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TECHNICAL MEMORANDUM

To: Veronique Blanchard, Town Administrator
Town of Conway
P.O. Box 240, 32 Main Street
Conway, MA 01341

From: Rosalie T. Starvish, M.S., P.E., CFM, CPMSM
Nathaniel L. Russell, P.E.
Steven D'Ambrosio, P.E.
Mark J. Stadnicki, P.E.
GZA GeoEnvironmental, Inc.
1350 Main Street, Suite 1400
Springfield, MA 01103

Date: June 2, 2025

File No.: 15.0167305.01

Re: Pine Hill Neighborhood Drainage Design
Town of Conway, MA

Dear Ms. Blanchard:

In accordance with our contract executed on April 4, 2025, GZA GeoEnvironmental, Inc. (GZA) prepared this memorandum for the Town of Conway (Client; Town) to present GZA's proposed drainage system and analysis of existing and proposed flow rates at each outfall under existing and proposed conditions for the stormwater drainage system in the Pine Hill neighborhood of Conway, MA. Elevations in this report are provided in feet, referenced to the North American Vertical Datum 1988 (NAVD88) datum unless otherwise specified.

This memorandum is subject to the Limitations included as **Attachment A**.

BACKGROUND AND OBJECTIVE

GZA previously was contracted by the Town to provide professional consulting services to prepare a preliminary hydrologic and hydraulic (H&H) assessment of the existing stormwater drainage system in the Pine Hill neighborhood of Conway, MA, which includes primarily rural residential properties in the general vicinity of Pine Hill Road, Upper Baptist Hill Road, and Baptist Hill Road ("Site"). The H&H assessment was originally developed to support future grant applications to fund final design, permitting and construction of improvements to the drainage system to help mitigate and reduce damage due to outflows from the existing system discharges on private property. However, the Town was successful in acquiring funding through the MassWorks grant, for construction of a new drainage system and road paving, which is planned to commence this summer (2025).



Subsequently, the Town contracted GZA to prepare a conceptual plan for proposed improvements to the stormwater drainage system for the neighborhood, with the intent to attempt to reduce the frequency of discharges from the existing outfalls on private property.

GZA used the information previously gathered for the preliminary H&H assessment of the existing drainage system as a basis to model existing conditions, and to evaluate the potential impacts of proposed modifications to the drainage system.

SITE DESCRIPTION, TOPOGRAPHY, AND SOILS

The Pine Hill Neighborhood is in the Town of Conway which is located in Franklin County, Massachusetts. The Project is located on the southeastern slope of a valley associated with the South River in downtown Conway and consists of Baptist Hill Road, Upper Baptist Hill Road, a portion of Pine Hill Road and Shelburne Falls Road and is made up of primarily rural residential properties, woodlands, and open space/fields. The area is uphill and north of Main Street (Route 116), which is a Massachusetts State (State) owned roadway. Baptist Hill Road heads north from the intersection with Route 116 and Shelburne Falls Road and rises in grade to the intersection with Upper Baptist Hill Road. Upper Baptist Hill Road heads westerly from the intersection with Baptist Hill Road and then turns southwesterly at the intersection with Pine Hill Road all while rising in grade to a crest at the limit of the Project area. Pine Hill Road heads northwesterly and rises in grade from the intersection of Upper Baptist Hill Road. The area between Upper Baptist Hill Road and Baptist Hill Road generally slopes southernly, towards a state-mapped wetland area on the back (north side) of residential properties abutting Route 116.

A review of the United States Department of Agriculture (USDA) Natural Resources Conservation Services (NRCS) Soil Survey of Franklin County indicates on-site soils consist of Canton fine sandy loam (420D), Chalton-Chatfield-Holis complex (125D, 125F), Chatfield-Holis complex (109C, 109F), and Paxton fine sandy loam (305B, 305C, 305F, 306F). The USDA defines groups of soils into Hydrologic Soil Groups (HSG) according to their runoff-producing characteristics. Soils are assigned to four groups (A, B, C, and D). Group A soils have a high rate of infiltration and therefore a low runoff potential. They typically are deep, well drained, and sandy or gravelly. In Group D, at the other extreme are soils having a very slow infiltration rate and thus a high runoff potential. They may have a hardpan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other nearly impervious material. The on-site soils are mapped with HSG classifications as follows:

Soil Type/Map Unit	-	HSG
• Canton fine sandy loam (420D)	-	A
• Chalton-Chatfield-Holis complex (125D)	-	A
• Chatfield-Holis complex (109C, 109F)	-	B
• Paxton fine sandy loam (305B, 305C, 305F, 306F)	-	C

HYDROLOGIC ANALYSIS

The existing and proposed storm drainage system was modeled using HydroCAD® (version 10.20-6a) which is an industry-standard computer software program used to evaluate drainage systems. HydroCAD was used to estimate peak flows from the existing and proposed outfalls from the Pine Hill Neighborhood drainage system resulting from the 2-, 10-, 25-, and 100-yr “return interval” design storms using the NRCS runoff Curve Number method. The drainage area and sub-



catchments used for the analysis were obtained from the previous H&H assessment. Land cover for each sub-catchment was estimated based on 2023 Ortho Imagery¹.

In order to calculate the peak flow rates, the following information provided in Tables 1 and 2, and the hydrologic parameters of each sub-catchment under pre- and post-conditions are required:

Table 1: 24-hour Rainfall Depths

24-Hour Rainfall (in)				
Design Storm / Recurrence Interval	2-Year	10-Year	25-Year	100-Year
Precipitation (inches)	3.07	4.70	5.75	7.29

Note: Rainfall depths were derived from Atlas 14 published by the National Oceanographic and Atmospheric Administration (NOAA).

Table 2: Pre- and Post-Development Runoff Curve Numbers (RCN)

Land Use	Hydrologic Soil Group	RCN
Woods, Poor Condition	A, B, C	45, 66, 77
75% Grass Cover, Good	A, B, C	39, 61, 74
50-75% Grass Cover, Fair	A	49
Row Crops, Straight Row, Poor	A, C	72, 88
Impervious Surface	N/A	98

Note: RCN values obtained from Hydro CAD 10.20-6a.

EXISTING DRAINAGE SYSTEM

The existing drainage system consists of a combination of catch basins, drop inlets, and open-end culverts which collect runoff from the 50-acre watershed and convey the stormwater to existing discharge points, including (See Figures 1 - 3, and 6):

- A presumed 15-inch corrugated metal pipe (CMP) discharges stormwater collected by catch basins, along the upper portion of Upper Baptist Hill Road (Sub-catchments 1E and 2E), to the South River on the southern side of Route 116 through the property of 62 River Street (Design Point DP-1).
- A drop inlet collects stormwater from a portion of Upper Baptist Hill Road (Sub-catchment 3E) and conveys it to a drainage channel between 67, and 45 Upper Baptist Hill Road (Design Point DP-2).
- The drainage channel conveys the stormwater to the rear portion of 12 and 14 River Street. Stormwater behind 12 and 14 River Street is collected and routed to the Massachusetts Department of Transportation (MassDOT) drainage system within Route 116 (Sub-catchment 10E). An open-ended culvert collects stormwater along the eastern side of Upper Baptist Hill Road (Sub-catchment 5E) and discharges to northwestern portion of 51 Baptist Hill Road (Design Point DP-3).
- Stormwater which collects in a small, grassed depression at the intersection of Upper Baptist (Sub-catchment 6E), Pine Hill and Baptist Hill Roads is collected by an open-ended pipe and conveyed to a wooden structure which discharges to the lawn of 10 Pine Hill Road. The wooden structure is presumed to connect to the drainage system

¹ 2023 Ortho Images obtained from MassMapper by MassGIS:
<https://maps.massgis.digital.mass.gov/MassMapper/MassMapper.html>



within Baptist Hill Road and the discharge to 10 Pine Hill Road is an overflow. Stormwater which is collected via catch basins and drop inlets along Baptist Hill Road (Sub-catchments 7E, 8E, and 9E) are conveyed through a 12-inch CMP pipe and connect to a catch basin at the bottom of Baptist Hill Road on the northwestern corner of the Baptist Hill Road and Shelburne Falls Road. Presumably the catch basin at the bottom of Baptist Hill Road connects to the MassDOT drainage system within Route 116, and discharges to the east in the South River (Design Point DP-4).

- An open-ended culvert collects stormwater on the eastern side of the bottom of Baptist Hill Road (Sub-catchment 11E) and conveys the stormwater to a drainage swale along the northern side of Shelburne Falls Road to a drop inlet which conveys the stormwater under Shelburne Falls Road to the southern properties (Design Point DP-5).
- An existing 15-inch corrugated plastic pipe culvert conveys stormwater collected in the southwestern corner of Pine Hill Road (Sub-catchment 4E) and Upper Baptist Hill Road to a "wet meadow" on the 10 Pine Hill Road Property. The stormwater is conveyed northerly through drainage channel (Sub-catchment 13S) to additional culverts under Emmerson Hollow Road and Shelburne Falls Road (Design Point DP-6).

Characteristics of the existing drainage areas and calculated peak flow rates to the existing discharge points can be found in the following tables:

Table 3: Existing Conditions Hydrologic Parameters

<i>Design Area</i>	Drainage Areas, Square Feet	Weighted Runoff Curve No.	Time of Concentration, Minutes
Sub-catchment-1E	324,117	57	17.3
Sub-catchment-2E	52,537	60	6.7
Sub-catchment-3E	515,093	55	13.6
Sub-catchment-4E	441,577	63	14.1
Sub-catchment-5E	21,556	48	9.8
Sub-catchment-6E	11,369	64	7
Sub-catchment-7E	19,699	76	8.3
Sub-catchment-8E	64,091	84	7.2
Sub-catchment-9E	11,227	68	1.2
Sub-catchment-10E	162,915	53	21.2
Sub-catchment-11E	58,435	82	12.1
Sub-catchment-12E	24,870	63	1.2
Sub-catchment-13E	491,459	73	14.7
Total	2,198,945		

Ref. Attachment B and Figure 6: Existing Conditions Drainage Map



Table 4: Existing Conditions Peak Flow Rates

Peak Flow Rates 24-hour Storm Event (cfs)				
Discharge Point	Design Storm /Recurrence Interval			
	2-Year	10-Year	25-Year	100-Year
DP-1	1.0	5.5	9.6	11.3
DP-2	0.9	6.7	9.7	10.0
DP-3	0.0	1.4	10.7	38.0
DP-4	3.2	12.0	26.3	56.0
DP-5	2.0	5.5	8.1	12.3
DP-6	11.1	30.0	39.0	53.3

Ref. Attachment B

PROPOSED DRAINAGE SYSTEM

The proposed drainage system will consist of new catch basins and drop inlets which will collect stormwater from the watershed and convey it to discharge points as described below. The proposed system will incorporate existing outfalls as overflow outlets for larger storms, however the proposed drainage system is intended to reduce the frequency of discharges from the outfalls during smaller design storms.

To better model the proposed drainage system, the watershed was further discretized into fifteen (15) sub-catchments (see Figure 7: Proposed Conditions Drainage Map).

Stormwater from the upper portion of Upper Baptist Hill Road (Sub-catchments 1S, 2S, 3S, 5S) will be collected in new drop inlets and drainage pipes that will connect to the existing 15-inch corrugated metal pipe which is understood to convey stormwater to the South River through 62 River Street property and under Route 116 (Design Point DP-1). New drop inlets will be installed along the lower portion of Upper Baptist Hill Road (Sub-catchments 4S, 6S), and within the small, grassed island depression (Sub-catchment 7S). These drop inlets will connect to a large trunk line which will convey the stormwater to a new discharge point located on the southern side of Shelburne Falls Road (Design Point DP-5). The existing drop inlet and open-ended pipe along the eastern edge of Baptist Hill Road (Sub-catchments 9S, 11S, 13S) will be removed and replaced with catch basins that will collect the stormwater and route it to the proposed trunk line. The proposed trunk line will discharge through an energy dissipating outlet structure onto the Town property on the southern side of Shelburne Falls Road (Design Point DP-5) before ultimately flowing overland to the South River, consistent with the general existing regional drainage patterns.

An overflow pipe that will help reduce the potential of flooding when the existing 15-inch corrugated plastic pipe culvert which conveys stormwater under Pine Hill Road from Sub-catchment 14S to Design Point DP-6 is inundated. The overflow pipe will connect to the drop inlet located within the small, grassed island.

As noted above, the existing outfalls between 67 and 45 Upper Baptist Hill Road (Design Point DP-2) and the outfall at 51 Baptist Hill Road (Design Point DP-3) will be maintained as overflow discharge points for the drainage system during larger design-storm events (>10-yr design storm). As part of the proposed improvements, the existing wooden box structure and outlet that discharges towards the septic system of 10 Pine Hill Road will be removed.

The existing catch basins which collect stormwater along the western side of Baptist Hill Road (Sub-catchments 8S, 10S, 12S) and discharge to the MassDOT drainage system within Route 116 (Design Point DP-4) will be maintained.

(See Figure 4, 5 & 7)



Characteristics of the proposed drainage areas and calculated peak flow rates to the proposed discharge points can be found in the following tables:

Table 5: Proposed Conditions Hydrologic Parameters

<i>Design Area</i>	Drainage Areas, Square Feet	Weighted Runoff Curve No.	Time of Concentration, Minutes
Sub-catchment-1S	263,518	57	17.3
Sub-catchment-2S	52,537	60	6.7
Sub-catchment-3S	241,534	53	14.4
Sub-catchment-4S	273,796	59	13.6
Sub-catchment-5S	60,599	68	11.9
Sub-catchment-6S	24,323	48	9.8
Sub-catchment-7S	13,788	64	6.9
Sub-catchment-8S	19,699	76	8.3
Sub-catchment-9S	64,091	84	7.2
Sub-catchment-10S	11,227	68	1.2
Sub-catchment-11S	58,435	82	15.5
Sub-catchment-12S	157,658	53	21.2
Sub-catchment-13S	24,870	63	1.2
Sub-catchment-14S	441,577	63	14.1
Sub-catchment-15S	491,280	74	14.7
Total	2,198,932		

Ref. Attachment C and Figure 7: Proposed Conditions Drainage Map

Table 6: Proposed Conditions Peak Flow Rates

Peak Flow Rates 24-hour Storm Event (cfs)				
Design Point	Design Storm /Recurrence Interval			
	2-Year	10-Year	25-Year	100-Year
DP-1	1.2	8.2	14.0	16.3
DP-2	0.0	0.0	5.2	8.2
DP-3	0.0	0.0	3.2	25.6
DP-4	0.61	2.2	12.2	40.5
DP-5	4.62	15.8	23.7	27.5
DP-6	11.7	28.9	39.1	53.6

Ref. Attachment C



FINDINGS

The hydraulic analysis indicates that the proposed drainage design reduces the frequency and volume of stormwater discharges to the abutting properties of 45 and 62 Upper Baptist Hill Road, 51 Baptist Hill Road, and 12 and 14 River Street for the smaller design storms and will convey a larger portion of the runoff in a controlled manner to the Town property along the Shelburne Falls Road, the existing connection to the MassDOT drainage system within Route 116 at the intersection of Baptist Hill Road and Shelburne Falls Road, and the existing drainage pipe routed through the 62 River Street property towards Route 116. The changes in flow to each design discharge point are summarized in the table below

Table 7: Peak Flow Rate Comparisons

Peak Flow Rates 24-hour Storm Event (cfs)												
Design Point	Design Storm /Recurrence Interval											
	2-Year			10-Year			25-Year			100-Year		
	EX	PROP	Δ	EX	PROP	Δ	EX	PROP	Δ	EX	PROP	Δ
DP-1	1.0	1.2	0.2	5.5	8.2	2.7	9.6	14.0	4.4	11.3	16.3	5.0
DP-2	0.9	0.0	-0.9	6.7	0.0	-6.7	9.7	5.2	-4.5	10.	8.2	-1.8
DP-3	0.0	0.0	0.0	1.4	0.0	-1.4	10.7	3.2	-7.5	38.0	25.6	-12.4
DP-4	3.2	0.61	-2.59	12.0	2.2	-9.8	26.3	12.2	-14.1	56.0	40.5	-15.5
DP-5	2.0	4.62	2.62	5.5	15.8	10.3	8.1	23.7	15.6	12.3	27.5	15.2
DP-6	11.1	11.7	0.6	30.0	28.9	-1.1	39.0	39.1	0.1	53.3	53.6	0.3

Attachments:

- Figure 1 – Pine Hill Existing Conditions Drainage Structures – Page 1 of 3
- Figure 2 - Pine Hill Existing Conditions Drainage Structures - Page 2 of 3
- Figure 3 - Pine Hill Existing Conditions Drainage Structures - Page 3 of 3
- Figure 4 – Pine Hill Proposed Condition Drainage Structures – Page 1 of 4
- Figure 5 – Pine Hill Proposed Condition Drainage Structures – Page 2 of 4
- Figure 6 – Pine Hill Existing Condition Drainage Map
- Figure 7 – Pine Hill Proposed Condition Drainage Map
- Attachment A – Limitations
- Attachment B – Existing Condition HydroCAD Calculations
- Attachment C – Proposed Condition HydroCAD Calculations
- Attachment D – NRCS Web Soil Survey Map



FIGURES



LEGEND

- CATCH BASIN
- DROP INLET
- MANHOLE
- PIPE END
- ESTIMATED MANHOLE
- SWALE (BASED ON TOPOGRAPHIC LOW POINTS)
- PIPE
- - - ESTIMATED PIPE
- - - DRAINAGE LINE
- ESTIMATED STREAM
- ➔ ESTIMATED FLOW DIRECTION
- OPEN WATER
- ESTIMATED WETLAND
- MASSACHUSETTS PROPERTY TAX PARCELS



NOTES:

1. BASE MAP SOURCE: MASSACHUSETTS 2023 AERIAL IMAGERY (TILE SERVICE): MASSGIS



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**PINE HILL NEIGHBORHOOD
HYDRAULIC ASSESSMENT
CONWAY, MA**

**EXISTING CONDITIONS
DRAINAGE STRUCTURES**

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: TOWN OF CONWAY PO BOX 240, 32 MAIN STREET CONWAY, MA 01341		
PROJ MGR: RFS	DESIGNED BY: JRC	REVIEWED BY: NLR	CHECKED BY: DML	FIGURE 1
DATE: 09/18/2024	PROJECT NO: 15.0167305.00	SCALE: 1 in 125 ft	REVISION NO:	



LEGEND

- CATCH BASIN
- DROP INLET
- MANHOLE
- PIPE END
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DESIGNED BY:	JRC	DRAWN BY:	JRC
DATE:	09/18/2024	PROJECT NO.:	15.0167305.00
		CHECKED BY:	DML
		SCALE:	1 in 125 ft
		REVISION NO.:	
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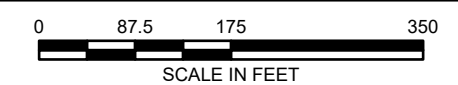
LEGEND

- CATCH BASIN
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1. BASE MAP SOURCE: MASSACHUSETTS 2023 AERIAL IMAGERY (TILE SERVICE); MASSGIS

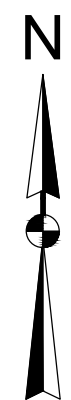


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HYDRAULIC ASSESSMENT
CONWAY, MA**

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DATE:	09/18/2024	PROJECT NO.:	15.0167305.00
CHECKED BY:			DML
SCALE:			1 in 175 ft
REVISION NO.:			
FIGURE			3



NOTES:

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3. 2023 IMAGERY INFORMATION OBTAINED FROM MassGIS MassMapper (<https://maps.massgis.digital.mass.gov/MassMapper/MassMapper.html>)
4. EXISTING DRAINAGE STRUCTURE LOCATIONS APPROXIMATE AND BASED ON GPS SURVEY EQUIPMENT BY GZA GEOENVIRONMENTAL, INC. ON 5/30/2024.
5. RIM & INVERT ELEVATIONS ESTIMATED USING TOPOGRAPHIC INFORMATION OBTAINED FROM PUBLISHED LIDAR DATA. ACTUAL ELEVATIONS SHOULD BE DETERMINED IN FIELD.



NO.	ISSUE/DESCRIPTION	BY	DATE

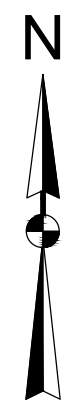
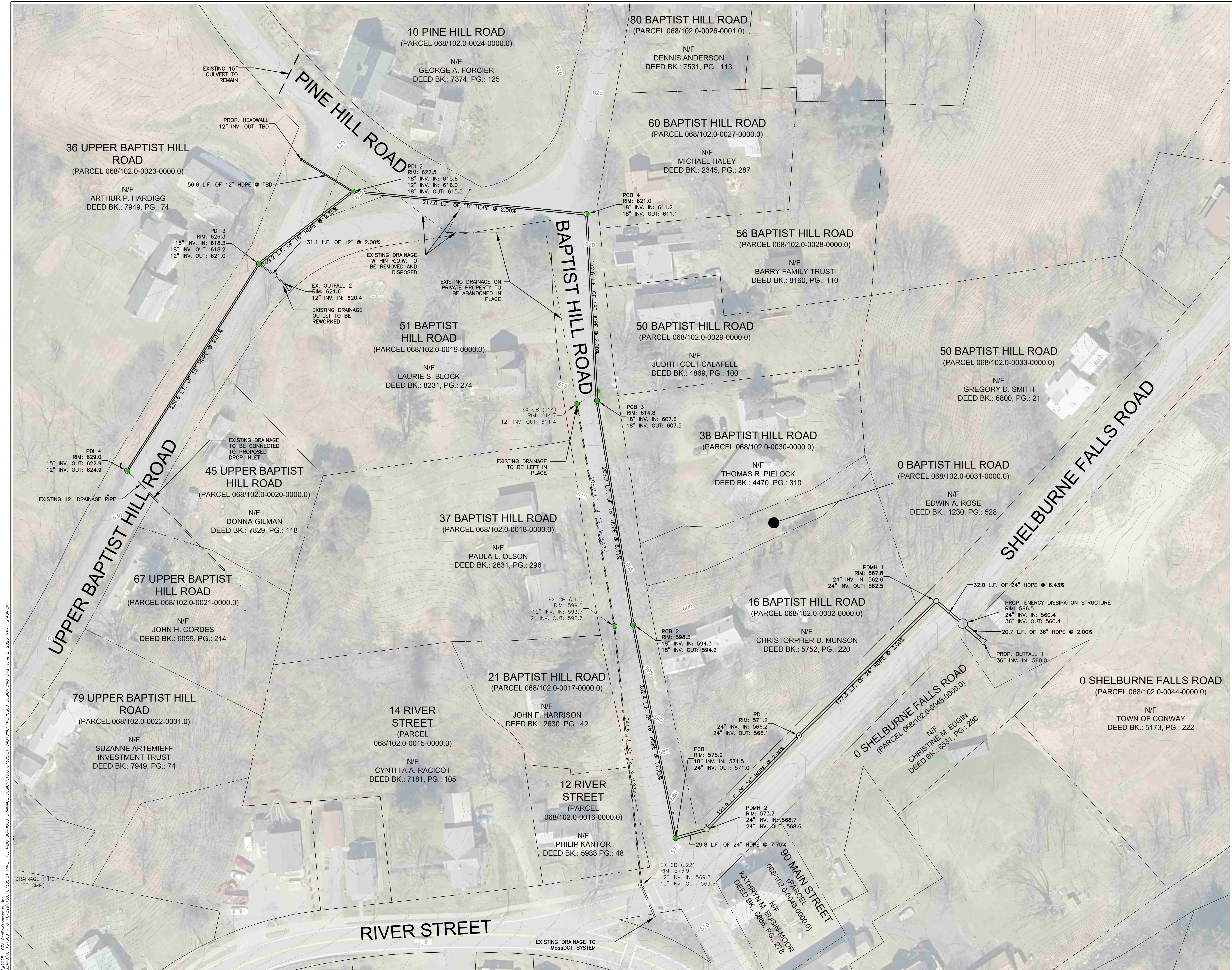
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**DRAINAGE IMPROVEMENTS
PINE HILL NEIGHBORHOOD
CONWAY, MA**

**PINE HILL NEIGHBORHOOD
DRAINAGE IMPROVEMENTS**

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CHECKED BY: NLR SCALE: AS SHOWN REVISION NO.: -	DRAWING C-1 SHEET NO. 1 OF 4

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 CAD: VAW/IMP/PROPOSED_DRAINAGE_DESIGN/15.0167305.01 CAD: VAW/IMP/PROPOSED_DRAINAGE_DESIGN/15.0167305.01 June 2, 2025 MARK STONICK



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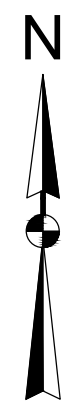
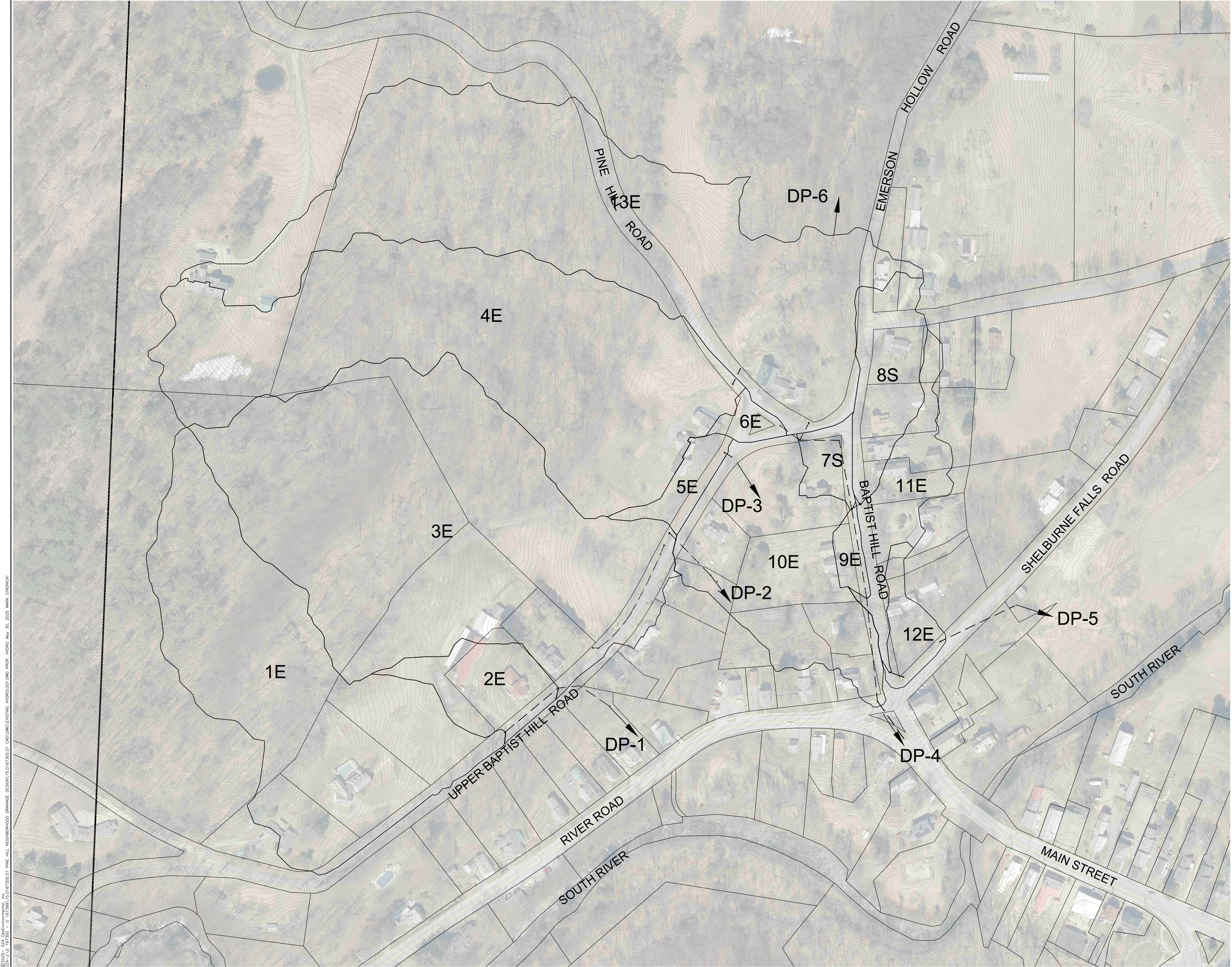
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**DRAINAGE IMPROVEMENTS
PINE HILL NEIGHBORHOOD
CONWAY, MA**

**PINE HILL NEIGHBORHOOD
DRAINAGE IMPROVEMENTS**

PREPARED BY: GZA GeoEnvironmental, Inc. www.gza.com	PREPARED FOR: TOWN OF CONWAY 32 MAIN ST., P.O. BOX 240 CONWAY, MA 01341
PROJ MGR: RTS DESIGNED BY: MJS DATE: JUNE, 2025	REVIEWED BY: STD DRAWN BY: MJS PROJECT NO.: 15.0167305.01
CHECKED BY: NLR SCALE: AS SHOWN REVISION NO.: -	DRAWING: C-2 SHEET NO. 2 OF 4

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NOTES:

1. TOPOGRAPHIC INFORMATION DEPICTED IS BASED ON LIDAR DATA OBTAINED FROM THE NOAA DATA ACCESS VIEWER (<https://coast.noaa.gov/dataviewer/#lidar/search/>)
2. BOUNDARY INFORMATION DEPICTED IS BASED ON GIS DATA OBTAINED FROM MassGIS MassMapper (<https://maps.massgis.digital.mass.gov/MassMapper/MassMapper.html>)
3. 2023 IMAGERY INFORMATION OBTAINED FROM MassGIS MassMapper (<https://maps.massgis.digital.mass.gov/MassMapper/MassMapper.html>)
4. EXISTING DRAINAGE STRUCTURE LOCATIONS APPROXIMATE AND BASED ON GPS SURVEY EQUIPMENT BY GZA GEOENVIRONMENTAL, INC. ON 5/30/2024.



NO.	ISSUE/DESCRIPTION	BY	DATE

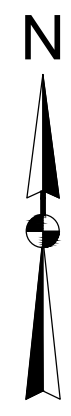
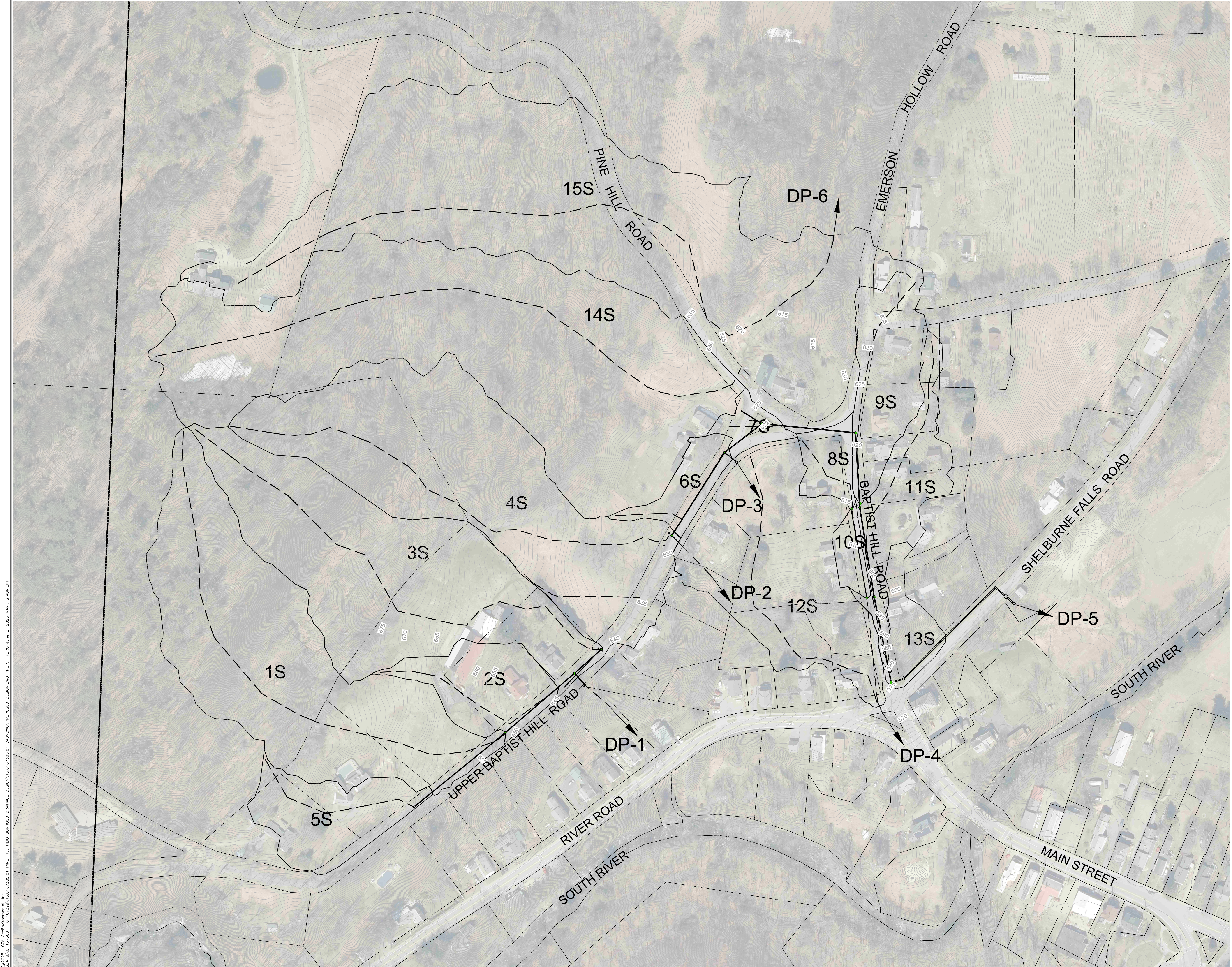
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**DRAINAGE IMPROVEMENTS
PINE HILL NEIGHBORHOOD
CONWAY, MA**

**PINE HILL NEIGHBORHOOD
EXISTING HYDROLOGY MAP**

PREPARED BY: GZA GeoEnvironmental, Inc. www.gza.com		PREPARED FOR: TOWN OF CONWAY 32 MAIN ST., P.O. BOX 240 CONWAY, MA 01341	
PROJ MGR: RTS DESIGNED BY: MJS DATE: JUNE, 2025	REVIEWED BY: STD DRAWN BY: MJS PROJECT NO.: 15.0167305.01	CHECKED BY: NLR SCALE: AS SHOWN REVISION NO.: -	FIGURE 6 SHEET NO. 1 OF 1

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NOTES:

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4. EXISTING DRAINAGE STRUCTURE LOCATIONS APPROXIMATE AND BASED ON GPS SURVEY EQUIPMENT BY GZA GEOENVIRONMENTAL, INC. ON 5/30/2024.



NO.	ISSUE/DESCRIPTION	BY	DATE

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**DRAINAGE IMPROVEMENTS
PINE HILL NEIGHBORHOOD
CONWAY, MA**

**PINE HILL NEIGHBORHOOD
PROPOSED HYDROLOGY MAP**

PREPARED BY: GZA GeoEnvironmental, Inc. www.gza.com		PREPARED FOR: TOWN OF CONWAY 32 MAIN ST., P.O. BOX 240 CONWAY, MA 01341	
PROJ MGR: RTS DESIGNED BY: MJS DATE: JUNE, 2025	REVIEWED BY: STD DRAWN BY: MJS PROJECT NO.: 15.0167305.01	CHECKED BY: NLR SCALE: AS SHOWN REVISION NO.: -	FIGURE 7 SHEET NO. 1 OF 1

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ATTACHMENT A

LIMITATIONS



USE OF REPORT

1. GeoEnvironmental, Inc. (GZA) prepared this report on behalf of, and for the exclusive use of the Client for the stated purpose(s) and location(s) identified in the Report. Use of this Report, in whole or in part, at other locations, or for other purposes, may lead to inappropriate conclusions and we do not accept any responsibility for the consequences of such use(s). Further, reliance by any party not identified in the agreement, for any use, without our prior written permission, shall be at that party's sole risk, and without any liability to GZA.

STANDARD OF CARE

2. Our findings and conclusions are based on the work conducted as part of the Scope of Services set forth in the Report and/or proposal, and reflect our professional judgment. These findings and conclusions must be considered not as scientific or engineering certainties, but rather as our professional opinions concerning the limited data gathered during the course of our work. Conditions other than described in this report may be found at the subject location(s).
3. The interpretations and conclusions presented in the Report were based solely upon the services described therein, and not on scientific tasks or procedures beyond the scope of the described services. The work described in this report was carried out in accordance with the agreed upon Terms and Conditions of Engagement.
4. GZA's flood evaluation was performed in accordance with generally accepted practices of qualified professionals performing the same type of services at the same time, under similar conditions, at the same or a similar property. No warranty, expressed or implied, is made. The findings of the risk characterization are dependent on numerous assumptions and uncertainties inherent in the risk assessment process. The findings of the flood evaluation are not an absolute characterization of actual risks, but rather serve to highlight potential sources of risk at the site(s).
5. Unless specifically stated otherwise, the flood evaluations performed by GZA and associated results and conclusions are based upon evaluation of historic data, trends, references, and guidance with respect to the current climate and sea level conditions. Future climate change may result in alterations to inputs which influence flooding at the site (*e.g.* rainfall totals, storm intensities, mean sea level, *etc.*). Such changes may have implications on the estimated flood elevations, wave heights, flood frequencies and/or other parameters contained in this report.

RELIANCE ON INFORMATION FROM OTHERS

6. In conducting our work, GZA has relied upon certain information made available by public agencies, Client and/or others. GZA did not attempt to independently verify the accuracy or completeness of that information. Any inconsistencies in this information which we have noted are discussed in the Report.

COMPLIANCE WITH CODES AND REGULATIONS

7. We used reasonable care in identifying and interpreting applicable codes and regulations necessary to execute our scope of work. These codes and regulations are subject to various, and possibly contradictory, interpretations. Interpretations with codes and regulations by other parties are beyond our control.

ADDITIONAL INFORMATION

8. In the event that the Client or others authorized to use this report obtain information on conditions at the site(s) not contained in this report, such information shall be brought to GZA's attention forthwith. GZA will evaluate such information and, on the basis of this evaluation, may modify the opinions stated in this report.

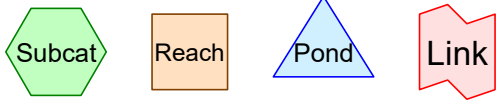
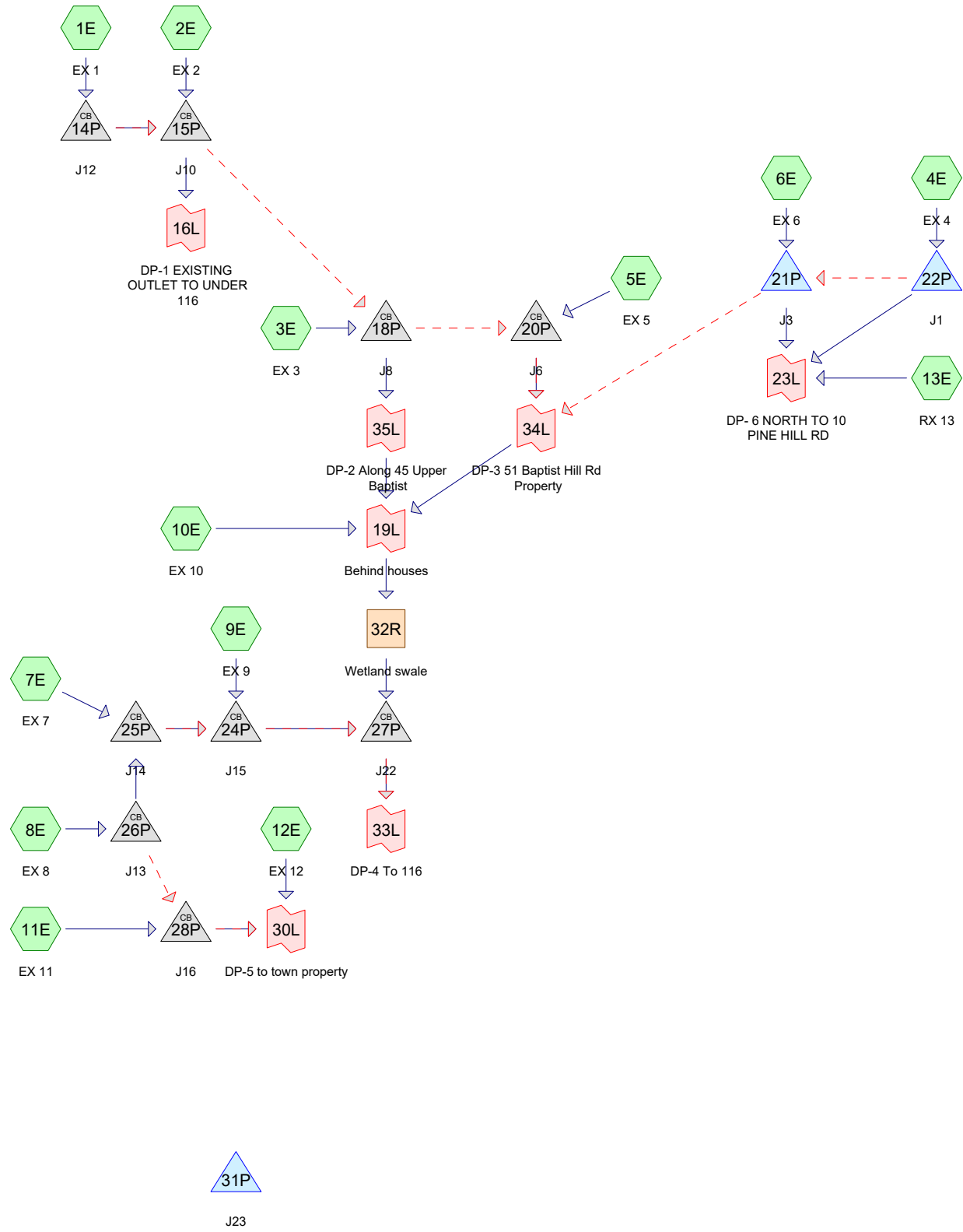


ADDITIONAL SERVICES

9. GZA recommends that we be retained to provide services during any future investigations, design, implementation activities, construction, and/or property development/ redevelopment at the Site. This will allow us the opportunity to: i) observe conditions and compliance with our design concepts and opinions; ii) allow for changes in the event that conditions are other than anticipated; iii) provide modifications to our design; and iv) assess the consequences of changes in technologies and/or regulations.



ATTACHMENT B
EXISTING HYDROCAD
CALULATIONS



Routing Diagram for 15.0167305.01-EXC HYDROLOGY
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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type III 24-hr		Default	24.00	1	3.07	2
2	10-yr	Type III 24-hr		Default	24.00	1	4.70	2
3	25-yr	Type III 24-hr		Default	24.00	1	5.72	2
4	100-yr	Type III 24-hr		Default	24.00	1	7.29	2

15.0167305.01-EXC HYDROLOGY

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.866	49	50-75% Grass cover, Fair, HSG A (3E)
1.478	39	>75% Grass Cover, Good HSG A (1E)
0.391	61	>75% Grass Cover, Good HSG B (1E)
9.185	39	>75% Grass cover, Good, HSG A (1E, 2E, 3E, 4E, 5E, 6E, 7E, 9E, 10E, 11E, 12E, 13E)
2.219	61	>75% Grass cover, Good, HSG B (1E, 4E, 10E, 13E)
3.425	74	>75% Grass cover, Good, HSG C (4E, 7E, 8E, 10E, 11E, 12E, 13E)
1.552	98	Impervious, HSG A (1E, 2E, 6E, 7E, 9E, 10E, 11E, 12E, 13E)
0.236	98	Impervious, HSG B (1E, 12E, 13E)
1.781	98	Impervious, HSG C (7E, 8E, 10E, 11E, 12E, 13E)
0.257	72	Row crops, straight row, Poor, HSG A (13E)
0.590	88	Row crops, straight row, Poor, HSG C (13E)
4.719	45	Woods, Poor, HSG A (1E, 3E, 4E, 10E, 12E, 13E)
13.382	66	Woods, Poor, HSG B (1E, 3E, 4E, 10E, 12E, 13E)
9.161	77	Woods, Poor, HSG C (4E, 13E)
0.239	98	impervious, HSG A (3E, 5E)
50.480	63	TOTAL AREA

15.0167305.01-EXC HYDROLOGY

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
19.295	HSG A	1E, 2E, 3E, 4E, 5E, 6E, 7E, 9E, 10E, 11E, 12E, 13E
16.228	HSG B	1E, 3E, 4E, 10E, 12E, 13E
14.957	HSG C	4E, 7E, 8E, 10E, 11E, 12E, 13E
0.000	HSG D	
0.000	Other	
50.480		TOTAL AREA

15.0167305.01-EXC HYDROLOGY

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
1.866	0.000	0.000	0.000	0.000	1.866	50-75% Grass cover, Fair	3E
1.478	0.391	0.000	0.000	0.000	1.869	>75% Grass Cover, Good	1E
9.185	2.219	3.425	0.000	0.000	14.829	>75% Grass cover, Good	1E, 2E, 3E, 4E, 5E, 6E, 7E, 8E, 9E, 10E, 11E, 12E, 13E
1.552	0.236	1.781	0.000	0.000	3.569	Impervious	1E, 2E, 6E, 7E, 8E, 9E, 10E, 11E, 12E, 13E
0.257	0.000	0.590	0.000	0.000	0.847	Row crops, straight row, Poor	13E
4.719	13.382	9.161	0.000	0.000	27.261	Woods, Poor	1E, 3E, 4E, 10E, 12E, 13E
0.239	0.000	0.000	0.000	0.000	0.239	impervious	3E, 5E
19.295	16.228	14.957	0.000	0.000	50.480	TOTAL AREA	

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Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	14P	647.59	639.96	159.4	0.0479	0.025	0.0	12.0	0.0	
2	15P	639.76	625.00	62.0	0.2381	0.025	0.0	15.0	0.0	
3	18P	624.50	623.38	25.0	0.0448	0.013	0.0	12.0	0.0	
4	20P	623.69	624.96	19.0	-0.0668	0.013	0.0	12.0	0.0	
5	21P	619.50	618.98	101.0	0.0051	0.025	0.0	12.0	0.0	
6	22P	623.23	622.75	39.2	0.0122	0.013	0.0	15.0	0.0	
7	24P	593.70	569.82	240.0	0.0995	0.013	0.0	12.0	0.0	
8	25P	611.36	593.70	460.0	0.0384	0.025	0.0	12.0	0.0	
9	26P	614.00	611.86	23.0	0.0930	0.025	0.0	12.0	0.0	
10	27P	569.62	567.62	40.0	0.0500	0.013	0.0	15.0	0.0	
11	28P	577.17	571.01	33.0	0.1867	0.013	0.0	12.0	0.0	

15.0167305.01-EXC HYDROLOGY

Type III 24-hr 2-yr Rainfall=3.07"

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Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1E: EX 1	Runoff Area=324,117 sf 3.47% Impervious Runoff Depth=0.27" Flow Length=1,253' Tc=17.3 min CN=57 Runoff=0.78 cfs 0.166 af
Subcatchment2E: EX 2	Runoff Area=52,537 sf 35.20% Impervious Runoff Depth=0.36" Flow Length=472' Tc=6.7 min CN=60 Runoff=0.25 cfs 0.036 af
Subcatchment3E: EX 3	Runoff Area=515,091 sf 1.39% Impervious Runoff Depth=0.21" Flow Length=1,106' Tc=13.6 min CN=55 Runoff=0.87 cfs 0.211 af
Subcatchment4E: EX 4	Runoff Area=441,577 sf 0.00% Impervious Runoff Depth=0.46" Flow Length=1,423' Tc=14.1 min CN=63 Runoff=2.85 cfs 0.391 af
Subcatchment5E: EX 5	Runoff Area=21,556 sf 15.01% Impervious Runoff Depth=0.07" Flow Length=368' Tc=9.8 min CN=48 Runoff=0.00 cfs 0.003 af
Subcatchment6E: EX 6	Runoff Area=11,369 sf 41.58% Impervious Runoff Depth=0.50" Flow Length=125' Tc=7.0 min CN=64 Runoff=0.10 cfs 0.011 af
Subcatchment7E: EX 7	Runoff Area=19,699 sf 37.25% Impervious Runoff Depth=1.06" Flow Length=211' Tc=8.3 min CN=76 Runoff=0.49 cfs 0.040 af
Subcatchment8E: EX 8	Runoff Area=64,091 sf 41.74% Impervious Runoff Depth=1.57" Flow Length=546' Tc=7.2 min CN=84 Runoff=2.57 cfs 0.193 af
Subcatchment9E: EX 9	Runoff Area=11,227 sf 49.99% Impervious Runoff Depth=0.66" Tc=1.2 min CN=68 Runoff=0.19 cfs 0.014 af
Subcatchment10E: EX 10	Runoff Area=162,915 sf 11.13% Impervious Runoff Depth=0.17" Flow Length=743' Tc=21.2 min CN=53 Runoff=0.14 cfs 0.052 af
Subcatchment11E: EX 11	Runoff Area=58,435 sf 35.42% Impervious Runoff Depth=1.43" Flow Length=803' Tc=12.1 min CN=82 Runoff=1.82 cfs 0.160 af
Subcatchment12E: EX 12	Runoff Area=24,870 sf 22.10% Impervious Runoff Depth=0.46" Tc=1.2 min CN=63 Runoff=0.24 cfs 0.022 af
Subcatchment13E: RX 13	Runoff Area=491,439 sf 7.52% Impervious Runoff Depth=0.90" Flow Length=1,700' Tc=14.7 min CN=73 Runoff=8.31 cfs 0.847 af
Reach 32R: Wetland swale	Avg. Flow Depth=0.50' Max Vel=0.94 fps Inflow=0.98 cfs 0.265 af n=0.100 L=230.0' S=0.0261 '/' Capacity=110.96 cfs Outflow=0.95 cfs 0.265 af
Pond 14P: J12	Peak Elev=648.04' Inflow=0.78 cfs 0.166 af Primary=0.78 cfs 0.166 af Secondary=0.00 cfs 0.000 af Outflow=0.78 cfs 0.166 af
Pond 15P: J10	Peak Elev=640.22' Inflow=0.95 cfs 0.202 af Primary=0.95 cfs 0.202 af Secondary=0.00 cfs 0.000 af Outflow=0.95 cfs 0.202 af

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Type III 24-hr 2-yr Rainfall=3.07"

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Pond 18P: J8	Peak Elev=624.98'	Inflow=0.87 cfs	0.211 af
	Primary=0.87 cfs	0.211 af	Secondary=0.00 cfs
			0.000 af
		Outflow=0.87 cfs	0.211 af
Pond 20P: J6	Peak Elev=624.99'	Inflow=0.00 cfs	0.003 af
	Primary=0.00 cfs	0.003 af	Secondary=0.00 cfs
			0.000 af
		Outflow=0.00 cfs	0.003 af
Pond 21P: J3	Peak Elev=619.75'	Storage=5 cf	Inflow=0.10 cfs
			0.011 af
	Primary=0.11 cfs	0.011 af	Secondary=0.00 cfs
			0.000 af
		Outflow=0.11 cfs	0.011 af
Pond 22P: J1	Peak Elev=624.11'	Storage=33 cf	Inflow=2.85 cfs
			0.391 af
	Primary=2.85 cfs	0.391 af	Secondary=0.00 cfs
			0.000 af
		Outflow=2.85 cfs	0.391 af
Pond 24P: J15	Peak Elev=594.91'	Inflow=3.18 cfs	0.247 af
	Primary=3.18 cfs	0.247 af	Secondary=0.00 cfs
			0.000 af
		Outflow=3.18 cfs	0.247 af
Pond 25P: J14	Peak Elev=612.51'	Inflow=3.05 cfs	0.233 af
	Primary=3.05 cfs	0.233 af	Secondary=0.00 cfs
			0.000 af
		Outflow=3.05 cfs	0.233 af
Pond 26P: J13	Peak Elev=614.95'	Inflow=2.57 cfs	0.193 af
	Primary=2.57 cfs	0.193 af	Secondary=0.00 cfs
			0.000 af
		Outflow=2.57 cfs	0.193 af
Pond 27P: J22	Peak Elev=570.54'	Inflow=3.18 cfs	0.512 af
	Primary=3.18 cfs	0.512 af	Secondary=0.00 cfs
			0.000 af
		Outflow=3.18 cfs	0.512 af
Pond 28P: J16	Peak Elev=577.91'	Inflow=1.82 cfs	0.160 af
	Primary=1.82 cfs	0.160 af	Secondary=0.00 cfs
			0.000 af
		Outflow=1.82 cfs	0.160 af
Pond 31P: J23			Primary=0.00 cfs
			0.000 af
Link 16L: DP-1 EXISTING OUTLET TO UNDER 116		Inflow=0.95 cfs	0.202 af
		Primary=0.95 cfs	0.202 af
Link 19L: Behind houses		Inflow=0.98 cfs	0.265 af
		Primary=0.98 cfs	0.265 af
Link 23L: DP- 6 NORTH TO 10 PINE HILL RD		Inflow=11.11 cfs	1.248 af
		Primary=11.11 cfs	1.248 af
Link 30L: DP-5 to town property		Inflow=1.97 cfs	0.182 af
		Primary=1.97 cfs	0.182 af
Link 33L: DP-4 To 116		Inflow=3.18 cfs	0.512 af
		Primary=3.18 cfs	0.512 af
Link 34L: DP-3 51 Baptist Hill Rd Property		Inflow=0.00 cfs	0.003 af
		Primary=0.00 cfs	0.003 af
Link 35L: DP-2 Along 45 Upper Baptist		Inflow=0.87 cfs	0.211 af
		Primary=0.87 cfs	0.211 af

15.0167305.01-EXC HYDROLOGY

Type III 24-hr 2-yr Rainfall=3.07"

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Total Runoff Area = 50.480 ac Runoff Volume = 2.145 af Average Runoff Depth = 0.51"
92.46% Pervious = 46.673 ac 7.54% Impervious = 3.808 ac

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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Subcatchment 1E: EX 1

Runoff = 0.78 cfs @ 12.48 hrs, Volume= 0.166 af, Depth= 0.27"
 Routed to Pond 14P : J12

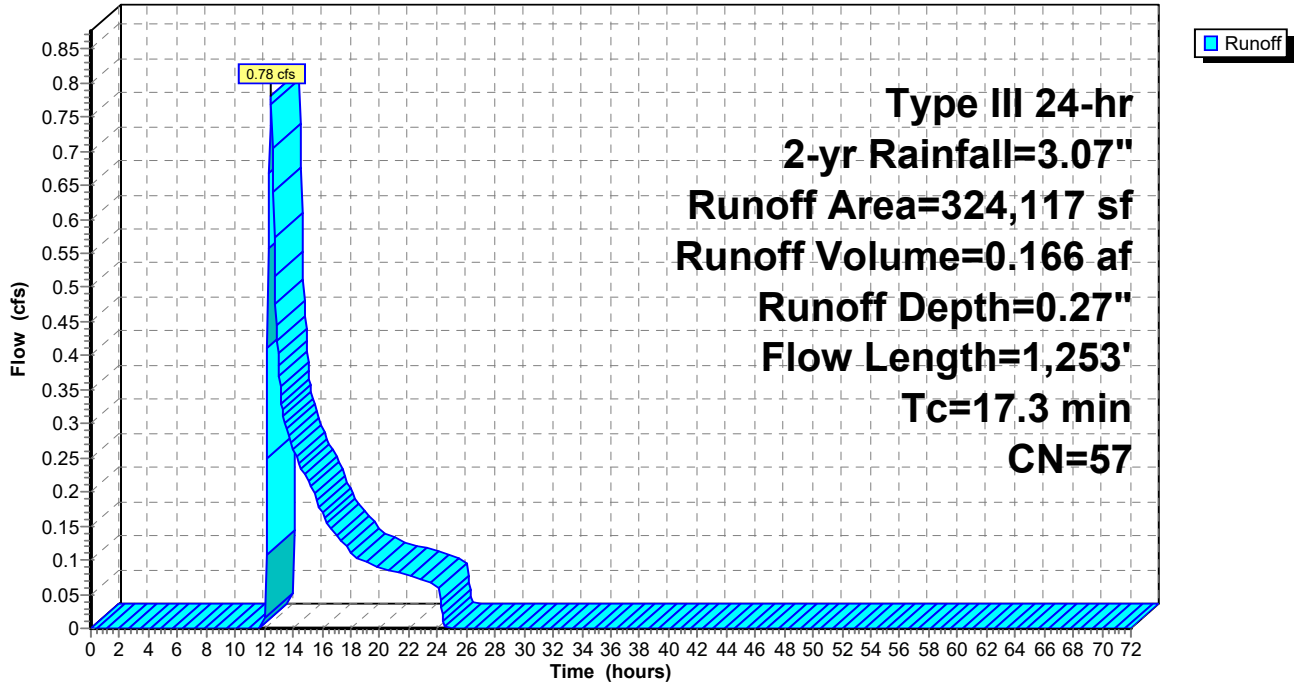
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr Rainfall=3.07"

Area (sf)	CN	Description
154,324	66	Woods, Poor, HSG B
* 27,768	45	Woods, Poor, HSG A
* 17,039	61	>75% Grass Cover, Good HSG B
* 64,387	39	>75% Grass Cover, Good HSG A
23,965	39	>75% Grass cover, Good, HSG A
25,373	61	>75% Grass cover, Good, HSG B
* 4,212	98	Impervious, HSG B
* 7,049	98	Impervious, HSG A
324,117	57	Weighted Average
312,856		96.53% Pervious Area
11,261		3.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.1800	0.18		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.07"
2.6	385	0.2442	2.47		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.7	293	0.3240	2.85		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.9	475	0.0821	2.01		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.3	1,253	Total			

Subcatchment 1E: EX 1

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Subcatchment 2E: EX 2

Runoff = 0.25 cfs @ 12.16 hrs, Volume= 0.036 af, Depth= 0.36"
 Routed to Pond 15P : J10

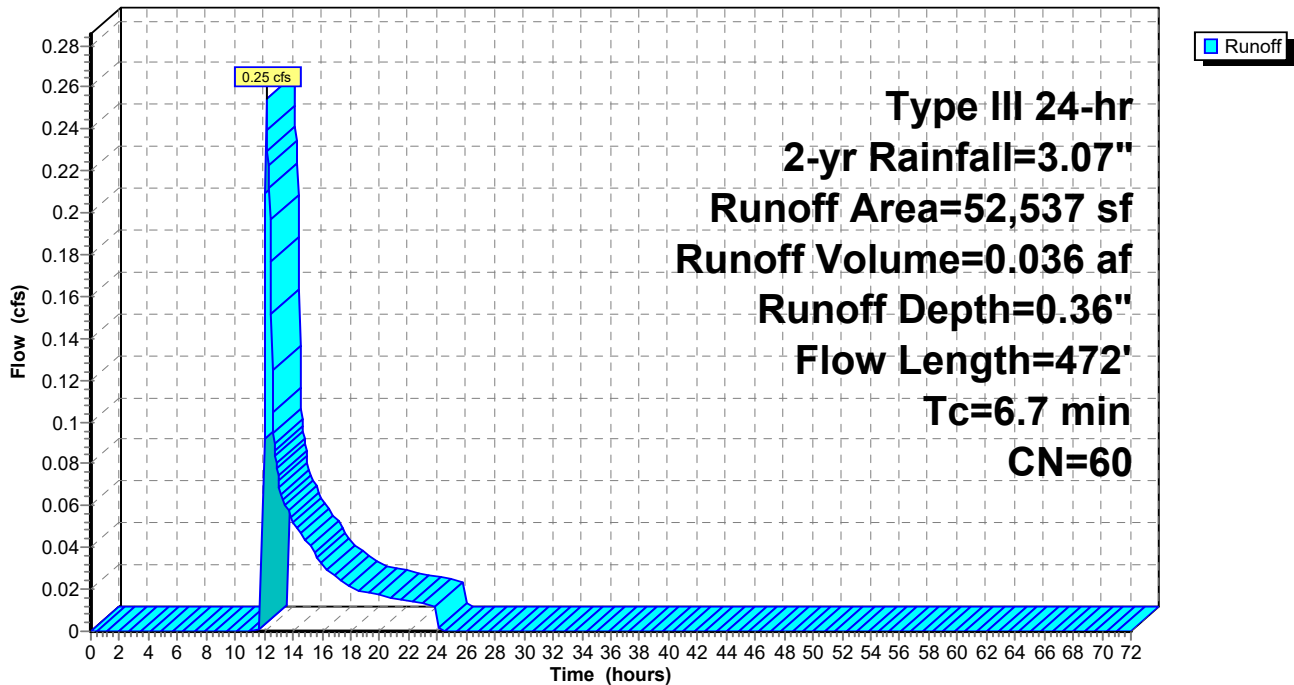
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr Rainfall=3.07"

	Area (sf)	CN	Description
*	18,495	98	Impervious, HSG A
	34,042	39	>75% Grass cover, Good, HSG A
	52,537	60	Weighted Average
	34,042		64.80% Pervious Area
	18,495		35.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0900	0.30		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
1.2	372	0.0661	5.22		Shallow Concentrated Flow, Paved Kv= 20.3 fps
6.7	472	Total			

Subcatchment 2E: EX 2

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Subcatchment 3E: EX 3

Runoff = 0.87 cfs @ 12.48 hrs, Volume= 0.211 af, Depth= 0.21"
 Routed to Pond 18P : J8

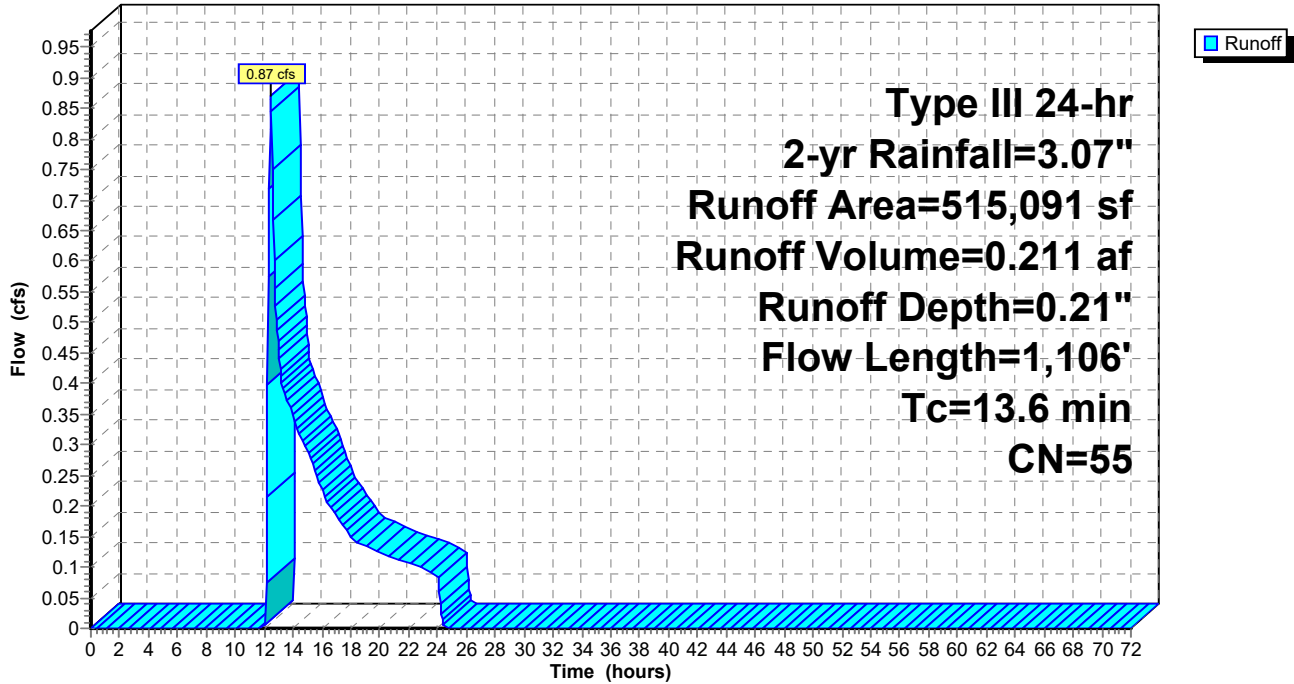
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr Rainfall=3.07"

Area (sf)	CN	Description
152,788	66	Woods, Poor, HSG B
83,867	39	>75% Grass cover, Good, HSG A
* 7,162	98	impervious, HSG A
29,740	45	Woods, Poor, HSG A
78,775	66	Woods, Poor, HSG B
81,473	45	Woods, Poor, HSG A
81,286	49	50-75% Grass cover, Fair, HSG A
515,091	55	Weighted Average
507,929		98.61% Pervious Area
7,162		1.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	100	0.3100	0.23		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.07"
1.4	214	0.2520	2.51		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.5	120	0.6500	4.03		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.3	212	0.2920	2.70		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.1	460	0.0739	2.45		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
13.6	1,106	Total			

Subcatchment 3E: EX 3

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Subcatchment 4E: EX 4

Runoff = 2.85 cfs @ 12.27 hrs, Volume= 0.391 af, Depth= 0.46"
 Routed to Pond 22P : J1

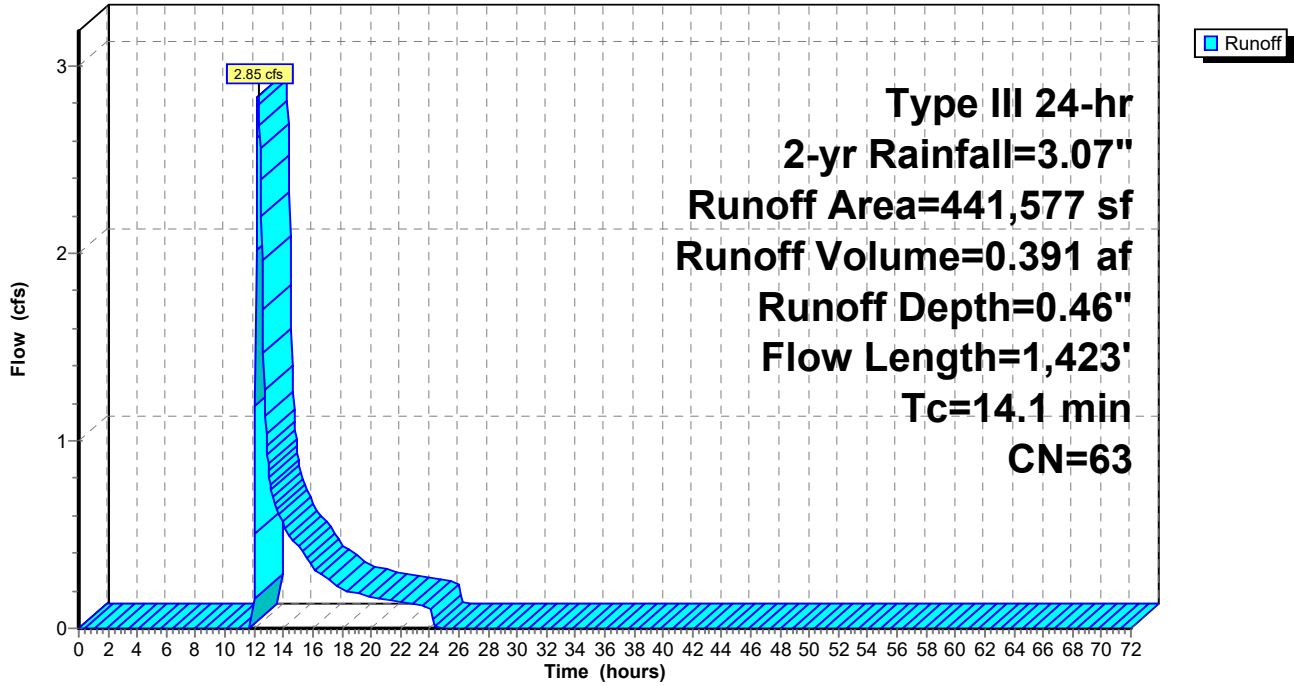
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr Rainfall=3.07"

Area (sf)	CN	Description
186,589	66	Woods, Poor, HSG B
11,967	45	Woods, Poor, HSG A
104,358	77	Woods, Poor, HSG C
43,979	61	>75% Grass cover, Good, HSG B
10,084	74	>75% Grass cover, Good, HSG C
84,600	39	>75% Grass cover, Good, HSG A
441,577	63	Weighted Average
441,577		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	100	0.1900	0.41		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
1.5	199	0.1055	2.27		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.4	185	0.1946	2.21		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
4.1	619	0.2569	2.53		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.0	320	0.0656	1.79		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.1	1,423	Total			

Subcatchment 4E: EX 4

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Subcatchment 5E: EX 5

Runoff = 0.00 cfs @ 14.86 hrs, Volume= 0.003 af, Depth= 0.07"
 Routed to Pond 20P : J6

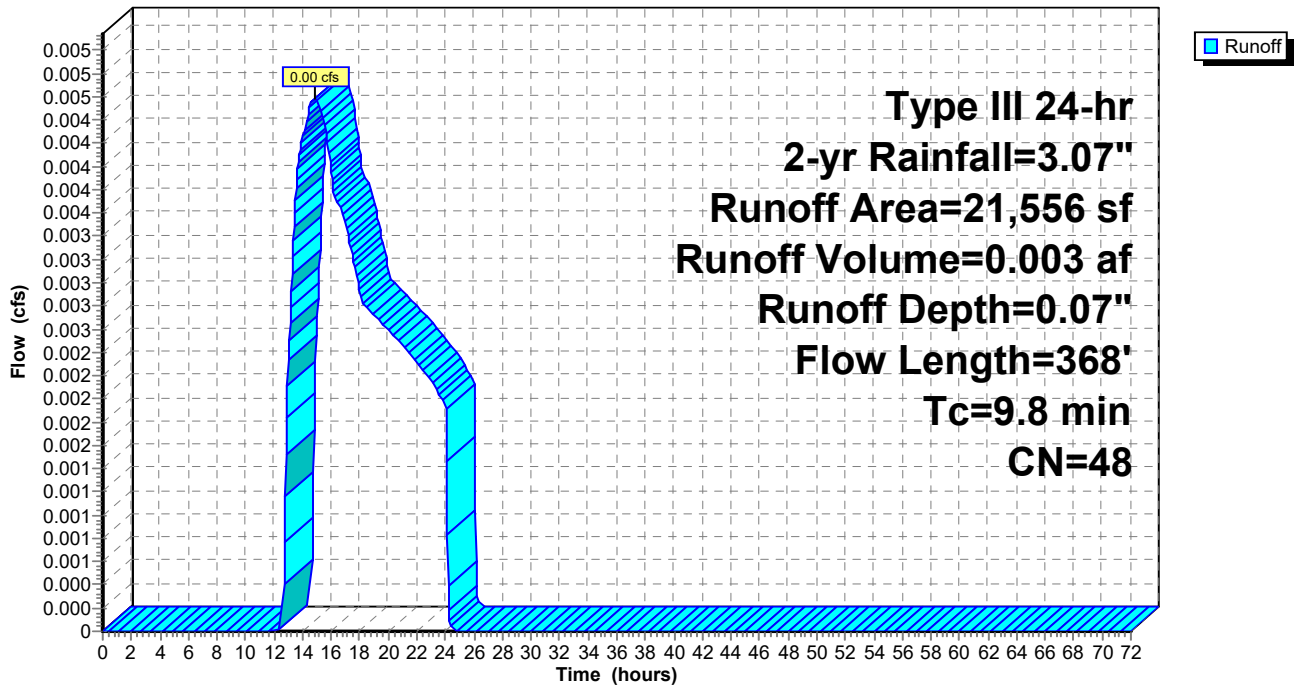
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr Rainfall=3.07"

Area (sf)	CN	Description
* 3,236	98	impervious, HSG A
18,320	39	>75% Grass cover, Good, HSG A
21,556	48	Weighted Average
18,320		84.99% Pervious Area
3,236		15.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	100	0.0400	0.20		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.07"
1.4	268	0.0261	3.28		Shallow Concentrated Flow, Paved Kv= 20.3 fps
9.8	368	Total			

Subcatchment 5E: EX 5

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Subcatchment 6E: EX 6

Runoff = 0.10 cfs @ 12.14 hrs, Volume= 0.011 af, Depth= 0.50"
 Routed to Pond 21P : J3

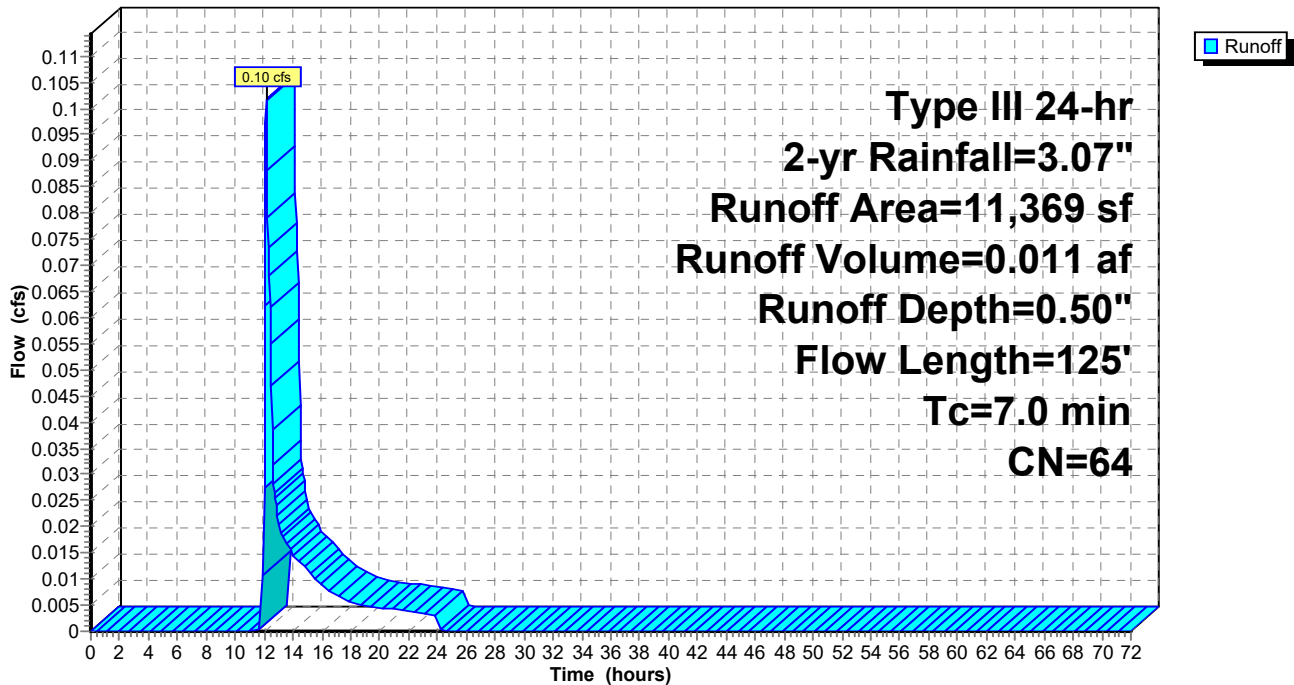
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr Rainfall=3.07"

Area (sf)	CN	Description
6,642	39	>75% Grass cover, Good, HSG A
* 4,727	98	Impervious, HSG A
11,369	64	Weighted Average
6,642		58.42% Pervious Area
4,727		41.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	100	0.0500	0.24		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
0.1	25	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.0	125	Total			

Subcatchment 6E: EX 6

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Subcatchment 7E: EX 7

Runoff = 0.49 cfs @ 12.13 hrs, Volume= 0.040 af, Depth= 1.06"
 Routed to Pond 25P : J14

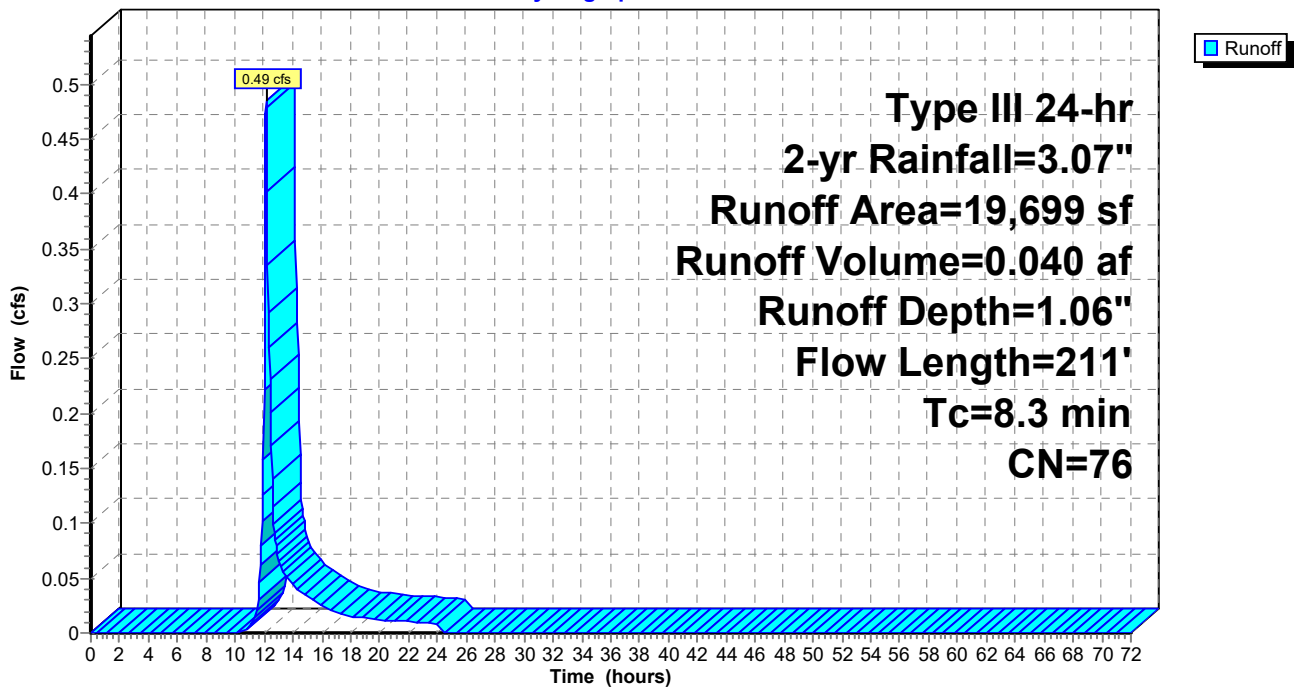
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr Rainfall=3.07"

	Area (sf)	CN	Description
*	6,358	98	Impervious, HSG C
*	980	98	Impervious, HSG A
	3,996	39	>75% Grass cover, Good, HSG A
	8,365	74	>75% Grass cover, Good, HSG C
	19,699	76	Weighted Average
	12,361		62.75% Pervious Area
	7,338		37.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	100	0.0400	0.22		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
0.7	111	0.0180	2.72		Shallow Concentrated Flow, Paved Kv= 20.3 fps
8.3	211	Total			

Subcatchment 7E: EX 7

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Subcatchment 8E: EX 8

Runoff = 2.57 cfs @ 12.11 hrs, Volume= 0.193 af, Depth= 1.57"
 Routed to Pond 26P : J13

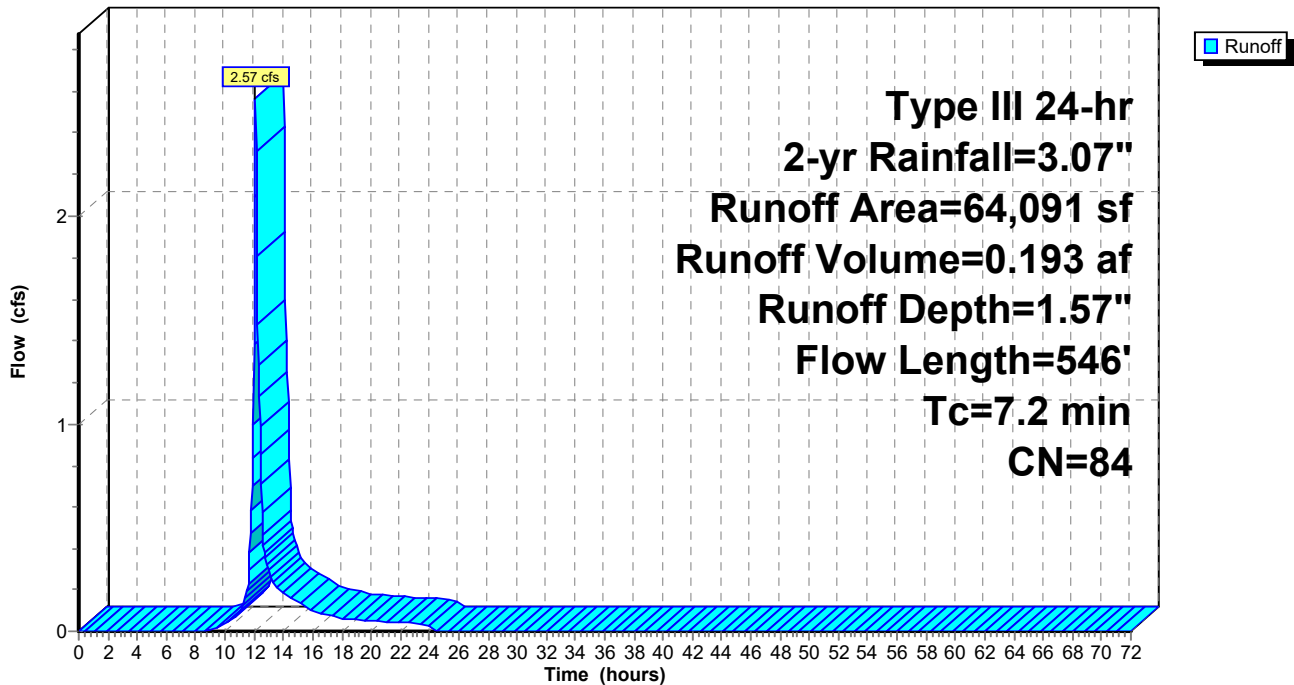
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr Rainfall=3.07"

	Area (sf)	CN	Description
*	26,754	98	Impervious, HSG C
	37,337	74	>75% Grass cover, Good, HSG C
	64,091	84	Weighted Average
	37,337		58.26% Pervious Area
	26,754		41.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0900	0.30		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
1.7	446	0.0471	4.41		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.2	546	Total			

Subcatchment 8E: EX 8

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Subcatchment 9E: EX 9

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.19 cfs @ 12.04 hrs, Volume= 0.014 af, Depth= 0.66"
 Routed to Pond 24P : J15

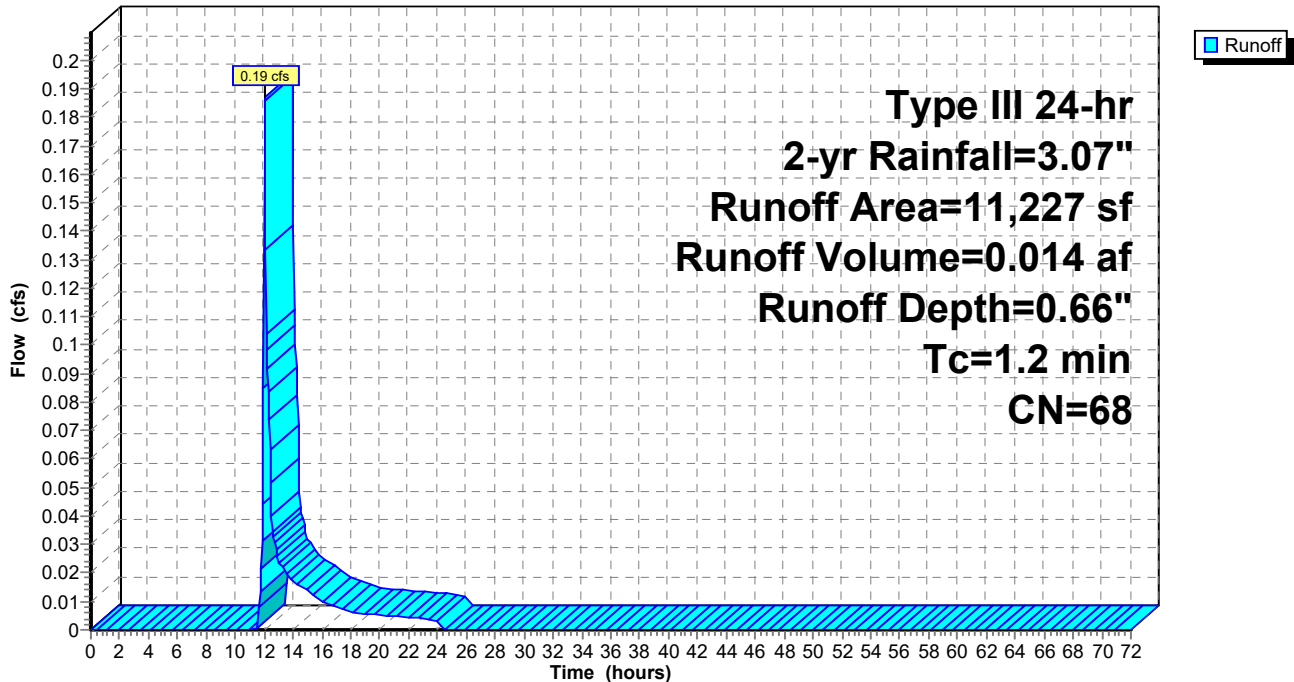
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr Rainfall=3.07"

	Area (sf)	CN	Description
*	5,612	98	Impervious, HSG A
	5,615	39	>75% Grass cover, Good, HSG A
	11,227	68	Weighted Average
	5,615		50.01% Pervious Area
	5,612		49.99% Impervious Area

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

Subcatchment 9E: EX 9

Hydrograph



15.0167305.01-EXC HYDROLOGY

Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Subcatchment 10E: EX 10

Runoff = 0.14 cfs @ 12.65 hrs, Volume= 0.052 af, Depth= 0.17"
 Routed to Link 19L : Behind houses

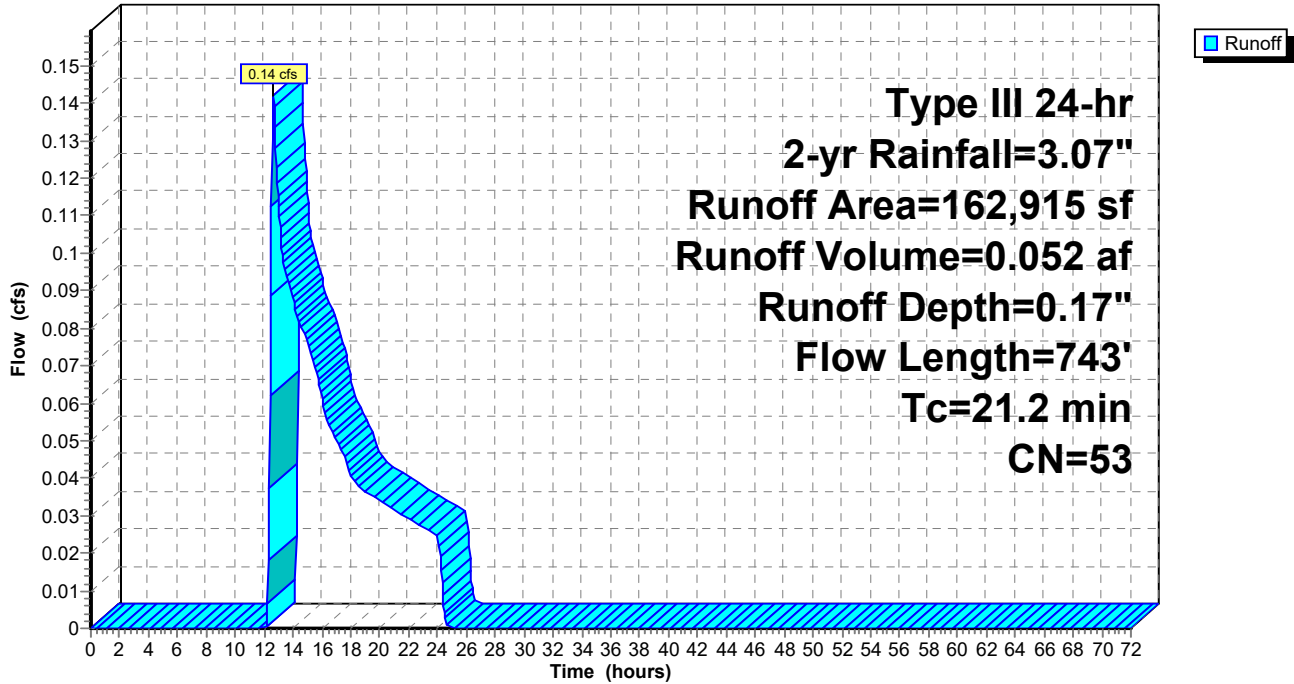
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr Rainfall=3.07"

Area (sf)	CN	Description
* 13,392	98	Impervious, HSG A
* 4,745	98	Impervious, HSG C
24,615	45	Woods, Poor, HSG A
7,646	66	Woods, Poor, HSG B
89,600	39	>75% Grass cover, Good, HSG A
22,005	74	>75% Grass cover, Good, HSG C
912	61	>75% Grass cover, Good, HSG B
162,915	53	Weighted Average
144,778		88.87% Pervious Area
18,137		11.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	100	0.0300	0.13		Sheet Flow, Grass: Dense n= 0.240 P2= 3.07"
8.8	643	0.0594	1.22		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
21.2	743	Total			

Subcatchment 10E: EX 10

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Subcatchment 11E: EX 11

Runoff = 1.82 cfs @ 12.17 hrs, Volume= 0.160 af, Depth= 1.43"
 Routed to Pond 28P : J16

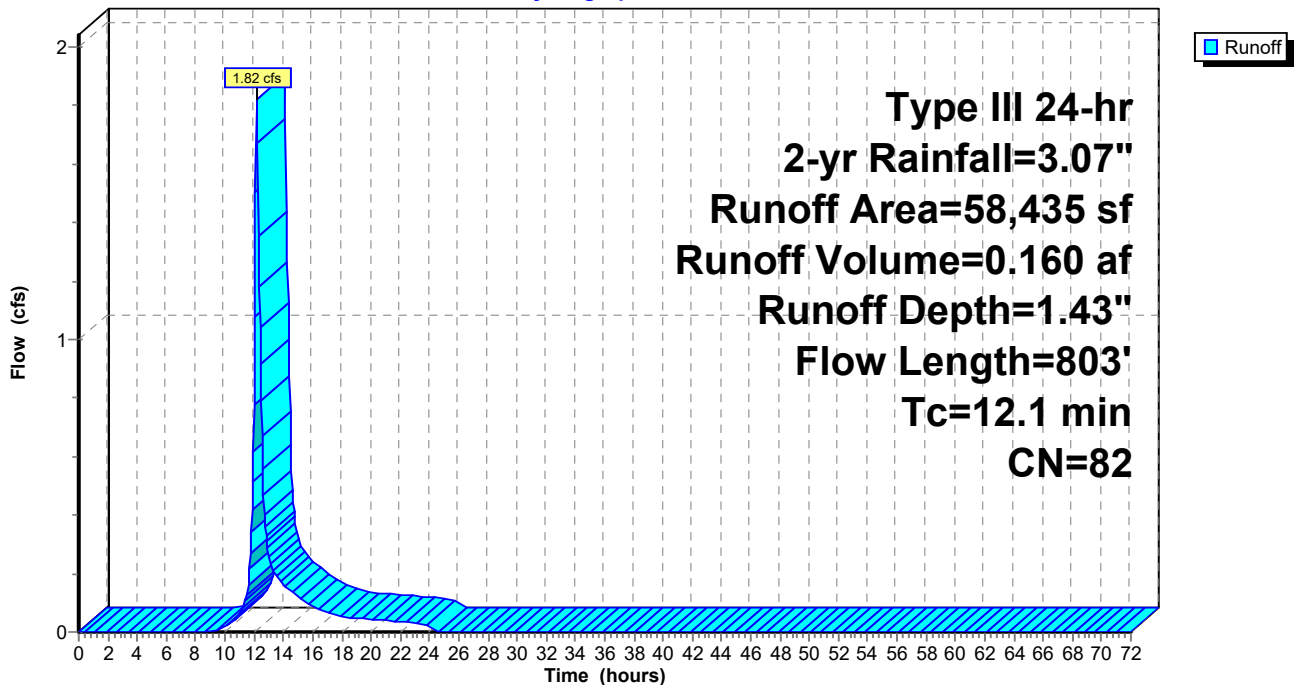
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr Rainfall=3.07"

	Area (sf)	CN	Description
*	1,964	98	Impervious, HSG A
	780	39	>75% Grass cover, Good, HSG A
*	18,734	98	Impervious, HSG C
	36,957	74	>75% Grass cover, Good, HSG C
	58,435	82	Weighted Average
	37,737		64.58% Pervious Area
	20,698		35.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	100	0.0400	0.22		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
3.8	411	0.0657	1.79		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.7	292	0.1199	7.03		Shallow Concentrated Flow, Paved Kv= 20.3 fps
12.1	803	Total			

Subcatchment 11E: EX 11

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Subcatchment 12E: EX 12

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.24 cfs @ 12.05 hrs, Volume= 0.022 af, Depth= 0.46"
 Routed to Link 30L : DP-5 to town property

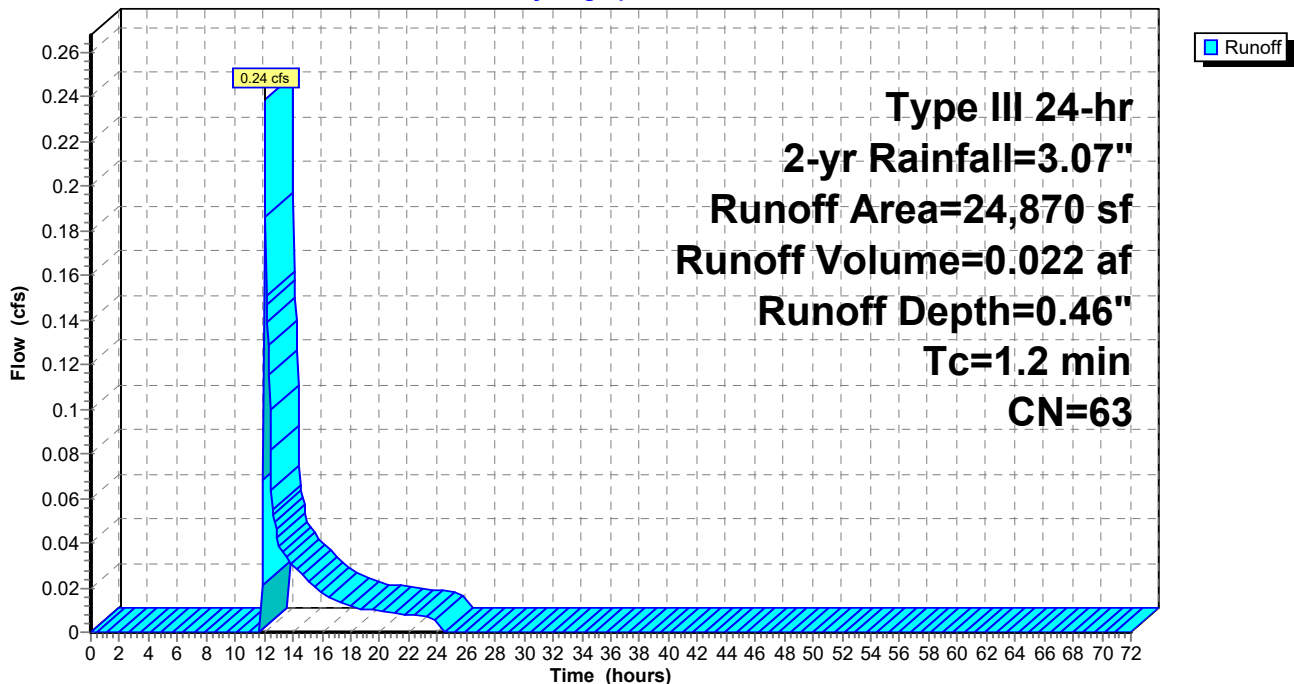
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-yr Rainfall=3.07"

Area (sf)	CN	Description
5,179	74	>75% Grass cover, Good, HSG C
* 2,500	98	Impervious, HSG C
13,037	45	Woods, Poor, HSG A
546	39	>75% Grass cover, Good, HSG A
* 2,290	98	Impervious, HSG A
* 706	98	Impervious, HSG B
612	66	Woods, Poor, HSG B
24,870	63	Weighted Average
19,374		77.90% Pervious Area
5,496		22.10% Impervious Area

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

Subcatchment 12E: EX 12

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Subcatchment 13E: RX 13

Runoff = 8.31 cfs @ 12.22 hrs, Volume= 0.847 af, Depth= 0.90"

Routed to Link 23L : DP- 6 NORTH TO 10 PINE HILL RD

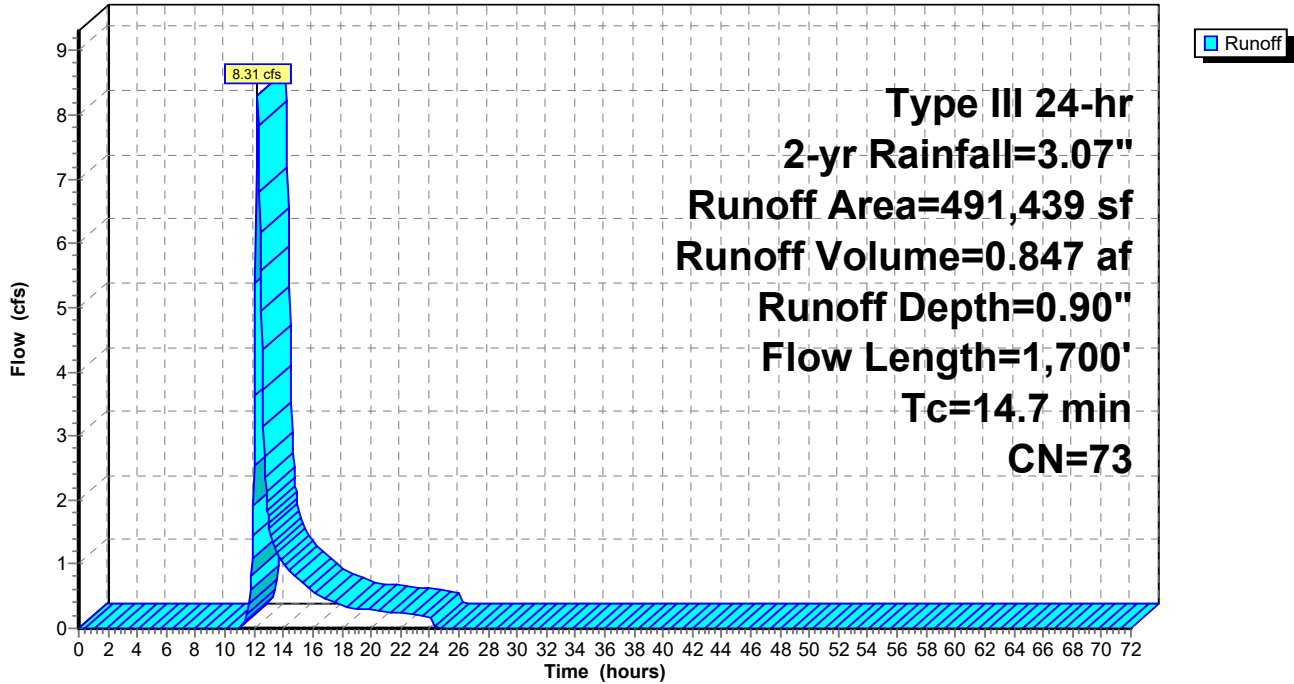
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.07"

Area (sf)	CN	Description
26,404	61	>75% Grass cover, Good, HSG B
29,263	74	>75% Grass cover, Good, HSG C
48,122	39	>75% Grass cover, Good, HSG A
16,942	45	Woods, Poor, HSG A
2,172	66	Woods, Poor, HSG B
294,686	77	Woods, Poor, HSG C
25,711	88	Row crops, straight row, Poor, HSG C
11,199	72	Row crops, straight row, Poor, HSG A
* 13,085	98	Impervious, HSG A
* 18,490	98	Impervious, HSG C
* 5,365	98	Impervious, HSG B
491,439	73	Weighted Average
454,499		92.48% Pervious Area
36,940		7.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	100	0.1400	0.36		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
0.9	140	0.1357	2.58		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
4.7	651	0.2166	2.33		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.0	131	0.1756	2.10		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.3	212	0.0849	2.62		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
2.2	466	0.0558	3.54		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
14.7	1,700	Total			

Subcatchment 13E: RX 13

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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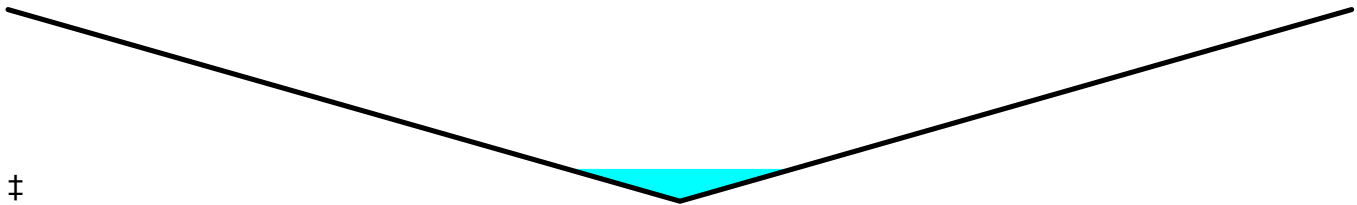
Summary for Reach 32R: Wetland swale

Inflow Area = 16.060 ac, 4.08% Impervious, Inflow Depth = 0.20" for 2-yr event
 Inflow = 0.98 cfs @ 12.50 hrs, Volume= 0.265 af
 Outflow = 0.95 cfs @ 12.55 hrs, Volume= 0.265 af, Atten= 3%, Lag= 3.3 min
 Routed to Pond 27P : J22

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Max. Velocity= 0.94 fps, Min. Travel Time= 4.1 min
 Avg. Velocity = 0.57 fps, Avg. Travel Time= 6.7 min

Peak Storage= 233 cf @ 12.55 hrs
 Average Depth at Peak Storage= 0.50' , Surface Width= 4.03'
 Bank-Full Depth= 3.00' Flow Area= 36.0 sf, Capacity= 110.96 cfs

Custom cross-section, Length= 230.0' Slope= 0.0261 '/'
 Constant n= 0.100 Earth, dense brush, high stage
 Inlet Invert= 580.00', Outlet Invert= 574.00'



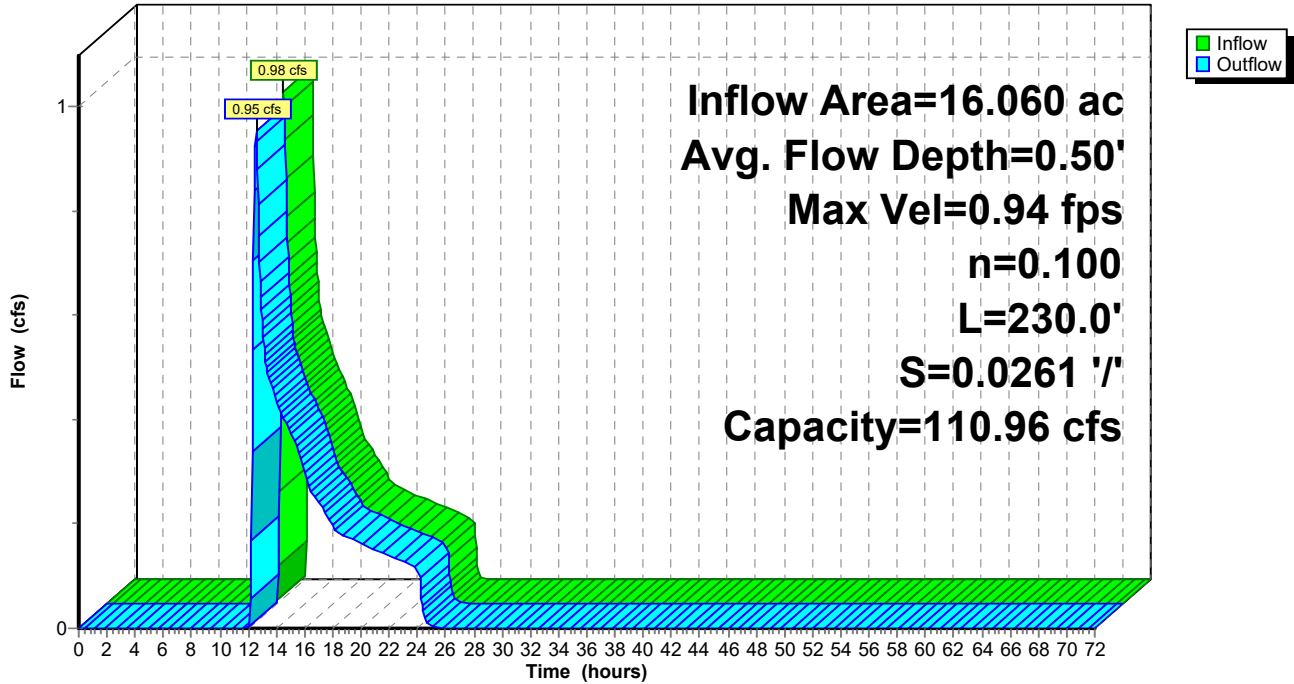
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Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	3.00	0.00
12.00	0.00	3.00
24.00	3.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Width (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	0.0	0.0	0	0.00
3.00	36.0	24.7	24.0	8,280	110.96

Reach 32R: Wetland swale

Hydrograph



15.0167305.01-EXC HYDROLOGY

Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Pond 14P: J12

Inflow Area = 7.441 ac, 3.47% Impervious, Inflow Depth = 0.27" for 2-yr event
 Inflow = 0.78 cfs @ 12.48 hrs, Volume= 0.166 af
 Outflow = 0.78 cfs @ 12.48 hrs, Volume= 0.166 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.78 cfs @ 12.48 hrs, Volume= 0.166 af
 Routed to Pond 15P : J10
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 15P : J10

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 648.04' @ 12.48 hrs
 Flood Elev= 650.84'

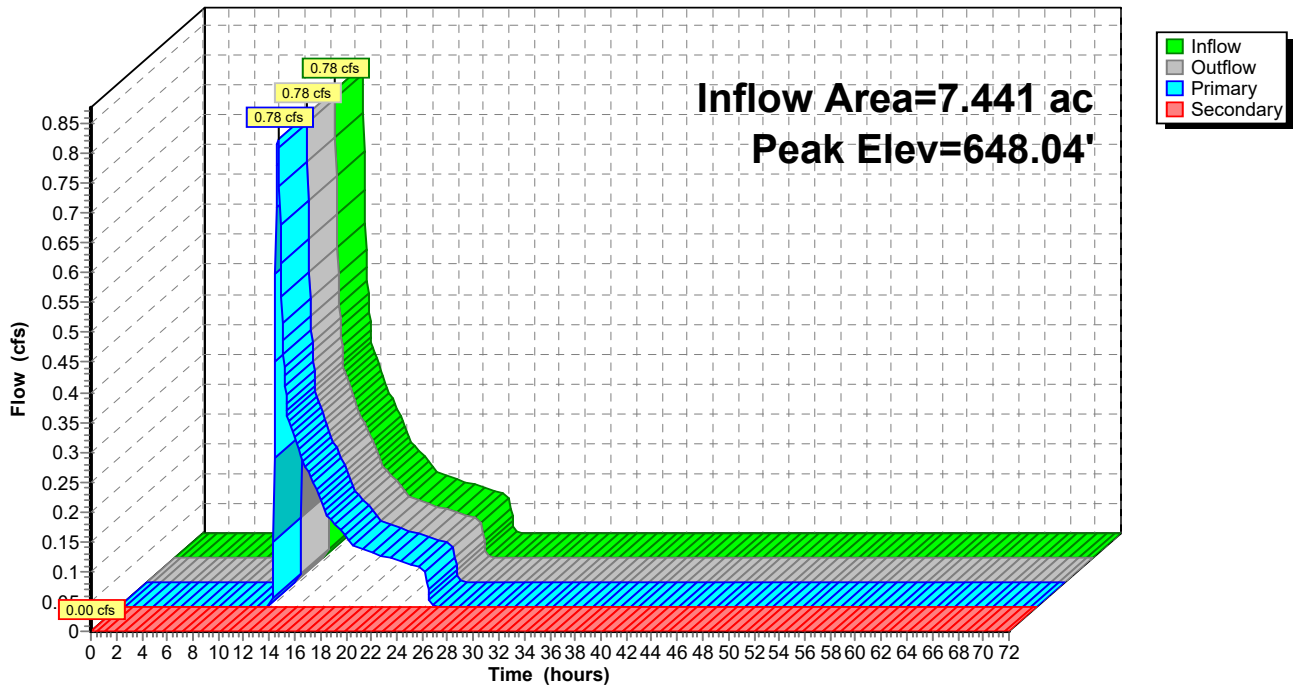
Device	Routing	Invert	Outlet Devices
#1	Primary	647.59'	12.0" Round Culvert L= 159.4' Ke= 0.500 Inlet / Outlet Invert= 647.59' / 639.96' S= 0.0479 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	650.84'	22.0" x 22.0" Horiz. Orifice/Gate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.78 cfs @ 12.48 hrs HW=648.04' TW=640.22' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 0.78 cfs @ 2.28 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=647.59' TW=639.76' (Dynamic Tailwater)
 ↳2=Orifice/Gate (Controls 0.00 cfs)

Pond 14P: J12

Hydrograph



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Summary for Pond 15P: J10

Inflow Area = 8.647 ac, 7.90% Impervious, Inflow Depth = 0.28" for 2-yr event
 Inflow = 0.95 cfs @ 12.45 hrs, Volume= 0.202 af
 Outflow = 0.95 cfs @ 12.45 hrs, Volume= 0.202 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.95 cfs @ 12.45 hrs, Volume= 0.202 af
 Routed to Link 16L : DP-1 EXISTING OUTLET TO UNDER 116
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 18P : J8

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 640.22' @ 12.45 hrs
 Flood Elev= 643.66'

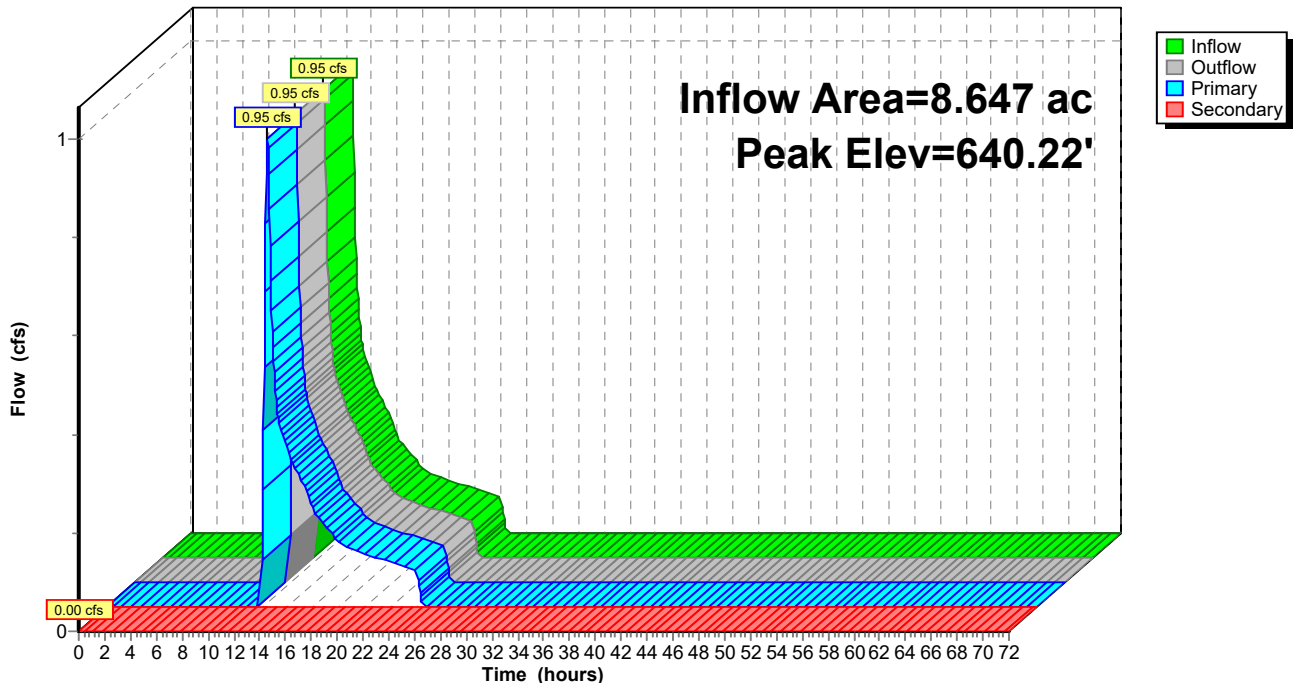
Device	Routing	Invert	Outlet Devices
#1	Primary	639.76'	15.0" Round Culvert L= 62.0' Ke= 0.500 Inlet / Outlet Invert= 639.76' / 625.00' S= 0.2381 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.23 sf
#2	Secondary	643.66'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.95 cfs @ 12.45 hrs HW=640.22' TW=0.00' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 0.95 cfs @ 2.31 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=639.76' TW=624.50' (Dynamic Tailwater)
 ↳2=Orifice/Grate (Controls 0.00 cfs)

Pond 15P: J10

Hydrograph



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Summary for Pond 18P: J8

Inflow Area = 11.825 ac, 1.39% Impervious, Inflow Depth = 0.21" for 2-yr event
 Inflow = 0.87 cfs @ 12.48 hrs, Volume= 0.211 af
 Outflow = 0.87 cfs @ 12.48 hrs, Volume= 0.211 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.87 cfs @ 12.48 hrs, Volume= 0.211 af
 Routed to Link 35L : DP-2 Along 45 Upper Baptist
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 20P : J6

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 624.98' @ 12.48 hrs
 Flood Elev= 631.50'

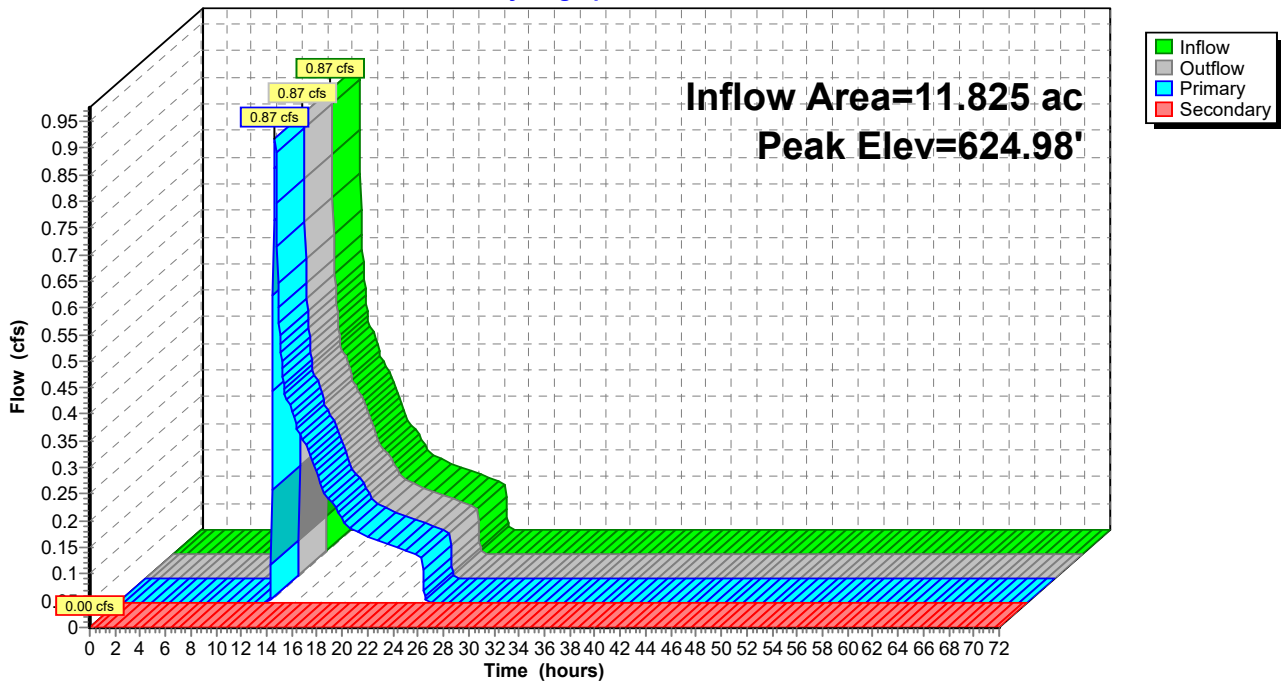
Device	Routing	Invert	Outlet Devices
#1	Primary	624.50'	12.0" Round Culvert L= 25.0' Ke= 0.500 Inlet / Outlet Invert= 624.50' / 623.38' S= 0.0448 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	631.50'	25.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.87 cfs @ 12.48 hrs HW=624.98' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 0.87 cfs @ 2.35 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=624.50' TW=624.96' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 18P: J8

Hydrograph



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Summary for Pond 20P: J6

Inflow Area = 0.495 ac, 15.01% Impervious, Inflow Depth = 0.07" for 2-yr event
 Inflow = 0.00 cfs @ 14.86 hrs, Volume= 0.003 af
 Outflow = 0.00 cfs @ 14.86 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 14.86 hrs, Volume= 0.003 af
 Routed to Link 34L : DP-3 51 Baptist Hill Rd Property
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 34L : DP-3 51 Baptist Hill Rd Property

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 624.99' @ 14.86 hrs
 Flood Elev= 626.00'

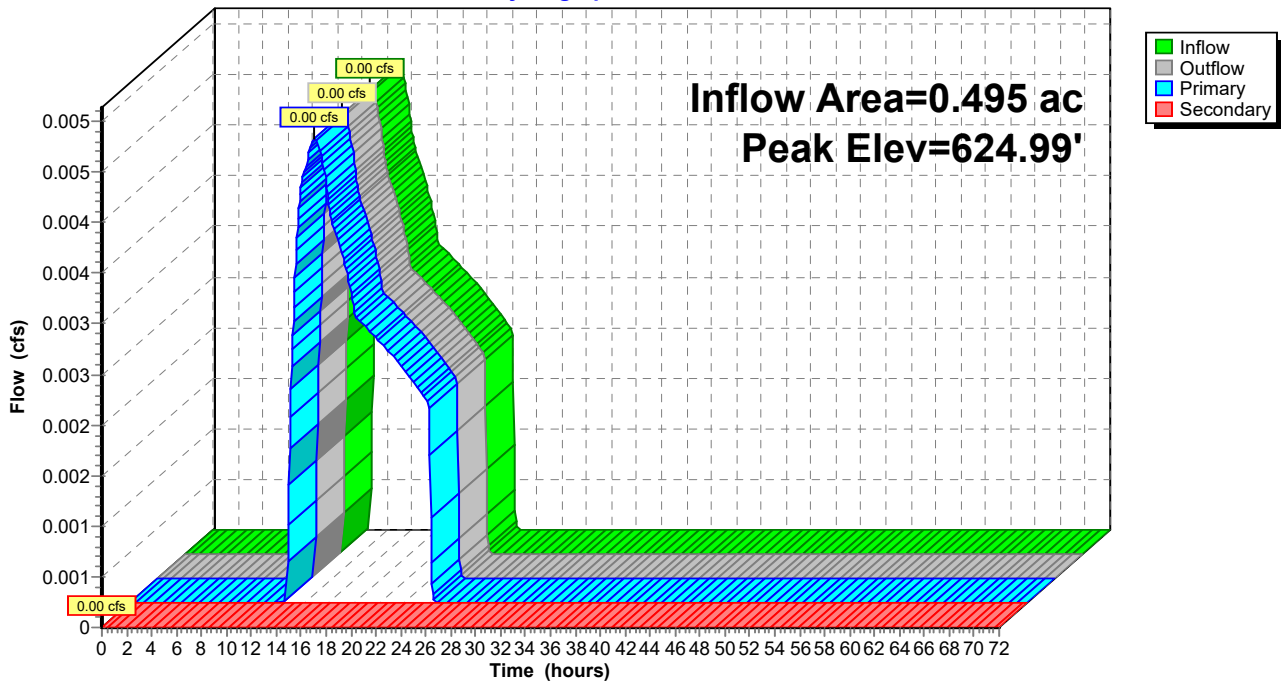
Device	Routing	Invert	Outlet Devices
#1	Primary	624.96'	12.0" Round Culvert L= 19.0' Ke= 0.500 Inlet / Outlet Invert= 623.69' / 624.96' S= -0.0668 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	626.00'	10.0' long x 24.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.00 cfs @ 14.86 hrs HW=624.99' TW=0.00' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 0.00 cfs @ 0.61 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=624.99' TW=0.00' (Dynamic Tailwater)
 ↳2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 20P: J6

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Pond 21P: J3

[92] Warning: Device #2 is above defined storage

[90] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 0.261 ac, 41.58% Impervious, Inflow Depth = 0.50" for 2-yr event
 Inflow = 0.10 cfs @ 12.14 hrs, Volume= 0.011 af
 Outflow = 0.11 cfs @ 12.15 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.5 min
 Primary = 0.11 cfs @ 12.15 hrs, Volume= 0.011 af
 Routed to Link 23L : DP- 6 NORTH TO 10 PINE HILL RD
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 34L : DP-3 51 Baptist Hill Rd Property

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 619.75' @ 12.15 hrs Surf.Area= 8 sf Storage= 5 cf

Plug-Flow detention time= 5.1 min calculated for 0.011 af (99% of inflow)
 Center-of-Mass det. time= 2.0 min (907.2 - 905.3)

Volume	Invert	Avail.Storage	Storage Description
#1	619.00'	420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
619.00	4	0	0
620.00	10	7	7
621.00	24	17	24
622.00	768	396	420

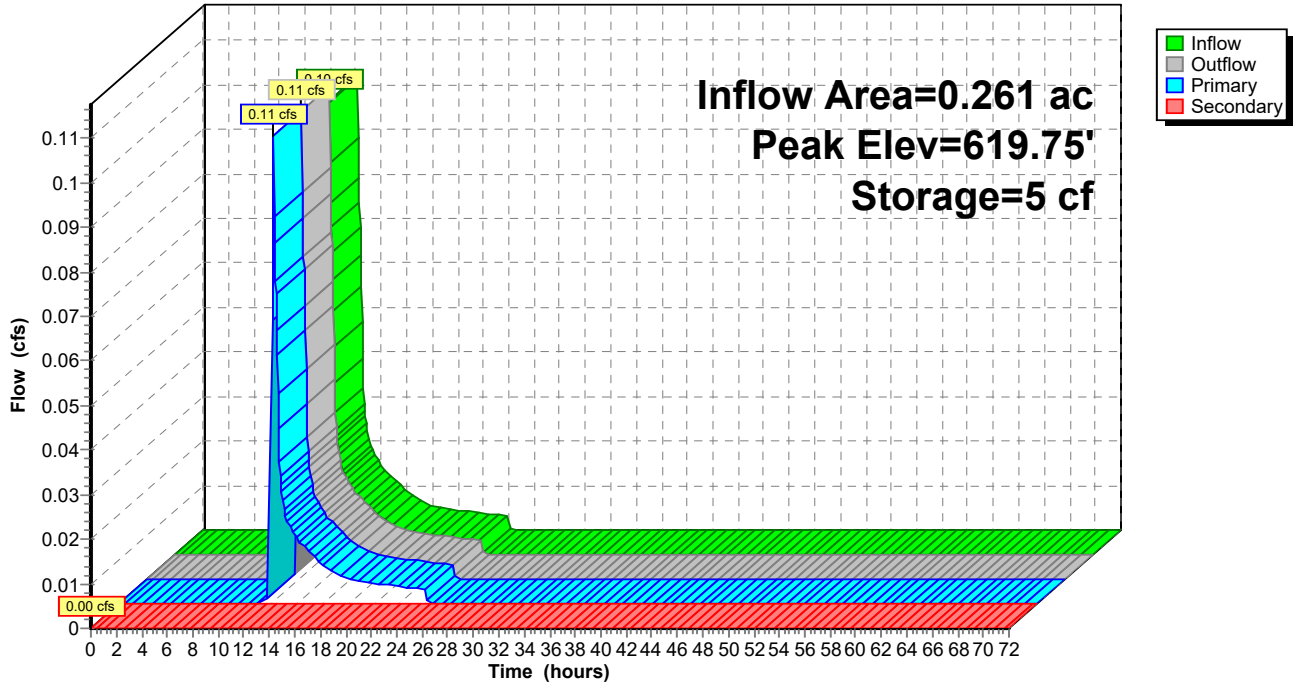
Device	Routing	Invert	Outlet Devices
#1	Primary	619.50'	12.0" Round Culvert L= 101.0' Ke= 0.500 Inlet / Outlet Invert= 619.50' / 618.98' S= 0.0051 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	622.00'	20.0' long x 18.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.10 cfs @ 12.15 hrs HW=619.75' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Barrel Controls 0.10 cfs @ 1.03 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=619.00' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 21P: J3

Hydrograph



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Summary for Pond 22P: J1

Inflow Area = 10.137 ac, 0.00% Impervious, Inflow Depth = 0.46" for 2-yr event
 Inflow = 2.85 cfs @ 12.27 hrs, Volume= 0.391 af
 Outflow = 2.85 cfs @ 12.27 hrs, Volume= 0.391 af, Atten= 0%, Lag= 0.1 min
 Primary = 2.85 cfs @ 12.27 hrs, Volume= 0.391 af
 Routed to Link 23L : DP- 6 NORTH TO 10 PINE HILL RD
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 21P : J3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 624.11' @ 12.27 hrs Surf.Area= 41 sf Storage= 33 cf

Plug-Flow detention time= 0.5 min calculated for 0.390 af (100% of inflow)
 Center-of-Mass det. time= 0.4 min (917.2 - 916.9)

Volume	Invert	Avail.Storage	Storage Description
#1	623.00'	855 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
623.00	19	0	0
624.00	38	29	29
625.00	68	53	82
626.00	1,478	773	855

Device	Routing	Invert	Outlet Devices
#1	Primary	623.23'	15.0" Round Culvert L= 39.2' Ke= 0.500 Inlet / Outlet Invert= 623.23' / 622.75' S= 0.0122 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	625.10'	10.0' long x 25.0' 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) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=2.82 cfs @ 12.27 hrs HW=624.10' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Barrel Controls 2.82 cfs @ 4.34 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=623.00' TW=619.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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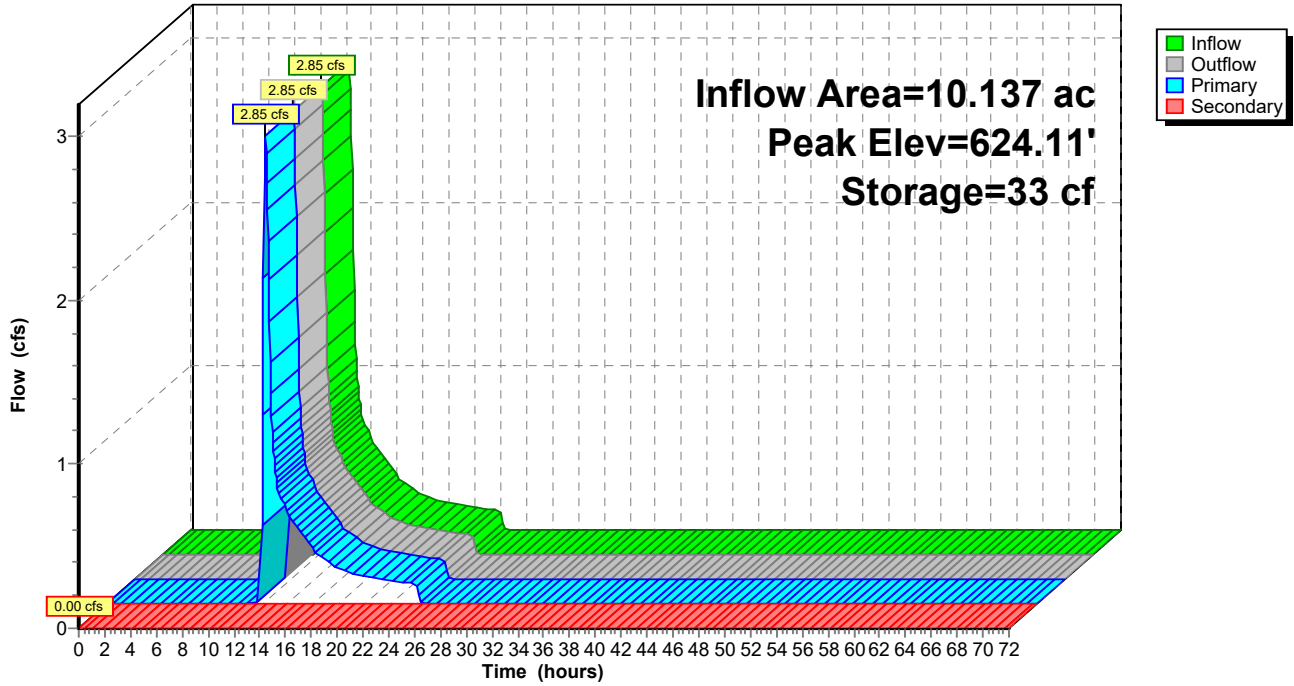
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Pond 22P: J1

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Summary for Pond 24P: J15

Inflow Area = 2.181 ac, 41.79% Impervious, Inflow Depth = 1.36" for 2-yr event
 Inflow = 3.18 cfs @ 12.11 hrs, Volume= 0.247 af
 Outflow = 3.18 cfs @ 12.11 hrs, Volume= 0.247 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.18 cfs @ 12.11 hrs, Volume= 0.247 af
 Routed to Pond 27P : J22
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 27P : J22

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 594.91' @ 12.11 hrs
 Flood Elev= 598.30'

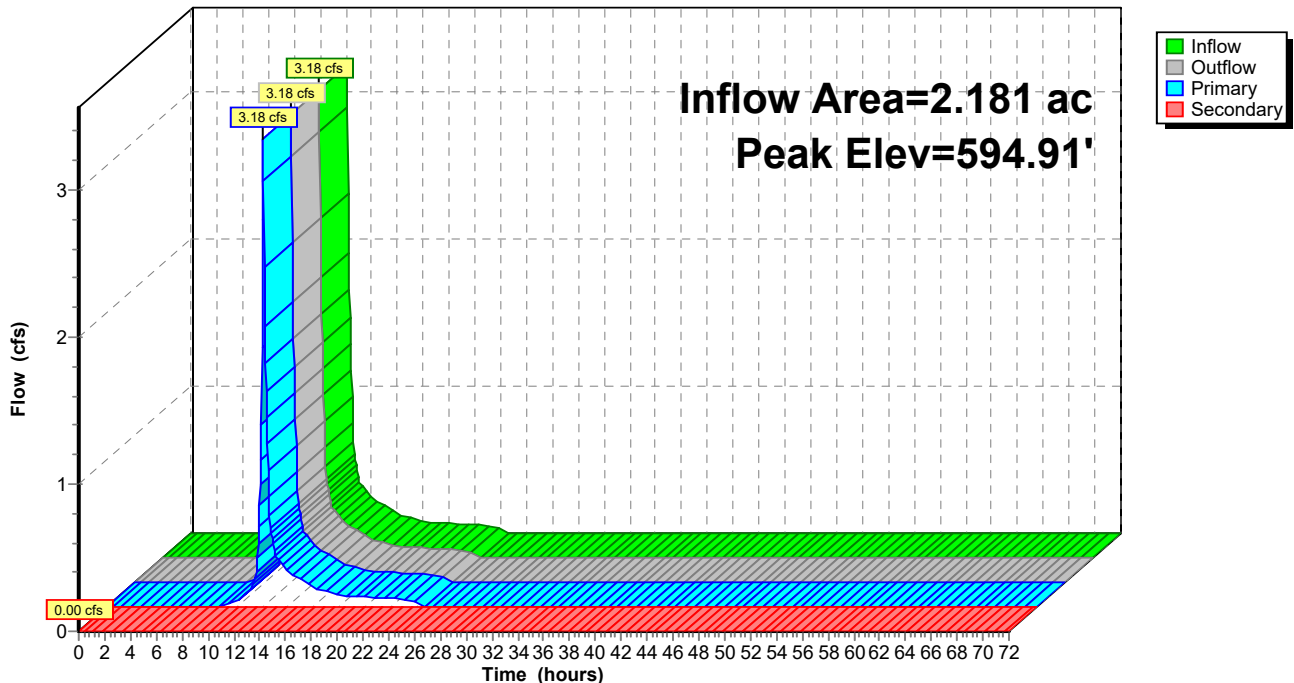
Device	Routing	Invert	Outlet Devices
#1	Primary	593.70'	12.0" Round Culvert L= 240.0' Ke= 0.500 Inlet / Outlet Invert= 593.70' / 569.82' S= 0.0995 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	598.30'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.13 cfs @ 12.11 hrs HW=594.88' TW=570.53' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 3.13 cfs @ 3.98 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=593.70' TW=569.62' (Dynamic Tailwater)
 ↳2=Orifice/Grate (Controls 0.00 cfs)

Pond 24P: J15

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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Pond 25P: J14

Inflow Area = 1.924 ac, 40.69% Impervious, Inflow Depth = 1.45" for 2-yr event
 Inflow = 3.05 cfs @ 12.11 hrs, Volume= 0.233 af
 Outflow = 3.05 cfs @ 12.11 hrs, Volume= 0.233 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.05 cfs @ 12.11 hrs, Volume= 0.233 af
 Routed to Pond 24P : J15
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 24P : J15

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 612.51' @ 12.11 hrs
 Flood Elev= 614.36'

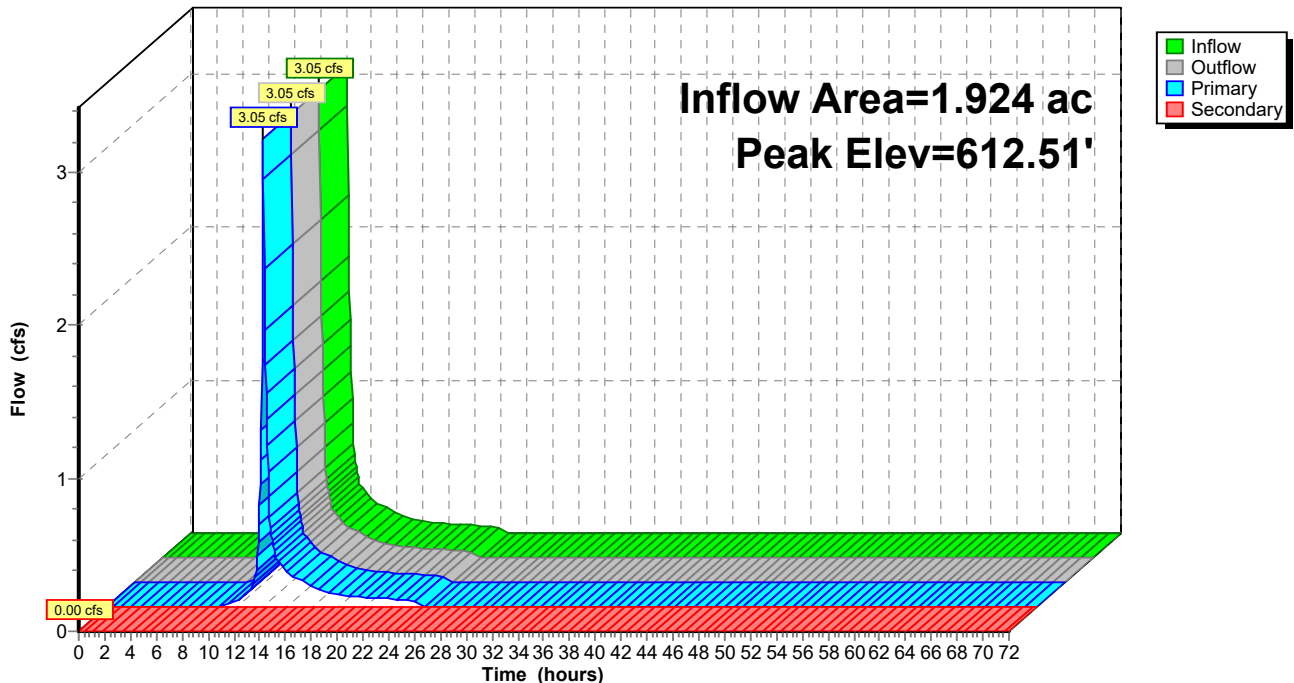
Device	Routing	Invert	Outlet Devices
#1	Primary	611.36'	12.0" Round Culvert L= 460.0' Ke= 0.500 Inlet / Outlet Invert= 611.36' / 593.70' S= 0.0384 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	614.36'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.99 cfs @ 12.11 hrs HW=612.48' TW=594.88' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 2.99 cfs @ 3.80 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=611.36' TW=593.70' (Dynamic Tailwater)
 ↳2=Orifice/Grate (Controls 0.00 cfs)

Pond 25P: J14

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Summary for Pond 26P: J13

Inflow Area = 1.471 ac, 41.74% Impervious, Inflow Depth = 1.57" for 2-yr event
 Inflow = 2.57 cfs @ 12.11 hrs, Volume= 0.193 af
 Outflow = 2.57 cfs @ 12.11 hrs, Volume= 0.193 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.57 cfs @ 12.11 hrs, Volume= 0.193 af
 Routed to Pond 25P : J14
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 28P : J16

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 614.95' @ 12.11 hrs
 Flood Elev= 615.25'

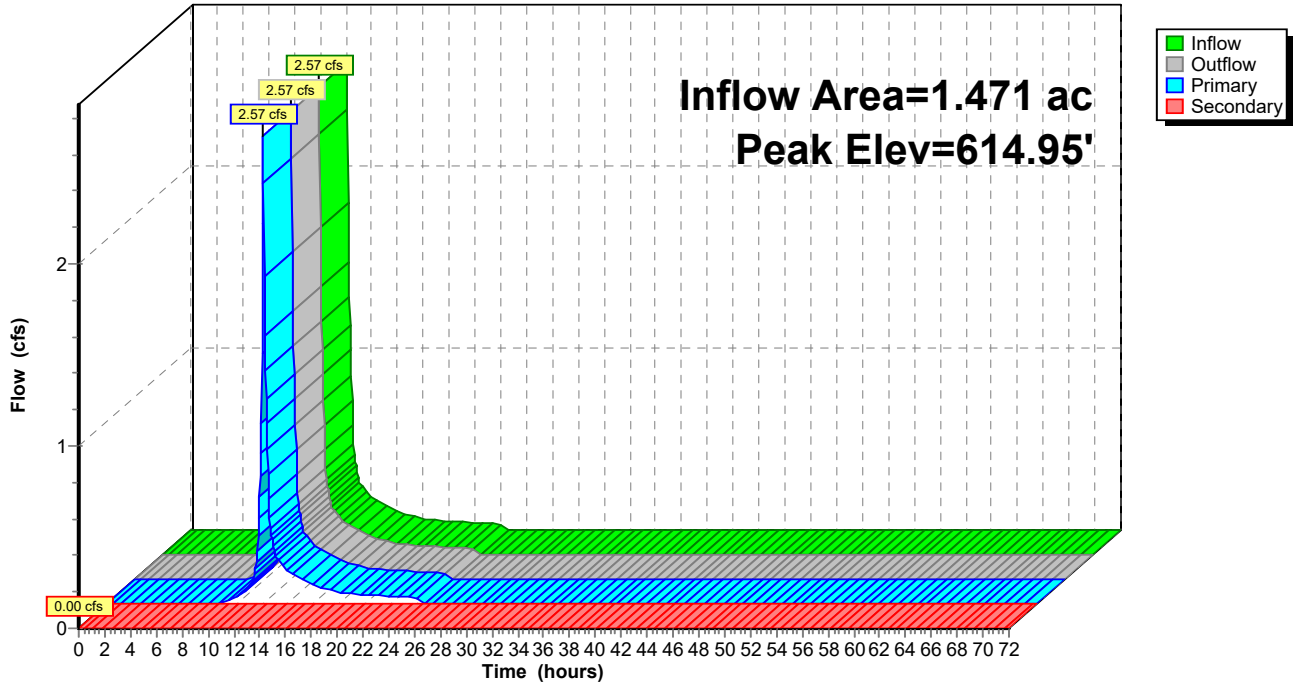
Device	Routing	Invert	Outlet Devices
#1	Primary	614.00'	12.0" Round Culvert L= 23.0' Ke= 0.500 Inlet / Outlet Invert= 614.00' / 611.86' S= 0.0930 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	615.20'	4.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=2.53 cfs @ 12.11 hrs HW=614.94' TW=612.49' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 2.53 cfs @ 3.30 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=614.00' TW=577.17' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 26P: J13

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Summary for Pond 27P: J22

Inflow Area = 18.241 ac, 8.59% Impervious, Inflow Depth = 0.34" for 2-yr event
 Inflow = 3.18 cfs @ 12.11 hrs, Volume= 0.512 af
 Outflow = 3.18 cfs @ 12.11 hrs, Volume= 0.512 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.18 cfs @ 12.11 hrs, Volume= 0.512 af
 Routed to Link 33L : DP-4 To 116
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 33L : DP-4 To 116

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 570.54' @ 12.11 hrs
 Flood Elev= 573.12'

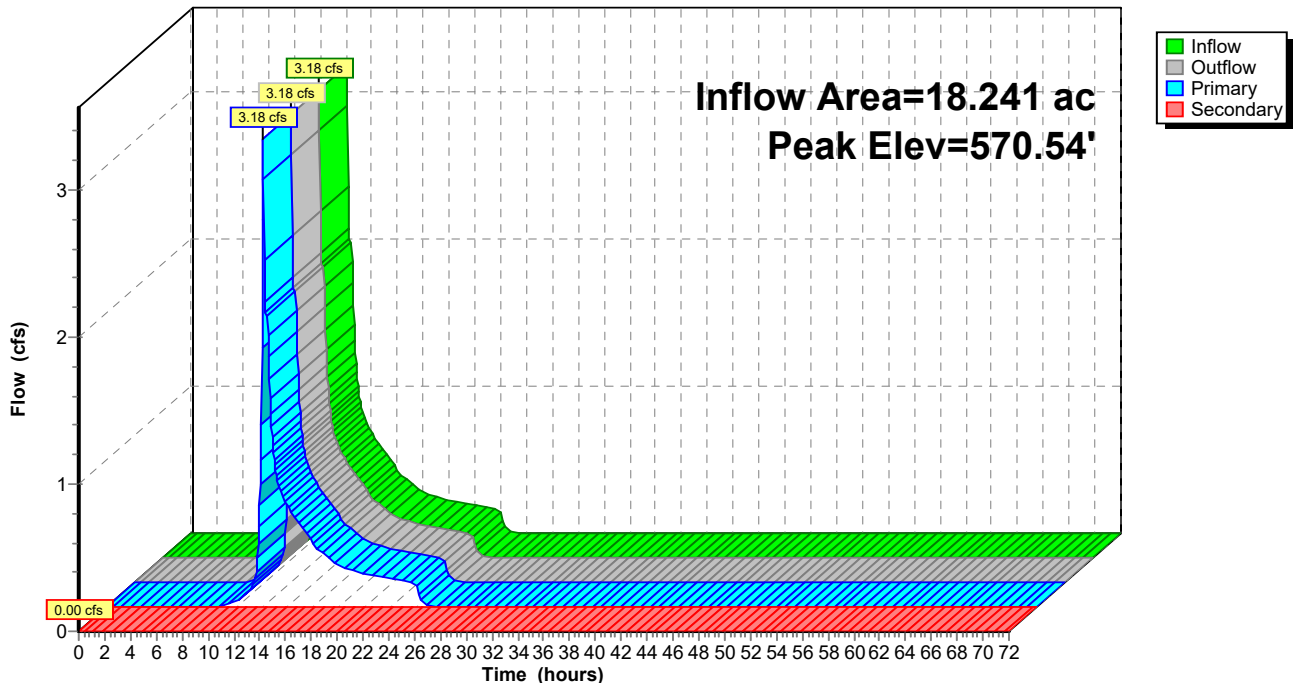
Device	Routing	Invert	Outlet Devices
#1	Primary	569.62'	15.0" Round Culvert L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 569.62' / 567.62' S= 0.0500 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	573.12'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.12 cfs @ 12.11 hrs HW=570.53' TW=0.00' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 3.12 cfs @ 3.25 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=569.62' TW=0.00' (Dynamic Tailwater)
 ↳2=Orifice/Grate (Controls 0.00 cfs)

Pond 27P: J22

Hydrograph



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Summary for Pond 28P: J16

Inflow Area = 1.341 ac, 35.42% Impervious, Inflow Depth = 1.43" for 2-yr event
 Inflow = 1.82 cfs @ 12.17 hrs, Volume= 0.160 af
 Outflow = 1.82 cfs @ 12.17 hrs, Volume= 0.160 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.82 cfs @ 12.17 hrs, Volume= 0.160 af
 Routed to Link 30L : DP-5 to town property
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 30L : DP-5 to town property

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 577.91' @ 12.17 hrs
 Flood Elev= 578.17'

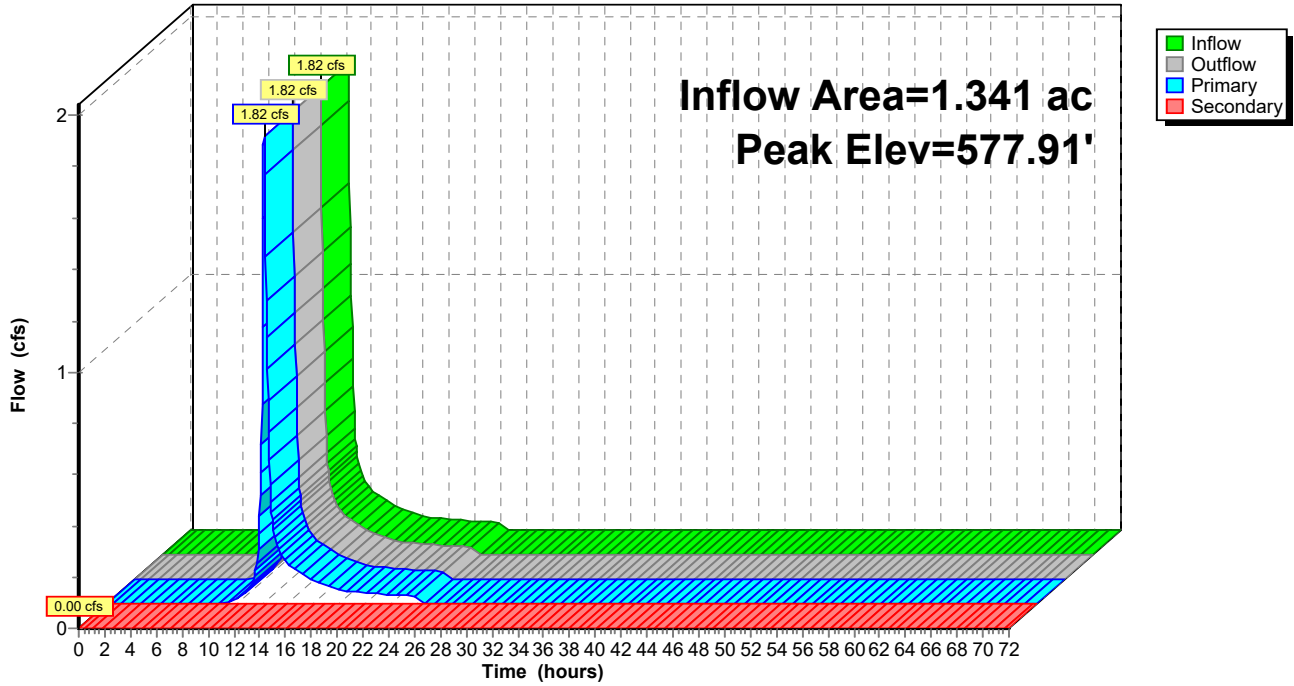
Device	Routing	Invert	Outlet Devices
#1	Primary	577.17'	12.0" Round Culvert L= 33.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 577.17' / 571.01' S= 0.1867 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	578.75'	4.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=1.78 cfs @ 12.17 hrs HW=577.90' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 1.78 cfs @ 2.91 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=577.17' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 28P: J16

