



**MERIDIAN**  
**LAND SERVICES, INC.**

CIVIL ENGINEERING | LAND SURVEYING | PERMITTING | SOIL & WETLAND MAPPING | SEPTIC DESIGN | ENVIRONMENTAL

Office: 31 Old Nashua Road, Suite 2, Amherst, NH 03031

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[www.MeridianLandServices.com](http://www.MeridianLandServices.com)

## **Stormwater Management Report**

### **Hildreth's Farm Subdivision**

**Tax Map 248 Lot 8**

**114 West Road**

**Canterbury, New Hampshire 03224**

Prepared for:

114 West Road LLC

709 Keith Ave

Pembroke, New Hampshire 03275

September 18, 2025

Prepared by: Jasper J. Anderson, EIT

Reviewed by: Samuel R. Foisie, PE



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## STORMWATER NARRATIVE

### SUBDIVISION PLANS FOR HILDRETH'S FARM

114 West Road  
Tax Map 248 Lot 8  
Canterbury, New Hampshire 03224

September 18, 2025

#### I. INTRODUCTION

The following drainage calculations are being provided in support of the proposed condominium development plan located at 114 West Road. The development proposes twenty-six (26) condo lots and three (3) commercial lots. Development of the site also includes 3,246 lf of roadway, driveways, access aisles, and parking areas totaling approximately 494,700 square feet. Ancillary site improvements include a public water supply well, septic systems, electric and communications utility services, stormwater mitigation and landscaping.

#### II. SITE DESCRIPTION

The site is in western Canterbury on the southern side of West Road and eastern side of Senator Styles Bridges Highway (Interstate 93). The site is vacant land and consists mainly of undeveloped wooded and scrub brush areas. Site topography consists generally of 3-8% slopes and slopes from West Road and Interstate 93 to the western property line and Cold Brook.

The NRCS Web Soil Survey indicates soils onsite consist of Champlain loamy fine sand and Searsport-Chocorua-Naumburg complex, classified as hydrologic soil groups A and D respectively. Further evaluation of the site in the form of test pits and soil borings by Spencer C. Tate, Certified Soil Scientist of this office was performed to prepare a site-specific soil map as required by the New Hampshire Department of Environmental Services (DES) Alteration of Terrain (AoT) Bureau. The results of the subsurface exploration indicate soils onsite consist of the following soil series:

|     |                          |       |
|-----|--------------------------|-------|
| 35  | Champlain loamy sand     | HSG A |
| 116 | Finch Sand               | HSG C |
| 214 | Naumburg loamy fine sand | HSG C |
| 613 | Croghan fine sand        | HSG B |

Test pits onsite indicate seasonal highwater table depths between 10 and >102 inches below existing grade. Please refer to the site-specific soil report for additional information.



Stormwater Narrative - Subdivision Plans Hildreth's Farm  
114 West Road, Canterbury, New Hampshire 03224

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### III. DRAINAGE DESIGN

The proposed development is subject to Town of Canterbury *Land Development Regulations, Section 8.8: Drainage, Appendix A: Typical Construction Standards and Details; Section 3: Storm Water Management, Erosion and Sedimentation Control*, and the NH DES AoT *Env-Wq 1500* requirements. The stormwater mitigation practices have been designed to treat and control runoff generated during the following events: 2-, 10-, 25- and 50-year 24-hour storms. Groundwater recharge is provided in accordance with State requirements via the proposed infiltration practices.

The stormwater mitigation system for the site is split between two ponds; Infiltration Basin 'A' (IB-A) and Infiltration Basin 'D' (IB-D). IB-A treats runoff from the commercial lot at the entrance to the site, condominium lots 1-7 and 21-26, just under half of Farmhouse Lane, and the Phase 1 portion of Oakmont Drive. IB-D treats runoff for lots 8-20 and the remainder of Farmhouse Lane.

The roadway is designed with curbing along each side to convey runoff to catch basins, located along the side of the proposed roadways. Stormwater generated will receive pretreatment via sediment forebays before flowing into the main basins. The ponds are designed to maintain a minimum 3-foot separation to the SHWT.

A single observation point is used to compare pre- and post-development runoff rates and volumes. The observation point (OP1) is representative of the total flow from the parcel to the Souhegan River.

### IV. METHODOLOGY

The quantity of runoff and the conveyance of that flow through the site are determined using the software package HydroCAD 10.20-7a by HydroCAD Software Solutions LLC. HydroCAD is a computer aided design program for modeling storm water hydrology based on the Soil Conservation Service (SCS) TR-55 method combined with standard hydraulics calculations.

### V. SUMMARY

The proposed stormwater design provides adequate treatment, mitigation, recharge, and attenuation of stormwater generated because of the proposed site and roadway development. The proposed design achieves the stormwater goals of the Town of Canterbury and meets the requirements of the Alteration of Terrain Bureau. Refer to the summary tables below for calculated peak flow rates and volumes during each analyzed event.



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Table 1: 2-, 10-, 25-, and 50-year Peak Rate of Stormwater Discharge Summary

| Location | Q2 (CFS) |      |          | Q10 (CFS) |      |          | Q25 (CFS) |      |          | Q50 (CFS) |       |          |
|----------|----------|------|----------|-----------|------|----------|-----------|------|----------|-----------|-------|----------|
|          | Pre      | Post | $\Delta$ | Pre       | Post | $\Delta$ | Pre       | Post | $\Delta$ | Pre       | Post  | $\Delta$ |
| OP-1     | 0.08     | 0.08 | 0.00     | 1.80      | 1.79 | -0.01    | 6.41      | 5.86 | -0.55    | 13.32     | 11.57 | -1.75    |

Table 2: 2-year Peak Volume of Stormwater Discharge Summary

| Location | V2 (AF) |       |          |
|----------|---------|-------|----------|
|          | Pre     | Post  | $\Delta$ |
| OP-1     | 0.056   | 0.056 | 0.000    |



# Extreme Precipitation Tables

## Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

| Metadata for Point |                                                           |
|--------------------|-----------------------------------------------------------|
| Smoothing          | Yes                                                       |
| State              | New Hampshire                                             |
| Location           | New Hampshire, United States                              |
| Latitude           | 43.330 degrees North                                      |
| Longitude          | 71.601 degrees West                                       |
| Elevation          | 100 feet                                                  |
| Date/Time          | Wed May 21 2025 09:40:01 GMT-0400 (Eastern Daylight Time) |

### Extreme Precipitation Estimates

|       | 5min | 10min | 15min | 30min | 60min | 120min |       | 1hr  | 2hr  | 3hr  | 6hr  | 12hr | 24hr  | 48hr  |       | 1da  |
|-------|------|-------|-------|-------|-------|--------|-------|------|------|------|------|------|-------|-------|-------|------|
| 1yr   | 0.26 | 0.40  | 0.49  | 0.65  | 0.81  | 1.02   | 1yr   | 0.70 | 0.97 | 1.17 | 1.48 | 1.86 | 2.35  | 2.56  | 1yr   | 2.08 |
| 2yr   | 0.32 | 0.49  | 0.60  | 0.80  | 1.00  | 1.26   | 2yr   | 0.87 | 1.15 | 1.45 | 1.81 | 2.24 | 2.78  | 3.10  | 2yr   | 2.40 |
| 5yr   | 0.37 | 0.58  | 0.73  | 0.98  | 1.25  | 1.58   | 5yr   | 1.08 | 1.46 | 1.83 | 2.27 | 2.80 | 3.45  | 3.92  | 5yr   | 3.02 |
| 10yr  | 0.42 | 0.67  | 0.84  | 1.14  | 1.49  | 1.89   | 10yr  | 1.28 | 1.75 | 2.19 | 2.72 | 3.33 | 4.06  | 4.68  | 10yr  | 3.60 |
| 25yr  | 0.50 | 0.80  | 1.02  | 1.40  | 1.86  | 2.39   | 25yr  | 1.61 | 2.21 | 2.77 | 3.42 | 4.19 | 5.06  | 5.92  | 25yr  | 4.47 |
| 50yr  | 0.57 | 0.92  | 1.18  | 1.64  | 2.21  | 2.85   | 50yr  | 1.91 | 2.65 | 3.31 | 4.09 | 4.97 | 5.97  | 7.08  | 50yr  | 5.28 |
| 100yr | 0.65 | 1.05  | 1.36  | 1.92  | 2.62  | 3.40   | 100yr | 2.26 | 3.17 | 3.96 | 4.88 | 5.90 | 7.05  | 8.46  | 100yr | 6.24 |
| 200yr | 0.75 | 1.22  | 1.58  | 2.26  | 3.11  | 4.06   | 200yr | 2.69 | 3.80 | 4.72 | 5.81 | 7.01 | 8.33  | 10.13 | 200yr | 7.37 |
| 500yr | 0.90 | 1.48  | 1.93  | 2.80  | 3.91  | 5.12   | 500yr | 3.37 | 4.83 | 5.96 | 7.33 | 8.80 | 10.41 | 12.84 | 500yr | 9.27 |

### Lower Confidence Limits

|       | 5min | 10min | 15min | 30min | 60min | 120min |       | 1hr  | 2hr  | 3hr  | 6hr  | 12hr | 24hr | 48hr |       | 1da  |
|-------|------|-------|-------|-------|-------|--------|-------|------|------|------|------|------|------|------|-------|------|
| 1yr   | 0.24 | 0.36  | 0.44  | 0.60  | 0.73  | 0.88   | 1yr   | 0.63 | 0.86 | 1.00 | 1.35 | 1.59 | 2.10 | 2.39 | 1yr   | 1.86 |
| 2yr   | 0.31 | 0.47  | 0.58  | 0.79  | 0.97  | 1.15   | 2yr   | 0.84 | 1.12 | 1.31 | 1.71 | 2.20 | 2.71 | 3.02 | 2yr   | 2.40 |
| 5yr   | 0.34 | 0.53  | 0.66  | 0.90  | 1.15  | 1.37   | 5yr   | 0.99 | 1.34 | 1.55 | 1.99 | 2.58 | 3.25 | 3.64 | 5yr   | 2.87 |
| 10yr  | 0.38 | 0.58  | 0.72  | 1.01  | 1.31  | 1.54   | 10yr  | 1.13 | 1.51 | 1.75 | 2.24 | 2.90 | 3.74 | 4.19 | 10yr  | 3.33 |
| 25yr  | 0.44 | 0.66  | 0.82  | 1.18  | 1.55  | 1.82   | 25yr  | 1.34 | 1.78 | 2.07 | 2.60 | 3.39 | 4.50 | 5.03 | 25yr  | 3.98 |
| 50yr  | 0.48 | 0.73  | 0.91  | 1.31  | 1.77  | 2.06   | 50yr  | 1.52 | 2.01 | 2.36 | 2.91 | 3.81 | 5.19 | 5.77 | 50yr  | 4.60 |
| 100yr | 0.53 | 0.81  | 1.01  | 1.46  | 2.00  | 2.33   | 100yr | 1.73 | 2.28 | 2.68 | 3.25 | 4.29 | 6.00 | 6.64 | 100yr | 5.33 |
| 200yr | 0.59 | 0.89  | 1.13  | 1.63  | 2.27  | 2.63   | 200yr | 1.96 | 2.57 | 3.03 | 3.64 | 4.83 | 6.96 | 7.65 | 200yr | 6.10 |
| 500yr | 0.68 | 1.01  | 1.30  | 1.89  | 2.69  | 3.07   | 500yr | 2.32 | 3.00 | 3.57 | 4.21 | 5.67 | 8.46 | 9.24 | 500yr | 7.49 |

### Upper Confidence Limits

|       | 5min | 10min | 15min | 30min | 60min | 120min |       | 1hr  | 2hr  | 3hr  | 6hr  | 12hr | 24hr | 48hr  |       | 1da  |
|-------|------|-------|-------|-------|-------|--------|-------|------|------|------|------|------|------|-------|-------|------|
| 1yr   | 0.28 | 0.44  | 0.54  | 0.72  | 0.89  | 1.08   | 1yr   | 0.77 | 1.06 | 1.21 | 1.56 | 1.94 | 2.51 | 2.73  | 1yr   | 2.22 |
| 2yr   | 0.33 | 0.51  | 0.63  | 0.85  | 1.05  | 1.24   | 2yr   | 0.91 | 1.22 | 1.40 | 1.83 | 2.34 | 2.85 | 3.21  | 2yr   | 2.52 |
| 5yr   | 0.40 | 0.62  | 0.77  | 1.06  | 1.35  | 1.62   | 5yr   | 1.17 | 1.58 | 1.84 | 2.38 | 3.00 | 3.65 | 4.18  | 5yr   | 3.22 |
| 10yr  | 0.49 | 0.75  | 0.93  | 1.30  | 1.68  | 1.98   | 10yr  | 1.45 | 1.93 | 2.21 | 2.78 | 3.50 | 4.40 | 5.12  | 10yr  | 3.90 |
| 25yr  | 0.63 | 0.96  | 1.20  | 1.71  | 2.25  | 2.63   | 25yr  | 1.94 | 2.57 | 2.89 | 3.54 | 4.43 | 5.64 | 6.71  | 25yr  | 4.99 |
| 50yr  | 0.77 | 1.17  | 1.45  | 2.09  | 2.82  | 3.26   | 50yr  | 2.43 | 3.19 | 3.55 | 4.26 | 5.30 | 6.80 | 8.25  | 50yr  | 6.02 |
| 100yr | 0.94 | 1.42  | 1.78  | 2.57  | 3.52  | 4.06   | 100yr | 3.04 | 3.97 | 4.36 | 5.12 | 6.34 | 8.20 | 10.13 | 100yr | 7.20 |



[illegible]

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



## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

#### Soil Rating Polygons

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

#### Soil Rating Lines

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

#### Soil Rating Points

 A  
 A/D  
 B  
 B/D

 C  
 C/D  
 D  
 Not rated or not available

### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

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

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: Merrimack and Belknap Counties, New Hampshire

Survey Area Data: Version 30, Sep 3, 2024

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

Date(s) aerial images were photographed: Oct 6, 2022—Oct 22, 2022

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

## Hydrologic Soil Group

| Map unit symbol | Map unit name                                                       | Rating | Acres in AOI | Percent of AOI |
|-----------------|---------------------------------------------------------------------|--------|--------------|----------------|
| 17A             | Searsport-Chocorua-Naumburg complex, 0 to 1 percent slopes          | A/D    | 45.4         | 3.0%           |
| 35A             | Champlain loamy fine sand, 0 to 3 percent slopes                    | A      | 292.5        | 19.1%          |
| 35B             | Champlain loamy fine sand, 3 to 8 percent slopes                    | A      | 226.1        | 14.8%          |
| 35C             | Champlain loamy fine sand, 8 to 15 percent slopes                   | A      | 28.3         | 1.8%           |
| 35E             | Champlain loamy fine sand, 15 to 60 percent slopes                  | A      | 124.9        | 8.1%           |
| 46C             | Henniker fine sandy loam, 8 to 15 percent slopes                    | C      | 23.9         | 1.6%           |
| 47E             | Henniker fine sandy loam, 25 to 35 percent slopes, very stony       | C      | 0.4          | 0.0%           |
| 94A             | Agawam-Ninigret fine sandy loams, 0 to 3 percent slopes             | B      | 24.7         | 1.6%           |
| 101A            | Ondawa fine sandy loam, 0 to 3 percent slopes, frequently flooded   | B      | 56.2         | 3.7%           |
| 102A            | Sunday loamy fine sand, 0 to 3 percent slopes, occasionally flooded | A      | 6.8          | 0.4%           |
| 104A            | Podunk fine sandy loam, 0 to 3 percent slopes, frequently flooded   | B/D    | 60.1         | 3.9%           |
| 105A            | Rumney fine sandy loam, 0 to 3 percent slopes, frequently flooded   | B/D    | 46.4         | 3.0%           |
| 167C            | Canterbury fine sandy loam, 8 to 15 percent slopes, very stony      | C      | 52.3         | 3.4%           |
| 201A            | Ondawa fine sandy loam, 0 to 3 percent slopes, occasionally flooded | B      | 71.4         | 4.7%           |

| Map unit symbol                    | Map unit name                                                            | Rating | Acres in AOI   | Percent of AOI |
|------------------------------------|--------------------------------------------------------------------------|--------|----------------|----------------|
| 290C                               | Champlain-Woodstock complex, 8 to 15 percent slopes                      | A      | 113.6          | 7.4%           |
| 290D                               | Champlain-Woodstock complex, 15 to 35 percent slopes                     | A      | 28.5           | 1.9%           |
| 300B                               | Udipsamments, 0 to 6 percent slopes                                      | A      | 7.0            | 0.5%           |
| 406A                               | Medomak mucky silt loam, 0 to 2 percent slopes, frequently flooded       | B/D    | 40.5           | 2.6%           |
| 415B                               | Moosilauke fine sandy loam, 3 to 8 percent slopes, very stony            | A/D    | 22.8           | 1.5%           |
| 458B                               | Metacomet fine sandy loam, 3 to 8 percent slopes                         | C      | 32.8           | 2.1%           |
| 458C                               | Metacomet fine sandy loam, 8 to 15 percent slopes                        | C      | 9.2            | 0.6%           |
| 459B                               | Metacomet fine sandy loam, 3 to 8 percent slopes, very stony             | C      | 12.2           | 0.8%           |
| 459C                               | Metacomet fine sandy loam, 8 to 15 percent slopes, very stony            | C      | 31.8           | 2.1%           |
| 478B                               | Gilmanton fine sandy loam, 3 to 8 percent slopes                         | C/D    | 2.4            | 0.2%           |
| 479B                               | Gilmanton fine sandy loam, 3 to 8 percent slopes, very stony             | C/D    | 40.2           | 2.6%           |
| 480C                               | Millsite-Woodstock-Henniker complex, 8 to 15 percent slopes, very stony  | C      | 37.0           | 2.4%           |
| 480D                               | Millsite-Woodstock-Henniker complex, 15 to 25 percent slopes, very stony | B      | 39.9           | 2.6%           |
| 613A                               | Croghan loamy fine sand, 0 to 8 percent slopes, wooded                   | A      | 4.9            | 0.3%           |
| 647B                               | Pillsbury fine sandy loam, 0 to 8 percent slopes, very stony             | D      | 14.9           | 1.0%           |
| W                                  | Water                                                                    |        | 35.1           | 2.3%           |
| <b>Totals for Area of Interest</b> |                                                                          |        | <b>1,532.5</b> | <b>100.0%</b>  |

## Description

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

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

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

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

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

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

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

## Rating Options

*Aggregation Method:* Dominant Condition

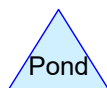
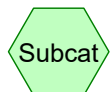
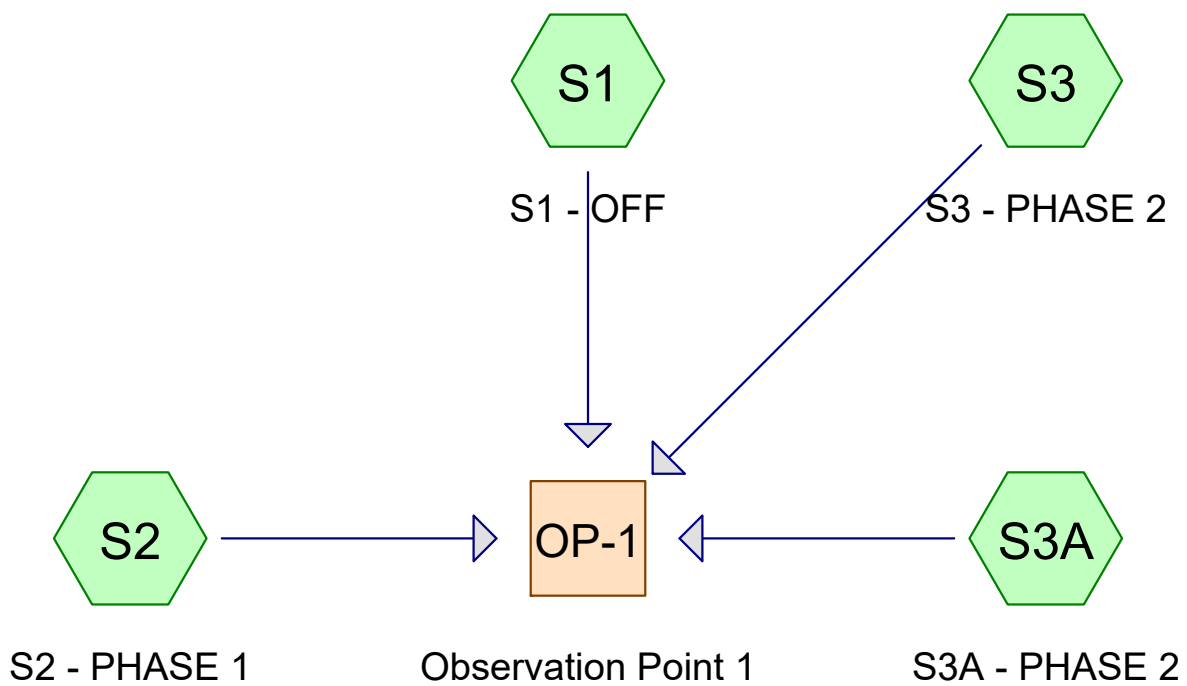
*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher



## Section 1.0: Pre-Developed Conditions





#### Routing Diagram for 12609EX00

Prepared by Meridian Land Services Inc, Printed 9/18/2025  
HydroCAD® 10.20-7a s/n 00595 © 2025 HydroCAD Software Solutions LLC



**Area Listing (all nodes)**

| Area<br>(acres) | CN        | Description<br>(subcatchment-numbers)          |
|-----------------|-----------|------------------------------------------------|
| 11.519          | 39        | >75% Grass cover, Good HSG A (S1, S2, S3, S3A) |
| 5.637           | 61        | >75% Grass cover, Good HSG B (S1, S2)          |
| 3.735           | 74        | >75% Grass cover, Good HSG C (S1)              |
| 0.340           | 76        | Gravel roads HSG A (S1, S2, S3)                |
| 0.074           | 98        | Roofs HSG A (S2)                               |
| 0.003           | 98        | Roofs HSG B (S1)                               |
| 11.297          | 30        | Woods, Good HSG A (S1, S2, S3)                 |
| 1.426           | 55        | Woods, Good HSG B (S1, S2)                     |
| 0.337           | 70        | Woods, Good HSG C (S1, S2)                     |
| <b>34.369</b>   | <b>45</b> | <b>TOTAL AREA</b>                              |

**12609EX00**

Prepared by Meridian Land Services Inc

Printed 9/18/2025

HydroCAD® 10.20-7a s/n 00595 © 2025 HydroCAD Software Solutions LLC

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**Soil Listing (all nodes)**

| Area<br>(acres) | Soil<br>Group | Subcatchment<br>Numbers |
|-----------------|---------------|-------------------------|
| 23.230          | HSG A         | S1, S2, S3, S3A         |
| 7.066           | HSG B         | S1, S2                  |
| 4.073           | HSG C         | S1, S2                  |
| 0.000           | HSG D         |                         |
| 0.000           | Other         |                         |
| <b>34.369</b>   |               | <b>TOTAL AREA</b>       |

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

**Subcatchment S1: S1 - OFF** Runoff Area=888,613 sf 0.01% Impervious Runoff Depth=0.03"  
Flow Length=1,047' Slope=0.1490 '/' Tc=20.0 min CN=48 Runoff=0.08 cfs 0.056 af

**Subcatchment S2: S2 - PHASE 1** Runoff Area=403,699 sf 0.80% Impervious Runoff Depth=0.00"  
Flow Length=732' Slope=0.0655 '/' Tc=26.5 min CN=42 Runoff=0.00 cfs 0.000 af

**Subcatchment S3: S3 - PHASE 2** Runoff Area=188,101 sf 0.00% Impervious Runoff Depth=0.00"  
Flow Length=468' Slope=0.0430 '/' Tc=26.3 min CN=37 Runoff=0.00 cfs 0.000 af

**Subcatchment S3A: S3A - PHASE 2** Runoff Area=16,681 sf 0.00% Impervious Runoff Depth=0.00"  
Flow Length=108' Slope=0.0828 '/' Tc=6.0 min CN=39 Runoff=0.00 cfs 0.000 af

**Reach OP-1: Observation Point 1**

Inflow=0.08 cfs 0.056 af  
Outflow=0.08 cfs 0.056 af

**Total Runoff Area = 34.369 ac Runoff Volume = 0.056 af Average Runoff Depth = 0.02"**  
**99.78% Pervious = 34.291 ac 0.22% Impervious = 0.077 ac**

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

**Subcatchment S1: S1 - OFF** Runoff Area=888,613 sf 0.01% Impervious Runoff Depth=0.28"  
Flow Length=1,047' Slope=0.1490 '/' Tc=20.0 min CN=48 Runoff=1.79 cfs 0.479 af

**Subcatchment S2: S2 - PHASE 1** Runoff Area=403,699 sf 0.80% Impervious Runoff Depth=0.11"  
Flow Length=732' Slope=0.0655 '/' Tc=26.5 min CN=42 Runoff=0.14 cfs 0.086 af

**Subcatchment S3: S3 - PHASE 2** Runoff Area=188,101 sf 0.00% Impervious Runoff Depth=0.02"  
Flow Length=468' Slope=0.0430 '/' Tc=26.3 min CN=37 Runoff=0.01 cfs 0.009 af

**Subcatchment S3A: S3A - PHASE 2** Runoff Area=16,681 sf 0.00% Impervious Runoff Depth=0.05"  
Flow Length=108' Slope=0.0828 '/' Tc=6.0 min CN=39 Runoff=0.00 cfs 0.002 af

**Reach OP-1: Observation Point 1**

Inflow=1.80 cfs 0.575 af  
Outflow=1.80 cfs 0.575 af

**Total Runoff Area = 34.369 ac Runoff Volume = 0.575 af Average Runoff Depth = 0.20"**  
**99.78% Pervious = 34.291 ac 0.22% Impervious = 0.077 ac**

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

**Subcatchment S1: S1 - OFF** Runoff Area=888,613 sf 0.01% Impervious Runoff Depth=0.61"  
Flow Length=1,047' Slope=0.1490 '/' Tc=20.0 min CN=48 Runoff=5.88 cfs 1.037 af

**Subcatchment S2: S2 - PHASE 1** Runoff Area=403,699 sf 0.80% Impervious Runoff Depth=0.33"  
Flow Length=732' Slope=0.0655 '/' Tc=26.5 min CN=42 Runoff=0.80 cfs 0.253 af

**Subcatchment S3: S3 - PHASE 2** Runoff Area=188,101 sf 0.00% Impervious Runoff Depth=0.15"  
Flow Length=468' Slope=0.0430 '/' Tc=26.3 min CN=37 Runoff=0.08 cfs 0.053 af

**Subcatchment S3A: S3A - PHASE 2** Runoff Area=16,681 sf 0.00% Impervious Runoff Depth=0.21"  
Flow Length=108' Slope=0.0828 '/' Tc=6.0 min CN=39 Runoff=0.02 cfs 0.007 af

**Reach OP-1: Observation Point 1**

Inflow=6.41 cfs 1.349 af  
Outflow=6.41 cfs 1.349 af

**Total Runoff Area = 34.369 ac Runoff Volume = 1.349 af Average Runoff Depth = 0.47"**  
**99.78% Pervious = 34.291 ac 0.22% Impervious = 0.077 ac**

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

**Subcatchment S1: S1 - OFF** Runoff Area=888,613 sf 0.01% Impervious Runoff Depth=0.99"  
Flow Length=1,047' Slope=0.1490 '/' Tc=20.0 min CN=48 Runoff=11.63 cfs 1.680 af

**Subcatchment S2: S2 - PHASE 1** Runoff Area=403,699 sf 0.80% Impervious Runoff Depth=0.60"  
Flow Length=732' Slope=0.0655 '/' Tc=26.5 min CN=42 Runoff=2.16 cfs 0.467 af

**Subcatchment S3: S3 - PHASE 2** Runoff Area=188,101 sf 0.00% Impervious Runoff Depth=0.34"  
Flow Length=468' Slope=0.0430 '/' Tc=26.3 min CN=37 Runoff=0.33 cfs 0.121 af

**Subcatchment S3A: S3A - PHASE 2** Runoff Area=16,681 sf 0.00% Impervious Runoff Depth=0.44"  
Flow Length=108' Slope=0.0828 '/' Tc=6.0 min CN=39 Runoff=0.07 cfs 0.014 af

**Reach OP-1: Observation Point 1**

Inflow=13.32 cfs 2.282 af  
Outflow=13.32 cfs 2.282 af

**Total Runoff Area = 34.369 ac Runoff Volume = 2.282 af Average Runoff Depth = 0.80"**  
**99.78% Pervious = 34.291 ac 0.22% Impervious = 0.077 ac**

Section 1.1: Pre-Developed Conditions  
25- and 50-year Storm – Full Summary



**Summary for Subcatchment S1: S1 - OFF**

Runoff = 5.88 cfs @ 12.43 hrs, Volume= 1.037 af, Depth= 0.61"  
 Routed to Reach OP-1 : Observation Point 1

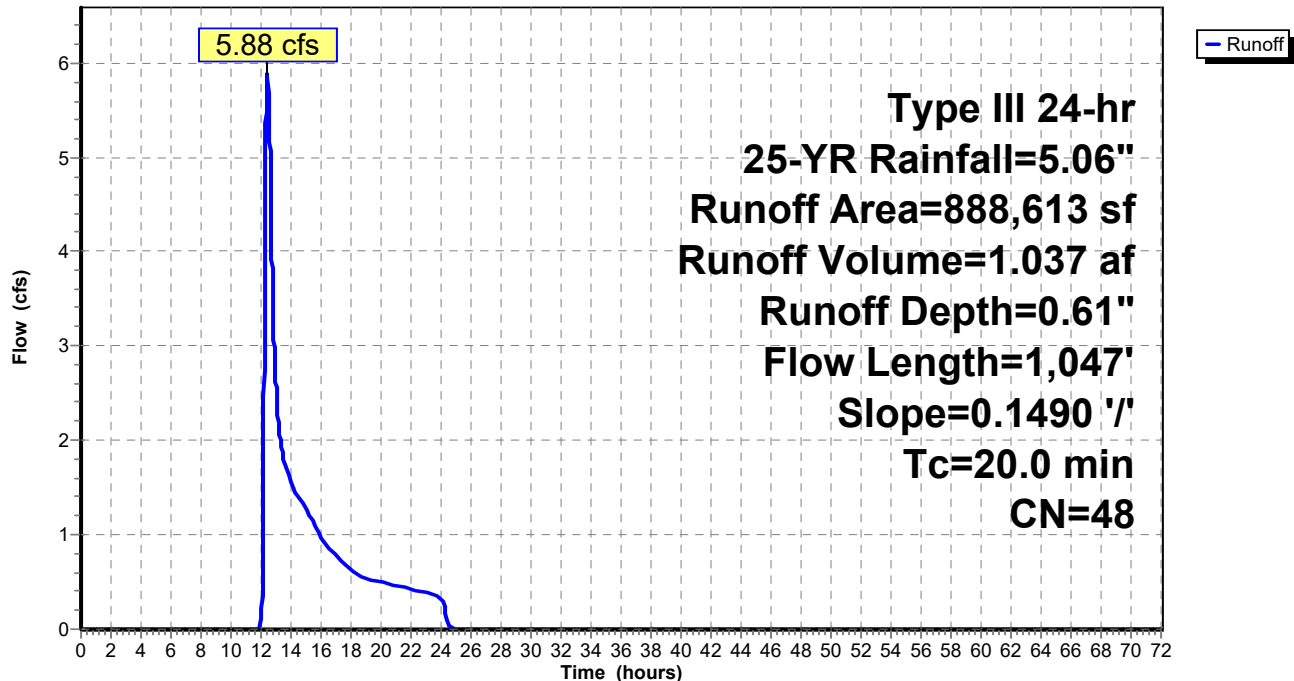
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-YR Rainfall=5.06"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 36,466    | 55 | Woods, Good HSG B            |
| 117       | 98 | Roofs HSG B                  |
| 14,274    | 70 | Woods, Good HSG C            |
| 335,876   | 30 | Woods, Good HSG A            |
| 448       | 76 | Gravel roads HSG A           |
| 149,935   | 39 | >75% Grass cover, Good HSG A |
| 188,787   | 61 | >75% Grass cover, Good HSG B |
| 162,709   | 74 | >75% Grass cover, Good HSG C |
| 888,613   | 48 | Weighted Average             |
| 888,496   |    | 99.99% Pervious Area         |
| 117       |    | 0.01% Impervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 20.0     | 1,047         | 0.1490        | 0.87              |                | Lag/CN Method, |

**Subcatchment S1: S1 - OFF**

Hydrograph



**Summary for Subcatchment S2: S2 - PHASE 1**

Runoff = 0.80 cfs @ 12.69 hrs, Volume= 0.253 af, Depth= 0.33"  
 Routed to Reach OP-1 : Observation Point 1

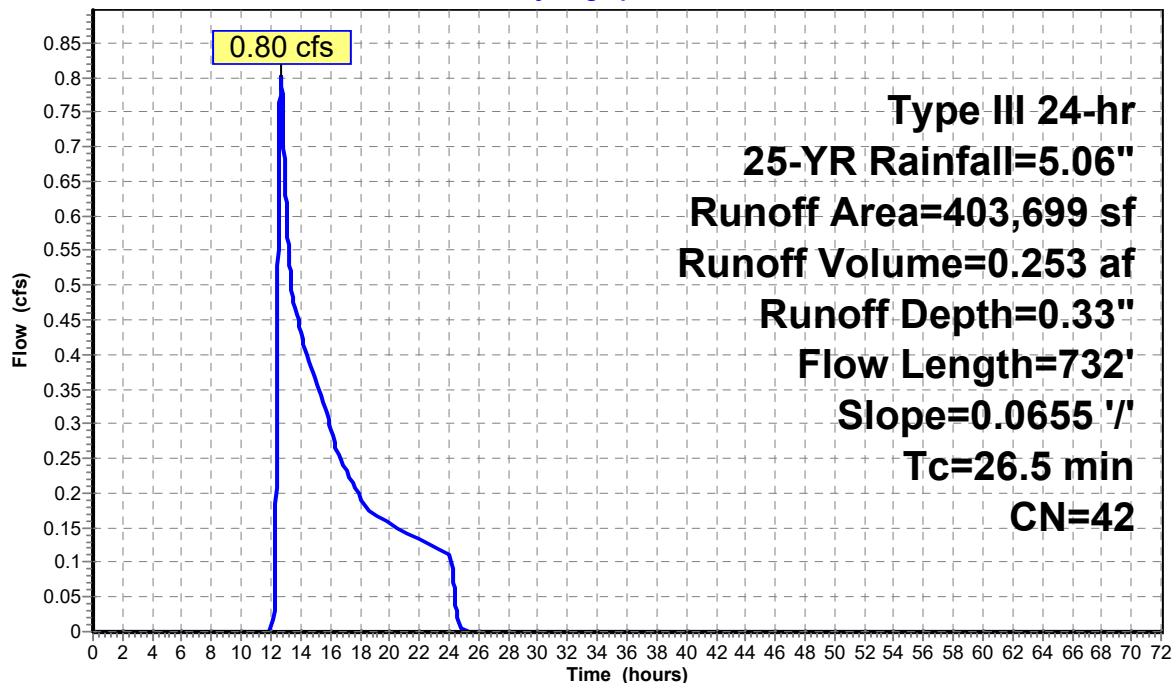
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-YR Rainfall=5.06"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 418       | 70 | Woods, Good HSG C            |
| 25,661    | 55 | Woods, Good HSG B            |
| 113,255   | 30 | Woods, Good HSG A            |
| 11,713    | 76 | Gravel roads HSG A           |
| 3,242     | 98 | Roofs HSG A                  |
| 192,637   | 39 | >75% Grass cover, Good HSG A |
| 56,773    | 61 | >75% Grass cover, Good HSG B |
| 403,699   | 42 | Weighted Average             |
| 400,457   |    | 99.20% Pervious Area         |
| 3,242     |    | 0.80% Impervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 26.5     | 732           | 0.0655        | 0.46              |                | Lag/CN Method, |

**Subcatchment S2: S2 - PHASE 1**

Hydrograph



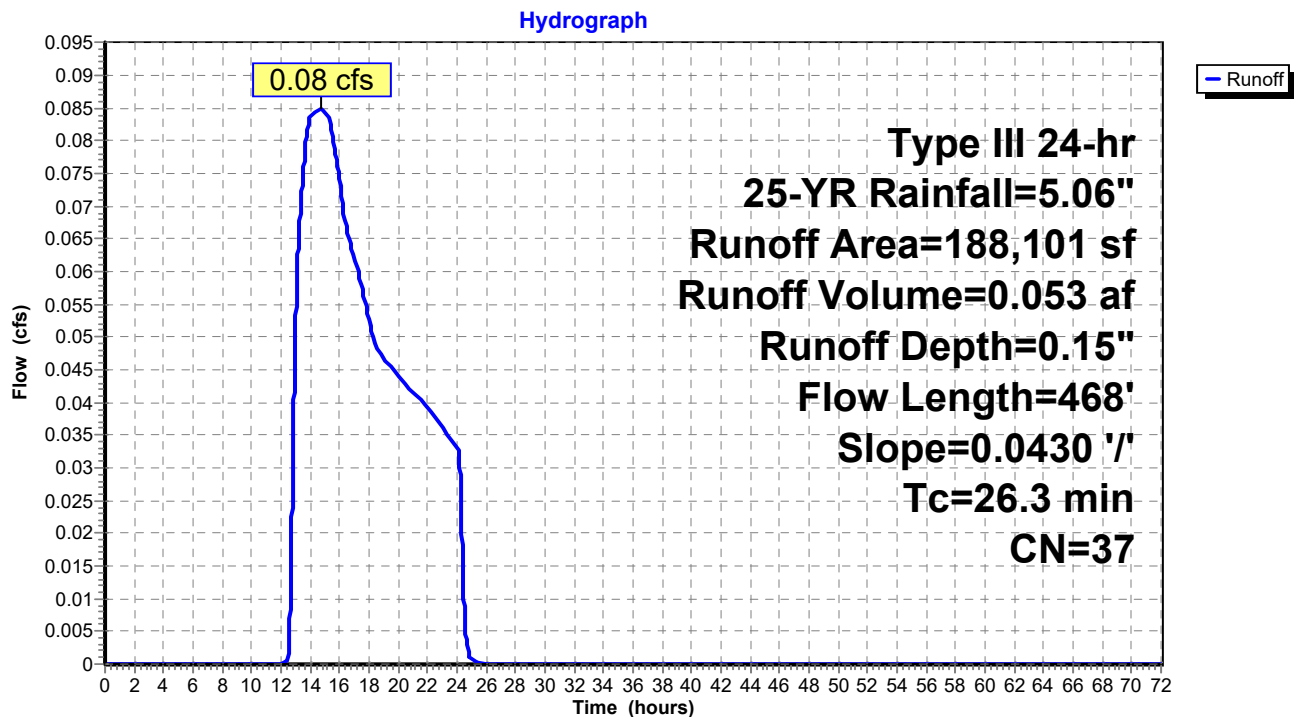
**Summary for Subcatchment S3: S3 - PHASE 2**

Runoff = 0.08 cfs @ 14.76 hrs, Volume= 0.053 af, Depth= 0.15"  
 Routed to Reach OP-1 : Observation Point 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=5.06"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 42,945    | 30 | Woods, Good HSG A            |
| 2,635     | 76 | Gravel roads HSG A           |
| 142,521   | 39 | >75% Grass cover, Good HSG A |
| 188,101   | 37 | Weighted Average             |
| 188,101   |    | 100.00% Pervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 26.3     | 468           | 0.0430        | 0.30              |                | Lag/CN Method, |

**Subcatchment S3: S3 - PHASE 2**

**Summary for Subcatchment S3A: S3A - PHASE 2**

Runoff = 0.02 cfs @ 12.46 hrs, Volume= 0.007 af, Depth= 0.21"  
 Routed to Reach OP-1 : Observation Point 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=5.06"

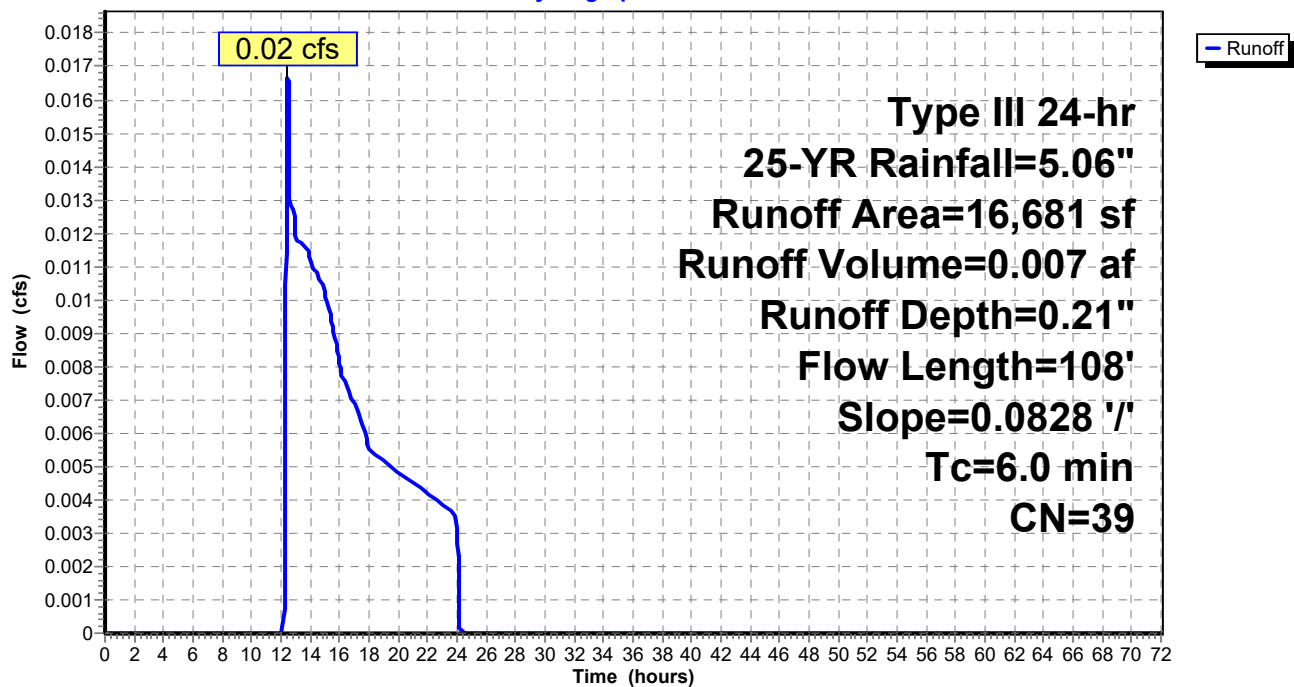
| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 16,681    | 39 | >75% Grass cover, Good HSG A |
| 16,681    |    | 100.00% Pervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|------------------------------------------|-------------------|----------------|----------------|
| 5.6      | 108           | 0.0828                                   | 0.32              |                | Lag/CN Method, |
| 5.6      | 108           | Total, Increased to minimum Tc = 6.0 min |                   |                |                |

**Subcatchment S3A: S3A - PHASE 2**

Hydrograph



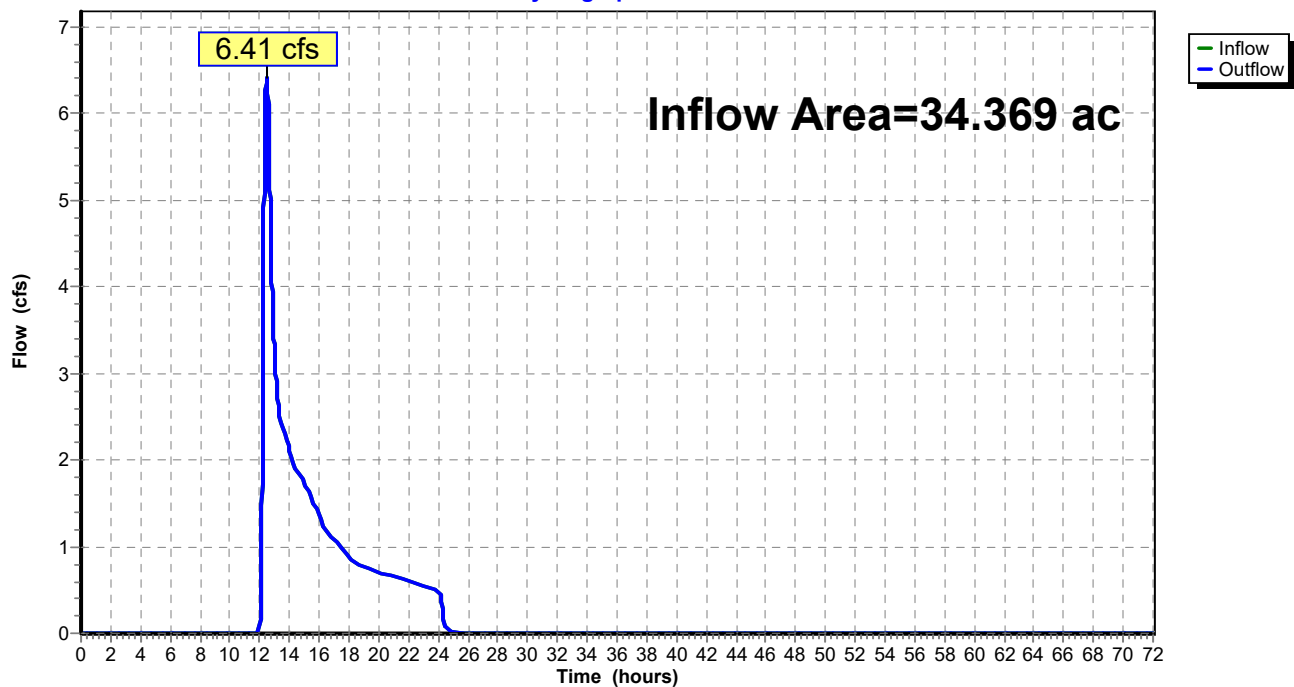
**Summary for Reach OP-1: Observation Point 1**

Inflow Area = 34.369 ac, 0.22% Impervious, Inflow Depth = 0.47" for 25-YR event  
Inflow = 6.41 cfs @ 12.47 hrs, Volume= 1.349 af  
Outflow = 6.41 cfs @ 12.47 hrs, Volume= 1.349 af, Atten= 0%, Lag= 0.0 min  
Routed to nonexistent node OP-T

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

**Reach OP-1: Observation Point 1**

Hydrograph



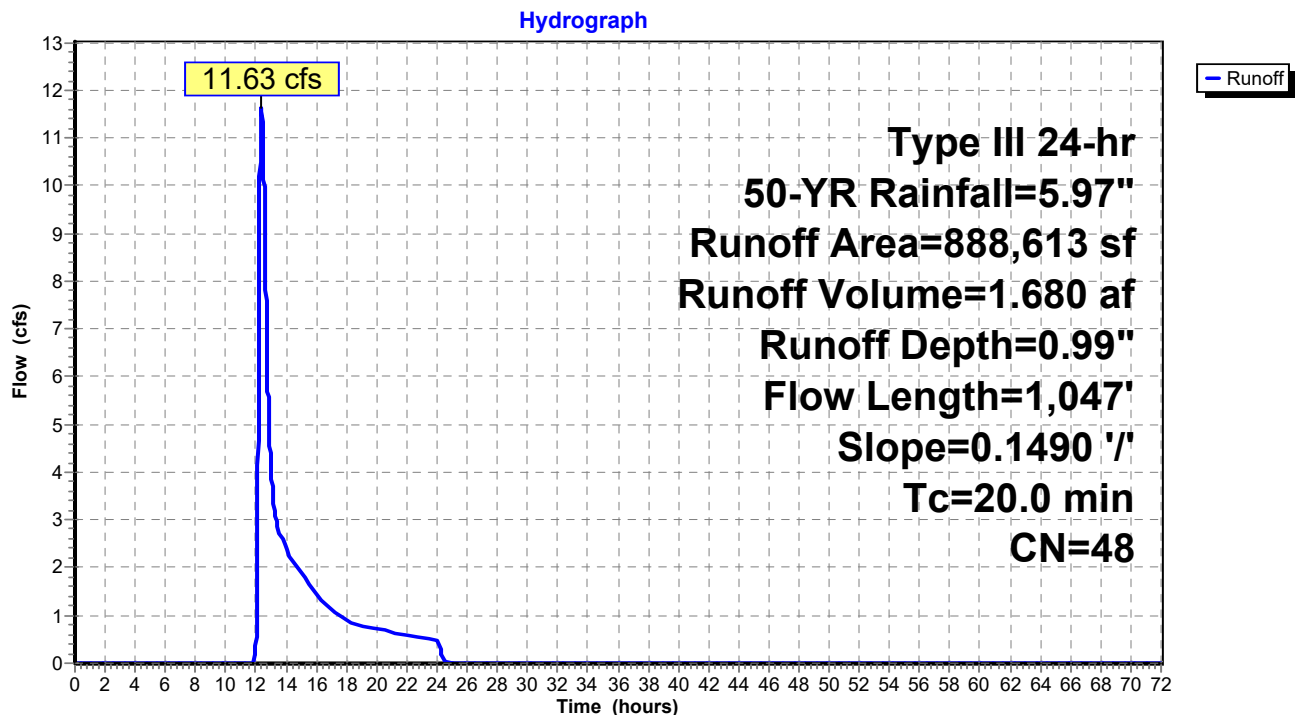
**Summary for Subcatchment S1: S1 - OFF**

Runoff = 11.63 cfs @ 12.36 hrs, Volume= 1.680 af, Depth= 0.99"  
 Routed to Reach OP-1 : Observation Point 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 50-YR Rainfall=5.97"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 36,466    | 55 | Woods, Good HSG B            |
| 117       | 98 | Roofs HSG B                  |
| 14,274    | 70 | Woods, Good HSG C            |
| 335,876   | 30 | Woods, Good HSG A            |
| 448       | 76 | Gravel roads HSG A           |
| 149,935   | 39 | >75% Grass cover, Good HSG A |
| 188,787   | 61 | >75% Grass cover, Good HSG B |
| 162,709   | 74 | >75% Grass cover, Good HSG C |
| 888,613   | 48 | Weighted Average             |
| 888,496   |    | 99.99% Pervious Area         |
| 117       |    | 0.01% Impervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 20.0     | 1,047         | 0.1490        | 0.87              |                | Lag/CN Method, |

**Subcatchment S1: S1 - OFF**

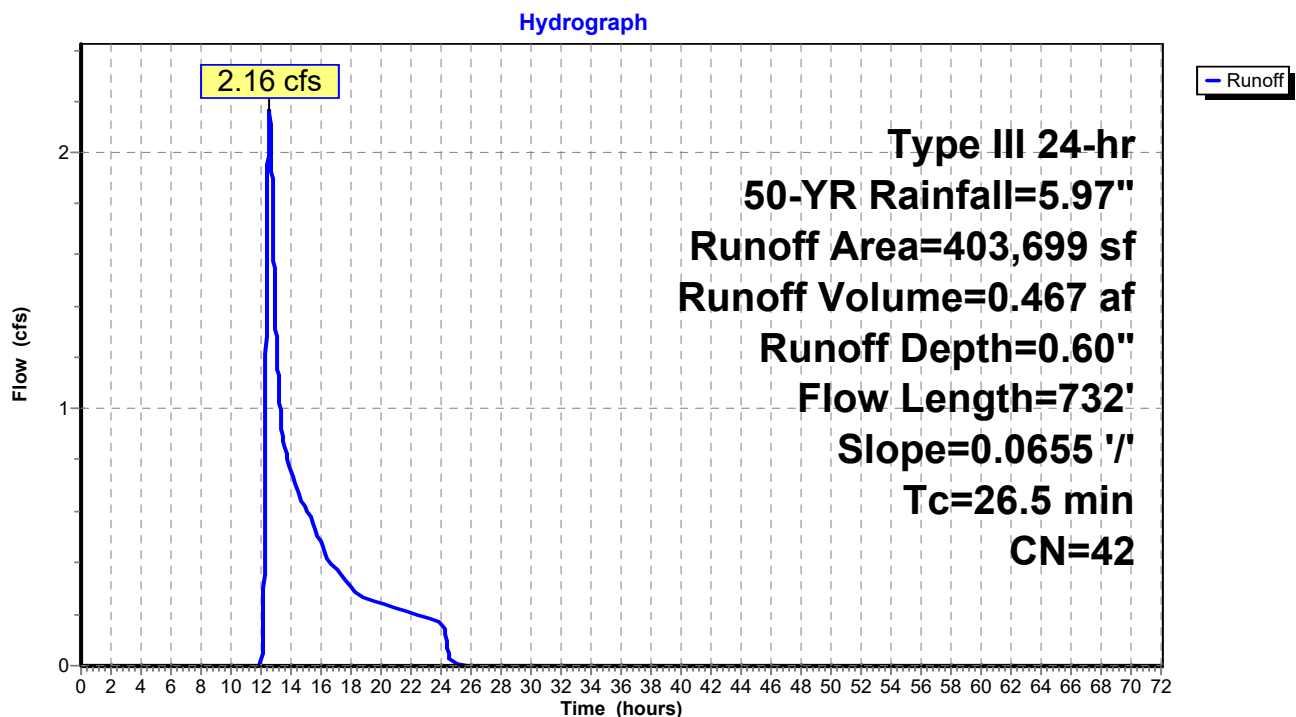
**Summary for Subcatchment S2: S2 - PHASE 1**

Runoff = 2.16 cfs @ 12.57 hrs, Volume= 0.467 af, Depth= 0.60"  
 Routed to Reach OP-1 : Observation Point 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 50-YR Rainfall=5.97"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 418       | 70 | Woods, Good HSG C            |
| 25,661    | 55 | Woods, Good HSG B            |
| 113,255   | 30 | Woods, Good HSG A            |
| 11,713    | 76 | Gravel roads HSG A           |
| 3,242     | 98 | Roofs HSG A                  |
| 192,637   | 39 | >75% Grass cover, Good HSG A |
| 56,773    | 61 | >75% Grass cover, Good HSG B |
| 403,699   | 42 | Weighted Average             |
| 400,457   |    | 99.20% Pervious Area         |
| 3,242     |    | 0.80% Impervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 26.5     | 732           | 0.0655        | 0.46              |                | Lag/CN Method, |

**Subcatchment S2: S2 - PHASE 1**

**Summary for Subcatchment S3: S3 - PHASE 2**

Runoff = 0.33 cfs @ 12.71 hrs, Volume= 0.121 af, Depth= 0.34"  
 Routed to Reach OP-1 : Observation Point 1

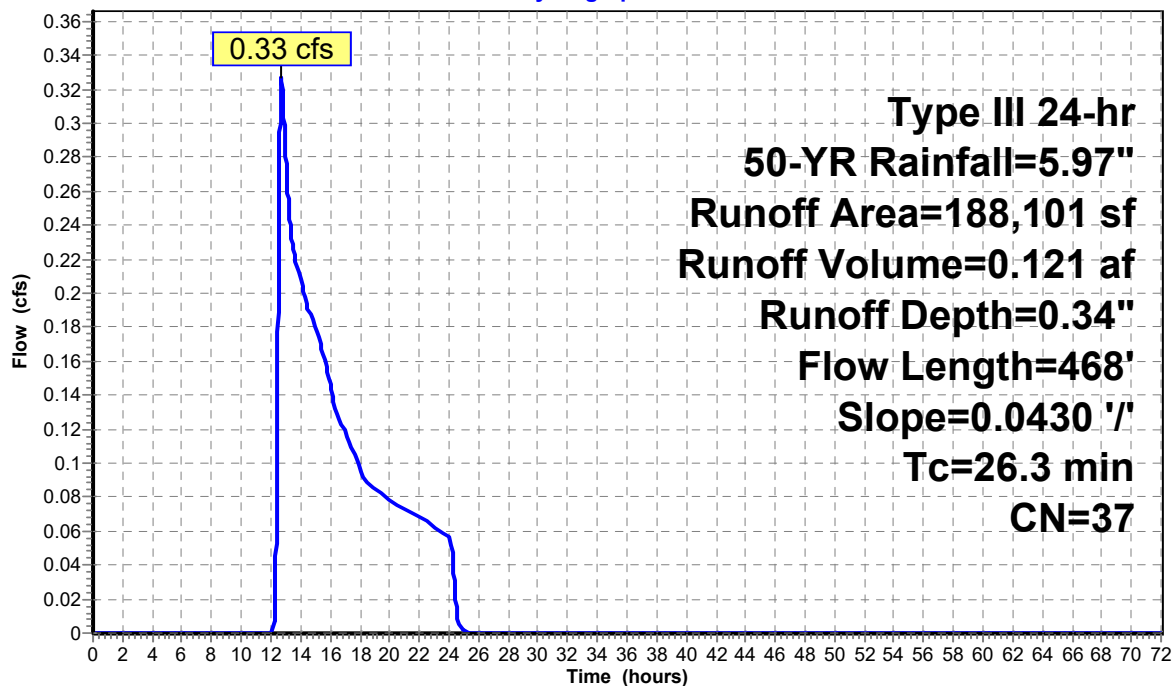
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 50-YR Rainfall=5.97"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 42,945    | 30 | Woods, Good HSG A            |
| 2,635     | 76 | Gravel roads HSG A           |
| 142,521   | 39 | >75% Grass cover, Good HSG A |
| 188,101   | 37 | Weighted Average             |
| 188,101   |    | 100.00% Pervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 26.3     | 468           | 0.0430        | 0.30              |                | Lag/CN Method, |

**Subcatchment S3: S3 - PHASE 2**

Hydrograph



**Summary for Subcatchment S3A: S3A - PHASE 2**

Runoff = 0.07 cfs @ 12.35 hrs, Volume= 0.014 af, Depth= 0.44"  
 Routed to Reach OP-1 : Observation Point 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 50-YR Rainfall=5.97"

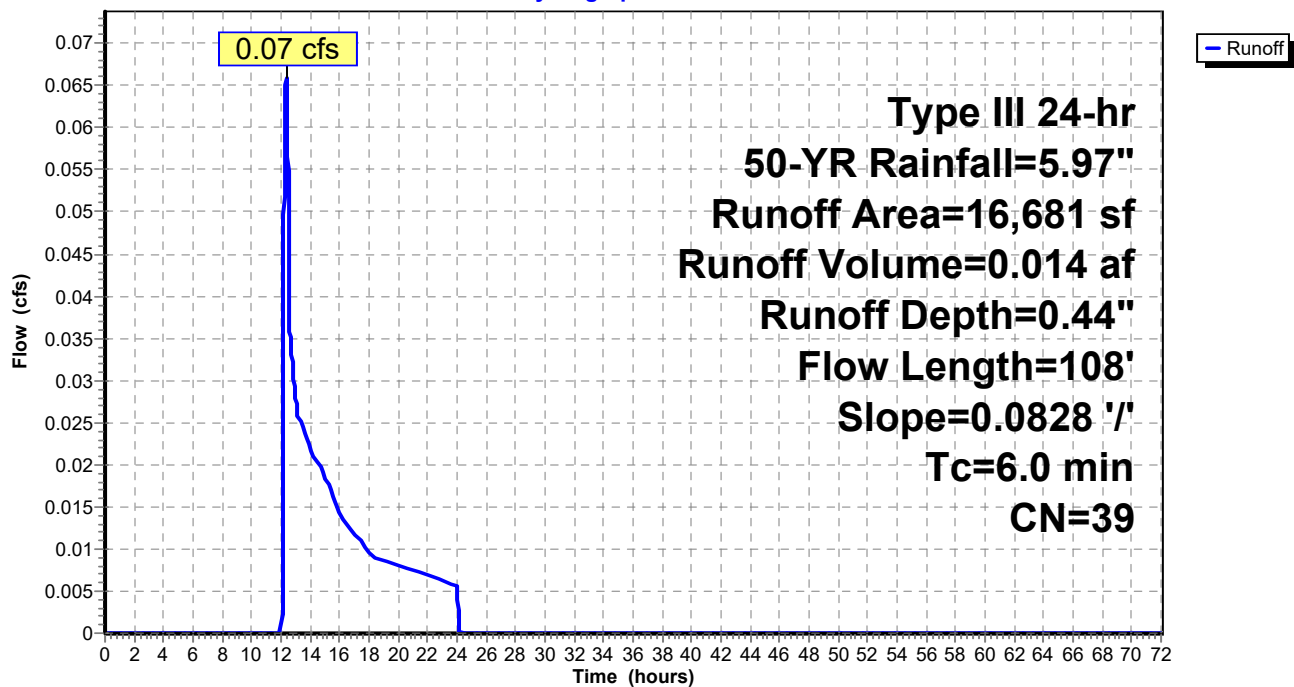
| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 16,681    | 39 | >75% Grass cover, Good HSG A |
| 16,681    |    | 100.00% Pervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|------------------------------------------|-------------------|----------------|----------------|
| 5.6      | 108           | 0.0828                                   | 0.32              |                | Lag/CN Method, |
| 5.6      | 108           | Total, Increased to minimum Tc = 6.0 min |                   |                |                |

