Stormwater Management Narrative

112 HARRISON AVE APARTMENTS

112 HARRISON AVENUE

Town of Moreau

Saratoga County, New York

Applicant:

SCHERMERHORN REAL ESTATE HOLDINGS LP

536 BAY ROAD

QUEENSBURY, NY 12804

Prepared By:

The Environmental Design Partnership, LLP

900 Route 146

Clifton Park, NY 12065

September 2021

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1.0 Introduction

Schermerhorn Residential Holdings LP is proposing a 16-unit apartment complex to be built on lands within tax parcel number 37.1-1-18. The project will involve the construction of 4 buildings, access road, parking spaces, and stormwater basins. Water and sewer will be provided by connections to existing municipal services.

A stormwater management system has been designed to provide pollutant removal, reduce channel erosion, prevent overbank flooding, and safely control extreme flood events in accordance with the NYS Stormwater Management Design Manual (Design Manual). The proposed stormwater management system for the project will include vegetated swales and three (3) infiltration basins which will provide a total storage volume of approximately 0.09± acre-feet.

This narrative presents a review of the design concepts and parameters of the stormwater management system for the proposed development. The purpose of the stormwater management narrative is to assure that changes in the surface runoff characteristics, as a result of the proposed construction, will not adversely impact adjacent or downstream properties. On-site stormwater management will be implemented in accordance with the Design Manual to accommodate both additional stormwater runoff and to provide water quality treatment according to the green infrastructure standards.

2.0 Existing Conditions

The existing project site (Figure 1) consists of forest with light undergrowth. The topography of the site varies with slopes ranging from less than 1% to 3%.

Elevations on site range from 320 to 324 feet above sea level.

The site is bounded by private property to the south, east and west, and Harrison Avenue to the north.

According to the Federal Emergency Management Area (FEMA), the project falls within an area of minimal flood hazards.

2.1 Soil and Groundwater Conditions

The USDA Natural Resources Conservation Service Soil Survey (NRCSS) identifies the primary soil groups within the area of proposed development as Windsor Loamy sand (WnA) with slopes ranging from 0 to 3%. The NRCSS identifies the Windsor series as excessively drained soils with a low runoff class and classifies them as Hydrologic Soil Group (HSG) “A”.

Test pits were conducted on site on March 15, 2021. Test pits showed a layer of topsoil in the top 12” of soil, sandy loam in the next 12-24” of soil, and sand for the next 40-80” of soil. Groundwater was found in some pits at a minimum of 68” below grade. An infiltration rate of 5” per hour has been chosen as a conservative design rate.

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3.0 Predevelopment Stormwater Analysis

The existing hydrologic conditions, in the area to be disturbed as a result of the proposed construction, were analyzed using Applied Microcomputer Systems' "HydroCAD" computer modeling program. The HydroCAD stormwater modeling program employs the United States Department of Agriculture's Soil Conservation Service (SCS) Technical Release 20 (TR-20) method for stormwater analysis. Using this modeling technique, the site is divided into "subcatchments" that represent specific areas contributing stormwater runoff to an existing, or proposed drainage feature. The subcatchments typically flow through "reaches" (i.e., swales, channels, or pipes) that convey the stormwater to storm basins or discharge areas.

A hydrologic model of the existing site was prepared using the Hydrocad program. One (1) subcachment was used to represent the existing drainage condition, see Figure 2. The total predevelopment stormwater discharge was modeled for several design storms. Stormwater model results are included in Appendix B.

The existing parameters of topography, vegetation, slope and soil type are all incorporated into the predevelopment model.

Table 1 presents a summary of the pre-development stormwater peak discharge for the 1-year, 10-year and 100-year design storm events at the respective Design Points. As will be discussed in subsequent sections, the post development stormwater discharge rate has been limited to the predevelopment discharge rate for the 1-year, 10-year, and 100-year storm events.

Table 1: Pre-Development Runoff Rates

Storm Event	Design Point Peak Discharge (cfs)	Total Peak Discharge offsite (cfs)
	DP#1	
1-Year (2.22")	0.00	0.00
10-Year (3.69")	0.00	0.00
100-Year (6.18")	0.03	0.03

The predevelopment stormwater discharge was evaluated for several design storms at the Design DP#1. DP#1 consists of a low point on the south edge of the parcel.

The pre-development Curve Number (CN) for the existing wooded land was established as 30. The pre-development curve number for the grassed areas was stablished as 30. The CN for existing impervious area was established as 98. The weighted predevelopment curve number is

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31. The HydroCAD model results for the pre-development conditions are included within Attachment B.

4.0 Stormwater Management Planning and Practice Selection

The site layout and stormwater design for this project was completed while taking into consideration the potential impacts on the existing site and downstream hydrology. The existing site predominately infiltrates stormwater runoff; therefore, the proposed system will rely on infiltration practices.

All offsite areas which impact onsite drainage and stormwater flows were also accounted for in the stormwater calculations.

Stormwater management on the site is designed to incorporate infiltration practices through infiltration basins. Infiltration practices are considered a standard SMP with RRv Capacity by the Design Manual. By using infiltration practices that are located relatively close to the source of runoff, the post-development hydrology will more closely match the pre-development hydrology.

5.0 Post-Development Stormwater Analysis

The post-development conditions, in the area to be disturbed as a result of the proposed construction, were analyzed using Applied Microcomputer Systems' "HydroCAD" computer modeling program.

Four (4) subcatchments were used to represent the post development drainage conditions of the site. Site improvements to the property will consist of the construction four buildings, access road, and parking. Stormwater management practices have been designed to provide storage, infiltration, and attenuation of stormwater runoff from the proposed impervious surfaces on the site.

Stormwater runoff from the site will be managed with vegetated swales, and three (3) infiltration basins which will provide a total storage volume of approximately 0.09± acre-feet. The contributing area to the infiltration basins and vegetated swales will include the proposed paved areas and buildings.

A post-development Curve Number (CN) of 98 was assigned to all impervious surface within the proposed site. A post-development CN of 30 was assigned to all remaining wooded areas. A post-development CN of 39 was assigned to all new grassed areas directly contributing to the proposed stormwater devices. The weighted CN for the post-development conditions for the site is 62. The HydroCAD model results for the post-development conditions are included within Attachment B.

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5.1 Stormwater Management Areas #1, 2, 3 – Infiltration Basin

Stormwater Management Areas (SMA) #1, #2, and #3 have been designed as infiltration basins. Chapter 3 of the Design Manual recognizes infiltration basins as an acceptable infiltration practice when all the required elements, design guidelines, soil testing and maintenance requirements are followed. Infiltration practices can meet detention and channel protection requirements when the soil infiltration rate is greater than 5 inches per hour. The infiltration basins will be located at least three feet above seasonal high groundwater. A conservative infiltration rate of 5 inches per hour has been used for all infiltration calculations.

SMA#1 will provide treatment of stormwater from Subcatchments 1S and 4S. The stormwater will sheet flow to a vegetated swale, which will then flow into SMA #1 where it will attenuate and infiltrate. Pretreatment will be provided within the forebay which has been sized to treat 100% of the contributing water quality volume for these areas. The contributing area to SMA#1 includes approximately 1.84± acres with approximately 0.74± acres of impervious area.

Drainage Calculations for SMA#1

100 Year Storm Runoff Volume contributing to SMA#1: 0.197 Acre-Feet

Infiltration Rate: 5 In./Hour

SMA#1 Surface Area (From CAD): ~2,090 Ft^2

Drainage Time =

0.197 Acre-Feet * 43,560 Ft^2/Acre = ~8,580 Ft^3

8,580 Ft^3/2,090 Ft^2 = 4.11 Ft

4.12 Ft * 12 In./1 Ft = 49.3 In.

49.3 In./5 In./Hour = **~10 Hours to drain**

As indicated by stormwater modelling, the SMA has been designed to fully attenuate and infiltrate the contributing stormwater runoff for stormwater events up to the 100-Year design storm without any overflows.

SMA#2 will provide treatment of stormwater from Subcatchment 2S. The stormwater will sheet flow into a vegetated swale, which will then flow to SMA#2 where it will attenuate and infiltrate. Pretreatment will be provided by a forebay located immediately adjacent to the infiltration area. The contributing area to SMA#2 includes approximately 0.19± acres with approximately 0.11± acres of impervious area.

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Drainage Calculations for SMA#2

100 Year Storm Runoff Volume contributing to SMA#2: 0.042 Acre-Feet

Infiltration Rate: 5 In./Hour

SMA#2 Surface Area (From CAD): ~260 Ft^2

Drainage Time =

0.042 Acre-Feet * 43,560 Ft^2/Acre = 1,830 Ft^3

1,830 Ft^3/260 Ft^2 = 7.04 Ft

7.04 Ft * 12 In./1 Ft = 84.5 In.

84.5 In./5 In./Hour = **~17 Hours to drain**

As indicated by stormwater modelling, the SMA has been designed to fully attenuate and infiltrate the contributing stormwater runoff for stormwater events up to the 100-Year design storm without any overflows.

SMA#3 will provide treatment of stormwater Subcatchment 3S. The stormwater will sheet flow to a vegetated swale, which will then flow into SMA#3 where it will attenuate and infiltrate. Pretreatment will be provided by a forebay located immediately adjacent to the infiltration area. The contributing area to SMA#3 includes approximately 0.13± acres with approximately 0.04± acres of impervious area.

Drainage Calculations for SMA#3

100 Year Storm Runoff Volume contributing to SMA#3: 0.016 Acre-Feet

Infiltration Rate: 5 In./Hour

SMA#3 Surface Area (From CAD): ~110 Ft^2

Drainage Time =

0.016 Acre-Feet * 43,560 Ft^2/Acre = 700 Ft^3

700 Ft^3/110 Ft^2 = 6.36 Ft

6.36 Ft * 12 In./1 Ft = 76.3 In.

76.3 In./5 In./Hour = ~**15 Hours to drain**

As indicated by stormwater modelling, the SMA has been designed to fully attenuate and infiltrate the contributing stormwater runoff for stormwater events up to the 100-Year design storm without any overflows.

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5.4 NYS Unified Stormwater Sizing Criteria

The post-development stormwater management system has been designed based on the Unified Stormwater Sizing Criteria as described in the following sections. The contributing area of each stormwater management area is identified on Figure 3. Hydrocad results are included at the end of this report.

5.4.1 Water Quality (WQ_v)

In general, small storm events and the initial runoff from larger storm events are an environmental concern as this stormwater runoff typically contains roadway pollutants and thermal energy stored by the asphalt. In accordance with the Design Manual, this initial runoff is designated as the Water Quality Volume (WQ_v) and special attention is given to this volume of runoff to meet water quality objectives.

The Design Manual identifies several standard practices, such as the proposed infiltration basins, which are acceptable for water quality treatment. These acceptable Stormwater Management Practices (SMPs) can capture and treat the full water quality volume (WQ_v), are capable of 80% TSS removal and 40% TP removal, have acceptable longevity in the field, and have a pretreatment mechanism.

The water quality storage volume, WQ_v, is calculated as follows:

$$WQ_v = \frac{P \cdot R_v \cdot A}{12}$$

Where: WQ_v = water quality volume (acre-feet)

P = 90% rainfall event number

R_v = 0.05+0.009(I), where I is percent impervious cover

A = site area (acres), impervious area used with I = 100%

Table 2: Required Water Quality Volume

SMA #	P	R_v	A (SF)	Required WQ_v (cf)
SMA#1	1.1	0.40	80,189	2,926
SMA#2	1.1	0.57	8,376	435
SMA#3	1.1	0.31	5,764	162
TOTAL				3,523

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5.4.1.1 Pretreatment Practices

In accordance with the Design Manual, the required pre-treatment for infiltration practices is equivalent to 100% of the contributing WQv, when the infiltration rate is greater than 5 inches per hour. The proposed pre-treatment practice for SMA #1, 2, and 3 includes a forebay.

The following tables summarizes the treatment of the WQv in the stormwater management areas.

Table 3: Pretreatment Water Quality Volume

SMA ID	P	R_v	A (SF)	Required WQ_v (cf)	Provided WQv (cf)
SMA#1	1.1	0.40	80,189	2,926	3,256
SMA#2	1.1	0.57	8,376	435	533
SMA#3	1.1	0.31	5,764	162	174

5.4.2 Runoff Reduction Volume (RRv)

The Design Manual specifies that runoff shall be reduced by 100% of the site WQv using standard SMPs with RRv capacity and green infrastructure techniques. The proposed project area on the site is approximately 2.17± acres, with a total post-development impervious area on the order of 0.86± acres. The resulting WQv for these site coverages is computed as 3,523 CF. The minimum RRv has been computed as 1,184 CF. As the provided WQv is greater than the minimum RRv for practices that allow treatment of RRv through standard SMP's, runoff reduction will be provided by the proposed infiltration basins.

5.4.2.1 Stormwater Management Practices

Stormwater infiltration basins have been proposed to collect, treat and infiltrate the stormwater runoff for a portion of the proposed development. Stormwater infiltration basins are considered standard SMP's with RRv capacity.

The total runoff reduction from the infiltration practices will be on the order of 3,523 CF.

5.4.3 Green Infrastructure Practices

The following table provides a summary of the runoff reduction provided for the proposed development, based on each management practice and technique. The site Runoff Reduction Volume is equivalent to the computer Water Quality volume.

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Table 4: Runoff Reduction Volume Summary

Runoff Reduction Technique	RRv (cf)
SMA#1 (Infiltration Basin)	2,926
SMA#2 (Infiltration Basin)	435
SMA#3 (Infiltration Basin)	162
Total Site Runoff Reduction	**3,523**
Required Water Quality Volume	**3,523**

Many of the green infrastructure practices recommended in the Design Manual were not applied to the stormwater management design on this site due to either site restrictions or the use of more feasible green infrastructure of standard SMP techniques in place of more restrictive and/or maintenance intensive practices. The following table discusses why the unused green infrastructure practices were not feasible.

Table 5: Non-Feasible Green Infrastructure Practices

Green Infrastructure Practice	**Reason use is not feasible**
Conservation of Natural Areas	Existing natural areas on site will be conserved to the greatest extend possible, however the contribution to the RRV reduction is minimal.
Porous Pavement	The proposed practices require less maintenance and are more economically feasible when compared to porous pavement. Most drainage areas suitable for porous pavement on the project site are already conveyed to infiltration devices.
Vegetated Filter Strips	No suitable locations exist within the current layout.
Rain Gardens	Proposed practices require less maintenance and are more economically feasible than rain gardens. Additionally, rain gardens are not typically recommended for commercial applications.
Vegetated Swale	Vegetated swales are proposed on the project site, however contribution to the overall runoff reduction is minimal.
Tree Planting/Tree Pit	Trees will be saved on the site as possible to conserve the natural areas. Trees will also be planted to maintain a buffer from the roadway to the proposed site, and surrounding properties though the resulting runoff reduction value for adding additional trees is minimal.
Stream Daylighting	No culverted/piped streams exist on the site or in the site perimeter.
Green Roofs	No rooftops exist on the site.

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Stormwater Planters	Proposed practices were deemed more economically feasible and effective as opposed to stormwater planters. Additionally, they require less maintenance.
Rooftop Disconnection	Rooftops exist on the site, but reduction provided by disconnection is minimal.
Rain Barrels/Cisterns	Rain Barrels/Cisterns would require the ability to use the water between storm events which is not feasible for this project type.

5.4.4 Channel Protection (Cp_v)

In accordance with the Design Manual, stream channel protection, designed to protect stream channels from erosion, is accomplished by providing 24-hour extended detention of the one-year, 24-hour storm event. The Cp_v requirement is typically satisfied by providing additional storage above the water quality (WQ_v) volume.

According to Chapter 4 of the Design Manual, the stream channel protection requirement does not apply when the entire channel protection volume is reduced through green infrastructure or infiltration systems. All stormwater management practices on this site are designed as infiltration practices; additionally, stormwater modelling indicates the proposed stormwater management areas designed to fully attenuate and infiltrate the contributing stormwater runoff for stormwater events up to the 100-Year design storm without any overflows.

5.4.5 Overbank Flood (Q_p)

Overbank Flood Control Criteria has been established to limit the frequency and magnitude of out-of-bank flooding generated through changes in runoff characteristics as a result of increased impervious surface area. In accordance with the Design Manual, providing sufficient storage volume to attenuate the post development 10-year, 24-hour peak discharge rate to the equivalent pre-development discharge rate controls overbank flooding.

The 10-year design storm event was analyzed using the HydroCAD stormwater modeling program (TR-20) under the post-development drainage conditions shown on Figure 3. Using a 10-year, 24-hour design storm of 3.69 inches, the stormwater management areas were designed with sufficient storage volume to limit the post-development 10-year, 24-hour peak discharge rate to the pre-development discharge rate. The following table presents the pre- and post-development discharge rates for the offsite discharge. As indicated, the post-development discharge rate is less than the pre-development rate as required.

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Table 6: Overbank Flow Runoff Summary

Design Point	10-year (3.69") runoff rate (cfs)	
	Predevelopment	Post-Development
DP#1	0.00	0.00
TOTAL	0.00	0.00

5.4.6 Extreme Storm (Q_f)

In accordance with the Design Manual, the stormwater management system must attenuate the post development 100-year, 24-hour peak discharge rate to the predevelopment rate while providing safe passage of this storm event.

The 100-year storm event was analyzed using the HydroCAD stormwater modeling program (TR-20) under the post-development drainage conditions shown in Figure 3. Using a 100-year, 24-hour design storm of 6.18 inches, the stormwater management areas were designed with sufficient storage volume to limit the post-development 100-year, 24-hour peak discharge rate to the predevelopment discharge rate. The following table presents the pre- and post-development discharge rates for the offsite discharge. As indicated, the post-development discharge rate is less than the predevelopment rate as required.

Table 7: Extreme Storm Runoff Summary

Design Point	100-year (6.18") runoff rate (cfs)	
	Predevelopment	Post-Development
DP#1	0.03	0.00
TOTAL	0.03	0.00

6.0 Summary

Development of the proposed property will change the stormwater drainage characteristics of the site; impervious area will be added and the site will be re-graded to support the proposed improvements. Changes to the stormwater drainage characteristics of the site have been evaluated in accordance with the Design Manual. The proposed stormwater management system has been designed to comply with the recommendations in the Design Manual related

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to water quality, runoff reduction, channel protection, overbank flood control and extreme flood control for new development projects.

The proposed stormwater management system has been designed to attenuate and treat the stormwater runoff generated from the contributing areas for storm events up to and including the 100-year design storm event. The proposed stormwater management design includes the use of infiltration basins. Extended detention storage will be provided above the required water quality volume to meet detention ($Q_{p)}$ requirements. Stormwater modeling results, based on the proposed site layout, indicate the ability to reduce the overall post-development discharge rate from the site as summarized in Table 8.

Table 8: Post Development Stormwater Peak Discharge Rates

Peak Discharge Rates in cfs	1-Year Storm	10-Year Storm	100-Year Storm
Pre-Development	0.00	0.00	0.03
Post-Development	0.00	0.00	0.00
Overall Reduction (cfs)	0.00	0.00	0.03

Through the implementation of acceptable stormwater management practices, recommended by the NYS Stormwater Management Design Manual, the proposed project will not adversely affect adjacent or downstream properties.

Prepared by:

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Figures

1. Site Location map
2. Site Soils Data
3. Pre-Development Drainage Map
4. Post-Development Drainage Map

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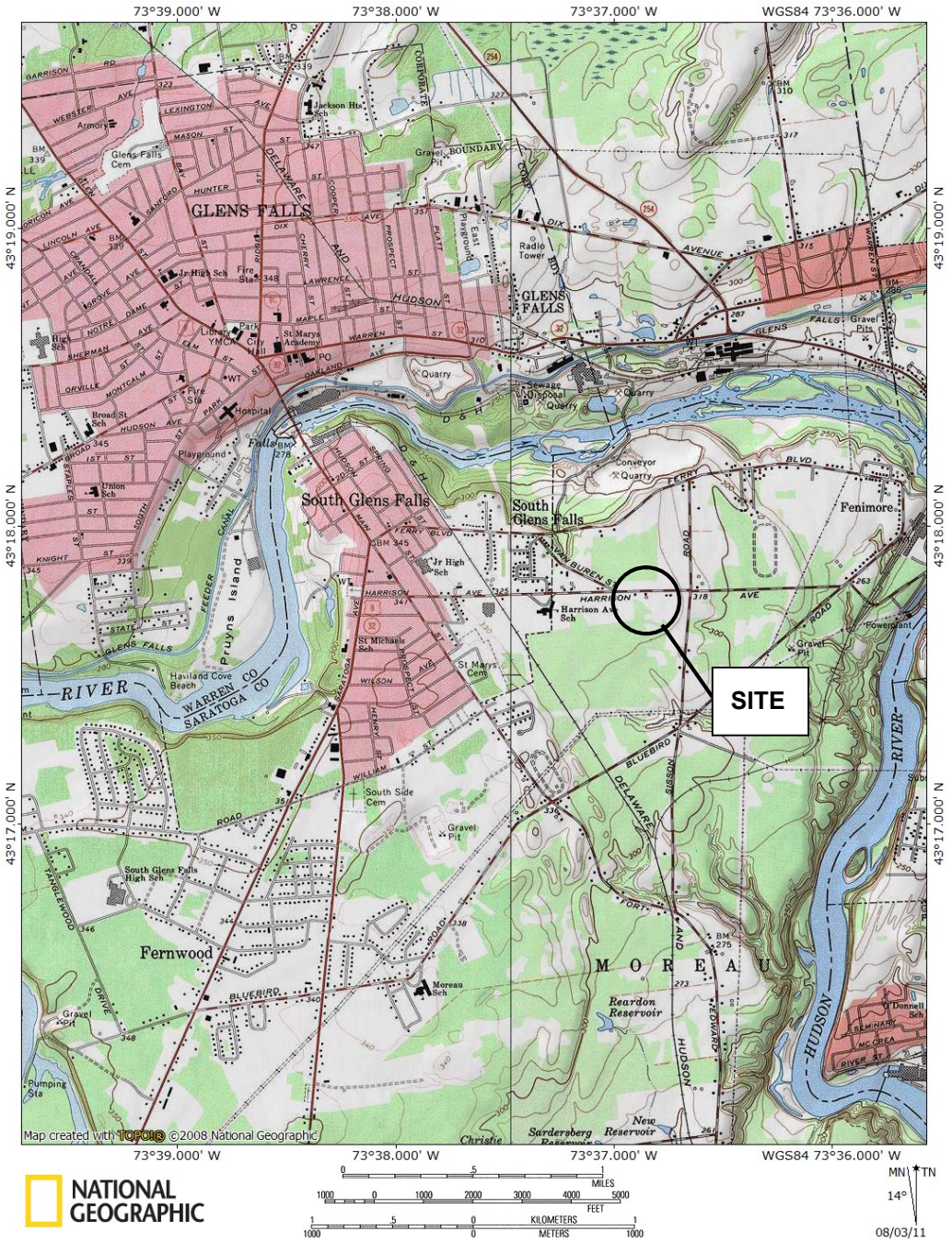
Figure 1: Site Location Map



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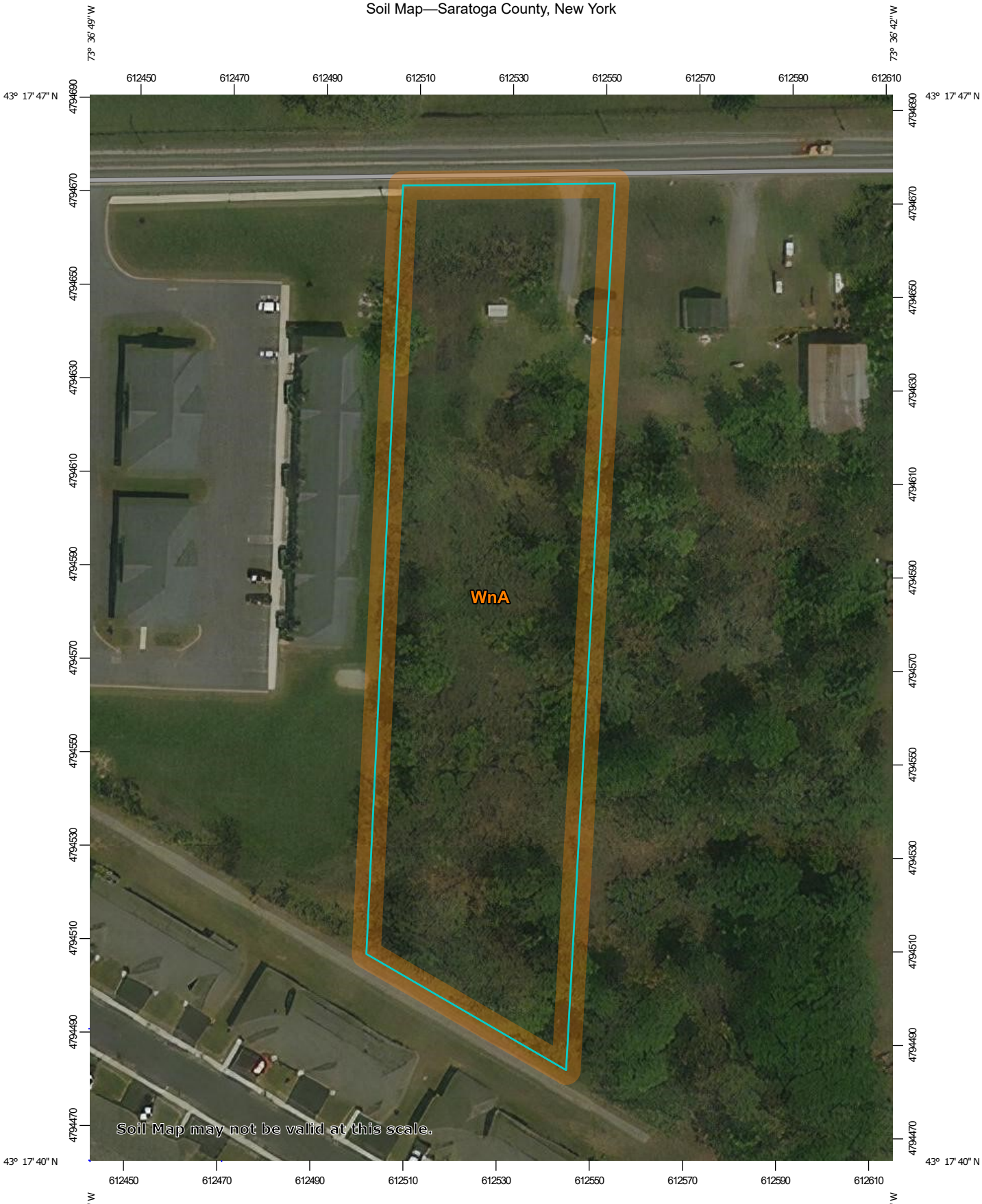


Map Scale: 1:1,110 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Saratoga County, New York
Survey Area Data: Version 20, Jun 11, 2020

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

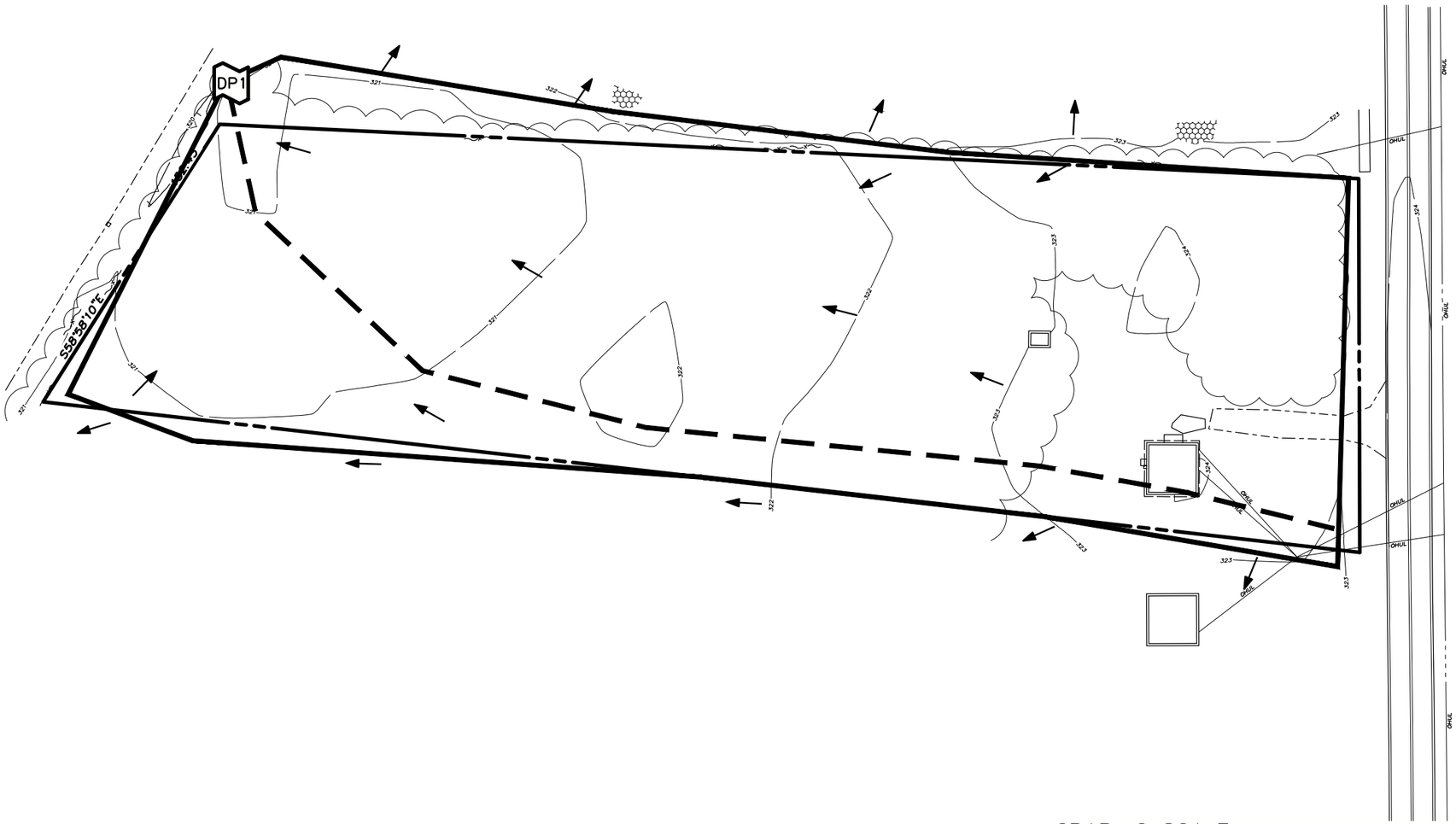
Date(s) aerial images were photographed: Jun 10, 2015—Mar 29, 2017

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
WnA	Windsor loamy sand, 0 to 3 percent slopes	2.0	100.0%
Totals for Area of Interest		**2.0**	**100.0%**

MAP KEY	
	SUBCATCHMENT BOUNDARY
S1	SUBCATCHMENT I.D.
4P	STORMWATER DEVICE
DP	DESIGN POINT
	DRAINAGE ARROW
	TC PATH



GRAPHIC SCALE

60 50 40 30 20 10 0 30 60 120 240

(IN FEET)
1 INCH = 60 FT.

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PROPOSED APARTMENTS FOR
112 HARRISON AVE APT.
SCHERMERHORN REAL ESTATE HOLDINGS, LLC

LOCATED AT 112 HARRISON AVENUE
TOWN OF MOREAU
SARATOGA COUNTY, NEW YORK

TAX MAP ID: 37.-1-18
SEPTEMBER 7, 2021

DRAWN BY	DVD
CHECK BY	JCD
EDP PROJECT NUMBER	12842

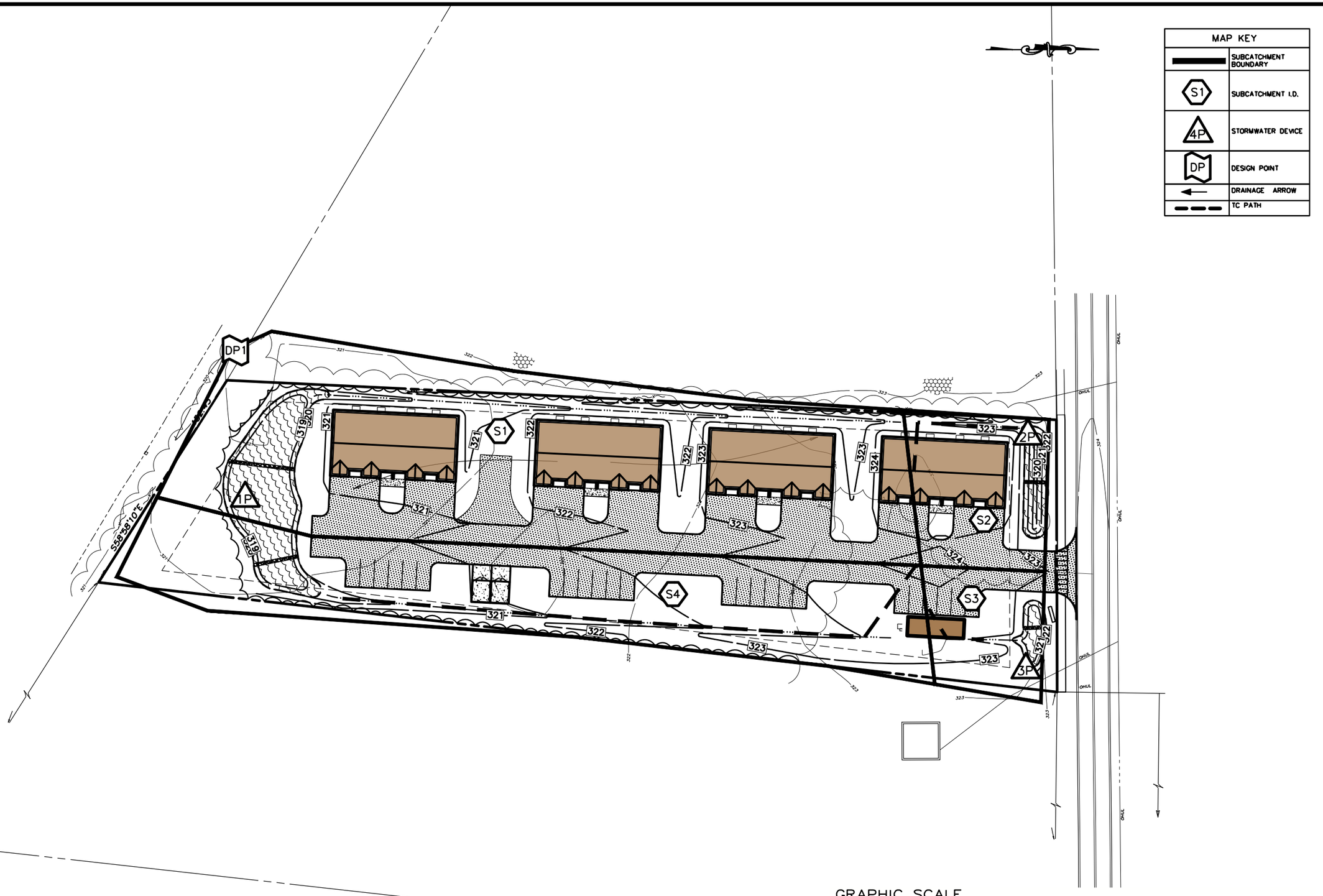
REVISION	DATE	BY

SCALE: 1"=60'

SHEET TITLE: PREDEVELOPMENT

SHEET: 3 of 4

R:\SARATOGA\Moreau\Harrison Ave\112 - Schermerhorn\05-dwg\Detailed Plans\FIGURES\Stormwater - 112 Harrison.dwg Sep 06, 2021 015007PM, AR



PROPOSED APARTMENTS FOR
112 HARRISON AVE APT.
SCHERMERHORN REAL ESTATE HOLDINGS, LLC

LOCATED AT 112 HARRISON AVENUE
TOWN OF MOREAU
SARATOGA COUNTY, NEW YORK

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SEPTEMBER 7, 2021

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EDP PROJECT NUMBER	12842

REVISION	DATE	BY

SCALE: 1"=60'

SHEET TITLE: POSTDEVELOPMENT

SHEET: 4 of 4

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Attachment A

Water Quality Calculation

Runoff Reduction Calculation

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DESIGN
PARTNERSHIP, LLP
900 Route 146
Clifton Park, New York
12065
Phone:(518) 371-7621
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Water Quality Volume (WQv) Calculations

Project: 112 HARRISON AVE

Date: 9/6/2021

SMA I.D.	AREA (SF)	I (SF)	I (%)	Rv	WQv (cu-ft)	WQv Provided (cu-ft)
SMA 1	80,189	31,008	39%	0.40	2,926	3,256
SMA 2	8,376	4,807	57%	0.57	435	533
SMA 3	5,784	1,642	28%	0.31	162	174
Totals	**94,349**	**37,457**			**3,523**	**3,963**

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Runoff Reduction Volume (RRv) Calculations

Project: LEONELLI APARTMENTS.

Date: 6/6/2016

Total Site Area = 2.17 acres
Imp= 39.7 %
Rv = 0.407

P = 1.1 in
WQv = 3,523 cf

Minimum Reduction

Aic (ac)	S	Ai (ac)	Rv*	RRv (ac-ft)	Min Reduction (RRv) (cf)
1.04	0.3	0.31	0.95	0.03	1,184

Green Infrastructure

Reduction from Green Infrastructure = **0** cf

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Runoff Reduction Volume (RRv) Calculations

Project: LEONELLI APARTMENTS.

Date: 6/6/2016

Total Site Area = 2.17 acres
I= 39.7 %
Rv = 0.407

P = 1.1 in
WQv = 3,523 cf

Stormwater Management Practices

Infiltration

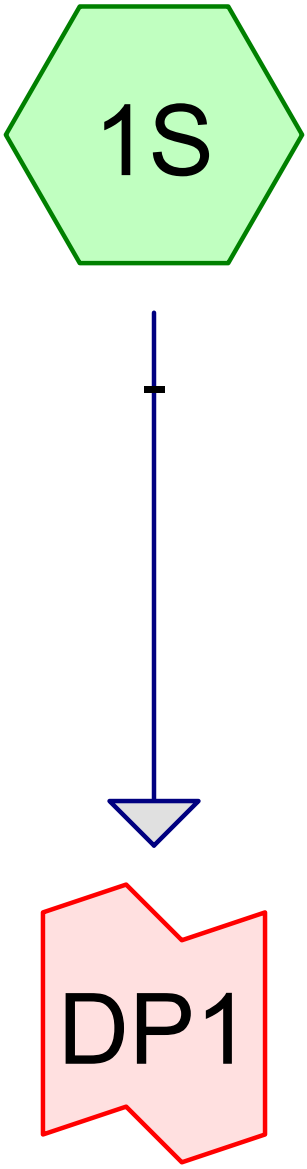
I.D.	WQv Provided (cf)	% Reduction	Max Reduction (cf) (Contributing WQv)	Reduction (cf)
SMA1	3,256	100	2,926	2,926
SMA2	553	100	435	435
SMA3	174	100	162	162

Reduction from Standard SMPs = **3,523** cf
Reduction from GI = **0** cf
Total Overall RRv = **3,523** cf
% Min. Reduction= **298%**

Attachment B

Stormwater Modeling Calculations

900 Route 146, Clifton Park, New York 12065
phone (518) 371-7621
e-mail: info@edpllp.com



TOTAL

Subcat Reach Pond Link

Routing Diagram for Predevelopment - 112 Harrison
Prepared by {enter your company name here}, Printed 9/6/2021

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	Type II 24-hr		Default	24.00	1	2.22	2
2	2-yr	Type II 24-hr		Default	24.00	1	2.58	2
3	10-yr	Type II 24-hr		Default	24.00	1	3.69	2
4	25-yr	Type II 24-hr		Default	24.00	1	4.52	2
5	100-yr	Type II 24-hr		Default	24.00	1	6.18	2
6	WQv	Type II 24-hr		Default	24.00	1	1.10	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
11,219	30	Meadow, non-grazed, HSG A (1S)
1,452	98	Paved parking, HSG A (1S)
81,679	30	Woods, Good, HSG A (1S)
94,350	**31**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
94,350	HSG A	1S
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
94,350		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Subcat Numbe
11,219	0	0	0	0	11,219	Meadow, non-grazed	
1,452	0	0	0	0	1,452	Paved parking	
81,679	0	0	0	0	81,679	Woods, Good	
94,350	**0**	**0**	**0**	**0**	**94,350**	**TOTAL AREA**	

Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: - Runoff Area=94,350 sf 1.54% Impervious Runoff Depth=0.00"
Flow Length=600' Slope=0.0033 '/' Tc=32.1 min CN=31 Runoff=0.00 cfs 0 cf

Link DP1: TOTAL Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Total Runoff Area = 94,350 sf Runoff Volume = 0 cf Average Runoff Depth = 0.00"
98.46% Pervious = 92,898 sf 1.54% Impervious = 1,452 sf

Summary for Subcatchment 1S: -

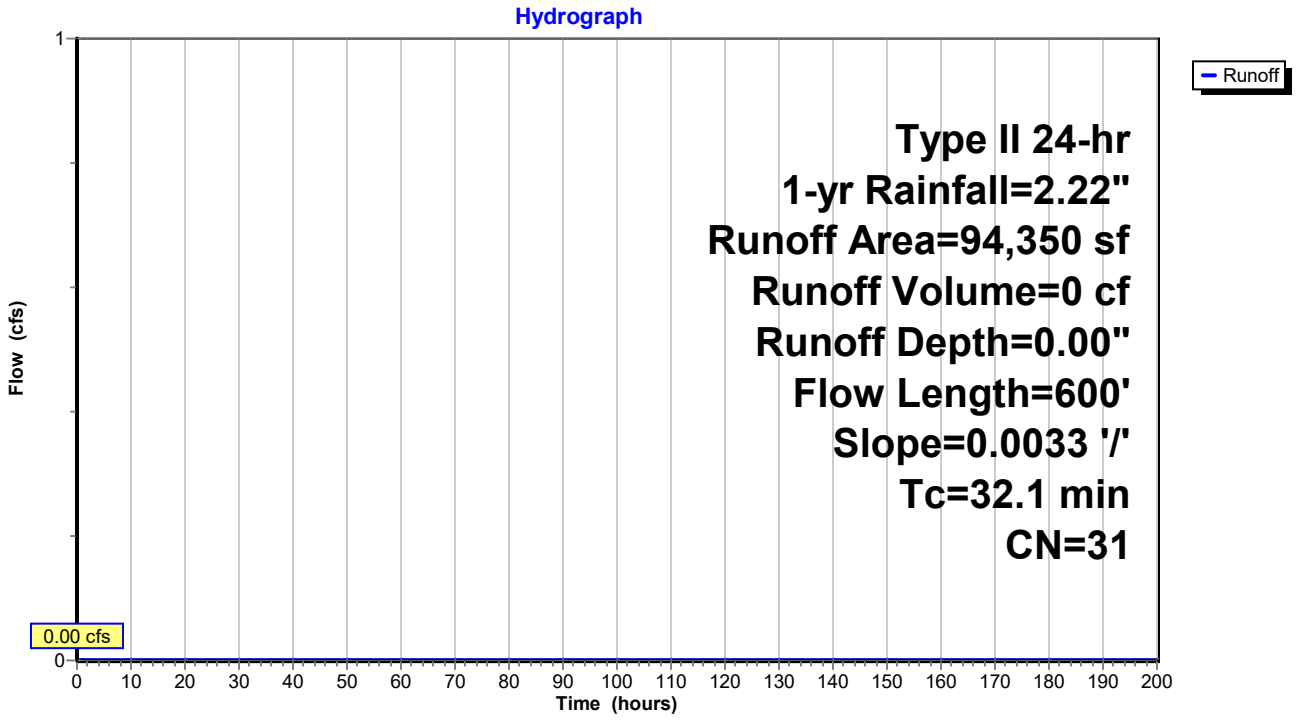
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.22"

Area (sf)	CN	Description
81,679	30	Woods, Good, HSG A
1,452	98	Paved parking, HSG A
11,219	30	Meadow, non-grazed, HSG A
94,350	31	Weighted Average
92,898		98.46% Pervious Area
1,452		1.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.4	100	0.0033	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
9.7	500	0.0033	0.86		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
32.1	600	Total			

