PRELIMINARY HYDROLOGIC ANALYSIS

For:

COMPREHENSIVE PERMIT PLAN
RIVER STONE
HINGHAM, MA

Located at:

VIKING LANE & WARD STREET
HINGHAM, MASSACHUSETTS

Submitted to:

TOWN OF HINGHAM

Prepared For:

RIVER STONE, LLC
293R WASHINGTON STREET
NORWELL, MASSACHUSETTS 02061

MCKENZIE ENGINEERING GROUP

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January 8, 2018
Revised February 2, 2018
Revised March 9. 2018
Revised April 25, 2018
Revised December 19, 2018

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Comprehensive Permit Plan
River Stone
Viking Lane and Ward Street
Hingham, MA

Project Summary

The project proponent, River Stone, LLC, proposes to develop an approximate 6.67-acre parcel of land on Viking Lane and Ward Street in Hingham, Massachusetts based on the plans entitled "Definitive Subdivision Viking Lane at Ward Street in Hingham, Massachusetts", dated March 20, 1995 recorded in Plan Book 45, Page 803. The proposed development will consist of 32 residential units comprised of 1, 2, and 3-unit buildings. The development is being permitted under MGL Ch. 40B Comprehensive Permit. The proposed development will involve the construction of approximately 1,745 linear feet of bituminous roadway, bituminous parking areas, and associated infrastructure.

The project will access utility infrastructure located on Viking Lane and Ward Street, including water, electric, telephone and cable television. A wastewater collection system will be constructed to convey sewage flows to an on-site wastewater treatment plant and soil absorption system. The stormwater management system and will be designed to fully comply with all standards of the Department of Environment Protection's Stormwater Management Regulations and will utilize an existing closed drainage system on Viking Lane and existing stormwater management facility located on-site.

The project is comprised of one parcel which is shown on Assessors' Map 124, Lots 70-75 and Lot 26. The site is bounded by developed residential lots on Ward Street to the south, southwest, and northwest, Autumn Circle to the northeast and to the north. Refer to Figure 1 - USGS Locus Map for the location of the parcel.

The existing and proposed site conditions are illustrated on the project site plans entitled "Comprehensive Permit Plans known as River Stone (Assessors' Map 124, Lots 70-75 and Lot 26), Viking Lane and Ward Street, Hingham, Massachusetts," prepared by McKenzie Engineering Group, Inc. and dated October 7, 2015, with a latest revision date of December 19, 2018. This report contains stormwater peak rate of runoff calculations for the pre-development and post-development conditions and includes the sizing of the proposed drainage systems for compliance with DEP Stormwater Management Standard 2 – Peak Rate Attenuation.

Pre-Development Condition

The site is located within the Residence B Zoning District and is not located in the Aquifer Protection District and the Natural Heritage and Endangered Species. The site is located within the Zone X of the Flood Insurance Rate Map, as shown on the current FEMA Flood Insurance Rate Map Panel No. 25023CO083J with an effective date of July 17, 2012. Refer to Figure 2 – FEMA Flood Map.

The limit of bordering vegetated wetland resource areas and approximate location of the intermittent stream on the site were delineated by Environmental Consulting and Restoration, LLC in June 2015.

The parcel is currently undeveloped and is mostly wooded with some grass areas with the exception of Viking Lane and the stormwater management facility. The topography of the site ranges in elevation from approximately 54 ft. (NAVD 88) in the northeasterly portion of the site to an elevation of approximately 86 ft. along the southerly portion of the site. Portions of runoff emanating from the site flow in a southwesterly and northwesterly direction to the closed drainage system on Viking Lane, southeasterly and northeasterly to the existing stormwater management facility and existing wetlands, with a small portion flowing towards Ward Street to the south and abutting properties to the northwest. The soil types as identified by the Soil Survey, Plymouth County, MA prepared by the NRCS Soil Conservation Service (NRCS) are classified Quonset sandy loam, 8 to 15 percent slopes; Warwick fine sandy loam, 0 to 8 percent slopes; Sudbury fine sandy loan, 3 to 8 percent slopes; and Freetown muck, 0 to 1 percent slopes soils. The soils fall into the following hydrological soil groups: Quonset – HSG A, Warwick – HSG A, Sudbury – HSG B, and Freetown - HSG D. Through an on-site soil evaluation, the site soils were determined to be consistent with the NRCS soil classifications. Refer to Figure 3 - Soil Map for the NRCS delineation of soil types and Appendix C – Soil Testing Results for supporting data.

In the pre-and post-development stormwater analysis, the watershed area analyzed was approximately 7.045 acres consisting of the subject parcel to be developed and offsite tributary areas and consists of five (5) sub-catchments. Refer to Pre-Development Watershed Delineation Plan WS-1 in Appendix A for a delineation of drainage subareas for the pre-development design condition.

The SCS Technical Release 20 (TR-20) and Technical Release 55 (TR-55) method based program "HydroCAD" was employed to develop pre- and post-development peak flows. Drainage calculations were prepared for the pre-development condition for the 2, 10, 25 and 100-year, Type III storm events. Refer to Appendix A for computer results, soil characteristics, cover descriptions and times of concentrations for all subareas.

The peak rates of runoff and elevations for this condition are as follows:

Table 1 – Pre-Development Results

	Design Storm (flow in cfs)			
	2-Year Storm	10-Year Storm	25-Year Storm	100-Year Storm
Design Point	Flow (CFS)	Flow (CFS)	Flow (CFS)	Flow (CFS)
DP-1	0.57	0.92	1.19	1.71
DP-2	0.00	0.00	0.00	0.01
DP-3	0.62	2.11	3.33	5.01
DP-4	0.00	0.00	0.02	0.09
DP-5	0.03	0.29	0.74	1.71

	Design Storm (volume in ac-ft)			
	2-Year Storm	10-Year Storm	25-Year Storm	100-Year Storm
Design Point	Volume (AC-FT)	Volume (AC-FT)	Volume (AC-FT)	Volume (AC-FT)
DP-1	0.042	0.076	0.110	0.173
DP-2	0.000	0.000	0.001	0.007

DP-3	0.103	0.238	0.361	0.581
DP-4	0.000	0.002	0.007	0.018
DP-5	0.016	0.051	0.088	0.160

Post-Development Condition

The proposed development will consist of 32 residential units comprised of 1, 2, and 3-unit buildings with bituminous concrete access roadways, parking areas, sidewalks and associated infrastructure. Visitor parking will be dispersed throughout the site. Viking Lane will be widened to 20 feet.

The project will access utility infrastructure located on Viking Lane and Ward Street, including water, electric, telephone and cable television. A wastewater collection system will be constructed to convey sewage flows to an on-site wastewater treatment plant and soil absorption system. The stormwater management system and will be designed to fully comply with all standards of the Department of Environment Protection's Stormwater Management Regulations and will utilize an existing closed drainage system on Viking Lane and existing stormwater management facility located on-site.

In the post-development condition, stormwater analysis watershed areas were analyzed for purposes of designing a drainage system to accommodate the 14 buildings and associated bituminous roadway infrastructure. The objective in designing the proposed drainage facilities for the project was to maintain existing drainage patterns to the extent practicable and to ensure that the post-development rates of runoff are equal or less than pre-development. Refer to Post-Development Watershed Delineation Plan WS-2 in Appendix B for a delineation of post-development drainage subareas. The watershed area and design points for the post-development design conditions correspond to those analyzed for the pre-development design condition and are shown on Plan No. WS-2.

Drainage calculations were prepared by employing the SCS TR-20 Methods for the 2, 10, 25 and 100-year, type III storm events. Refer to Appendix B for computer results. The subsurface infiltration chambers were designed to accommodate peak flows generated by all storms up to and including the 100-year storm event. Refer to site plans for the drainage system design.

Table 2 – Post-Development Results				
	Design Storm (flow in cfs)			
	2-Year Storm	10-Year Storm	25-Year Storm	100-Year Storm
Design Point	Flow (CFS)	Flow (CFS)	Flow (CFS)	Flow (CFS)
DP-1	0.26	0.44	0.86	1.46
DP-2	0.00	0.00	0.00	0.00
DP-3	0.15	0.49	1.68	3.58
DP-4	0.00	0.00	0.01	0.05
DP-5	0.03	0.13	0.27	0.52

	Design Storm (volume in ac-ft)			
	2-Year Storm	10-Year Storm	25-Year Storm	100-Year Storm
Design Point	Volume (AC-FT)	Volume (AC-FT)	Volume (AC-FT)	Volume (AC-FT)
DP-1	0.019	0.039	0.059	0.093
DP-2	0.000	0.000	0.000	0.000
DP-3	0.084	0.212	0.340	0.556
DP-4	0.000	0.001	0.003	0.006
DP-5	0.006	0.015	0.025	0.042

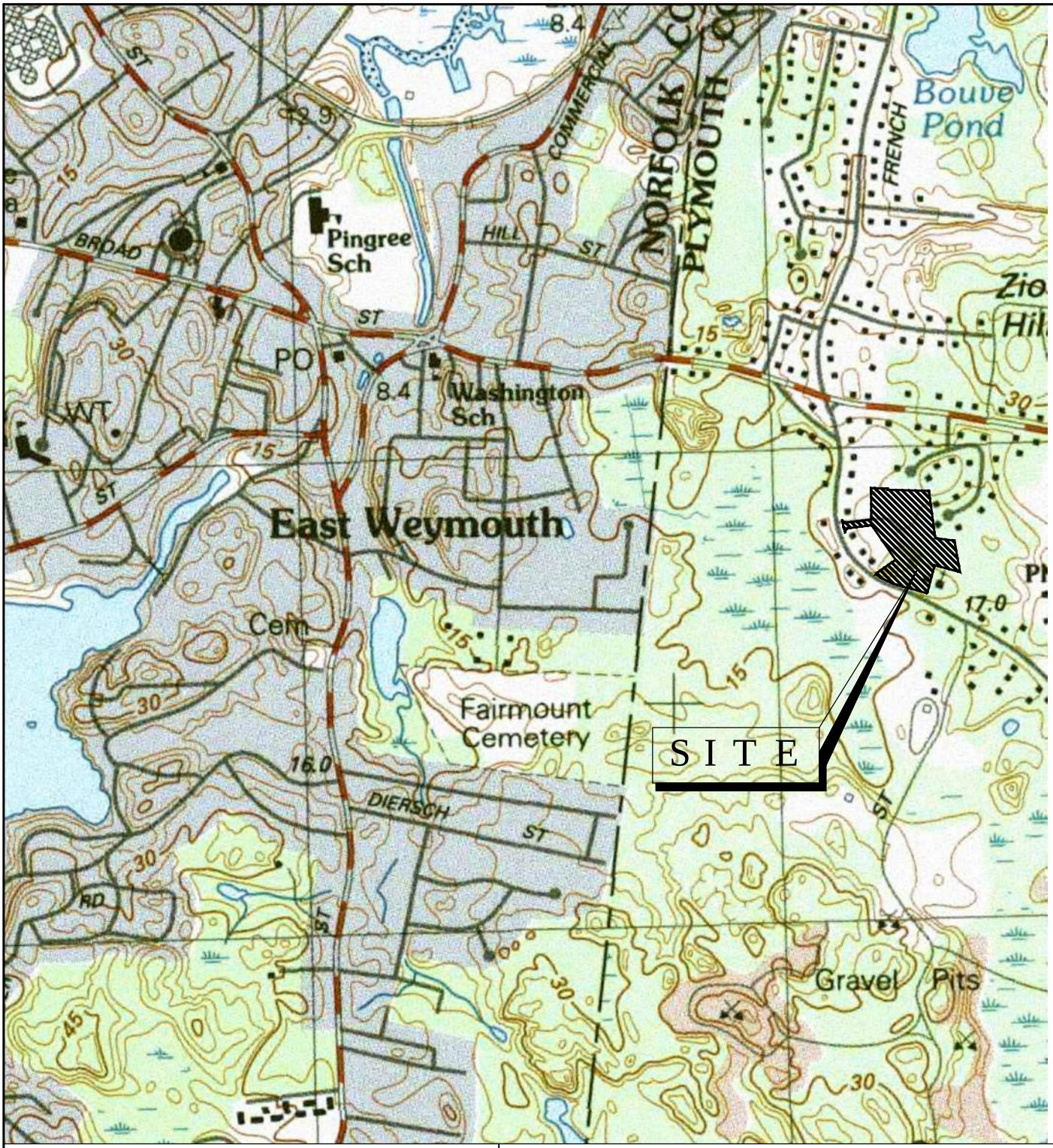

FIGURE - 1

0 1000' 2000' 2500'

U.S. GEOLOGICAL SURVEY
7.5 X 15 MINUTE SERIES

MCKENZIE ENGINEERING GROUP
150 LONGWATER DRIVE, SUITE 101
NORWELL, MASSACHUSETTS 02061
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USGS LOCUS MAP

VIKING LANE & WARD STREET
MAP 124, LOTS 70-75 & LOT 26
HINGHAM, MASSACHUSETTS

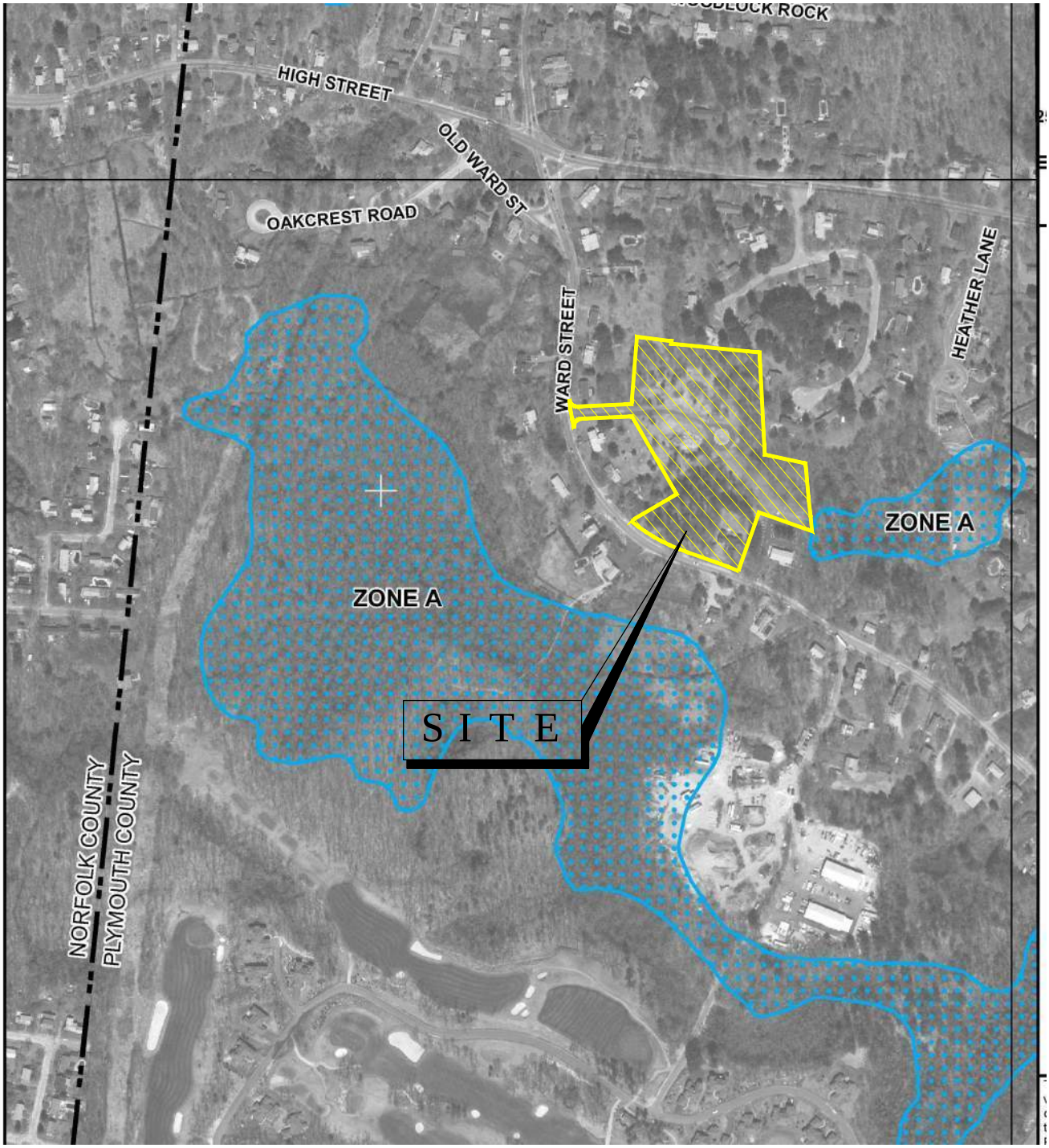

FIGURE - 2

0 500' 1000' 1500'

COMMUNITY PANEL NO: 25023CO083J
EFFECTIVE DATE: JULY 17, 2012

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FEMA FLOOD MAP

VIKING LANE & WARD STREET
MAP 124, LOTS 70-75 & LOT 26
HINGHAM, MASSACHUSETTS

SOIL KEY

SOIL CLASSIFICATION	DESCRIPTION	HYDROLOGIC SOIL GROUP
52A	FREETOWN MUCK	D
260B	SUDBURY FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES	B
262C	QUONSET SANDY LOAM, 8 TO 15 PERCENT SLOPES	A
266A	WARWICK FINE SANDY LOAM, 0 TO 3 PERCENT SLOPES	A
266B	WARWICK FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES	A

FIGURE - 3

0 200' 400' 500'

NRCS SOIL SURVEY
PLYMOUTH COUNTY

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NRCS SOILS MAP

VIKING LANE & WARD STREET
MAP 124, LOTS 70-75 & LOT 26
HINGHAM, MASSACHUSETTS

FIGURE - 4

0 200’ 400’ 500’

14TH EDITION MASSACHUSETTS
NATURAL HERITAGE ATLAS

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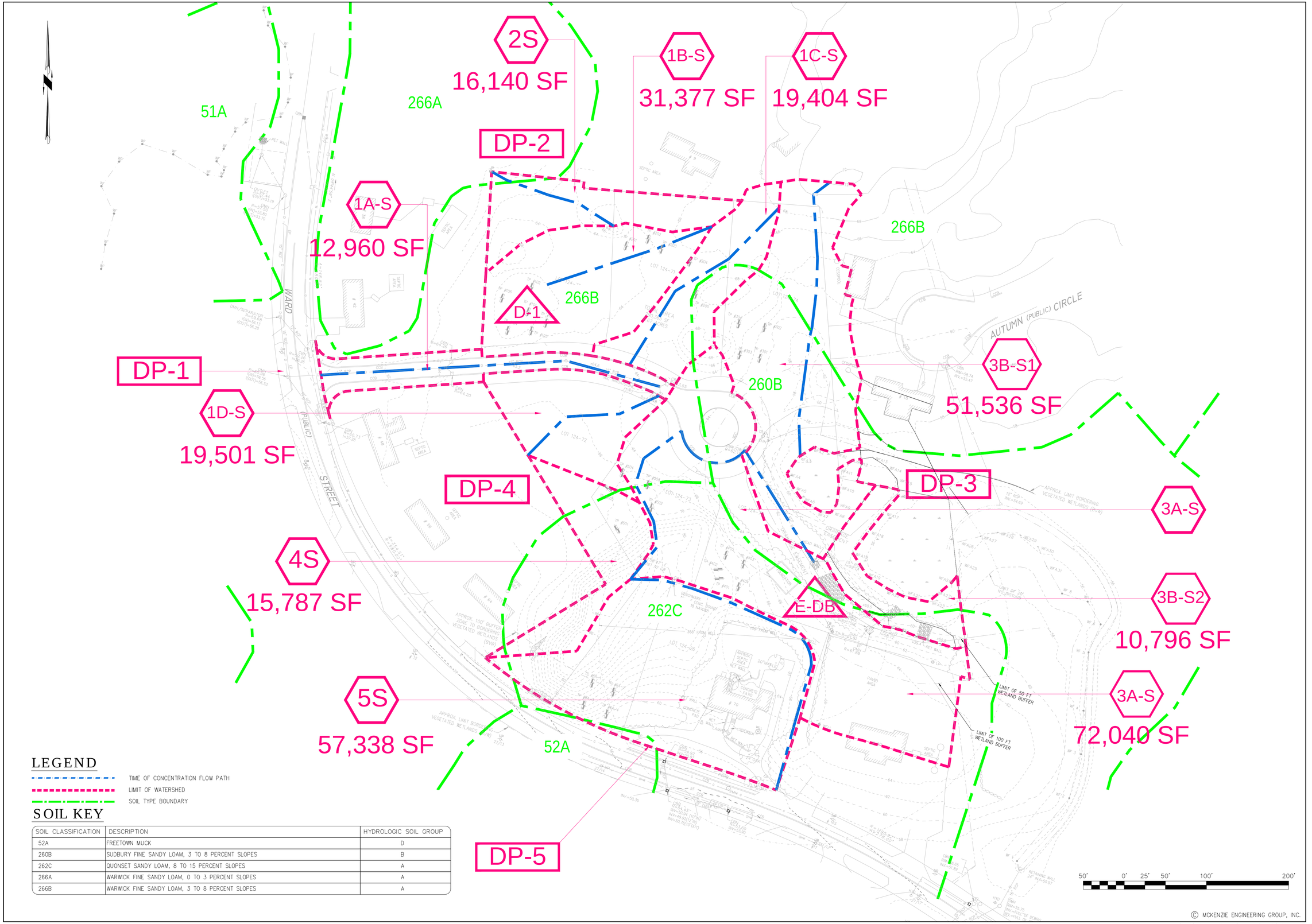
NATURAL HERITAGE & ENDANGERED SPECIES MAP

VIKING LANE & WARD STREET
MAP 124, LOTS 70-75 & LOT 26
HINGHAM, MASSACHUSETTS

A P P E N D I X A

Pre-Development Condition



LEGEND

- TIME OF CONCENTRATION FLOW PATH
- LIMIT OF WATERSHED
- SOIL TYPE BOUNDARY

SOIL KEY

SOIL CLASSIFICATION	DESCRIPTION	HYDROLOGIC SOIL GROUP
52A	FREETOWN MUCK	D
260B	SUDBURY FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES	B
262C	QUONSET SANDY LOAM, 8 TO 15 PERCENT SLOPES	A
266A	WARWICK FINE SANDY LOAM, 0 TO 3 PERCENT SLOPES	A
266B	WARWICK FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES	A

REV	DATE	DESCRIPTION	BY	APP
1	3/9/18	AREA 3A-S	SBS	BCM
2	4/25/18	AREAS 3B-S1, 3B-S2	SBS	BCM

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COMPREHENSIVE PERMIT PLAN

KNOWN AS

RIVER STONE

(ASSESSORS MAP 124, LOTS 70-75 & LOT 26)
VIKING LANE & WARD STREET
HINGHAM, MASSACHUSETTS

PROFESSIONAL ENGINEER:

APPLICANT:
RIVER STONE, LLC
293R WASHINGTON STREET
NORWELL, MASSACHUSETTS 02061

ZBA PERMIT PLAN

DRAWN BY:	SBS
DESIGNED BY:	SBS
CHECKED BY:	BCM
APPROVED BY:	BCM
DATE:	JANUARY 8, 2018
SCALE:	1"=50'
PROJECT NO.:	27-135

DWG. TITLE:
Pre-Dev. Watershed Plan

DWG. NO:
WS-1

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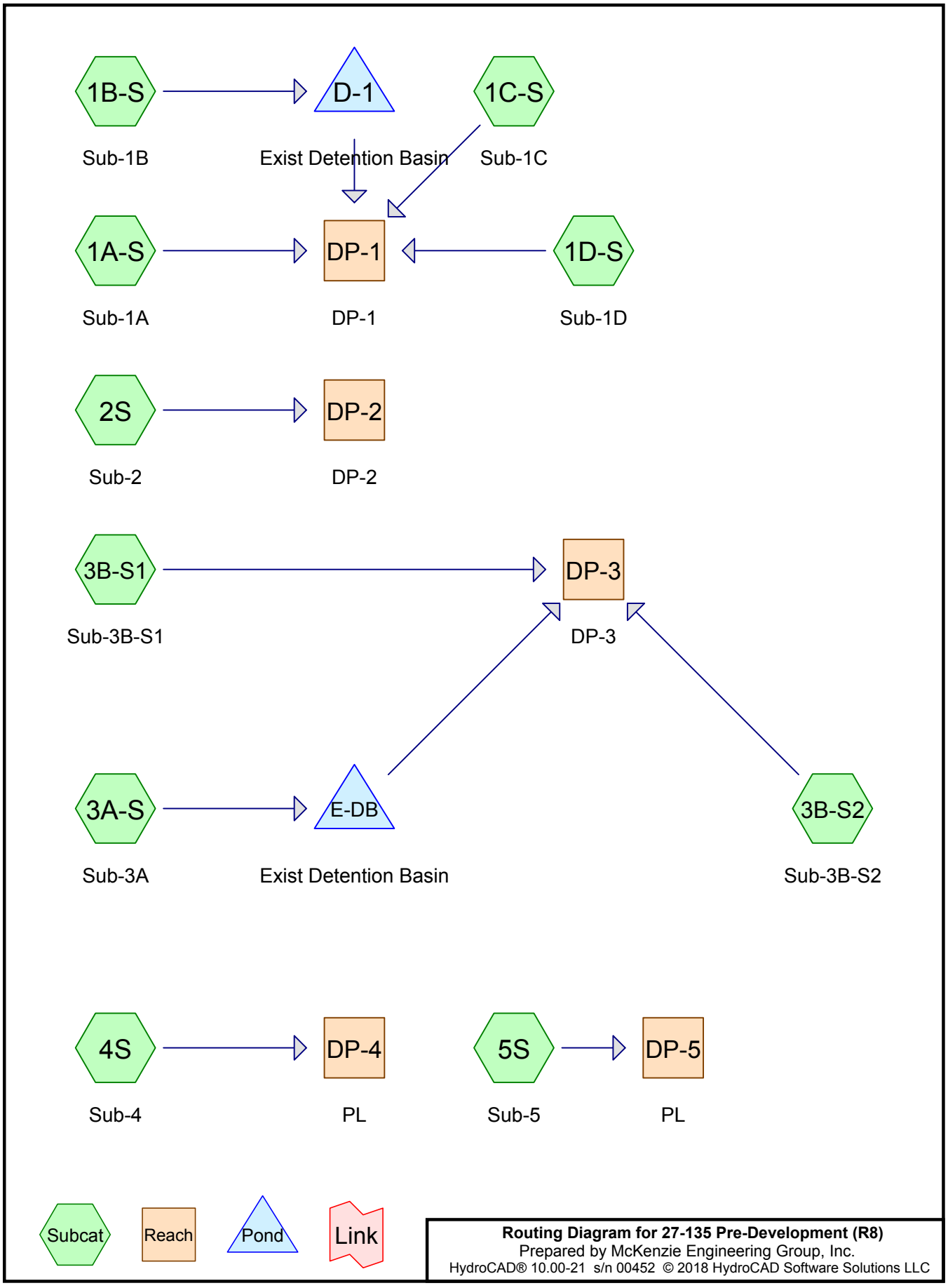


Routing Diagram for 27-135 Pre-Development (R8)
Prepared by McKenzie Engineering Group, Inc.

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.258	49	50-75% Grass cover, Fair, HSG A (1B-S, 1C-S, 1D-S)
0.968	39	>75% Grass cover, Good, HSG A (1A-S, 1B-S, 1C-S, 1D-S, 3A-S, 3B-S2, 5S)
0.122	39	>75% Grass cover, Good, HSG A - offsite (3A-S, 3B-S1)
0.338	61	>75% Grass cover, Good, HSG B (3A-S, 3B-S1, 3B-S2)
0.022	61	>75% Grass cover, Good, HSG B - offsite (3B-S1)
0.009	80	>75% Grass cover, Good, HSG D (5S)
0.062	98	Existing Detention Basin, HSG A (3A-S)
0.029	98	Existing Detention Basin, HSG B (3A-S)
0.004	98	Ledge, HSG A (5S)
0.005	98	Misc, HSG A (5S)
0.012	98	Patio, HSG A (5S)
0.122	98	Paved drive, HSG A (5S)
0.007	98	Paved drive, HSG A - offsite (3B-S1)
0.007	98	Paved drive, HSG D (5S)
0.369	98	Paved parking, HSG A - offsite (3A-S)
0.259	98	Paved roads w/curbs & sewers, HSG A (1A-S, 3A-S)
0.075	98	Paved roads w/curbs & sewers, HSG B (3A-S)
0.025	98	Riprap, HSG A (3A-S, 3B-S1, 3B-S2)
0.024	98	Riprap, HSG B (3A-S, 3B-S1, 3B-S2)
0.049	98	Roofs, HSG A (5S)
0.032	98	Roofs, HSG A - offsite (3A-S)
0.018	98	Rubble Pile, HSG A (1D-S)
1.113	36	Woods, Fair, HSG A (4S, 5S)
2.058	30	Woods, Good, HSG A (1B-S, 1C-S, 1D-S, 2S, 3A-S, 3B-S1, 3B-S2)
0.158	30	Woods, Good, HSG A - offsite (1C-S, 3A-S, 3B-S1)
0.859	55	Woods, Good, HSG B (1C-S, 3A-S, 3B-S1, 3B-S2)
0.040	55	Woods, Good, HSG B - offsite (3B-S1)
7.045	**48**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
5.642	HSG A	1A-S, 1B-S, 1C-S, 1D-S, 2S, 3A-S, 3B-S1, 3B-S2, 4S, 5S
1.387	HSG B	1C-S, 3A-S, 3B-S1, 3B-S2
0.000	HSG C	
0.016	HSG D	5S
0.000	Other	
7.045		**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
0.258	0.000	0.000	0.000	0.000	0.258	50-75% Grass cover, Fair	1B-S, 1C-S, 1D-S
1.090	0.360	0.000	0.009	0.000	1.459	>75% Grass cover, Good	1A-S, 1B-S, 1C-S, 1D-S, 3A-S, 3B-S1, 3B-S2, 5S
0.062	0.029	0.000	0.000	0.000	0.092	Existing Detention Basin	3A-S
0.004	0.000	0.000	0.000	0.000	0.004	Ledge	5S
0.005	0.000	0.000	0.000	0.000	0.005	Misc	5S
0.012	0.000	0.000	0.000	0.000	0.012	Patio	5S
0.129	0.000	0.000	0.007	0.000	0.136	Paved drive	3B-S1, 5S
0.369	0.000	0.000	0.000	0.000	0.369	Paved parking	3A-S
0.259	0.075	0.000	0.000	0.000	0.334	Paved roads w/curbs & sewers	1A-S, 3A-S
0.025	0.024	0.000	0.000	0.000	0.049	Riprap	3A-S, 3B-S1, 3B-S2

Ground Covers (all nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.081	0.000	0.000	0.000	0.000	0.081	Roofs	3A-S, 5S
0.018	0.000	0.000	0.000	0.000	0.018	Rubble Pile	1D-S
1.113	0.000	0.000	0.000	0.000	1.113	Woods, Fair	4S, 5S
2.216	0.899	0.000	0.000	0.000	3.115	Woods, Good	1B-S, 1C-S, 1D-S, 2S, 3A-S, 3B-S1, 3B-S2
5.642	**1.387**	**0.000**	**0.016**	**0.000**	**7.045**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	3A-S	0.00	0.00	157.0	0.0030	0.013	15.0	0.0	0.0
2	E-DB	58.12	58.05	25.0	0.0028	0.013	12.0	0.0	0.0

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1A-S: Sub-1A Runoff Area=12,960 sf 68.56% Impervious Runoff Depth=1.64"
Tc=6.0 min CN=79 Runoff=0.57 cfs 0.041 af

Subcatchment1B-S: Sub-1B Runoff Area=31,377 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=212' Tc=9.6 min CN=35 Runoff=0.00 cfs 0.000 af

Subcatchment1C-S: Sub-1C Runoff Area=19,404 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=269' Tc=16.6 min CN=37 Runoff=0.00 cfs 0.000 af

Subcatchment1D-S: Sub-1D Runoff Area=19,501 sf 3.95% Impervious Runoff Depth=0.02"
Flow Length=185' Tc=11.0 min CN=40 Runoff=0.00 cfs 0.001 af

Subcatchment2S: Sub-2 Runoff Area=16,140 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=164' Tc=8.6 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment3A-S: Sub-3A Runoff Area=72,040 sf 40.04% Impervious Runoff Depth=0.66"
Flow Length=534' Tc=9.4 min CN=62 Runoff=0.87 cfs 0.091 af

Subcatchment3B-S1: Sub-3B-S1 Runoff Area=51,536 sf 1.07% Impervious Runoff Depth=0.19"
Flow Length=345' Tc=8.5 min CN=49 Runoff=0.07 cfs 0.019 af

Subcatchment3B-S2: Sub-3B-S2 Runoff Area=10,796 sf 1.36% Impervious Runoff Depth=0.22"
Flow Length=345' Tc=8.5 min CN=50 Runoff=0.02 cfs 0.005 af

Subcatchment4S: Sub-4 Runoff Area=15,787 sf 0.00% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=36 Runoff=0.00 cfs 0.000 af

Subcatchment5S: Sub-5 Runoff Area=57,338 sf 15.24% Impervious Runoff Depth=0.14"
Flow Length=438' Tc=7.8 min CN=47 Runoff=0.03 cfs 0.016 af

Reach DP-1: DP-1 Inflow=0.57 cfs 0.042 af
Outflow=0.57 cfs 0.042 af

Reach DP-2: DP-2 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach DP-3: DP-3 Inflow=0.62 cfs 0.103 af
Outflow=0.62 cfs 0.103 af

Reach DP-4: PL Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach DP-5: PL Inflow=0.03 cfs 0.016 af
Outflow=0.03 cfs 0.016 af

Pond D-1: Exist Detention Basin Peak Elev=62.00' Storage=0 cf Inflow=0.00 cfs 0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Pond E-DB: Exist Detention Basin Peak Elev=58.87' Storage=741 cf Inflow=0.87 cfs 0.091 af
Outflow=0.54 cfs 0.080 af

Total Runoff Area = 7.045 ac Runoff Volume = 0.172 af Average Runoff Depth = 0.29"
84.38% Pervious = 5.945 ac 15.62% Impervious = 1.100 ac

Summary for Subcatchment 1A-S: Sub-1A

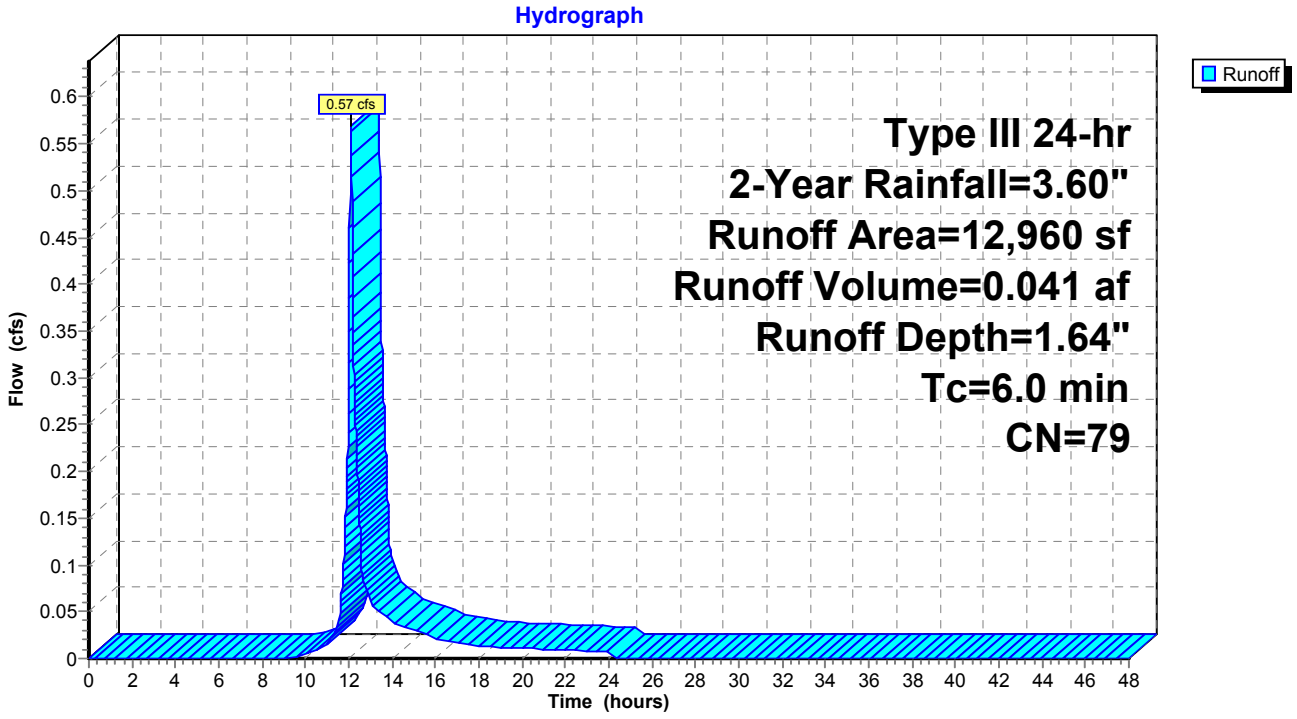
Runoff = 0.57 cfs @ 12.09 hrs, Volume= 0.041 af, Depth= 1.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.60"

Area (sf)	CN	Description
4,075	39	>75% Grass cover, Good, HSG A
8,885	98	Paved roads w/curbs & sewers, HSG A
12,960	79	Weighted Average
4,075		31.44% Pervious Area
8,885		68.56% Impervious Area

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

Subcatchment 1A-S: Sub-1A



Summary for Subcatchment 1B-S: Sub-1B

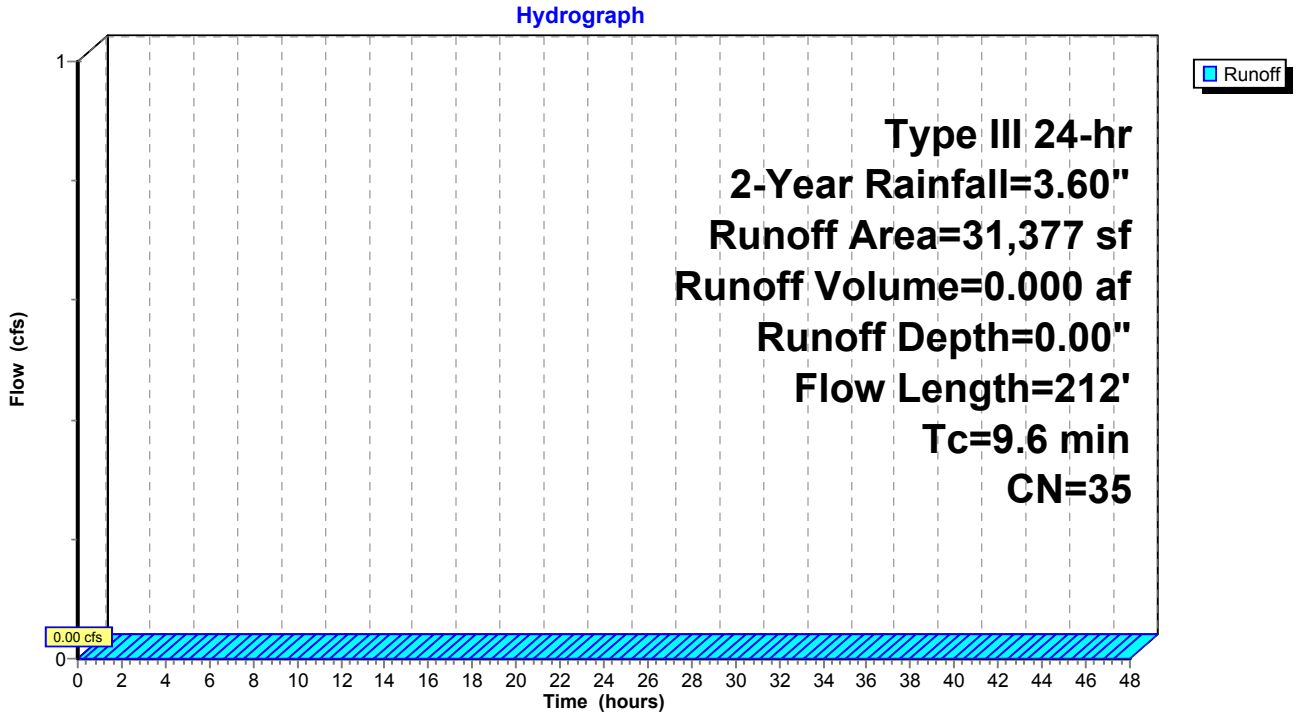
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.60"

Area (sf)	CN	Description
22,072	30	Woods, Good, HSG A
1,755	39	>75% Grass cover, Good, HSG A
7,550	49	50-75% Grass cover, Fair, HSG A
31,377	35	Weighted Average
31,377		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	50	0.0500	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
1.5	162	0.0120	1.76		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
9.6	212	Total			

Subcatchment 1B-S: Sub-1B



Summary for Subcatchment 1C-S: Sub-1C

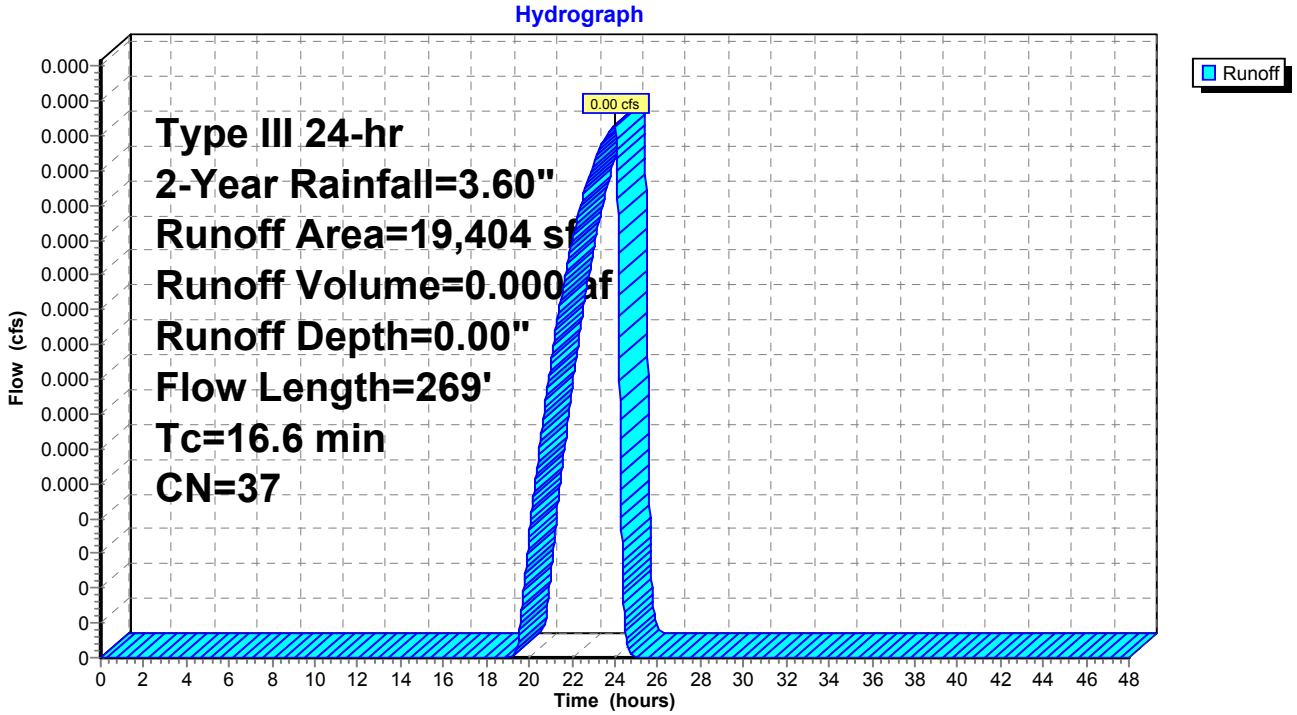
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
	12,129	30	Woods, Good, HSG A
	1,513	39	>75% Grass cover, Good, HSG A
	3,840	55	Woods, Good, HSG B
*	899	30	Woods, Good, HSG A - offsite
	1,023	49	50-75% Grass cover, Fair, HSG A
	19,404	37	Weighted Average
	19,404		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	50	0.0120	0.06		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.60"
2.3	219	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
16.6	269	Total			

Subcatchment 1C-S: Sub-1C



Summary for Subcatchment 1D-S: Sub-1D

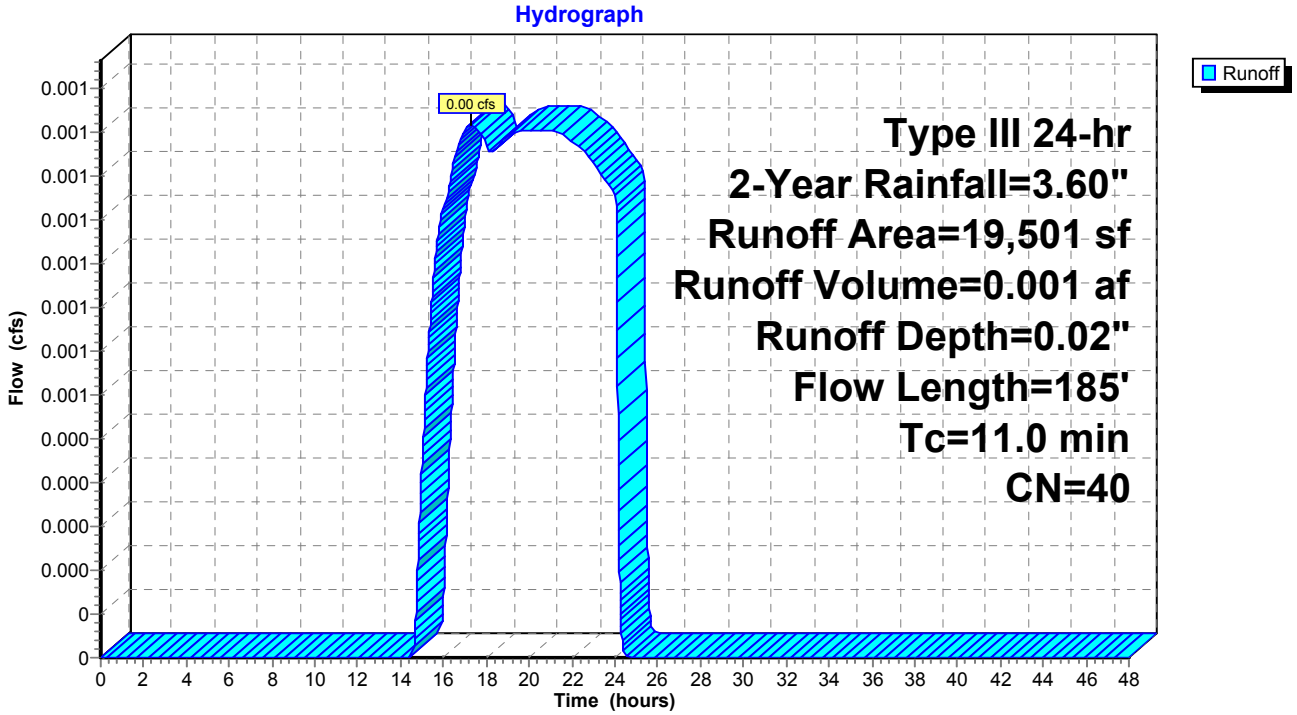
Runoff = 0.00 cfs @ 17.32 hrs, Volume= 0.001 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
	10,890	39	>75% Grass cover, Good, HSG A
	2,684	49	50-75% Grass cover, Fair, HSG A
*	770	98	Rubble Pile, HSG A
	5,157	30	Woods, Good, HSG A
	19,501	40	Weighted Average
	18,731		96.05% Pervious Area
	770		3.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	50	0.0300	0.08		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.60"
1.1	135	0.0160	2.04		**Shallow Concentrated Flow, B-C** Unpaved Kv= 16.1 fps
11.0	185	Total			

Subcatchment 1D-S: Sub-1D



Summary for Subcatchment 2S: Sub-2

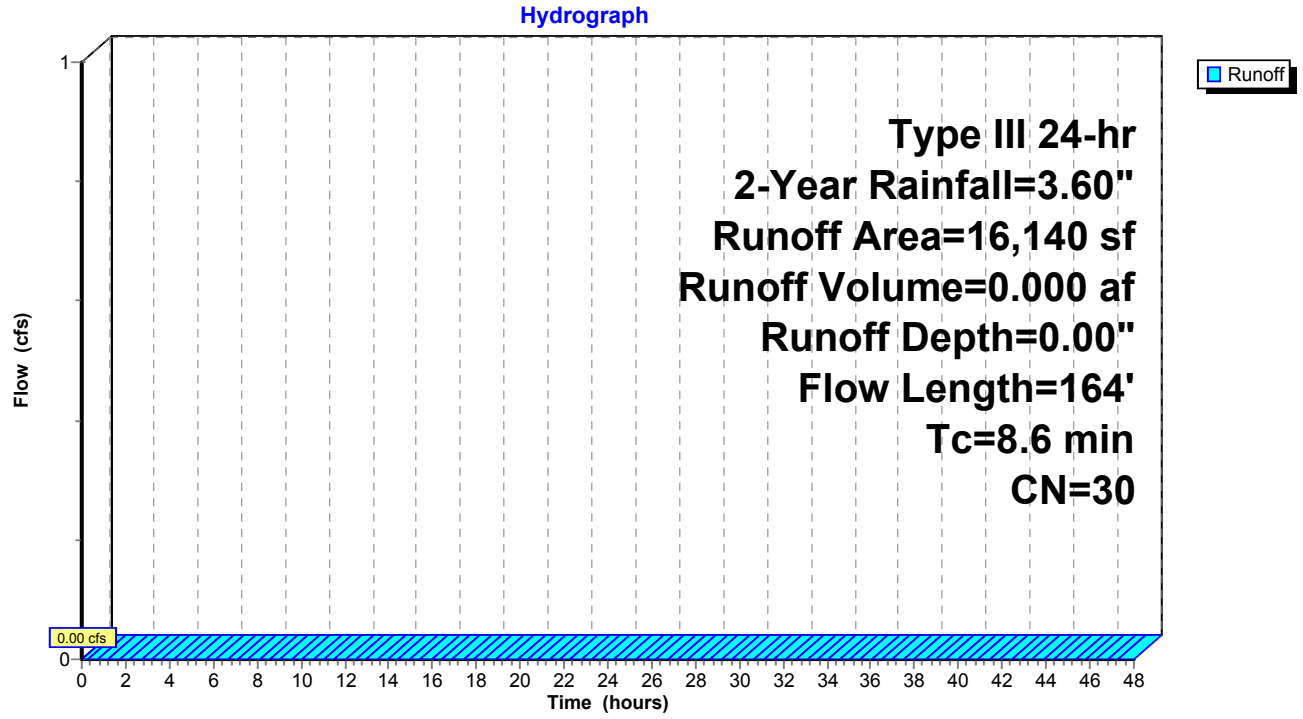
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.60"

Area (sf)	CN	Description
16,140	30	Woods, Good, HSG A
16,140		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	50	0.0800	0.12		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.60"
1.9	114	0.0383	0.98		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
8.6	164	Total			

Subcatchment 2S: Sub-2



Summary for Subcatchment 3A-S: Sub-3A

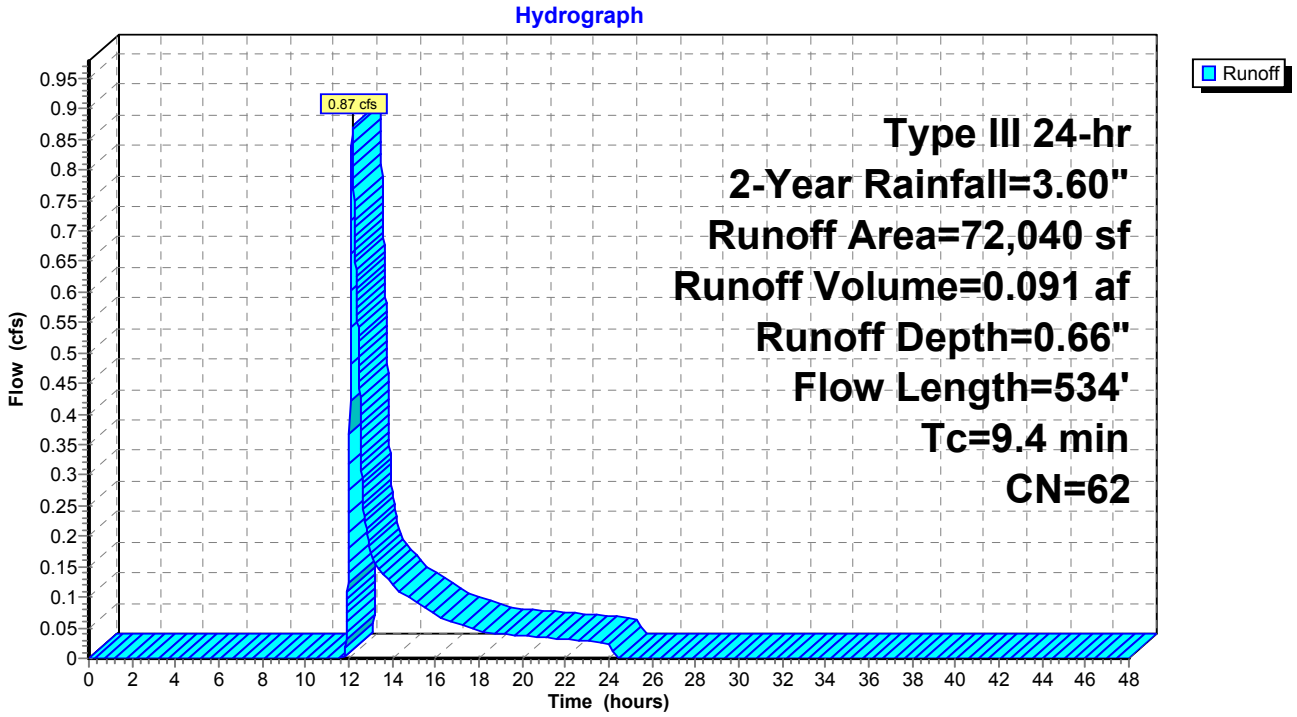
Runoff = 0.87 cfs @ 12.16 hrs, Volume= 0.091 af, Depth= 0.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
*	1,384	98	Roofs, HSG A - offsite
*	16,069	98	Paved parking, HSG A - offsite
*	1,682	30	Woods, Good, HSG A - offsite
*	1,189	39	>75% Grass cover, Good, HSG A - offsite
	24,471	30	Woods, Good, HSG A
	6,630	39	>75% Grass cover, Good, HSG A
	2,407	98	Paved roads w/curbs & sewers, HSG A
*	2,712	98	Existing Detention Basin, HSG A
*	810	98	Riprap, HSG A
	3,247	98	Paved roads w/curbs & sewers, HSG B
	2,784	55	Woods, Good, HSG B
*	938	98	Riprap, HSG B
	6,442	61	>75% Grass cover, Good, HSG B
*	1,275	98	Existing Detention Basin, HSG B
	72,040	62	Weighted Average
	43,198		59.96% Pervious Area
	28,842		40.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	50	0.0160	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.60"
1.8	225	0.0160	2.04		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.9	102	0.0090	1.93		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.9	157	0.0030	2.88	3.54	**Pipe Channel, RCP_Round 15"** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013
9.4	534	Total			

Subcatchment 3A-S: Sub-3A



Summary for Subcatchment 3B-S1: Sub-3B-S1

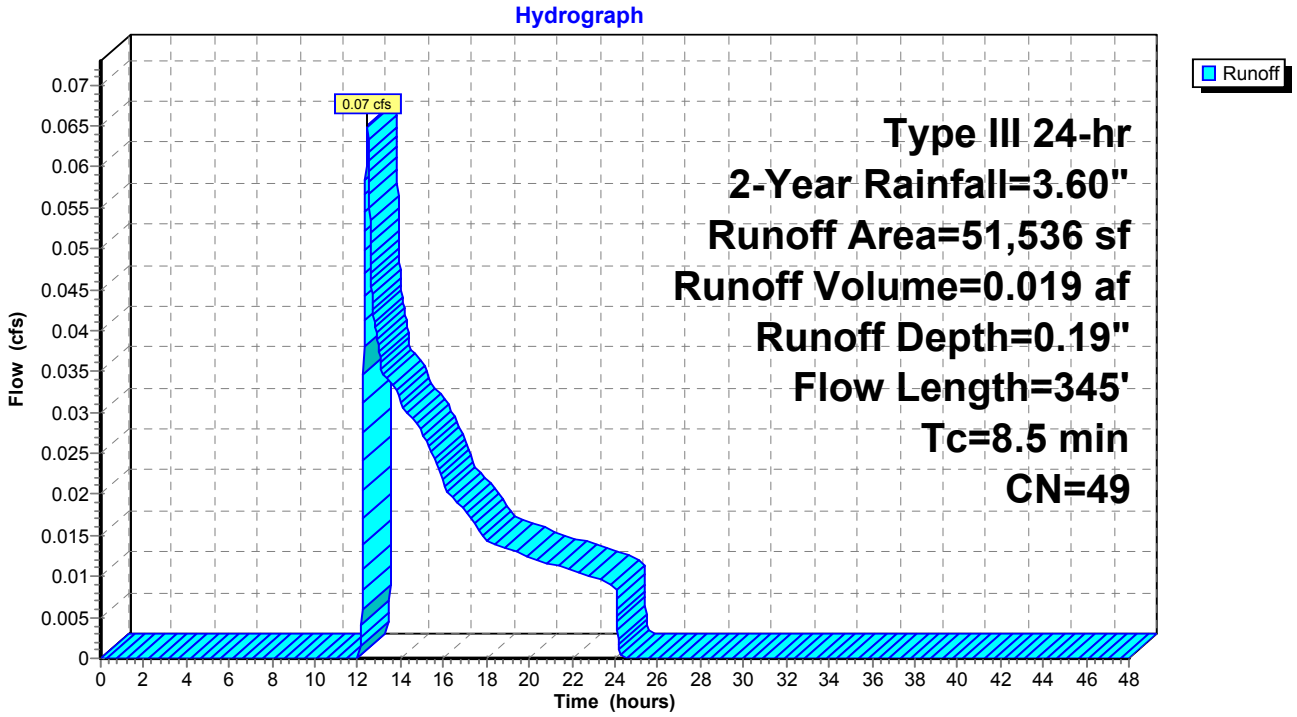
Runoff = 0.07 cfs @ 12.45 hrs, Volume= 0.019 af, Depth= 0.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
*	255	98	Riprap, HSG A
*	4	98	Riprap, HSG B
	8,302	30	Woods, Good, HSG A
	24,250	55	Woods, Good, HSG B
	7,313	61	>75% Grass cover, Good, HSG B
*	4,310	30	Woods, Good, HSG A - offsite
*	4,121	39	>75% Grass cover, Good, HSG A - offsite
*	290	98	Paved drive, HSG A - offsite
*	957	61	>75% Grass cover, Good, HSG B - offsite
*	1,734	55	Woods, Good, HSG B - offsite
	51,536	49	Weighted Average
	50,987		98.93% Pervious Area
	549		1.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	50	0.0700	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
1.5	295	0.0400	3.22		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
8.5	345	Total			

Subcatchment 3B-S1: Sub-3B-S1



Summary for Subcatchment 3B-S2: Sub-3B-S2

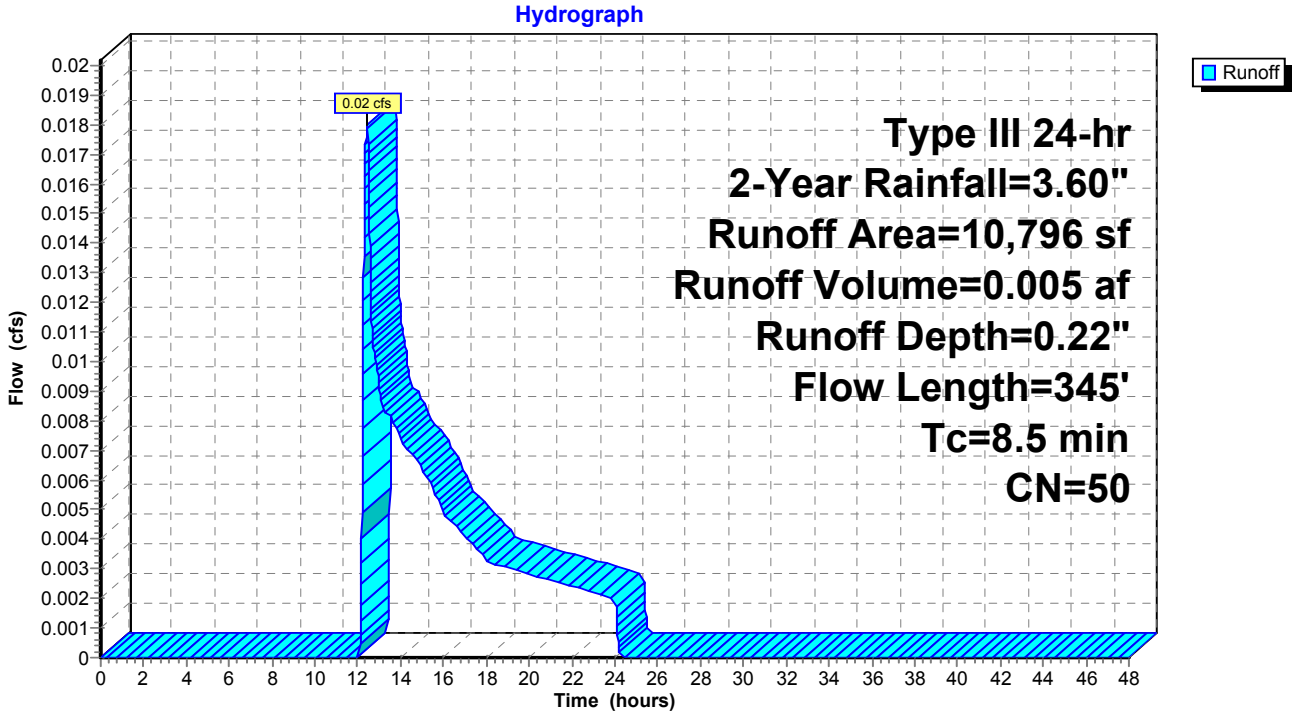
Runoff = 0.02 cfs @ 12.42 hrs, Volume= 0.005 af, Depth= 0.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
*	30	98	Riprap, HSG A
*	117	98	Riprap, HSG B
	1,380	30	Woods, Good, HSG A
	6,538	55	Woods, Good, HSG B
	1,762	39	>75% Grass cover, Good, HSG A
	969	61	>75% Grass cover, Good, HSG B
	10,796	50	Weighted Average
	10,649		98.64% Pervious Area
	147		1.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	50	0.0700	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
1.5	295	0.0400	3.22		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
8.5	345	Total			

Subcatchment 3B-S2: Sub-3B-S2



Summary for Subcatchment 4S: Sub-4

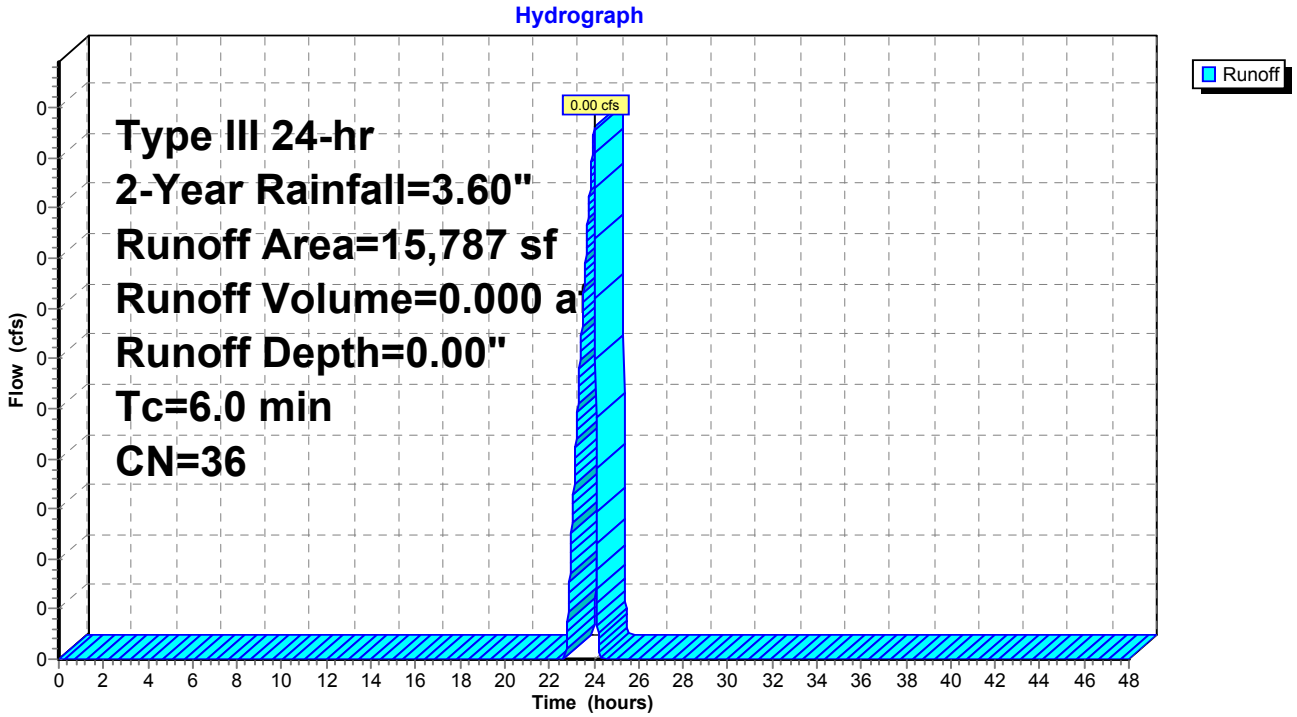
Runoff = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.60"

Area (sf)	CN	Description
15,787	36	Woods, Fair, HSG A
15,787		100.00% Pervious Area

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

Subcatchment 4S: Sub-4



Summary for Subcatchment 5S: Sub-5

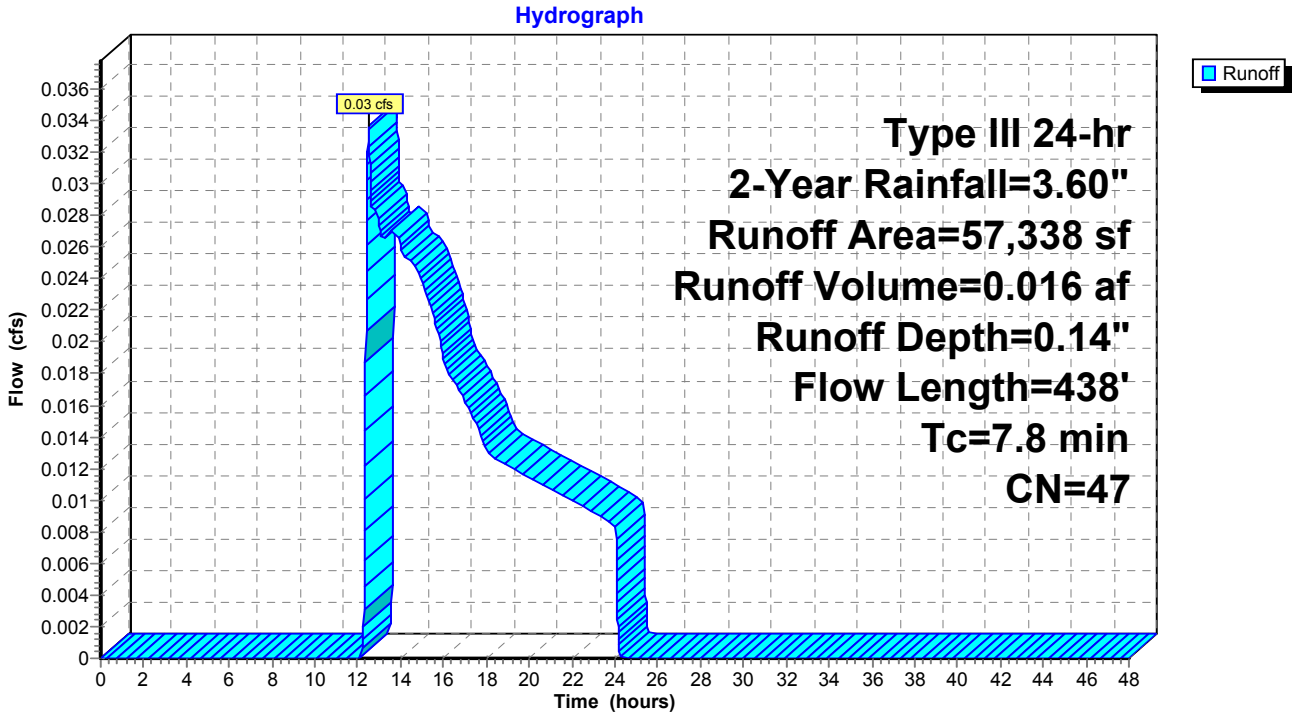
Runoff = 0.03 cfs @ 12.51 hrs, Volume= 0.016 af, Depth= 0.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
	32,676	36	Woods, Fair, HSG A
	15,526	39	>75% Grass cover, Good, HSG A
	395	80	>75% Grass cover, Good, HSG D
*	318	98	Paved drive, HSG D
	2,148	98	Roofs, HSG A
*	5,322	98	Paved drive, HSG A
*	533	98	Patio, HSG A
*	235	98	Misc, HSG A
*	185	98	Ledge, HSG A
	57,338	47	Weighted Average
	48,597		84.76% Pervious Area
	8,741		15.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	39	0.1538	0.15		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.60"
1.8	11	0.1100	0.10		**Sheet Flow, B-C** Woods: Light underbrush n= 0.400 P2= 3.60"
0.1	22	0.1166	5.50		**Shallow Concentrated Flow, C-D** Unpaved Kv= 16.1 fps
0.2	54	0.0500	3.60		**Shallow Concentrated Flow, D-E** Unpaved Kv= 16.1 fps
0.2	52	0.0770	4.47		**Shallow Concentrated Flow, E-F** Unpaved Kv= 16.1 fps
1.0	175	0.0300	2.79		**Shallow Concentrated Flow, F-G** Unpaved Kv= 16.1 fps
0.3	85	0.1100	5.34		**Shallow Concentrated Flow, G-H** Unpaved Kv= 16.1 fps
7.8	438	Total			

Subcatchment 5S: Sub-5

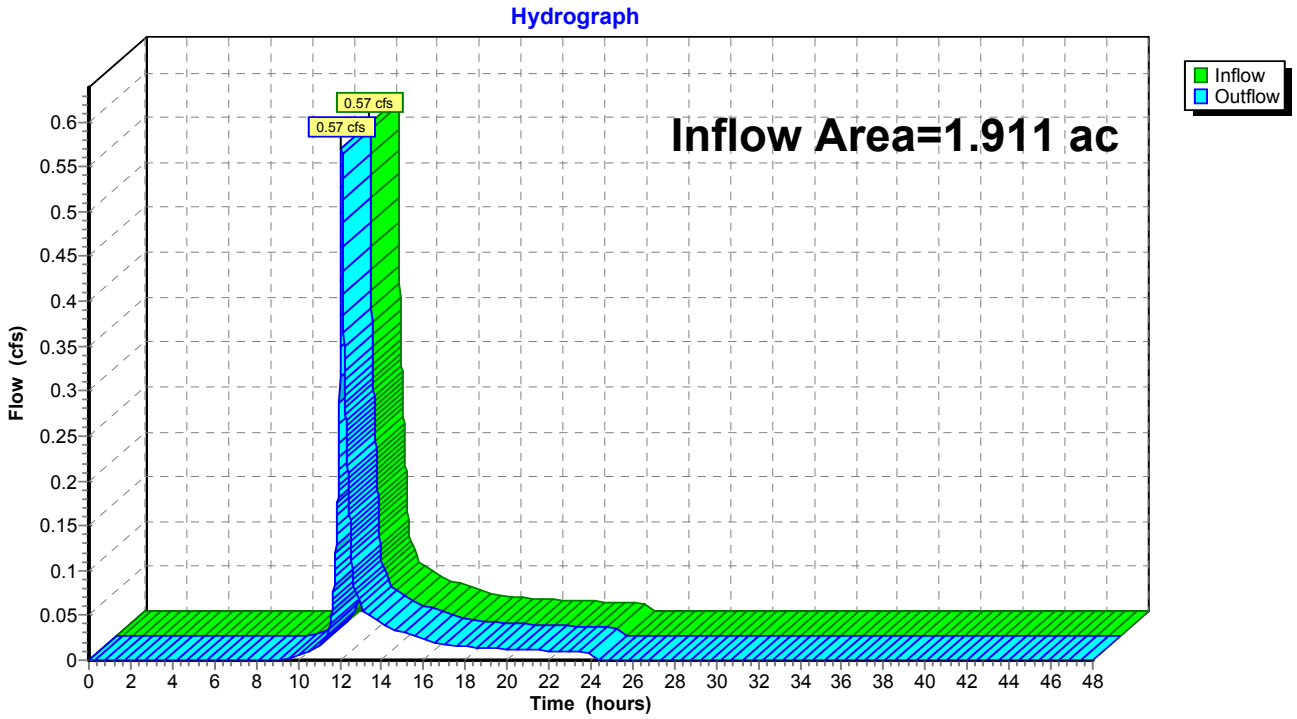


Summary for Reach DP-1: DP-1

Inflow Area = 1.911 ac, 11.60% Impervious, Inflow Depth = 0.26" for 2-Year event
Inflow = 0.57 cfs @ 12.09 hrs, Volume= 0.042 af
Outflow = 0.57 cfs @ 12.09 hrs, Volume= 0.042 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP-1: DP-1

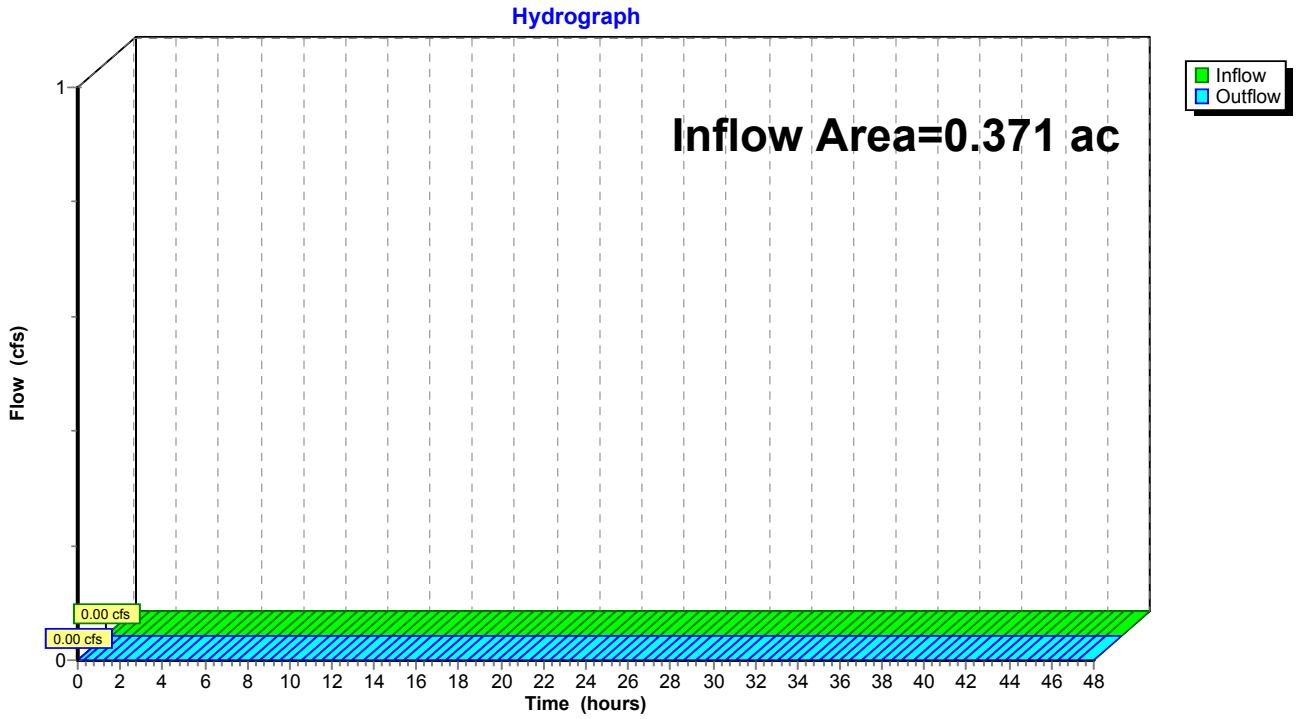


Summary for Reach DP-2: DP-2

Inflow Area = 0.371 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP-2: DP-2

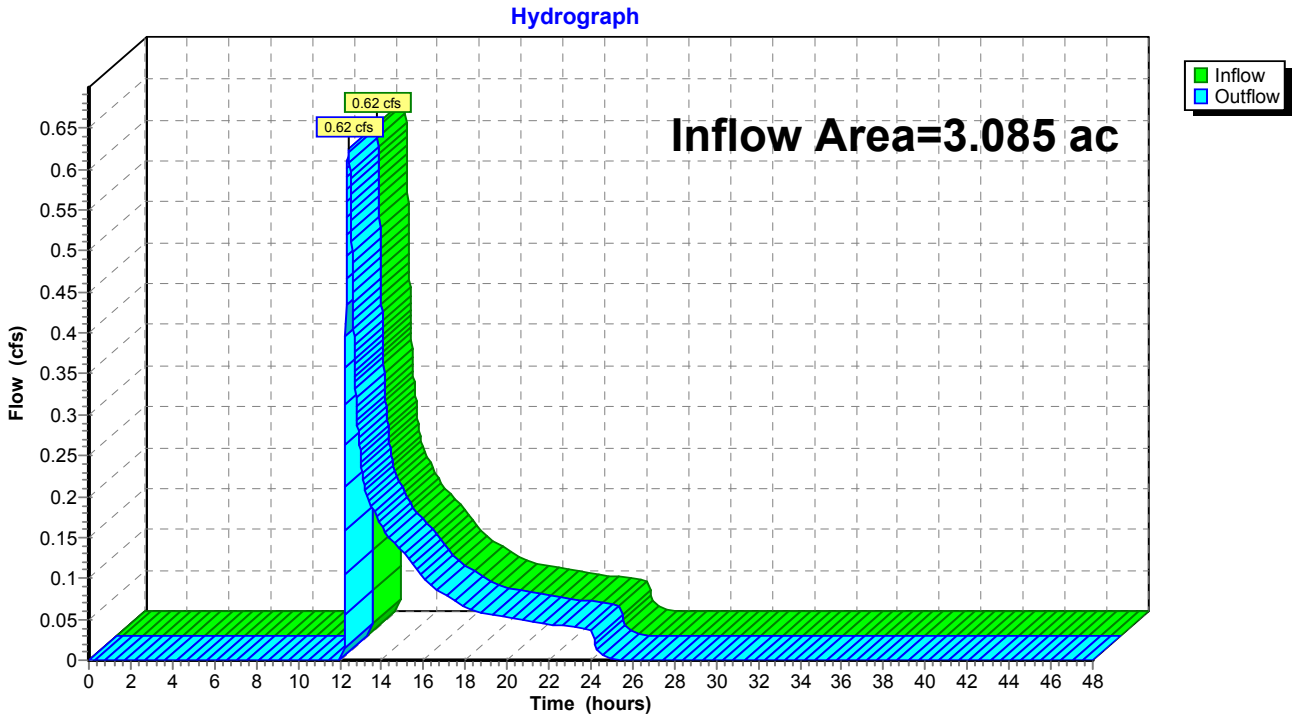


Summary for Reach DP-3: DP-3

Inflow Area = 3.085 ac, 21.98% Impervious, Inflow Depth = 0.40" for 2-Year event
Inflow = 0.62 cfs @ 12.42 hrs, Volume= 0.103 af
Outflow = 0.62 cfs @ 12.42 hrs, Volume= 0.103 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP-3: DP-3

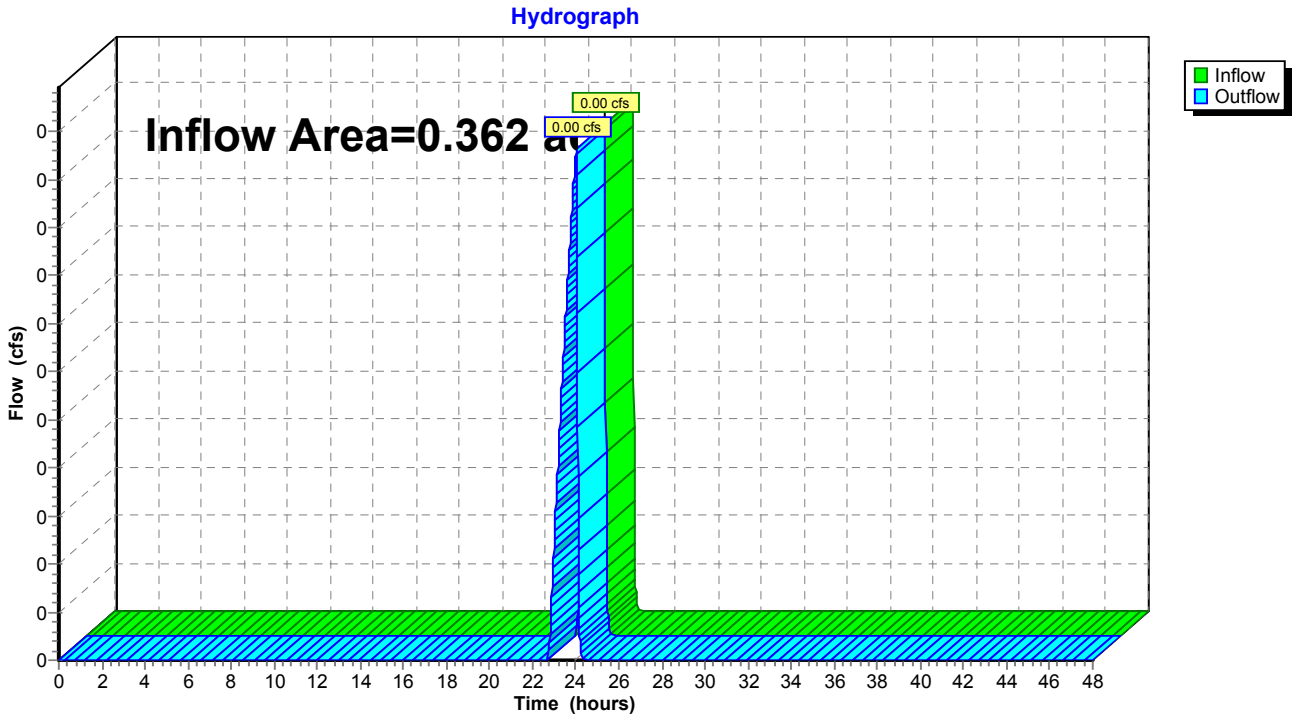


Summary for Reach DP-4: PL

Inflow Area = 0.362 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP-4: PL

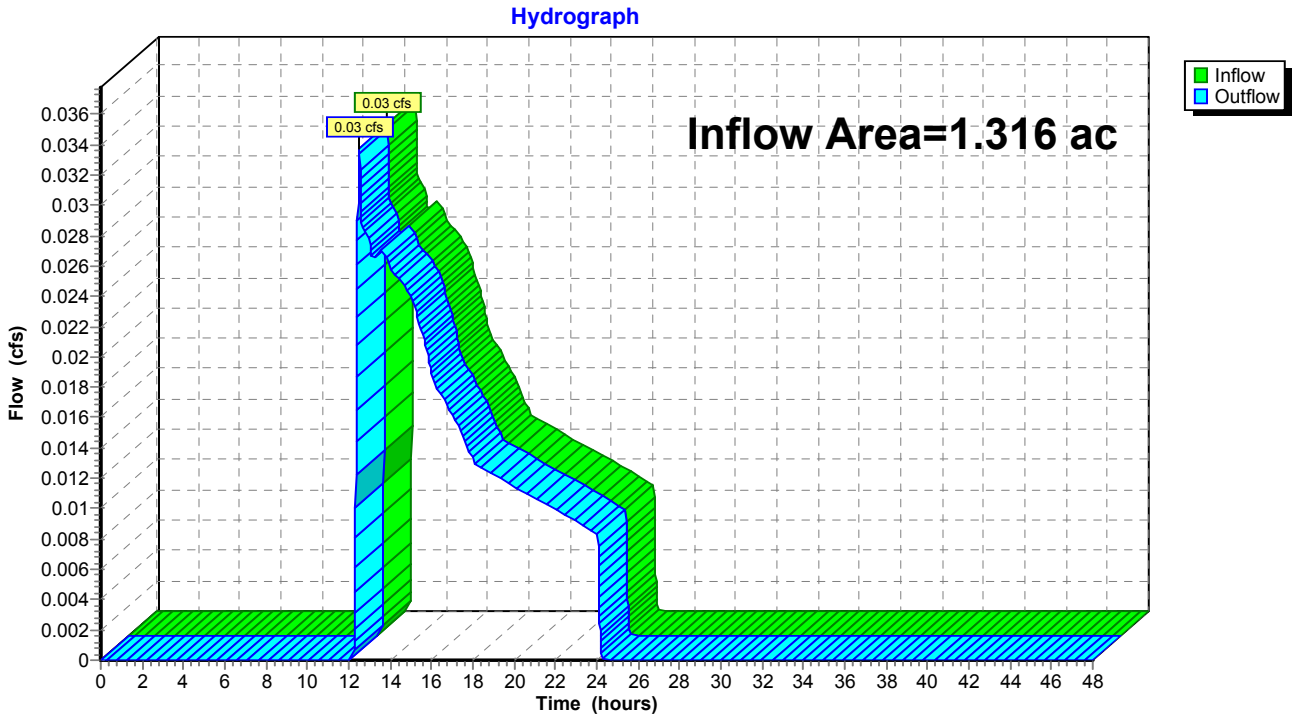


Summary for Reach DP-5: PL

Inflow Area = 1.316 ac, 15.24% Impervious, Inflow Depth = 0.14" for 2-Year event
Inflow = 0.03 cfs @ 12.51 hrs, Volume= 0.016 af
Outflow = 0.03 cfs @ 12.51 hrs, Volume= 0.016 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP-5: PL



Summary for Pond D-1: Exist Detention Basin

Inflow Area = 0.720 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 62.00' @ 0.00 hrs Surf.Area= 4,336 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	62.00'	5,584 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

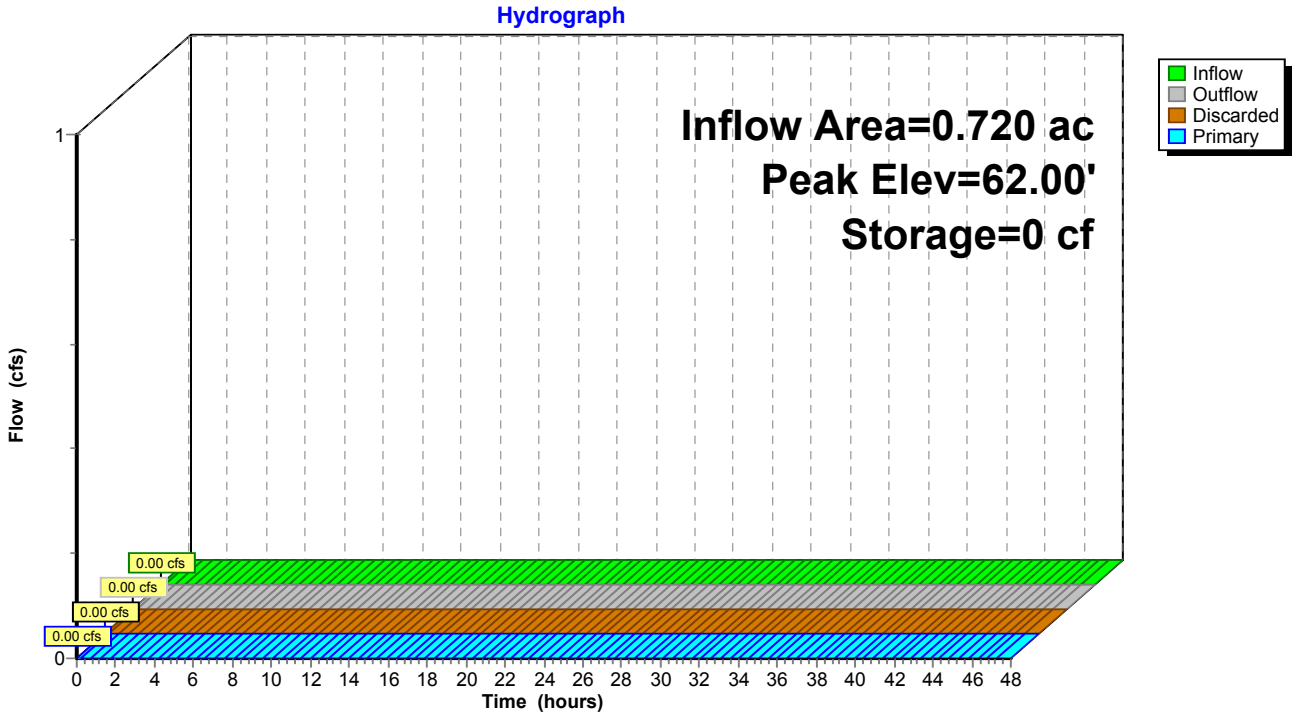
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	4,336	0	0
63.00	6,832	5,584	5,584

Device	Routing	Invert	Outlet Devices
#1	Primary	63.00'	**10.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	62.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=62.00' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=62.00' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond D-1: Exist Detention Basin



Summary for Pond E-DB: Exist Detention Basin

Inflow Area = 1.654 ac, 40.04% Impervious, Inflow Depth = 0.66" for 2-Year event
Inflow = 0.87 cfs @ 12.16 hrs, Volume= 0.091 af
Outflow = 0.54 cfs @ 12.42 hrs, Volume= 0.080 af, Atten= 38%, Lag= 15.6 min
Primary = 0.54 cfs @ 12.42 hrs, Volume= 0.080 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 58.87' @ 12.42 hrs Surf.Area= 1,361 sf Storage= 741 cf

Plug-Flow detention time= 95.4 min calculated for 0.080 af (87% of inflow)
Center-of-Mass det. time= 37.2 min (936.9 - 899.7)

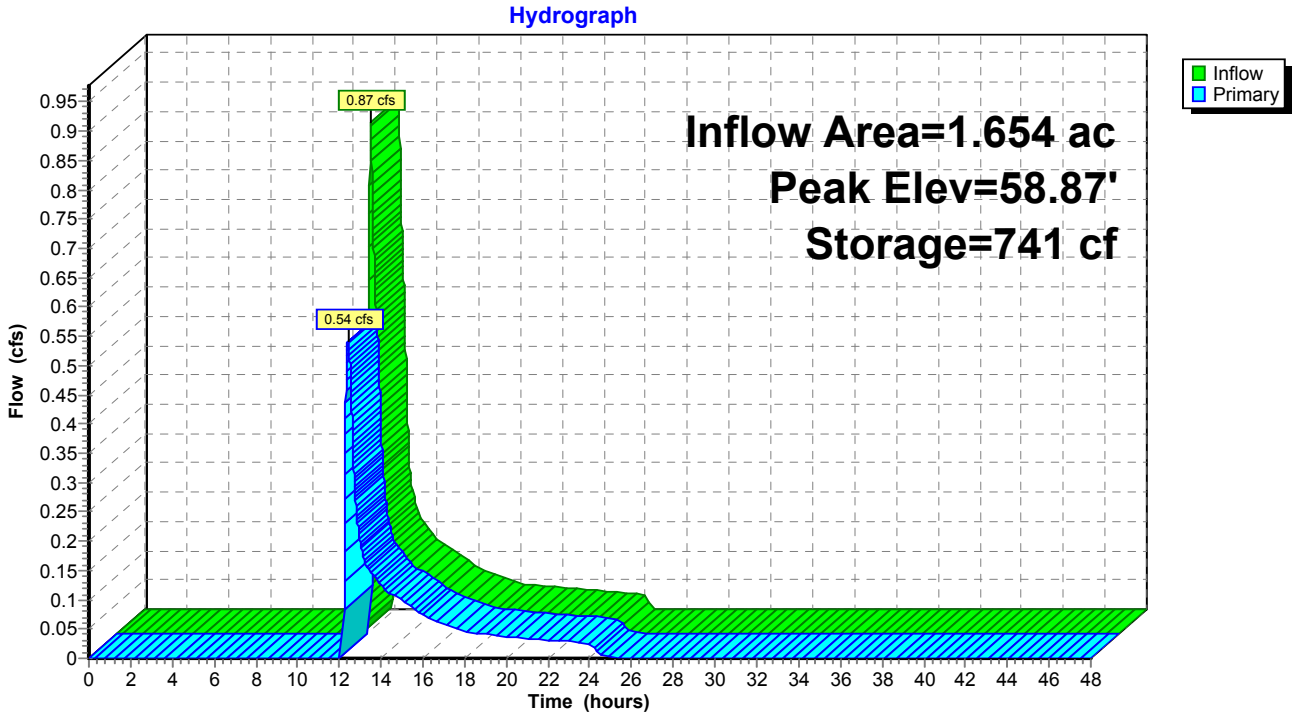
Volume	Invert	Avail.Storage	Storage Description
#1	58.00'	7,325 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
58.00	336	0	0
59.00	1,511	924	924
60.00	3,233	2,372	3,296
61.00	4,826	4,030	7,325

Device	Routing	Invert	Outlet Devices
#1	Primary	58.12'	**12.0" Round RCP_Round 12"** L= 25.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 58.12' / 58.05' S= 0.0028 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	58.68'	**2.0' long x 1.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	59.88'	**7.0' long x 2.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Device 2	58.68'	**5.0' long x 1.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=0.54 cfs @ 12.42 hrs HW=58.87' TW=0.00' (Dynamic Tailwater)
- **1=RCP_Round 12"** (Passes 0.54 cfs of 1.25 cfs potential flow)
  - **2=Sharp-Crested Rectangular Weir** (Weir Controls 0.54 cfs @ 1.44 fps)
    - **4=Sharp-Crested Rectangular Weir** (Passes 0.54 cfs of 1.37 cfs potential flow)
  - **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond E-DB: Exist Detention Basin



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1A-S: Sub-1A Runoff Area=12,960 sf 68.56% Impervious Runoff Depth=2.63"
Tc=6.0 min CN=79 Runoff=0.92 cfs 0.065 af

Subcatchment1B-S: Sub-1B Runoff Area=31,377 sf 0.00% Impervious Runoff Depth=0.06"
Flow Length=212' Tc=9.6 min CN=35 Runoff=0.01 cfs 0.004 af

Subcatchment1C-S: Sub-1C Runoff Area=19,404 sf 0.00% Impervious Runoff Depth=0.11"
Flow Length=269' Tc=16.6 min CN=37 Runoff=0.01 cfs 0.004 af

Subcatchment1D-S: Sub-1D Runoff Area=19,501 sf 3.95% Impervious Runoff Depth=0.19"
Flow Length=185' Tc=11.0 min CN=40 Runoff=0.01 cfs 0.007 af

Subcatchment2S: Sub-2 Runoff Area=16,140 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=164' Tc=8.6 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment3A-S: Sub-3A Runoff Area=72,040 sf 40.04% Impervious Runoff Depth=1.32"
Flow Length=534' Tc=9.4 min CN=62 Runoff=2.06 cfs 0.181 af

Subcatchment3B-S1: Sub-3B-S1 Runoff Area=51,536 sf 1.07% Impervious Runoff Depth=0.56"
Flow Length=345' Tc=8.5 min CN=49 Runoff=0.37 cfs 0.056 af

Subcatchment3B-S2: Sub-3B-S2 Runoff Area=10,796 sf 1.36% Impervious Runoff Depth=0.61"
Flow Length=345' Tc=8.5 min CN=50 Runoff=0.09 cfs 0.013 af

Subcatchment4S: Sub-4 Runoff Area=15,787 sf 0.00% Impervious Runoff Depth=0.08"
Tc=6.0 min CN=36 Runoff=0.00 cfs 0.002 af

Subcatchment5S: Sub-5 Runoff Area=57,338 sf 15.24% Impervious Runoff Depth=0.47"
Flow Length=438' Tc=7.8 min CN=47 Runoff=0.29 cfs 0.051 af

Reach DP-1: DP-1 Inflow=0.92 cfs 0.076 af
Outflow=0.92 cfs 0.076 af

Reach DP-2: DP-2 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach DP-3: DP-3 Inflow=2.11 cfs 0.238 af
Outflow=2.11 cfs 0.238 af

Reach DP-4: PL Inflow=0.00 cfs 0.002 af
Outflow=0.00 cfs 0.002 af

Reach DP-5: PL Inflow=0.29 cfs 0.051 af
Outflow=0.29 cfs 0.051 af

Pond D-1: Exist Detention Basin Peak Elev=62.00' Storage=0 cf Inflow=0.01 cfs 0.004 af
Discarded=0.01 cfs 0.004 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.004 af

Pond E-DB: Exist Detention Basin Peak Elev=59.09' Storage=1,070 cf Inflow=2.06 cfs 0.181 af
Outflow=1.66 cfs 0.170 af

Total Runoff Area = 7.045 ac Runoff Volume = 0.383 af Average Runoff Depth = 0.65"
84.38% Pervious = 5.945 ac 15.62% Impervious = 1.100 ac

Summary for Subcatchment 1A-S: Sub-1A

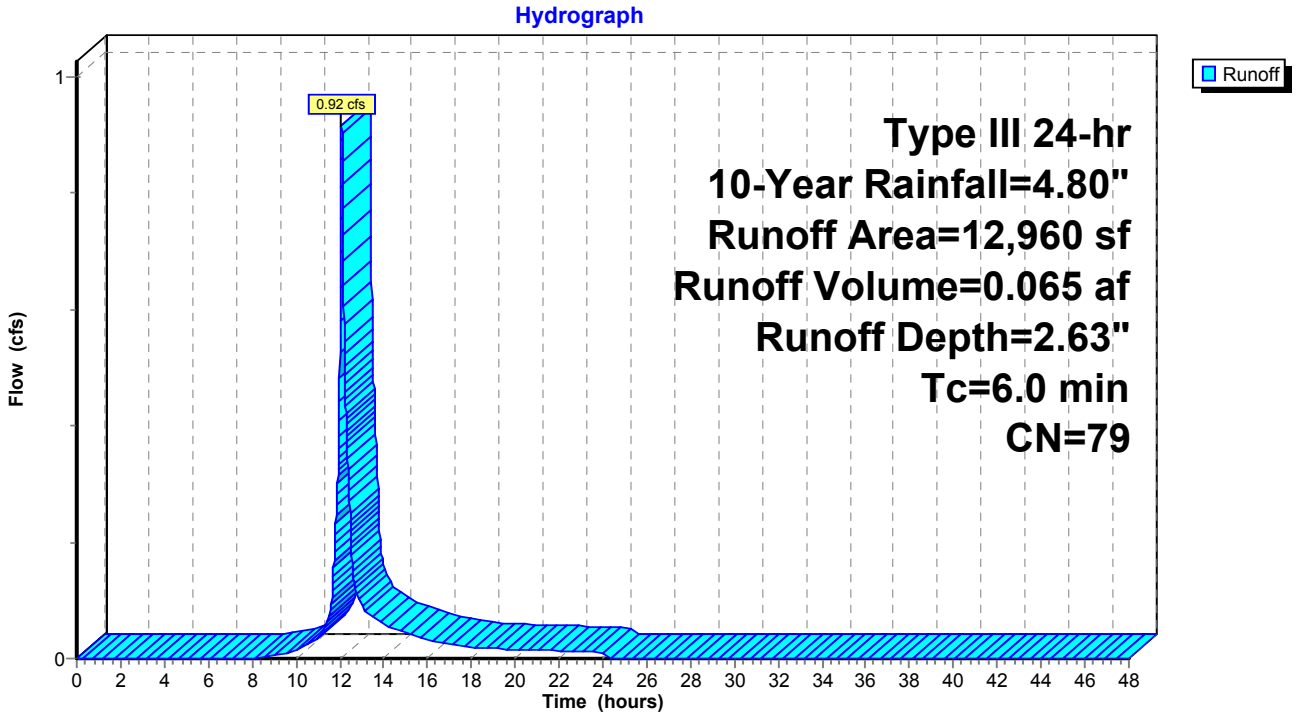
Runoff = 0.92 cfs @ 12.09 hrs, Volume= 0.065 af, Depth= 2.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.80"

Area (sf)	CN	Description
4,075	39	>75% Grass cover, Good, HSG A
8,885	98	Paved roads w/curbs & sewers, HSG A
12,960	79	Weighted Average
4,075		31.44% Pervious Area
8,885		68.56% Impervious Area

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

Subcatchment 1A-S: Sub-1A



Summary for Subcatchment 1B-S: Sub-1B

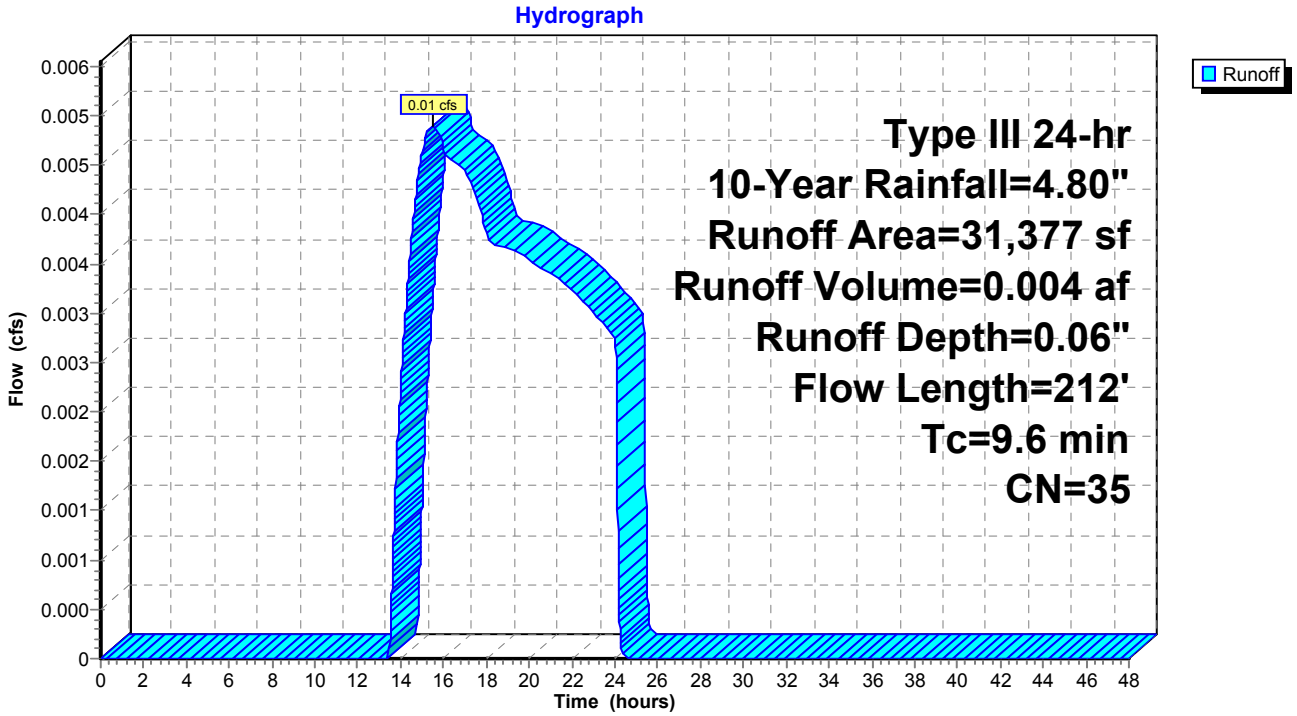
Runoff = 0.01 cfs @ 15.52 hrs, Volume= 0.004 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.80"

Area (sf)	CN	Description
22,072	30	Woods, Good, HSG A
1,755	39	>75% Grass cover, Good, HSG A
7,550	49	50-75% Grass cover, Fair, HSG A
31,377	35	Weighted Average
31,377		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	50	0.0500	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
1.5	162	0.0120	1.76		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
9.6	212	Total			

Subcatchment 1B-S: Sub-1B



Summary for Subcatchment 1C-S: Sub-1C

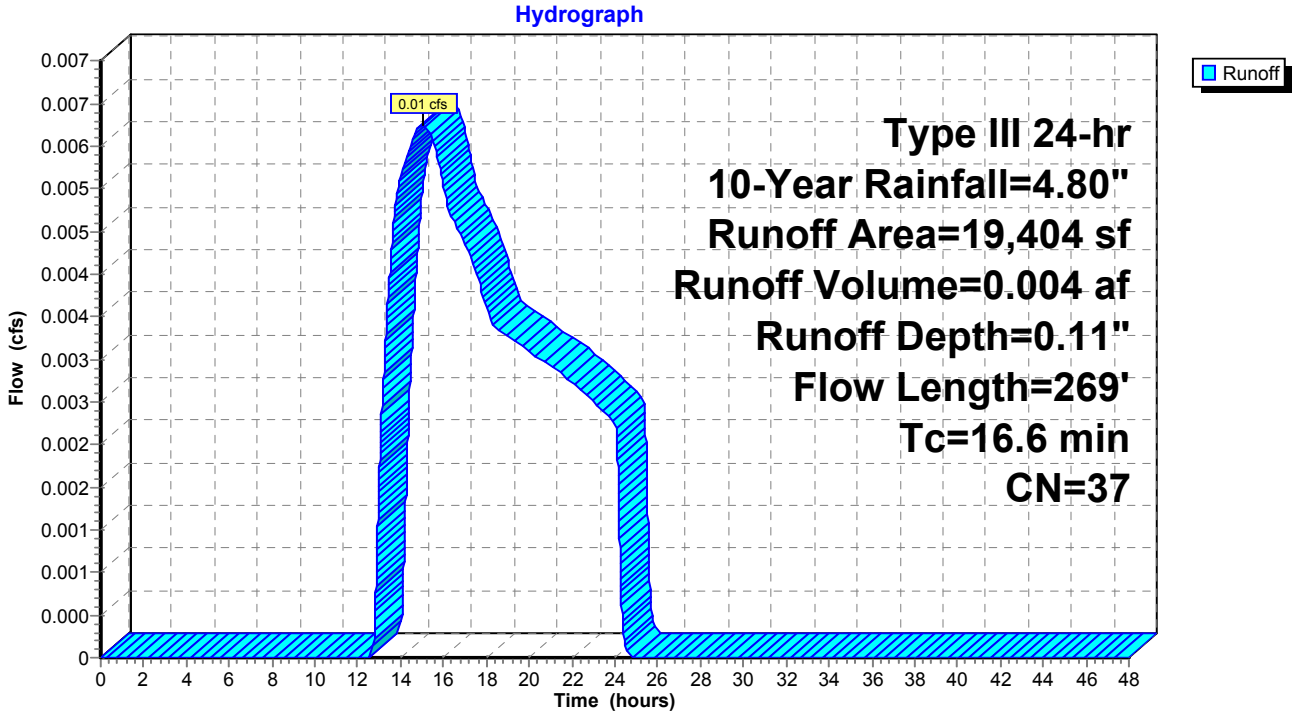
Runoff = 0.01 cfs @ 15.03 hrs, Volume= 0.004 af, Depth= 0.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
	12,129	30	Woods, Good, HSG A
	1,513	39	>75% Grass cover, Good, HSG A
	3,840	55	Woods, Good, HSG B
*	899	30	Woods, Good, HSG A - offsite
	1,023	49	50-75% Grass cover, Fair, HSG A
	19,404	37	Weighted Average
	19,404		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	50	0.0120	0.06		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.60"
2.3	219	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
16.6	269	Total			

