



Memorandum

To: Christopher Hulk, PE
FieldTurf

Date: March 4, 2024

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 6.0- 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. 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 used in the hydrologic model utilizing one-half of the lowest field-tested infiltration rate as provided by FieldTurf for the

area. 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 three (3) catchment areas that outlet to two (2) design points.

Drainage Area P-1A: This 3.5-acre catchment area consists of the grassed area at the western property line and the parking lot in the eastern portion of the watershed. The area drains overland and via pipe to the southern proposed stormwater basin (Pond 1P).

Drainage Area P-1B: This 2.5-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-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	25-year	100-year
<u>Design Point:</u>				
<u>DP1</u>				
Existing	6.1	15.6	22.1	32.6
Proposed	0.0	0.0	1.5	4.6
<u>Design Point:</u>				
<u>DP2</u>				
Existing	2.6	6.4	8.9	12.9
Proposed	2.5	6.2	8.7	12.7

Water Quality

Retention and infiltration of the required water quality volume is provided within the proposed stormwater basin for tributary impervious areas. Computations for the required water quality volume are enclosed herewith.

Ref: FieldTurf South Windsor, CT

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Figures

Figure 1: Existing Conditions Drainage Areas

Figure 2: Proposed Conditions Drainage Areas

Attachments

Attachment 3: NOAA Precipitation Frequency

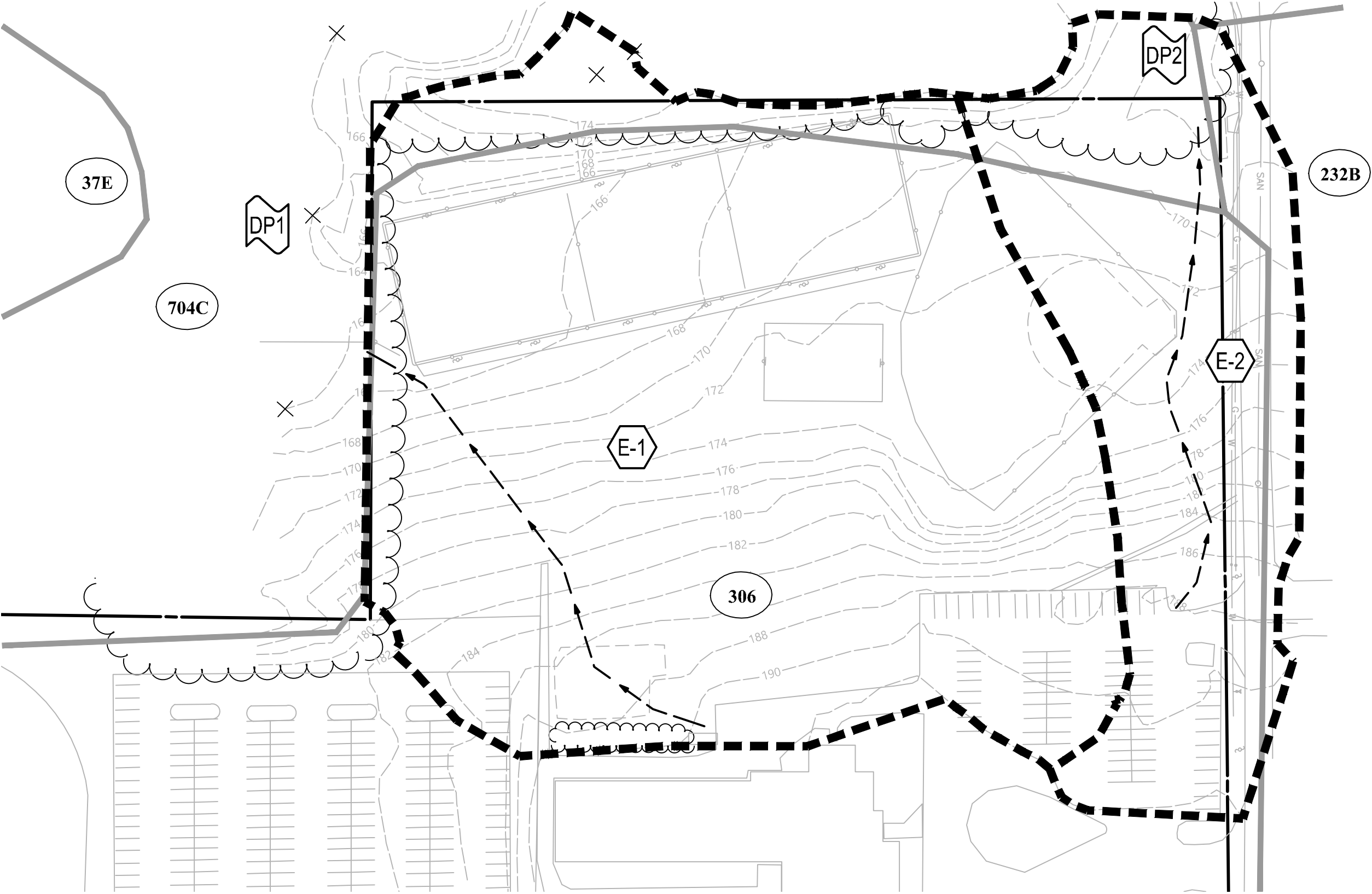
Attachment 4: NRCS Hydrologic Soil Group & Field-tested Infiltration Rates

Attachment 5: FEMA Flood Map

Attachment 6: Water Quality Volume Computations

Attachment 7: HydroCAD Existing Conditions

Attachment 8: HydroCAD Proposed Conditions



Legend

X

DRAINAGE AREA DESIGNATION

DPX

DESIGN POINT

DRAINAGE AREA BOUNDARY

TIME OF CONCENTRATION FLOW LINE

SOIL TYPE BOUNDARY

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

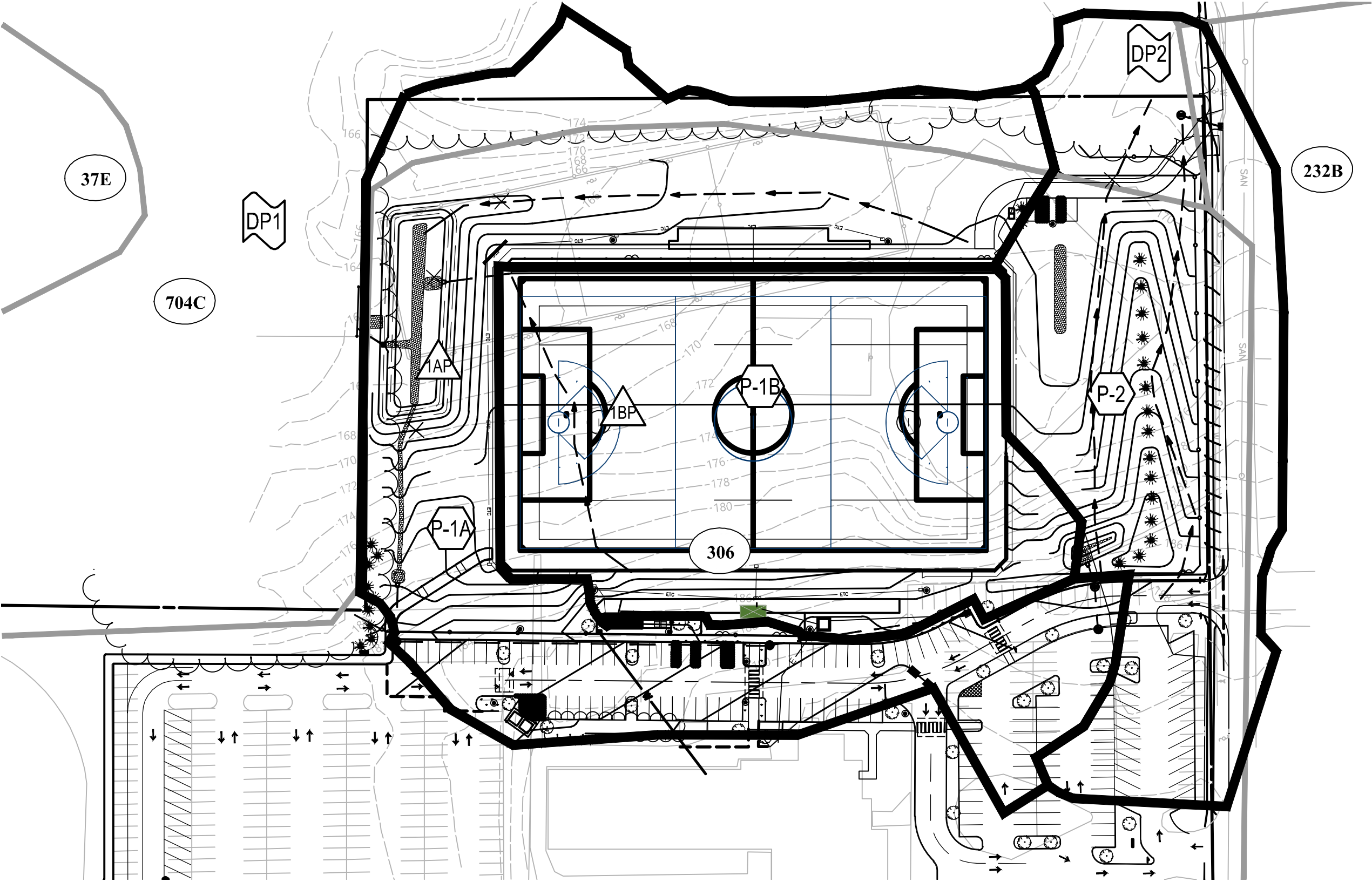
MANCHESTER GRAVELLY SANDY LOAM, 15-45% SLOPES, HSG B



Existing Drainage Conditions

Figure 1

FieldTurf - S. Windsor High Drainage 3-4-2024
Ayers Road & Nevers Road, South Windsor, CT



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

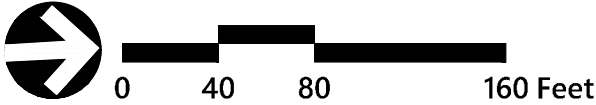
UDORTHENTS, SMOOTHED, HSG B

232B

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

37E

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





NOAA Atlas 14, Volume 10, Version 3
Location name: South Windsor, Connecticut, USA*
Latitude: 41.842°, Longitude: -72.5545°
Elevation: 184 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	0.336 (0.259-0.435)	0.407 (0.314-0.527)	0.523 (0.402-0.681)	0.620 (0.474-0.811)	0.753 (0.558-1.03)	0.853 (0.621-1.19)	0.958 (0.678-1.39)	1.08 (0.723-1.60)	1.25 (0.806-1.92)	1.39 (0.877-2.17)
10-min	0.475 (0.367-0.616)	0.576 (0.444-0.747)	0.741 (0.569-0.964)	0.878 (0.671-1.15)	1.07 (0.791-1.46)	1.21 (0.878-1.69)	1.36 (0.960-1.97)	1.52 (1.02-2.26)	1.77 (1.14-2.71)	1.96 (1.24-3.08)
15-min	0.559 (0.432-0.724)	0.678 (0.523-0.879)	0.872 (0.670-1.13)	1.03 (0.789-1.35)	1.26 (0.930-1.72)	1.42 (1.03-1.99)	1.60 (1.13-2.32)	1.79 (1.20-2.66)	2.08 (1.34-3.19)	2.31 (1.46-3.62)
30-min	0.752 (0.580-0.973)	0.913 (0.704-1.18)	1.18 (0.904-1.53)	1.40 (1.07-1.83)	1.70 (1.26-2.32)	1.93 (1.40-2.69)	2.16 (1.53-3.14)	2.43 (1.63-3.61)	2.82 (1.82-4.33)	3.13 (1.98-4.92)
60-min	0.944 (0.728-1.22)	1.15 (0.885-1.49)	1.48 (1.14-1.93)	1.76 (1.35-2.30)	2.14 (1.59-2.93)	2.43 (1.77-3.40)	2.73 (1.94-3.97)	3.07 (2.06-4.56)	3.56 (2.30-5.47)	3.96 (2.51-6.21)
2-hr	1.22 (0.946-1.57)	1.48 (1.14-1.90)	1.89 (1.46-2.45)	2.24 (1.72-2.92)	2.72 (2.03-3.71)	3.07 (2.25-4.29)	3.45 (2.47-5.02)	3.90 (2.63-5.76)	4.58 (2.97-7.00)	5.15 (3.27-8.02)
3-hr	1.40 (1.09-1.80)	1.70 (1.32-2.18)	2.18 (1.69-2.81)	2.57 (1.98-3.34)	3.12 (2.34-4.25)	3.52 (2.59-4.91)	3.96 (2.85-5.76)	4.49 (3.03-6.61)	5.30 (3.45-8.08)	6.00 (3.82-9.31)
6-hr	1.76 (1.38-2.25)	2.14 (1.67-2.73)	2.75 (2.14-3.53)	3.26 (2.52-4.20)	3.96 (2.98-5.37)	4.47 (3.31-6.22)	5.04 (3.65-7.31)	5.74 (3.88-8.39)	6.82 (4.45-10.3)	7.76 (4.95-12.0)
12-hr	2.16 (1.70-2.74)	2.64 (2.07-3.36)	3.43 (2.69-4.38)	4.09 (3.18-5.24)	4.99 (3.78-6.74)	5.66 (4.21-7.82)	6.39 (4.65-9.22)	7.30 (4.96-10.6)	8.72 (5.70-13.1)	9.95 (6.37-15.2)
24-hr	2.52 (1.99-3.18)	3.13 (2.47-3.95)	4.12 (3.24-5.23)	4.95 (3.87-6.31)	6.09 (4.64-8.18)	6.92 (5.19-9.54)	7.84 (5.76-11.3)	9.01 (6.14-13.0)	10.9 (7.14-16.3)	12.5 (8.03-19.0)
2-day	2.83 (2.25-3.56)	3.57 (2.83-4.49)	4.77 (3.78-6.02)	5.77 (4.54-7.32)	7.14 (5.48-9.58)	8.14 (6.15-11.2)	9.26 (6.87-13.4)	10.7 (7.34-15.4)	13.1 (8.65-19.5)	15.3 (9.85-23.1)
3-day	3.08 (2.46-3.86)	3.89 (3.10-4.88)	5.21 (4.14-6.55)	6.30 (4.98-7.97)	7.81 (6.02-10.4)	8.90 (6.75-12.2)	10.1 (7.54-14.6)	11.8 (8.06-16.9)	14.5 (9.53-21.4)	16.9 (10.9-25.4)
4-day	3.31 (2.65-4.14)	4.17 (3.33-5.22)	5.58 (4.44-7.00)	6.74 (5.34-8.51)	8.35 (6.44-11.1)	9.51 (7.22-13.0)	10.8 (8.07-15.6)	12.6 (8.62-17.9)	15.4 (10.2-22.8)	18.0 (11.6-27.0)
7-day	3.94 (3.16-4.90)	4.91 (3.94-6.10)	6.49 (5.18-8.10)	7.80 (6.20-9.79)	9.60 (7.44-12.7)	10.9 (8.31-14.9)	12.4 (9.25-17.7)	14.3 (9.85-20.3)	17.5 (11.6-25.6)	20.3 (13.1-30.2)
10-day	4.57 (3.68-5.66)	5.59 (4.50-6.94)	7.27 (5.82-9.05)	8.66 (6.90-10.8)	10.6 (8.19-13.9)	12.0 (9.11-16.2)	13.5 (10.1-19.1)	15.5 (10.7-21.9)	18.7 (12.4-27.4)	21.5 (14.0-32.1)
20-day	6.57 (5.32-8.10)	7.66 (6.20-9.45)	9.44 (7.61-11.7)	10.9 (8.74-13.6)	12.9 (10.0-16.8)	14.4 (11.0-19.2)	16.1 (11.9-22.2)	18.0 (12.5-25.3)	21.0 (14.0-30.4)	23.5 (15.3-34.7)
30-day	8.29 (6.74-10.2)	9.40 (7.63-11.6)	11.2 (9.07-13.8)	12.7 (10.2-15.8)	14.8 (11.5-19.1)	16.4 (12.4-21.5)	18.0 (13.2-24.5)	19.8 (13.8-27.7)	22.5 (15.0-32.4)	24.6 (16.0-36.2)
45-day	10.4 (8.52-12.8)	11.6 (9.44-14.2)	13.5 (10.9-16.6)	15.0 (12.1-18.6)	17.2 (13.3-22.0)	18.8 (14.3-24.5)	20.5 (15.0-27.5)	22.1 (15.5-30.7)	24.4 (16.4-35.0)	26.1 (17.0-38.3)
60-day	12.3 (10.0-15.0)	13.4 (11.0-16.4)	15.4 (12.5-18.9)	17.0 (13.7-20.9)	19.2 (14.9-24.4)	20.9 (15.9-27.1)	22.6 (16.5-30.1)	24.2 (16.9-33.4)	26.1 (17.6-37.4)	27.5 (18.0-40.2)

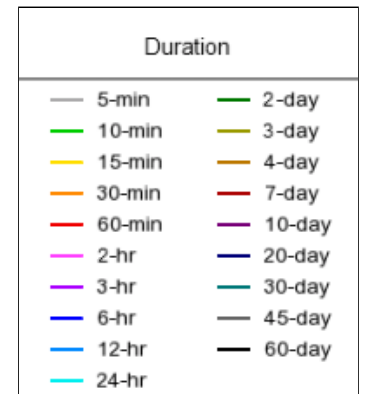
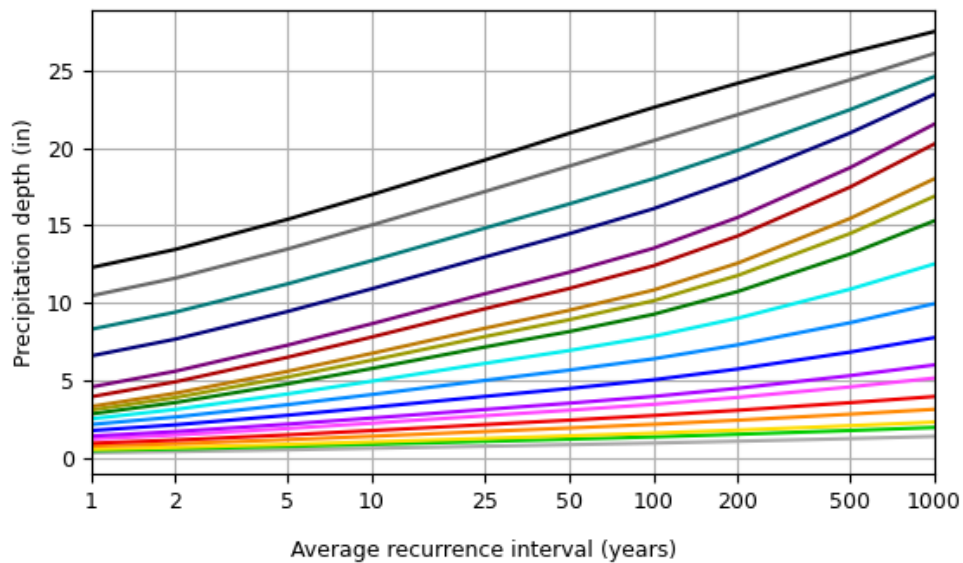
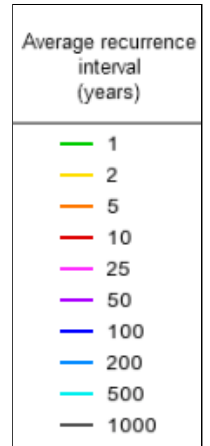
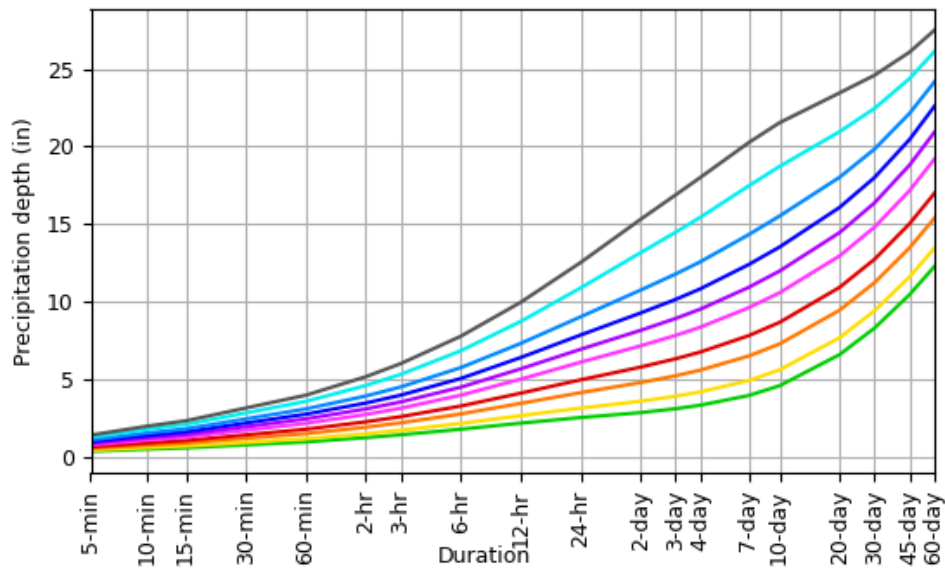
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average 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.

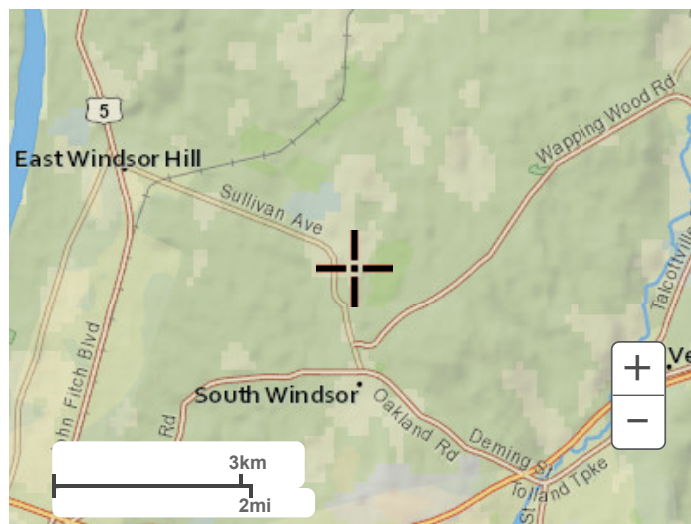
[Back to Top](#)

PF graphical

PDS-based depth-duration-frequency (DDF) curves

Latitude: 41.8420°, Longitude: -72.5545°

[Back to Top](#)**Maps & aerals****Small scale terrain**



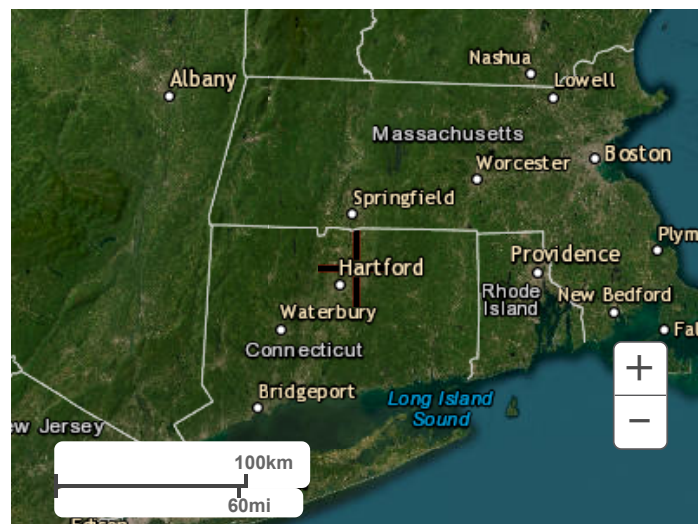
Large scale terrain



Large scale map



Large scale aerial



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Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov
[Disclaimer](#)

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

C/D

 C/D

D

 D

Not rated or not available

 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

EXISTING CONDITIONS LEGEND

PROPERTY LINE	
TREE LINE	
CHAIN LINK FENCE	
EXISTING CONTOUR	
WATER LINE	
GAS LINE	
SEWER LINE	
UTILITY POLE	
TEST PIT	

EXISTING CONDITIONS NOTES

1. ALL INFORMATION SHOWN IS BASED ON AVAILABLE MAPPING AND SHOULD BE CONSIDERED APPROXIMATE.

REMOVALS LEGEND

	REMOVE AND DISPOSE OF SITE FEATURE
	ALTER EXISTING SITE FEATURE TO REMAIN
	STRIP TOPSOIL TO REMAIN ONSITE
	MILL EXISTING PAVEMENT AND STOCKPILE TO REUSE AS BASE MATERIAL ON SITE

NOTES:

ALL TOPSOIL TO BE REMAIN ON SITE.

