



Memorandum

To: Christopher Hulk, PE
FieldTurf

Date: December 19, 2023

From: Steven J. Kochis, PE
VHB

Project #: 43380.00
Re: FieldTurf Athletic Field Drainage
Ayers Road & Nevers Road
South Windsor, Connecticut

Site & Project Description

South Windsor High School is located at 161 Nevers Road in South Windsor, Connecticut. The property contains the existing school buildings, associated parking and athletic fields. The project proposes a new synthetic turf field to replace an existing grass athletic field. The new field is proposed northwest of the existing field. VHB prepared an analysis of existing and proposed conditions drainage conditions.

NRCS Web Soil Survey lists the existing field as Udorthents-Urban Land Complex (Hydrologic Soil Group B) and a small portion as Enfield Silt Loam, 8-15% Slopes (Hydrologic Soil Group B) and Haven-Urban Land Complex, 0-8% Slopes (Hydrologic Soil Group B).

Per available FEMA Map No. 09003C0381F dated 09/26/2008, the site is located within Zone X – area of minimal flood hazard (no Special Flood Hazard Areas).

Existing Drainage Conditions

Under existing conditions, the project area was analyzed as two (2) drainage areas that outlet to two (2) design points. See Figure 1 – Existing Drainage Conditions.

Drainage Area E-1: This 6.4- acre catchment area consists of a portion of the South Windsor Parks and Recreation parking, an existing grassed field west of South Windsor Parks and Recreation Building, portions of the existing South Windsor High School Baseball Field and the existing South Windsor High School tennis courts. This area conveys stormwater runoff overland to the southern property line adjacent to the existing tennis courts (DP1).

Drainage Area E-2: This 2.3-acre catchment area consists of a portion of the South Windsor Parks and Recreation parking lot, the northern portion of the South Windsor High School Baseball Field and the grassed area adjacent to Ayers Road. Stormwater in this area is conveyed westerly overland to the western property line (DP2).

Proposed Drainage Conditions

A synthetic turf field is proposed, which will include no actual hardscape and a network of subsurface perforated drains within crushed stone. The proposed field area itself has been modelled as a stone reservoir for the subsurface stone. An outlet control structure incorporating an above-ground inlet will allow volumetric storage of stormwater runoff to promote retention and infiltration for water quality. A small basin is also proposed primarily to treat water quality from portions of the parking lot. Peak rates of runoff are attenuated from proposed conditions down to pre-development levels. An infiltration rate of 7 inches per hour into the native soil has been assumed in the hydrologic

model by recommendation of FieldTurf. This assumption should be tested in the field and VHB provided the opportunity to adjust the stormwater design if/as needed upon completion. It is also recommended that a wetland study be performed within the development area for the possible presence of wetlands.

Table 1 below displays the anticipated existing and proposed peak flows for the project area before and after site improvements including underdrainage.

Figure 2 illustrates the proposed "post construction conditions for the project area. As shown the project area was analyzed as four (4) catchment areas (two (2) drainage areas) that outlet to two (2) design points.

Drainage Area P-1A: This 2.2-acre catchment area consists of the grassed area at the western property line. The area drains overland to the southern proposed stormwater basin (Pond 1P).

Drainage Area P-1B: This 3.1-acre catchment area consists of a portion of the proposed parking expansion and the proposed field. Stormwater flows over the field being collected by the fields underdrainage and then is conveyed into the proposed stormwater basin (Pond 1P).

Drainage Area P-1C: This 1.1-acre catchment area consists of the majority of the proposed parking area as well as a portion of the proposed field and the grassed area located south of the field. Stormwater is collected via catch basins within the parking field and conveyed to a flared end section which deposits the stormwater into a grassed swale and then into the proposed stormwater basin (Pond 1P), where it is combined with Drainage Area P-1B.

Drainage Area P-2: This 2.3-acre catchment area consist of a portion of the existing and proposed parking area located along the road frontage as well as the grassed area proposed north of the field. Stormwater flows overland to the northwest corner of the property (DP2).

The table (Table 1) below presents a summary of the existing and proposed conditions peak discharge rates:

Design Point	2-year	10-year	100-year
<u>Design Point: DP1</u>			
Existing	3.6	12.2	29.1
Proposed	0.8	3.2	8.3
<u>Design Point: DP2</u>			
Existing	2.6	6.4	12.9
Proposed	2.5	6.1	12.7

Water Quality

Retention and infiltration of the required water quality volume is provided within the two proposed stormwater basins. Computations for the required water quality volume are enclosed herewith.

Figures

Figure 1: Existing Conditions Drainage Areas

Figure 2: Proposed Conditions Drainage Areas

Attachments

Attachment 3: NOAA Precipitation Frequency

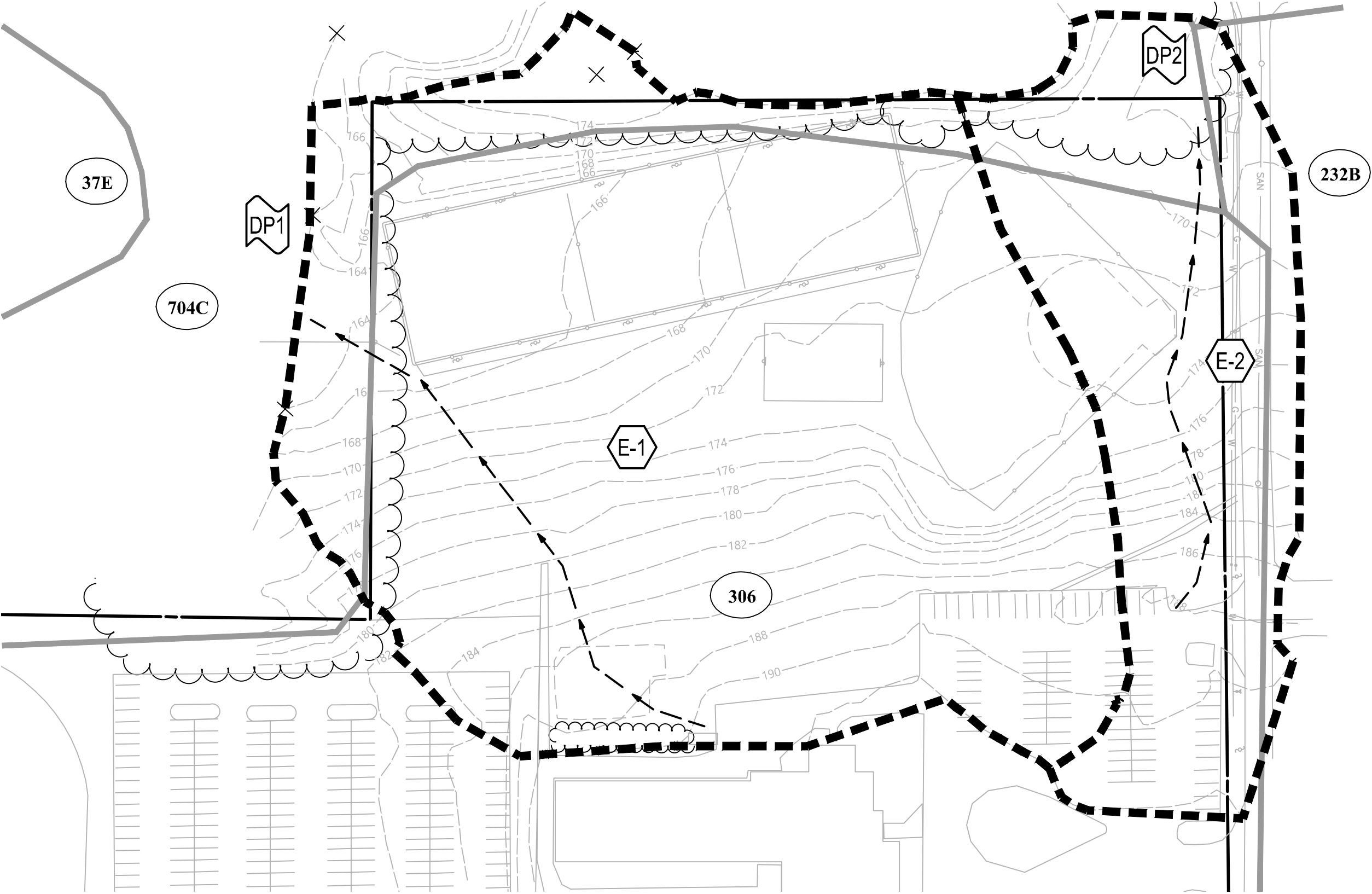
Attachment 4: NRCS Hydrologic Soil Group

Attachment 5: FEMA Flood Map

Attachment 6: Water Quality Volume Computations

Attachment 7: HydroCAD Existing Conditions

Attachment 8: HydroCAD Proposed Conditions



Legend

SYMBOLS

DRAINAGE AREA DESIGNATION

DESIGN POINT

LINETYPES

DRAINAGE AREA BOUNDARY

TIME OF CONCENTRATION FLOW LINE

SOIL TYPE BOUNDARY

SCS SOIL CLASSIFICATIONS

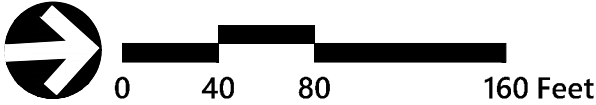
UDORTHENTS-URBAN LAND COMPLEX, HSG B

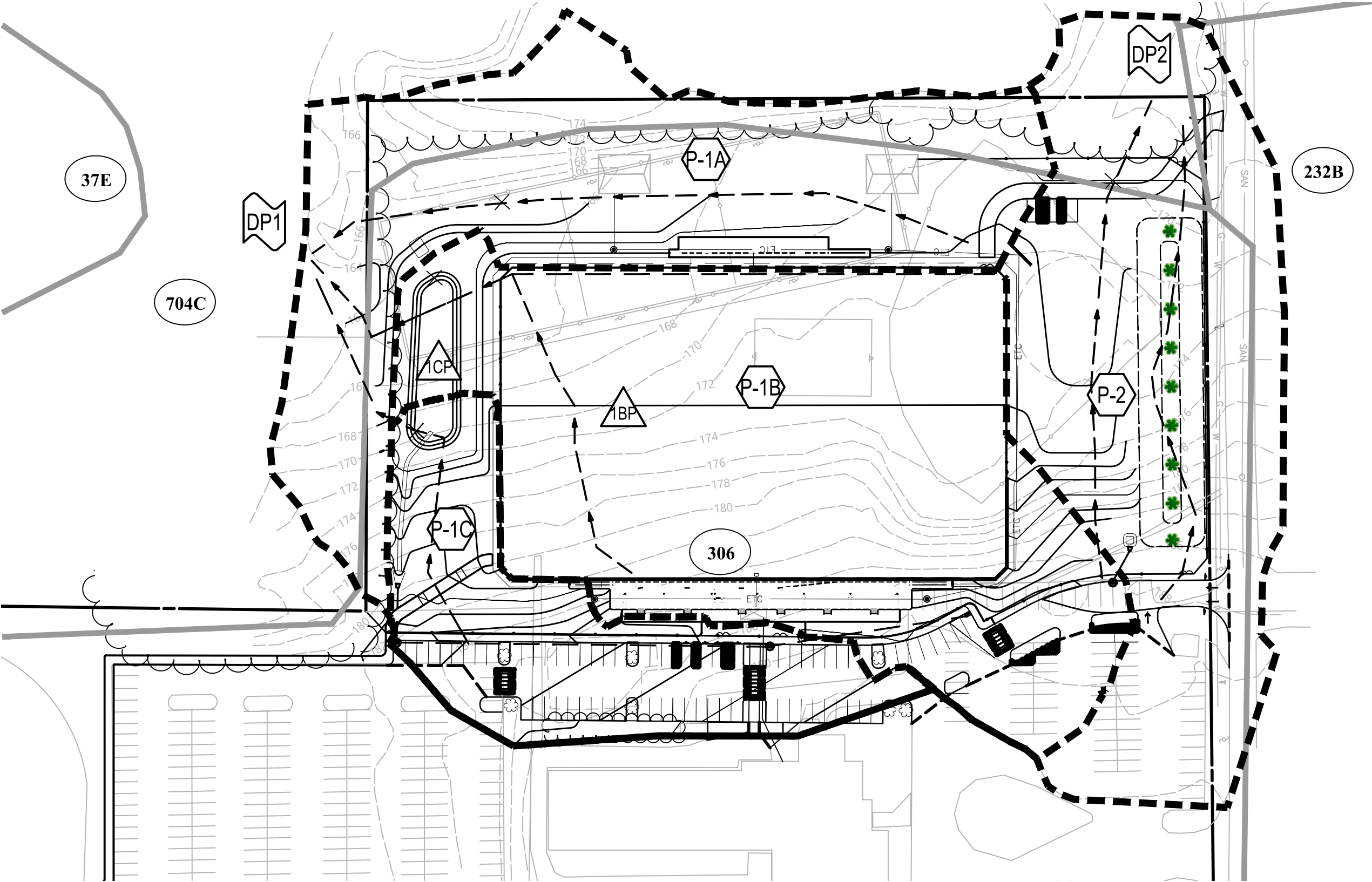
ENFIELD SILT LOAM, 8-15% SLOPES, HSG B

UDORTHENTS, SMOOTHED, HSG B

HAVEN-URBAN LAND COMPLEX, 0-8% SLOPES, HSG B

MANCHESTER GRAVELLY SANDY LOAM, 15-45% SLOPES, HSG B





Legend

SYMBOLS

X

DRAINAGE AREA DESIGNATION

XP

DRAINAGE POND

DPX

DESIGN POINT

LINETYPES

DRAINAGE AREA BOUNDARY

TIME OF CONCENTRATION FLOW LINE

SOIL TYPE BOUNDARY

SCS SOIL CLASSIFICATIONS

306

UDORTHENTS-URBAN LAND COMPLEX, HSG B

704C

ENFIELD SILT LOAM, 8-15% SLOPES, HSG B

308

UDORTHENTS, SMOOTHED, HSG B

232B

HAVEN-URBAN LAND COMPLEX, 0-8% SLOPES, HSG B

37E

MANCHESTER GRAVELLY SANDY LOAM, 15-45% SLOPES, HSG B

A north arrow pointing to the right and a scale bar with markings at 0, 40, 80, and 160 feet.

vhb

Proposed Drainage Conditions

Figure 2

FieldTurf - S. Windsor High Drainage 12-19-2023
Ayers Road & Nevers Road, South Windsor, CT



NOAA Atlas 14, Volume 10, Version 3
Location name: Hardwick, Massachusetts, USA*
Latitude: 42.3621°, Longitude: -72.1625°
Elevation: 636 ft**
* source: ESRI Maps
** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps & aerals](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.338 (0.265-0.430)	0.393 (0.308-0.501)	0.483 (0.377-0.617)	0.558 (0.434-0.717)	0.662 (0.496-0.883)	0.742 (0.543-1.01)	0.822 (0.581-1.15)	0.906 (0.612-1.31)	1.02 (0.661-1.52)	1.10 (0.699-1.69)
10-min	0.479 (0.376-0.609)	0.557 (0.437-0.710)	0.685 (0.535-0.876)	0.791 (0.615-1.02)	0.938 (0.703-1.25)	1.05 (0.770-1.43)	1.16 (0.824-1.63)	1.28 (0.866-1.85)	1.44 (0.937-2.16)	1.56 (0.990-2.39)
15-min	0.563 (0.442-0.716)	0.655 (0.514-0.835)	0.806 (0.630-1.03)	0.931 (0.722-1.20)	1.10 (0.827-1.47)	1.24 (0.905-1.68)	1.37 (0.969-1.92)	1.51 (1.02-2.18)	1.70 (1.10-2.54)	1.84 (1.16-2.81)
30-min	0.761 (0.597-0.968)	0.886 (0.695-1.13)	1.09 (0.851-1.39)	1.26 (0.980-1.62)	1.50 (1.12-2.00)	1.68 (1.23-2.28)	1.86 (1.31-2.60)	2.04 (1.38-2.96)	2.30 (1.49-3.44)	2.50 (1.58-3.81)
60-min	0.959 (0.752-1.22)	1.12 (0.876-1.42)	1.38 (1.08-1.76)	1.59 (1.24-2.04)	1.89 (1.42-2.52)	2.12 (1.55-2.88)	2.34 (1.66-3.29)	2.58 (1.75-3.74)	2.90 (1.88-4.34)	3.15 (1.99-4.81)
2-hr	1.21 (0.956-1.53)	1.42 (1.12-1.79)	1.75 (1.38-2.22)	2.03 (1.58-2.59)	2.41 (1.82-3.22)	2.69 (2.00-3.68)	3.00 (2.16-4.26)	3.36 (2.28-4.84)	3.91 (2.54-5.82)	4.38 (2.78-6.64)
3-hr	1.38 (1.09-1.74)	1.62 (1.28-2.04)	2.02 (1.59-2.55)	2.34 (1.84-2.98)	2.80 (2.13-3.73)	3.13 (2.34-4.27)	3.49 (2.54-4.98)	3.95 (2.68-5.67)	4.67 (3.04-6.92)	5.29 (3.36-8.00)
6-hr	1.70 (1.36-2.13)	2.03 (1.62-2.55)	2.57 (2.04-3.23)	3.02 (2.38-3.82)	3.64 (2.79-4.84)	4.09 (3.08-5.57)	4.59 (3.38-6.55)	5.24 (3.57-7.48)	6.29 (4.11-9.28)	7.23 (4.61-10.9)
12-hr	2.07 (1.66-2.58)	2.52 (2.02-3.14)	3.26 (2.61-4.07)	3.88 (3.08-4.86)	4.72 (3.64-6.24)	5.34 (4.04-7.23)	6.02 (4.45-8.53)	6.90 (4.72-9.79)	8.32 (5.45-12.2)	9.57 (6.12-14.3)
24-hr	2.45 (1.98-3.02)	3.02 (2.44-3.73)	3.96 (3.19-4.91)	4.75 (3.79-5.91)	5.82 (4.51-7.64)	6.61 (5.03-8.89)	7.48 (5.55-10.5)	8.59 (5.89-12.1)	10.4 (6.81-15.1)	11.9 (7.65-17.7)
2-day	2.81 (2.28-3.44)	3.48 (2.83-4.28)	4.60 (3.72-5.66)	5.52 (4.44-6.82)	6.78 (5.29-8.84)	7.71 (5.90-10.3)	8.74 (6.52-12.2)	10.0 (6.92-14.1)	12.1 (8.01-17.5)	14.0 (9.00-20.6)
3-day	3.06 (2.50-3.74)	3.80 (3.10-4.64)	5.01 (4.07-6.14)	6.01 (4.85-7.40)	7.38 (5.78-9.59)	8.39 (6.44-11.2)	9.51 (7.11-13.2)	10.9 (7.55-15.2)	13.2 (8.74-19.0)	15.2 (9.82-22.3)
4-day	3.30 (2.70-4.01)	4.08 (3.34-4.97)	5.36 (4.36-6.55)	6.42 (5.19-7.89)	7.88 (6.18-10.2)	8.94 (6.88-11.9)	10.1 (7.59-14.1)	11.6 (8.04-16.2)	14.1 (9.30-20.2)	16.2 (10.4-23.6)
7-day	3.97 (3.27-4.80)	4.83 (3.98-5.86)	6.25 (5.12-7.60)	7.43 (6.04-9.08)	9.05 (7.12-11.6)	10.2 (7.90-13.5)	11.5 (8.67-15.9)	13.2 (9.16-18.2)	15.8 (10.5-22.6)	18.1 (11.7-26.3)
10-day	4.63 (3.83-5.59)	5.54 (4.57-6.69)	7.04 (5.78-8.52)	8.27 (6.76-10.1)	9.98 (7.87-12.8)	11.2 (8.67-14.7)	12.6 (9.45-17.2)	14.3 (9.95-19.7)	16.9 (11.3-24.1)	19.2 (12.5-27.8)
20-day	6.67 (5.55-7.99)	7.64 (6.34-9.16)	9.22 (7.62-11.1)	10.5 (8.65-12.7)	12.3 (9.75-15.5)	13.7 (10.6-17.6)	15.1 (11.2-20.1)	16.7 (11.7-22.8)	19.1 (12.8-26.9)	21.0 (13.6-30.2)
30-day	8.38 (7.00-10.0)	9.37 (7.82-11.2)	11.0 (9.13-13.2)	12.3 (10.2-14.9)	14.2 (11.2-17.7)	15.6 (12.0-19.9)	17.0 (12.6-22.4)	18.5 (13.0-25.1)	20.6 (13.8-28.9)	22.2 (14.5-31.8)
45-day	10.5 (8.81-12.5)	11.5 (9.66-13.7)	13.2 (11.0-15.8)	14.6 (12.1-17.5)	16.5 (13.1-20.5)	18.0 (13.9-22.7)	19.5 (14.4-25.3)	20.9 (14.7-28.1)	22.6 (15.3-31.6)	23.9 (15.6-34.1)
60-day	12.3 (10.3-14.5)	13.3 (11.2-15.8)	15.1 (12.6-17.9)	16.5 (13.7-19.8)	18.5 (14.7-22.8)	20.1 (15.5-25.2)	21.6 (15.9-27.8)	22.9 (16.2-30.8)	24.5 (16.6-34.1)	25.6 (16.7-36.4)

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

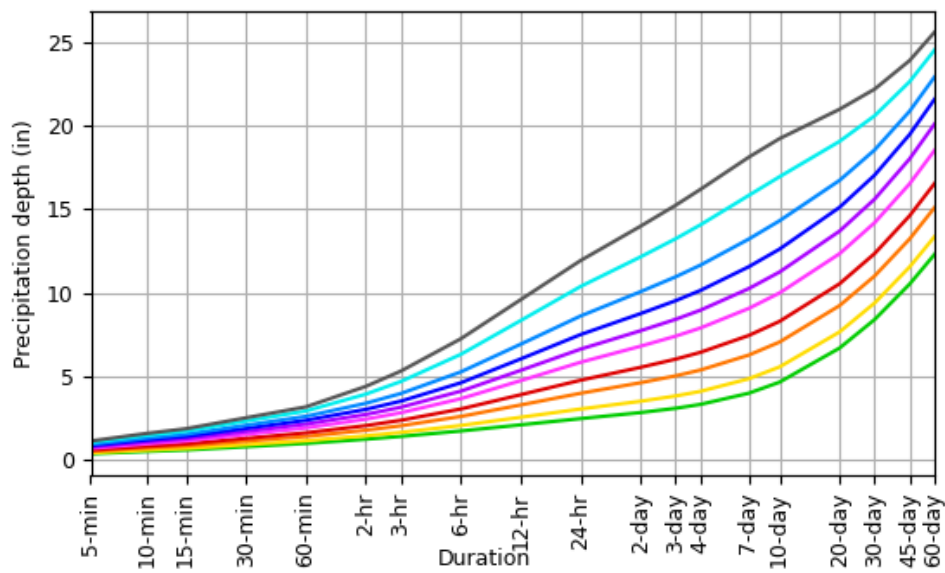
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper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

Please refer to NOAA Atlas 14 document for more information.