Subcatchment 1C-S: Sub-1C



Summary for Subcatchment 1D-S: Sub-1D

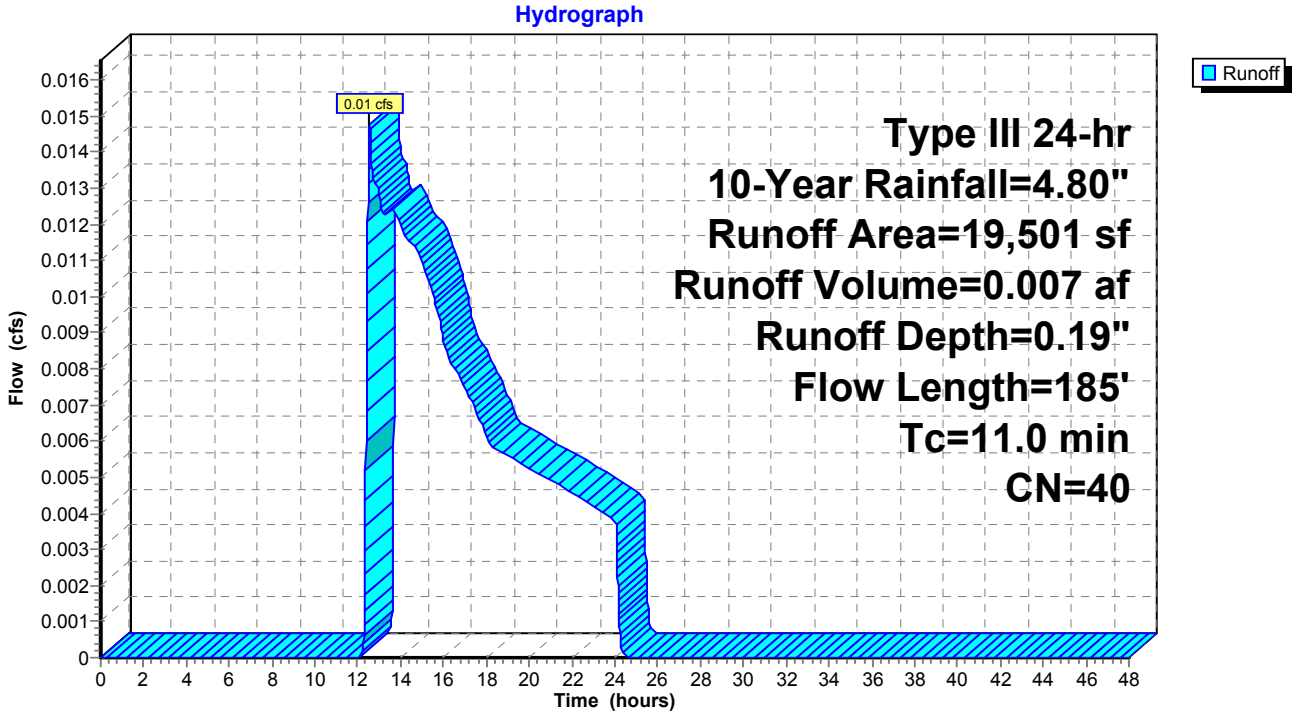
Runoff = 0.01 cfs @ 12.55 hrs, Volume= 0.007 af, Depth= 0.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
	10,890	39	>75% Grass cover, Good, HSG A
	2,684	49	50-75% Grass cover, Fair, HSG A
*	770	98	Rubble Pile, HSG A
	5,157	30	Woods, Good, HSG A
	19,501	40	Weighted Average
	18,731		96.05% Pervious Area
	770		3.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	50	0.0300	0.08		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.60"
1.1	135	0.0160	2.04		**Shallow Concentrated Flow, B-C** Unpaved Kv= 16.1 fps
11.0	185	Total			

Subcatchment 1D-S: Sub-1D



Summary for Subcatchment 2S: Sub-2

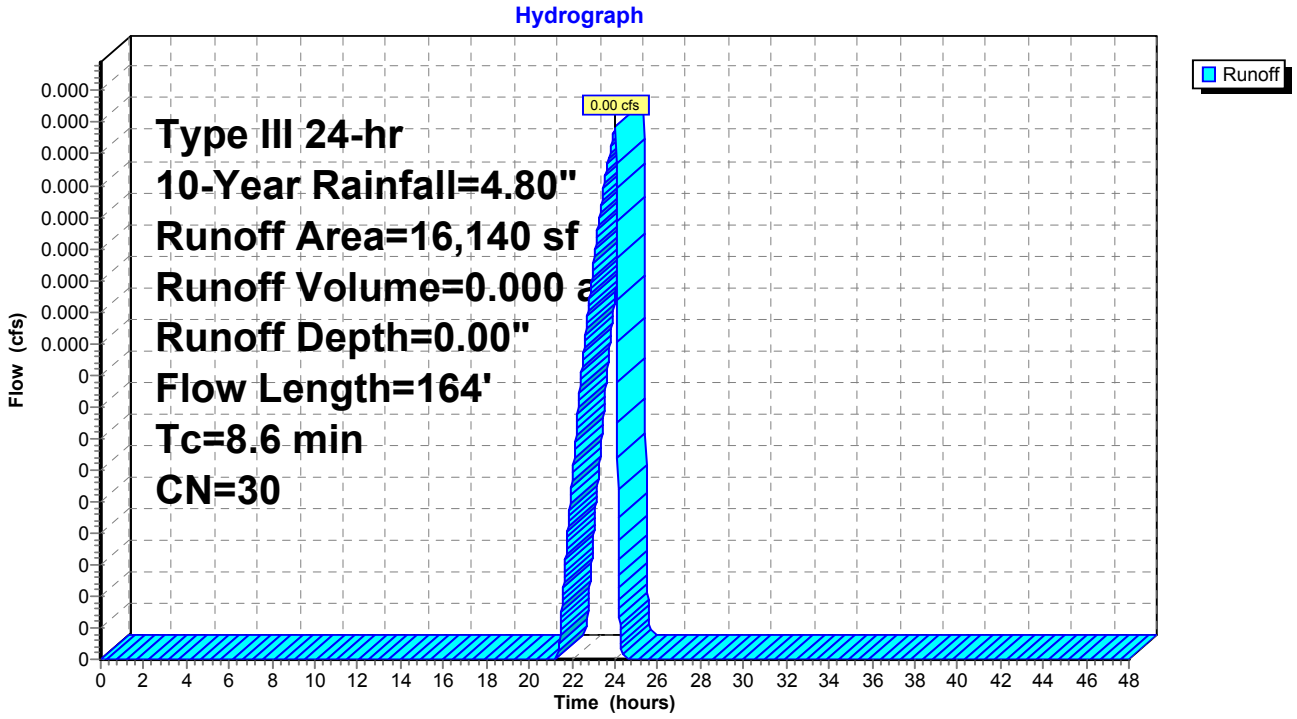
Runoff = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.80"

Area (sf)	CN	Description
16,140	30	Woods, Good, HSG A
16,140		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	50	0.0800	0.12		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.60"
1.9	114	0.0383	0.98		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
8.6	164	Total			

Subcatchment 2S: Sub-2



Summary for Subcatchment 3A-S: Sub-3A

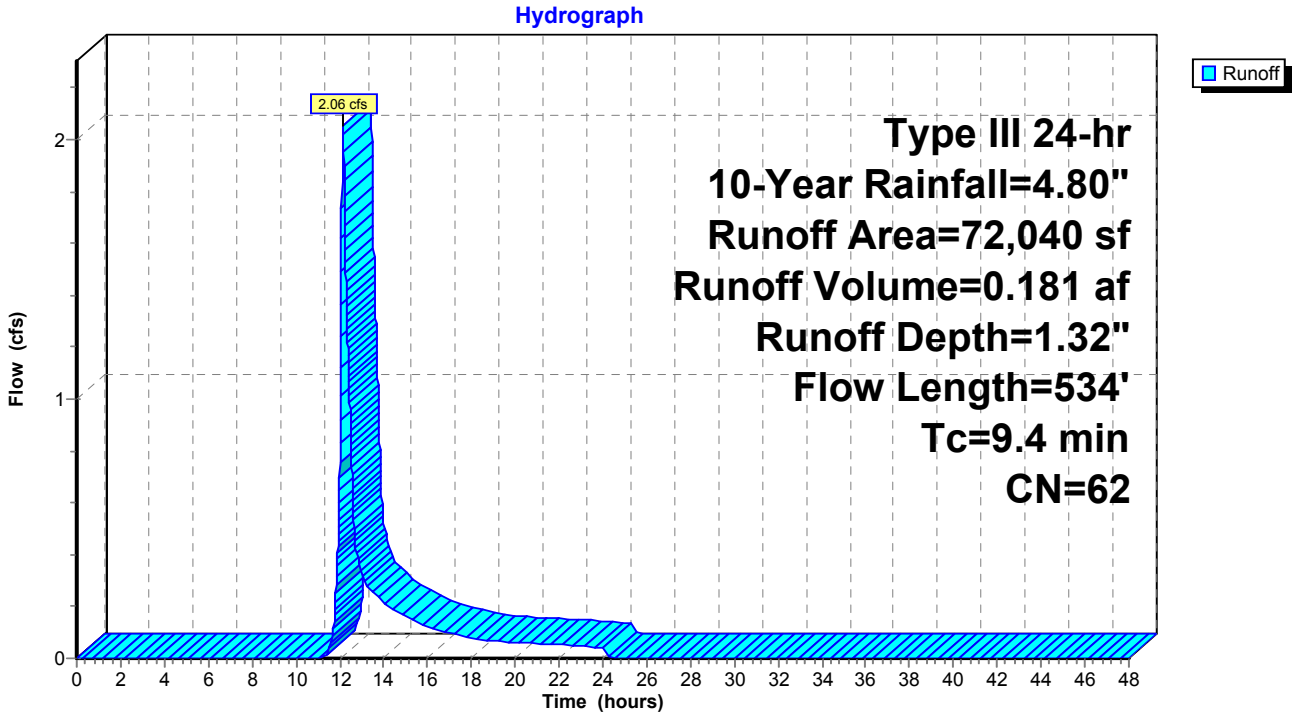
Runoff = 2.06 cfs @ 12.15 hrs, Volume= 0.181 af, Depth= 1.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
*	1,384	98	Roofs, HSG A - offsite
*	16,069	98	Paved parking, HSG A - offsite
*	1,682	30	Woods, Good, HSG A - offsite
*	1,189	39	>75% Grass cover, Good, HSG A - offsite
	24,471	30	Woods, Good, HSG A
	6,630	39	>75% Grass cover, Good, HSG A
	2,407	98	Paved roads w/curbs & sewers, HSG A
*	2,712	98	Existing Detention Basin, HSG A
*	810	98	Riprap, HSG A
	3,247	98	Paved roads w/curbs & sewers, HSG B
	2,784	55	Woods, Good, HSG B
*	938	98	Riprap, HSG B
	6,442	61	>75% Grass cover, Good, HSG B
*	1,275	98	Existing Detention Basin, HSG B
	72,040	62	Weighted Average
	43,198		59.96% Pervious Area
	28,842		40.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	50	0.0160	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.60"
1.8	225	0.0160	2.04		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.9	102	0.0090	1.93		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.9	157	0.0030	2.88	3.54	**Pipe Channel, RCP_Round 15"** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013
9.4	534	Total			

Subcatchment 3A-S: Sub-3A



Summary for Subcatchment 3B-S1: Sub-3B-S1

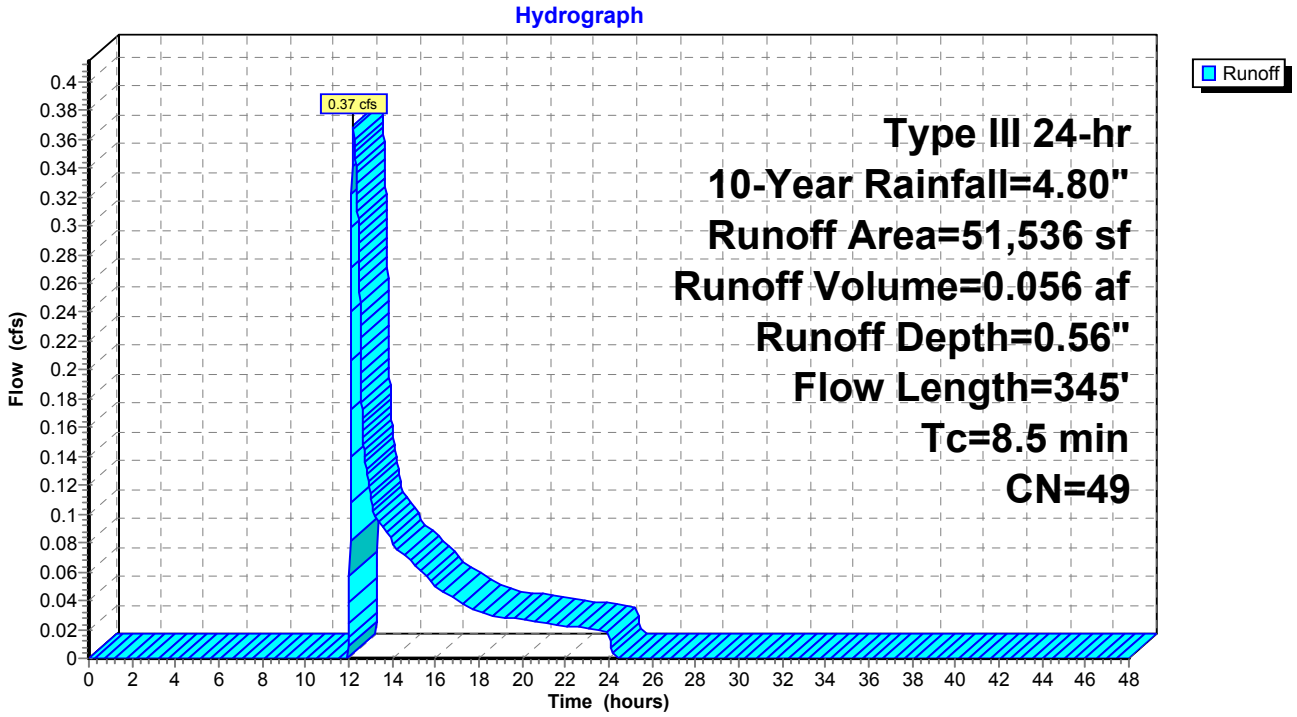
Runoff = 0.37 cfs @ 12.18 hrs, Volume= 0.056 af, Depth= 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
*	255	98	Riprap, HSG A
*	4	98	Riprap, HSG B
	8,302	30	Woods, Good, HSG A
	24,250	55	Woods, Good, HSG B
	7,313	61	>75% Grass cover, Good, HSG B
*	4,310	30	Woods, Good, HSG A - offsite
*	4,121	39	>75% Grass cover, Good, HSG A - offsite
*	290	98	Paved drive, HSG A - offsite
*	957	61	>75% Grass cover, Good, HSG B - offsite
*	1,734	55	Woods, Good, HSG B - offsite
	51,536	49	Weighted Average
	50,987		98.93% Pervious Area
	549		1.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	50	0.0700	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
1.5	295	0.0400	3.22		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
8.5	345	Total			

Subcatchment 3B-S1: Sub-3B-S1



Summary for Subcatchment 3B-S2: Sub-3B-S2

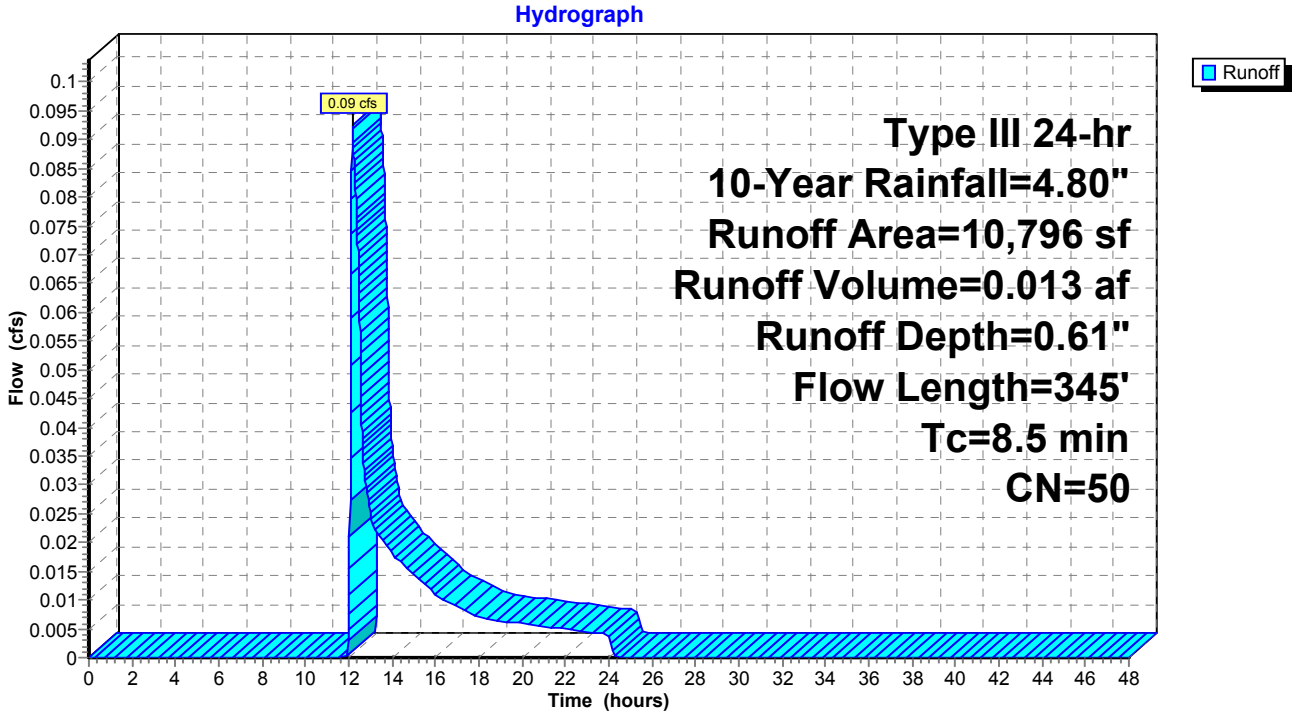
Runoff = 0.09 cfs @ 12.17 hrs, Volume= 0.013 af, Depth= 0.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
*	30	98	Riprap, HSG A
*	117	98	Riprap, HSG B
	1,380	30	Woods, Good, HSG A
	6,538	55	Woods, Good, HSG B
	1,762	39	>75% Grass cover, Good, HSG A
	969	61	>75% Grass cover, Good, HSG B
	10,796	50	Weighted Average
	10,649		98.64% Pervious Area
	147		1.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	50	0.0700	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
1.5	295	0.0400	3.22		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
8.5	345	Total			

Subcatchment 3B-S2: Sub-3B-S2



Summary for Subcatchment 4S: Sub-4

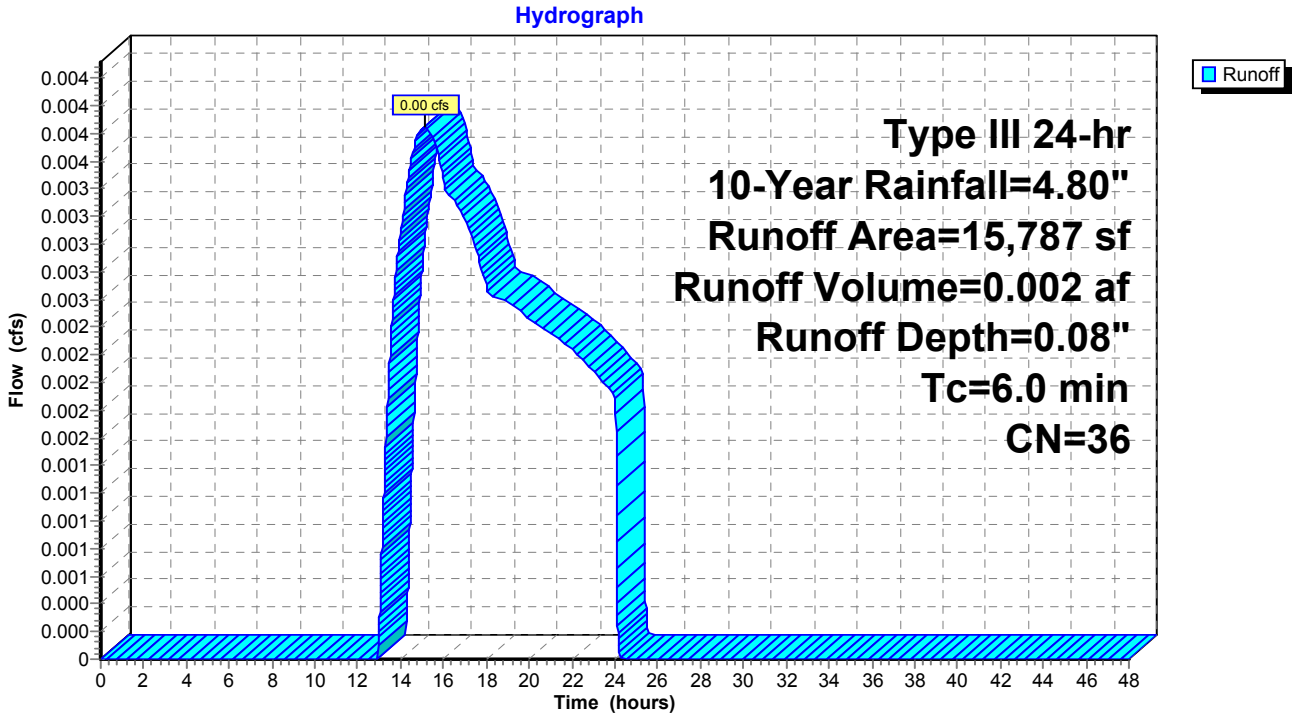
Runoff = 0.00 cfs @ 15.14 hrs, Volume= 0.002 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.80"

Area (sf)	CN	Description
15,787	36	Woods, Fair, HSG A
15,787		100.00% Pervious Area

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

Subcatchment 4S: Sub-4



Summary for Subcatchment 5S: Sub-5

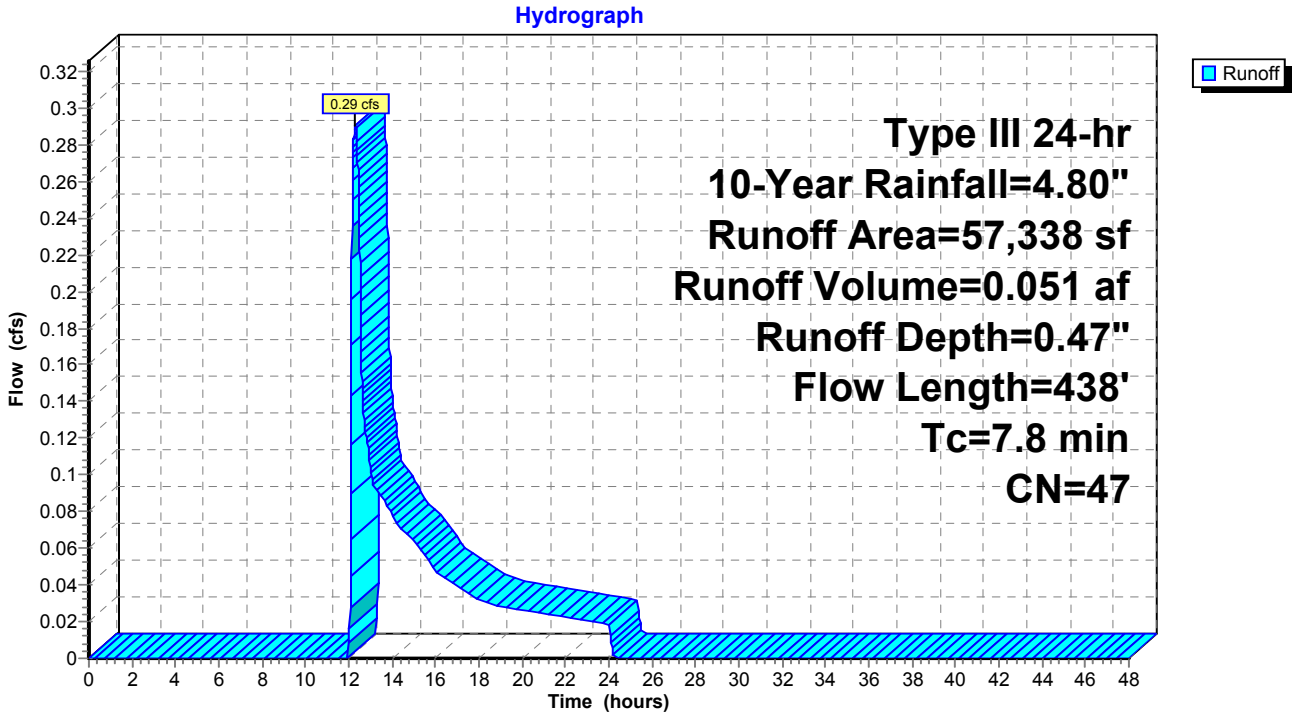
Runoff = 0.29 cfs @ 12.30 hrs, Volume= 0.051 af, Depth= 0.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
	32,676	36	Woods, Fair, HSG A
	15,526	39	>75% Grass cover, Good, HSG A
	395	80	>75% Grass cover, Good, HSG D
*	318	98	Paved drive, HSG D
	2,148	98	Roofs, HSG A
*	5,322	98	Paved drive, HSG A
*	533	98	Patio, HSG A
*	235	98	Misc, HSG A
*	185	98	Ledge, HSG A
	57,338	47	Weighted Average
	48,597		84.76% Pervious Area
	8,741		15.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	39	0.1538	0.15		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.60"
1.8	11	0.1100	0.10		**Sheet Flow, B-C** Woods: Light underbrush n= 0.400 P2= 3.60"
0.1	22	0.1166	5.50		**Shallow Concentrated Flow, C-D** Unpaved Kv= 16.1 fps
0.2	54	0.0500	3.60		**Shallow Concentrated Flow, D-E** Unpaved Kv= 16.1 fps
0.2	52	0.0770	4.47		**Shallow Concentrated Flow, E-F** Unpaved Kv= 16.1 fps
1.0	175	0.0300	2.79		**Shallow Concentrated Flow, F-G** Unpaved Kv= 16.1 fps
0.3	85	0.1100	5.34		**Shallow Concentrated Flow, G-H** Unpaved Kv= 16.1 fps
7.8	438	Total			

Subcatchment 5S: Sub-5

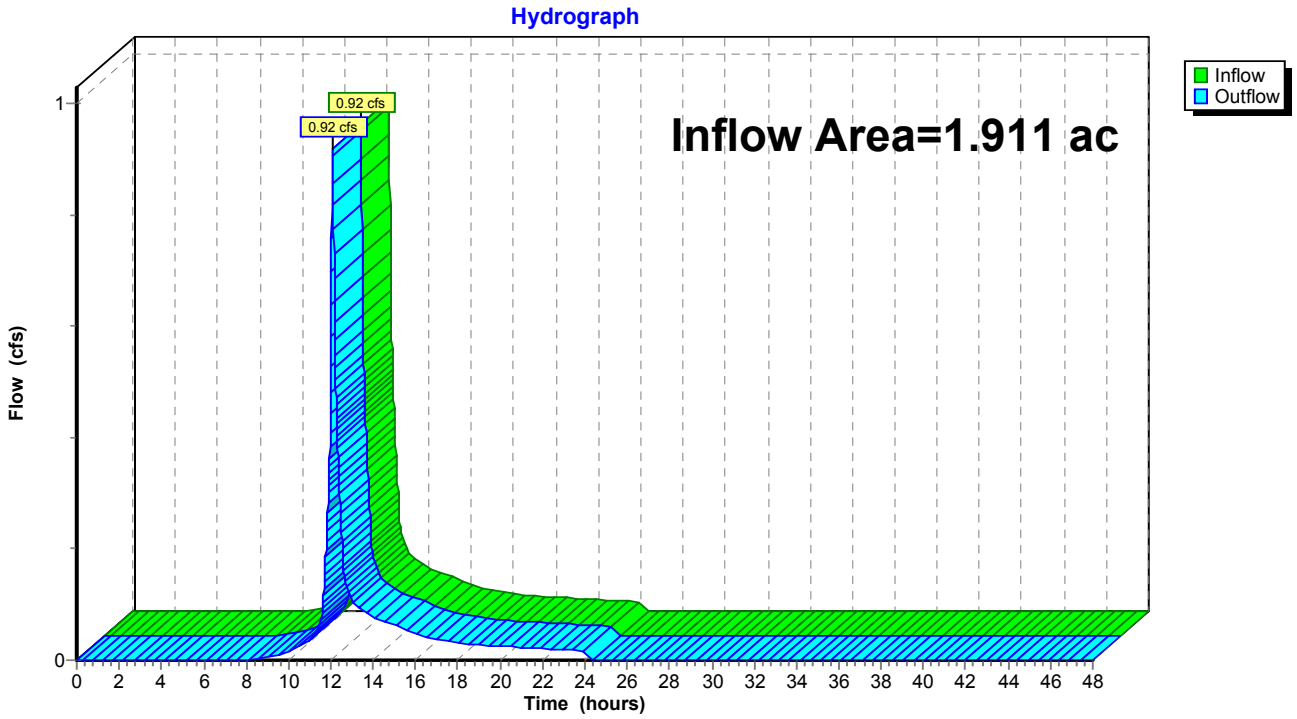


Summary for Reach DP-1: DP-1

Inflow Area = 1.911 ac, 11.60% Impervious, Inflow Depth = 0.48" for 10-Year event
Inflow = 0.92 cfs @ 12.09 hrs, Volume= 0.076 af
Outflow = 0.92 cfs @ 12.09 hrs, Volume= 0.076 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP-1: DP-1

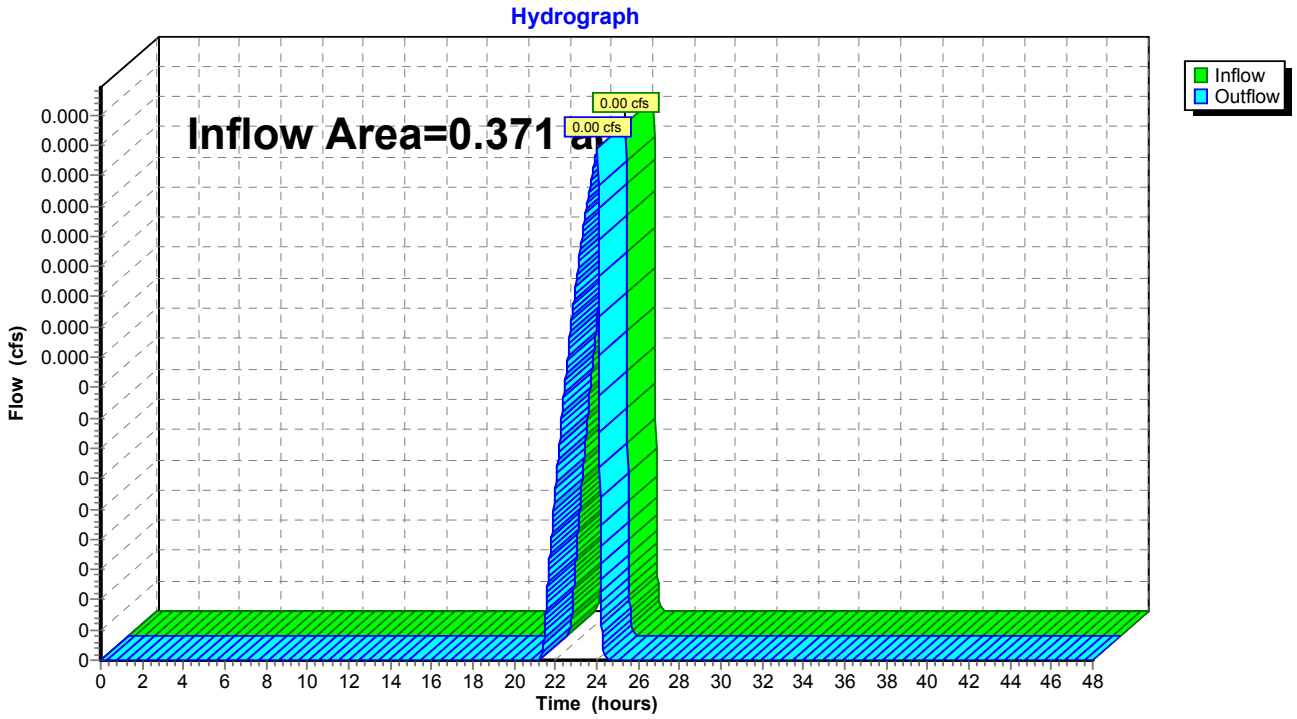


Summary for Reach DP-2: DP-2

Inflow Area = 0.371 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP-2: DP-2

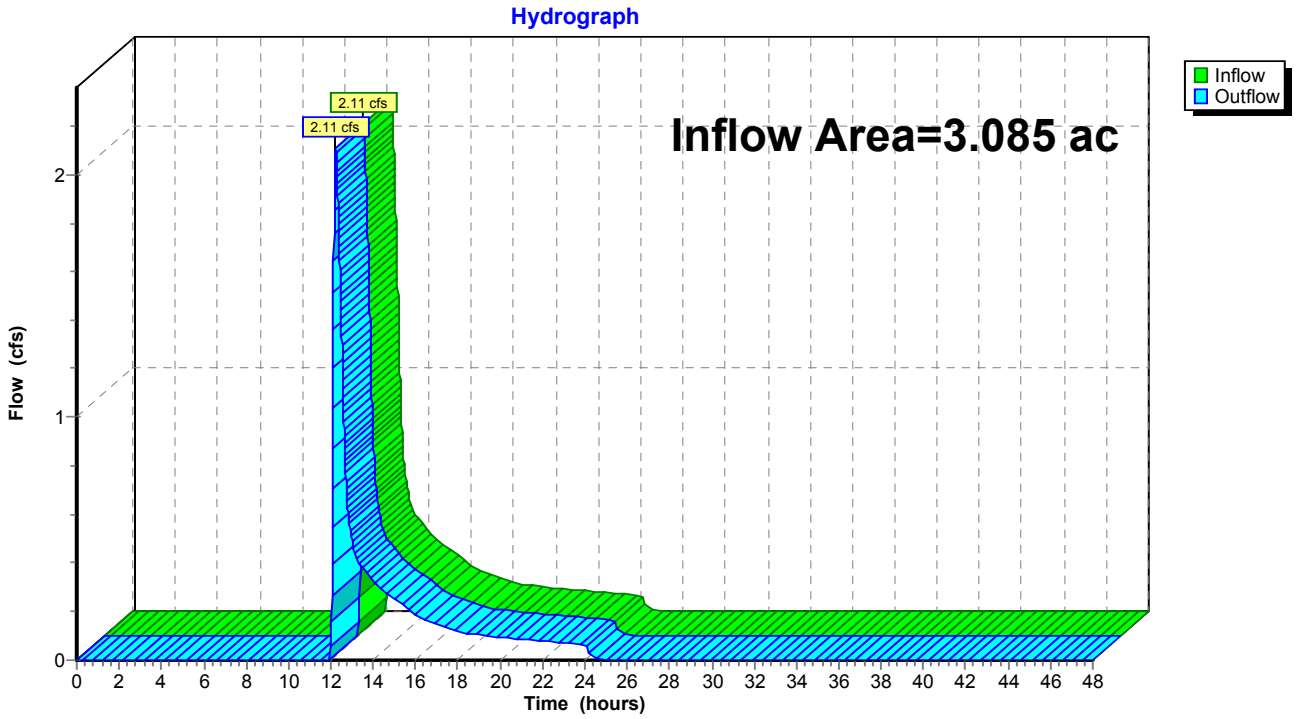


Summary for Reach DP-3: DP-3

Inflow Area = 3.085 ac, 21.98% Impervious, Inflow Depth = 0.93" for 10-Year event
Inflow = 2.11 cfs @ 12.23 hrs, Volume= 0.238 af
Outflow = 2.11 cfs @ 12.23 hrs, Volume= 0.238 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP-3: DP-3

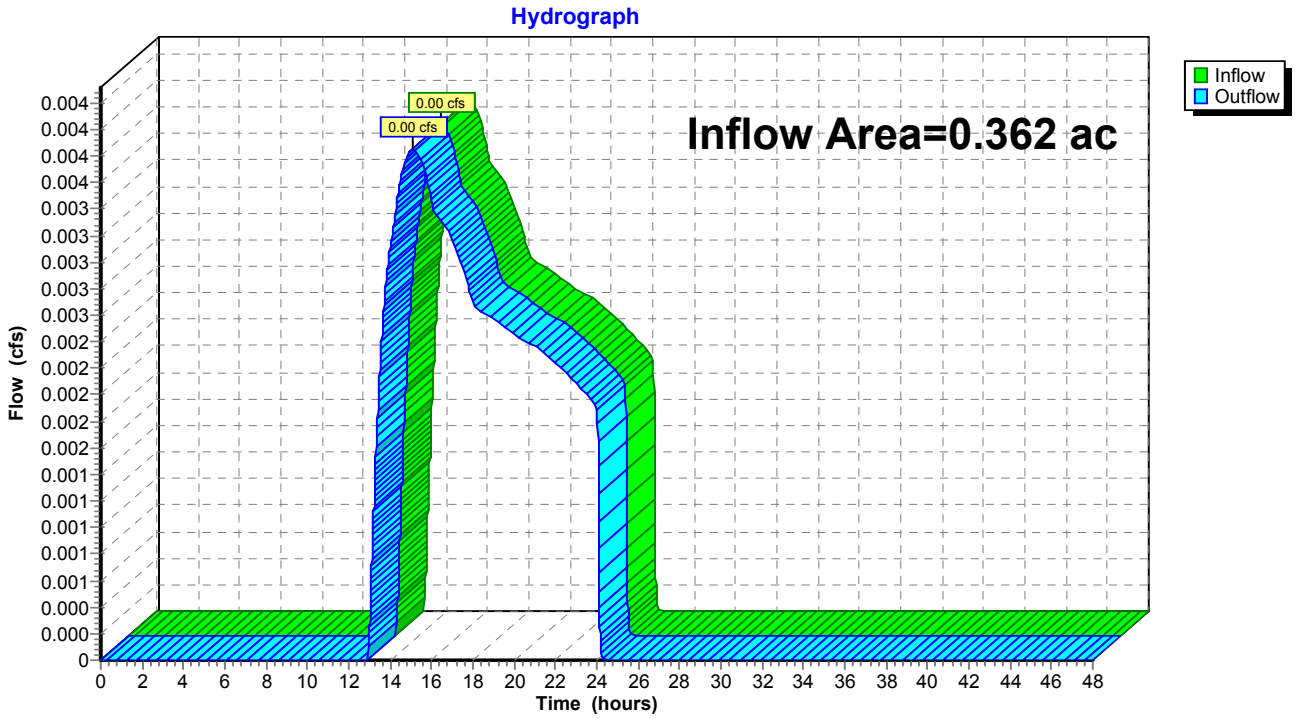


Summary for Reach DP-4: PL

Inflow Area = 0.362 ac, 0.00% Impervious, Inflow Depth = 0.08" for 10-Year event
Inflow = 0.00 cfs @ 15.14 hrs, Volume= 0.002 af
Outflow = 0.00 cfs @ 15.14 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP-4: PL

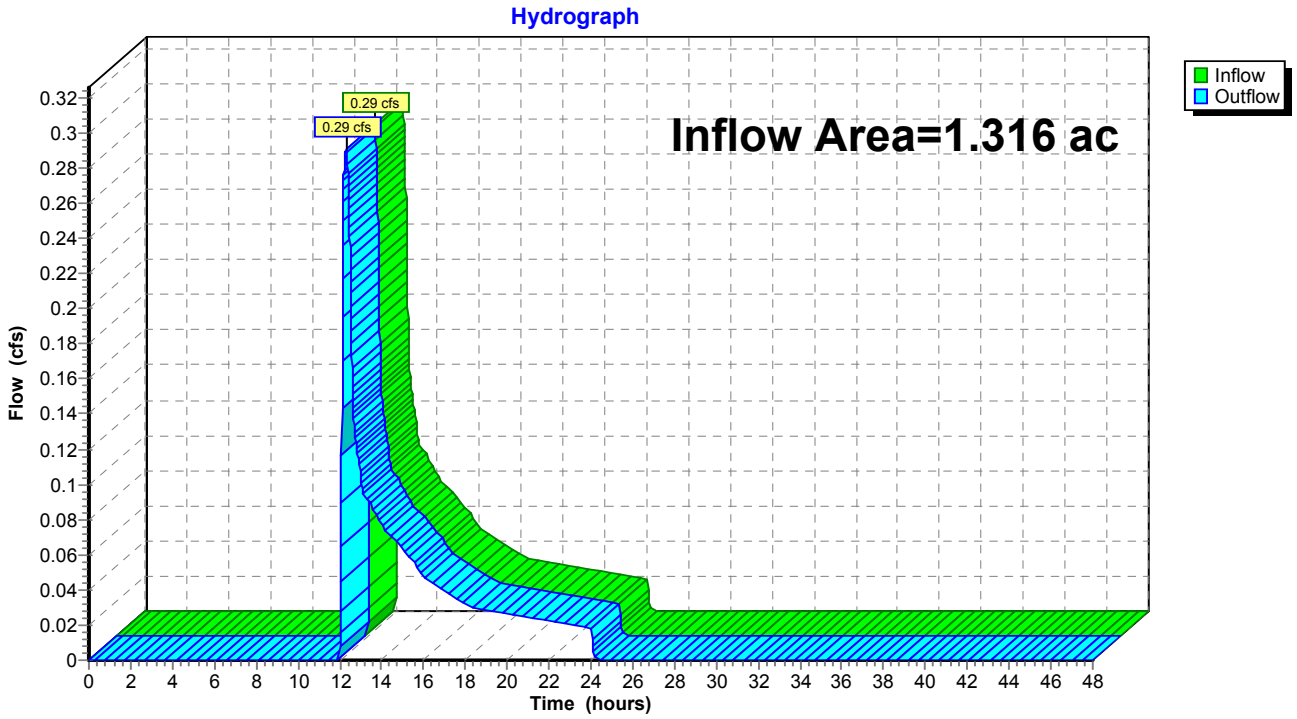


Summary for Reach DP-5: PL

Inflow Area = 1.316 ac, 15.24% Impervious, Inflow Depth = 0.47" for 10-Year event
Inflow = 0.29 cfs @ 12.30 hrs, Volume= 0.051 af
Outflow = 0.29 cfs @ 12.30 hrs, Volume= 0.051 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP-5: PL



Summary for Pond D-1: Exist Detention Basin

Inflow Area = 0.720 ac, 0.00% Impervious, Inflow Depth = 0.06" for 10-Year event
Inflow = 0.01 cfs @ 15.52 hrs, Volume= 0.004 af
Outflow = 0.01 cfs @ 15.53 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.4 min
Discarded = 0.01 cfs @ 15.53 hrs, Volume= 0.004 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 62.00' @ 15.53 hrs Surf.Area= 4,336 sf Storage= 0 cf

Plug-Flow detention time= 0.9 min calculated for 0.004 af (100% of inflow)
Center-of-Mass det. time= 0.9 min (1,120.0 - 1,119.1)

Volume	Invert	Avail.Storage	Storage Description
#1	62.00'	5,584 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

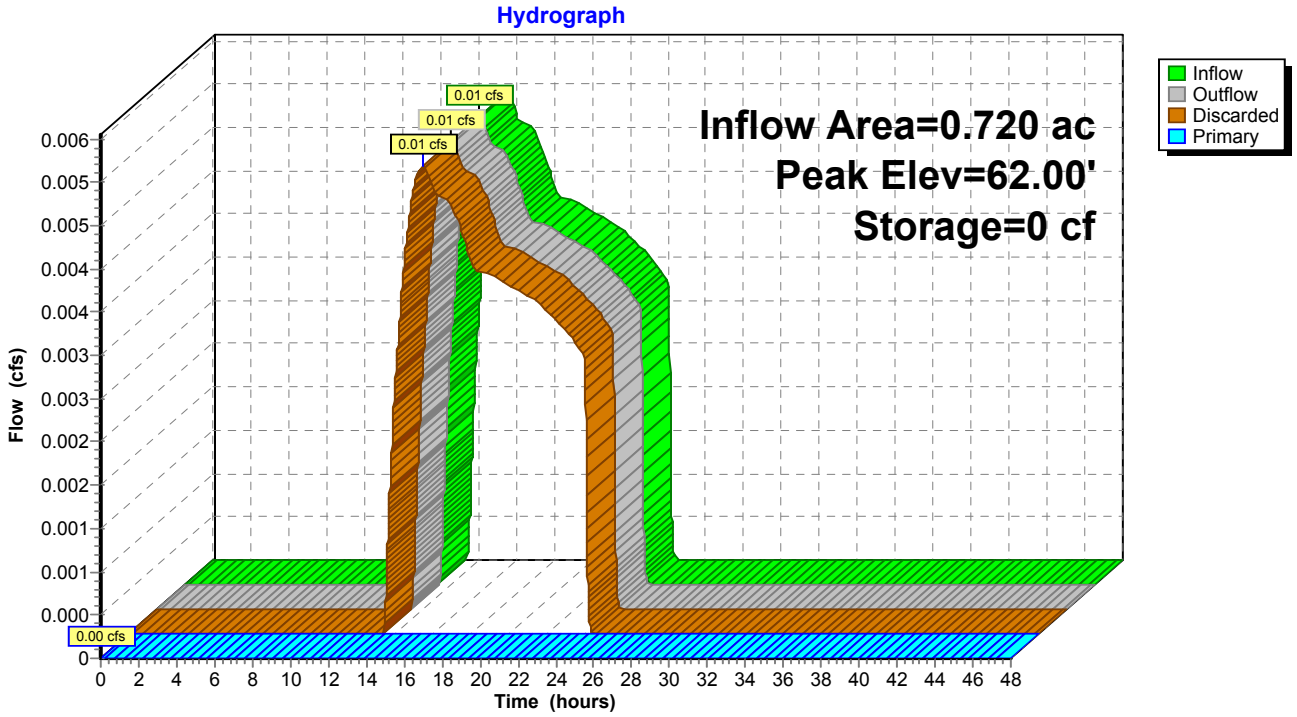
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	4,336	0	0
63.00	6,832	5,584	5,584

Device	Routing	Invert	Outlet Devices
#1	Primary	63.00'	**10.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	62.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.01 cfs @ 15.53 hrs HW=62.00' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=62.00' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond D-1: Exist Detention Basin



Summary for Pond E-DB: Exist Detention Basin

Inflow Area = 1.654 ac, 40.04% Impervious, Inflow Depth = 1.32" for 10-Year event
Inflow = 2.06 cfs @ 12.15 hrs, Volume= 0.181 af
Outflow = 1.66 cfs @ 12.23 hrs, Volume= 0.170 af, Atten= 19%, Lag= 5.2 min
Primary = 1.66 cfs @ 12.23 hrs, Volume= 0.170 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 59.09' @ 12.23 hrs Surf.Area= 1,670 sf Storage= 1,070 cf

Plug-Flow detention time= 53.0 min calculated for 0.170 af (94% of inflow)
Center-of-Mass det. time= 20.4 min (895.8 - 875.4)

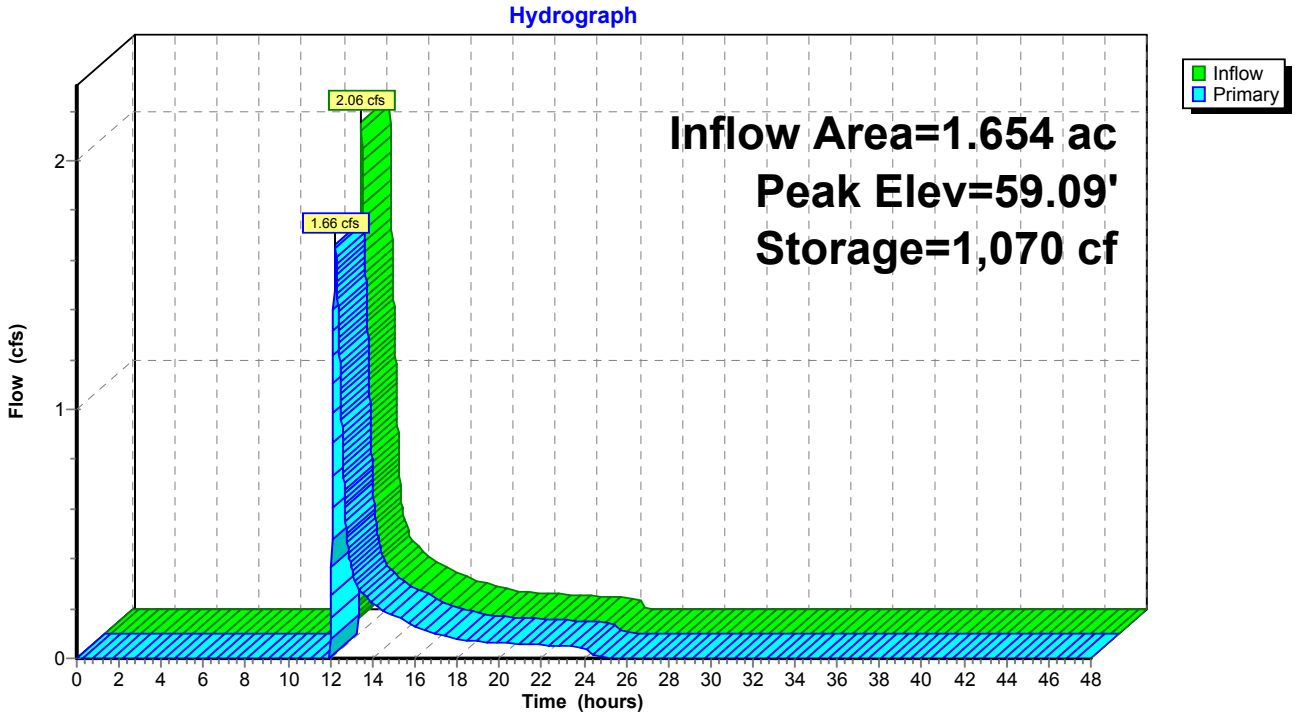
Volume	Invert	Avail.Storage	Storage Description
#1	58.00'	7,325 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
58.00	336	0	0
59.00	1,511	924	924
60.00	3,233	2,372	3,296
61.00	4,826	4,030	7,325

Device	Routing	Invert	Outlet Devices
#1	Primary	58.12'	**12.0" Round RCP_Round 12"** L= 25.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 58.12' / 58.05' S= 0.0028 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	58.68'	**2.0' long x 1.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	59.88'	**7.0' long x 2.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Device 2	58.68'	**5.0' long x 1.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=1.66 cfs @ 12.23 hrs HW=59.09' TW=0.00' (Dynamic Tailwater)
- **1=RCP_Round 12"** (Passes 1.66 cfs of 1.89 cfs potential flow)
  - **2=Sharp-Crested Rectangular Weir** (Weir Controls 1.66 cfs @ 2.10 fps)
    - **4=Sharp-Crested Rectangular Weir** (Passes 1.66 cfs of 4.25 cfs potential flow)
  - **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond E-DB: Exist Detention Basin



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1A-S: Sub-1A Runoff Area=12,960 sf 68.56% Impervious Runoff Depth=3.41"
Tc=6.0 min CN=79 Runoff=1.19 cfs 0.085 af

Subcatchment1B-S: Sub-1B Runoff Area=31,377 sf 0.00% Impervious Runoff Depth=0.19"
Flow Length=212' Tc=9.6 min CN=35 Runoff=0.02 cfs 0.012 af

Subcatchment1C-S: Sub-1C Runoff Area=19,404 sf 0.00% Impervious Runoff Depth=0.27"
Flow Length=269' Tc=16.6 min CN=37 Runoff=0.03 cfs 0.010 af

Subcatchment1D-S: Sub-1D Runoff Area=19,501 sf 3.95% Impervious Runoff Depth=0.41"
Flow Length=185' Tc=11.0 min CN=40 Runoff=0.07 cfs 0.015 af

Subcatchment2S: Sub-2 Runoff Area=16,140 sf 0.00% Impervious Runoff Depth=0.04"
Flow Length=164' Tc=8.6 min CN=30 Runoff=0.00 cfs 0.001 af

Subcatchment3A-S: Sub-3A Runoff Area=72,040 sf 40.04% Impervious Runoff Depth=1.89"
Flow Length=534' Tc=9.4 min CN=62 Runoff=3.09 cfs 0.260 af

Subcatchment3B-S1: Sub-3B-S1 Runoff Area=51,536 sf 1.07% Impervious Runoff Depth=0.93"
Flow Length=345' Tc=8.5 min CN=49 Runoff=0.84 cfs 0.092 af

Subcatchment3B-S2: Sub-3B-S2 Runoff Area=10,796 sf 1.36% Impervious Runoff Depth=1.00"
Flow Length=345' Tc=8.5 min CN=50 Runoff=0.20 cfs 0.021 af

Subcatchment4S: Sub-4 Runoff Area=15,787 sf 0.00% Impervious Runoff Depth=0.23"
Tc=6.0 min CN=36 Runoff=0.02 cfs 0.007 af

Subcatchment5S: Sub-5 Runoff Area=57,338 sf 15.24% Impervious Runoff Depth=0.81"
Flow Length=438' Tc=7.8 min CN=47 Runoff=0.74 cfs 0.088 af

Reach DP-1: DP-1 Inflow=1.19 cfs 0.110 af
Outflow=1.19 cfs 0.110 af

Reach DP-2: DP-2 Inflow=0.00 cfs 0.001 af
Outflow=0.00 cfs 0.001 af

Reach DP-3: DP-3 Inflow=3.33 cfs 0.361 af
Outflow=3.33 cfs 0.361 af

Reach DP-4: PL Inflow=0.02 cfs 0.007 af
Outflow=0.02 cfs 0.007 af

Reach DP-5: PL Inflow=0.74 cfs 0.088 af
Outflow=0.74 cfs 0.088 af

Pond D-1: Exist Detention Basin Peak Elev=62.00' Storage=1 cf Inflow=0.02 cfs 0.012 af
Discarded=0.02 cfs 0.012 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.012 af

Pond E-DB: Exist Detention Basin Peak Elev=59.27' Storage=1,403 cf Inflow=3.09 cfs 0.260 af
Outflow=2.39 cfs 0.249 af

Total Runoff Area = 7.045 ac Runoff Volume = 0.591 af Average Runoff Depth = 1.01"
84.38% Pervious = 5.945 ac 15.62% Impervious = 1.100 ac

Summary for Subcatchment 1A-S: Sub-1A

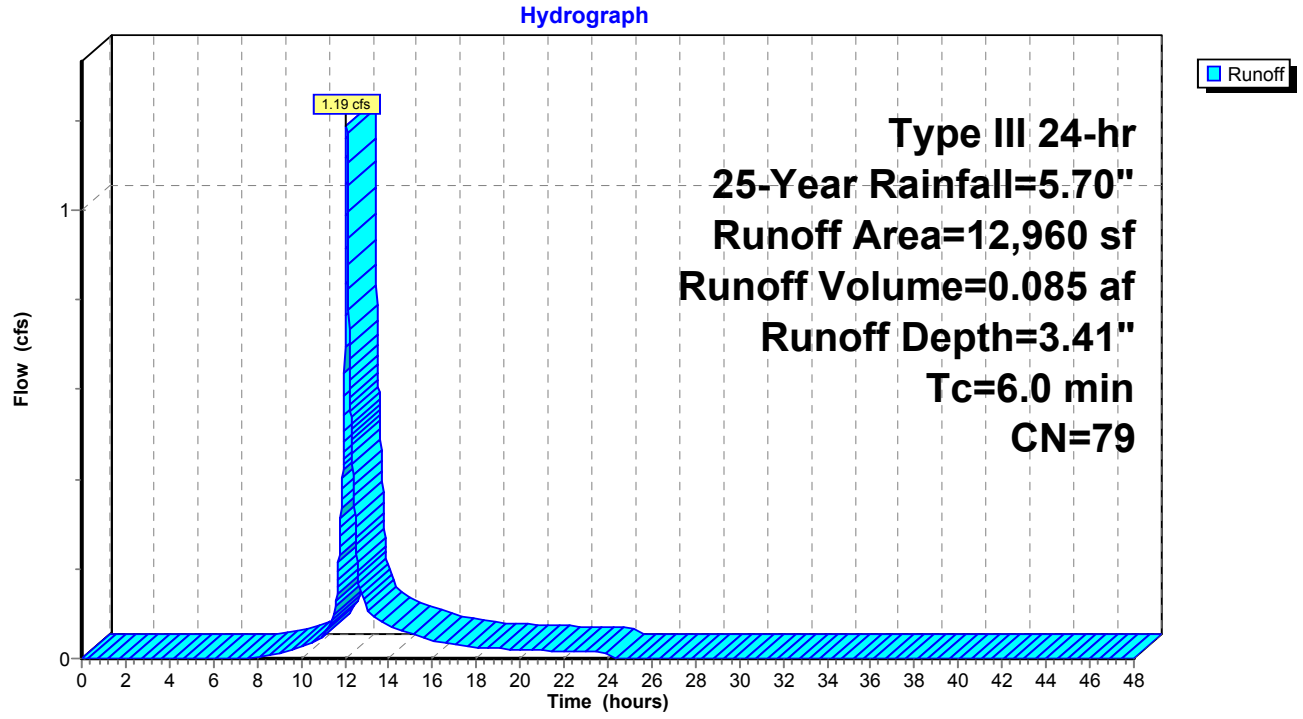
Runoff = 1.19 cfs @ 12.09 hrs, Volume= 0.085 af, Depth= 3.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.70"

Area (sf)	CN	Description
4,075	39	>75% Grass cover, Good, HSG A
8,885	98	Paved roads w/curbs & sewers, HSG A
12,960	79	Weighted Average
4,075		31.44% Pervious Area
8,885		68.56% Impervious Area

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

Subcatchment 1A-S: Sub-1A



Summary for Subcatchment 1B-S: Sub-1B

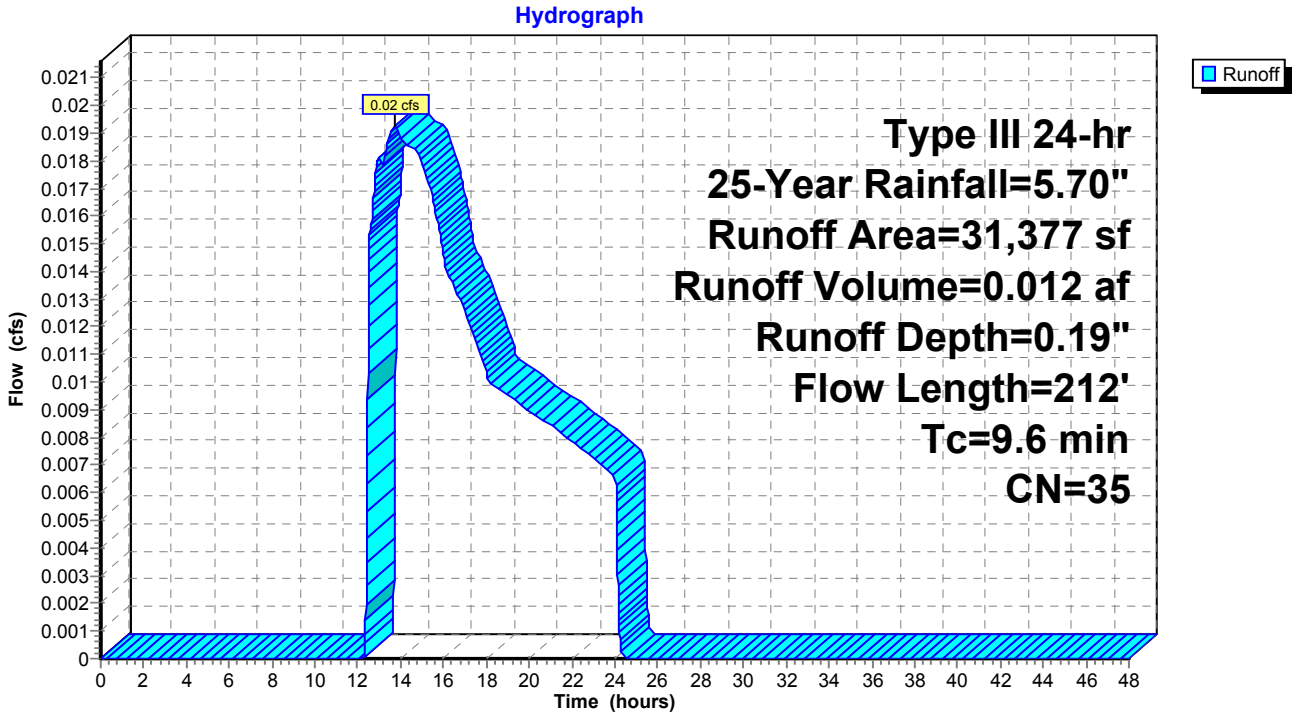
Runoff = 0.02 cfs @ 13.73 hrs, Volume= 0.012 af, Depth= 0.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.70"

Area (sf)	CN	Description
22,072	30	Woods, Good, HSG A
1,755	39	>75% Grass cover, Good, HSG A
7,550	49	50-75% Grass cover, Fair, HSG A
31,377	35	Weighted Average
31,377		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	50	0.0500	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
1.5	162	0.0120	1.76		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
9.6	212	Total			

Subcatchment 1B-S: Sub-1B



Summary for Subcatchment 1C-S: Sub-1C

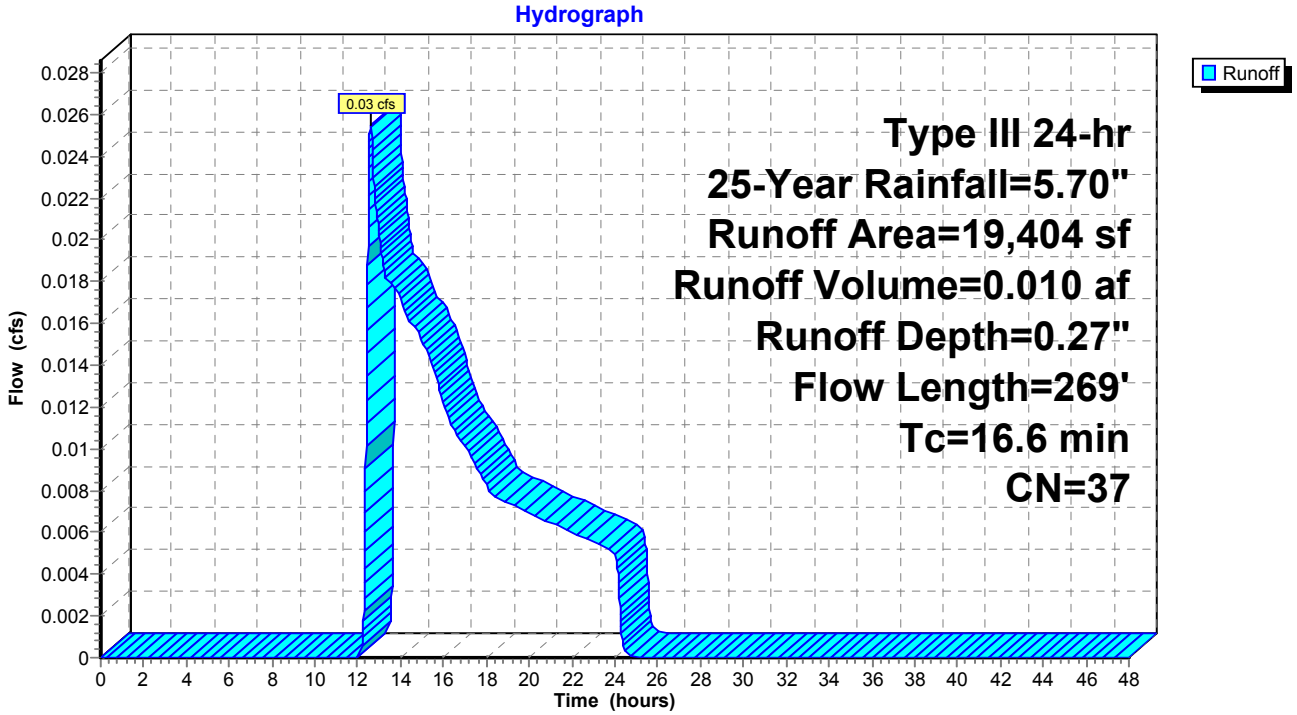
Runoff = 0.03 cfs @ 12.60 hrs, Volume= 0.010 af, Depth= 0.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
	12,129	30	Woods, Good, HSG A
	1,513	39	>75% Grass cover, Good, HSG A
	3,840	55	Woods, Good, HSG B
*	899	30	Woods, Good, HSG A - offsite
	1,023	49	50-75% Grass cover, Fair, HSG A
	19,404	37	Weighted Average
	19,404		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	50	0.0120	0.06		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.60"
2.3	219	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
16.6	269	Total			

Subcatchment 1C-S: Sub-1C



Summary for Subcatchment 1D-S: Sub-1D

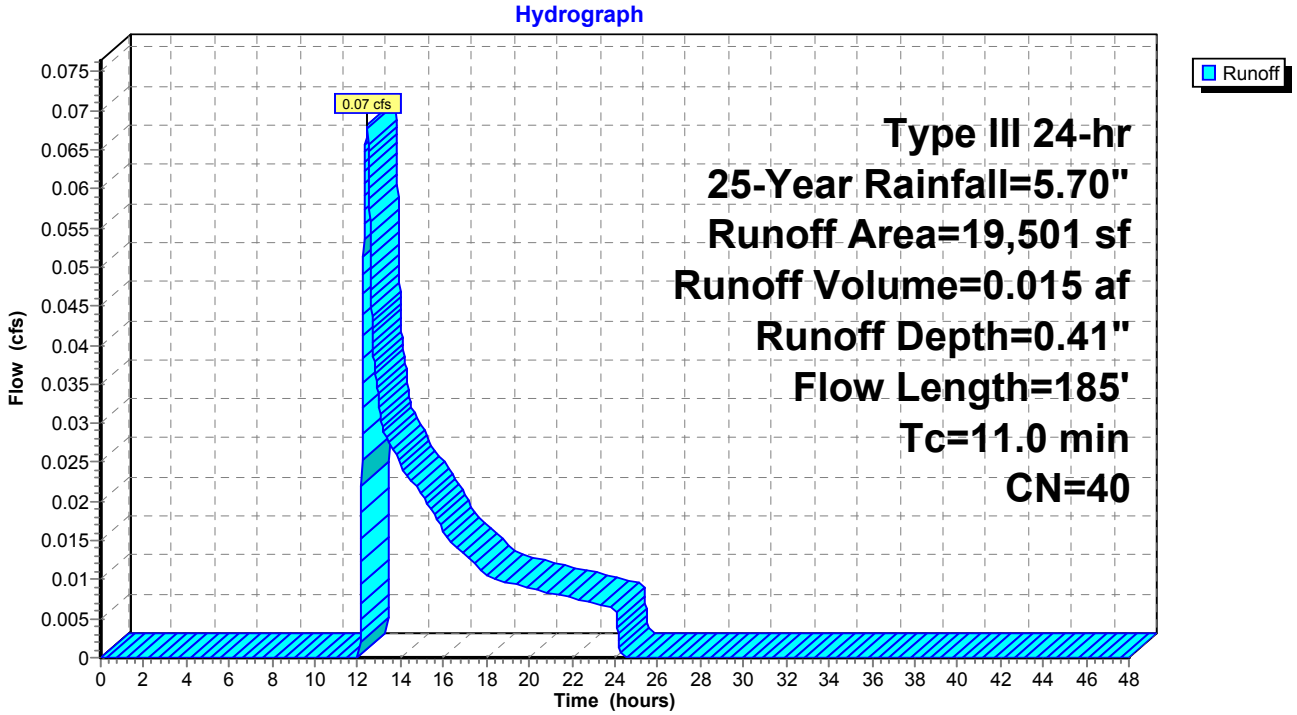
Runoff = 0.07 cfs @ 12.43 hrs, Volume= 0.015 af, Depth= 0.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
	10,890	39	>75% Grass cover, Good, HSG A
	2,684	49	50-75% Grass cover, Fair, HSG A
*	770	98	Rubble Pile, HSG A
	5,157	30	Woods, Good, HSG A
	19,501	40	Weighted Average
	18,731		96.05% Pervious Area
	770		3.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	50	0.0300	0.08		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.60"
1.1	135	0.0160	2.04		**Shallow Concentrated Flow, B-C** Unpaved Kv= 16.1 fps
11.0	185	Total			

Subcatchment 1D-S: Sub-1D



Summary for Subcatchment 2S: Sub-2

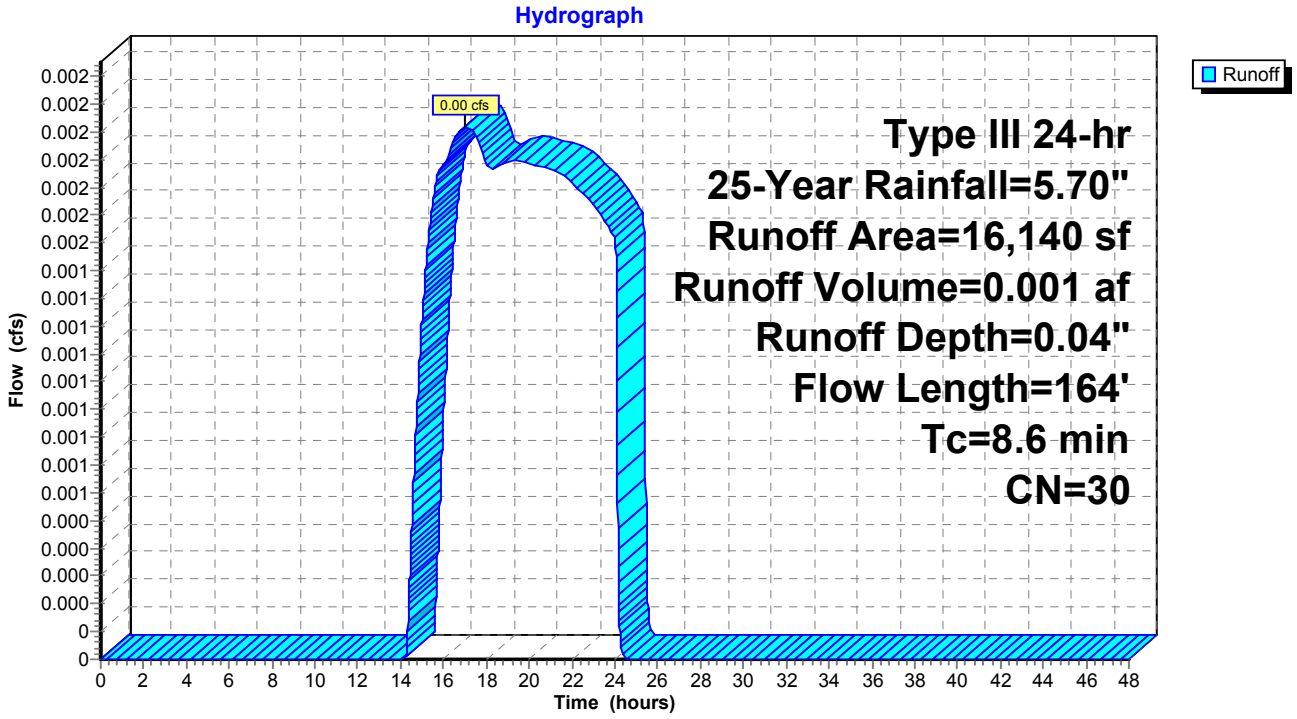
Runoff = 0.00 cfs @ 17.02 hrs, Volume= 0.001 af, Depth= 0.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.70"

Area (sf)	CN	Description
16,140	30	Woods, Good, HSG A
16,140		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	50	0.0800	0.12		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.60"
1.9	114	0.0383	0.98		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
8.6	164	Total			

Subcatchment 2S: Sub-2



Summary for Subcatchment 3A-S: Sub-3A

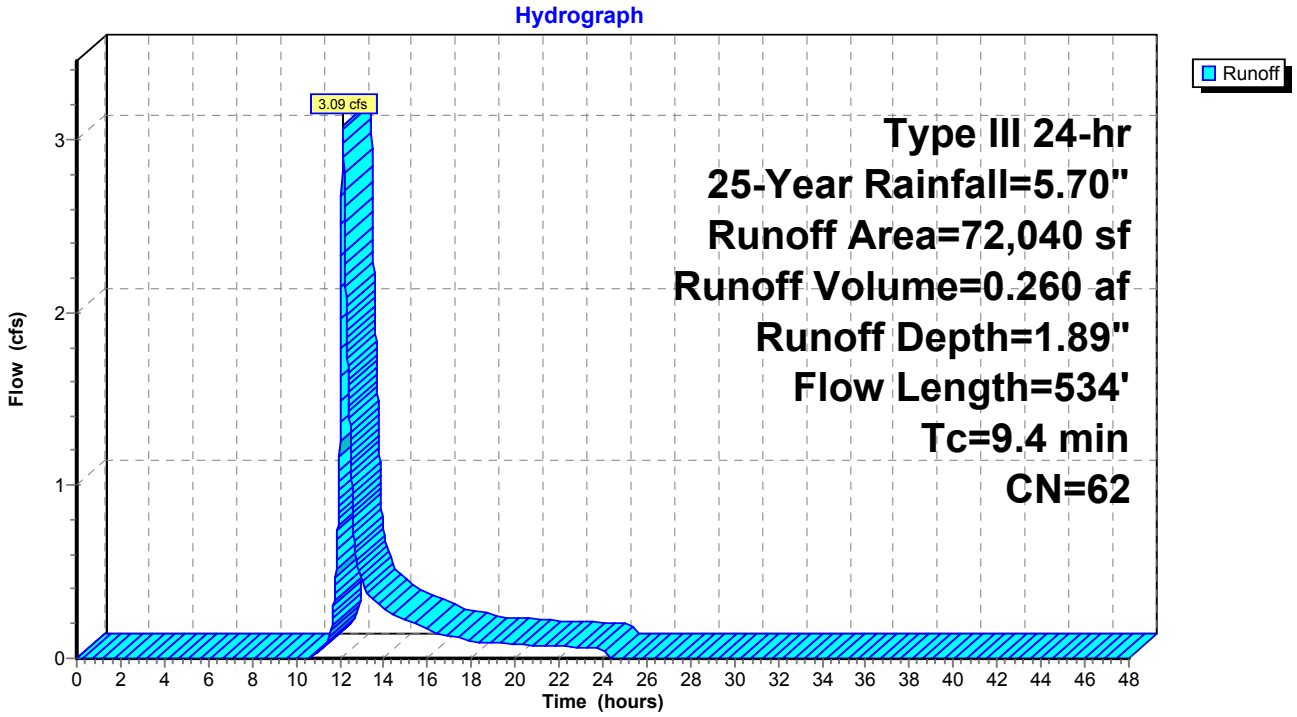
Runoff = 3.09 cfs @ 12.14 hrs, Volume= 0.260 af, Depth= 1.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
*	1,384	98	Roofs, HSG A - offsite
*	16,069	98	Paved parking, HSG A - offsite
*	1,682	30	Woods, Good, HSG A - offsite
*	1,189	39	>75% Grass cover, Good, HSG A - offsite
	24,471	30	Woods, Good, HSG A
	6,630	39	>75% Grass cover, Good, HSG A
	2,407	98	Paved roads w/curbs & sewers, HSG A
*	2,712	98	Existing Detention Basin, HSG A
*	810	98	Riprap, HSG A
	3,247	98	Paved roads w/curbs & sewers, HSG B
	2,784	55	Woods, Good, HSG B
*	938	98	Riprap, HSG B
	6,442	61	>75% Grass cover, Good, HSG B
*	1,275	98	Existing Detention Basin, HSG B
	72,040	62	Weighted Average
	43,198		59.96% Pervious Area
	28,842		40.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	50	0.0160	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.60"
1.8	225	0.0160	2.04		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.9	102	0.0090	1.93		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.9	157	0.0030	2.88	3.54	**Pipe Channel, RCP_Round 15"** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013
9.4	534	Total			

Subcatchment 3A-S: Sub-3A



Summary for Subcatchment 3B-S1: Sub-3B-S1

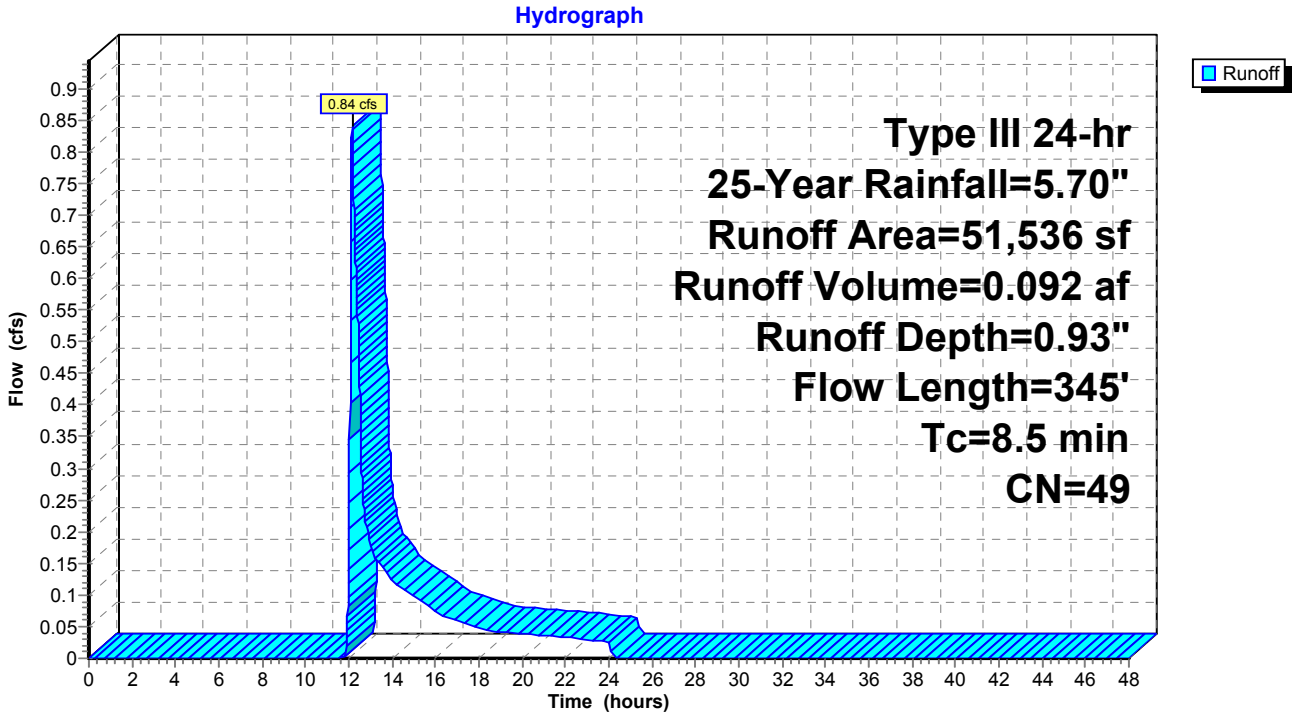
Runoff = 0.84 cfs @ 12.15 hrs, Volume= 0.092 af, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
*	255	98	Riprap, HSG A
*	4	98	Riprap, HSG B
	8,302	30	Woods, Good, HSG A
	24,250	55	Woods, Good, HSG B
	7,313	61	>75% Grass cover, Good, HSG B
*	4,310	30	Woods, Good, HSG A - offsite
*	4,121	39	>75% Grass cover, Good, HSG A - offsite
*	290	98	Paved drive, HSG A - offsite
*	957	61	>75% Grass cover, Good, HSG B - offsite
*	1,734	55	Woods, Good, HSG B - offsite
	51,536	49	Weighted Average
	50,987		98.93% Pervious Area
	549		1.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	50	0.0700	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
1.5	295	0.0400	3.22		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
8.5	345	Total			

Subcatchment 3B-S1: Sub-3B-S1



Summary for Subcatchment 3B-S2: Sub-3B-S2

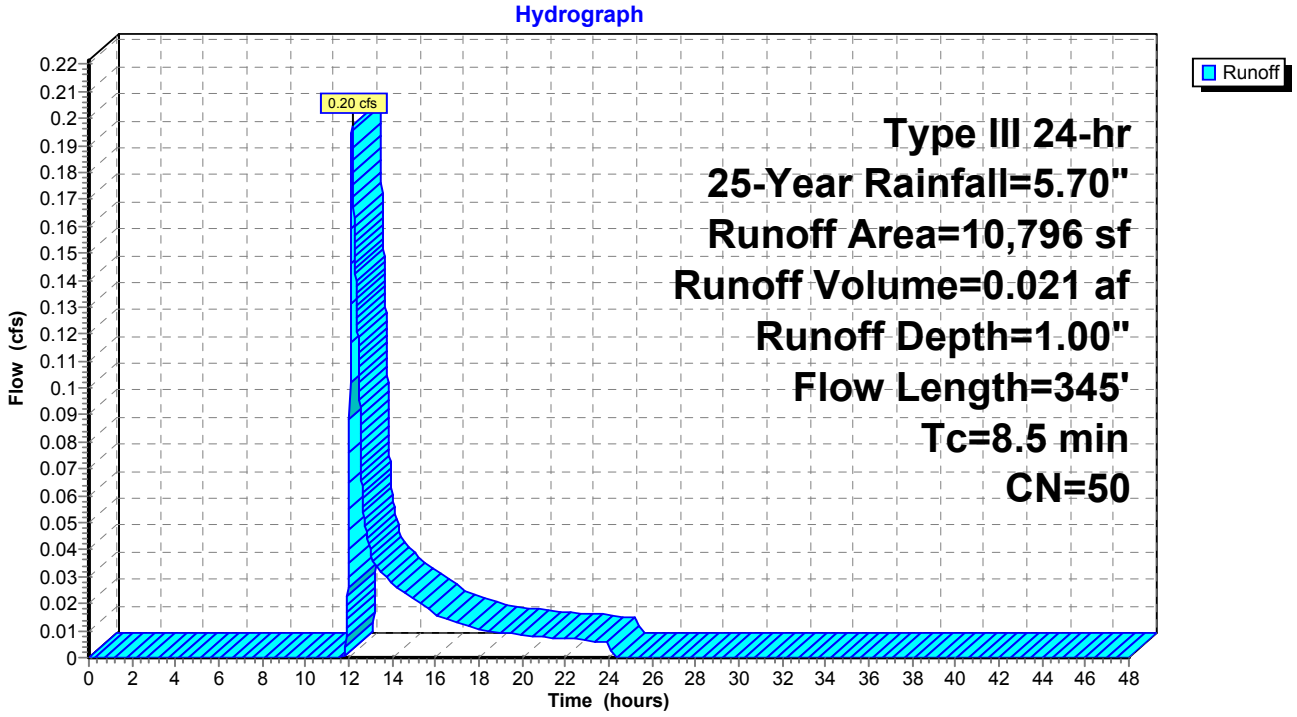
Runoff = 0.20 cfs @ 12.15 hrs, Volume= 0.021 af, Depth= 1.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
*	30	98	Riprap, HSG A
*	117	98	Riprap, HSG B
	1,380	30	Woods, Good, HSG A
	6,538	55	Woods, Good, HSG B
	1,762	39	>75% Grass cover, Good, HSG A
	969	61	>75% Grass cover, Good, HSG B
	10,796	50	Weighted Average
	10,649		98.64% Pervious Area
	147		1.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	50	0.0700	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
1.5	295	0.0400	3.22		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
8.5	345	Total			

Subcatchment 3B-S2: Sub-3B-S2



Summary for Subcatchment 4S: Sub-4

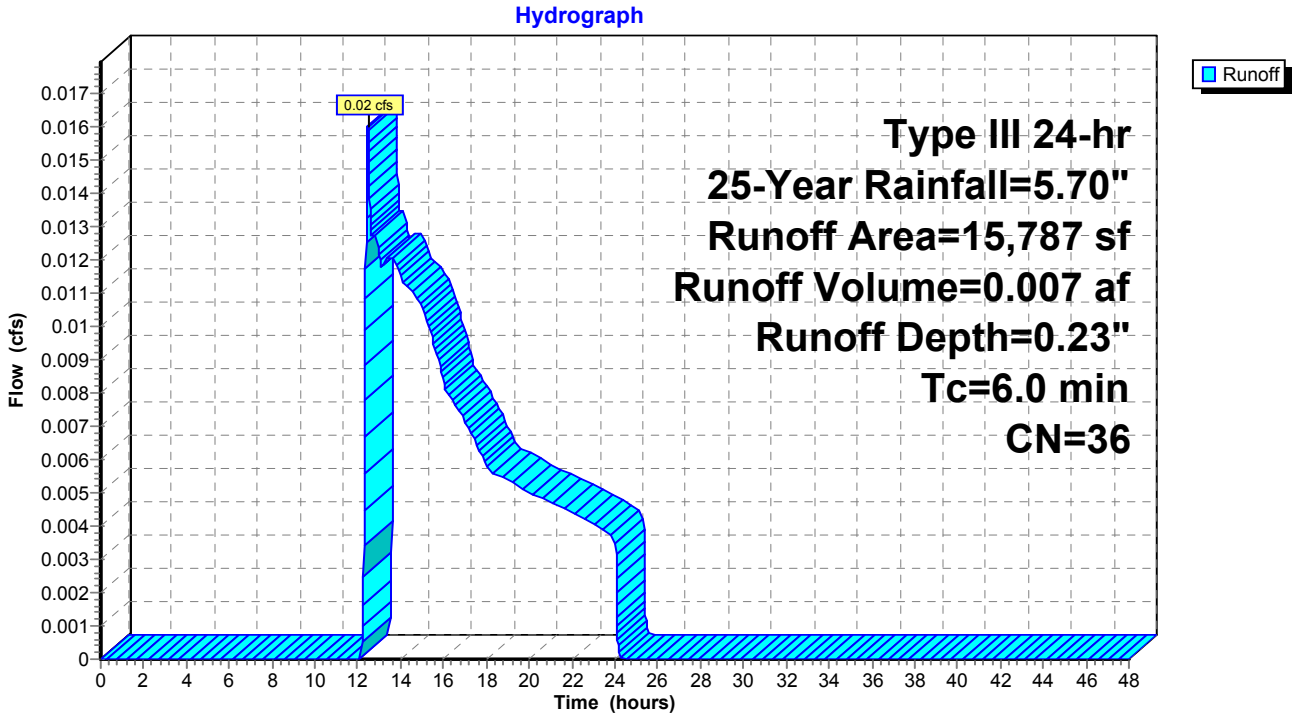
Runoff = 0.02 cfs @ 12.47 hrs, Volume= 0.007 af, Depth= 0.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.70"

Area (sf)	CN	Description
15,787	36	Woods, Fair, HSG A
15,787		100.00% Pervious Area

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

Subcatchment 4S: Sub-4



Summary for Subcatchment 5S: Sub-5

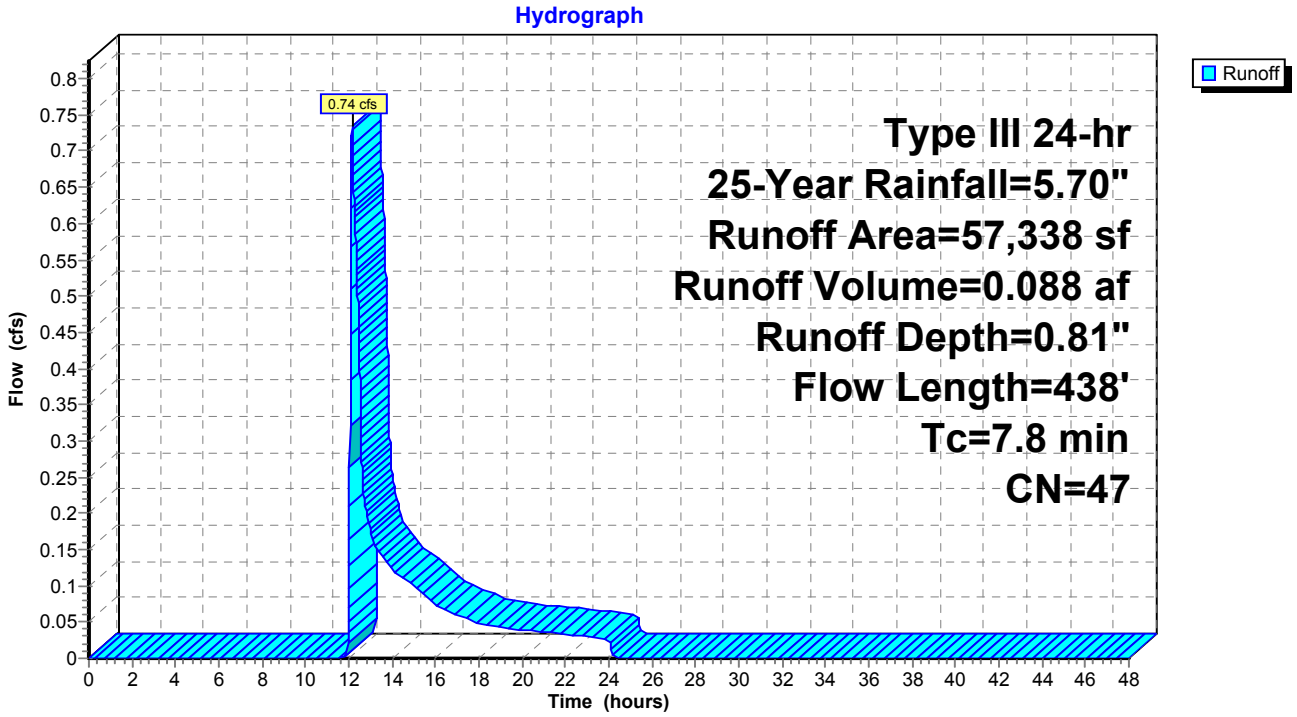
Runoff = 0.74 cfs @ 12.15 hrs, Volume= 0.088 af, Depth= 0.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
	32,676	36	Woods, Fair, HSG A
	15,526	39	>75% Grass cover, Good, HSG A
	395	80	>75% Grass cover, Good, HSG D
*	318	98	Paved drive, HSG D
	2,148	98	Roofs, HSG A
*	5,322	98	Paved drive, HSG A
*	533	98	Patio, HSG A
*	235	98	Misc, HSG A
*	185	98	Ledge, HSG A
	57,338	47	Weighted Average
	48,597		84.76% Pervious Area
	8,741		15.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	39	0.1538	0.15		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.60"
1.8	11	0.1100	0.10		**Sheet Flow, B-C** Woods: Light underbrush n= 0.400 P2= 3.60"
0.1	22	0.1166	5.50		**Shallow Concentrated Flow, C-D** Unpaved Kv= 16.1 fps
0.2	54	0.0500	3.60		**Shallow Concentrated Flow, D-E** Unpaved Kv= 16.1 fps
0.2	52	0.0770	4.47		**Shallow Concentrated Flow, E-F** Unpaved Kv= 16.1 fps
1.0	175	0.0300	2.79		**Shallow Concentrated Flow, F-G** Unpaved Kv= 16.1 fps
0.3	85	0.1100	5.34		**Shallow Concentrated Flow, G-H** Unpaved Kv= 16.1 fps
7.8	438	Total			

Subcatchment 5S: Sub-5

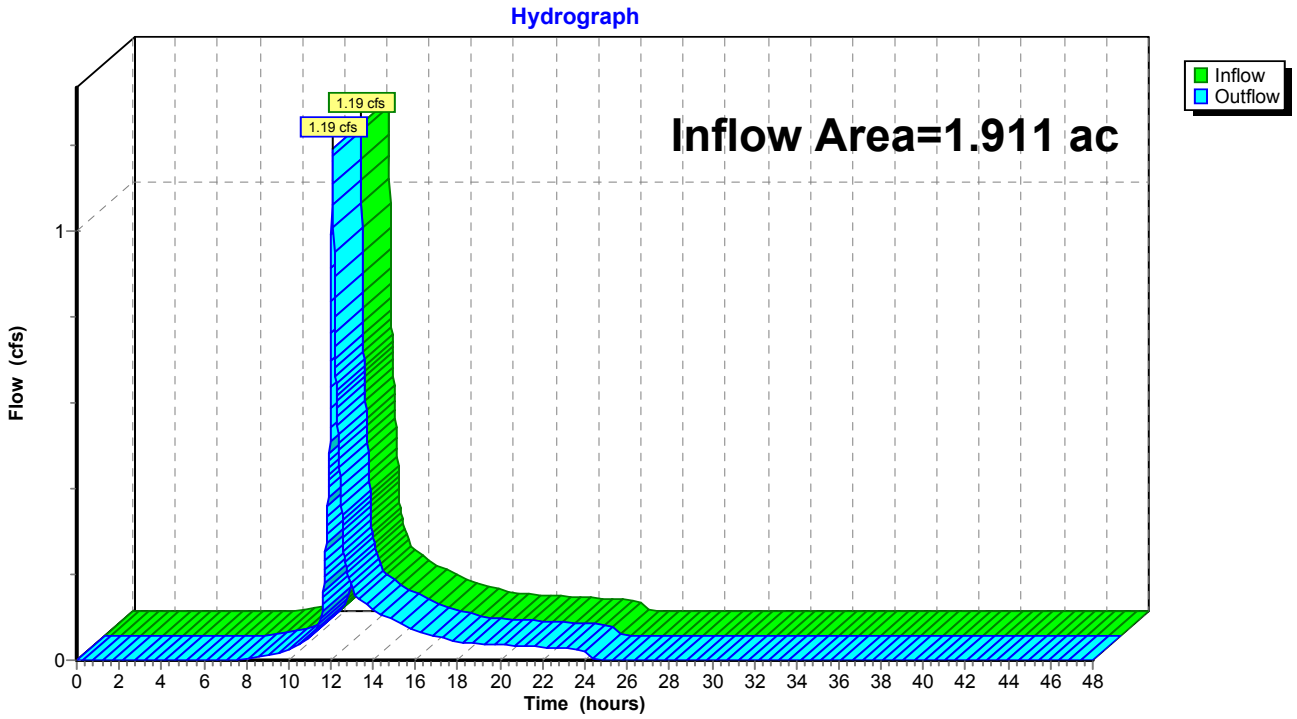


Summary for Reach DP-1: DP-1

Inflow Area = 1.911 ac, 11.60% Impervious, Inflow Depth = 0.69" for 25-Year event
Inflow = 1.19 cfs @ 12.09 hrs, Volume= 0.110 af
Outflow = 1.19 cfs @ 12.09 hrs, Volume= 0.110 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP-1: DP-1

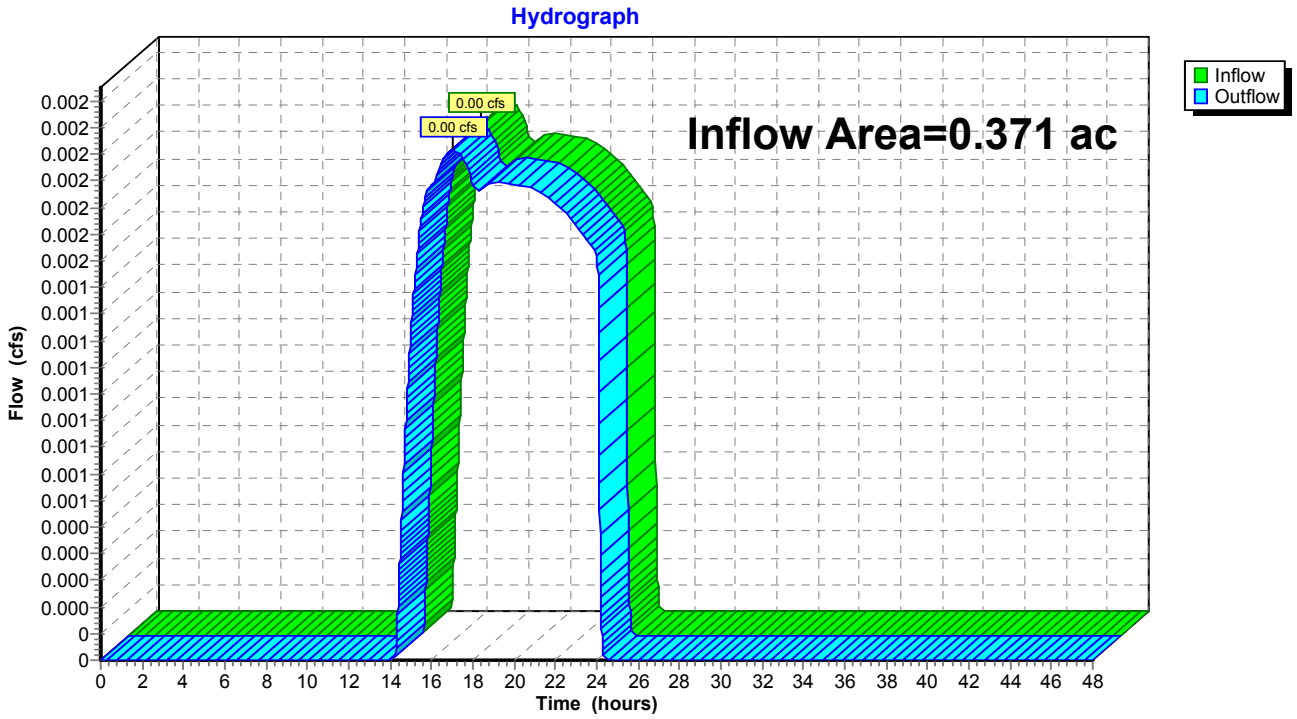


Summary for Reach DP-2: DP-2

Inflow Area = 0.371 ac, 0.00% Impervious, Inflow Depth = 0.04" for 25-Year event
Inflow = 0.00 cfs @ 17.02 hrs, Volume= 0.001 af
Outflow = 0.00 cfs @ 17.02 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP-2: DP-2

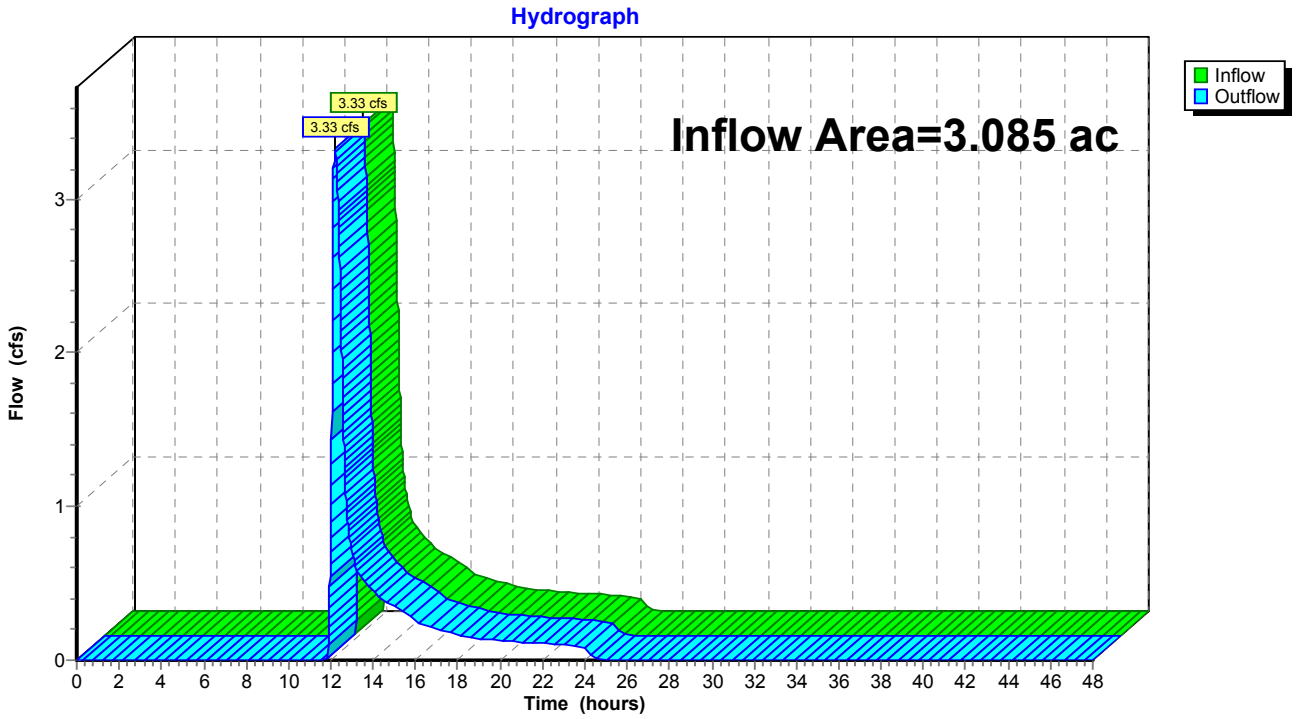


Summary for Reach DP-3: DP-3

Inflow Area = 3.085 ac, 21.98% Impervious, Inflow Depth = 1.41" for 25-Year event
Inflow = 3.33 cfs @ 12.19 hrs, Volume= 0.361 af
Outflow = 3.33 cfs @ 12.19 hrs, Volume= 0.361 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP-3: DP-3

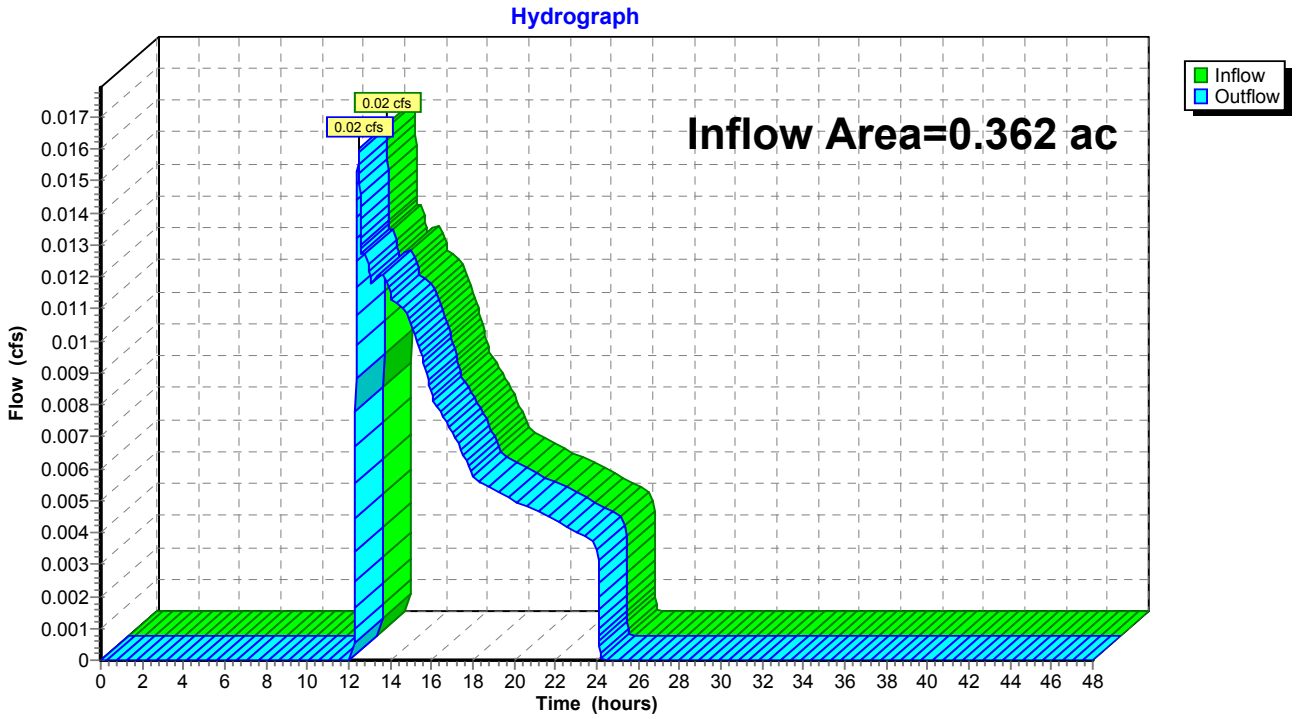


Summary for Reach DP-4: PL

Inflow Area = 0.362 ac, 0.00% Impervious, Inflow Depth = 0.23" for 25-Year event
Inflow = 0.02 cfs @ 12.47 hrs, Volume= 0.007 af
Outflow = 0.02 cfs @ 12.47 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP-4: PL