Hydrograph



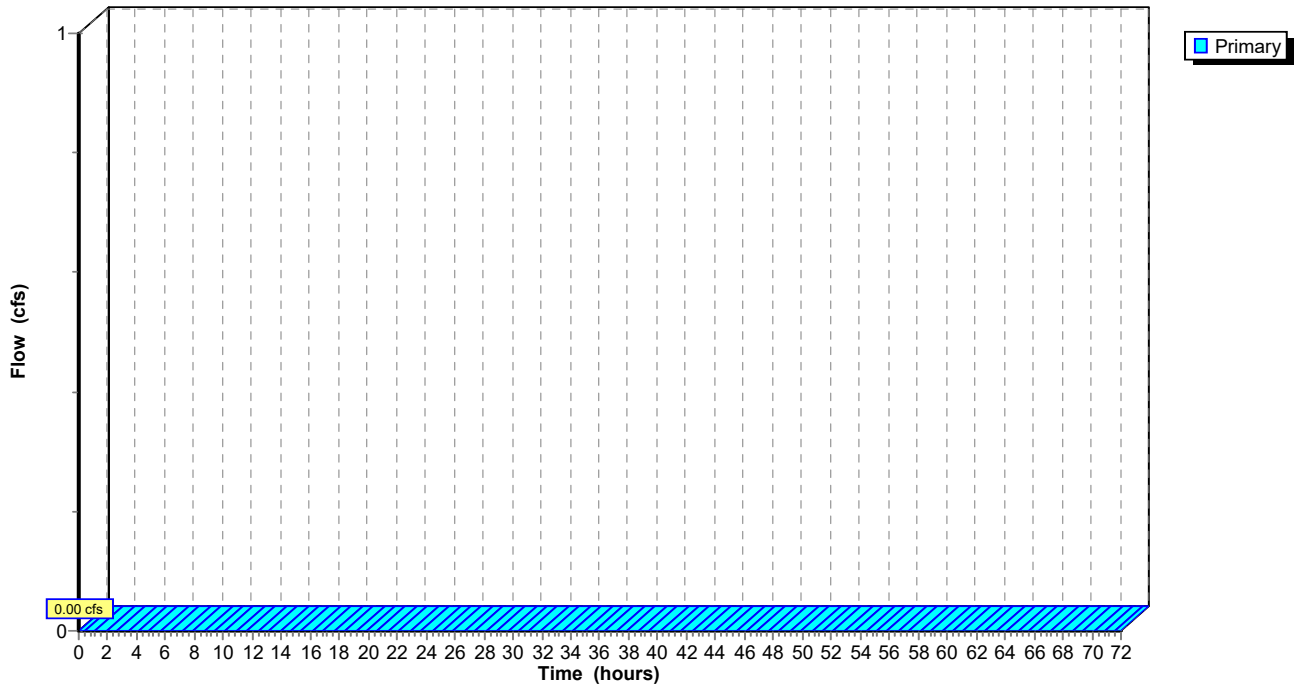
Summary for Pond 31P: J23

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

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

Pond 31P: J23

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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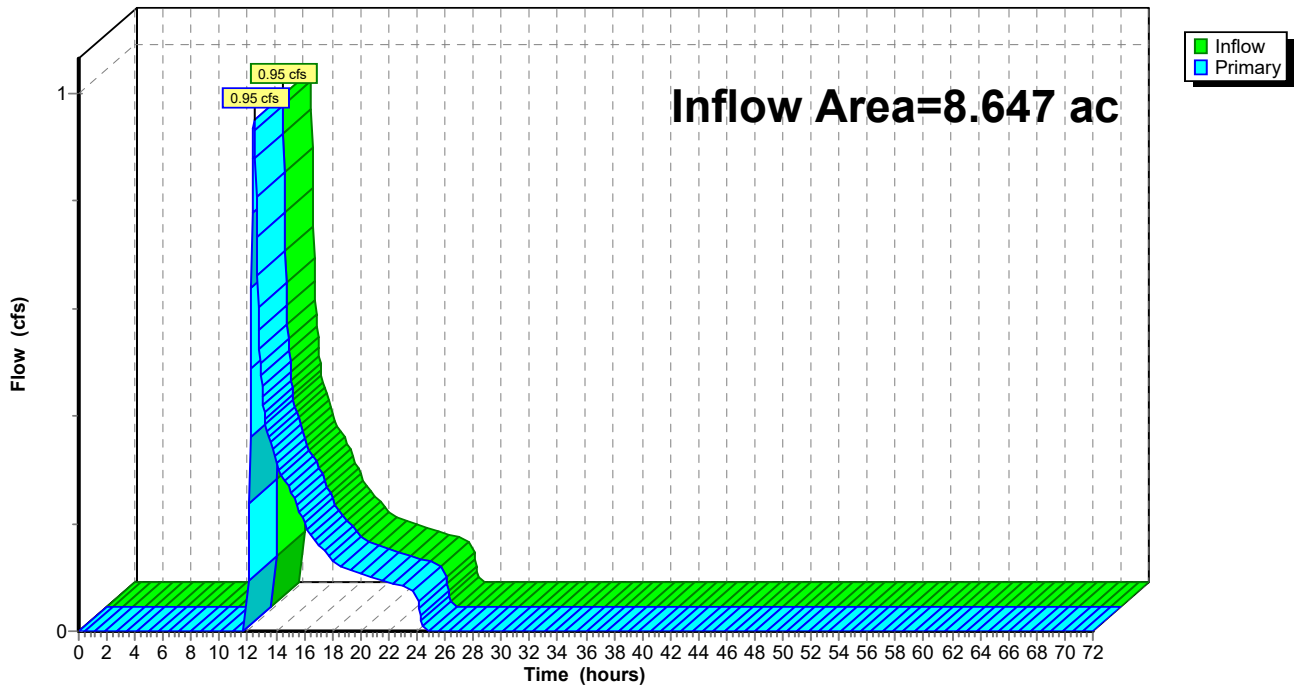
Summary for Link 16L: DP-1 EXISTING OUTLET TO UNDER 116

Inflow Area = 8.647 ac, 7.90% Impervious, Inflow Depth = 0.28" for 2-yr event
Inflow = 0.95 cfs @ 12.45 hrs, Volume= 0.202 af
Primary = 0.95 cfs @ 12.45 hrs, Volume= 0.202 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 16L: DP-1 EXISTING OUTLET TO UNDER 116

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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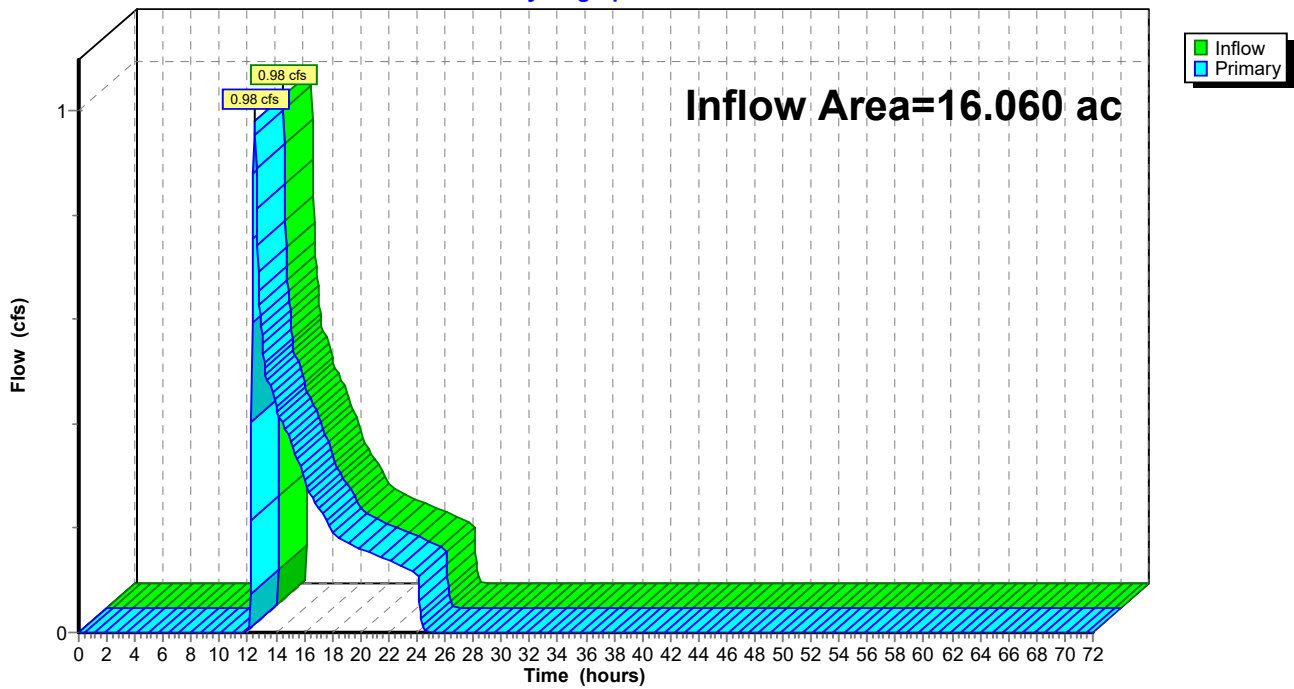
Summary for Link 19L: Behind houses

Inflow Area = 16.060 ac, 4.08% Impervious, Inflow Depth = 0.20" for 2-yr event
Inflow = 0.98 cfs @ 12.50 hrs, Volume= 0.265 af
Primary = 0.98 cfs @ 12.50 hrs, Volume= 0.265 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 32R : Wetland swale

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 19L: Behind houses

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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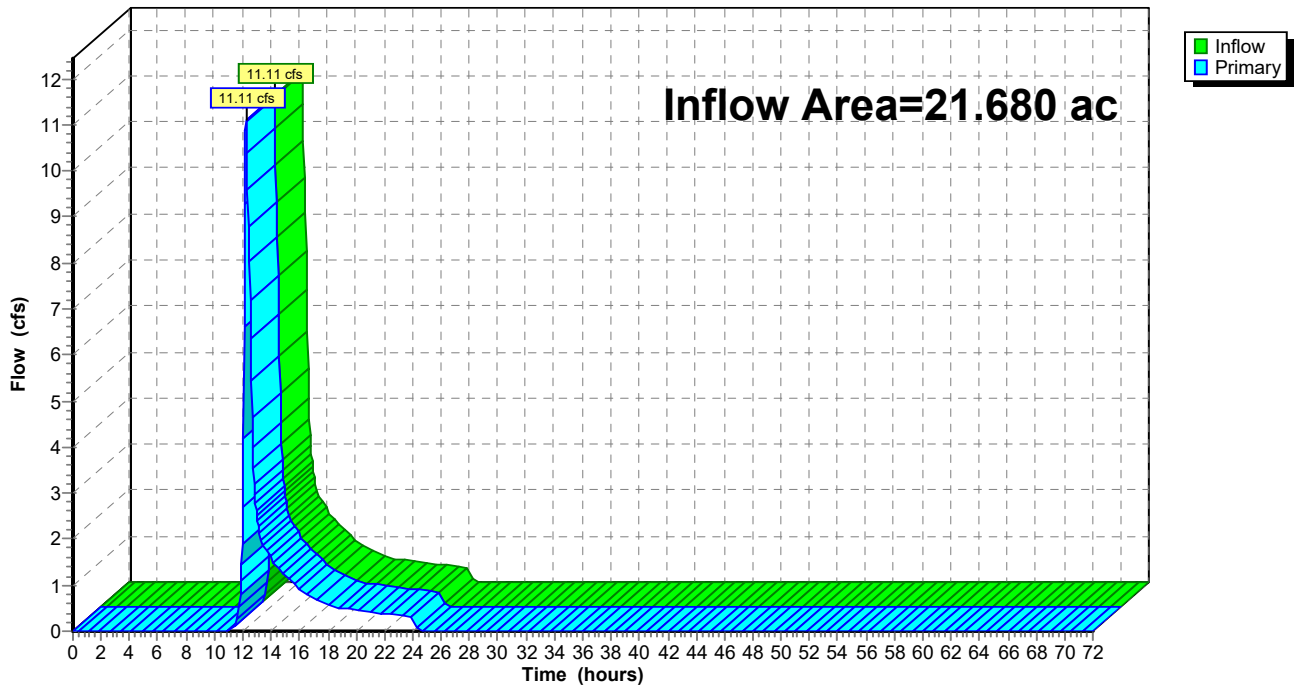
Summary for Link 23L: DP- 6 NORTH TO 10 PINE HILL RD

Inflow Area = 21.680 ac, 4.41% Impervious, Inflow Depth = 0.69" for 2-yr event
Inflow = 11.11 cfs @ 12.24 hrs, Volume= 1.248 af
Primary = 11.11 cfs @ 12.24 hrs, Volume= 1.248 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 23L: DP- 6 NORTH TO 10 PINE HILL RD

Hydrograph



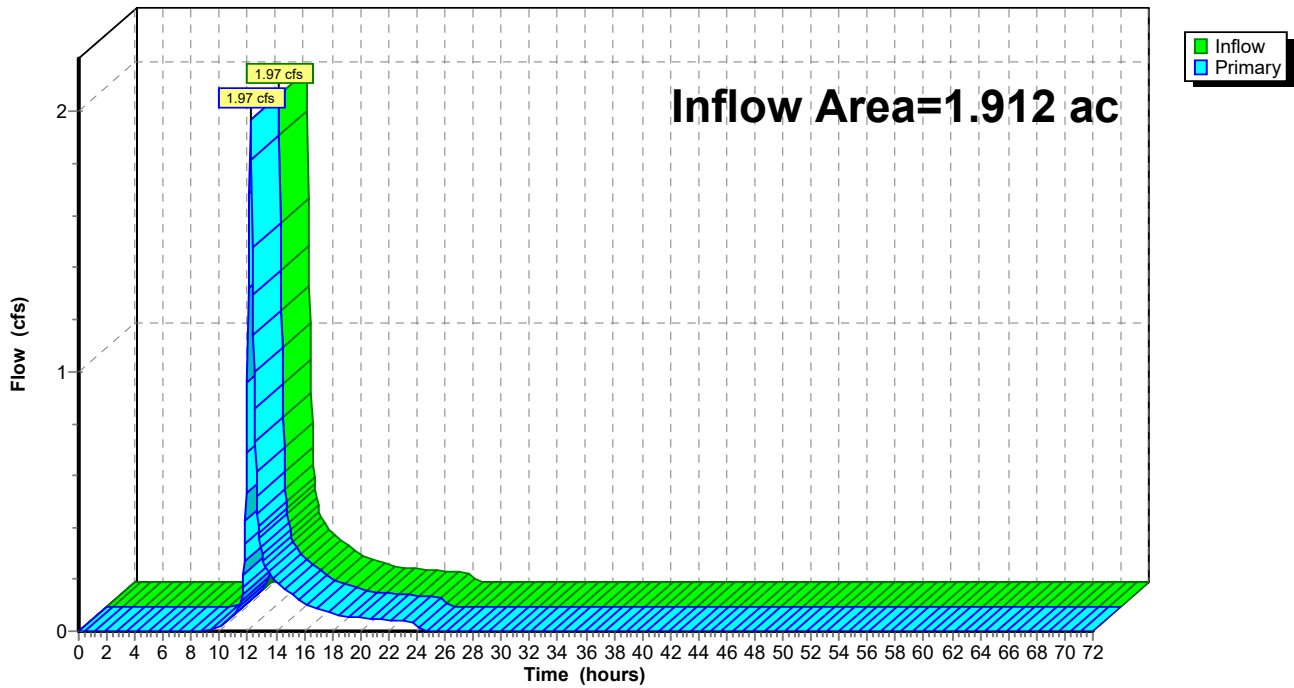
Summary for Link 30L: DP-5 to town property

Inflow Area = 1.912 ac, 31.44% Impervious, Inflow Depth = 1.14" for 2-yr event
Inflow = 1.97 cfs @ 12.17 hrs, Volume= 0.182 af
Primary = 1.97 cfs @ 12.17 hrs, Volume= 0.182 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 30L: DP-5 to town property

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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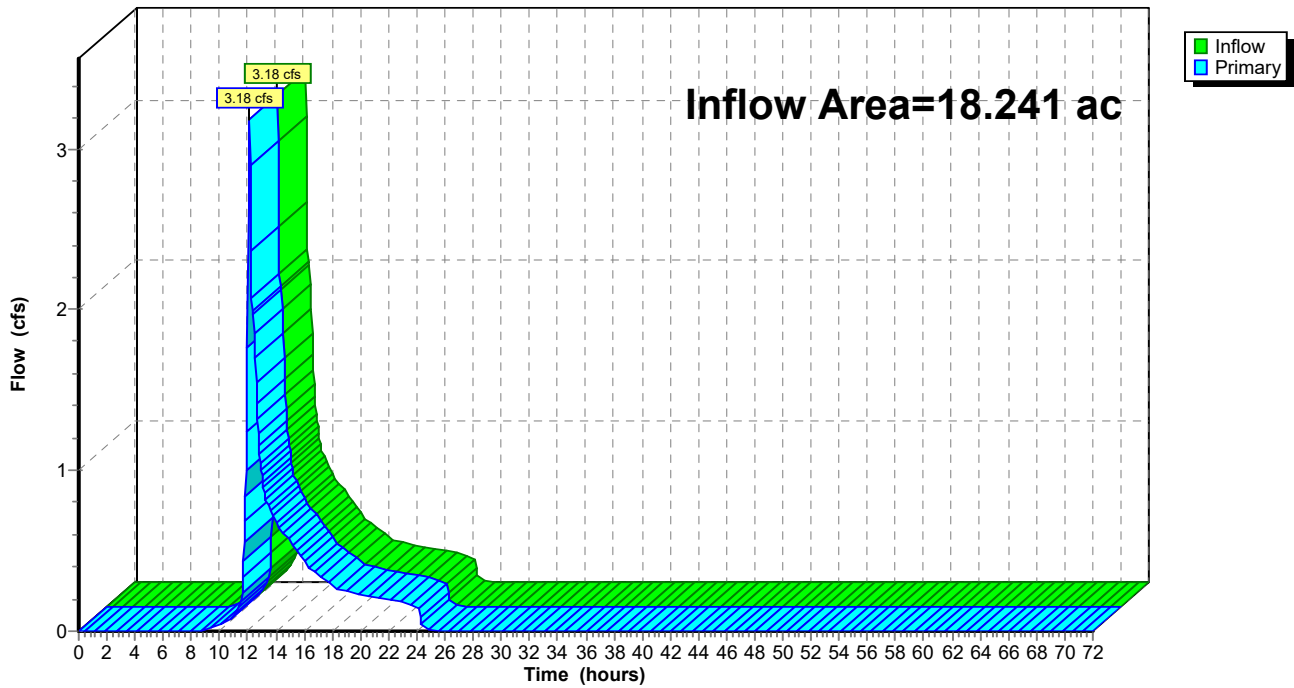
Summary for Link 33L: DP-4 To 116

Inflow Area = 18.241 ac, 8.59% Impervious, Inflow Depth = 0.34" for 2-yr event
Inflow = 3.18 cfs @ 12.11 hrs, Volume= 0.512 af
Primary = 3.18 cfs @ 12.11 hrs, Volume= 0.512 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 33L: DP-4 To 116

Hydrograph



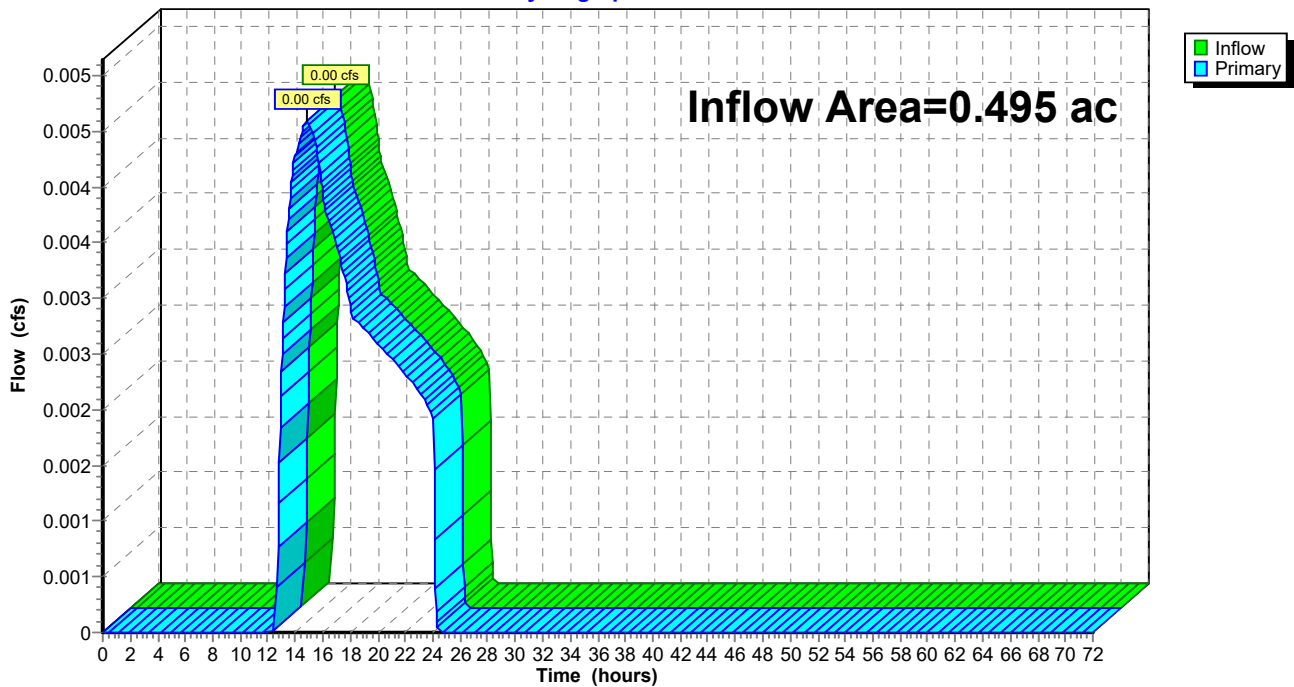
Summary for Link 34L: DP-3 51 Baptist Hill Rd Property

Inflow Area = 0.495 ac, 15.01% Impervious, Inflow Depth = 0.07" for 2-yr event
Inflow = 0.00 cfs @ 14.86 hrs, Volume= 0.003 af
Primary = 0.00 cfs @ 14.86 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : Behind houses

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 34L: DP-3 51 Baptist Hill Rd Property

Hydrograph



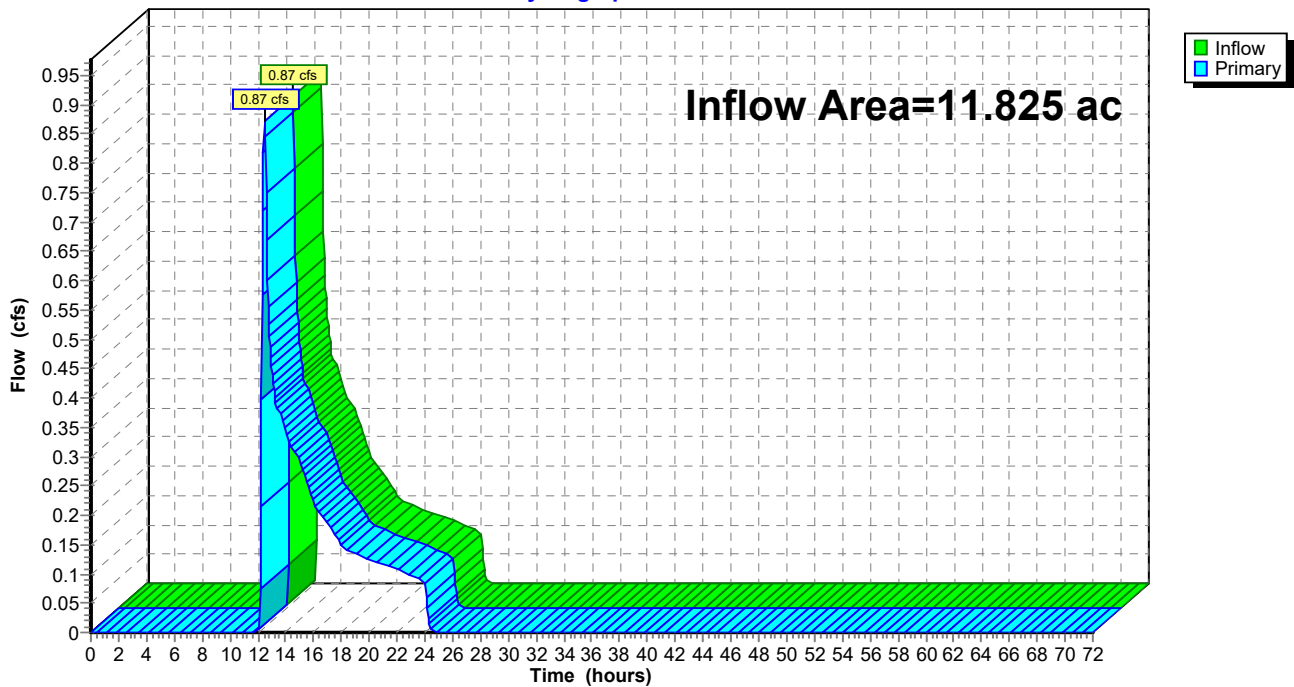
Summary for Link 35L: DP-2 Along 45 Upper Baptist

Inflow Area = 11.825 ac, 1.39% Impervious, Inflow Depth = 0.21" for 2-yr event
Inflow = 0.87 cfs @ 12.48 hrs, Volume= 0.211 af
Primary = 0.87 cfs @ 12.48 hrs, Volume= 0.211 af, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : Behind houses

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 35L: DP-2 Along 45 Upper Baptist

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1E: EX 1	Runoff Area=324,117 sf 3.47% Impervious Runoff Depth=0.95" Flow Length=1,253' Tc=17.3 min CN=57 Runoff=4.73 cfs 0.588 af
Subcatchment2E: EX 2	Runoff Area=52,537 sf 35.20% Impervious Runoff Depth=1.13" Flow Length=472' Tc=6.7 min CN=60 Runoff=1.34 cfs 0.114 af
Subcatchment3E: EX 3	Runoff Area=515,091 sf 1.39% Impervious Runoff Depth=0.83" Flow Length=1,106' Tc=13.6 min CN=55 Runoff=6.72 cfs 0.822 af
Subcatchment4E: EX 4	Runoff Area=441,577 sf 0.00% Impervious Runoff Depth=1.32" Flow Length=1,423' Tc=14.1 min CN=63 Runoff=11.02 cfs 1.117 af
Subcatchment5E: EX 5	Runoff Area=21,556 sf 15.01% Impervious Runoff Depth=0.48" Flow Length=368' Tc=9.8 min CN=48 Runoff=0.11 cfs 0.020 af
Subcatchment6E: EX 6	Runoff Area=11,369 sf 41.58% Impervious Runoff Depth=1.39" Flow Length=125' Tc=7.0 min CN=64 Runoff=0.38 cfs 0.030 af
Subcatchment7E: EX 7	Runoff Area=19,699 sf 37.25% Impervious Runoff Depth=2.29" Flow Length=211' Tc=8.3 min CN=76 Runoff=1.10 cfs 0.086 af
Subcatchment8E: EX 8	Runoff Area=64,091 sf 41.74% Impervious Runoff Depth=3.00" Flow Length=546' Tc=7.2 min CN=84 Runoff=4.87 cfs 0.367 af
Subcatchment9E: EX 9	Runoff Area=11,227 sf 49.99% Impervious Runoff Depth=1.67" Tc=1.2 min CN=68 Runoff=0.53 cfs 0.036 af
Subcatchment10E: EX 10	Runoff Area=162,915 sf 11.13% Impervious Runoff Depth=0.73" Flow Length=743' Tc=21.2 min CN=53 Runoff=1.47 cfs 0.226 af
Subcatchment11E: EX 11	Runoff Area=58,435 sf 35.42% Impervious Runoff Depth=2.81" Flow Length=803' Tc=12.1 min CN=82 Runoff=3.60 cfs 0.314 af
Subcatchment12E: EX 12	Runoff Area=24,870 sf 22.10% Impervious Runoff Depth=1.32" Tc=1.2 min CN=63 Runoff=0.90 cfs 0.063 af
Subcatchment13E: RX 13	Runoff Area=491,439 sf 7.52% Impervious Runoff Depth=2.05" Flow Length=1,700' Tc=14.7 min CN=73 Runoff=20.27 cfs 1.925 af
Reach 32R: Wetland swale	Avg. Flow Depth=1.16' Max Vel=1.63 fps Inflow=9.22 cfs 1.076 af n=0.100 L=230.0' S=0.0261 '/' Capacity=110.96 cfs Outflow=8.72 cfs 1.076 af
Pond 14P: J12	Peak Elev=650.90' Inflow=4.73 cfs 0.588 af Primary=4.40 cfs 0.585 af Secondary=0.36 cfs 0.003 af Outflow=4.73 cfs 0.588 af
Pond 15P: J10	Peak Elev=641.26' Inflow=5.54 cfs 0.702 af Primary=5.54 cfs 0.702 af Secondary=0.00 cfs 0.000 af Outflow=5.54 cfs 0.702 af

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Type III 24-hr 10-yr Rainfall=4.70"

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Pond 18P: J8	Peak Elev=628.15' Inflow=6.72 cfs 0.822 af Primary=6.72 cfs 0.822 af Secondary=0.00 cfs 0.000 af Outflow=6.72 cfs 0.822 af
Pond 20P: J6	Peak Elev=625.12' Inflow=0.11 cfs 0.020 af Primary=0.11 cfs 0.020 af Secondary=0.00 cfs 0.000 af Outflow=0.11 cfs 0.020 af
Pond 21P: J3	Peak Elev=622.11' Storage=420 cf Inflow=3.97 cfs 0.097 af Primary=2.53 cfs 0.090 af Secondary=1.26 cfs 0.007 af Outflow=3.78 cfs 0.098 af
Pond 22P: J1	Peak Elev=625.37' Storage=201 cf Inflow=11.02 cfs 1.117 af Primary=7.26 cfs 1.050 af Secondary=3.67 cfs 0.067 af Outflow=10.93 cfs 1.117 af
Pond 24P: J15	Peak Elev=595.87' Inflow=4.89 cfs 0.474 af Primary=4.89 cfs 0.474 af Secondary=0.00 cfs 0.000 af Outflow=4.89 cfs 0.474 af
Pond 25P: J14	Peak Elev=614.44' Inflow=4.42 cfs 0.438 af Primary=3.73 cfs 0.430 af Secondary=0.65 cfs 0.007 af Outflow=4.42 cfs 0.438 af
Pond 26P: J13	Peak Elev=615.51' Inflow=4.87 cfs 0.367 af Primary=3.50 cfs 0.352 af Secondary=1.73 cfs 0.016 af Outflow=4.87 cfs 0.367 af
Pond 27P: J22	Peak Elev=573.29' Inflow=11.97 cfs 1.550 af Primary=10.31 cfs 1.533 af Secondary=1.66 cfs 0.017 af Outflow=11.97 cfs 1.550 af
Pond 28P: J16	Peak Elev=578.93' Inflow=4.90 cfs 0.330 af Primary=4.25 cfs 0.326 af Secondary=0.65 cfs 0.005 af Outflow=4.90 cfs 0.330 af
Pond 31P: J23	Primary=0.00 cfs 0.000 af
Link 16L: DP-1 EXISTING OUTLET TO UNDER 116	Inflow=5.54 cfs 0.702 af Primary=5.54 cfs 0.702 af
Link 19L: Behind houses	Inflow=9.22 cfs 1.076 af Primary=9.22 cfs 1.076 af
Link 23L: DP- 6 NORTH TO 10 PINE HILL RD	Inflow=29.94 cfs 3.066 af Primary=29.94 cfs 3.066 af
Link 30L: DP-5 to town property	Inflow=5.52 cfs 0.393 af Primary=5.52 cfs 0.393 af
Link 33L: DP-4 To 116	Inflow=11.97 cfs 1.550 af Primary=11.97 cfs 1.550 af
Link 34L: DP-3 51 Baptist Hill Rd Property	Inflow=1.37 cfs 0.027 af Primary=1.37 cfs 0.027 af
Link 35L: DP-2 Along 45 Upper Baptist	Inflow=6.72 cfs 0.822 af Primary=6.72 cfs 0.822 af

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Type III 24-hr 10-yr Rainfall=4.70"

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Total Runoff Area = 50.480 ac Runoff Volume = 5.710 af Average Runoff Depth = 1.36"
92.46% Pervious = 46.673 ac 7.54% Impervious = 3.808 ac

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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Subcatchment 1E: EX 1

Runoff = 4.73 cfs @ 12.29 hrs, Volume= 0.588 af, Depth= 0.95"
 Routed to Pond 14P : J12

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr Rainfall=4.70"

Area (sf)	CN	Description
154,324	66	Woods, Poor, HSG B
* 27,768	45	Woods, Poor, HSG A
* 17,039	61	>75% Grass Cover, Good HSG B
* 64,387	39	>75% Grass Cover, Good HSG A
23,965	39	>75% Grass cover, Good, HSG A
25,373	61	>75% Grass cover, Good, HSG B
* 4,212	98	Impervious, HSG B
* 7,049	98	Impervious, HSG A
324,117	57	Weighted Average
312,856		96.53% Pervious Area
11,261		3.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.1800	0.18		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.07"
2.6	385	0.2442	2.47		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.7	293	0.3240	2.85		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.9	475	0.0821	2.01		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.3	1,253	Total			

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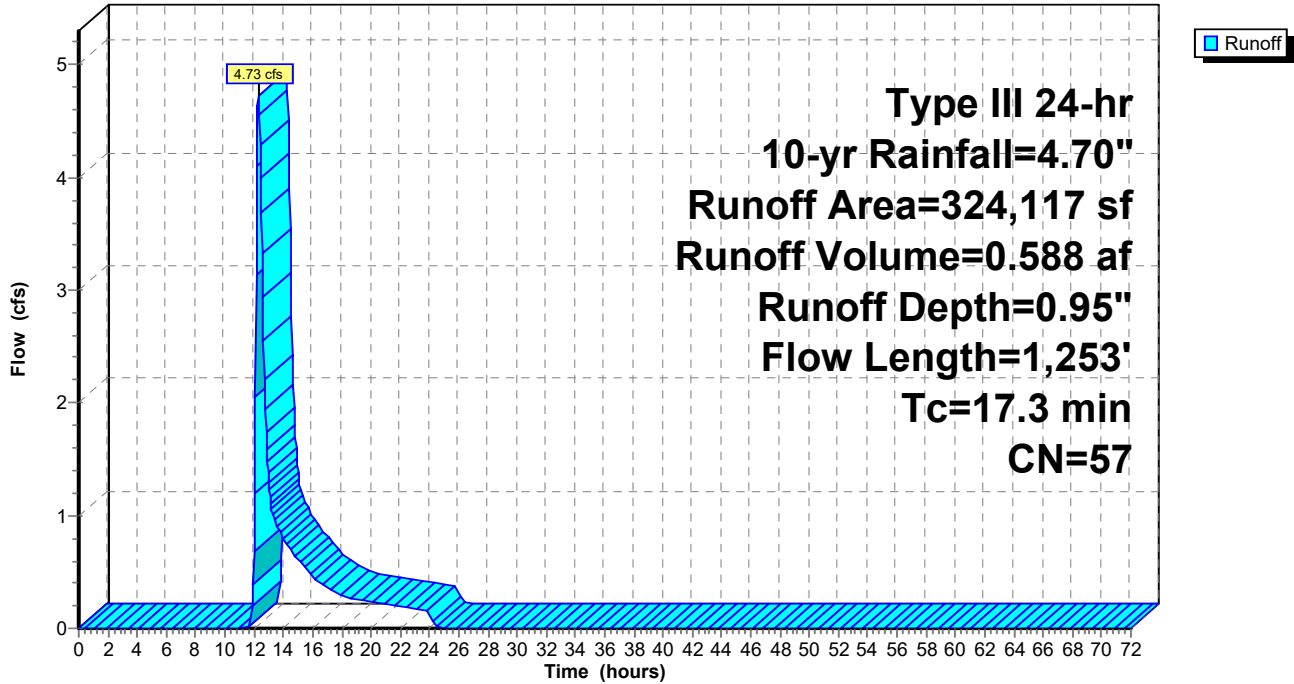
Type III 24-hr 10-yr Rainfall=4.70"

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Subcatchment 1E: EX 1

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Subcatchment 2E: EX 2

Runoff = 1.34 cfs @ 12.11 hrs, Volume= 0.114 af, Depth= 1.13"
 Routed to Pond 15P : J10

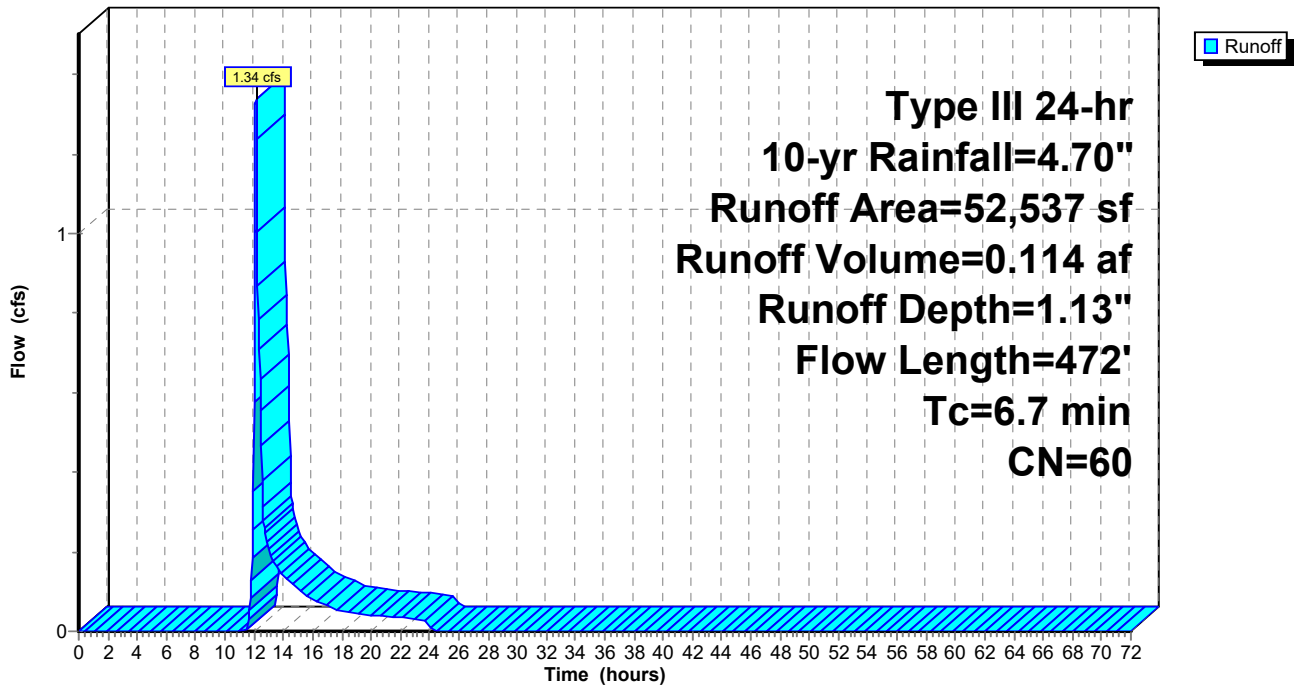
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr Rainfall=4.70"

	Area (sf)	CN	Description
*	18,495	98	Impervious, HSG A
	34,042	39	>75% Grass cover, Good, HSG A
	52,537	60	Weighted Average
	34,042		64.80% Pervious Area
	18,495		35.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0900	0.30		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
1.2	372	0.0661	5.22		Shallow Concentrated Flow, Paved Kv= 20.3 fps
6.7	472	Total			

Subcatchment 2E: EX 2

Hydrograph



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Summary for Subcatchment 3E: EX 3

Runoff = 6.72 cfs @ 12.24 hrs, Volume= 0.822 af, Depth= 0.83"
 Routed to Pond 18P : J8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr Rainfall=4.70"

Area (sf)	CN	Description
152,788	66	Woods, Poor, HSG B
83,867	39	>75% Grass cover, Good, HSG A
* 7,162	98	impervious, HSG A
29,740	45	Woods, Poor, HSG A
78,775	66	Woods, Poor, HSG B
81,473	45	Woods, Poor, HSG A
81,286	49	50-75% Grass cover, Fair, HSG A
515,091	55	Weighted Average
507,929		98.61% Pervious Area
7,162		1.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	100	0.3100	0.23		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.07"
1.4	214	0.2520	2.51		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.5	120	0.6500	4.03		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.3	212	0.2920	2.70		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.1	460	0.0739	2.45		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
13.6	1,106	Total			

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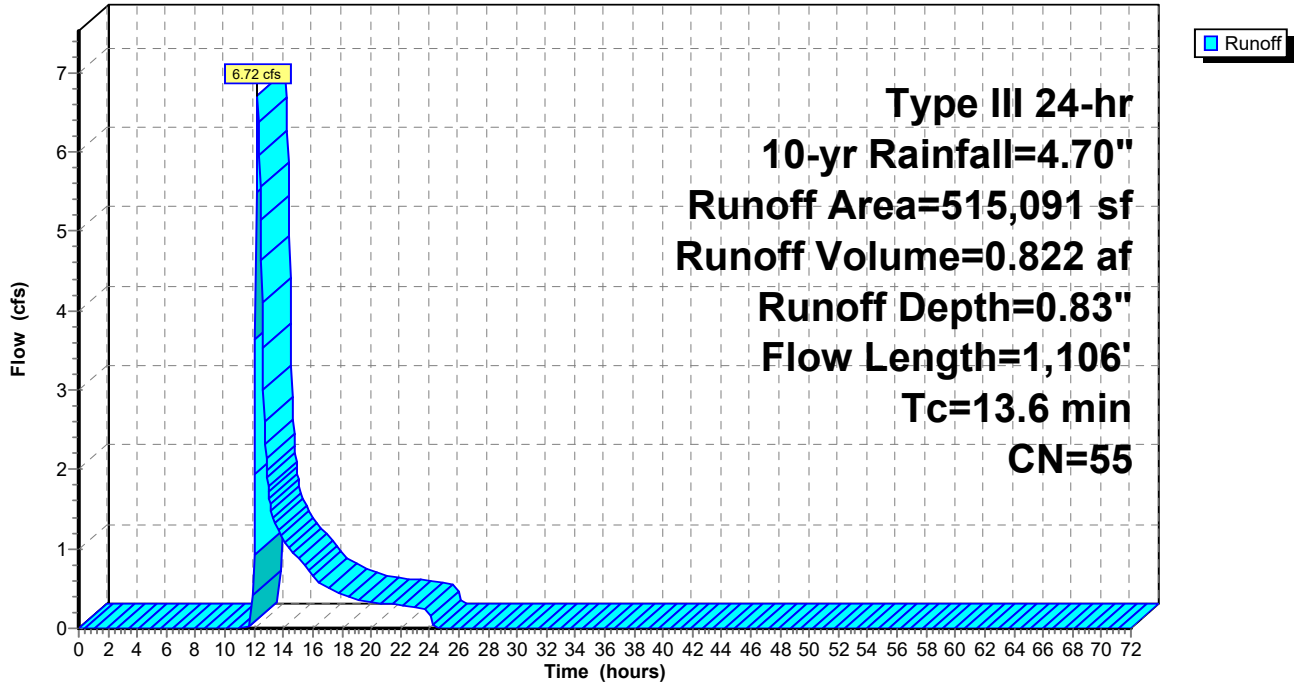
Type III 24-hr 10-yr Rainfall=4.70"

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Subcatchment 3E: EX 3

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Subcatchment 4E: EX 4

Runoff = 11.02 cfs @ 12.22 hrs, Volume= 1.117 af, Depth= 1.32"
 Routed to Pond 22P : J1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr Rainfall=4.70"

Area (sf)	CN	Description
186,589	66	Woods, Poor, HSG B
11,967	45	Woods, Poor, HSG A
104,358	77	Woods, Poor, HSG C
43,979	61	>75% Grass cover, Good, HSG B
10,084	74	>75% Grass cover, Good, HSG C
84,600	39	>75% Grass cover, Good, HSG A
441,577	63	Weighted Average
441,577		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	100	0.1900	0.41		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
1.5	199	0.1055	2.27		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.4	185	0.1946	2.21		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
4.1	619	0.2569	2.53		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.0	320	0.0656	1.79		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.1	1,423	Total			

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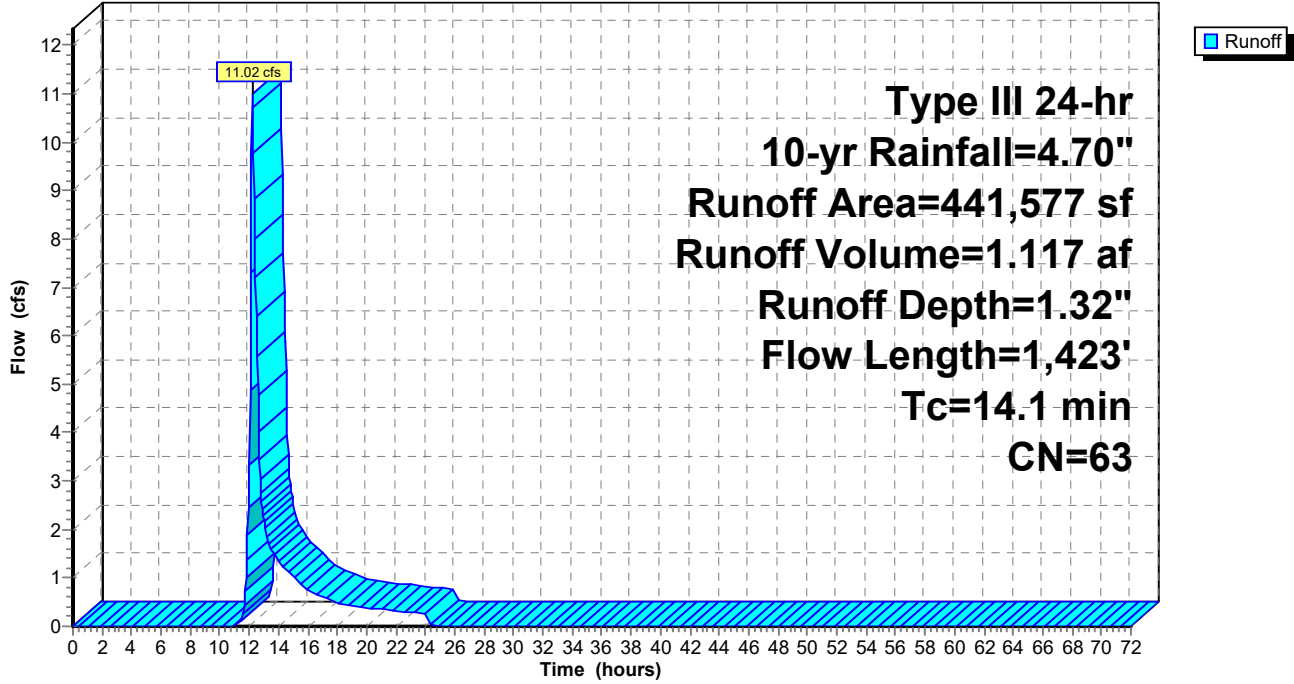
Type III 24-hr 10-yr Rainfall=4.70"

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Subcatchment 4E: EX 4

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Subcatchment 5E: EX 5

Runoff = 0.11 cfs @ 12.32 hrs, Volume= 0.020 af, Depth= 0.48"
 Routed to Pond 20P : J6

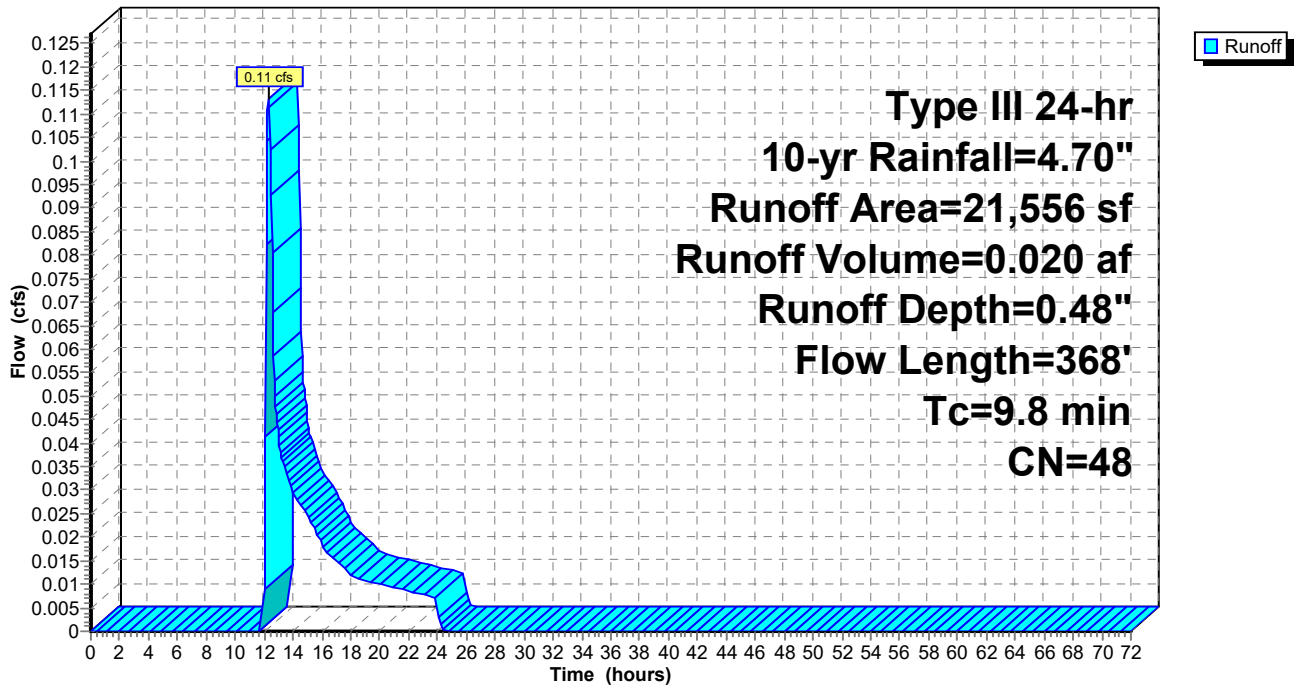
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr Rainfall=4.70"

Area (sf)	CN	Description
* 3,236	98	impervious, HSG A
18,320	39	>75% Grass cover, Good, HSG A
21,556	48	Weighted Average
18,320		84.99% Pervious Area
3,236		15.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	100	0.0400	0.20		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.07"
1.4	268	0.0261	3.28		Shallow Concentrated Flow, Paved Kv= 20.3 fps
9.8	368	Total			

Subcatchment 5E: EX 5

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Subcatchment 6E: EX 6

Runoff = 0.38 cfs @ 12.11 hrs, Volume= 0.030 af, Depth= 1.39"
 Routed to Pond 21P : J3

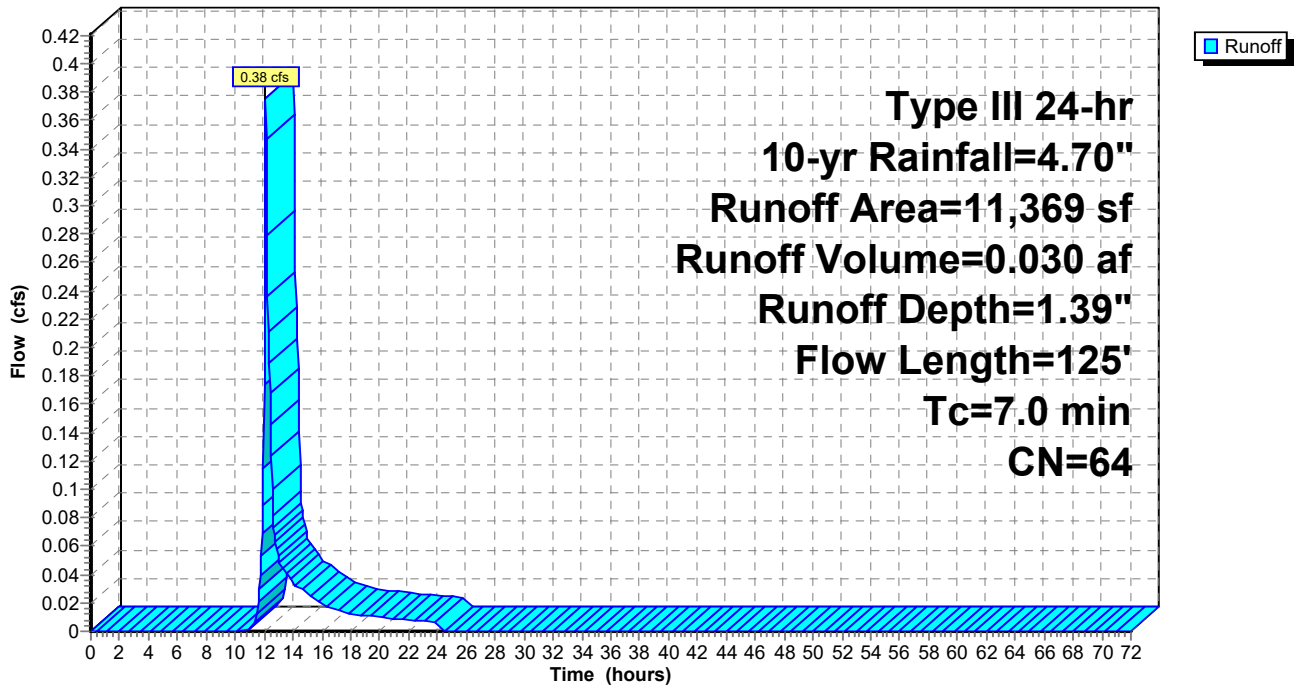
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr Rainfall=4.70"

Area (sf)	CN	Description
6,642	39	>75% Grass cover, Good, HSG A
* 4,727	98	Impervious, HSG A
11,369	64	Weighted Average
6,642		58.42% Pervious Area
4,727		41.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	100	0.0500	0.24		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
0.1	25	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.0	125	Total			

Subcatchment 6E: EX 6

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Subcatchment 7E: EX 7

Runoff = 1.10 cfs @ 12.12 hrs, Volume= 0.086 af, Depth= 2.29"
 Routed to Pond 25P : J14

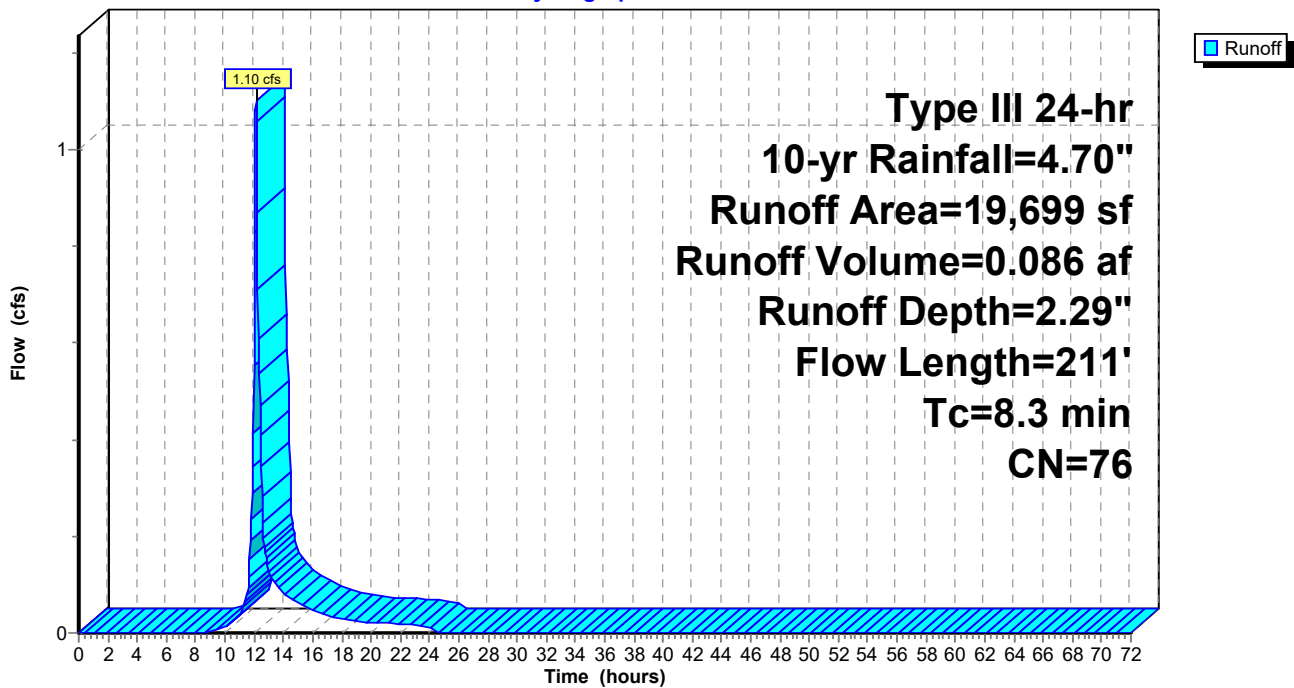
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr Rainfall=4.70"

	Area (sf)	CN	Description
*	6,358	98	Impervious, HSG C
*	980	98	Impervious, HSG A
	3,996	39	>75% Grass cover, Good, HSG A
	8,365	74	>75% Grass cover, Good, HSG C
	19,699	76	Weighted Average
	12,361		62.75% Pervious Area
	7,338		37.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	100	0.0400	0.22		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
0.7	111	0.0180	2.72		Shallow Concentrated Flow, Paved Kv= 20.3 fps
8.3	211	Total			

Subcatchment 7E: EX 7

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Subcatchment 8E: EX 8

Runoff = 4.87 cfs @ 12.10 hrs, Volume= 0.367 af, Depth= 3.00"
 Routed to Pond 26P : J13

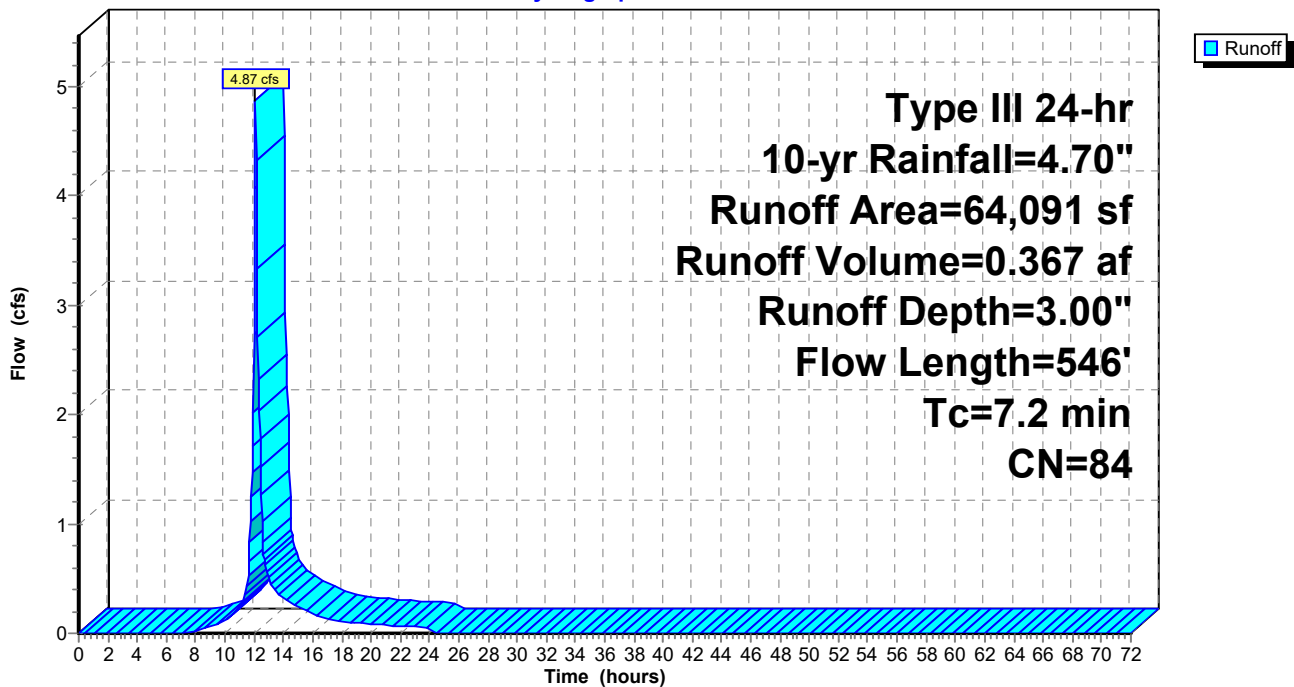
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr Rainfall=4.70"

	Area (sf)	CN	Description
*	26,754	98	Impervious, HSG C
	37,337	74	>75% Grass cover, Good, HSG C
	64,091	84	Weighted Average
	37,337		58.26% Pervious Area
	26,754		41.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0900	0.30		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
1.7	446	0.0471	4.41		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.2	546	Total			

Subcatchment 8E: EX 8

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Subcatchment 9E: EX 9

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.53 cfs @ 12.03 hrs, Volume= 0.036 af, Depth= 1.67"
 Routed to Pond 24P : J15

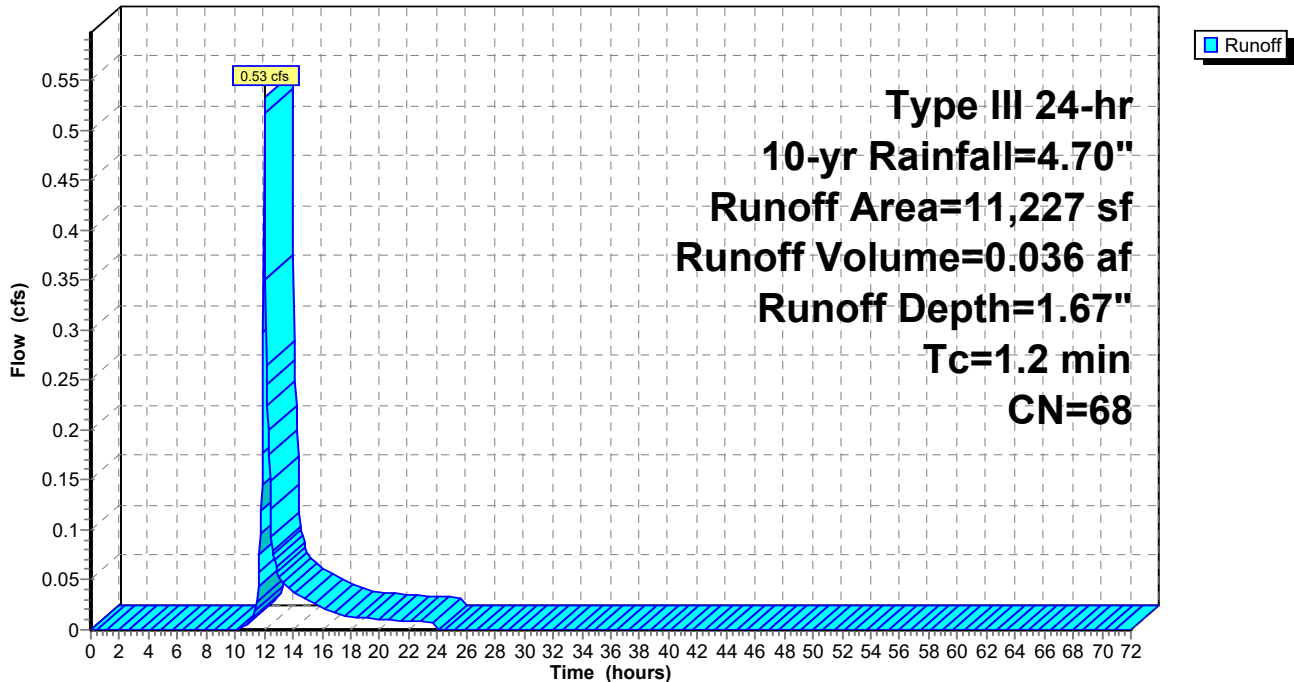
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr Rainfall=4.70"

	Area (sf)	CN	Description
*	5,612	98	Impervious, HSG A
	5,615	39	>75% Grass cover, Good, HSG A
	11,227	68	Weighted Average
	5,615		50.01% Pervious Area
	5,612		49.99% Impervious Area

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

Subcatchment 9E: EX 9

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Subcatchment 10E: EX 10

Runoff = 1.47 cfs @ 12.40 hrs, Volume= 0.226 af, Depth= 0.73"
 Routed to Link 19L : Behind houses

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr Rainfall=4.70"

Area (sf)	CN	Description
* 13,392	98	Impervious, HSG A
* 4,745	98	Impervious, HSG C
24,615	45	Woods, Poor, HSG A
7,646	66	Woods, Poor, HSG B
89,600	39	>75% Grass cover, Good, HSG A
22,005	74	>75% Grass cover, Good, HSG C
912	61	>75% Grass cover, Good, HSG B
162,915	53	Weighted Average
144,778		88.87% Pervious Area
18,137		11.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	100	0.0300	0.13		Sheet Flow, Grass: Dense n= 0.240 P2= 3.07"
8.8	643	0.0594	1.22		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
21.2	743	Total			

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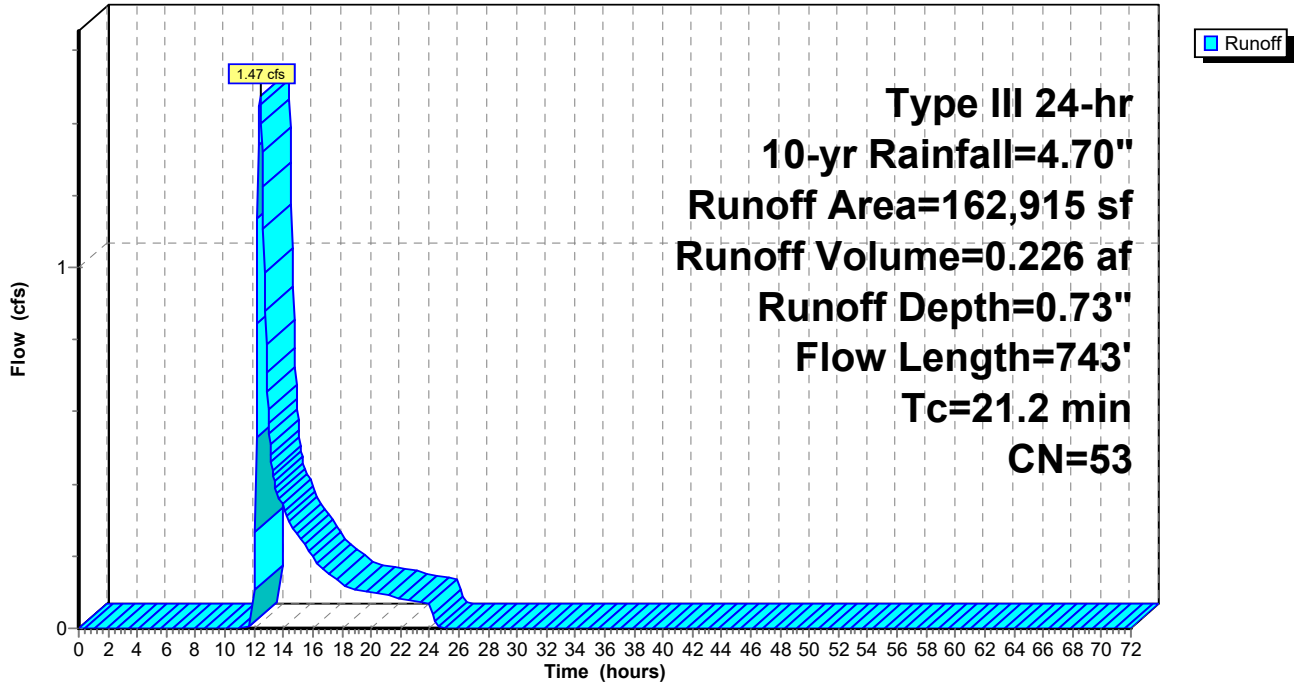
Type III 24-hr 10-yr Rainfall=4.70"

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Subcatchment 10E: EX 10

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Subcatchment 11E: EX 11

Runoff = 3.60 cfs @ 12.17 hrs, Volume= 0.314 af, Depth= 2.81"
 Routed to Pond 28P : J16

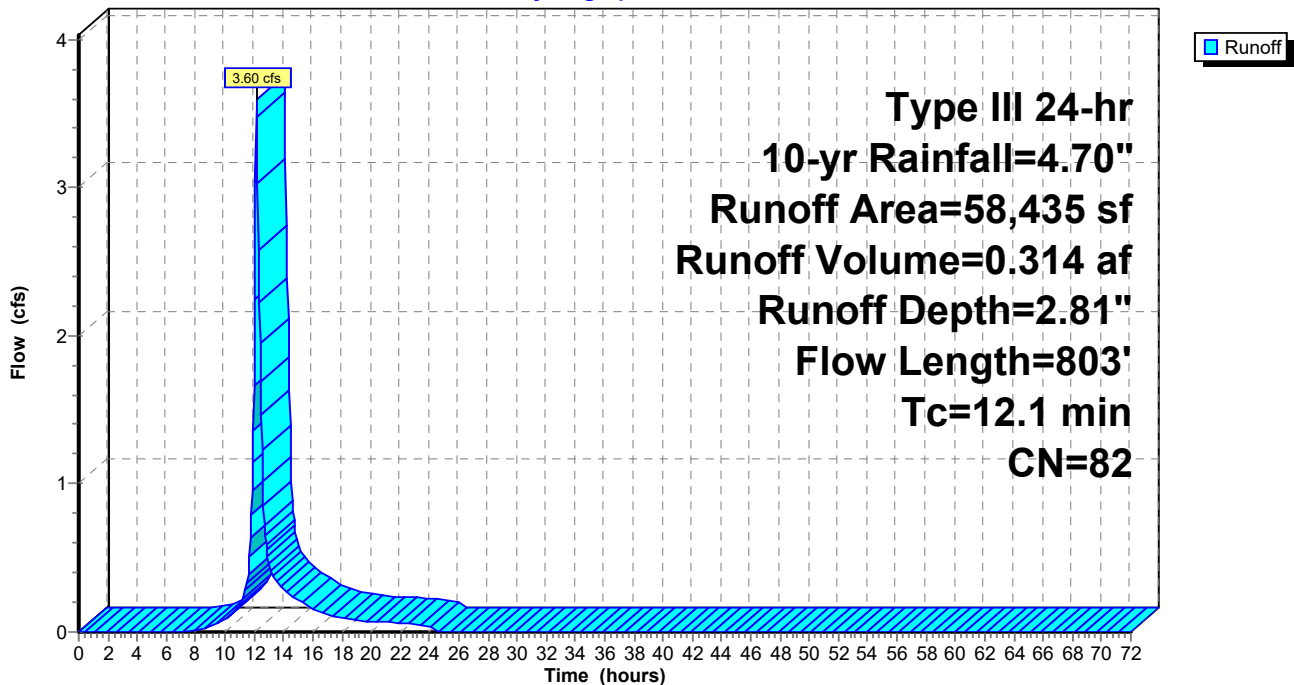
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr Rainfall=4.70"

	Area (sf)	CN	Description
*	1,964	98	Impervious, HSG A
	780	39	>75% Grass cover, Good, HSG A
*	18,734	98	Impervious, HSG C
	36,957	74	>75% Grass cover, Good, HSG C
	58,435	82	Weighted Average
	37,737		64.58% Pervious Area
	20,698		35.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	100	0.0400	0.22		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
3.8	411	0.0657	1.79		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.7	292	0.1199	7.03		Shallow Concentrated Flow, Paved Kv= 20.3 fps
12.1	803	Total			

Subcatchment 11E: EX 11

Hydrograph



15.0167305.01-EXC HYDROLOGY

Summary for Subcatchment 12E: EX 12

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.90 cfs @ 12.03 hrs, Volume= 0.063 af, Depth= 1.32"
 Routed to Link 30L : DP-5 to town property

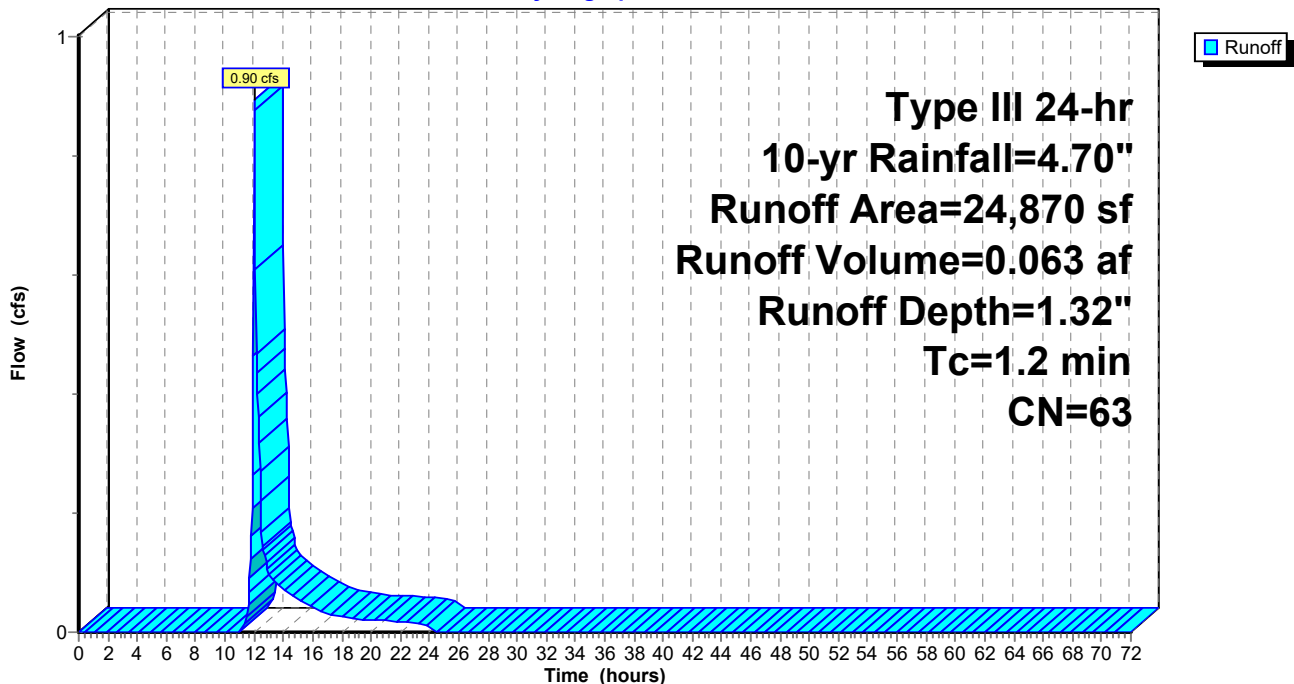
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-yr Rainfall=4.70"

Area (sf)	CN	Description
5,179	74	>75% Grass cover, Good, HSG C
* 2,500	98	Impervious, HSG C
13,037	45	Woods, Poor, HSG A
546	39	>75% Grass cover, Good, HSG A
* 2,290	98	Impervious, HSG A
* 706	98	Impervious, HSG B
612	66	Woods, Poor, HSG B
24,870	63	Weighted Average
19,374		77.90% Pervious Area
5,496		22.10% Impervious Area

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

Subcatchment 12E: EX 12

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Subcatchment 13E: RX 13

Runoff = 20.27 cfs @ 12.21 hrs, Volume= 1.925 af, Depth= 2.05"

Routed to Link 23L : DP- 6 NORTH TO 10 PINE HILL RD

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=4.70"

Area (sf)	CN	Description
26,404	61	>75% Grass cover, Good, HSG B
29,263	74	>75% Grass cover, Good, HSG C
48,122	39	>75% Grass cover, Good, HSG A
16,942	45	Woods, Poor, HSG A
2,172	66	Woods, Poor, HSG B
294,686	77	Woods, Poor, HSG C
25,711	88	Row crops, straight row, Poor, HSG C
11,199	72	Row crops, straight row, Poor, HSG A
* 13,085	98	Impervious, HSG A
* 18,490	98	Impervious, HSG C
* 5,365	98	Impervious, HSG B
491,439	73	Weighted Average
454,499		92.48% Pervious Area
36,940		7.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	100	0.1400	0.36		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
0.9	140	0.1357	2.58		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
4.7	651	0.2166	2.33		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.0	131	0.1756	2.10		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.3	212	0.0849	2.62		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
2.2	466	0.0558	3.54		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
14.7	1,700	Total			

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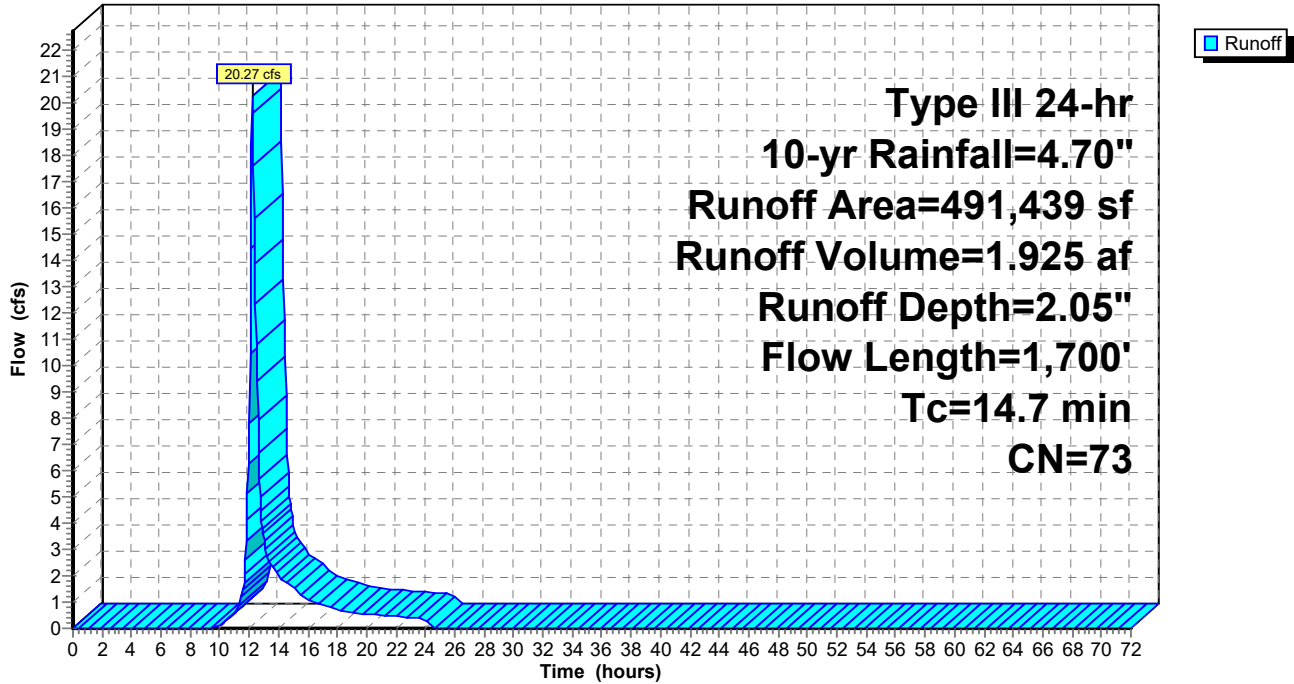
Type III 24-hr 10-yr Rainfall=4.70"

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Subcatchment 13E: RX 13

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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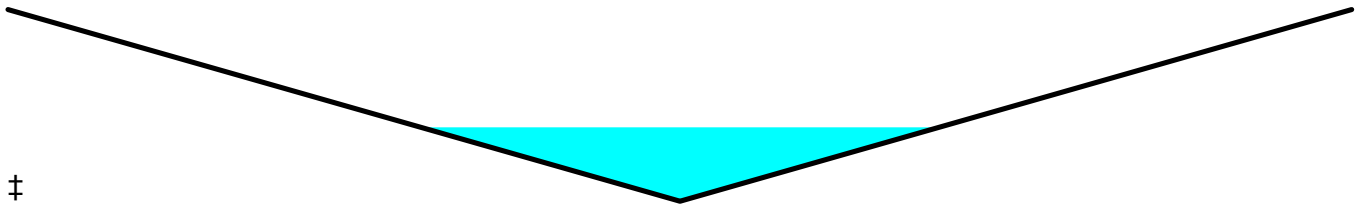
Summary for Reach 32R: Wetland swale

Inflow Area = 16.060 ac, 4.08% Impervious, Inflow Depth = 0.80" for 10-yr event
 Inflow = 9.22 cfs @ 12.26 hrs, Volume= 1.076 af
 Outflow = 8.72 cfs @ 12.30 hrs, Volume= 1.076 af, Atten= 5%, Lag= 2.3 min
 Routed to Pond 27P : J22

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Max. Velocity= 1.63 fps, Min. Travel Time= 2.3 min
 Avg. Velocity = 0.76 fps, Avg. Travel Time= 5.0 min

Peak Storage= 1,229 cf @ 12.30 hrs
 Average Depth at Peak Storage= 1.16' , Surface Width= 9.25'
 Bank-Full Depth= 3.00' Flow Area= 36.0 sf, Capacity= 110.96 cfs

Custom cross-section, Length= 230.0' Slope= 0.0261 '/'
 Constant n= 0.100 Earth, dense brush, high stage
 Inlet Invert= 580.00', Outlet Invert= 574.00'



‡

Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	3.00	0.00
12.00	0.00	3.00
24.00	3.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Width (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	0.0	0.0	0	0.00
3.00	36.0	24.7	24.0	8,280	110.96

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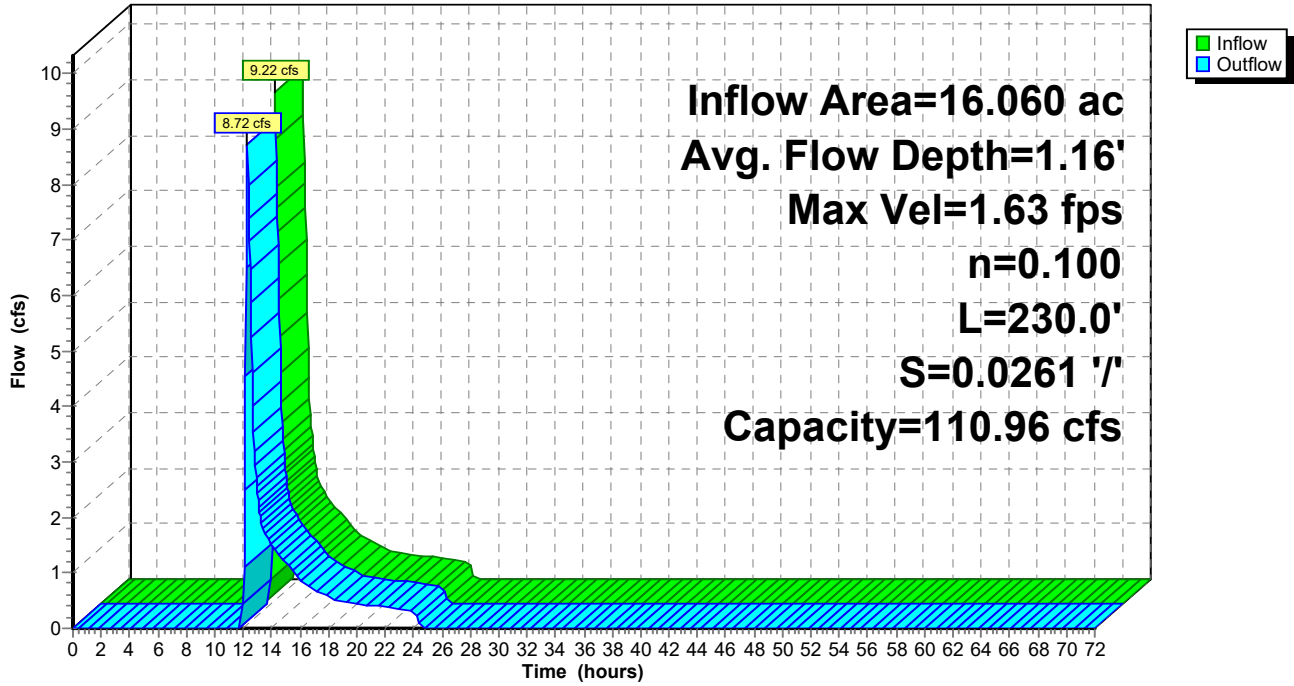
Type III 24-hr 10-yr Rainfall=4.70"

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Reach 32R: Wetland swale

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Pond 14P: J12

[58] Hint: Peaked 0.06' above defined flood level

Inflow Area = 7.441 ac, 3.47% Impervious, Inflow Depth = 0.95" for 10-yr event
 Inflow = 4.73 cfs @ 12.29 hrs, Volume= 0.588 af
 Outflow = 4.73 cfs @ 12.29 hrs, Volume= 0.588 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.40 cfs @ 12.25 hrs, Volume= 0.585 af
 Routed to Pond 15P : J10
 Secondary = 0.36 cfs @ 12.30 hrs, Volume= 0.003 af
 Routed to Pond 15P : J10

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 650.90' @ 12.30 hrs
 Flood Elev= 650.84'

Device	Routing	Invert	Outlet Devices
#1	Primary	647.59'	12.0" Round Culvert L= 159.4' Ke= 0.500 Inlet / Outlet Invert= 647.59' / 639.96' S= 0.0479 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	650.84'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.37 cfs @ 12.25 hrs HW=650.89' TW=641.25' (Dynamic Tailwater)
 ↑1=Culvert (Outlet Controls 4.37 cfs @ 5.57 fps)

Secondary OutFlow Max=0.34 cfs @ 12.30 hrs HW=650.90' TW=641.26' (Dynamic Tailwater)
 ↑2=Orifice/Grate (Weir Controls 0.34 cfs @ 0.79 fps)

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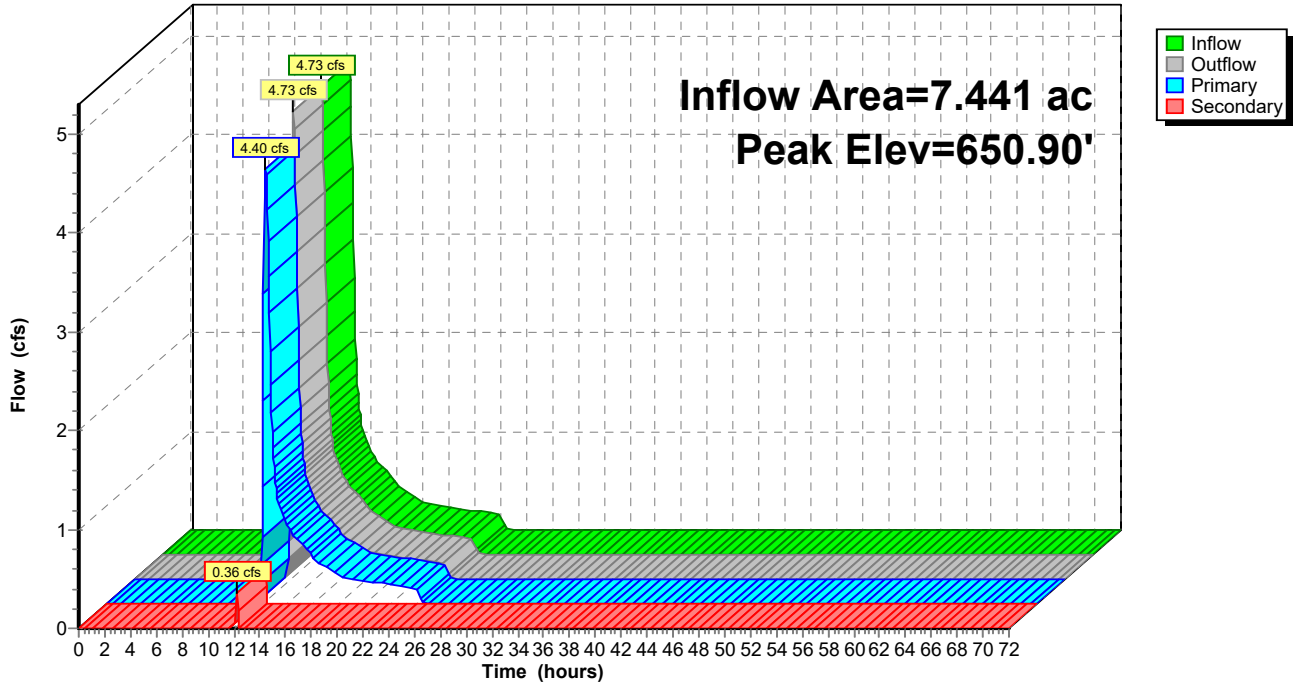
Type III 24-hr 10-yr Rainfall=4.70"

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Pond 14P: J12

Hydrograph



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Summary for Pond 15P: J10

Inflow Area = 8.647 ac, 7.90% Impervious, Inflow Depth = 0.97" for 10-yr event
 Inflow = 5.54 cfs @ 12.28 hrs, Volume= 0.702 af
 Outflow = 5.54 cfs @ 12.28 hrs, Volume= 0.702 af, Atten= 0%, Lag= 0.0 min
 Primary = 5.54 cfs @ 12.28 hrs, Volume= 0.702 af
 Routed to Link 16L : DP-1 EXISTING OUTLET TO UNDER 116
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 18P : J8

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 641.26' @ 12.28 hrs
 Flood Elev= 643.66'

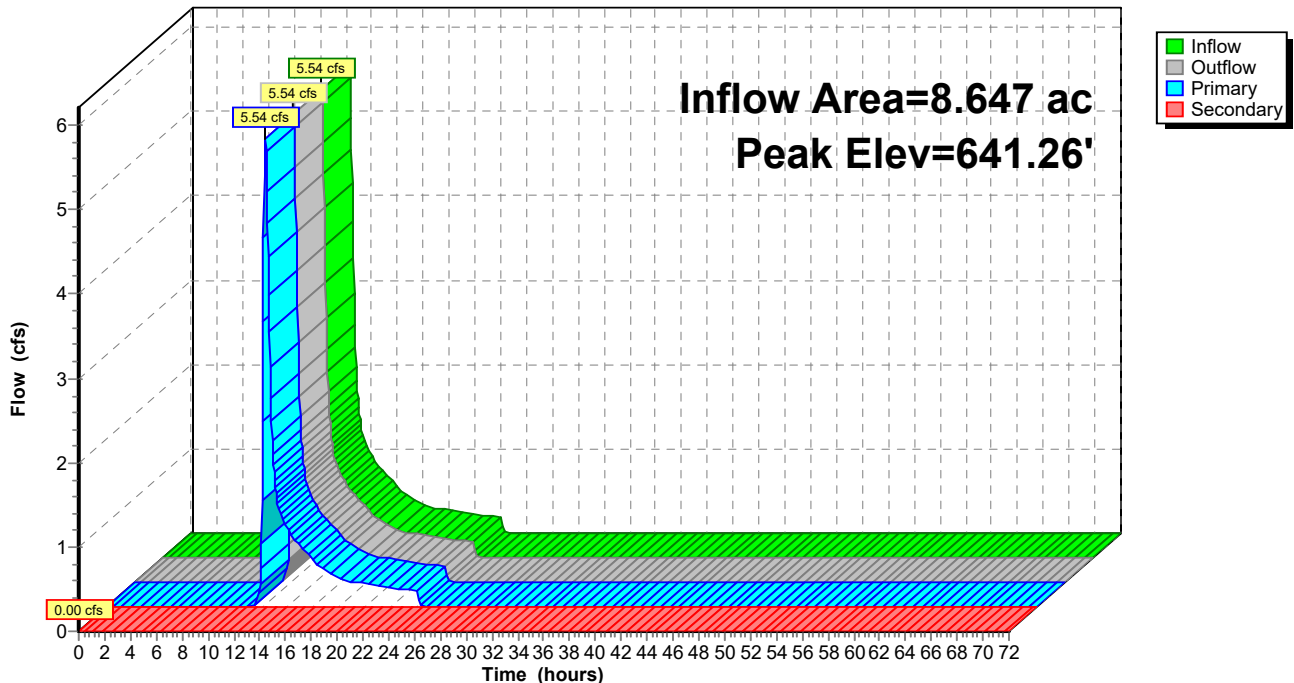
Device	Routing	Invert	Outlet Devices
#1	Primary	639.76'	15.0" Round Culvert L= 62.0' Ke= 0.500 Inlet / Outlet Invert= 639.76' / 625.00' S= 0.2381 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.23 sf
#2	Secondary	643.66'	22.0" x 22.0" Horiz. Orifice/Gate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.51 cfs @ 12.28 hrs HW=641.25' TW=0.00' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 5.51 cfs @ 4.49 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=639.76' TW=624.50' (Dynamic Tailwater)
 ↳2=Orifice/Gate (Controls 0.00 cfs)

Pond 15P: J10

Hydrograph



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Summary for Pond 18P: J8

Inflow Area = 11.825 ac, 1.39% Impervious, Inflow Depth = 0.83" for 10-yr event
 Inflow = 6.72 cfs @ 12.24 hrs, Volume= 0.822 af
 Outflow = 6.72 cfs @ 12.24 hrs, Volume= 0.822 af, Atten= 0%, Lag= 0.0 min
 Primary = 6.72 cfs @ 12.24 hrs, Volume= 0.822 af
 Routed to Link 35L : DP-2 Along 45 Upper Baptist
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 20P : J6

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 628.15' @ 12.24 hrs
 Flood Elev= 631.50'

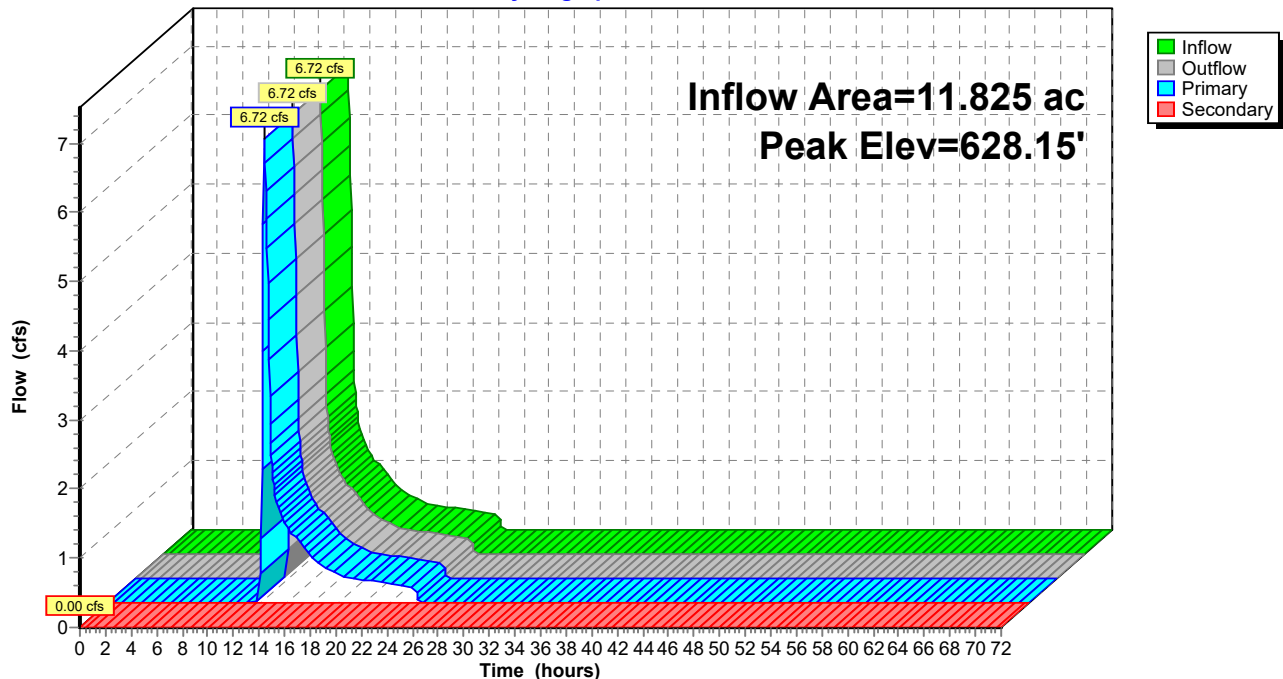
Device	Routing	Invert	Outlet Devices
#1	Primary	624.50'	12.0" Round Culvert L= 25.0' Ke= 0.500 Inlet / Outlet Invert= 624.50' / 623.38' S= 0.0448 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	631.50'	25.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=6.68 cfs @ 12.24 hrs HW=628.12' TW=0.00' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 6.68 cfs @ 8.50 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=624.50' TW=624.96' (Dynamic Tailwater)
 ↳2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 18P: J8

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Pond 20P: J6

Inflow Area = 0.495 ac, 15.01% Impervious, Inflow Depth = 0.48" for 10-yr event
 Inflow = 0.11 cfs @ 12.32 hrs, Volume= 0.020 af
 Outflow = 0.11 cfs @ 12.32 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.11 cfs @ 12.32 hrs, Volume= 0.020 af
 Routed to Link 34L : DP-3 51 Baptist Hill Rd Property
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 34L : DP-3 51 Baptist Hill Rd Property

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 625.12' @ 12.32 hrs
 Flood Elev= 626.00'

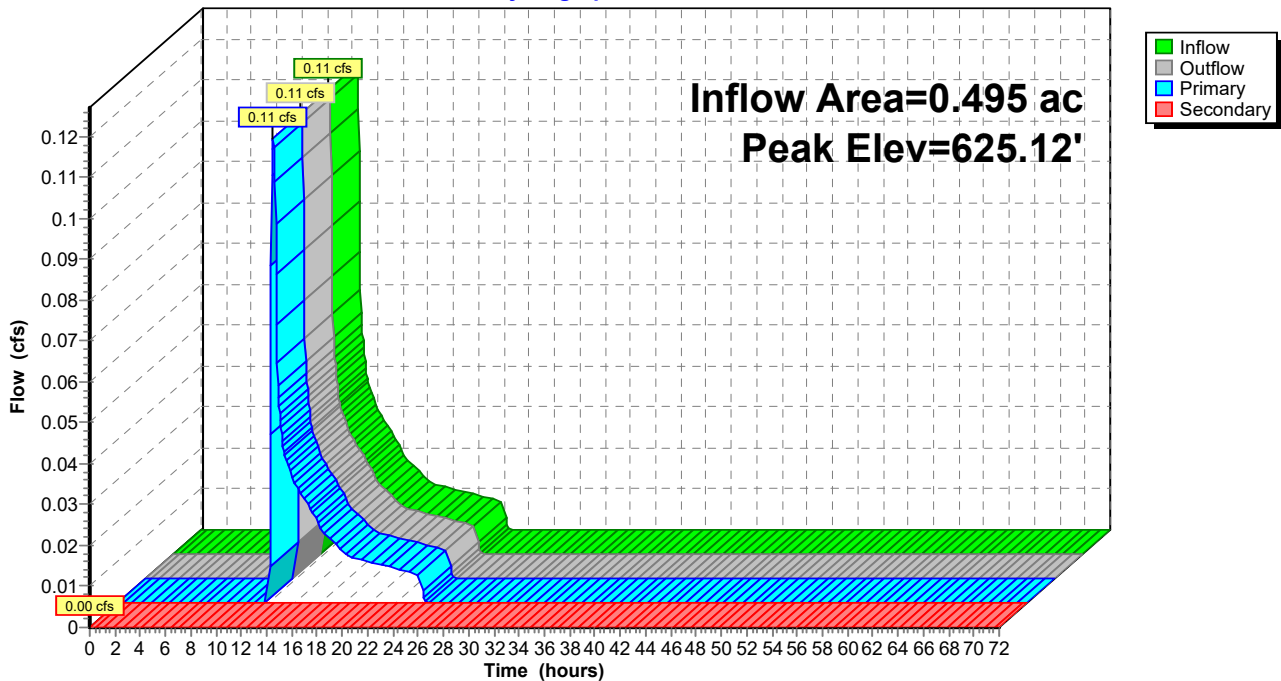
Device	Routing	Invert	Outlet Devices
#1	Primary	624.96'	12.0" Round Culvert L= 19.0' Ke= 0.500 Inlet / Outlet Invert= 623.69' / 624.96' S= -0.0668 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	626.00'	10.0' long x 24.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.11 cfs @ 12.32 hrs HW=625.12' TW=0.00' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 0.11 cfs @ 1.37 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=624.96' TW=0.00' (Dynamic Tailwater)
 ↳2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 20P: J6

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Pond 21P: J3

[92] Warning: Device #2 is above defined storage

[93] Warning: Storage range exceeded by 0.11'

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=2)

Inflow Area = 0.261 ac, 41.58% Impervious, Inflow Depth = 4.45" for 10-yr event
 Inflow = 3.97 cfs @ 12.22 hrs, Volume= 0.097 af
 Outflow = 3.78 cfs @ 12.26 hrs, Volume= 0.098 af, Atten= 5%, Lag= 2.1 min
 Primary = 2.53 cfs @ 12.27 hrs, Volume= 0.090 af
 Routed to Link 23L : DP- 6 NORTH TO 10 PINE HILL RD
 Secondary = 1.26 cfs @ 12.26 hrs, Volume= 0.007 af
 Routed to Link 34L : DP-3 51 Baptist Hill Rd Property

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 622.11' @ 12.27 hrs Surf.Area= 768 sf Storage= 420 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 1.2 min (778.4 - 777.1)

Volume	Invert	Avail.Storage	Storage Description
#1	619.00'	420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
619.00	4	0	0
620.00	10	7	7
621.00	24	17	24
622.00	768	396	420

Device	Routing	Invert	Outlet Devices
#1	Primary	619.50'	12.0" Round Culvert L= 101.0' Ke= 0.500 Inlet / Outlet Invert= 619.50' / 618.98' S= 0.0051 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	622.00'	20.0' long x 18.0' 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) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=2.50 cfs @ 12.27 hrs HW=622.07' TW=0.00' (Dynamic Tailwater)
 ↑**1=Culvert** (Barrel Controls 2.50 cfs @ 3.19 fps)

Secondary OutFlow Max=1.13 cfs @ 12.26 hrs HW=622.08' TW=0.00' (Dynamic Tailwater)
 ↑**2=Broad-Crested Rectangular Weir**(Weir Controls 1.13 cfs @ 0.74 fps)

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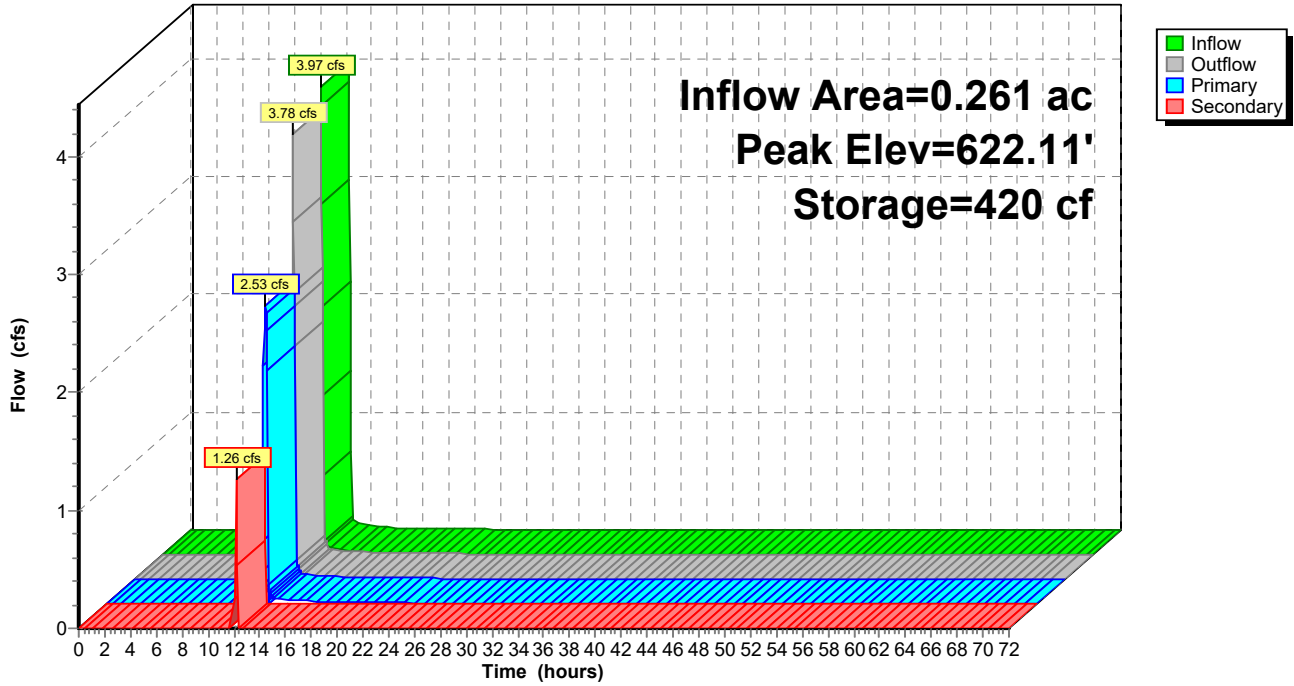
Type III 24-hr 10-yr Rainfall=4.70"

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Pond 21P: J3

Hydrograph



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Summary for Pond 22P: J1

Inflow Area = 10.137 ac, 0.00% Impervious, Inflow Depth = 1.32" for 10-yr event
 Inflow = 11.02 cfs @ 12.22 hrs, Volume= 1.117 af
 Outflow = 10.93 cfs @ 12.23 hrs, Volume= 1.117 af, Atten= 1%, Lag= 0.5 min
 Primary = 7.26 cfs @ 12.23 hrs, Volume= 1.050 af
 Routed to Link 23L : DP- 6 NORTH TO 10 PINE HILL RD
 Secondary = 3.67 cfs @ 12.23 hrs, Volume= 0.067 af
 Routed to Pond 21P : J3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 625.37' @ 12.23 hrs Surf.Area= 583 sf Storage= 201 cf

Plug-Flow detention time= 1.3 min calculated for 1.117 af (100% of inflow)
 Center-of-Mass det. time= 0.3 min (878.5 - 878.2)

Volume	Invert	Avail.Storage	Storage Description
#1	623.00'	855 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
623.00	19	0	0
624.00	38	29	29
625.00	68	53	82
626.00	1,478	773	855

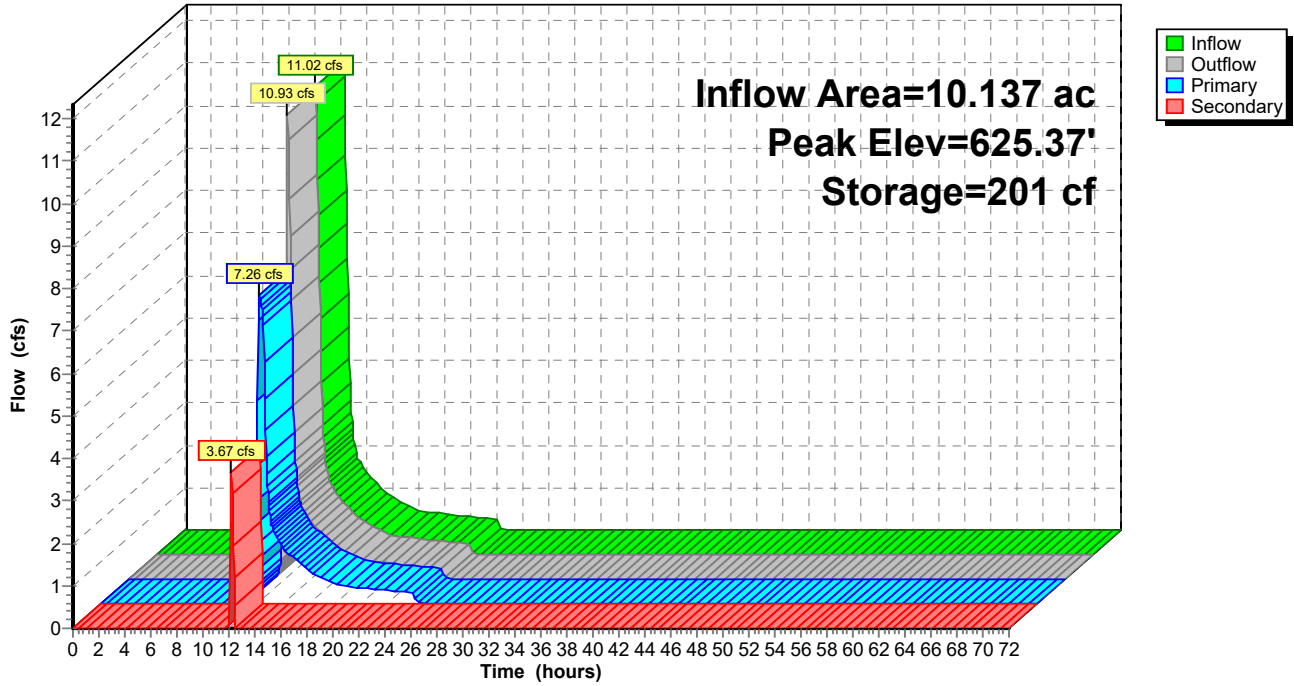
Device	Routing	Invert	Outlet Devices
#1	Primary	623.23'	15.0" Round Culvert L= 39.2' Ke= 0.500 Inlet / Outlet Invert= 623.23' / 622.75' S= 0.0122 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	625.10'	10.0' long x 25.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=7.25 cfs @ 12.23 hrs HW=625.36' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 7.25 cfs @ 5.91 fps)

Secondary OutFlow Max=3.57 cfs @ 12.23 hrs HW=625.36' TW=621.94' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 3.57 cfs @ 1.37 fps)

Pond 22P: J1

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Summary for Pond 24P: J15

Inflow Area = 2.181 ac, 41.79% Impervious, Inflow Depth = 2.61" for 10-yr event
 Inflow = 4.89 cfs @ 12.07 hrs, Volume= 0.474 af
 Outflow = 4.89 cfs @ 12.07 hrs, Volume= 0.474 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.89 cfs @ 12.07 hrs, Volume= 0.474 af
 Routed to Pond 27P : J22
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 27P : J22

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 595.87' @ 12.07 hrs
 Flood Elev= 598.30'

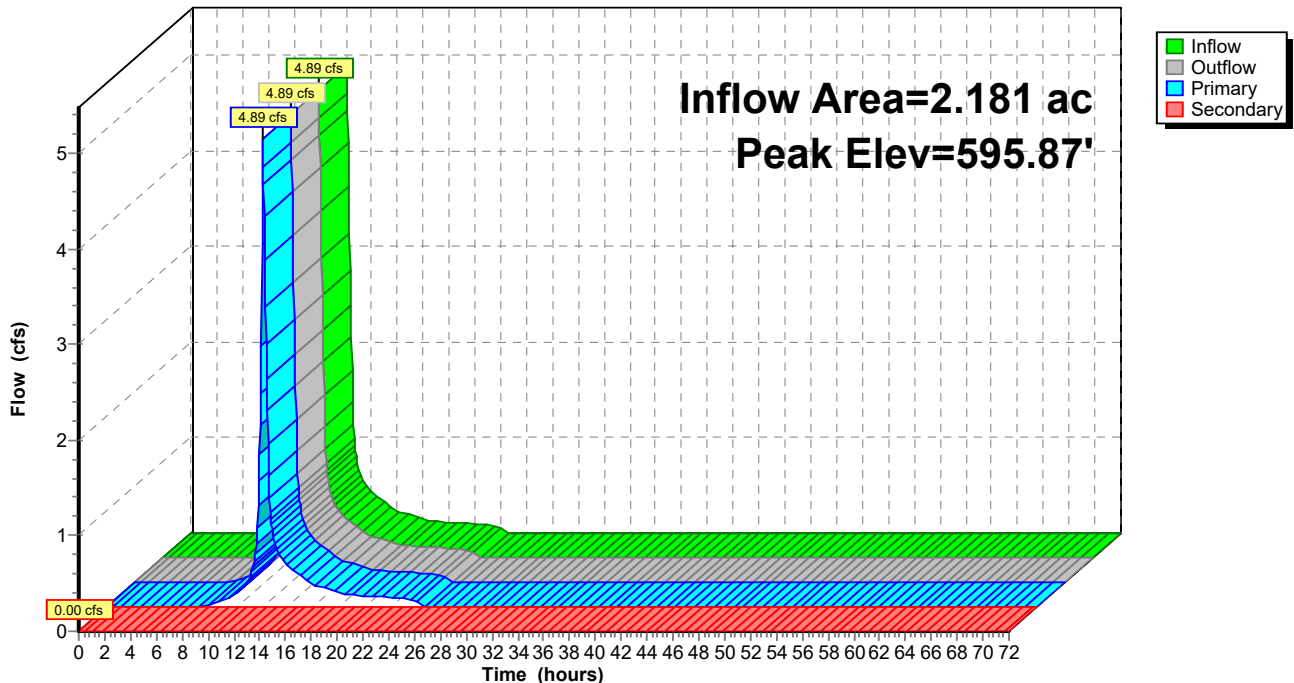
Device	Routing	Invert	Outlet Devices
#1	Primary	593.70'	12.0" Round Culvert L= 240.0' Ke= 0.500 Inlet / Outlet Invert= 593.70' / 569.82' S= 0.0995 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	598.30'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.76 cfs @ 12.07 hrs HW=595.78' TW=571.39' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 4.76 cfs @ 6.06 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=593.70' TW=569.62' (Dynamic Tailwater)
 ↳2=Orifice/Grate (Controls 0.00 cfs)

Pond 24P: J15

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Summary for Pond 25P: J14

[58] Hint: Peaked 0.08' above defined flood level

Inflow Area = 1.924 ac, 40.69% Impervious, Inflow Depth = 2.73" for 10-yr event
 Inflow = 4.42 cfs @ 12.07 hrs, Volume= 0.438 af
 Outflow = 4.42 cfs @ 12.07 hrs, Volume= 0.438 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.73 cfs @ 12.05 hrs, Volume= 0.430 af
 Routed to Pond 24P : J15
 Secondary = 0.65 cfs @ 12.07 hrs, Volume= 0.007 af
 Routed to Pond 24P : J15

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 614.44' @ 12.05 hrs
 Flood Elev= 614.36'

Device	Routing	Invert	Outlet Devices
#1	Primary	611.36'	12.0" Round Culvert L= 460.0' Ke= 0.500 Inlet / Outlet Invert= 611.36' / 593.70' S= 0.0384 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	614.36'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.67 cfs @ 12.05 hrs HW=614.44' TW=595.83' (Dynamic Tailwater)
 ↑1=Culvert (Outlet Controls 3.67 cfs @ 4.67 fps)

Secondary OutFlow Max=0.58 cfs @ 12.07 hrs HW=614.44' TW=595.76' (Dynamic Tailwater)
 ↑2=Orifice/Grate (Weir Controls 0.58 cfs @ 0.95 fps)

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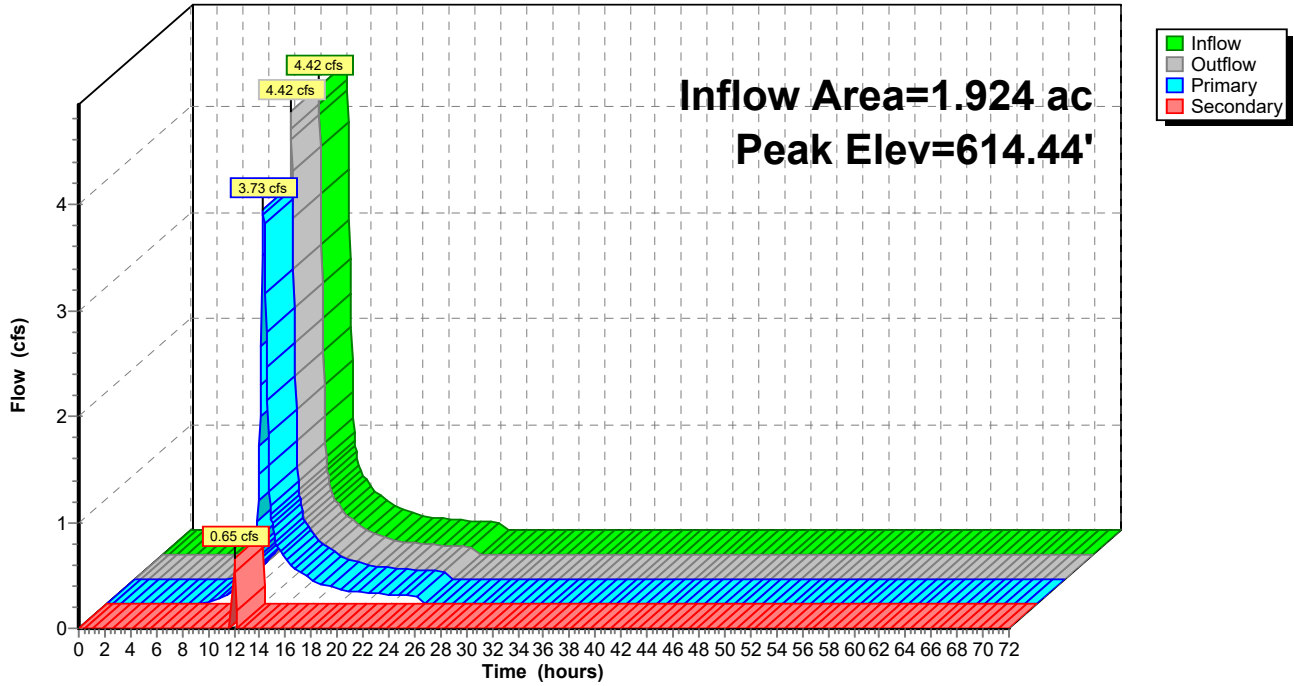
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Pond 25P: J14

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Summary for Pond 26P: J13

[58] Hint: Peaked 0.26' above defined flood level

Inflow Area = 1.471 ac, 41.74% Impervious, Inflow Depth = 3.00" for 10-yr event
 Inflow = 4.87 cfs @ 12.10 hrs, Volume= 0.367 af
 Outflow = 4.87 cfs @ 12.10 hrs, Volume= 0.367 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.50 cfs @ 12.06 hrs, Volume= 0.352 af
 Routed to Pond 25P : J14
 Secondary = 1.73 cfs @ 12.11 hrs, Volume= 0.016 af
 Routed to Pond 28P : J16

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 615.51' @ 12.11 hrs
 Flood Elev= 615.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	614.00'	12.0" Round Culvert L= 23.0' Ke= 0.500 Inlet / Outlet Invert= 614.00' / 611.86' S= 0.0930 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	615.20'	4.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=2.98 cfs @ 12.06 hrs HW=615.38' TW=614.44' (Dynamic Tailwater)
 ↑1=Culvert (Outlet Controls 2.98 cfs @ 3.80 fps)

Secondary OutFlow Max=1.60 cfs @ 12.11 hrs HW=615.49' TW=578.90' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir(Weir Controls 1.60 cfs @ 1.38 fps)

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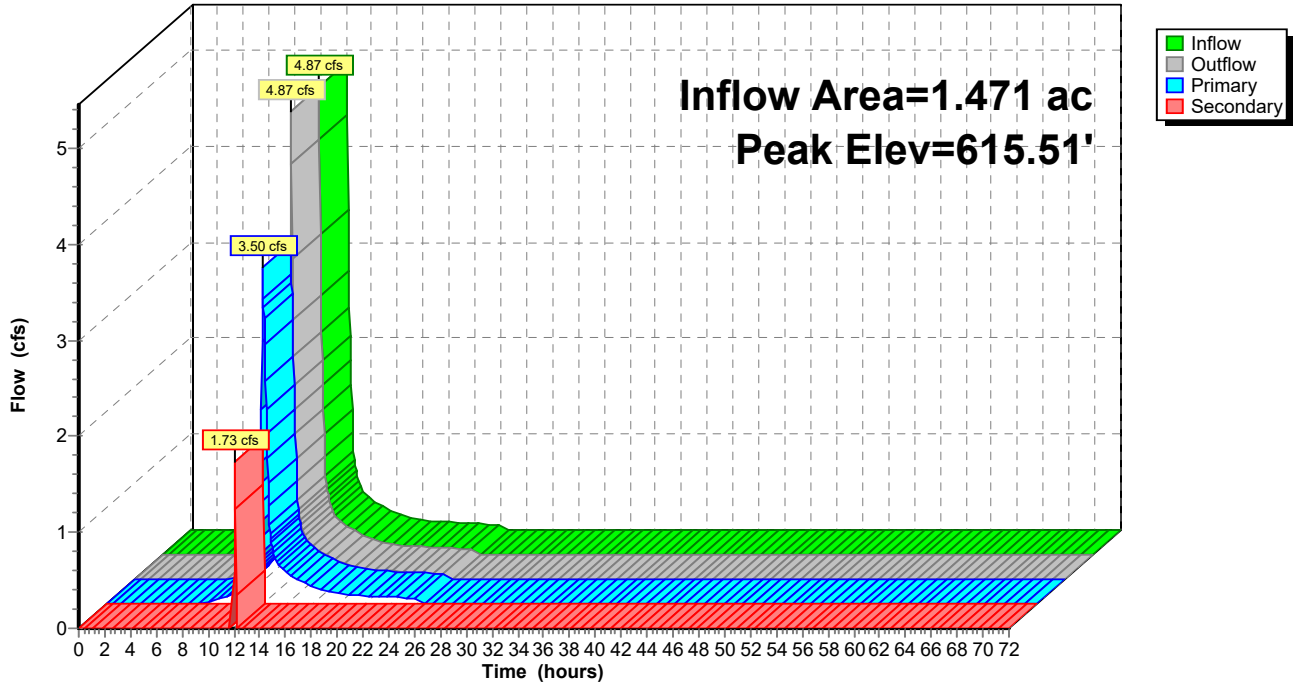
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Pond 26P: J13

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Summary for Pond 27P: J22

[58] Hint: Peaked 0.17' above defined flood level

Inflow Area = 18.241 ac, 8.59% Impervious, Inflow Depth = 1.02" for 10-yr event
 Inflow = 11.97 cfs @ 12.28 hrs, Volume= 1.550 af
 Outflow = 11.97 cfs @ 12.28 hrs, Volume= 1.550 af, Atten= 0%, Lag= 0.0 min
 Primary = 10.31 cfs @ 12.28 hrs, Volume= 1.533 af
 Routed to Link 33L : DP-4 To 116
 Secondary = 1.66 cfs @ 12.28 hrs, Volume= 0.017 af
 Routed to Link 33L : DP-4 To 116

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 573.29' @ 12.28 hrs
 Flood Elev= 573.12'

Device	Routing	Invert	Outlet Devices
#1	Primary	569.62'	15.0" Round Culvert L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 569.62' / 567.62' S= 0.0500 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	573.12'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=10.29 cfs @ 12.28 hrs HW=573.28' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 10.29 cfs @ 8.39 fps)

Secondary OutFlow Max=1.53 cfs @ 12.28 hrs HW=573.28' TW=0.00' (Dynamic Tailwater)
 ↑2=Orifice/Grate (Weir Controls 1.53 cfs @ 1.31 fps)

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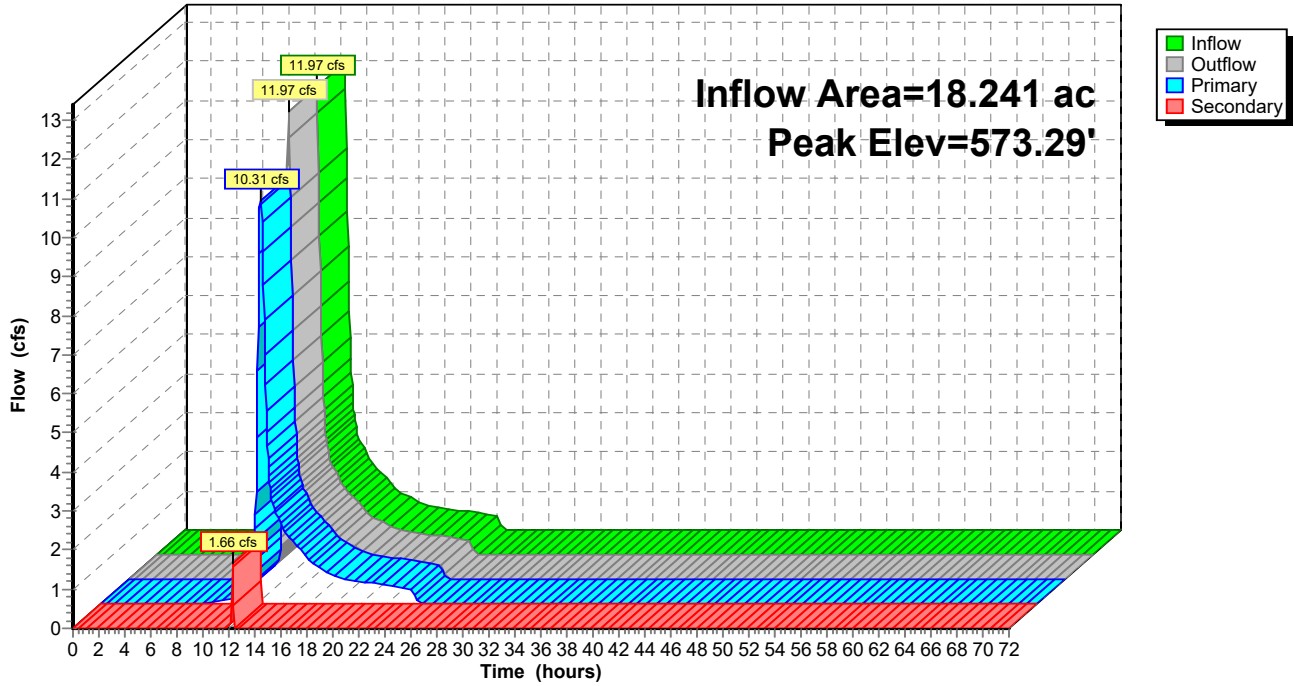
Type III 24-hr 10-yr Rainfall=4.70"

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Pond 27P: J22

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Summary for Pond 28P: J16

[58] Hint: Peaked 0.76' above defined flood level

Inflow Area = 1.341 ac, 35.42% Impervious, Inflow Depth = 2.95" for 10-yr event
 Inflow = 4.90 cfs @ 12.13 hrs, Volume= 0.330 af
 Outflow = 4.90 cfs @ 12.13 hrs, Volume= 0.330 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.25 cfs @ 12.13 hrs, Volume= 0.326 af
 Routed to Link 30L : DP-5 to town property
 Secondary = 0.65 cfs @ 12.13 hrs, Volume= 0.005 af
 Routed to Link 30L : DP-5 to town property

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 578.93' @ 12.13 hrs
 Flood Elev= 578.17'

Device	Routing	Invert	Outlet Devices
#1	Primary	577.17'	12.0" Round Culvert L= 33.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 577.17' / 571.01' S= 0.1867 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	578.75'	4.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=4.20 cfs @ 12.13 hrs HW=578.90' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 4.20 cfs @ 5.35 fps)

Secondary OutFlow Max=0.57 cfs @ 12.13 hrs HW=578.90' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 0.57 cfs @ 0.93 fps)

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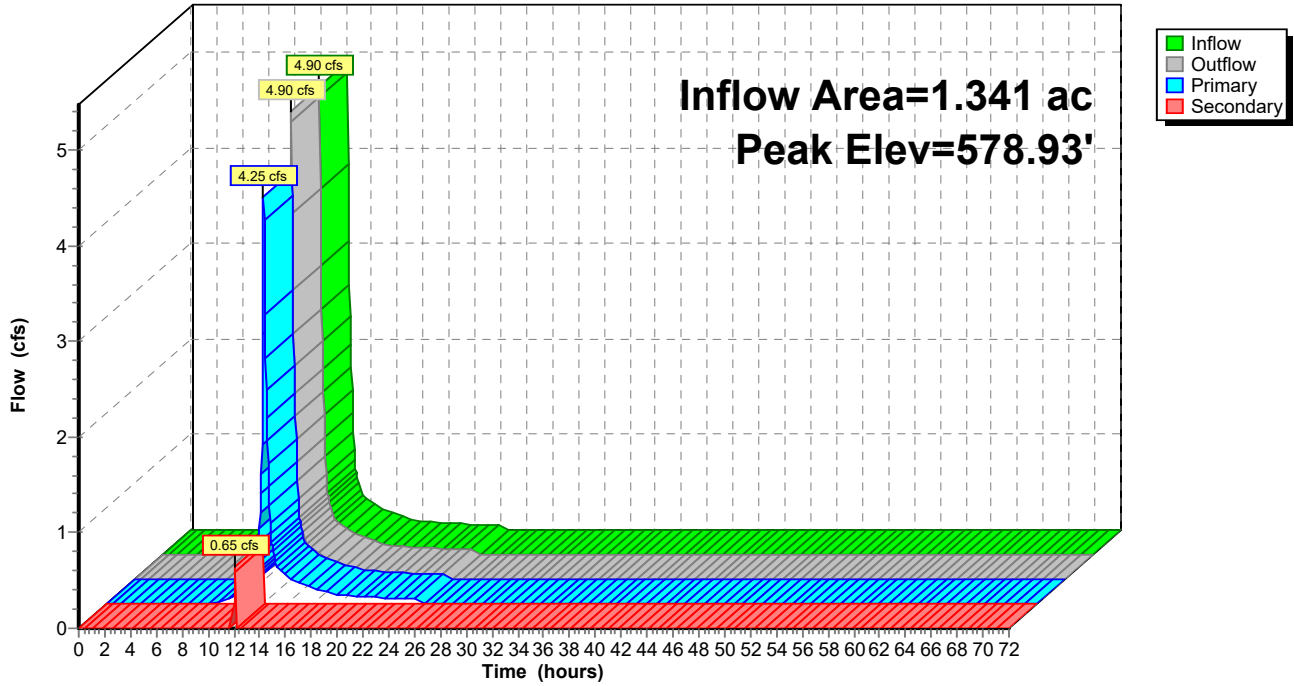
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Pond 28P: J16

Hydrograph



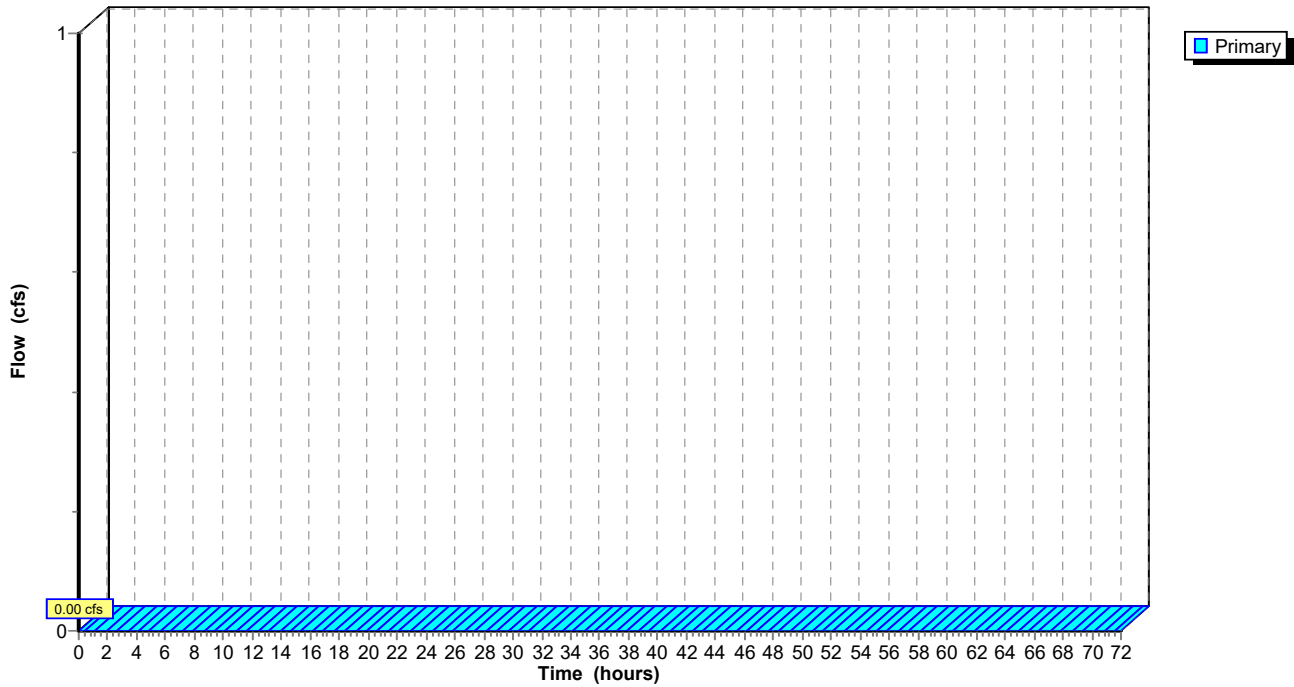
Summary for Pond 31P: J23

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

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

Pond 31P: J23

Hydrograph



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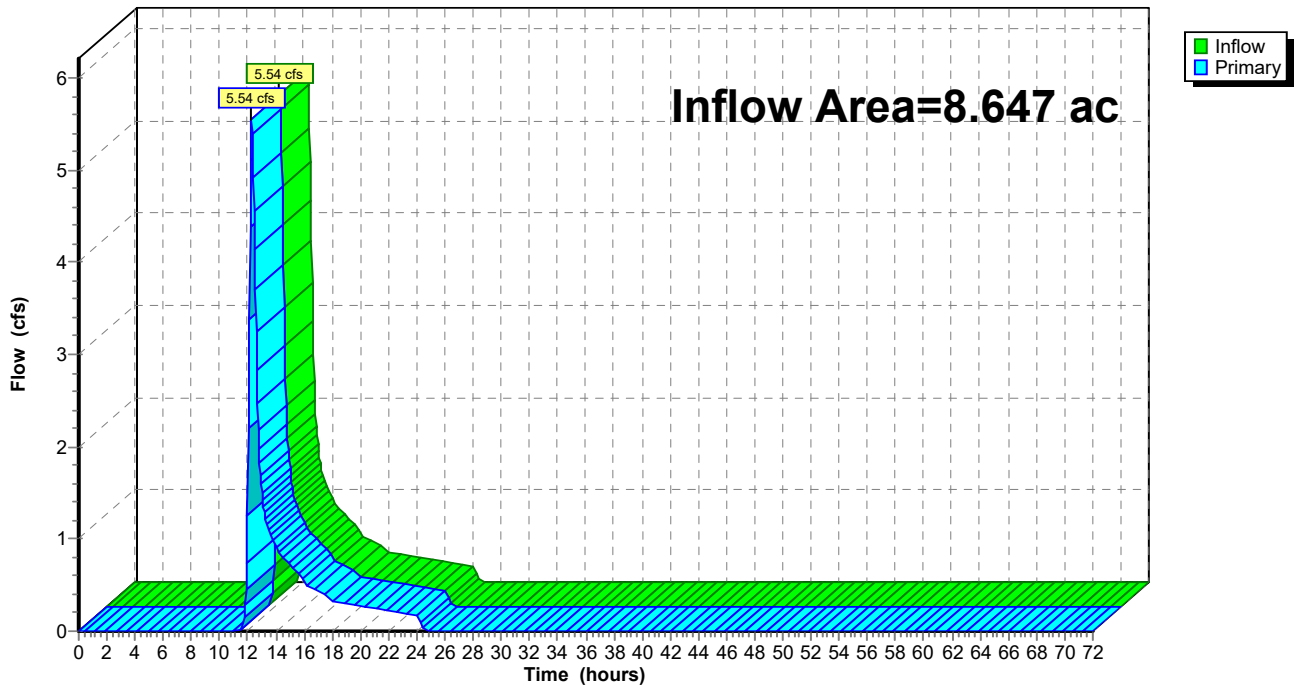
Summary for Link 16L: DP-1 EXISTING OUTLET TO UNDER 116

Inflow Area = 8.647 ac, 7.90% Impervious, Inflow Depth = 0.97" for 10-yr event
Inflow = 5.54 cfs @ 12.28 hrs, Volume= 0.702 af
Primary = 5.54 cfs @ 12.28 hrs, Volume= 0.702 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 16L: DP-1 EXISTING OUTLET TO UNDER 116

Hydrograph



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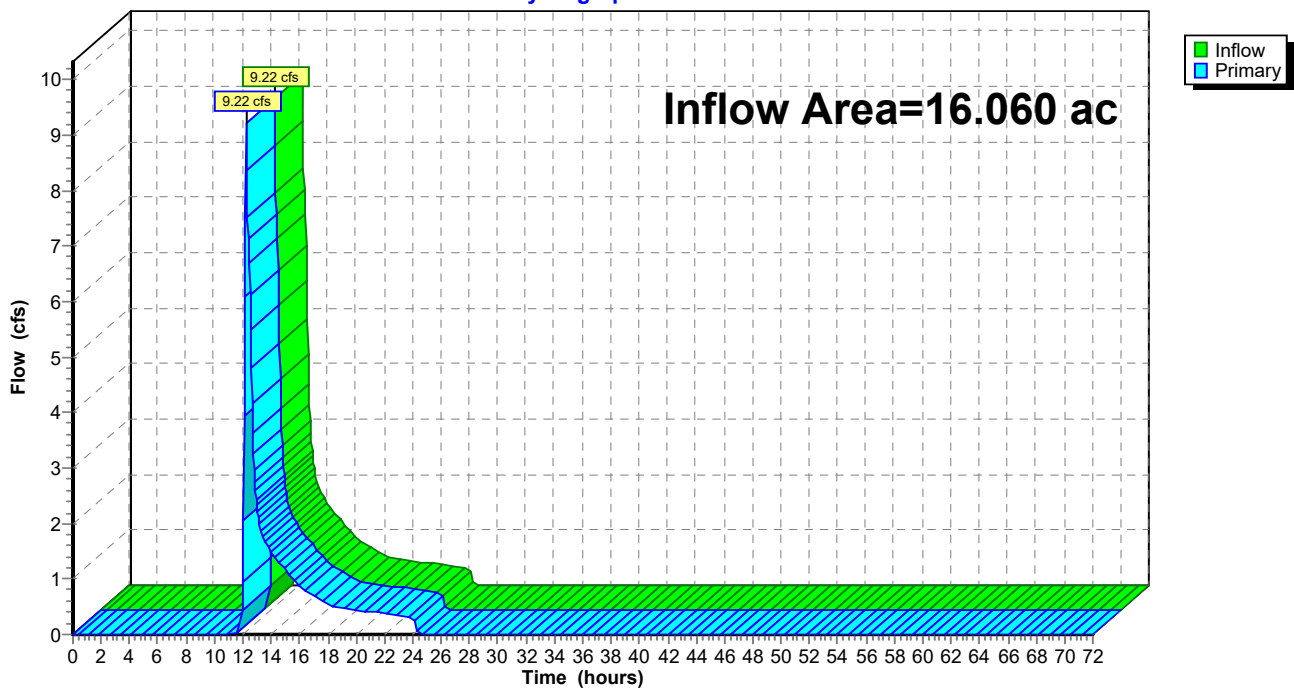
Summary for Link 19L: Behind houses

Inflow Area = 16.060 ac, 4.08% Impervious, Inflow Depth = 0.80" for 10-yr event
Inflow = 9.22 cfs @ 12.26 hrs, Volume= 1.076 af
Primary = 9.22 cfs @ 12.26 hrs, Volume= 1.076 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 32R : Wetland swale

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 19L: Behind houses

Hydrograph



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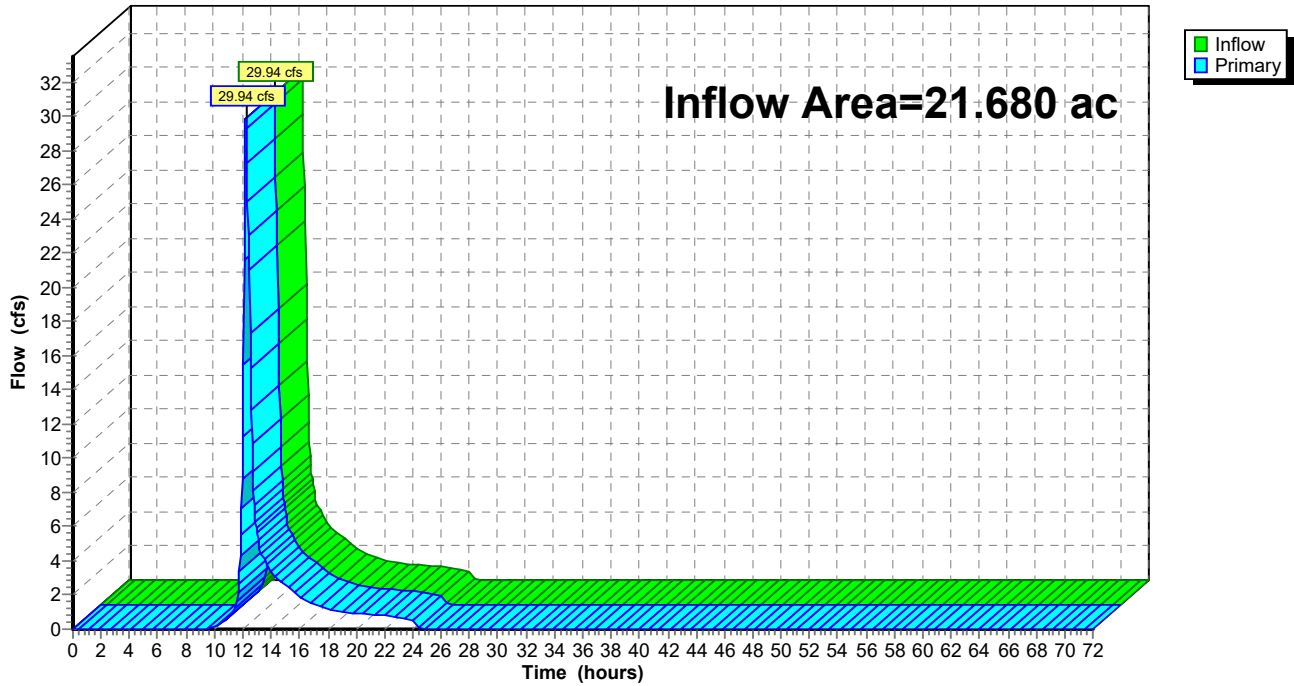
Summary for Link 23L: DP- 6 NORTH TO 10 PINE HILL RD

Inflow Area = 21.680 ac, 4.41% Impervious, Inflow Depth = 1.70" for 10-yr event
Inflow = 29.94 cfs @ 12.22 hrs, Volume= 3.066 af
Primary = 29.94 cfs @ 12.22 hrs, Volume= 3.066 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 23L: DP- 6 NORTH TO 10 PINE HILL RD

Hydrograph



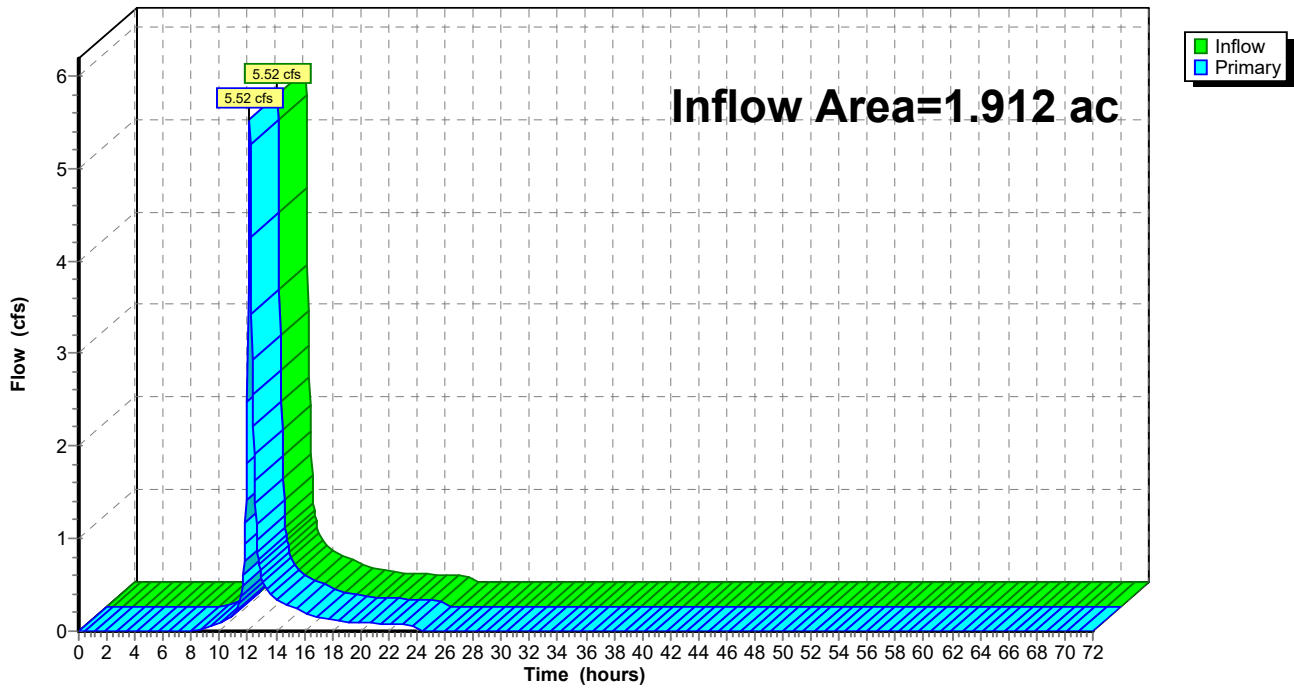
Summary for Link 30L: DP-5 to town property

Inflow Area = 1.912 ac, 31.44% Impervious, Inflow Depth = 2.47" for 10-yr event
Inflow = 5.52 cfs @ 12.12 hrs, Volume= 0.393 af
Primary = 5.52 cfs @ 12.12 hrs, Volume= 0.393 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 30L: DP-5 to town property

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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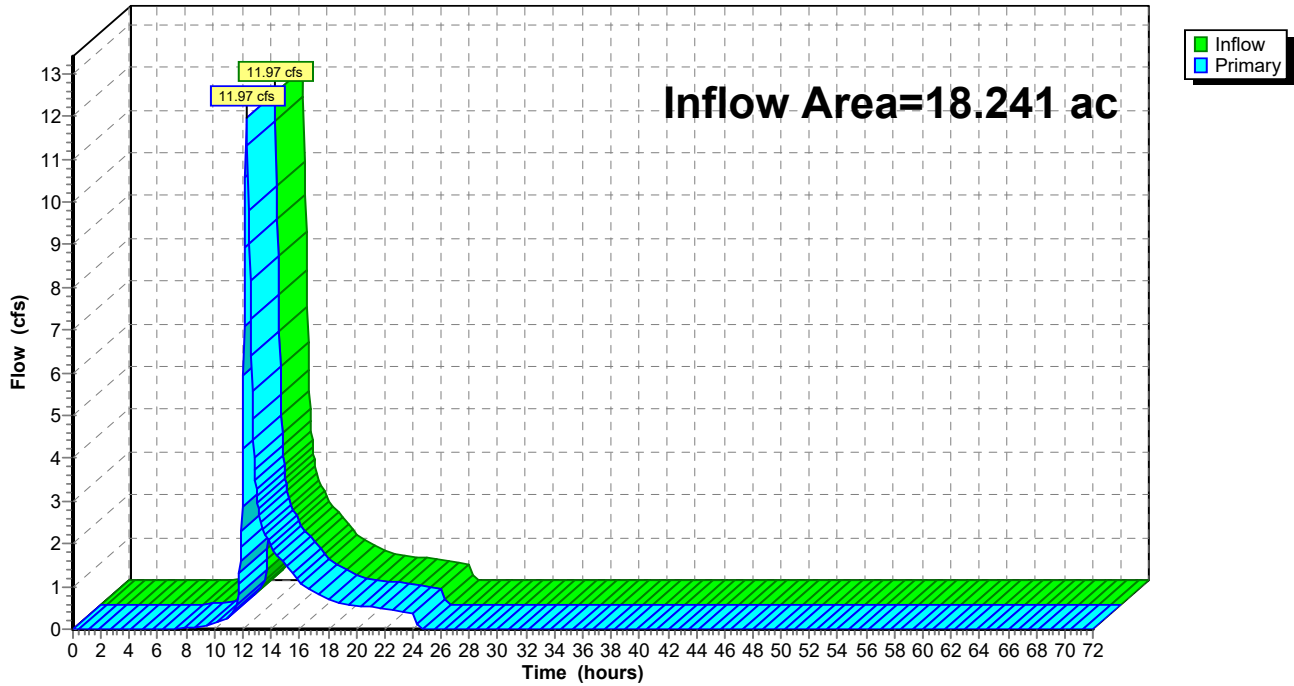
Summary for Link 33L: DP-4 To 116

Inflow Area = 18.241 ac, 8.59% Impervious, Inflow Depth = 1.02" for 10-yr event
Inflow = 11.97 cfs @ 12.28 hrs, Volume= 1.550 af
Primary = 11.97 cfs @ 12.28 hrs, Volume= 1.550 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 33L: DP-4 To 116

Hydrograph



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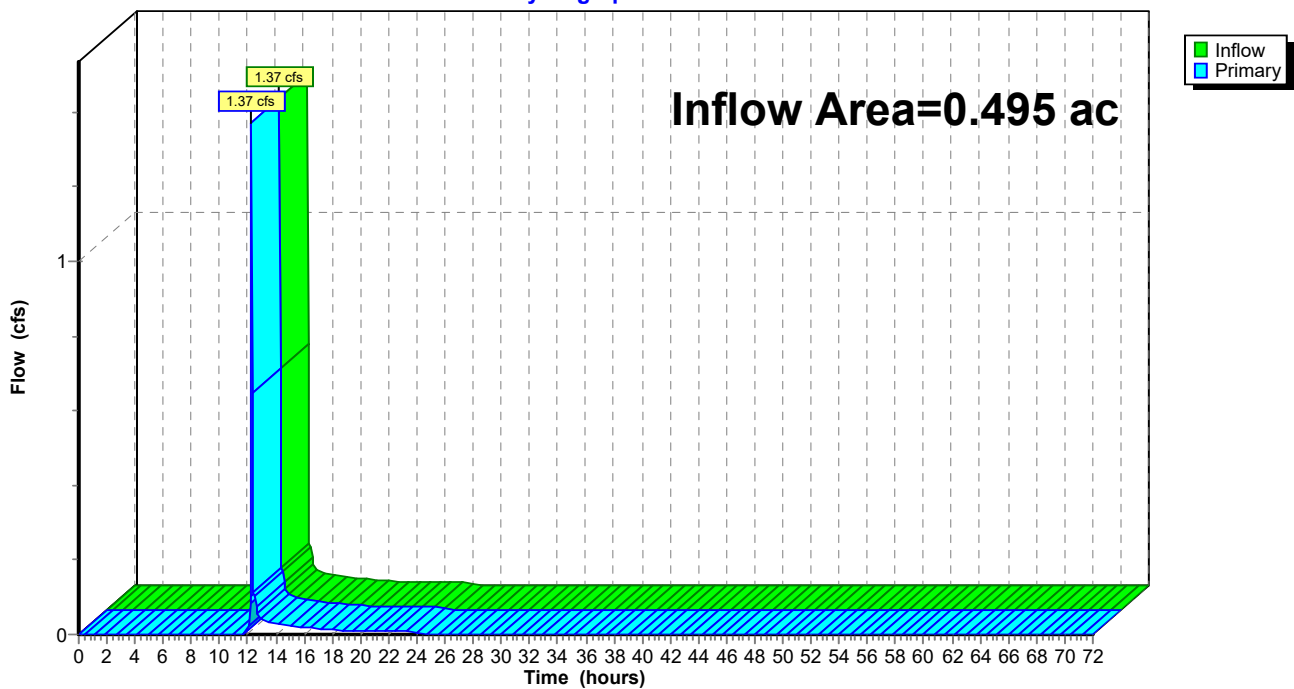
Summary for Link 34L: DP-3 51 Baptist Hill Rd Property

Inflow Area = 0.495 ac, 15.01% Impervious, Inflow Depth = 0.66" for 10-yr event
Inflow = 1.37 cfs @ 12.26 hrs, Volume= 0.027 af
Primary = 1.37 cfs @ 12.26 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : Behind houses

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 34L: DP-3 51 Baptist Hill Rd Property