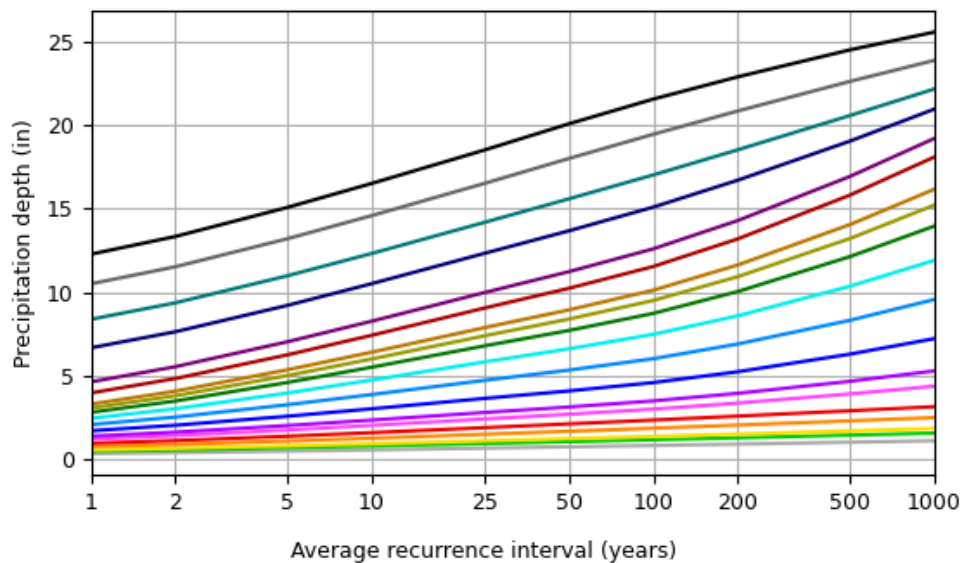
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PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 42.3621°, Longitude: -72.1625°



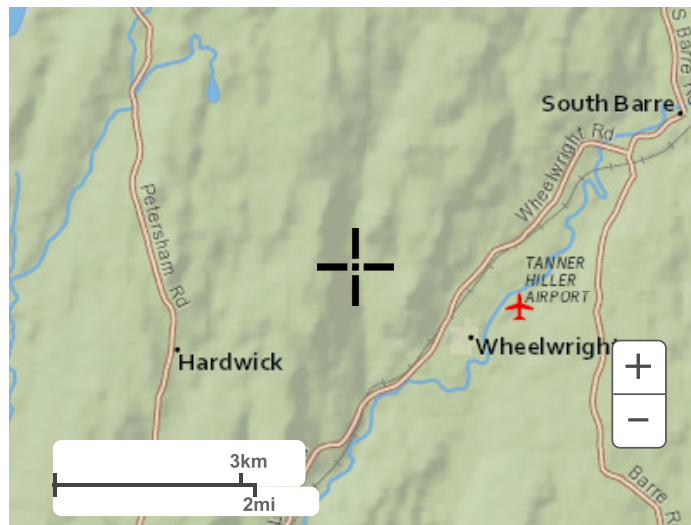
Average recurrence interval (years)
1
2
5
10
25
50
100
200
500
1000



Duration	
5-min	2-day
10-min	3-day
15-min	4-day
30-min	7-day
60-min	10-day
2-hr	20-day
3-hr	30-day
6-hr	45-day
12-hr	60-day
24-hr	

Maps & aerials

Small scale terrain



Large scale terrain



Large scale map



Large scale aerial



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1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

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Hydrologic Soil Group—State of Connecticut, Western Part



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

A 

A/D 

B 

B/D 

C 

C/D 

D 

Not rated or not available 

Soil Rating Lines

A 

A/D 

B 

B/D 

C 

C/D 

D 

Not rated or not available 

Soil Rating Points

A 

A/D 

B 

B/D 

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

C 

C/D 

D 

Not rated or not available 

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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: State of Connecticut, Western Part
Survey Area Data: Version 1, Sep 15, 2023

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

Date(s) aerial images were photographed: Jun 14, 2022—Oct 6, 2022

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
37E	Manchester gravelly sandy loam, 15 to 45 percent slopes	A	0.4	2.9%
232B	Haven-Urban land complex, 0 to 8 percent slopes	B	0.4	2.5%
306	Udorthents-Urban land complex	B	9.6	65.0%
308	Udorthents, smoothed	B	0.0	0.3%
704C	Enfield silt loam, 8 to 15 percent slopes	B	4.3	29.3%
Totals for Area of Interest			14.8	100.0%

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

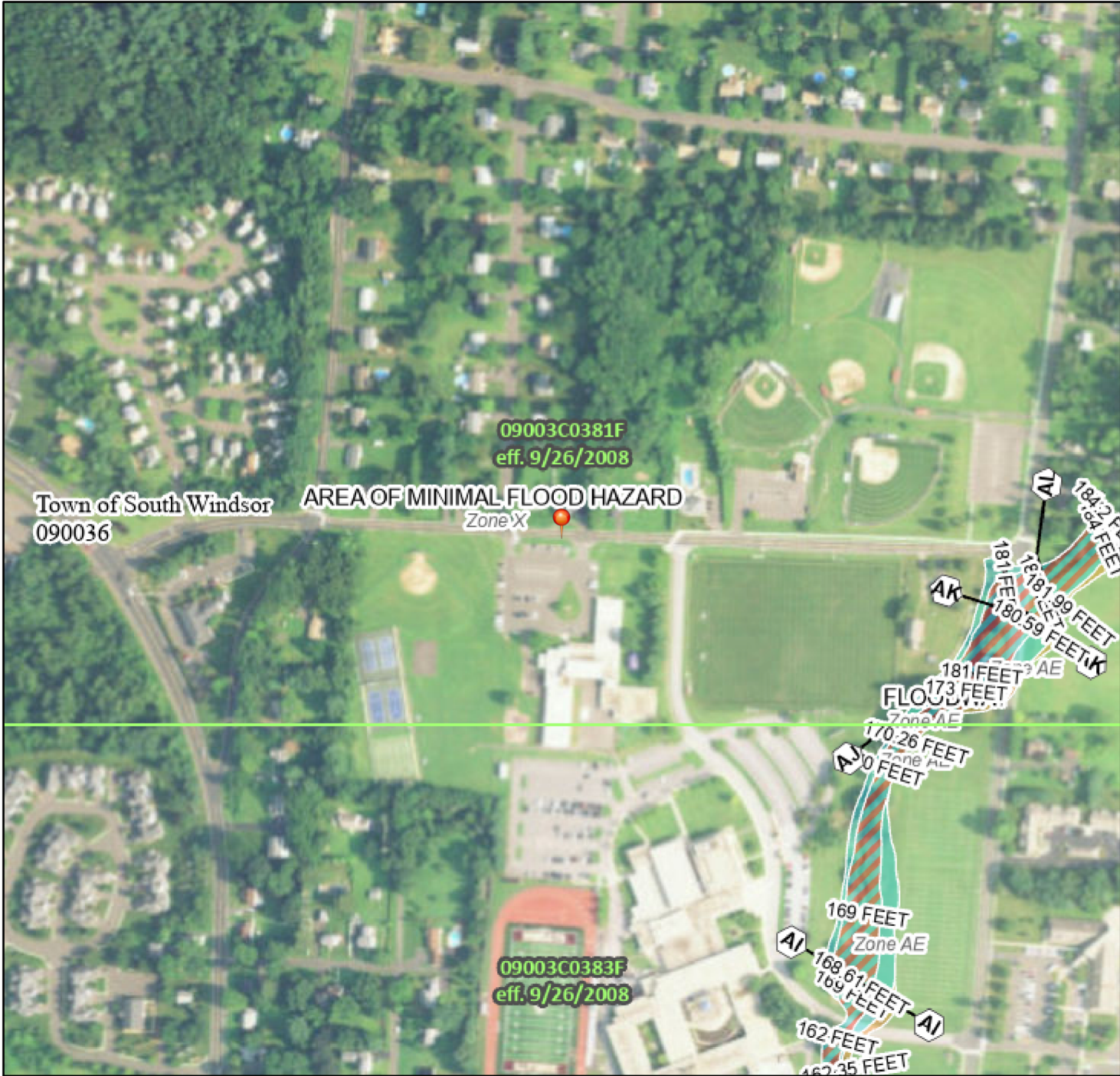
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

National Flood Hazard Layer FIRMette



72°33'39"W 41°50'56"N



0 250 500 1,000 1,500 2,000 Feet 1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
MAP PANELS		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/16/2023 at 2:45 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Water Quality Volume Calculations

Project: South Windsor High School Field

By: AMK

Date: 12/19/23

Location: South Windsor, CT

Checked: SJK

Date: _____

Basin Name	PR-1B	PR-1C	
Rainfall, P	1.0 in.	1.0 in.	a
Area, A	3.13 ac	1.08 ac	b
Impervious Cover Area	0.6 ac	0.6 ac	c
% Impervious, I	19 %	54 %	
Volumetric Runoff Coeff., R	0.221	0.533	d
Water Quality Volume, WQV	0.058 ac-ft	0.048 ac-ft	e
	2,511 cf	2,087 cf	

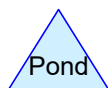
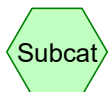
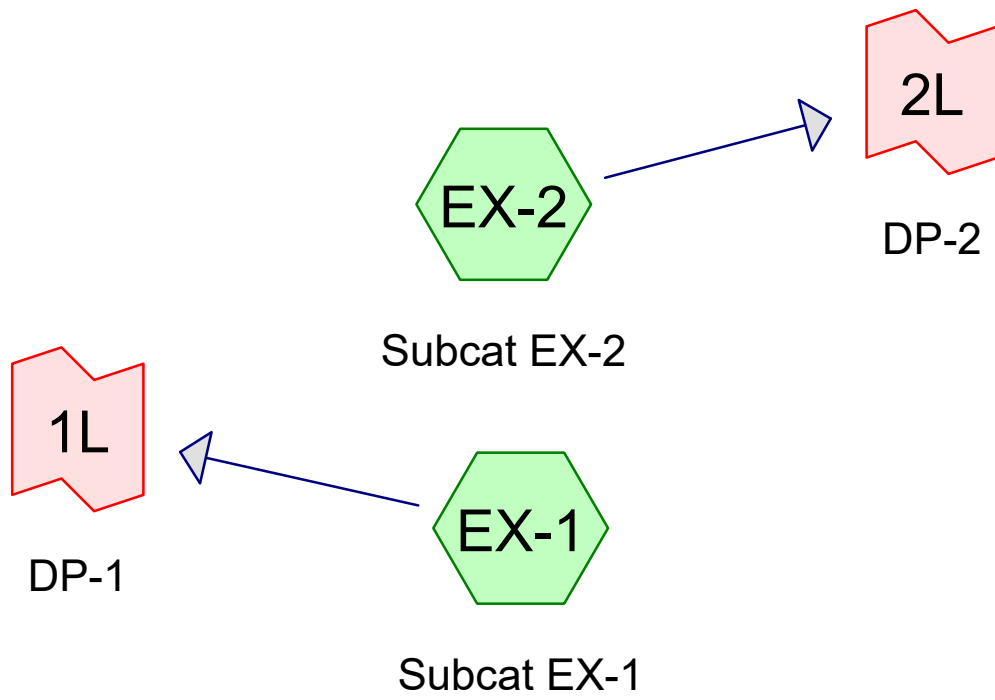
^a First one inch of rainfall; 2004 Connecticut Stormwater Quality Manual

^b Area tributary to the stormwater management basin

^c Impervious cover area tributary to the stormwater management basin

^d $R=0.05+0.009*I$; Section 7.4.1 from 2004 Connecticut Stormwater Quality Manual

^e $WQV=P*R*A/12$; Section 7.4.1 from 2004 Connecticut Stormwater Quality Manual



43380-EX DR

Prepared by VHB, Inc

HydroCAD® 10.20-3c s/n 01038 © 2023 HydroCAD Software Solutions LLC

Printed 12/13/2023

Page 2

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2 yr	Type III 24-hr		Default	24.00	1	3.13	2
2	10 yr	Type III 24-hr		Default	24.00	1	4.95	2
3	100 yr	Type III 24-hr		Default	24.00	1	7.84	2

43380-EX DR

Prepared by VHB, Inc

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
5.901	61	>75% Grass cover, Good, HSG B (EX-1, EX-2)
0.166	82	Dirt roads, HSG B (EX-1, EX-2)
2.649	98	Unconnected pavement, HSG B (EX-1, EX-2)
8.717	73	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
8.717	HSG B	EX-1, EX-2
0.000	HSG C	
0.000	HSG D	
0.000	Other	
8.717		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	5.901	0.000	0.000	0.000	5.901	>75% Grass cover, Good	EX-1, EX-2
0.000	0.166	0.000	0.000	0.000	0.166	Dirt roads	EX-1, EX-2
0.000	2.649	0.000	0.000	0.000	2.649	Unconnected pavement	EX-1, EX-2
0.000	8.717	0.000	0.000	0.000	8.717	TOTAL AREA	

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Type III 24-hr 2 yr Rainfall=3.13"

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Time span=0.00-36.00 hrs, dt=0.03 hrs, 1201 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX-1: Subcat EX-1

Runoff Area=6.449 ac 28.81% Impervious Runoff Depth=0.61"

Tc=6.0 min UI Adjusted CN=66 Runoff=3.63 cfs 0.327 af

SubcatchmentEX-2: Subcat EX-2

Runoff Area=2.268 ac 34.90% Impervious Runoff Depth=1.05"

Flow Length=381' Tc=6.0 min CN=75 Runoff=2.64 cfs 0.198 af

Link 1L: DP-1

Inflow=3.63 cfs 0.327 af

Primary=3.63 cfs 0.327 af

Link 2L: DP-2

Inflow=2.64 cfs 0.198 af

Primary=2.64 cfs 0.198 af

Total Runoff Area = 8.717 ac Runoff Volume = 0.525 af Average Runoff Depth = 0.72"
69.61% Pervious = 6.067 ac 30.39% Impervious = 2.649 ac

Summary for Subcatchment EX-1: Subcat EX-1

Runoff = 3.63 cfs @ 12.11 hrs, Volume= 0.327 af, Depth= 0.61"
 Routed to Link 1L : DP-1

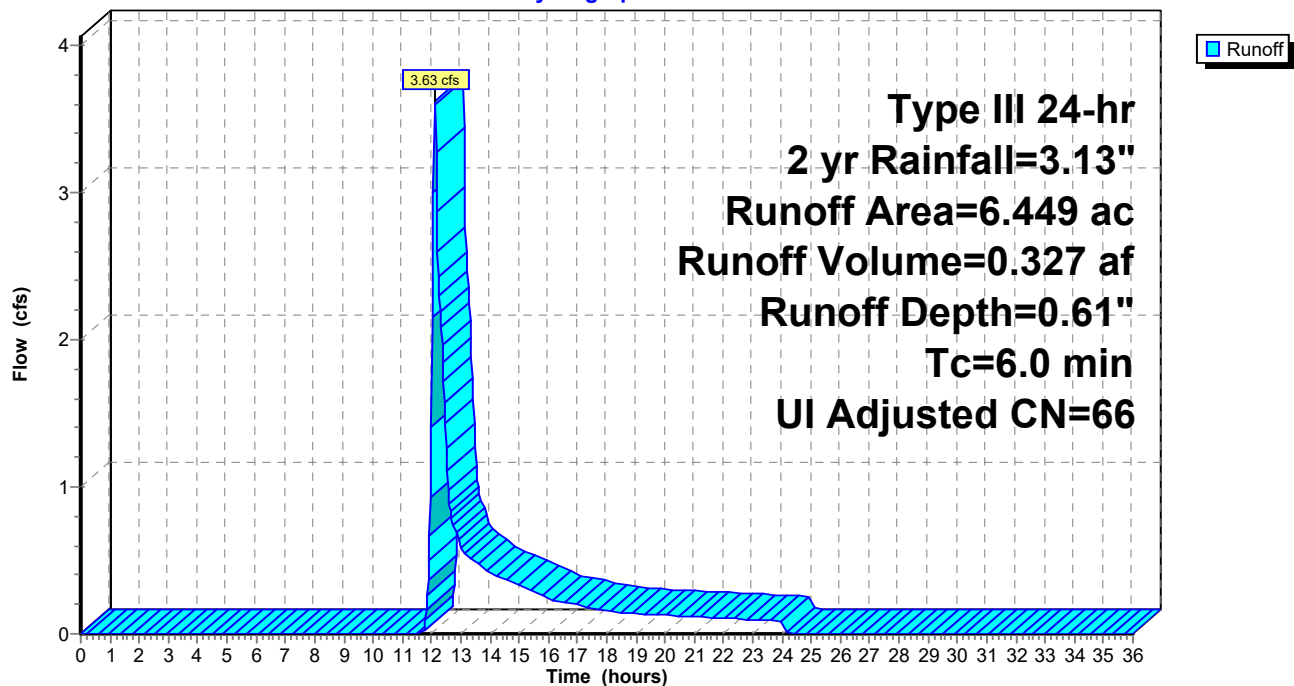
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 2 yr Rainfall=3.13"

Area (ac)	CN	Adj	Description
4.558	61		>75% Grass cover, Good, HSG B
0.033	82		Dirt roads, HSG B
1.858	98		Unconnected pavement, HSG B
6.449	72	66	Weighted Average, UI Adjusted
4.591			71.19% Pervious Area
1.858			28.81% Impervious Area
1.858			100.00% Unconnected

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

Subcatchment EX-1: Subcat EX-1

Hydrograph



Summary for Subcatchment EX-2: Subcat EX-2

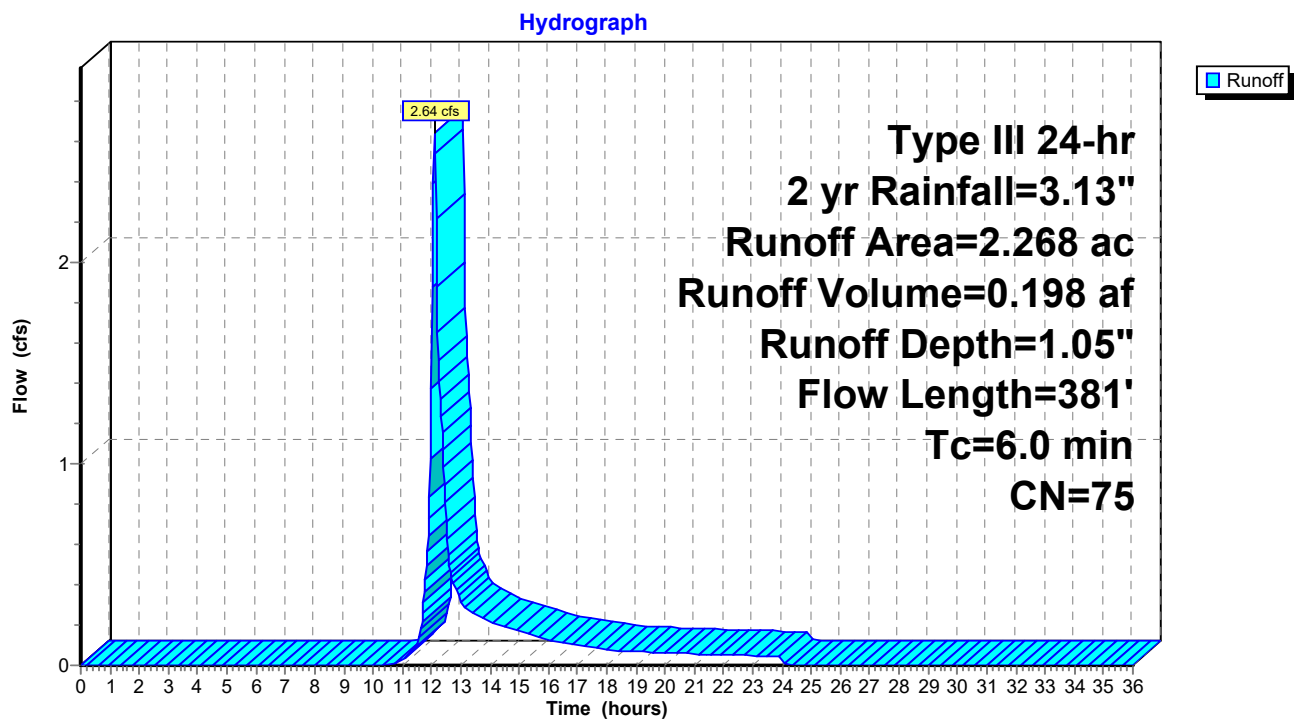
Runoff = 2.64 cfs @ 12.10 hrs, Volume= 0.198 af, Depth= 1.05"
 Routed to Link 2L : DP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 2 yr Rainfall=3.13"