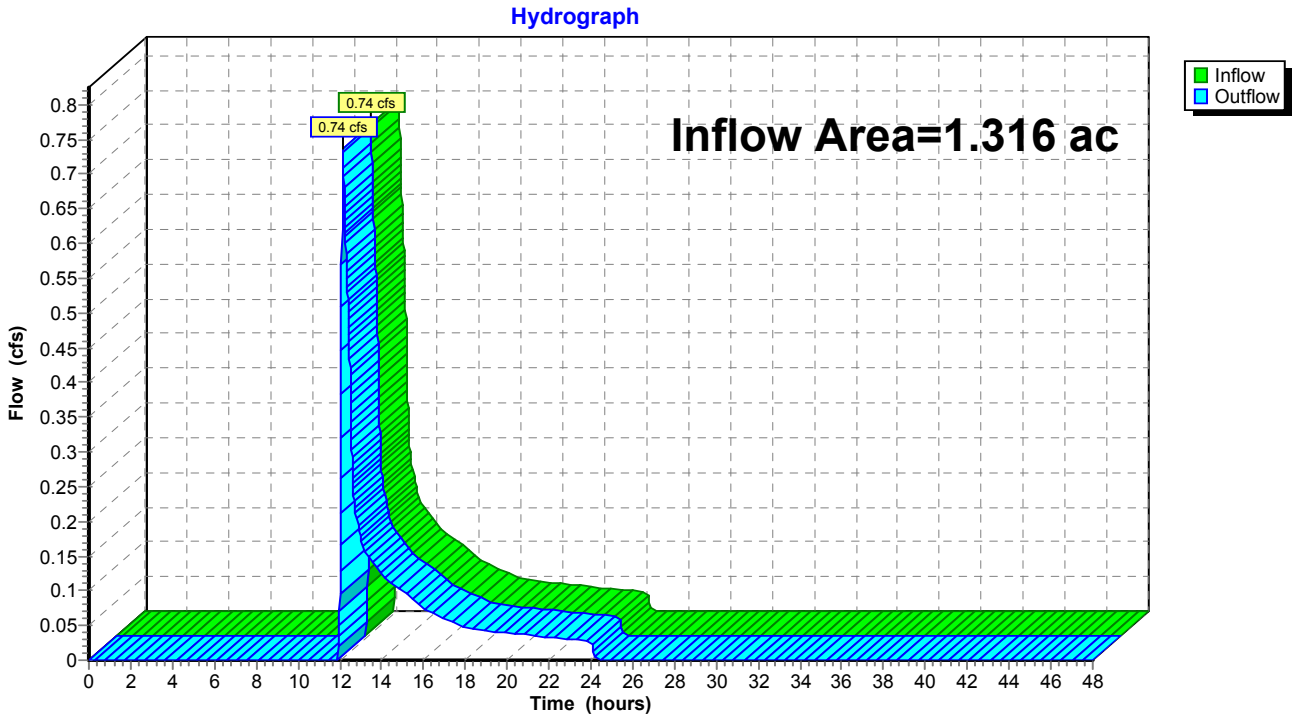


Summary for Reach DP-5: PL

Inflow Area = 1.316 ac, 15.24% Impervious, Inflow Depth = 0.81" for 25-Year event
Inflow = 0.74 cfs @ 12.15 hrs, Volume= 0.088 af
Outflow = 0.74 cfs @ 12.15 hrs, Volume= 0.088 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP-5: PL



Summary for Pond D-1: Exist Detention Basin

Inflow Area = 0.720 ac, 0.00% Impervious, Inflow Depth = 0.19" for 25-Year event
Inflow = 0.02 cfs @ 13.73 hrs, Volume= 0.012 af
Outflow = 0.02 cfs @ 13.75 hrs, Volume= 0.012 af, Atten= 0%, Lag= 1.0 min
Discarded = 0.02 cfs @ 13.75 hrs, Volume= 0.012 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 62.00' @ 13.75 hrs Surf.Area= 4,337 sf Storage= 1 cf

Plug-Flow detention time= 0.9 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 0.9 min (1,029.7 - 1,028.9)

Volume	Invert	Avail.Storage	Storage Description
#1	62.00'	5,584 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

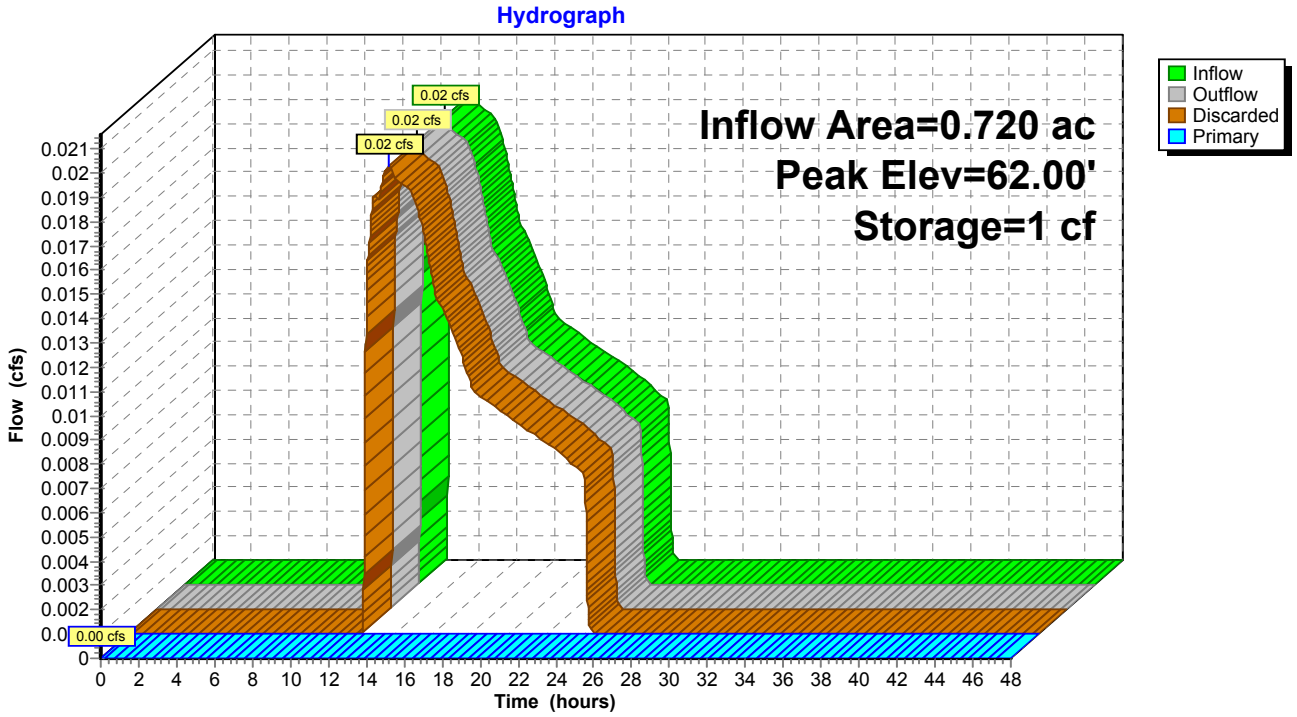
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	4,336	0	0
63.00	6,832	5,584	5,584

Device	Routing	Invert	Outlet Devices
#1	Primary	63.00'	**10.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	62.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.02 cfs @ 13.75 hrs HW=62.00' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=62.00' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond D-1: Exist Detention Basin



Summary for Pond E-DB: Exist Detention Basin

Inflow Area = 1.654 ac, 40.04% Impervious, Inflow Depth = 1.89" for 25-Year event
Inflow = 3.09 cfs @ 12.14 hrs, Volume= 0.260 af
Outflow = 2.39 cfs @ 12.24 hrs, Volume= 0.249 af, Atten= 23%, Lag= 5.7 min
Primary = 2.39 cfs @ 12.24 hrs, Volume= 0.249 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 59.27' @ 12.24 hrs Surf.Area= 1,984 sf Storage= 1,403 cf

Plug-Flow detention time= 40.1 min calculated for 0.249 af (96% of inflow)
Center-of-Mass det. time= 16.3 min (880.2 - 863.9)

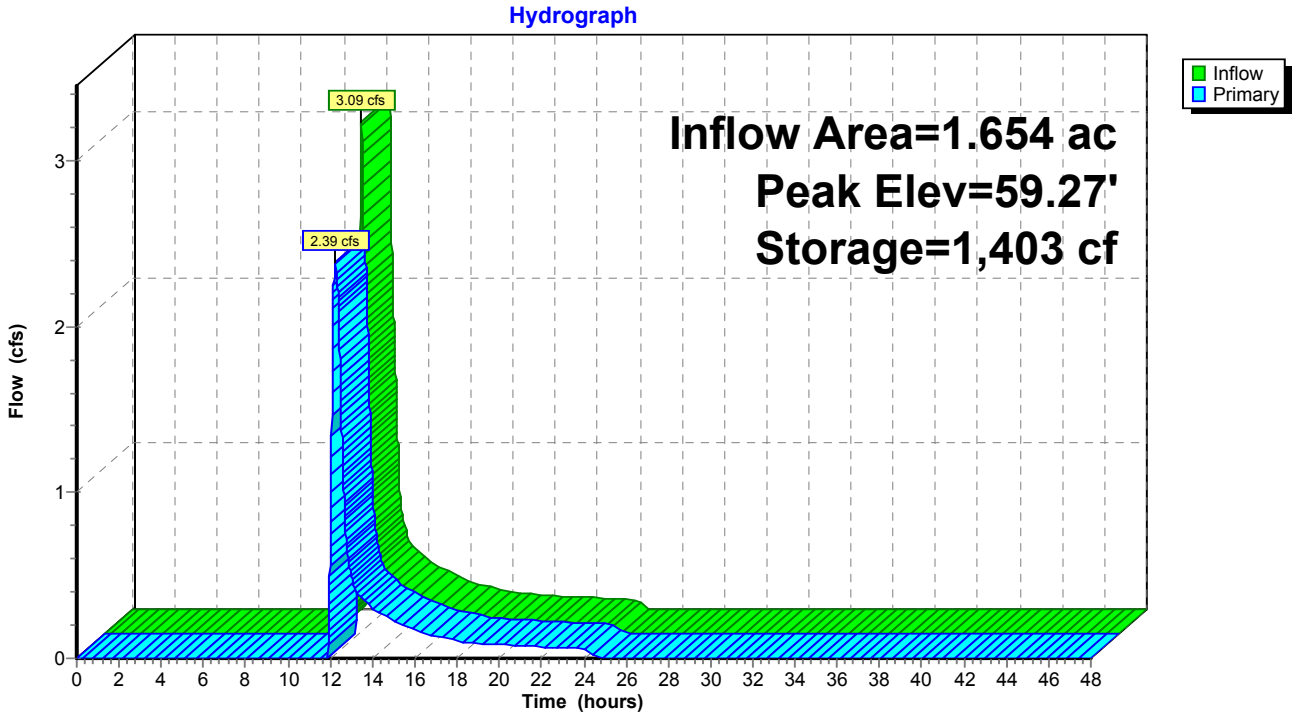
Volume	Invert	Avail.Storage	Storage Description
#1	58.00'	7,325 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
58.00	336	0	0
59.00	1,511	924	924
60.00	3,233	2,372	3,296
61.00	4,826	4,030	7,325

Device	Routing	Invert	Outlet Devices
#1	Primary	58.12'	**12.0" Round RCP_Round 12"** L= 25.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 58.12' / 58.05' S= 0.0028 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	58.68'	**2.0' long x 1.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	59.88'	**7.0' long x 2.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Device 2	58.68'	**5.0' long x 1.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=2.39 cfs @ 12.24 hrs HW=59.27' TW=0.00' (Dynamic Tailwater)
- **1=RCP_Round 12"** (Barrel Controls 2.39 cfs @ 3.31 fps)
  - **2=Sharp-Crested Rectangular Weir** (Passes 2.39 cfs of 2.82 cfs potential flow)
    - **4=Sharp-Crested Rectangular Weir** (Passes 2.39 cfs of 7.32 cfs potential flow)
  - **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond E-DB: Exist Detention Basin



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1A-S: Sub-1A Runoff Area=12,960 sf 68.56% Impervious Runoff Depth=4.68"
Tc=6.0 min CN=79 Runoff=1.62 cfs 0.116 af

Subcatchment1B-S: Sub-1B Runoff Area=31,377 sf 0.00% Impervious Runoff Depth=0.52"
Flow Length=212' Tc=9.6 min CN=35 Runoff=0.14 cfs 0.031 af

Subcatchment1C-S: Sub-1C Runoff Area=19,404 sf 0.00% Impervious Runoff Depth=0.66"
Flow Length=269' Tc=16.6 min CN=37 Runoff=0.12 cfs 0.024 af

Subcatchment1D-S: Sub-1D Runoff Area=19,501 sf 3.95% Impervious Runoff Depth=0.88"
Flow Length=185' Tc=11.0 min CN=40 Runoff=0.22 cfs 0.033 af

Subcatchment2S: Sub-2 Runoff Area=16,140 sf 0.00% Impervious Runoff Depth=0.23"
Flow Length=164' Tc=8.6 min CN=30 Runoff=0.01 cfs 0.007 af

Subcatchment3A-S: Sub-3A Runoff Area=72,040 sf 40.04% Impervious Runoff Depth=2.87"
Flow Length=534' Tc=9.4 min CN=62 Runoff=4.86 cfs 0.396 af

Subcatchment3B-S1: Sub-3B-S1 Runoff Area=51,536 sf 1.07% Impervious Runoff Depth=1.63"
Flow Length=345' Tc=8.5 min CN=49 Runoff=1.77 cfs 0.161 af

Subcatchment3B-S2: Sub-3B-S2 Runoff Area=10,796 sf 1.36% Impervious Runoff Depth=1.72"
Flow Length=345' Tc=8.5 min CN=50 Runoff=0.40 cfs 0.036 af

Subcatchment4S: Sub-4 Runoff Area=15,787 sf 0.00% Impervious Runoff Depth=0.59"
Tc=6.0 min CN=36 Runoff=0.09 cfs 0.018 af

Subcatchment5S: Sub-5 Runoff Area=57,338 sf 15.24% Impervious Runoff Depth=1.46"
Flow Length=438' Tc=7.8 min CN=47 Runoff=1.72 cfs 0.160 af

Reach DP-1: DP-1 Inflow=1.71 cfs 0.173 af
Outflow=1.71 cfs 0.173 af

Reach DP-2: DP-2 Inflow=0.01 cfs 0.007 af
Outflow=0.01 cfs 0.007 af

Reach DP-3: DP-3 Inflow=5.01 cfs 0.581 af
Outflow=5.01 cfs 0.581 af

Reach DP-4: PL Inflow=0.09 cfs 0.018 af
Outflow=0.09 cfs 0.018 af

Reach DP-5: PL Inflow=1.72 cfs 0.160 af
Outflow=1.72 cfs 0.160 af

Pond D-1: Exist Detention Basin Peak Elev=62.00' Storage=7 cf Inflow=0.14 cfs 0.031 af
Discarded=0.14 cfs 0.031 af Primary=0.00 cfs 0.000 af Outflow=0.14 cfs 0.031 af

Pond E-DB: Exist Detention Basin Peak Elev=59.65' Storage=2,278 cf Inflow=4.86 cfs 0.396 af
Outflow=3.24 cfs 0.385 af

Total Runoff Area = 7.045 ac Runoff Volume = 0.982 af Average Runoff Depth = 1.67"
84.38% Pervious = 5.945 ac 15.62% Impervious = 1.100 ac

Summary for Subcatchment 1A-S: Sub-1A

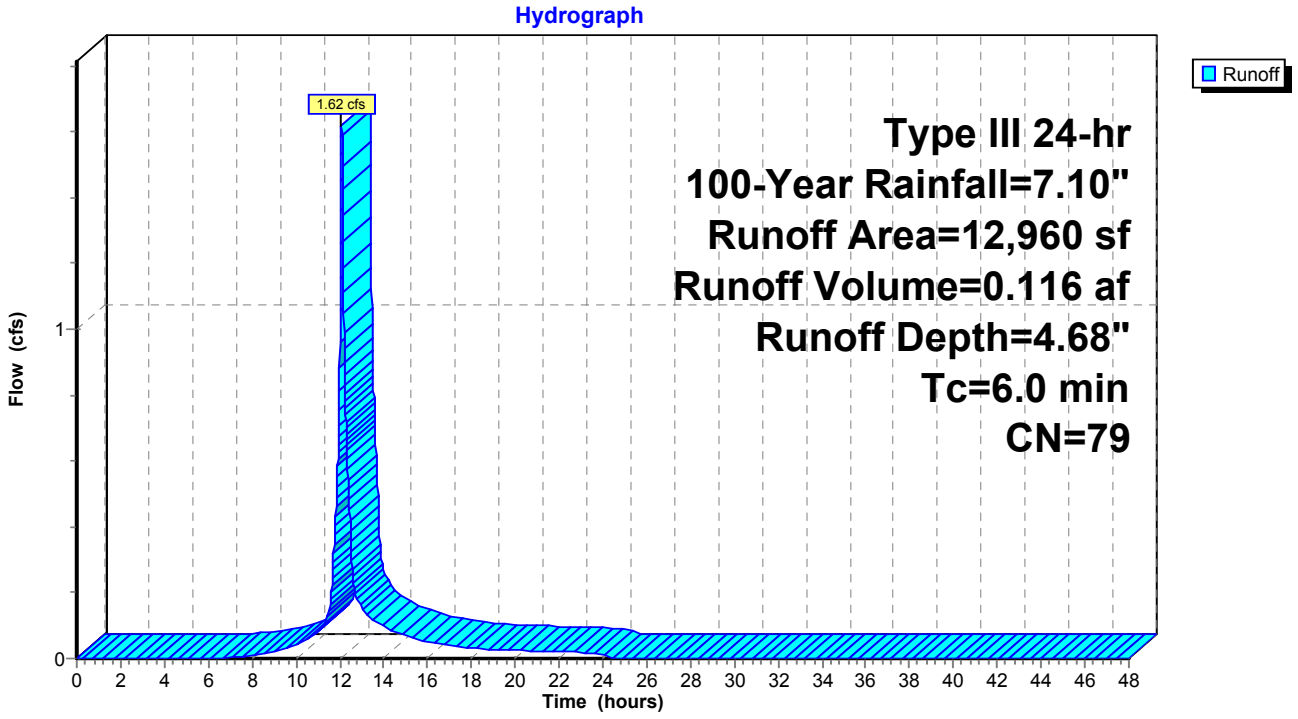
Runoff = 1.62 cfs @ 12.09 hrs, Volume= 0.116 af, Depth= 4.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=7.10"

Area (sf)	CN	Description
4,075	39	>75% Grass cover, Good, HSG A
8,885	98	Paved roads w/curbs & sewers, HSG A
12,960	79	Weighted Average
4,075		31.44% Pervious Area
8,885		68.56% Impervious Area

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

Subcatchment 1A-S: Sub-1A



Summary for Subcatchment 1B-S: Sub-1B

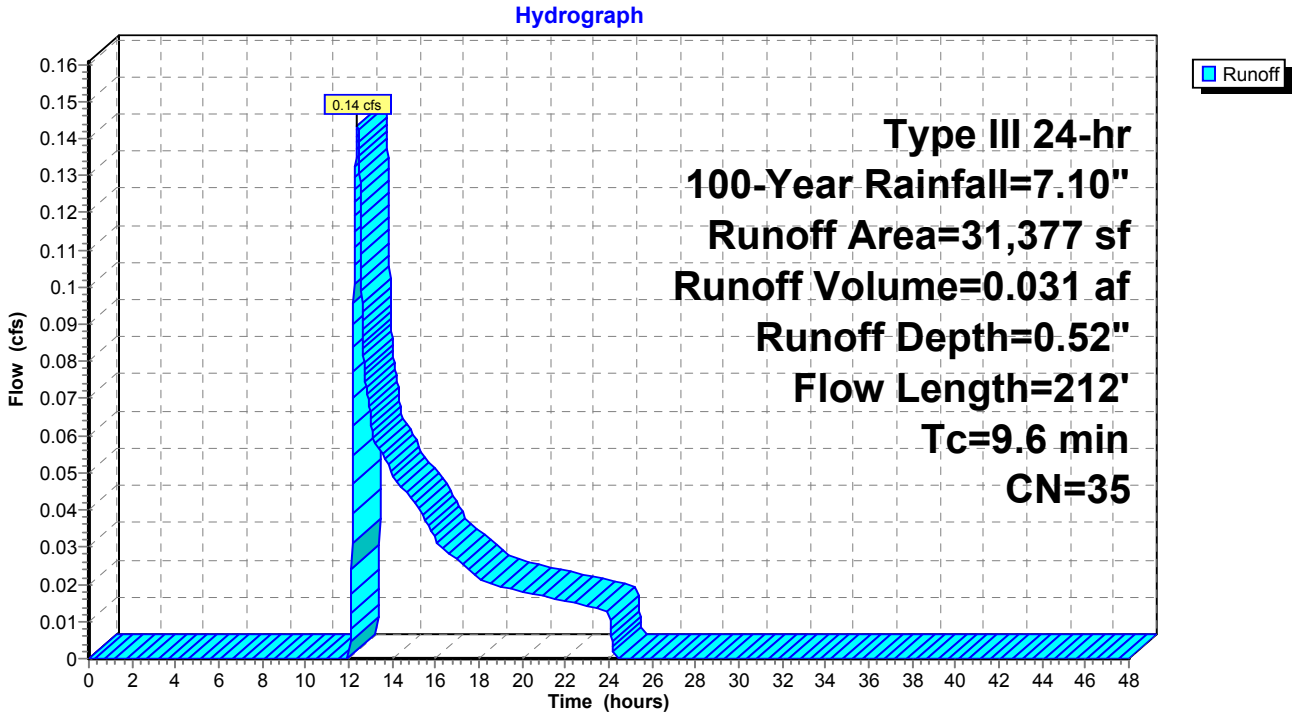
Runoff = 0.14 cfs @ 12.40 hrs, Volume= 0.031 af, Depth= 0.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=7.10"

Area (sf)	CN	Description
22,072	30	Woods, Good, HSG A
1,755	39	>75% Grass cover, Good, HSG A
7,550	49	50-75% Grass cover, Fair, HSG A
31,377	35	Weighted Average
31,377		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	50	0.0500	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
1.5	162	0.0120	1.76		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
9.6	212	Total			

Subcatchment 1B-S: Sub-1B



Summary for Subcatchment 1C-S: Sub-1C

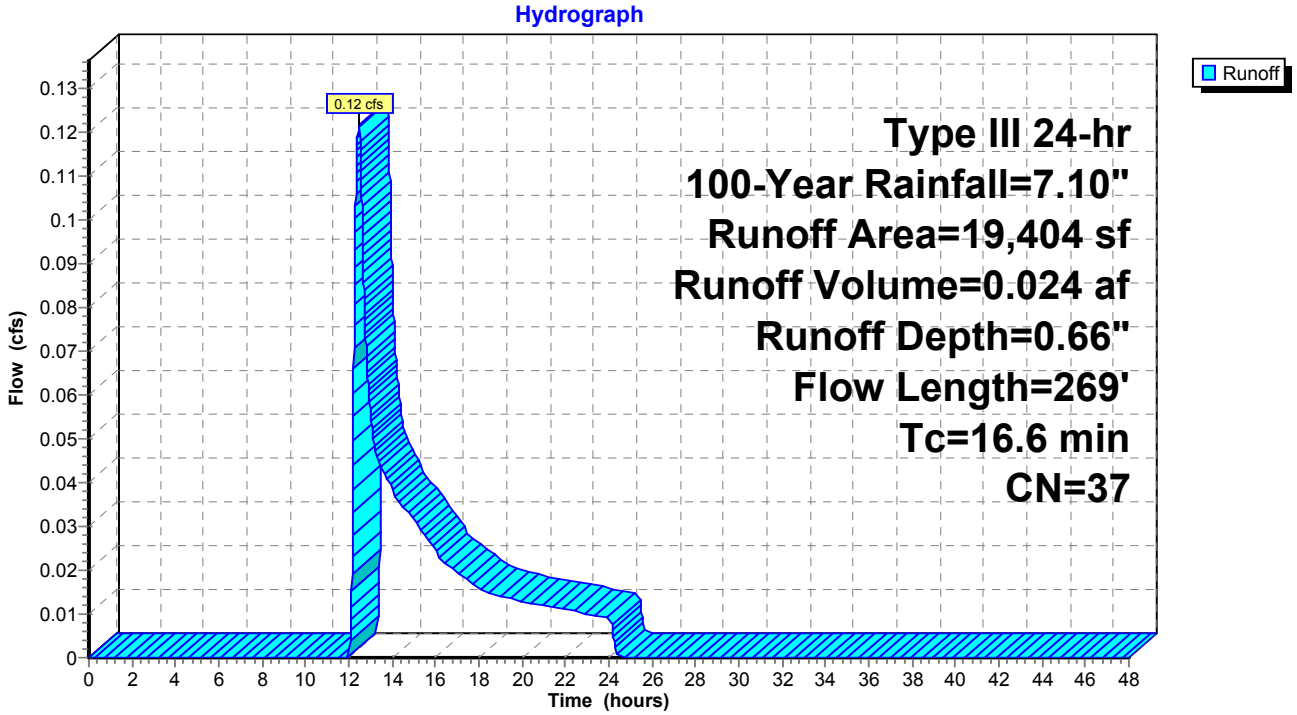
Runoff = 0.12 cfs @ 12.45 hrs, Volume= 0.024 af, Depth= 0.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
	12,129	30	Woods, Good, HSG A
	1,513	39	>75% Grass cover, Good, HSG A
	3,840	55	Woods, Good, HSG B
*	899	30	Woods, Good, HSG A - offsite
	1,023	49	50-75% Grass cover, Fair, HSG A
	19,404	37	Weighted Average
	19,404		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	50	0.0120	0.06		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.60"
2.3	219	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
16.6	269	Total			

Subcatchment 1C-S: Sub-1C



Summary for Subcatchment 1D-S: Sub-1D

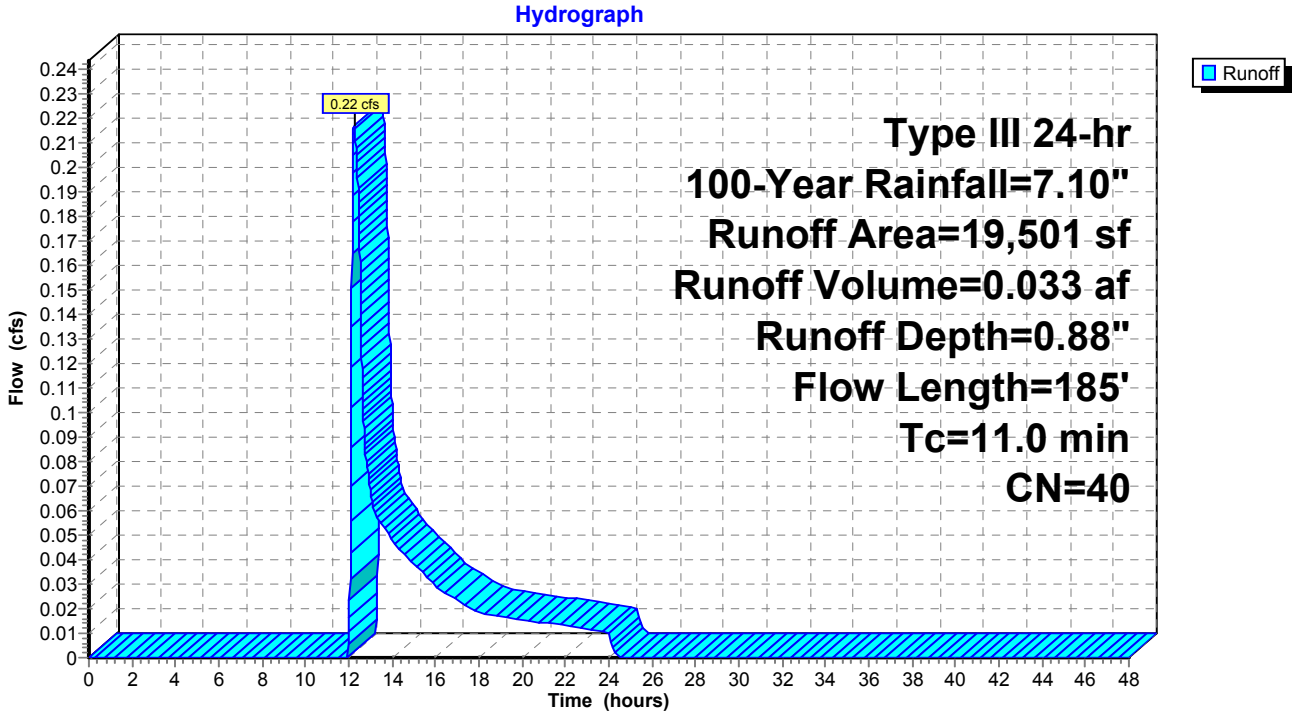
Runoff = 0.22 cfs @ 12.23 hrs, Volume= 0.033 af, Depth= 0.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
	10,890	39	>75% Grass cover, Good, HSG A
	2,684	49	50-75% Grass cover, Fair, HSG A
*	770	98	Rubble Pile, HSG A
	5,157	30	Woods, Good, HSG A
	19,501	40	Weighted Average
	18,731		96.05% Pervious Area
	770		3.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	50	0.0300	0.08		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.60"
1.1	135	0.0160	2.04		**Shallow Concentrated Flow, B-C** Unpaved Kv= 16.1 fps
11.0	185	Total			

Subcatchment 1D-S: Sub-1D



Summary for Subcatchment 2S: Sub-2

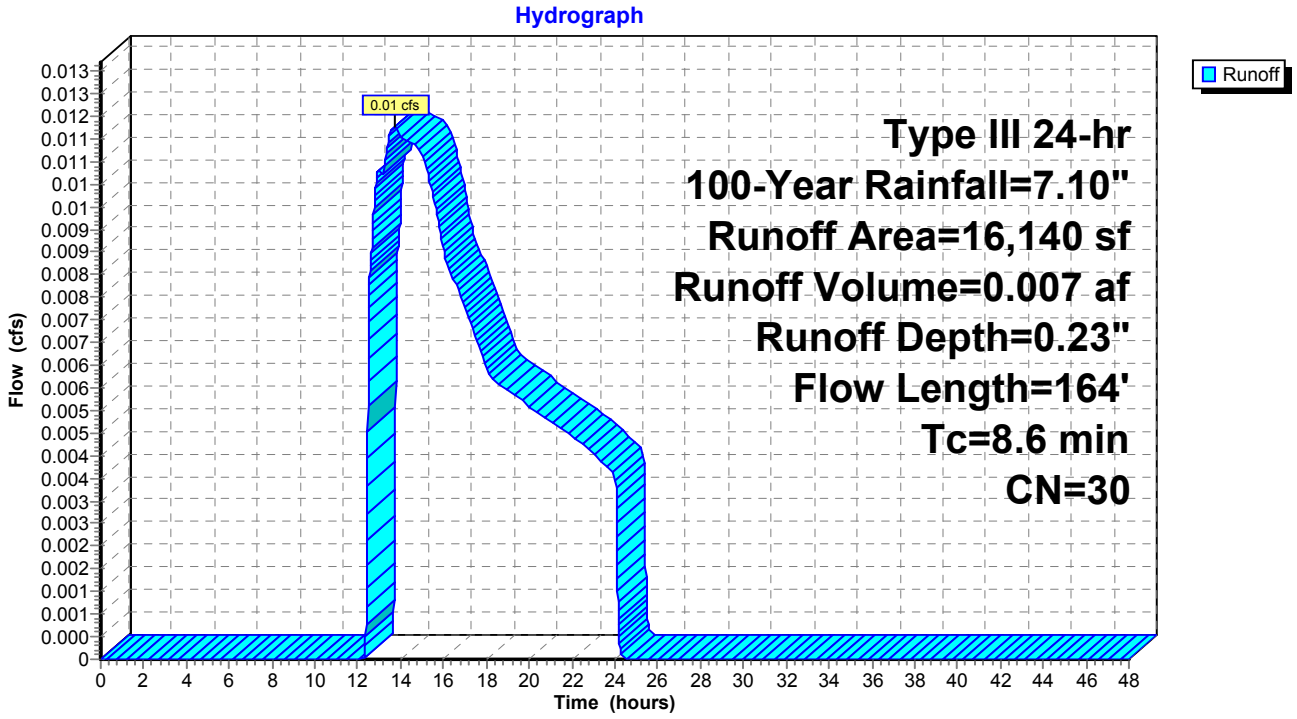
Runoff = 0.01 cfs @ 13.75 hrs, Volume= 0.007 af, Depth= 0.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=7.10"

Area (sf)	CN	Description
16,140	30	Woods, Good, HSG A
16,140		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	50	0.0800	0.12		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.60"
1.9	114	0.0383	0.98		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
8.6	164	Total			

Subcatchment 2S: Sub-2



Summary for Subcatchment 3A-S: Sub-3A

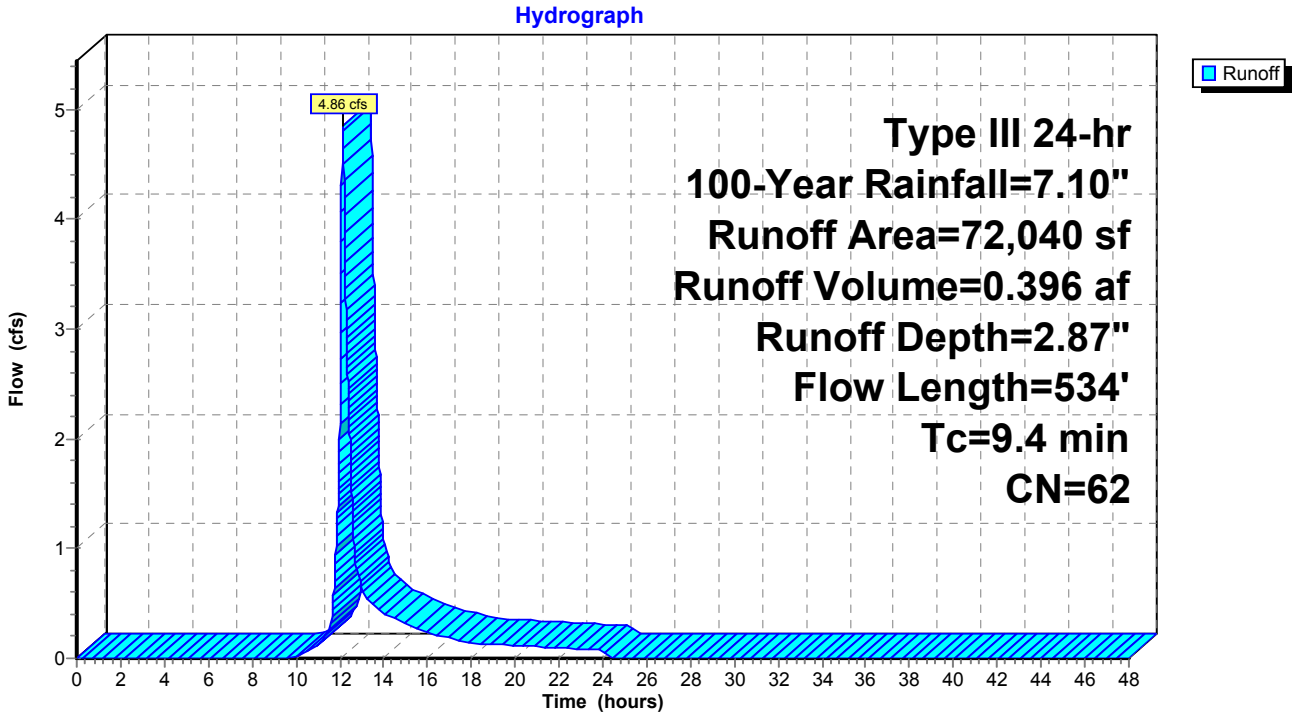
Runoff = 4.86 cfs @ 12.14 hrs, Volume= 0.396 af, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
*	1,384	98	Roofs, HSG A - offsite
*	16,069	98	Paved parking, HSG A - offsite
*	1,682	30	Woods, Good, HSG A - offsite
*	1,189	39	>75% Grass cover, Good, HSG A - offsite
	24,471	30	Woods, Good, HSG A
	6,630	39	>75% Grass cover, Good, HSG A
	2,407	98	Paved roads w/curbs & sewers, HSG A
*	2,712	98	Existing Detention Basin, HSG A
*	810	98	Riprap, HSG A
	3,247	98	Paved roads w/curbs & sewers, HSG B
	2,784	55	Woods, Good, HSG B
*	938	98	Riprap, HSG B
	6,442	61	>75% Grass cover, Good, HSG B
*	1,275	98	Existing Detention Basin, HSG B
	72,040	62	Weighted Average
	43,198		59.96% Pervious Area
	28,842		40.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	50	0.0160	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.60"
1.8	225	0.0160	2.04		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.9	102	0.0090	1.93		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.9	157	0.0030	2.88	3.54	**Pipe Channel, RCP_Round 15"** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013
9.4	534	Total			

Subcatchment 3A-S: Sub-3A



Summary for Subcatchment 3B-S1: Sub-3B-S1

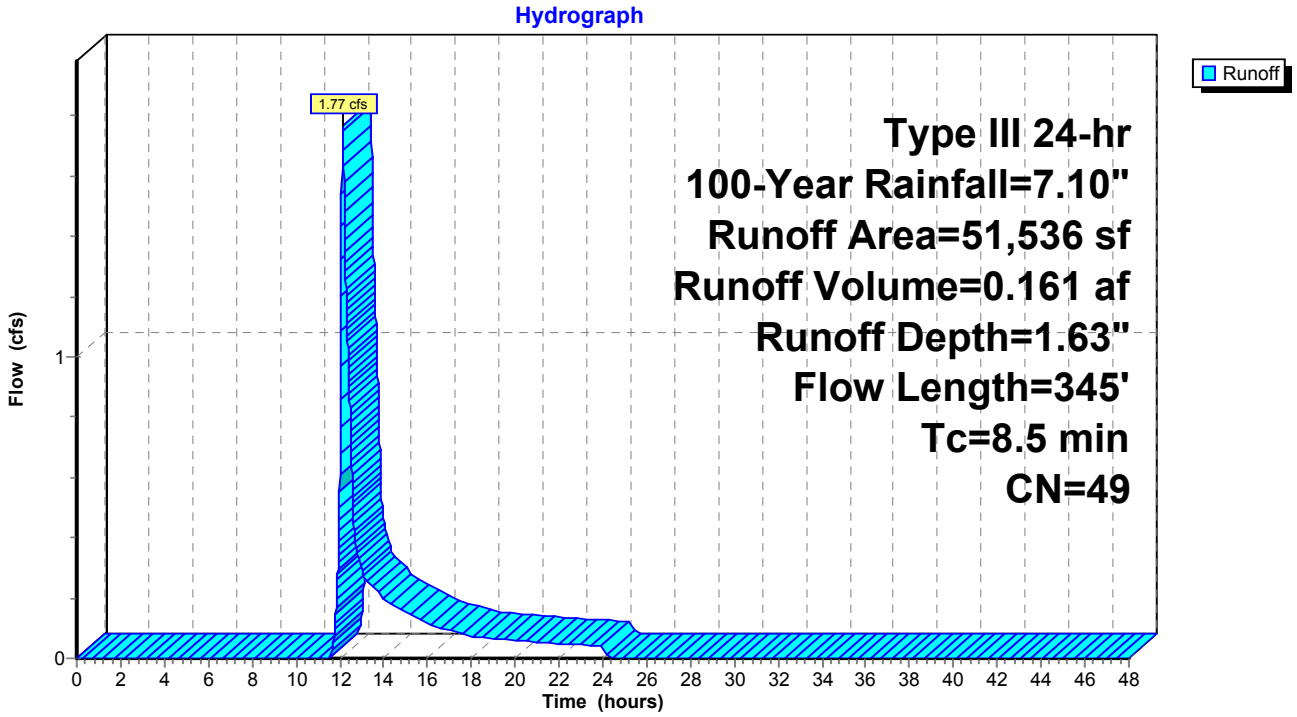
Runoff = 1.77 cfs @ 12.14 hrs, Volume= 0.161 af, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
*	255	98	Riprap, HSG A
*	4	98	Riprap, HSG B
	8,302	30	Woods, Good, HSG A
	24,250	55	Woods, Good, HSG B
	7,313	61	>75% Grass cover, Good, HSG B
*	4,310	30	Woods, Good, HSG A - offsite
*	4,121	39	>75% Grass cover, Good, HSG A - offsite
*	290	98	Paved drive, HSG A - offsite
*	957	61	>75% Grass cover, Good, HSG B - offsite
*	1,734	55	Woods, Good, HSG B - offsite
	51,536	49	Weighted Average
	50,987		98.93% Pervious Area
	549		1.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	50	0.0700	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
1.5	295	0.0400	3.22		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
8.5	345	Total			

Subcatchment 3B-S1: Sub-3B-S1



Summary for Subcatchment 3B-S2: Sub-3B-S2

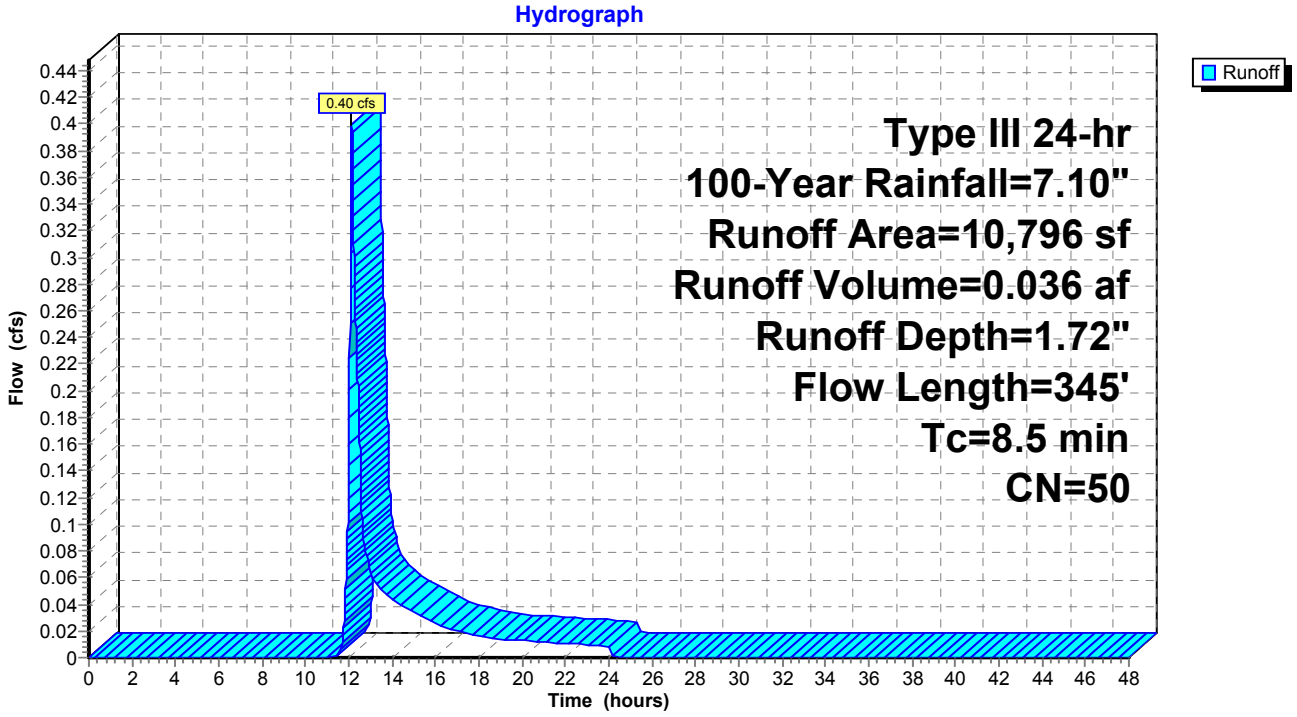
Runoff = 0.40 cfs @ 12.14 hrs, Volume= 0.036 af, Depth= 1.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
*	30	98	Riprap, HSG A
*	117	98	Riprap, HSG B
	1,380	30	Woods, Good, HSG A
	6,538	55	Woods, Good, HSG B
	1,762	39	>75% Grass cover, Good, HSG A
	969	61	>75% Grass cover, Good, HSG B
	10,796	50	Weighted Average
	10,649		98.64% Pervious Area
	147		1.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	50	0.0700	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.60"
1.5	295	0.0400	3.22		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
8.5	345	Total			

Subcatchment 3B-S2: Sub-3B-S2



Summary for Subcatchment 4S: Sub-4

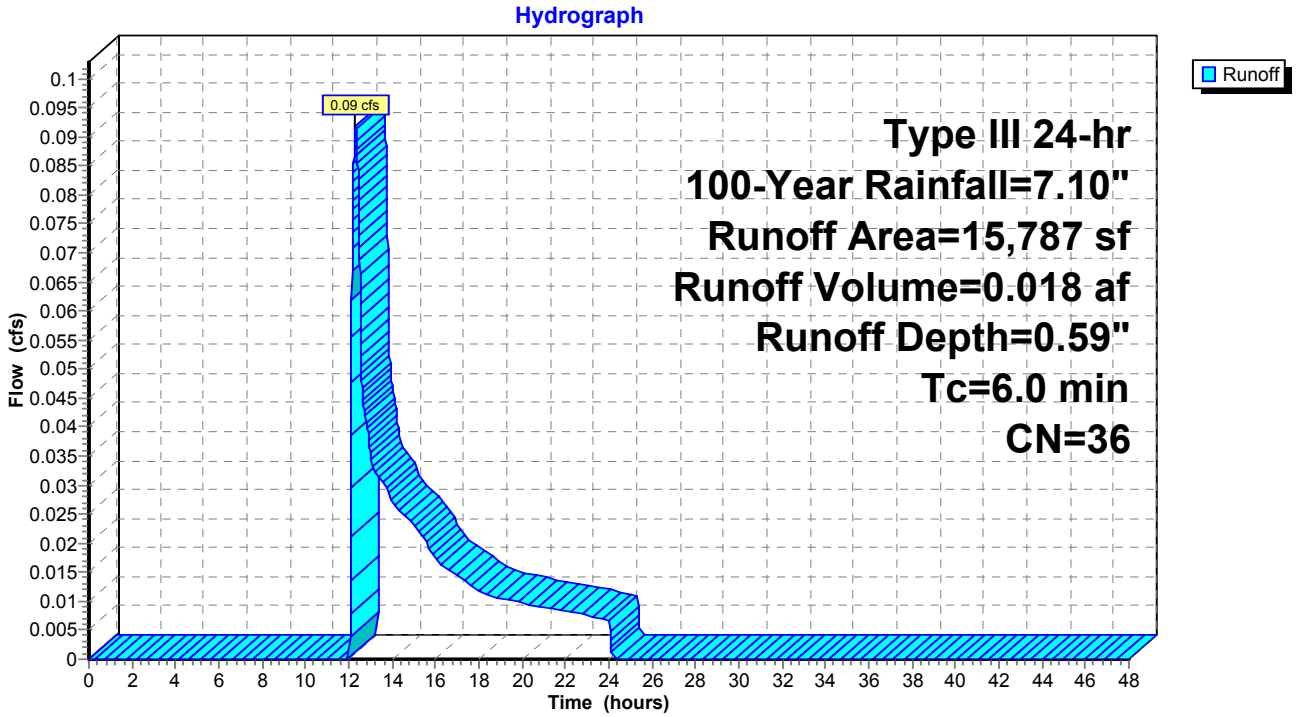
Runoff = 0.09 cfs @ 12.32 hrs, Volume= 0.018 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=7.10"

Area (sf)	CN	Description
15,787	36	Woods, Fair, HSG A
15,787		100.00% Pervious Area

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

Subcatchment 4S: Sub-4



Summary for Subcatchment 5S: Sub-5

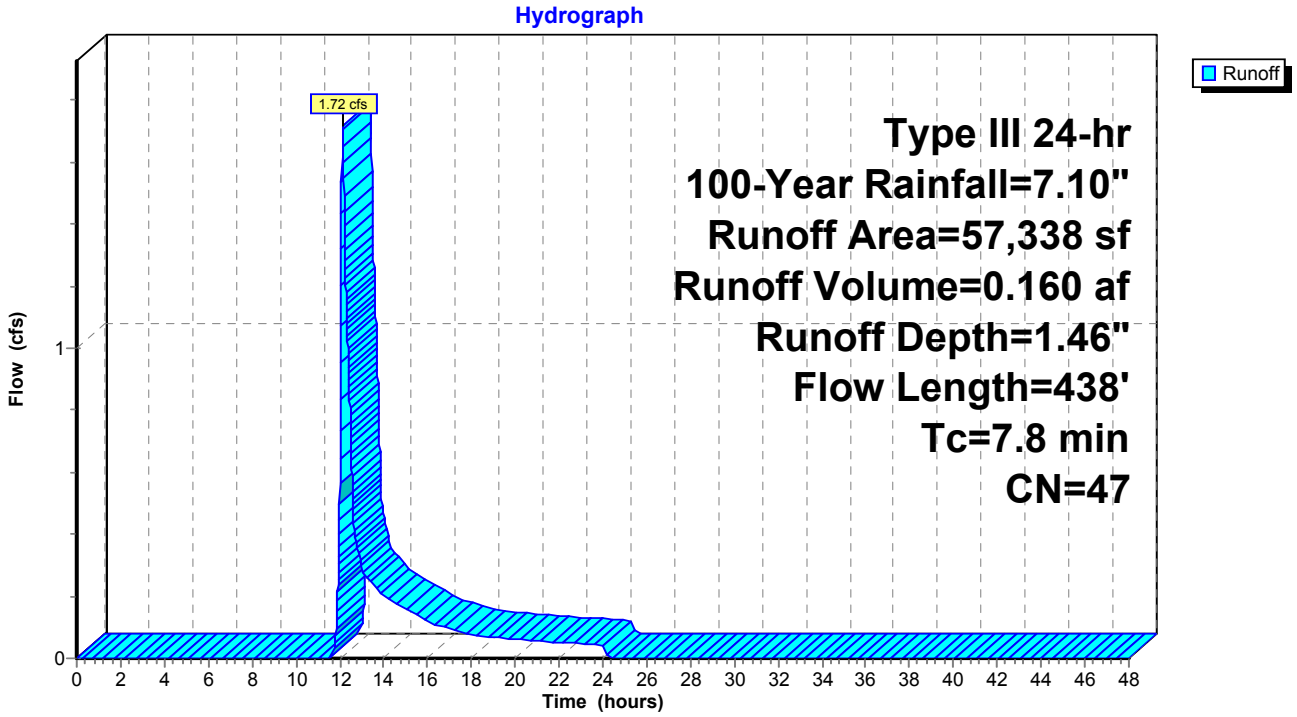
Runoff = 1.72 cfs @ 12.13 hrs, Volume= 0.160 af, Depth= 1.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
	32,676	36	Woods, Fair, HSG A
	15,526	39	>75% Grass cover, Good, HSG A
	395	80	>75% Grass cover, Good, HSG D
*	318	98	Paved drive, HSG D
	2,148	98	Roofs, HSG A
*	5,322	98	Paved drive, HSG A
*	533	98	Patio, HSG A
*	235	98	Misc, HSG A
*	185	98	Ledge, HSG A
	57,338	47	Weighted Average
	48,597		84.76% Pervious Area
	8,741		15.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	39	0.1538	0.15		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.60"
1.8	11	0.1100	0.10		**Sheet Flow, B-C** Woods: Light underbrush n= 0.400 P2= 3.60"
0.1	22	0.1166	5.50		**Shallow Concentrated Flow, C-D** Unpaved Kv= 16.1 fps
0.2	54	0.0500	3.60		**Shallow Concentrated Flow, D-E** Unpaved Kv= 16.1 fps
0.2	52	0.0770	4.47		**Shallow Concentrated Flow, E-F** Unpaved Kv= 16.1 fps
1.0	175	0.0300	2.79		**Shallow Concentrated Flow, F-G** Unpaved Kv= 16.1 fps
0.3	85	0.1100	5.34		**Shallow Concentrated Flow, G-H** Unpaved Kv= 16.1 fps
7.8	438	Total			

Subcatchment 5S: Sub-5

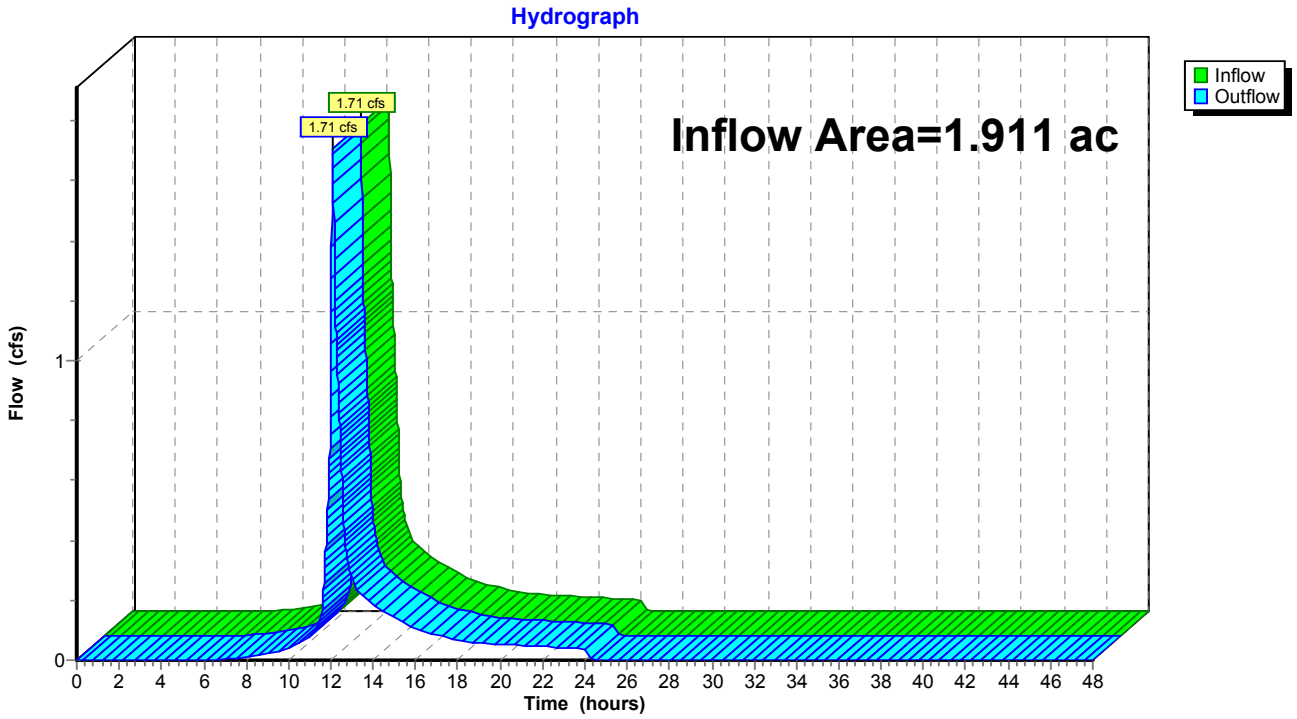


Summary for Reach DP-1: DP-1

Inflow Area = 1.911 ac, 11.60% Impervious, Inflow Depth = 1.09" for 100-Year event
Inflow = 1.71 cfs @ 12.09 hrs, Volume= 0.173 af
Outflow = 1.71 cfs @ 12.09 hrs, Volume= 0.173 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP-1: DP-1

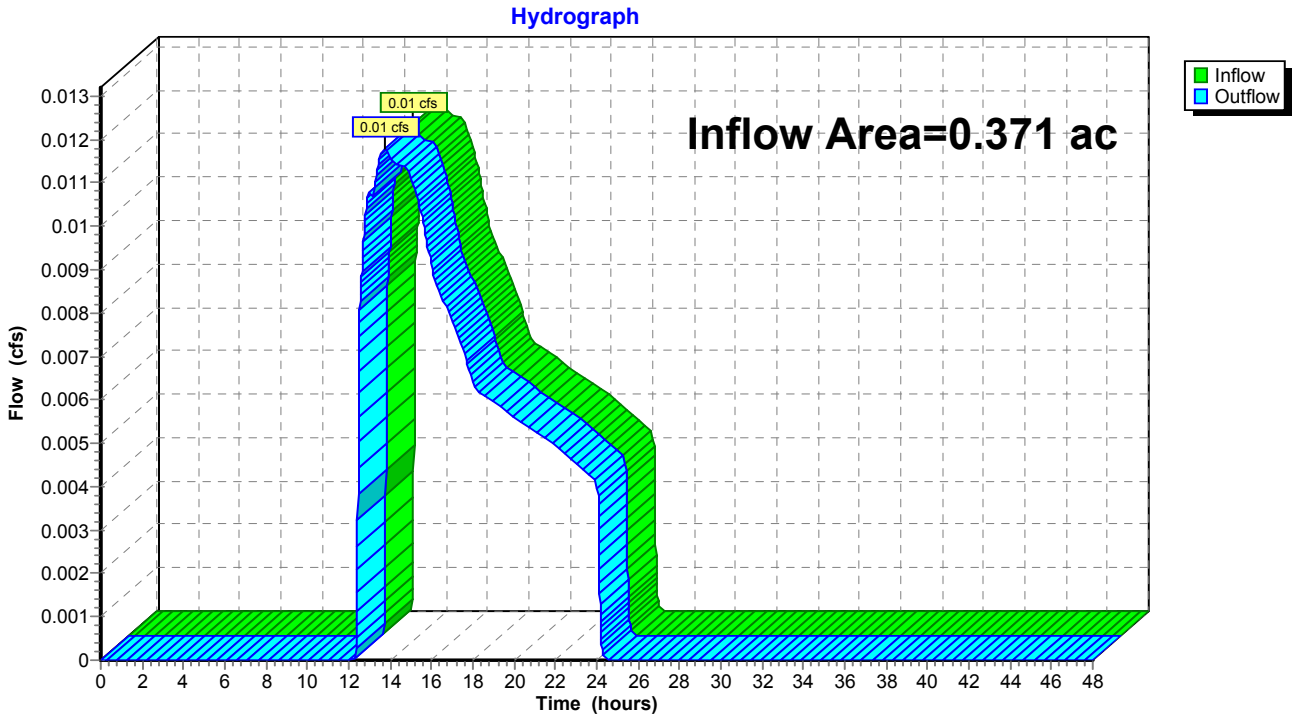


Summary for Reach DP-2: DP-2

Inflow Area = 0.371 ac, 0.00% Impervious, Inflow Depth = 0.23" for 100-Year event
Inflow = 0.01 cfs @ 13.75 hrs, Volume= 0.007 af
Outflow = 0.01 cfs @ 13.75 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP-2: DP-2

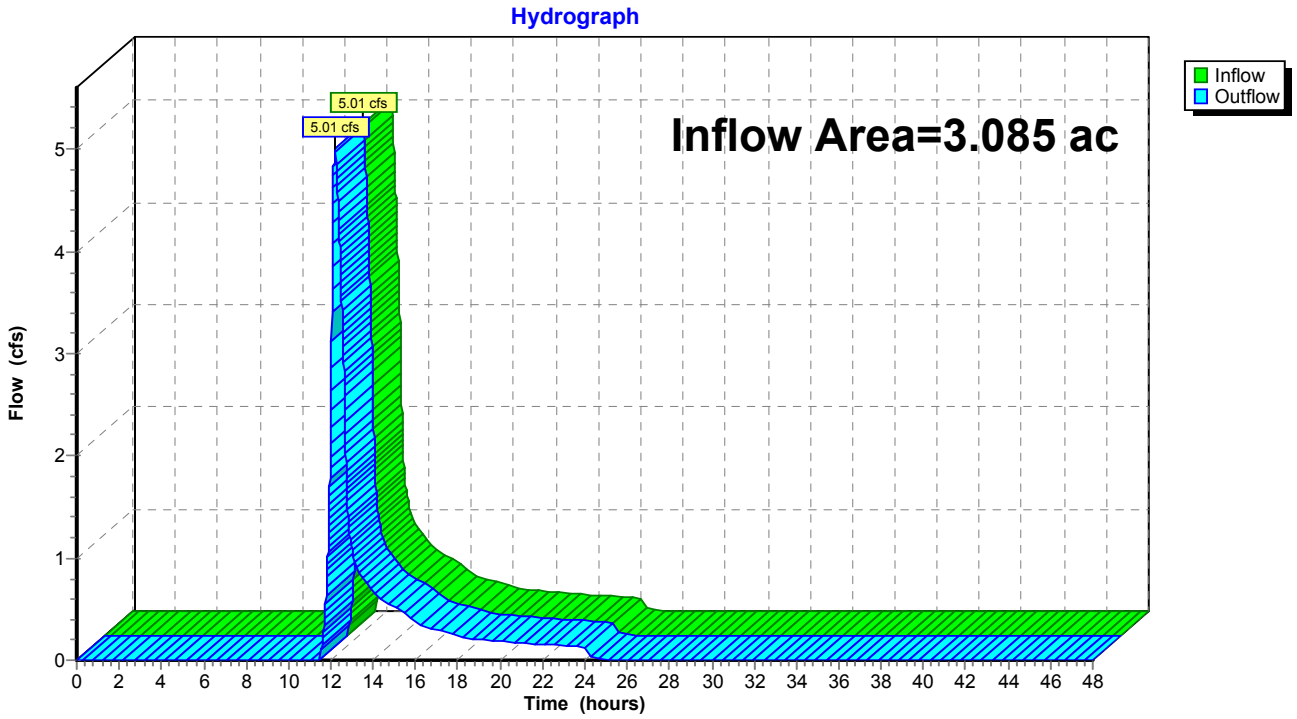


Summary for Reach DP-3: DP-3

Inflow Area = 3.085 ac, 21.98% Impervious, Inflow Depth = 2.26" for 100-Year event
Inflow = 5.01 cfs @ 12.18 hrs, Volume= 0.581 af
Outflow = 5.01 cfs @ 12.18 hrs, Volume= 0.581 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP-3: DP-3

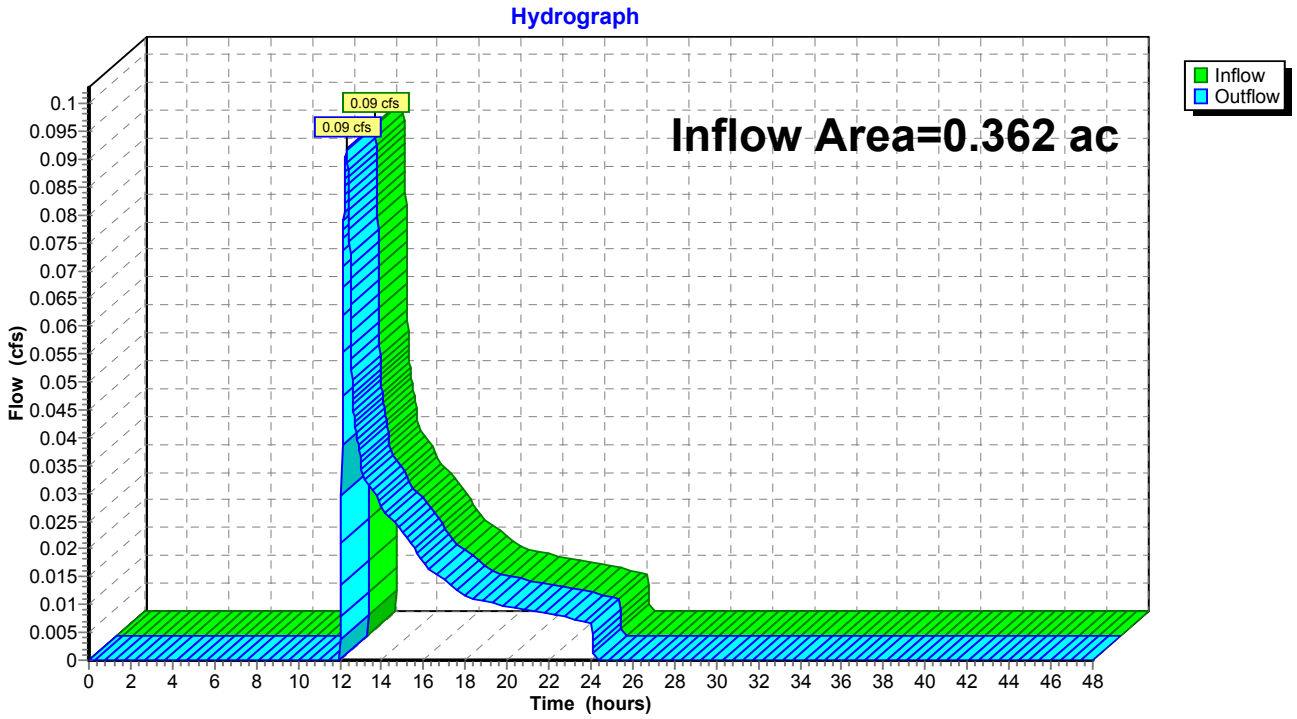


Summary for Reach DP-4: PL

Inflow Area = 0.362 ac, 0.00% Impervious, Inflow Depth = 0.59" for 100-Year event
Inflow = 0.09 cfs @ 12.32 hrs, Volume= 0.018 af
Outflow = 0.09 cfs @ 12.32 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP-4: PL

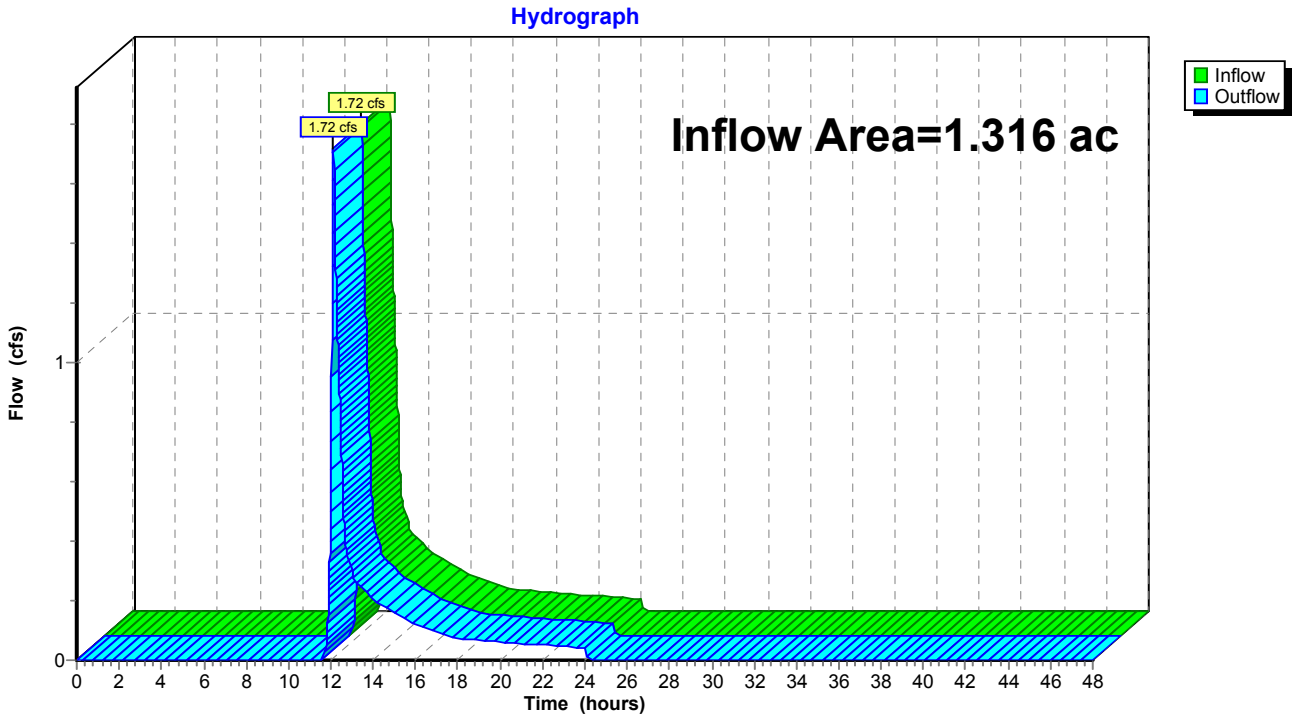


Summary for Reach DP-5: PL

Inflow Area = 1.316 ac, 15.24% Impervious, Inflow Depth = 1.46" for 100-Year event
Inflow = 1.72 cfs @ 12.13 hrs, Volume= 0.160 af
Outflow = 1.72 cfs @ 12.13 hrs, Volume= 0.160 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach DP-5: PL



Summary for Pond D-1: Exist Detention Basin

Inflow Area = 0.720 ac, 0.00% Impervious, Inflow Depth = 0.52" for 100-Year event
Inflow = 0.14 cfs @ 12.40 hrs, Volume= 0.031 af
Outflow = 0.14 cfs @ 12.42 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.9 min
Discarded = 0.14 cfs @ 12.42 hrs, Volume= 0.031 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 62.00' @ 12.42 hrs Surf.Area= 4,340 sf Storage= 7 cf

Plug-Flow detention time= 0.9 min calculated for 0.031 af (100% of inflow)
Center-of-Mass det. time= 0.9 min (964.5 - 963.6)

Volume	Invert	Avail.Storage	Storage Description
#1	62.00'	5,584 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

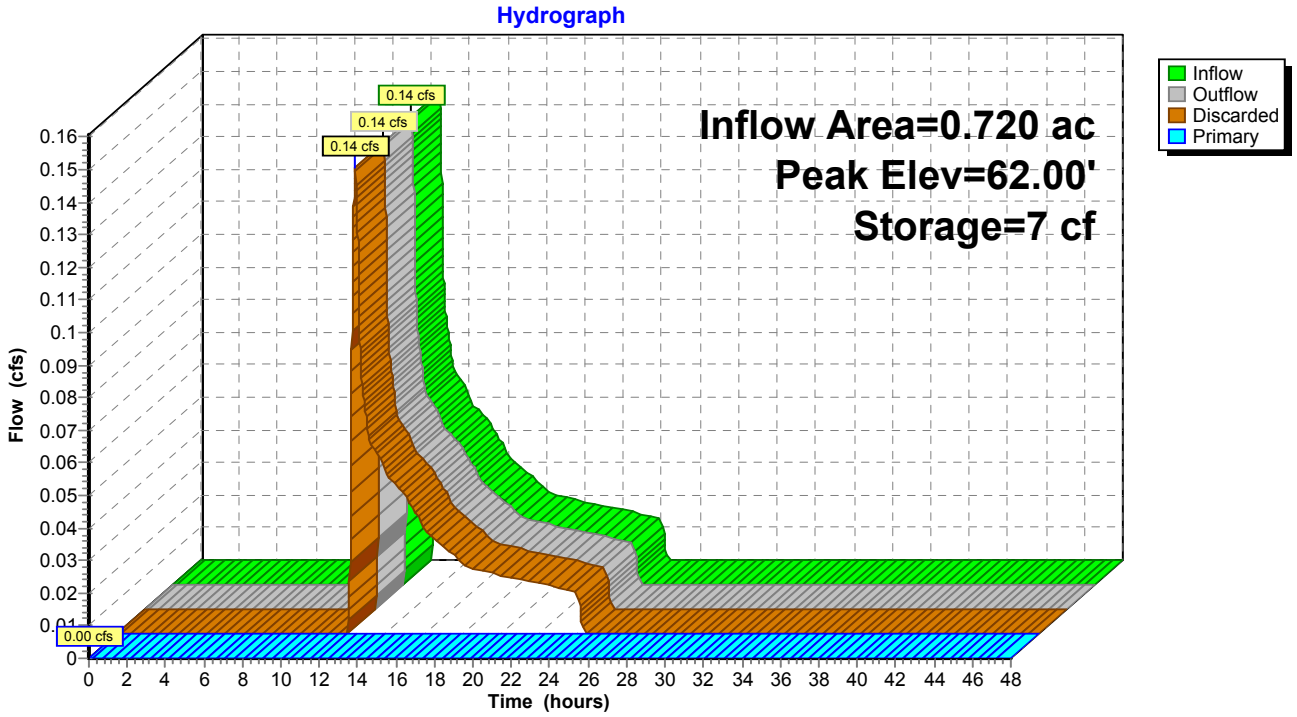
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	4,336	0	0
63.00	6,832	5,584	5,584

Device	Routing	Invert	Outlet Devices
#1	Primary	63.00'	**10.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#2	Discarded	62.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.14 cfs @ 12.42 hrs HW=62.00' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.14 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=62.00' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond D-1: Exist Detention Basin



Summary for Pond E-DB: Exist Detention Basin

Inflow Area = 1.654 ac, 40.04% Impervious, Inflow Depth = 2.87" for 100-Year event
Inflow = 4.86 cfs @ 12.14 hrs, Volume= 0.396 af
Outflow = 3.24 cfs @ 12.27 hrs, Volume= 0.385 af, Atten= 33%, Lag= 8.1 min
Primary = 3.24 cfs @ 12.27 hrs, Volume= 0.385 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 59.65' @ 12.27 hrs Surf.Area= 2,636 sf Storage= 2,278 cf

Plug-Flow detention time= 30.4 min calculated for 0.385 af (97% of inflow)
Center-of-Mass det. time= 14.2 min (865.4 - 851.2)

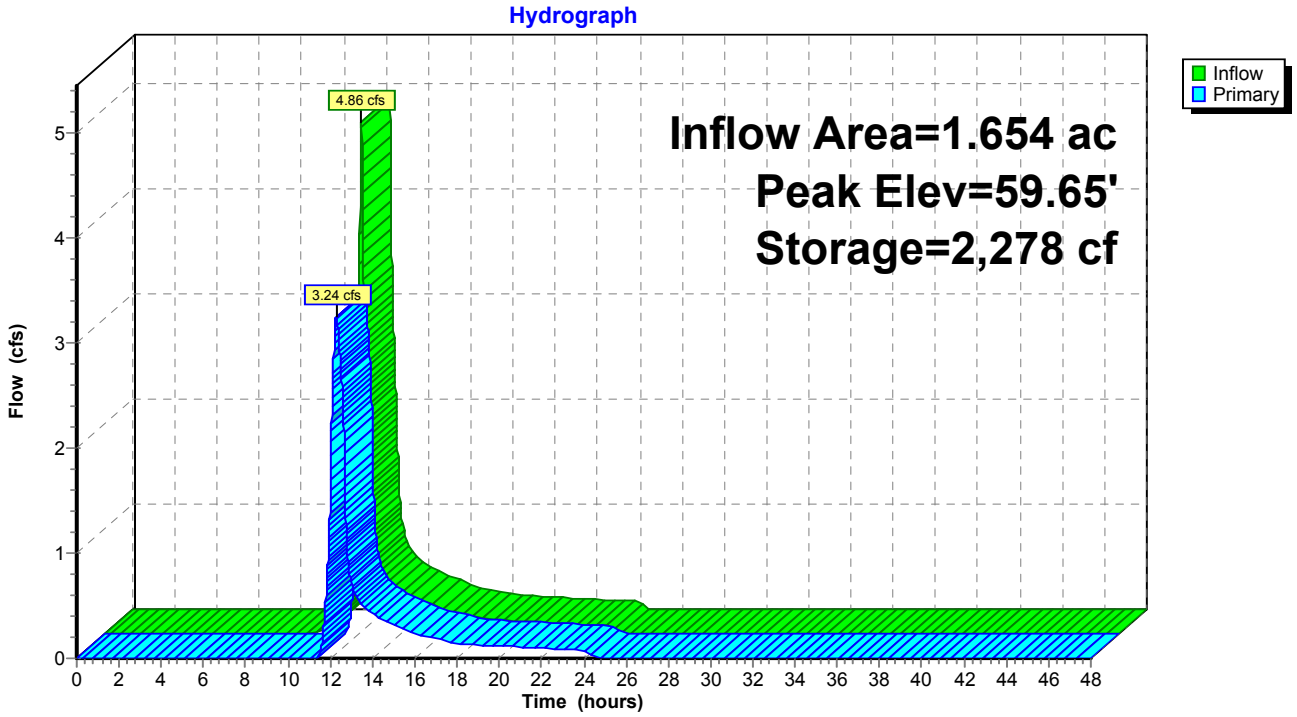
Volume	Invert	Avail.Storage	Storage Description
#1	58.00'	7,325 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
58.00	336	0	0
59.00	1,511	924	924
60.00	3,233	2,372	3,296
61.00	4,826	4,030	7,325

Device	Routing	Invert	Outlet Devices
#1	Primary	58.12'	**12.0" Round RCP_Round 12"** L= 25.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 58.12' / 58.05' S= 0.0028 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	58.68'	**2.0' long x 1.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 1	59.88'	**7.0' long x 2.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Device 2	58.68'	**5.0' long x 1.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)

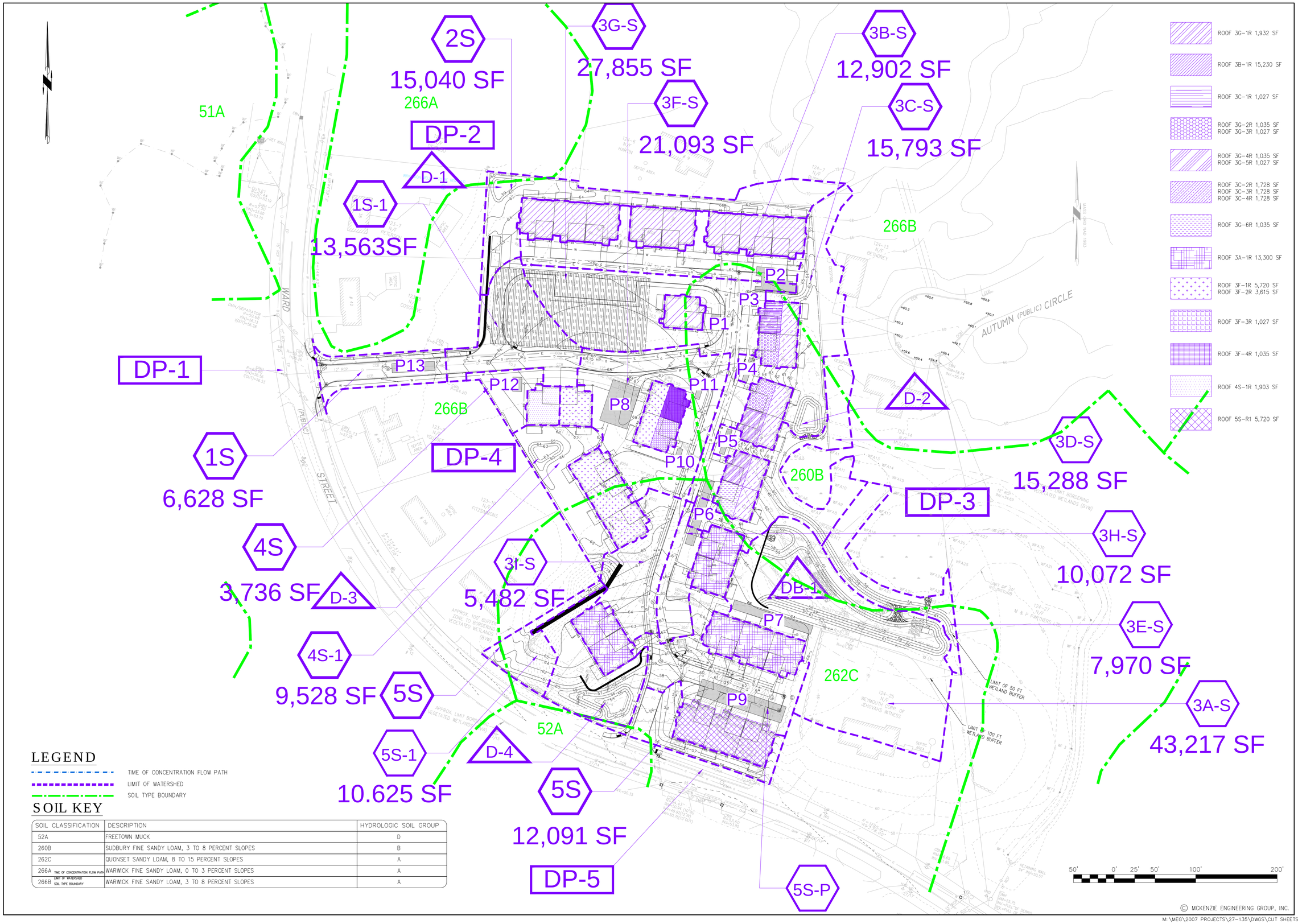
Primary OutFlow Max=3.24 cfs @ 12.27 hrs HW=59.65' TW=0.00' (Dynamic Tailwater)
- **1=RCP_Round 12"** (Barrel Controls 3.24 cfs @ 4.12 fps)
  - **2=Sharp-Crested Rectangular Weir** (Passes 3.24 cfs of 5.67 cfs potential flow)
    - **4=Sharp-Crested Rectangular Weir** (Passes 3.24 cfs of 15.08 cfs potential flow)
  - **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond E-DB: Exist Detention Basin



A P P E N D I X B

Post-Development Condition



LEGEND

- TIME OF CONCENTRATION FLOW PATH
- LIMIT OF WATERSHED
- SOIL TYPE BOUNDARY

SOIL KEY

SOIL CLASSIFICATION	DESCRIPTION	HYDROLOGIC SOIL GROUP
52A	FREETOWN MUCK	D
260B	SUDBURY FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES	B
262C	QUONSET SANDY LOAM, 8 TO 15 PERCENT SLOPES	A
266A TIME OF CONCENTRATION FLOW PATH	WARWICK FINE SANDY LOAM, 0 TO 3 PERCENT SLOPES	A
266B LIMIT OF WATERSHED / SOIL TYPE BOUNDARY	WARWICK FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES	A

REV	DATE	DESCRIPTION	BY	APP
1	2/2/18	REVIEW COMMENTS	SBS	BCM
2	3/9/18	REVIEW COMMENTS	SBS	BCM
3	4/25/18	REVIEW COMMENTS	SBS	BCM
4	12/19/18	RECONFIGURATION	SBS	BCM

MCKENZIE ENGINEERING GROUP
Assinippi Office Park
150 Longwater Drive, Suite 101
Norwell, MA 02061
Ph: 781-792-3900
www.mckeng.com

COMPREHENSIVE PERMIT PLAN

KNOWN AS

RIVER STONE

(ASSESSORS MAP 124, LOTS 70-75 & LOT 26)
VIKING LANE & WARD STREET
HINGHAM, MASSACHUSETTS

PROFESSIONAL ENGINEER:

APPLICANT:
RIVER STONE, LLC
293R WASHINGTON STREET
NORWELL, MASSACHUSETTS 02061

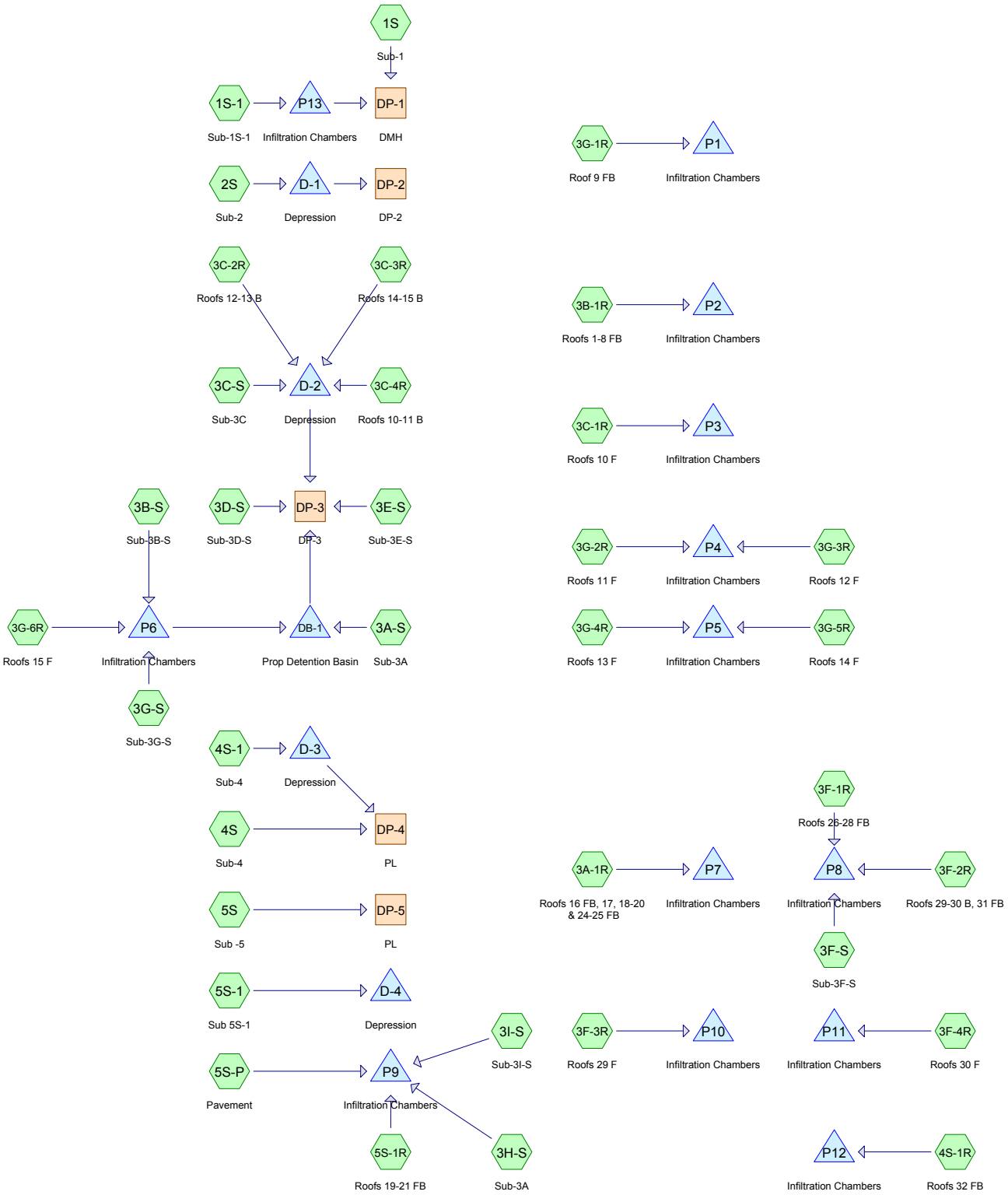
ZBA PERMIT PLAN

DRAWN BY:	SBS
DESIGNED BY:	SBS
CHECKED BY:	BCM
APPROVED BY:	BCM
DATE:	JANUARY 8, 2018
SCALE:	1"=50'
PROJECT NO.:	27-135

DWG. TITLE:
Post-Dev. Watershed Plan

DWG. NO:
WS-2

M:\MEG\2007 PROJECTS\27-135\DWGS\CUT SHEETS\SUBMISSION R7\27-135 WS-2 (R7).DWG



Routing Diagram for 27-135 Post-Development (R8)
Prepared by McKenzie Engineering Group, Inc.

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.252	39	>75% Grass cover, Good, HSG A (1S, 1S-1, 2S, 3A-S, 3B-S, 3C-S, 3D-S, 3E-S, 3F-S, 3G-S, 3H-S, 3I-S, 4S, 4S-1, 5S, 5S-1, 5S-P)
0.122	39	>75% Grass cover, Good, HSG A - offsite (3A-S, 3C-S, 3D-S)
0.455	61	>75% Grass cover, Good, HSG B (3A-S, 3B-S, 3C-S, 3D-S, 3E-S, 3F-S, 3G-S)
0.022	61	>75% Grass cover, Good, HSG B - offsite (3D-S)
0.008	80	>75% Grass cover, Good, HSG D (5S)
0.105	98	Decks, HSG A (2S, 3A-S, 3C-S, 3D-S, 3F-S, 4S-1, 5S, 5S-1)
0.023	98	Decks, HSG B (3C-S, 3D-S)
0.187	98	Detention Basin, HSG A (3A-S)
0.101	98	Detention Basin, HSG B (3A-S)
0.002	98	Kiosk, HSG A (5S-P)
0.320	98	Paved drives, HSG A (1S-1, 3B-S, 3F-S, 3G-S, 3H-S, 3I-S, 5S-P)
0.007	98	Paved drives, HSG A - offsite (3C-S)
0.077	98	Paved drives, HSG B (3B-S, 3F-S, 3G-S)
0.369	98	Paved parking, HSG A - offsite (3A-S)
0.750	98	Paved roads w/curbs & sewers, HSG A (1S, 1S-1, 3B-S, 3F-S, 3G-S, 3H-S, 3I-S, 5S, 5S-P)
0.181	98	Paved roads w/curbs & sewers, HSG B (3B-S, 3F-S, 3G-S)
0.007	98	Paved roads w/curbs & sewers, HSG D (5S)
0.140	98	Paved sidewalk, HSG A (1S, 1S-1, 3F-S, 3G-S, 3H-S, 5S, 5S-P)
0.026	98	Paved sidewalk, HSG B (3F-S, 3G-S)
0.001	98	Paved sidewalk, HSG D (5S)
0.004	98	Riprap, HSG A (3A-S, 3E-S)
0.008	98	Riprap, HSG B (3A-S, 3C-S, 3D-S, 3E-S)
1.123	98	Roofs, HSG A (3A-1R, 3B-1R, 3C-4R, 3F-1R, 3F-2R, 3F-3R, 3F-4R, 3G-1R, 3G-6R, 4S-1R, 5S-1R)
0.032	98	Roofs, HSG A - offsite (3A-S)
0.274	98	Roofs, HSG B (3A-1R, 3C-1R, 3C-2R, 3C-3R, 3C-4R, 3G-1R, 3G-2R, 3G-3R, 3G-4R, 3G-5R, 3G-6R)
0.025	98	Walks, HSG A (3B-S, 3F-S, 3G-S, 3H-S, 3I-S, 4S, 5S-P)
0.006	98	Walks, HSG B (3F-S, 3G-S)
0.045	98	Walls, HSG A (1S-1, 2S, 3A-S, 3H-S, 4S-1, 5S-1)
0.002	98	Walls, HSG B (3A-S)
0.003	30	Woods, Good, HSG A (3E-S)
0.158	30	Woods, Good, HSG A - offsite (2S, 3A-S, 3C-S, 3D-S)
0.172	55	Woods, Good, HSG B (3D-S, 3E-S)
0.040	55	Woods, Good, HSG B - offsite (3D-S)
7.045	**73**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
5.642	HSG A	1S, 1S-1, 2S, 3A-1R, 3A-S, 3B-1R, 3B-S, 3C-4R, 3C-S, 3D-S, 3E-S, 3F-1R, 3F-2R, 3F-3R, 3F-4R, 3F-S, 3G-1R, 3G-6R, 3G-S, 3H-S, 3I-S, 4S, 4S-1, 4S-1R, 5S, 5S-1, 5S-1R, 5S-P
1.387	HSG B	3A-1R, 3A-S, 3B-S, 3C-1R, 3C-2R, 3C-3R, 3C-4R, 3C-S, 3D-S, 3E-S, 3F-S, 3G-1R, 3G-2R, 3G-3R, 3G-4R, 3G-5R, 3G-6R, 3G-S
0.000	HSG C	
0.016	HSG D	5S
0.000	Other	
7.045		**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
2.373	0.477	0.000	0.008	0.000	2.859	>75% Grass cover, Good	1S, 1S-1, 2S, 3A-S, 3B-S, 3C-S, 3D-S, 3E-S, 3F-S, 3G-S, 3H-S, 3I-S, 4S, 4S-1, 5S, 5S-1, 5S-P
0.105	0.023	0.000	0.000	0.000	0.128	Decks	2S, 3A-S, 3C-S, 3D-S, 3F-S, 4S-1,

Ground Covers (all nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.187	0.101	0.000	0.000	0.000	0.288	Detention Basin	3A-S
0.002	0.000	0.000	0.000	0.000	0.002	Kiosk	5S-P
0.326	0.077	0.000	0.000	0.000	0.403	Paved drives	1S-1, 3B-S, 3C-S, 3F-S, 3G-S, 3H-S, 3I-S, 5S-P
0.369	0.000	0.000	0.000	0.000	0.369	Paved parking	3A-S
0.750	0.181	0.000	0.007	0.000	0.938	Paved roads w/curbs & sewers	1S, 1S-1, 3B-S, 3F-S, 3G-S, 3H-S, 3I-S, 5S, 5S-P
0.140	0.026	0.000	0.001	0.000	0.167	Paved sidewalk	1S, 1S-1, 3F-S,

Ground Covers (all nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.004	0.008	0.000	0.000	0.000	0.011	Riprap	3A-S, 3C-S, 3D-S, 3E-S
1.154	0.274	0.000	0.000	0.000	1.429	Roofs	3A-1R, 3A-S, 3B-1R, 3C-1R, 3C-2R, 3C-3R, 3C-4R, 3F-1R, 3F-2R, 3F-3R, 3F-4R, 3G-1R, 3G-2R,

Ground Covers (all nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.025	0.006	0.000	0.000	0.000	0.031	Walks	3B-S, 3F-S, 3G-S, 3H-S, 3I-S, 4S, 5S-P
0.045	0.002	0.000	0.000	0.000	0.046	Walls	1S-1, 2S, 3A-S, 3H-S, 4S-1, 5S-1
0.161	0.212	0.000	0.000	0.000	0.373	Woods, Good	2S, 3A-S, 3C-S, 3D-S, 3E-S
5.642	**1.387**	**0.000**	**0.016**	**0.000**	**7.045**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	DB-1	58.00	57.30	19.5	0.0359	0.013	12.0	0.0	0.0
2	P13	58.90	57.42	90.0	0.0164	0.013	6.0	0.0	0.0
3	P6	61.85	59.00	88.0	0.0324	0.013	12.0	0.0	0.0

Time span=0.00-48.00 hrs, dt=0.02 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Sub-1 Runoff Area=6,628 sf 64.88% Impervious Runoff Depth=1.51"
Tc=6.0 min CN=77 Runoff=0.26 cfs 0.019 af

Subcatchment1S-1: Sub-1S-1 Runoff Area=13,563 sf 64.32% Impervious Runoff Depth=1.51"
Tc=6.0 min CN=77 Runoff=0.54 cfs 0.039 af

Subcatchment2S: Sub-2 Runoff Area=15,040 sf 10.74% Impervious Runoff Depth=0.08"
Tc=6.0 min CN=44 Runoff=0.00 cfs 0.002 af

Subcatchment3A-1R: Roofs 16 FB, 17, Runoff Area=13,300 sf 100.00% Impervious Runoff Depth=3.37"
Tc=6.0 min CN=98 Runoff=1.07 cfs 0.086 af

Subcatchment3A-S: Sub-3A Runoff Area=43,217 sf 71.58% Impervious Runoff Depth=1.87"
Tc=6.0 min CN=82 Runoff=2.17 cfs 0.154 af

Subcatchment3B-1R: Roofs 1-8 FB Runoff Area=15,230 sf 100.00% Impervious Runoff Depth=3.37"
Tc=6.0 min CN=98 Runoff=1.22 cfs 0.098 af

Subcatchment3B-S: Sub-3B-S Runoff Area=12,902 sf 58.89% Impervious Runoff Depth=1.31"
Tc=6.0 min CN=74 Runoff=0.44 cfs 0.032 af

Subcatchment3C-1R: Roofs 10 F Runoff Area=1,027 sf 100.00% Impervious Runoff Depth=3.37"
Tc=6.0 min CN=98 Runoff=0.08 cfs 0.007 af

Subcatchment3C-2R: Roofs 12-13 B Runoff Area=1,728 sf 100.00% Impervious Runoff Depth=3.37"
Tc=6.0 min CN=98 Runoff=0.14 cfs 0.011 af

Subcatchment3C-3R: Roofs 14-15 B Runoff Area=1,728 sf 100.00% Impervious Runoff Depth=3.37"
Tc=6.0 min CN=98 Runoff=0.14 cfs 0.011 af

Subcatchment3C-4R: Roofs 10-11 B Runoff Area=1,728 sf 100.00% Impervious Runoff Depth=3.37"
Tc=6.0 min CN=98 Runoff=0.14 cfs 0.011 af

Subcatchment3C-S: Sub-3C Runoff Area=15,793 sf 6.05% Impervious Runoff Depth=0.25"
Tc=6.0 min CN=51 Runoff=0.03 cfs 0.008 af

Subcatchment3D-S: Sub-3D-S Runoff Area=15,288 sf 5.25% Impervious Runoff Depth=0.45"
Tc=6.0 min CN=57 Runoff=0.11 cfs 0.013 af

Subcatchment3E-S: Sub-3E-S Runoff Area=7,970 sf 1.39% Impervious Runoff Depth=0.35"
Tc=6.0 min CN=54 Runoff=0.03 cfs 0.005 af

Subcatchment3F-1R: Roofs 26-28 FB Runoff Area=5,720 sf 100.00% Impervious Runoff Depth=3.37"
Tc=6.0 min CN=98 Runoff=0.46 cfs 0.037 af

Subcatchment3F-2R: Roofs 29-30 B, 31 FB Runoff Area=3,615 sf 100.00% Impervious Runoff Depth=3.37"
Tc=6.0 min CN=98 Runoff=0.29 cfs 0.023 af

Subcatchment3F-3R: Roofs 29 F Runoff Area=1,027 sf 100.00% Impervious Runoff Depth=3.37"
Tc=6.0 min CN=98 Runoff=0.08 cfs 0.007 af

Subcatchment3F-4R: Roofs 30 F Runoff Area=1,035 sf 100.00% Impervious Runoff Depth=3.37"
Tc=6.0 min CN=98 Runoff=0.08 cfs 0.007 af

Subcatchment3F-S: Sub-3F-S Runoff Area=21,093 sf 52.96% Impervious Runoff Depth=1.13"
Tc=6.0 min CN=71 Runoff=0.60 cfs 0.046 af

Subcatchment3G-1R: Roof 9 FB Runoff Area=1,932 sf 100.00% Impervious Runoff Depth=3.37"
Tc=6.0 min CN=98 Runoff=0.16 cfs 0.012 af

Subcatchment3G-2R: Roofs 11 F Runoff Area=1,035 sf 100.00% Impervious Runoff Depth=3.37"
Tc=6.0 min CN=98 Runoff=0.08 cfs 0.007 af

Subcatchment3G-3R: Roofs 12 F Runoff Area=1,027 sf 100.00% Impervious Runoff Depth=3.37"
Tc=6.0 min CN=98 Runoff=0.08 cfs 0.007 af

Subcatchment3G-4R: Roofs 13 F Runoff Area=1,035 sf 100.00% Impervious Runoff Depth=3.37"
Tc=6.0 min CN=98 Runoff=0.08 cfs 0.007 af

Subcatchment3G-5R: Roofs 14 F Runoff Area=1,027 sf 100.00% Impervious Runoff Depth=3.37"
Tc=6.0 min CN=98 Runoff=0.08 cfs 0.007 af

Subcatchment3G-6R: Roofs 15 F Runoff Area=1,035 sf 100.00% Impervious Runoff Depth=3.37"
Tc=6.0 min CN=98 Runoff=0.08 cfs 0.007 af

Subcatchment3G-S: Sub-3G-S Runoff Area=27,855 sf 57.22% Impervious Runoff Depth=1.37"
Tc=6.0 min CN=75 Runoff=1.00 cfs 0.073 af

Subcatchment3H-S: Sub-3A Runoff Area=10,072 sf 50.76% Impervious Runoff Depth=1.01"
Tc=6.0 min CN=69 Runoff=0.25 cfs 0.020 af

Subcatchment3I-S: Sub-3I-S Runoff Area=5,482 sf 79.57% Impervious Runoff Depth=2.19"
Tc=6.0 min CN=86 Runoff=0.32 cfs 0.023 af

Subcatchment4S: Sub-4 Runoff Area=3,736 sf 1.12% Impervious Runoff Depth=0.02"
Tc=6.0 min CN=40 Runoff=0.00 cfs 0.000 af

Subcatchment4S-1: Sub-4 Runoff Area=9,528 sf 12.07% Impervious Runoff Depth=0.12"
Tc=6.0 min CN=46 Runoff=0.00 cfs 0.002 af

Subcatchment4S-1R: Roofs 32 FB Runoff Area=1,903 sf 100.00% Impervious Runoff Depth=3.37"
Tc=6.0 min CN=98 Runoff=0.15 cfs 0.012 af

Subcatchment5S: Sub -5 Runoff Area=12,091 sf 18.97% Impervious Runoff Depth=0.25"
Tc=6.0 min CN=51 Runoff=0.03 cfs 0.006 af

Subcatchment5S-1: Sub 5S-1 Runoff Area=10,625 sf 14.55% Impervious Runoff Depth=0.17"
Tc=6.0 min CN=48 Runoff=0.01 cfs 0.003 af

Subcatchment5S-1R: Roofs 19-21 FB Runoff Area=5,720 sf 100.00% Impervious Runoff Depth=3.37"
Tc=6.0 min CN=98 Runoff=0.46 cfs 0.037 af

Subcatchment5S-P: Pavement Runoff Area=15,144 sf 56.52% Impervious Runoff Depth=1.19"
Tc=6.0 min CN=72 Runoff=0.46 cfs 0.034 af

Reach DP-1: DMH Inflow=0.26 cfs 0.019 af
Outflow=0.26 cfs 0.019 af

Reach DP-2: DP-2 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach DP-3: DP-3 Inflow=0.15 cfs 0.084 af
Outflow=0.15 cfs 0.084 af

Reach DP-4: PL Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach DP-5: PL Inflow=0.03 cfs 0.006 af
Outflow=0.03 cfs 0.006 af

Pond D-1: Depression Peak Elev=59.00' Storage=0 cf Inflow=0.00 cfs 0.002 af
Outflow=0.00 cfs 0.002 af

Pond D-2: Depression Peak Elev=56.70' Storage=339 cf Inflow=0.42 cfs 0.041 af
Discarded=0.11 cfs 0.041 af Primary=0.00 cfs 0.000 af Outflow=0.11 cfs 0.041 af

Pond D-3: Depression Peak Elev=63.00' Storage=0 cf Inflow=0.00 cfs 0.002 af
Outflow=0.00 cfs 0.002 af

Pond D-4: Depression Peak Elev=54.00' Storage=1 cf Inflow=0.01 cfs 0.003 af
Outflow=0.01 cfs 0.003 af

Pond DB-1: Prop Detention Basin Peak Elev=58.85' Storage=6,275 cf Inflow=2.17 cfs 0.167 af
Outflow=0.02 cfs 0.066 af

Pond P1: Infiltration Chambers Peak Elev=57.15' Storage=107 cf Inflow=0.16 cfs 0.012 af
Outflow=0.04 cfs 0.012 af

Pond P10: Infiltration Chambers Peak Elev=60.58' Storage=53 cf Inflow=0.08 cfs 0.007 af
Outflow=0.02 cfs 0.007 af

Pond P11: Infiltration Chambers Peak Elev=60.59' Storage=54 cf Inflow=0.08 cfs 0.007 af
Outflow=0.02 cfs 0.007 af

Pond P12: Infiltration Chambers Peak Elev=59.07' Storage=70 cf Inflow=0.15 cfs 0.012 af
Outflow=0.05 cfs 0.012 af

Pond P13: Infiltration Chambers Peak Elev=58.63' Storage=414 cf Inflow=0.54 cfs 0.039 af
Discarded=0.11 cfs 0.039 af Primary=0.00 cfs 0.000 af Outflow=0.11 cfs 0.039 af

Pond P2: Infiltration Chambers Peak Elev=57.39' Storage=982 cf Inflow=1.22 cfs 0.098 af
Outflow=0.24 cfs 0.098 af

Pond P3: Infiltration Chambers Peak Elev=57.08' Storage=53 cf Inflow=0.08 cfs 0.007 af
Outflow=0.02 cfs 0.007 af

Pond P4: Infiltration Chambers Peak Elev=57.22' Storage=118 cf Inflow=0.17 cfs 0.013 af
Outflow=0.04 cfs 0.013 af

Pond P5: Infiltration Chambers Peak Elev=60.72' Storage=118 cf Inflow=0.17 cfs 0.013 af
Outflow=0.04 cfs 0.013 af

Pond P6: Infiltration Chambers Peak Elev=62.17' Storage=1,281 cf Inflow=1.52 cfs 0.112 af
Discarded=0.17 cfs 0.099 af Primary=0.41 cfs 0.013 af Outflow=0.57 cfs 0.112 af

Pond P7: Infiltration Chambers Peak Elev=61.17' Storage=841 cf Inflow=1.07 cfs 0.086 af
Outflow=0.22 cfs 0.086 af

Pond P8: Infiltration Chambers Peak Elev=59.30' Storage=844 cf Inflow=1.35 cfs 0.106 af
Outflow=0.36 cfs 0.106 af

Pond P9: Infiltration Chambers Peak Elev=56.31' Storage=846 cf Inflow=1.49 cfs 0.114 af
Outflow=0.43 cfs 0.114 af

Total Runoff Area = 7.045 ac Runoff Volume = 0.872 af Average Runoff Depth = 1.49"
45.88% Pervious = 3.233 ac 54.12% Impervious = 3.812 ac