PERCOLATION TEST RESULTS:

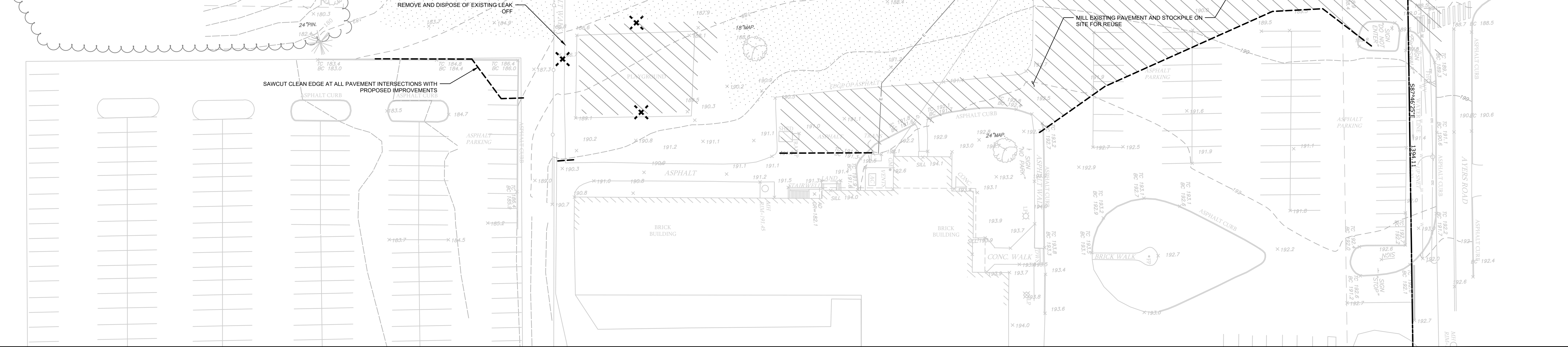
CONDUCTED MARCH 1, 2024

PERC 1: 46" DEPTH (SAND LAYER). 1 HOUR PRESOAK	
TIME	READING
09:37	22.5"
09:47	25"
09:57	27.5"
10:07	29.5"
10:17	31.5"
10:25	34"
RATE: 14.3 IN/HR	

PERC 2: 42" DEPTH (SAND LAYER). 1 HOUR PRESOAK	
TIME	READING
09:38	21"
09:48	24.5"
10:00	27"
10:08	28.5"
10:16	30"
10:23	32"
RATE: 14.6 IN/HR	

PERC 3: 66" DEPTH (SAND LAYER). 0.5 HOUR PRESOAK	
TIME	READING
09:22	48"
09:32	53"
09:42	56"
09:53	59"
RATE: 21.3 IN/HR	

PERC 4: 62" DEPTH (SAND LAYER). 1 HOUR PRESOAK	
TIME	READING
09:20	44"
09:30	47.5"
09:40	51"
09:49	54"
RATE: 20.0 IN/HR	



CEH ENGINEERING
AND CONSULTING
580 SHEPARD AVENUE
HAMDEN, CT 06514
chris.hulk@yahoo.com, 203-676-4445

FieldTurf
A Tarkett Sports Company

DESCRIPTION	DATE	BY
INWC SUBMISSION	12/29/2023	CEH
P2C SUBMISSION	1/22/2024	CEH
P & Z SUBMISSION	3/4/2024	CEH

SITE PLAN - EXISTING CONDITIONS AND REMOVALS

PROPOSED SYNTHETIC TURF FIELD AND TENNIS COURT DEVELOPMENT

SOUTH WINDSOR HIGH SCHOOL

AYERS ROAD AND NEVERS ROAD

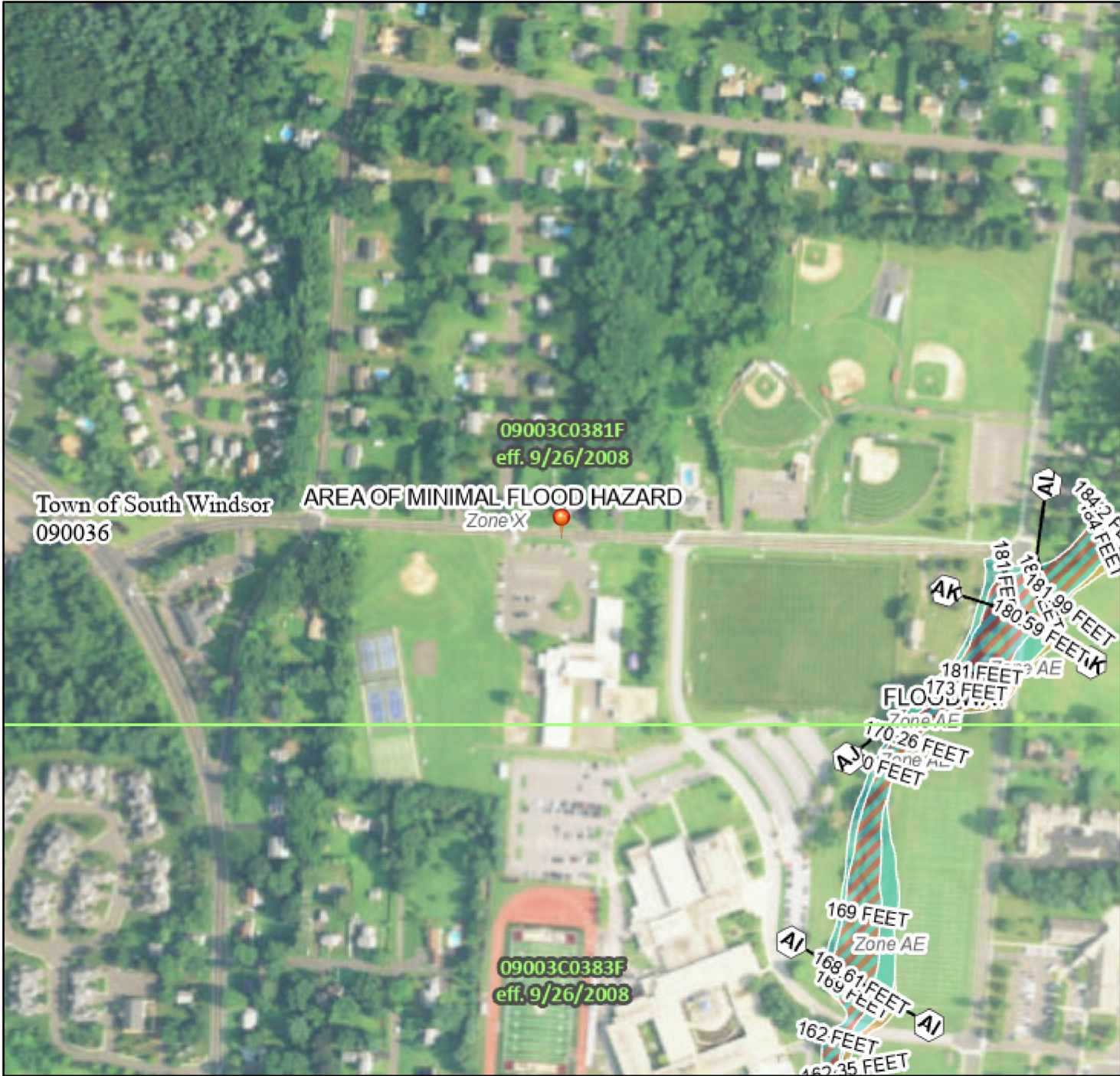
SOUTH WINDSOR, CONNECTICUT

CEH	JDH
DESIGNED	DRAWN
1"=30'	
DECEMBER 15, 2023	
EX-1	
SHEET	

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.

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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.

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Water Quality Volume Calculations

Project: South Windsor High School Field By: AMK Date: 3/4/24
 Location: South Windsor, CT Checked: SJK Date: _____

Basin Name	PR-1B & 1C		
Rainfall, P	1.0 in.		a
Area, A	6.05 ac		b
Impervious Cover Area	1.4 ac		c
% Impervious, I	23 %		
Volumetric Runoff Coeff., R	0.253		d
Water Quality Volume, WQV	0.128 ac-ft		e
	5,563 cf		
WQV Provided	0.226 ac-ft		e
	9,835 cf		f

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

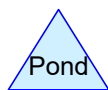
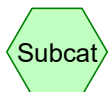
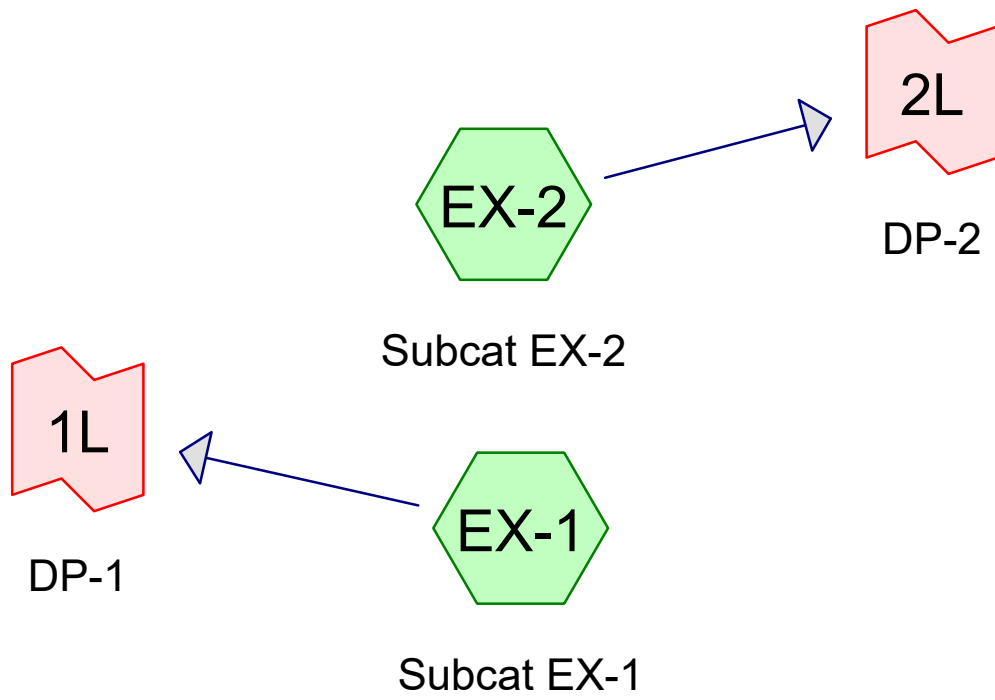
b Area tributary to the stormwater management basin

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

f Volumetric storage below outlet invert within proposed stormwater basin



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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	25 yr	Type III 24-hr		Default	24.00	1	6.09	2
4	100 yr	Type III 24-hr		Default	24.00	1	7.84	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
5.442	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)
8.258	73	TOTAL AREA

Soil Listing (all nodes)

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

43380-EX DR 2024-03-04

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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	5.442	0.000	0.000	0.000	5.442	>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	8.258	0.000	0.000	0.000	8.258	TOTAL AREA	

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=5.990 ac 31.02% Impervious Runoff Depth=0.94"
Tc=6.0 min CN=73 Runoff=6.11 cfs 0.468 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=6.11 cfs 0.468 af
Primary=6.11 cfs 0.468 af

Link 2L: DP-2

Inflow=2.64 cfs 0.198 af
Primary=2.64 cfs 0.198 af

Total Runoff Area = 8.258 ac Runoff Volume = 0.666 af Average Runoff Depth = 0.97"
67.92% Pervious = 5.608 ac 32.08% Impervious = 2.649 ac

Summary for Subcatchment EX-1: Subcat EX-1

Runoff = 6.11 cfs @ 12.10 hrs, Volume= 0.468 af, Depth= 0.94"
 Routed to Link 1L : DP-1

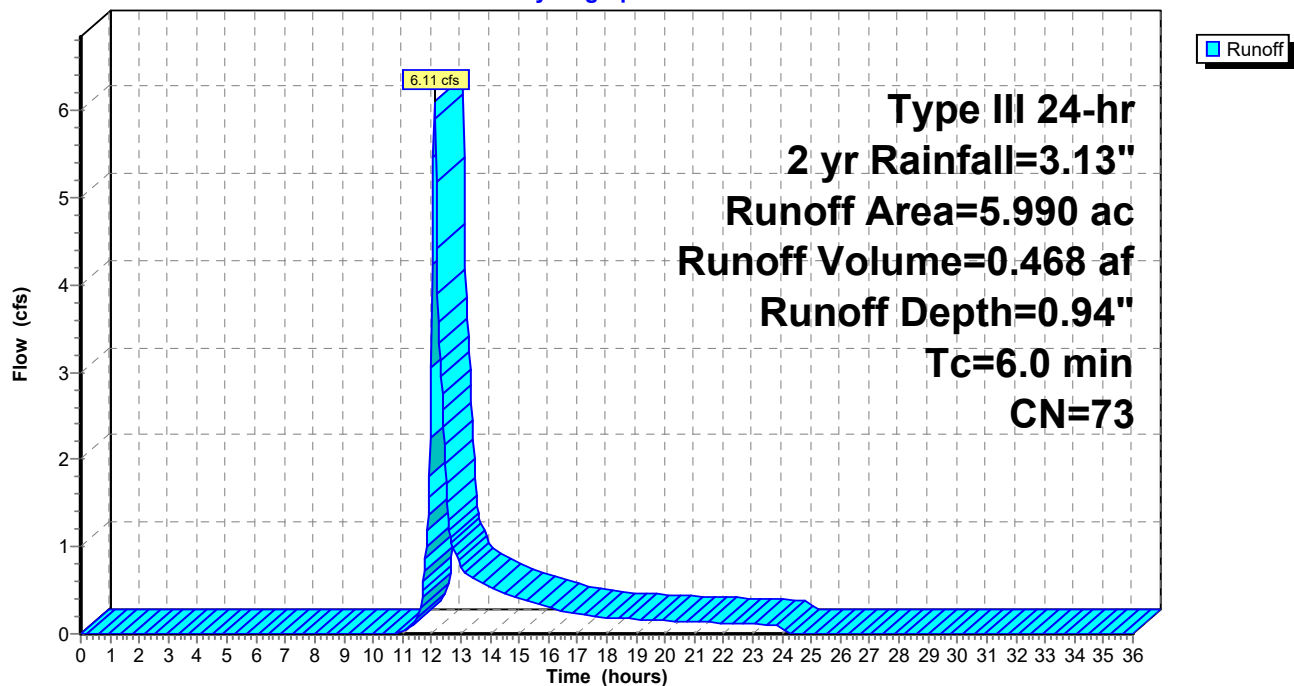
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 2 yr Rainfall=3.13"

Area (ac)	CN	Description
4.099	61	>75% Grass cover, Good, HSG B
0.033	82	Dirt roads, HSG B
1.858	98	Unconnected pavement, HSG B
5.990	73	Weighted Average
4.132		68.98% Pervious Area
1.858		31.02% 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

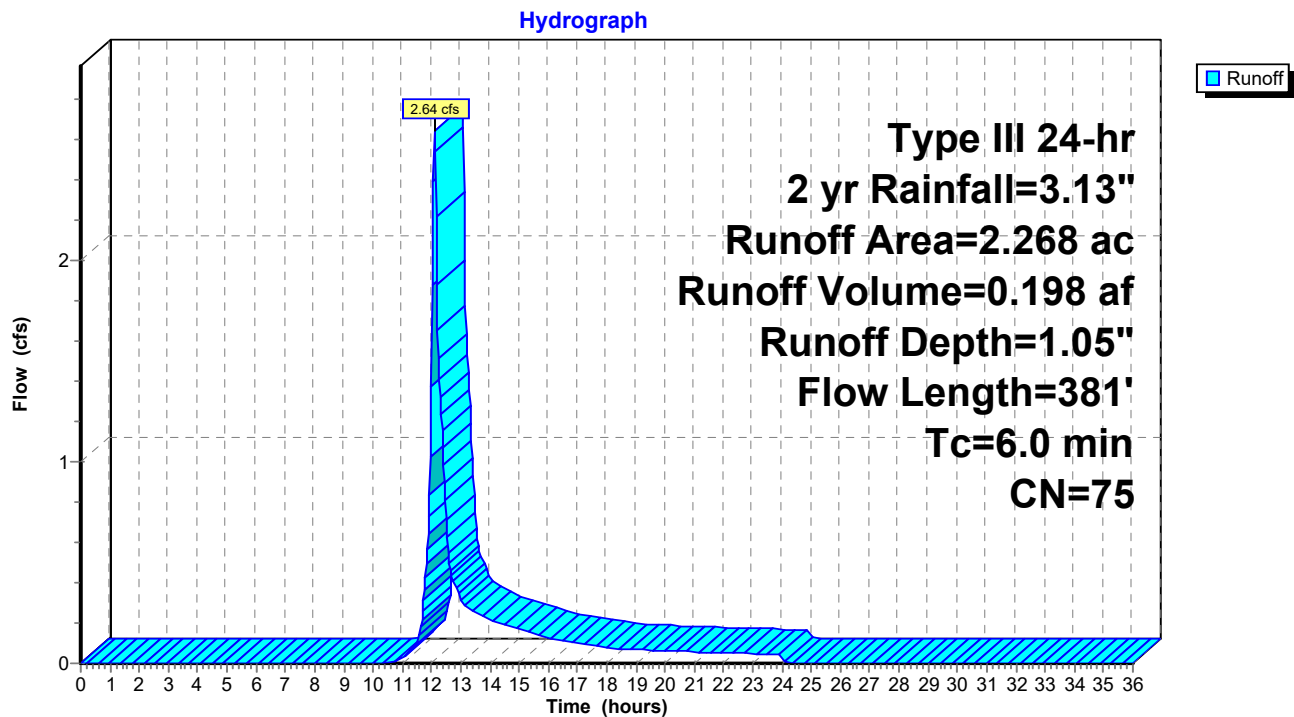
Runoff = 2.64 cfs @ 12.10 hrs, Volume= 0.198 af, Depth= 1.05"
 Routed to Link 2L : DP-2

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			

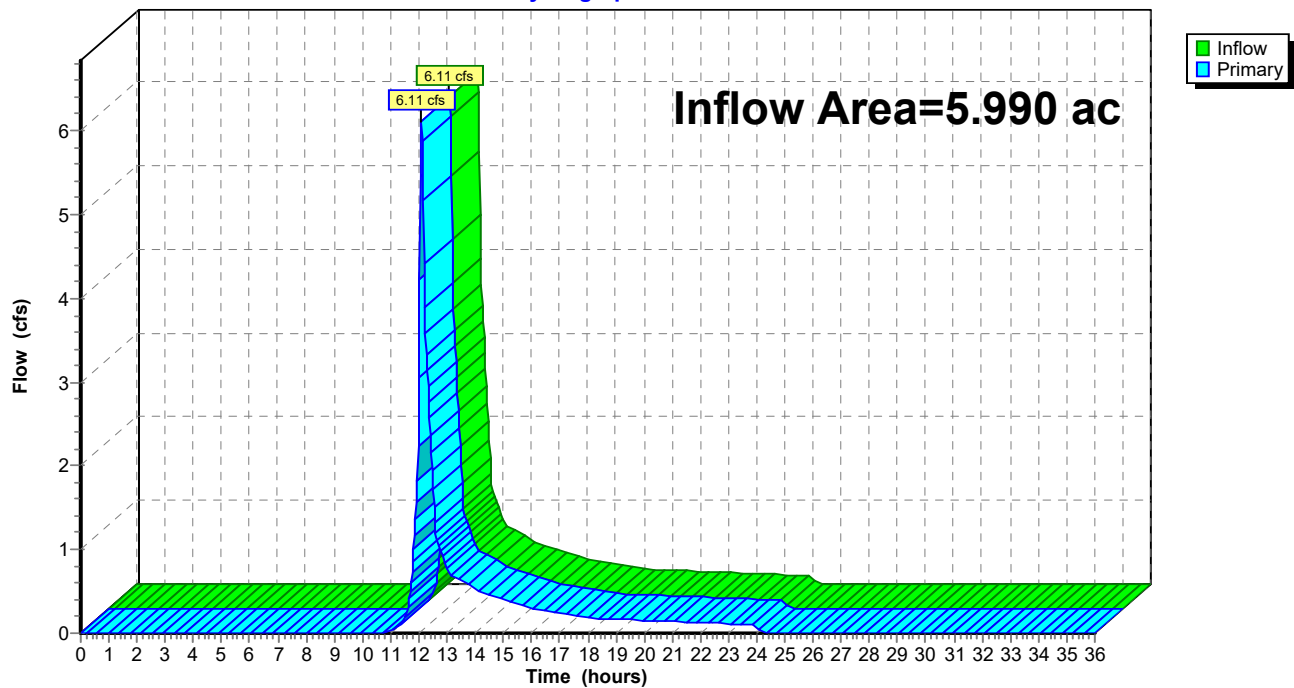
Subcatchment EX-2: Subcat EX-2



Summary for Link 1L: DP-1

Inflow Area = 5.990 ac, 31.02% Impervious, Inflow Depth = 0.94" for 2 yr event
Inflow = 6.11 cfs @ 12.10 hrs, Volume= 0.468 af
Primary = 6.11 cfs @ 12.10 hrs, Volume= 0.468 af, Atten= 0%, Lag= 0.0 min

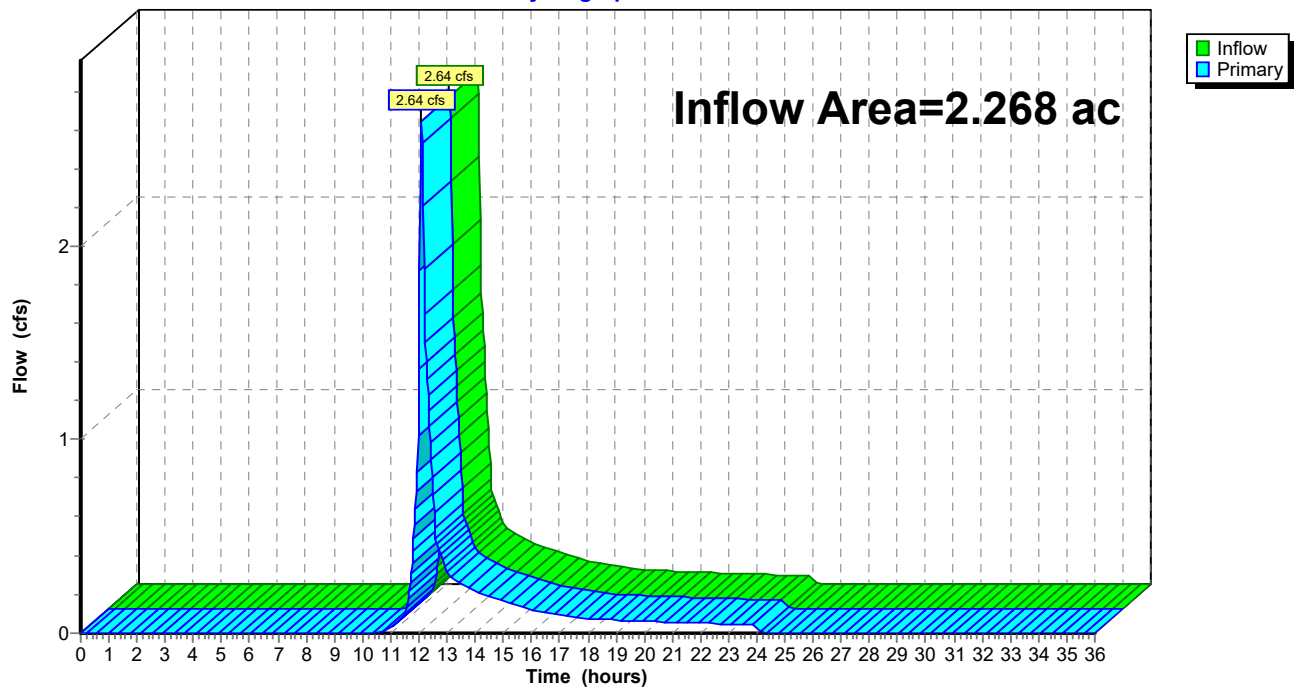
Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