Subcatchment 1S: -

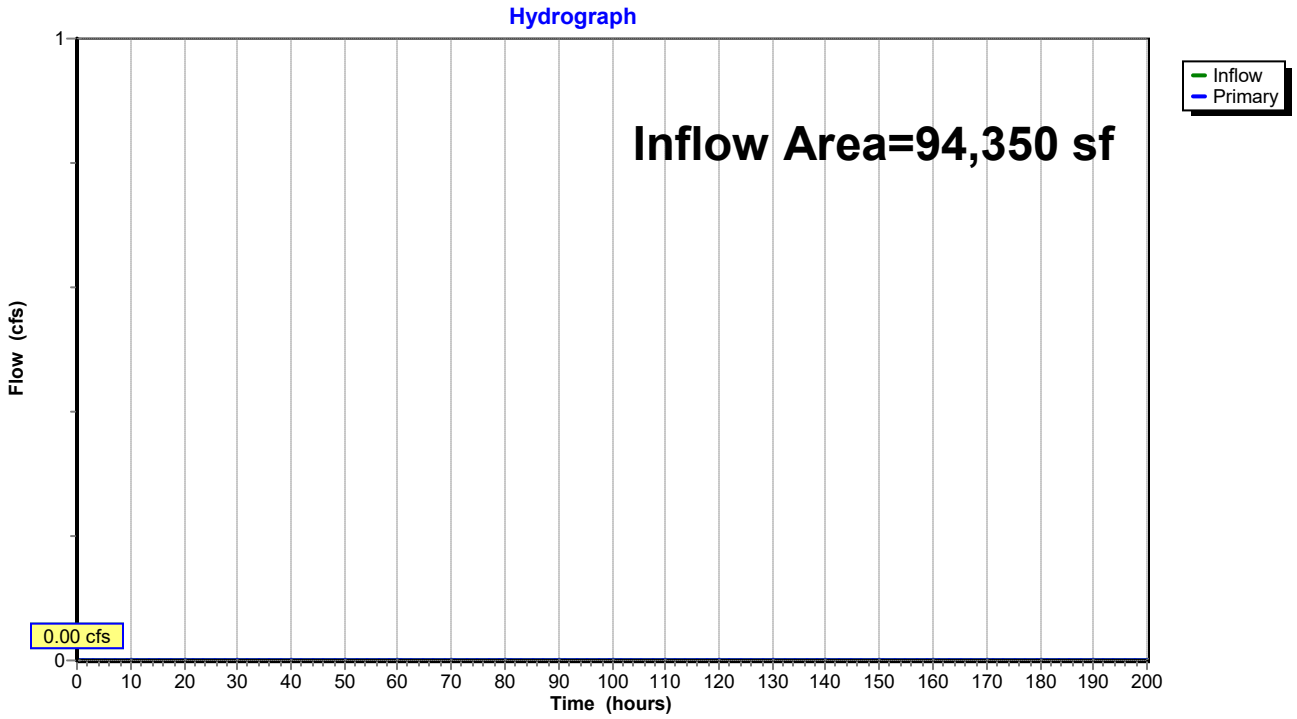


Summary for Link DP1: TOTAL

Inflow Area = 94,350 sf, 1.54% Impervious, Inflow Depth = 0.00" for 1-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link DP1: TOTAL



Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: - Runoff Area=94,350 sf 1.54% Impervious Runoff Depth=0.00"
Flow Length=600' Slope=0.0033 '/' Tc=32.1 min CN=31 Runoff=0.00 cfs 0 cf

Link DP1: TOTAL Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Total Runoff Area = 94,350 sf Runoff Volume = 0 cf Average Runoff Depth = 0.00"
98.46% Pervious = 92,898 sf 1.54% Impervious = 1,452 sf

Summary for Subcatchment 1S: -

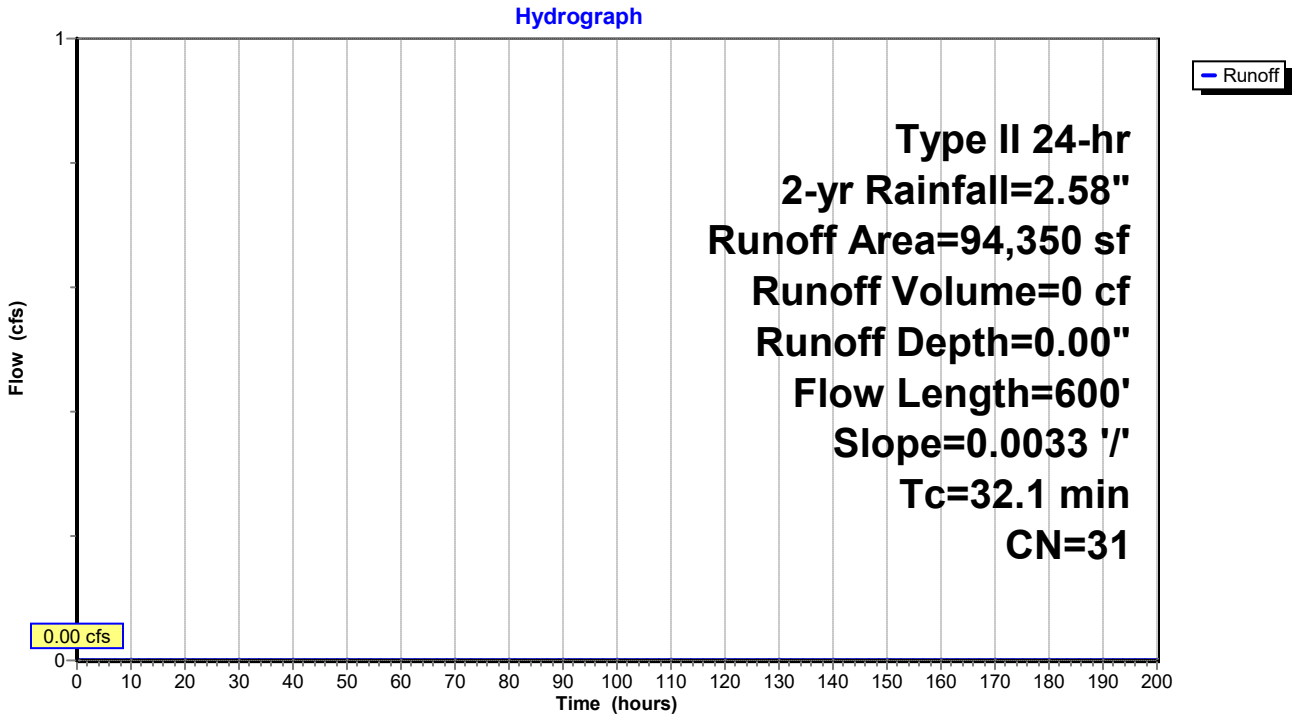
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=2.58"

Area (sf)	CN	Description
81,679	30	Woods, Good, HSG A
1,452	98	Paved parking, HSG A
11,219	30	Meadow, non-grazed, HSG A
94,350	31	Weighted Average
92,898		98.46% Pervious Area
1,452		1.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.4	100	0.0033	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
9.7	500	0.0033	0.86		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
32.1	600	Total			

Subcatchment 1S: -

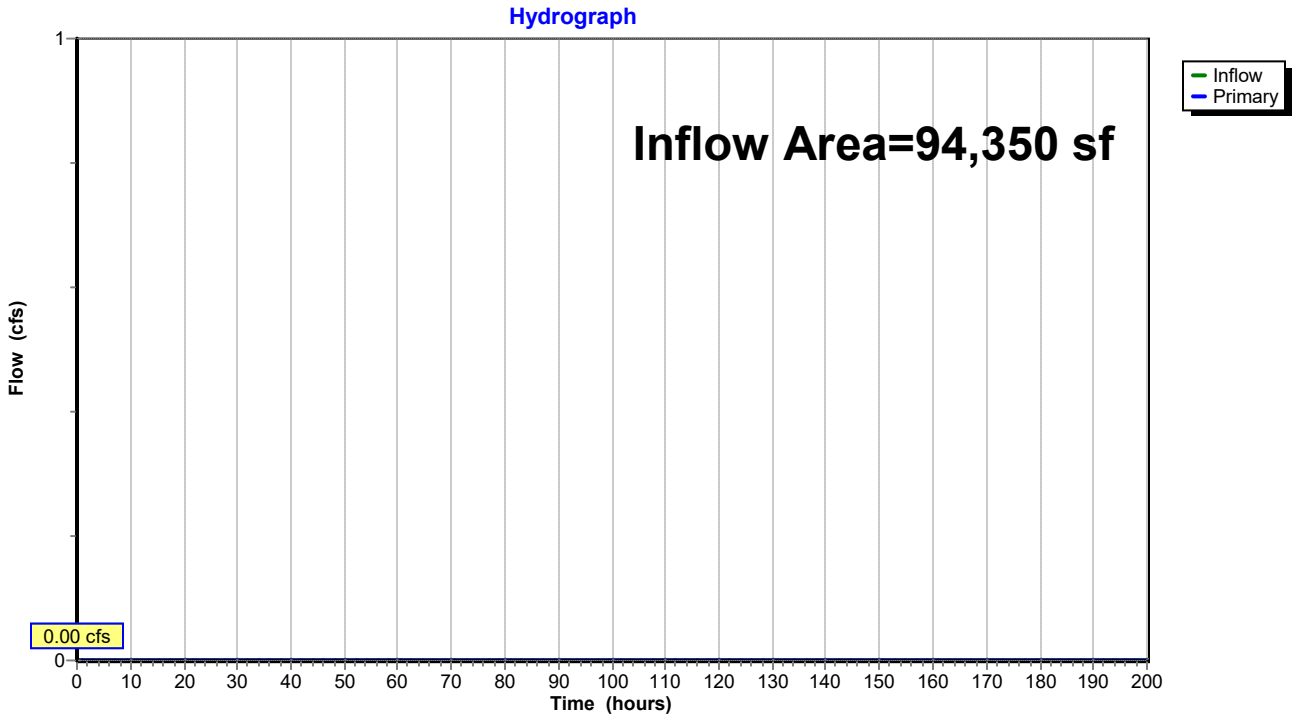


Summary for Link DP1: TOTAL

Inflow Area = 94,350 sf, 1.54% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link DP1: TOTAL



Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: - Runoff Area=94,350 sf 1.54% Impervious Runoff Depth=0.00"
Flow Length=600' Slope=0.0033 '/' Tc=32.1 min CN=31 Runoff=0.00 cfs 0 cf

Link DP1: TOTAL Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Total Runoff Area = 94,350 sf Runoff Volume = 0 cf Average Runoff Depth = 0.00"
98.46% Pervious = 92,898 sf 1.54% Impervious = 1,452 sf

Summary for Subcatchment 1S: -

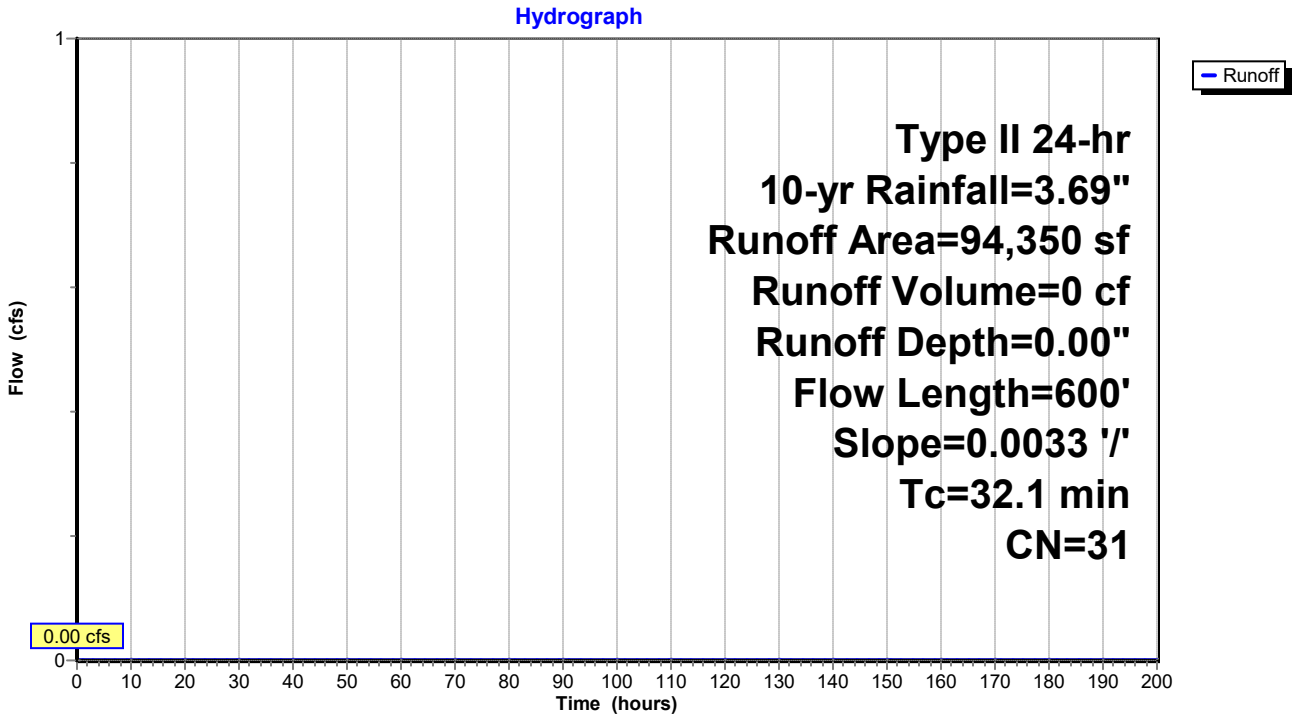
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.69"

Area (sf)	CN	Description
81,679	30	Woods, Good, HSG A
1,452	98	Paved parking, HSG A
11,219	30	Meadow, non-grazed, HSG A
94,350	31	Weighted Average
92,898		98.46% Pervious Area
1,452		1.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.4	100	0.0033	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
9.7	500	0.0033	0.86		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
32.1	600	Total			

Subcatchment 1S: -

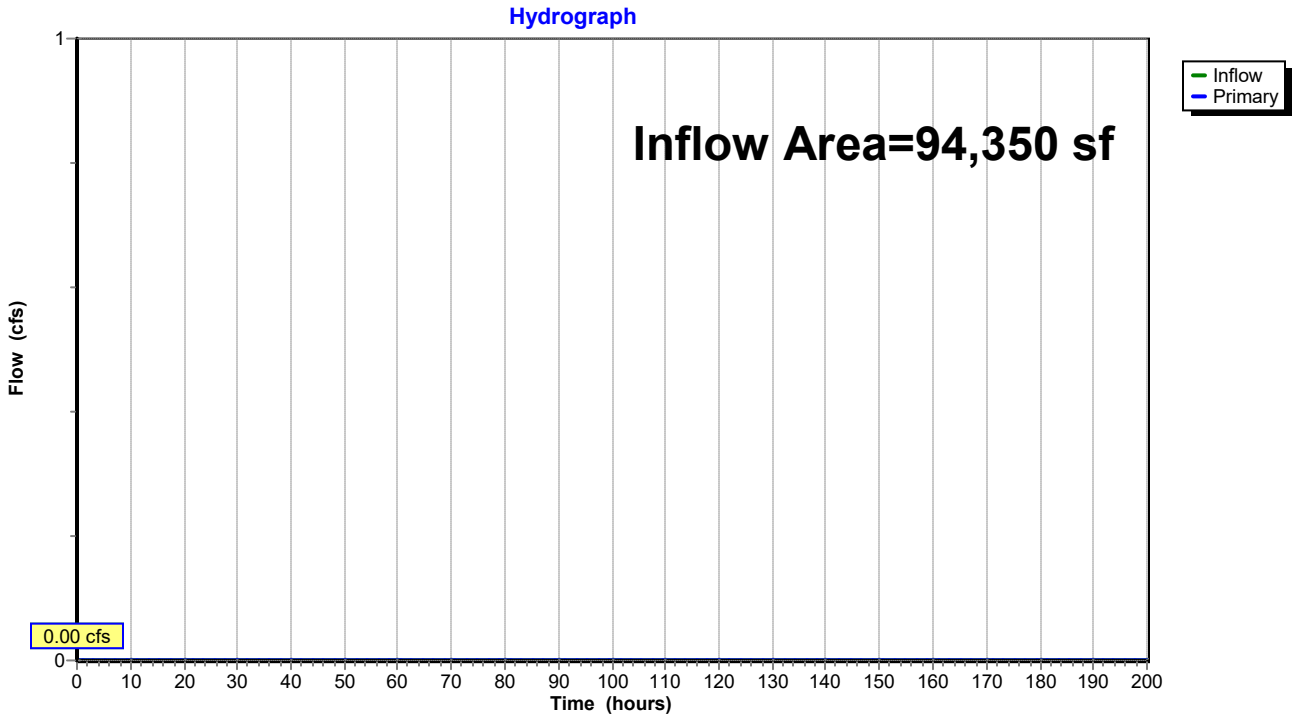


Summary for Link DP1: TOTAL

Inflow Area = 94,350 sf, 1.54% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link DP1: TOTAL



Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: - Runoff Area=94,350 sf 1.54% Impervious Runoff Depth=0.00"
Flow Length=600' Slope=0.0033 '/' Tc=32.1 min CN=31 Runoff=0.00 cfs 2 cf

Link DP1: TOTAL Inflow=0.00 cfs 2 cf
Primary=0.00 cfs 2 cf

Total Runoff Area = 94,350 sf Runoff Volume = 2 cf Average Runoff Depth = 0.00"
98.46% Pervious = 92,898 sf 1.54% Impervious = 1,452 sf

Summary for Subcatchment 1S: -

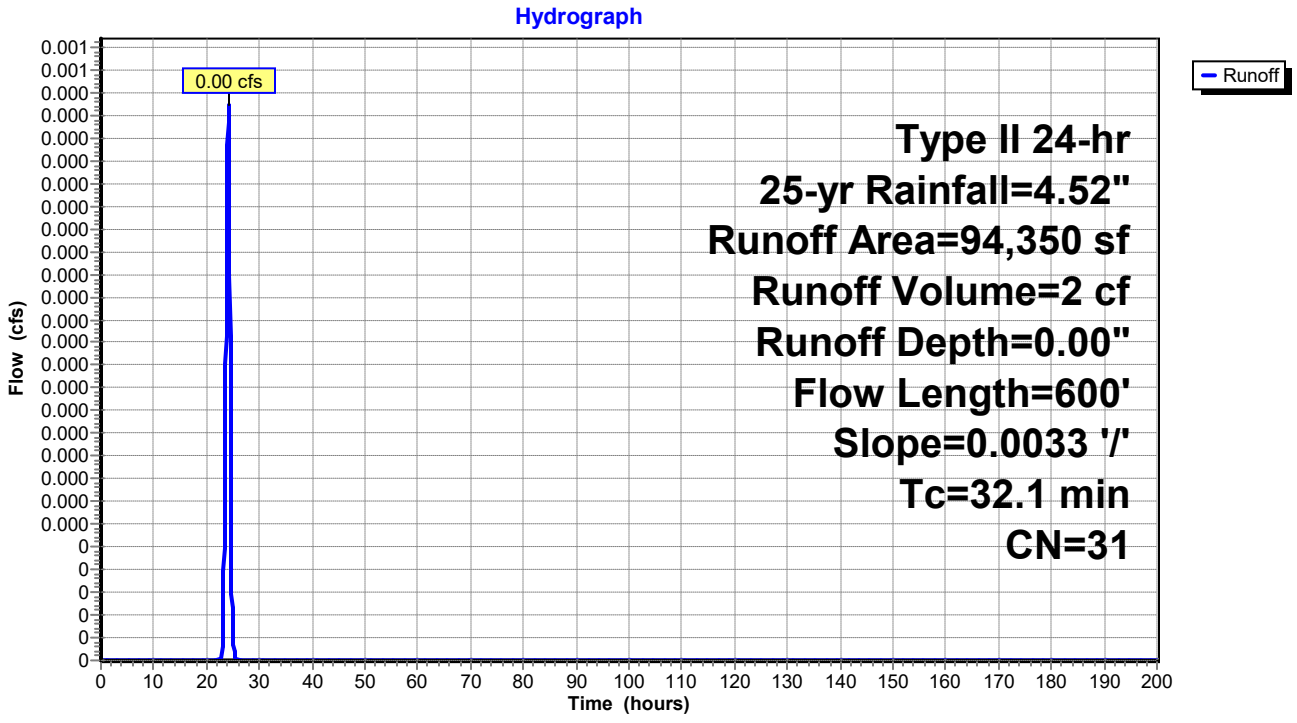
Runoff = 0.00 cfs @ 24.18 hrs, Volume= 2 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=4.52"

Area (sf)	CN	Description
81,679	30	Woods, Good, HSG A
1,452	98	Paved parking, HSG A
11,219	30	Meadow, non-grazed, HSG A
94,350	31	Weighted Average
92,898		98.46% Pervious Area
1,452		1.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.4	100	0.0033	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
9.7	500	0.0033	0.86		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
32.1	600	Total			

Subcatchment 1S: -

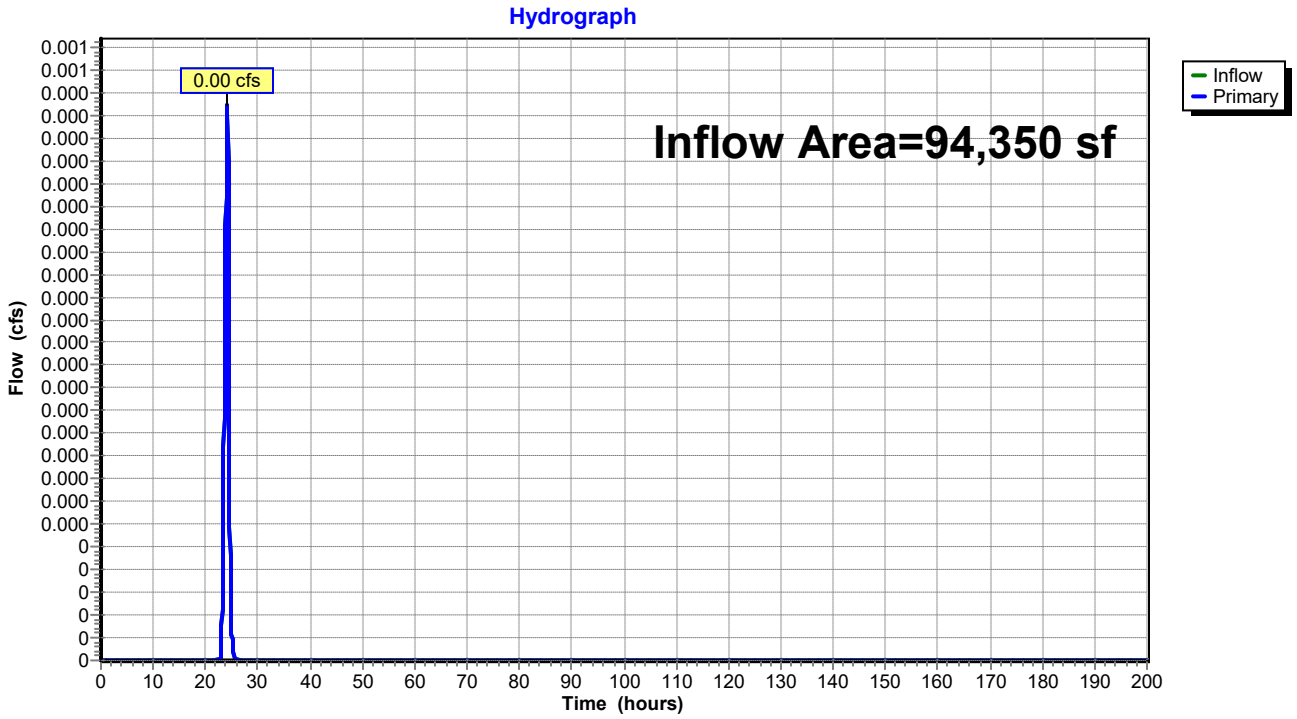


Summary for Link DP1: TOTAL

Inflow Area = 94,350 sf, 1.54% Impervious, Inflow Depth = 0.00" for 25-yr event
Inflow = 0.00 cfs @ 24.18 hrs, Volume= 2 cf
Primary = 0.00 cfs @ 24.18 hrs, Volume= 2 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link DP1: TOTAL



Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: - Runoff Area=94,350 sf 1.54% Impervious Runoff Depth=0.12"
Flow Length=600' Slope=0.0033 '/' Tc=32.1 min CN=31 Runoff=0.03 cfs 979 cf

Link DP1: TOTAL Inflow=0.03 cfs 979 cf
Primary=0.03 cfs 979 cf

Total Runoff Area = 94,350 sf Runoff Volume = 979 cf Average Runoff Depth = 0.12"
98.46% Pervious = 92,898 sf 1.54% Impervious = 1,452 sf

Summary for Subcatchment 1S: -

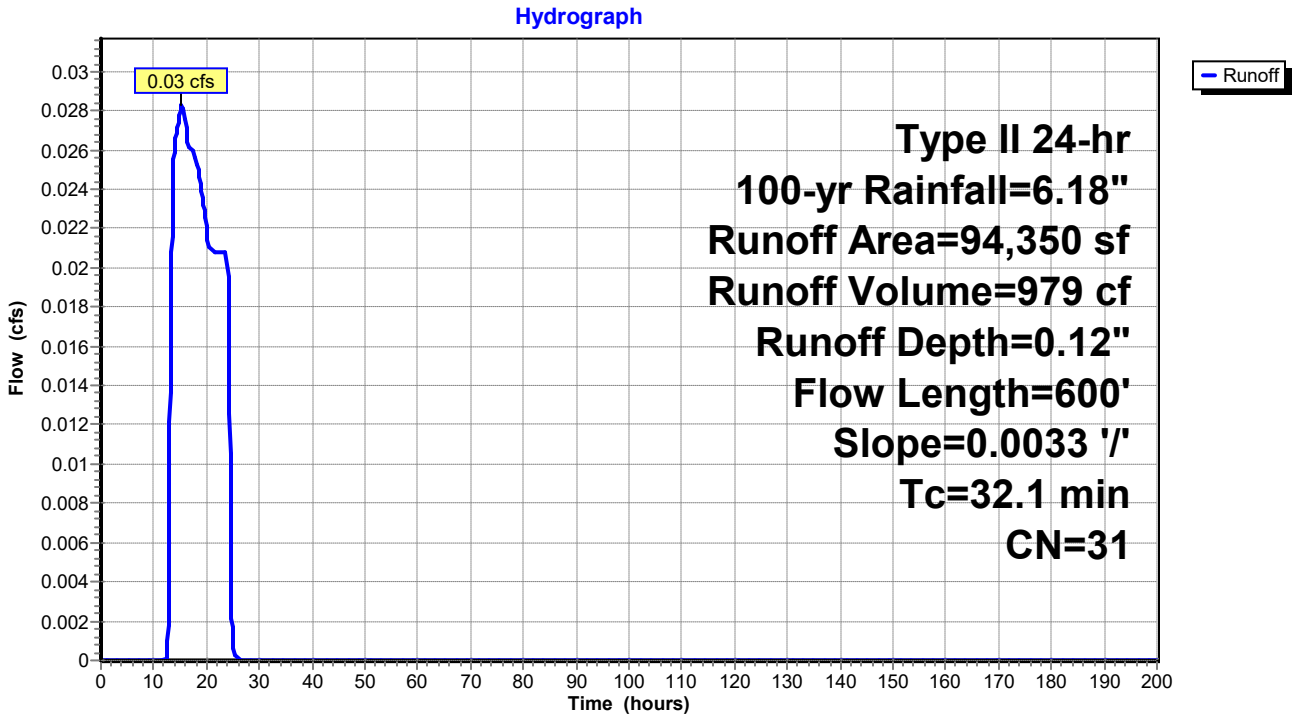
Runoff = 0.03 cfs @ 15.32 hrs, Volume= 979 cf, Depth= 0.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.18"

Area (sf)	CN	Description
81,679	30	Woods, Good, HSG A
1,452	98	Paved parking, HSG A
11,219	30	Meadow, non-grazed, HSG A
94,350	31	Weighted Average
92,898		98.46% Pervious Area
1,452		1.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.4	100	0.0033	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
9.7	500	0.0033	0.86		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
32.1	600	Total			

Subcatchment 1S: -

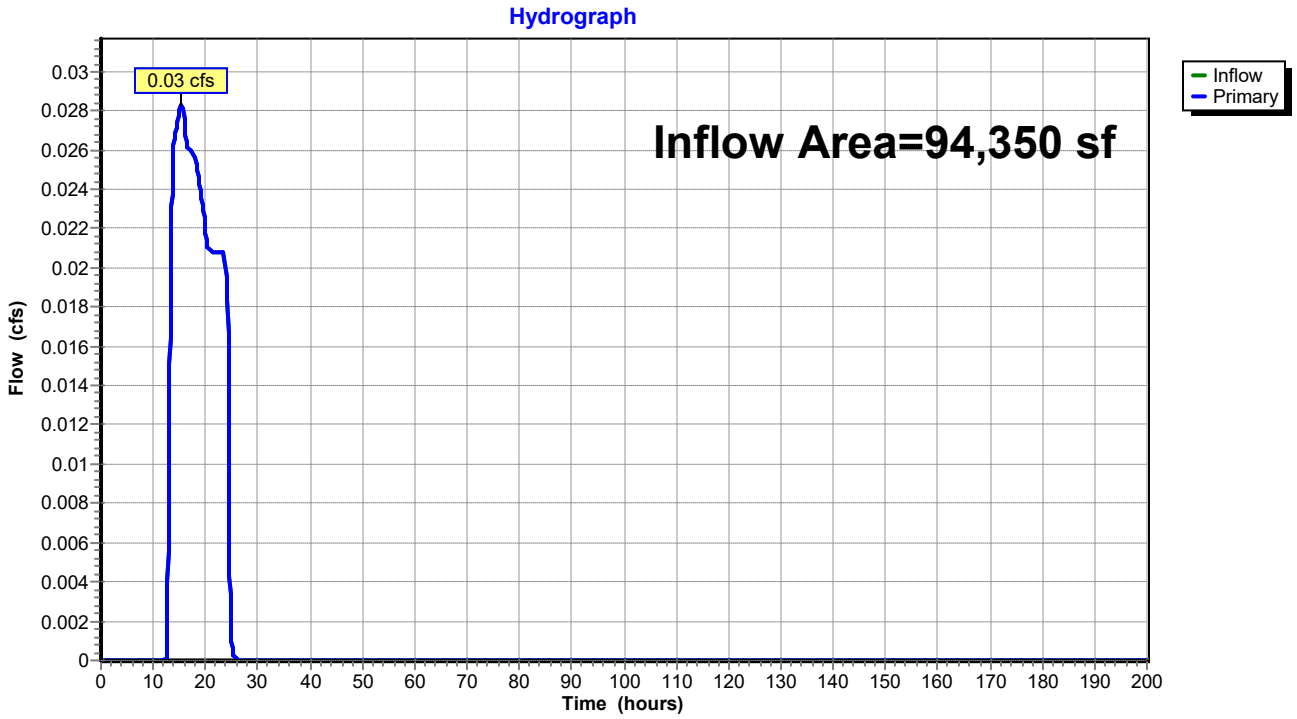


Summary for Link DP1: TOTAL

Inflow Area = 94,350 sf, 1.54% Impervious, Inflow Depth = 0.12" for 100-yr event
Inflow = 0.03 cfs @ 15.32 hrs, Volume= 979 cf
Primary = 0.03 cfs @ 15.32 hrs, Volume= 979 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link DP1: TOTAL



Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: - Runoff Area=94,350 sf 1.54% Impervious Runoff Depth=0.00"
Flow Length=600' Slope=0.0033 '/' Tc=32.1 min CN=31 Runoff=0.00 cfs 0 cf

Link DP1: TOTAL Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Total Runoff Area = 94,350 sf Runoff Volume = 0 cf Average Runoff Depth = 0.00"
98.46% Pervious = 92,898 sf 1.54% Impervious = 1,452 sf

Summary for Subcatchment 1S: -

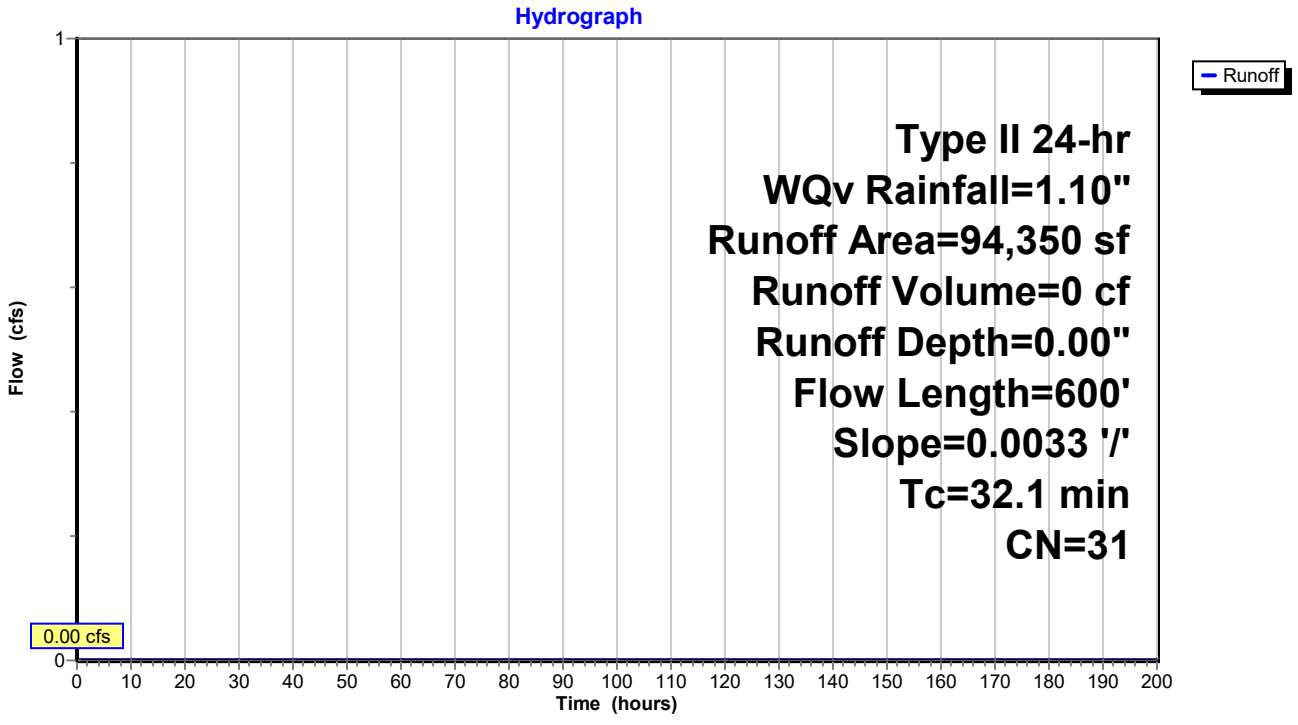
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr WQv Rainfall=1.10"

Area (sf)	CN	Description
81,679	30	Woods, Good, HSG A
1,452	98	Paved parking, HSG A
11,219	30	Meadow, non-grazed, HSG A
94,350	31	Weighted Average
92,898		98.46% Pervious Area
1,452		1.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.4	100	0.0033	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
9.7	500	0.0033	0.86		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
32.1	600	Total			

Subcatchment 1S: -

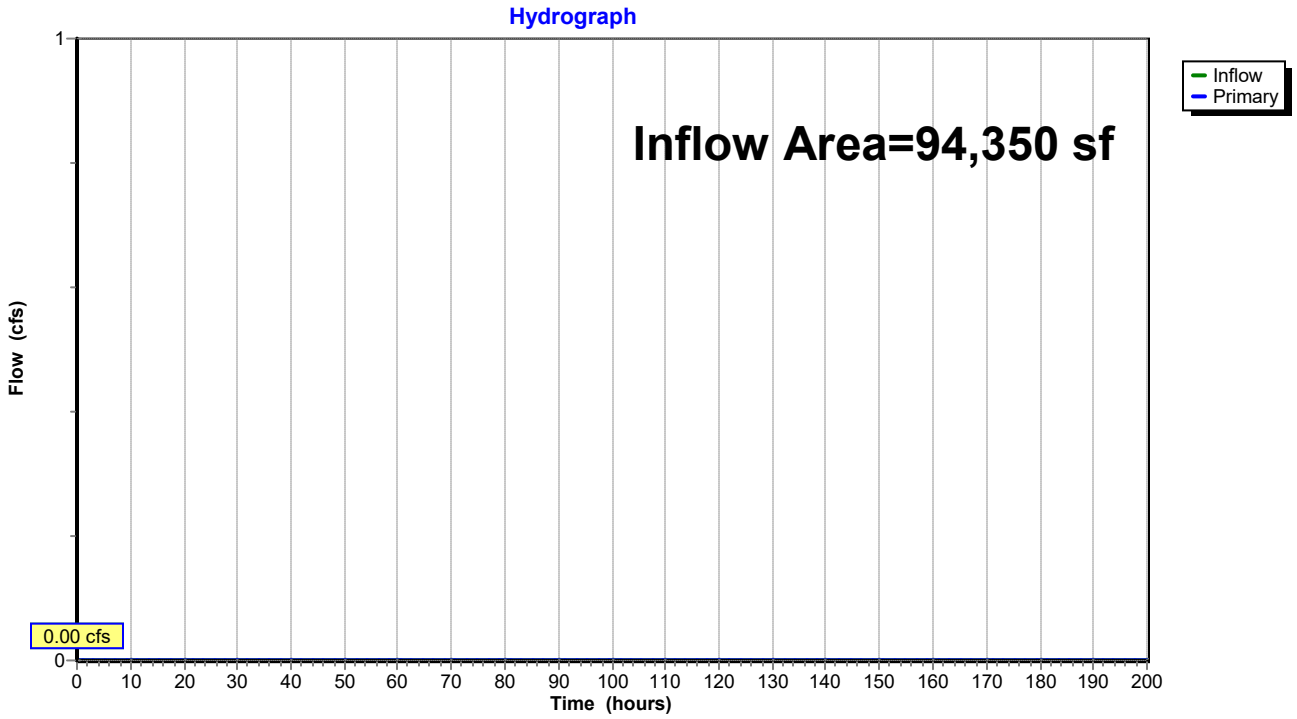


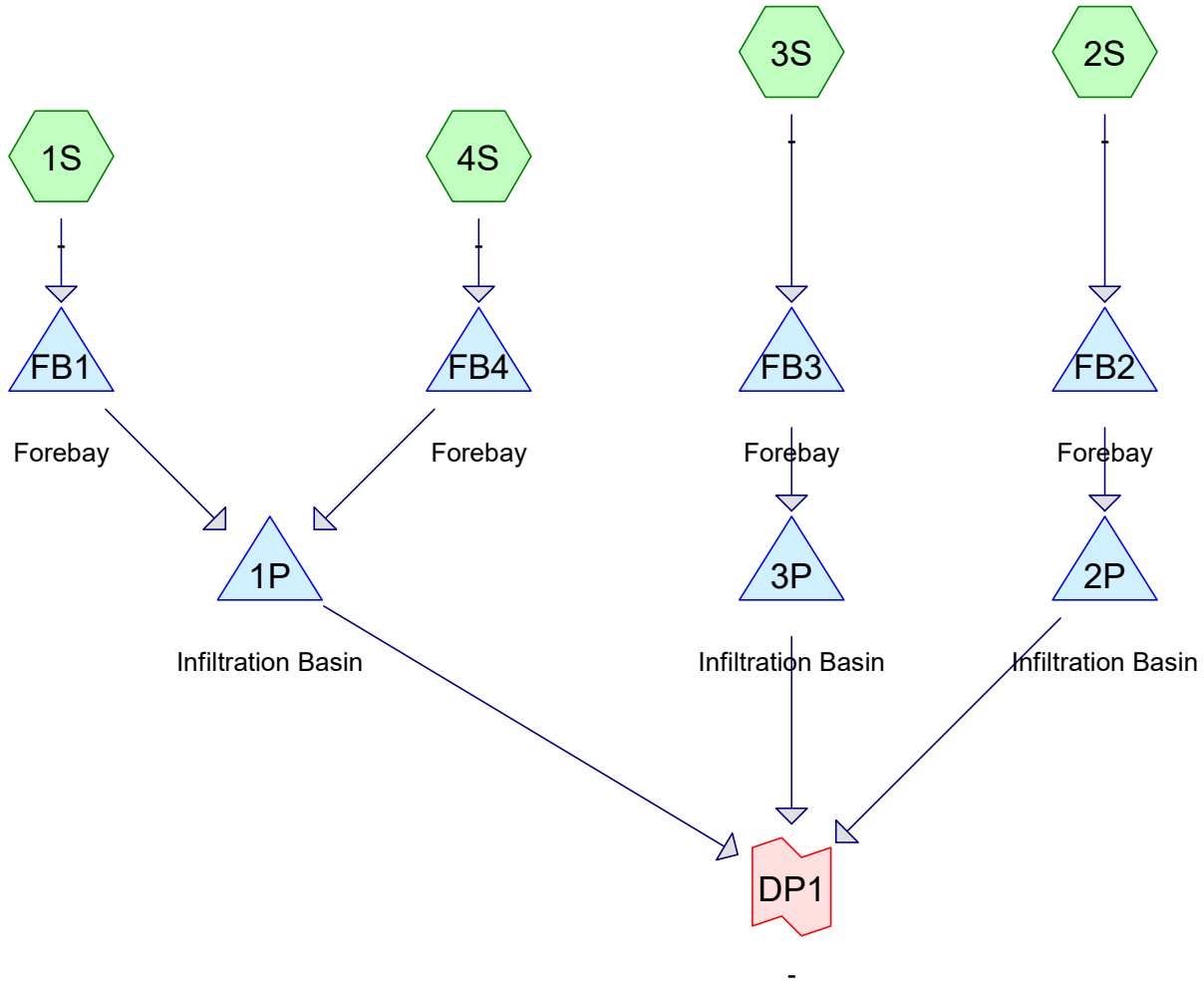
Summary for Link DP1: TOTAL

Inflow Area = 94,350 sf, 1.54% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link DP1: TOTAL





Subcat Reach Pond Link

Routing Diagram for Postdevelopment - 112 Harrison
Prepared by {enter your company name here}, Printed 9/6/2021

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	Type II 24-hr		Default	24.00	1	2.22	2
2	2-yr	Type II 24-hr		Default	24.00	1	2.58	2
3	10-yr	Type II 24-hr		Default	24.00	1	3.69	2
4	25-yr	Type II 24-hr		Default	24.00	1	4.52	2
5	100-yr	Type II 24-hr		Default	24.00	1	6.18	2
6	WQv	Type II 24-hr		Default	24.00	1	1.10	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
42,735	39	>75% Grass cover, Good, HSG A (1S, 2S, 3S, 4S)
38,580	98	Paved parking, HSG A (1S, 2S, 3S, 4S)
13,034	30	Woods, Good, HSG A (1S, 4S)
94,349	**62**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
94,349	HSG A	1S, 2S, 3S, 4S
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
94,349		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
42,735	0	0	0	0	42,735	>75% Grass cover, Good	
38,580	0	0	0	0	38,580	Paved parking	
13,034	0	0	0	0	13,034	Woods, Good	
94,349	**0**	**0**	**0**	**0**	**94,349**	**TOTAL AREA**	

Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: - Runoff Area=50,097 sf 46.28% Impervious Runoff Depth=0.20"
Flow Length=400' Slope=0.0100 '/' Tc=17.7 min CN=65 Runoff=0.12 cfs 836 cf

Subcatchment 2S: - Runoff Area=8,376 sf 57.39% Impervious Runoff Depth=0.42"
Flow Length=400' Slope=0.0100 '/' Tc=17.7 min CN=73 Runoff=0.08 cfs 295 cf

Subcatchment 3S: - Runoff Area=5,784 sf 28.39% Impervious Runoff Depth=0.05"
Flow Length=400' Slope=0.0100 '/' Tc=17.7 min CN=56 Runoff=0.00 cfs 24 cf

Subcatchment 4S: - Runoff Area=30,092 sf 29.73% Impervious Runoff Depth=0.04"
Flow Length=400' Slope=0.0100 '/' Tc=17.7 min CN=55 Runoff=0.00 cfs 97 cf

Pond 1P: Infiltration Basin Peak Elev=318.50' Storage=0 cf Inflow=0.00 cfs 0 cf
Discarded=0.00 cfs 0 cf Primary=0.00 cfs 0 cf Outflow=0.00 cfs 0 cf

Pond 2P: Infiltration Basin Peak Elev=320.00' Storage=0 cf Inflow=0.00 cfs 0 cf
Discarded=0.00 cfs 0 cf Primary=0.00 cfs 0 cf Outflow=0.00 cfs 0 cf

Pond 3P: Infiltration Basin Peak Elev=321.00' Storage=0 cf Inflow=0.00 cfs 0 cf
Discarded=0.00 cfs 0 cf Primary=0.00 cfs 0 cf Outflow=0.00 cfs 0 cf

Pond FB1: Forebay Peak Elev=319.19' Storage=836 cf Inflow=0.12 cfs 836 cf
Outflow=0.00 cfs 0 cf

Pond FB2: Forebay Peak Elev=321.44' Storage=295 cf Inflow=0.08 cfs 295 cf
Outflow=0.00 cfs 0 cf

Pond FB3: Forebay Peak Elev=321.19' Storage=24 cf Inflow=0.00 cfs 24 cf
Outflow=0.00 cfs 0 cf

Pond FB4: Forebay Peak Elev=318.76' Storage=97 cf Inflow=0.00 cfs 97 cf
Outflow=0.00 cfs 0 cf