Hydrograph



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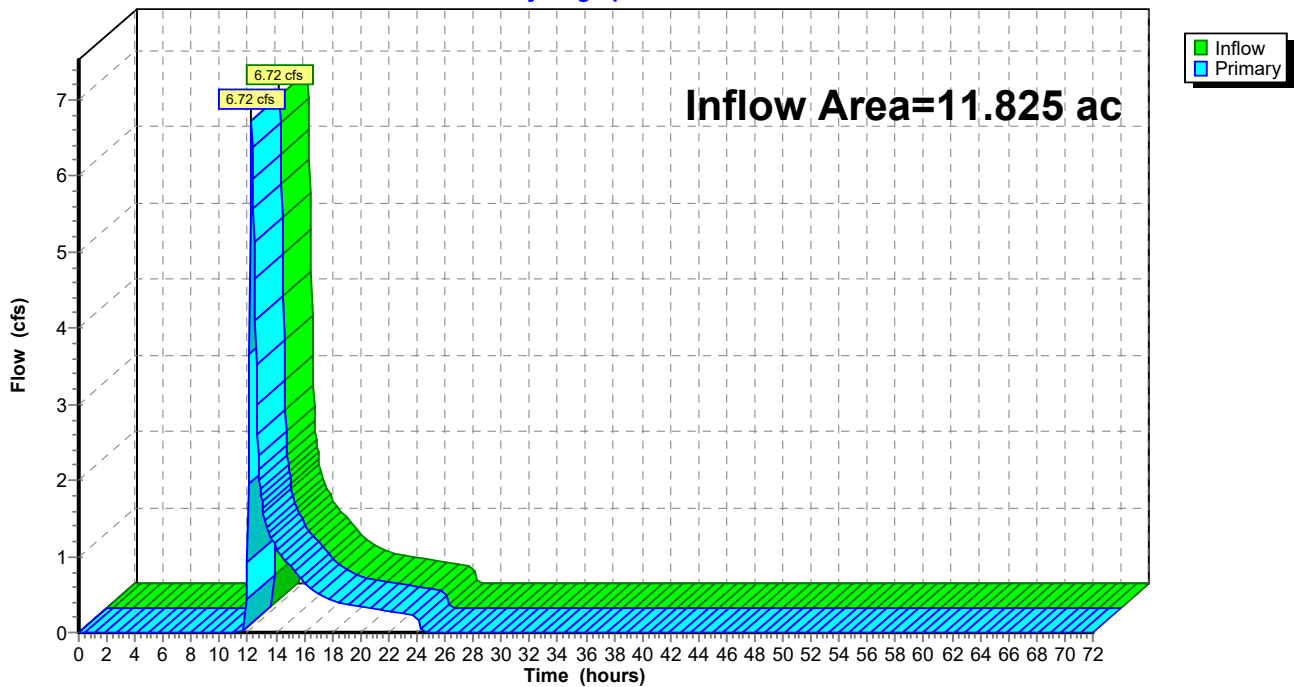
Summary for Link 35L: DP-2 Along 45 Upper Baptist

Inflow Area = 11.825 ac, 1.39% Impervious, Inflow Depth = 0.83" for 10-yr event
Inflow = 6.72 cfs @ 12.24 hrs, Volume= 0.822 af
Primary = 6.72 cfs @ 12.24 hrs, Volume= 0.822 af, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : Behind houses

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 35L: DP-2 Along 45 Upper Baptist

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1E: EX 1	Runoff Area=324,117 sf 3.47% Impervious Runoff Depth=1.51" Flow Length=1,253' Tc=17.3 min CN=57 Runoff=8.37 cfs 0.935 af
Subcatchment2E: EX 2	Runoff Area=52,537 sf 35.20% Impervious Runoff Depth=1.74" Flow Length=472' Tc=6.7 min CN=60 Runoff=2.22 cfs 0.175 af
Subcatchment3E: EX 3	Runoff Area=515,091 sf 1.39% Impervious Runoff Depth=1.36" Flow Length=1,106' Tc=13.6 min CN=55 Runoff=12.68 cfs 1.340 af
Subcatchment4E: EX 4	Runoff Area=441,577 sf 0.00% Impervious Runoff Depth=1.98" Flow Length=1,423' Tc=14.1 min CN=63 Runoff=17.33 cfs 1.675 af
Subcatchment5E: EX 5	Runoff Area=21,556 sf 15.01% Impervious Runoff Depth=0.88" Flow Length=368' Tc=9.8 min CN=48 Runoff=0.30 cfs 0.036 af
Subcatchment6E: EX 6	Runoff Area=11,369 sf 41.58% Impervious Runoff Depth=2.07" Flow Length=125' Tc=7.0 min CN=64 Runoff=0.58 cfs 0.045 af
Subcatchment7E: EX 7	Runoff Area=19,699 sf 37.25% Impervious Runoff Depth=3.14" Flow Length=211' Tc=8.3 min CN=76 Runoff=1.52 cfs 0.118 af
Subcatchment8E: EX 8	Runoff Area=64,091 sf 41.74% Impervious Runoff Depth=3.94" Flow Length=546' Tc=7.2 min CN=84 Runoff=6.35 cfs 0.482 af
Subcatchment9E: EX 9	Runoff Area=11,227 sf 49.99% Impervious Runoff Depth=2.41" Tc=1.2 min CN=68 Runoff=0.79 cfs 0.052 af
Subcatchment10E: EX 10	Runoff Area=162,915 sf 11.13% Impervious Runoff Depth=1.22" Flow Length=743' Tc=21.2 min CN=53 Runoff=2.90 cfs 0.379 af
Subcatchment11E: EX 11	Runoff Area=58,435 sf 35.42% Impervious Runoff Depth=3.73" Flow Length=803' Tc=12.1 min CN=82 Runoff=4.75 cfs 0.417 af
Subcatchment12E: EX 12	Runoff Area=24,870 sf 22.10% Impervious Runoff Depth=1.98" Tc=1.2 min CN=63 Runoff=1.40 cfs 0.094 af
Subcatchment13E: RX 13	Runoff Area=491,439 sf 7.52% Impervious Runoff Depth=2.86" Flow Length=1,700' Tc=14.7 min CN=73 Runoff=28.60 cfs 2.687 af
Reach 32R: Wetland swale	Avg. Flow Depth=1.64' Max Vel=2.06 fps Inflow=22.86 cfs 1.892 af n=0.100 L=230.0' S=0.0261 '/' Capacity=110.96 cfs Outflow=22.10 cfs 1.892 af
Pond 14P: J12	Peak Elev=651.16' Inflow=8.37 cfs 0.935 af Primary=4.56 cfs 0.828 af Secondary=4.34 cfs 0.107 af Outflow=8.37 cfs 0.935 af
Pond 15P: J10	Peak Elev=643.06' Inflow=9.67 cfs 1.110 af Primary=9.67 cfs 1.110 af Secondary=0.00 cfs 0.000 af Outflow=9.67 cfs 1.110 af

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Pond 18P: J8	Peak Elev=631.62' Inflow=12.68 cfs 1.340 af Primary=9.73 cfs 1.302 af Secondary=2.94 cfs 0.038 af Outflow=12.68 cfs 1.340 af
Pond 20P: J6	Peak Elev=626.08' Inflow=3.23 cfs 0.074 af Primary=3.01 cfs 0.073 af Secondary=0.25 cfs 0.001 af Outflow=3.23 cfs 0.074 af
Pond 21P: J3	Peak Elev=622.27' Storage=420 cf Inflow=9.92 cfs 0.284 af Primary=2.62 cfs 0.147 af Secondary=7.70 cfs 0.137 af Outflow=10.32 cfs 0.285 af
Pond 22P: J1	Peak Elev=625.60' Storage=376 cf Inflow=17.33 cfs 1.675 af Primary=7.80 cfs 1.436 af Secondary=9.53 cfs 0.239 af Outflow=17.33 cfs 1.675 af
Pond 24P: J15	Peak Elev=596.20' Inflow=5.34 cfs 0.613 af Primary=5.34 cfs 0.613 af Secondary=0.00 cfs 0.000 af Outflow=5.34 cfs 0.613 af
Pond 25P: J14	Peak Elev=614.50' Inflow=4.85 cfs 0.561 af Primary=3.77 cfs 0.544 af Secondary=1.20 cfs 0.017 af Outflow=4.85 cfs 0.561 af
Pond 26P: J13	Peak Elev=615.64' Inflow=6.35 cfs 0.482 af Primary=3.36 cfs 0.443 af Secondary=3.01 cfs 0.040 af Outflow=6.35 cfs 0.482 af
Pond 27P: J22	Peak Elev=573.97' Inflow=26.30 cfs 2.505 af Primary=11.40 cfs 2.163 af Secondary=14.90 cfs 0.342 af Outflow=26.30 cfs 2.505 af
Pond 28P: J16	Peak Elev=579.16' Inflow=7.24 cfs 0.457 af Primary=4.61 cfs 0.425 af Secondary=2.63 cfs 0.031 af Outflow=7.24 cfs 0.457 af
Pond 31P: J23	Primary=0.00 cfs 0.000 af
Link 16L: DP-1 EXISTING OUTLET TO UNDER 116	Inflow=9.67 cfs 1.110 af Primary=9.67 cfs 1.110 af
Link 19L: Behind houses	Inflow=22.86 cfs 1.892 af Primary=22.86 cfs 1.892 af
Link 23L: DP- 6 NORTH TO 10 PINE HILL RD	Inflow=39.01 cfs 4.270 af Primary=39.01 cfs 4.270 af
Link 30L: DP-5 to town property	Inflow=8.11 cfs 0.551 af Primary=8.11 cfs 0.551 af
Link 33L: DP-4 To 116	Inflow=26.30 cfs 2.505 af Primary=26.30 cfs 2.505 af
Link 34L: DP-3 51 Baptist Hill Rd Property	Inflow=10.70 cfs 0.211 af Primary=10.70 cfs 0.211 af
Link 35L: DP-2 Along 45 Upper Baptist	Inflow=9.73 cfs 1.302 af Primary=9.73 cfs 1.302 af

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Total Runoff Area = 50.480 ac Runoff Volume = 8.436 af Average Runoff Depth = 2.01"
92.46% Pervious = 46.673 ac 7.54% Impervious = 3.808 ac

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Summary for Subcatchment 1E: EX 1

Runoff = 8.37 cfs @ 12.27 hrs, Volume= 0.935 af, Depth= 1.51"
 Routed to Pond 14P : J12

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr Rainfall=5.72"

Area (sf)	CN	Description
154,324	66	Woods, Poor, HSG B
* 27,768	45	Woods, Poor, HSG A
* 17,039	61	>75% Grass Cover, Good HSG B
* 64,387	39	>75% Grass Cover, Good HSG A
23,965	39	>75% Grass cover, Good, HSG A
25,373	61	>75% Grass cover, Good, HSG B
* 4,212	98	Impervious, HSG B
* 7,049	98	Impervious, HSG A
324,117	57	Weighted Average
312,856		96.53% Pervious Area
11,261		3.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.1800	0.18		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.07"
2.6	385	0.2442	2.47		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.7	293	0.3240	2.85		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.9	475	0.0821	2.01		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.3	1,253	Total			

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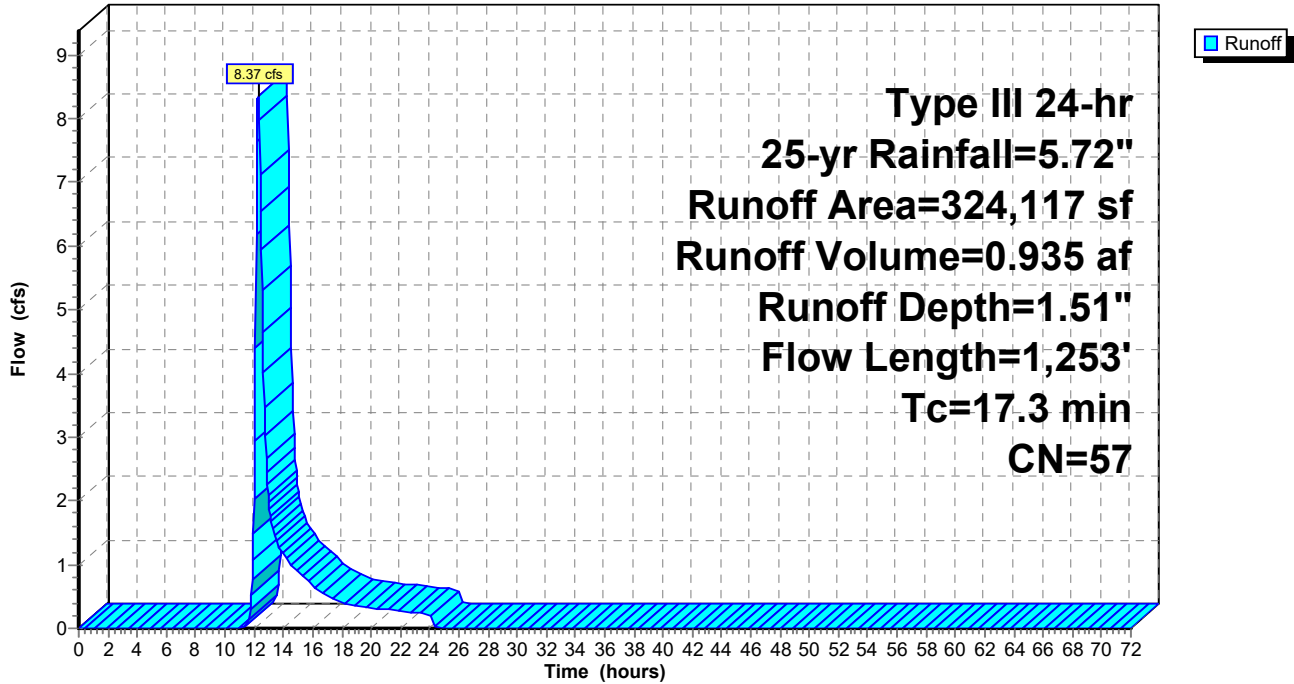
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Subcatchment 1E: EX 1

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Summary for Subcatchment 2E: EX 2

Runoff = 2.22 cfs @ 12.11 hrs, Volume= 0.175 af, Depth= 1.74"
 Routed to Pond 15P : J10

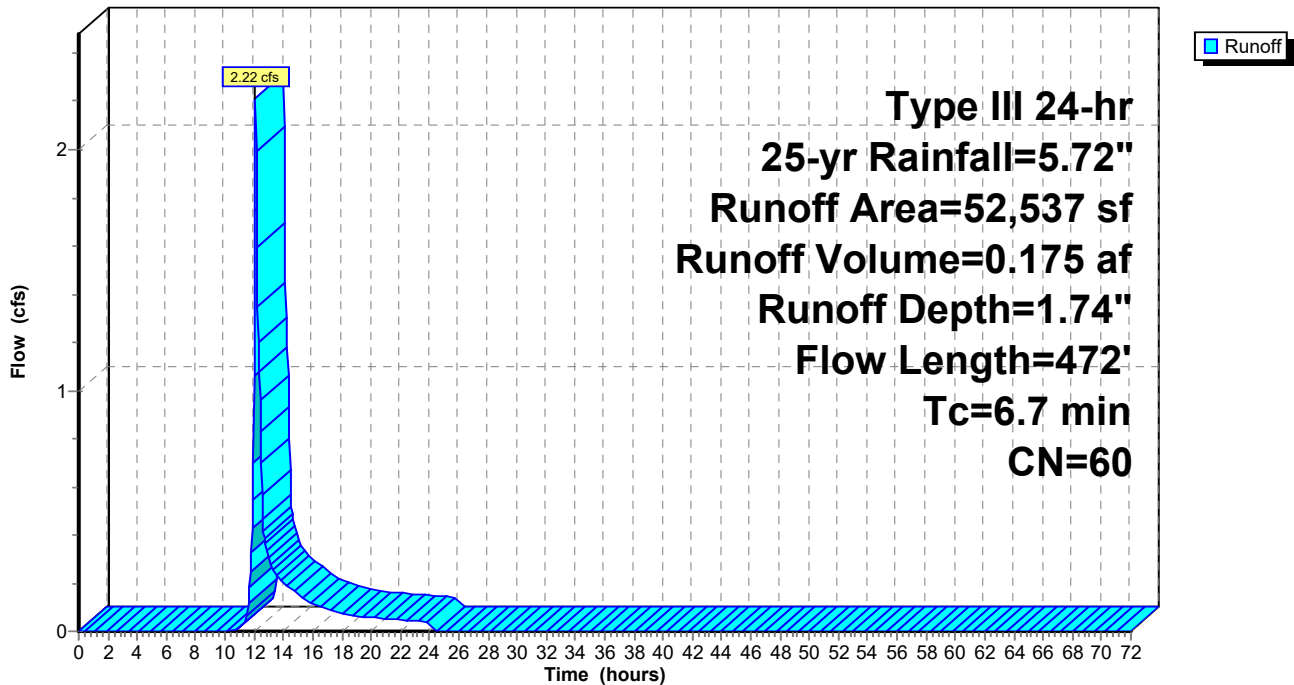
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr Rainfall=5.72"

	Area (sf)	CN	Description
*	18,495	98	Impervious, HSG A
	34,042	39	>75% Grass cover, Good, HSG A
	52,537	60	Weighted Average
	34,042		64.80% Pervious Area
	18,495		35.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0900	0.30		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
1.2	372	0.0661	5.22		Shallow Concentrated Flow, Paved Kv= 20.3 fps
6.7	472	Total			

Subcatchment 2E: EX 2

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Summary for Subcatchment 3E: EX 3

Runoff = 12.68 cfs @ 12.22 hrs, Volume= 1.340 af, Depth= 1.36"
 Routed to Pond 18P : J8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr Rainfall=5.72"

Area (sf)	CN	Description
152,788	66	Woods, Poor, HSG B
83,867	39	>75% Grass cover, Good, HSG A
* 7,162	98	impervious, HSG A
29,740	45	Woods, Poor, HSG A
78,775	66	Woods, Poor, HSG B
81,473	45	Woods, Poor, HSG A
81,286	49	50-75% Grass cover, Fair, HSG A
515,091	55	Weighted Average
507,929		98.61% Pervious Area
7,162		1.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	100	0.3100	0.23		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.07"
1.4	214	0.2520	2.51		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.5	120	0.6500	4.03		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.3	212	0.2920	2.70		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.1	460	0.0739	2.45		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
13.6	1,106	Total			

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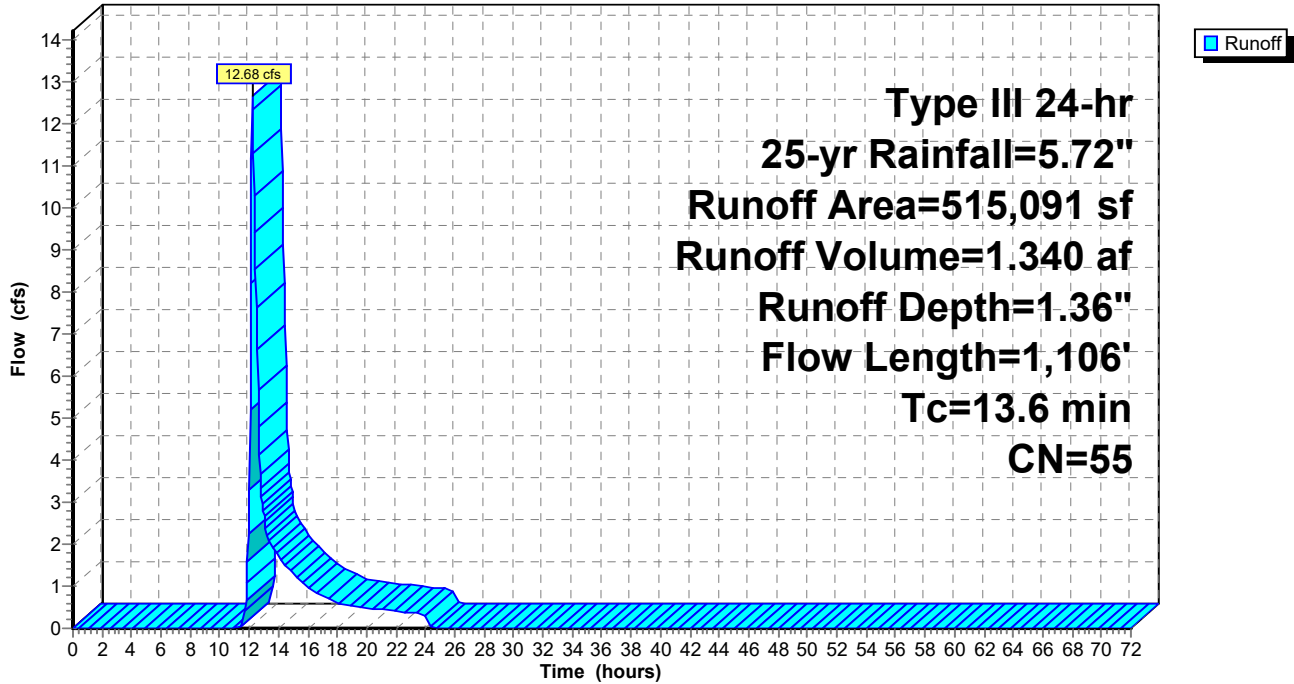
Type III 24-hr 25-yr Rainfall=5.72"

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Subcatchment 3E: EX 3

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Summary for Subcatchment 4E: EX 4

Runoff = 17.33 cfs @ 12.21 hrs, Volume= 1.675 af, Depth= 1.98"
 Routed to Pond 22P : J1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr Rainfall=5.72"

Area (sf)	CN	Description
186,589	66	Woods, Poor, HSG B
11,967	45	Woods, Poor, HSG A
104,358	77	Woods, Poor, HSG C
43,979	61	>75% Grass cover, Good, HSG B
10,084	74	>75% Grass cover, Good, HSG C
84,600	39	>75% Grass cover, Good, HSG A
441,577	63	Weighted Average
441,577		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	100	0.1900	0.41		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
1.5	199	0.1055	2.27		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.4	185	0.1946	2.21		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
4.1	619	0.2569	2.53		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.0	320	0.0656	1.79		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.1	1,423	Total			

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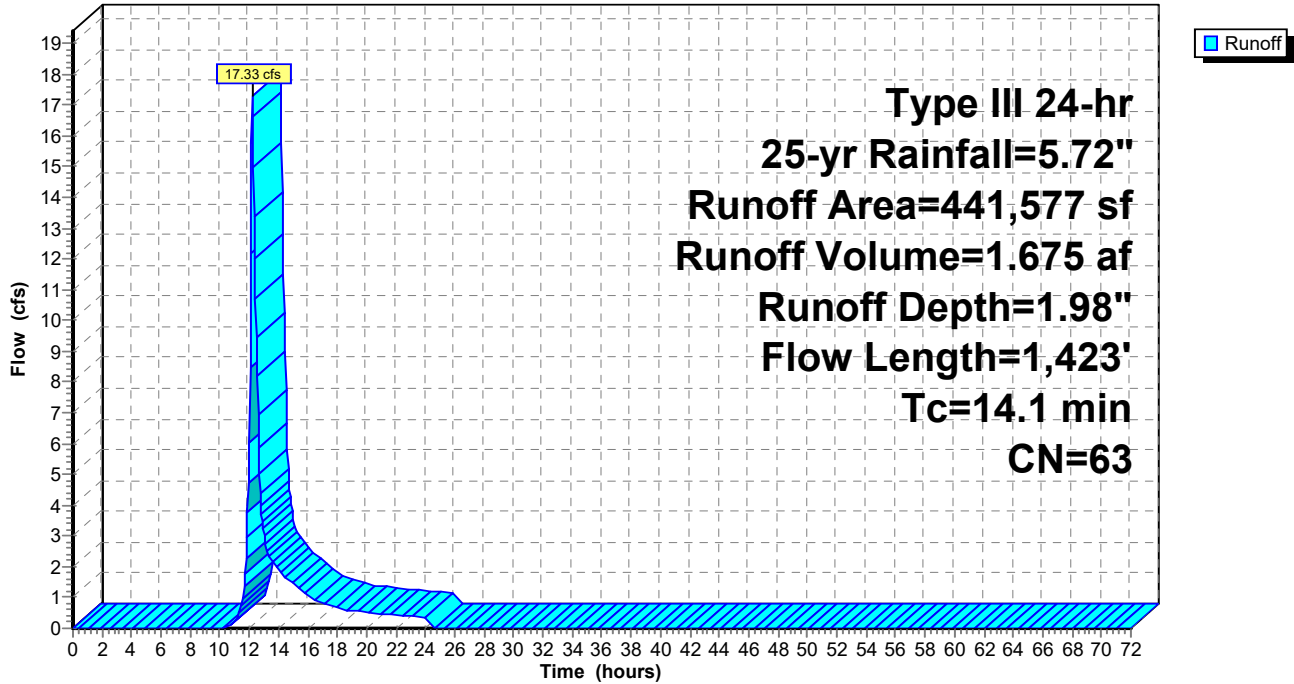
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Subcatchment 4E: EX 4

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Summary for Subcatchment 5E: EX 5

Runoff = 0.30 cfs @ 12.19 hrs, Volume= 0.036 af, Depth= 0.88"
 Routed to Pond 20P : J6

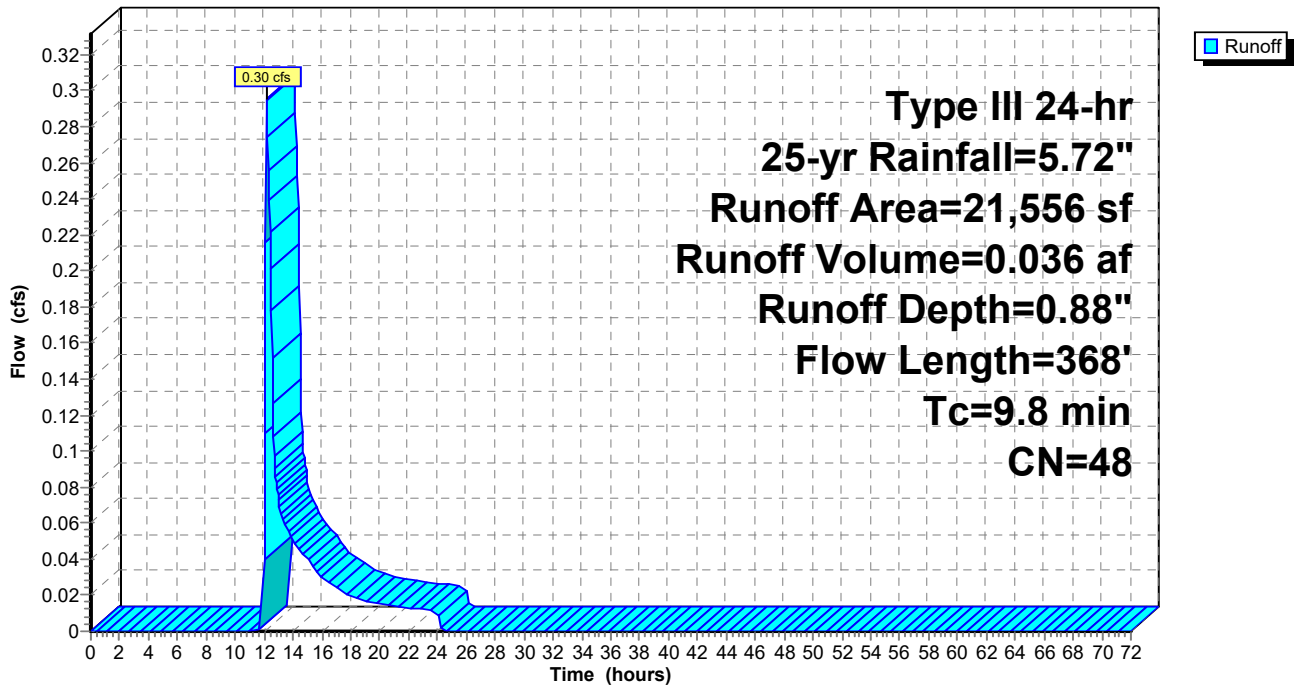
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr Rainfall=5.72"

Area (sf)	CN	Description
3,236	98	impervious, HSG A
18,320	39	>75% Grass cover, Good, HSG A
21,556	48	Weighted Average
18,320		84.99% Pervious Area
3,236		15.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	100	0.0400	0.20		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.07"
1.4	268	0.0261	3.28		Shallow Concentrated Flow, Paved Kv= 20.3 fps
9.8	368	Total			

Subcatchment 5E: EX 5

Hydrograph



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Summary for Subcatchment 6E: EX 6

Runoff = 0.58 cfs @ 12.11 hrs, Volume= 0.045 af, Depth= 2.07"
 Routed to Pond 21P : J3

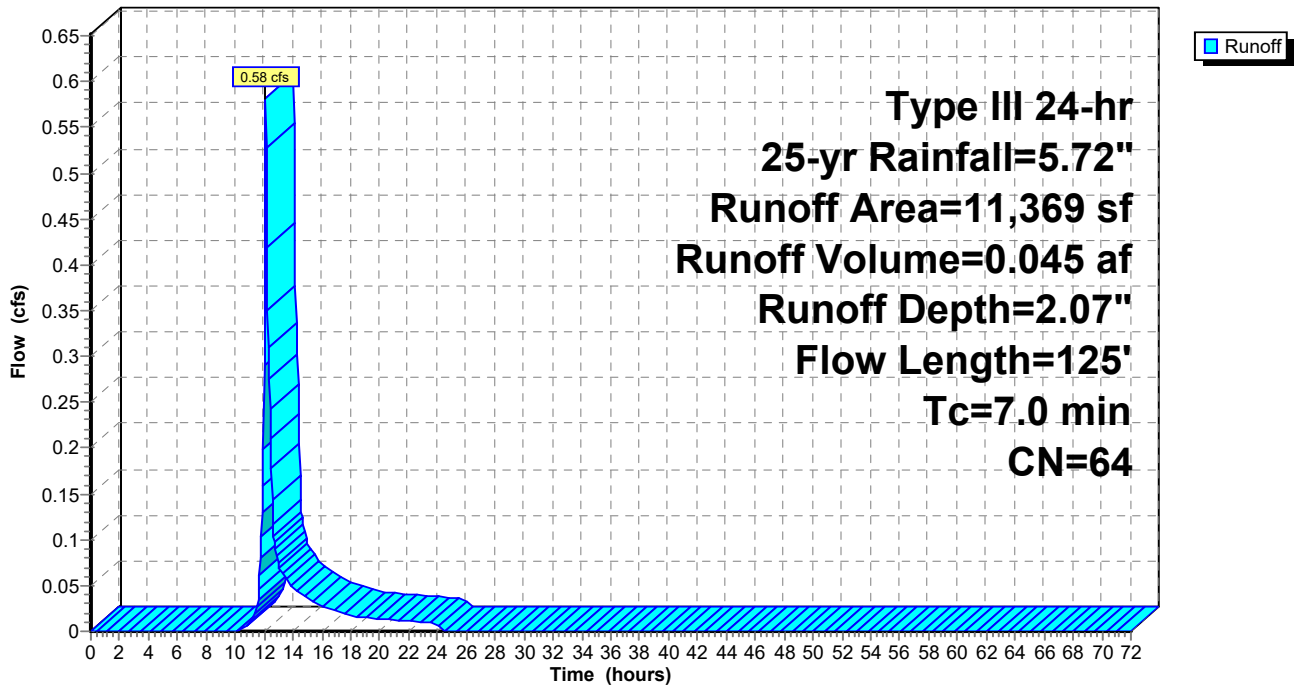
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr Rainfall=5.72"

Area (sf)	CN	Description
6,642	39	>75% Grass cover, Good, HSG A
* 4,727	98	Impervious, HSG A
11,369	64	Weighted Average
6,642		58.42% Pervious Area
4,727		41.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	100	0.0500	0.24		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
0.1	25	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.0	125	Total			

Subcatchment 6E: EX 6

Hydrograph



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Summary for Subcatchment 7E: EX 7

Runoff = 1.52 cfs @ 12.12 hrs, Volume= 0.118 af, Depth= 3.14"
 Routed to Pond 25P : J14

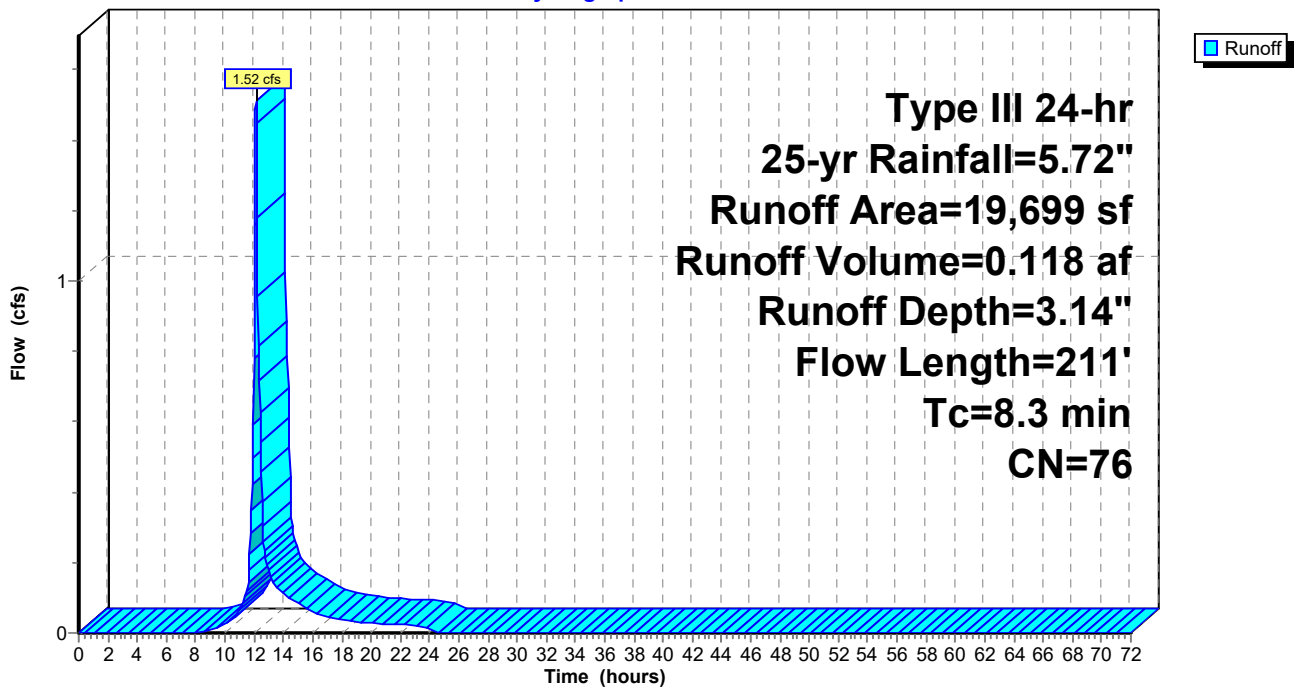
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr Rainfall=5.72"

	Area (sf)	CN	Description
*	6,358	98	Impervious, HSG C
*	980	98	Impervious, HSG A
	3,996	39	>75% Grass cover, Good, HSG A
	8,365	74	>75% Grass cover, Good, HSG C
	19,699	76	Weighted Average
	12,361		62.75% Pervious Area
	7,338		37.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	100	0.0400	0.22		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
0.7	111	0.0180	2.72		Shallow Concentrated Flow, Paved Kv= 20.3 fps
8.3	211	Total			

Subcatchment 7E: EX 7

Hydrograph



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Summary for Subcatchment 8E: EX 8

Runoff = 6.35 cfs @ 12.10 hrs, Volume= 0.482 af, Depth= 3.94"
 Routed to Pond 26P : J13

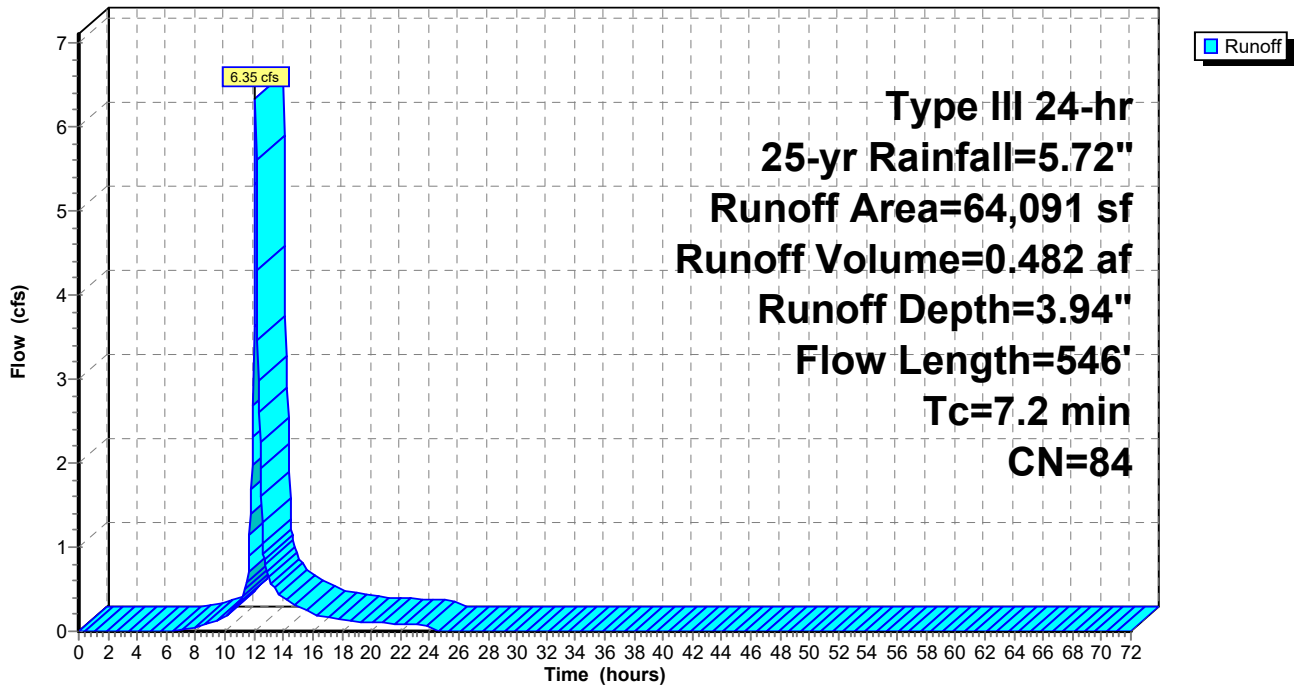
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr Rainfall=5.72"

	Area (sf)	CN	Description
*	26,754	98	Impervious, HSG C
	37,337	74	>75% Grass cover, Good, HSG C
	64,091	84	Weighted Average
	37,337		58.26% Pervious Area
	26,754		41.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0900	0.30		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
1.7	446	0.0471	4.41		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.2	546	Total			

Subcatchment 8E: EX 8

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Summary for Subcatchment 9E: EX 9

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.79 cfs @ 12.03 hrs, Volume= 0.052 af, Depth= 2.41"
 Routed to Pond 24P : J15

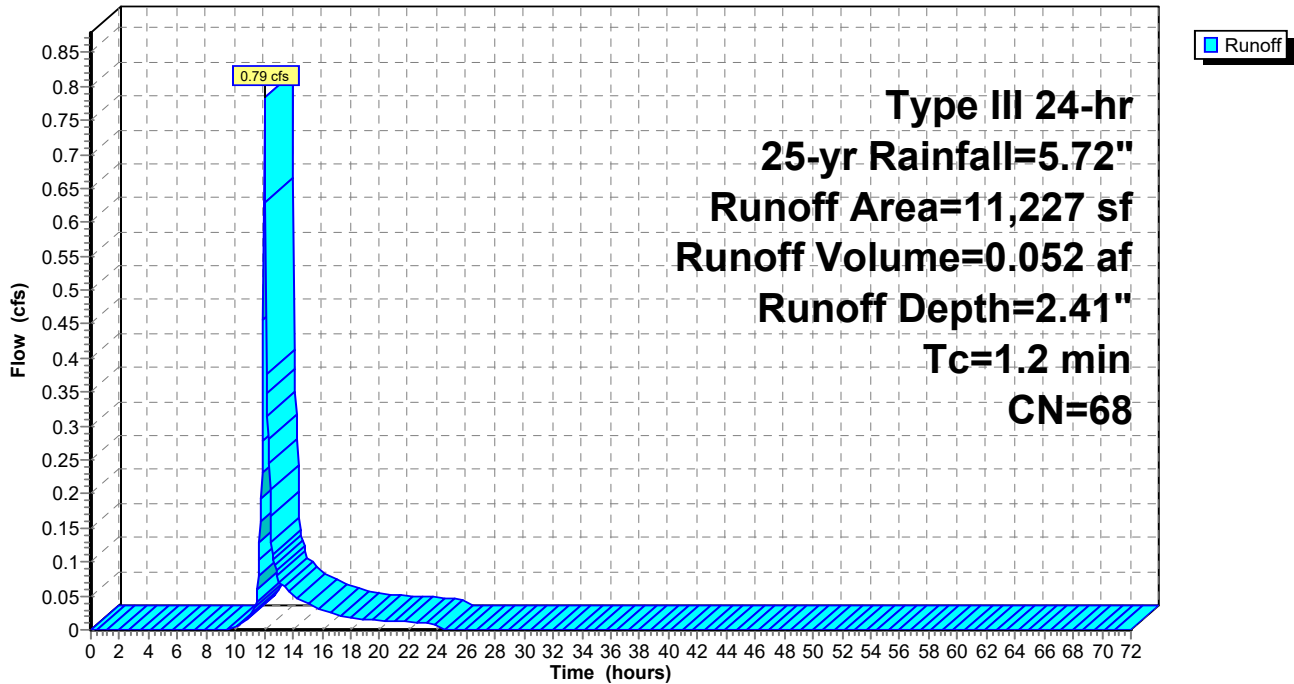
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr Rainfall=5.72"

	Area (sf)	CN	Description
*	5,612	98	Impervious, HSG A
	5,615	39	>75% Grass cover, Good, HSG A
	11,227	68	Weighted Average
	5,615		50.01% Pervious Area
	5,612		49.99% Impervious Area

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

Subcatchment 9E: EX 9

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Summary for Subcatchment 10E: EX 10

Runoff = 2.90 cfs @ 12.35 hrs, Volume= 0.379 af, Depth= 1.22"
 Routed to Link 19L : Behind houses

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr Rainfall=5.72"

Area (sf)	CN	Description
* 13,392	98	Impervious, HSG A
* 4,745	98	Impervious, HSG C
24,615	45	Woods, Poor, HSG A
7,646	66	Woods, Poor, HSG B
89,600	39	>75% Grass cover, Good, HSG A
22,005	74	>75% Grass cover, Good, HSG C
912	61	>75% Grass cover, Good, HSG B
162,915	53	Weighted Average
144,778		88.87% Pervious Area
18,137		11.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	100	0.0300	0.13		Sheet Flow, Grass: Dense n= 0.240 P2= 3.07"
8.8	643	0.0594	1.22		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
21.2	743	Total			

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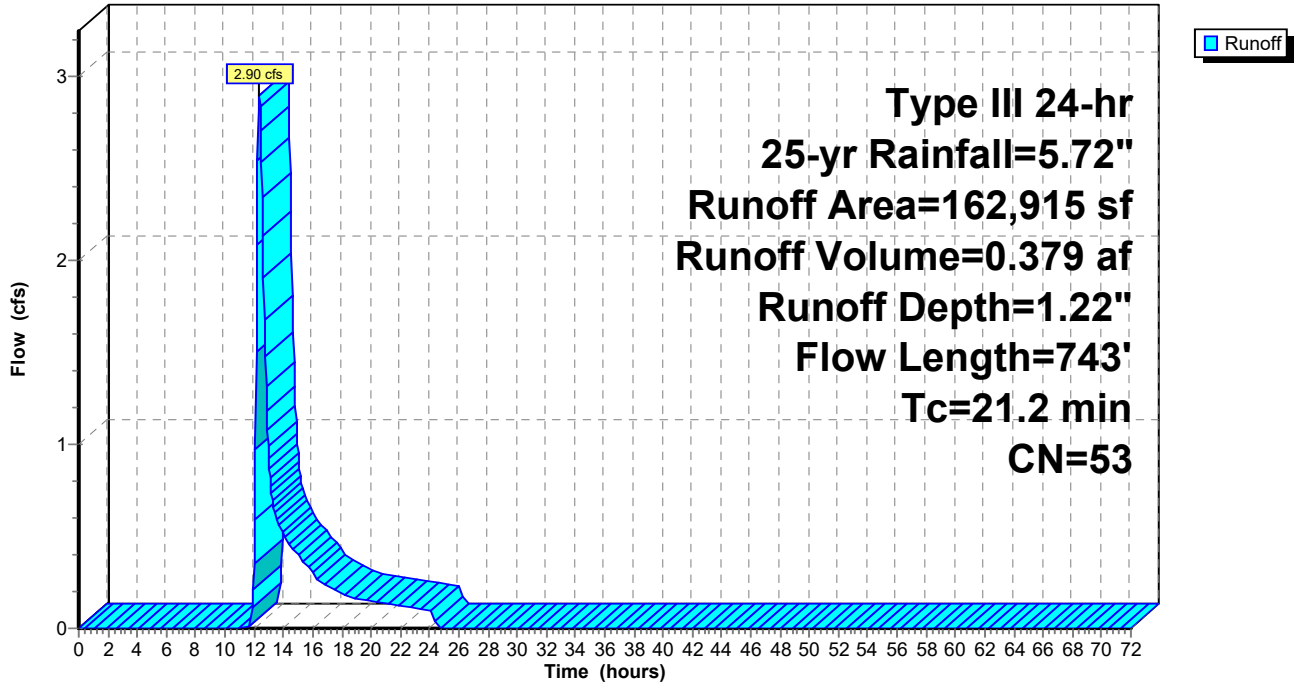
Type III 24-hr 25-yr Rainfall=5.72"

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Subcatchment 10E: EX 10

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Summary for Subcatchment 11E: EX 11

Runoff = 4.75 cfs @ 12.17 hrs, Volume= 0.417 af, Depth= 3.73"
 Routed to Pond 28P : J16

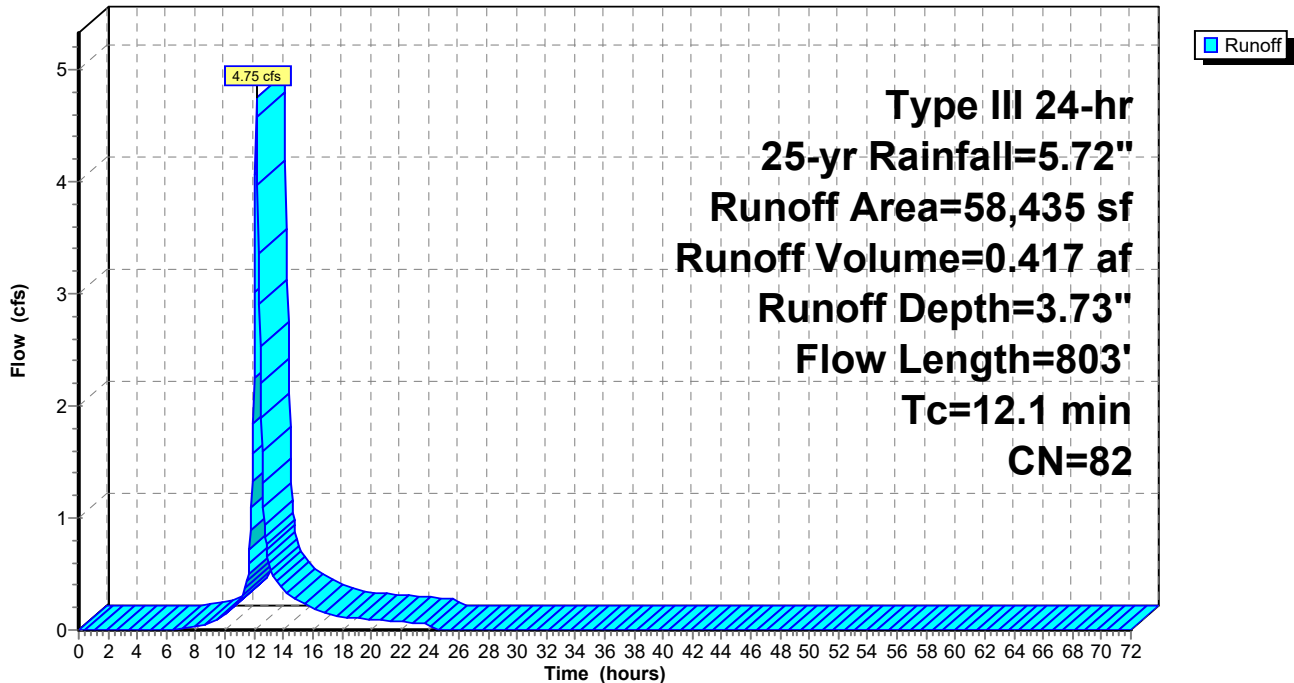
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr Rainfall=5.72"

	Area (sf)	CN	Description
*	1,964	98	Impervious, HSG A
	780	39	>75% Grass cover, Good, HSG A
*	18,734	98	Impervious, HSG C
	36,957	74	>75% Grass cover, Good, HSG C
	58,435	82	Weighted Average
	37,737		64.58% Pervious Area
	20,698		35.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	100	0.0400	0.22		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
3.8	411	0.0657	1.79		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.7	292	0.1199	7.03		Shallow Concentrated Flow, Paved Kv= 20.3 fps
12.1	803	Total			

Subcatchment 11E: EX 11

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Subcatchment 12E: EX 12

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.40 cfs @ 12.03 hrs, Volume= 0.094 af, Depth= 1.98"
 Routed to Link 30L : DP-5 to town property

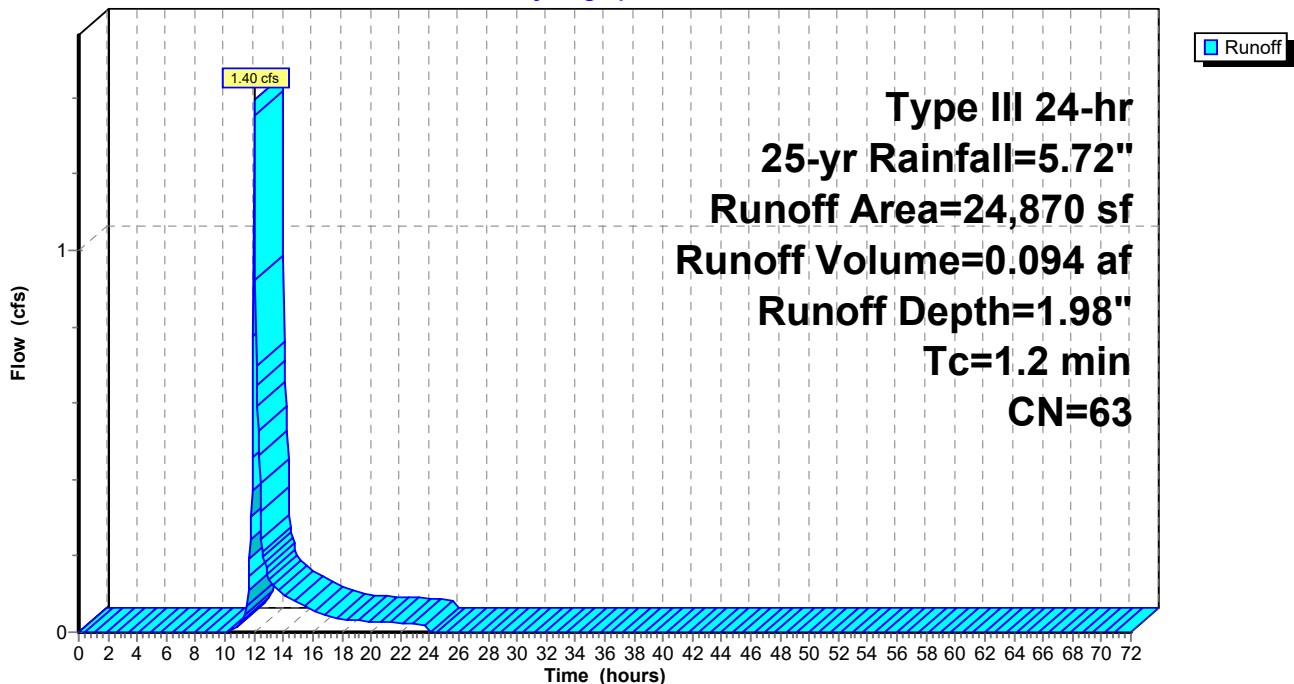
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-yr Rainfall=5.72"

Area (sf)	CN	Description
5,179	74	>75% Grass cover, Good, HSG C
* 2,500	98	Impervious, HSG C
13,037	45	Woods, Poor, HSG A
546	39	>75% Grass cover, Good, HSG A
* 2,290	98	Impervious, HSG A
* 706	98	Impervious, HSG B
612	66	Woods, Poor, HSG B
24,870	63	Weighted Average
19,374		77.90% Pervious Area
5,496		22.10% Impervious Area

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

Subcatchment 12E: EX 12

Hydrograph



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Summary for Subcatchment 13E: RX 13

Runoff = 28.60 cfs @ 12.21 hrs, Volume= 2.687 af, Depth= 2.86"

Routed to Link 23L : DP- 6 NORTH TO 10 PINE HILL RD

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=5.72"

Area (sf)	CN	Description
26,404	61	>75% Grass cover, Good, HSG B
29,263	74	>75% Grass cover, Good, HSG C
48,122	39	>75% Grass cover, Good, HSG A
16,942	45	Woods, Poor, HSG A
2,172	66	Woods, Poor, HSG B
294,686	77	Woods, Poor, HSG C
25,711	88	Row crops, straight row, Poor, HSG C
11,199	72	Row crops, straight row, Poor, HSG A
* 13,085	98	Impervious, HSG A
* 18,490	98	Impervious, HSG C
* 5,365	98	Impervious, HSG B
491,439	73	Weighted Average
454,499		92.48% Pervious Area
36,940		7.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	100	0.1400	0.36		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
0.9	140	0.1357	2.58		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
4.7	651	0.2166	2.33		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.0	131	0.1756	2.10		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.3	212	0.0849	2.62		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
2.2	466	0.0558	3.54		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
14.7	1,700	Total			

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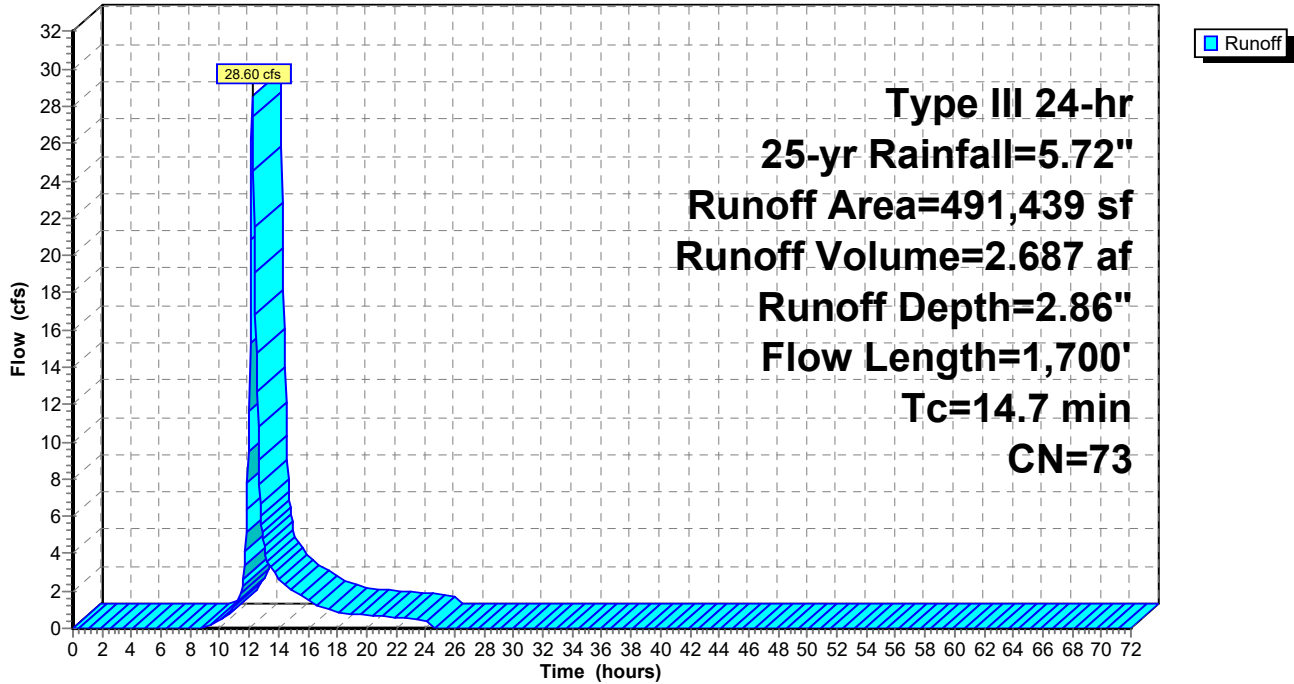
Type III 24-hr 25-yr Rainfall=5.72"

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Subcatchment 13E: RX 13

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Type III 24-hr 25-yr Rainfall=5.72"

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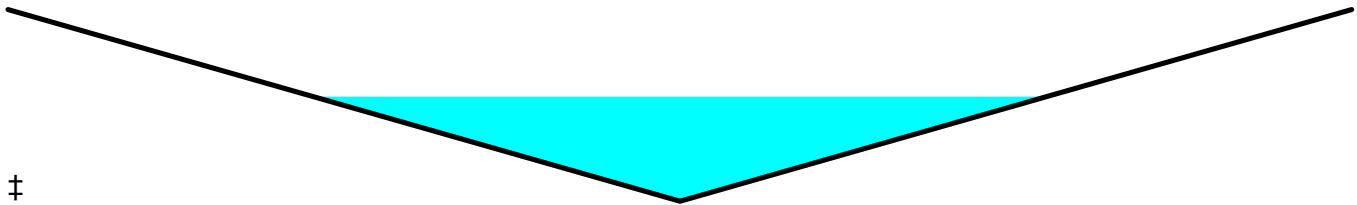
Summary for Reach 32R: Wetland swale

Inflow Area = 16.060 ac, 4.08% Impervious, Inflow Depth = 1.41" for 25-yr event
 Inflow = 22.86 cfs @ 12.24 hrs, Volume= 1.892 af
 Outflow = 22.10 cfs @ 12.25 hrs, Volume= 1.892 af, Atten= 3%, Lag= 0.9 min
 Routed to Pond 27P : J22

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Max. Velocity= 2.06 fps, Min. Travel Time= 1.9 min
 Avg. Velocity = 0.84 fps, Avg. Travel Time= 4.6 min

Peak Storage= 2,469 cf @ 12.25 hrs
 Average Depth at Peak Storage= 1.64' , Surface Width= 13.10'
 Bank-Full Depth= 3.00' Flow Area= 36.0 sf, Capacity= 110.96 cfs

Custom cross-section, Length= 230.0' Slope= 0.0261 '/'
 Constant n= 0.100 Earth, dense brush, high stage
 Inlet Invert= 580.00', Outlet Invert= 574.00'



‡

Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	3.00	0.00
12.00	0.00	3.00
24.00	3.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Width (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	0.0	0.0	0	0.00
3.00	36.0	24.7	24.0	8,280	110.96

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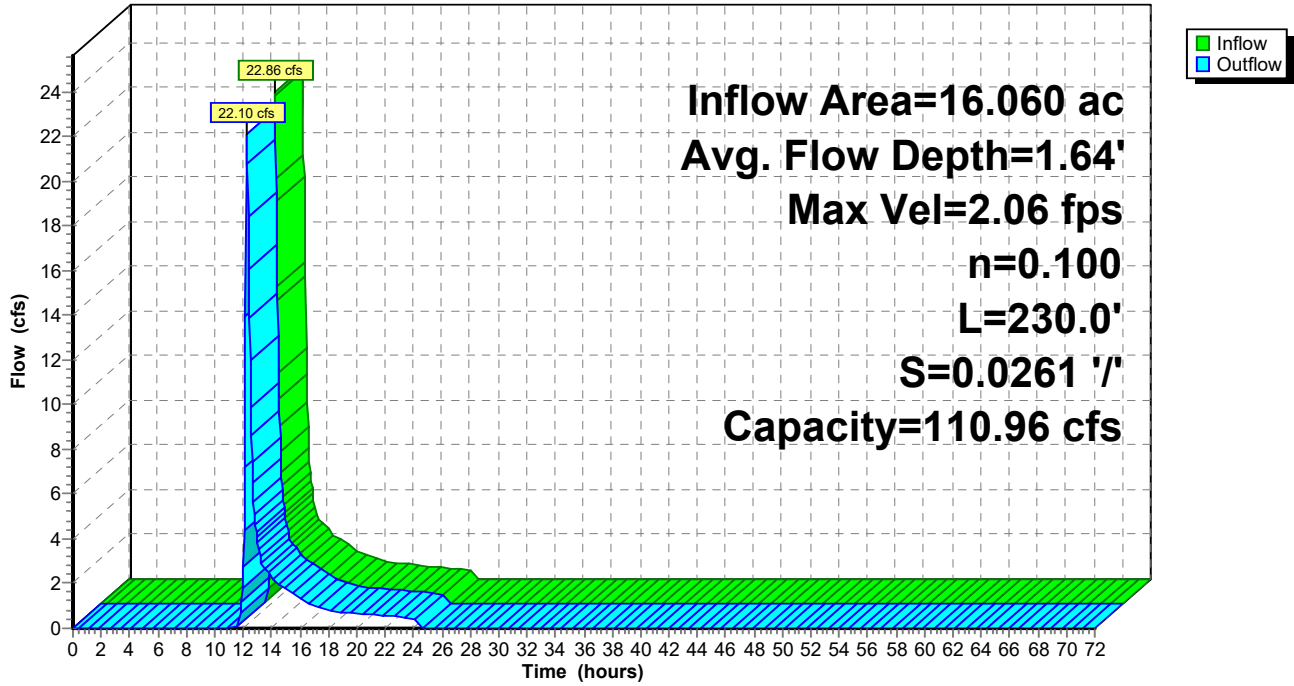
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Reach 32R: Wetland swale

Hydrograph



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Summary for Pond 14P: J12

[58] Hint: Peaked 0.32' above defined flood level

Inflow Area = 7.441 ac, 3.47% Impervious, Inflow Depth = 1.51" for 25-yr event
 Inflow = 8.37 cfs @ 12.27 hrs, Volume= 0.935 af
 Outflow = 8.37 cfs @ 12.27 hrs, Volume= 0.935 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.56 cfs @ 12.12 hrs, Volume= 0.828 af
 Routed to Pond 15P : J10
 Secondary = 4.34 cfs @ 12.27 hrs, Volume= 0.107 af
 Routed to Pond 15P : J10

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 651.16' @ 12.27 hrs
 Flood Elev= 650.84'

Device	Routing	Invert	Outlet Devices
#1	Primary	647.59'	12.0" Round Culvert L= 159.4' Ke= 0.500 Inlet / Outlet Invert= 647.59' / 639.96' S= 0.0479 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	650.84'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.22 cfs @ 12.12 hrs HW=650.90' TW=641.93' (Dynamic Tailwater)
 ↑1=Culvert (Outlet Controls 4.22 cfs @ 5.37 fps)

Secondary OutFlow Max=4.24 cfs @ 12.27 hrs HW=651.15' TW=643.00' (Dynamic Tailwater)
 ↑2=Orifice/Grate (Weir Controls 4.24 cfs @ 1.84 fps)

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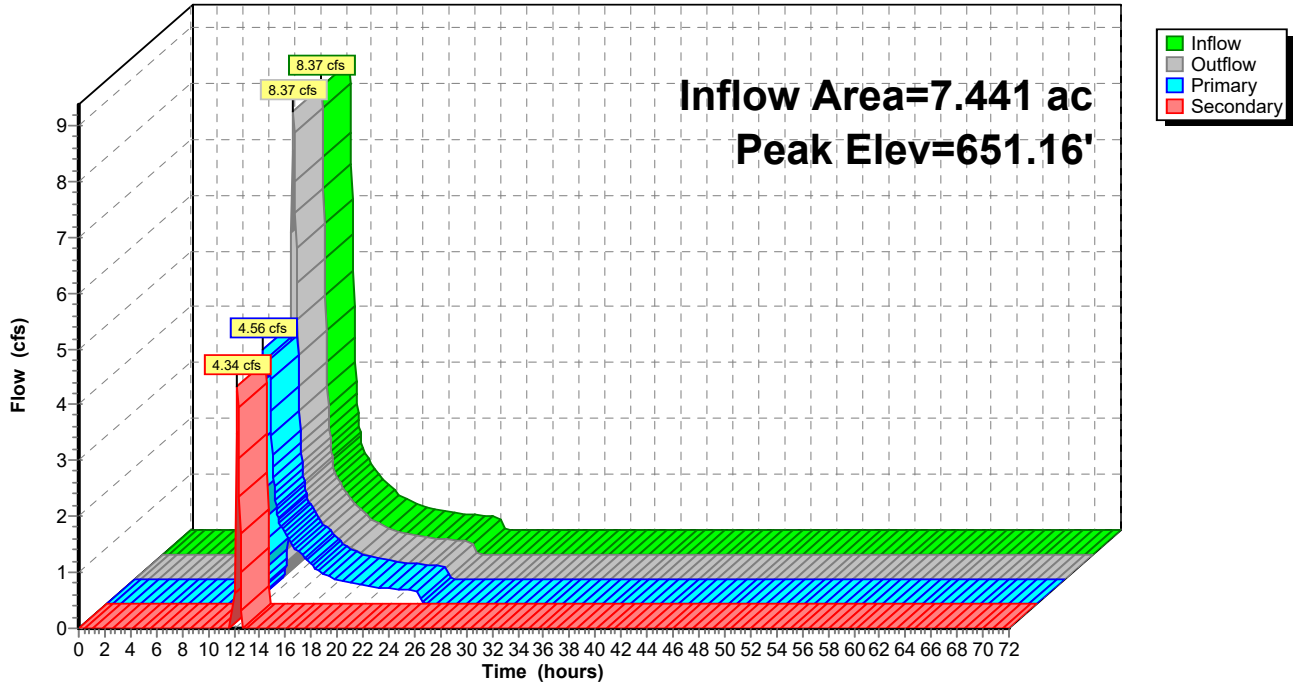
Type III 24-hr 25-yr Rainfall=5.72"

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Pond 14P: J12

Hydrograph



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Summary for Pond 15P: J10

Inflow Area = 8.647 ac, 7.90% Impervious, Inflow Depth = 1.54" for 25-yr event
 Inflow = 9.67 cfs @ 12.26 hrs, Volume= 1.110 af
 Outflow = 9.67 cfs @ 12.26 hrs, Volume= 1.110 af, Atten= 0%, Lag= 0.0 min
 Primary = 9.67 cfs @ 12.26 hrs, Volume= 1.110 af
 Routed to Link 16L : DP-1 EXISTING OUTLET TO UNDER 116
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 18P : J8

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 643.06' @ 12.26 hrs
 Flood Elev= 643.66'

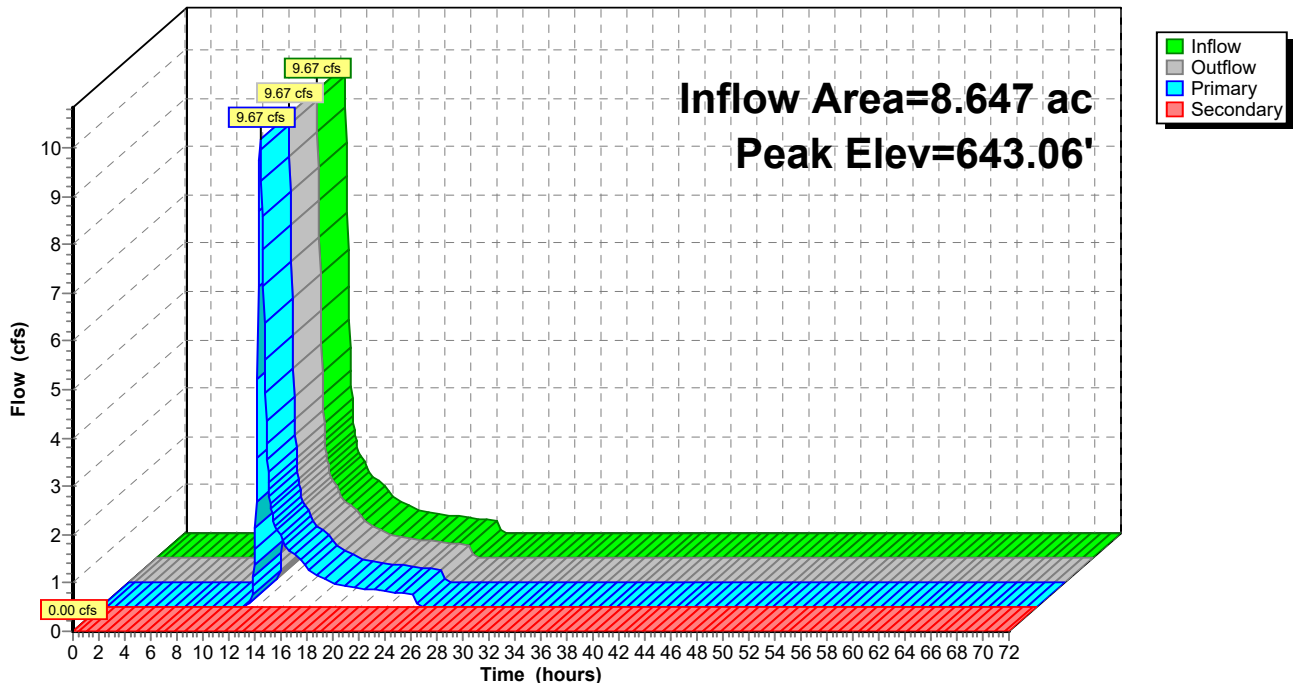
Device	Routing	Invert	Outlet Devices
#1	Primary	639.76'	15.0" Round Culvert L= 62.0' Ke= 0.500 Inlet / Outlet Invert= 639.76' / 625.00' S= 0.2381 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.23 sf
#2	Secondary	643.66'	22.0" x 22.0" Horiz. Orifice/Gate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=9.63 cfs @ 12.26 hrs HW=643.04' TW=0.00' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 9.63 cfs @ 7.85 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=639.76' TW=624.50' (Dynamic Tailwater)
 ↳2=Orifice/Gate (Controls 0.00 cfs)

Pond 15P: J10

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Pond 18P: J8

[58] Hint: Peaked 0.12' above defined flood level

Inflow Area = 11.825 ac, 1.39% Impervious, Inflow Depth = 1.36" for 25-yr event
 Inflow = 12.68 cfs @ 12.22 hrs, Volume= 1.340 af
 Outflow = 12.68 cfs @ 12.22 hrs, Volume= 1.340 af, Atten= 0%, Lag= 0.0 min
 Primary = 9.73 cfs @ 12.20 hrs, Volume= 1.302 af
 Routed to Link 35L : DP-2 Along 45 Upper Baptist
 Secondary = 2.94 cfs @ 12.22 hrs, Volume= 0.038 af
 Routed to Pond 20P : J6

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 631.62' @ 12.20 hrs
 Flood Elev= 631.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	624.50'	12.0" Round Culvert L= 25.0' Ke= 0.500 Inlet / Outlet Invert= 624.50' / 623.38' S= 0.0448 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	631.50'	25.0' long x 20.0' 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) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=9.73 cfs @ 12.20 hrs HW=631.62' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 9.73 cfs @ 12.39 fps)

Secondary OutFlow Max=2.76 cfs @ 12.22 hrs HW=631.62' TW=626.03' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 2.76 cfs @ 0.93 fps)

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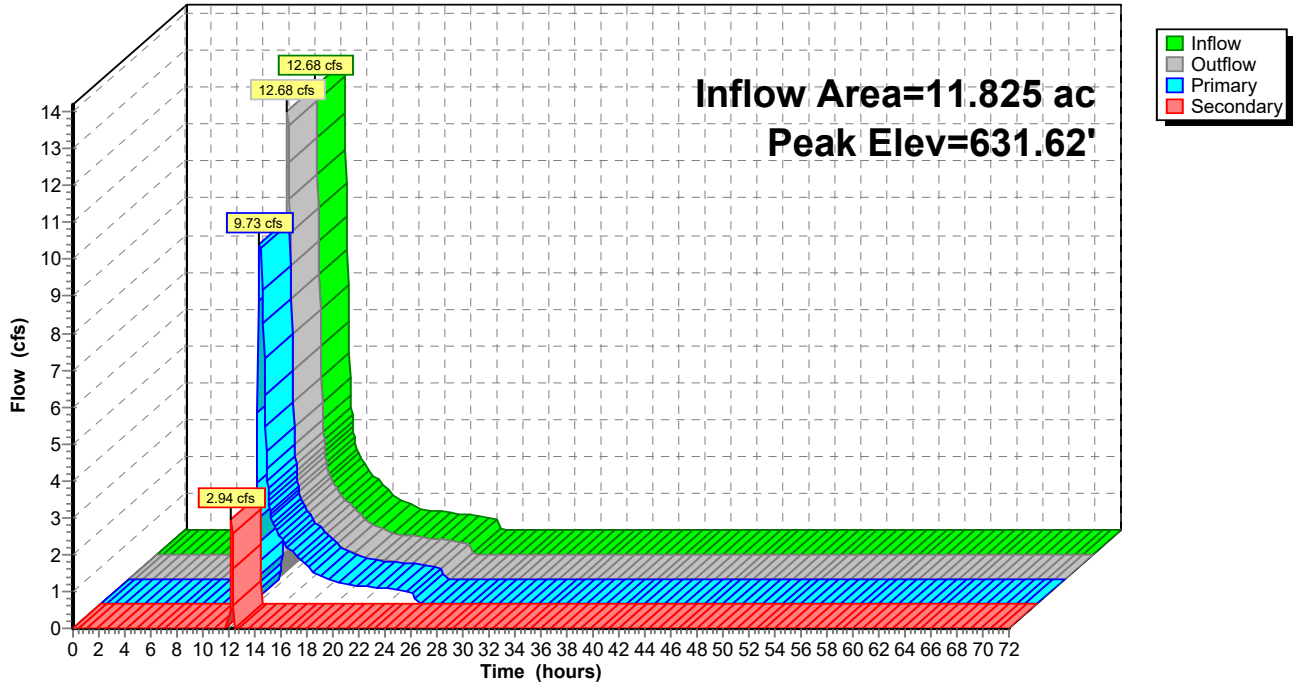
Type III 24-hr 25-yr Rainfall=5.72"

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Pond 18P: J8

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Summary for Pond 20P: J6

[58] Hint: Peaked 0.08' above defined flood level

Inflow Area = 0.495 ac, 15.01% Impervious, Inflow Depth = 1.79" for 25-yr event
 Inflow = 3.23 cfs @ 12.22 hrs, Volume= 0.074 af
 Outflow = 3.23 cfs @ 12.22 hrs, Volume= 0.074 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.01 cfs @ 12.22 hrs, Volume= 0.073 af
 Routed to Link 34L : DP-3 51 Baptist Hill Rd Property
 Secondary = 0.25 cfs @ 12.20 hrs, Volume= 0.001 af
 Routed to Link 34L : DP-3 51 Baptist Hill Rd Property

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 626.08' @ 12.22 hrs
 Flood Elev= 626.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	624.96'	12.0" Round Culvert L= 19.0' Ke= 0.500 Inlet / Outlet Invert= 623.69' / 624.96' S= -0.0668 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	626.00'	10.0' long x 24.0' 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) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=2.86 cfs @ 12.22 hrs HW=626.03' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 2.86 cfs @ 3.64 fps)

Secondary OutFlow Max=0.24 cfs @ 12.20 hrs HW=626.04' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 0.24 cfs @ 0.56 fps)

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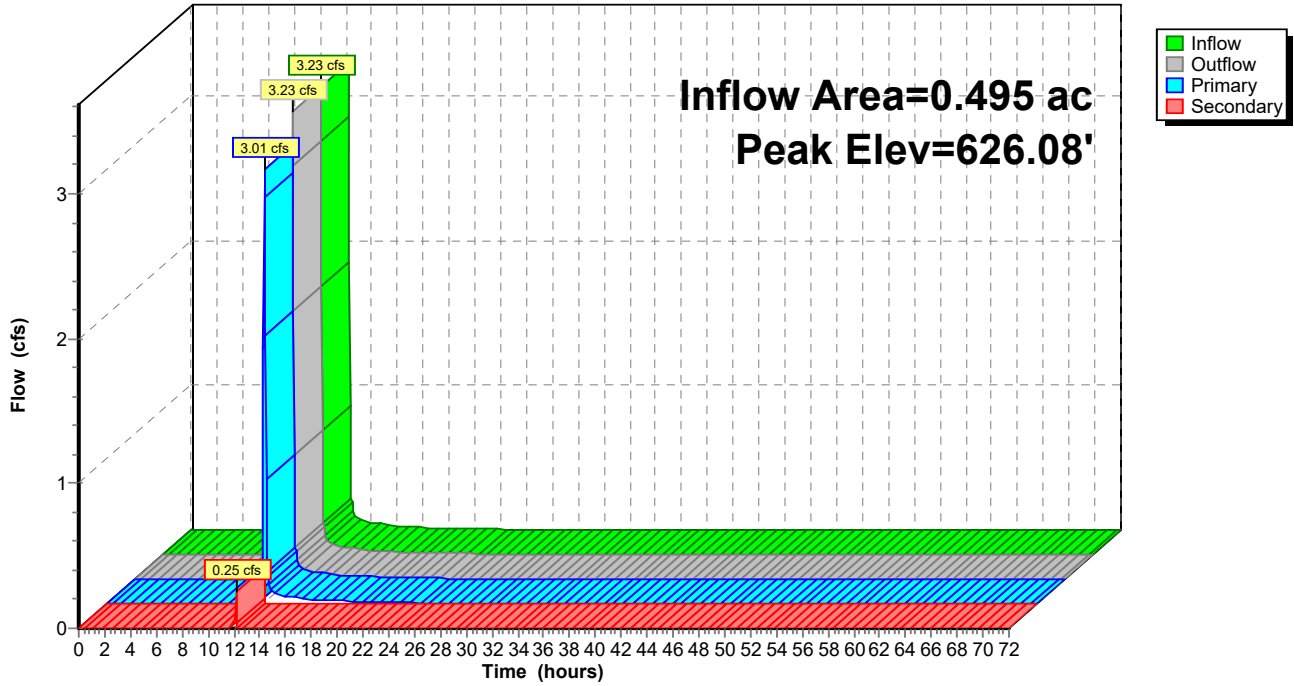
Type III 24-hr 25-yr Rainfall=5.72"

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Pond 20P: J6

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Summary for Pond 21P: J3

- [92] Warning: Device #2 is above defined storage
- [93] Warning: Storage range exceeded by 0.27'
- [90] Warning: Qout>Qin may require smaller dt or Finer Routing
- [87] Warning: Oscillations may require smaller dt or Finer Routing (severity=1)

Inflow Area = 0.261 ac, 41.58% Impervious, Inflow Depth = 13.06" for 25-yr event
 Inflow = 9.92 cfs @ 12.22 hrs, Volume= 0.284 af
 Outflow = 10.32 cfs @ 12.24 hrs, Volume= 0.285 af, Atten= 0%, Lag= 1.4 min
 Primary = 2.62 cfs @ 12.24 hrs, Volume= 0.147 af
 Routed to Link 23L : DP- 6 NORTH TO 10 PINE HILL RD
 Secondary = 7.70 cfs @ 12.24 hrs, Volume= 0.137 af
 Routed to Link 34L : DP-3 51 Baptist Hill Rd Property

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 622.27' @ 12.24 hrs Surf.Area= 768 sf Storage= 420 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 1.0 min (756.6 - 755.5)

Volume	Invert	Avail.Storage	Storage Description
#1	619.00'	420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
619.00	4	0	0
620.00	10	7	7
621.00	24	17	24
622.00	768	396	420

Device	Routing	Invert	Outlet Devices
#1	Primary	619.50'	12.0" Round Culvert L= 101.0' Ke= 0.500 Inlet / Outlet Invert= 619.50' / 618.98' S= 0.0051 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	622.00'	20.0' long x 18.0' 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) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=2.62 cfs @ 12.24 hrs HW=622.26' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Barrel Controls 2.62 cfs @ 3.34 fps)

Secondary OutFlow Max=7.33 cfs @ 12.24 hrs HW=622.27' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 7.33 cfs @ 1.38 fps)

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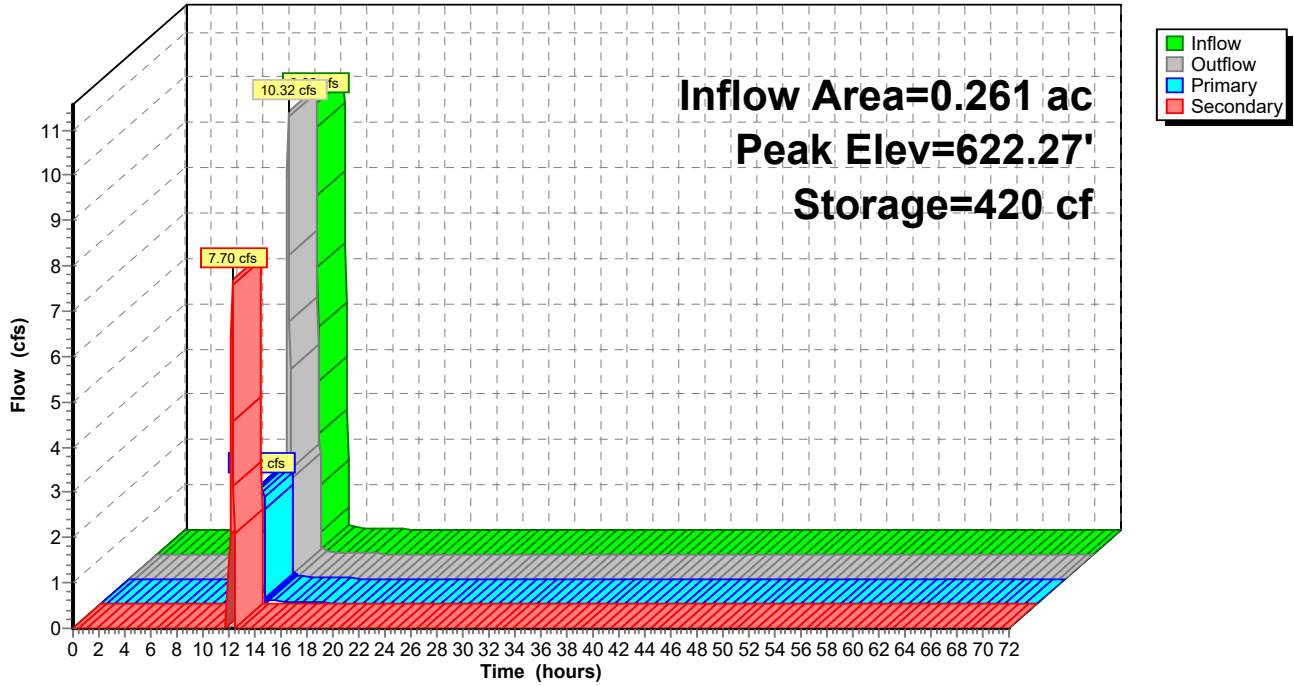
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Pond 21P: J3

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Summary for Pond 22P: J1

[90] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 10.137 ac, 0.00% Impervious, Inflow Depth = 1.98" for 25-yr event
 Inflow = 17.33 cfs @ 12.21 hrs, Volume= 1.675 af
 Outflow = 17.33 cfs @ 12.22 hrs, Volume= 1.675 af, Atten= 0%, Lag= 0.4 min
 Primary = 7.80 cfs @ 12.22 hrs, Volume= 1.436 af
 Routed to Link 23L : DP- 6 NORTH TO 10 PINE HILL RD
 Secondary = 9.53 cfs @ 12.22 hrs, Volume= 0.239 af
 Routed to Pond 21P : J3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 625.60' @ 12.22 hrs Surf.Area= 914 sf Storage= 376 cf

Plug-Flow detention time= 0.3 min calculated for 1.674 af (100% of inflow)
 Center-of-Mass det. time= 0.3 min (865.7 - 865.4)

Volume	Invert	Avail.Storage	Storage Description
#1	623.00'	855 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
623.00	19	0	0
624.00	38	29	29
625.00	68	53	82
626.00	1,478	773	855

Device	Routing	Invert	Outlet Devices
#1	Primary	623.23'	15.0" Round Culvert L= 39.2' Ke= 0.500 Inlet / Outlet Invert= 623.23' / 622.75' S= 0.0122 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	625.10'	10.0' long x 25.0' 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) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=7.78 cfs @ 12.22 hrs HW=625.59' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 7.78 cfs @ 6.34 fps)

Secondary OutFlow Max=9.28 cfs @ 12.22 hrs HW=625.59' TW=622.25' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 9.28 cfs @ 1.89 fps)

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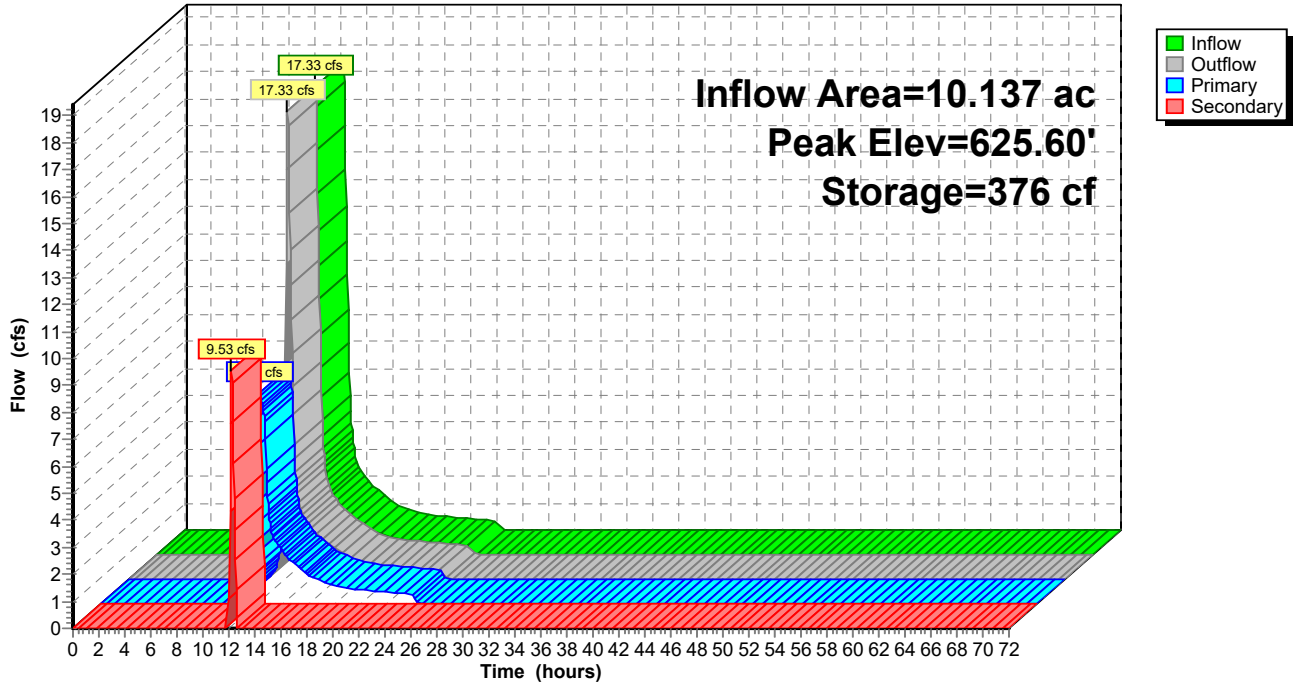
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Pond 22P: J1

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Summary for Pond 24P: J15

Inflow Area = 2.181 ac, 41.79% Impervious, Inflow Depth = 3.37" for 25-yr event
 Inflow = 5.34 cfs @ 12.09 hrs, Volume= 0.613 af
 Outflow = 5.34 cfs @ 12.09 hrs, Volume= 0.613 af, Atten= 0%, Lag= 0.0 min
 Primary = 5.34 cfs @ 12.09 hrs, Volume= 0.613 af
 Routed to Pond 27P : J22
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 27P : J22

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 596.20' @ 12.09 hrs
 Flood Elev= 598.30'

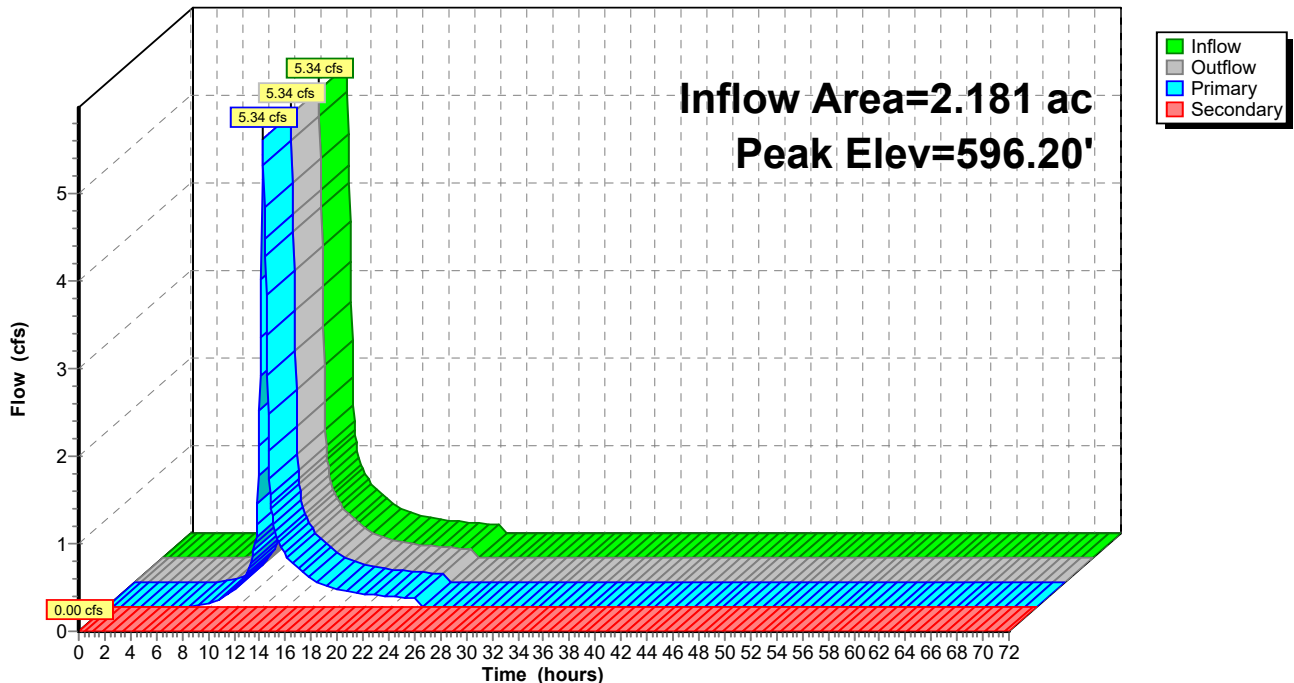
Device	Routing	Invert	Outlet Devices
#1	Primary	593.70'	12.0" Round Culvert L= 240.0' Ke= 0.500 Inlet / Outlet Invert= 593.70' / 569.82' S= 0.0995 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	598.30'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.32 cfs @ 12.09 hrs HW=596.18' TW=573.26' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 5.32 cfs @ 6.77 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=593.70' TW=569.62' (Dynamic Tailwater)
 ↳2=Orifice/Grate (Controls 0.00 cfs)

Pond 24P: J15

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Pond 25P: J14

[58] Hint: Peaked 0.14' above defined flood level

Inflow Area = 1.924 ac, 40.69% Impervious, Inflow Depth = 3.50" for 25-yr event
 Inflow = 4.85 cfs @ 12.11 hrs, Volume= 0.561 af
 Outflow = 4.85 cfs @ 12.11 hrs, Volume= 0.561 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.77 cfs @ 12.02 hrs, Volume= 0.544 af
 Routed to Pond 24P : J15
 Secondary = 1.20 cfs @ 12.11 hrs, Volume= 0.017 af
 Routed to Pond 24P : J15

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 614.50' @ 12.11 hrs
 Flood Elev= 614.36'

Device	Routing	Invert	Outlet Devices
#1	Primary	611.36'	12.0" Round Culvert L= 460.0' Ke= 0.500 Inlet / Outlet Invert= 611.36' / 593.70' S= 0.0384 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	614.36'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.66 cfs @ 12.02 hrs HW=614.44' TW=595.95' (Dynamic Tailwater)
 ↑1=Culvert (Outlet Controls 3.66 cfs @ 4.66 fps)

Secondary OutFlow Max=1.15 cfs @ 12.11 hrs HW=614.49' TW=596.14' (Dynamic Tailwater)
 ↑2=Orifice/Grate (Weir Controls 1.15 cfs @ 1.19 fps)

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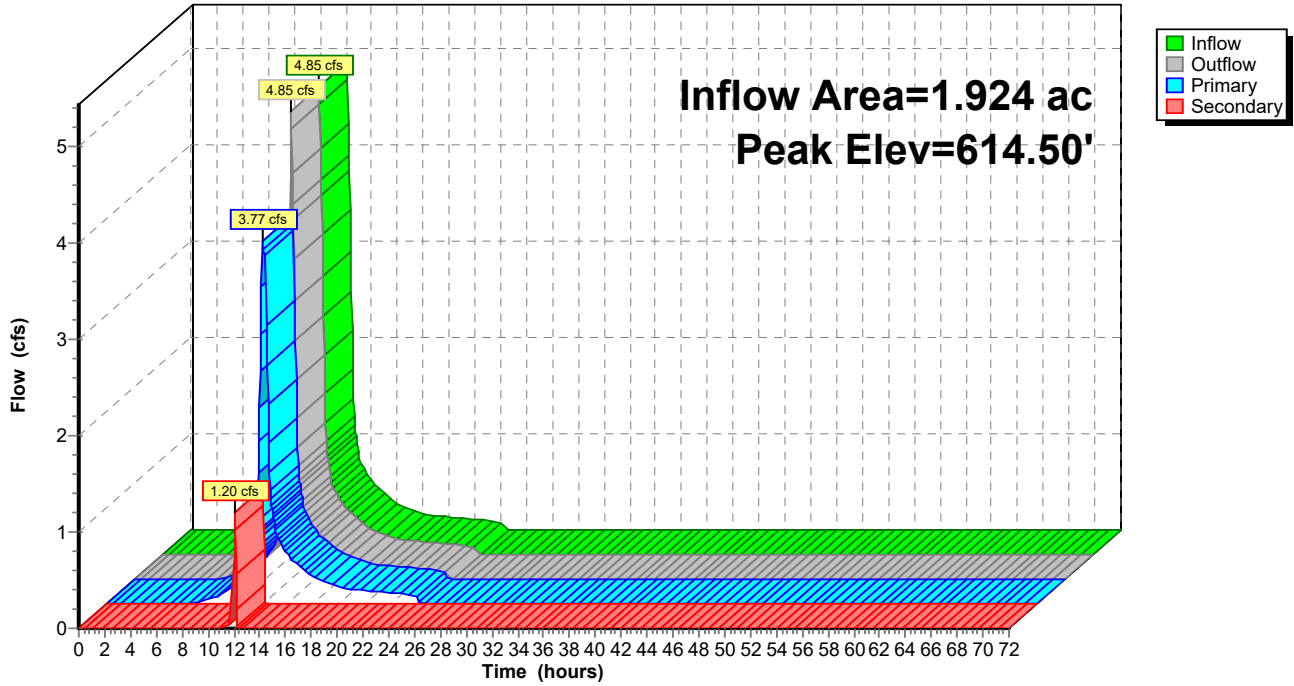
Type III 24-hr 25-yr Rainfall=5.72"

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Pond 25P: J14

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Pond 26P: J13

[58] Hint: Peaked 0.39' above defined flood level

Inflow Area = 1.471 ac, 41.74% Impervious, Inflow Depth = 3.94" for 25-yr event
 Inflow = 6.35 cfs @ 12.10 hrs, Volume= 0.482 af
 Outflow = 6.35 cfs @ 12.10 hrs, Volume= 0.482 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.36 cfs @ 12.00 hrs, Volume= 0.443 af
 Routed to Pond 25P : J14
 Secondary = 3.01 cfs @ 12.11 hrs, Volume= 0.040 af
 Routed to Pond 28P : J16

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 615.64' @ 12.11 hrs
 Flood Elev= 615.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	614.00'	12.0" Round Culvert L= 23.0' Ke= 0.500 Inlet / Outlet Invert= 614.00' / 611.86' S= 0.0930 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	615.20'	4.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=2.97 cfs @ 12.00 hrs HW=615.29' TW=614.43' (Dynamic Tailwater)
 ↑1=Culvert (Outlet Controls 2.97 cfs @ 3.83 fps)

Secondary OutFlow Max=2.93 cfs @ 12.11 hrs HW=615.63' TW=579.14' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir(Weir Controls 2.93 cfs @ 1.71 fps)

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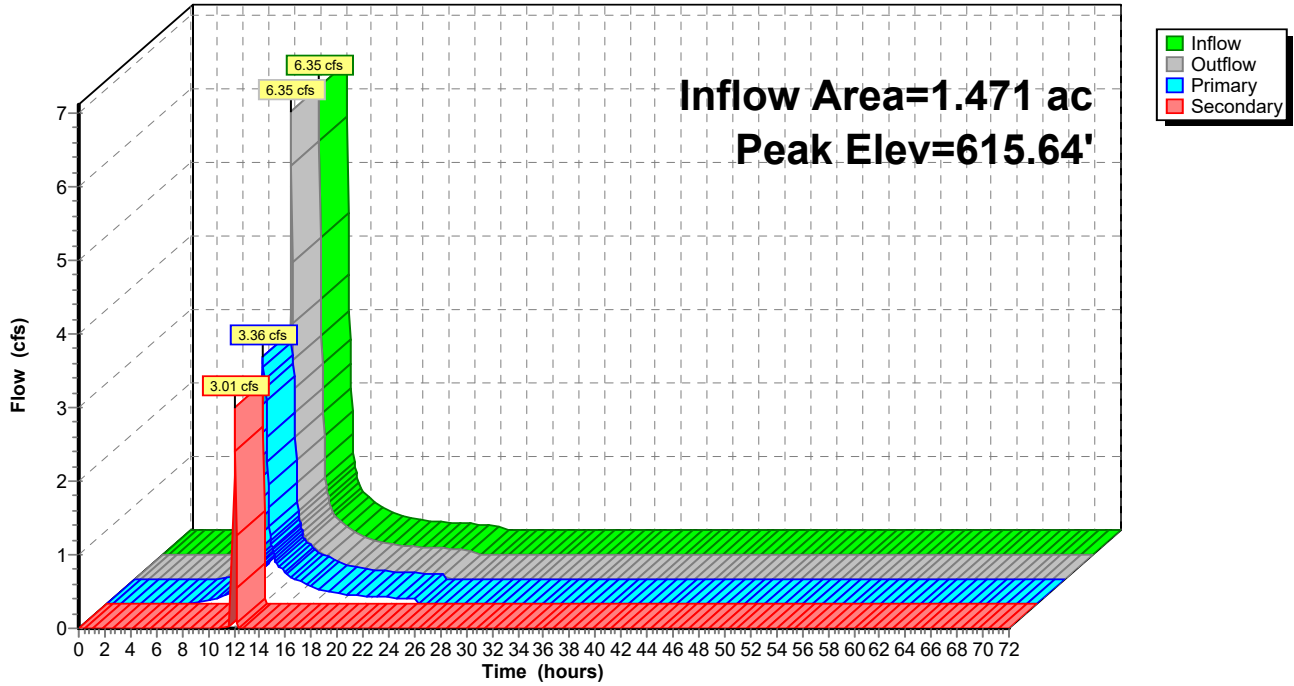
Type III 24-hr 25-yr Rainfall=5.72"

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Pond 26P: J13

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Summary for Pond 27P: J22

[58] Hint: Peaked 0.85' above defined flood level

Inflow Area = 18.241 ac, 8.59% Impervious, Inflow Depth = 1.65" for 25-yr event
 Inflow = 26.30 cfs @ 12.25 hrs, Volume= 2.505 af
 Outflow = 26.30 cfs @ 12.25 hrs, Volume= 2.505 af, Atten= 0%, Lag= 0.0 min
 Primary = 11.40 cfs @ 12.25 hrs, Volume= 2.163 af
 Routed to Link 33L : DP-4 To 116
 Secondary = 14.90 cfs @ 12.25 hrs, Volume= 0.342 af
 Routed to Link 33L : DP-4 To 116

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 573.97' @ 12.25 hrs
 Flood Elev= 573.12'

Device	Routing	Invert	Outlet Devices
#1	Primary	569.62'	15.0" Round Culvert L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 569.62' / 567.62' S= 0.0500 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	573.12'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=11.40 cfs @ 12.25 hrs HW=573.97' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 11.40 cfs @ 9.29 fps)

Secondary OutFlow Max=14.88 cfs @ 12.25 hrs HW=573.97' TW=0.00' (Dynamic Tailwater)
 ↑2=Orifice/Grate (Orifice Controls 14.88 cfs @ 4.43 fps)

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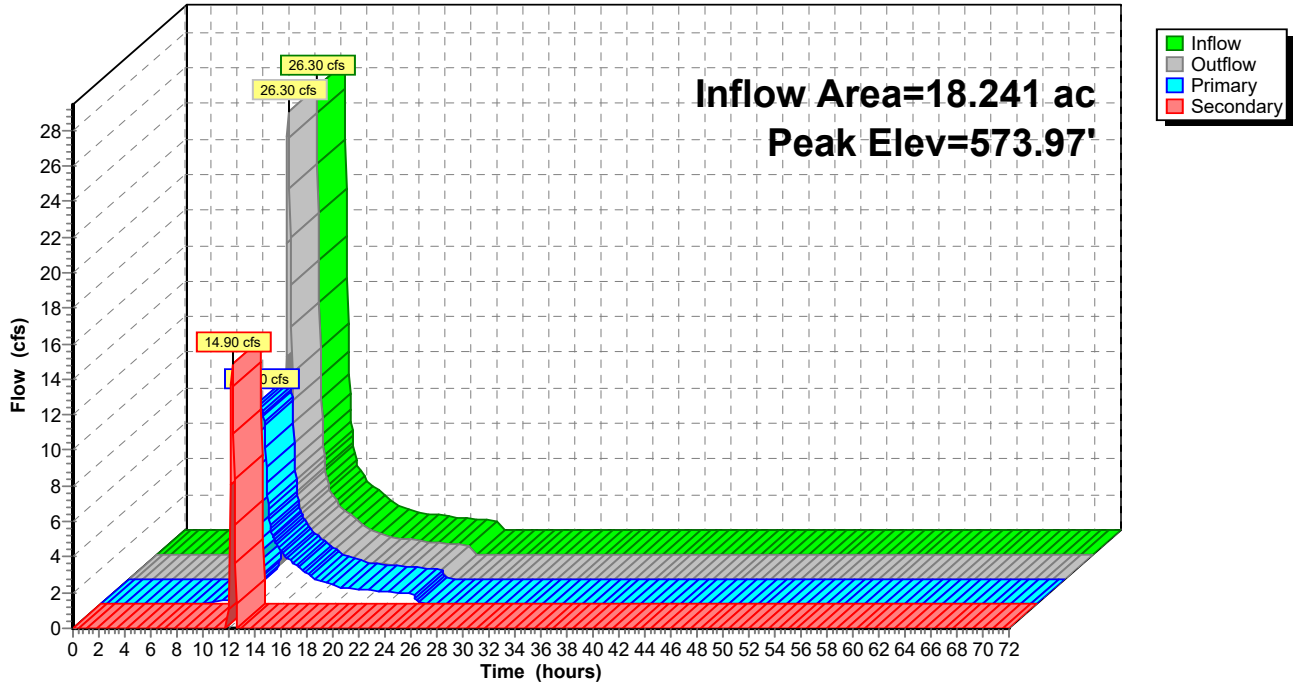
Type III 24-hr 25-yr Rainfall=5.72"

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Pond 27P: J22

Hydrograph



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Summary for Pond 28P: J16

[58] Hint: Peaked 0.99' above defined flood level

Inflow Area = 1.341 ac, 35.42% Impervious, Inflow Depth = 4.09" for 25-yr event
 Inflow = 7.24 cfs @ 12.13 hrs, Volume= 0.457 af
 Outflow = 7.24 cfs @ 12.13 hrs, Volume= 0.457 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.61 cfs @ 12.13 hrs, Volume= 0.425 af
 Routed to Link 30L : DP-5 to town property
 Secondary = 2.63 cfs @ 12.13 hrs, Volume= 0.031 af
 Routed to Link 30L : DP-5 to town property

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 579.16' @ 12.13 hrs
 Flood Elev= 578.17'

Device	Routing	Invert	Outlet Devices
#1	Primary	577.17'	12.0" Round Culvert L= 33.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 577.17' / 571.01' S= 0.1867 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	578.75'	4.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=4.59 cfs @ 12.13 hrs HW=579.14' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 4.59 cfs @ 5.84 fps)

Secondary OutFlow Max=2.49 cfs @ 12.13 hrs HW=579.14' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 2.49 cfs @ 1.59 fps)

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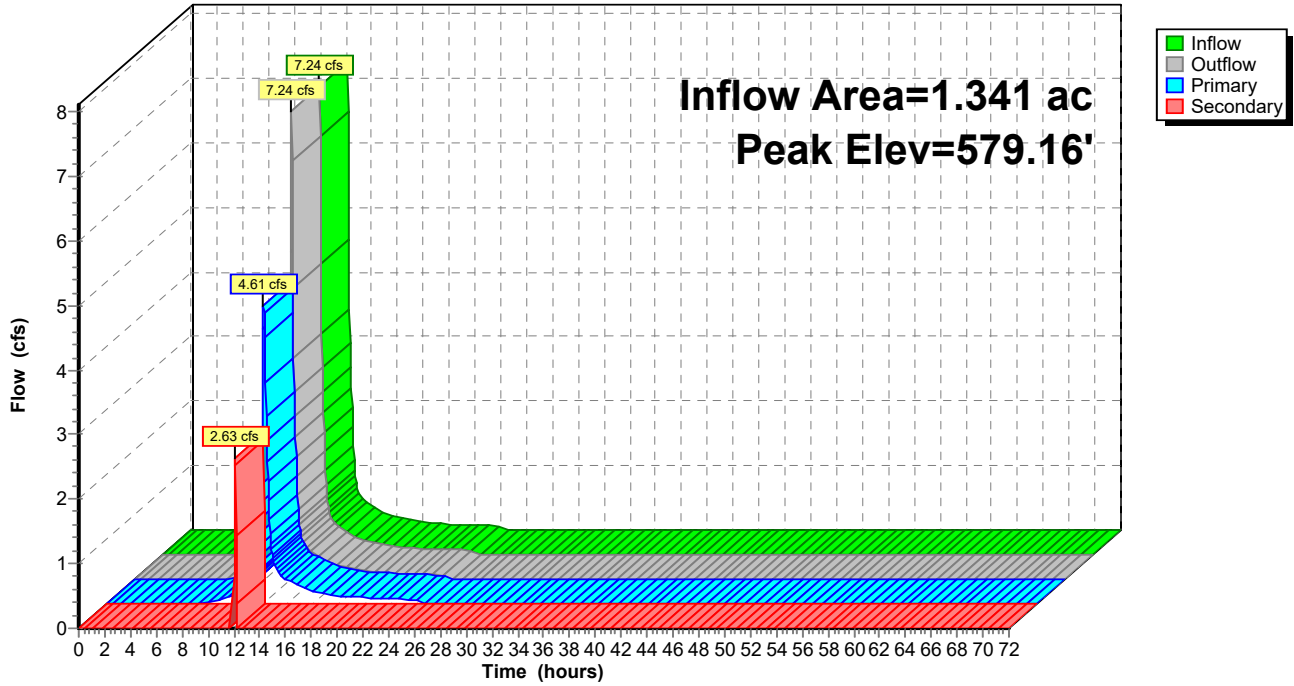
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Pond 28P: J16

Hydrograph



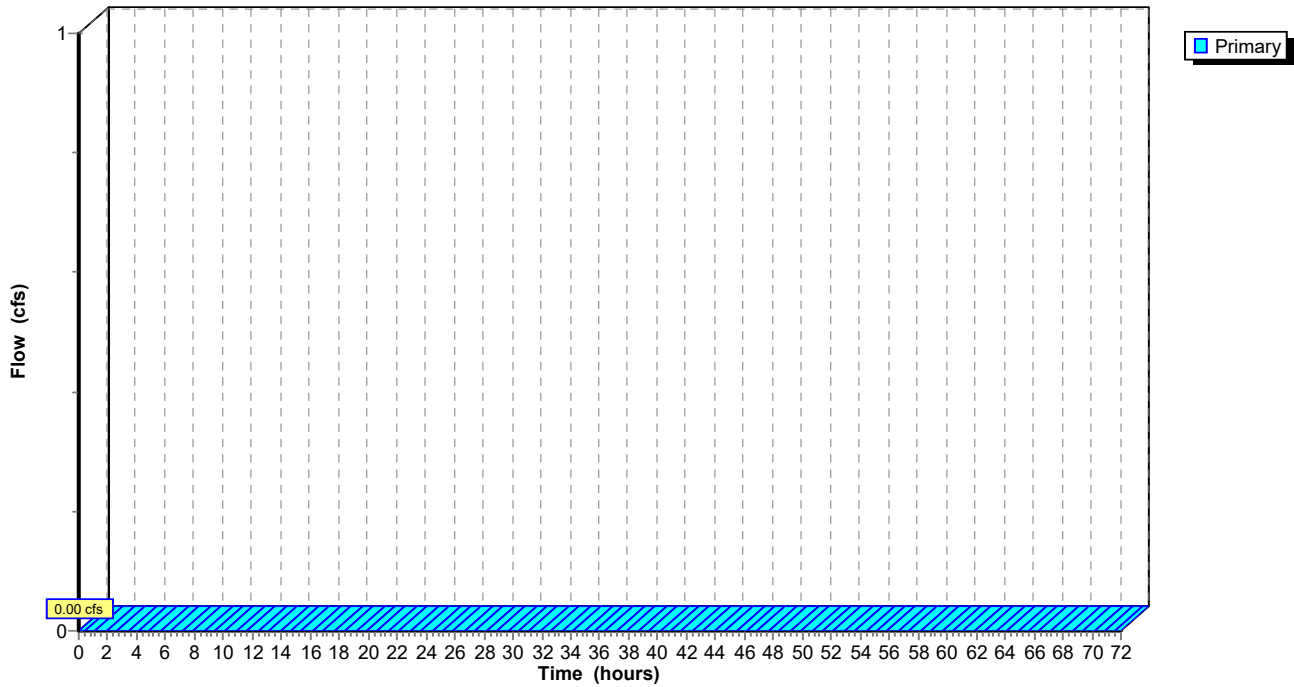
Summary for Pond 31P: J23

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

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

Pond 31P: J23

Hydrograph



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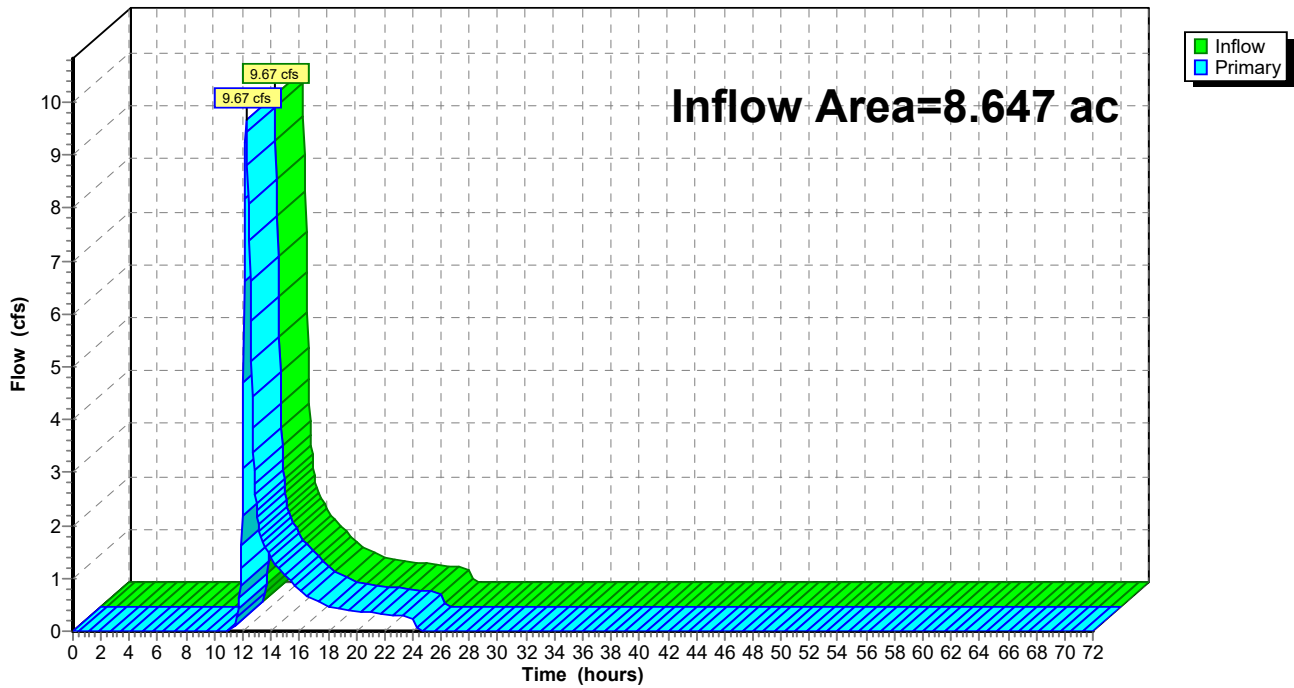
Summary for Link 16L: DP-1 EXISTING OUTLET TO UNDER 116

Inflow Area = 8.647 ac, 7.90% Impervious, Inflow Depth = 1.54" for 25-yr event
Inflow = 9.67 cfs @ 12.26 hrs, Volume= 1.110 af
Primary = 9.67 cfs @ 12.26 hrs, Volume= 1.110 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 16L: DP-1 EXISTING OUTLET TO UNDER 116

Hydrograph



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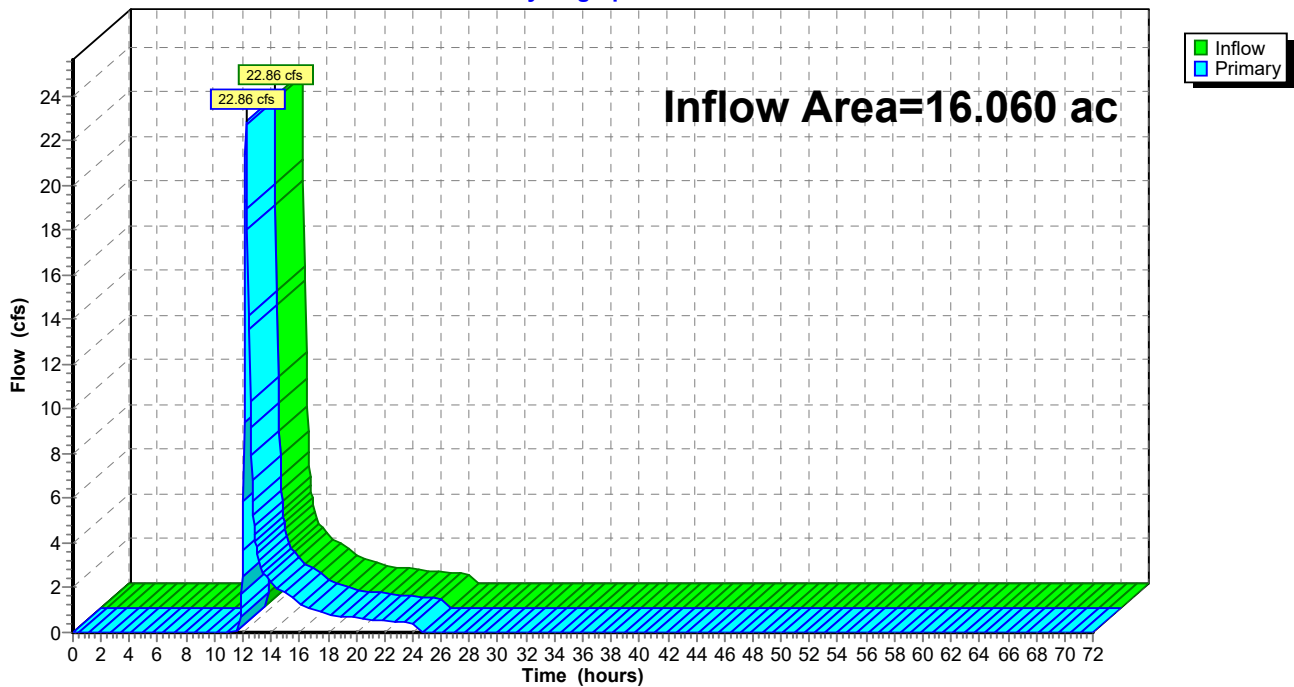
Summary for Link 19L: Behind houses

Inflow Area = 16.060 ac, 4.08% Impervious, Inflow Depth = 1.41" for 25-yr event
Inflow = 22.86 cfs @ 12.24 hrs, Volume= 1.892 af
Primary = 22.86 cfs @ 12.24 hrs, Volume= 1.892 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 32R : Wetland swale

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 19L: Behind houses

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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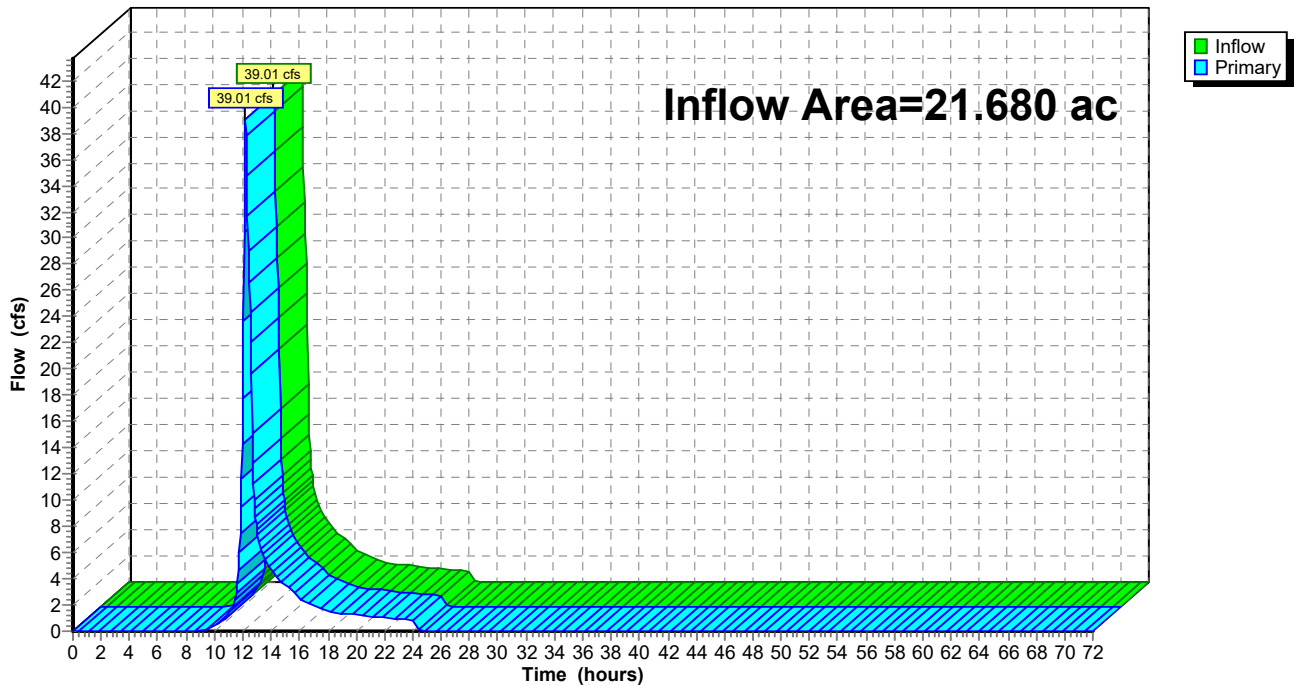
Summary for Link 23L: DP- 6 NORTH TO 10 PINE HILL RD

Inflow Area = 21.680 ac, 4.41% Impervious, Inflow Depth = 2.36" for 25-yr event
Inflow = 39.01 cfs @ 12.21 hrs, Volume= 4.270 af
Primary = 39.01 cfs @ 12.21 hrs, Volume= 4.270 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 23L: DP- 6 NORTH TO 10 PINE HILL RD

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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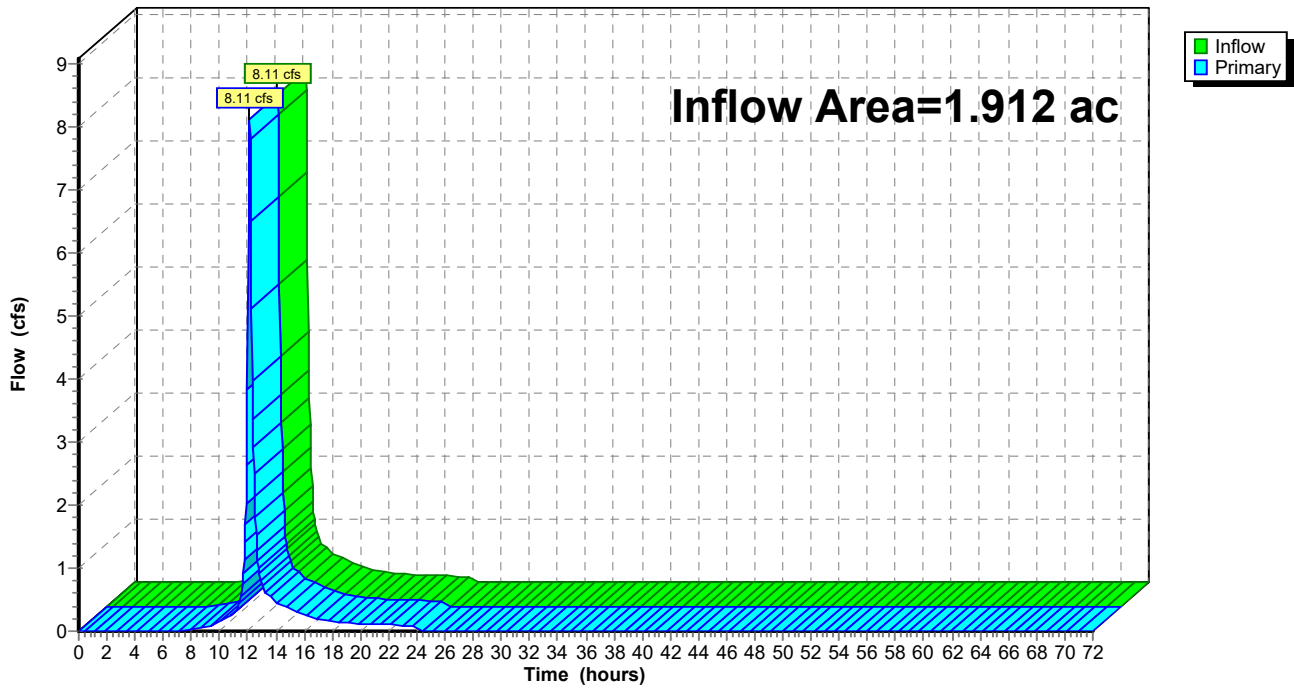
Summary for Link 30L: DP-5 to town property

Inflow Area = 1.912 ac, 31.44% Impervious, Inflow Depth = 3.46" for 25-yr event
Inflow = 8.11 cfs @ 12.12 hrs, Volume= 0.551 af
Primary = 8.11 cfs @ 12.12 hrs, Volume= 0.551 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 30L: DP-5 to town property

Hydrograph



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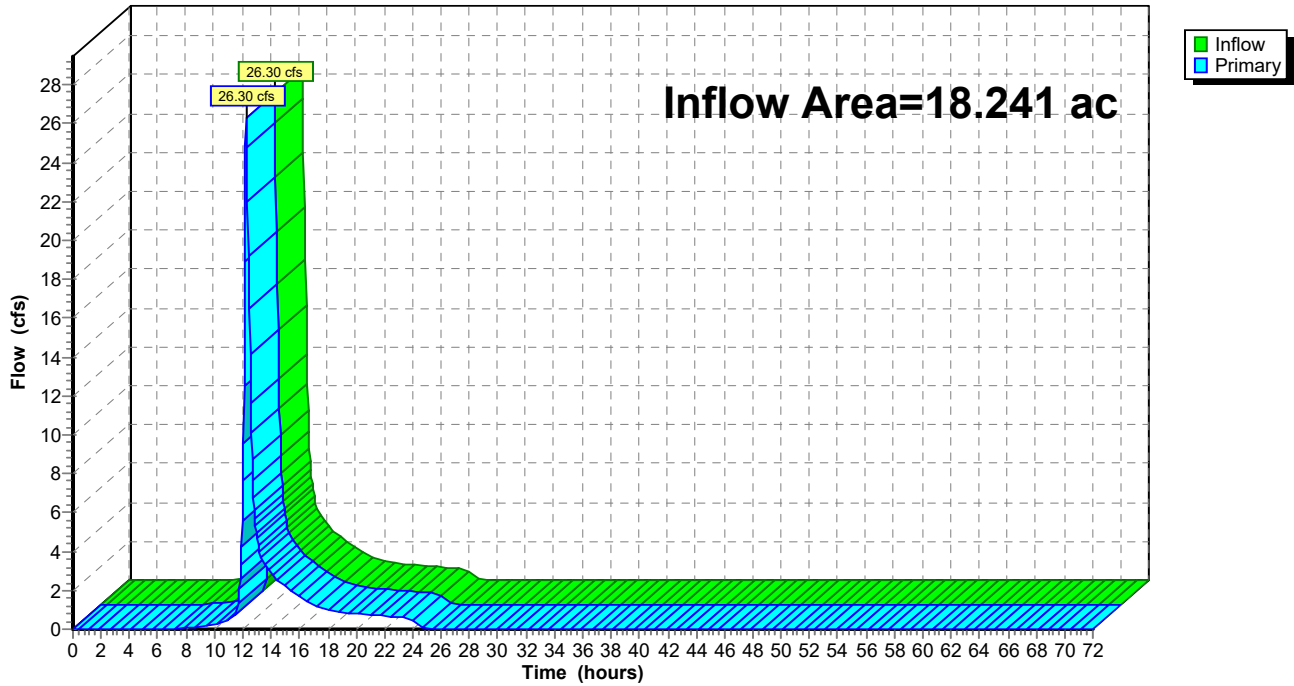
Summary for Link 33L: DP-4 To 116

Inflow Area = 18.241 ac, 8.59% Impervious, Inflow Depth = 1.65" for 25-yr event
Inflow = 26.30 cfs @ 12.25 hrs, Volume= 2.505 af
Primary = 26.30 cfs @ 12.25 hrs, Volume= 2.505 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 33L: DP-4 To 116

Hydrograph



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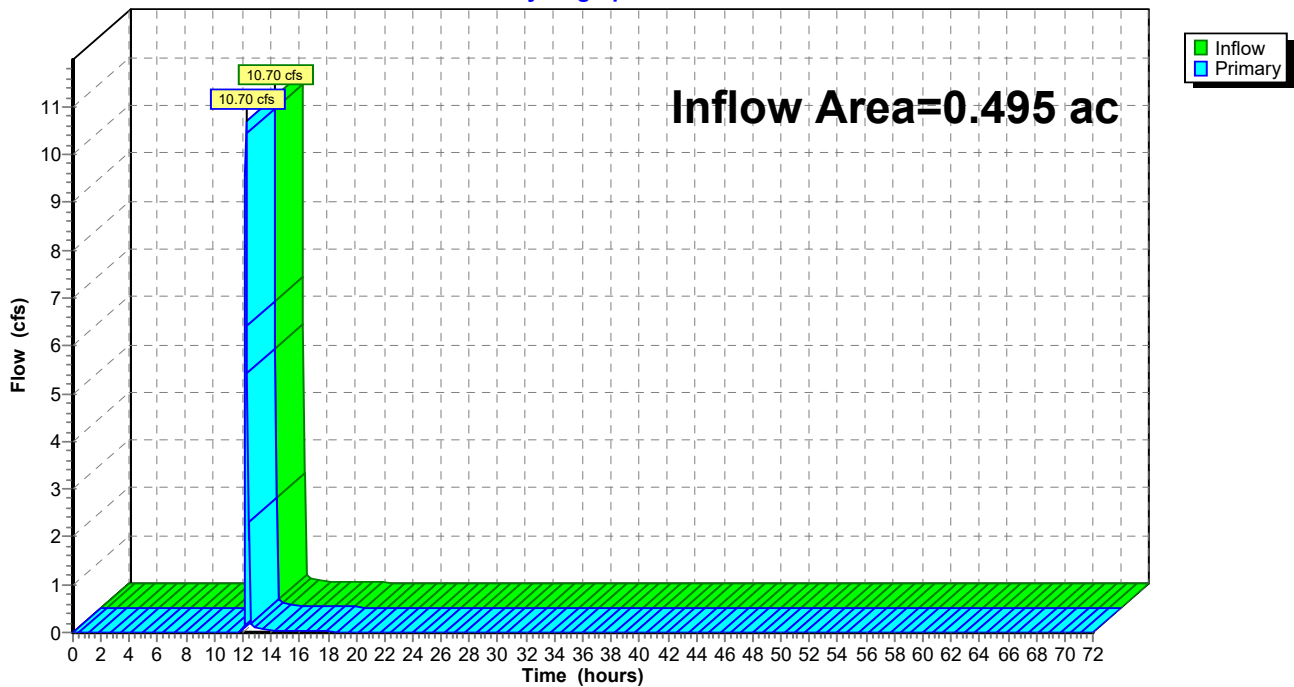
Summary for Link 34L: DP-3 51 Baptist Hill Rd Property

Inflow Area = 0.495 ac, 15.01% Impervious, Inflow Depth = 5.12" for 25-yr event
Inflow = 10.70 cfs @ 12.23 hrs, Volume= 0.211 af
Primary = 10.70 cfs @ 12.23 hrs, Volume= 0.211 af, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : Behind houses

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 34L: DP-3 51 Baptist Hill Rd Property

Hydrograph



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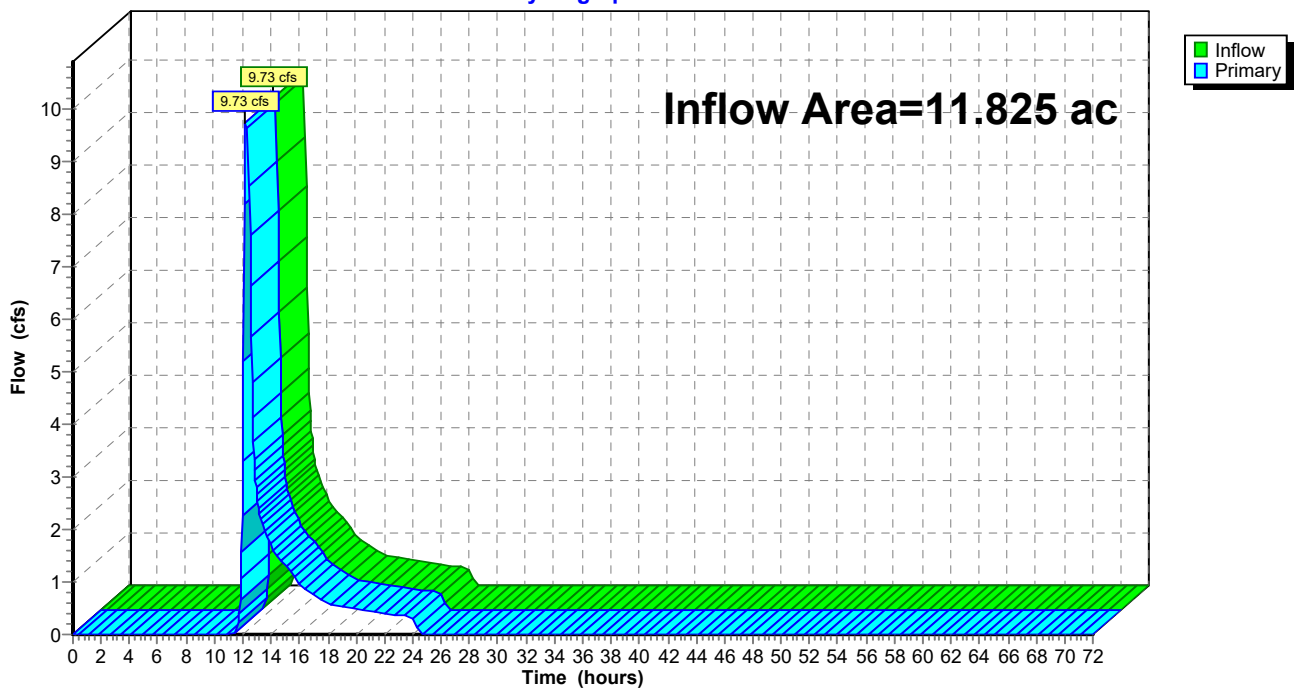
Summary for Link 35L: DP-2 Along 45 Upper Baptist

Inflow Area = 11.825 ac, 1.39% Impervious, Inflow Depth = 1.32" for 25-yr event
Inflow = 9.73 cfs @ 12.20 hrs, Volume= 1.302 af
Primary = 9.73 cfs @ 12.20 hrs, Volume= 1.302 af, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : Behind houses

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 35L: DP-2 Along 45 Upper Baptist

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1E: EX 1	Runoff Area=324,117 sf 3.47% Impervious Runoff Depth=2.51" Flow Length=1,253' Tc=17.3 min CN=57 Runoff=14.84 cfs 1.555 af
Subcatchment2E: EX 2	Runoff Area=52,537 sf 35.20% Impervious Runoff Depth=2.81" Flow Length=472' Tc=6.7 min CN=60 Runoff=3.73 cfs 0.283 af
Subcatchment3E: EX 3	Runoff Area=515,091 sf 1.39% Impervious Runoff Depth=2.31" Flow Length=1,106' Tc=13.6 min CN=55 Runoff=23.42 cfs 2.277 af
Subcatchment4E: EX 4	Runoff Area=441,577 sf 0.00% Impervious Runoff Depth=3.12" Flow Length=1,423' Tc=14.1 min CN=63 Runoff=28.11 cfs 2.635 af
Subcatchment5E: EX 5	Runoff Area=21,556 sf 15.01% Impervious Runoff Depth=1.64" Flow Length=368' Tc=9.8 min CN=48 Runoff=0.70 cfs 0.068 af
Subcatchment6E: EX 6	Runoff Area=11,369 sf 41.58% Impervious Runoff Depth=3.22" Flow Length=125' Tc=7.0 min CN=64 Runoff=0.93 cfs 0.070 af
Subcatchment7E: EX 7	Runoff Area=19,699 sf 37.25% Impervious Runoff Depth=4.52" Flow Length=211' Tc=8.3 min CN=76 Runoff=2.18 cfs 0.170 af
Subcatchment8E: EX 8	Runoff Area=64,091 sf 41.74% Impervious Runoff Depth=5.42" Flow Length=546' Tc=7.2 min CN=84 Runoff=8.63 cfs 0.664 af
Subcatchment9E: EX 9	Runoff Area=11,227 sf 49.99% Impervious Runoff Depth=3.65" Tc=1.2 min CN=68 Runoff=1.21 cfs 0.078 af
Subcatchment10E: EX 10	Runoff Area=162,915 sf 11.13% Impervious Runoff Depth=2.12" Flow Length=743' Tc=21.2 min CN=53 Runoff=5.58 cfs 0.659 af
Subcatchment11E: EX 11	Runoff Area=58,435 sf 35.42% Impervious Runoff Depth=5.19" Flow Length=803' Tc=12.1 min CN=82 Runoff=6.55 cfs 0.580 af
Subcatchment12E: EX 12	Runoff Area=24,870 sf 22.10% Impervious Runoff Depth=3.12" Tc=1.2 min CN=63 Runoff=2.26 cfs 0.148 af
Subcatchment13E: RX 13	Runoff Area=491,439 sf 7.52% Impervious Runoff Depth=4.19" Flow Length=1,700' Tc=14.7 min CN=73 Runoff=42.04 cfs 3.936 af
Reach 32R: Wetland swale	Avg. Flow Depth=2.24' Max Vel=2.54 fps Inflow=52.56 cfs 3.591 af n=0.100 L=230.0' S=0.0261 '/' Capacity=110.96 cfs Outflow=51.02 cfs 3.591 af
Pond 14P: J12	Peak Elev=651.44' Inflow=14.84 cfs 1.555 af Primary=4.49 cfs 1.185 af Secondary=11.01 cfs 0.370 af Outflow=14.84 cfs 1.555 af
Pond 15P: J10	Peak Elev=644.04' Inflow=17.00 cfs 1.838 af Primary=11.30 cfs 1.717 af Secondary=5.70 cfs 0.121 af Outflow=17.00 cfs 1.838 af

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Type III 24-hr 100-yr Rainfall=7.29"

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Pond 18P: J8	Peak Elev=631.93' Inflow=28.90 cfs 2.397 af Primary=9.95 cfs 1.950 af Secondary=18.94 cfs 0.447 af Outflow=28.90 cfs 2.397 af
Pond 20P: J6	Peak Elev=626.69' Inflow=19.58 cfs 0.515 af Primary=4.20 cfs 0.199 af Secondary=15.39 cfs 0.316 af Outflow=19.58 cfs 0.515 af
Pond 21P: J3	Peak Elev=622.49' Storage=420 cf Inflow=20.19 cfs 0.676 af Primary=2.74 cfs 0.210 af Secondary=18.44 cfs 0.467 af Outflow=21.19 cfs 0.677 af
Pond 22P: J1	Peak Elev=625.92' Storage=741 cf Inflow=28.11 cfs 2.635 af Primary=8.49 cfs 2.029 af Secondary=19.57 cfs 0.606 af Outflow=28.06 cfs 2.635 af
Pond 24P: J15	Peak Elev=597.10' Inflow=6.44 cfs 0.824 af Primary=6.44 cfs 0.824 af Secondary=0.00 cfs 0.000 af Outflow=6.44 cfs 0.824 af
Pond 25P: J14	Peak Elev=614.56' Inflow=5.68 cfs 0.746 af Primary=3.75 cfs 0.706 af Secondary=2.12 cfs 0.039 af Outflow=5.68 cfs 0.746 af
Pond 26P: J13	Peak Elev=615.82' Inflow=8.63 cfs 0.664 af Primary=3.53 cfs 0.575 af Secondary=5.11 cfs 0.089 af Outflow=8.63 cfs 0.664 af
Pond 27P: J22	Peak Elev=578.83' Inflow=55.97 cfs 4.415 af Primary=17.31 cfs 3.207 af Secondary=38.66 cfs 1.208 af Outflow=55.97 cfs 4.415 af
Pond 28P: J16	Peak Elev=579.43' Inflow=11.05 cfs 0.669 af Primary=5.02 cfs 0.571 af Secondary=6.03 cfs 0.097 af Outflow=11.05 cfs 0.669 af
Pond 31P: J23	Primary=0.00 cfs 0.000 af
Link 16L: DP-1 EXISTING OUTLET TO UNDER 116	Inflow=11.30 cfs 1.717 af Primary=11.30 cfs 1.717 af
Link 19L: Behind houses	Inflow=52.56 cfs 3.591 af Primary=52.56 cfs 3.591 af
Link 23L: DP- 6 NORTH TO 10 PINE HILL RD	Inflow=53.27 cfs 6.175 af Primary=53.27 cfs 6.175 af
Link 30L: DP-5 to town property	Inflow=12.30 cfs 0.817 af Primary=12.30 cfs 0.817 af
Link 33L: DP-4 To 116	Inflow=55.97 cfs 4.415 af Primary=55.97 cfs 4.415 af
Link 34L: DP-3 51 Baptist Hill Rd Property	Inflow=37.98 cfs 0.982 af Primary=37.98 cfs 0.982 af
Link 35L: DP-2 Along 45 Upper Baptist	Inflow=9.95 cfs 1.950 af Primary=9.95 cfs 1.950 af

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Type III 24-hr 100-yr Rainfall=7.29"

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Total Runoff Area = 50.480 ac Runoff Volume = 13.124 af Average Runoff Depth = 3.12"
92.46% Pervious = 46.673 ac 7.54% Impervious = 3.808 ac

15.0167305.01-EXC HYDROLOGY

Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Subcatchment 1E: EX 1

Runoff = 14.84 cfs @ 12.26 hrs, Volume= 1.555 af, Depth= 2.51"
 Routed to Pond 14P : J12

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr Rainfall=7.29"

Area (sf)	CN	Description
154,324	66	Woods, Poor, HSG B
* 27,768	45	Woods, Poor, HSG A
* 17,039	61	>75% Grass Cover, Good HSG B
* 64,387	39	>75% Grass Cover, Good HSG A
23,965	39	>75% Grass cover, Good, HSG A
25,373	61	>75% Grass cover, Good, HSG B
* 4,212	98	Impervious, HSG B
* 7,049	98	Impervious, HSG A
324,117	57	Weighted Average
312,856		96.53% Pervious Area
11,261		3.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.1800	0.18		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.07"
2.6	385	0.2442	2.47		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.7	293	0.3240	2.85		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.9	475	0.0821	2.01		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.3	1,253	Total			

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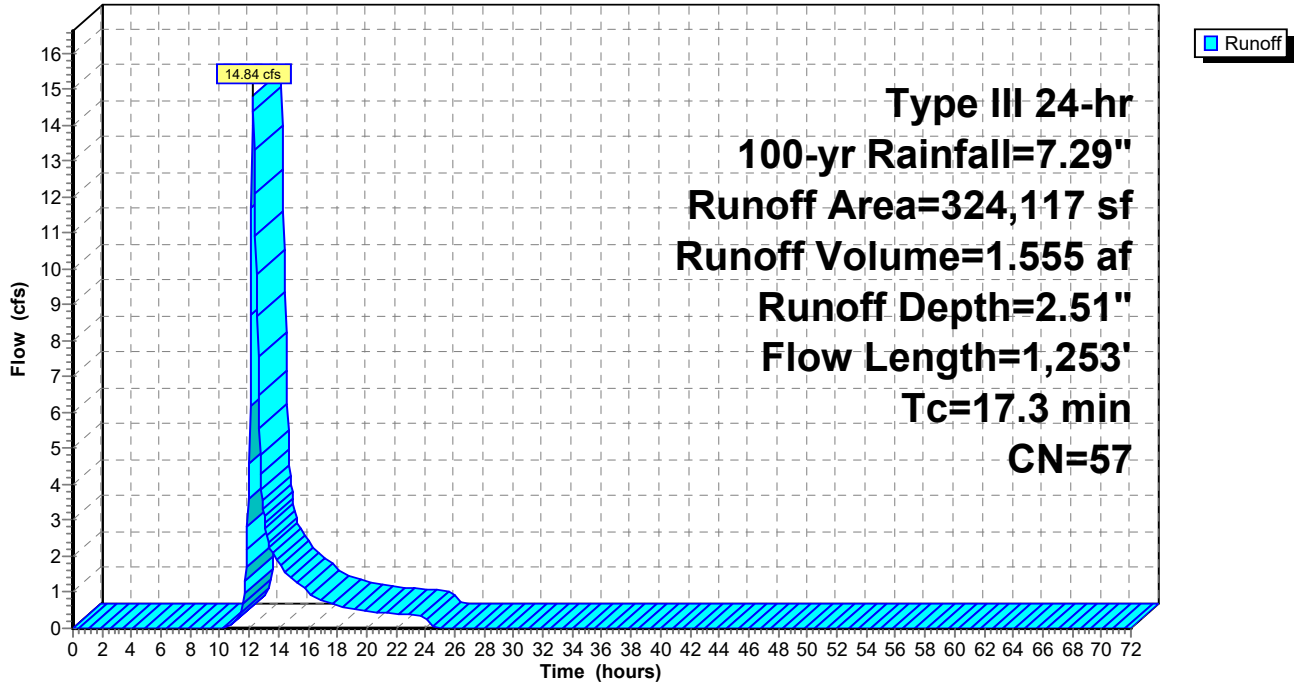
Type III 24-hr 100-yr Rainfall=7.29"

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Subcatchment 1E: EX 1

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Subcatchment 2E: EX 2

Runoff = 3.73 cfs @ 12.11 hrs, Volume= 0.283 af, Depth= 2.81"
 Routed to Pond 15P : J10

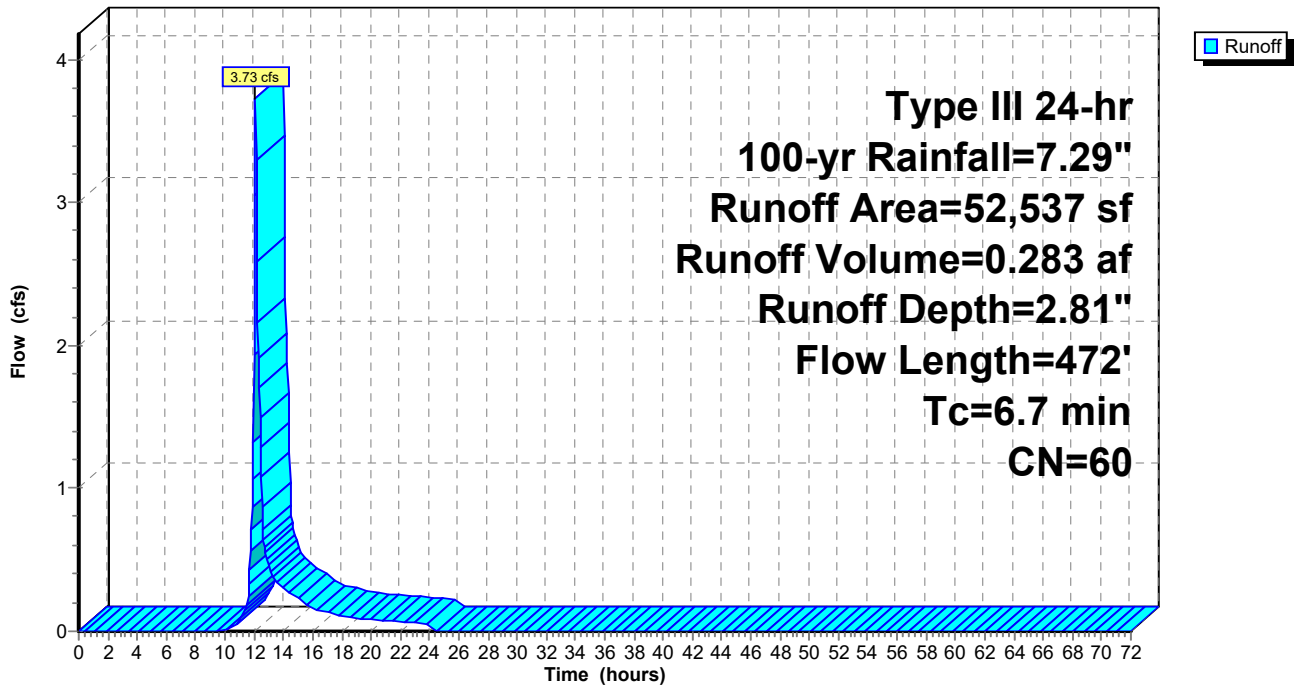
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr Rainfall=7.29"

Area (sf)	CN	Description
* 18,495	98	Impervious, HSG A
34,042	39	>75% Grass cover, Good, HSG A
52,537	60	Weighted Average
34,042		64.80% Pervious Area
18,495		35.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0900	0.30		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
1.2	372	0.0661	5.22		Shallow Concentrated Flow, Paved Kv= 20.3 fps
6.7	472	Total			

Subcatchment 2E: EX 2

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Subcatchment 3E: EX 3

Runoff = 23.42 cfs @ 12.21 hrs, Volume= 2.277 af, Depth= 2.31"
 Routed to Pond 18P : J8

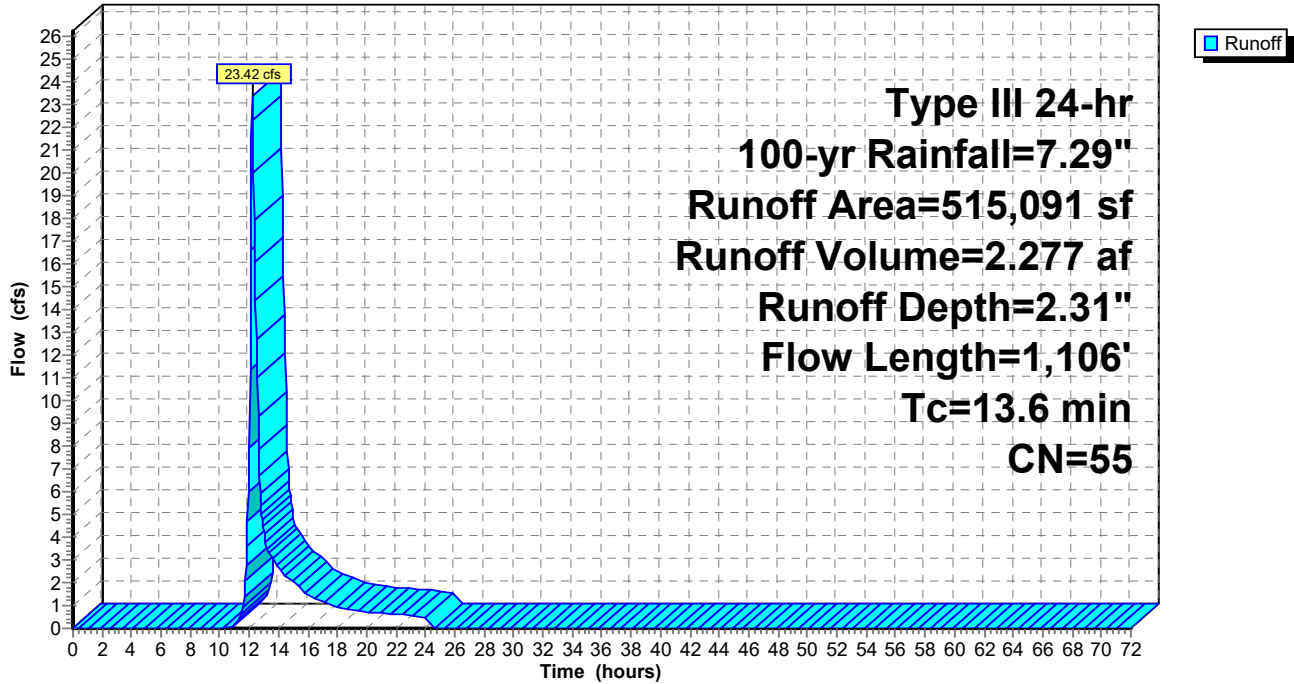
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr Rainfall=7.29"

Area (sf)	CN	Description
152,788	66	Woods, Poor, HSG B
83,867	39	>75% Grass cover, Good, HSG A
* 7,162	98	impervious, HSG A
29,740	45	Woods, Poor, HSG A
78,775	66	Woods, Poor, HSG B
81,473	45	Woods, Poor, HSG A
81,286	49	50-75% Grass cover, Fair, HSG A
515,091	55	Weighted Average
507,929		98.61% Pervious Area
7,162		1.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	100	0.3100	0.23		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.07"
1.4	214	0.2520	2.51		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.5	120	0.6500	4.03		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.3	212	0.2920	2.70		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.1	460	0.0739	2.45		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
13.6	1,106	Total			

Subcatchment 3E: EX 3

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Subcatchment 4E: EX 4

Runoff = 28.11 cfs @ 12.20 hrs, Volume= 2.635 af, Depth= 3.12"
 Routed to Pond 22P : J1