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**

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=5.990 ac 31.02% Impervious Runoff Depth=2.24"
Tc=6.0 min CN=73 Runoff=15.55 cfs 1.119 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=15.55 cfs 1.119 af
Primary=15.55 cfs 1.119 af

Link 2L: DP-2

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

Total Runoff Area = 8.258 ac Runoff Volume = 1.574 af Average Runoff Depth = 2.29"
67.92% Pervious = 5.608 ac 32.08% Impervious = 2.649 ac

Summary for Subcatchment EX-1: Subcat EX-1

Runoff = 15.55 cfs @ 12.09 hrs, Volume= 1.119 af, Depth= 2.24"
 Routed to Link 1L : DP-1

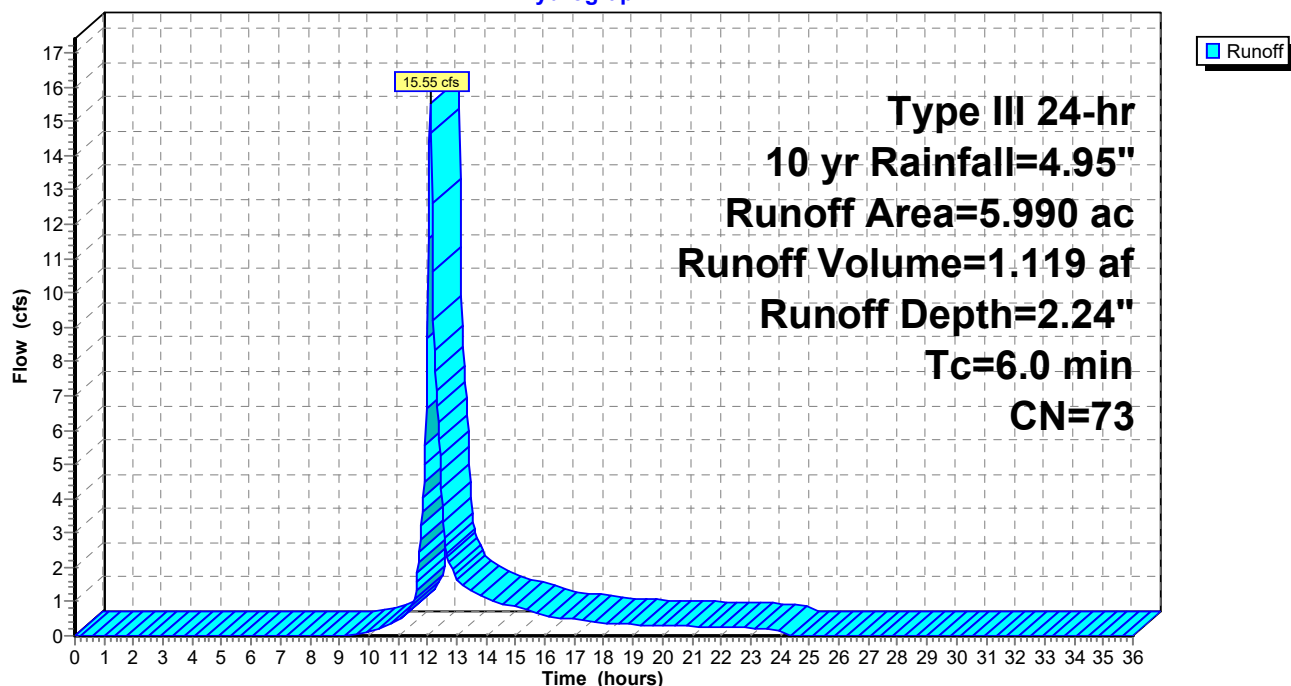
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 10 yr Rainfall=4.95"

Area (ac)	CN	Description
4.099	61	>75% Grass cover, Good, HSG B
0.033	82	Dirt roads, HSG B
1.858	98	Unconnected pavement, HSG B
5.990	73	Weighted Average
4.132		68.98% Pervious Area
1.858		31.02% 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

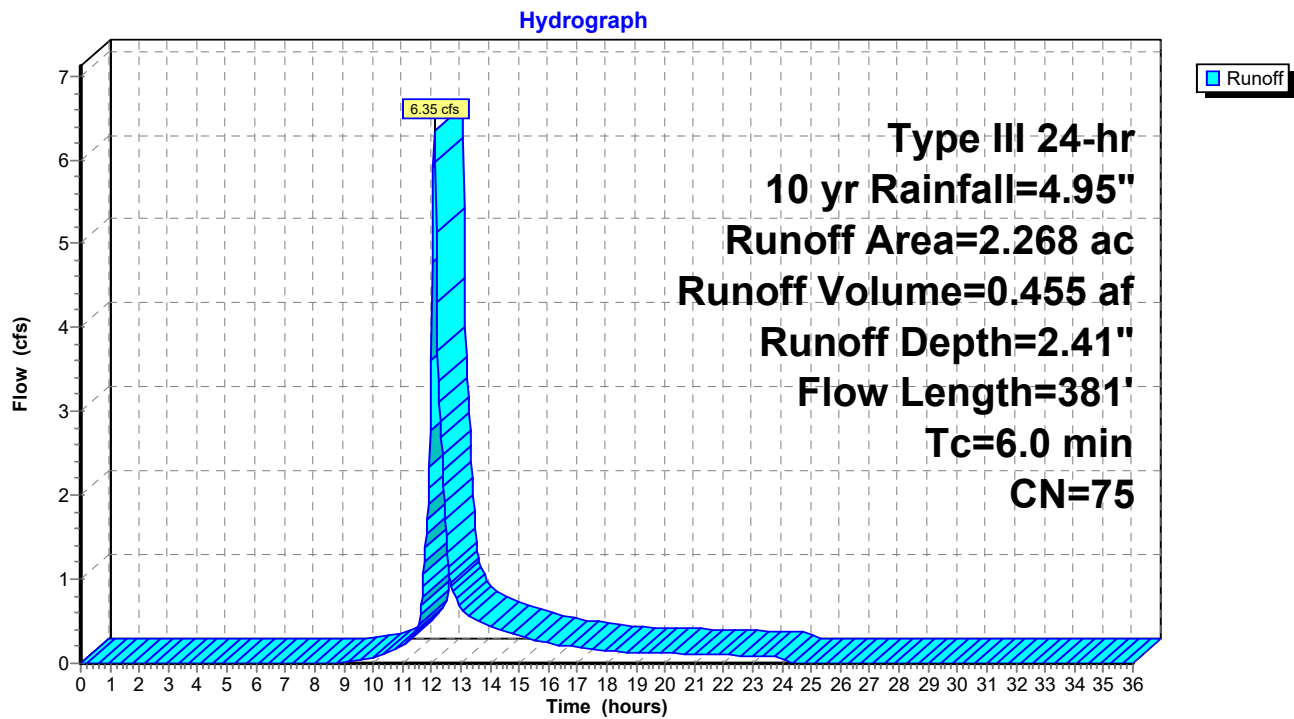
Runoff = 6.35 cfs @ 12.09 hrs, Volume= 0.455 af, Depth= 2.41"
 Routed to Link 2L : DP-2

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			

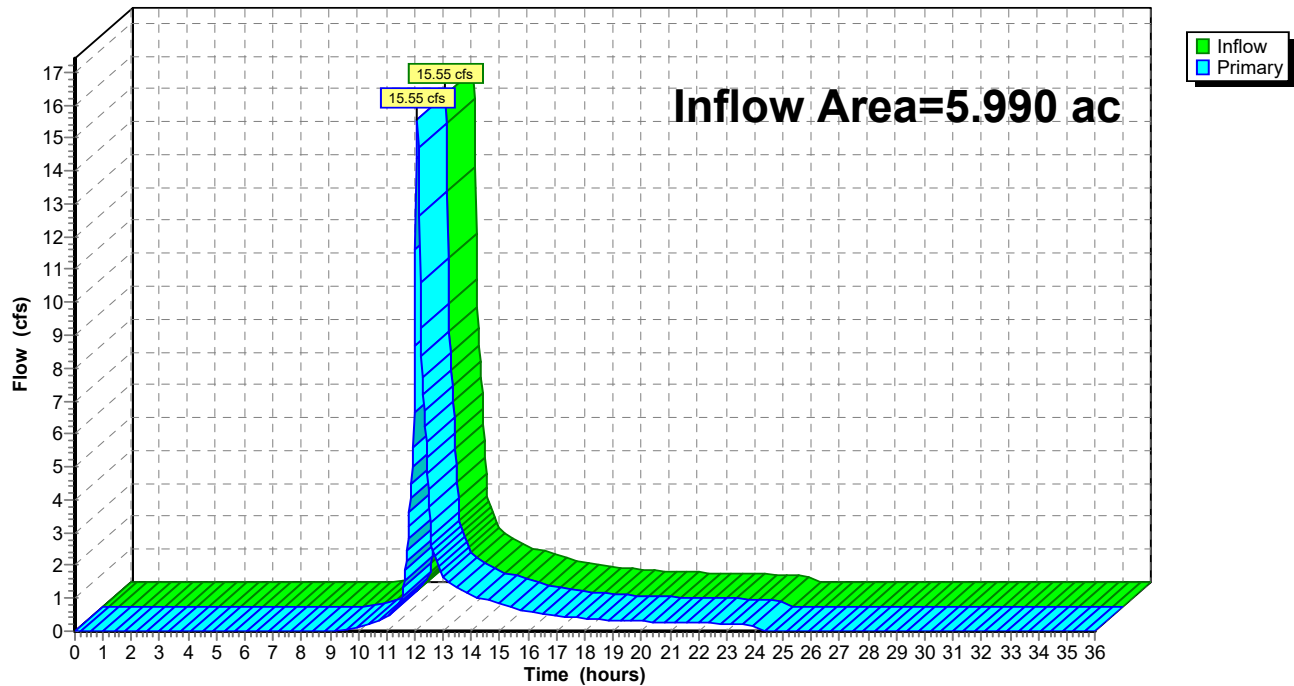
Subcatchment EX-2: Subcat EX-2



Summary for Link 1L: DP-1

Inflow Area = 5.990 ac, 31.02% Impervious, Inflow Depth = 2.24" for 10 yr event
Inflow = 15.55 cfs @ 12.09 hrs, Volume= 1.119 af
Primary = 15.55 cfs @ 12.09 hrs, Volume= 1.119 af, Atten= 0%, Lag= 0.0 min

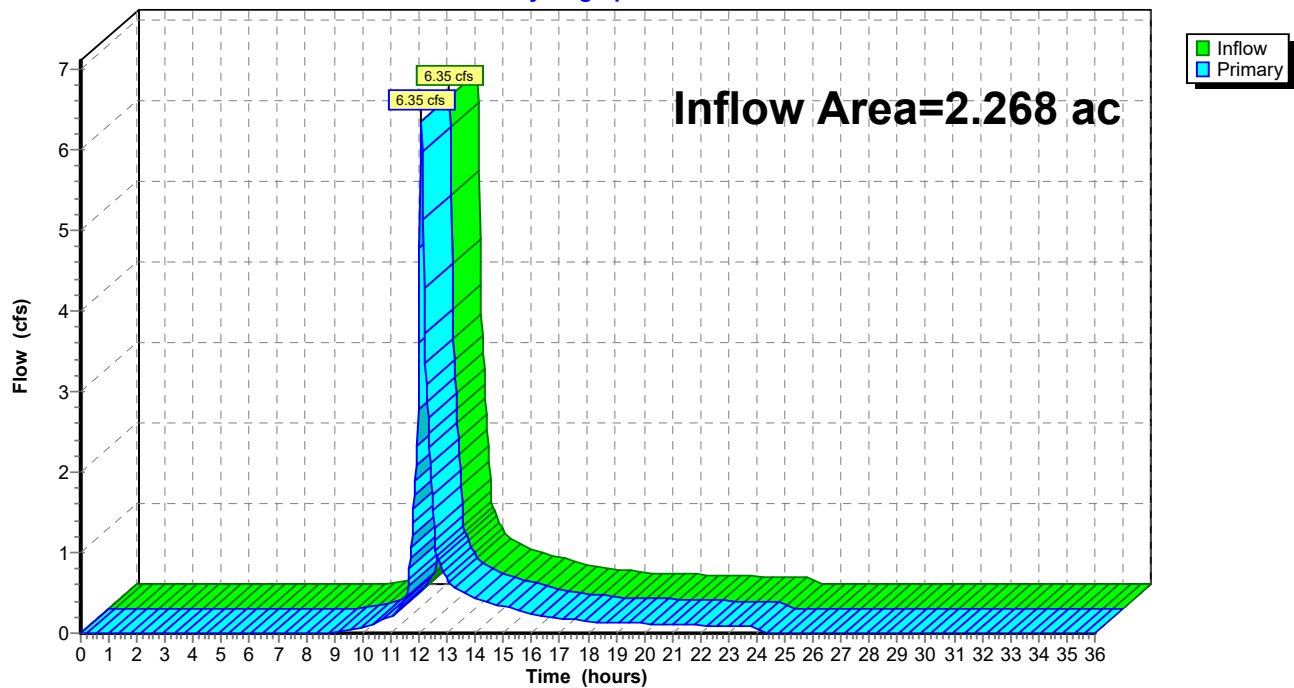
Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

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**

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=5.990 ac 31.02% Impervious Runoff Depth=3.16"
Tc=6.0 min CN=73 Runoff=22.10 cfs 1.579 af

SubcatchmentEX-2: Subcat EX-2

Runoff Area=2.268 ac 34.90% Impervious Runoff Depth=3.36"
Flow Length=381' Tc=6.0 min CN=75 Runoff=8.89 cfs 0.635 af

Link 1L: DP-1

Inflow=22.10 cfs 1.579 af
Primary=22.10 cfs 1.579 af

Link 2L: DP-2

Inflow=8.89 cfs 0.635 af
Primary=8.89 cfs 0.635 af

Total Runoff Area = 8.258 ac Runoff Volume = 2.214 af Average Runoff Depth = 3.22"
67.92% Pervious = 5.608 ac 32.08% Impervious = 2.649 ac

Summary for Subcatchment EX-1: Subcat EX-1

Runoff = 22.10 cfs @ 12.09 hrs, Volume= 1.579 af, Depth= 3.16"
 Routed to Link 1L : DP-1

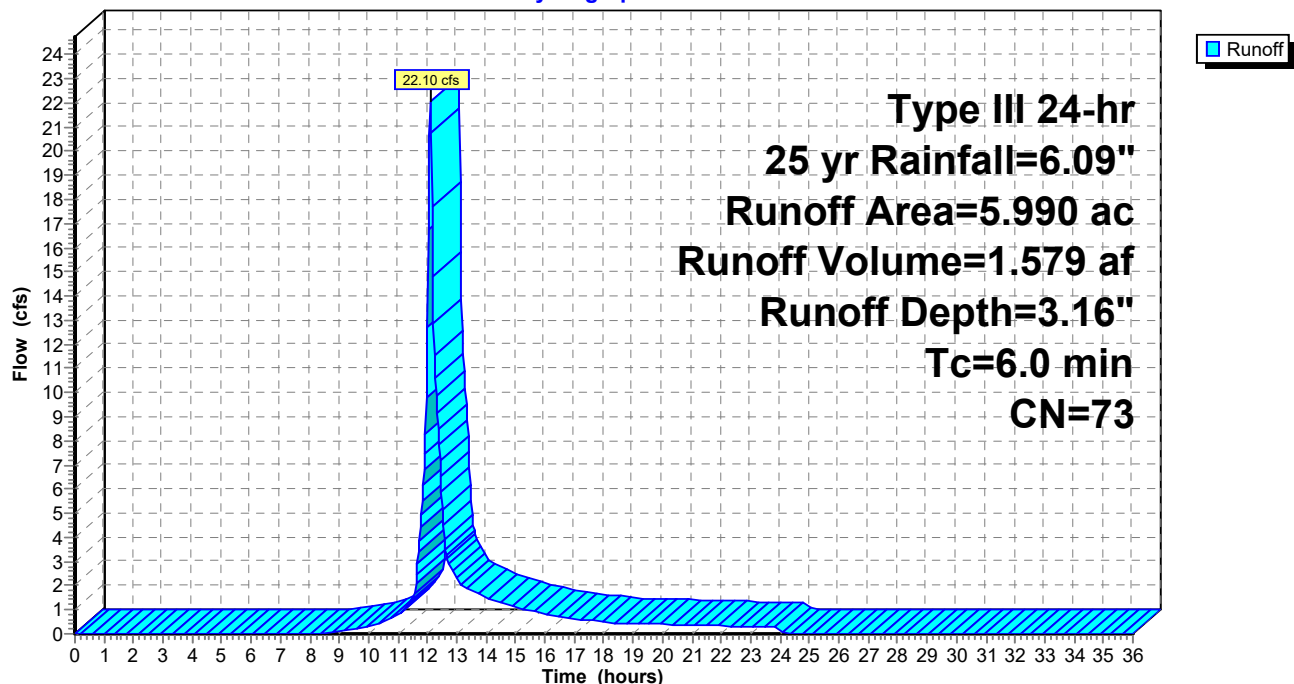
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 25 yr Rainfall=6.09"

Area (ac)	CN	Description
4.099	61	>75% Grass cover, Good, HSG B
0.033	82	Dirt roads, HSG B
1.858	98	Unconnected pavement, HSG B
5.990	73	Weighted Average
4.132		68.98% Pervious Area
1.858		31.02% 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

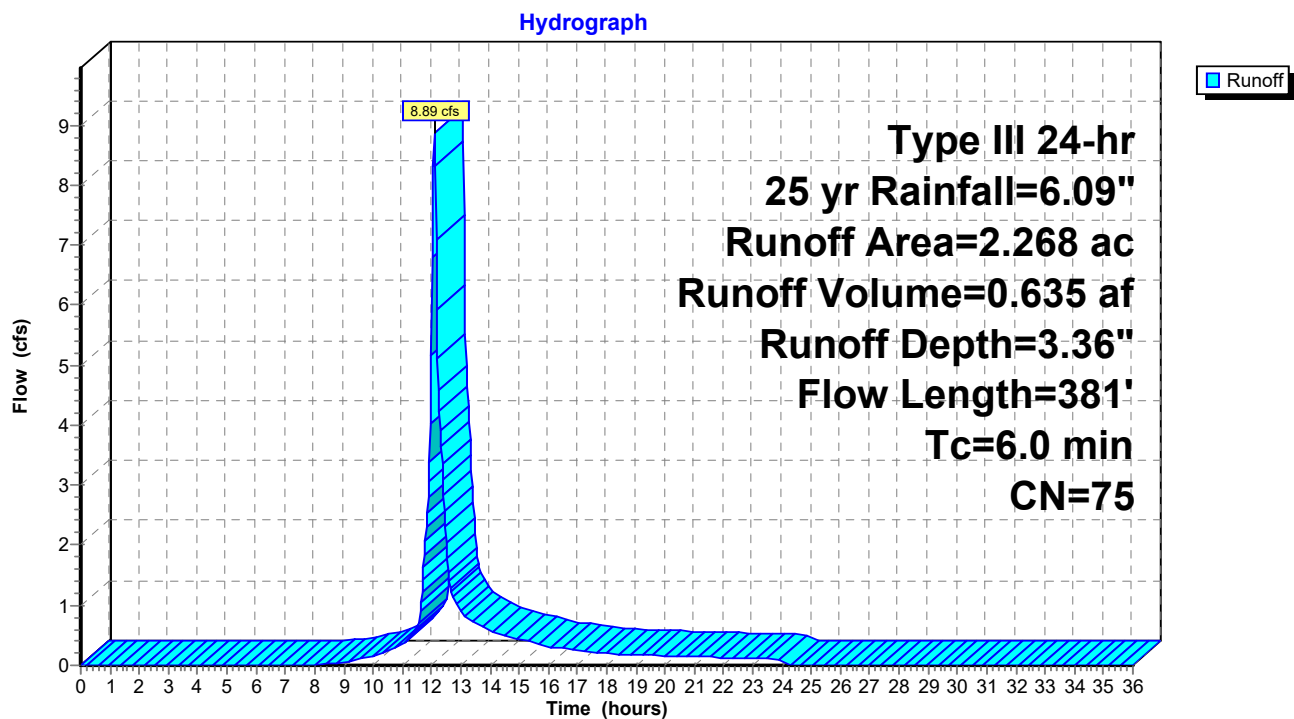
Runoff = 8.89 cfs @ 12.09 hrs, Volume= 0.635 af, Depth= 3.36"
 Routed to Link 2L : DP-2

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 25 yr Rainfall=6.09"

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			

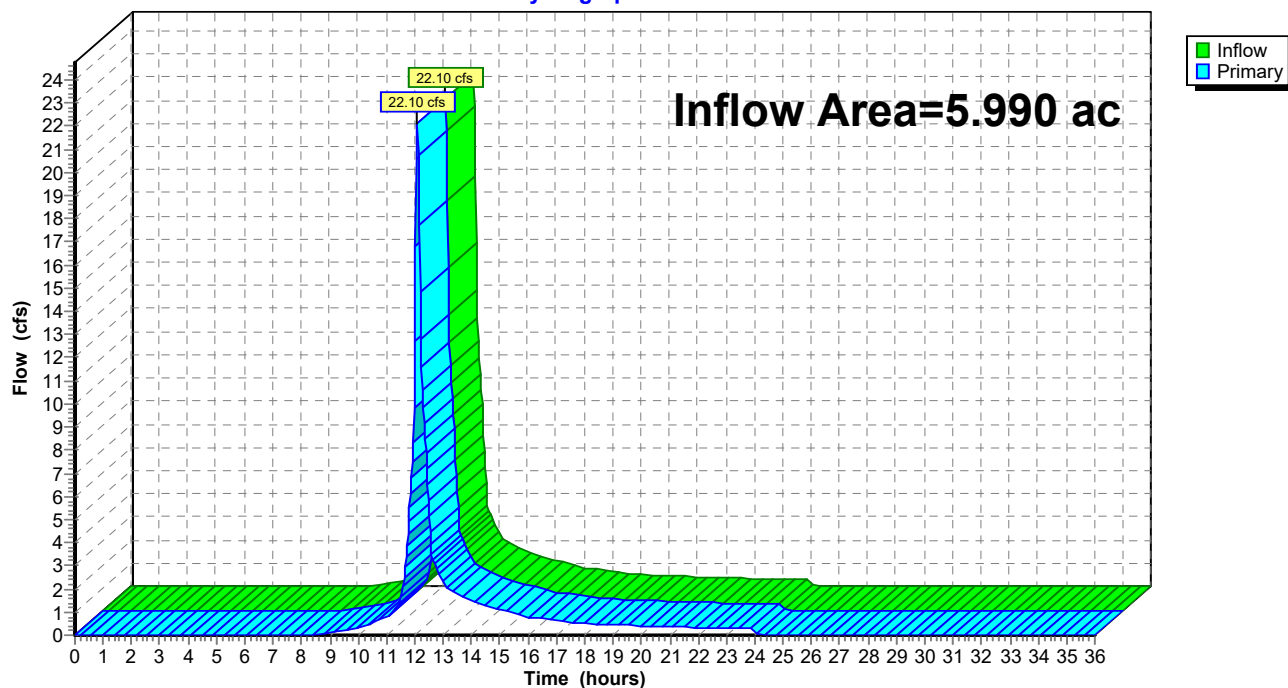
Subcatchment EX-2: Subcat EX-2



Summary for Link 1L: DP-1

Inflow Area = 5.990 ac, 31.02% Impervious, Inflow Depth = 3.16" for 25 yr event
Inflow = 22.10 cfs @ 12.09 hrs, Volume= 1.579 af
Primary = 22.10 cfs @ 12.09 hrs, Volume= 1.579 af, Atten= 0%, Lag= 0.0 min