Summary for Subcatchment 1S: Sub-1

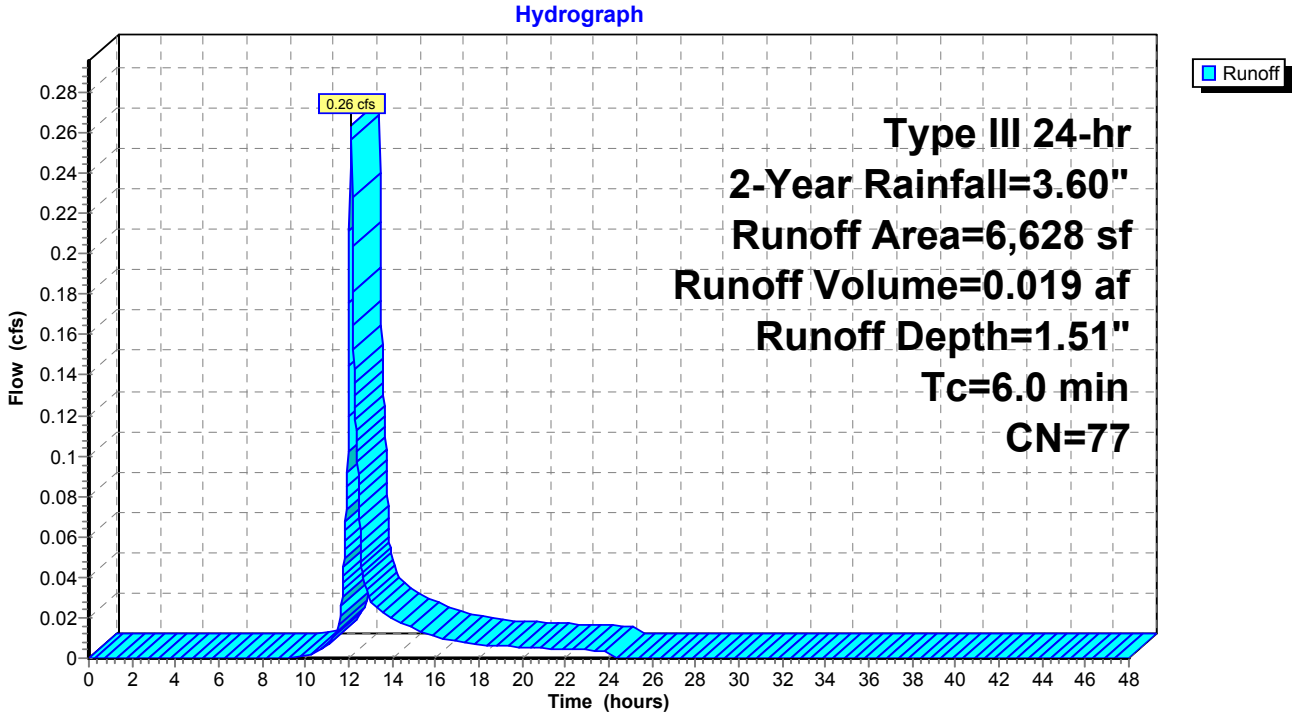
Runoff = 0.26 cfs @ 12.09 hrs, Volume= 0.019 af, Depth= 1.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
	2,328	39	>75% Grass cover, Good, HSG A
	3,451	98	Paved roads w/curbs & sewers, HSG A
*	849	98	Paved sidewalk, HSG A
	6,628	77	Weighted Average
	2,328		35.12% Pervious Area
	4,300		64.88% Impervious Area

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

Subcatchment 1S: Sub-1



Summary for Subcatchment 1S-1: Sub-1S-1

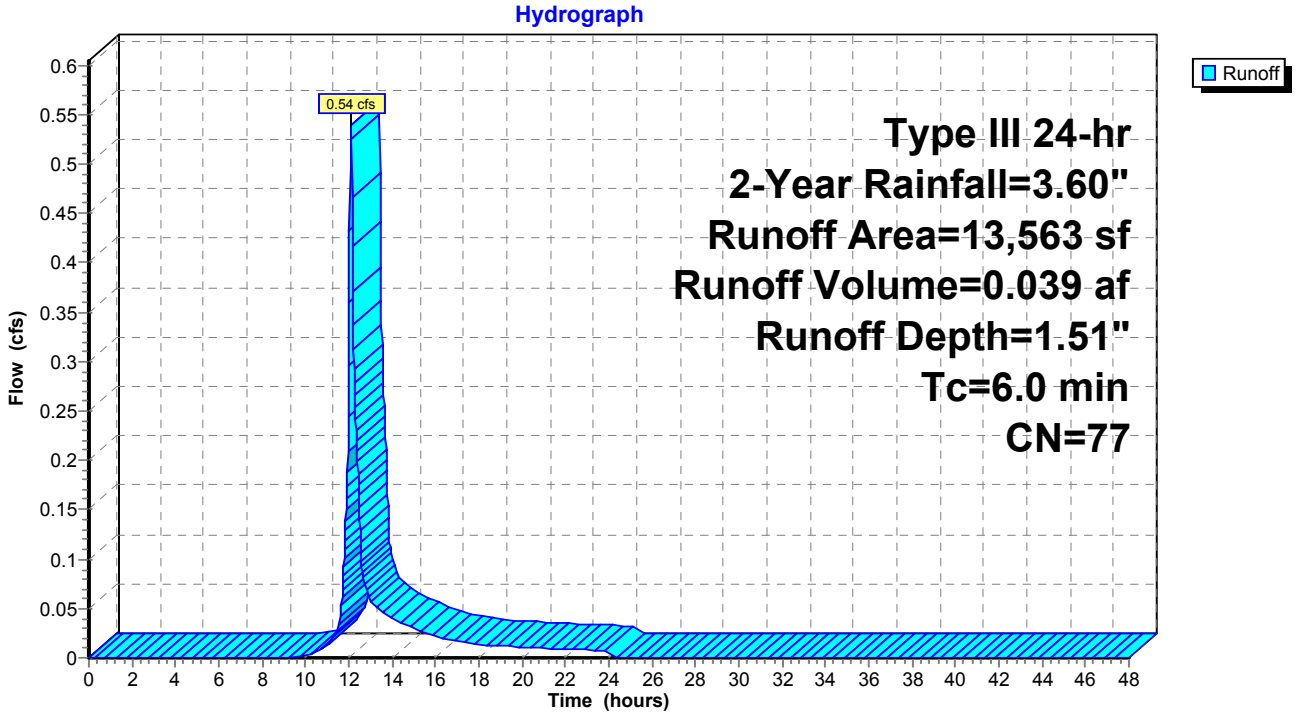
Runoff = 0.54 cfs @ 12.09 hrs, Volume= 0.039 af, Depth= 1.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
	4,839	39	>75% Grass cover, Good, HSG A
	6,500	98	Paved roads w/curbs & sewers, HSG A
*	1,077	98	Paved sidewalk, HSG A
*	163	98	Walls, HSG A
*	984	98	Paved drives, HSG A
	13,563	77	Weighted Average
	4,839		35.68% Pervious Area
	8,724		64.32% Impervious Area

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

Subcatchment 1S-1: Sub-1S-1



Summary for Subcatchment 2S: Sub-2

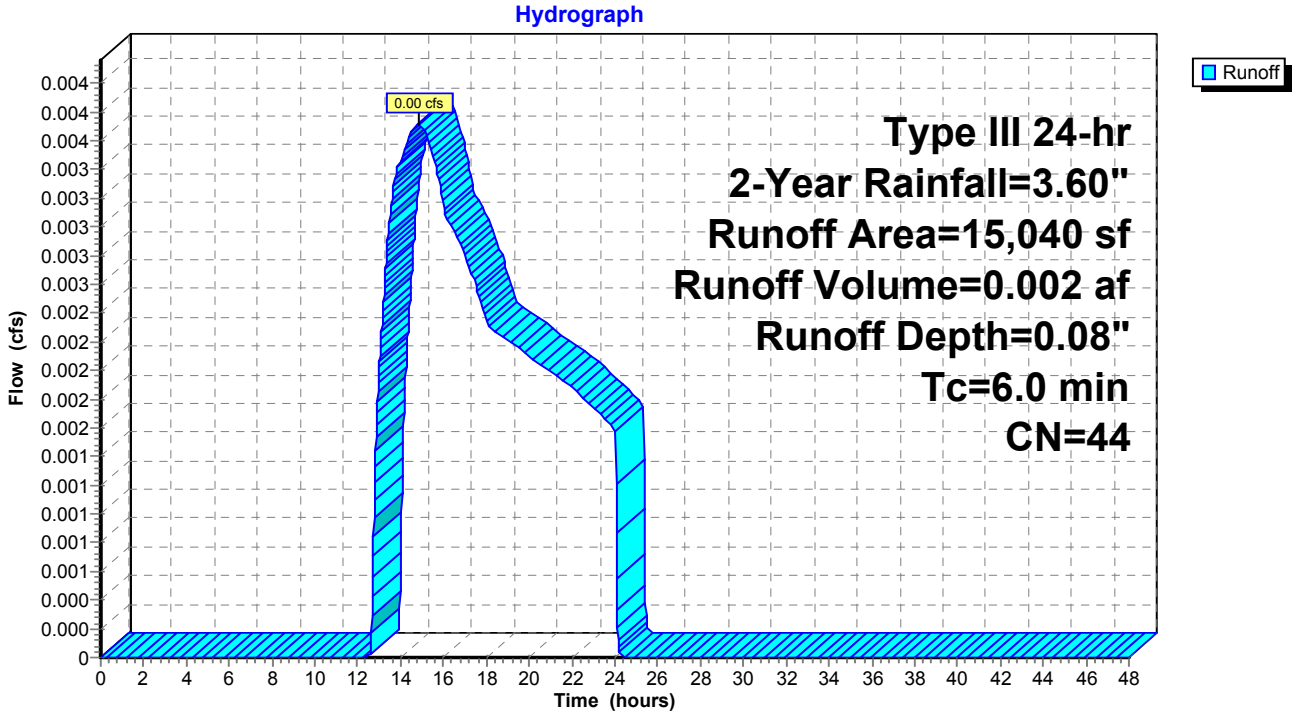
Runoff = 0.00 cfs @ 14.80 hrs, Volume= 0.002 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
	7,795	39	>75% Grass cover, Good, HSG A
*	100	98	Walls, HSG A
*	570	98	Decks, HSG A
*	945	98	Decks, HSG A
	2,630	39	>75% Grass cover, Good, HSG A
*	3,000	30	Woods, Good, HSG A - offsite
	15,040	44	Weighted Average
	13,425		89.26% Pervious Area
	1,615		10.74% Impervious Area

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

Subcatchment 2S: Sub-2



Summary for Subcatchment 3A-1R: Roofs 16 FB, 17, 18-20 & 24-25 FB

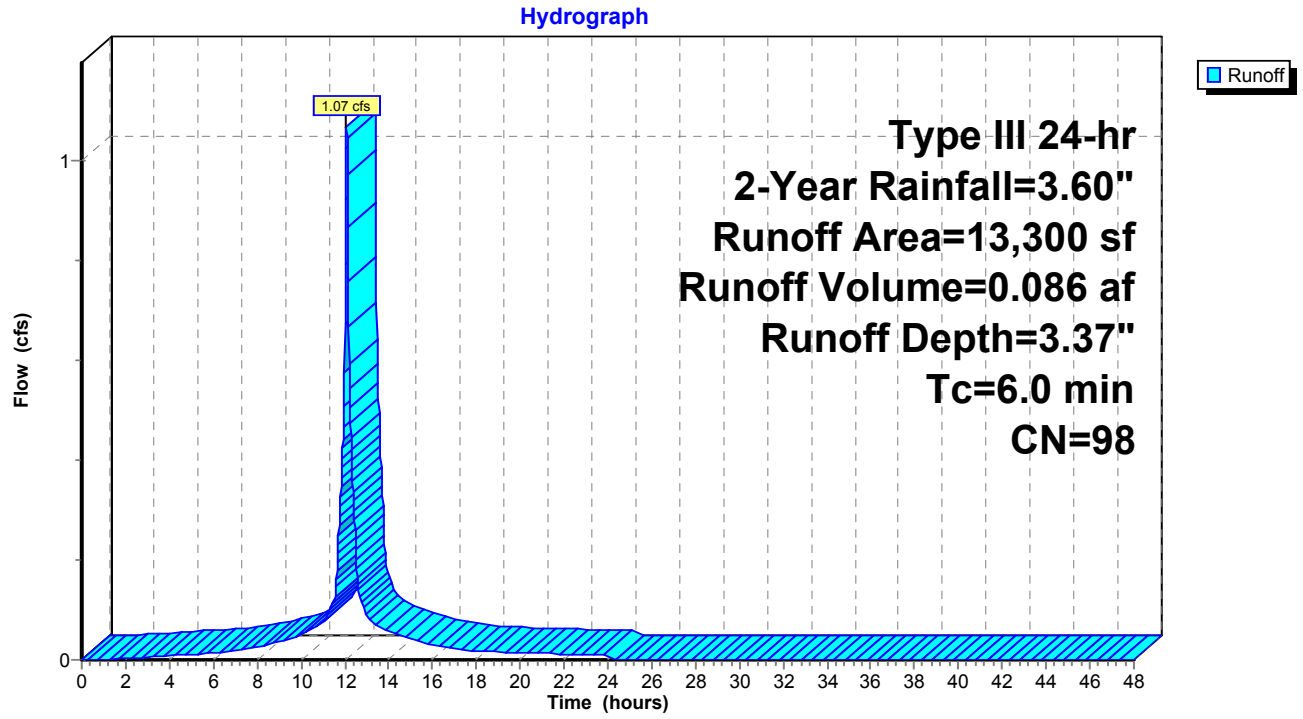
Runoff = 1.07 cfs @ 12.08 hrs, Volume= 0.086 af, Depth= 3.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
	5,720	98	Roofs, HSG A
	3,790	98	Roofs, HSG A
*	1,903	98	Roofs, HSG A
	837	98	Roofs, HSG A
	23	98	Roofs, HSG B
*	1,027	98	Roofs, HSG A
	13,300	98	Weighted Average
	13,300		100.00% Impervious Area

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

Subcatchment 3A-1R: Roofs 16 FB, 17, 18-20 & 24-25 FB



Summary for Subcatchment 3A-S: Sub-3A

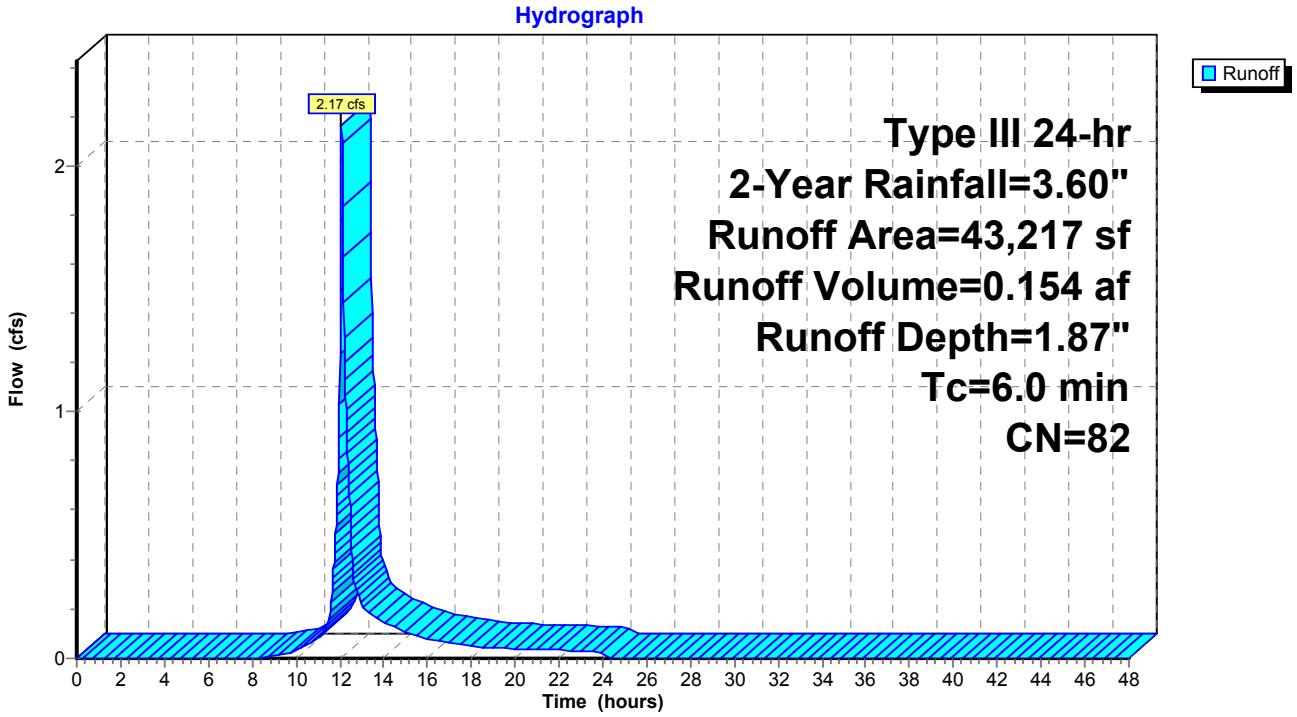
Runoff = 2.17 cfs @ 12.09 hrs, Volume= 0.154 af, Depth= 1.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
	7,575	39	>75% Grass cover, Good, HSG A
	1,836	61	>75% Grass cover, Good, HSG B
*	556	98	Decks, HSG A
*	8,140	98	Detention Basin, HSG A
*	4,387	98	Detention Basin, HSG B
*	146	98	Riprap, HSG A
*	70	98	Riprap, HSG B
*	113	98	Walls, HSG A
*	70	98	Walls, HSG B
*	1,384	98	Roofs, HSG A - offsite
*	16,069	98	Paved parking, HSG A - offsite
*	1,189	39	>75% Grass cover, Good, HSG A - offsite
*	1,682	30	Woods, Good, HSG A - offsite
	43,217	82	Weighted Average
	12,282		28.42% Pervious Area
	30,935		71.58% Impervious Area

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

Subcatchment 3A-S: Sub-3A



Summary for Subcatchment 3B-1R: Roofs 1-8 FB

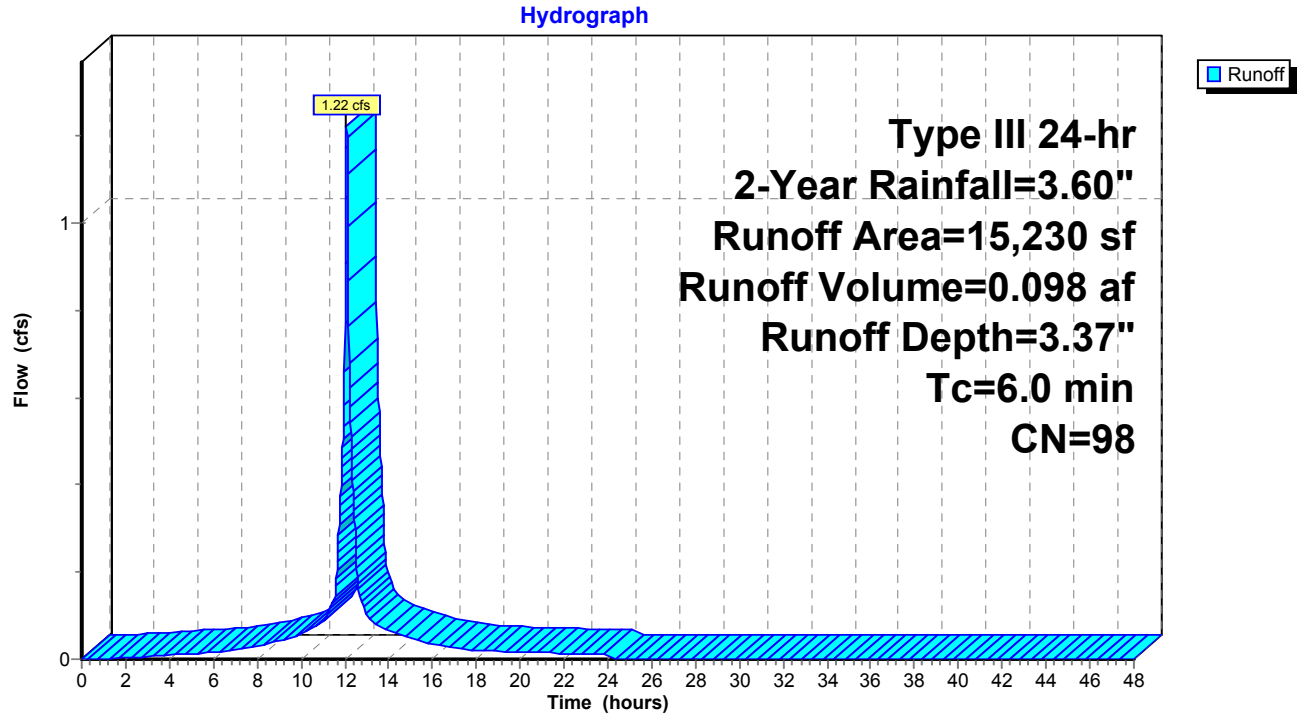
Runoff = 1.22 cfs @ 12.08 hrs, Volume= 0.098 af, Depth= 3.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

Area (sf)	CN	Description
15,230	98	Roofs, HSG A
15,230		100.00% Impervious Area

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

Subcatchment 3B-1R: Roofs 1-8 FB



Summary for Subcatchment 3B-S: Sub-3B-S

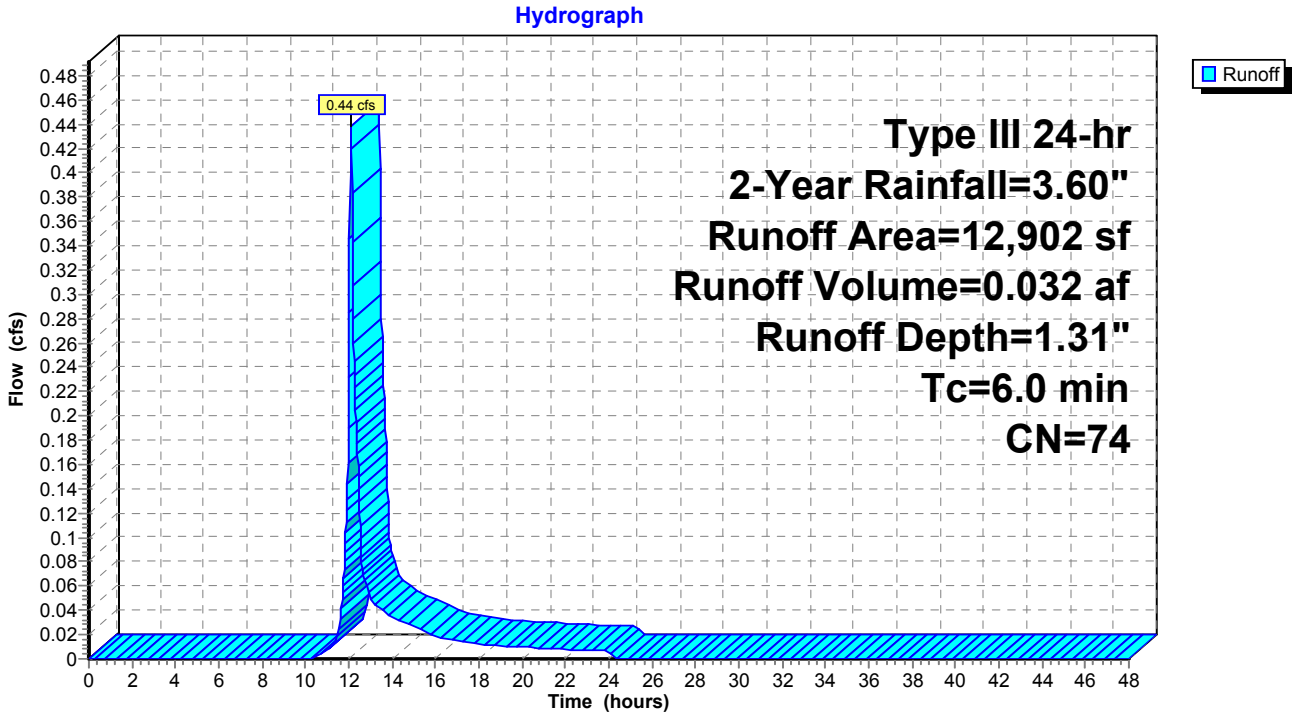
Runoff = 0.44 cfs @ 12.09 hrs, Volume= 0.032 af, Depth= 1.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
*	3,581	98	Paved drives, HSG A
*	185	98	Paved drives, HSG B
*	2,716	98	Paved roads w/curbs & sewers, HSG A
	776	98	Paved roads w/curbs & sewers, HSG B
*	340	98	Walks, HSG A
	5,125	39	>75% Grass cover, Good, HSG A
	179	61	>75% Grass cover, Good, HSG B
	12,902	74	Weighted Average
	5,304		41.11% Pervious Area
	7,598		58.89% Impervious Area

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

Subcatchment 3B-S: Sub-3B-S



Summary for Subcatchment 3C-1R: Roofs 10 F

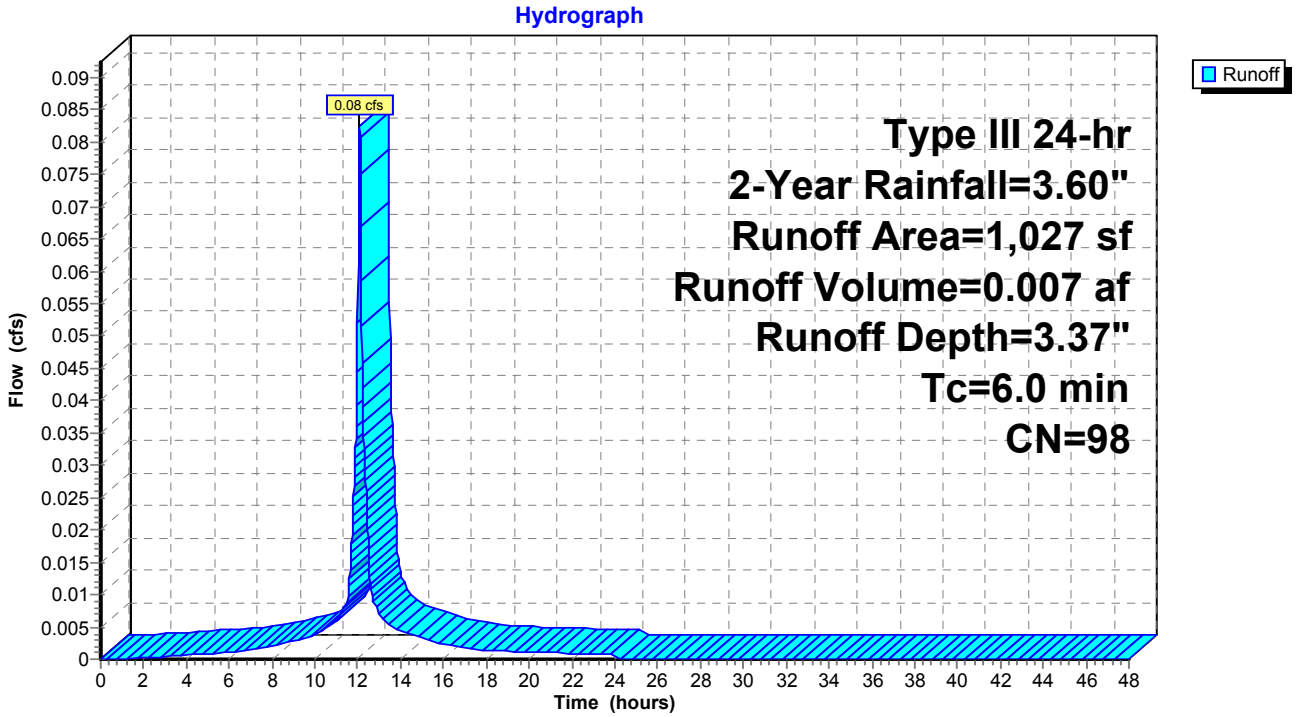
Runoff = 0.08 cfs @ 12.08 hrs, Volume= 0.007 af, Depth= 3.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
*	1,027	98	Roofs, HSG B
	1,027		100.00% Impervious Area

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

Subcatchment 3C-1R: Roofs 10 F



Summary for Subcatchment 3C-2R: Roofs 12-13 B

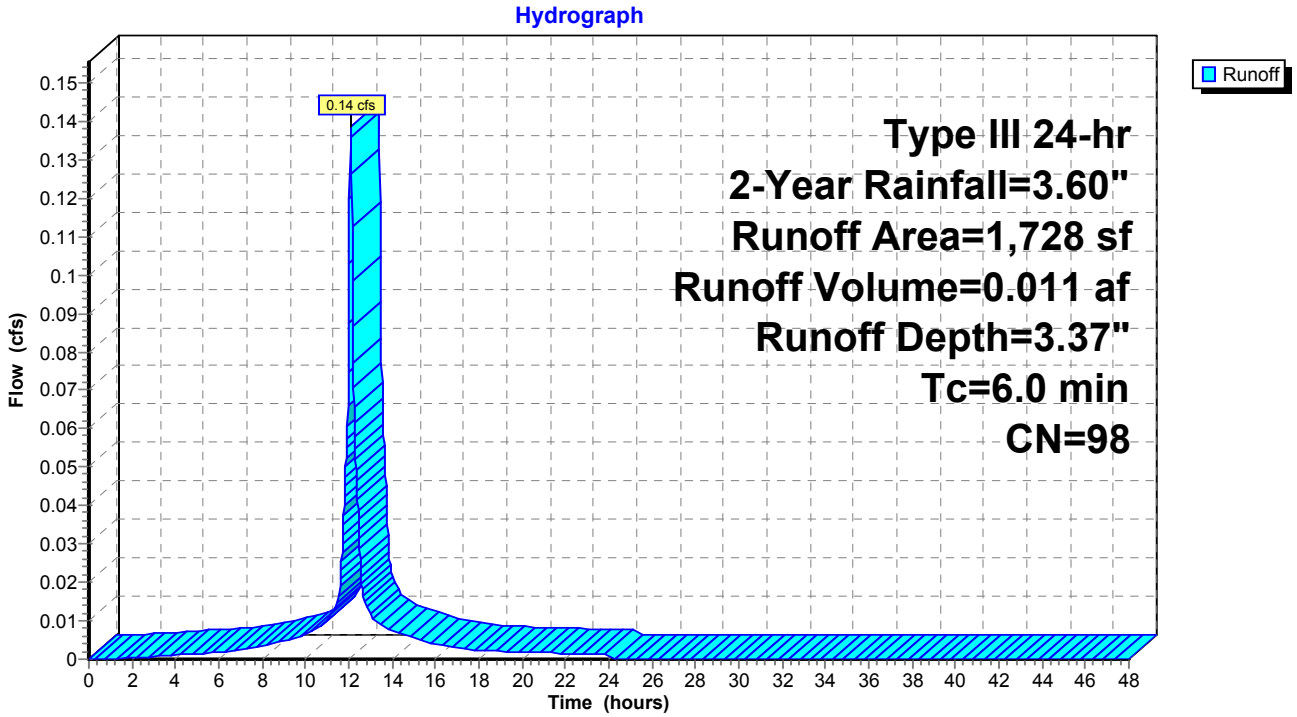
Runoff = 0.14 cfs @ 12.08 hrs, Volume= 0.011 af, Depth= 3.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
*	1,728	98	Roofs, HSG B
	1,728		100.00% Impervious Area

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

Subcatchment 3C-2R: Roofs 12-13 B



Summary for Subcatchment 3C-3R: Roofs 14-15 B

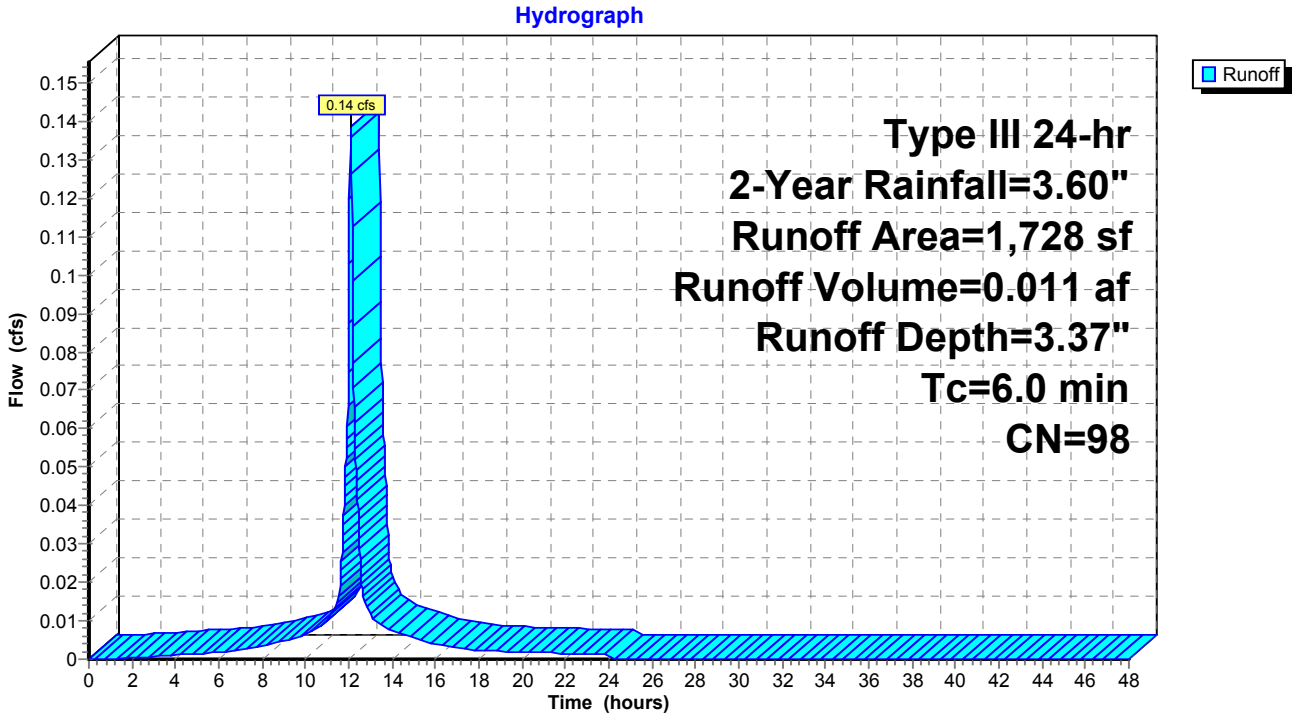
Runoff = 0.14 cfs @ 12.08 hrs, Volume= 0.011 af, Depth= 3.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
*	1,728	98	Roofs, HSG B
	1,728		100.00% Impervious Area

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

Subcatchment 3C-3R: Roofs 14-15 B



Summary for Subcatchment 3C-4R: Roofs 10-11 B

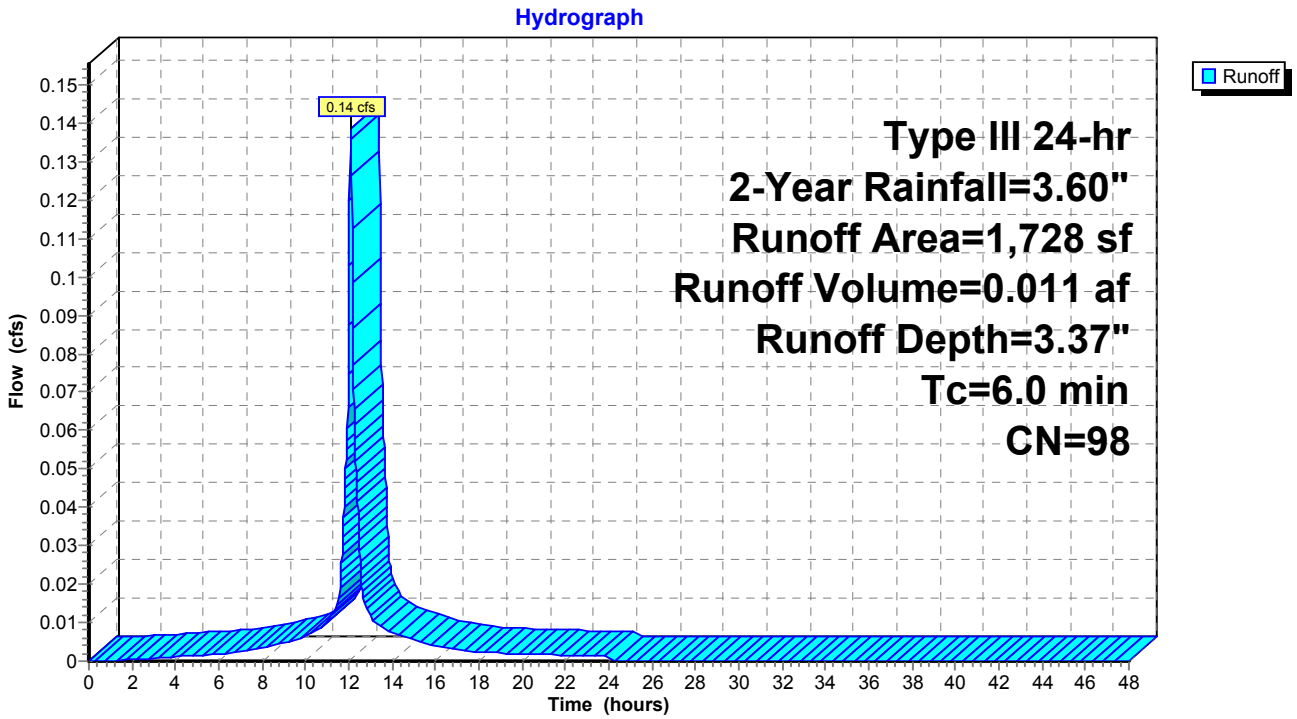
Runoff = 0.14 cfs @ 12.08 hrs, Volume= 0.011 af, Depth= 3.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
*	1,538	98	Roofs, HSG B
	190	98	Roofs, HSG A
	1,728	98	Weighted Average
	1,728		100.00% Impervious Area

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

Subcatchment 3C-4R: Roofs 10-11 B



Summary for Subcatchment 3C-S: Sub-3C

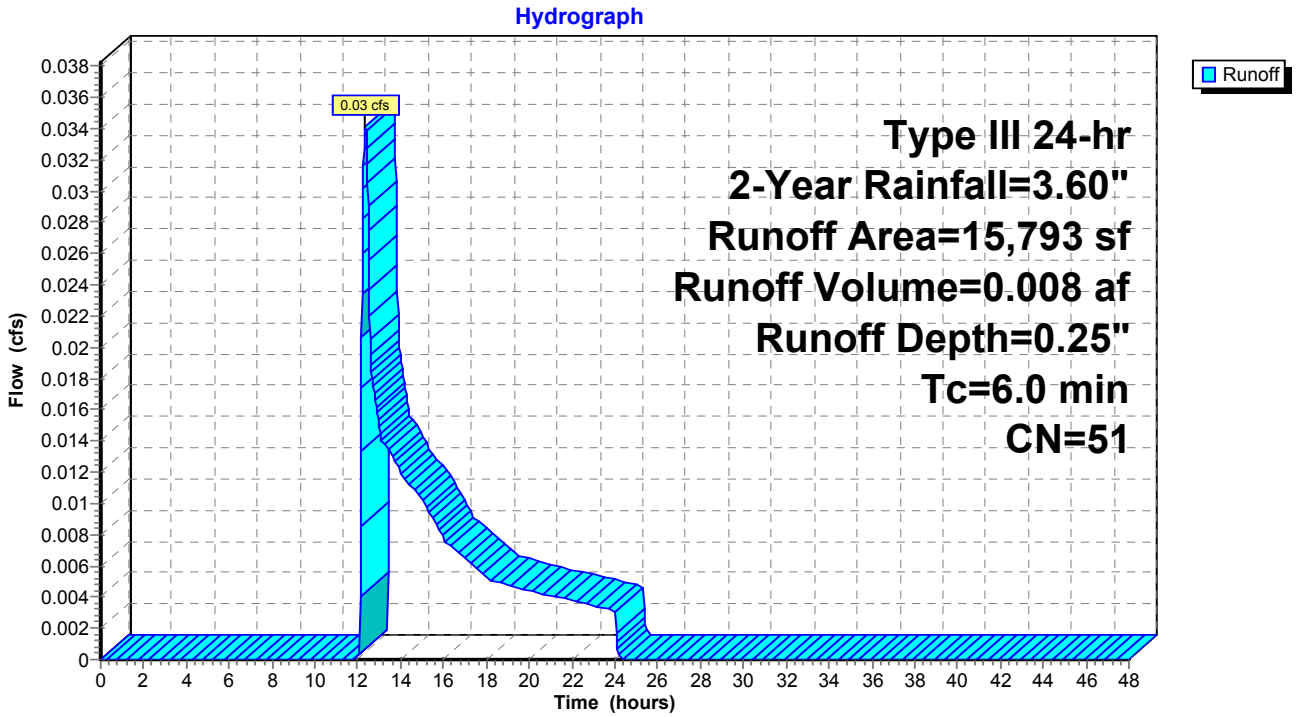
Runoff = 0.03 cfs @ 12.36 hrs, Volume= 0.008 af, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
*	290	98	Paved drives, HSG A - offsite
*	2,113	30	Woods, Good, HSG A - offsite
*	3,045	39	>75% Grass cover, Good, HSG A - offsite
	6,567	61	>75% Grass cover, Good, HSG B
	3,112	39	>75% Grass cover, Good, HSG A
*	185	98	Decks, HSG A
*	371	98	Decks, HSG B
*	110	98	Riprap, HSG B
	15,793	51	Weighted Average
	14,837		93.95% Pervious Area
	956		6.05% Impervious Area

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

Subcatchment 3C-S: Sub-3C



Summary for Subcatchment 3D-S: Sub-3D-S

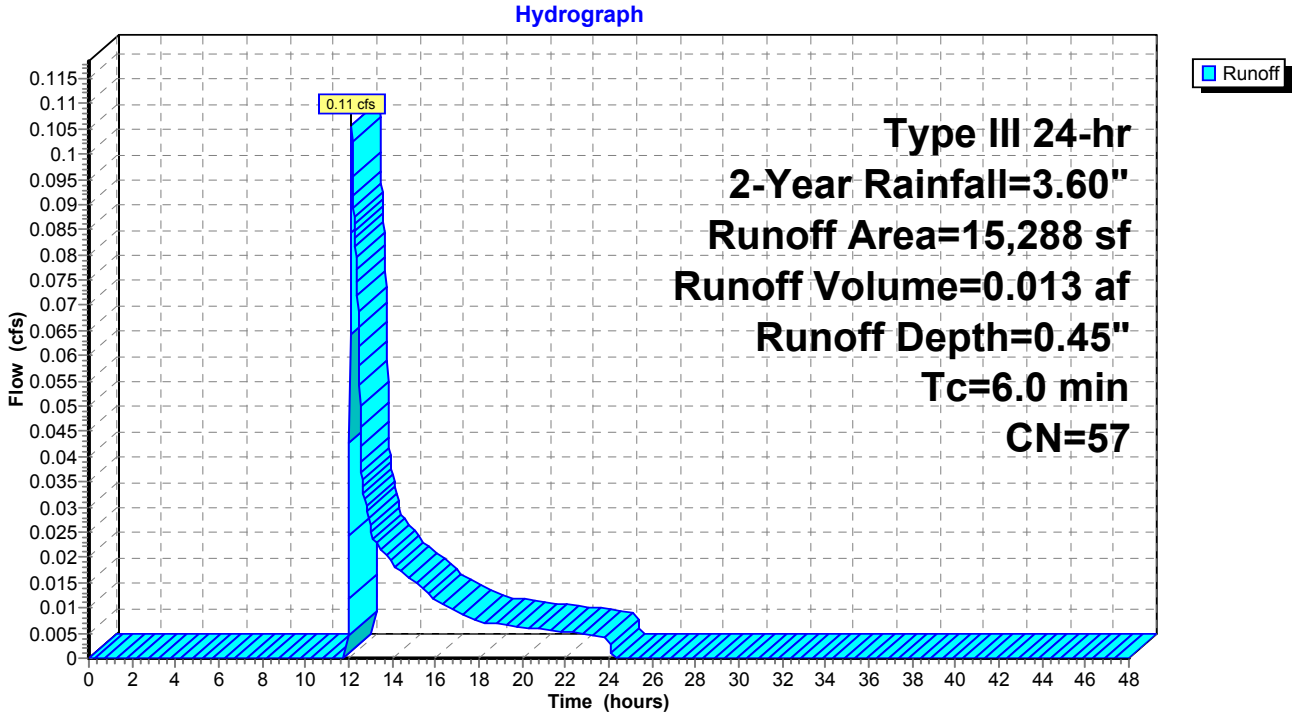
Runoff = 0.11 cfs @ 12.13 hrs, Volume= 0.013 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
	3,098	55	Woods, Good, HSG B
	6,117	61	>75% Grass cover, Good, HSG B
	1,408	39	>75% Grass cover, Good, HSG A
*	641	98	Decks, HSG B
*	100	98	Decks, HSG A
*	61	98	Riprap, HSG B
*	96	30	Woods, Good, HSG A - offsite
*	1,076	39	>75% Grass cover, Good, HSG A - offsite
*	957	61	>75% Grass cover, Good, HSG B - offsite
*	1,734	55	Woods, Good, HSG B - offsite
	15,288	57	Weighted Average
	14,486		94.75% Pervious Area
	802		5.25% Impervious Area

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

Subcatchment 3D-S: Sub-3D-S



Summary for Subcatchment 3E-S: Sub-3E-S

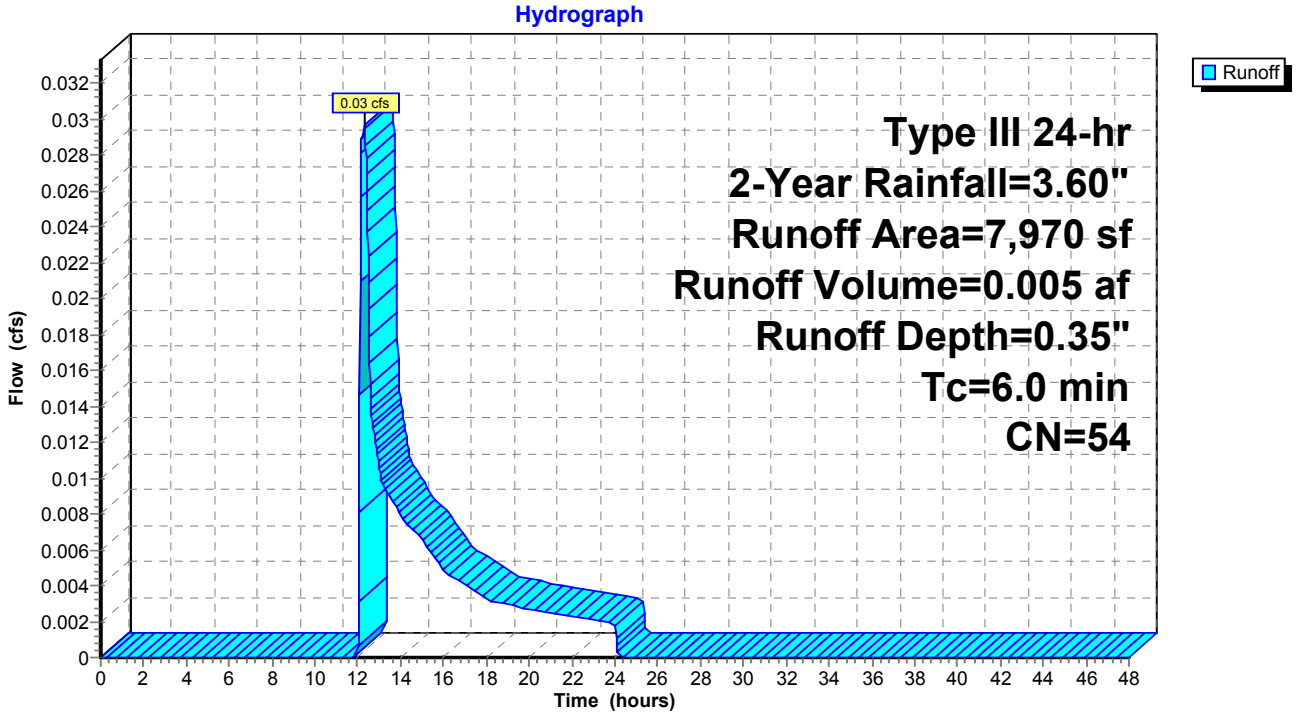
Runoff = 0.03 cfs @ 12.28 hrs, Volume= 0.005 af, Depth= 0.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
*	97	98	Riprap, HSG B
*	14	98	Riprap, HSG A
	4,411	55	Woods, Good, HSG B
	130	30	Woods, Good, HSG A
	1,396	39	>75% Grass cover, Good, HSG A
	1,922	61	>75% Grass cover, Good, HSG B
	7,970	54	Weighted Average
	7,859		98.61% Pervious Area
	111		1.39% Impervious Area

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

Subcatchment 3E-S: Sub-3E-S



Summary for Subcatchment 3F-1R: Roofs 26-28 FB

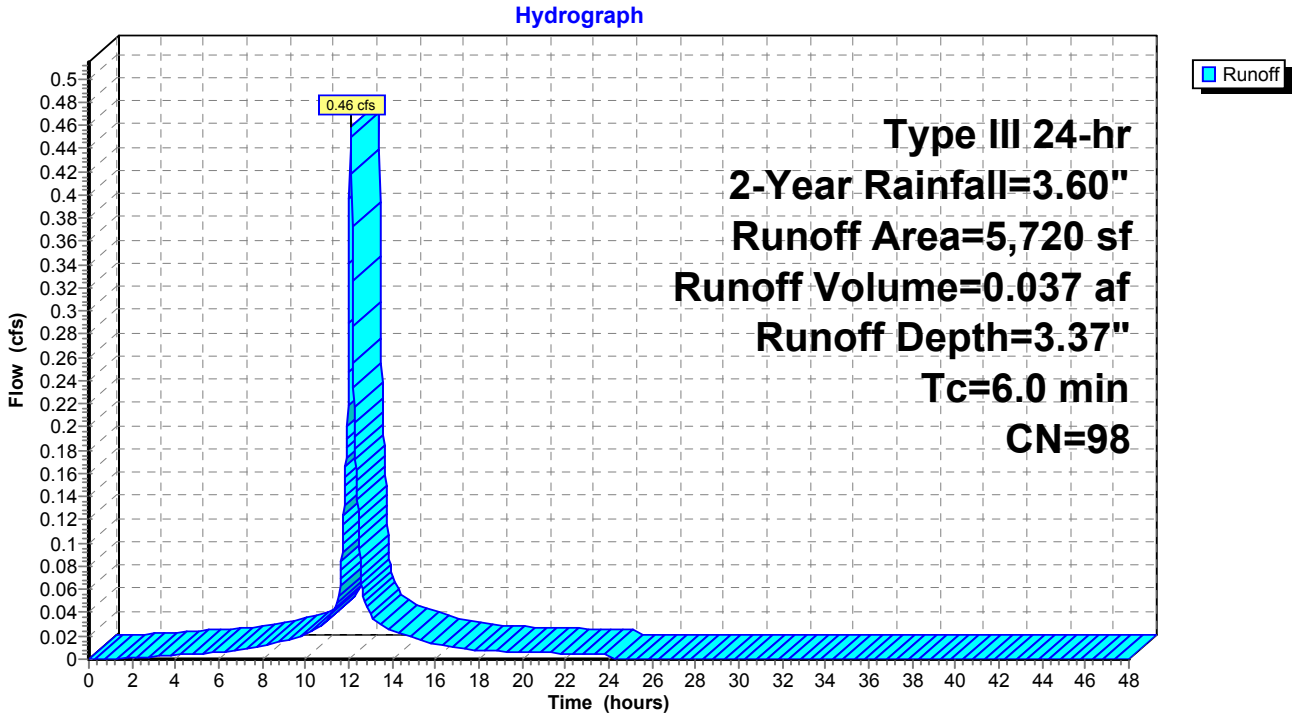
Runoff = 0.46 cfs @ 12.08 hrs, Volume= 0.037 af, Depth= 3.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

Area (sf)	CN	Description
5,720	98	Roofs, HSG A
5,720		100.00% Impervious Area

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

Subcatchment 3F-1R: Roofs 26-28 FB



Summary for Subcatchment 3F-2R: Roofs 29-30 B, 31 FB

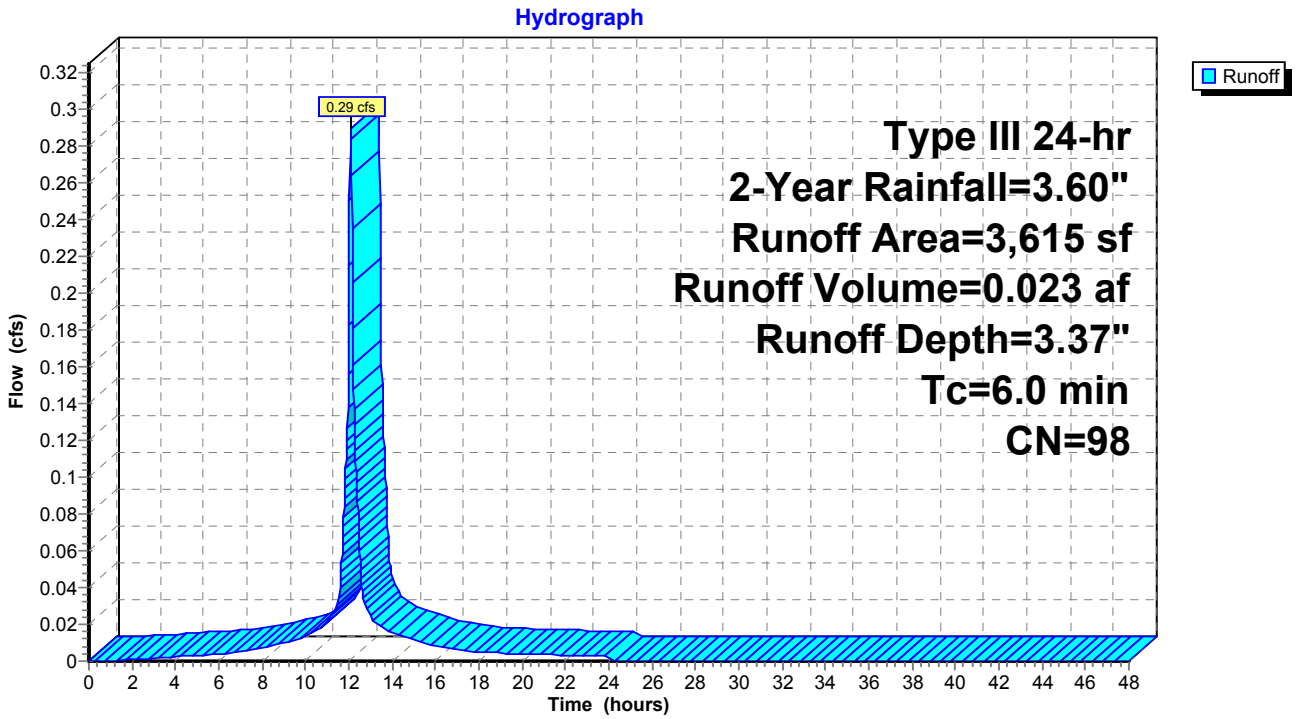
Runoff = 0.29 cfs @ 12.08 hrs, Volume= 0.023 af, Depth= 3.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
*	1,728	98	Roofs, HSG A
	1,887	98	Roofs, HSG A
	3,615	98	Weighted Average
	3,615		100.00% Impervious Area

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

Subcatchment 3F-2R: Roofs 29-30 B, 31 FB



Summary for Subcatchment 3F-3R: Roofs 29 F

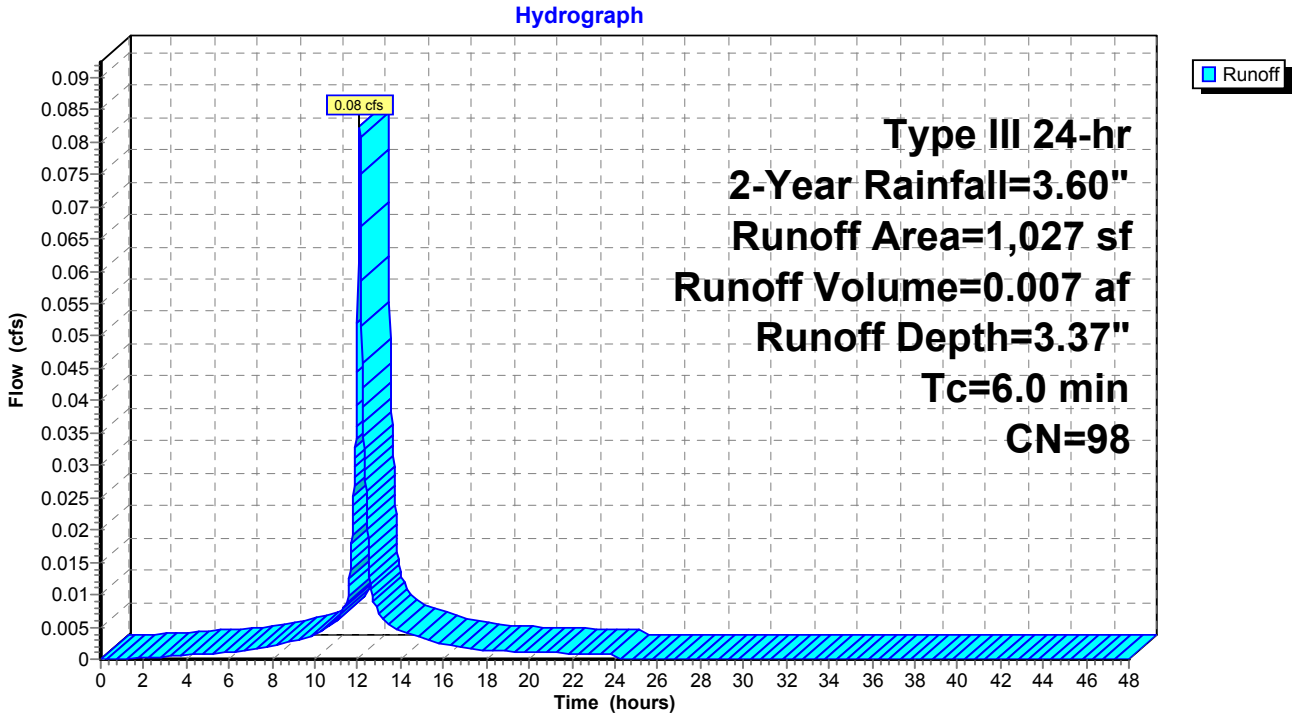
Runoff = 0.08 cfs @ 12.08 hrs, Volume= 0.007 af, Depth= 3.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

Area (sf)	CN	Description
1,027	98	Roofs, HSG A
1,027		100.00% Impervious Area

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

Subcatchment 3F-3R: Roofs 29 F



Summary for Subcatchment 3F-4R: Roofs 30 F

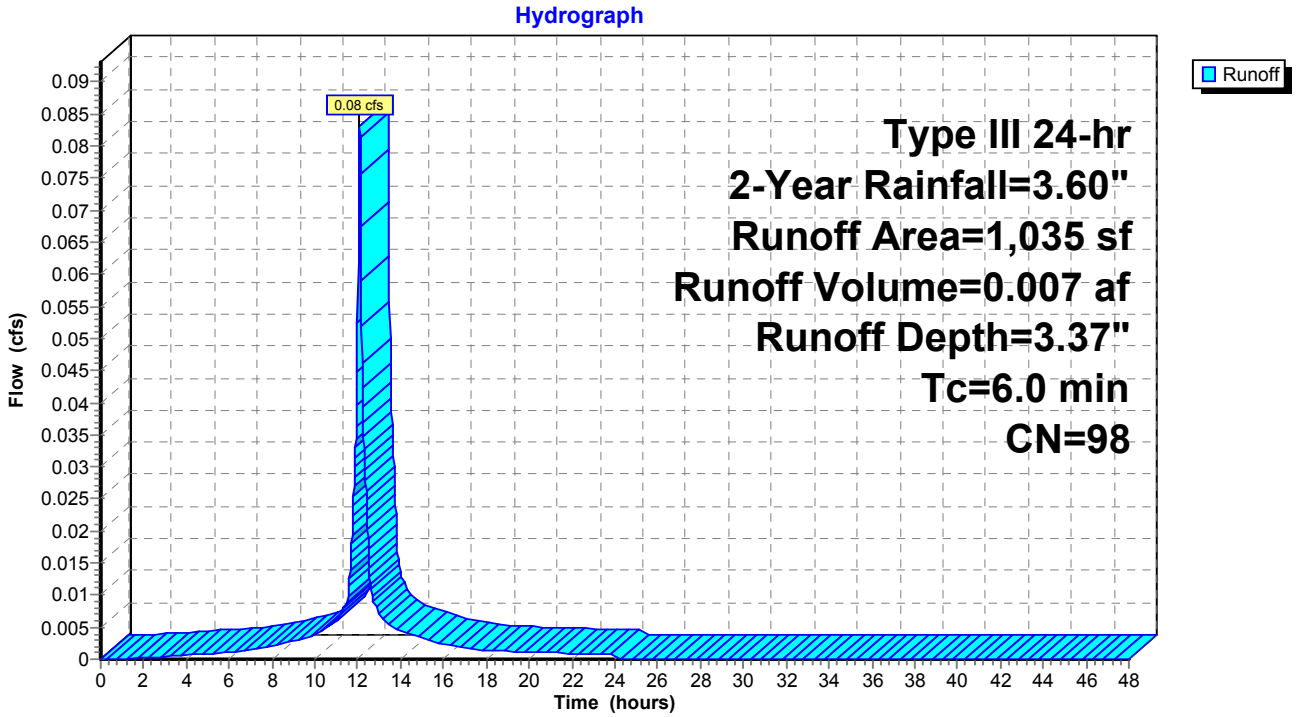
Runoff = 0.08 cfs @ 12.08 hrs, Volume= 0.007 af, Depth= 3.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

Area (sf)	CN	Description
1,035	98	Roofs, HSG A
1,035		100.00% Impervious Area

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

Subcatchment 3F-4R: Roofs 30 F



Summary for Subcatchment 3F-S: Sub-3F-S

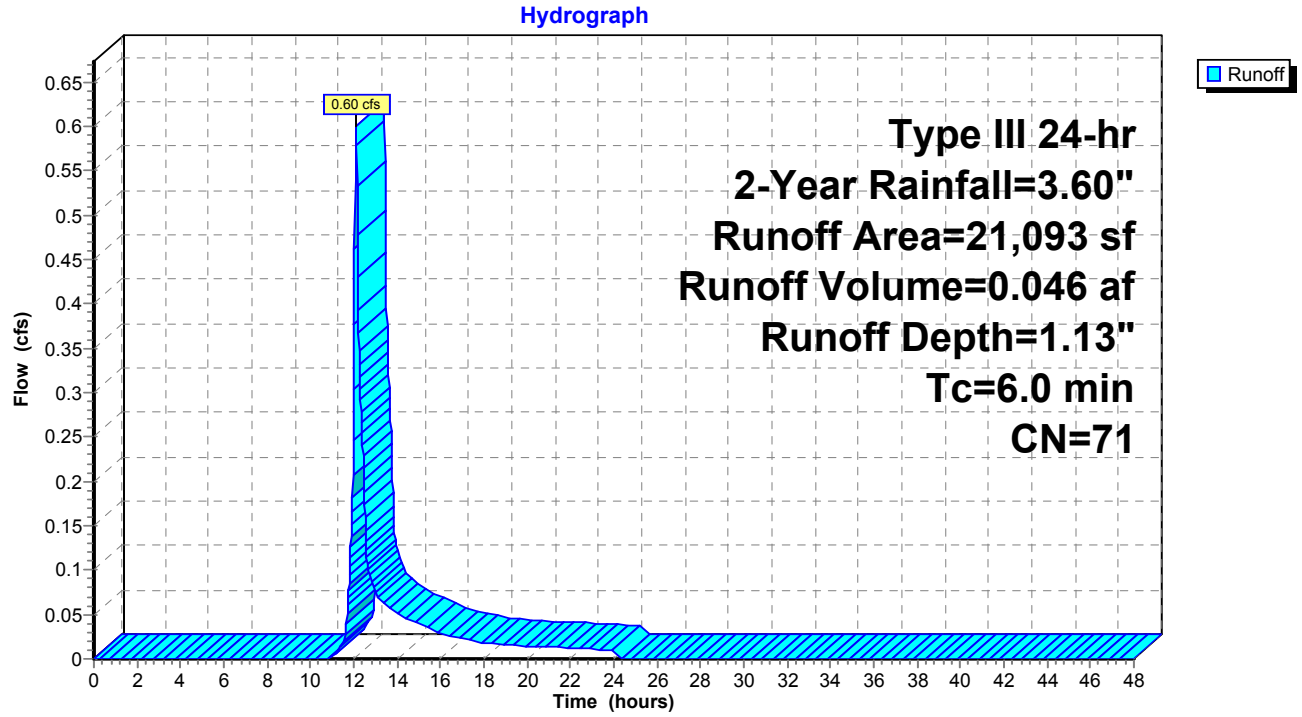
Runoff = 0.60 cfs @ 12.10 hrs, Volume= 0.046 af, Depth= 1.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
*	3,112	98	Paved drives, HSG A
*	85	98	Paved drives, HSG B
*	3,514	98	Paved roads w/curbs & sewers, HSG A
	2,279	98	Paved roads w/curbs & sewers, HSG B
*	1,089	98	Paved sidewalk, HSG A
*	508	98	Paved sidewalk, HSG B
*	209	98	Walks, HSG A
*	4	98	Walks, HSG B
*	371	98	Decks, HSG A
	9,065	39	>75% Grass cover, Good, HSG A
	857	61	>75% Grass cover, Good, HSG B
	21,093	71	Weighted Average
	9,922		47.04% Pervious Area
	11,171		52.96% Impervious Area

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

Subcatchment 3F-S: Sub-3F-S



Summary for Subcatchment 3G-1R: Roof 9 FB

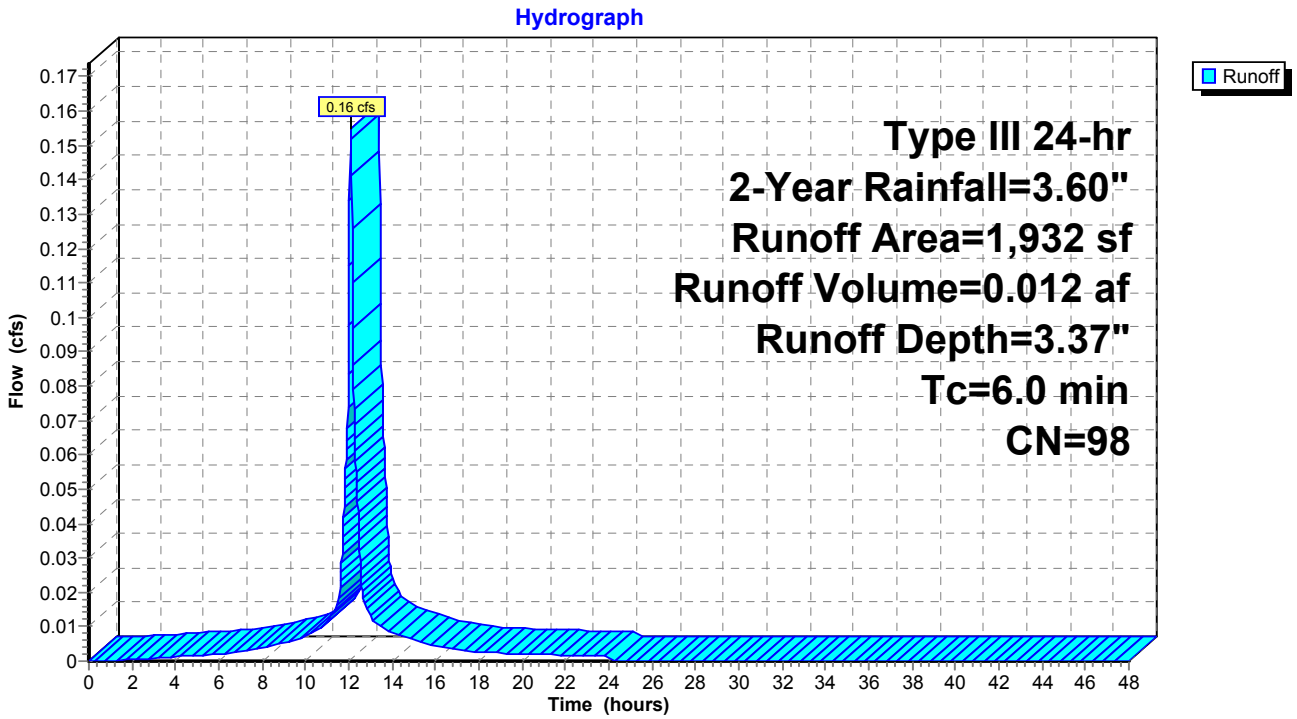
Runoff = 0.16 cfs @ 12.08 hrs, Volume= 0.012 af, Depth= 3.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
	1,085	98	Roofs, HSG A
*	847	98	Roofs, HSG B
	1,932	98	Weighted Average
	1,932		100.00% Impervious Area

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

Subcatchment 3G-1R: Roof 9 FB



Summary for Subcatchment 3G-2R: Roofs 11 F

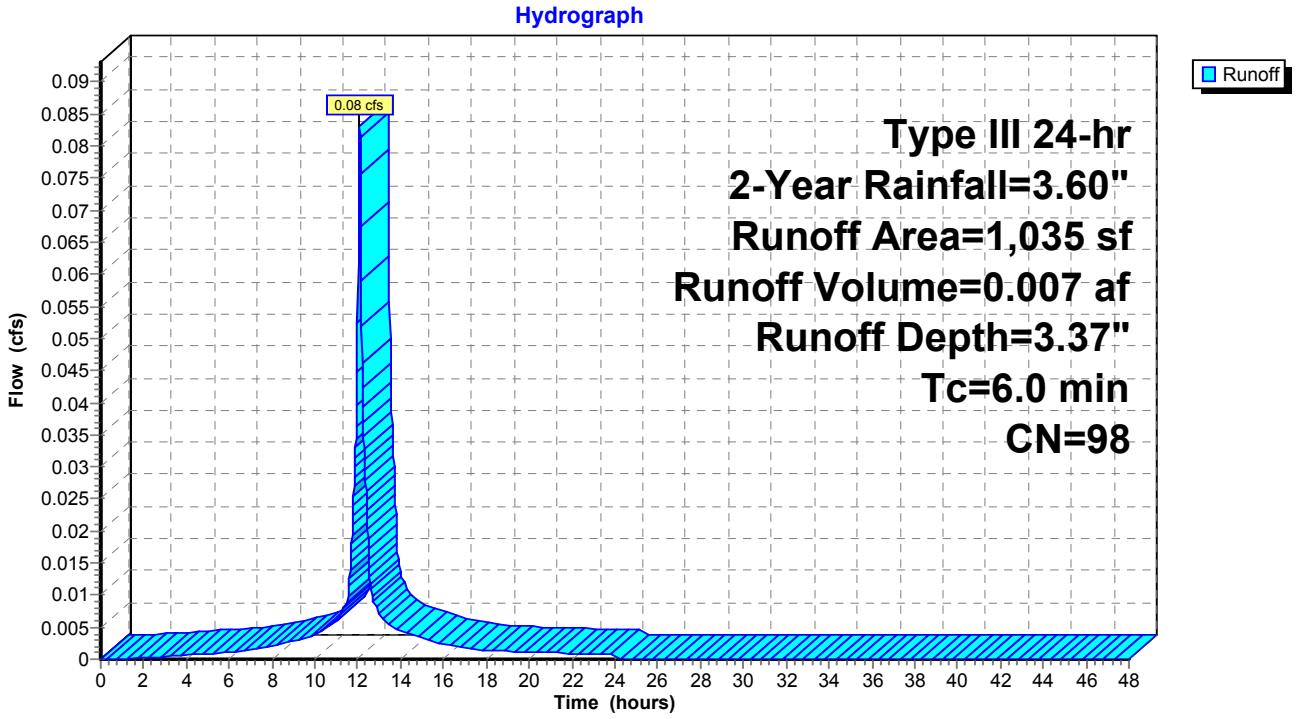
Runoff = 0.08 cfs @ 12.08 hrs, Volume= 0.007 af, Depth= 3.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
*	1,035	98	Roofs, HSG B
	1,035		100.00% Impervious Area

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

Subcatchment 3G-2R: Roofs 11 F



Summary for Subcatchment 3G-3R: Roofs 12 F

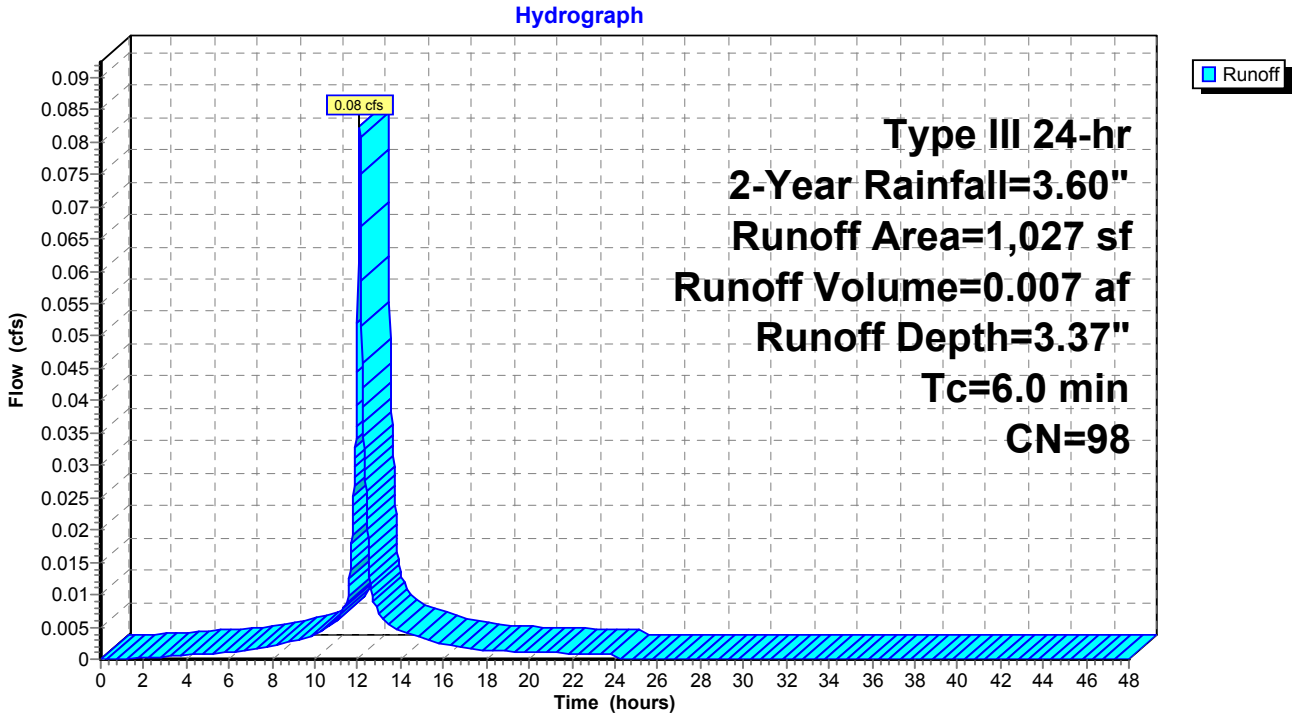
Runoff = 0.08 cfs @ 12.08 hrs, Volume= 0.007 af, Depth= 3.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
*	1,027	98	Roofs, HSG B
	1,027		100.00% Impervious Area

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

Subcatchment 3G-3R: Roofs 12 F



Summary for Subcatchment 3G-4R: Roofs 13 F

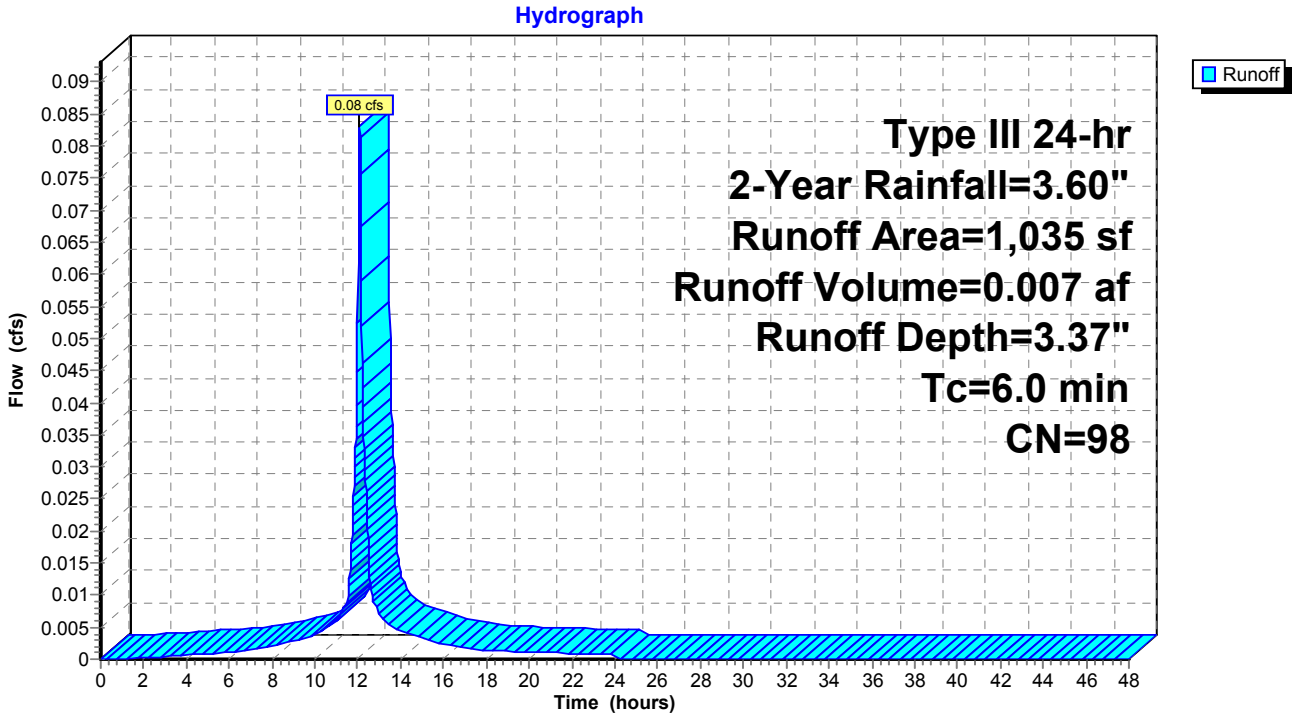
Runoff = 0.08 cfs @ 12.08 hrs, Volume= 0.007 af, Depth= 3.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
*	1,035	98	Roofs, HSG B
	1,035		100.00% Impervious Area

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

Subcatchment 3G-4R: Roofs 13 F



Summary for Subcatchment 3G-5R: Roofs 14 F

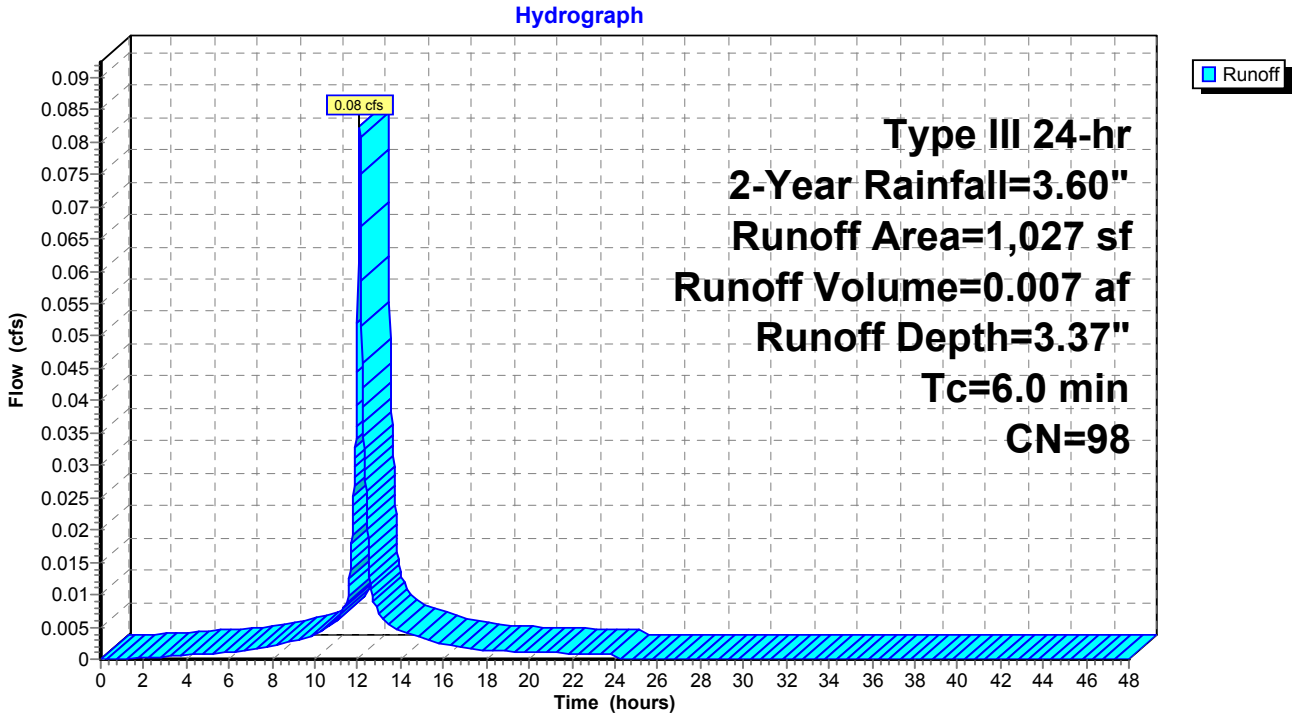
Runoff = 0.08 cfs @ 12.08 hrs, Volume= 0.007 af, Depth= 3.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
*	1,027	98	Roofs, HSG B
	1,027		100.00% Impervious Area

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

Subcatchment 3G-5R: Roofs 14 F



Summary for Subcatchment 3G-6R: Roofs 15 F

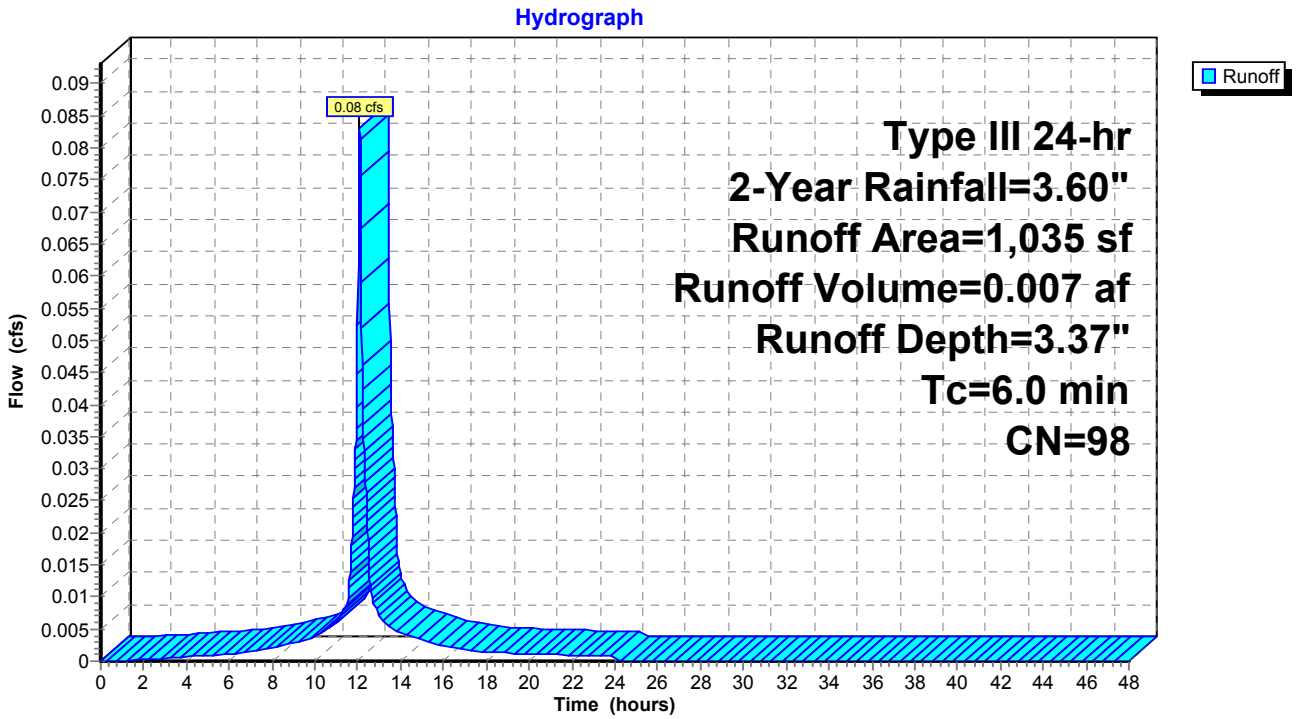
Runoff = 0.08 cfs @ 12.08 hrs, Volume= 0.007 af, Depth= 3.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
	98	98	Roofs, HSG A
*	937	98	Roofs, HSG B
	1,035	98	Weighted Average
	1,035		100.00% Impervious Area

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

Subcatchment 3G-6R: Roofs 15 F



Summary for Subcatchment 3G-S: Sub-3G-S

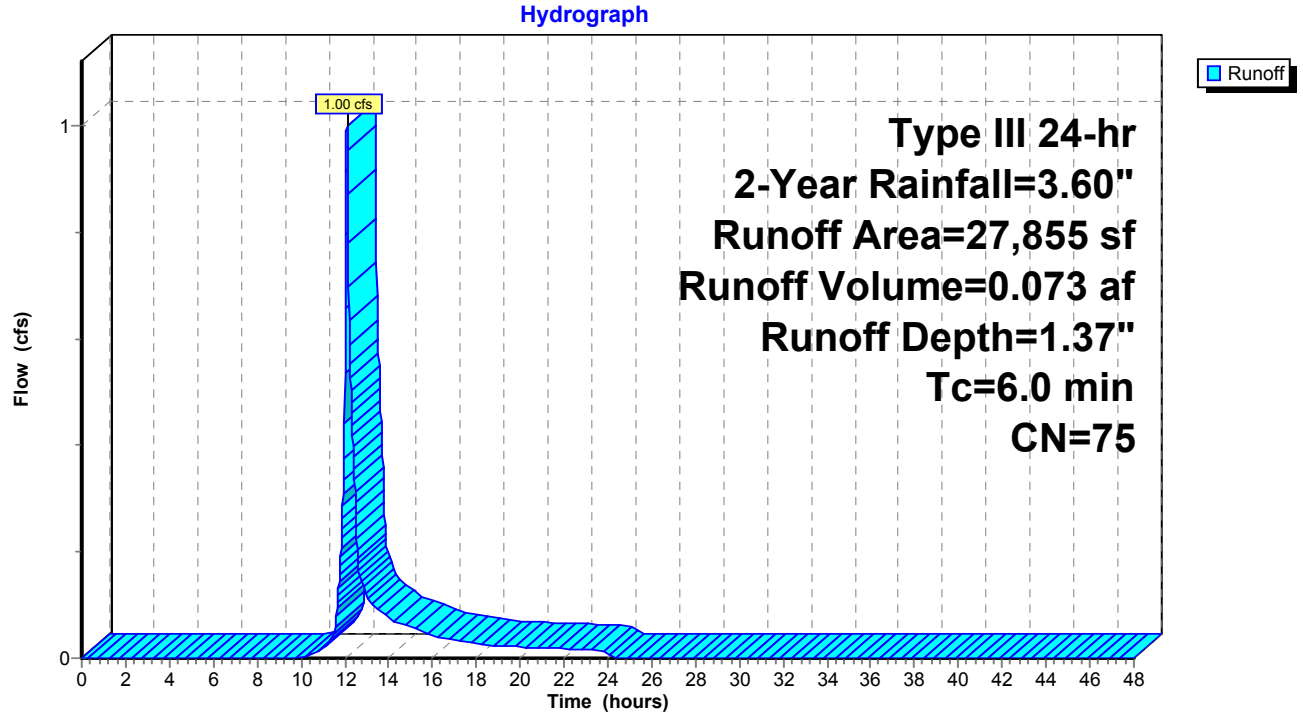
Runoff = 1.00 cfs @ 12.09 hrs, Volume= 0.073 af, Depth= 1.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
*	236	98	Paved drives, HSG A
*	3,067	98	Paved drives, HSG B
*	5,613	98	Paved roads w/curbs & sewers, HSG A
	4,837	98	Paved roads w/curbs & sewers, HSG B
*	1,272	98	Paved sidewalk, HSG A
*	617	98	Paved sidewalk, HSG B
*	42	98	Walks, HSG A
*	255	98	Walks, HSG B
	9,558	39	>75% Grass cover, Good, HSG A
	2,358	61	>75% Grass cover, Good, HSG B
	27,855	75	Weighted Average
	11,916		42.78% Pervious Area
	15,939		57.22% Impervious Area

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

Subcatchment 3G-S: Sub-3G-S



Summary for Subcatchment 3H-S: Sub-3A

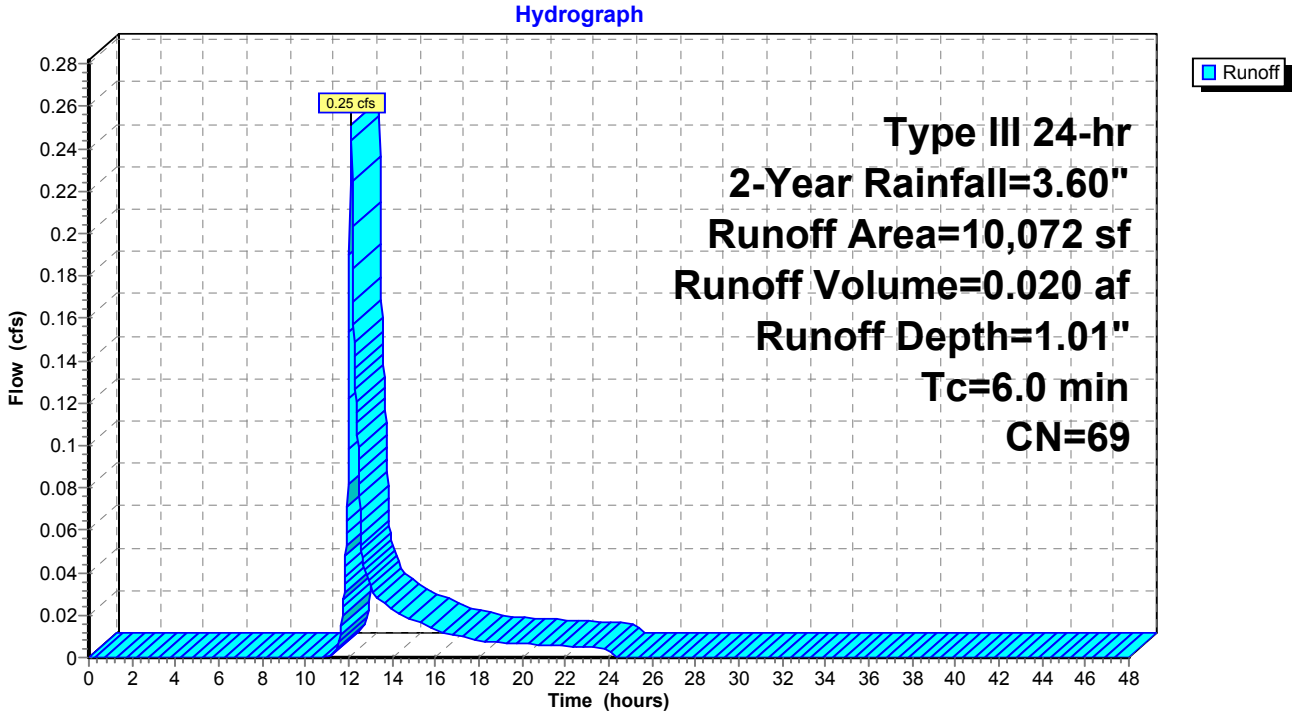
Runoff = 0.25 cfs @ 12.10 hrs, Volume= 0.020 af, Depth= 1.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
*	2,235	98	Paved drives, HSG A
	1,736	98	Paved roads w/curbs & sewers, HSG A
*	85	98	Walks, HSG A
	4,959	39	>75% Grass cover, Good, HSG A
*	889	98	Paved sidewalk, HSG A
*	168	98	Walls, HSG A
	10,072	69	Weighted Average
	4,959		49.24% Pervious Area
	5,113		50.76% Impervious Area

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

Subcatchment 3H-S: Sub-3A



Summary for Subcatchment 3I-S: Sub-3I-S

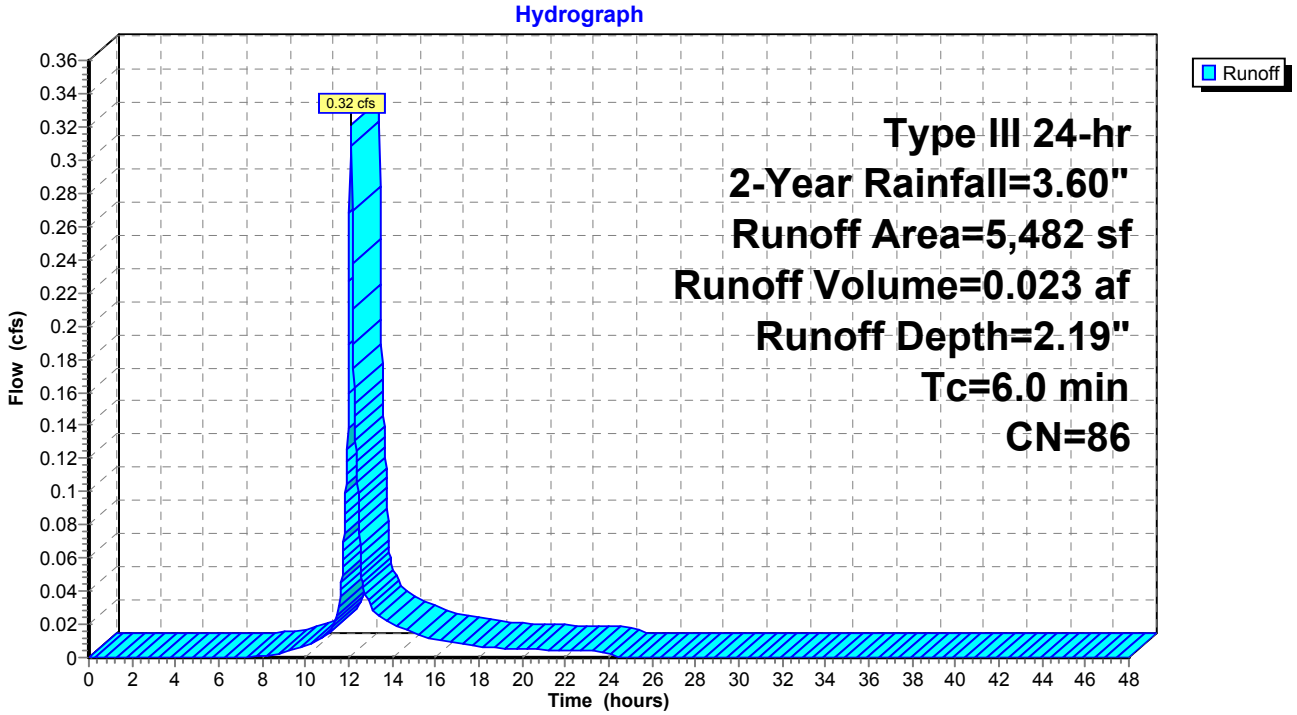
Runoff = 0.32 cfs @ 12.09 hrs, Volume= 0.023 af, Depth= 2.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
*	955	98	Paved drives, HSG A
*	3,322	98	Paved roads w/curbs & sewers, HSG A
*	85	98	Walks, HSG A
	1,120	39	>75% Grass cover, Good, HSG A
	5,482	86	Weighted Average
	1,120		20.43% Pervious Area
	4,362		79.57% Impervious Area

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

Subcatchment 3I-S: Sub-3I-S



Summary for Subcatchment 4S: Sub-4

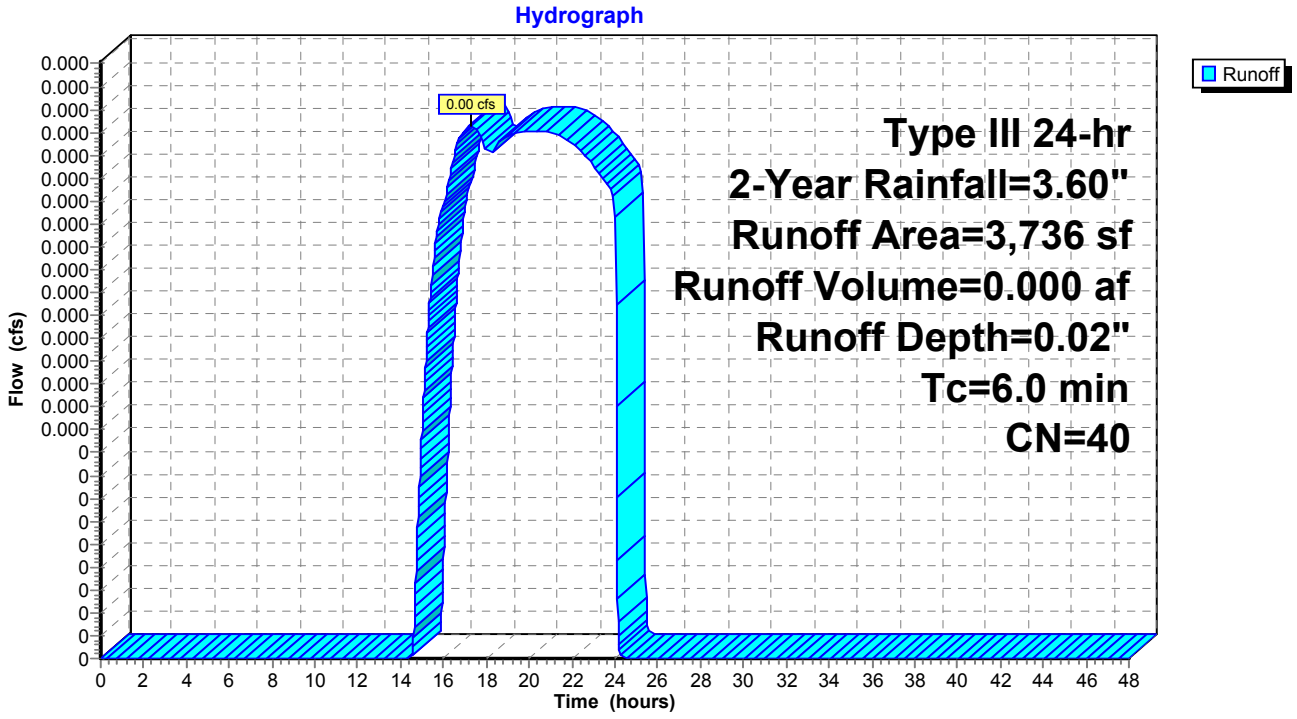
Runoff = 0.00 cfs @ 17.24 hrs, Volume= 0.000 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
	3,694	39	>75% Grass cover, Good, HSG A
*	42	98	Walks, HSG A
	3,736	40	Weighted Average
	3,694		98.88% Pervious Area
	42		1.12% Impervious Area

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

Subcatchment 4S: Sub-4



Summary for Subcatchment 4S-1: Sub-4

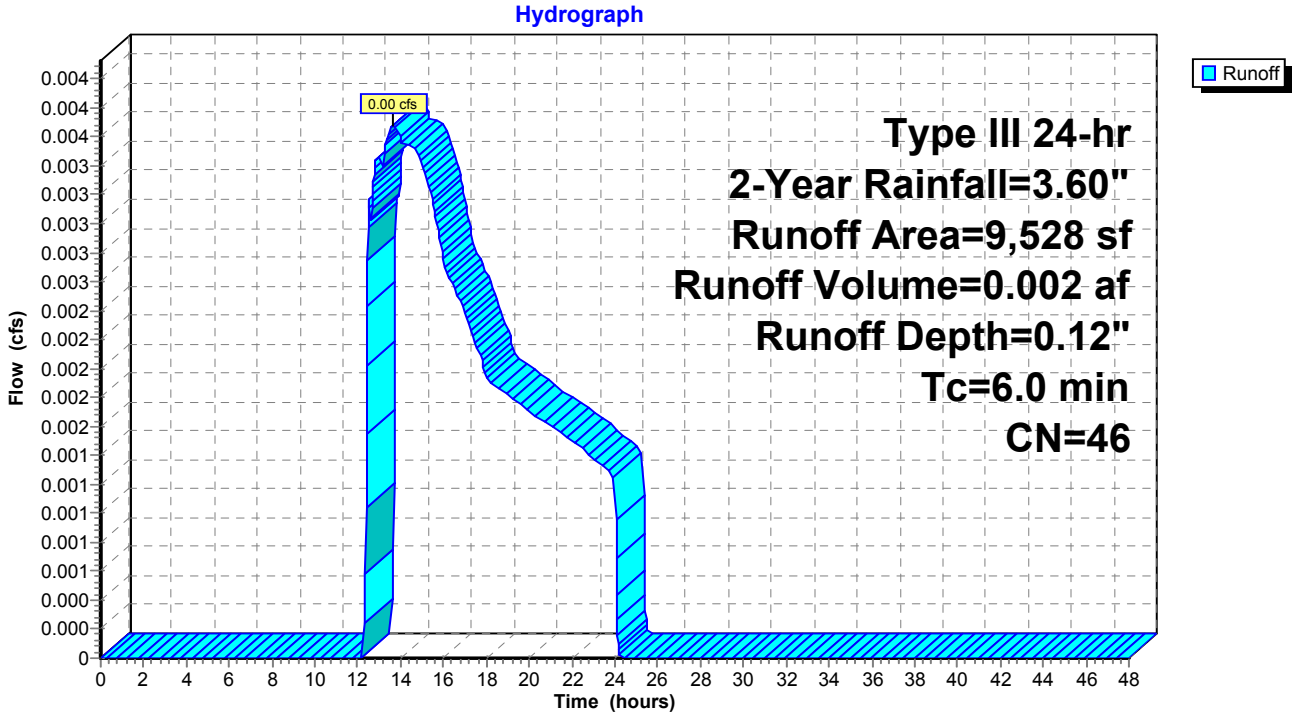
Runoff = 0.00 cfs @ 13.68 hrs, Volume= 0.002 af, Depth= 0.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
	8,378	39	>75% Grass cover, Good, HSG A
*	926	98	Decks, HSG A
*	224	98	Walls, HSG A
	9,528	46	Weighted Average
	8,378		87.93% Pervious Area
	1,150		12.07% Impervious Area

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

Subcatchment 4S-1: Sub-4



Summary for Subcatchment 4S-1R: Roofs 32 FB

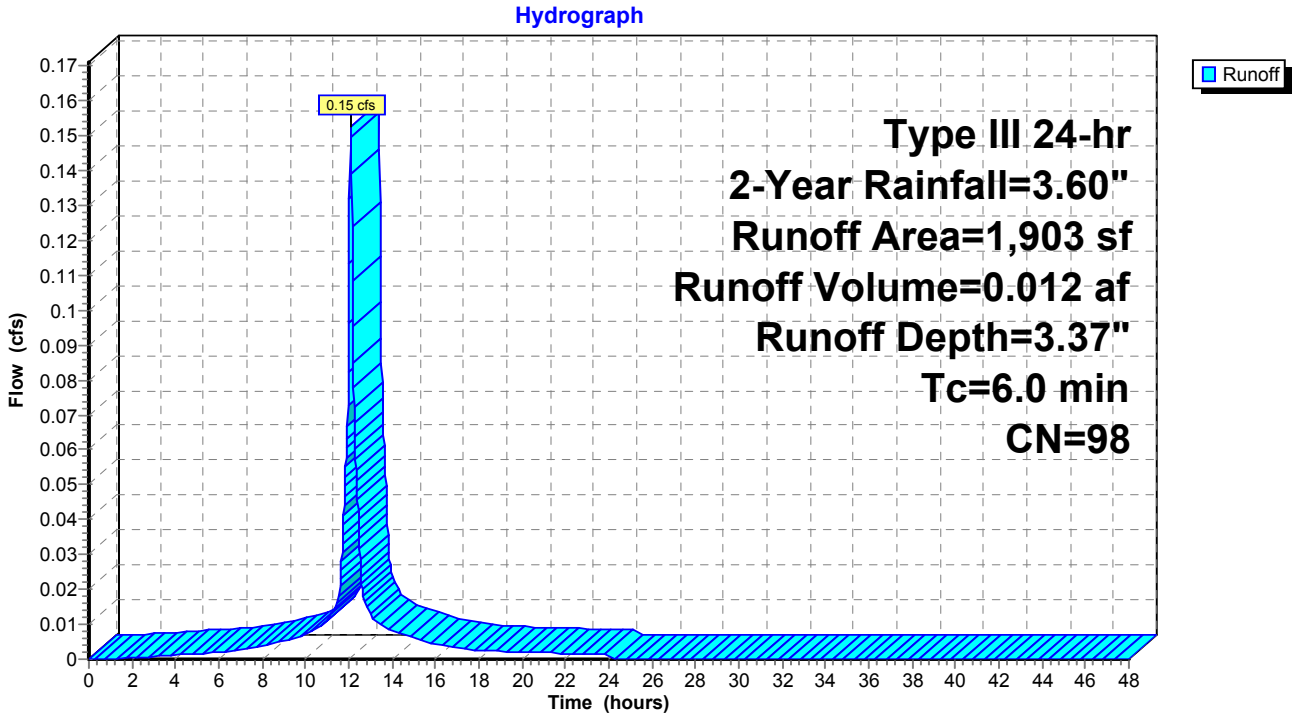
Runoff = 0.15 cfs @ 12.08 hrs, Volume= 0.012 af, Depth= 3.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