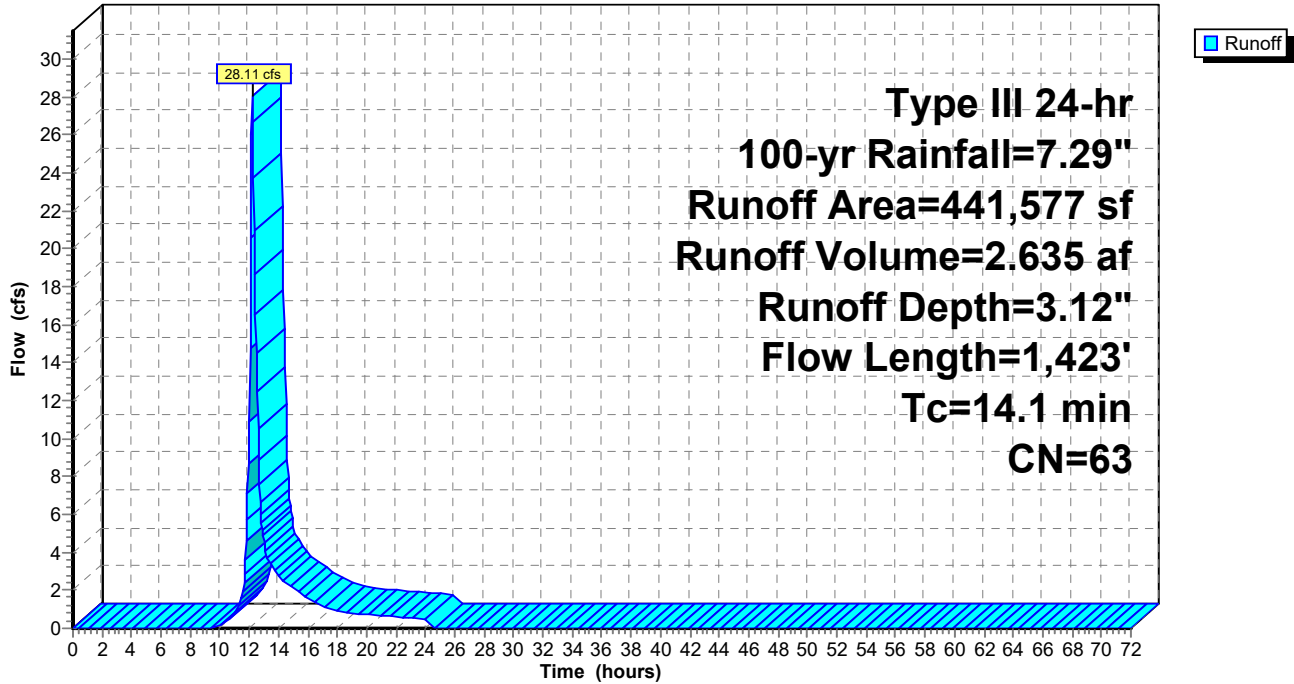
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr Rainfall=7.29"

Area (sf)	CN	Description
186,589	66	Woods, Poor, HSG B
11,967	45	Woods, Poor, HSG A
104,358	77	Woods, Poor, HSG C
43,979	61	>75% Grass cover, Good, HSG B
10,084	74	>75% Grass cover, Good, HSG C
84,600	39	>75% Grass cover, Good, HSG A
441,577	63	Weighted Average
441,577		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	100	0.1900	0.41		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
1.5	199	0.1055	2.27		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.4	185	0.1946	2.21		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
4.1	619	0.2569	2.53		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.0	320	0.0656	1.79		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.1	1,423	Total			

Subcatchment 4E: EX 4

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Subcatchment 5E: EX 5

Runoff = 0.70 cfs @ 12.16 hrs, Volume= 0.068 af, Depth= 1.64"
 Routed to Pond 20P : J6

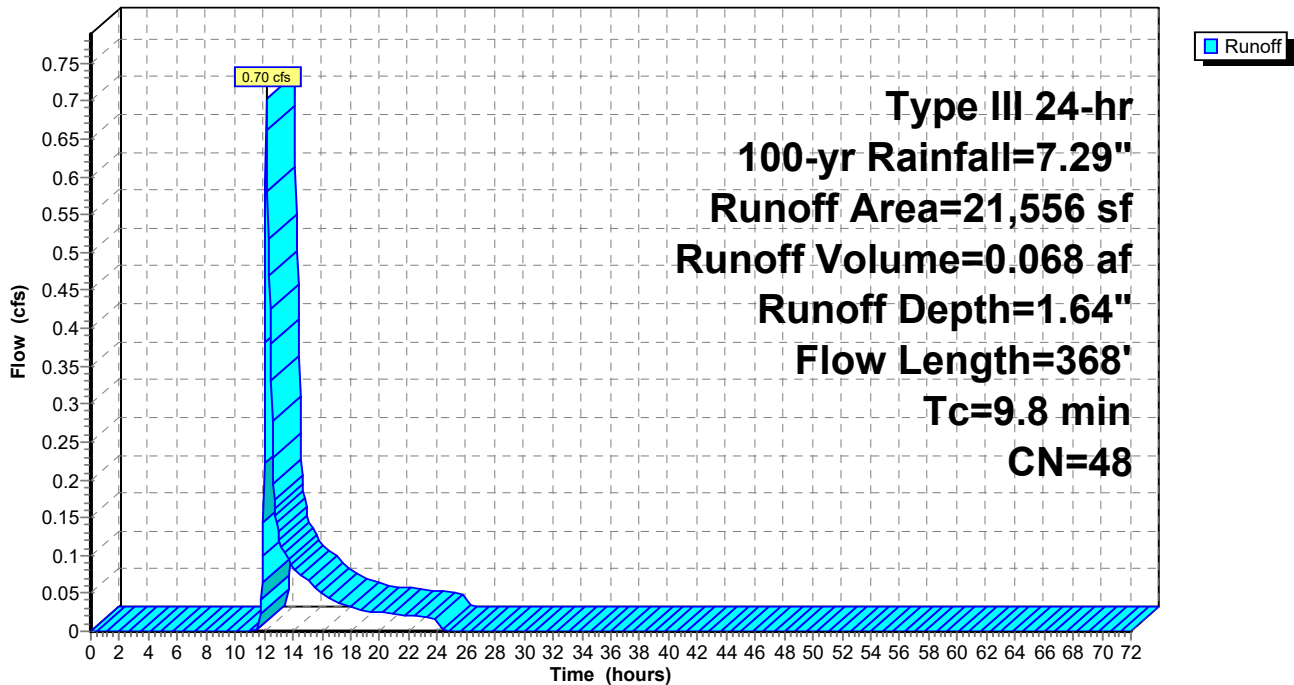
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr Rainfall=7.29"

Area (sf)	CN	Description
* 3,236	98	impervious, HSG A
18,320	39	>75% Grass cover, Good, HSG A
21,556	48	Weighted Average
18,320		84.99% Pervious Area
3,236		15.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	100	0.0400	0.20		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.07"
1.4	268	0.0261	3.28		Shallow Concentrated Flow, Paved Kv= 20.3 fps
9.8	368	Total			

Subcatchment 5E: EX 5

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Subcatchment 6E: EX 6

Runoff = 0.93 cfs @ 12.11 hrs, Volume= 0.070 af, Depth= 3.22"
 Routed to Pond 21P : J3

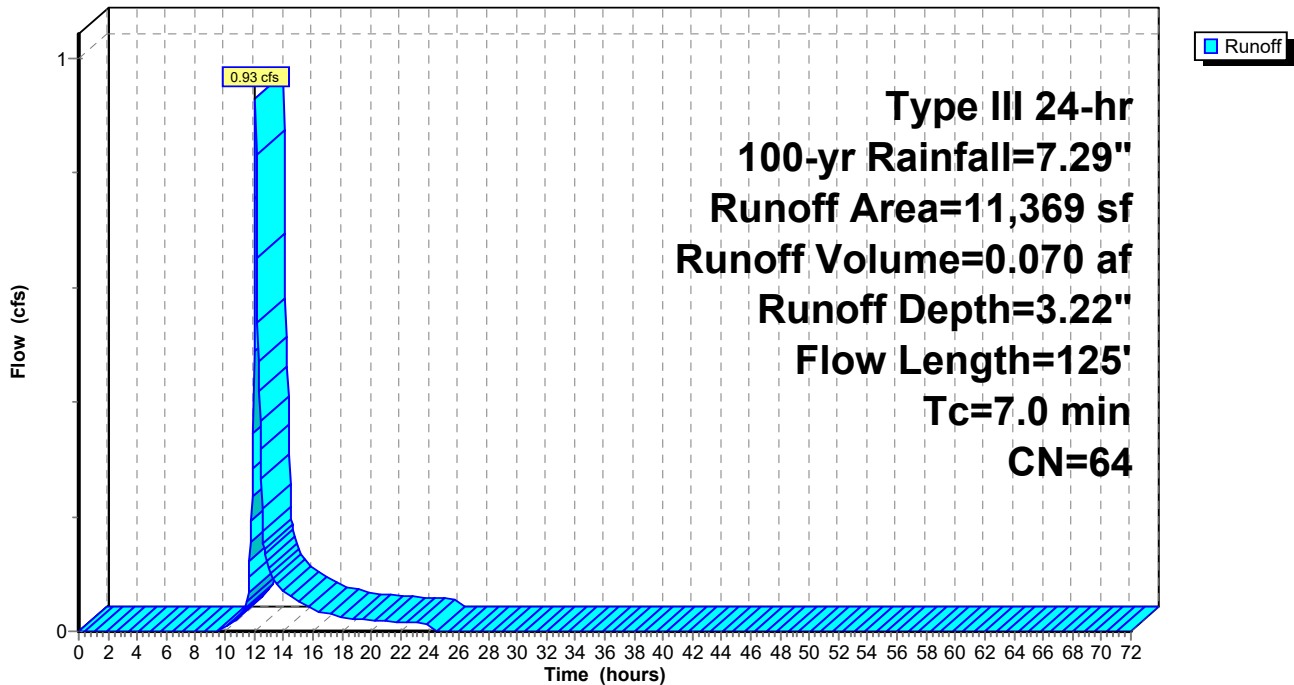
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr Rainfall=7.29"

Area (sf)	CN	Description
6,642	39	>75% Grass cover, Good, HSG A
* 4,727	98	Impervious, HSG A
11,369	64	Weighted Average
6,642		58.42% Pervious Area
4,727		41.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	100	0.0500	0.24		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
0.1	25	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.0	125	Total			

Subcatchment 6E: EX 6

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Subcatchment 7E: EX 7

Runoff = 2.18 cfs @ 12.12 hrs, Volume= 0.170 af, Depth= 4.52"
 Routed to Pond 25P : J14

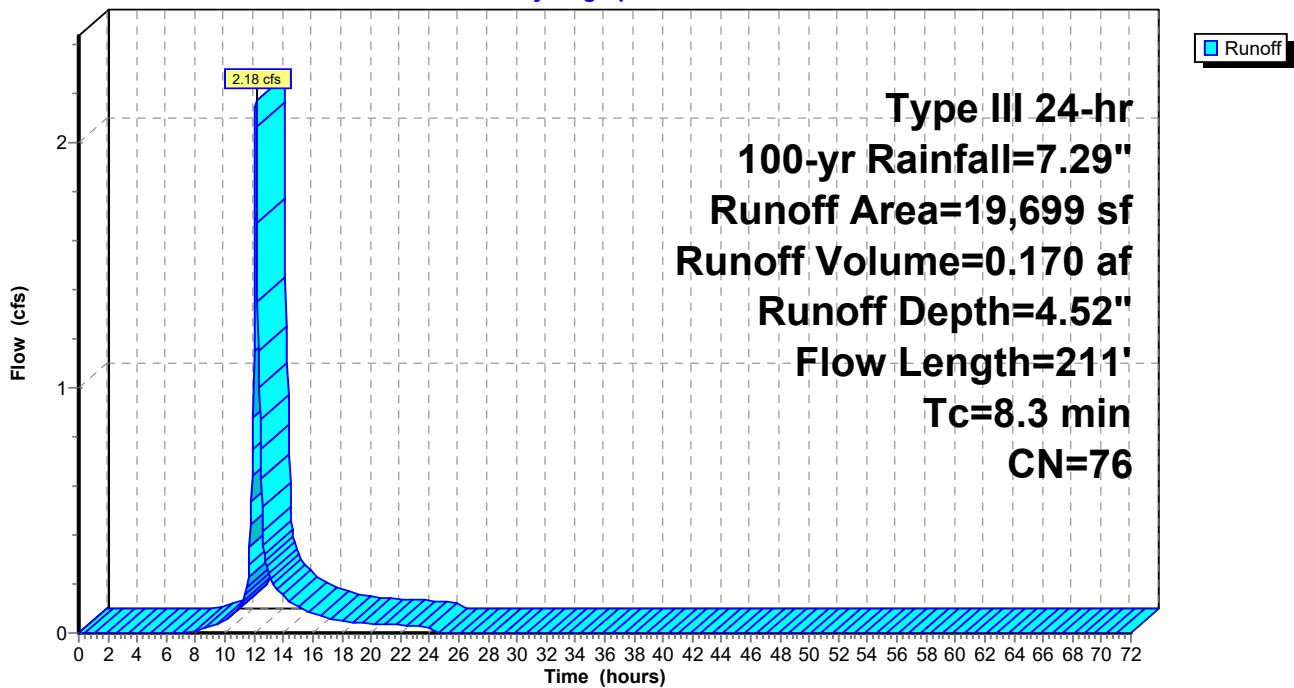
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr Rainfall=7.29"

	Area (sf)	CN	Description
*	6,358	98	Impervious, HSG C
*	980	98	Impervious, HSG A
	3,996	39	>75% Grass cover, Good, HSG A
	8,365	74	>75% Grass cover, Good, HSG C
	19,699	76	Weighted Average
	12,361		62.75% Pervious Area
	7,338		37.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	100	0.0400	0.22		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
0.7	111	0.0180	2.72		Shallow Concentrated Flow, Paved Kv= 20.3 fps
8.3	211	Total			

Subcatchment 7E: EX 7

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Subcatchment 8E: EX 8

Runoff = 8.63 cfs @ 12.10 hrs, Volume= 0.664 af, Depth= 5.42"
 Routed to Pond 26P : J13

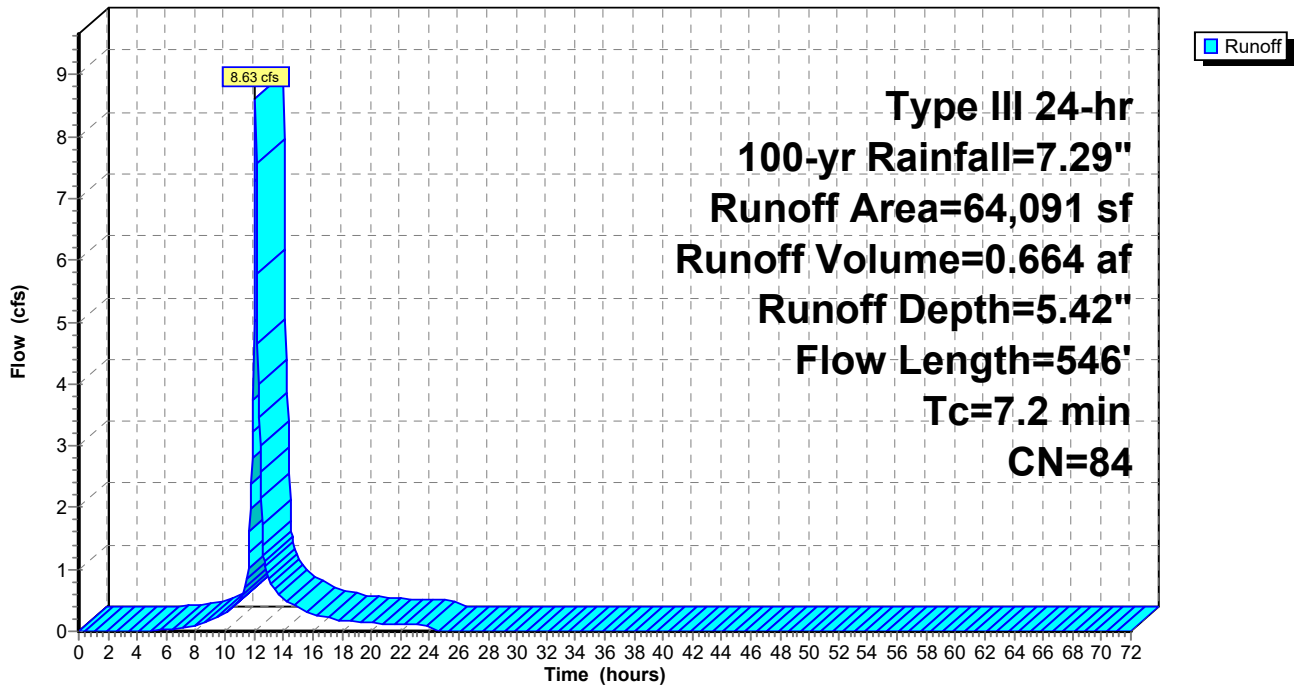
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr Rainfall=7.29"

	Area (sf)	CN	Description
*	26,754	98	Impervious, HSG C
	37,337	74	>75% Grass cover, Good, HSG C
	64,091	84	Weighted Average
	37,337		58.26% Pervious Area
	26,754		41.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0900	0.30		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
1.7	446	0.0471	4.41		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.2	546	Total			

Subcatchment 8E: EX 8

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Subcatchment 9E: EX 9

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.21 cfs @ 12.02 hrs, Volume= 0.078 af, Depth= 3.65"
 Routed to Pond 24P : J15

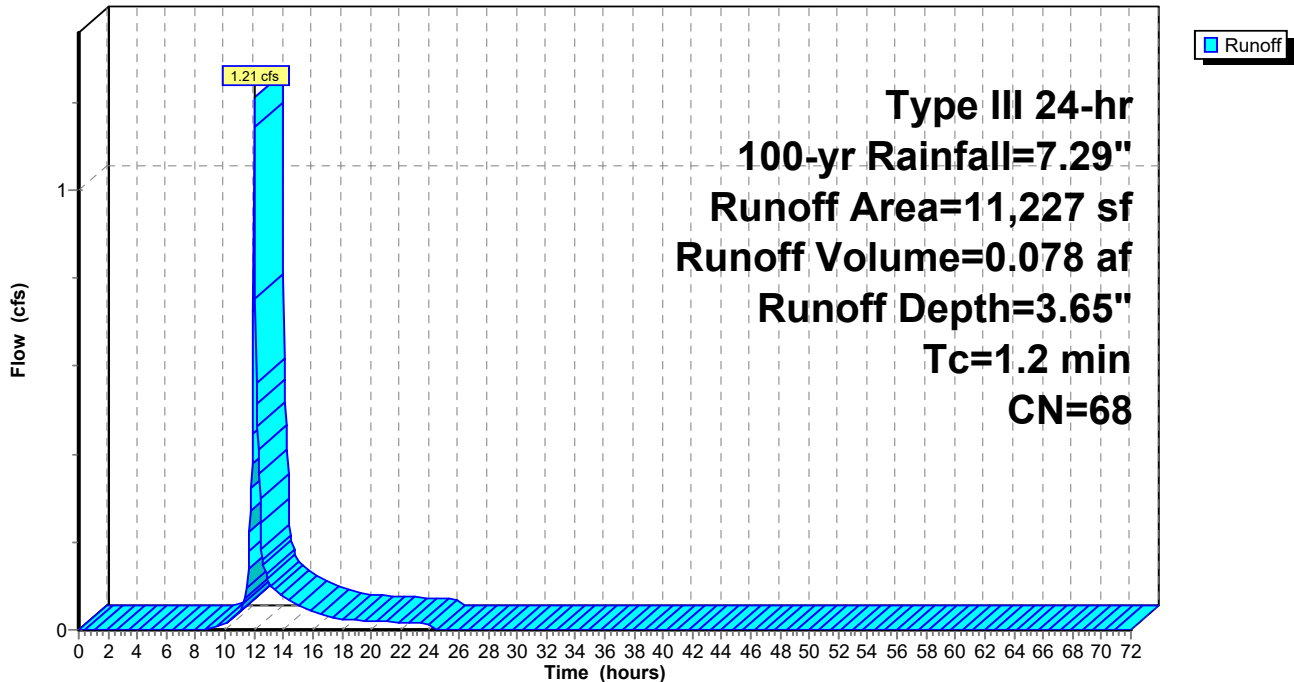
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr Rainfall=7.29"

	Area (sf)	CN	Description
*	5,612	98	Impervious, HSG A
	5,615	39	>75% Grass cover, Good, HSG A
	11,227	68	Weighted Average
	5,615		50.01% Pervious Area
	5,612		49.99% Impervious Area

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

Subcatchment 9E: EX 9

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Subcatchment 10E: EX 10

Runoff = 5.58 cfs @ 12.33 hrs, Volume= 0.659 af, Depth= 2.12"
 Routed to Link 19L : Behind houses

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr Rainfall=7.29"

Area (sf)	CN	Description
* 13,392	98	Impervious, HSG A
* 4,745	98	Impervious, HSG C
24,615	45	Woods, Poor, HSG A
7,646	66	Woods, Poor, HSG B
89,600	39	>75% Grass cover, Good, HSG A
22,005	74	>75% Grass cover, Good, HSG C
912	61	>75% Grass cover, Good, HSG B
162,915	53	Weighted Average
144,778		88.87% Pervious Area
18,137		11.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	100	0.0300	0.13		Sheet Flow, Grass: Dense n= 0.240 P2= 3.07"
8.8	643	0.0594	1.22		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
21.2	743	Total			

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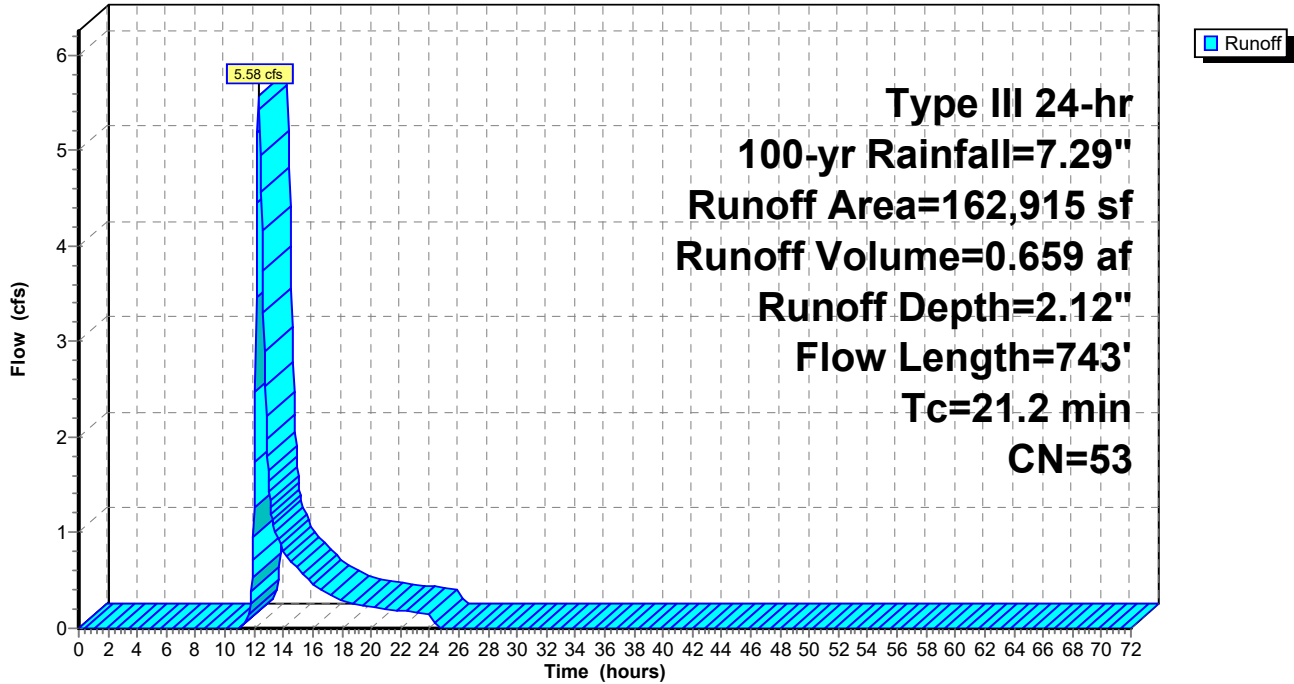
Type III 24-hr 100-yr Rainfall=7.29"

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Subcatchment 10E: EX 10

Hydrograph



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Summary for Subcatchment 11E: EX 11

Runoff = 6.55 cfs @ 12.16 hrs, Volume= 0.580 af, Depth= 5.19"
 Routed to Pond 28P : J16

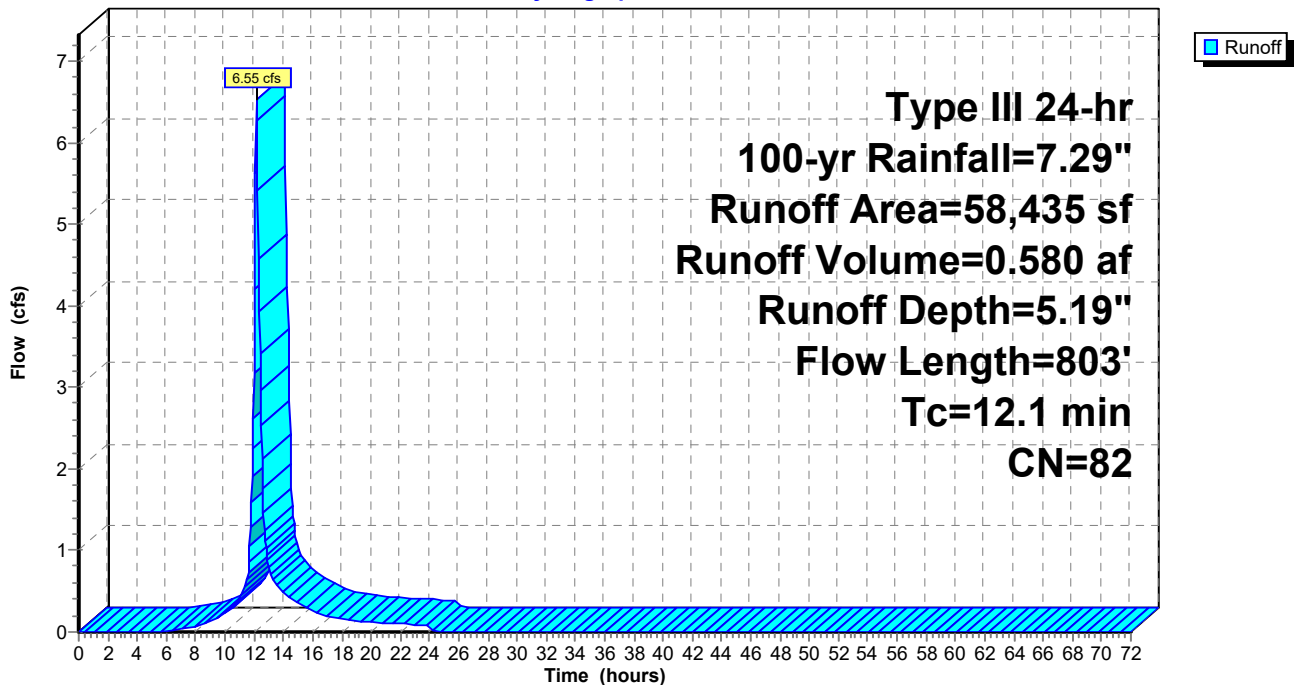
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr Rainfall=7.29"

	Area (sf)	CN	Description
*	1,964	98	Impervious, HSG A
	780	39	>75% Grass cover, Good, HSG A
*	18,734	98	Impervious, HSG C
	36,957	74	>75% Grass cover, Good, HSG C
	58,435	82	Weighted Average
	37,737		64.58% Pervious Area
	20,698		35.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	100	0.0400	0.22		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
3.8	411	0.0657	1.79		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.7	292	0.1199	7.03		Shallow Concentrated Flow, Paved Kv= 20.3 fps
12.1	803	Total			

Subcatchment 11E: EX 11

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Subcatchment 12E: EX 12

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.26 cfs @ 12.03 hrs, Volume= 0.148 af, Depth= 3.12"
 Routed to Link 30L : DP-5 to town property

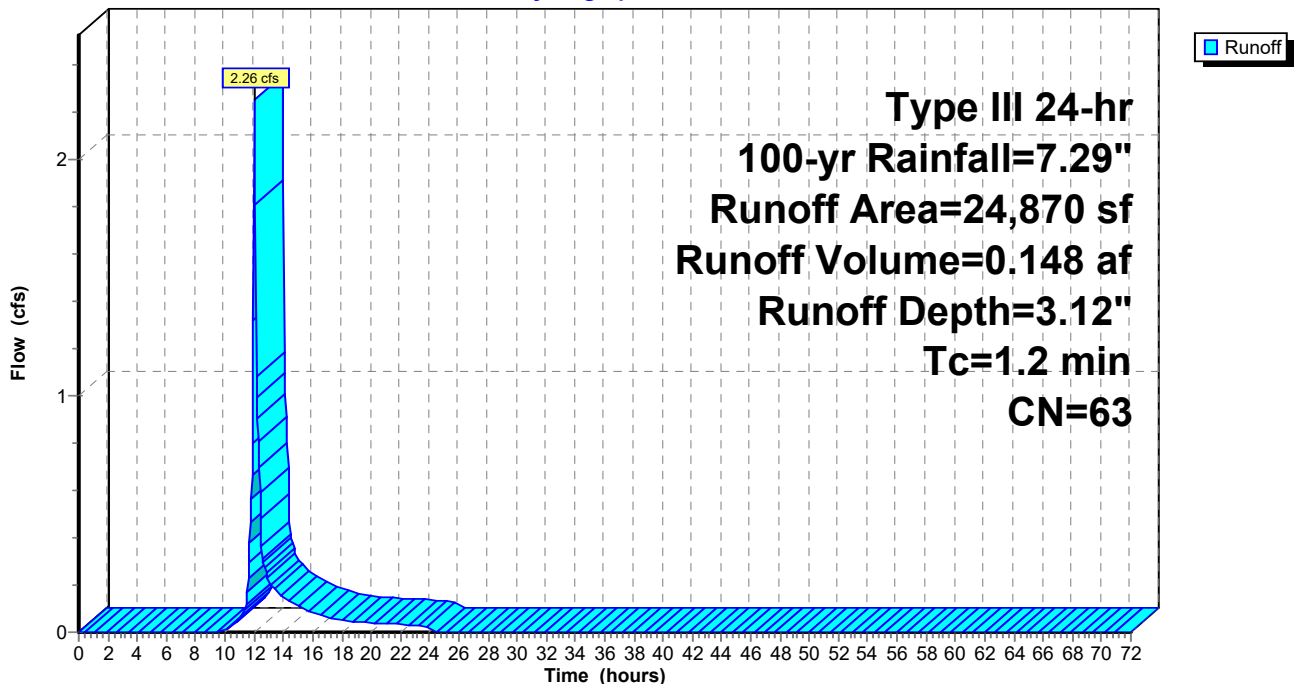
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-yr Rainfall=7.29"

Area (sf)	CN	Description
5,179	74	>75% Grass cover, Good, HSG C
* 2,500	98	Impervious, HSG C
13,037	45	Woods, Poor, HSG A
546	39	>75% Grass cover, Good, HSG A
* 2,290	98	Impervious, HSG A
* 706	98	Impervious, HSG B
612	66	Woods, Poor, HSG B
24,870	63	Weighted Average
19,374		77.90% Pervious Area
5,496		22.10% Impervious Area

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

Subcatchment 12E: EX 12

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Subcatchment 13E: RX 13

Runoff = 42.04 cfs @ 12.21 hrs, Volume= 3.936 af, Depth= 4.19"

Routed to Link 23L : DP- 6 NORTH TO 10 PINE HILL RD

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=7.29"

Area (sf)	CN	Description
26,404	61	>75% Grass cover, Good, HSG B
29,263	74	>75% Grass cover, Good, HSG C
48,122	39	>75% Grass cover, Good, HSG A
16,942	45	Woods, Poor, HSG A
2,172	66	Woods, Poor, HSG B
294,686	77	Woods, Poor, HSG C
25,711	88	Row crops, straight row, Poor, HSG C
11,199	72	Row crops, straight row, Poor, HSG A
* 13,085	98	Impervious, HSG A
* 18,490	98	Impervious, HSG C
* 5,365	98	Impervious, HSG B
491,439	73	Weighted Average
454,499		92.48% Pervious Area
36,940		7.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	100	0.1400	0.36		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
0.9	140	0.1357	2.58		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
4.7	651	0.2166	2.33		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.0	131	0.1756	2.10		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.3	212	0.0849	2.62		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
2.2	466	0.0558	3.54		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
14.7	1,700	Total			

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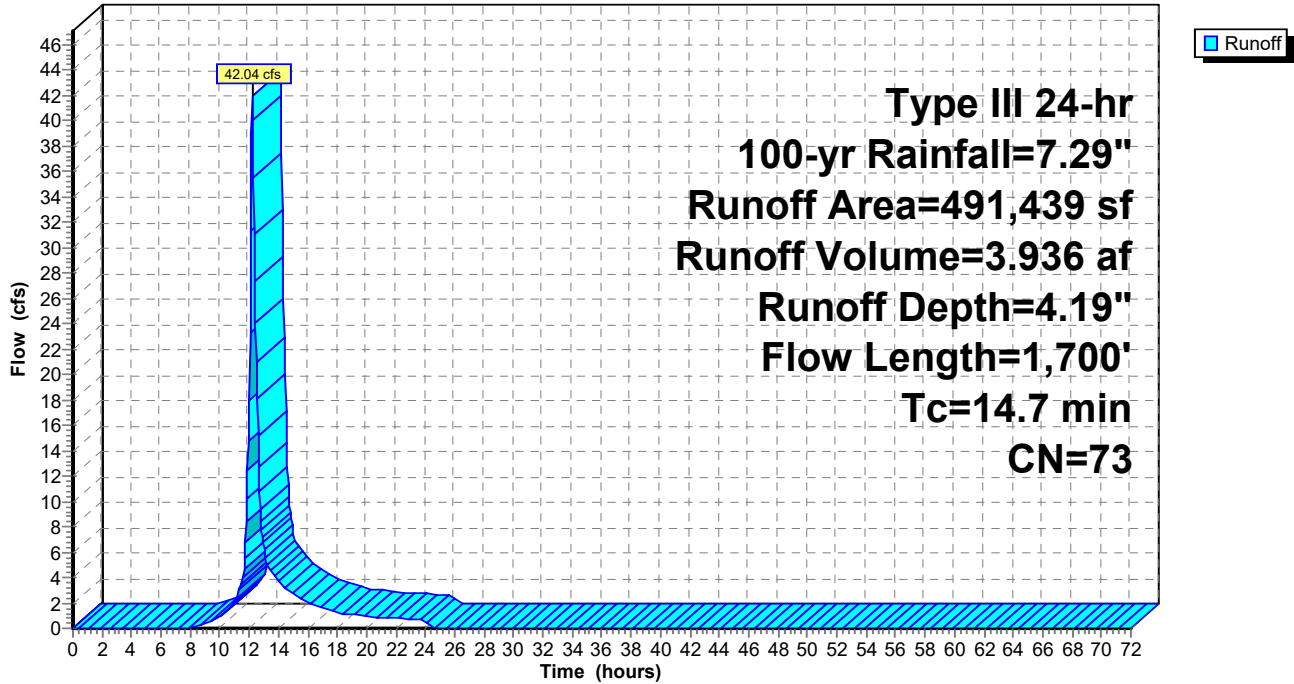
Type III 24-hr 100-yr Rainfall=7.29"

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Subcatchment 13E: RX 13

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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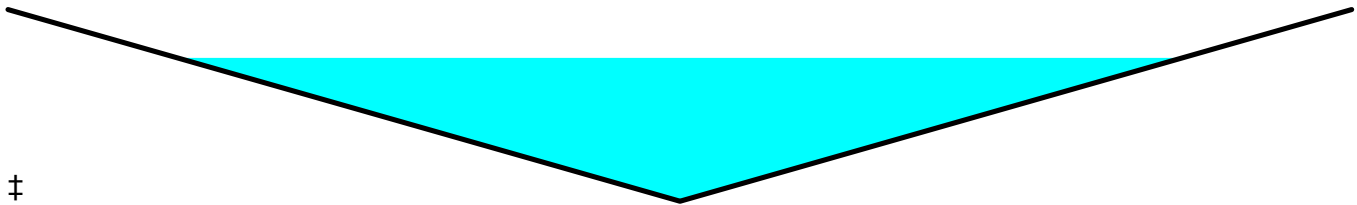
Summary for Reach 32R: Wetland swale

Inflow Area = 16.060 ac, 4.08% Impervious, Inflow Depth = 2.68" for 100-yr event
 Inflow = 52.56 cfs @ 12.21 hrs, Volume= 3.591 af
 Outflow = 51.02 cfs @ 12.24 hrs, Volume= 3.591 af, Atten= 3%, Lag= 1.8 min
 Routed to Pond 27P : J22

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Max. Velocity= 2.54 fps, Min. Travel Time= 1.5 min
 Avg. Velocity = 0.93 fps, Avg. Travel Time= 4.1 min

Peak Storage= 4,624 cf @ 12.24 hrs
 Average Depth at Peak Storage= 2.24' , Surface Width= 17.93'
 Bank-Full Depth= 3.00' Flow Area= 36.0 sf, Capacity= 110.96 cfs

Custom cross-section, Length= 230.0' Slope= 0.0261 '/'
 Constant n= 0.100 Earth, dense brush, high stage
 Inlet Invert= 580.00', Outlet Invert= 574.00'



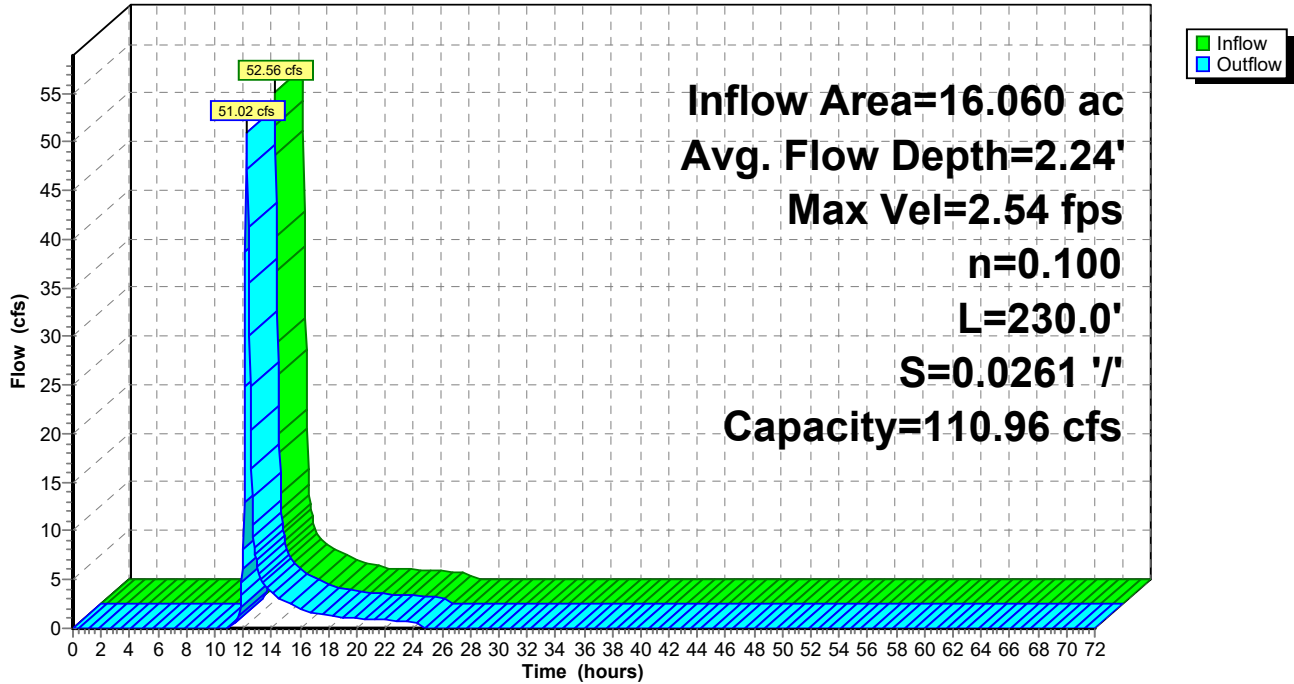
‡

Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	3.00	0.00
12.00	0.00	3.00
24.00	3.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Width (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	0.0	0.0	0	0.00
3.00	36.0	24.7	24.0	8,280	110.96

Reach 32R: Wetland swale

Hydrograph



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Summary for Pond 14P: J12

[58] Hint: Peaked 0.60' above defined flood level

Inflow Area = 7.441 ac, 3.47% Impervious, Inflow Depth = 2.51" for 100-yr event
 Inflow = 14.84 cfs @ 12.26 hrs, Volume= 1.555 af
 Outflow = 14.84 cfs @ 12.26 hrs, Volume= 1.555 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.49 cfs @ 12.02 hrs, Volume= 1.185 af
 Routed to Pond 15P : J10
 Secondary = 11.01 cfs @ 12.26 hrs, Volume= 0.370 af
 Routed to Pond 15P : J10

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 651.44' @ 12.26 hrs
 Flood Elev= 650.84'

Device	Routing	Invert	Outlet Devices
#1	Primary	647.59'	12.0" Round Culvert L= 159.4' Ke= 0.500 Inlet / Outlet Invert= 647.59' / 639.96' S= 0.0479 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	650.84'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.19 cfs @ 12.02 hrs HW=650.94' TW=642.11' (Dynamic Tailwater)
 ↑1=Culvert (Outlet Controls 4.19 cfs @ 5.33 fps)

Secondary OutFlow Max=10.92 cfs @ 12.26 hrs HW=651.43' TW=644.04' (Dynamic Tailwater)
 ↑2=Orifice/Grate (Weir Controls 10.92 cfs @ 2.52 fps)

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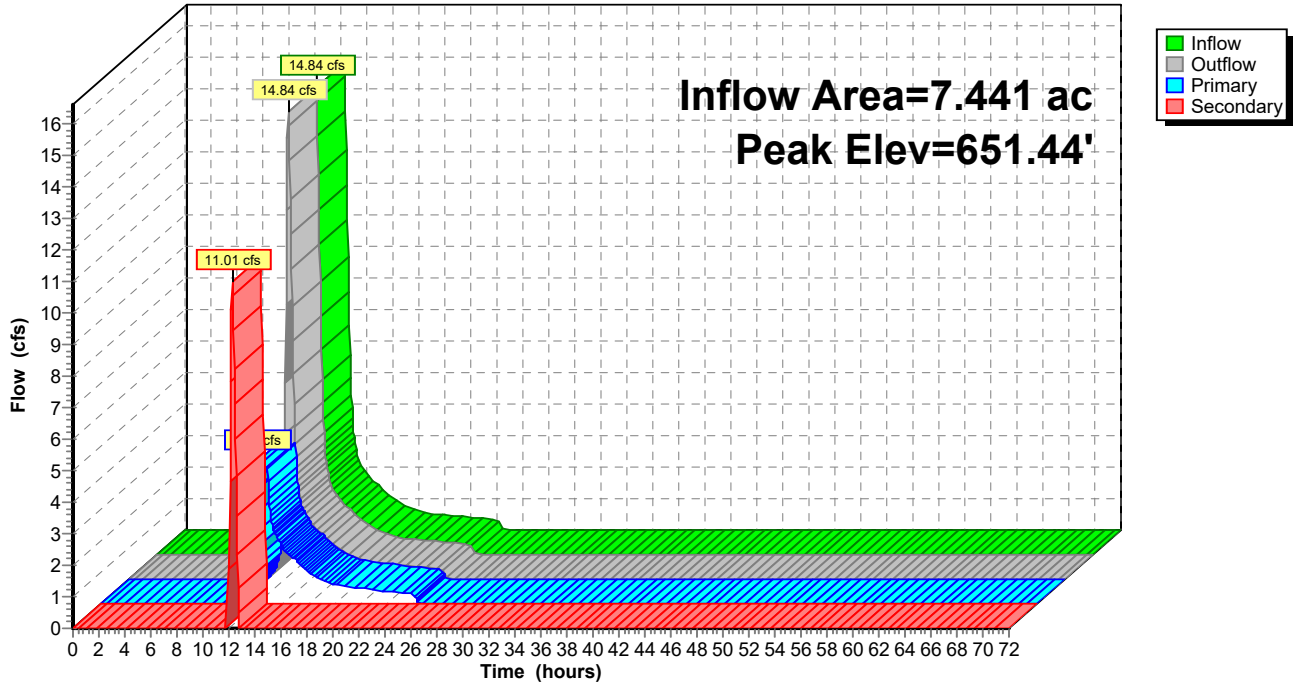
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Pond 14P: J12

Hydrograph



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Summary for Pond 15P: J10

[58] Hint: Peaked 0.38' above defined flood level

Inflow Area = 8.647 ac, 7.90% Impervious, Inflow Depth = 2.55" for 100-yr event
 Inflow = 17.00 cfs @ 12.24 hrs, Volume= 1.838 af
 Outflow = 17.00 cfs @ 12.24 hrs, Volume= 1.838 af, Atten= 0%, Lag= 0.0 min
 Primary = 11.30 cfs @ 12.24 hrs, Volume= 1.717 af
 Routed to Link 16L : DP-1 EXISTING OUTLET TO UNDER 116
 Secondary = 5.70 cfs @ 12.24 hrs, Volume= 0.121 af
 Routed to Pond 18P : J8

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 644.04' @ 12.24 hrs
 Flood Elev= 643.66'

Device	Routing	Invert	Outlet Devices
#1	Primary	639.76'	15.0" Round Culvert L= 62.0' Ke= 0.500 Inlet / Outlet Invert= 639.76' / 625.00' S= 0.2381 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 1.23 sf
#2	Secondary	643.66'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=11.30 cfs @ 12.24 hrs HW=644.04' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 11.30 cfs @ 9.21 fps)

Secondary OutFlow Max=5.64 cfs @ 12.24 hrs HW=644.04' TW=631.92' (Dynamic Tailwater)
 ↑2=Orifice/Grate (Weir Controls 5.64 cfs @ 2.02 fps)

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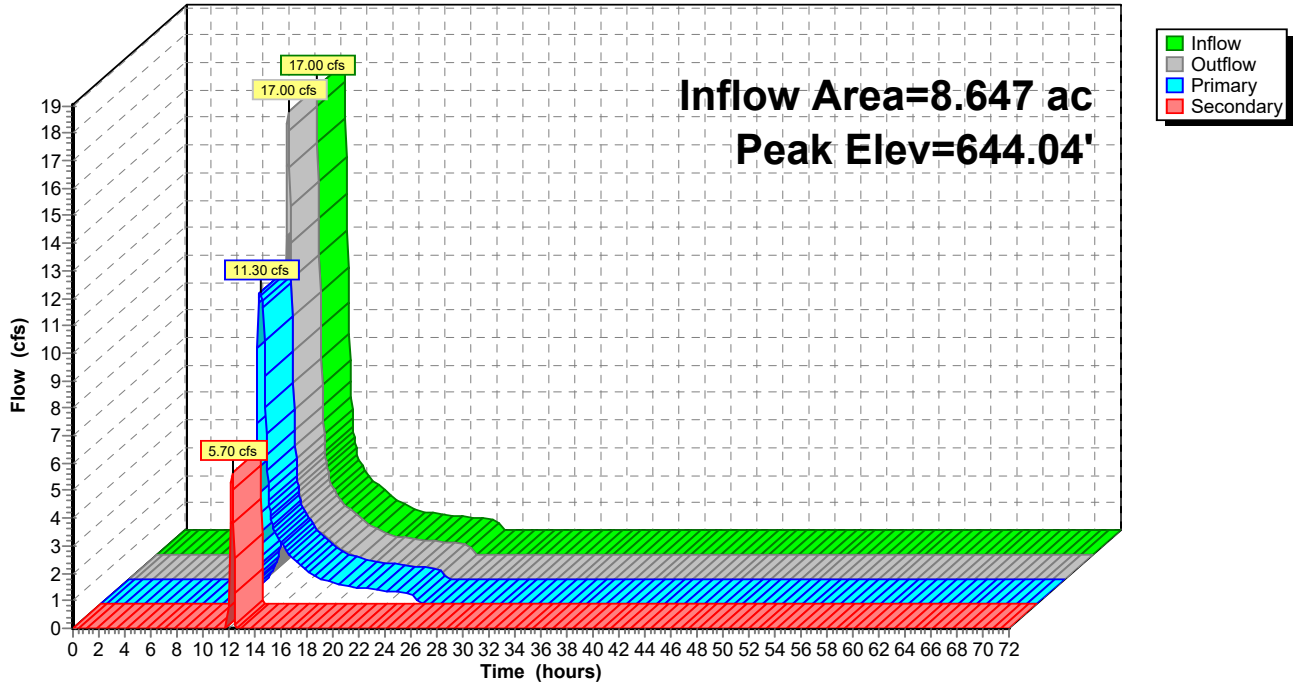
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Pond 15P: J10

Hydrograph



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Summary for Pond 18P: J8

[58] Hint: Peaked 0.43' above defined flood level

Inflow Area = 11.825 ac, 1.39% Impervious, Inflow Depth = 2.43" for 100-yr event
 Inflow = 28.90 cfs @ 12.22 hrs, Volume= 2.397 af
 Outflow = 28.90 cfs @ 12.22 hrs, Volume= 2.397 af, Atten= 0%, Lag= 0.0 min
 Primary = 9.95 cfs @ 12.22 hrs, Volume= 1.950 af
 Routed to Link 35L : DP-2 Along 45 Upper Baptist
 Secondary = 18.94 cfs @ 12.22 hrs, Volume= 0.447 af
 Routed to Pond 20P : J6

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 631.93' @ 12.22 hrs
 Flood Elev= 631.50'

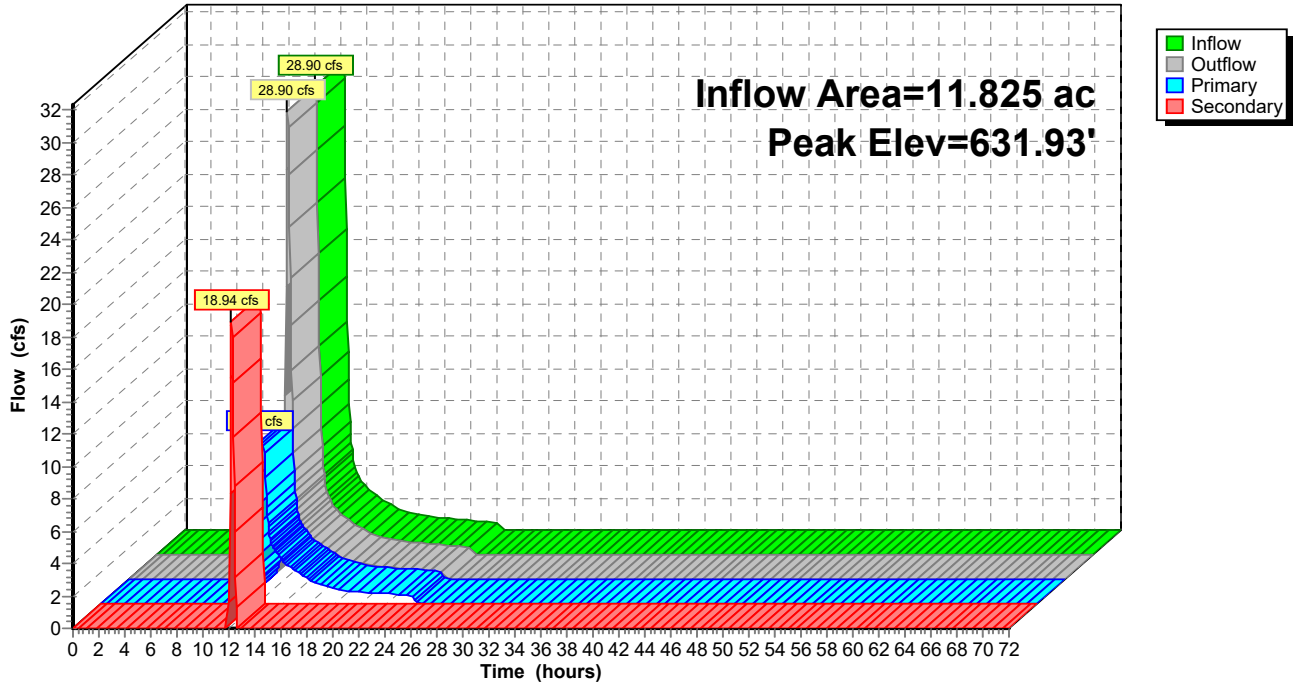
Device	Routing	Invert	Outlet Devices
#1	Primary	624.50'	12.0" Round Culvert L= 25.0' Ke= 0.500 Inlet / Outlet Invert= 624.50' / 623.38' S= 0.0448 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	631.50'	25.0' long x 20.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=9.95 cfs @ 12.22 hrs HW=631.92' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 9.95 cfs @ 12.67 fps)

Secondary OutFlow Max=18.51 cfs @ 12.22 hrs HW=631.92' TW=626.68' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 18.51 cfs @ 1.75 fps)

Pond 18P: J8

Hydrograph



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Summary for Pond 20P: J6

[58] Hint: Peaked 0.69' above defined flood level

Inflow Area = 0.495 ac, 15.01% Impervious, Inflow Depth = 12.49" for 100-yr event
 Inflow = 19.58 cfs @ 12.22 hrs, Volume= 0.515 af
 Outflow = 19.58 cfs @ 12.22 hrs, Volume= 0.515 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.20 cfs @ 12.22 hrs, Volume= 0.199 af
 Routed to Link 34L : DP-3 51 Baptist Hill Rd Property
 Secondary = 15.39 cfs @ 12.22 hrs, Volume= 0.316 af
 Routed to Link 34L : DP-3 51 Baptist Hill Rd Property

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 626.69' @ 12.22 hrs
 Flood Elev= 626.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	624.96'	12.0" Round Culvert L= 19.0' Ke= 0.500 Inlet / Outlet Invert= 623.69' / 624.96' S= -0.0668 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	626.00'	10.0' long x 24.0' 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) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=4.18 cfs @ 12.22 hrs HW=626.68' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 4.18 cfs @ 5.32 fps)

Secondary OutFlow Max=14.98 cfs @ 12.22 hrs HW=626.68' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 14.98 cfs @ 2.21 fps)

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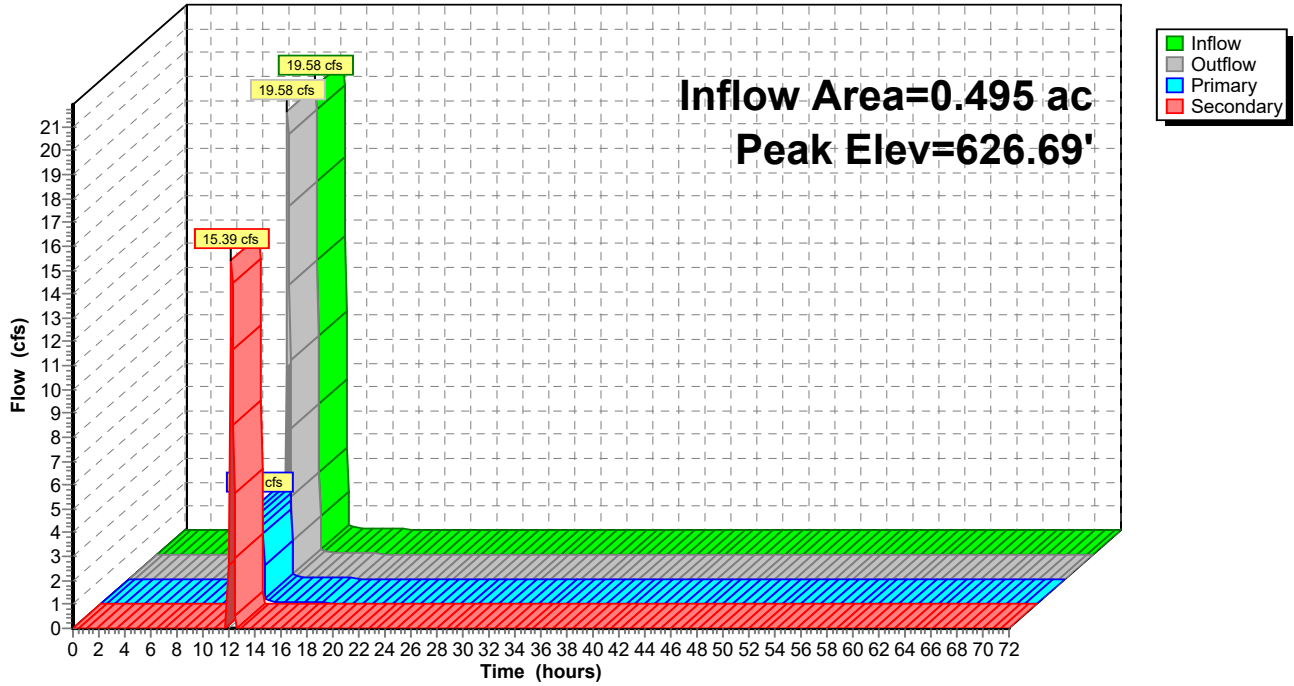
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Pond 20P: J6

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Summary for Pond 21P: J3

- [92] Warning: Device #2 is above defined storage
- [93] Warning: Storage range exceeded by 0.49'
- [90] Warning: Qout>Qin may require smaller dt or Finer Routing
- [87] Warning: Oscillations may require smaller dt or Finer Routing (severity=1)

Inflow Area = 0.261 ac, 41.58% Impervious, Inflow Depth = 31.10" for 100-yr event
 Inflow = 20.19 cfs @ 12.21 hrs, Volume= 0.676 af
 Outflow = 21.19 cfs @ 12.21 hrs, Volume= 0.677 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.74 cfs @ 12.21 hrs, Volume= 0.210 af
 Routed to Link 23L : DP- 6 NORTH TO 10 PINE HILL RD
 Secondary = 18.44 cfs @ 12.21 hrs, Volume= 0.467 af
 Routed to Link 34L : DP-3 51 Baptist Hill Rd Property

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 622.49' @ 12.21 hrs Surf.Area= 768 sf Storage= 420 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.6 min (748.5 - 747.8)

Volume	Invert	Avail.Storage	Storage Description
#1	619.00'	420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
619.00	4	0	0
620.00	10	7	7
621.00	24	17	24
622.00	768	396	420

Device	Routing	Invert	Outlet Devices
#1	Primary	619.50'	12.0" Round Culvert L= 101.0' Ke= 0.500 Inlet / Outlet Invert= 619.50' / 618.98' S= 0.0051 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	622.00'	20.0' long x 18.0' 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) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=2.74 cfs @ 12.21 hrs HW=622.48' TW=0.00' (Dynamic Tailwater)
 ↑**1=Culvert** (Barrel Controls 2.74 cfs @ 3.49 fps)

Secondary OutFlow Max=18.06 cfs @ 12.21 hrs HW=622.48' TW=0.00' (Dynamic Tailwater)
 ↑**2=Broad-Crested Rectangular Weir**(Weir Controls 18.06 cfs @ 1.87 fps)

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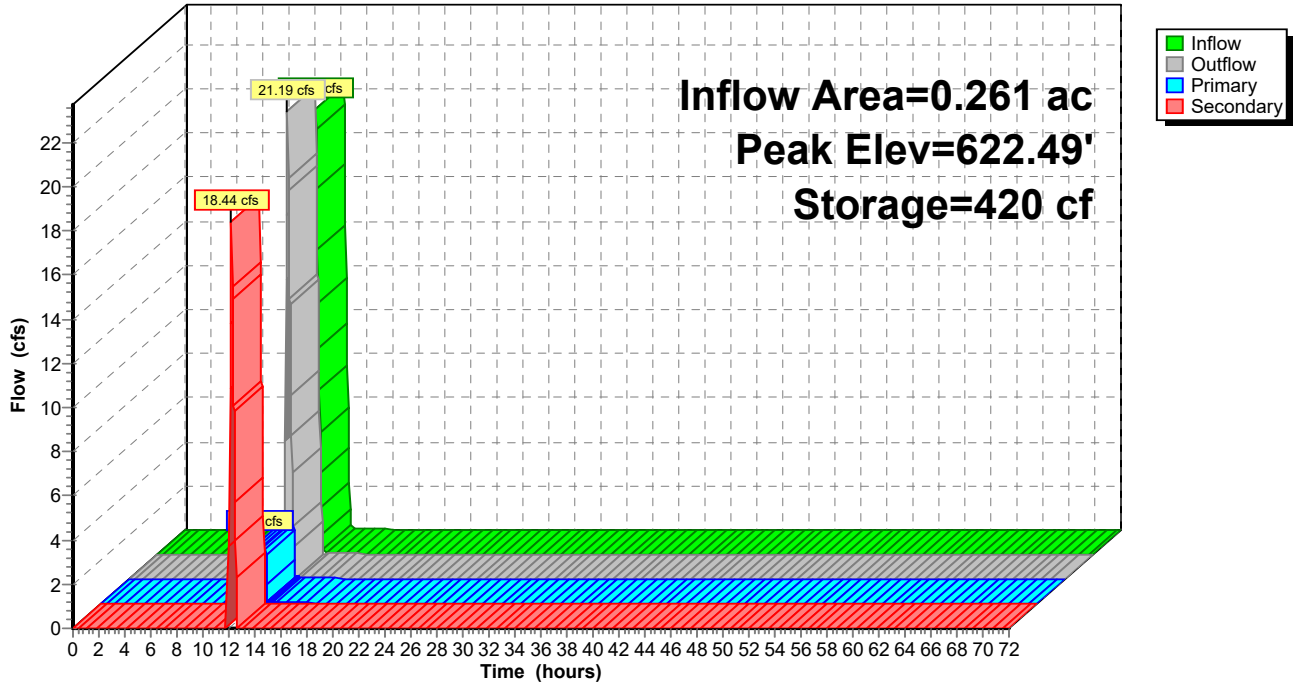
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Pond 21P: J3

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Summary for Pond 22P: J1

Inflow Area = 10.137 ac, 0.00% Impervious, Inflow Depth = 3.12" for 100-yr event
 Inflow = 28.11 cfs @ 12.20 hrs, Volume= 2.635 af
 Outflow = 28.06 cfs @ 12.21 hrs, Volume= 2.635 af, Atten= 0%, Lag= 0.6 min
 Primary = 8.49 cfs @ 12.21 hrs, Volume= 2.029 af
 Routed to Link 23L : DP- 6 NORTH TO 10 PINE HILL RD
 Secondary = 19.57 cfs @ 12.21 hrs, Volume= 0.606 af
 Routed to Pond 21P : J3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 625.92' @ 12.21 hrs Surf.Area= 1,365 sf Storage= 741 cf

Plug-Flow detention time= 0.3 min calculated for 2.633 af (100% of inflow)
 Center-of-Mass det. time= 0.3 min (852.2 - 851.9)

Volume	Invert	Avail.Storage	Storage Description
#1	623.00'	855 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
623.00	19	0	0
624.00	38	29	29
625.00	68	53	82
626.00	1,478	773	855

Device	Routing	Invert	Outlet Devices
#1	Primary	623.23'	15.0" Round Culvert L= 39.2' Ke= 0.500 Inlet / Outlet Invert= 623.23' / 622.75' S= 0.0122 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	625.10'	10.0' long x 25.0' 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) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=8.47 cfs @ 12.21 hrs HW=625.91' TW=0.00' (Dynamic Tailwater)
 ↑**1=Culvert** (Inlet Controls 8.47 cfs @ 6.90 fps)

Secondary OutFlow Max=19.22 cfs @ 12.21 hrs HW=625.91' TW=622.47' (Dynamic Tailwater)
 ↑**2=Broad-Crested Rectangular Weir**(Weir Controls 19.22 cfs @ 2.37 fps)

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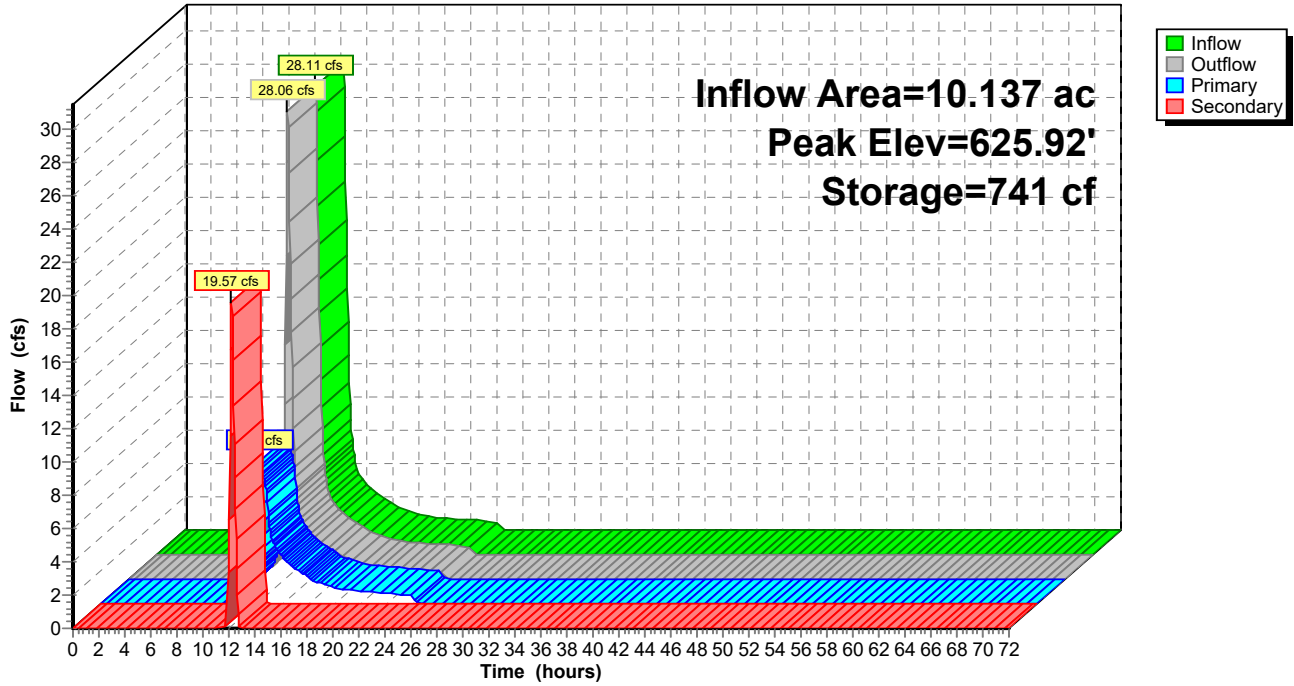
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Pond 22P: J1

Hydrograph



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Summary for Pond 24P: J15

Inflow Area = 2.181 ac, 41.79% Impervious, Inflow Depth = 4.53" for 100-yr event
 Inflow = 6.44 cfs @ 12.09 hrs, Volume= 0.824 af
 Outflow = 6.44 cfs @ 12.09 hrs, Volume= 0.824 af, Atten= 0%, Lag= 0.0 min
 Primary = 6.44 cfs @ 12.09 hrs, Volume= 0.824 af
 Routed to Pond 27P : J22
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 27P : J22

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 597.10' @ 12.09 hrs
 Flood Elev= 598.30'

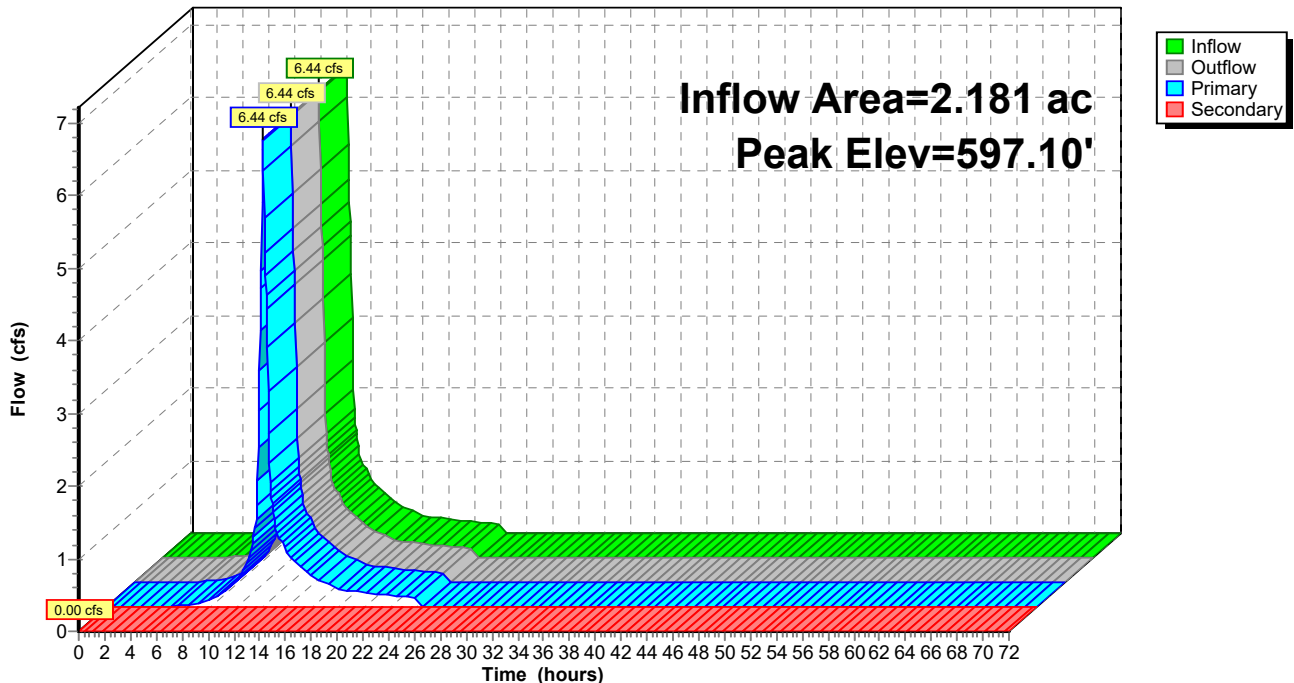
Device	Routing	Invert	Outlet Devices
#1	Primary	593.70'	12.0" Round Culvert L= 240.0' Ke= 0.500 Inlet / Outlet Invert= 593.70' / 569.82' S= 0.0995 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	598.30'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=6.38 cfs @ 12.09 hrs HW=597.05' TW=574.26' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 6.38 cfs @ 8.13 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=593.70' TW=569.62' (Dynamic Tailwater)
 ↳2=Orifice/Grate (Controls 0.00 cfs)

Pond 24P: J15

Hydrograph



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Summary for Pond 25P: J14

[58] Hint: Peaked 0.20' above defined flood level

Inflow Area = 1.924 ac, 40.69% Impervious, Inflow Depth = 4.65" for 100-yr event
 Inflow = 5.68 cfs @ 12.11 hrs, Volume= 0.746 af
 Outflow = 5.68 cfs @ 12.11 hrs, Volume= 0.746 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.75 cfs @ 11.92 hrs, Volume= 0.706 af
 Routed to Pond 24P : J15
 Secondary = 2.12 cfs @ 12.11 hrs, Volume= 0.039 af
 Routed to Pond 24P : J15

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 614.56' @ 12.11 hrs
 Flood Elev= 614.36'

Device	Routing	Invert	Outlet Devices
#1	Primary	611.36'	12.0" Round Culvert L= 460.0' Ke= 0.500 Inlet / Outlet Invert= 611.36' / 593.70' S= 0.0384 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	614.36'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.69 cfs @ 11.92 hrs HW=614.40' TW=595.61' (Dynamic Tailwater)
 ↑1=Culvert (Outlet Controls 3.69 cfs @ 4.69 fps)

Secondary OutFlow Max=2.05 cfs @ 12.11 hrs HW=614.55' TW=597.00' (Dynamic Tailwater)
 ↑2=Orifice/Grate (Weir Controls 2.05 cfs @ 1.44 fps)

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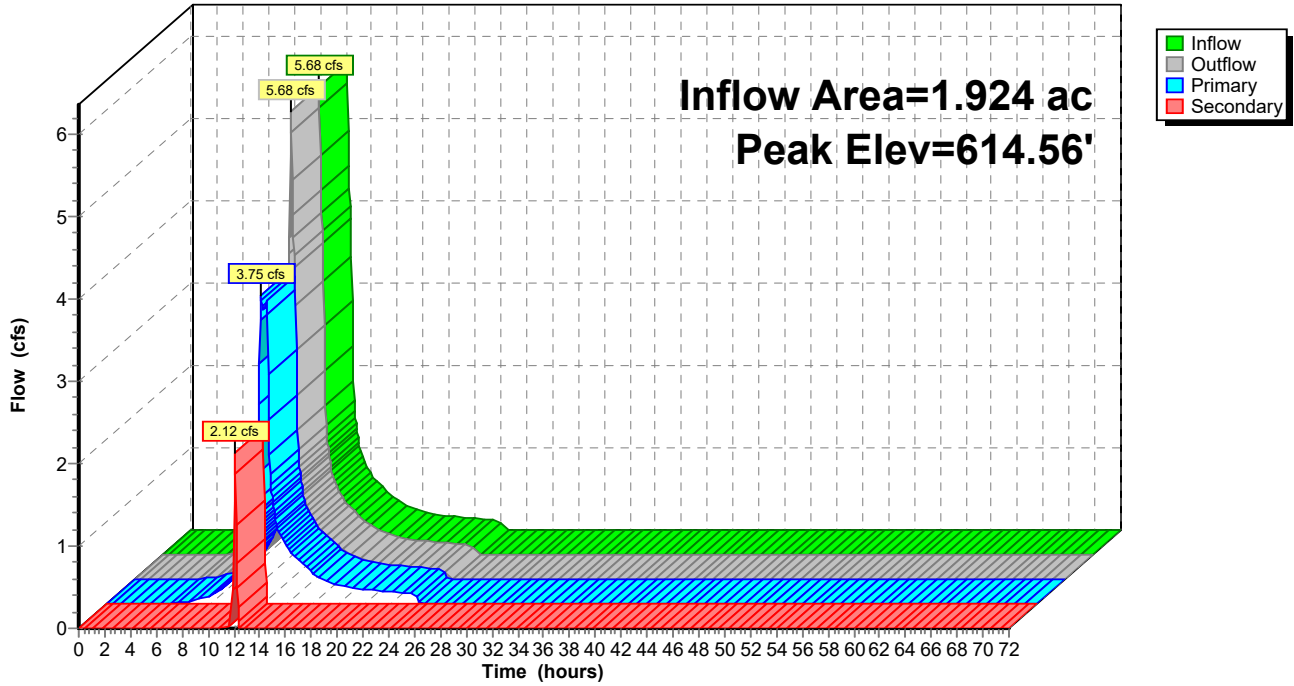
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Pond 25P: J14

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Summary for Pond 26P: J13

[58] Hint: Peaked 0.57' above defined flood level

Inflow Area = 1.471 ac, 41.74% Impervious, Inflow Depth = 5.42" for 100-yr event
 Inflow = 8.63 cfs @ 12.10 hrs, Volume= 0.664 af
 Outflow = 8.63 cfs @ 12.10 hrs, Volume= 0.664 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.53 cfs @ 12.09 hrs, Volume= 0.575 af
 Routed to Pond 25P : J14
 Secondary = 5.11 cfs @ 12.10 hrs, Volume= 0.089 af
 Routed to Pond 28P : J16

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 615.82' @ 12.10 hrs
 Flood Elev= 615.25'

Device	Routing	Invert	Outlet Devices
#1	Primary	614.00'	12.0" Round Culvert L= 23.0' Ke= 0.500 Inlet / Outlet Invert= 614.00' / 611.86' S= 0.0930 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	615.20'	4.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=3.45 cfs @ 12.09 hrs HW=615.80' TW=614.55' (Dynamic Tailwater)
 ↑1=Culvert (Outlet Controls 3.45 cfs @ 4.39 fps)

Secondary OutFlow Max=5.02 cfs @ 12.10 hrs HW=615.81' TW=579.41' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir(Weir Controls 5.02 cfs @ 2.04 fps)

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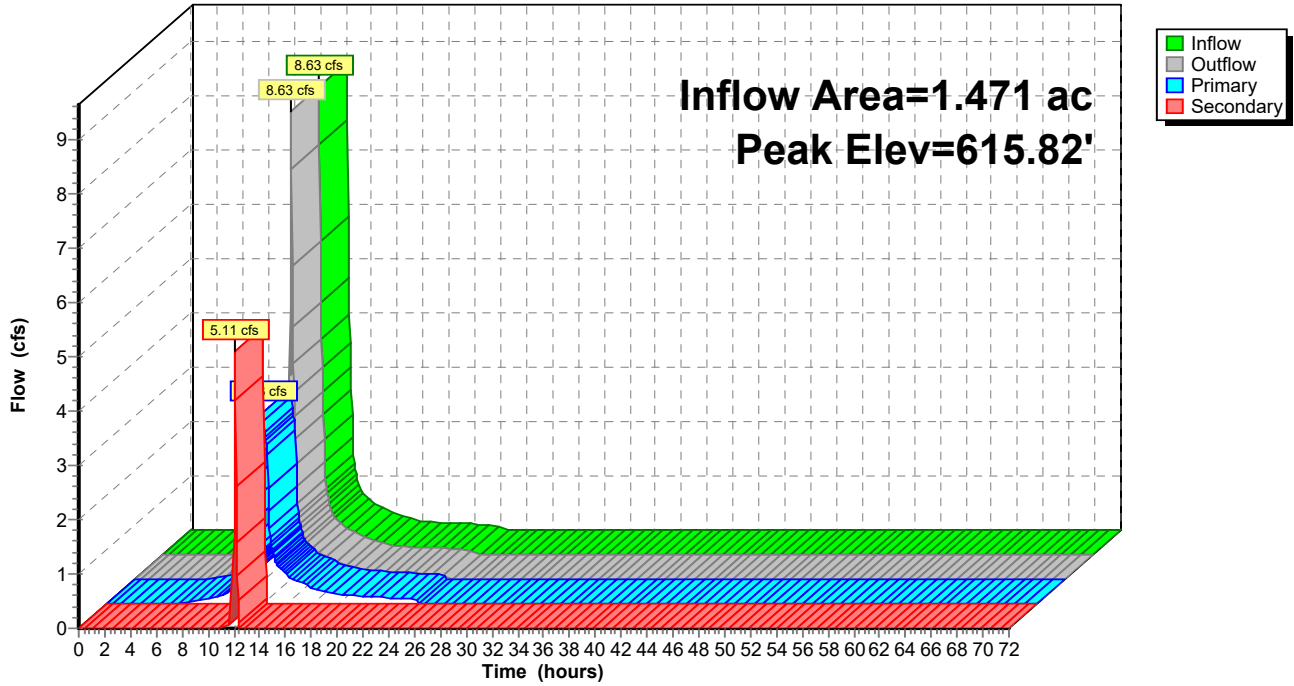
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Pond 26P: J13

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Summary for Pond 27P: J22

[58] Hint: Peaked 5.71' above defined flood level

[62] Hint: Exceeded Reach 32R OUTLET depth by 2.56' @ 12.25 hrs

[64] Warning: Exceeded Reach 32R outlet bank by 1.83' @ 12.24 hrs

Inflow Area = 18.241 ac, 8.59% Impervious, Inflow Depth = 2.90" for 100-yr event
 Inflow = 55.97 cfs @ 12.24 hrs, Volume= 4.415 af
 Outflow = 55.97 cfs @ 12.24 hrs, Volume= 4.415 af, Atten= 0%, Lag= 0.0 min
 Primary = 17.31 cfs @ 12.24 hrs, Volume= 3.207 af
 Routed to Link 33L : DP-4 To 116
 Secondary = 38.66 cfs @ 12.24 hrs, Volume= 1.208 af
 Routed to Link 33L : DP-4 To 116

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 578.83' @ 12.24 hrs
 Flood Elev= 573.12'

Device	Routing	Invert	Outlet Devices
#1	Primary	569.62'	15.0" Round Culvert L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 569.62' / 567.62' S= 0.0500 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	573.12'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=17.20 cfs @ 12.24 hrs HW=578.72' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 17.20 cfs @ 14.02 fps)

Secondary OutFlow Max=38.29 cfs @ 12.24 hrs HW=578.72' TW=0.00' (Dynamic Tailwater)
 ↑2=Orifice/Grate (Orifice Controls 38.29 cfs @ 11.39 fps)

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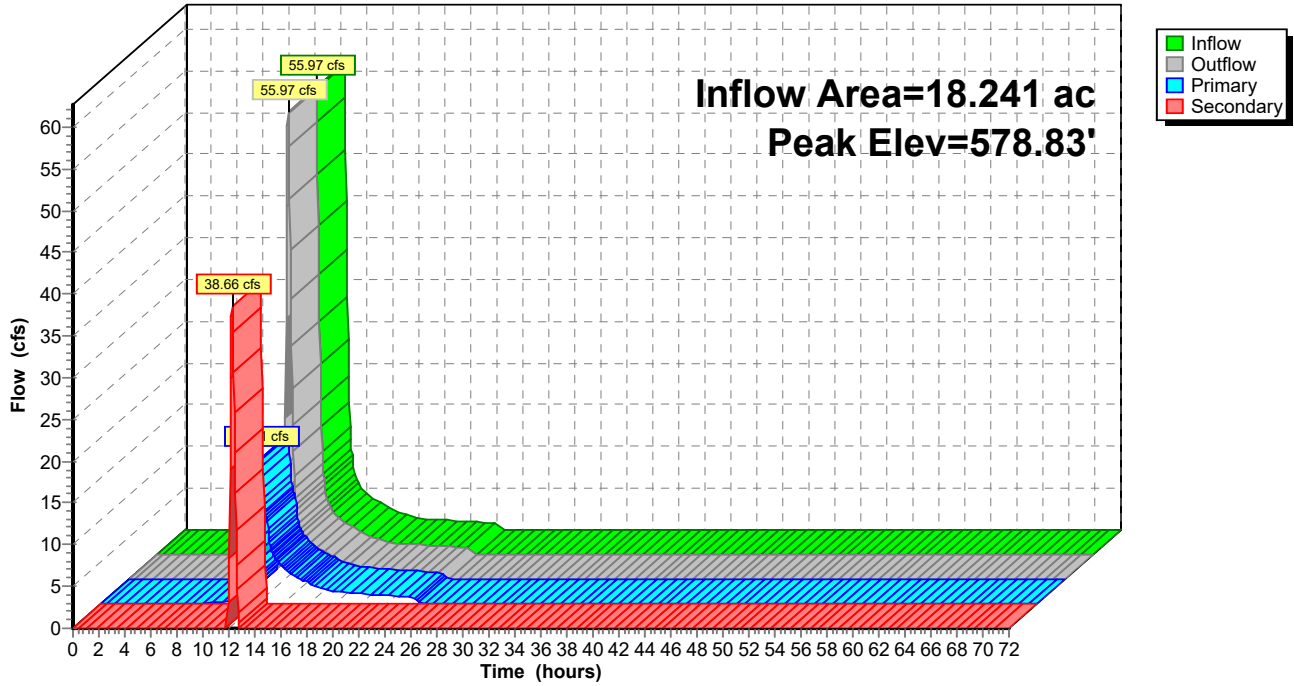
Type III 24-hr 100-yr Rainfall=7.29"

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Pond 27P: J22

Hydrograph



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Summary for Pond 28P: J16

[58] Hint: Peaked 1.26' above defined flood level

Inflow Area = 1.341 ac, 35.42% Impervious, Inflow Depth = 5.98" for 100-yr event
 Inflow = 11.05 cfs @ 12.12 hrs, Volume= 0.669 af
 Outflow = 11.05 cfs @ 12.12 hrs, Volume= 0.669 af, Atten= 0%, Lag= 0.0 min
 Primary = 5.02 cfs @ 12.12 hrs, Volume= 0.571 af
 Routed to Link 30L : DP-5 to town property
 Secondary = 6.03 cfs @ 12.12 hrs, Volume= 0.097 af
 Routed to Link 30L : DP-5 to town property

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 579.43' @ 12.12 hrs
 Flood Elev= 578.17'

Device	Routing	Invert	Outlet Devices
#1	Primary	577.17'	12.0" Round Culvert L= 33.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 577.17' / 571.01' S= 0.1867 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	578.75'	4.0' long x 4.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=4.98 cfs @ 12.12 hrs HW=579.41' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 4.98 cfs @ 6.35 fps)

Secondary OutFlow Max=5.73 cfs @ 12.12 hrs HW=579.41' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 5.73 cfs @ 2.18 fps)

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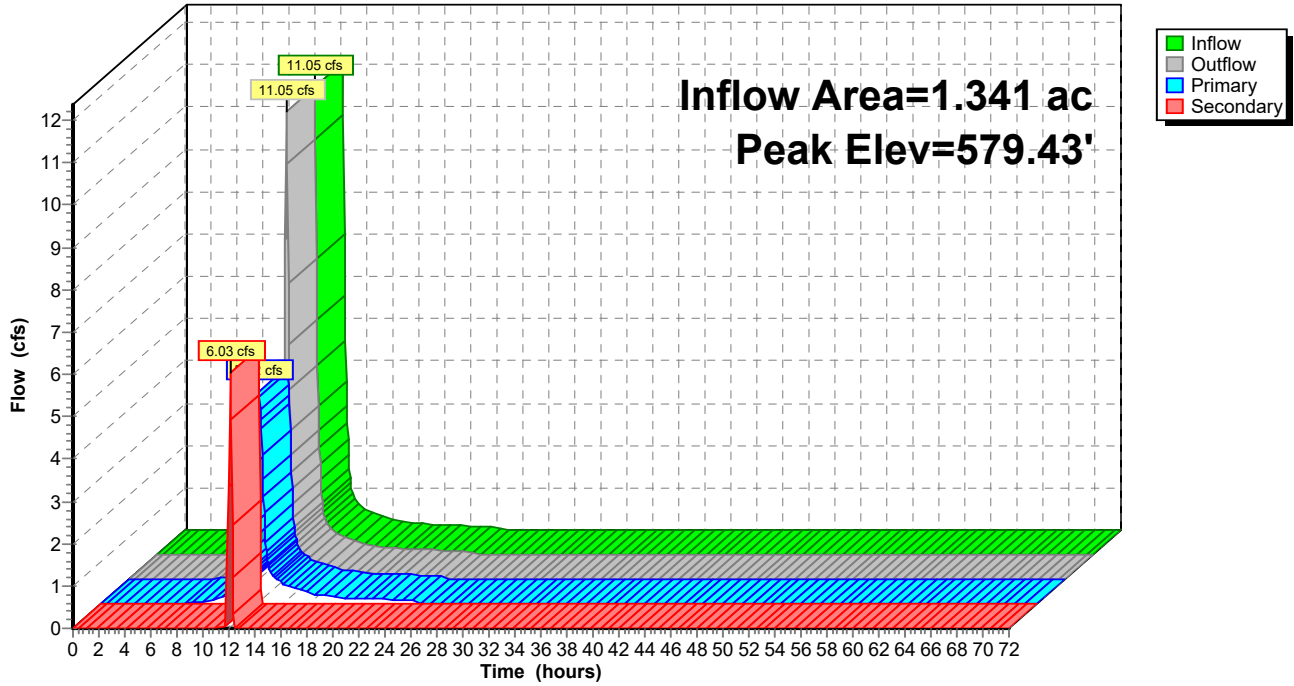
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Pond 28P: J16

Hydrograph



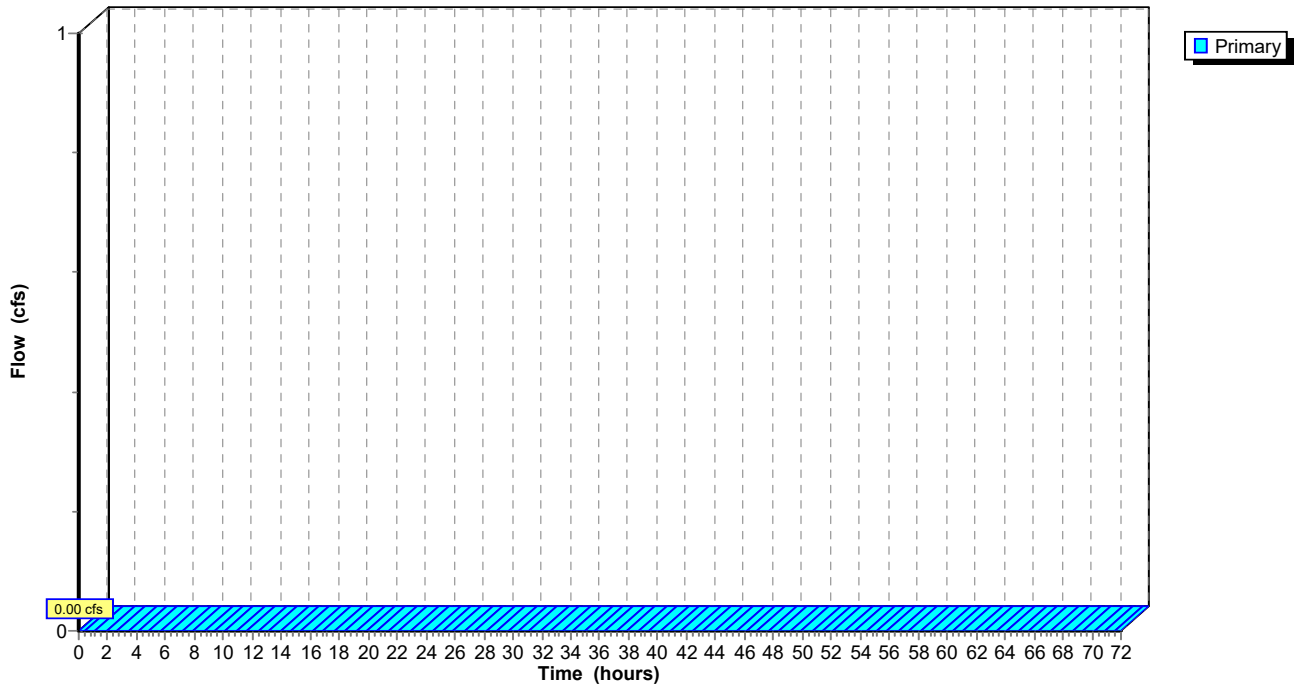
Summary for Pond 31P: J23

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

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

Pond 31P: J23

Hydrograph



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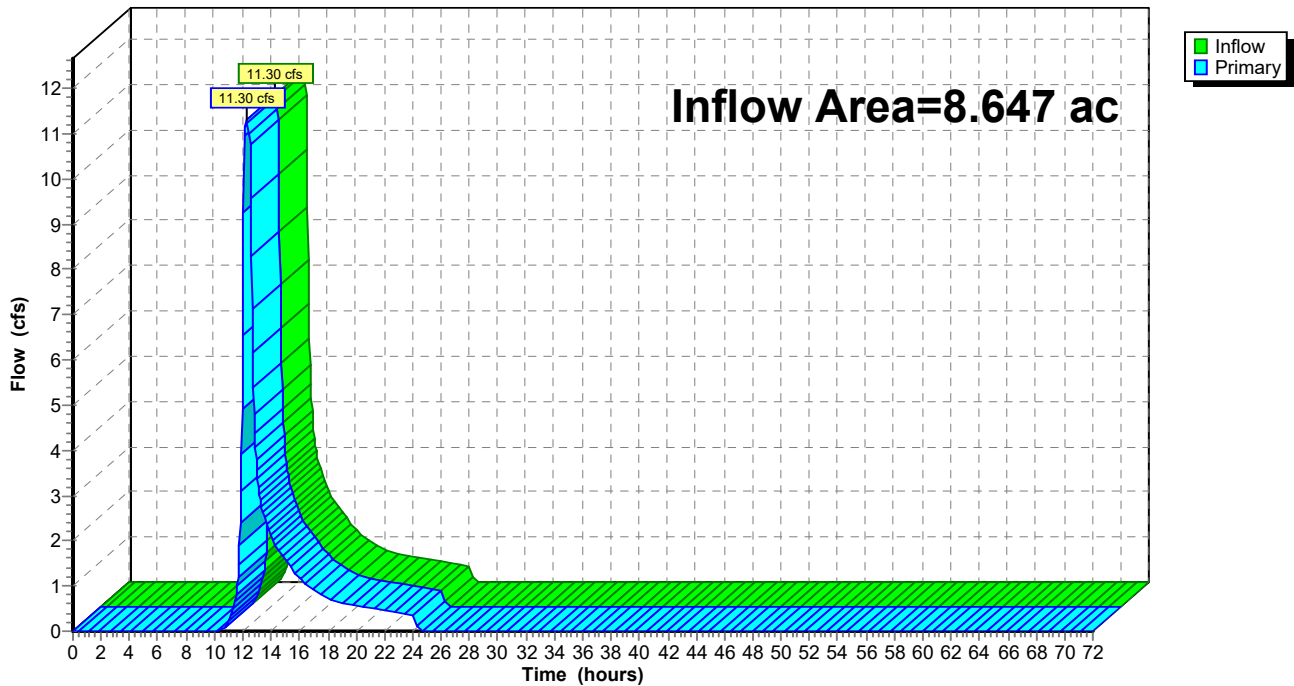
Summary for Link 16L: DP-1 EXISTING OUTLET TO UNDER 116

Inflow Area = 8.647 ac, 7.90% Impervious, Inflow Depth = 2.38" for 100-yr event
Inflow = 11.30 cfs @ 12.24 hrs, Volume= 1.717 af
Primary = 11.30 cfs @ 12.24 hrs, Volume= 1.717 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 16L: DP-1 EXISTING OUTLET TO UNDER 116

Hydrograph



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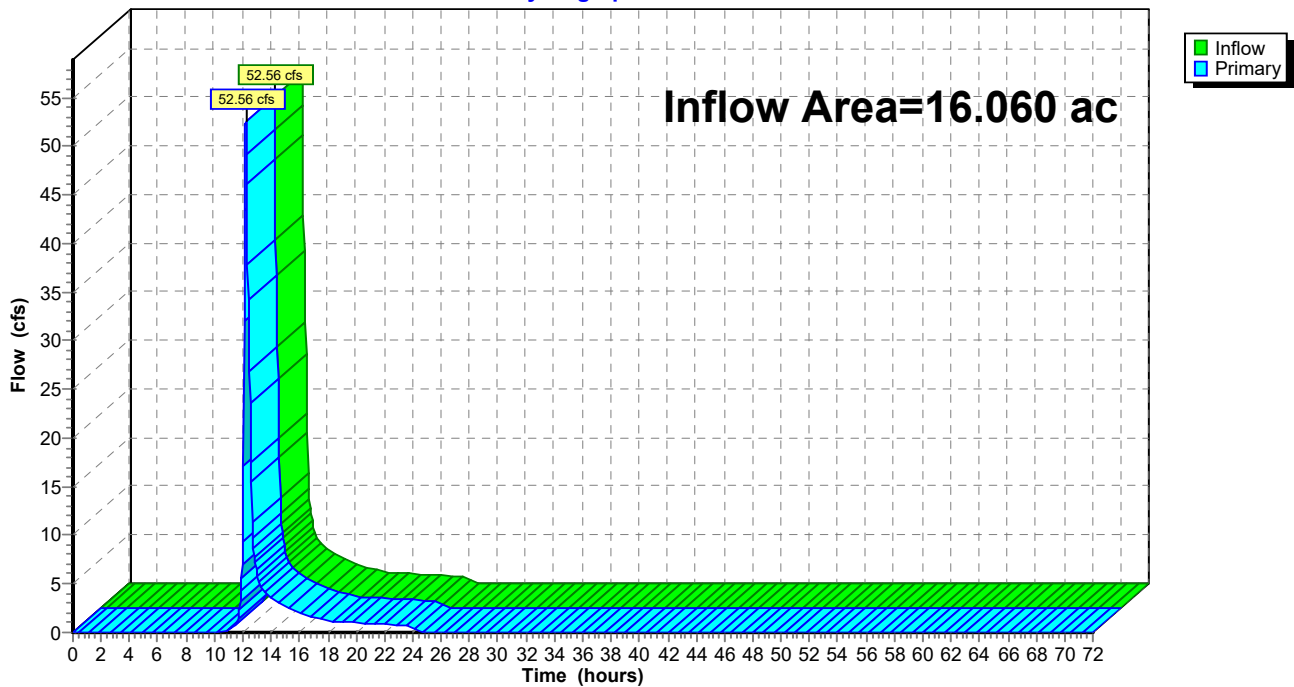
Summary for Link 19L: Behind houses

Inflow Area = 16.060 ac, 4.08% Impervious, Inflow Depth = 2.68" for 100-yr event
Inflow = 52.56 cfs @ 12.21 hrs, Volume= 3.591 af
Primary = 52.56 cfs @ 12.21 hrs, Volume= 3.591 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 32R : Wetland swale

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 19L: Behind houses

Hydrograph



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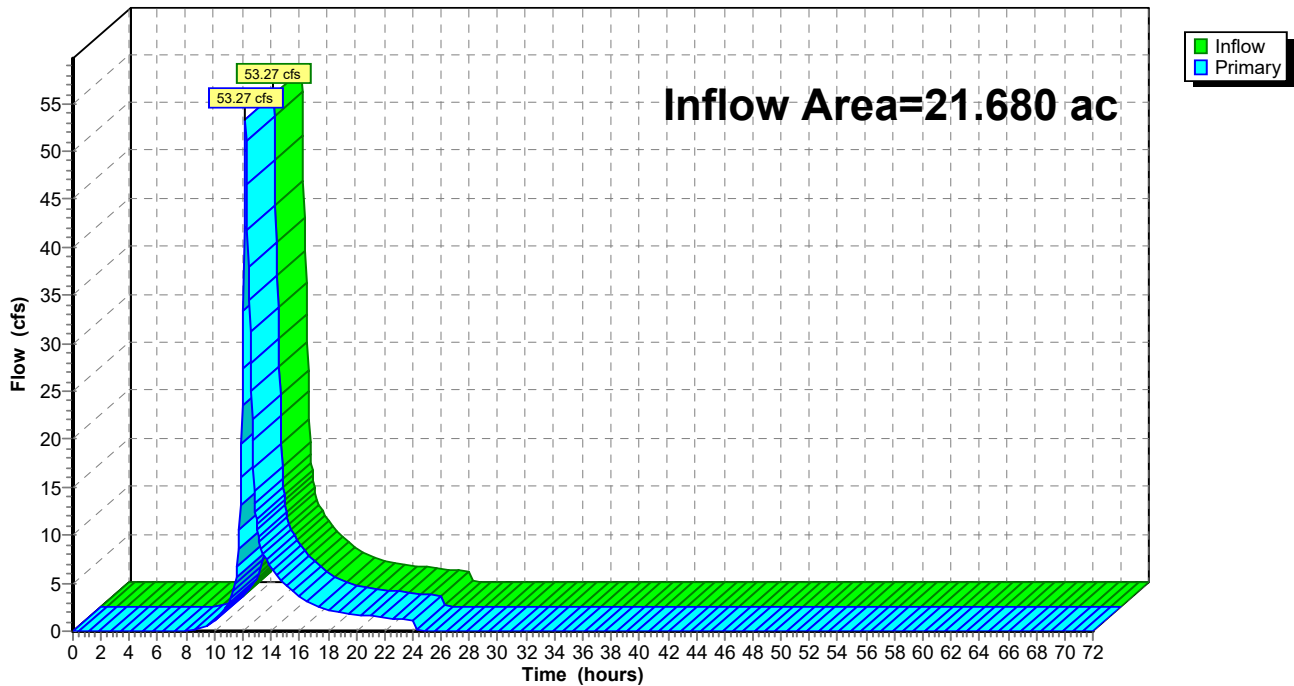
Summary for Link 23L: DP- 6 NORTH TO 10 PINE HILL RD

Inflow Area = 21.680 ac, 4.41% Impervious, Inflow Depth = 3.42" for 100-yr event
Inflow = 53.27 cfs @ 12.21 hrs, Volume= 6.175 af
Primary = 53.27 cfs @ 12.21 hrs, Volume= 6.175 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 23L: DP- 6 NORTH TO 10 PINE HILL RD

Hydrograph



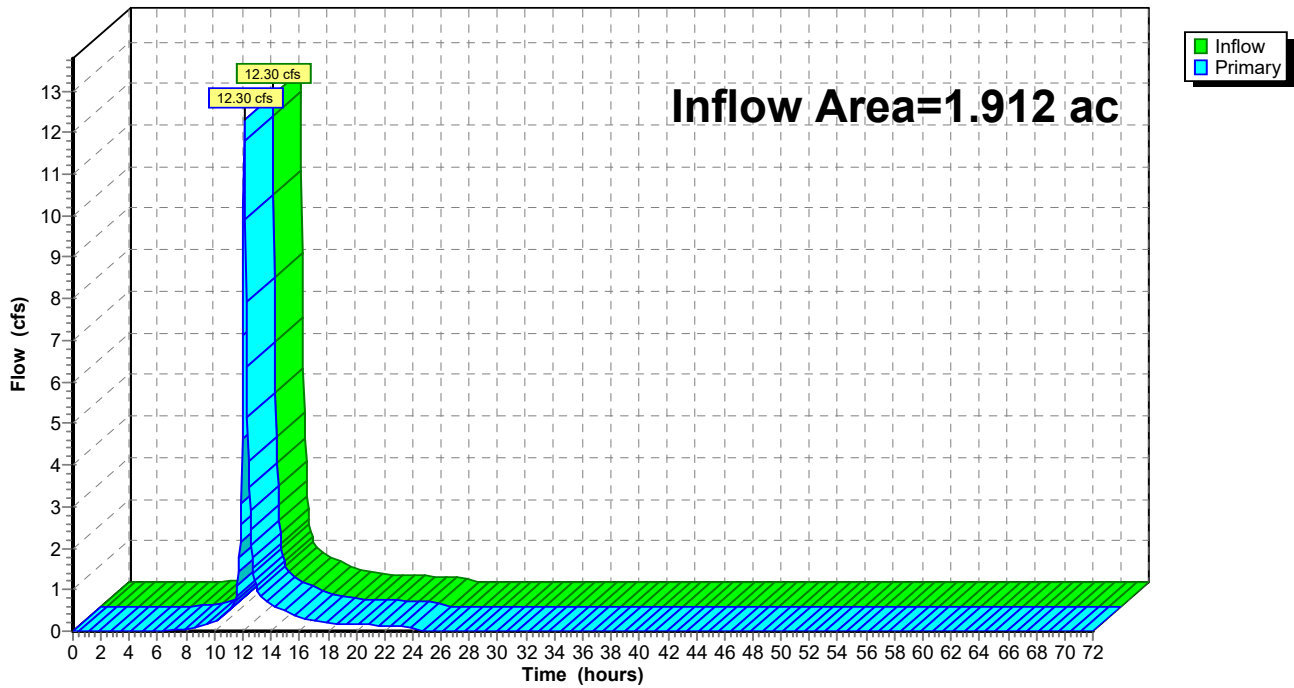
Summary for Link 30L: DP-5 to town property

Inflow Area = 1.912 ac, 31.44% Impervious, Inflow Depth = 5.13" for 100-yr event
Inflow = 12.30 cfs @ 12.12 hrs, Volume= 0.817 af
Primary = 12.30 cfs @ 12.12 hrs, Volume= 0.817 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 30L: DP-5 to town property

Hydrograph



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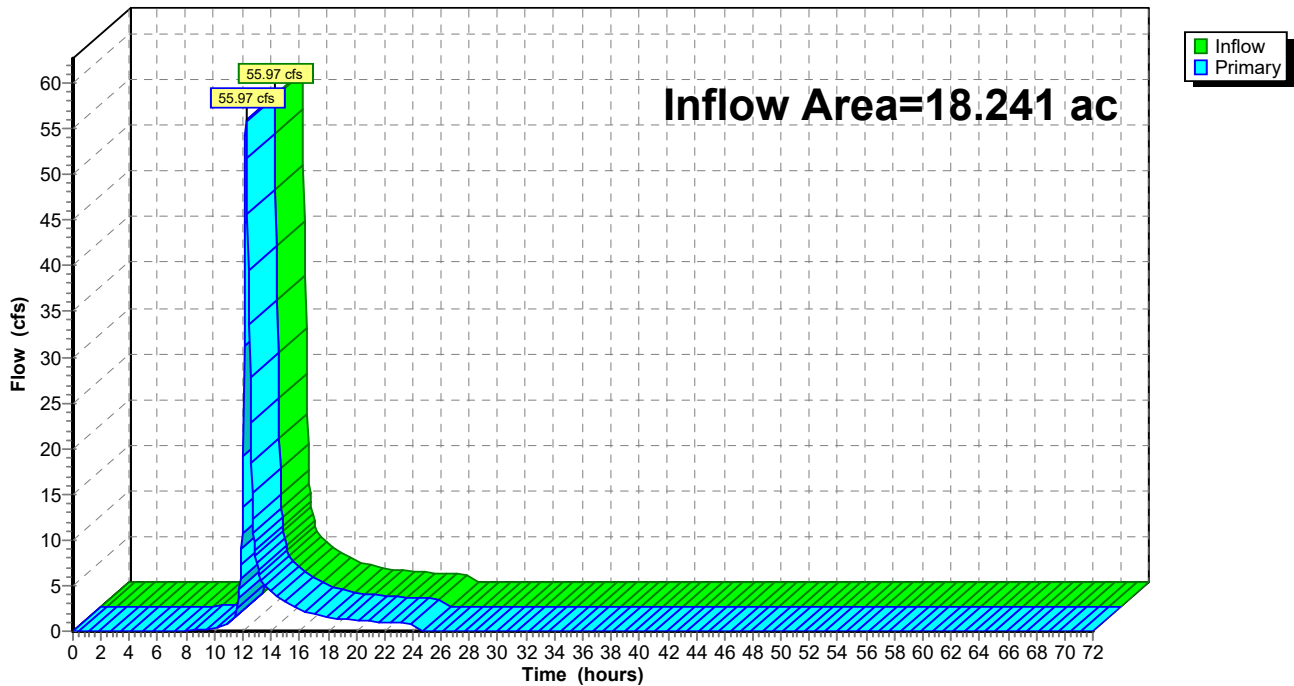
Summary for Link 33L: DP-4 To 116

Inflow Area = 18.241 ac, 8.59% Impervious, Inflow Depth = 2.90" for 100-yr event
Inflow = 55.97 cfs @ 12.24 hrs, Volume= 4.415 af
Primary = 55.97 cfs @ 12.24 hrs, Volume= 4.415 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 33L: DP-4 To 116

Hydrograph



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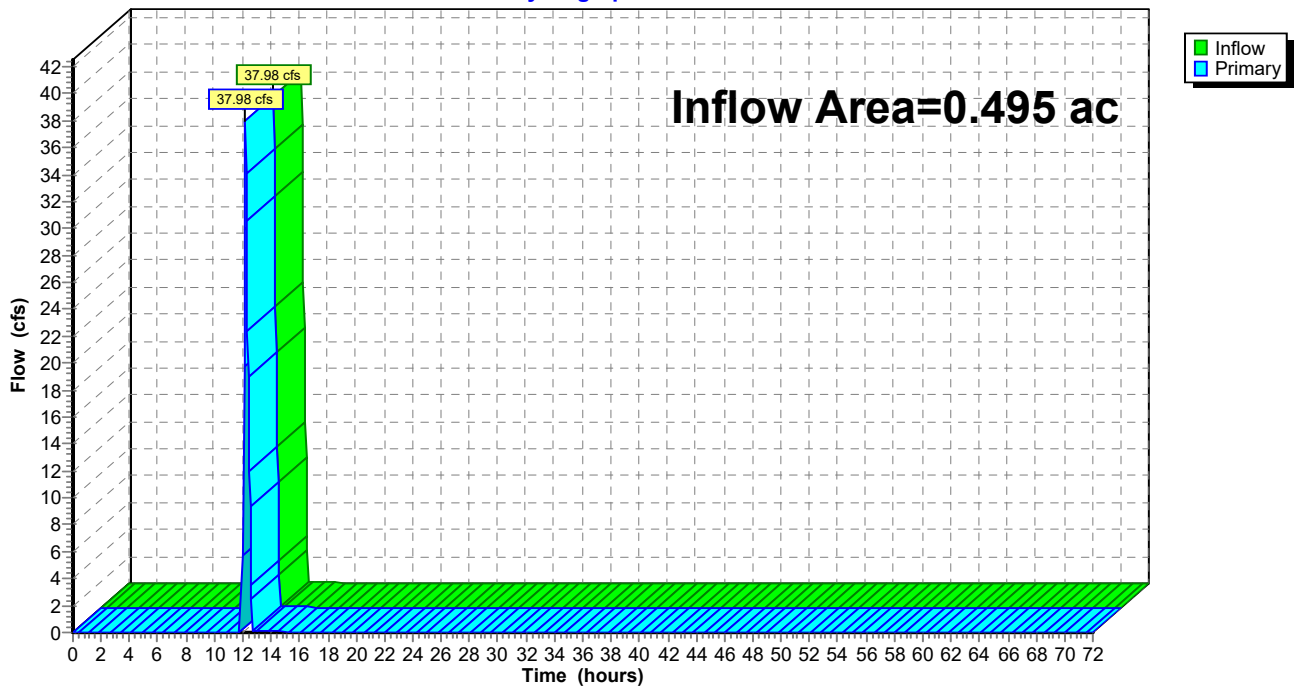
Summary for Link 34L: DP-3 51 Baptist Hill Rd Property

Inflow Area = 0.495 ac, 15.01% Impervious, Inflow Depth = 23.81" for 100-yr event
Inflow = 37.98 cfs @ 12.21 hrs, Volume= 0.982 af
Primary = 37.98 cfs @ 12.21 hrs, Volume= 0.982 af, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : Behind houses

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 34L: DP-3 51 Baptist Hill Rd Property

Hydrograph



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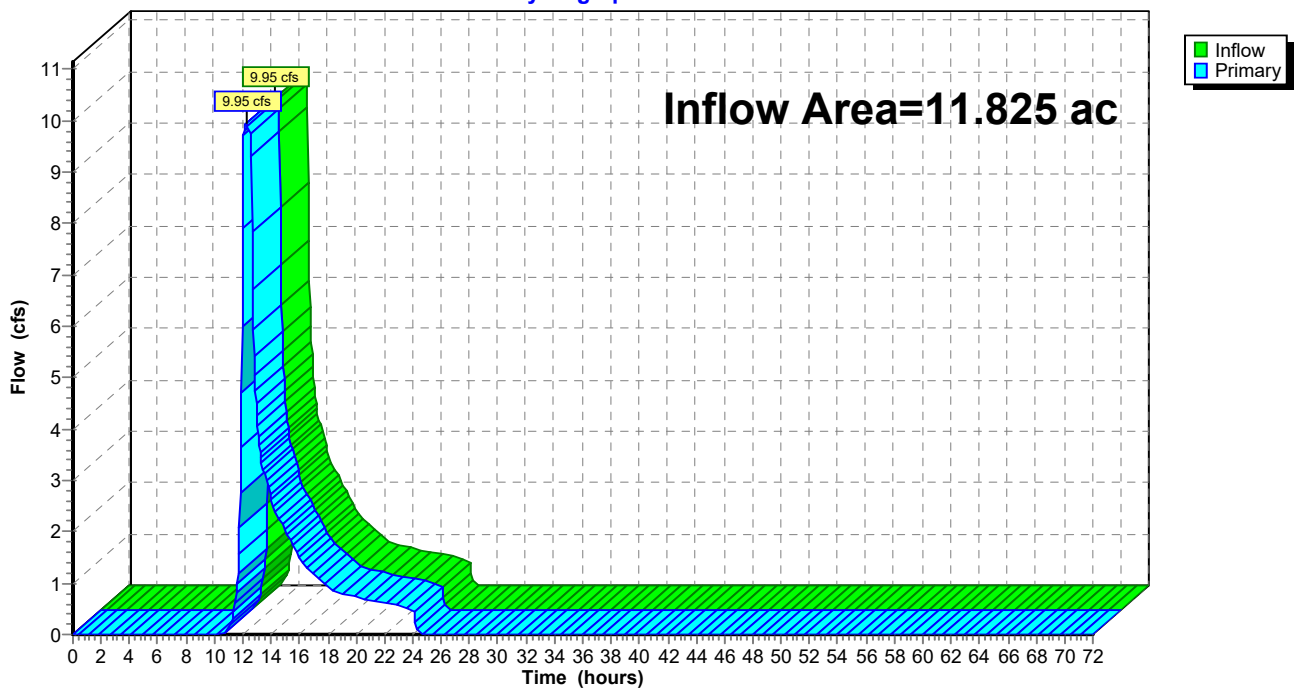
Summary for Link 35L: DP-2 Along 45 Upper Baptist

Inflow Area = 11.825 ac, 1.39% Impervious, Inflow Depth = 1.98" for 100-yr event
Inflow = 9.95 cfs @ 12.22 hrs, Volume= 1.950 af
Primary = 9.95 cfs @ 12.22 hrs, Volume= 1.950 af, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : Behind houses

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

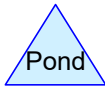
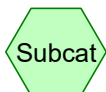
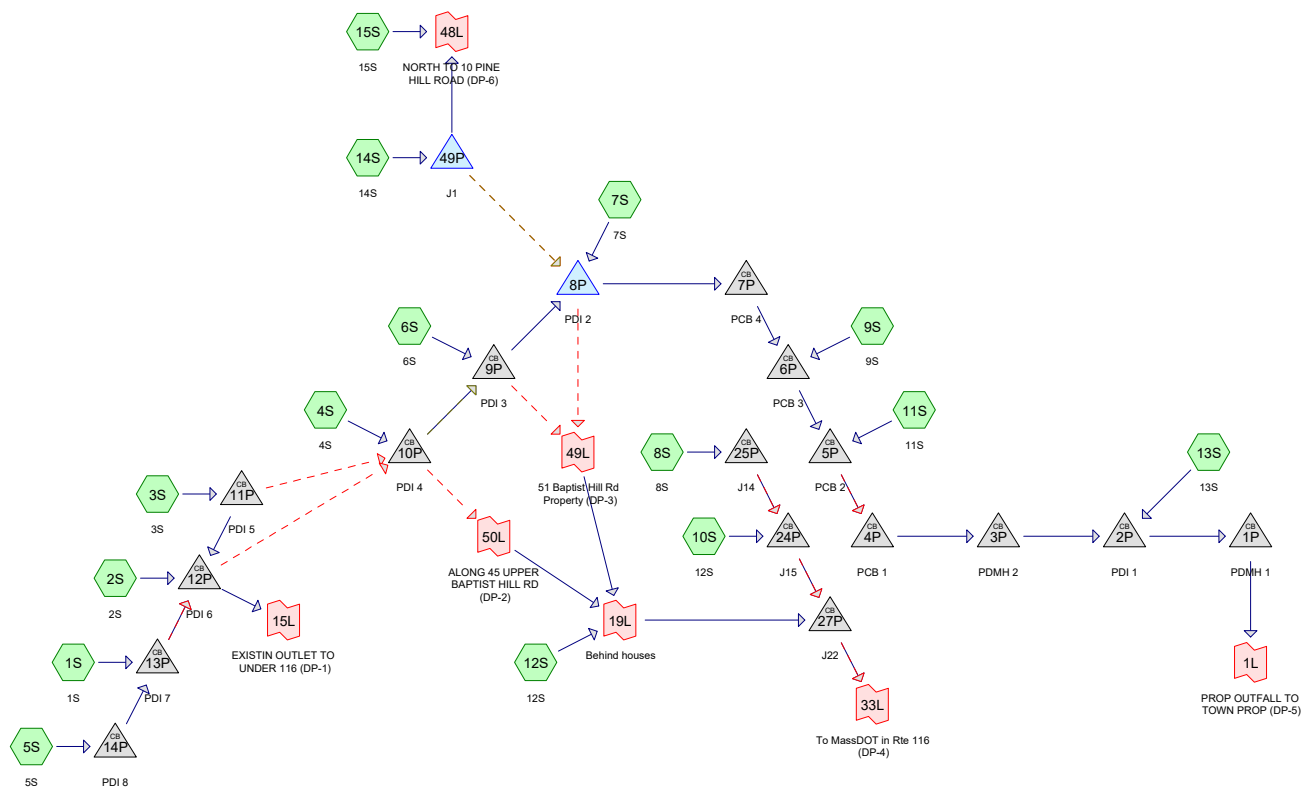
Link 35L: DP-2 Along 45 Upper Baptist

Hydrograph





ATTACHMENT C
PROPOSED HYDROCAD
CALULATIONS



Routing Diagram for 15.0167305.01-DEV HYDROLOGY
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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type III 24-hr		Default	24.00	1	3.07	2
2	10-yr	Type III 24-hr		Default	24.00	1	4.70	2
3	25-yr	Type III 24-hr		Default	24.00	1	5.72	2
4	100-yr	Type III 24-hr		Default	24.00	1	7.29	2

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.866	49	50-75% Grass cover, Fair, HSG A (3S)
10.617	39	>75% Grass cover, Good, HSG A (1S, 2S, 4S, 5S, 6S, 7S, 8S, 10S, 11S, 12S, 13S, 14S, 15S)
2.538	61	>75% Grass cover, Good, HSG B (1S, 5S, 12S, 14S, 15S)
3.425	74	>75% Grass cover, Good, HSG C (8S, 9S, 11S, 12S, 13S, 14S, 15S)
0.016	98	Impervious B (13S)
0.053	98	Impervious, A (13S)
0.057	98	Impervious, C (13S)
0.064	98	Impervious, Good, HSG A (4S)
0.966	98	Impervious, HSG A (5S, 8S, 10S, 11S, 12S, 15S)
0.220	98	Impervious, HSG B (5S, 15S)
1.109	98	Impervious, HSG C (8S, 11S, 12S, 15S)
0.589	98	Paved parking, HSG A (2S, 7S)
0.614	98	Paved parking, HSG C (9S)
0.238	98	Paved roads w/curbs & sewers, HSG A (4S, 6S)
0.257	72	Row crops, straight row, Poor, HSG A (15S)
0.820	88	Row crops, straight row, Poor, HSG C (15S)
4.036	45	Woods, Poor, HSG A (1S, 3S, 12S, 13S, 14S, 15S)
14.064	66	Woods, Poor, HSG B (1S, 3S, 4S, 12S, 13S, 14S, 15S)
9.046	77	Woods, Poor, HSG C (14S, 15S)
50.596	63	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
18.633	HSG A	1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S, 10S, 11S, 12S, 13S, 14S, 15S
16.822	HSG B	1S, 3S, 4S, 5S, 12S, 13S, 14S, 15S
15.014	HSG C	8S, 9S, 11S, 12S, 13S, 14S, 15S
0.000	HSG D	
0.126	Other	13S
50.596		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
1.866	0.000	0.000	0.000	0.000	1.866	50-75% Grass cover, Fair	3S
10.617	2.538	3.425	0.000	0.000	16.580	>75% Grass cover, Good	1S, 2S, 4S, 5S, 6S, 7S, 8S, 9S, 10 S, 11 S, 12 S, 13 S, 14 S, 15 S
0.966	0.220	1.109	0.000	0.000	2.295	Impervious	5S, 8S, 10 S, 11 S, 12 S, 15 S

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Ground Covers (all nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	0.016	0.016	Impervious B	13 S
0.000	0.000	0.000	0.000	0.053	0.053	Impervious, A	13 S
0.000	0.000	0.000	0.000	0.057	0.057	Impervious, C	13 S
0.064	0.000	0.000	0.000	0.000	0.064	Impervious, Good	4S
0.589	0.000	0.614	0.000	0.000	1.203	Paved parking	2S, 7S, 9S
0.238	0.000	0.000	0.000	0.000	0.238	Paved roads w/curbs & sewers	4S, 6S
0.257	0.000	0.820	0.000	0.000	1.077	Row crops, straight row, Poor	15 S
4.036	14.064	9.046	0.000	0.000	27.146	Woods, Poor	1S, 3S, 4S, 12 S, 13 S, 14 S, 15 S
18.633	16.822	15.014	0.000	0.126	50.596	TOTAL AREA	

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Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	1P	562.50	560.00	52.7	0.0474	0.013	0.0	24.0	0.0	
2	2P	566.10	562.60	177.3	0.0197	0.013	0.0	24.0	0.0	
3	3P	568.60	566.20	121.9	0.0197	0.013	0.0	24.0	0.0	
4	4P	571.00	568.70	30.1	0.0764	0.013	0.0	24.0	0.0	
5	5P	594.20	571.50	202.3	0.1122	0.013	0.0	18.0	0.0	
6	6P	607.50	594.30	209.7	0.0629	0.013	0.0	18.0	0.0	
7	7P	611.10	607.60	172.6	0.0203	0.013	0.0	18.0	0.0	
8	8P	615.50	611.20	217.0	0.0198	0.013	0.0	18.0	0.0	
9	9P	618.20	615.60	109.2	0.0238	0.013	0.0	18.0	0.0	
10	9P	621.00	620.38	31.0	0.0200	0.013	0.0	12.0	0.0	
11	10P	622.90	618.30	226.6	0.0203	0.013	0.0	15.0	0.0	
12	10P	624.30	623.80	25.0	0.0200	0.013	0.0	12.0	0.0	
13	11P	637.00	636.20	82.0	0.0098	0.013	0.0	12.0	0.0	
14	12P	636.10	625.50	35.9	0.2953	0.013	0.0	15.0	0.0	
15	13P	645.80	638.00	211.3	0.0369	0.013	0.0	12.0	0.0	
16	14P	655.30	645.90	271.3	0.0346	0.013	0.0	12.0	0.0	
17	24P	593.70	569.82	240.0	0.0995	0.025	0.0	12.0	0.0	
18	25P	611.36	593.70	460.0	0.0384	0.025	0.0	12.0	0.0	
19	27P	569.62	567.62	40.0	0.0500	0.013	0.0	15.0	0.0	
20	49P	623.23	622.75	39.2	0.0122	0.013	0.0	15.0	0.0	
21	49P	624.48	615.50	62.0	0.1448	0.013	0.0	12.0	0.0	

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Type III 24-hr 2-yr Rainfall=3.07"

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: 1S	Runoff Area=263,518 sf 0.00% Impervious Runoff Depth=0.27" Flow Length=1,253' Tc=17.3 min CN=57 Runoff=0.64 cfs 0.135 af
Subcatchment2S: 2S	Runoff Area=52,537 sf 35.20% Impervious Runoff Depth=0.36" Flow Length=472' Tc=6.7 min CN=60 Runoff=0.26 cfs 0.036 af
Subcatchment3S: 3S	Runoff Area=241,534 sf 0.00% Impervious Runoff Depth=0.17" Flow Length=1,175' Tc=14.4 min CN=53 Runoff=0.24 cfs 0.076 af
Subcatchment4S: 4S	Runoff Area=273,557 sf 2.62% Impervious Runoff Depth=0.33" Flow Length=1,106' Tc=13.6 min CN=59 Runoff=0.97 cfs 0.171 af
Subcatchment5S: 5S	Runoff Area=60,599 sf 18.58% Impervious Runoff Depth=0.33" Flow Length=406' Tc=11.9 min CN=59 Runoff=0.22 cfs 0.038 af
Subcatchment6S: 6S	Runoff Area=24,324 sf 24.68% Impervious Runoff Depth=0.19" Flow Length=368' Tc=9.8 min CN=54 Runoff=0.03 cfs 0.009 af
Subcatchment7S: 7S	Runoff Area=13,788 sf 51.83% Impervious Runoff Depth=0.75" Flow Length=100' Slope=0.0500 '/' Tc=6.9 min CN=70 Runoff=0.24 cfs 0.020 af
Subcatchment8S: 8S	Runoff Area=19,699 sf 37.25% Impervious Runoff Depth=1.06" Flow Length=211' Tc=8.3 min CN=76 Runoff=0.50 cfs 0.040 af
Subcatchment9S: 9S	Runoff Area=64,091 sf 41.74% Impervious Runoff Depth=1.57" Flow Length=546' Tc=7.2 min CN=84 Runoff=2.60 cfs 0.193 af
Subcatchment10S: 12S	Runoff Area=11,227 sf 49.99% Impervious Runoff Depth=0.66" Tc=1.2 min CN=68 Runoff=0.20 cfs 0.014 af
Subcatchment11S: 11S	Runoff Area=58,435 sf 35.42% Impervious Runoff Depth=1.43" Flow Length=803' Tc=15.5 min CN=82 Runoff=1.67 cfs 0.160 af
Subcatchment12S: 12S	Runoff Area=162,915 sf 11.13% Impervious Runoff Depth=0.17" Flow Length=743' Tc=21.2 min CN=53 Runoff=0.14 cfs 0.052 af
Subcatchment13S: 13S	Runoff Area=24,870 sf 22.10% Impervious Runoff Depth=0.46" Tc=1.2 min CN=63 Runoff=0.24 cfs 0.022 af
Subcatchment14S: 14S	Runoff Area=441,577 sf 0.00% Impervious Runoff Depth=0.46" Flow Length=1,423' Tc=14.1 min CN=63 Runoff=2.84 cfs 0.391 af
Subcatchment15S: 15S	Runoff Area=491,280 sf 7.52% Impervious Runoff Depth=0.95" Flow Length=1,700' Tc=14.7 min CN=74 Runoff=8.93 cfs 0.896 af
Pond 1P: PDMH 1	Peak Elev=563.42' Inflow=4.62 cfs 0.575 af 24.0" Round Culvert n=0.013 L=52.7' S=0.0474 '/' Outflow=4.62 cfs 0.575 af

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Type III 24-hr 2-yr Rainfall=3.07"

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Pond 2P: PDI 1	Peak Elev=567.02' Inflow=4.62 cfs 0.575 af 24.0" Round Culvert n=0.013 L=177.3' S=0.0197 '/' Outflow=4.62 cfs 0.575 af
Pond 3P: PDMH 2	Peak Elev=569.50' Inflow=4.47 cfs 0.553 af 24.0" Round Culvert n=0.013 L=121.9' S=0.0197 '/' Outflow=4.47 cfs 0.553 af
Pond 4P: PCB 1	Peak Elev=571.90' Inflow=4.47 cfs 0.553 af 24.0" Round Culvert n=0.013 L=30.1' S=0.0764 '/' Outflow=4.47 cfs 0.553 af
Pond 5P: PCB 2	Peak Elev=595.23' Inflow=4.47 cfs 0.553 af Primary=4.47 cfs 0.553 af Secondary=0.00 cfs 0.000 af Outflow=4.47 cfs 0.553 af
Pond 6P: PCB 3	Peak Elev=608.32' Inflow=3.08 cfs 0.393 af 18.0" Round Culvert n=0.013 L=209.7' S=0.0629 '/' Outflow=3.08 cfs 0.393 af
Pond 7P: PCB 4	Peak Elev=611.57' Inflow=1.12 cfs 0.200 af 18.0" Round Culvert n=0.013 L=172.6' S=0.0203 '/' Outflow=1.12 cfs 0.200 af
Pond 8P: PDI 2	Peak Elev=615.97' Storage=6 cf Inflow=1.12 cfs 0.200 af Primary=1.12 cfs 0.200 af Secondary=0.00 cfs 0.000 af Outflow=1.12 cfs 0.200 af
Pond 9P: PDI 3	Peak Elev=618.65' Inflow=1.00 cfs 0.180 af Primary=1.00 cfs 0.180 af Secondary=0.00 cfs 0.000 af Outflow=1.00 cfs 0.180 af
Pond 10P: PDI 4	Peak Elev=623.37' Inflow=0.97 cfs 0.171 af Primary=0.97 cfs 0.171 af Secondary=0.00 cfs 0.000 af Tertiary=0.00 cfs 0.000 af Outflow=0.97 cfs 0.171 af
Pond 11P: PDI 5	Peak Elev=637.26' Inflow=0.24 cfs 0.076 af Primary=0.24 cfs 0.076 af Secondary=0.00 cfs 0.000 af Outflow=0.24 cfs 0.076 af
Pond 12P: PDI 6	Peak Elev=636.63' Inflow=1.23 cfs 0.285 af Primary=1.23 cfs 0.285 af Secondary=0.00 cfs 0.000 af Outflow=1.23 cfs 0.285 af
Pond 13P: PDI 7	Peak Elev=646.27' Inflow=0.84 cfs 0.173 af Primary=0.84 cfs 0.173 af Secondary=0.00 cfs 0.000 af Outflow=0.84 cfs 0.173 af
Pond 14P: PDI 8	Peak Elev=655.53' Inflow=0.22 cfs 0.038 af 12.0" Round Culvert n=0.013 L=271.3' S=0.0346 '/' Outflow=0.22 cfs 0.038 af
Pond 24P: J15	Peak Elev=594.09' Inflow=0.61 cfs 0.054 af Primary=0.61 cfs 0.054 af Secondary=0.00 cfs 0.000 af Outflow=0.61 cfs 0.054 af
Pond 25P: J14	Peak Elev=611.71' Inflow=0.50 cfs 0.040 af Primary=0.50 cfs 0.040 af Secondary=0.00 cfs 0.000 af Outflow=0.50 cfs 0.040 af
Pond 27P: J22	Peak Elev=569.98' Inflow=0.61 cfs 0.106 af Primary=0.61 cfs 0.106 af Secondary=0.00 cfs 0.000 af Outflow=0.61 cfs 0.106 af
Pond 49P: J1	Peak Elev=624.11' Storage=33 cf Inflow=2.84 cfs 0.391 af Primary=2.84 cfs 0.391 af Secondary=0.00 cfs 0.000 af Tertiary=0.00 cfs 0.000 af Outflow=2.84 cfs 0.391 af

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Link 1L: PROP OUTFALL TO TOWN PROP (DP-5)	Inflow=4.62 cfs 0.575 af Primary=4.62 cfs 0.575 af
Link 15L: EXISTIN OUTLET TO UNDER 116 (DP-1)	Inflow=1.23 cfs 0.285 af Primary=1.23 cfs 0.285 af
Link 19L: Behind houses	Inflow=0.14 cfs 0.052 af Primary=0.14 cfs 0.052 af
Link 33L: To MassDOT in Rte 116 (DP-4)	Inflow=0.61 cfs 0.106 af Primary=0.61 cfs 0.106 af
Link 48L: NORTH TO 10 PINE HILL ROAD (DP-6)	Inflow=11.71 cfs 1.286 af Primary=11.71 cfs 1.286 af
Link 49L: 51 Baptist Hill Rd Property (DP-3)	Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af
Link 50L: ALONG 45 UPPER BAPTISTHILL RD (DP-2)	Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af

Total Runoff Area = 50.596 ac Runoff Volume = 2.253 af Average Runoff Depth = 0.53"
92.24% Pervious = 46.669 ac 7.76% Impervious = 3.927 ac

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Summary for Subcatchment 1S: 1S

Runoff = 0.64 cfs @ 12.48 hrs, Volume= 0.135 af, Depth= 0.27"
 Routed to Pond 13P : PDI 7

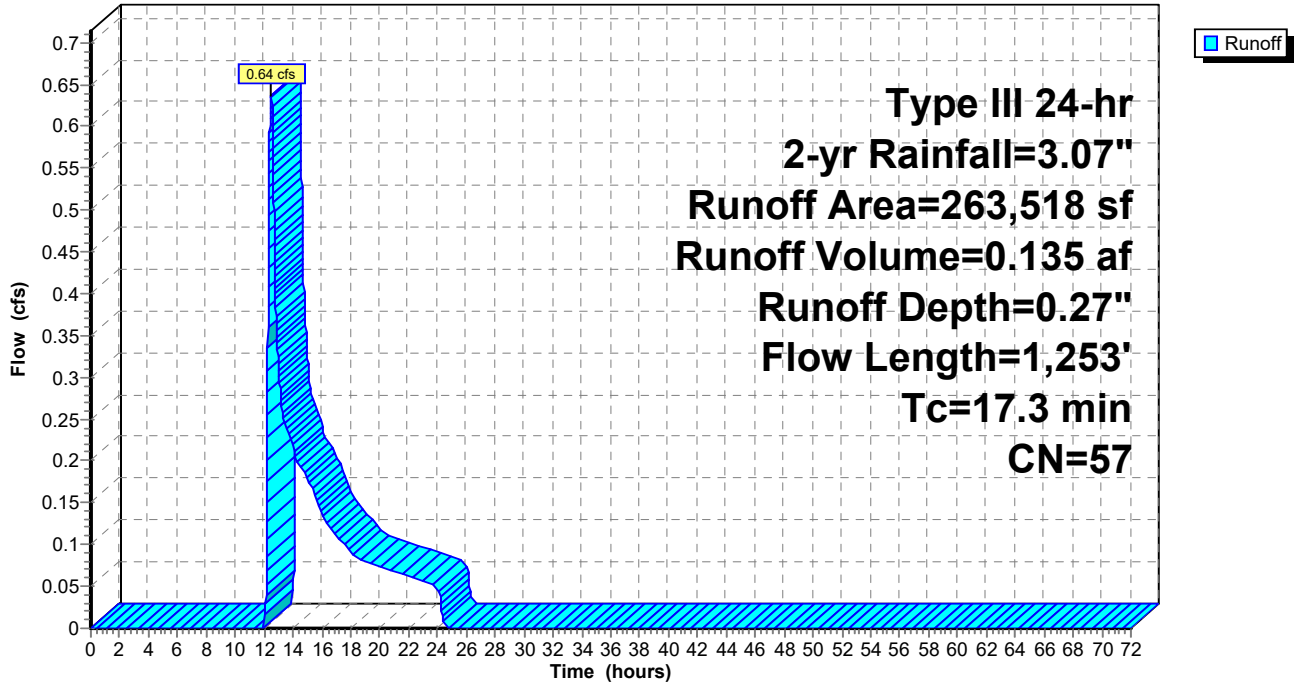
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2-yr Rainfall=3.07"

Area (sf)	CN	Description
154,324	66	Woods, Poor, HSG B
27,768	45	Woods, Poor, HSG A
17,039	61	>75% Grass cover, Good, HSG B
64,387	39	>75% Grass cover, Good, HSG A
263,518	57	Weighted Average
263,518		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.1800	0.18		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.07"
2.6	385	0.2442	2.47		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.7	293	0.3240	2.85		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.9	475	0.0821	2.01		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.3	1,253	Total			

Subcatchment 1S: 1S

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Subcatchment 2S: 2S

Runoff = 0.26 cfs @ 12.15 hrs, Volume= 0.036 af, Depth= 0.36"
 Routed to Pond 12P : PDI 6

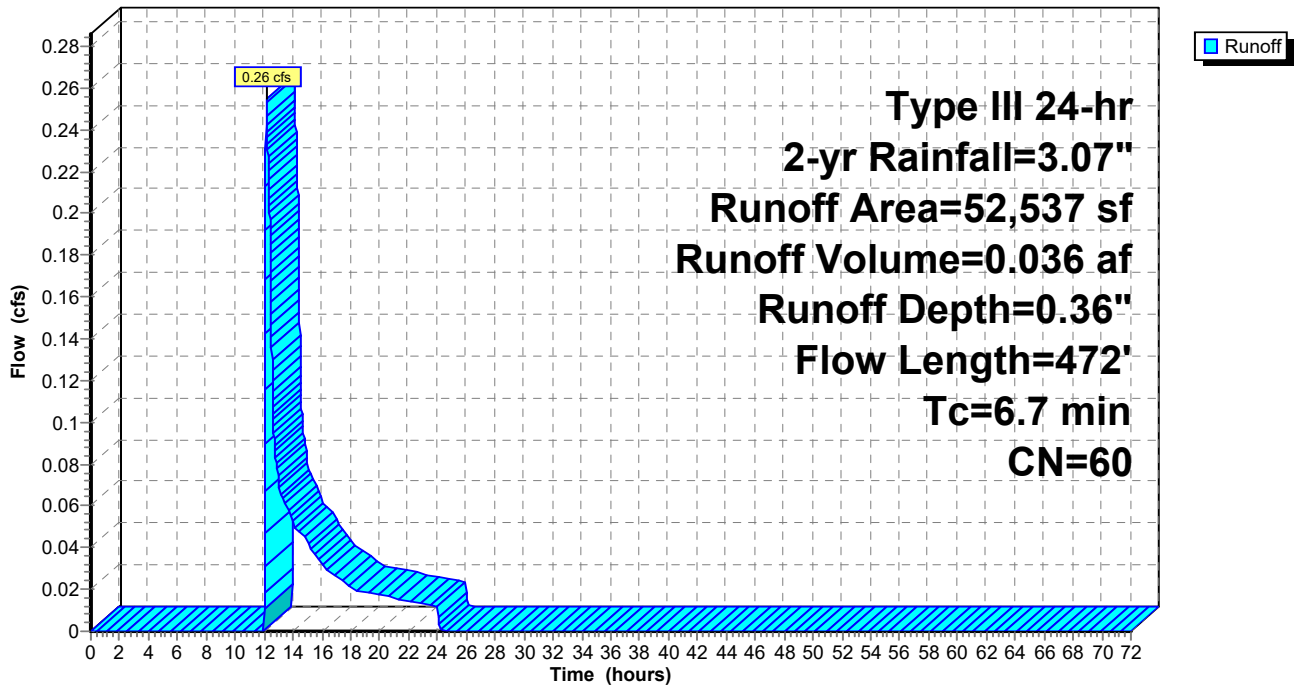
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2-yr Rainfall=3.07"

Area (sf)	CN	Description
18,495	98	Paved parking, HSG A
34,042	39	>75% Grass cover, Good, HSG A
52,537	60	Weighted Average
34,042		64.80% Pervious Area
18,495		35.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0900	0.30		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
1.2	372	0.0661	5.22		Shallow Concentrated Flow, Paved Kv= 20.3 fps
6.7	472	Total			

Subcatchment 2S: 2S

Hydrograph



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Summary for Subcatchment 3S: 3S

Runoff = 0.24 cfs @ 12.53 hrs, Volume= 0.076 af, Depth= 0.17"
 Routed to Pond 11P : PDI 5

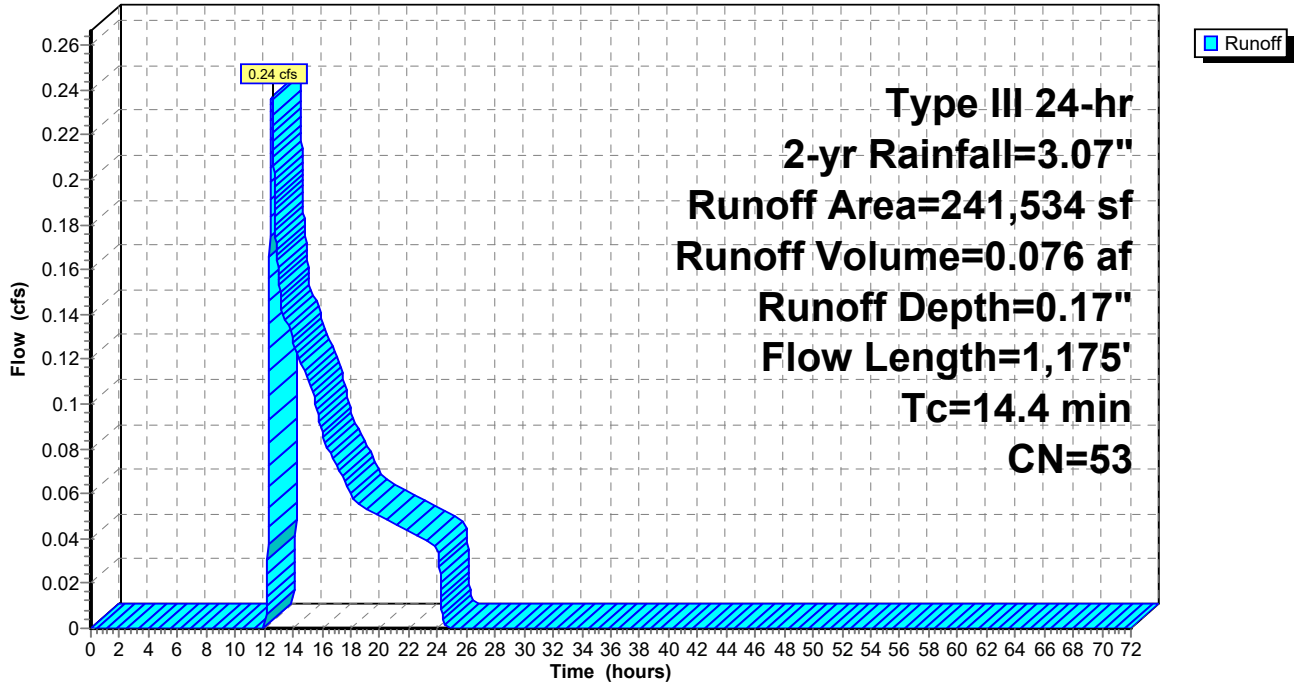
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2-yr Rainfall=3.07"

Area (sf)	CN	Description
78,775	66	Woods, Poor, HSG B
81,473	45	Woods, Poor, HSG A
81,286	49	50-75% Grass cover, Fair, HSG A
241,534	53	Weighted Average
241,534		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	100	0.1900	0.19		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.07"
1.1	180	0.3000	2.74		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.6	150	0.6933	4.16		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.5	210	0.2190	2.34		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.3	535	0.0598	3.94		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
14.4	1,175	Total			

Subcatchment 3S: 3S

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Subcatchment 4S: 4S

Runoff = 0.97 cfs @ 12.38 hrs, Volume= 0.171 af, Depth= 0.33"
 Routed to Pond 10P : PDI 4

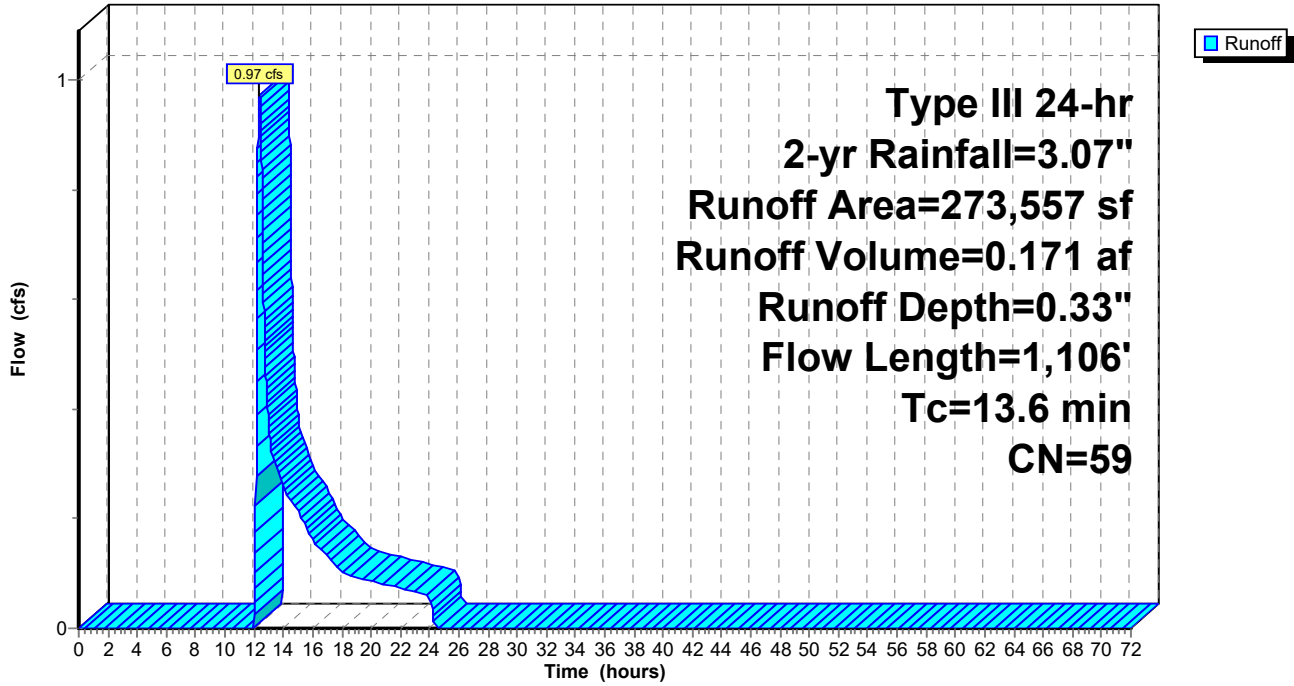
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2-yr Rainfall=3.07"

Area (sf)	CN	Description
4,382	98	Paved roads w/curbs & sewers, HSG A
66,093	39	>75% Grass cover, Good, HSG A
182,528	66	Woods, Poor, HSG B
17,774	39	>75% Grass cover, Good, HSG A
* 2,780	98	Impervious, Good, HSG A
273,557	59	Weighted Average
266,395		97.38% Pervious Area
7,162		2.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	100	0.3100	0.23		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.07"
1.4	214	0.2520	2.51		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.5	120	0.6500	4.03		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.3	212	0.2920	2.70		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.1	460	0.0739	2.45		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
13.6	1,106	Total			

Subcatchment 4S: 4S

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Subcatchment 5S: 5S

Runoff = 0.22 cfs @ 12.34 hrs, Volume= 0.038 af, Depth= 0.33"
 Routed to Pond 14P : PDI 8

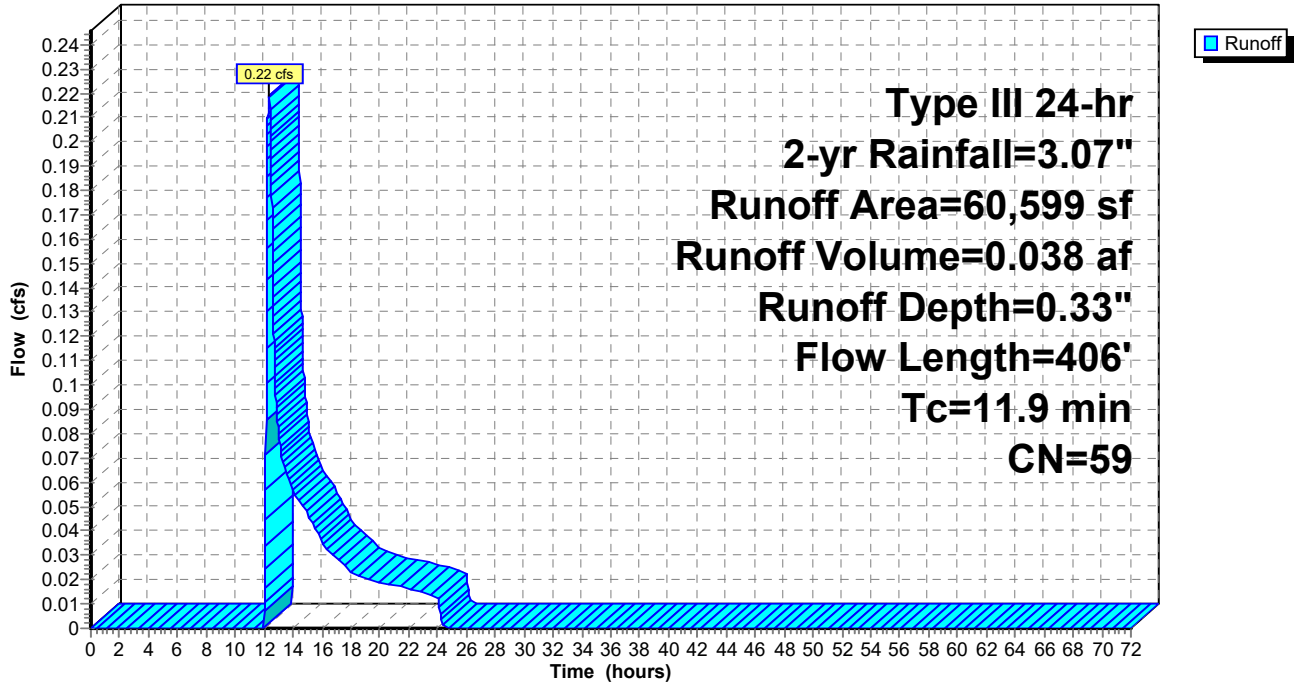
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2-yr Rainfall=3.07"

Area (sf)	CN	Description
23,965	39	>75% Grass cover, Good, HSG A
25,373	61	>75% Grass cover, Good, HSG B
* 4,212	98	Impervious, HSG B
* 7,049	98	Impervious, HSG A
60,599	59	Weighted Average
49,338		81.42% Pervious Area
11,261		18.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.1600	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.07"
0.4	98	0.1633	3.64		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
1.2	93	0.0323	1.26		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.8	115	0.1235	2.46		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.9	406	Total			

Subcatchment 5S: 5S

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Subcatchment 6S: 6S

Runoff = 0.03 cfs @ 12.44 hrs, Volume= 0.009 af, Depth= 0.19"
 Routed to Pond 9P : PDI 3

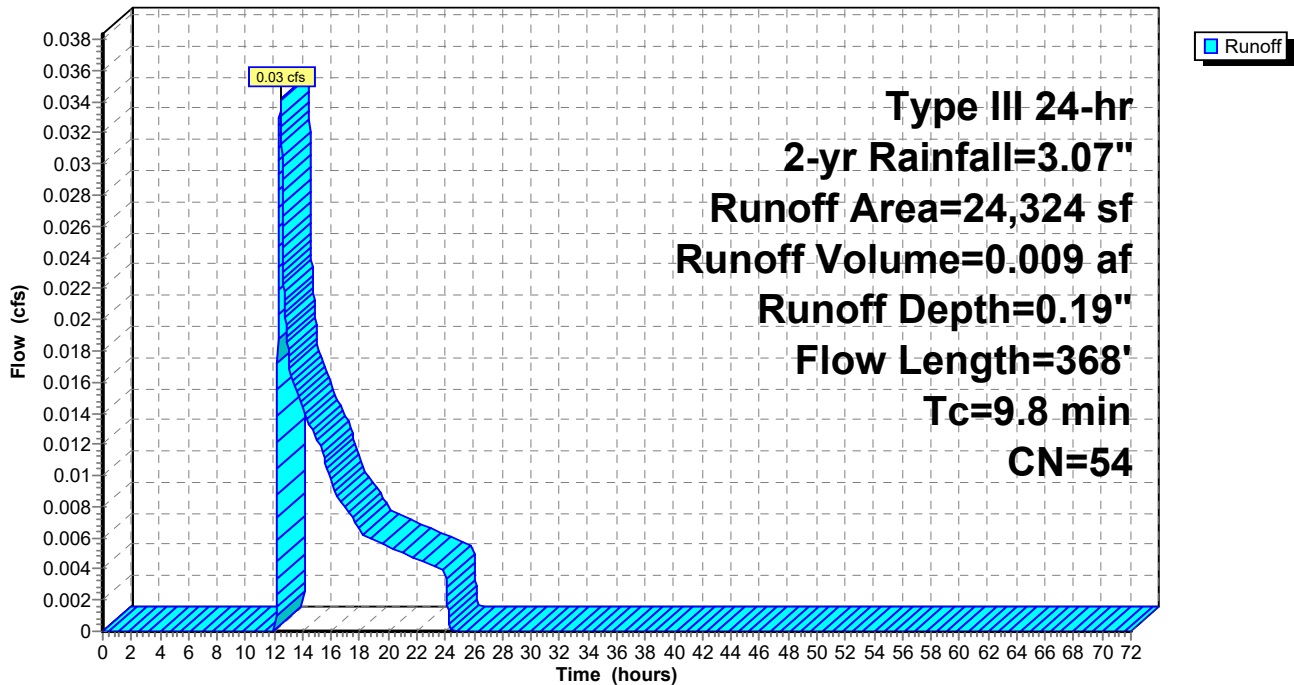
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2-yr Rainfall=3.07"