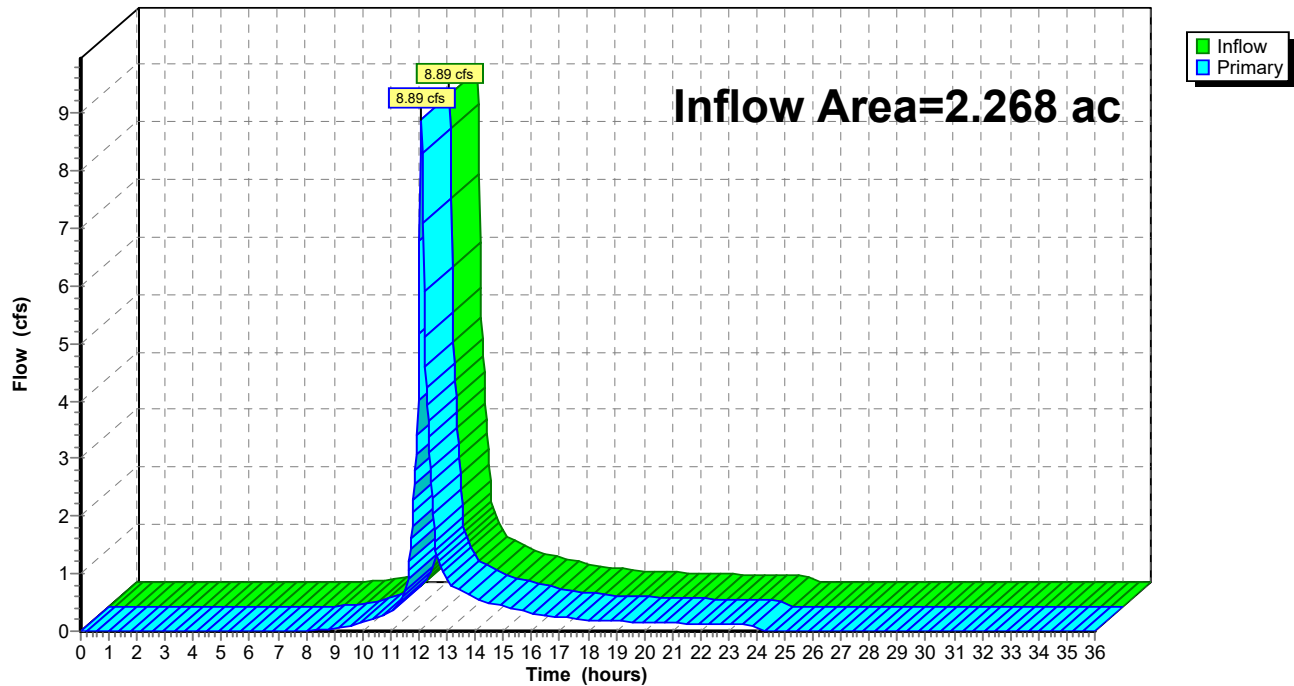
Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

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

Summary for Link 2L: DP-2

Inflow Area = 2.268 ac, 34.90% Impervious, Inflow Depth = 3.36" for 25 yr event
Inflow = 8.89 cfs @ 12.09 hrs, Volume= 0.635 af
Primary = 8.89 cfs @ 12.09 hrs, Volume= 0.635 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**

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=5.990 ac 31.02% Impervious Runoff Depth=4.67"
Tc=6.0 min CN=73 Runoff=32.59 cfs 2.330 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=32.59 cfs 2.330 af
Primary=32.59 cfs 2.330 af

Link 2L: DP-2

Inflow=12.91 cfs 0.925 af
Primary=12.91 cfs 0.925 af

Total Runoff Area = 8.258 ac Runoff Volume = 3.256 af Average Runoff Depth = 4.73"
67.92% Pervious = 5.608 ac 32.08% Impervious = 2.649 ac

Summary for Subcatchment EX-1: Subcat EX-1

Runoff = 32.59 cfs @ 12.09 hrs, Volume= 2.330 af, Depth= 4.67"
 Routed to Link 1L : DP-1

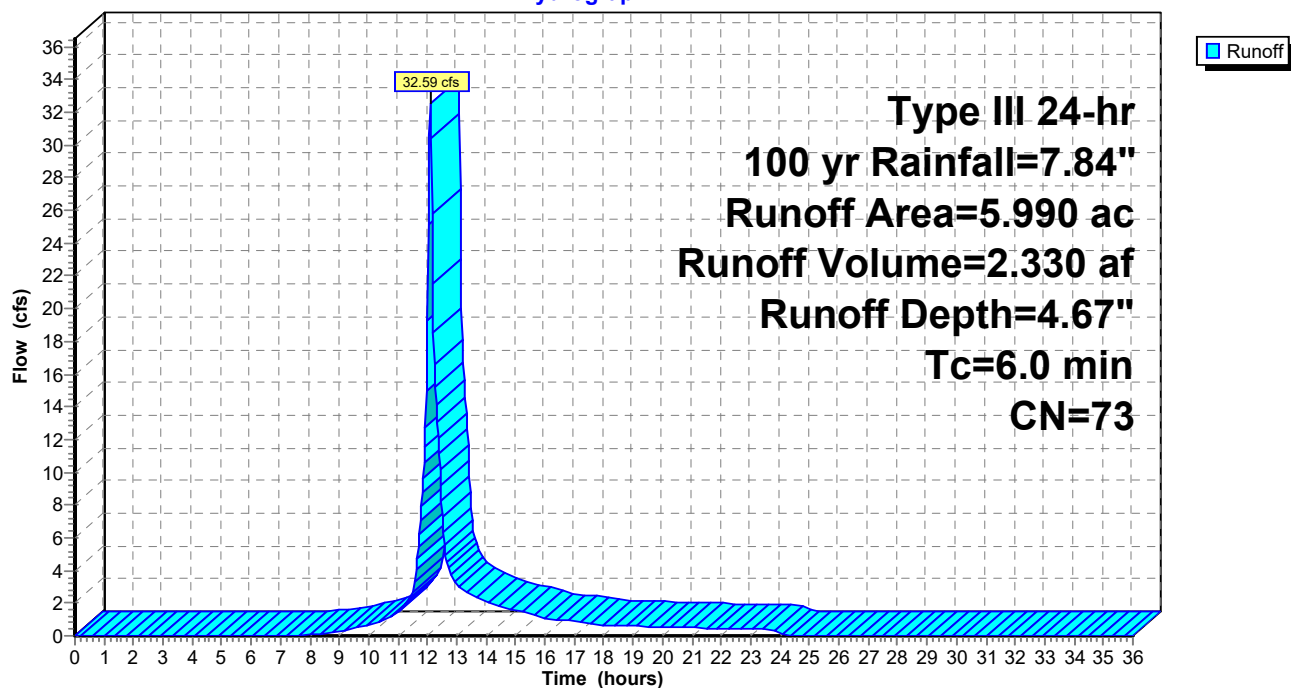
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 100 yr Rainfall=7.84"

Area (ac)	CN	Description
4.099	61	>75% Grass cover, Good, HSG B
0.033	82	Dirt roads, HSG B
1.858	98	Unconnected pavement, HSG B
5.990	73	Weighted Average
4.132		68.98% Pervious Area
1.858		31.02% 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

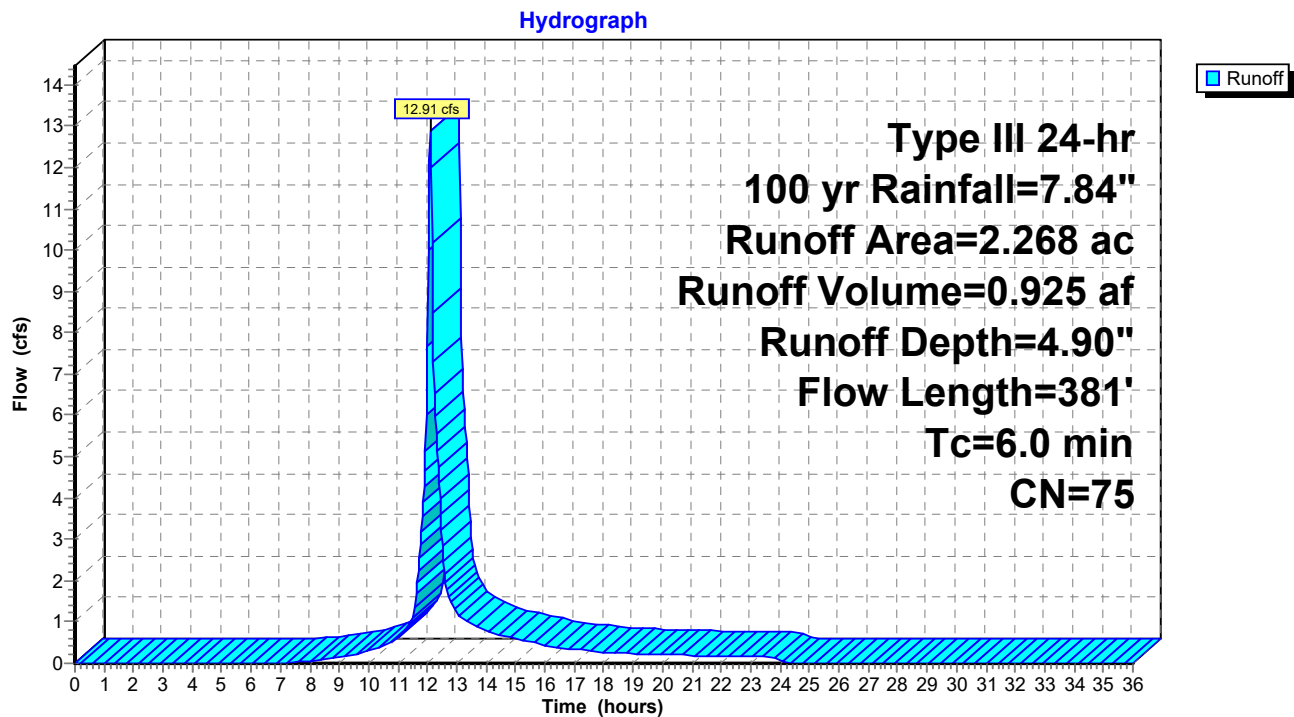
Runoff = 12.91 cfs @ 12.09 hrs, Volume= 0.925 af, Depth= 4.90"
 Routed to Link 2L : DP-2

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			

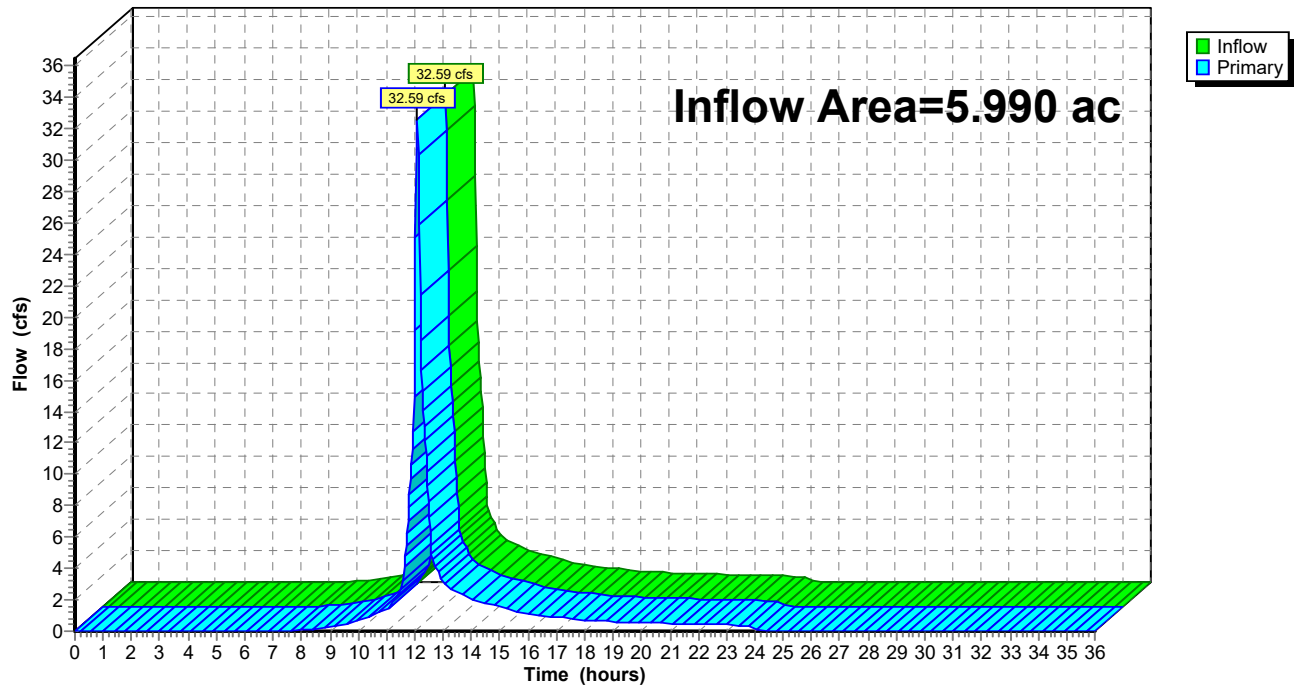
Subcatchment EX-2: Subcat EX-2



Summary for Link 1L: DP-1

Inflow Area = 5.990 ac, 31.02% Impervious, Inflow Depth = 4.67" for 100 yr event
Inflow = 32.59 cfs @ 12.09 hrs, Volume= 2.330 af
Primary = 32.59 cfs @ 12.09 hrs, Volume= 2.330 af, Atten= 0%, Lag= 0.0 min

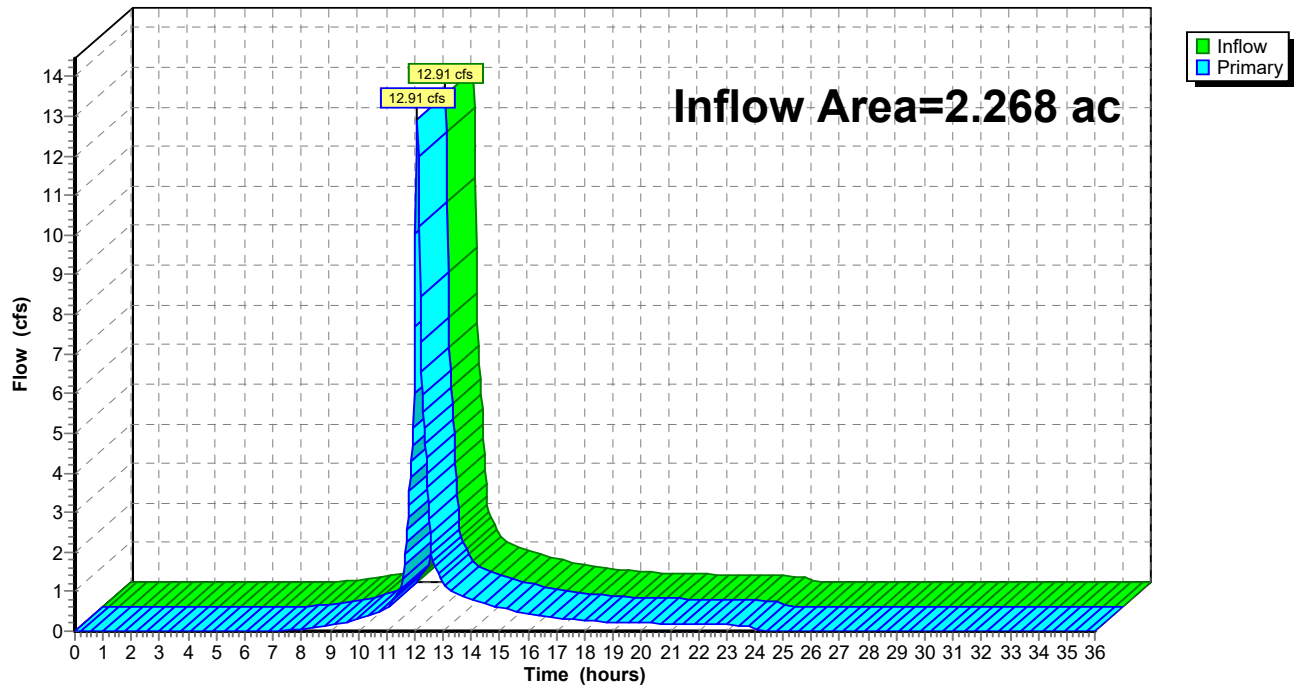
Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

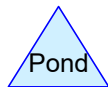
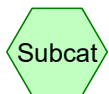
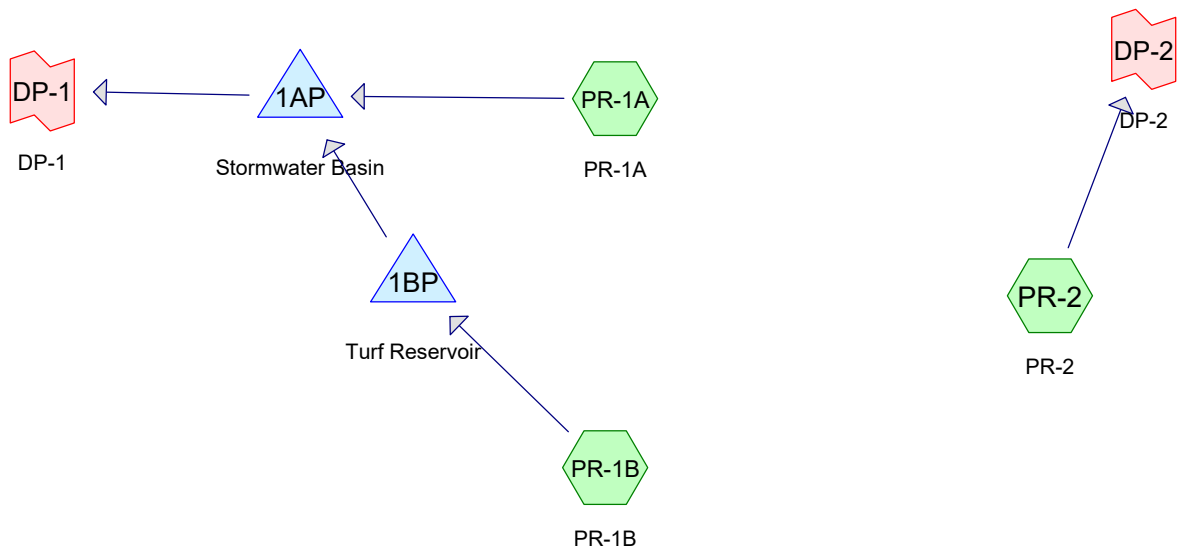
Link 1L: DP-1**Hydrograph**

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**



Rainfall Events Listing

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	25 yr	Type III 24-hr		Default	24.00	1	6.09	2
4	100 yr	Type III 24-hr		Default	24.00	1	7.84	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
3.993	61	>75% Grass cover, Good, HSG B (PR-1A, PR-1B, 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)
0.102	98	Roofs, HSG B (PR-1A)
1.894	98	Unconnected pavement, HSG B (PR-1A, PR-1B, PR-2)
8.326	76	TOTAL AREA

Soil Listing (all nodes)

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

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	3.993	0.000	0.000	0.000	3.993	>75% Grass cover, Good	PR-1A,
							PR-1B,
							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	0.102	0.000	0.000	0.000	0.102	Roofs	PR-1A
0.000	1.894	0.000	0.000	0.000	1.894	Unconnected pavement	PR-1A,
							PR-1B,
							PR-2
0.000	8.326	0.000	0.000	0.000	8.326	TOTAL AREA	

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=152,799 sf 32.52% Impervious Runoff Depth=0.94"
Tc=10.0 min CN=73 Runoff=3.11 cfs 0.274 af

SubcatchmentPR-1B: PR-1B Runoff Area=110,533 sf 3.60% Impervious Runoff Depth=1.48"
Tc=6.0 min UI Adjusted CN=82 Runoff=4.37 cfs 0.313 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 1AP: Stormwater Basin Peak Elev=162.52' Storage=2,662 cf Inflow=3.11 cfs 0.274 af
Discarded=0.88 cfs 0.274 af Primary=0.00 cfs 0.000 af Outflow=0.88 cfs 0.274 af

Pond 1BP: Turf Reservoir Peak Elev=172.50' Storage=108 cf Inflow=4.37 cfs 0.313 af
Discarded=4.36 cfs 0.313 af Primary=0.00 cfs 0.000 af Outflow=4.36 cfs 0.313 af

Link DP-1: DP-1 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

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

Total Runoff Area = 8.326 ac Runoff Volume = 0.776 af Average Runoff Depth = 1.12"
76.02% Pervious = 6.330 ac 23.98% Impervious = 1.996 ac

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

Runoff = 3.11 cfs @ 12.15 hrs, Volume= 0.274 af, Depth= 0.94"
 Routed to Pond 1AP : Stormwater Basin

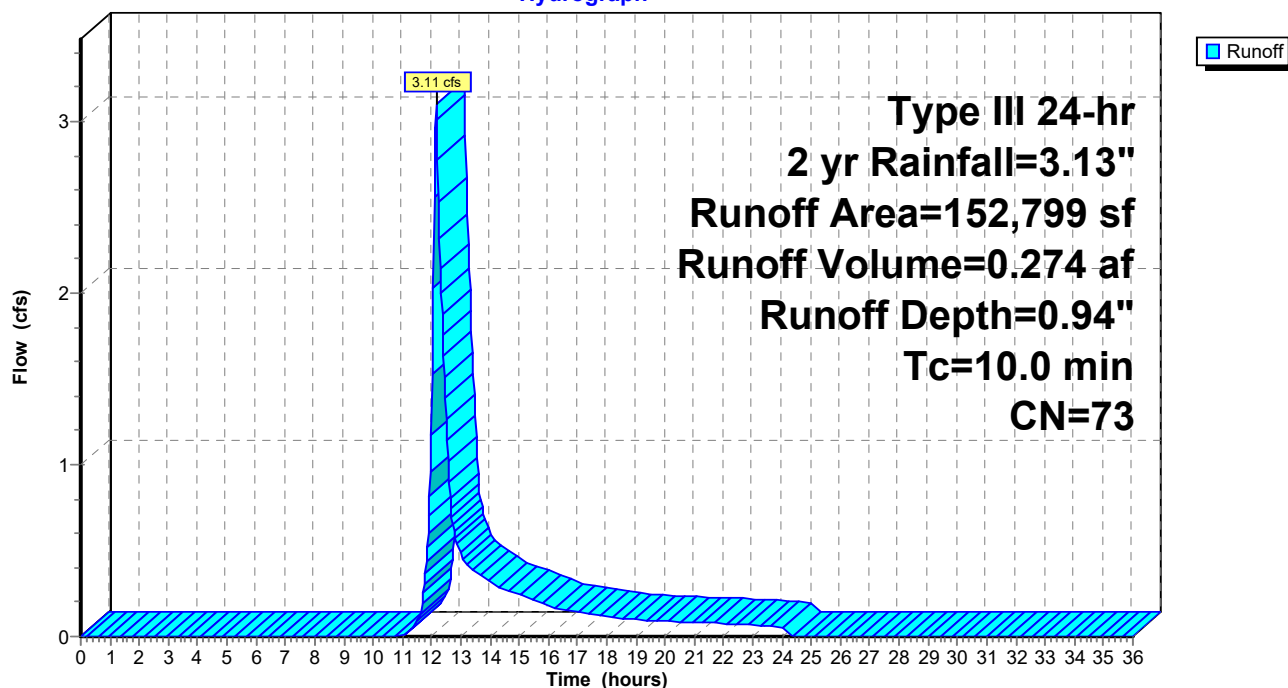
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 2 yr Rainfall=3.13"