Area (sf)	CN	Description
1,903	98	Roofs, HSG A
1,903		100.00% Impervious Area

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

Subcatchment 4S-1R: Roofs 32 FB



Summary for Subcatchment 5S: Sub -5

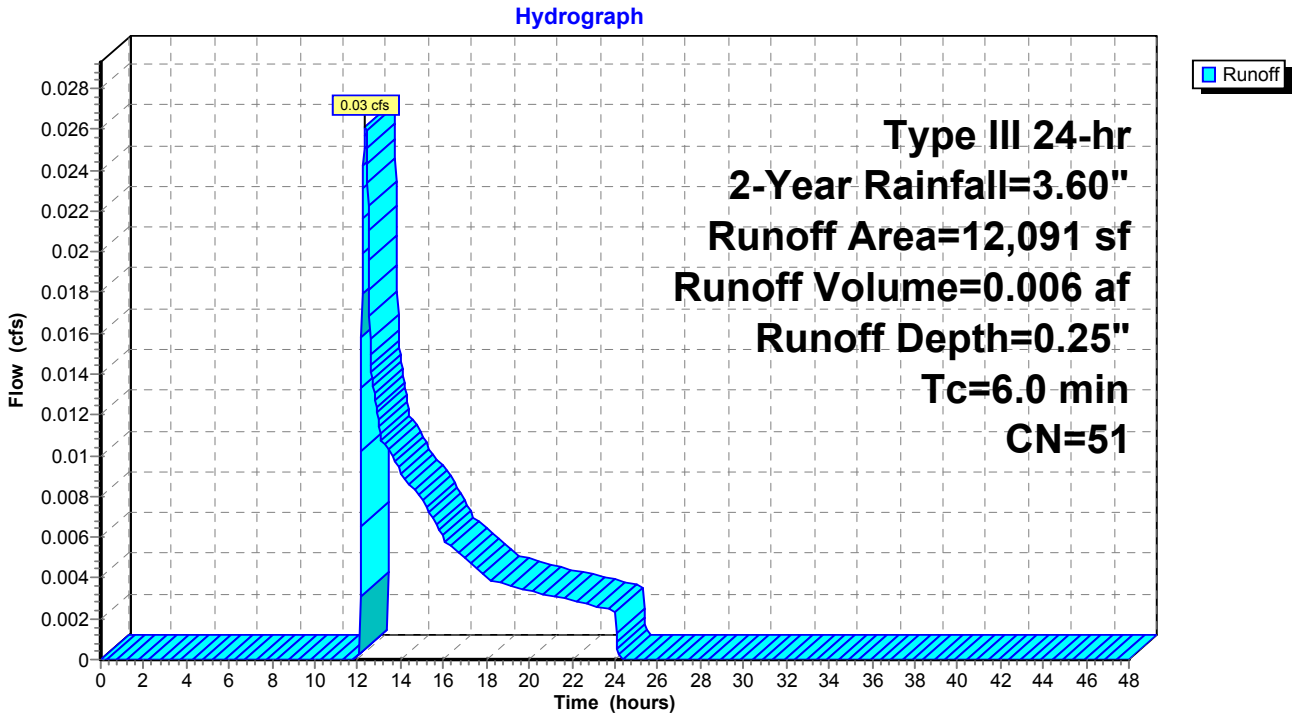
Runoff = 0.03 cfs @ 12.36 hrs, Volume= 0.006 af, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
	6,491	39	>75% Grass cover, Good, HSG A
	365	80	>75% Grass cover, Good, HSG D
*	556	98	Decks, HSG A
*	261	98	Paved sidewalk, HSG A
*	62	98	Paved sidewalk, HSG D
	1,129	98	Paved roads w/curbs & sewers, HSG A
	286	98	Paved roads w/curbs & sewers, HSG D
	2,941	39	>75% Grass cover, Good, HSG A
	12,091	51	Weighted Average
	9,797		81.03% Pervious Area
	2,294		18.97% Impervious Area

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

Subcatchment 5S: Sub -5



Summary for Subcatchment 5S-1: Sub 5S-1

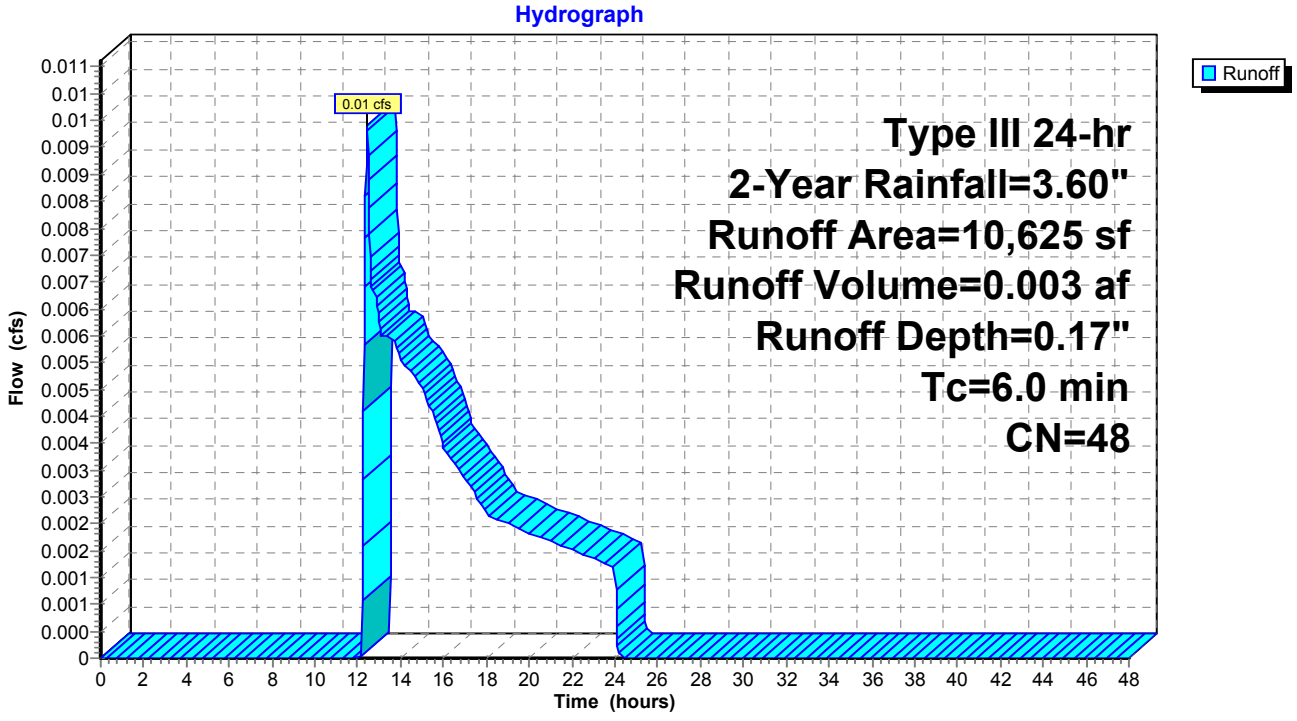
Runoff = 0.01 cfs @ 12.44 hrs, Volume= 0.003 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
*	1,175	98	Walls, HSG A
*	371	98	Decks, HSG A
	9,079	39	>75% Grass cover, Good, HSG A
	10,625	48	Weighted Average
	9,079		85.45% Pervious Area
	1,546		14.55% Impervious Area

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

Subcatchment 5S-1: Sub 5S-1



Summary for Subcatchment 5S-1R: Roofs 19-21 FB

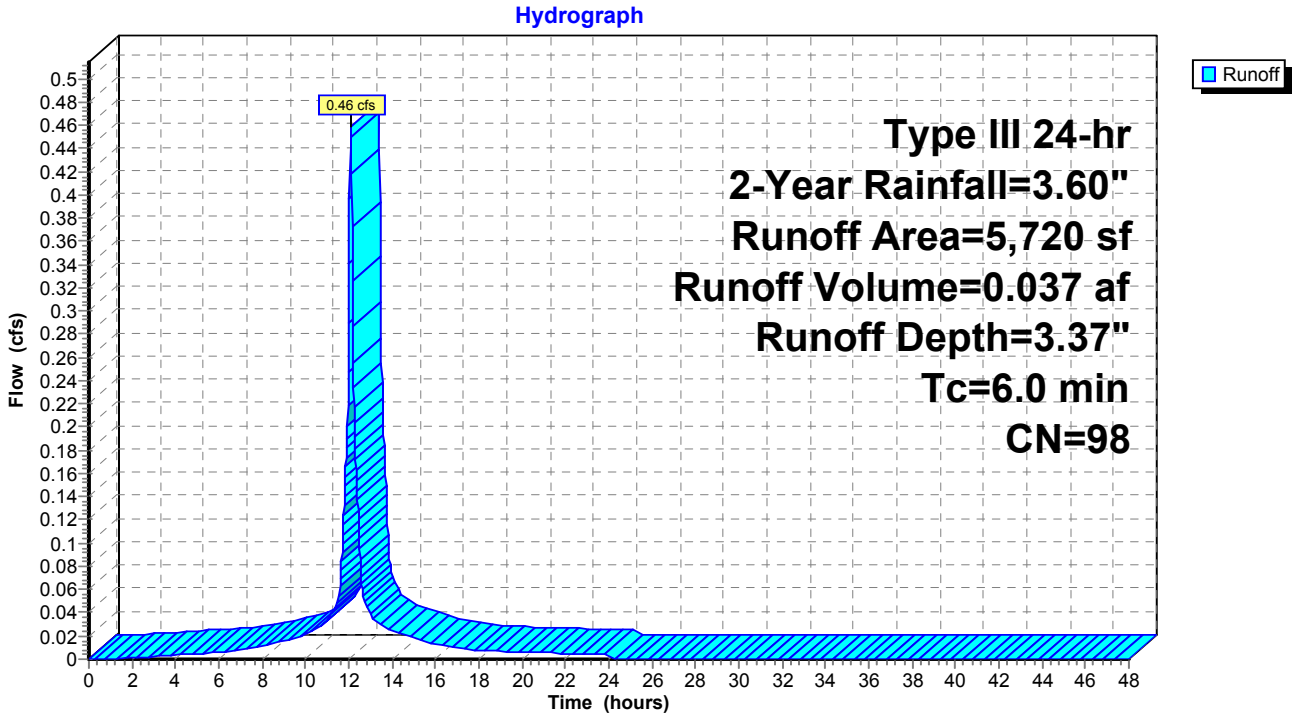
Runoff = 0.46 cfs @ 12.08 hrs, Volume= 0.037 af, Depth= 3.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

Area (sf)	CN	Description
5,720	98	Roofs, HSG A
5,720		100.00% Impervious Area

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

Subcatchment 5S-1R: Roofs 19-21 FB



Summary for Subcatchment 5S-P: Pavement

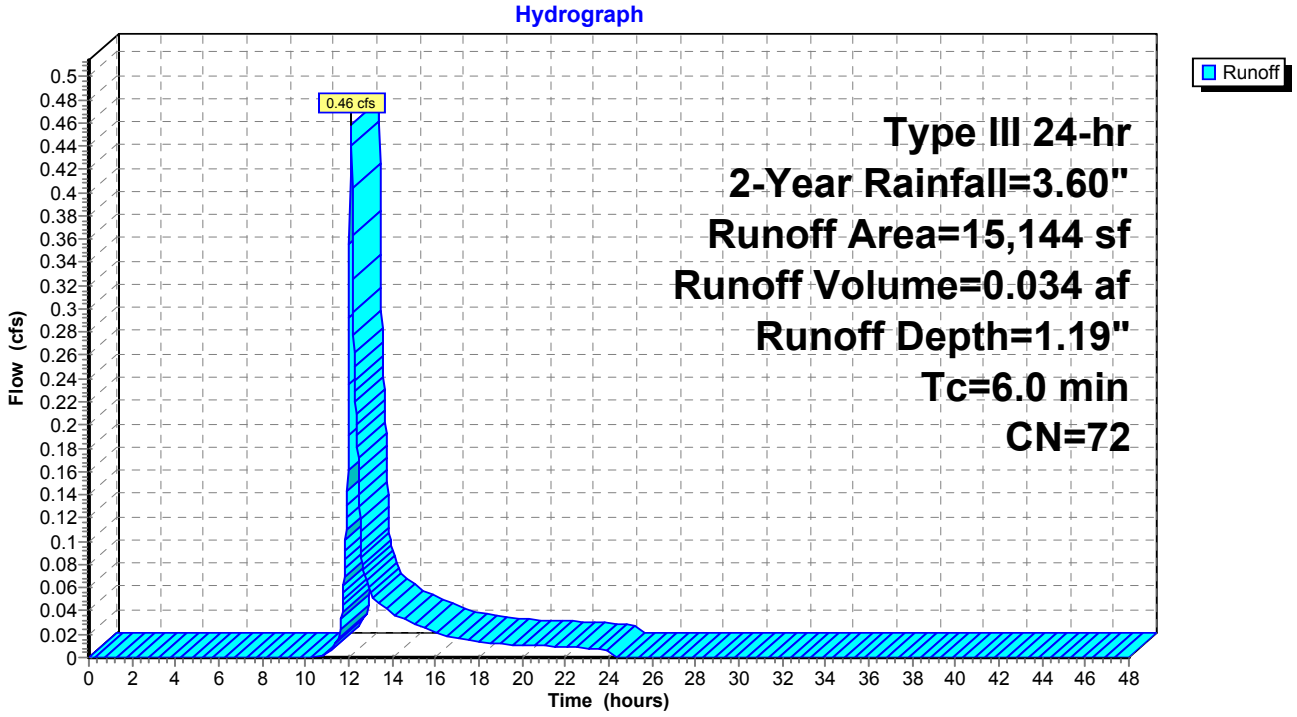
Runoff = 0.46 cfs @ 12.10 hrs, Volume= 0.034 af, Depth= 1.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.60"

	Area (sf)	CN	Description
*	2,816	98	Paved drives, HSG A
	4,704	98	Paved roads w/curbs & sewers, HSG A
	6,584	39	>75% Grass cover, Good, HSG A
*	643	98	Paved sidewalk, HSG A
*	297	98	Walks, HSG A
*	100	98	Kiosk, HSG A
	15,144	72	Weighted Average
	6,584		43.48% Pervious Area
	8,560		56.52% Impervious Area

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

Subcatchment 5S-P: Pavement

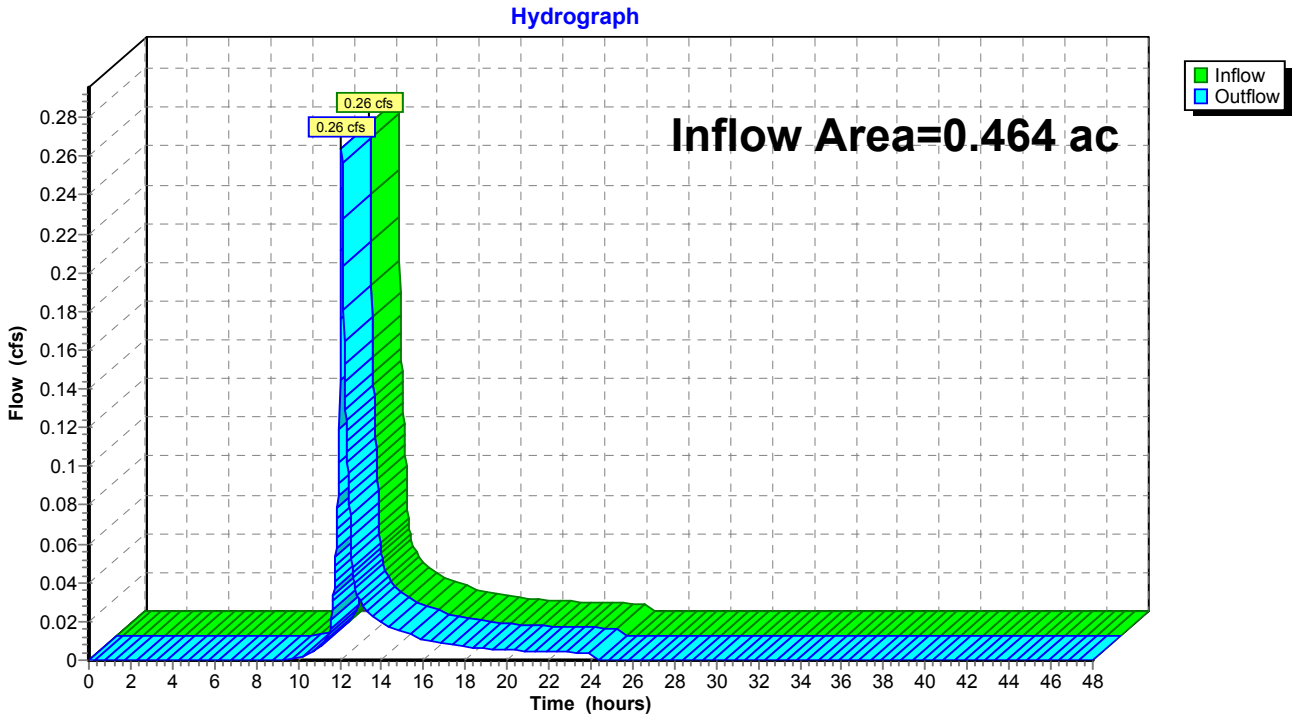


Summary for Reach DP-1: DMH

Inflow Area = 0.464 ac, 64.50% Impervious, Inflow Depth = 0.49" for 2-Year event
Inflow = 0.26 cfs @ 12.09 hrs, Volume= 0.019 af
Outflow = 0.26 cfs @ 12.09 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Reach DP-1: DMH

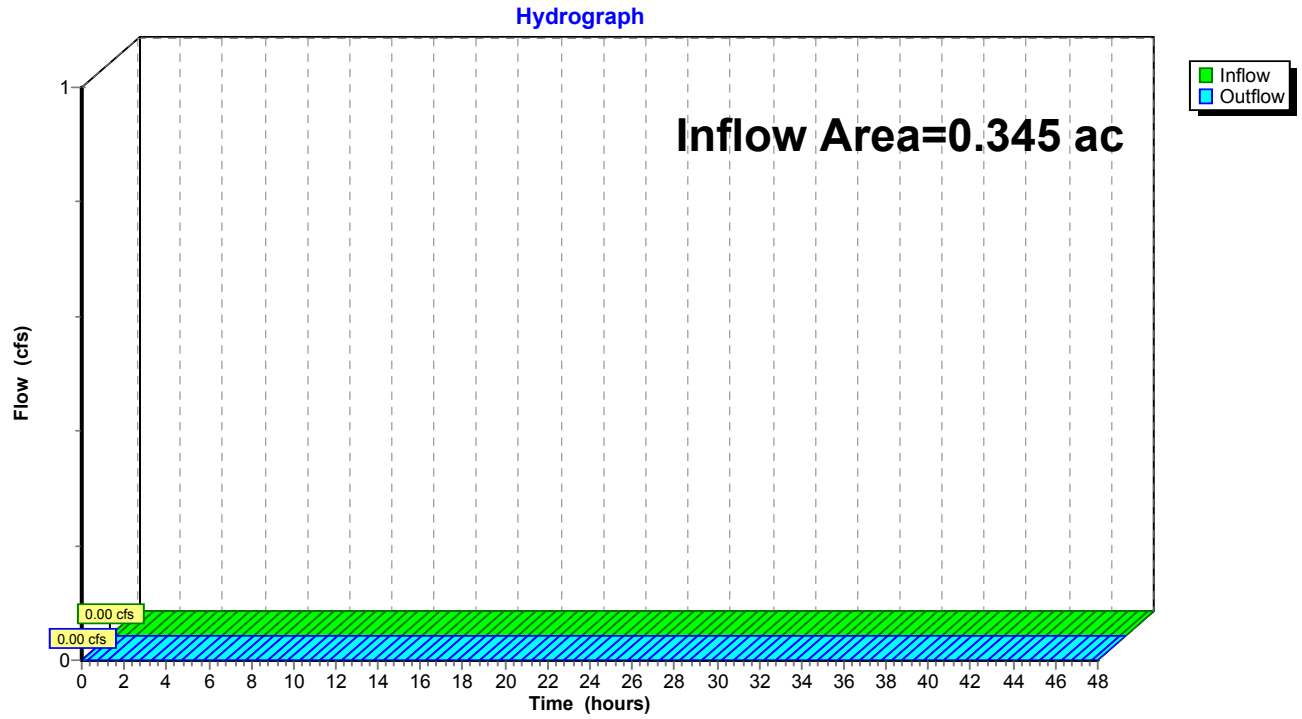


Summary for Reach DP-2: DP-2

Inflow Area = 0.345 ac, 10.74% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Reach DP-2: DP-2

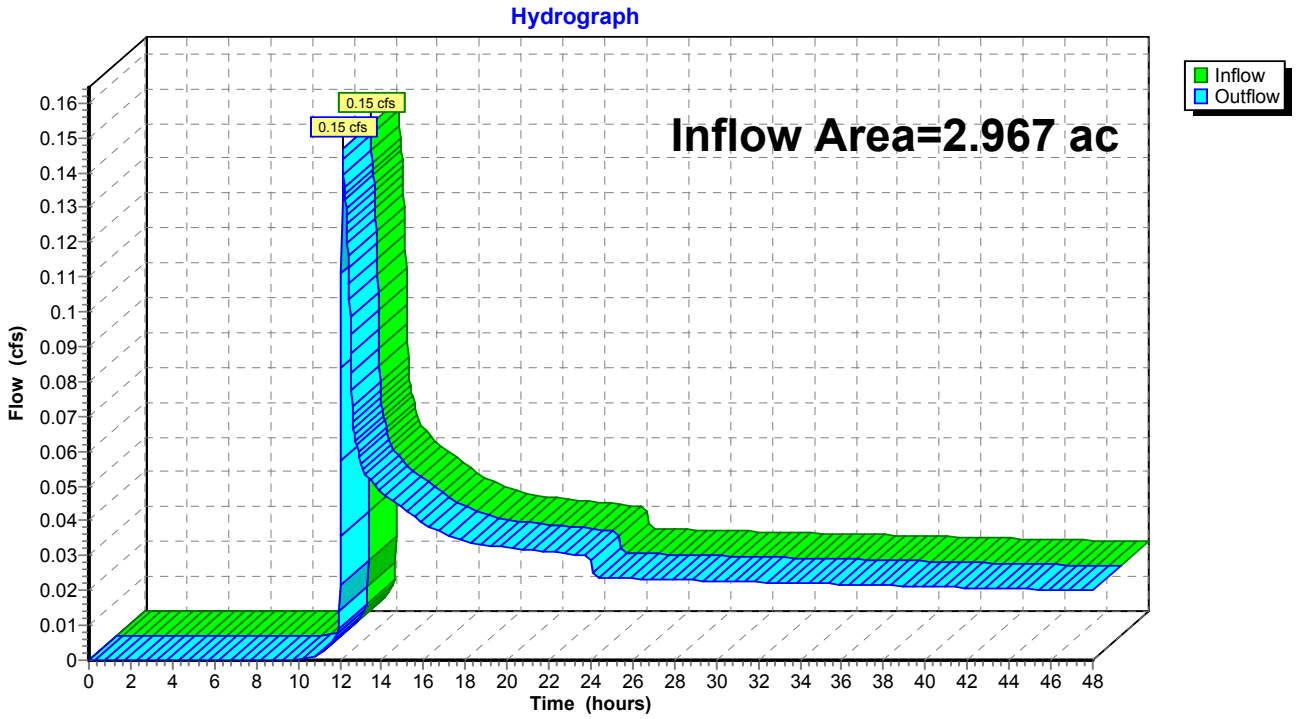


Summary for Reach DP-3: DP-3

Inflow Area = 2.967 ac, 48.40% Impervious, Inflow Depth > 0.34" for 2-Year event
Inflow = 0.15 cfs @ 12.14 hrs, Volume= 0.084 af
Outflow = 0.15 cfs @ 12.14 hrs, Volume= 0.084 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Reach DP-3: DP-3

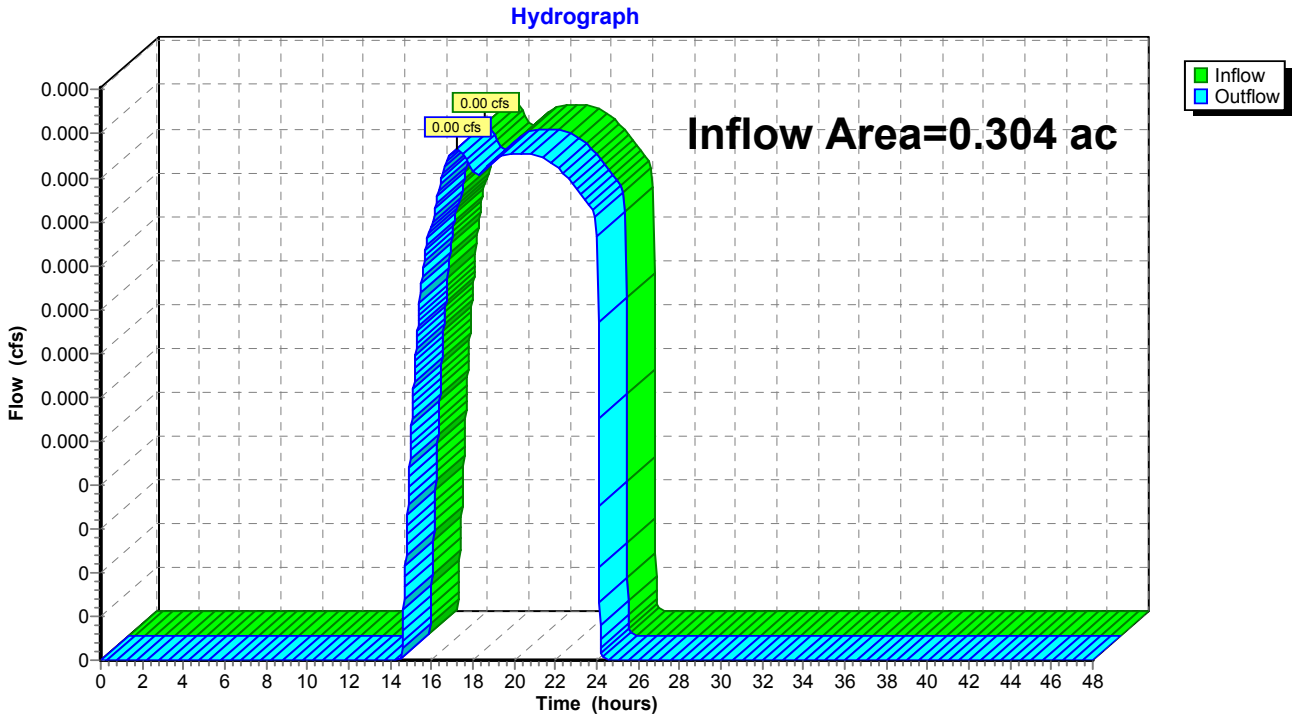


Summary for Reach DP-4: PL

Inflow Area = 0.304 ac, 8.99% Impervious, Inflow Depth = 0.01" for 2-Year event
Inflow = 0.00 cfs @ 17.24 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 17.24 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Reach DP-4: PL

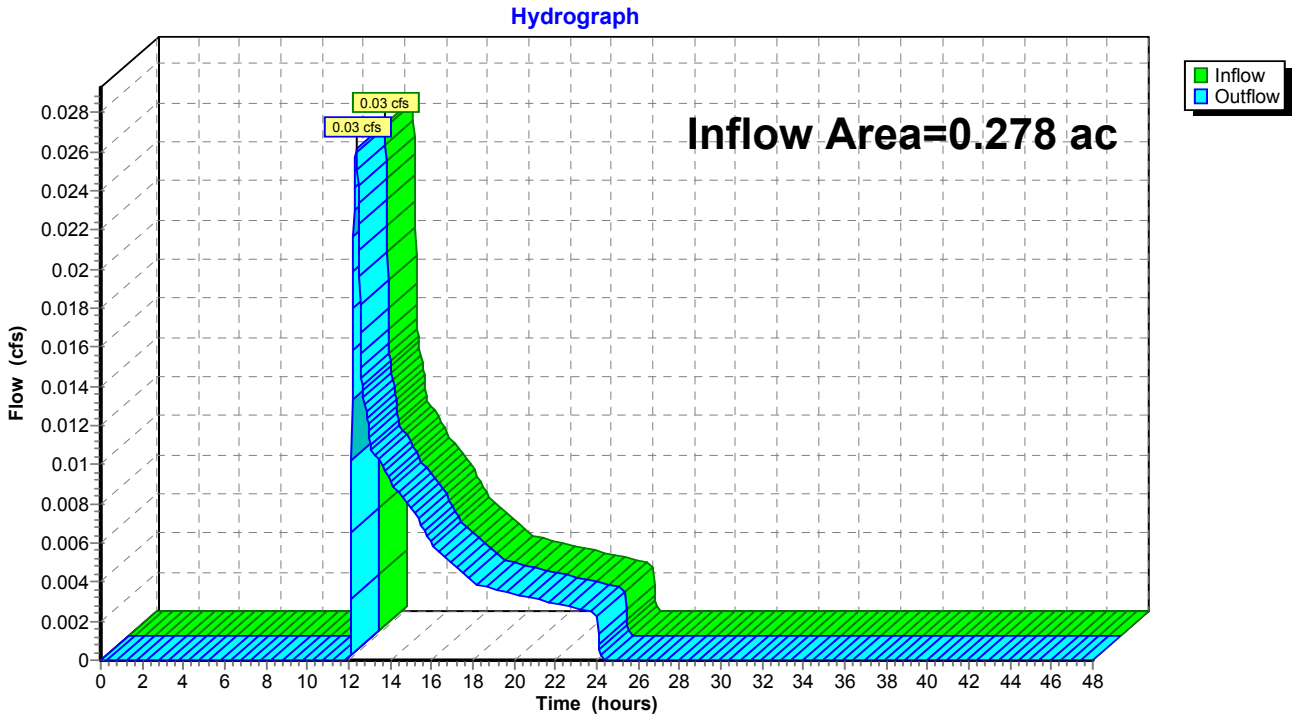


Summary for Reach DP-5: PL

Inflow Area = 0.278 ac, 18.97% Impervious, Inflow Depth = 0.25" for 2-Year event
Inflow = 0.03 cfs @ 12.36 hrs, Volume= 0.006 af
Outflow = 0.03 cfs @ 12.36 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Reach DP-5: PL



Summary for Pond D-1: Depression

Inflow Area = 0.345 ac, 10.74% Impervious, Inflow Depth = 0.08" for 2-Year event
Inflow = 0.00 cfs @ 14.80 hrs, Volume= 0.002 af
Outflow = 0.00 cfs @ 14.83 hrs, Volume= 0.002 af, Atten= 0%, Lag= 1.5 min
Discarded = 0.00 cfs @ 14.83 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 59.00' @ 14.83 hrs Surf.Area= 419 sf Storage= 0 cf

Plug-Flow detention time= 0.9 min calculated for 0.002 af (100% of inflow)
Center-of-Mass det. time= 0.9 min (1,063.1 - 1,062.2)

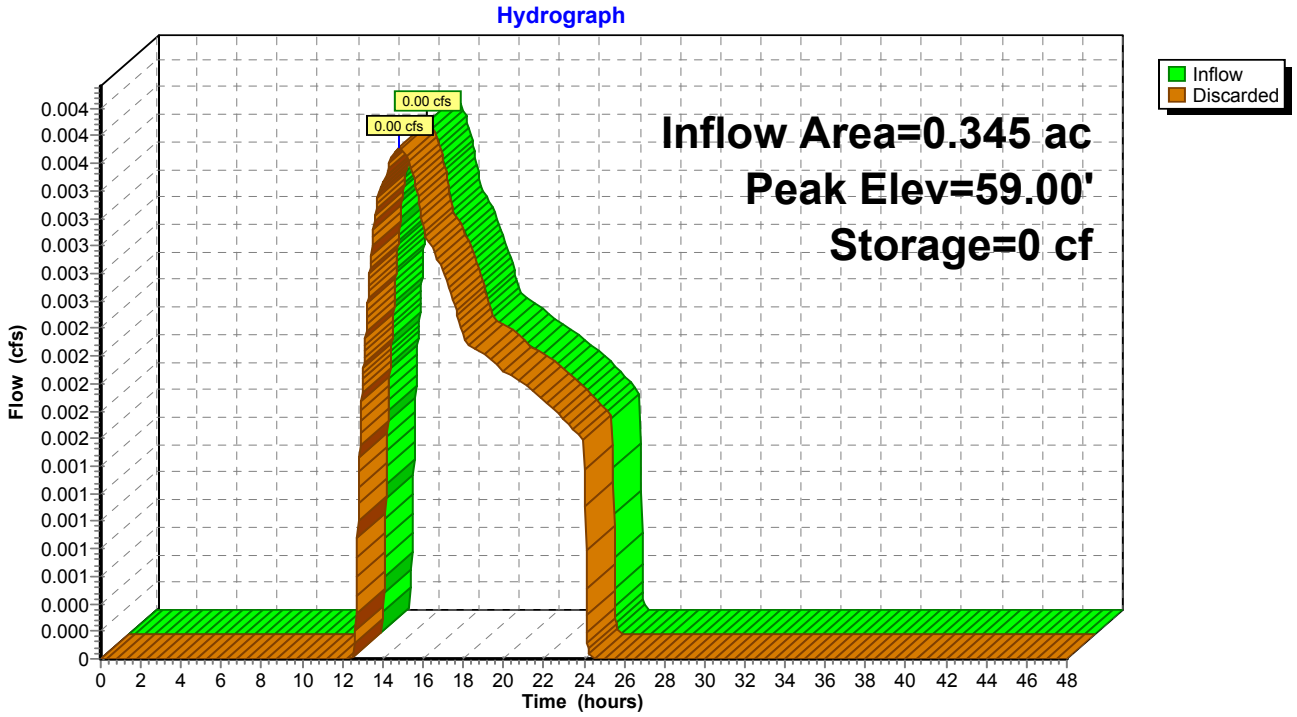
Volume	Invert	Avail.Storage	Storage Description
#1	59.00'	615 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
59.00	419	0	0
60.00	811	615	615

Device	Routing	Invert	Outlet Devices
#1	Discarded	59.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.00 cfs @ 14.83 hrs HW=59.00' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Pond D-1: Depression



Summary for Pond D-2: Depression

Inflow Area = 0.482 ac, 29.27% Impervious, Inflow Depth = 1.02" for 2-Year event
Inflow = 0.42 cfs @ 12.09 hrs, Volume= 0.041 af
Outflow = 0.11 cfs @ 12.50 hrs, Volume= 0.041 af, Atten= 73%, Lag= 25.1 min
Discarded = 0.11 cfs @ 12.50 hrs, Volume= 0.041 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 56.70' @ 12.50 hrs Surf.Area= 586 sf Storage= 339 cf

Plug-Flow detention time= 16.3 min calculated for 0.041 af (100% of inflow)
Center-of-Mass det. time= 16.3 min (809.1 - 792.9)

Volume	Invert	Avail.Storage	Storage Description
#1	56.00'	2,585 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

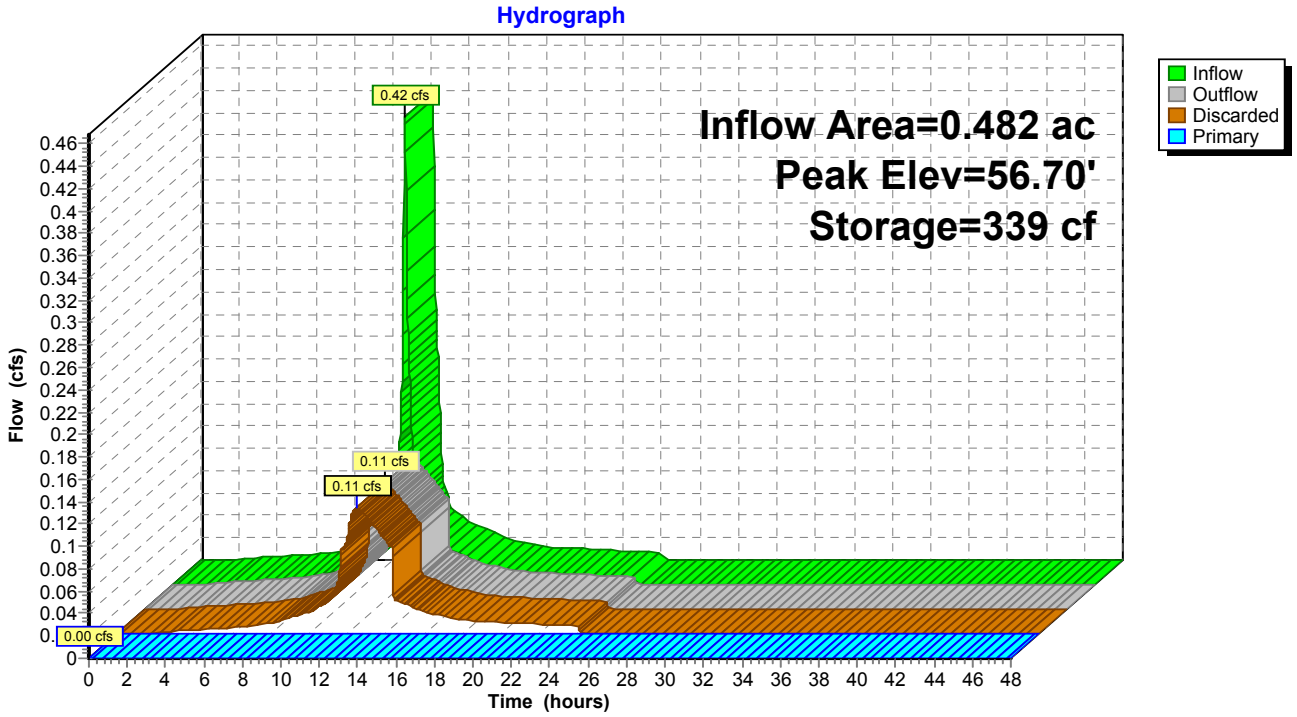
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.00	388	0	0
57.00	672	530	530
58.00	1,013	843	1,373
59.00	1,411	1,212	2,585

Device	Routing	Invert	Outlet Devices
#1	Primary	58.60'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.40 Width (feet) 5.00 20.00
#2	Discarded	56.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.11 cfs @ 12.50 hrs HW=56.70' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=56.00' TW=0.00' (Dynamic Tailwater)
↑—**1=Custom Weir/Orifice** (Controls 0.00 cfs)

Pond D-2: Depression



Summary for Pond D-3: Depression

Inflow Area = 0.219 ac, 12.07% Impervious, Inflow Depth = 0.12" for 2-Year event
Inflow = 0.00 cfs @ 13.68 hrs, Volume= 0.002 af
Outflow = 0.00 cfs @ 13.69 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.7 min
Discarded = 0.00 cfs @ 13.69 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 63.00' @ 13.69 hrs Surf.Area= 757 sf Storage= 0 cf

Plug-Flow detention time= 0.9 min calculated for 0.002 af (100% of inflow)
Center-of-Mass det. time= 0.9 min (1,026.7 - 1,025.9)

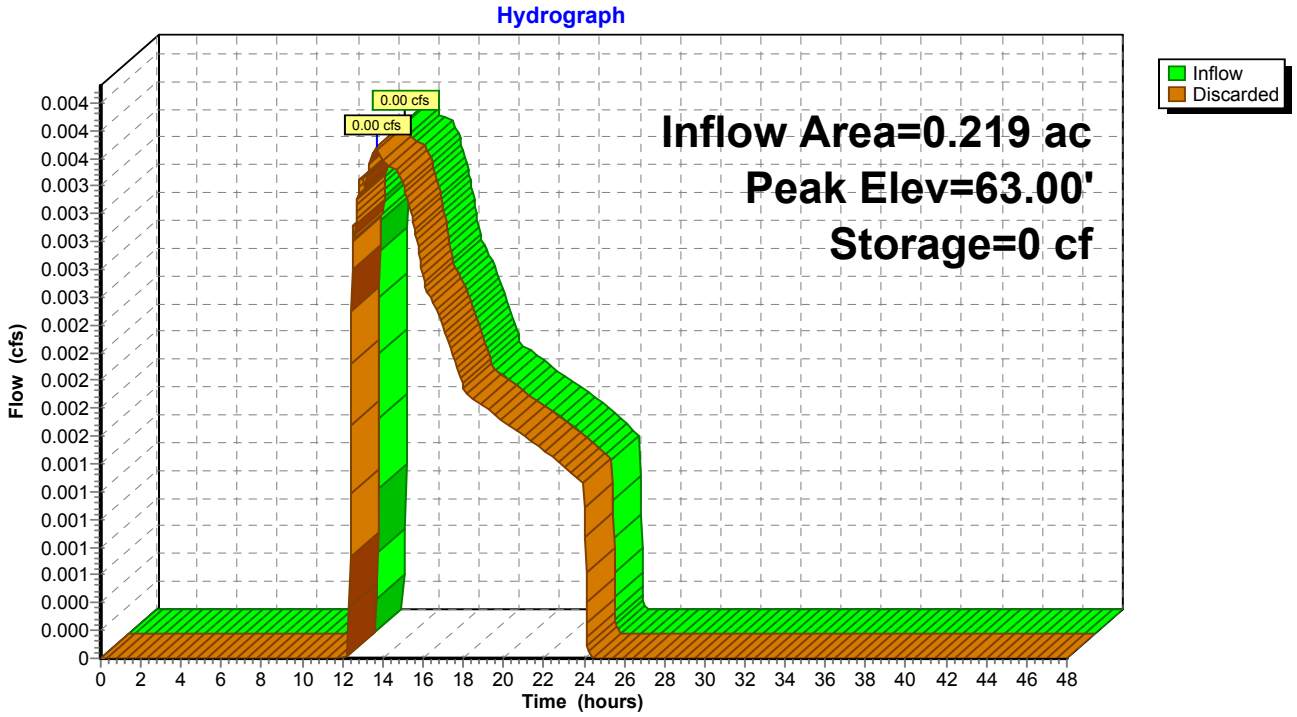
Volume	Invert	Avail.Storage	Storage Description
#1	63.00'	2,747 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
63.00	757	0	0
64.00	1,368	1,063	1,063
65.00	2,001	1,685	2,747

Device	Routing	Invert	Outlet Devices
#1	Discarded	63.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.00 cfs @ 13.69 hrs HW=63.00' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.00 cfs)

Pond D-3: Depression



Summary for Pond D-4: Depression

Inflow Area = 0.244 ac, 14.55% Impervious, Inflow Depth = 0.17" for 2-Year event
Inflow = 0.01 cfs @ 12.44 hrs, Volume= 0.003 af
Outflow = 0.01 cfs @ 12.46 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.9 min
Discarded = 0.01 cfs @ 12.46 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 54.00' @ 12.46 hrs Surf.Area= 889 sf Storage= 1 cf

Plug-Flow detention time= 0.9 min calculated for 0.003 af (100% of inflow)
Center-of-Mass det. time= 0.9 min (998.3 - 997.4)

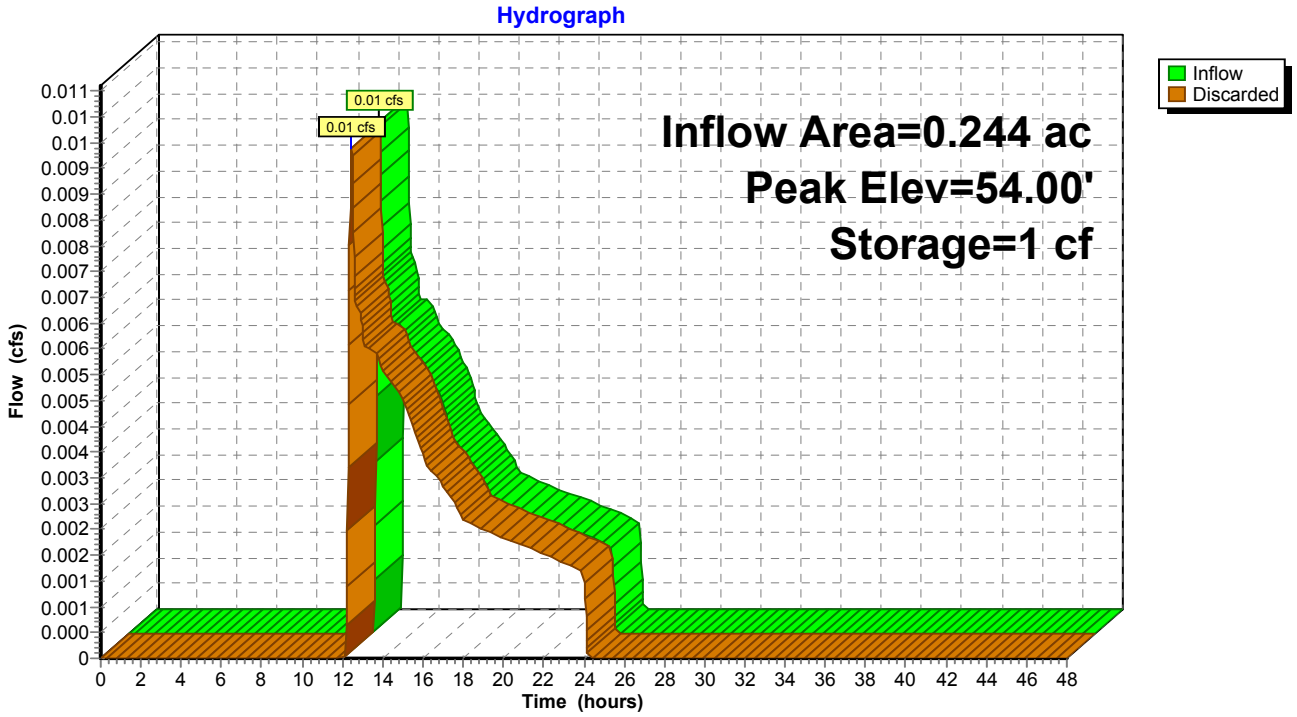
Volume	Invert	Avail.Storage	Storage Description
#1	54.00'	2,555 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
54.00	889	0	0
55.00	1,252	1,071	1,071
56.00	1,717	1,485	2,555

Device	Routing	Invert	Outlet Devices
#1	Discarded	54.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.01 cfs @ 12.46 hrs HW=54.00' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.01 cfs)

Pond D-4: Depression



Summary for Pond DB-1: Prop Detention Basin

Inflow Area = 1.952 ac, 65.30% Impervious, Inflow Depth = 1.03" for 2-Year event
Inflow = 2.17 cfs @ 12.09 hrs, Volume= 0.167 af
Outflow = 0.02 cfs @ 24.04 hrs, Volume= 0.066 af, Atten= 99%, Lag= 716.9 min
Primary = 0.02 cfs @ 24.04 hrs, Volume= 0.066 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 58.85' @ 24.04 hrs Surf.Area= 8,019 sf Storage= 6,275 cf

Plug-Flow detention time= 1,068.0 min calculated for 0.066 af (39% of inflow)
Center-of-Mass det. time= 951.9 min (1,776.7 - 824.7)

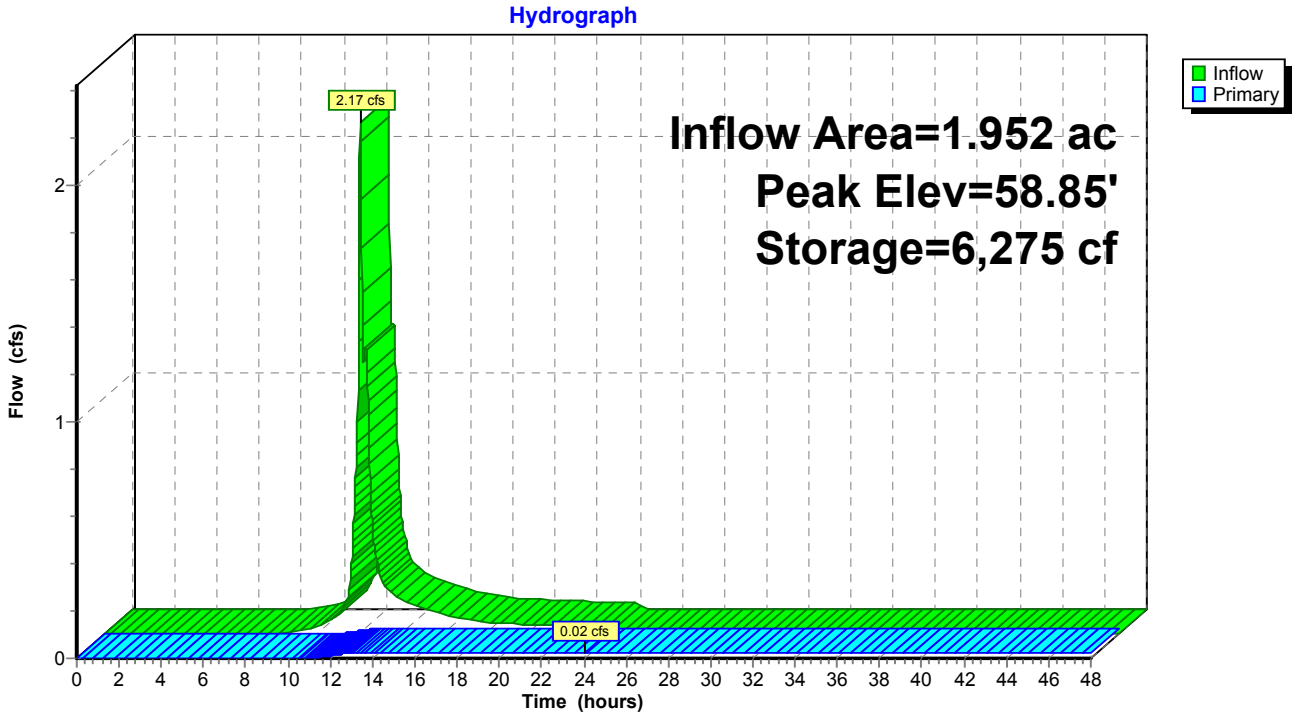
Volume	Invert	Avail.Storage	Storage Description
#1	58.00'	29,454 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
58.00	6,690	0	0
59.00	8,247	7,469	7,469
59.10	9,613	893	8,362
60.00	11,020	9,285	17,646
61.00	12,596	11,808	29,454

Device	Routing	Invert	Outlet Devices
#1	Primary	58.00'	**12.0" Round Culvert** L= 19.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 58.00' / 57.30' S= 0.0359 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	58.00'	**1.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	59.00'	**4.0' long x 1.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=0.02 cfs @ 24.04 hrs HW=58.85' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.02 cfs of 1.77 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.02 cfs @ 4.34 fps)
  └─**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond DB-1: Prop Detention Basin



Summary for Pond P1: Infiltration Chambers

Inflow Area = 0.044 ac,100.00% Impervious, Inflow Depth = 3.37" for 2-Year event
Inflow = 0.16 cfs @ 12.08 hrs, Volume= 0.012 af
Outflow = 0.04 cfs @ 11.80 hrs, Volume= 0.012 af, Atten= 76%, Lag= 0.0 min
Discarded = 0.04 cfs @ 11.80 hrs, Volume= 0.012 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 57.15' @ 12.46 hrs Surf.Area= 195 sf Storage= 107 cf

Plug-Flow detention time= 13.4 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 13.4 min (767.4 - 754.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	56.20'	184 cf	**11.17'W x 17.50'L x 3.54'H Field A** 692 cf Overall - 231 cf Embedded = 461 cf x 40.0% Voids
#2A	56.70'	231 cf	**Cultec R-330XLHD** x 4 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		415 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.20'	**8.200 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.04 cfs @ 11.80 hrs HW=56.24' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Pond P1: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

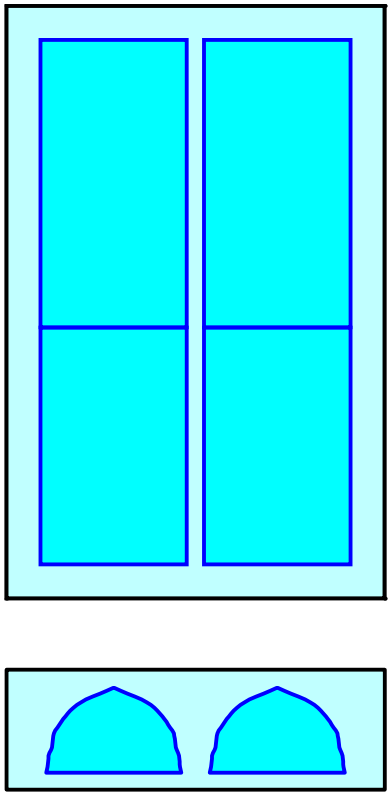
2 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 15.50' Row Length +12.0" End Stone x 2 = 17.50' Base Length
2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

4 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 231.0 cf Chamber Storage

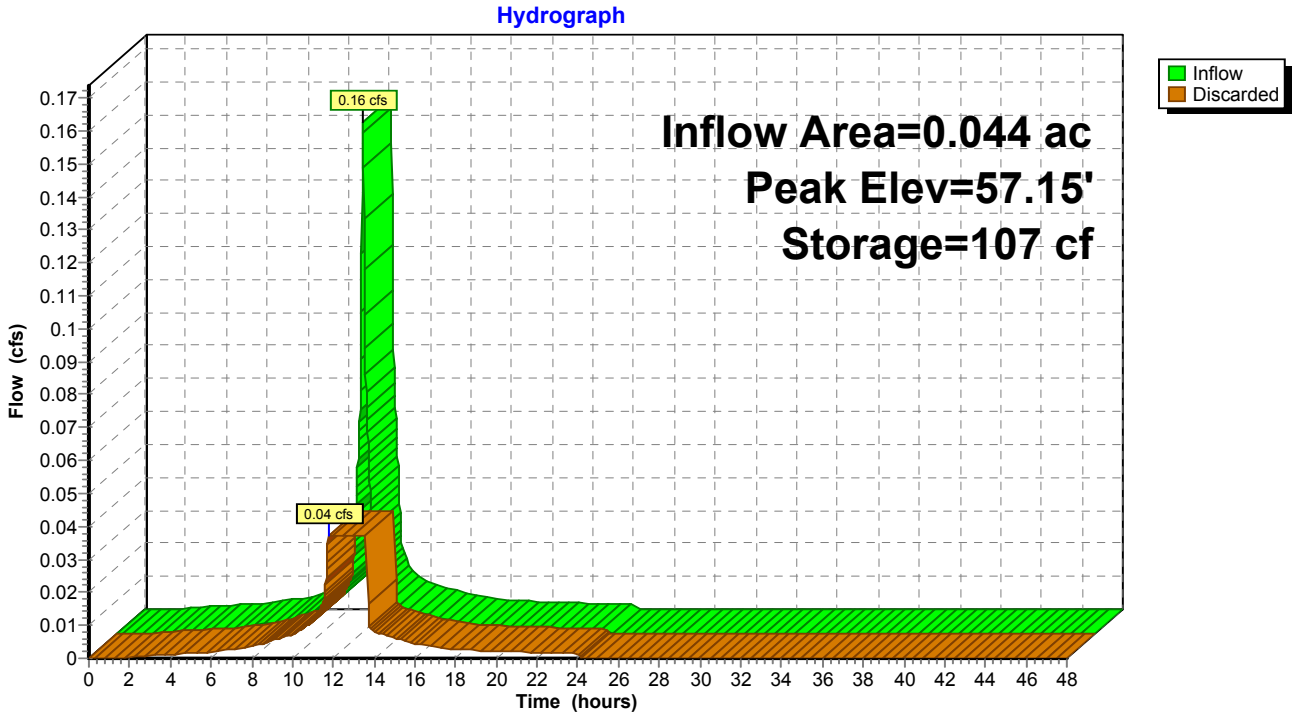
692.1 cf Field - 231.0 cf Chambers = 461.1 cf Stone x 40.0% Voids = 184.4 cf Stone Storage

Chamber Storage + Stone Storage = 415.4 cf = 0.010 af
Overall Storage Efficiency = 60.0%
Overall System Size = 17.50' x 11.17' x 3.54'

4 Chambers
25.6 cy Field
17.1 cy Stone



Pond P1: Infiltration Chambers



Summary for Pond P10: Infiltration Chambers

Inflow Area = 0.024 ac,100.00% Impervious, Inflow Depth = 3.37" for 2-Year event
Inflow = 0.08 cfs @ 12.08 hrs, Volume= 0.007 af
Outflow = 0.02 cfs @ 11.82 hrs, Volume= 0.007 af, Atten= 74%, Lag= 0.0 min
Discarded = 0.02 cfs @ 11.82 hrs, Volume= 0.007 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 60.58' @ 12.44 hrs Surf.Area= 111 sf Storage= 53 cf

Plug-Flow detention time= 11.3 min calculated for 0.007 af (100% of inflow)
Center-of-Mass det. time= 11.3 min (765.3 - 754.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	59.70'	111 cf	**6.33'W x 17.50'L x 3.54'H Field A** 393 cf Overall - 115 cf Embedded = 277 cf x 40.0% Voids
#2A	60.20'	115 cf	**Cultec R-330XLHD** x 2 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		226 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	59.70'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.02 cfs @ 11.82 hrs HW=59.74' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Pond P10: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 1 rows

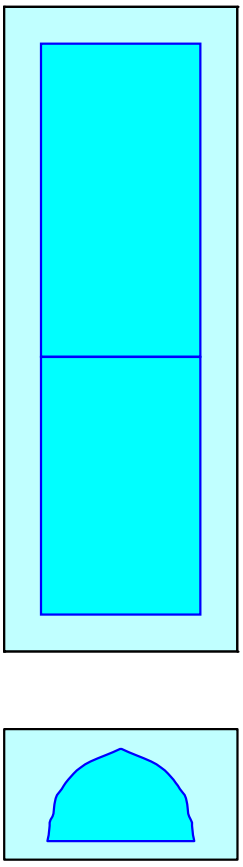
2 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 15.50' Row Length +12.0" End Stone x 2 = 17.50' Base Length
1 Rows x 52.0" Wide + 12.0" Side Stone x 2 = 6.33' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

2 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 1 Rows = 115.5 cf Chamber Storage

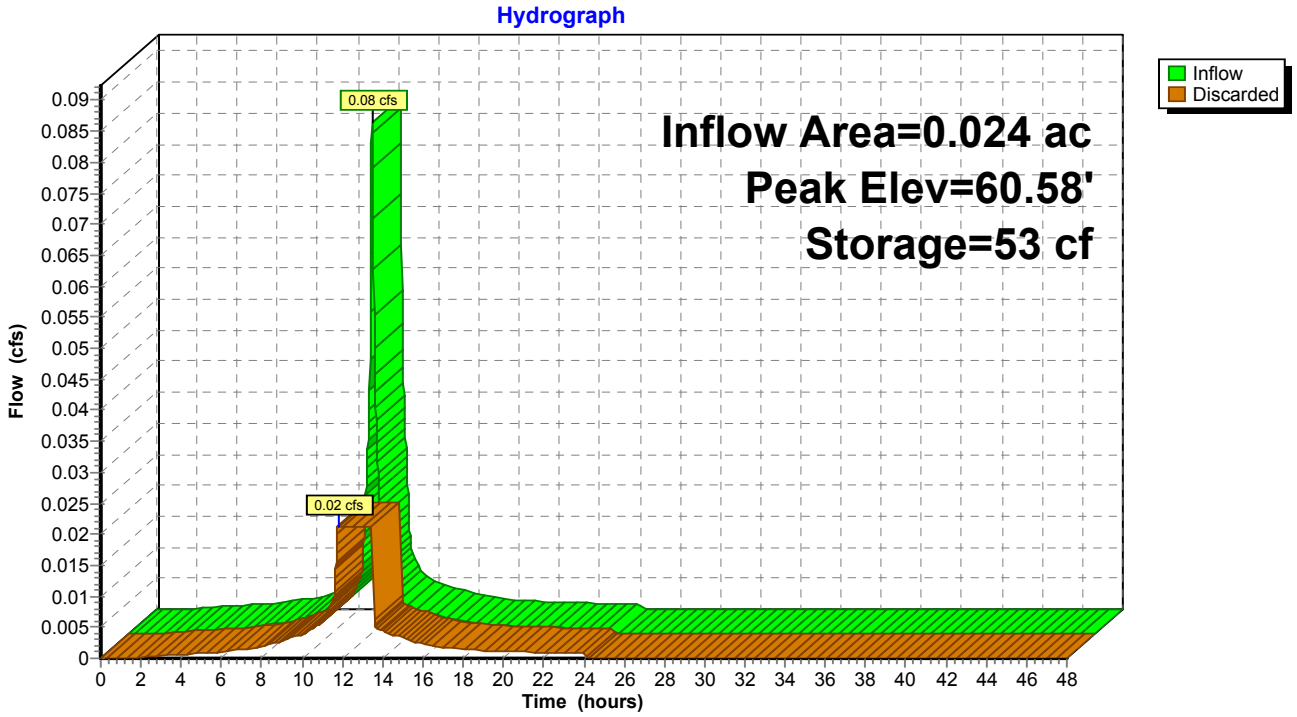
392.5 cf Field - 115.5 cf Chambers = 277.0 cf Stone x 40.0% Voids = 110.8 cf Stone Storage

Chamber Storage + Stone Storage = 226.3 cf = 0.005 af
Overall Storage Efficiency = 57.7%
Overall System Size = 17.50' x 6.33' x 3.54'

2 Chambers
14.5 cy Field
10.3 cy Stone



Pond P10: Infiltration Chambers



Summary for Pond P11: Infiltration Chambers

Inflow Area = 0.024 ac,100.00% Impervious, Inflow Depth = 3.37" for 2-Year event
Inflow = 0.08 cfs @ 12.08 hrs, Volume= 0.007 af
Outflow = 0.02 cfs @ 11.82 hrs, Volume= 0.007 af, Atten= 74%, Lag= 0.0 min
Discarded = 0.02 cfs @ 11.82 hrs, Volume= 0.007 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 60.59' @ 12.45 hrs Surf.Area= 111 sf Storage= 54 cf

Plug-Flow detention time= 11.5 min calculated for 0.007 af (100% of inflow)
Center-of-Mass det. time= 11.5 min (765.5 - 754.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	59.70'	111 cf	**6.33'W x 17.50'L x 3.54'H Field A** 393 cf Overall - 115 cf Embedded = 277 cf x 40.0% Voids
#2A	60.20'	115 cf	**Cultec R-330XLHD** x 2 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		226 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	59.70'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.02 cfs @ 11.82 hrs HW=59.74' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Pond P11: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 1 rows

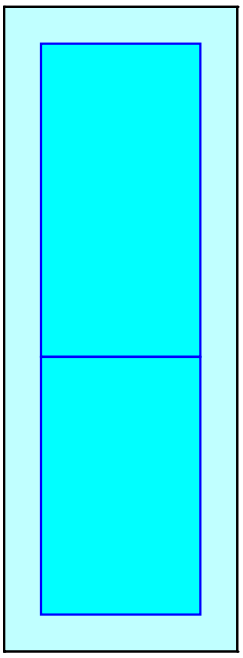
2 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 15.50' Row Length +12.0" End Stone x 2 = 17.50' Base Length
1 Rows x 52.0" Wide + 12.0" Side Stone x 2 = 6.33' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

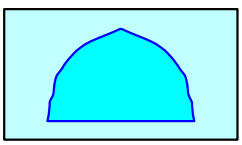
2 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 1 Rows = 115.5 cf Chamber Storage

392.5 cf Field - 115.5 cf Chambers = 277.0 cf Stone x 40.0% Voids = 110.8 cf Stone Storage

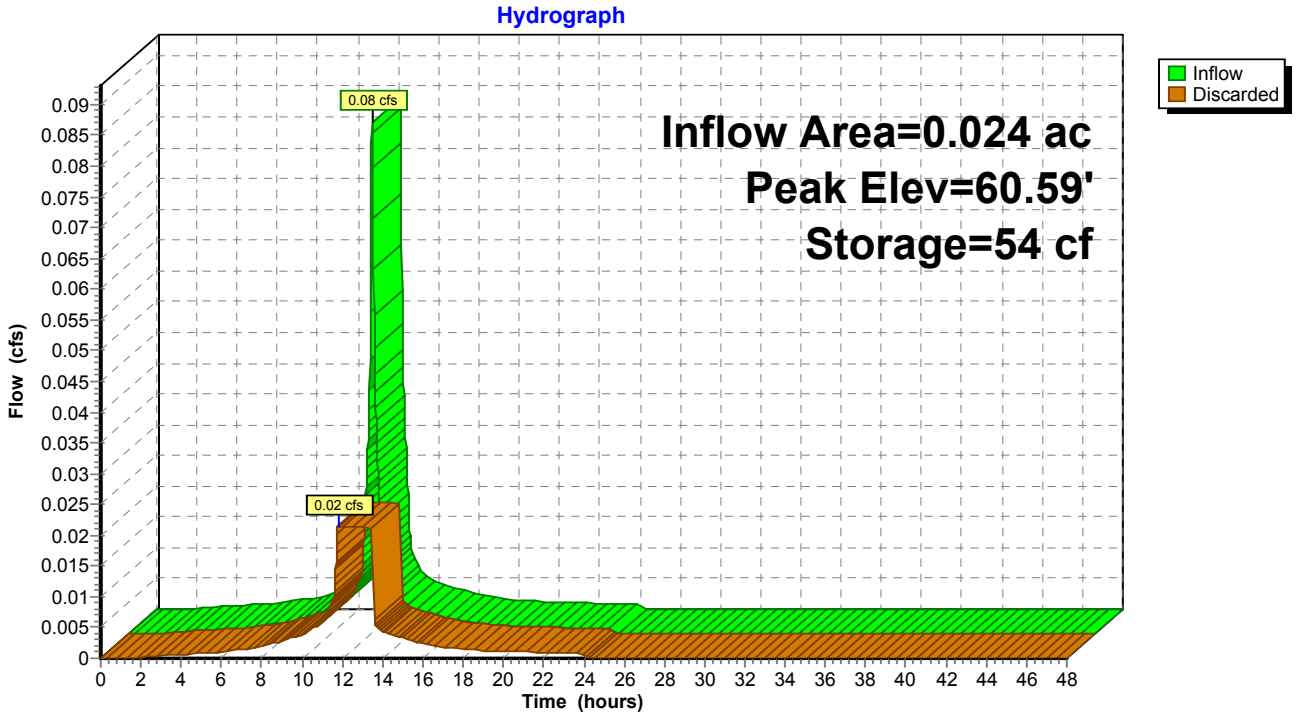
Chamber Storage + Stone Storage = 226.3 cf = 0.005 af
Overall Storage Efficiency = 57.7%
Overall System Size = 17.50' x 6.33' x 3.54'

2 Chambers
14.5 cy Field
10.3 cy Stone





Pond P11: Infiltration Chambers



Summary for Pond P12: Infiltration Chambers

Inflow Area = 0.044 ac,100.00% Impervious, Inflow Depth = 3.37" for 2-Year event
Inflow = 0.15 cfs @ 12.08 hrs, Volume= 0.012 af
Outflow = 0.05 cfs @ 11.94 hrs, Volume= 0.012 af, Atten= 66%, Lag= 0.0 min
Discarded = 0.05 cfs @ 11.94 hrs, Volume= 0.012 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 59.07' @ 12.35 hrs Surf.Area= 274 sf Storage= 70 cf

Plug-Flow detention time= 5.7 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 5.7 min (759.6 - 754.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	58.50'	253 cf	**11.17'W x 24.50'L x 3.54'H Field A** 969 cf Overall - 335 cf Embedded = 634 cf x 40.0% Voids
#2A	59.00'	335 cf	**Cultec R-330XLHD** x 6 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		589 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	58.50'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.05 cfs @ 11.94 hrs HW=58.54' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Pond P12: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

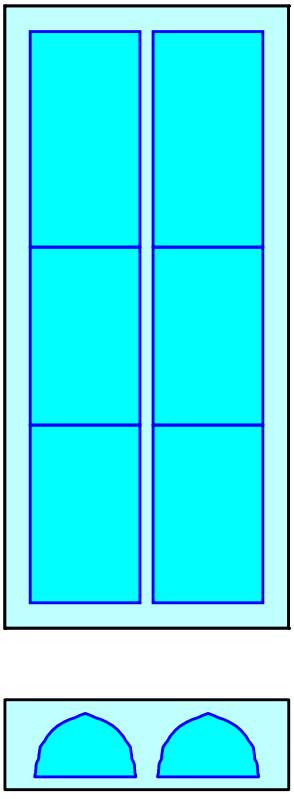
3 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 22.50' Row Length +12.0" End Stone x 2 = 24.50' Base Length
2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

6 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 335.3 cf Chamber Storage

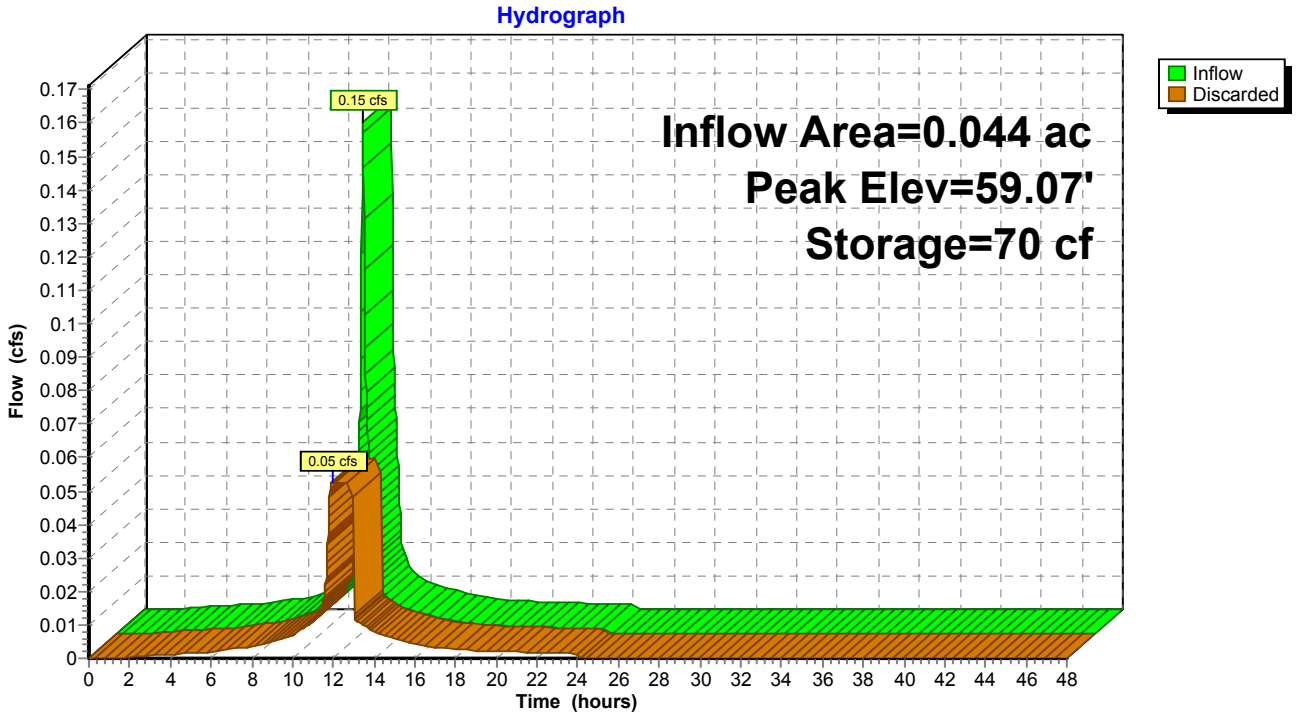
968.9 cf Field - 335.3 cf Chambers = 633.6 cf Stone x 40.0% Voids = 253.5 cf Stone Storage

Chamber Storage + Stone Storage = 588.8 cf = 0.014 af
Overall Storage Efficiency = 60.8%
Overall System Size = 24.50' x 11.17' x 3.54'

6 Chambers
35.9 cy Field
23.5 cy Stone



Pond P12: Infiltration Chambers



Summary for Pond P13: Infiltration Chambers

Inflow Area = 0.311 ac, 64.32% Impervious, Inflow Depth = 1.51" for 2-Year event
Inflow = 0.54 cfs @ 12.09 hrs, Volume= 0.039 af
Outflow = 0.11 cfs @ 11.88 hrs, Volume= 0.039 af, Atten= 79%, Lag= 0.0 min
Discarded = 0.11 cfs @ 11.88 hrs, Volume= 0.039 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 58.63' @ 12.55 hrs Surf.Area= 586 sf Storage= 414 cf

Plug-Flow detention time= 22.0 min calculated for 0.039 af (100% of inflow)
Center-of-Mass det. time= 22.0 min (867.9 - 845.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	57.50'	530 cf	**11.17'W x 52.50'L x 3.54'H Field A** 2,076 cf Overall - 753 cf Embedded = 1,324 cf x 40.0% Voids
#2A	58.00'	753 cf	**Cultec R-330XLHD** x 14 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		1,282 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	58.90'	**6.0" Round Culvert** L= 90.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 58.90' / 57.42' S= 0.0164 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Discarded	57.50'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.11 cfs @ 11.88 hrs HW=57.54' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=57.50' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Pond P13: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

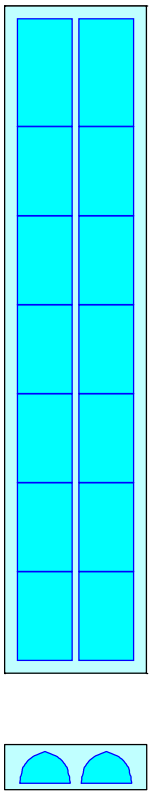
7 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 50.50' Row Length +12.0" End Stone x 2 = 52.50' Base Length
2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

14 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 752.6 cf Chamber Storage

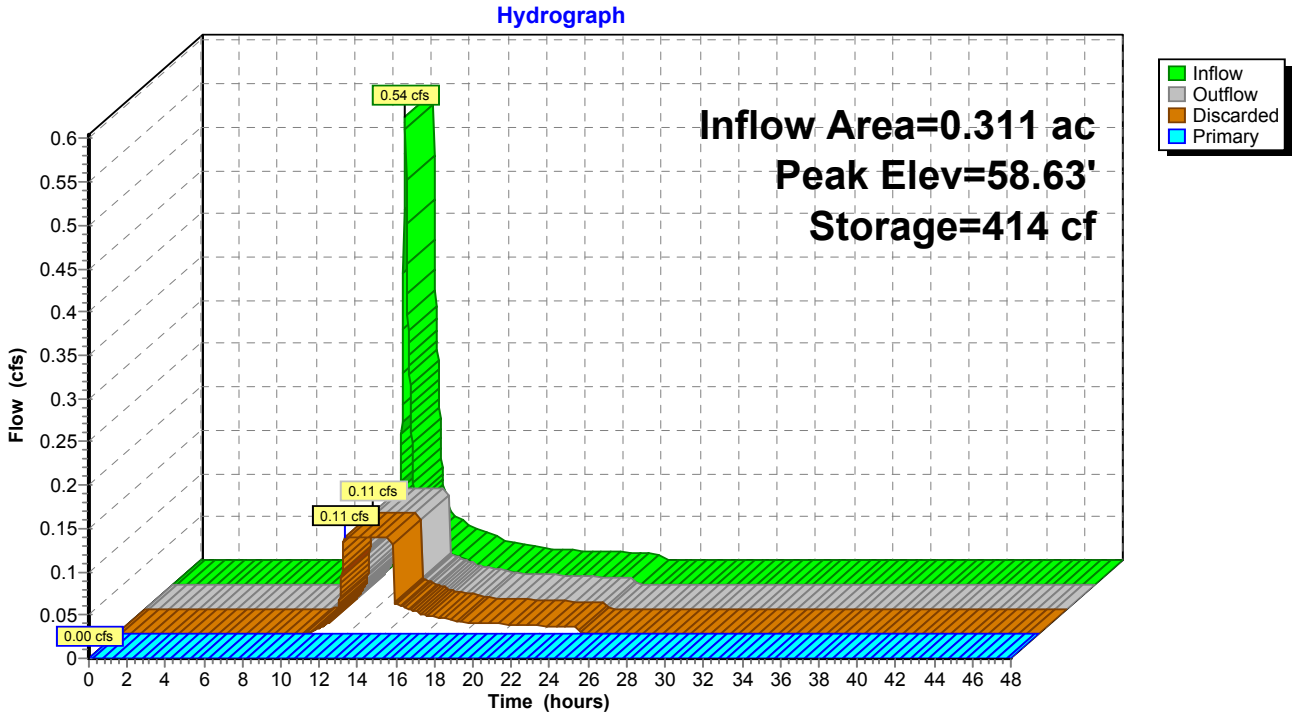
2,076.3 cf Field - 752.6 cf Chambers = 1,323.8 cf Stone x 40.0% Voids = 529.5 cf Stone Storage

Chamber Storage + Stone Storage = 1,282.1 cf = 0.029 af
Overall Storage Efficiency = 61.7%
Overall System Size = 52.50' x 11.17' x 3.54'

14 Chambers
76.9 cy Field
49.0 cy Stone



Pond P13: Infiltration Chambers



Summary for Pond P2: Infiltration Chambers

Inflow Area = 0.350 ac,100.00% Impervious, Inflow Depth = 3.37" for 2-Year event
Inflow = 1.22 cfs @ 12.08 hrs, Volume= 0.098 af
Outflow = 0.24 cfs @ 11.76 hrs, Volume= 0.098 af, Atten= 80%, Lag= 0.0 min
Discarded = 0.24 cfs @ 11.76 hrs, Volume= 0.098 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 57.39' @ 12.51 hrs Surf.Area= 1,265 sf Storage= 982 cf

Plug-Flow detention time= 20.2 min calculated for 0.098 af (100% of inflow)
Center-of-Mass det. time= 20.2 min (774.2 - 754.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	56.20'	1,089 cf	**40.17'W x 31.50'L x 3.54'H Field A** 4,481 cf Overall - 1,758 cf Embedded = 2,723 cf x 40.0% Voids
#2A	56.70'	1,758 cf	**Cultec R-330XLHD** x 32 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 8 rows
		2,847 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.20'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.24 cfs @ 11.76 hrs HW=56.25' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.24 cfs)

Pond P2: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 8 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

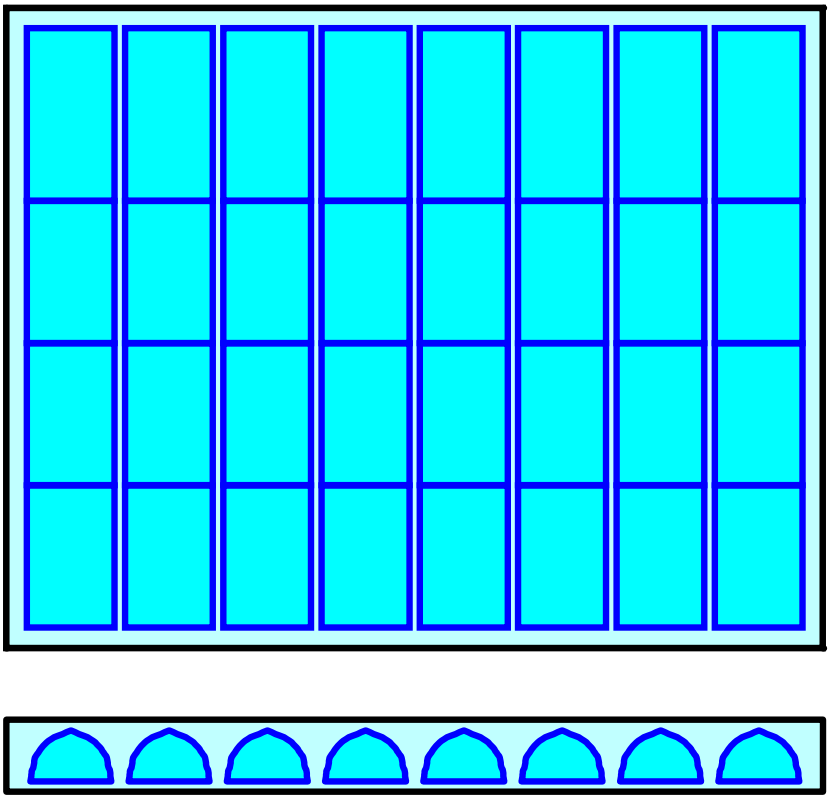
4 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 29.50' Row Length +12.0" End Stone x 2 = 31.50' Base Length
8 Rows x 52.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 40.17' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

32 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 8 Rows = 1,758.4 cf Chamber Storage

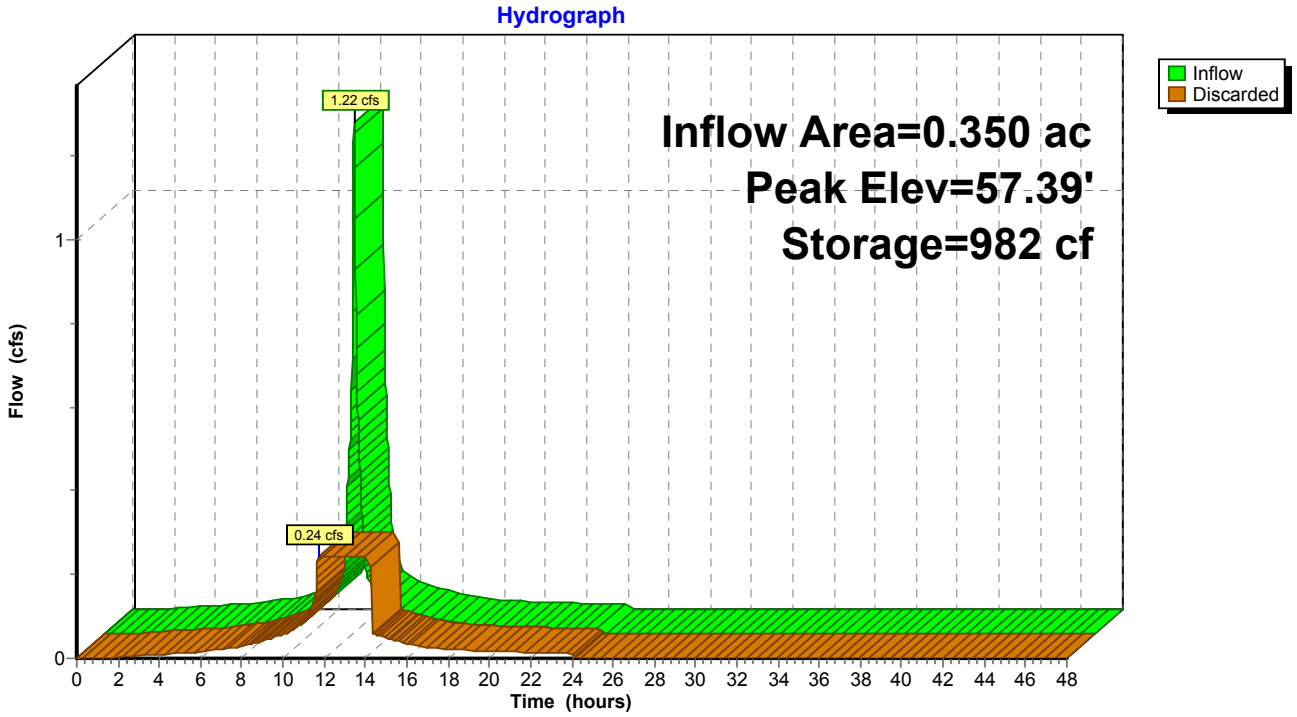
4,481.1 cf Field - 1,758.4 cf Chambers = 2,722.7 cf Stone x 40.0% Voids = 1,089.1 cf Stone Storage

Chamber Storage + Stone Storage = 2,847.5 cf = 0.065 af
Overall Storage Efficiency = 63.5%
Overall System Size = 31.50' x 40.17' x 3.54'

32 Chambers
166.0 cy Field
100.8 cy Stone



Pond P2: Infiltration Chambers



Summary for Pond P3: Infiltration Chambers

Inflow Area = 0.024 ac,100.00% Impervious, Inflow Depth = 3.37" for 2-Year event
Inflow = 0.08 cfs @ 12.08 hrs, Volume= 0.007 af
Outflow = 0.02 cfs @ 11.82 hrs, Volume= 0.007 af, Atten= 74%, Lag= 0.0 min
Discarded = 0.02 cfs @ 11.82 hrs, Volume= 0.007 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 57.08' @ 12.44 hrs Surf.Area= 111 sf Storage= 53 cf

Plug-Flow detention time= 11.3 min calculated for 0.007 af (100% of inflow)
Center-of-Mass det. time= 11.3 min (765.3 - 754.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	56.20'	111 cf	**6.33'W x 17.50'L x 3.54'H Field A** 393 cf Overall - 115 cf Embedded = 277 cf x 40.0% Voids
#2A	56.70'	115 cf	**Cultec R-330XLHD** x 2 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		226 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.20'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.02 cfs @ 11.82 hrs HW=56.24' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Pond P3: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 1 rows

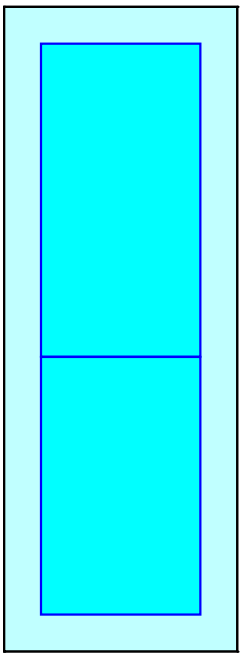
2 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 15.50' Row Length +12.0" End Stone x 2 = 17.50' Base Length
1 Rows x 52.0" Wide + 12.0" Side Stone x 2 = 6.33' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

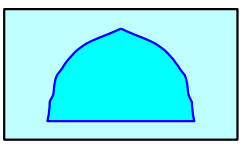
2 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 1 Rows = 115.5 cf Chamber Storage

392.5 cf Field - 115.5 cf Chambers = 277.0 cf Stone x 40.0% Voids = 110.8 cf Stone Storage

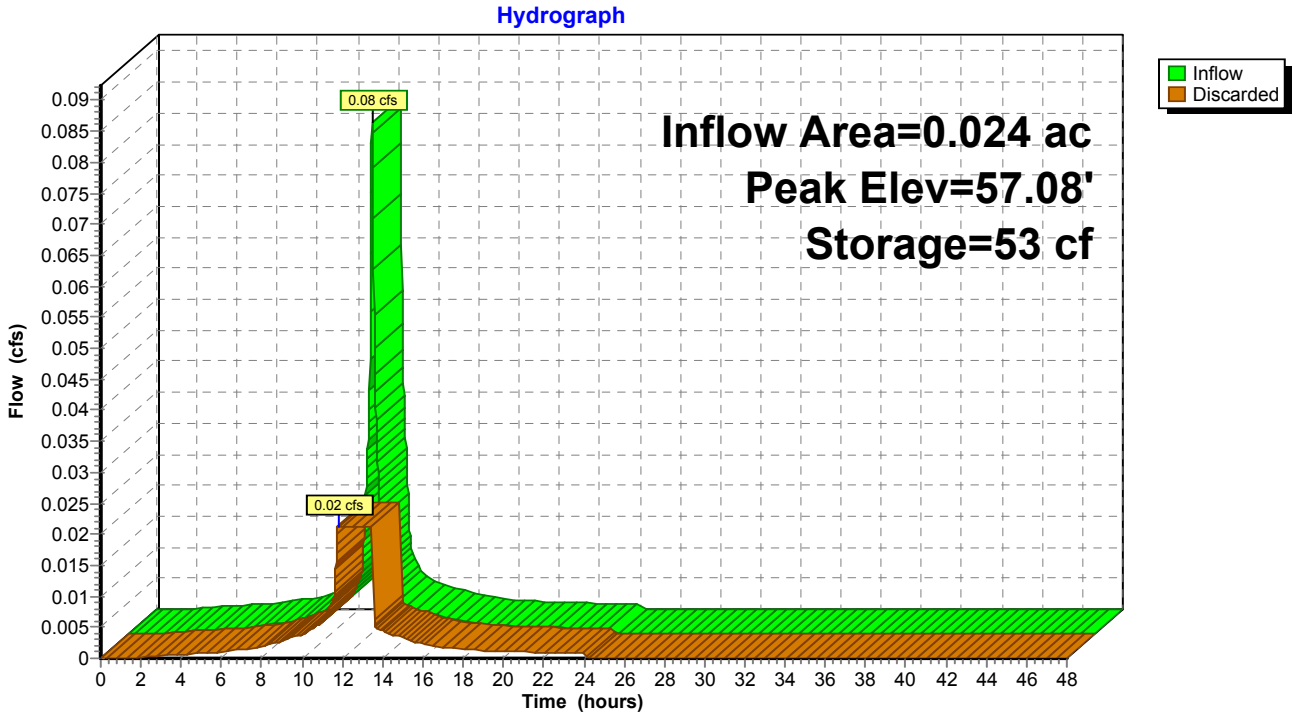
Chamber Storage + Stone Storage = 226.3 cf = 0.005 af
Overall Storage Efficiency = 57.7%
Overall System Size = 17.50' x 6.33' x 3.54'

2 Chambers
14.5 cy Field
10.3 cy Stone





Pond P3: Infiltration Chambers



Summary for Pond P4: Infiltration Chambers

Inflow Area = 0.047 ac,100.00% Impervious, Inflow Depth = 3.37" for 2-Year event
Inflow = 0.17 cfs @ 12.08 hrs, Volume= 0.013 af
Outflow = 0.04 cfs @ 11.80 hrs, Volume= 0.013 af, Atten= 77%, Lag= 0.0 min
Discarded = 0.04 cfs @ 11.80 hrs, Volume= 0.013 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 57.22' @ 12.47 hrs Surf.Area= 199 sf Storage= 118 cf

Plug-Flow detention time= 14.5 min calculated for 0.013 af (100% of inflow)
Center-of-Mass det. time= 14.5 min (768.5 - 754.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	56.20'	195 cf	**6.33'W x 31.50'L x 3.54'H Field A** 707 cf Overall - 220 cf Embedded = 487 cf x 40.0% Voids
#2A	56.70'	220 cf	**Cultec R-330XLHD** x 4 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		415 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.20'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.04 cfs @ 11.80 hrs HW=56.24' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Pond P4: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 1 rows

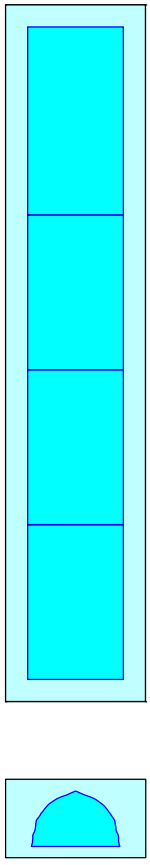
4 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 29.50' Row Length +12.0" End Stone x 2 = 31.50' Base Length
1 Rows x 52.0" Wide + 12.0" Side Stone x 2 = 6.33' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

4 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 1 Rows = 219.8 cf Chamber Storage

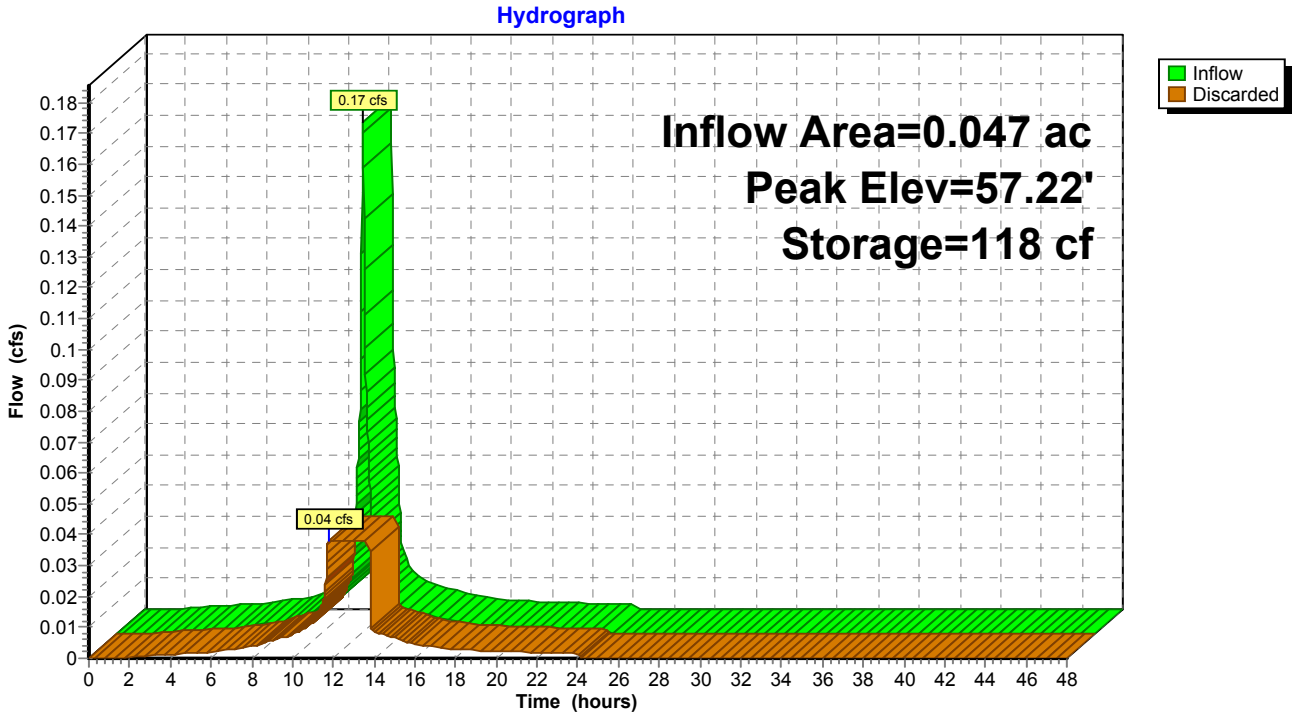
706.6 cf Field - 219.8 cf Chambers = 486.8 cf Stone x 40.0% Voids = 194.7 cf Stone Storage

Chamber Storage + Stone Storage = 414.5 cf = 0.010 af
Overall Storage Efficiency = 58.7%
Overall System Size = 31.50' x 6.33' x 3.54'

4 Chambers
26.2 cy Field
18.0 cy Stone



Pond P4: Infiltration Chambers



Summary for Pond P5: Infiltration Chambers

Inflow Area = 0.047 ac,100.00% Impervious, Inflow Depth = 3.37" for 2-Year event
Inflow = 0.17 cfs @ 12.08 hrs, Volume= 0.013 af
Outflow = 0.04 cfs @ 11.80 hrs, Volume= 0.013 af, Atten= 77%, Lag= 0.0 min
Discarded = 0.04 cfs @ 11.80 hrs, Volume= 0.013 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 60.72' @ 12.47 hrs Surf.Area= 199 sf Storage= 118 cf

Plug-Flow detention time= 14.5 min calculated for 0.013 af (100% of inflow)
Center-of-Mass det. time= 14.5 min (768.5 - 754.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	59.70'	195 cf	**6.33'W x 31.50'L x 3.54'H Field A** 707 cf Overall - 220 cf Embedded = 487 cf x 40.0% Voids
#2A	60.20'	220 cf	**Cultec R-330XLHD** x 4 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		415 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	59.70'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.04 cfs @ 11.80 hrs HW=59.74' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Pond P5: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 1 rows

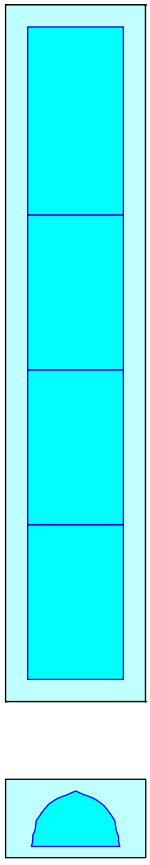
4 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 29.50' Row Length +12.0" End Stone x 2 = 31.50' Base Length
1 Rows x 52.0" Wide + 12.0" Side Stone x 2 = 6.33' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

4 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 1 Rows = 219.8 cf Chamber Storage

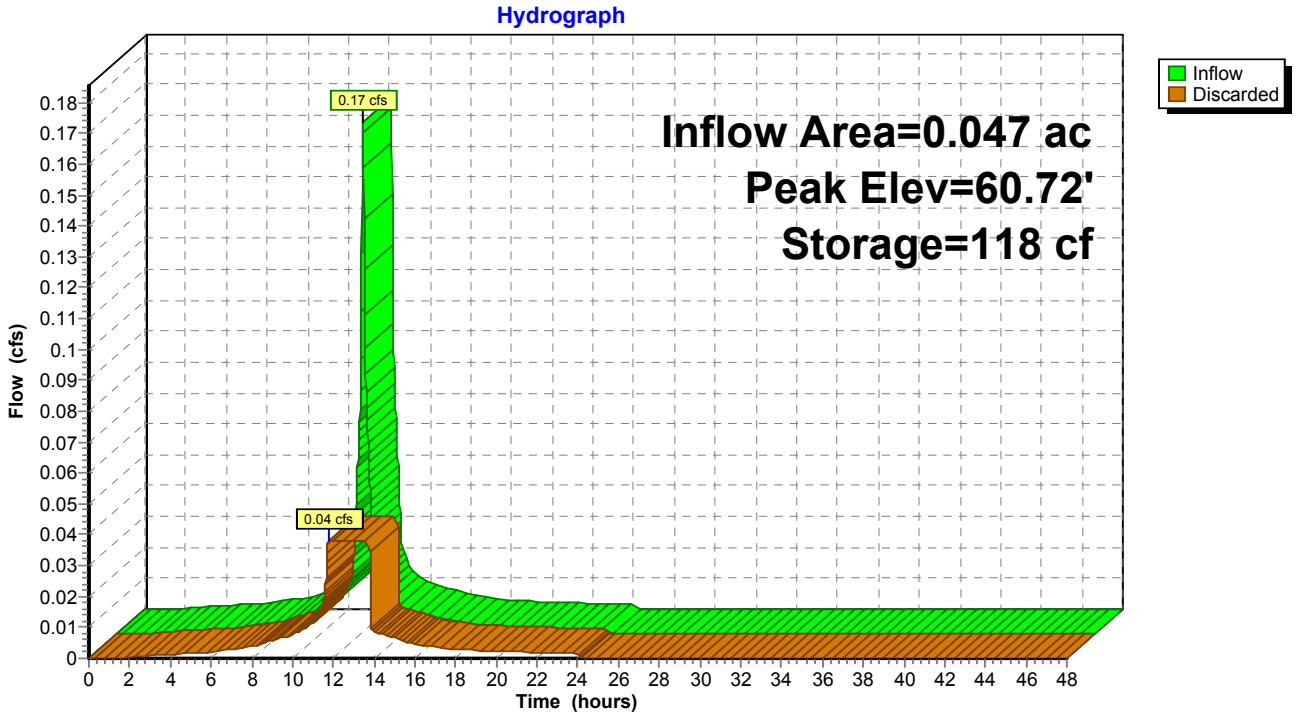
706.6 cf Field - 219.8 cf Chambers = 486.8 cf Stone x 40.0% Voids = 194.7 cf Stone Storage

Chamber Storage + Stone Storage = 414.5 cf = 0.010 af
Overall Storage Efficiency = 58.7%
Overall System Size = 31.50' x 6.33' x 3.54'

4 Chambers
26.2 cy Field
18.0 cy Stone



Pond P5: Infiltration Chambers



Summary for Pond P6: Infiltration Chambers

Inflow Area = 0.959 ac, 58.80% Impervious, Inflow Depth = 1.40" for 2-Year event
Inflow = 1.52 cfs @ 12.09 hrs, Volume= 0.112 af
Outflow = 0.57 cfs @ 12.40 hrs, Volume= 0.112 af, Atten= 62%, Lag= 18.3 min
Discarded = 0.17 cfs @ 11.74 hrs, Volume= 0.099 af
Primary = 0.41 cfs @ 12.40 hrs, Volume= 0.013 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 62.17' @ 12.40 hrs Surf.Area= 879 sf Storage= 1,281 cf

Plug-Flow detention time= 49.1 min calculated for 0.112 af (100% of inflow)
Center-of-Mass det. time= 49.0 min (896.0 - 847.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	60.00'	814 cf	**83.67'W x 10.50'L x 3.54'H Field A** 3,111 cf Overall - 1,077 cf Embedded = 2,035 cf x 40.0% Voids
#2A	60.50'	1,077 cf	**Cultec R-330XLHD** x 17 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 17 rows
		1,891 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	60.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'
#2	Primary	61.85'	**12.0" Round Culvert** L= 88.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 61.85' / 59.00' S= 0.0324 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.17 cfs @ 11.74 hrs HW=60.04' (Free Discharge)
↑└**1=Exfiltration** (Exfiltration Controls 0.17 cfs)

Primary OutFlow Max=0.41 cfs @ 12.40 hrs HW=62.17' TW=58.48' (Dynamic Tailwater)
↑└**2=Culvert** (Inlet Controls 0.41 cfs @ 1.91 fps)

Pond P6: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 17 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

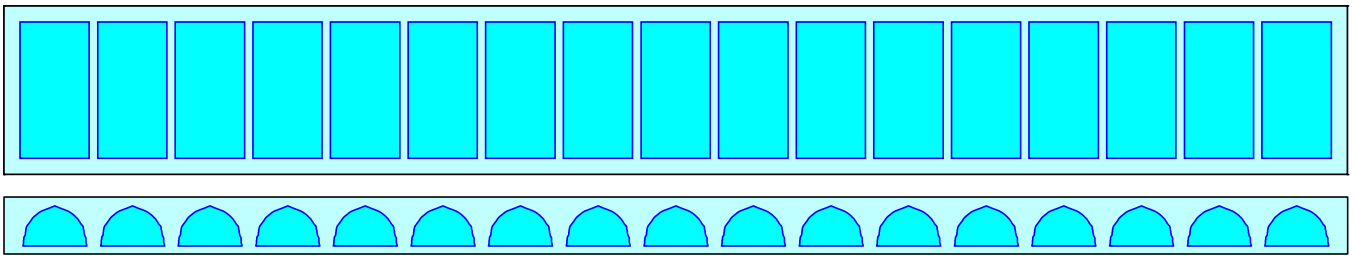
1 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 8.50' Row Length +12.0" End Stone x 2 = 10.50' Base Length
17 Rows x 52.0" Wide + 6.0" Spacing x 16 + 12.0" Side Stone x 2 = 83.67' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

17 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 17 Rows = 1,076.7 cf Chamber Storage

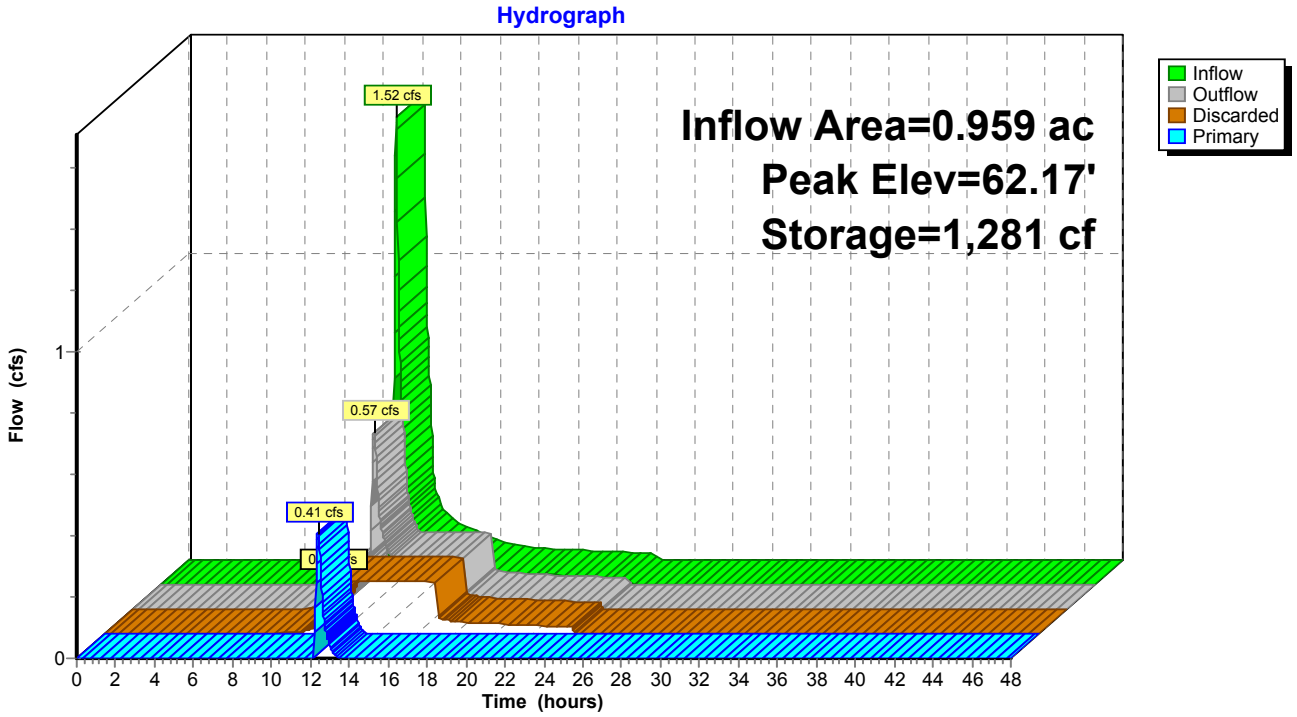
3,111.4 cf Field - 1,076.7 cf Chambers = 2,034.7 cf Stone x 40.0% Voids = 813.9 cf Stone Storage

Chamber Storage + Stone Storage = 1,890.5 cf = 0.043 af
Overall Storage Efficiency = 60.8%
Overall System Size = 10.50' x 83.67' x 3.54'

17 Chambers
115.2 cy Field
75.4 cy Stone



Pond P6: Infiltration Chambers



Summary for Pond P7: Infiltration Chambers

Inflow Area = 0.305 ac,100.00% Impervious, Inflow Depth = 3.37" for 2-Year event
Inflow = 1.07 cfs @ 12.08 hrs, Volume= 0.086 af
Outflow = 0.22 cfs @ 11.76 hrs, Volume= 0.086 af, Atten= 80%, Lag= 0.0 min
Discarded = 0.22 cfs @ 11.76 hrs, Volume= 0.086 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 61.17' @ 12.50 hrs Surf.Area= 1,133 sf Storage= 841 cf

Plug-Flow detention time= 19.1 min calculated for 0.086 af (100% of inflow)
Center-of-Mass det. time= 19.1 min (773.1 - 754.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	60.00'	1,013 cf	**11.17'W x 101.50'L x 3.54'H Field A** 4,014 cf Overall - 1,483 cf Embedded = 2,531 cf x 40.0% Voids
#2A	60.50'	1,483 cf	**Cultec R-330XLHD** x 28 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		2,495 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	60.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.22 cfs @ 11.76 hrs HW=60.04' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.22 cfs)

Pond P7: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

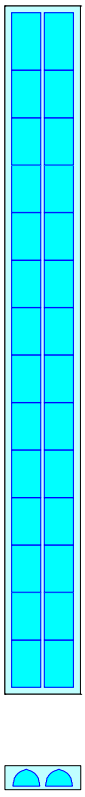
14 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 99.50' Row Length +12.0" End Stone x 2 = 101.50' Base Length
2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

28 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 1,482.7 cf Chamber Storage