Area (ac)	CN	Description
1.343	61	>75% Grass cover, Good, HSG B
0.133	82	Dirt roads, HSG B
0.791	98	Unconnected pavement, HSG B
2.268	75	Weighted Average
1.476		65.10% Pervious Area
0.791		34.90% Impervious Area
0.791		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 3.13"
0.1	36	0.0830	4.64		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.3	85	0.1060	5.24		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
1.3	210	0.0285	2.72		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
6.0	381	Total			

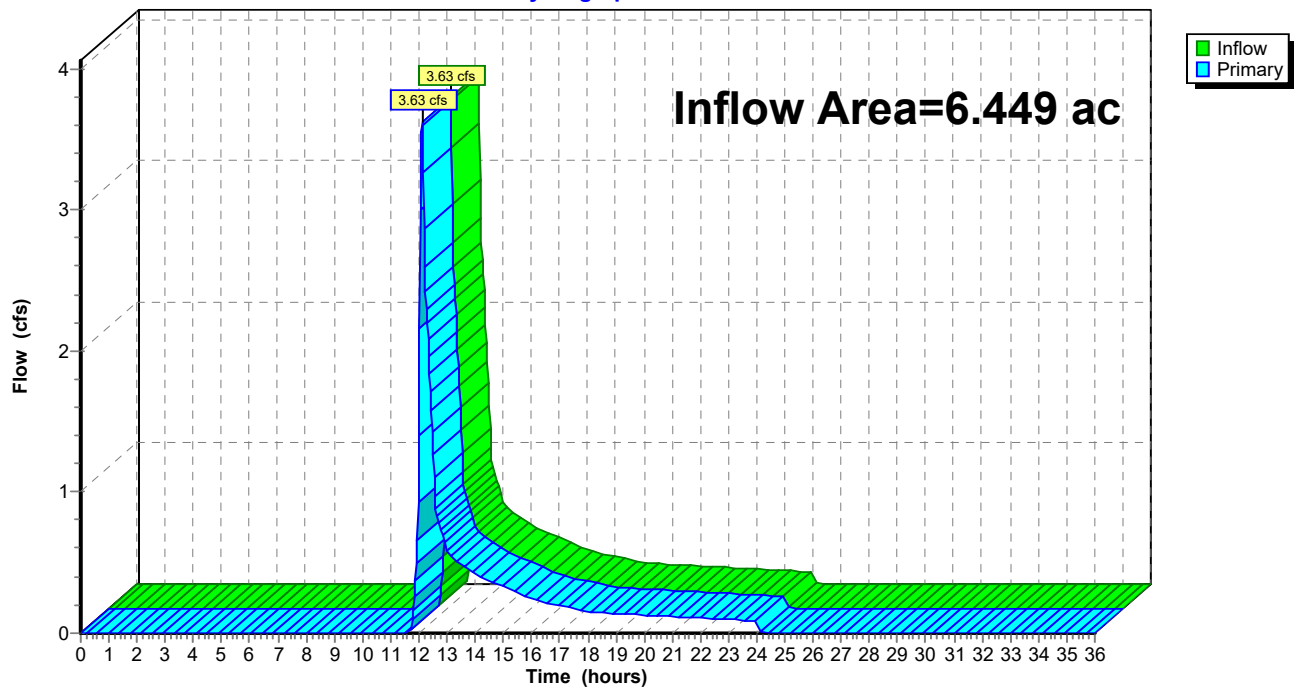
Subcatchment EX-2: Subcat EX-2



Summary for Link 1L: DP-1

Inflow Area = 6.449 ac, 28.81% Impervious, Inflow Depth = 0.61" for 2 yr event
Inflow = 3.63 cfs @ 12.11 hrs, Volume= 0.327 af
Primary = 3.63 cfs @ 12.11 hrs, Volume= 0.327 af, Atten= 0%, Lag= 0.0 min

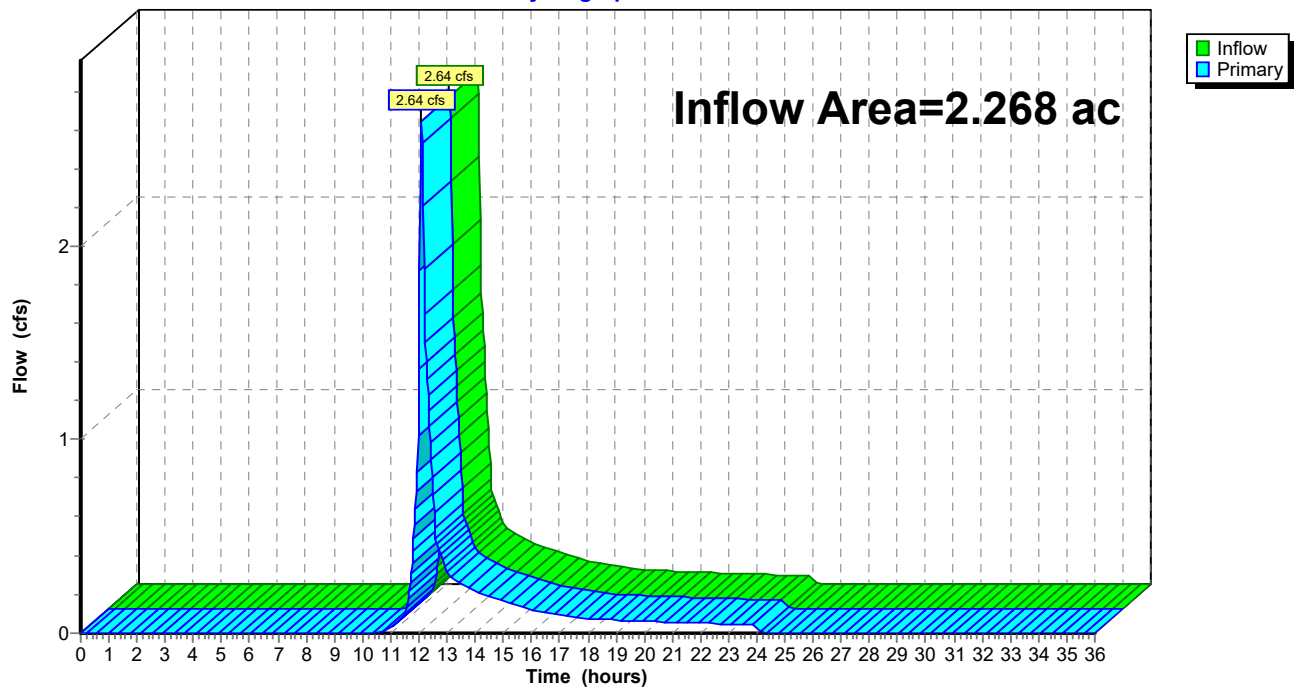
Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link 1L: DP-1**Hydrograph**

Summary for Link 2L: DP-2

Inflow Area = 2.268 ac, 34.90% Impervious, Inflow Depth = 1.05" for 2 yr event
Inflow = 2.64 cfs @ 12.10 hrs, Volume= 0.198 af
Primary = 2.64 cfs @ 12.10 hrs, Volume= 0.198 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link 2L: DP-2**Hydrograph**

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Type III 24-hr 10 yr Rainfall=4.95"

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Time span=0.00-36.00 hrs, dt=0.03 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX-1: Subcat EX-1

Runoff Area=6.449 ac 28.81% Impervious Runoff Depth=1.69"
Tc=6.0 min UI Adjusted CN=66 Runoff=12.21 cfs 0.910 af

SubcatchmentEX-2: Subcat EX-2

Runoff Area=2.268 ac 34.90% Impervious Runoff Depth=2.41"
Flow Length=381' Tc=6.0 min CN=75 Runoff=6.35 cfs 0.455 af

Link 1L: DP-1

Inflow=12.21 cfs 0.910 af
Primary=12.21 cfs 0.910 af

Link 2L: DP-2

Inflow=6.35 cfs 0.455 af
Primary=6.35 cfs 0.455 af

Total Runoff Area = 8.717 ac Runoff Volume = 1.365 af Average Runoff Depth = 1.88"
69.61% Pervious = 6.067 ac 30.39% Impervious = 2.649 ac

Summary for Subcatchment EX-1: Subcat EX-1

Runoff = 12.21 cfs @ 12.10 hrs, Volume= 0.910 af, Depth= 1.69"
 Routed to Link 1L : DP-1

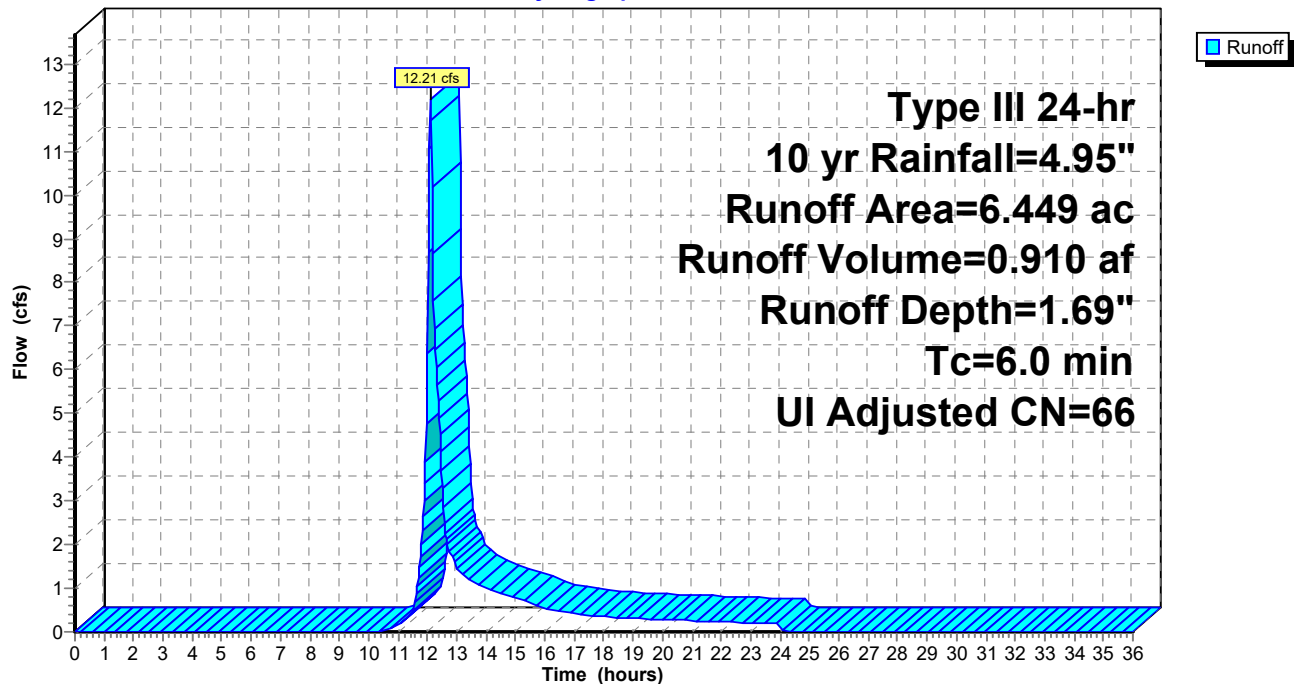
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 10 yr Rainfall=4.95"

Area (ac)	CN	Adj	Description
4.558	61		>75% Grass cover, Good, HSG B
0.033	82		Dirt roads, HSG B
1.858	98		Unconnected pavement, HSG B
6.449	72	66	Weighted Average, UI Adjusted
4.591			71.19% Pervious Area
1.858			28.81% Impervious Area
1.858			100.00% Unconnected

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

Subcatchment EX-1: Subcat EX-1

Hydrograph



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Type III 24-hr 10 yr Rainfall=4.95"

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Summary for Subcatchment EX-2: Subcat EX-2

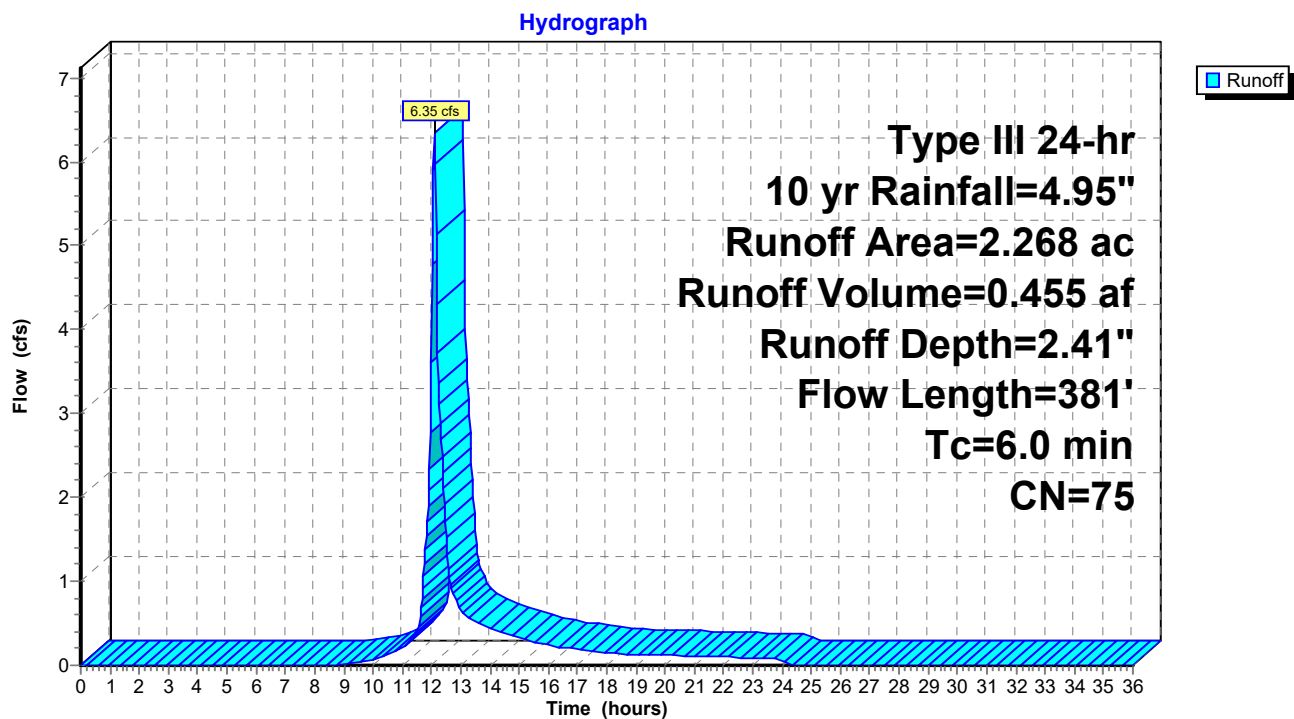
Runoff = 6.35 cfs @ 12.09 hrs, Volume= 0.455 af, Depth= 2.41"
 Routed to Link 2L : DP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 10 yr Rainfall=4.95"

Area (ac)	CN	Description
1.343	61	>75% Grass cover, Good, HSG B
0.133	82	Dirt roads, HSG B
0.791	98	Unconnected pavement, HSG B
2.268	75	Weighted Average
1.476		65.10% Pervious Area
0.791		34.90% Impervious Area
0.791		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 3.13"
0.1	36	0.0830	4.64		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.3	85	0.1060	5.24		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
1.3	210	0.0285	2.72		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
6.0	381	Total			

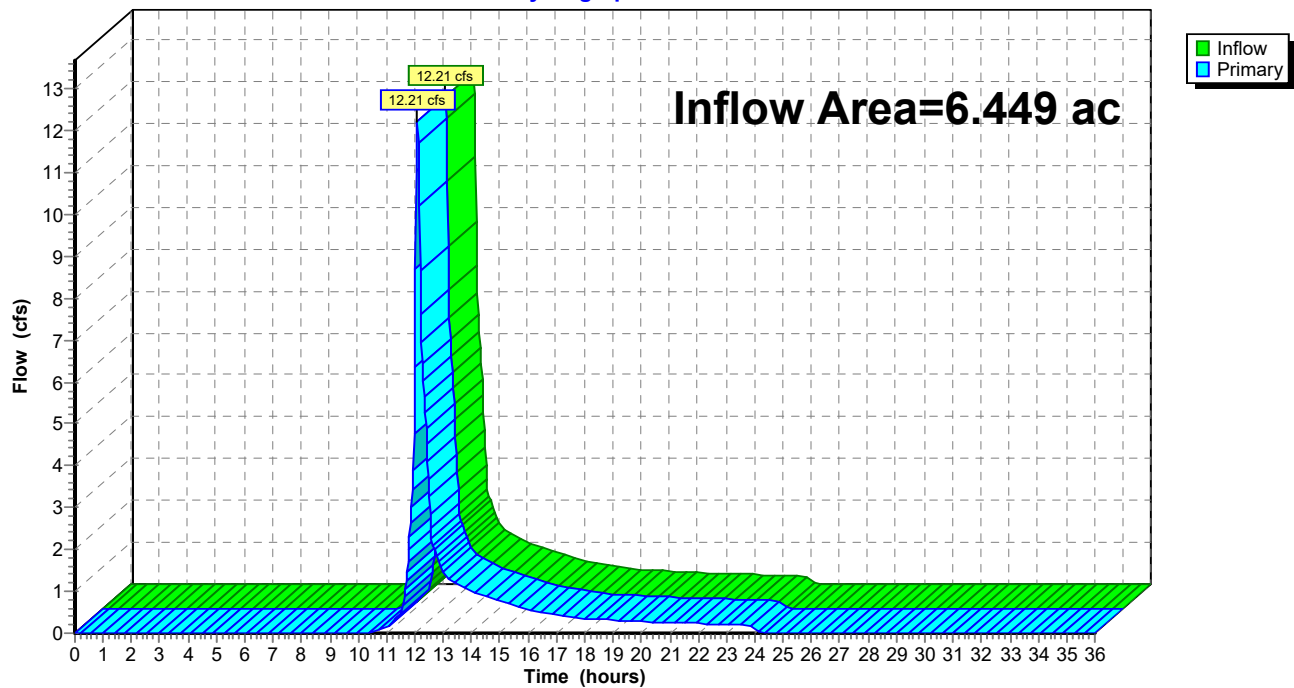
Subcatchment EX-2: Subcat EX-2



Summary for Link 1L: DP-1

Inflow Area = 6.449 ac, 28.81% Impervious, Inflow Depth = 1.69" for 10 yr event
Inflow = 12.21 cfs @ 12.10 hrs, Volume= 0.910 af
Primary = 12.21 cfs @ 12.10 hrs, Volume= 0.910 af, Atten= 0%, Lag= 0.0 min

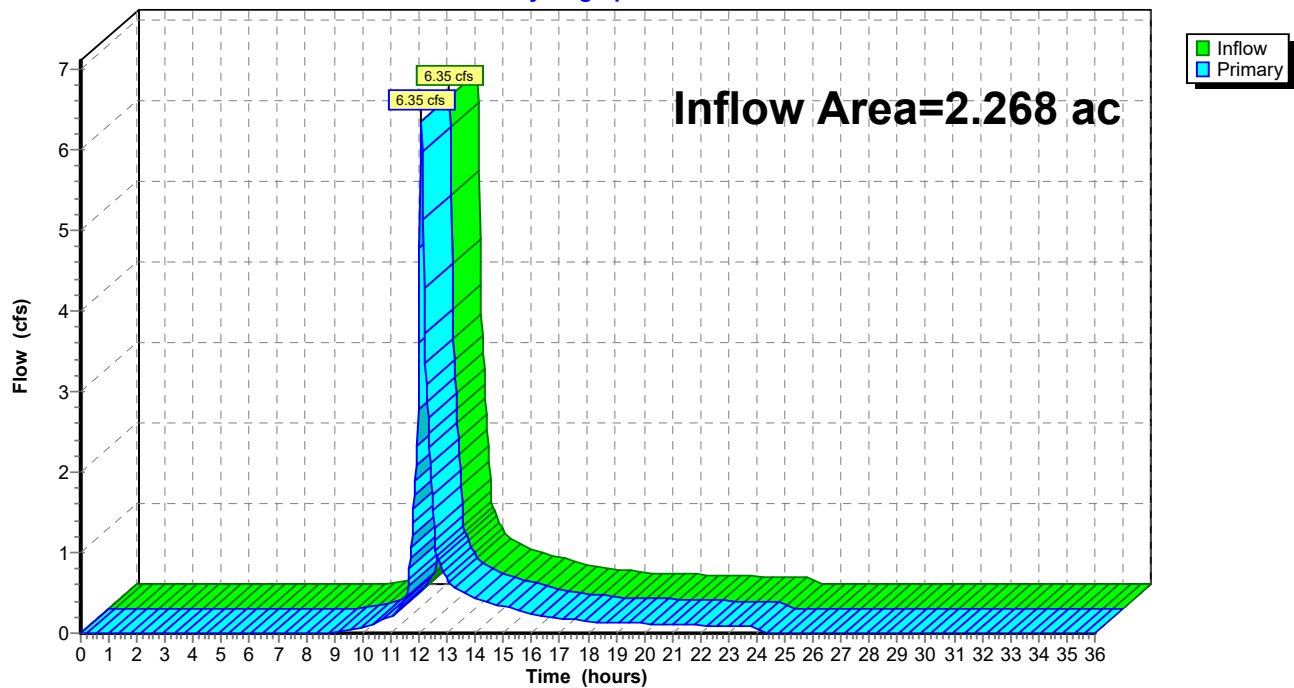
Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link 1L: DP-1**Hydrograph**

Summary for Link 2L: DP-2

Inflow Area = 2.268 ac, 34.90% Impervious, Inflow Depth = 2.41" for 10 yr event
Inflow = 6.35 cfs @ 12.09 hrs, Volume= 0.455 af
Primary = 6.35 cfs @ 12.09 hrs, Volume= 0.455 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link 2L: DP-2**Hydrograph**

43380-EX DR*Type III 24-hr 100 yr Rainfall=7.84"*

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Time span=0.00-36.00 hrs, dt=0.03 hrs, 1201 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX-1: Subcat EX-1

Runoff Area=6.449 ac 28.81% Impervious Runoff Depth=3.88"

Tc=6.0 min UI Adjusted CN=66 Runoff=29.11 cfs 2.083 af

SubcatchmentEX-2: Subcat EX-2

Runoff Area=2.268 ac 34.90% Impervious Runoff Depth=4.90"