Area (sf)	CN	Description
45,254	98	Unconnected pavement, HSG B
947	96	Gravel surface, HSG B
102,160	61	>75% Grass cover, Good, HSG B
4,438	98	Roofs, HSG B
152,799	73	Weighted Average
103,107		67.48% Pervious Area
49,692		32.52% Impervious Area
45,254		91.07% Unconnected

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

Subcatchment PR-1A: PR-1A

Hydrograph



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

Runoff = 4.37 cfs @ 12.09 hrs, Volume= 0.313 af, Depth= 1.48"
 Routed to Pond 1BP : Turf Reservoir

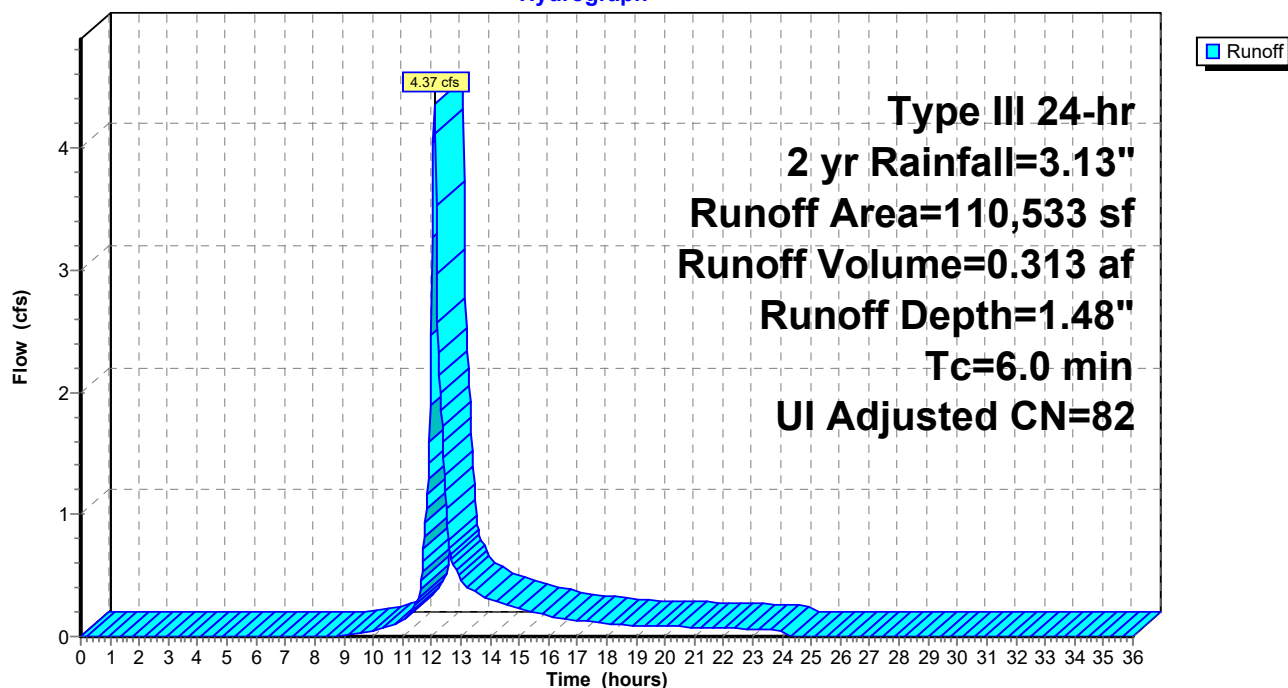
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 2 yr Rainfall=3.13"

Area (sf)	CN	Adj	Description
3,984	98		Unconnected pavement, HSG B
4,917	96		Gravel surface, HSG B
93,955	83		Fallow, crop residue, Good, HSG B
7,677	61		>75% Grass cover, Good, HSG B
110,533	83	82	Weighted Average, UI Adjusted
106,549			96.40% Pervious Area
3,984			3.60% Impervious Area
3,984			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-2: PR-2

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

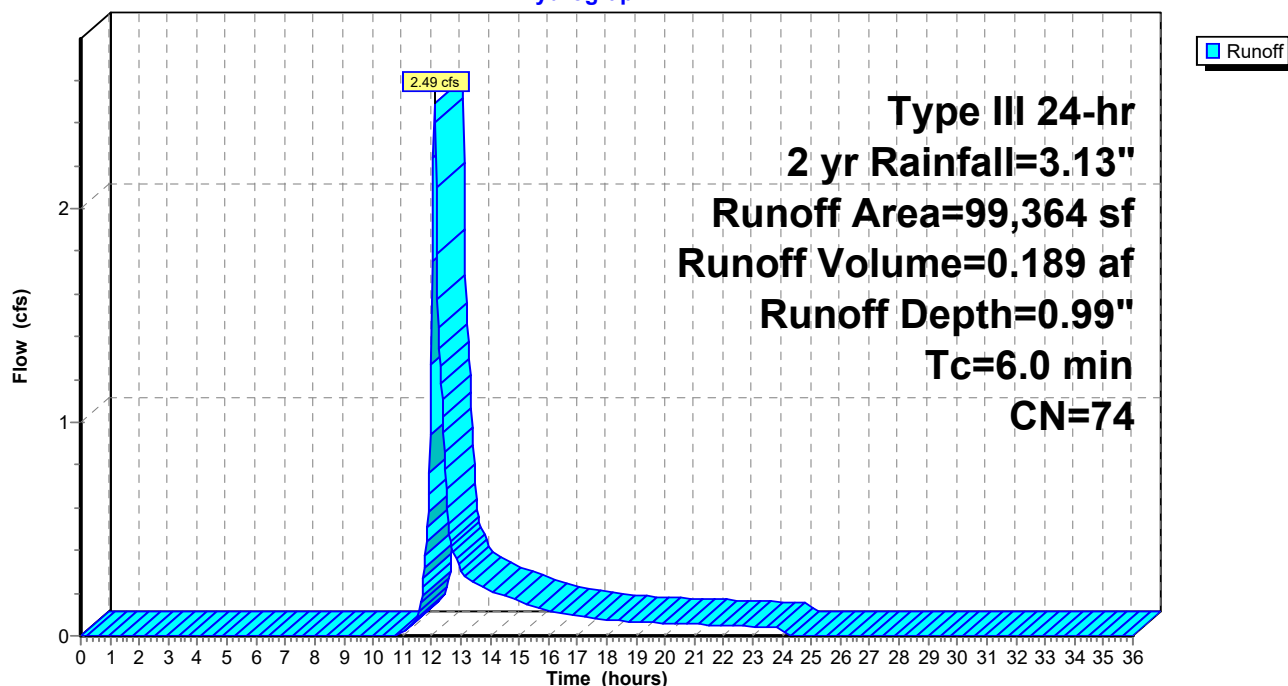
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 2 yr Rainfall=3.13"

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 1AP: Stormwater Basin

Inflow Area = 6.045 ac, 20.38% Impervious, Inflow Depth = 0.54" for 2 yr event
 Inflow = 3.11 cfs @ 12.15 hrs, Volume= 0.274 af
 Outflow = 0.88 cfs @ 12.61 hrs, Volume= 0.274 af, Atten= 72%, Lag= 27.3 min
 Discarded = 0.88 cfs @ 12.61 hrs, Volume= 0.274 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= 162.52' @ 12.61 hrs Surf.Area= 5,411 sf Storage= 2,662 cf

Plug-Flow detention time= 20.1 min calculated for 0.274 af (100% of inflow)
 Center-of-Mass det. time= 20.1 min (890.6 - 870.6)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	28,990 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
162.00	4,840	0	0
163.00	5,940	5,390	5,390
164.00	7,110	6,525	11,915
165.00	8,320	7,715	19,630
166.00	10,400	9,360	28,990

Device	Routing	Invert	Outlet Devices
#1	Primary	165.00'	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	162.00'	7.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 10.00'
#3	Primary	163.70'	15.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

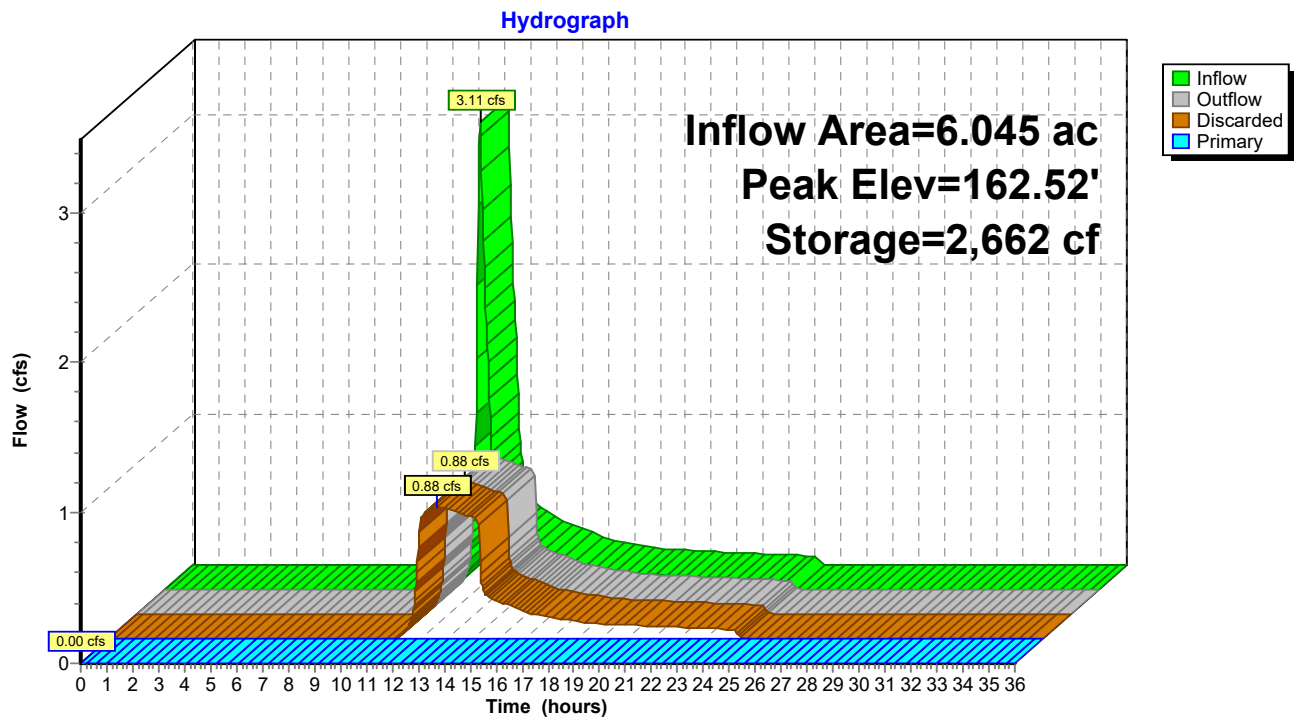
Discarded OutFlow Max=0.88 cfs @ 12.61 hrs HW=162.52' (Free Discharge)

↑ **2=Exfiltration** (Controls 0.88 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=162.00' (Free Discharge)

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

↑ **3=Orifice/Grate** (Controls 0.00 cfs)

Pond 1AP: Stormwater Basin

Summary for Pond 1BP: Turf Reservoir

Inflow Area = 2.537 ac, 3.60% Impervious, Inflow Depth = 1.48" for 2 yr event
 Inflow = 4.37 cfs @ 12.09 hrs, Volume= 0.313 af
 Outflow = 4.36 cfs @ 12.10 hrs, Volume= 0.313 af, Atten= 0%, Lag= 0.4 min
 Discarded = 4.36 cfs @ 12.10 hrs, Volume= 0.313 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 1AP : Stormwater Basin

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= 108 cf

Plug-Flow detention time= 0.4 min calculated for 0.313 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

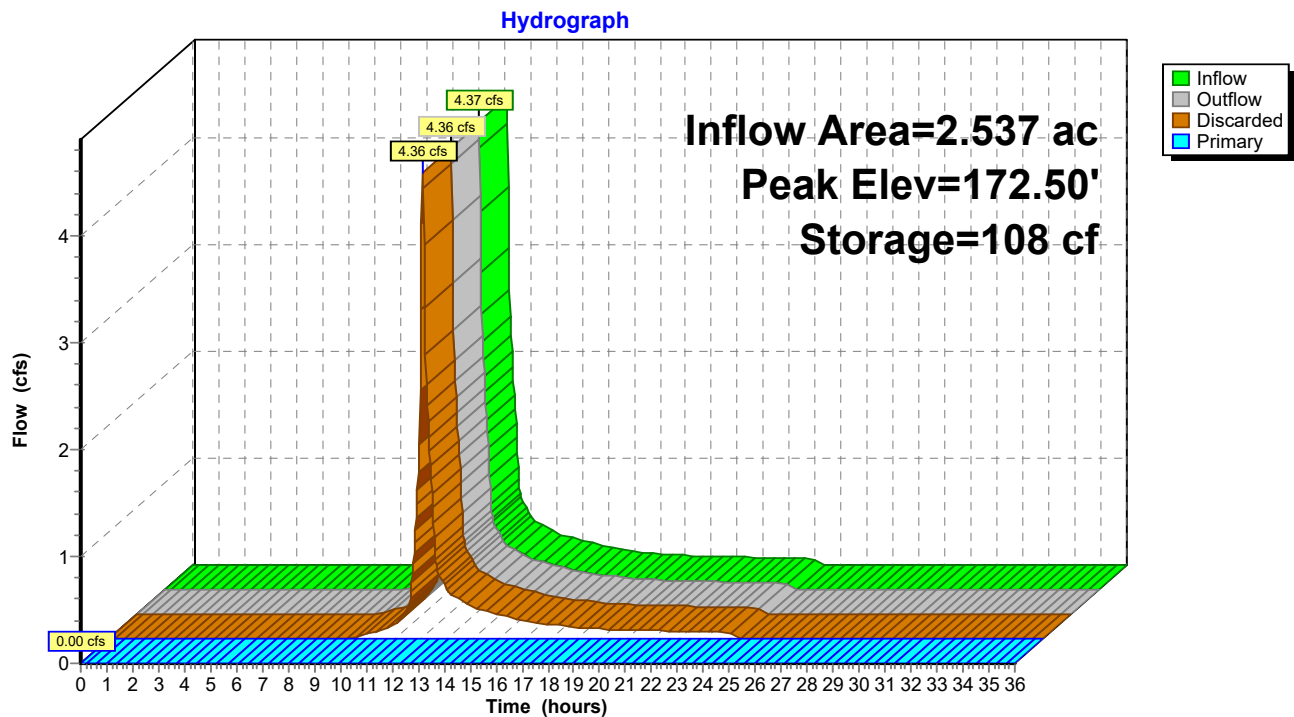
Device	Routing	Invert	Outlet Devices
#1	Primary	172.75'	746.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Discarded	172.50'	7.000 in/hr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

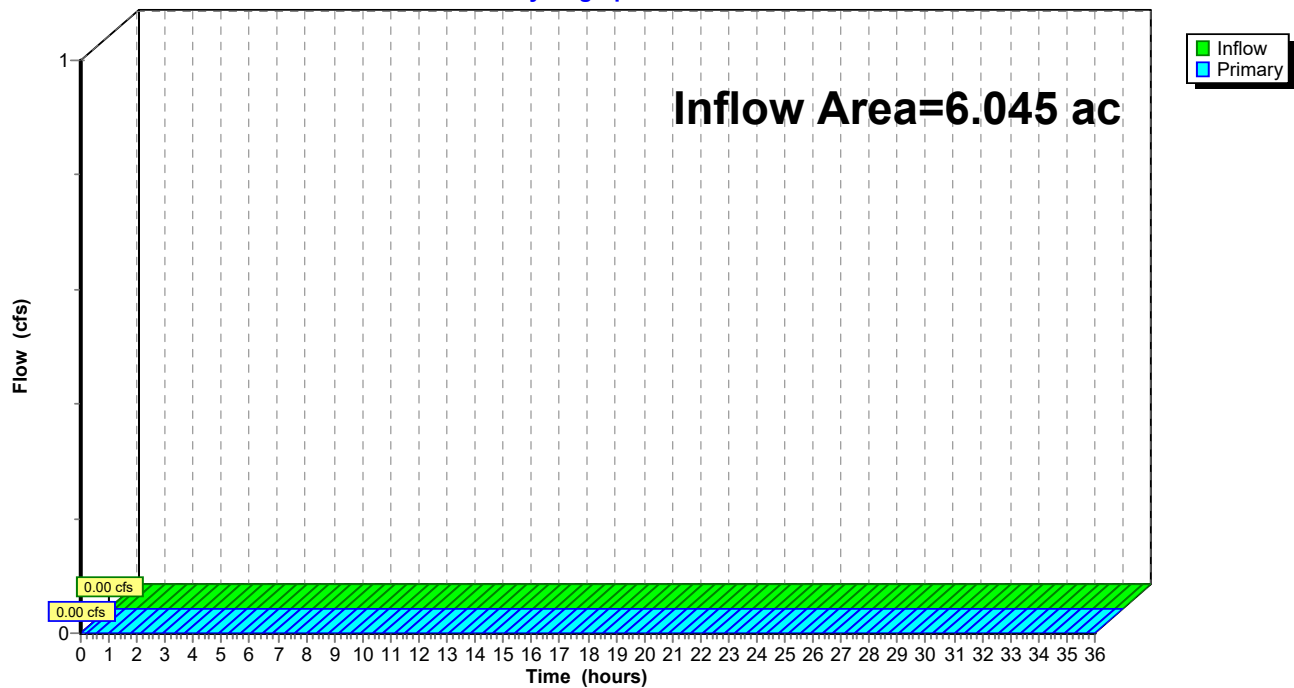
Summary for Link DP-1: DP-1

Inflow Area = 6.045 ac, 20.38% Impervious, Inflow Depth = 0.00" for 2 yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

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

Link DP-1: DP-1

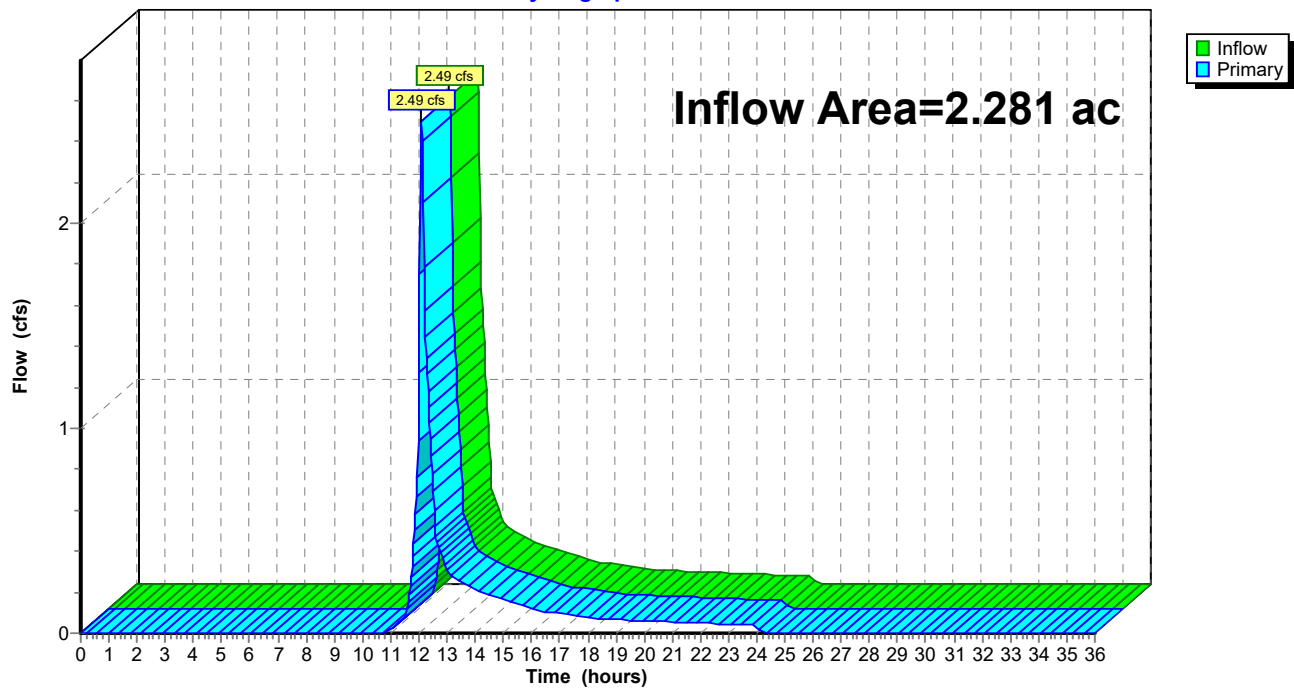
Hydrograph



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**

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=152,799 sf 32.52% Impervious Runoff Depth=2.24"
Tc=10.0 min CN=73 Runoff=7.94 cfs 0.655 af

SubcatchmentPR-1B: PR-1B Runoff Area=110,533 sf 3.60% Impervious Runoff Depth=3.03"
Tc=6.0 min UI Adjusted CN=82 Runoff=8.96 cfs 0.642 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 1AP: Stormwater Basin Peak Elev=163.75' Storage=10,142 cf Inflow=7.94 cfs 0.655 af
Discarded=1.11 cfs 0.655 af Primary=0.01 cfs 0.000 af Outflow=1.13 cfs 0.655 af

Pond 1BP: Turf Reservoir Peak Elev=172.51' Storage=221 cf Inflow=8.96 cfs 0.642 af
Discarded=8.94 cfs 0.642 af Primary=0.00 cfs 0.000 af Outflow=8.94 cfs 0.642 af

Link DP-1: DP-1 Inflow=0.01 cfs 0.000 af
Primary=0.01 cfs 0.000 af

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

Total Runoff Area = 8.326 ac Runoff Volume = 1.739 af Average Runoff Depth = 2.51"
76.02% Pervious = 6.330 ac 23.98% Impervious = 1.996 ac

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

Runoff = 7.94 cfs @ 12.15 hrs, Volume= 0.655 af, Depth= 2.24"
 Routed to Pond 1AP : Stormwater Basin

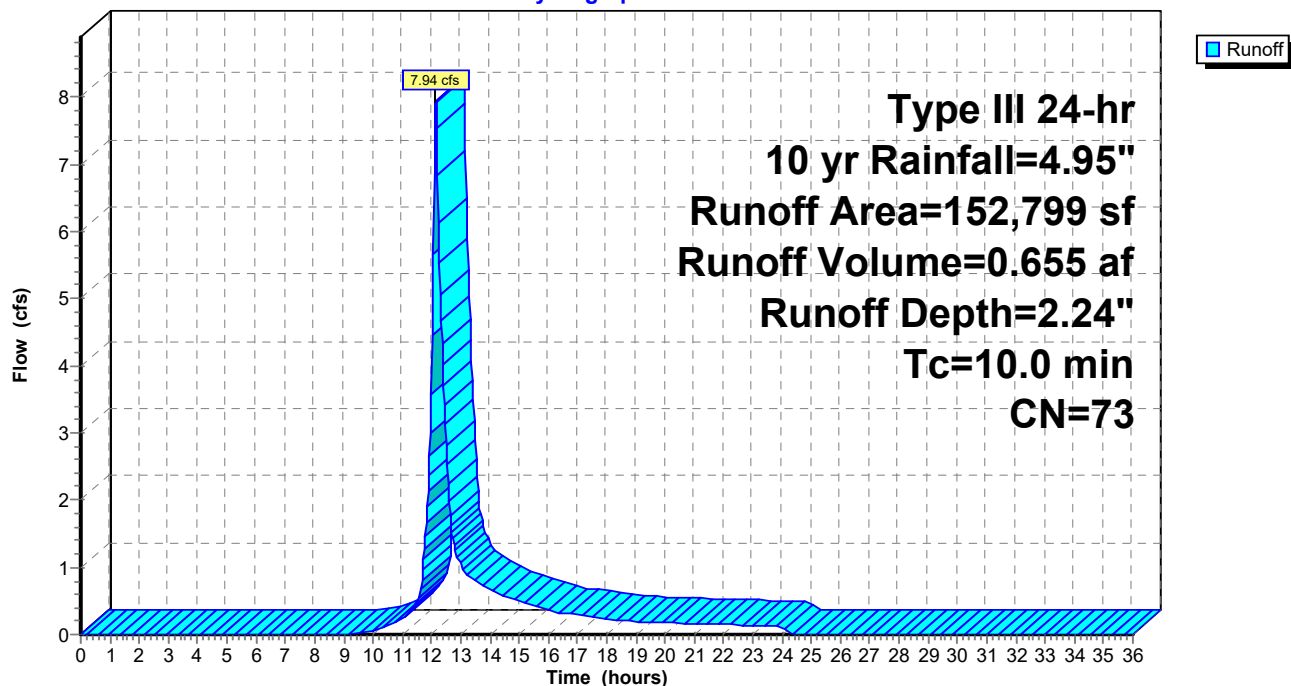
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 10 yr Rainfall=4.95"