**Subcatchment S3A: S3A - PHASE 2**

Hydrograph



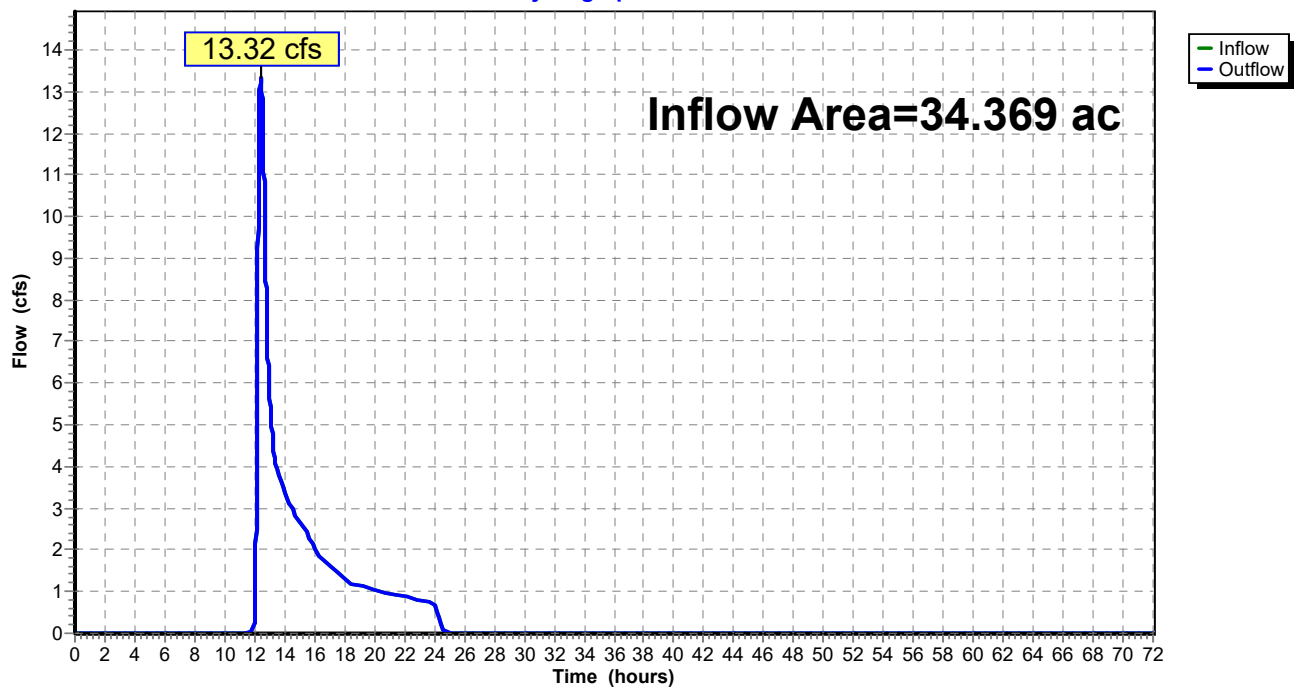
**Summary for Reach OP-1: Observation Point 1**

Inflow Area = 34.369 ac, 0.22% Impervious, Inflow Depth = 0.80" for 50-YR event  
Inflow = 13.32 cfs @ 12.40 hrs, Volume= 2.282 af  
Outflow = 13.32 cfs @ 12.40 hrs, Volume= 2.282 af, Atten= 0%, Lag= 0.0 min  
Routed to nonexistent node OP-T

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

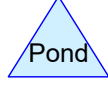
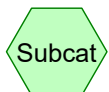
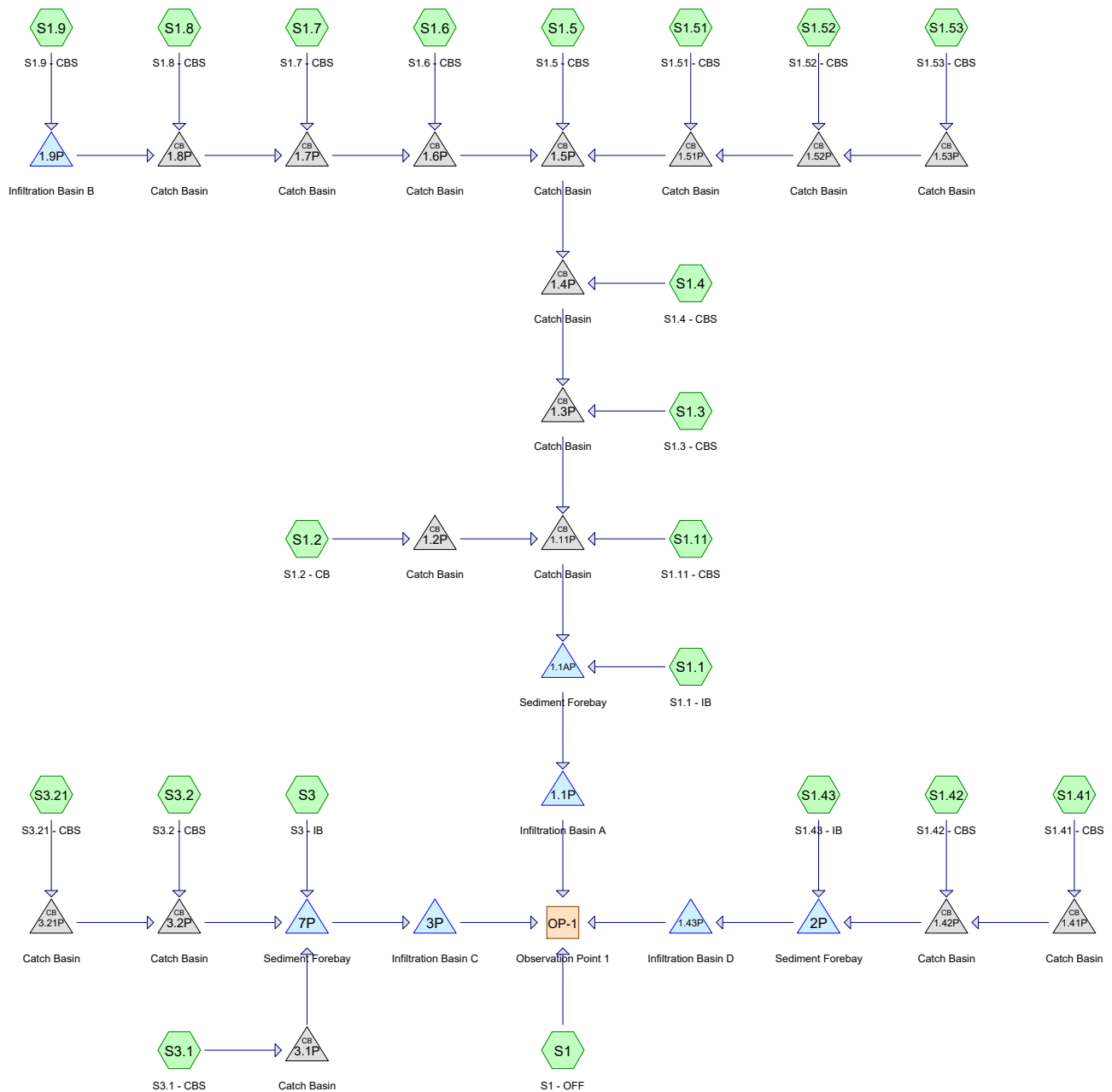
**Reach OP-1: Observation Point 1**

Hydrograph



## Section 2.0: Post-Developed Conditions





### Routing Diagram for 12609DV00A

Prepared by Meridian Land Services Inc, Printed 9/18/2025  
HydroCAD® 10.20-7a s/n 00595 © 2025 HydroCAD Software Solutions LLC



**Area Listing (all nodes)**

| Area<br>(acres) | CN        | Description<br>(subcatchment-numbers)                                                                                                                     |
|-----------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8.183           | 39        | >75% Grass cover, Good HSG A (S1, S1.1, S1.11, S1.2, S1.4, S1.41, S1.42, S1.43, S1.5, S1.51, S1.52, S1.53, S1.6, S1.7, S1.8, S1.9, S3, S3.1, S3.2, S3.21) |
| 5.730           | 61        | >75% Grass cover, Good HSG B (S1, S1.1, S1.11, S1.2, S1.41, S1.42, S1.43, S1.51, S1.52, S1.53)                                                            |
| 3.769           | 74        | >75% Grass cover, Good HSG C (S1)                                                                                                                         |
| 0.083           | 76        | Gravel roads HSG A (S1, S1.42)                                                                                                                            |
| 0.020           | 85        | Gravel roads HSG B (S1)                                                                                                                                   |
| 0.008           | 89        | Gravel roads HSG C (S1)                                                                                                                                   |
| 4.115           | 98        | Paved parking HSG A (S1.11, S1.2, S1.3, S1.4, S1.41, S1.42, S1.5, S1.51, S1.52, S1.53, S1.6, S1.7, S1.8, S1.9, S3.1, S3.2, S3.21)                         |
| 0.307           | 98        | Paved parking HSG B (S1.11, S1.2, S1.41, S1.42, S1.52, S1.53)                                                                                             |
| 2.311           | 98        | Roofs HSG A (S1.4, S1.41, S1.42, S1.43, S1.5, S1.51, S1.53, S1.8, S1.9, S3.1)                                                                             |
| 0.371           | 98        | Roofs HSG B (S1, S1.41, S1.42, S1.52, S1.53)                                                                                                              |
| 0.010           | 98        | Roofs HSG C (S1.42)                                                                                                                                       |
| 8.538           | 30        | Woods, Good HSG A (S1, S1.2, S1.7, S1.9, S3.21)                                                                                                           |
| 0.639           | 55        | Woods, Good HSG B (S1)                                                                                                                                    |
| 0.285           | 70        | Woods, Good HSG C (S1)                                                                                                                                    |
| <b>34.369</b>   | <b>57</b> | <b>TOTAL AREA</b>                                                                                                                                         |

**Soil Listing (all nodes)**

| Area<br>(acres) | Soil<br>Group | Subcatchment<br>Numbers                                                                                                          |
|-----------------|---------------|----------------------------------------------------------------------------------------------------------------------------------|
| 23.230          | HSG A         | S1, S1.1, S1.11, S1.2, S1.3, S1.4, S1.41, S1.42, S1.43, S1.5, S1.51, S1.52, S1.53, S1.6, S1.7, S1.8, S1.9, S3, S3.1, S3.2, S3.21 |
| 7.066           | HSG B         | S1, S1.1, S1.11, S1.2, S1.41, S1.42, S1.43, S1.51, S1.52, S1.53                                                                  |
| 4.073           | HSG C         | S1, S1.42                                                                                                                        |
| 0.000           | HSG D         |                                                                                                                                  |
| 0.000           | Other         |                                                                                                                                  |
| <b>34.369</b>   |               | <b>TOTAL AREA</b>                                                                                                                |

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

|                                       |                                                             |
|---------------------------------------|-------------------------------------------------------------|
| <b>SubcatchmentS1: S1 - OFF</b>       | Runoff Area=888,613 sf 0.07% Impervious Runoff Depth=0.03"  |
| Flow Length=1,134'                    | Slope=0.1654 '/' Tc=20.3 min CN=48 Runoff=0.08 cfs 0.056 af |
| <b>SubcatchmentS1.1: S1.1 - IB</b>    | Runoff Area=14,980 sf 0.00% Impervious Runoff Depth=0.12"   |
| Flow Length=22'                       | Slope=0.1534 '/' Tc=6.0 min CN=54 Runoff=0.01 cfs 0.003 af  |
| <b>SubcatchmentS1.11: S1.11 - CBS</b> | Runoff Area=5,223 sf 96.08% Impervious Runoff Depth=2.34"   |
| Flow Length=271'                      | Slope=0.0699 '/' Tc=6.0 min CN=96 Runoff=0.31 cfs 0.023 af  |
| <b>SubcatchmentS1.2: S1.2 - CB</b>    | Runoff Area=76,797 sf 12.06% Impervious Runoff Depth=0.00"  |
| Flow Length=475'                      | Slope=0.1439 '/' Tc=13.0 min CN=41 Runoff=0.00 cfs 0.000 af |
| <b>SubcatchmentS1.3: S1.3 - CBS</b>   | Runoff Area=183 sf 100.00% Impervious Runoff Depth=2.55"    |
| Flow Length=19'                       | Slope=0.0238 '/' Tc=6.0 min CN=98 Runoff=0.01 cfs 0.001 af  |
| <b>SubcatchmentS1.4: S1.4 - CBS</b>   | Runoff Area=16,150 sf 21.20% Impervious Runoff Depth=0.09"  |
| Flow Length=235'                      | Slope=0.0463 '/' Tc=9.8 min CN=52 Runoff=0.00 cfs 0.003 af  |
| <b>SubcatchmentS1.41: S1.41 - CBS</b> | Runoff Area=72,779 sf 34.39% Impervious Runoff Depth=0.34"  |
| Flow Length=465'                      | Slope=0.0845 '/' Tc=9.5 min CN=63 Runoff=0.33 cfs 0.048 af  |
| <b>SubcatchmentS1.42: S1.42 - CBS</b> | Runoff Area=44,389 sf 59.24% Impervious Runoff Depth=1.15"  |
| Flow Length=557'                      | Slope=0.0476 '/' Tc=8.8 min CN=81 Runoff=1.22 cfs 0.097 af  |
| <b>SubcatchmentS1.43: S1.43 - IB</b>  | Runoff Area=18,765 sf 11.19% Impervious Runoff Depth=0.12"  |
| Flow Length=89'                       | Slope=0.1142 '/' Tc=6.0 min CN=54 Runoff=0.01 cfs 0.004 af  |
| <b>SubcatchmentS1.5: S1.5 - CBS</b>   | Runoff Area=61,830 sf 41.05% Impervious Runoff Depth=0.34"  |
| Flow Length=263'                      | Slope=0.0297 '/' Tc=10.1 min CN=63 Runoff=0.28 cfs 0.041 af |
| <b>SubcatchmentS1.51: S1.51 - CBS</b> | Runoff Area=35,983 sf 31.88% Impervious Runoff Depth=0.26"  |
| Flow Length=432'                      | Slope=0.0151 '/' Tc=22.8 min CN=60 Runoff=0.08 cfs 0.018 af |
| <b>SubcatchmentS1.52: S1.52 - CBS</b> | Runoff Area=7,297 sf 56.50% Impervious Runoff Depth=1.03"   |
| Flow Length=123'                      | Slope=0.0172 '/' Tc=6.0 min CN=79 Runoff=0.20 cfs 0.014 af  |
| <b>SubcatchmentS1.53: S1.53 - CBS</b> | Runoff Area=11,189 sf 35.92% Impervious Runoff Depth=0.64"  |
| Flow Length=192'                      | Slope=0.0169 '/' Tc=8.5 min CN=71 Runoff=0.15 cfs 0.014 af  |
| <b>SubcatchmentS1.6: S1.6 - CBS</b>   | Runoff Area=1,489 sf 75.73% Impervious Runoff Depth=1.34"   |
| Flow Length=129'                      | Slope=0.0755 '/' Tc=6.0 min CN=84 Runoff=0.05 cfs 0.004 af  |
| <b>SubcatchmentS1.7: S1.7 - CBS</b>   | Runoff Area=5,359 sf 34.57% Impervious Runoff Depth=0.14"   |
| Flow Length=95'                       | Slope=0.0587 '/' Tc=6.0 min CN=55 Runoff=0.00 cfs 0.001 af  |
| <b>SubcatchmentS1.8: S1.8 - CBS</b>   | Runoff Area=11,325 sf 72.84% Impervious Runoff Depth=1.21"  |
| Flow Length=260'                      | Slope=0.0179 '/' Tc=7.6 min CN=82 Runoff=0.34 cfs 0.026 af  |

|                                         |                                                                                                                                            |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Subcatchment S1.9: S1.9 - CBS</b>    | Runoff Area=19,911 sf 70.97% Impervious Runoff Depth=1.15"                                                                                 |
| Flow Length=207'                        | Slope=0.0068 '/' Tc=10.6 min CN=81 Runoff=0.52 cfs 0.044 af                                                                                |
| <b>Subcatchment S3: S3 - IB</b>         | Runoff Area=16,681 sf 0.00% Impervious Runoff Depth=0.00"                                                                                  |
| Flow Length=12'                         | Slope=0.0980 '/' Tc=6.0 min CN=39 Runoff=0.00 cfs 0.000 af                                                                                 |
| <b>Subcatchment S3.1: S3.1 - CBS</b>    | Runoff Area=145,755 sf 99.48% Impervious Runoff Depth=2.55"                                                                                |
| Flow Length=488'                        | Slope=0.0191 '/' Tc=6.1 min CN=98 Runoff=8.96 cfs 0.711 af                                                                                 |
| <b>Subcatchment S3.2: S3.2 - CBS</b>    | Runoff Area=11,785 sf 95.99% Impervious Runoff Depth=2.34"                                                                                 |
| Flow Length=706'                        | Slope=0.0613 '/' Tc=6.0 min CN=96 Runoff=0.70 cfs 0.053 af                                                                                 |
| <b>Subcatchment S3.21: S3.21 - CBS</b>  | Runoff Area=30,610 sf 36.87% Impervious Runoff Depth=0.18"                                                                                 |
| Flow Length=727'                        | Slope=0.1040 '/' Tc=14.3 min CN=57 Runoff=0.04 cfs 0.011 af                                                                                |
| <b>Reach OP-1: Observation Point 1</b>  | Inflow=0.08 cfs 0.056 af<br>Outflow=0.08 cfs 0.056 af                                                                                      |
| <b>Pond 1.11P: Catch Basin</b>          | Peak Elev=359.05' Inflow=1.22 cfs 0.145 af<br>24.0" Round Culvert n=0.013 L=18.7' S=0.0080 '/' Outflow=1.22 cfs 0.145 af                   |
| <b>Pond 1.1AP: Sediment Forebay</b>     | Peak Elev=359.05' Storage=2,480 cf Inflow=1.22 cfs 0.148 af<br>Outflow=0.33 cfs 0.094 af                                                   |
| <b>Pond 1.1P: Infiltration Basin A</b>  | Peak Elev=357.00' Storage=0 cf Inflow=0.33 cfs 0.094 af<br>Discarded=0.33 cfs 0.094 af Primary=0.00 cfs 0.000 af Outflow=0.33 cfs 0.094 af |
| <b>Pond 1.2P: Catch Basin</b>           | Peak Elev=359.05' Inflow=0.00 cfs 0.000 af<br>24.0" Round Culvert n=0.013 L=18.0' S=0.0111 '/' Outflow=0.00 cfs 0.000 af                   |
| <b>Pond 1.3P: Catch Basin</b>           | Peak Elev=359.06' Inflow=0.94 cfs 0.122 af<br>18.0" Round Culvert n=0.013 L=135.2' S=0.0063 '/' Outflow=0.94 cfs 0.122 af                  |
| <b>Pond 1.41P: Catch Basin</b>          | Peak Elev=356.03' Inflow=0.33 cfs 0.048 af<br>18.0" Round Culvert n=0.013 L=18.0' S=0.0000 '/' Outflow=0.33 cfs 0.048 af                   |
| <b>Pond 1.42P: Catch Basin</b>          | Peak Elev=356.03' Inflow=1.50 cfs 0.145 af<br>18.0" Round Culvert n=0.013 L=21.0' S=0.0071 '/' Outflow=1.50 cfs 0.145 af                   |
| <b>Pond 1.43P: Infiltration Basin D</b> | Peak Elev=353.00' Storage=0 cf Inflow=0.13 cfs 0.053 af<br>Discarded=0.13 cfs 0.053 af Primary=0.00 cfs 0.000 af Outflow=0.13 cfs 0.053 af |
| <b>Pond 1.4P: Catch Basin</b>           | Peak Elev=359.07' Inflow=0.93 cfs 0.121 af<br>18.0" Round Culvert n=0.013 L=32.5' S=0.0062 '/' Outflow=0.93 cfs 0.121 af                   |
| <b>Pond 1.51P: Catch Basin</b>          | Peak Elev=364.23' Inflow=0.34 cfs 0.046 af<br>15.0" Round Culvert n=0.013 L=120.9' S=0.0058 '/' Outflow=0.34 cfs 0.046 af                  |
| <b>Pond 1.52P: Catch Basin</b>          | Peak Elev=365.71' Inflow=0.34 cfs 0.028 af<br>15.0" Round Culvert n=0.013 L=282.6' S=0.0053 '/' Outflow=0.34 cfs 0.028 af                  |
| <b>Pond 1.53P: Catch Basin</b>          | Peak Elev=365.78' Inflow=0.15 cfs 0.014 af<br>15.0" Round Culvert n=0.013 L=20.9' S=0.0048 '/' Outflow=0.15 cfs 0.014 af                   |

|                                                                                            |                                                                                                                                                 |
|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Pond 1.5P: Catch Basin</b>                                                              | Peak Elev=363.69' Inflow=0.93 cfs 0.118 af<br>18.0" Round Culvert n=0.013 L=175.3' S=0.0280 '/' Outflow=0.93 cfs 0.118 af                       |
| <b>Pond 1.6P: Catch Basin</b>                                                              | Peak Elev=363.81' Inflow=0.40 cfs 0.031 af<br>18.0" Round Culvert n=0.013 L=36.2' S=0.0055 '/' Outflow=0.40 cfs 0.031 af                        |
| <b>Pond 1.7P: Catch Basin</b>                                                              | Peak Elev=365.69' Inflow=0.34 cfs 0.028 af<br>18.0" Round Culvert n=0.013 L=205.8' S=0.0097 '/' Outflow=0.34 cfs 0.028 af                       |
| <b>Pond 1.8P: Catch Basin</b>                                                              | Peak Elev=365.90' Inflow=0.34 cfs 0.026 af<br>18.0" Round Culvert n=0.013 L=19.0' S=0.0105 '/' Outflow=0.34 cfs 0.026 af                        |
| <b>Pond 1.9P: Infiltration Basin B</b>                                                     | Peak Elev=369.79' Storage=593 cf Inflow=0.52 cfs 0.044 af<br>Discarded=0.13 cfs 0.044 af Primary=0.00 cfs 0.000 af Outflow=0.13 cfs 0.044 af    |
| <b>Pond 2P: Sediment Forebay</b>                                                           | Peak Elev=356.03' Storage=4,320 cf Inflow=1.50 cfs 0.150 af<br>Outflow=0.13 cfs 0.053 af                                                        |
| <b>Pond 3.1P: Catch Basin</b>                                                              | Peak Elev=362.18' Inflow=8.96 cfs 0.711 af<br>24.0" Round Culvert n=0.013 L=121.7' S=0.0378 '/' Outflow=8.96 cfs 0.711 af                       |
| <b>Pond 3.21P: Catch Basin</b>                                                             | Peak Elev=359.20' Inflow=0.04 cfs 0.011 af<br>18.0" Round Culvert n=0.013 L=18.0' S=0.0111 '/' Outflow=0.04 cfs 0.011 af                        |
| <b>Pond 3.2P: Catch Basin</b>                                                              | Peak Elev=359.22' Inflow=0.70 cfs 0.063 af<br>18.0" Round Culvert n=0.013 L=70.4' S=0.0398 '/' Outflow=0.70 cfs 0.063 af                        |
| <b>Pond 3P: Infiltration Basin C</b>                                                       | Peak Elev=353.46' Storage=10,245 cf Inflow=8.90 cfs 0.380 af<br>Discarded=0.90 cfs 0.380 af Primary=0.00 cfs 0.000 af Outflow=0.90 cfs 0.380 af |
| <b>Pond 7P: Sediment Forebay</b>                                                           | Peak Elev=355.46' Storage=5,275 cf Inflow=9.66 cfs 0.774 af<br>Discarded=0.35 cfs 0.394 af Primary=8.90 cfs 0.380 af Outflow=9.25 cfs 0.774 af  |
| <b>Total Runoff Area = 34.369 ac Runoff Volume = 1.172 af Average Runoff Depth = 0.41"</b> |                                                                                                                                                 |
| <b>79.30% Pervious = 27.255 ac 20.70% Impervious = 7.113 ac</b>                            |                                                                                                                                                 |

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

|                                       |                                                             |
|---------------------------------------|-------------------------------------------------------------|
| <b>SubcatchmentS1: S1 - OFF</b>       | Runoff Area=888,613 sf 0.07% Impervious Runoff Depth=0.28"  |
| Flow Length=1,134'                    | Slope=0.1654 '/' Tc=20.3 min CN=48 Runoff=1.79 cfs 0.479 af |
| <b>SubcatchmentS1.1: S1.1 - IB</b>    | Runoff Area=14,980 sf 0.00% Impervious Runoff Depth=0.51"   |
| Flow Length=22'                       | Slope=0.1534 '/' Tc=6.0 min CN=54 Runoff=0.12 cfs 0.015 af  |
| <b>SubcatchmentS1.11: S1.11 - CBS</b> | Runoff Area=5,223 sf 96.08% Impervious Runoff Depth=3.60"   |
| Flow Length=271'                      | Slope=0.0699 '/' Tc=6.0 min CN=96 Runoff=0.46 cfs 0.036 af  |
| <b>SubcatchmentS1.2: S1.2 - CB</b>    | Runoff Area=76,797 sf 12.06% Impervious Runoff Depth=0.09"  |
| Flow Length=475'                      | Slope=0.1439 '/' Tc=13.0 min CN=41 Runoff=0.02 cfs 0.013 af |
| <b>SubcatchmentS1.3: S1.3 - CBS</b>   | Runoff Area=183 sf 100.00% Impervious Runoff Depth=3.82"    |
| Flow Length=19'                       | Slope=0.0238 '/' Tc=6.0 min CN=98 Runoff=0.02 cfs 0.001 af  |
| <b>SubcatchmentS1.4: S1.4 - CBS</b>   | Runoff Area=16,150 sf 21.20% Impervious Runoff Depth=0.43"  |
| Flow Length=235'                      | Slope=0.0463 '/' Tc=9.8 min CN=52 Runoff=0.08 cfs 0.013 af  |
| <b>SubcatchmentS1.41: S1.41 - CBS</b> | Runoff Area=72,779 sf 34.39% Impervious Runoff Depth=0.95"  |
| Flow Length=465'                      | Slope=0.0845 '/' Tc=9.5 min CN=63 Runoff=1.42 cfs 0.132 af  |
| <b>SubcatchmentS1.42: S1.42 - CBS</b> | Runoff Area=44,389 sf 59.24% Impervious Runoff Depth=2.17"  |
| Flow Length=557'                      | Slope=0.0476 '/' Tc=8.8 min CN=81 Runoff=2.36 cfs 0.184 af  |
| <b>SubcatchmentS1.43: S1.43 - IB</b>  | Runoff Area=18,765 sf 11.19% Impervious Runoff Depth=0.51"  |
| Flow Length=89'                       | Slope=0.1142 '/' Tc=6.0 min CN=54 Runoff=0.15 cfs 0.018 af  |
| <b>SubcatchmentS1.5: S1.5 - CBS</b>   | Runoff Area=61,830 sf 41.05% Impervious Runoff Depth=0.95"  |
| Flow Length=263'                      | Slope=0.0297 '/' Tc=10.1 min CN=63 Runoff=1.18 cfs 0.112 af |
| <b>SubcatchmentS1.51: S1.51 - CBS</b> | Runoff Area=35,983 sf 31.88% Impervious Runoff Depth=0.79"  |
| Flow Length=432'                      | Slope=0.0151 '/' Tc=22.8 min CN=60 Runoff=0.39 cfs 0.054 af |
| <b>SubcatchmentS1.52: S1.52 - CBS</b> | Runoff Area=7,297 sf 56.50% Impervious Runoff Depth=2.01"   |
| Flow Length=123'                      | Slope=0.0172 '/' Tc=6.0 min CN=79 Runoff=0.39 cfs 0.028 af  |
| <b>SubcatchmentS1.53: S1.53 - CBS</b> | Runoff Area=11,189 sf 35.92% Impervious Runoff Depth=1.44"  |
| Flow Length=192'                      | Slope=0.0169 '/' Tc=8.5 min CN=71 Runoff=0.38 cfs 0.031 af  |
| <b>SubcatchmentS1.6: S1.6 - CBS</b>   | Runoff Area=1,489 sf 75.73% Impervious Runoff Depth=2.42"   |
| Flow Length=129'                      | Slope=0.0755 '/' Tc=6.0 min CN=84 Runoff=0.10 cfs 0.007 af  |
| <b>SubcatchmentS1.7: S1.7 - CBS</b>   | Runoff Area=5,359 sf 34.57% Impervious Runoff Depth=0.55"   |
| Flow Length=95'                       | Slope=0.0587 '/' Tc=6.0 min CN=55 Runoff=0.05 cfs 0.006 af  |
| <b>SubcatchmentS1.8: S1.8 - CBS</b>   | Runoff Area=11,325 sf 72.84% Impervious Runoff Depth=2.25"  |
| Flow Length=260'                      | Slope=0.0179 '/' Tc=7.6 min CN=82 Runoff=0.65 cfs 0.049 af  |

|                                                       |                                                             |
|-------------------------------------------------------|-------------------------------------------------------------|
| <b>Subcatchment S1.9: S1.9 - CBS</b>                  | Runoff Area=19,911 sf 70.97% Impervious Runoff Depth=2.17"  |
| Flow Length=207'                                      | Slope=0.0068 '/' Tc=10.6 min CN=81 Runoff=1.00 cfs 0.083 af |
| <b>Subcatchment S3: S3 - IB</b>                       | Runoff Area=16,681 sf 0.00% Impervious Runoff Depth=0.05"   |
| Flow Length=12'                                       | Slope=0.0980 '/' Tc=6.0 min CN=39 Runoff=0.00 cfs 0.002 af  |
| <b>Subcatchment S3.1: S3.1 - CBS</b>                  | Runoff Area=145,755 sf 99.48% Impervious Runoff Depth=3.82" |
| Flow Length=488'                                      | Slope=0.0191 '/' Tc=6.1 min CN=98 Runoff=13.21 cfs 1.067 af |
| <b>Subcatchment S3.2: S3.2 - CBS</b>                  | Runoff Area=11,785 sf 95.99% Impervious Runoff Depth=3.60"  |
| Flow Length=706'                                      | Slope=0.0613 '/' Tc=6.0 min CN=96 Runoff=1.05 cfs 0.081 af  |
| <b>Subcatchment S3.21: S3.21 - CBS</b>                | Runoff Area=30,610 sf 36.87% Impervious Runoff Depth=0.64"  |
| Flow Length=727'                                      | Slope=0.1040 '/' Tc=14.3 min CN=57 Runoff=0.28 cfs 0.038 af |
| <b>Reach OP-1: Observation Point 1</b>                | Inflow=1.79 cfs 0.479 af                                    |
|                                                       | Outflow=1.79 cfs 0.479 af                                   |
| <b>Pond 1.11P: Catch Basin</b>                        | Peak Elev=359.27' Inflow=3.24 cfs 0.351 af                  |
| 24.0" Round Culvert n=0.013 L=18.7' S=0.0080 '/'      | Outflow=3.24 cfs 0.351 af                                   |
| <b>Pond 1.1AP: Sediment Forebay</b>                   | Peak Elev=359.22' Storage=2,897 cf Inflow=3.35 cfs 0.366 af |
|                                                       | Outflow=2.87 cfs 0.311 af                                   |
| <b>Pond 1.1P: Infiltration Basin A</b>                | Peak Elev=357.79' Storage=2,785 cf Inflow=2.87 cfs 0.311 af |
| Discarded=0.77 cfs 0.311 af Primary=0.00 cfs 0.000 af | Outflow=0.77 cfs 0.311 af                                   |
| <b>Pond 1.2P: Catch Basin</b>                         | Peak Elev=359.26' Inflow=0.02 cfs 0.013 af                  |
| 24.0" Round Culvert n=0.013 L=18.0' S=0.0111 '/'      | Outflow=0.04 cfs 0.013 af                                   |
| <b>Pond 1.3P: Catch Basin</b>                         | Peak Elev=359.51' Inflow=2.84 cfs 0.302 af                  |
| 18.0" Round Culvert n=0.013 L=135.2' S=0.0063 '/'     | Outflow=2.84 cfs 0.302 af                                   |
| <b>Pond 1.41P: Catch Basin</b>                        | Peak Elev=356.30' Inflow=1.42 cfs 0.132 af                  |
| 18.0" Round Culvert n=0.013 L=18.0' S=0.0000 '/'      | Outflow=1.42 cfs 0.132 af                                   |
| <b>Pond 1.42P: Catch Basin</b>                        | Peak Elev=356.28' Inflow=3.75 cfs 0.317 af                  |
| 18.0" Round Culvert n=0.013 L=21.0' S=0.0071 '/'      | Outflow=3.75 cfs 0.317 af                                   |
| <b>Pond 1.43P: Infiltration Basin D</b>               | Peak Elev=354.49' Storage=2,999 cf Inflow=2.06 cfs 0.238 af |
| Discarded=0.34 cfs 0.238 af Primary=0.00 cfs 0.000 af | Outflow=0.34 cfs 0.238 af                                   |
| <b>Pond 1.4P: Catch Basin</b>                         | Peak Elev=359.68' Inflow=2.82 cfs 0.300 af                  |
| 18.0" Round Culvert n=0.013 L=32.5' S=0.0062 '/'      | Outflow=2.82 cfs 0.300 af                                   |
| <b>Pond 1.51P: Catch Basin</b>                        | Peak Elev=364.50' Inflow=0.87 cfs 0.113 af                  |
| 15.0" Round Culvert n=0.013 L=120.9' S=0.0058 '/'     | Outflow=0.87 cfs 0.113 af                                   |
| <b>Pond 1.52P: Catch Basin</b>                        | Peak Elev=365.88' Inflow=0.76 cfs 0.059 af                  |
| 15.0" Round Culvert n=0.013 L=282.6' S=0.0053 '/'     | Outflow=0.76 cfs 0.059 af                                   |
| <b>Pond 1.53P: Catch Basin</b>                        | Peak Elev=365.96' Inflow=0.38 cfs 0.031 af                  |
| 15.0" Round Culvert n=0.013 L=20.9' S=0.0048 '/'      | Outflow=0.38 cfs 0.031 af                                   |

**Pond 1.5P: Catch Basin**

Peak Elev=364.09' Inflow=2.77 cfs 0.287 af  
18.0" Round Culvert n=0.013 L=175.3' S=0.0280 '/' Outflow=2.77 cfs 0.287 af

**Pond 1.6P: Catch Basin**

Peak Elev=364.16' Inflow=0.79 cfs 0.061 af  
18.0" Round Culvert n=0.013 L=36.2' S=0.0055 '/' Outflow=0.79 cfs 0.061 af

**Pond 1.7P: Catch Basin**

Peak Elev=365.82' Inflow=0.70 cfs 0.055 af  
18.0" Round Culvert n=0.013 L=205.8' S=0.0097 '/' Outflow=0.70 cfs 0.055 af

**Pond 1.8P: Catch Basin**

Peak Elev=366.04' Inflow=0.65 cfs 0.049 af  
18.0" Round Culvert n=0.013 L=19.0' S=0.0105 '/' Outflow=0.65 cfs 0.049 af

**Pond 1.9P: Infiltration Basin B**

Peak Elev=370.69' Storage=1,310 cf Inflow=1.00 cfs 0.083 af  
Discarded=0.19 cfs 0.083 af Primary=0.00 cfs 0.000 af Outflow=0.19 cfs 0.083 af

**Pond 2P: Sediment Forebay**

Peak Elev=356.19' Storage=4,786 cf Inflow=3.89 cfs 0.335 af  
Outflow=2.06 cfs 0.238 af

**Pond 3.1P: Catch Basin**

Peak Elev=362.82' Inflow=13.21 cfs 1.067 af  
24.0" Round Culvert n=0.013 L=121.7' S=0.0378 '/' Outflow=13.21 cfs 1.067 af

**Pond 3.21P: Catch Basin**

Peak Elev=359.36' Inflow=0.28 cfs 0.038 af  
18.0" Round Culvert n=0.013 L=18.0' S=0.0111 '/' Outflow=0.28 cfs 0.038 af

**Pond 3.2P: Catch Basin**

Peak Elev=359.35' Inflow=1.15 cfs 0.119 af  
18.0" Round Culvert n=0.013 L=70.4' S=0.0398 '/' Outflow=1.15 cfs 0.119 af

**Pond 3P: Infiltration Basin C**

Peak Elev=354.42' Storage=18,255 cf Inflow=13.55 cfs 0.707 af  
Discarded=1.03 cfs 0.708 af Primary=0.00 cfs 0.000 af Outflow=1.03 cfs 0.708 af

**Pond 7P: Sediment Forebay**

Peak Elev=355.58' Storage=5,654 cf Inflow=14.35 cfs 1.187 af  
Discarded=0.37 cfs 0.480 af Primary=13.55 cfs 0.707 af Outflow=13.92 cfs 1.187 af

**Total Runoff Area = 34.369 ac Runoff Volume = 2.449 af Average Runoff Depth = 0.86"**  
**79.30% Pervious = 27.255 ac 20.70% Impervious = 7.113 ac**

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

|                                       |                                                             |
|---------------------------------------|-------------------------------------------------------------|
| <b>SubcatchmentS1: S1 - OFF</b>       | Runoff Area=888,613 sf 0.07% Impervious Runoff Depth=0.61"  |
| Flow Length=1,134'                    | Slope=0.1654 '/' Tc=20.3 min CN=48 Runoff=5.86 cfs 1.037 af |
| <b>SubcatchmentS1.1: S1.1 - IB</b>    | Runoff Area=14,980 sf 0.00% Impervious Runoff Depth=0.95"   |
| Flow Length=22'                       | Slope=0.1534 '/' Tc=6.0 min CN=54 Runoff=0.30 cfs 0.027 af  |
| <b>SubcatchmentS1.11: S1.11 - CBS</b> | Runoff Area=5,223 sf 96.08% Impervious Runoff Depth=4.59"   |
| Flow Length=271'                      | Slope=0.0699 '/' Tc=6.0 min CN=96 Runoff=0.58 cfs 0.046 af  |
| <b>SubcatchmentS1.2: S1.2 - CB</b>    | Runoff Area=76,797 sf 12.06% Impervious Runoff Depth=0.29"  |
| Flow Length=475'                      | Slope=0.1439 '/' Tc=13.0 min CN=41 Runoff=0.14 cfs 0.042 af |
| <b>SubcatchmentS1.3: S1.3 - CBS</b>   | Runoff Area=183 sf 100.00% Impervious Runoff Depth=4.82"    |
| Flow Length=19'                       | Slope=0.0238 '/' Tc=6.0 min CN=98 Runoff=0.02 cfs 0.002 af  |
| <b>SubcatchmentS1.4: S1.4 - CBS</b>   | Runoff Area=16,150 sf 21.20% Impervious Runoff Depth=0.83"  |
| Flow Length=235'                      | Slope=0.0463 '/' Tc=9.8 min CN=52 Runoff=0.22 cfs 0.026 af  |
| <b>SubcatchmentS1.41: S1.41 - CBS</b> | Runoff Area=72,779 sf 34.39% Impervious Runoff Depth=1.55"  |
| Flow Length=465'                      | Slope=0.0845 '/' Tc=9.5 min CN=63 Runoff=2.50 cfs 0.215 af  |
| <b>SubcatchmentS1.42: S1.42 - CBS</b> | Runoff Area=44,389 sf 59.24% Impervious Runoff Depth=3.04"  |
| Flow Length=557'                      | Slope=0.0476 '/' Tc=8.8 min CN=81 Runoff=3.29 cfs 0.258 af  |
| <b>SubcatchmentS1.43: S1.43 - IB</b>  | Runoff Area=18,765 sf 11.19% Impervious Runoff Depth=0.95"  |
| Flow Length=89'                       | Slope=0.1142 '/' Tc=6.0 min CN=54 Runoff=0.37 cfs 0.034 af  |
| <b>SubcatchmentS1.5: S1.5 - CBS</b>   | Runoff Area=61,830 sf 41.05% Impervious Runoff Depth=1.55"  |
| Flow Length=263'                      | Slope=0.0297 '/' Tc=10.1 min CN=63 Runoff=2.09 cfs 0.183 af |
| <b>SubcatchmentS1.51: S1.51 - CBS</b> | Runoff Area=35,983 sf 31.88% Impervious Runoff Depth=1.34"  |
| Flow Length=432'                      | Slope=0.0151 '/' Tc=22.8 min CN=60 Runoff=0.74 cfs 0.092 af |
| <b>SubcatchmentS1.52: S1.52 - CBS</b> | Runoff Area=7,297 sf 56.50% Impervious Runoff Depth=2.85"   |
| Flow Length=123'                      | Slope=0.0172 '/' Tc=6.0 min CN=79 Runoff=0.56 cfs 0.040 af  |
| <b>SubcatchmentS1.53: S1.53 - CBS</b> | Runoff Area=11,189 sf 35.92% Impervious Runoff Depth=2.16"  |
| Flow Length=192'                      | Slope=0.0169 '/' Tc=8.5 min CN=71 Runoff=0.59 cfs 0.046 af  |
| <b>SubcatchmentS1.6: S1.6 - CBS</b>   | Runoff Area=1,489 sf 75.73% Impervious Runoff Depth=3.33"   |
| Flow Length=129'                      | Slope=0.0755 '/' Tc=6.0 min CN=84 Runoff=0.13 cfs 0.009 af  |
| <b>SubcatchmentS1.7: S1.7 - CBS</b>   | Runoff Area=5,359 sf 34.57% Impervious Runoff Depth=1.01"   |
| Flow Length=95'                       | Slope=0.0587 '/' Tc=6.0 min CN=55 Runoff=0.12 cfs 0.010 af  |
| <b>SubcatchmentS1.8: S1.8 - CBS</b>   | Runoff Area=11,325 sf 72.84% Impervious Runoff Depth=3.13"  |
| Flow Length=260'                      | Slope=0.0179 '/' Tc=7.6 min CN=82 Runoff=0.90 cfs 0.068 af  |

**Subcatchment S1.9: S1.9 - CBS** Runoff Area=19,911 sf 70.97% Impervious Runoff Depth=3.04"  
Flow Length=207' Slope=0.0068 '/' Tc=10.6 min CN=81 Runoff=1.39 cfs 0.116 af

**Subcatchment S3: S3 - IB** Runoff Area=16,681 sf 0.00% Impervious Runoff Depth=0.21"  
Flow Length=12' Slope=0.0980 '/' Tc=6.0 min CN=39 Runoff=0.02 cfs 0.007 af

**Subcatchment S3.1: S3.1 - CBS** Runoff Area=145,755 sf 99.48% Impervious Runoff Depth=4.82"  
Flow Length=488' Slope=0.0191 '/' Tc=6.1 min CN=98 Runoff=16.51 cfs 1.345 af

**Subcatchment S3.2: S3.2 - CBS** Runoff Area=11,785 sf 95.99% Impervious Runoff Depth=4.59"  
Flow Length=706' Slope=0.0613 '/' Tc=6.0 min CN=96 Runoff=1.32 cfs 0.104 af

**Subcatchment S3.21: S3.21 - CBS** Runoff Area=30,610 sf 36.87% Impervious Runoff Depth=1.14"  
Flow Length=727' Slope=0.1040 '/' Tc=14.3 min CN=57 Runoff=0.61 cfs 0.067 af

**Reach OP-1: Observation Point 1** Inflow=5.86 cfs 1.037 af  
Outflow=5.86 cfs 1.037 af

**Pond 1.11P: Catch Basin** Peak Elev=359.52' Inflow=5.31 cfs 0.564 af  
24.0" Round Culvert n=0.013 L=18.7' S=0.0080 '/' Outflow=5.31 cfs 0.564 af

**Pond 1.1AP: Sediment Forebay** Peak Elev=359.33' Storage=3,181 cf Inflow=5.60 cfs 0.591 af  
Outflow=5.39 cfs 0.537 af

**Pond 1.1P: Infiltration Basin A** Peak Elev=358.80' Storage=7,208 cf Inflow=5.39 cfs 0.537 af  
Discarded=0.96 cfs 0.537 af Primary=0.00 cfs 0.000 af Outflow=0.96 cfs 0.537 af

**Pond 1.2P: Catch Basin** Peak Elev=359.52' Inflow=0.14 cfs 0.042 af  
24.0" Round Culvert n=0.013 L=18.0' S=0.0111 '/' Outflow=0.19 cfs 0.042 af

**Pond 1.3P: Catch Basin** Peak Elev=360.02' Inflow=4.80 cfs 0.476 af  
18.0" Round Culvert n=0.013 L=135.2' S=0.0063 '/' Outflow=4.80 cfs 0.476 af

**Pond 1.41P: Catch Basin** Peak Elev=357.13' Inflow=2.50 cfs 0.215 af  
18.0" Round Culvert n=0.013 L=18.0' S=0.0000 '/' Outflow=2.52 cfs 0.215 af

**Pond 1.42P: Catch Basin** Peak Elev=357.00' Inflow=5.78 cfs 0.473 af  
18.0" Round Culvert n=0.013 L=21.0' S=0.0071 '/' Outflow=5.78 cfs 0.473 af

**Pond 1.43P: Infiltration Basin D** Peak Elev=355.76' Storage=7,168 cf Inflow=5.23 cfs 0.410 af  
Discarded=0.49 cfs 0.410 af Primary=0.00 cfs 0.000 af Outflow=0.49 cfs 0.410 af

**Pond 1.4P: Catch Basin** Peak Elev=360.52' Inflow=4.79 cfs 0.474 af  
18.0" Round Culvert n=0.013 L=32.5' S=0.0062 '/' Outflow=4.79 cfs 0.474 af

**Pond 1.51P: Catch Basin** Peak Elev=364.77' Inflow=1.44 cfs 0.178 af  
15.0" Round Culvert n=0.013 L=120.9' S=0.0058 '/' Outflow=1.44 cfs 0.178 af

**Pond 1.52P: Catch Basin** Peak Elev=366.01' Inflow=1.13 cfs 0.086 af  
15.0" Round Culvert n=0.013 L=282.6' S=0.0053 '/' Outflow=1.13 cfs 0.086 af

**Pond 1.53P: Catch Basin** Peak Elev=366.10' Inflow=0.59 cfs 0.046 af  
15.0" Round Culvert n=0.013 L=20.9' S=0.0048 '/' Outflow=0.59 cfs 0.046 af

**Pond 1.5P: Catch Basin**

Peak Elev=364.42' Inflow=4.58 cfs 0.449 af  
18.0" Round Culvert n=0.013 L=175.3' S=0.0280 '/' Outflow=4.58 cfs 0.449 af

**Pond 1.6P: Catch Basin**

Peak Elev=364.47' Inflow=1.15 cfs 0.088 af  
18.0" Round Culvert n=0.013 L=36.2' S=0.0055 '/' Outflow=1.15 cfs 0.088 af

**Pond 1.7P: Catch Basin**

Peak Elev=365.91' Inflow=1.02 cfs 0.078 af  
18.0" Round Culvert n=0.013 L=205.8' S=0.0097 '/' Outflow=1.02 cfs 0.078 af

**Pond 1.8P: Catch Basin**

Peak Elev=366.13' Inflow=0.90 cfs 0.068 af  
18.0" Round Culvert n=0.013 L=19.0' S=0.0105 '/' Outflow=0.90 cfs 0.068 af

**Pond 1.9P: Infiltration Basin B**

Peak Elev=371.29' Storage=1,957 cf Inflow=1.39 cfs 0.116 af  
Discarded=0.24 cfs 0.116 af Primary=0.00 cfs 0.000 af Outflow=0.24 cfs 0.116 af

**Pond 2P: Sediment Forebay**

Peak Elev=356.34' Storage=5,246 cf Inflow=6.15 cfs 0.507 af  
Outflow=5.23 cfs 0.410 af

**Pond 3.1P: Catch Basin**

Peak Elev=363.51' Inflow=16.51 cfs 1.345 af  
24.0" Round Culvert n=0.013 L=121.7' S=0.0378 '/' Outflow=16.51 cfs 1.345 af

**Pond 3.21P: Catch Basin**

Peak Elev=359.52' Inflow=0.61 cfs 0.067 af  
18.0" Round Culvert n=0.013 L=18.0' S=0.0111 '/' Outflow=0.61 cfs 0.067 af

**Pond 3.2P: Catch Basin**

Peak Elev=359.46' Inflow=1.65 cfs 0.170 af  
18.0" Round Culvert n=0.013 L=70.4' S=0.0398 '/' Outflow=1.65 cfs 0.170 af

**Pond 3P: Infiltration Basin C**

Peak Elev=355.16' Storage=25,233 cf Inflow=17.21 cfs 0.990 af  
Discarded=1.14 cfs 0.990 af Primary=0.00 cfs 0.000 af Outflow=1.14 cfs 0.990 af

**Pond 7P: Sediment Forebay**

Peak Elev=355.67' Storage=5,945 cf Inflow=18.14 cfs 1.522 af  
Discarded=0.38 cfs 0.532 af Primary=17.21 cfs 0.990 af Outflow=17.59 cfs 1.522 af

**Total Runoff Area = 34.369 ac Runoff Volume = 3.773 af Average Runoff Depth = 1.32"**  
**79.30% Pervious = 27.255 ac 20.70% Impervious = 7.113 ac**

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

|                                       |                                                              |
|---------------------------------------|--------------------------------------------------------------|
| <b>SubcatchmentS1: S1 - OFF</b>       | Runoff Area=888,613 sf 0.07% Impervious Runoff Depth=0.99"   |
| Flow Length=1,134'                    | Slope=0.1654 '/' Tc=20.3 min CN=48 Runoff=11.57 cfs 1.680 af |
| <b>SubcatchmentS1.1: S1.1 - IB</b>    | Runoff Area=14,980 sf 0.00% Impervious Runoff Depth=1.42"    |
| Flow Length=22'                       | Slope=0.1534 '/' Tc=6.0 min CN=54 Runoff=0.50 cfs 0.041 af   |
| <b>SubcatchmentS1.11: S1.11 - CBS</b> | Runoff Area=5,223 sf 96.08% Impervious Runoff Depth=5.50"    |
| Flow Length=271'                      | Slope=0.0699 '/' Tc=6.0 min CN=96 Runoff=0.69 cfs 0.055 af   |
| <b>SubcatchmentS1.2: S1.2 - CB</b>    | Runoff Area=76,797 sf 12.06% Impervious Runoff Depth=0.55"   |
| Flow Length=475'                      | Slope=0.1439 '/' Tc=13.0 min CN=41 Runoff=0.42 cfs 0.080 af  |
| <b>SubcatchmentS1.3: S1.3 - CBS</b>   | Runoff Area=183 sf 100.00% Impervious Runoff Depth=5.73"     |
| Flow Length=19'                       | Slope=0.0238 '/' Tc=6.0 min CN=98 Runoff=0.02 cfs 0.002 af   |
| <b>SubcatchmentS1.4: S1.4 - CBS</b>   | Runoff Area=16,150 sf 21.20% Impervious Runoff Depth=1.27"   |
| Flow Length=235'                      | Slope=0.0463 '/' Tc=9.8 min CN=52 Runoff=0.40 cfs 0.039 af   |
| <b>SubcatchmentS1.41: S1.41 - CBS</b> | Runoff Area=72,779 sf 34.39% Impervious Runoff Depth=2.16"   |
| Flow Length=465'                      | Slope=0.0845 '/' Tc=9.5 min CN=63 Runoff=3.61 cfs 0.300 af   |
| <b>SubcatchmentS1.42: S1.42 - CBS</b> | Runoff Area=44,389 sf 59.24% Impervious Runoff Depth=3.86"   |
| Flow Length=557'                      | Slope=0.0476 '/' Tc=8.8 min CN=81 Runoff=4.16 cfs 0.327 af   |
| <b>SubcatchmentS1.43: S1.43 - IB</b>  | Runoff Area=18,765 sf 11.19% Impervious Runoff Depth=1.42"   |
| Flow Length=89'                       | Slope=0.1142 '/' Tc=6.0 min CN=54 Runoff=0.63 cfs 0.051 af   |
| <b>SubcatchmentS1.5: S1.5 - CBS</b>   | Runoff Area=61,830 sf 41.05% Impervious Runoff Depth=2.16"   |
| Flow Length=263'                      | Slope=0.0297 '/' Tc=10.1 min CN=63 Runoff=3.01 cfs 0.255 af  |
| <b>SubcatchmentS1.51: S1.51 - CBS</b> | Runoff Area=35,983 sf 31.88% Impervious Runoff Depth=1.90"   |
| Flow Length=432'                      | Slope=0.0151 '/' Tc=22.8 min CN=60 Runoff=1.10 cfs 0.131 af  |
| <b>SubcatchmentS1.52: S1.52 - CBS</b> | Runoff Area=7,297 sf 56.50% Impervious Runoff Depth=3.65"    |
| Flow Length=123'                      | Slope=0.0172 '/' Tc=6.0 min CN=79 Runoff=0.72 cfs 0.051 af   |
| <b>SubcatchmentS1.53: S1.53 - CBS</b> | Runoff Area=11,189 sf 35.92% Impervious Runoff Depth=2.87"   |
| Flow Length=192'                      | Slope=0.0169 '/' Tc=8.5 min CN=71 Runoff=0.79 cfs 0.062 af   |
| <b>SubcatchmentS1.6: S1.6 - CBS</b>   | Runoff Area=1,489 sf 75.73% Impervious Runoff Depth=4.17"    |
| Flow Length=129'                      | Slope=0.0755 '/' Tc=6.0 min CN=84 Runoff=0.16 cfs 0.012 af   |
| <b>SubcatchmentS1.7: S1.7 - CBS</b>   | Runoff Area=5,359 sf 34.57% Impervious Runoff Depth=1.50"    |
| Flow Length=95'                       | Slope=0.0587 '/' Tc=6.0 min CN=55 Runoff=0.19 cfs 0.015 af   |
| <b>SubcatchmentS1.8: S1.8 - CBS</b>   | Runoff Area=11,325 sf 72.84% Impervious Runoff Depth=3.96"   |
| Flow Length=260'                      | Slope=0.0179 '/' Tc=7.6 min CN=82 Runoff=1.13 cfs 0.086 af   |

**Subcatchment S1.9: S1.9 - CBS** Runoff Area=19,911 sf 70.97% Impervious Runoff Depth=3.86"  
Flow Length=207' Slope=0.0068 '/' Tc=10.6 min CN=81 Runoff=1.76 cfs 0.147 af

**Subcatchment S3: S3 - IB** Runoff Area=16,681 sf 0.00% Impervious Runoff Depth=0.44"  
Flow Length=12' Slope=0.0980 '/' Tc=6.0 min CN=39 Runoff=0.07 cfs 0.014 af

**Subcatchment S3.1: S3.1 - CBS** Runoff Area=145,755 sf 99.48% Impervious Runoff Depth=5.73"  
Flow Length=488' Slope=0.0191 '/' Tc=6.1 min CN=98 Runoff=19.51 cfs 1.598 af

**Subcatchment S3.2: S3.2 - CBS** Runoff Area=11,785 sf 95.99% Impervious Runoff Depth=5.50"  
Flow Length=706' Slope=0.0613 '/' Tc=6.0 min CN=96 Runoff=1.56 cfs 0.124 af

**Subcatchment S3.21: S3.21 - CBS** Runoff Area=30,610 sf 36.87% Impervious Runoff Depth=1.66"  
Flow Length=727' Slope=0.1040 '/' Tc=14.3 min CN=57 Runoff=0.95 cfs 0.097 af

**Reach OP-1: Observation Point 1** Inflow=11.57 cfs 1.736 af  
Outflow=11.57 cfs 1.736 af

**Pond 1.11P: Catch Basin** Peak Elev=359.79' Inflow=7.48 cfs 0.797 af  
24.0" Round Culvert n=0.013 L=18.7' S=0.0080 '/' Outflow=7.48 cfs 0.797 af

**Pond 1.1AP: Sediment Forebay** Peak Elev=359.60' Storage=3,944 cf Inflow=7.96 cfs 0.837 af  
Outflow=7.74 cfs 0.783 af

**Pond 1.1P: Infiltration Basin A** Peak Elev=359.60' Storage=11,423 cf Inflow=7.74 cfs 0.783 af  
Discarded=1.12 cfs 0.783 af Primary=0.00 cfs 0.000 af Outflow=1.12 cfs 0.783 af

**Pond 1.2P: Catch Basin** Peak Elev=359.79' Inflow=0.42 cfs 0.080 af  
24.0" Round Culvert n=0.013 L=18.0' S=0.0111 '/' Outflow=0.42 cfs 0.080 af

**Pond 1.3P: Catch Basin** Peak Elev=360.81' Inflow=6.79 cfs 0.661 af  
18.0" Round Culvert n=0.013 L=135.2' S=0.0063 '/' Outflow=6.79 cfs 0.661 af

**Pond 1.41P: Catch Basin** Peak Elev=358.03' Inflow=3.61 cfs 0.300 af  
18.0" Round Culvert n=0.013 L=18.0' S=0.0000 '/' Outflow=3.62 cfs 0.300 af

**Pond 1.42P: Catch Basin** Peak Elev=357.74' Inflow=7.73 cfs 0.628 af  
18.0" Round Culvert n=0.013 L=21.0' S=0.0071 '/' Outflow=7.73 cfs 0.628 af

**Pond 1.43P: Infiltration Basin D** Peak Elev=356.51' Storage=10,403 cf Inflow=7.96 cfs 0.582 af  
Discarded=0.59 cfs 0.581 af Primary=0.02 cfs 0.001 af Outflow=0.61 cfs 0.582 af

**Pond 1.4P: Catch Basin** Peak Elev=361.81' Inflow=6.76 cfs 0.659 af  
18.0" Round Culvert n=0.013 L=32.5' S=0.0062 '/' Outflow=6.76 cfs 0.659 af

**Pond 1.51P: Catch Basin** Peak Elev=365.12' Inflow=2.00 cfs 0.243 af  
15.0" Round Culvert n=0.013 L=120.9' S=0.0058 '/' Outflow=2.00 cfs 0.243 af

**Pond 1.52P: Catch Basin** Peak Elev=366.14' Inflow=1.48 cfs 0.113 af  
15.0" Round Culvert n=0.013 L=282.6' S=0.0053 '/' Outflow=1.48 cfs 0.113 af

**Pond 1.53P: Catch Basin** Peak Elev=366.23' Inflow=0.79 cfs 0.062 af  
15.0" Round Culvert n=0.013 L=20.9' S=0.0048 '/' Outflow=0.79 cfs 0.062 af

|                                        |                                                                                                                                                   |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Pond 1.5P: Catch Basin</b>          | Peak Elev=364.85' Inflow=6.38 cfs 0.620 af<br>18.0" Round Culvert n=0.013 L=175.3' S=0.0280 '/' Outflow=6.38 cfs 0.620 af                         |
| <b>Pond 1.6P: Catch Basin</b>          | Peak Elev=364.89' Inflow=1.48 cfs 0.121 af<br>18.0" Round Culvert n=0.013 L=36.2' S=0.0055 '/' Outflow=1.48 cfs 0.121 af                          |
| <b>Pond 1.7P: Catch Basin</b>          | Peak Elev=365.99' Inflow=1.32 cfs 0.110 af<br>18.0" Round Culvert n=0.013 L=205.8' S=0.0097 '/' Outflow=1.32 cfs 0.110 af                         |
| <b>Pond 1.8P: Catch Basin</b>          | Peak Elev=366.22' Inflow=1.13 cfs 0.094 af<br>18.0" Round Culvert n=0.013 L=19.0' S=0.0105 '/' Outflow=1.13 cfs 0.094 af                          |
| <b>Pond 1.9P: Infiltration Basin B</b> | Peak Elev=371.58' Storage=2,323 cf Inflow=1.76 cfs 0.147 af<br>Discarded=0.27 cfs 0.138 af Primary=0.42 cfs 0.008 af Outflow=0.69 cfs 0.147 af    |
| <b>Pond 2P: Sediment Forebay</b>       | Peak Elev=356.51' Storage=5,830 cf Inflow=8.32 cfs 0.679 af<br>Outflow=7.96 cfs 0.582 af                                                          |
| <b>Pond 3.1P: Catch Basin</b>          | Peak Elev=364.27' Inflow=19.51 cfs 1.598 af<br>24.0" Round Culvert n=0.013 L=121.7' S=0.0378 '/' Outflow=19.51 cfs 1.598 af                       |
| <b>Pond 3.21P: Catch Basin</b>         | Peak Elev=359.66' Inflow=0.95 cfs 0.097 af<br>18.0" Round Culvert n=0.013 L=18.0' S=0.0111 '/' Outflow=0.95 cfs 0.097 af                          |
| <b>Pond 3.2P: Catch Basin</b>          | Peak Elev=359.57' Inflow=2.15 cfs 0.221 af<br>18.0" Round Culvert n=0.013 L=70.4' S=0.0398 '/' Outflow=2.15 cfs 0.221 af                          |
| <b>Pond 3P: Infiltration Basin C</b>   | Peak Elev=355.61' Storage=29,756 cf Inflow=20.63 cfs 1.256 af<br>Discarded=1.20 cfs 1.202 af Primary=0.84 cfs 0.055 af Outflow=2.04 cfs 1.256 af  |
| <b>Pond 7P: Sediment Forebay</b>       | Peak Elev=355.75' Storage=6,208 cf Inflow=21.63 cfs 1.833 af<br>Discarded=0.39 cfs 0.577 af Primary=20.63 cfs 1.256 af Outflow=21.01 cfs 1.833 af |

**Total Runoff Area = 34.369 ac Runoff Volume = 5.168 af Average Runoff Depth = 1.80"**  
**79.30% Pervious = 27.255 ac 20.70% Impervious = 7.113 ac**