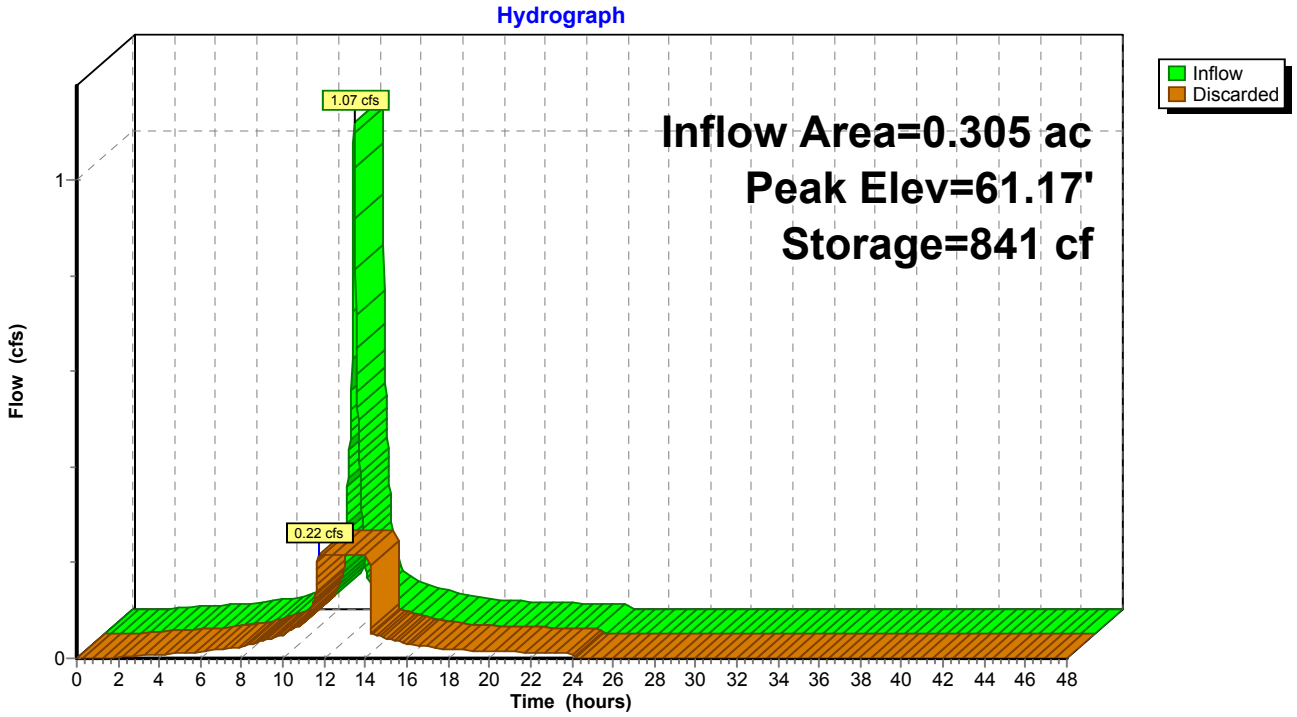
4,014.2 cf Field - 1,482.7 cf Chambers = 2,531.4 cf Stone x 40.0% Voids = 1,012.6 cf Stone Storage

Chamber Storage + Stone Storage = 2,495.3 cf = 0.057 af
Overall Storage Efficiency = 62.2%
Overall System Size = 101.50' x 11.17' x 3.54'

28 Chambers
148.7 cy Field
93.8 cy Stone



Pond P7: Infiltration Chambers



Summary for Pond P8: Infiltration Chambers

Inflow Area = 0.699 ac, 67.39% Impervious, Inflow Depth = 1.81" for 2-Year event
Inflow = 1.35 cfs @ 12.09 hrs, Volume= 0.106 af
Outflow = 0.36 cfs @ 11.90 hrs, Volume= 0.106 af, Atten= 74%, Lag= 0.0 min
Discarded = 0.36 cfs @ 11.90 hrs, Volume= 0.106 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 59.30' @ 12.48 hrs Surf.Area= 1,855 sf Storage= 844 cf

Plug-Flow detention time= 11.4 min calculated for 0.106 af (100% of inflow)
Center-of-Mass det. time= 11.4 min (812.9 - 801.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	58.50'	1,574 cf	**35.33'W x 52.50'L x 3.54'H Field A** 6,570 cf Overall - 2,634 cf Embedded = 3,936 cf x 40.0% Voids
#2A	59.00'	2,634 cf	**Cultec R-330XLHD** x 49 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 7 rows
		4,208 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	58.50'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.36 cfs @ 11.90 hrs HW=58.54' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.36 cfs)

Pond P8: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 7 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

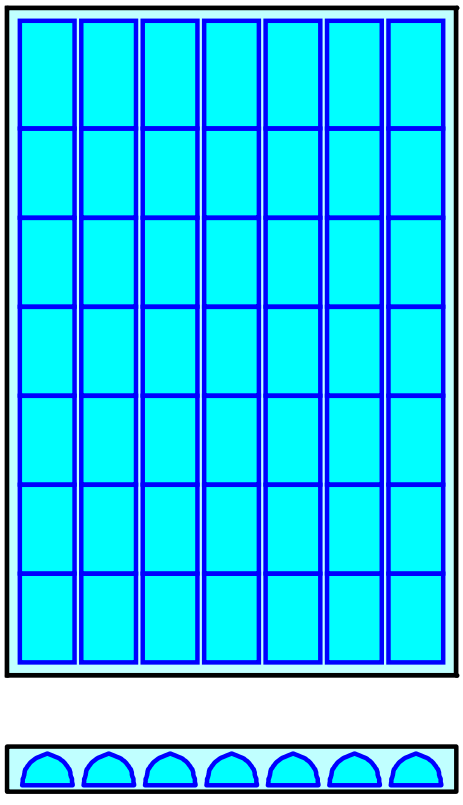
7 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 50.50' Row Length +12.0" End Stone x 2 = 52.50' Base Length
7 Rows x 52.0" Wide + 6.0" Spacing x 6 + 12.0" Side Stone x 2 = 35.33' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

49 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 7 Rows = 2,633.9 cf Chamber Storage

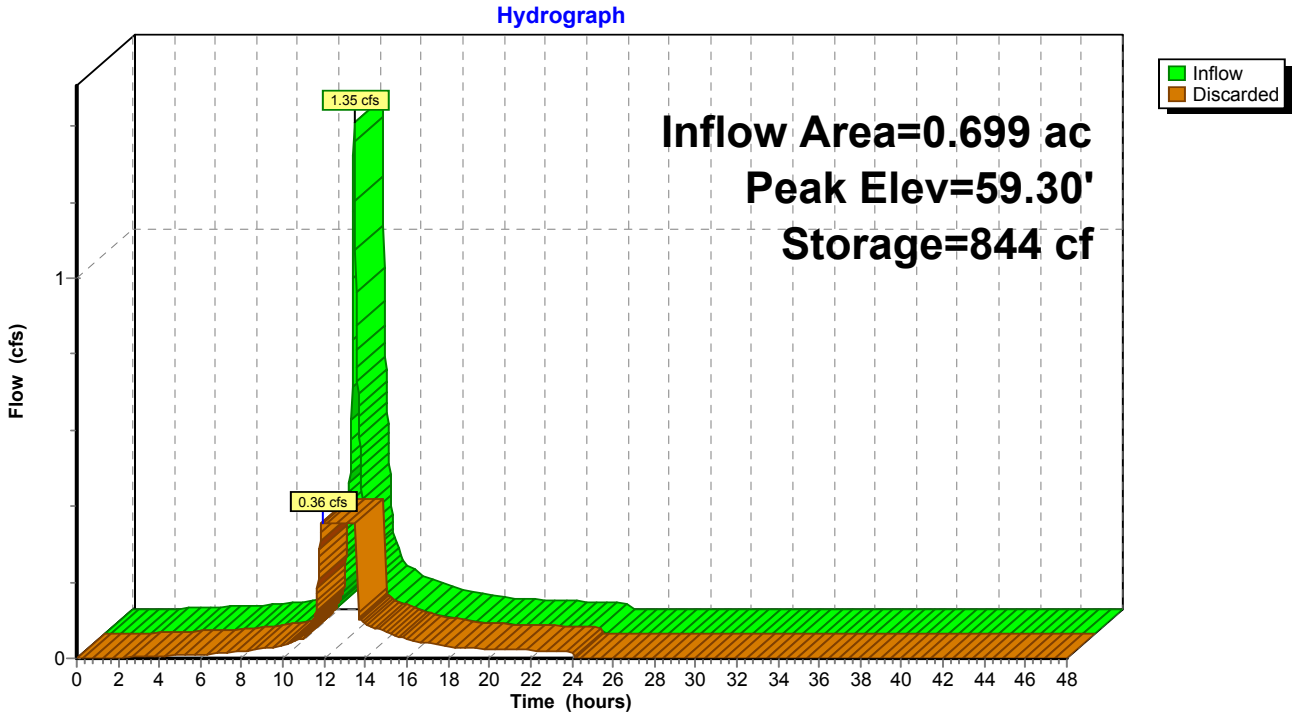
6,569.8 cf Field - 2,633.9 cf Chambers = 3,935.9 cf Stone x 40.0% Voids = 1,574.3 cf Stone Storage

Chamber Storage + Stone Storage = 4,208.3 cf = 0.097 af
Overall Storage Efficiency = 64.1%
Overall System Size = 52.50' x 35.33' x 3.54'

49 Chambers
243.3 cy Field
145.8 cy Stone



Pond P8: Infiltration Chambers



Summary for Pond P9: Infiltration Chambers

Inflow Area = 0.836 ac, 65.23% Impervious, Inflow Depth = 1.63" for 2-Year event
Inflow = 1.49 cfs @ 12.09 hrs, Volume= 0.114 af
Outflow = 0.43 cfs @ 11.96 hrs, Volume= 0.114 af, Atten= 71%, Lag= 0.0 min
Discarded = 0.43 cfs @ 11.96 hrs, Volume= 0.114 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 56.31' @ 12.46 hrs Surf.Area= 2,260 sf Storage= 846 cf

Plug-Flow detention time= 9.4 min calculated for 0.114 af (100% of inflow)
Center-of-Mass det. time= 9.4 min (828.7 - 819.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	55.60'	1,933 cf	**20.83'W x 108.50'L x 3.54'H Field A** 8,006 cf Overall - 3,174 cf Embedded = 4,832 cf x 40.0% Voids
#2A	56.10'	3,174 cf	**Cultec R-330XLHD** x 60 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 4 rows
		5,107 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	55.60'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.43 cfs @ 11.96 hrs HW=55.64' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.43 cfs)

Pond P9: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 4 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

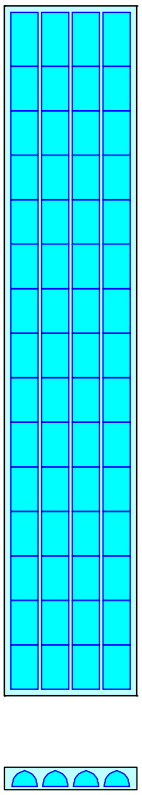
15 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 106.50' Row Length +12.0" End Stone x 2 = 108.50' Base Length
4 Rows x 52.0" Wide + 6.0" Spacing x 3 + 12.0" Side Stone x 2 = 20.83' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

60 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 4 Rows = 3,174.1 cf Chamber Storage

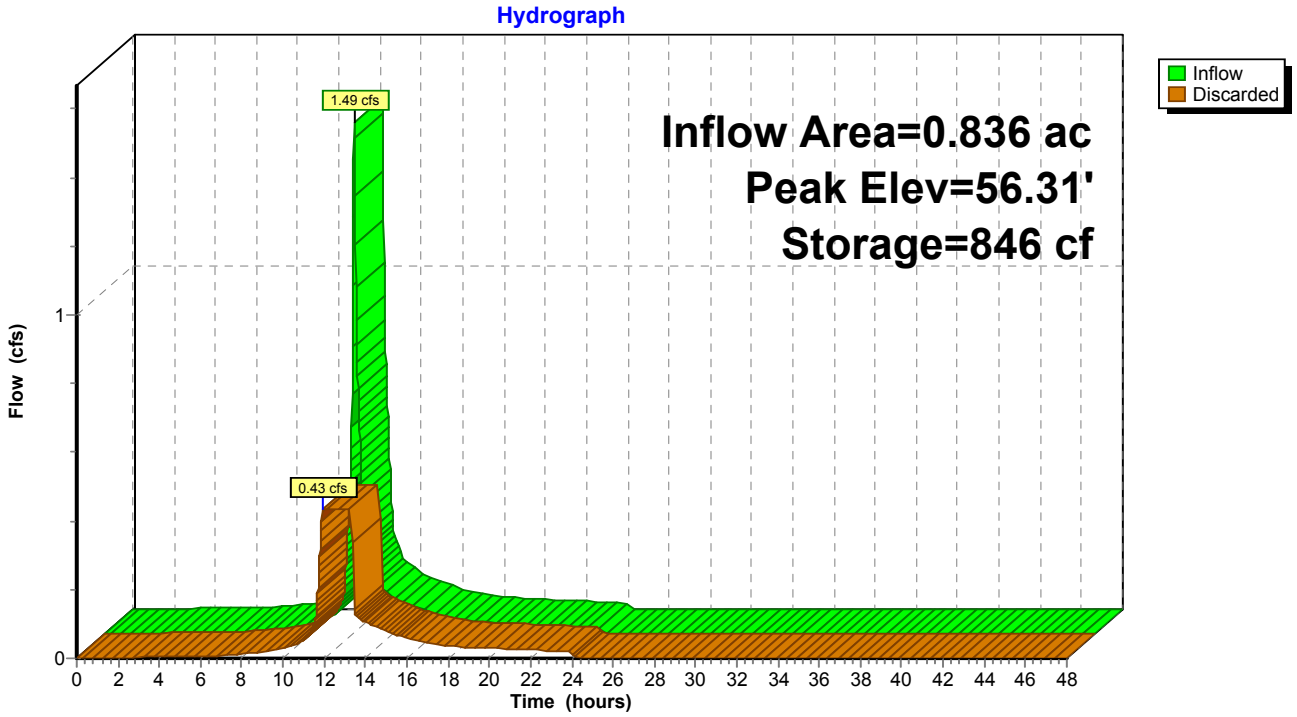
8,005.6 cf Field - 3,174.1 cf Chambers = 4,831.5 cf Stone x 40.0% Voids = 1,932.6 cf Stone Storage

Chamber Storage + Stone Storage = 5,106.7 cf = 0.117 af
Overall Storage Efficiency = 63.8%
Overall System Size = 108.50' x 20.83' x 3.54'

60 Chambers
296.5 cy Field
178.9 cy Stone



Pond P9: Infiltration Chambers



Time span=0.00-48.00 hrs, dt=0.02 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Sub-1 Runoff Area=6,628 sf 64.88% Impervious Runoff Depth=2.46"
Tc=6.0 min CN=77 Runoff=0.44 cfs 0.031 af

Subcatchment1S-1: Sub-1S-1 Runoff Area=13,563 sf 64.32% Impervious Runoff Depth=2.46"
Tc=6.0 min CN=77 Runoff=0.89 cfs 0.064 af

Subcatchment2S: Sub-2 Runoff Area=15,040 sf 10.74% Impervious Runoff Depth=0.34"
Tc=6.0 min CN=44 Runoff=0.04 cfs 0.010 af

Subcatchment3A-1R: Roofs 16 FB, 17, Runoff Area=13,300 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=1.43 cfs 0.116 af

Subcatchment3A-S: Sub-3A Runoff Area=43,217 sf 71.58% Impervious Runoff Depth=2.90"
Tc=6.0 min CN=82 Runoff=3.36 cfs 0.240 af

Subcatchment3B-1R: Roofs 1-8 FB Runoff Area=15,230 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=1.64 cfs 0.133 af

Subcatchment3B-S: Sub-3B-S Runoff Area=12,902 sf 58.89% Impervious Runoff Depth=2.21"
Tc=6.0 min CN=74 Runoff=0.76 cfs 0.054 af

Subcatchment3C-1R: Roofs 10 F Runoff Area=1,027 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=0.11 cfs 0.009 af

Subcatchment3C-2R: Roofs 12-13 B Runoff Area=1,728 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=0.19 cfs 0.015 af

Subcatchment3C-3R: Roofs 14-15 B Runoff Area=1,728 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=0.19 cfs 0.015 af

Subcatchment3C-4R: Roofs 10-11 B Runoff Area=1,728 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=0.19 cfs 0.015 af

Subcatchment3C-S: Sub-3C Runoff Area=15,793 sf 6.05% Impervious Runoff Depth=0.66"
Tc=6.0 min CN=51 Runoff=0.18 cfs 0.020 af

Subcatchment3D-S: Sub-3D-S Runoff Area=15,288 sf 5.25% Impervious Runoff Depth=1.00"
Tc=6.0 min CN=57 Runoff=0.34 cfs 0.029 af

Subcatchment3E-S: Sub-3E-S Runoff Area=7,970 sf 1.39% Impervious Runoff Depth=0.83"
Tc=6.0 min CN=54 Runoff=0.13 cfs 0.013 af

Subcatchment3F-1R: Roofs 26-28 FB Runoff Area=5,720 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=0.62 cfs 0.050 af

Subcatchment3F-2R: Roofs 29-30 B, 31 FB Runoff Area=3,615 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=0.39 cfs 0.032 af

Subcatchment3F-3R: Roofs 29 F Runoff Area=1,027 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=0.11 cfs 0.009 af

Subcatchment3F-4R: Roofs 30 F Runoff Area=1,035 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=0.11 cfs 0.009 af

Subcatchment3F-S: Sub-3F-S Runoff Area=21,093 sf 52.96% Impervious Runoff Depth=1.97"
Tc=6.0 min CN=71 Runoff=1.09 cfs 0.079 af

Subcatchment3G-1R: Roof 9 FB Runoff Area=1,932 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=0.21 cfs 0.017 af

Subcatchment3G-2R: Roofs 11 F Runoff Area=1,035 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=0.11 cfs 0.009 af

Subcatchment3G-3R: Roofs 12 F Runoff Area=1,027 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=0.11 cfs 0.009 af

Subcatchment3G-4R: Roofs 13 F Runoff Area=1,035 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=0.11 cfs 0.009 af

Subcatchment3G-5R: Roofs 14 F Runoff Area=1,027 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=0.11 cfs 0.009 af

Subcatchment3G-6R: Roofs 15 F Runoff Area=1,035 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=0.11 cfs 0.009 af

Subcatchment3G-S: Sub-3G-S Runoff Area=27,855 sf 57.22% Impervious Runoff Depth=2.29"
Tc=6.0 min CN=75 Runoff=1.70 cfs 0.122 af

Subcatchment3H-S: Sub-3A Runoff Area=10,072 sf 50.76% Impervious Runoff Depth=1.81"
Tc=6.0 min CN=69 Runoff=0.48 cfs 0.035 af

Subcatchment3I-S: Sub-3I-S Runoff Area=5,482 sf 79.57% Impervious Runoff Depth=3.28"
Tc=6.0 min CN=86 Runoff=0.48 cfs 0.034 af

Subcatchment4S: Sub-4 Runoff Area=3,736 sf 1.12% Impervious Runoff Depth=0.19"
Tc=6.0 min CN=40 Runoff=0.00 cfs 0.001 af

Subcatchment4S-1: Sub-4 Runoff Area=9,528 sf 12.07% Impervious Runoff Depth=0.42"
Tc=6.0 min CN=46 Runoff=0.04 cfs 0.008 af

Subcatchment4S-1R: Roofs 32 FB Runoff Area=1,903 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=0.20 cfs 0.017 af

Subcatchment5S: Sub -5 Runoff Area=12,091 sf 18.97% Impervious Runoff Depth=0.66"
Tc=6.0 min CN=51 Runoff=0.13 cfs 0.015 af

Subcatchment5S-1: Sub 5S-1 Runoff Area=10,625 sf 14.55% Impervious Runoff Depth=0.51"
Tc=6.0 min CN=48 Runoff=0.07 cfs 0.010 af

Subcatchment5S-1R: Roofs 19-21 FB Runoff Area=5,720 sf 100.00% Impervious Runoff Depth=4.56"
Tc=6.0 min CN=98 Runoff=0.62 cfs 0.050 af

Subcatchment5S-P: Pavement Runoff Area=15,144 sf 56.52% Impervious Runoff Depth=2.05"
Tc=6.0 min CN=72 Runoff=0.82 cfs 0.059 af

Reach DP-1: DMH Inflow=0.44 cfs 0.039 af
Outflow=0.44 cfs 0.039 af

Reach DP-2: DP-2 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach DP-3: DP-3 Inflow=0.49 cfs 0.212 af
Outflow=0.49 cfs 0.212 af

Reach DP-4: PL Inflow=0.00 cfs 0.001 af
Outflow=0.00 cfs 0.001 af

Reach DP-5: PL Inflow=0.13 cfs 0.015 af
Outflow=0.13 cfs 0.015 af

Pond D-1: Depression Peak Elev=59.01' Storage=2 cf Inflow=0.04 cfs 0.010 af
Outflow=0.04 cfs 0.010 af

Pond D-2: Depression Peak Elev=57.23' Storage=690 cf Inflow=0.72 cfs 0.065 af
Discarded=0.14 cfs 0.065 af Primary=0.00 cfs 0.000 af Outflow=0.14 cfs 0.065 af

Pond D-3: Depression Peak Elev=63.00' Storage=2 cf Inflow=0.04 cfs 0.008 af
Outflow=0.04 cfs 0.008 af

Pond D-4: Depression Peak Elev=54.00' Storage=4 cf Inflow=0.07 cfs 0.010 af
Outflow=0.07 cfs 0.010 af

Pond DB-1: Prop Detention Basin Peak Elev=59.09' Storage=8,289 cf Inflow=4.47 cfs 0.296 af
Outflow=0.39 cfs 0.170 af

Pond P1: Infiltration Chambers Peak Elev=57.64' Storage=179 cf Inflow=0.21 cfs 0.017 af
Outflow=0.04 cfs 0.017 af

Pond P10: Infiltration Chambers Peak Elev=61.06' Storage=91 cf Inflow=0.11 cfs 0.009 af
Outflow=0.02 cfs 0.009 af

Pond P11: Infiltration Chambers Peak Elev=61.07' Storage=92 cf Inflow=0.11 cfs 0.009 af
Outflow=0.02 cfs 0.009 af

Pond P12: Infiltration Chambers Peak Elev=59.36' Storage=132 cf Inflow=0.20 cfs 0.017 af
Outflow=0.05 cfs 0.017 af

Pond P13: Infiltration Chambers Peak Elev=59.21' Storage=678 cf Inflow=0.89 cfs 0.064 af
Discarded=0.11 cfs 0.056 af Primary=0.25 cfs 0.008 af Outflow=0.36 cfs 0.064 af

Pond P2: Infiltration Chambers Peak Elev=57.98' Storage=1,576 cf Inflow=1.64 cfs 0.133 af
Outflow=0.24 cfs 0.133 af

Pond P3: Infiltration Chambers Peak Elev=57.56' Storage=91 cf Inflow=0.11 cfs 0.009 af
Outflow=0.02 cfs 0.009 af

Pond P4: Infiltration Chambers Peak Elev=57.76' Storage=196 cf Inflow=0.22 cfs 0.018 af
Outflow=0.04 cfs 0.018 af

Pond P5: Infiltration Chambers Peak Elev=61.26' Storage=196 cf Inflow=0.22 cfs 0.018 af
Outflow=0.04 cfs 0.018 af

Pond P6: Infiltration Chambers Peak Elev=62.57' Storage=1,510 cf Inflow=2.57 cfs 0.185 af
Discarded=0.17 cfs 0.129 af Primary=1.75 cfs 0.056 af Outflow=1.92 cfs 0.185 af

Pond P7: Infiltration Chambers Peak Elev=61.76' Storage=1,358 cf Inflow=1.43 cfs 0.116 af
Outflow=0.22 cfs 0.116 af

Pond P8: Infiltration Chambers Peak Elev=59.95' Storage=1,841 cf Inflow=2.10 cfs 0.161 af
Outflow=0.36 cfs 0.161 af

Pond P9: Infiltration Chambers Peak Elev=56.92' Storage=2,006 cf Inflow=2.39 cfs 0.179 af
Outflow=0.43 cfs 0.179 af

Total Runoff Area = 7.045 ac Runoff Volume = 1.357 af Average Runoff Depth = 2.31"
45.88% Pervious = 3.233 ac 54.12% Impervious = 3.812 ac

Summary for Subcatchment 1S: Sub-1

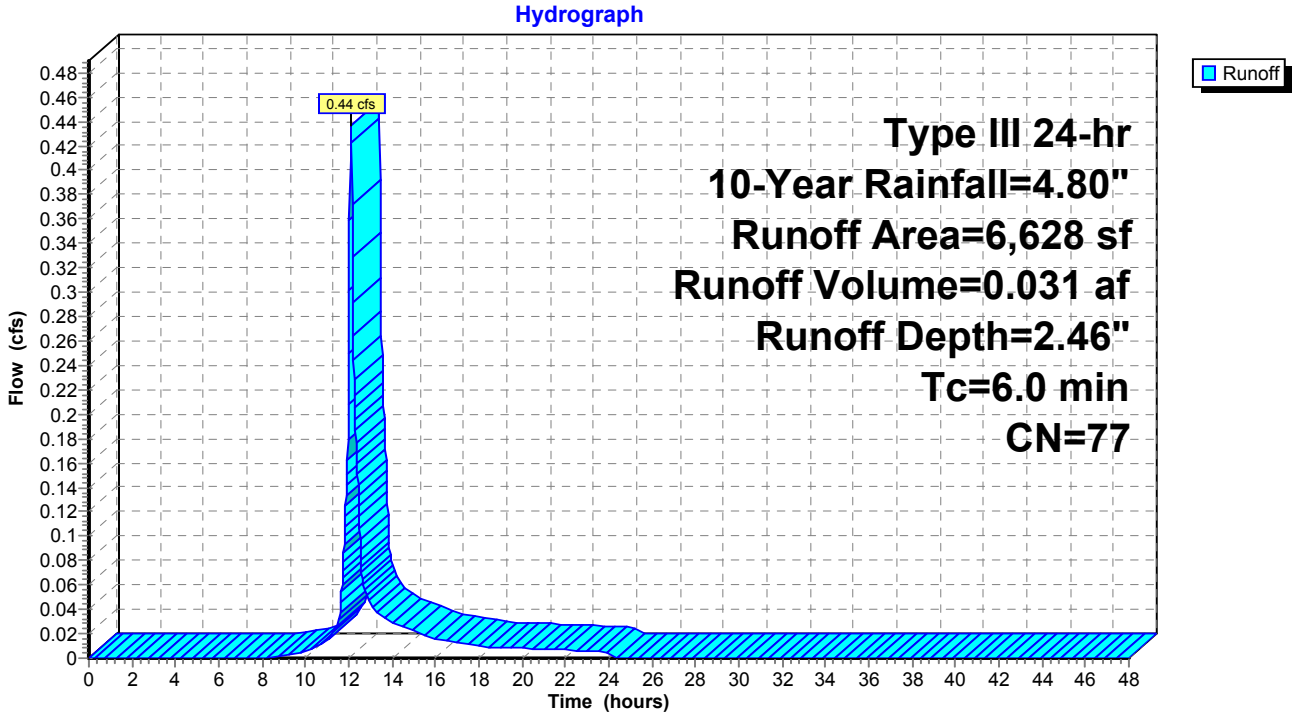
Runoff = 0.44 cfs @ 12.09 hrs, Volume= 0.031 af, Depth= 2.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
	2,328	39	>75% Grass cover, Good, HSG A
	3,451	98	Paved roads w/curbs & sewers, HSG A
*	849	98	Paved sidewalk, HSG A
	6,628	77	Weighted Average
	2,328		35.12% Pervious Area
	4,300		64.88% Impervious Area

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

Subcatchment 1S: Sub-1



Summary for Subcatchment 1S-1: Sub-1S-1

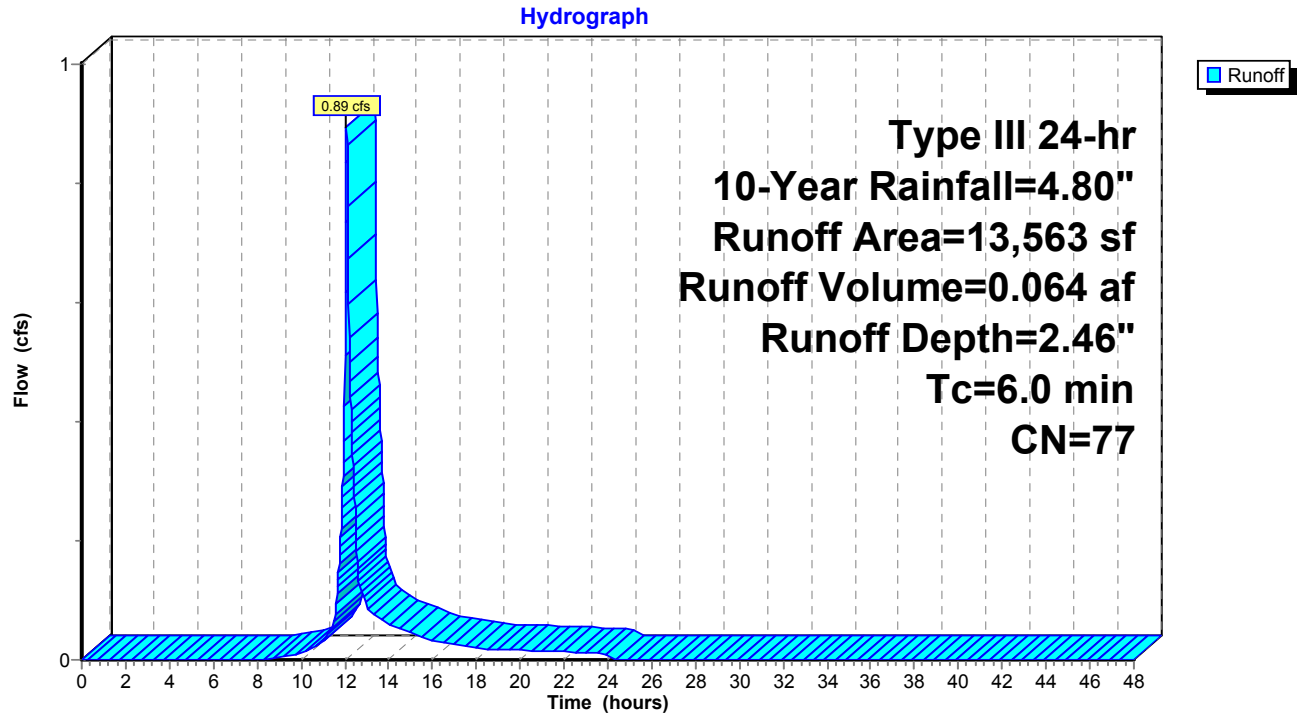
Runoff = 0.89 cfs @ 12.09 hrs, Volume= 0.064 af, Depth= 2.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
	4,839	39	>75% Grass cover, Good, HSG A
	6,500	98	Paved roads w/curbs & sewers, HSG A
*	1,077	98	Paved sidewalk, HSG A
*	163	98	Walls, HSG A
*	984	98	Paved drives, HSG A
	13,563	77	Weighted Average
	4,839		35.68% Pervious Area
	8,724		64.32% Impervious Area

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

Subcatchment 1S-1: Sub-1S-1



Summary for Subcatchment 2S: Sub-2

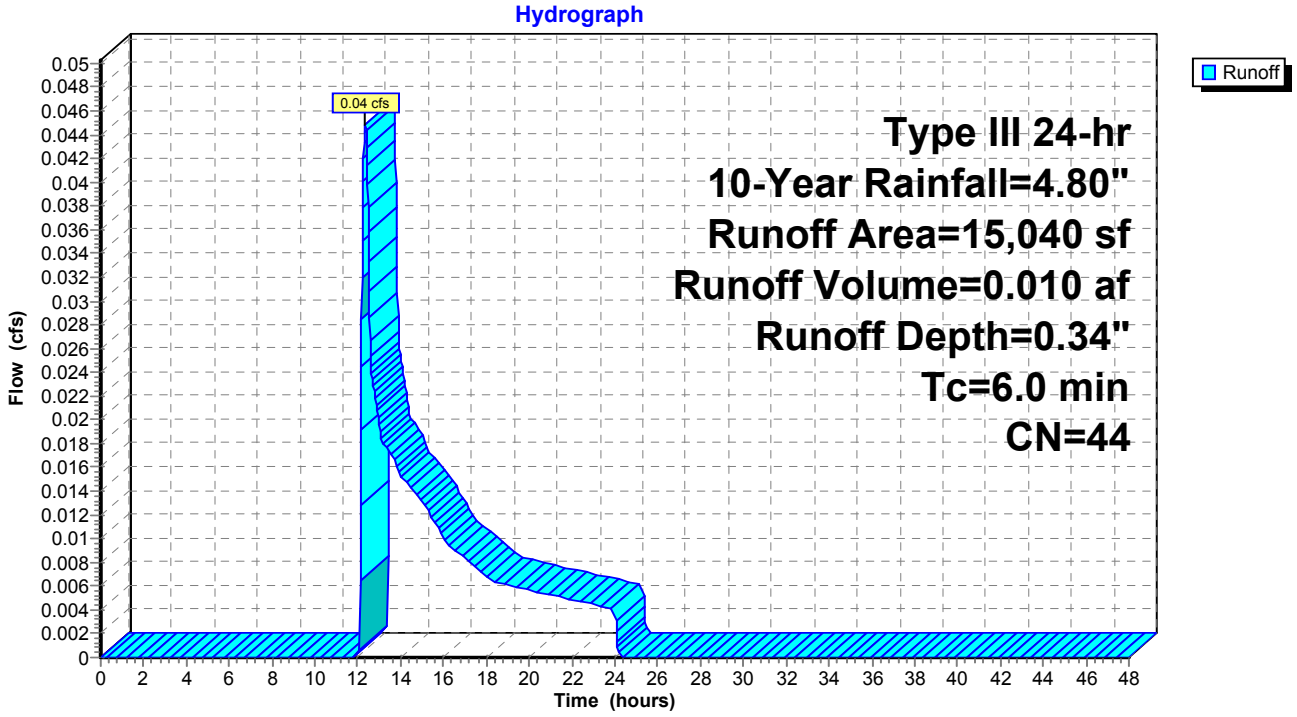
Runoff = 0.04 cfs @ 12.35 hrs, Volume= 0.010 af, Depth= 0.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
	7,795	39	>75% Grass cover, Good, HSG A
*	100	98	Walls, HSG A
*	570	98	Decks, HSG A
*	945	98	Decks, HSG A
	2,630	39	>75% Grass cover, Good, HSG A
*	3,000	30	Woods, Good, HSG A - offsite
	15,040	44	Weighted Average
	13,425		89.26% Pervious Area
	1,615		10.74% Impervious Area

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

Subcatchment 2S: Sub-2



Summary for Subcatchment 3A-1R: Roofs 16 FB, 17, 18-20 & 24-25 FB

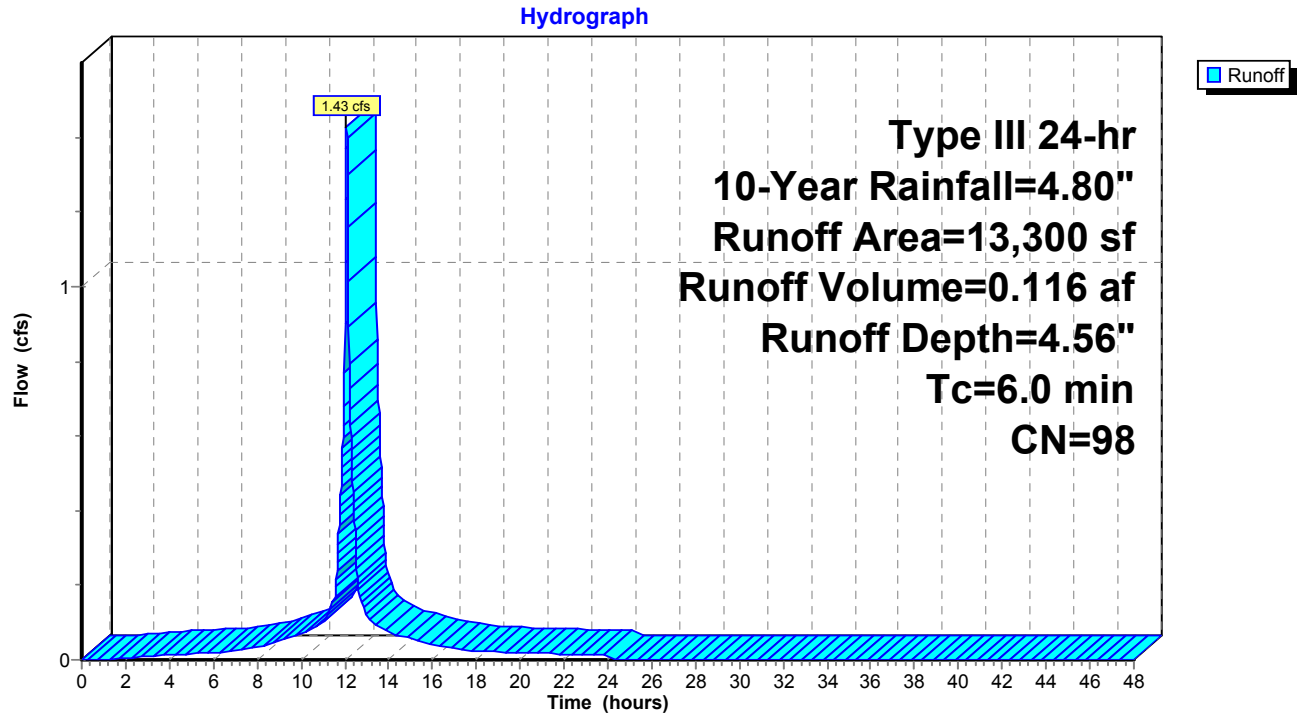
Runoff = 1.43 cfs @ 12.08 hrs, Volume= 0.116 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
	5,720	98	Roofs, HSG A
	3,790	98	Roofs, HSG A
*	1,903	98	Roofs, HSG A
	837	98	Roofs, HSG A
	23	98	Roofs, HSG B
*	1,027	98	Roofs, HSG A
	13,300	98	Weighted Average
	13,300		100.00% Impervious Area

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

Subcatchment 3A-1R: Roofs 16 FB, 17, 18-20 & 24-25 FB



Summary for Subcatchment 3A-S: Sub-3A

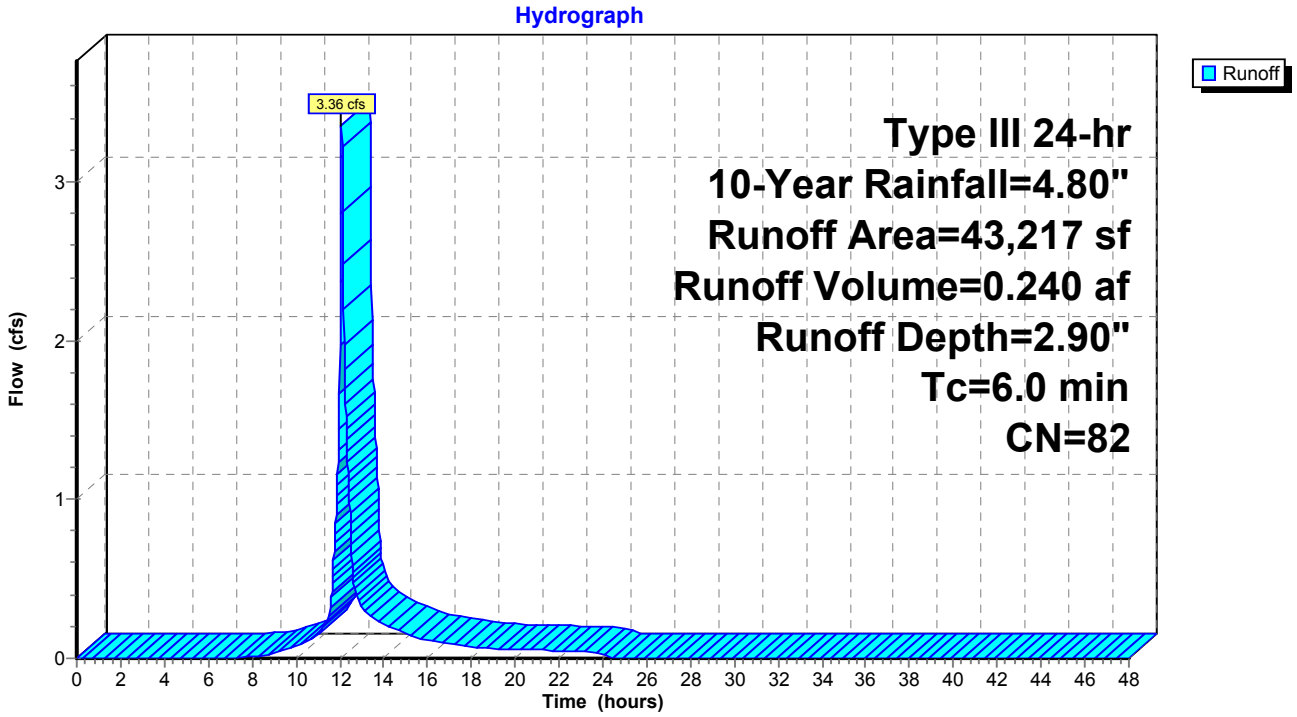
Runoff = 3.36 cfs @ 12.09 hrs, Volume= 0.240 af, Depth= 2.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
	7,575	39	>75% Grass cover, Good, HSG A
	1,836	61	>75% Grass cover, Good, HSG B
*	556	98	Decks, HSG A
*	8,140	98	Detention Basin, HSG A
*	4,387	98	Detention Basin, HSG B
*	146	98	Riprap, HSG A
*	70	98	Riprap, HSG B
*	113	98	Walls, HSG A
*	70	98	Walls, HSG B
*	1,384	98	Roofs, HSG A - offsite
*	16,069	98	Paved parking, HSG A - offsite
*	1,189	39	>75% Grass cover, Good, HSG A - offsite
*	1,682	30	Woods, Good, HSG A - offsite
	43,217	82	Weighted Average
	12,282		28.42% Pervious Area
	30,935		71.58% Impervious Area

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

Subcatchment 3A-S: Sub-3A



Summary for Subcatchment 3B-1R: Roofs 1-8 FB

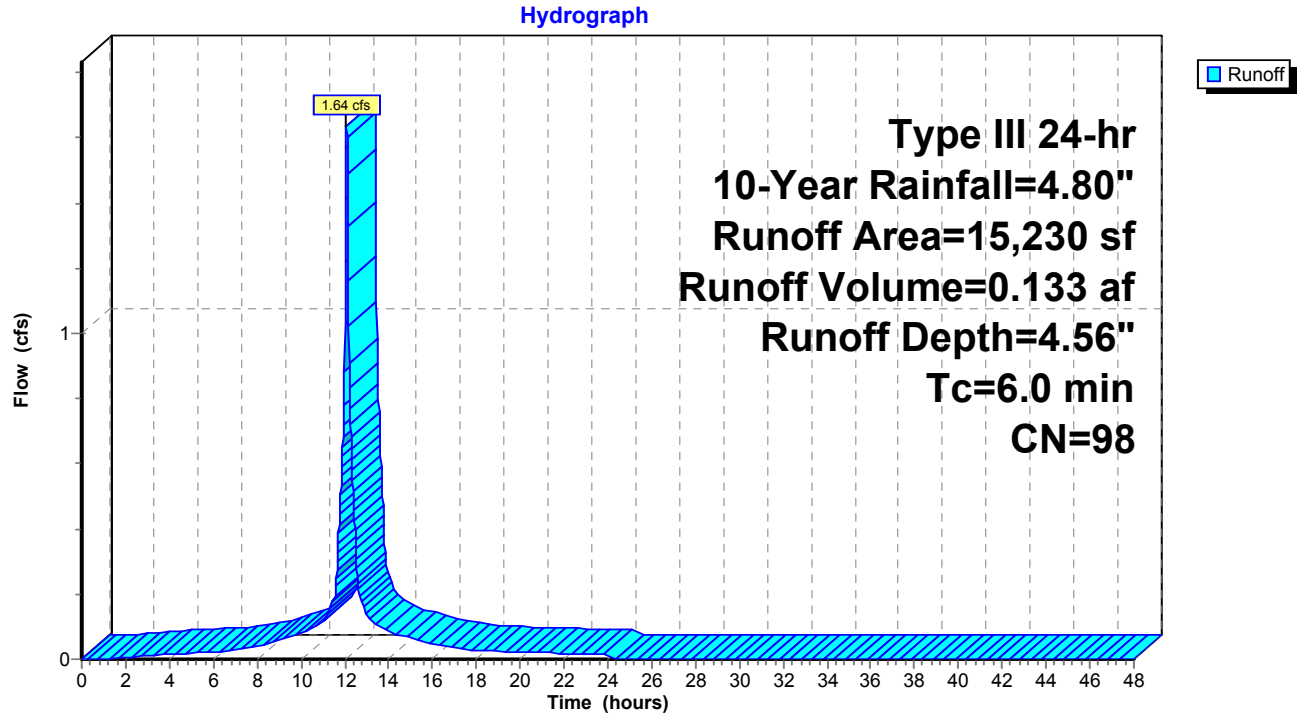
Runoff = 1.64 cfs @ 12.08 hrs, Volume= 0.133 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

Area (sf)	CN	Description
15,230	98	Roofs, HSG A
15,230		100.00% Impervious Area

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

Subcatchment 3B-1R: Roofs 1-8 FB



Summary for Subcatchment 3B-S: Sub-3B-S

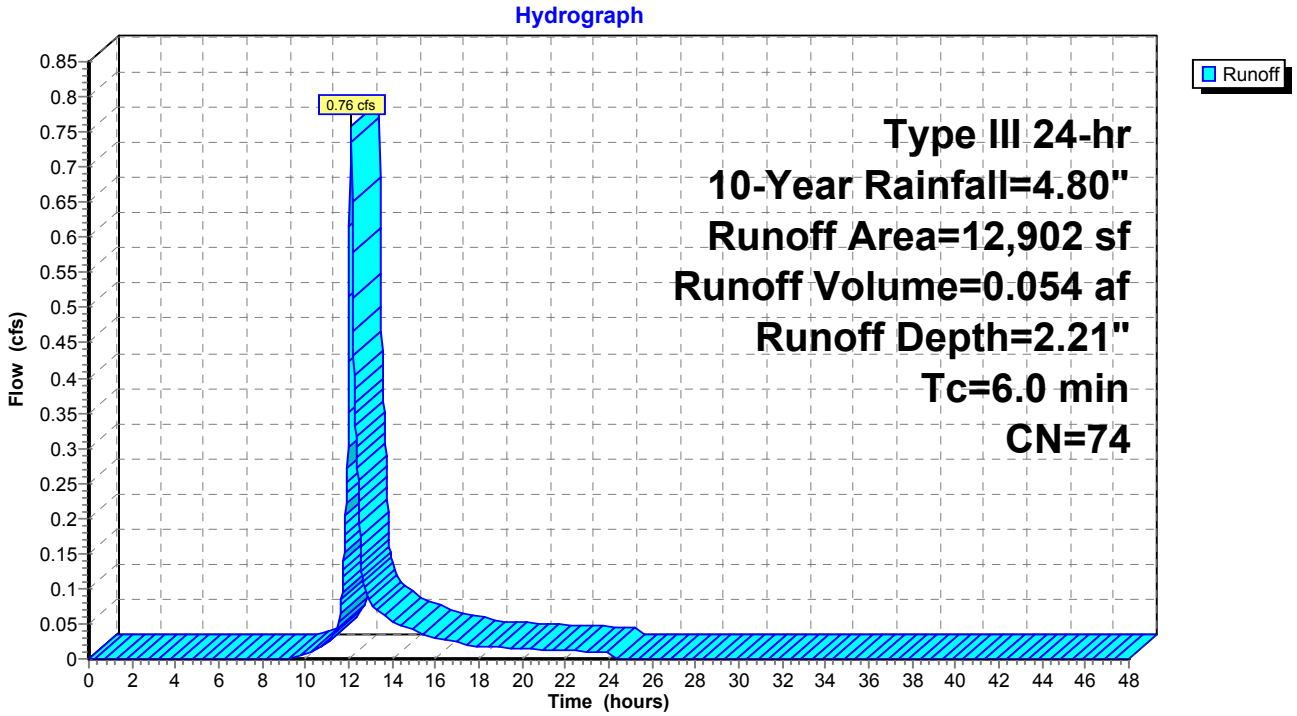
Runoff = 0.76 cfs @ 12.09 hrs, Volume= 0.054 af, Depth= 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
*	3,581	98	Paved drives, HSG A
*	185	98	Paved drives, HSG B
*	2,716	98	Paved roads w/curbs & sewers, HSG A
	776	98	Paved roads w/curbs & sewers, HSG B
*	340	98	Walks, HSG A
	5,125	39	>75% Grass cover, Good, HSG A
	179	61	>75% Grass cover, Good, HSG B
	12,902	74	Weighted Average
	5,304		41.11% Pervious Area
	7,598		58.89% Impervious Area

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

Subcatchment 3B-S: Sub-3B-S



Summary for Subcatchment 3C-1R: Roofs 10 F

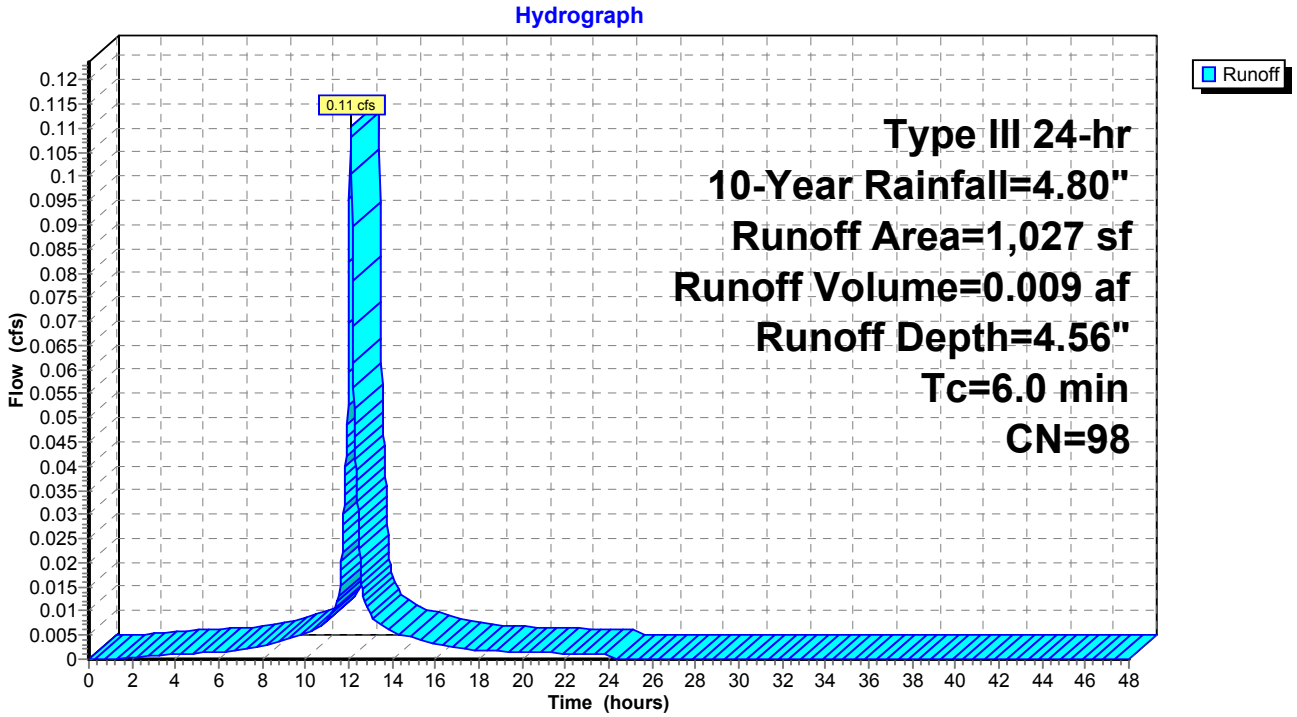
Runoff = 0.11 cfs @ 12.08 hrs, Volume= 0.009 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
*	1,027	98	Roofs, HSG B
	1,027		100.00% Impervious Area

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

Subcatchment 3C-1R: Roofs 10 F



Summary for Subcatchment 3C-2R: Roofs 12-13 B

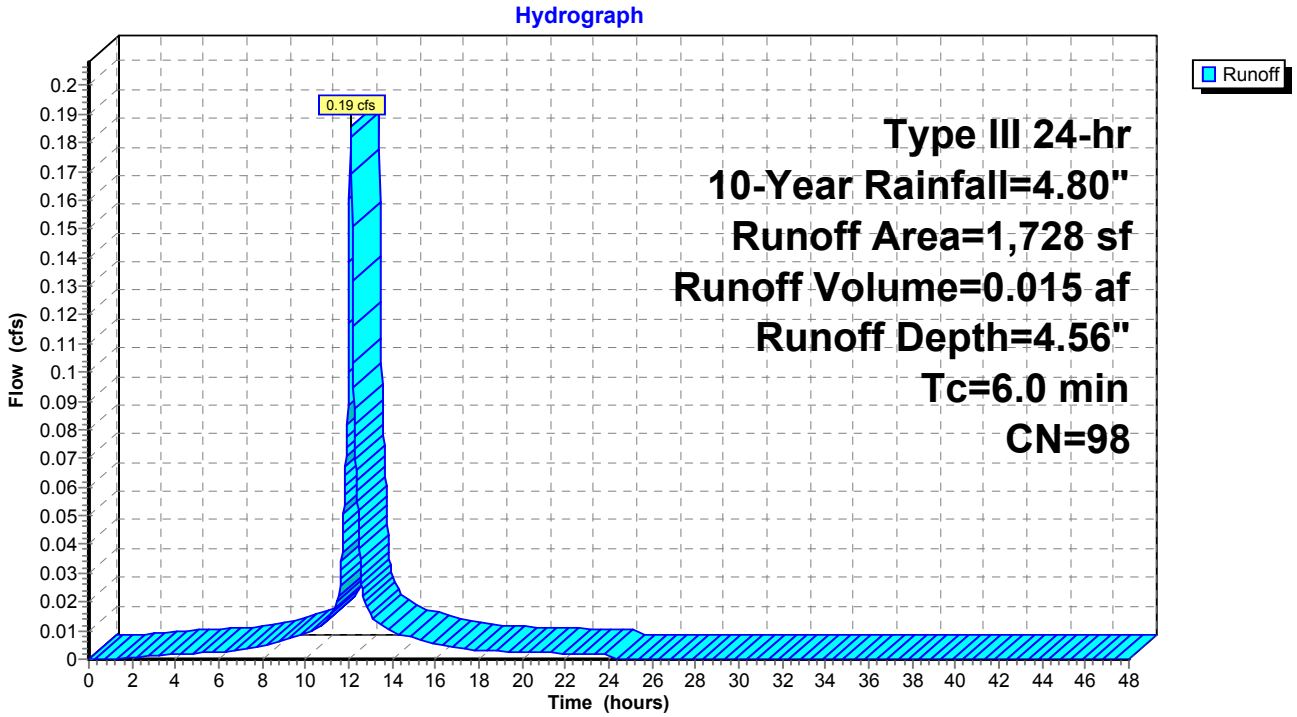
Runoff = 0.19 cfs @ 12.08 hrs, Volume= 0.015 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
*	1,728	98	Roofs, HSG B
	1,728		100.00% Impervious Area

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

Subcatchment 3C-2R: Roofs 12-13 B



Summary for Subcatchment 3C-3R: Roofs 14-15 B

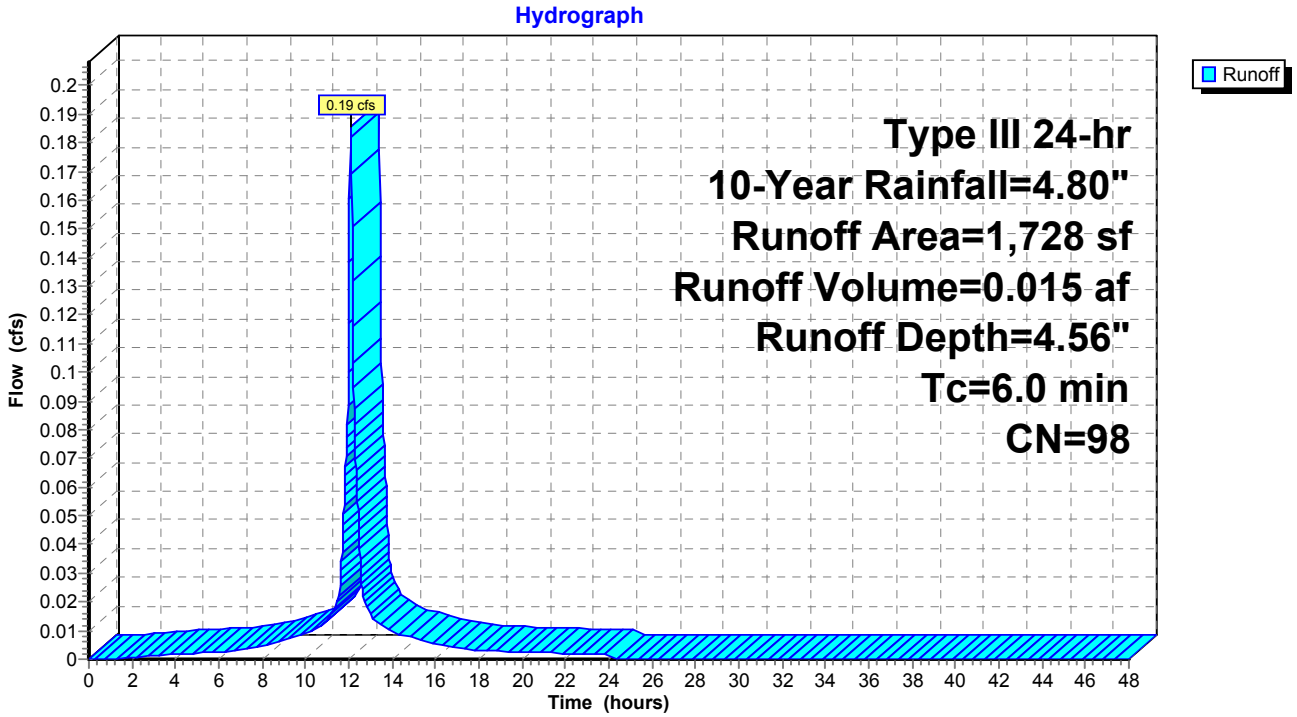
Runoff = 0.19 cfs @ 12.08 hrs, Volume= 0.015 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
*	1,728	98	Roofs, HSG B
	1,728		100.00% Impervious Area

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

Subcatchment 3C-3R: Roofs 14-15 B



Summary for Subcatchment 3C-4R: Roofs 10-11 B

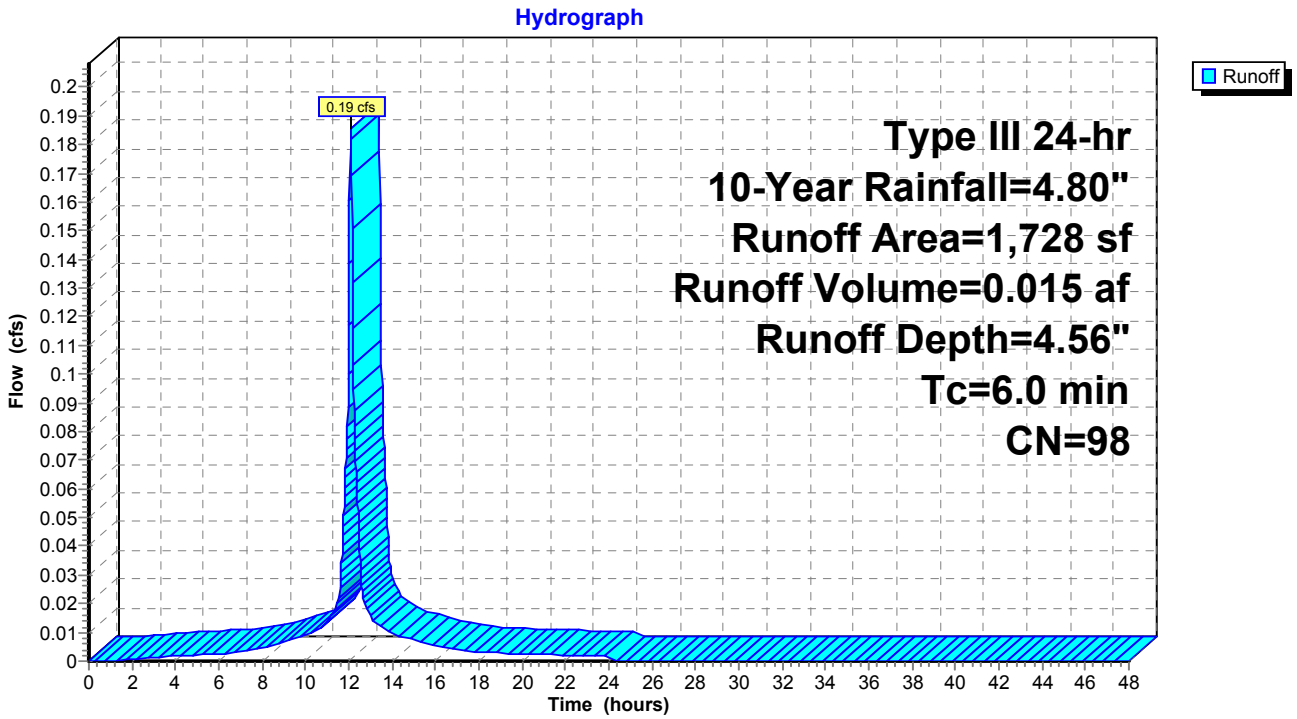
Runoff = 0.19 cfs @ 12.08 hrs, Volume= 0.015 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
*	1,538	98	Roofs, HSG B
	190	98	Roofs, HSG A
	1,728	98	Weighted Average
	1,728		100.00% Impervious Area

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

Subcatchment 3C-4R: Roofs 10-11 B



Summary for Subcatchment 3C-S: Sub-3C

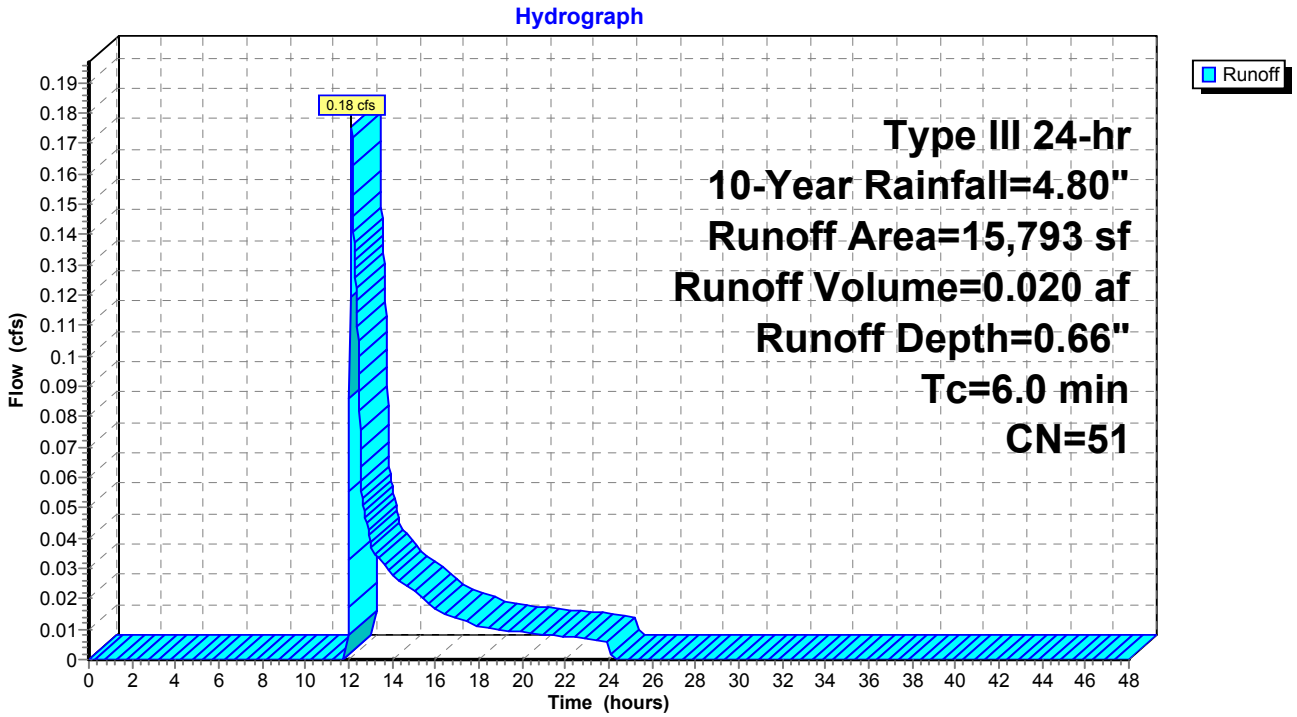
Runoff = 0.18 cfs @ 12.12 hrs, Volume= 0.020 af, Depth= 0.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
*	290	98	Paved drives, HSG A - offsite
*	2,113	30	Woods, Good, HSG A - offsite
*	3,045	39	>75% Grass cover, Good, HSG A - offsite
	6,567	61	>75% Grass cover, Good, HSG B
	3,112	39	>75% Grass cover, Good, HSG A
*	185	98	Decks, HSG A
*	371	98	Decks, HSG B
*	110	98	Riprap, HSG B
	15,793	51	Weighted Average
	14,837		93.95% Pervious Area
	956		6.05% Impervious Area

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

Subcatchment 3C-S: Sub-3C



Summary for Subcatchment 3D-S: Sub-3D-S

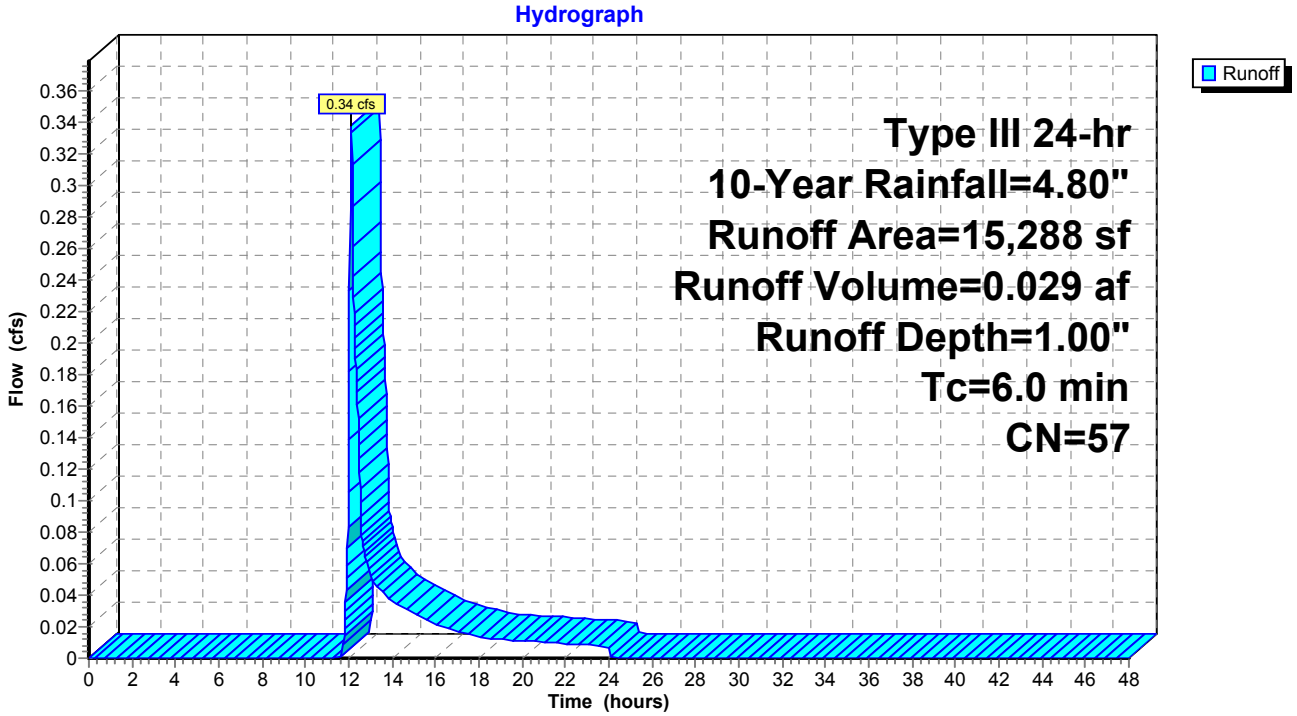
Runoff = 0.34 cfs @ 12.11 hrs, Volume= 0.029 af, Depth= 1.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
	3,098	55	Woods, Good, HSG B
	6,117	61	>75% Grass cover, Good, HSG B
	1,408	39	>75% Grass cover, Good, HSG A
*	641	98	Decks, HSG B
*	100	98	Decks, HSG A
*	61	98	Riprap, HSG B
*	96	30	Woods, Good, HSG A - offsite
*	1,076	39	>75% Grass cover, Good, HSG A - offsite
*	957	61	>75% Grass cover, Good, HSG B - offsite
*	1,734	55	Woods, Good, HSG B - offsite
	15,288	57	Weighted Average
	14,486		94.75% Pervious Area
	802		5.25% Impervious Area

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

Subcatchment 3D-S: Sub-3D-S



Summary for Subcatchment 3E-S: Sub-3E-S

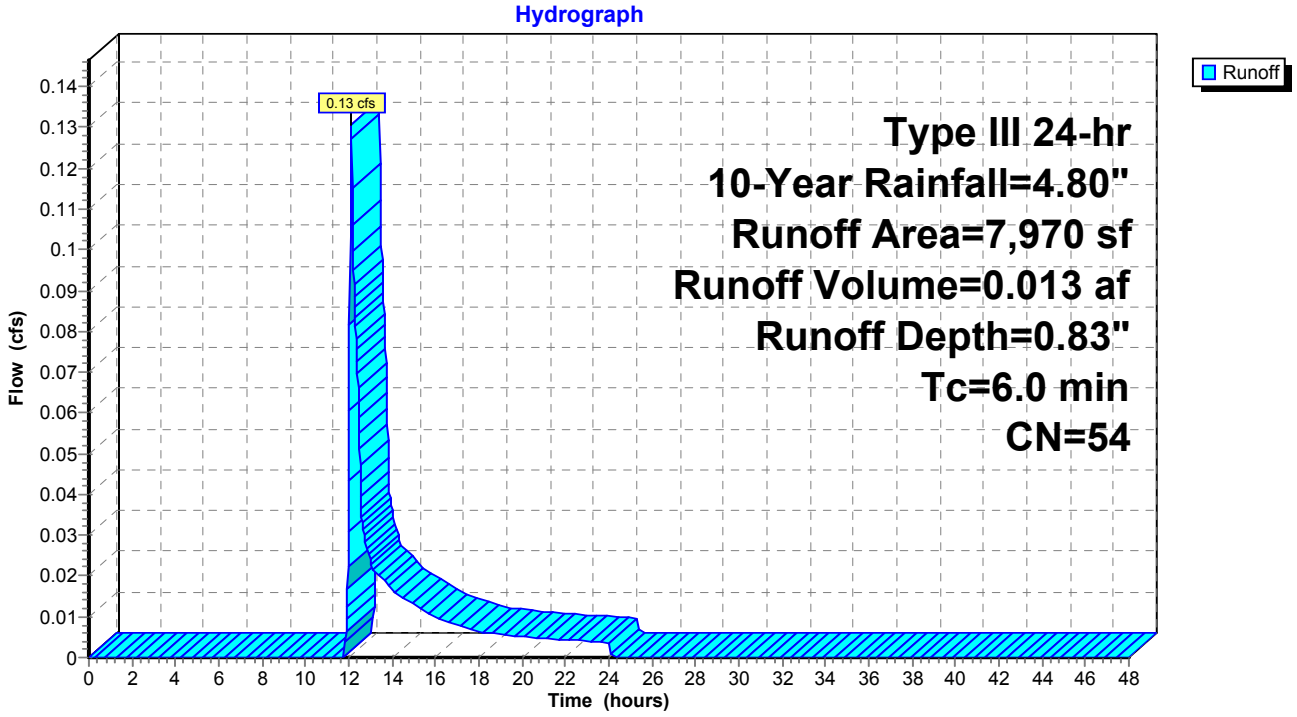
Runoff = 0.13 cfs @ 12.11 hrs, Volume= 0.013 af, Depth= 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
*	97	98	Riprap, HSG B
*	14	98	Riprap, HSG A
	4,411	55	Woods, Good, HSG B
	130	30	Woods, Good, HSG A
	1,396	39	>75% Grass cover, Good, HSG A
	1,922	61	>75% Grass cover, Good, HSG B
	7,970	54	Weighted Average
	7,859		98.61% Pervious Area
	111		1.39% Impervious Area

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

Subcatchment 3E-S: Sub-3E-S



Summary for Subcatchment 3F-1R: Roofs 26-28 FB

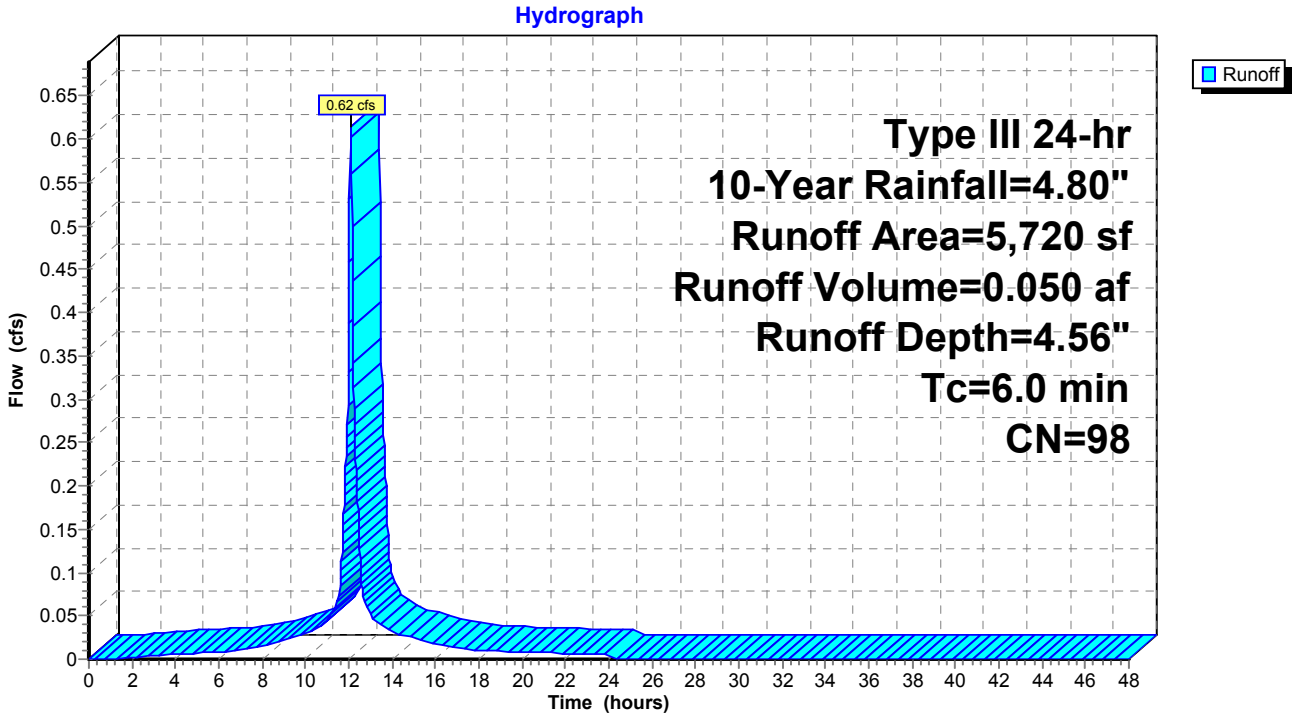
Runoff = 0.62 cfs @ 12.08 hrs, Volume= 0.050 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

Area (sf)	CN	Description
5,720	98	Roofs, HSG A
5,720		100.00% Impervious Area

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

Subcatchment 3F-1R: Roofs 26-28 FB



Summary for Subcatchment 3F-2R: Roofs 29-30 B, 31 FB

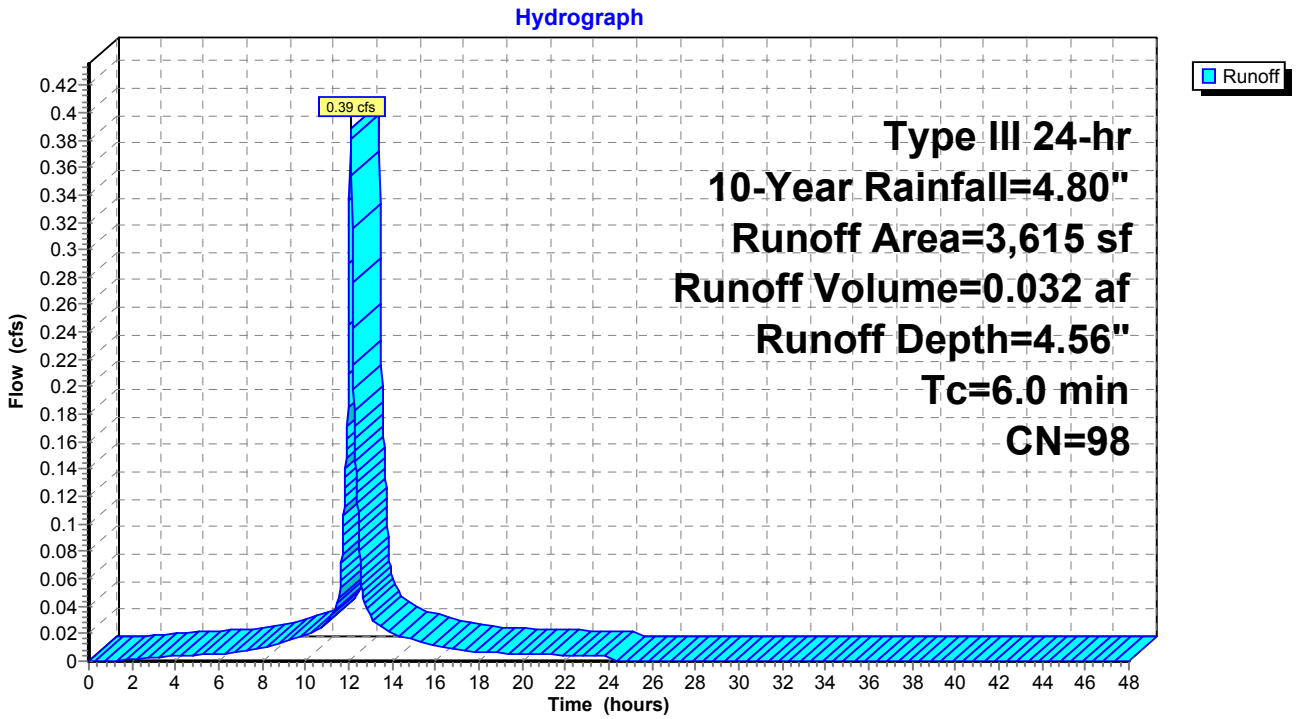
Runoff = 0.39 cfs @ 12.08 hrs, Volume= 0.032 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
*	1,728	98	Roofs, HSG A
	1,887	98	Roofs, HSG A
	3,615	98	Weighted Average
	3,615		100.00% Impervious Area

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

Subcatchment 3F-2R: Roofs 29-30 B, 31 FB



Summary for Subcatchment 3F-3R: Roofs 29 F

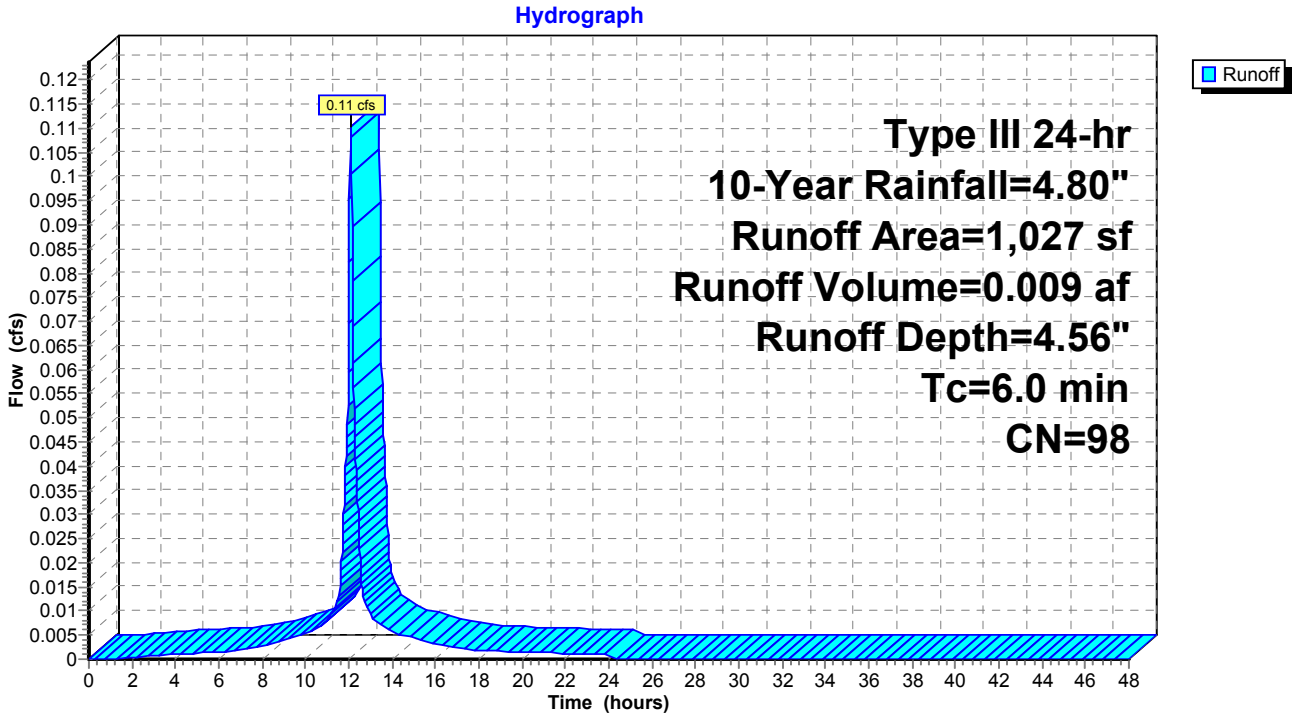
Runoff = 0.11 cfs @ 12.08 hrs, Volume= 0.009 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

Area (sf)	CN	Description
1,027	98	Roofs, HSG A
1,027		100.00% Impervious Area

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

Subcatchment 3F-3R: Roofs 29 F



Summary for Subcatchment 3F-4R: Roofs 30 F

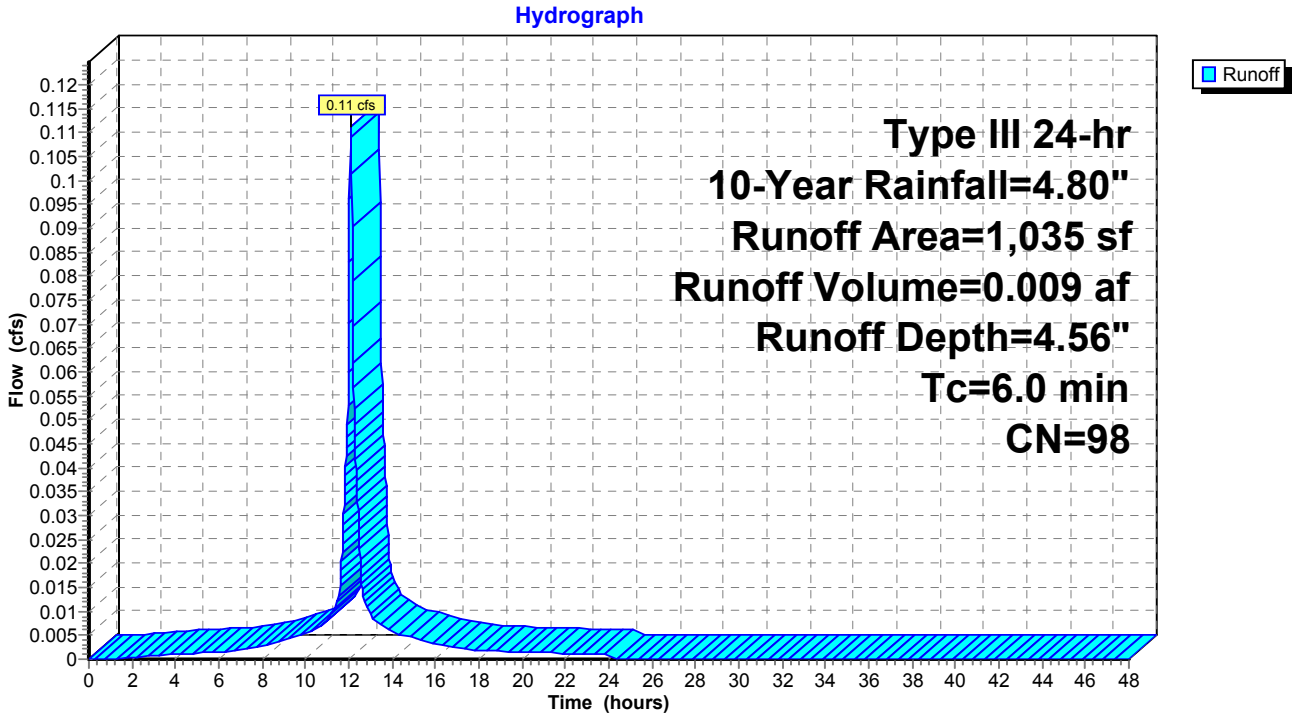
Runoff = 0.11 cfs @ 12.08 hrs, Volume= 0.009 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

Area (sf)	CN	Description
1,035	98	Roofs, HSG A
1,035		100.00% Impervious Area

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

Subcatchment 3F-4R: Roofs 30 F



Summary for Subcatchment 3F-S: Sub-3F-S

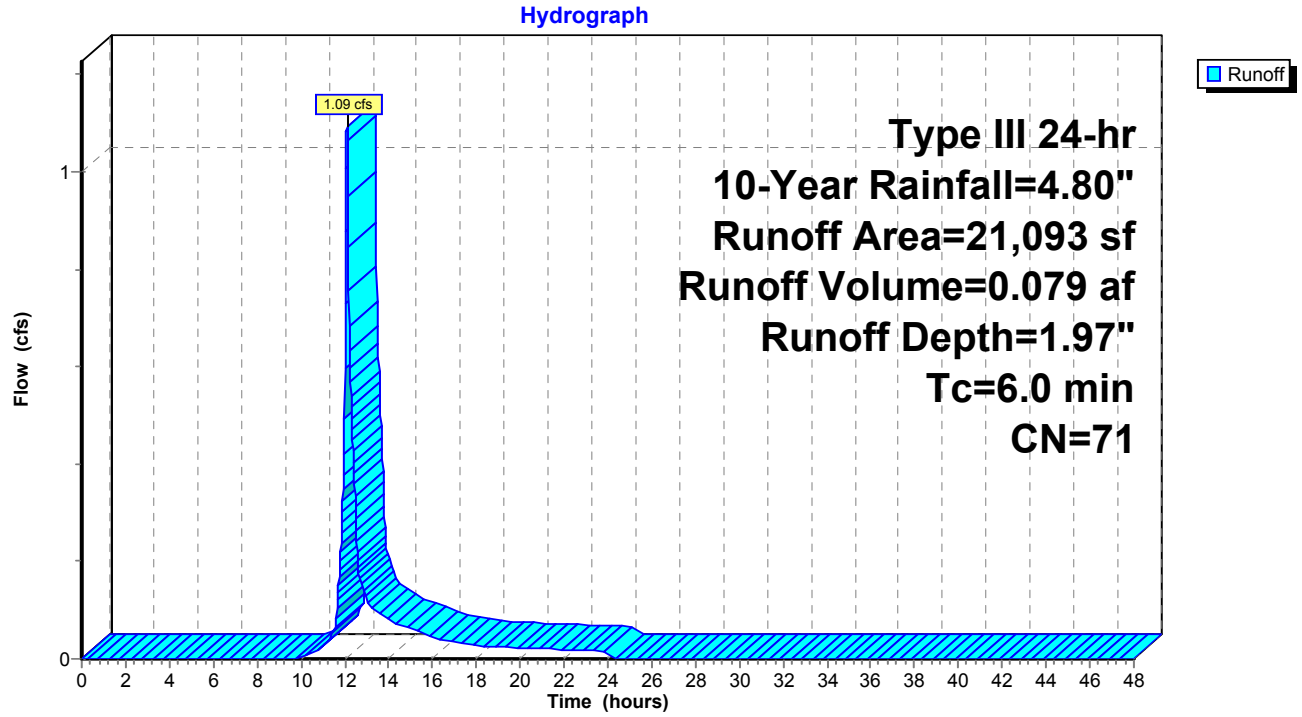
Runoff = 1.09 cfs @ 12.09 hrs, Volume= 0.079 af, Depth= 1.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
*	3,112	98	Paved drives, HSG A
*	85	98	Paved drives, HSG B
*	3,514	98	Paved roads w/curbs & sewers, HSG A
	2,279	98	Paved roads w/curbs & sewers, HSG B
*	1,089	98	Paved sidewalk, HSG A
*	508	98	Paved sidewalk, HSG B
*	209	98	Walks, HSG A
*	4	98	Walks, HSG B
*	371	98	Decks, HSG A
	9,065	39	>75% Grass cover, Good, HSG A
	857	61	>75% Grass cover, Good, HSG B
	21,093	71	Weighted Average
	9,922		47.04% Pervious Area
	11,171		52.96% Impervious Area

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

Subcatchment 3F-S: Sub-3F-S



Summary for Subcatchment 3G-1R: Roof 9 FB

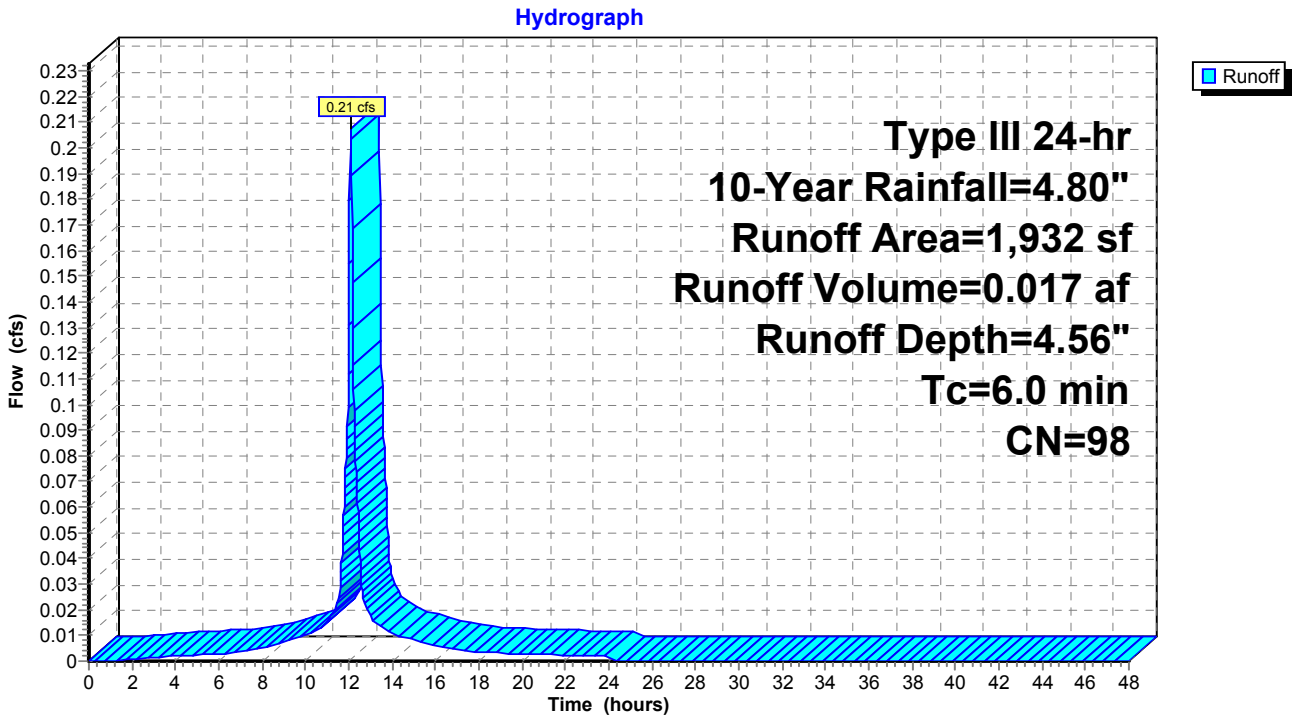
Runoff = 0.21 cfs @ 12.08 hrs, Volume= 0.017 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
	1,085	98	Roofs, HSG A
*	847	98	Roofs, HSG B
	1,932	98	Weighted Average
	1,932		100.00% Impervious Area

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

Subcatchment 3G-1R: Roof 9 FB



Summary for Subcatchment 3G-2R: Roofs 11 F

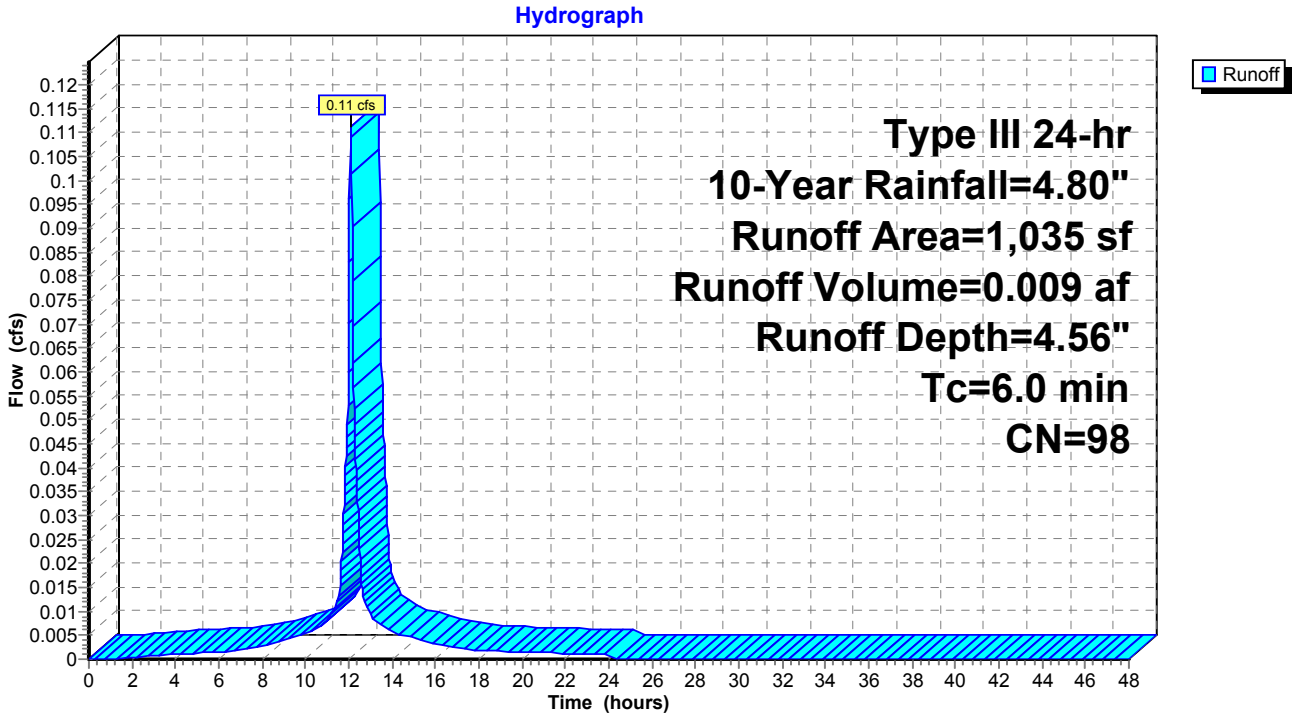
Runoff = 0.11 cfs @ 12.08 hrs, Volume= 0.009 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
*	1,035	98	Roofs, HSG B
	1,035		100.00% Impervious Area

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

Subcatchment 3G-2R: Roofs 11 F



Summary for Subcatchment 3G-3R: Roofs 12 F

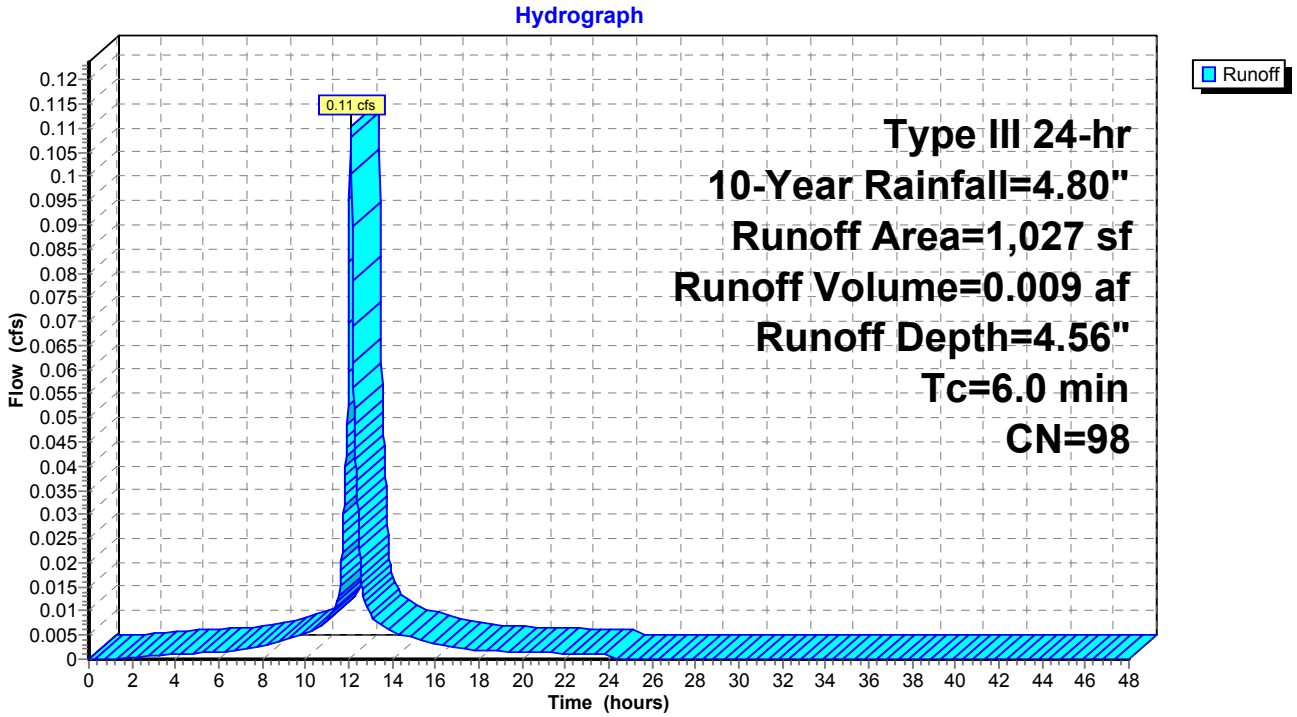
Runoff = 0.11 cfs @ 12.08 hrs, Volume= 0.009 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
*	1,027	98	Roofs, HSG B
	1,027		100.00% Impervious Area

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

Subcatchment 3G-3R: Roofs 12 F



Summary for Subcatchment 3G-4R: Roofs 13 F

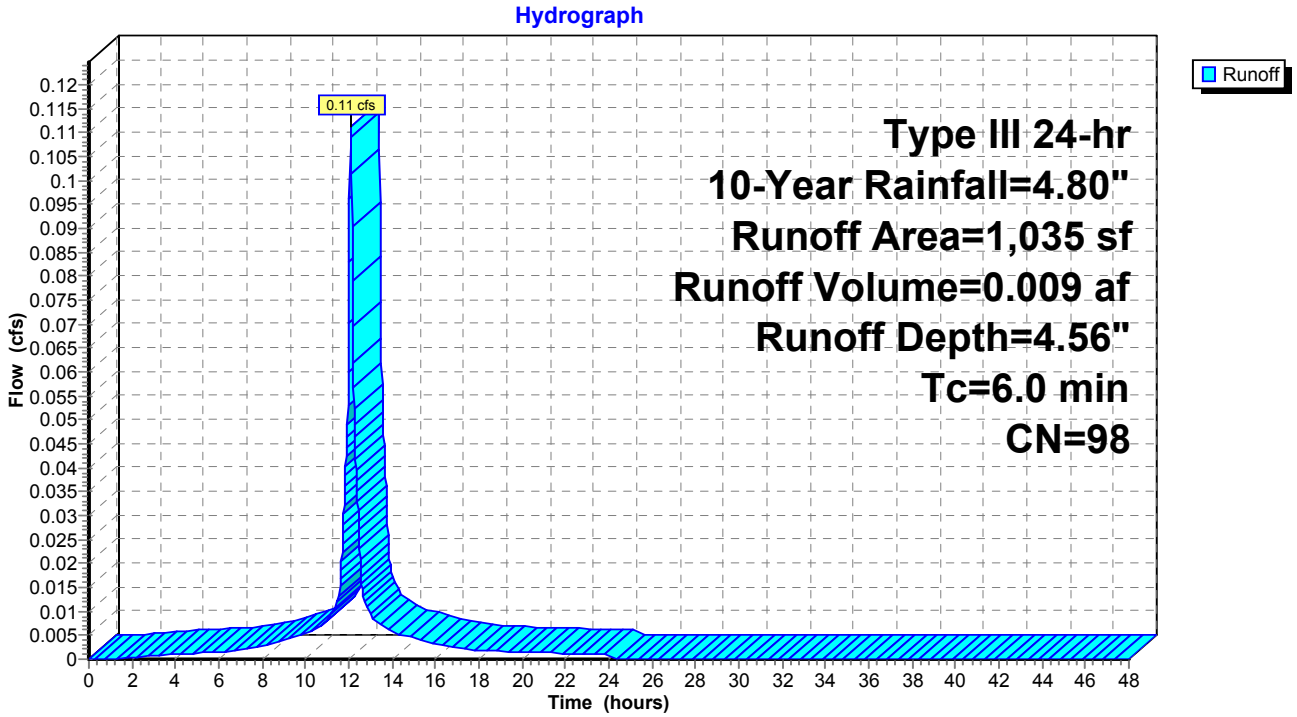
Runoff = 0.11 cfs @ 12.08 hrs, Volume= 0.009 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
*	1,035	98	Roofs, HSG B
	1,035		100.00% Impervious Area

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

Subcatchment 3G-4R: Roofs 13 F



Summary for Subcatchment 3G-5R: Roofs 14 F

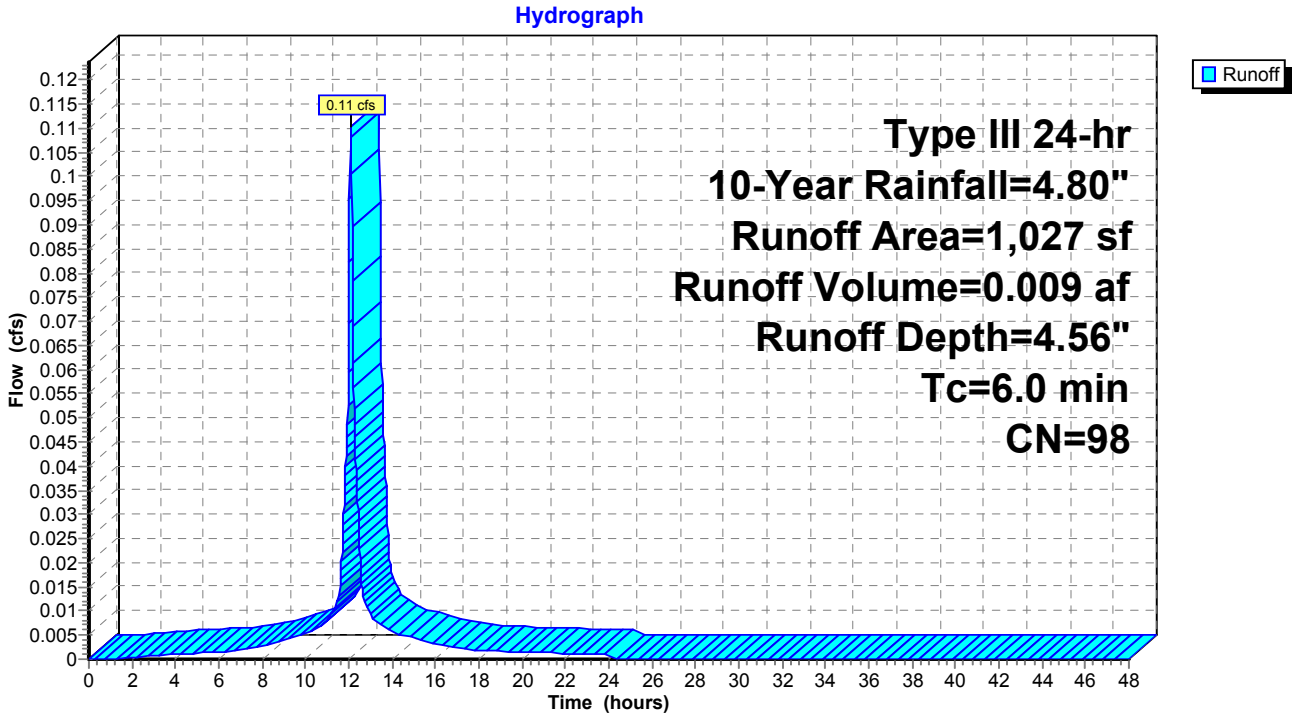
Runoff = 0.11 cfs @ 12.08 hrs, Volume= 0.009 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
*	1,027	98	Roofs, HSG B
	1,027		100.00% Impervious Area