Area (sf)	CN	Description
45,254	98	Unconnected pavement, HSG B
947	96	Gravel surface, HSG B
102,160	61	>75% Grass cover, Good, HSG B
4,438	98	Roofs, HSG B
152,799	73	Weighted Average
103,107		67.48% Pervious Area
49,692		32.52% Impervious Area
45,254		91.07% Unconnected

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

Subcatchment PR-1A: PR-1A

Hydrograph



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

Runoff = 8.96 cfs @ 12.09 hrs, Volume= 0.642 af, Depth= 3.03"
 Routed to Pond 1BP : Turf Reservoir

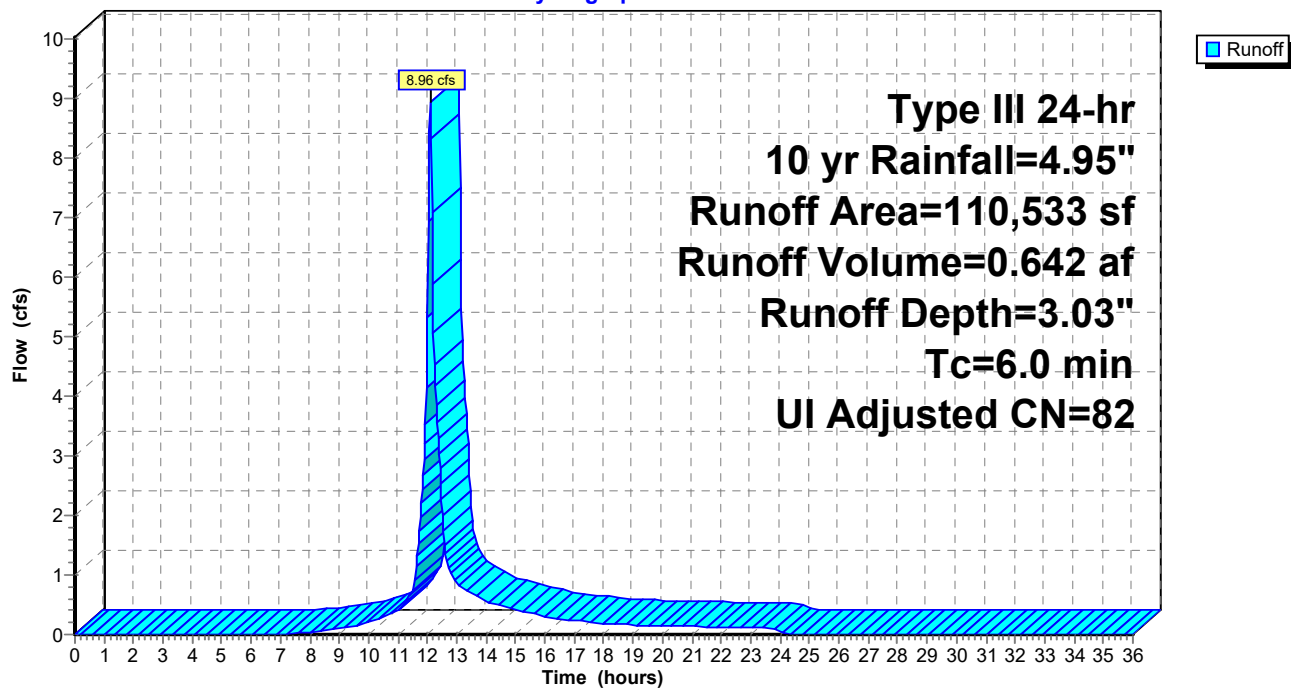
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 10 yr Rainfall=4.95"

Area (sf)	CN	Adj	Description
3,984	98		Unconnected pavement, HSG B
4,917	96		Gravel surface, HSG B
93,955	83		Fallow, crop residue, Good, HSG B
7,677	61		>75% Grass cover, Good, HSG B
110,533	83	82	Weighted Average, UI Adjusted
106,549			96.40% Pervious Area
3,984			3.60% Impervious Area
3,984			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-2: PR-2

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

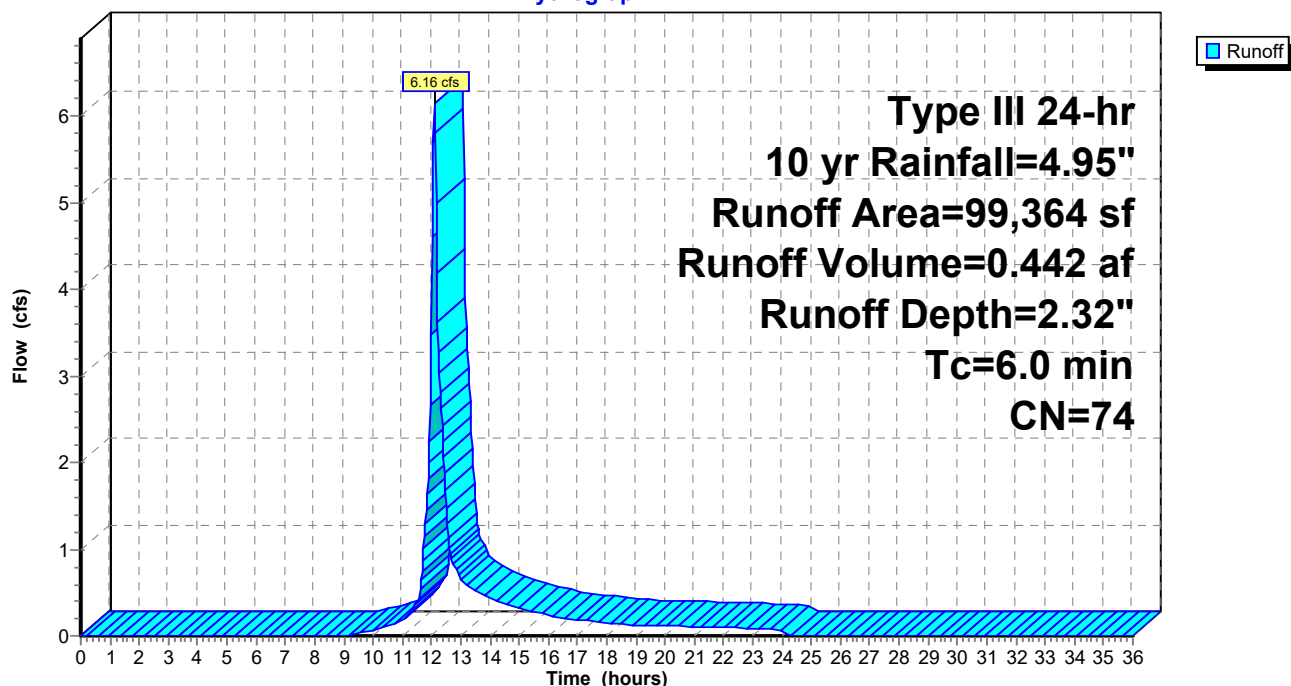
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 10 yr Rainfall=4.95"

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 1AP: Stormwater Basin

Inflow Area = 6.045 ac, 20.38% Impervious, Inflow Depth = 1.30" for 10 yr event
 Inflow = 7.94 cfs @ 12.15 hrs, Volume= 0.655 af
 Outflow = 1.13 cfs @ 12.93 hrs, Volume= 0.655 af, Atten= 86%, Lag= 46.9 min
 Discarded = 1.11 cfs @ 12.93 hrs, Volume= 0.655 af
 Primary = 0.01 cfs @ 12.93 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= 163.75' @ 12.93 hrs Surf.Area= 6,812 sf Storage= 10,142 cf

Plug-Flow detention time= 82.3 min calculated for 0.655 af (100% of inflow)
 Center-of-Mass det. time= 82.2 min (926.4 - 844.2)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	28,990 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
162.00	4,840	0	0
163.00	5,940	5,390	5,390
164.00	7,110	6,525	11,915
165.00	8,320	7,715	19,630
166.00	10,400	9,360	28,990

Device	Routing	Invert	Outlet Devices
#1	Primary	165.00'	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	162.00'	7.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 10.00'
#3	Primary	163.70'	15.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

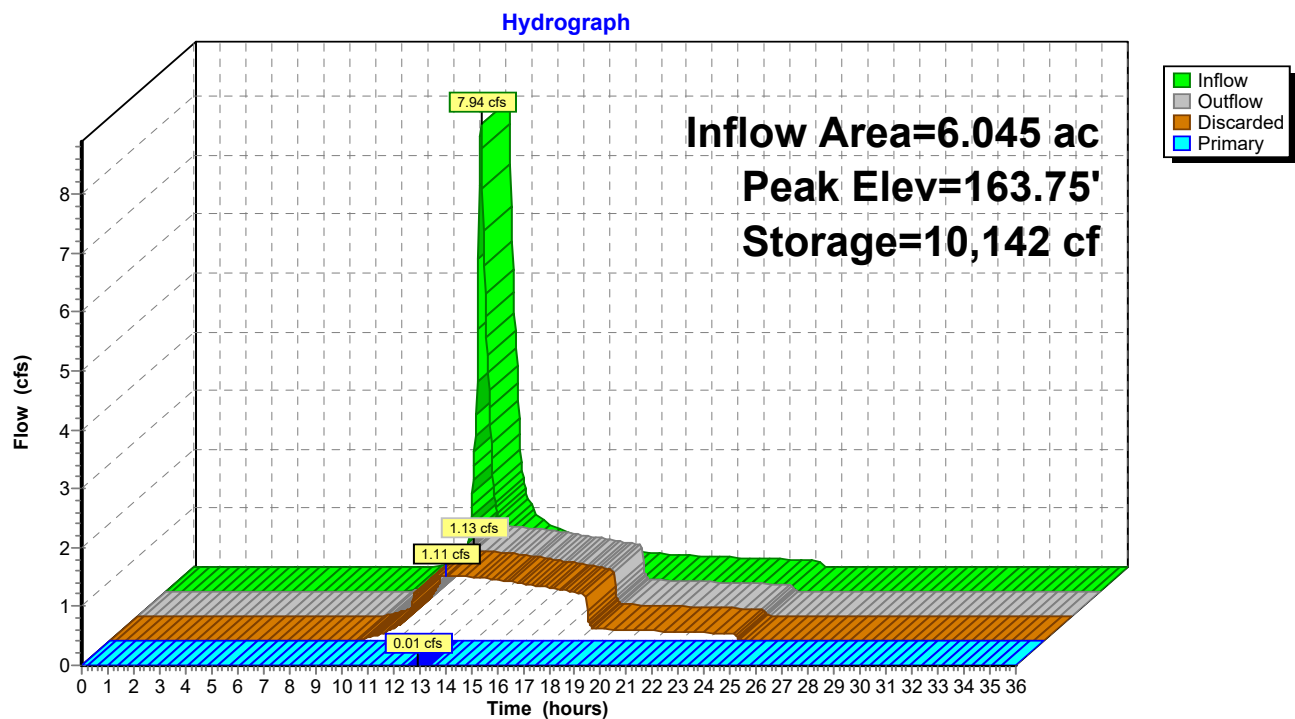
Discarded OutFlow Max=1.11 cfs @ 12.93 hrs HW=163.75' (Free Discharge)

↑ **2=Exfiltration** (Controls 1.11 cfs)

Primary OutFlow Max=0.01 cfs @ 12.93 hrs HW=163.75' (Free Discharge)

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

↑ **3=Orifice/Grate** (Orifice Controls 0.01 cfs @ 0.72 fps)

Pond 1AP: Stormwater Basin

Summary for Pond 1BP: Turf Reservoir

Inflow Area = 2.537 ac, 3.60% Impervious, Inflow Depth = 3.03" for 10 yr event
 Inflow = 8.96 cfs @ 12.09 hrs, Volume= 0.642 af
 Outflow = 8.94 cfs @ 12.10 hrs, Volume= 0.642 af, Atten= 0%, Lag= 0.4 min
 Discarded = 8.94 cfs @ 12.10 hrs, Volume= 0.642 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 1AP : Stormwater Basin

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= 221 cf

Plug-Flow detention time= 0.4 min calculated for 0.641 af (100% of inflow)
 Center-of-Mass det. time= 0.4 min (817.1 - 816.7)

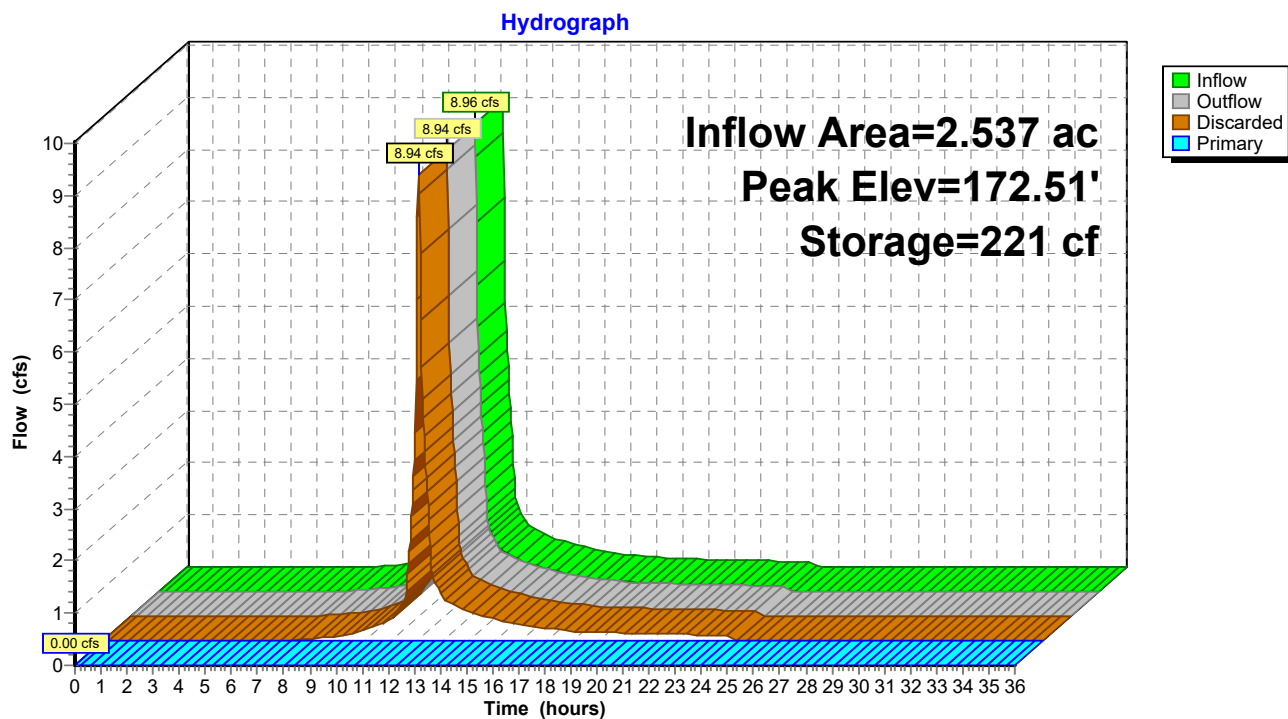
Volume	Invert	Avail.Storage	Storage Description
#1	172.50'	37,256 cf	Custom Stage Data (Irregular) Listed below (Recalc) 93,140 cf Overall x 40.0% Voids

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)

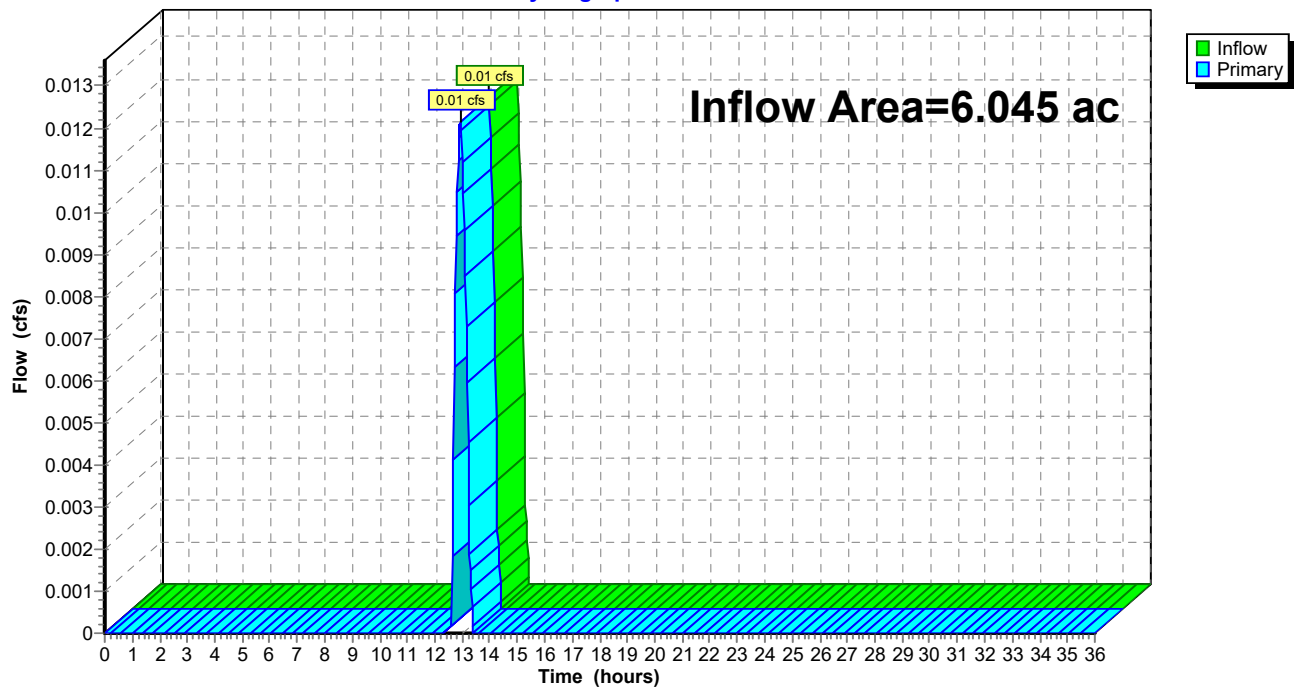
Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=172.50' (Free Discharge)
 ↑ **1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1BP: Turf Reservoir

Summary for Link DP-1: DP-1

Inflow Area = 6.045 ac, 20.38% Impervious, Inflow Depth = 0.00" for 10 yr event
Inflow = 0.01 cfs @ 12.93 hrs, Volume= 0.000 af
Primary = 0.01 cfs @ 12.93 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

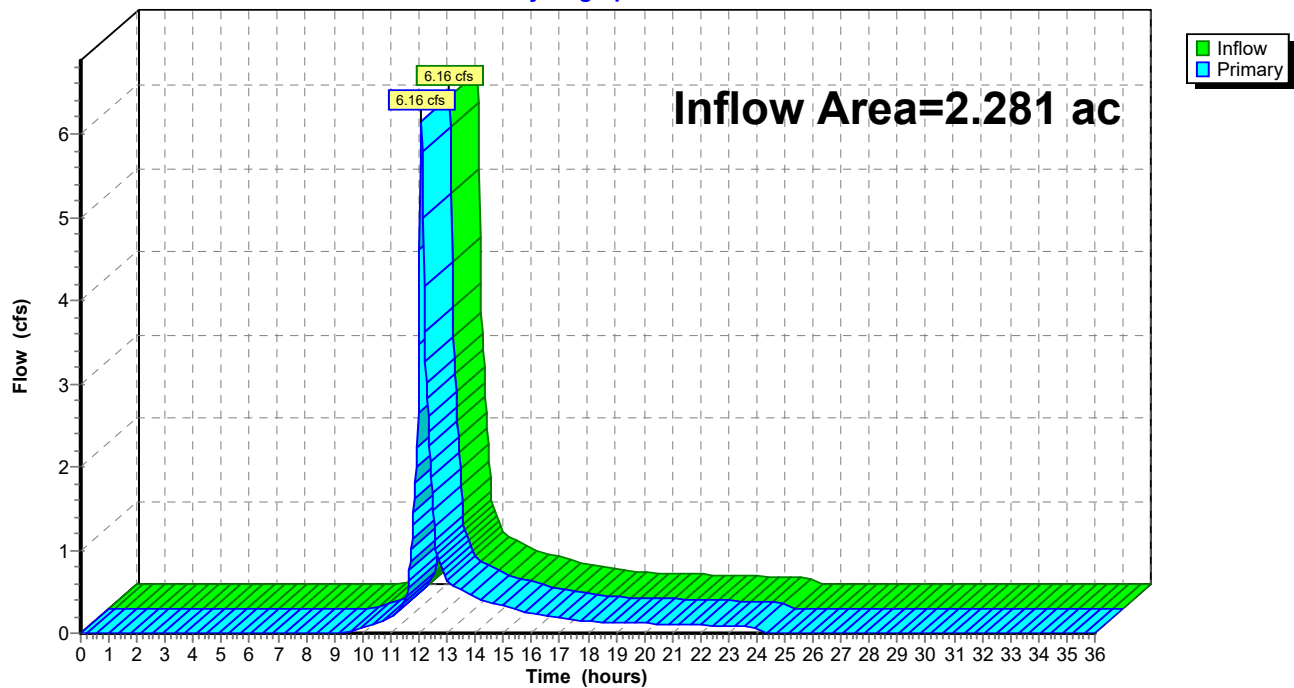
Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

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**

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=152,799 sf 32.52% Impervious Runoff Depth=3.16"
Tc=10.0 min CN=73 Runoff=11.30 cfs 0.925 af

SubcatchmentPR-1B: PR-1B Runoff Area=110,533 sf 3.60% Impervious Runoff Depth=4.07"
Tc=6.0 min UI Adjusted CN=82 Runoff=11.93 cfs 0.861 af

SubcatchmentPR-2: PR-2 Runoff Area=99,364 sf 33.50% Impervious Runoff Depth=3.26"
Tc=6.0 min CN=74 Runoff=8.68 cfs 0.620 af

Pond 1AP: Stormwater Basin Peak Elev=164.29' Storage=14,024 cf Inflow=11.30 cfs 0.925 af
Discarded=1.22 cfs 0.814 af Primary=1.49 cfs 0.111 af Outflow=2.71 cfs 0.925 af

Pond 1BP: Turf Reservoir Peak Elev=172.51' Storage=294 cf Inflow=11.93 cfs 0.861 af
Discarded=11.90 cfs 0.861 af Primary=0.00 cfs 0.000 af Outflow=11.90 cfs 0.861 af

Link DP-1: DP-1 Inflow=1.49 cfs 0.111 af
Primary=1.49 cfs 0.111 af

Link DP-2: DP-2 Inflow=8.68 cfs 0.620 af
Primary=8.68 cfs 0.620 af

Total Runoff Area = 8.326 ac Runoff Volume = 2.405 af Average Runoff Depth = 3.47"
76.02% Pervious = 6.330 ac 23.98% Impervious = 1.996 ac