Flow Length=381' Tc=6.0 min CN=75 Runoff=12.91 cfs 0.925 af

Link 1L: DP-1

Inflow=29.11 cfs 2.083 af

Primary=29.11 cfs 2.083 af

Link 2L: DP-2

Inflow=12.91 cfs 0.925 af

Primary=12.91 cfs 0.925 af

Total Runoff Area = 8.717 ac Runoff Volume = 3.009 af Average Runoff Depth = 4.14"
69.61% Pervious = 6.067 ac 30.39% Impervious = 2.649 ac

Summary for Subcatchment EX-1: Subcat EX-1

Runoff = 29.11 cfs @ 12.09 hrs, Volume= 2.083 af, Depth= 3.88"
 Routed to Link 1L : DP-1

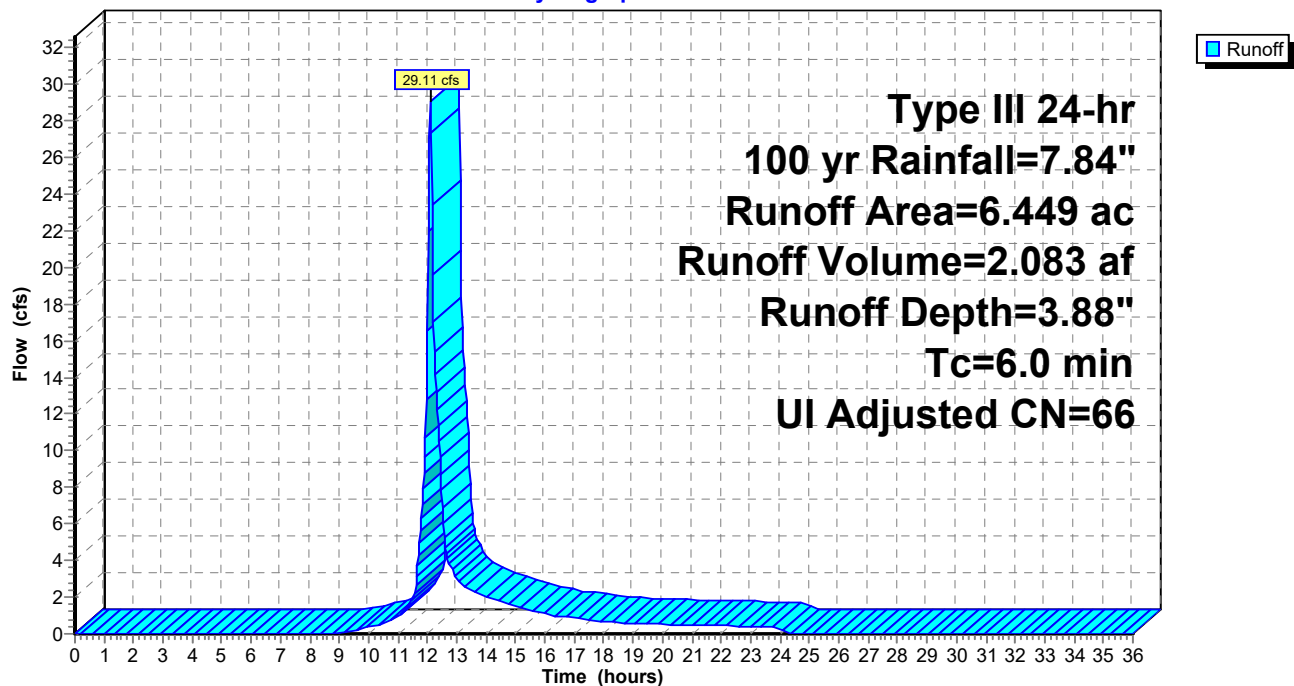
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 100 yr Rainfall=7.84"

Area (ac)	CN	Adj	Description
4.558	61		>75% Grass cover, Good, HSG B
0.033	82		Dirt roads, HSG B
1.858	98		Unconnected pavement, HSG B
6.449	72	66	Weighted Average, UI Adjusted
4.591			71.19% Pervious Area
1.858			28.81% Impervious Area
1.858			100.00% Unconnected

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

Subcatchment EX-1: Subcat EX-1

Hydrograph



Summary for Subcatchment EX-2: Subcat EX-2

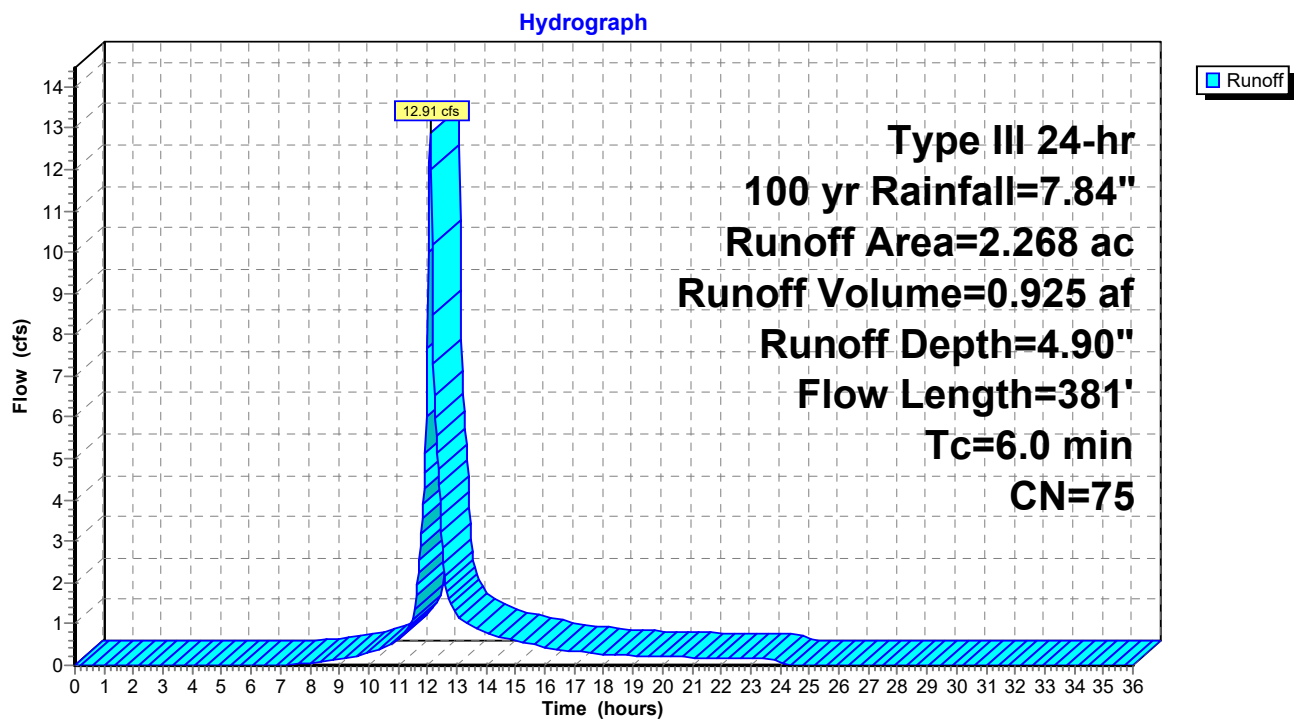
Runoff = 12.91 cfs @ 12.09 hrs, Volume= 0.925 af, Depth= 4.90"
 Routed to Link 2L : DP-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 100 yr Rainfall=7.84"

Area (ac)	CN	Description
1.343	61	>75% Grass cover, Good, HSG B
0.133	82	Dirt roads, HSG B
0.791	98	Unconnected pavement, HSG B
2.268	75	Weighted Average
1.476		65.10% Pervious Area
0.791		34.90% Impervious Area
0.791		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0400	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 3.13"
0.1	36	0.0830	4.64		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.3	85	0.1060	5.24		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
1.3	210	0.0285	2.72		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
6.0	381	Total			

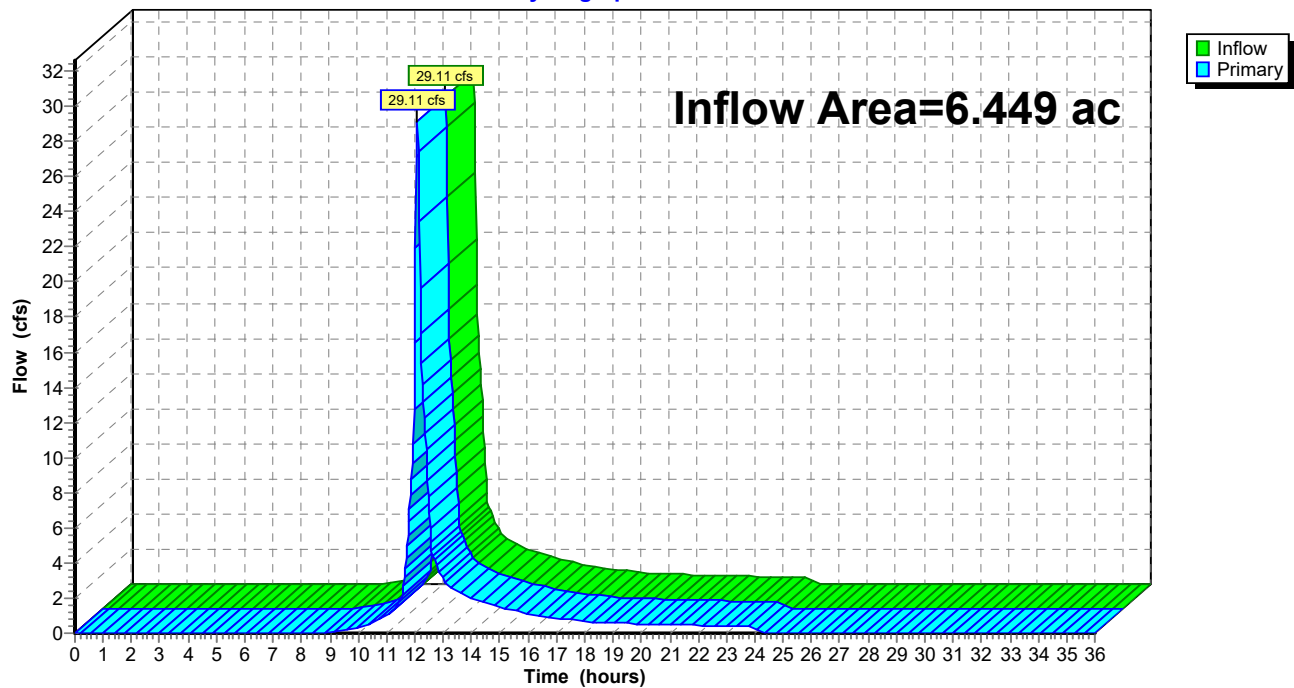
Subcatchment EX-2: Subcat EX-2



Summary for Link 1L: DP-1

Inflow Area = 6.449 ac, 28.81% Impervious, Inflow Depth = 3.88" for 100 yr event
Inflow = 29.11 cfs @ 12.09 hrs, Volume= 2.083 af
Primary = 29.11 cfs @ 12.09 hrs, Volume= 2.083 af, Atten= 0%, Lag= 0.0 min

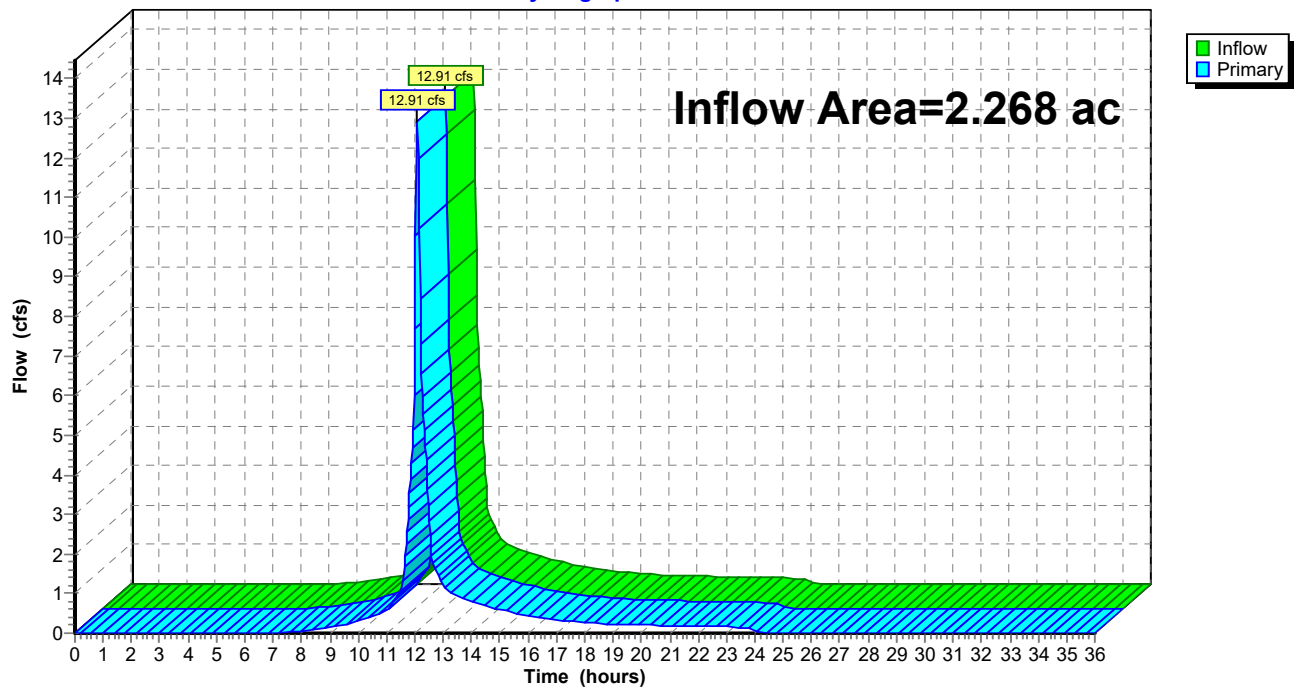
Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

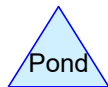
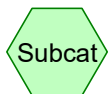
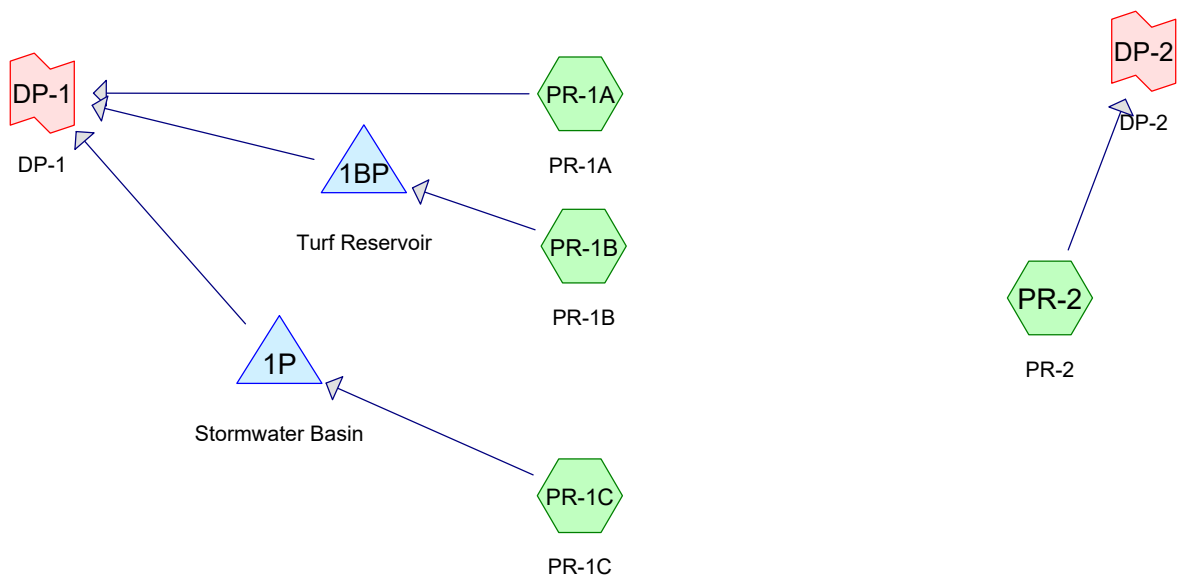
Link 1L: DP-1**Hydrograph**

Summary for Link 2L: DP-2

Inflow Area = 2.268 ac, 34.90% Impervious, Inflow Depth = 4.90" for 100 yr event
Inflow = 12.91 cfs @ 12.09 hrs, Volume= 0.925 af
Primary = 12.91 cfs @ 12.09 hrs, Volume= 0.925 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link 2L: DP-2**Hydrograph**



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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2 yr	Type III 24-hr		Default	24.00	1	3.13	2
2	10 yr	Type III 24-hr		Default	24.00	1	4.95	2
3	100 yr	Type III 24-hr		Default	24.00	1	7.84	2

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
4.383	61	>75% Grass cover, Good, HSG B (PR-1A, PR-1B, PR-1C, PR-2)
2.157	83	Fallow, crop residue, Good, HSG B (PR-1B)
0.180	96	Gravel surface, HSG B (PR-1A, PR-1B, PR-2)
1.894	98	Unconnected pavement, HSG B (PR-1A, PR-1B, PR-1C, PR-2)
0.102	98	Unconnected roofs, HSG B (PR-1A)
8.717	76	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
8.717	HSG B	PR-1A, PR-1B, PR-1C, PR-2
0.000	HSG C	
0.000	HSG D	
0.000	Other	
8.717		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	4.383	0.000	0.000	0.000	4.383	>75% Grass cover, Good	PR-1A, PR-1B, PR-1C, PR-2
0.000	2.157	0.000	0.000	0.000	2.157	Fallow, crop residue, Good	PR-1B
0.000	0.180	0.000	0.000	0.000	0.180	Gravel surface	PR-1A, PR-1B, PR-2
0.000	1.894	0.000	0.000	0.000	1.894	Unconnected pavement	PR-1A, PR-1B, PR-1C, PR-2
0.000	0.102	0.000	0.000	0.000	0.102	Unconnected roofs	PR-1A
0.000	8.717	0.000	0.000	0.000	8.717	TOTAL AREA	

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Type III 24-hr 2 yr Rainfall=3.13"

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Time span=0.00-36.00 hrs, dt=0.03 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR-1A: PR-1A Runoff Area=96,811 sf 7.72% Impervious Runoff Depth=0.49"
Flow Length=522' Tc=9.0 min UI Adjusted CN=63 Runoff=0.78 cfs 0.090 af

SubcatchmentPR-1B: PR-1B Runoff Area=136,533 sf 15.37% Impervious Runoff Depth=1.48"
Tc=6.0 min UI Adjusted CN=82 Runoff=5.40 cfs 0.387 af

SubcatchmentPR-1C: PR-1C Runoff Area=46,988 sf 53.68% Impervious Runoff Depth=1.41"
Tc=6.0 min CN=81 Runoff=1.77 cfs 0.127 af

SubcatchmentPR-2: PR-2 Runoff Area=99,364 sf 33.50% Impervious Runoff Depth=0.99"
Tc=6.0 min CN=74 Runoff=2.49 cfs 0.189 af

Pond 1BP: Turf Reservoir Peak Elev=172.50' Storage=133 cf Inflow=5.40 cfs 0.387 af
Discarded=5.38 cfs 0.387 af Primary=0.00 cfs 0.000 af Outflow=5.38 cfs 0.387 af

Pond 1P: Stormwater Basin Peak Elev=167.29' Storage=978 cf Inflow=1.77 cfs 0.127 af
Discarded=0.57 cfs 0.127 af Primary=0.00 cfs 0.000 af Outflow=0.57 cfs 0.127 af

Link DP-1: DP-1 Inflow=0.78 cfs 0.090 af
Primary=0.78 cfs 0.090 af

Link DP-2: DP-2 Inflow=2.49 cfs 0.189 af
Primary=2.49 cfs 0.189 af

Total Runoff Area = 8.717 ac Runoff Volume = 0.793 af Average Runoff Depth = 1.09"
77.10% Pervious = 6.720 ac 22.90% Impervious = 1.996 ac

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Type III 24-hr 2 yr Rainfall=3.13"

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Summary for Subcatchment PR-1A: PR-1A

Runoff = 0.78 cfs @ 12.16 hrs, Volume= 0.090 af, Depth= 0.49"
 Routed to Link DP-1 : DP-1

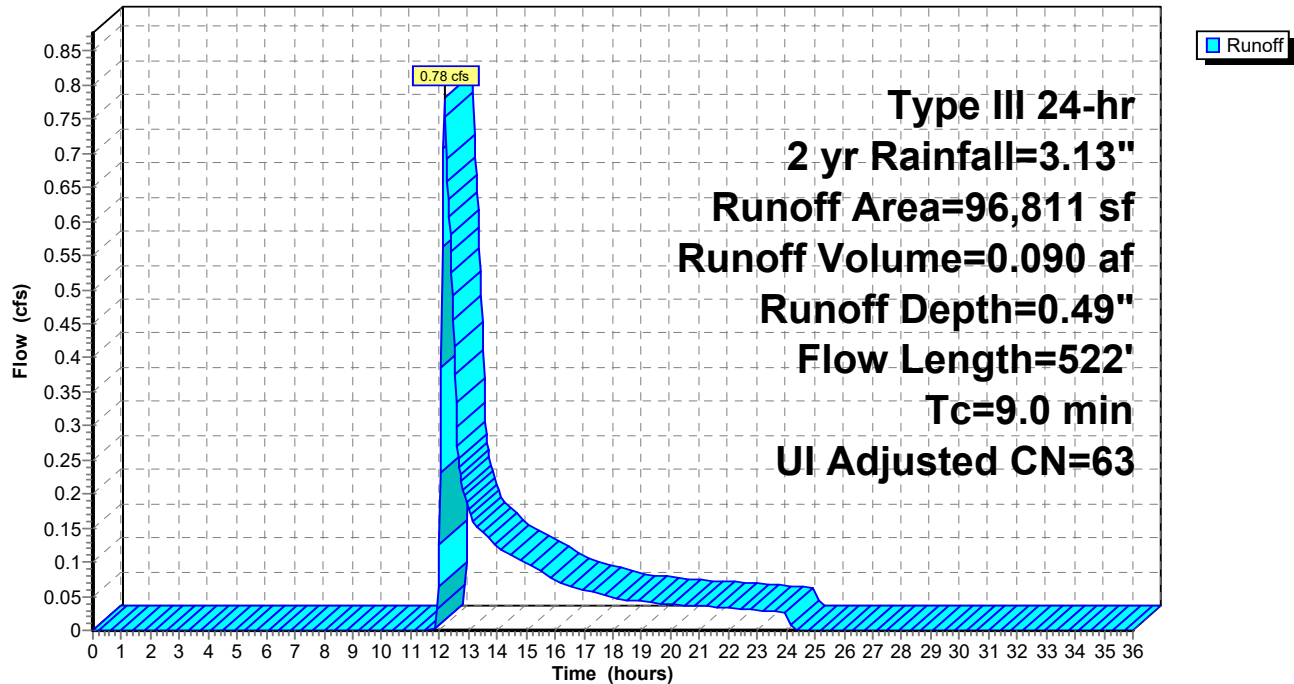
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 2 yr Rainfall=3.13"