Link DP1: - Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Total Runoff Area = 94,349 sf Runoff Volume = 1,252 cf Average Runoff Depth = 0.16"
59.11% Pervious = 55,769 sf 40.89% Impervious = 38,580 sf

Summary for Subcatchment 1S: -

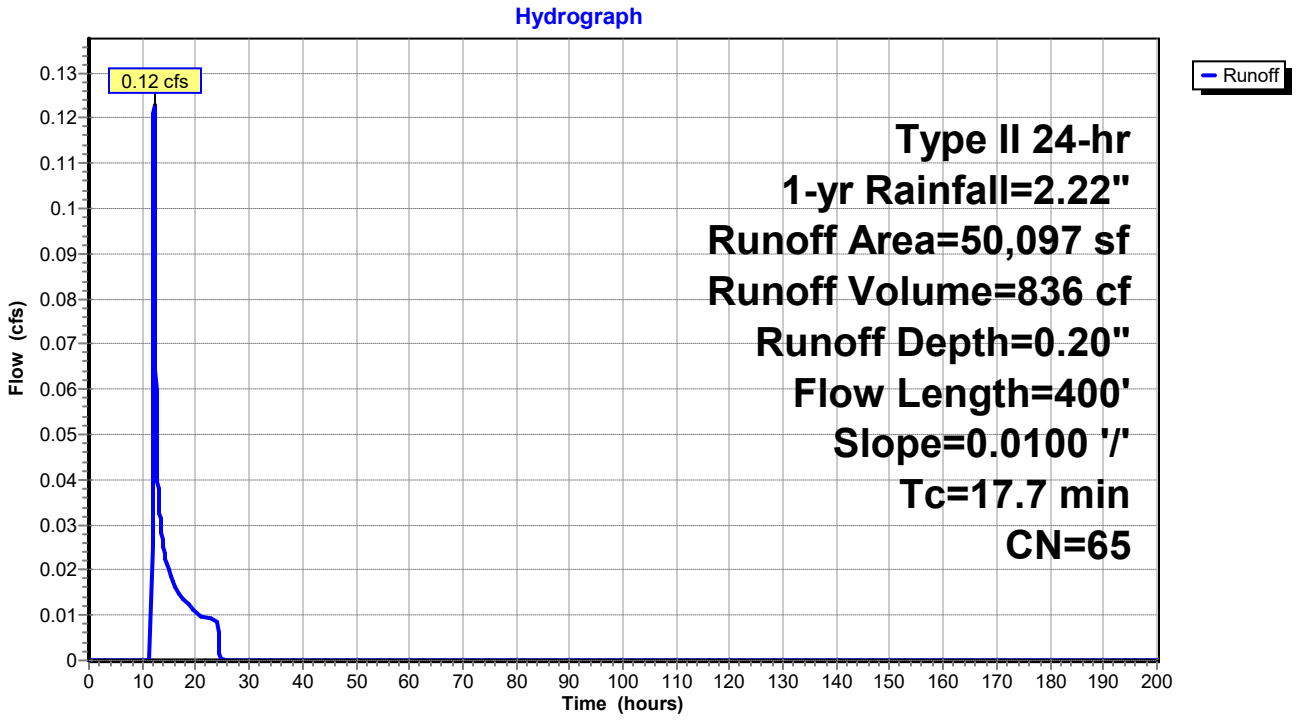
Runoff = 0.12 cfs @ 12.18 hrs, Volume= 836 cf, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.22"

Area (sf)	CN	Description
23,186	98	Paved parking, HSG A
18,691	39	>75% Grass cover, Good, HSG A
8,220	30	Woods, Good, HSG A
50,097	65	Weighted Average
26,911		53.72% Pervious Area
23,186		46.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
3.3	300	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.7	400	Total			

Subcatchment 1S: -



Summary for Subcatchment 2S: -

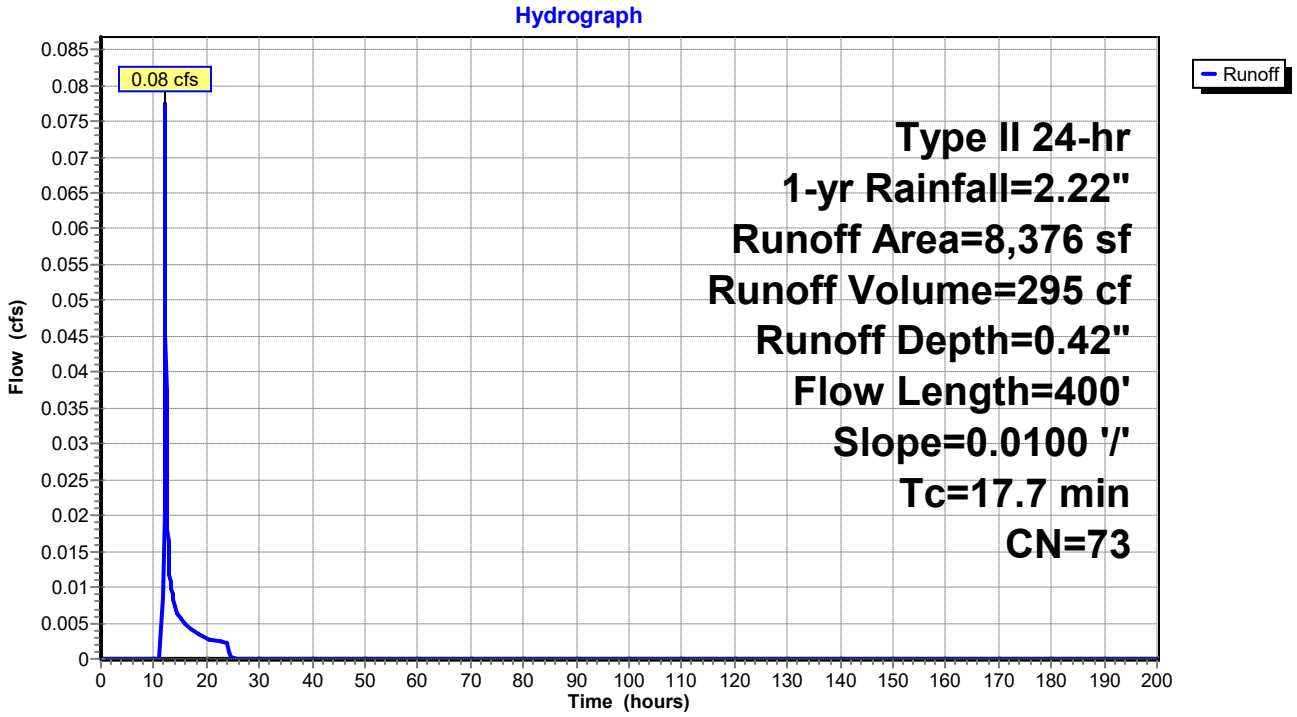
Runoff = 0.08 cfs @ 12.13 hrs, Volume= 295 cf, Depth= 0.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.22"

Area (sf)	CN	Description
4,807	98	Paved parking, HSG A
3,569	39	>75% Grass cover, Good, HSG A
8,376	73	Weighted Average
3,569		42.61% Pervious Area
4,807		57.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
3.3	300	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.7	400	Total			

Subcatchment 2S: -



Summary for Subcatchment 3S: -

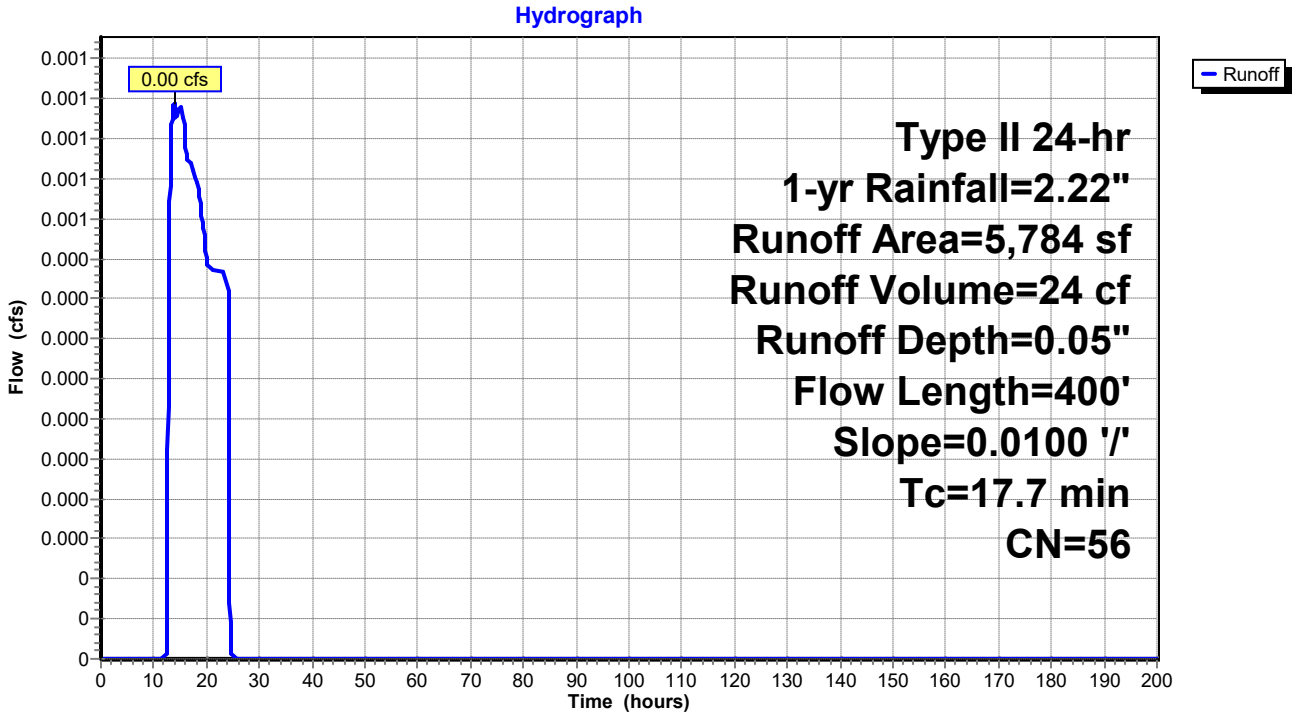
Runoff = 0.00 cfs @ 13.83 hrs, Volume= 24 cf, Depth= 0.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.22"

Area (sf)	CN	Description
1,642	98	Paved parking, HSG A
4,142	39	>75% Grass cover, Good, HSG A
5,784	56	Weighted Average
4,142		71.61% Pervious Area
1,642		28.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
3.3	300	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.7	400	Total			

Subcatchment 3S: -



Summary for Subcatchment 4S: -

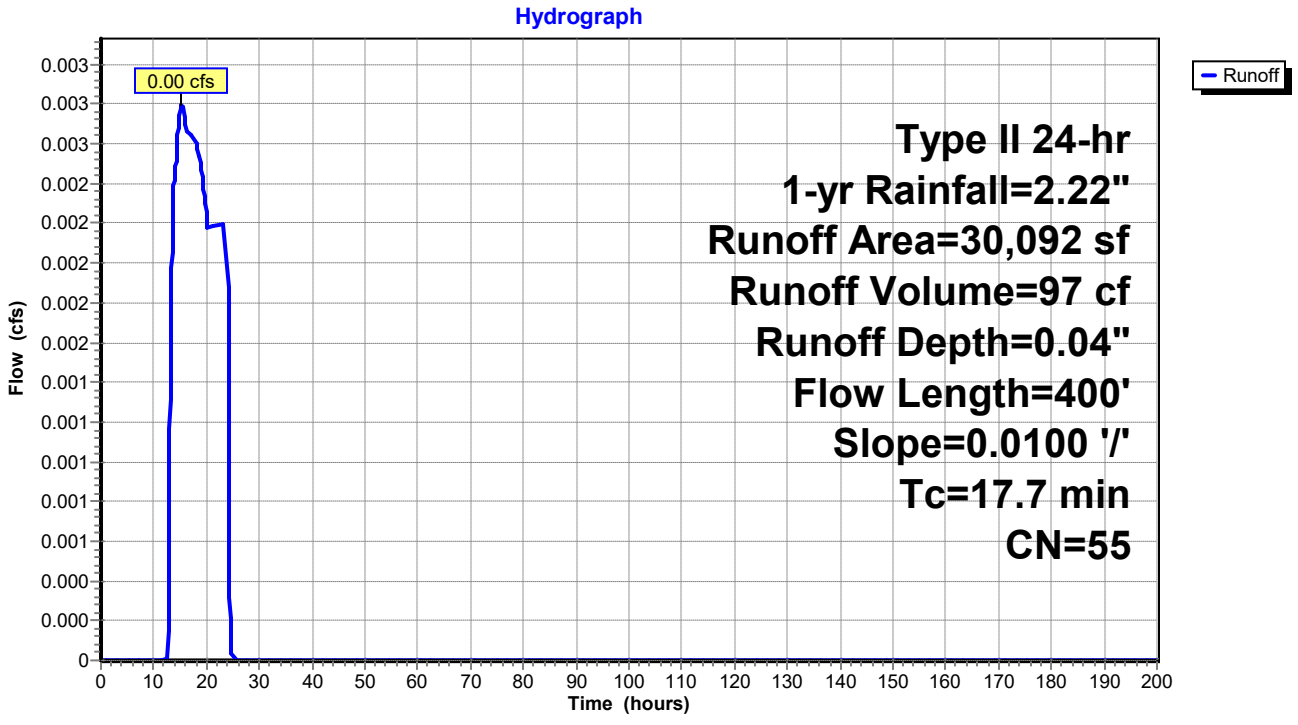
Runoff = 0.00 cfs @ 15.33 hrs, Volume= 97 cf, Depth= 0.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.22"

Area (sf)	CN	Description
8,945	98	Paved parking, HSG A
16,333	39	>75% Grass cover, Good, HSG A
4,814	30	Woods, Good, HSG A
30,092	55	Weighted Average
21,147		70.27% Pervious Area
8,945		29.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
3.3	300	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.7	400	Total			

Subcatchment 4S: -



Summary for Pond 1P: Infiltration Basin

Inflow Area = 80,189 sf, 40.07% Impervious, Inflow Depth = 0.00" for 1-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 318.50' @ 0.00 hrs Surf.Area= 1,815 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	318.50'	3,256 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

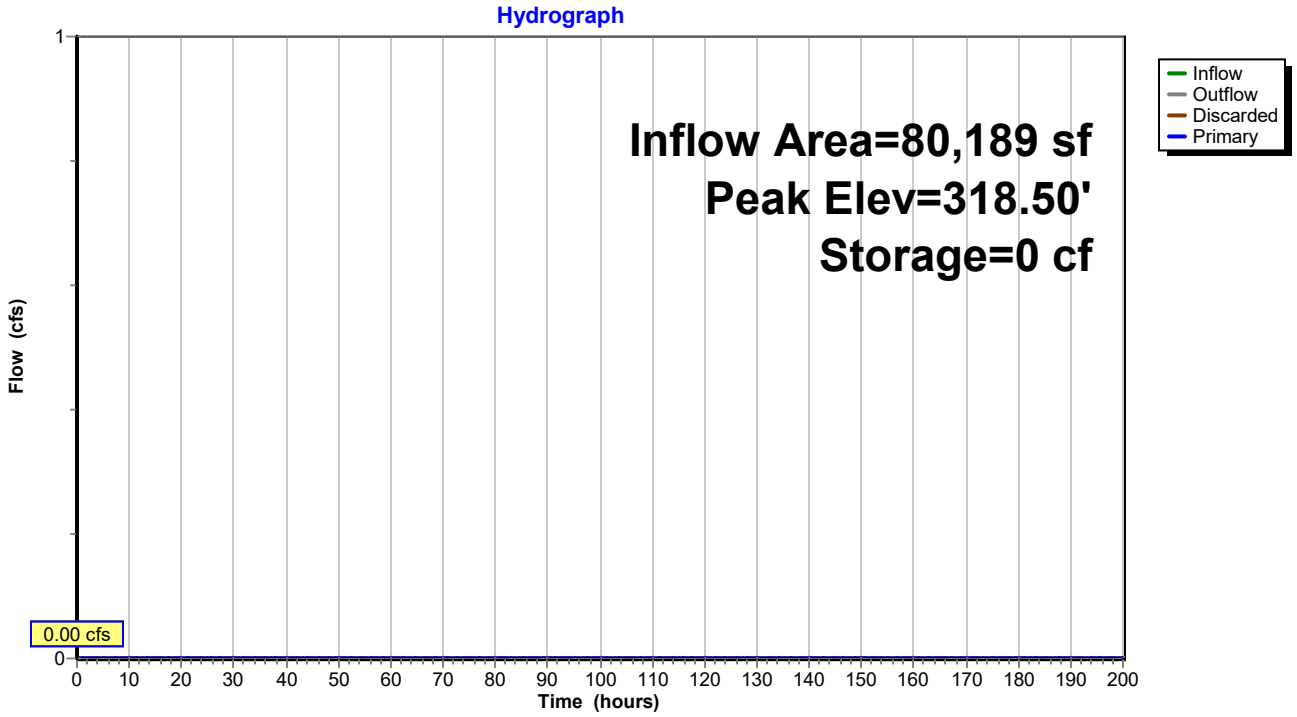
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
318.50	1,815	175.0	0	0	1,815
319.00	2,085	185.0	974	974	2,115
320.00	2,485	200.0	2,282	3,256	2,614

Device	Routing	Invert	Outlet Devices
#1	Discarded	318.50'	**5.00 cfs Exfiltration at all elevations**
#2	Primary	319.80'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=318.50' (Free Discharge)
1=Exfiltration (Passes 0.00 cfs of 5.00 cfs potential flow)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=318.50' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1P: Infiltration Basin



Summary for Pond 2P: Infiltration Basin

Inflow Area = 8,376 sf, 57.39% Impervious, Inflow Depth = 0.00" for 1-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 320.00' @ 0.00 hrs Surf.Area= 70 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	320.00'	533 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

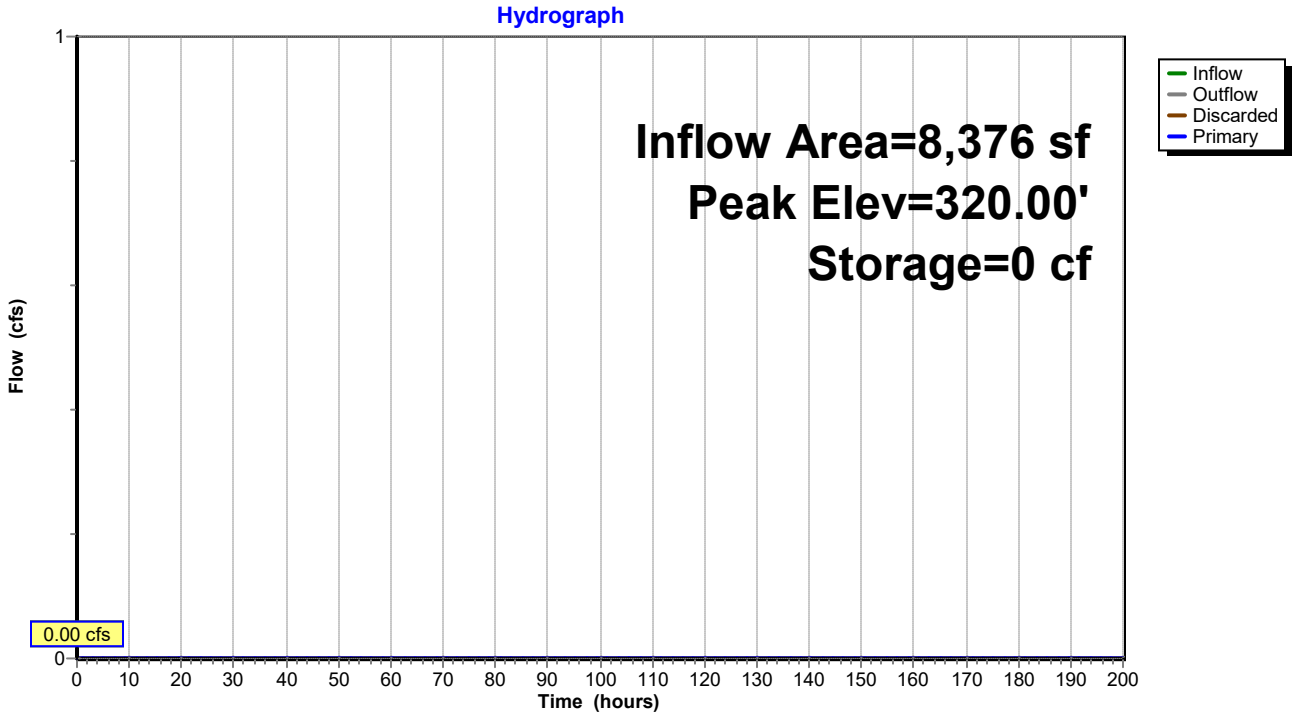
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
320.00	70	65.0	0	0	70
321.00	265	80.0	157	157	258
322.00	500	95.0	376	533	484

Device	Routing	Invert	Outlet Devices
#1	Discarded	320.00'	**5.00 cfs Exfiltration at all elevations**
#2	Primary	321.90'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=320.00' (Free Discharge)
↑—**1=Exfiltration** (Passes 0.00 cfs of 5.00 cfs potential flow)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=320.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: Infiltration Basin



Summary for Pond 3P: Infiltration Basin

Inflow Area = 5,784 sf, 28.39% Impervious, Inflow Depth = 0.00" for 1-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 321.00' @ 0.00 hrs Surf.Area= 115 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	321.00'	174 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

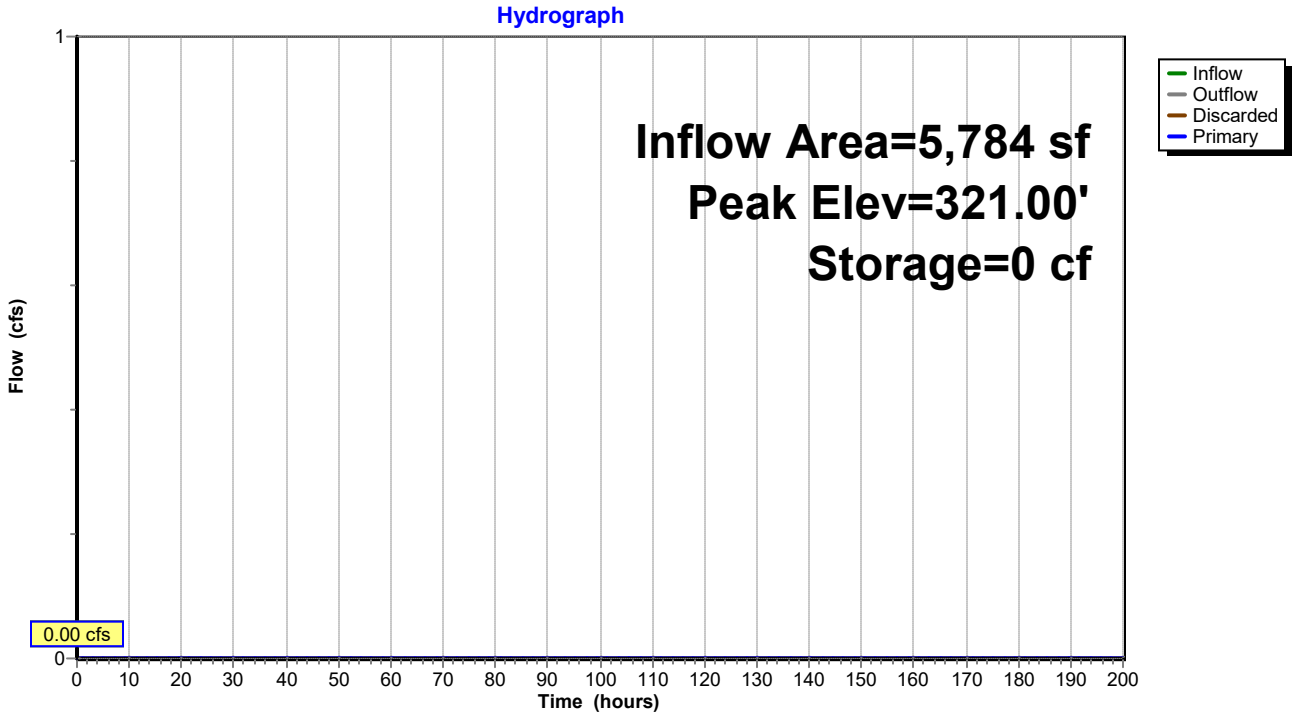
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
321.00	115	45.0	0	0	115
322.00	240	60.0	174	174	251

Device	Routing	Invert	Outlet Devices
#1	Discarded	321.00'	**5.00 cfs Exfiltration at all elevations**
#2	Primary	321.90'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=321.00' (Free Discharge)
↑—**1=Exfiltration** (Passes 0.00 cfs of 5.00 cfs potential flow)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=321.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: Infiltration Basin



Summary for Pond FB1: Forebay

Inflow Area = 50,097 sf, 46.28% Impervious, Inflow Depth = 0.20" for 1-yr event
Inflow = 0.12 cfs @ 12.18 hrs, Volume= 836 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 319.19' @ 25.05 hrs Surf.Area= 1,404 sf Storage= 836 cf

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

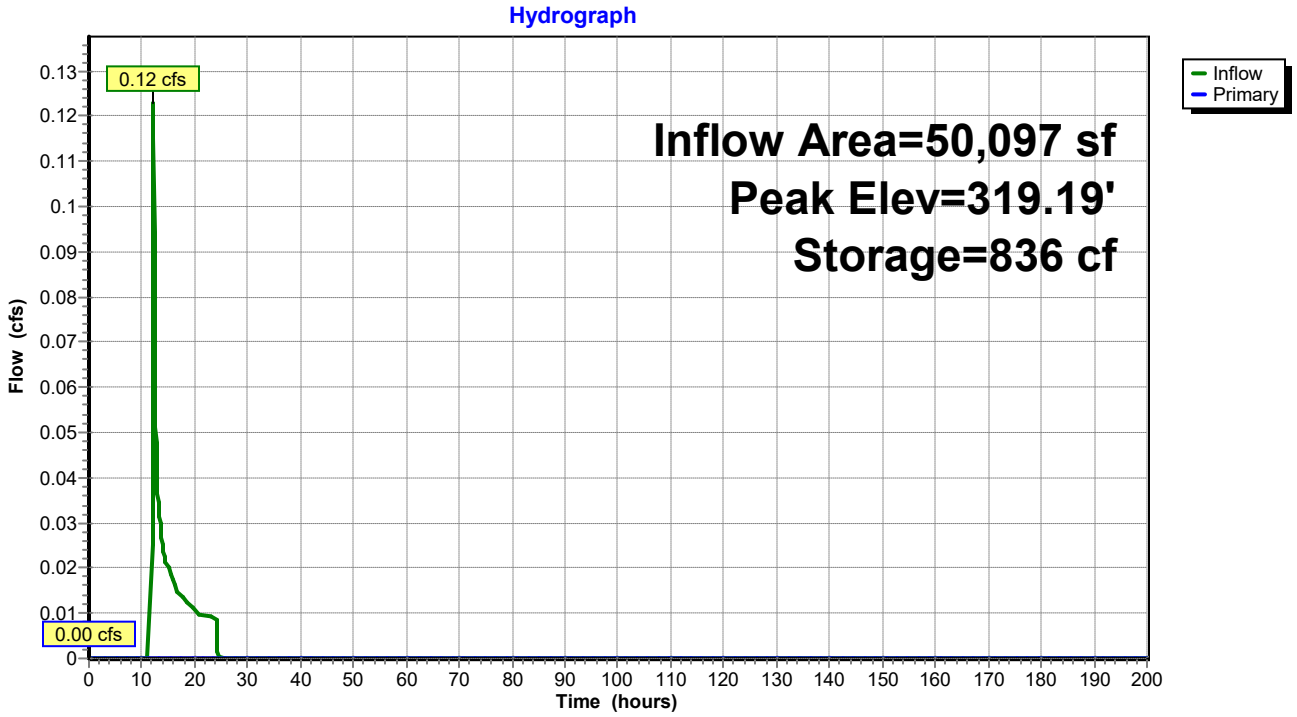
Volume	Invert	Avail.Storage	Storage Description
#1	318.50'	2,172 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
318.50	1,030	150.0	0	0	1,030
319.00	1,300	165.0	581	581	1,414
320.00	1,900	290.0	1,591	2,172	5,946

Device	Routing	Invert	Outlet Devices
#1	Primary	319.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=318.50' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond FB1: Forebay



Summary for Pond FB2: Forebay

Inflow Area = 8,376 sf, 57.39% Impervious, Inflow Depth = 0.42" for 1-yr event
Inflow = 0.08 cfs @ 12.13 hrs, Volume= 295 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 321.44' @ 25.05 hrs Surf.Area= 363 sf Storage= 295 cf

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

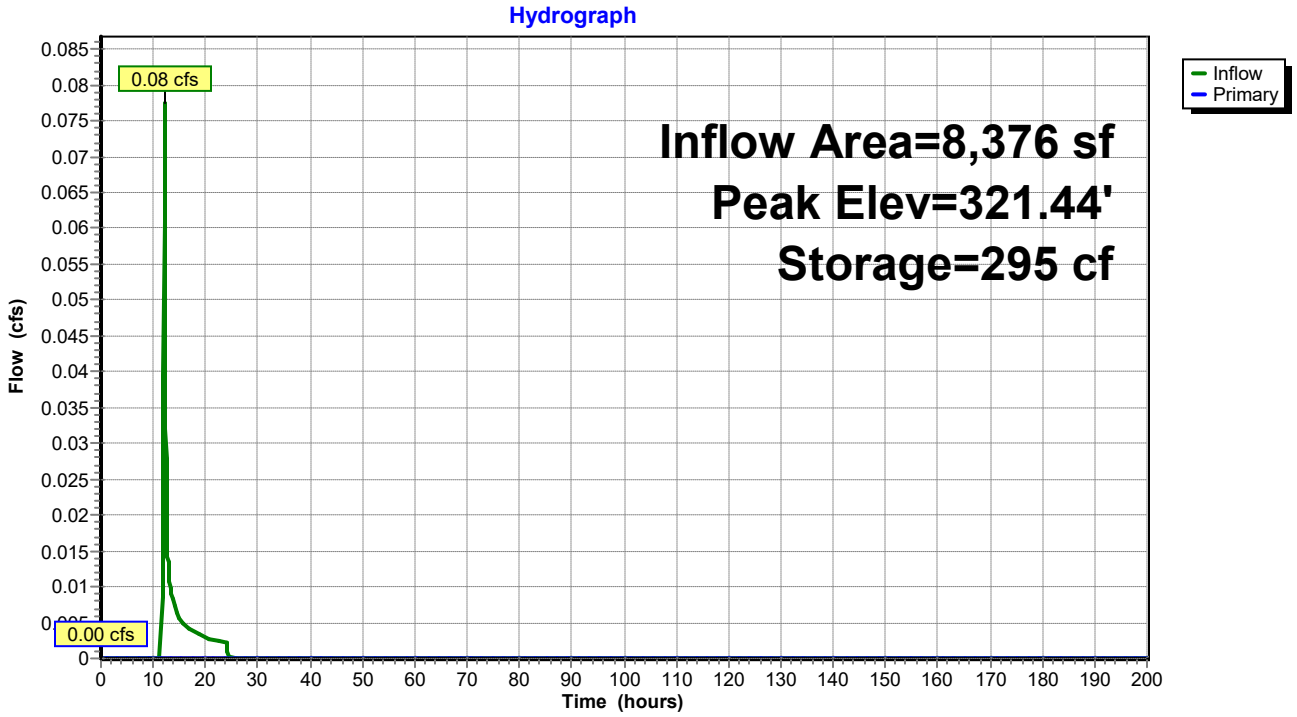
Volume	Invert	Avail.Storage	Storage Description
#1	320.00'	535 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
320.00	65	65.0	0	0	65
321.00	270	80.0	156	156	253
322.00	500	100.0	379	535	553

Device	Routing	Invert	Outlet Devices
#1	Primary	321.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=320.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond FB2: Forebay



Summary for Pond FB3: Forebay

Inflow Area = 5,784 sf, 28.39% Impervious, Inflow Depth = 0.05" for 1-yr event
Inflow = 0.00 cfs @ 13.83 hrs, Volume= 24 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 321.19' @ 25.05 hrs Surf.Area= 143 sf Storage= 24 cf

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

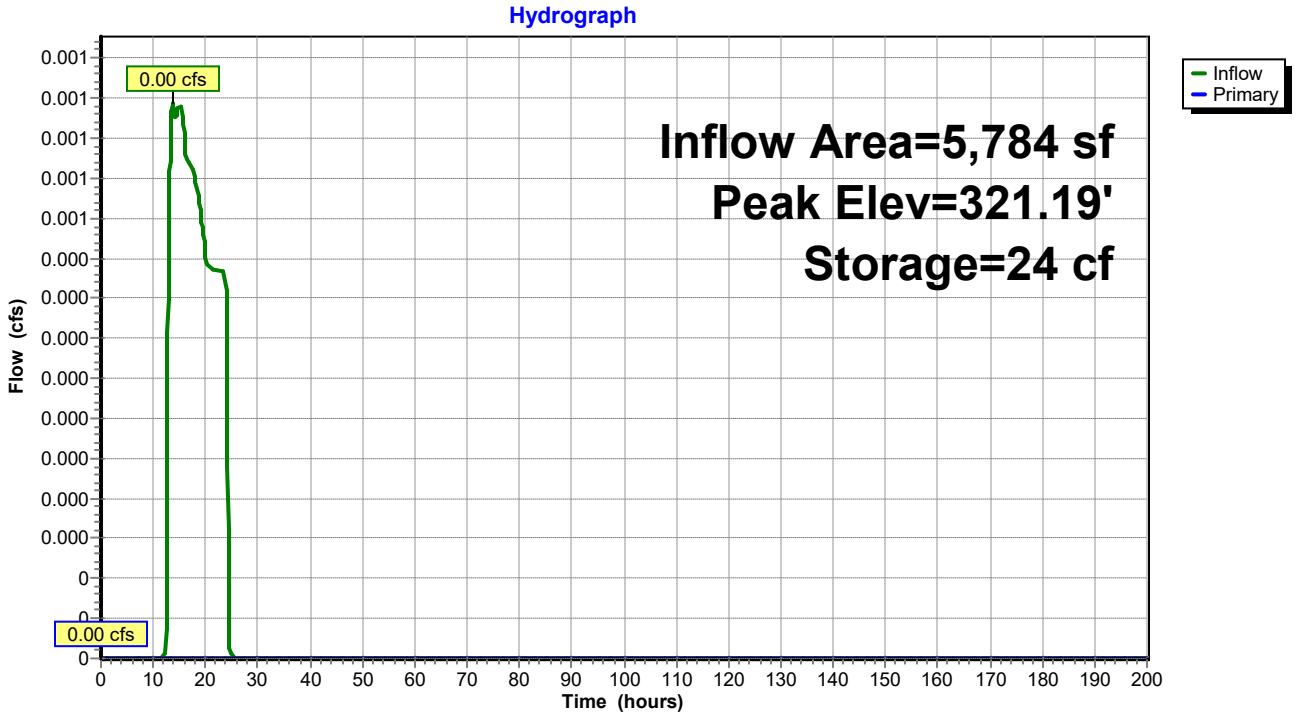
Volume	Invert	Avail.Storage	Storage Description
#1	321.00'	200 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
321.00	115	50.0	0	0	115
322.00	300	75.0	200	200	371

Device	Routing	Invert	Outlet Devices
#1	Primary	321.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=321.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond FB3: Forebay



Summary for Pond FB4: Forebay

Inflow Area = 30,092 sf, 29.73% Impervious, Inflow Depth = 0.04" for 1-yr event
Inflow = 0.00 cfs @ 15.33 hrs, Volume= 97 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 318.76' @ 25.05 hrs Surf.Area= 419 sf Storage= 97 cf

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

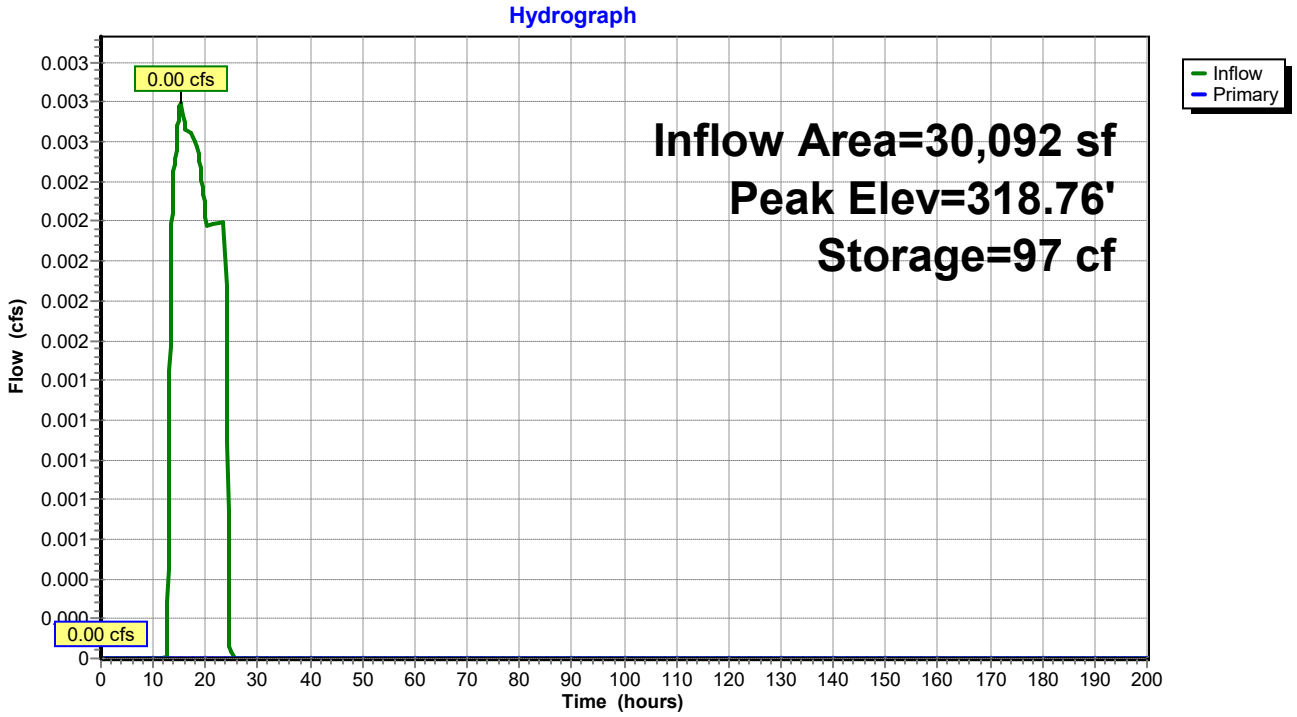
Volume	Invert	Avail.Storage	Storage Description
#1	318.50'	913 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
318.50	340	95.0	0	0	340
319.00	500	130.0	209	209	969
320.00	930	200.0	704	913	2,815

Device	Routing	Invert	Outlet Devices
#1	Primary	319.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=318.50' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond FB4: Forebay

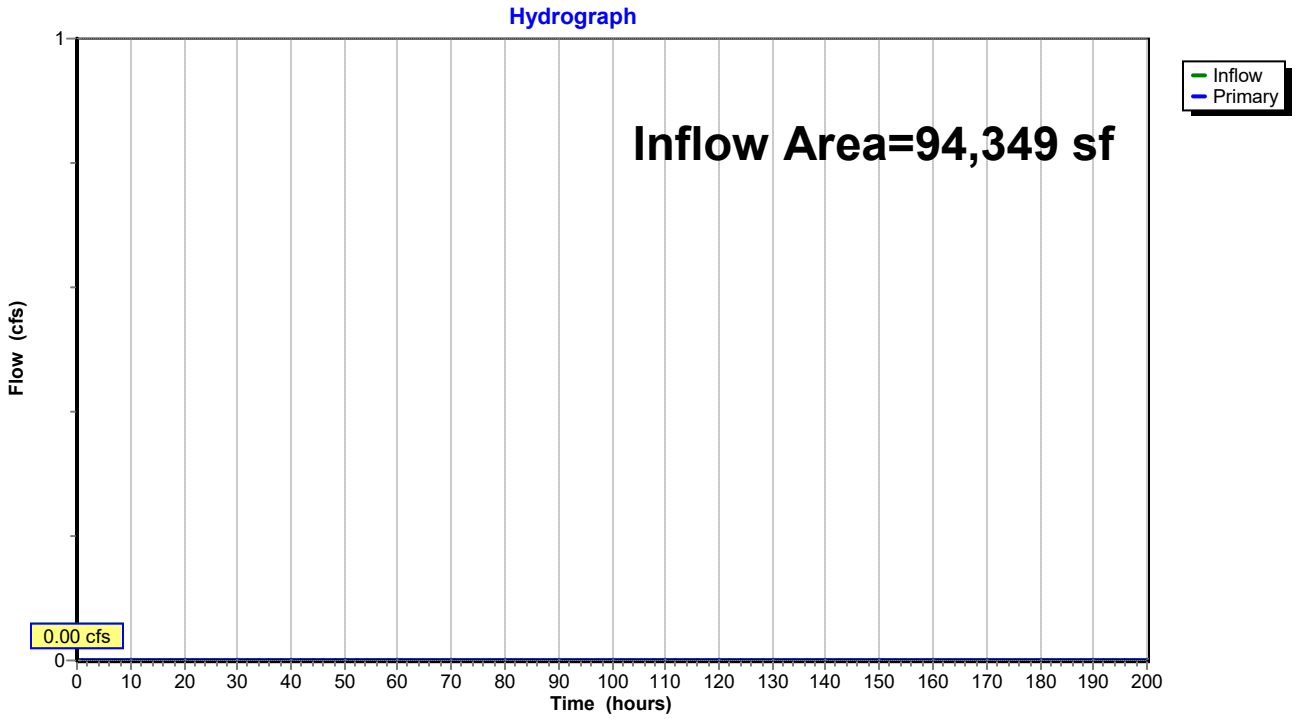


Summary for Link DP1: -

Inflow Area = 94,349 sf, 40.89% Impervious, Inflow Depth = 0.00" for 1-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link DP1: -



Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: - Runoff Area=50,097 sf 46.28% Impervious Runoff Depth=0.33"
Flow Length=400' Slope=0.0100 '/' Tc=17.7 min CN=65 Runoff=0.28 cfs 1,369 cf

Subcatchment 2S: - Runoff Area=8,376 sf 57.39% Impervious Runoff Depth=0.61"
Flow Length=400' Slope=0.0100 '/' Tc=17.7 min CN=73 Runoff=0.12 cfs 427 cf

Subcatchment 3S: - Runoff Area=5,784 sf 28.39% Impervious Runoff Depth=0.11"
Flow Length=400' Slope=0.0100 '/' Tc=17.7 min CN=56 Runoff=0.00 cfs 55 cf

Subcatchment 4S: - Runoff Area=30,092 sf 29.73% Impervious Runoff Depth=0.10"
Flow Length=400' Slope=0.0100 '/' Tc=17.7 min CN=55 Runoff=0.01 cfs 245 cf

Pond 1P: Infiltration Basin Peak Elev=318.50' Storage=0 cf Inflow=0.00 cfs 0 cf
Discarded=0.00 cfs 0 cf Primary=0.00 cfs 0 cf Outflow=0.00 cfs 0 cf

Pond 2P: Infiltration Basin Peak Elev=320.00' Storage=0 cf Inflow=0.00 cfs 0 cf
Discarded=0.00 cfs 0 cf Primary=0.00 cfs 0 cf Outflow=0.00 cfs 0 cf

Pond 3P: Infiltration Basin Peak Elev=321.00' Storage=0 cf Inflow=0.00 cfs 0 cf
Discarded=0.00 cfs 0 cf Primary=0.00 cfs 0 cf Outflow=0.00 cfs 0 cf

Pond FB1: Forebay Peak Elev=319.54' Storage=1,369 cf Inflow=0.28 cfs 1,369 cf
Outflow=0.00 cfs 0 cf

Pond FB2: Forebay Peak Elev=321.77' Storage=427 cf Inflow=0.12 cfs 427 cf
Outflow=0.00 cfs 0 cf

Pond FB3: Forebay Peak Elev=321.38' Storage=55 cf Inflow=0.00 cfs 55 cf
Outflow=0.00 cfs 0 cf

Pond FB4: Forebay Peak Elev=319.07' Storage=245 cf Inflow=0.01 cfs 245 cf
Outflow=0.00 cfs 0 cf

Link DP1: - Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Total Runoff Area = 94,349 sf Runoff Volume = 2,096 cf Average Runoff Depth = 0.27"
59.11% Pervious = 55,769 sf 40.89% Impervious = 38,580 sf