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

Runoff = 11.30 cfs @ 12.14 hrs, Volume= 0.925 af, Depth= 3.16"
 Routed to Pond 1AP : Stormwater Basin

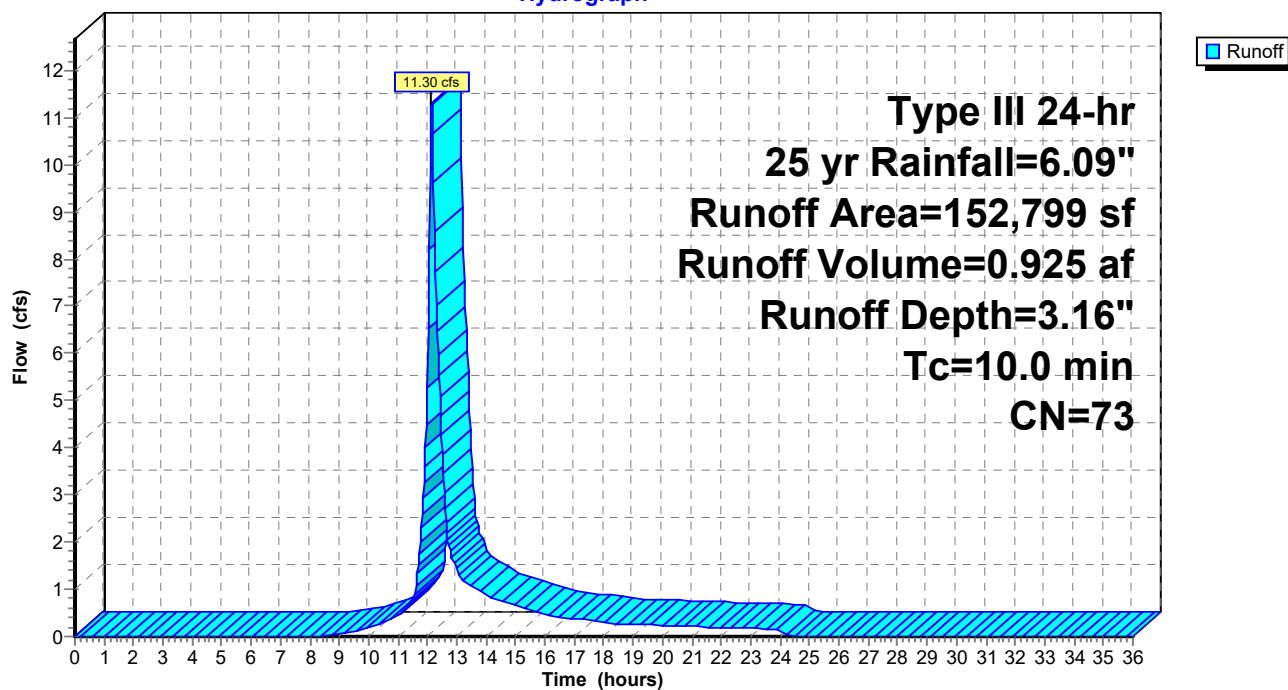
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 25 yr Rainfall=6.09"

Area (sf)	CN	Description
45,254	98	Unconnected pavement, HSG B
947	96	Gravel surface, HSG B
102,160	61	>75% Grass cover, Good, HSG B
4,438	98	Roofs, HSG B
152,799	73	Weighted Average
103,107		67.48% Pervious Area
49,692		32.52% Impervious Area
45,254		91.07% Unconnected

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

Subcatchment PR-1A: PR-1A

Hydrograph



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

Runoff = 11.93 cfs @ 12.09 hrs, Volume= 0.861 af, Depth= 4.07"
 Routed to Pond 1BP : Turf Reservoir

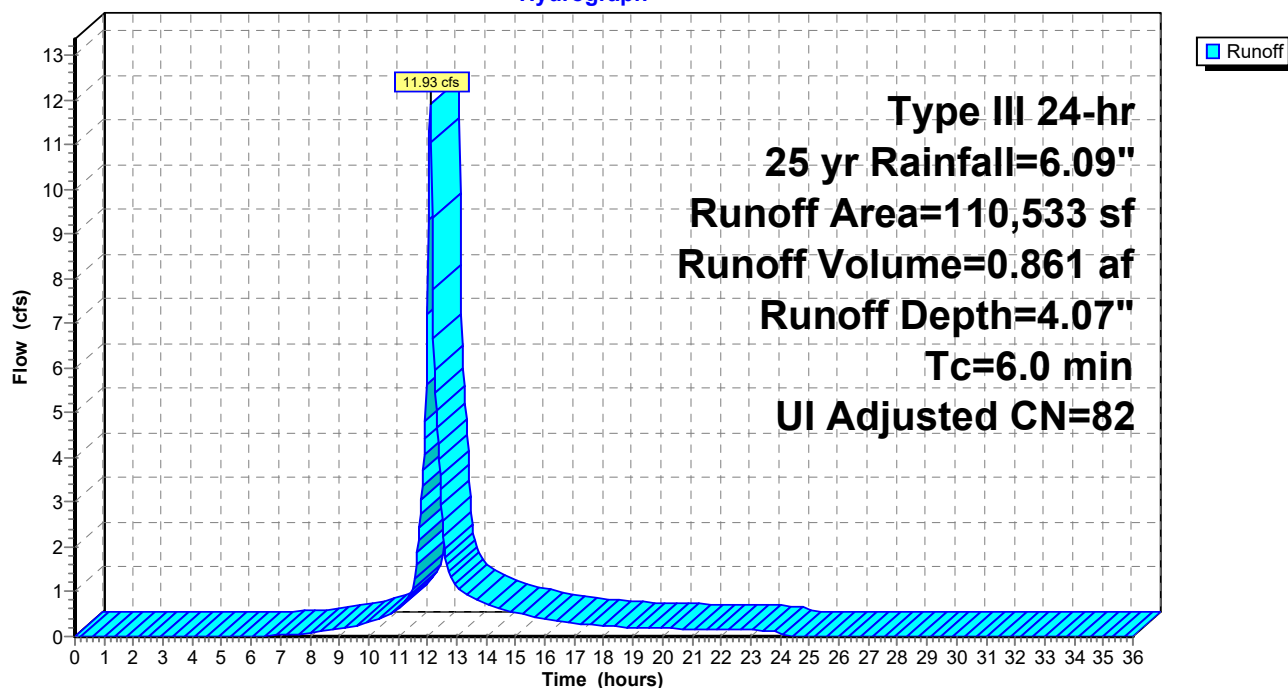
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 25 yr Rainfall=6.09"

Area (sf)	CN	Adj	Description
3,984	98		Unconnected pavement, HSG B
4,917	96		Gravel surface, HSG B
93,955	83		Fallow, crop residue, Good, HSG B
7,677	61		>75% Grass cover, Good, HSG B
110,533	83	82	Weighted Average, UI Adjusted
106,549			96.40% Pervious Area
3,984			3.60% Impervious Area
3,984			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-2: PR-2

Runoff = 8.68 cfs @ 12.09 hrs, Volume= 0.620 af, Depth= 3.26"
 Routed to Link DP-2 : DP-2

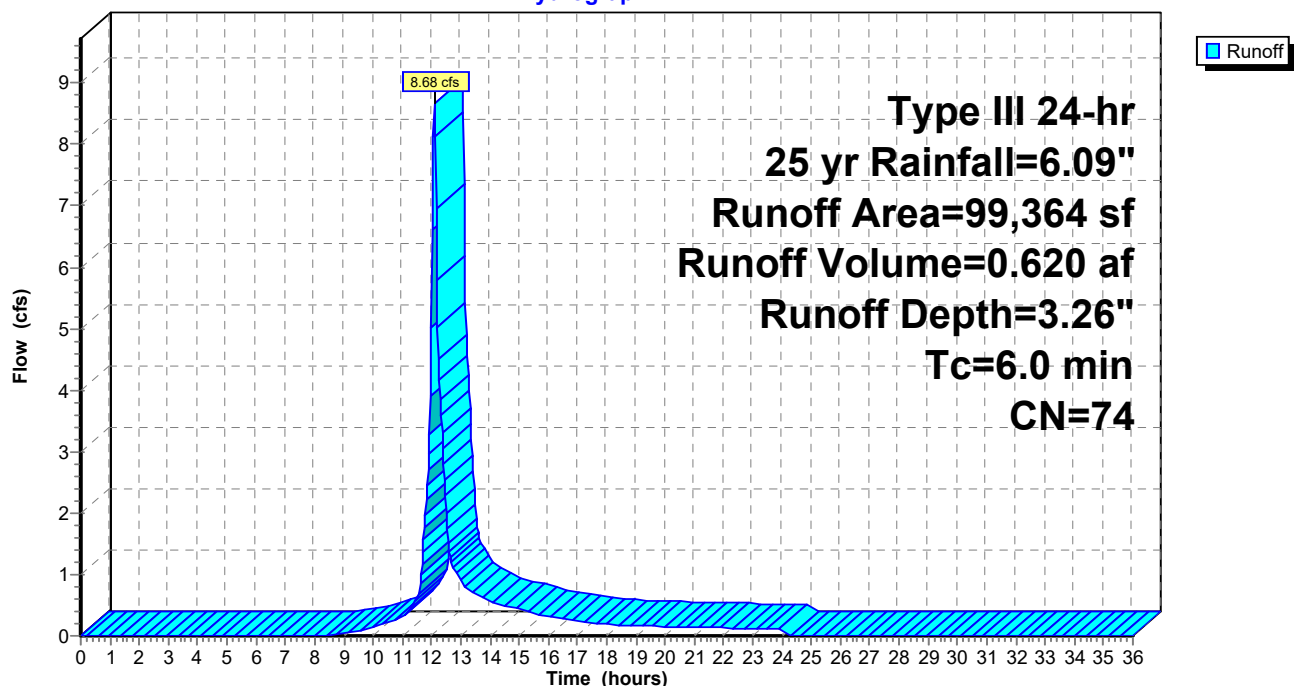
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 25 yr Rainfall=6.09"

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 1AP: Stormwater Basin

Inflow Area = 6.045 ac, 20.38% Impervious, Inflow Depth = 1.84" for 25 yr event
 Inflow = 11.30 cfs @ 12.14 hrs, Volume= 0.925 af
 Outflow = 2.71 cfs @ 12.60 hrs, Volume= 0.925 af, Atten= 76%, Lag= 27.5 min
 Discarded = 1.22 cfs @ 12.60 hrs, Volume= 0.814 af
 Primary = 1.49 cfs @ 12.60 hrs, Volume= 0.111 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= 164.29' @ 12.60 hrs Surf.Area= 7,460 sf Storage= 14,024 cf

Plug-Flow detention time= 86.2 min calculated for 0.924 af (100% of inflow)
 Center-of-Mass det. time= 86.1 min (920.3 - 834.2)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	28,990 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
162.00	4,840	0	0
163.00	5,940	5,390	5,390
164.00	7,110	6,525	11,915
165.00	8,320	7,715	19,630
166.00	10,400	9,360	28,990

Device	Routing	Invert	Outlet Devices
#1	Primary	165.00'	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	162.00'	7.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 10.00'
#3	Primary	163.70'	15.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

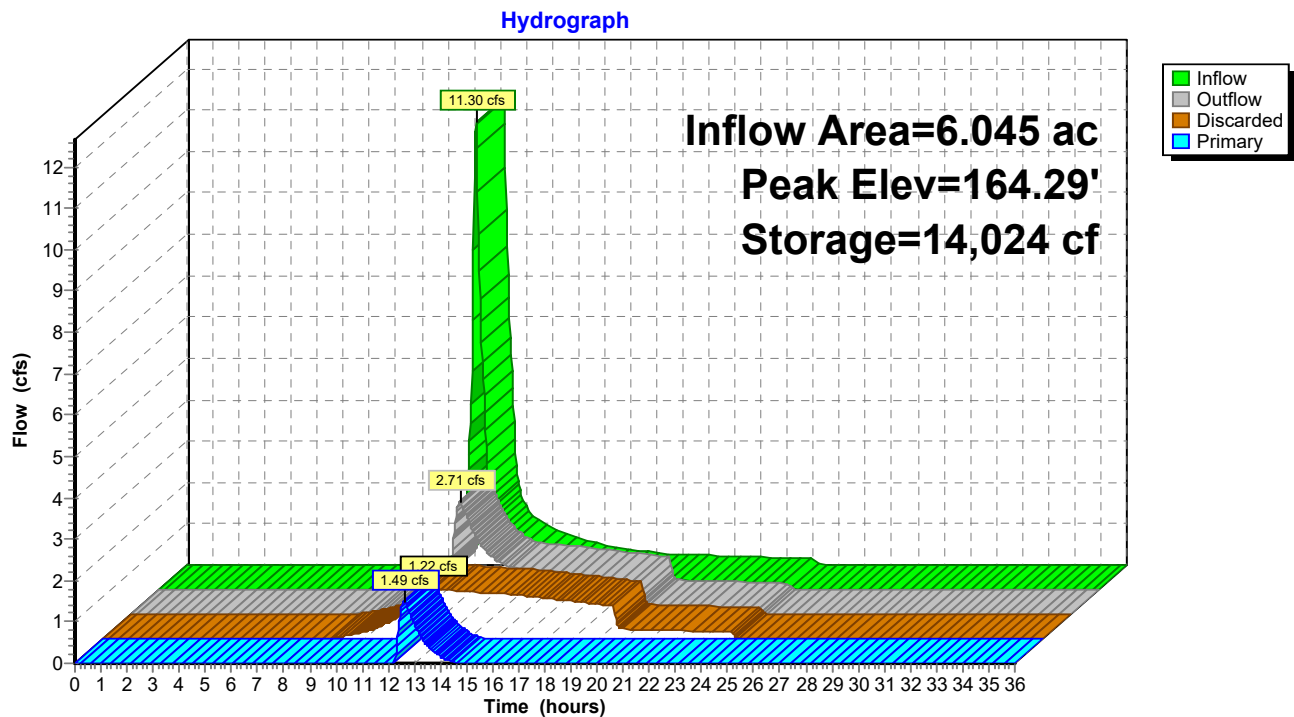
Discarded OutFlow Max=1.22 cfs @ 12.60 hrs HW=164.29' (Free Discharge)

↑ **2=Exfiltration** (Controls 1.22 cfs)

Primary OutFlow Max=1.49 cfs @ 12.60 hrs HW=164.29' (Free Discharge)

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

↑ **3=Orifice/Grate** (Orifice Controls 1.49 cfs @ 2.61 fps)

Pond 1AP: Stormwater Basin

Summary for Pond 1BP: Turf Reservoir

Inflow Area = 2.537 ac, 3.60% Impervious, Inflow Depth = 4.07" for 25 yr event
 Inflow = 11.93 cfs @ 12.09 hrs, Volume= 0.861 af
 Outflow = 11.90 cfs @ 12.09 hrs, Volume= 0.861 af, Atten= 0%, Lag= 0.4 min
 Discarded = 11.90 cfs @ 12.09 hrs, Volume= 0.861 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 1AP : Stormwater Basin

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Peak Elev= 172.51' @ 12.09 hrs Surf.Area= 93,140 sf Storage= 294 cf

Plug-Flow detention time= 0.4 min calculated for 0.860 af (100% of inflow)
 Center-of-Mass det. time= 0.4 min (808.8 - 808.4)

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

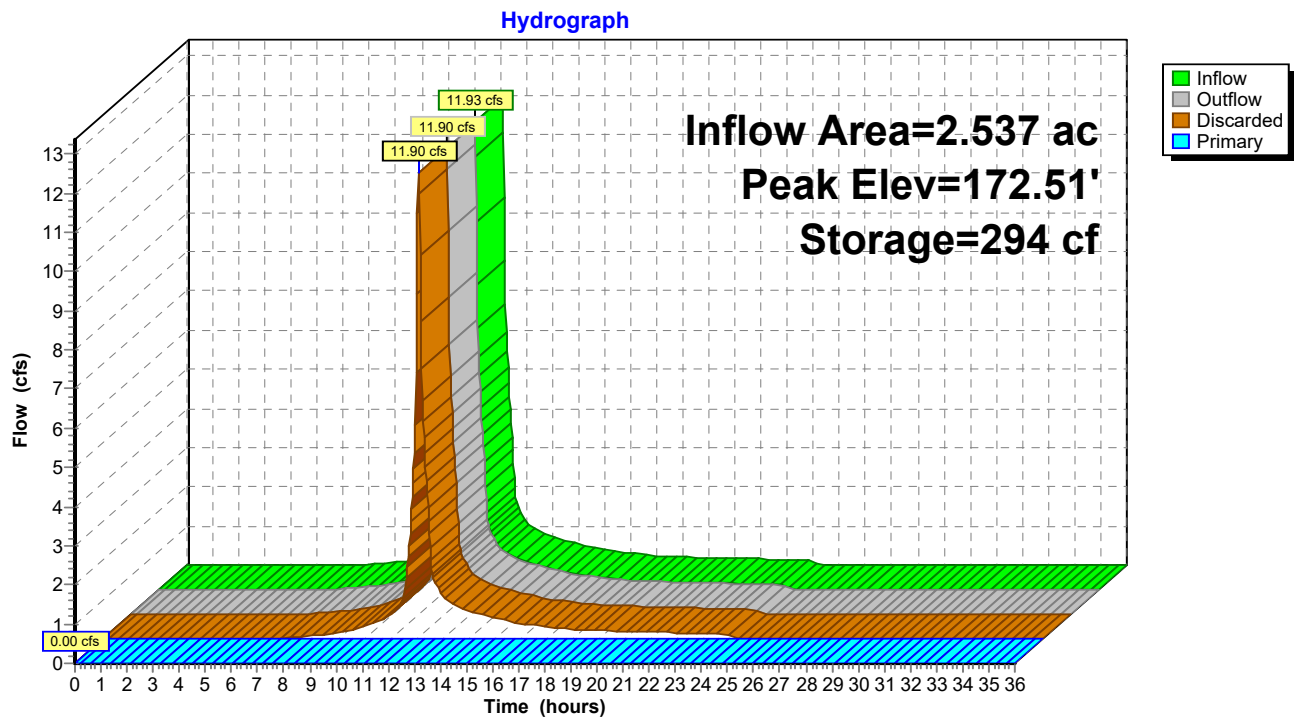
Device	Routing	Invert	Outlet Devices
#1	Primary	172.75'	746.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Discarded	172.50'	7.000 in/hr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

Discarded OutFlow Max=15.09 cfs @ 12.09 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)

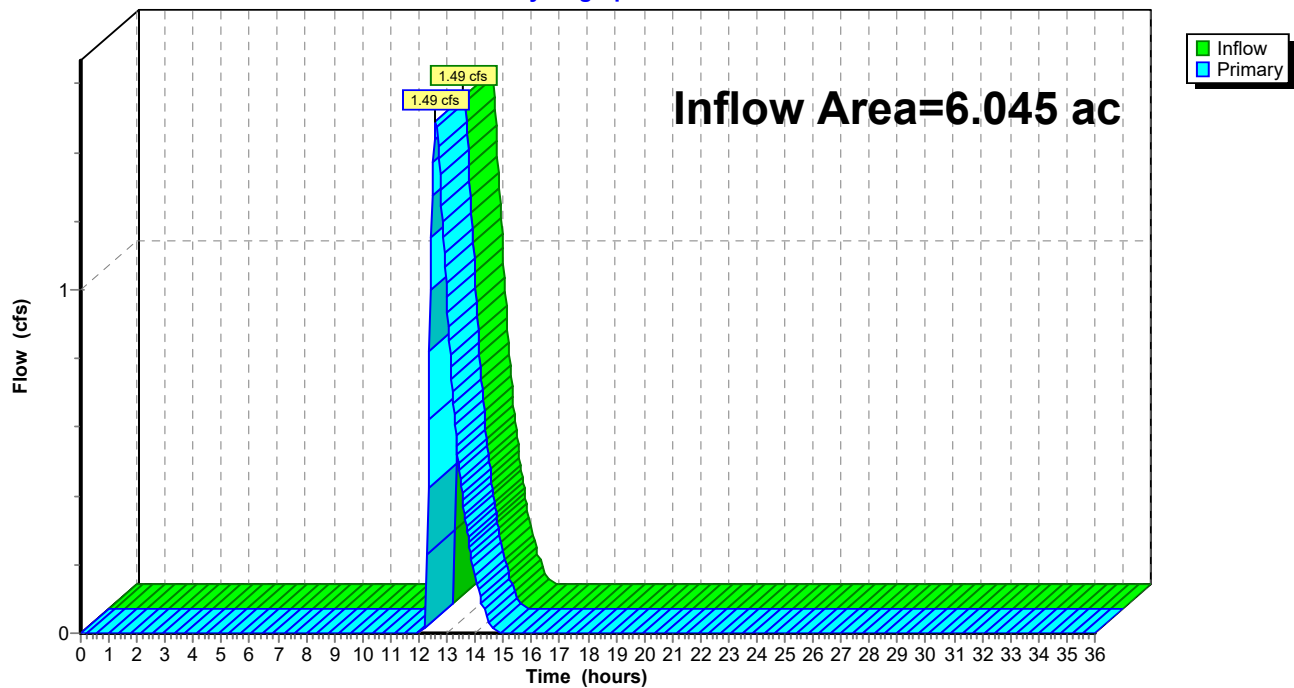
↑ **1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1BP: Turf Reservoir

Summary for Link DP-1: DP-1

Inflow Area = 6.045 ac, 20.38% Impervious, Inflow Depth = 0.22" for 25 yr event
Inflow = 1.49 cfs @ 12.60 hrs, Volume= 0.111 af
Primary = 1.49 cfs @ 12.60 hrs, Volume= 0.111 af, Atten= 0%, Lag= 0.0 min

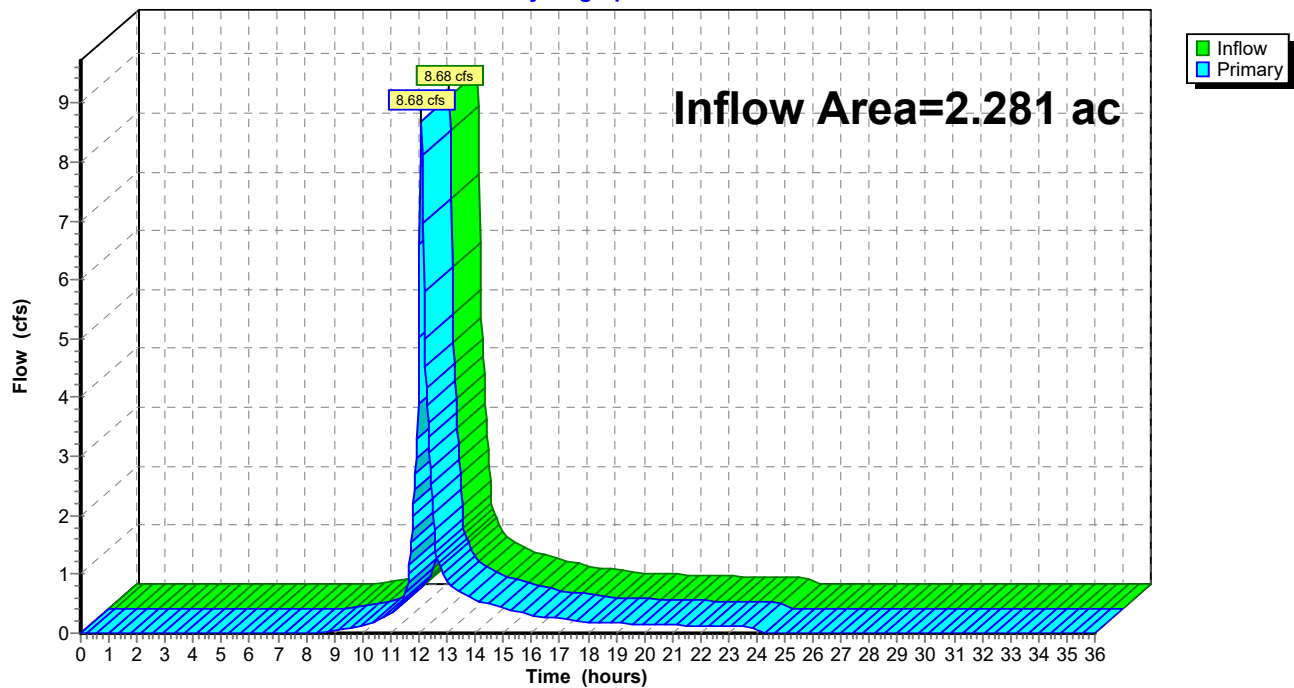
Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