Area (sf)	CN	Description
6,004	98	Paved roads w/curbs & sewers, HSG A
18,320	39	>75% Grass cover, Good, HSG A
24,324	54	Weighted Average
18,320		75.32% Pervious Area
6,004		24.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	100	0.0400	0.20		Sheet Flow,
1.4	268	0.0261	3.28		Cultivated: Residue>20% n= 0.170 P2= 3.07"
					Shallow Concentrated Flow,
					Paved Kv= 20.3 fps
9.8	368	Total			

Subcatchment 6S: 6S

Hydrograph



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Summary for Subcatchment 7S: 7S

Runoff = 0.24 cfs @ 12.11 hrs, Volume= 0.020 af, Depth= 0.75"
 Routed to Pond 8P : PDI 2

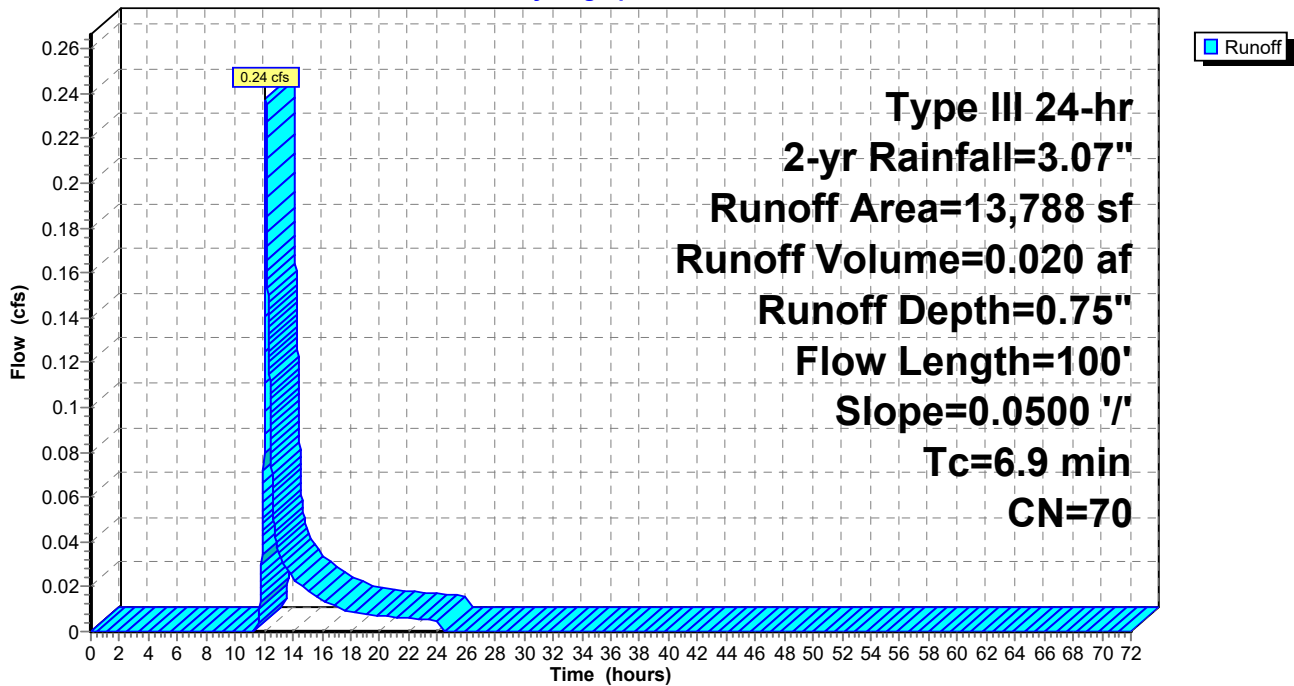
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2-yr Rainfall=3.07"

Area (sf)	CN	Description
6,642	39	>75% Grass cover, Good, HSG A
7,146	98	Paved parking, HSG A
13,788	70	Weighted Average
6,642		48.17% Pervious Area
7,146		51.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	100	0.0500	0.24		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"

Subcatchment 7S: 7S

Hydrograph



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Summary for Subcatchment 8S: 8S

Runoff = 0.50 cfs @ 12.13 hrs, Volume= 0.040 af, Depth= 1.06"
 Routed to Pond 25P : J14

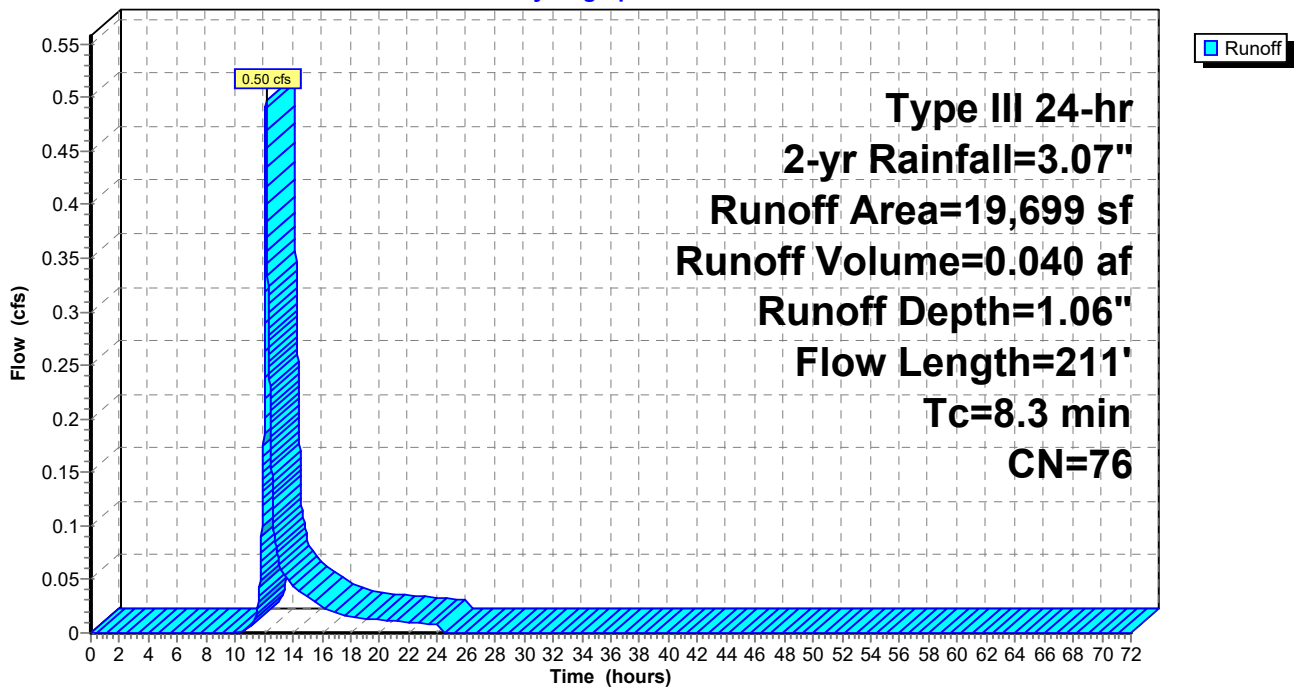
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2-yr Rainfall=3.07"

	Area (sf)	CN	Description
*	6,358	98	Impervious, HSG C
*	980	98	Impervious, HSG A
	3,996	39	>75% Grass cover, Good, HSG A
	8,365	74	>75% Grass cover, Good, HSG C
	19,699	76	Weighted Average
	12,361		62.75% Pervious Area
	7,338		37.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	100	0.0400	0.22		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
0.7	111	0.0180	2.72		Shallow Concentrated Flow, Paved Kv= 20.3 fps
8.3	211	Total			

Subcatchment 8S: 8S

Hydrograph



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Summary for Subcatchment 9S: 9S

Runoff = 2.60 cfs @ 12.11 hrs, Volume= 0.193 af, Depth= 1.57"
 Routed to Pond 6P : PCB 3

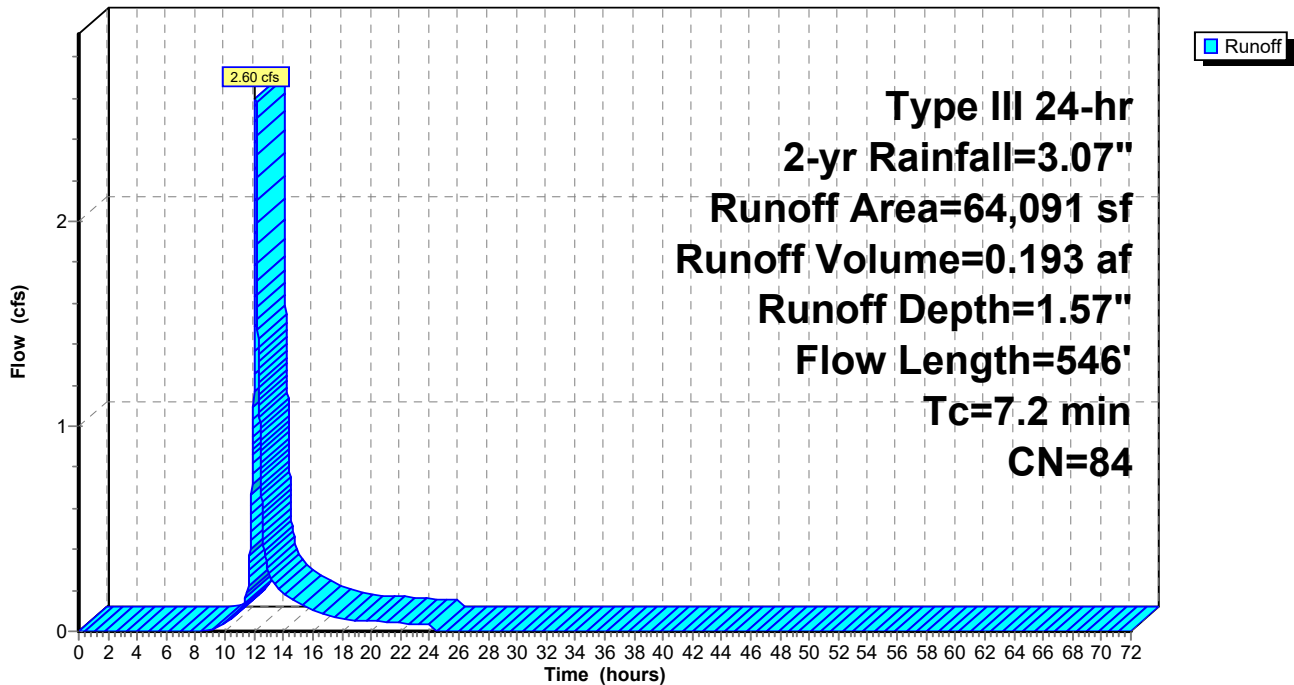
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2-yr Rainfall=3.07"

Area (sf)	CN	Description
26,754	98	Paved parking, HSG C
37,337	74	>75% Grass cover, Good, HSG C
64,091	84	Weighted Average
37,337		58.26% Pervious Area
26,754		41.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0900	0.30		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
1.7	446	0.0471	4.41		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.2	546	Total			

Subcatchment 9S: 9S

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Summary for Subcatchment 10S: 12S

Runoff = 0.20 cfs @ 12.03 hrs, Volume= 0.014 af, Depth= 0.66"
 Routed to Pond 24P : J15

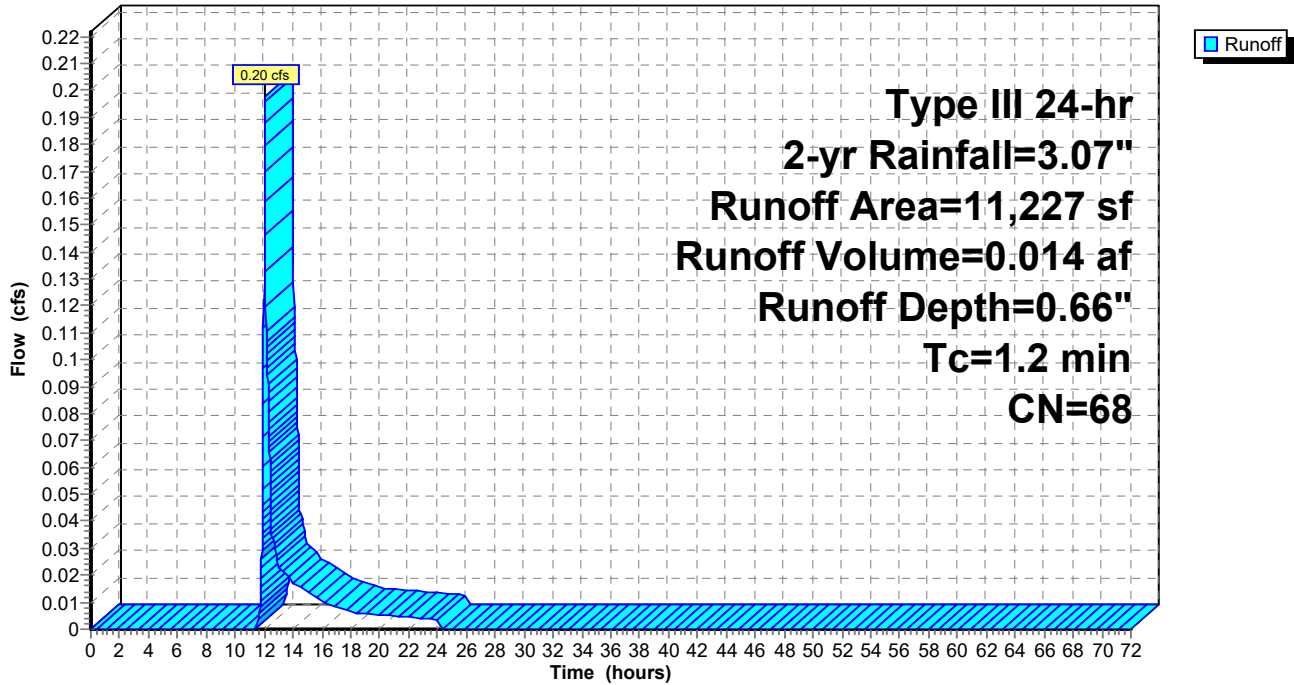
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2-yr Rainfall=3.07"

	Area (sf)	CN	Description
*	5,612	98	Impervious, HSG A
	5,615	39	>75% Grass cover, Good, HSG A
	11,227	68	Weighted Average
	5,615		50.01% Pervious Area
	5,612		49.99% Impervious Area

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

Subcatchment 10S: 12S

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Summary for Subcatchment 11S: 11S

Runoff = 1.67 cfs @ 12.21 hrs, Volume= 0.160 af, Depth= 1.43"
 Routed to Pond 5P : PCB 2

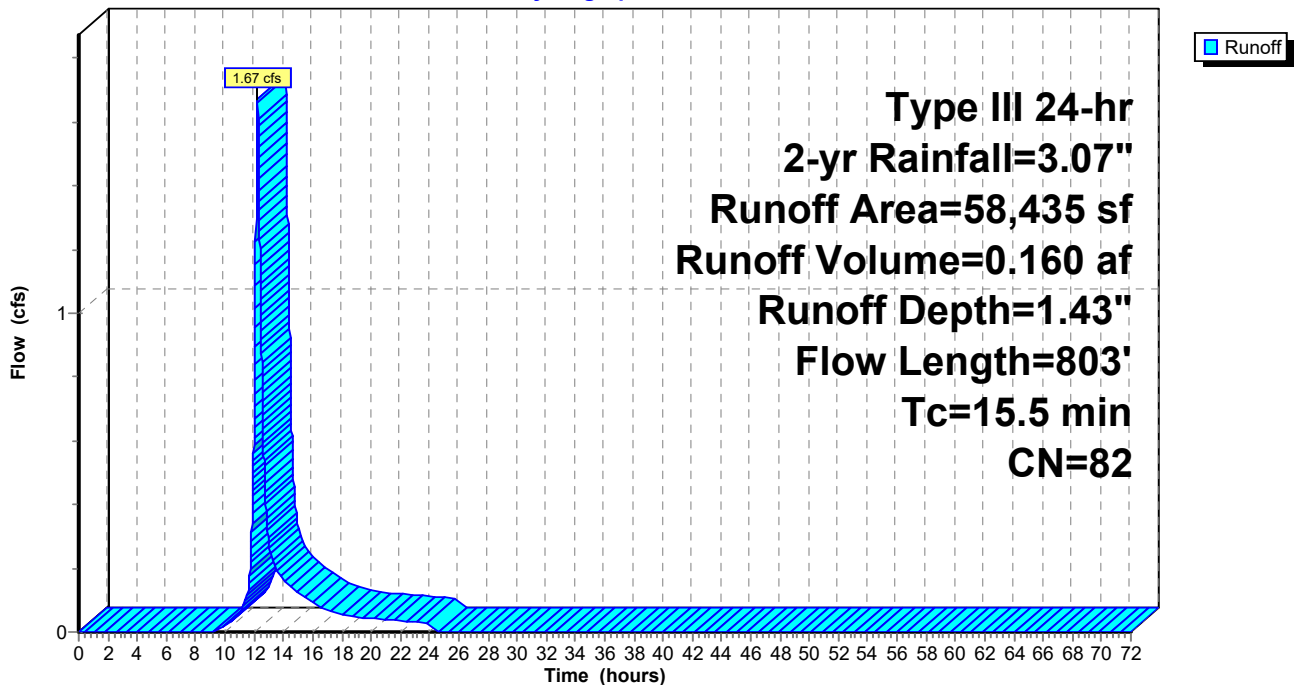
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2-yr Rainfall=3.07"

	Area (sf)	CN	Description
*	1,964	98	Impervious, HSG A
	780	39	>75% Grass cover, Good, HSG A
*	18,734	98	Impervious, HSG C
	36,957	74	>75% Grass cover, Good, HSG C
	58,435	82	Weighted Average
	37,737		64.58% Pervious Area
	20,698		35.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	100	0.0400	0.15		Sheet Flow, Grass: Dense n= 0.240 P2= 3.07"
3.8	411	0.0657	1.79		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.7	292	0.1199	7.03		Shallow Concentrated Flow, Paved Kv= 20.3 fps
15.5	803	Total			

Subcatchment 11S: 11S

Hydrograph



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Summary for Subcatchment 12S: 12S

Runoff = 0.14 cfs @ 12.65 hrs, Volume= 0.052 af, Depth= 0.17"
 Routed to Link 19L : Behind houses

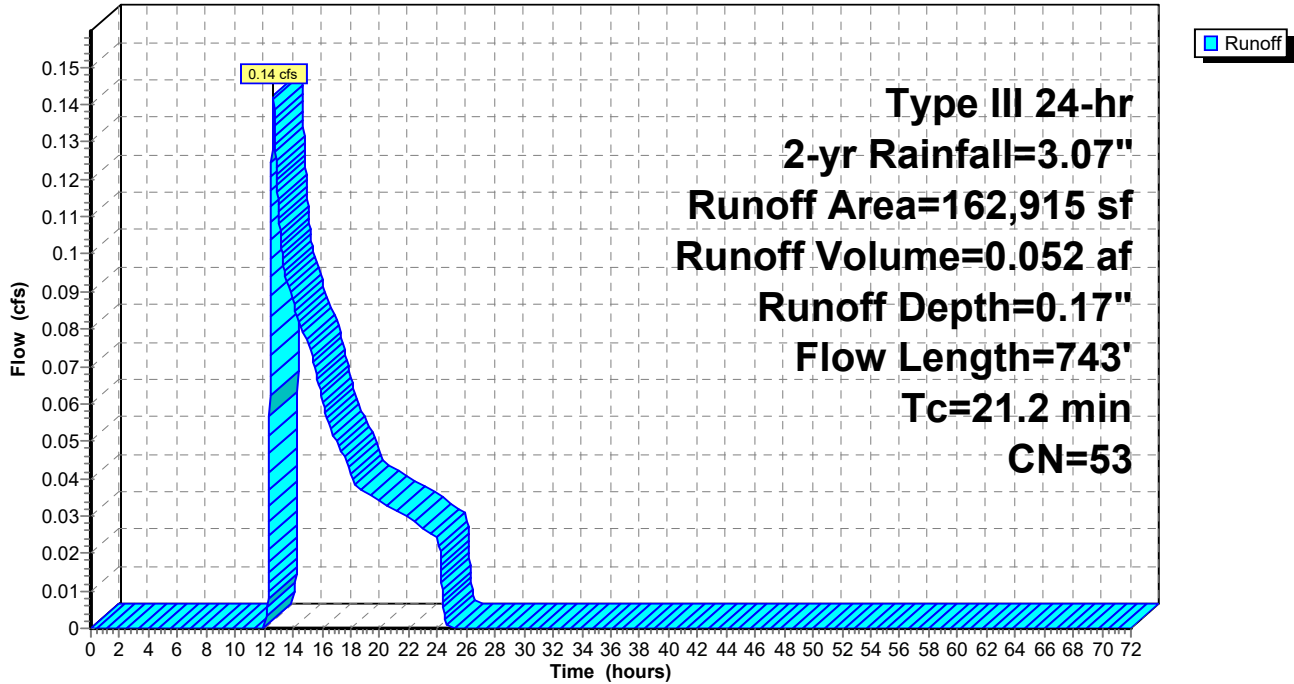
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 Type III 24-hr 2-yr Rainfall=3.07"

Area (sf)	CN	Description
* 13,392	98	Impervious, HSG A
* 4,745	98	Impervious, HSG C
24,615	45	Woods, Poor, HSG A
7,646	66	Woods, Poor, HSG B
89,600	39	>75% Grass cover, Good, HSG A
22,005	74	>75% Grass cover, Good, HSG C
912	61	>75% Grass cover, Good, HSG B
162,915	53	Weighted Average
144,778		88.87% Pervious Area
18,137		11.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	100	0.0300	0.13		Sheet Flow, Grass: Dense n= 0.240 P2= 3.07"
8.8	643	0.0594	1.22		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
21.2	743	Total			

Subcatchment 12S: 12S

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Subcatchment 13S: 13S

Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.022 af, Depth= 0.46"
 Routed to Pond 2P : PDI 1

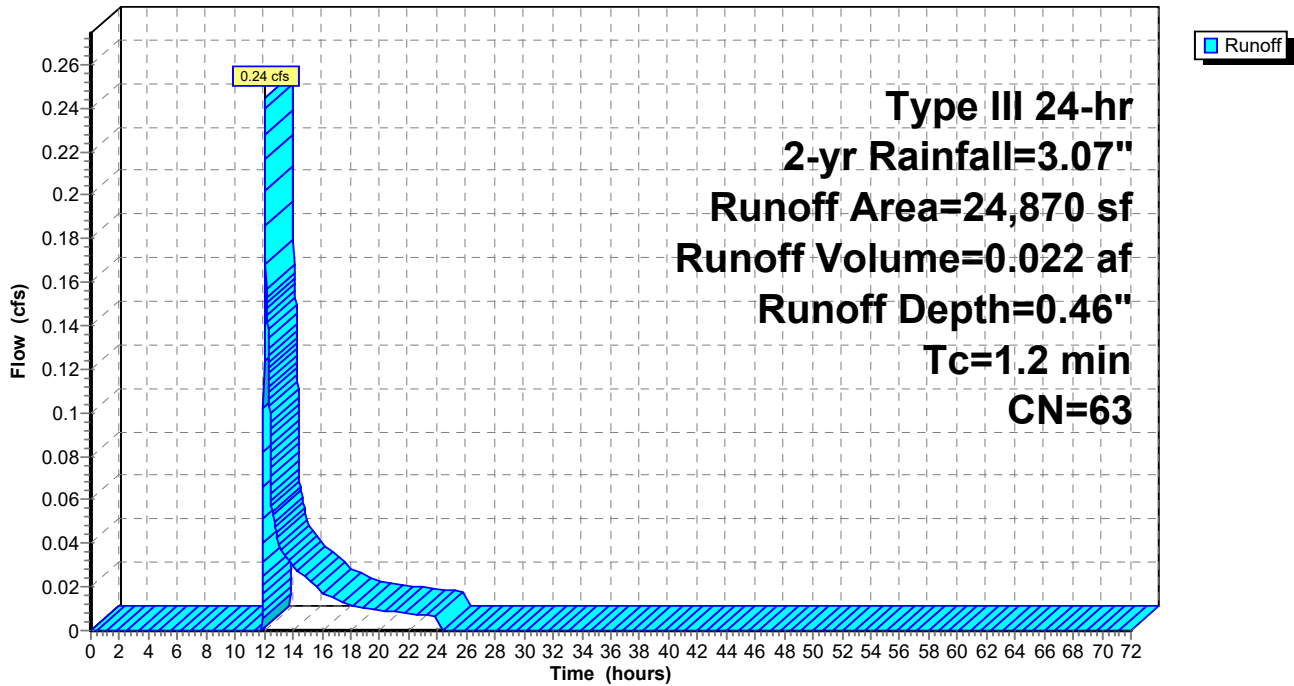
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2-yr Rainfall=3.07"

Area (sf)	CN	Description
5,179	74	>75% Grass cover, Good, HSG C
* 2,500	98	Impervious, C
13,037	45	Woods, Poor, HSG A
546	39	>75% Grass cover, Good, HSG A
* 2,290	98	Impervious, A
* 706	98	Impervious B
612	66	Woods, Poor, HSG B
24,870	63	Weighted Average
19,374		77.90% Pervious Area
5,496		22.10% Impervious Area

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

Subcatchment 13S: 13S

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Subcatchment 14S: 14S

Runoff = 2.84 cfs @ 12.26 hrs, Volume= 0.391 af, Depth= 0.46"
 Routed to Pond 49P : J1

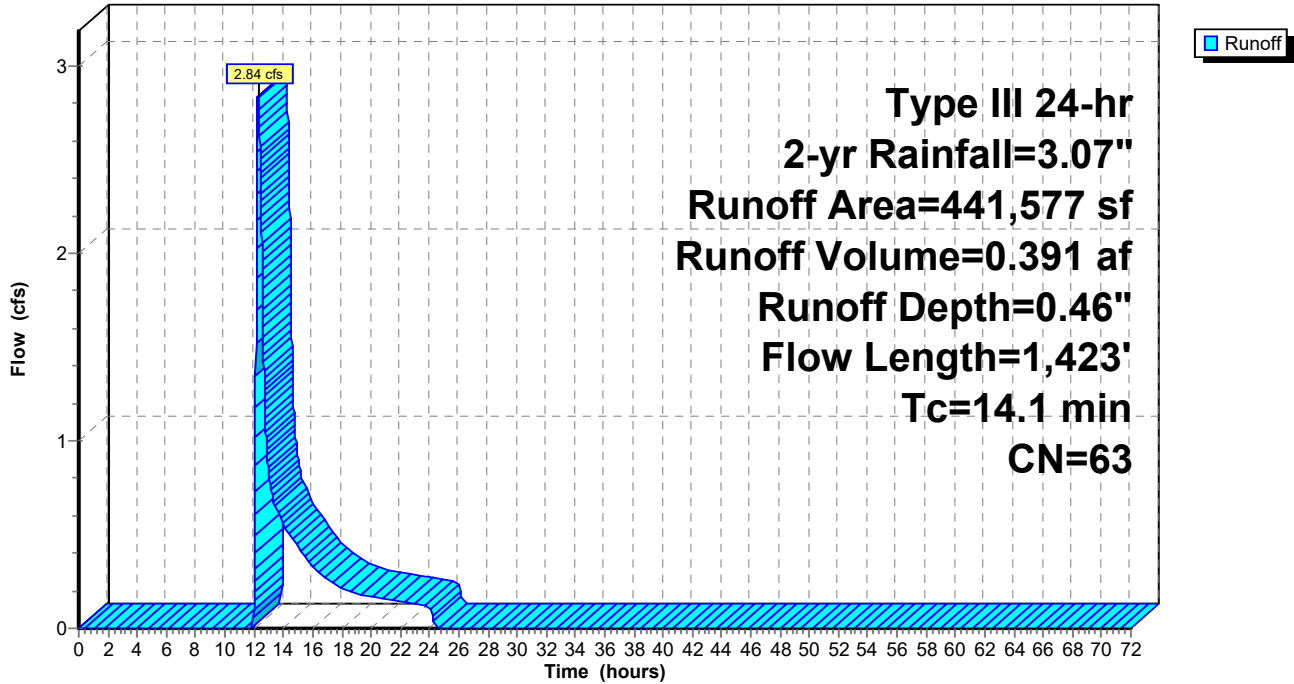
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 2-yr Rainfall=3.07"

Area (sf)	CN	Description
186,589	66	Woods, Poor, HSG B
11,967	45	Woods, Poor, HSG A
104,358	77	Woods, Poor, HSG C
43,979	61	>75% Grass cover, Good, HSG B
10,084	74	>75% Grass cover, Good, HSG C
84,600	39	>75% Grass cover, Good, HSG A
441,577	63	Weighted Average
441,577		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	100	0.1900	0.41		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
1.5	199	0.1055	2.27		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.4	185	0.1946	2.21		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
4.1	619	0.2569	2.53		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.0	320	0.0656	1.79		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.1	1,423	Total			

Subcatchment 14S: 14S

Hydrograph



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Summary for Subcatchment 15S: 15S

Runoff = 8.93 cfs @ 12.22 hrs, Volume= 0.896 af, Depth= 0.95"

Routed to Link 48L : NORTH TO 10 PINE HILL ROAD (DP-6)

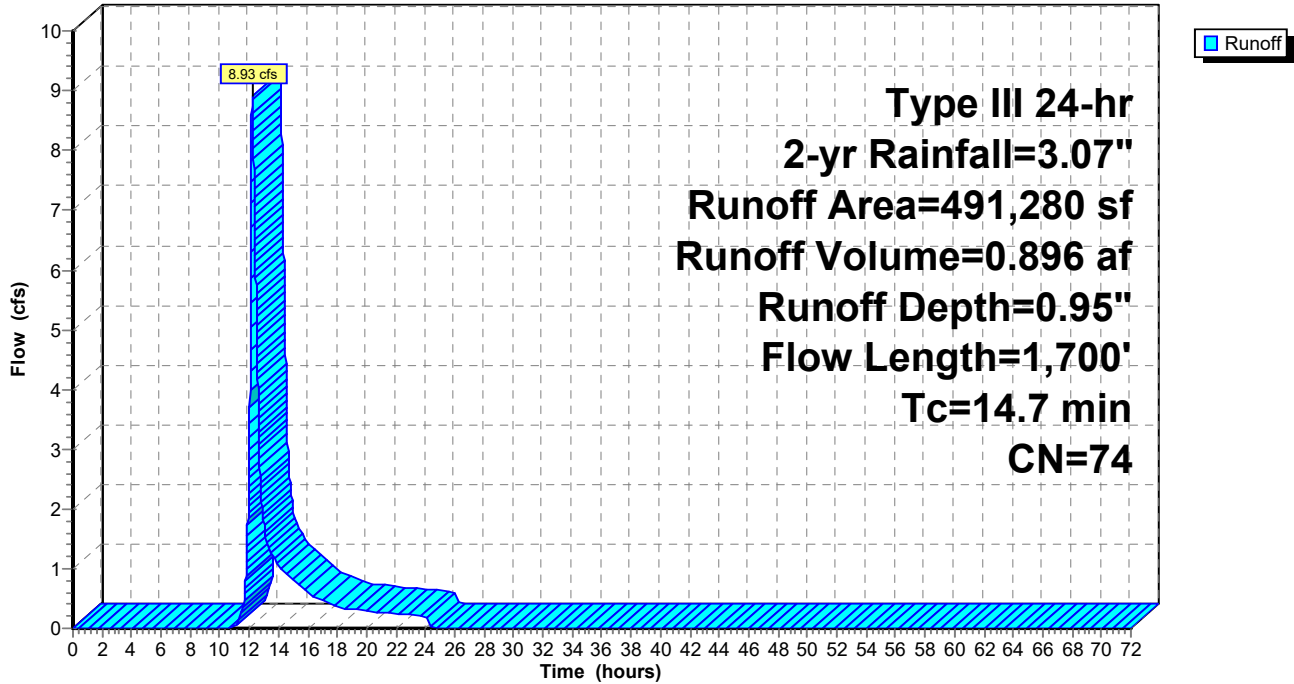
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.07"

Area (sf)	CN	Description
23,245	61	>75% Grass cover, Good, HSG B
29,263	74	>75% Grass cover, Good, HSG C
46,122	39	>75% Grass cover, Good, HSG A
16,942	45	Woods, Poor, HSG A
2,172	66	Woods, Poor, HSG B
289,686	77	Woods, Poor, HSG C
35,711	88	Row crops, straight row, Poor, HSG C
11,199	72	Row crops, straight row, Poor, HSG A
* 13,085	98	Impervious, HSG A
* 18,490	98	Impervious, HSG C
* 5,365	98	Impervious, HSG B
491,280	74	Weighted Average
454,340		92.48% Pervious Area
36,940		7.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	100	0.1400	0.36		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
0.9	140	0.1357	2.58		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
4.7	651	0.2166	2.33		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.0	131	0.1756	2.10		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.3	212	0.0849	2.62		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
2.2	466	0.0558	3.54		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
14.7	1,700	Total			

Subcatchment 15S: 15S

Hydrograph



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Summary for Pond 1P: PDMH 1

Inflow Area = 10.539 ac, 15.96% Impervious, Inflow Depth = 0.65" for 2-yr event
 Inflow = 4.62 cfs @ 12.15 hrs, Volume= 0.575 af
 Outflow = 4.62 cfs @ 12.15 hrs, Volume= 0.575 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.62 cfs @ 12.15 hrs, Volume= 0.575 af
 Routed to Link 1L : PROP OUTFALL TO TOWN PROP (DP-5)

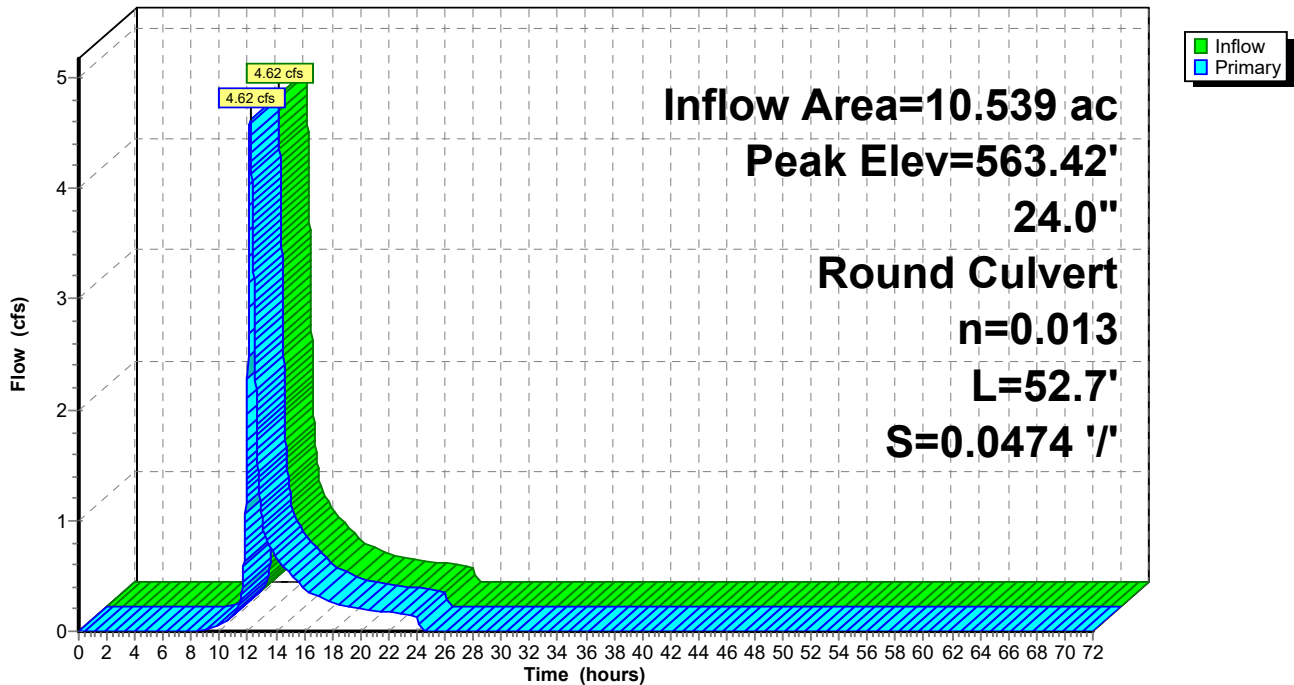
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 563.42' @ 12.15 hrs
 Flood Elev= 567.50'

Device #	Routing	Invert	Outlet Devices
#1	Primary	562.50'	24.0" Round Culvert L= 52.7' Ke= 0.500 Inlet / Outlet Invert= 562.50' / 560.00' S= 0.0474 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=4.62 cfs @ 12.15 hrs HW=563.42' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 4.62 cfs @ 3.27 fps)

Pond 1P: PDMH 1

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Pond 2P: PDI 1

Inflow Area = 10.539 ac, 15.96% Impervious, Inflow Depth = 0.65" for 2-yr event
 Inflow = 4.62 cfs @ 12.15 hrs, Volume= 0.575 af
 Outflow = 4.62 cfs @ 12.15 hrs, Volume= 0.575 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.62 cfs @ 12.15 hrs, Volume= 0.575 af
 Routed to Pond 1P : PDMH 1

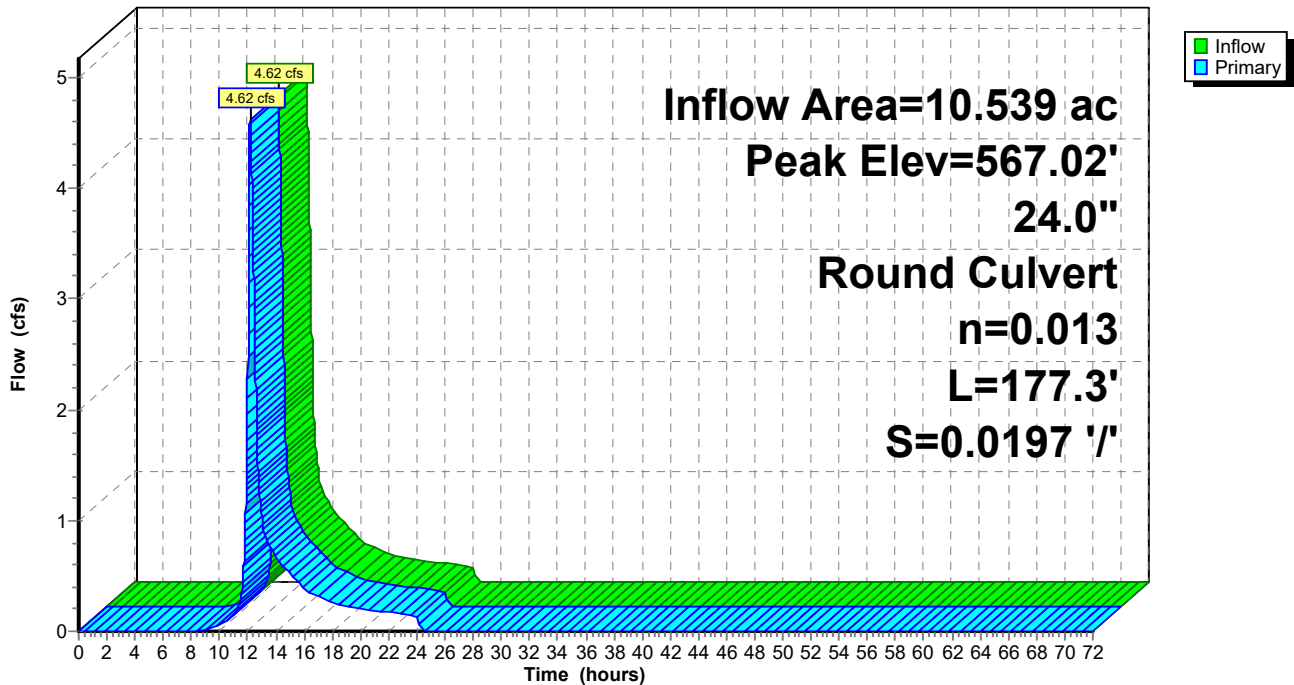
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 567.02' @ 12.15 hrs
 Flood Elev= 571.20'

Device #	Routing	Invert	Outlet Devices
#1	Primary	566.10'	24.0" Round Culvert L= 177.3' Ke= 0.500 Inlet / Outlet Invert= 566.10' / 562.60' S= 0.0197 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=4.62 cfs @ 12.15 hrs HW=567.02' TW=563.42' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 4.62 cfs @ 3.27 fps)

Pond 2P: PDI 1

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Pond 3P: PDMH 2

Inflow Area = 9.968 ac, 15.61% Impervious, Inflow Depth = 0.67" for 2-yr event
 Inflow = 4.47 cfs @ 12.15 hrs, Volume= 0.553 af
 Outflow = 4.47 cfs @ 12.15 hrs, Volume= 0.553 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.47 cfs @ 12.15 hrs, Volume= 0.553 af
 Routed to Pond 2P : PDI 1

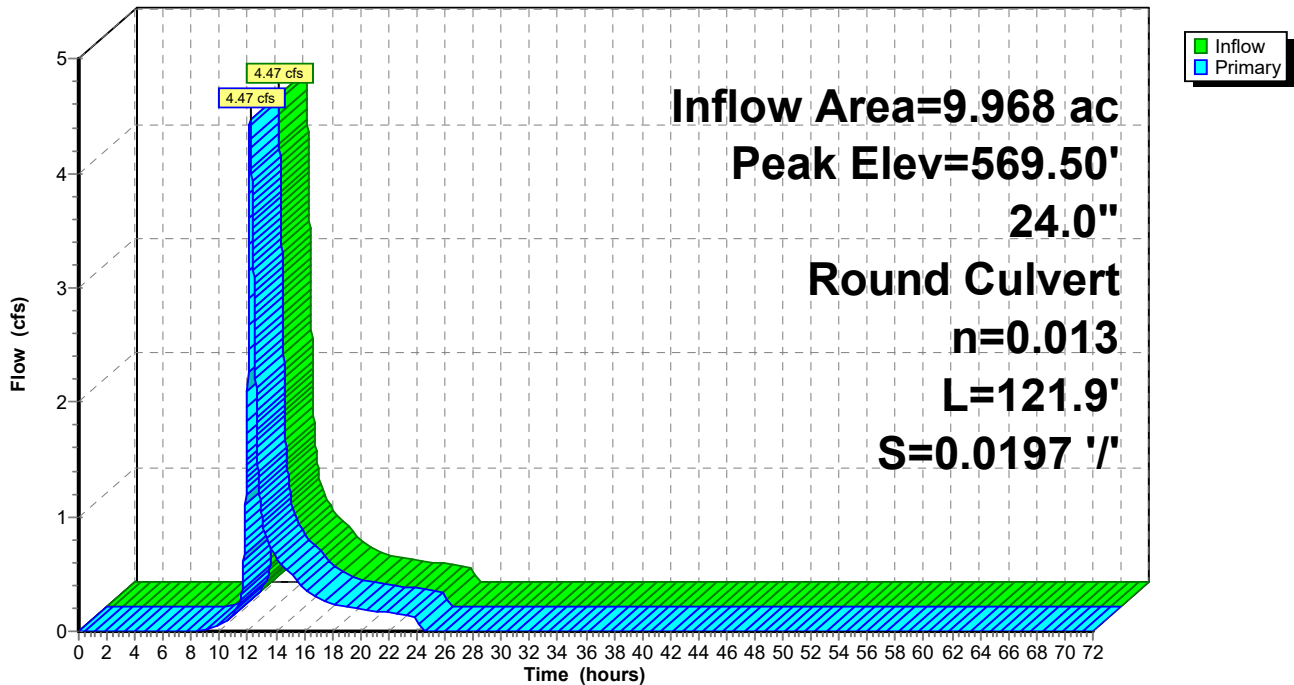
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 569.50' @ 12.15 hrs
 Flood Elev= 573.70'

Device #	Routing	Invert	Outlet Devices
#1	Primary	568.60'	24.0" Round Culvert L= 121.9' Ke= 0.500 Inlet / Outlet Invert= 568.60' / 566.20' S= 0.0197 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=4.47 cfs @ 12.15 hrs HW=569.50' TW=567.02' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 4.47 cfs @ 3.24 fps)

Pond 3P: PDMH 2

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Pond 4P: PCB 1

Inflow Area = 9.968 ac, 15.61% Impervious, Inflow Depth = 0.67" for 2-yr event
 Inflow = 4.47 cfs @ 12.15 hrs, Volume= 0.553 af
 Outflow = 4.47 cfs @ 12.15 hrs, Volume= 0.553 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.47 cfs @ 12.15 hrs, Volume= 0.553 af
 Routed to Pond 3P : PDMH 2

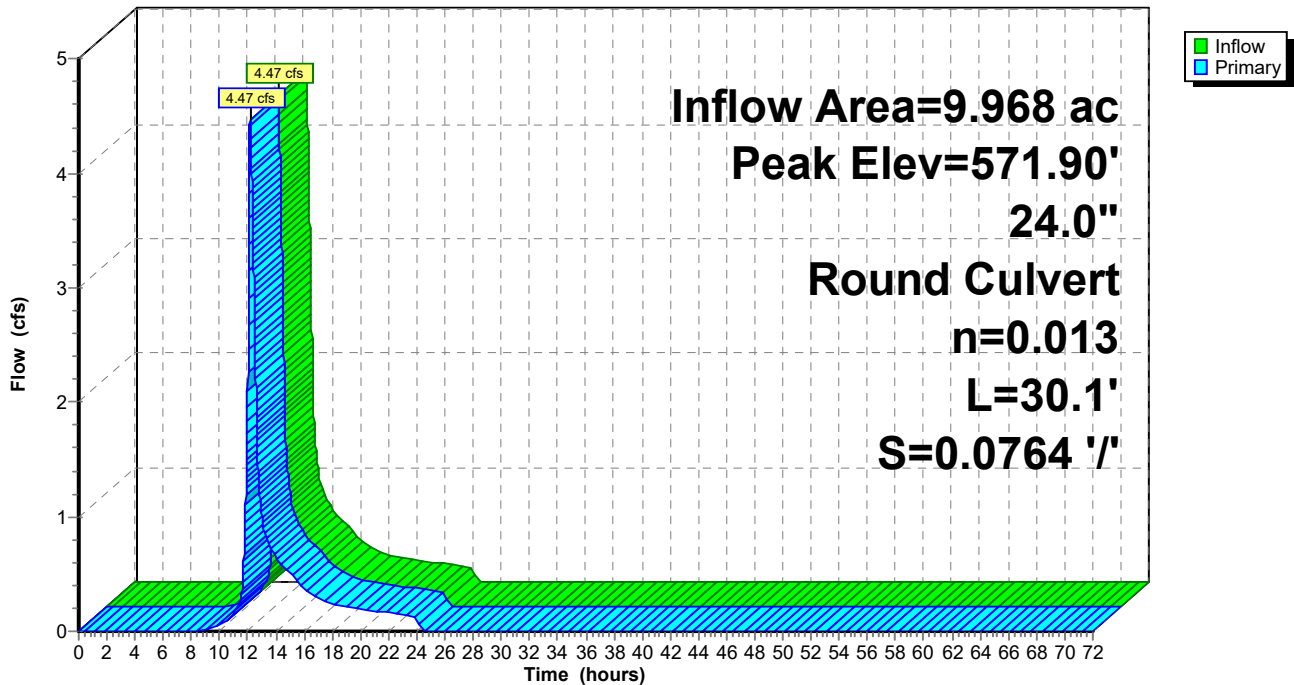
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 571.90' @ 12.15 hrs
 Flood Elev= 576.00'

Device #	Routing	Invert	Outlet Devices
#1	Primary	571.00'	24.0" Round Culvert L= 30.1' Ke= 0.500 Inlet / Outlet Invert= 571.00' / 568.70' S= 0.0764 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=4.47 cfs @ 12.15 hrs HW=571.90' TW=569.50' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 4.47 cfs @ 3.24 fps)

Pond 4P: PCB 1

Hydrograph



Summary for Pond 5P: PCB 2

Inflow Area = 9.968 ac, 15.61% Impervious, Inflow Depth = 0.67" for 2-yr event
 Inflow = 4.47 cfs @ 12.15 hrs, Volume= 0.553 af
 Outflow = 4.47 cfs @ 12.15 hrs, Volume= 0.553 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.47 cfs @ 12.15 hrs, Volume= 0.553 af
 Routed to Pond 4P : PCB 1
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 4P : PCB 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 595.23' @ 12.15 hrs
 Flood Elev= 598.30'

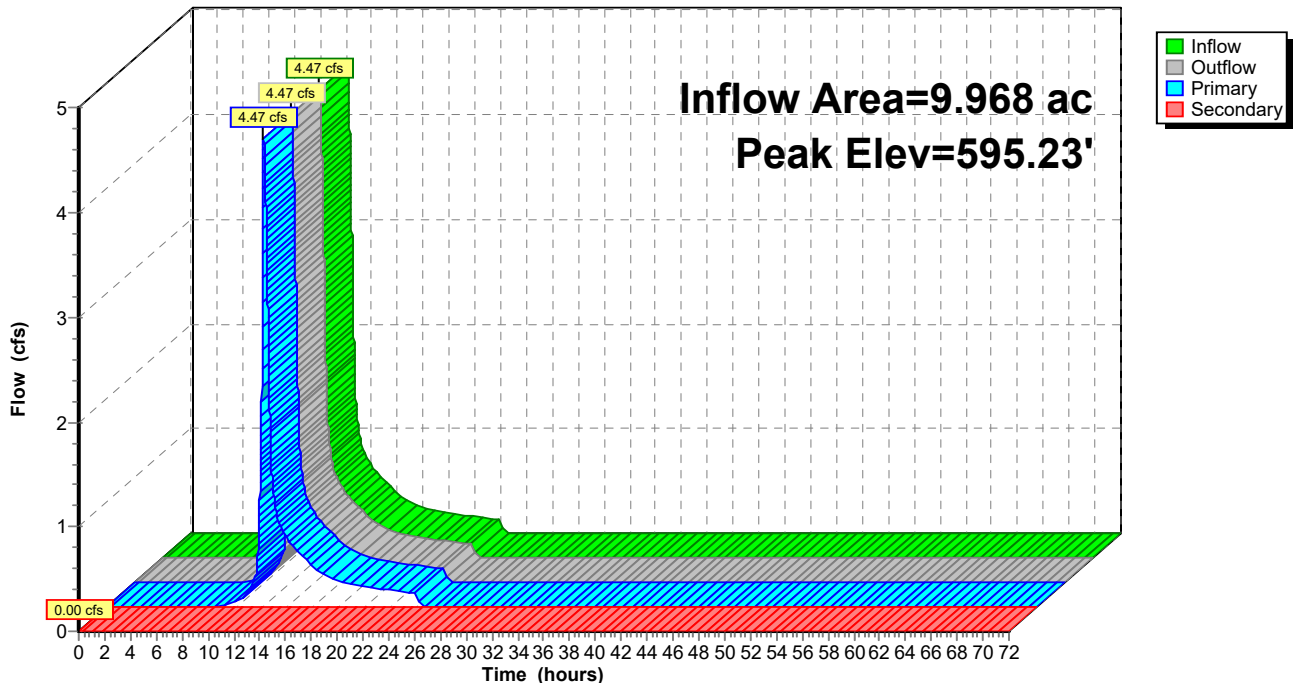
Device	Routing	Invert	Outlet Devices
#1	Primary	594.20'	18.0" Round Culvert L= 202.3' Ke= 0.500 Inlet / Outlet Invert= 594.20' / 571.50' S= 0.1122 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	598.30'	20.0" x 20.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.47 cfs @ 12.15 hrs HW=595.23' TW=571.90' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 4.47 cfs @ 3.45 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=594.20' TW=571.00' (Dynamic Tailwater)
 ↳2=Orifice/Grate (Controls 0.00 cfs)

Pond 5P: PCB 2

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Pond 6P: PCB 3

Inflow Area = 8.626 ac, 12.53% Impervious, Inflow Depth = 0.55" for 2-yr event
Inflow = 3.08 cfs @ 12.12 hrs, Volume= 0.393 af
Outflow = 3.08 cfs @ 12.12 hrs, Volume= 0.393 af, Atten= 0%, Lag= 0.0 min
Primary = 3.08 cfs @ 12.12 hrs, Volume= 0.393 af
Routed to Pond 5P : PCB 2

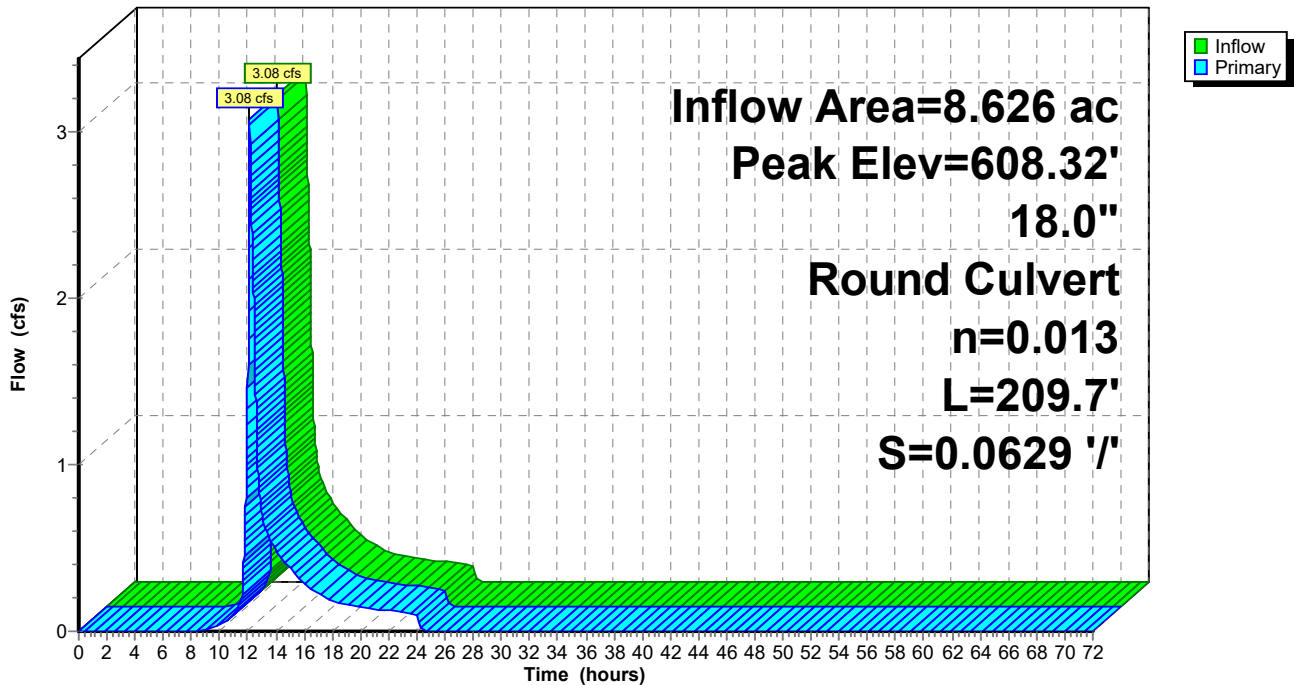
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 608.32' @ 12.12 hrs
Flood Elev= 615.20'

Device #	Routing	Invert	Outlet Devices
1	Primary	607.50'	18.0" Round Culvert L= 209.7' Ke= 0.500 Inlet / Outlet Invert= 607.50' / 594.30' S= 0.0629 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.07 cfs @ 12.12 hrs HW=608.32' TW=595.22' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 3.07 cfs @ 3.09 fps)

Pond 6P: PCB 3

Hydrograph



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Summary for Pond 7P: PCB 4

Inflow Area = 7.155 ac, 6.52% Impervious, Inflow Depth = 0.34" for 2-yr event
Inflow = 1.12 cfs @ 12.35 hrs, Volume= 0.200 af
Outflow = 1.12 cfs @ 12.35 hrs, Volume= 0.200 af, Atten= 0%, Lag= 0.0 min
Primary = 1.12 cfs @ 12.35 hrs, Volume= 0.200 af
Routed to Pond 6P : PCB 3

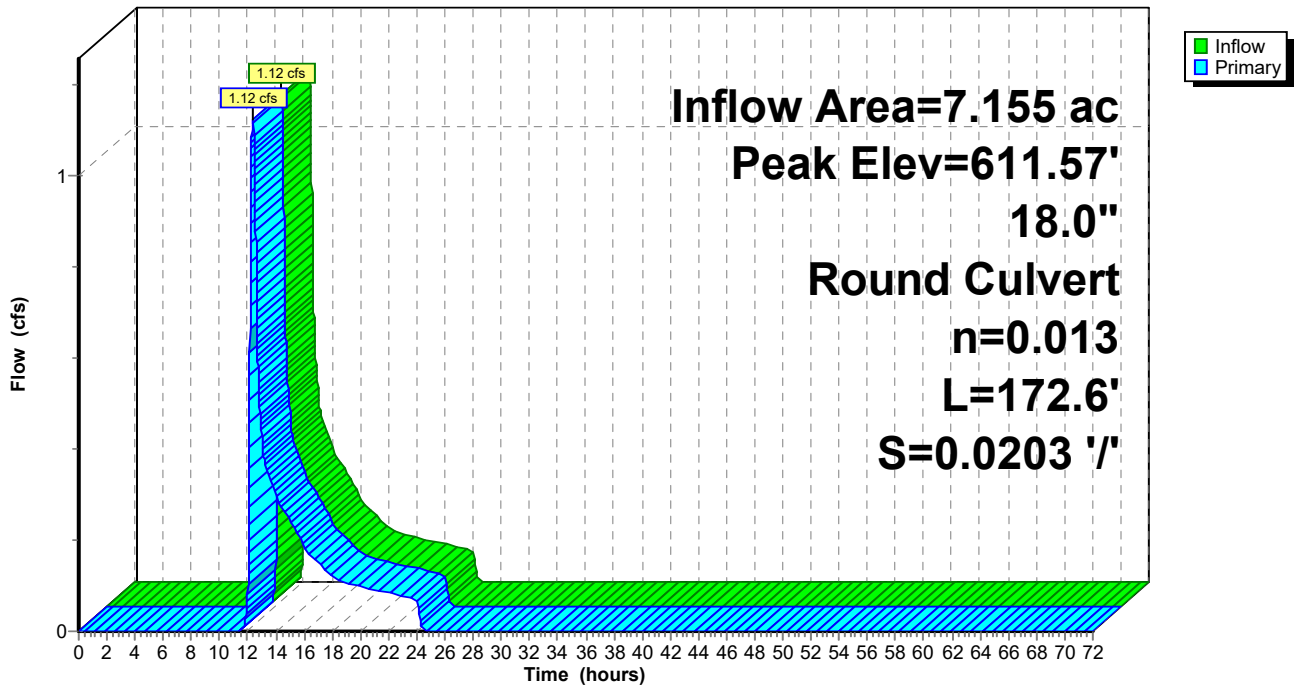
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 611.57' @ 12.35 hrs
Flood Elev= 620.80'

Device #	Routing	Invert	Outlet Devices
1	Primary	611.10'	18.0" Round Culvert L= 172.6' Ke= 0.500 Inlet / Outlet Invert= 611.10' / 607.60' S= 0.0203 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.12 cfs @ 12.35 hrs HW=611.57' TW=608.19' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 1.12 cfs @ 2.34 fps)

Pond 7P: PCB 4

Hydrograph



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Summary for Pond 8P: PDI 2

[92] Warning: Device #2 is above defined storage

Inflow Area = 7.155 ac, 6.52% Impervious, Inflow Depth = 0.34" for 2-yr event
 Inflow = 1.12 cfs @ 12.35 hrs, Volume= 0.200 af
 Outflow = 1.12 cfs @ 12.35 hrs, Volume= 0.200 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.12 cfs @ 12.35 hrs, Volume= 0.200 af
 Routed to Pond 7P : PCB 4
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 49L : 51 Baptist Hill Rd Property (DP-3)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 615.97' @ 12.35 hrs Surf.Area= 13 sf Storage= 6 cf
 Flood Elev= 621.75' Surf.Area= 595 sf Storage= 295 cf

Plug-Flow detention time= 0.2 min calculated for 0.200 af (100% of inflow)
 Center-of-Mass det. time= 0.2 min (935.8 - 935.6)

Volume	Invert	Avail.Storage	Storage Description
#1	615.50'	44 cf	4.00'D x 3.50'H Vertical Cone/Cylinder
#2	619.00'	420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		464 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
619.00	4	0	0
620.00	10	7	7
621.00	24	17	24
622.00	768	396	420

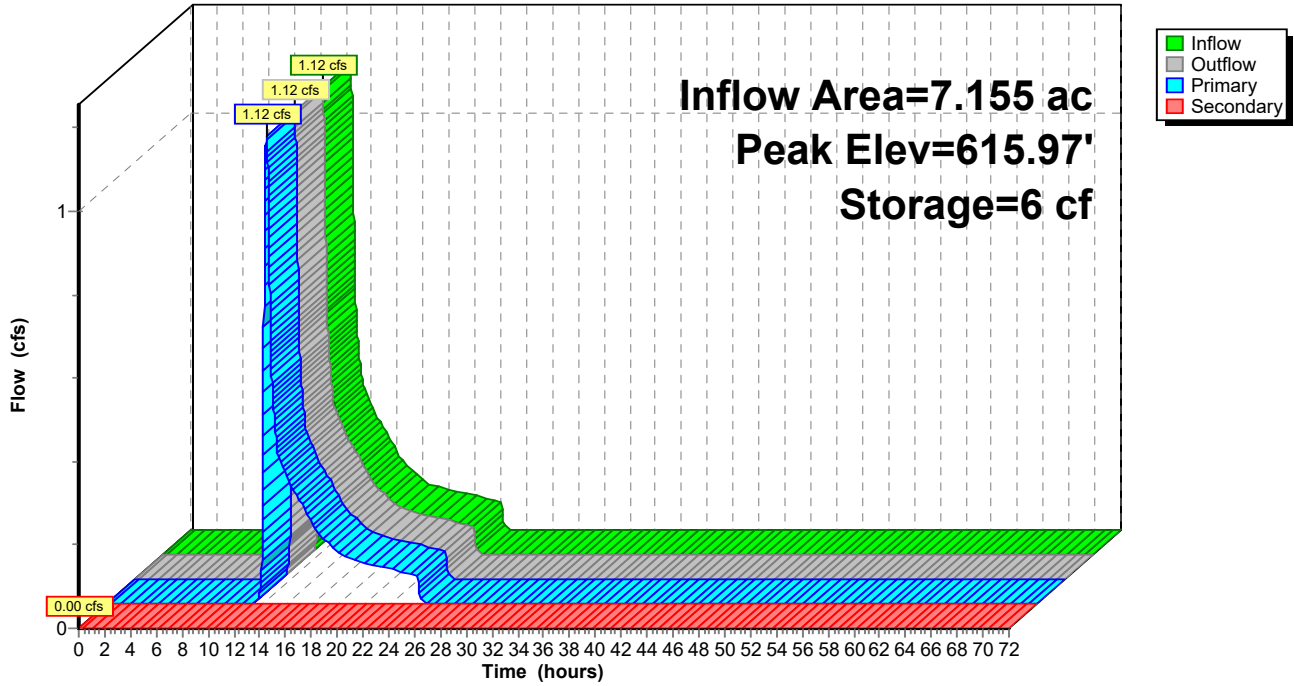
Device	Routing	Invert	Outlet Devices
#1	Primary	615.50'	18.0" Round Culvert L= 217.0' Ke= 0.500 Inlet / Outlet Invert= 615.50' / 611.20' S= 0.0198 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	622.00'	20.0' long x 18.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=1.12 cfs @ 12.35 hrs HW=615.97' TW=611.57' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 1.12 cfs @ 2.34 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=615.50' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 8P: PDI 2

Hydrograph



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Summary for Pond 9P: PDI 3

Inflow Area = 6.838 ac, 4.42% Impervious, Inflow Depth = 0.32" for 2-yr event
 Inflow = 1.00 cfs @ 12.38 hrs, Volume= 0.180 af
 Outflow = 1.00 cfs @ 12.38 hrs, Volume= 0.180 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.00 cfs @ 12.38 hrs, Volume= 0.180 af
 Routed to Pond 8P : PDI 2
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 49L : 51 Baptist Hill Rd Property (DP-3)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 618.65' @ 12.38 hrs
 Flood Elev= 625.90'

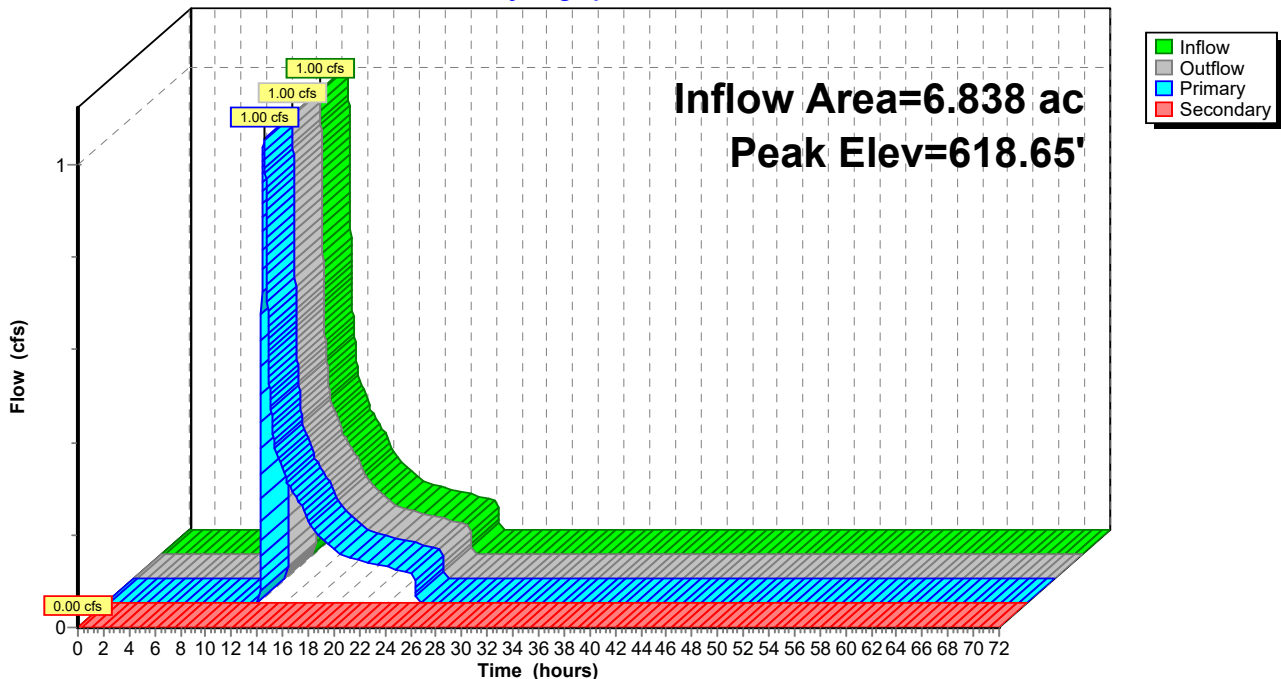
Device	Routing	Invert	Outlet Devices
#1	Primary	618.20'	18.0" Round Culvert L= 109.2' Ke= 0.500 Inlet / Outlet Invert= 618.20' / 615.60' S= 0.0238 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	621.00'	12.0" Round Culvert L= 31.0' Ke= 0.500 Inlet / Outlet Invert= 621.00' / 620.38' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.00 cfs @ 12.38 hrs HW=618.65' TW=615.97' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 1.00 cfs @ 2.28 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=618.20' TW=0.00' (Dynamic Tailwater)
 ↑2=Culvert (Controls 0.00 cfs)

Pond 9P: PDI 3

Hydrograph



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Summary for Pond 10P: PDI 4

Inflow Area = 6.280 ac, 2.62% Impervious, Inflow Depth = 0.33" for 2-yr event
 Inflow = 0.97 cfs @ 12.38 hrs, Volume= 0.171 af
 Outflow = 0.97 cfs @ 12.38 hrs, Volume= 0.171 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.97 cfs @ 12.38 hrs, Volume= 0.171 af
 Routed to Pond 9P : PDI 3
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 50L : ALONG 45 UPPER BAPTIST HILL RD (DP-2)
 Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 9P : PDI 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 623.37' @ 12.38 hrs
 Flood Elev= 629.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	622.90'	15.0" Round Culvert L= 226.6' Ke= 0.500 Inlet / Outlet Invert= 622.90' / 618.30' S= 0.0203 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	624.30'	12.0" Round Culvert L= 25.0' Ke= 0.500 Inlet / Outlet Invert= 624.30' / 623.80' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Tertiary	629.00'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

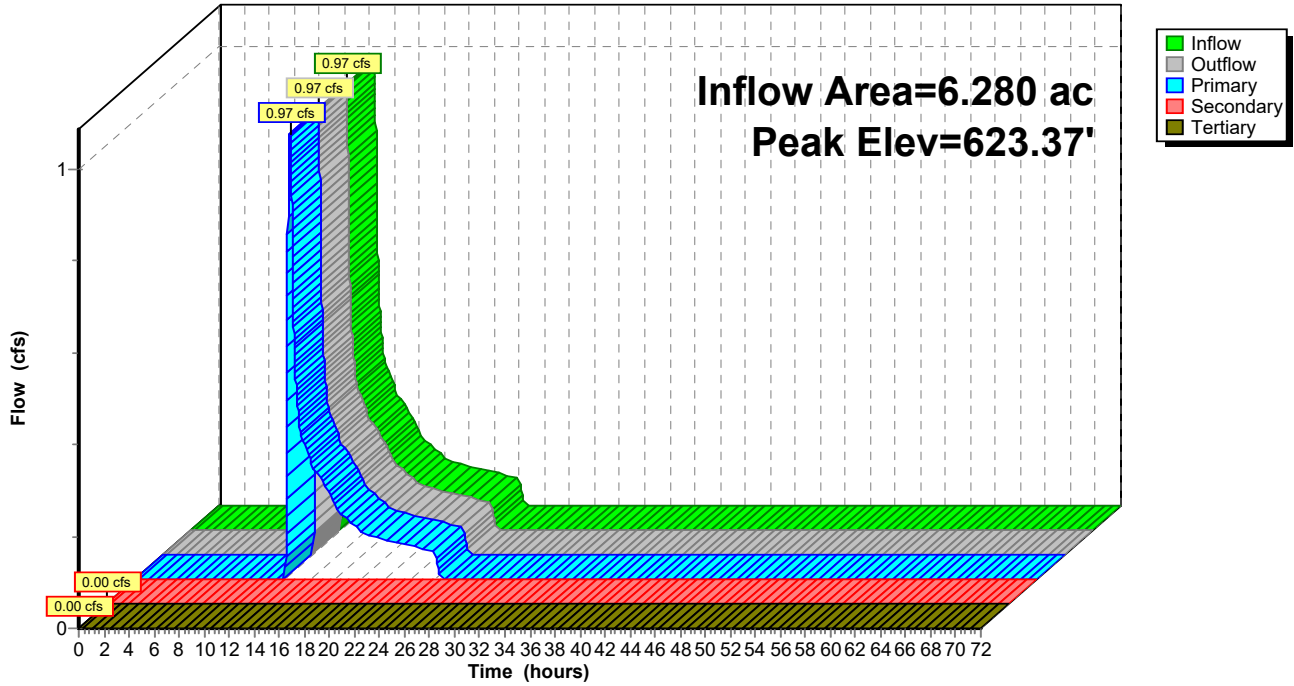
Primary OutFlow Max=0.97 cfs @ 12.38 hrs HW=623.37' TW=618.65' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 0.97 cfs @ 2.33 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=622.90' TW=0.00' (Dynamic Tailwater)
 ↑2=Culvert (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=622.90' TW=618.20' (Dynamic Tailwater)
 ↑3=Orifice/Grate (Controls 0.00 cfs)

Pond 10P: PDI 4

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Pond 11P: PDI 5

Inflow Area = 5.545 ac, 0.00% Impervious, Inflow Depth = 0.17" for 2-yr event
 Inflow = 0.24 cfs @ 12.53 hrs, Volume= 0.076 af
 Outflow = 0.24 cfs @ 12.53 hrs, Volume= 0.076 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.24 cfs @ 12.53 hrs, Volume= 0.076 af
 Routed to Pond 12P : PDI 6
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 10P : PDI 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 637.26' @ 12.53 hrs
 Flood Elev= 641.20'

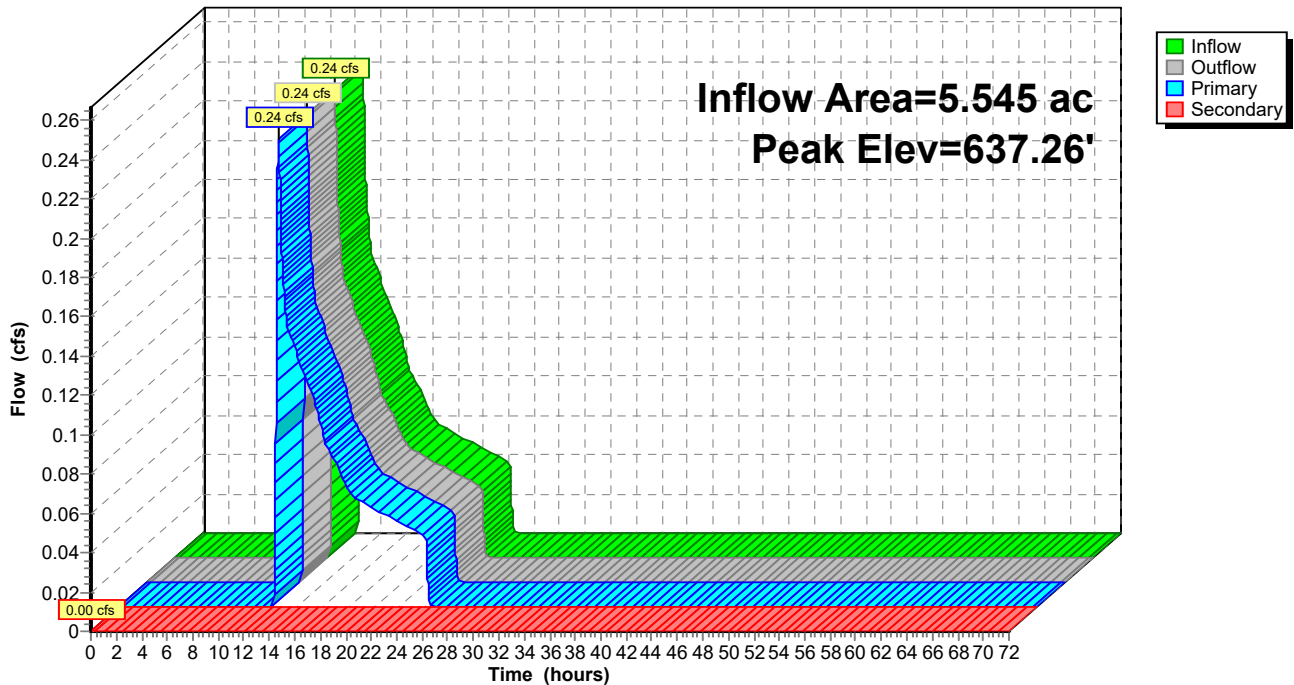
Device	Routing	Invert	Outlet Devices
#1	Primary	637.00'	12.0" Round Culvert L= 82.0' Ke= 0.500 Inlet / Outlet Invert= 637.00' / 636.20' S= 0.0098 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	641.20'	22.0" x 22.0" Horiz. Orifice/Gate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.24 cfs @ 12.53 hrs HW=637.26' TW=636.62' (Dynamic Tailwater)
 ↳1=Culvert (Outlet Controls 0.24 cfs @ 2.21 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=637.00' TW=622.90' (Dynamic Tailwater)
 ↳2=Orifice/Gate (Controls 0.00 cfs)

Pond 11P: PDI 5

Hydrograph



15.0167305.01-DEV HYDROLOGY

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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Pond 12P: PDI 6

Inflow Area = 14.192 ac, 4.81% Impervious, Inflow Depth = 0.24" for 2-yr event
 Inflow = 1.23 cfs @ 12.46 hrs, Volume= 0.285 af
 Outflow = 1.23 cfs @ 12.46 hrs, Volume= 0.285 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.23 cfs @ 12.46 hrs, Volume= 0.285 af
 Routed to Link 15L : EXISTIN OUTLET TO UNDER 116 (DP-1)
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 10P : PDI 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 636.63' @ 12.46 hrs
 Flood Elev= 644.20'

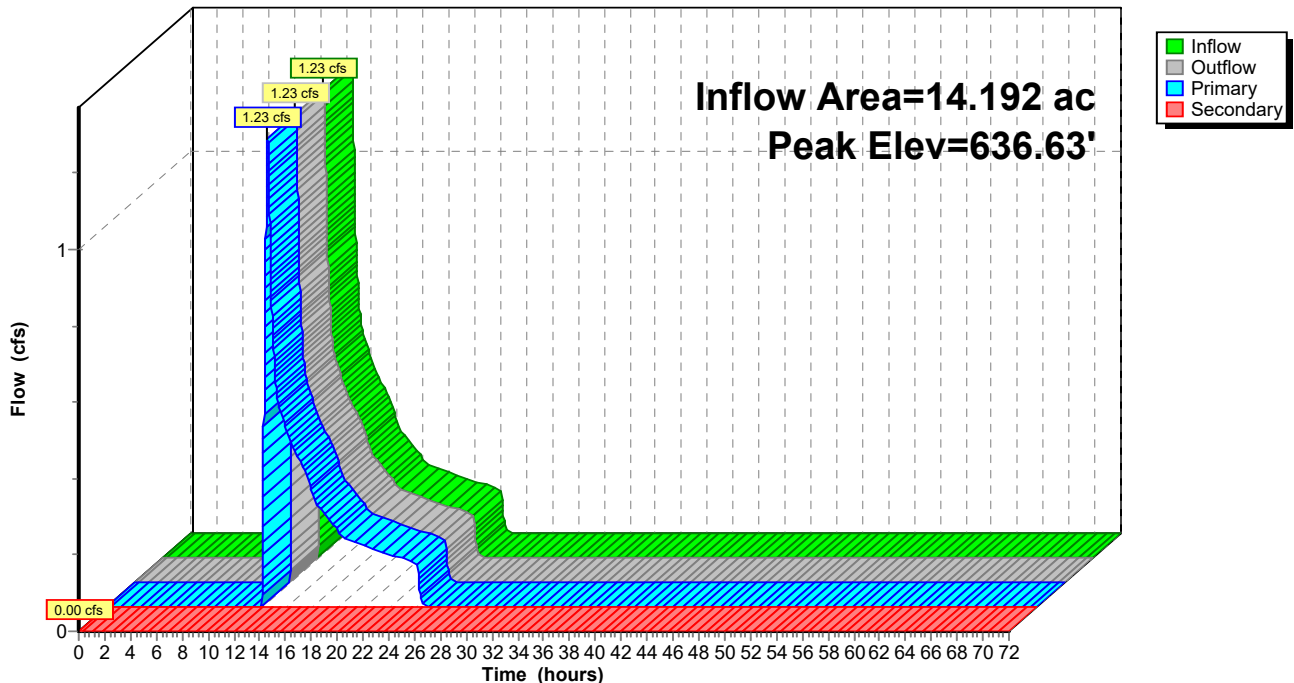
Device	Routing	Invert	Outlet Devices
#1	Primary	636.10'	15.0" Round Culvert L= 35.9' Ke= 0.500 Inlet / Outlet Invert= 636.10' / 625.50' S= 0.2953 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	644.20'	20.0" x 20.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.23 cfs @ 12.46 hrs HW=636.63' TW=0.00' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 1.23 cfs @ 2.48 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=636.10' TW=622.90' (Dynamic Tailwater)
 ↳2=Orifice/Grate (Controls 0.00 cfs)

Pond 12P: PDI 6

Hydrograph



15.0167305.01-DEV HYDROLOGY

Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Pond 13P: PDI 7

Inflow Area = 7.441 ac, 3.47% Impervious, Inflow Depth = 0.28" for 2-yr event
 Inflow = 0.84 cfs @ 12.46 hrs, Volume= 0.173 af
 Outflow = 0.84 cfs @ 12.46 hrs, Volume= 0.173 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.84 cfs @ 12.46 hrs, Volume= 0.173 af
 Routed to Pond 12P : PDI 6
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 12P : PDI 6

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 646.27' @ 12.46 hrs
 Flood Elev= 651.40'

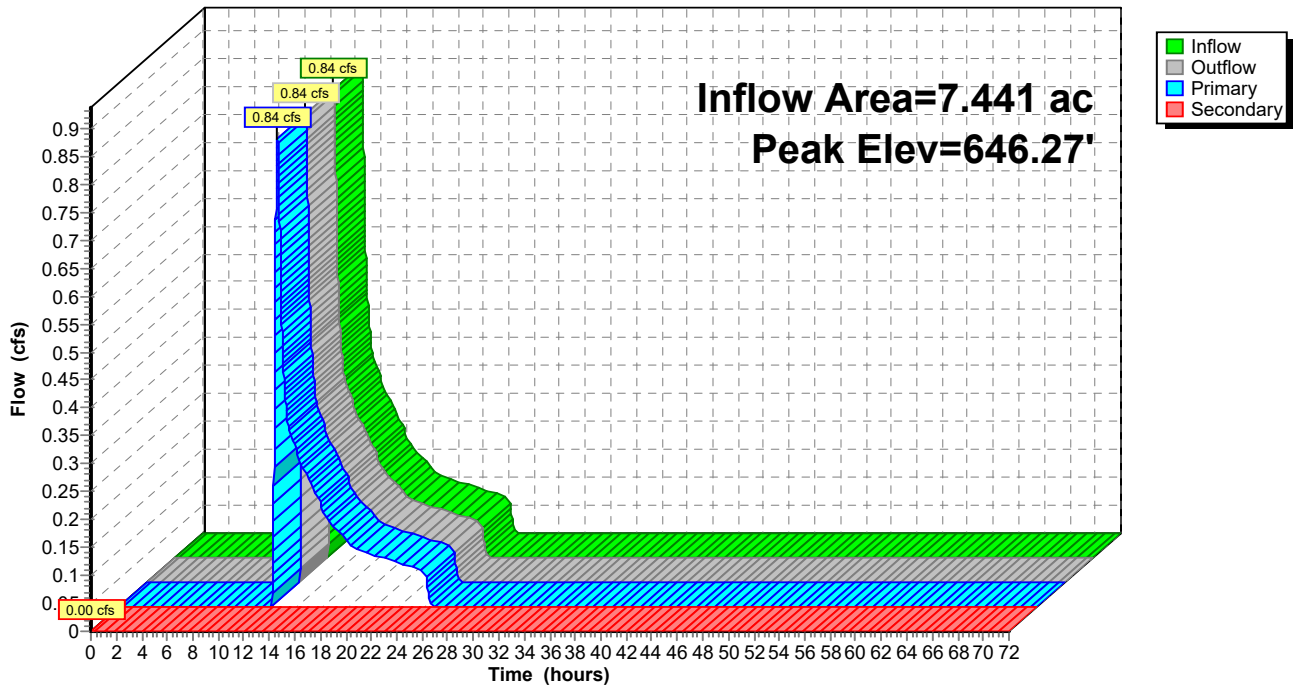
Device	Routing	Invert	Outlet Devices
#1	Primary	645.80'	12.0" Round Culvert L= 211.3' Ke= 0.500 Inlet / Outlet Invert= 645.80' / 638.00' S= 0.0369 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	651.40'	20.0" x 20.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.84 cfs @ 12.46 hrs HW=646.27' TW=636.63' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 0.84 cfs @ 2.33 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=645.80' TW=636.10' (Dynamic Tailwater)
 ↳2=Orifice/Grate (Controls 0.00 cfs)

Pond 13P: PDI 7

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Pond 14P: PDI 8

Inflow Area = 1.391 ac, 18.58% Impervious, Inflow Depth = 0.33" for 2-yr event
 Inflow = 0.22 cfs @ 12.34 hrs, Volume= 0.038 af
 Outflow = 0.22 cfs @ 12.34 hrs, Volume= 0.038 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.22 cfs @ 12.34 hrs, Volume= 0.038 af
 Routed to Pond 13P : PDI 7

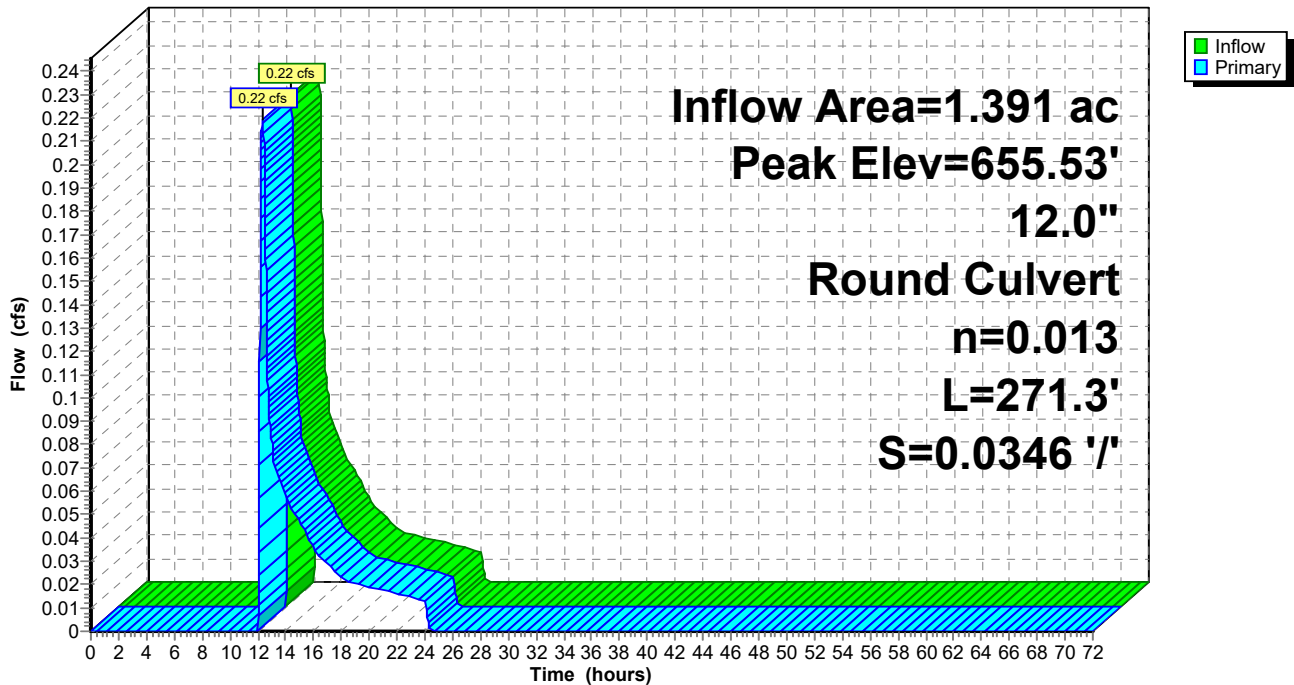
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 655.53' @ 12.34 hrs
 Flood Elev= 660.80'

Device #	Routing	Invert	Outlet Devices
#1	Primary	655.30'	12.0" Round Culvert L= 271.3' Ke= 0.500 Inlet / Outlet Invert= 655.30' / 645.90' S= 0.0346 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.22 cfs @ 12.34 hrs HW=655.53' TW=646.24' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 0.22 cfs @ 1.63 fps)

Pond 14P: PDI 8

Hydrograph



15.0167305.01-DEV HYDROLOGY

Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Pond 24P: J15

Inflow Area = 0.710 ac, 41.87% Impervious, Inflow Depth = 0.92" for 2-yr event
 Inflow = 0.61 cfs @ 12.10 hrs, Volume= 0.054 af
 Outflow = 0.61 cfs @ 12.10 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.61 cfs @ 12.10 hrs, Volume= 0.054 af
 Routed to Pond 27P : J22
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 27P : J22

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 594.09' @ 12.10 hrs
 Flood Elev= 598.30'

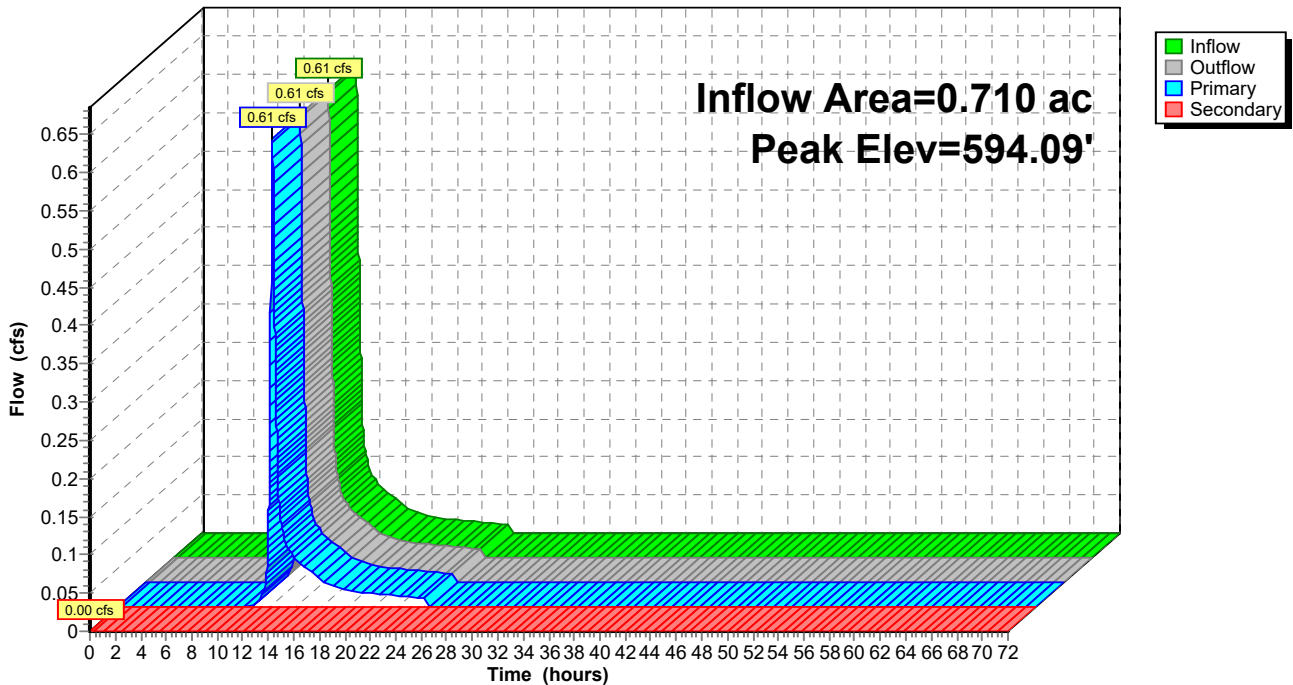
Device	Routing	Invert	Outlet Devices
#1	Primary	593.70'	12.0" Round Culvert L= 240.0' Ke= 0.500 Inlet / Outlet Invert= 593.70' / 569.82' S= 0.0995 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	598.30'	22.0" x 22.0" Horiz. Orifice/Gate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.61 cfs @ 12.10 hrs HW=594.09' TW=569.98' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 0.61 cfs @ 2.13 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=593.70' TW=569.62' (Dynamic Tailwater)
 ↳2=Orifice/Gate (Controls 0.00 cfs)

Pond 24P: J15

Hydrograph



Summary for Pond 25P: J14

Inflow Area = 0.452 ac, 37.25% Impervious, Inflow Depth = 1.06" for 2-yr event
 Inflow = 0.50 cfs @ 12.13 hrs, Volume= 0.040 af
 Outflow = 0.50 cfs @ 12.13 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.50 cfs @ 12.13 hrs, Volume= 0.040 af
 Routed to Pond 24P : J15
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 24P : J15

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 611.71' @ 12.13 hrs
 Flood Elev= 614.36'

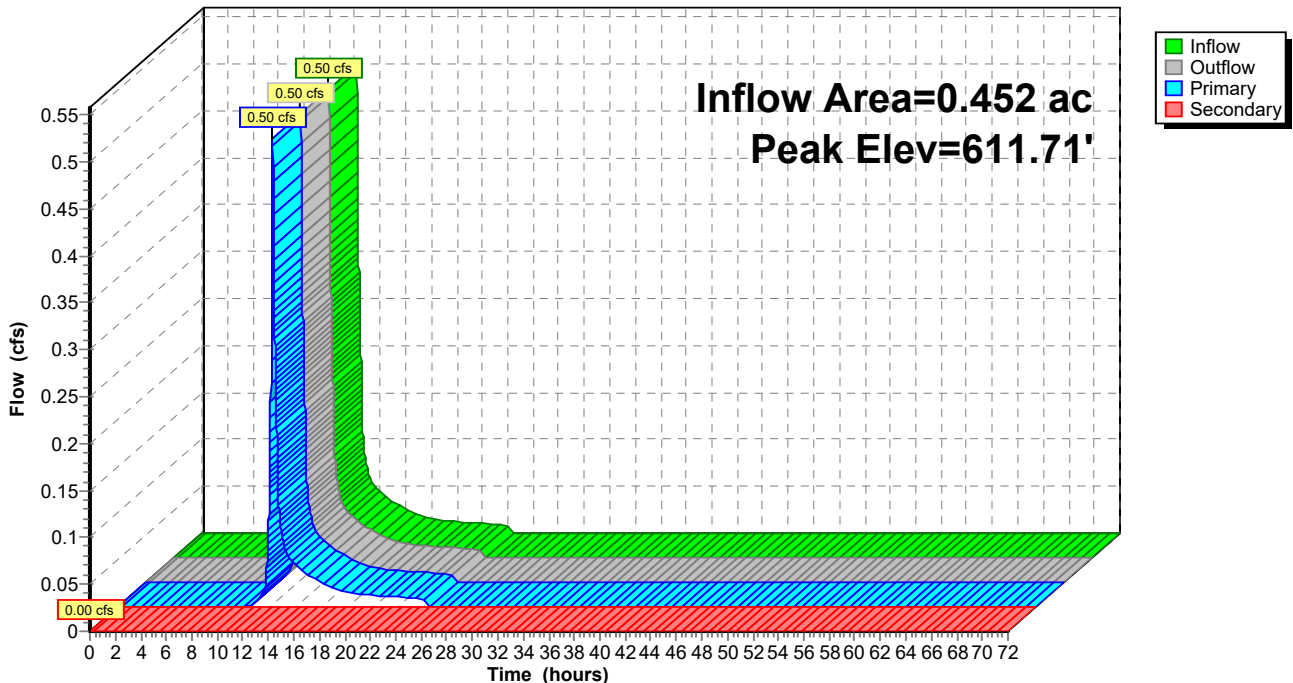
Device	Routing	Invert	Outlet Devices
#1	Primary	611.36'	12.0" Round Culvert L= 460.0' Ke= 0.500 Inlet / Outlet Invert= 611.36' / 593.70' S= 0.0384 '/ Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	614.36'	22.0" x 22.0" Horiz. Orifice/Gate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.50 cfs @ 12.13 hrs HW=611.71' TW=594.09' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 0.50 cfs @ 2.02 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=611.36' TW=593.70' (Dynamic Tailwater)
 ↳2=Orifice/Gate (Controls 0.00 cfs)

Pond 25P: J14

Hydrograph



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Summary for Pond 27P: J22

Inflow Area = 4.450 ac, 16.04% Impervious, Inflow Depth = 0.29" for 2-yr event
 Inflow = 0.61 cfs @ 12.10 hrs, Volume= 0.106 af
 Outflow = 0.61 cfs @ 12.10 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.61 cfs @ 12.10 hrs, Volume= 0.106 af
 Routed to Link 33L : To MassDOT in Rte 116 (DP-4)
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 33L : To MassDOT in Rte 116 (DP-4)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 569.98' @ 12.10 hrs
 Flood Elev= 573.12'

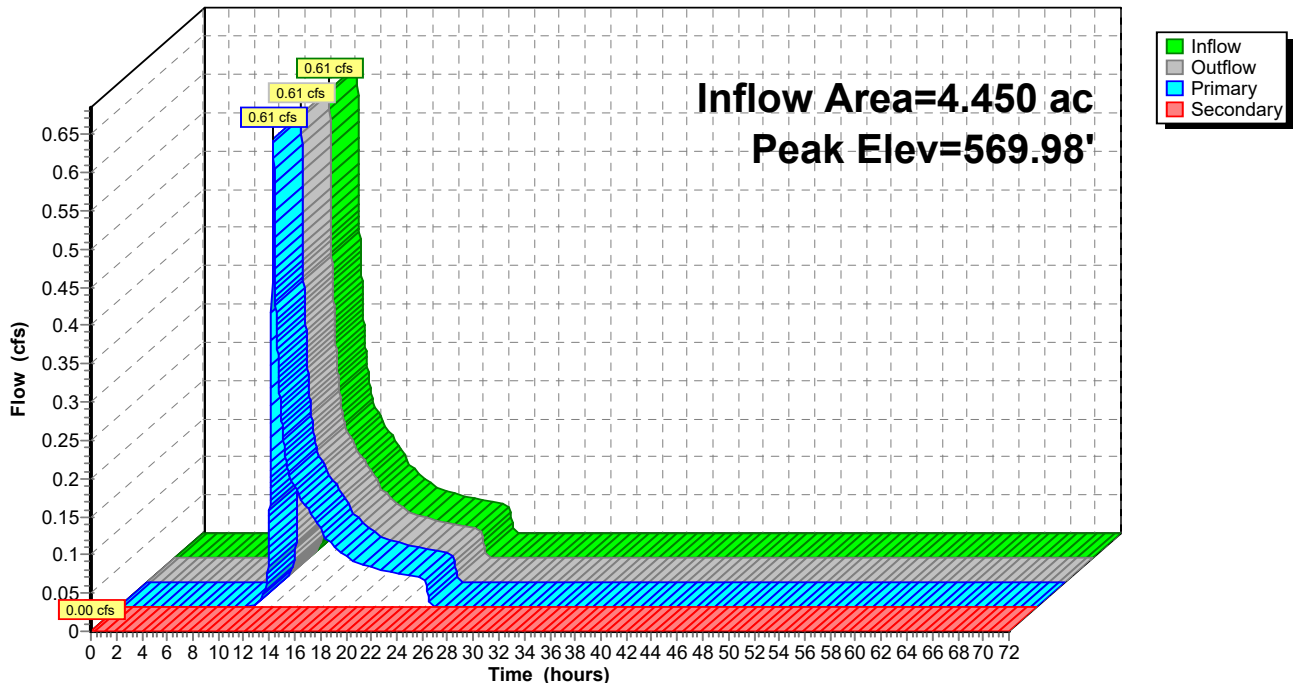
Device	Routing	Invert	Outlet Devices
#1	Primary	569.62'	15.0" Round Culvert L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 569.62' / 567.62' S= 0.0500 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	573.12'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.61 cfs @ 12.10 hrs HW=569.98' TW=0.00' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 0.61 cfs @ 2.05 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=569.62' TW=0.00' (Dynamic Tailwater)
 ↳2=Orifice/Grate (Controls 0.00 cfs)

Pond 27P: J22

Hydrograph



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Type III 24-hr 2-yr Rainfall=3.07"

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Summary for Pond 49P: J1

[92] Warning: Device #3 is above defined storage

Inflow Area = 10.137 ac, 0.00% Impervious, Inflow Depth = 0.46" for 2-yr event
 Inflow = 2.84 cfs @ 12.26 hrs, Volume= 0.391 af
 Outflow = 2.84 cfs @ 12.27 hrs, Volume= 0.391 af, Atten= 0%, Lag= 0.1 min
 Primary = 2.84 cfs @ 12.27 hrs, Volume= 0.391 af
 Routed to Link 48L : NORTH TO 10 PINE HILL ROAD (DP-6)
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 8P : PDI 2
 Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 8P : PDI 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 624.11' @ 12.27 hrs Surf.Area= 41 sf Storage= 33 cf

Plug-Flow detention time= 0.7 min calculated for 0.391 af (100% of inflow)
 Center-of-Mass det. time= 0.4 min (917.2 - 916.9)

Volume	Invert	Avail.Storage	Storage Description
#1	623.00'	855 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
623.00	19	0	0
624.00	38	29	29
625.00	68	53	82
626.00	1,478	773	855

Device	Routing	Invert	Outlet Devices
#1	Primary	623.23'	15.0" Round Culvert L= 39.2' Ke= 0.500 Inlet / Outlet Invert= 623.23' / 622.75' S= 0.0122 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	624.48'	12.0" Round Culvert L= 62.0' Ke= 0.500 Inlet / Outlet Invert= 624.48' / 615.50' S= 0.1448 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Tertiary	626.10'	10.0' long x 25.0' 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) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

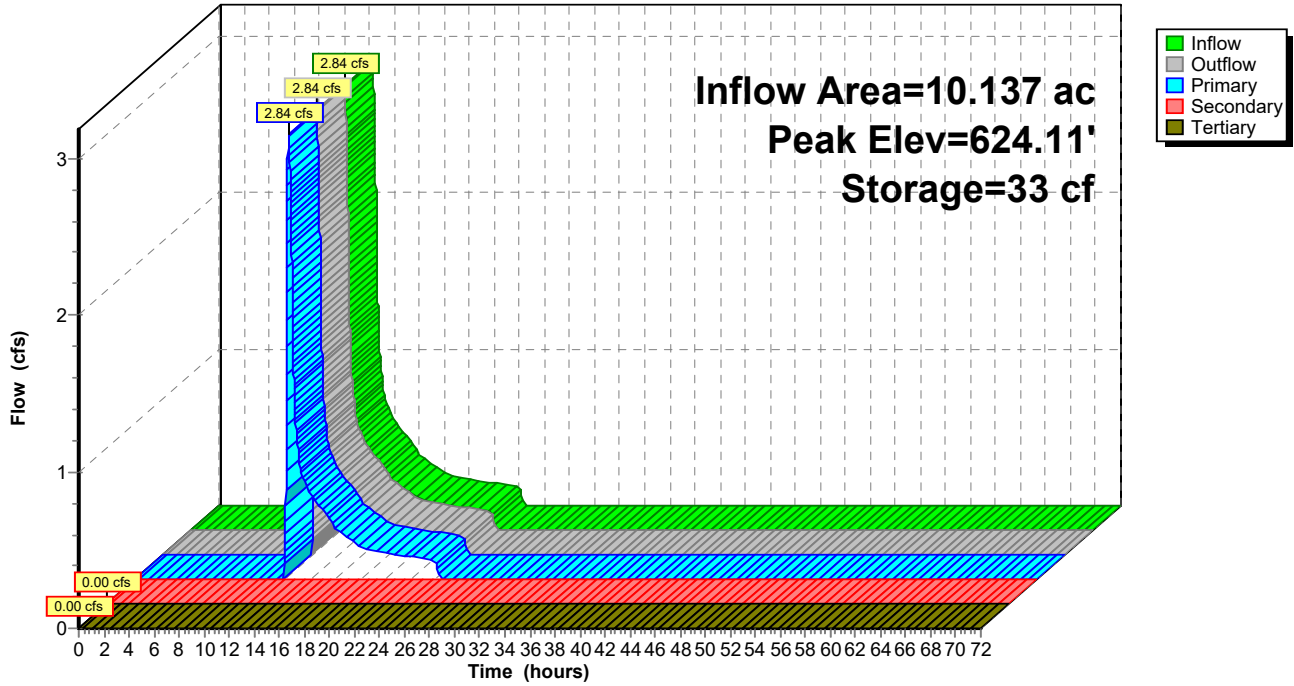
Primary OutFlow Max=2.84 cfs @ 12.27 hrs HW=624.11' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Barrel Controls 2.84 cfs @ 4.35 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=623.00' TW=615.50' (Dynamic Tailwater)
 ↑2=Culvert (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=623.00' TW=615.50' (Dynamic Tailwater)
 ↑3=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 49P: J1

Hydrograph



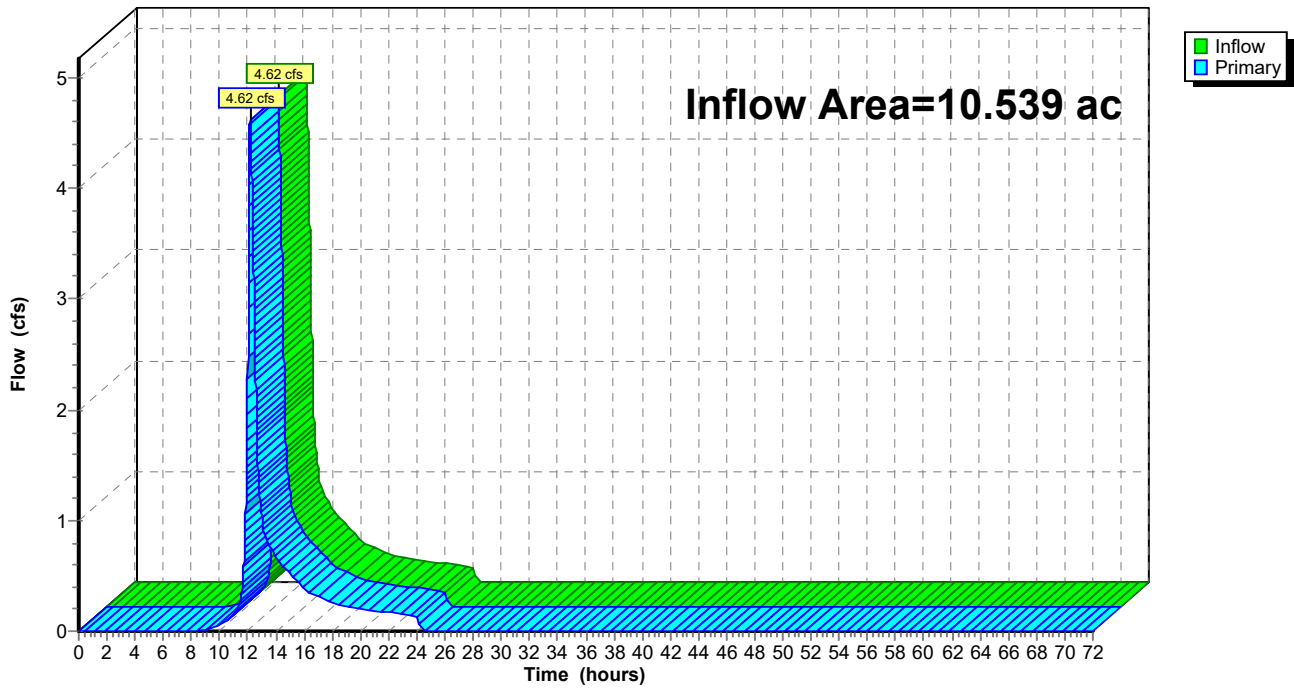
Summary for Link 1L: PROP OUTFALL TO TOWN PROP (DP-5)

Inflow Area = 10.539 ac, 15.96% Impervious, Inflow Depth = 0.65" for 2-yr event
Inflow = 4.62 cfs @ 12.15 hrs, Volume= 0.575 af
Primary = 4.62 cfs @ 12.15 hrs, Volume= 0.575 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 1L: PROP OUTFALL TO TOWN PROP (DP-5)

Hydrograph



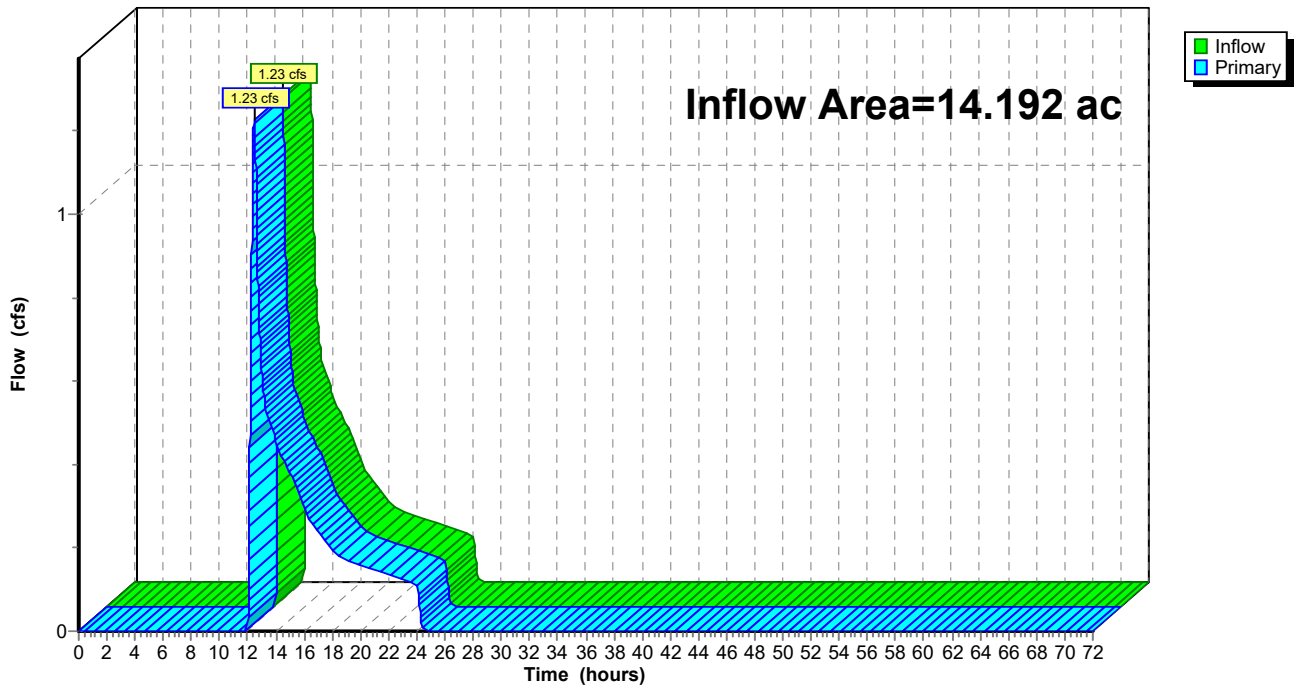
Summary for Link 15L: EXISTIN OUTLET TO UNDER 116 (DP-1)

Inflow Area = 14.192 ac, 4.81% Impervious, Inflow Depth = 0.24" for 2-yr event
Inflow = 1.23 cfs @ 12.46 hrs, Volume= 0.285 af
Primary = 1.23 cfs @ 12.46 hrs, Volume= 0.285 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 15L: EXISTIN OUTLET TO UNDER 116 (DP-1)

Hydrograph



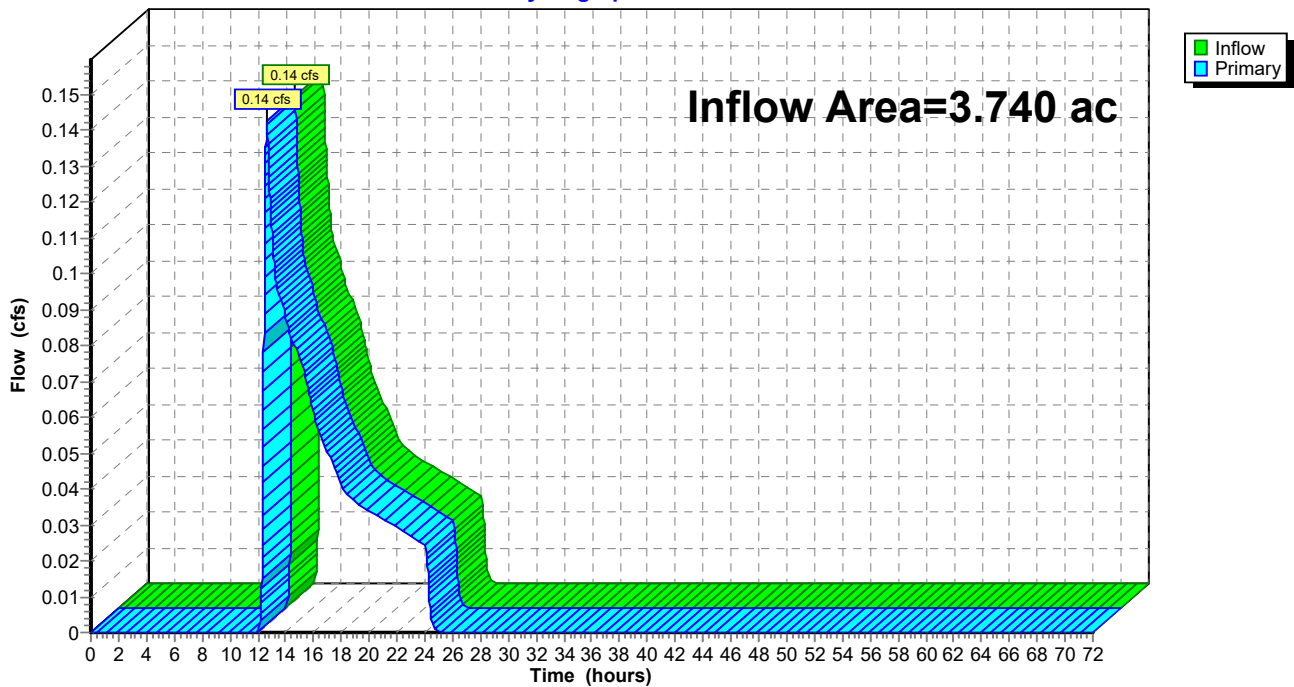
Summary for Link 19L: Behind houses

Inflow Area = 3.740 ac, 11.13% Impervious, Inflow Depth = 0.17" for 2-yr event
Inflow = 0.14 cfs @ 12.65 hrs, Volume= 0.052 af
Primary = 0.14 cfs @ 12.65 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 27P : J22

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 19L: Behind houses

Hydrograph



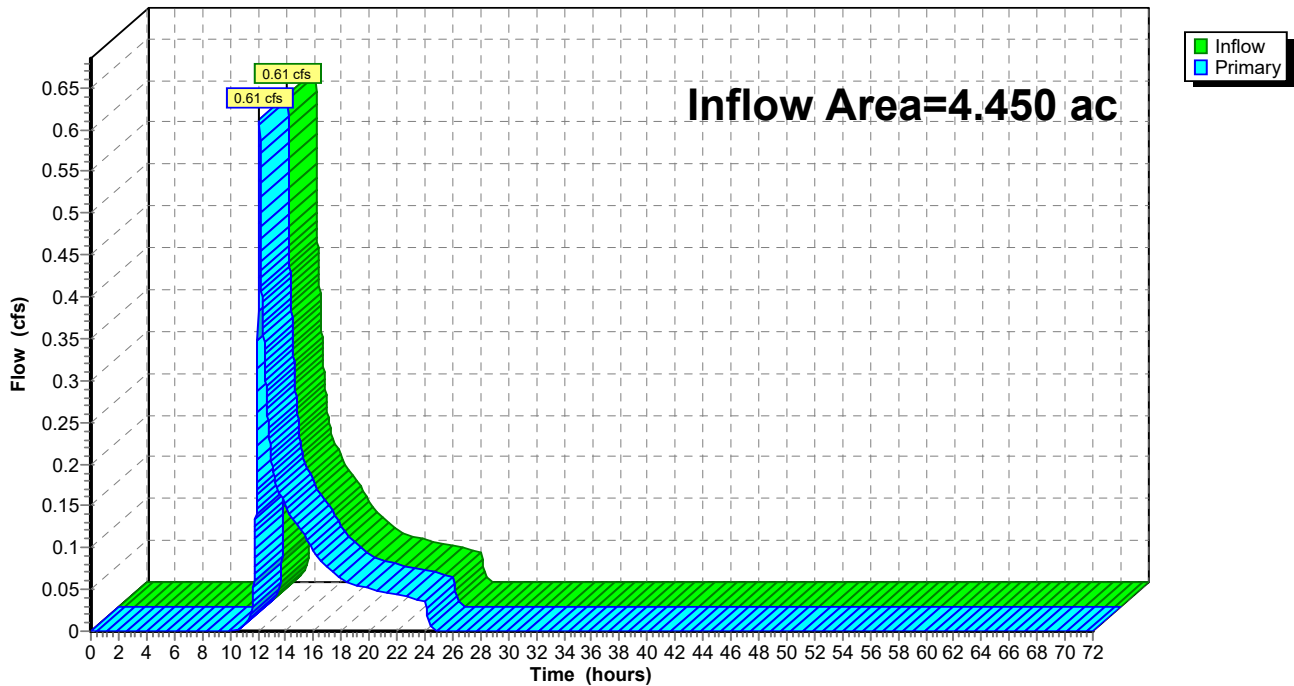
Summary for Link 33L: To MassDOT in Rte 116 (DP-4)

Inflow Area = 4.450 ac, 16.04% Impervious, Inflow Depth = 0.29" for 2-yr event
Inflow = 0.61 cfs @ 12.10 hrs, Volume= 0.106 af
Primary = 0.61 cfs @ 12.10 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 33L: To MassDOT in Rte 116 (DP-4)

Hydrograph



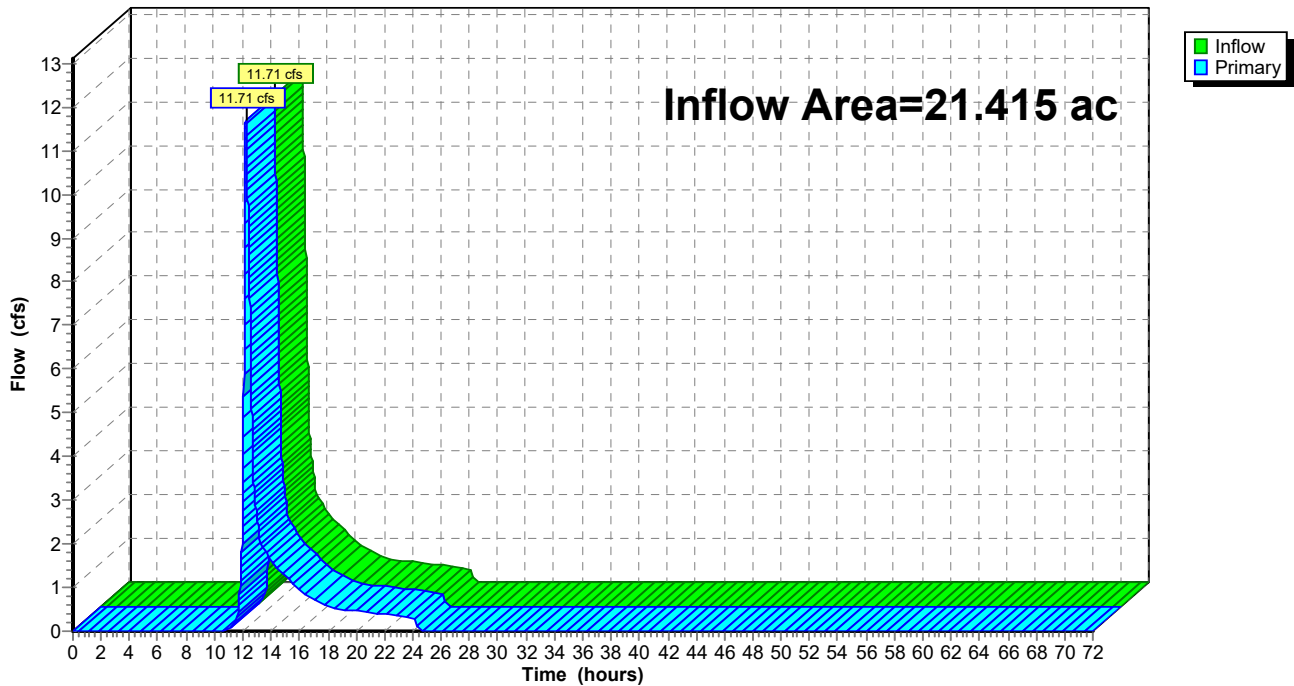
Summary for Link 48L: NORTH TO 10 PINE HILL ROAD (DP-6)

Inflow Area = 21.415 ac, 3.96% Impervious, Inflow Depth = 0.72" for 2-yr event
Inflow = 11.71 cfs @ 12.23 hrs, Volume= 1.286 af
Primary = 11.71 cfs @ 12.23 hrs, Volume= 1.286 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 48L: NORTH TO 10 PINE HILL ROAD (DP-6)

Hydrograph



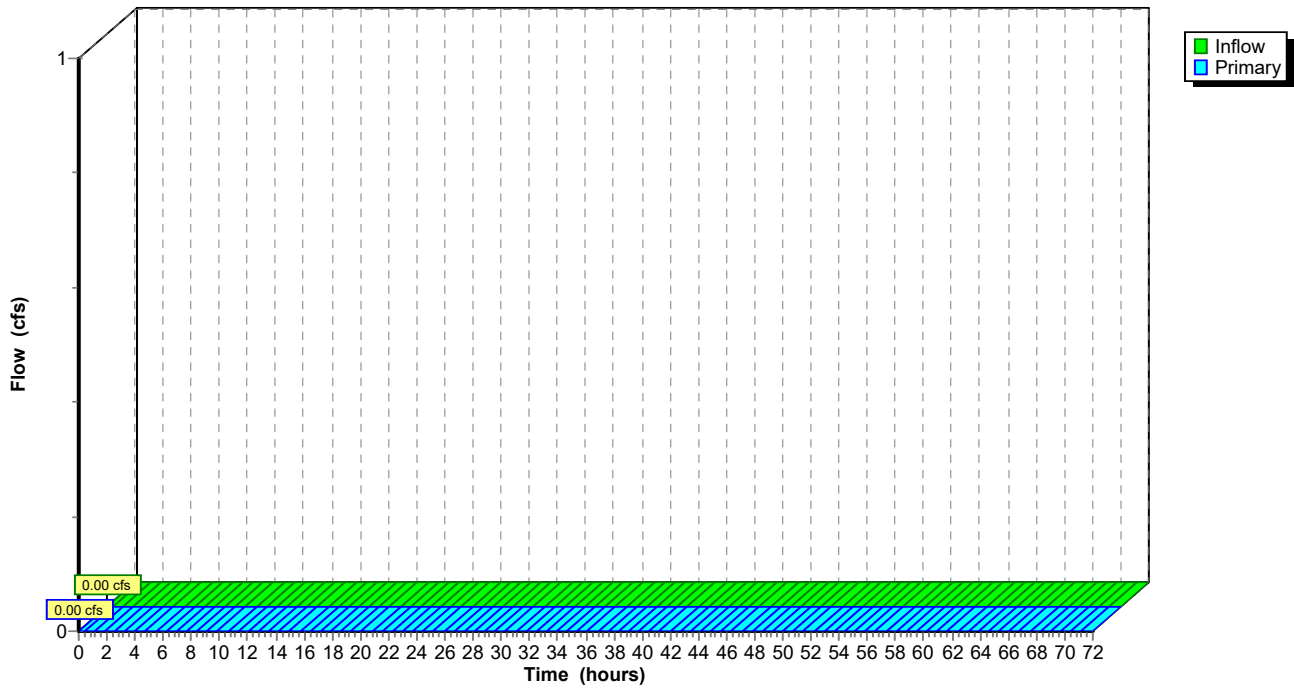
Summary for Link 49L: 51 Baptist Hill Rd Property (DP-3)

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : Behind houses

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 49L: 51 Baptist Hill Rd Property (DP-3)

Hydrograph

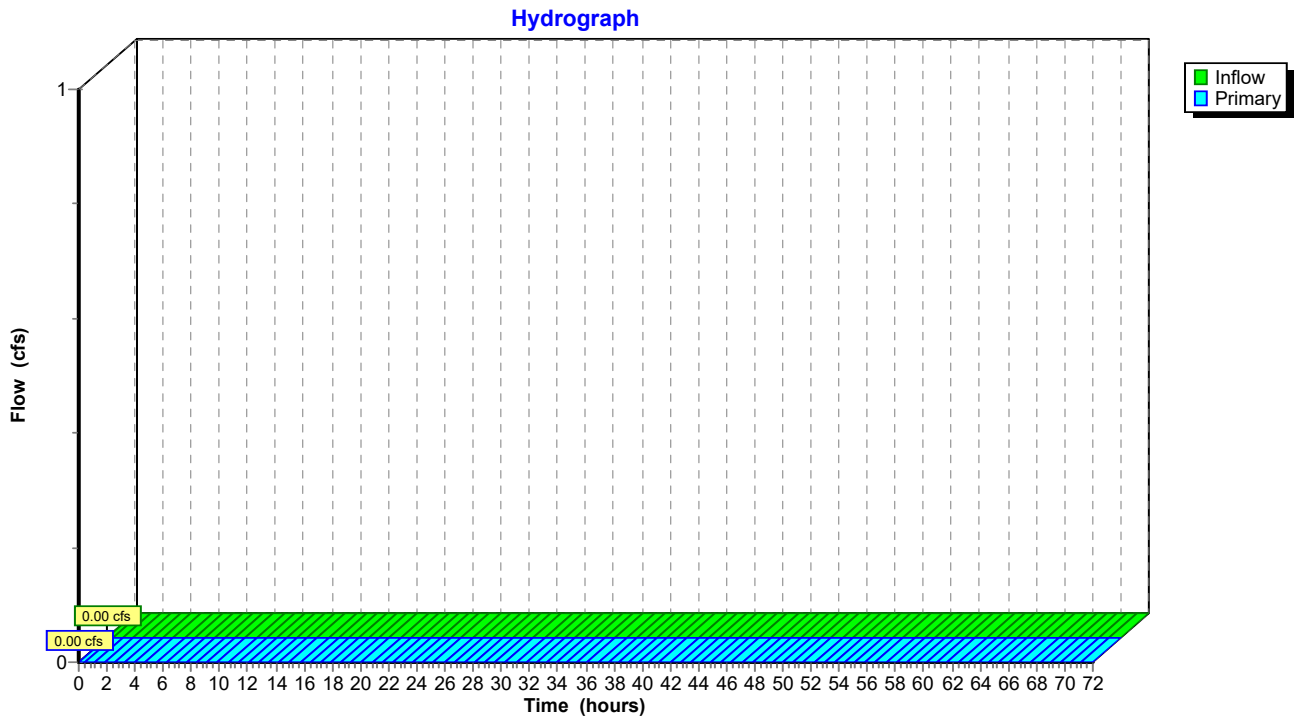


Summary for Link 50L: ALONG 45 UPPER BAPTIST HILL RD (DP-2)

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : Behind houses

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 50L: ALONG 45 UPPER BAPTIST HILL RD (DP-2)



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Type III 24-hr 10-yr Rainfall=4.70"

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: 1S	Runoff Area=263,518 sf 0.00% Impervious Runoff Depth=0.95" Flow Length=1,253' Tc=17.3 min CN=57 Runoff=3.87 cfs 0.478 af
Subcatchment2S: 2S	Runoff Area=52,537 sf 35.20% Impervious Runoff Depth=1.13" Flow Length=472' Tc=6.7 min CN=60 Runoff=1.36 cfs 0.114 af
Subcatchment3S: 3S	Runoff Area=241,534 sf 0.00% Impervious Runoff Depth=0.73" Flow Length=1,175' Tc=14.4 min CN=53 Runoff=2.47 cfs 0.336 af
Subcatchment4S: 4S	Runoff Area=273,557 sf 2.62% Impervious Runoff Depth=1.07" Flow Length=1,106' Tc=13.6 min CN=59 Runoff=5.21 cfs 0.559 af
Subcatchment5S: 5S	Runoff Area=60,599 sf 18.58% Impervious Runoff Depth=1.07" Flow Length=406' Tc=11.9 min CN=59 Runoff=1.21 cfs 0.124 af
Subcatchment6S: 6S	Runoff Area=24,324 sf 24.68% Impervious Runoff Depth=0.78" Flow Length=368' Tc=9.8 min CN=54 Runoff=0.32 cfs 0.036 af
Subcatchment7S: 7S	Runoff Area=13,788 sf 51.83% Impervious Runoff Depth=1.82" Flow Length=100' Slope=0.0500 '/' Tc=6.9 min CN=70 Runoff=0.64 cfs 0.048 af
Subcatchment8S: 8S	Runoff Area=19,699 sf 37.25% Impervious Runoff Depth=2.29" Flow Length=211' Tc=8.3 min CN=76 Runoff=1.12 cfs 0.086 af
Subcatchment9S: 9S	Runoff Area=64,091 sf 41.74% Impervious Runoff Depth=3.00" Flow Length=546' Tc=7.2 min CN=84 Runoff=4.94 cfs 0.367 af
Subcatchment10S: 12S	Runoff Area=11,227 sf 49.99% Impervious Runoff Depth=1.67" Tc=1.2 min CN=68 Runoff=0.58 cfs 0.036 af
Subcatchment11S: 11S	Runoff Area=58,435 sf 35.42% Impervious Runoff Depth=2.81" Flow Length=803' Tc=15.5 min CN=82 Runoff=3.31 cfs 0.314 af
Subcatchment12S: 12S	Runoff Area=162,915 sf 11.13% Impervious Runoff Depth=0.73" Flow Length=743' Tc=21.2 min CN=53 Runoff=1.48 cfs 0.226 af
Subcatchment13S: 13S	Runoff Area=24,870 sf 22.10% Impervious Runoff Depth=1.32" Tc=1.2 min CN=63 Runoff=0.96 cfs 0.063 af
Subcatchment14S: 14S	Runoff Area=441,577 sf 0.00% Impervious Runoff Depth=1.32" Flow Length=1,423' Tc=14.1 min CN=63 Runoff=11.05 cfs 1.117 af
Subcatchment15S: 15S	Runoff Area=491,280 sf 7.52% Impervious Runoff Depth=2.13" Flow Length=1,700' Tc=14.7 min CN=74 Runoff=21.23 cfs 1.999 af
Pond 1P: PDMH 1	Peak Elev=564.58' Inflow=15.74 cfs 1.458 af 24.0" Round Culvert n=0.013 L=52.7' S=0.0474 '/' Outflow=15.74 cfs 1.458 af

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Pond 2P: PDI 1	Peak Elev=568.18' Inflow=15.74 cfs 1.458 af 24.0" Round Culvert n=0.013 L=177.3' S=0.0197 '/' Outflow=15.74 cfs 1.458 af
Pond 3P: PDMH 2	Peak Elev=570.62' Inflow=15.30 cfs 1.395 af 24.0" Round Culvert n=0.013 L=121.9' S=0.0197 '/' Outflow=15.30 cfs 1.395 af
Pond 4P: PCB 1	Peak Elev=573.02' Inflow=15.30 cfs 1.395 af 24.0" Round Culvert n=0.013 L=30.1' S=0.0764 '/' Outflow=15.30 cfs 1.395 af
Pond 5P: PCB 2	Peak Elev=598.18' Inflow=15.30 cfs 1.395 af Primary=15.30 cfs 1.395 af Secondary=0.00 cfs 0.000 af Outflow=15.30 cfs 1.395 af
Pond 6P: PCB 3	Peak Elev=610.26' Inflow=12.06 cfs 1.081 af 18.0" Round Culvert n=0.013 L=209.7' S=0.0629 '/' Outflow=12.06 cfs 1.081 af
Pond 7P: PCB 4	Peak Elev=612.91' Inflow=8.78 cfs 0.713 af 18.0" Round Culvert n=0.013 L=172.6' S=0.0203 '/' Outflow=8.78 cfs 0.713 af
Pond 8P: PDI 2	Peak Elev=617.31' Storage=23 cf Inflow=8.78 cfs 0.713 af Primary=8.78 cfs 0.713 af Secondary=0.00 cfs 0.000 af Outflow=8.78 cfs 0.713 af
Pond 9P: PDI 3	Peak Elev=619.38' Inflow=5.51 cfs 0.595 af Primary=5.51 cfs 0.595 af Secondary=0.00 cfs 0.000 af Outflow=5.51 cfs 0.595 af
Pond 10P: PDI 4	Peak Elev=624.30' Inflow=5.21 cfs 0.559 af Primary=5.21 cfs 0.559 af Secondary=0.00 cfs 0.000 af Tertiary=0.00 cfs 0.000 af Outflow=5.21 cfs 0.559 af
Pond 11P: PDI 5	Peak Elev=639.29' Inflow=2.47 cfs 0.336 af Primary=2.47 cfs 0.336 af Secondary=0.00 cfs 0.000 af Outflow=2.47 cfs 0.336 af
Pond 12P: PDI 6	Peak Elev=638.67' Inflow=8.23 cfs 1.051 af Primary=8.23 cfs 1.051 af Secondary=0.00 cfs 0.000 af Outflow=8.23 cfs 1.051 af
Pond 13P: PDI 7	Peak Elev=647.99' Inflow=4.91 cfs 0.602 af Primary=4.91 cfs 0.602 af Secondary=0.00 cfs 0.000 af Outflow=4.91 cfs 0.602 af
Pond 14P: PDI 8	Peak Elev=655.88' Inflow=1.21 cfs 0.124 af 12.0" Round Culvert n=0.013 L=271.3' S=0.0346 '/' Outflow=1.21 cfs 0.124 af
Pond 24P: J15	Peak Elev=594.34' Inflow=1.44 cfs 0.122 af Primary=1.44 cfs 0.122 af Secondary=0.00 cfs 0.000 af Outflow=1.44 cfs 0.122 af
Pond 25P: J14	Peak Elev=611.91' Inflow=1.12 cfs 0.086 af Primary=1.12 cfs 0.086 af Secondary=0.00 cfs 0.000 af Outflow=1.12 cfs 0.086 af
Pond 27P: J22	Peak Elev=570.35' Inflow=2.16 cfs 0.348 af Primary=2.16 cfs 0.348 af Secondary=0.00 cfs 0.000 af Outflow=2.16 cfs 0.348 af
Pond 49P: J1	Peak Elev=625.58' Storage=361 cf Inflow=11.05 cfs 1.117 af Primary=7.77 cfs 1.047 af Secondary=2.94 cfs 0.070 af Tertiary=0.00 cfs 0.000 af Outflow=10.71 cfs 1.117 af

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Link 1L: PROP OUTFALL TO TOWN PROP (DP-5)

Inflow=15.74 cfs 1.458 af
Primary=15.74 cfs 1.458 af

Link 15L: EXISTIN OUTLET TO UNDER 116 (DP-1)

Inflow=8.23 cfs 1.051 af
Primary=8.23 cfs 1.051 af

Link 19L: Behind houses

Inflow=1.48 cfs 0.226 af
Primary=1.48 cfs 0.226 af

Link 33L: To MassDOT in Rte 116 (DP-4)

Inflow=2.16 cfs 0.348 af
Primary=2.16 cfs 0.348 af

Link 48L: NORTH TO 10 PINE HILL ROAD (DP-6)

Inflow=28.85 cfs 3.046 af
Primary=28.85 cfs 3.046 af

Link 49L: 51 Baptist Hill Rd Property (DP-3)

Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link 50L: ALONG 45 UPPER BAPTISTHILL RD (DP-2)

Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 50.596 ac Runoff Volume = 5.904 af Average Runoff Depth = 1.40"
92.24% Pervious = 46.669 ac 7.76% Impervious = 3.927 ac

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Summary for Subcatchment 1S: 1S

Runoff = 3.87 cfs @ 12.28 hrs, Volume= 0.478 af, Depth= 0.95"
 Routed to Pond 13P : PDI 7

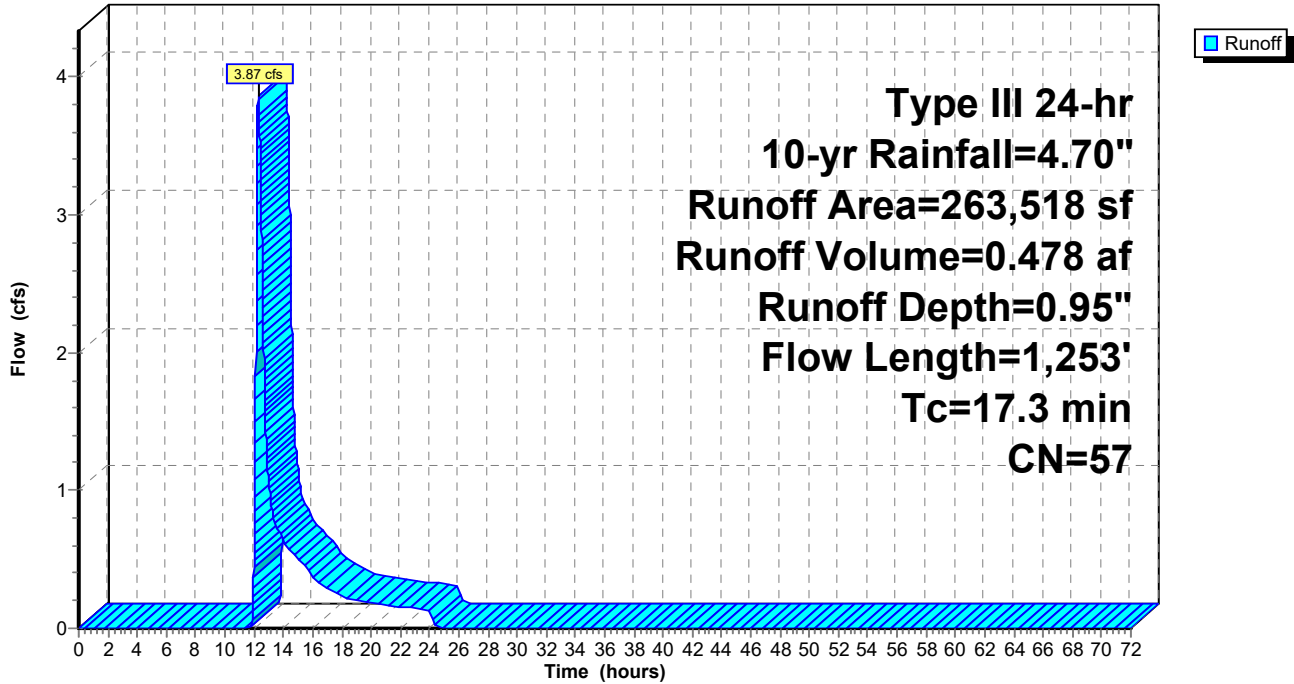
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-yr Rainfall=4.70"

Area (sf)	CN	Description
154,324	66	Woods, Poor, HSG B
27,768	45	Woods, Poor, HSG A
17,039	61	>75% Grass cover, Good, HSG B
64,387	39	>75% Grass cover, Good, HSG A
263,518	57	Weighted Average
263,518		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.1800	0.18		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.07"
2.6	385	0.2442	2.47		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.7	293	0.3240	2.85		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.9	475	0.0821	2.01		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.3	1,253	Total			

Subcatchment 1S: 1S

Hydrograph



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Summary for Subcatchment 2S: 2S

Runoff = 1.36 cfs @ 12.11 hrs, Volume= 0.114 af, Depth= 1.13"
 Routed to Pond 12P : PDI 6

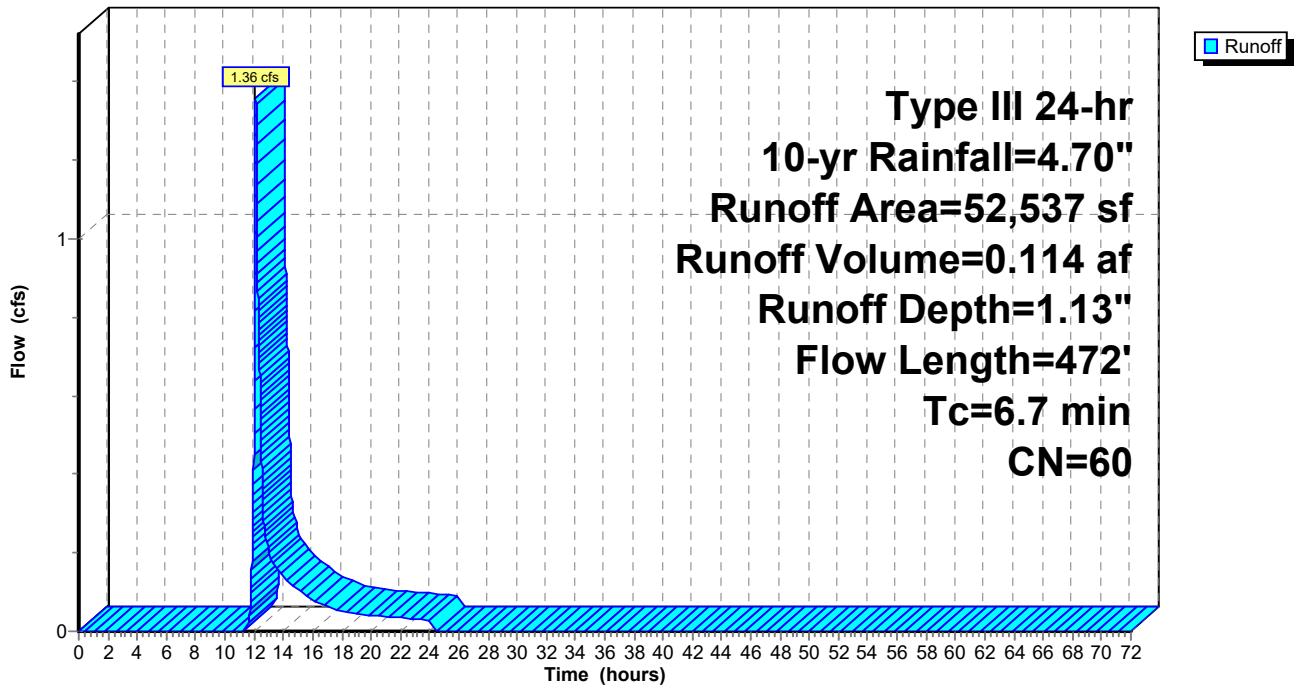
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-yr Rainfall=4.70"

Area (sf)	CN	Description
18,495	98	Paved parking, HSG A
34,042	39	>75% Grass cover, Good, HSG A
52,537	60	Weighted Average
34,042		64.80% Pervious Area
18,495		35.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0900	0.30		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
1.2	372	0.0661	5.22		Shallow Concentrated Flow, Paved Kv= 20.3 fps
6.7	472	Total			

Subcatchment 2S: 2S

Hydrograph



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Summary for Subcatchment 3S: 3S

Runoff = 2.47 cfs @ 12.27 hrs, Volume= 0.336 af, Depth= 0.73"
 Routed to Pond 11P : PDI 5

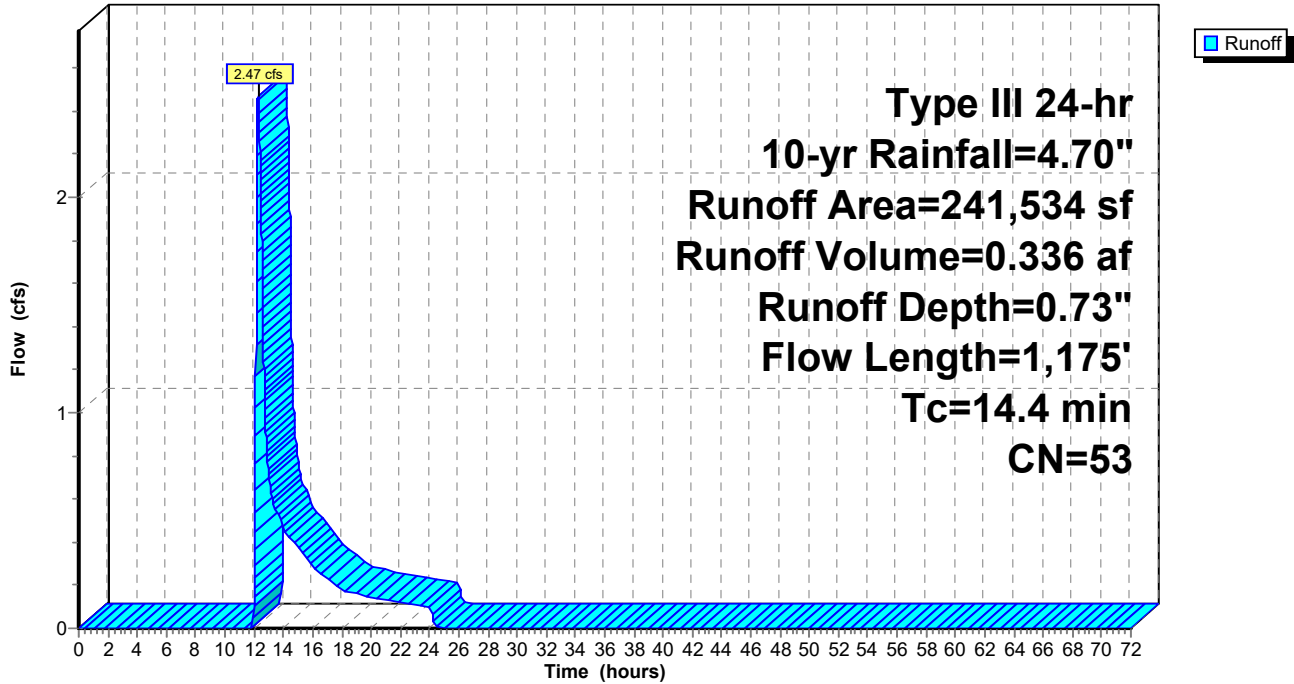
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-yr Rainfall=4.70"

Area (sf)	CN	Description
78,775	66	Woods, Poor, HSG B
81,473	45	Woods, Poor, HSG A
81,286	49	50-75% Grass cover, Fair, HSG A
241,534	53	Weighted Average
241,534		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	100	0.1900	0.19		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.07"
1.1	180	0.3000	2.74		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.6	150	0.6933	4.16		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.5	210	0.2190	2.34		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.3	535	0.0598	3.94		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
14.4	1,175	Total			

Subcatchment 3S: 3S

Hydrograph



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Summary for Subcatchment 4S: 4S

Runoff = 5.21 cfs @ 12.22 hrs, Volume= 0.559 af, Depth= 1.07"
 Routed to Pond 10P : PDI 4

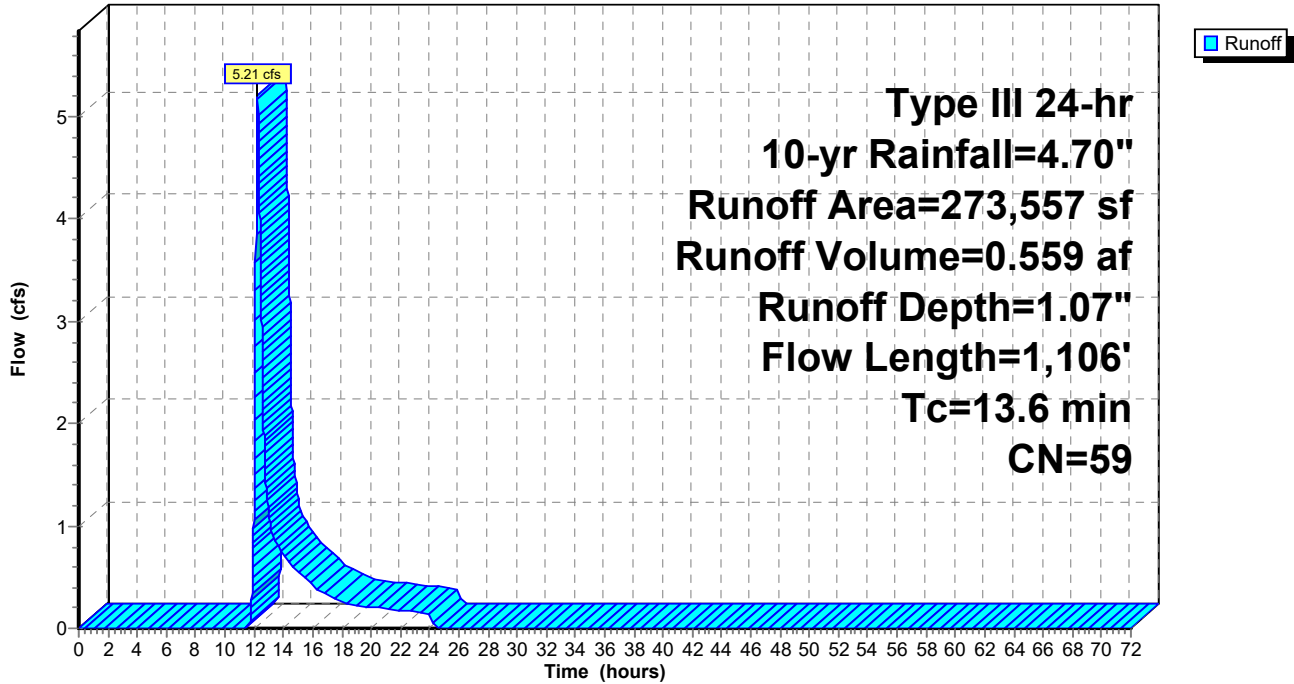
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-yr Rainfall=4.70"

Area (sf)	CN	Description
4,382	98	Paved roads w/curbs & sewers, HSG A
66,093	39	>75% Grass cover, Good, HSG A
182,528	66	Woods, Poor, HSG B
17,774	39	>75% Grass cover, Good, HSG A
* 2,780	98	Impervious, Good, HSG A
273,557	59	Weighted Average
266,395		97.38% Pervious Area
7,162		2.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	100	0.3100	0.23		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.07"
1.4	214	0.2520	2.51		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.5	120	0.6500	4.03		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.3	212	0.2920	2.70		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.1	460	0.0739	2.45		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
13.6	1,106	Total			

Subcatchment 4S: 4S

Hydrograph



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Summary for Subcatchment 5S: 5S

Runoff = 1.21 cfs @ 12.19 hrs, Volume= 0.124 af, Depth= 1.07"
 Routed to Pond 14P : PDI 8