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

Subcatchment 3G-5R: Roofs 14 F



Summary for Subcatchment 3G-6R: Roofs 15 F

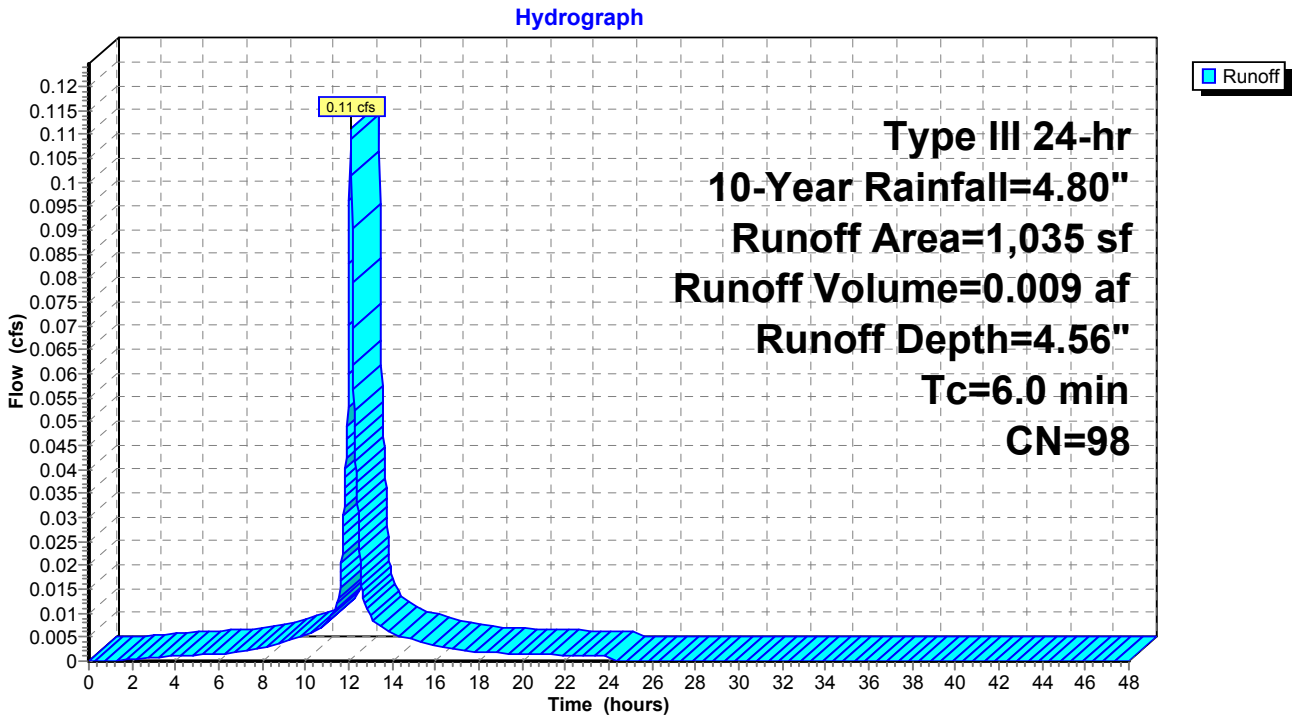
Runoff = 0.11 cfs @ 12.08 hrs, Volume= 0.009 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
	98	98	Roofs, HSG A
*	937	98	Roofs, HSG B
	1,035	98	Weighted Average
	1,035		100.00% Impervious Area

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

Subcatchment 3G-6R: Roofs 15 F



Summary for Subcatchment 3G-S: Sub-3G-S

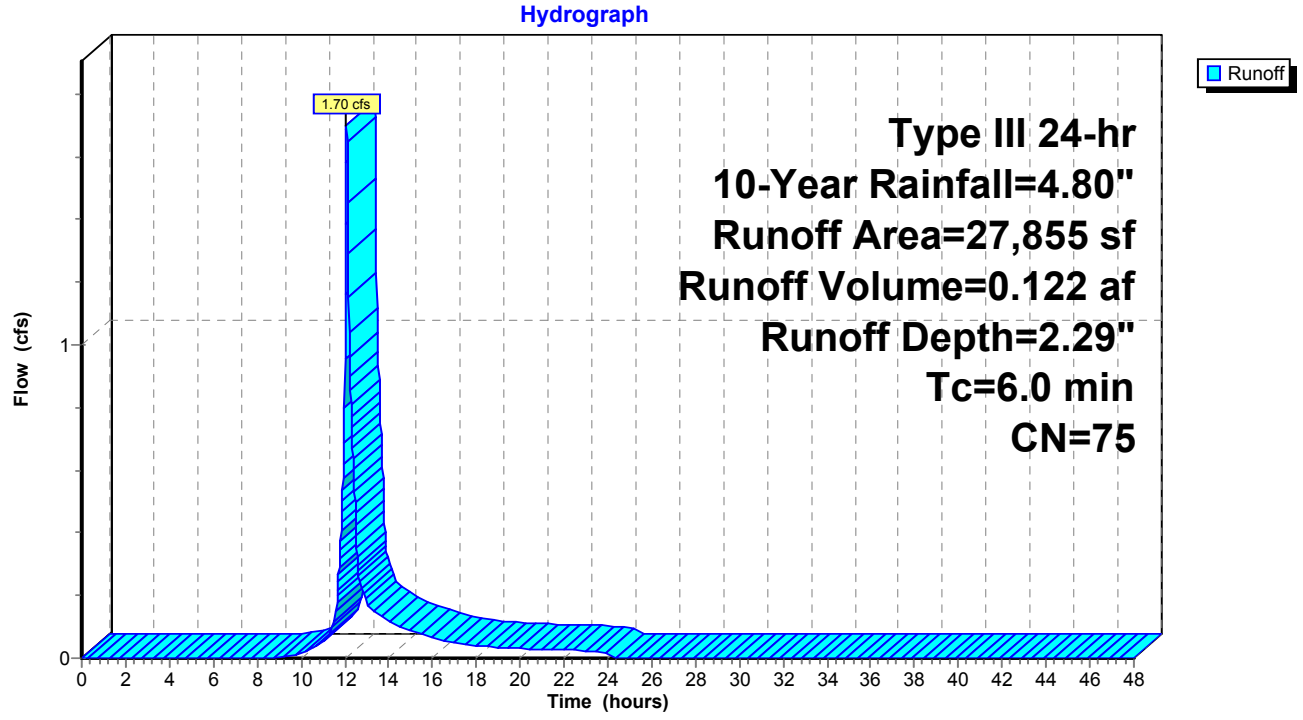
Runoff = 1.70 cfs @ 12.09 hrs, Volume= 0.122 af, Depth= 2.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
*	236	98	Paved drives, HSG A
*	3,067	98	Paved drives, HSG B
*	5,613	98	Paved roads w/curbs & sewers, HSG A
	4,837	98	Paved roads w/curbs & sewers, HSG B
*	1,272	98	Paved sidewalk, HSG A
*	617	98	Paved sidewalk, HSG B
*	42	98	Walks, HSG A
*	255	98	Walks, HSG B
	9,558	39	>75% Grass cover, Good, HSG A
	2,358	61	>75% Grass cover, Good, HSG B
	27,855	75	Weighted Average
	11,916		42.78% Pervious Area
	15,939		57.22% Impervious Area

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

Subcatchment 3G-S: Sub-3G-S



Summary for Subcatchment 3H-S: Sub-3A

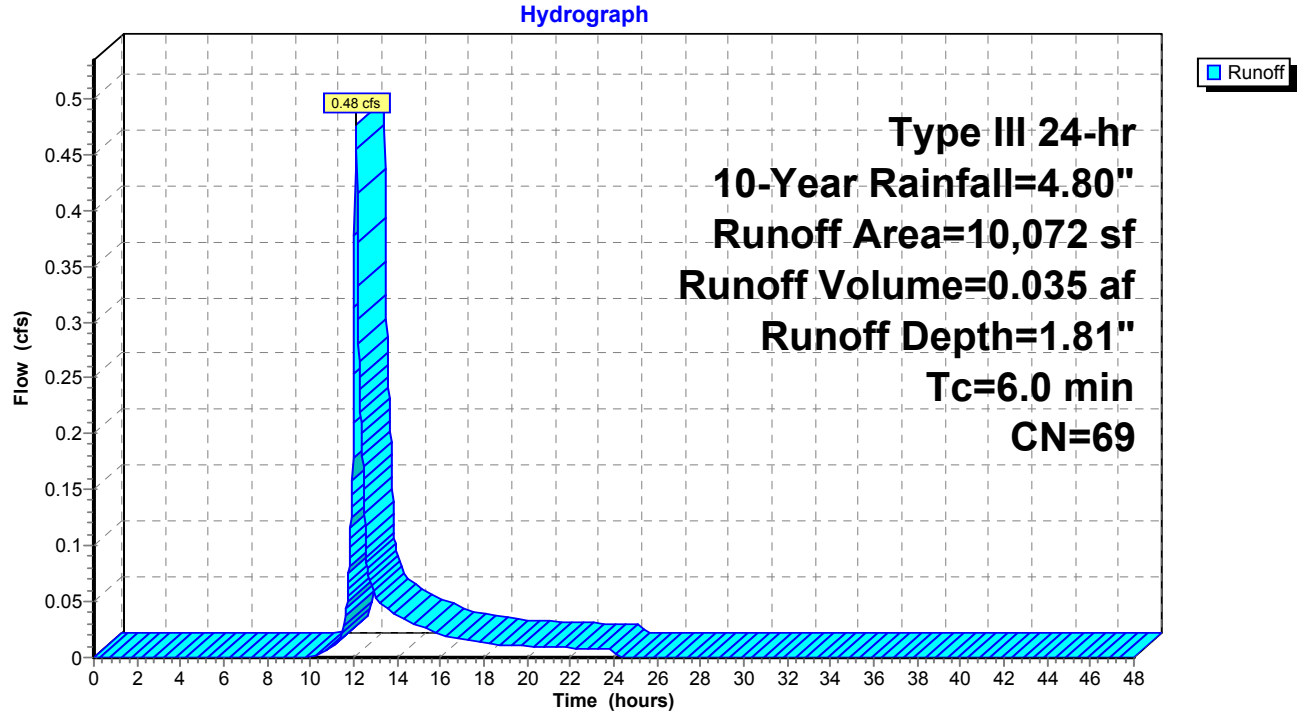
Runoff = 0.48 cfs @ 12.09 hrs, Volume= 0.035 af, Depth= 1.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
*	2,235	98	Paved drives, HSG A
	1,736	98	Paved roads w/curbs & sewers, HSG A
*	85	98	Walks, HSG A
	4,959	39	>75% Grass cover, Good, HSG A
*	889	98	Paved sidewalk, HSG A
*	168	98	Walls, HSG A
	10,072	69	Weighted Average
	4,959		49.24% Pervious Area
	5,113		50.76% Impervious Area

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

Subcatchment 3H-S: Sub-3A



Summary for Subcatchment 3I-S: Sub-3I-S

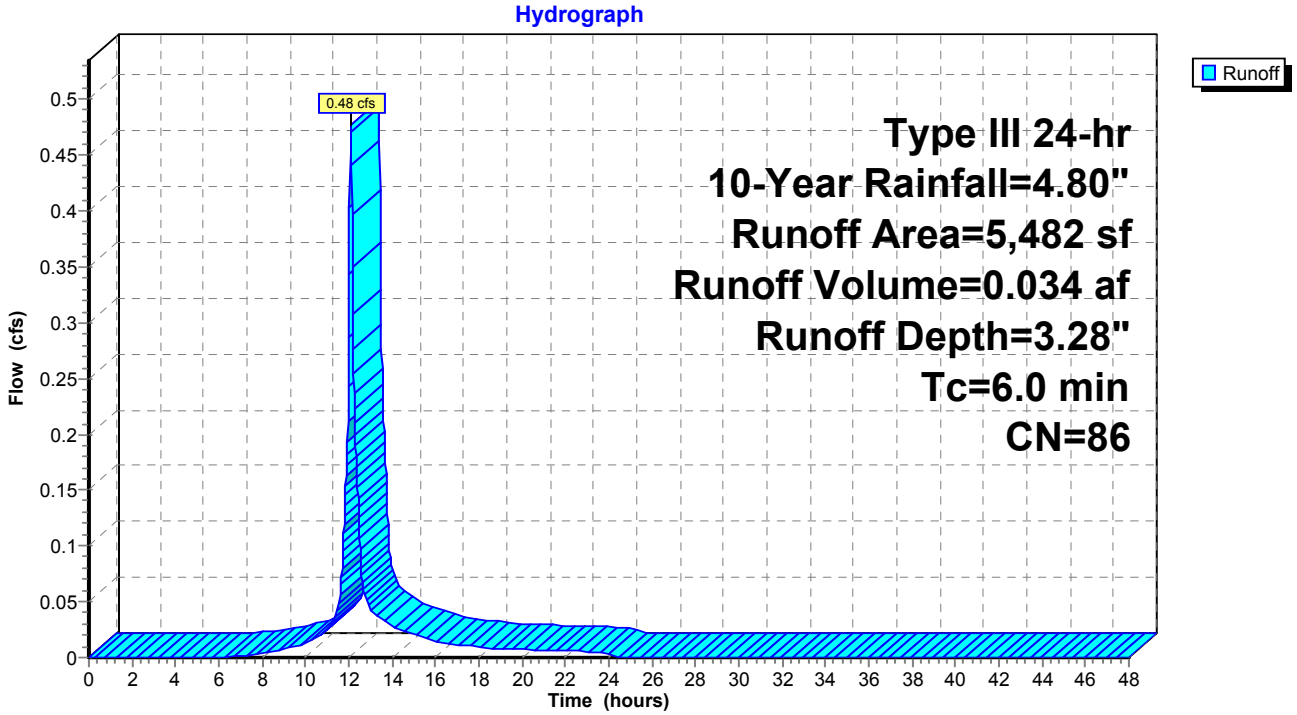
Runoff = 0.48 cfs @ 12.09 hrs, Volume= 0.034 af, Depth= 3.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
*	955	98	Paved drives, HSG A
*	3,322	98	Paved roads w/curbs & sewers, HSG A
*	85	98	Walks, HSG A
	1,120	39	>75% Grass cover, Good, HSG A
	5,482	86	Weighted Average
	1,120		20.43% Pervious Area
	4,362		79.57% Impervious Area

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

Subcatchment 3I-S: Sub-3I-S



Summary for Subcatchment 4S: Sub-4

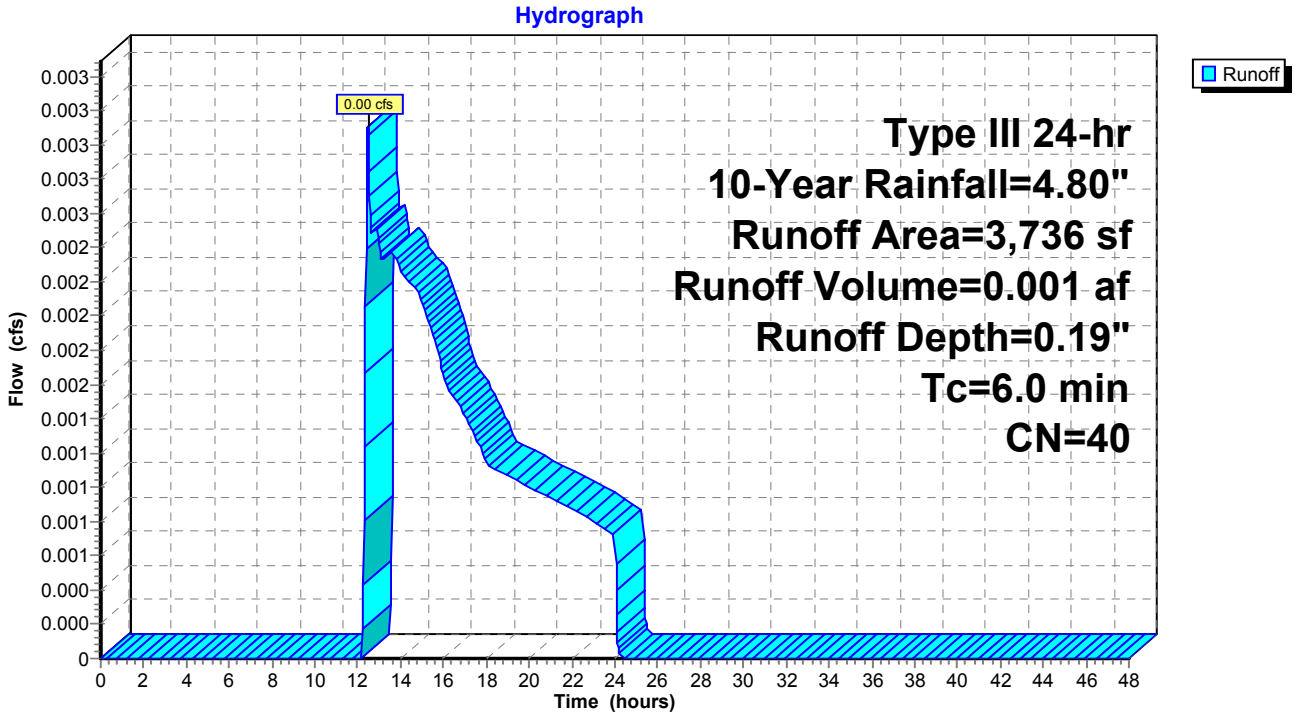
Runoff = 0.00 cfs @ 12.48 hrs, Volume= 0.001 af, Depth= 0.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
	3,694	39	>75% Grass cover, Good, HSG A
*	42	98	Walks, HSG A
	3,736	40	Weighted Average
	3,694		98.88% Pervious Area
	42		1.12% Impervious Area

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

Subcatchment 4S: Sub-4



Summary for Subcatchment 4S-1: Sub-4

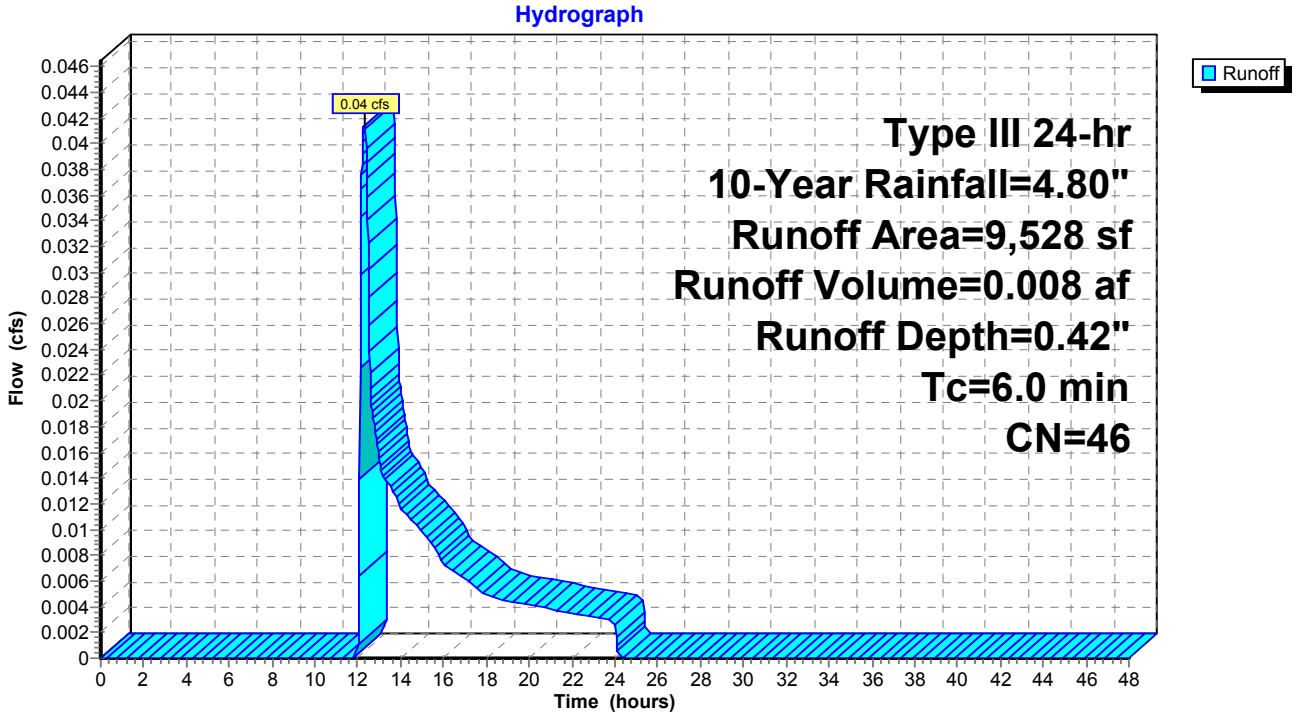
Runoff = 0.04 cfs @ 12.31 hrs, Volume= 0.008 af, Depth= 0.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
	8,378	39	>75% Grass cover, Good, HSG A
*	926	98	Decks, HSG A
*	224	98	Walls, HSG A
	9,528	46	Weighted Average
	8,378		87.93% Pervious Area
	1,150		12.07% Impervious Area

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

Subcatchment 4S-1: Sub-4



Summary for Subcatchment 4S-1R: Roofs 32 FB

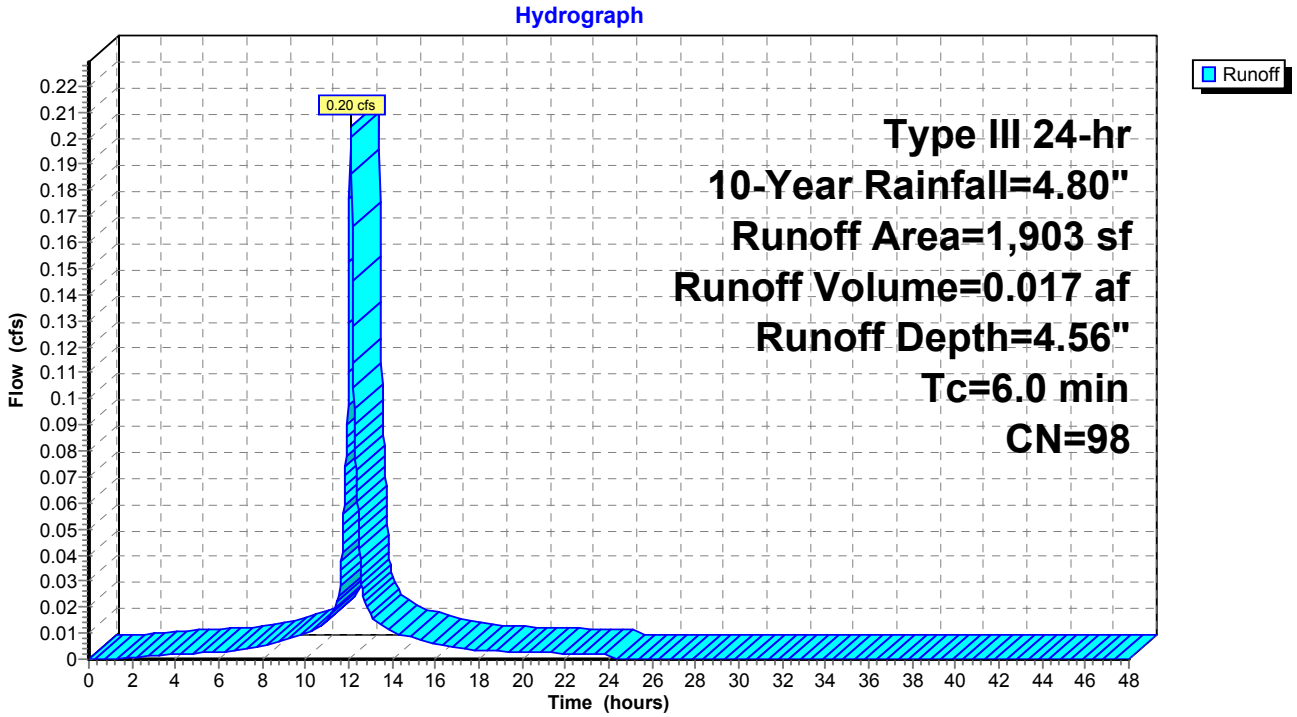
Runoff = 0.20 cfs @ 12.08 hrs, Volume= 0.017 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

Area (sf)	CN	Description
1,903	98	Roofs, HSG A
1,903		100.00% Impervious Area

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

Subcatchment 4S-1R: Roofs 32 FB



Summary for Subcatchment 5S: Sub -5

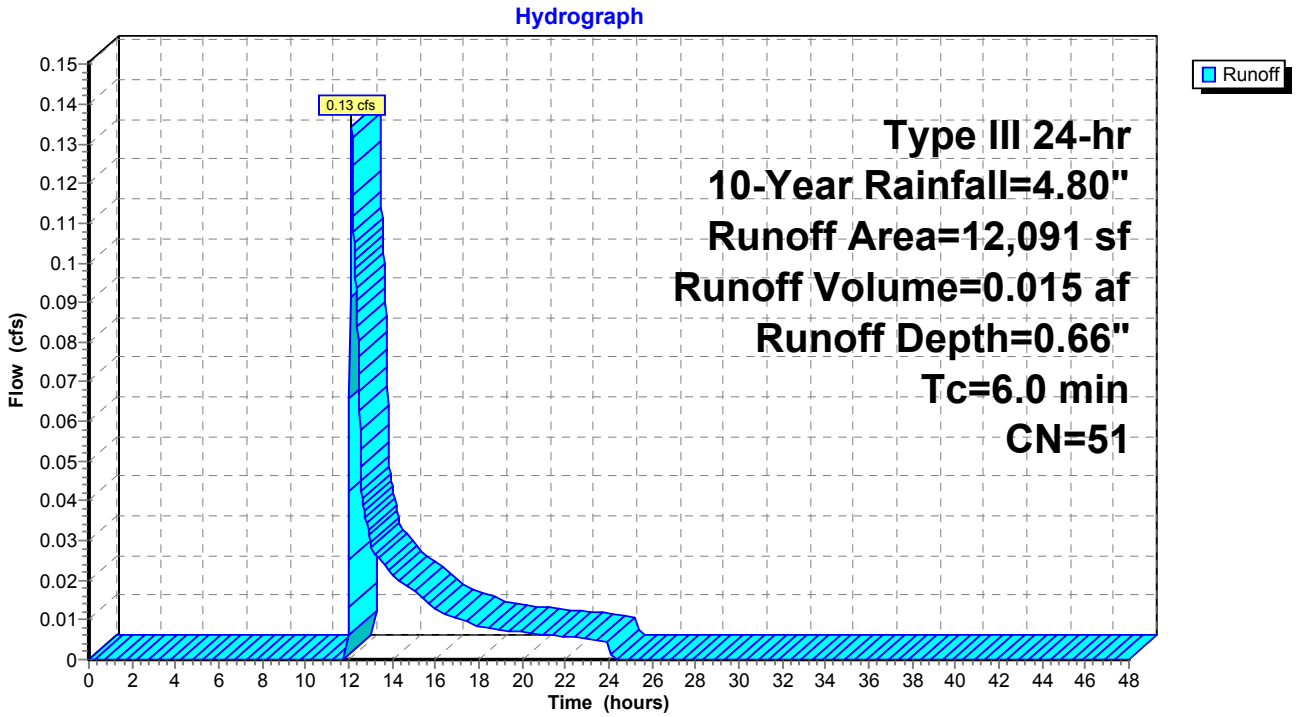
Runoff = 0.13 cfs @ 12.12 hrs, Volume= 0.015 af, Depth= 0.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
	6,491	39	>75% Grass cover, Good, HSG A
	365	80	>75% Grass cover, Good, HSG D
*	556	98	Decks, HSG A
*	261	98	Paved sidewalk, HSG A
*	62	98	Paved sidewalk, HSG D
	1,129	98	Paved roads w/curbs & sewers, HSG A
	286	98	Paved roads w/curbs & sewers, HSG D
	2,941	39	>75% Grass cover, Good, HSG A
	12,091	51	Weighted Average
	9,797		81.03% Pervious Area
	2,294		18.97% Impervious Area

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

Subcatchment 5S: Sub -5



Summary for Subcatchment 5S-1: Sub 5S-1

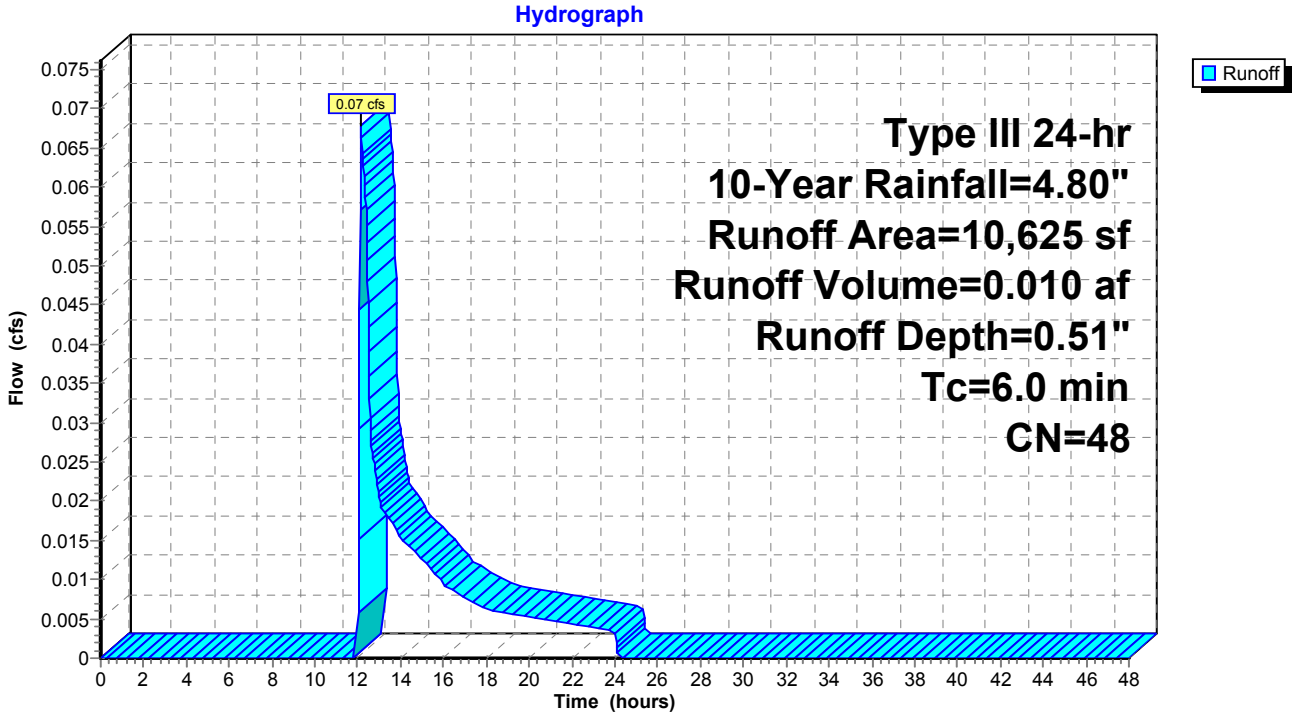
Runoff = 0.07 cfs @ 12.15 hrs, Volume= 0.010 af, Depth= 0.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
*	1,175	98	Walls, HSG A
*	371	98	Decks, HSG A
	9,079	39	>75% Grass cover, Good, HSG A
	10,625	48	Weighted Average
	9,079		85.45% Pervious Area
	1,546		14.55% Impervious Area

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

Subcatchment 5S-1: Sub 5S-1



Summary for Subcatchment 5S-1R: Roofs 19-21 FB

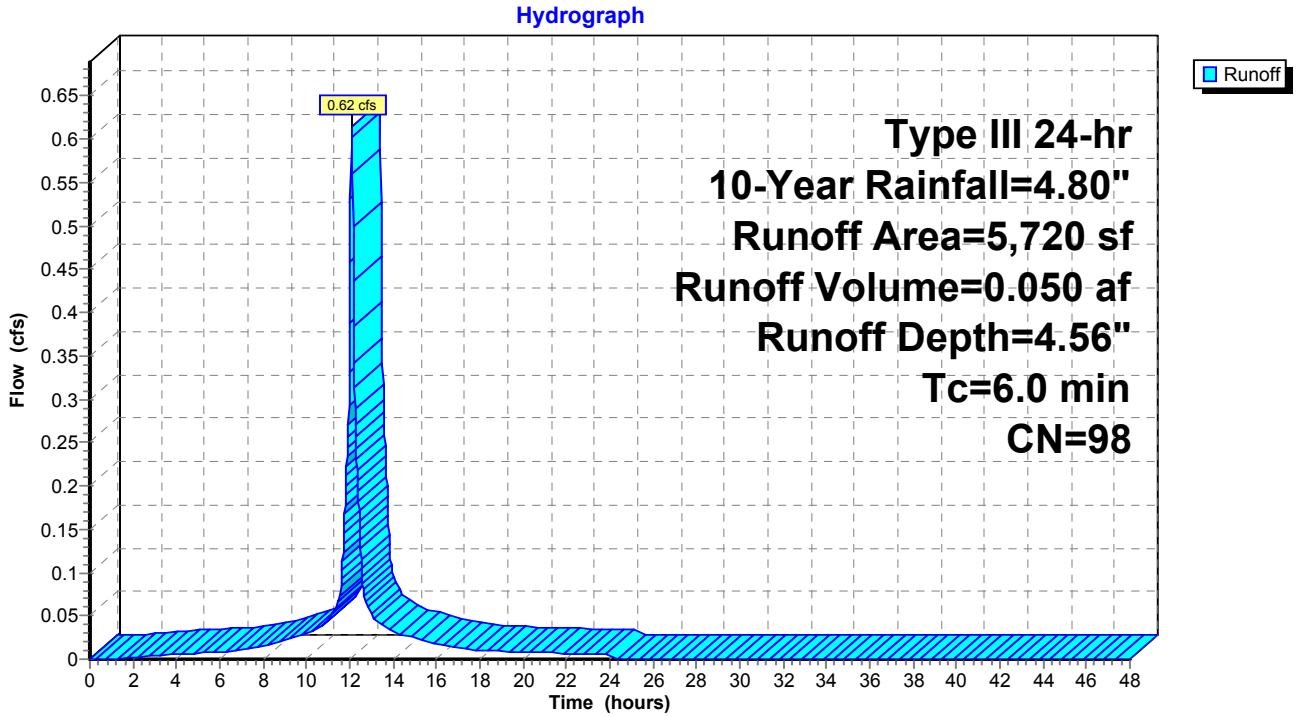
Runoff = 0.62 cfs @ 12.08 hrs, Volume= 0.050 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

Area (sf)	CN	Description
5,720	98	Roofs, HSG A
5,720		100.00% Impervious Area

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

Subcatchment 5S-1R: Roofs 19-21 FB



Summary for Subcatchment 5S-P: Pavement

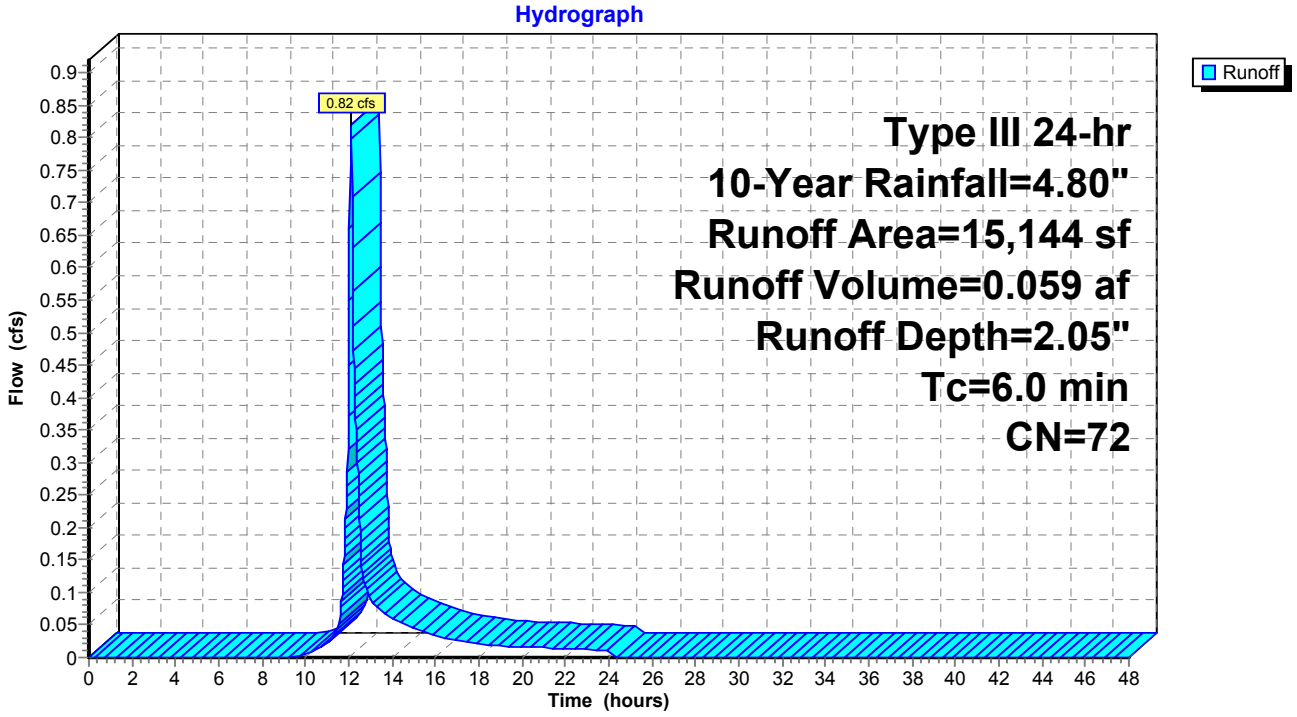
Runoff = 0.82 cfs @ 12.09 hrs, Volume= 0.059 af, Depth= 2.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-Year Rainfall=4.80"

	Area (sf)	CN	Description
*	2,816	98	Paved drives, HSG A
	4,704	98	Paved roads w/curbs & sewers, HSG A
	6,584	39	>75% Grass cover, Good, HSG A
*	643	98	Paved sidewalk, HSG A
*	297	98	Walks, HSG A
*	100	98	Kiosk, HSG A
	15,144	72	Weighted Average
	6,584		43.48% Pervious Area
	8,560		56.52% Impervious Area

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

Subcatchment 5S-P: Pavement

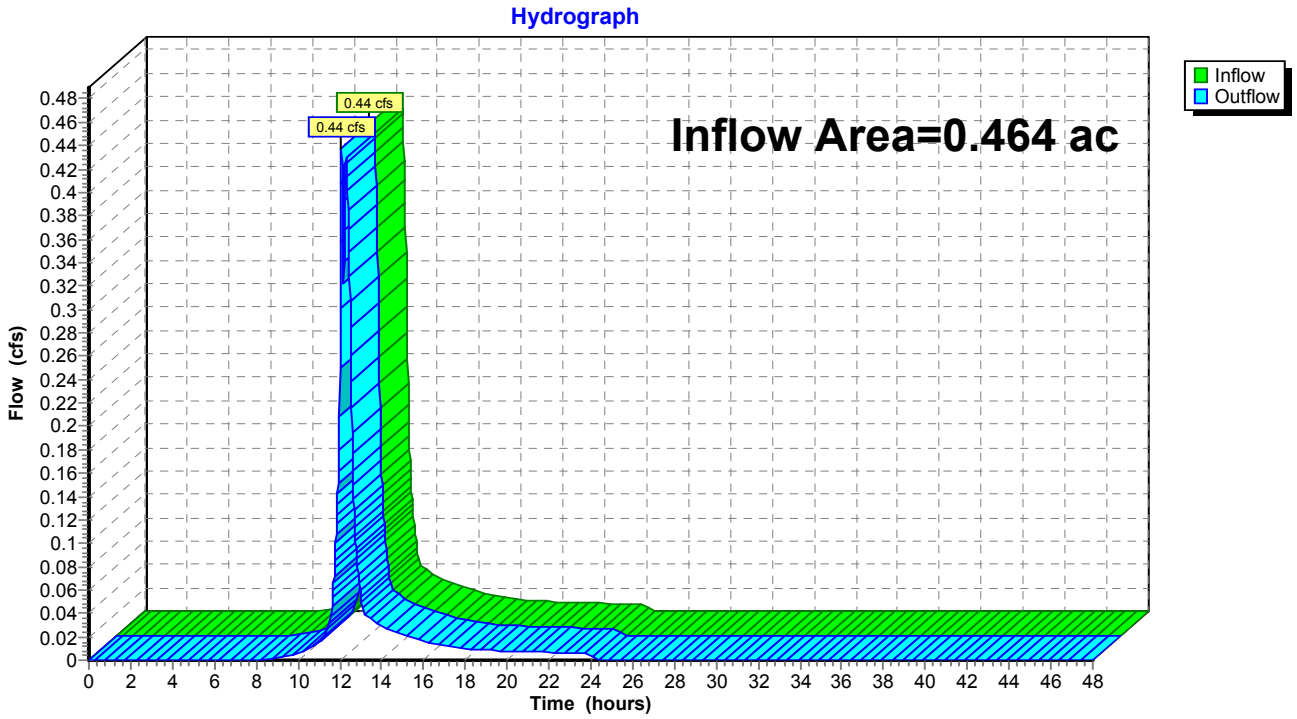


Summary for Reach DP-1: DMH

Inflow Area = 0.464 ac, 64.50% Impervious, Inflow Depth = 1.01" for 10-Year event
Inflow = 0.44 cfs @ 12.09 hrs, Volume= 0.039 af
Outflow = 0.44 cfs @ 12.09 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Reach DP-1: DMH

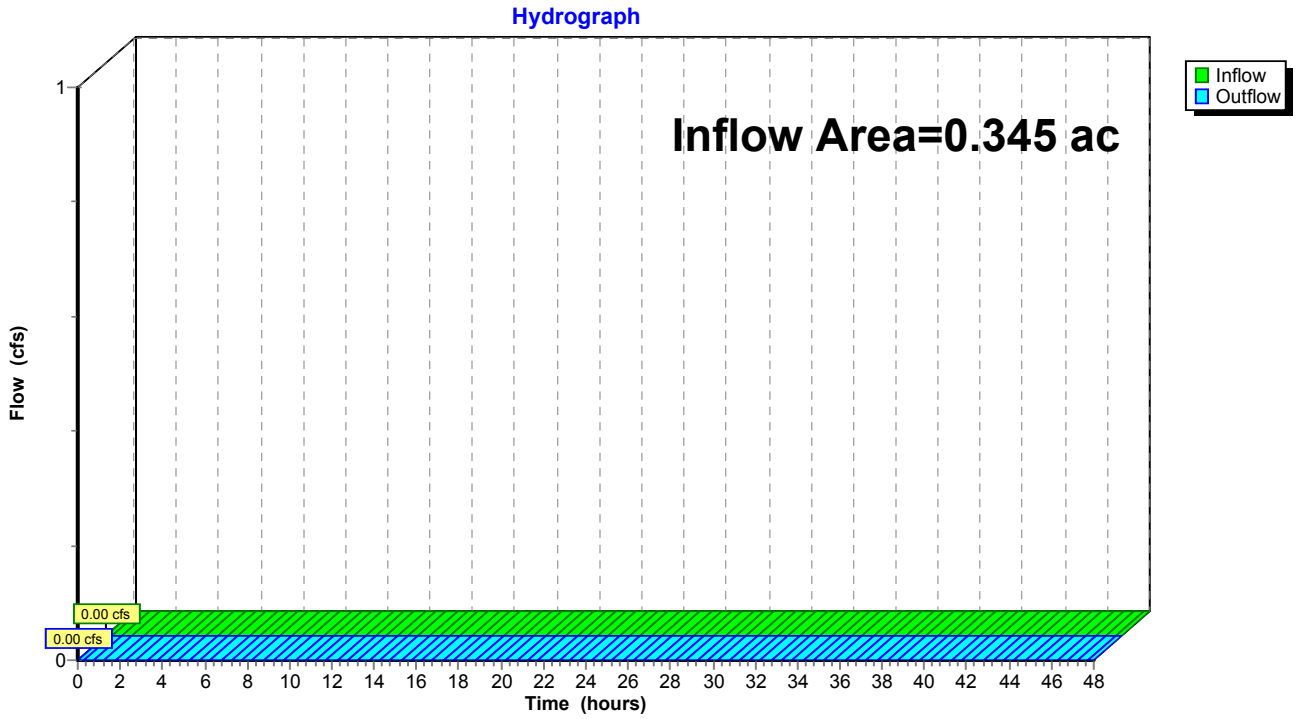


Summary for Reach DP-2: DP-2

Inflow Area = 0.345 ac, 10.74% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Reach DP-2: DP-2

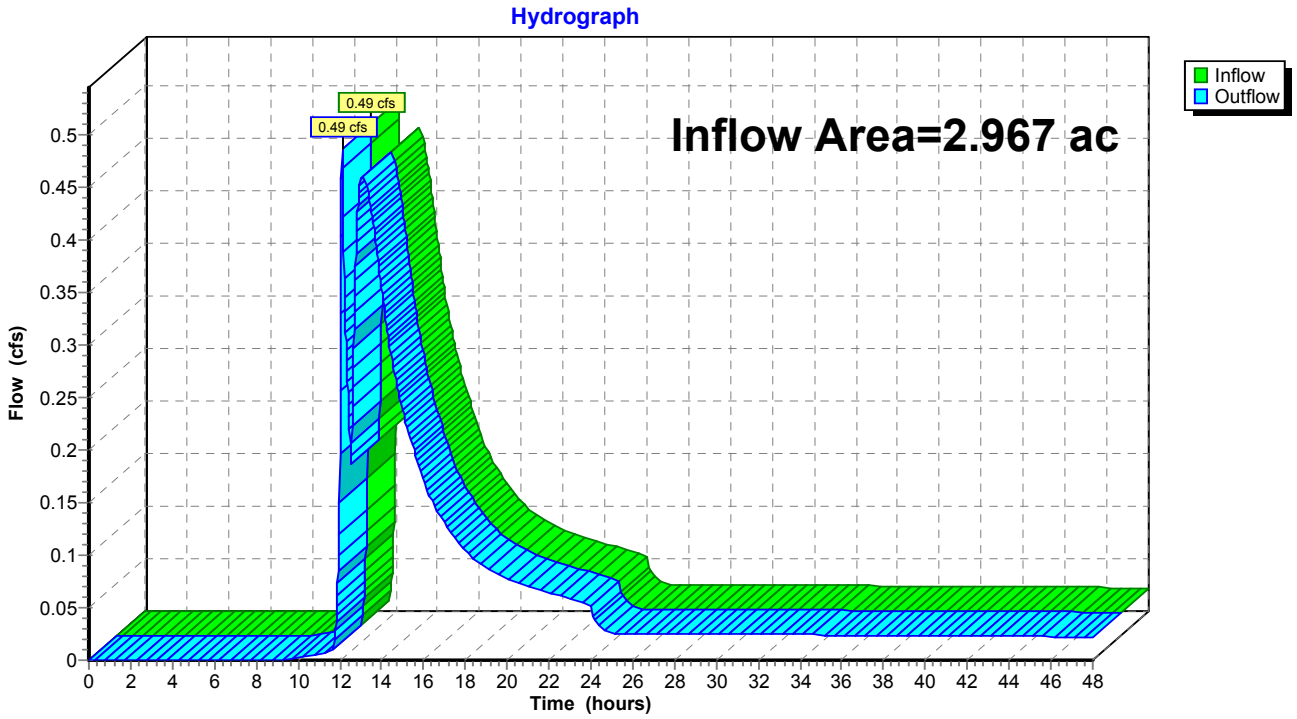


Summary for Reach DP-3: DP-3

Inflow Area = 2.967 ac, 48.40% Impervious, Inflow Depth > 0.86" for 10-Year event
Inflow = 0.49 cfs @ 12.11 hrs, Volume= 0.212 af
Outflow = 0.49 cfs @ 12.11 hrs, Volume= 0.212 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Reach DP-3: DP-3

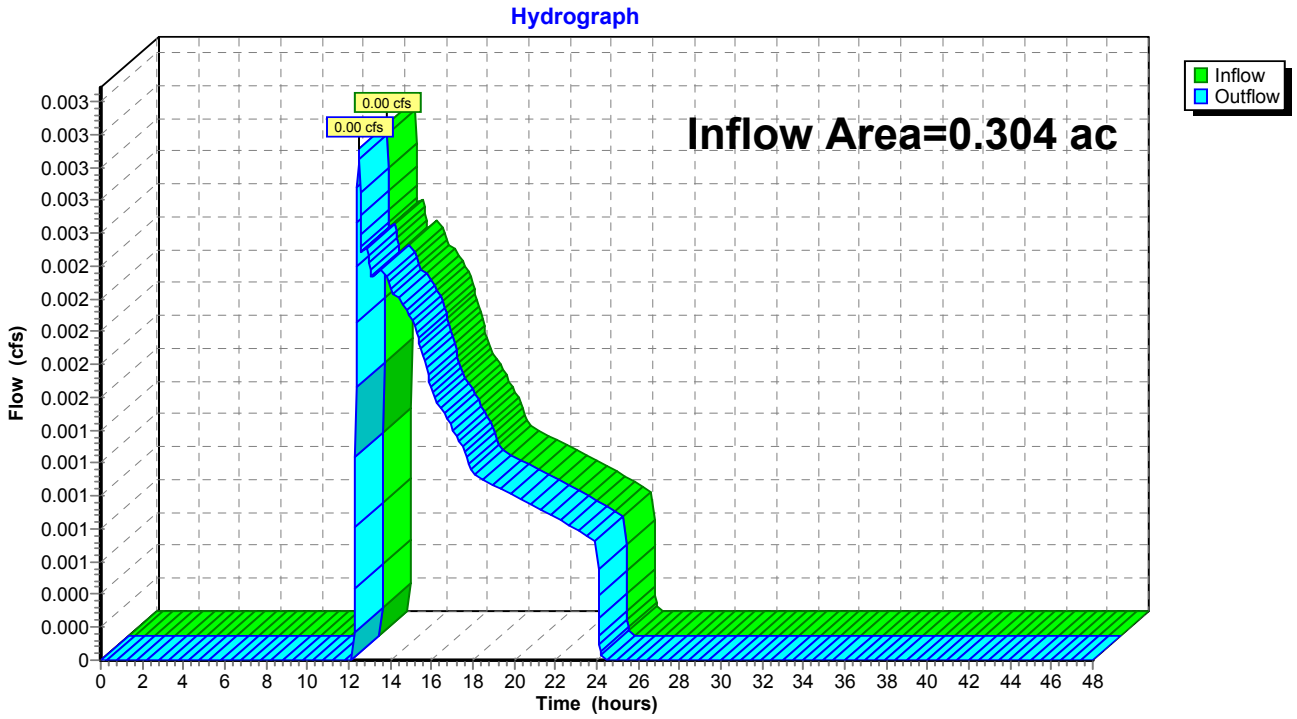


Summary for Reach DP-4: PL

Inflow Area = 0.304 ac, 8.99% Impervious, Inflow Depth = 0.05" for 10-Year event
Inflow = 0.00 cfs @ 12.48 hrs, Volume= 0.001 af
Outflow = 0.00 cfs @ 12.48 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Reach DP-4: PL

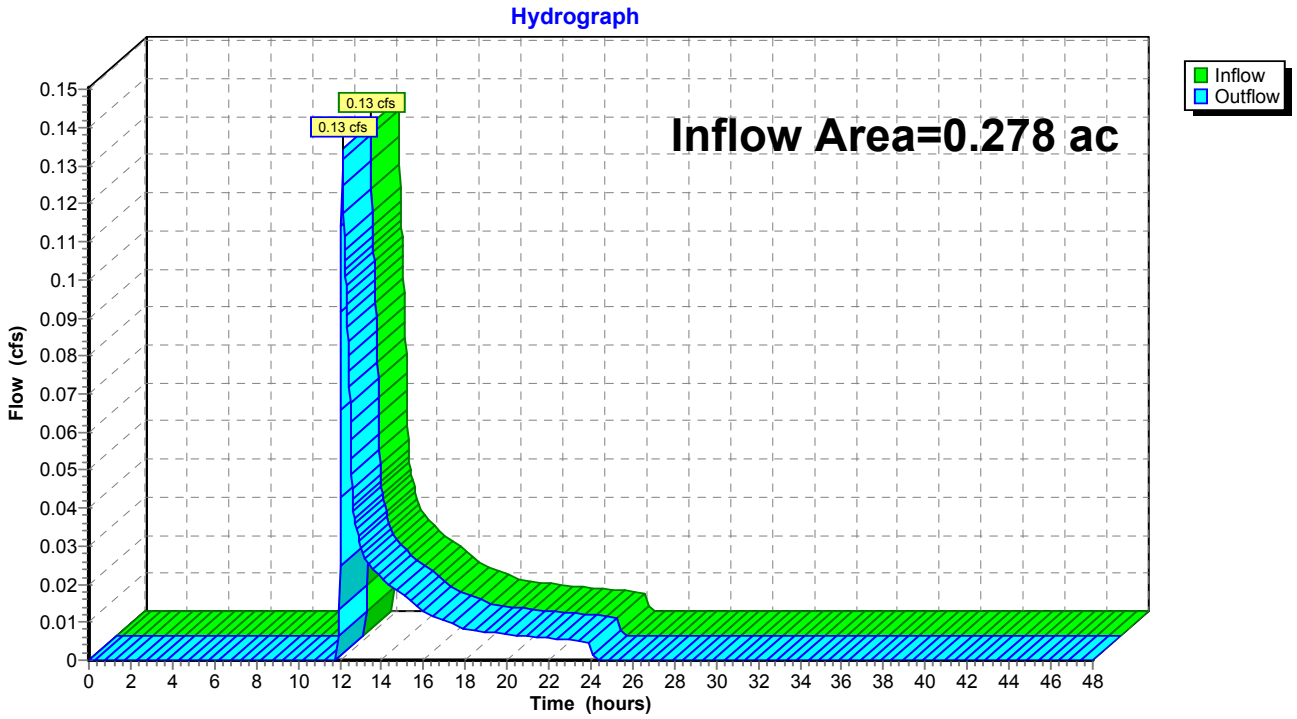


Summary for Reach DP-5: PL

Inflow Area = 0.278 ac, 18.97% Impervious, Inflow Depth = 0.66" for 10-Year event
Inflow = 0.13 cfs @ 12.12 hrs, Volume= 0.015 af
Outflow = 0.13 cfs @ 12.12 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Reach DP-5: PL



Summary for Pond D-1: Depression

Inflow Area = 0.345 ac, 10.74% Impervious, Inflow Depth = 0.34" for 10-Year event
Inflow = 0.04 cfs @ 12.35 hrs, Volume= 0.010 af
Outflow = 0.04 cfs @ 12.37 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.9 min
Discarded = 0.04 cfs @ 12.37 hrs, Volume= 0.010 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 59.01' @ 12.37 hrs Surf.Area= 421 sf Storage= 2 cf

Plug-Flow detention time= 0.9 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 0.9 min (964.2 - 963.4)

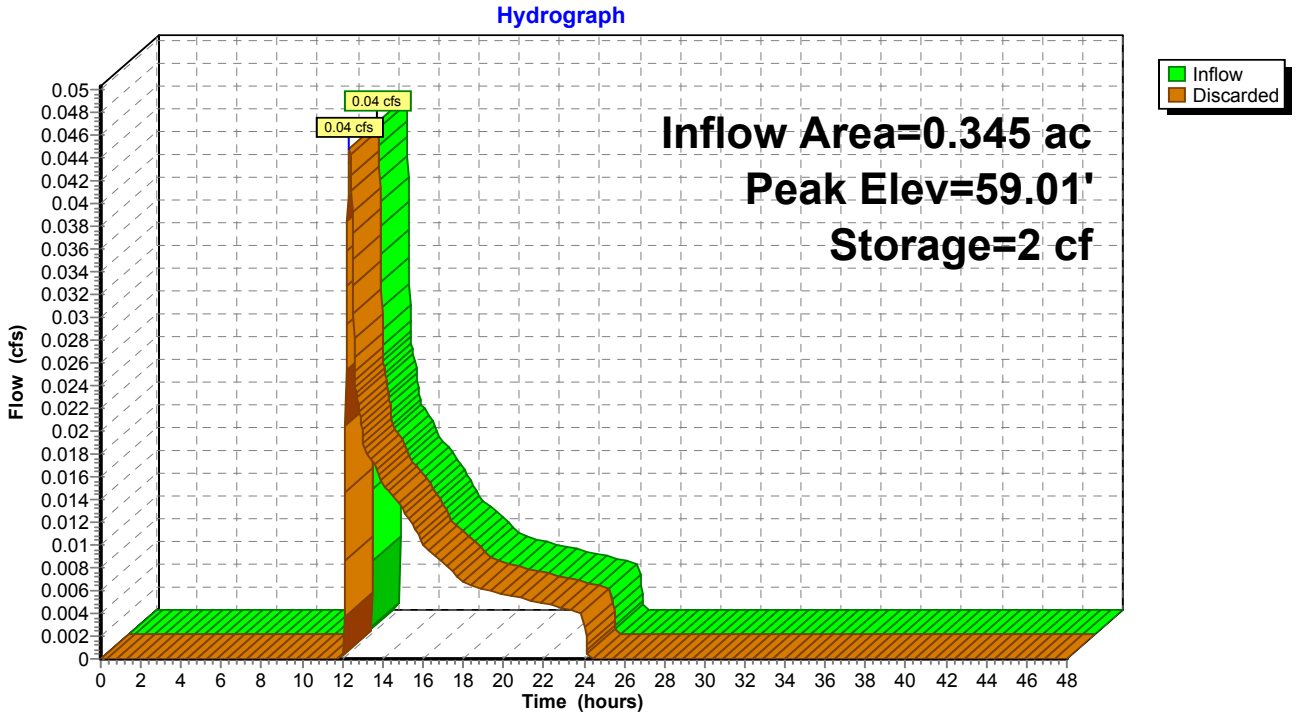
Volume	Invert	Avail.Storage	Storage Description
#1	59.00'	615 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
59.00	419	0	0
60.00	811	615	615

Device	Routing	Invert	Outlet Devices
#1	Discarded	59.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.04 cfs @ 12.37 hrs HW=59.01' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Pond D-1: Depression



Summary for Pond D-2: Depression

Inflow Area = 0.482 ac, 29.27% Impervious, Inflow Depth = 1.63" for 10-Year event
Inflow = 0.72 cfs @ 12.09 hrs, Volume= 0.065 af
Outflow = 0.14 cfs @ 12.57 hrs, Volume= 0.065 af, Atten= 80%, Lag= 28.6 min
Discarded = 0.14 cfs @ 12.57 hrs, Volume= 0.065 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 57.23' @ 12.57 hrs Surf.Area= 749 sf Storage= 690 cf

Plug-Flow detention time= 33.2 min calculated for 0.065 af (100% of inflow)
Center-of-Mass det. time= 33.2 min (833.0 - 799.8)

Volume	Invert	Avail.Storage	Storage Description
#1	56.00'	2,585 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

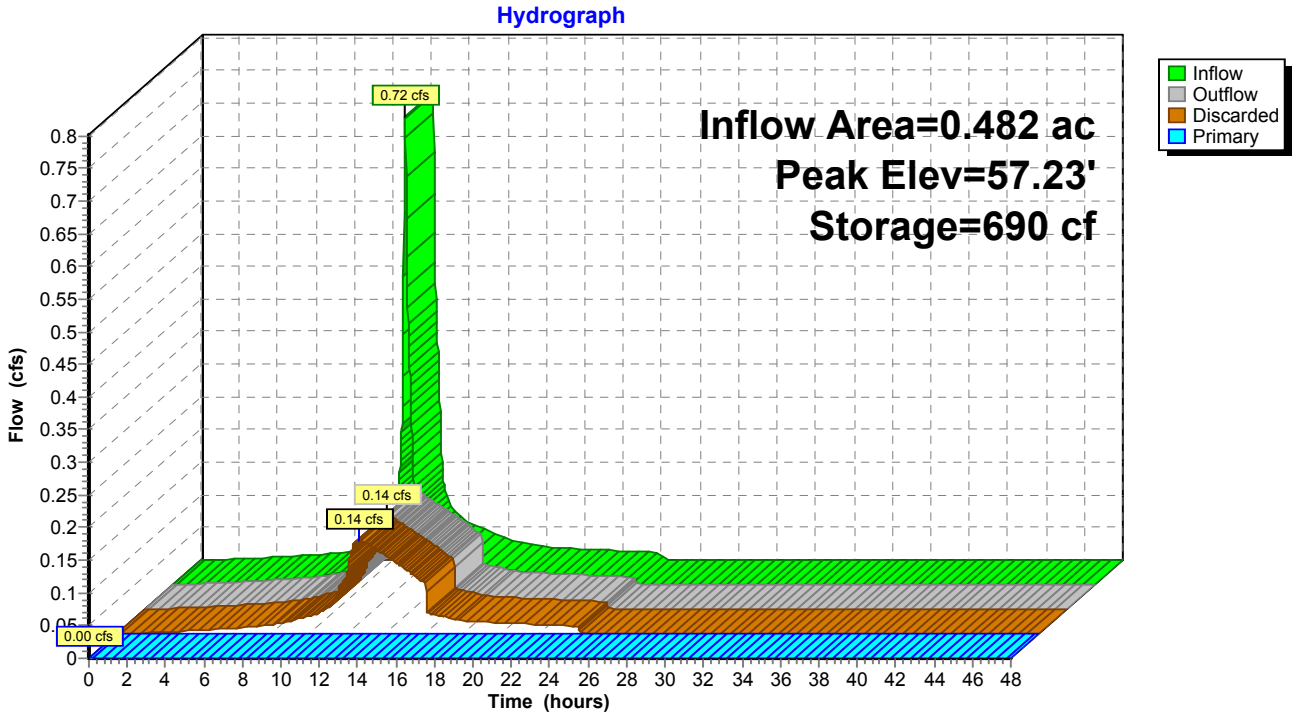
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.00	388	0	0
57.00	672	530	530
58.00	1,013	843	1,373
59.00	1,411	1,212	2,585

Device	Routing	Invert	Outlet Devices
#1	Primary	58.60'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.40 Width (feet) 5.00 20.00
#2	Discarded	56.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.14 cfs @ 12.57 hrs HW=57.23' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.14 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=56.00' TW=0.00' (Dynamic Tailwater)
↑—**1=Custom Weir/Orifice** (Controls 0.00 cfs)

Pond D-2: Depression



Summary for Pond D-3: Depression

Inflow Area = 0.219 ac, 12.07% Impervious, Inflow Depth = 0.42" for 10-Year event
Inflow = 0.04 cfs @ 12.31 hrs, Volume= 0.008 af
Outflow = 0.04 cfs @ 12.32 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.8 min
Discarded = 0.04 cfs @ 12.32 hrs, Volume= 0.008 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 63.00' @ 12.32 hrs Surf.Area= 759 sf Storage= 2 cf

Plug-Flow detention time= 0.9 min calculated for 0.008 af (100% of inflow)
Center-of-Mass det. time= 0.9 min (947.3 - 946.5)

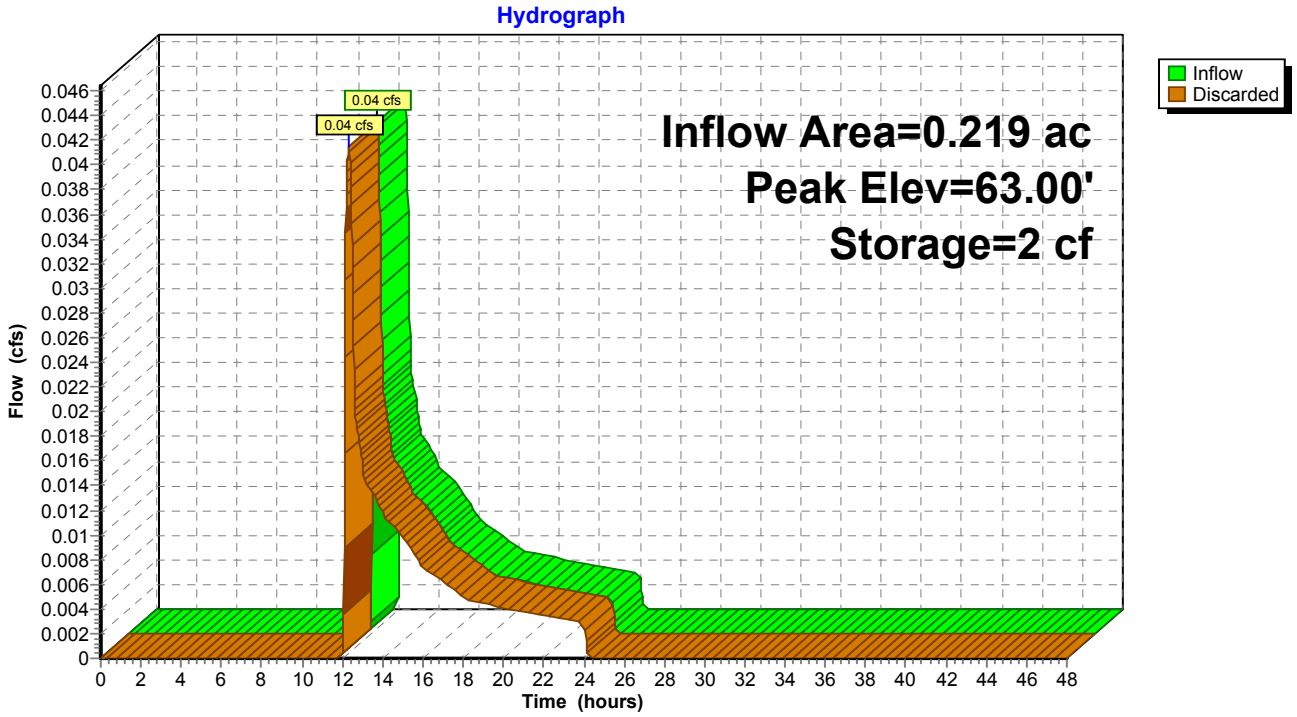
Volume	Invert	Avail.Storage	Storage Description
#1	63.00'	2,747 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
63.00	757	0	0
64.00	1,368	1,063	1,063
65.00	2,001	1,685	2,747

Device	Routing	Invert	Outlet Devices
#1	Discarded	63.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.04 cfs @ 12.32 hrs HW=63.00' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.04 cfs)

Pond D-3: Depression



Summary for Pond D-4: Depression

Inflow Area = 0.244 ac, 14.55% Impervious, Inflow Depth = 0.51" for 10-Year event
Inflow = 0.07 cfs @ 12.15 hrs, Volume= 0.010 af
Outflow = 0.07 cfs @ 12.17 hrs, Volume= 0.010 af, Atten= 1%, Lag= 1.2 min
Discarded = 0.07 cfs @ 12.17 hrs, Volume= 0.010 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 54.00' @ 12.17 hrs Surf.Area= 890 sf Storage= 4 cf

Plug-Flow detention time= 0.9 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 0.9 min (933.2 - 932.4)

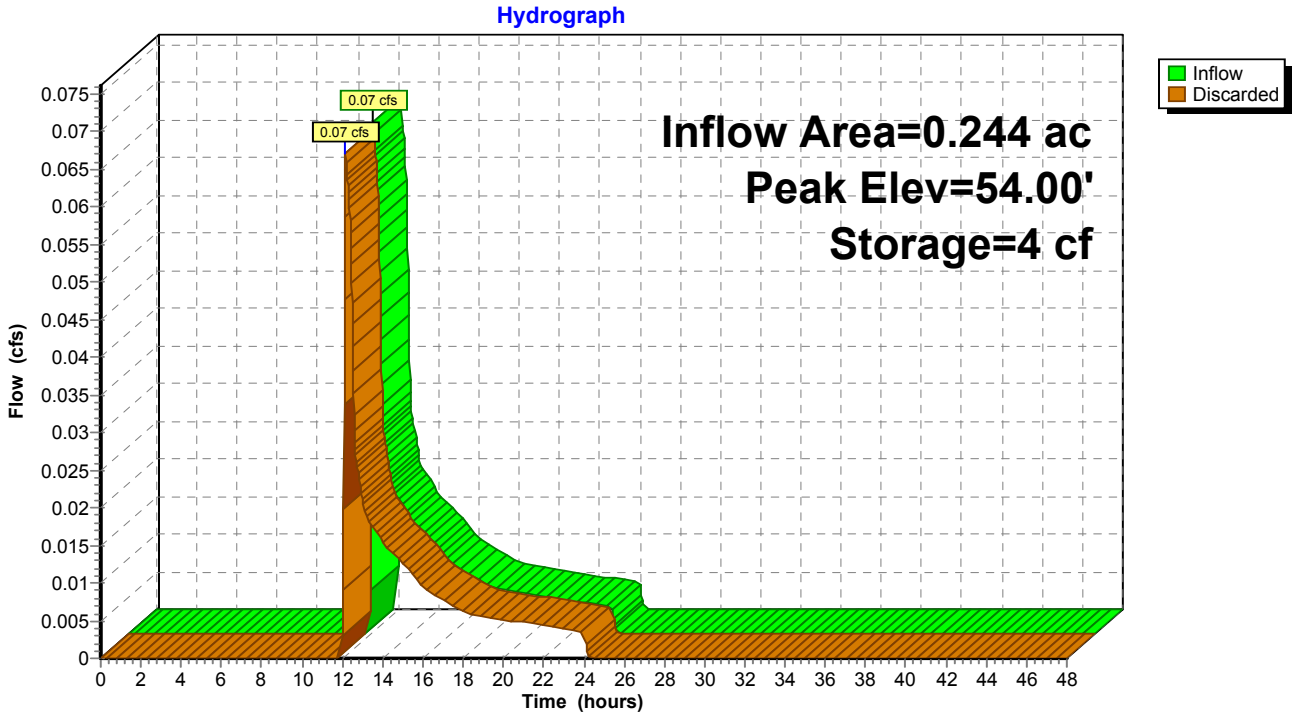
Volume	Invert	Avail.Storage	Storage Description
#1	54.00'	2,555 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
54.00	889	0	0
55.00	1,252	1,071	1,071
56.00	1,717	1,485	2,555

Device	Routing	Invert	Outlet Devices
#1	Discarded	54.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.07 cfs @ 12.17 hrs HW=54.00' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.07 cfs)

Pond D-4: Depression



Summary for Pond DB-1: Prop Detention Basin

Inflow Area = 1.952 ac, 65.30% Impervious, Inflow Depth = 1.82" for 10-Year event
Inflow = 4.47 cfs @ 12.13 hrs, Volume= 0.296 af
Outflow = 0.39 cfs @ 13.13 hrs, Volume= 0.170 af, Atten= 91%, Lag= 59.8 min
Primary = 0.39 cfs @ 13.13 hrs, Volume= 0.170 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 59.09' @ 13.13 hrs Surf.Area= 9,510 sf Storage= 8,289 cf

Plug-Flow detention time= 576.8 min calculated for 0.170 af (58% of inflow)
Center-of-Mass det. time= 485.9 min (1,290.7 - 804.8)

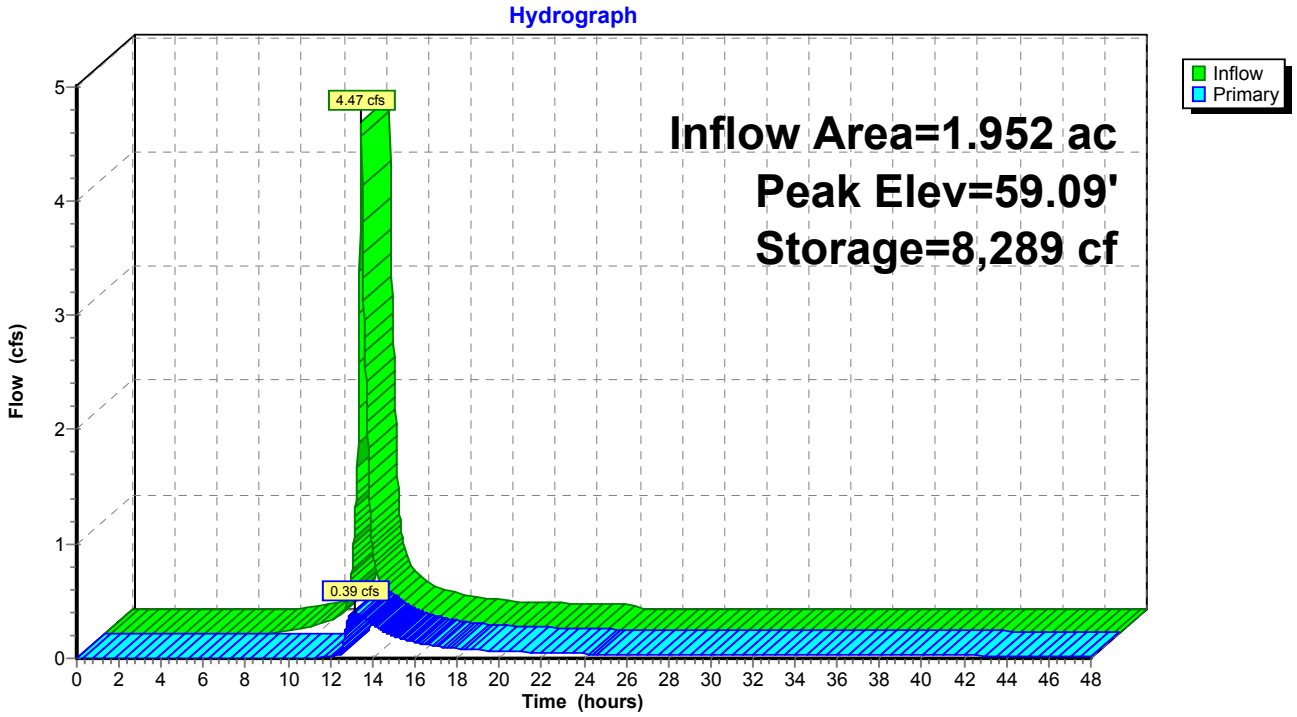
Volume	Invert	Avail.Storage	Storage Description
#1	58.00'	29,454 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
58.00	6,690	0	0
59.00	8,247	7,469	7,469
59.10	9,613	893	8,362
60.00	11,020	9,285	17,646
61.00	12,596	11,808	29,454

Device	Routing	Invert	Outlet Devices
#1	Primary	58.00'	**12.0" Round Culvert** L= 19.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 58.00' / 57.30' S= 0.0359 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	58.00'	**1.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	59.00'	**4.0' long x 1.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=0.39 cfs @ 13.13 hrs HW=59.09' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.39 cfs of 2.30 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.03 cfs @ 4.94 fps)
  └─**3=Sharp-Crested Rectangular Weir** (Weir Controls 0.37 cfs @ 0.99 fps)

Pond DB-1: Prop Detention Basin



Summary for Pond P1: Infiltration Chambers

Inflow Area = 0.044 ac,100.00% Impervious, Inflow Depth = 4.56" for 10-Year event
Inflow = 0.21 cfs @ 12.08 hrs, Volume= 0.017 af
Outflow = 0.04 cfs @ 11.72 hrs, Volume= 0.017 af, Atten= 82%, Lag= 0.0 min
Discarded = 0.04 cfs @ 11.72 hrs, Volume= 0.017 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 57.64' @ 12.53 hrs Surf.Area= 195 sf Storage= 179 cf

Plug-Flow detention time= 24.8 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 24.8 min (773.5 - 748.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	56.20'	184 cf	**11.17'W x 17.50'L x 3.54'H Field A** 692 cf Overall - 231 cf Embedded = 461 cf x 40.0% Voids
#2A	56.70'	231 cf	**Cultec R-330XLHD** x 4 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		415 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.20'	**8.200 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.04 cfs @ 11.72 hrs HW=56.24' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Pond P1: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

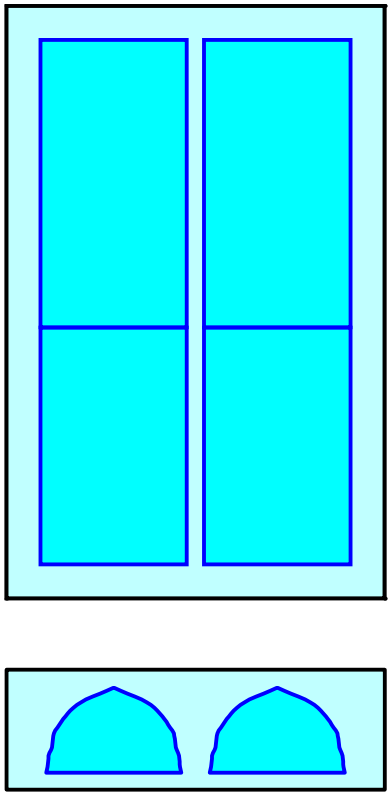
2 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 15.50' Row Length +12.0" End Stone x 2 = 17.50' Base Length
2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

4 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 231.0 cf Chamber Storage

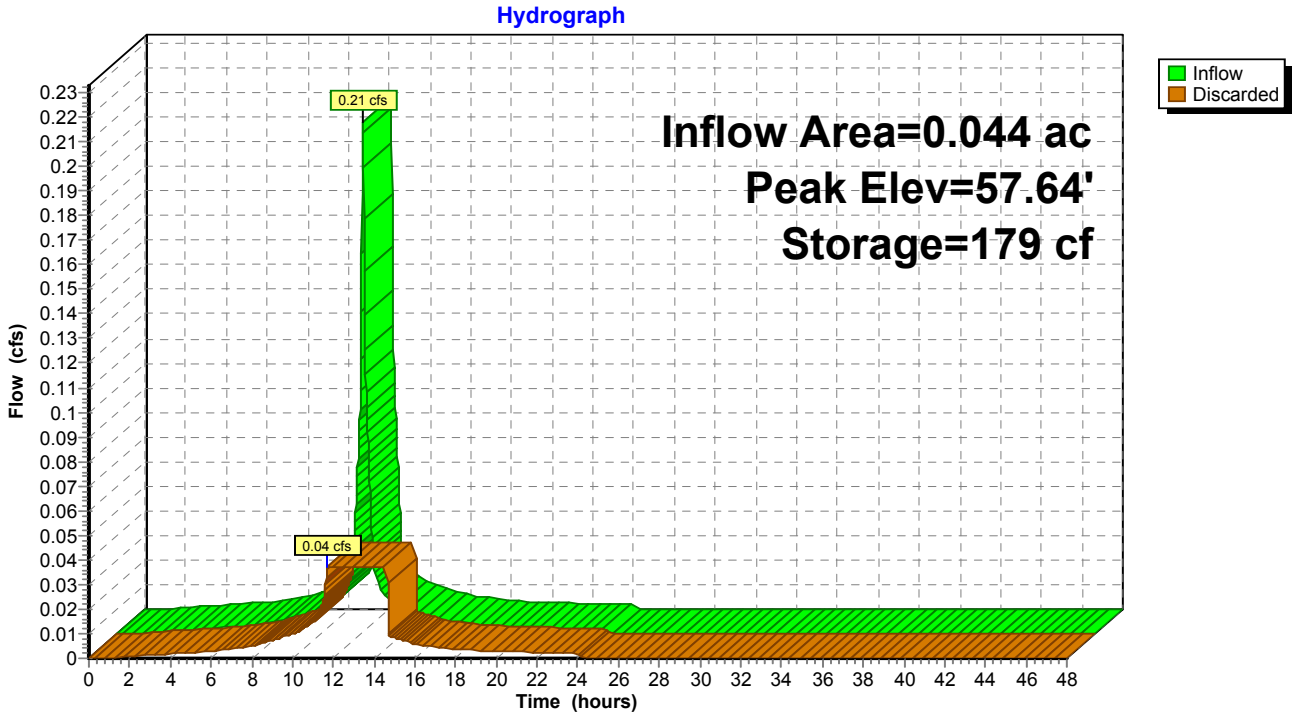
692.1 cf Field - 231.0 cf Chambers = 461.1 cf Stone x 40.0% Voids = 184.4 cf Stone Storage

Chamber Storage + Stone Storage = 415.4 cf = 0.010 af
Overall Storage Efficiency = 60.0%
Overall System Size = 17.50' x 11.17' x 3.54'

4 Chambers
25.6 cy Field
17.1 cy Stone



Pond P1: Infiltration Chambers



Summary for Pond P10: Infiltration Chambers

Inflow Area = 0.024 ac,100.00% Impervious, Inflow Depth = 4.56" for 10-Year event
Inflow = 0.11 cfs @ 12.08 hrs, Volume= 0.009 af
Outflow = 0.02 cfs @ 11.74 hrs, Volume= 0.009 af, Atten= 81%, Lag= 0.0 min
Discarded = 0.02 cfs @ 11.74 hrs, Volume= 0.009 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 61.06' @ 12.52 hrs Surf.Area= 111 sf Storage= 91 cf

Plug-Flow detention time= 21.3 min calculated for 0.009 af (100% of inflow)
Center-of-Mass det. time= 21.3 min (770.0 - 748.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	59.70'	111 cf	**6.33'W x 17.50'L x 3.54'H Field A** 393 cf Overall - 115 cf Embedded = 277 cf x 40.0% Voids
#2A	60.20'	115 cf	**Cultec R-330XLHD** x 2 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		226 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	59.70'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.02 cfs @ 11.74 hrs HW=59.74' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Pond P10: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 1 rows

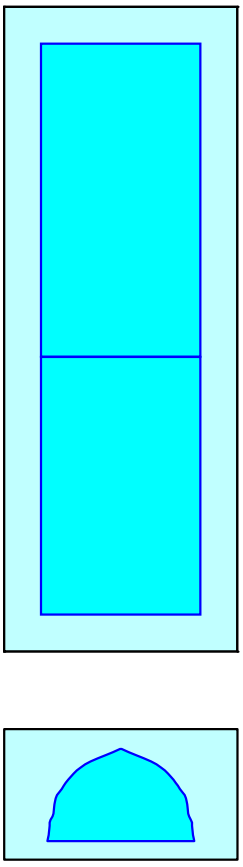
2 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 15.50' Row Length +12.0" End Stone x 2 = 17.50' Base Length
1 Rows x 52.0" Wide + 12.0" Side Stone x 2 = 6.33' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

2 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 1 Rows = 115.5 cf Chamber Storage

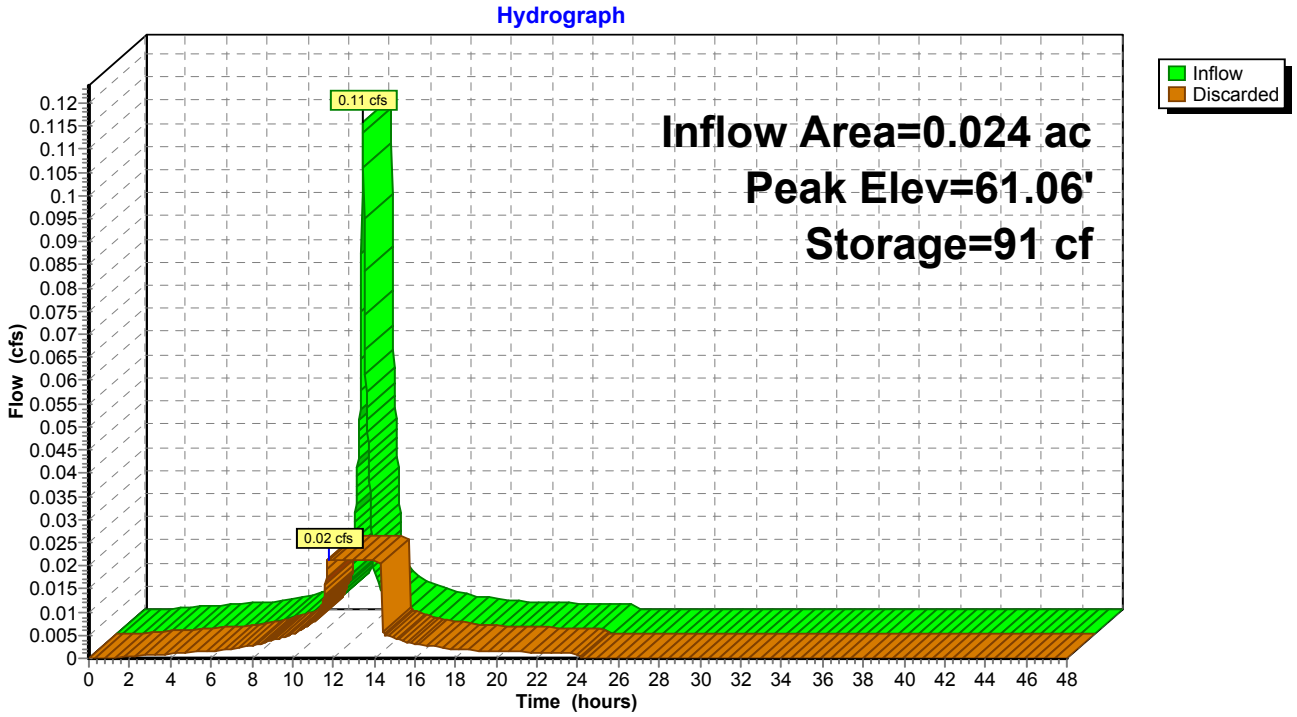
392.5 cf Field - 115.5 cf Chambers = 277.0 cf Stone x 40.0% Voids = 110.8 cf Stone Storage

Chamber Storage + Stone Storage = 226.3 cf = 0.005 af
Overall Storage Efficiency = 57.7%
Overall System Size = 17.50' x 6.33' x 3.54'

2 Chambers
14.5 cy Field
10.3 cy Stone



Pond P10: Infiltration Chambers



Summary for Pond P11: Infiltration Chambers

Inflow Area = 0.024 ac,100.00% Impervious, Inflow Depth = 4.56" for 10-Year event
Inflow = 0.11 cfs @ 12.08 hrs, Volume= 0.009 af
Outflow = 0.02 cfs @ 11.74 hrs, Volume= 0.009 af, Atten= 81%, Lag= 0.0 min
Discarded = 0.02 cfs @ 11.74 hrs, Volume= 0.009 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 61.07' @ 12.52 hrs Surf.Area= 111 sf Storage= 92 cf

Plug-Flow detention time= 21.6 min calculated for 0.009 af (100% of inflow)
Center-of-Mass det. time= 21.6 min (770.3 - 748.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	59.70'	111 cf	**6.33'W x 17.50'L x 3.54'H Field A** 393 cf Overall - 115 cf Embedded = 277 cf x 40.0% Voids
#2A	60.20'	115 cf	**Cultec R-330XLHD** x 2 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		226 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	59.70'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.02 cfs @ 11.74 hrs HW=59.74' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Pond P11: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 1 rows

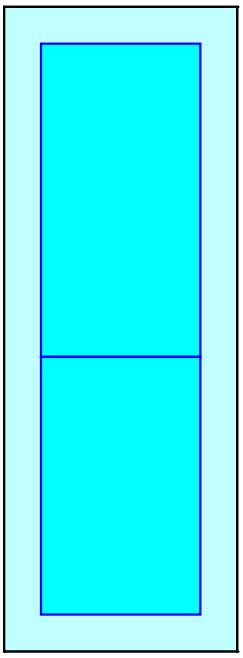
2 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 15.50' Row Length +12.0" End Stone x 2 = 17.50' Base Length
1 Rows x 52.0" Wide + 12.0" Side Stone x 2 = 6.33' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

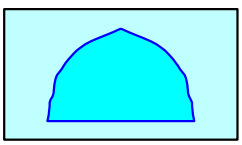
2 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 1 Rows = 115.5 cf Chamber Storage

392.5 cf Field - 115.5 cf Chambers = 277.0 cf Stone x 40.0% Voids = 110.8 cf Stone Storage

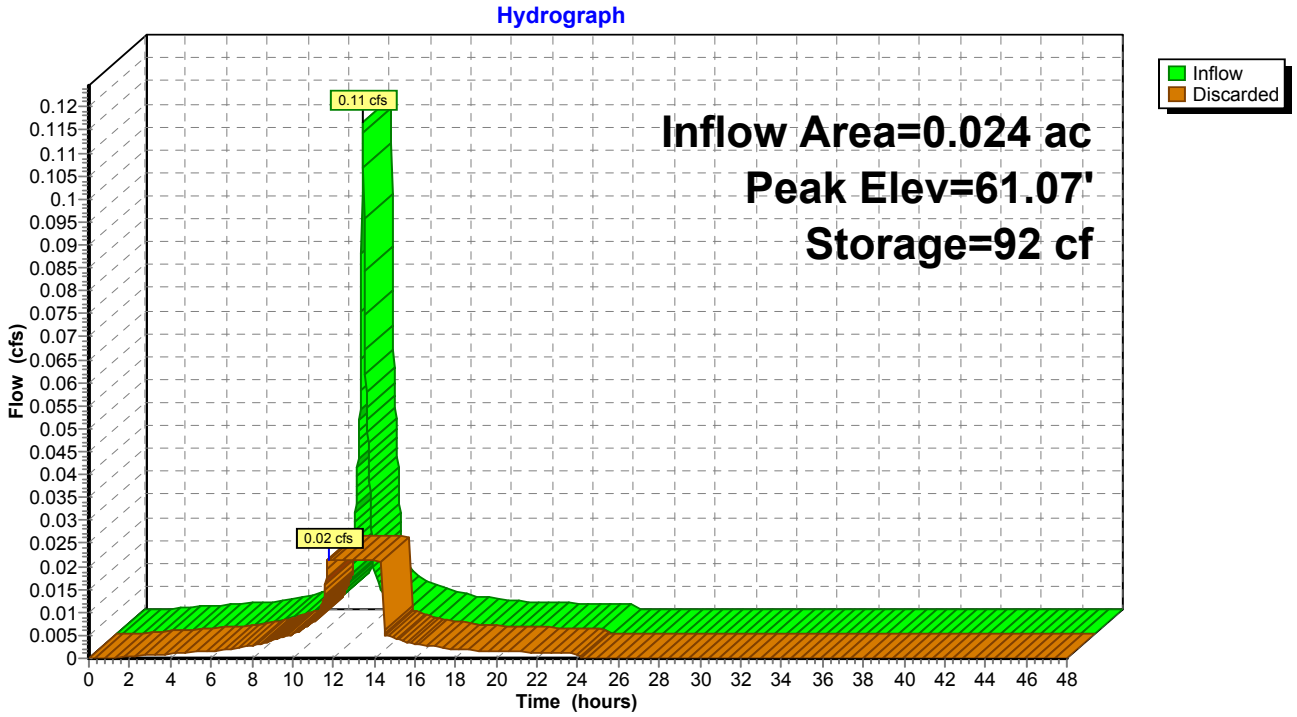
Chamber Storage + Stone Storage = 226.3 cf = 0.005 af
Overall Storage Efficiency = 57.7%
Overall System Size = 17.50' x 6.33' x 3.54'

2 Chambers
14.5 cy Field
10.3 cy Stone





Pond P11: Infiltration Chambers



Summary for Pond P12: Infiltration Chambers

Inflow Area = 0.044 ac,100.00% Impervious, Inflow Depth = 4.56" for 10-Year event
Inflow = 0.20 cfs @ 12.08 hrs, Volume= 0.017 af
Outflow = 0.05 cfs @ 11.82 hrs, Volume= 0.017 af, Atten= 74%, Lag= 0.0 min
Discarded = 0.05 cfs @ 11.82 hrs, Volume= 0.017 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 59.36' @ 12.45 hrs Surf.Area= 274 sf Storage= 132 cf

Plug-Flow detention time= 11.3 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 11.3 min (760.0 - 748.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	58.50'	253 cf	**11.17'W x 24.50'L x 3.54'H Field A** 969 cf Overall - 335 cf Embedded = 634 cf x 40.0% Voids
#2A	59.00'	335 cf	**Cultec R-330XLHD** x 6 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		589 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	58.50'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.05 cfs @ 11.82 hrs HW=58.54' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Pond P12: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

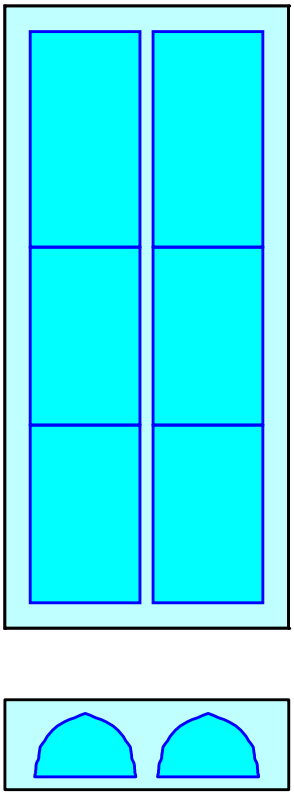
3 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 22.50' Row Length +12.0" End Stone x 2 = 24.50' Base Length
2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

6 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 335.3 cf Chamber Storage

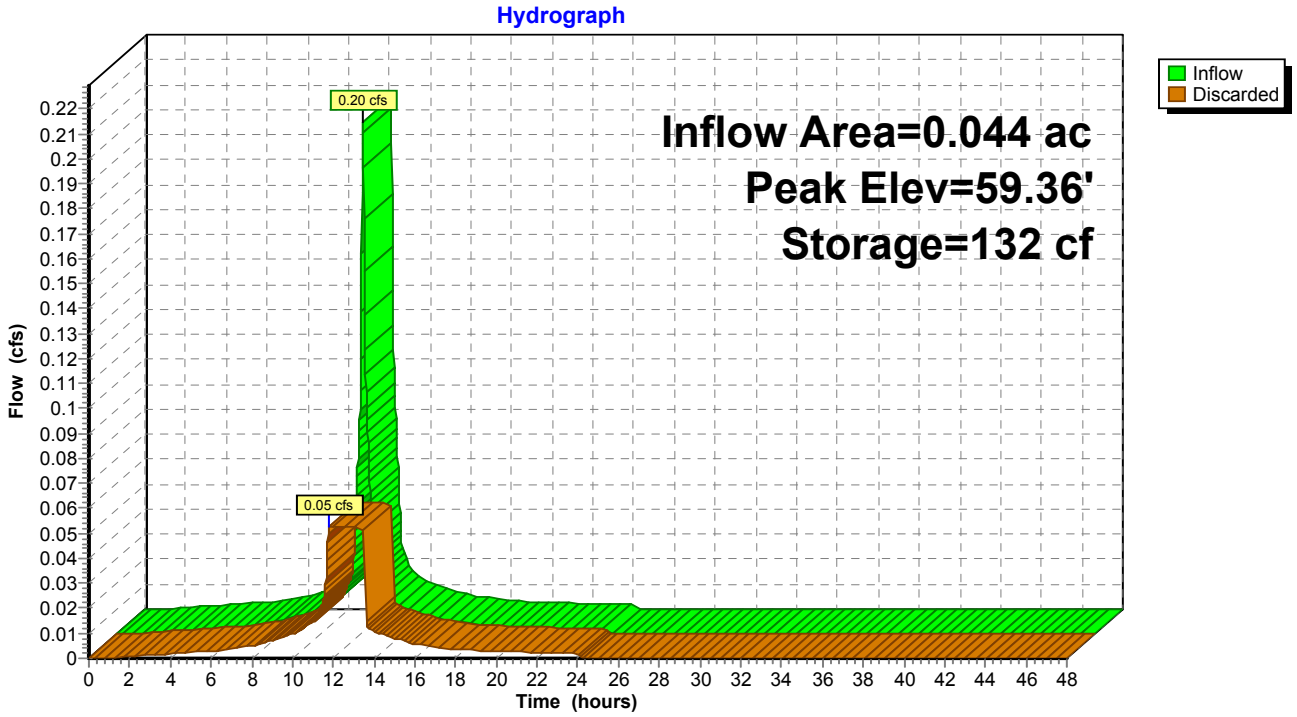
968.9 cf Field - 335.3 cf Chambers = 633.6 cf Stone x 40.0% Voids = 253.5 cf Stone Storage

Chamber Storage + Stone Storage = 588.8 cf = 0.014 af
Overall Storage Efficiency = 60.8%
Overall System Size = 24.50' x 11.17' x 3.54'

6 Chambers
35.9 cy Field
23.5 cy Stone



Pond P12: Infiltration Chambers



Summary for Pond P13: Infiltration Chambers

Inflow Area = 0.311 ac, 64.32% Impervious, Inflow Depth = 2.46" for 10-Year event
Inflow = 0.89 cfs @ 12.09 hrs, Volume= 0.064 af
Outflow = 0.36 cfs @ 12.35 hrs, Volume= 0.064 af, Atten= 60%, Lag= 15.4 min
Discarded = 0.11 cfs @ 11.74 hrs, Volume= 0.056 af
Primary = 0.25 cfs @ 12.35 hrs, Volume= 0.008 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 59.21' @ 12.35 hrs Surf.Area= 586 sf Storage= 678 cf

Plug-Flow detention time= 32.4 min calculated for 0.064 af (100% of inflow)
Center-of-Mass det. time= 32.4 min (864.0 - 831.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	57.50'	530 cf	**11.17'W x 52.50'L x 3.54'H Field A** 2,076 cf Overall - 753 cf Embedded = 1,324 cf x 40.0% Voids
#2A	58.00'	753 cf	**Cultec R-330XLHD** x 14 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		1,282 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	58.90'	**6.0" Round Culvert** L= 90.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 58.90' / 57.42' S= 0.0164 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Discarded	57.50'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.11 cfs @ 11.74 hrs HW=57.55' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=0.25 cfs @ 12.35 hrs HW=59.21' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.25 cfs @ 1.90 fps)

Pond P13: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

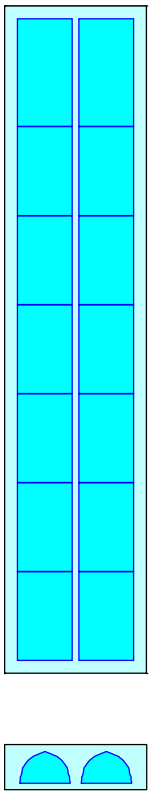
7 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 50.50' Row Length +12.0" End Stone x 2 = 52.50' Base Length
2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

14 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 752.6 cf Chamber Storage

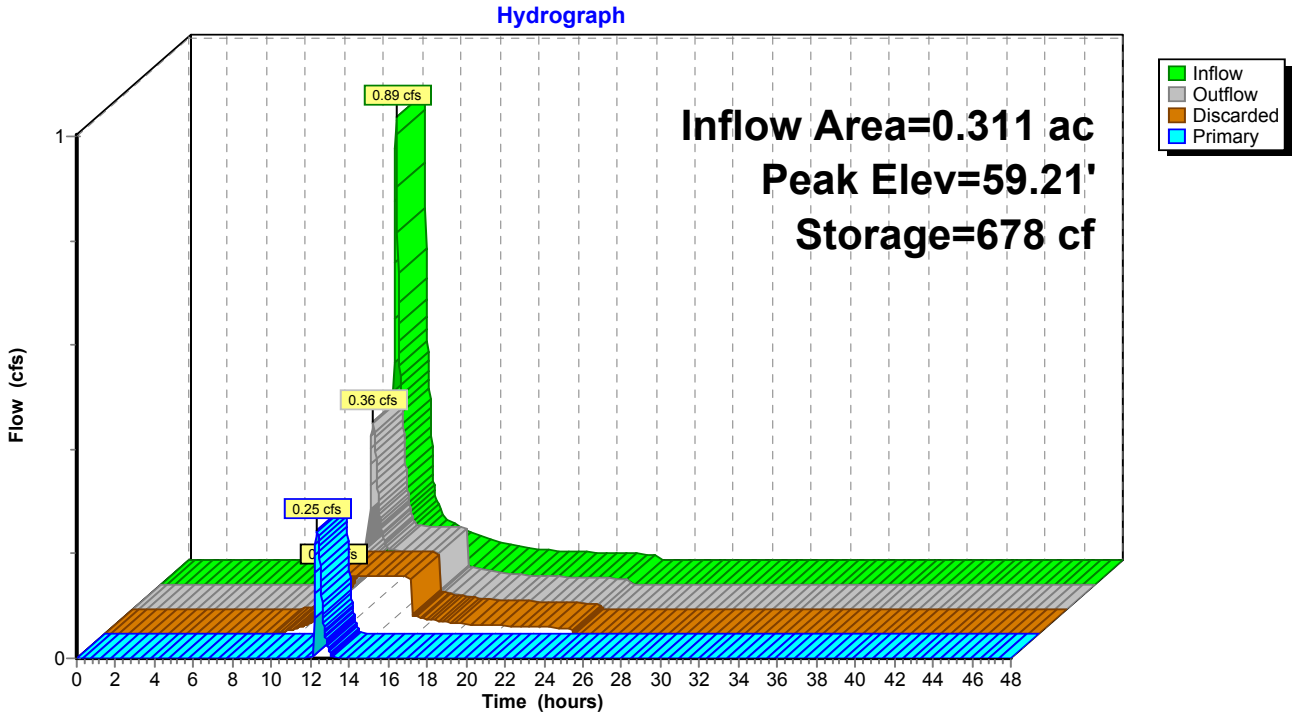
2,076.3 cf Field - 752.6 cf Chambers = 1,323.8 cf Stone x 40.0% Voids = 529.5 cf Stone Storage

Chamber Storage + Stone Storage = 1,282.1 cf = 0.029 af
Overall Storage Efficiency = 61.7%
Overall System Size = 52.50' x 11.17' x 3.54'

14 Chambers
76.9 cy Field
49.0 cy Stone



Pond P13: Infiltration Chambers



Summary for Pond P2: Infiltration Chambers

Inflow Area = 0.350 ac,100.00% Impervious, Inflow Depth = 4.56" for 10-Year event
Inflow = 1.64 cfs @ 12.08 hrs, Volume= 0.133 af
Outflow = 0.24 cfs @ 11.68 hrs, Volume= 0.133 af, Atten= 85%, Lag= 0.0 min
Discarded = 0.24 cfs @ 11.68 hrs, Volume= 0.133 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 57.98' @ 12.57 hrs Surf.Area= 1,265 sf Storage= 1,576 cf

Plug-Flow detention time= 36.2 min calculated for 0.133 af (100% of inflow)
Center-of-Mass det. time= 36.2 min (784.9 - 748.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	56.20'	1,089 cf	**40.17'W x 31.50'L x 3.54'H Field A** 4,481 cf Overall - 1,758 cf Embedded = 2,723 cf x 40.0% Voids
#2A	56.70'	1,758 cf	**Cultec R-330XLHD** x 32 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 8 rows
		2,847 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.20'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.24 cfs @ 11.68 hrs HW=56.24' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.24 cfs)

Pond P2: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 8 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

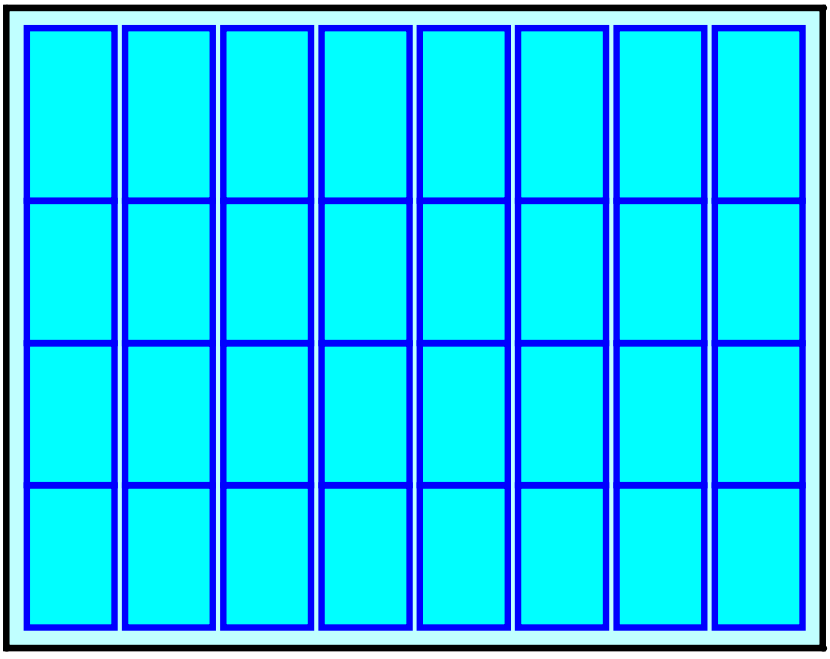
4 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 29.50' Row Length +12.0" End Stone x 2 = 31.50' Base Length
8 Rows x 52.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 40.17' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

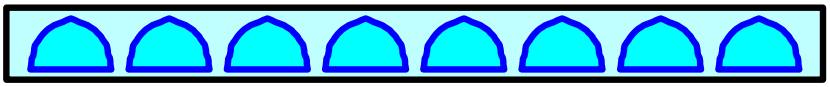
32 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 8 Rows = 1,758.4 cf Chamber Storage

4,481.1 cf Field - 1,758.4 cf Chambers = 2,722.7 cf Stone x 40.0% Voids = 1,089.1 cf Stone Storage

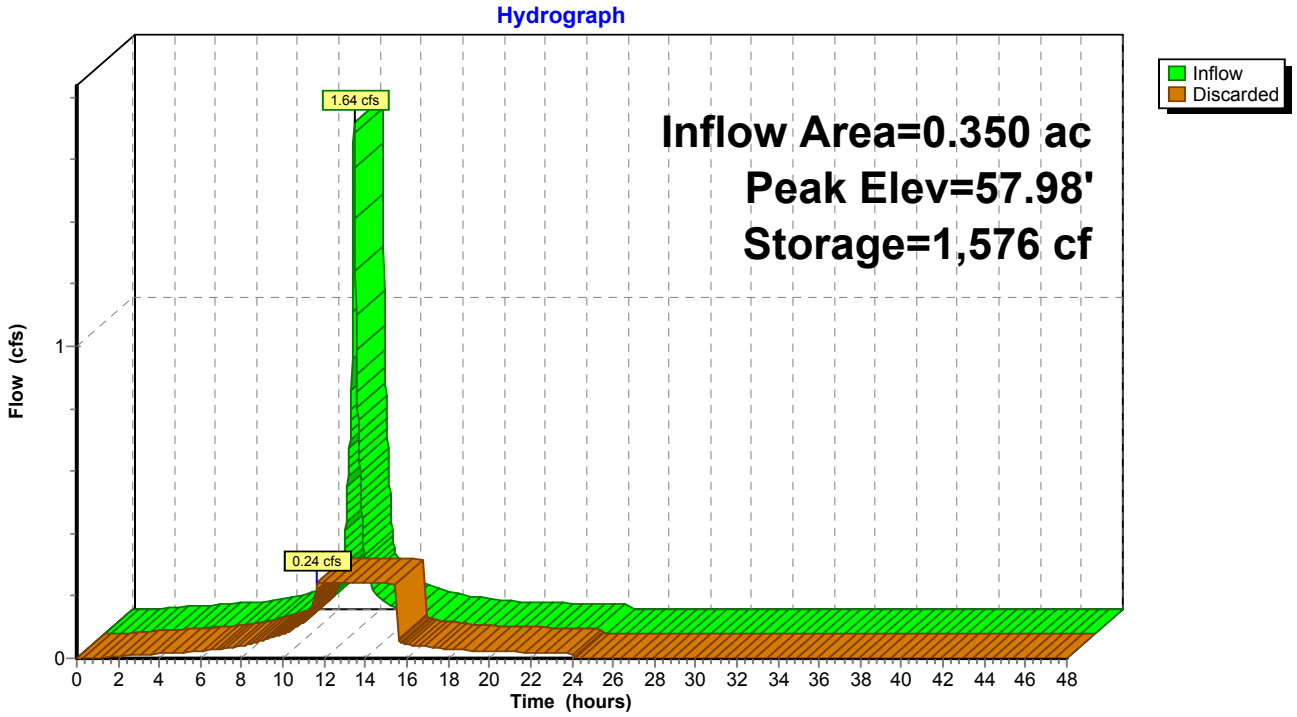
Chamber Storage + Stone Storage = 2,847.5 cf = 0.065 af
Overall Storage Efficiency = 63.5%
Overall System Size = 31.50' x 40.17' x 3.54'