Area (sf)	CN	Adj	Description
3,032	98		Unconnected pavement, HSG B
4,438	98		Unconnected roofs, HSG B
947	96		Gravel surface, HSG B
88,394	61		>75% Grass cover, Good, HSG B
96,811	64	63	Weighted Average, UI Adjusted
89,341			92.28% Pervious Area
7,470			7.72% Impervious Area
7,470			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.13"
0.4	66	0.0300	2.79		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
1.8	213	0.0150	1.97		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
2.0	193	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
9.0	522	Total			

Subcatchment PR-1A: PR-1A

Hydrograph



43380-PR DR

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Type III 24-hr 2 yr Rainfall=3.13"

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Summary for Subcatchment PR-1B: PR-1B

Runoff = 5.40 cfs @ 12.09 hrs, Volume= 0.387 af, Depth= 1.48"
 Routed to Pond 1BP : Turf Reservoir

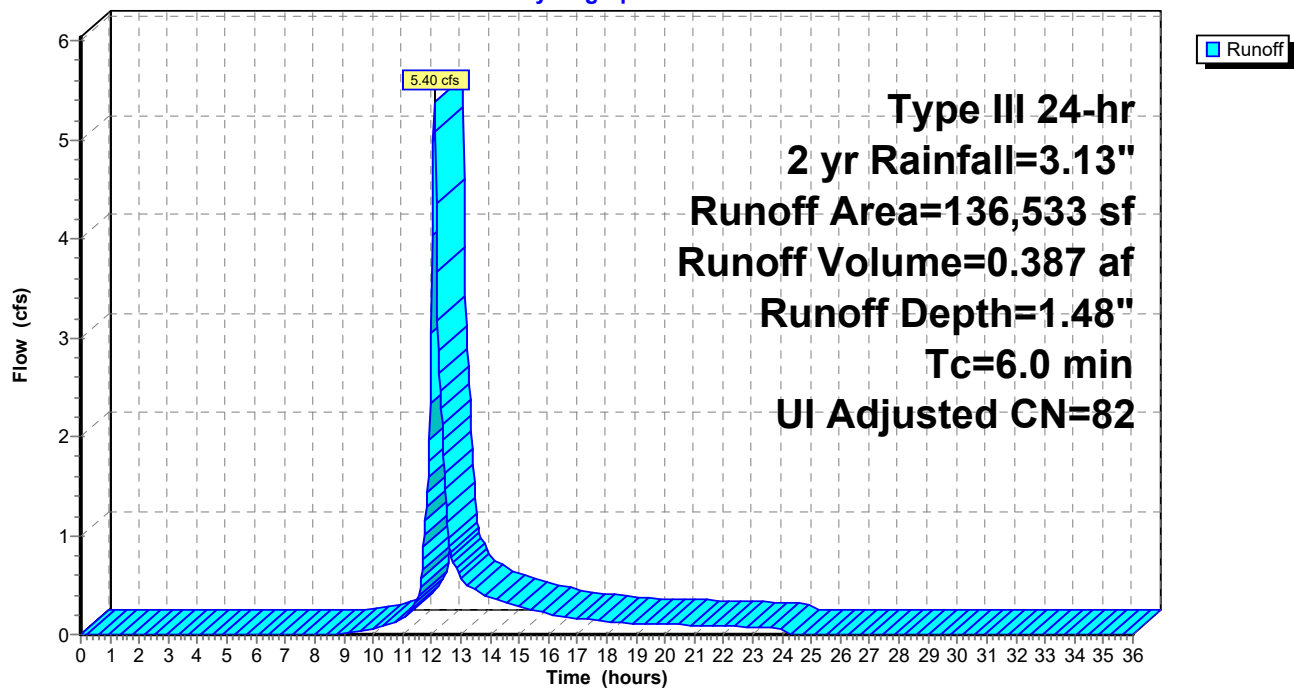
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 2 yr Rainfall=3.13"

Area (sf)	CN	Adj	Description
20,984	98		Unconnected pavement, HSG B
4,917	96		Gravel surface, HSG B
93,955	83		Fallow, crop residue, Good, HSG B
16,677	61		>75% Grass cover, Good, HSG B
136,533	83	82	Weighted Average, UI Adjusted
115,549			84.63% Pervious Area
20,984			15.37% Impervious Area
20,984			100.00% Unconnected

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

Subcatchment PR-1B: PR-1B

Hydrograph



Summary for Subcatchment PR-1C: PR-1C

Runoff = 1.77 cfs @ 12.09 hrs, Volume= 0.127 af, Depth= 1.41"
 Routed to Pond 1P : Stormwater Basin

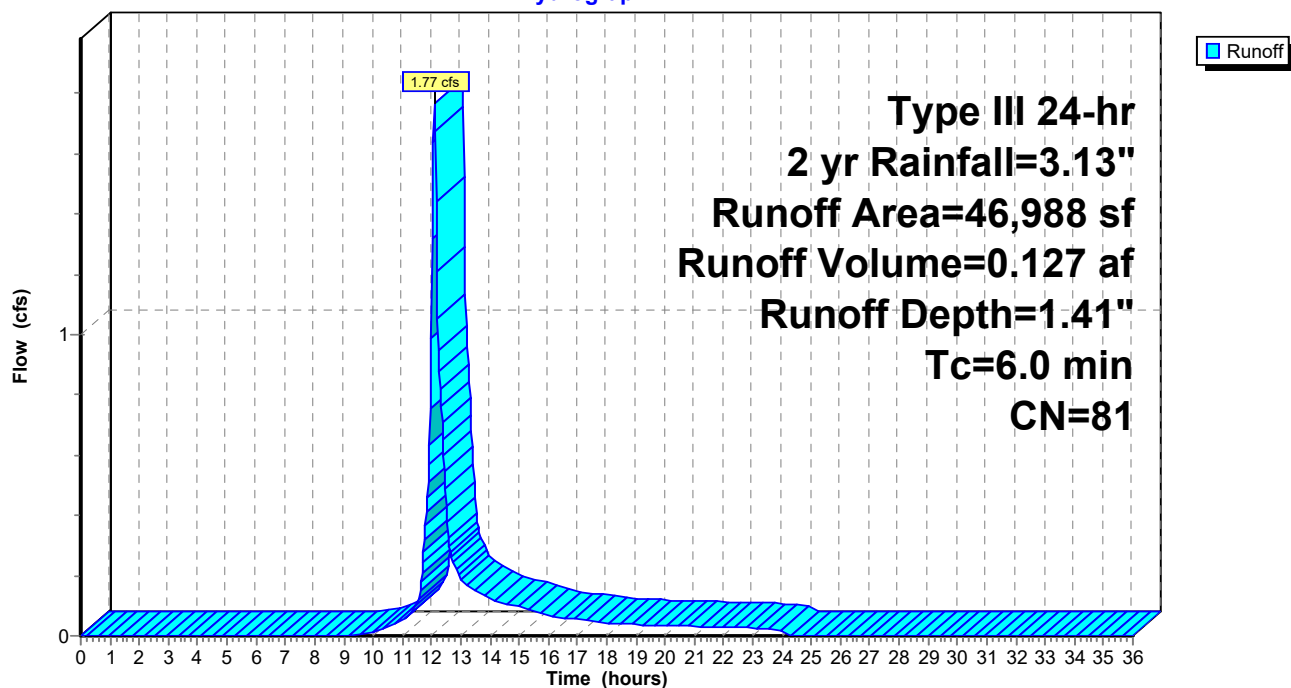
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 2 yr Rainfall=3.13"

Area (sf)	CN	Description
25,222	98	Unconnected pavement, HSG B
0	96	Gravel surface, HSG B
21,766	61	>75% Grass cover, Good, HSG B
46,988	81	Weighted Average
21,766		46.32% Pervious Area
25,222		53.68% Impervious Area
25,222		100.00% Unconnected

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

Subcatchment PR-1C: PR-1C

Hydrograph



Summary for Subcatchment PR-2: PR-2

Runoff = 2.49 cfs @ 12.10 hrs, Volume= 0.189 af, Depth= 0.99"
 Routed to Link DP-2 : DP-2

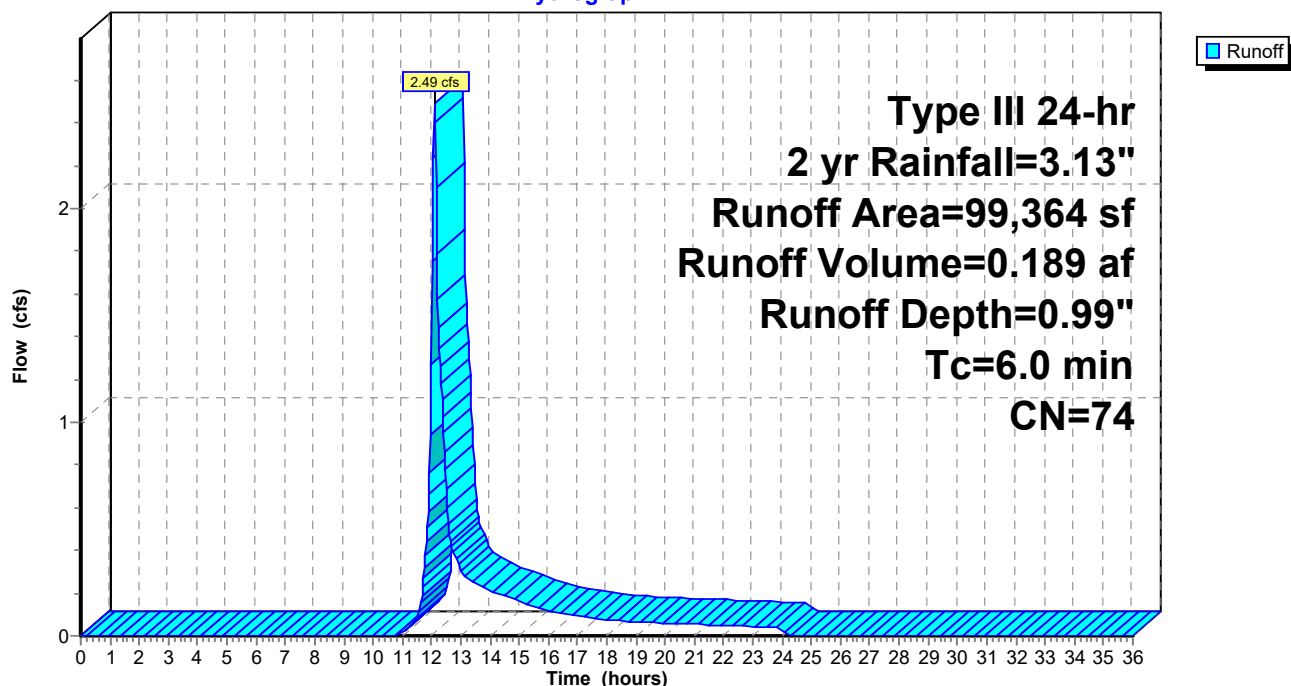
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 2 yr Rainfall=3.13"

Area (sf)	CN	Description
33,283	98	Unconnected pavement, HSG B
64,091	61	>75% Grass cover, Good, HSG B
1,990	96	Gravel surface, HSG B
99,364	74	Weighted Average
66,081		66.50% Pervious Area
33,283		33.50% Impervious Area
33,283		100.00% Unconnected

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

Subcatchment PR-2: PR-2

Hydrograph



Summary for Pond 1BP: Turf Reservoir

Inflow Area = 3.134 ac, 15.37% Impervious, Inflow Depth = 1.48" for 2 yr event
 Inflow = 5.40 cfs @ 12.09 hrs, Volume= 0.387 af
 Outflow = 5.38 cfs @ 12.10 hrs, Volume= 0.387 af, Atten= 0%, Lag= 0.4 min
 Discarded = 5.38 cfs @ 12.10 hrs, Volume= 0.387 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link DP-1 : DP-1

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Peak Elev= 172.50' @ 12.10 hrs Surf.Area= 93,140 sf Storage= 133 cf

Plug-Flow detention time= 0.4 min calculated for 0.387 af (100% of inflow)
 Center-of-Mass det. time= 0.4 min (837.7 - 837.3)

Volume	Invert	Avail.Storage	Storage Description
#1	172.50'	37,256 cf	Custom Stage Data (Irregular) Listed below (Recalc) 93,140 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
172.50	93,140	746.0	0	0	93,140
173.00	93,140	746.0	46,570	46,570	93,513
173.50	93,140	746.0	46,570	93,140	93,886

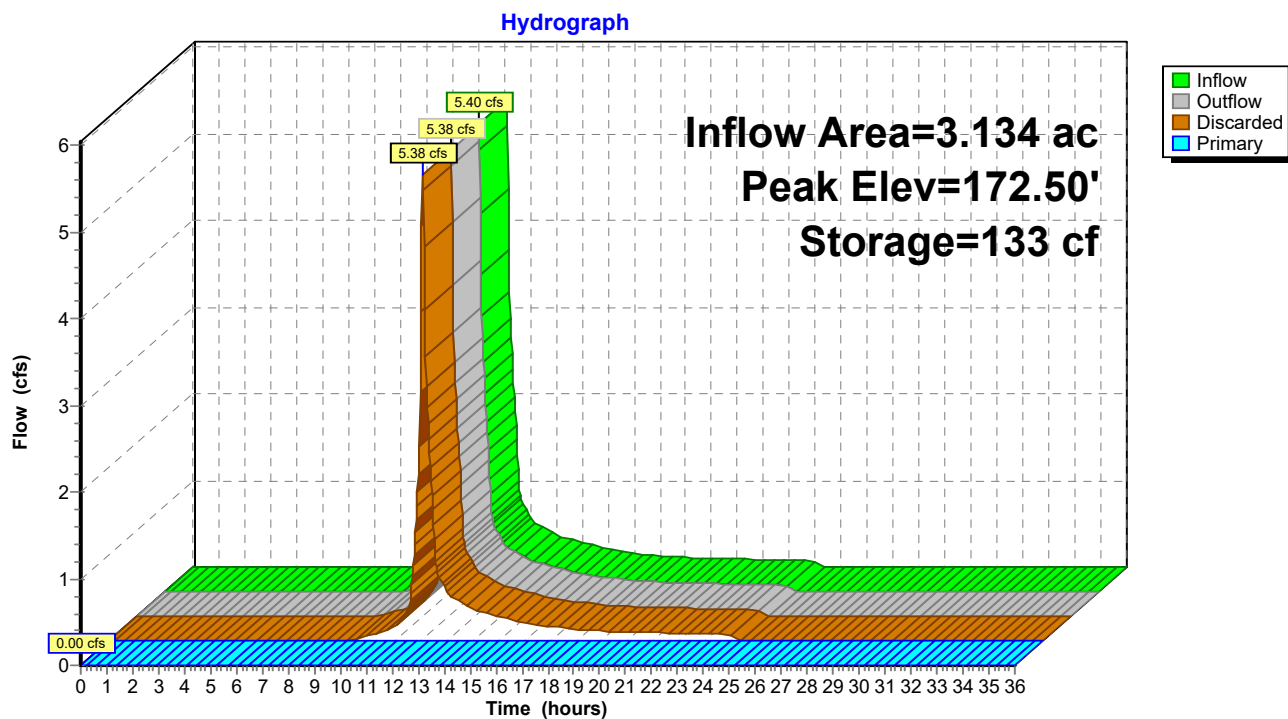
Device	Routing	Invert	Outlet Devices
#1	Primary	172.75'	746.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Discarded	172.50'	7.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 10.00'

Discarded OutFlow Max=15.09 cfs @ 12.10 hrs HW=172.50' (Free Discharge)

↑ **2=Exfiltration** (Controls 15.09 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=172.50' (Free Discharge)

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

Pond 1BP: Turf Reservoir

Summary for Pond 1P: Stormwater Basin

Inflow Area = 1.079 ac, 53.68% Impervious, Inflow Depth = 1.41" for 2 yr event
 Inflow = 1.77 cfs @ 12.09 hrs, Volume= 0.127 af
 Outflow = 0.57 cfs @ 12.44 hrs, Volume= 0.127 af, Atten= 68%, Lag= 20.8 min
 Discarded = 0.57 cfs @ 12.44 hrs, Volume= 0.127 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link DP-1 : DP-1

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Peak Elev= 167.29' @ 12.44 hrs Surf.Area= 3,482 sf Storage= 978 cf

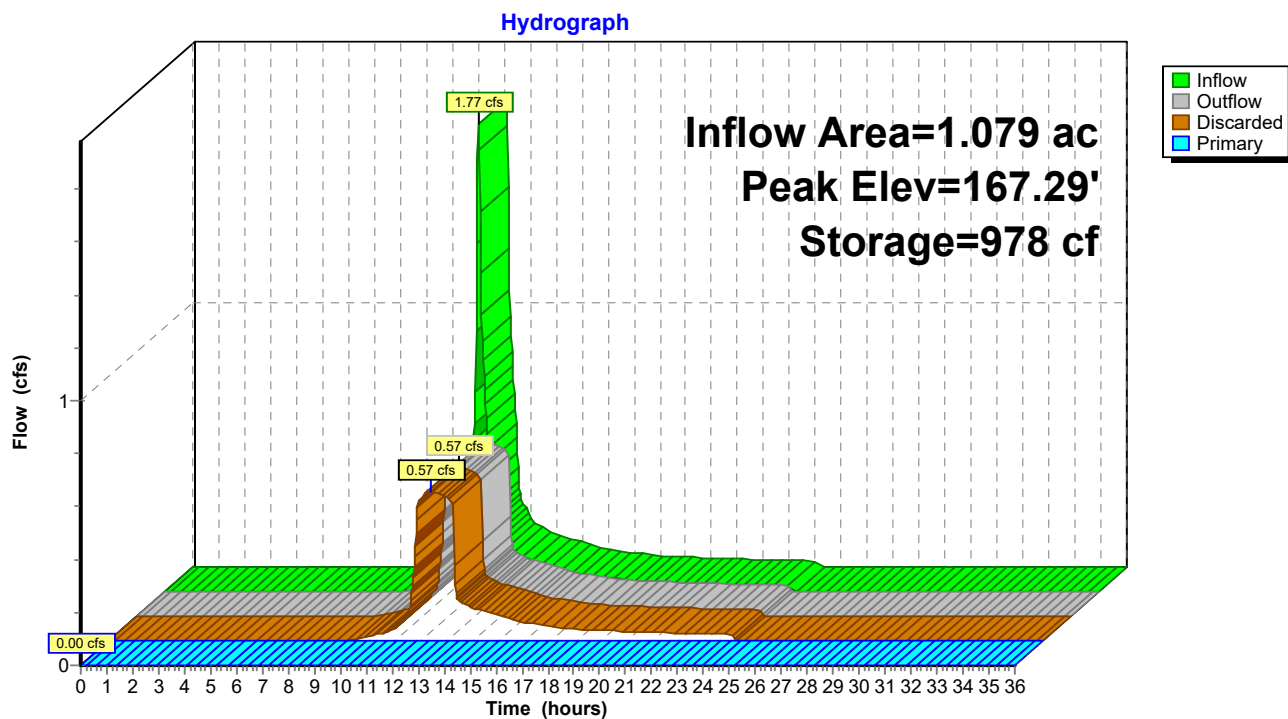
Plug-Flow detention time= 9.8 min calculated for 0.127 af (100% of inflow)
 Center-of-Mass det. time= 9.8 min (850.5 - 840.6)

Volume	Invert	Avail.Storage	Storage Description
#1	167.00'	8,234 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
167.00	3,227	0	0
168.00	4,103	3,665	3,665
169.00	5,035	4,569	8,234

Device	Routing	Invert	Outlet Devices
#1	Primary	168.50'	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
#2	Discarded	167.00'	7.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 10.00'

Discarded OutFlow Max=0.57 cfs @ 12.44 hrs HW=167.29' (Free Discharge)
 ↑ **2=Exfiltration** (Controls 0.57 cfs)