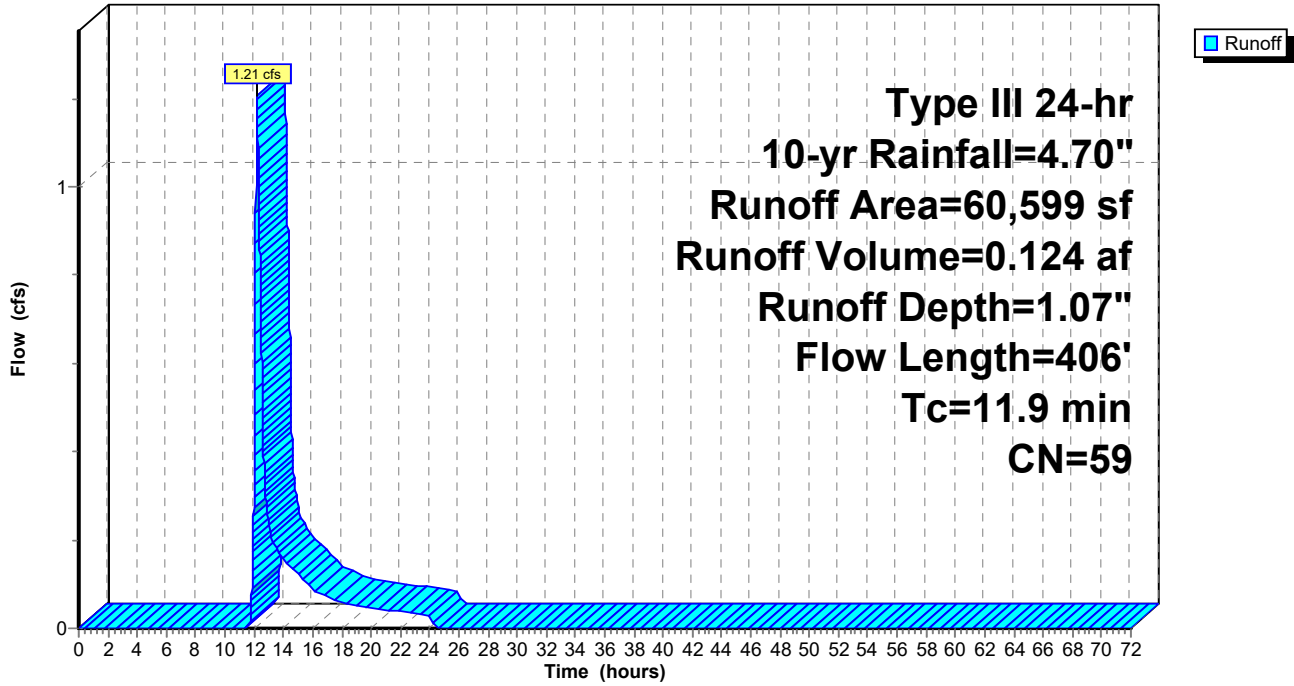
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-yr Rainfall=4.70"

Area (sf)	CN	Description
23,965	39	>75% Grass cover, Good, HSG A
25,373	61	>75% Grass cover, Good, HSG B
* 4,212	98	Impervious, HSG B
* 7,049	98	Impervious, HSG A
60,599	59	Weighted Average
49,338		81.42% Pervious Area
11,261		18.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.1600	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.07"
0.4	98	0.1633	3.64		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
1.2	93	0.0323	1.26		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.8	115	0.1235	2.46		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.9	406	Total			

Subcatchment 5S: 5S

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Summary for Subcatchment 6S: 6S

Runoff = 0.32 cfs @ 12.17 hrs, Volume= 0.036 af, Depth= 0.78"
 Routed to Pond 9P : PDI 3

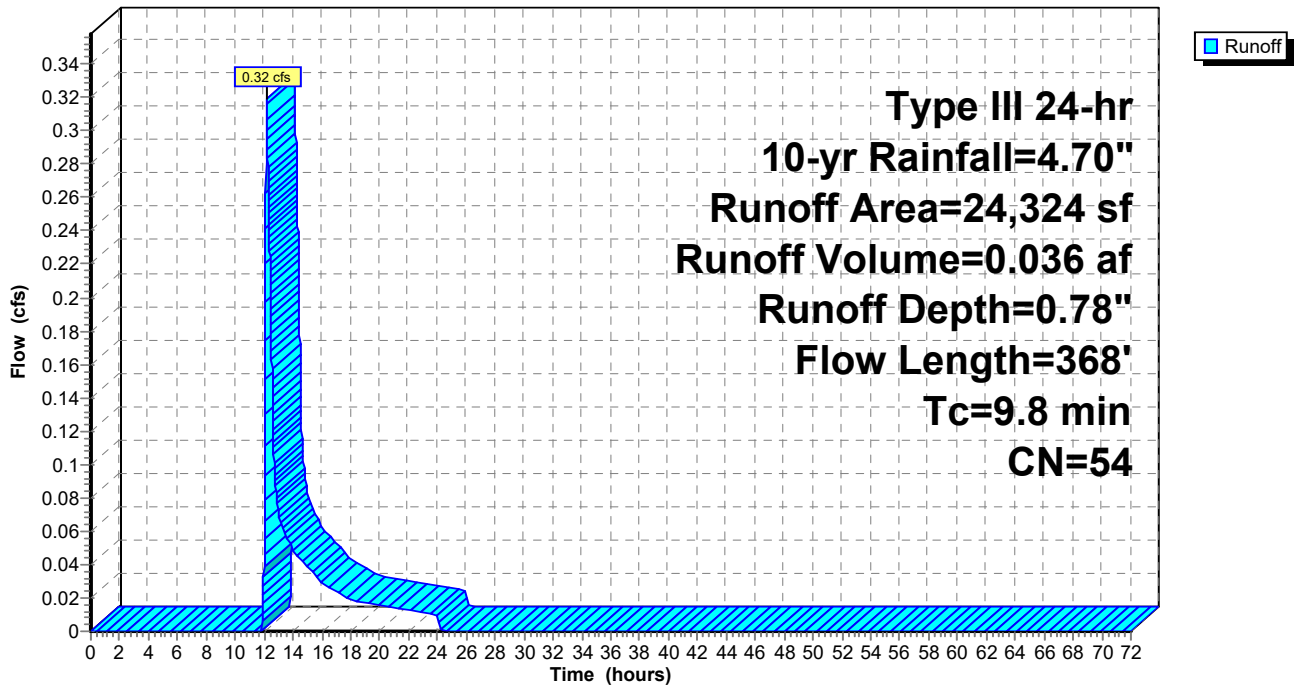
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-yr Rainfall=4.70"

Area (sf)	CN	Description
6,004	98	Paved roads w/curbs & sewers, HSG A
18,320	39	>75% Grass cover, Good, HSG A
24,324	54	Weighted Average
18,320		75.32% Pervious Area
6,004		24.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	100	0.0400	0.20		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.07"
1.4	268	0.0261	3.28		Shallow Concentrated Flow, Paved Kv= 20.3 fps
9.8	368	Total			

Subcatchment 6S: 6S

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Summary for Subcatchment 7S: 7S

Runoff = 0.64 cfs @ 12.11 hrs, Volume= 0.048 af, Depth= 1.82"
 Routed to Pond 8P : PDI 2

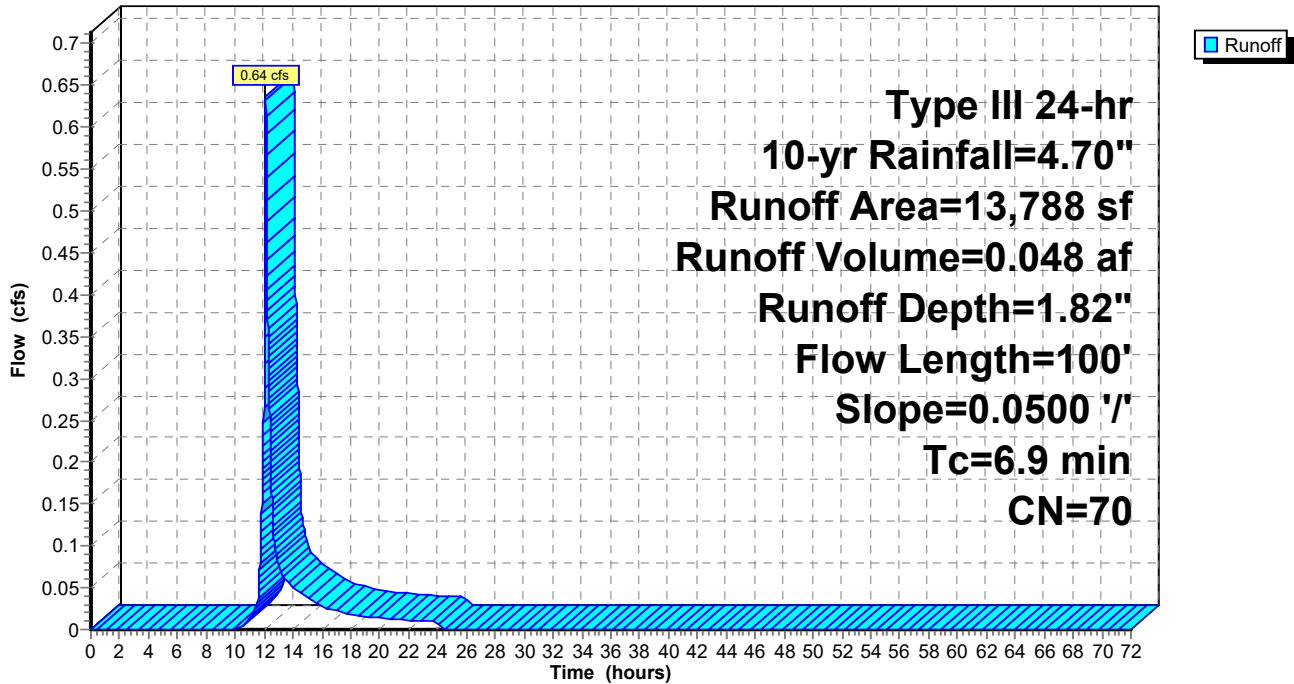
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-yr Rainfall=4.70"

Area (sf)	CN	Description
6,642	39	>75% Grass cover, Good, HSG A
7,146	98	Paved parking, HSG A
13,788	70	Weighted Average
6,642		48.17% Pervious Area
7,146		51.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	100	0.0500	0.24		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"

Subcatchment 7S: 7S

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Summary for Subcatchment 8S: 8S

Runoff = 1.12 cfs @ 12.12 hrs, Volume= 0.086 af, Depth= 2.29"
 Routed to Pond 25P : J14

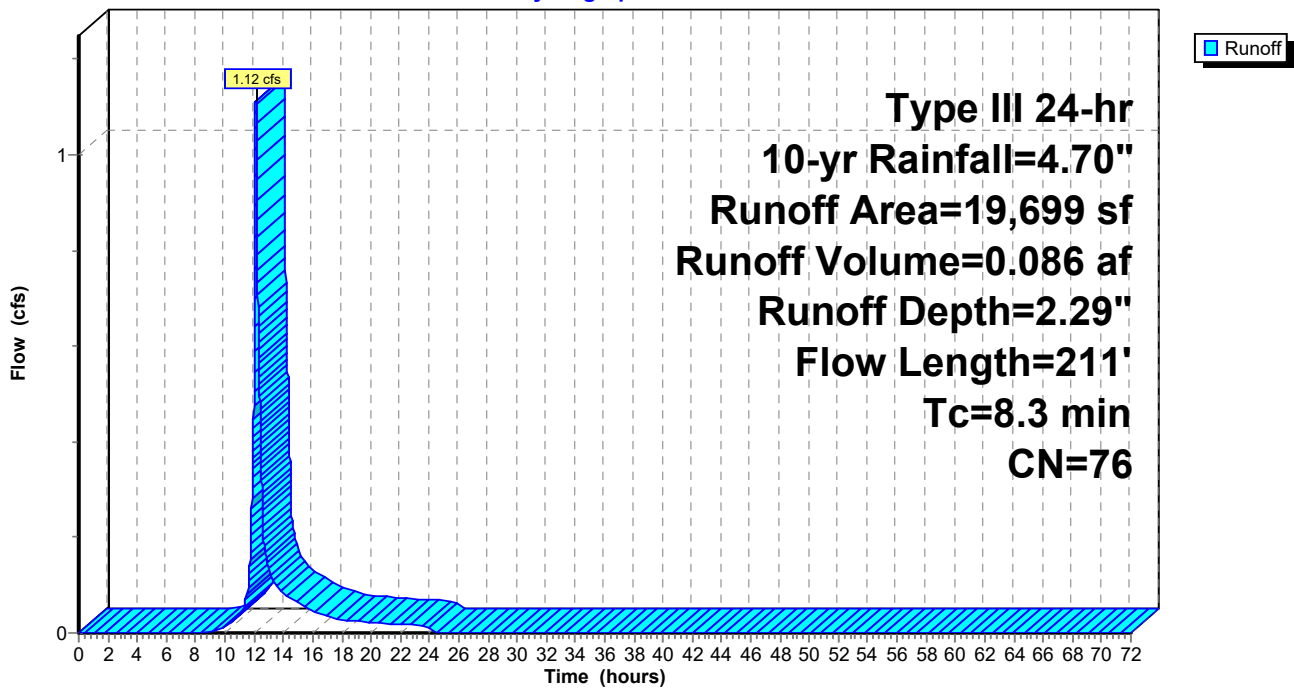
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-yr Rainfall=4.70"

	Area (sf)	CN	Description
*	6,358	98	Impervious, HSG C
*	980	98	Impervious, HSG A
	3,996	39	>75% Grass cover, Good, HSG A
	8,365	74	>75% Grass cover, Good, HSG C
	19,699	76	Weighted Average
	12,361		62.75% Pervious Area
	7,338		37.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	100	0.0400	0.22		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
0.7	111	0.0180	2.72		Shallow Concentrated Flow, Paved Kv= 20.3 fps
8.3	211	Total			

Subcatchment 8S: 8S

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Summary for Subcatchment 9S: 9S

Runoff = 4.94 cfs @ 12.10 hrs, Volume= 0.367 af, Depth= 3.00"
 Routed to Pond 6P : PCB 3

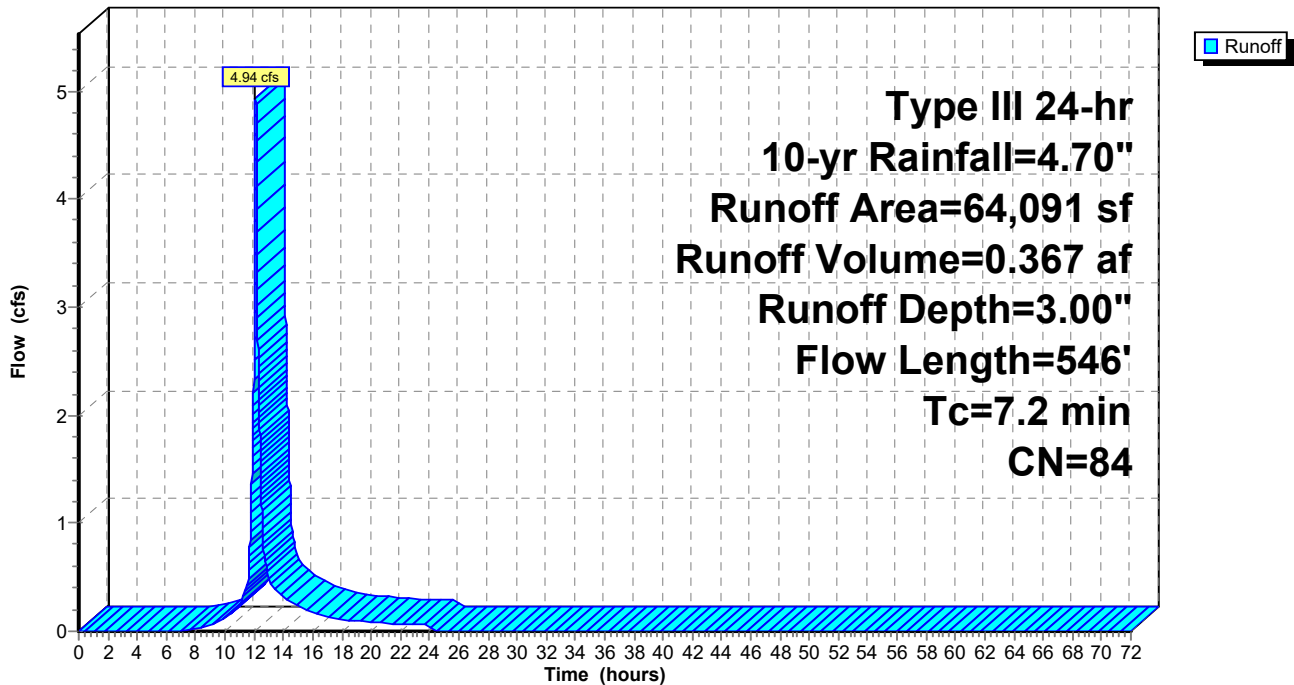
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-yr Rainfall=4.70"

Area (sf)	CN	Description
26,754	98	Paved parking, HSG C
37,337	74	>75% Grass cover, Good, HSG C
64,091	84	Weighted Average
37,337		58.26% Pervious Area
26,754		41.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0900	0.30		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
1.7	446	0.0471	4.41		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.2	546	Total			

Subcatchment 9S: 9S

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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Subcatchment 10S: 12S

Runoff = 0.58 cfs @ 12.02 hrs, Volume= 0.036 af, Depth= 1.67"
 Routed to Pond 24P : J15

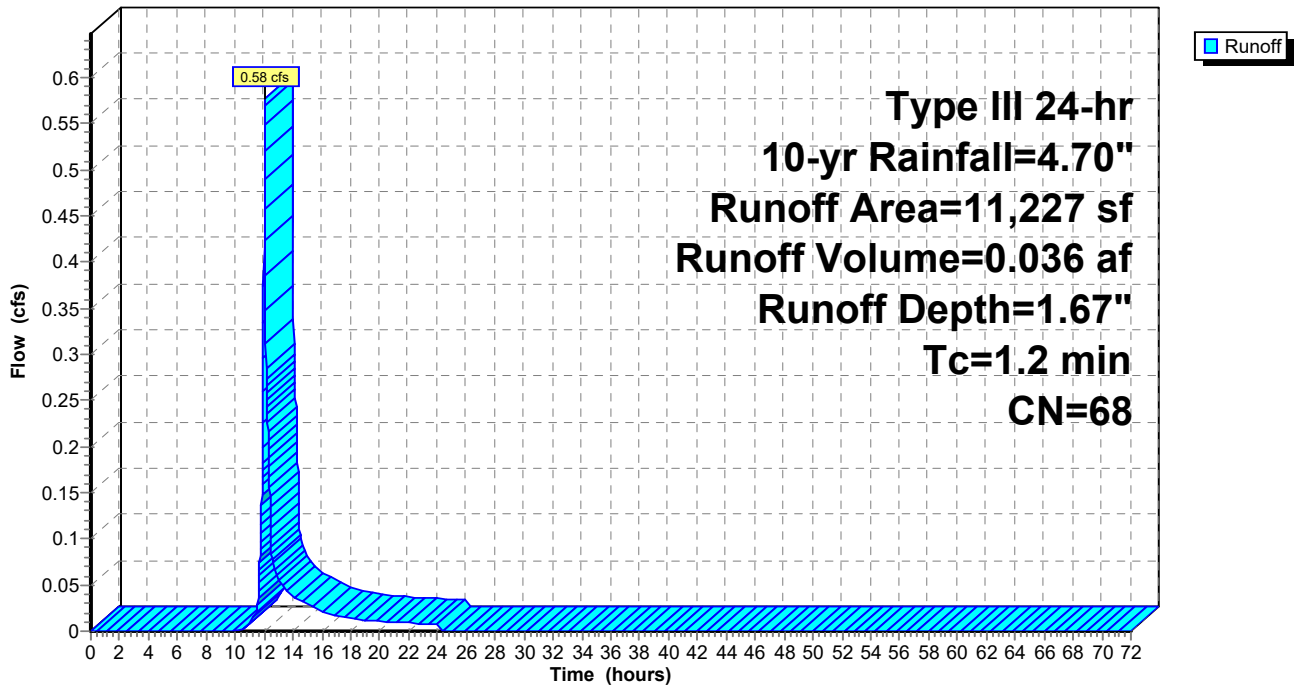
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-yr Rainfall=4.70"

Area (sf)	CN	Description
* 5,612	98	Impervious, HSG A
5,615	39	>75% Grass cover, Good, HSG A
11,227	68	Weighted Average
5,615		50.01% Pervious Area
5,612		49.99% Impervious Area

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

Subcatchment 10S: 12S

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Summary for Subcatchment 11S: 11S

Runoff = 3.31 cfs @ 12.21 hrs, Volume= 0.314 af, Depth= 2.81"
 Routed to Pond 5P : PCB 2

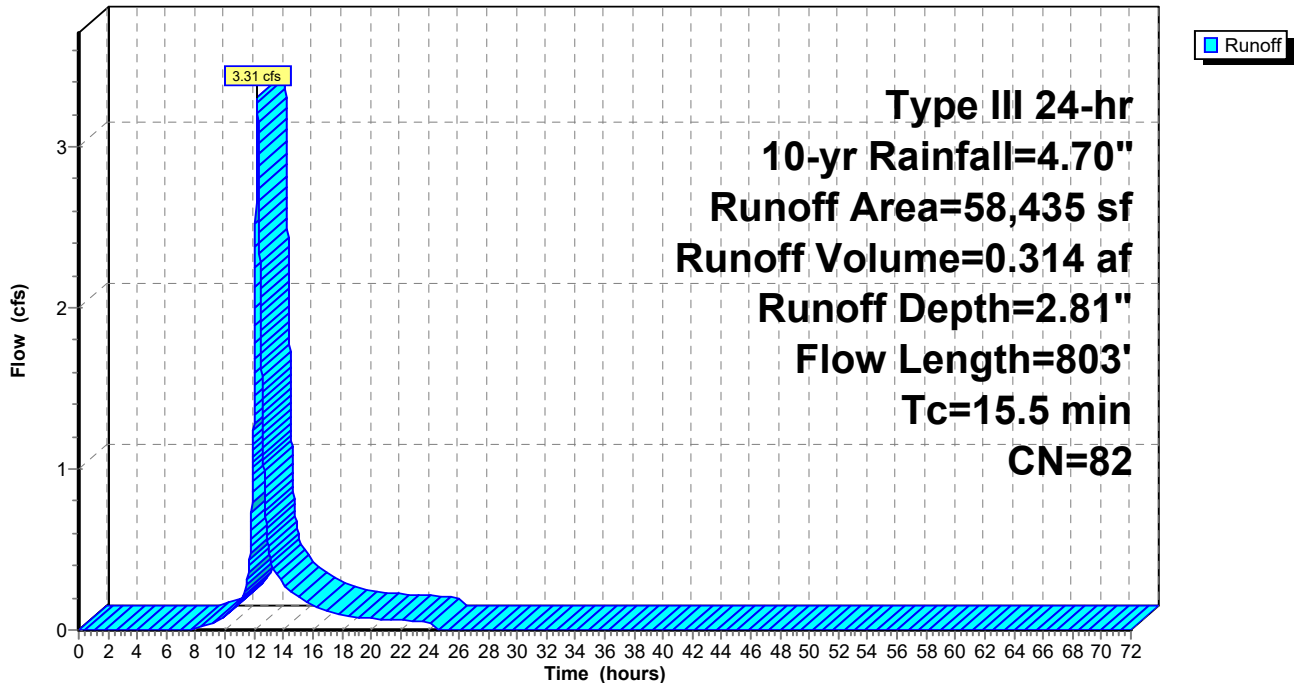
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-yr Rainfall=4.70"

	Area (sf)	CN	Description
*	1,964	98	Impervious, HSG A
	780	39	>75% Grass cover, Good, HSG A
*	18,734	98	Impervious, HSG C
	36,957	74	>75% Grass cover, Good, HSG C
	58,435	82	Weighted Average
	37,737		64.58% Pervious Area
	20,698		35.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	100	0.0400	0.15		Sheet Flow, Grass: Dense n= 0.240 P2= 3.07"
3.8	411	0.0657	1.79		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.7	292	0.1199	7.03		Shallow Concentrated Flow, Paved Kv= 20.3 fps
15.5	803	Total			

Subcatchment 11S: 11S

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Subcatchment 12S: 12S

Runoff = 1.48 cfs @ 12.40 hrs, Volume= 0.226 af, Depth= 0.73"
 Routed to Link 19L : Behind houses

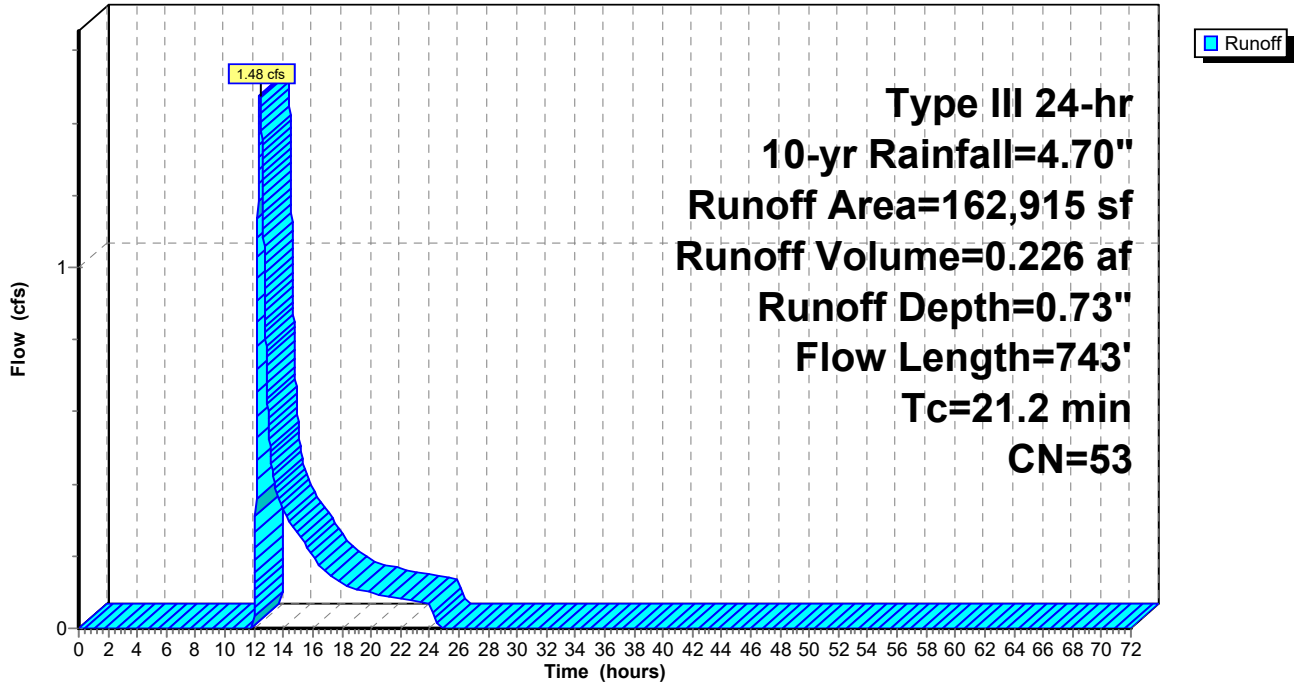
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-yr Rainfall=4.70"

Area (sf)	CN	Description
* 13,392	98	Impervious, HSG A
* 4,745	98	Impervious, HSG C
24,615	45	Woods, Poor, HSG A
7,646	66	Woods, Poor, HSG B
89,600	39	>75% Grass cover, Good, HSG A
22,005	74	>75% Grass cover, Good, HSG C
912	61	>75% Grass cover, Good, HSG B
162,915	53	Weighted Average
144,778		88.87% Pervious Area
18,137		11.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	100	0.0300	0.13		Sheet Flow, Grass: Dense n= 0.240 P2= 3.07"
8.8	643	0.0594	1.22		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
21.2	743	Total			

Subcatchment 12S: 12S

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Subcatchment 13S: 13S

Runoff = 0.96 cfs @ 12.02 hrs, Volume= 0.063 af, Depth= 1.32"
 Routed to Pond 2P : PDI 1

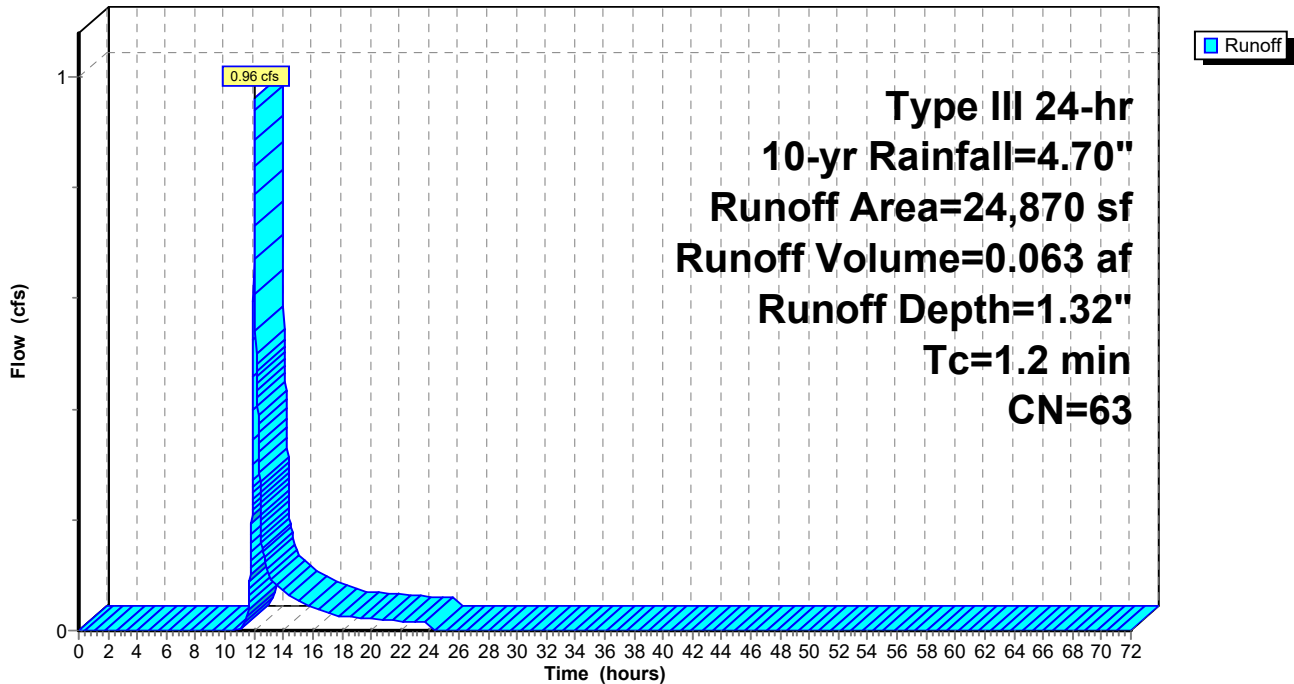
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-yr Rainfall=4.70"

Area (sf)	CN	Description
5,179	74	>75% Grass cover, Good, HSG C
* 2,500	98	Impervious, C
13,037	45	Woods, Poor, HSG A
546	39	>75% Grass cover, Good, HSG A
* 2,290	98	Impervious, A
* 706	98	Impervious B
612	66	Woods, Poor, HSG B
24,870	63	Weighted Average
19,374		77.90% Pervious Area
5,496		22.10% Impervious Area

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

Subcatchment 13S: 13S

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Subcatchment 14S: 14S

Runoff = 11.05 cfs @ 12.21 hrs, Volume= 1.117 af, Depth= 1.32"
 Routed to Pond 49P : J1

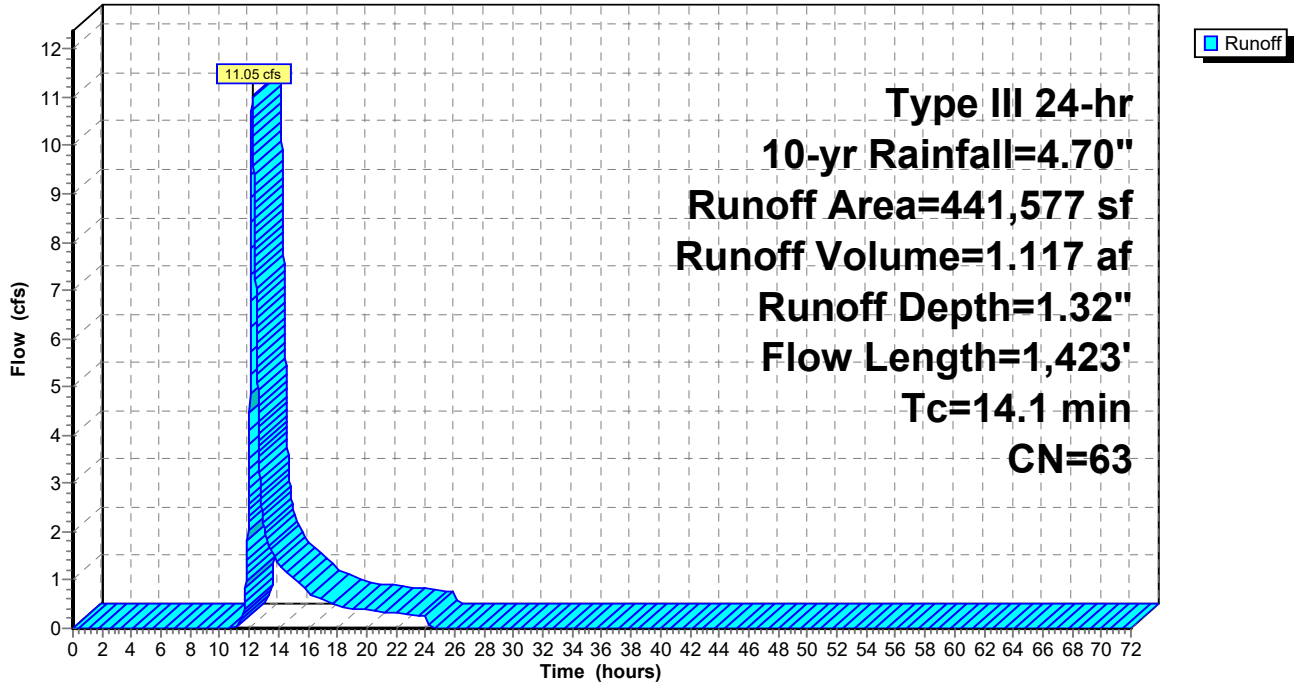
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 10-yr Rainfall=4.70"

Area (sf)	CN	Description
186,589	66	Woods, Poor, HSG B
11,967	45	Woods, Poor, HSG A
104,358	77	Woods, Poor, HSG C
43,979	61	>75% Grass cover, Good, HSG B
10,084	74	>75% Grass cover, Good, HSG C
84,600	39	>75% Grass cover, Good, HSG A
441,577	63	Weighted Average
441,577		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	100	0.1900	0.41		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
1.5	199	0.1055	2.27		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.4	185	0.1946	2.21		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
4.1	619	0.2569	2.53		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.0	320	0.0656	1.79		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.1	1,423	Total			

Subcatchment 14S: 14S

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Subcatchment 15S: 15S

Runoff = 21.23 cfs @ 12.20 hrs, Volume= 1.999 af, Depth= 2.13"

Routed to Link 48L : NORTH TO 10 PINE HILL ROAD (DP-6)

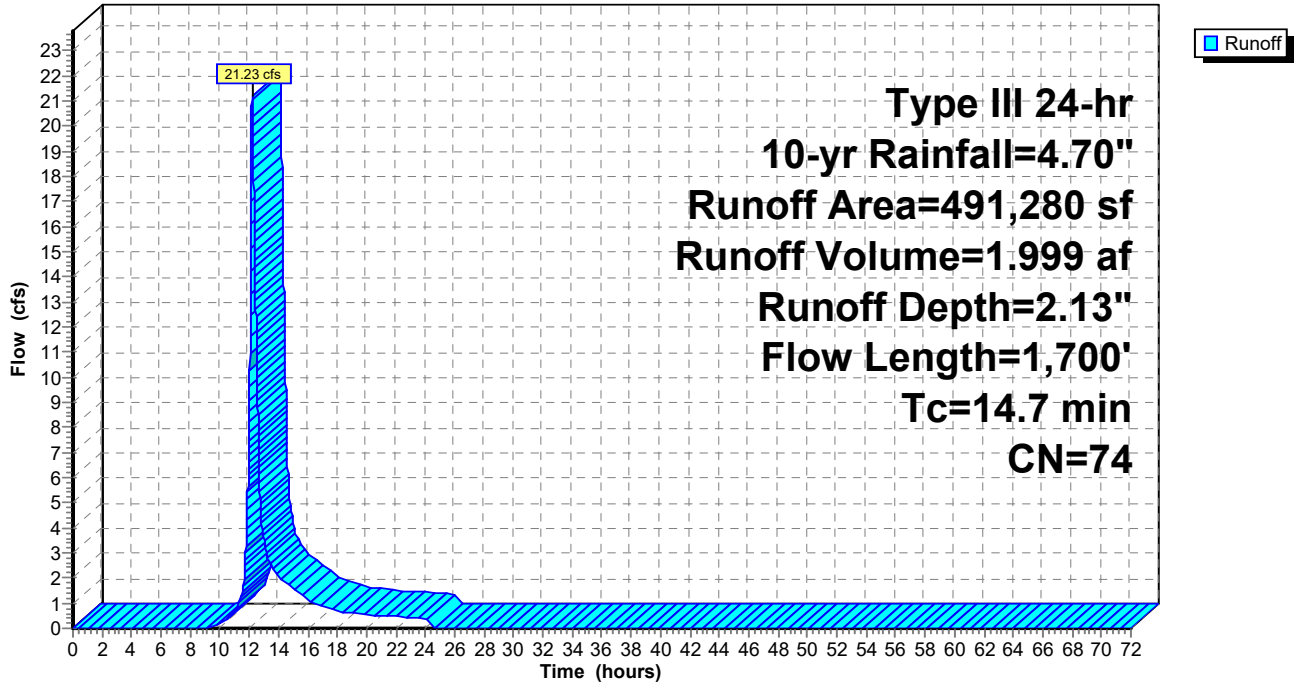
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.70"

Area (sf)	CN	Description
23,245	61	>75% Grass cover, Good, HSG B
29,263	74	>75% Grass cover, Good, HSG C
46,122	39	>75% Grass cover, Good, HSG A
16,942	45	Woods, Poor, HSG A
2,172	66	Woods, Poor, HSG B
289,686	77	Woods, Poor, HSG C
35,711	88	Row crops, straight row, Poor, HSG C
11,199	72	Row crops, straight row, Poor, HSG A
* 13,085	98	Impervious, HSG A
* 18,490	98	Impervious, HSG C
* 5,365	98	Impervious, HSG B
491,280	74	Weighted Average
454,340		92.48% Pervious Area
36,940		7.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	100	0.1400	0.36		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
0.9	140	0.1357	2.58		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
4.7	651	0.2166	2.33		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.0	131	0.1756	2.10		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.3	212	0.0849	2.62		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
2.2	466	0.0558	3.54		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
14.7	1,700	Total			

Subcatchment 15S: 15S

Hydrograph



15.0167305.01-DEV HYDROLOGY

Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Pond 1P: PDMH 1

Inflow Area = 10.539 ac, 15.96% Impervious, Inflow Depth = 1.66" for 10-yr event
 Inflow = 15.74 cfs @ 12.19 hrs, Volume= 1.458 af
 Outflow = 15.74 cfs @ 12.19 hrs, Volume= 1.458 af, Atten= 0%, Lag= 0.0 min
 Primary = 15.74 cfs @ 12.19 hrs, Volume= 1.458 af
 Routed to Link 1L : PROP OUTFALL TO TOWN PROP (DP-5)

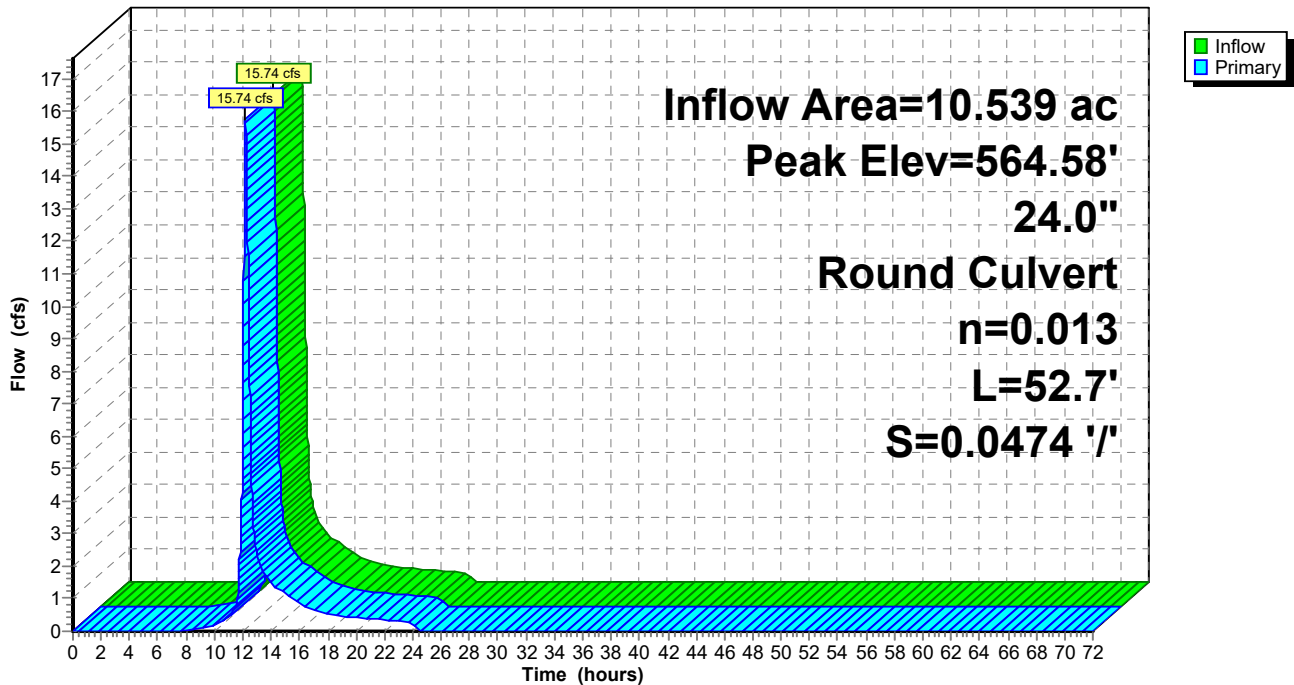
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 564.58' @ 12.19 hrs
 Flood Elev= 567.50'

Device #	Routing	Invert	Outlet Devices
#1	Primary	562.50'	24.0" Round Culvert L= 52.7' Ke= 0.500 Inlet / Outlet Invert= 562.50' / 560.00' S= 0.0474 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=15.74 cfs @ 12.19 hrs HW=564.58' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 15.74 cfs @ 5.01 fps)

Pond 1P: PDMH 1

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Pond 2P: PDI 1

Inflow Area = 10.539 ac, 15.96% Impervious, Inflow Depth = 1.66" for 10-yr event
 Inflow = 15.74 cfs @ 12.19 hrs, Volume= 1.458 af
 Outflow = 15.74 cfs @ 12.19 hrs, Volume= 1.458 af, Atten= 0%, Lag= 0.0 min
 Primary = 15.74 cfs @ 12.19 hrs, Volume= 1.458 af
 Routed to Pond 1P : PDMH 1

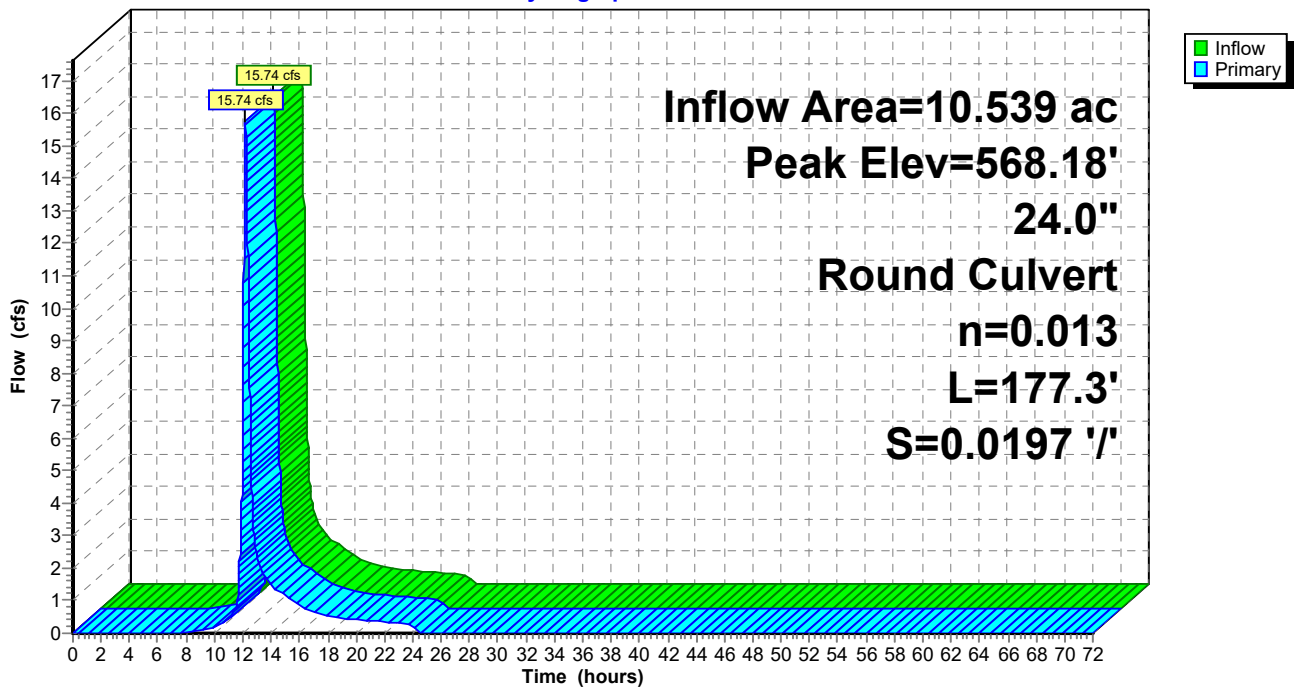
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 568.18' @ 12.19 hrs
 Flood Elev= 571.20'

Device #	Routing	Invert	Outlet Devices
#1	Primary	566.10'	24.0" Round Culvert L= 177.3' Ke= 0.500 Inlet / Outlet Invert= 566.10' / 562.60' S= 0.0197 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=15.74 cfs @ 12.19 hrs HW=568.18' TW=564.58' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 15.74 cfs @ 5.01 fps)

Pond 2P: PDI 1

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Pond 3P: PDMH 2

Inflow Area = 9.968 ac, 15.61% Impervious, Inflow Depth = 1.68" for 10-yr event
 Inflow = 15.30 cfs @ 12.19 hrs, Volume= 1.395 af
 Outflow = 15.30 cfs @ 12.19 hrs, Volume= 1.395 af, Atten= 0%, Lag= 0.0 min
 Primary = 15.30 cfs @ 12.19 hrs, Volume= 1.395 af
 Routed to Pond 2P : PDI 1

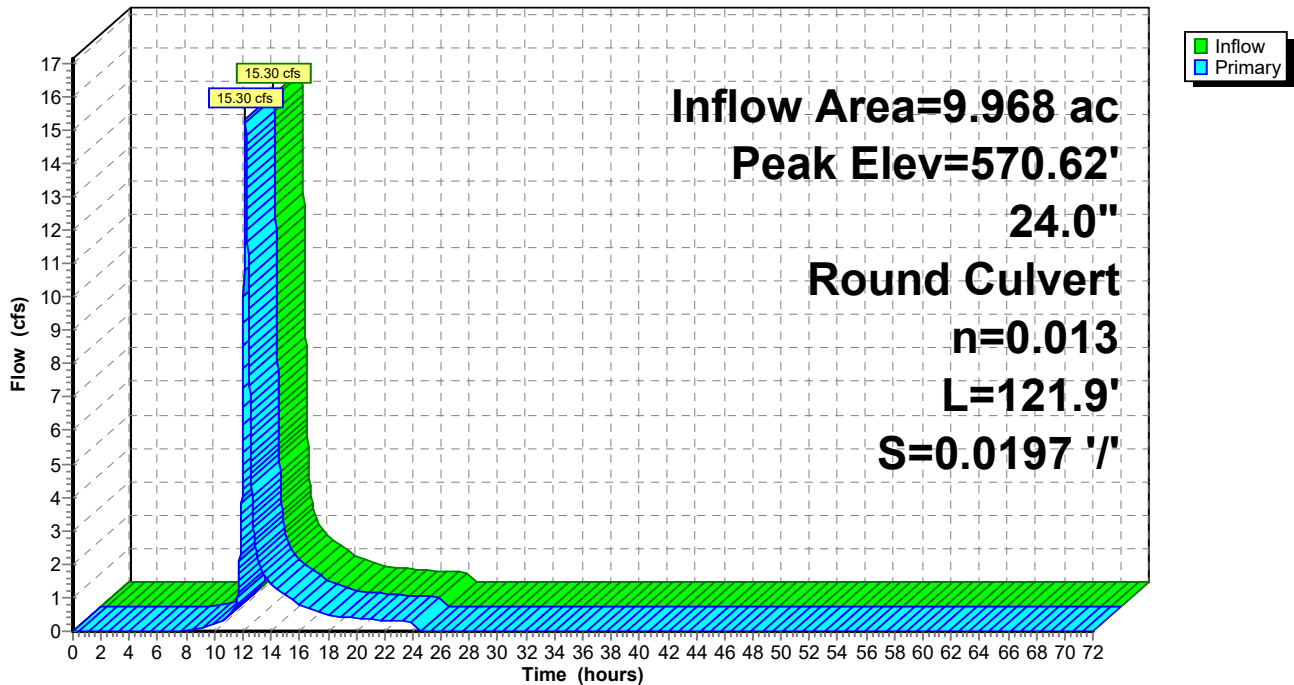
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 570.62' @ 12.19 hrs
 Flood Elev= 573.70'

Device #	Routing	Invert	Outlet Devices
#1	Primary	568.60'	24.0" Round Culvert L= 121.9' Ke= 0.500 Inlet / Outlet Invert= 568.60' / 566.20' S= 0.0197 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=15.29 cfs @ 12.19 hrs HW=570.62' TW=568.18' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 15.29 cfs @ 4.87 fps)

Pond 3P: PDMH 2

Hydrograph



15.0167305.01-DEV HYDROLOGY

Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Pond 4P: PCB 1

Inflow Area = 9.968 ac, 15.61% Impervious, Inflow Depth = 1.68" for 10-yr event
 Inflow = 15.30 cfs @ 12.19 hrs, Volume= 1.395 af
 Outflow = 15.30 cfs @ 12.19 hrs, Volume= 1.395 af, Atten= 0%, Lag= 0.0 min
 Primary = 15.30 cfs @ 12.19 hrs, Volume= 1.395 af
 Routed to Pond 3P : PDMH 2

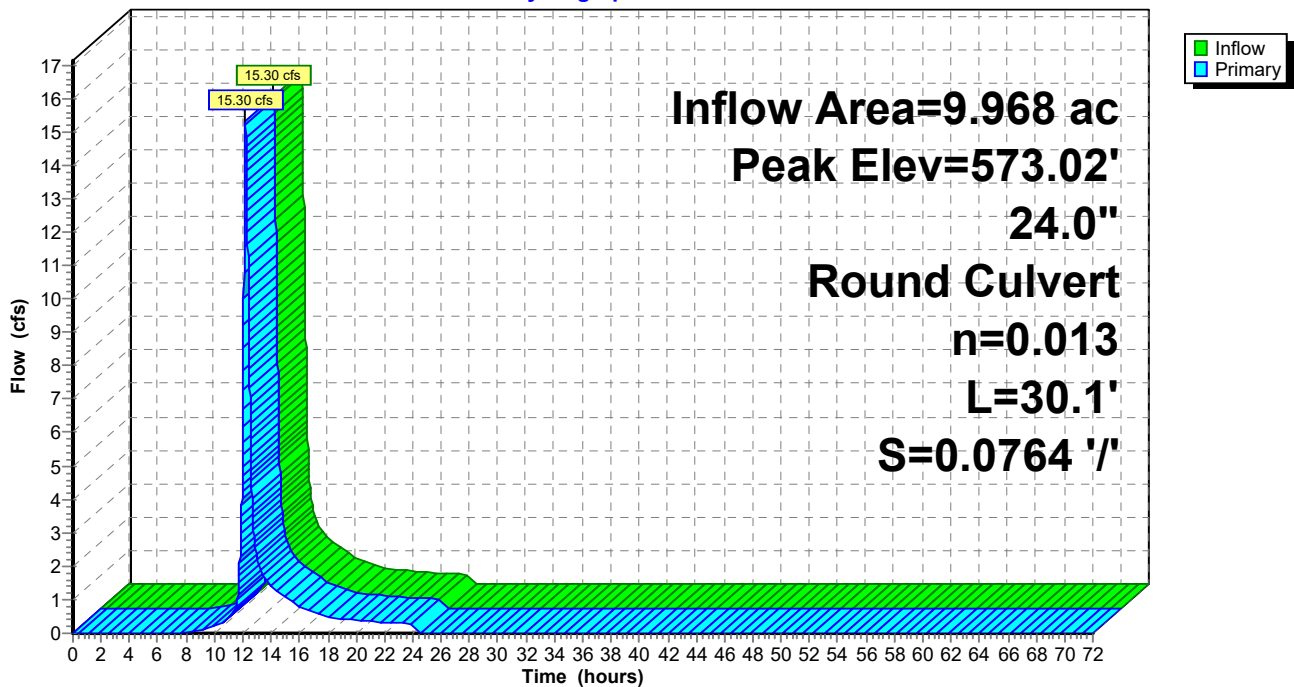
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 573.02' @ 12.19 hrs
 Flood Elev= 576.00'

Device #	Routing	Invert	Outlet Devices
#1	Primary	571.00'	24.0" Round Culvert L= 30.1' Ke= 0.500 Inlet / Outlet Invert= 571.00' / 568.70' S= 0.0764 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=15.29 cfs @ 12.19 hrs HW=573.02' TW=570.62' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 15.29 cfs @ 4.87 fps)

Pond 4P: PCB 1

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Pond 5P: PCB 2

Inflow Area = 9.968 ac, 15.61% Impervious, Inflow Depth = 1.68" for 10-yr event
 Inflow = 15.30 cfs @ 12.19 hrs, Volume= 1.395 af
 Outflow = 15.30 cfs @ 12.19 hrs, Volume= 1.395 af, Atten= 0%, Lag= 0.0 min
 Primary = 15.30 cfs @ 12.19 hrs, Volume= 1.395 af
 Routed to Pond 4P : PCB 1
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 4P : PCB 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 598.18' @ 12.19 hrs
 Flood Elev= 598.30'

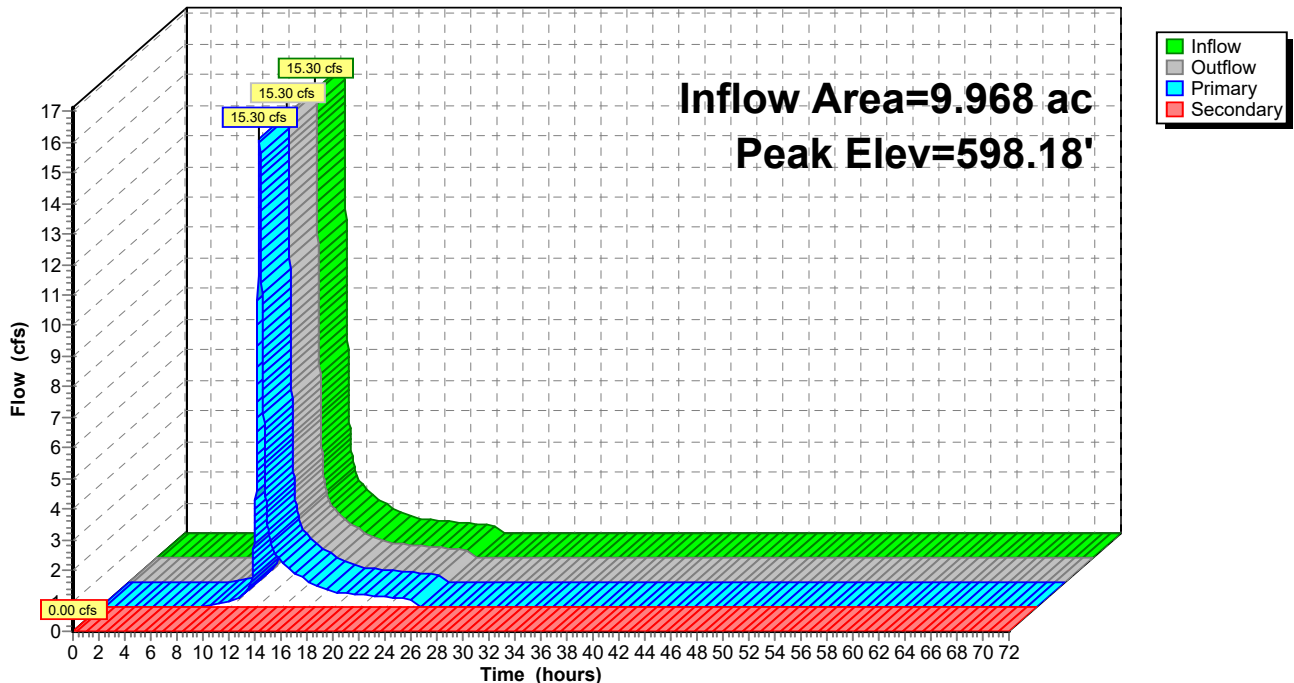
Device	Routing	Invert	Outlet Devices
#1	Primary	594.20'	18.0" Round Culvert L= 202.3' Ke= 0.500 Inlet / Outlet Invert= 594.20' / 571.50' S= 0.1122 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	598.30'	20.0" x 20.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=15.29 cfs @ 12.19 hrs HW=598.18' TW=573.02' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 15.29 cfs @ 8.65 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=594.20' TW=571.00' (Dynamic Tailwater)
 ↳2=Orifice/Grate (Controls 0.00 cfs)

Pond 5P: PCB 2

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Pond 6P: PCB 3

Inflow Area = 8.626 ac, 12.53% Impervious, Inflow Depth = 1.50" for 10-yr event
 Inflow = 12.06 cfs @ 12.18 hrs, Volume= 1.081 af
 Outflow = 12.06 cfs @ 12.18 hrs, Volume= 1.081 af, Atten= 0%, Lag= 0.0 min
 Primary = 12.06 cfs @ 12.18 hrs, Volume= 1.081 af
 Routed to Pond 5P : PCB 2

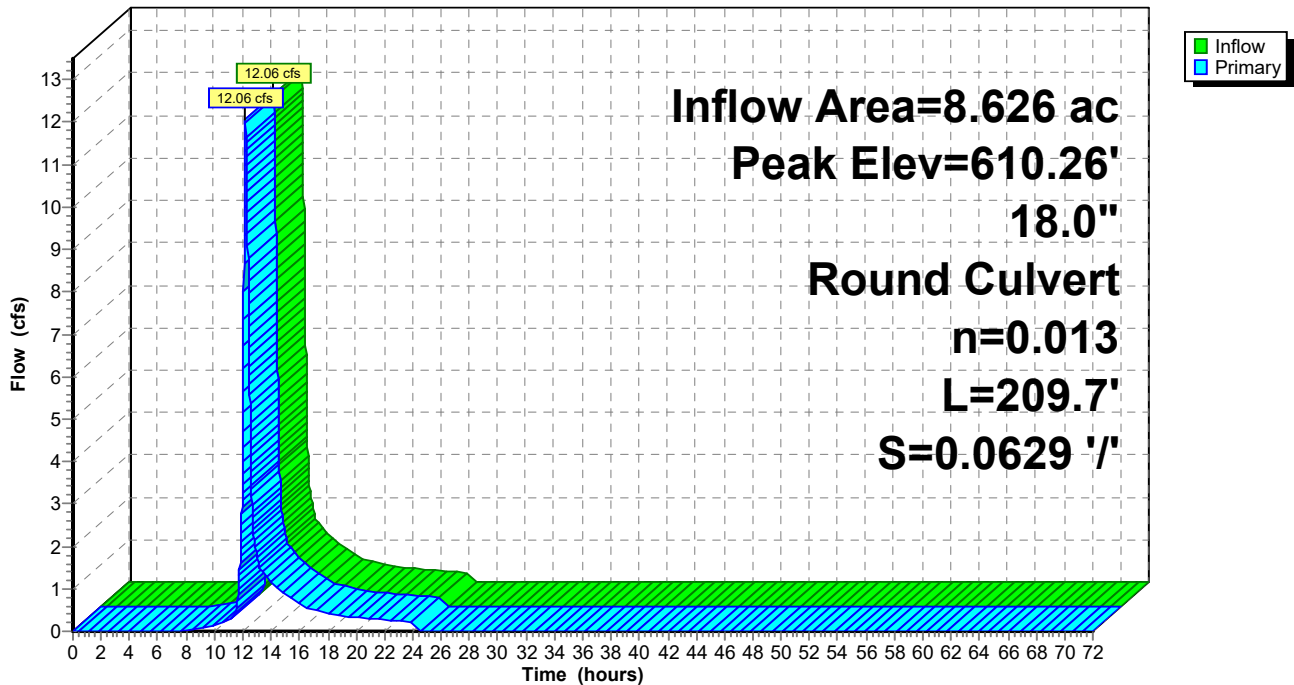
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 610.26' @ 12.18 hrs
 Flood Elev= 615.20'

Device #	Routing	Invert	Outlet Devices
1	Primary	607.50'	18.0" Round Culvert L= 209.7' Ke= 0.500 Inlet / Outlet Invert= 607.50' / 594.30' S= 0.0629 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=12.06 cfs @ 12.18 hrs HW=610.26' TW=598.18' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 12.06 cfs @ 6.82 fps)

Pond 6P: PCB 3

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Pond 7P: PCB 4

Inflow Area = 7.155 ac, 6.52% Impervious, Inflow Depth = 1.20" for 10-yr event
 Inflow = 8.78 cfs @ 12.22 hrs, Volume= 0.713 af
 Outflow = 8.78 cfs @ 12.22 hrs, Volume= 0.713 af, Atten= 0%, Lag= 0.0 min
 Primary = 8.78 cfs @ 12.22 hrs, Volume= 0.713 af
 Routed to Pond 6P : PCB 3

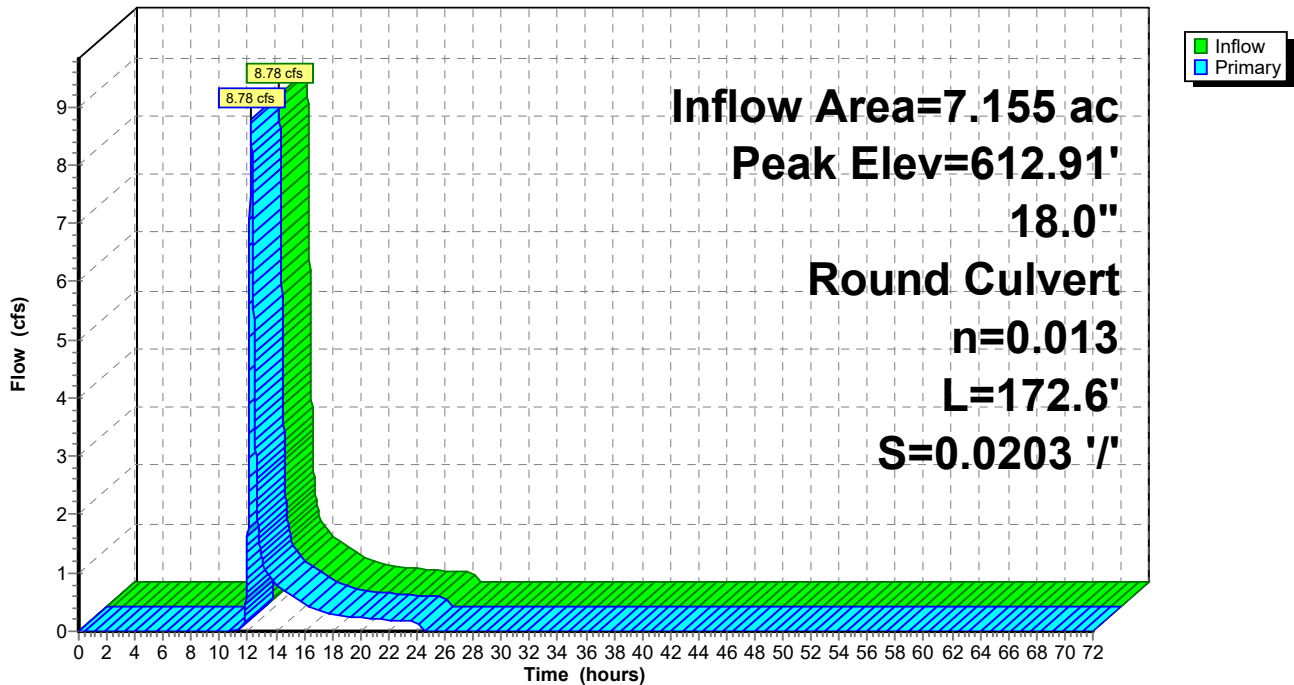
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 612.91' @ 12.22 hrs
 Flood Elev= 620.80'

Device #	Routing	Invert	Outlet Devices
#1	Primary	611.10'	18.0" Round Culvert L= 172.6' Ke= 0.500 Inlet / Outlet Invert= 611.10' / 607.60' S= 0.0203 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=8.77 cfs @ 12.22 hrs HW=612.91' TW=610.15' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 8.77 cfs @ 4.96 fps)

Pond 7P: PCB 4

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Pond 8P: PDI 2

[92] Warning: Device #2 is above defined storage

Inflow Area = 7.155 ac, 6.52% Impervious, Inflow Depth = 1.20" for 10-yr event
 Inflow = 8.78 cfs @ 12.22 hrs, Volume= 0.713 af
 Outflow = 8.78 cfs @ 12.22 hrs, Volume= 0.713 af, Atten= 0%, Lag= 0.0 min
 Primary = 8.78 cfs @ 12.22 hrs, Volume= 0.713 af
 Routed to Pond 7P : PCB 4
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 49L : 51 Baptist Hill Rd Property (DP-3)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 617.31' @ 12.22 hrs Surf.Area= 13 sf Storage= 23 cf
 Flood Elev= 621.75' Surf.Area= 595 sf Storage= 295 cf

Plug-Flow detention time= 0.3 min calculated for 0.713 af (100% of inflow)
 Center-of-Mass det. time= 0.1 min (873.8 - 873.7)

Volume	Invert	Avail.Storage	Storage Description
#1	615.50'	44 cf	4.00'D x 3.50'H Vertical Cone/Cylinder
#2	619.00'	420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		464 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
619.00	4	0	0
620.00	10	7	7
621.00	24	17	24
622.00	768	396	420

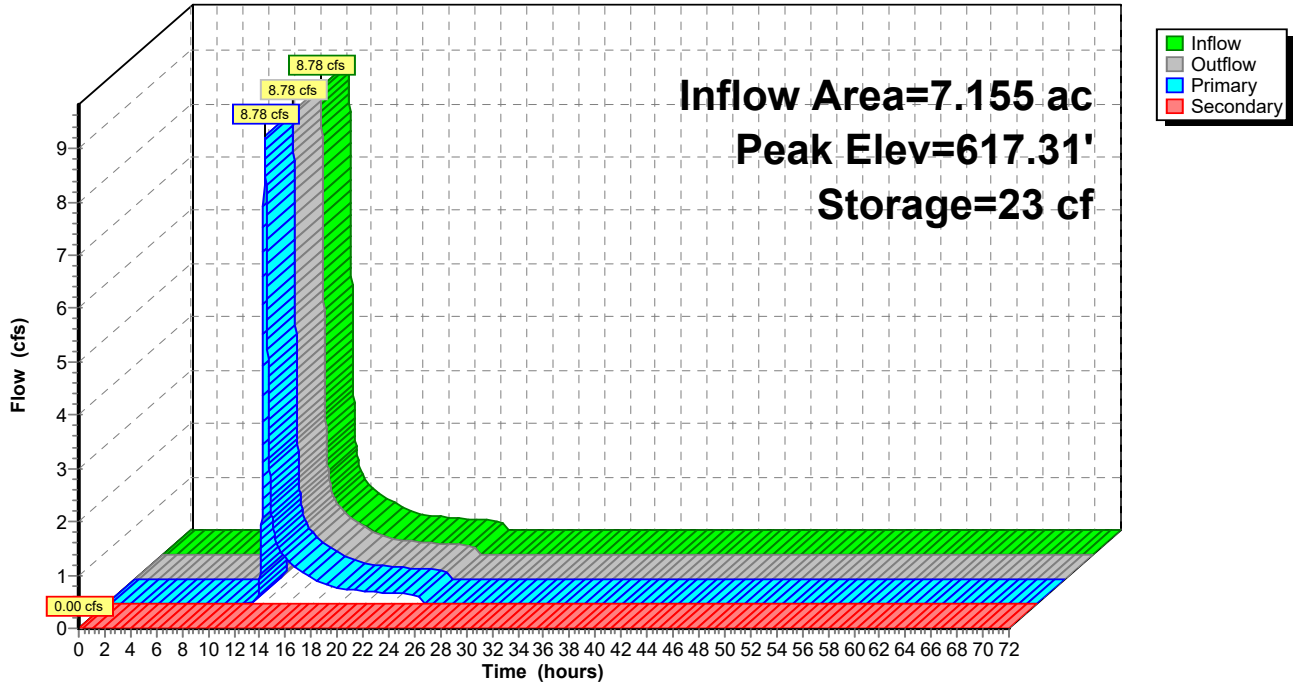
Device	Routing	Invert	Outlet Devices
#1	Primary	615.50'	18.0" Round Culvert L= 217.0' Ke= 0.500 Inlet / Outlet Invert= 615.50' / 611.20' S= 0.0198 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	622.00'	20.0' long x 18.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=8.77 cfs @ 12.22 hrs HW=617.31' TW=612.91' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 8.77 cfs @ 4.96 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=615.50' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 8P: PDI 2

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Pond 9P: PDI 3

Inflow Area = 6.838 ac, 4.42% Impervious, Inflow Depth = 1.04" for 10-yr event
 Inflow = 5.51 cfs @ 12.21 hrs, Volume= 0.595 af
 Outflow = 5.51 cfs @ 12.21 hrs, Volume= 0.595 af, Atten= 0%, Lag= 0.0 min
 Primary = 5.51 cfs @ 12.21 hrs, Volume= 0.595 af
 Routed to Pond 8P : PDI 2
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 49L : 51 Baptist Hill Rd Property (DP-3)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 619.38' @ 12.21 hrs
 Flood Elev= 625.90'

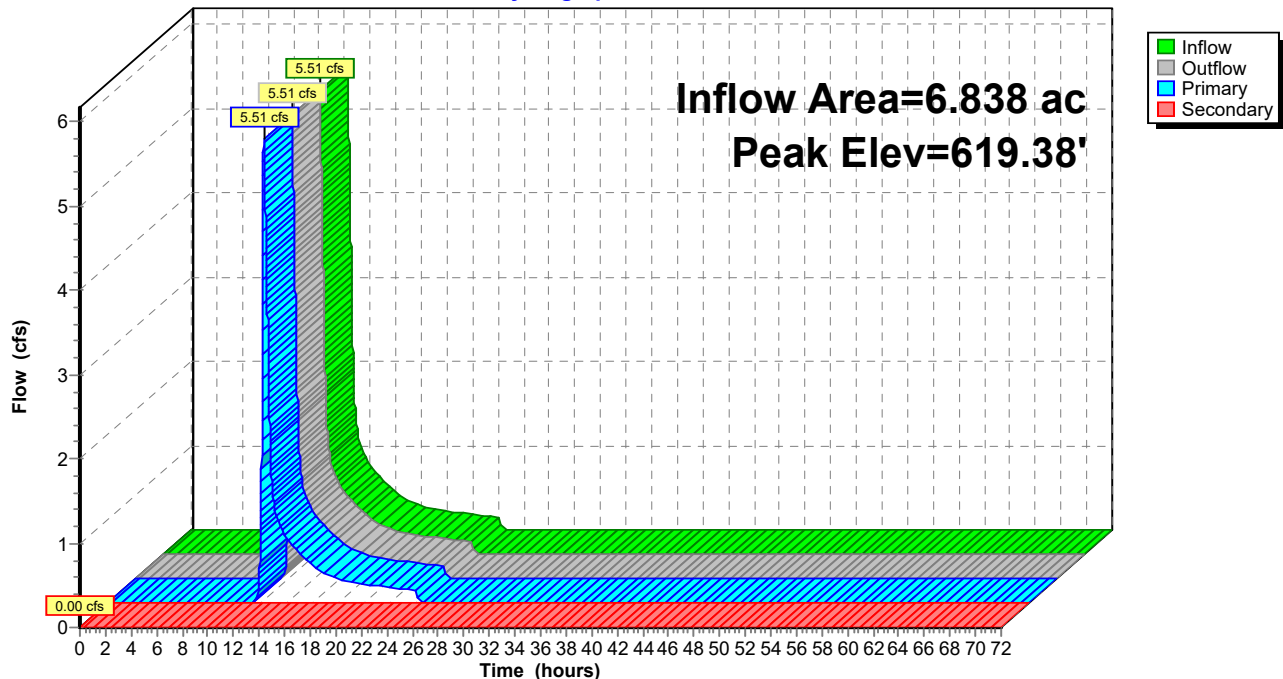
Device	Routing	Invert	Outlet Devices
#1	Primary	618.20'	18.0" Round Culvert L= 109.2' Ke= 0.500 Inlet / Outlet Invert= 618.20' / 615.60' S= 0.0238 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	621.00'	12.0" Round Culvert L= 31.0' Ke= 0.500 Inlet / Outlet Invert= 621.00' / 620.38' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=5.51 cfs @ 12.21 hrs HW=619.38' TW=617.31' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 5.51 cfs @ 3.70 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=618.20' TW=0.00' (Dynamic Tailwater)
 ↳2=Culvert (Controls 0.00 cfs)

Pond 9P: PDI 3

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Pond 10P: PDI 4

Inflow Area = 6.280 ac, 2.62% Impervious, Inflow Depth = 1.07" for 10-yr event
 Inflow = 5.21 cfs @ 12.22 hrs, Volume= 0.559 af
 Outflow = 5.21 cfs @ 12.22 hrs, Volume= 0.559 af, Atten= 0%, Lag= 0.0 min
 Primary = 5.21 cfs @ 12.22 hrs, Volume= 0.559 af
 Routed to Pond 9P : PDI 3
 Secondary = 0.00 cfs @ 12.22 hrs, Volume= 0.000 af
 Routed to Link 50L : ALONG 45 UPPER BAPTIST HILL RD (DP-2)
 Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 9P : PDI 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 624.30' @ 12.22 hrs
 Flood Elev= 629.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	622.90'	15.0" Round Culvert L= 226.6' Ke= 0.500 Inlet / Outlet Invert= 622.90' / 618.30' S= 0.0203 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	624.30'	12.0" Round Culvert L= 25.0' Ke= 0.500 Inlet / Outlet Invert= 624.30' / 623.80' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Tertiary	629.00'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

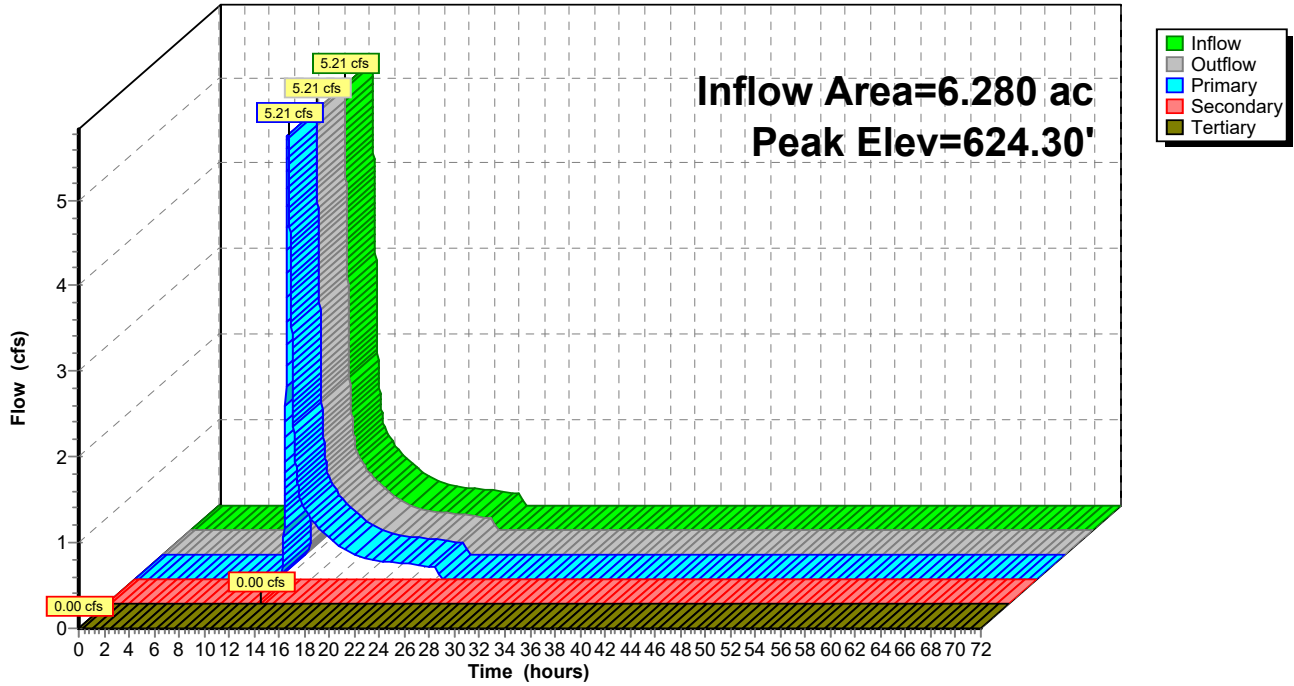
Primary OutFlow Max=5.20 cfs @ 12.22 hrs HW=624.30' TW=619.38' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 5.20 cfs @ 4.24 fps)

Secondary OutFlow Max=0.00 cfs @ 12.22 hrs HW=624.30' TW=0.00' (Dynamic Tailwater)
 ↑2=Culvert (Barrel Controls 0.00 cfs @ 0.06 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=622.90' TW=618.20' (Dynamic Tailwater)
 ↑3=Orifice/Grate (Controls 0.00 cfs)

Pond 10P: PDI 4

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Pond 11P: PDI 5

Inflow Area = 5.545 ac, 0.00% Impervious, Inflow Depth = 0.73" for 10-yr event
 Inflow = 2.47 cfs @ 12.27 hrs, Volume= 0.336 af
 Outflow = 2.47 cfs @ 12.27 hrs, Volume= 0.336 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.47 cfs @ 12.27 hrs, Volume= 0.336 af
 Routed to Pond 12P : PDI 6
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 10P : PDI 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 639.29' @ 12.27 hrs
 Flood Elev= 641.20'

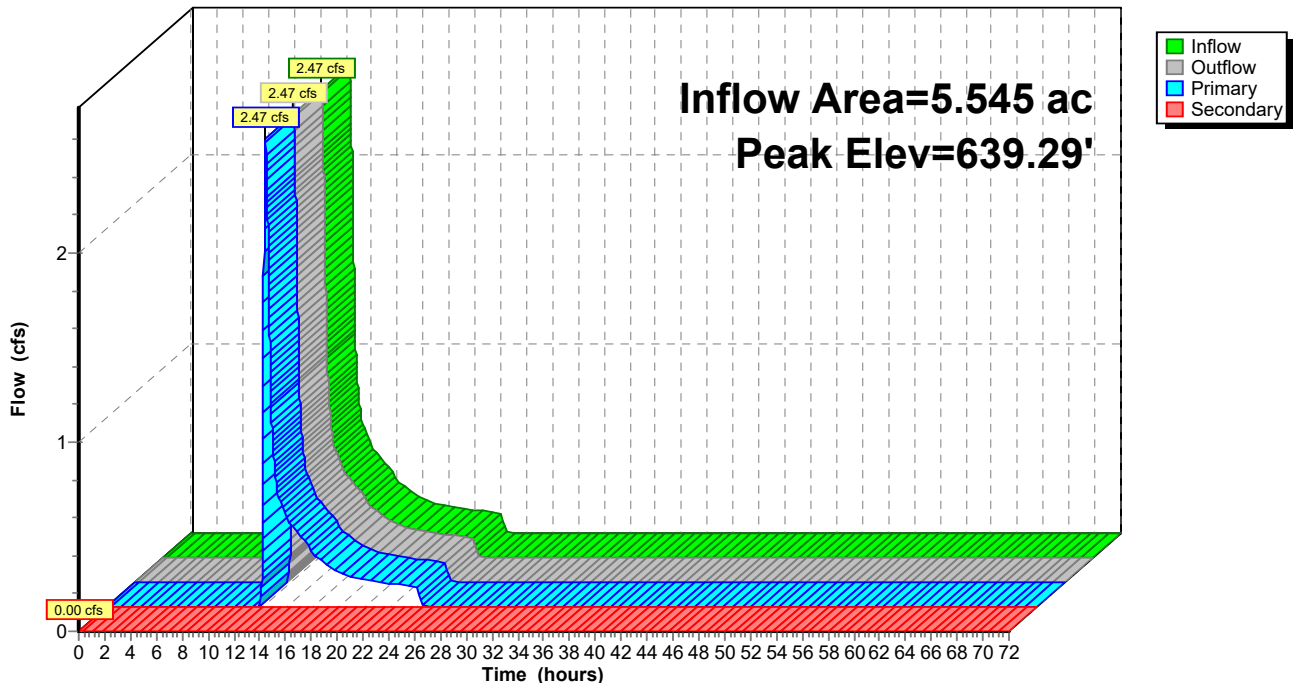
Device	Routing	Invert	Outlet Devices
#1	Primary	637.00'	12.0" Round Culvert L= 82.0' Ke= 0.500 Inlet / Outlet Invert= 637.00' / 636.20' S= 0.0098 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	641.20'	22.0" x 22.0" Horiz. Orifice/Gate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.48 cfs @ 12.27 hrs HW=639.29' TW=638.66' (Dynamic Tailwater)
 ↳1=Culvert (Outlet Controls 2.48 cfs @ 3.16 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=637.00' TW=622.90' (Dynamic Tailwater)
 ↳2=Orifice/Gate (Controls 0.00 cfs)

Pond 11P: PDI 5

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Pond 12P: PDI 6

Inflow Area = 14.192 ac, 4.81% Impervious, Inflow Depth = 0.89" for 10-yr event
 Inflow = 8.23 cfs @ 12.25 hrs, Volume= 1.051 af
 Outflow = 8.23 cfs @ 12.25 hrs, Volume= 1.051 af, Atten= 0%, Lag= 0.0 min
 Primary = 8.23 cfs @ 12.25 hrs, Volume= 1.051 af
 Routed to Link 15L : EXISTIN OUTLET TO UNDER 116 (DP-1)
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 10P : PDI 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 638.67' @ 12.25 hrs
 Flood Elev= 644.20'

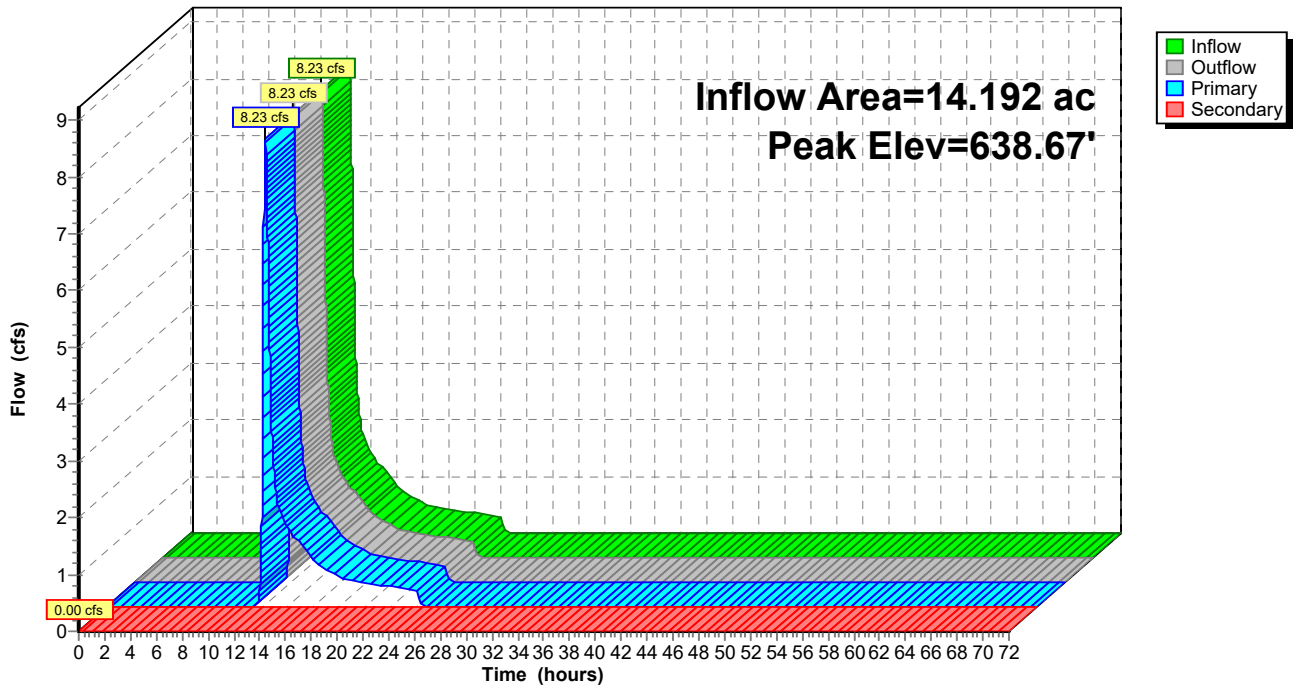
Device	Routing	Invert	Outlet Devices
#1	Primary	636.10'	15.0" Round Culvert L= 35.9' Ke= 0.500 Inlet / Outlet Invert= 636.10' / 625.50' S= 0.2953 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	644.20'	20.0" x 20.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=8.23 cfs @ 12.25 hrs HW=638.66' TW=0.00' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 8.23 cfs @ 6.71 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=636.10' TW=622.90' (Dynamic Tailwater)
 ↳2=Orifice/Grate (Controls 0.00 cfs)

Pond 12P: PDI 6

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Pond 13P: PDI 7

Inflow Area = 7.441 ac, 3.47% Impervious, Inflow Depth = 0.97" for 10-yr event
 Inflow = 4.91 cfs @ 12.27 hrs, Volume= 0.602 af
 Outflow = 4.91 cfs @ 12.27 hrs, Volume= 0.602 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.91 cfs @ 12.27 hrs, Volume= 0.602 af
 Routed to Pond 12P : PDI 6
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 12P : PDI 6

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 647.99' @ 12.27 hrs
 Flood Elev= 651.40'

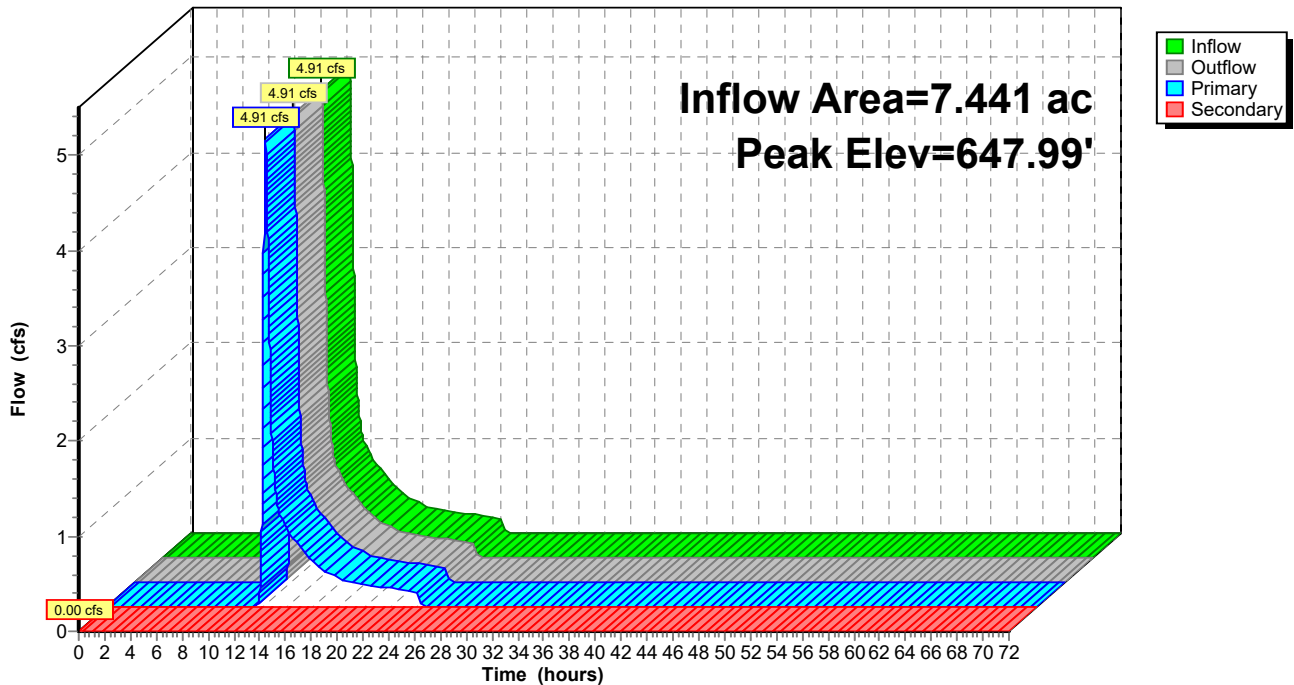
Device	Routing	Invert	Outlet Devices
#1	Primary	645.80'	12.0" Round Culvert L= 211.3' Ke= 0.500 Inlet / Outlet Invert= 645.80' / 638.00' S= 0.0369 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	651.40'	20.0" x 20.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.91 cfs @ 12.27 hrs HW=647.99' TW=638.66' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 4.91 cfs @ 6.25 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=645.80' TW=636.10' (Dynamic Tailwater)
 ↳2=Orifice/Grate (Controls 0.00 cfs)

Pond 13P: PDI 7

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Pond 14P: PDI 8

Inflow Area = 1.391 ac, 18.58% Impervious, Inflow Depth = 1.07" for 10-yr event
Inflow = 1.21 cfs @ 12.19 hrs, Volume= 0.124 af
Outflow = 1.21 cfs @ 12.19 hrs, Volume= 0.124 af, Atten= 0%, Lag= 0.0 min
Primary = 1.21 cfs @ 12.19 hrs, Volume= 0.124 af
Routed to Pond 13P : PDI 7

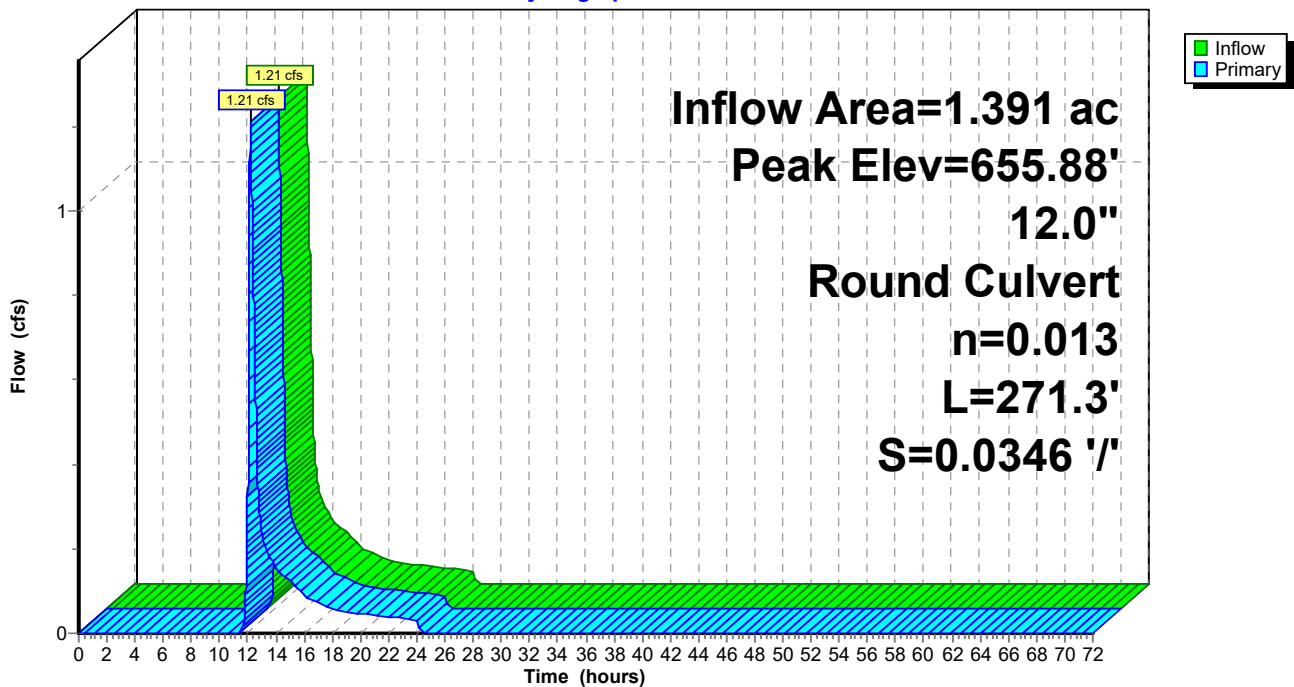
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 655.88' @ 12.19 hrs
Flood Elev= 660.80'

Device #	Routing	Invert	Outlet Devices
#1	Primary	655.30'	12.0" Round Culvert L= 271.3' Ke= 0.500 Inlet / Outlet Invert= 655.30' / 645.90' S= 0.0346 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.21 cfs @ 12.19 hrs HW=655.88' TW=647.64' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 1.21 cfs @ 2.58 fps)

Pond 14P: PDI 8

Hydrograph



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Summary for Pond 24P: J15

Inflow Area = 0.710 ac, 41.87% Impervious, Inflow Depth = 2.06" for 10-yr event
 Inflow = 1.44 cfs @ 12.09 hrs, Volume= 0.122 af
 Outflow = 1.44 cfs @ 12.09 hrs, Volume= 0.122 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.44 cfs @ 12.09 hrs, Volume= 0.122 af
 Routed to Pond 27P : J22
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 27P : J22

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 594.34' @ 12.09 hrs
 Flood Elev= 598.30'

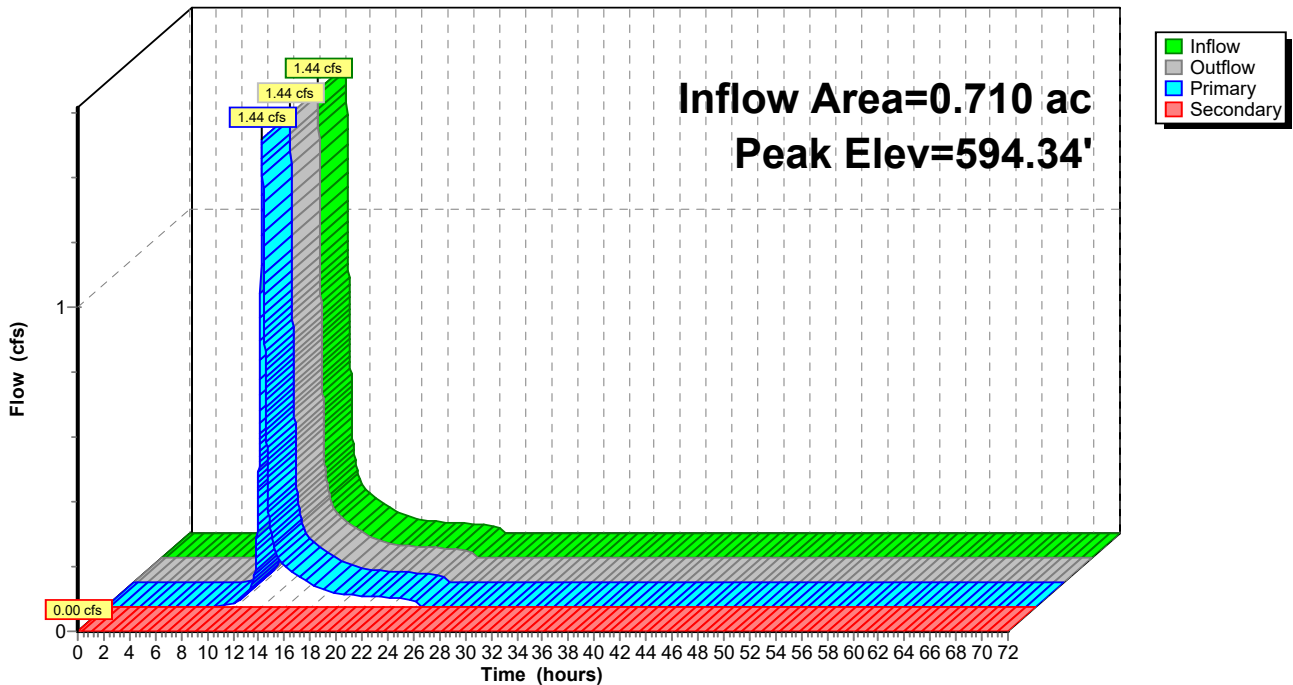
Device	Routing	Invert	Outlet Devices
#1	Primary	593.70'	12.0" Round Culvert L= 240.0' Ke= 0.500 Inlet / Outlet Invert= 593.70' / 569.82' S= 0.0995 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	598.30'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.44 cfs @ 12.09 hrs HW=594.34' TW=570.25' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 1.44 cfs @ 2.72 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=593.70' TW=569.62' (Dynamic Tailwater)
 ↳2=Orifice/Grate (Controls 0.00 cfs)

Pond 24P: J15

Hydrograph



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Summary for Pond 25P: J14

Inflow Area = 0.452 ac, 37.25% Impervious, Inflow Depth = 2.29" for 10-yr event
 Inflow = 1.12 cfs @ 12.12 hrs, Volume= 0.086 af
 Outflow = 1.12 cfs @ 12.12 hrs, Volume= 0.086 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.12 cfs @ 12.12 hrs, Volume= 0.086 af
 Routed to Pond 24P : J15
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 24P : J15

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 611.91' @ 12.12 hrs
 Flood Elev= 614.36'

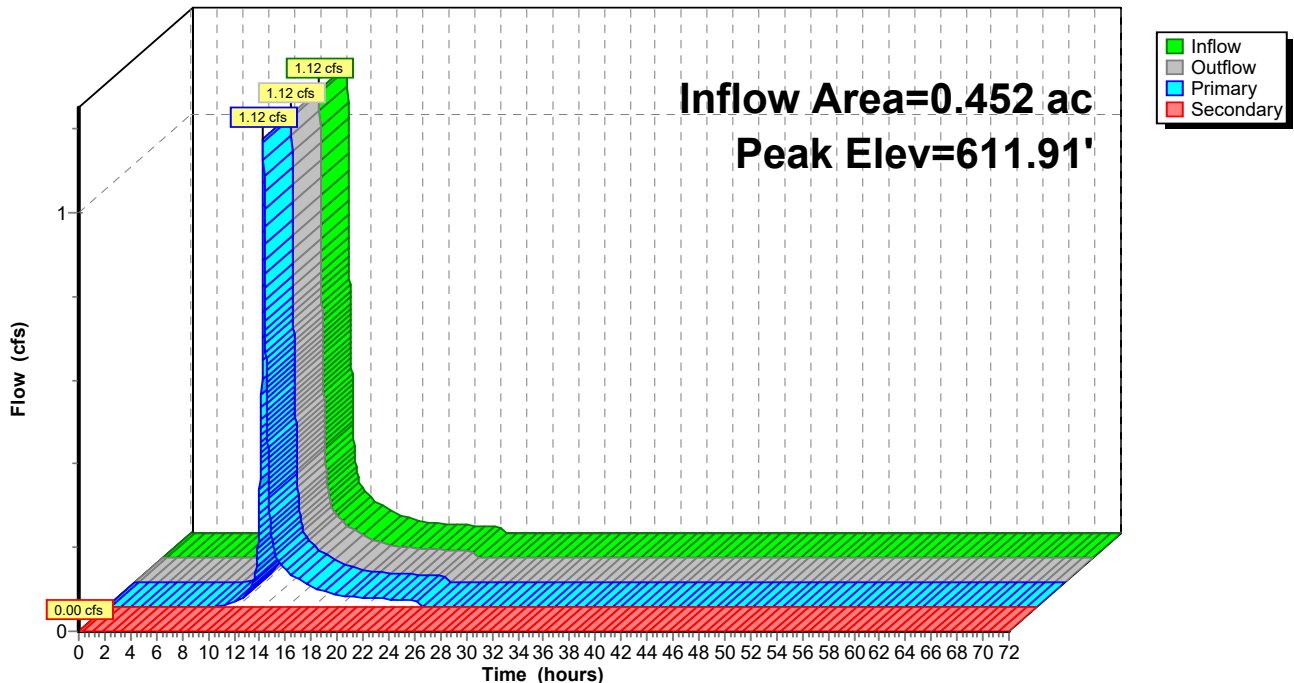
Device	Routing	Invert	Outlet Devices
#1	Primary	611.36'	12.0" Round Culvert L= 460.0' Ke= 0.500 Inlet / Outlet Invert= 611.36' / 593.70' S= 0.0384 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	614.36'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.12 cfs @ 12.12 hrs HW=611.91' TW=594.33' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 1.12 cfs @ 2.52 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=611.36' TW=593.70' (Dynamic Tailwater)
 ↳2=Orifice/Grate (Controls 0.00 cfs)

Pond 25P: J14

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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Summary for Pond 27P: J22

Inflow Area = 4.450 ac, 16.04% Impervious, Inflow Depth = 0.94" for 10-yr event
 Inflow = 2.16 cfs @ 12.33 hrs, Volume= 0.348 af
 Outflow = 2.16 cfs @ 12.33 hrs, Volume= 0.348 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.16 cfs @ 12.33 hrs, Volume= 0.348 af
 Routed to Link 33L : To MassDOT in Rte 116 (DP-4)
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 33L : To MassDOT in Rte 116 (DP-4)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 570.35' @ 12.33 hrs
 Flood Elev= 573.12'

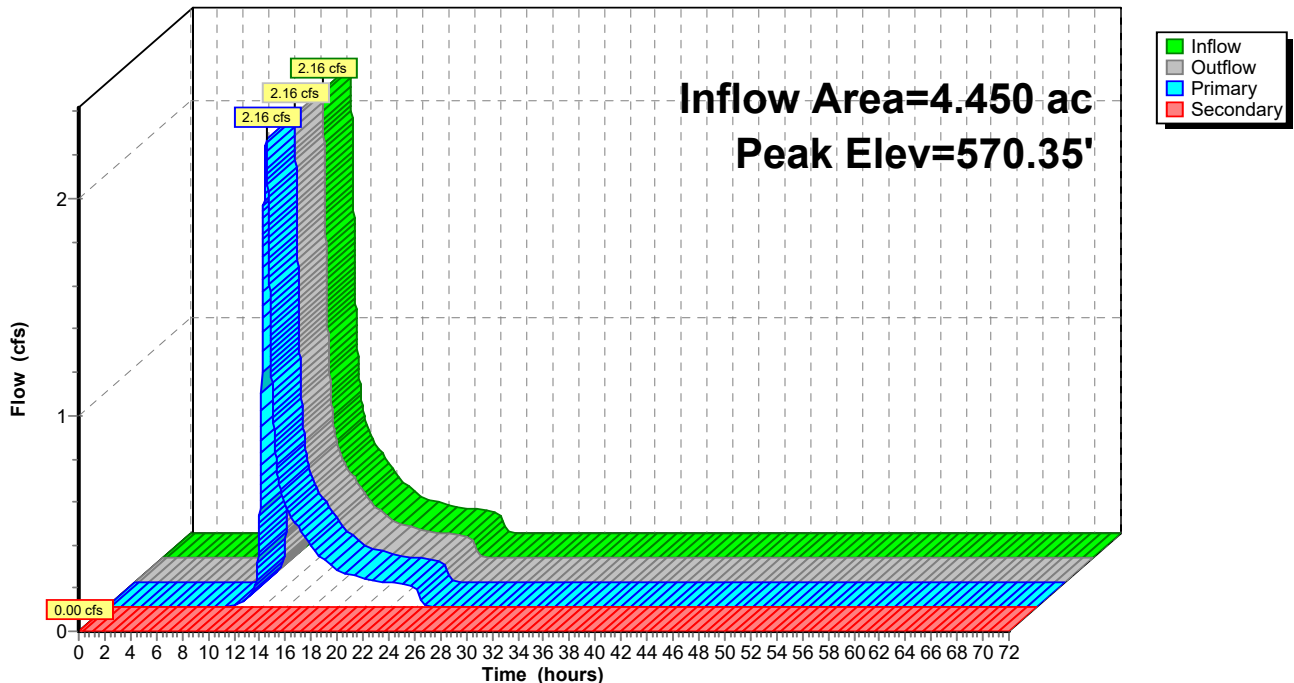
Device	Routing	Invert	Outlet Devices
#1	Primary	569.62'	15.0" Round Culvert L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 569.62' / 567.62' S= 0.0500 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	573.12'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.16 cfs @ 12.33 hrs HW=570.35' TW=0.00' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 2.16 cfs @ 2.91 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=569.62' TW=0.00' (Dynamic Tailwater)
 ↳2=Orifice/Grate (Controls 0.00 cfs)

Pond 27P: J22

Hydrograph



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Summary for Pond 49P: J1

[92] Warning: Device #3 is above defined storage

Inflow Area = 10.137 ac, 0.00% Impervious, Inflow Depth = 1.32" for 10-yr event
 Inflow = 11.05 cfs @ 12.21 hrs, Volume= 1.117 af
 Outflow = 10.71 cfs @ 12.25 hrs, Volume= 1.117 af, Atten= 3%, Lag= 2.4 min
 Primary = 7.77 cfs @ 12.25 hrs, Volume= 1.047 af
 Routed to Link 48L : NORTH TO 10 PINE HILL ROAD (DP-6)
 Secondary = 2.94 cfs @ 12.25 hrs, Volume= 0.070 af
 Routed to Pond 8P : PDI 2
 Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 8P : PDI 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 625.58' @ 12.25 hrs Surf.Area= 891 sf Storage= 361 cf

Plug-Flow detention time= 0.5 min calculated for 1.117 af (100% of inflow)
 Center-of-Mass det. time= 0.3 min (878.5 - 878.2)

Volume	Invert	Avail.Storage	Storage Description
#1	623.00'	855 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
623.00	19	0	0
624.00	38	29	29
625.00	68	53	82
626.00	1,478	773	855

Device	Routing	Invert	Outlet Devices
#1	Primary	623.23'	15.0" Round Culvert L= 39.2' Ke= 0.500 Inlet / Outlet Invert= 623.23' / 622.75' S= 0.0122 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	624.48'	12.0" Round Culvert L= 62.0' Ke= 0.500 Inlet / Outlet Invert= 624.48' / 615.50' S= 0.1448 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Tertiary	626.10'	10.0' long x 25.0' 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) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

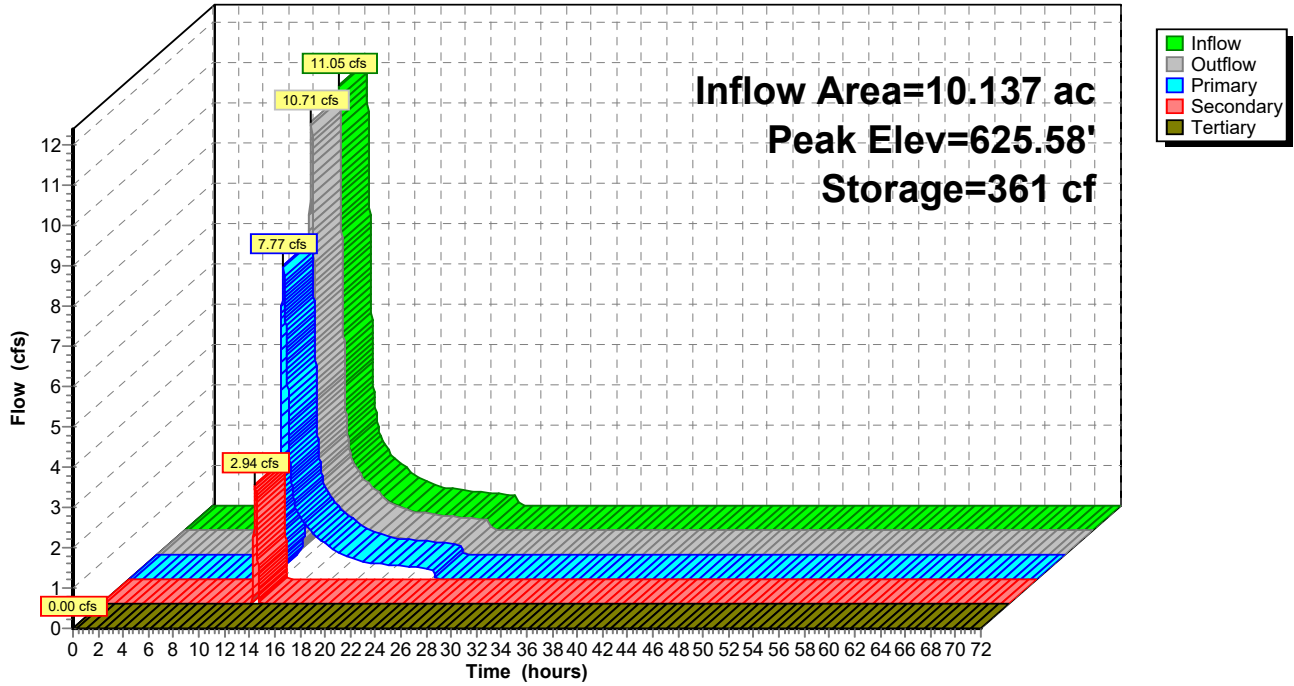
Primary OutFlow Max=7.77 cfs @ 12.25 hrs HW=625.58' TW=0.00' (Dynamic Tailwater)
 ↑**1=Culvert** (Inlet Controls 7.77 cfs @ 6.33 fps)

Secondary OutFlow Max=2.94 cfs @ 12.25 hrs HW=625.58' TW=617.29' (Dynamic Tailwater)
 ↑**2=Culvert** (Inlet Controls 2.94 cfs @ 3.74 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=623.00' TW=615.50' (Dynamic Tailwater)
 ↑**3=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Pond 49P: J1

Hydrograph



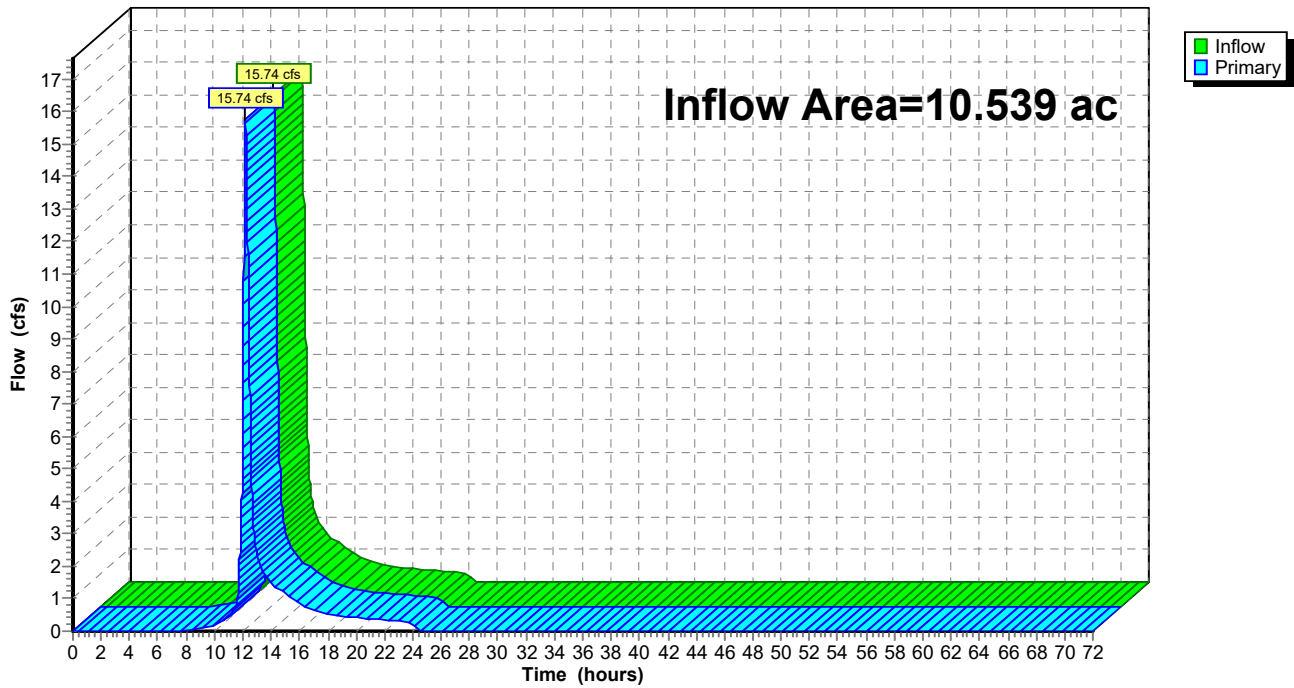
Summary for Link 1L: PROP OUTFALL TO TOWN PROP (DP-5)

Inflow Area = 10.539 ac, 15.96% Impervious, Inflow Depth = 1.66" for 10-yr event
Inflow = 15.74 cfs @ 12.19 hrs, Volume= 1.458 af
Primary = 15.74 cfs @ 12.19 hrs, Volume= 1.458 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 1L: PROP OUTFALL TO TOWN PROP (DP-5)

Hydrograph



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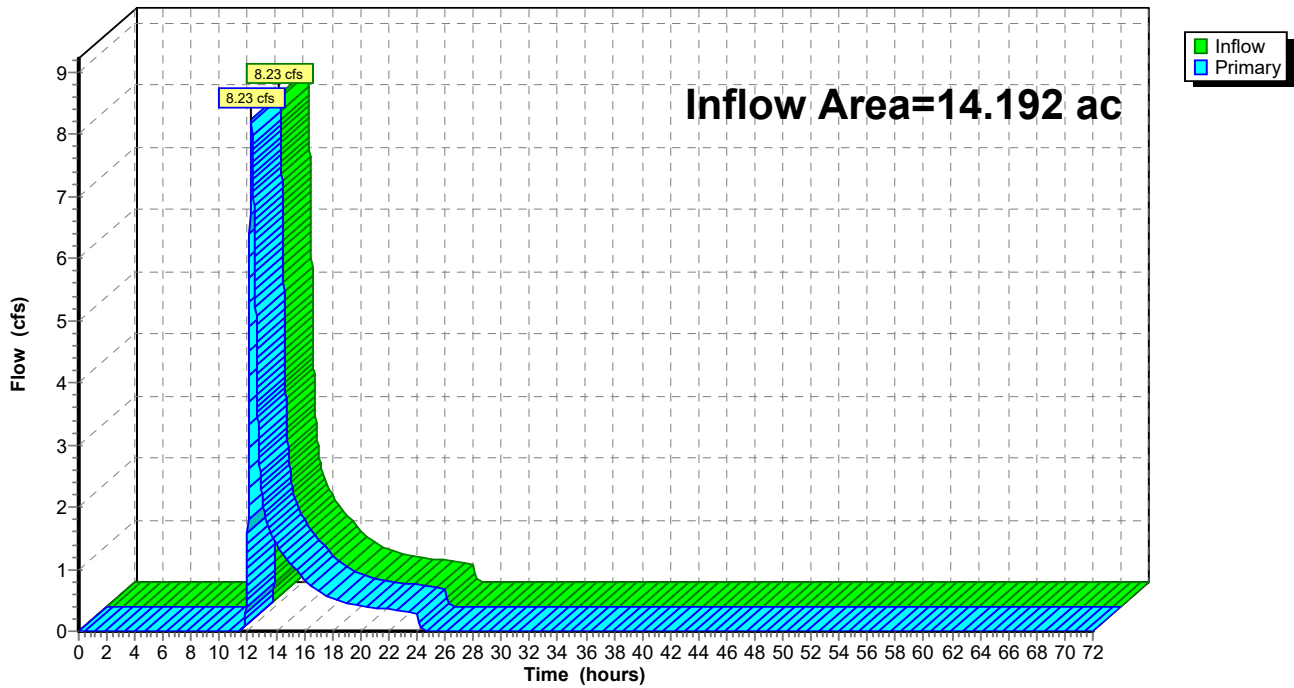
Summary for Link 15L: EXISTIN OUTLET TO UNDER 116 (DP-1)

Inflow Area = 14.192 ac, 4.81% Impervious, Inflow Depth = 0.89" for 10-yr event
Inflow = 8.23 cfs @ 12.25 hrs, Volume= 1.051 af
Primary = 8.23 cfs @ 12.25 hrs, Volume= 1.051 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 15L: EXISTIN OUTLET TO UNDER 116 (DP-1)

Hydrograph



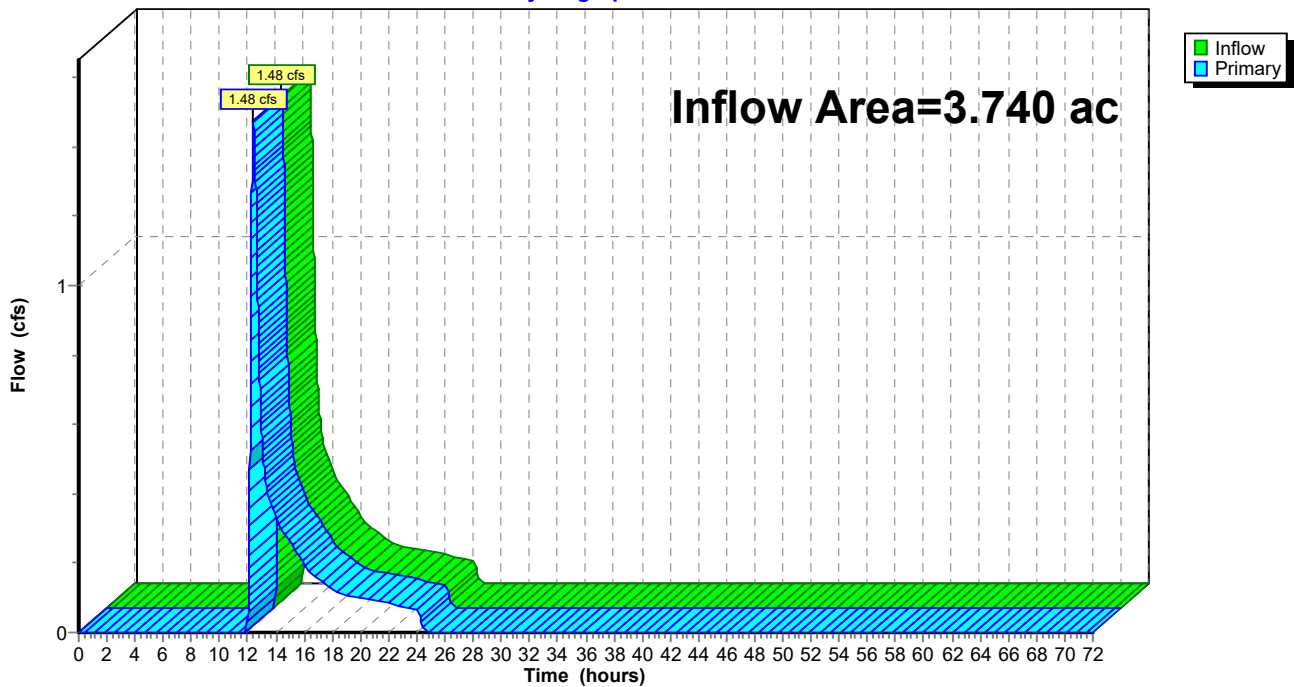
Summary for Link 19L: Behind houses

Inflow Area = 3.740 ac, 11.13% Impervious, Inflow Depth = 0.73" for 10-yr event
Inflow = 1.48 cfs @ 12.40 hrs, Volume= 0.226 af
Primary = 1.48 cfs @ 12.40 hrs, Volume= 0.226 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 27P : J22

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 19L: Behind houses

Hydrograph



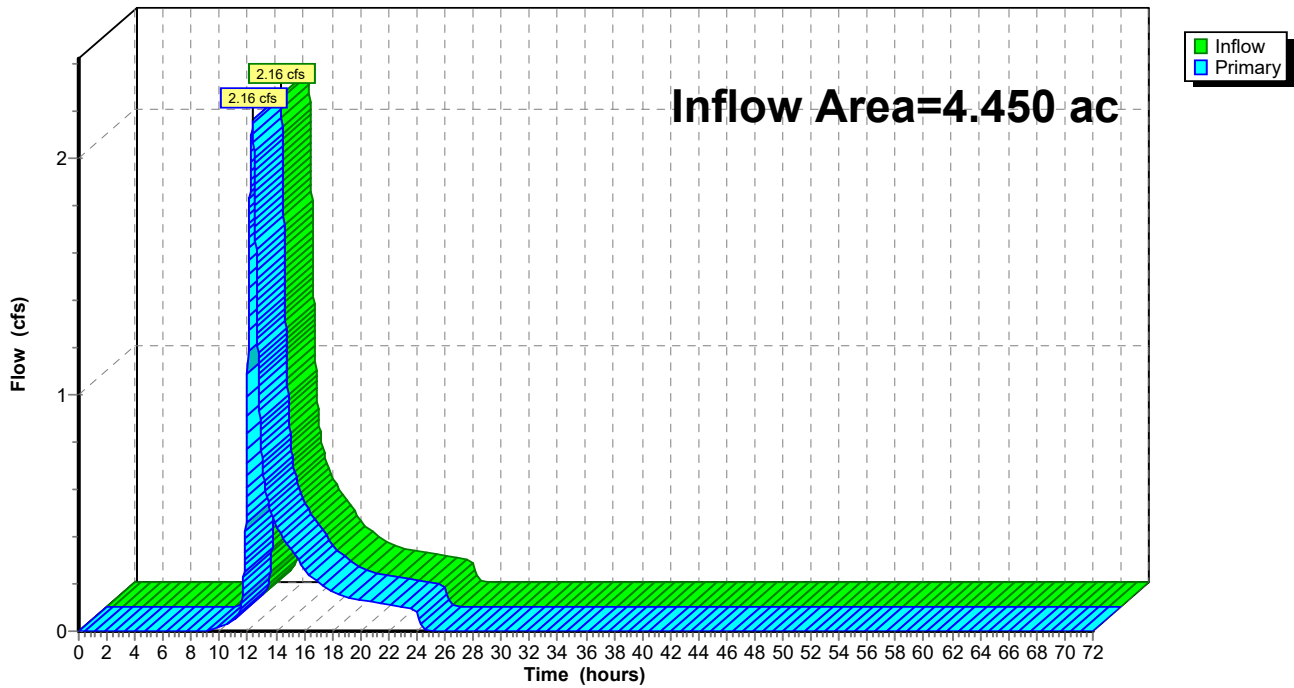
Summary for Link 33L: To MassDOT in Rte 116 (DP-4)

Inflow Area = 4.450 ac, 16.04% Impervious, Inflow Depth = 0.94" for 10-yr event
Inflow = 2.16 cfs @ 12.33 hrs, Volume= 0.348 af
Primary = 2.16 cfs @ 12.33 hrs, Volume= 0.348 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 33L: To MassDOT in Rte 116 (DP-4)

Hydrograph



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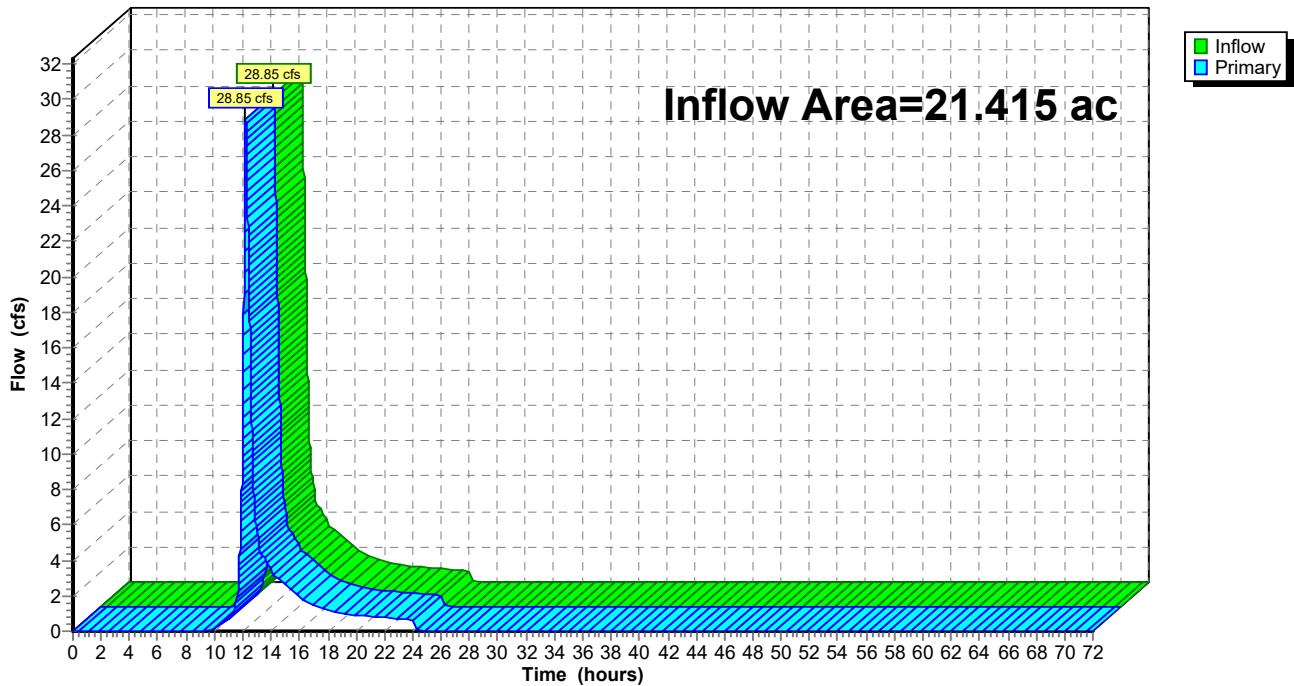
Summary for Link 48L: NORTH TO 10 PINE HILL ROAD (DP-6)

Inflow Area = 21.415 ac, 3.96% Impervious, Inflow Depth = 1.71" for 10-yr event
Inflow = 28.85 cfs @ 12.21 hrs, Volume= 3.046 af
Primary = 28.85 cfs @ 12.21 hrs, Volume= 3.046 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 48L: NORTH TO 10 PINE HILL ROAD (DP-6)

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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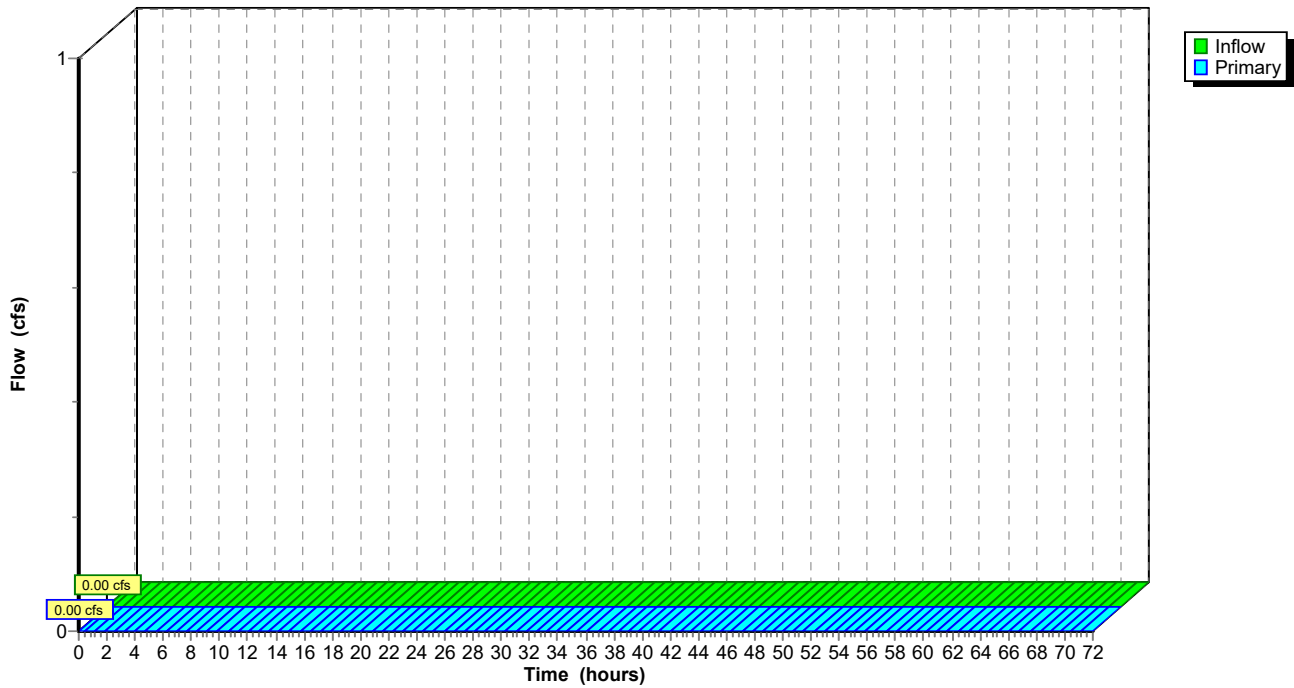
Summary for Link 49L: 51 Baptist Hill Rd Property (DP-3)

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : Behind houses

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 49L: 51 Baptist Hill Rd Property (DP-3)

Hydrograph



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Type III 24-hr 10-yr Rainfall=4.70"

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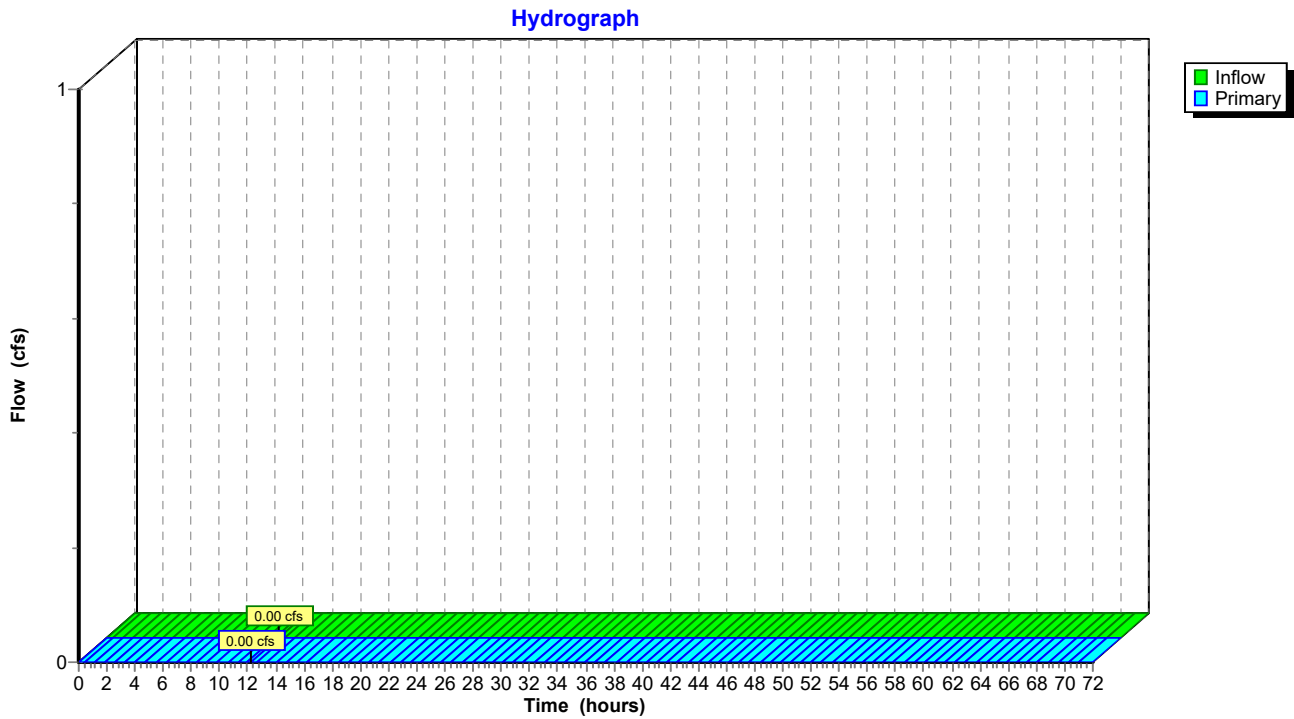
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Summary for Link 50L: ALONG 45 UPPER BAPTIST HILL RD (DP-2)

Inflow = 0.00 cfs @ 12.22 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 12.22 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : Behind houses

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 50L: ALONG 45 UPPER BAPTIST HILL RD (DP-2)



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Type III 24-hr 25-yr Rainfall=5.72"

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: 1S	Runoff Area=263,518 sf 0.00% Impervious Runoff Depth=1.51" Flow Length=1,253' Tc=17.3 min CN=57 Runoff=6.81 cfs 0.761 af
Subcatchment2S: 2S	Runoff Area=52,537 sf 35.20% Impervious Runoff Depth=1.74" Flow Length=472' Tc=6.7 min CN=60 Runoff=2.24 cfs 0.175 af
Subcatchment3S: 3S	Runoff Area=241,534 sf 0.00% Impervious Runoff Depth=1.22" Flow Length=1,175' Tc=14.4 min CN=53 Runoff=4.98 cfs 0.562 af
Subcatchment4S: 4S	Runoff Area=273,557 sf 2.62% Impervious Runoff Depth=1.66" Flow Length=1,106' Tc=13.6 min CN=59 Runoff=8.80 cfs 0.870 af
Subcatchment5S: 5S	Runoff Area=60,599 sf 18.58% Impervious Runoff Depth=1.66" Flow Length=406' Tc=11.9 min CN=59 Runoff=2.05 cfs 0.193 af
Subcatchment6S: 6S	Runoff Area=24,324 sf 24.68% Impervious Runoff Depth=1.29" Flow Length=368' Tc=9.8 min CN=54 Runoff=0.62 cfs 0.060 af
Subcatchment7S: 7S	Runoff Area=13,788 sf 51.83% Impervious Runoff Depth=2.58" Flow Length=100' Slope=0.0500 '/' Tc=6.9 min CN=70 Runoff=0.92 cfs 0.068 af
Subcatchment8S: 8S	Runoff Area=19,699 sf 37.25% Impervious Runoff Depth=3.14" Flow Length=211' Tc=8.3 min CN=76 Runoff=1.54 cfs 0.118 af
Subcatchment9S: 9S	Runoff Area=64,091 sf 41.74% Impervious Runoff Depth=3.94" Flow Length=546' Tc=7.2 min CN=84 Runoff=6.43 cfs 0.482 af
Subcatchment10S: 12S	Runoff Area=11,227 sf 49.99% Impervious Runoff Depth=2.41" Tc=1.2 min CN=68 Runoff=0.85 cfs 0.052 af
Subcatchment11S: 11S	Runoff Area=58,435 sf 35.42% Impervious Runoff Depth=3.73" Flow Length=803' Tc=15.5 min CN=82 Runoff=4.37 cfs 0.417 af
Subcatchment12S: 12S	Runoff Area=162,915 sf 11.13% Impervious Runoff Depth=1.22" Flow Length=743' Tc=21.2 min CN=53 Runoff=2.90 cfs 0.379 af
Subcatchment13S: 13S	Runoff Area=24,870 sf 22.10% Impervious Runoff Depth=1.98" Tc=1.2 min CN=63 Runoff=1.51 cfs 0.094 af
Subcatchment14S: 14S	Runoff Area=441,577 sf 0.00% Impervious Runoff Depth=1.98" Flow Length=1,423' Tc=14.1 min CN=63 Runoff=17.40 cfs 1.675 af
Subcatchment15S: 15S	Runoff Area=491,280 sf 7.52% Impervious Runoff Depth=2.95" Flow Length=1,700' Tc=14.7 min CN=74 Runoff=29.73 cfs 2.773 af
Pond 1P: PDMH 1	Peak Elev=565.96' Inflow=23.70 cfs 2.151 af 24.0" Round Culvert n=0.013 L=52.7' S=0.0474 '/' Outflow=23.70 cfs 2.151 af

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Type III 24-hr 25-yr Rainfall=5.72"

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Pond 2P: PDI 1	Peak Elev=569.56' Inflow=23.70 cfs 2.151 af 24.0" Round Culvert n=0.013 L=177.3' S=0.0197 '/' Outflow=23.70 cfs 2.151 af
Pond 3P: PDMH 2	Peak Elev=571.93' Inflow=23.02 cfs 2.056 af 24.0" Round Culvert n=0.013 L=121.9' S=0.0197 '/' Outflow=23.02 cfs 2.056 af
Pond 4P: PCB 1	Peak Elev=574.32' Inflow=23.02 cfs 2.056 af 24.0" Round Culvert n=0.013 L=30.1' S=0.0764 '/' Outflow=23.02 cfs 2.056 af
Pond 5P: PCB 2	Peak Elev=598.74' Inflow=23.02 cfs 2.056 af Primary=16.57 cfs 1.951 af Secondary=6.44 cfs 0.105 af Outflow=23.02 cfs 2.056 af
Pond 6P: PCB 3	Peak Elev=613.19' Inflow=18.92 cfs 1.639 af 18.0" Round Culvert n=0.013 L=209.7' S=0.0629 '/' Outflow=18.92 cfs 1.639 af
Pond 7P: PCB 4	Peak Elev=617.06' Inflow=13.69 cfs 1.157 af 18.0" Round Culvert n=0.013 L=172.6' S=0.0203 '/' Outflow=13.69 cfs 1.157 af
Pond 8P: PDI 2	Peak Elev=621.69' Storage=259 cf Inflow=16.05 cfs 1.157 af Primary=13.69 cfs 1.157 af Secondary=0.00 cfs 0.000 af Outflow=13.69 cfs 1.157 af
Pond 9P: PDI 3	Peak Elev=622.19' Inflow=8.66 cfs 0.918 af Primary=8.34 cfs 0.887 af Secondary=3.15 cfs 0.032 af Outflow=8.66 cfs 0.918 af
Pond 10P: PDI 4	Peak Elev=626.70' Inflow=13.36 cfs 0.923 af Primary=8.15 cfs 0.858 af Secondary=5.22 cfs 0.065 af Tertiary=0.00 cfs 0.000 af Outflow=13.36 cfs 0.923 af
Pond 11P: PDI 5	Peak Elev=641.55' Inflow=4.98 cfs 0.562 af Primary=4.39 cfs 0.508 af Secondary=4.95 cfs 0.053 af Outflow=4.98 cfs 0.562 af
Pond 12P: PDI 6	Peak Elev=642.35' Inflow=14.01 cfs 1.637 af Primary=14.01 cfs 1.637 af Secondary=0.00 cfs 0.000 af Outflow=14.01 cfs 1.637 af
Pond 13P: PDI 7	Peak Elev=651.59' Inflow=8.61 cfs 0.953 af Primary=7.76 cfs 0.936 af Secondary=1.82 cfs 0.017 af Outflow=8.61 cfs 0.953 af
Pond 14P: PDI 8	Peak Elev=656.10' Inflow=2.05 cfs 0.193 af 12.0" Round Culvert n=0.013 L=271.3' S=0.0346 '/' Outflow=2.05 cfs 0.193 af
Pond 24P: J15	Peak Elev=594.49' Inflow=2.02 cfs 0.170 af Primary=2.02 cfs 0.170 af Secondary=0.00 cfs 0.000 af Outflow=2.02 cfs 0.170 af
Pond 25P: J14	Peak Elev=612.02' Inflow=1.54 cfs 0.118 af Primary=1.54 cfs 0.118 af Secondary=0.00 cfs 0.000 af Outflow=1.54 cfs 0.118 af
Pond 27P: J22	Peak Elev=573.32' Inflow=12.18 cfs 0.645 af Primary=10.38 cfs 0.640 af Secondary=1.84 cfs 0.006 af Outflow=12.18 cfs 0.645 af
Pond 49P: J1	Peak Elev=626.36' Storage=855 cf Inflow=17.40 cfs 1.675 af Primary=9.36 cfs 1.473 af Secondary=4.45 cfs 0.163 af Tertiary=3.62 cfs 0.039 af Outflow=17.43 cfs 1.675 af

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Type III 24-hr 25-yr Rainfall=5.72"

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Link 1L: PROP OUTFALL TO TOWN PROP (DP-5)

Inflow=23.70 cfs 2.151 af
Primary=23.70 cfs 2.151 af

Link 15L: EXISTIN OUTLET TO UNDER 116 (DP-1)

Inflow=14.01 cfs 1.637 af
Primary=14.01 cfs 1.637 af

Link 19L: Behind houses

Inflow=10.91 cfs 0.475 af
Primary=10.91 cfs 0.475 af

Link 33L: To MassDOT in Rte 116 (DP-4)

Inflow=12.18 cfs 0.645 af
Primary=12.18 cfs 0.645 af

Link 48L: NORTH TO 10 PINE HILL ROAD (DP-6)

Inflow=39.09 cfs 4.247 af
Primary=39.09 cfs 4.247 af

Link 49L: 51 Baptist Hill Rd Property (DP-3)

Inflow=3.15 cfs 0.032 af
Primary=3.15 cfs 0.032 af

Link 50L: ALONG 45 UPPER BAPTISTHILL RD (DP-2)

Inflow=5.22 cfs 0.065 af
Primary=5.22 cfs 0.065 af

Total Runoff Area = 50.596 ac Runoff Volume = 8.679 af Average Runoff Depth = 2.06"
92.24% Pervious = 46.669 ac 7.76% Impervious = 3.927 ac

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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Subcatchment 1S: 1S

Runoff = 6.81 cfs @ 12.27 hrs, Volume= 0.761 af, Depth= 1.51"
 Routed to Pond 13P : PDI 7

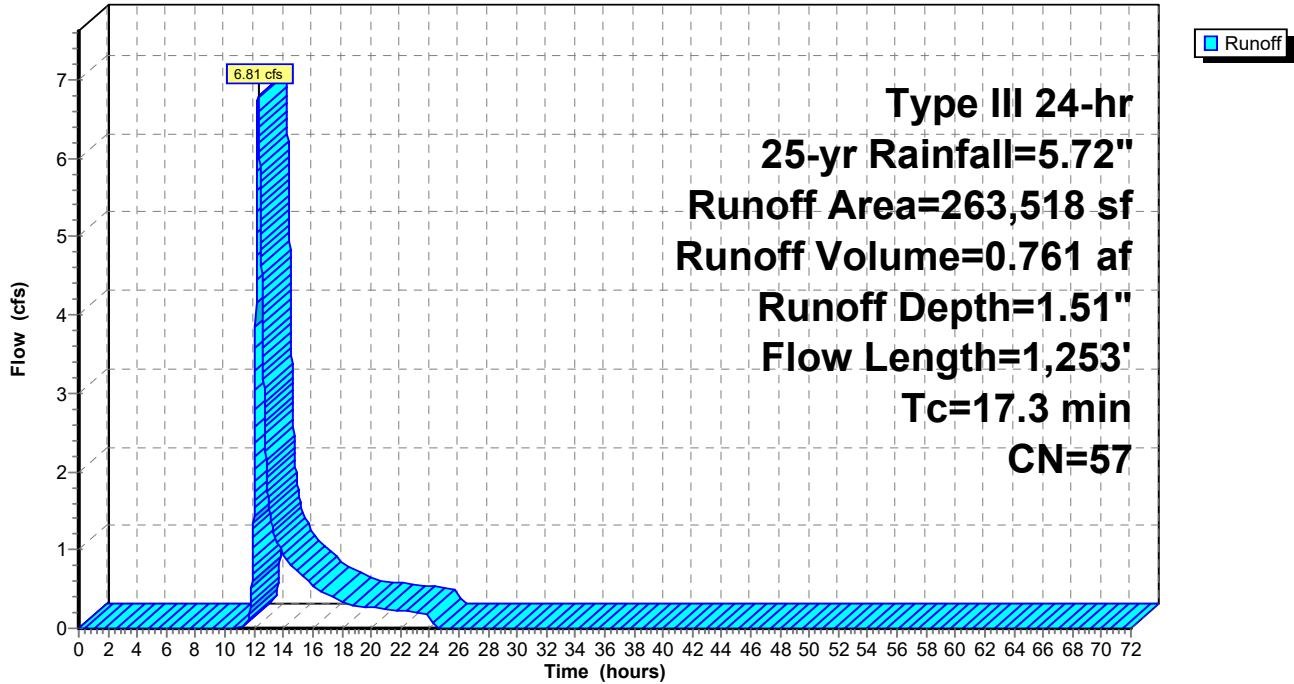
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25-yr Rainfall=5.72"

Area (sf)	CN	Description
154,324	66	Woods, Poor, HSG B
27,768	45	Woods, Poor, HSG A
17,039	61	>75% Grass cover, Good, HSG B
64,387	39	>75% Grass cover, Good, HSG A
263,518	57	Weighted Average
263,518		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.1800	0.18		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.07"
2.6	385	0.2442	2.47		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.7	293	0.3240	2.85		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.9	475	0.0821	2.01		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.3	1,253	Total			

Subcatchment 1S: 1S

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Subcatchment 2S: 2S

Runoff = 2.24 cfs @ 12.11 hrs, Volume= 0.175 af, Depth= 1.74"
 Routed to Pond 12P : PDI 6

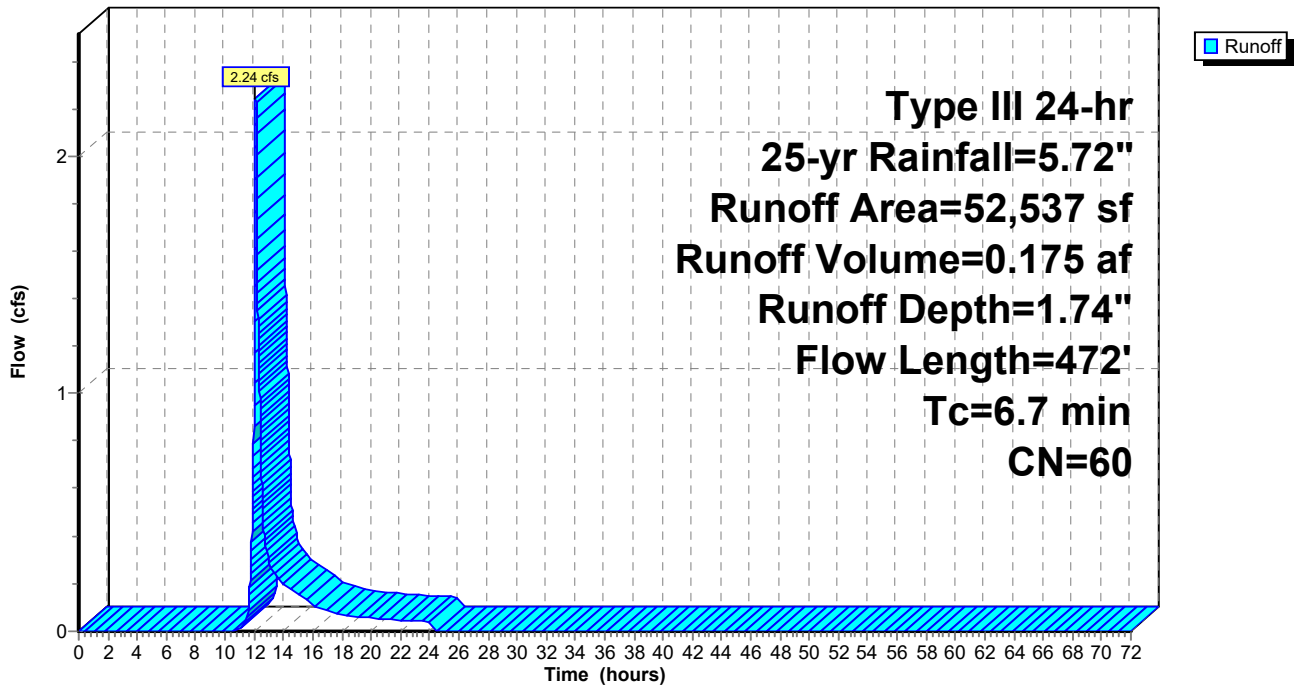
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25-yr Rainfall=5.72"

Area (sf)	CN	Description
18,495	98	Paved parking, HSG A
34,042	39	>75% Grass cover, Good, HSG A
52,537	60	Weighted Average
34,042		64.80% Pervious Area
18,495		35.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0900	0.30		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
1.2	372	0.0661	5.22		Shallow Concentrated Flow, Paved Kv= 20.3 fps
6.7	472	Total			

Subcatchment 2S: 2S

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Subcatchment 3S: 3S

Runoff = 4.98 cfs @ 12.24 hrs, Volume= 0.562 af, Depth= 1.22"
 Routed to Pond 11P : PDI 5

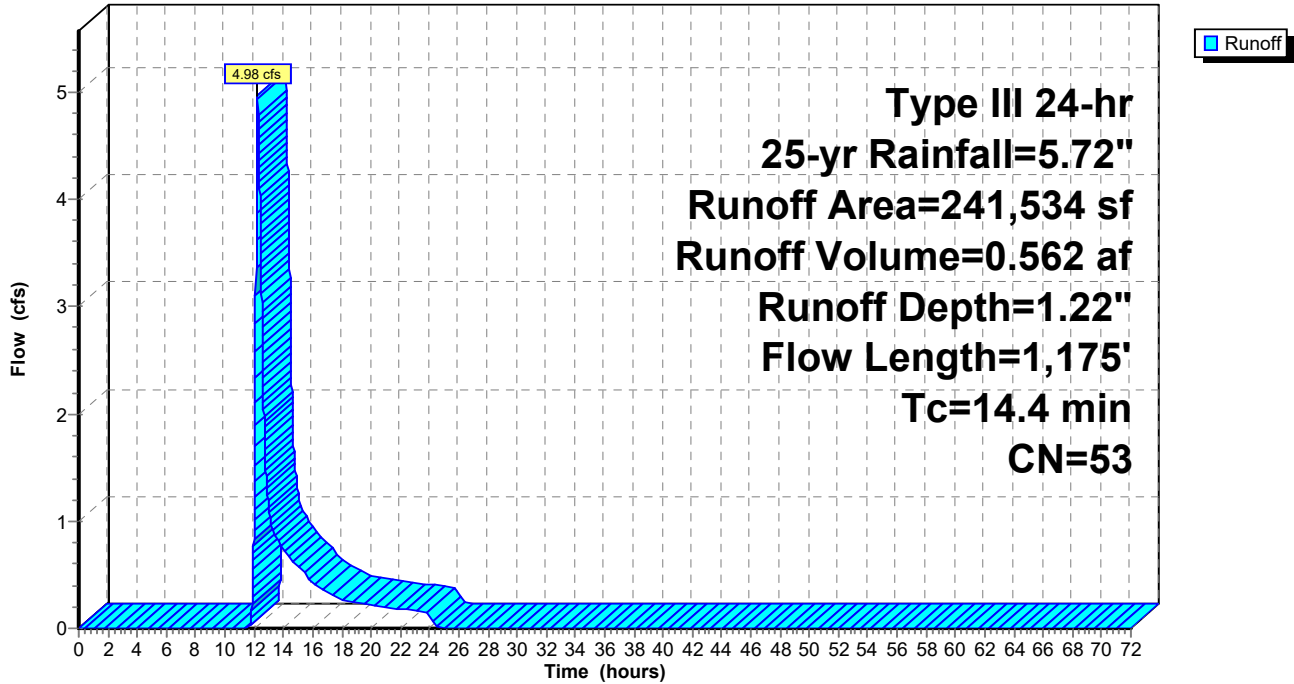
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25-yr Rainfall=5.72"