Section 2.1: Post-Developed Conditions  
25- and 50-year Storm – Full Summary



**Summary for Subcatchment S1: S1 - OFF**

Runoff = 5.86 cfs @ 12.43 hrs, Volume= 1.037 af, Depth= 0.61"  
 Routed to Reach OP-1 : Observation Point 1

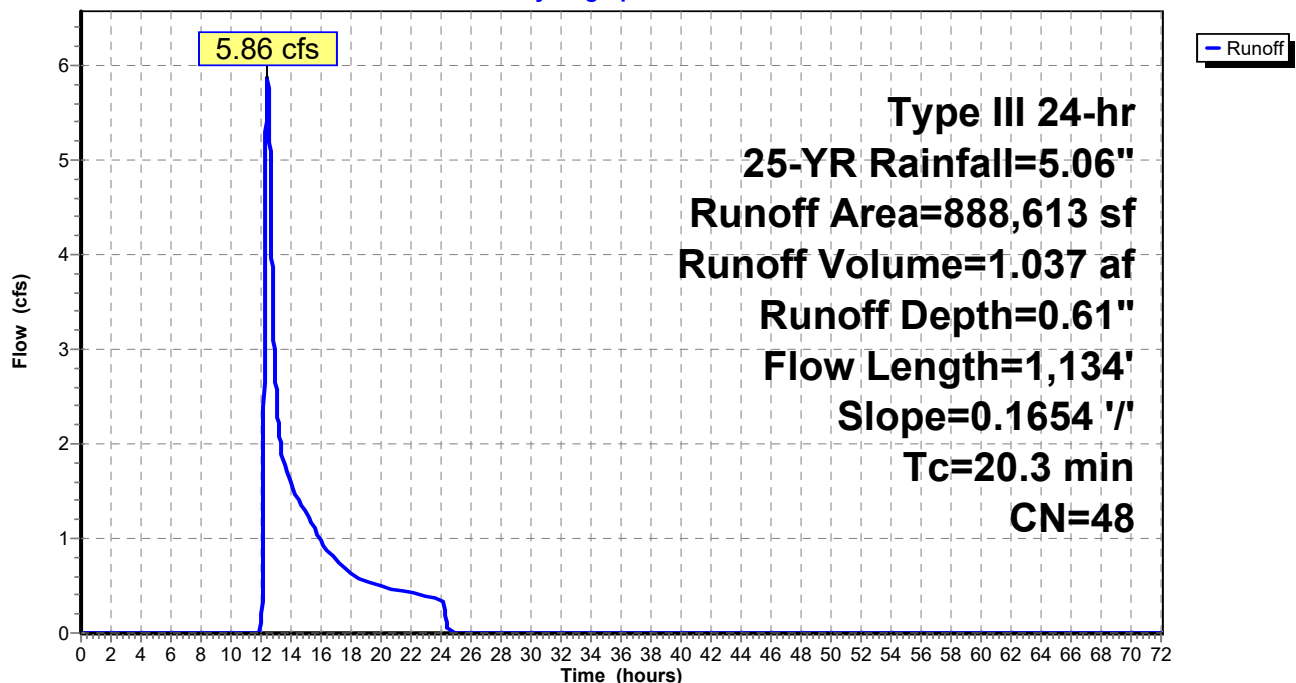
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-YR Rainfall=5.06"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 853       | 85 | Gravel roads HSG B           |
| 3,192     | 76 | Gravel roads HSG A           |
| 27,839    | 55 | Woods, Good HSG B            |
| 12,435    | 70 | Woods, Good HSG C            |
| 312,518   | 30 | Woods, Good HSG A            |
| 600       | 98 | Roofs HSG B                  |
| 357       | 89 | Gravel roads HSG C           |
| 170,550   | 39 | >75% Grass cover, Good HSG A |
| 196,079   | 61 | >75% Grass cover, Good HSG B |
| 164,191   | 74 | >75% Grass cover, Good HSG C |
| 888,613   | 48 | Weighted Average             |
| 888,013   |    | 99.93% Pervious Area         |
| 600       |    | 0.07% Impervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 20.3     | 1,134         | 0.1654        | 0.93              |                | Lag/CN Method, |

**Subcatchment S1: S1 - OFF**

Hydrograph



**Summary for Subcatchment S1.1: S1.1 - IB**

Runoff = 0.30 cfs @ 12.11 hrs, Volume= 0.027 af, Depth= 0.95"  
 Routed to Pond 1.1AP : Sediment Forebay

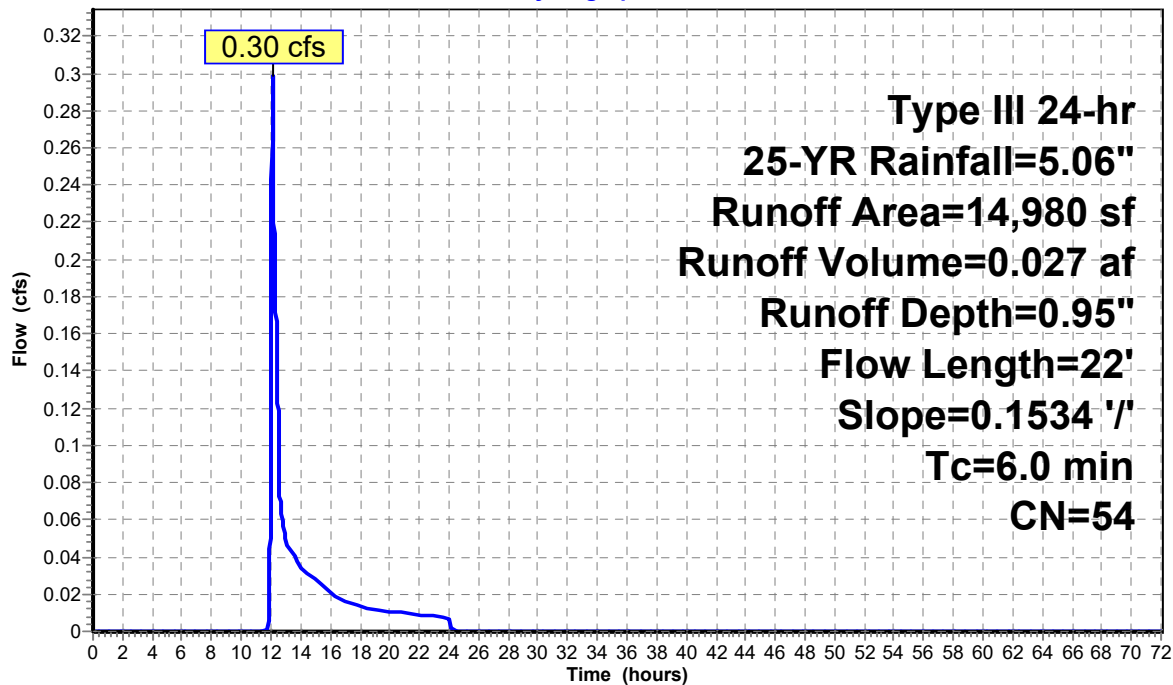
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-YR Rainfall=5.06"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 5,057     | 39 | >75% Grass cover, Good HSG A |
| 9,923     | 61 | >75% Grass cover, Good HSG B |
| 14,980    | 54 | Weighted Average             |
| 14,980    |    | 100.00% Pervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|------------------------------------------|-------------------|----------------|----------------|
| 0.8      | 22            | 0.1534                                   | 0.47              |                | Lag/CN Method, |
| 0.8      | 22            | Total, Increased to minimum Tc = 6.0 min |                   |                |                |

**Subcatchment S1.1: S1.1 - IB**

Hydrograph



**Summary for Subcatchment S1.11: S1.11 - CBS**

Runoff = 0.58 cfs @ 12.08 hrs, Volume= 0.046 af, Depth= 4.59"  
 Routed to Pond 1.11P : Catch Basin

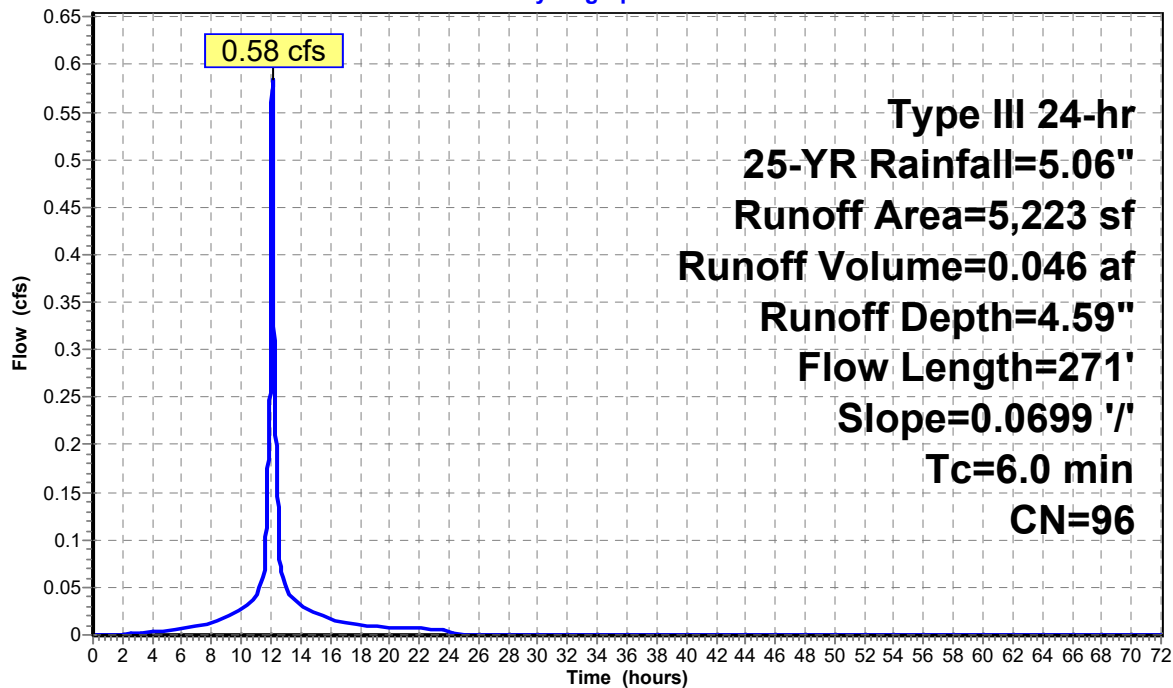
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-YR Rainfall=5.06"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 694       | 98 | Paved parking HSG B          |
| 4,324     | 98 | Paved parking HSG A          |
| 171       | 39 | >75% Grass cover, Good HSG A |
| 34        | 61 | >75% Grass cover, Good HSG B |
| 5,223     | 96 | Weighted Average             |
| 205       |    | 3.92% Pervious Area          |
| 5,018     |    | 96.08% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|------------------------------------------|-------------------|----------------|----------------|
| 2.2      | 271           | 0.0699                                   | 2.01              |                | Lag/CN Method, |
| 2.2      | 271           | Total, Increased to minimum Tc = 6.0 min |                   |                |                |

**Subcatchment S1.11: S1.11 - CBS**

Hydrograph



**Summary for Subcatchment S1.2: S1.2 - CB**

Runoff = 0.14 cfs @ 12.50 hrs, Volume= 0.042 af, Depth= 0.29"  
 Routed to Pond 1.2P : Catch Basin

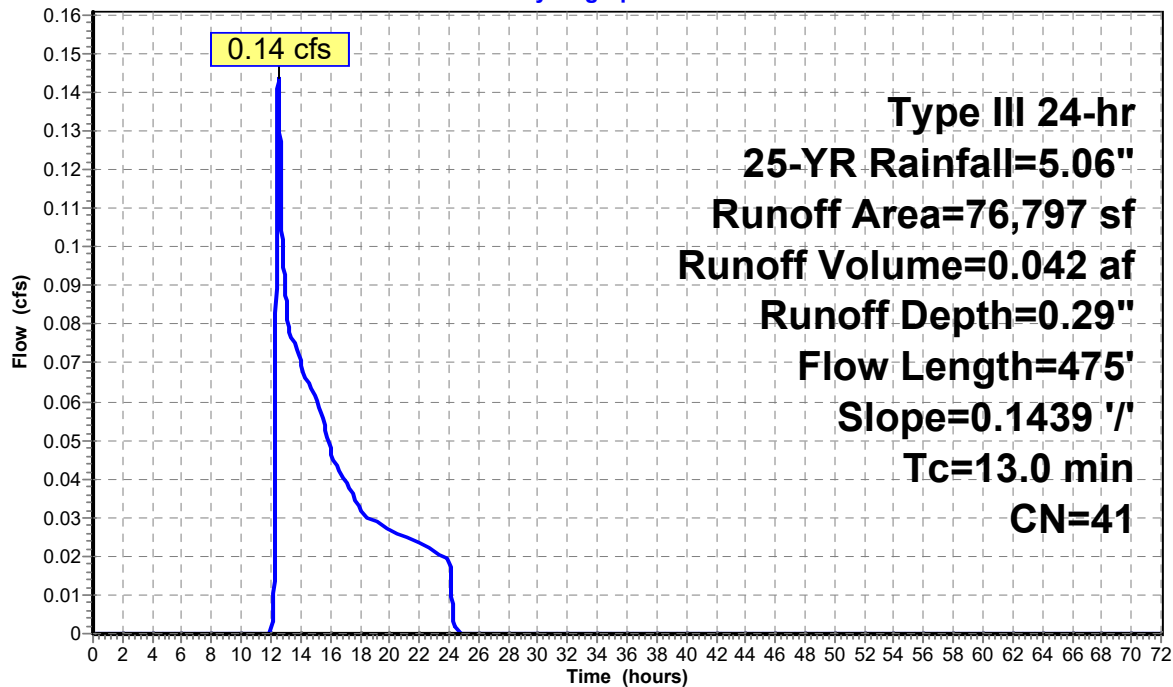
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-YR Rainfall=5.06"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 462       | 98 | Paved parking HSG B          |
| 43,201    | 30 | Woods, Good HSG A            |
| 8,801     | 98 | Paved parking HSG A          |
| 24,187    | 39 | >75% Grass cover, Good HSG A |
| 146       | 61 | >75% Grass cover, Good HSG B |
| 76,797    | 41 | Weighted Average             |
| 67,534    |    | 87.94% Pervious Area         |
| 9,263     |    | 12.06% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 13.0     | 475           | 0.1439        | 0.61              |                | Lag/CN Method, |

**Subcatchment S1.2: S1.2 - CB**

Hydrograph



**Summary for Subcatchment S1.3: S1.3 - CBS**

Runoff = 0.02 cfs @ 12.08 hrs, Volume= 0.002 af, Depth= 4.82"  
 Routed to Pond 1.3P : Catch Basin

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=5.06"

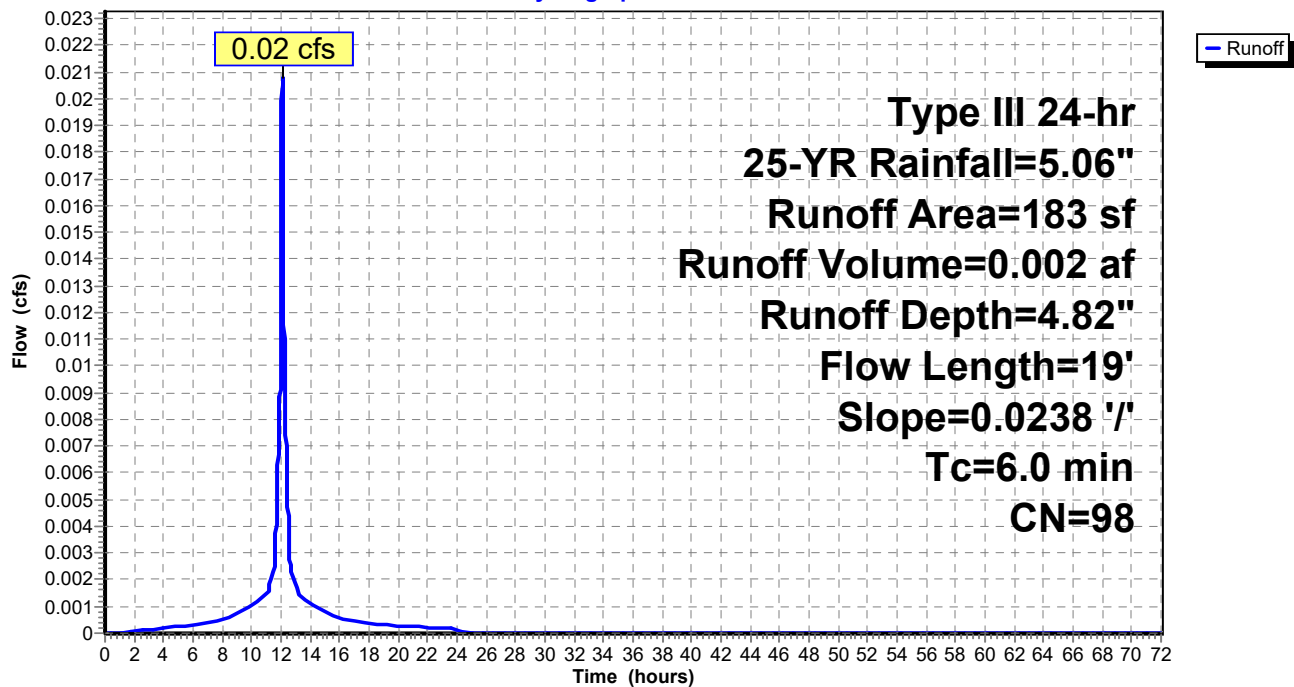
| Area (sf) | CN | Description             |
|-----------|----|-------------------------|
| 183       | 98 | Paved parking HSG A     |
| 183       |    | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|------------------------------------------|-------------------|----------------|----------------|
| 0.4      | 19            | 0.0238                                   | 0.78              |                | Lag/CN Method, |
| 0.4      | 19            | Total, Increased to minimum Tc = 6.0 min |                   |                |                |

**Subcatchment S1.3: S1.3 - CBS**

Hydrograph



**Summary for Subcatchment S1.4: S1.4 - CBS**

Runoff = 0.22 cfs @ 12.17 hrs, Volume= 0.026 af, Depth= 0.83"  
 Routed to Pond 1.4P : Catch Basin

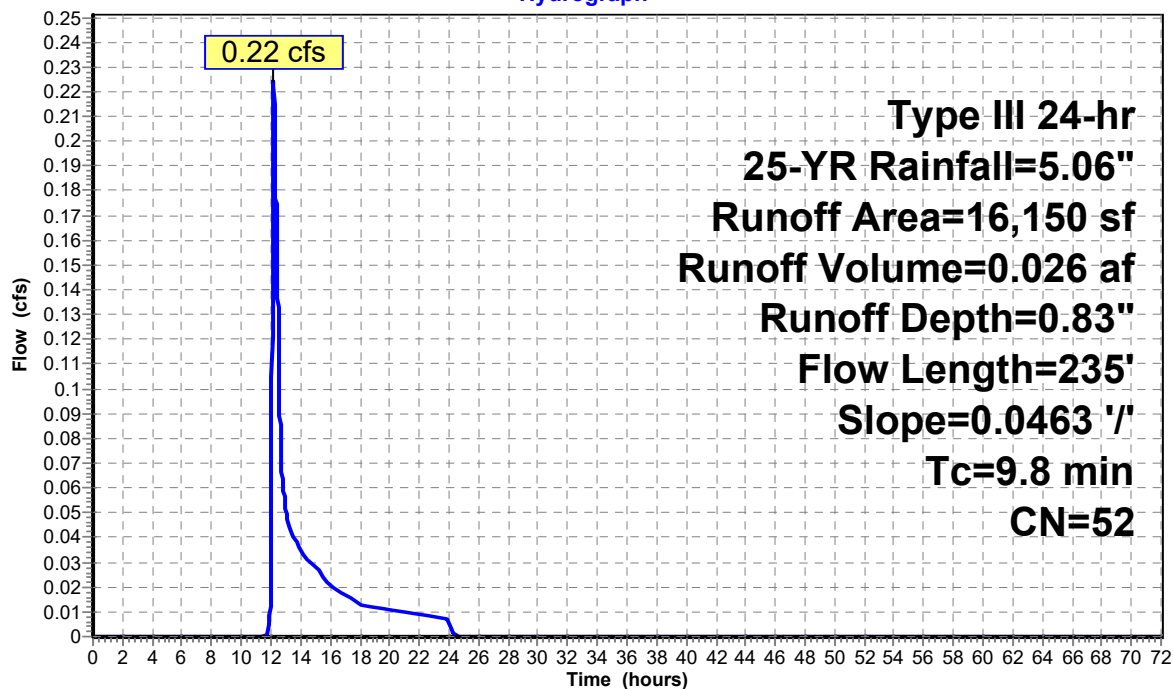
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-YR Rainfall=5.06"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 1,050     | 98 | Roofs HSG A                  |
| 2,374     | 98 | Paved parking HSG A          |
| 12,726    | 39 | >75% Grass cover, Good HSG A |
| 16,150    | 52 | Weighted Average             |
| 12,726    |    | 78.80% Pervious Area         |
| 3,424     |    | 21.20% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 9.8      | 235           | 0.0463        | 0.40              |                | Lag/CN Method, |

**Subcatchment S1.4: S1.4 - CBS**

Hydrograph



**Summary for Subcatchment S1.41: S1.41 - CBS**

Runoff = 2.50 cfs @ 12.15 hrs, Volume= 0.215 af, Depth= 1.55"  
 Routed to Pond 1.41P : Catch Basin

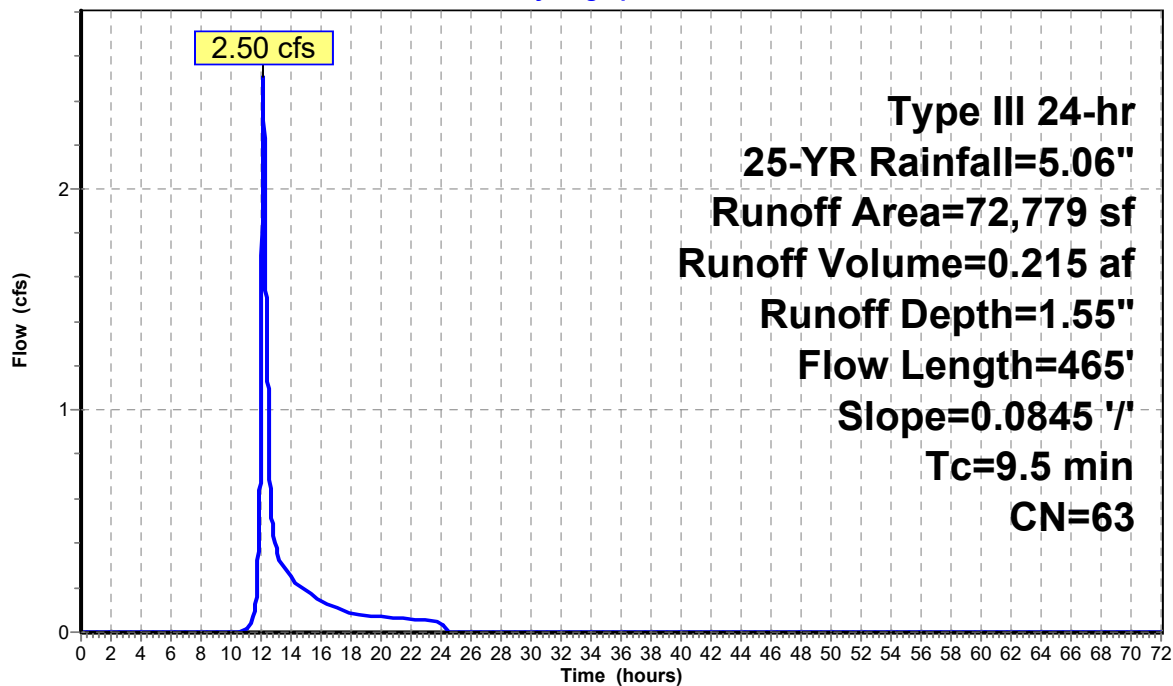
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-YR Rainfall=5.06"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 3,676     | 98 | Paved parking HSG B          |
| 3,382     | 98 | Roofs HSG B                  |
| 9,218     | 98 | Roofs HSG A                  |
| 8,749     | 98 | Paved parking HSG A          |
| 36,945    | 39 | >75% Grass cover, Good HSG A |
| 10,808    | 61 | >75% Grass cover, Good HSG B |
| 72,779    | 63 | Weighted Average             |
| 47,754    |    | 65.61% Pervious Area         |
| 25,025    |    | 34.39% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 9.5      | 465           | 0.0845        | 0.82              |                | Lag/CN Method, |

**Subcatchment S1.41: S1.41 - CBS**

Hydrograph



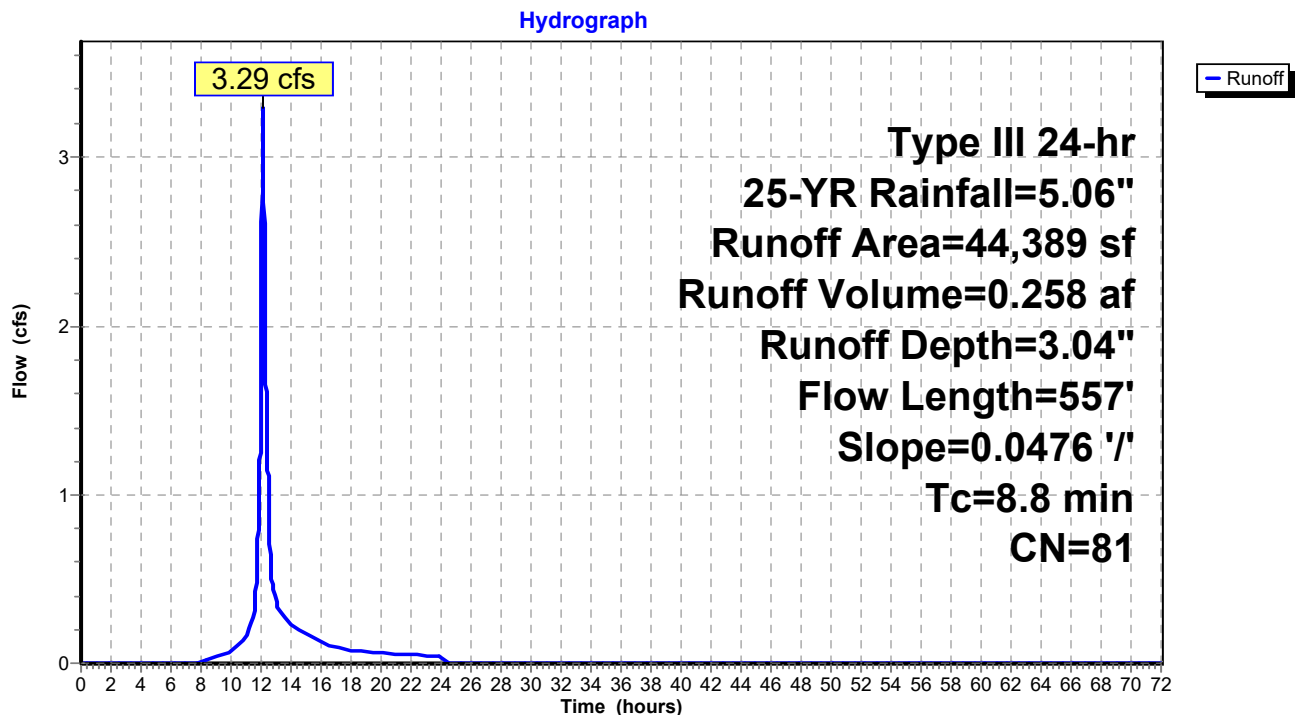
**Summary for Subcatchment S1.42: S1.42 - CBS**

Runoff = 3.29 cfs @ 12.12 hrs, Volume= 0.258 af, Depth= 3.04"  
 Routed to Pond 1.42P : Catch Basin

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=5.06"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 5,650     | 98 | Paved parking HSG B          |
| 418       | 98 | Roofs HSG C                  |
| 408       | 76 | Gravel roads HSG A           |
| 3,432     | 98 | Roofs HSG A                  |
| 8,750     | 98 | Roofs HSG B                  |
| 8,048     | 98 | Paved parking HSG A          |
| 3,652     | 39 | >75% Grass cover, Good HSG A |
| 14,032    | 61 | >75% Grass cover, Good HSG B |
| 44,389    | 81 | Weighted Average             |
| 18,092    |    | 40.76% Pervious Area         |
| 26,297    |    | 59.24% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 8.8      | 557           | 0.0476        | 1.05              |                | Lag/CN Method, |

**Subcatchment S1.42: S1.42 - CBS**

**Summary for Subcatchment S1.43: S1.43 - IB**

Runoff = 0.37 cfs @ 12.11 hrs, Volume= 0.034 af, Depth= 0.95"  
 Routed to Pond 2P : Sediment Forebay

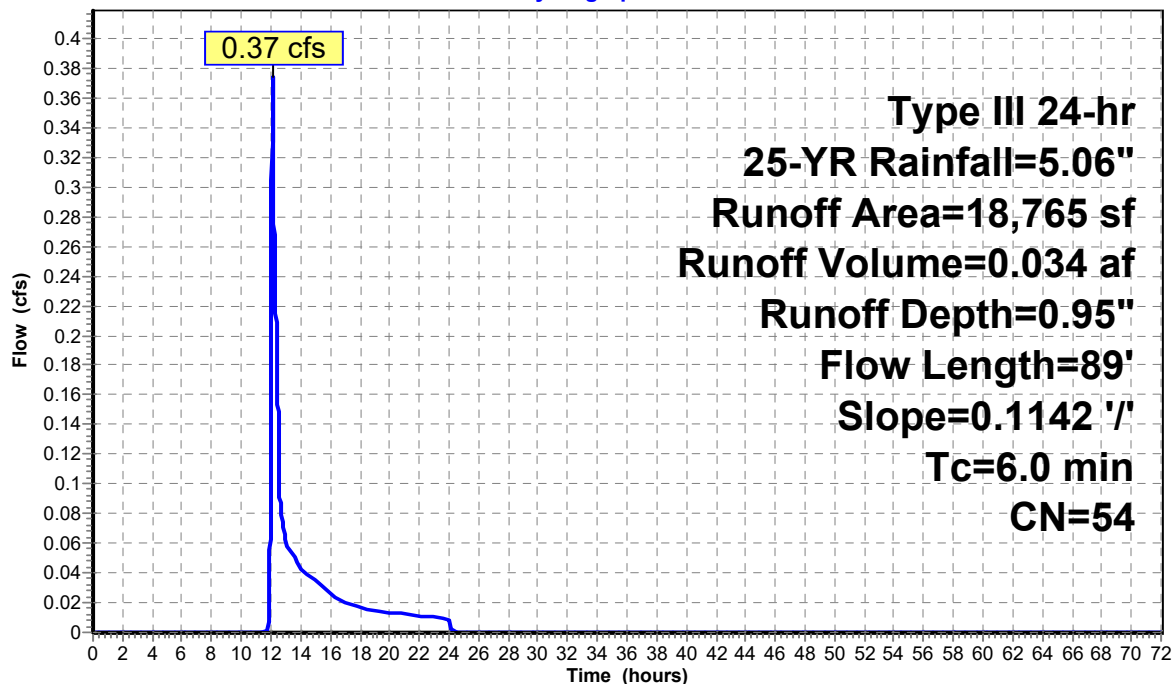
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-YR Rainfall=5.06"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 2,100     | 98 | Roofs HSG A                  |
| 9,353     | 39 | >75% Grass cover, Good HSG A |
| 7,312     | 61 | >75% Grass cover, Good HSG B |
| 18,765    | 54 | Weighted Average             |
| 16,665    |    | 88.81% Pervious Area         |
| 2,100     |    | 11.19% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|------------------------------------------|-------------------|----------------|----------------|
| 2.7      | 89            | 0.1142                                   | 0.54              |                | Lag/CN Method, |
| 2.7      | 89            | Total, Increased to minimum Tc = 6.0 min |                   |                |                |

**Subcatchment S1.43: S1.43 - IB**

Hydrograph



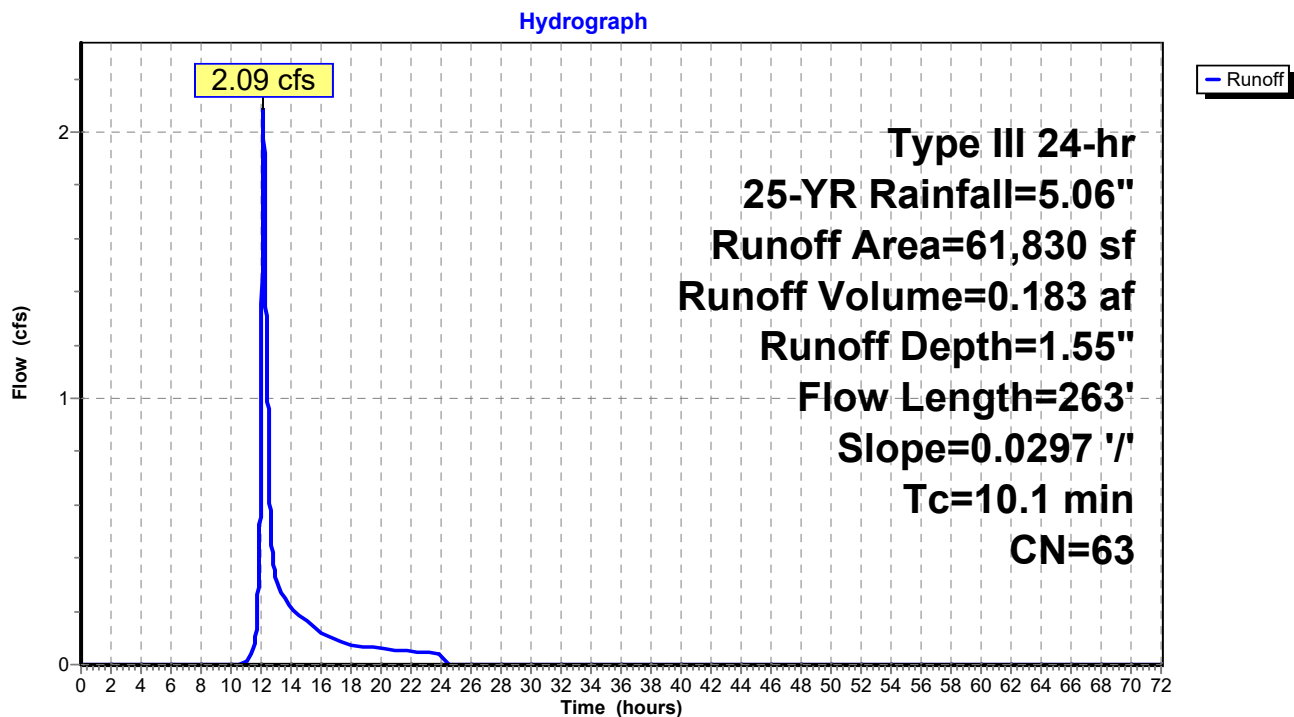
**Summary for Subcatchment S1.5: S1.5 - CBS**

Runoff = 2.09 cfs @ 12.15 hrs, Volume= 0.183 af, Depth= 1.55"  
 Routed to Pond 1.5P : Catch Basin

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=5.06"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 14,250    | 98 | Roofs HSG A                  |
| 11,130    | 98 | Paved parking HSG A          |
| 36,450    | 39 | >75% Grass cover, Good HSG A |
| 61,830    | 63 | Weighted Average             |
| 36,450    |    | 58.95% Pervious Area         |
| 25,380    |    | 41.05% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 10.1     | 263           | 0.0297        | 0.43              |                | Lag/CN Method, |

**Subcatchment S1.5: S1.5 - CBS**

**Summary for Subcatchment S1.51: S1.51 - CBS**

Runoff = 0.74 cfs @ 12.36 hrs, Volume= 0.092 af, Depth= 1.34"  
 Routed to Pond 1.51P : Catch Basin

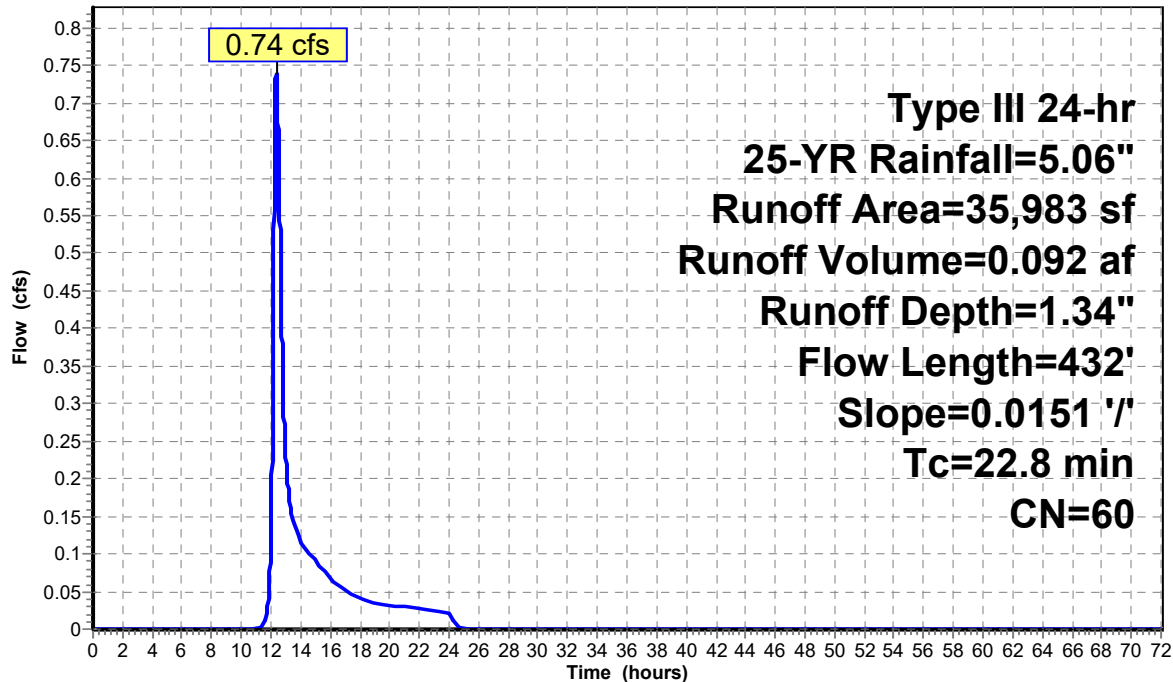
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-YR Rainfall=5.06"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 6,000     | 98 | Roofs HSG A                  |
| 5,470     | 98 | Paved parking HSG A          |
| 20,793    | 39 | >75% Grass cover, Good HSG A |
| 3,720     | 61 | >75% Grass cover, Good HSG B |
| 35,983    | 60 | Weighted Average             |
| 24,513    |    | 68.12% Pervious Area         |
| 11,470    |    | 31.88% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 22.8     | 432           | 0.0151        | 0.32              |                | Lag/CN Method, |

**Subcatchment S1.51: S1.51 - CBS**

Hydrograph



**Summary for Subcatchment S1.52: S1.52 - CBS**

Runoff = 0.56 cfs @ 12.09 hrs, Volume= 0.040 af, Depth= 2.85"  
 Routed to Pond 1.52P : Catch Basin

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=5.06"

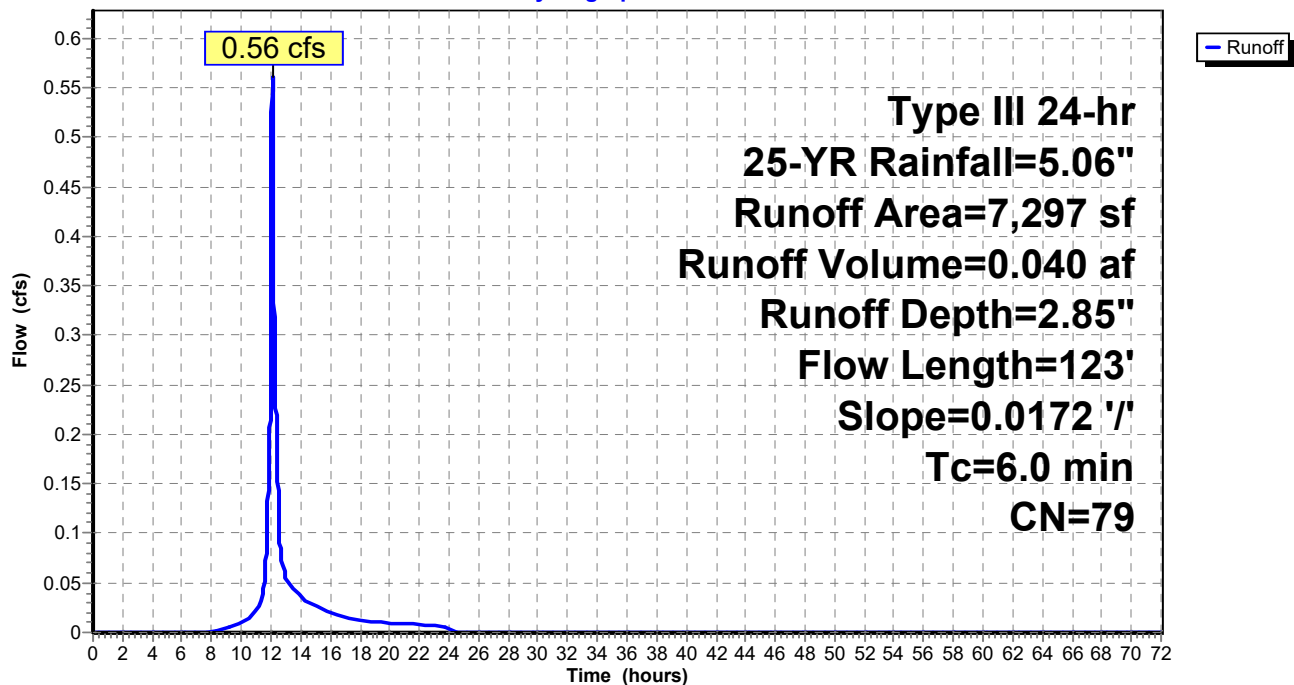
| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 1,410     | 98 | Paved parking HSG B          |
| 2,100     | 98 | Roofs HSG B                  |
| 612       | 98 | Paved parking HSG A          |
| 1,005     | 39 | >75% Grass cover, Good HSG A |
| 2,169     | 61 | >75% Grass cover, Good HSG B |
| 7,297     | 79 | Weighted Average             |
| 3,174     |    | 43.50% Pervious Area         |
| 4,123     |    | 56.50% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|------------------------------------------|-------------------|----------------|----------------|
| 4.7      | 123           | 0.0172                                   | 0.44              |                | Lag/CN Method, |
| 4.7      | 123           | Total, Increased to minimum Tc = 6.0 min |                   |                |                |

**Subcatchment S1.52: S1.52 - CBS**

Hydrograph



**Summary for Subcatchment S1.53: S1.53 - CBS**

Runoff = 0.59 cfs @ 12.12 hrs, Volume= 0.046 af, Depth= 2.16"  
 Routed to Pond 1.53P : Catch Basin

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=5.06"

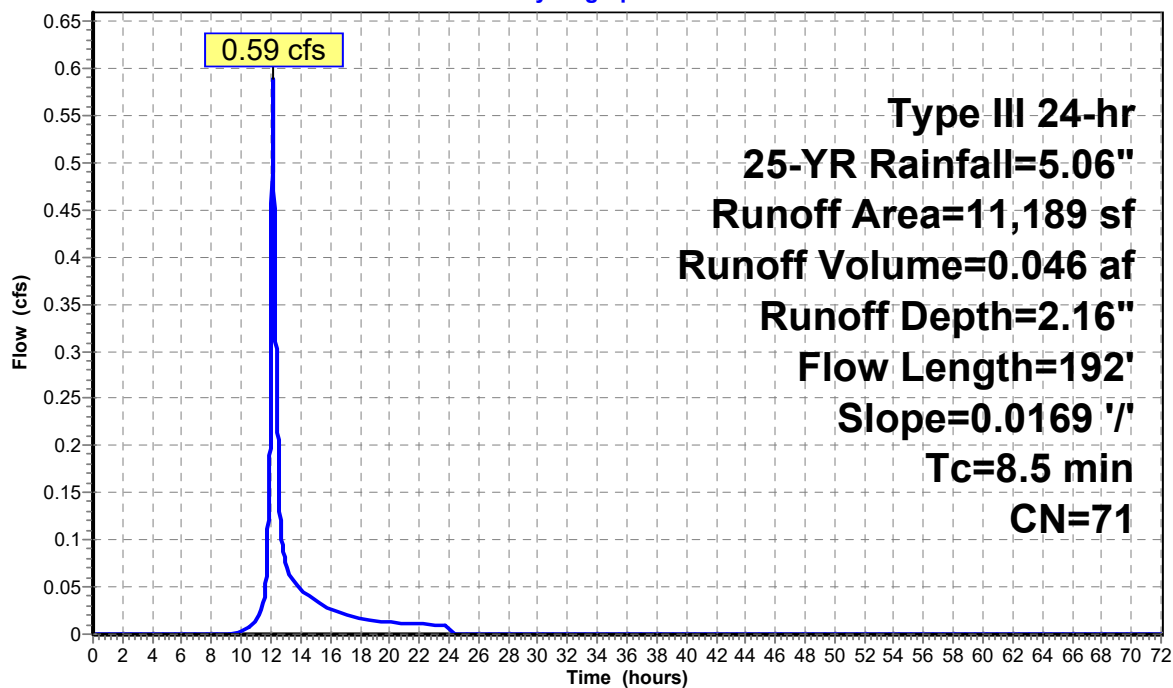
| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 1,482     | 98 | Paved parking HSG B          |
| 1,315     | 98 | Roofs HSG B                  |
| 785       | 98 | Roofs HSG A                  |
| 438       | 98 | Paved parking HSG A          |
| 1,803     | 39 | >75% Grass cover, Good HSG A |
| 5,367     | 61 | >75% Grass cover, Good HSG B |
| 11,189    | 71 | Weighted Average             |
| 7,170     |    | 64.08% Pervious Area         |
| 4,020     |    | 35.92% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 8.5      | 192           | 0.0169        | 0.38              |                | Lag/CN Method, |

**Subcatchment S1.53: S1.53 - CBS**

Hydrograph



**Summary for Subcatchment S1.6: S1.6 - CBS**

Runoff = 0.13 cfs @ 12.09 hrs, Volume= 0.009 af, Depth= 3.33"  
 Routed to Pond 1.6P : Catch Basin

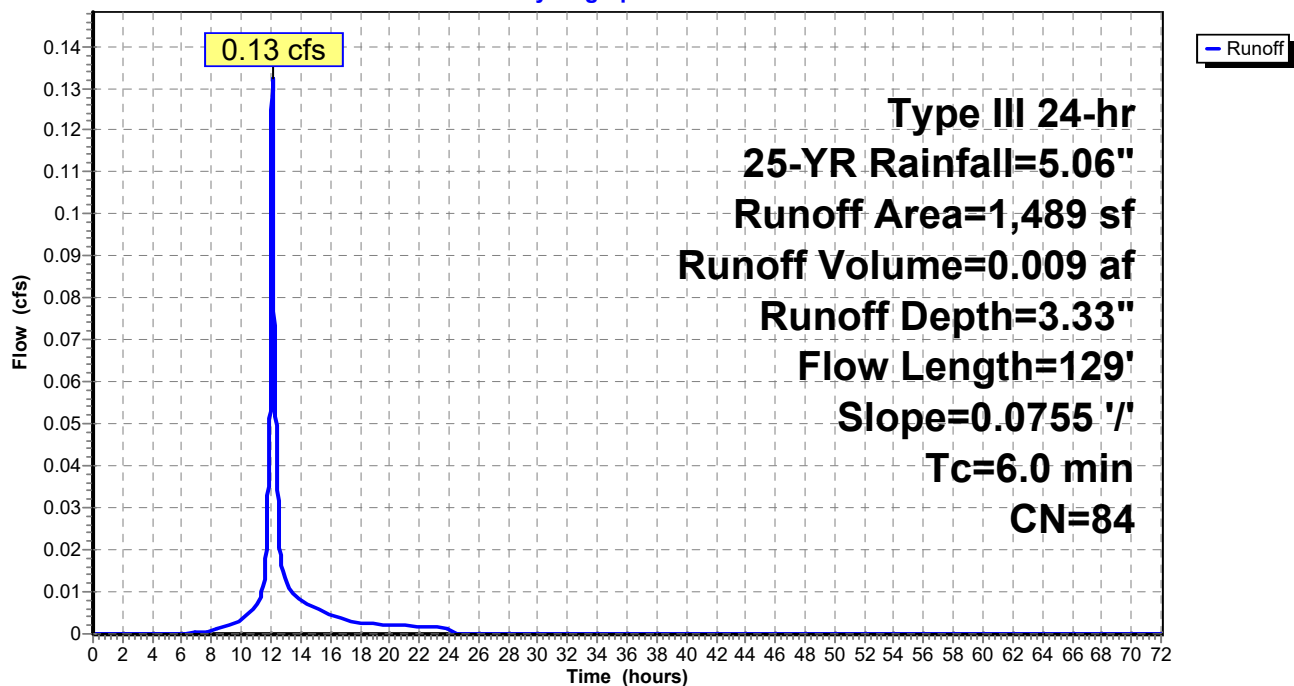
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-YR Rainfall=5.06"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 1,128     | 98 | Paved parking HSG A          |
| 361       | 39 | >75% Grass cover, Good HSG A |
| 1,489     | 84 | Weighted Average             |
| 361       |    | 24.27% Pervious Area         |
| 1,128     |    | 75.73% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|------------------------------------------|-------------------|----------------|----------------|
| 2.0      | 129           | 0.0755                                   | 1.09              |                | Lag/CN Method, |
| 2.0      | 129           | Total, Increased to minimum Tc = 6.0 min |                   |                |                |

**Subcatchment S1.6: S1.6 - CBS**

Hydrograph



**Summary for Subcatchment S1.7: S1.7 - CBS**

Runoff = 0.12 cfs @ 12.11 hrs, Volume= 0.010 af, Depth= 1.01"  
 Routed to Pond 1.7P : Catch Basin

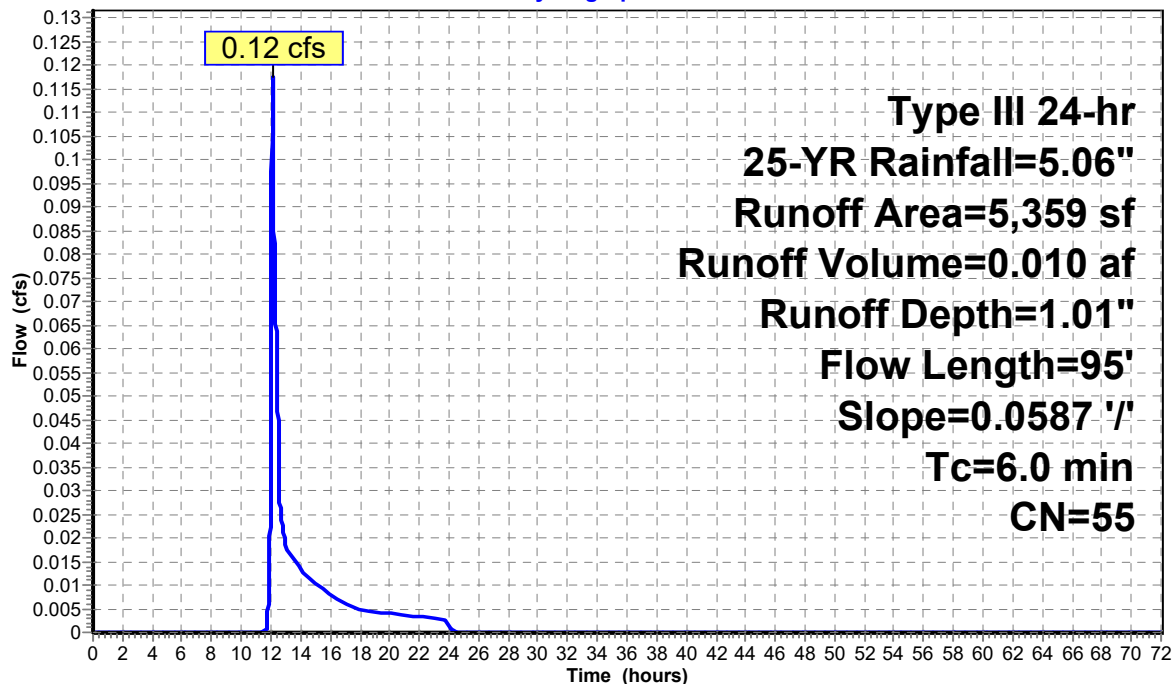
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-YR Rainfall=5.06"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 2,755     | 30 | Woods, Good HSG A            |
| 1,853     | 98 | Paved parking HSG A          |
| 751       | 39 | >75% Grass cover, Good HSG A |
| 5,359     | 55 | Weighted Average             |
| 3,506     |    | 65.43% Pervious Area         |
| 1,853     |    | 34.57% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|------------------------------------------|-------------------|----------------|----------------|
| 3.9      | 95            | 0.0587                                   | 0.40              |                | Lag/CN Method, |
| 3.9      | 95            | Total, Increased to minimum Tc = 6.0 min |                   |                |                |

**Subcatchment S1.7: S1.7 - CBS**

Hydrograph



Runoff

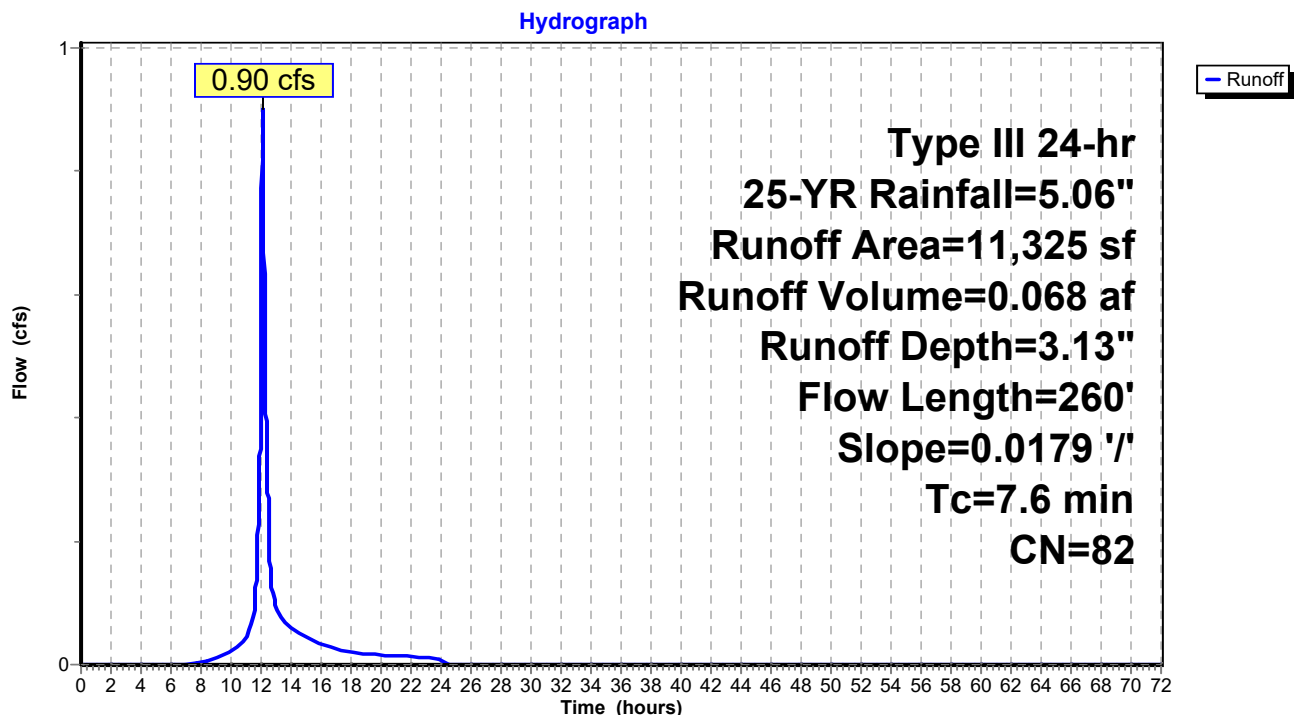
**Summary for Subcatchment S1.8: S1.8 - CBS**

Runoff = 0.90 cfs @ 12.11 hrs, Volume= 0.068 af, Depth= 3.13"  
 Routed to Pond 1.8P : Catch Basin

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=5.06"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 1,162     | 98 | Roofs HSG A                  |
| 7,086     | 98 | Paved parking HSG A          |
| 3,076     | 39 | >75% Grass cover, Good HSG A |
| 11,325    | 82 | Weighted Average             |
| 3,076     |    | 27.16% Pervious Area         |
| 8,248     |    | 72.84% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 7.6      | 260           | 0.0179        | 0.57              |                | Lag/CN Method, |

**Subcatchment S1.8: S1.8 - CBS**

**Summary for Subcatchment S1.9: S1.9 - CBS**

Runoff = 1.39 cfs @ 12.15 hrs, Volume= 0.116 af, Depth= 3.04"  
 Routed to Pond 1.9P : Infiltration Basin B

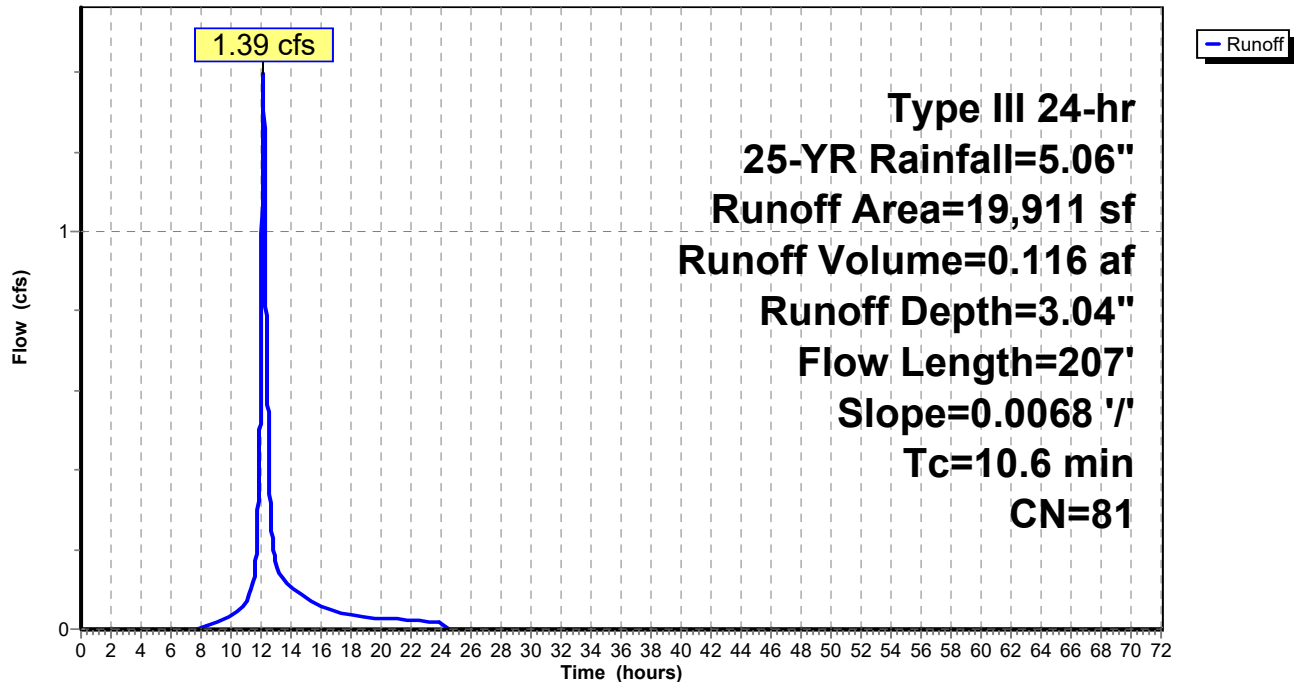
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-YR Rainfall=5.06"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 48        | 30 | Woods, Good HSG A            |
| 1,067     | 98 | Roofs HSG A                  |
| 13,064    | 98 | Paved parking HSG A          |
| 5,732     | 39 | >75% Grass cover, Good HSG A |
| 19,911    | 81 | Weighted Average             |
| 5,780     |    | 29.03% Pervious Area         |
| 14,131    |    | 70.97% Impervious Area       |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 10.6        | 207              | 0.0068           | 0.32                 |                   | Lag/CN Method, |

**Subcatchment S1.9: S1.9 - CBS**

Hydrograph



**Summary for Subcatchment S3: S3 - IB**

Runoff = 0.02 cfs @ 12.46 hrs, Volume= 0.007 af, Depth= 0.21"  
 Routed to Pond 7P : Sediment Forebay

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=5.06"