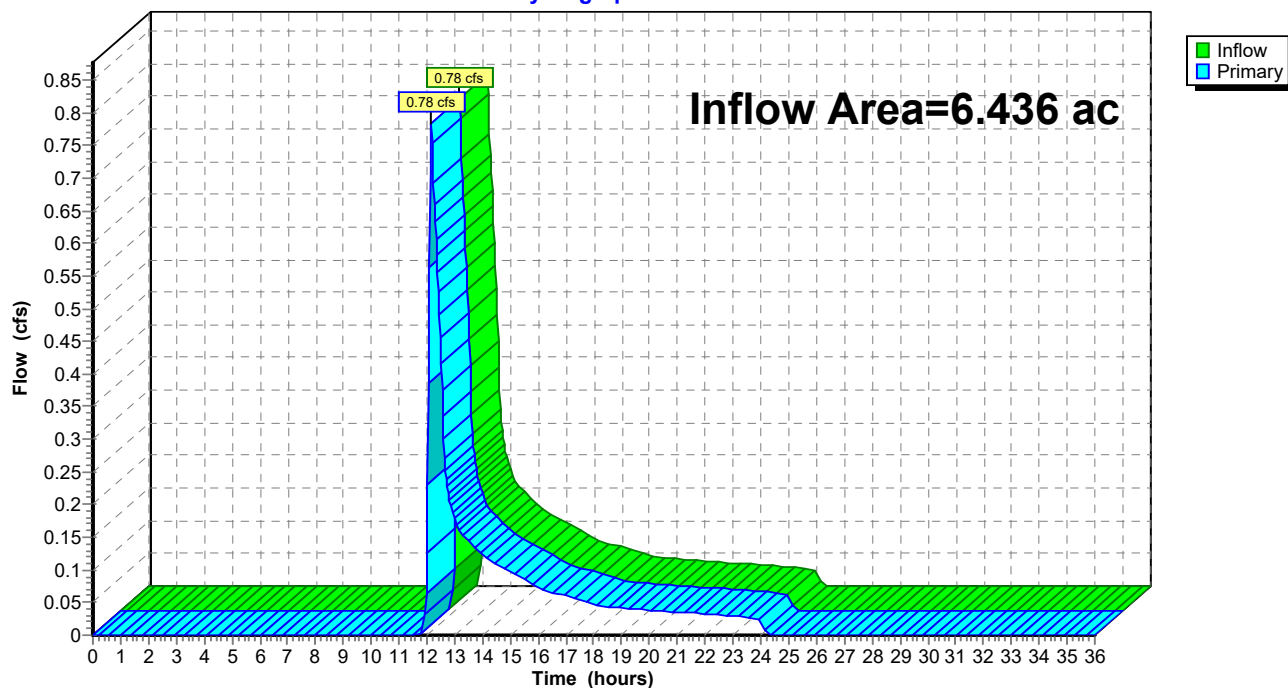
Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=167.00' (Free Discharge)
 ↑ **1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Stormwater Basin

Summary for Link DP-1: DP-1

Inflow Area = 6.436 ac, 19.15% Impervious, Inflow Depth = 0.17" for 2 yr event
Inflow = 0.78 cfs @ 12.16 hrs, Volume= 0.090 af
Primary = 0.78 cfs @ 12.16 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.0 min

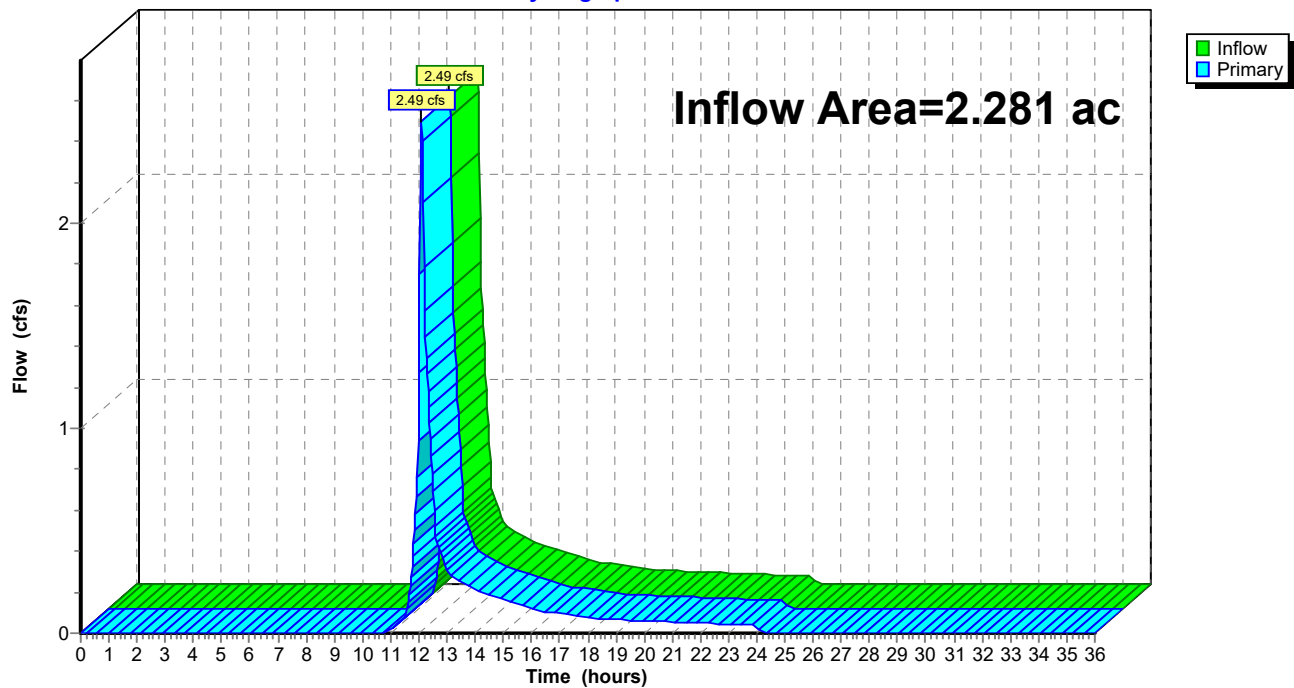
Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link DP-1: DP-1**Hydrograph**

Summary for Link DP-2: DP-2

Inflow Area = 2.281 ac, 33.50% Impervious, Inflow Depth = 0.99" for 2 yr event
Inflow = 2.49 cfs @ 12.10 hrs, Volume= 0.189 af
Primary = 2.49 cfs @ 12.10 hrs, Volume= 0.189 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link DP-2: DP-2**Hydrograph**

43380-PR DR

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Type III 24-hr 10 yr Rainfall=4.95"

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Time span=0.00-36.00 hrs, dt=0.03 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR-1A: PR-1A Runoff Area=96,811 sf 7.72% Impervious Runoff Depth=1.48"
Flow Length=522' Tc=9.0 min UI Adjusted CN=63 Runoff=3.20 cfs 0.274 af

SubcatchmentPR-1B: PR-1B Runoff Area=136,533 sf 15.37% Impervious Runoff Depth=3.03"
Tc=6.0 min UI Adjusted CN=82 Runoff=11.07 cfs 0.793 af

SubcatchmentPR-1C: PR-1C Runoff Area=46,988 sf 53.68% Impervious Runoff Depth=2.94"
Tc=6.0 min CN=81 Runoff=3.70 cfs 0.264 af

SubcatchmentPR-2: PR-2 Runoff Area=99,364 sf 33.50% Impervious Runoff Depth=2.32"
Tc=6.0 min CN=74 Runoff=6.16 cfs 0.442 af

Pond 1BP: Turf Reservoir Peak Elev=172.51' Storage=272 cf Inflow=11.07 cfs 0.793 af
Discarded=11.04 cfs 0.793 af Primary=0.00 cfs 0.000 af Outflow=11.04 cfs 0.793 af

Pond 1P: Stormwater Basin Peak Elev=167.93' Storage=3,376 cf Inflow=3.70 cfs 0.264 af
Discarded=0.66 cfs 0.264 af Primary=0.00 cfs 0.000 af Outflow=0.66 cfs 0.264 af

Link DP-1: DP-1 Inflow=3.20 cfs 0.274 af
Primary=3.20 cfs 0.274 af

Link DP-2: DP-2 Inflow=6.16 cfs 0.442 af
Primary=6.16 cfs 0.442 af

Total Runoff Area = 8.717 ac Runoff Volume = 1.772 af Average Runoff Depth = 2.44"
77.10% Pervious = 6.720 ac 22.90% Impervious = 1.996 ac

Summary for Subcatchment PR-1A: PR-1A

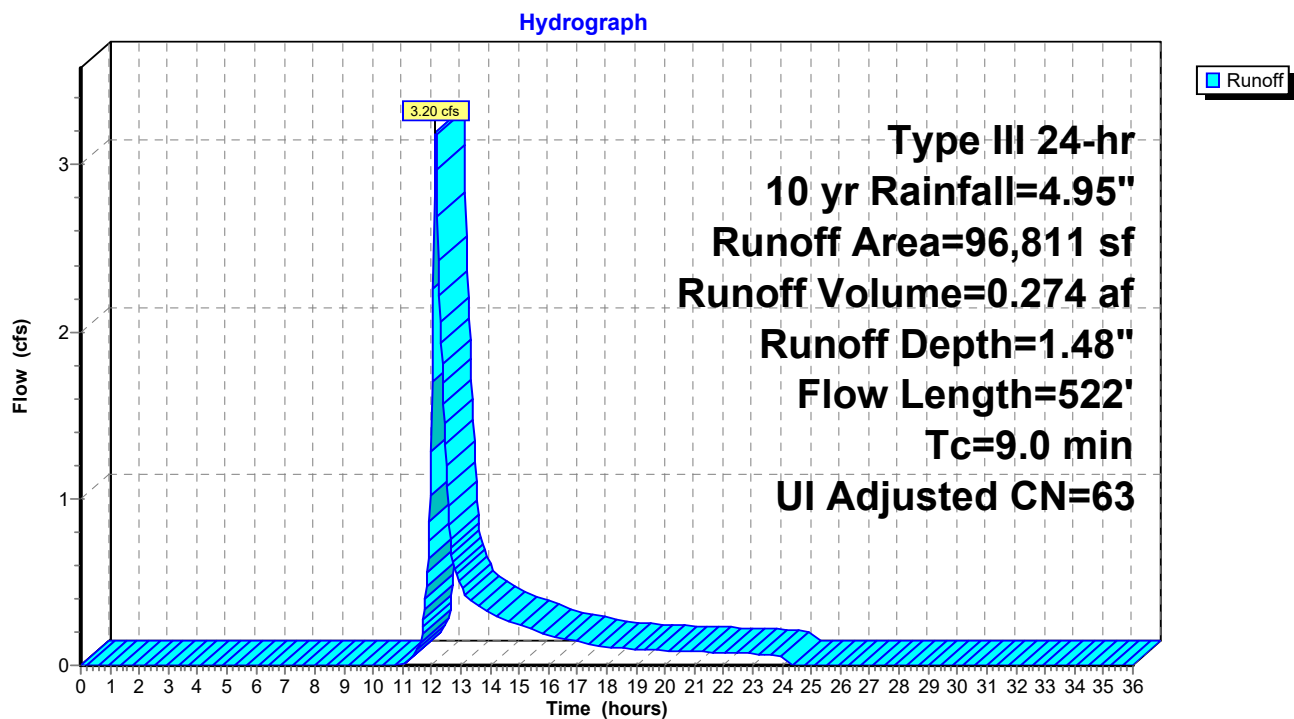
Runoff = 3.20 cfs @ 12.14 hrs, Volume= 0.274 af, Depth= 1.48"
 Routed to Link DP-1 : DP-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 10 yr Rainfall=4.95"

Area (sf)	CN	Adj	Description
3,032	98		Unconnected pavement, HSG B
4,438	98		Unconnected roofs, HSG B
947	96		Gravel surface, HSG B
88,394	61		>75% Grass cover, Good, HSG B
96,811	64	63	Weighted Average, UI Adjusted
89,341			92.28% Pervious Area
7,470			7.72% Impervious Area
7,470			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.13"
0.4	66	0.0300	2.79		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
1.8	213	0.0150	1.97		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
2.0	193	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
9.0	522	Total			

Subcatchment PR-1A: PR-1A



Summary for Subcatchment PR-1B: PR-1B

Runoff = 11.07 cfs @ 12.09 hrs, Volume= 0.793 af, Depth= 3.03"
 Routed to Pond 1BP : Turf Reservoir

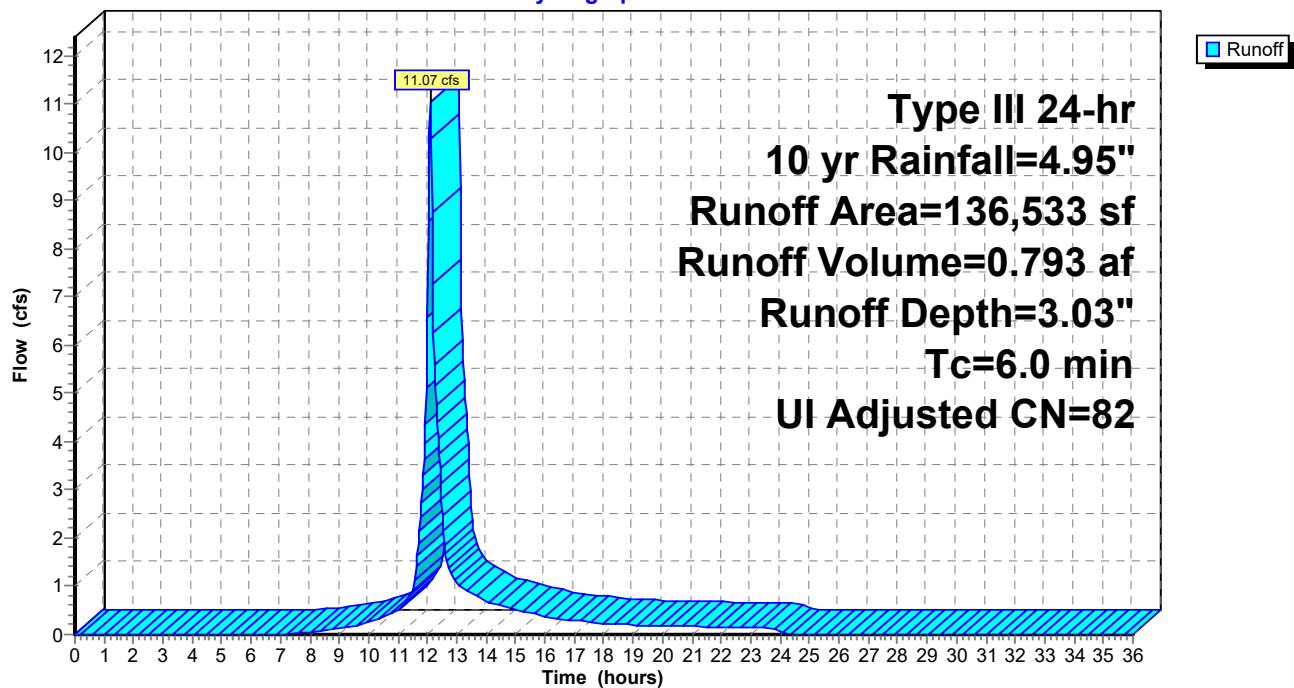
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 10 yr Rainfall=4.95"

Area (sf)	CN	Adj	Description
20,984	98		Unconnected pavement, HSG B
4,917	96		Gravel surface, HSG B
93,955	83		Fallow, crop residue, Good, HSG B
16,677	61		>75% Grass cover, Good, HSG B
136,533	83	82	Weighted Average, UI Adjusted
115,549			84.63% Pervious Area
20,984			15.37% Impervious Area
20,984			100.00% Unconnected

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

Subcatchment PR-1B: PR-1B

Hydrograph



Summary for Subcatchment PR-1C: PR-1C

Runoff = 3.70 cfs @ 12.09 hrs, Volume= 0.264 af, Depth= 2.94"
 Routed to Pond 1P : Stormwater Basin

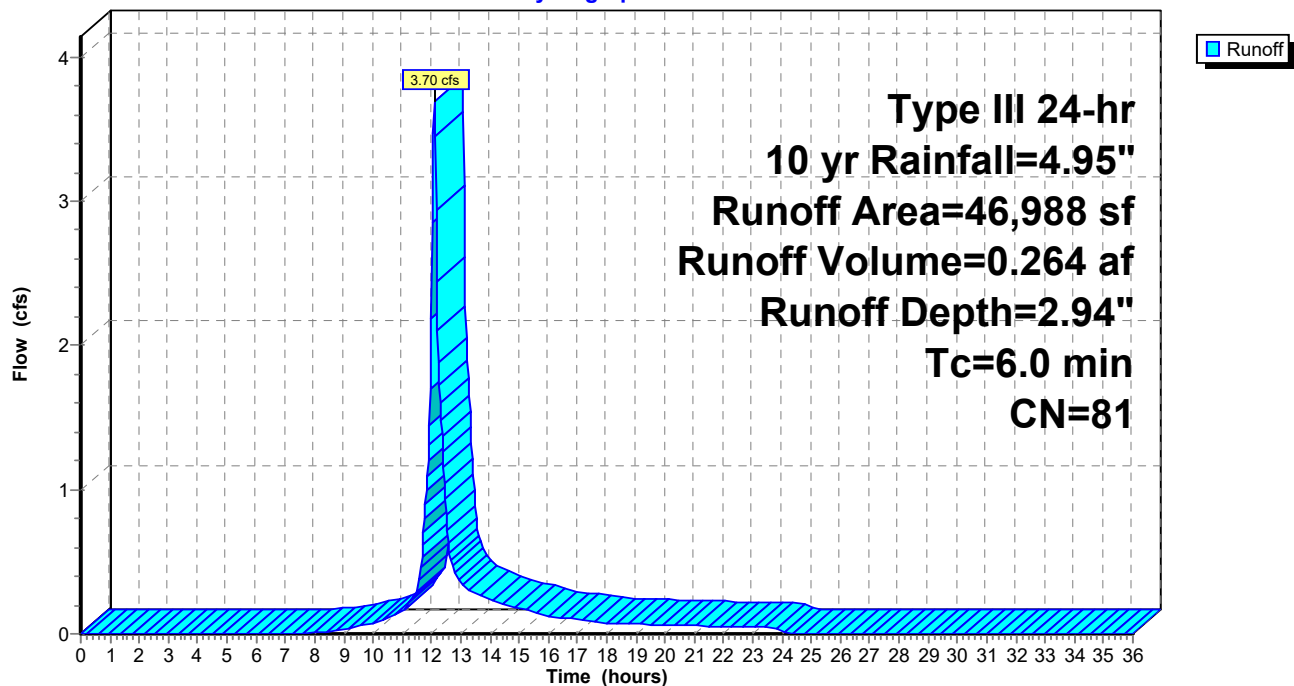
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 10 yr Rainfall=4.95"

Area (sf)	CN	Description
25,222	98	Unconnected pavement, HSG B
0	96	Gravel surface, HSG B
21,766	61	>75% Grass cover, Good, HSG B
46,988	81	Weighted Average
21,766		46.32% Pervious Area
25,222		53.68% Impervious Area
25,222		100.00% Unconnected

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

Subcatchment PR-1C: PR-1C

Hydrograph



Summary for Subcatchment PR-2: PR-2

Runoff = 6.16 cfs @ 12.09 hrs, Volume= 0.442 af, Depth= 2.32"
 Routed to Link DP-2 : DP-2

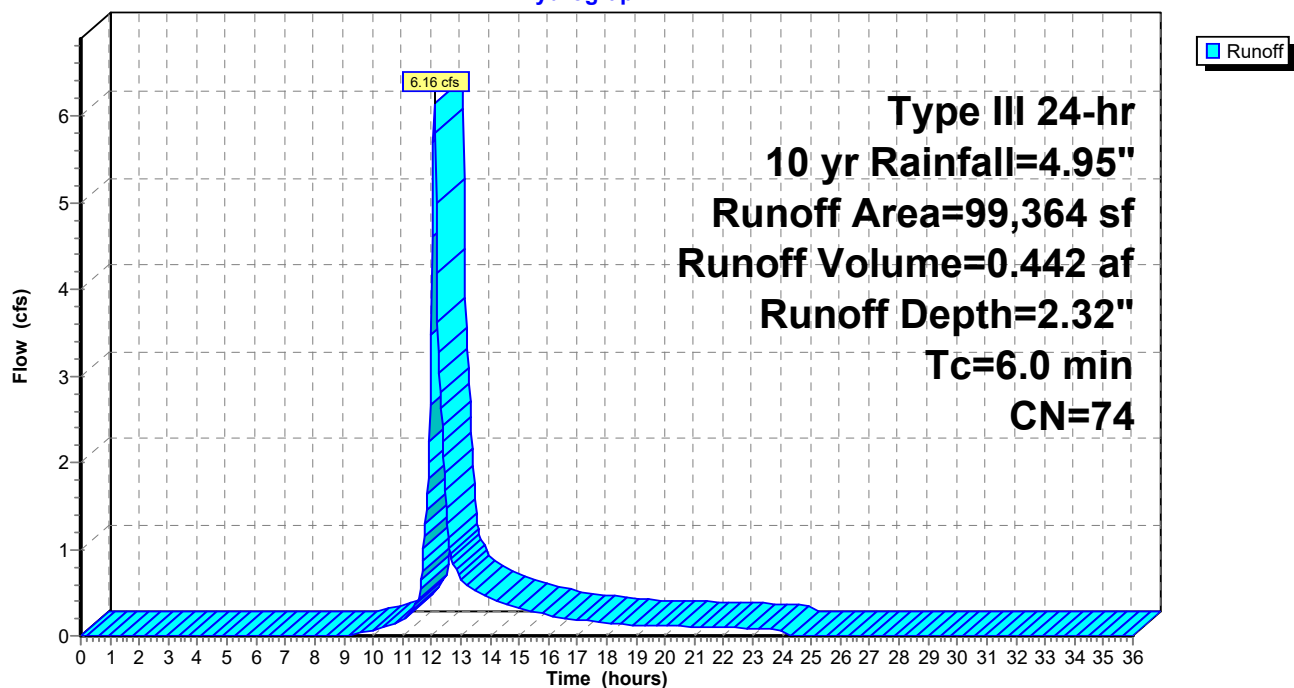
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 10 yr Rainfall=4.95"

Area (sf)	CN	Description
33,283	98	Unconnected pavement, HSG B
64,091	61	>75% Grass cover, Good, HSG B
1,990	96	Gravel surface, HSG B
99,364	74	Weighted Average
66,081		66.50% Pervious Area
33,283		33.50% Impervious Area
33,283		100.00% Unconnected