Area (sf)	CN	Description
78,775	66	Woods, Poor, HSG B
81,473	45	Woods, Poor, HSG A
81,286	49	50-75% Grass cover, Fair, HSG A
241,534	53	Weighted Average
241,534		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	100	0.1900	0.19		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.07"
1.1	180	0.3000	2.74		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.6	150	0.6933	4.16		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.5	210	0.2190	2.34		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.3	535	0.0598	3.94		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
14.4	1,175	Total			

Subcatchment 3S: 3S

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Subcatchment 4S: 4S

Runoff = 8.80 cfs @ 12.20 hrs, Volume= 0.870 af, Depth= 1.66"
 Routed to Pond 10P : PDI 4

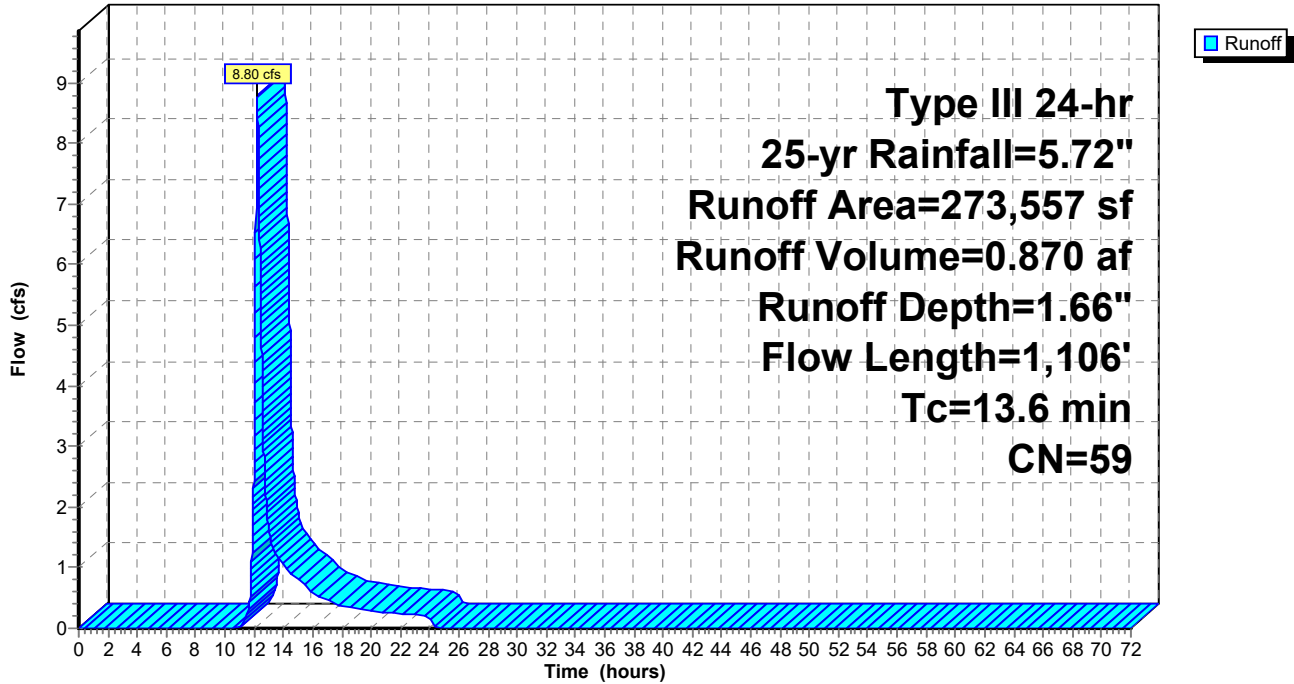
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25-yr Rainfall=5.72"

Area (sf)	CN	Description
4,382	98	Paved roads w/curbs & sewers, HSG A
66,093	39	>75% Grass cover, Good, HSG A
182,528	66	Woods, Poor, HSG B
17,774	39	>75% Grass cover, Good, HSG A
* 2,780	98	Impervious, Good, HSG A
273,557	59	Weighted Average
266,395		97.38% Pervious Area
7,162		2.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	100	0.3100	0.23		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.07"
1.4	214	0.2520	2.51		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.5	120	0.6500	4.03		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.3	212	0.2920	2.70		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.1	460	0.0739	2.45		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
13.6	1,106	Total			

Subcatchment 4S: 4S

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Subcatchment 5S: 5S

Runoff = 2.05 cfs @ 12.18 hrs, Volume= 0.193 af, Depth= 1.66"
 Routed to Pond 14P : PDI 8

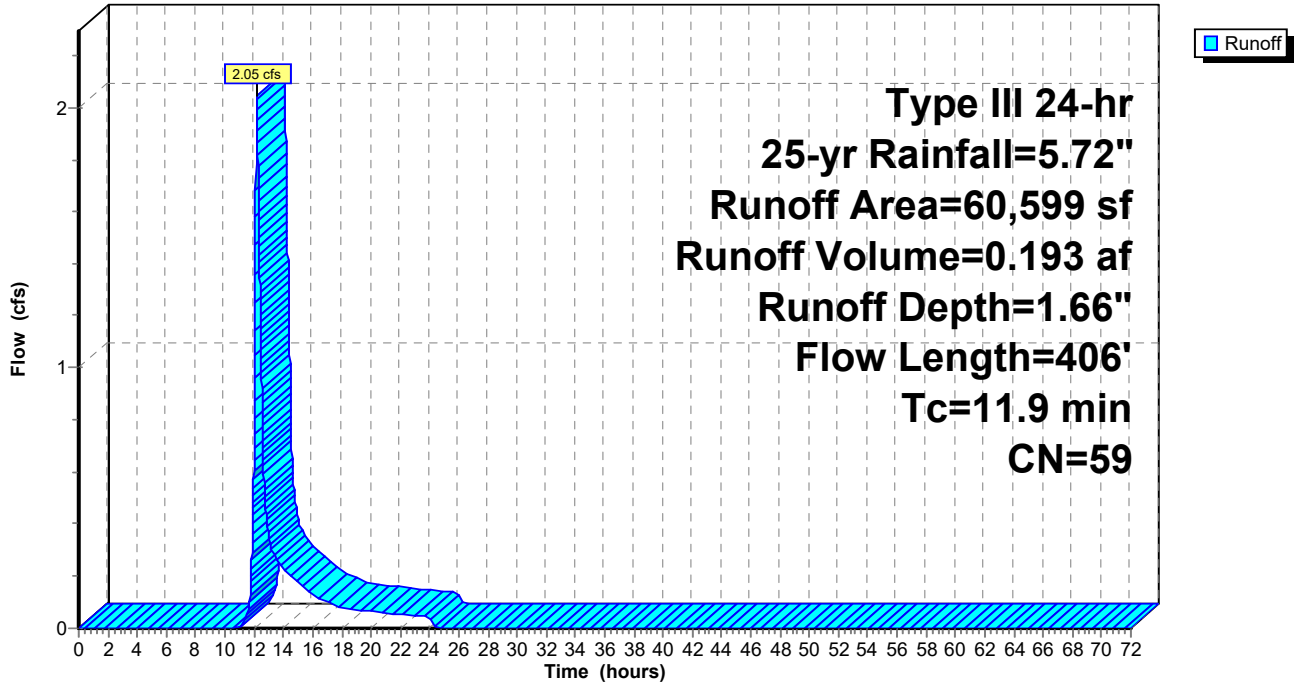
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25-yr Rainfall=5.72"

Area (sf)	CN	Description
23,965	39	>75% Grass cover, Good, HSG A
25,373	61	>75% Grass cover, Good, HSG B
* 4,212	98	Impervious, HSG B
* 7,049	98	Impervious, HSG A
60,599	59	Weighted Average
49,338		81.42% Pervious Area
11,261		18.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.1600	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.07"
0.4	98	0.1633	3.64		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
1.2	93	0.0323	1.26		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.8	115	0.1235	2.46		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.9	406	Total			

Subcatchment 5S: 5S

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Subcatchment 6S: 6S

Runoff = 0.62 cfs @ 12.16 hrs, Volume= 0.060 af, Depth= 1.29"
 Routed to Pond 9P : PDI 3

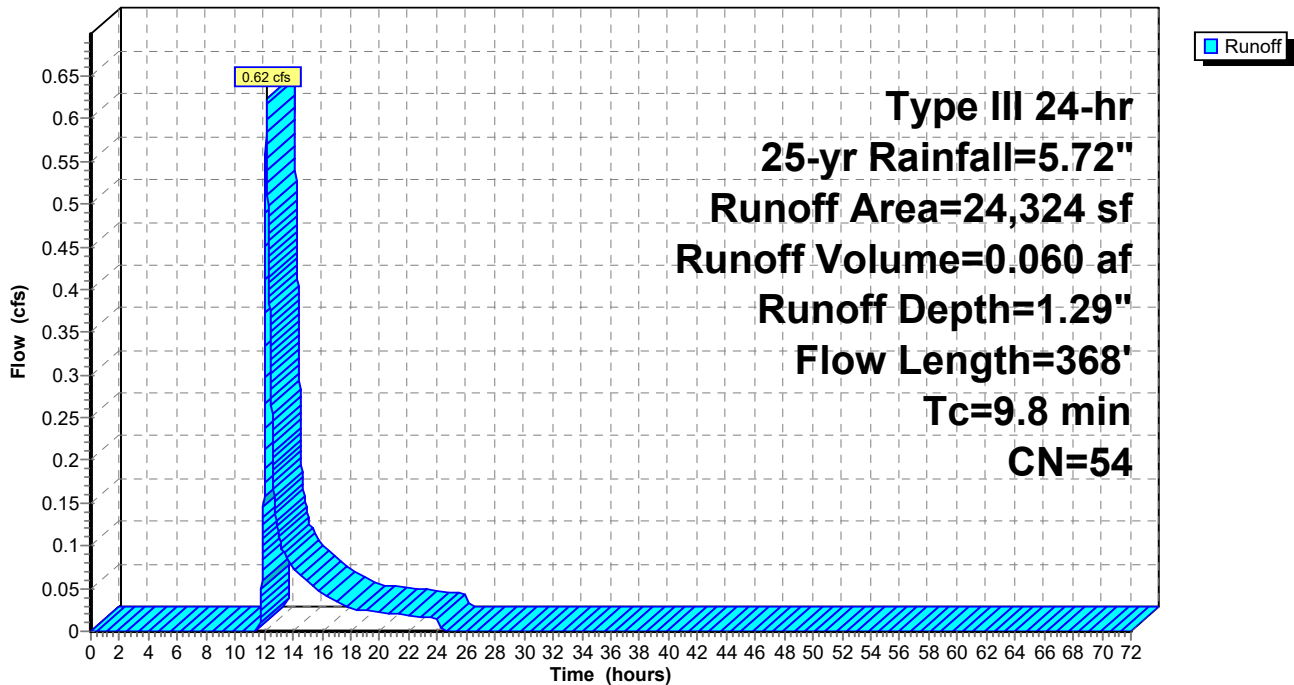
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25-yr Rainfall=5.72"

Area (sf)	CN	Description
6,004	98	Paved roads w/curbs & sewers, HSG A
18,320	39	>75% Grass cover, Good, HSG A
24,324	54	Weighted Average
18,320		75.32% Pervious Area
6,004		24.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	100	0.0400	0.20		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.07"
1.4	268	0.0261	3.28		Shallow Concentrated Flow, Paved Kv= 20.3 fps
9.8	368	Total			

Subcatchment 6S: 6S

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Subcatchment 7S: 7S

Runoff = 0.92 cfs @ 12.10 hrs, Volume= 0.068 af, Depth= 2.58"
 Routed to Pond 8P : PDI 2

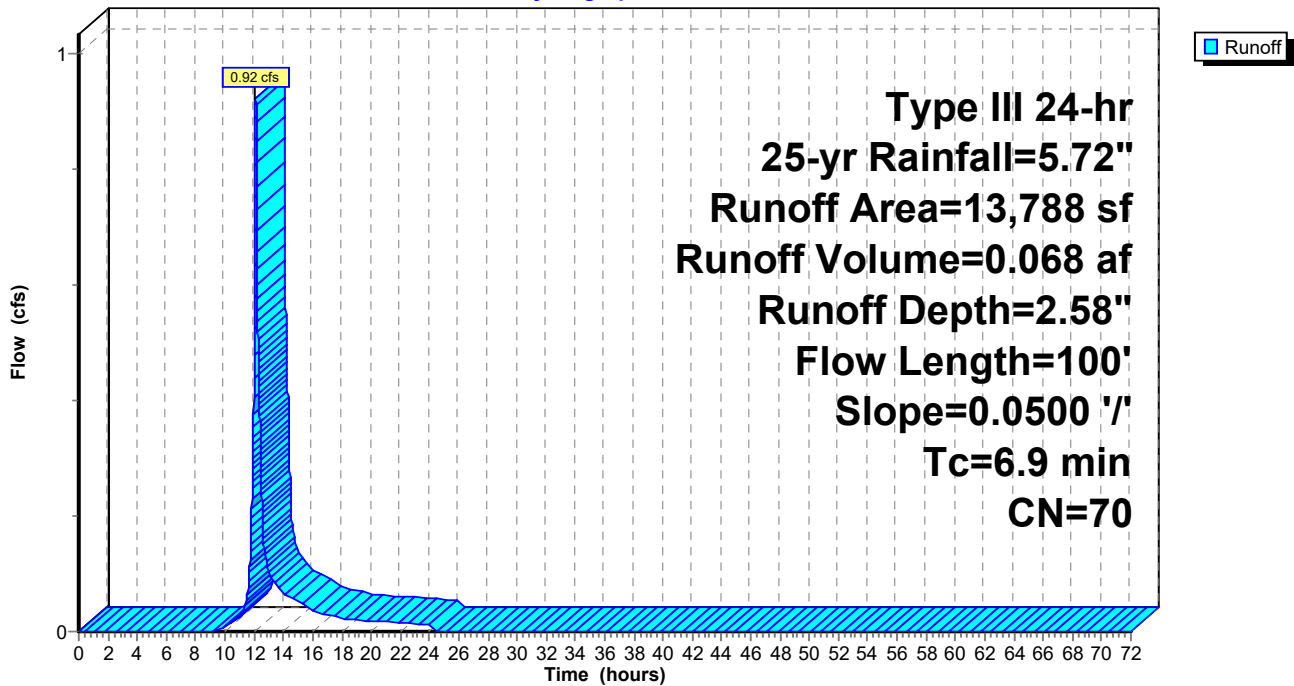
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25-yr Rainfall=5.72"

Area (sf)	CN	Description
6,642	39	>75% Grass cover, Good, HSG A
7,146	98	Paved parking, HSG A
13,788	70	Weighted Average
6,642		48.17% Pervious Area
7,146		51.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	100	0.0500	0.24		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"

Subcatchment 7S: 7S

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Subcatchment 8S: 8S

Runoff = 1.54 cfs @ 12.12 hrs, Volume= 0.118 af, Depth= 3.14"
 Routed to Pond 25P : J14

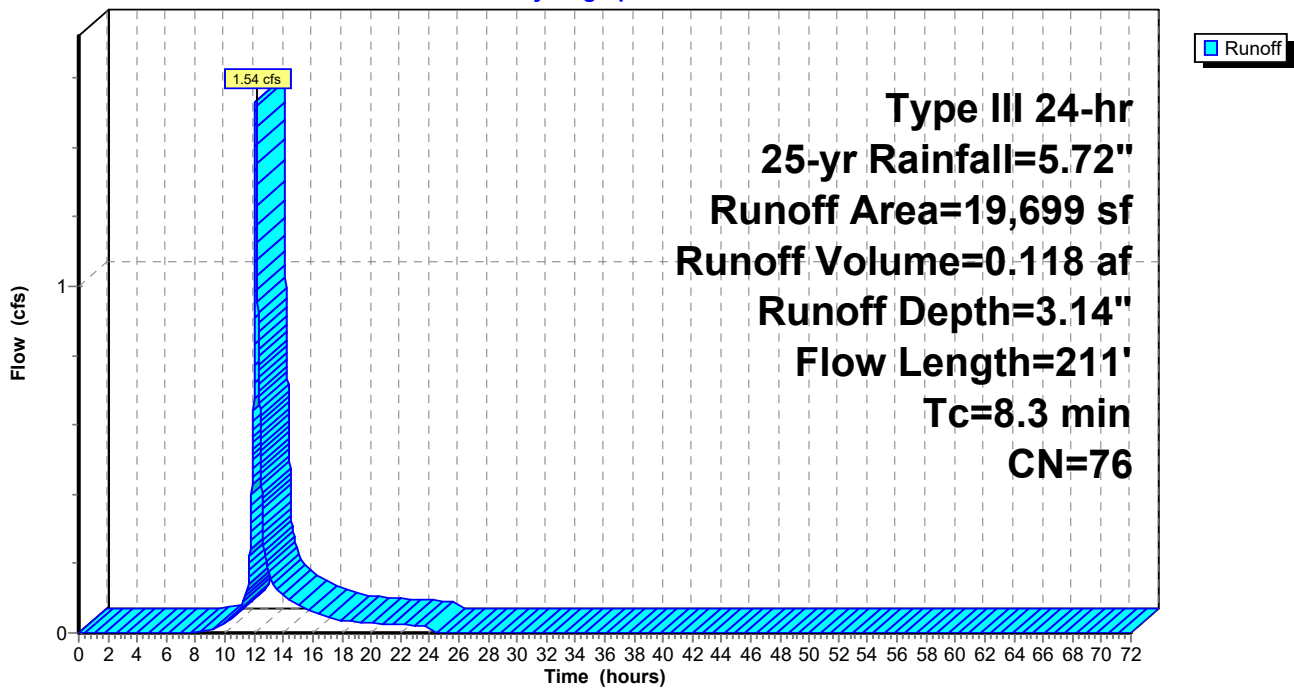
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25-yr Rainfall=5.72"

	Area (sf)	CN	Description
*	6,358	98	Impervious, HSG C
*	980	98	Impervious, HSG A
	3,996	39	>75% Grass cover, Good, HSG A
	8,365	74	>75% Grass cover, Good, HSG C
	19,699	76	Weighted Average
	12,361		62.75% Pervious Area
	7,338		37.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	100	0.0400	0.22		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
0.7	111	0.0180	2.72		Shallow Concentrated Flow, Paved Kv= 20.3 fps
8.3	211	Total			

Subcatchment 8S: 8S

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Subcatchment 9S: 9S

Runoff = 6.43 cfs @ 12.10 hrs, Volume= 0.482 af, Depth= 3.94"
 Routed to Pond 6P : PCB 3

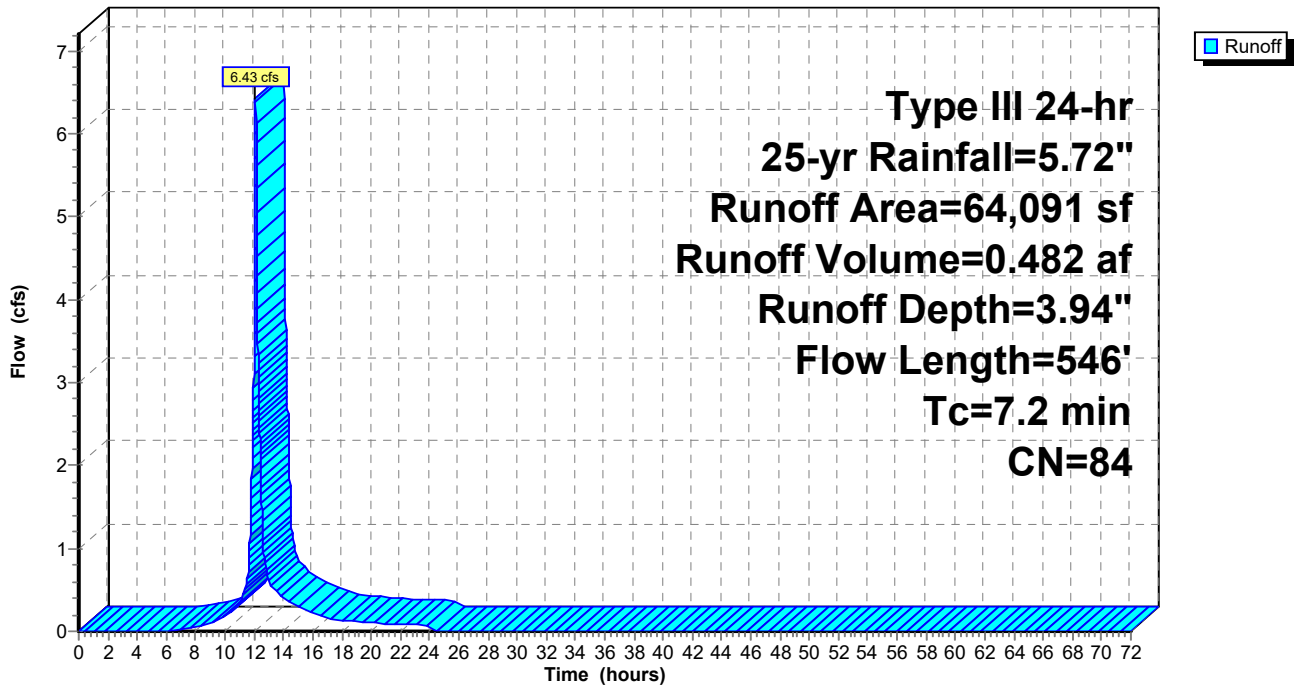
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25-yr Rainfall=5.72"

Area (sf)	CN	Description
26,754	98	Paved parking, HSG C
37,337	74	>75% Grass cover, Good, HSG C
64,091	84	Weighted Average
37,337		58.26% Pervious Area
26,754		41.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0900	0.30		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
1.7	446	0.0471	4.41		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.2	546	Total			

Subcatchment 9S: 9S

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Subcatchment 10S: 12S

Runoff = 0.85 cfs @ 12.02 hrs, Volume= 0.052 af, Depth= 2.41"
 Routed to Pond 24P : J15

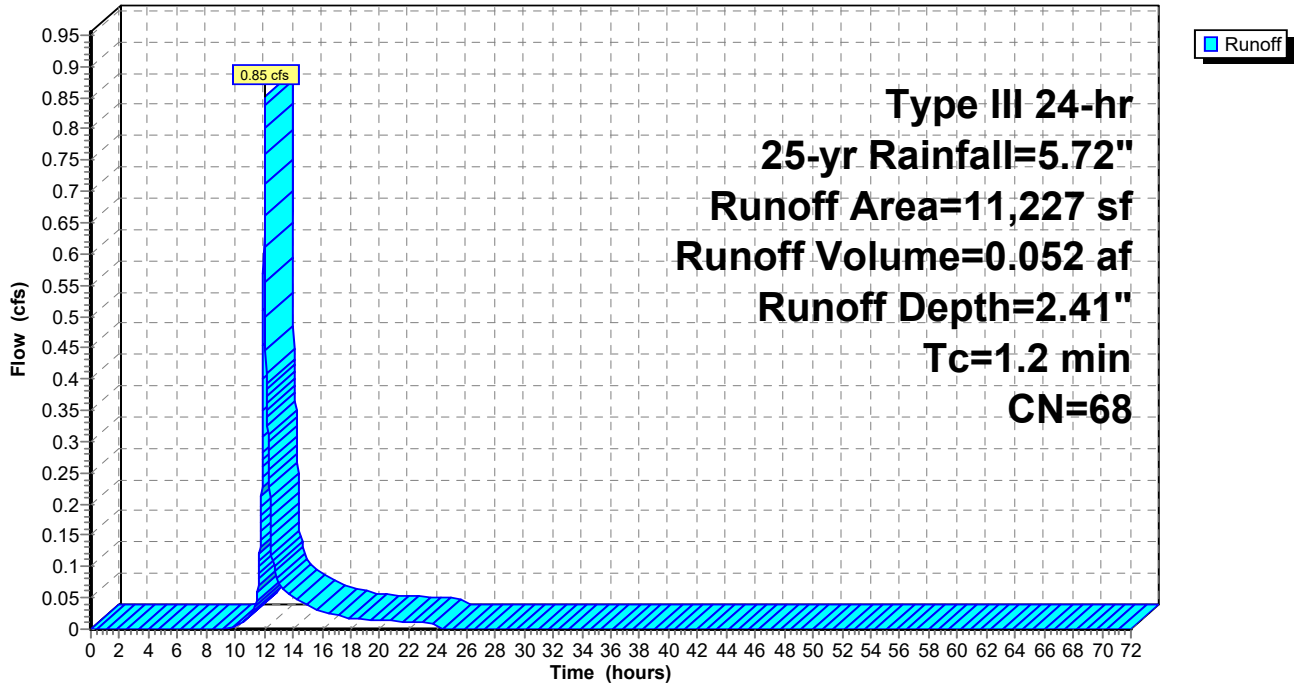
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25-yr Rainfall=5.72"

	Area (sf)	CN	Description
*	5,612	98	Impervious, HSG A
	5,615	39	>75% Grass cover, Good, HSG A
	11,227	68	Weighted Average
	5,615		50.01% Pervious Area
	5,612		49.99% Impervious Area

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

Subcatchment 10S: 12S

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Subcatchment 11S: 11S

Runoff = 4.37 cfs @ 12.21 hrs, Volume= 0.417 af, Depth= 3.73"
 Routed to Pond 5P : PCB 2

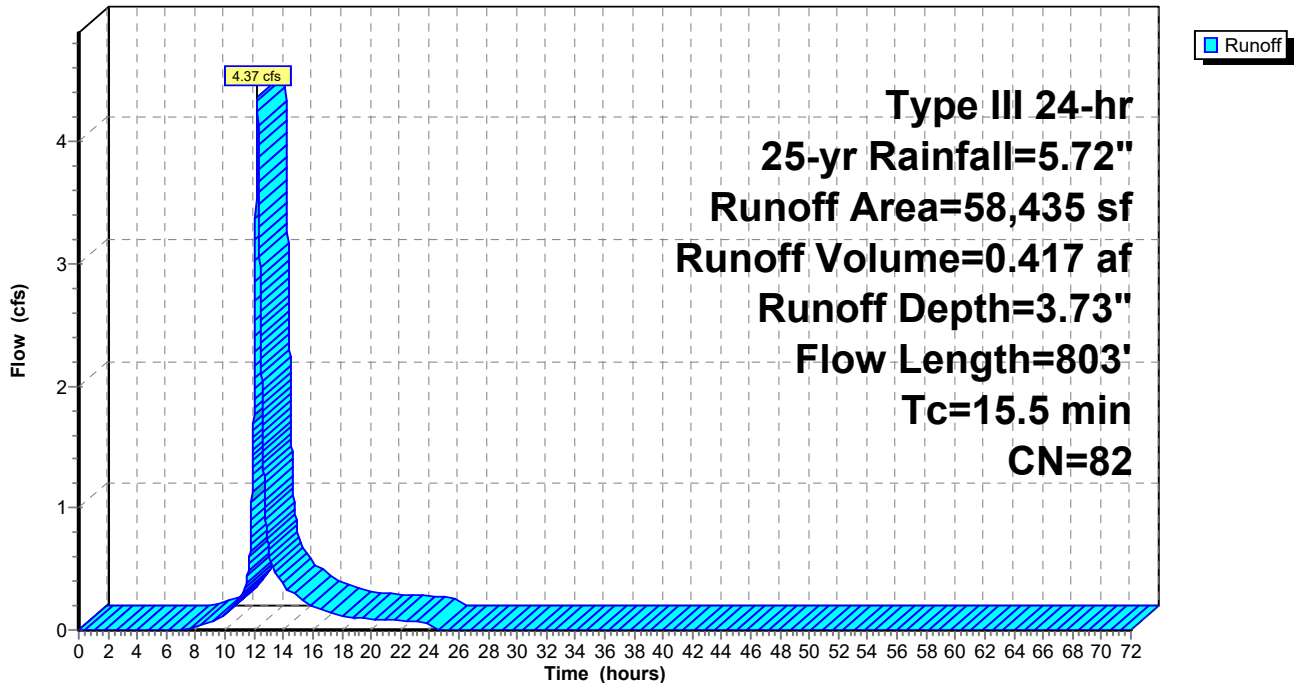
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25-yr Rainfall=5.72"

	Area (sf)	CN	Description
*	1,964	98	Impervious, HSG A
	780	39	>75% Grass cover, Good, HSG A
*	18,734	98	Impervious, HSG C
	36,957	74	>75% Grass cover, Good, HSG C
	58,435	82	Weighted Average
	37,737		64.58% Pervious Area
	20,698		35.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	100	0.0400	0.15		Sheet Flow, Grass: Dense n= 0.240 P2= 3.07"
3.8	411	0.0657	1.79		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.7	292	0.1199	7.03		Shallow Concentrated Flow, Paved Kv= 20.3 fps
15.5	803	Total			

Subcatchment 11S: 11S

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Subcatchment 12S: 12S

Runoff = 2.90 cfs @ 12.35 hrs, Volume= 0.379 af, Depth= 1.22"
 Routed to Link 19L : Behind houses

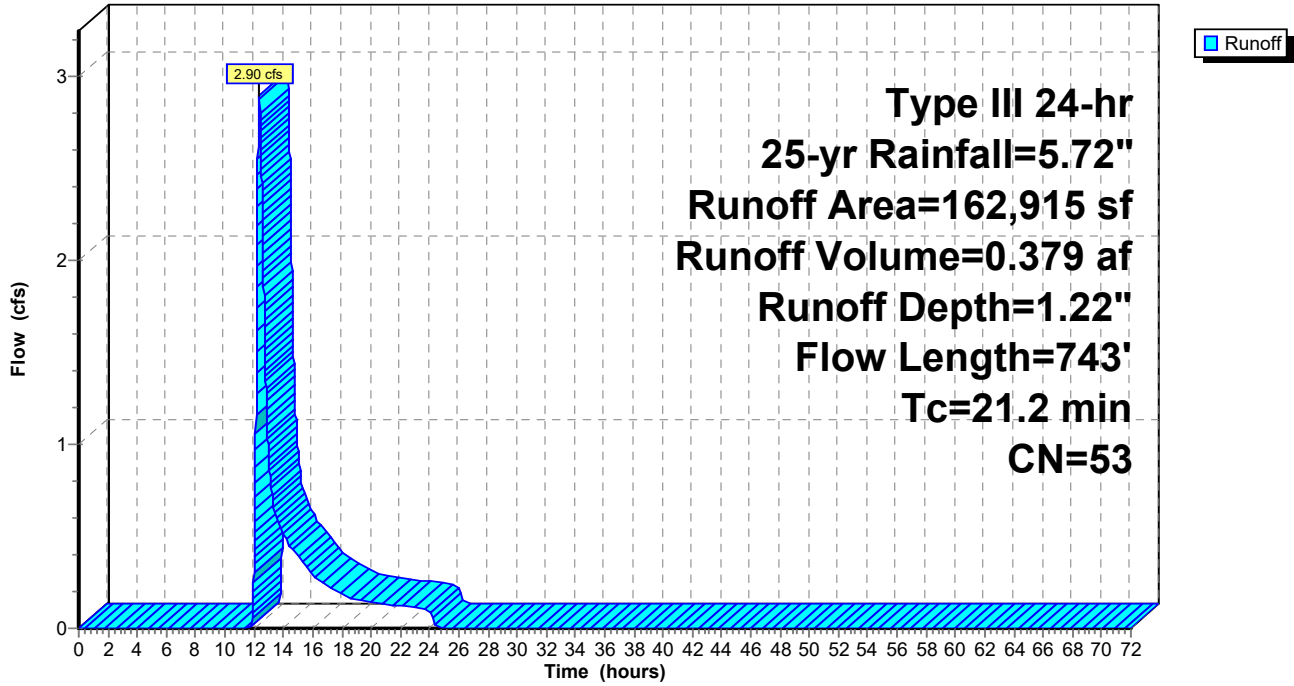
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25-yr Rainfall=5.72"

Area (sf)	CN	Description
* 13,392	98	Impervious, HSG A
* 4,745	98	Impervious, HSG C
24,615	45	Woods, Poor, HSG A
7,646	66	Woods, Poor, HSG B
89,600	39	>75% Grass cover, Good, HSG A
22,005	74	>75% Grass cover, Good, HSG C
912	61	>75% Grass cover, Good, HSG B
162,915	53	Weighted Average
144,778		88.87% Pervious Area
18,137		11.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	100	0.0300	0.13		Sheet Flow, Grass: Dense n= 0.240 P2= 3.07"
8.8	643	0.0594	1.22		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
21.2	743	Total			

Subcatchment 12S: 12S

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Subcatchment 13S: 13S

Runoff = 1.51 cfs @ 12.02 hrs, Volume= 0.094 af, Depth= 1.98"
 Routed to Pond 2P : PDI 1

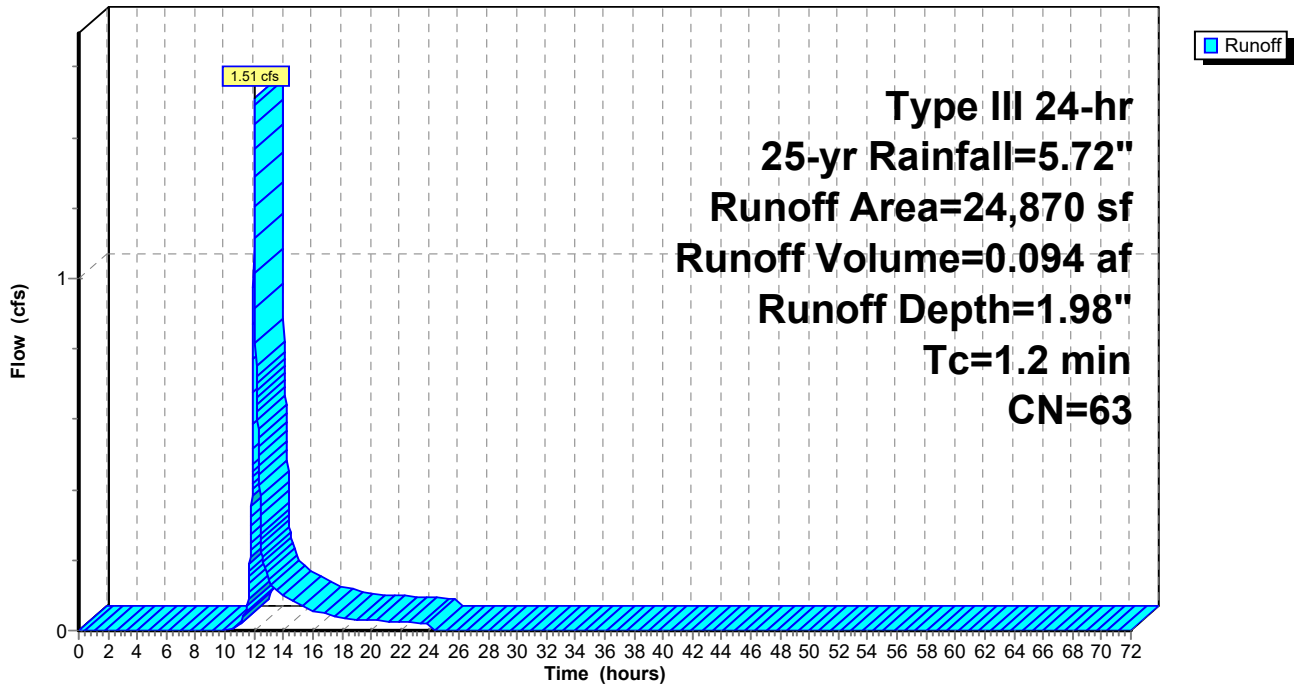
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25-yr Rainfall=5.72"

Area (sf)	CN	Description
5,179	74	>75% Grass cover, Good, HSG C
* 2,500	98	Impervious, C
13,037	45	Woods, Poor, HSG A
546	39	>75% Grass cover, Good, HSG A
* 2,290	98	Impervious, A
* 706	98	Impervious B
612	66	Woods, Poor, HSG B
24,870	63	Weighted Average
19,374		77.90% Pervious Area
5,496		22.10% Impervious Area

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

Subcatchment 13S: 13S

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Subcatchment 14S: 14S

Runoff = 17.40 cfs @ 12.21 hrs, Volume= 1.675 af, Depth= 1.98"
 Routed to Pond 49P : J1

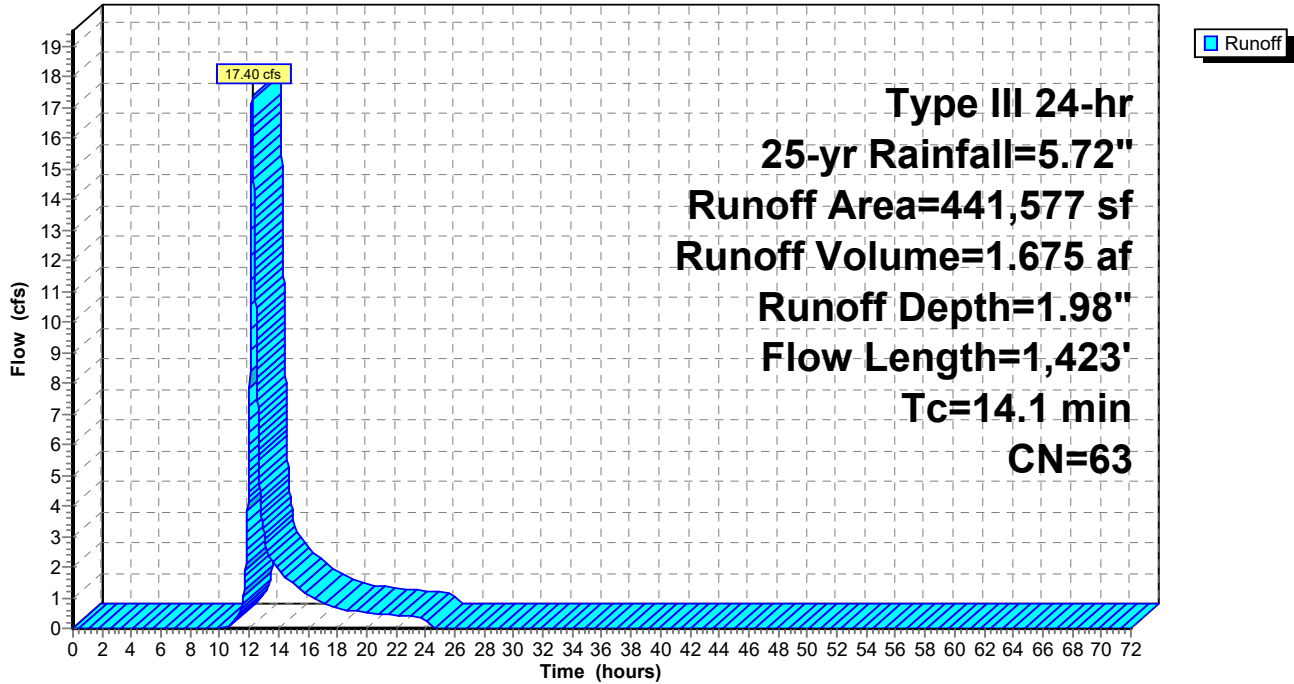
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 25-yr Rainfall=5.72"

Area (sf)	CN	Description
186,589	66	Woods, Poor, HSG B
11,967	45	Woods, Poor, HSG A
104,358	77	Woods, Poor, HSG C
43,979	61	>75% Grass cover, Good, HSG B
10,084	74	>75% Grass cover, Good, HSG C
84,600	39	>75% Grass cover, Good, HSG A
441,577	63	Weighted Average
441,577		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	100	0.1900	0.41		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
1.5	199	0.1055	2.27		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.4	185	0.1946	2.21		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
4.1	619	0.2569	2.53		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.0	320	0.0656	1.79		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.1	1,423	Total			

Subcatchment 14S: 14S

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Subcatchment 15S: 15S

Runoff = 29.73 cfs @ 12.20 hrs, Volume= 2.773 af, Depth= 2.95"

Routed to Link 48L : NORTH TO 10 PINE HILL ROAD (DP-6)

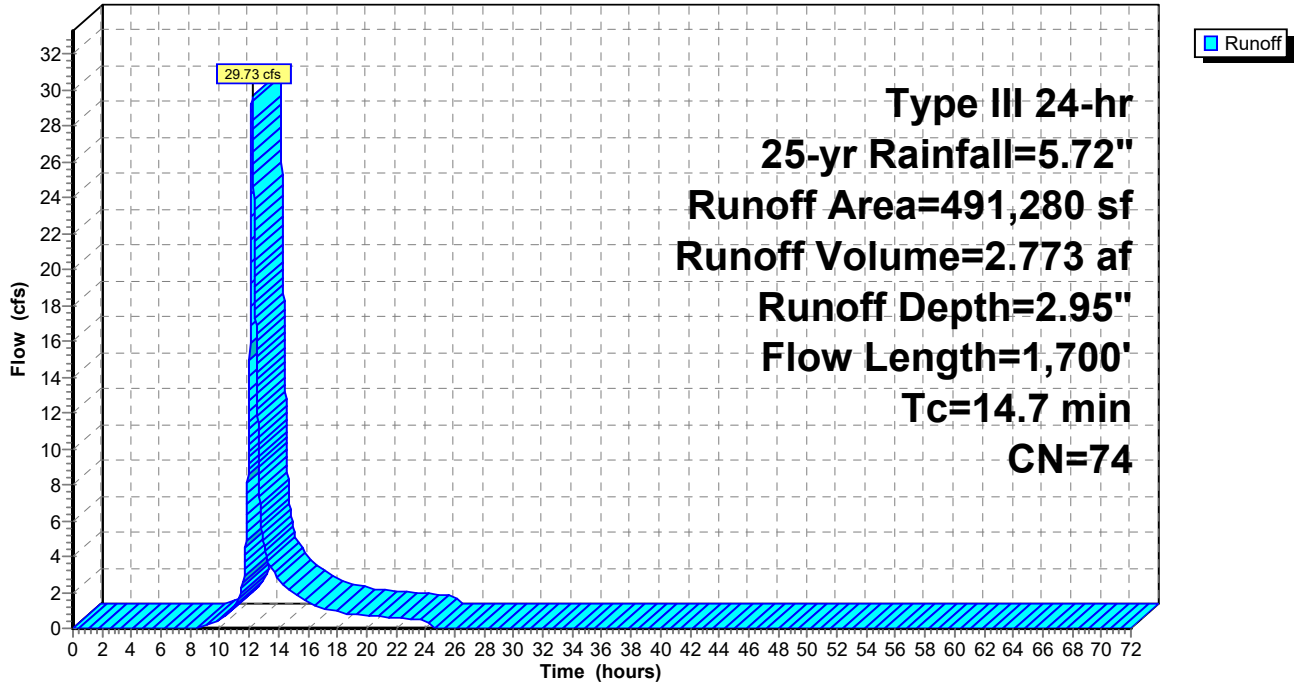
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=5.72"

Area (sf)	CN	Description
23,245	61	>75% Grass cover, Good, HSG B
29,263	74	>75% Grass cover, Good, HSG C
46,122	39	>75% Grass cover, Good, HSG A
16,942	45	Woods, Poor, HSG A
2,172	66	Woods, Poor, HSG B
289,686	77	Woods, Poor, HSG C
35,711	88	Row crops, straight row, Poor, HSG C
11,199	72	Row crops, straight row, Poor, HSG A
* 13,085	98	Impervious, HSG A
* 18,490	98	Impervious, HSG C
* 5,365	98	Impervious, HSG B
491,280	74	Weighted Average
454,340		92.48% Pervious Area
36,940		7.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	100	0.1400	0.36		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
0.9	140	0.1357	2.58		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
4.7	651	0.2166	2.33		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.0	131	0.1756	2.10		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.3	212	0.0849	2.62		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
2.2	466	0.0558	3.54		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
14.7	1,700	Total			

Subcatchment 15S: 15S

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Pond 1P: PDMH 1

Inflow Area = 10.539 ac, 15.96% Impervious, Inflow Depth = 2.45" for 25-yr event
Inflow = 23.70 cfs @ 12.16 hrs, Volume= 2.151 af
Outflow = 23.70 cfs @ 12.16 hrs, Volume= 2.151 af, Atten= 0%, Lag= 0.0 min
Primary = 23.70 cfs @ 12.16 hrs, Volume= 2.151 af
Routed to Link 1L : PROP OUTFALL TO TOWN PROP (DP-5)

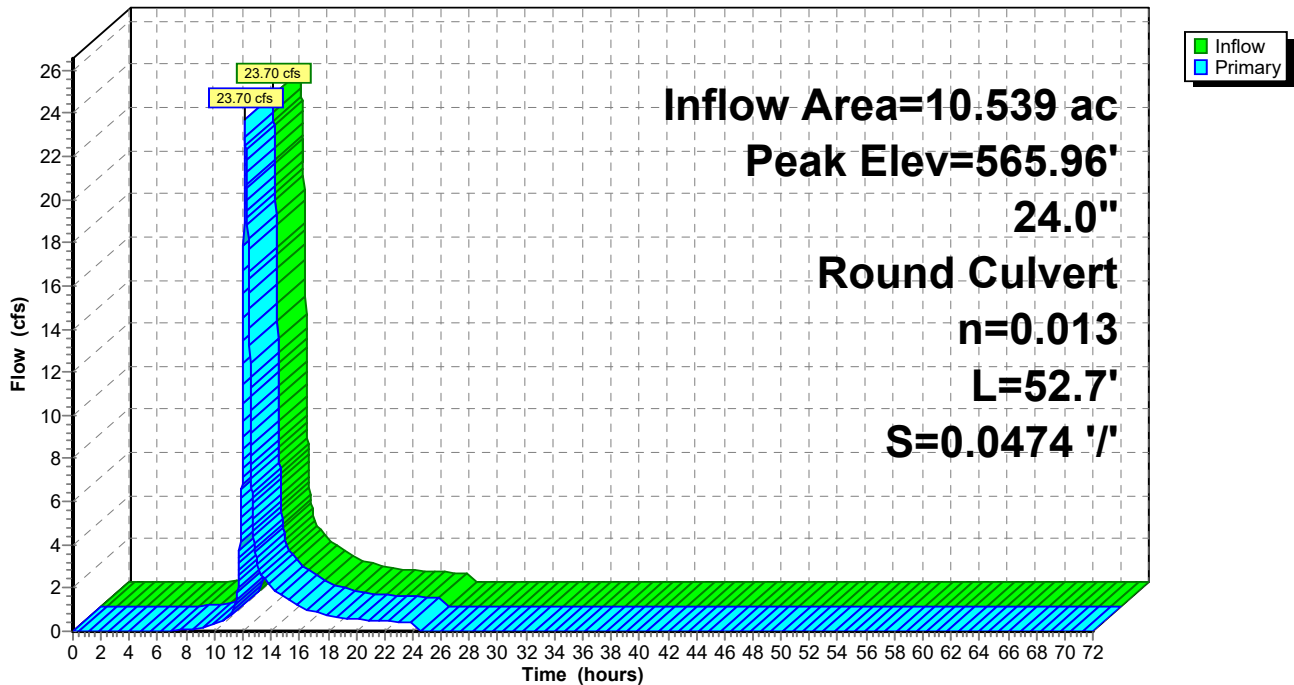
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 565.96' @ 12.16 hrs
Flood Elev= 567.50'

Device #	Routing	Invert	Outlet Devices
#1	Primary	562.50'	24.0" Round Culvert L= 52.7' Ke= 0.500 Inlet / Outlet Invert= 562.50' / 560.00' S= 0.0474 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=23.68 cfs @ 12.16 hrs HW=565.95' TW=0.00' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 23.68 cfs @ 7.54 fps)

Pond 1P: PDMH 1

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Pond 2P: PDI 1

Inflow Area = 10.539 ac, 15.96% Impervious, Inflow Depth = 2.45" for 25-yr event
 Inflow = 23.70 cfs @ 12.16 hrs, Volume= 2.151 af
 Outflow = 23.70 cfs @ 12.16 hrs, Volume= 2.151 af, Atten= 0%, Lag= 0.0 min
 Primary = 23.70 cfs @ 12.16 hrs, Volume= 2.151 af
 Routed to Pond 1P : PDMH 1

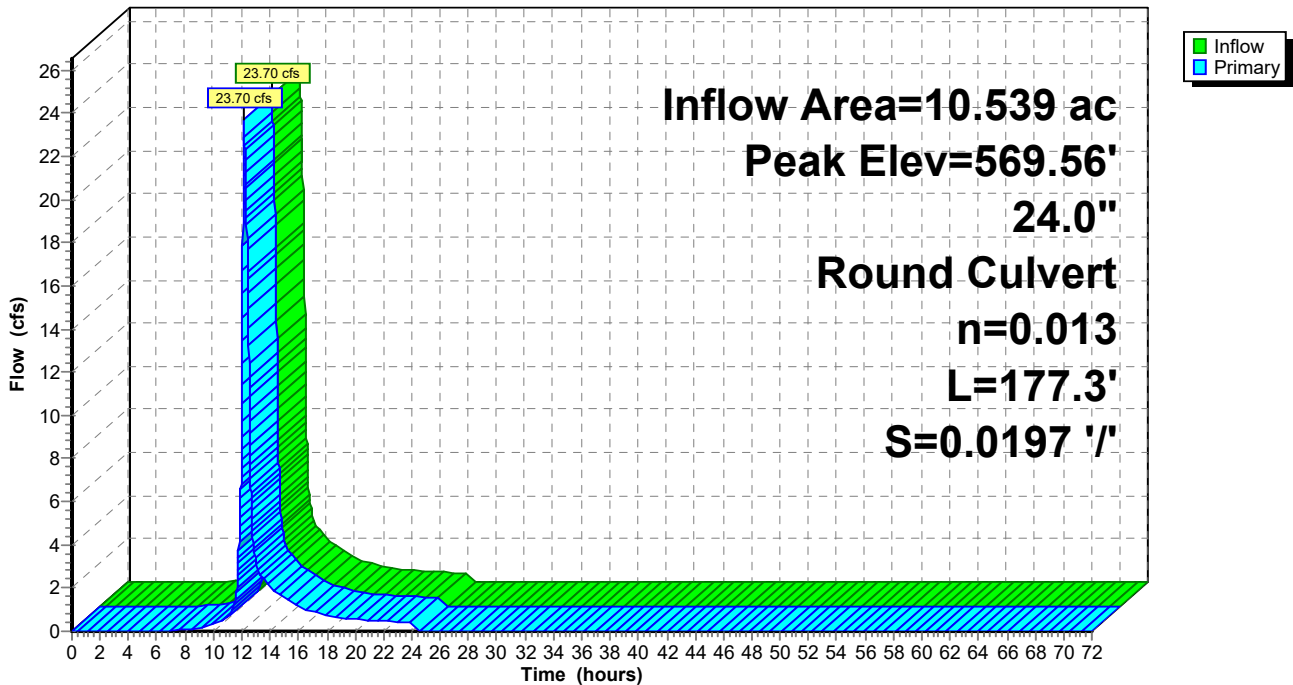
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 569.56' @ 12.16 hrs
 Flood Elev= 571.20'

Device #	Routing	Invert	Outlet Devices
#1	Primary	566.10'	24.0" Round Culvert L= 177.3' Ke= 0.500 Inlet / Outlet Invert= 566.10' / 562.60' S= 0.0197 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=23.68 cfs @ 12.16 hrs HW=569.55' TW=565.95' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 23.68 cfs @ 7.54 fps)

Pond 2P: PDI 1

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Pond 3P: PDMH 2

Inflow Area = 9.968 ac, 15.61% Impervious, Inflow Depth = 2.48" for 25-yr event
Inflow = 23.02 cfs @ 12.16 hrs, Volume= 2.056 af
Outflow = 23.02 cfs @ 12.16 hrs, Volume= 2.056 af, Atten= 0%, Lag= 0.0 min
Primary = 23.02 cfs @ 12.16 hrs, Volume= 2.056 af
Routed to Pond 2P : PDI 1

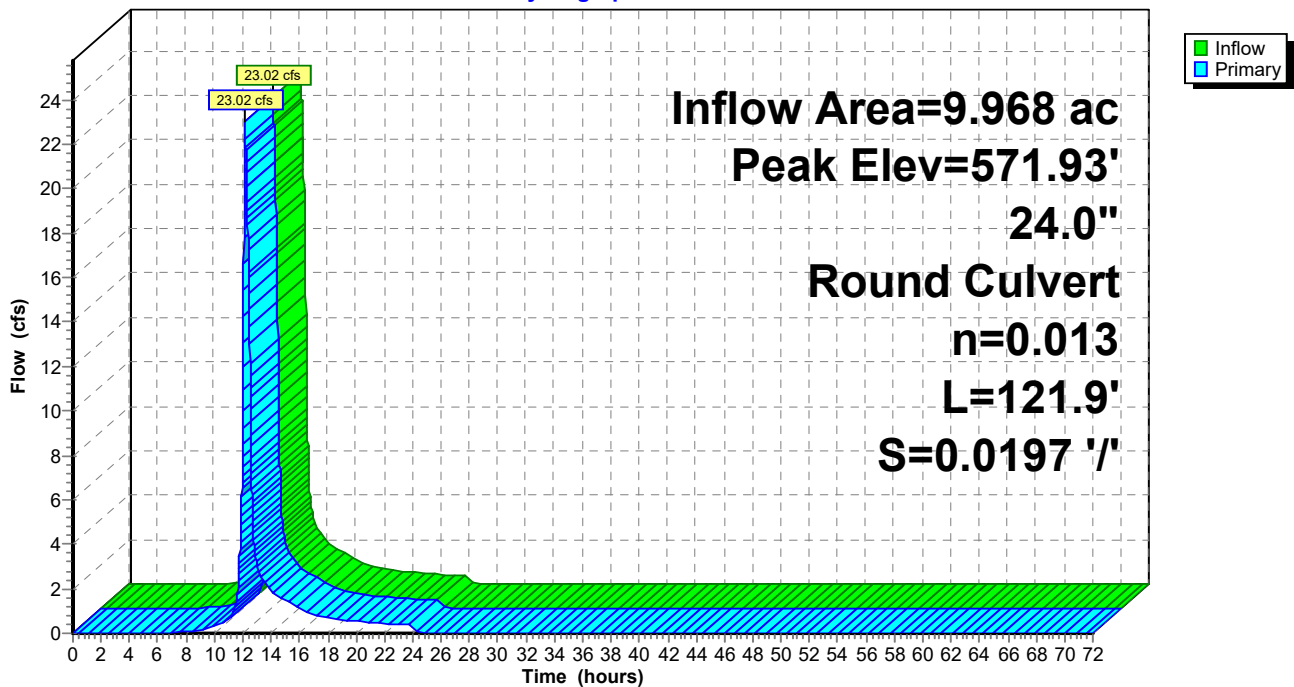
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 571.93' @ 12.16 hrs
Flood Elev= 573.70'

Device #	Routing	Invert	Outlet Devices
1	Primary	568.60'	24.0" Round Culvert L= 121.9' Ke= 0.500 Inlet / Outlet Invert= 568.60' / 566.20' S= 0.0197 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=22.31 cfs @ 12.16 hrs HW=571.91' TW=569.55' (Dynamic Tailwater)
↑1=Culvert (Outlet Controls 22.31 cfs @ 7.10 fps)

Pond 3P: PDMH 2

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Pond 4P: PCB 1

Inflow Area = 9.968 ac, 15.61% Impervious, Inflow Depth = 2.48" for 25-yr event
 Inflow = 23.02 cfs @ 12.16 hrs, Volume= 2.056 af
 Outflow = 23.02 cfs @ 12.16 hrs, Volume= 2.056 af, Atten= 0%, Lag= 0.0 min
 Primary = 23.02 cfs @ 12.16 hrs, Volume= 2.056 af
 Routed to Pond 3P : PDMH 2

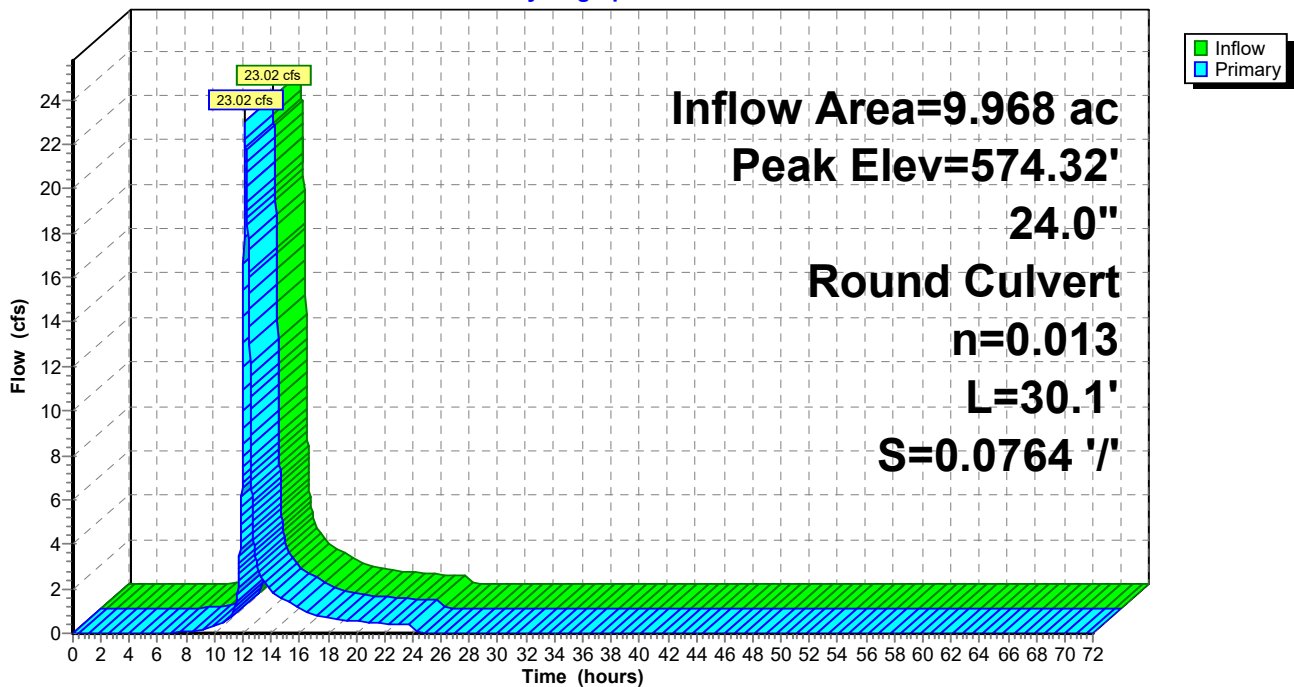
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 574.32' @ 12.16 hrs
 Flood Elev= 576.00'

Device #	Routing	Invert	Outlet Devices
#1	Primary	571.00'	24.0" Round Culvert L= 30.1' Ke= 0.500 Inlet / Outlet Invert= 571.00' / 568.70' S= 0.0764 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=22.99 cfs @ 12.16 hrs HW=574.31' TW=571.91' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 22.99 cfs @ 7.32 fps)

Pond 4P: PCB 1

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Pond 5P: PCB 2

[58] Hint: Peaked 0.44' above defined flood level

Inflow Area = 9.968 ac, 15.61% Impervious, Inflow Depth = 2.48" for 25-yr event
 Inflow = 23.02 cfs @ 12.16 hrs, Volume= 2.056 af
 Outflow = 23.02 cfs @ 12.16 hrs, Volume= 2.056 af, Atten= 0%, Lag= 0.0 min
 Primary = 16.57 cfs @ 12.16 hrs, Volume= 1.951 af
 Routed to Pond 4P : PCB 1
 Secondary = 6.44 cfs @ 12.16 hrs, Volume= 0.105 af
 Routed to Pond 4P : PCB 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 598.74' @ 12.16 hrs
 Flood Elev= 598.30'

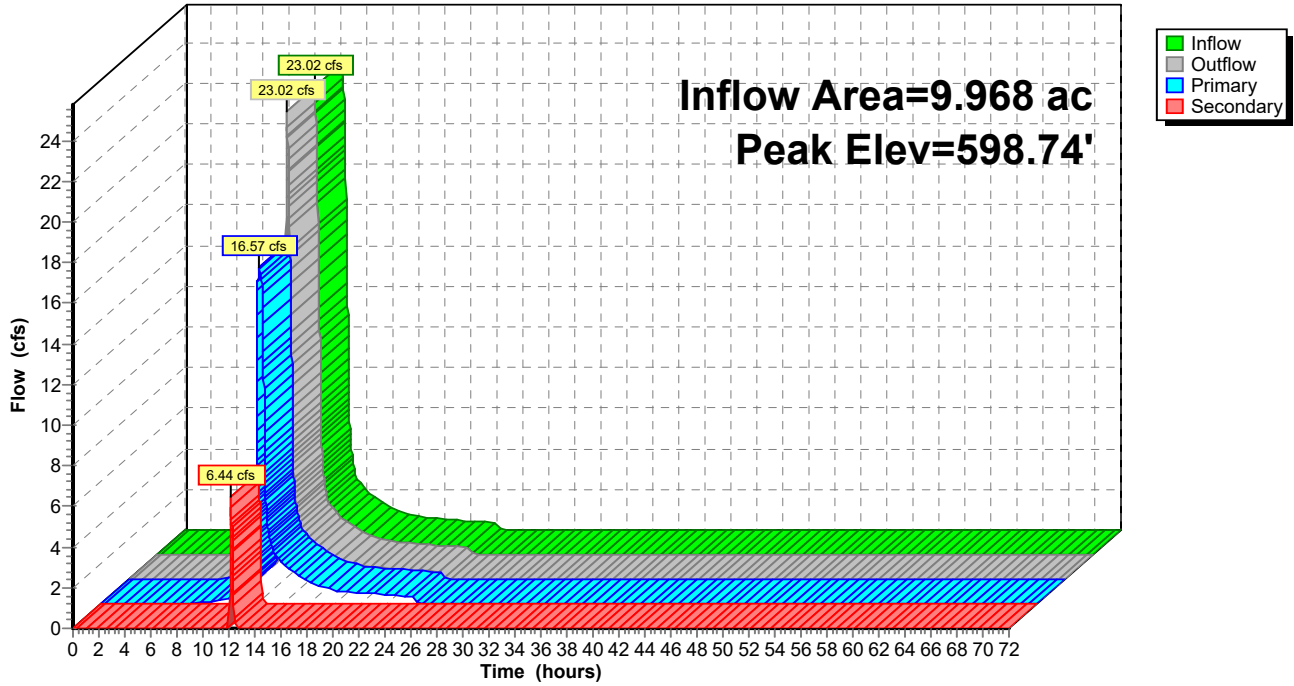
Device	Routing	Invert	Outlet Devices
#1	Primary	594.20'	18.0" Round Culvert L= 202.3' Ke= 0.500 Inlet / Outlet Invert= 594.20' / 571.50' S= 0.1122 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	598.30'	20.0" x 20.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=16.57 cfs @ 12.16 hrs HW=598.74' TW=574.31' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 16.57 cfs @ 9.38 fps)

Secondary OutFlow Max=6.42 cfs @ 12.16 hrs HW=598.74' TW=574.31' (Dynamic Tailwater)
 ↑2=Orifice/Grate (Weir Controls 6.42 cfs @ 2.18 fps)

Pond 5P: PCB 2

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Pond 6P: PCB 3

Inflow Area = 8.626 ac, 12.53% Impervious, Inflow Depth = 2.28" for 25-yr event
 Inflow = 18.92 cfs @ 12.16 hrs, Volume= 1.639 af
 Outflow = 18.92 cfs @ 12.16 hrs, Volume= 1.639 af, Atten= 0%, Lag= 0.0 min
 Primary = 18.92 cfs @ 12.16 hrs, Volume= 1.639 af
 Routed to Pond 5P : PCB 2

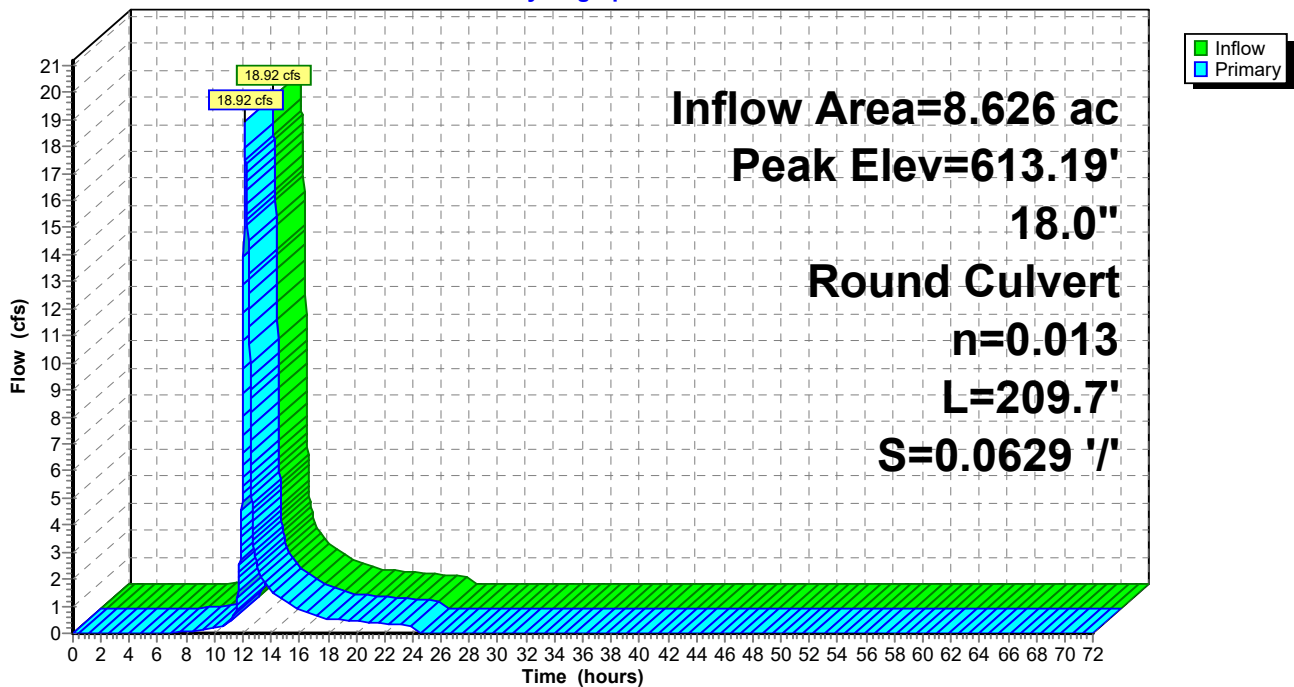
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 613.19' @ 12.16 hrs
 Flood Elev= 615.20'

Device #	Routing	Invert	Outlet Devices
#1	Primary	607.50'	18.0" Round Culvert L= 209.7' Ke= 0.500 Inlet / Outlet Invert= 607.50' / 594.30' S= 0.0629 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=18.89 cfs @ 12.16 hrs HW=613.18' TW=598.74' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 18.89 cfs @ 10.69 fps)

Pond 6P: PCB 3

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Pond 7P: PCB 4

Inflow Area = 7.155 ac, 6.52% Impervious, Inflow Depth = 1.94" for 25-yr event
 Inflow = 13.69 cfs @ 12.22 hrs, Volume= 1.157 af
 Outflow = 13.69 cfs @ 12.22 hrs, Volume= 1.157 af, Atten= 0%, Lag= 0.0 min
 Primary = 13.69 cfs @ 12.22 hrs, Volume= 1.157 af
 Routed to Pond 6P : PCB 3

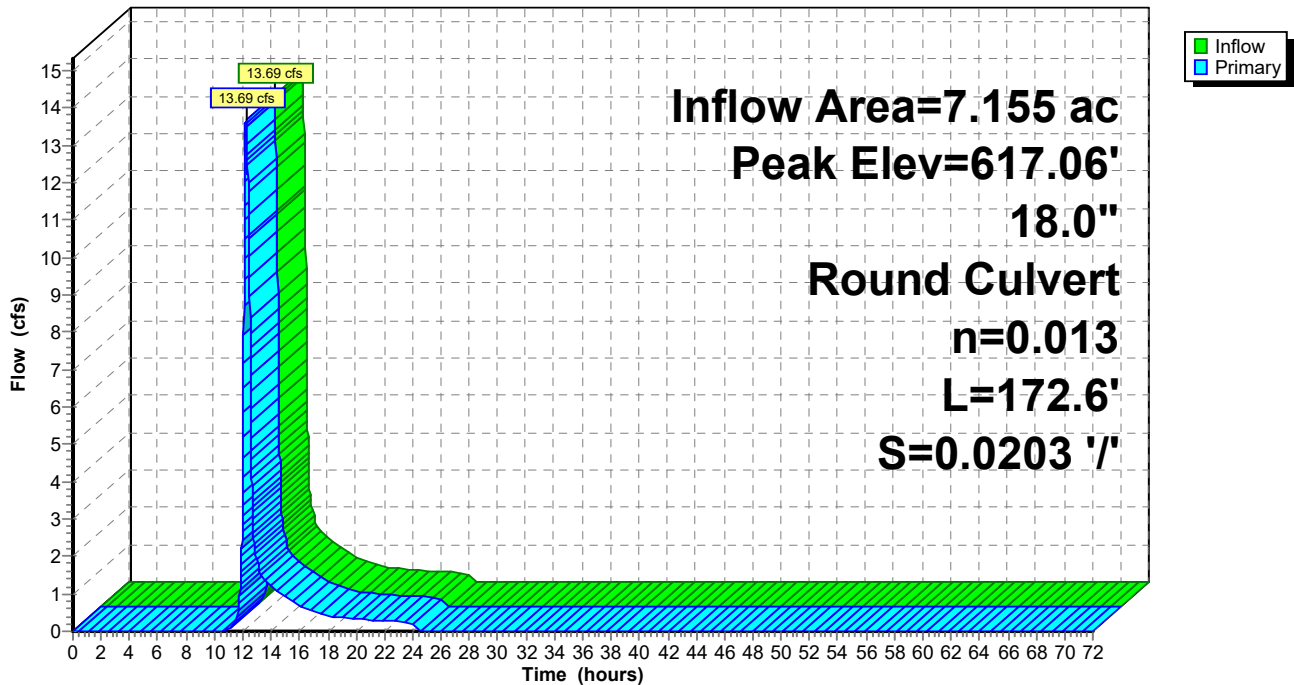
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 617.06' @ 12.17 hrs
 Flood Elev= 620.80'

Device #	Routing	Invert	Outlet Devices
#1	Primary	611.10'	18.0" Round Culvert L= 172.6' Ke= 0.500 Inlet / Outlet Invert= 611.10' / 607.60' S= 0.0203 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=13.58 cfs @ 12.22 hrs HW=616.76' TW=612.50' (Dynamic Tailwater)
 ↑1=Culvert (Outlet Controls 13.58 cfs @ 7.68 fps)

Pond 7P: PCB 4

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Pond 8P: PDI 2

[92] Warning: Device #2 is above defined storage

[80] Warning: Exceeded Pond 9P by 0.11' @ 12.16 hrs (2.57 cfs 0.002 af)

Inflow Area = 7.155 ac, 6.52% Impervious, Inflow Depth = 1.94" for 25-yr event
 Inflow = 16.05 cfs @ 12.16 hrs, Volume= 1.157 af
 Outflow = 13.69 cfs @ 12.22 hrs, Volume= 1.157 af, Atten= 15%, Lag= 3.6 min
 Primary = 13.69 cfs @ 12.22 hrs, Volume= 1.157 af
 Routed to Pond 7P : PCB 4
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 49L : 51 Baptist Hill Rd Property (DP-3)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 621.69' @ 12.22 hrs Surf.Area= 547 sf Storage= 259 cf
 Flood Elev= 621.75' Surf.Area= 595 sf Storage= 295 cf

Plug-Flow detention time= 0.3 min calculated for 1.157 af (100% of inflow)
 Center-of-Mass det. time= 0.1 min (855.7 - 855.6)

Volume	Invert	Avail.Storage	Storage Description
#1	615.50'	44 cf	4.00'D x 3.50'H Vertical Cone/Cylinder
#2	619.00'	420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		464 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
619.00	4	0	0
620.00	10	7	7
621.00	24	17	24
622.00	768	396	420

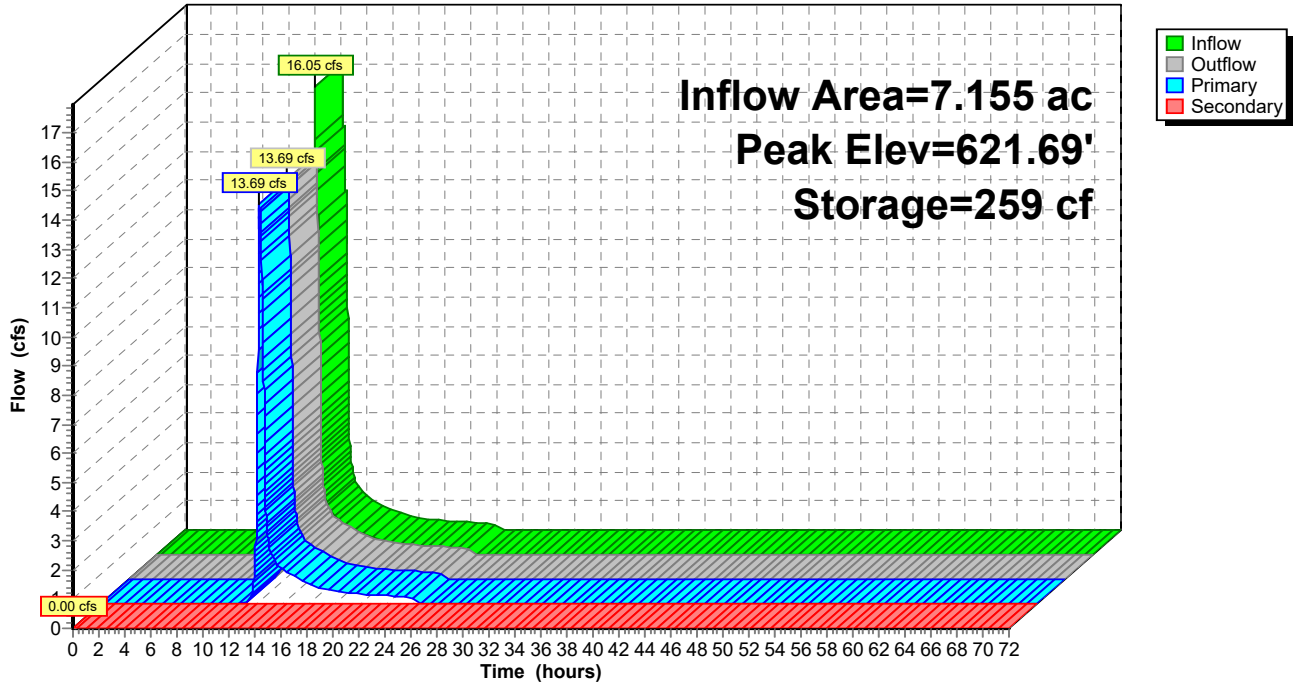
Device	Routing	Invert	Outlet Devices
#1	Primary	615.50'	18.0" Round Culvert L= 217.0' Ke= 0.500 Inlet / Outlet Invert= 615.50' / 611.20' S= 0.0198 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	622.00'	20.0' long x 18.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=13.45 cfs @ 12.22 hrs HW=621.69' TW=616.76' (Dynamic Tailwater)
 ↑1=Culvert (Outlet Controls 13.45 cfs @ 7.61 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=615.50' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 8P: PDI 2

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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Summary for Pond 9P: PDI 3

Inflow Area = 6.838 ac, 4.42% Impervious, Inflow Depth = 1.61" for 25-yr event
 Inflow = 8.66 cfs @ 12.25 hrs, Volume= 0.918 af
 Outflow = 8.66 cfs @ 12.25 hrs, Volume= 0.918 af, Atten= 0%, Lag= 0.0 min
 Primary = 8.34 cfs @ 12.35 hrs, Volume= 0.887 af
 Routed to Pond 8P : PDI 2
 Secondary = 3.15 cfs @ 12.25 hrs, Volume= 0.032 af
 Routed to Link 49L : 51 Baptist Hill Rd Property (DP-3)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 622.19' @ 12.25 hrs
 Flood Elev= 625.90'

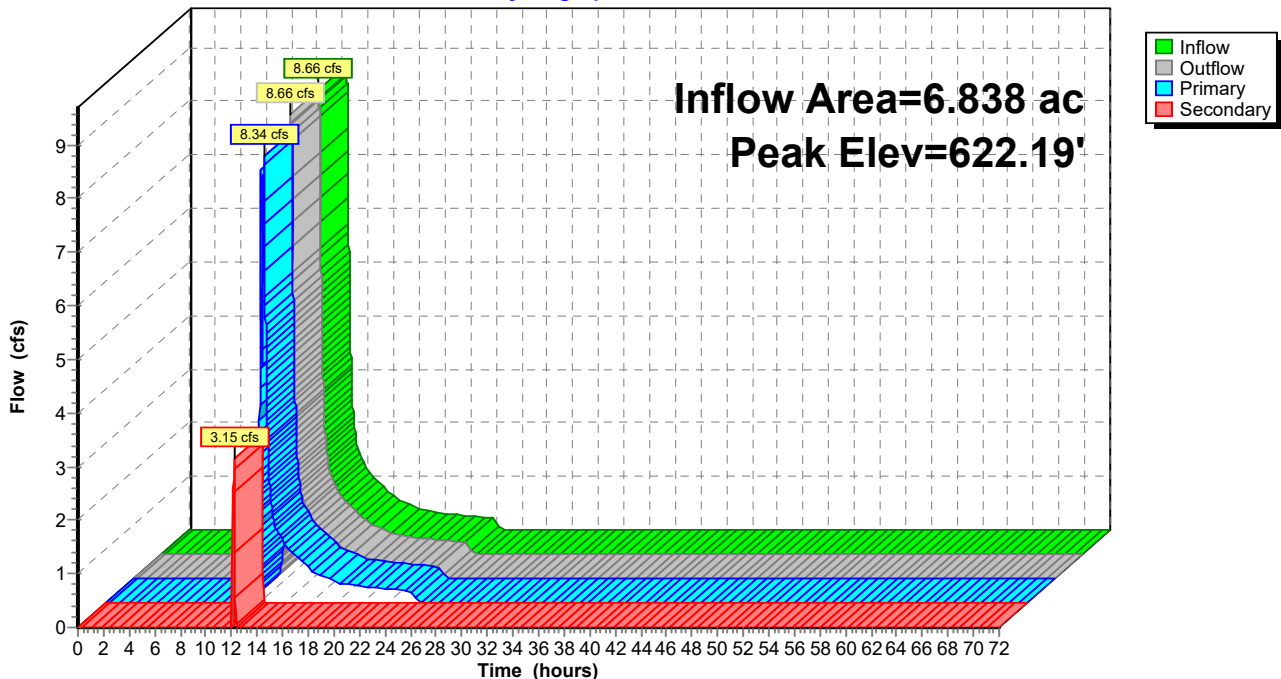
Device	Routing	Invert	Outlet Devices
#1	Primary	618.20'	18.0" Round Culvert L= 109.2' Ke= 0.500 Inlet / Outlet Invert= 618.20' / 615.60' S= 0.0238 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	621.00'	12.0" Round Culvert L= 31.0' Ke= 0.500 Inlet / Outlet Invert= 621.00' / 620.38' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=9.41 cfs @ 12.35 hrs HW=621.04' TW=619.49' (Dynamic Tailwater)
 ↳1=Culvert (Outlet Controls 9.41 cfs @ 5.33 fps)

Secondary OutFlow Max=3.11 cfs @ 12.25 hrs HW=622.18' TW=0.00' (Dynamic Tailwater)
 ↳2=Culvert (Inlet Controls 3.11 cfs @ 3.96 fps)

Pond 9P: PDI 3

Hydrograph



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Summary for Pond 10P: PDI 4

Inflow Area = 6.280 ac, 2.62% Impervious, Inflow Depth = 1.76" for 25-yr event
 Inflow = 13.36 cfs @ 12.25 hrs, Volume= 0.923 af
 Outflow = 13.36 cfs @ 12.25 hrs, Volume= 0.923 af, Atten= 0%, Lag= 0.0 min
 Primary = 8.15 cfs @ 12.25 hrs, Volume= 0.858 af
 Routed to Pond 9P : PDI 3
 Secondary = 5.22 cfs @ 12.25 hrs, Volume= 0.065 af
 Routed to Link 50L : ALONG 45 UPPER BAPTIST HILL RD (DP-2)
 Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 9P : PDI 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 626.70' @ 12.25 hrs
 Flood Elev= 629.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	622.90'	15.0" Round Culvert L= 226.6' Ke= 0.500 Inlet / Outlet Invert= 622.90' / 618.30' S= 0.0203 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	624.30'	12.0" Round Culvert L= 25.0' Ke= 0.500 Inlet / Outlet Invert= 624.30' / 623.80' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Tertiary	629.00'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

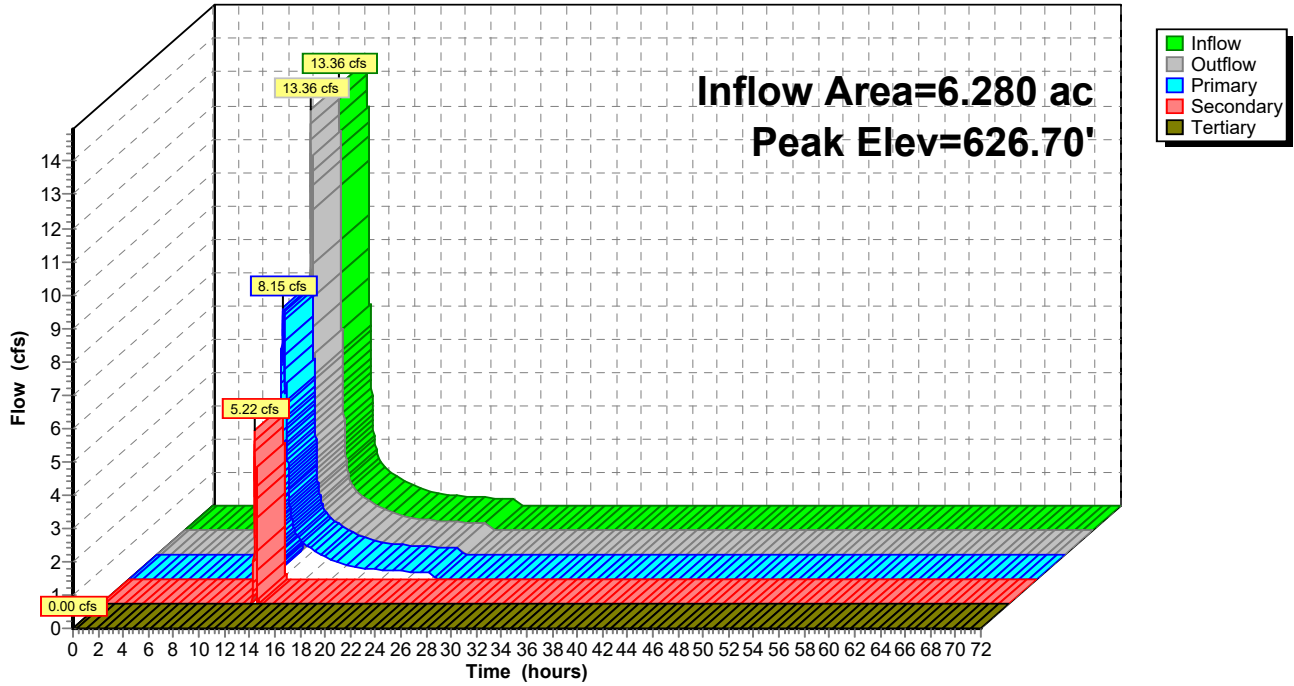
Primary OutFlow Max=7.96 cfs @ 12.25 hrs HW=626.62' TW=622.18' (Dynamic Tailwater)
 ↑**1=Culvert** (Outlet Controls 7.96 cfs @ 6.49 fps)

Secondary OutFlow Max=5.08 cfs @ 12.25 hrs HW=626.60' TW=0.00' (Dynamic Tailwater)
 ↑**2=Culvert** (Inlet Controls 5.08 cfs @ 6.46 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=622.90' TW=618.20' (Dynamic Tailwater)
 ↑**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 10P: PDI 4

Hydrograph



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Summary for Pond 11P: PDI 5

[58] Hint: Peaked 0.35' above defined flood level

Inflow Area = 5.545 ac, 0.00% Impervious, Inflow Depth = 1.22" for 25-yr event
 Inflow = 4.98 cfs @ 12.24 hrs, Volume= 0.562 af
 Outflow = 4.98 cfs @ 12.24 hrs, Volume= 0.562 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.39 cfs @ 12.32 hrs, Volume= 0.508 af
 Routed to Pond 12P : PDI 6
 Secondary = 4.95 cfs @ 12.25 hrs, Volume= 0.053 af
 Routed to Pond 10P : PDI 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 641.55' @ 12.25 hrs
 Flood Elev= 641.20'

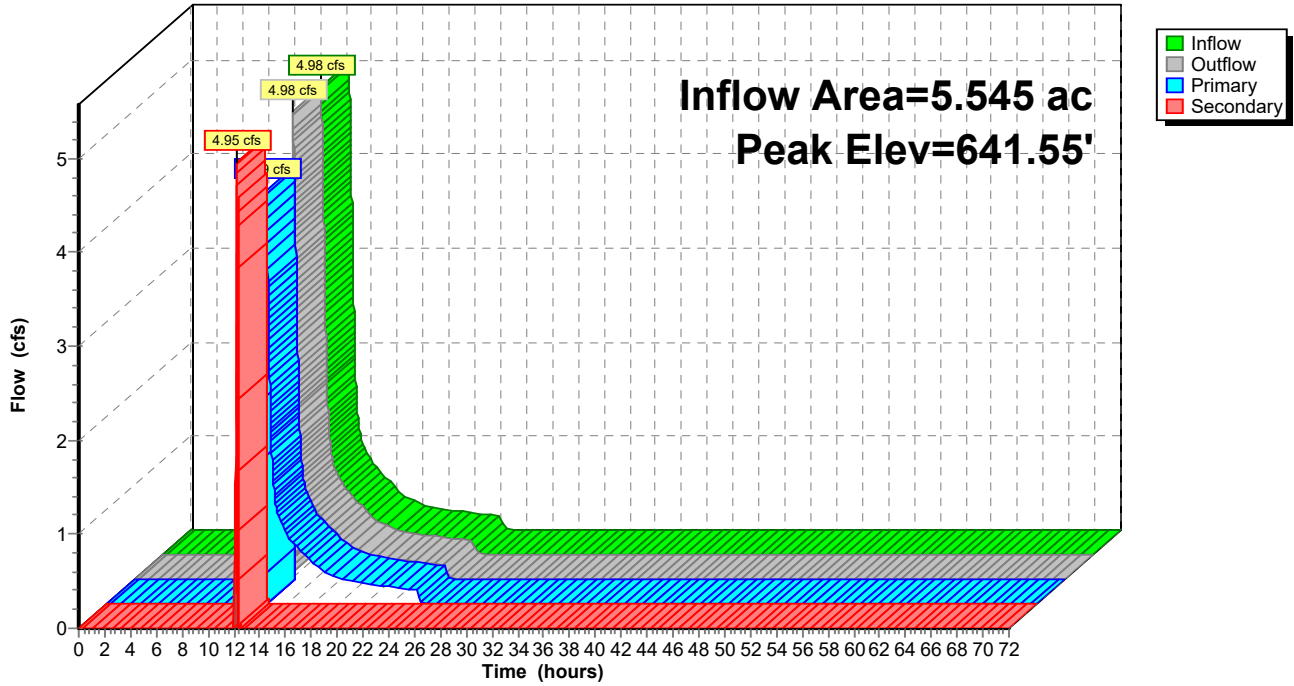
Device	Routing	Invert	Outlet Devices
#1	Primary	637.00'	12.0" Round Culvert L= 82.0' Ke= 0.500 Inlet / Outlet Invert= 637.00' / 636.20' S= 0.0098 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	641.20'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 12.32 hrs HW=641.23' TW=642.06' (Dynamic Tailwater)
 ↑1=Culvert (Controls 0.00 cfs)

Secondary OutFlow Max=4.74 cfs @ 12.25 hrs HW=641.54' TW=626.63' (Dynamic Tailwater)
 ↑2=Orifice/Grate (Weir Controls 4.74 cfs @ 1.90 fps)

Pond 11P: PDI 5

Hydrograph



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Summary for Pond 12P: PDI 6

[80] Warning: Exceeded Pond 11P by 1.05' @ 12.26 hrs (3.19 cfs 0.018 af)

Inflow Area = 14.192 ac, 4.81% Impervious, Inflow Depth = 1.38" for 25-yr event
 Inflow = 14.01 cfs @ 12.26 hrs, Volume= 1.637 af
 Outflow = 14.01 cfs @ 12.26 hrs, Volume= 1.637 af, Atten= 0%, Lag= 0.0 min
 Primary = 14.01 cfs @ 12.26 hrs, Volume= 1.637 af
 Routed to Link 15L : EXISTIN OUTLET TO UNDER 116 (DP-1)
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 10P : PDI 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 642.35' @ 12.26 hrs
 Flood Elev= 644.20'

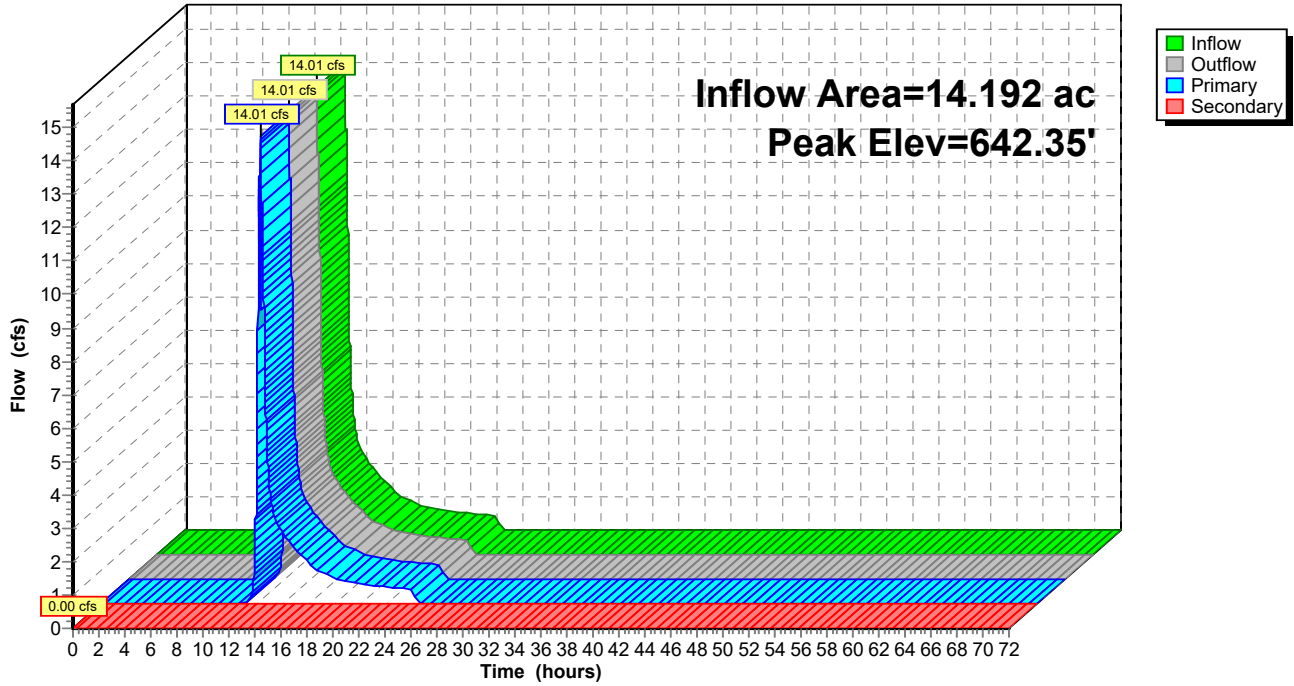
Device	Routing	Invert	Outlet Devices
#1	Primary	636.10'	15.0" Round Culvert L= 35.9' Ke= 0.500 Inlet / Outlet Invert= 636.10' / 625.50' S= 0.2953 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	644.20'	20.0" x 20.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=13.98 cfs @ 12.26 hrs HW=642.33' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 13.98 cfs @ 11.40 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=636.10' TW=622.90' (Dynamic Tailwater)
 ↑2=Orifice/Grate (Controls 0.00 cfs)

Pond 12P: PDI 6

Hydrograph



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Summary for Pond 13P: PDI 7

[58] Hint: Peaked 0.19' above defined flood level

Inflow Area = 7.441 ac, 3.47% Impervious, Inflow Depth = 1.54" for 25-yr event
 Inflow = 8.61 cfs @ 12.25 hrs, Volume= 0.953 af
 Outflow = 8.61 cfs @ 12.25 hrs, Volume= 0.953 af, Atten= 0%, Lag= 0.0 min
 Primary = 7.76 cfs @ 12.34 hrs, Volume= 0.936 af
 Routed to Pond 12P : PDI 6
 Secondary = 1.82 cfs @ 12.27 hrs, Volume= 0.017 af
 Routed to Pond 12P : PDI 6

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 651.59' @ 12.27 hrs
 Flood Elev= 651.40'

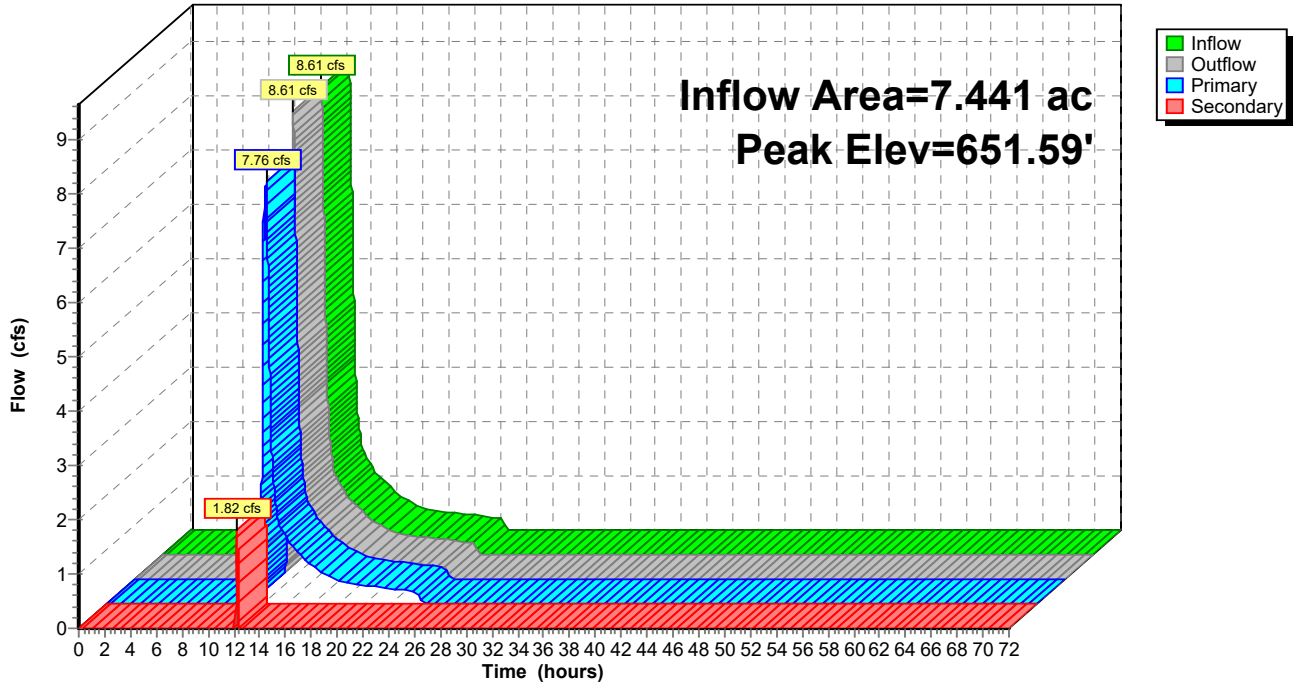
Device	Routing	Invert	Outlet Devices
#1	Primary	645.80'	12.0" Round Culvert L= 211.3' Ke= 0.500 Inlet / Outlet Invert= 645.80' / 638.00' S= 0.0369 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	651.40'	20.0" x 20.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=6.88 cfs @ 12.34 hrs HW=651.43' TW=641.75' (Dynamic Tailwater)
 ↑1=Culvert (Outlet Controls 6.88 cfs @ 8.75 fps)

Secondary OutFlow Max=1.79 cfs @ 12.27 hrs HW=651.59' TW=639.57' (Dynamic Tailwater)
 ↑2=Orifice/Grate (Weir Controls 1.79 cfs @ 1.42 fps)

Pond 13P: PDI 7

Hydrograph



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Summary for Pond 14P: PDI 8

Inflow Area = 1.391 ac, 18.58% Impervious, Inflow Depth = 1.66" for 25-yr event
Inflow = 2.05 cfs @ 12.18 hrs, Volume= 0.193 af
Outflow = 2.05 cfs @ 12.18 hrs, Volume= 0.193 af, Atten= 0%, Lag= 0.0 min
Primary = 2.05 cfs @ 12.18 hrs, Volume= 0.193 af
Routed to Pond 13P : PDI 7

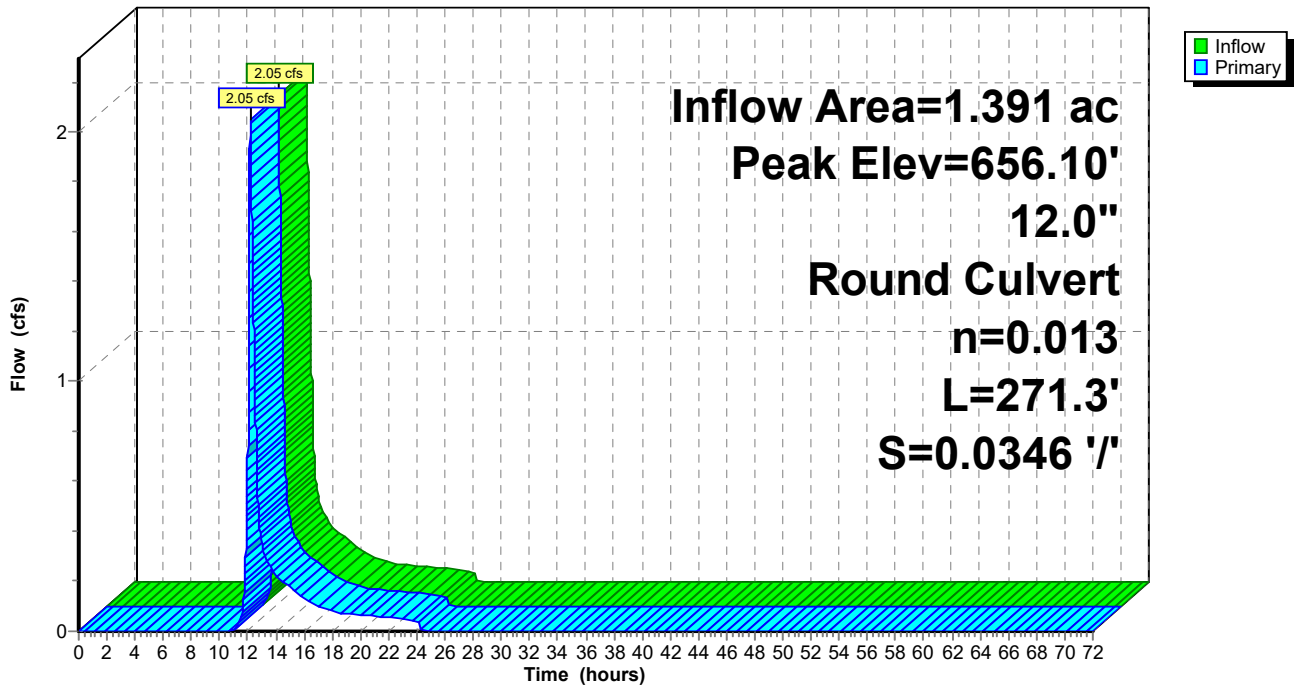
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 656.10' @ 12.18 hrs
Flood Elev= 660.80'

Device #	Routing	Invert	Outlet Devices
1	Primary	655.30'	12.0" Round Culvert L= 271.3' Ke= 0.500 Inlet / Outlet Invert= 655.30' / 645.90' S= 0.0346 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.05 cfs @ 12.18 hrs HW=656.10' TW=651.49' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 2.05 cfs @ 3.04 fps)

Pond 14P: PDI 8

Hydrograph



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Summary for Pond 24P: J15

Inflow Area = 0.710 ac, 41.87% Impervious, Inflow Depth = 2.87" for 25-yr event
 Inflow = 2.02 cfs @ 12.09 hrs, Volume= 0.170 af
 Outflow = 2.02 cfs @ 12.09 hrs, Volume= 0.170 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.02 cfs @ 12.09 hrs, Volume= 0.170 af
 Routed to Pond 27P : J22
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 27P : J22

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 594.49' @ 12.09 hrs
 Flood Elev= 598.30'

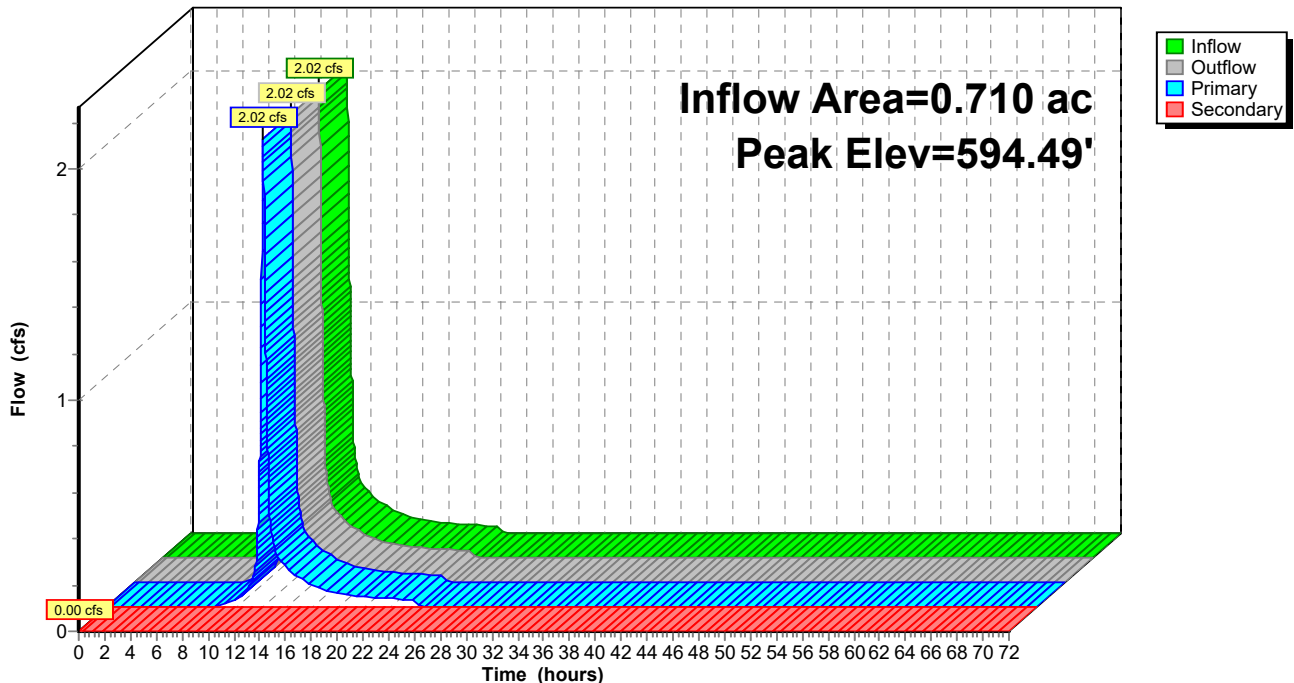
Device	Routing	Invert	Outlet Devices
#1	Primary	593.70'	12.0" Round Culvert L= 240.0' Ke= 0.500 Inlet / Outlet Invert= 593.70' / 569.82' S= 0.0995 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	598.30'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.02 cfs @ 12.09 hrs HW=594.49' TW=570.50' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 2.02 cfs @ 3.03 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=593.70' TW=569.62' (Dynamic Tailwater)
 ↳2=Orifice/Grate (Controls 0.00 cfs)

Pond 24P: J15

Hydrograph



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Summary for Pond 25P: J14

Inflow Area = 0.452 ac, 37.25% Impervious, Inflow Depth = 3.14" for 25-yr event
 Inflow = 1.54 cfs @ 12.12 hrs, Volume= 0.118 af
 Outflow = 1.54 cfs @ 12.12 hrs, Volume= 0.118 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.54 cfs @ 12.12 hrs, Volume= 0.118 af
 Routed to Pond 24P : J15
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 24P : J15

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 612.02' @ 12.12 hrs
 Flood Elev= 614.36'

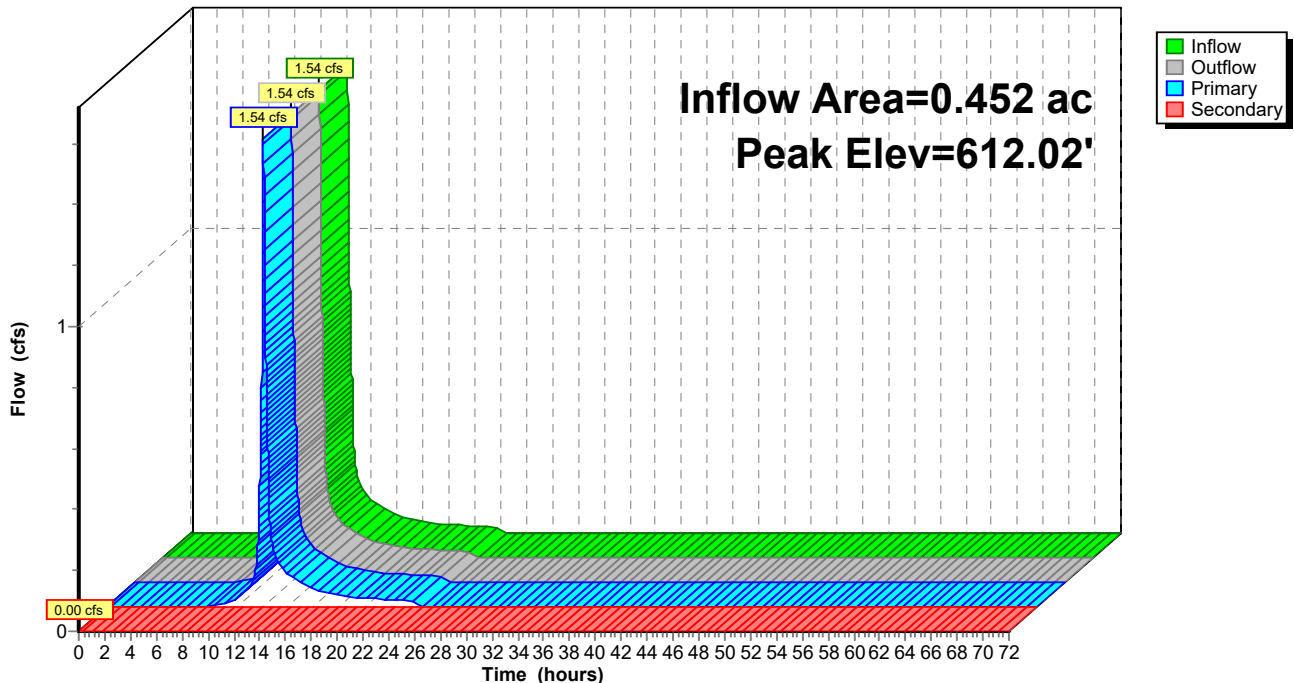
Device	Routing	Invert	Outlet Devices
#1	Primary	611.36'	12.0" Round Culvert L= 460.0' Ke= 0.500 Inlet / Outlet Invert= 611.36' / 593.70' S= 0.0384 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	614.36'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.54 cfs @ 12.12 hrs HW=612.02' TW=594.47' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 1.54 cfs @ 2.77 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=611.36' TW=593.70' (Dynamic Tailwater)
 ↳2=Orifice/Grate (Controls 0.00 cfs)

Pond 25P: J14

Hydrograph



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Summary for Pond 27P: J22

[58] Hint: Peaked 0.20' above defined flood level

Inflow Area = 4.450 ac, 16.04% Impervious, Inflow Depth = 1.74" for 25-yr event
 Inflow = 12.18 cfs @ 12.25 hrs, Volume= 0.645 af
 Outflow = 12.18 cfs @ 12.25 hrs, Volume= 0.645 af, Atten= 0%, Lag= 0.0 min
 Primary = 10.38 cfs @ 12.25 hrs, Volume= 0.640 af
 Routed to Link 33L : To MassDOT in Rte 116 (DP-4)
 Secondary = 1.84 cfs @ 12.25 hrs, Volume= 0.006 af
 Routed to Link 33L : To MassDOT in Rte 116 (DP-4)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 573.32' @ 12.25 hrs
 Flood Elev= 573.12'

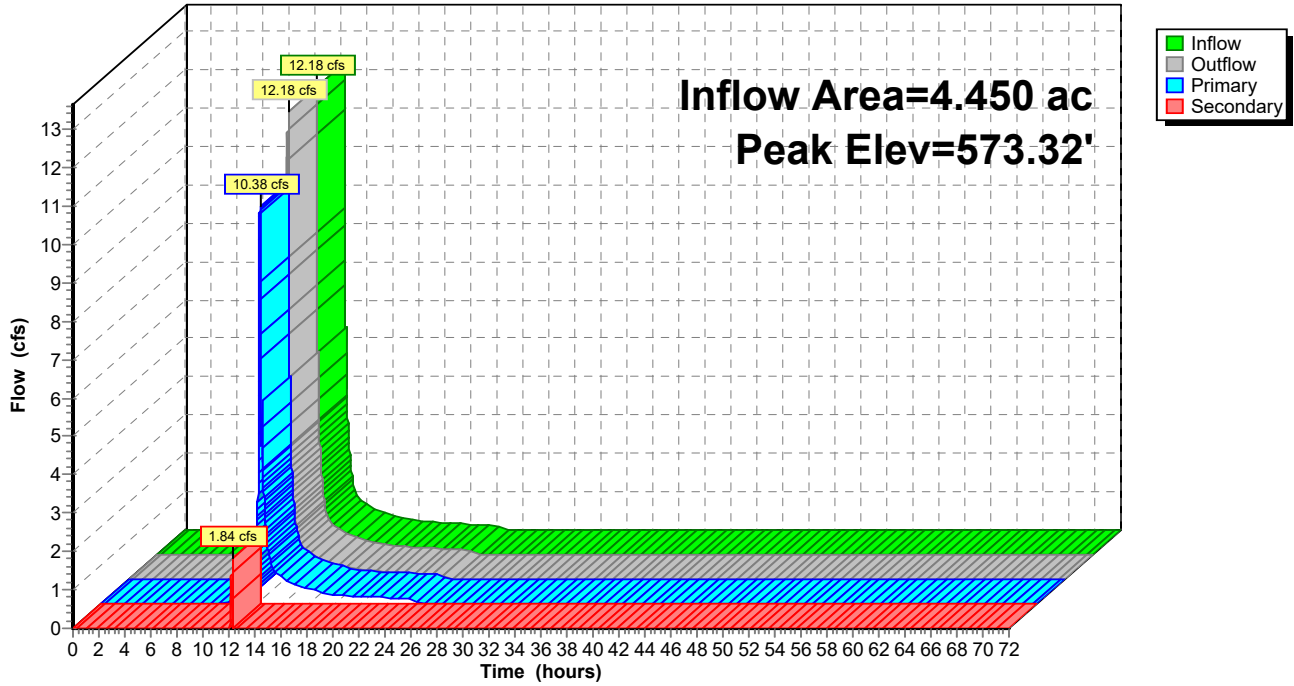
Device	Routing	Invert	Outlet Devices
#1	Primary	569.62'	15.0" Round Culvert L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 569.62' / 567.62' S= 0.0500 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	573.12'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=10.21 cfs @ 12.25 hrs HW=573.23' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 10.21 cfs @ 8.32 fps)

Secondary OutFlow Max=1.84 cfs @ 12.25 hrs HW=573.30' TW=0.00' (Dynamic Tailwater)
 ↑2=Orifice/Grate (Weir Controls 1.84 cfs @ 1.39 fps)

Pond 27P: J22

Hydrograph



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Summary for Pond 49P: J1

- [92] Warning: Device #3 is above defined storage
- [93] Warning: Storage range exceeded by 0.36'
- [90] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 10.137 ac, 0.00% Impervious, Inflow Depth = 1.98" for 25-yr event
 Inflow = 17.40 cfs @ 12.21 hrs, Volume= 1.675 af
 Outflow = 17.43 cfs @ 12.20 hrs, Volume= 1.675 af, Atten= 0%, Lag= 0.0 min
 Primary = 9.36 cfs @ 12.20 hrs, Volume= 1.473 af
 Routed to Link 48L : NORTH TO 10 PINE HILL ROAD (DP-6)
 Secondary = 4.45 cfs @ 12.20 hrs, Volume= 0.163 af
 Routed to Pond 8P : PDI 2
 Tertiary = 3.62 cfs @ 12.20 hrs, Volume= 0.039 af
 Routed to Pond 8P : PDI 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 626.36' @ 12.20 hrs Surf.Area= 1,478 sf Storage= 855 cf

Plug-Flow detention time= 0.5 min calculated for 1.675 af (100% of inflow)
 Center-of-Mass det. time= 0.4 min (865.9 - 865.4)

Volume	Invert	Avail.Storage	Storage Description
#1	623.00'	855 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
623.00	19	0	0
624.00	38	29	29
625.00	68	53	82
626.00	1,478	773	855

Device	Routing	Invert	Outlet Devices
#1	Primary	623.23'	15.0" Round Culvert L= 39.2' Ke= 0.500 Inlet / Outlet Invert= 623.23' / 622.75' S= 0.0122 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	624.48'	12.0" Round Culvert L= 62.0' Ke= 0.500 Inlet / Outlet Invert= 624.48' / 615.50' S= 0.1448 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Tertiary	626.10'	10.0' long x 25.0' 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) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

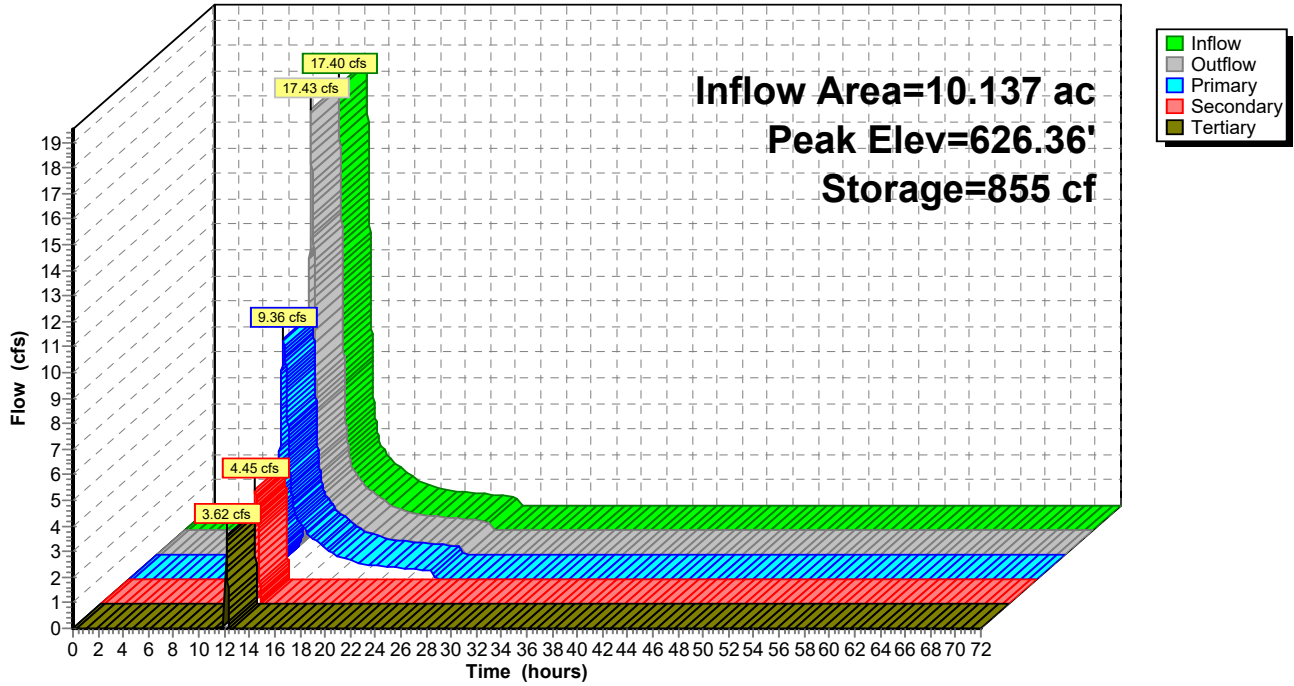
Primary OutFlow Max=9.36 cfs @ 12.20 hrs HW=626.36' TW=0.00' (Dynamic Tailwater)
 ↑**1=Culvert** (Inlet Controls 9.36 cfs @ 7.62 fps)

Secondary OutFlow Max=4.45 cfs @ 12.20 hrs HW=626.36' TW=621.65' (Dynamic Tailwater)
 ↑**2=Culvert** (Inlet Controls 4.45 cfs @ 5.66 fps)

Tertiary OutFlow Max=3.60 cfs @ 12.20 hrs HW=626.36' TW=621.65' (Dynamic Tailwater)
 ↑**3=Broad-Crested Rectangular Weir**(Weir Controls 3.60 cfs @ 1.38 fps)

Pond 49P: J1

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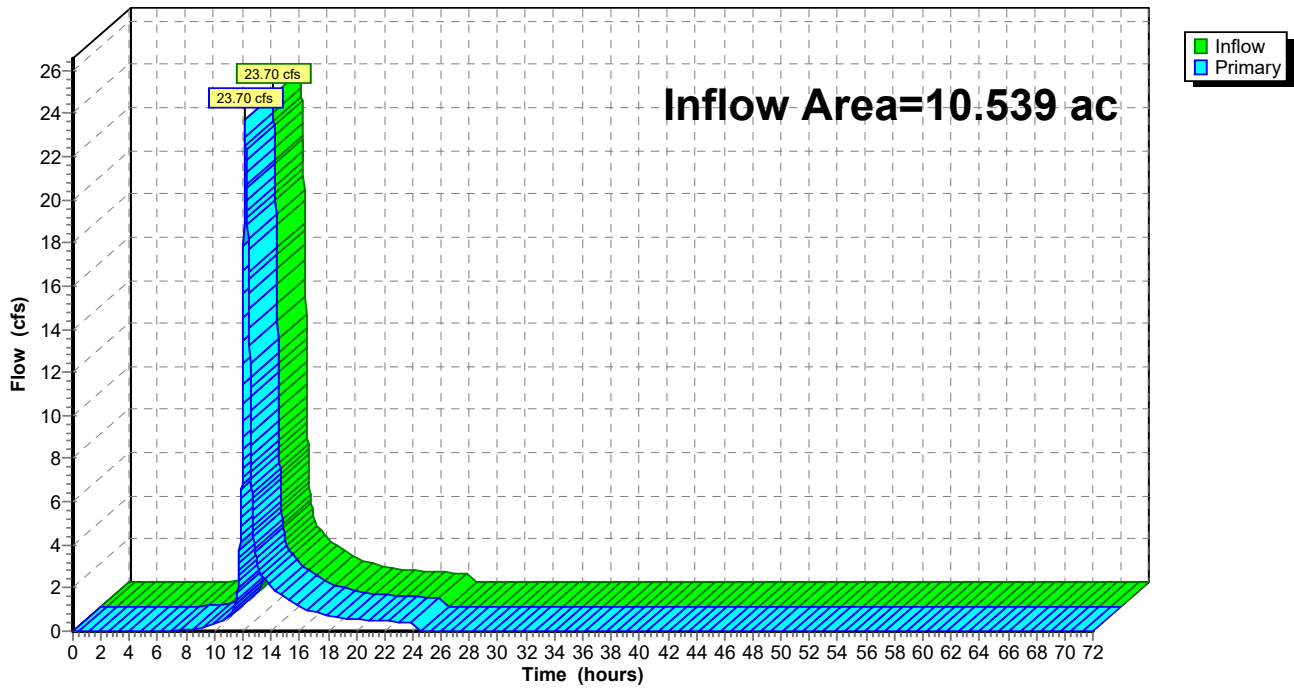
Summary for Link 1L: PROP OUTFALL TO TOWN PROP (DP-5)

Inflow Area = 10.539 ac, 15.96% Impervious, Inflow Depth = 2.45" for 25-yr event
Inflow = 23.70 cfs @ 12.16 hrs, Volume= 2.151 af
Primary = 23.70 cfs @ 12.16 hrs, Volume= 2.151 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 1L: PROP OUTFALL TO TOWN PROP (DP-5)

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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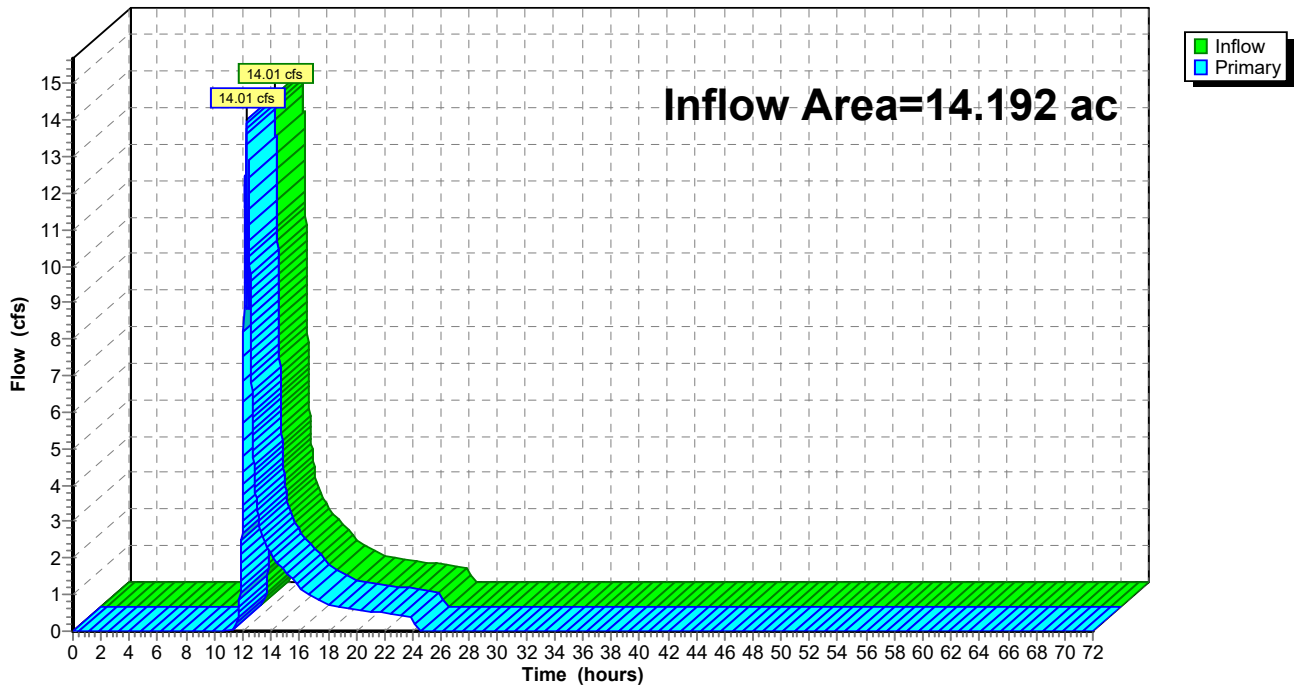
Summary for Link 15L: EXISTIN OUTLET TO UNDER 116 (DP-1)

Inflow Area = 14.192 ac, 4.81% Impervious, Inflow Depth = 1.38" for 25-yr event
Inflow = 14.01 cfs @ 12.26 hrs, Volume= 1.637 af
Primary = 14.01 cfs @ 12.26 hrs, Volume= 1.637 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 15L: EXISTIN OUTLET TO UNDER 116 (DP-1)

Hydrograph



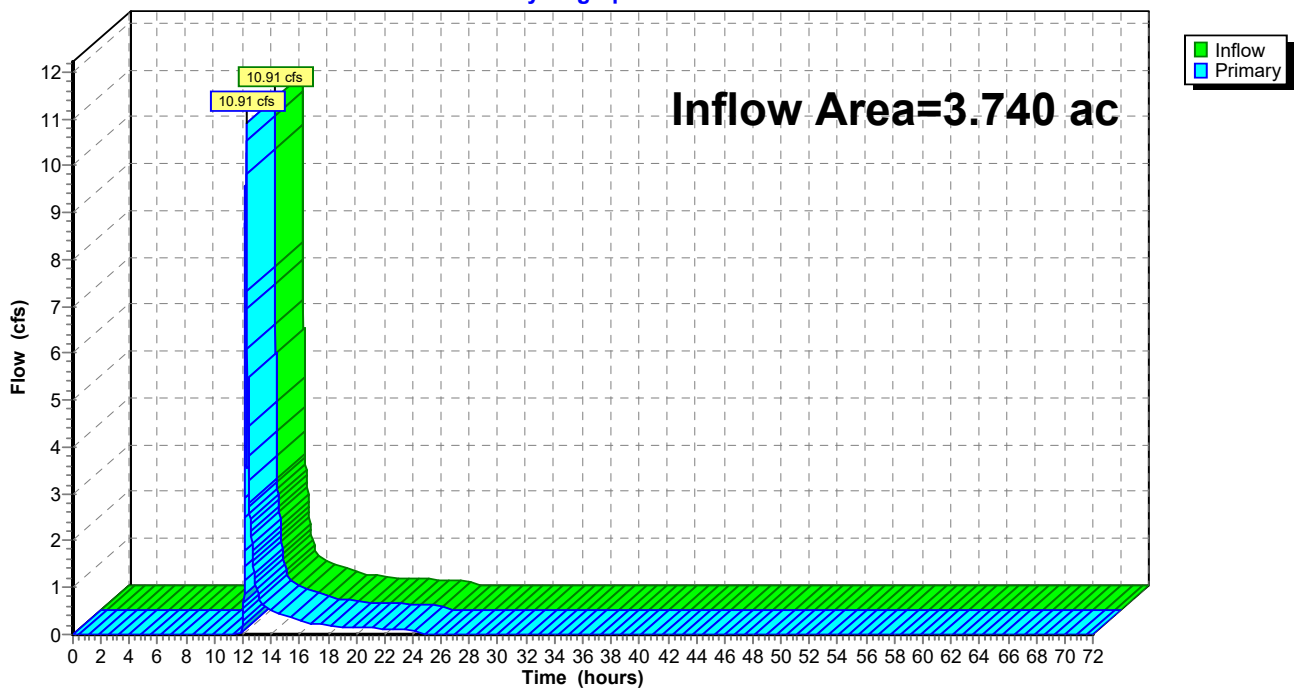
Summary for Link 19L: Behind houses

Inflow Area = 3.740 ac, 11.13% Impervious, Inflow Depth = 1.52" for 25-yr event
Inflow = 10.91 cfs @ 12.25 hrs, Volume= 0.475 af
Primary = 10.91 cfs @ 12.25 hrs, Volume= 0.475 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 27P : J22

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 19L: Behind houses

Hydrograph



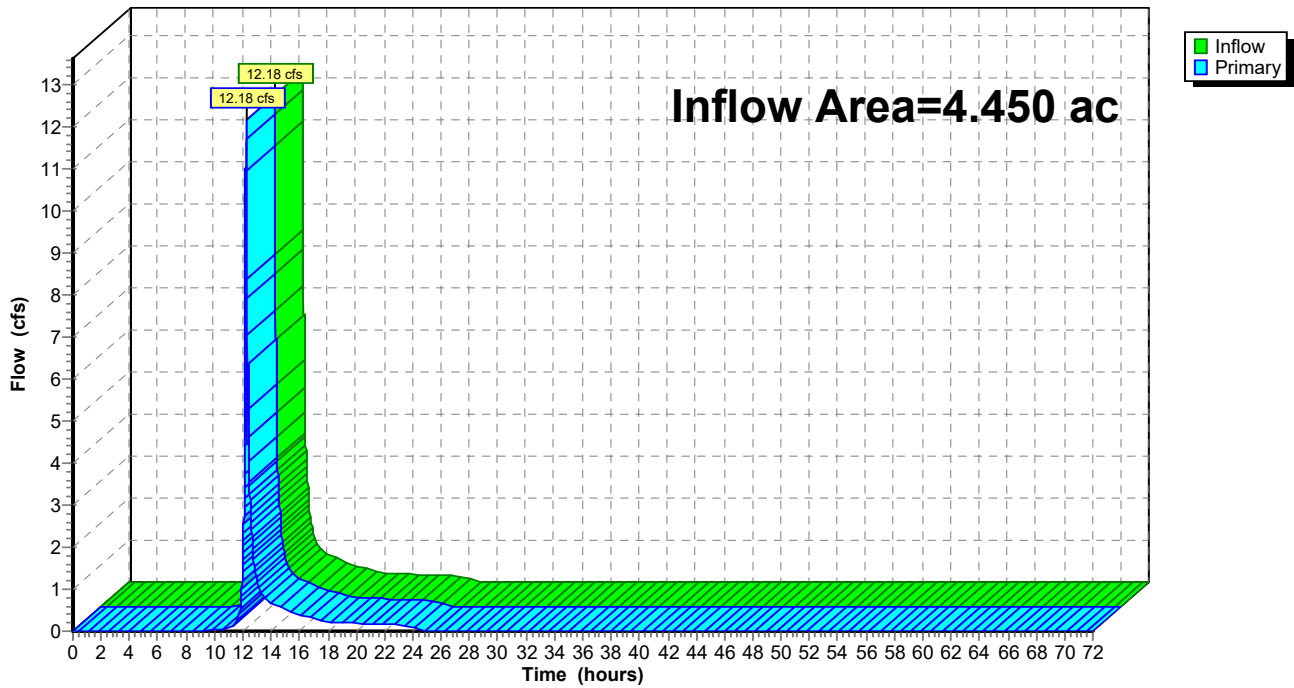
Summary for Link 33L: To MassDOT in Rte 116 (DP-4)

Inflow Area = 4.450 ac, 16.04% Impervious, Inflow Depth = 1.74" for 25-yr event
Inflow = 12.18 cfs @ 12.25 hrs, Volume= 0.645 af
Primary = 12.18 cfs @ 12.25 hrs, Volume= 0.645 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 33L: To MassDOT in Rte 116 (DP-4)

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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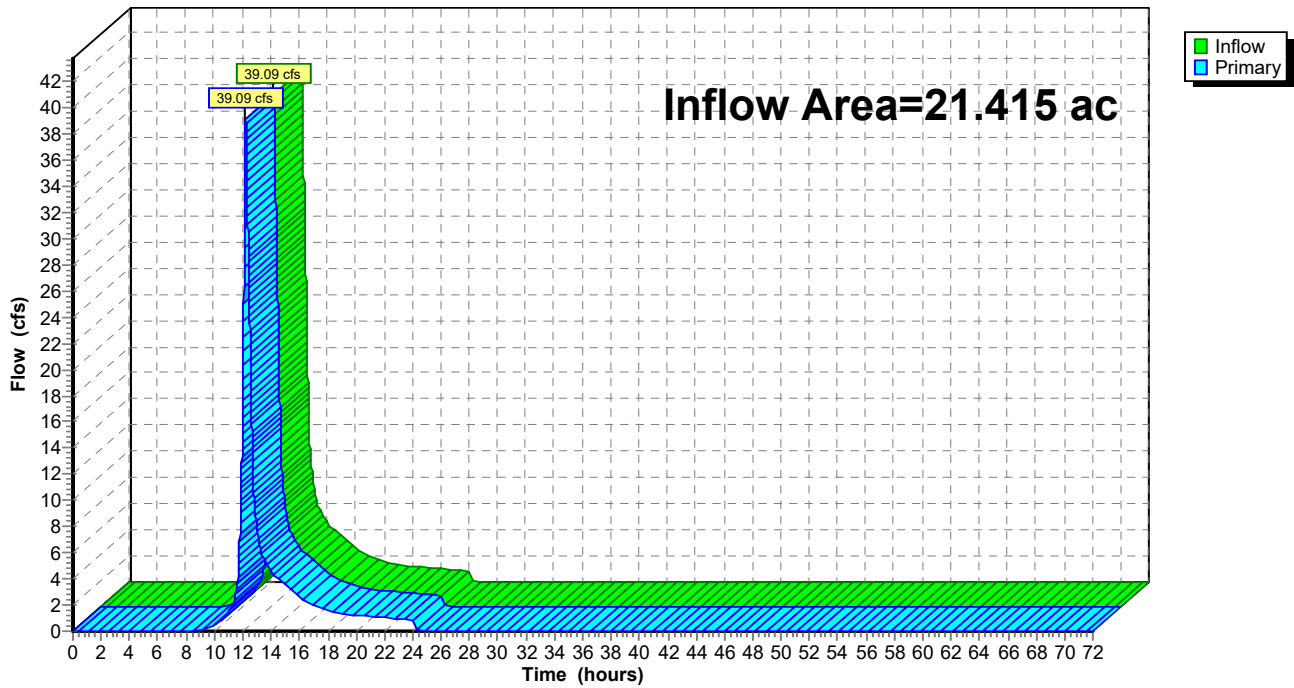
Summary for Link 48L: NORTH TO 10 PINE HILL ROAD (DP-6)

Inflow Area = 21.415 ac, 3.96% Impervious, Inflow Depth = 2.38" for 25-yr event
Inflow = 39.09 cfs @ 12.20 hrs, Volume= 4.247 af
Primary = 39.09 cfs @ 12.20 hrs, Volume= 4.247 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 48L: NORTH TO 10 PINE HILL ROAD (DP-6)

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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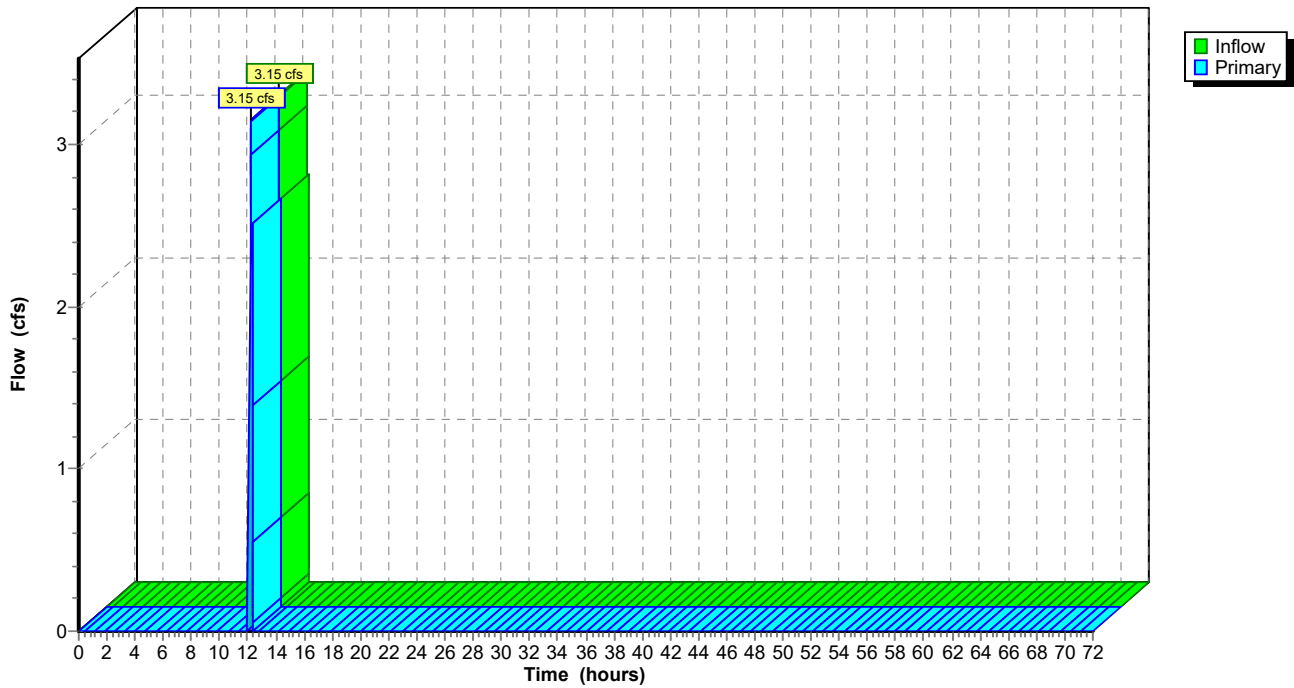
Summary for Link 49L: 51 Baptist Hill Rd Property (DP-3)

Inflow = 3.15 cfs @ 12.25 hrs, Volume= 0.032 af
Primary = 3.15 cfs @ 12.25 hrs, Volume= 0.032 af, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : Behind houses

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 49L: 51 Baptist Hill Rd Property (DP-3)

Hydrograph



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Type III 24-hr 25-yr Rainfall=5.72"

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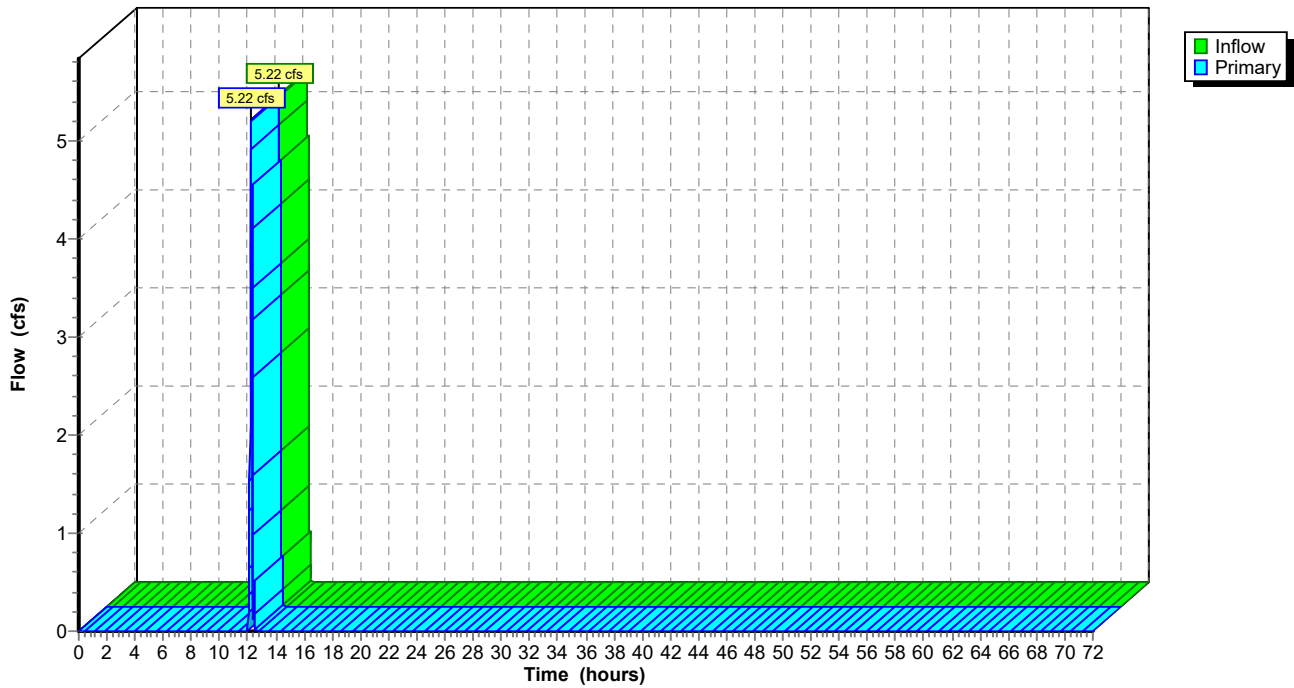
Summary for Link 50L: ALONG 45 UPPER BAPTIST HILL RD (DP-2)

Inflow = 5.22 cfs @ 12.25 hrs, Volume= 0.065 af
Primary = 5.22 cfs @ 12.25 hrs, Volume= 0.065 af, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : Behind houses

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 50L: ALONG 45 UPPER BAPTIST HILL RD (DP-2)

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: 1S	Runoff Area=263,518 sf 0.00% Impervious Runoff Depth=2.51" Flow Length=1,253' Tc=17.3 min CN=57 Runoff=12.11 cfs 1.264 af
Subcatchment2S: 2S	Runoff Area=52,537 sf 35.20% Impervious Runoff Depth=2.81" Flow Length=472' Tc=6.7 min CN=60 Runoff=3.78 cfs 0.283 af
Subcatchment3S: 3S	Runoff Area=241,534 sf 0.00% Impervious Runoff Depth=2.12" Flow Length=1,175' Tc=14.4 min CN=53 Runoff=9.68 cfs 0.978 af
Subcatchment4S: 4S	Runoff Area=273,557 sf 2.62% Impervious Runoff Depth=2.71" Flow Length=1,106' Tc=13.6 min CN=59 Runoff=15.12 cfs 1.418 af
Subcatchment5S: 5S	Runoff Area=60,599 sf 18.58% Impervious Runoff Depth=2.71" Flow Length=406' Tc=11.9 min CN=59 Runoff=3.51 cfs 0.314 af
Subcatchment6S: 6S	Runoff Area=24,324 sf 24.68% Impervious Runoff Depth=2.21" Flow Length=368' Tc=9.8 min CN=54 Runoff=1.18 cfs 0.103 af
Subcatchment7S: 7S	Runoff Area=13,788 sf 51.83% Impervious Runoff Depth=3.86" Flow Length=100' Slope=0.0500 '/' Tc=6.9 min CN=70 Runoff=1.39 cfs 0.102 af
Subcatchment8S: 8S	Runoff Area=19,699 sf 37.25% Impervious Runoff Depth=4.52" Flow Length=211' Tc=8.3 min CN=76 Runoff=2.21 cfs 0.170 af
Subcatchment9S: 9S	Runoff Area=64,091 sf 41.74% Impervious Runoff Depth=5.42" Flow Length=546' Tc=7.2 min CN=84 Runoff=8.74 cfs 0.664 af
Subcatchment10S: 12S	Runoff Area=11,227 sf 49.99% Impervious Runoff Depth=3.65" Tc=1.2 min CN=68 Runoff=1.31 cfs 0.078 af
Subcatchment11S: 11S	Runoff Area=58,435 sf 35.42% Impervious Runoff Depth=5.19" Flow Length=803' Tc=15.5 min CN=82 Runoff=6.02 cfs 0.580 af
Subcatchment12S: 12S	Runoff Area=162,915 sf 11.13% Impervious Runoff Depth=2.12" Flow Length=743' Tc=21.2 min CN=53 Runoff=5.61 cfs 0.659 af
Subcatchment13S: 13S	Runoff Area=24,870 sf 22.10% Impervious Runoff Depth=3.12" Tc=1.2 min CN=63 Runoff=2.45 cfs 0.148 af
Subcatchment14S: 14S	Runoff Area=441,577 sf 0.00% Impervious Runoff Depth=3.12" Flow Length=1,423' Tc=14.1 min CN=63 Runoff=28.26 cfs 2.635 af
Subcatchment15S: 15S	Runoff Area=491,280 sf 7.52% Impervious Runoff Depth=4.30" Flow Length=1,700' Tc=14.7 min CN=74 Runoff=43.38 cfs 4.038 af
Pond 1P: PDMH 1	Peak Elev=566.81' Inflow=27.52 cfs 3.117 af 24.0" Round Culvert n=0.013 L=52.7' S=0.0474 '/' Outflow=27.52 cfs 3.117 af

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Type III 24-hr 100-yr Rainfall=7.29"

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Pond 2P: PDI 1Peak Elev=571.10' Inflow=27.52 cfs 3.117 af
24.0" Round Culvert n=0.013 L=177.3' S=0.0197 '/' Outflow=27.52 cfs 3.117 af**Pond 3P: PDMH 2**Peak Elev=574.26' Inflow=26.36 cfs 2.969 af
24.0" Round Culvert n=0.013 L=121.9' S=0.0197 '/' Outflow=26.36 cfs 2.969 af**Pond 4P: PCB 1**Peak Elev=577.21' Inflow=26.36 cfs 2.969 af
24.0" Round Culvert n=0.013 L=30.1' S=0.0764 '/' Outflow=26.36 cfs 2.969 af**Pond 5P: PCB 2**Peak Elev=598.87' Inflow=26.36 cfs 2.969 af
Primary=16.86 cfs 2.705 af Secondary=9.50 cfs 0.264 af Outflow=26.36 cfs 2.969 af**Pond 6P: PCB 3**Peak Elev=614.70' Inflow=21.61 cfs 2.389 af
18.0" Round Culvert n=0.013 L=209.7' S=0.0629 '/' Outflow=21.61 cfs 2.389 af**Pond 7P: PCB 4**Peak Elev=618.19' Inflow=14.06 cfs 1.725 af
18.0" Round Culvert n=0.013 L=172.6' S=0.0203 '/' Outflow=14.06 cfs 1.725 af**Pond 8P: PDI 2**Peak Elev=622.49' Storage=464 cf Inflow=34.21 cfs 2.004 af
Primary=14.06 cfs 1.725 af Secondary=18.68 cfs 0.279 af Outflow=31.97 cfs 2.004 af**Pond 9P: PDI 3**Peak Elev=624.89' Inflow=18.71 cfs 1.540 af
Primary=11.77 cfs 1.358 af Secondary=6.96 cfs 0.182 af Outflow=18.71 cfs 1.540 af**Pond 10P: PDI 4**Peak Elev=629.54' Inflow=25.90 cfs 1.728 af
Primary=9.64 cfs 1.313 af Secondary=8.23 cfs 0.291 af Tertiary=9.48 cfs 0.124 af Outflow=25.90 cfs 1.728 af**Pond 11P: PDI 5**Peak Elev=641.75' Inflow=9.68 cfs 0.978 af
Primary=4.59 cfs 0.678 af Secondary=9.68 cfs 0.300 af Outflow=9.68 cfs 0.978 af**Pond 12P: PDI 6**Peak Elev=644.34' Inflow=17.51 cfs 2.539 af
Primary=16.31 cfs 2.529 af Secondary=1.20 cfs 0.010 af Outflow=17.51 cfs 2.539 af**Pond 13P: PDI 7**Peak Elev=651.96' Inflow=15.20 cfs 1.579 af
Primary=7.78 cfs 1.350 af Secondary=9.10 cfs 0.228 af Outflow=15.20 cfs 1.579 af**Pond 14P: PDI 8**Peak Elev=656.66' Inflow=3.51 cfs 0.314 af
12.0" Round Culvert n=0.013 L=271.3' S=0.0346 '/' Outflow=3.51 cfs 0.314 af**Pond 24P: J15**Peak Elev=594.81' Inflow=2.95 cfs 0.249 af
Primary=2.95 cfs 0.249 af Secondary=0.00 cfs 0.000 af Outflow=2.95 cfs 0.249 af**Pond 25P: J14**Peak Elev=612.20' Inflow=2.21 cfs 0.170 af
Primary=2.21 cfs 0.170 af Secondary=0.00 cfs 0.000 af Outflow=2.21 cfs 0.170 af**Pond 27P: J22**Peak Elev=575.81' Inflow=40.48 cfs 1.660 af
Primary=13.94 cfs 1.130 af Secondary=26.54 cfs 0.530 af Outflow=40.48 cfs 1.660 af**Pond 49P: J1**Peak Elev=626.82' Storage=855 cf Inflow=28.26 cfs 2.635 af
Primary=10.18 cfs 2.091 af Secondary=5.14 cfs 0.263 af Tertiary=16.40 cfs 0.282 af Outflow=31.72 cfs 2.635 af

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Type III 24-hr 100-yr Rainfall=7.29"

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Link 1L: PROP OUTFALL TO TOWN PROP (DP-5)

Inflow=27.52 cfs 3.117 af
Primary=27.52 cfs 3.117 af

Link 15L: EXISTIN OUTLET TO UNDER 116 (DP-1)

Inflow=16.31 cfs 2.529 af
Primary=16.31 cfs 2.529 af

Link 19L: Behind houses

Inflow=38.30 cfs 1.412 af
Primary=38.30 cfs 1.412 af

Link 33L: To MassDOT in Rte 116 (DP-4)

Inflow=40.48 cfs 1.660 af
Primary=40.48 cfs 1.660 af

Link 48L: NORTH TO 10 PINE HILL ROAD (DP-6)

Inflow=53.56 cfs 6.128 af
Primary=53.56 cfs 6.128 af

Link 49L: 51 Baptist Hill Rd Property (DP-3)

Inflow=25.61 cfs 0.461 af
Primary=25.61 cfs 0.461 af

Link 50L: ALONG 45 UPPER BAPTISTHILL RD (DP-2)

Inflow=8.23 cfs 0.291 af
Primary=8.23 cfs 0.291 af

Total Runoff Area = 50.596 ac Runoff Volume = 13.434 af Average Runoff Depth = 3.19"
92.24% Pervious = 46.669 ac 7.76% Impervious = 3.927 ac

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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Subcatchment 1S: 1S

Runoff = 12.11 cfs @ 12.25 hrs, Volume= 1.264 af, Depth= 2.51"
 Routed to Pond 13P : PDI 7