Summary for Subcatchment 1S: -

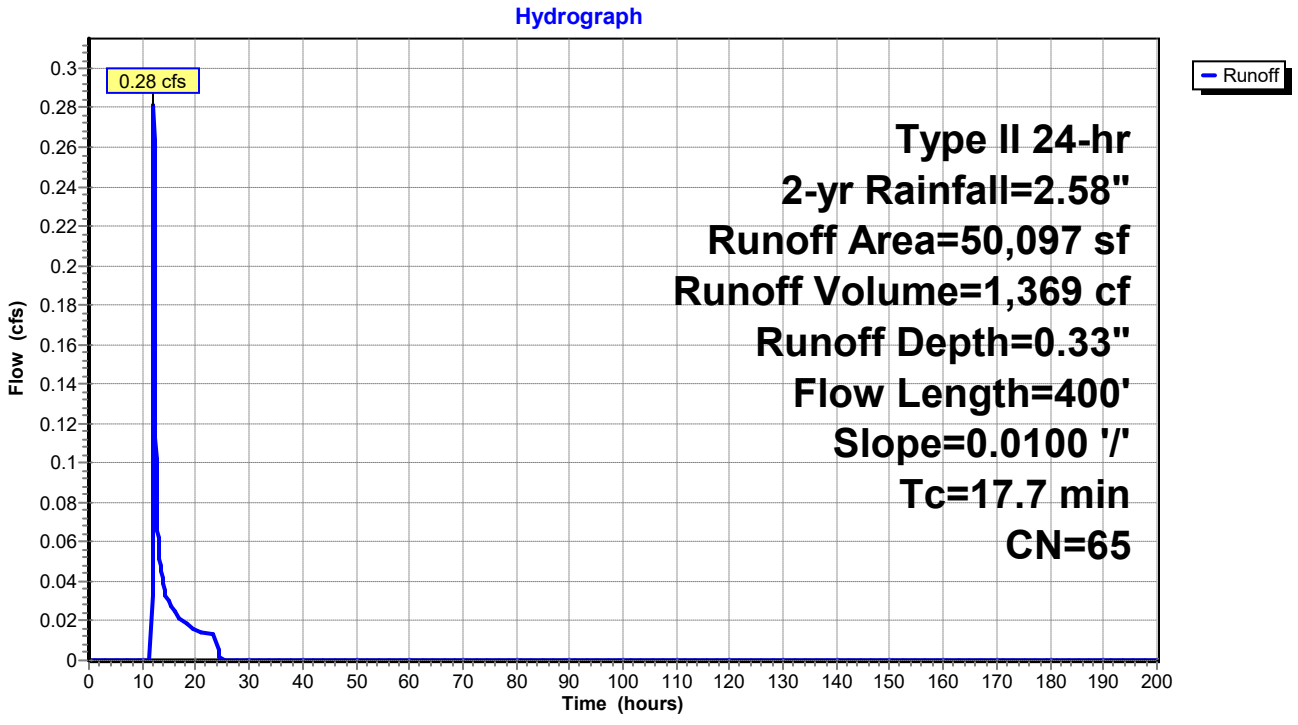
Runoff = 0.28 cfs @ 12.15 hrs, Volume= 1,369 cf, Depth= 0.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=2.58"

Area (sf)	CN	Description
23,186	98	Paved parking, HSG A
18,691	39	>75% Grass cover, Good, HSG A
8,220	30	Woods, Good, HSG A
50,097	65	Weighted Average
26,911		53.72% Pervious Area
23,186		46.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
3.3	300	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.7	400	Total			

Subcatchment 1S: -



Summary for Subcatchment 2S: -

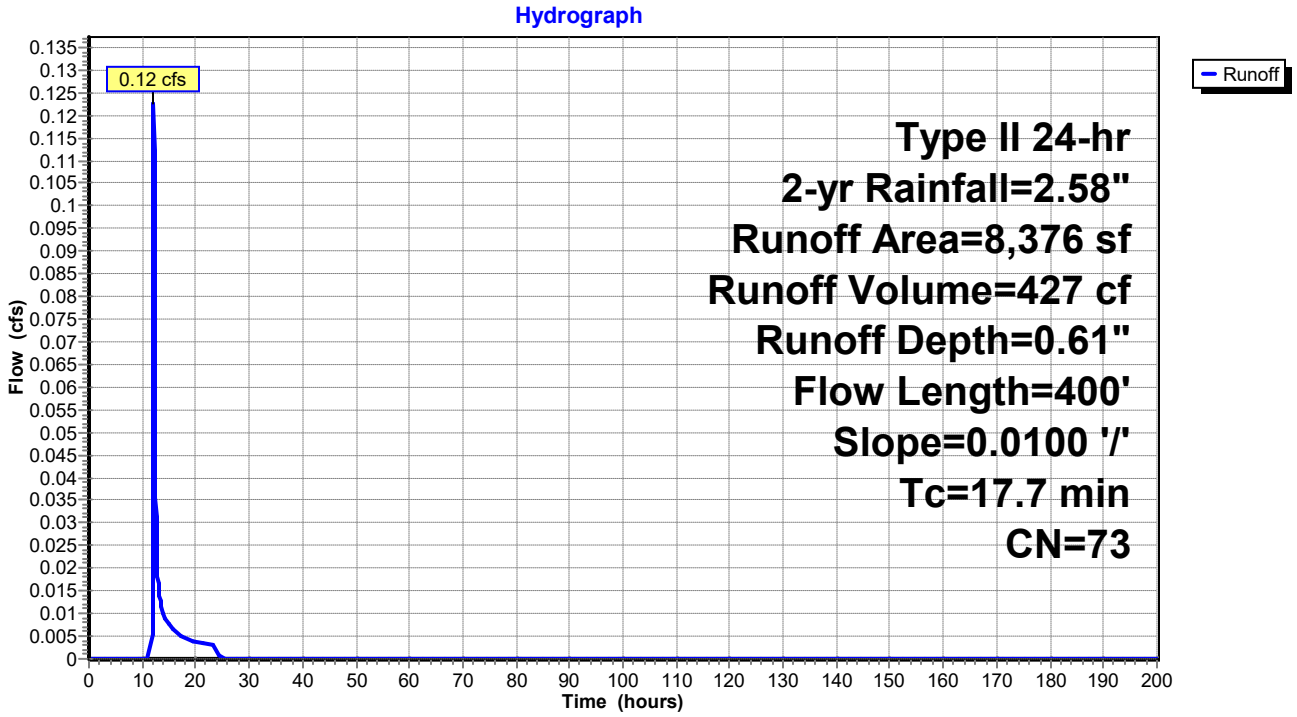
Runoff = 0.12 cfs @ 12.12 hrs, Volume= 427 cf, Depth= 0.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=2.58"

Area (sf)	CN	Description
4,807	98	Paved parking, HSG A
3,569	39	>75% Grass cover, Good, HSG A
8,376	73	Weighted Average
3,569		42.61% Pervious Area
4,807		57.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
3.3	300	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.7	400	Total			

Subcatchment 2S: -



Summary for Subcatchment 3S: -

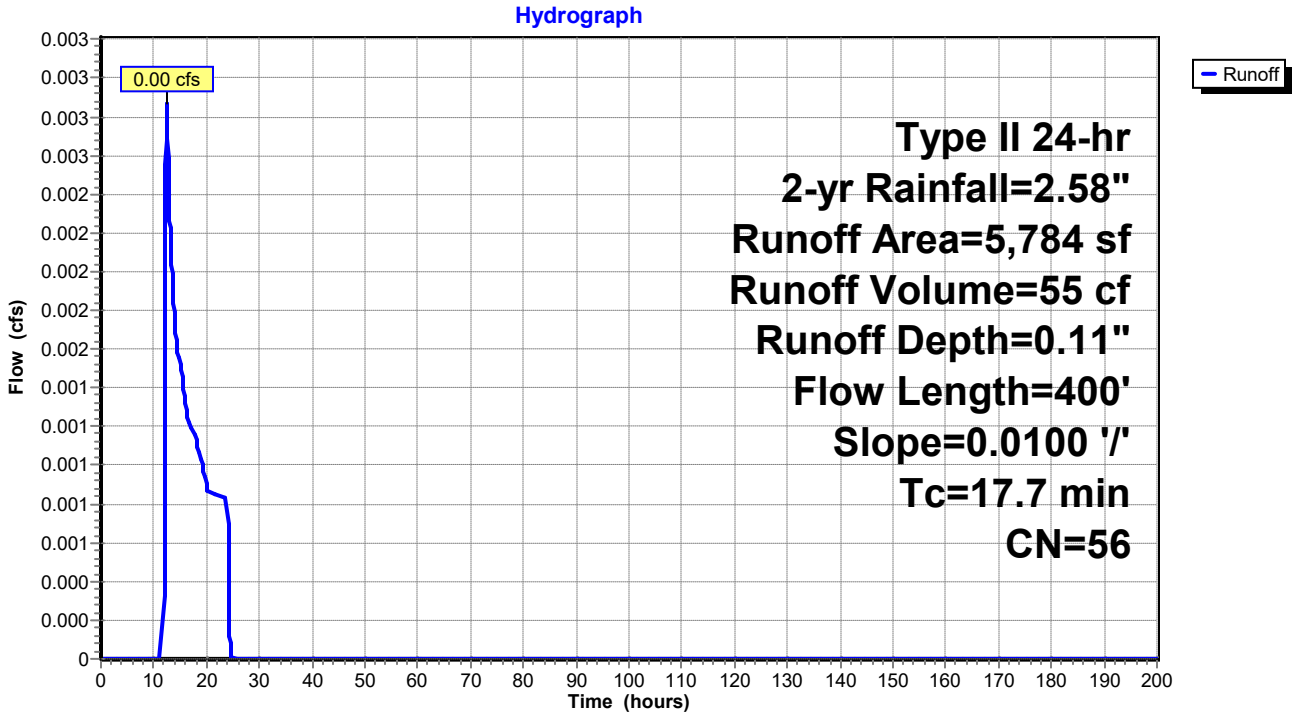
Runoff = 0.00 cfs @ 12.50 hrs, Volume= 55 cf, Depth= 0.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=2.58"

Area (sf)	CN	Description
1,642	98	Paved parking, HSG A
4,142	39	>75% Grass cover, Good, HSG A
5,784	56	Weighted Average
4,142		71.61% Pervious Area
1,642		28.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
3.3	300	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.7	400	Total			

Subcatchment 3S: -



Summary for Subcatchment 4S: -

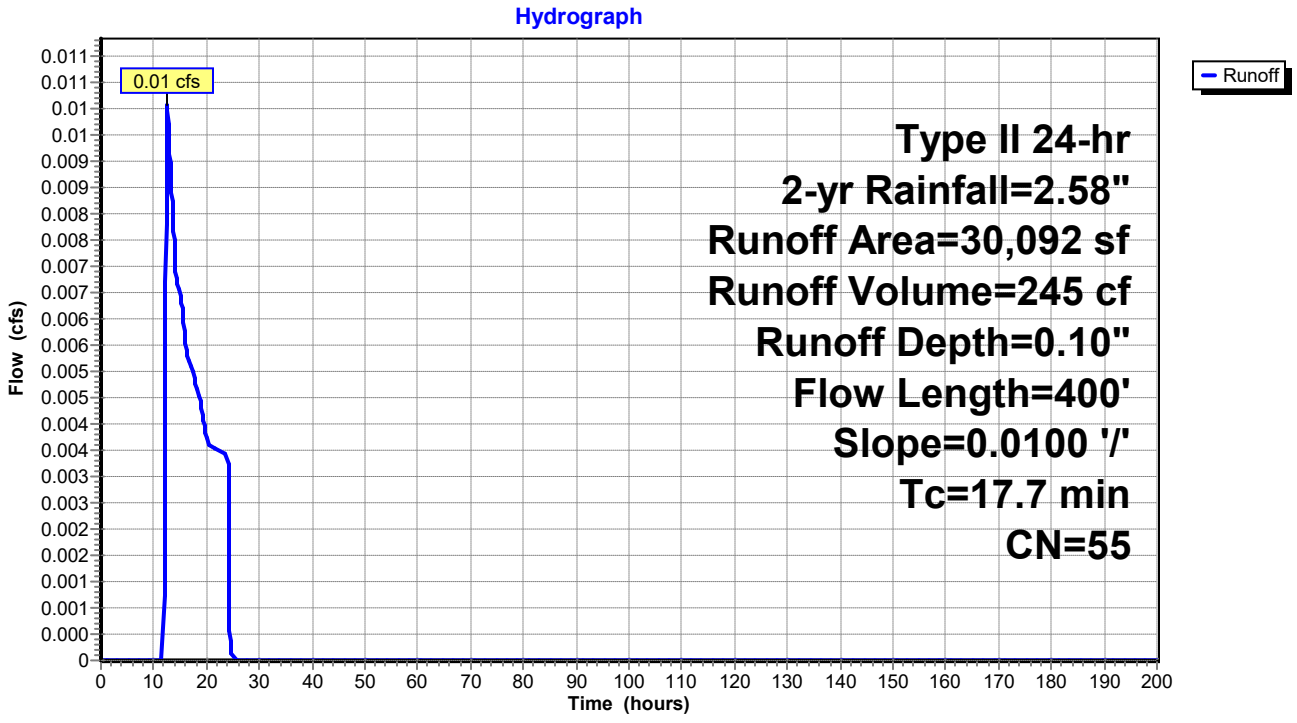
Runoff = 0.01 cfs @ 12.57 hrs, Volume= 245 cf, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=2.58"

Area (sf)	CN	Description
8,945	98	Paved parking, HSG A
16,333	39	>75% Grass cover, Good, HSG A
4,814	30	Woods, Good, HSG A
30,092	55	Weighted Average
21,147		70.27% Pervious Area
8,945		29.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
3.3	300	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.7	400	Total			

Subcatchment 4S: -



Summary for Pond 1P: Infiltration Basin

Inflow Area = 80,189 sf, 40.07% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 318.50' @ 0.00 hrs Surf.Area= 1,815 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	318.50'	3,256 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

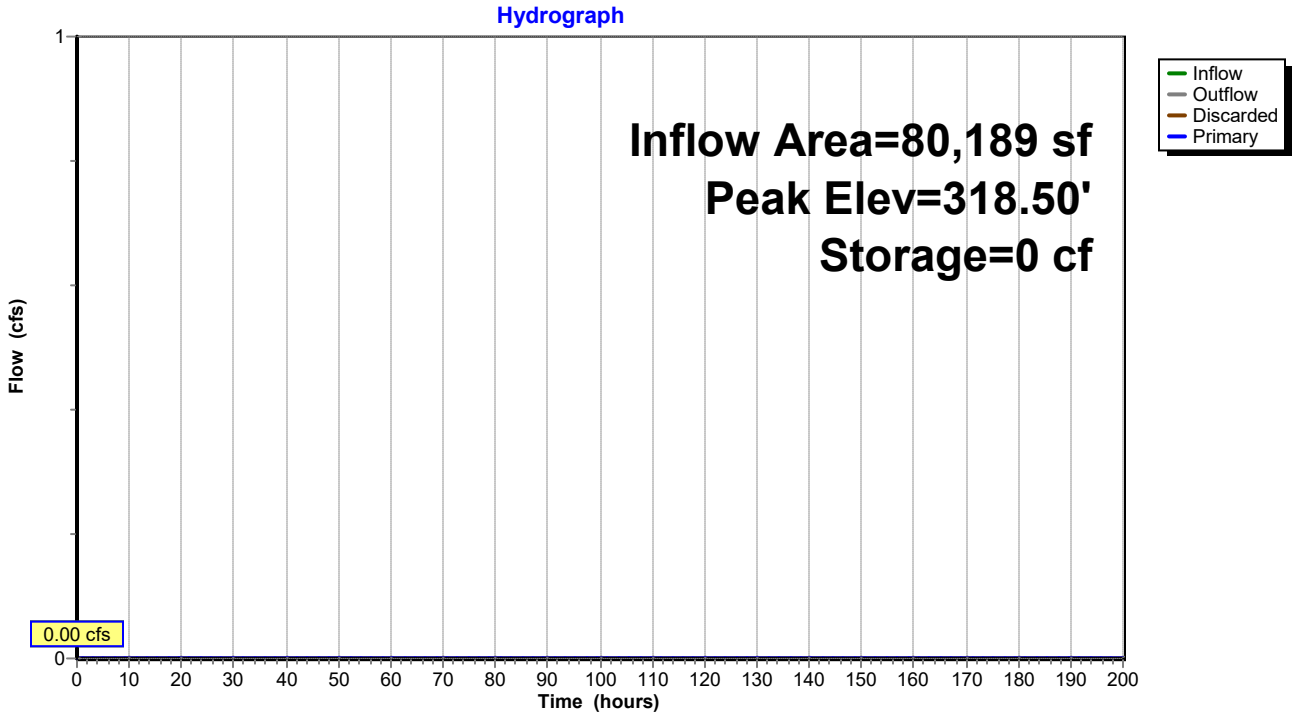
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
318.50	1,815	175.0	0	0	1,815
319.00	2,085	185.0	974	974	2,115
320.00	2,485	200.0	2,282	3,256	2,614

Device	Routing	Invert	Outlet Devices
#1	Discarded	318.50'	**5.00 cfs Exfiltration at all elevations**
#2	Primary	319.80'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=318.50' (Free Discharge)
1=Exfiltration (Passes 0.00 cfs of 5.00 cfs potential flow)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=318.50' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1P: Infiltration Basin



Summary for Pond 2P: Infiltration Basin

Inflow Area = 8,376 sf, 57.39% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 320.00' @ 0.00 hrs Surf.Area= 70 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	320.00'	533 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

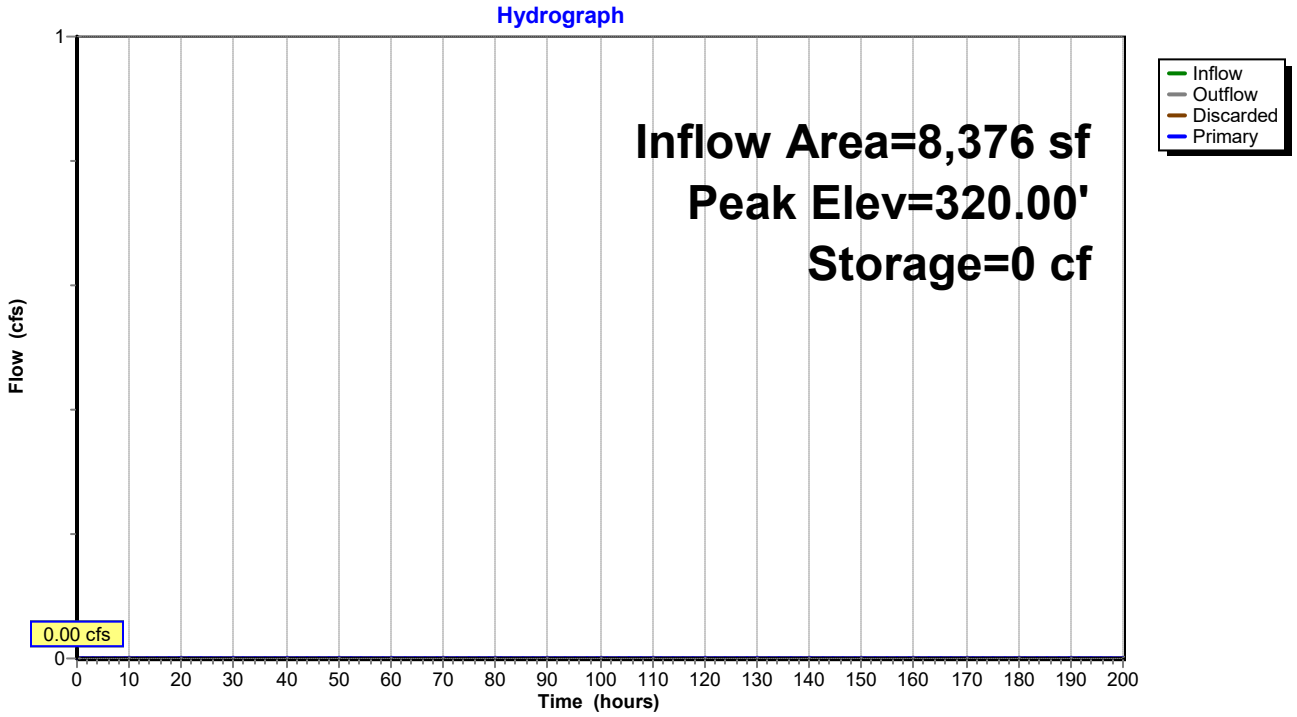
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
320.00	70	65.0	0	0	70
321.00	265	80.0	157	157	258
322.00	500	95.0	376	533	484

Device	Routing	Invert	Outlet Devices
#1	Discarded	320.00'	**5.00 cfs Exfiltration at all elevations**
#2	Primary	321.90'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=320.00' (Free Discharge)
↑—**1=Exfiltration** (Passes 0.00 cfs of 5.00 cfs potential flow)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=320.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: Infiltration Basin



Summary for Pond 3P: Infiltration Basin

Inflow Area = 5,784 sf, 28.39% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 321.00' @ 0.00 hrs Surf.Area= 115 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	321.00'	174 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

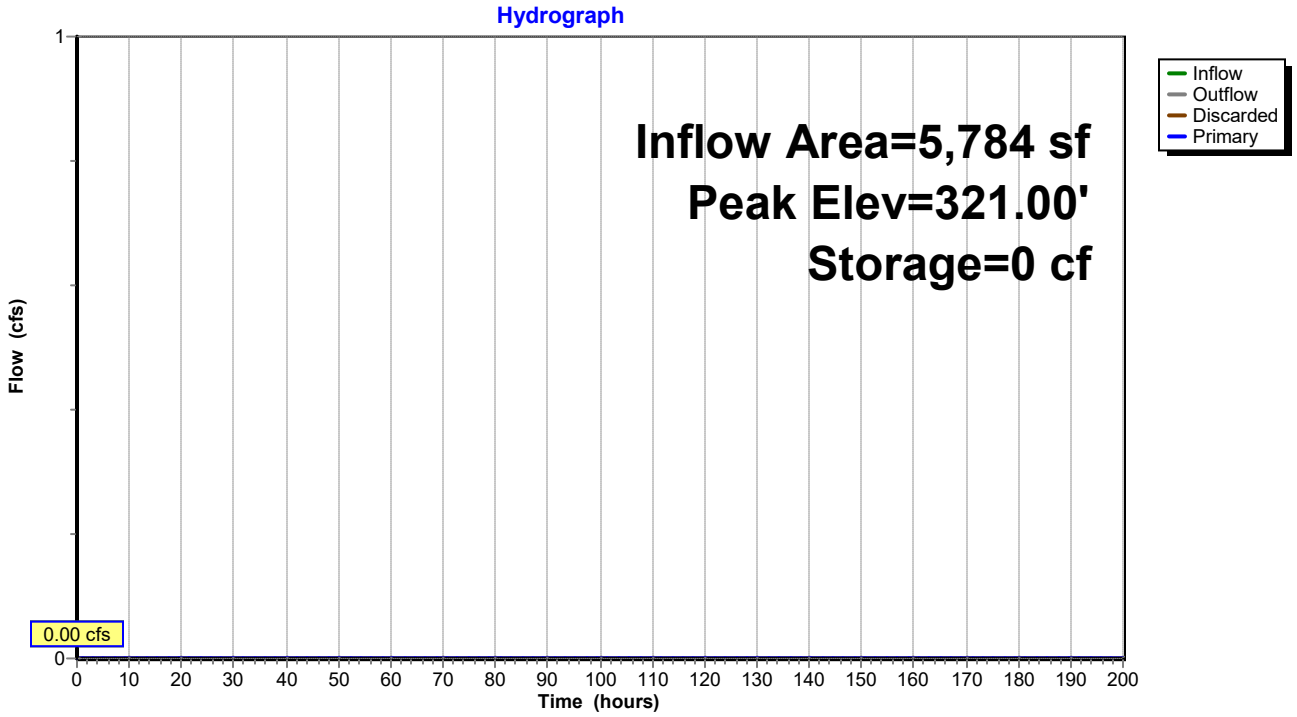
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
321.00	115	45.0	0	0	115
322.00	240	60.0	174	174	251

Device	Routing	Invert	Outlet Devices
#1	Discarded	321.00'	**5.00 cfs Exfiltration at all elevations**
#2	Primary	321.90'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=321.00' (Free Discharge)
↑—**1=Exfiltration** (Passes 0.00 cfs of 5.00 cfs potential flow)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=321.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: Infiltration Basin



Summary for Pond FB1: Forebay

Inflow Area = 50,097 sf, 46.28% Impervious, Inflow Depth = 0.33" for 2-yr event
Inflow = 0.28 cfs @ 12.15 hrs, Volume= 1,369 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 319.54' @ 25.05 hrs Surf.Area= 1,611 sf Storage= 1,369 cf

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

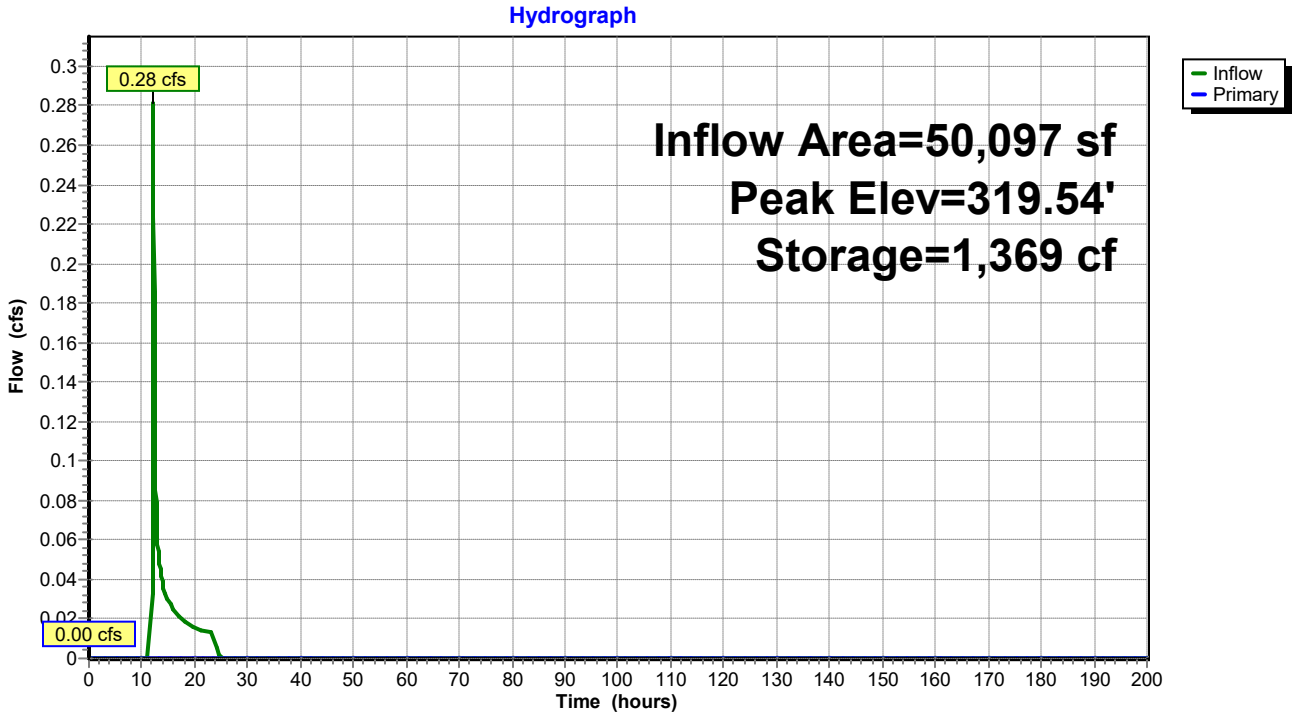
Volume	Invert	Avail.Storage	Storage Description
#1	318.50'	2,172 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
318.50	1,030	150.0	0	0	1,030
319.00	1,300	165.0	581	581	1,414
320.00	1,900	290.0	1,591	2,172	5,946

Device	Routing	Invert	Outlet Devices
#1	Primary	319.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=318.50' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond FB1: Forebay



Summary for Pond FB2: Forebay

Inflow Area = 8,376 sf, 57.39% Impervious, Inflow Depth = 0.61" for 2-yr event
Inflow = 0.12 cfs @ 12.12 hrs, Volume= 427 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 321.77' @ 25.05 hrs Surf.Area= 441 sf Storage= 427 cf

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

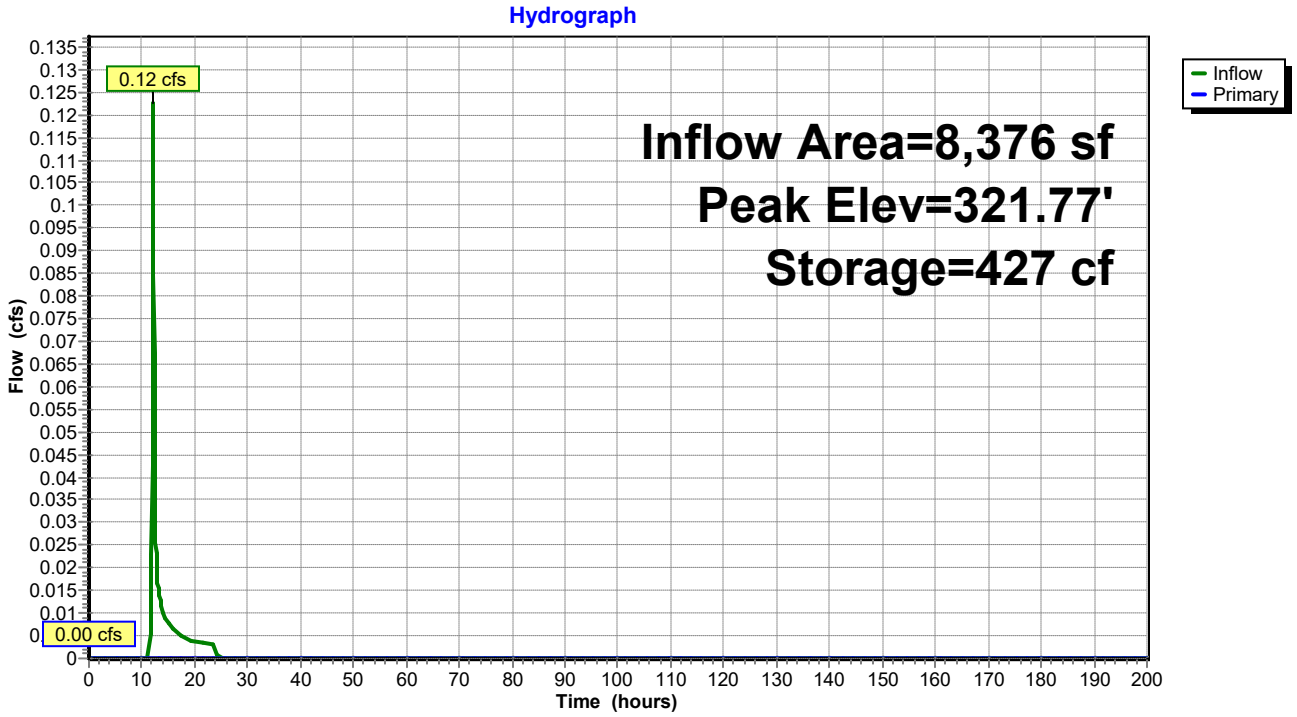
Volume	Invert	Avail.Storage	Storage Description
#1	320.00'	535 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
320.00	65	65.0	0	0	65
321.00	270	80.0	156	156	253
322.00	500	100.0	379	535	553

Device	Routing	Invert	Outlet Devices
#1	Primary	321.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=320.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond FB2: Forebay



Summary for Pond FB3: Forebay

Inflow Area = 5,784 sf, 28.39% Impervious, Inflow Depth = 0.11" for 2-yr event
Inflow = 0.00 cfs @ 12.50 hrs, Volume= 55 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 321.38' @ 25.05 hrs Surf.Area= 176 sf Storage= 55 cf

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

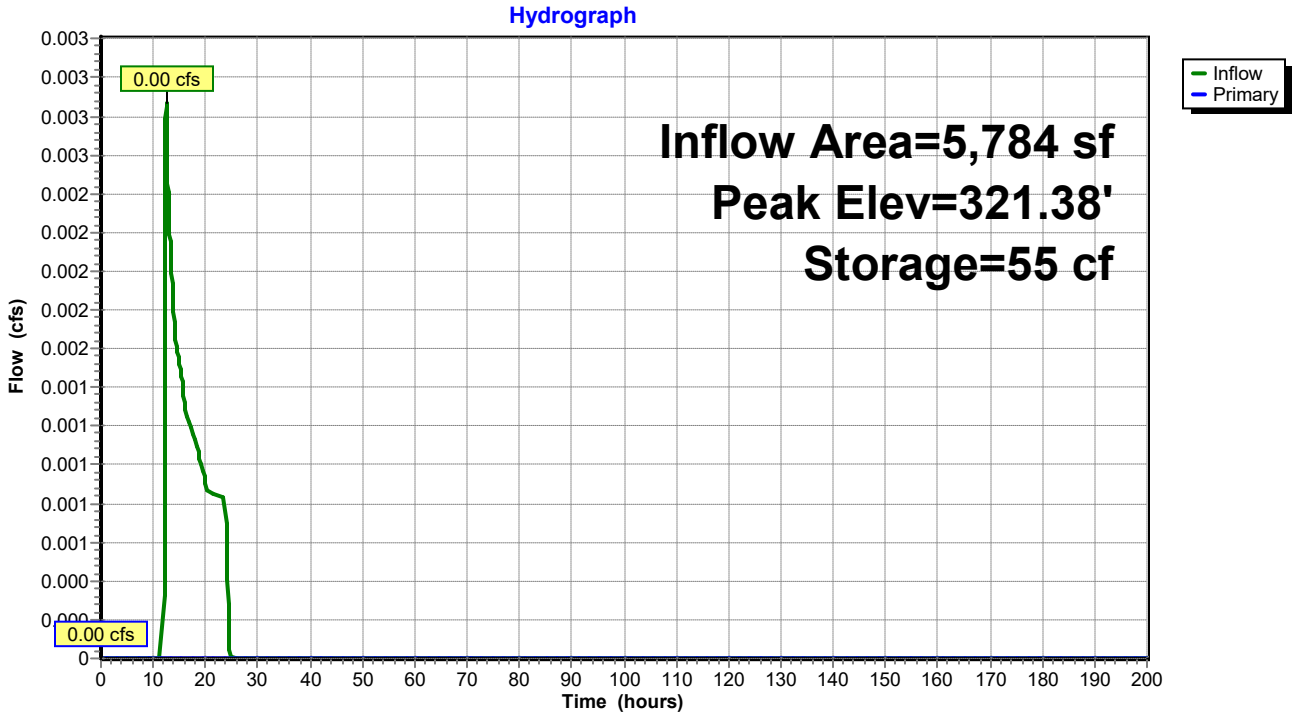
Volume	Invert	Avail.Storage	Storage Description
#1	321.00'	200 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
321.00	115	50.0	0	0	115
322.00	300	75.0	200	200	371

Device	Routing	Invert	Outlet Devices
#1	Primary	321.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=321.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond FB3: Forebay



Summary for Pond FB4: Forebay

Inflow Area = 30,092 sf, 29.73% Impervious, Inflow Depth = 0.10" for 2-yr event
Inflow = 0.01 cfs @ 12.57 hrs, Volume= 245 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 319.07' @ 25.05 hrs Surf.Area= 526 sf Storage= 245 cf

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

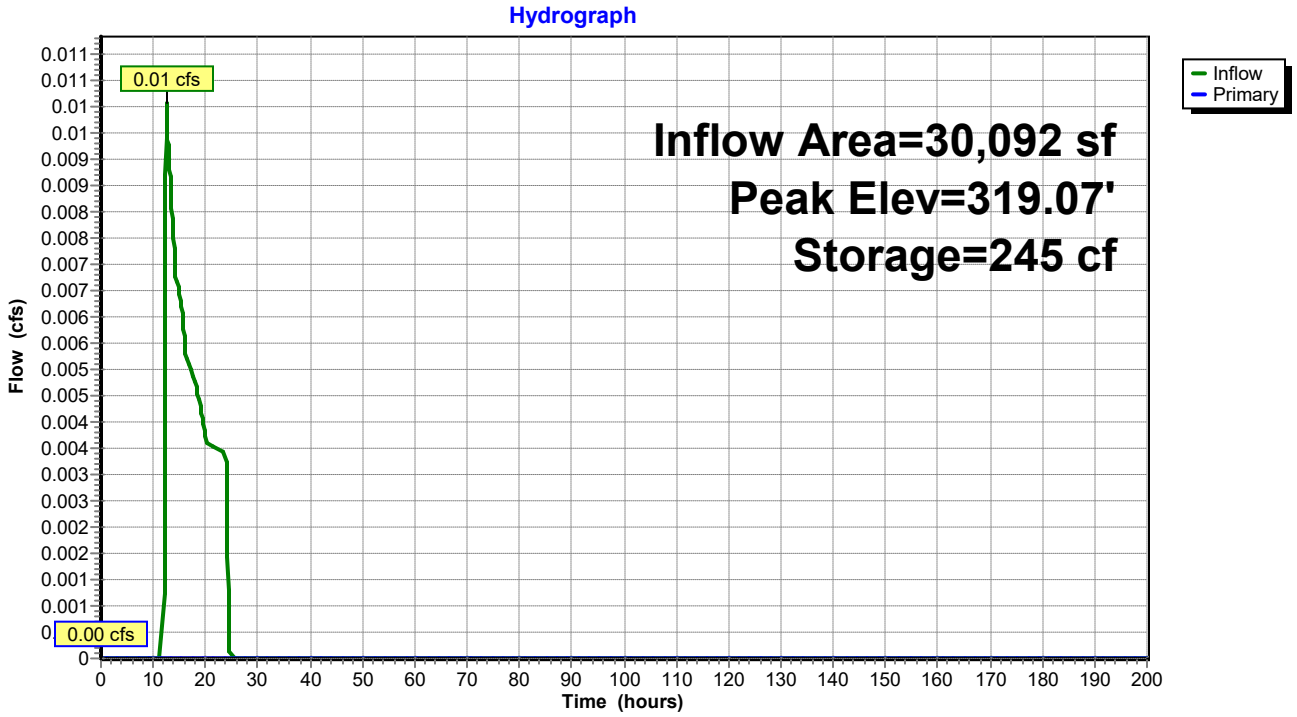
Volume	Invert	Avail.Storage	Storage Description
#1	318.50'	913 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
318.50	340	95.0	0	0	340
319.00	500	130.0	209	209	969
320.00	930	200.0	704	913	2,815

Device	Routing	Invert	Outlet Devices
#1	Primary	319.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=318.50' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond FB4: Forebay

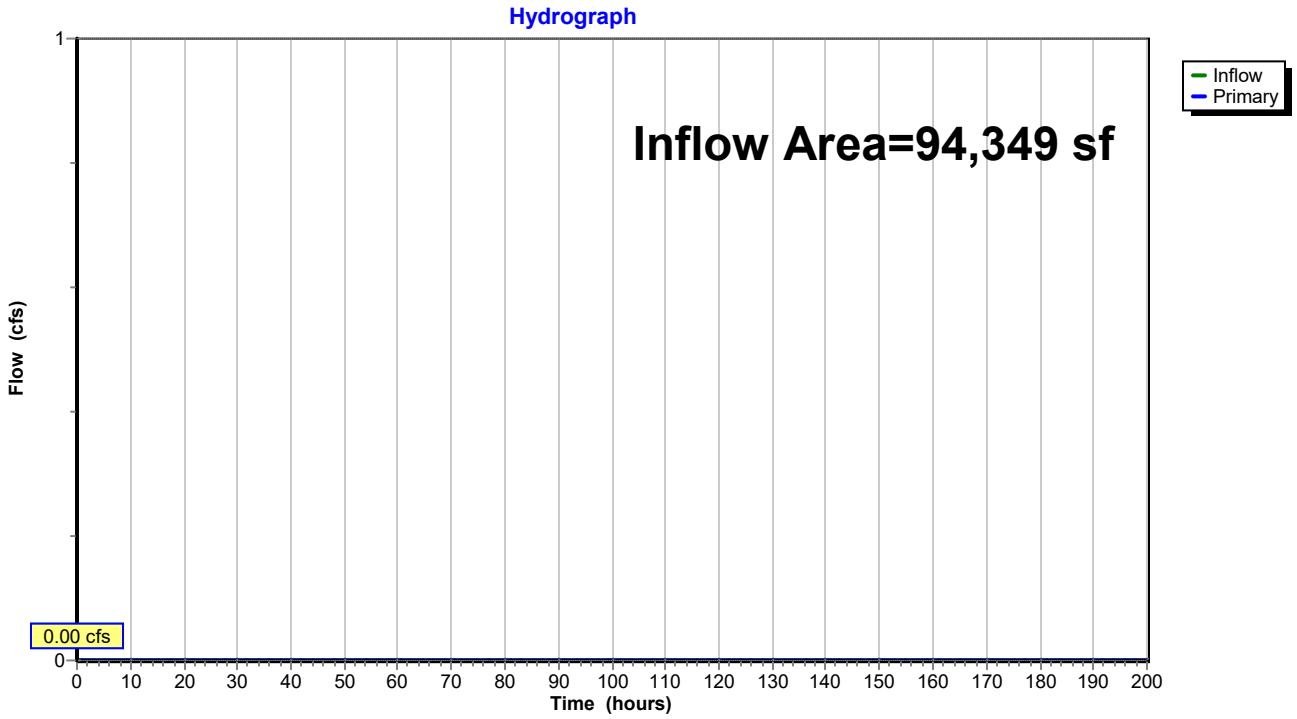


Summary for Link DP1: -

Inflow Area = 94,349 sf, 40.89% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link DP1: -



Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: - Runoff Area=50,097 sf 46.28% Impervious Runoff Depth=0.85"
Flow Length=400' Slope=0.0100 '/' Tc=17.7 min CN=65 Runoff=1.02 cfs 3,564 cf

Subcatchment 2S: - Runoff Area=8,376 sf 57.39% Impervious Runoff Depth=1.31"
Flow Length=400' Slope=0.0100 '/' Tc=17.7 min CN=73 Runoff=0.29 cfs 914 cf

Subcatchment 3S: - Runoff Area=5,784 sf 28.39% Impervious Runoff Depth=0.45"
Flow Length=400' Slope=0.0100 '/' Tc=17.7 min CN=56 Runoff=0.04 cfs 217 cf

Subcatchment 4S: - Runoff Area=30,092 sf 29.73% Impervious Runoff Depth=0.41"
Flow Length=400' Slope=0.0100 '/' Tc=17.7 min CN=55 Runoff=0.19 cfs 1,033 cf

Pond 1P: Infiltration Basin Peak Elev=318.50' Storage=1 cf Inflow=0.10 cfs 2,056 cf
Discarded=0.10 cfs 2,056 cf Primary=0.00 cfs 0 cf Outflow=0.10 cfs 2,056 cf

Pond 2P: Infiltration Basin Peak Elev=320.00' Storage=0 cf Inflow=0.05 cfs 474 cf
Discarded=0.05 cfs 474 cf Primary=0.00 cfs 0 cf Outflow=0.05 cfs 474 cf

Pond 3P: Infiltration Basin Peak Elev=321.00' Storage=0 cf Inflow=0.00 cfs 72 cf
Discarded=0.00 cfs 72 cf Primary=0.00 cfs 0 cf Outflow=0.00 cfs 72 cf

Pond FB1: Forebay Peak Elev=319.83' Storage=1,850 cf Inflow=1.02 cfs 3,564 cf
Outflow=0.10 cfs 1,760 cf

Pond FB2: Forebay Peak Elev=321.81' Storage=447 cf Inflow=0.29 cfs 914 cf
Outflow=0.05 cfs 474 cf

Pond FB3: Forebay Peak Elev=321.80' Storage=145 cf Inflow=0.04 cfs 217 cf
Outflow=0.00 cfs 72 cf

Pond FB4: Forebay Peak Elev=319.81' Storage=742 cf Inflow=0.19 cfs 1,033 cf
Outflow=0.02 cfs 297 cf

Link DP1: - Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Total Runoff Area = 94,349 sf Runoff Volume = 5,728 cf Average Runoff Depth = 0.73"
59.11% Pervious = 55,769 sf 40.89% Impervious = 38,580 sf