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

Subcatchment PR-2: PR-2

Hydrograph



Summary for Pond 1BP: Turf Reservoir

Inflow Area = 3.134 ac, 15.37% Impervious, Inflow Depth = 3.03" for 10 yr event
 Inflow = 11.07 cfs @ 12.09 hrs, Volume= 0.793 af
 Outflow = 11.04 cfs @ 12.10 hrs, Volume= 0.793 af, Atten= 0%, Lag= 0.4 min
 Discarded = 11.04 cfs @ 12.10 hrs, Volume= 0.793 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link DP-1 : DP-1

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Peak Elev= 172.51' @ 12.10 hrs Surf.Area= 93,140 sf Storage= 272 cf

Plug-Flow detention time= 0.4 min calculated for 0.792 af (100% of inflow)
 Center-of-Mass det. time= 0.4 min (817.1 - 816.7)

Volume	Invert	Avail.Storage	Storage Description
#1	172.50'	37,256 cf	Custom Stage Data (Irregular) Listed below (Recalc) 93,140 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
172.50	93,140	746.0	0	0	93,140
173.00	93,140	746.0	46,570	46,570	93,513
173.50	93,140	746.0	46,570	93,140	93,886

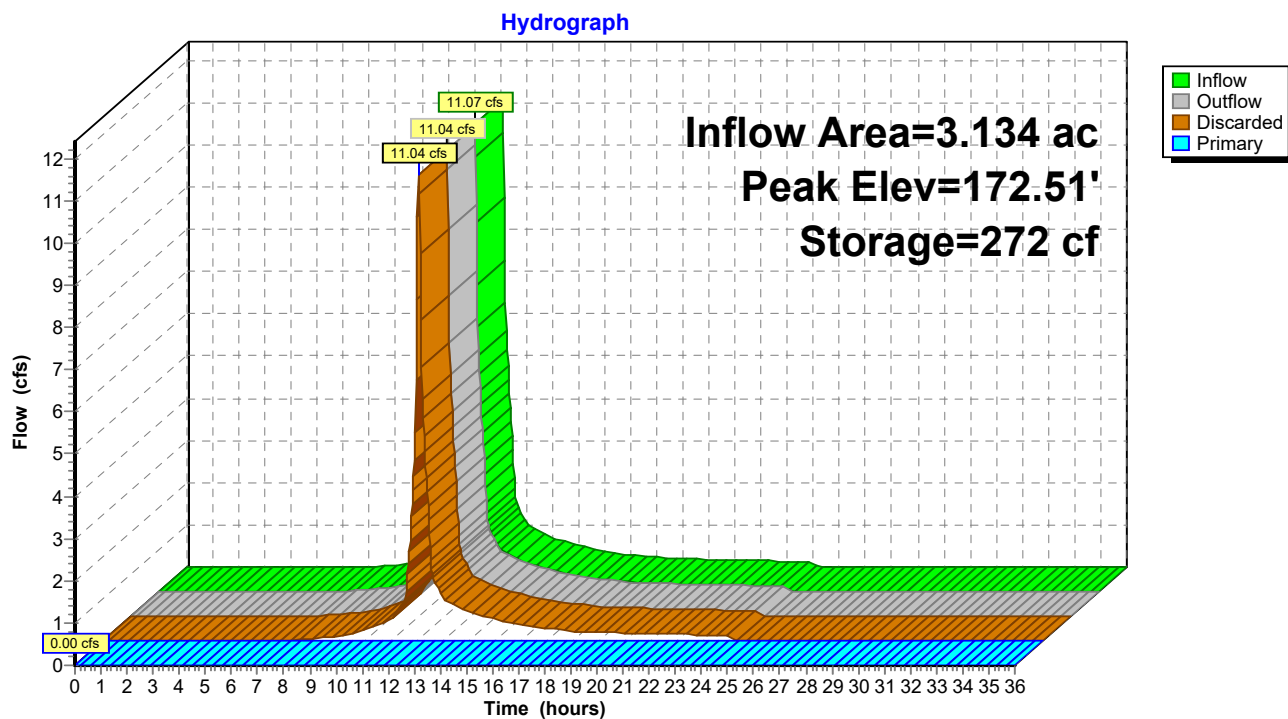
Device	Routing	Invert	Outlet Devices
#1	Primary	172.75'	746.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Discarded	172.50'	7.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 10.00'

Discarded OutFlow Max=15.09 cfs @ 12.10 hrs HW=172.51' (Free Discharge)

↑ **2=Exfiltration** (Controls 15.09 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=172.50' (Free Discharge)

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

Pond 1BP: Turf Reservoir

Summary for Pond 1P: Stormwater Basin

Inflow Area = 1.079 ac, 53.68% Impervious, Inflow Depth = 2.94" for 10 yr event
 Inflow = 3.70 cfs @ 12.09 hrs, Volume= 0.264 af
 Outflow = 0.66 cfs @ 12.56 hrs, Volume= 0.264 af, Atten= 82%, Lag= 28.3 min
 Discarded = 0.66 cfs @ 12.56 hrs, Volume= 0.264 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link DP-1 : DP-1

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Peak Elev= 167.93' @ 12.56 hrs Surf.Area= 4,041 sf Storage= 3,376 cf

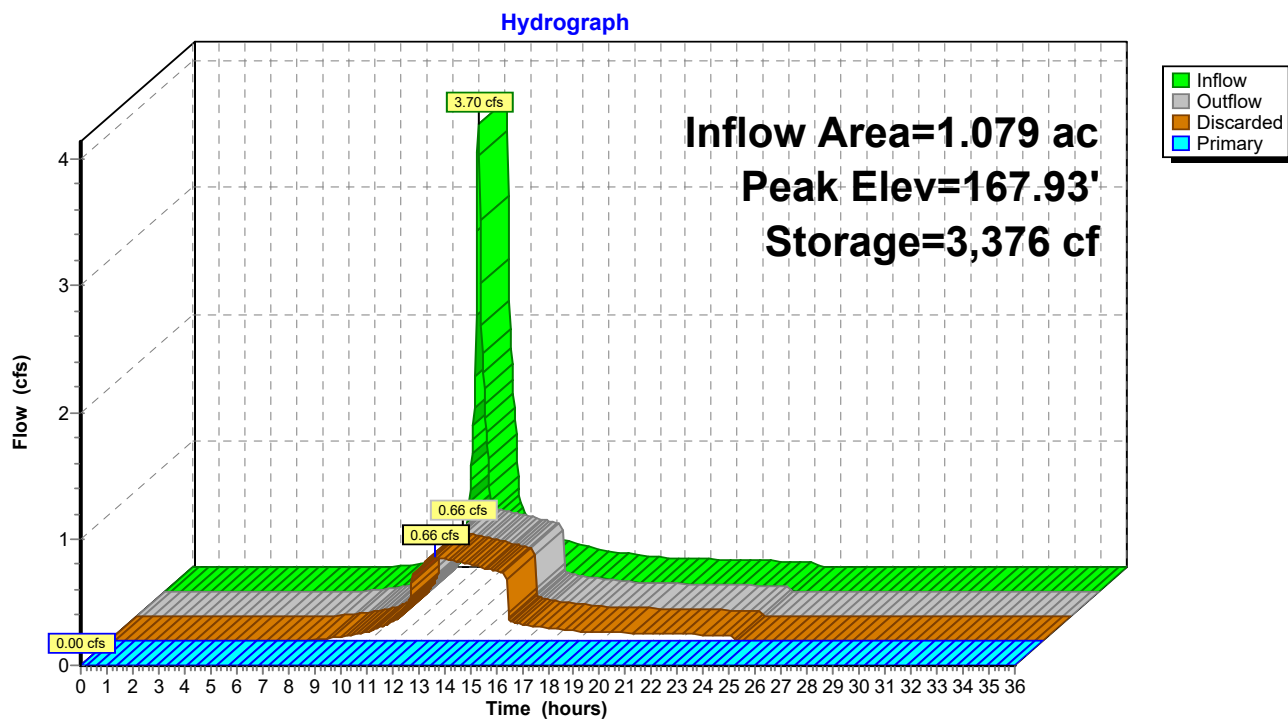
Plug-Flow detention time= 35.6 min calculated for 0.264 af (100% of inflow)
 Center-of-Mass det. time= 35.6 min (855.1 - 819.5)

Volume	Invert	Avail.Storage	Storage Description
#1	167.00'	8,234 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
167.00	3,227	0	0
168.00	4,103	3,665	3,665
169.00	5,035	4,569	8,234

Device	Routing	Invert	Outlet Devices
#1	Primary	168.50'	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
#2	Discarded	167.00'	7.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 10.00'

Discarded OutFlow Max=0.66 cfs @ 12.56 hrs HW=167.93' (Free Discharge)
 ↑ **2=Exfiltration** (Controls 0.66 cfs)

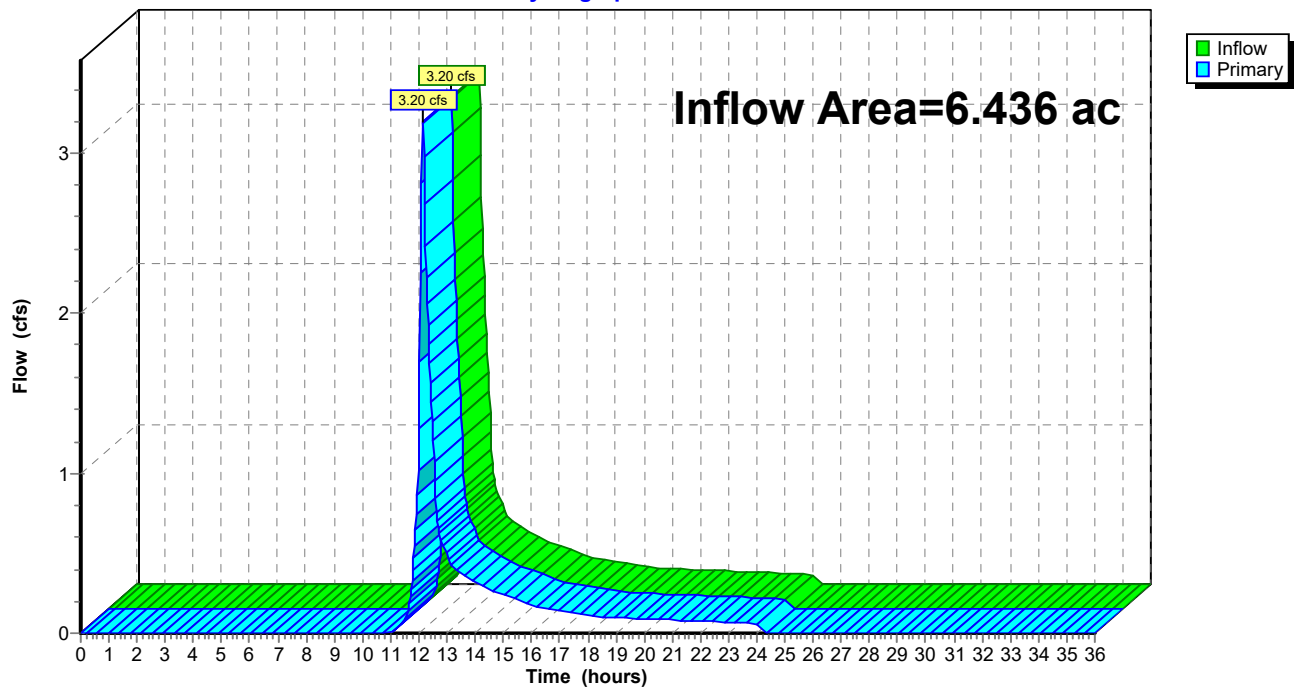
Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=167.00' (Free Discharge)
 ↑ **1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Stormwater Basin

Summary for Link DP-1: DP-1

Inflow Area = 6.436 ac, 19.15% Impervious, Inflow Depth = 0.51" for 10 yr event
Inflow = 3.20 cfs @ 12.14 hrs, Volume= 0.274 af
Primary = 3.20 cfs @ 12.14 hrs, Volume= 0.274 af, Atten= 0%, Lag= 0.0 min

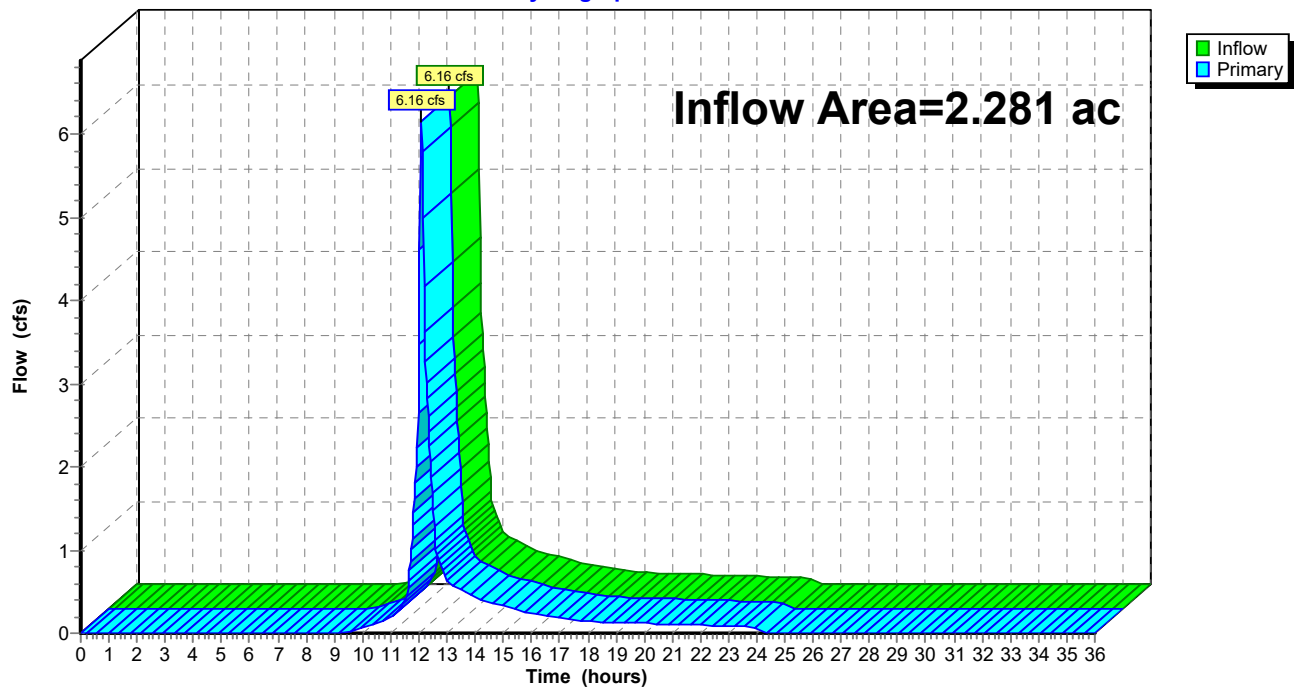
Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link DP-1: DP-1**Hydrograph**

Summary for Link DP-2: DP-2

Inflow Area = 2.281 ac, 33.50% Impervious, Inflow Depth = 2.32" for 10 yr event
Inflow = 6.16 cfs @ 12.09 hrs, Volume= 0.442 af
Primary = 6.16 cfs @ 12.09 hrs, Volume= 0.442 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link DP-2: DP-2**Hydrograph**

43380-PR DR

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Type III 24-hr 100 yr Rainfall=7.84"

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Time span=0.00-36.00 hrs, dt=0.03 hrs, 1201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR-1A: PR-1A

Runoff Area=96,811 sf 7.72% Impervious Runoff Depth=3.54"
Flow Length=522' Tc=9.0 min UI Adjusted CN=63 Runoff=8.23 cfs 0.656 af

SubcatchmentPR-1B: PR-1B

Runoff Area=136,533 sf 15.37% Impervious Runoff Depth=5.71"
Tc=6.0 min UI Adjusted CN=82 Runoff=20.41 cfs 1.491 af

SubcatchmentPR-1C: PR-1C

Runoff Area=46,988 sf 53.68% Impervious Runoff Depth=5.59"
Tc=6.0 min CN=81 Runoff=6.90 cfs 0.503 af

SubcatchmentPR-2: PR-2

Runoff Area=99,364 sf 33.50% Impervious Runoff Depth=4.78"
Tc=6.0 min CN=74 Runoff=12.70 cfs 0.909 af

Pond 1BP: Turf Reservoir

Peak Elev=172.55' Storage=1,934 cf Inflow=20.41 cfs 1.491 af
Discarded=15.10 cfs 1.491 af Primary=0.00 cfs 0.000 af Outflow=15.10 cfs 1.491 af

Pond 1P: Stormwater Basin

Peak Elev=168.67' Storage=6,604 cf Inflow=6.90 cfs 0.503 af
Discarded=0.77 cfs 0.455 af Primary=1.58 cfs 0.048 af Outflow=2.35 cfs 0.503 af

Link DP-1: DP-1

Inflow=8.23 cfs 0.704 af
Primary=8.23 cfs 0.704 af

Link DP-2: DP-2

Inflow=12.70 cfs 0.909 af
Primary=12.70 cfs 0.909 af

Total Runoff Area = 8.717 ac Runoff Volume = 3.559 af Average Runoff Depth = 4.90"
77.10% Pervious = 6.720 ac 22.90% Impervious = 1.996 ac

Summary for Subcatchment PR-1A: PR-1A

Runoff = 8.23 cfs @ 12.13 hrs, Volume= 0.656 af, Depth= 3.54"
 Routed to Link DP-1 : DP-1

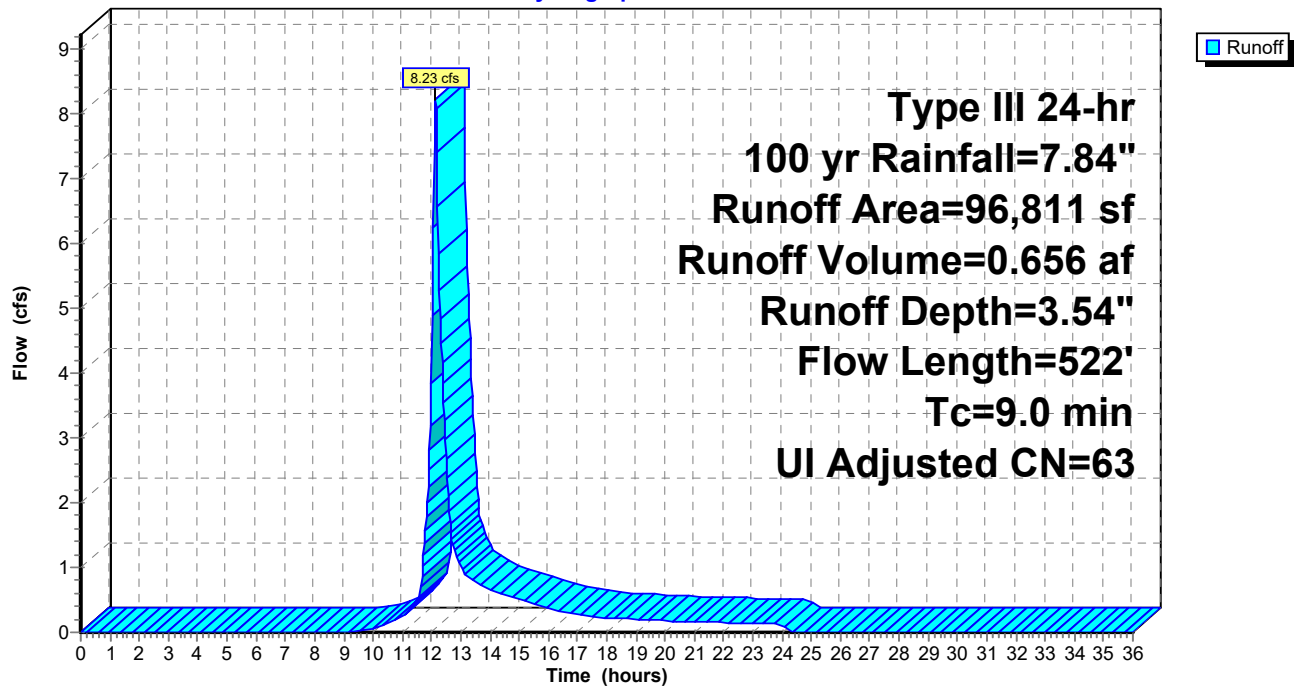
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 100 yr Rainfall=7.84"

Area (sf)	CN	Adj	Description
3,032	98		Unconnected pavement, HSG B
4,438	98		Unconnected roofs, HSG B
947	96		Gravel surface, HSG B
88,394	61		>75% Grass cover, Good, HSG B
96,811	64	63	Weighted Average, UI Adjusted
89,341			92.28% Pervious Area
7,470			7.72% Impervious Area
7,470			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	50	0.0300	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.13"
0.4	66	0.0300	2.79		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
1.8	213	0.0150	1.97		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
2.0	193	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
9.0	522	Total			

Subcatchment PR-1A: PR-1A

Hydrograph



Summary for Subcatchment PR-1B: PR-1B

Runoff = 20.41 cfs @ 12.09 hrs, Volume= 1.491 af, Depth= 5.71"
 Routed to Pond 1BP : Turf Reservoir