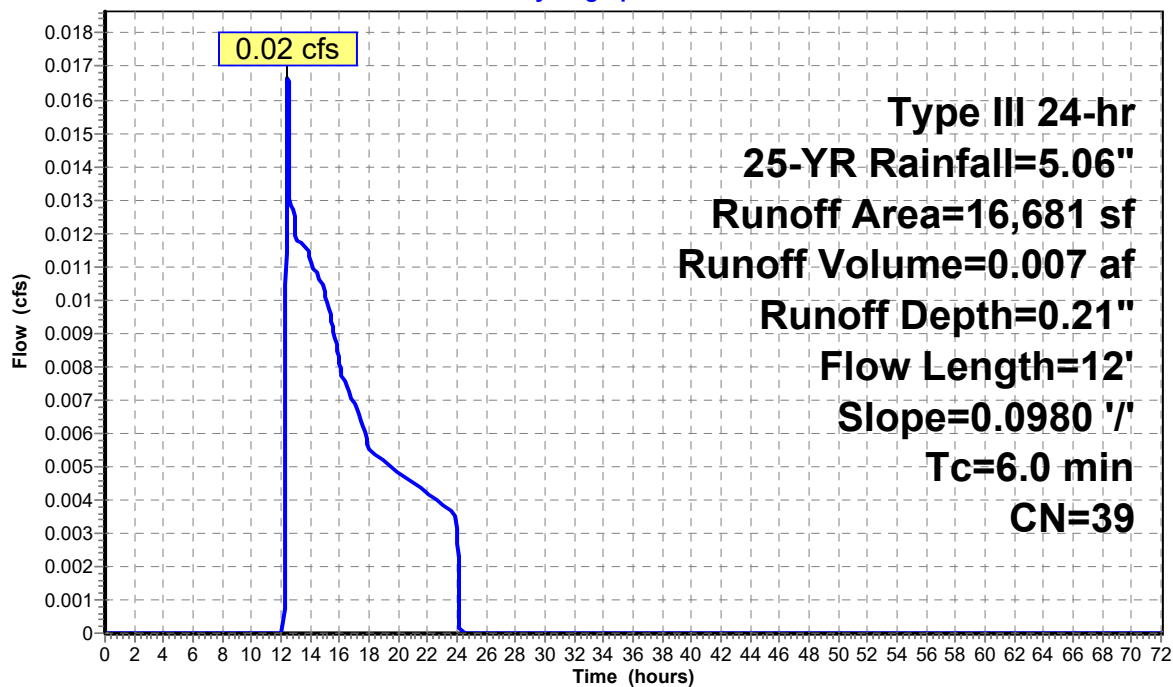
| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 16,681    | 39 | >75% Grass cover, Good HSG A |
| 16,681    |    | 100.00% Pervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|------------------------------------------|-------------------|----------------|----------------|
| 0.9      | 12            | 0.0980                                   | 0.23              |                | Lag/CN Method, |
| 0.9      | 12            | Total, Increased to minimum Tc = 6.0 min |                   |                |                |

**Subcatchment S3: S3 - IB**

Hydrograph



**Summary for Subcatchment S3.1: S3.1 - CBS**

Runoff = 16.51 cfs @ 12.08 hrs, Volume= 1.345 af, Depth= 4.82"  
 Routed to Pond 3.1P : Catch Basin

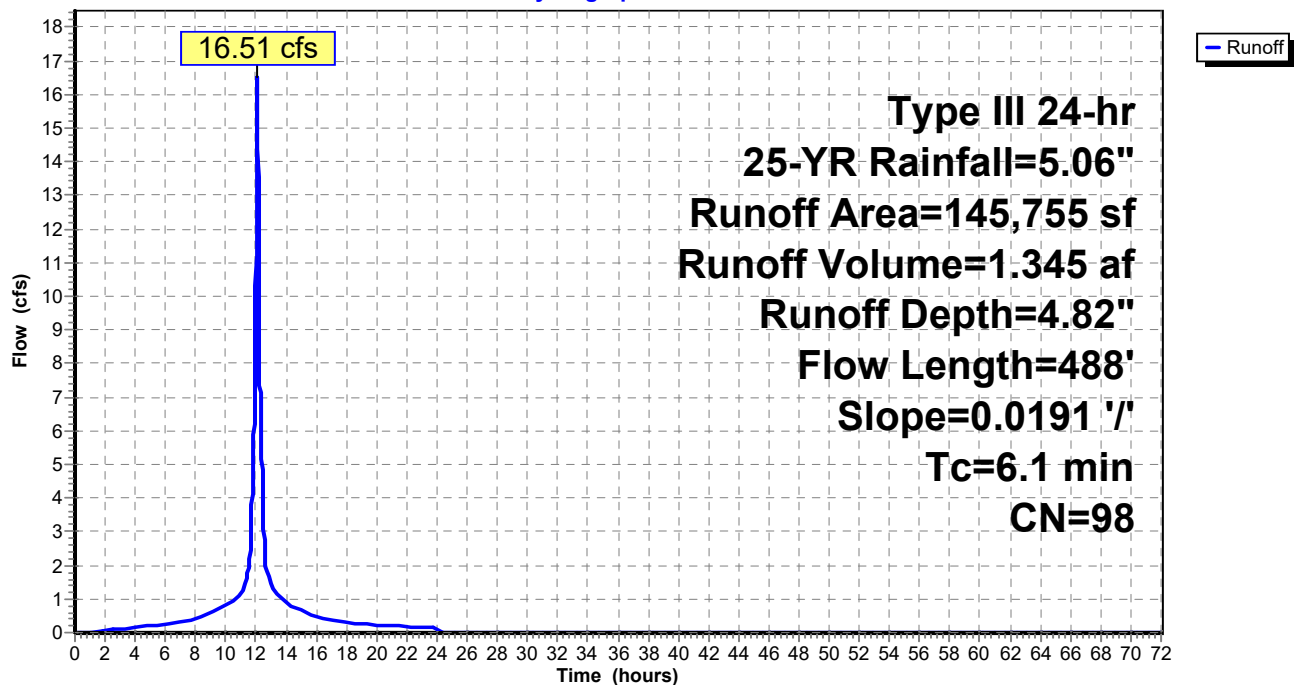
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-YR Rainfall=5.06"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 61,600    | 98 | Roofs HSG A                  |
| 83,399    | 98 | Paved parking HSG A          |
| 756       | 39 | >75% Grass cover, Good HSG A |
| 145,755   | 98 | Weighted Average             |
| 756       |    | 0.52% Pervious Area          |
| 144,999   |    | 99.48% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 6.1      | 488           | 0.0191        | 1.32              |                | Lag/CN Method, |

**Subcatchment S3.1: S3.1 - CBS**

Hydrograph



**Summary for Subcatchment S3.2: S3.2 - CBS**

Runoff = 1.32 cfs @ 12.08 hrs, Volume= 0.104 af, Depth= 4.59"  
 Routed to Pond 3.2P : Catch Basin

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=5.06"

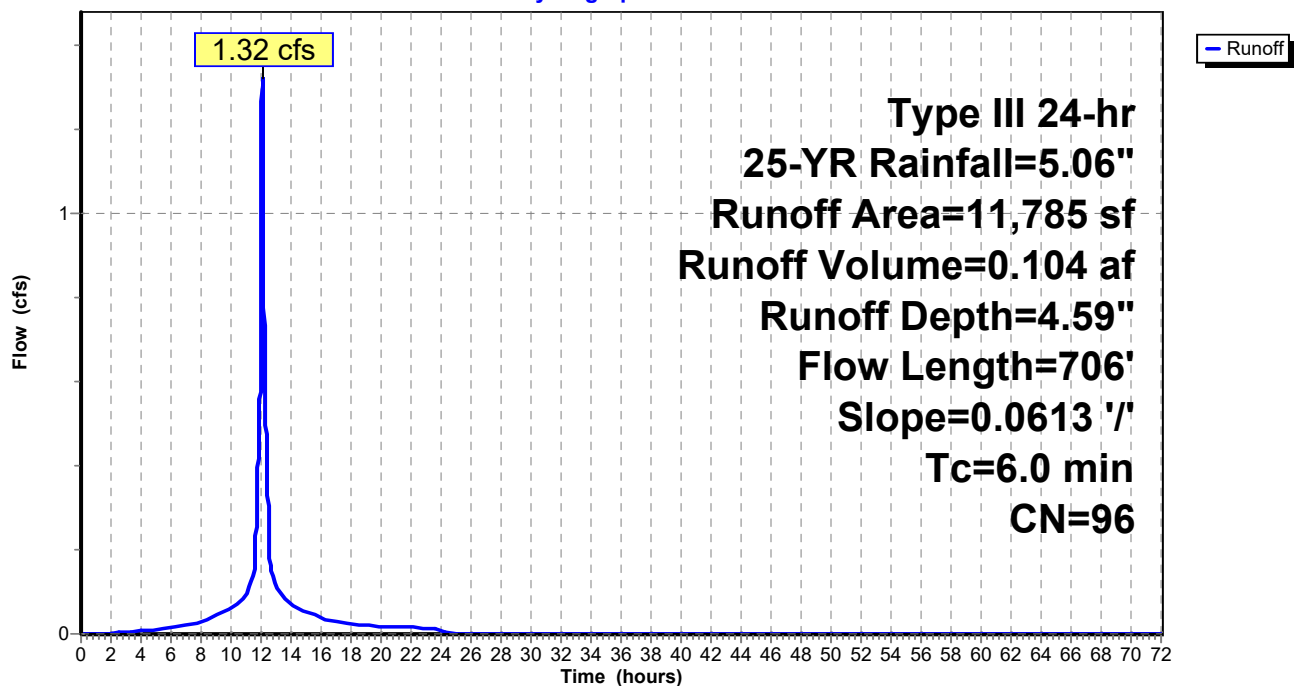
| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 11,313    | 98 | Paved parking HSG A          |
| 473       | 39 | >75% Grass cover, Good HSG A |
| 11,785    | 96 | Weighted Average             |
| 473       |    | 4.01% Pervious Area          |
| 11,313    |    | 95.99% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|------------------------------------------|-------------------|----------------|----------------|
| 5.2      | 706           | 0.0613                                   | 2.28              |                | Lag/CN Method, |
| 5.2      | 706           | Total, Increased to minimum Tc = 6.0 min |                   |                |                |

**Subcatchment S3.2: S3.2 - CBS**

Hydrograph



**Summary for Subcatchment S3.21: S3.21 - CBS**

Runoff = 0.61 cfs @ 12.22 hrs, Volume= 0.067 af, Depth= 1.14"  
 Routed to Pond 3.21P : Catch Basin

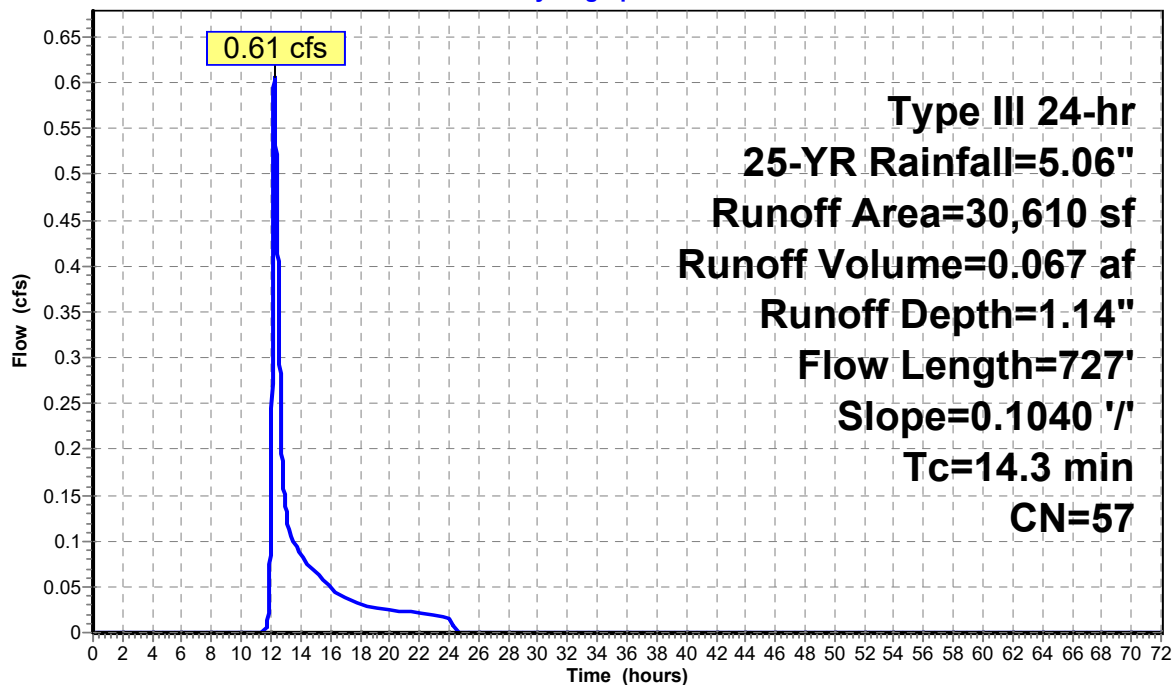
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25-YR Rainfall=5.06"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 13,390    | 30 | Woods, Good HSG A            |
| 11,285    | 98 | Paved parking HSG A          |
| 5,935     | 39 | >75% Grass cover, Good HSG A |
| 30,610    | 57 | Weighted Average             |
| 19,325    |    | 63.13% Pervious Area         |
| 11,285    |    | 36.87% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 14.3     | 727           | 0.1040        | 0.85              |                | Lag/CN Method, |

**Subcatchment S3.21: S3.21 - CBS**

Hydrograph



**Summary for Reach OP-1: Observation Point 1**

Inflow Area = 34.369 ac, 20.70% Impervious, Inflow Depth = 0.36" for 25-YR event

Inflow = 5.86 cfs @ 12.43 hrs, Volume= 1.037 af

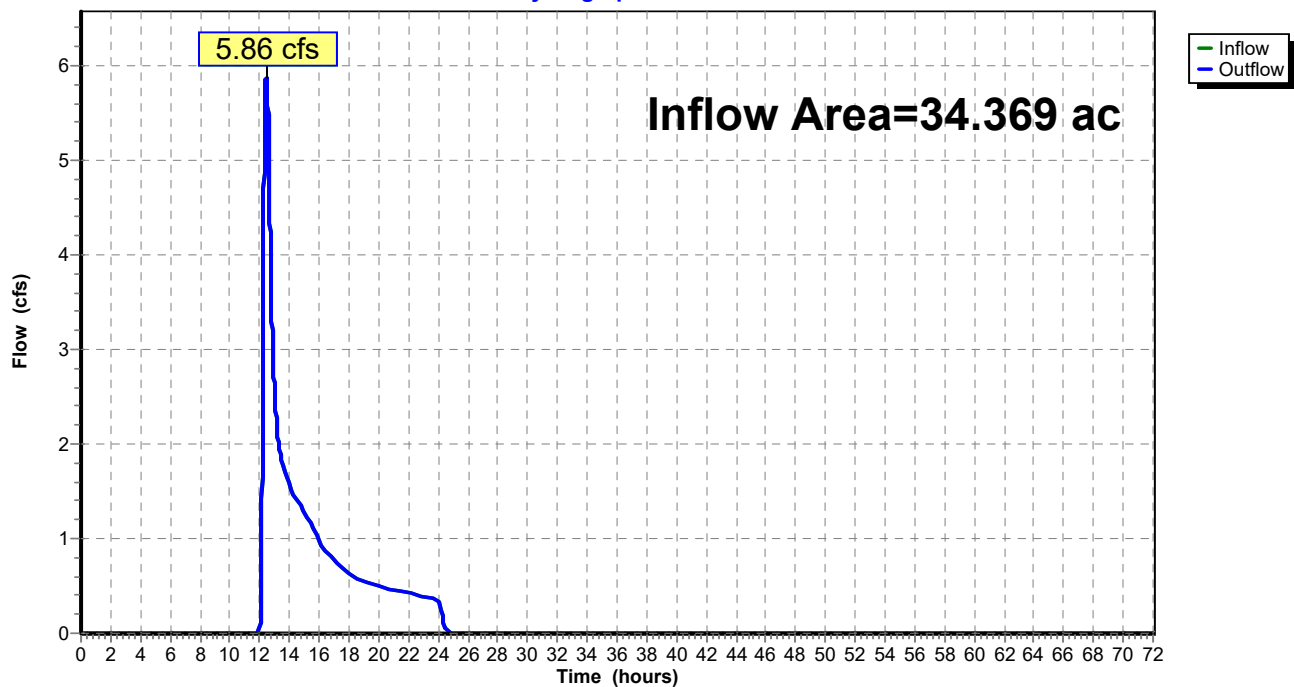
Outflow = 5.86 cfs @ 12.43 hrs, Volume= 1.037 af, Atten= 0%, Lag= 0.0 min

Routed to nonexistent node OP-T

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

**Reach OP-1: Observation Point 1**

Hydrograph



**Summary for Pond 1.11P: Catch Basin**

Inflow Area = 5.802 ac, 34.91% Impervious, Inflow Depth = 1.17" for 25-YR event  
 Inflow = 5.31 cfs @ 12.13 hrs, Volume= 0.564 af  
 Outflow = 5.31 cfs @ 12.13 hrs, Volume= 0.564 af, Atten= 0%, Lag= 0.0 min  
 Primary = 5.31 cfs @ 12.13 hrs, Volume= 0.564 af  
 Routed to Pond 1.1AP : Sediment Forebay

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 359.52' @ 12.14 hrs

Flood Elev= 362.50'

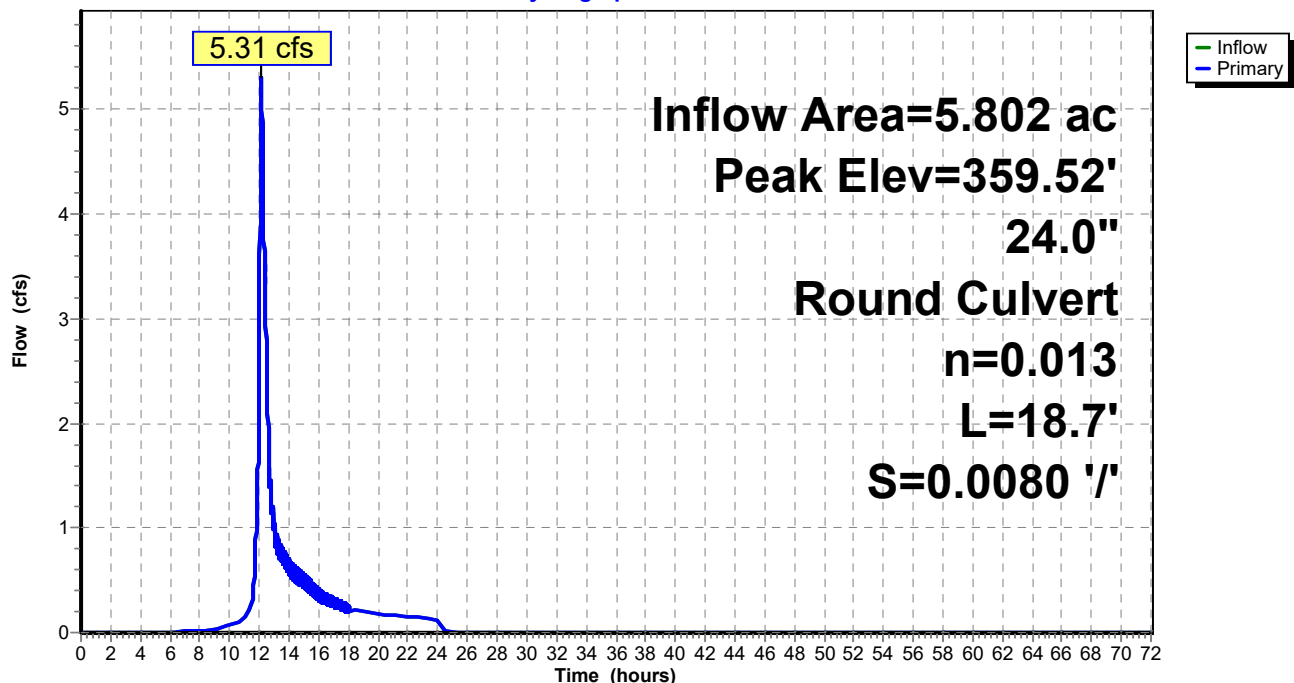
| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                   |
|--------|---------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 357.15' | <b>24.0" Round Culvert</b><br>L= 18.7' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 357.15' / 357.00' S= 0.0080 '/ Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf |

**Primary OutFlow** Max=5.21 cfs @ 12.13 hrs HW=359.51' TW=359.32' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 5.21 cfs @ 1.66 fps)

**Pond 1.11P: Catch Basin**

Hydrograph



**Summary for Pond 1.1AP: Sediment Forebay**

Inflow Area = 6.146 ac, 32.96% Impervious, Inflow Depth = 1.15" for 25-YR event  
 Inflow = 5.60 cfs @ 12.13 hrs, Volume= 0.591 af  
 Outflow = 5.39 cfs @ 12.16 hrs, Volume= 0.537 af, Atten= 4%, Lag= 1.9 min  
 Primary = 5.39 cfs @ 12.16 hrs, Volume= 0.537 af  
 Routed to Pond 1.1P : Infiltration Basin A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Peak Elev= 359.33' @ 12.16 hrs Surf.Area= 2,687 sf Storage= 3,181 cf  
 Flood Elev= 361.00' Surf.Area= 4,693 sf Storage= 9,274 cf

Plug-Flow detention time= 71.6 min calculated for 0.537 af (91% of inflow)  
 Center-of-Mass det. time= 25.8 min ( 889.6 - 863.9 )

| Volume              | Invert               | Avail.Storage    | Storage Description                                        |                           |                     |  |
|---------------------|----------------------|------------------|------------------------------------------------------------|---------------------------|---------------------|--|
| #1                  | 357.00'              | 9,274 cf         | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                           |                     |  |
| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Perim.<br>(feet) | Inc.Store<br>(cubic-feet)                                  | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |  |
| 357.00              | 313                  | 317.0            | 0                                                          | 0                         | 313                 |  |
| 359.00              | 2,359                | 365.0            | 2,354                                                      | 2,354                     | 3,006               |  |
| 361.00              | 4,693                | 413.0            | 6,920                                                      | 9,274                     | 6,078               |  |

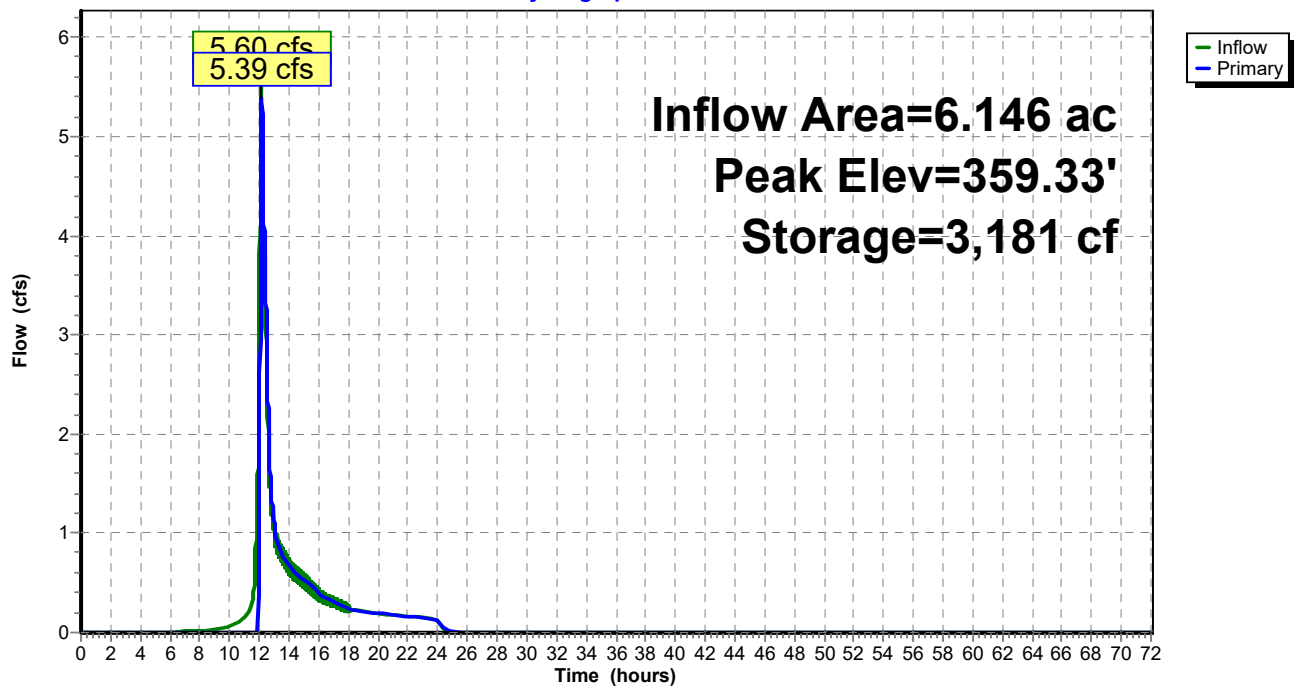
  

| Device | Routing | Invert  | Outlet Devices                                          |      |      |      |      |      |      |      |      |  |
|--------|---------|---------|---------------------------------------------------------|------|------|------|------|------|------|------|------|--|
| #1     | Primary | 359.00' | <b>10.0' long + 3.0 ' SideZ x 14.0' breadth FOREBAY</b> |      |      |      |      |      |      |      |      |  |
|        |         |         | Head (feet)                                             | 0.20 | 0.40 | 0.60 | 0.80 | 1.00 | 1.20 | 1.40 | 1.60 |  |
|        |         |         | Coef. (English)                                         | 2.64 | 2.67 | 2.70 | 2.65 | 2.64 | 2.65 | 2.65 | 2.63 |  |

**Primary OutFlow** Max=5.39 cfs @ 12.16 hrs HW=359.33' TW=357.53' (Dynamic Tailwater)  
 ↗1=FOREBAY (Weir Controls 5.39 cfs @ 1.50 fps)

**Pond 1.1AP: Sediment Forebay**

Hydrograph



**Summary for Pond 1.1P: Infiltration Basin A**

Inflow Area = 6.146 ac, 32.96% Impervious, Inflow Depth = 1.05" for 25-YR event  
 Inflow = 5.39 cfs @ 12.16 hrs, Volume= 0.537 af  
 Outflow = 0.96 cfs @ 13.14 hrs, Volume= 0.537 af, Atten= 82%, Lag= 58.6 min  
 Discarded = 0.96 cfs @ 13.14 hrs, Volume= 0.537 af  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Reach OP-1 : Observation Point 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Peak Elev= 358.80' @ 13.14 hrs Surf.Area= 4,869 sf Storage= 7,208 cf  
 Flood Elev= 361.00' Surf.Area= 7,245 sf Storage= 20,470 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)  
 Center-of-Mass det. time= 72.3 min ( 961.9 - 889.6 )

| Volume | Invert  | Avail.Storage | Storage Description                                        |
|--------|---------|---------------|------------------------------------------------------------|
| #1     | 357.00' | 20,470 cf     | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |

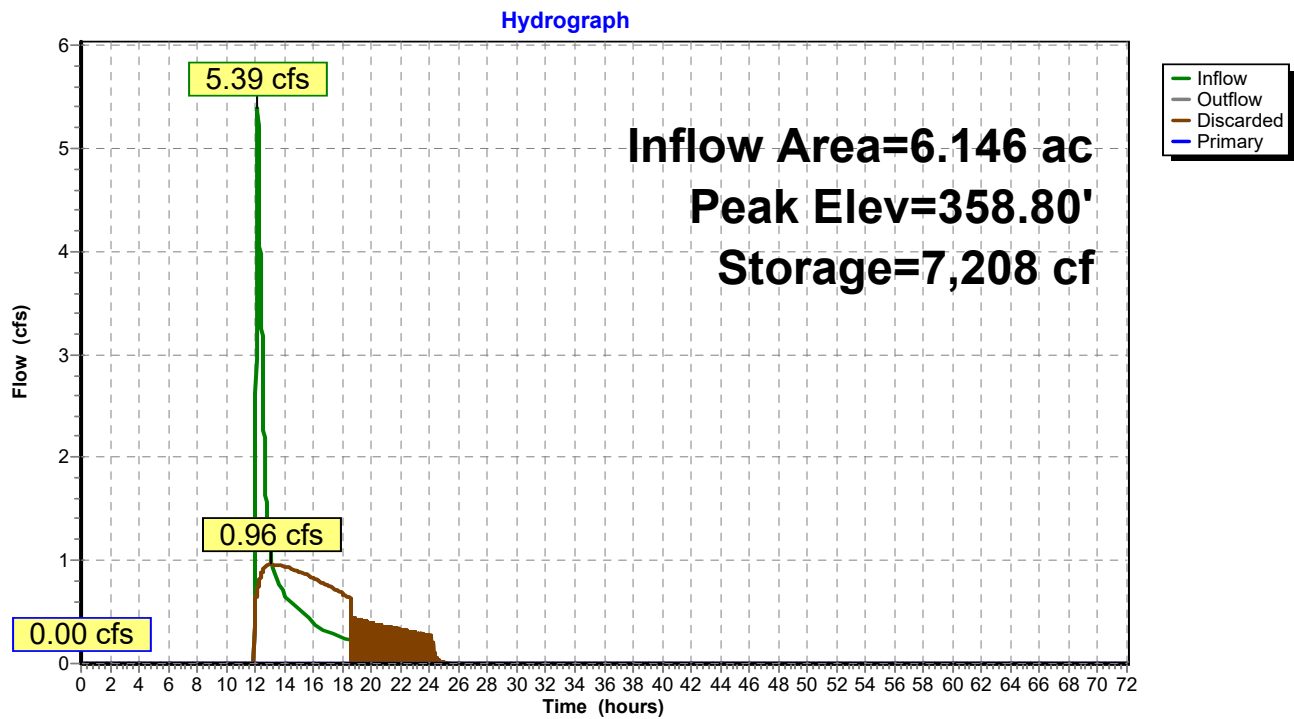
| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Perim.<br>(feet) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |
|---------------------|----------------------|------------------|---------------------------|---------------------------|---------------------|
| 357.00              | 3,206                | 281.5            | 0                         | 0                         | 3,206               |
| 359.00              | 5,077                | 338.5            | 8,212                     | 8,212                     | 6,086               |
| 361.00              | 7,245                | 383.4            | 12,258                    | 20,470                    | 8,764               |

| Device | Routing   | Invert  | Outlet Devices                                                                                                                                                                                                                                                                                  |
|--------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Discarded | 357.00' | <b>8.530 in/hr Exfiltration over Surface area</b>                                                                                                                                                                                                                                               |
| #2     | Primary   | 357.00' | <b>18.0" Round Culvert</b><br>L= 25.0' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 357.00' / 356.50' S= 0.0200 ' S= 0.0200 ' Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf                                                                     |
| #3     | Primary   | 360.50' | <b>10.0' long + 3.0 ' SideZ x 7.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00<br>2.50 3.00 3.50 4.00 4.50 5.00 5.50<br>Coef. (English) 2.40 2.52 2.70 2.68 2.68 2.67 2.66 2.65 2.65<br>2.65 2.66 2.65 2.66 2.68 2.70 2.73 2.78 |
| #4     | Device 2  | 360.50' | <b>24.0" x 24.0" Horiz. RIM</b> C= 0.600<br>Limited to weir flow at low heads                                                                                                                                                                                                                   |
| #5     | Primary   | 359.75' | <b>3.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads                                                                                                                                                                                                                      |

**Discarded OutFlow** Max=0.96 cfs @ 13.14 hrs HW=358.80' (Free Discharge)  
 1=Exfiltration (Exfiltration Controls 0.96 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=357.00' TW=0.00' (Dynamic Tailwater)  
 2=Culvert ( Controls 0.00 cfs)  
 4=RIM ( Controls 0.00 cfs)  
 3=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)  
 5=Orifice/Grate ( Controls 0.00 cfs)

## Pond 1.1P: Infiltration Basin A



**Summary for Pond 1.2P: Catch Basin**

Inflow Area = 1.763 ac, 12.06% Impervious, Inflow Depth = 0.29" for 25-YR event  
 Inflow = 0.14 cfs @ 12.50 hrs, Volume= 0.042 af  
 Outflow = 0.19 cfs @ 12.50 hrs, Volume= 0.042 af, Atten= 0%, Lag= 0.0 min  
 Primary = 0.19 cfs @ 12.50 hrs, Volume= 0.042 af  
 Routed to Pond 1.11P : Catch Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 359.52' @ 12.16 hrs

Flood Elev= 362.50'

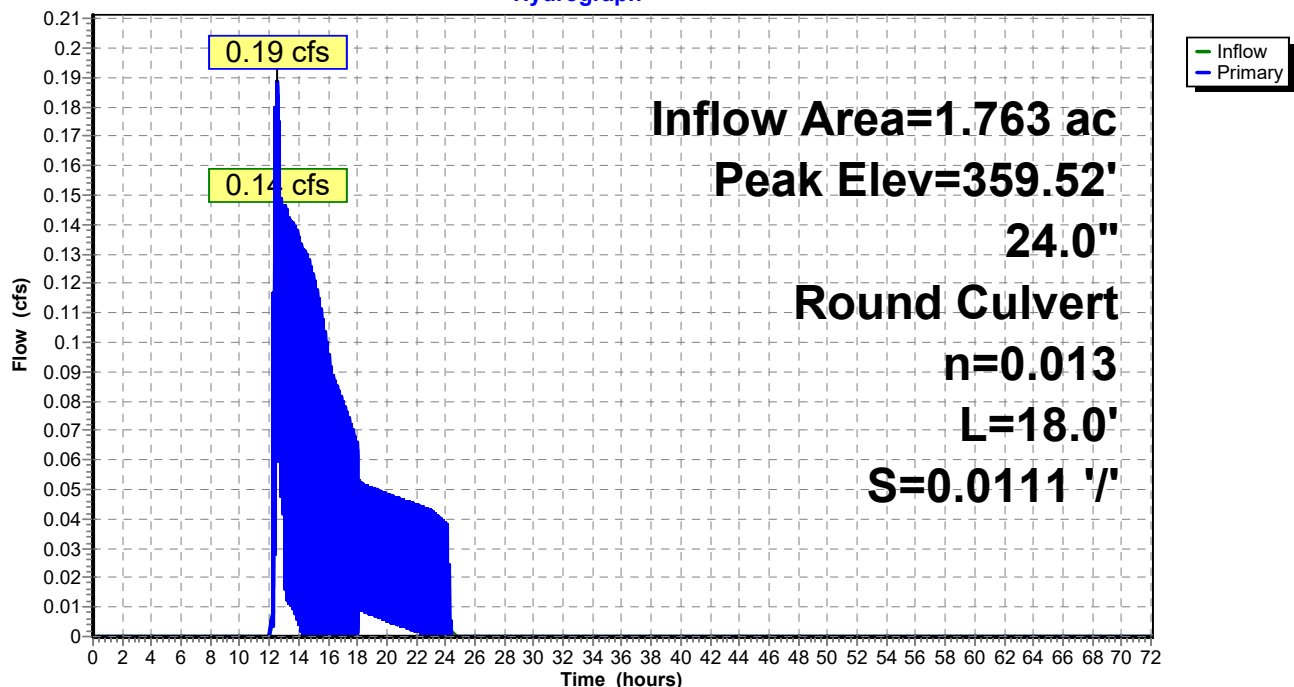
| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                    |
|--------|---------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 357.35' | <b>24.0" Round Culvert</b><br>L= 18.0' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 357.35' / 357.15' S= 0.0111 '/' Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf |

**Primary OutFlow** Max=0.64 cfs @ 12.50 hrs HW=359.28' TW=359.27' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 0.64 cfs @ 0.21 fps)

**Pond 1.2P: Catch Basin**

Hydrograph



**Summary for Pond 1.3P: Catch Basin**

Inflow Area = 3.919 ac, 43.32% Impervious, Inflow Depth = 1.46" for 25-YR event  
 Inflow = 4.80 cfs @ 12.13 hrs, Volume= 0.476 af  
 Outflow = 4.80 cfs @ 12.13 hrs, Volume= 0.476 af, Atten= 0%, Lag= 0.0 min  
 Primary = 4.80 cfs @ 12.13 hrs, Volume= 0.476 af  
 Routed to Pond 1.11P : Catch Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 360.02' @ 12.14 hrs

Flood Elev= 362.99'

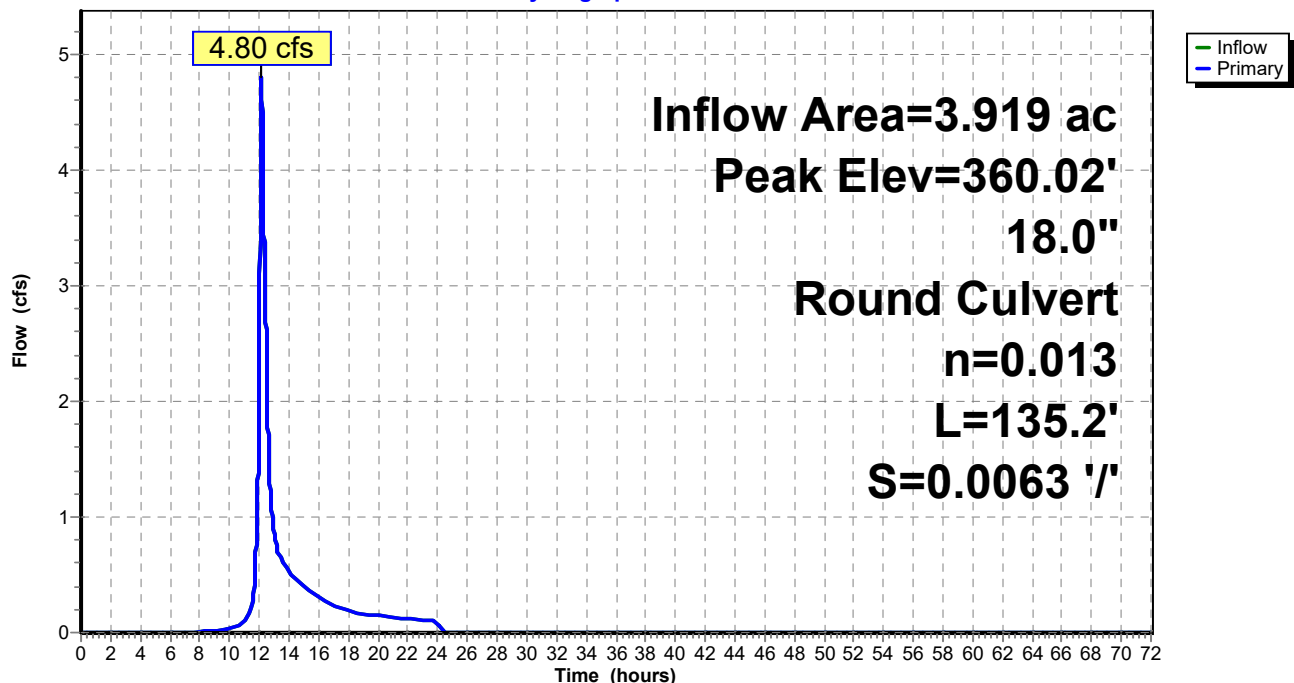
| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                    |
|--------|---------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 358.10' | <b>18.0" Round Culvert</b><br>L= 135.2' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 358.10' / 357.25' S= 0.0063 '/ Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf |

**Primary OutFlow** Max=4.77 cfs @ 12.13 hrs HW=360.02' TW=359.51' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 4.77 cfs @ 2.70 fps)

**Pond 1.3P: Catch Basin**

Hydrograph



**Summary for Pond 1.41P: Catch Basin**

Inflow Area = 1.671 ac, 34.39% Impervious, Inflow Depth = 1.55" for 25-YR event  
 Inflow = 2.50 cfs @ 12.15 hrs, Volume= 0.215 af  
 Outflow = 2.52 cfs @ 12.15 hrs, Volume= 0.215 af, Atten= 0%, Lag= 0.2 min  
 Primary = 2.52 cfs @ 12.15 hrs, Volume= 0.215 af  
 Routed to Pond 1.42P : Catch Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 357.13' @ 12.16 hrs

Flood Elev= 357.65'

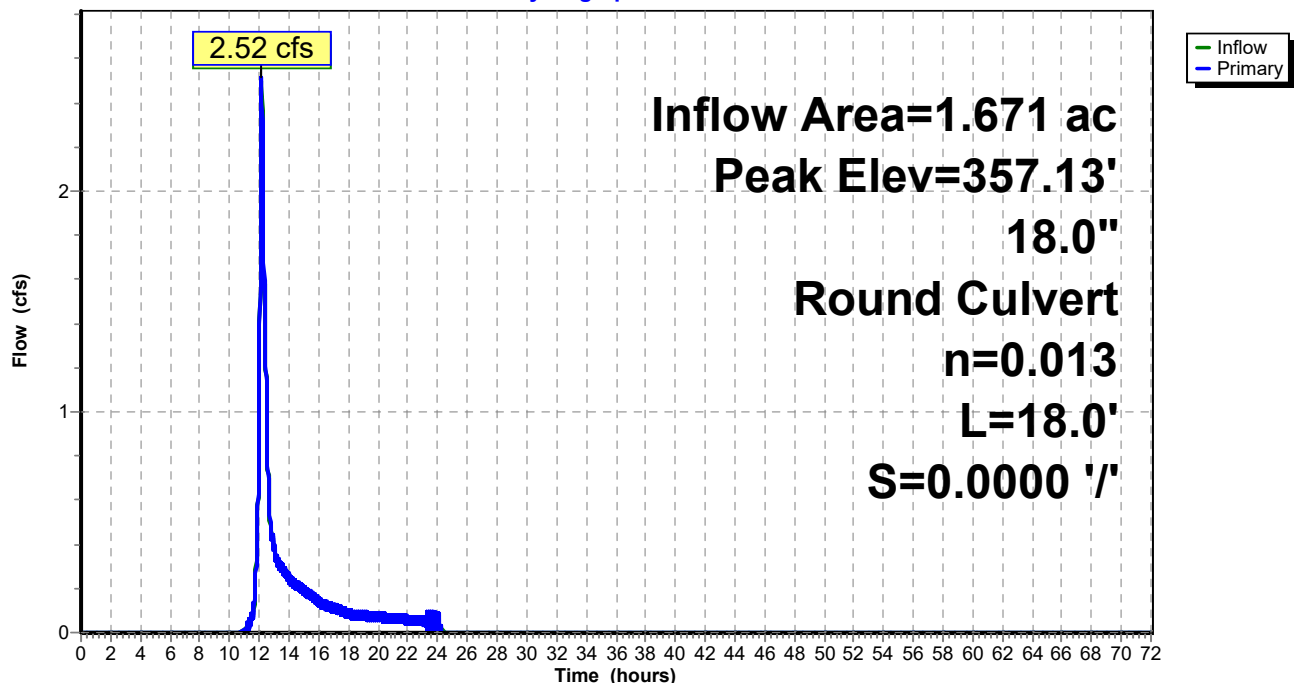
| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                    |
|--------|---------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 353.15' | <b>18.0" Round Culvert</b><br>L= 18.0' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 353.15' / 353.15' S= 0.0000 '/' Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf |

**Primary OutFlow** Max=2.31 cfs @ 12.15 hrs HW=357.11' TW=356.99' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 2.31 cfs @ 1.31 fps)

**Pond 1.41P: Catch Basin**

Hydrograph



**Summary for Pond 1.42P: Catch Basin**

Inflow Area = 2.690 ac, 43.80% Impervious, Inflow Depth = 2.11" for 25-YR event  
 Inflow = 5.78 cfs @ 12.13 hrs, Volume= 0.473 af  
 Outflow = 5.78 cfs @ 12.13 hrs, Volume= 0.473 af, Atten= 0%, Lag= 0.0 min  
 Primary = 5.78 cfs @ 12.13 hrs, Volume= 0.473 af  
 Routed to Pond 2P : Sediment Forebay

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 357.00' @ 12.15 hrs

Flood Elev= 357.65'

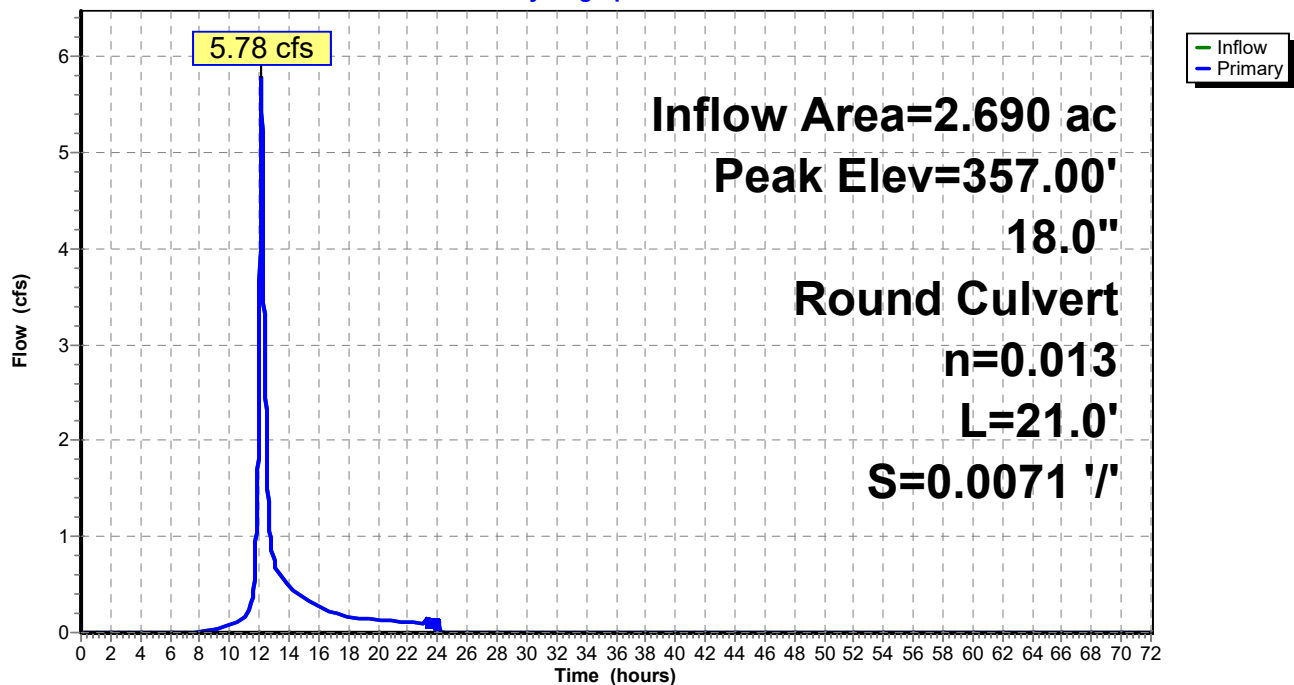
| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                   |
|--------|---------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 353.15' | <b>18.0" Round Culvert</b><br>L= 21.0' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 353.15' / 353.00' S= 0.0071 '/ Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf |

**Primary OutFlow** Max=5.63 cfs @ 12.13 hrs HW=356.95' TW=356.25' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 5.63 cfs @ 3.19 fps)

**Pond 1.42P: Catch Basin**

Hydrograph



**Summary for Pond 1.43P: Infiltration Basin D**

Inflow Area = 3.121 ac, 39.30% Impervious, Inflow Depth = 1.58" for 25-YR event  
 Inflow = 5.23 cfs @ 12.19 hrs, Volume= 0.410 af  
 Outflow = 0.49 cfs @ 14.21 hrs, Volume= 0.410 af, Atten= 91%, Lag= 121.1 min  
 Discarded = 0.49 cfs @ 14.21 hrs, Volume= 0.410 af  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Reach OP-1 : Observation Point 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Peak Elev= 355.76' @ 14.21 hrs Surf.Area= 3,894 sf Storage= 7,168 cf  
 Flood Elev= 357.00' Surf.Area= 5,210 sf Storage= 12,808 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)  
 Center-of-Mass det. time= 180.8 min ( 1,070.2 - 889.4 )

| Volume              | Invert               | Avail.Storage    | Storage Description                                        |                           |                     |
|---------------------|----------------------|------------------|------------------------------------------------------------|---------------------------|---------------------|
| #1                  | 353.00'              | 12,808 cf        | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                           |                     |
| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Perim.<br>(feet) | Inc.Store<br>(cubic-feet)                                  | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |
| 353.00              | 1,423                | 271.5            | 0                                                          | 0                         | 1,423               |
| 355.00              | 3,187                | 315.6            | 4,493                                                      | 4,493                     | 3,565               |
| 357.00              | 5,210                | 358.3            | 8,315                                                      | 12,808                    | 5,952               |

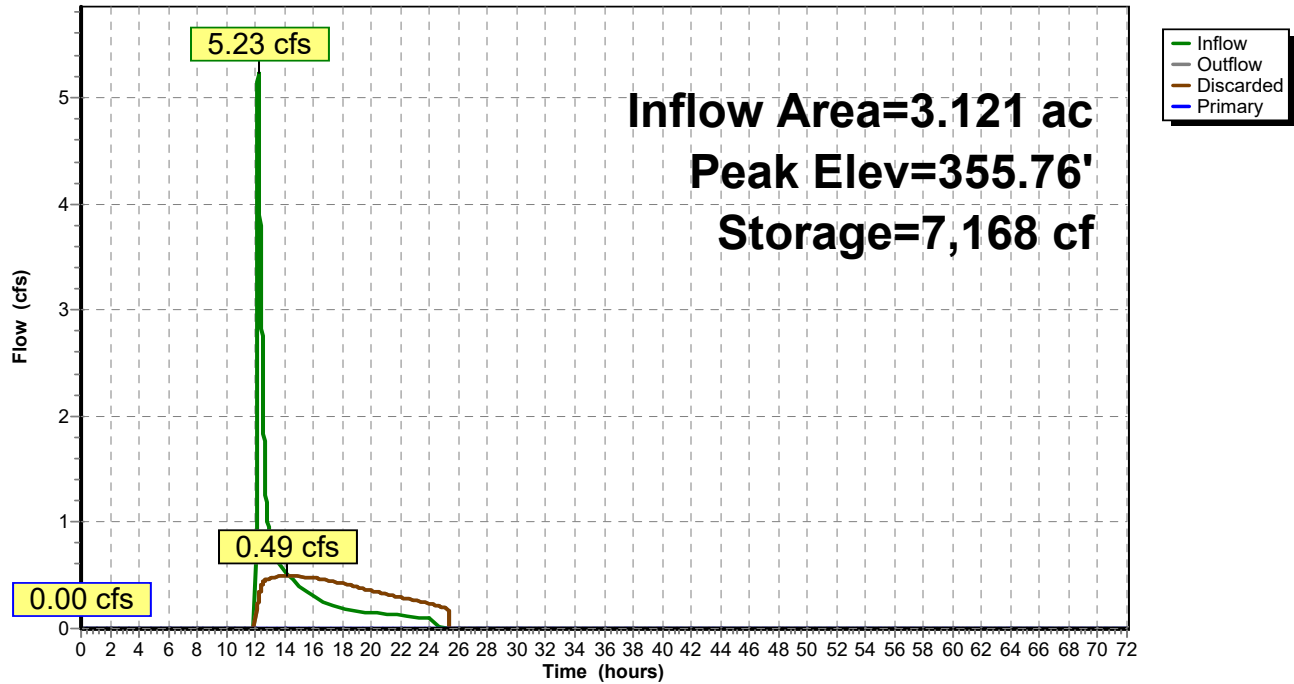
| Device | Routing   | Invert  | Outlet Devices                                                               |  |  |  |  |  |  |  |  |  |  |  |  |
|--------|-----------|---------|------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| #1     | Primary   | 356.50' | <b>5.0' long + 3.0 ' SideZ x 7.0' breadth Broad-Crested Rectangular Weir</b> |  |  |  |  |  |  |  |  |  |  |  |  |
|        |           |         | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00                |  |  |  |  |  |  |  |  |  |  |  |  |
|        |           |         | 2.50 3.00 3.50 4.00 4.50 5.00 5.50                                           |  |  |  |  |  |  |  |  |  |  |  |  |
|        |           |         | Coef. (English) 2.40 2.52 2.70 2.68 2.68 2.67 2.66 2.65 2.65                 |  |  |  |  |  |  |  |  |  |  |  |  |
|        |           |         | 2.65 2.66 2.65 2.66 2.68 2.70 2.73 2.78                                      |  |  |  |  |  |  |  |  |  |  |  |  |
| #2     | Discarded | 353.00' | <b>5.490 in/hr Exfiltration over Surface area</b>                            |  |  |  |  |  |  |  |  |  |  |  |  |

**Discarded OutFlow** Max=0.49 cfs @ 14.21 hrs HW=355.76' (Free Discharge)

↑**2=Exfiltration** (Exfiltration Controls 0.49 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=353.00' TW=0.00' (Dynamic Tailwater)

↑**1=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

**Pond 1.43P: Infiltration Basin D****Hydrograph**

**Summary for Pond 1.4P: Catch Basin**

Inflow Area = 3.915 ac, 43.26% Impervious, Inflow Depth = 1.45" for 25-YR event  
 Inflow = 4.79 cfs @ 12.13 hrs, Volume= 0.474 af  
 Outflow = 4.79 cfs @ 12.13 hrs, Volume= 0.474 af, Atten= 0%, Lag= 0.0 min  
 Primary = 4.79 cfs @ 12.13 hrs, Volume= 0.474 af  
 Routed to Pond 1.3P : Catch Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 360.52' @ 12.15 hrs

Flood Elev= 363.27'

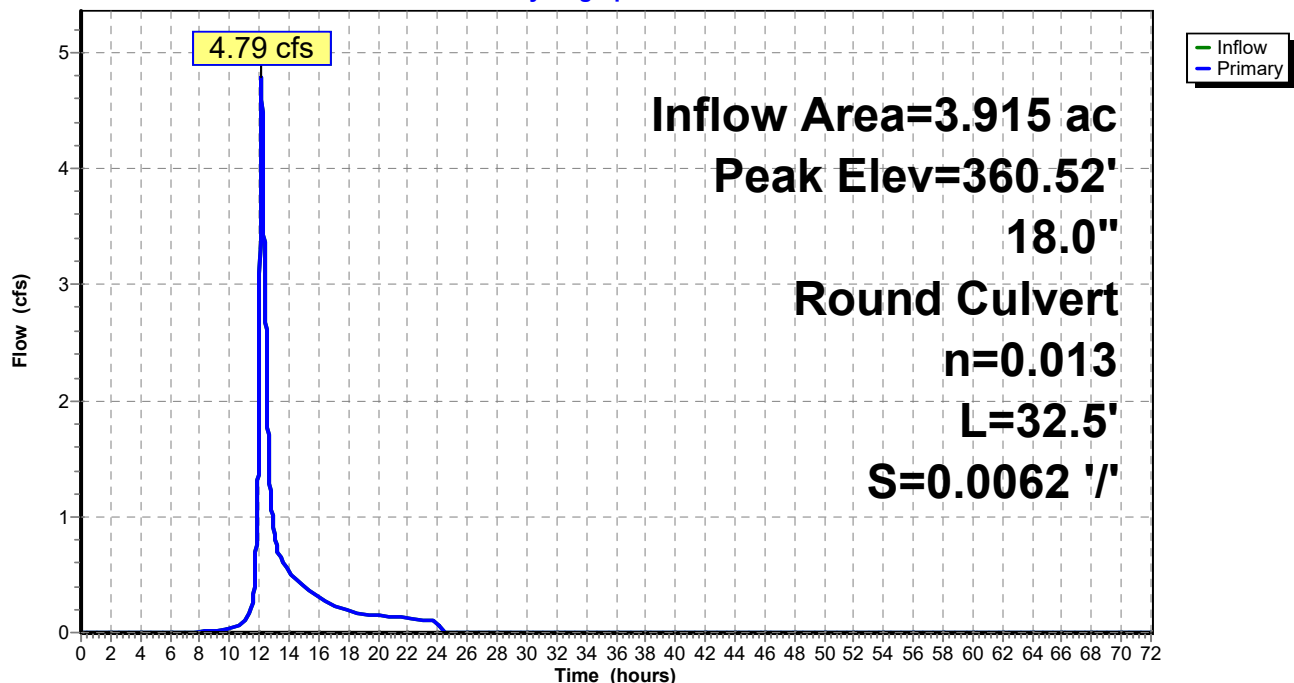
| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                   |
|--------|---------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 358.30' | <b>18.0" Round Culvert</b><br>L= 32.5' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 358.30' / 358.10' S= 0.0062 '/ Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf |

**Primary OutFlow** Max=4.70 cfs @ 12.13 hrs HW=360.51' TW=360.02' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 4.70 cfs @ 2.66 fps)

**Pond 1.4P: Catch Basin**

Hydrograph



**Summary for Pond 1.51P: Catch Basin**

Inflow Area = 1.250 ac, 36.01% Impervious, Inflow Depth = 1.71" for 25-YR event  
 Inflow = 1.44 cfs @ 12.12 hrs, Volume= 0.178 af  
 Outflow = 1.44 cfs @ 12.12 hrs, Volume= 0.178 af, Atten= 0%, Lag= 0.0 min  
 Primary = 1.44 cfs @ 12.12 hrs, Volume= 0.178 af  
 Routed to Pond 1.5P : Catch Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 364.77' @ 12.14 hrs

Flood Elev= 368.68'

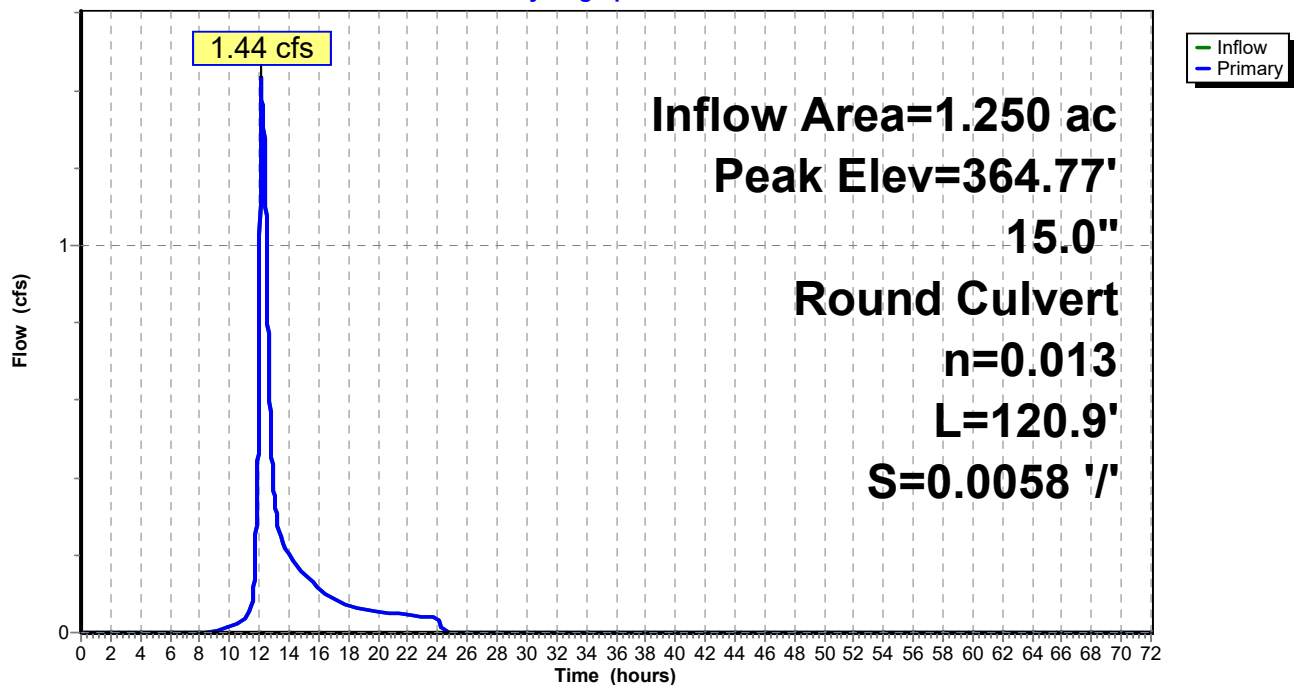
| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                    |
|--------|---------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 363.90' | <b>15.0" Round Culvert</b><br>L= 120.9' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 363.90' / 363.20' S= 0.0058 '/ Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf |

**Primary OutFlow** Max=1.42 cfs @ 12.12 hrs HW=364.77' TW=364.42' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 1.42 cfs @ 2.20 fps)

**Pond 1.51P: Catch Basin**

Hydrograph



**Summary for Pond 1.52P: Catch Basin**

Inflow Area = 0.424 ac, 44.05% Impervious, Inflow Depth = 2.43" for 25-YR event  
 Inflow = 1.13 cfs @ 12.10 hrs, Volume= 0.086 af  
 Outflow = 1.13 cfs @ 12.10 hrs, Volume= 0.086 af, Atten= 0%, Lag= 0.0 min  
 Primary = 1.13 cfs @ 12.10 hrs, Volume= 0.086 af  
 Routed to Pond 1.51P : Catch Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 366.01' @ 12.11 hrs

Flood Elev= 370.12'