Summary for Subcatchment 1S: -

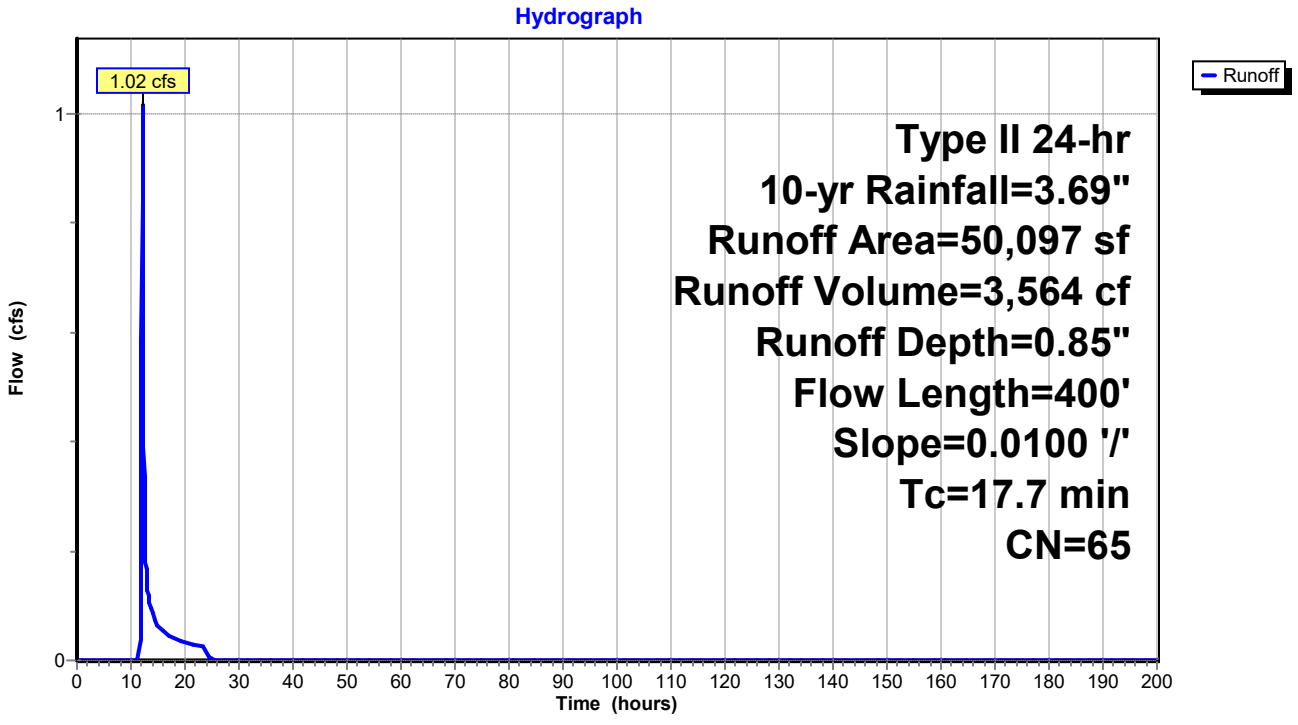
Runoff = 1.02 cfs @ 12.12 hrs, Volume= 3,564 cf, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.69"

Area (sf)	CN	Description
23,186	98	Paved parking, HSG A
18,691	39	>75% Grass cover, Good, HSG A
8,220	30	Woods, Good, HSG A
50,097	65	Weighted Average
26,911		53.72% Pervious Area
23,186		46.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
3.3	300	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.7	400	Total			

Subcatchment 1S: -



Summary for Subcatchment 2S: -

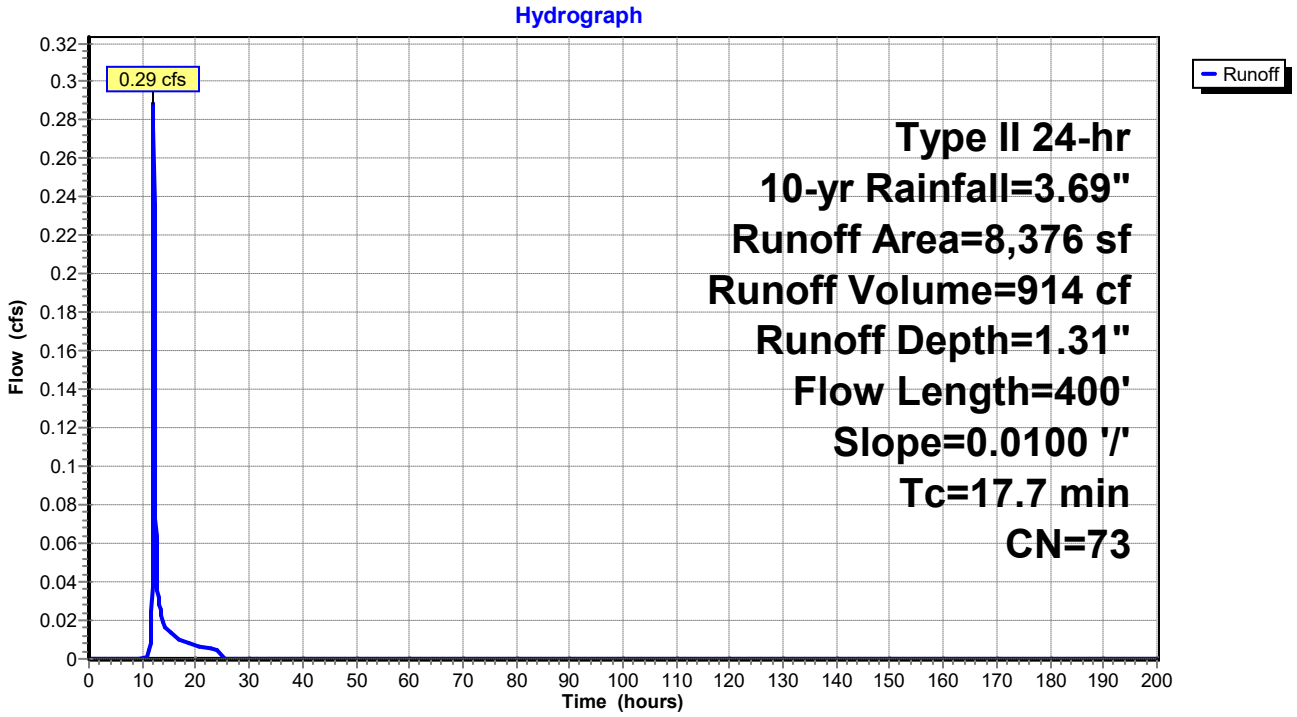
Runoff = 0.29 cfs @ 12.11 hrs, Volume= 914 cf, Depth= 1.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.69"

Area (sf)	CN	Description
4,807	98	Paved parking, HSG A
3,569	39	>75% Grass cover, Good, HSG A
8,376	73	Weighted Average
3,569		42.61% Pervious Area
4,807		57.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
3.3	300	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.7	400	Total			

Subcatchment 2S: -



Summary for Subcatchment 3S: -

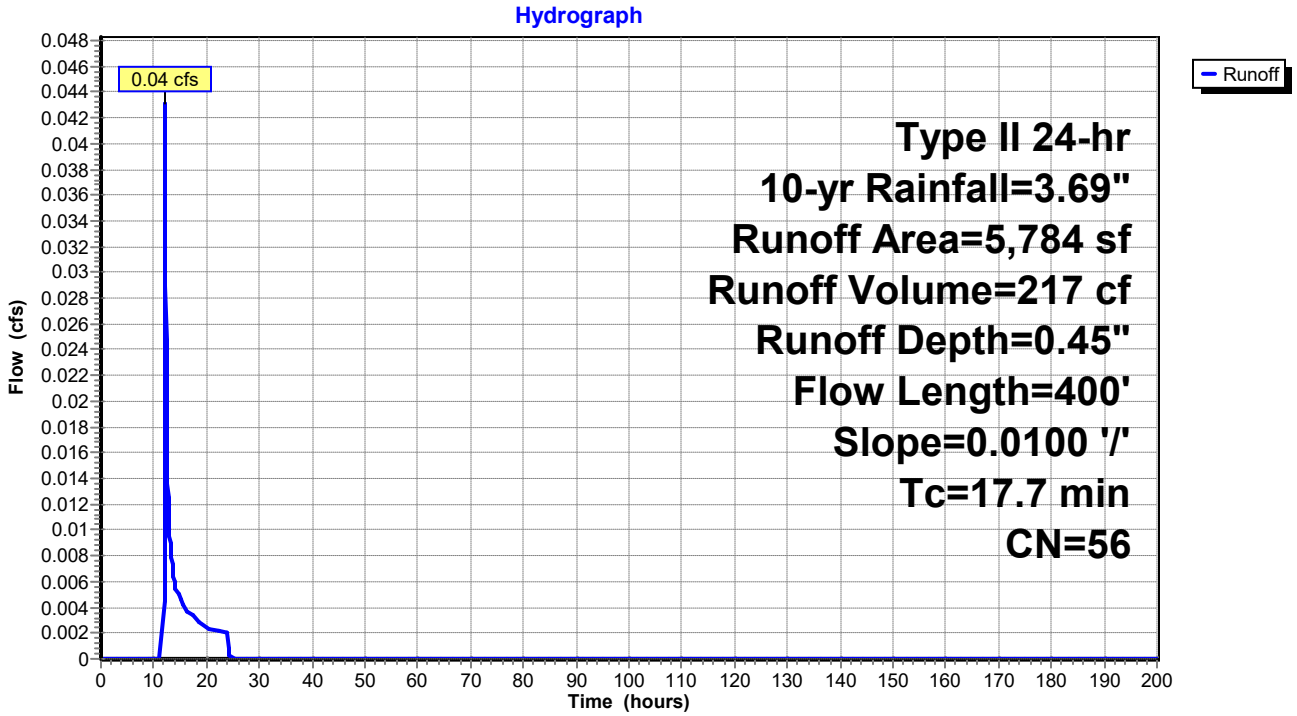
Runoff = 0.04 cfs @ 12.16 hrs, Volume= 217 cf, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.69"

Area (sf)	CN	Description
1,642	98	Paved parking, HSG A
4,142	39	>75% Grass cover, Good, HSG A
5,784	56	Weighted Average
4,142		71.61% Pervious Area
1,642		28.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
3.3	300	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.7	400	Total			

Subcatchment 3S: -



Summary for Subcatchment 4S: -

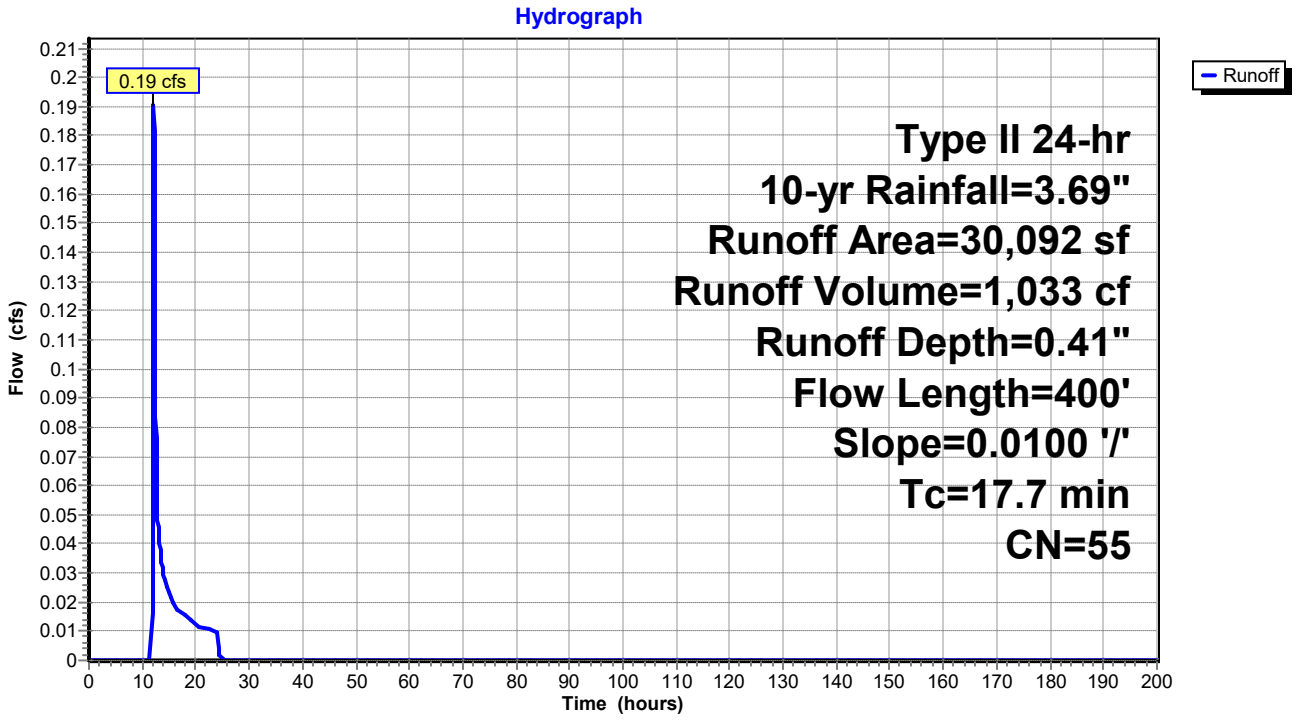
Runoff = 0.19 cfs @ 12.16 hrs, Volume= 1,033 cf, Depth= 0.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.69"

Area (sf)	CN	Description
8,945	98	Paved parking, HSG A
16,333	39	>75% Grass cover, Good, HSG A
4,814	30	Woods, Good, HSG A
30,092	55	Weighted Average
21,147		70.27% Pervious Area
8,945		29.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
3.3	300	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.7	400	Total			

Subcatchment 4S: -



Summary for Pond 1P: Infiltration Basin

Inflow Area = 80,189 sf, 40.07% Impervious, Inflow Depth = 0.31" for 10-yr event
Inflow = 0.10 cfs @ 13.54 hrs, Volume= 2,056 cf
Outflow = 0.10 cfs @ 13.55 hrs, Volume= 2,056 cf, Atten= 0%, Lag= 0.2 min
Discarded = 0.10 cfs @ 13.55 hrs, Volume= 2,056 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 318.50' @ 13.55 hrs Surf.Area= 1,815 sf Storage= 1 cf

Plug-Flow detention time= 0.1 min calculated for 2,056 cf (100% of inflow)
Center-of-Mass det. time= 0.1 min (1,081.6 - 1,081.5)

Volume	Invert	Avail.Storage	Storage Description
#1	318.50'	3,256 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

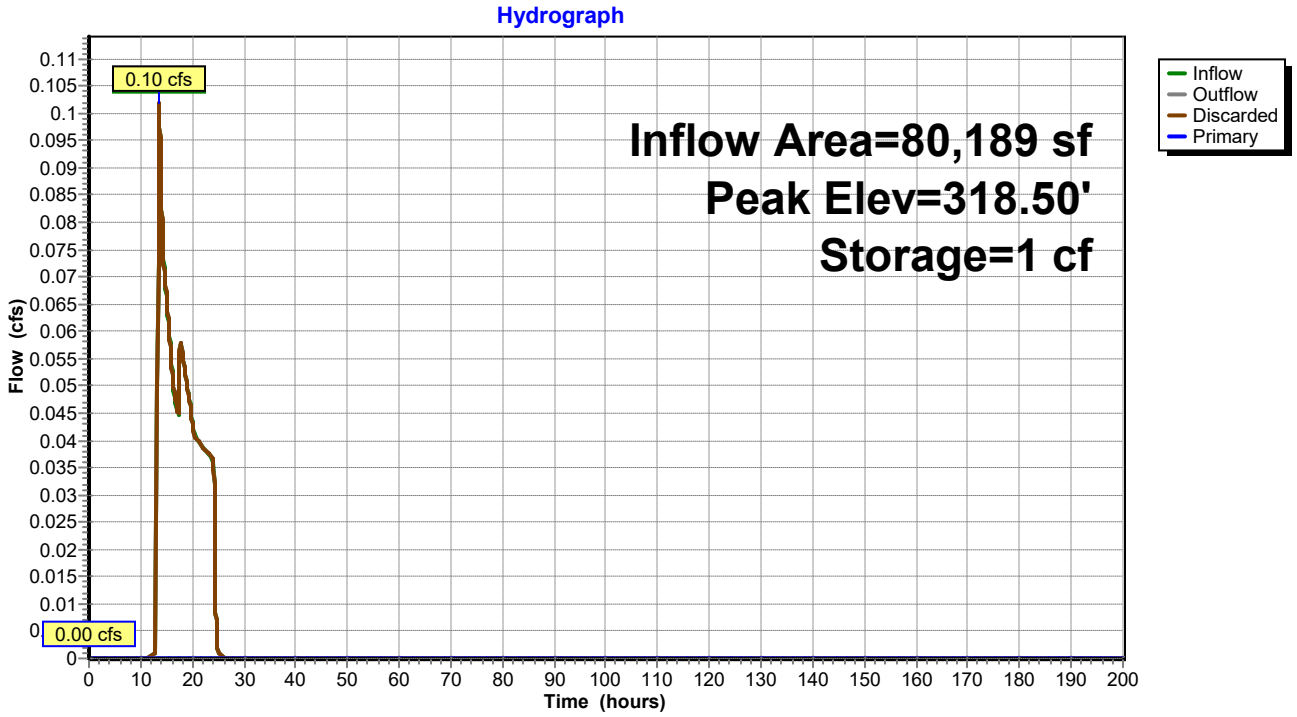
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
318.50	1,815	175.0	0	0	1,815
319.00	2,085	185.0	974	974	2,115
320.00	2,485	200.0	2,282	3,256	2,614

Device	Routing	Invert	Outlet Devices
#1	Discarded	318.50'	**5.00 cfs Exfiltration at all elevations**
#2	Primary	319.80'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=5.00 cfs @ 13.55 hrs HW=318.50' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 5.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=318.50' (Free Discharge)
↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Infiltration Basin



Summary for Pond 2P: Infiltration Basin

Inflow Area = 8,376 sf, 57.39% Impervious, Inflow Depth = 0.68" for 10-yr event
Inflow = 0.05 cfs @ 12.67 hrs, Volume= 474 cf
Outflow = 0.05 cfs @ 12.67 hrs, Volume= 474 cf, Atten= 0%, Lag= 0.0 min
Discarded = 0.05 cfs @ 12.67 hrs, Volume= 474 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 320.00' @ 12.67 hrs Surf.Area= 70 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (992.7 - 992.7)

Volume	Invert	Avail.Storage	Storage Description
#1	320.00'	533 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

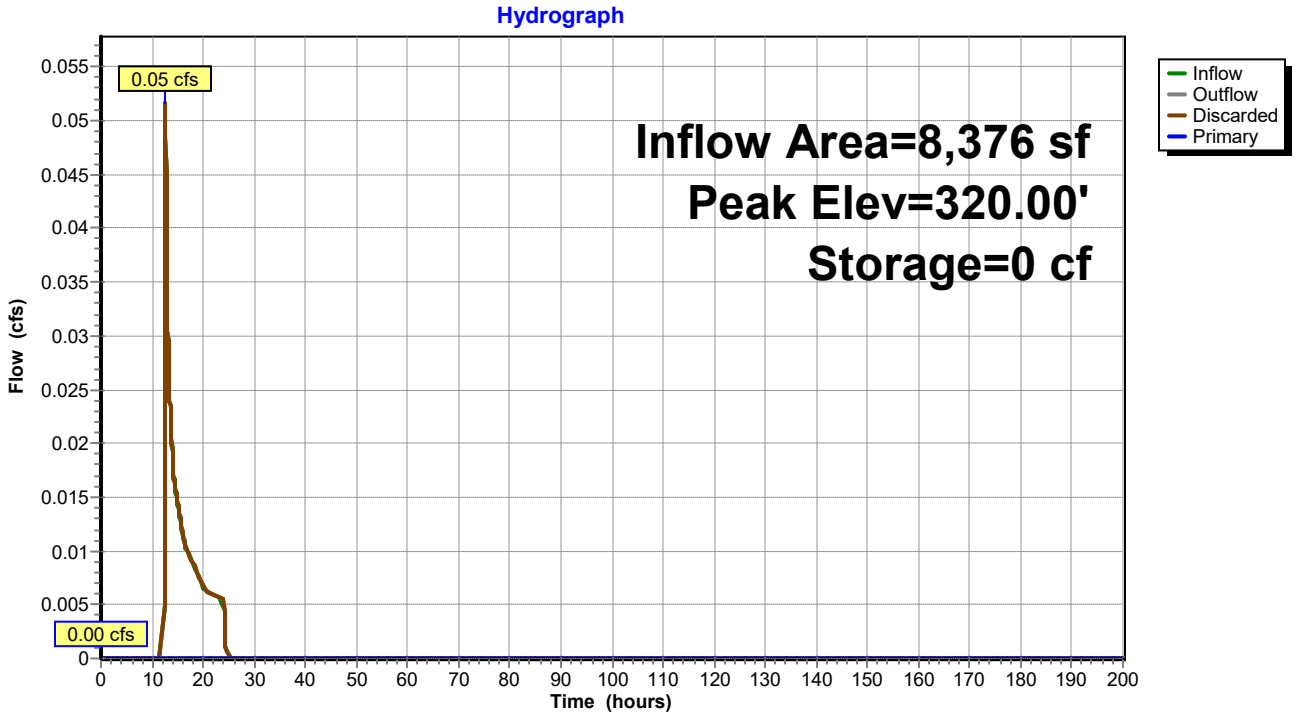
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
320.00	70	65.0	0	0	70
321.00	265	80.0	157	157	258
322.00	500	95.0	376	533	484

Device	Routing	Invert	Outlet Devices
#1	Discarded	320.00'	**5.00 cfs Exfiltration at all elevations**
#2	Primary	321.90'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=5.00 cfs @ 12.67 hrs HW=320.00' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 5.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=320.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: Infiltration Basin



Summary for Pond 3P: Infiltration Basin

Inflow Area = 5,784 sf, 28.39% Impervious, Inflow Depth = 0.15" for 10-yr event
Inflow = 0.00 cfs @ 16.60 hrs, Volume= 72 cf
Outflow = 0.00 cfs @ 16.60 hrs, Volume= 72 cf, Atten= 0%, Lag= 0.0 min
Discarded = 0.00 cfs @ 16.60 hrs, Volume= 72 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 321.00' @ 16.60 hrs Surf.Area= 115 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (1,200.8 - 1,200.8)

Volume	Invert	Avail.Storage	Storage Description
#1	321.00'	174 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

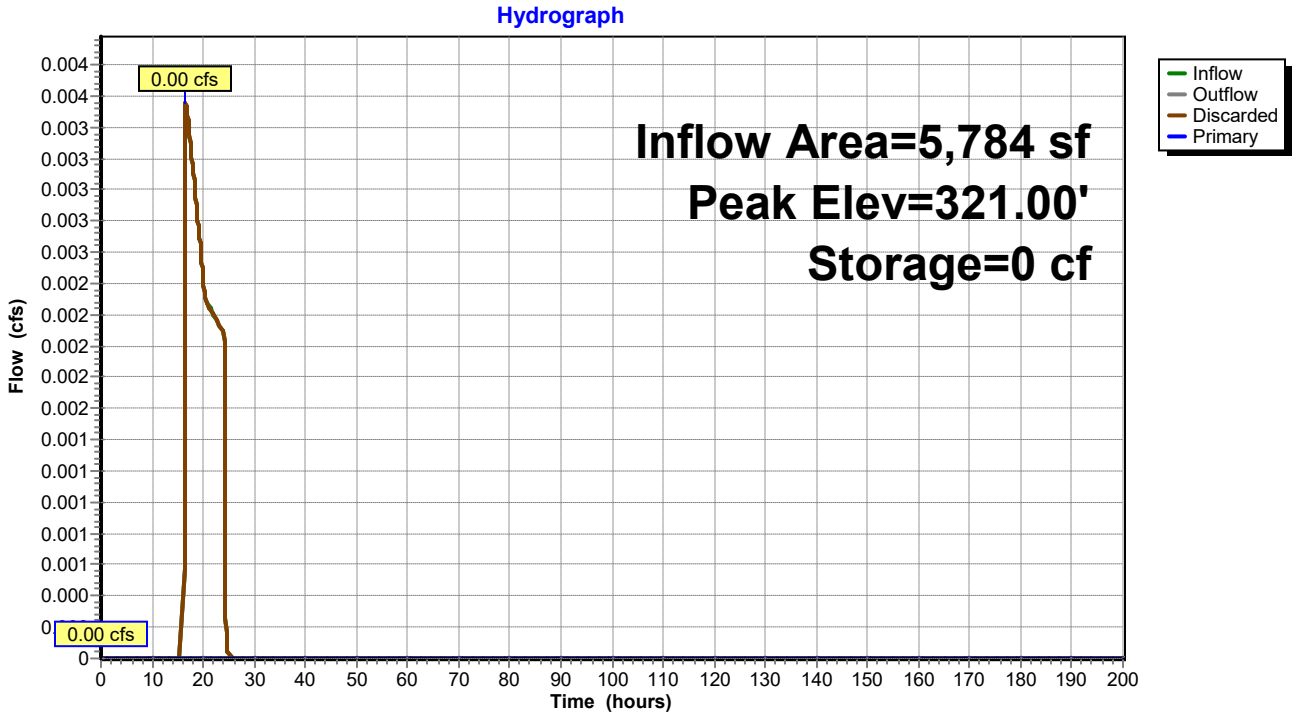
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
321.00	115	45.0	0	0	115
322.00	240	60.0	174	174	251

Device	Routing	Invert	Outlet Devices
#1	Discarded	321.00'	**5.00 cfs Exfiltration at all elevations**
#2	Primary	321.90'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=5.00 cfs @ 16.60 hrs HW=321.00' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 5.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=321.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: Infiltration Basin



Summary for Pond FB1: Forebay

Inflow Area = 50,097 sf, 46.28% Impervious, Inflow Depth = 0.85" for 10-yr event
Inflow = 1.02 cfs @ 12.12 hrs, Volume= 3,564 cf
Outflow = 0.10 cfs @ 13.54 hrs, Volume= 1,760 cf, Atten= 90%, Lag= 85.2 min
Primary = 0.10 cfs @ 13.54 hrs, Volume= 1,760 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 319.83' @ 13.54 hrs Surf.Area= 1,787 sf Storage= 1,850 cf

Plug-Flow detention time= 315.9 min calculated for 1,759 cf (49% of inflow)
Center-of-Mass det. time= 163.9 min (1,054.4 - 890.4)

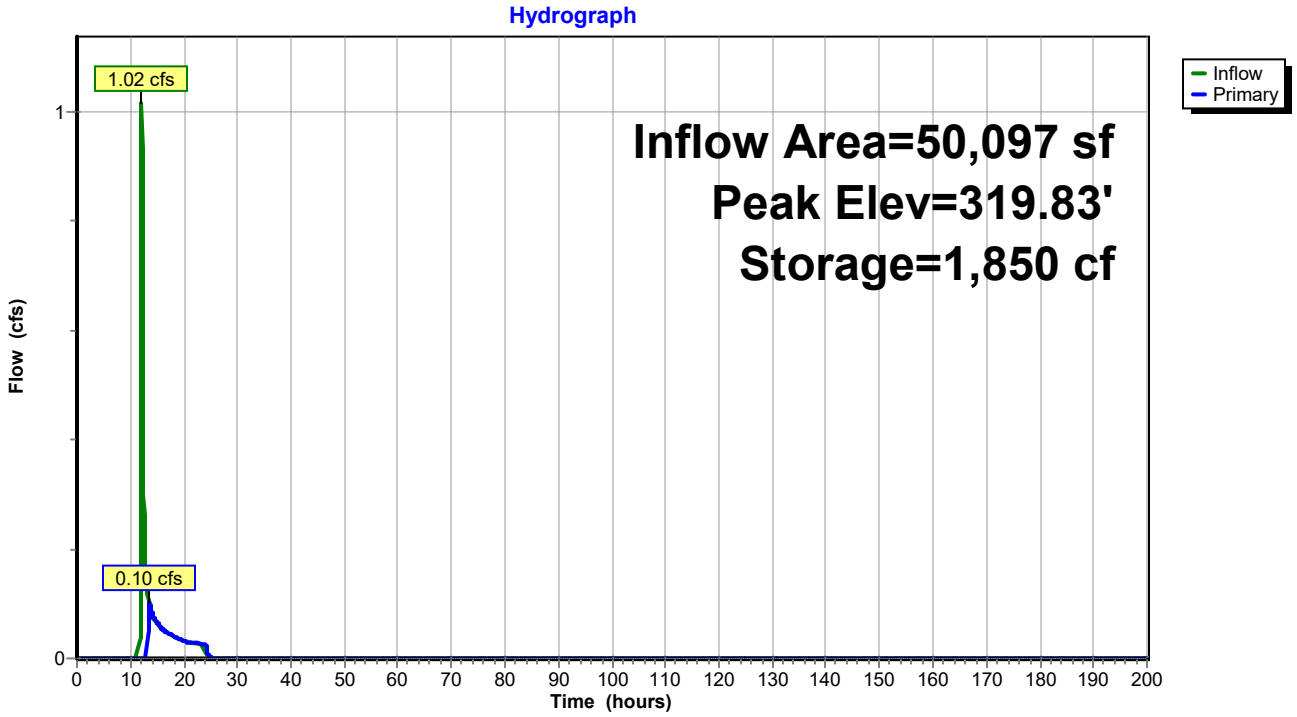
Volume	Invert	Avail.Storage	Storage Description
#1	318.50'	2,172 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
318.50	1,030	150.0	0	0	1,030
319.00	1,300	165.0	581	581	1,414
320.00	1,900	290.0	1,591	2,172	5,946

Device	Routing	Invert	Outlet Devices
#1	Primary	319.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.10 cfs @ 13.54 hrs HW=319.83' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.10 cfs @ 0.39 fps)

Pond FB1: Forebay



Summary for Pond FB2: Forebay

Inflow Area = 8,376 sf, 57.39% Impervious, Inflow Depth = 1.31" for 10-yr event
Inflow = 0.29 cfs @ 12.11 hrs, Volume= 914 cf
Outflow = 0.05 cfs @ 12.67 hrs, Volume= 474 cf, Atten= 82%, Lag= 33.7 min
Primary = 0.05 cfs @ 12.67 hrs, Volume= 474 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 321.81' @ 12.67 hrs Surf.Area= 452 sf Storage= 447 cf

Plug-Flow detention time= 262.4 min calculated for 473 cf (52% of inflow)
Center-of-Mass det. time= 128.7 min (992.7 - 864.0)

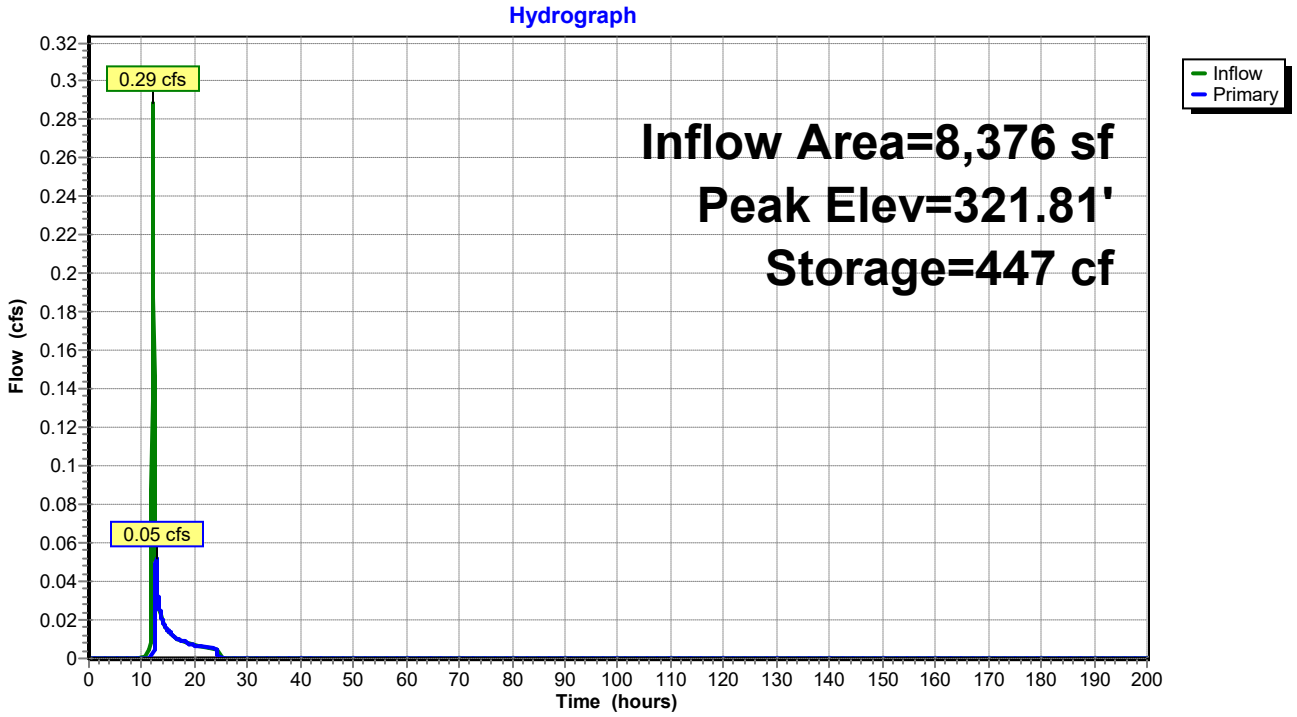
Volume	Invert	Avail.Storage	Storage Description
#1	320.00'	535 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
320.00	65	65.0	0	0	65
321.00	270	80.0	156	156	253
322.00	500	100.0	379	535	553

Device	Routing	Invert	Outlet Devices
#1	Primary	321.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.04 cfs @ 12.67 hrs HW=321.81' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.04 cfs @ 0.29 fps)

Pond FB2: Forebay



Summary for Pond FB3: Forebay

Inflow Area = 5,784 sf, 28.39% Impervious, Inflow Depth = 0.45" for 10-yr event
Inflow = 0.04 cfs @ 12.16 hrs, Volume= 217 cf
Outflow = 0.00 cfs @ 16.60 hrs, Volume= 72 cf, Atten= 92%, Lag= 266.6 min
Primary = 0.00 cfs @ 16.60 hrs, Volume= 72 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 321.80' @ 16.60 hrs Surf.Area= 256 sf Storage= 145 cf

Plug-Flow detention time= 461.5 min calculated for 72 cf (33% of inflow)
Center-of-Mass det. time= 267.4 min (1,200.8 - 933.4)

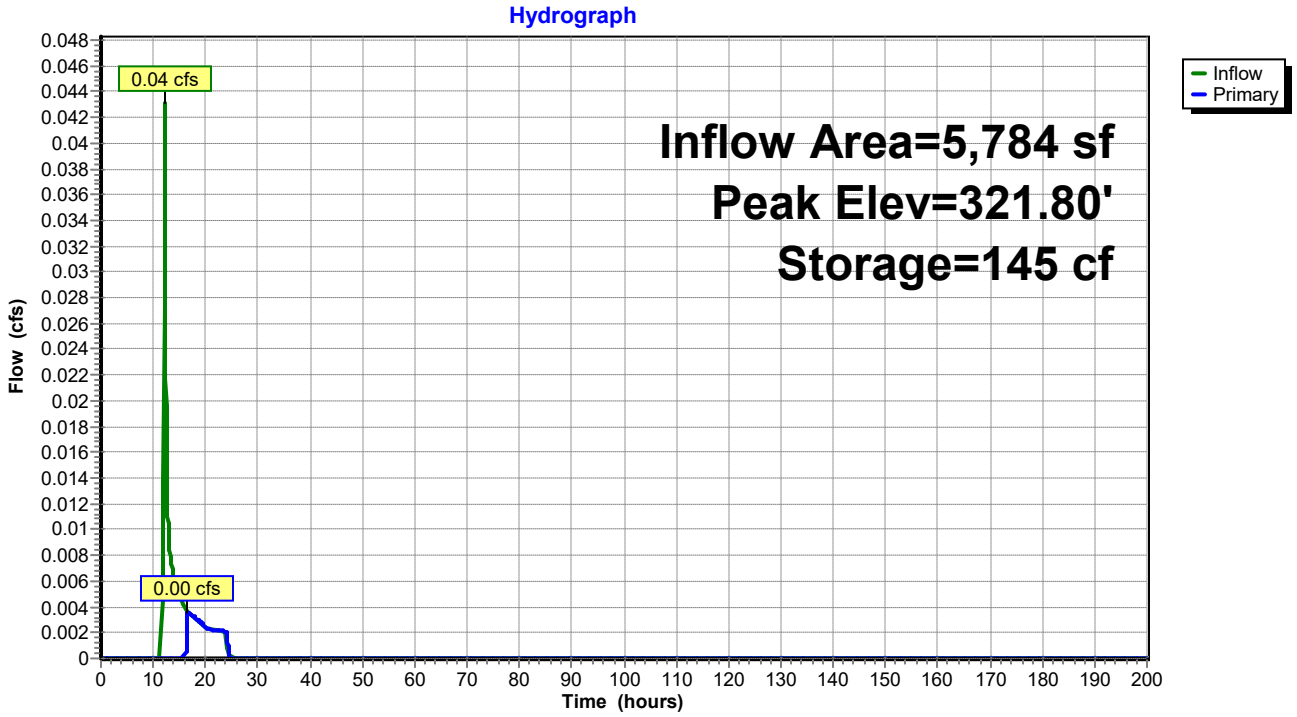
Volume	Invert	Avail.Storage	Storage Description
#1	321.00'	200 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
321.00	115	50.0	0	0	115
322.00	300	75.0	200	200	371

Device	Routing	Invert	Outlet Devices
#1	Primary	321.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.00 cfs @ 16.60 hrs HW=321.80' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.00 cfs @ 0.09 fps)

Pond FB3: Forebay



Summary for Pond FB4: Forebay

Inflow Area = 30,092 sf, 29.73% Impervious, Inflow Depth = 0.41" for 10-yr event
Inflow = 0.19 cfs @ 12.16 hrs, Volume= 1,033 cf
Outflow = 0.02 cfs @ 17.80 hrs, Volume= 297 cf, Atten= 92%, Lag= 338.1 min
Primary = 0.02 cfs @ 17.80 hrs, Volume= 297 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 319.81' @ 17.80 hrs Surf.Area= 837 sf Storage= 742 cf

Plug-Flow detention time= 504.7 min calculated for 297 cf (29% of inflow)
Center-of-Mass det. time= 302.4 min (1,242.2 - 939.8)

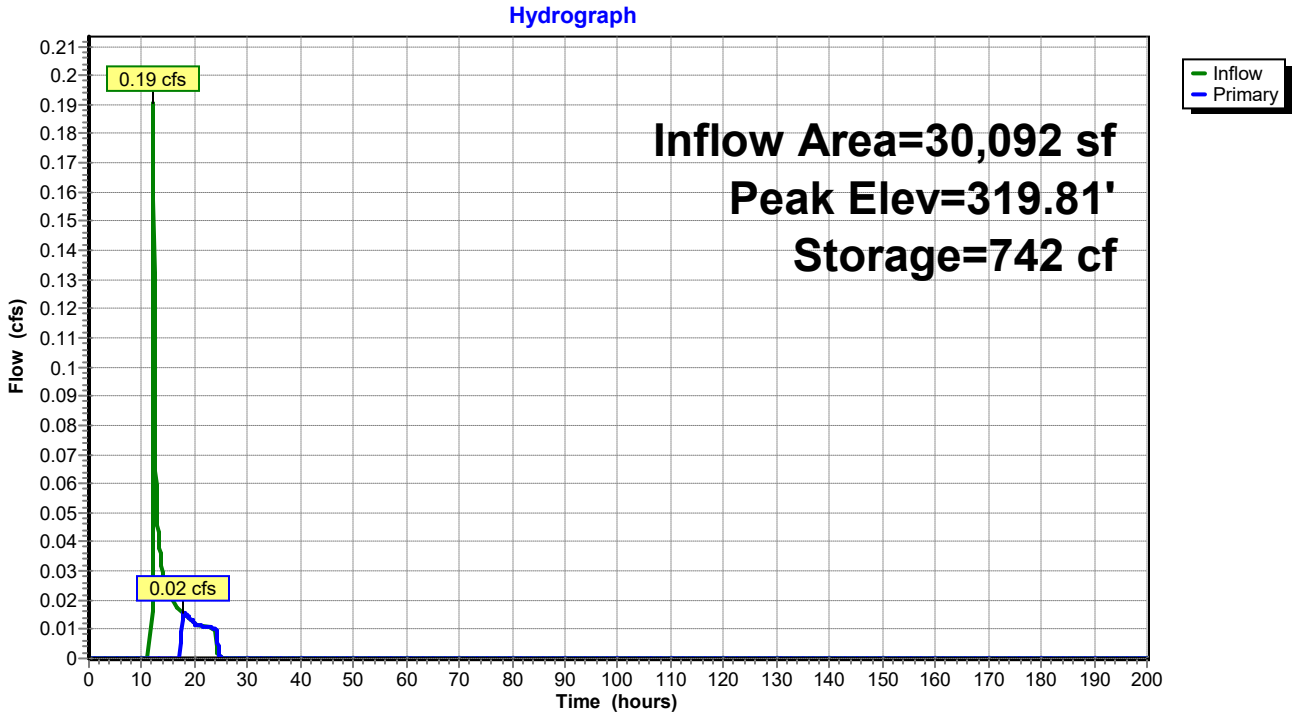
Volume	Invert	Avail.Storage	Storage Description
#1	318.50'	913 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
318.50	340	95.0	0	0	340
319.00	500	130.0	209	209	969
320.00	930	200.0	704	913	2,815

Device	Routing	Invert	Outlet Devices
#1	Primary	319.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.01 cfs @ 17.80 hrs HW=319.81' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.01 cfs @ 0.20 fps)

Pond FB4: Forebay

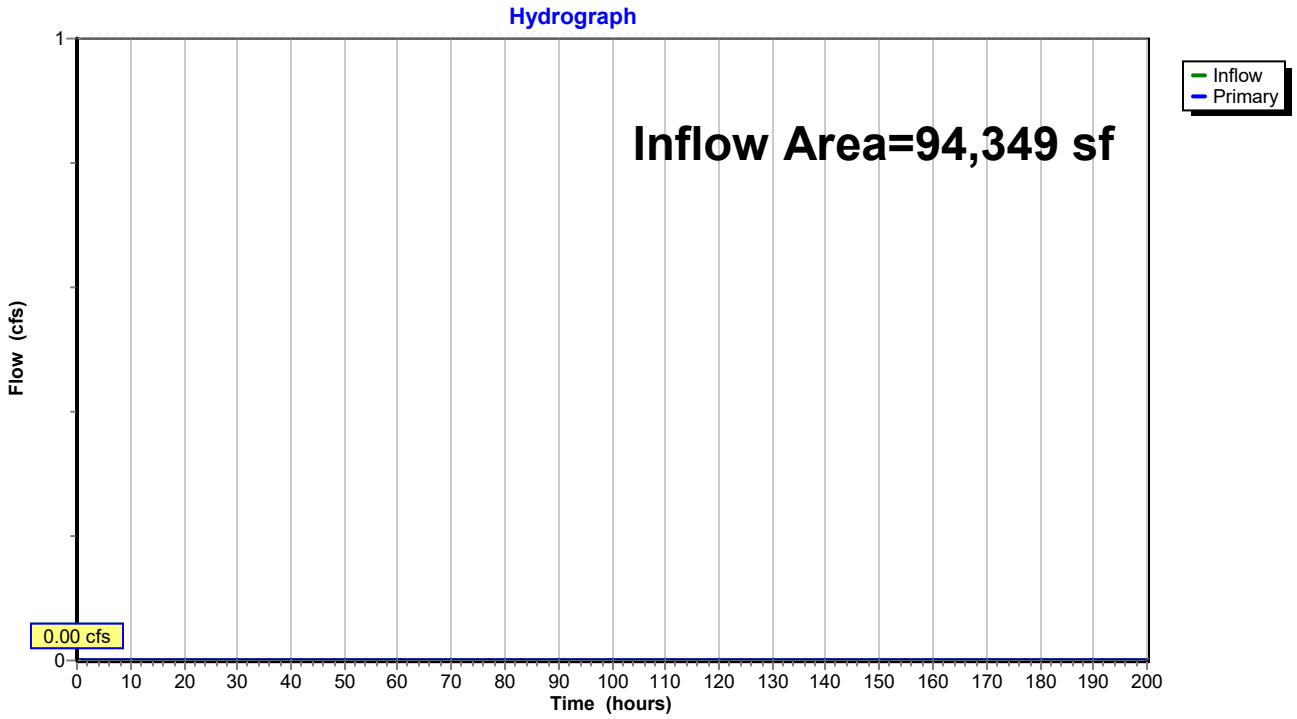


Summary for Link DP1: -

Inflow Area = 94,349 sf, 40.89% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link DP1: -



Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: - Runoff Area=50,097 sf 46.28% Impervious Runoff Depth=1.34"
Flow Length=400' Slope=0.0100 '/' Tc=17.7 min CN=65 Runoff=1.71 cfs 5,606 cf

Subcatchment 2S: - Runoff Area=8,376 sf 57.39% Impervious Runoff Depth=1.91"
Flow Length=400' Slope=0.0100 '/' Tc=17.7 min CN=73 Runoff=0.43 cfs 1,334 cf

Subcatchment 3S: - Runoff Area=5,784 sf 28.39% Impervious Runoff Depth=0.80"
Flow Length=400' Slope=0.0100 '/' Tc=17.7 min CN=56 Runoff=0.10 cfs 388 cf

Subcatchment 4S: - Runoff Area=30,092 sf 29.73% Impervious Runoff Depth=0.75"
Flow Length=400' Slope=0.0100 '/' Tc=17.7 min CN=55 Runoff=0.46 cfs 1,884 cf