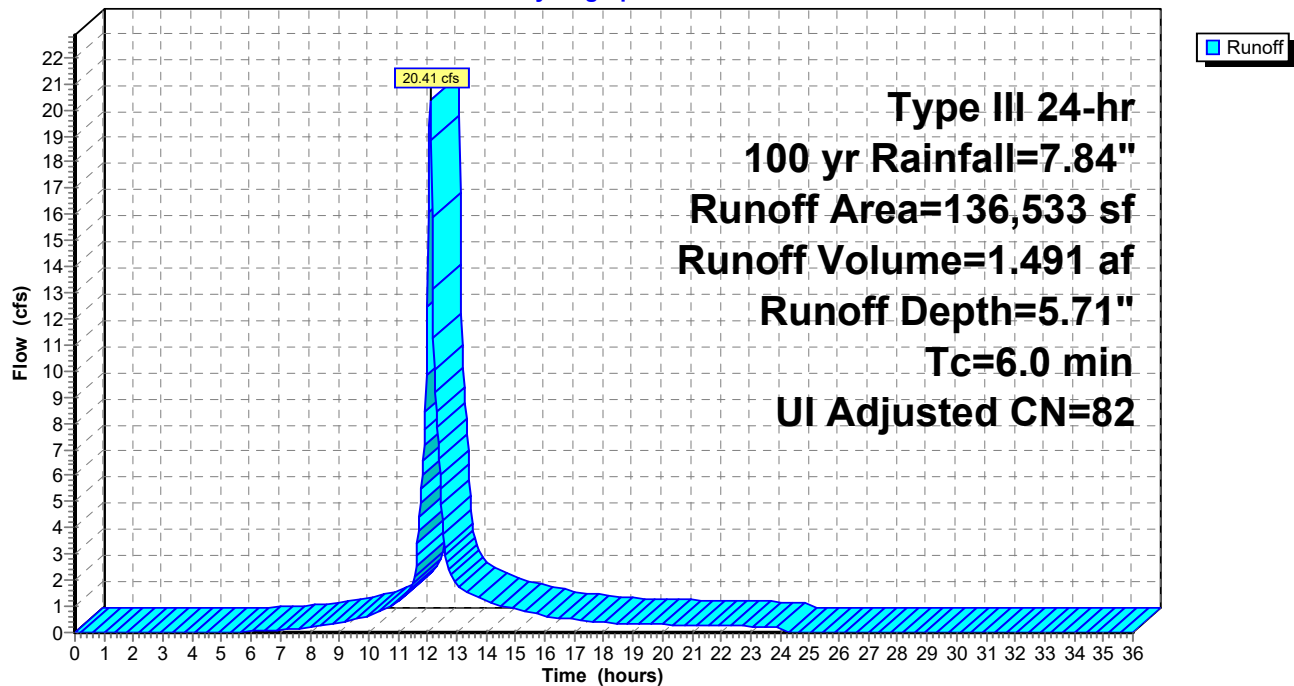
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 100 yr Rainfall=7.84"

Area (sf)	CN	Adj	Description
20,984	98		Unconnected pavement, HSG B
4,917	96		Gravel surface, HSG B
93,955	83		Fallow, crop residue, Good, HSG B
16,677	61		>75% Grass cover, Good, HSG B
136,533	83	82	Weighted Average, UI Adjusted
115,549			84.63% Pervious Area
20,984			15.37% Impervious Area
20,984			100.00% Unconnected

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

Subcatchment PR-1B: PR-1B

Hydrograph



Summary for Subcatchment PR-1C: PR-1C

Runoff = 6.90 cfs @ 12.09 hrs, Volume= 0.503 af, Depth= 5.59"
 Routed to Pond 1P : Stormwater Basin

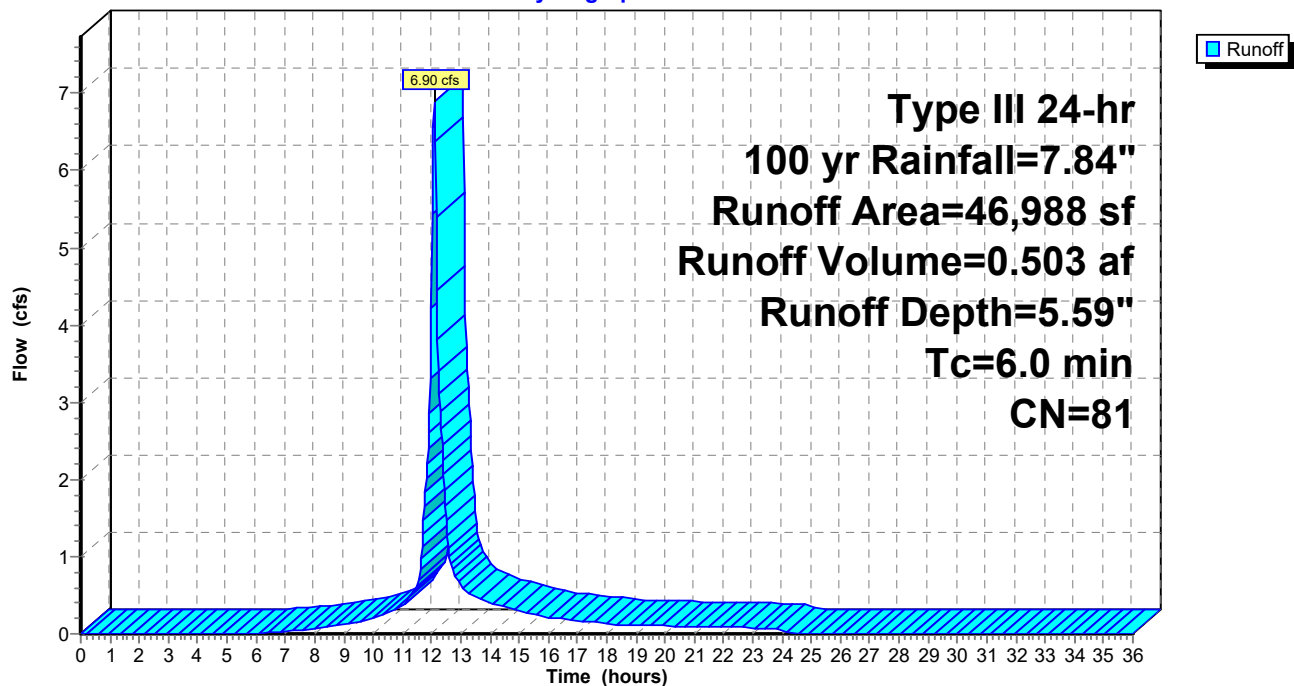
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 100 yr Rainfall=7.84"

Area (sf)	CN	Description
25,222	98	Unconnected pavement, HSG B
0	96	Gravel surface, HSG B
21,766	61	>75% Grass cover, Good, HSG B
46,988	81	Weighted Average
21,766		46.32% Pervious Area
25,222		53.68% Impervious Area
25,222		100.00% Unconnected

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

Subcatchment PR-1C: PR-1C

Hydrograph



Summary for Subcatchment PR-2: PR-2

Runoff = 12.70 cfs @ 12.09 hrs, Volume= 0.909 af, Depth= 4.78"
 Routed to Link DP-2 : DP-2

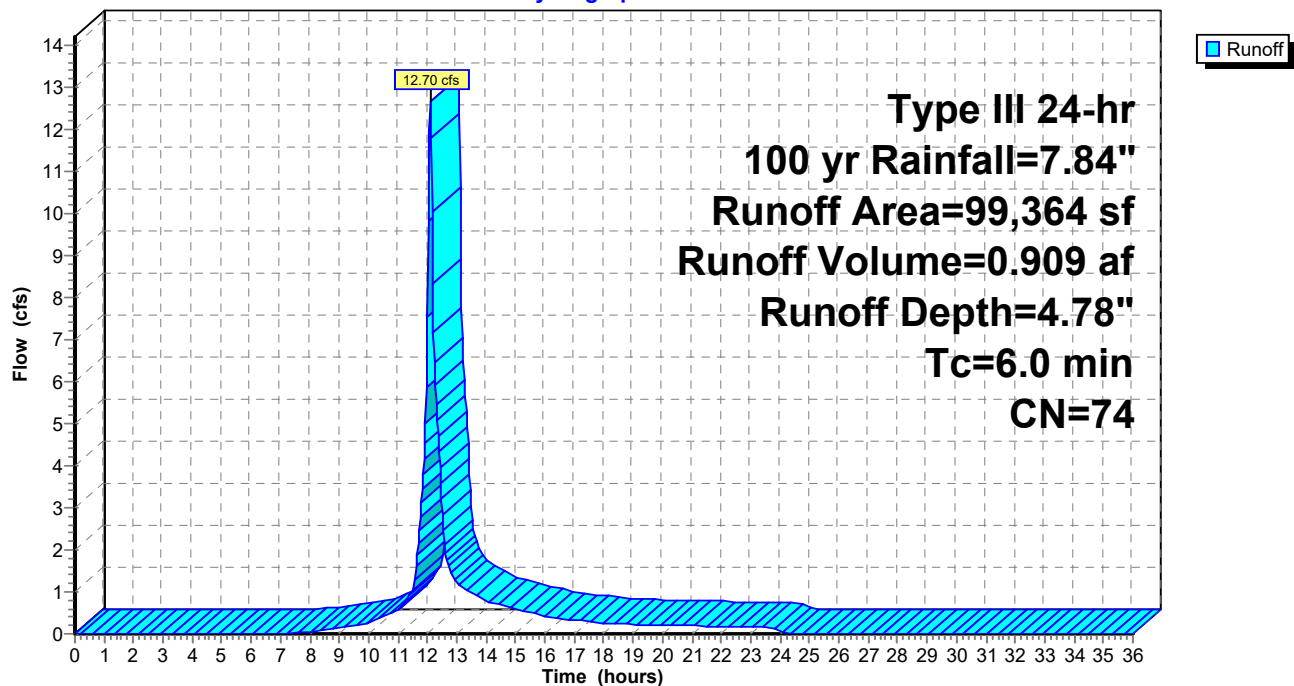
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 100 yr Rainfall=7.84"

Area (sf)	CN	Description
33,283	98	Unconnected pavement, HSG B
64,091	61	>75% Grass cover, Good, HSG B
1,990	96	Gravel surface, HSG B
99,364	74	Weighted Average
66,081		66.50% Pervious Area
33,283		33.50% Impervious Area
33,283		100.00% Unconnected

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

Subcatchment PR-2: PR-2

Hydrograph



Summary for Pond 1BP: Turf Reservoir

Inflow Area = 3.134 ac, 15.37% Impervious, Inflow Depth = 5.71" for 100 yr event
 Inflow = 20.41 cfs @ 12.09 hrs, Volume= 1.491 af
 Outflow = 15.10 cfs @ 12.16 hrs, Volume= 1.491 af, Atten= 26%, Lag= 4.3 min
 Discarded = 15.10 cfs @ 12.16 hrs, Volume= 1.491 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link DP-1 : DP-1

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Peak Elev= 172.55' @ 12.16 hrs Surf.Area= 93,140 sf Storage= 1,934 cf

Plug-Flow detention time= 0.6 min calculated for 1.490 af (100% of inflow)
 Center-of-Mass det. time= 0.6 min (799.5 - 798.8)

Volume	Invert	Avail.Storage	Storage Description
#1	172.50'	37,256 cf	Custom Stage Data (Irregular) Listed below (Recalc) 93,140 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
172.50	93,140	746.0	0	0	93,140
173.00	93,140	746.0	46,570	46,570	93,513
173.50	93,140	746.0	46,570	93,140	93,886

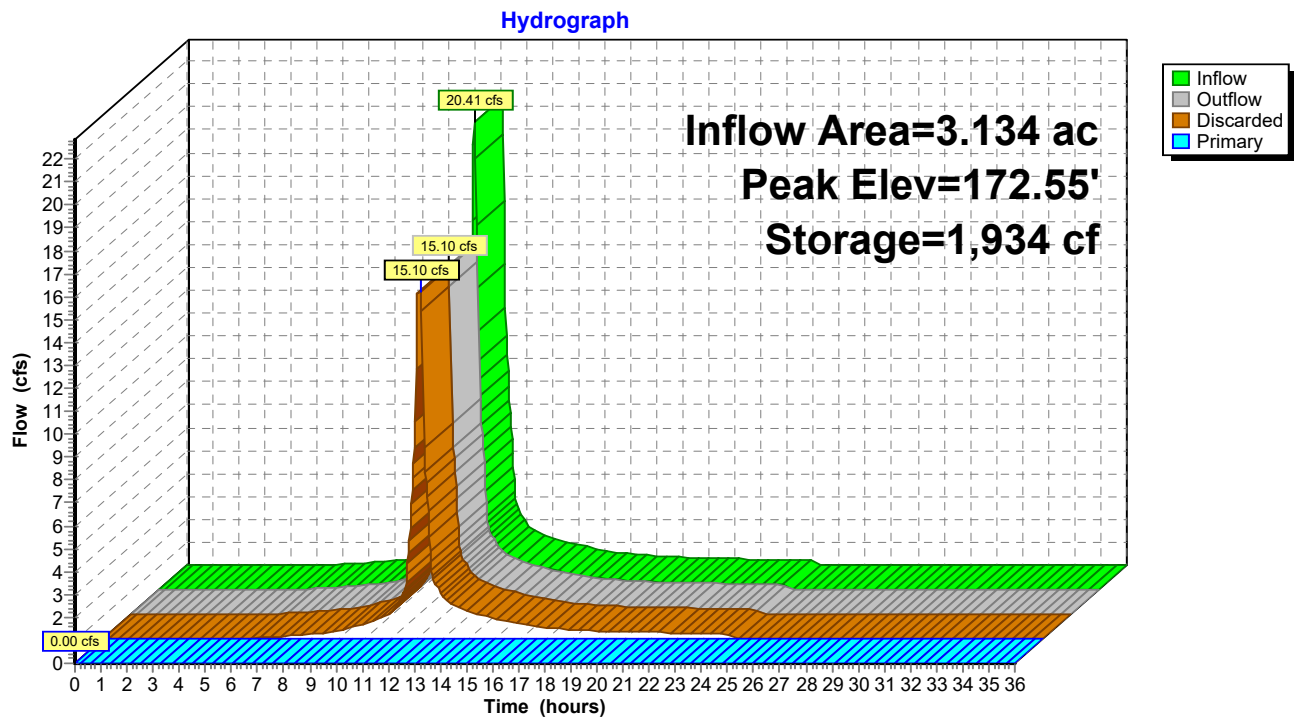
Device	Routing	Invert	Outlet Devices
#1	Primary	172.75'	746.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Discarded	172.50'	7.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 10.00'

Discarded OutFlow Max=15.10 cfs @ 12.16 hrs HW=172.55' (Free Discharge)

↑ **2=Exfiltration** (Controls 15.10 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=172.50' (Free Discharge)

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

Pond 1BP: Turf Reservoir

Summary for Pond 1P: Stormwater Basin

Inflow Area = 1.079 ac, 53.68% Impervious, Inflow Depth = 5.59" for 100 yr event
 Inflow = 6.90 cfs @ 12.09 hrs, Volume= 0.503 af
 Outflow = 2.35 cfs @ 12.38 hrs, Volume= 0.503 af, Atten= 66%, Lag= 17.4 min
 Discarded = 0.77 cfs @ 12.38 hrs, Volume= 0.455 af
 Primary = 1.58 cfs @ 12.38 hrs, Volume= 0.048 af
 Routed to Link DP-1 : DP-1

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Peak Elev= 168.67' @ 12.38 hrs Surf.Area= 4,724 sf Storage= 6,604 cf

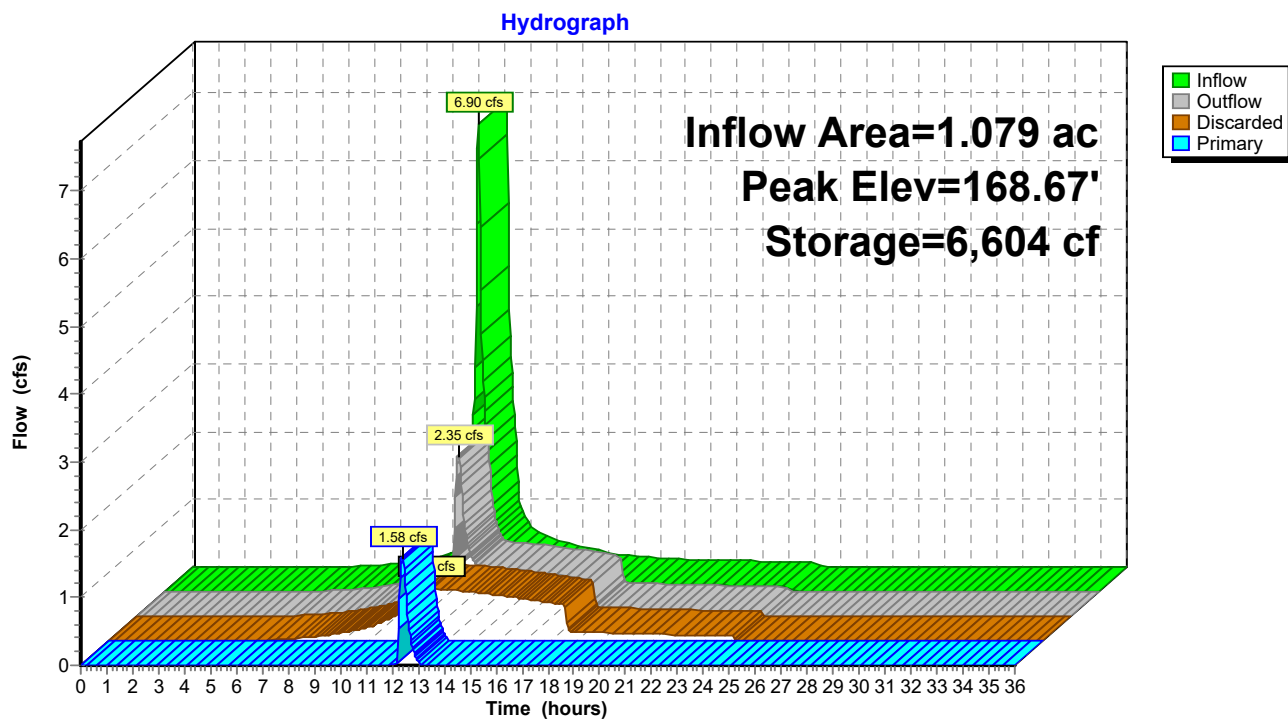
Plug-Flow detention time= 58.6 min calculated for 0.502 af (100% of inflow)
 Center-of-Mass det. time= 58.5 min (859.8 - 801.3)

Volume	Invert	Avail.Storage	Storage Description
#1	167.00'	8,234 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
167.00	3,227	0	0
168.00	4,103	3,665	3,665
169.00	5,035	4,569	8,234

Device	Routing	Invert	Outlet Devices
#1	Primary	168.50'	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
#2	Discarded	167.00'	7.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 10.00'

Discarded OutFlow Max=0.77 cfs @ 12.38 hrs HW=168.67' (Free Discharge)
 ↑ **2=Exfiltration** (Controls 0.77 cfs)

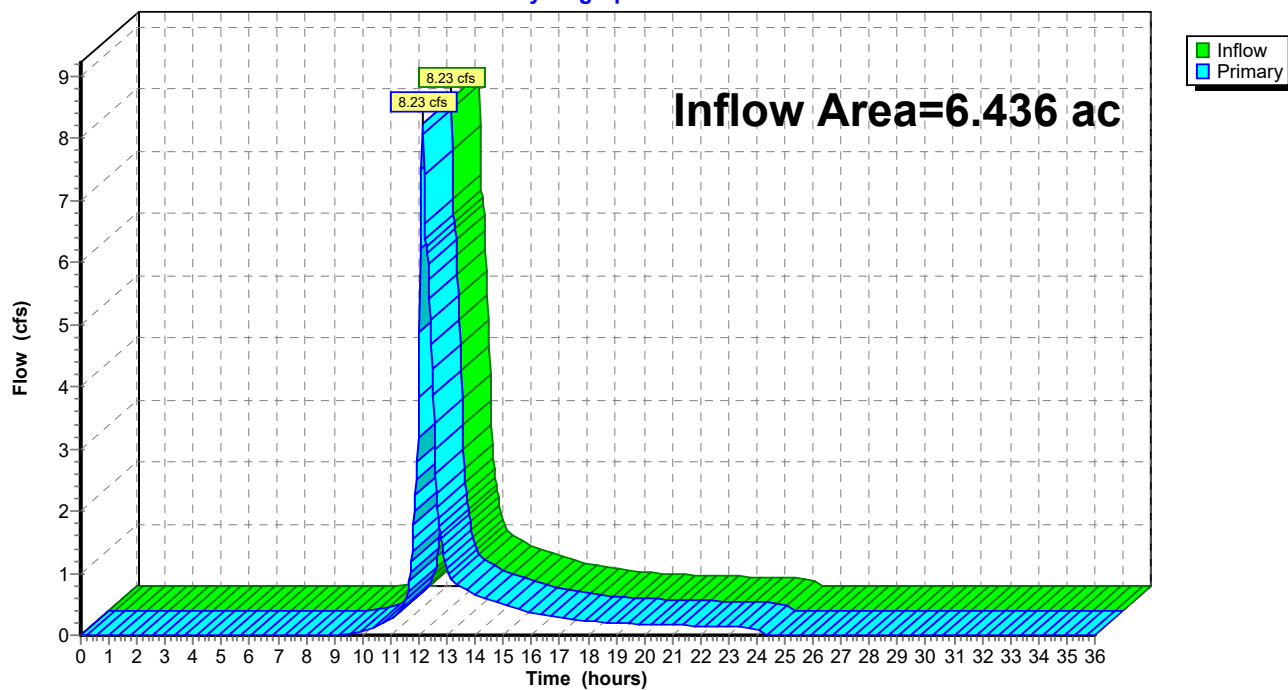
Primary OutFlow Max=1.57 cfs @ 12.38 hrs HW=168.67' (Free Discharge)
 ↑ **1=Broad-Crested Rectangular Weir**(Weir Controls 1.57 cfs @ 0.95 fps)

Pond 1P: Stormwater Basin

Summary for Link DP-1: DP-1

Inflow Area = 6.436 ac, 19.15% Impervious, Inflow Depth = 1.31" for 100 yr event
Inflow = 8.23 cfs @ 12.13 hrs, Volume= 0.704 af
Primary = 8.23 cfs @ 12.13 hrs, Volume= 0.704 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link DP-1: DP-1**Hydrograph**

Summary for Link DP-2: DP-2

Inflow Area = 2.281 ac, 33.50% Impervious, Inflow Depth = 4.78" for 100 yr event
Inflow = 12.70 cfs @ 12.09 hrs, Volume= 0.909 af
Primary = 12.70 cfs @ 12.09 hrs, Volume= 0.909 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link DP-2: DP-2**Hydrograph**