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

Summary for Link DP-2: DP-2

Inflow Area = 2.281 ac, 33.50% Impervious, Inflow Depth = 3.26" for 25 yr event
Inflow = 8.68 cfs @ 12.09 hrs, Volume= 0.620 af
Primary = 8.68 cfs @ 12.09 hrs, Volume= 0.620 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**

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=152,799 sf 32.52% Impervious Runoff Depth=4.67"
Tc=10.0 min CN=73 Runoff=16.69 cfs 1.365 af

SubcatchmentPR-1B: PR-1B Runoff Area=110,533 sf 3.60% Impervious Runoff Depth=5.71"
Tc=6.0 min UI Adjusted CN=82 Runoff=16.52 cfs 1.207 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 1AP: Stormwater Basin Peak Elev=164.91' Storage=18,877 cf Inflow=16.69 cfs 1.365 af
Discarded=1.35 cfs 0.990 af Primary=4.55 cfs 0.374 af Outflow=5.90 cfs 1.365 af

Pond 1BP: Turf Reservoir Peak Elev=172.52' Storage=569 cf Inflow=16.52 cfs 1.207 af
Discarded=15.09 cfs 1.207 af Primary=0.00 cfs 0.000 af Outflow=15.09 cfs 1.207 af

Link DP-1: DP-1 Inflow=4.55 cfs 0.374 af
Primary=4.55 cfs 0.374 af

Link DP-2: DP-2 Inflow=12.70 cfs 0.909 af
Primary=12.70 cfs 0.909 af

Total Runoff Area = 8.326 ac Runoff Volume = 3.481 af Average Runoff Depth = 5.02"
76.02% Pervious = 6.330 ac 23.98% Impervious = 1.996 ac

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

Runoff = 16.69 cfs @ 12.14 hrs, Volume= 1.365 af, Depth= 4.67"
 Routed to Pond 1AP : Stormwater Basin

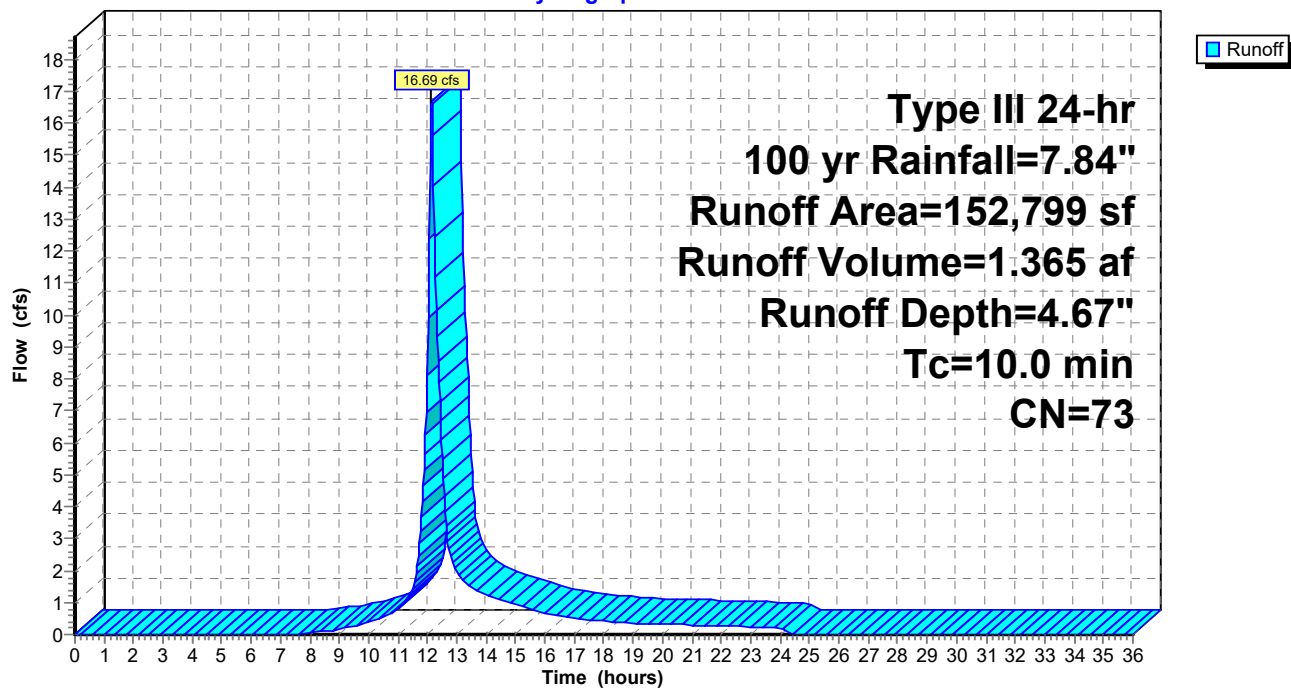
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 100 yr Rainfall=7.84"

Area (sf)	CN	Description
45,254	98	Unconnected pavement, HSG B
947	96	Gravel surface, HSG B
102,160	61	>75% Grass cover, Good, HSG B
4,438	98	Roofs, HSG B
152,799	73	Weighted Average
103,107		67.48% Pervious Area
49,692		32.52% Impervious Area
45,254		91.07% Unconnected

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

Subcatchment PR-1A: PR-1A

Hydrograph



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

Runoff = 16.52 cfs @ 12.09 hrs, Volume= 1.207 af, Depth= 5.71"
 Routed to Pond 1BP : Turf Reservoir

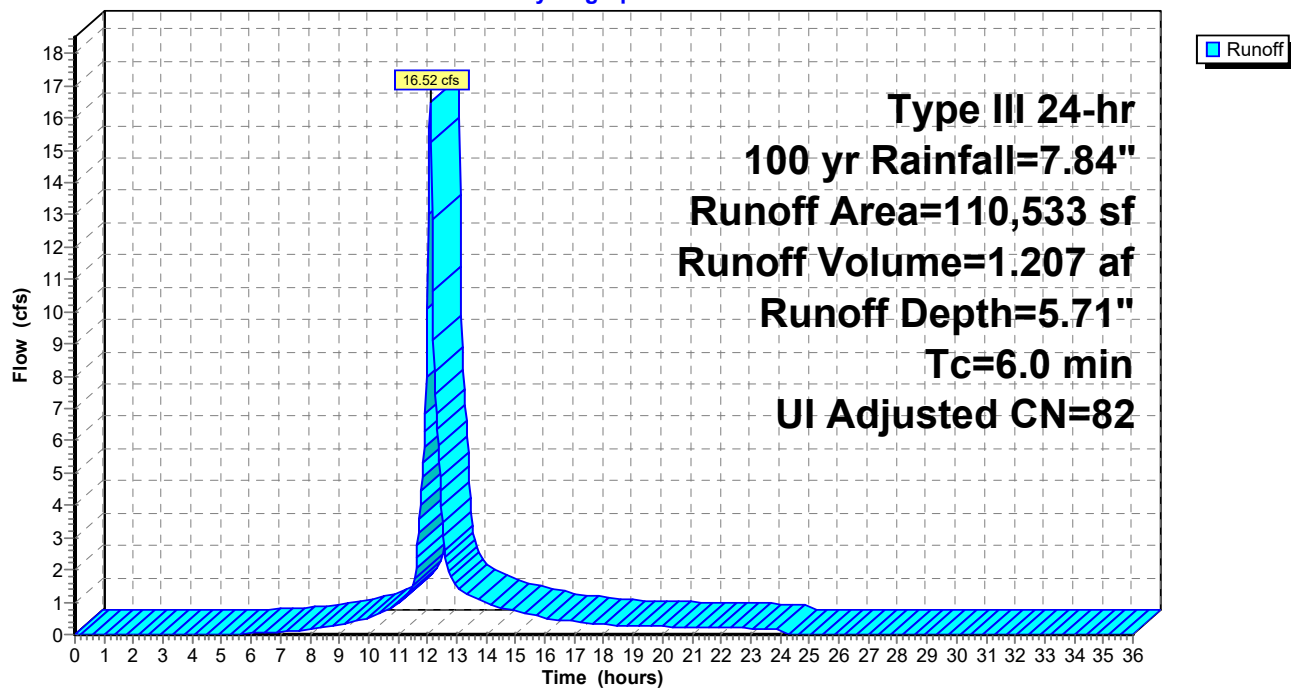
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 100 yr Rainfall=7.84"

Area (sf)	CN	Adj	Description
3,984	98		Unconnected pavement, HSG B
4,917	96		Gravel surface, HSG B
93,955	83		Fallow, crop residue, Good, HSG B
7,677	61		>75% Grass cover, Good, HSG B
110,533	83	82	Weighted Average, UI Adjusted
106,549			96.40% Pervious Area
3,984			3.60% Impervious Area
3,984			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-2: PR-2

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

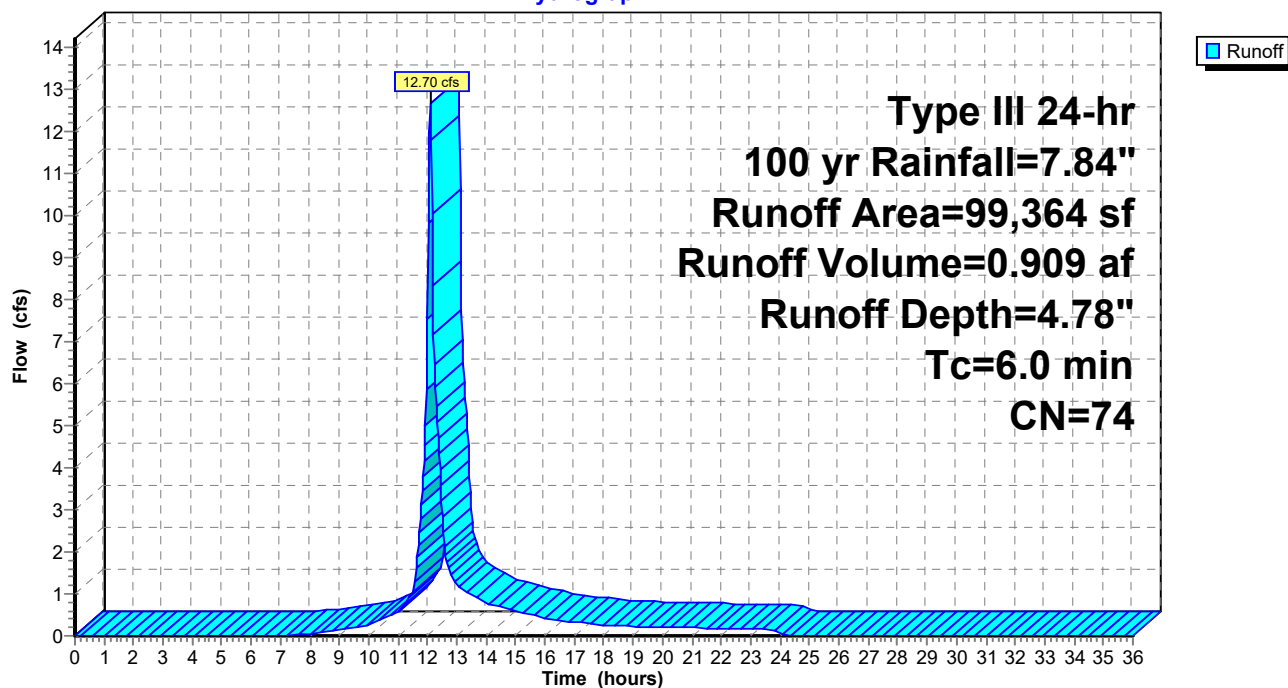
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Type III 24-hr 100 yr Rainfall=7.84"

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 1AP: Stormwater Basin

Inflow Area = 6.045 ac, 20.38% Impervious, Inflow Depth = 2.71" for 100 yr event
 Inflow = 16.69 cfs @ 12.14 hrs, Volume= 1.365 af
 Outflow = 5.90 cfs @ 12.49 hrs, Volume= 1.365 af, Atten= 65%, Lag= 20.9 min
 Discarded = 1.35 cfs @ 12.49 hrs, Volume= 0.990 af
 Primary = 4.55 cfs @ 12.49 hrs, Volume= 0.374 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= 164.91' @ 12.49 hrs Surf.Area= 8,210 sf Storage= 18,877 cf

Plug-Flow detention time= 77.5 min calculated for 1.364 af (100% of inflow)
 Center-of-Mass det. time= 77.4 min (900.4 - 823.0)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	28,990 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
162.00	4,840	0	0
163.00	5,940	5,390	5,390
164.00	7,110	6,525	11,915
165.00	8,320	7,715	19,630
166.00	10,400	9,360	28,990

Device	Routing	Invert	Outlet Devices
#1	Primary	165.00'	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	162.00'	7.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 10.00'
#3	Primary	163.70'	15.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

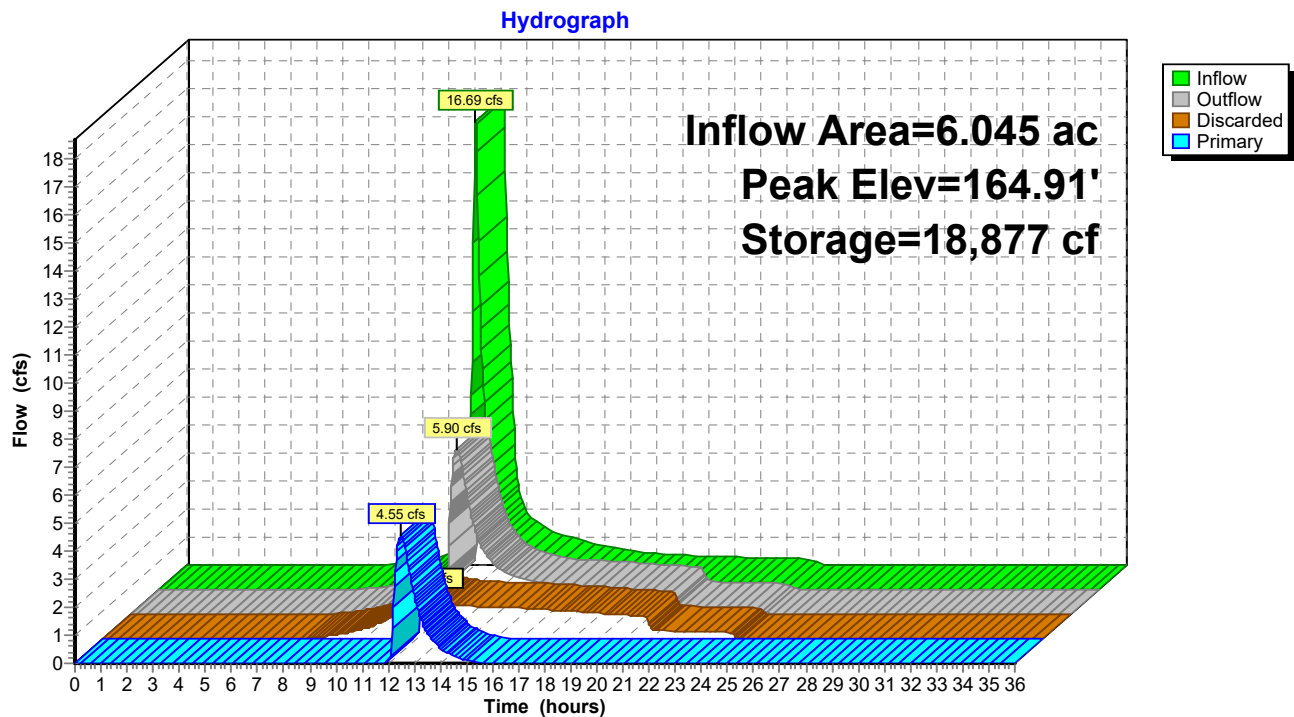
Discarded OutFlow Max=1.35 cfs @ 12.49 hrs HW=164.91' (Free Discharge)

↑ **2=Exfiltration** (Controls 1.35 cfs)

Primary OutFlow Max=4.55 cfs @ 12.49 hrs HW=164.91' (Free Discharge)

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

↑ **3=Orifice/Grate** (Orifice Controls 4.55 cfs @ 3.74 fps)

Pond 1AP: Stormwater Basin

Summary for Pond 1BP: Turf Reservoir

Inflow Area = 2.537 ac, 3.60% Impervious, Inflow Depth = 5.71" for 100 yr event
 Inflow = 16.52 cfs @ 12.09 hrs, Volume= 1.207 af
 Outflow = 15.09 cfs @ 12.12 hrs, Volume= 1.207 af, Atten= 9%, Lag= 2.0 min
 Discarded = 15.09 cfs @ 12.12 hrs, Volume= 1.207 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 1AP : Stormwater Basin

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
 Peak Elev= 172.52' @ 12.12 hrs Surf.Area= 93,140 sf Storage= 569 cf

Plug-Flow detention time= 0.4 min calculated for 1.206 af (100% of inflow)
 Center-of-Mass det. time= 0.4 min (799.3 - 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

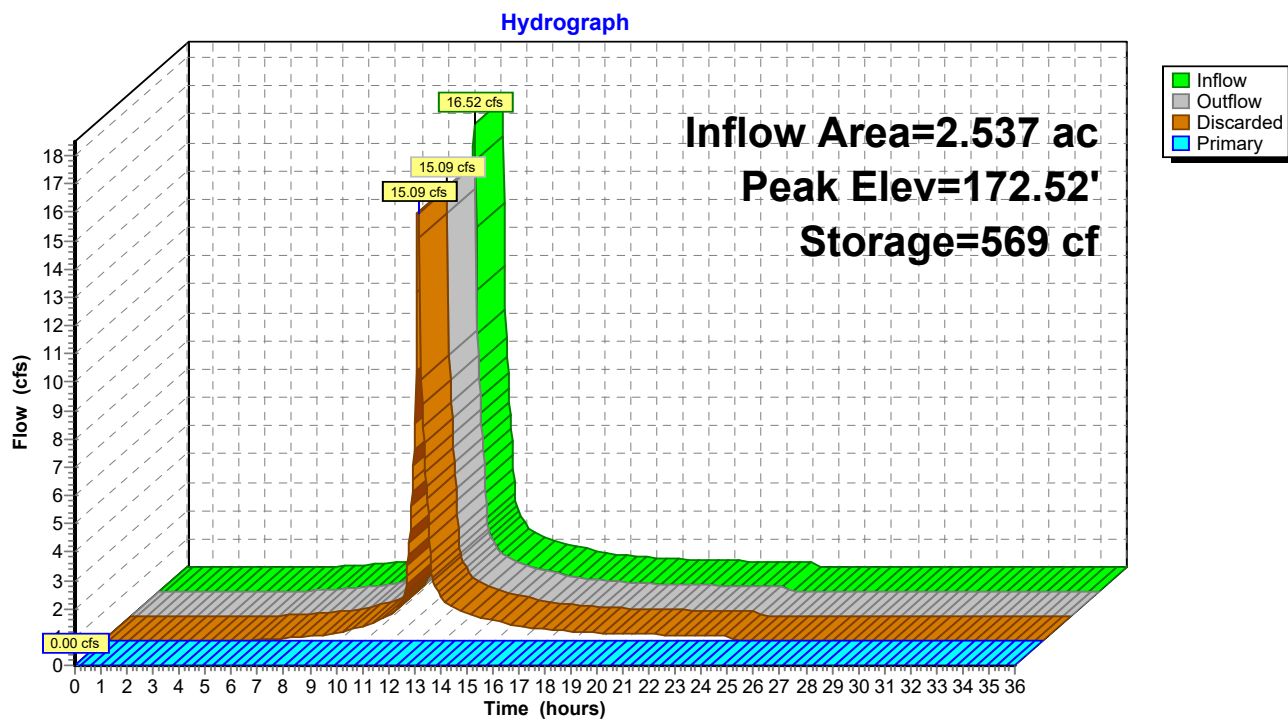
Device	Routing	Invert	Outlet Devices
#1	Primary	172.75'	746.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#2	Discarded	172.50'	7.000 in/hr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

Discarded OutFlow Max=15.09 cfs @ 12.12 hrs HW=172.52' (Free Discharge)

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

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

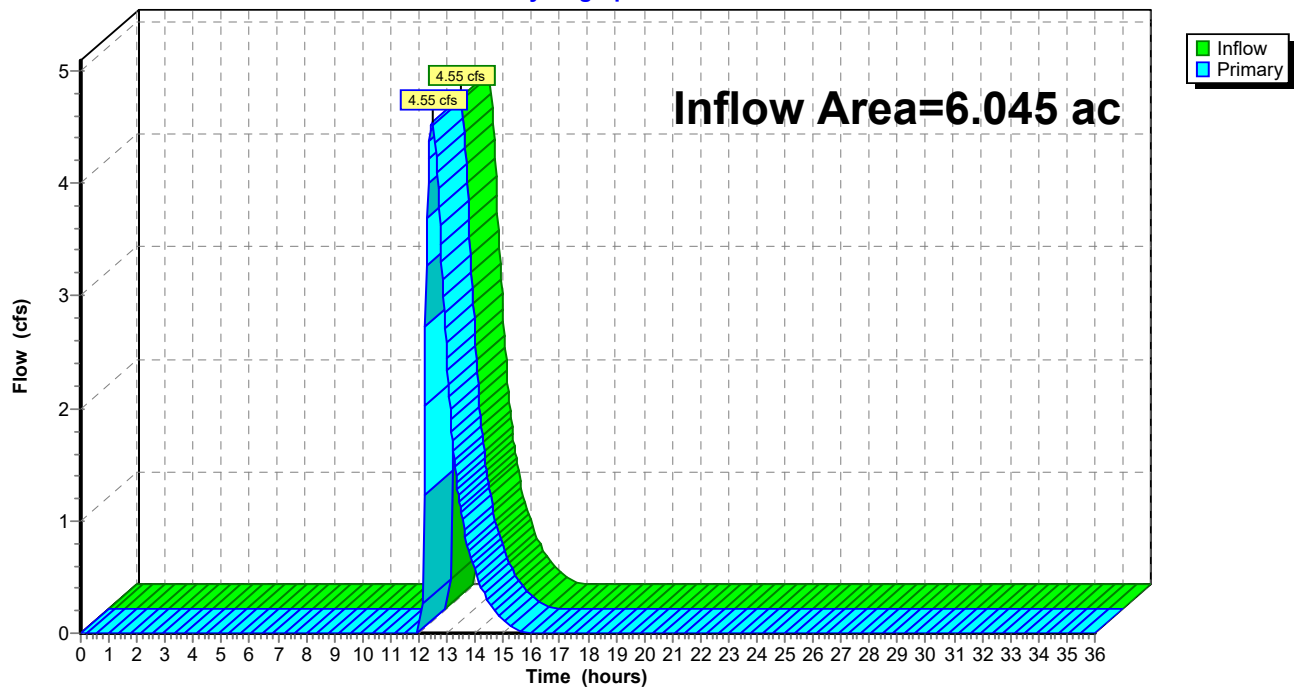
↑ **1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1BP: Turf Reservoir

Summary for Link DP-1: DP-1

Inflow Area = 6.045 ac, 20.38% Impervious, Inflow Depth = 0.74" for 100 yr event
Inflow = 4.55 cfs @ 12.49 hrs, Volume= 0.374 af
Primary = 4.55 cfs @ 12.49 hrs, Volume= 0.374 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**