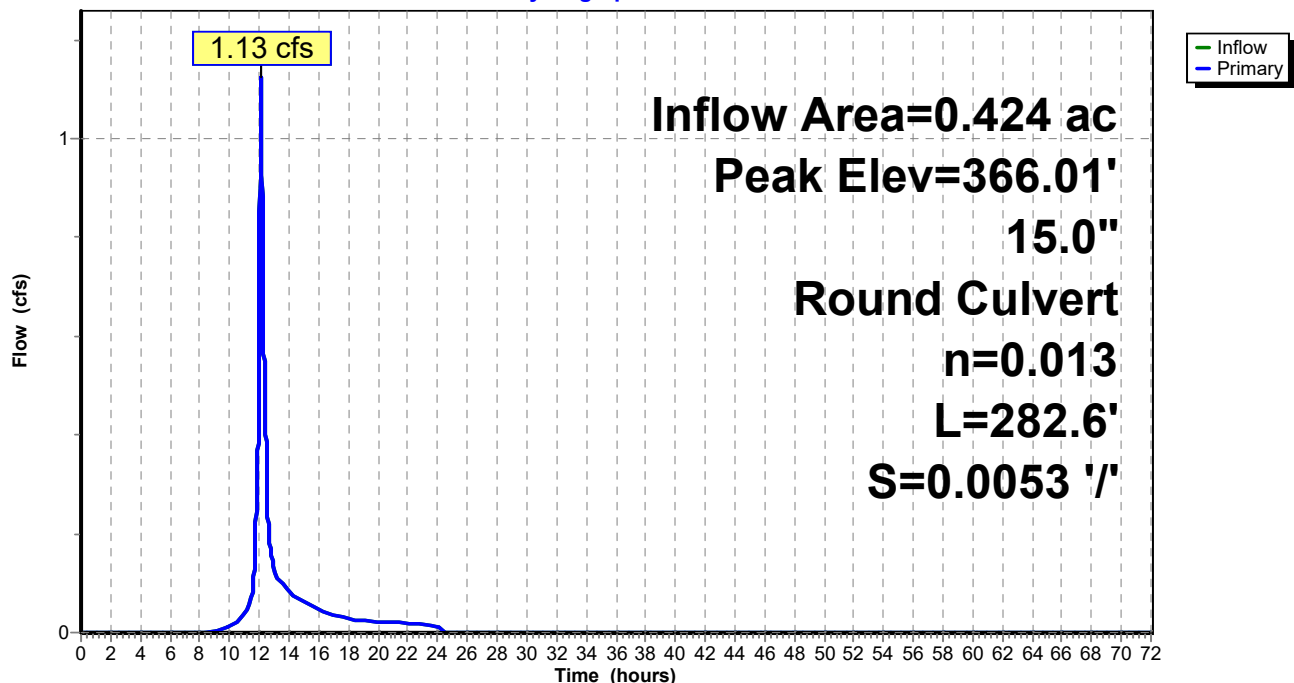
| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                     |
|--------|---------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 365.40' | <b>15.0" Round Culvert</b><br>L= 282.6' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 365.40' / 363.90' S= 0.0053 '/' Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf |

**Primary OutFlow** Max=1.11 cfs @ 12.10 hrs HW=366.01' TW=364.74' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 1.11 cfs @ 2.75 fps)

**Pond 1.52P: Catch Basin**

Hydrograph



**Summary for Pond 1.53P: Catch Basin**

Inflow Area = 0.257 ac, 35.92% Impervious, Inflow Depth = 2.16" for 25-YR event  
 Inflow = 0.59 cfs @ 12.12 hrs, Volume= 0.046 af  
 Outflow = 0.59 cfs @ 12.12 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.0 min  
 Primary = 0.59 cfs @ 12.12 hrs, Volume= 0.046 af  
 Routed to Pond 1.52P : Catch Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 366.10' @ 12.12 hrs

Flood Elev= 370.17'

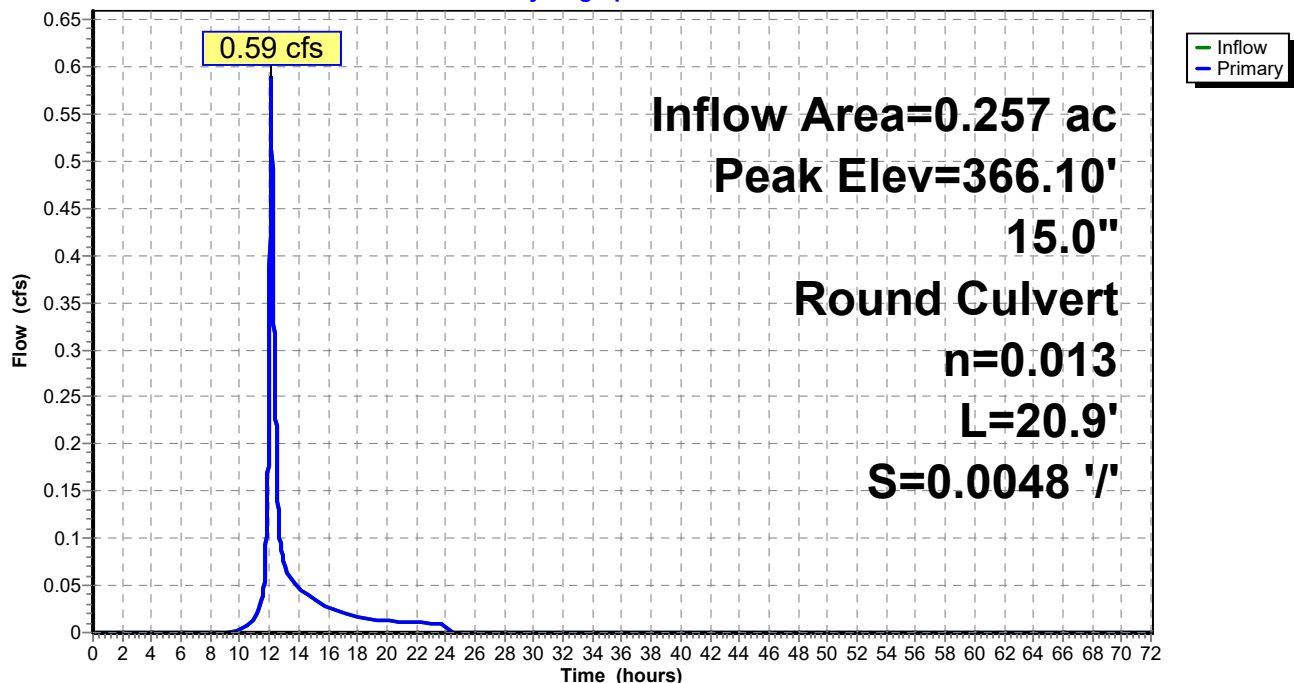
| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                   |
|--------|---------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 365.50' | <b>15.0" Round Culvert</b><br>L= 20.9' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 365.50' / 365.40' S= 0.0048 '/ Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf |

**Primary OutFlow** Max=0.60 cfs @ 12.12 hrs HW=366.10' TW=366.01' (Dynamic Tailwater)

↑ **1=Culvert** (Outlet Controls 0.60 cfs @ 1.51 fps)

**Pond 1.53P: Catch Basin**

Hydrograph



**Summary for Pond 1.5P: Catch Basin**

Inflow Area = 3.544 ac, 45.57% Impervious, Inflow Depth = 1.52" for 25-YR event  
 Inflow = 4.58 cfs @ 12.13 hrs, Volume= 0.449 af  
 Outflow = 4.58 cfs @ 12.13 hrs, Volume= 0.449 af, Atten= 0%, Lag= 0.0 min  
 Primary = 4.58 cfs @ 12.13 hrs, Volume= 0.449 af  
 Routed to Pond 1.4P : Catch Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

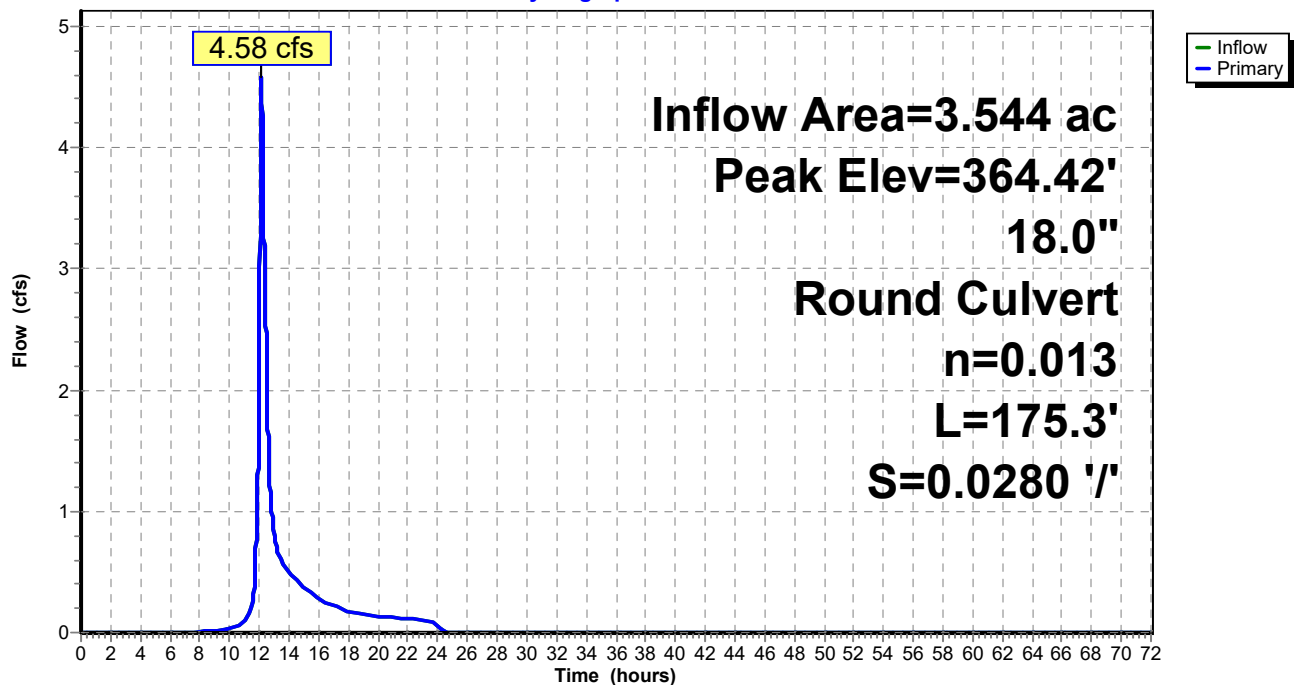
Peak Elev= 364.42' @ 12.13 hrs

Flood Elev= 367.78'

| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                    |
|--------|---------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 363.20' | <b>18.0" Round Culvert</b><br>L= 175.3' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 363.20' / 358.30' S= 0.0280 '/ Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf |

**Primary OutFlow** Max=4.57 cfs @ 12.13 hrs HW=364.42' TW=360.50' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 4.57 cfs @ 2.97 fps)

**Pond 1.5P: Catch Basin****Hydrograph**

**Summary for Pond 1.6P: Catch Basin**

Inflow Area = 0.874 ac, 66.59% Impervious, Inflow Depth = 1.20" for 25-YR event  
 Inflow = 1.15 cfs @ 12.10 hrs, Volume= 0.088 af  
 Outflow = 1.15 cfs @ 12.10 hrs, Volume= 0.088 af, Atten= 0%, Lag= 0.0 min  
 Primary = 1.15 cfs @ 12.10 hrs, Volume= 0.088 af  
 Routed to Pond 1.5P : Catch Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

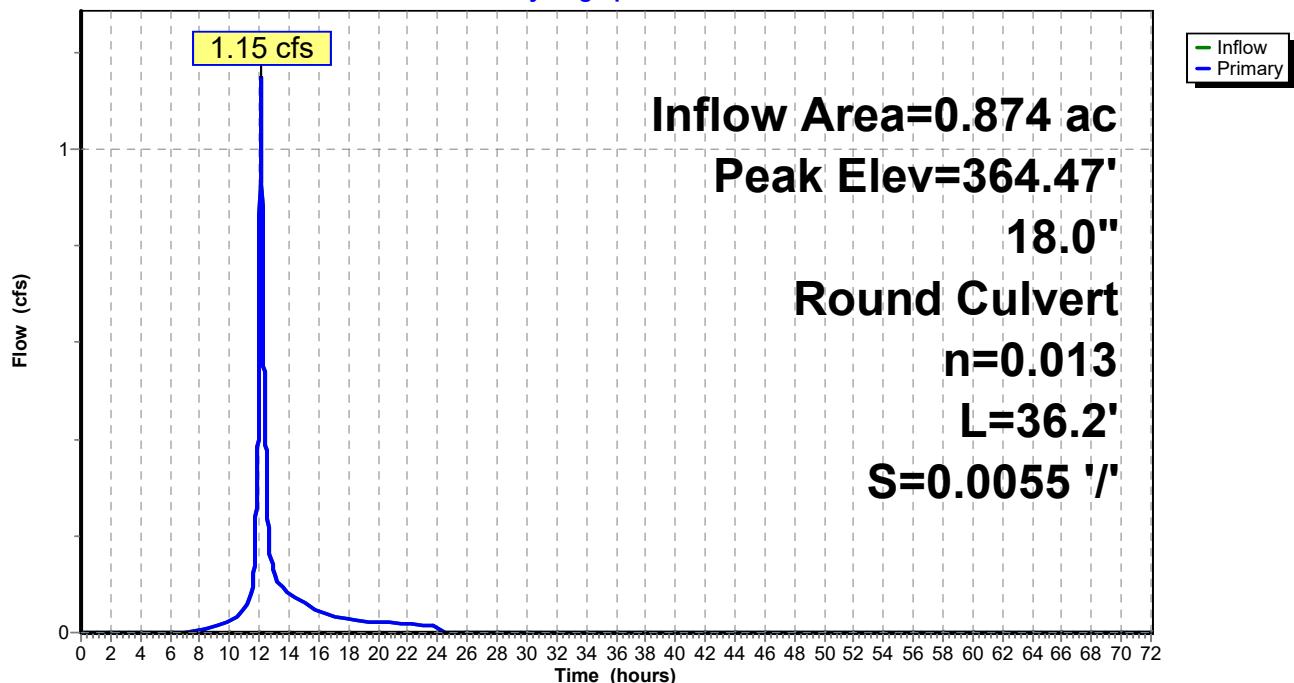
Peak Elev= 364.47' @ 12.14 hrs

Flood Elev= 369.07'

| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                   |
|--------|---------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 363.40' | <b>18.0" Round Culvert</b><br>L= 36.2' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 363.40' / 363.20' S= 0.0055 '/ Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf |

**Primary OutFlow** Max=0.88 cfs @ 12.10 hrs HW=364.43' TW=364.39' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 0.88 cfs @ 0.97 fps)

**Pond 1.6P: Catch Basin****Hydrograph**

**Summary for Pond 1.7P: Catch Basin**

Inflow Area = 0.840 ac, 66.22% Impervious, Inflow Depth = 1.12" for 25-YR event  
 Inflow = 1.02 cfs @ 12.11 hrs, Volume= 0.078 af  
 Outflow = 1.02 cfs @ 12.11 hrs, Volume= 0.078 af, Atten= 0%, Lag= 0.0 min  
 Primary = 1.02 cfs @ 12.11 hrs, Volume= 0.078 af  
 Routed to Pond 1.6P : Catch Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

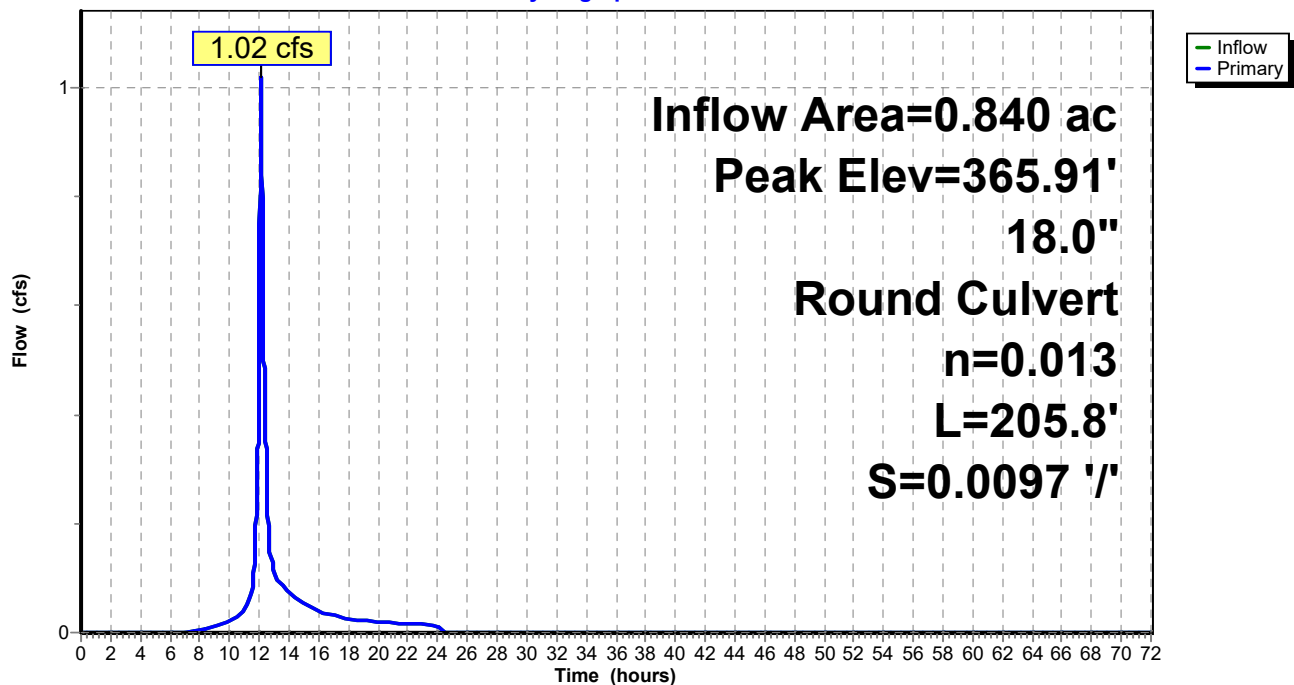
Peak Elev= 365.91' @ 12.11 hrs

Flood Elev= 372.97'

| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                     |
|--------|---------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 365.40' | <b>18.0" Round Culvert</b><br>L= 205.8' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 365.40' / 363.40' S= 0.0097 '/' Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf |

**Primary OutFlow** Max=1.02 cfs @ 12.11 hrs HW=365.91' TW=364.44' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 1.02 cfs @ 1.92 fps)

**Pond 1.7P: Catch Basin****Hydrograph**

**Summary for Pond 1.8P: Catch Basin**

Inflow Area = 0.717 ac, 71.65% Impervious, Inflow Depth = 1.14" for 25-YR event  
 Inflow = 0.90 cfs @ 12.11 hrs, Volume= 0.068 af  
 Outflow = 0.90 cfs @ 12.11 hrs, Volume= 0.068 af, Atten= 0%, Lag= 0.0 min  
 Primary = 0.90 cfs @ 12.11 hrs, Volume= 0.068 af  
 Routed to Pond 1.7P : Catch Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 366.13' @ 12.11 hrs

Flood Elev= 372.95'

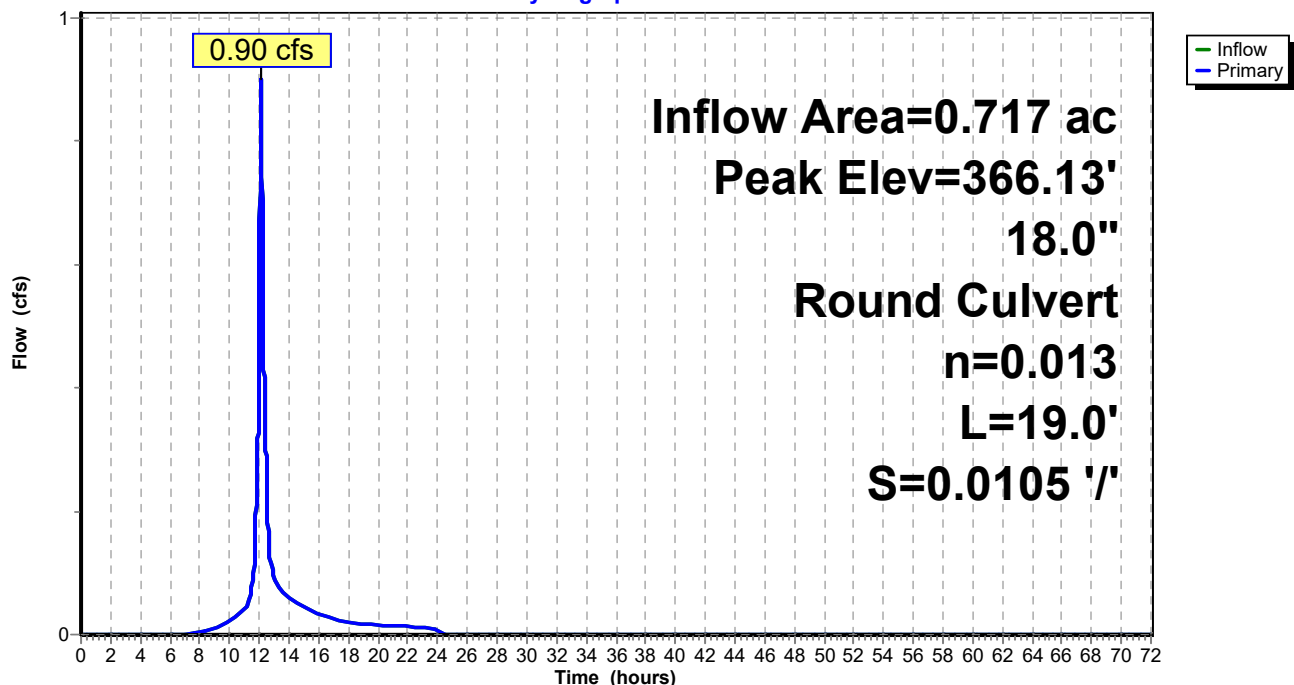
| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                    |
|--------|---------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 365.60' | <b>18.0" Round Culvert</b><br>L= 19.0' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 365.60' / 365.40' S= 0.0105 '/' Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf |

**Primary OutFlow** Max=0.90 cfs @ 12.11 hrs HW=366.13' TW=365.91' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 0.90 cfs @ 2.37 fps)

**Pond 1.8P: Catch Basin**

Hydrograph



**Summary for Pond 1.9P: Infiltration Basin B**

Inflow Area = 0.457 ac, 70.97% Impervious, Inflow Depth = 3.04" for 25-YR event  
 Inflow = 1.39 cfs @ 12.15 hrs, Volume= 0.116 af  
 Outflow = 0.24 cfs @ 12.70 hrs, Volume= 0.116 af, Atten= 83%, Lag= 33.5 min  
 Discarded = 0.24 cfs @ 12.70 hrs, Volume= 0.116 af  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Pond 1.8P : Catch Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Peak Elev= 371.29' @ 12.70 hrs Surf.Area= 1,209 sf Storage= 1,957 cf  
 Flood Elev= 372.00' Surf.Area= 1,540 sf Storage= 2,934 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)  
 Center-of-Mass det. time= 88.5 min ( 911.3 - 822.8 )

| Volume              | Invert               | Avail.Storage    | Storage Description                                        |                           |                     |
|---------------------|----------------------|------------------|------------------------------------------------------------|---------------------------|---------------------|
| #1                  | 368.00'              | 2,934 cf         | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                           |                     |
| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Perim.<br>(feet) | Inc.Store<br>(cubic-feet)                                  | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |
| 368.00              | 111                  | 78.3             | 0                                                          | 0                         | 111                 |
| 370.00              | 711                  | 119.4            | 735                                                        | 735                       | 787                 |
| 372.00              | 1,540                | 157.1            | 2,198                                                      | 2,934                     | 1,662               |

| Device | Routing   | Invert  | Outlet Devices                                                                                                                                                                                                    |
|--------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Discarded | 368.00' | <b>8.695 in/hr Exfiltration over Surface area</b>                                                                                                                                                                 |
| #2     | Primary   | 366.00' | <b>15.0" Round Culvert</b><br>L= 15.0' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 366.00' / 365.60' S= 0.0267 '/' Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf |
| #3     | Device 2  | 371.50' | <b>24.0" Horiz. RISER</b> C= 0.600 Limited to weir flow at low heads                                                                                                                                              |

**Discarded OutFlow** Max=0.24 cfs @ 12.70 hrs HW=371.29' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.24 cfs)

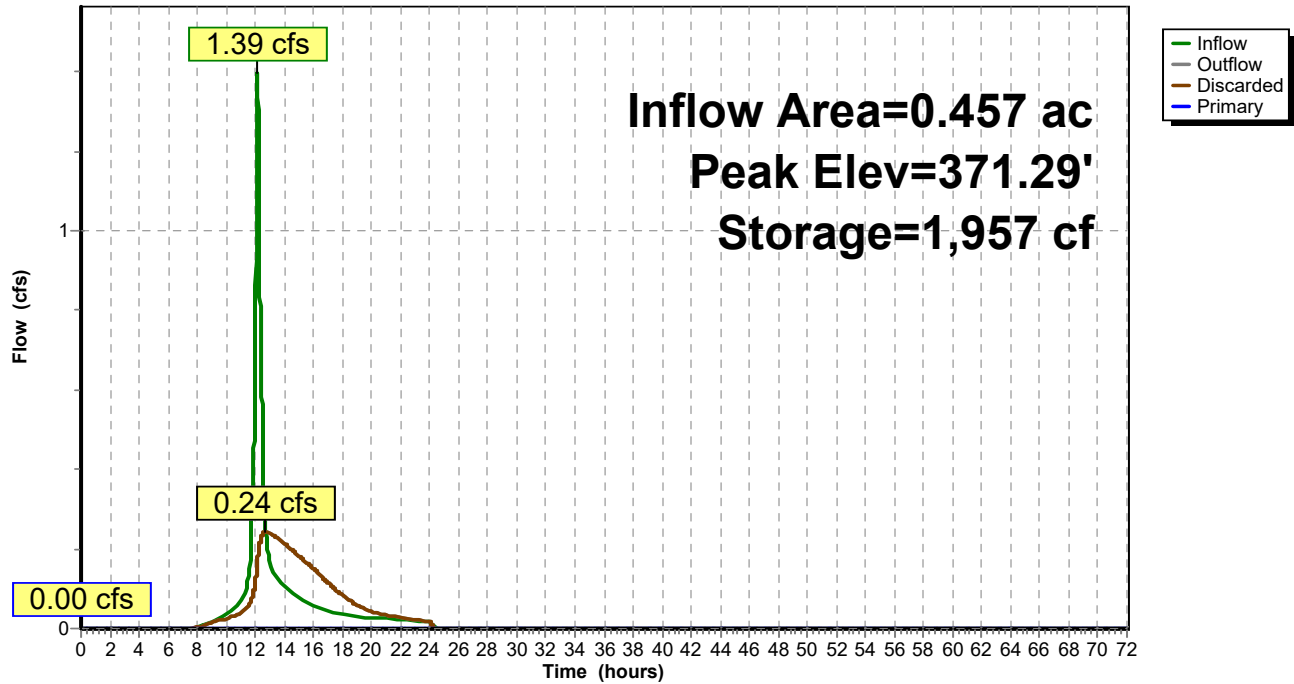
**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=368.00' TW=365.60' (Dynamic Tailwater)

↑ **2=Culvert** (Passes 0.00 cfs of 5.47 cfs potential flow)

↑ **3=RISER** ( Controls 0.00 cfs)

**Pond 1.9P: Infiltration Basin B**

Hydrograph



**Summary for Pond 2P: Sediment Forebay**

Inflow Area = 3.121 ac, 39.30% Impervious, Inflow Depth = 1.95" for 25-YR event  
 Inflow = 6.15 cfs @ 12.13 hrs, Volume= 0.507 af  
 Outflow = 5.23 cfs @ 12.19 hrs, Volume= 0.410 af, Atten= 15%, Lag= 3.9 min  
 Primary = 5.23 cfs @ 12.19 hrs, Volume= 0.410 af  
 Routed to Pond 1.43P : Infiltration Basin D

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Peak Elev= 356.34' @ 12.19 hrs Surf.Area= 3,202 sf Storage= 5,246 cf  
 Flood Elev= 357.00' Surf.Area= 3,971 sf Storage= 7,622 cf

Plug-Flow detention time= 121.5 min calculated for 0.410 af (81% of inflow)  
 Center-of-Mass det. time= 43.0 min ( 889.4 - 846.4 )

| Volume | Invert  | Avail.Storage | Storage Description                                        |
|--------|---------|---------------|------------------------------------------------------------|
| #1     | 353.00' | 7,622 cf      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |

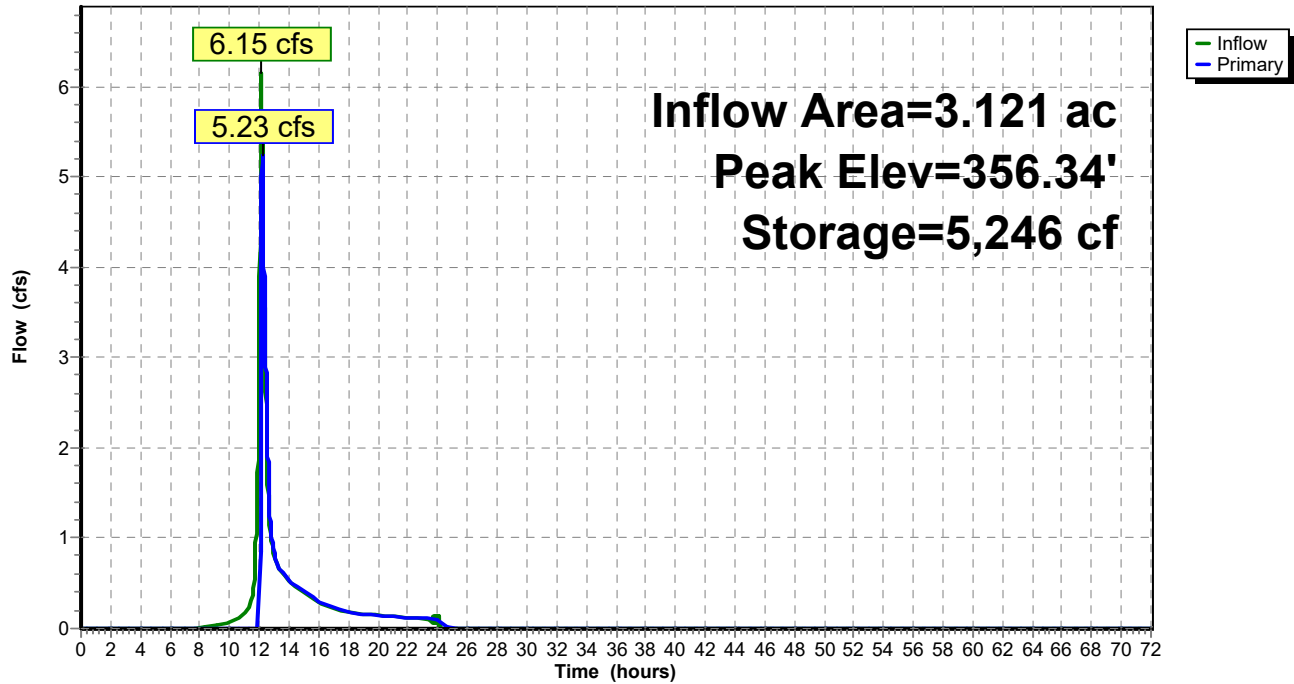
| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Perim.<br>(feet) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |
|---------------------|----------------------|------------------|---------------------------|---------------------------|---------------------|
| 353.00              | 234                  | 243.9            | 0                         | 0                         | 234                 |
| 355.00              | 1,905                | 307.7            | 1,871                     | 1,871                     | 3,088               |
| 357.00              | 3,971                | 391.4            | 5,751                     | 7,622                     | 7,797               |

| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                                                                                                  |
|--------|---------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 356.00' | <b>10.0' long + 3.0 ' SideZ x 7.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00<br>2.50 3.00 3.50 4.00 4.50 5.00 5.50<br>Coef. (English) 2.40 2.52 2.70 2.68 2.68 2.67 2.66 2.65 2.65<br>2.65 2.66 2.65 2.66 2.68 2.70 2.73 2.78 |

**Primary OutFlow** Max=5.22 cfs @ 12.19 hrs HW=356.34' TW=353.73' (Dynamic Tailwater)  
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 5.22 cfs @ 1.41 fps)

**Pond 2P: Sediment Forebay**

Hydrograph



**Summary for Pond 3.1P: Catch Basin**

Inflow Area = 3.346 ac, 99.48% Impervious, Inflow Depth = 4.82" for 25-YR event  
 Inflow = 16.51 cfs @ 12.08 hrs, Volume= 1.345 af  
 Outflow = 16.51 cfs @ 12.08 hrs, Volume= 1.345 af, Atten= 0%, Lag= 0.0 min  
 Primary = 16.51 cfs @ 12.08 hrs, Volume= 1.345 af  
 Routed to Pond 7P : Sediment Forebay

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

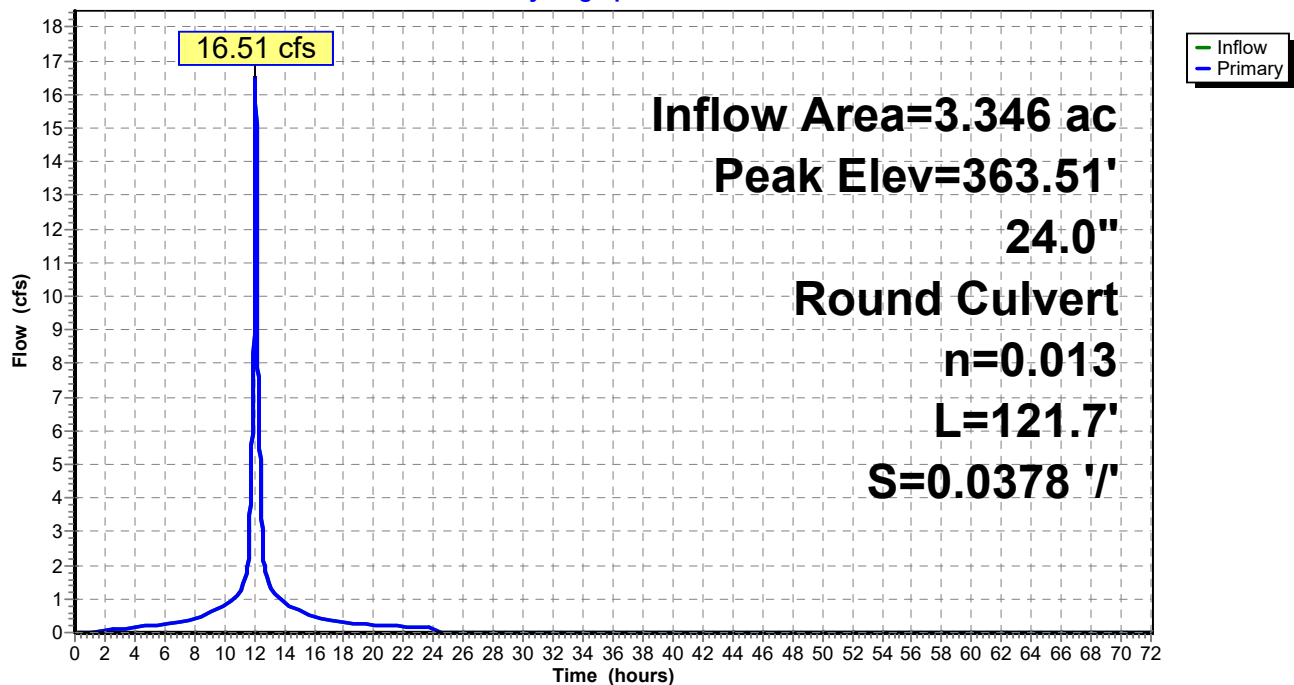
Peak Elev= 363.51' @ 12.08 hrs

Flood Elev= 365.61'

| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                    |
|--------|---------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 360.60' | <b>24.0" Round Culvert</b><br>L= 121.7' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 360.60' / 356.00' S= 0.0378 '/ Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf |

**Primary OutFlow** Max=16.48 cfs @ 12.08 hrs HW=363.50' TW=355.66' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 16.48 cfs @ 5.25 fps)

**Pond 3.1P: Catch Basin****Hydrograph**

**Summary for Pond 3.21P: Catch Basin**

Inflow Area = 0.703 ac, 36.87% Impervious, Inflow Depth = 1.14" for 25-YR event  
 Inflow = 0.61 cfs @ 12.22 hrs, Volume= 0.067 af  
 Outflow = 0.61 cfs @ 12.22 hrs, Volume= 0.067 af, Atten= 0%, Lag= 0.0 min  
 Primary = 0.61 cfs @ 12.22 hrs, Volume= 0.067 af  
 Routed to Pond 3.2P : Catch Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 359.52' @ 12.14 hrs

Flood Elev= 365.24'

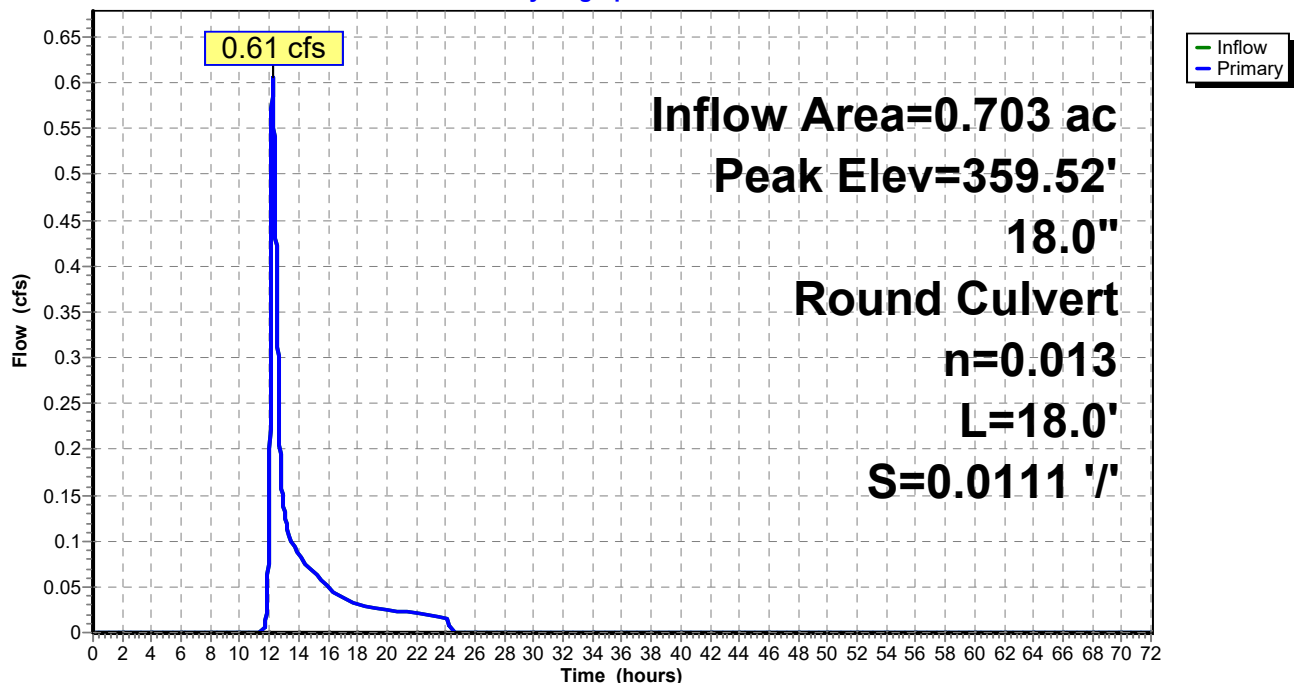
| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                    |
|--------|---------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 359.00' | <b>18.0" Round Culvert</b><br>L= 18.0' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 359.00' / 358.80' S= 0.0111 '/' Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf |

**Primary OutFlow** Max=0.62 cfs @ 12.22 hrs HW=359.50' TW=359.37' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 0.62 cfs @ 1.79 fps)

**Pond 3.21P: Catch Basin**

Hydrograph



**Summary for Pond 3.2P: Catch Basin**

Inflow Area = 0.973 ac, 53.30% Impervious, Inflow Depth = 2.10" for 25-YR event  
 Inflow = 1.65 cfs @ 12.10 hrs, Volume= 0.170 af  
 Outflow = 1.65 cfs @ 12.10 hrs, Volume= 0.170 af, Atten= 0%, Lag= 0.0 min  
 Primary = 1.65 cfs @ 12.10 hrs, Volume= 0.170 af  
 Routed to Pond 7P : Sediment Forebay

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

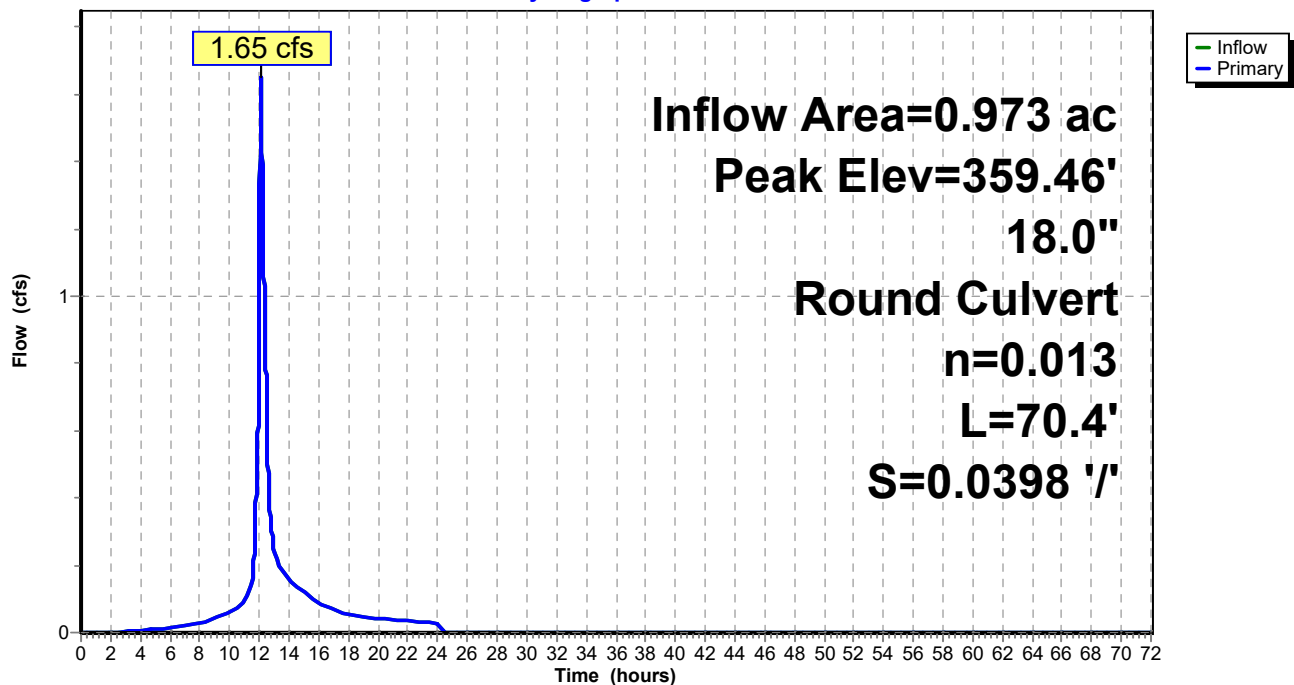
Peak Elev= 359.46' @ 12.10 hrs

Flood Elev= 365.24'

| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                   |
|--------|---------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 358.80' | <b>18.0" Round Culvert</b><br>L= 70.4' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 358.80' / 356.00' S= 0.0398 '/ Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf |

**Primary OutFlow** Max=1.65 cfs @ 12.10 hrs HW=359.46' TW=355.67' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 1.65 cfs @ 2.19 fps)

**Pond 3.2P: Catch Basin****Hydrograph**

**Summary for Pond 3P: Infiltration Basin C**

Inflow Area = 4.702 ac, 81.82% Impervious, Inflow Depth = 2.53" for 25-YR event  
 Inflow = 17.21 cfs @ 12.11 hrs, Volume= 0.990 af  
 Outflow = 1.14 cfs @ 13.17 hrs, Volume= 0.990 af, Atten= 93%, Lag= 64.1 min  
 Discarded = 1.14 cfs @ 13.17 hrs, Volume= 0.990 af  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Reach OP-1 : Observation Point 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Peak Elev= 355.16' @ 13.17 hrs Surf.Area= 9,847 sf Storage= 25,233 cf  
 Flood Elev= 356.00' Surf.Area= 10,929 sf Storage= 33,970 cf

Plug-Flow detention time= 223.1 min calculated for 0.990 af (100% of inflow)  
 Center-of-Mass det. time= 223.2 min ( 970.8 - 747.7 )

| Volume | Invert  | Avail.Storage | Storage Description                                        |
|--------|---------|---------------|------------------------------------------------------------|
| #1     | 352.00' | 33,970 cf     | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Perim.<br>(feet) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |
|---------------------|----------------------|------------------|---------------------------|---------------------------|---------------------|
| 352.00              | 6,249                | 342.9            | 0                         | 0                         | 6,249               |
| 354.00              | 8,450                | 390.6            | 14,644                    | 14,644                    | 9,128               |
| 356.00              | 10,929               | 435.4            | 19,326                    | 33,970                    | 12,187              |

| Device | Routing   | Invert  | Outlet Devices                                                                                                                                                                                                                                                                                  |
|--------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Discarded | 352.00' | <b>4.980 in/hr Exfiltration over Surface area</b>                                                                                                                                                                                                                                               |
| #2     | Primary   | 355.50' | <b>10.0' long + 3.0 ' SideZ x 7.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00<br>2.50 3.00 3.50 4.00 4.50 5.00 5.50<br>Coef. (English) 2.40 2.52 2.70 2.68 2.68 2.67 2.66 2.65 2.65<br>2.65 2.66 2.65 2.66 2.68 2.70 2.73 2.78 |

**Discarded OutFlow** Max=1.14 cfs @ 13.17 hrs HW=355.16' (Free Discharge)

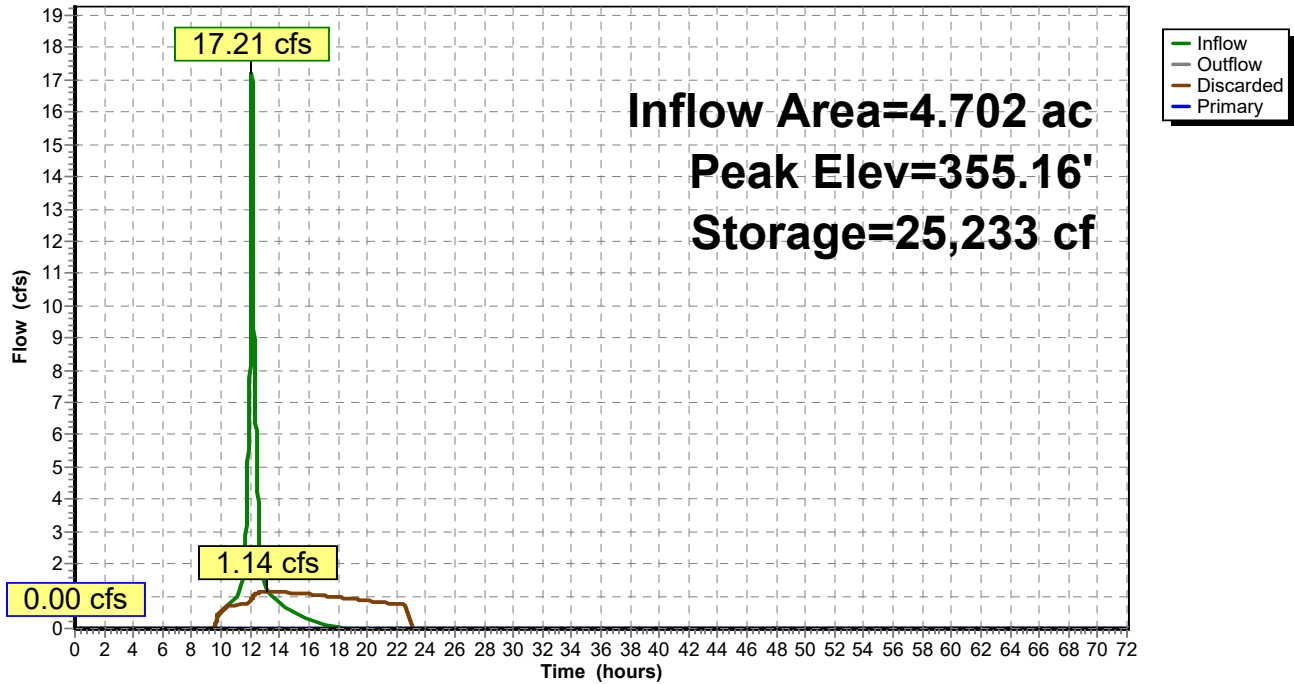
↑**1=Exfiltration** (Exfiltration Controls 1.14 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=352.00' TW=0.00' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

**Pond 3P: Infiltration Basin C**

Hydrograph



**Summary for Pond 7P: Sediment Forebay**

Inflow Area = 4.702 ac, 81.82% Impervious, Inflow Depth = 3.88" for 25-YR event  
 Inflow = 18.14 cfs @ 12.09 hrs, Volume= 1.522 af  
 Outflow = 17.59 cfs @ 12.11 hrs, Volume= 1.522 af, Atten= 3%, Lag= 1.3 min  
 Discarded = 0.38 cfs @ 12.11 hrs, Volume= 0.532 af  
 Primary = 17.21 cfs @ 12.11 hrs, Volume= 0.990 af  
 Routed to Pond 3P : Infiltration Basin C

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Peak Elev= 355.67' @ 12.11 hrs Surf.Area= 3,266 sf Storage= 5,945 cf  
 Flood Elev= 356.00' Surf.Area= 3,607 sf Storage= 7,073 cf

Plug-Flow detention time= 67.8 min calculated for 1.522 af (100% of inflow)  
 Center-of-Mass det. time= 67.9 min ( 824.2 - 756.3 )

| Volume              | Invert               | Avail.Storage    | Storage Description                                        |                           |                     |
|---------------------|----------------------|------------------|------------------------------------------------------------|---------------------------|---------------------|
| #1                  | 352.00'              | 7,073 cf         | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                           |                     |
| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Perim.<br>(feet) | Inc.Store<br>(cubic-feet)                                  | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |
| 352.00              | 233                  | 237.5            | 0                                                          | 0                         | 233                 |
| 354.00              | 1,791                | 281.3            | 1,780                                                      | 1,780                     | 2,114               |
| 356.00              | 3,607                | 323.9            | 5,293                                                      | 7,073                     | 4,253               |

| Device | Routing   | Invert  | Outlet Devices                                                                |  |  |  |  |  |  |  |  |  |  |  |  |
|--------|-----------|---------|-------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| #1     | Primary   | 355.00' | <b>10.0' long + 3.0 ' SideZ x 7.0' breadth Broad-Crested Rectangular Weir</b> |  |  |  |  |  |  |  |  |  |  |  |  |
|        |           |         | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00                 |  |  |  |  |  |  |  |  |  |  |  |  |
|        |           |         | 2.50 3.00 3.50 4.00 4.50 5.00 5.50                                            |  |  |  |  |  |  |  |  |  |  |  |  |
|        |           |         | Coef. (English) 2.40 2.52 2.70 2.68 2.68 2.67 2.66 2.65 2.65                  |  |  |  |  |  |  |  |  |  |  |  |  |
|        |           |         | 2.65 2.66 2.65 2.66 2.68 2.70 2.73 2.78                                       |  |  |  |  |  |  |  |  |  |  |  |  |
| #2     | Discarded | 352.00' | <b>4.980 in/hr Exfiltration over Surface area</b>                             |  |  |  |  |  |  |  |  |  |  |  |  |

**Discarded OutFlow** Max=0.38 cfs @ 12.11 hrs HW=355.67' (Free Discharge)

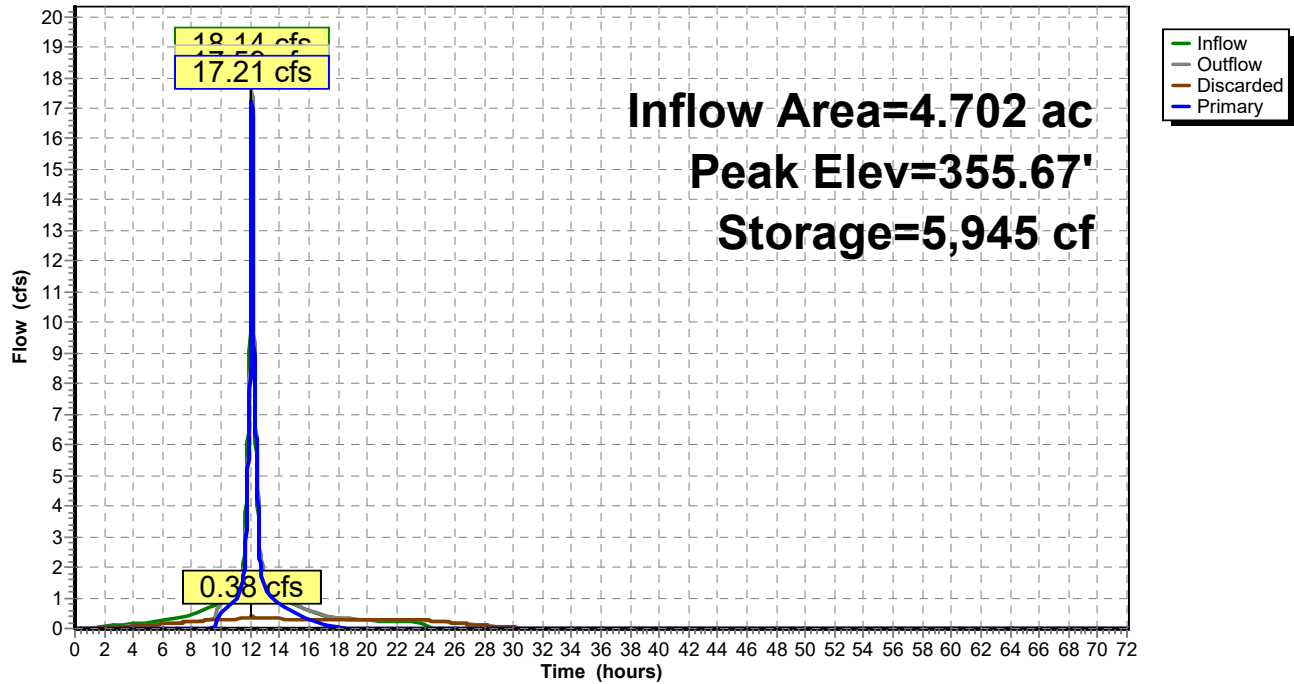
↑ **2=Exfiltration** (Exfiltration Controls 0.38 cfs)

**Primary OutFlow** Max=17.18 cfs @ 12.11 hrs HW=355.67' TW=353.69' (Dynamic Tailwater)

↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 17.18 cfs @ 2.13 fps)

**Pond 7P: Sediment Forebay**

Hydrograph



**Summary for Subcatchment S1: S1 - OFF**

Runoff = 11.57 cfs @ 12.37 hrs, Volume= 1.680 af, Depth= 0.99"  
 Routed to Reach OP-1 : Observation Point 1

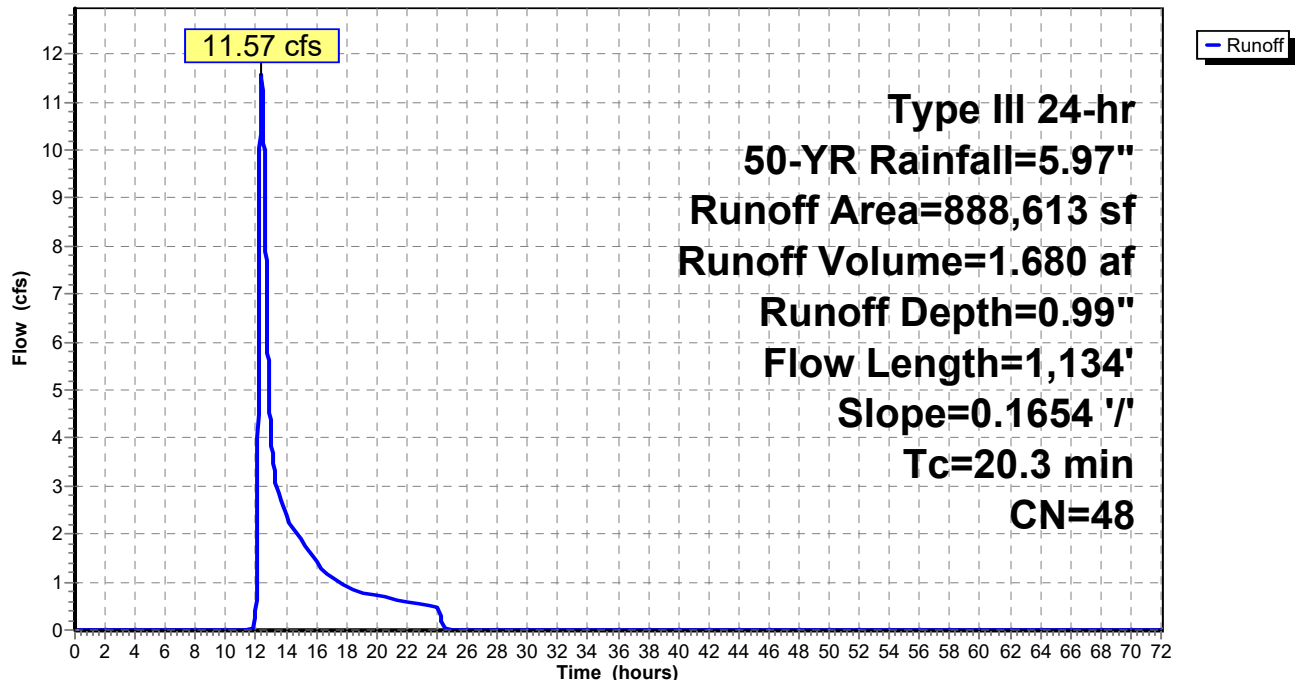
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 50-YR Rainfall=5.97"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 853       | 85 | Gravel roads HSG B           |
| 3,192     | 76 | Gravel roads HSG A           |
| 27,839    | 55 | Woods, Good HSG B            |
| 12,435    | 70 | Woods, Good HSG C            |
| 312,518   | 30 | Woods, Good HSG A            |
| 600       | 98 | Roofs HSG B                  |
| 357       | 89 | Gravel roads HSG C           |
| 170,550   | 39 | >75% Grass cover, Good HSG A |
| 196,079   | 61 | >75% Grass cover, Good HSG B |
| 164,191   | 74 | >75% Grass cover, Good HSG C |
| 888,613   | 48 | Weighted Average             |
| 888,013   |    | 99.93% Pervious Area         |
| 600       |    | 0.07% Impervious Area        |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 20.3        | 1,134            | 0.1654           | 0.93                 |                   | Lag/CN Method, |

**Subcatchment S1: S1 - OFF**

Hydrograph



**Summary for Subcatchment S1.1: S1.1 - IB**

Runoff = 0.50 cfs @ 12.10 hrs, Volume= 0.041 af, Depth= 1.42"  
 Routed to Pond 1.1AP : Sediment Forebay

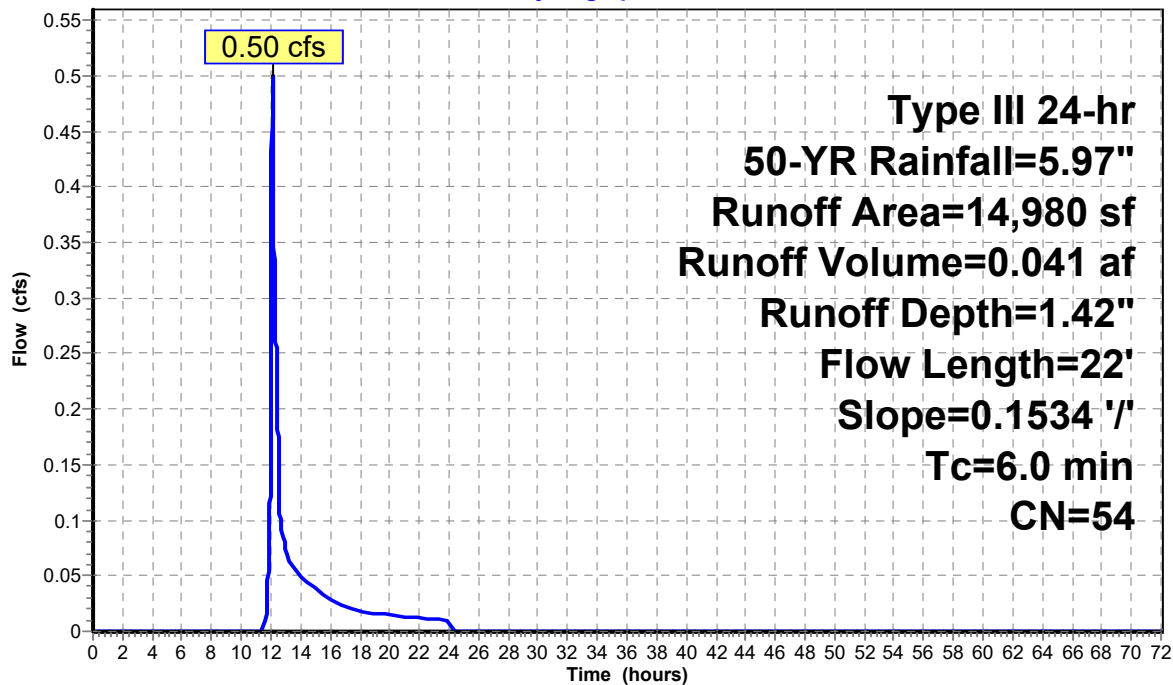
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 50-YR Rainfall=5.97"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 5,057     | 39 | >75% Grass cover, Good HSG A |
| 9,923     | 61 | >75% Grass cover, Good HSG B |
| 14,980    | 54 | Weighted Average             |
| 14,980    |    | 100.00% Pervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|------------------------------------------|-------------------|----------------|----------------|
| 0.8      | 22            | 0.1534                                   | 0.47              |                | Lag/CN Method, |
| 0.8      | 22            | Total, Increased to minimum Tc = 6.0 min |                   |                |                |