Pond 1P: Infiltration Basin Peak Elev=318.50' Storage=4 cf Inflow=0.68 cfs 4,950 cf
Discarded=0.71 cfs 4,950 cf Primary=0.00 cfs 0 cf Outflow=0.71 cfs 4,950 cf

Pond 2P: Infiltration Basin Peak Elev=320.00' Storage=0 cf Inflow=0.36 cfs 894 cf
Discarded=0.35 cfs 894 cf Primary=0.00 cfs 0 cf Outflow=0.35 cfs 894 cf

Pond 3P: Infiltration Basin Peak Elev=321.00' Storage=0 cf Inflow=0.02 cfs 243 cf
Discarded=0.02 cfs 243 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 243 cf

Pond FB1: Forebay Peak Elev=319.89' Storage=1,970 cf Inflow=1.71 cfs 5,606 cf
Outflow=0.68 cfs 3,802 cf

Pond FB2: Forebay Peak Elev=321.86' Storage=467 cf Inflow=0.43 cfs 1,334 cf
Outflow=0.36 cfs 894 cf

Pond FB3: Forebay Peak Elev=321.81' Storage=147 cf Inflow=0.10 cfs 388 cf
Outflow=0.02 cfs 243 cf

Pond FB4: Forebay Peak Elev=319.82' Storage=754 cf Inflow=0.46 cfs 1,884 cf
Outflow=0.08 cfs 1,148 cf

Link DP1: - Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Total Runoff Area = 94,349 sf Runoff Volume = 9,212 cf Average Runoff Depth = 1.17"
59.11% Pervious = 55,769 sf 40.89% Impervious = 38,580 sf

Summary for Subcatchment 1S: -

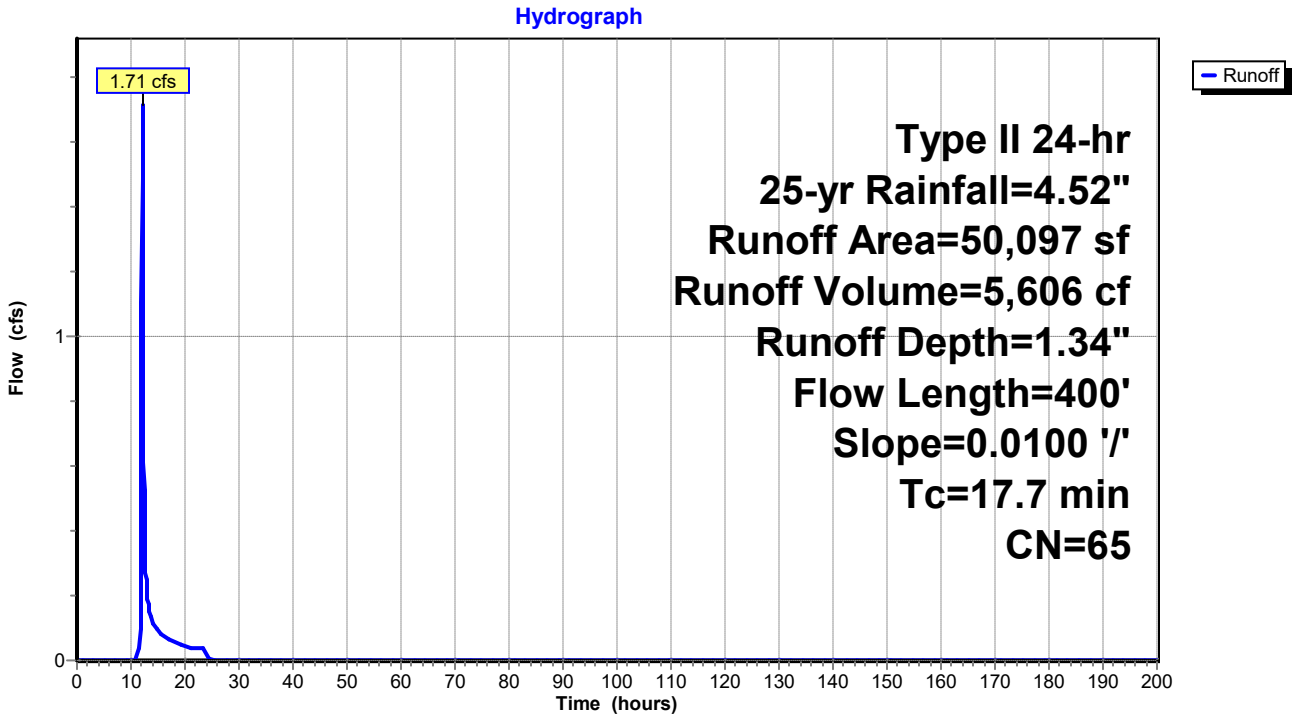
Runoff = 1.71 cfs @ 12.12 hrs, Volume= 5,606 cf, Depth= 1.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=4.52"

Area (sf)	CN	Description
23,186	98	Paved parking, HSG A
18,691	39	>75% Grass cover, Good, HSG A
8,220	30	Woods, Good, HSG A
50,097	65	Weighted Average
26,911		53.72% Pervious Area
23,186		46.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
3.3	300	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.7	400	Total			

Subcatchment 1S: -



Summary for Subcatchment 2S: -

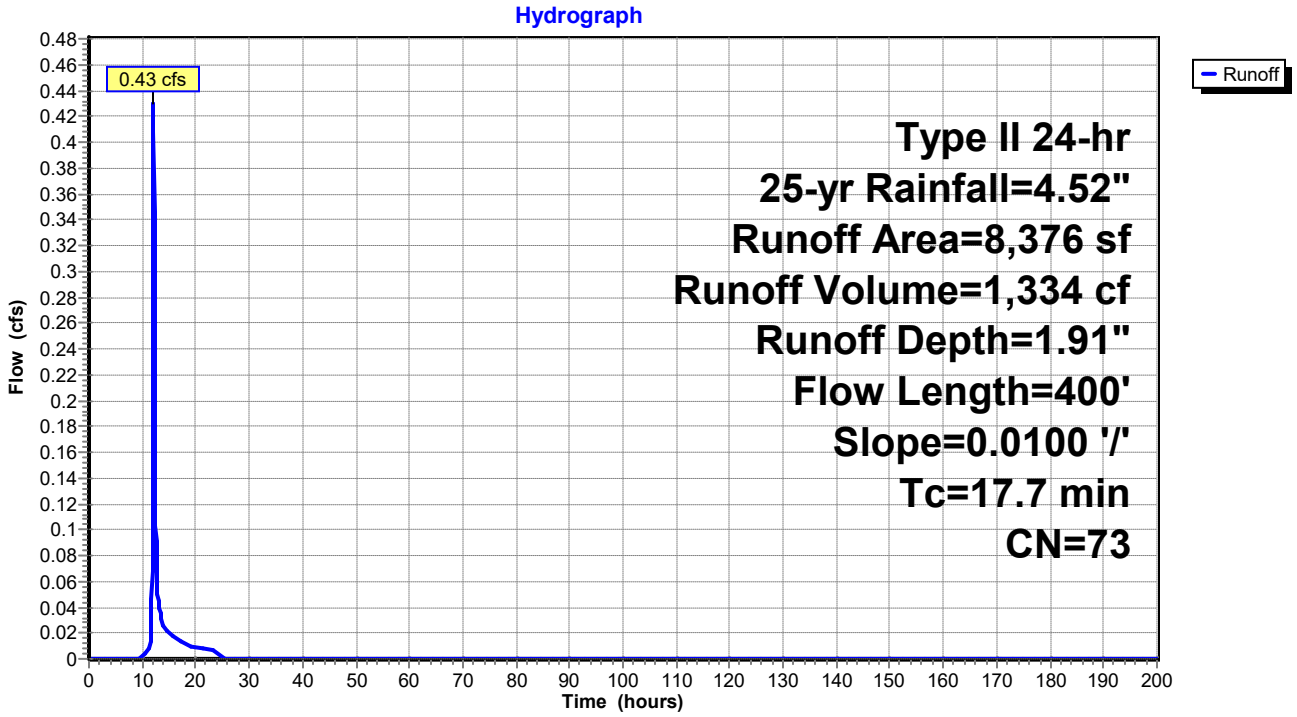
Runoff = 0.43 cfs @ 12.11 hrs, Volume= 1,334 cf, Depth= 1.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=4.52"

Area (sf)	CN	Description
4,807	98	Paved parking, HSG A
3,569	39	>75% Grass cover, Good, HSG A
8,376	73	Weighted Average
3,569		42.61% Pervious Area
4,807		57.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
3.3	300	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.7	400	Total			

Subcatchment 2S: -



Summary for Subcatchment 3S: -

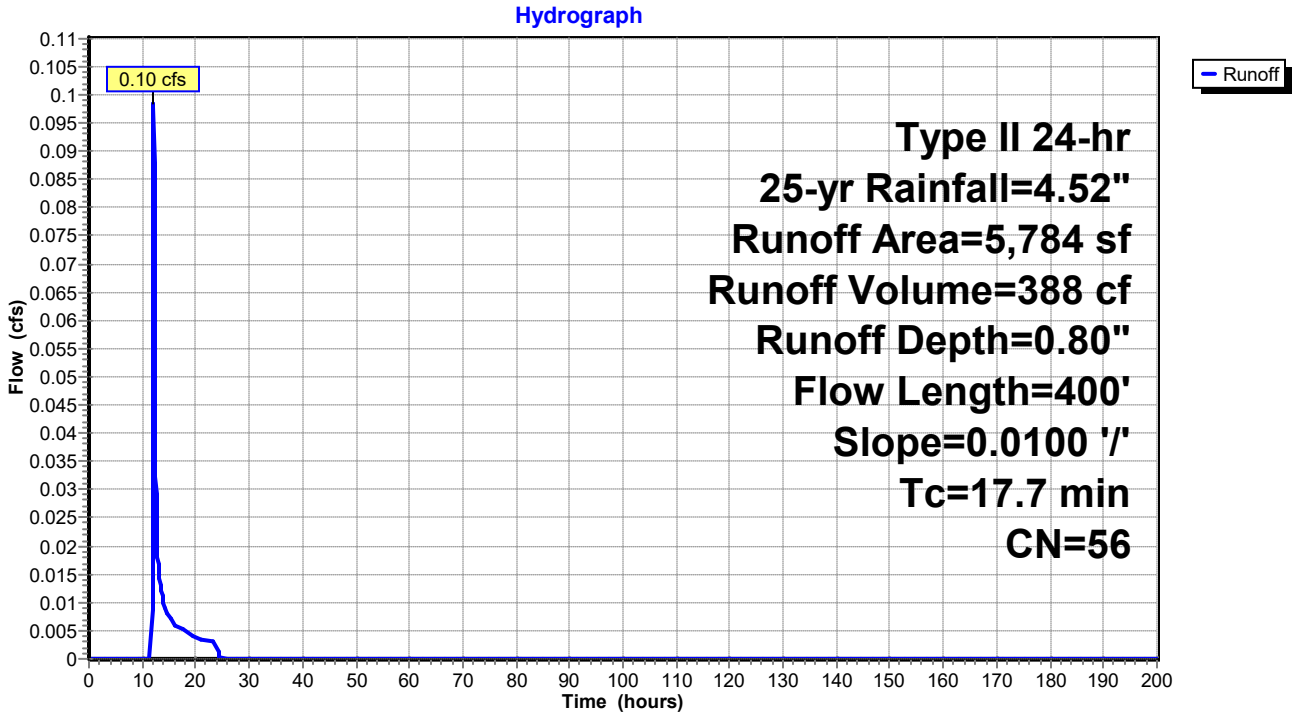
Runoff = 0.10 cfs @ 12.14 hrs, Volume= 388 cf, Depth= 0.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=4.52"

Area (sf)	CN	Description
1,642	98	Paved parking, HSG A
4,142	39	>75% Grass cover, Good, HSG A
5,784	56	Weighted Average
4,142		71.61% Pervious Area
1,642		28.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
3.3	300	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.7	400	Total			

Subcatchment 3S: -



Summary for Subcatchment 4S: -

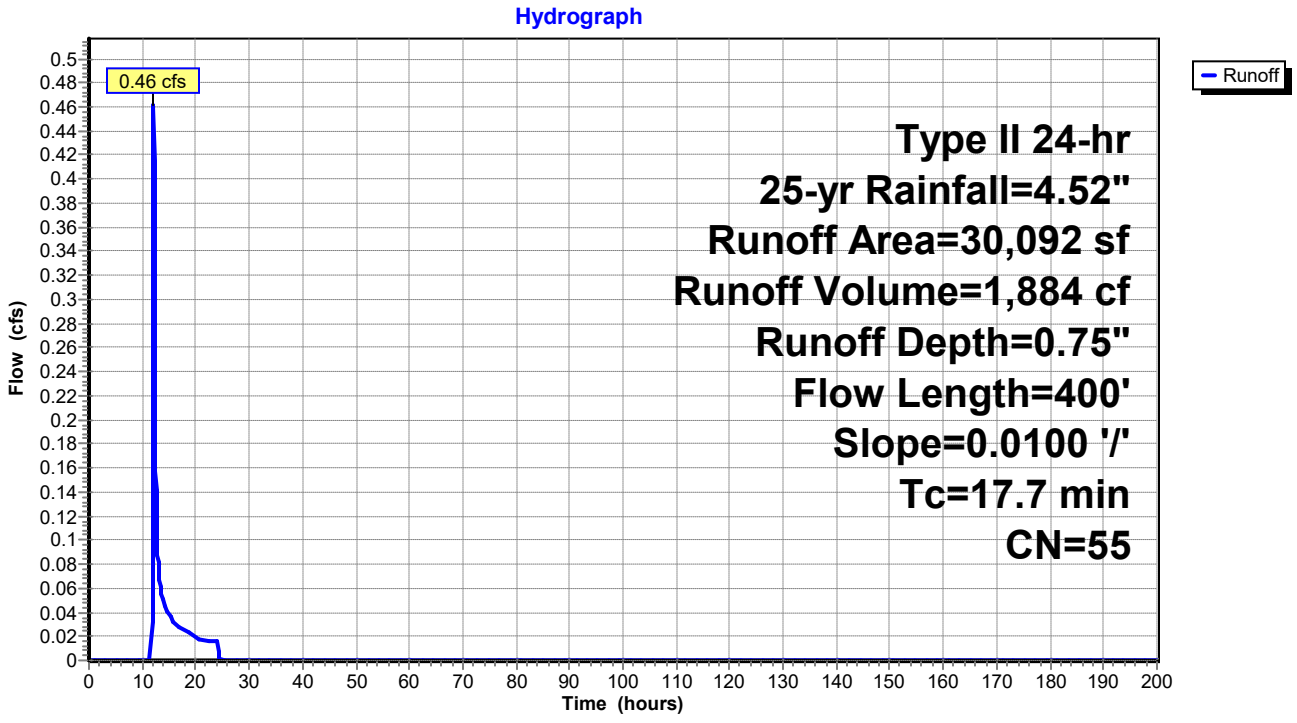
Runoff = 0.46 cfs @ 12.14 hrs, Volume= 1,884 cf, Depth= 0.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-yr Rainfall=4.52"

Area (sf)	CN	Description
8,945	98	Paved parking, HSG A
16,333	39	>75% Grass cover, Good, HSG A
4,814	30	Woods, Good, HSG A
30,092	55	Weighted Average
21,147		70.27% Pervious Area
8,945		29.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
3.3	300	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.7	400	Total			

Subcatchment 4S: -



Summary for Pond 1P: Infiltration Basin

Inflow Area = 80,189 sf, 40.07% Impervious, Inflow Depth = 0.74" for 25-yr event
Inflow = 0.68 cfs @ 12.38 hrs, Volume= 4,950 cf
Outflow = 0.71 cfs @ 12.37 hrs, Volume= 4,950 cf, Atten= 0%, Lag= 0.0 min
Discarded = 0.71 cfs @ 12.37 hrs, Volume= 4,950 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 318.50' @ 12.37 hrs Surf.Area= 1,816 sf Storage= 4 cf

Plug-Flow detention time= 0.1 min calculated for 4,948 cf (100% of inflow)
Center-of-Mass det. time= 0.1 min (971.2 - 971.2)

Volume	Invert	Avail.Storage	Storage Description
#1	318.50'	3,256 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

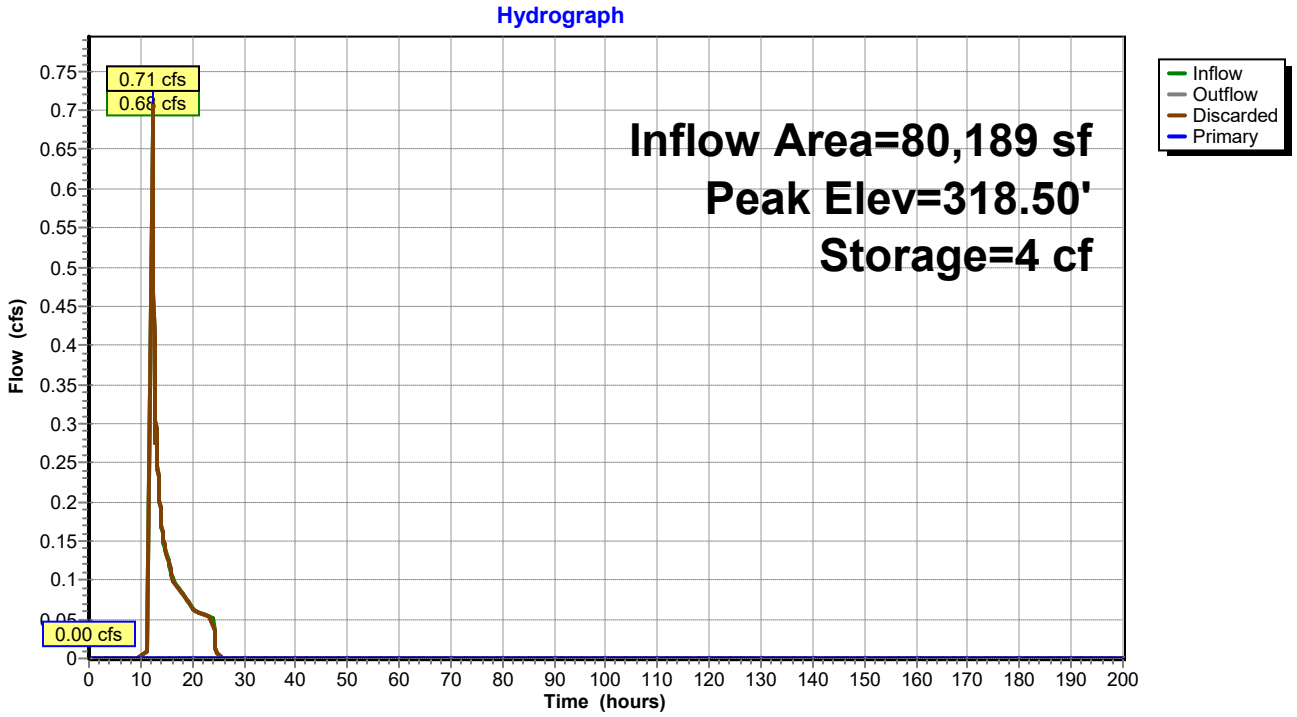
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
318.50	1,815	175.0	0	0	1,815
319.00	2,085	185.0	974	974	2,115
320.00	2,485	200.0	2,282	3,256	2,614

Device	Routing	Invert	Outlet Devices
#1	Discarded	318.50'	**5.00 cfs Exfiltration at all elevations**
#2	Primary	319.80'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=5.00 cfs @ 12.37 hrs HW=318.50' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 5.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=318.50' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Infiltration Basin



Summary for Pond 2P: Infiltration Basin

Inflow Area = 8,376 sf, 57.39% Impervious, Inflow Depth = 1.28" for 25-yr event
Inflow = 0.36 cfs @ 12.26 hrs, Volume= 894 cf
Outflow = 0.35 cfs @ 12.26 hrs, Volume= 894 cf, Atten= 0%, Lag= 0.0 min
Discarded = 0.35 cfs @ 12.26 hrs, Volume= 894 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 320.00' @ 12.26 hrs Surf.Area= 70 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (921.6 - 921.5)

Volume	Invert	Avail.Storage	Storage Description
#1	320.00'	533 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

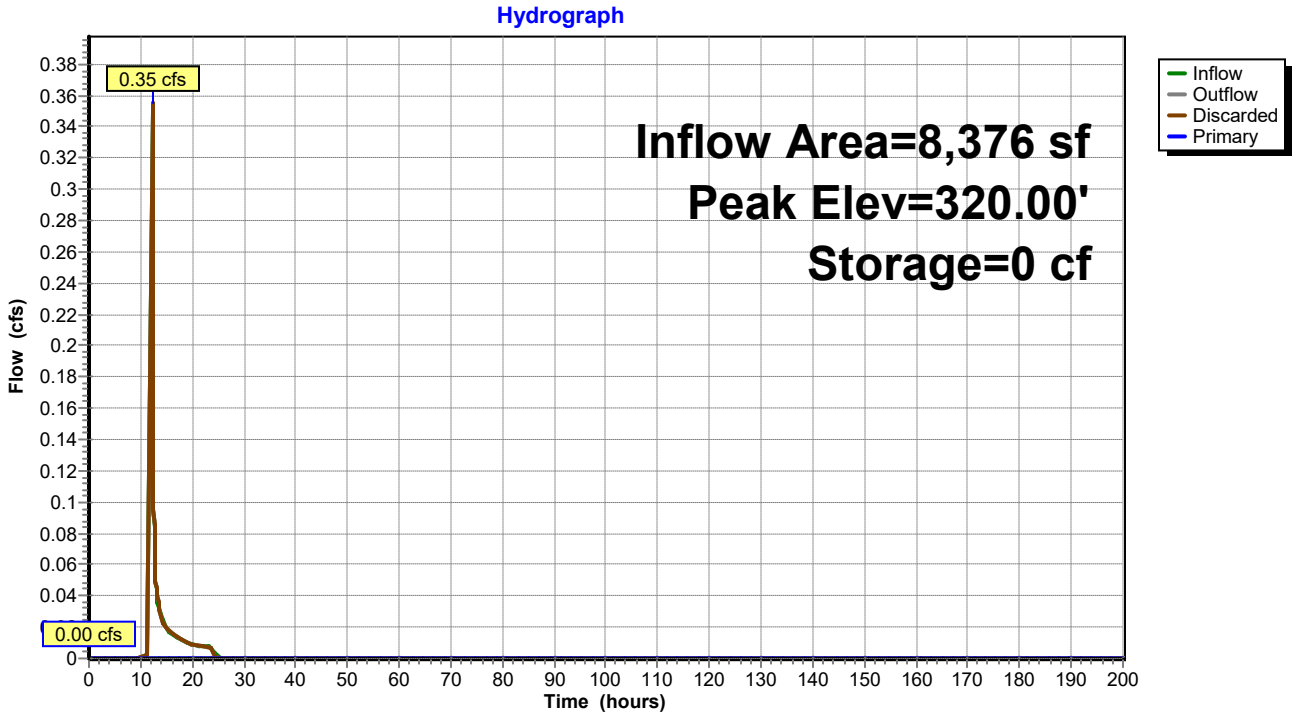
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
320.00	70	65.0	0	0	70
321.00	265	80.0	157	157	258
322.00	500	95.0	376	533	484

Device	Routing	Invert	Outlet Devices
#1	Discarded	320.00'	**5.00 cfs Exfiltration at all elevations**
#2	Primary	321.90'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=5.00 cfs @ 12.26 hrs HW=320.00' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 5.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=320.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: Infiltration Basin



Summary for Pond 3P: Infiltration Basin

Inflow Area = 5,784 sf, 28.39% Impervious, Inflow Depth = 0.50" for 25-yr event
Inflow = 0.02 cfs @ 12.77 hrs, Volume= 243 cf
Outflow = 0.02 cfs @ 12.77 hrs, Volume= 243 cf, Atten= 0%, Lag= 0.0 min
Discarded = 0.02 cfs @ 12.77 hrs, Volume= 243 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 321.00' @ 12.77 hrs Surf.Area= 115 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (1,012.0 - 1,012.0)

Volume	Invert	Avail.Storage	Storage Description
#1	321.00'	174 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

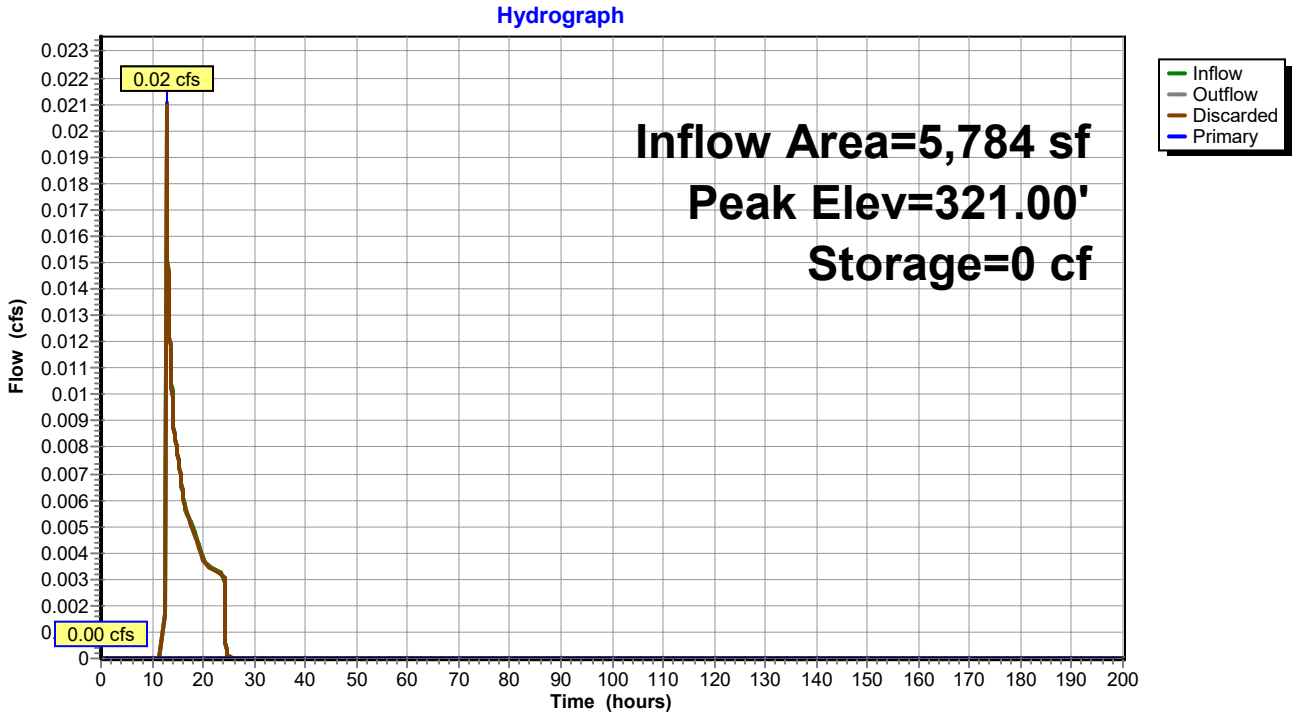
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
321.00	115	45.0	0	0	115
322.00	240	60.0	174	174	251

Device	Routing	Invert	Outlet Devices
#1	Discarded	321.00'	**5.00 cfs Exfiltration at all elevations**
#2	Primary	321.90'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=5.00 cfs @ 12.77 hrs HW=321.00' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 5.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=321.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: Infiltration Basin



Summary for Pond FB1: Forebay

Inflow Area = 50,097 sf, 46.28% Impervious, Inflow Depth = 1.34" for 25-yr event
Inflow = 1.71 cfs @ 12.12 hrs, Volume= 5,606 cf
Outflow = 0.68 cfs @ 12.38 hrs, Volume= 3,802 cf, Atten= 60%, Lag= 15.5 min
Primary = 0.68 cfs @ 12.38 hrs, Volume= 3,802 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 319.89' @ 12.38 hrs Surf.Area= 1,830 sf Storage= 1,970 cf

Plug-Flow detention time= 197.7 min calculated for 3,802 cf (68% of inflow)
Center-of-Mass det. time= 78.8 min (953.7 - 875.0)

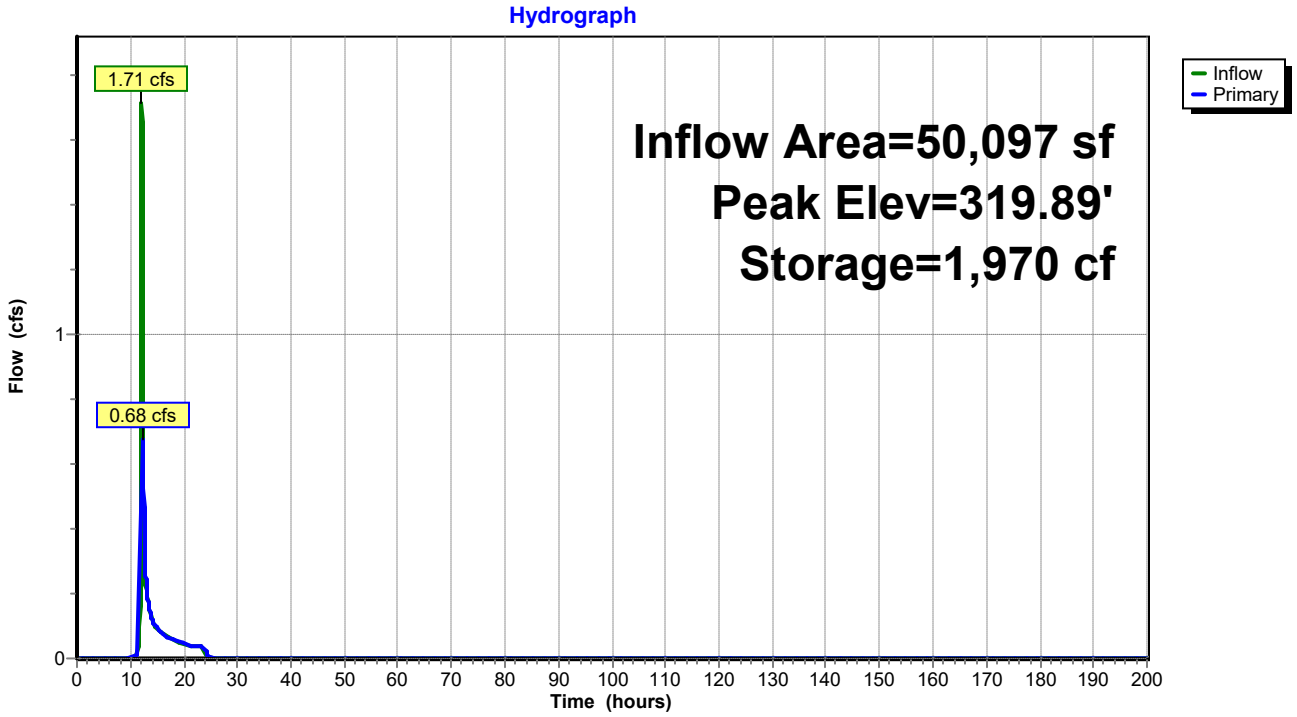
Volume	Invert	Avail.Storage	Storage Description
#1	318.50'	2,172 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
318.50	1,030	150.0	0	0	1,030
319.00	1,300	165.0	581	581	1,414
320.00	1,900	290.0	1,591	2,172	5,946

Device	Routing	Invert	Outlet Devices
#1	Primary	319.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.67 cfs @ 12.38 hrs HW=319.89' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.67 cfs @ 0.74 fps)

Pond FB1: Forebay



Summary for Pond FB2: Forebay

Inflow Area = 8,376 sf, 57.39% Impervious, Inflow Depth = 1.91" for 25-yr event
Inflow = 0.43 cfs @ 12.11 hrs, Volume= 1,334 cf
Outflow = 0.36 cfs @ 12.26 hrs, Volume= 894 cf, Atten= 17%, Lag= 9.0 min
Primary = 0.36 cfs @ 12.26 hrs, Volume= 894 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 321.86' @ 12.26 hrs Surf.Area= 464 sf Storage= 467 cf

Plug-Flow detention time= 181.7 min calculated for 894 cf (67% of inflow)
Center-of-Mass det. time= 68.8 min (921.5 - 852.7)

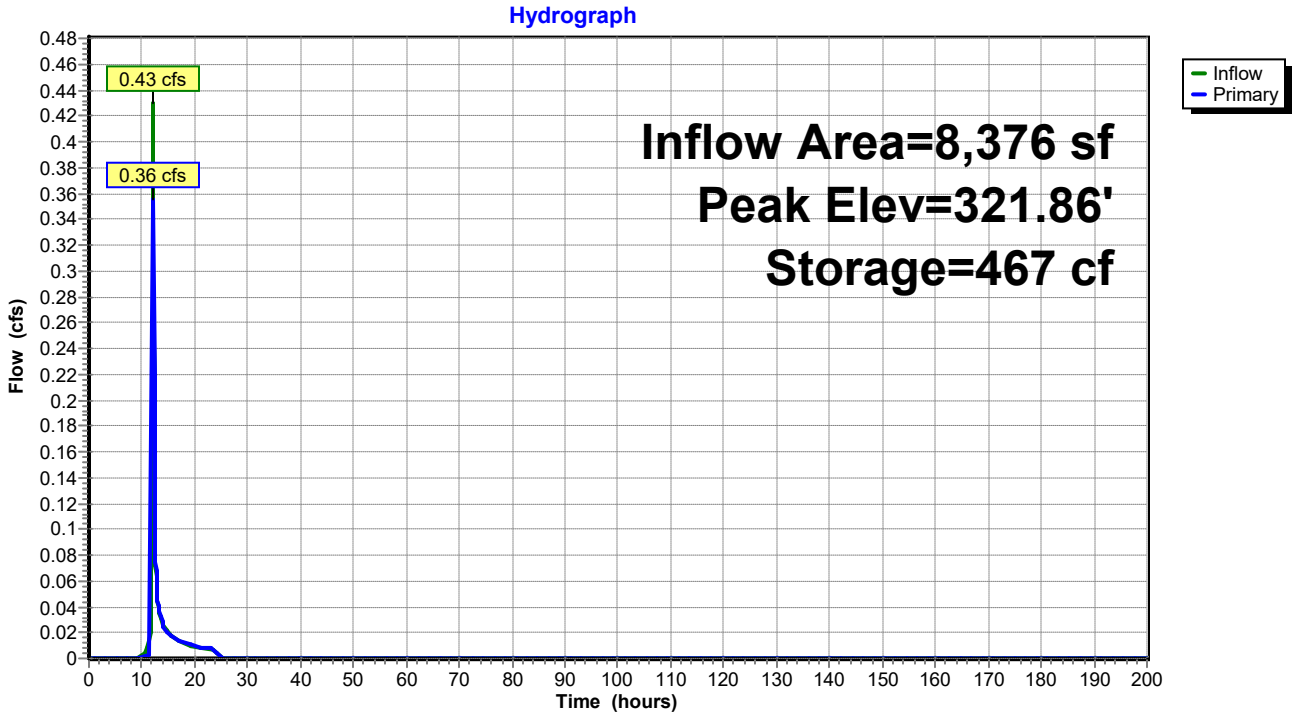
Volume	Invert	Avail.Storage	Storage Description
#1	320.00'	535 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
320.00	65	65.0	0	0	65
321.00	270	80.0	156	156	253
322.00	500	100.0	379	535	553

Device	Routing	Invert	Outlet Devices
#1	Primary	321.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.32 cfs @ 12.26 hrs HW=321.86' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.32 cfs @ 0.58 fps)

Pond FB2: Forebay



Summary for Pond FB3: Forebay

Inflow Area = 5,784 sf, 28.39% Impervious, Inflow Depth = 0.80" for 25-yr event
Inflow = 0.10 cfs @ 12.14 hrs, Volume= 388 cf
Outflow = 0.02 cfs @ 12.77 hrs, Volume= 243 cf, Atten= 79%, Lag= 38.0 min
Primary = 0.02 cfs @ 12.77 hrs, Volume= 243 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 321.81' @ 12.77 hrs Surf.Area= 258 sf Storage= 147 cf

Plug-Flow detention time= 243.2 min calculated for 243 cf (63% of inflow)
Center-of-Mass det. time= 104.8 min (1,012.0 - 907.3)

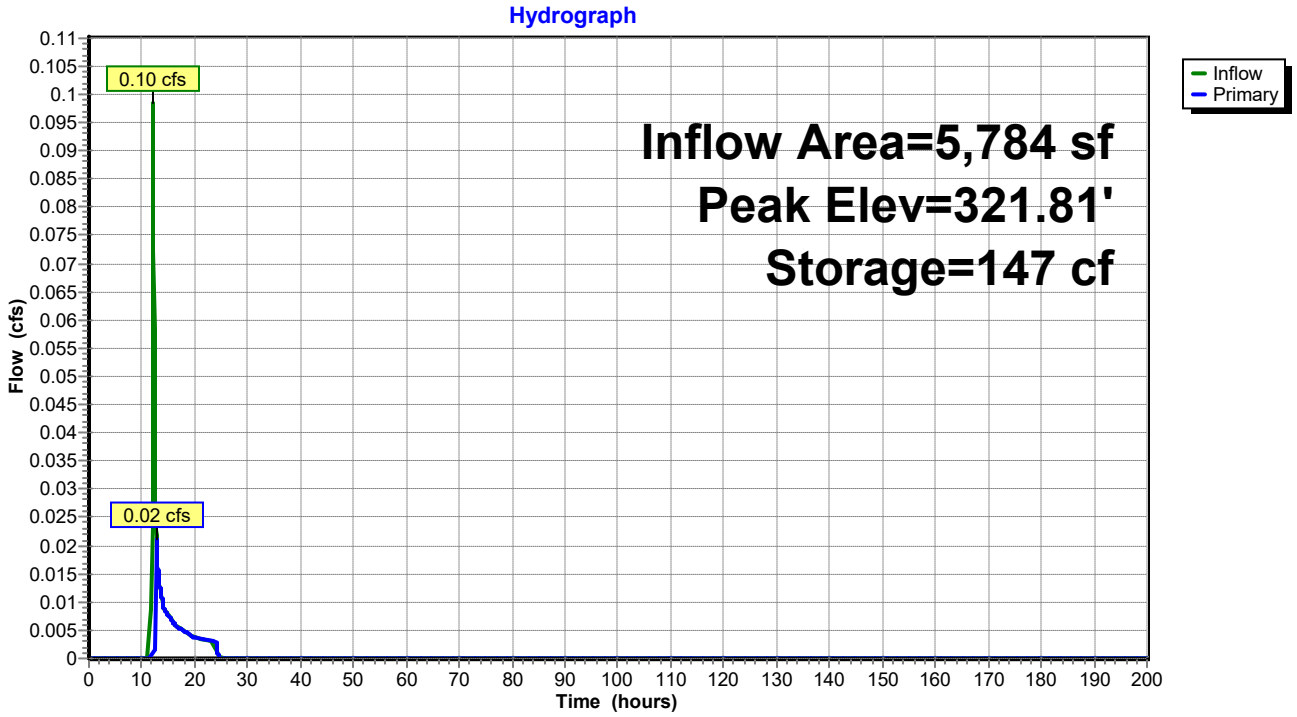
Volume	Invert	Avail.Storage	Storage Description
#1	321.00'	200 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
321.00	115	50.0	0	0	115
322.00	300	75.0	200	200	371

Device	Routing	Invert	Outlet Devices
#1	Primary	321.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.02 cfs @ 12.77 hrs HW=321.81' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.02 cfs @ 0.22 fps)

Pond FB3: Forebay



Summary for Pond FB4: Forebay

Inflow Area = 30,092 sf, 29.73% Impervious, Inflow Depth = 0.75" for 25-yr event
Inflow = 0.46 cfs @ 12.14 hrs, Volume= 1,884 cf
Outflow = 0.08 cfs @ 13.02 hrs, Volume= 1,148 cf, Atten= 83%, Lag= 52.6 min
Primary = 0.08 cfs @ 13.02 hrs, Volume= 1,148 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 319.82' @ 13.02 hrs Surf.Area= 844 sf Storage= 754 cf

Plug-Flow detention time= 260.7 min calculated for 1,148 cf (61% of inflow)
Center-of-Mass det. time= 117.1 min (1,028.9 - 911.8)

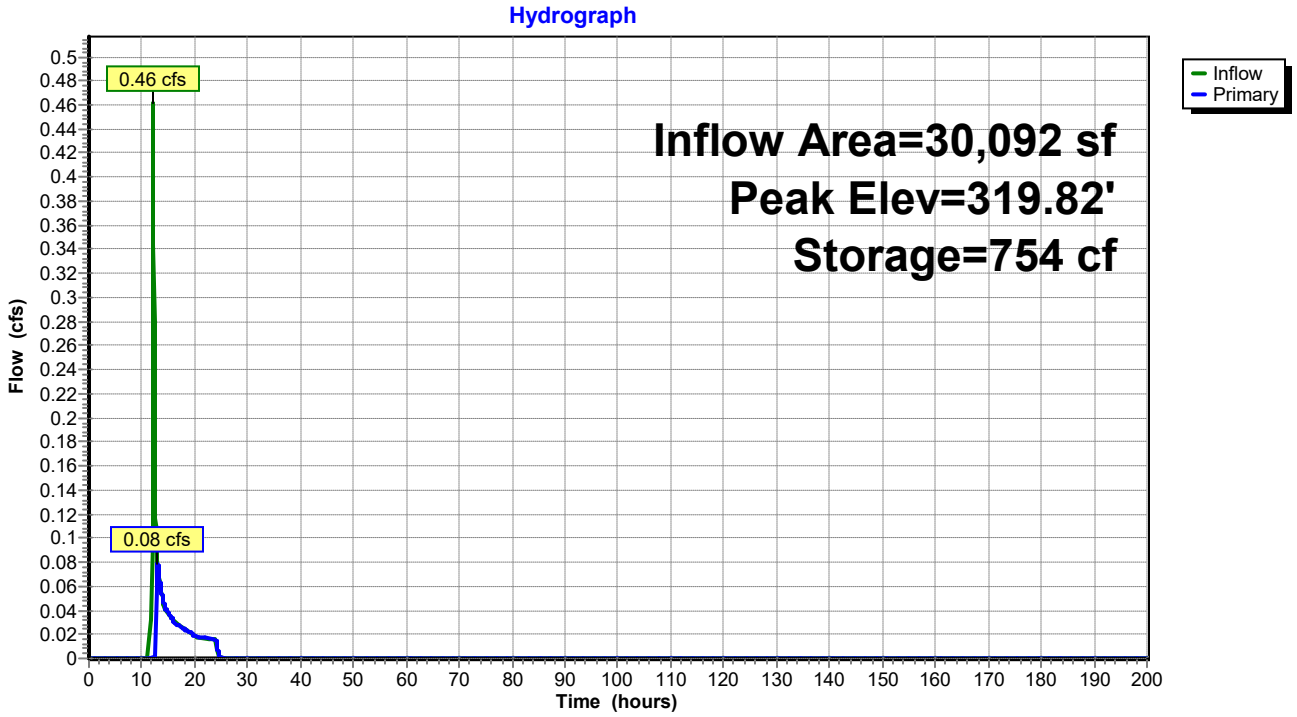
Volume	Invert	Avail.Storage	Storage Description
#1	318.50'	913 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
318.50	340	95.0	0	0	340
319.00	500	130.0	209	209	969
320.00	930	200.0	704	913	2,815

Device	Routing	Invert	Outlet Devices
#1	Primary	319.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.08 cfs @ 13.02 hrs HW=319.82' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.08 cfs @ 0.36 fps)