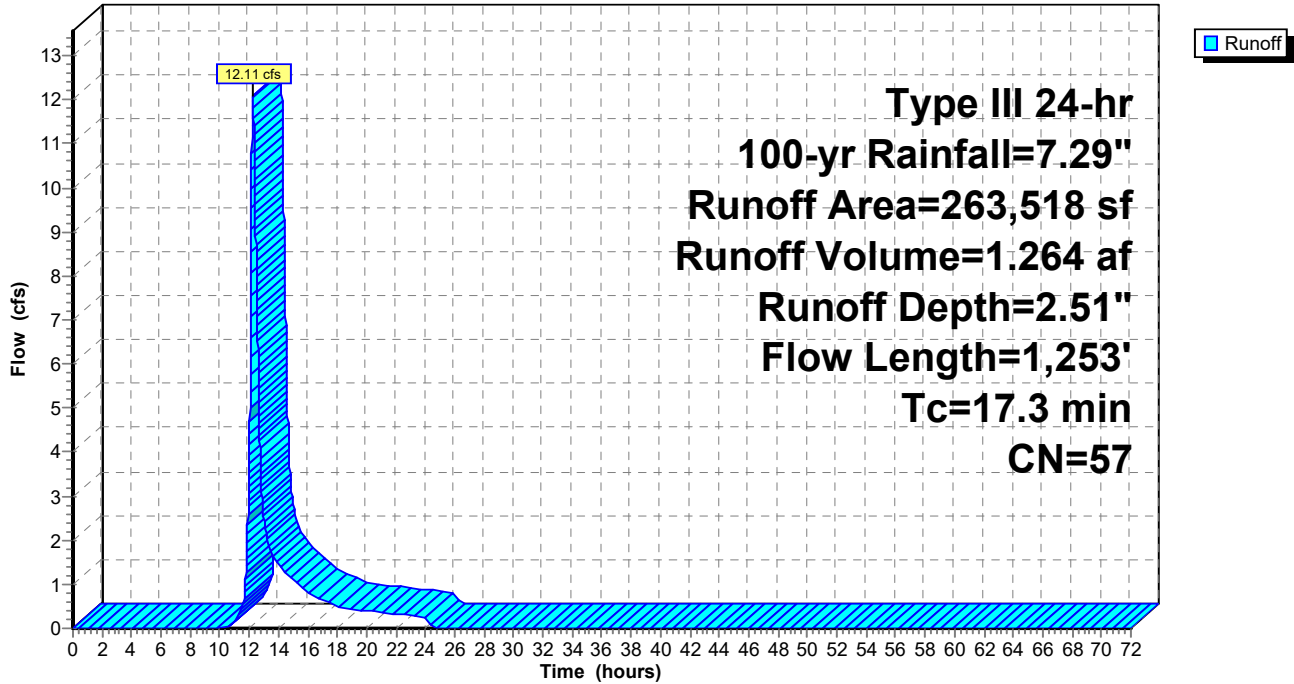
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100-yr Rainfall=7.29"

Area (sf)	CN	Description
154,324	66	Woods, Poor, HSG B
27,768	45	Woods, Poor, HSG A
17,039	61	>75% Grass cover, Good, HSG B
64,387	39	>75% Grass cover, Good, HSG A
263,518	57	Weighted Average
263,518		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.1800	0.18		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.07"
2.6	385	0.2442	2.47		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.7	293	0.3240	2.85		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.9	475	0.0821	2.01		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
17.3	1,253	Total			

Subcatchment 1S: 1S

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Subcatchment 2S: 2S

Runoff = 3.78 cfs @ 12.10 hrs, Volume= 0.283 af, Depth= 2.81"
 Routed to Pond 12P : PDI 6

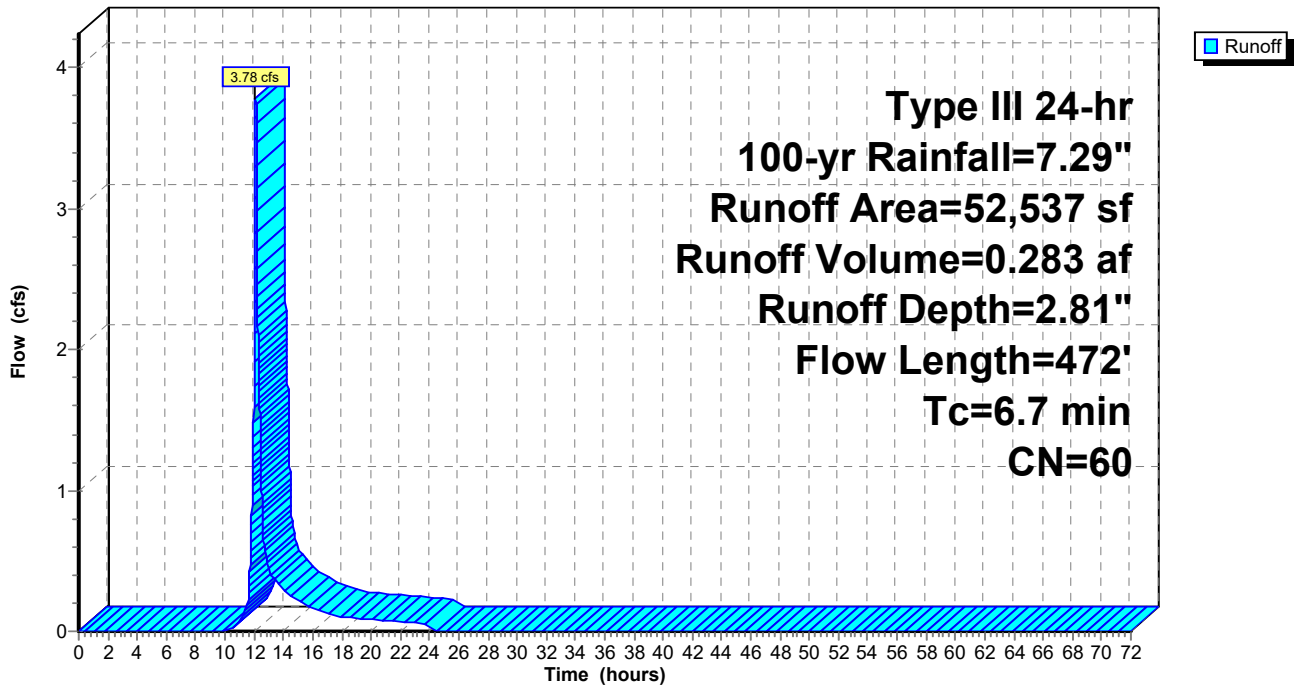
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100-yr Rainfall=7.29"

Area (sf)	CN	Description
18,495	98	Paved parking, HSG A
34,042	39	>75% Grass cover, Good, HSG A
52,537	60	Weighted Average
34,042		64.80% Pervious Area
18,495		35.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0900	0.30		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
1.2	372	0.0661	5.22		Shallow Concentrated Flow, Paved Kv= 20.3 fps
6.7	472	Total			

Subcatchment 2S: 2S

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Subcatchment 3S: 3S

Runoff = 9.68 cfs @ 12.21 hrs, Volume= 0.978 af, Depth= 2.12"
 Routed to Pond 11P : PDI 5

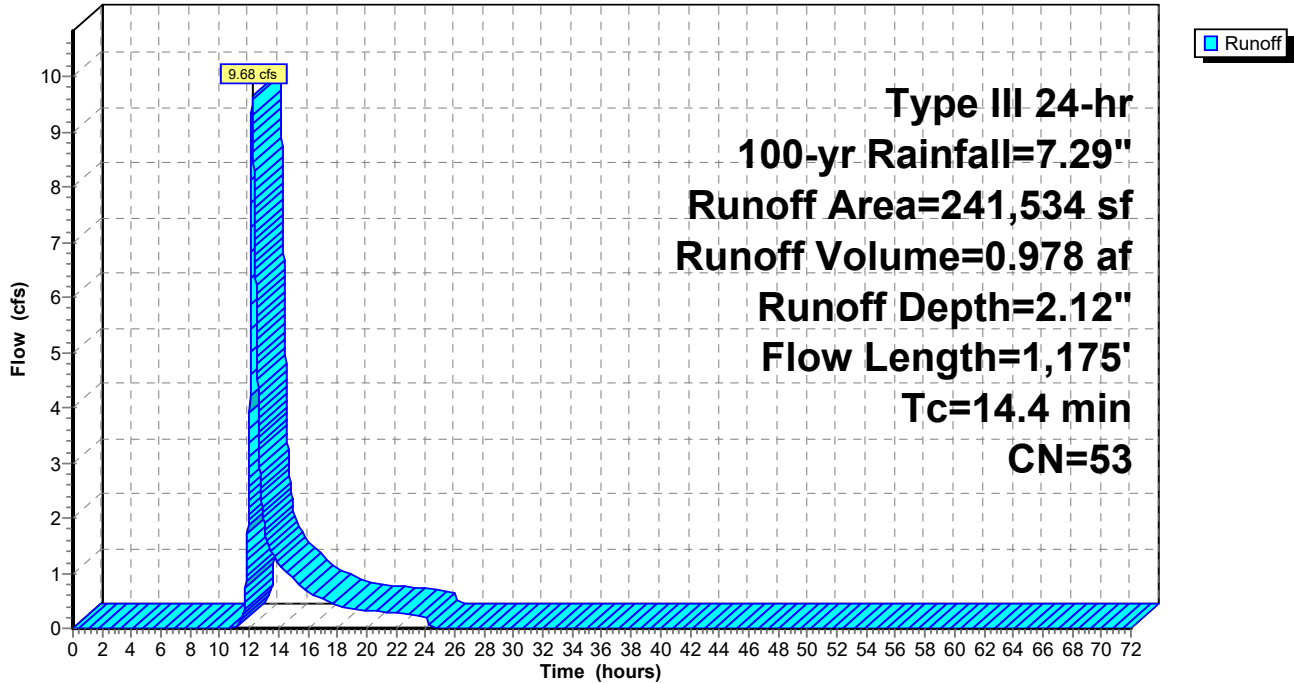
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100-yr Rainfall=7.29"

Area (sf)	CN	Description
78,775	66	Woods, Poor, HSG B
81,473	45	Woods, Poor, HSG A
81,286	49	50-75% Grass cover, Fair, HSG A
241,534	53	Weighted Average
241,534		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	100	0.1900	0.19		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.07"
1.1	180	0.3000	2.74		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.6	150	0.6933	4.16		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.5	210	0.2190	2.34		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.3	535	0.0598	3.94		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
14.4	1,175	Total			

Subcatchment 3S: 3S

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Subcatchment 4S: 4S

Runoff = 15.12 cfs @ 12.20 hrs, Volume= 1.418 af, Depth= 2.71"
 Routed to Pond 10P : PDI 4

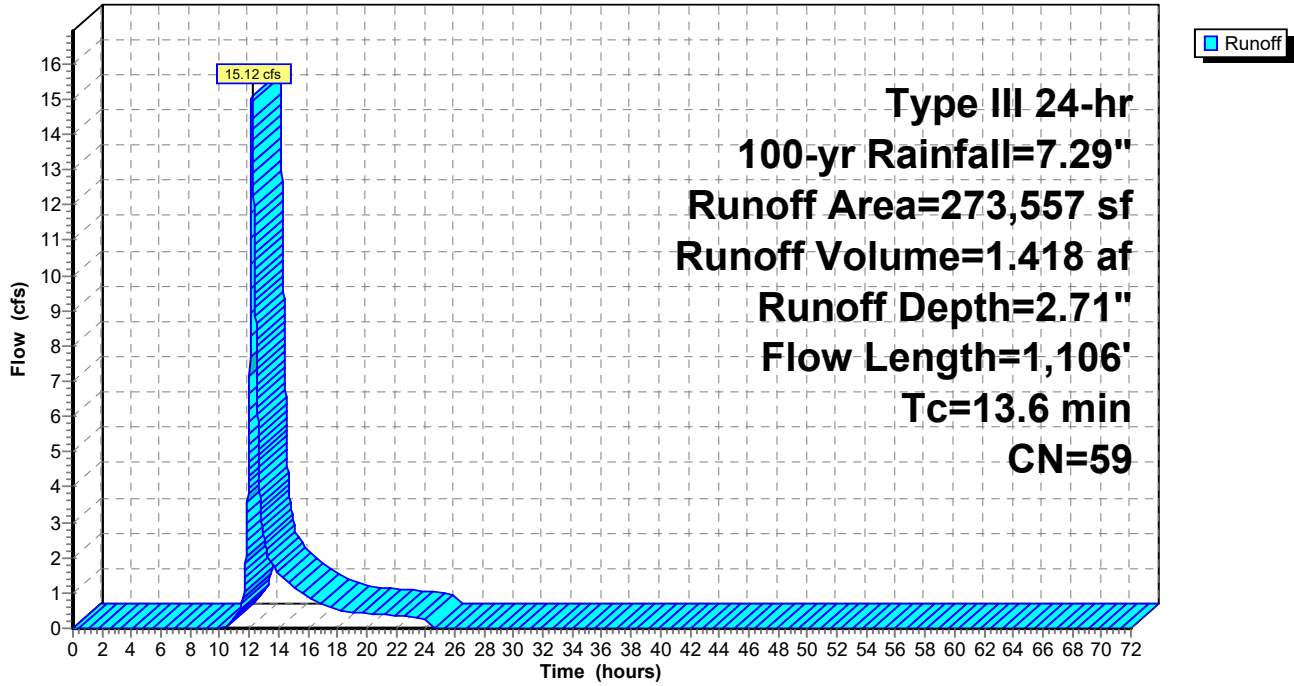
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100-yr Rainfall=7.29"

Area (sf)	CN	Description
4,382	98	Paved roads w/curbs & sewers, HSG A
66,093	39	>75% Grass cover, Good, HSG A
182,528	66	Woods, Poor, HSG B
17,774	39	>75% Grass cover, Good, HSG A
* 2,780	98	Impervious, Good, HSG A
273,557	59	Weighted Average
266,395		97.38% Pervious Area
7,162		2.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	100	0.3100	0.23		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.07"
1.4	214	0.2520	2.51		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.5	120	0.6500	4.03		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.3	212	0.2920	2.70		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.1	460	0.0739	2.45		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
13.6	1,106	Total			

Subcatchment 4S: 4S

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Subcatchment 5S: 5S

Runoff = 3.51 cfs @ 12.17 hrs, Volume= 0.314 af, Depth= 2.71"
 Routed to Pond 14P : PDI 8

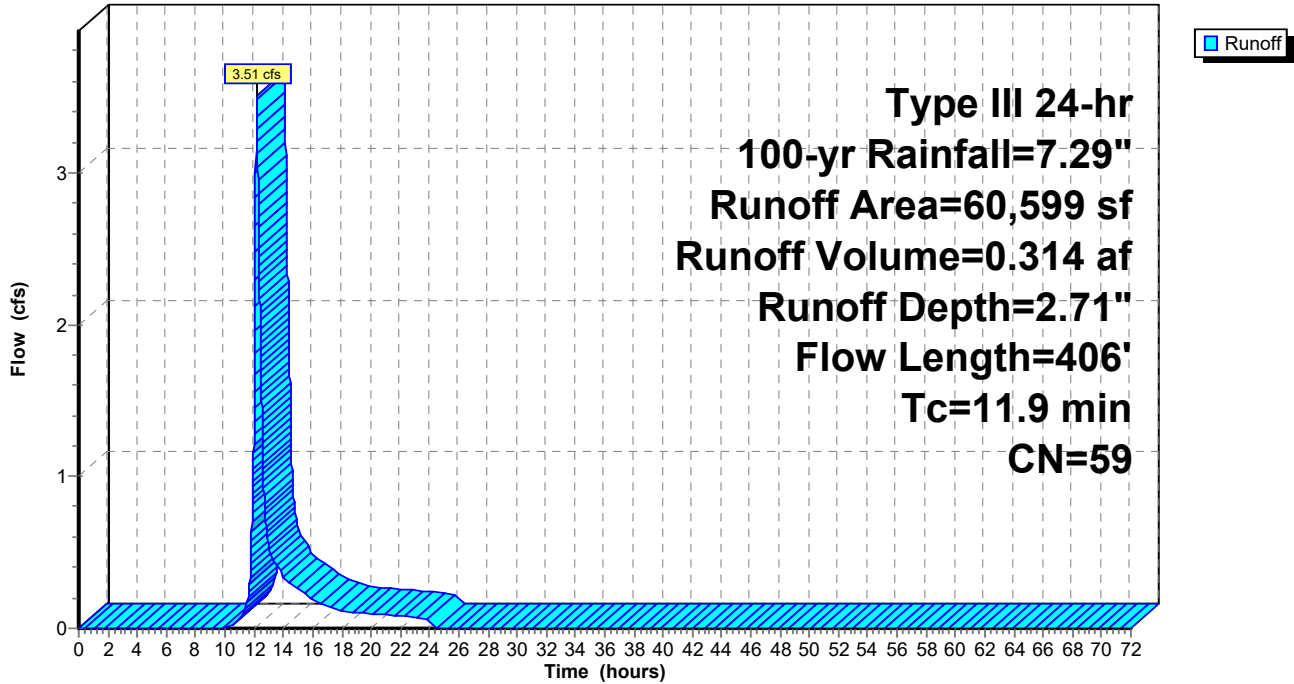
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100-yr Rainfall=7.29"

Area (sf)	CN	Description
23,965	39	>75% Grass cover, Good, HSG A
25,373	61	>75% Grass cover, Good, HSG B
* 4,212	98	Impervious, HSG B
* 7,049	98	Impervious, HSG A
60,599	59	Weighted Average
49,338		81.42% Pervious Area
11,261		18.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.1600	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.07"
0.4	98	0.1633	3.64		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
1.2	93	0.0323	1.26		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.8	115	0.1235	2.46		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
11.9	406	Total			

Subcatchment 5S: 5S

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Subcatchment 6S: 6S

Runoff = 1.18 cfs @ 12.15 hrs, Volume= 0.103 af, Depth= 2.21"
 Routed to Pond 9P : PDI 3

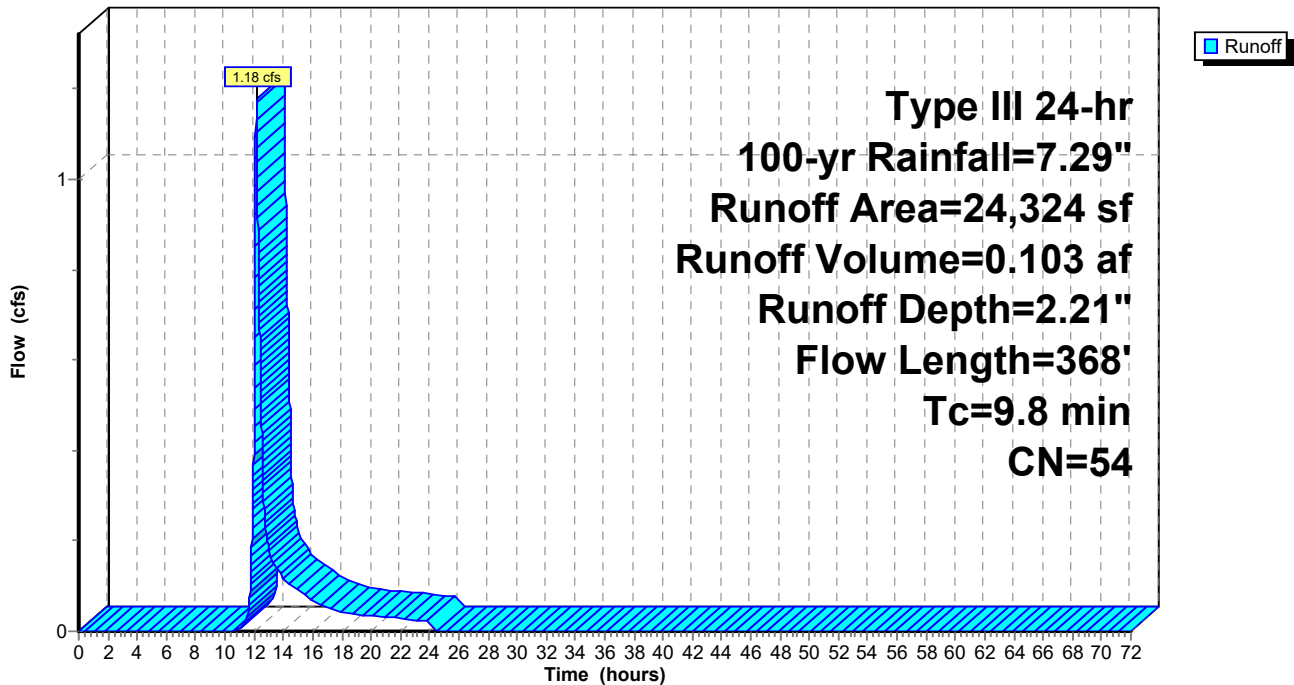
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100-yr Rainfall=7.29"

Area (sf)	CN	Description
6,004	98	Paved roads w/curbs & sewers, HSG A
18,320	39	>75% Grass cover, Good, HSG A
24,324	54	Weighted Average
18,320		75.32% Pervious Area
6,004		24.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	100	0.0400	0.20		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 3.07"
1.4	268	0.0261	3.28		Shallow Concentrated Flow, Paved Kv= 20.3 fps
9.8	368	Total			

Subcatchment 6S: 6S

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Subcatchment 7S: 7S

Runoff = 1.39 cfs @ 12.10 hrs, Volume= 0.102 af, Depth= 3.86"
 Routed to Pond 8P : PDI 2

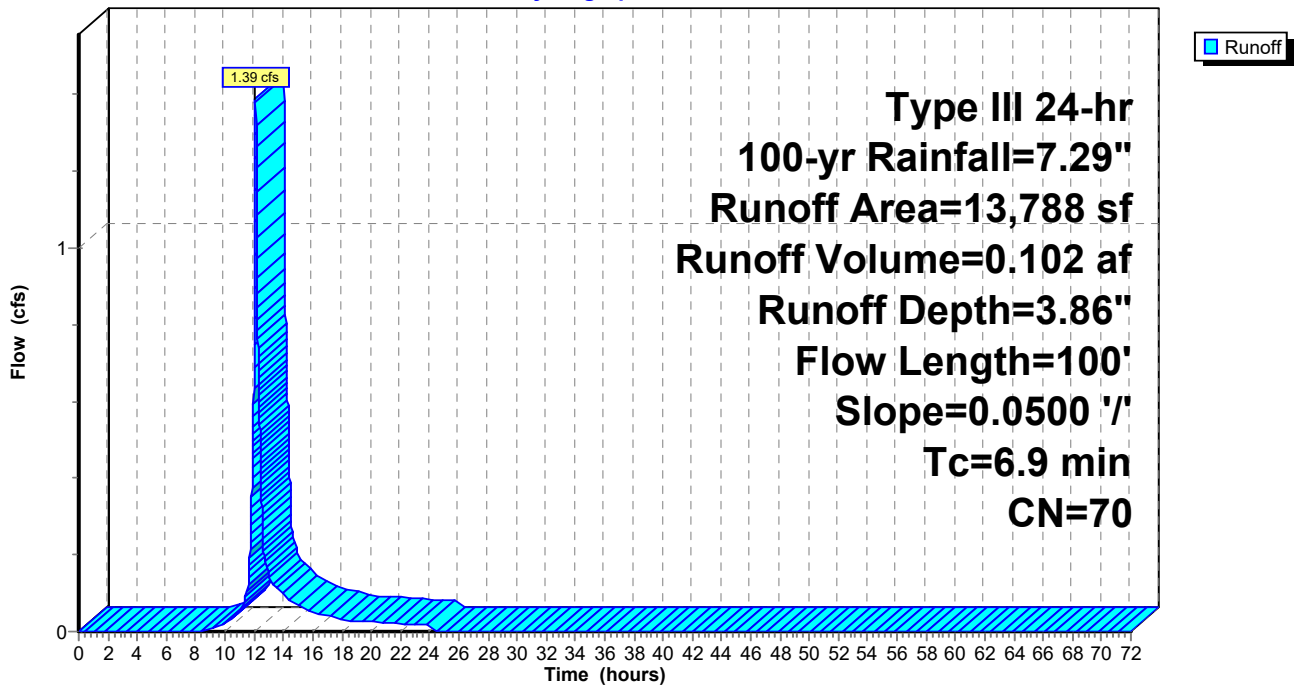
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100-yr Rainfall=7.29"

Area (sf)	CN	Description
6,642	39	>75% Grass cover, Good, HSG A
7,146	98	Paved parking, HSG A
13,788	70	Weighted Average
6,642		48.17% Pervious Area
7,146		51.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	100	0.0500	0.24		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"

Subcatchment 7S: 7S

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Subcatchment 8S: 8S

Runoff = 2.21 cfs @ 12.12 hrs, Volume= 0.170 af, Depth= 4.52"
 Routed to Pond 25P : J14

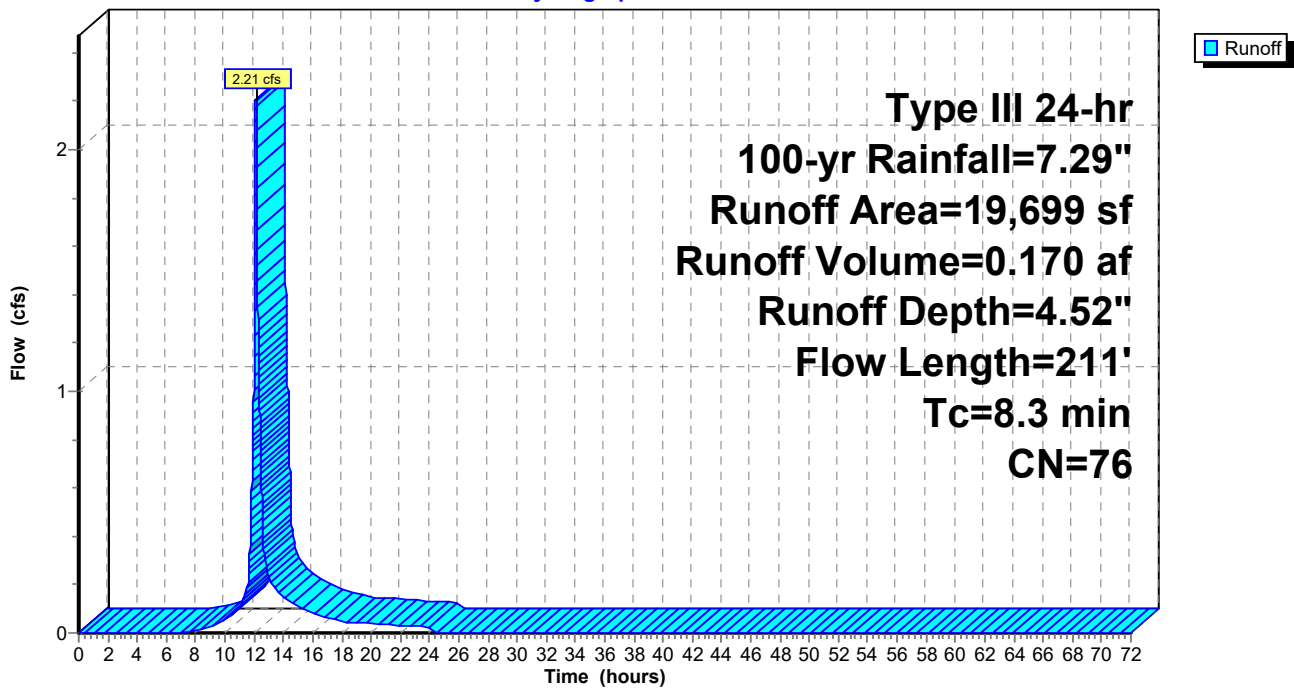
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100-yr Rainfall=7.29"

Area (sf)	CN	Description
* 6,358	98	Impervious, HSG C
* 980	98	Impervious, HSG A
3,996	39	>75% Grass cover, Good, HSG A
8,365	74	>75% Grass cover, Good, HSG C
19,699	76	Weighted Average
12,361		62.75% Pervious Area
7,338		37.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	100	0.0400	0.22		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
0.7	111	0.0180	2.72		Shallow Concentrated Flow, Paved Kv= 20.3 fps
8.3	211	Total			

Subcatchment 8S: 8S

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Subcatchment 9S: 9S

Runoff = 8.74 cfs @ 12.10 hrs, Volume= 0.664 af, Depth= 5.42"
 Routed to Pond 6P : PCB 3

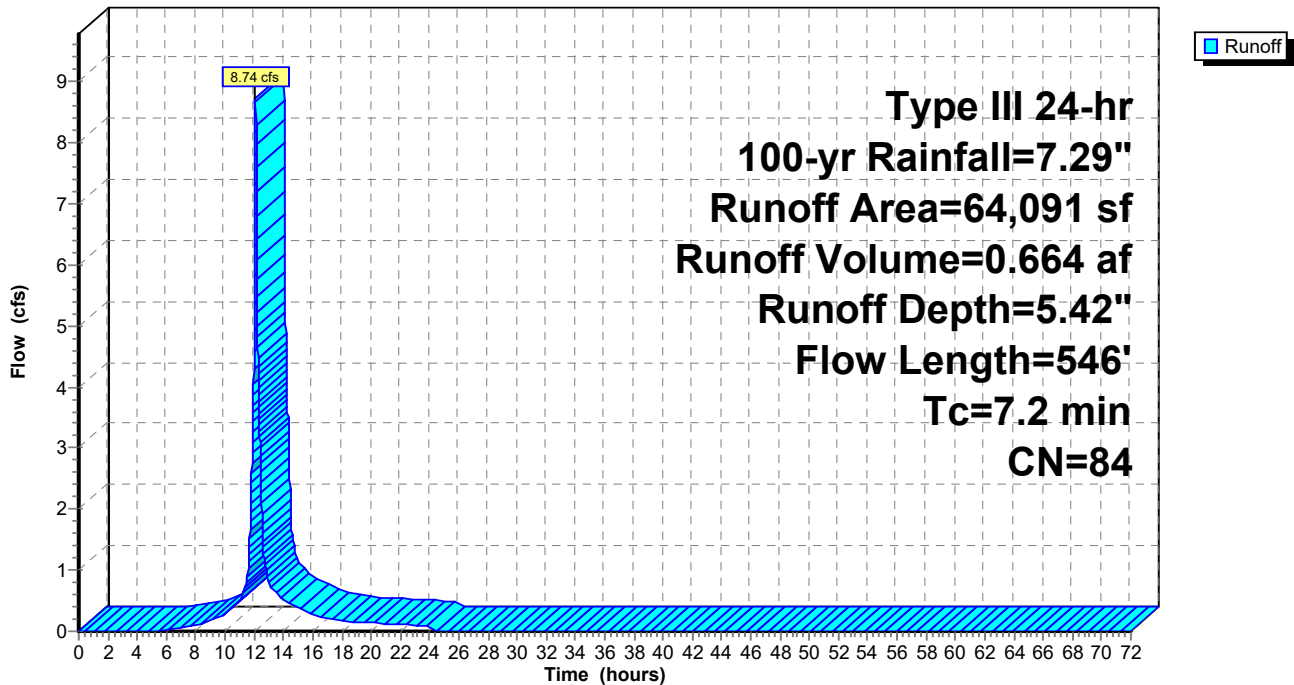
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100-yr Rainfall=7.29"

Area (sf)	CN	Description
26,754	98	Paved parking, HSG C
37,337	74	>75% Grass cover, Good, HSG C
64,091	84	Weighted Average
37,337		58.26% Pervious Area
26,754		41.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	100	0.0900	0.30		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
1.7	446	0.0471	4.41		Shallow Concentrated Flow, Paved Kv= 20.3 fps
7.2	546	Total			

Subcatchment 9S: 9S

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Subcatchment 10S: 12S

Runoff = 1.31 cfs @ 12.02 hrs, Volume= 0.078 af, Depth= 3.65"
 Routed to Pond 24P : J15

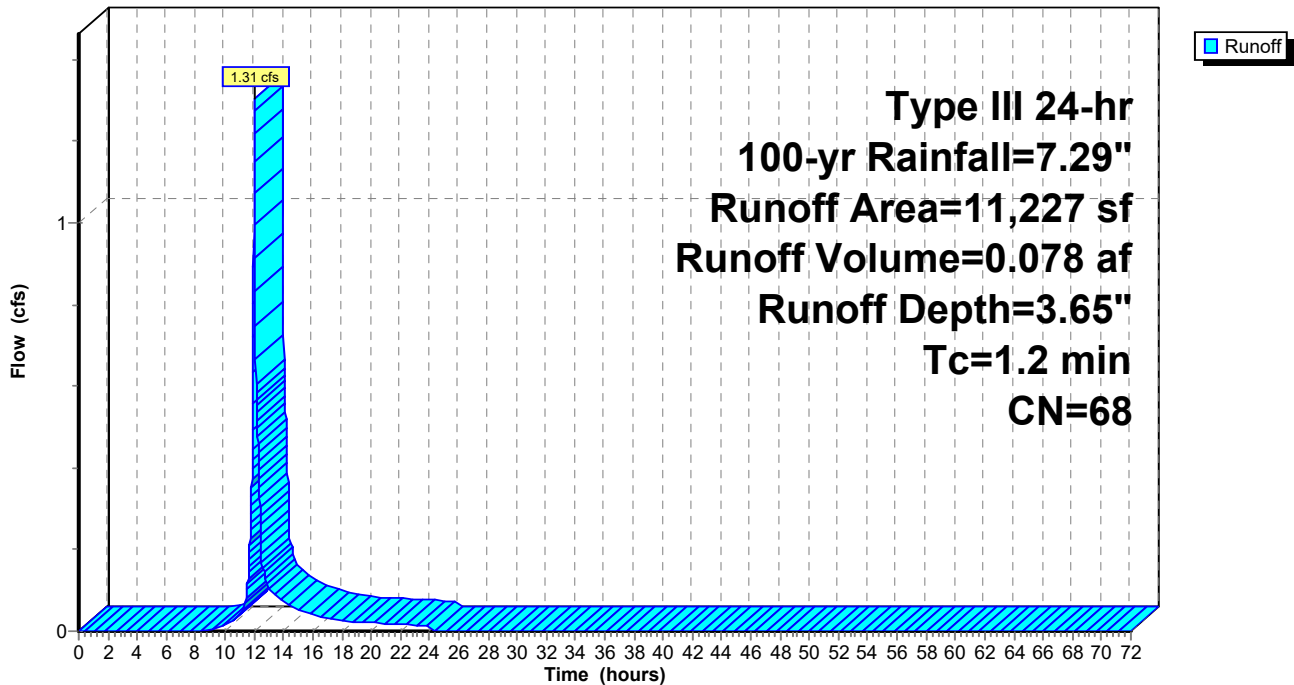
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100-yr Rainfall=7.29"

	Area (sf)	CN	Description
*	5,612	98	Impervious, HSG A
	5,615	39	>75% Grass cover, Good, HSG A
	11,227	68	Weighted Average
	5,615		50.01% Pervious Area
	5,612		49.99% Impervious Area

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

Subcatchment 10S: 12S

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Subcatchment 11S: 11S

Runoff = 6.02 cfs @ 12.21 hrs, Volume= 0.580 af, Depth= 5.19"
 Routed to Pond 5P : PCB 2

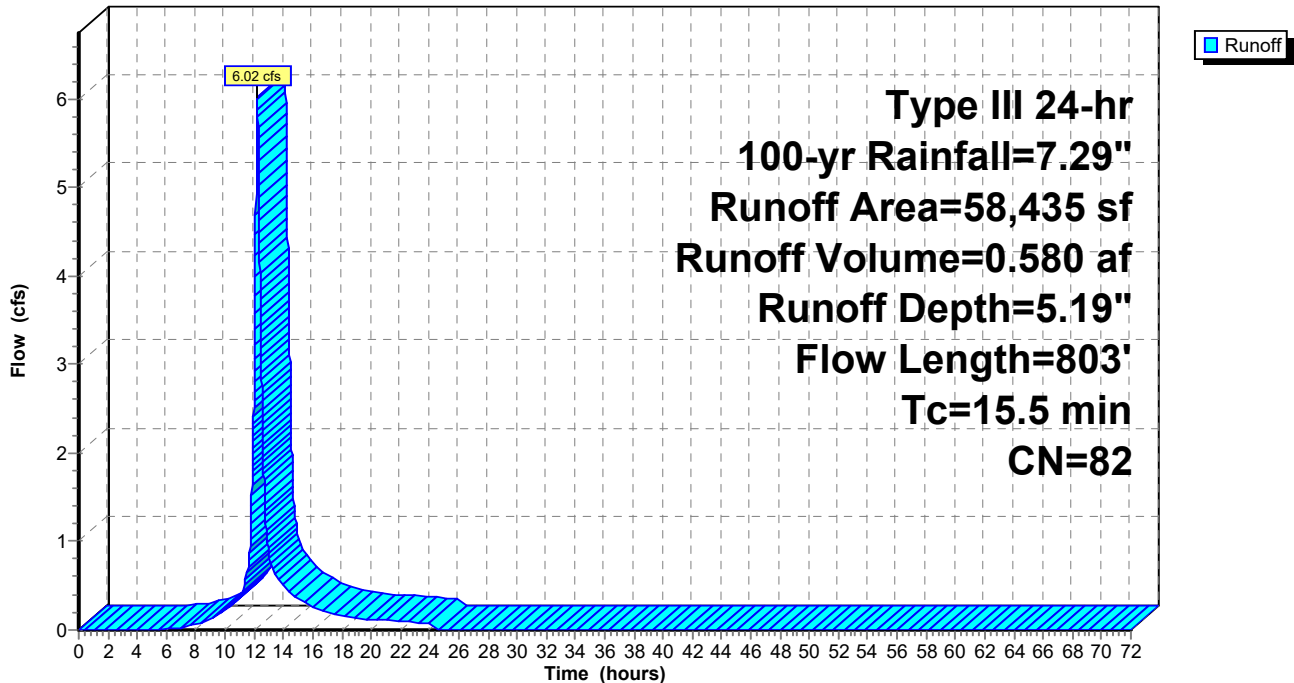
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100-yr Rainfall=7.29"

	Area (sf)	CN	Description
*	1,964	98	Impervious, HSG A
	780	39	>75% Grass cover, Good, HSG A
*	18,734	98	Impervious, HSG C
	36,957	74	>75% Grass cover, Good, HSG C
	58,435	82	Weighted Average
	37,737		64.58% Pervious Area
	20,698		35.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	100	0.0400	0.15		Sheet Flow, Grass: Dense n= 0.240 P2= 3.07"
3.8	411	0.0657	1.79		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
0.7	292	0.1199	7.03		Shallow Concentrated Flow, Paved Kv= 20.3 fps
15.5	803	Total			

Subcatchment 11S: 11S

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Subcatchment 12S: 12S

Runoff = 5.61 cfs @ 12.32 hrs, Volume= 0.659 af, Depth= 2.12"
 Routed to Link 19L : Behind houses

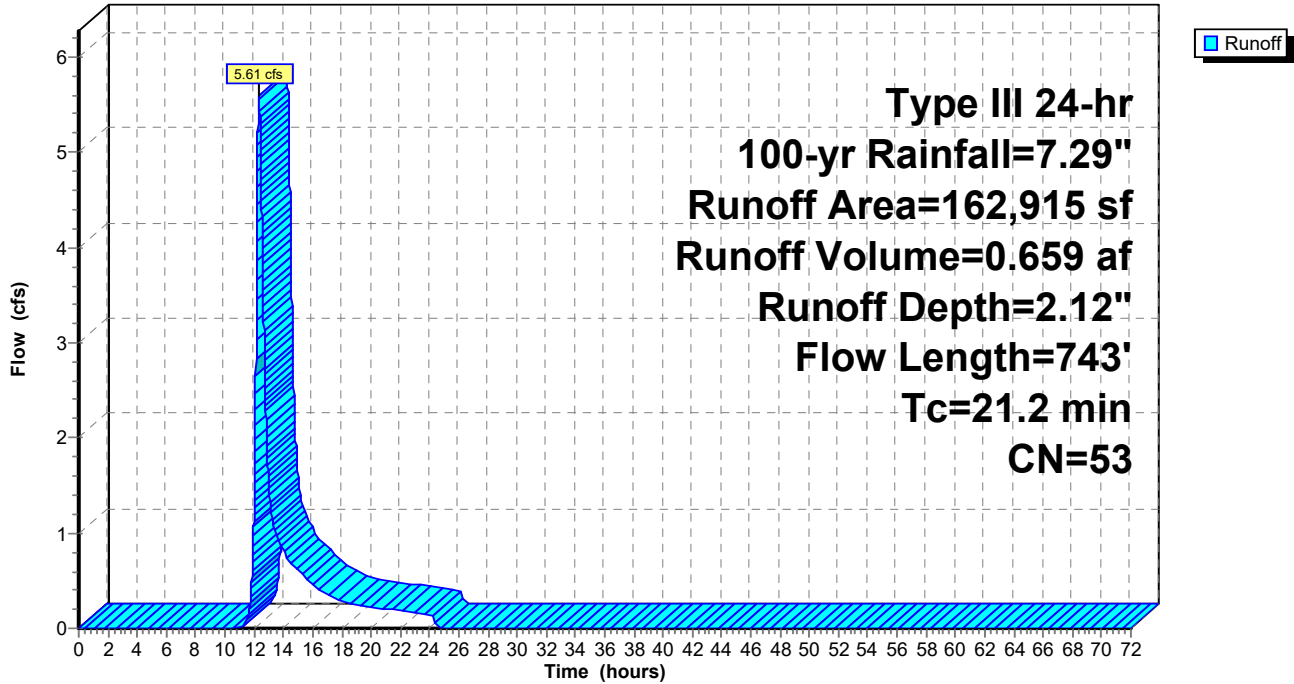
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100-yr Rainfall=7.29"

Area (sf)	CN	Description
* 13,392	98	Impervious, HSG A
* 4,745	98	Impervious, HSG C
24,615	45	Woods, Poor, HSG A
7,646	66	Woods, Poor, HSG B
89,600	39	>75% Grass cover, Good, HSG A
22,005	74	>75% Grass cover, Good, HSG C
912	61	>75% Grass cover, Good, HSG B
162,915	53	Weighted Average
144,778		88.87% Pervious Area
18,137		11.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	100	0.0300	0.13		Sheet Flow, Grass: Dense n= 0.240 P2= 3.07"
8.8	643	0.0594	1.22		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
21.2	743	Total			

Subcatchment 12S: 12S

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Subcatchment 13S: 13S

Runoff = 2.45 cfs @ 12.02 hrs, Volume= 0.148 af, Depth= 3.12"
 Routed to Pond 2P : PDI 1

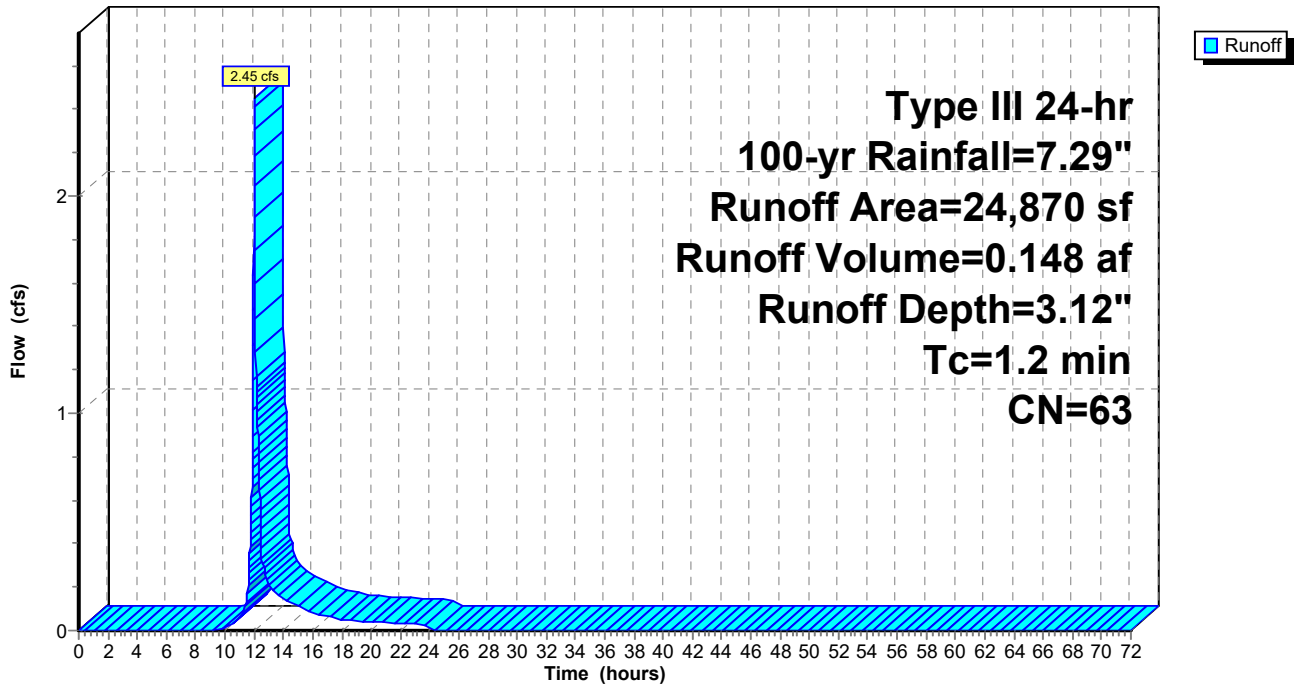
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100-yr Rainfall=7.29"

Area (sf)	CN	Description
5,179	74	>75% Grass cover, Good, HSG C
* 2,500	98	Impervious, C
13,037	45	Woods, Poor, HSG A
546	39	>75% Grass cover, Good, HSG A
* 2,290	98	Impervious, A
* 706	98	Impervious B
612	66	Woods, Poor, HSG B
24,870	63	Weighted Average
19,374		77.90% Pervious Area
5,496		22.10% Impervious Area

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

Subcatchment 13S: 13S

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Subcatchment 14S: 14S

Runoff = 28.26 cfs @ 12.20 hrs, Volume= 2.635 af, Depth= 3.12"
 Routed to Pond 49P : J1

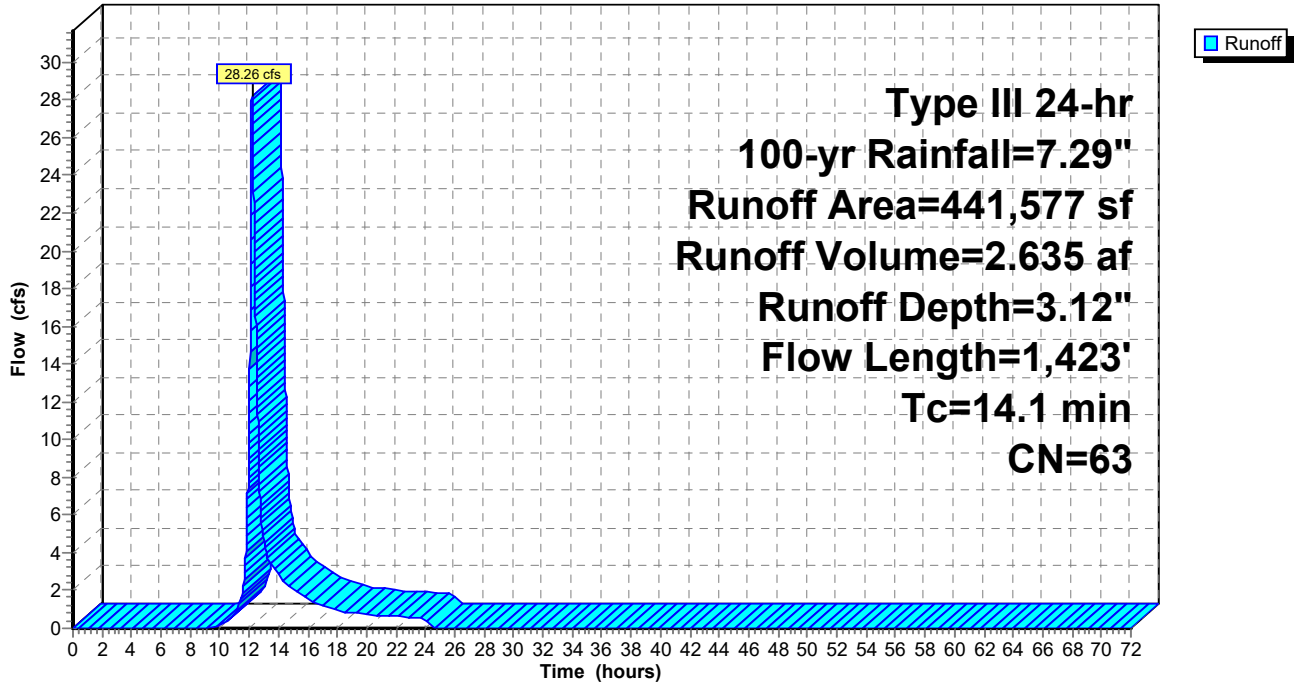
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100-yr Rainfall=7.29"

Area (sf)	CN	Description
186,589	66	Woods, Poor, HSG B
11,967	45	Woods, Poor, HSG A
104,358	77	Woods, Poor, HSG C
43,979	61	>75% Grass cover, Good, HSG B
10,084	74	>75% Grass cover, Good, HSG C
84,600	39	>75% Grass cover, Good, HSG A
441,577	63	Weighted Average
441,577		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	100	0.1900	0.41		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
1.5	199	0.1055	2.27		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
1.4	185	0.1946	2.21		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
4.1	619	0.2569	2.53		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
3.0	320	0.0656	1.79		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.1	1,423	Total			

Subcatchment 14S: 14S

Hydrograph



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Summary for Subcatchment 15S: 15S

Runoff = 43.38 cfs @ 12.20 hrs, Volume= 4.038 af, Depth= 4.30"

Routed to Link 48L : NORTH TO 10 PINE HILL ROAD (DP-6)

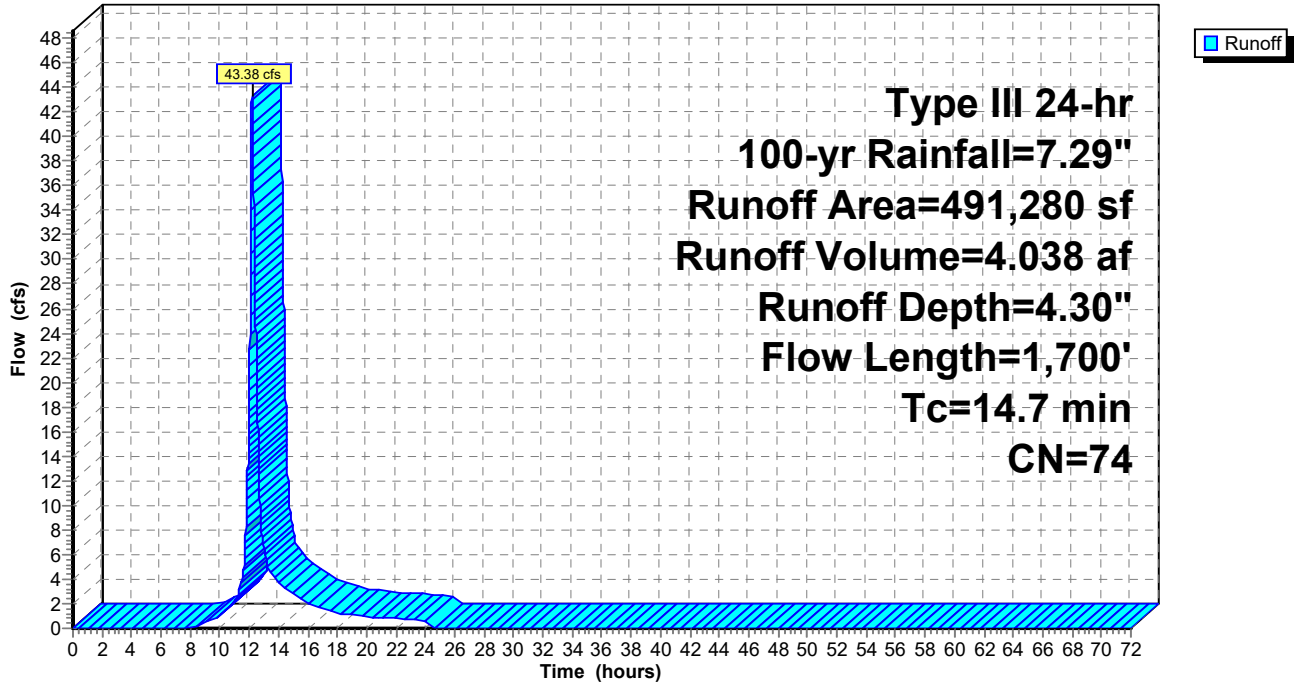
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=7.29"

Area (sf)	CN	Description
23,245	61	>75% Grass cover, Good, HSG B
29,263	74	>75% Grass cover, Good, HSG C
46,122	39	>75% Grass cover, Good, HSG A
16,942	45	Woods, Poor, HSG A
2,172	66	Woods, Poor, HSG B
289,686	77	Woods, Poor, HSG C
35,711	88	Row crops, straight row, Poor, HSG C
11,199	72	Row crops, straight row, Poor, HSG A
* 13,085	98	Impervious, HSG A
* 18,490	98	Impervious, HSG C
* 5,365	98	Impervious, HSG B
491,280	74	Weighted Average
454,340		92.48% Pervious Area
36,940		7.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	100	0.1400	0.36		Sheet Flow, Grass: Short n= 0.150 P2= 3.07"
0.9	140	0.1357	2.58		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
4.7	651	0.2166	2.33		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.0	131	0.1756	2.10		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
1.3	212	0.0849	2.62		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
2.2	466	0.0558	3.54		Shallow Concentrated Flow, Grassed Waterway Kv= 15.0 fps
14.7	1,700	Total			

Subcatchment 15S: 15S

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Pond 1P: PDMH 1

Inflow Area = 10.539 ac, 15.96% Impervious, Inflow Depth = 3.55" for 100-yr event
 Inflow = 27.52 cfs @ 12.12 hrs, Volume= 3.117 af
 Outflow = 27.52 cfs @ 12.12 hrs, Volume= 3.117 af, Atten= 0%, Lag= 0.0 min
 Primary = 27.52 cfs @ 12.12 hrs, Volume= 3.117 af
 Routed to Link 1L : PROP OUTFALL TO TOWN PROP (DP-5)

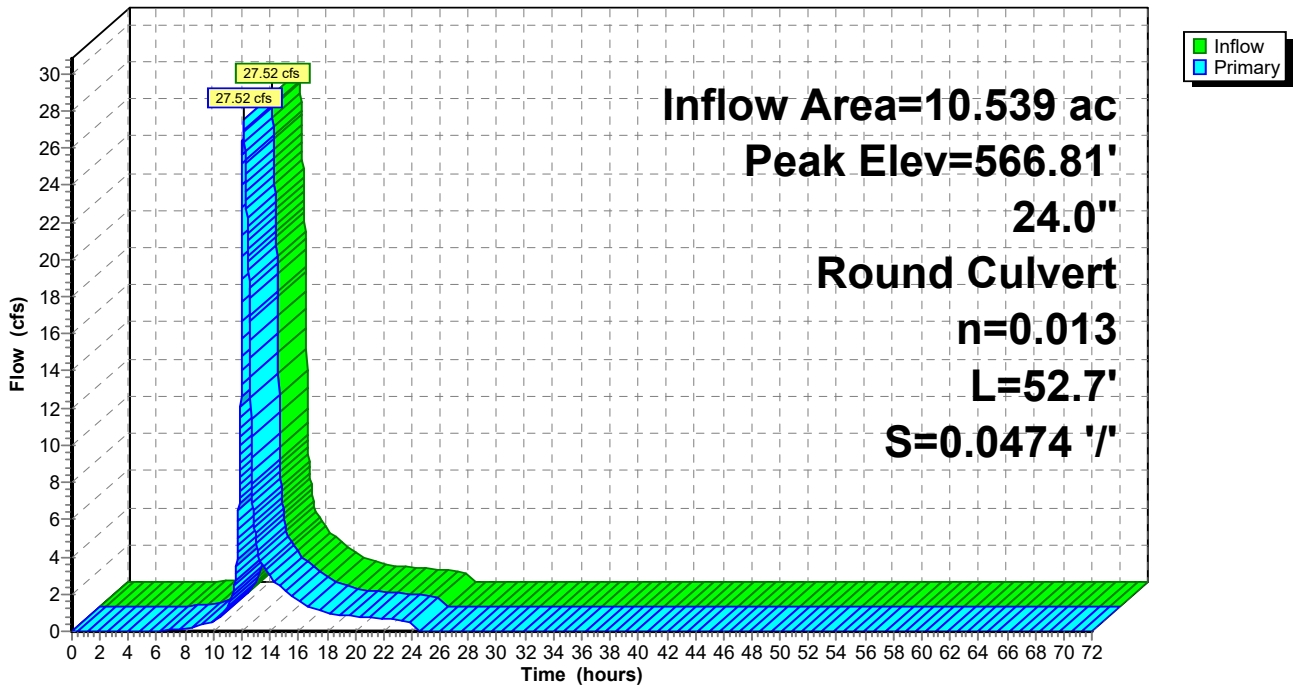
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 566.81' @ 12.12 hrs
 Flood Elev= 567.50'

Device #	Routing	Invert	Outlet Devices
#1	Primary	562.50'	24.0" Round Culvert L= 52.7' Ke= 0.500 Inlet / Outlet Invert= 562.50' / 560.00' S= 0.0474 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=27.51 cfs @ 12.12 hrs HW=566.81' TW=0.00' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 27.51 cfs @ 8.76 fps)

Pond 1P: PDMH 1

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Pond 2P: PDI 1

Inflow Area = 10.539 ac, 15.96% Impervious, Inflow Depth = 3.55" for 100-yr event
 Inflow = 27.52 cfs @ 12.12 hrs, Volume= 3.117 af
 Outflow = 27.52 cfs @ 12.12 hrs, Volume= 3.117 af, Atten= 0%, Lag= 0.0 min
 Primary = 27.52 cfs @ 12.12 hrs, Volume= 3.117 af
 Routed to Pond 1P : PDMH 1

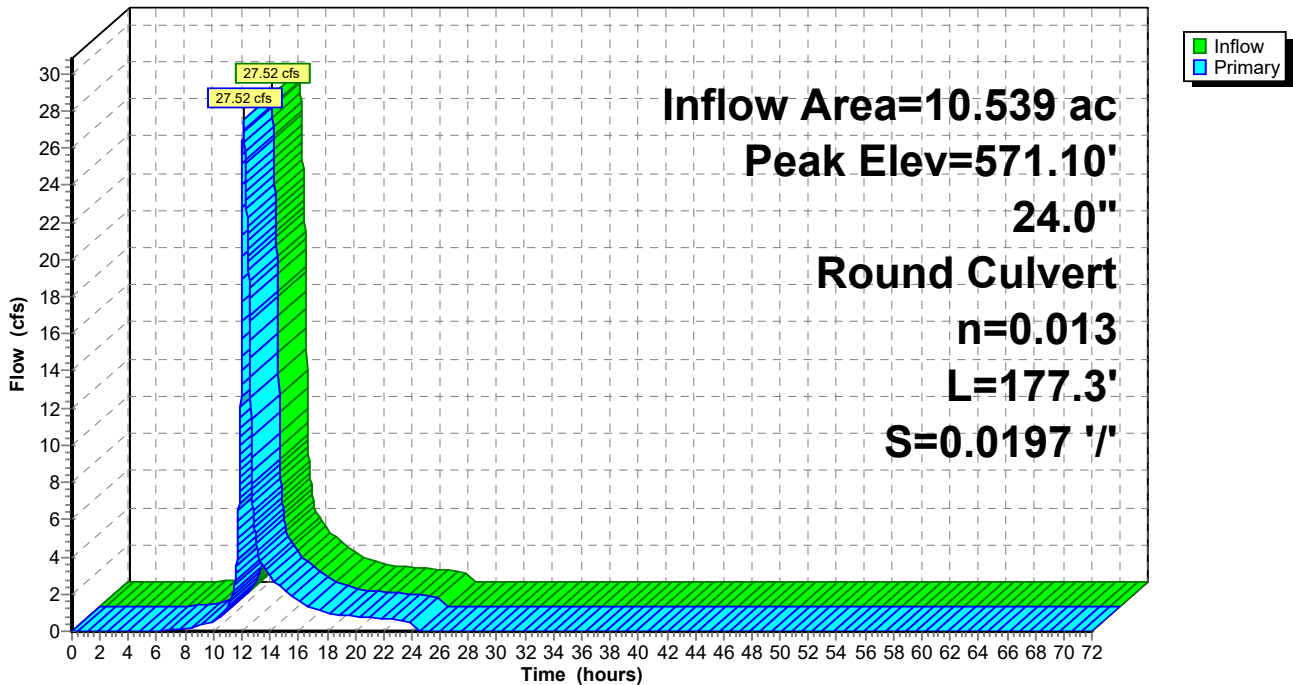
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 571.10' @ 12.12 hrs
 Flood Elev= 571.20'

Device #	Routing	Invert	Outlet Devices
#1	Primary	566.10'	24.0" Round Culvert L= 177.3' Ke= 0.500 Inlet / Outlet Invert= 566.10' / 562.60' S= 0.0197 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=27.07 cfs @ 12.12 hrs HW=571.08' TW=566.81' (Dynamic Tailwater)
 ↑1=Culvert (Outlet Controls 27.07 cfs @ 8.62 fps)

Pond 2P: PDI 1

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Pond 3P: PDMH 2

[58] Hint: Peaked 0.56' above defined flood level

Inflow Area = 9.968 ac, 15.61% Impervious, Inflow Depth = 3.57" for 100-yr event
 Inflow = 26.36 cfs @ 12.12 hrs, Volume= 2.969 af
 Outflow = 26.36 cfs @ 12.12 hrs, Volume= 2.969 af, Atten= 0%, Lag= 0.0 min
 Primary = 26.36 cfs @ 12.12 hrs, Volume= 2.969 af
 Routed to Pond 2P : PDI 1

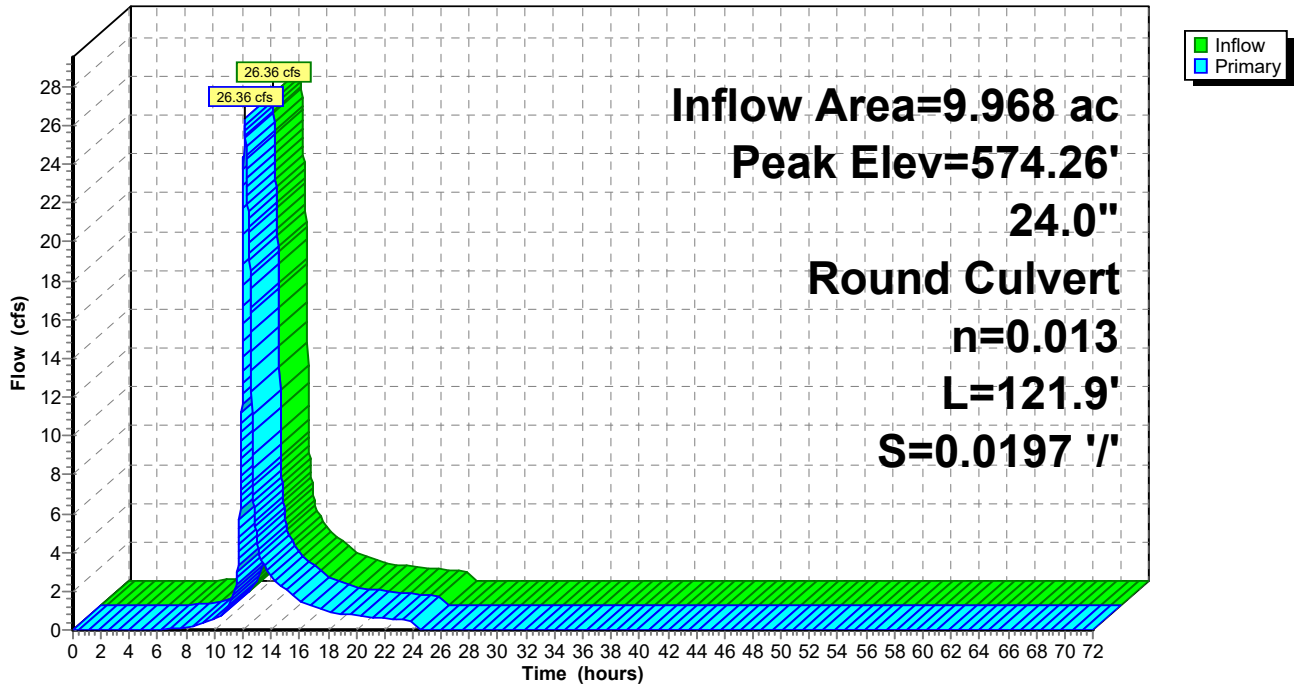
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 574.26' @ 12.13 hrs
 Flood Elev= 573.70'

Device #	Routing	Invert	Outlet Devices
#1	Primary	568.60'	24.0" Round Culvert L= 121.9' Ke= 0.500 Inlet / Outlet Invert= 568.60' / 566.20' S= 0.0197 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=25.59 cfs @ 12.12 hrs HW=574.19' TW=571.08' (Dynamic Tailwater)
 ←1=Culvert (Outlet Controls 25.59 cfs @ 8.15 fps)

Pond 3P: PDMH 2

Hydrograph



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Summary for Pond 4P: PCB 1

[58] Hint: Peaked 1.21' above defined flood level

Inflow Area = 9.968 ac, 15.61% Impervious, Inflow Depth = 3.57" for 100-yr event
 Inflow = 26.36 cfs @ 12.12 hrs, Volume= 2.969 af
 Outflow = 26.36 cfs @ 12.12 hrs, Volume= 2.969 af, Atten= 0%, Lag= 0.0 min
 Primary = 26.36 cfs @ 12.12 hrs, Volume= 2.969 af
 Routed to Pond 3P : PDMH 2

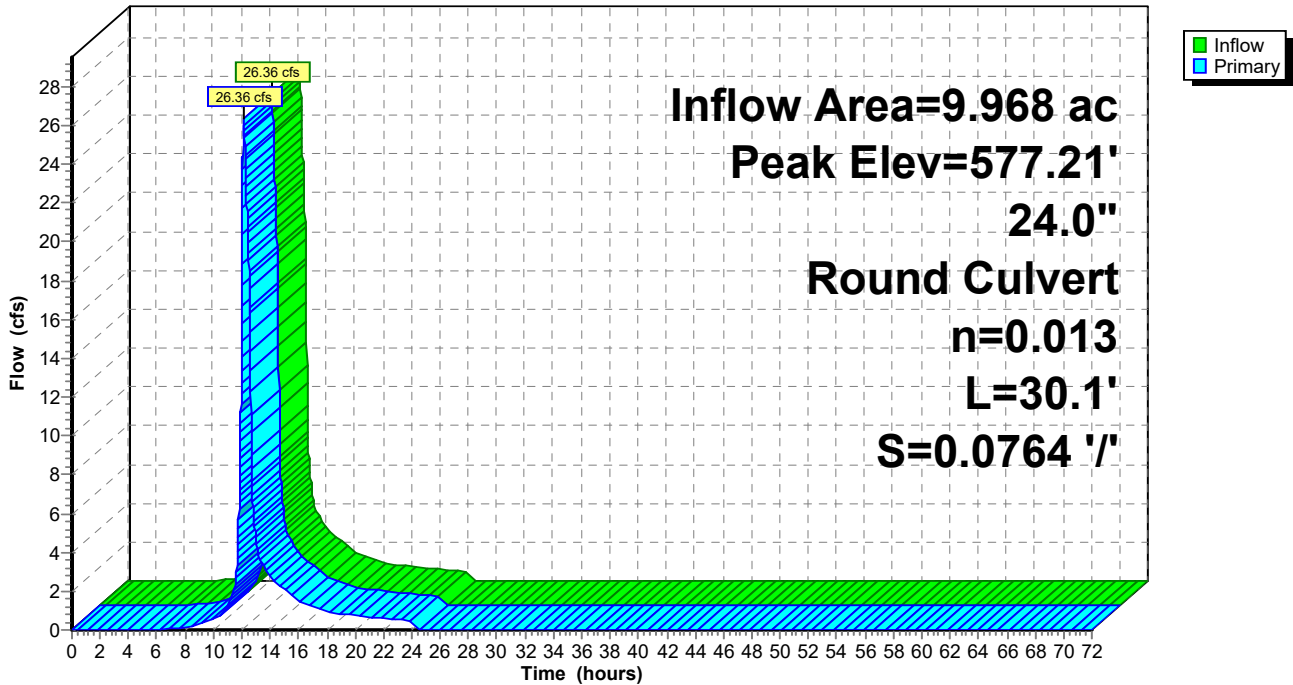
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 577.21' @ 12.15 hrs
 Flood Elev= 576.00'

Device #	Routing	Invert	Outlet Devices
#1	Primary	571.00'	24.0" Round Culvert L= 30.1' Ke= 0.500 Inlet / Outlet Invert= 571.00' / 568.70' S= 0.0764 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=26.07 cfs @ 12.12 hrs HW=577.16' TW=574.19' (Dynamic Tailwater)
 ←1=Culvert (Inlet Controls 26.07 cfs @ 8.30 fps)

Pond 4P: PCB 1

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Pond 5P: PCB 2

[58] Hint: Peaked 0.57' above defined flood level

Inflow Area = 9.968 ac, 15.61% Impervious, Inflow Depth = 3.57" for 100-yr event
 Inflow = 26.36 cfs @ 12.12 hrs, Volume= 2.969 af
 Outflow = 26.36 cfs @ 12.12 hrs, Volume= 2.969 af, Atten= 0%, Lag= 0.0 min
 Primary = 16.86 cfs @ 12.12 hrs, Volume= 2.705 af
 Routed to Pond 4P : PCB 1
 Secondary = 9.50 cfs @ 12.12 hrs, Volume= 0.264 af
 Routed to Pond 4P : PCB 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 598.87' @ 12.12 hrs
 Flood Elev= 598.30'

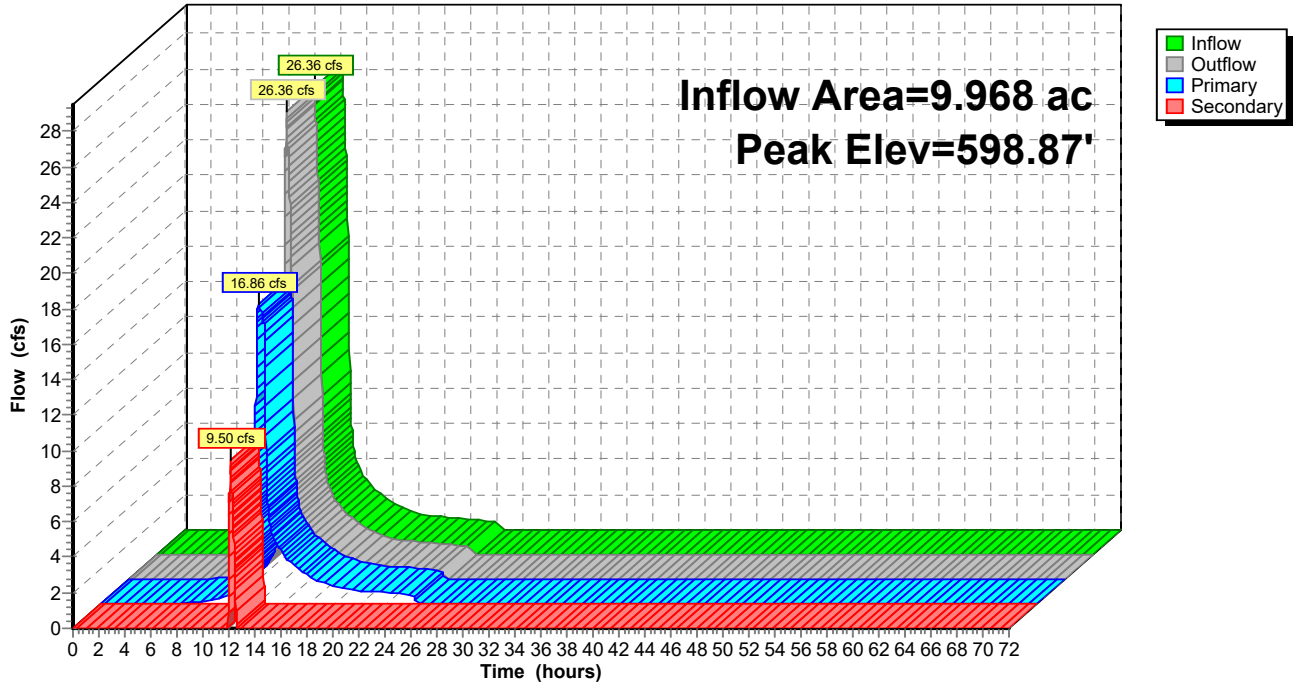
Device	Routing	Invert	Outlet Devices
#1	Primary	594.20'	18.0" Round Culvert L= 202.3' Ke= 0.500 Inlet / Outlet Invert= 594.20' / 571.50' S= 0.1122 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	598.30'	20.0" x 20.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=16.85 cfs @ 12.12 hrs HW=598.87' TW=577.16' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 16.85 cfs @ 9.54 fps)

Secondary OutFlow Max=9.46 cfs @ 12.12 hrs HW=598.87' TW=577.16' (Dynamic Tailwater)
 ↑2=Orifice/Grate (Weir Controls 9.46 cfs @ 2.48 fps)

Pond 5P: PCB 2

Hydrograph



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Type III 24-hr 100-yr Rainfall=7.29"

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Summary for Pond 6P: PCB 3

Inflow Area = 8.626 ac, 12.53% Impervious, Inflow Depth = 3.32" for 100-yr event
 Inflow = 21.61 cfs @ 12.09 hrs, Volume= 2.389 af
 Outflow = 21.61 cfs @ 12.09 hrs, Volume= 2.389 af, Atten= 0%, Lag= 0.0 min
 Primary = 21.61 cfs @ 12.09 hrs, Volume= 2.389 af
 Routed to Pond 5P : PCB 2

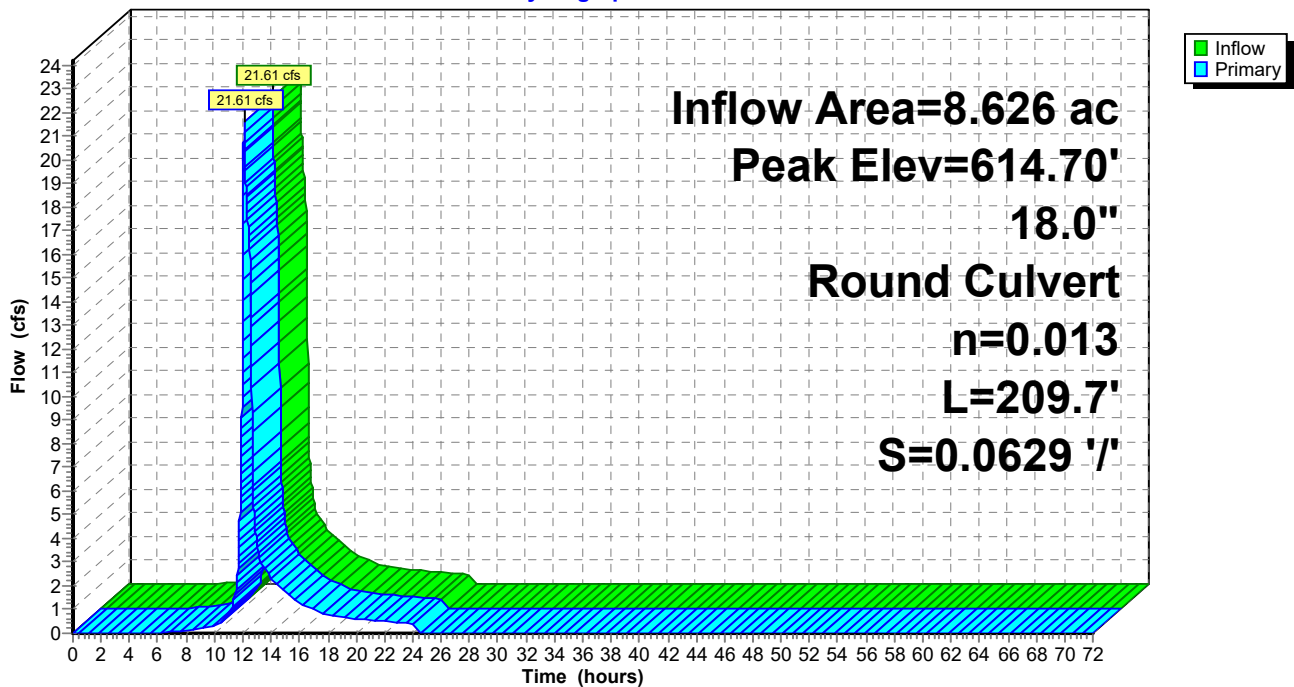
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 614.70' @ 12.09 hrs
 Flood Elev= 615.20'

Device #	Routing	Invert	Outlet Devices
#1	Primary	607.50'	18.0" Round Culvert L= 209.7' Ke= 0.500 Inlet / Outlet Invert= 607.50' / 594.30' S= 0.0629 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=21.59 cfs @ 12.09 hrs HW=614.69' TW=598.86' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 21.59 cfs @ 12.22 fps)

Pond 6P: PCB 3

Hydrograph



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Summary for Pond 7P: PCB 4

Inflow Area = 7.155 ac, 6.52% Impervious, Inflow Depth = 2.89" for 100-yr event
 Inflow = 14.06 cfs @ 12.42 hrs, Volume= 1.725 af
 Outflow = 14.06 cfs @ 12.42 hrs, Volume= 1.725 af, Atten= 0%, Lag= 0.0 min
 Primary = 14.06 cfs @ 12.42 hrs, Volume= 1.725 af
 Routed to Pond 6P : PCB 3

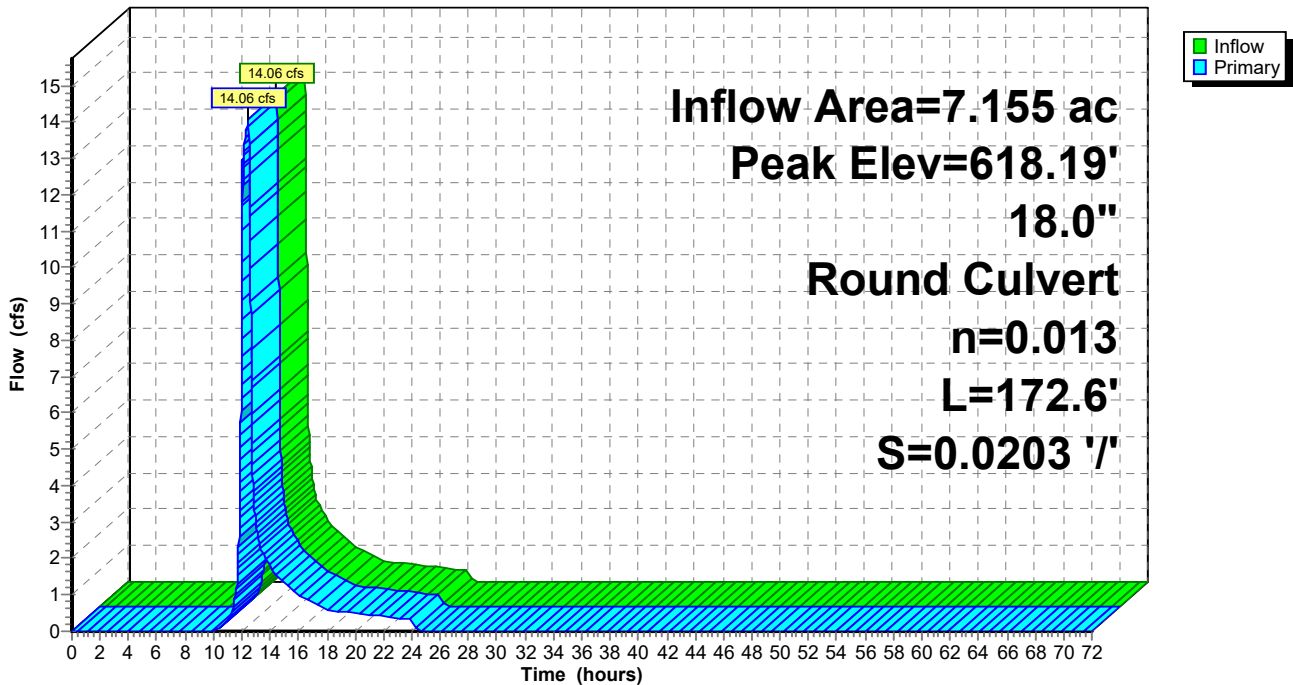
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 618.19' @ 12.10 hrs
 Flood Elev= 620.80'

Device #	Routing	Invert	Outlet Devices
#1	Primary	611.10'	18.0" Round Culvert L= 172.6' Ke= 0.500 Inlet / Outlet Invert= 611.10' / 607.60' S= 0.0203 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=13.99 cfs @ 12.42 hrs HW=616.73' TW=612.19' (Dynamic Tailwater)
 ↑1=Culvert (Outlet Controls 13.99 cfs @ 7.92 fps)

Pond 7P: PCB 4

Hydrograph



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Summary for Pond 8P: PDI 2

- [92] Warning: Device #2 is above defined storage
- [93] Warning: Storage range exceeded by 0.49'
- [58] Hint: Peaked 0.74' above defined flood level
- [80] Warning: Exceeded Pond 9P by 0.05' @ 12.06 hrs (1.68 cfs 0.001 af)

Inflow Area = 7.155 ac, 6.52% Impervious, Inflow Depth = 3.36" for 100-yr event
 Inflow = 34.21 cfs @ 12.20 hrs, Volume= 2.004 af
 Outflow = 31.97 cfs @ 12.20 hrs, Volume= 2.004 af, Atten= 7%, Lag= 0.0 min
 Primary = 14.06 cfs @ 12.42 hrs, Volume= 1.725 af
 Routed to Pond 7P : PCB 4
 Secondary = 18.68 cfs @ 12.20 hrs, Volume= 0.279 af
 Routed to Link 49L : 51 Baptist Hill Rd Property (DP-3)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 622.49' @ 12.20 hrs Surf.Area= 781 sf Storage= 464 cf
 Flood Elev= 621.75' Surf.Area= 595 sf Storage= 295 cf

Plug-Flow detention time= 0.2 min calculated for 2.004 af (100% of inflow)
 Center-of-Mass det. time= 0.2 min (836.3 - 836.1)

Volume	Invert	Avail.Storage	Storage Description
#1	615.50'	44 cf	4.00'D x 3.50'H Vertical Cone/Cylinder
#2	619.00'	420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		464 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
619.00	4	0	0
620.00	10	7	7
621.00	24	17	24
622.00	768	396	420

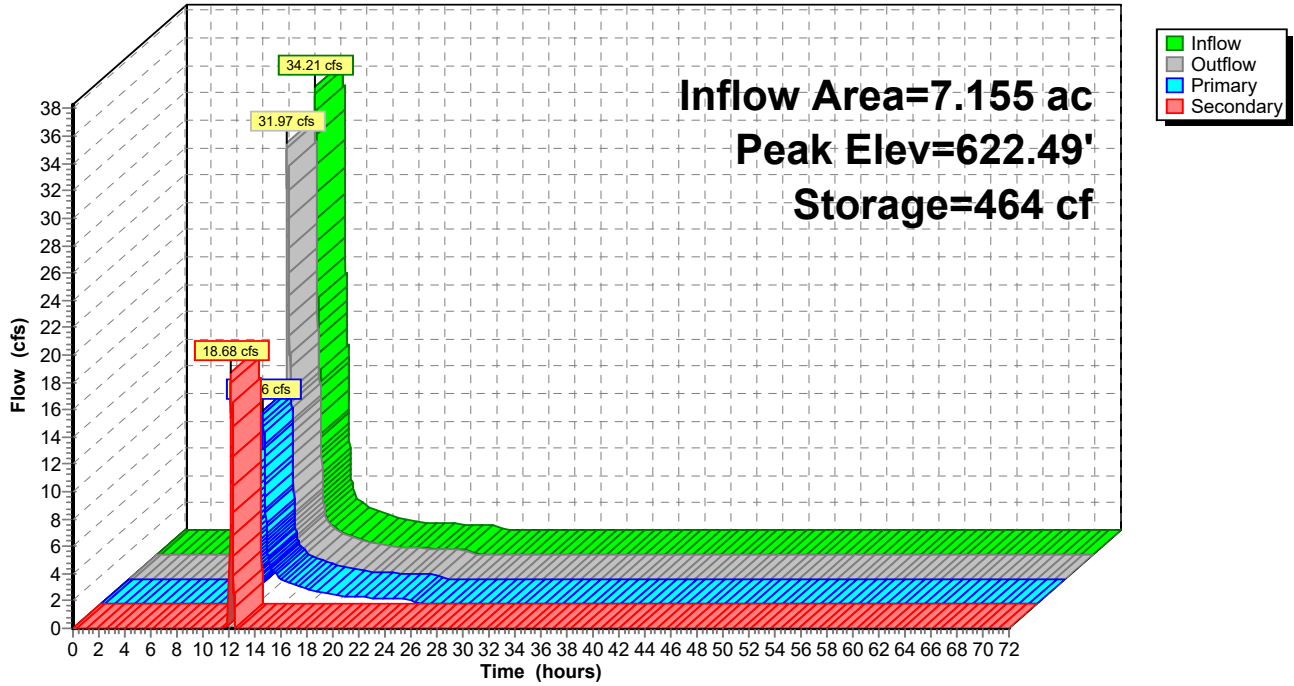
Device	Routing	Invert	Outlet Devices
#1	Primary	615.50'	18.0" Round Culvert L= 217.0' Ke= 0.500 Inlet / Outlet Invert= 615.50' / 611.20' S= 0.0198 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	622.00'	20.0' long x 18.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=14.04 cfs @ 12.42 hrs HW=622.09' TW=616.73' (Dynamic Tailwater)
 ↑1=Culvert (Outlet Controls 14.04 cfs @ 7.95 fps)

Secondary OutFlow Max=18.62 cfs @ 12.20 hrs HW=622.49' TW=0.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 18.62 cfs @ 1.89 fps)

Pond 8P: PDI 2

Hydrograph



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Summary for Pond 9P: PDI 3

Inflow Area = 6.838 ac, 4.42% Impervious, Inflow Depth = 2.70" for 100-yr event
 Inflow = 18.71 cfs @ 12.21 hrs, Volume= 1.540 af
 Outflow = 18.71 cfs @ 12.21 hrs, Volume= 1.540 af, Atten= 0%, Lag= 0.0 min
 Primary = 11.77 cfs @ 12.20 hrs, Volume= 1.358 af
 Routed to Pond 8P : PDI 2
 Secondary = 6.96 cfs @ 12.21 hrs, Volume= 0.182 af
 Routed to Link 49L : 51 Baptist Hill Rd Property (DP-3)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 624.89' @ 12.21 hrs
 Flood Elev= 625.90'

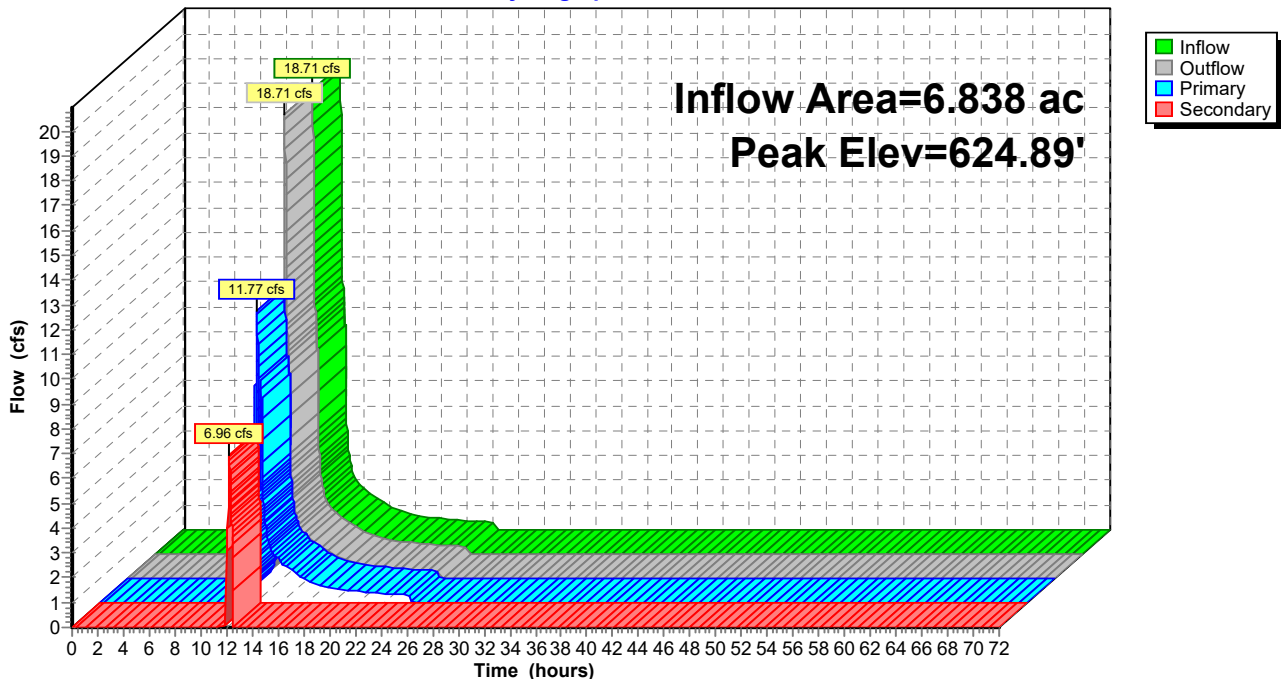
Device	Routing	Invert	Outlet Devices
#1	Primary	618.20'	18.0" Round Culvert L= 109.2' Ke= 0.500 Inlet / Outlet Invert= 618.20' / 615.60' S= 0.0238 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	621.00'	12.0" Round Culvert L= 31.0' Ke= 0.500 Inlet / Outlet Invert= 621.00' / 620.38' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=11.73 cfs @ 12.20 hrs HW=624.87' TW=622.48' (Dynamic Tailwater)
 ↳1=Culvert (Outlet Controls 11.73 cfs @ 6.64 fps)

Secondary OutFlow Max=6.95 cfs @ 12.21 hrs HW=624.88' TW=0.00' (Dynamic Tailwater)
 ↳2=Culvert (Inlet Controls 6.95 cfs @ 8.85 fps)

Pond 9P: PDI 3

Hydrograph



Summary for Pond 10P: PDI 4

[58] Hint: Peaked 0.54' above defined flood level

Inflow Area = 6.280 ac, 2.62% Impervious, Inflow Depth = 3.30" for 100-yr event
 Inflow = 25.90 cfs @ 12.21 hrs, Volume= 1.728 af
 Outflow = 25.90 cfs @ 12.21 hrs, Volume= 1.728 af, Atten= 0%, Lag= 0.0 min
 Primary = 9.64 cfs @ 12.11 hrs, Volume= 1.313 af
 Routed to Pond 9P : PDI 3
 Secondary = 8.23 cfs @ 12.21 hrs, Volume= 0.291 af
 Routed to Link 50L : ALONG 45 UPPER BAPTIST HILL RD (DP-2)
 Tertiary = 9.48 cfs @ 12.21 hrs, Volume= 0.124 af
 Routed to Pond 9P : PDI 3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 629.54' @ 12.21 hrs
 Flood Elev= 629.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	622.90'	15.0" Round Culvert L= 226.6' Ke= 0.500 Inlet / Outlet Invert= 622.90' / 618.30' S= 0.0203 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	624.30'	12.0" Round Culvert L= 25.0' Ke= 0.500 Inlet / Outlet Invert= 624.30' / 623.80' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Tertiary	629.00'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=9.27 cfs @ 12.11 hrs HW=629.06' TW=623.05' (Dynamic Tailwater)
 ↑1=Culvert (Outlet Controls 9.27 cfs @ 7.55 fps)

Secondary OutFlow Max=8.23 cfs @ 12.21 hrs HW=629.54' TW=0.00' (Dynamic Tailwater)
 ↑2=Culvert (Inlet Controls 8.23 cfs @ 10.48 fps)

Tertiary OutFlow Max=9.47 cfs @ 12.21 hrs HW=629.54' TW=624.89' (Dynamic Tailwater)
 ↑3=Orifice/Grate (Weir Controls 9.47 cfs @ 2.40 fps)

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Summary for Pond 11P: PDI 5

[58] Hint: Peaked 0.55' above defined flood level

Inflow Area = 5.545 ac, 0.00% Impervious, Inflow Depth = 2.12" for 100-yr event
 Inflow = 9.68 cfs @ 12.21 hrs, Volume= 0.978 af
 Outflow = 9.68 cfs @ 12.21 hrs, Volume= 0.978 af, Atten= 0%, Lag= 0.0 min
 Primary = 4.59 cfs @ 12.57 hrs, Volume= 0.678 af
 Routed to Pond 12P : PDI 6
 Secondary = 9.68 cfs @ 12.21 hrs, Volume= 0.300 af
 Routed to Pond 10P : PDI 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 641.75' @ 12.21 hrs
 Flood Elev= 641.20'

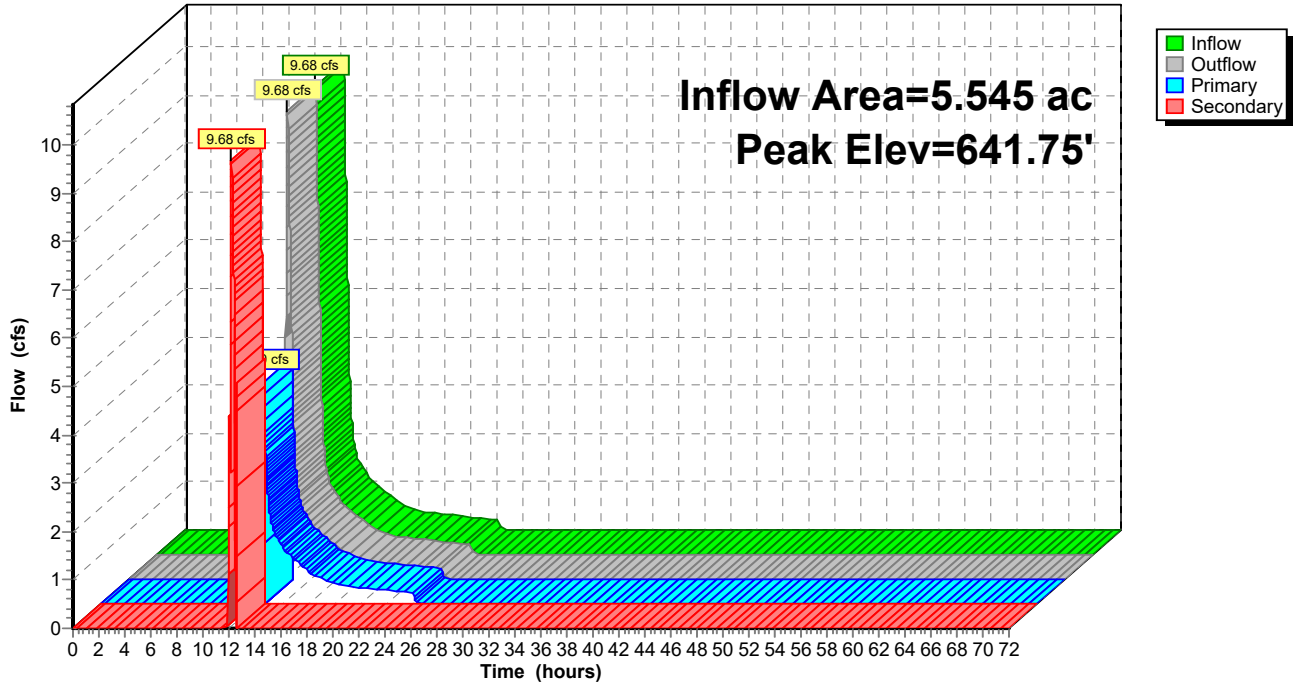
Device	Routing	Invert	Outlet Devices
#1	Primary	637.00'	12.0" Round Culvert L= 82.0' Ke= 0.500 Inlet / Outlet Invert= 637.00' / 636.20' S= 0.0098 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	641.20'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 12.57 hrs HW=641.22' TW=641.83' (Dynamic Tailwater)
 ↑1=Culvert (Controls 0.00 cfs)

Secondary OutFlow Max=9.67 cfs @ 12.21 hrs HW=641.75' TW=629.54' (Dynamic Tailwater)
 ↑2=Orifice/Grate (Weir Controls 9.67 cfs @ 2.42 fps)

Pond 11P: PDI 5

Hydrograph



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Summary for Pond 12P: PDI 6

[58] Hint: Peaked 0.14' above defined flood level

[80] Warning: Exceeded Pond 11P by 2.60' @ 12.22 hrs (5.03 cfs 0.134 af)

Inflow Area = 14.192 ac, 4.81% Impervious, Inflow Depth = 2.15" for 100-yr event
 Inflow = 17.51 cfs @ 12.21 hrs, Volume= 2.539 af
 Outflow = 17.51 cfs @ 12.21 hrs, Volume= 2.539 af, Atten= 0%, Lag= 0.0 min
 Primary = 16.31 cfs @ 12.21 hrs, Volume= 2.529 af
 Routed to Link 15L : EXISTIN OUTLET TO UNDER 116 (DP-1)
 Secondary = 1.20 cfs @ 12.21 hrs, Volume= 0.010 af
 Routed to Pond 10P : PDI 4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 644.34' @ 12.21 hrs

Flood Elev= 644.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	636.10'	15.0" Round Culvert L= 35.9' Ke= 0.500 Inlet / Outlet Invert= 636.10' / 625.50' S= 0.2953 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	644.20'	20.0" x 20.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=16.31 cfs @ 12.21 hrs HW=644.34' TW=0.00' (Dynamic Tailwater)

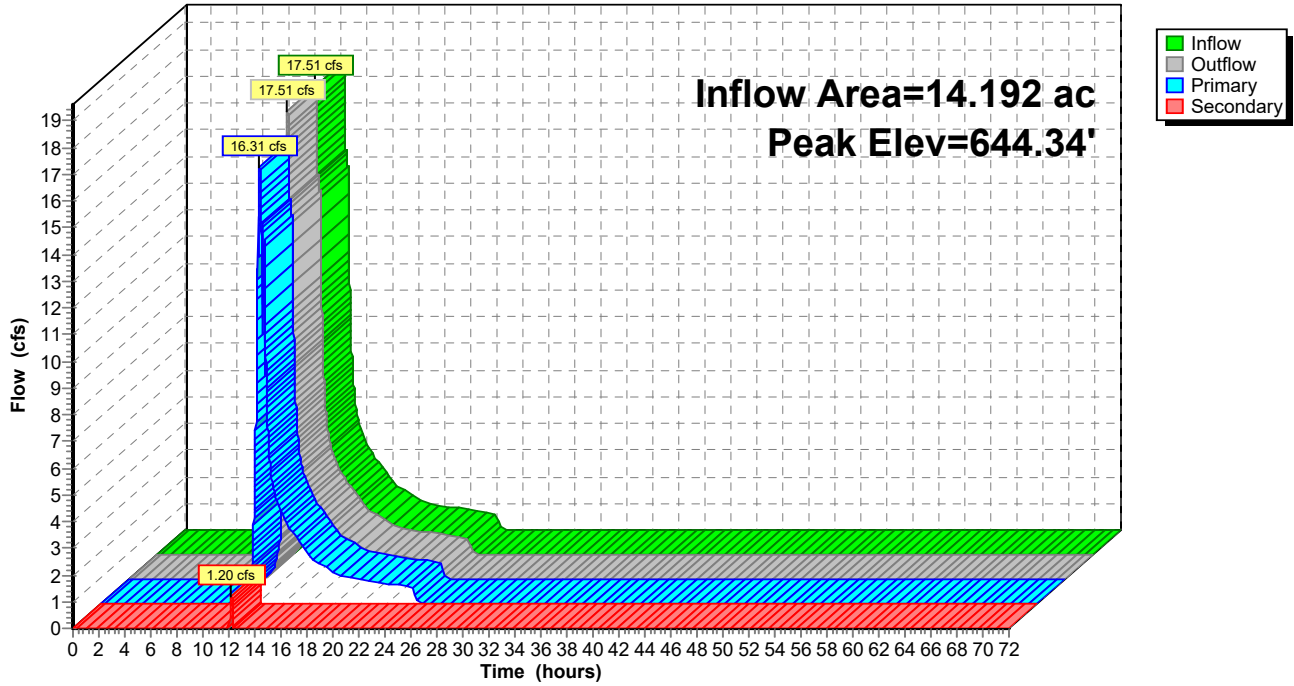
↑1=Culvert (Inlet Controls 16.31 cfs @ 13.29 fps)

Secondary OutFlow Max=1.19 cfs @ 12.21 hrs HW=644.34' TW=629.54' (Dynamic Tailwater)

↑2=Orifice/Grate (Weir Controls 1.19 cfs @ 1.24 fps)

Pond 12P: PDI 6

Hydrograph



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Summary for Pond 13P: PDI 7

[58] Hint: Peaked 0.56' above defined flood level

Inflow Area = 7.441 ac, 3.47% Impervious, Inflow Depth = 2.55" for 100-yr event
 Inflow = 15.20 cfs @ 12.24 hrs, Volume= 1.579 af
 Outflow = 15.20 cfs @ 12.24 hrs, Volume= 1.579 af, Atten= 0%, Lag= 0.0 min
 Primary = 7.78 cfs @ 12.57 hrs, Volume= 1.350 af
 Routed to Pond 12P : PDI 6
 Secondary = 9.10 cfs @ 12.24 hrs, Volume= 0.228 af
 Routed to Pond 12P : PDI 6

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 651.96' @ 12.24 hrs
 Flood Elev= 651.40'

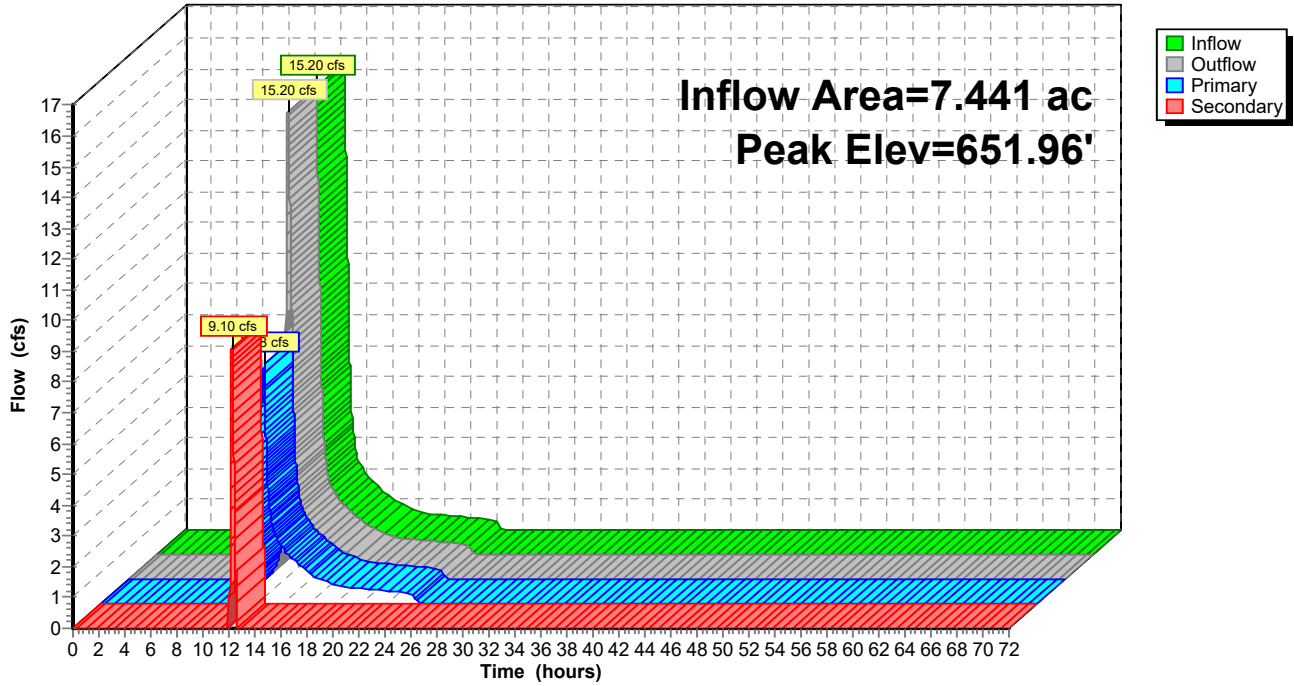
Device	Routing	Invert	Outlet Devices
#1	Primary	645.80'	12.0" Round Culvert L= 211.3' Ke= 0.500 Inlet / Outlet Invert= 645.80' / 638.00' S= 0.0369 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	651.40'	20.0" x 20.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=6.87 cfs @ 12.57 hrs HW=651.44' TW=641.77' (Dynamic Tailwater)
 ↑1=Culvert (Outlet Controls 6.87 cfs @ 8.75 fps)

Secondary OutFlow Max=9.09 cfs @ 12.24 hrs HW=651.96' TW=644.34' (Dynamic Tailwater)
 ↑2=Orifice/Grate (Weir Controls 9.09 cfs @ 2.44 fps)

Pond 13P: PDI 7

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Summary for Pond 14P: PDI 8

Inflow Area = 1.391 ac, 18.58% Impervious, Inflow Depth = 2.71" for 100-yr event
 Inflow = 3.51 cfs @ 12.17 hrs, Volume= 0.314 af
 Outflow = 3.51 cfs @ 12.17 hrs, Volume= 0.314 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.51 cfs @ 12.17 hrs, Volume= 0.314 af
 Routed to Pond 13P : PDI 7

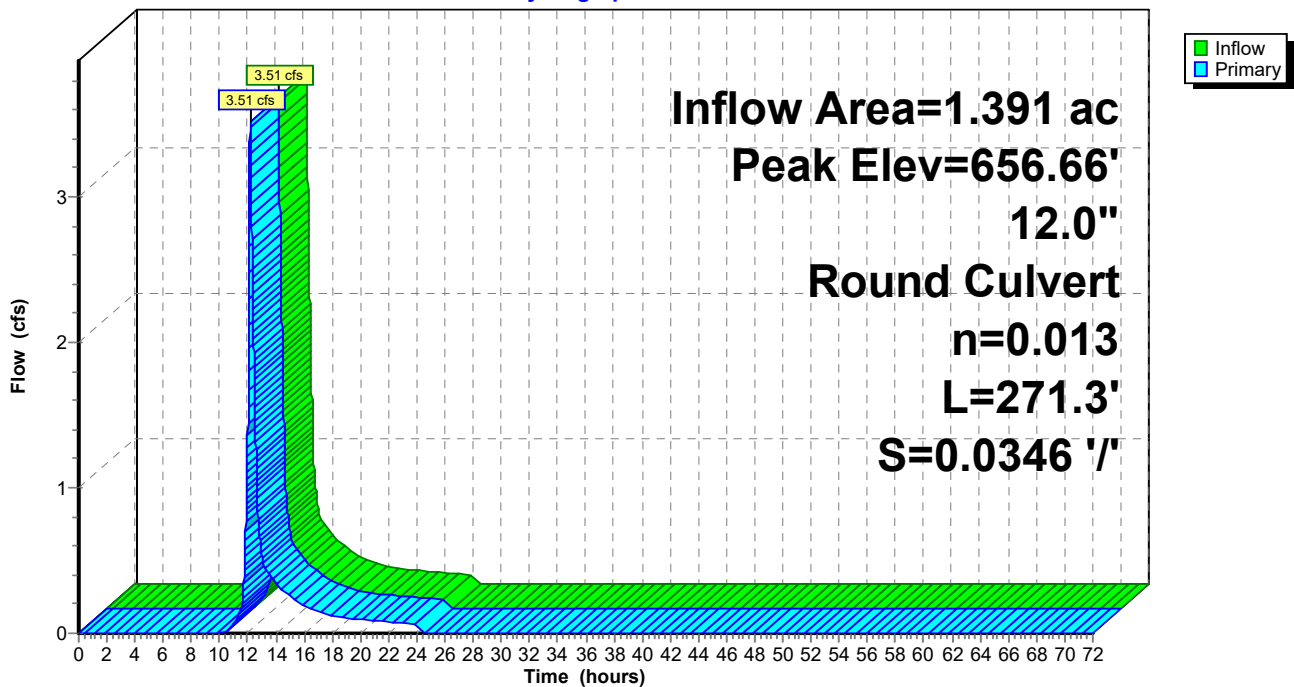
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 656.66' @ 12.17 hrs
 Flood Elev= 660.80'

Device #	Routing	Invert	Outlet Devices
1	Primary	655.30'	12.0" Round Culvert L= 271.3' Ke= 0.500 Inlet / Outlet Invert= 655.30' / 645.90' S= 0.0346 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.51 cfs @ 12.17 hrs HW=656.66' TW=651.91' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 3.51 cfs @ 4.47 fps)

Pond 14P: PDI 8

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Summary for Pond 24P: J15

Inflow Area = 0.710 ac, 41.87% Impervious, Inflow Depth = 4.20" for 100-yr event
 Inflow = 2.95 cfs @ 12.08 hrs, Volume= 0.249 af
 Outflow = 2.95 cfs @ 12.08 hrs, Volume= 0.249 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.95 cfs @ 12.08 hrs, Volume= 0.249 af
 Routed to Pond 27P : J22
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 27P : J22

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 594.81' @ 12.08 hrs
 Flood Elev= 598.30'

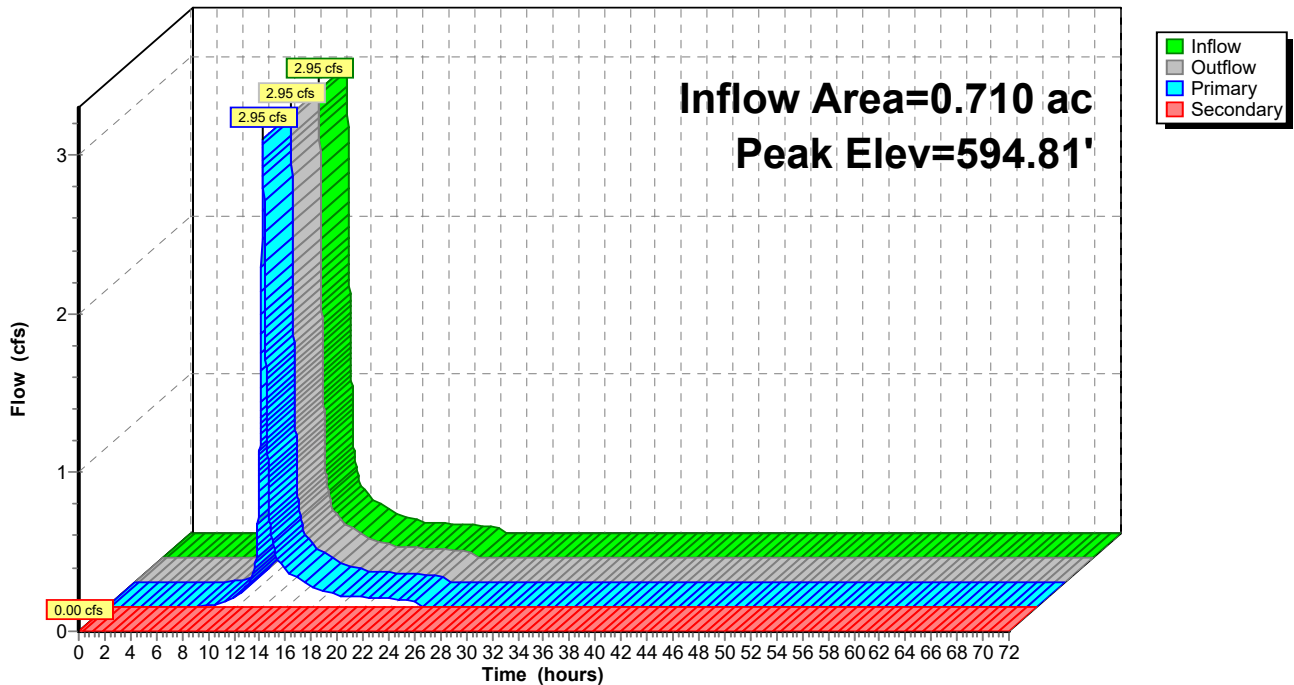
Device	Routing	Invert	Outlet Devices
#1	Primary	593.70'	12.0" Round Culvert L= 240.0' Ke= 0.500 Inlet / Outlet Invert= 593.70' / 569.82' S= 0.0995 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	598.30'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.95 cfs @ 12.08 hrs HW=594.81' TW=573.39' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 2.95 cfs @ 3.75 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=593.70' TW=569.62' (Dynamic Tailwater)
 ↳2=Orifice/Grate (Controls 0.00 cfs)

Pond 24P: J15

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Summary for Pond 25P: J14

Inflow Area = 0.452 ac, 37.25% Impervious, Inflow Depth = 4.52" for 100-yr event
 Inflow = 2.21 cfs @ 12.12 hrs, Volume= 0.170 af
 Outflow = 2.21 cfs @ 12.12 hrs, Volume= 0.170 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.21 cfs @ 12.12 hrs, Volume= 0.170 af
 Routed to Pond 24P : J15
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 24P : J15

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 612.20' @ 12.12 hrs
 Flood Elev= 614.36'

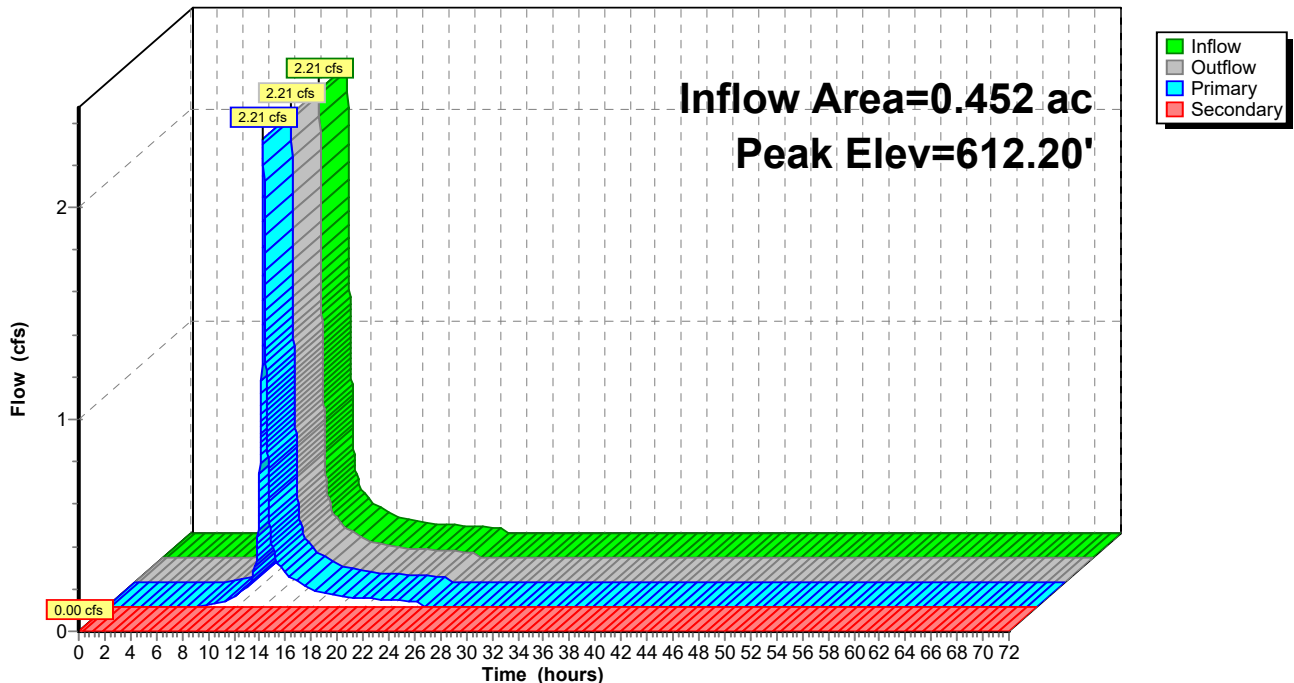
Device	Routing	Invert	Outlet Devices
#1	Primary	611.36'	12.0" Round Culvert L= 460.0' Ke= 0.500 Inlet / Outlet Invert= 611.36' / 593.70' S= 0.0384 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 0.79 sf
#2	Secondary	614.36'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.20 cfs @ 12.12 hrs HW=612.20' TW=594.76' (Dynamic Tailwater)
 ↳1=Culvert (Inlet Controls 2.20 cfs @ 3.12 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=611.36' TW=593.70' (Dynamic Tailwater)
 ↳2=Orifice/Grate (Controls 0.00 cfs)

Pond 25P: J14

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Summary for Pond 27P: J22

[58] Hint: Peaked 2.69' above defined flood level

Inflow Area = 4.450 ac, 16.04% Impervious, Inflow Depth = 4.48" for 100-yr event
Inflow = 40.48 cfs @ 12.20 hrs, Volume= 1.660 af
Outflow = 40.48 cfs @ 12.20 hrs, Volume= 1.660 af, Atten= 0%, Lag= 0.0 min
Primary = 13.94 cfs @ 12.20 hrs, Volume= 1.130 af
Routed to Link 33L : To MassDOT in Rte 116 (DP-4)
Secondary = 26.54 cfs @ 12.20 hrs, Volume= 0.530 af
Routed to Link 33L : To MassDOT in Rte 116 (DP-4)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 575.81' @ 12.20 hrs
Flood Elev= 573.12'

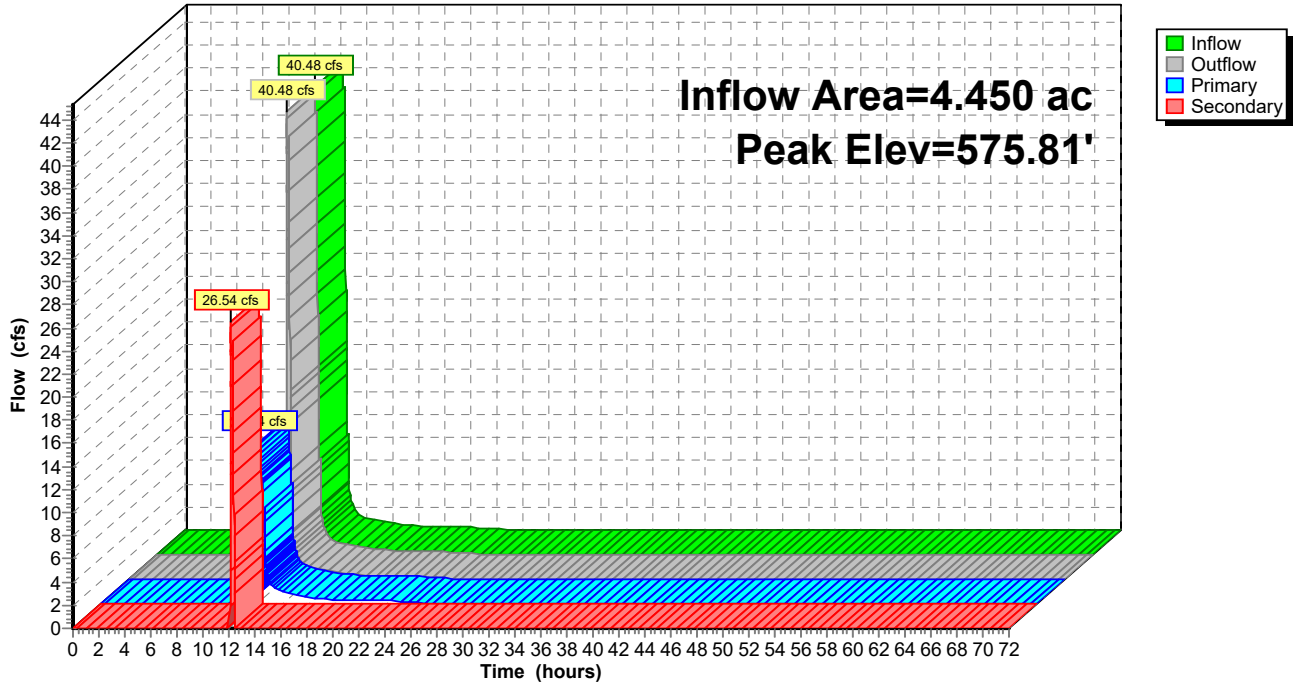
Device	Routing	Invert	Outlet Devices
#1	Primary	569.62'	15.0" Round Culvert L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 569.62' / 567.62' S= 0.0500 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	573.12'	22.0" x 22.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=13.94 cfs @ 12.20 hrs HW=575.81' TW=0.00' (Dynamic Tailwater)
↑1=Culvert (Inlet Controls 13.94 cfs @ 11.36 fps)

Secondary OutFlow Max=26.54 cfs @ 12.20 hrs HW=575.81' TW=0.00' (Dynamic Tailwater)
↑2=Orifice/Grate (Orifice Controls 26.54 cfs @ 7.90 fps)

Pond 27P: J22

Hydrograph



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Summary for Pond 49P: J1

- [92] Warning: Device #3 is above defined storage
- [93] Warning: Storage range exceeded by 0.82'
- [90] Warning: Qout>Qin may require smaller dt or Finer Routing
- [87] Warning: Oscillations may require smaller dt or Finer Routing (severity=21)

Inflow Area = 10.137 ac, 0.00% Impervious, Inflow Depth = 3.12" for 100-yr event
 Inflow = 28.26 cfs @ 12.20 hrs, Volume= 2.635 af
 Outflow = 31.72 cfs @ 12.20 hrs, Volume= 2.635 af, Atten= 0%, Lag= 0.0 min
 Primary = 10.18 cfs @ 12.20 hrs, Volume= 2.091 af
 Routed to Link 48L : NORTH TO 10 PINE HILL ROAD (DP-6)
 Secondary = 5.14 cfs @ 12.20 hrs, Volume= 0.263 af
 Routed to Pond 8P : PDI 2
 Tertiary = 16.40 cfs @ 12.20 hrs, Volume= 0.282 af
 Routed to Pond 8P : PDI 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 626.82' @ 12.20 hrs Surf.Area= 1,478 sf Storage= 855 cf

Plug-Flow detention time= 0.6 min calculated for 2.635 af (100% of inflow)
 Center-of-Mass det. time= 0.4 min (852.3 - 851.9)

Volume	Invert	Avail.Storage	Storage Description
#1	623.00'	855 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
623.00	19	0	0
624.00	38	29	29
625.00	68	53	82
626.00	1,478	773	855

Device	Routing	Invert	Outlet Devices
#1	Primary	623.23'	15.0" Round Culvert L= 39.2' Ke= 0.500 Inlet / Outlet Invert= 623.23' / 622.75' S= 0.0122 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Secondary	624.48'	12.0" Round Culvert L= 62.0' Ke= 0.500 Inlet / Outlet Invert= 624.48' / 615.50' S= 0.1448 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Tertiary	626.10'	10.0' long x 25.0' 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) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

15.0167305.01-DEV HYDROLOGY

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Type III 24-hr 100-yr Rainfall=7.29"

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Primary OutFlow Max=10.18 cfs @ 12.20 hrs HW=626.82' TW=0.00' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 10.18 cfs @ 8.30 fps)

Secondary OutFlow Max=5.13 cfs @ 12.20 hrs HW=626.82' TW=622.49' (Dynamic Tailwater)

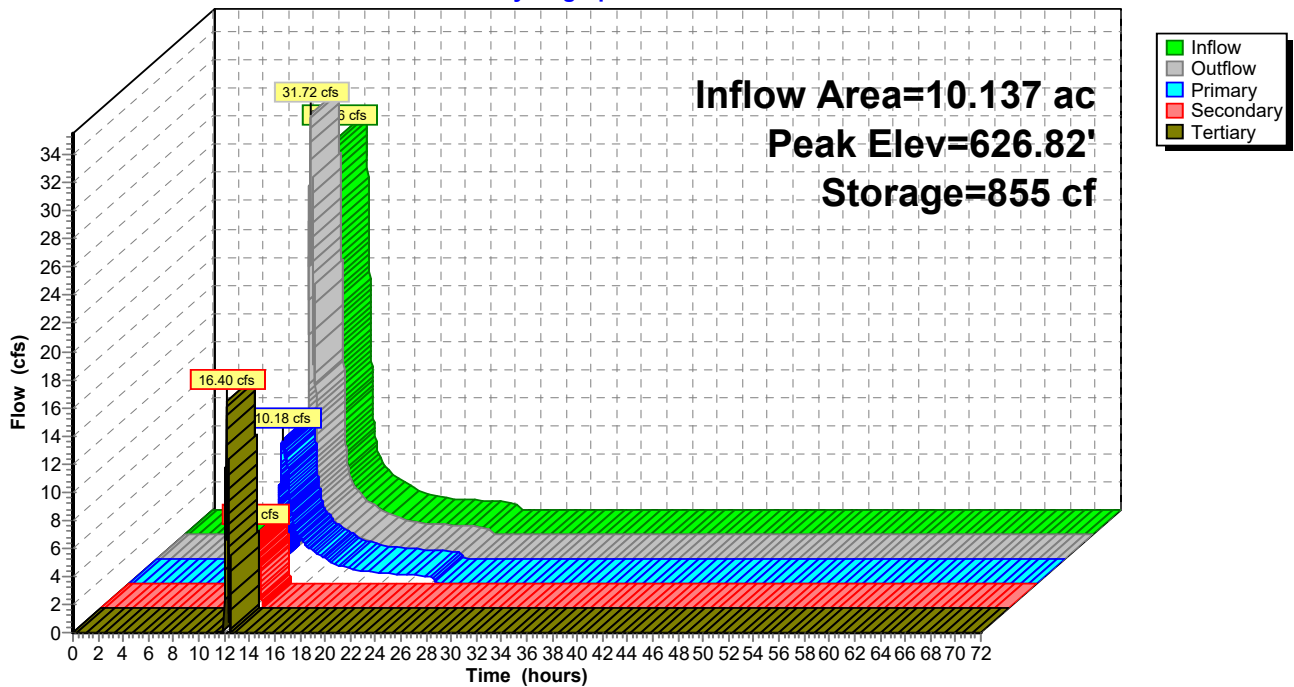
↑2=Culvert (Inlet Controls 5.13 cfs @ 6.54 fps)

Tertiary OutFlow Max=16.39 cfs @ 12.20 hrs HW=626.82' TW=622.49' (Dynamic Tailwater)

↑3=Broad-Crested Rectangular Weir (Weir Controls 16.39 cfs @ 2.27 fps)

Pond 49P: J1

Hydrograph



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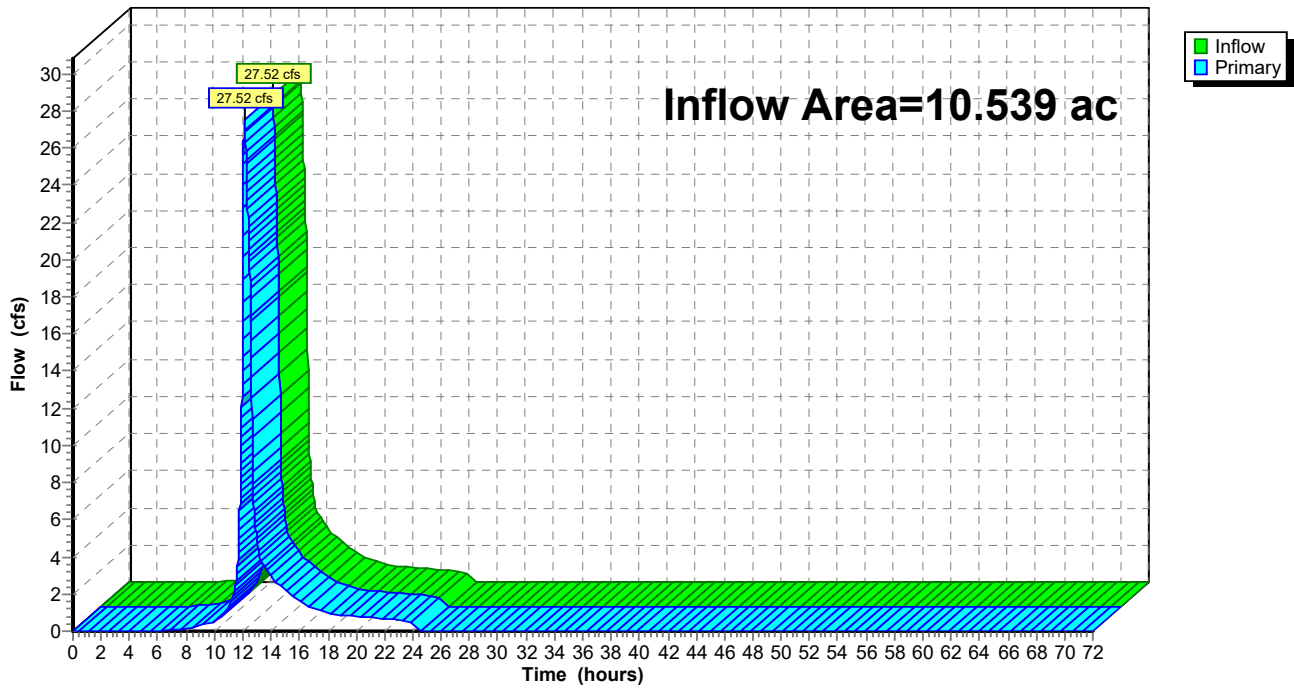
Summary for Link 1L: PROP OUTFALL TO TOWN PROP (DP-5)

Inflow Area = 10.539 ac, 15.96% Impervious, Inflow Depth = 3.55" for 100-yr event
Inflow = 27.52 cfs @ 12.12 hrs, Volume= 3.117 af
Primary = 27.52 cfs @ 12.12 hrs, Volume= 3.117 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 1L: PROP OUTFALL TO TOWN PROP (DP-5)

Hydrograph



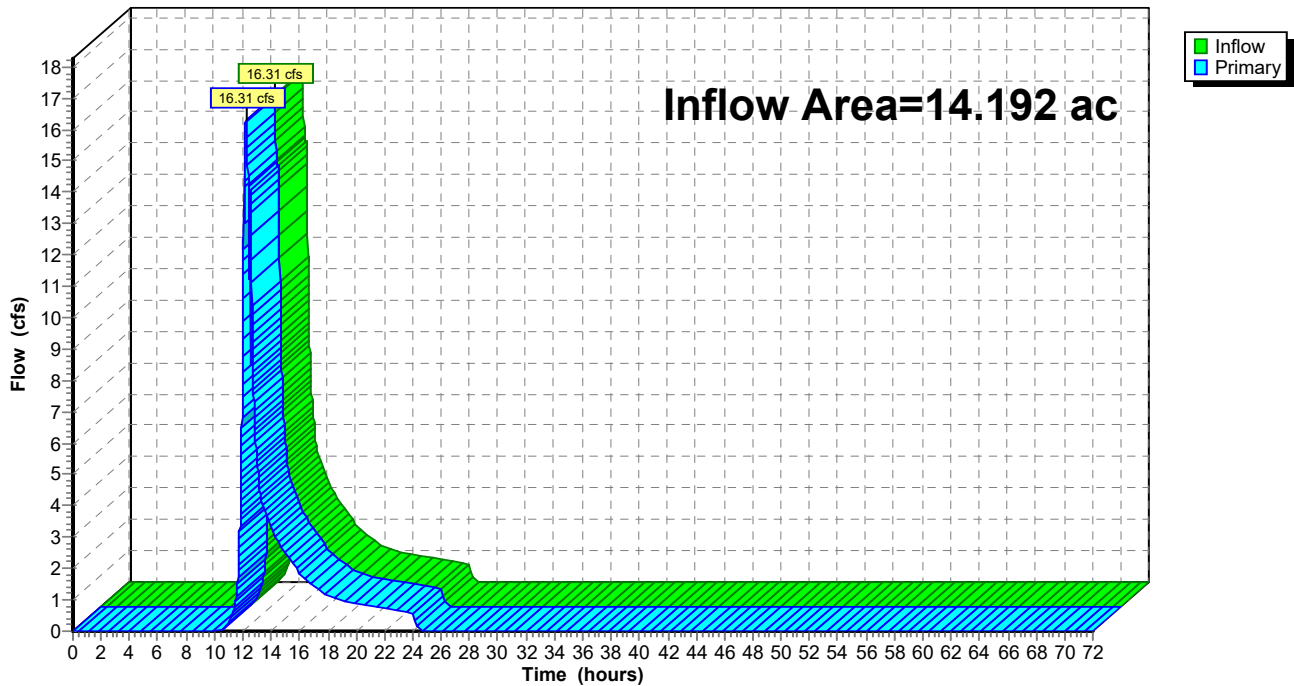
Summary for Link 15L: EXISTIN OUTLET TO UNDER 116 (DP-1)

Inflow Area = 14.192 ac, 4.81% Impervious, Inflow Depth = 2.14" for 100-yr event
Inflow = 16.31 cfs @ 12.21 hrs, Volume= 2.529 af
Primary = 16.31 cfs @ 12.21 hrs, Volume= 2.529 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 15L: EXISTIN OUTLET TO UNDER 116 (DP-1)

Hydrograph



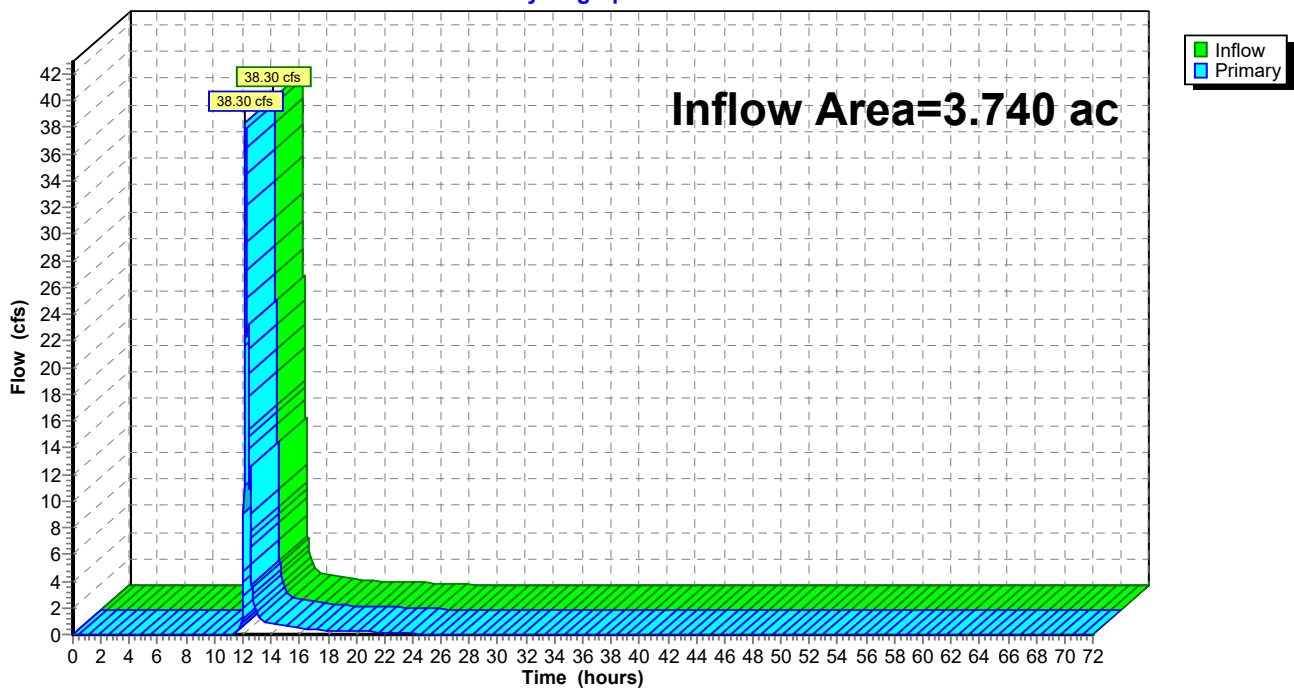
Summary for Link 19L: Behind houses

Inflow Area = 3.740 ac, 11.13% Impervious, Inflow Depth = 4.53" for 100-yr event
Inflow = 38.30 cfs @ 12.20 hrs, Volume= 1.412 af
Primary = 38.30 cfs @ 12.20 hrs, Volume= 1.412 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 27P : J22

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 19L: Behind houses

Hydrograph



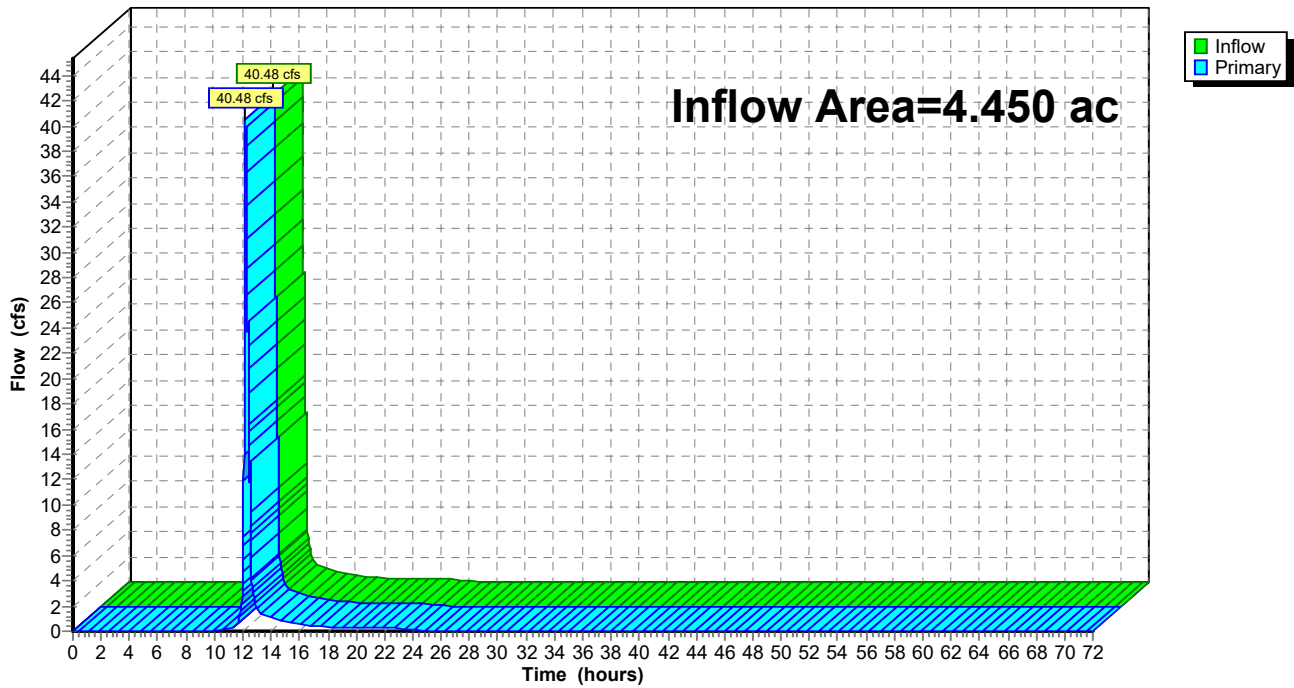
Summary for Link 33L: To MassDOT in Rte 116 (DP-4)

Inflow Area = 4.450 ac, 16.04% Impervious, Inflow Depth = 4.48" for 100-yr event
Inflow = 40.48 cfs @ 12.20 hrs, Volume= 1.660 af
Primary = 40.48 cfs @ 12.20 hrs, Volume= 1.660 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 33L: To MassDOT in Rte 116 (DP-4)

Hydrograph



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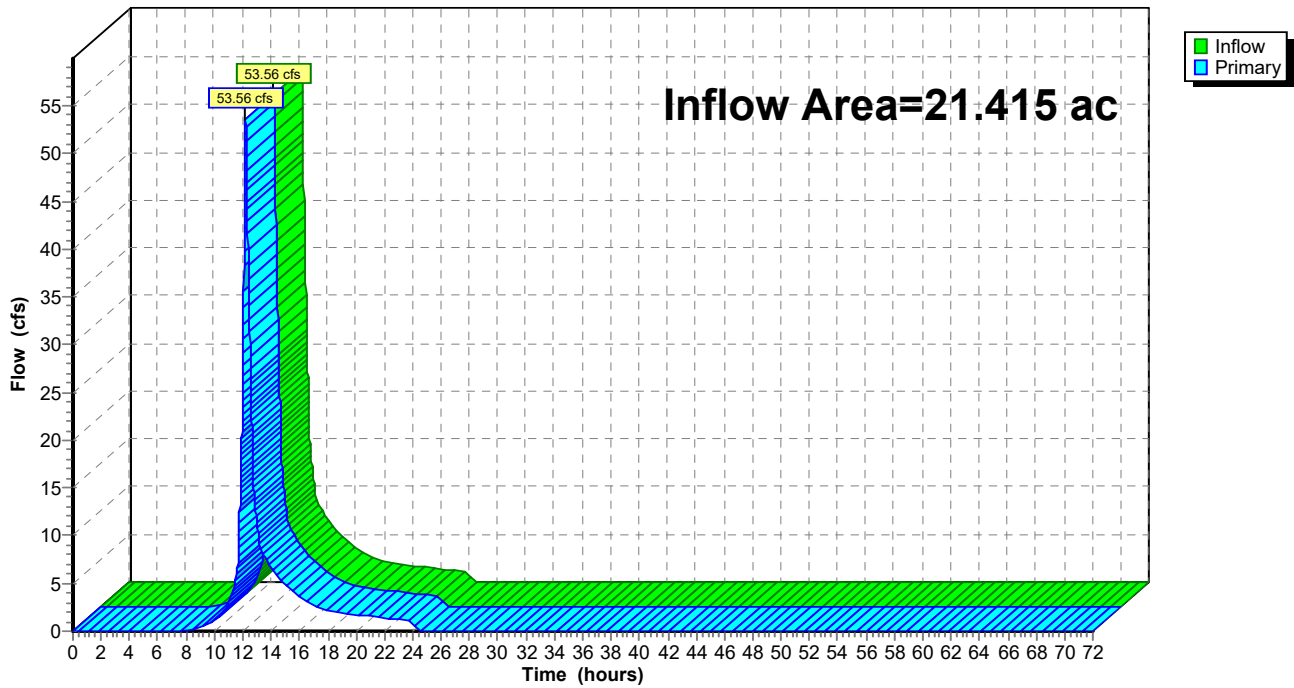
Summary for Link 48L: NORTH TO 10 PINE HILL ROAD (DP-6)

Inflow Area = 21.415 ac, 3.96% Impervious, Inflow Depth = 3.43" for 100-yr event
Inflow = 53.56 cfs @ 12.20 hrs, Volume= 6.128 af
Primary = 53.56 cfs @ 12.20 hrs, Volume= 6.128 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 48L: NORTH TO 10 PINE HILL ROAD (DP-6)

Hydrograph



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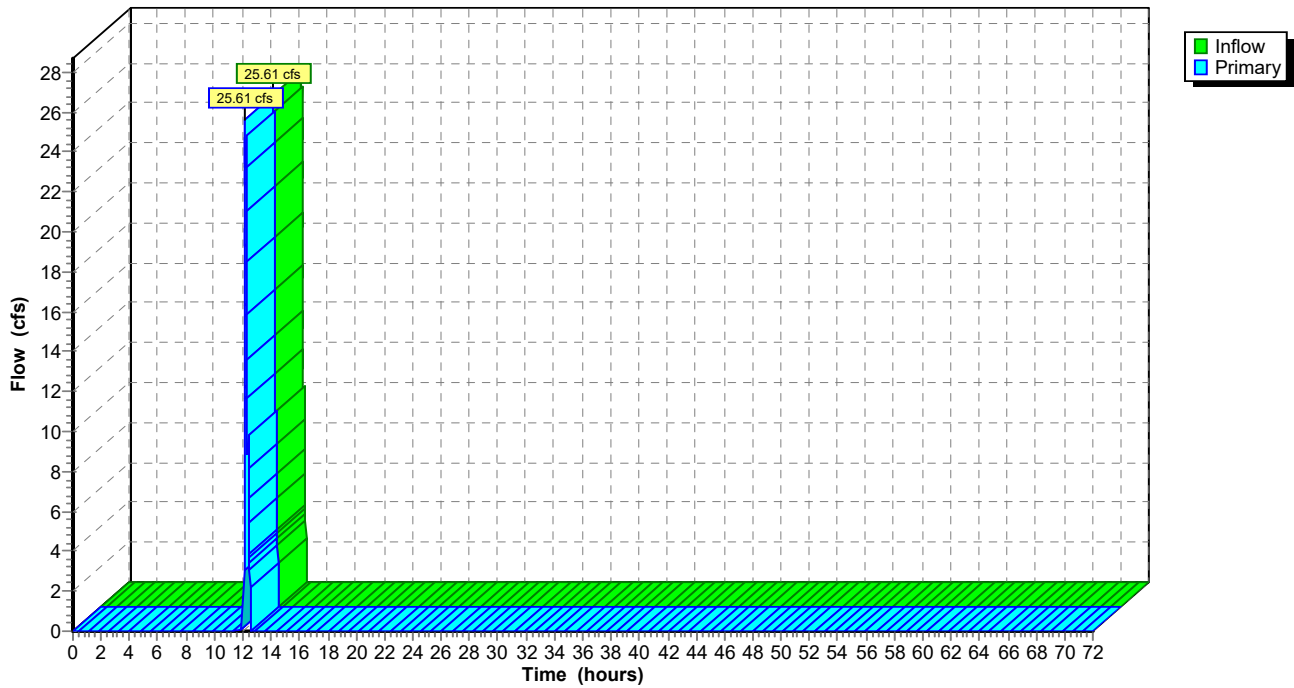
Summary for Link 49L: 51 Baptist Hill Rd Property (DP-3)

Inflow = 25.61 cfs @ 12.20 hrs, Volume= 0.461 af
Primary = 25.61 cfs @ 12.20 hrs, Volume= 0.461 af, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : Behind houses

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 49L: 51 Baptist Hill Rd Property (DP-3)

Hydrograph



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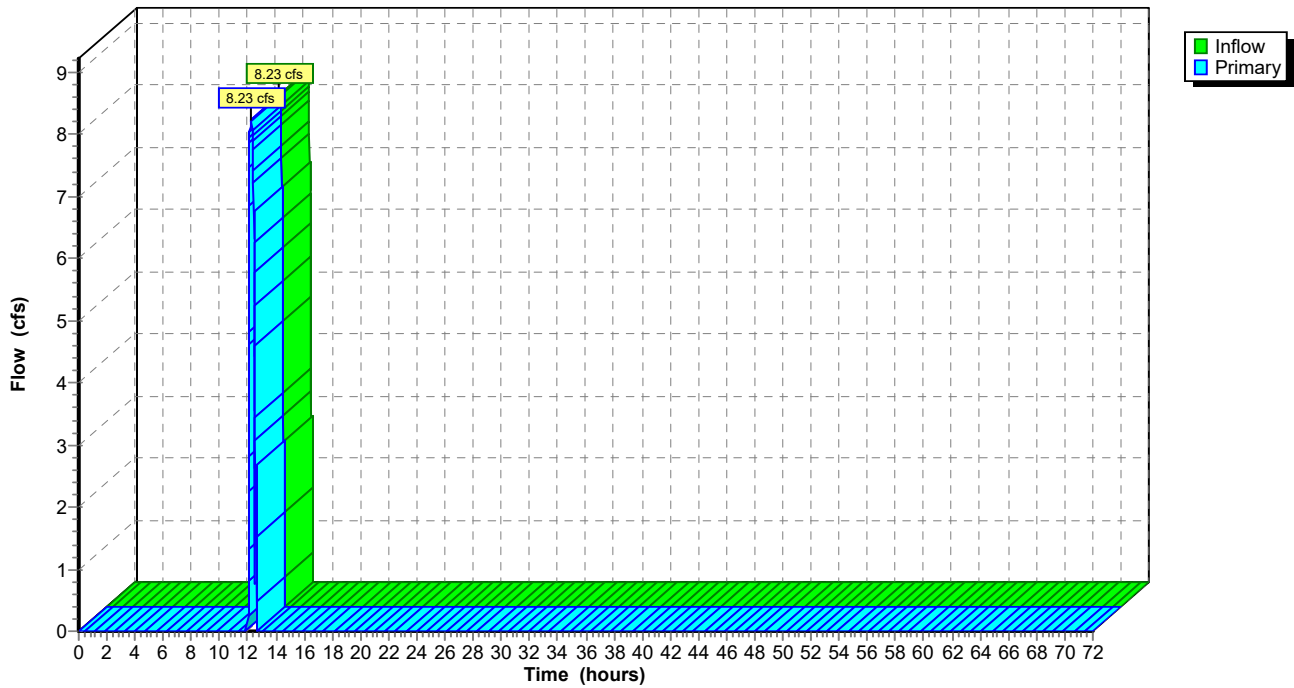
Summary for Link 50L: ALONG 45 UPPER BAPTIST HILL RD (DP-2)

Inflow = 8.23 cfs @ 12.21 hrs, Volume= 0.291 af
Primary = 8.23 cfs @ 12.21 hrs, Volume= 0.291 af, Atten= 0%, Lag= 0.0 min
Routed to Link 19L : Behind houses

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 50L: ALONG 45 UPPER BAPTIST HILL RD (DP-2)

Hydrograph






June 2, 2025
File No. 15.0167305.01
Pine Hill Drainage Improvement Memo

ATTACHMENT D
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 1:12,000.

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

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

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

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

Soil Survey Area: Franklin County, Massachusetts
 Survey Area Data: Version 19, Aug 27, 2024

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

Date(s) aerial images were photographed: Oct 15, 2020—Oct 31, 2020

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1	Water	2.6	1.9%
2A	Pootatuck very fine sandy loam, 0 to 3 percent slopes, occasionally flooded	2.3	1.7%
8A	Limerick silt loam, 0 to 2 percent slopes, frequently flooded	0.9	0.7%
109C	Chatfield-Hollis complex, 8 to 15 percent slopes, rocky	7.1	5.2%
109D	Chatfield-Hollis complex, 15 to 25 percent slopes, rocky	3.5	2.6%
109F	Chatfield-Hollis complex, 25 to 60 percent slopes, rocky	22.4	16.5%
125B	Charlton-Chatfield-Hollis complex, 3 to 8 percent slopes, rocky	2.5	1.9%
125C	Charlton-Chatfield-Hollis complex, 8 to 15 percent slopes, rocky	5.1	3.7%
125D	Charlton-Chatfield-Hollis complex, 15 to 25 percent slopes, rocky	8.6	6.3%
230B	Unadilla silt loam, 3 to 8 percent slopes	1.1	0.8%
235F	Poocham silt loam, 25 to 60 percent slopes	3.2	2.4%
254C	Merrimac fine sandy loam, 8 to 15 percent slopes	0.0	0.0%
275A	Agawam fine sandy loam, 0 to 3 percent slopes	0.3	0.2%
275B	Agawam fine sandy loam, 3 to 8 percent slopes	10.2	7.5%
305B	Paxton fine sandy loam, 3 to 8 percent slopes	2.2	1.6%
305C	Paxton fine sandy loam, 8 to 15 percent slopes	10.9	8.0%
305D	Paxton fine sandy loam, 15 to 25 percent slopes	14.8	10.9%
306F	Paxton fine sandy loam, 15 to 35 percent slopes, very stony	2.7	2.0%
310B	Woodbridge fine sandy loam, 3 to 8 percent slopes	3.7	2.7%
310C	Woodbridge fine sandy loam, 8 to 15 percent slopes	0.4	0.3%

Custom Soil Resource Report

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
420B	Canton fine sandy loam, 3 to 8 percent slopes	0.1	0.0%
420C	Canton fine sandy loam, 8 to 15 percent slopes	4.0	3.0%
420D	Canton fine sandy loam, 15 to 25 percent slopes	27.2	20.0%
Totals for Area of Interest		135.9	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.