**Subcatchment S1.1: S1.1 - IB**

Hydrograph



**Summary for Subcatchment S1.11: S1.11 - CBS**

Runoff = 0.69 cfs @ 12.08 hrs, Volume= 0.055 af, Depth= 5.50"  
 Routed to Pond 1.11P : Catch Basin

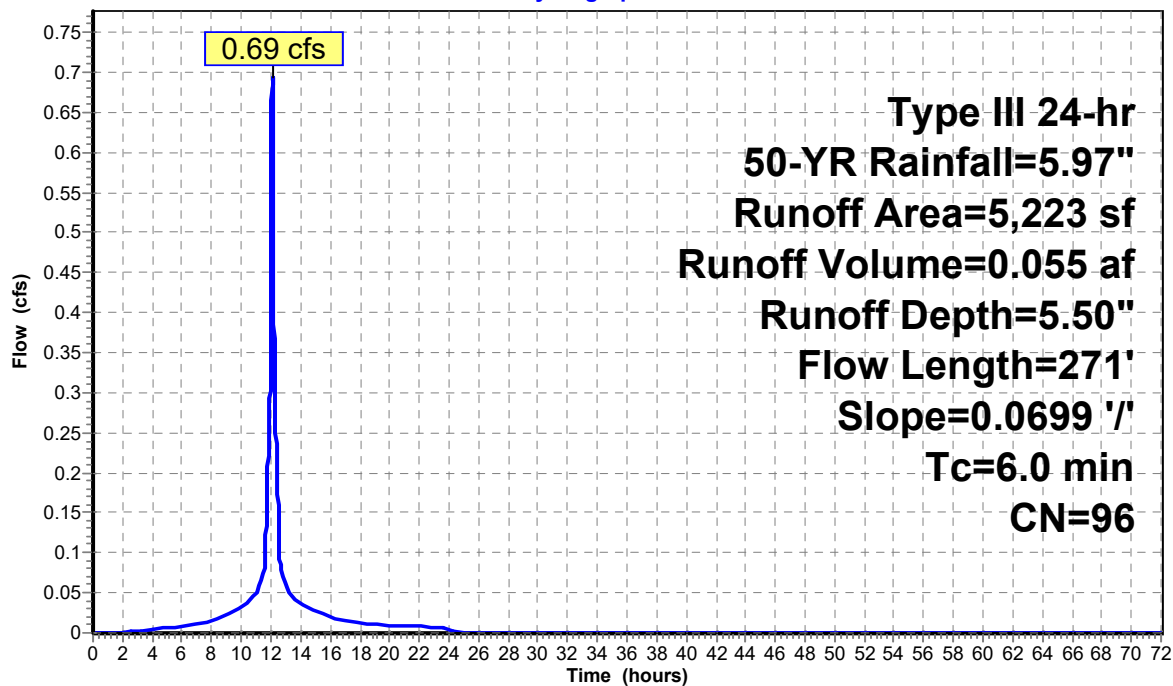
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 50-YR Rainfall=5.97"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 694       | 98 | Paved parking HSG B          |
| 4,324     | 98 | Paved parking HSG A          |
| 171       | 39 | >75% Grass cover, Good HSG A |
| 34        | 61 | >75% Grass cover, Good HSG B |
| 5,223     | 96 | Weighted Average             |
| 205       |    | 3.92% Pervious Area          |
| 5,018     |    | 96.08% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|------------------------------------------|-------------------|----------------|----------------|
| 2.2      | 271           | 0.0699                                   | 2.01              |                | Lag/CN Method, |
| 2.2      | 271           | Total, Increased to minimum Tc = 6.0 min |                   |                |                |

**Subcatchment S1.11: S1.11 - CBS**

Hydrograph



**Summary for Subcatchment S1.2: S1.2 - CB**

Runoff = 0.42 cfs @ 12.41 hrs, Volume= 0.080 af, Depth= 0.55"  
 Routed to Pond 1.2P : Catch Basin

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 50-YR Rainfall=5.97"

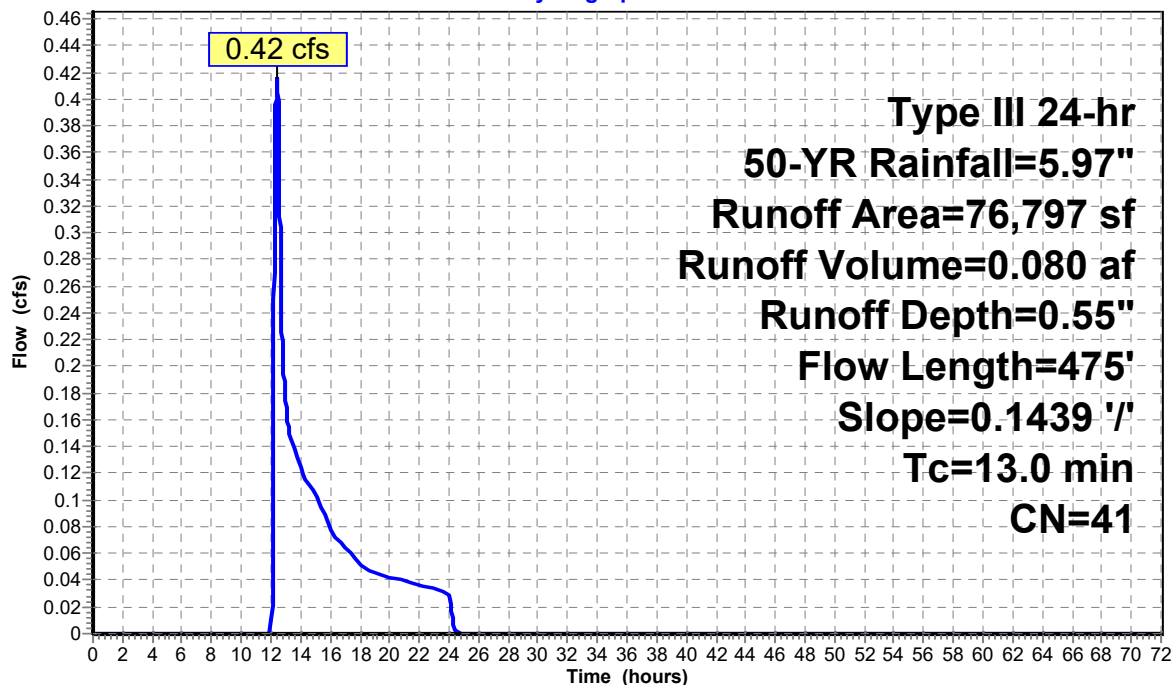
| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 462       | 98 | Paved parking HSG B          |
| 43,201    | 30 | Woods, Good HSG A            |
| 8,801     | 98 | Paved parking HSG A          |
| 24,187    | 39 | >75% Grass cover, Good HSG A |
| 146       | 61 | >75% Grass cover, Good HSG B |
| 76,797    | 41 | Weighted Average             |
| 67,534    |    | 87.94% Pervious Area         |
| 9,263     |    | 12.06% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 13.0     | 475           | 0.1439        | 0.61              |                | Lag/CN Method, |

**Subcatchment S1.2: S1.2 - CB**

Hydrograph



**Summary for Subcatchment S1.3: S1.3 - CBS**

Runoff = 0.02 cfs @ 12.08 hrs, Volume= 0.002 af, Depth= 5.73"  
 Routed to Pond 1.3P : Catch Basin

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 50-YR Rainfall=5.97"

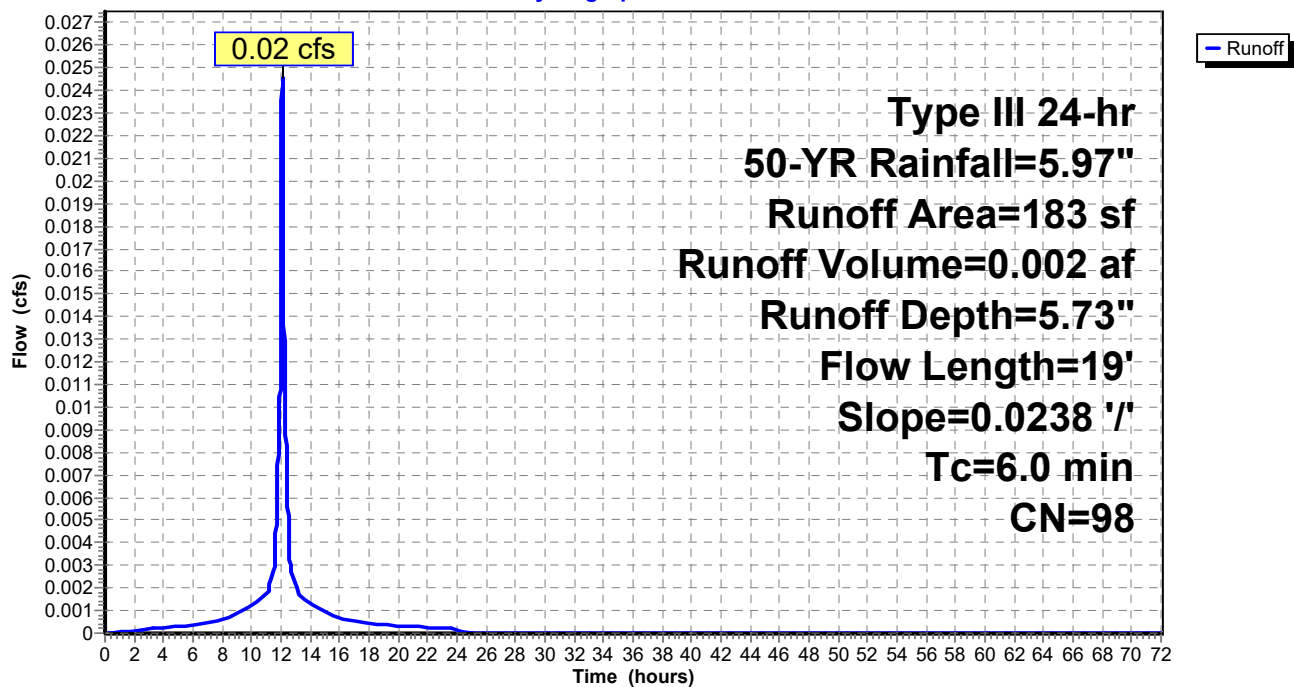
| Area (sf) | CN | Description             |
|-----------|----|-------------------------|
| 183       | 98 | Paved parking HSG A     |
| 183       |    | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|------------------------------------------|-------------------|----------------|----------------|
| 0.4      | 19            | 0.0238                                   | 0.78              |                | Lag/CN Method, |
| 0.4      | 19            | Total, Increased to minimum Tc = 6.0 min |                   |                |                |

**Subcatchment S1.3: S1.3 - CBS**

Hydrograph



**Summary for Subcatchment S1.4: S1.4 - CBS**

Runoff = 0.40 cfs @ 12.16 hrs, Volume= 0.039 af, Depth= 1.27"  
 Routed to Pond 1.4P : Catch Basin

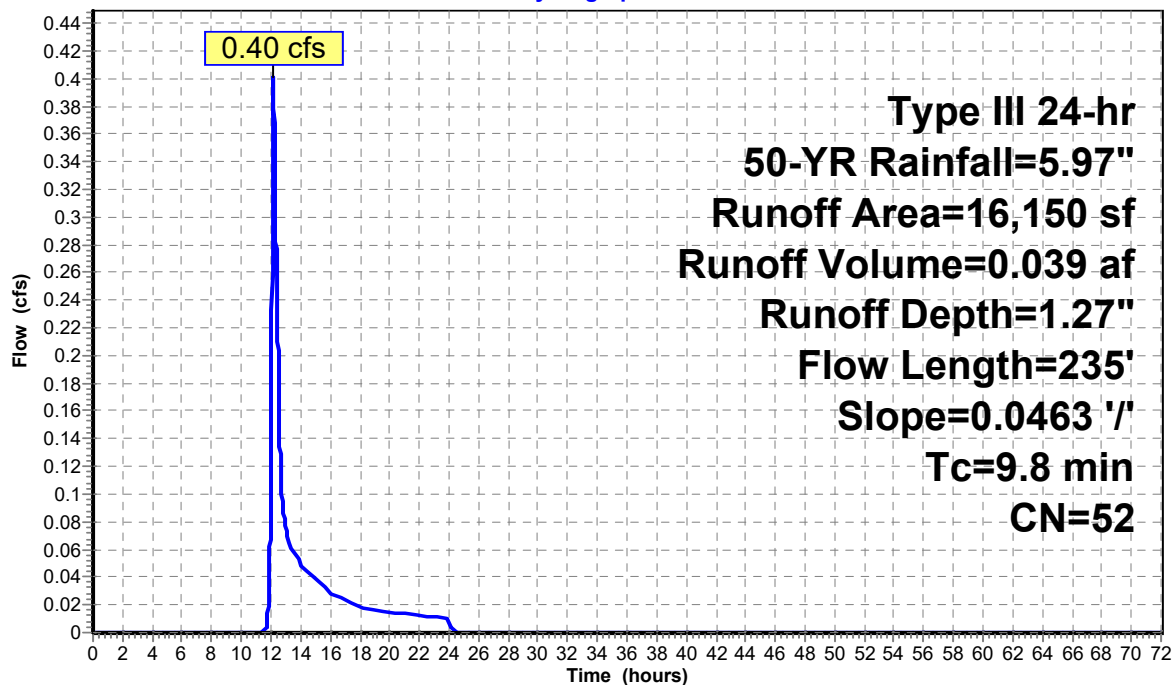
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 50-YR Rainfall=5.97"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 1,050     | 98 | Roofs HSG A                  |
| 2,374     | 98 | Paved parking HSG A          |
| 12,726    | 39 | >75% Grass cover, Good HSG A |
| 16,150    | 52 | Weighted Average             |
| 12,726    |    | 78.80% Pervious Area         |
| 3,424     |    | 21.20% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 9.8      | 235           | 0.0463        | 0.40              |                | Lag/CN Method, |

**Subcatchment S1.4: S1.4 - CBS**

Hydrograph



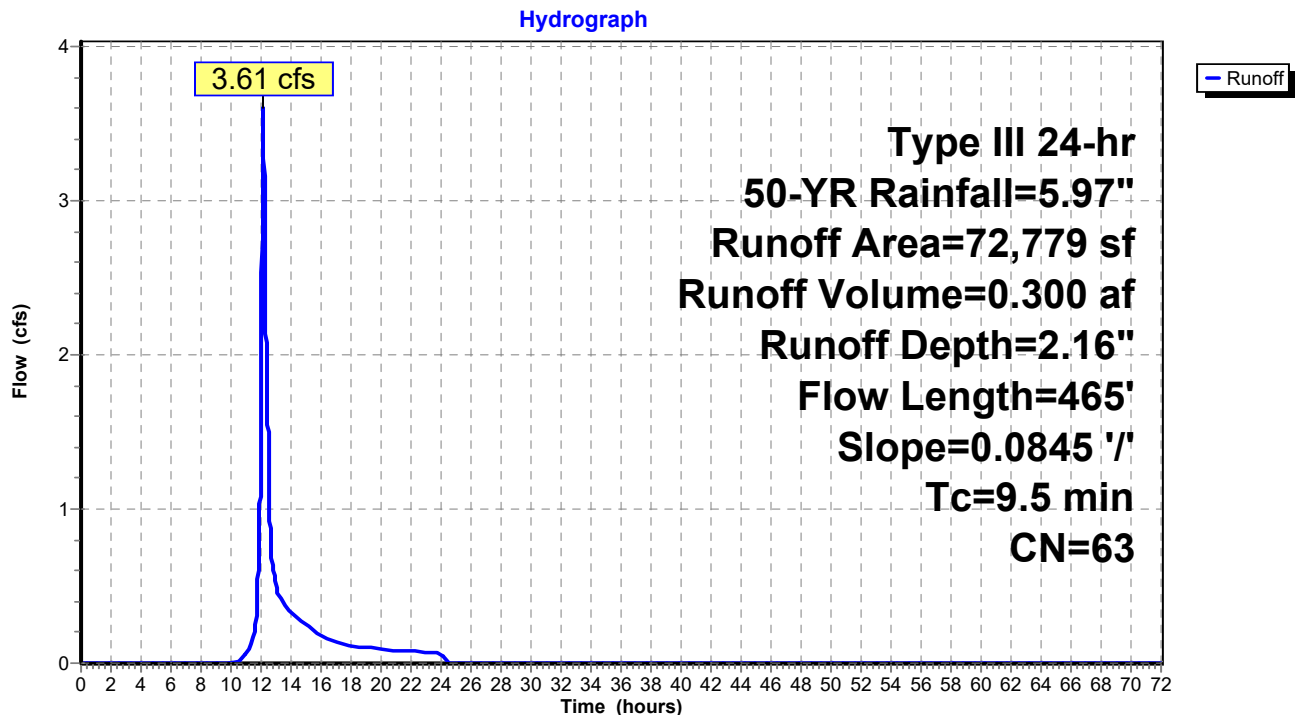
**Summary for Subcatchment S1.41: S1.41 - CBS**

Runoff = 3.61 cfs @ 12.14 hrs, Volume= 0.300 af, Depth= 2.16"  
 Routed to Pond 1.41P : Catch Basin

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 50-YR Rainfall=5.97"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 3,676     | 98 | Paved parking HSG B          |
| 3,382     | 98 | Roofs HSG B                  |
| 9,218     | 98 | Roofs HSG A                  |
| 8,749     | 98 | Paved parking HSG A          |
| 36,945    | 39 | >75% Grass cover, Good HSG A |
| 10,808    | 61 | >75% Grass cover, Good HSG B |
| 72,779    | 63 | Weighted Average             |
| 47,754    |    | 65.61% Pervious Area         |
| 25,025    |    | 34.39% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 9.5      | 465           | 0.0845        | 0.82              |                | Lag/CN Method, |

**Subcatchment S1.41: S1.41 - CBS**

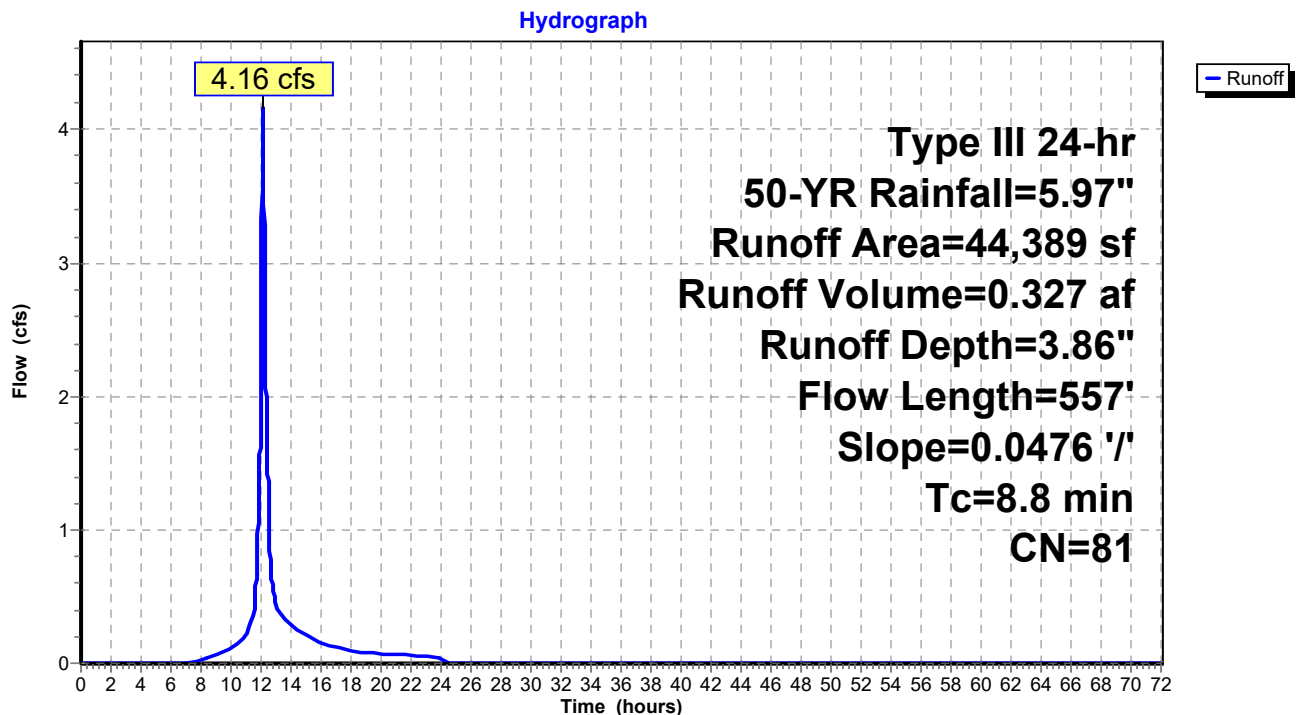
**Summary for Subcatchment S1.42: S1.42 - CBS**

Runoff = 4.16 cfs @ 12.12 hrs, Volume= 0.327 af, Depth= 3.86"  
 Routed to Pond 1.42P : Catch Basin

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 50-YR Rainfall=5.97"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 5,650     | 98 | Paved parking HSG B          |
| 418       | 98 | Roofs HSG C                  |
| 408       | 76 | Gravel roads HSG A           |
| 3,432     | 98 | Roofs HSG A                  |
| 8,750     | 98 | Roofs HSG B                  |
| 8,048     | 98 | Paved parking HSG A          |
| 3,652     | 39 | >75% Grass cover, Good HSG A |
| 14,032    | 61 | >75% Grass cover, Good HSG B |
| 44,389    | 81 | Weighted Average             |
| 18,092    |    | 40.76% Pervious Area         |
| 26,297    |    | 59.24% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 8.8      | 557           | 0.0476        | 1.05              |                | Lag/CN Method, |

**Subcatchment S1.42: S1.42 - CBS**

**Summary for Subcatchment S1.43: S1.43 - IB**

Runoff = 0.63 cfs @ 12.10 hrs, Volume= 0.051 af, Depth= 1.42"  
 Routed to Pond 2P : Sediment Forebay

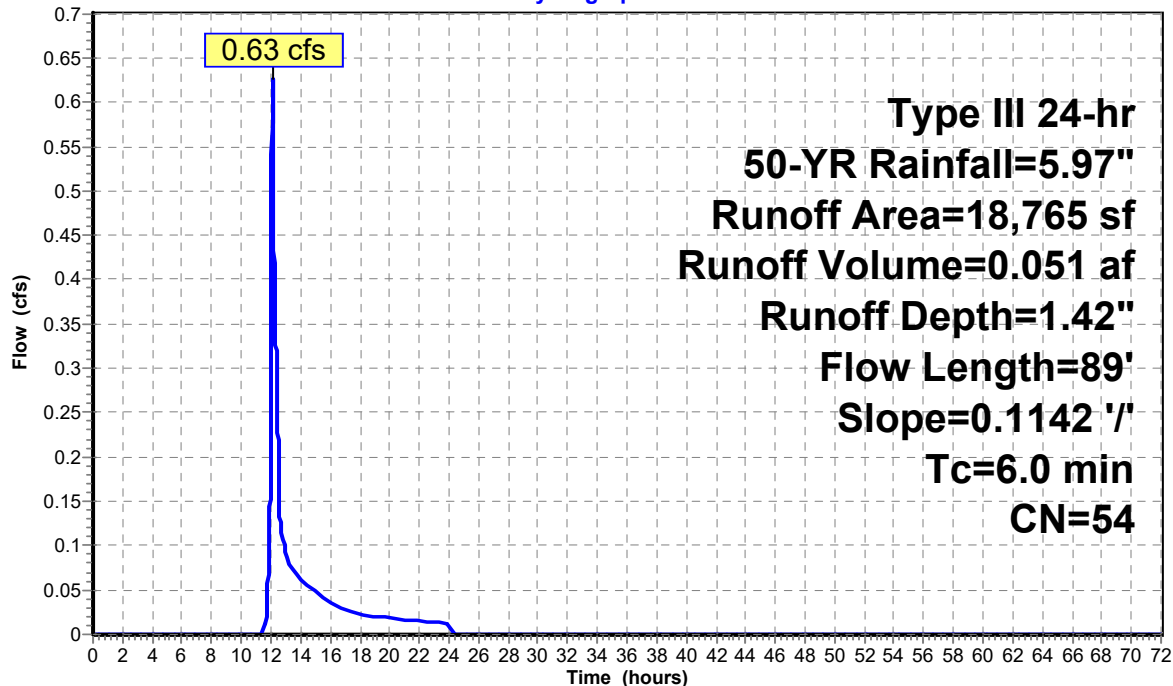
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 50-YR Rainfall=5.97"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 2,100     | 98 | Roofs HSG A                  |
| 9,353     | 39 | >75% Grass cover, Good HSG A |
| 7,312     | 61 | >75% Grass cover, Good HSG B |
| 18,765    | 54 | Weighted Average             |
| 16,665    |    | 88.81% Pervious Area         |
| 2,100     |    | 11.19% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|------------------------------------------|-------------------|----------------|----------------|
| 2.7      | 89            | 0.1142                                   | 0.54              |                | Lag/CN Method, |
| 2.7      | 89            | Total, Increased to minimum Tc = 6.0 min |                   |                |                |

**Subcatchment S1.43: S1.43 - IB**

Hydrograph



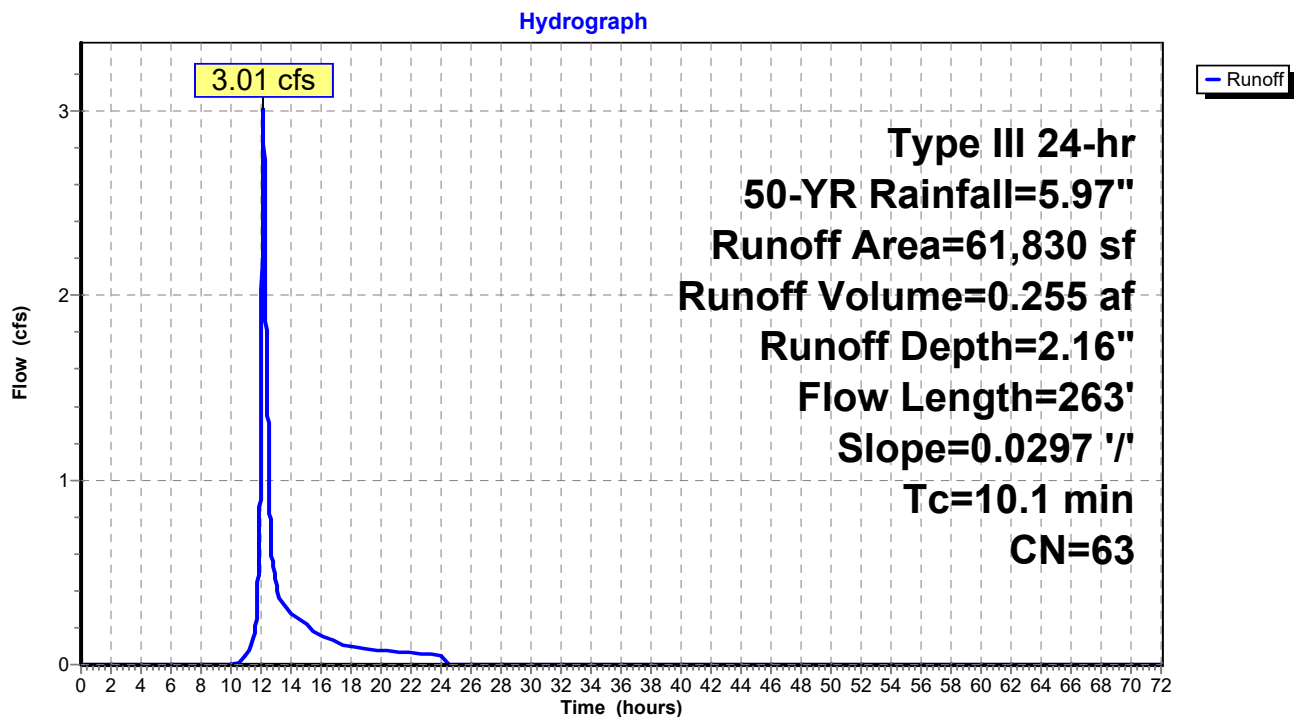
**Summary for Subcatchment S1.5: S1.5 - CBS**

Runoff = 3.01 cfs @ 12.15 hrs, Volume= 0.255 af, Depth= 2.16"  
 Routed to Pond 1.5P : Catch Basin

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 50-YR Rainfall=5.97"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 14,250    | 98 | Roofs HSG A                  |
| 11,130    | 98 | Paved parking HSG A          |
| 36,450    | 39 | >75% Grass cover, Good HSG A |
| 61,830    | 63 | Weighted Average             |
| 36,450    |    | 58.95% Pervious Area         |
| 25,380    |    | 41.05% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 10.1     | 263           | 0.0297        | 0.43              |                | Lag/CN Method, |

**Subcatchment S1.5: S1.5 - CBS**

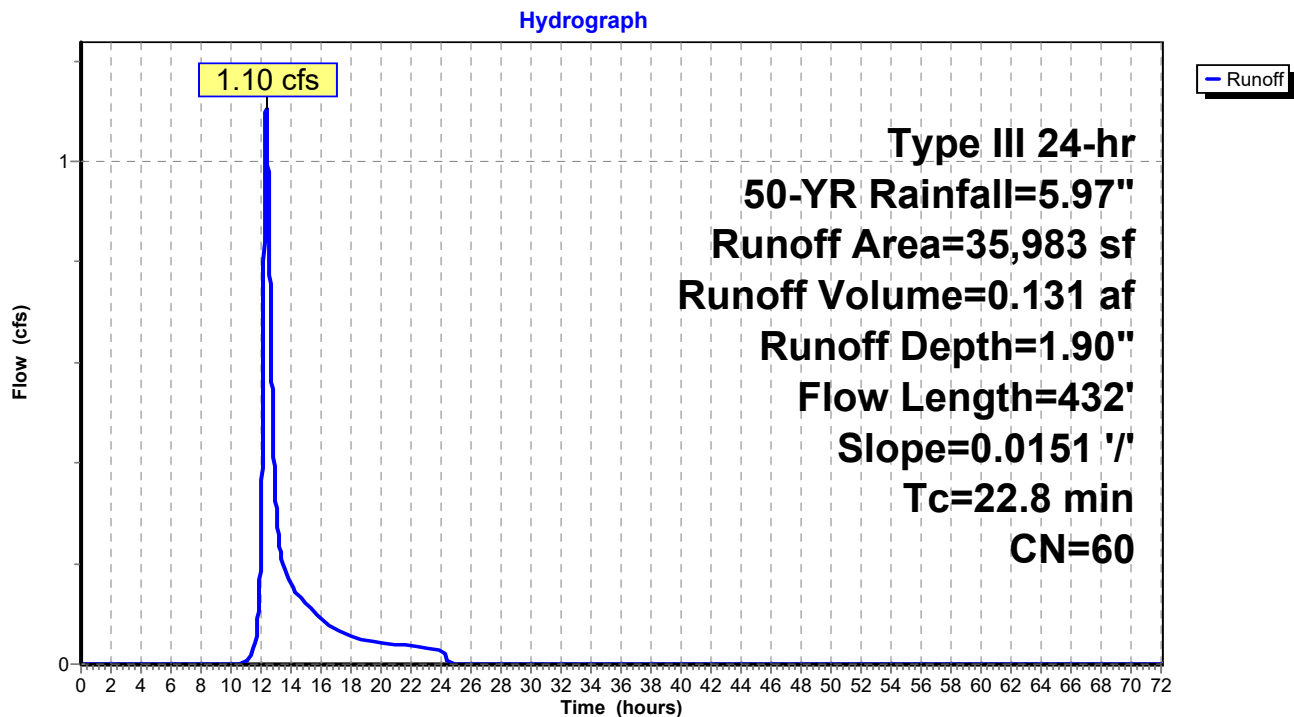
**Summary for Subcatchment S1.51: S1.51 - CBS**

Runoff = 1.10 cfs @ 12.34 hrs, Volume= 0.131 af, Depth= 1.90"  
 Routed to Pond 1.51P : Catch Basin

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 50-YR Rainfall=5.97"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 6,000     | 98 | Roofs HSG A                  |
| 5,470     | 98 | Paved parking HSG A          |
| 20,793    | 39 | >75% Grass cover, Good HSG A |
| 3,720     | 61 | >75% Grass cover, Good HSG B |
| 35,983    | 60 | Weighted Average             |
| 24,513    |    | 68.12% Pervious Area         |
| 11,470    |    | 31.88% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 22.8     | 432           | 0.0151        | 0.32              |                | Lag/CN Method, |

**Subcatchment S1.51: S1.51 - CBS**

**Summary for Subcatchment S1.52: S1.52 - CBS**

Runoff = 0.72 cfs @ 12.09 hrs, Volume= 0.051 af, Depth= 3.65"  
 Routed to Pond 1.52P : Catch Basin

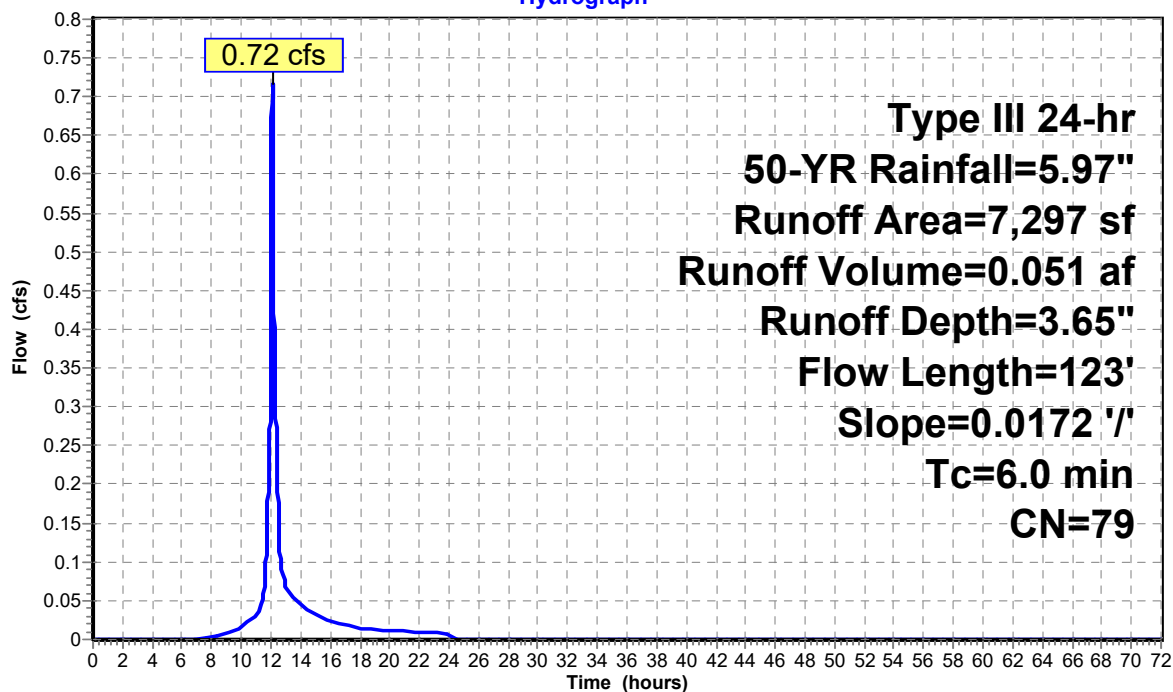
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 50-YR Rainfall=5.97"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 1,410     | 98 | Paved parking HSG B          |
| 2,100     | 98 | Roofs HSG B                  |
| 612       | 98 | Paved parking HSG A          |
| 1,005     | 39 | >75% Grass cover, Good HSG A |
| 2,169     | 61 | >75% Grass cover, Good HSG B |
| 7,297     | 79 | Weighted Average             |
| 3,174     |    | 43.50% Pervious Area         |
| 4,123     |    | 56.50% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|------------------------------------------|-------------------|----------------|----------------|
| 4.7      | 123           | 0.0172                                   | 0.44              |                | Lag/CN Method, |
| 4.7      | 123           | Total, Increased to minimum Tc = 6.0 min |                   |                |                |

**Subcatchment S1.52: S1.52 - CBS**

Hydrograph



**Summary for Subcatchment S1.53: S1.53 - CBS**

Runoff = 0.79 cfs @ 12.12 hrs, Volume= 0.062 af, Depth= 2.87"  
 Routed to Pond 1.53P : Catch Basin

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 50-YR Rainfall=5.97"

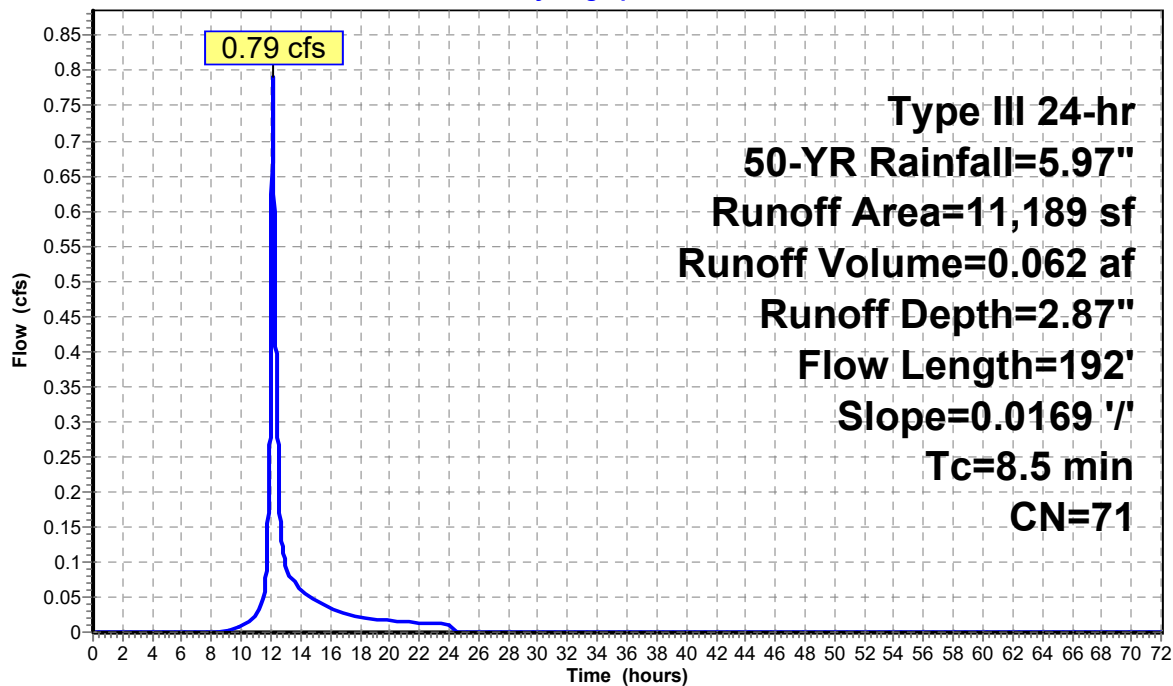
| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 1,482     | 98 | Paved parking HSG B          |
| 1,315     | 98 | Roofs HSG B                  |
| 785       | 98 | Roofs HSG A                  |
| 438       | 98 | Paved parking HSG A          |
| 1,803     | 39 | >75% Grass cover, Good HSG A |
| 5,367     | 61 | >75% Grass cover, Good HSG B |
| 11,189    | 71 | Weighted Average             |
| 7,170     |    | 64.08% Pervious Area         |
| 4,020     |    | 35.92% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 8.5      | 192           | 0.0169        | 0.38              |                | Lag/CN Method, |

**Subcatchment S1.53: S1.53 - CBS**

Hydrograph



**Summary for Subcatchment S1.6: S1.6 - CBS**

Runoff = 0.16 cfs @ 12.09 hrs, Volume= 0.012 af, Depth= 4.17"  
 Routed to Pond 1.6P : Catch Basin

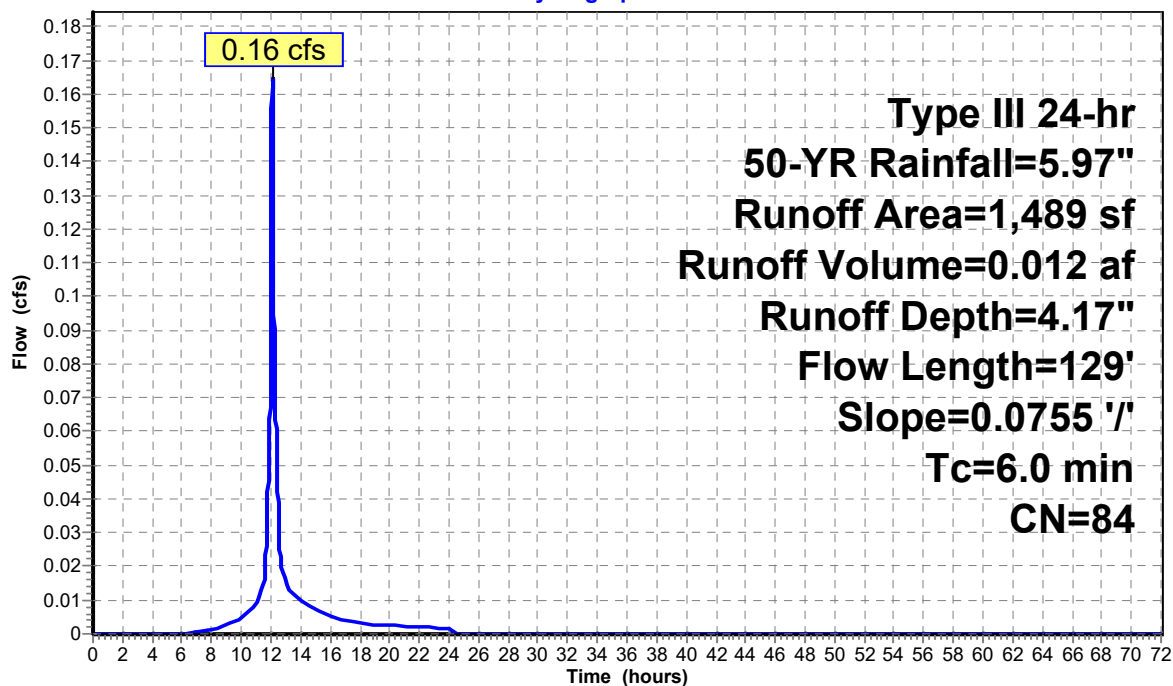
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 50-YR Rainfall=5.97"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 1,128     | 98 | Paved parking HSG A          |
| 361       | 39 | >75% Grass cover, Good HSG A |
| 1,489     | 84 | Weighted Average             |
| 361       |    | 24.27% Pervious Area         |
| 1,128     |    | 75.73% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|------------------------------------------|-------------------|----------------|----------------|
| 2.0      | 129           | 0.0755                                   | 1.09              |                | Lag/CN Method, |
| 2.0      | 129           | Total, Increased to minimum Tc = 6.0 min |                   |                |                |

**Subcatchment S1.6: S1.6 - CBS**

Hydrograph



**Summary for Subcatchment S1.7: S1.7 - CBS**

Runoff = 0.19 cfs @ 12.10 hrs, Volume= 0.015 af, Depth= 1.50"  
 Routed to Pond 1.7P : Catch Basin

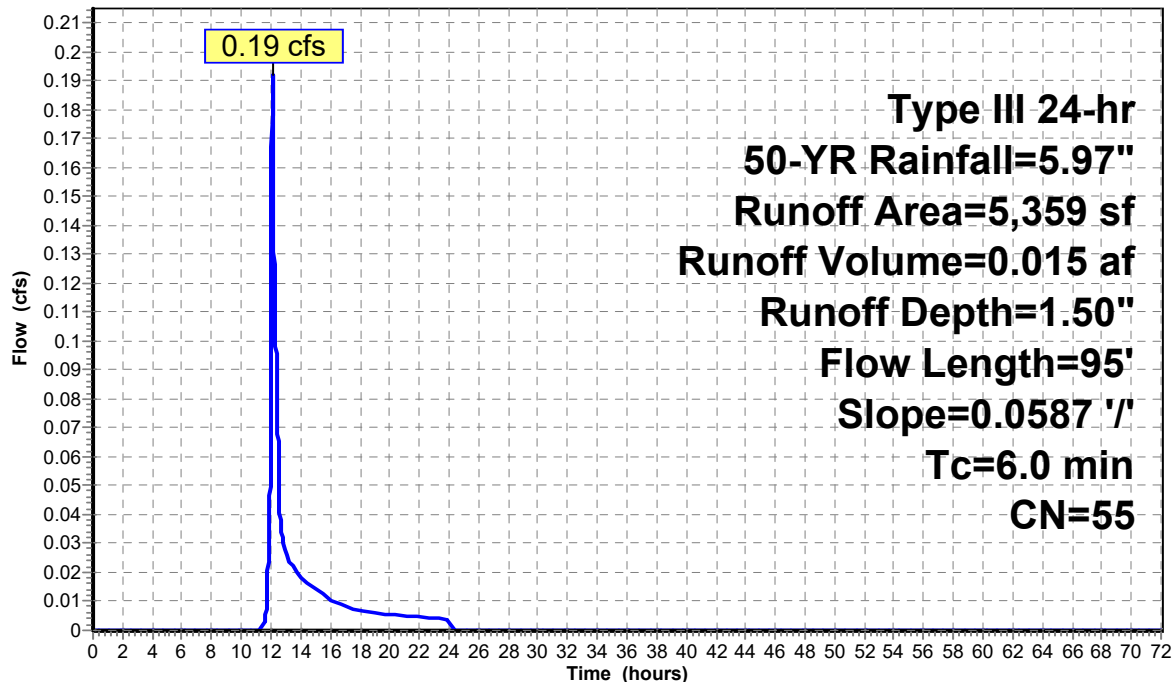
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 50-YR Rainfall=5.97"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 2,755     | 30 | Woods, Good HSG A            |
| 1,853     | 98 | Paved parking HSG A          |
| 751       | 39 | >75% Grass cover, Good HSG A |
| 5,359     | 55 | Weighted Average             |
| 3,506     |    | 65.43% Pervious Area         |
| 1,853     |    | 34.57% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|------------------------------------------|-------------------|----------------|----------------|
| 3.9      | 95            | 0.0587                                   | 0.40              |                | Lag/CN Method, |
| 3.9      | 95            | Total, Increased to minimum Tc = 6.0 min |                   |                |                |

**Subcatchment S1.7: S1.7 - CBS**

Hydrograph



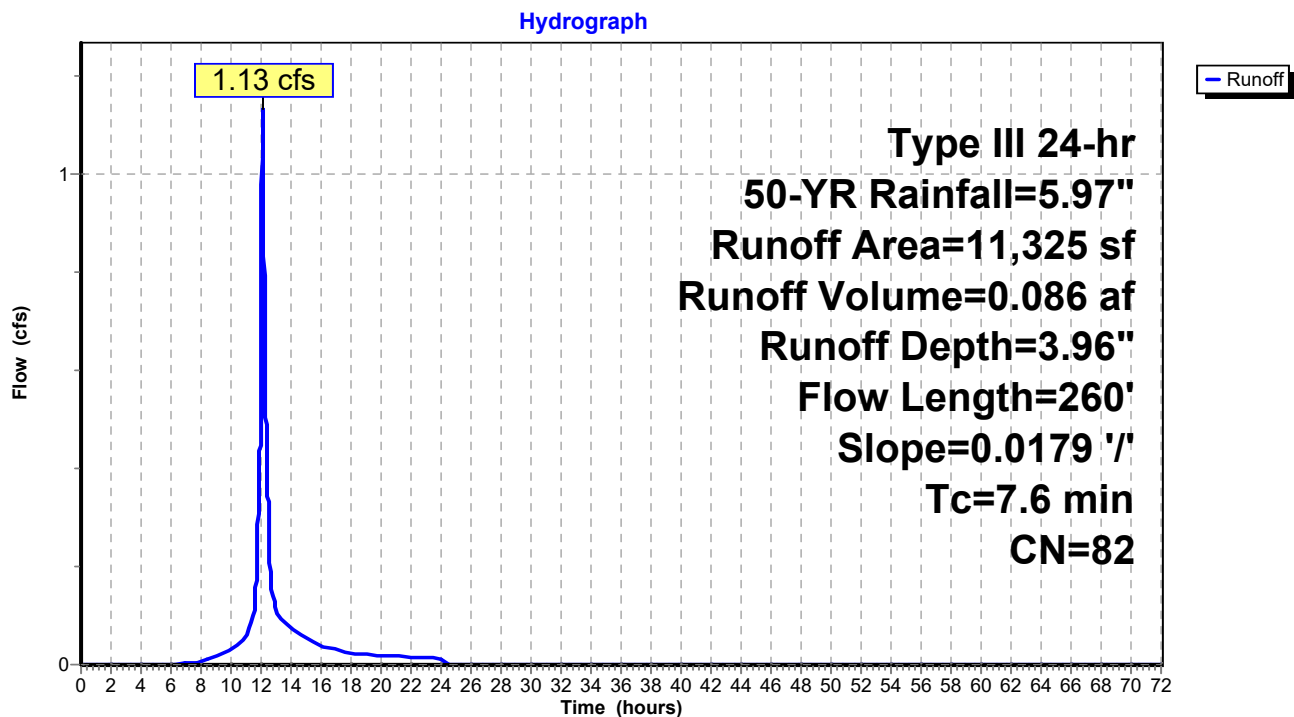
**Summary for Subcatchment S1.8: S1.8 - CBS**

Runoff = 1.13 cfs @ 12.11 hrs, Volume= 0.086 af, Depth= 3.96"  
 Routed to Pond 1.8P : Catch Basin

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 50-YR Rainfall=5.97"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 1,162     | 98 | Roofs HSG A                  |
| 7,086     | 98 | Paved parking HSG A          |
| 3,076     | 39 | >75% Grass cover, Good HSG A |
| 11,325    | 82 | Weighted Average             |
| 3,076     |    | 27.16% Pervious Area         |
| 8,248     |    | 72.84% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 7.6      | 260           | 0.0179        | 0.57              |                | Lag/CN Method, |

**Subcatchment S1.8: S1.8 - CBS**

**Summary for Subcatchment S1.9: S1.9 - CBS**

Runoff = 1.76 cfs @ 12.14 hrs, Volume= 0.147 af, Depth= 3.86"  
 Routed to Pond 1.9P : Infiltration Basin B

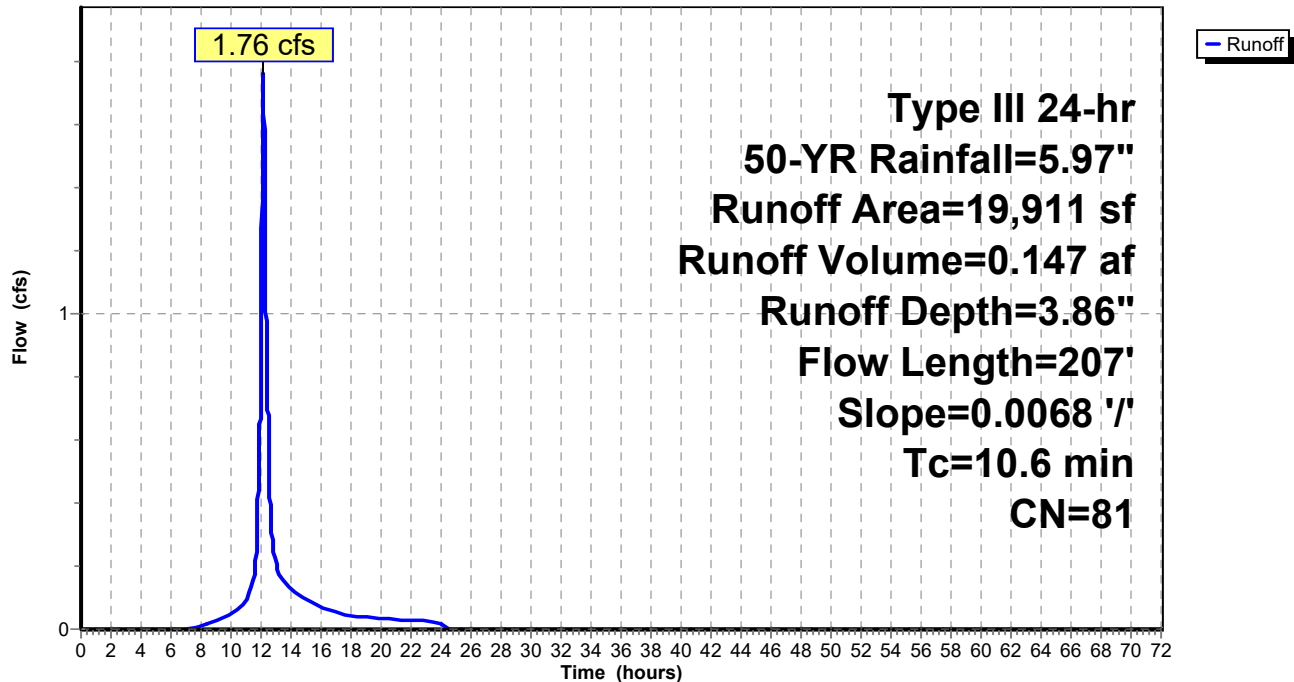
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 50-YR Rainfall=5.97"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 48        | 30 | Woods, Good HSG A            |
| 1,067     | 98 | Roofs HSG A                  |
| 13,064    | 98 | Paved parking HSG A          |
| 5,732     | 39 | >75% Grass cover, Good HSG A |
| 19,911    | 81 | Weighted Average             |
| 5,780     |    | 29.03% Pervious Area         |
| 14,131    |    | 70.97% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 10.6     | 207           | 0.0068        | 0.32              |                | Lag/CN Method, |

**Subcatchment S1.9: S1.9 - CBS**

Hydrograph



**Summary for Subcatchment S3: S3 - IB**

Runoff = 0.07 cfs @ 12.35 hrs, Volume= 0.014 af, Depth= 0.44"  
 Routed to Pond 7P : Sediment Forebay

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 50-YR Rainfall=5.97"

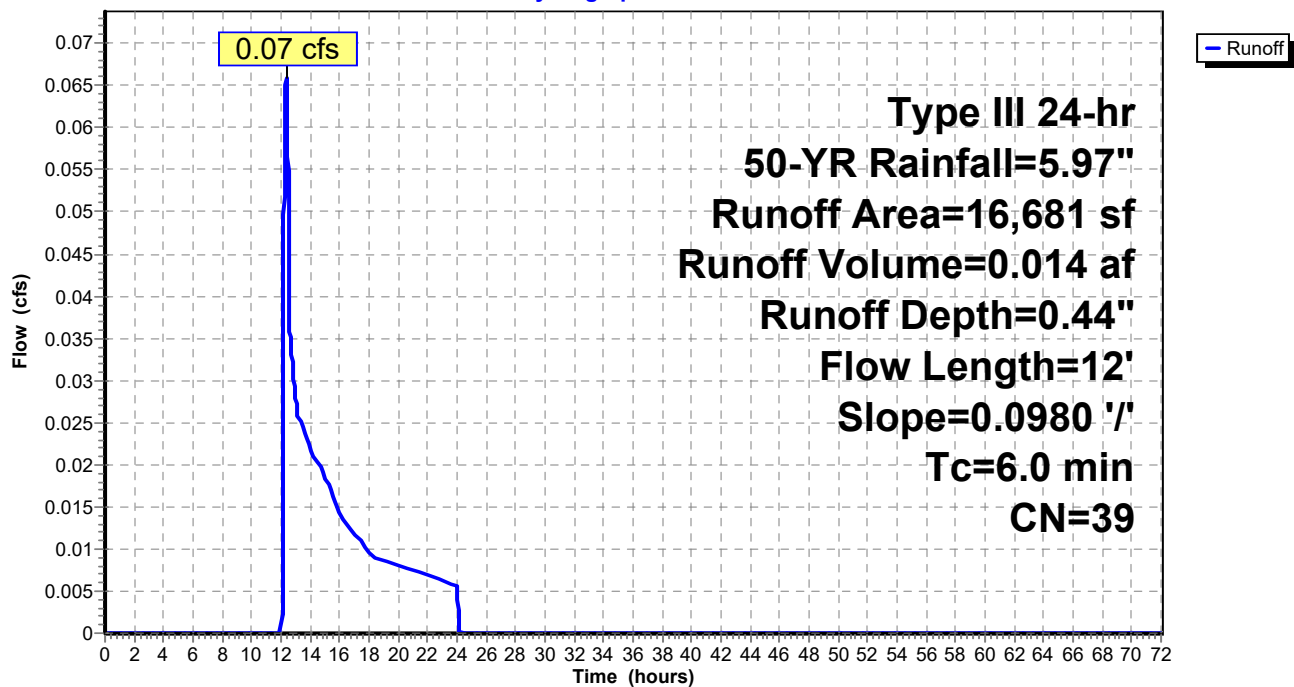
| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 16,681    | 39 | >75% Grass cover, Good HSG A |
| 16,681    |    | 100.00% Pervious Area        |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|------------------------------------------|-------------------|----------------|----------------|
| 0.9      | 12            | 0.0980                                   | 0.23              |                | Lag/CN Method, |
| 0.9      | 12            | Total, Increased to minimum Tc = 6.0 min |                   |                |                |

**Subcatchment S3: S3 - IB**

Hydrograph



**Summary for Subcatchment S3.1: S3.1 - CBS**

Runoff = 19.51 cfs @ 12.08 hrs, Volume= 1.598 af, Depth= 5.73"  
 Routed to Pond 3.1P : Catch Basin

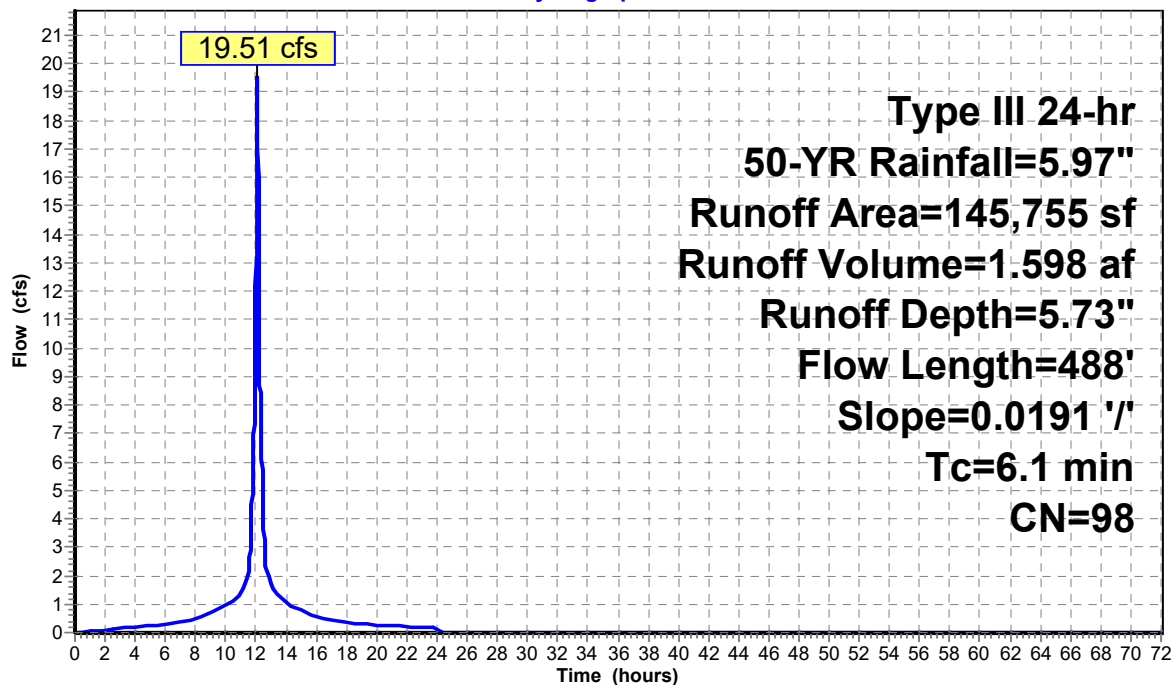
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 50-YR Rainfall=5.97"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 61,600    | 98 | Roofs HSG A                  |
| 83,399    | 98 | Paved parking HSG A          |
| 756       | 39 | >75% Grass cover, Good HSG A |
| 145,755   | 98 | Weighted Average             |
| 756       |    | 0.52% Pervious Area          |
| 144,999   |    | 99.48% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 6.1      | 488           | 0.0191        | 1.32              |                | Lag/CN Method, |