Pond FB4: Forebay

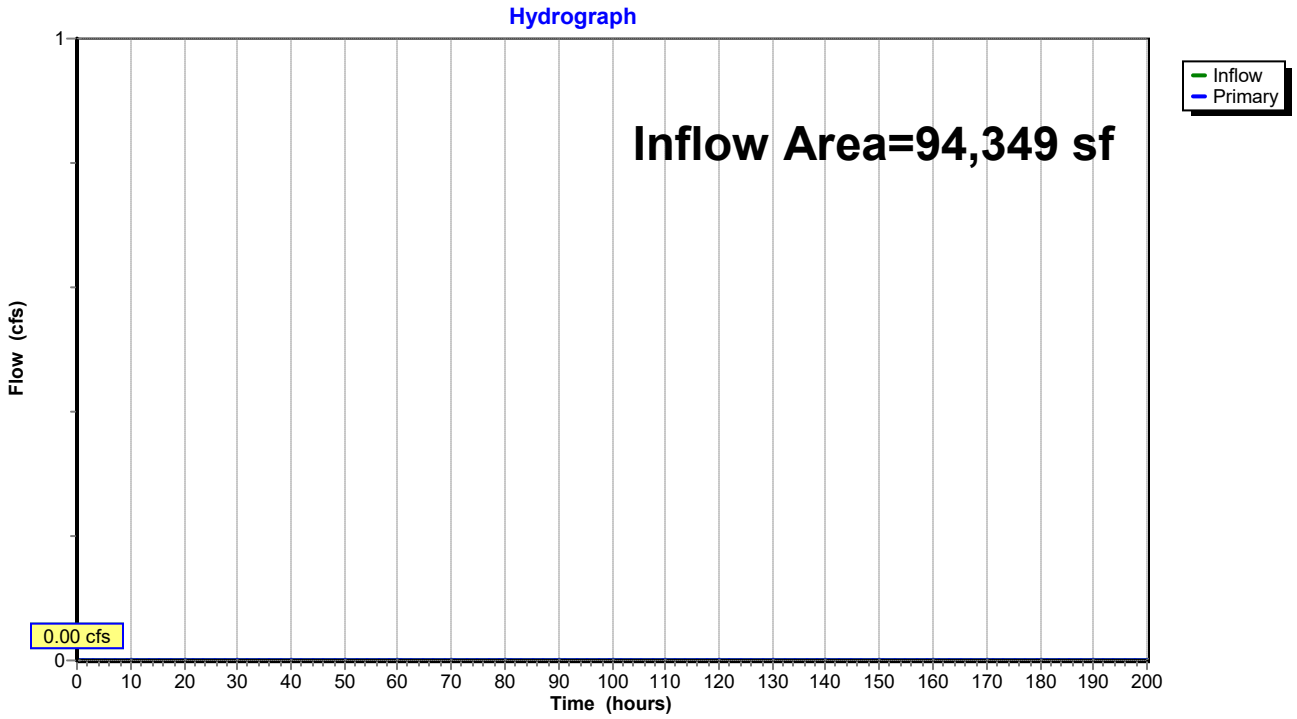


Summary for Link DP1: -

Inflow Area = 94,349 sf, 40.89% Impervious, Inflow Depth = 0.00" for 25-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link DP1: -



Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: - Runoff Area=50,097 sf 46.28% Impervious Runoff Depth=2.48"
Flow Length=400' Slope=0.0100 '/' Tc=17.7 min CN=65 Runoff=3.33 cfs 10,366 cf

Subcatchment 2S: - Runoff Area=8,376 sf 57.39% Impervious Runoff Depth=3.24"
Flow Length=400' Slope=0.0100 '/' Tc=17.7 min CN=73 Runoff=0.74 cfs 2,260 cf

Subcatchment 3S: - Runoff Area=5,784 sf 28.39% Impervious Runoff Depth=1.70"
Flow Length=400' Slope=0.0100 '/' Tc=17.7 min CN=56 Runoff=0.25 cfs 821 cf

Subcatchment 4S: - Runoff Area=30,092 sf 29.73% Impervious Runoff Depth=1.62"
Flow Length=400' Slope=0.0100 '/' Tc=17.7 min CN=55 Runoff=1.21 cfs 4,068 cf

Pond 1P: Infiltration Basin Peak Elev=318.51' Storage=25 cf Inflow=4.67 cfs 11,893 cf
Discarded=4.65 cfs 11,893 cf Primary=0.00 cfs 0 cf Outflow=4.65 cfs 11,893 cf

Pond 2P: Infiltration Basin Peak Elev=320.00' Storage=0 cf Inflow=0.82 cfs 1,820 cf
Discarded=0.82 cfs 1,820 cf Primary=0.00 cfs 0 cf Outflow=0.82 cfs 1,820 cf

Pond 3P: Infiltration Basin Peak Elev=321.00' Storage=0 cf Inflow=0.23 cfs 677 cf
Discarded=0.23 cfs 677 cf Primary=0.00 cfs 0 cf Outflow=0.23 cfs 677 cf

Pond FB1: Forebay Peak Elev=320.11' Storage=2,172 cf Inflow=3.33 cfs 10,366 cf
Outflow=4.26 cfs 8,561 cf

Pond FB2: Forebay Peak Elev=321.90' Storage=488 cf Inflow=0.74 cfs 2,260 cf
Outflow=0.82 cfs 1,820 cf

Pond FB3: Forebay Peak Elev=321.85' Storage=156 cf Inflow=0.25 cfs 821 cf
Outflow=0.23 cfs 677 cf

Pond FB4: Forebay Peak Elev=319.93' Storage=852 cf Inflow=1.21 cfs 4,068 cf
Outflow=1.18 cfs 3,332 cf

Link DP1: - Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Total Runoff Area = 94,349 sf Runoff Volume = 17,516 cf Average Runoff Depth = 2.23"
59.11% Pervious = 55,769 sf 40.89% Impervious = 38,580 sf

Summary for Subcatchment 1S: -

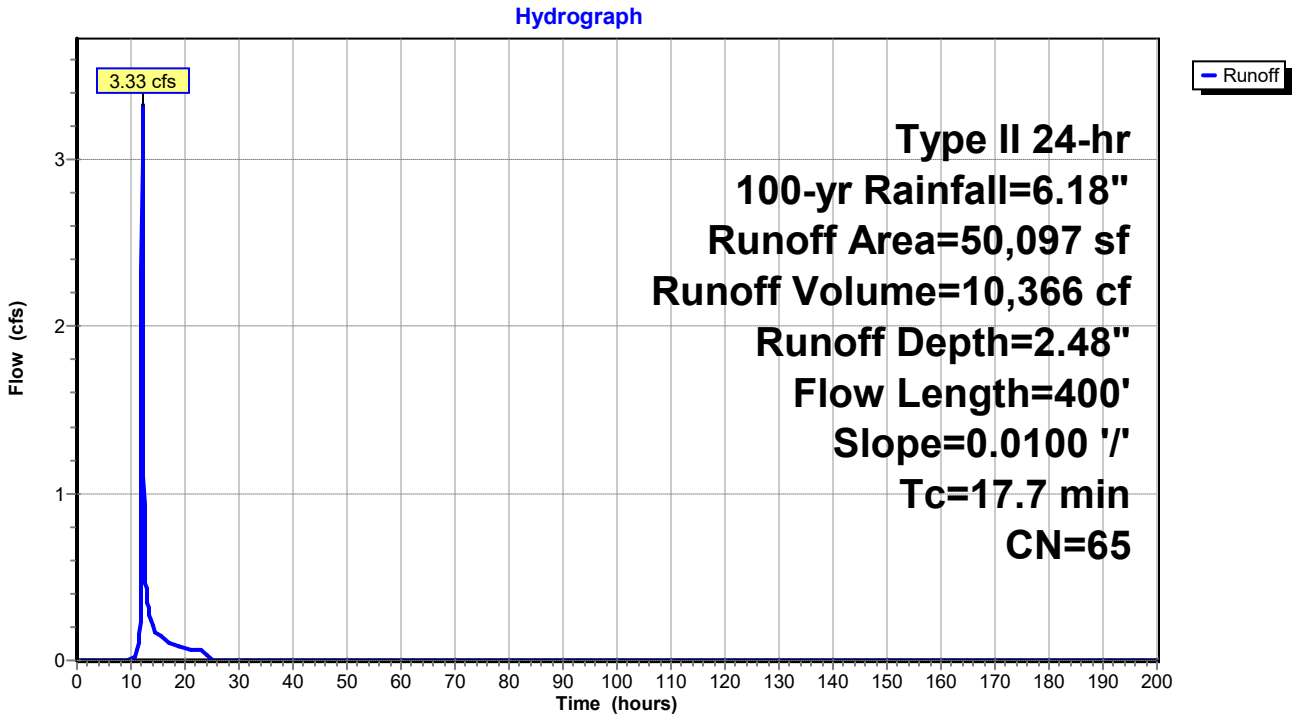
Runoff = 3.33 cfs @ 12.11 hrs, Volume= 10,366 cf, Depth= 2.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.18"

Area (sf)	CN	Description
23,186	98	Paved parking, HSG A
18,691	39	>75% Grass cover, Good, HSG A
8,220	30	Woods, Good, HSG A
50,097	65	Weighted Average
26,911		53.72% Pervious Area
23,186		46.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
3.3	300	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.7	400	Total			

Subcatchment 1S: -



Summary for Subcatchment 2S: -

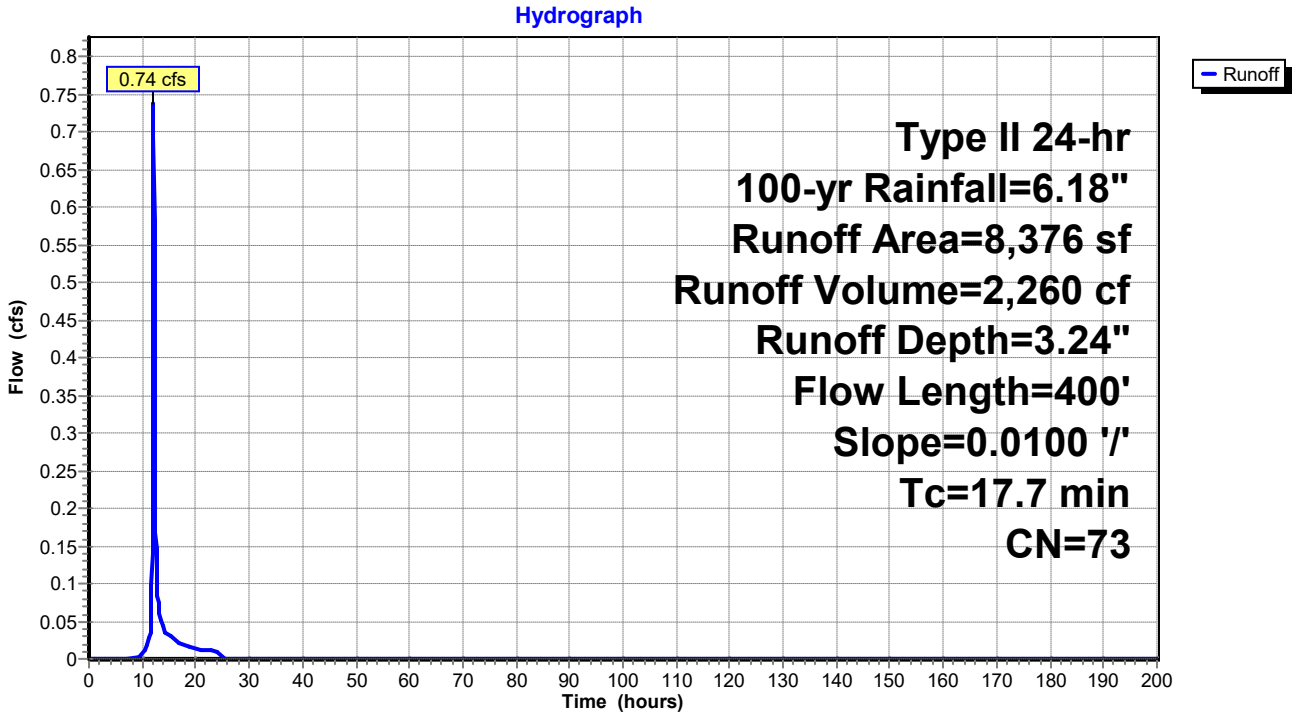
Runoff = 0.74 cfs @ 12.10 hrs, Volume= 2,260 cf, Depth= 3.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.18"

Area (sf)	CN	Description
4,807	98	Paved parking, HSG A
3,569	39	>75% Grass cover, Good, HSG A
8,376	73	Weighted Average
3,569		42.61% Pervious Area
4,807		57.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
3.3	300	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.7	400	Total			

Subcatchment 2S: -



Summary for Subcatchment 3S: -

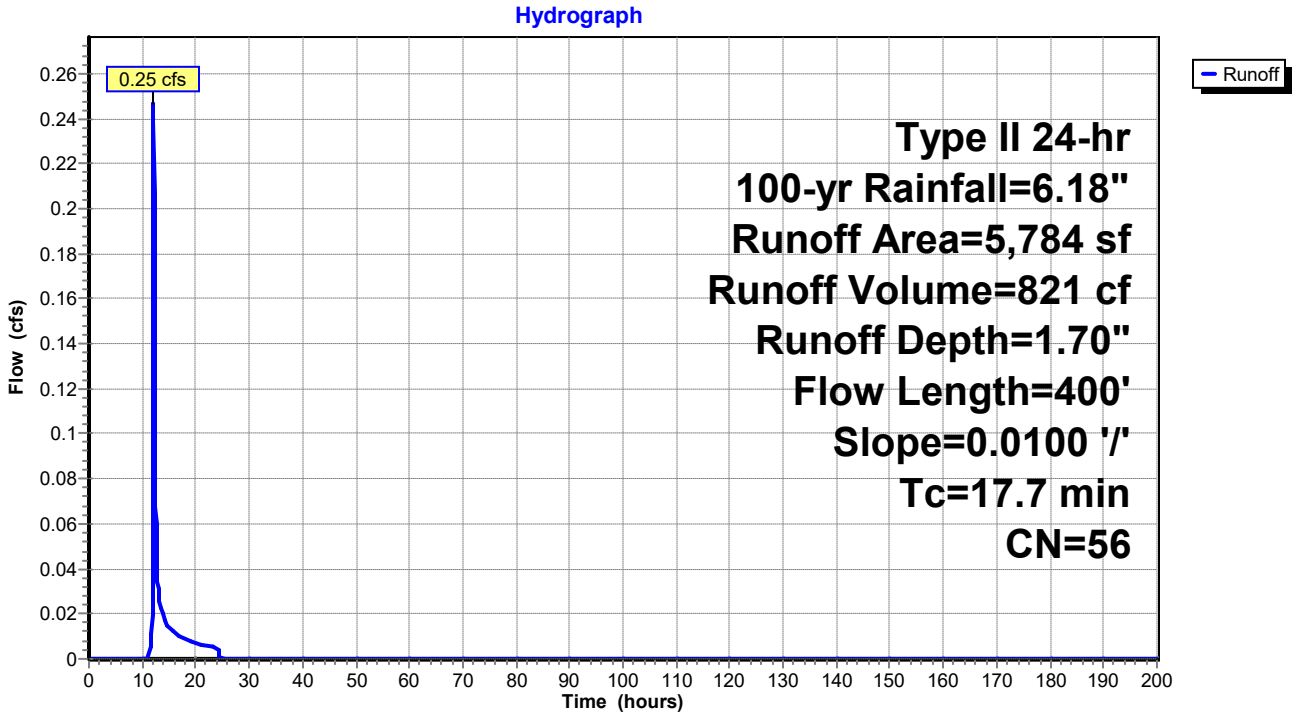
Runoff = 0.25 cfs @ 12.12 hrs, Volume= 821 cf, Depth= 1.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.18"

Area (sf)	CN	Description
1,642	98	Paved parking, HSG A
4,142	39	>75% Grass cover, Good, HSG A
5,784	56	Weighted Average
4,142		71.61% Pervious Area
1,642		28.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
3.3	300	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.7	400	Total			

Subcatchment 3S: -



Summary for Subcatchment 4S: -

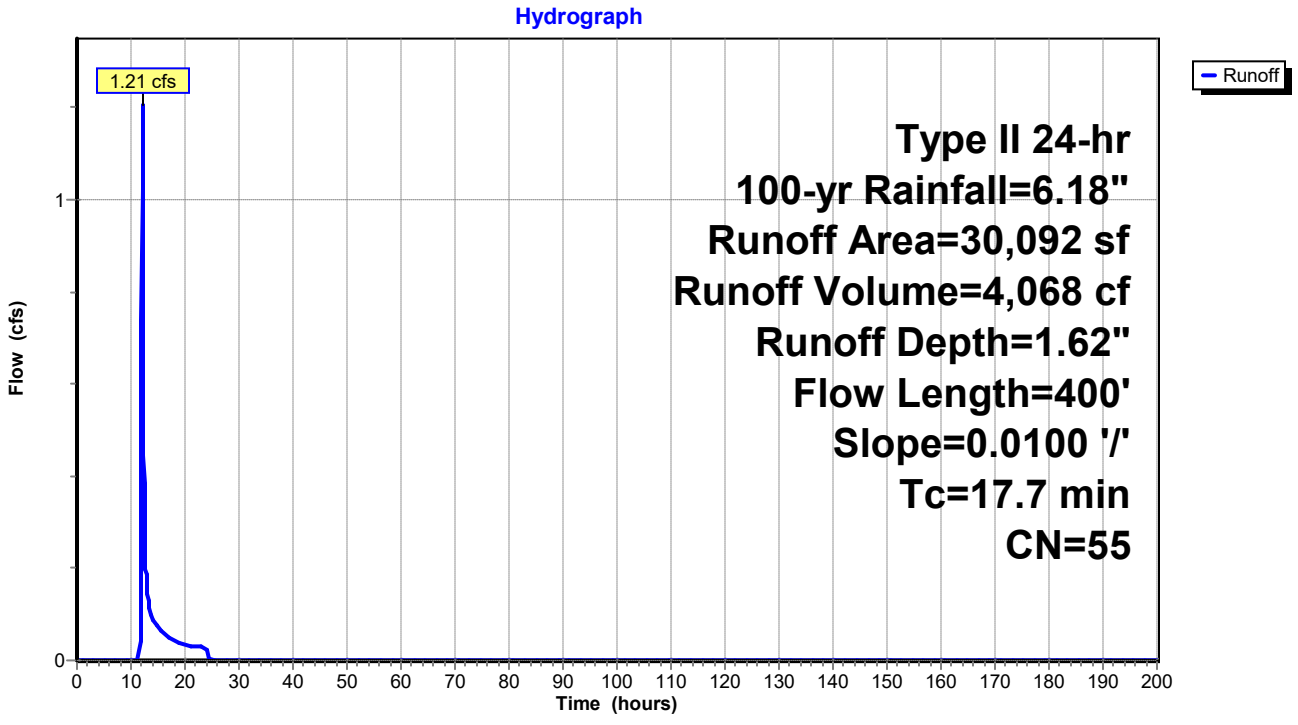
Runoff = 1.21 cfs @ 12.12 hrs, Volume= 4,068 cf, Depth= 1.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.18"

Area (sf)	CN	Description
8,945	98	Paved parking, HSG A
16,333	39	>75% Grass cover, Good, HSG A
4,814	30	Woods, Good, HSG A
30,092	55	Weighted Average
21,147		70.27% Pervious Area
8,945		29.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
3.3	300	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.7	400	Total			

Subcatchment 4S: -



Summary for Pond 1P: Infiltration Basin

Inflow Area = 80,189 sf, 40.07% Impervious, Inflow Depth = 1.78" for 100-yr event
Inflow = 4.67 cfs @ 12.16 hrs, Volume= 11,893 cf
Outflow = 4.65 cfs @ 12.16 hrs, Volume= 11,893 cf, Atten= 1%, Lag= 0.1 min
Discarded = 4.65 cfs @ 12.16 hrs, Volume= 11,893 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 318.51' @ 12.16 hrs Surf.Area= 1,822 sf Storage= 25 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (900.3 - 900.2)

Volume	Invert	Avail.Storage	Storage Description
#1	318.50'	3,256 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

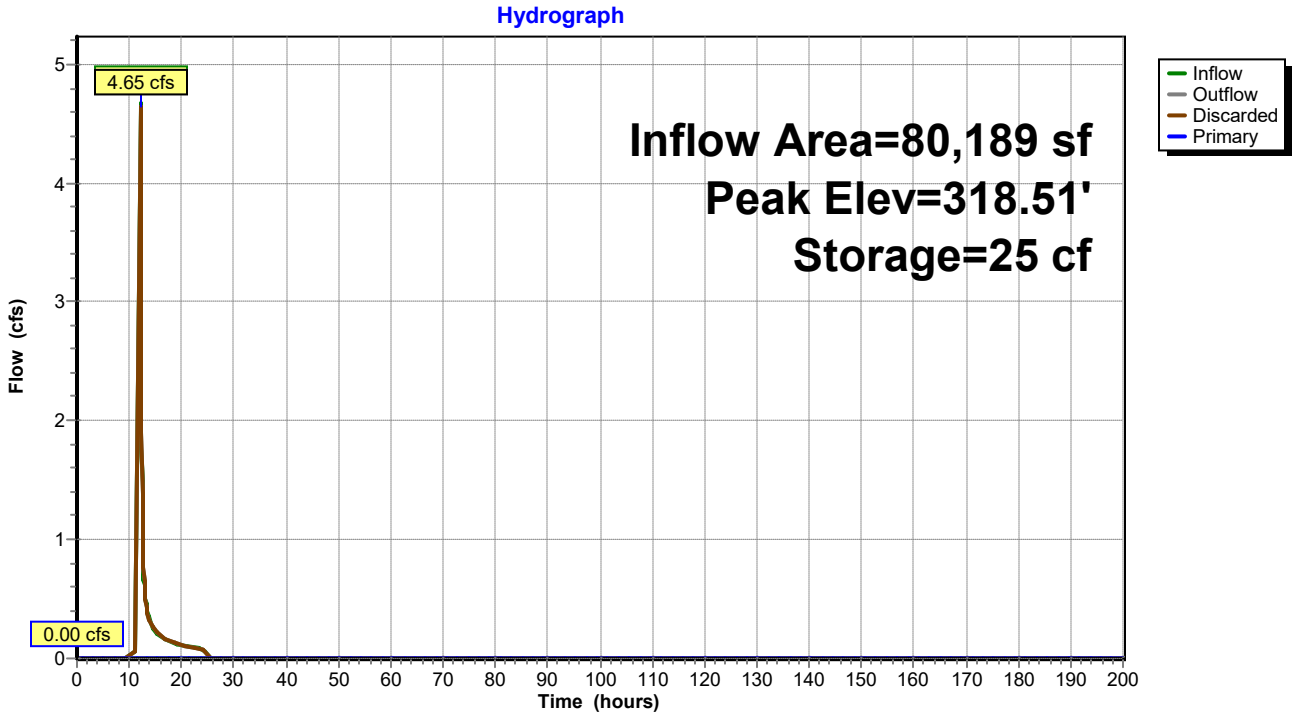
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
318.50	1,815	175.0	0	0	1,815
319.00	2,085	185.0	974	974	2,115
320.00	2,485	200.0	2,282	3,256	2,614

Device	Routing	Invert	Outlet Devices
#1	Discarded	318.50'	**5.00 cfs Exfiltration at all elevations**
#2	Primary	319.80'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=5.00 cfs @ 12.16 hrs HW=318.51' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 5.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=318.50' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Infiltration Basin



Summary for Pond 2P: Infiltration Basin

Inflow Area = 8,376 sf, 57.39% Impervious, Inflow Depth = 2.61" for 100-yr event
Inflow = 0.82 cfs @ 12.11 hrs, Volume= 1,820 cf
Outflow = 0.82 cfs @ 12.11 hrs, Volume= 1,820 cf, Atten= 0%, Lag= 0.0 min
Discarded = 0.82 cfs @ 12.11 hrs, Volume= 1,820 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 320.00' @ 12.11 hrs Surf.Area= 70 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (873.5 - 873.5)

Volume	Invert	Avail.Storage	Storage Description
#1	320.00'	533 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

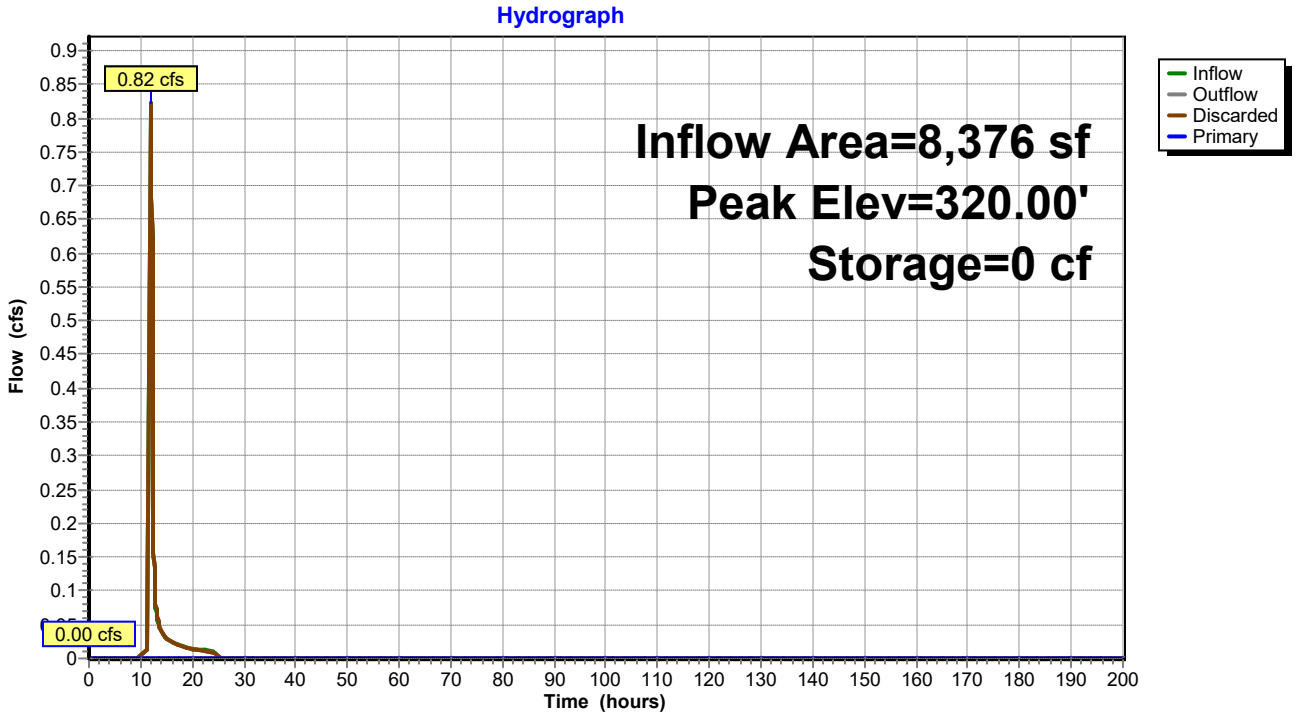
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
320.00	70	65.0	0	0	70
321.00	265	80.0	157	157	258
322.00	500	95.0	376	533	484

Device	Routing	Invert	Outlet Devices
#1	Discarded	320.00'	**5.00 cfs Exfiltration at all elevations**
#2	Primary	321.90'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=5.00 cfs @ 12.11 hrs HW=320.00' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 5.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=320.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: Infiltration Basin



Summary for Pond 3P: Infiltration Basin

Inflow Area = 5,784 sf, 28.39% Impervious, Inflow Depth = 1.40" for 100-yr event
Inflow = 0.23 cfs @ 12.19 hrs, Volume= 677 cf
Outflow = 0.23 cfs @ 12.19 hrs, Volume= 677 cf, Atten= 0%, Lag= 0.0 min
Discarded = 0.23 cfs @ 12.19 hrs, Volume= 677 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 321.00' @ 12.19 hrs Surf.Area= 115 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (915.1 - 915.1)

Volume	Invert	Avail.Storage	Storage Description
#1	321.00'	174 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

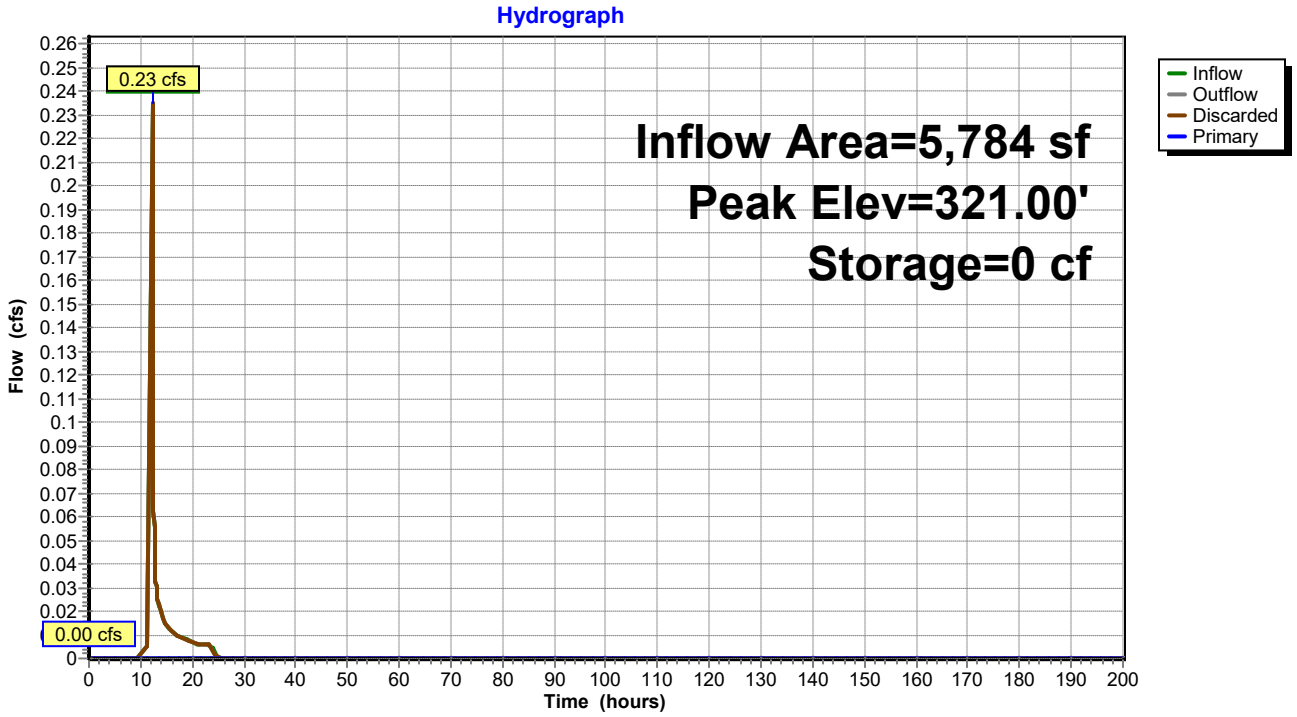
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
321.00	115	45.0	0	0	115
322.00	240	60.0	174	174	251

Device	Routing	Invert	Outlet Devices
#1	Discarded	321.00'	**5.00 cfs Exfiltration at all elevations**
#2	Primary	321.90'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=5.00 cfs @ 12.19 hrs HW=321.00' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 5.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=321.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: Infiltration Basin



Summary for Pond FB1: Forebay

Inflow Area = 50,097 sf, 46.28% Impervious, Inflow Depth = 2.48" for 100-yr event
Inflow = 3.33 cfs @ 12.11 hrs, Volume= 10,366 cf
Outflow = 4.26 cfs @ 12.15 hrs, Volume= 8,561 cf, Atten= 0%, Lag= 2.4 min
Primary = 4.26 cfs @ 12.15 hrs, Volume= 8,561 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 320.11' @ 12.15 hrs Surf.Area= 1,900 sf Storage= 2,172 cf

Plug-Flow detention time= 114.2 min calculated for 8,561 cf (83% of inflow)
Center-of-Mass det. time= 35.8 min (891.9 - 856.1)

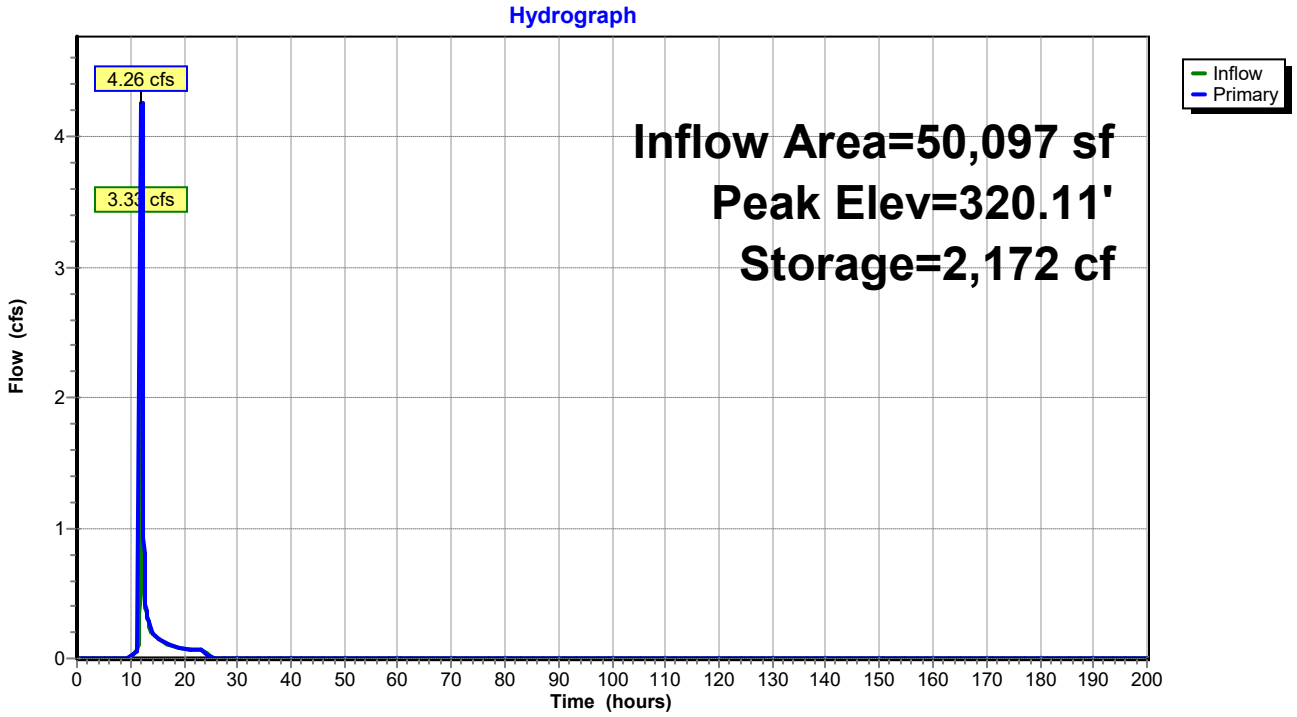
Volume	Invert	Avail.Storage	Storage Description
#1	318.50'	2,172 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
318.50	1,030	150.0	0	0	1,030
319.00	1,300	165.0	581	581	1,414
320.00	1,900	290.0	1,591	2,172	5,946

Device	Routing	Invert	Outlet Devices
#1	Primary	319.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=4.23 cfs @ 12.15 hrs HW=320.10' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 4.23 cfs @ 1.39 fps)

Pond FB1: Forebay



Summary for Pond FB2: Forebay

Inflow Area = 8,376 sf, 57.39% Impervious, Inflow Depth = 3.24" for 100-yr event
Inflow = 0.74 cfs @ 12.10 hrs, Volume= 2,260 cf
Outflow = 0.82 cfs @ 12.11 hrs, Volume= 1,820 cf, Atten= 0%, Lag= 0.6 min
Primary = 0.82 cfs @ 12.11 hrs, Volume= 1,820 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 321.90' @ 12.11 hrs Surf.Area= 475 sf Storage= 488 cf

Plug-Flow detention time= 118.5 min calculated for 1,820 cf (81% of inflow)
Center-of-Mass det. time= 36.0 min (873.5 - 837.5)

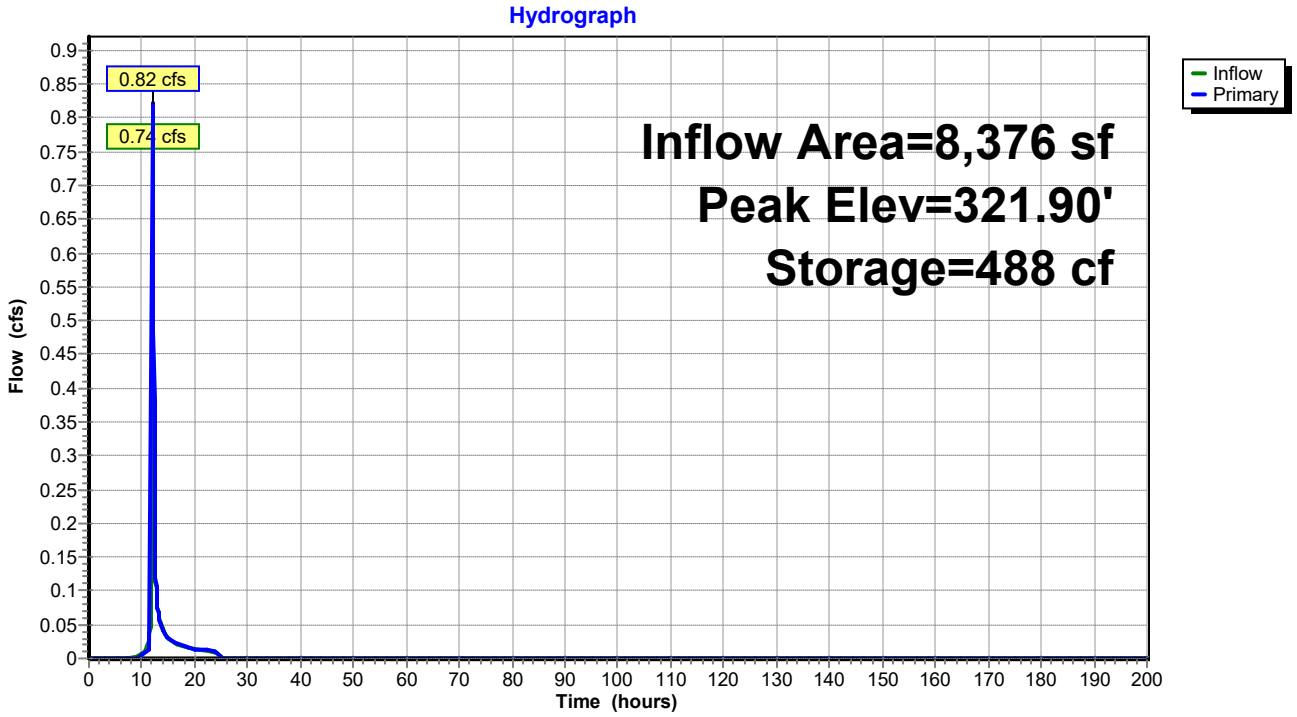
Volume	Invert	Avail.Storage	Storage Description
#1	320.00'	535 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
320.00	65	65.0	0	0	65
321.00	270	80.0	156	156	253
322.00	500	100.0	379	535	553

Device	Routing	Invert	Outlet Devices
#1	Primary	321.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.77 cfs @ 12.11 hrs HW=321.90' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.77 cfs @ 0.77 fps)

Pond FB2: Forebay



Summary for Pond FB3: Forebay

Inflow Area = 5,784 sf, 28.39% Impervious, Inflow Depth = 1.70" for 100-yr event
Inflow = 0.25 cfs @ 12.12 hrs, Volume= 821 cf
Outflow = 0.23 cfs @ 12.19 hrs, Volume= 677 cf, Atten= 5%, Lag= 4.4 min
Primary = 0.23 cfs @ 12.19 hrs, Volume= 677 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 321.85' @ 12.19 hrs Surf.Area= 266 sf Storage= 156 cf

Plug-Flow detention time= 116.9 min calculated for 677 cf (82% of inflow)
Center-of-Mass det. time= 35.6 min (915.1 - 879.6)

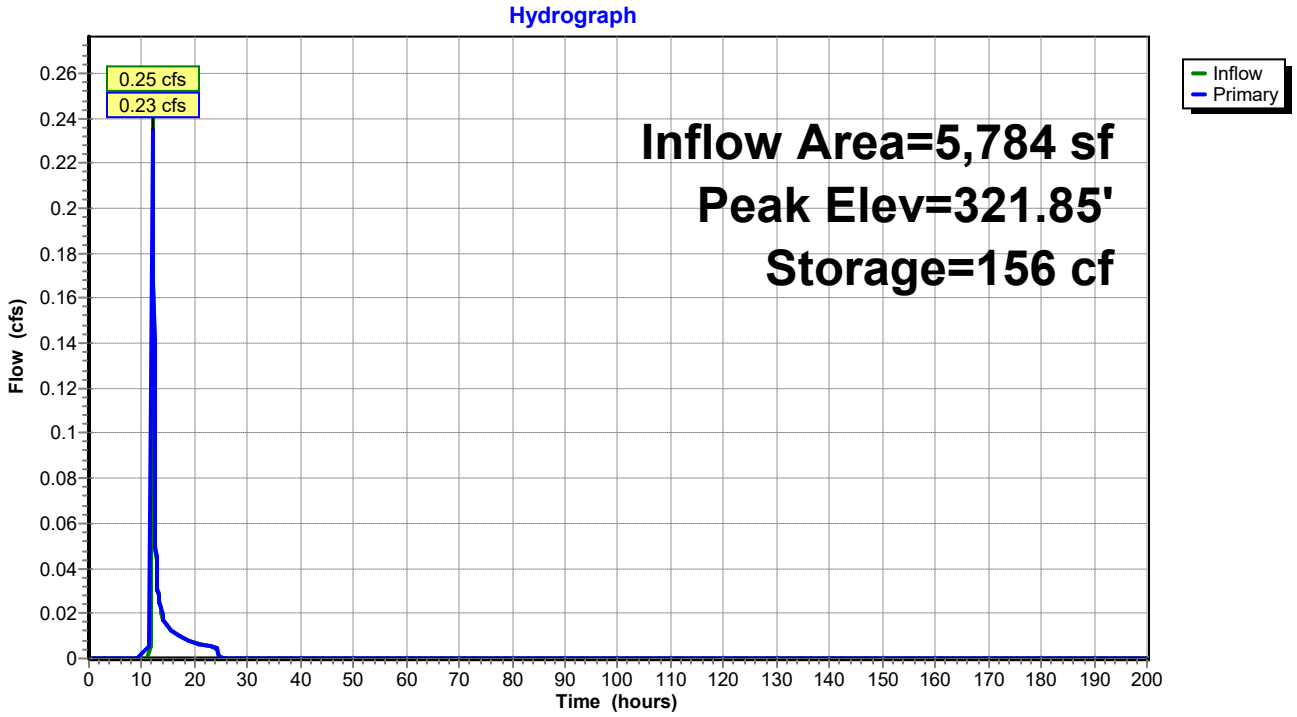
Volume	Invert	Avail.Storage	Storage Description
#1	321.00'	200 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
321.00	115	50.0	0	0	115
322.00	300	75.0	200	200	371

Device	Routing	Invert	Outlet Devices
#1	Primary	321.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.23 cfs @ 12.19 hrs HW=321.84' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.23 cfs @ 0.51 fps)

Pond FB3: Forebay



Summary for Pond FB4: Forebay

Inflow Area = 30,092 sf, 29.73% Impervious, Inflow Depth = 1.62" for 100-yr event
Inflow = 1.21 cfs @ 12.12 hrs, Volume= 4,068 cf
Outflow = 1.18 cfs @ 12.21 hrs, Volume= 3,332 cf, Atten= 2%, Lag= 5.5 min
Primary = 1.18 cfs @ 12.21 hrs, Volume= 3,332 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 319.93' @ 12.21 hrs Surf.Area= 897 sf Storage= 852 cf

Plug-Flow detention time= 121.9 min calculated for 3,332 cf (82% of inflow)
Center-of-Mass det. time= 39.1 min (921.7 - 882.6)

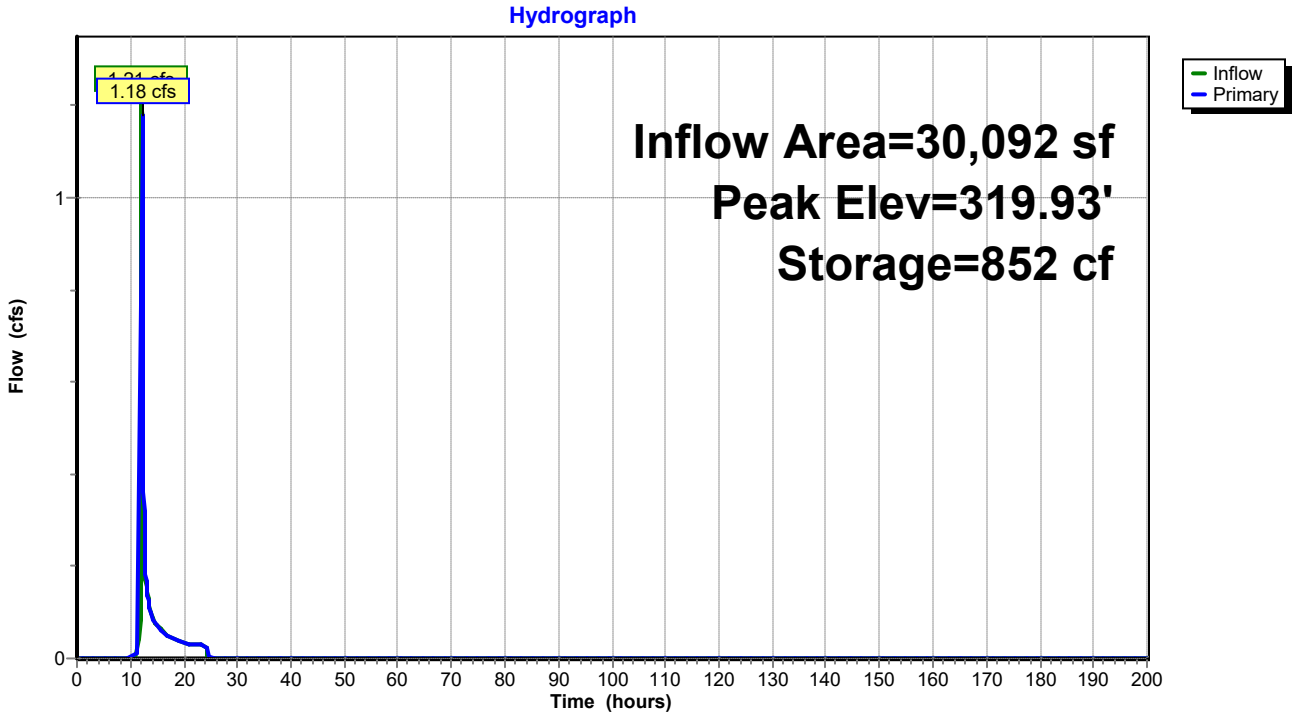
Volume	Invert	Avail.Storage	Storage Description
#1	318.50'	913 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
318.50	340	95.0	0	0	340
319.00	500	130.0	209	209	969
320.00	930	200.0	704	913	2,815