**Subcatchment S3.1: S3.1 - CBS**

Hydrograph



**Summary for Subcatchment S3.2: S3.2 - CBS**

Runoff = 1.56 cfs @ 12.08 hrs, Volume= 0.124 af, Depth= 5.50"  
 Routed to Pond 3.2P : Catch Basin

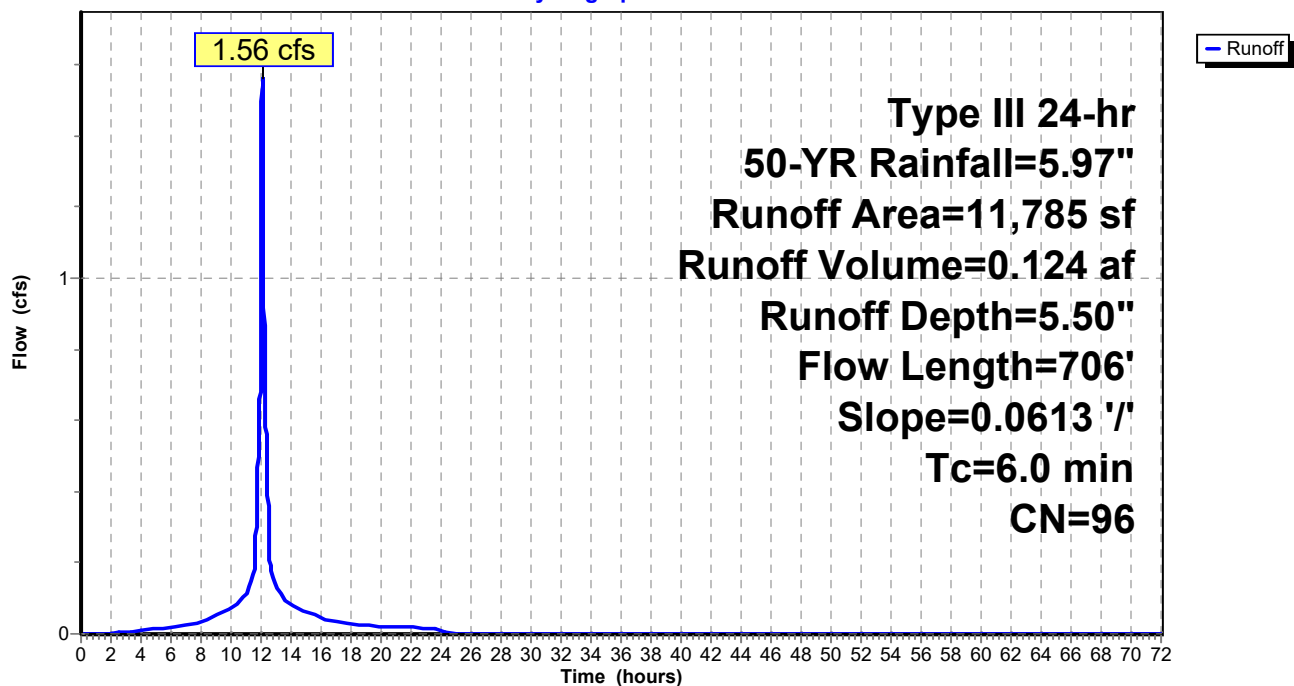
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 50-YR Rainfall=5.97"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 11,313    | 98 | Paved parking HSG A          |
| 473       | 39 | >75% Grass cover, Good HSG A |
| 11,785    | 96 | Weighted Average             |
| 473       |    | 4.01% Pervious Area          |
| 11,313    |    | 95.99% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft)                            | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|------------------------------------------|-------------------|----------------|----------------|
| 5.2      | 706           | 0.0613                                   | 2.28              |                | Lag/CN Method, |
| 5.2      | 706           | Total, Increased to minimum Tc = 6.0 min |                   |                |                |

**Subcatchment S3.2: S3.2 - CBS**

Hydrograph



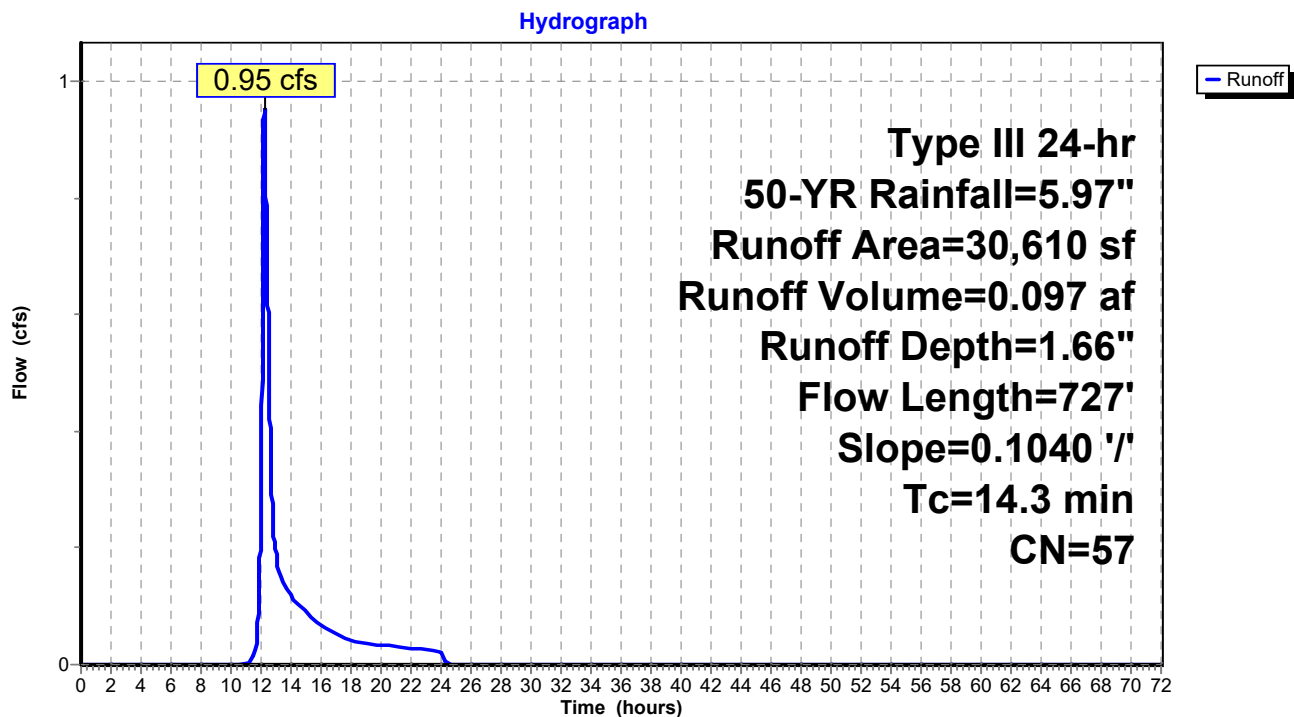
**Summary for Subcatchment S3.21: S3.21 - CBS**

Runoff = 0.95 cfs @ 12.22 hrs, Volume= 0.097 af, Depth= 1.66"  
 Routed to Pond 3.21P : Catch Basin

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 50-YR Rainfall=5.97"

| Area (sf) | CN | Description                  |
|-----------|----|------------------------------|
| 13,390    | 30 | Woods, Good HSG A            |
| 11,285    | 98 | Paved parking HSG A          |
| 5,935     | 39 | >75% Grass cover, Good HSG A |
| 30,610    | 57 | Weighted Average             |
| 19,325    |    | 63.13% Pervious Area         |
| 11,285    |    | 36.87% Impervious Area       |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 14.3     | 727           | 0.1040        | 0.85              |                | Lag/CN Method, |

**Subcatchment S3.21: S3.21 - CBS**

**Summary for Reach OP-1: Observation Point 1**

Inflow Area = 34.369 ac, 20.70% Impervious, Inflow Depth = 0.61" for 50-YR event

Inflow = 11.57 cfs @ 12.37 hrs, Volume= 1.736 af

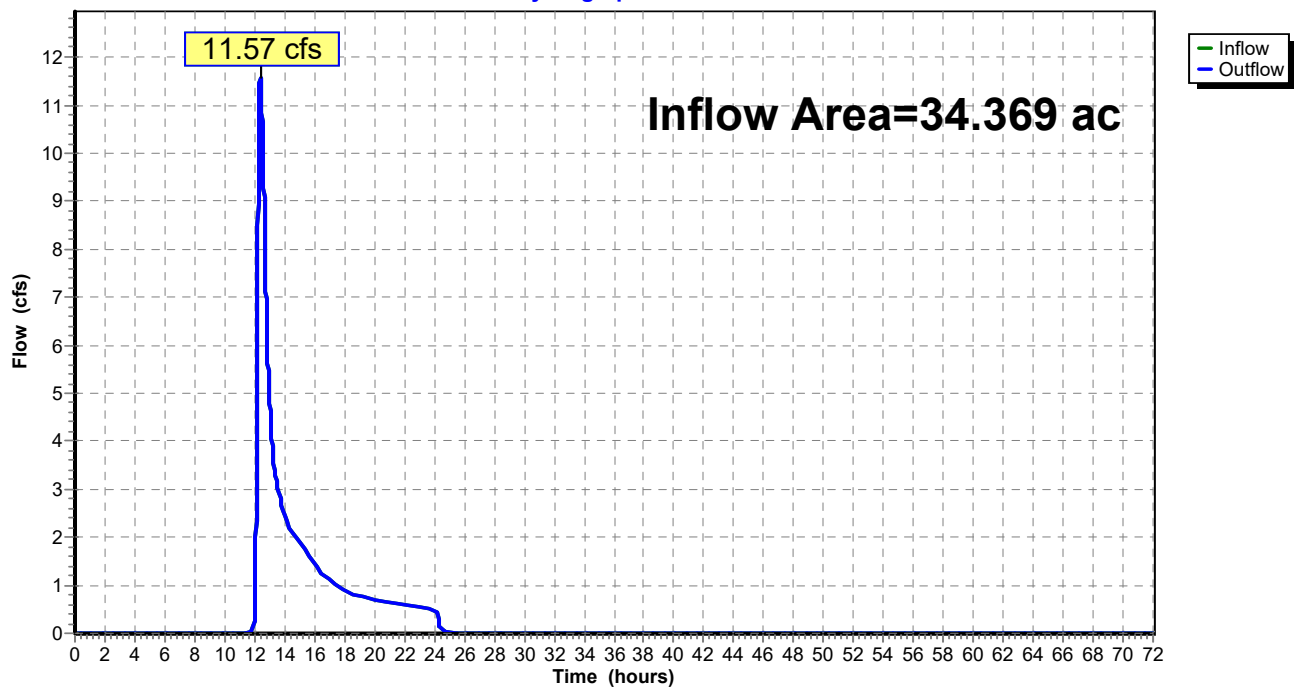
Outflow = 11.57 cfs @ 12.37 hrs, Volume= 1.736 af, Atten= 0%, Lag= 0.0 min

Routed to nonexistent node OP-T

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

**Reach OP-1: Observation Point 1**

Hydrograph



**Summary for Pond 1.11P: Catch Basin**

Inflow Area = 5.802 ac, 34.91% Impervious, Inflow Depth = 1.65" for 50-YR event  
 Inflow = 7.48 cfs @ 12.13 hrs, Volume= 0.797 af  
 Outflow = 7.48 cfs @ 12.13 hrs, Volume= 0.797 af, Atten= 0%, Lag= 0.0 min  
 Primary = 7.48 cfs @ 12.13 hrs, Volume= 0.797 af  
 Routed to Pond 1.1AP : Sediment Forebay

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 359.79' @ 12.14 hrs

Flood Elev= 362.50'

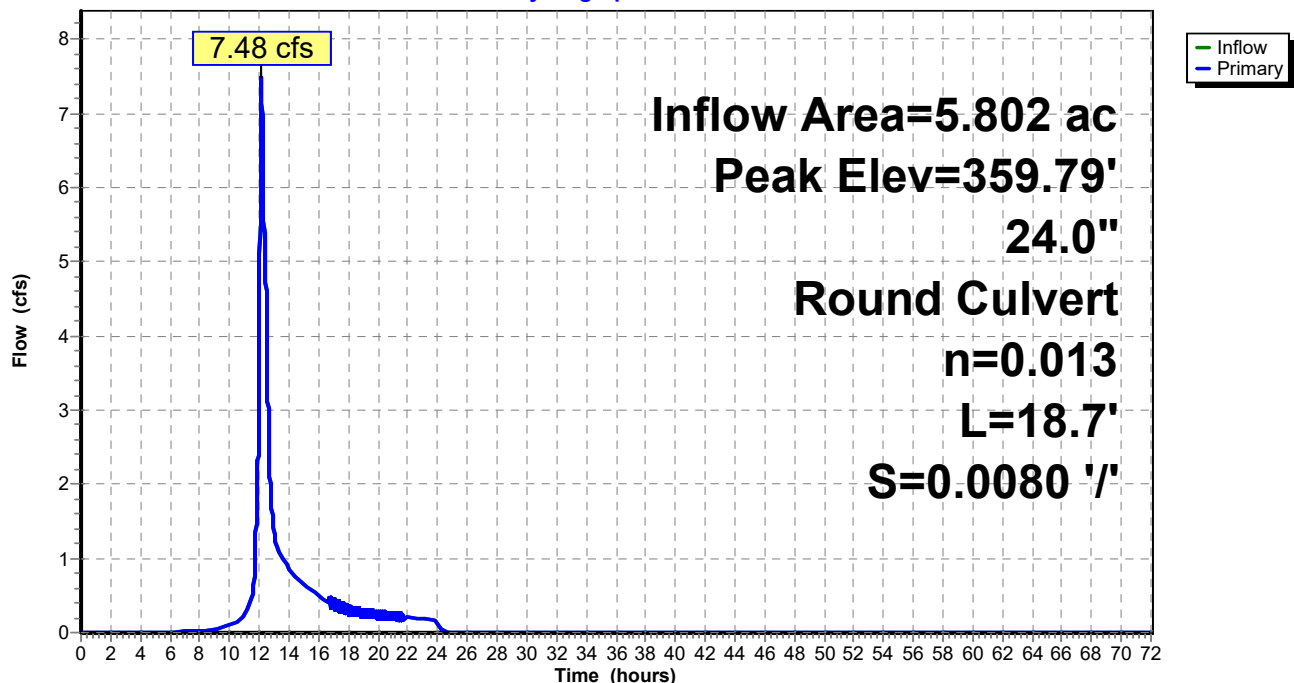
| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                   |
|--------|---------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 357.15' | <b>24.0" Round Culvert</b><br>L= 18.7' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 357.15' / 357.00' S= 0.0080 '/ Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf |

**Primary OutFlow** Max=7.42 cfs @ 12.13 hrs HW=359.79' TW=359.40' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 7.42 cfs @ 2.36 fps)

**Pond 1.11P: Catch Basin**

Hydrograph



**Summary for Pond 1.1AP: Sediment Forebay**

Inflow Area = 6.146 ac, 32.96% Impervious, Inflow Depth = 1.63" for 50-YR event  
 Inflow = 7.96 cfs @ 12.13 hrs, Volume= 0.837 af  
 Outflow = 7.74 cfs @ 12.16 hrs, Volume= 0.783 af, Atten= 3%, Lag= 1.7 min  
 Primary = 7.74 cfs @ 12.16 hrs, Volume= 0.783 af  
 Routed to Pond 1.1P : Infiltration Basin A

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Peak Elev= 359.60' @ 13.39 hrs Surf.Area= 2,973 sf Storage= 3,944 cf  
 Flood Elev= 361.00' Surf.Area= 4,693 sf Storage= 9,274 cf

Plug-Flow detention time= 60.3 min calculated for 0.783 af (94% of inflow)  
 Center-of-Mass det. time= 26.3 min ( 882.3 - 856.0 )

| Volume | Invert  | Avail.Storage | Storage Description                                        |
|--------|---------|---------------|------------------------------------------------------------|
| #1     | 357.00' | 9,274 cf      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |

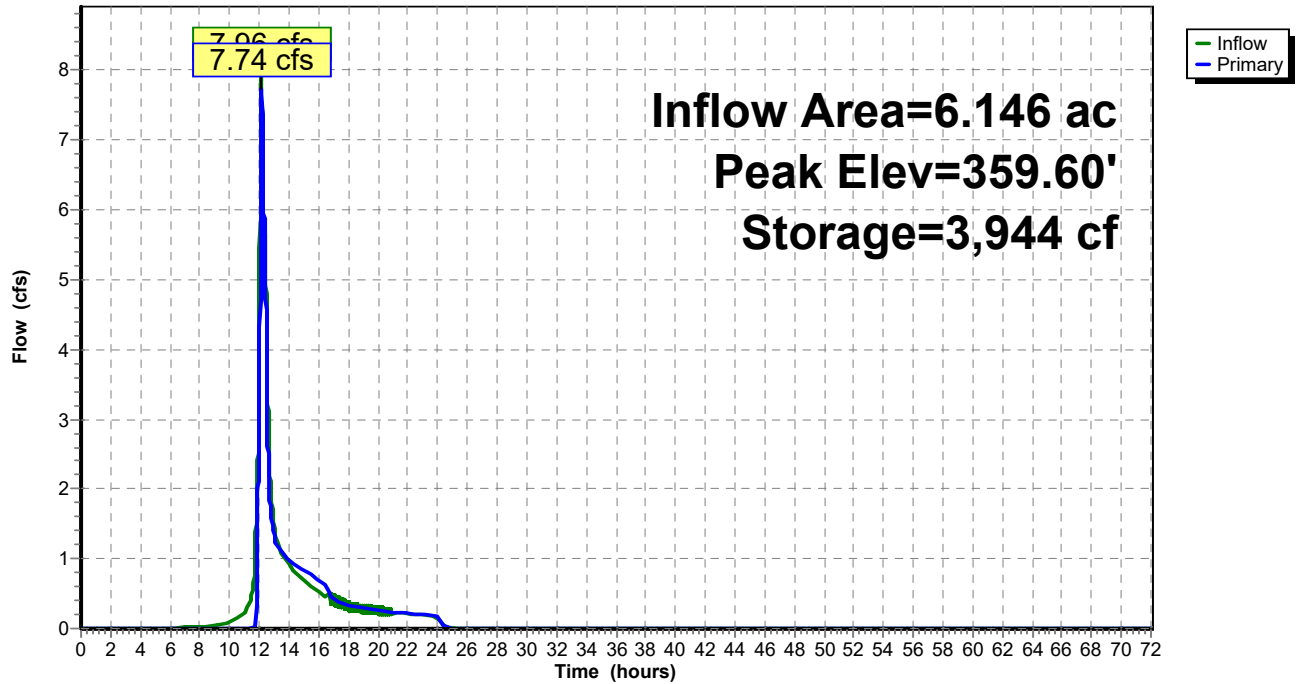
| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Perim.<br>(feet) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |
|---------------------|----------------------|------------------|---------------------------|---------------------------|---------------------|
| 357.00              | 313                  | 317.0            | 0                         | 0                         | 313                 |
| 359.00              | 2,359                | 365.0            | 2,354                     | 2,354                     | 3,006               |
| 361.00              | 4,693                | 413.0            | 6,920                     | 9,274                     | 6,078               |

| Device | Routing | Invert  | Outlet Devices                                                                                                                                                            |
|--------|---------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 359.00' | <b>10.0' long + 3.0 ' SideZ x 14.0' breadth FOREBAY</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.64 2.67 2.70 2.65 2.64 2.65 2.65 2.63 |

**Primary OutFlow** Max=7.73 cfs @ 12.16 hrs HW=359.41' TW=358.02' (Dynamic Tailwater)  
 ↑1=FOREBAY (Weir Controls 7.73 cfs @ 1.67 fps)

**Pond 1.1AP: Sediment Forebay**

Hydrograph



**Summary for Pond 1.1P: Infiltration Basin A**

Inflow Area = 6.146 ac, 32.96% Impervious, Inflow Depth = 1.53" for 50-YR event  
 Inflow = 7.74 cfs @ 12.16 hrs, Volume= 0.783 af  
 Outflow = 1.12 cfs @ 13.39 hrs, Volume= 0.783 af, Atten= 85%, Lag= 73.7 min  
 Discarded = 1.12 cfs @ 13.39 hrs, Volume= 0.783 af  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af  
 Routed to Reach OP-1 : Observation Point 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Peak Elev= 359.60' @ 13.39 hrs Surf.Area= 5,684 sf Storage= 11,423 cf  
 Flood Elev= 361.00' Surf.Area= 7,245 sf Storage= 20,470 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)  
 Center-of-Mass det. time= 113.8 min ( 996.1 - 882.3 )

| Volume              | Invert               | Avail.Storage    | Storage Description                                        |                           |                     |
|---------------------|----------------------|------------------|------------------------------------------------------------|---------------------------|---------------------|
| #1                  | 357.00'              | 20,470 cf        | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                           |                     |
| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Perim.<br>(feet) | Inc.Store<br>(cubic-feet)                                  | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |
| 357.00              | 3,206                | 281.5            | 0                                                          | 0                         | 3,206               |
| 359.00              | 5,077                | 338.5            | 8,212                                                      | 8,212                     | 6,086               |
| 361.00              | 7,245                | 383.4            | 12,258                                                     | 20,470                    | 8,764               |

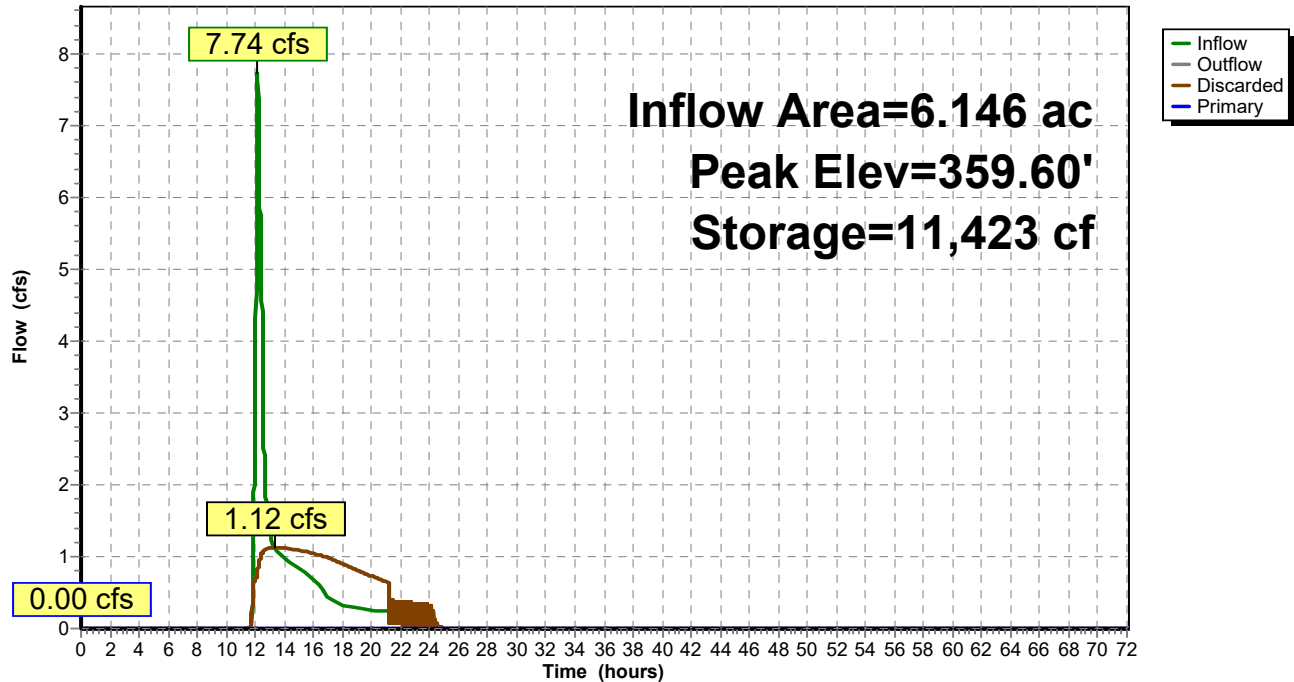
| Device | Routing   | Invert  | Outlet Devices                                                                                                                                                                                                                                                                                  |
|--------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Discarded | 357.00' | <b>8.530 in/hr Exfiltration over Surface area</b>                                                                                                                                                                                                                                               |
| #2     | Primary   | 357.00' | <b>18.0" Round Culvert</b><br>L= 25.0' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 357.00' / 356.50' S= 0.0200 ' S= 0.0200 ' Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf                                                                     |
| #3     | Primary   | 360.50' | <b>10.0' long + 3.0 ' SideZ x 7.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00<br>2.50 3.00 3.50 4.00 4.50 5.00 5.50<br>Coef. (English) 2.40 2.52 2.70 2.68 2.68 2.67 2.66 2.65 2.65<br>2.65 2.66 2.65 2.66 2.68 2.70 2.73 2.78 |
| #4     | Device 2  | 360.50' | <b>24.0" x 24.0" Horiz. RIM</b> C= 0.600<br>Limited to weir flow at low heads                                                                                                                                                                                                                   |
| #5     | Primary   | 359.75' | <b>3.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads                                                                                                                                                                                                                      |

**Discarded OutFlow** Max=1.12 cfs @ 13.39 hrs HW=359.60' (Free Discharge)  
 1=Exfiltration (Exfiltration Controls 1.12 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=357.00' TW=0.00' (Dynamic Tailwater)  
 2=Culvert ( Controls 0.00 cfs)  
 4=RIM ( Controls 0.00 cfs)  
 3=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)  
 5=Orifice/Grate ( Controls 0.00 cfs)

**Pond 1.1P: Infiltration Basin A**

Hydrograph



**Summary for Pond 1.2P: Catch Basin**

Inflow Area = 1.763 ac, 12.06% Impervious, Inflow Depth = 0.55" for 50-YR event  
 Inflow = 0.42 cfs @ 12.41 hrs, Volume= 0.080 af  
 Outflow = 0.42 cfs @ 12.41 hrs, Volume= 0.080 af, Atten= 0%, Lag= 0.1 min  
 Primary = 0.42 cfs @ 12.41 hrs, Volume= 0.080 af  
 Routed to Pond 1.11P : Catch Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 359.79' @ 12.15 hrs

Flood Elev= 362.50'

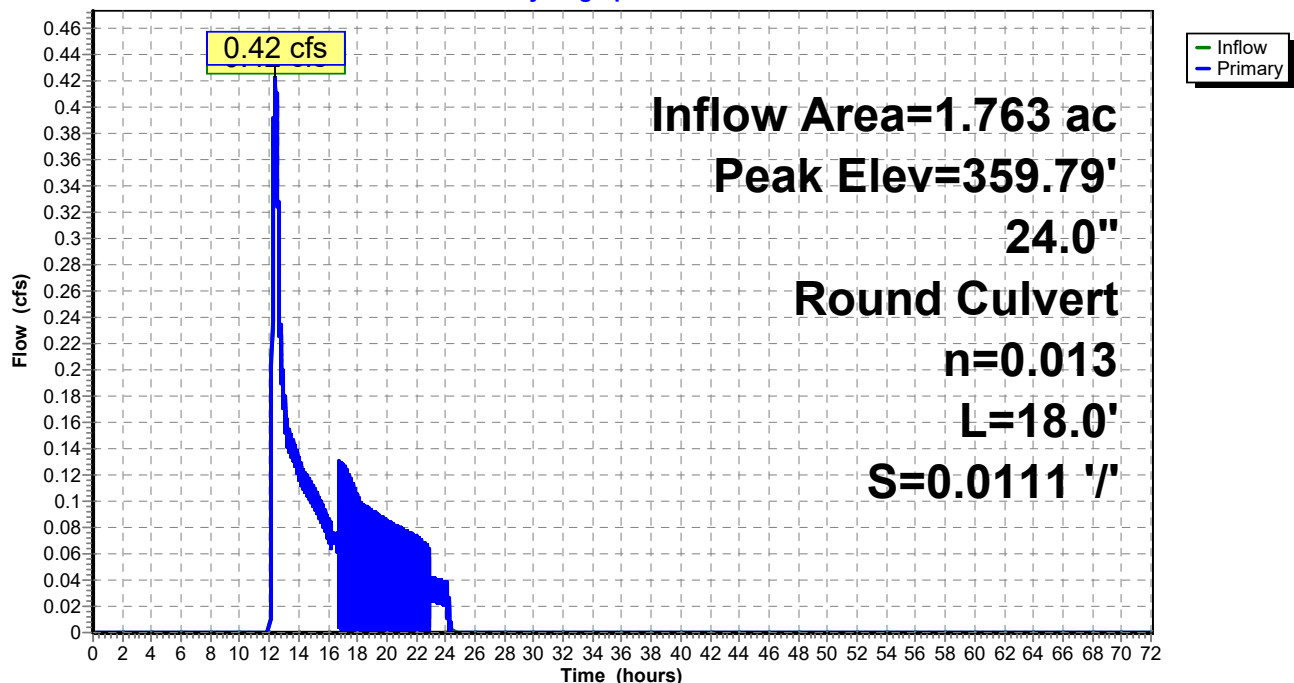
| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                    |
|--------|---------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 357.35' | <b>24.0" Round Culvert</b><br>L= 18.0' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 357.35' / 357.15' S= 0.0111 '/' Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf |

**Primary OutFlow** Max=0.81 cfs @ 12.41 hrs HW=359.50' TW=359.49' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 0.81 cfs @ 0.26 fps)

**Pond 1.2P: Catch Basin**

Hydrograph



**Summary for Pond 1.3P: Catch Basin**

Inflow Area = 3.919 ac, 43.32% Impervious, Inflow Depth = 2.02" for 50-YR event  
 Inflow = 6.79 cfs @ 12.13 hrs, Volume= 0.661 af  
 Outflow = 6.79 cfs @ 12.13 hrs, Volume= 0.661 af, Atten= 0%, Lag= 0.0 min  
 Primary = 6.79 cfs @ 12.13 hrs, Volume= 0.661 af  
 Routed to Pond 1.11P : Catch Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

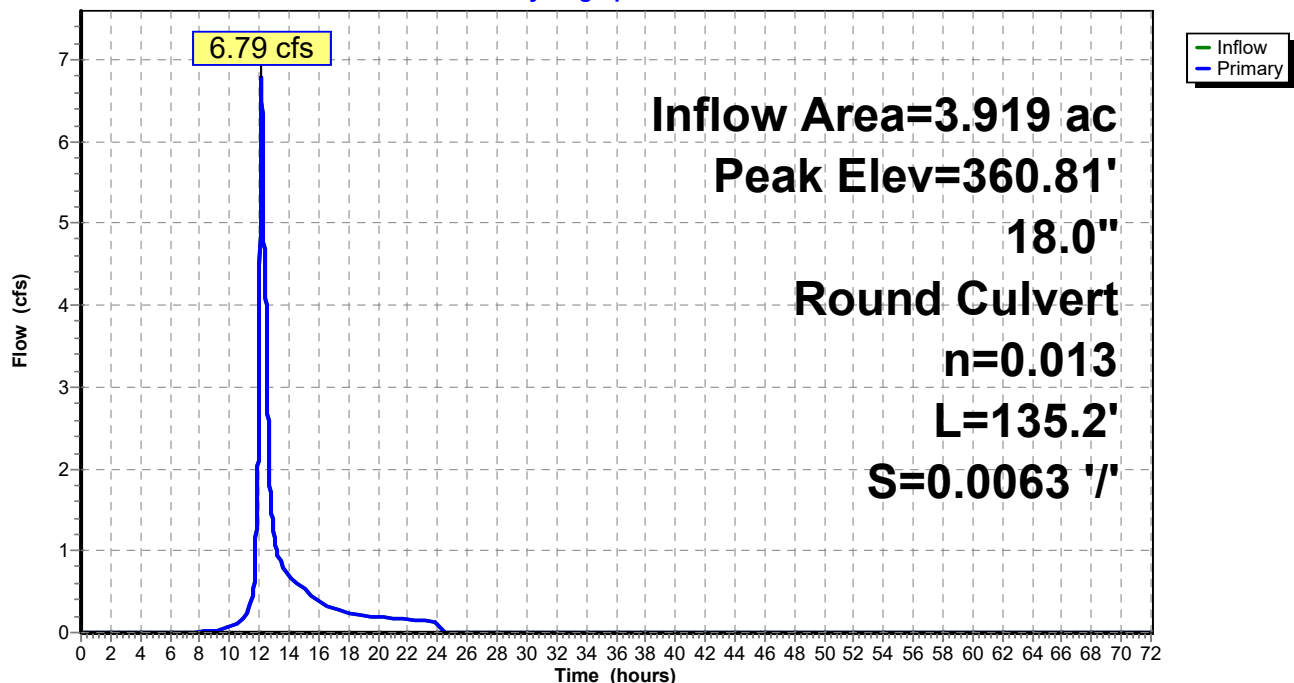
Peak Elev= 360.81' @ 12.14 hrs

Flood Elev= 362.99'

| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                    |
|--------|---------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 358.10' | <b>18.0" Round Culvert</b><br>L= 135.2' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 358.10' / 357.25' S= 0.0063 '/ Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf |

**Primary OutFlow** Max=6.74 cfs @ 12.13 hrs HW=360.80' TW=359.79' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 6.74 cfs @ 3.82 fps)

**Pond 1.3P: Catch Basin****Hydrograph**

**Summary for Pond 1.41P: Catch Basin**

Inflow Area = 1.671 ac, 34.39% Impervious, Inflow Depth = 2.16" for 50-YR event  
 Inflow = 3.61 cfs @ 12.14 hrs, Volume= 0.300 af  
 Outflow = 3.62 cfs @ 12.14 hrs, Volume= 0.300 af, Atten= 0%, Lag= 0.0 min  
 Primary = 3.62 cfs @ 12.14 hrs, Volume= 0.300 af  
 Routed to Pond 1.42P : Catch Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 358.03' @ 12.15 hrs

Flood Elev= 357.65'

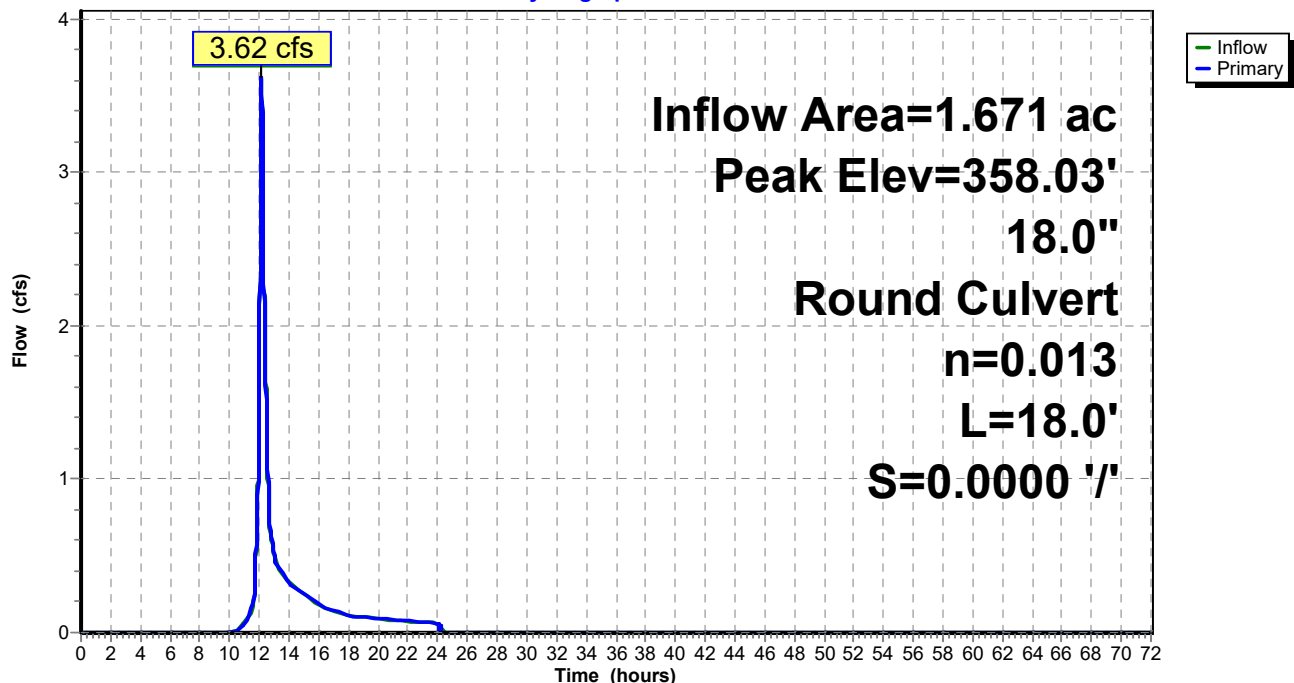
| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                   |
|--------|---------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 353.15' | <b>18.0" Round Culvert</b><br>L= 18.0' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 353.15' / 353.15' S= 0.0000 '/ Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf |

**Primary OutFlow** Max=3.59 cfs @ 12.14 hrs HW=358.02' TW=357.74' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 3.59 cfs @ 2.03 fps)

**Pond 1.41P: Catch Basin**

Hydrograph



**Summary for Pond 1.42P: Catch Basin**

Inflow Area = 2.690 ac, 43.80% Impervious, Inflow Depth = 2.80" for 50-YR event  
 Inflow = 7.73 cfs @ 12.13 hrs, Volume= 0.628 af  
 Outflow = 7.73 cfs @ 12.13 hrs, Volume= 0.628 af, Atten= 0%, Lag= 0.0 min  
 Primary = 7.73 cfs @ 12.13 hrs, Volume= 0.628 af  
 Routed to Pond 2P : Sediment Forebay

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 357.74' @ 12.14 hrs

Flood Elev= 357.65'

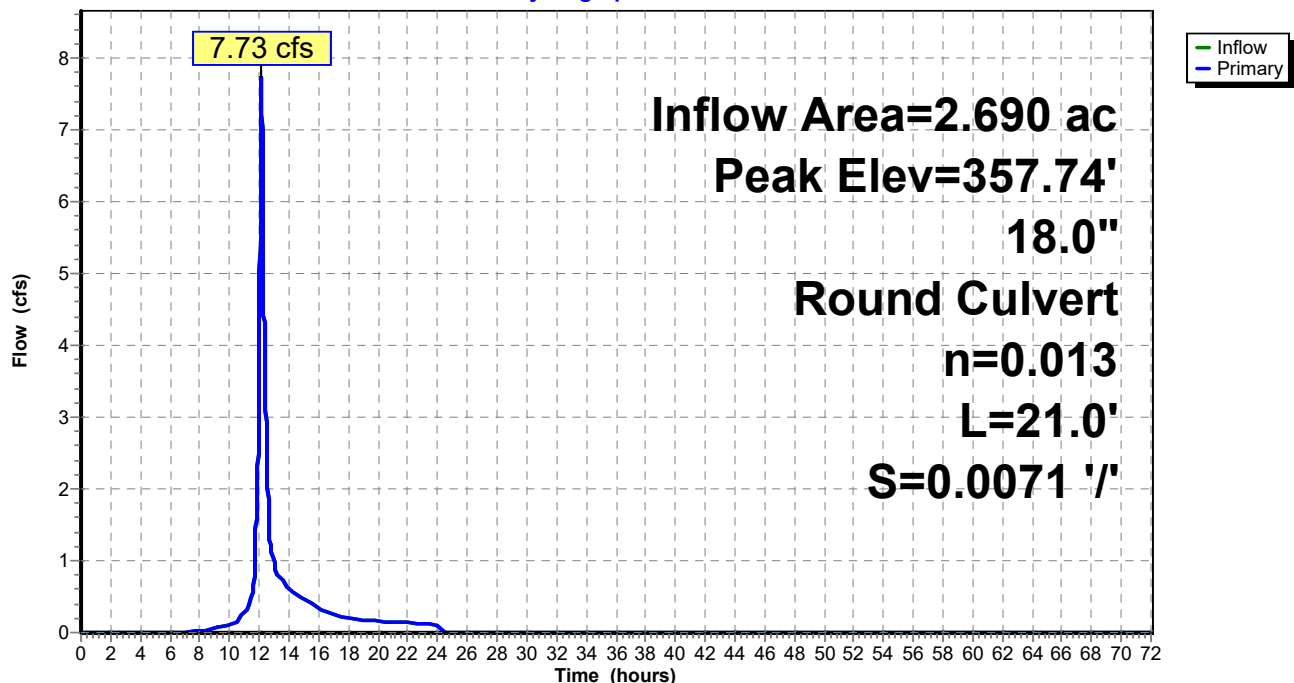
| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                   |
|--------|---------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 353.15' | <b>18.0" Round Culvert</b><br>L= 21.0' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 353.15' / 353.00' S= 0.0071 '/ Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf |

**Primary OutFlow** Max=7.70 cfs @ 12.13 hrs HW=357.73' TW=356.42' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 7.70 cfs @ 4.36 fps)

**Pond 1.42P: Catch Basin**

Hydrograph



**Summary for Pond 1.43P: Infiltration Basin D**

Inflow Area = 3.121 ac, 39.30% Impervious, Inflow Depth = 2.24" for 50-YR event  
 Inflow = 7.96 cfs @ 12.16 hrs, Volume= 0.582 af  
 Outflow = 0.61 cfs @ 14.27 hrs, Volume= 0.582 af, Atten= 92%, Lag= 126.6 min  
 Discarded = 0.59 cfs @ 14.27 hrs, Volume= 0.581 af  
 Primary = 0.02 cfs @ 14.27 hrs, Volume= 0.001 af  
 Routed to Reach OP-1 : Observation Point 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Peak Elev= 356.51' @ 14.27 hrs Surf.Area= 4,672 sf Storage= 10,403 cf  
 Flood Elev= 357.00' Surf.Area= 5,210 sf Storage= 12,808 cf

Plug-Flow detention time= 231.9 min calculated for 0.582 af (100% of inflow)  
 Center-of-Mass det. time= 231.9 min ( 1,118.0 - 886.1 )

| Volume              | Invert               | Avail.Storage    | Storage Description                                        |                           |                     |
|---------------------|----------------------|------------------|------------------------------------------------------------|---------------------------|---------------------|
| #1                  | 353.00'              | 12,808 cf        | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                           |                     |
| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Perim.<br>(feet) | Inc.Store<br>(cubic-feet)                                  | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |
| 353.00              | 1,423                | 271.5            | 0                                                          | 0                         | 1,423               |
| 355.00              | 3,187                | 315.6            | 4,493                                                      | 4,493                     | 3,565               |
| 357.00              | 5,210                | 358.3            | 8,315                                                      | 12,808                    | 5,952               |

| Device | Routing   | Invert  | Outlet Devices                                                               |  |  |  |  |  |  |  |  |  |  |  |
|--------|-----------|---------|------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|
| #1     | Primary   | 356.50' | <b>5.0' long + 3.0 ' SideZ x 7.0' breadth Broad-Crested Rectangular Weir</b> |  |  |  |  |  |  |  |  |  |  |  |
|        |           |         | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00                |  |  |  |  |  |  |  |  |  |  |  |
|        |           |         | 2.50 3.00 3.50 4.00 4.50 5.00 5.50                                           |  |  |  |  |  |  |  |  |  |  |  |
|        |           |         | Coef. (English) 2.40 2.52 2.70 2.68 2.68 2.67 2.66 2.65 2.65                 |  |  |  |  |  |  |  |  |  |  |  |
|        |           |         | 2.65 2.66 2.65 2.66 2.68 2.70 2.73 2.78                                      |  |  |  |  |  |  |  |  |  |  |  |
| #2     | Discarded | 353.00' | <b>5.490 in/hr Exfiltration over Surface area</b>                            |  |  |  |  |  |  |  |  |  |  |  |

**Discarded OutFlow** Max=0.59 cfs @ 14.27 hrs HW=356.51' (Free Discharge)

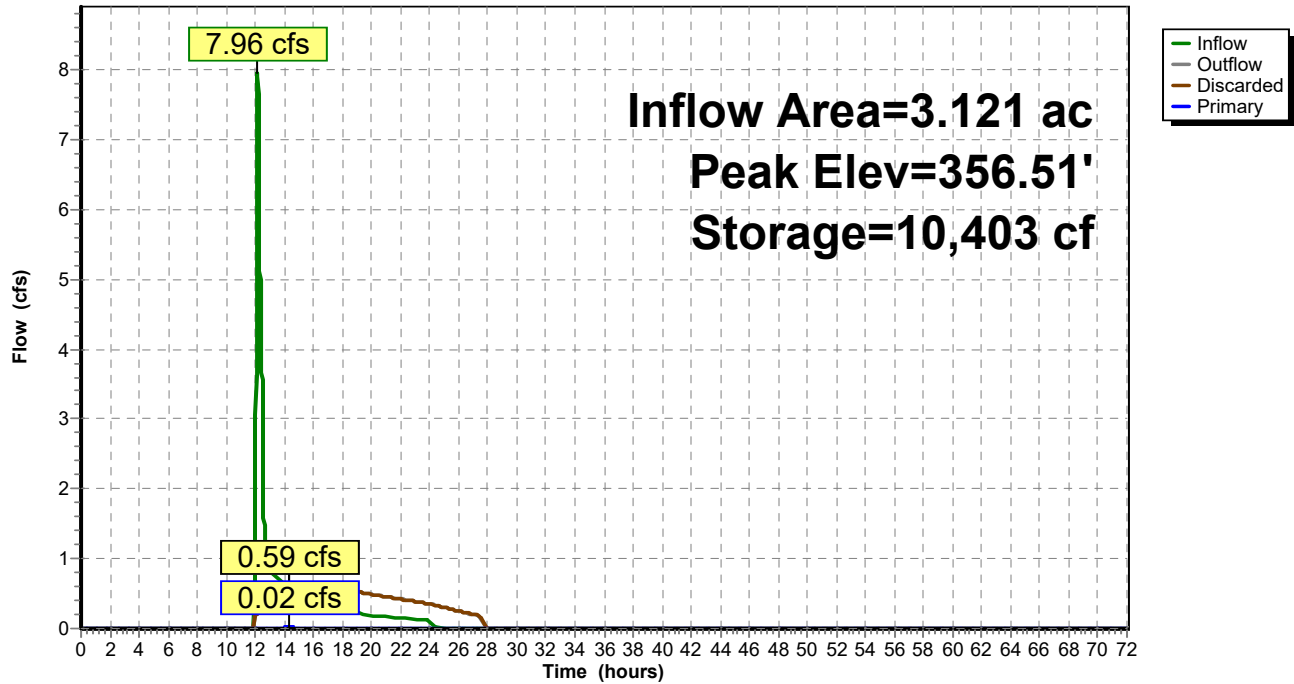
↑**2=Exfiltration** (Exfiltration Controls 0.59 cfs)

**Primary OutFlow** Max=0.02 cfs @ 14.27 hrs HW=356.51' TW=0.00' (Dynamic Tailwater)

↑**1=Broad-Crested Rectangular Weir** (Weir Controls 0.02 cfs @ 0.27 fps)

**Pond 1.43P: Infiltration Basin D**

Hydrograph



**Summary for Pond 1.4P: Catch Basin**

Inflow Area = 3.915 ac, 43.26% Impervious, Inflow Depth = 2.02" for 50-YR event  
 Inflow = 6.76 cfs @ 12.13 hrs, Volume= 0.659 af  
 Outflow = 6.76 cfs @ 12.13 hrs, Volume= 0.659 af, Atten= 0%, Lag= 0.0 min  
 Primary = 6.76 cfs @ 12.13 hrs, Volume= 0.659 af  
 Routed to Pond 1.3P : Catch Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 361.81' @ 12.14 hrs

Flood Elev= 363.27'

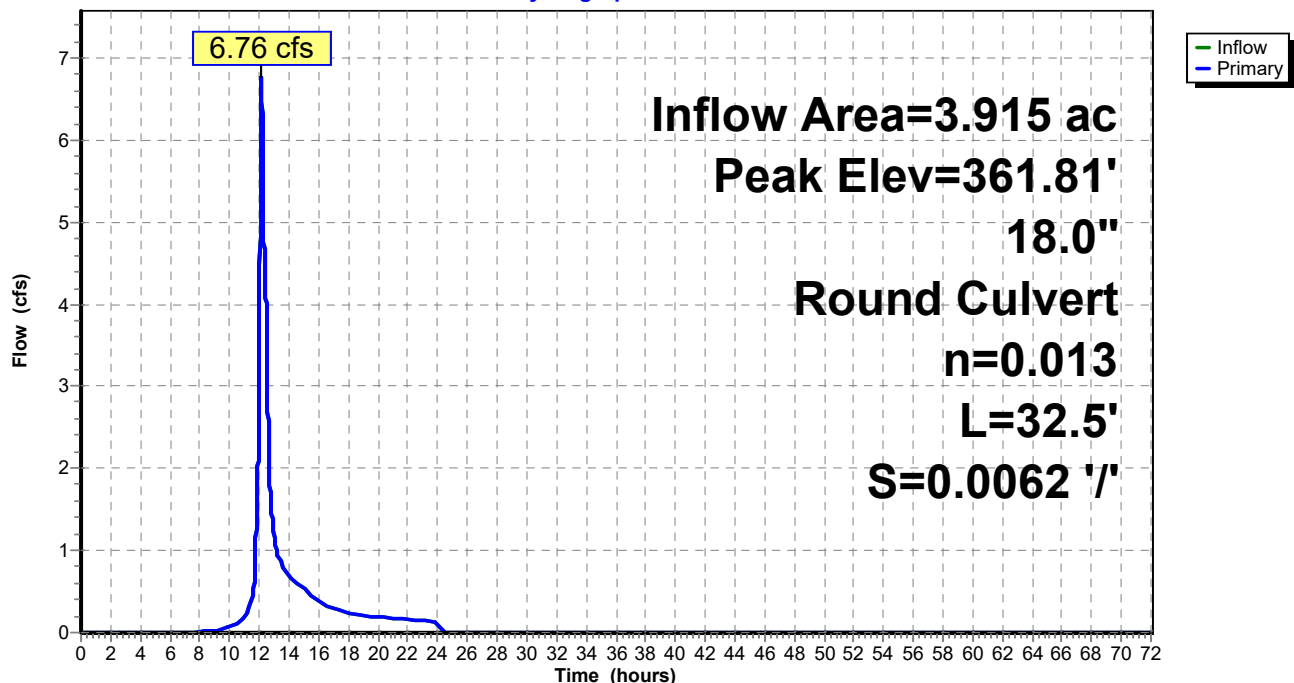
| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                   |
|--------|---------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 358.30' | <b>18.0" Round Culvert</b><br>L= 32.5' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 358.30' / 358.10' S= 0.0062 '/ Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf |

**Primary OutFlow** Max=6.67 cfs @ 12.13 hrs HW=361.78' TW=360.80' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 6.67 cfs @ 3.77 fps)

**Pond 1.4P: Catch Basin**

Hydrograph



**Summary for Pond 1.51P: Catch Basin**

Inflow Area = 1.250 ac, 36.01% Impervious, Inflow Depth = 2.34" for 50-YR event  
 Inflow = 2.00 cfs @ 12.13 hrs, Volume= 0.243 af  
 Outflow = 2.00 cfs @ 12.13 hrs, Volume= 0.243 af, Atten= 0%, Lag= 0.0 min  
 Primary = 2.00 cfs @ 12.13 hrs, Volume= 0.243 af  
 Routed to Pond 1.5P : Catch Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 365.12' @ 12.14 hrs

Flood Elev= 368.68'

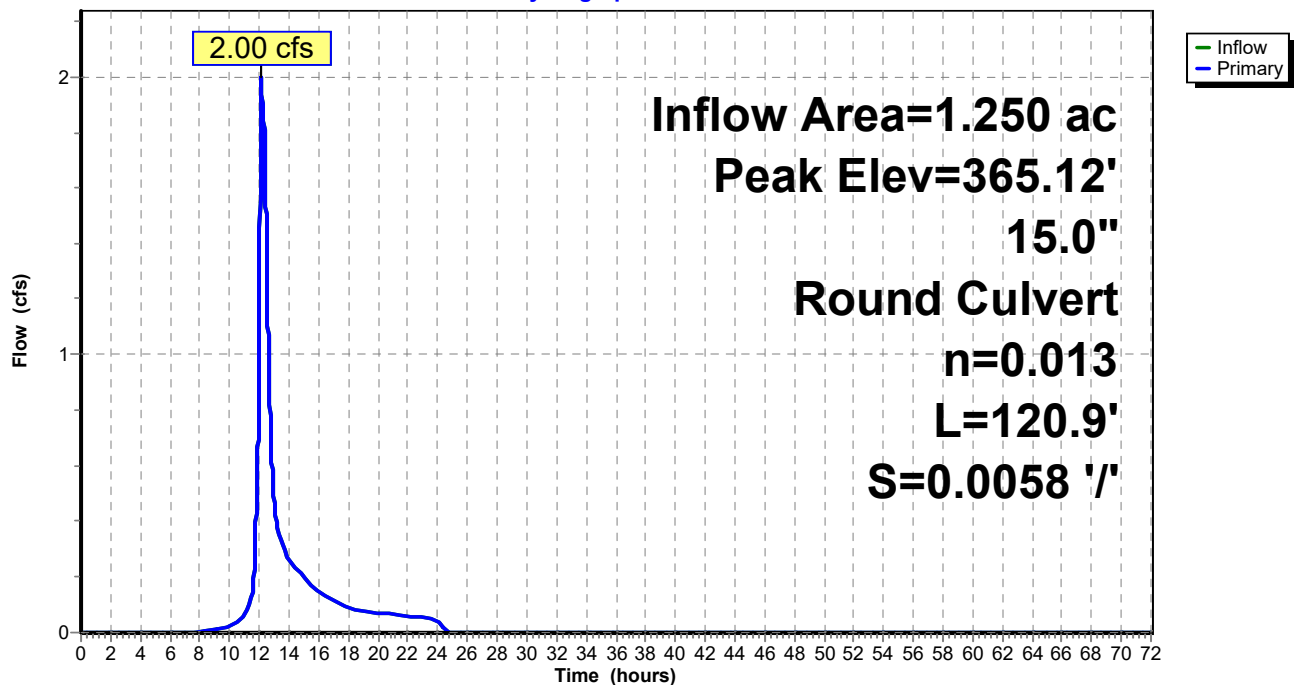
| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                    |
|--------|---------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 363.90' | <b>15.0" Round Culvert</b><br>L= 120.9' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 363.90' / 363.20' S= 0.0058 '/ Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf |

**Primary OutFlow** Max=1.94 cfs @ 12.13 hrs HW=365.11' TW=364.85' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 1.94 cfs @ 2.03 fps)

**Pond 1.51P: Catch Basin**

Hydrograph



**Summary for Pond 1.52P: Catch Basin**

Inflow Area = 0.424 ac, 44.05% Impervious, Inflow Depth = 3.18" for 50-YR event  
 Inflow = 1.48 cfs @ 12.10 hrs, Volume= 0.113 af  
 Outflow = 1.48 cfs @ 12.10 hrs, Volume= 0.113 af, Atten= 0%, Lag= 0.0 min  
 Primary = 1.48 cfs @ 12.10 hrs, Volume= 0.113 af  
 Routed to Pond 1.51P : Catch Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 366.14' @ 12.12 hrs

Flood Elev= 370.12'

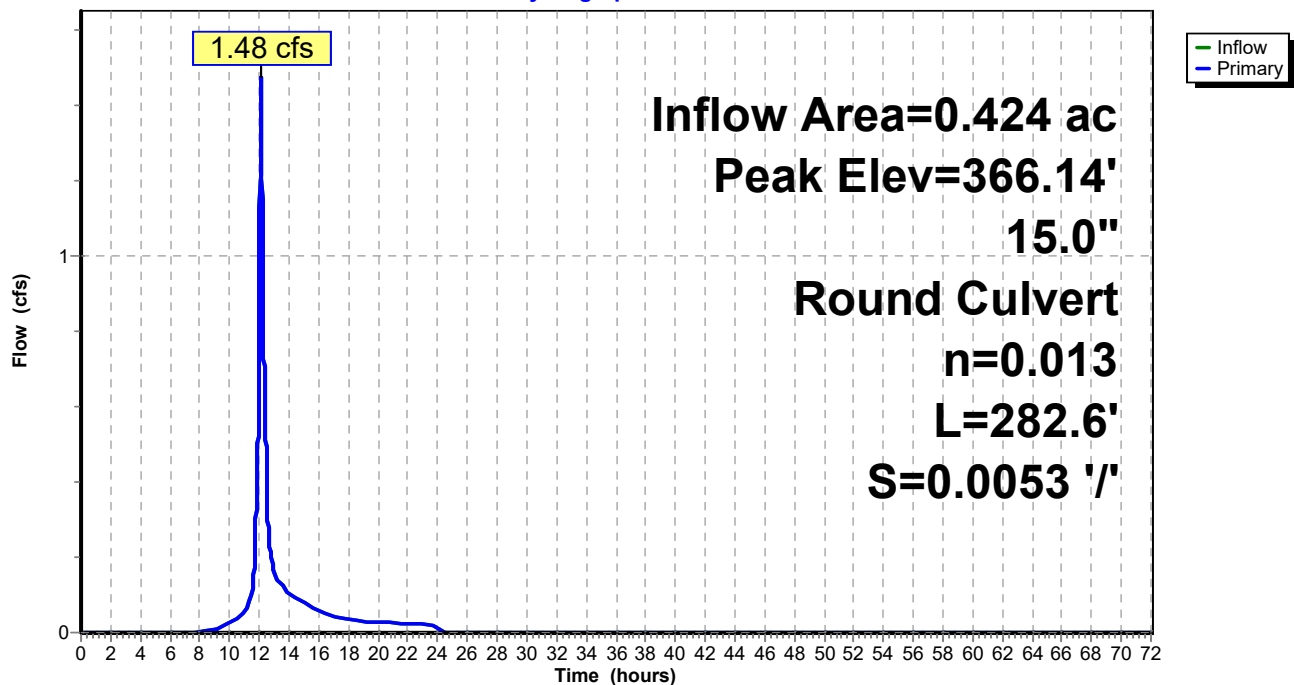
| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                    |
|--------|---------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 365.40' | <b>15.0" Round Culvert</b><br>L= 282.6' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 365.40' / 363.90' S= 0.0053 '/ Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf |

**Primary OutFlow** Max=1.44 cfs @ 12.10 hrs HW=366.14' TW=365.05' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 1.44 cfs @ 2.75 fps)

**Pond 1.52P: Catch Basin**

Hydrograph



**Summary for Pond 1.53P: Catch Basin**

Inflow Area = 0.257 ac, 35.92% Impervious, Inflow Depth = 2.87" for 50-YR event  
 Inflow = 0.79 cfs @ 12.12 hrs, Volume= 0.062 af  
 Outflow = 0.79 cfs @ 12.12 hrs, Volume= 0.062 af, Atten= 0%, Lag= 0.0 min  
 Primary = 0.79 cfs @ 12.12 hrs, Volume= 0.062 af  
 Routed to Pond 1.52P : Catch Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 366.23' @ 12.13 hrs

Flood Elev= 370.17'

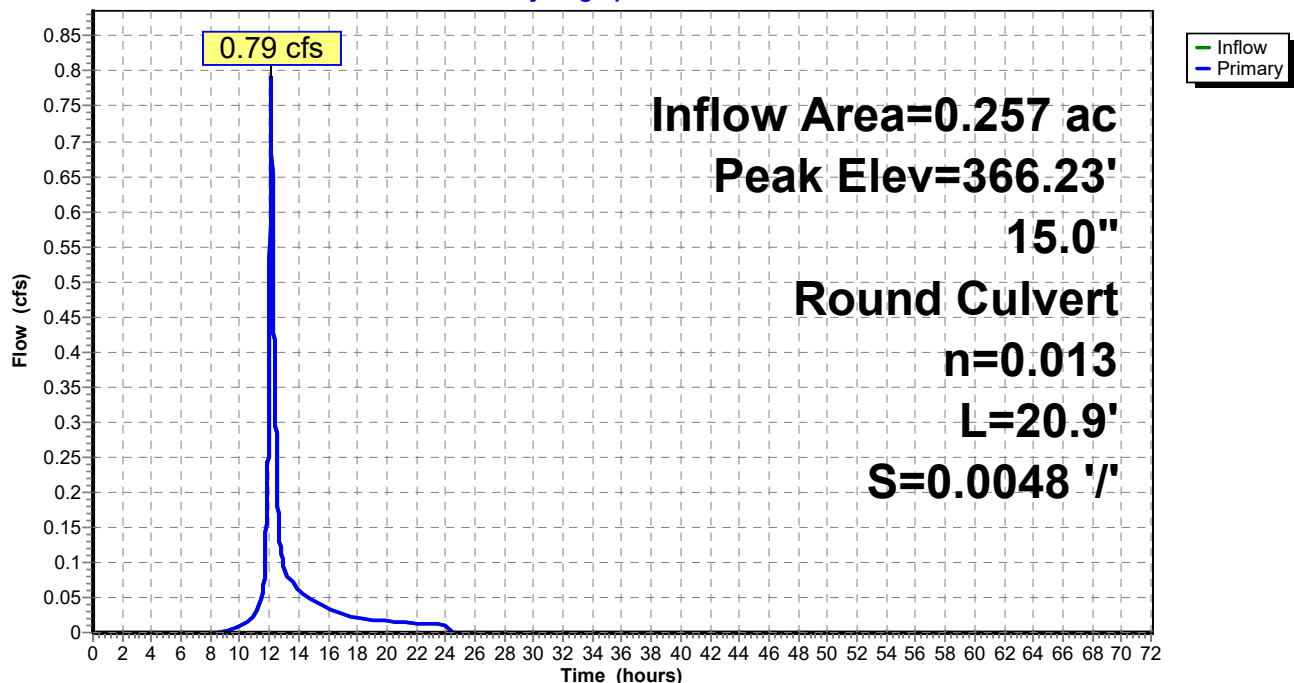
| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                   |
|--------|---------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 365.50' | <b>15.0" Round Culvert</b><br>L= 20.9' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 365.50' / 365.40' S= 0.0048 '/ Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf |

**Primary OutFlow** Max=0.79 cfs @ 12.12 hrs HW=366.23' TW=366.14' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 0.79 cfs @ 1.52 fps)

**Pond 1.53P: Catch Basin**

Hydrograph



**Summary for Pond 1.5P: Catch Basin**

Inflow Area = 3.544 ac, 45.57% Impervious, Inflow Depth = 2.10" for 50-YR event  
 Inflow = 6.38 cfs @ 12.13 hrs, Volume= 0.620 af  
 Outflow = 6.38 cfs @ 12.13 hrs, Volume= 0.620 af, Atten= 0%, Lag= 0.0 min  
 Primary = 6.38 cfs @ 12.13 hrs, Volume= 0.620 af  
 Routed to Pond 1.4P : Catch Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

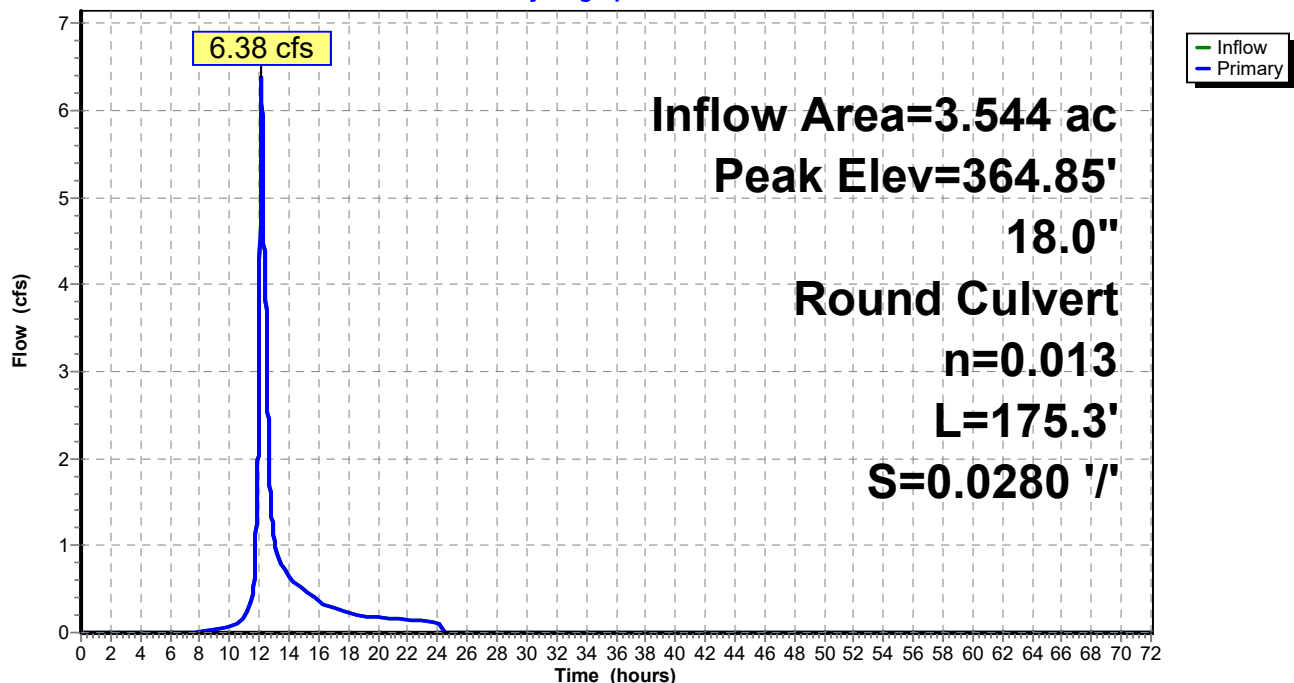
Peak Elev= 364.85' @ 12.13 hrs

Flood Elev= 367.78'

| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                    |
|--------|---------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 363.20' | <b>18.0" Round Culvert</b><br>L= 175.3' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 363.20' / 358.30' S= 0.0280 '/ Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf |

**Primary OutFlow** Max=6.37 cfs @ 12.13 hrs HW=364.85' TW=361.78' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 6.37 cfs @ 3.61 fps)

**Pond 1.5P: Catch Basin****Hydrograph**

**Summary for Pond 1.6P: Catch Basin**

Inflow Area = 0.874 ac, 66.59% Impervious, Inflow Depth = 1.67" for 50-YR event  
 Inflow = 1.48 cfs @ 12.10 hrs, Volume= 0.121 af  
 Outflow = 1.48 cfs @ 12.10 hrs, Volume= 0.121 af, Atten= 0%, Lag= 0.0 min  
 Primary = 1.48 cfs @ 12.10 hrs, Volume= 0.121 af  
 Routed to Pond 1.5P : Catch Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

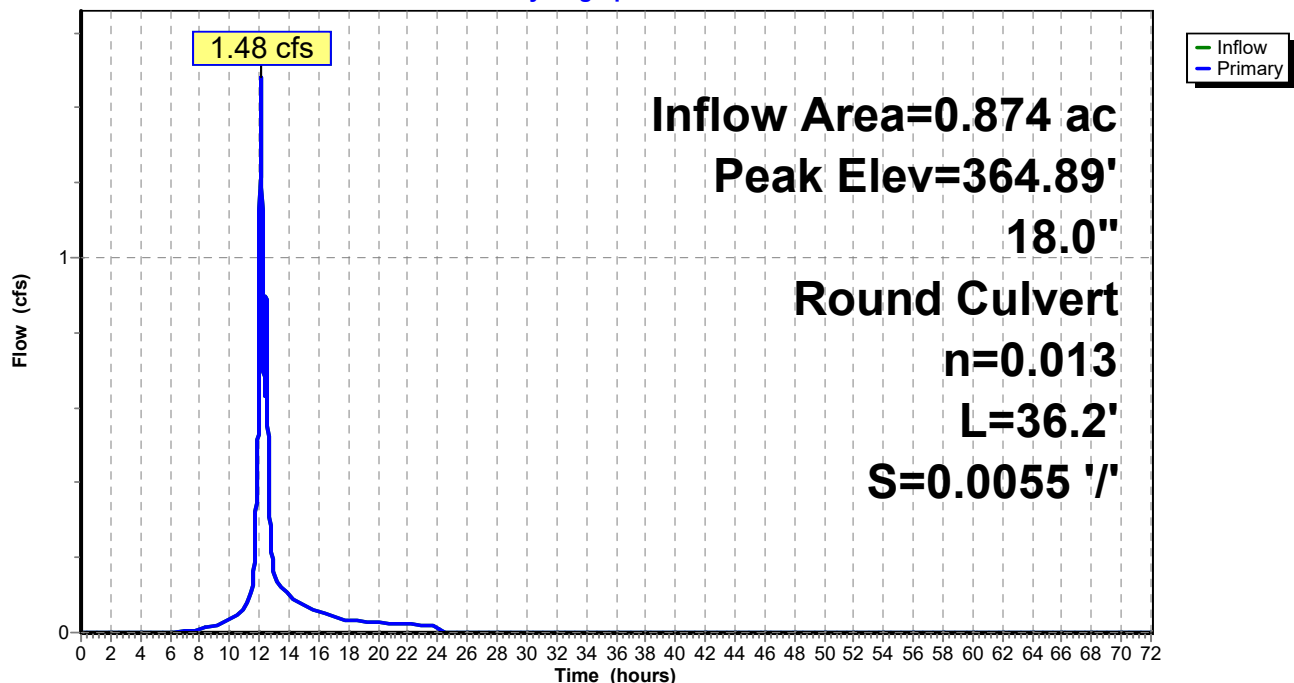
Peak Elev= 364.89' @ 12.14 hrs

Flood Elev= 369.07'

| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                   |
|--------|---------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 363.40' | <b>18.0" Round Culvert</b><br>L= 36.2' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 363.40' / 363.20' S= 0.0055 '/ Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf |

**Primary OutFlow** Max=0.26 cfs @ 12.10 hrs HW=364.79' TW=364.79' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 0.26 cfs @ 0.15 fps)

**Pond 1.6P: Catch Basin****Hydrograph**

**Summary for Pond 1.7P: Catch Basin**

Inflow Area = 0.840 ac, 66.22% Impervious, Inflow Depth = 1.57" for 50-YR event  
 Inflow = 1.32 cfs @ 12.11 hrs, Volume= 0.110 af  
 Outflow = 1.32 cfs @ 12.11 hrs, Volume= 0.110 af, Atten= 0%, Lag= 0.0 min  
 Primary = 1.32 cfs @ 12.11 hrs, Volume= 0.110 af  
 Routed to Pond 1.6P : Catch Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

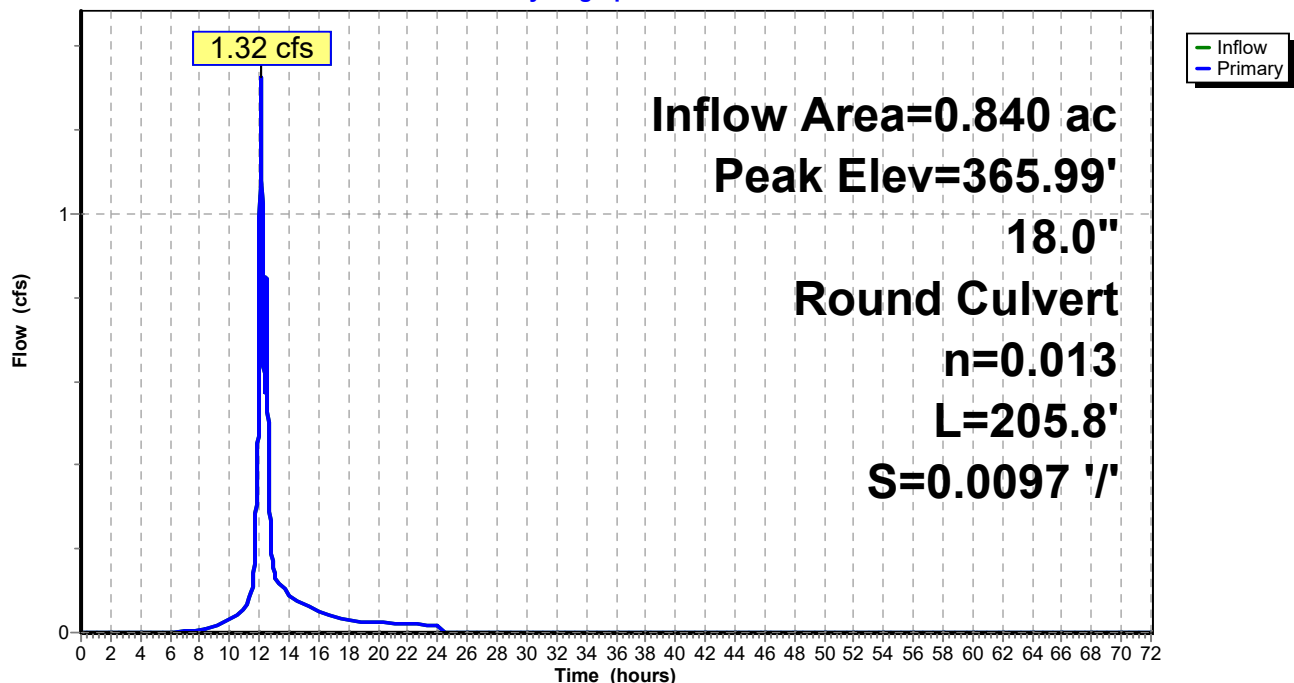
Peak Elev= 365.99' @ 12.12 hrs

Flood Elev= 372.97'

| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                     |
|--------|---------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 365.40' | <b>18.0" Round Culvert</b><br>L= 205.8' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 365.40' / 363.40' S= 0.0097 '/' Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf |

**Primary OutFlow** Max=1.31 cfs @ 12.11 hrs HW=365.99' TW=364.80' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 1.31 cfs @ 3.03 fps)

**Pond 1.7P: Catch Basin****Hydrograph**

**Summary for Pond 1.8P: Catch Basin**

Inflow Area = 0.717 ac, 71.65% Impervious, Inflow Depth = 1.58" for 50-YR event  
 Inflow = 1.13 cfs @ 12.11 hrs, Volume= 0.094 af  
 Outflow = 1.13 cfs @ 12.11 hrs, Volume= 0.094 af, Atten= 0%, Lag= 0.0 min  
 Primary = 1.13 cfs @ 12.11 hrs, Volume= 0.094 af  
 Routed to Pond 1.7P : Catch Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

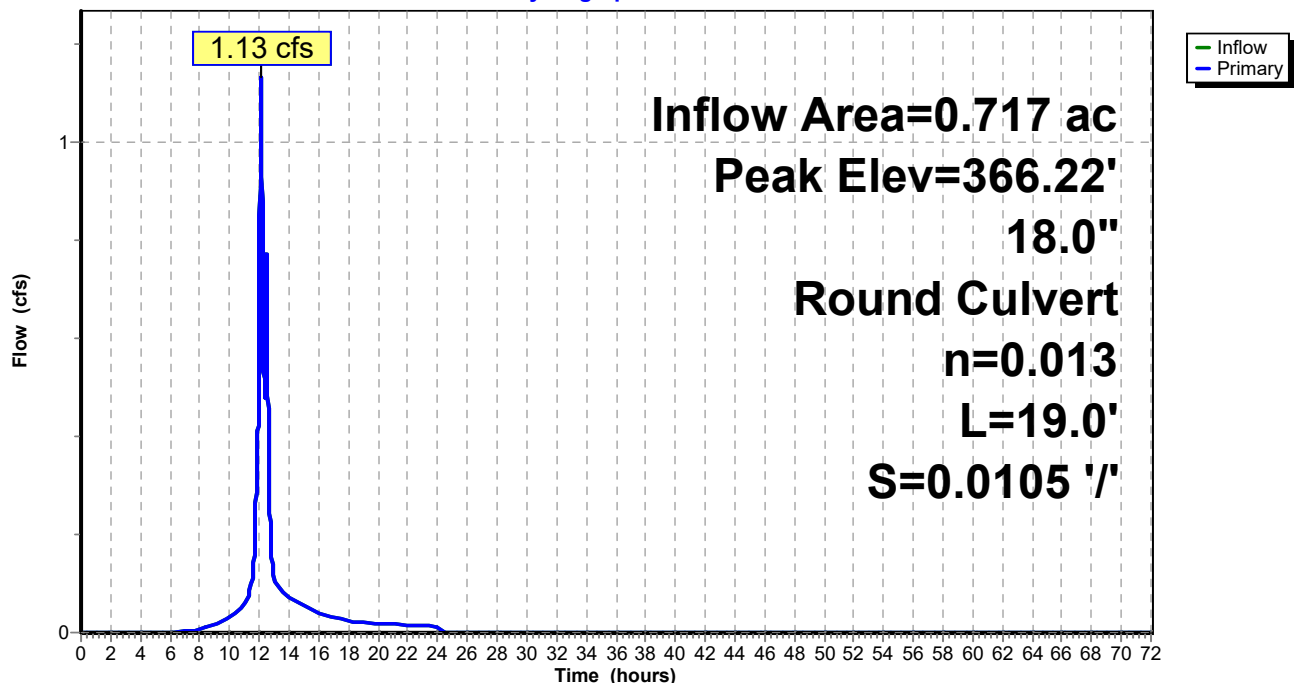
Peak Elev= 366.22' @ 12.11 hrs

Flood Elev= 372.95'

| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                   |
|--------|---------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 365.60' | <b>18.0" Round Culvert</b><br>L= 19.0' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 365.60' / 365.40' S= 0.0105 '/ Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf |

**Primary OutFlow** Max=1.13 cfs @ 12.11 hrs HW=366.22' TW=365.99' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 1.13 cfs @ 2.44 fps)

**Pond 1.8P: Catch Basin****Hydrograph**

**Summary for Pond 1.9P: Infiltration Basin B**

Inflow Area = 0.457 ac, 70.97% Impervious, Inflow Depth = 3.86" for 50-YR event  
 Inflow = 1.76 cfs @ 12.14 hrs, Volume= 0.147 af  
 Outflow = 0.69 cfs @ 12.46 hrs, Volume= 0.147 af, Atten= 61%, Lag= 19.1 min  
 Discarded = 0.27 cfs @ 12.46 hrs, Volume= 0.138 af  
 Primary = 0.42 cfs @ 12.46 hrs, Volume= 0.008 af  
 Routed to Pond 1.8P : Catch Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Peak Elev= 371.58' @ 12.46 hrs Surf.Area= 1,338 sf Storage= 2,323 cf  
 Flood Elev= 372.00' Surf.Area= 1,540 sf Storage= 2,934 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)  
 Center-of-Mass det. time= 90.7 min ( 906.8 - 816.0 )

| Volume              | Invert               | Avail.Storage    | Storage Description                                                                                                                                                                                               |                           |                     |
|---------------------|----------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------|
| #1                  | 368.00'              | 2,934 cf         | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc)                                                                                                                                                        |                           |                     |
| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Perim.<br>(feet) | Inc.Store<br>(cubic-feet)                                                                                                                                                                                         | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |
| 368.00              | 111                  | 78.3             | 0                                                                                                                                                                                                                 | 0                         | 111                 |
| 370.00              | 711                  | 119.4            | 735                                                                                                                                                                                                               | 735                       | 787                 |
| 372.00              | 1,540                | 157.1            | 2,198                                                                                                                                                                                                             | 2,934                     | 1,662               |
| Device              | Routing              | Invert           | Outlet Devices                                                                                                                                                                                                    |                           |                     |
| #1                  | Discarded            | 368.00'          | <b>8.695 in/hr Exfiltration over Surface area</b>                                                                                                                                                                 |                           |                     |
| #2                  | Primary              | 366.00'          | <b>15.0" Round Culvert</b><br>L= 15.0' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 366.00' / 365.60' S= 0.0267 '/' Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf |                           |                     |
| #3                  | Device 2             | 371.50'          | <b>24.0" Horiz. RISER</b> C= 0.600 Limited to weir flow at low heads                                                                                                                                              |                           |                     |

**Discarded OutFlow** Max=0.27 cfs @ 12.46 hrs HW=371.58' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 0.27 cfs)

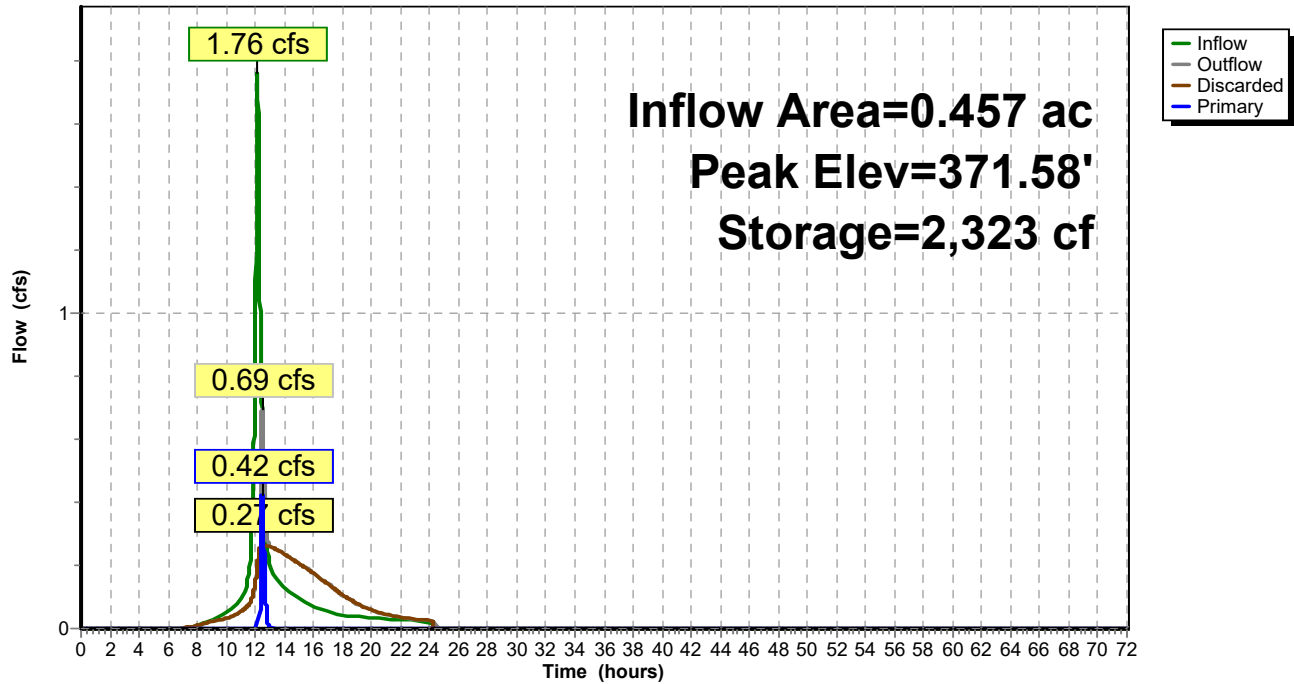
**Primary OutFlow** Max=0.42 cfs @ 12.46 hrs HW=371.58' TW=366.08' (Dynamic Tailwater)

↑ **2=Culvert** (Passes 0.42 cfs of 10.38 cfs potential flow)

↑ **3=RISER** (Weir Controls 0.42 cfs @ 0.90 fps)

**Pond 1.9P: Infiltration Basin B**

Hydrograph



**Summary for Pond 2P: Sediment Forebay**

Inflow Area = 3.121 ac, 39.30% Impervious, Inflow Depth = 2.61" for 50-YR event  
 Inflow = 8.32 cfs @ 12.13 hrs, Volume= 0.679 af  
 Outflow = 7.96 cfs @ 12.16 hrs, Volume= 0.582 af, Atten= 4%, Lag= 2.0 min  
 Primary = 7.96 cfs @ 12.16 hrs, Volume= 0.582 af  
 Routed to Pond 1.43P : Infiltration Basin D

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Peak Elev= 356.51' @ 14.28 hrs Surf.Area= 3,399 sf Storage= 5,830 cf  
 Flood Elev= 357.00' Surf.Area= 3,971 sf Storage= 7,622 cf

Plug-Flow detention time= 111.1 min calculated for 0.582 af (86% of inflow)  
 Center-of-Mass det. time= 47.2 min ( 886.1 - 838.9 )

| Volume | Invert  | Avail.Storage | Storage Description                                        |
|--------|---------|---------------|------------------------------------------------------------|
| #1     | 353.00' | 7,622 cf      | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |

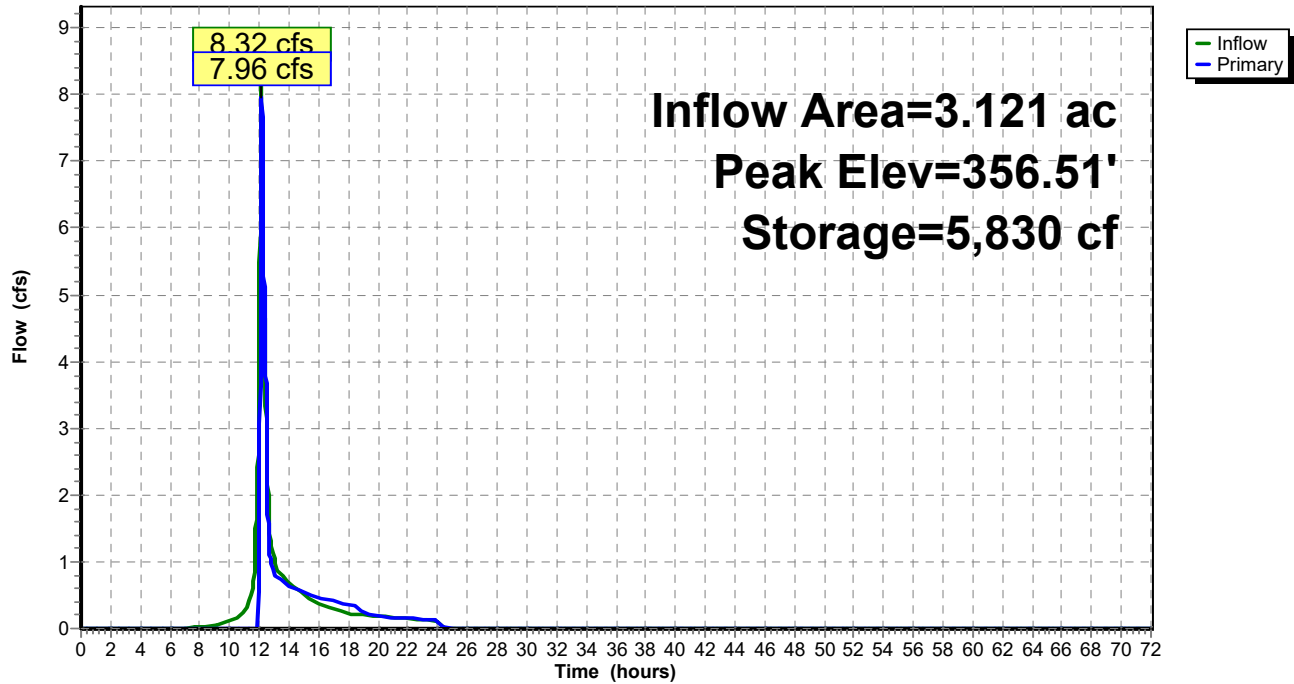
| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Perim.<br>(feet) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |
|---------------------|----------------------|------------------|---------------------------|---------------------------|---------------------|
| 353.00              | 234                  | 243.9            | 0                         | 0                         | 234                 |
| 355.00              | 1,905                | 307.7            | 1,871                     | 1,871                     | 3,088               |
| 357.00              | 3,971                | 391.4            | 5,751                     | 7,622                     | 7,797               |

| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                                                                                                  |
|--------|---------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 356.00' | <b>10.0' long + 3.0 ' SideZ x 7.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00<br>2.50 3.00 3.50 4.00 4.50 5.00 5.50<br>Coef. (English) 2.40 2.52 2.70 2.68 2.68 2.67 2.66 2.65 2.65<br>2.65 2.66 2.65 2.66 2.68 2.70 2.73 2.78 |

**Primary OutFlow** Max=7.95 cfs @ 12.16 hrs HW=356.43' TW=354.42' (Dynamic Tailwater)  
 ↑1=Broad-Crested Rectangular Weir (Weir Controls 7.95 cfs @ 1.63 fps)

**Pond 2P: Sediment Forebay**

Hydrograph



**Summary for Pond 3.1P: Catch Basin**

Inflow Area = 3.346 ac, 99.48% Impervious, Inflow Depth = 5.73" for 50-YR event  
 Inflow = 19.51 cfs @ 12.08 hrs, Volume= 1.598 af  
 Outflow = 19.51 cfs @ 12.08 hrs, Volume= 1.598 af, Atten= 0%, Lag= 0.0 min  
 Primary = 19.51 cfs @ 12.08 hrs, Volume= 1.598 af  
 Routed to Pond 7P : Sediment Forebay

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

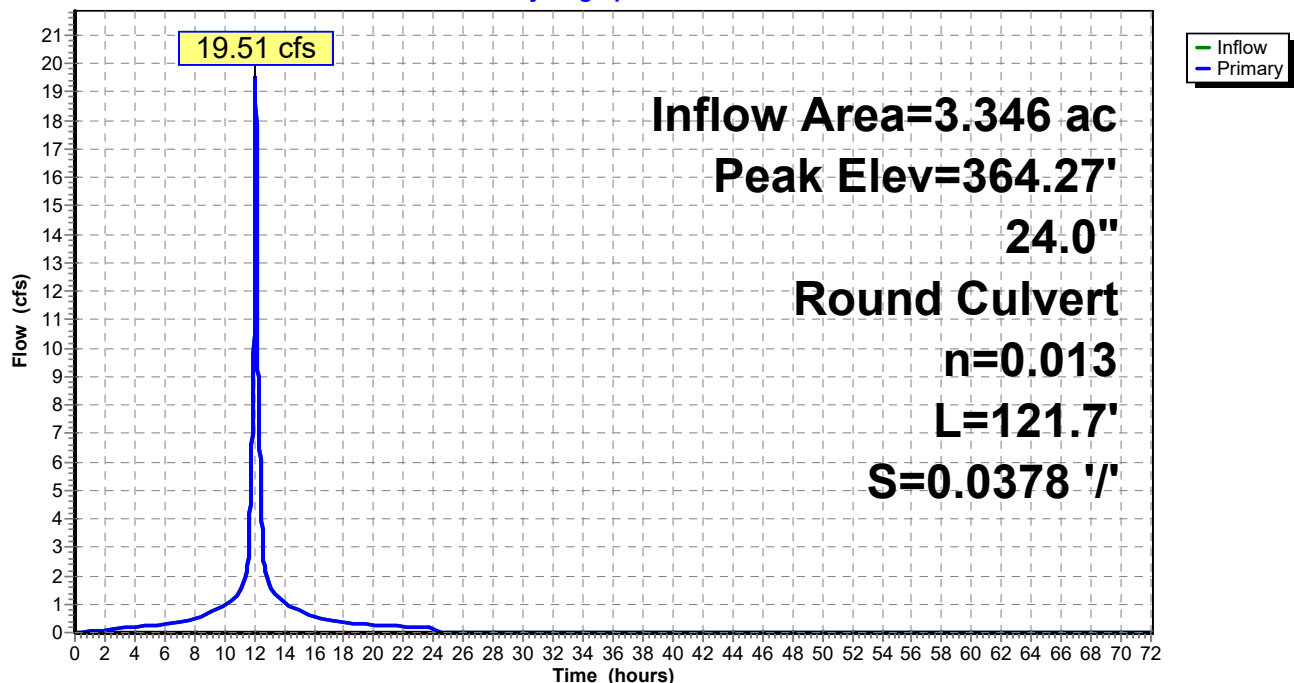
Peak Elev= 364.27' @ 12.08 hrs

Flood Elev= 365.61'

| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                    |
|--------|---------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 360.60' | <b>24.0" Round Culvert</b><br>L= 121.7' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 360.60' / 356.00' S= 0.0378 '/ Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf |

**Primary OutFlow** Max=19.48 cfs @ 12.08 hrs HW=364.26' TW=355.73' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 19.48 cfs @ 6.20 fps)

**Pond 3.1P: Catch Basin****Hydrograph**

**Summary for Pond 3.21P: Catch Basin**

Inflow Area = 0.703 ac, 36.87% Impervious, Inflow Depth = 1.66" for 50-YR event  
 Inflow = 0.95 cfs @ 12.22 hrs, Volume= 0.097 af  
 Outflow = 0.95 cfs @ 12.22 hrs, Volume= 0.097 af, Atten= 0%, Lag= 0.0 min  
 Primary = 0.95 cfs @ 12.22 hrs, Volume= 0.097 af  
 Routed to Pond 3.2P : Catch Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 359.66' @ 12.15 hrs

Flood Elev= 365.24'

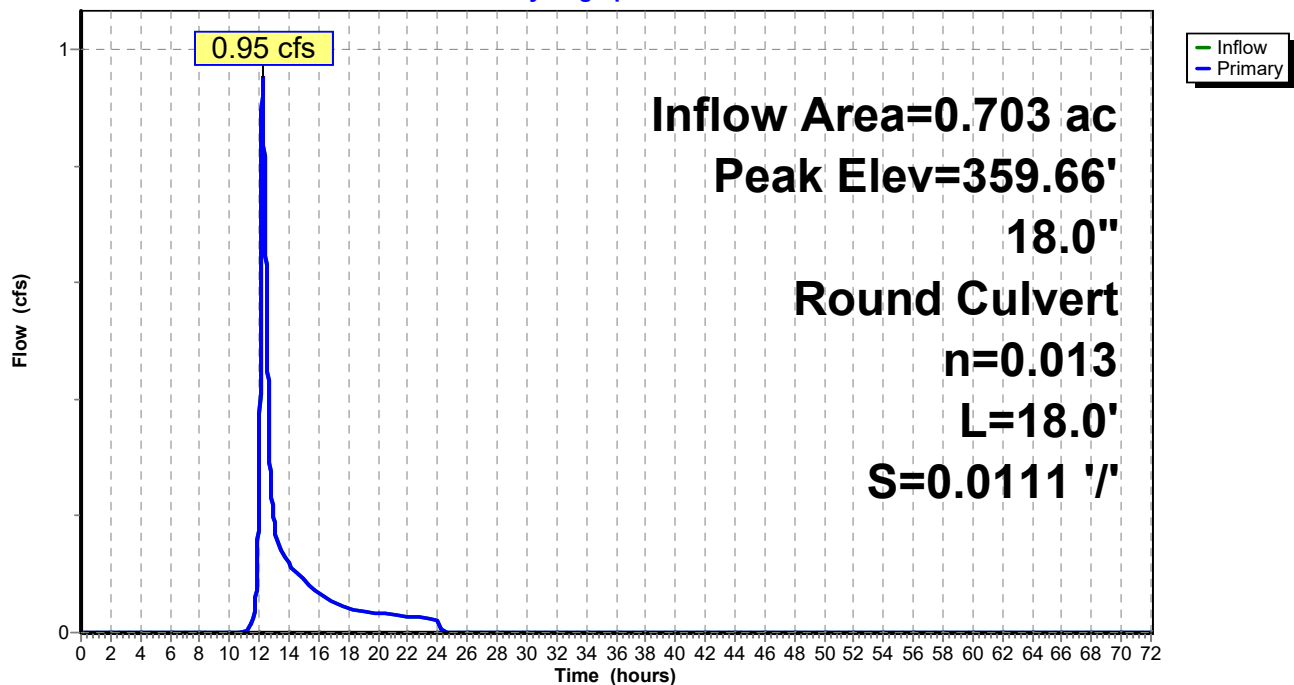
| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                    |
|--------|---------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 359.00' | <b>18.0" Round Culvert</b><br>L= 18.0' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 359.00' / 358.80' S= 0.0111 '/' Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf |

**Primary OutFlow** Max=0.97 cfs @ 12.22 hrs HW=359.64' TW=359.49' (Dynamic Tailwater)

↑1=Culvert (Outlet Controls 0.97 cfs @ 2.01 fps)

**Pond 3.21P: Catch Basin**

Hydrograph



**Summary for Pond 3.2P: Catch Basin**

Inflow Area = 0.973 ac, 53.30% Impervious, Inflow Depth = 2.73" for 50-YR event  
 Inflow = 2.15 cfs @ 12.11 hrs, Volume= 0.221 af  
 Outflow = 2.15 cfs @ 12.11 hrs, Volume= 0.221 af, Atten= 0%, Lag= 0.0 min  
 Primary = 2.15 cfs @ 12.11 hrs, Volume= 0.221 af  
 Routed to Pond 7P : Sediment Forebay

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 359.57' @ 12.11 hrs

Flood Elev= 365.24'

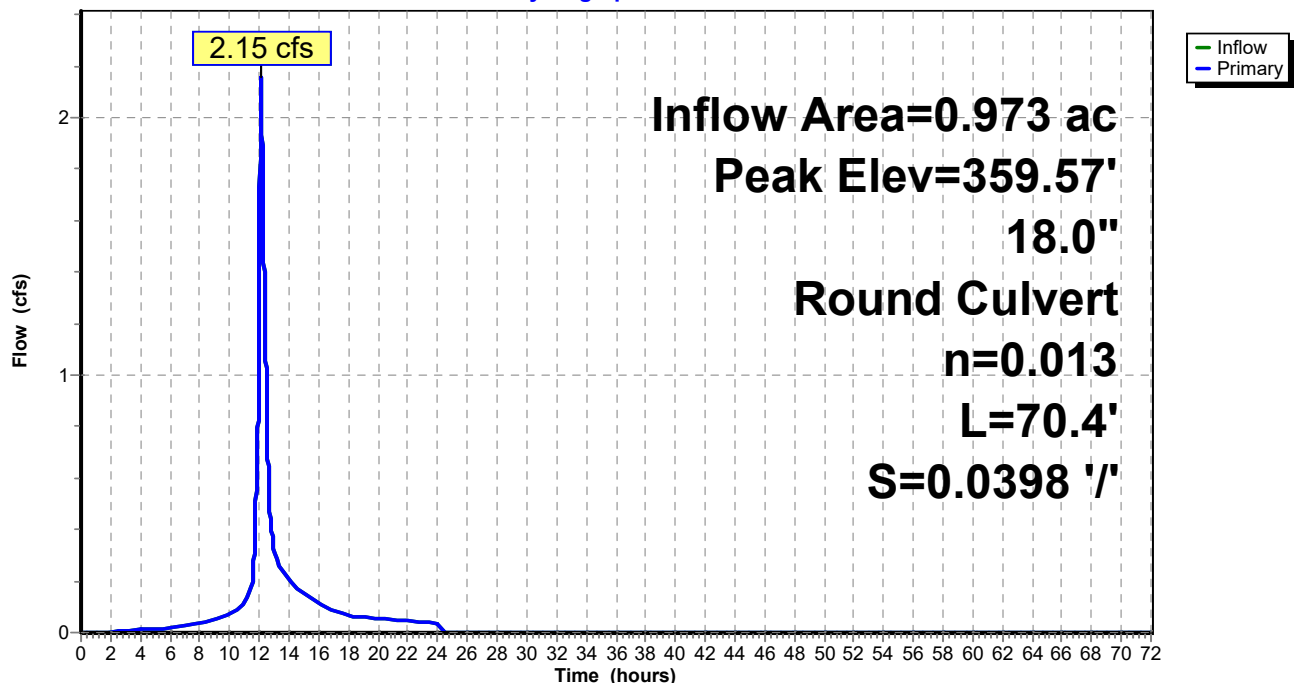
| Device | Routing | Invert  | Outlet Devices                                                                                                                                                                                                   |
|--------|---------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Primary | 358.80' | <b>18.0" Round Culvert</b><br>L= 70.4' CPP, projecting, no headwall, Ke= 0.900<br>Inlet / Outlet Invert= 358.80' / 356.00' S= 0.0398 '/ Cc= 0.900<br>n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf |

**Primary OutFlow** Max=2.15 cfs @ 12.11 hrs HW=359.57' TW=355.75' (Dynamic Tailwater)

↑1=Culvert (Inlet Controls 2.15 cfs @ 2.36 fps)

**Pond 3.2P: Catch Basin**

Hydrograph



**Summary for Pond 3P: Infiltration Basin C**

Inflow Area = 4.702 ac, 81.82% Impervious, Inflow Depth = 3.21" for 50-YR event  
 Inflow = 20.63 cfs @ 12.11 hrs, Volume= 1.256 af  
 Outflow = 2.04 cfs @ 12.82 hrs, Volume= 1.256 af, Atten= 90%, Lag= 42.6 min  
 Discarded = 1.20 cfs @ 12.82 hrs, Volume= 1.202 af  
 Primary = 0.84 cfs @ 12.82 hrs, Volume= 0.055 af  
 Routed to Reach OP-1 : Observation Point 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Peak Elev= 355.61' @ 12.82 hrs Surf.Area= 10,414 sf Storage= 29,756 cf  
 Flood Elev= 356.00' Surf.Area= 10,929 sf Storage= 33,970 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)  
 Center-of-Mass det. time= 240.1 min ( 992.6 - 752.5 )

| Volume              | Invert               | Avail.Storage    | Storage Description                                        |                           |                     |
|---------------------|----------------------|------------------|------------------------------------------------------------|---------------------------|---------------------|
| #1                  | 352.00'              | 33,970 cf        | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                           |                     |
| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Perim.<br>(feet) | Inc.Store<br>(cubic-feet)                                  | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |
| 352.00              | 6,249                | 342.9            | 0                                                          | 0                         | 6,249               |
| 354.00              | 8,450                | 390.6            | 14,644                                                     | 14,644                    | 9,128               |
| 356.00              | 10,929               | 435.4            | 19,326                                                     | 33,970                    | 12,187              |

| Device | Routing   | Invert  | Outlet Devices                                                                |  |  |  |  |  |  |  |  |  |  |  |  |
|--------|-----------|---------|-------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| #1     | Discarded | 352.00' | <b>4.980 in/hr Exfiltration over Surface area</b>                             |  |  |  |  |  |  |  |  |  |  |  |  |
| #2     | Primary   | 355.50' | <b>10.0' long + 3.0 ' SideZ x 7.0' breadth Broad-Crested Rectangular Weir</b> |  |  |  |  |  |  |  |  |  |  |  |  |
|        |           |         | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00                 |  |  |  |  |  |  |  |  |  |  |  |  |
|        |           |         | 2.50 3.00 3.50 4.00 4.50 5.00 5.50                                            |  |  |  |  |  |  |  |  |  |  |  |  |
|        |           |         | Coef. (English) 2.40 2.52 2.70 2.68 2.68 2.67 2.66 2.65 2.65                  |  |  |  |  |  |  |  |  |  |  |  |  |
|        |           |         | 2.65 2.66 2.65 2.66 2.68 2.70 2.73 2.78                                       |  |  |  |  |  |  |  |  |  |  |  |  |

**Discarded OutFlow** Max=1.20 cfs @ 12.82 hrs HW=355.61' (Free Discharge)

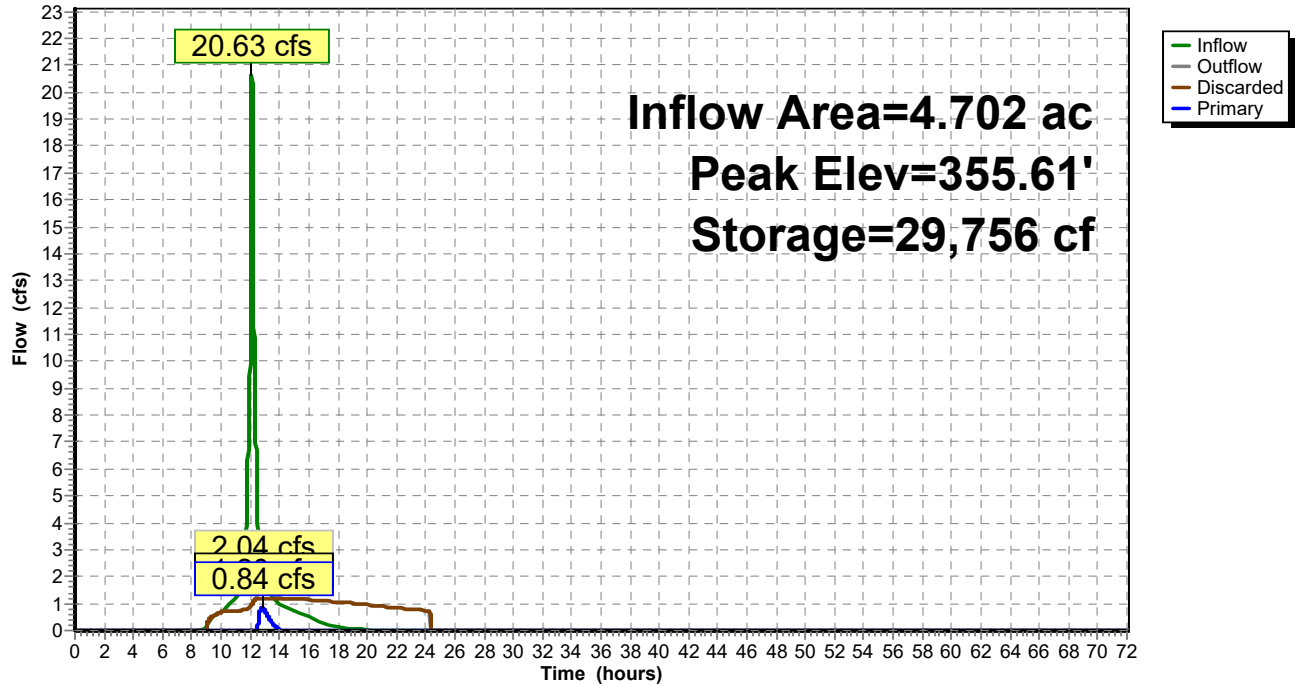
↑**1=Exfiltration** (Exfiltration Controls 1.20 cfs)

**Primary OutFlow** Max=0.84 cfs @ 12.82 hrs HW=355.61' TW=0.00' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir** (Weir Controls 0.84 cfs @ 0.77 fps)

### Pond 3P: Infiltration Basin C

Hydrograph



**Summary for Pond 7P: Sediment Forebay**

Inflow Area = 4.702 ac, 81.82% Impervious, Inflow Depth = 4.68" for 50-YR event  
 Inflow = 21.63 cfs @ 12.09 hrs, Volume= 1.833 af  
 Outflow = 21.01 cfs @ 12.11 hrs, Volume= 1.833 af, Atten= 3%, Lag= 1.2 min  
 Discarded = 0.39 cfs @ 12.11 hrs, Volume= 0.577 af  
 Primary = 20.63 cfs @ 12.11 hrs, Volume= 1.256 af  
 Routed to Pond 3P : Infiltration Basin C

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Peak Elev= 355.75' @ 12.11 hrs Surf.Area= 3,347 sf Storage= 6,208 cf  
 Flood Elev= 356.00' Surf.Area= 3,607 sf Storage= 7,073 cf

Plug-Flow detention time= 63.8 min calculated for 1.833 af (100% of inflow)  
 Center-of-Mass det. time= 63.8 min ( 818.8 - 754.9 )

| Volume              | Invert               | Avail.Storage    | Storage Description                                        |                           |                     |
|---------------------|----------------------|------------------|------------------------------------------------------------|---------------------------|---------------------|
| #1                  | 352.00'              | 7,073 cf         | <b>Custom Stage Data (Irregular)</b> Listed below (Recalc) |                           |                     |
| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Perim.<br>(feet) | Inc.Store<br>(cubic-feet)                                  | Cum.Store<br>(cubic-feet) | Wet.Area<br>(sq-ft) |
| 352.00              | 233                  | 237.5            | 0                                                          | 0                         | 233                 |
| 354.00              | 1,791                | 281.3            | 1,780                                                      | 1,780                     | 2,114               |
| 356.00              | 3,607                | 323.9            | 5,293                                                      | 7,073                     | 4,253               |

| Device | Routing   | Invert  | Outlet Devices                                                                |  |  |  |  |  |  |  |  |  |  |  |  |
|--------|-----------|---------|-------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| #1     | Primary   | 355.00' | <b>10.0' long + 3.0 ' SideZ x 7.0' breadth Broad-Crested Rectangular Weir</b> |  |  |  |  |  |  |  |  |  |  |  |  |
|        |           |         | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00                 |  |  |  |  |  |  |  |  |  |  |  |  |
|        |           |         | 2.50 3.00 3.50 4.00 4.50 5.00 5.50                                            |  |  |  |  |  |  |  |  |  |  |  |  |
|        |           |         | Coef. (English) 2.40 2.52 2.70 2.68 2.68 2.67 2.66 2.65 2.65                  |  |  |  |  |  |  |  |  |  |  |  |  |
|        |           |         | 2.65 2.66 2.65 2.66 2.68 2.70 2.73 2.78                                       |  |  |  |  |  |  |  |  |  |  |  |  |
| #2     | Discarded | 352.00' | <b>4.980 in/hr Exfiltration over Surface area</b>                             |  |  |  |  |  |  |  |  |  |  |  |  |

**Discarded OutFlow** Max=0.39 cfs @ 12.11 hrs HW=355.75' (Free Discharge)

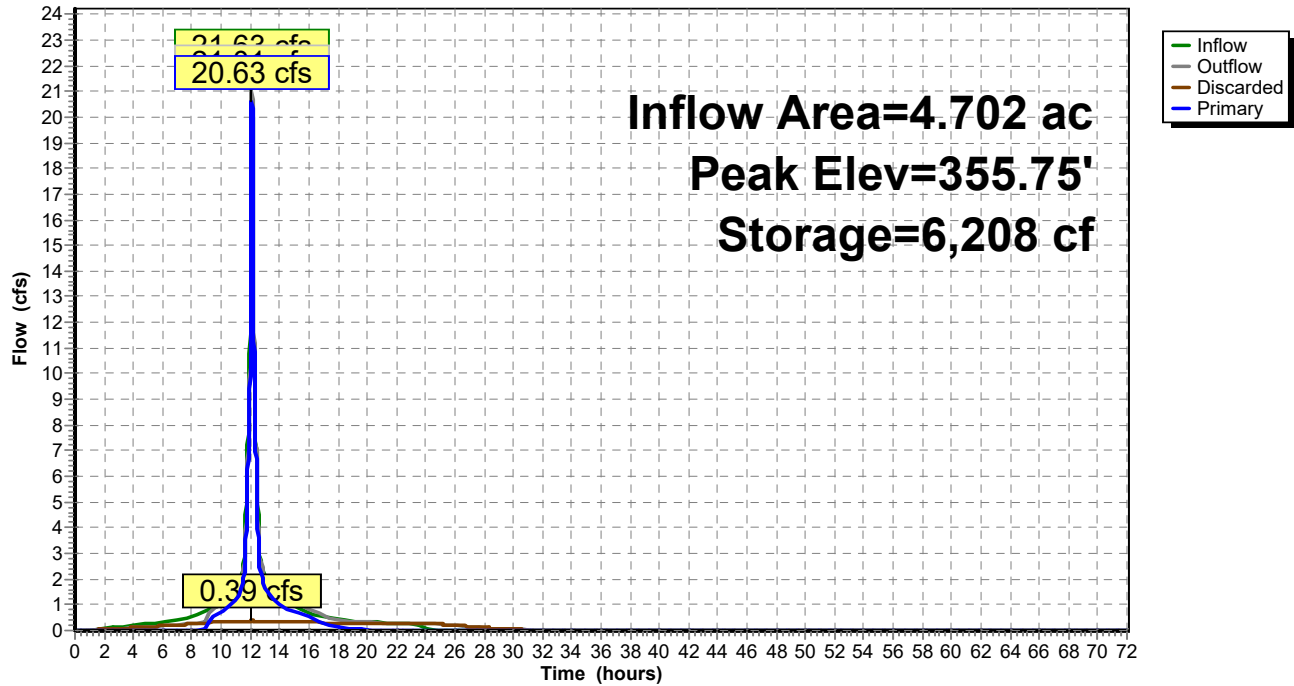
↑**2=Exfiltration** (Exfiltration Controls 0.39 cfs)

**Primary OutFlow** Max=20.60 cfs @ 12.11 hrs HW=355.75' TW=354.12' (Dynamic Tailwater)

↑**1=Broad-Crested Rectangular Weir** (Weir Controls 20.60 cfs @ 2.24 fps)

**Pond 7P: Sediment Forebay**

Hydrograph



## Section 3.0: Drainage Area Plans



35 - CHAMPLAIN LOAMY SAND  
116 - FINCH SAND  
214 - NAUMBURG LOAMY FINE SAND  
613 - CROGHAN FINE SAND

A - 0-3%  
B - 3-8%  
C - 8-15%  
D - 15-25%  
E - 25-50%  
F - 50%+

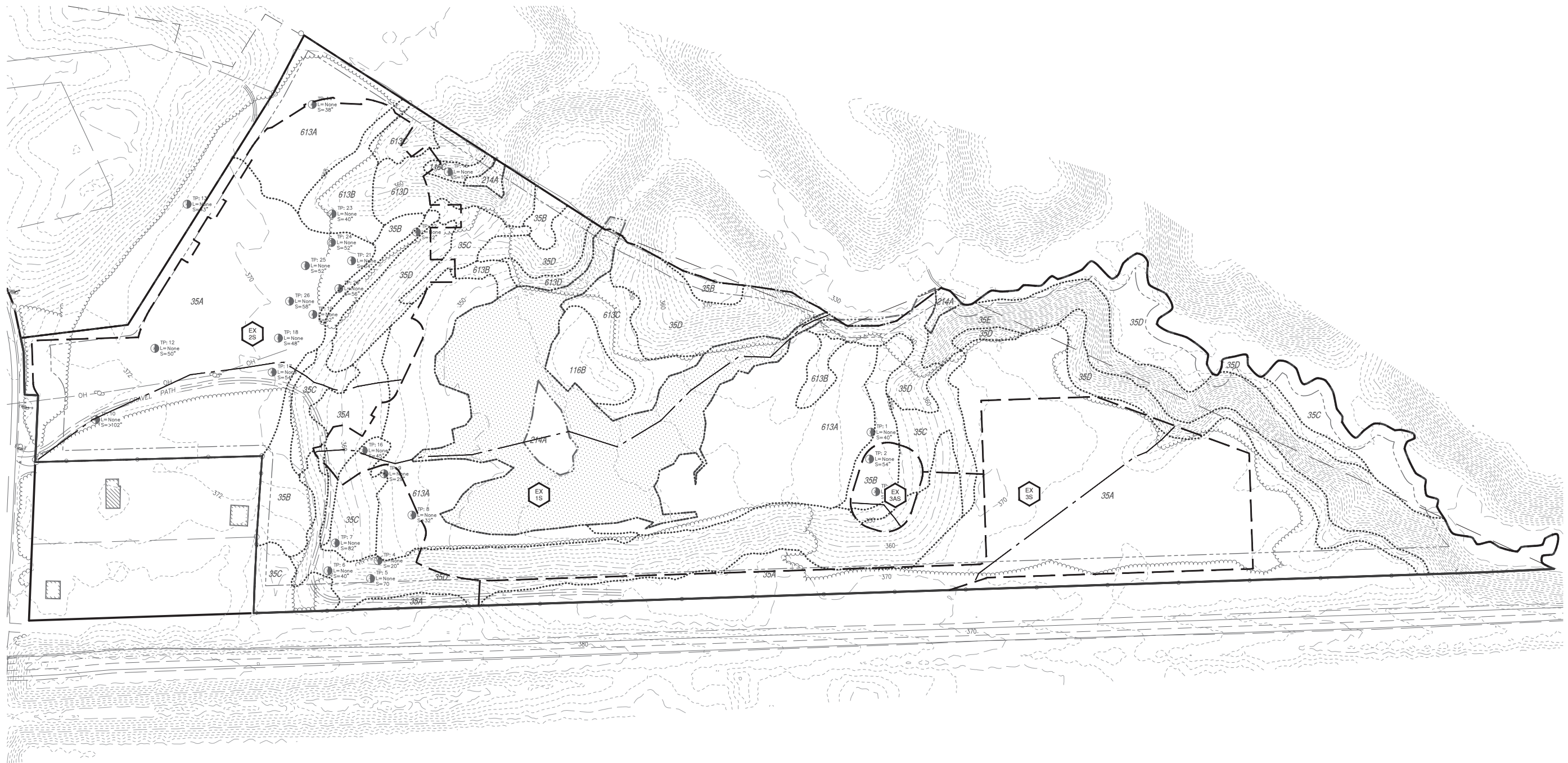


Diagram illustrating the components of a road cross-section and their corresponding labels:

- REACH
- SUBCATCHMENT
- POND
- OBSERVATION POINT
- SUB-CATCHMENT DELINEATION
- $T_c$  - TIME OF CONCENTRATION PATH
- EXISTING 2' CONTOUR INTERVAL
- EXISTING 10' CONTOUR INTERVAL
- NRCS SOIL DELINEATION
- EXISTING TREELINE
- SOILS LABEL



ISSUED FOR  
STATE AND/OR  
MUNICIPAL  
REVIEW AND/OR  
APPROVAL ONLY

| REV. | DATE    | DESCRIPTION             | DR  | CK  |
|------|---------|-------------------------|-----|-----|
| A    | 8/18/25 | PB COMMENT RESPONSES    | JUA | SRF |
| B    | 8/25/25 | VALUE ENGINEERING EDITS | JUA | SRF |
| C    |         |                         |     |     |
| D    |         |                         |     |     |
| E    |         |                         |     |     |
| F    |         |                         |     |     |
| G    |         |                         |     |     |
| H    |         |                         |     |     |

HILDRETH'S FARM  
DRAINAGE AREA PLAN  
PRE-DEVELOPED CONDITIONS

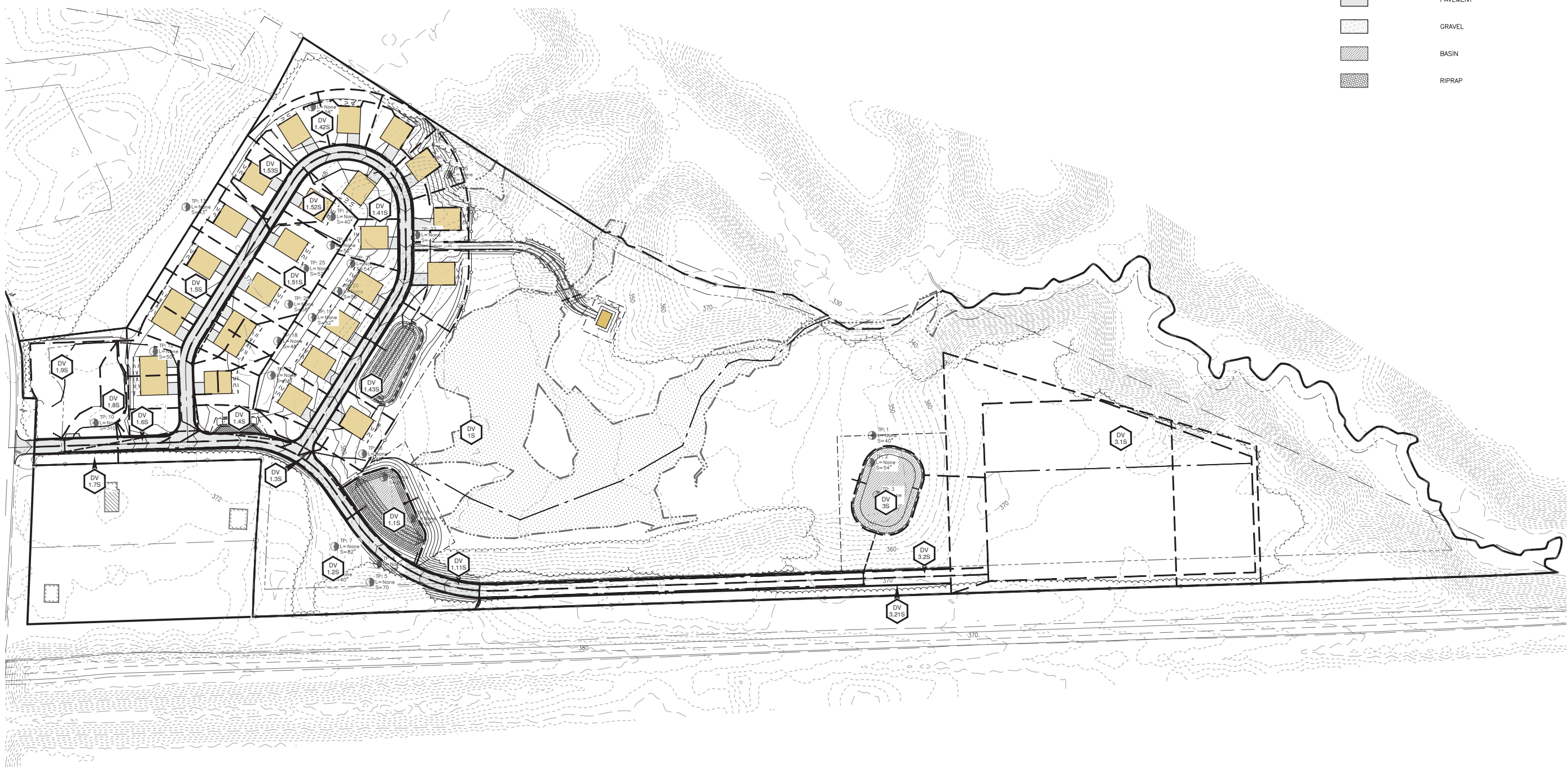
114 WEST ROAD, LLC  
114 WEST ROAD  
MAP 248 LOT 8  
CANTERBURY, NEW HAMPSHIRE

SCALE: 1" = 100'

# DRN-1

|           |               |
|-----------|---------------|
| FILE:     | 12609I00B.dwg |
| PROJECT   | 12609.00      |
| SHEET NO. | 1 OF 2        |

SEE SHEET DRN-1 FOR SOIL SERIES INFORMATION



**LEGEND: DEVELOPED CONDITIONS**



REACH



SUBCATCHMENT



POND



OBSERVATION POINT



#### SUB-CATCHMENT DELINEATION

T<sub>c</sub> - TIME OF CONCENTRATION PATH



EXISTING 2' CONTOUR INTERVAL



EXISTING 10' CONTOUR INTERVAL



NRCS SOIL DELINEATION



EXISTING TREELINE



PAVEMENT



BASIN



DIDDAR

[illegible]

HILDRETH'S FARM  
DRAINAGE AREA PLAN  
POST-DEVELOPED CONDITIONS

JUNE 3, 2025

114 WEST ROAD, LLC  
114 WEST ROAD  
MAP 248 LOT 8  
CANTERBURY, NEW HAMPSHIRE

SCALE: 1" = 100'

DRN-2

|           |               |
|-----------|---------------|
| FILE:     | 12609I00B.dwg |
| PROJECT   | 12609.00      |
| SHEET NO. | 2 OF 2        |

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MUNICIPAL  
REVIEW AND/OR  
APPROVAL ONLY