Device	Routing	Invert	Outlet Devices
#1	Primary	319.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=1.08 cfs @ 12.21 hrs HW=319.93' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 1.08 cfs @ 0.86 fps)

Pond FB4: Forebay

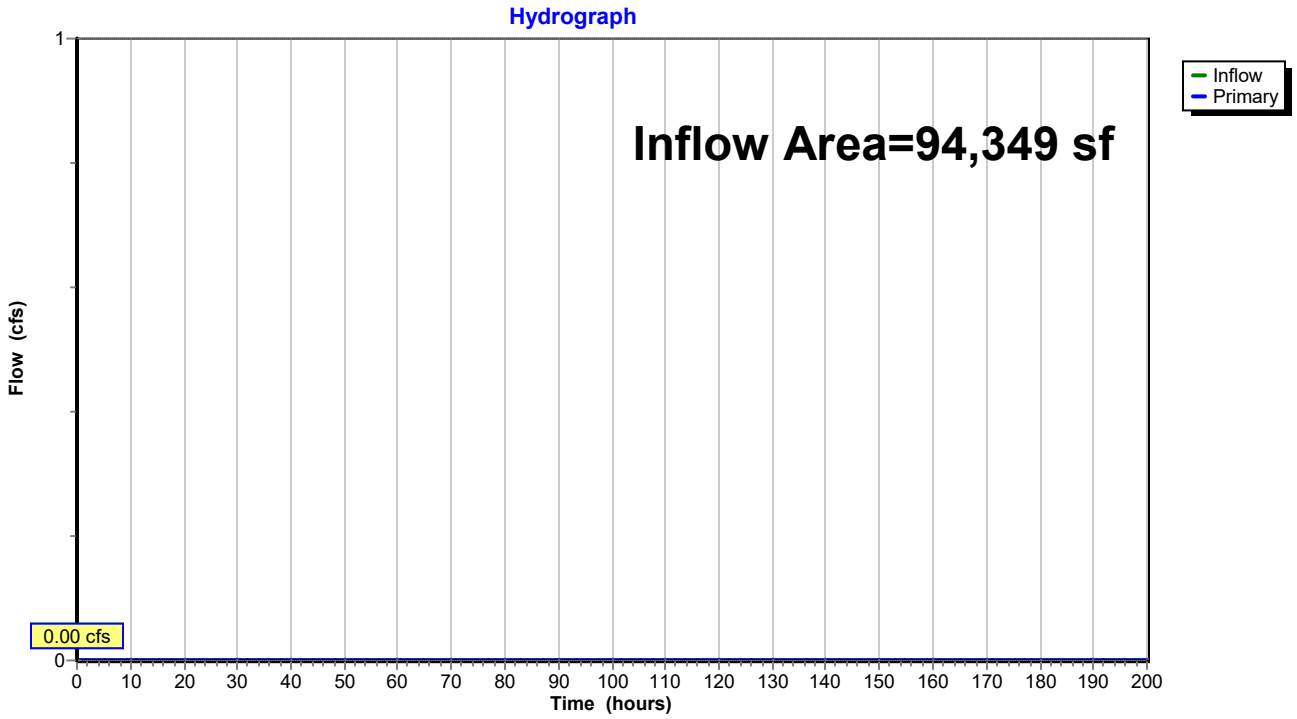


Summary for Link DP1: -

Inflow Area = 94,349 sf, 40.89% Impervious, Inflow Depth = 0.00" for 100-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link DP1: -



Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: - Runoff Area=50,097 sf 46.28% Impervious Runoff Depth=0.00"
Flow Length=400' Slope=0.0100 '/' Tc=17.7 min CN=65 Runoff=0.00 cfs 0 cf

Subcatchment 2S: - Runoff Area=8,376 sf 57.39% Impervious Runoff Depth=0.03"
Flow Length=400' Slope=0.0100 '/' Tc=17.7 min CN=73 Runoff=0.00 cfs 22 cf

Subcatchment 3S: - Runoff Area=5,784 sf 28.39% Impervious Runoff Depth=0.00"
Flow Length=400' Slope=0.0100 '/' Tc=17.7 min CN=56 Runoff=0.00 cfs 0 cf

Subcatchment 4S: - Runoff Area=30,092 sf 29.73% Impervious Runoff Depth=0.00"
Flow Length=400' Slope=0.0100 '/' Tc=17.7 min CN=55 Runoff=0.00 cfs 0 cf

Pond 1P: Infiltration Basin Peak Elev=318.50' Storage=0 cf Inflow=0.00 cfs 0 cf
Discarded=0.00 cfs 0 cf Primary=0.00 cfs 0 cf Outflow=0.00 cfs 0 cf

Pond 2P: Infiltration Basin Peak Elev=320.00' Storage=0 cf Inflow=0.00 cfs 0 cf
Discarded=0.00 cfs 0 cf Primary=0.00 cfs 0 cf Outflow=0.00 cfs 0 cf

Pond 3P: Infiltration Basin Peak Elev=321.00' Storage=0 cf Inflow=0.00 cfs 0 cf
Discarded=0.00 cfs 0 cf Primary=0.00 cfs 0 cf Outflow=0.00 cfs 0 cf

Pond FB1: Forebay Peak Elev=318.50' Storage=0 cf Inflow=0.00 cfs 0 cf
Outflow=0.00 cfs 0 cf

Pond FB2: Forebay Peak Elev=320.26' Storage=22 cf Inflow=0.00 cfs 22 cf
Outflow=0.00 cfs 0 cf

Pond FB3: Forebay Peak Elev=321.00' Storage=0 cf Inflow=0.00 cfs 0 cf
Outflow=0.00 cfs 0 cf

Pond FB4: Forebay Peak Elev=318.50' Storage=0 cf Inflow=0.00 cfs 0 cf
Outflow=0.00 cfs 0 cf

Link DP1: - Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Total Runoff Area = 94,349 sf Runoff Volume = 23 cf Average Runoff Depth = 0.00"
59.11% Pervious = 55,769 sf 40.89% Impervious = 38,580 sf

Summary for Subcatchment 1S: -

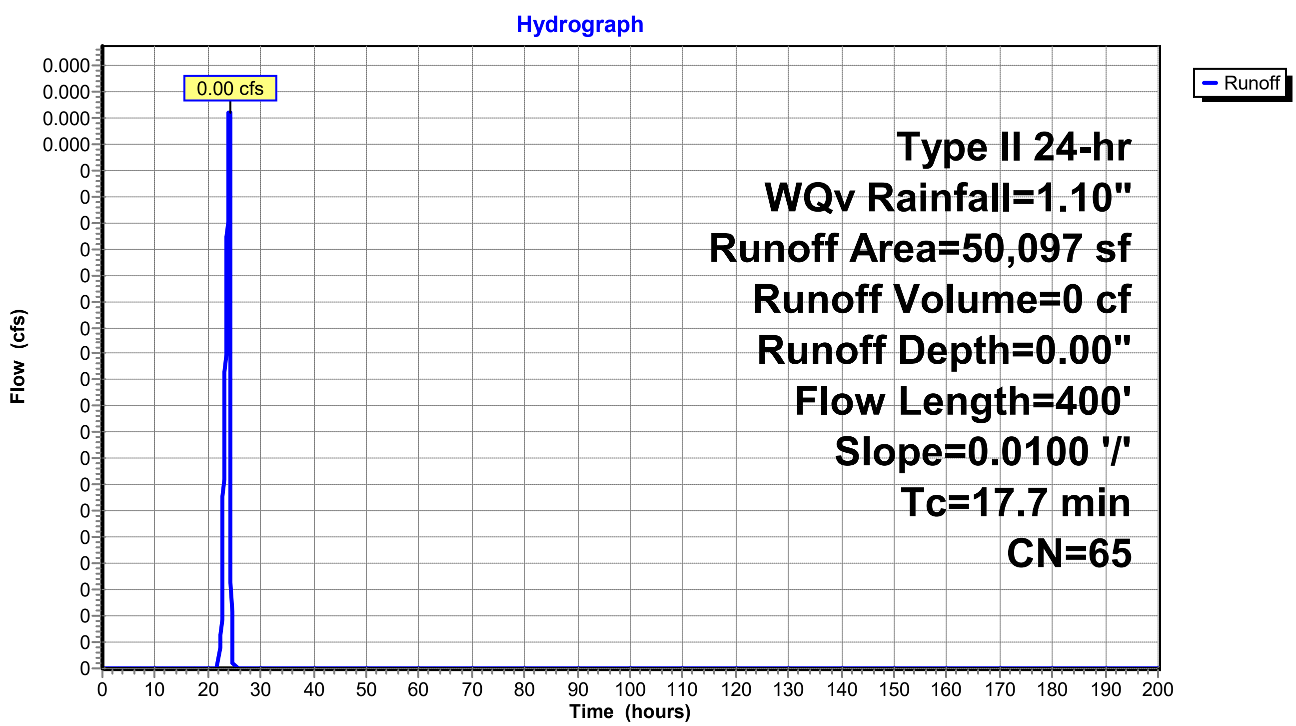
Runoff = 0.00 cfs @ 24.06 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr WQv Rainfall=1.10"

Area (sf)	CN	Description
23,186	98	Paved parking, HSG A
18,691	39	>75% Grass cover, Good, HSG A
8,220	30	Woods, Good, HSG A
50,097	65	Weighted Average
26,911		53.72% Pervious Area
23,186		46.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
3.3	300	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.7	400	Total			

Subcatchment 1S: -



Summary for Subcatchment 2S: -

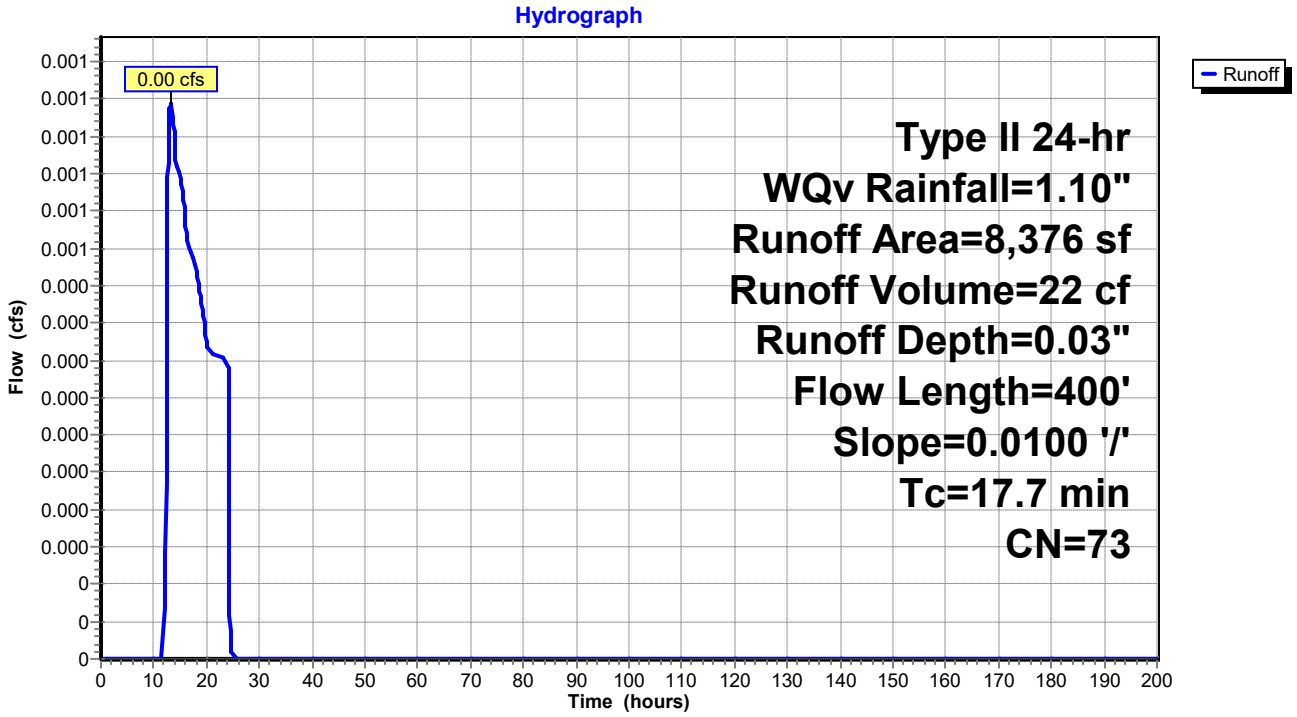
Runoff = 0.00 cfs @ 13.14 hrs, Volume= 22 cf, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr WQv Rainfall=1.10"

Area (sf)	CN	Description
4,807	98	Paved parking, HSG A
3,569	39	>75% Grass cover, Good, HSG A
8,376	73	Weighted Average
3,569		42.61% Pervious Area
4,807		57.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
3.3	300	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.7	400	Total			

Subcatchment 2S: -



Summary for Subcatchment 3S: -

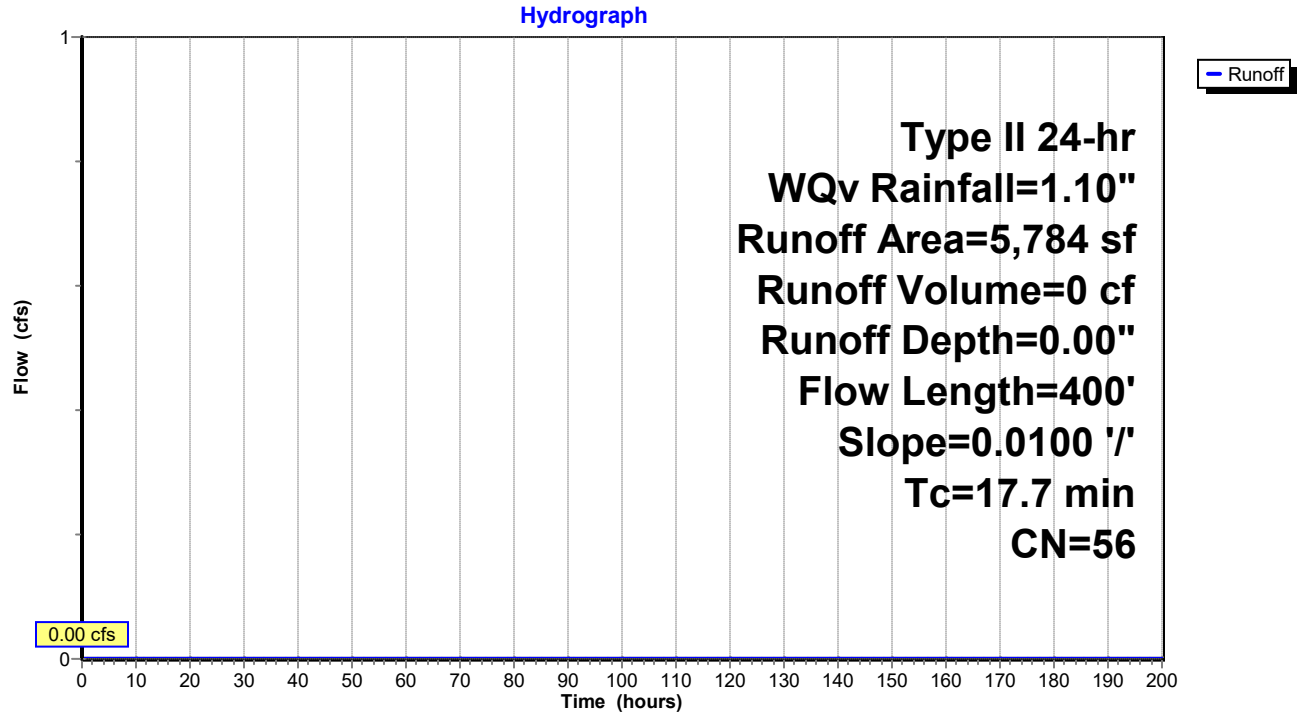
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr WQv Rainfall=1.10"

Area (sf)	CN	Description
1,642	98	Paved parking, HSG A
4,142	39	>75% Grass cover, Good, HSG A
5,784	56	Weighted Average
4,142		71.61% Pervious Area
1,642		28.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
3.3	300	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.7	400	Total			

Subcatchment 3S: -



Summary for Subcatchment 4S: -

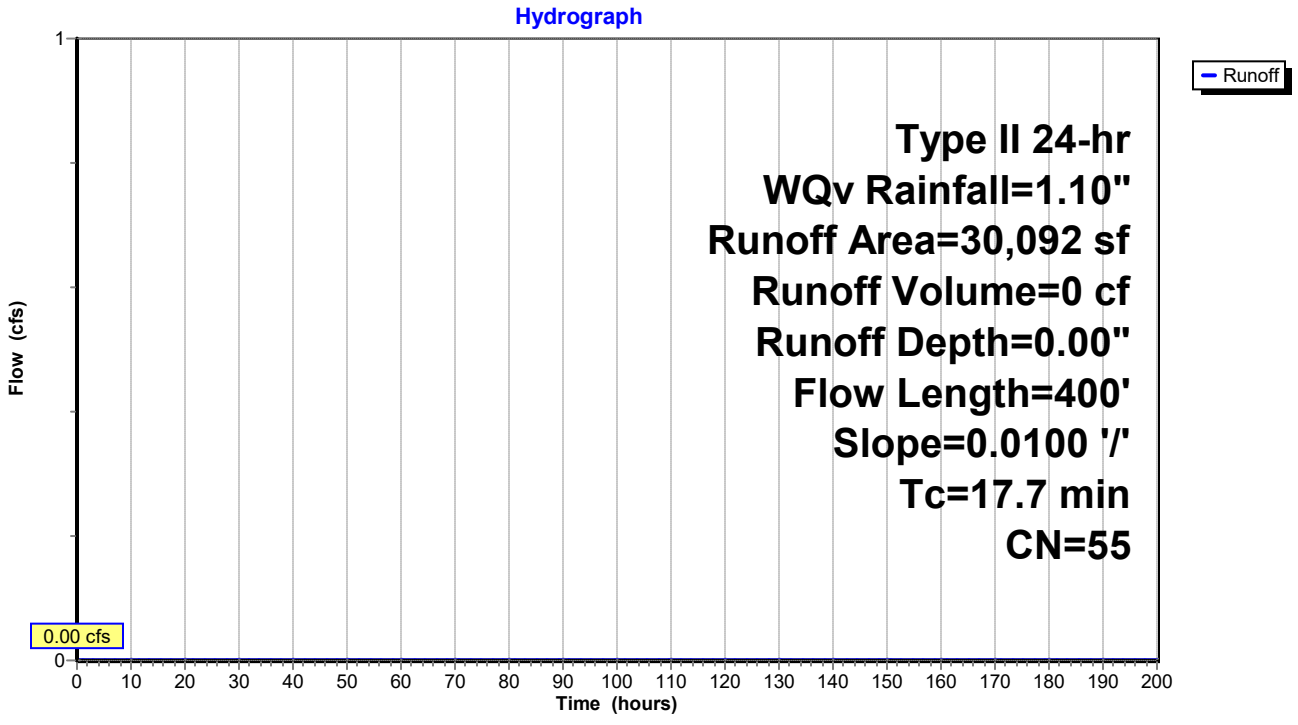
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr WQv Rainfall=1.10"

Area (sf)	CN	Description
8,945	98	Paved parking, HSG A
16,333	39	>75% Grass cover, Good, HSG A
4,814	30	Woods, Good, HSG A
30,092	55	Weighted Average
21,147		70.27% Pervious Area
8,945		29.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.58"
3.3	300	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.7	400	Total			

Subcatchment 4S: -



Summary for Pond 1P: Infiltration Basin

Inflow Area = 80,189 sf, 40.07% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 318.50' @ 0.00 hrs Surf.Area= 1,815 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	318.50'	3,256 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

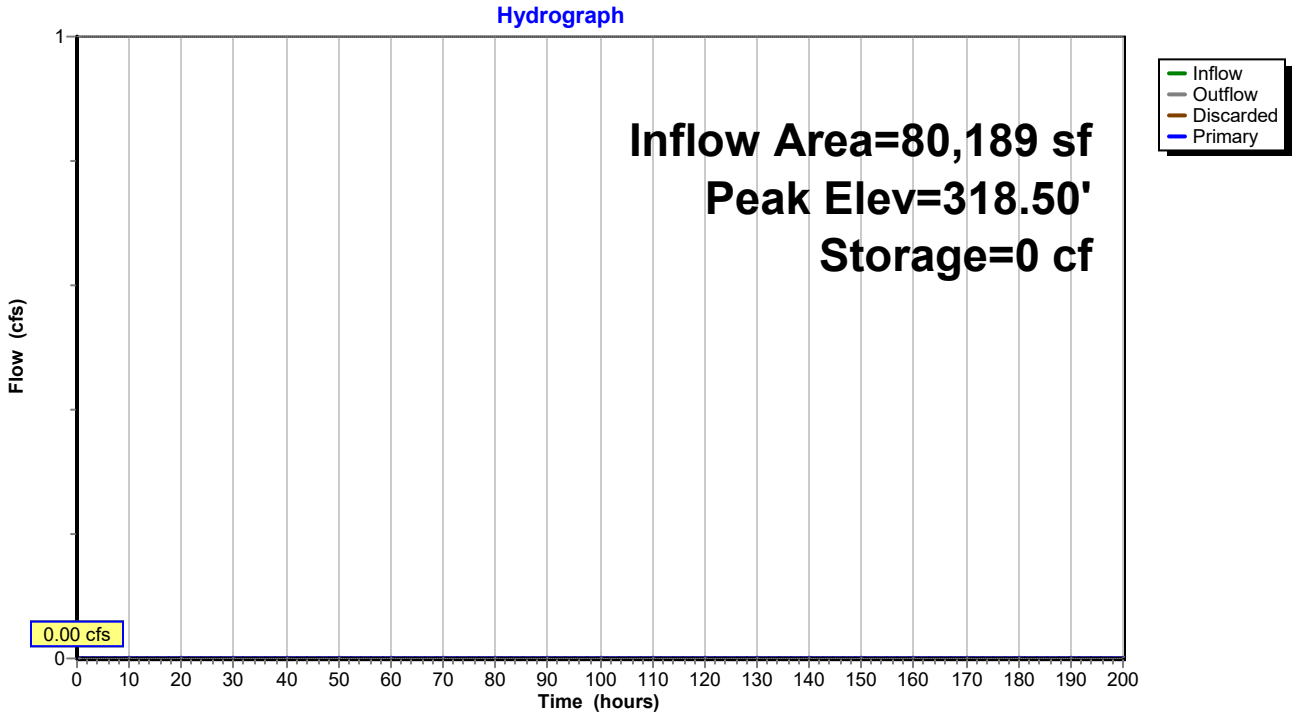
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
318.50	1,815	175.0	0	0	1,815
319.00	2,085	185.0	974	974	2,115
320.00	2,485	200.0	2,282	3,256	2,614

Device	Routing	Invert	Outlet Devices
#1	Discarded	318.50'	**5.00 cfs Exfiltration at all elevations**
#2	Primary	319.80'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=318.50' (Free Discharge)
1=Exfiltration (Passes 0.00 cfs of 5.00 cfs potential flow)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=318.50' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1P: Infiltration Basin



Summary for Pond 2P: Infiltration Basin

Inflow Area = 8,376 sf, 57.39% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 320.00' @ 0.00 hrs Surf.Area= 70 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	320.00'	533 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

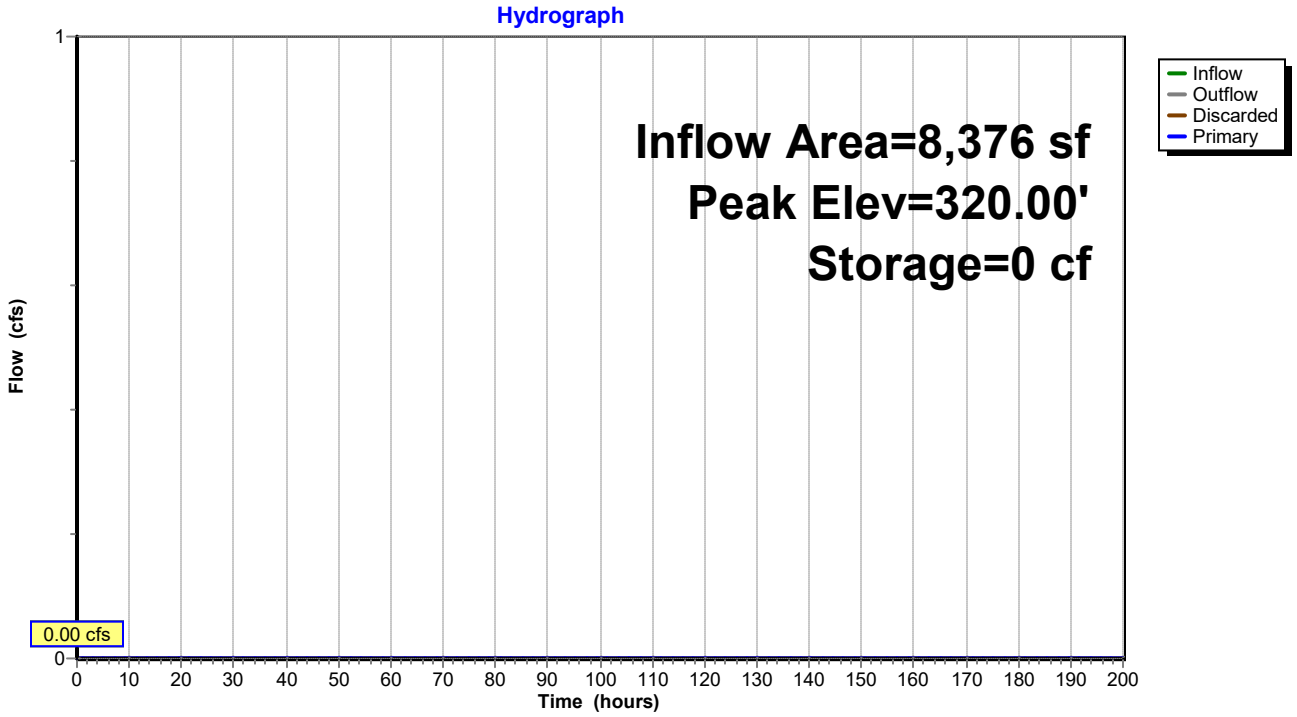
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
320.00	70	65.0	0	0	70
321.00	265	80.0	157	157	258
322.00	500	95.0	376	533	484

Device	Routing	Invert	Outlet Devices
#1	Discarded	320.00'	**5.00 cfs Exfiltration at all elevations**
#2	Primary	321.90'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=320.00' (Free Discharge)
↑—**1=Exfiltration** (Passes 0.00 cfs of 5.00 cfs potential flow)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=320.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: Infiltration Basin



Summary for Pond 3P: Infiltration Basin

Inflow Area = 5,784 sf, 28.39% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 321.00' @ 0.00 hrs Surf.Area= 115 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	321.00'	174 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

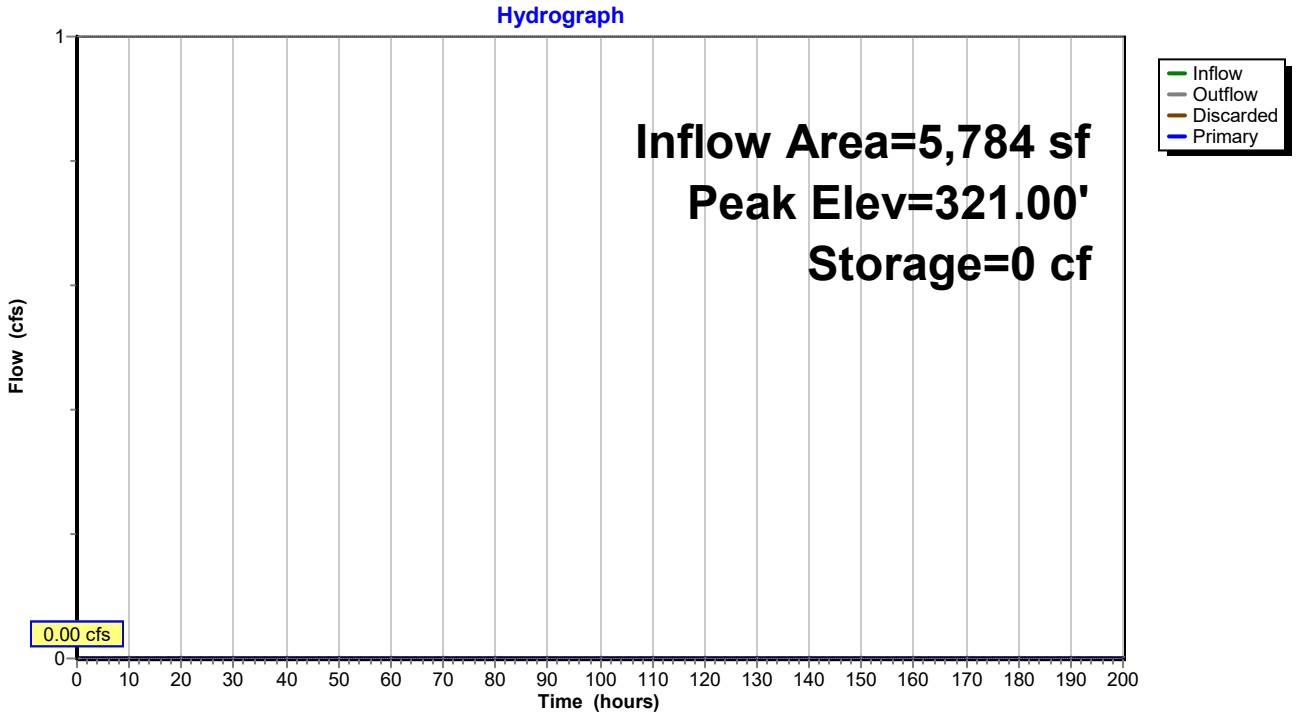
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
321.00	115	45.0	0	0	115
322.00	240	60.0	174	174	251

Device	Routing	Invert	Outlet Devices
#1	Discarded	321.00'	**5.00 cfs Exfiltration at all elevations**
#2	Primary	321.90'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=321.00' (Free Discharge)
↑—**1=Exfiltration** (Passes 0.00 cfs of 5.00 cfs potential flow)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=321.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: Infiltration Basin



Summary for Pond FB1: Forebay

Inflow Area = 50,097 sf, 46.28% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 24.06 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 318.50' @ 25.05 hrs Surf.Area= 1,030 sf Storage= 0 cf

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

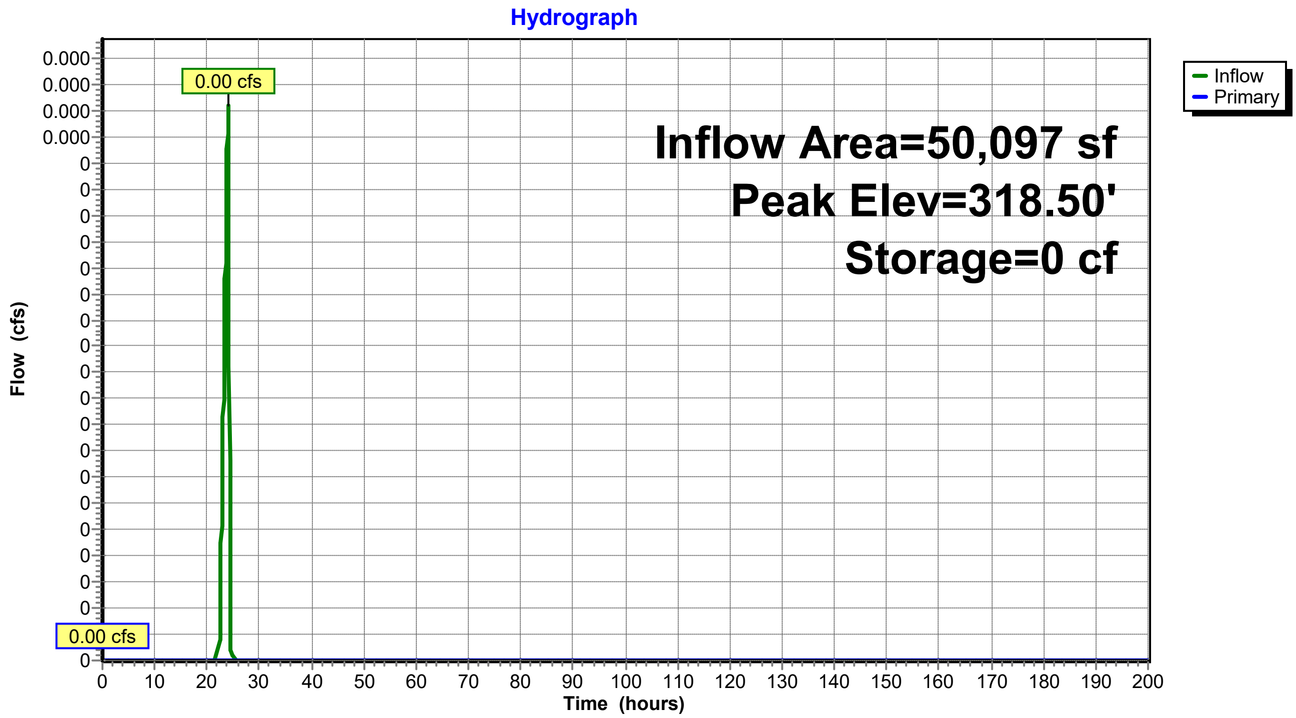
Volume	Invert	Avail.Storage	Storage Description
#1	318.50'	2,172 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
318.50	1,030	150.0	0	0	1,030
319.00	1,300	165.0	581	581	1,414
320.00	1,900	290.0	1,591	2,172	5,946

Device	Routing	Invert	Outlet Devices
#1	Primary	319.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=318.50' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond FB1: Forebay



Summary for Pond FB2: Forebay

Inflow Area = 8,376 sf, 57.39% Impervious, Inflow Depth = 0.03" for WQv event
Inflow = 0.00 cfs @ 13.14 hrs, Volume= 22 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 320.26' @ 25.05 hrs Surf.Area= 106 sf Storage= 22 cf

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

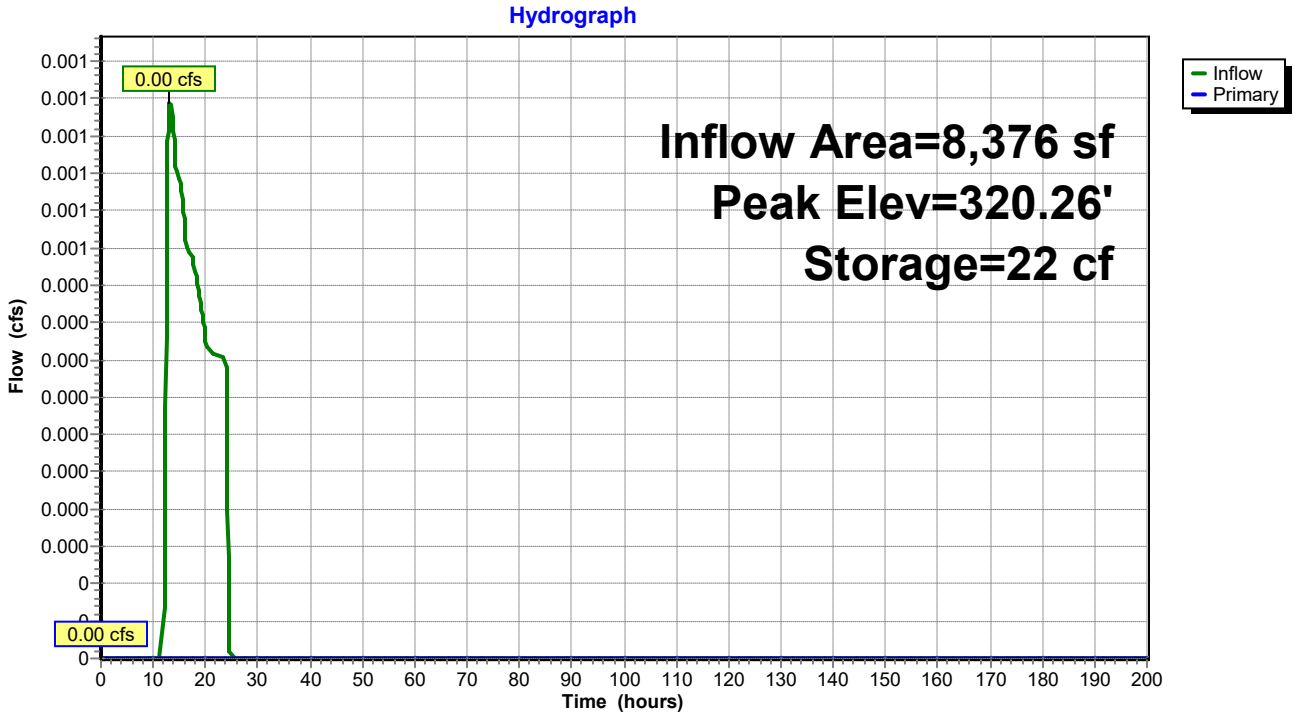
Volume	Invert	Avail.Storage	Storage Description
#1	320.00'	535 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
320.00	65	65.0	0	0	65
321.00	270	80.0	156	156	253
322.00	500	100.0	379	535	553

Device	Routing	Invert	Outlet Devices
#1	Primary	321.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=320.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond FB2: Forebay



Summary for Pond FB3: Forebay

Inflow Area = 5,784 sf, 28.39% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 321.00' @ 0.00 hrs Surf.Area= 115 sf Storage= 0 cf

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

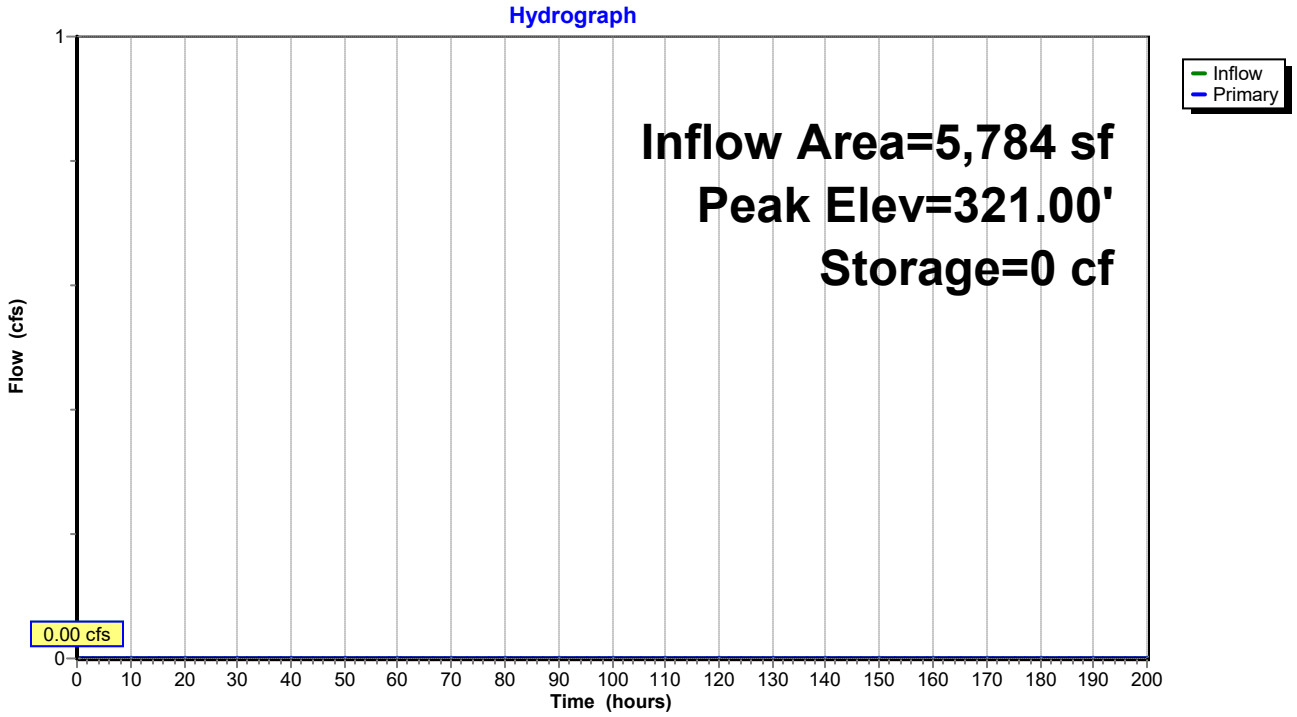
Volume	Invert	Avail.Storage	Storage Description
#1	321.00'	200 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
321.00	115	50.0	0	0	115
322.00	300	75.0	200	200	371

Device	Routing	Invert	Outlet Devices
#1	Primary	321.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=321.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond FB3: Forebay



Summary for Pond FB4: Forebay

Inflow Area = 30,092 sf, 29.73% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 318.50' @ 0.00 hrs Surf.Area= 340 sf Storage= 0 cf

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

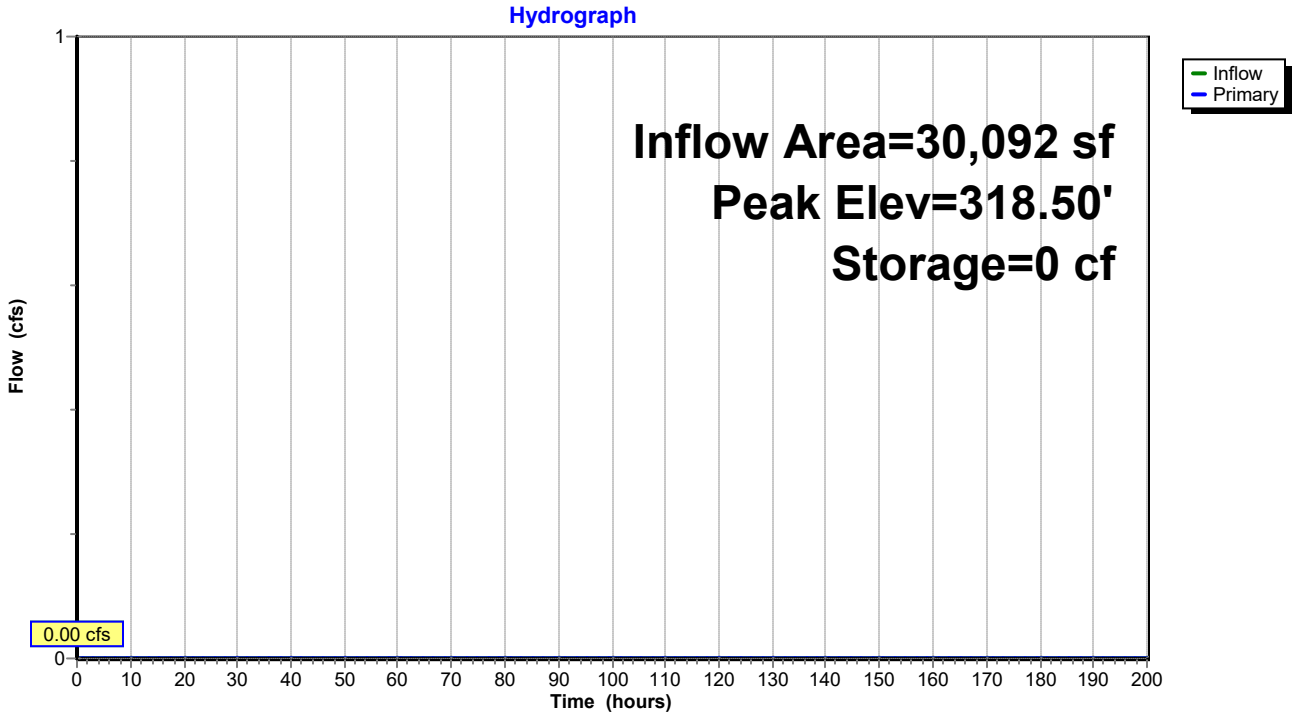
Volume	Invert	Avail.Storage	Storage Description
#1	318.50'	913 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
318.50	340	95.0	0	0	340
319.00	500	130.0	209	209	969
320.00	930	200.0	704	913	2,815

Device	Routing	Invert	Outlet Devices
#1	Primary	319.80'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=318.50' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond FB4: Forebay



Summary for Link DP1: -

Inflow Area = 94,349 sf, 40.89% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link DP1: -