32 Chambers
166.0 cy Field
100.8 cy Stone





Pond P2: Infiltration Chambers



Summary for Pond P3: Infiltration Chambers

Inflow Area = 0.024 ac,100.00% Impervious, Inflow Depth = 4.56" for 10-Year event
Inflow = 0.11 cfs @ 12.08 hrs, Volume= 0.009 af
Outflow = 0.02 cfs @ 11.74 hrs, Volume= 0.009 af, Atten= 81%, Lag= 0.0 min
Discarded = 0.02 cfs @ 11.74 hrs, Volume= 0.009 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 57.56' @ 12.52 hrs Surf.Area= 111 sf Storage= 91 cf

Plug-Flow detention time= 21.3 min calculated for 0.009 af (100% of inflow)
Center-of-Mass det. time= 21.3 min (770.0 - 748.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	56.20'	111 cf	**6.33'W x 17.50'L x 3.54'H Field A** 393 cf Overall - 115 cf Embedded = 277 cf x 40.0% Voids
#2A	56.70'	115 cf	**Cultec R-330XLHD** x 2 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		226 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.20'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.02 cfs @ 11.74 hrs HW=56.24' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Pond P3: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 1 rows

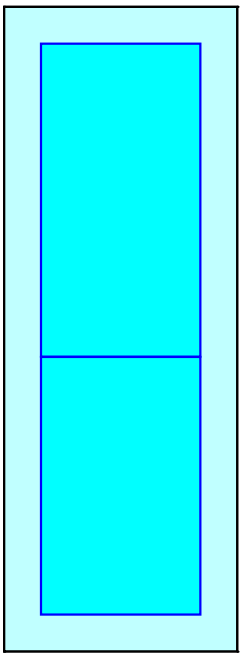
2 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 15.50' Row Length +12.0" End Stone x 2 = 17.50' Base Length
1 Rows x 52.0" Wide + 12.0" Side Stone x 2 = 6.33' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

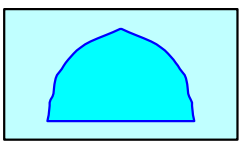
2 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 1 Rows = 115.5 cf Chamber Storage

392.5 cf Field - 115.5 cf Chambers = 277.0 cf Stone x 40.0% Voids = 110.8 cf Stone Storage

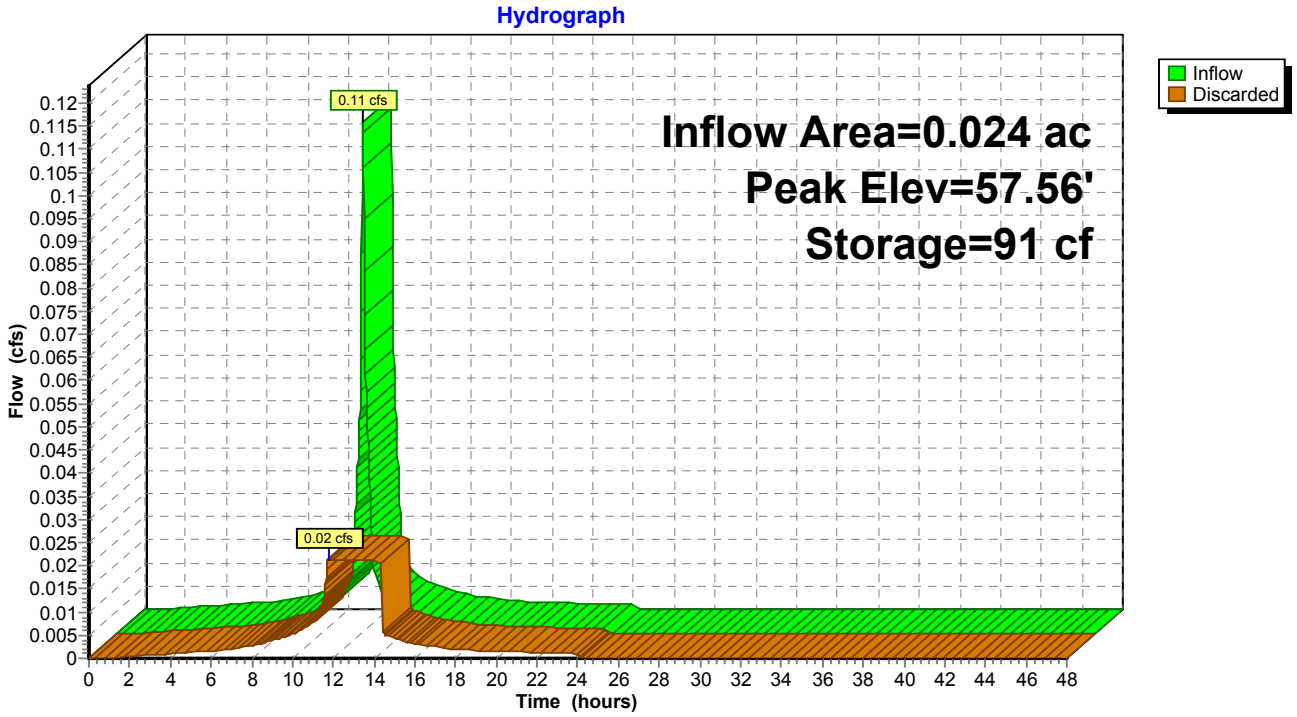
Chamber Storage + Stone Storage = 226.3 cf = 0.005 af
Overall Storage Efficiency = 57.7%
Overall System Size = 17.50' x 6.33' x 3.54'

2 Chambers
14.5 cy Field
10.3 cy Stone





Pond P3: Infiltration Chambers



Summary for Pond P4: Infiltration Chambers

Inflow Area = 0.047 ac,100.00% Impervious, Inflow Depth = 4.56" for 10-Year event
Inflow = 0.22 cfs @ 12.08 hrs, Volume= 0.018 af
Outflow = 0.04 cfs @ 11.72 hrs, Volume= 0.018 af, Atten= 83%, Lag= 0.0 min
Discarded = 0.04 cfs @ 11.72 hrs, Volume= 0.018 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 57.76' @ 12.54 hrs Surf.Area= 199 sf Storage= 196 cf

Plug-Flow detention time= 26.7 min calculated for 0.018 af (100% of inflow)
Center-of-Mass det. time= 26.7 min (775.4 - 748.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	56.20'	195 cf	**6.33'W x 31.50'L x 3.54'H Field A** 707 cf Overall - 220 cf Embedded = 487 cf x 40.0% Voids
#2A	56.70'	220 cf	**Cultec R-330XLHD** x 4 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		415 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.20'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.04 cfs @ 11.72 hrs HW=56.24' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Pond P4: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 1 rows

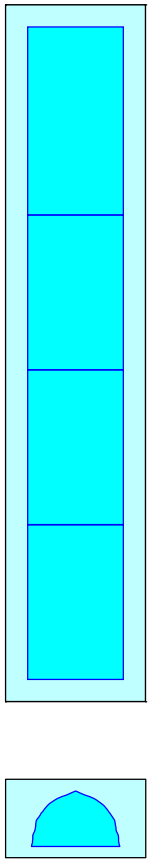
4 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 29.50' Row Length +12.0" End Stone x 2 = 31.50' Base Length
1 Rows x 52.0" Wide + 12.0" Side Stone x 2 = 6.33' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

4 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 1 Rows = 219.8 cf Chamber Storage

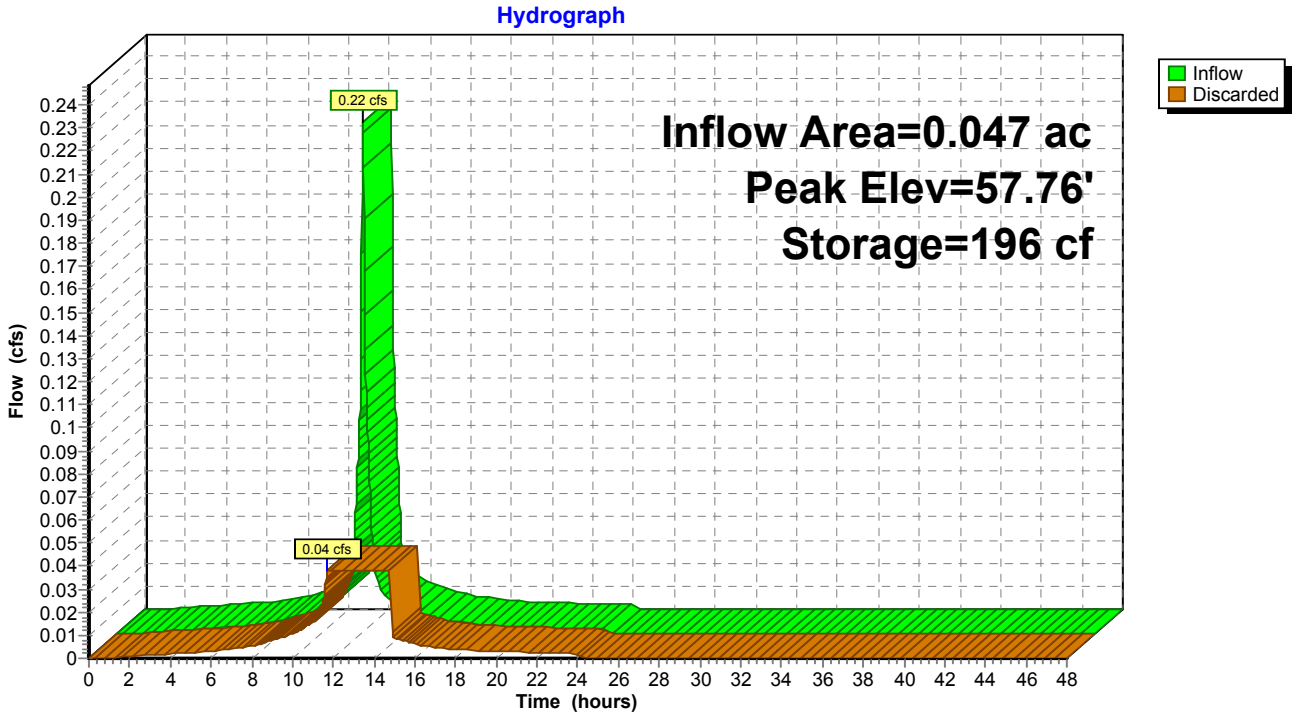
706.6 cf Field - 219.8 cf Chambers = 486.8 cf Stone x 40.0% Voids = 194.7 cf Stone Storage

Chamber Storage + Stone Storage = 414.5 cf = 0.010 af
Overall Storage Efficiency = 58.7%
Overall System Size = 31.50' x 6.33' x 3.54'

4 Chambers
26.2 cy Field
18.0 cy Stone



Pond P4: Infiltration Chambers



Summary for Pond P5: Infiltration Chambers

Inflow Area = 0.047 ac,100.00% Impervious, Inflow Depth = 4.56" for 10-Year event
Inflow = 0.22 cfs @ 12.08 hrs, Volume= 0.018 af
Outflow = 0.04 cfs @ 11.72 hrs, Volume= 0.018 af, Atten= 83%, Lag= 0.0 min
Discarded = 0.04 cfs @ 11.72 hrs, Volume= 0.018 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 61.26' @ 12.54 hrs Surf.Area= 199 sf Storage= 196 cf

Plug-Flow detention time= 26.7 min calculated for 0.018 af (100% of inflow)
Center-of-Mass det. time= 26.7 min (775.4 - 748.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	59.70'	195 cf	**6.33'W x 31.50'L x 3.54'H Field A** 707 cf Overall - 220 cf Embedded = 487 cf x 40.0% Voids
#2A	60.20'	220 cf	**Cultec R-330XLHD** x 4 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		415 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	59.70'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.04 cfs @ 11.72 hrs HW=59.74' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Pond P5: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 1 rows

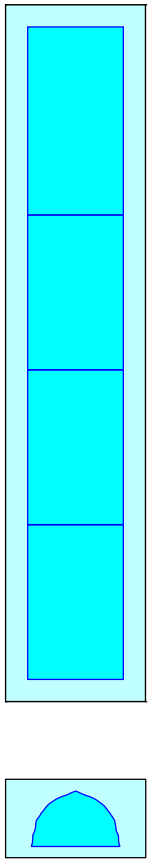
4 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 29.50' Row Length +12.0" End Stone x 2 = 31.50' Base Length
1 Rows x 52.0" Wide + 12.0" Side Stone x 2 = 6.33' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

4 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 1 Rows = 219.8 cf Chamber Storage

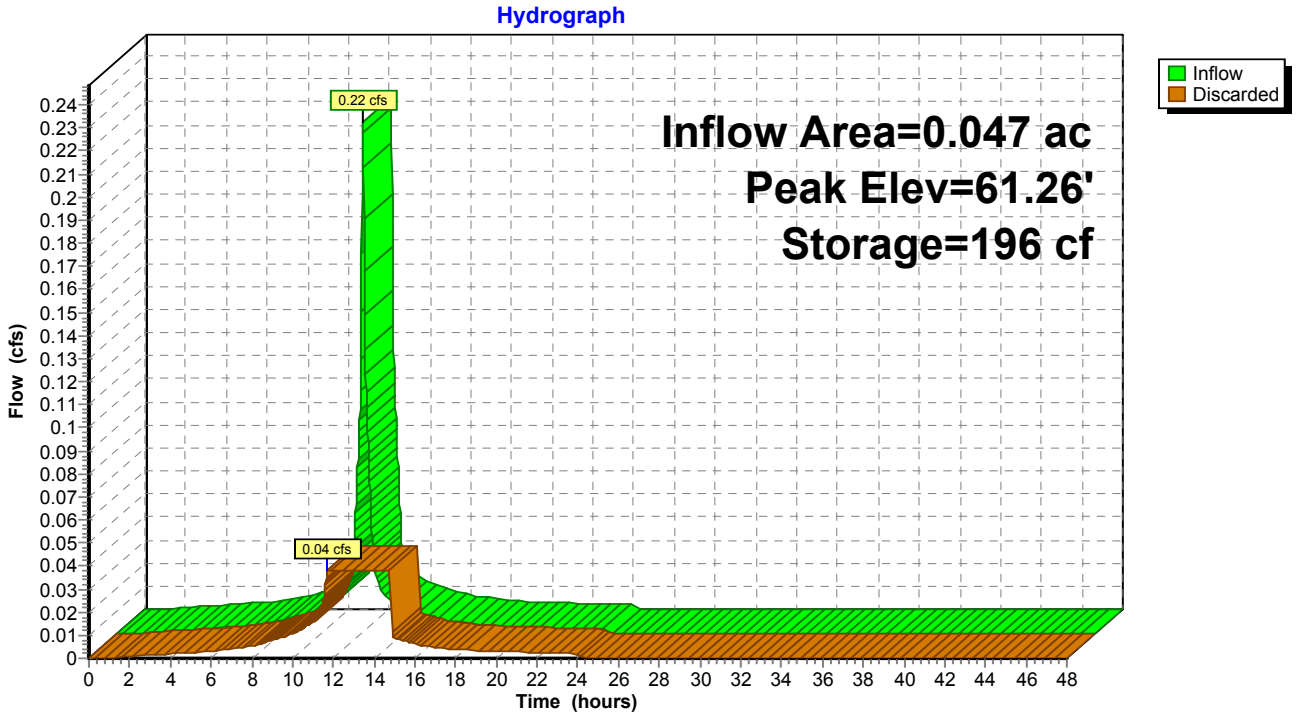
706.6 cf Field - 219.8 cf Chambers = 486.8 cf Stone x 40.0% Voids = 194.7 cf Stone Storage

Chamber Storage + Stone Storage = 414.5 cf = 0.010 af
Overall Storage Efficiency = 58.7%
Overall System Size = 31.50' x 6.33' x 3.54'

4 Chambers
26.2 cy Field
18.0 cy Stone



Pond P5: Infiltration Chambers



Summary for Pond P6: Infiltration Chambers

Inflow Area = 0.959 ac, 58.80% Impervious, Inflow Depth = 2.32" for 10-Year event
Inflow = 2.57 cfs @ 12.09 hrs, Volume= 0.185 af
Outflow = 1.92 cfs @ 12.17 hrs, Volume= 0.185 af, Atten= 25%, Lag= 4.5 min
Discarded = 0.17 cfs @ 11.60 hrs, Volume= 0.129 af
Primary = 1.75 cfs @ 12.17 hrs, Volume= 0.056 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 62.57' @ 12.17 hrs Surf.Area= 879 sf Storage= 1,510 cf

Plug-Flow detention time= 43.3 min calculated for 0.185 af (100% of inflow)
Center-of-Mass det. time= 43.3 min (876.6 - 833.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	60.00'	814 cf	**83.67'W x 10.50'L x 3.54'H Field A** 3,111 cf Overall - 1,077 cf Embedded = 2,035 cf x 40.0% Voids
#2A	60.50'	1,077 cf	**Cultec R-330XLHD** x 17 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 17 rows
		1,891 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	60.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'
#2	Primary	61.85'	**12.0" Round Culvert** L= 88.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 61.85' / 59.00' S= 0.0324 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.17 cfs @ 11.60 hrs HW=60.04' (Free Discharge)
↑└**1=Exfiltration** (Exfiltration Controls 0.17 cfs)

Primary OutFlow Max=1.74 cfs @ 12.17 hrs HW=62.57' TW=58.62' (Dynamic Tailwater)
↑└**2=Culvert** (Inlet Controls 1.74 cfs @ 2.88 fps)

Pond P6: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 17 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

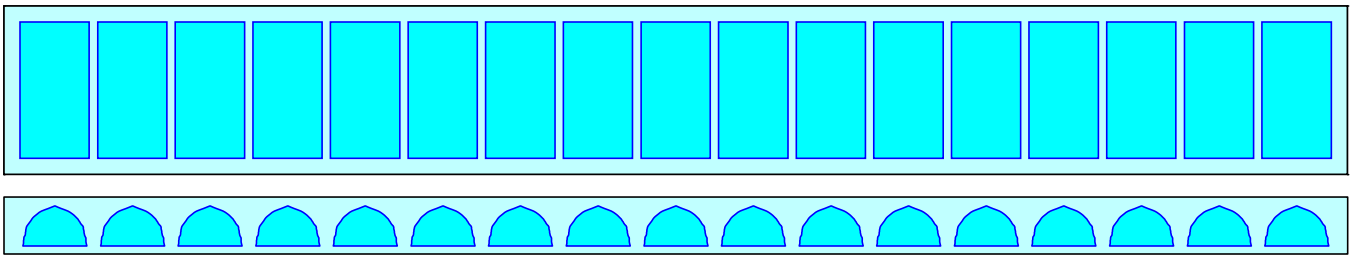
1 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 8.50' Row Length +12.0" End Stone x 2 = 10.50' Base Length
17 Rows x 52.0" Wide + 6.0" Spacing x 16 + 12.0" Side Stone x 2 = 83.67' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

17 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 17 Rows = 1,076.7 cf Chamber Storage

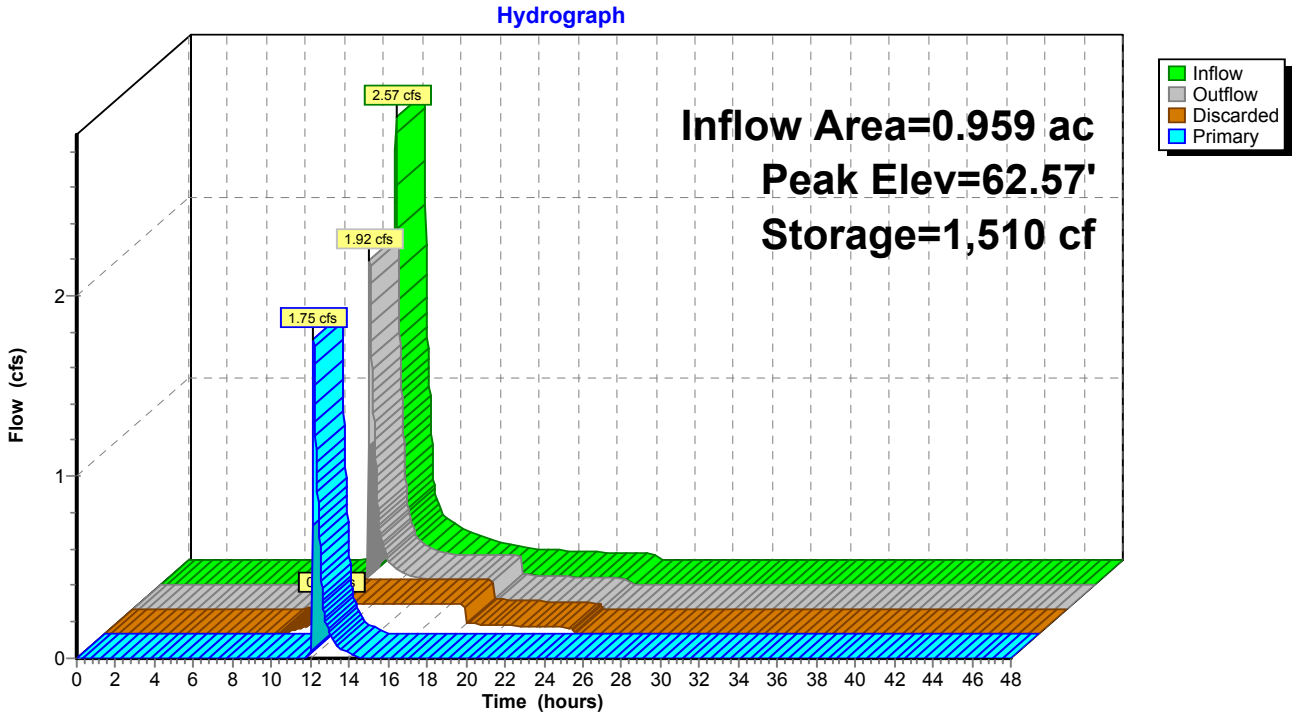
3,111.4 cf Field - 1,076.7 cf Chambers = 2,034.7 cf Stone x 40.0% Voids = 813.9 cf Stone Storage

Chamber Storage + Stone Storage = 1,890.5 cf = 0.043 af
Overall Storage Efficiency = 60.8%
Overall System Size = 10.50' x 83.67' x 3.54'

17 Chambers
115.2 cy Field
75.4 cy Stone



Pond P6: Infiltration Chambers



Summary for Pond P7: Infiltration Chambers

Inflow Area = 0.305 ac,100.00% Impervious, Inflow Depth = 4.56" for 10-Year event
Inflow = 1.43 cfs @ 12.08 hrs, Volume= 0.116 af
Outflow = 0.22 cfs @ 11.68 hrs, Volume= 0.116 af, Atten= 85%, Lag= 0.0 min
Discarded = 0.22 cfs @ 11.68 hrs, Volume= 0.116 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 61.76' @ 12.57 hrs Surf.Area= 1,133 sf Storage= 1,358 cf

Plug-Flow detention time= 34.4 min calculated for 0.116 af (100% of inflow)
Center-of-Mass det. time= 34.4 min (783.1 - 748.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	60.00'	1,013 cf	**11.17'W x 101.50'L x 3.54'H Field A** 4,014 cf Overall - 1,483 cf Embedded = 2,531 cf x 40.0% Voids
#2A	60.50'	1,483 cf	**Cultec R-330XLHD** x 28 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		2,495 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	60.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.22 cfs @ 11.68 hrs HW=60.04' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.22 cfs)

Pond P7: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

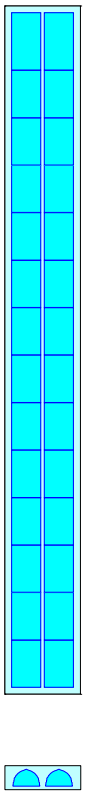
14 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 99.50' Row Length +12.0" End Stone x 2 = 101.50' Base Length
2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

28 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 1,482.7 cf Chamber Storage

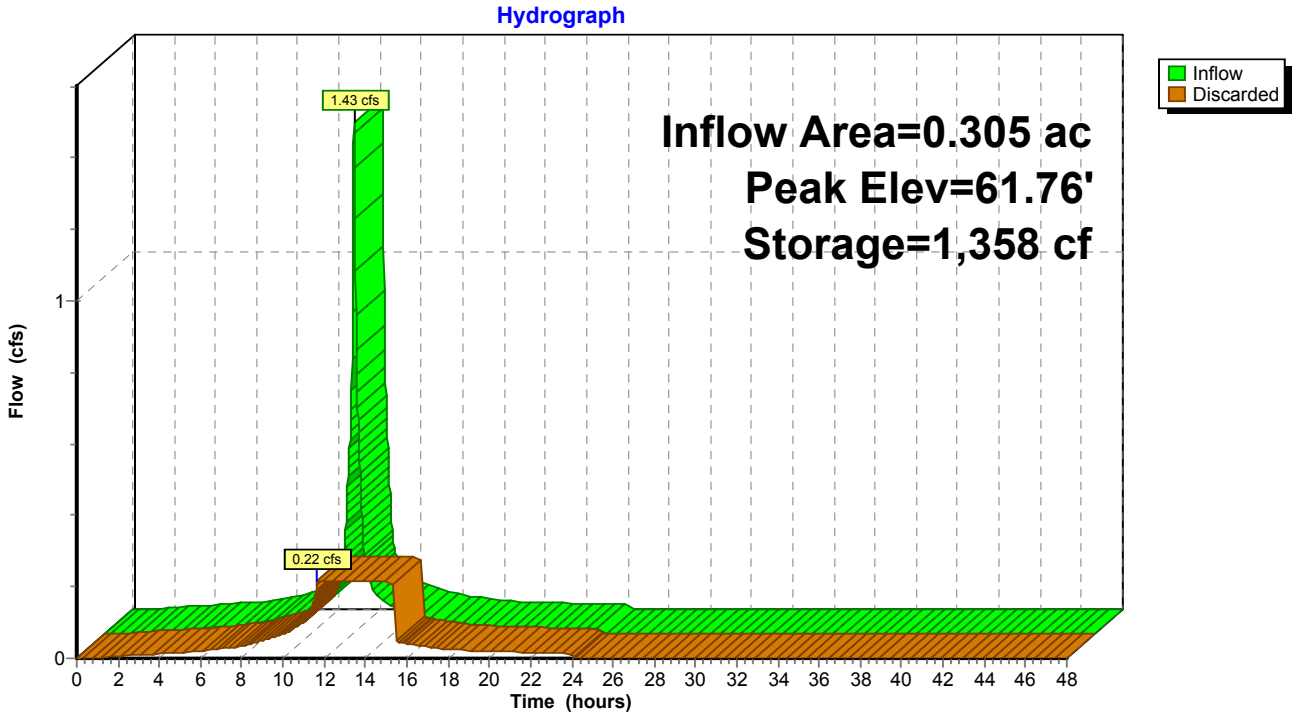
4,014.2 cf Field - 1,482.7 cf Chambers = 2,531.4 cf Stone x 40.0% Voids = 1,012.6 cf Stone Storage

Chamber Storage + Stone Storage = 2,495.3 cf = 0.057 af
Overall Storage Efficiency = 62.2%
Overall System Size = 101.50' x 11.17' x 3.54'

28 Chambers
148.7 cy Field
93.8 cy Stone



Pond P7: Infiltration Chambers



Summary for Pond P8: Infiltration Chambers

Inflow Area = 0.699 ac, 67.39% Impervious, Inflow Depth = 2.76" for 10-Year event
Inflow = 2.10 cfs @ 12.09 hrs, Volume= 0.161 af
Outflow = 0.36 cfs @ 11.78 hrs, Volume= 0.161 af, Atten= 83%, Lag= 0.0 min
Discarded = 0.36 cfs @ 11.78 hrs, Volume= 0.161 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 59.95' @ 12.57 hrs Surf.Area= 1,855 sf Storage= 1,841 cf

Plug-Flow detention time= 30.7 min calculated for 0.161 af (100% of inflow)
Center-of-Mass det. time= 30.7 min (828.0 - 797.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	58.50'	1,574 cf	**35.33'W x 52.50'L x 3.54'H Field A** 6,570 cf Overall - 2,634 cf Embedded = 3,936 cf x 40.0% Voids
#2A	59.00'	2,634 cf	**Cultec R-330XLHD** x 49 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 7 rows
		4,208 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	58.50'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.36 cfs @ 11.78 hrs HW=58.55' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.36 cfs)

Pond P8: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 7 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

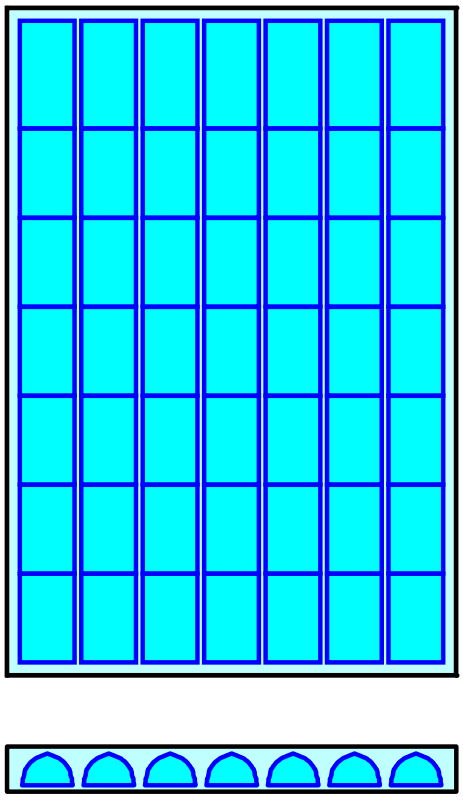
7 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 50.50' Row Length +12.0" End Stone x 2 = 52.50' Base Length
7 Rows x 52.0" Wide + 6.0" Spacing x 6 + 12.0" Side Stone x 2 = 35.33' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

49 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 7 Rows = 2,633.9 cf Chamber Storage

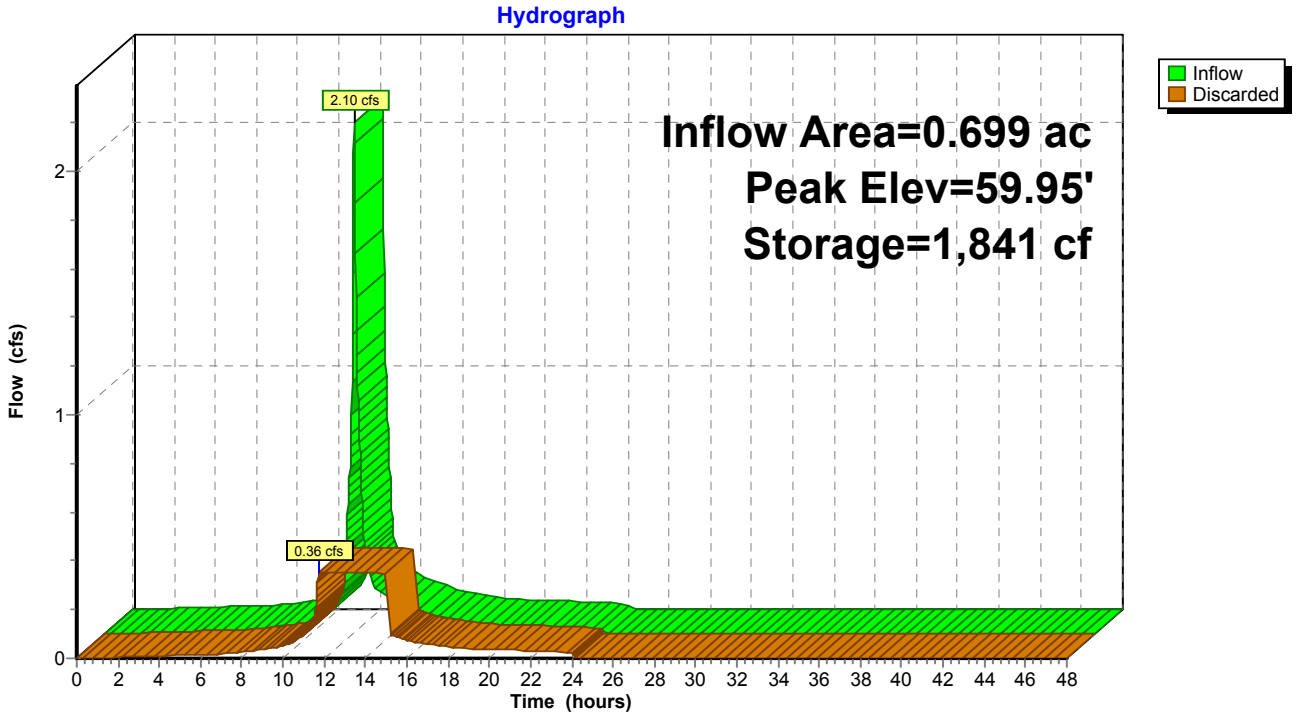
6,569.8 cf Field - 2,633.9 cf Chambers = 3,935.9 cf Stone x 40.0% Voids = 1,574.3 cf Stone Storage

Chamber Storage + Stone Storage = 4,208.3 cf = 0.097 af
Overall Storage Efficiency = 64.1%
Overall System Size = 52.50' x 35.33' x 3.54'

49 Chambers
243.3 cy Field
145.8 cy Stone



Pond P8: Infiltration Chambers



Summary for Pond P9: Infiltration Chambers

Inflow Area = 0.836 ac, 65.23% Impervious, Inflow Depth = 2.56" for 10-Year event
Inflow = 2.39 cfs @ 12.09 hrs, Volume= 0.179 af
Outflow = 0.43 cfs @ 11.80 hrs, Volume= 0.179 af, Atten= 82%, Lag= 0.0 min
Discarded = 0.43 cfs @ 11.80 hrs, Volume= 0.179 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 56.92' @ 12.56 hrs Surf.Area= 2,260 sf Storage= 2,006 cf

Plug-Flow detention time= 27.5 min calculated for 0.178 af (100% of inflow)
Center-of-Mass det. time= 27.5 min (839.4 - 811.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	55.60'	1,933 cf	**20.83'W x 108.50'L x 3.54'H Field A** 8,006 cf Overall - 3,174 cf Embedded = 4,832 cf x 40.0% Voids
#2A	56.10'	3,174 cf	**Cultec R-330XLHD** x 60 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 4 rows
		5,107 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	55.60'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.43 cfs @ 11.80 hrs HW=55.64' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.43 cfs)

Pond P9: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 4 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

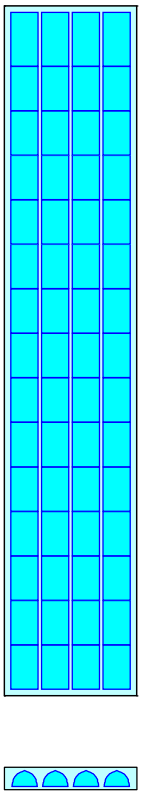
15 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 106.50' Row Length +12.0" End Stone x 2 = 108.50' Base Length
4 Rows x 52.0" Wide + 6.0" Spacing x 3 + 12.0" Side Stone x 2 = 20.83' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

60 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 4 Rows = 3,174.1 cf Chamber Storage

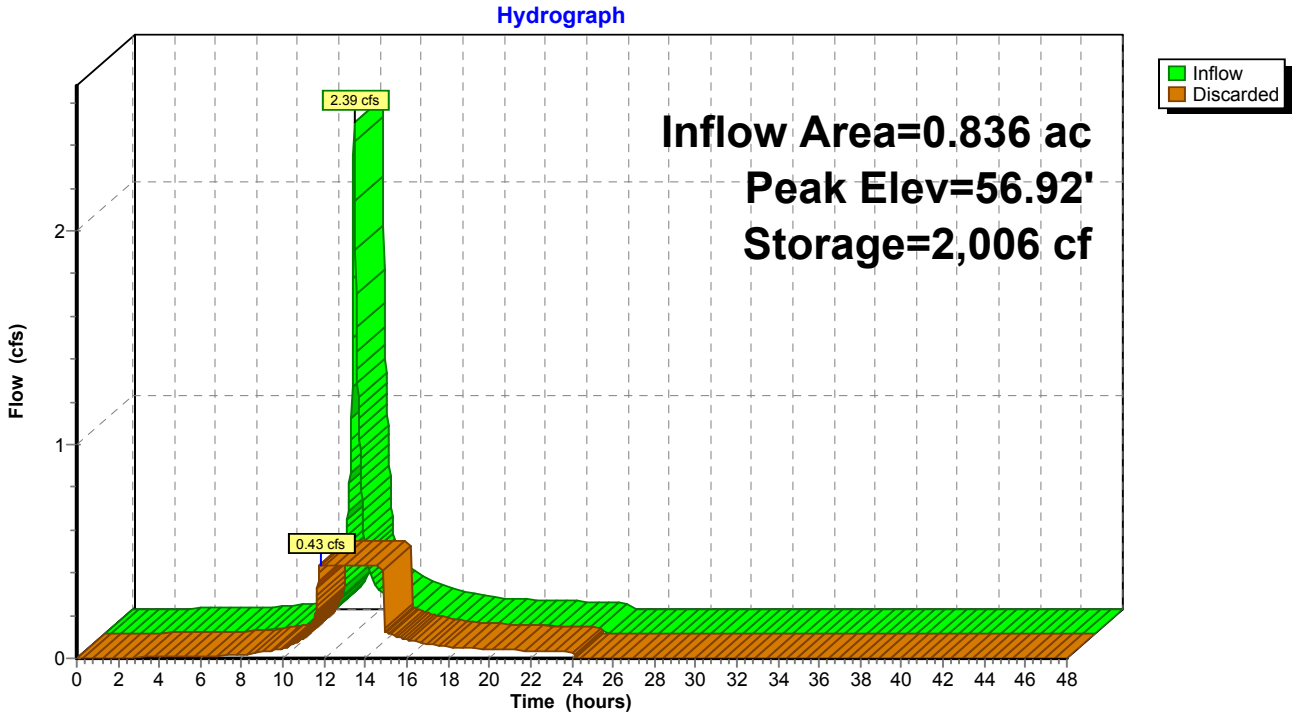
8,005.6 cf Field - 3,174.1 cf Chambers = 4,831.5 cf Stone x 40.0% Voids = 1,932.6 cf Stone Storage

Chamber Storage + Stone Storage = 5,106.7 cf = 0.117 af
Overall Storage Efficiency = 63.8%
Overall System Size = 108.50' x 20.83' x 3.54'

60 Chambers
296.5 cy Field
178.9 cy Stone



Pond P9: Infiltration Chambers



Time span=0.00-48.00 hrs, dt=0.02 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Sub-1 Runoff Area=6,628 sf 64.88% Impervious Runoff Depth=3.22"
Tc=6.0 min CN=77 Runoff=0.57 cfs 0.041 af

Subcatchment1S-1: Sub-1S-1 Runoff Area=13,563 sf 64.32% Impervious Runoff Depth=3.22"
Tc=6.0 min CN=77 Runoff=1.17 cfs 0.084 af

Subcatchment2S: Sub-2 Runoff Area=15,040 sf 10.74% Impervious Runoff Depth=0.63"
Tc=6.0 min CN=44 Runoff=0.12 cfs 0.018 af

Subcatchment3A-1R: Roofs 16 FB, 17, Runoff Area=13,300 sf 100.00% Impervious Runoff Depth=5.46"
Tc=6.0 min CN=98 Runoff=1.70 cfs 0.139 af

Subcatchment3A-S: Sub-3A Runoff Area=43,217 sf 71.58% Impervious Runoff Depth=3.71"
Tc=6.0 min CN=82 Runoff=4.28 cfs 0.307 af

Subcatchment3B-1R: Roofs 1-8 FB Runoff Area=15,230 sf 100.00% Impervious Runoff Depth=5.46"
Tc=6.0 min CN=98 Runoff=1.95 cfs 0.159 af

Subcatchment3B-S: Sub-3B-S Runoff Area=12,902 sf 58.89% Impervious Runoff Depth=2.93"
Tc=6.0 min CN=74 Runoff=1.02 cfs 0.072 af

Subcatchment3C-1R: Roofs 10 F Runoff Area=1,027 sf 100.00% Impervious Runoff Depth=5.46"
Tc=6.0 min CN=98 Runoff=0.13 cfs 0.011 af

Subcatchment3C-2R: Roofs 12-13 B Runoff Area=1,728 sf 100.00% Impervious Runoff Depth=5.46"
Tc=6.0 min CN=98 Runoff=0.22 cfs 0.018 af

Subcatchment3C-3R: Roofs 14-15 B Runoff Area=1,728 sf 100.00% Impervious Runoff Depth=5.46"
Tc=6.0 min CN=98 Runoff=0.22 cfs 0.018 af

Subcatchment3C-4R: Roofs 10-11 B Runoff Area=1,728 sf 100.00% Impervious Runoff Depth=5.46"
Tc=6.0 min CN=98 Runoff=0.22 cfs 0.018 af

Subcatchment3C-S: Sub-3C Runoff Area=15,793 sf 6.05% Impervious Runoff Depth=1.07"
Tc=6.0 min CN=51 Runoff=0.35 cfs 0.032 af

Subcatchment3D-S: Sub-3D-S Runoff Area=15,288 sf 5.25% Impervious Runoff Depth=1.50"
Tc=6.0 min CN=57 Runoff=0.55 cfs 0.044 af

Subcatchment3E-S: Sub-3E-S Runoff Area=7,970 sf 1.39% Impervious Runoff Depth=1.28"
Tc=6.0 min CN=54 Runoff=0.23 cfs 0.019 af

Subcatchment3F-1R: Roofs 26-28 FB Runoff Area=5,720 sf 100.00% Impervious Runoff Depth=5.46"
Tc=6.0 min CN=98 Runoff=0.73 cfs 0.060 af

Subcatchment3F-2R: Roofs 29-30 B, 31 FB Runoff Area=3,615 sf 100.00% Impervious Runoff Depth=5.46"
Tc=6.0 min CN=98 Runoff=0.46 cfs 0.038 af

Subcatchment3F-3R: Roofs 29 F Runoff Area=1,027 sf 100.00% Impervious Runoff Depth=5.46"
Tc=6.0 min CN=98 Runoff=0.13 cfs 0.011 af

Subcatchment3F-4R: Roofs 30 F Runoff Area=1,035 sf 100.00% Impervious Runoff Depth=5.46"
Tc=6.0 min CN=98 Runoff=0.13 cfs 0.011 af

Subcatchment3F-S: Sub-3F-S Runoff Area=21,093 sf 52.96% Impervious Runoff Depth=2.66"
Tc=6.0 min CN=71 Runoff=1.50 cfs 0.107 af

Subcatchment3G-1R: Roof 9 FB Runoff Area=1,932 sf 100.00% Impervious Runoff Depth=5.46"
Tc=6.0 min CN=98 Runoff=0.25 cfs 0.020 af

Subcatchment3G-2R: Roofs 11 F Runoff Area=1,035 sf 100.00% Impervious Runoff Depth=5.46"
Tc=6.0 min CN=98 Runoff=0.13 cfs 0.011 af

Subcatchment3G-3R: Roofs 12 F Runoff Area=1,027 sf 100.00% Impervious Runoff Depth=5.46"
Tc=6.0 min CN=98 Runoff=0.13 cfs 0.011 af

Subcatchment3G-4R: Roofs 13 F Runoff Area=1,035 sf 100.00% Impervious Runoff Depth=5.46"
Tc=6.0 min CN=98 Runoff=0.13 cfs 0.011 af

Subcatchment3G-5R: Roofs 14 F Runoff Area=1,027 sf 100.00% Impervious Runoff Depth=5.46"
Tc=6.0 min CN=98 Runoff=0.13 cfs 0.011 af

Subcatchment3G-6R: Roofs 15 F Runoff Area=1,035 sf 100.00% Impervious Runoff Depth=5.46"
Tc=6.0 min CN=98 Runoff=0.13 cfs 0.011 af

Subcatchment3G-S: Sub-3G-S Runoff Area=27,855 sf 57.22% Impervious Runoff Depth=3.03"
Tc=6.0 min CN=75 Runoff=2.27 cfs 0.161 af

Subcatchment3H-S: Sub-3A Runoff Area=10,072 sf 50.76% Impervious Runoff Depth=2.48"
Tc=6.0 min CN=69 Runoff=0.66 cfs 0.048 af

Subcatchment3I-S: Sub-3I-S Runoff Area=5,482 sf 79.57% Impervious Runoff Depth=4.12"
Tc=6.0 min CN=86 Runoff=0.60 cfs 0.043 af

Subcatchment4S: Sub-4 Runoff Area=3,736 sf 1.12% Impervious Runoff Depth=0.41"
Tc=6.0 min CN=40 Runoff=0.01 cfs 0.003 af

Subcatchment4S-1: Sub-4 Runoff Area=9,528 sf 12.07% Impervious Runoff Depth=0.74"
Tc=6.0 min CN=46 Runoff=0.11 cfs 0.014 af

Subcatchment4S-1R: Roofs 32 FB Runoff Area=1,903 sf 100.00% Impervious Runoff Depth=5.46"
Tc=6.0 min CN=98 Runoff=0.24 cfs 0.020 af

Subcatchment5S: Sub -5 Runoff Area=12,091 sf 18.97% Impervious Runoff Depth=1.07"
Tc=6.0 min CN=51 Runoff=0.27 cfs 0.025 af

Subcatchment5S-1: Sub 5S-1 Runoff Area=10,625 sf 14.55% Impervious Runoff Depth=0.87"
Tc=6.0 min CN=48 Runoff=0.17 cfs 0.018 af

Subcatchment5S-1R: Roofs 19-21 FB Runoff Area=5,720 sf 100.00% Impervious Runoff Depth=5.46"
Tc=6.0 min CN=98 Runoff=0.73 cfs 0.060 af

Subcatchment5S-P: Pavement Runoff Area=15,144 sf 56.52% Impervious Runoff Depth=2.75"
Tc=6.0 min CN=72 Runoff=1.11 cfs 0.080 af

Reach DP-1: DMH Inflow=0.86 cfs 0.059 af
Outflow=0.86 cfs 0.059 af

Reach DP-2: DP-2 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach DP-3: DP-3 Inflow=1.68 cfs 0.340 af
Outflow=1.68 cfs 0.340 af

Reach DP-4: PL Inflow=0.01 cfs 0.003 af
Outflow=0.01 cfs 0.003 af

Reach DP-5: PL Inflow=0.27 cfs 0.025 af
Outflow=0.27 cfs 0.025 af

Pond D-1: Depression Peak Elev=59.08' Storage=34 cf Inflow=0.12 cfs 0.018 af
Outflow=0.09 cfs 0.018 af

Pond D-2: Depression Peak Elev=57.65' Storage=1,036 cf Inflow=1.00 cfs 0.086 af
Discarded=0.17 cfs 0.086 af Primary=0.00 cfs 0.000 af Outflow=0.17 cfs 0.086 af

Pond D-3: Depression Peak Elev=63.01' Storage=6 cf Inflow=0.11 cfs 0.014 af
Outflow=0.11 cfs 0.014 af

Pond D-4: Depression Peak Elev=54.01' Storage=9 cf Inflow=0.17 cfs 0.018 af
Outflow=0.17 cfs 0.018 af

Pond DB-1: Prop Detention Basin Peak Elev=59.23' Storage=9,629 cf Inflow=6.87 cfs 0.403 af
Outflow=1.46 cfs 0.277 af

Pond P1: Infiltration Chambers Peak Elev=58.04' Storage=236 cf Inflow=0.25 cfs 0.020 af
Outflow=0.04 cfs 0.020 af

Pond P10: Infiltration Chambers Peak Elev=61.44' Storage=121 cf Inflow=0.13 cfs 0.011 af
Outflow=0.02 cfs 0.011 af

Pond P11: Infiltration Chambers Peak Elev=61.46' Storage=122 cf Inflow=0.13 cfs 0.011 af
Outflow=0.02 cfs 0.011 af

Pond P12: Infiltration Chambers Peak Elev=59.60' Storage=184 cf Inflow=0.24 cfs 0.020 af
Outflow=0.05 cfs 0.020 af

Pond P13: Infiltration Chambers Peak Elev=59.43' Storage=775 cf Inflow=1.17 cfs 0.084 af
Discarded=0.11 cfs 0.065 af Primary=0.50 cfs 0.018 af Outflow=0.62 cfs 0.084 af

Pond P2: Infiltration Chambers Peak Elev=58.47' Storage=2,040 cf Inflow=1.95 cfs 0.159 af
Outflow=0.24 cfs 0.159 af

Pond P3: Infiltration Chambers Peak Elev=57.94' Storage=121 cf Inflow=0.13 cfs 0.011 af
Outflow=0.02 cfs 0.011 af

Pond P4: Infiltration Chambers Peak Elev=58.20' Storage=257 cf Inflow=0.26 cfs 0.022 af
Outflow=0.04 cfs 0.022 af

Pond P5: Infiltration Chambers Peak Elev=61.70' Storage=257 cf Inflow=0.26 cfs 0.022 af
Outflow=0.04 cfs 0.022 af

Pond P6: Infiltration Chambers Peak Elev=62.91' Storage=1,667 cf Inflow=3.42 cfs 0.245 af
Discarded=0.17 cfs 0.148 af Primary=2.83 cfs 0.096 af Outflow=3.00 cfs 0.245 af

Pond P7: Infiltration Chambers Peak Elev=62.25' Storage=1,761 cf Inflow=1.70 cfs 0.139 af
Outflow=0.22 cfs 0.139 af

Pond P8: Infiltration Chambers Peak Elev=60.53' Storage=2,699 cf Inflow=2.69 cfs 0.205 af
Outflow=0.36 cfs 0.205 af

Pond P9: Infiltration Chambers Peak Elev=57.49' Storage=3,021 cf Inflow=3.10 cfs 0.230 af
Outflow=0.43 cfs 0.230 af

Total Runoff Area = 7.045 ac Runoff Volume = 1.751 af Average Runoff Depth = 2.98"
45.88% Pervious = 3.233 ac 54.12% Impervious = 3.812 ac

Summary for Subcatchment 1S: Sub-1

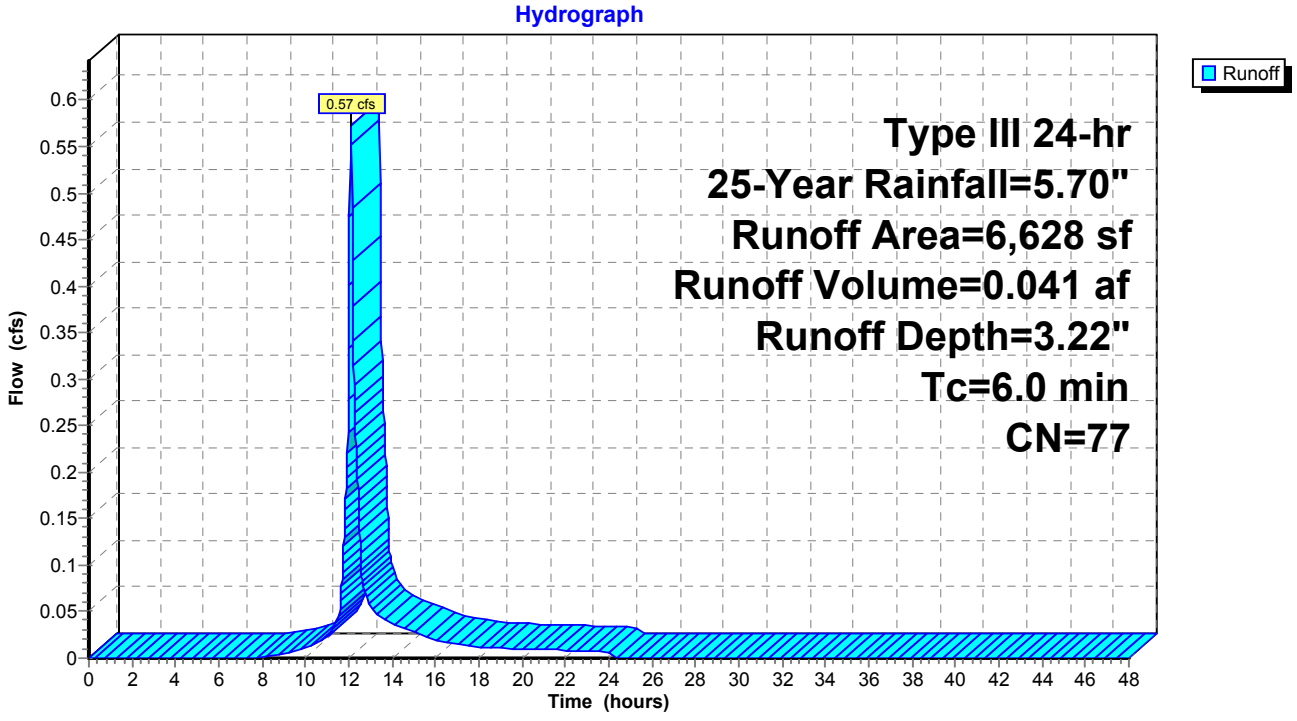
Runoff = 0.57 cfs @ 12.09 hrs, Volume= 0.041 af, Depth= 3.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
	2,328	39	>75% Grass cover, Good, HSG A
	3,451	98	Paved roads w/curbs & sewers, HSG A
*	849	98	Paved sidewalk, HSG A
	6,628	77	Weighted Average
	2,328		35.12% Pervious Area
	4,300		64.88% Impervious Area

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

Subcatchment 1S: Sub-1



Summary for Subcatchment 1S-1: Sub-1S-1

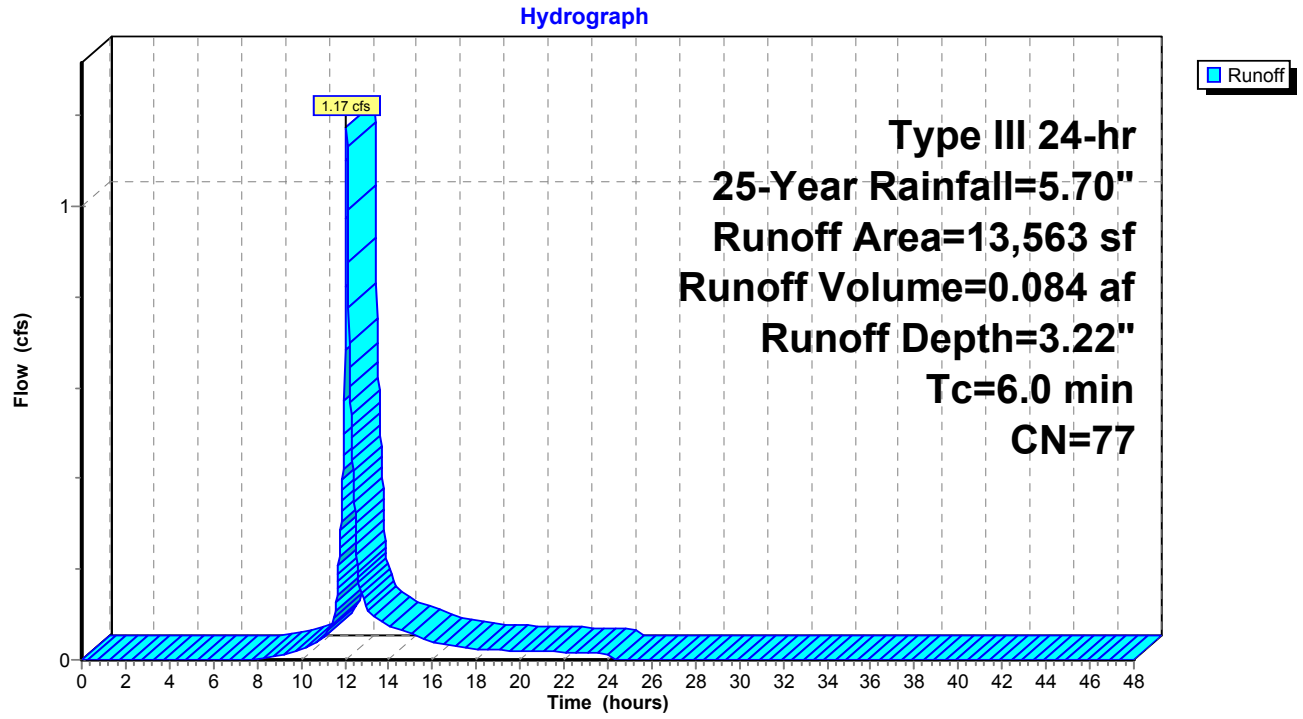
Runoff = 1.17 cfs @ 12.09 hrs, Volume= 0.084 af, Depth= 3.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
	4,839	39	>75% Grass cover, Good, HSG A
	6,500	98	Paved roads w/curbs & sewers, HSG A
*	1,077	98	Paved sidewalk, HSG A
*	163	98	Walls, HSG A
*	984	98	Paved drives, HSG A
	13,563	77	Weighted Average
	4,839		35.68% Pervious Area
	8,724		64.32% Impervious Area

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

Subcatchment 1S-1: Sub-1S-1



Summary for Subcatchment 2S: Sub-2

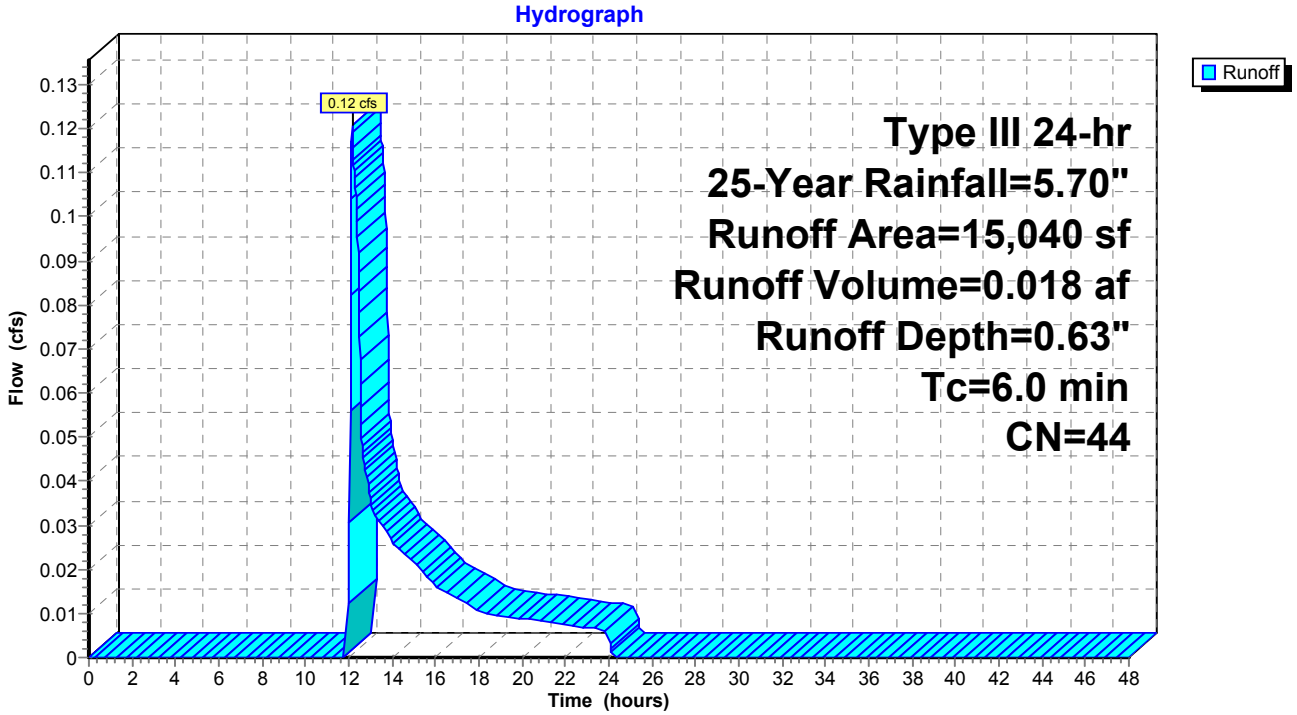
Runoff = 0.12 cfs @ 12.14 hrs, Volume= 0.018 af, Depth= 0.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
	7,795	39	>75% Grass cover, Good, HSG A
*	100	98	Walls, HSG A
*	570	98	Decks, HSG A
*	945	98	Decks, HSG A
	2,630	39	>75% Grass cover, Good, HSG A
*	3,000	30	Woods, Good, HSG A - offsite
	15,040	44	Weighted Average
	13,425		89.26% Pervious Area
	1,615		10.74% Impervious Area

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

Subcatchment 2S: Sub-2



Summary for Subcatchment 3A-1R: Roofs 16 FB, 17, 18-20 & 24-25 FB

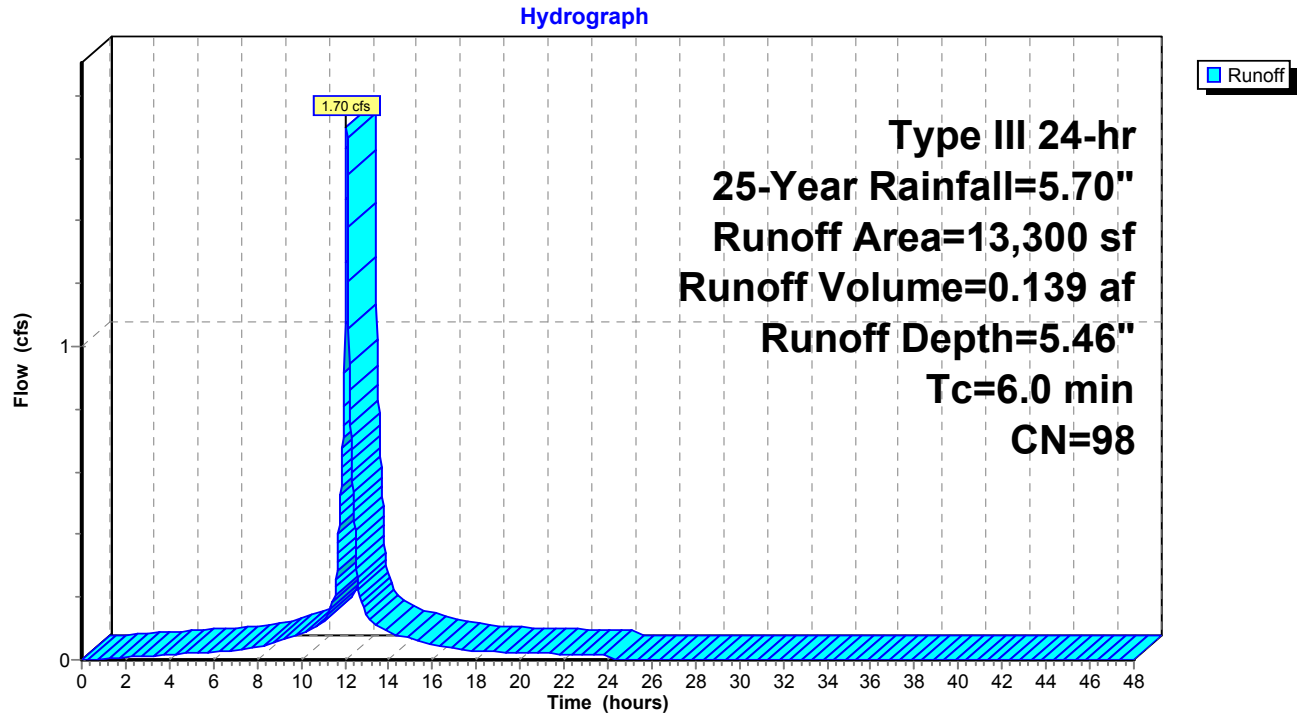
Runoff = 1.70 cfs @ 12.08 hrs, Volume= 0.139 af, Depth= 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
	5,720	98	Roofs, HSG A
	3,790	98	Roofs, HSG A
*	1,903	98	Roofs, HSG A
	837	98	Roofs, HSG A
	23	98	Roofs, HSG B
*	1,027	98	Roofs, HSG A
	13,300	98	Weighted Average
	13,300		100.00% Impervious Area

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

Subcatchment 3A-1R: Roofs 16 FB, 17, 18-20 & 24-25 FB



Summary for Subcatchment 3A-S: Sub-3A

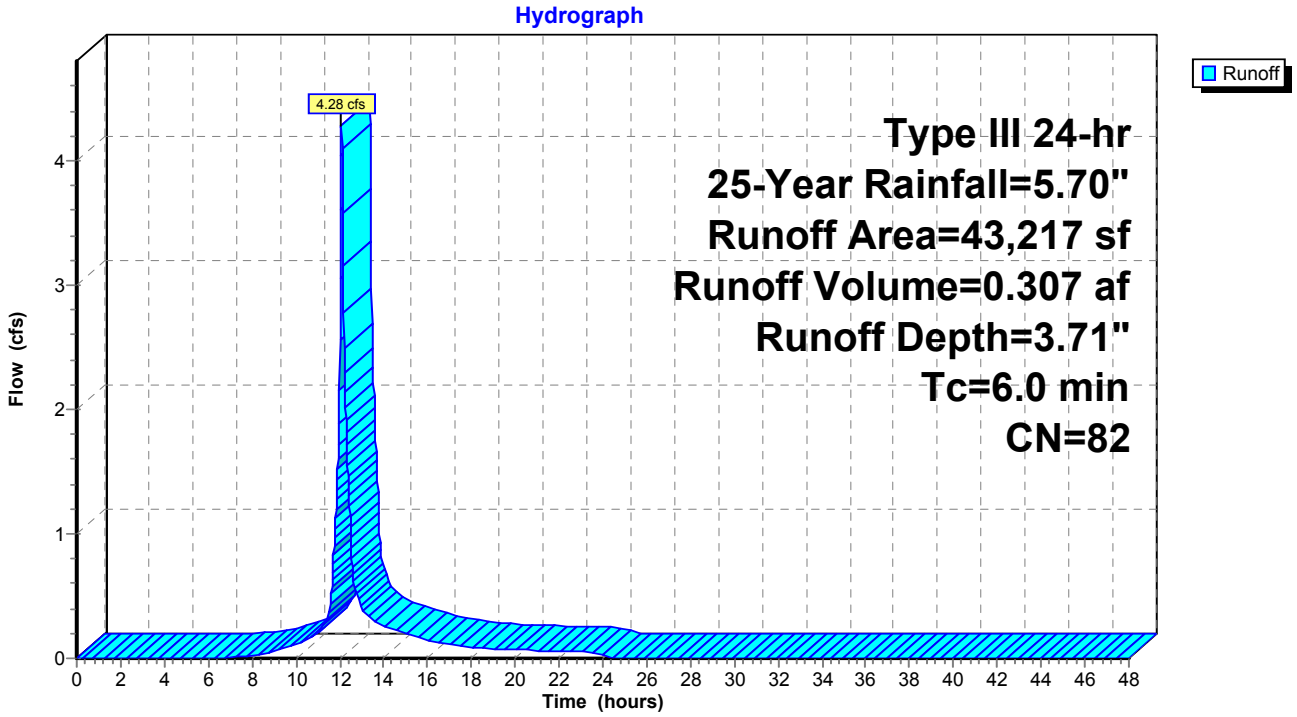
Runoff = 4.28 cfs @ 12.09 hrs, Volume= 0.307 af, Depth= 3.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
	7,575	39	>75% Grass cover, Good, HSG A
	1,836	61	>75% Grass cover, Good, HSG B
*	556	98	Decks, HSG A
*	8,140	98	Detention Basin, HSG A
*	4,387	98	Detention Basin, HSG B
*	146	98	Riprap, HSG A
*	70	98	Riprap, HSG B
*	113	98	Walls, HSG A
*	70	98	Walls, HSG B
*	1,384	98	Roofs, HSG A - offsite
*	16,069	98	Paved parking, HSG A - offsite
*	1,189	39	>75% Grass cover, Good, HSG A - offsite
*	1,682	30	Woods, Good, HSG A - offsite
	43,217	82	Weighted Average
	12,282		28.42% Pervious Area
	30,935		71.58% Impervious Area

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

Subcatchment 3A-S: Sub-3A



Summary for Subcatchment 3B-1R: Roofs 1-8 FB

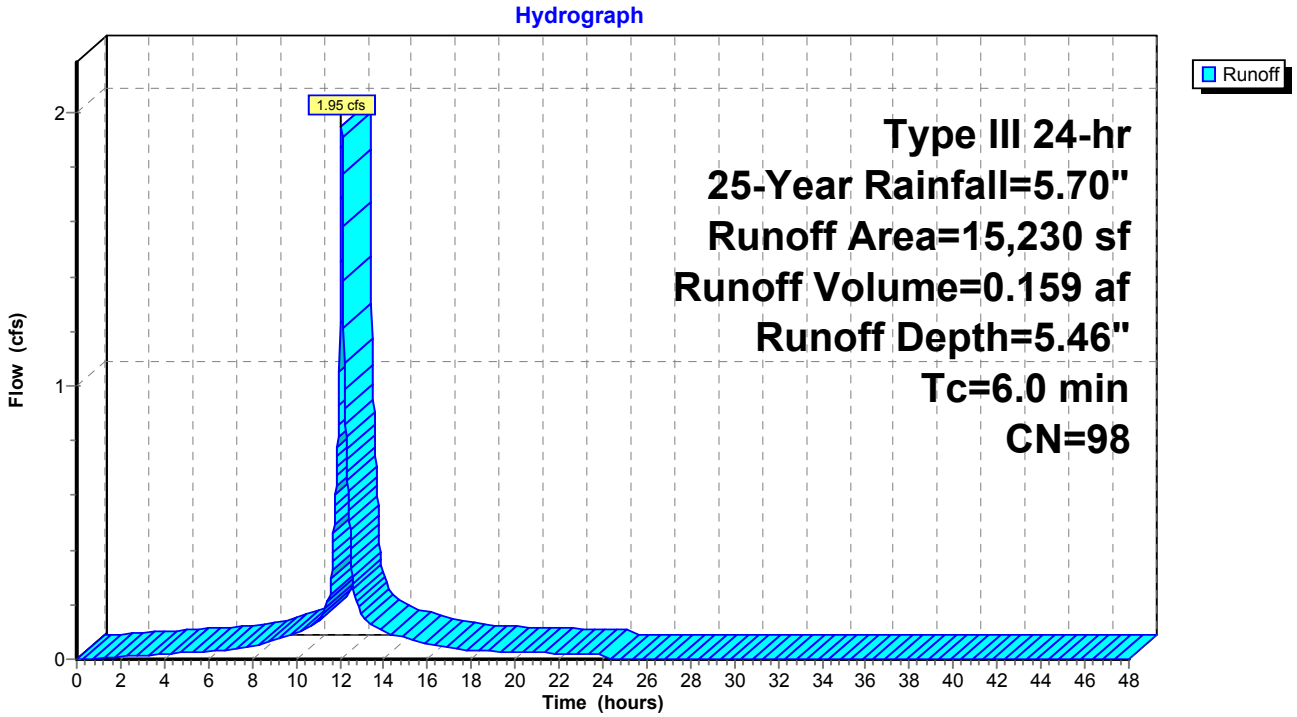
Runoff = 1.95 cfs @ 12.08 hrs, Volume= 0.159 af, Depth= 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

Area (sf)	CN	Description
15,230	98	Roofs, HSG A
15,230		100.00% Impervious Area

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

Subcatchment 3B-1R: Roofs 1-8 FB



Summary for Subcatchment 3B-S: Sub-3B-S

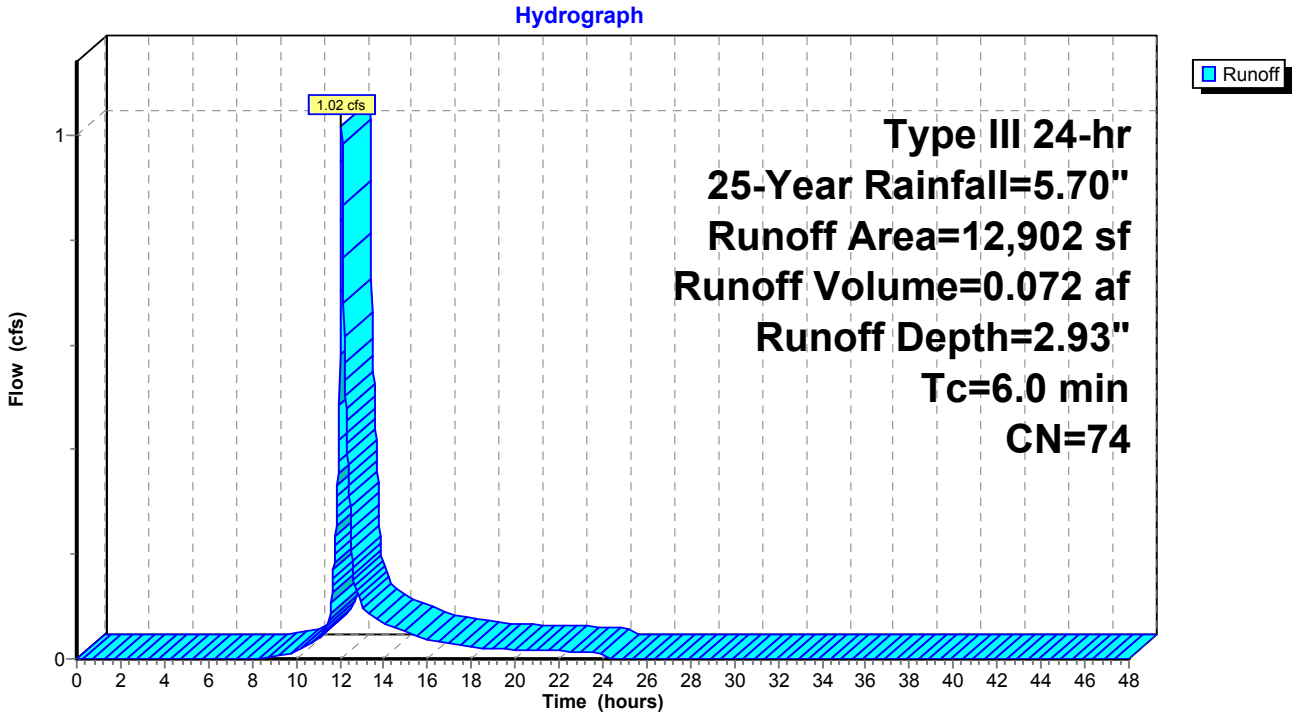
Runoff = 1.02 cfs @ 12.09 hrs, Volume= 0.072 af, Depth= 2.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
*	3,581	98	Paved drives, HSG A
*	185	98	Paved drives, HSG B
*	2,716	98	Paved roads w/curbs & sewers, HSG A
	776	98	Paved roads w/curbs & sewers, HSG B
*	340	98	Walks, HSG A
	5,125	39	>75% Grass cover, Good, HSG A
	179	61	>75% Grass cover, Good, HSG B
	12,902	74	Weighted Average
	5,304		41.11% Pervious Area
	7,598		58.89% Impervious Area

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

Subcatchment 3B-S: Sub-3B-S



Summary for Subcatchment 3C-1R: Roofs 10 F

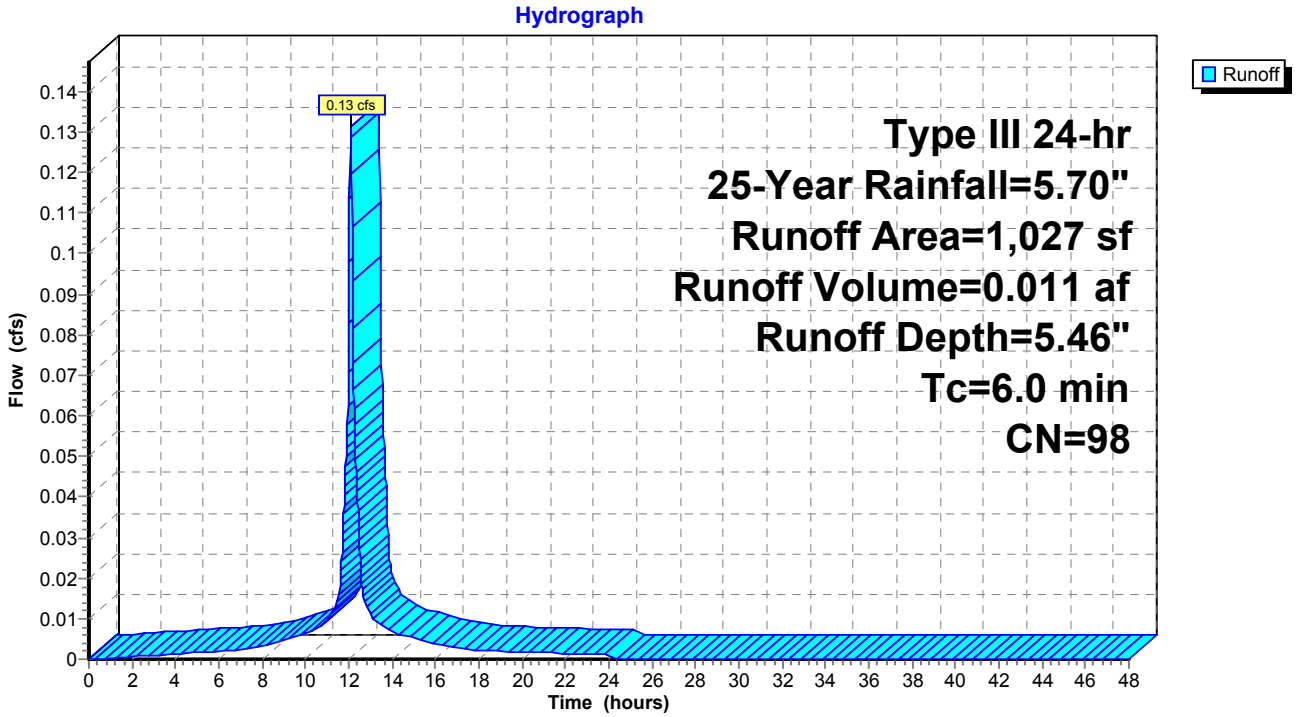
Runoff = 0.13 cfs @ 12.08 hrs, Volume= 0.011 af, Depth= 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
*	1,027	98	Roofs, HSG B
	1,027		100.00% Impervious Area

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

Subcatchment 3C-1R: Roofs 10 F



Summary for Subcatchment 3C-2R: Roofs 12-13 B

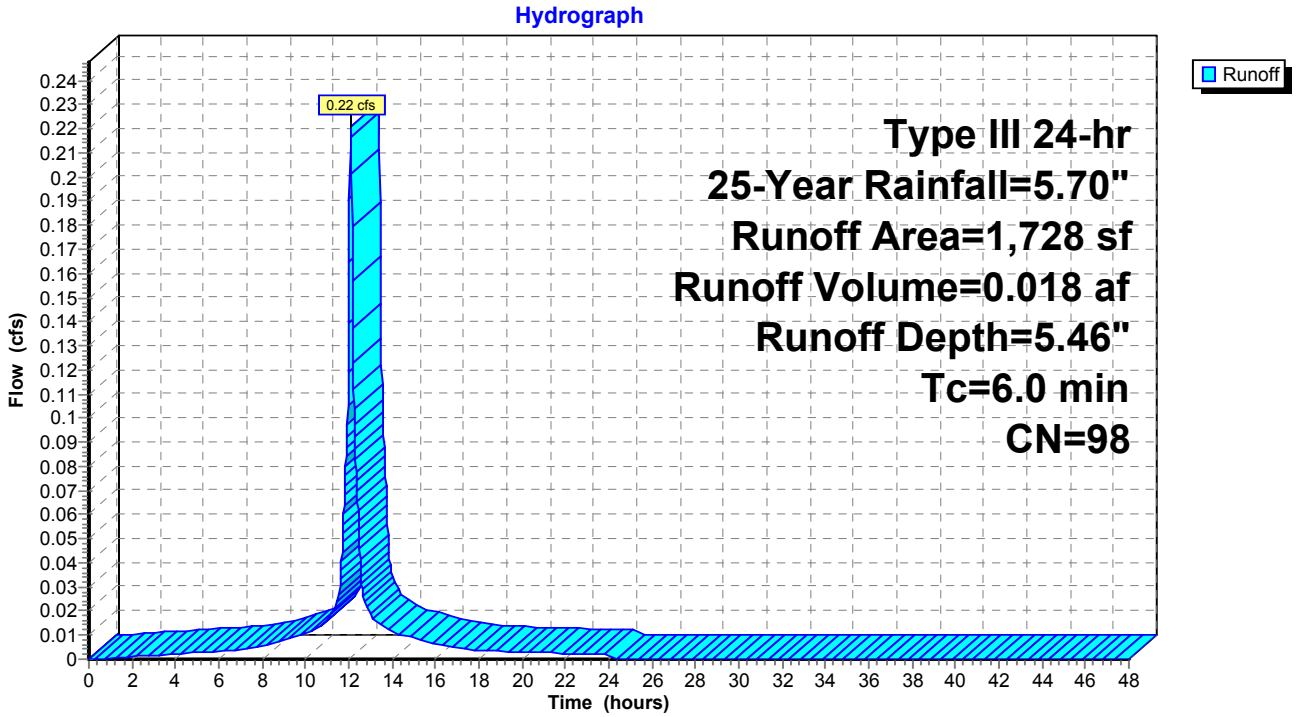
Runoff = 0.22 cfs @ 12.08 hrs, Volume= 0.018 af, Depth= 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
*	1,728	98	Roofs, HSG B
	1,728		100.00% Impervious Area

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

Subcatchment 3C-2R: Roofs 12-13 B



Summary for Subcatchment 3C-3R: Roofs 14-15 B

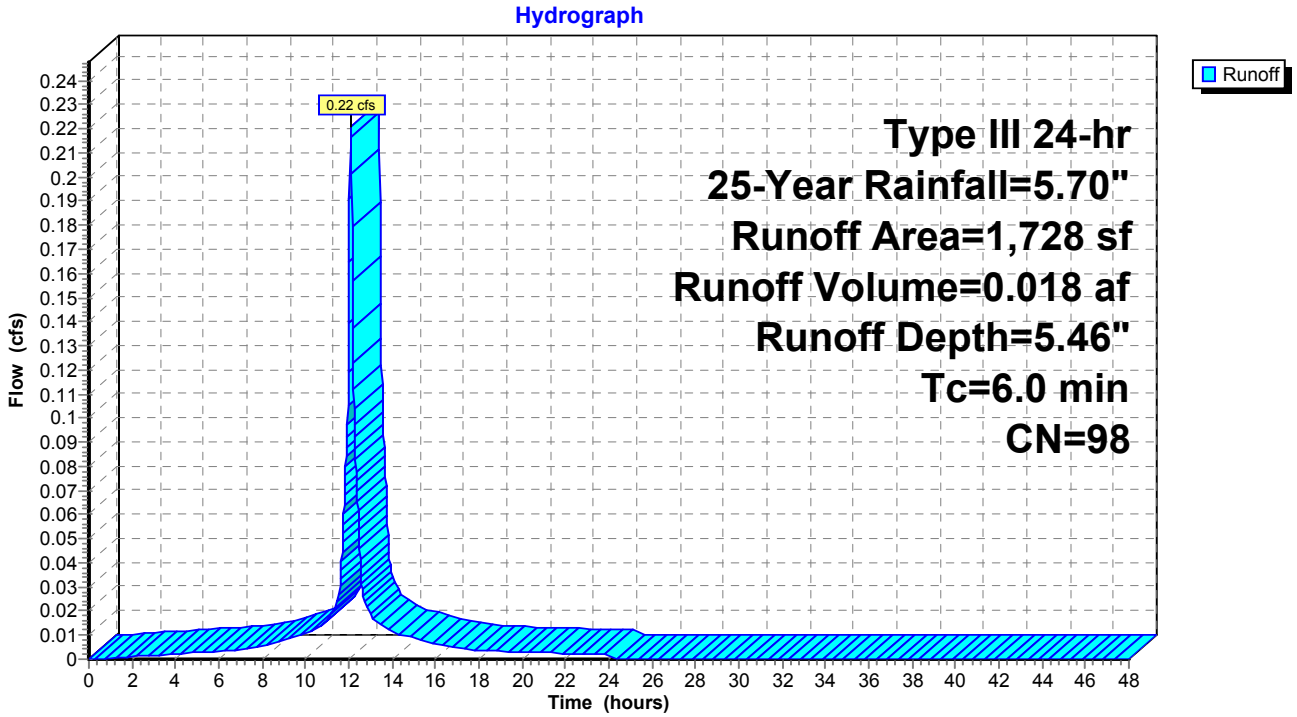
Runoff = 0.22 cfs @ 12.08 hrs, Volume= 0.018 af, Depth= 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
*	1,728	98	Roofs, HSG B
	1,728		100.00% Impervious Area

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

Subcatchment 3C-3R: Roofs 14-15 B



Summary for Subcatchment 3C-4R: Roofs 10-11 B

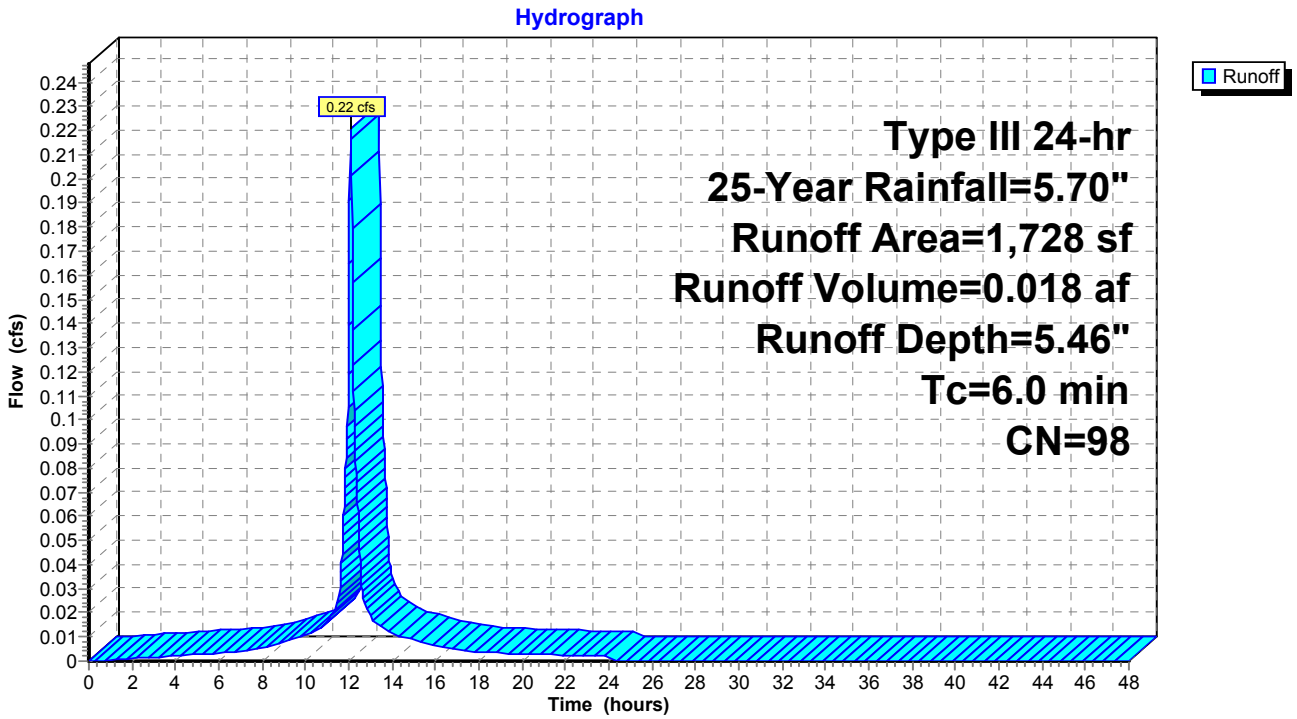
Runoff = 0.22 cfs @ 12.08 hrs, Volume= 0.018 af, Depth= 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
*	1,538	98	Roofs, HSG B
	190	98	Roofs, HSG A
	1,728	98	Weighted Average
	1,728		100.00% Impervious Area

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

Subcatchment 3C-4R: Roofs 10-11 B



Summary for Subcatchment 3C-S: Sub-3C

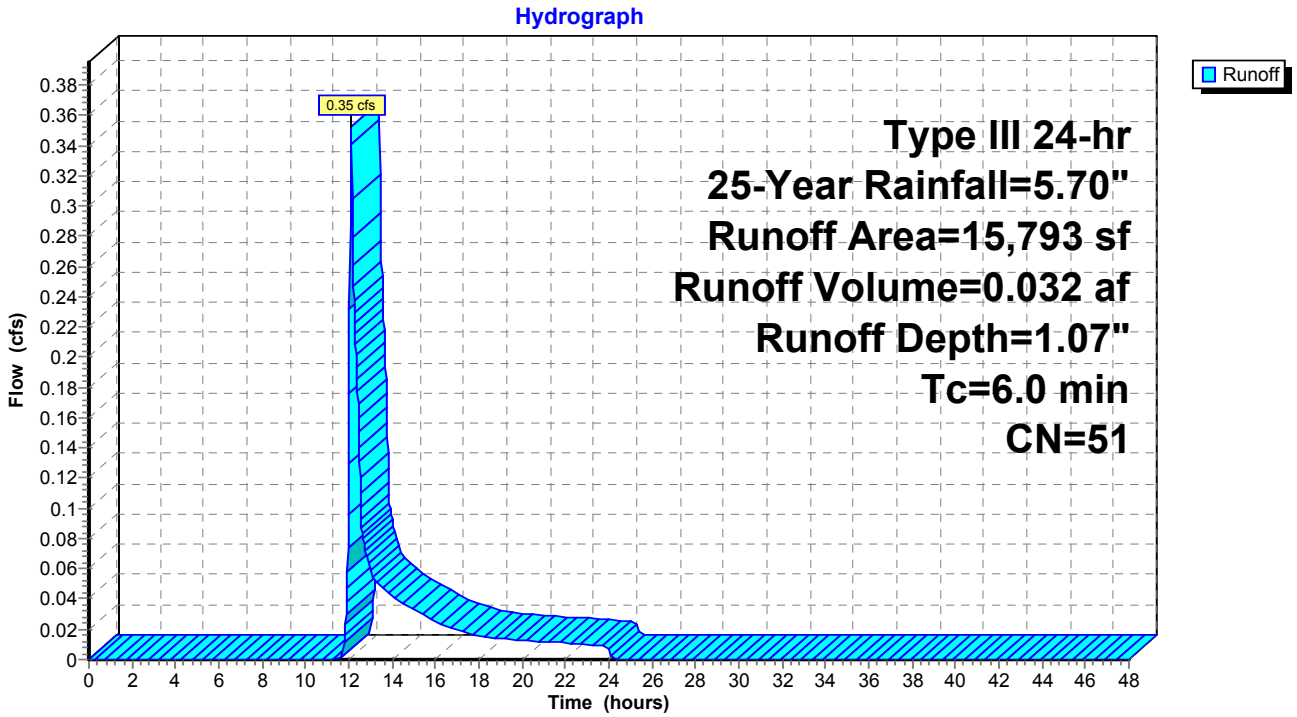
Runoff = 0.35 cfs @ 12.11 hrs, Volume= 0.032 af, Depth= 1.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
*	290	98	Paved drives, HSG A - offsite
*	2,113	30	Woods, Good, HSG A - offsite
*	3,045	39	>75% Grass cover, Good, HSG A - offsite
	6,567	61	>75% Grass cover, Good, HSG B
	3,112	39	>75% Grass cover, Good, HSG A
*	185	98	Decks, HSG A
*	371	98	Decks, HSG B
*	110	98	Riprap, HSG B
	15,793	51	Weighted Average
	14,837		93.95% Pervious Area
	956		6.05% Impervious Area

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

Subcatchment 3C-S: Sub-3C



Summary for Subcatchment 3D-S: Sub-3D-S

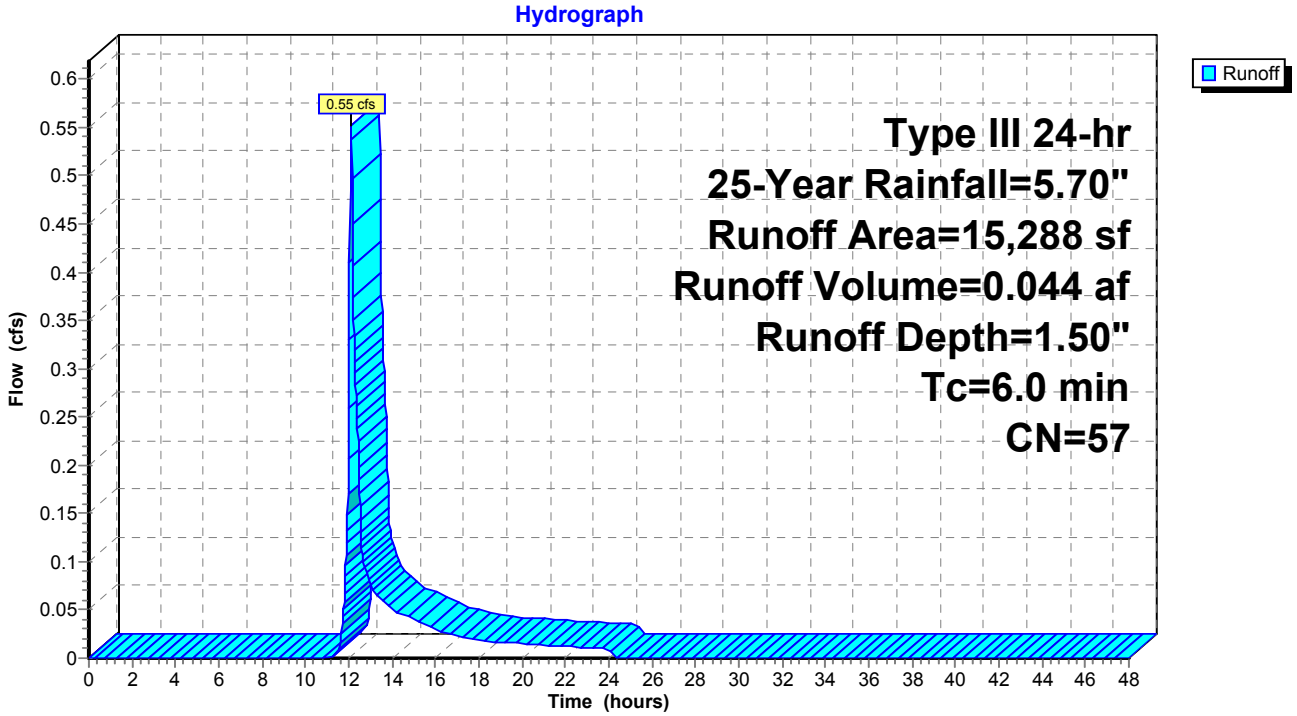
Runoff = 0.55 cfs @ 12.10 hrs, Volume= 0.044 af, Depth= 1.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
	3,098	55	Woods, Good, HSG B
	6,117	61	>75% Grass cover, Good, HSG B
	1,408	39	>75% Grass cover, Good, HSG A
*	641	98	Decks, HSG B
*	100	98	Decks, HSG A
*	61	98	Riprap, HSG B
*	96	30	Woods, Good, HSG A - offsite
*	1,076	39	>75% Grass cover, Good, HSG A - offsite
*	957	61	>75% Grass cover, Good, HSG B - offsite
*	1,734	55	Woods, Good, HSG B - offsite
	15,288	57	Weighted Average
	14,486		94.75% Pervious Area
	802		5.25% Impervious Area

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

Subcatchment 3D-S: Sub-3D-S



Summary for Subcatchment 3E-S: Sub-3E-S

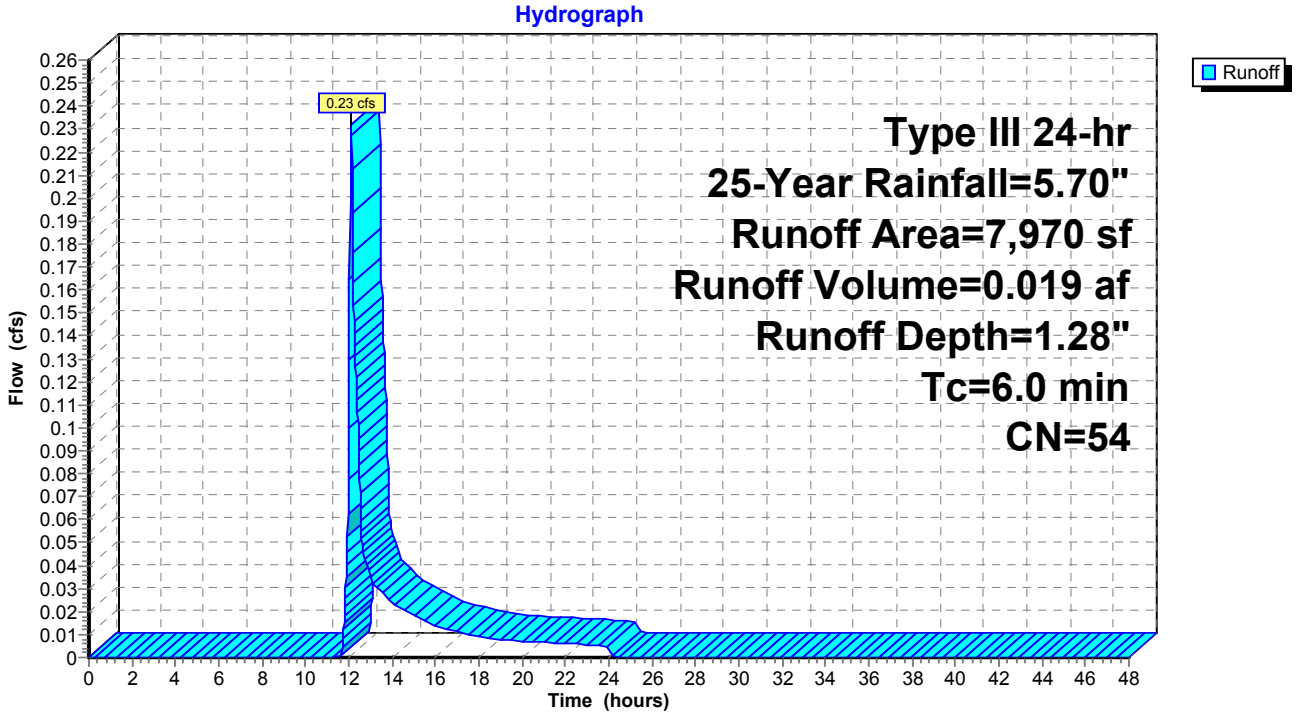
Runoff = 0.23 cfs @ 12.10 hrs, Volume= 0.019 af, Depth= 1.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
*	97	98	Riprap, HSG B
*	14	98	Riprap, HSG A
	4,411	55	Woods, Good, HSG B
	130	30	Woods, Good, HSG A
	1,396	39	>75% Grass cover, Good, HSG A
	1,922	61	>75% Grass cover, Good, HSG B
	7,970	54	Weighted Average
	7,859		98.61% Pervious Area
	111		1.39% Impervious Area

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

Subcatchment 3E-S: Sub-3E-S



Summary for Subcatchment 3F-1R: Roofs 26-28 FB

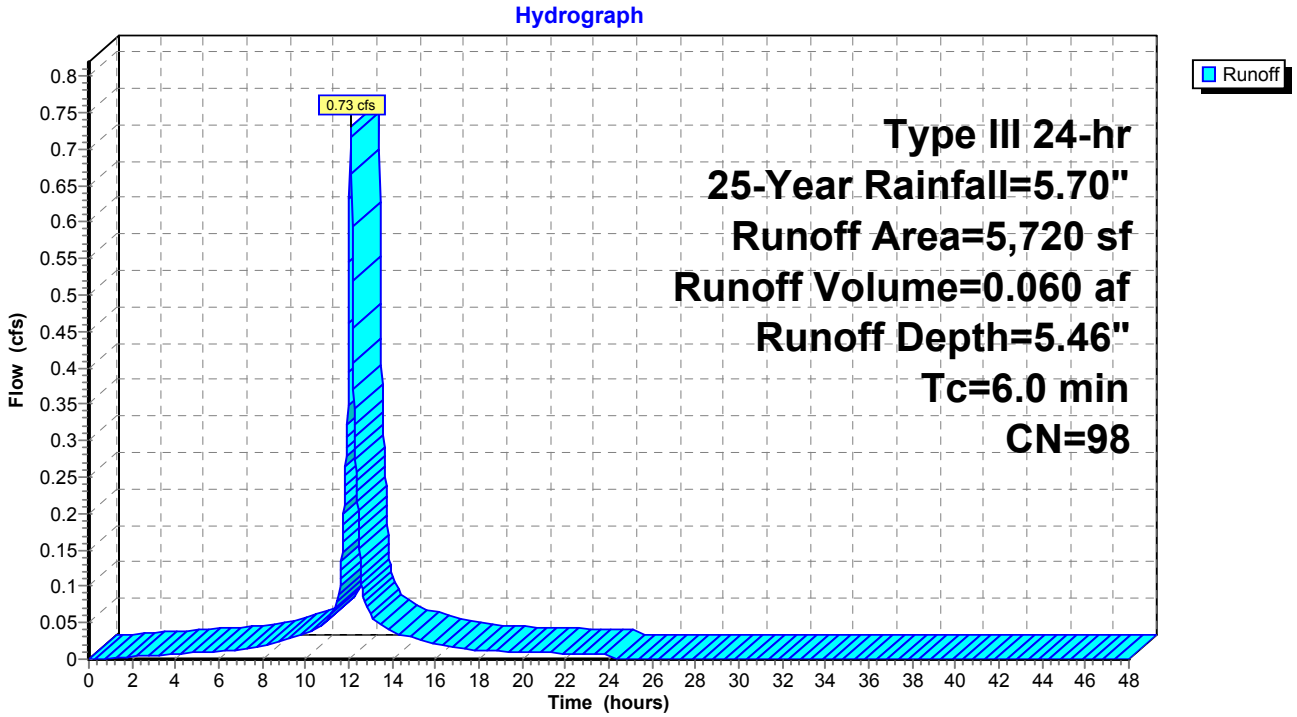
Runoff = 0.73 cfs @ 12.08 hrs, Volume= 0.060 af, Depth= 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

Area (sf)	CN	Description
5,720	98	Roofs, HSG A
5,720		100.00% Impervious Area

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

Subcatchment 3F-1R: Roofs 26-28 FB



Summary for Subcatchment 3F-2R: Roofs 29-30 B, 31 FB

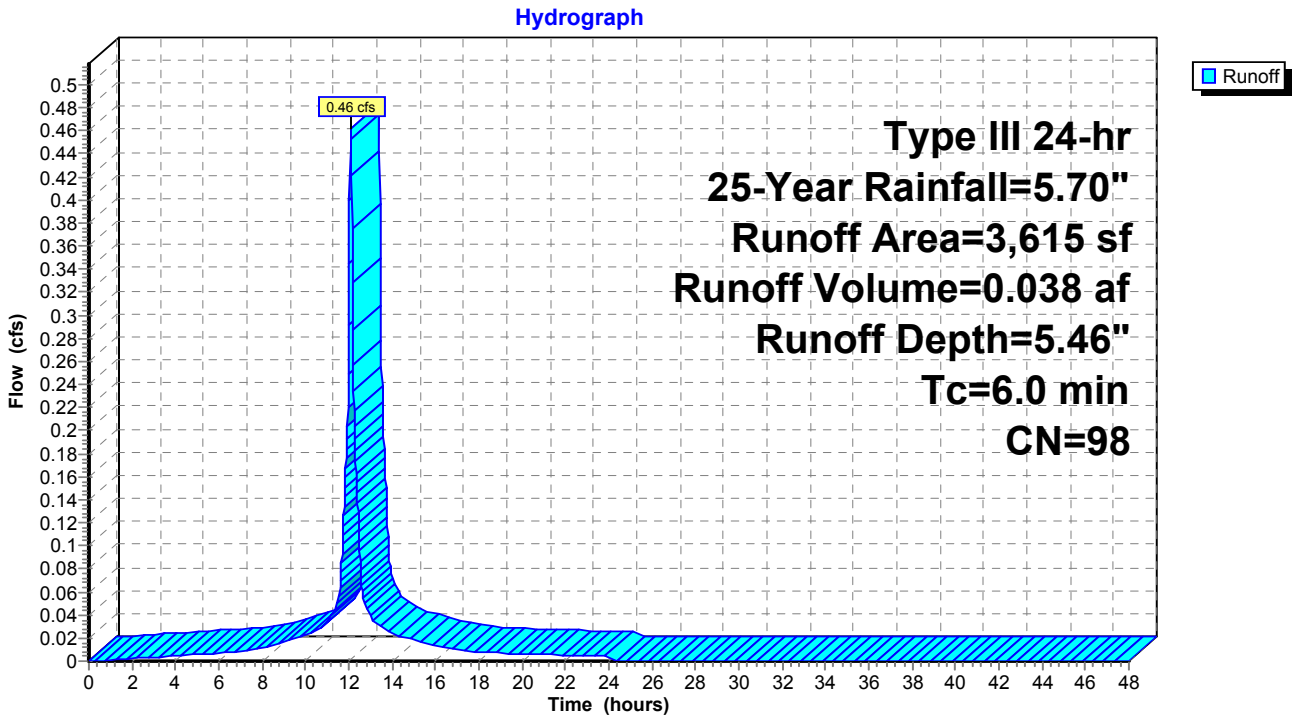
Runoff = 0.46 cfs @ 12.08 hrs, Volume= 0.038 af, Depth= 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
*	1,728	98	Roofs, HSG A
	1,887	98	Roofs, HSG A
	3,615	98	Weighted Average
	3,615		100.00% Impervious Area

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

Subcatchment 3F-2R: Roofs 29-30 B, 31 FB



Summary for Subcatchment 3F-3R: Roofs 29 F

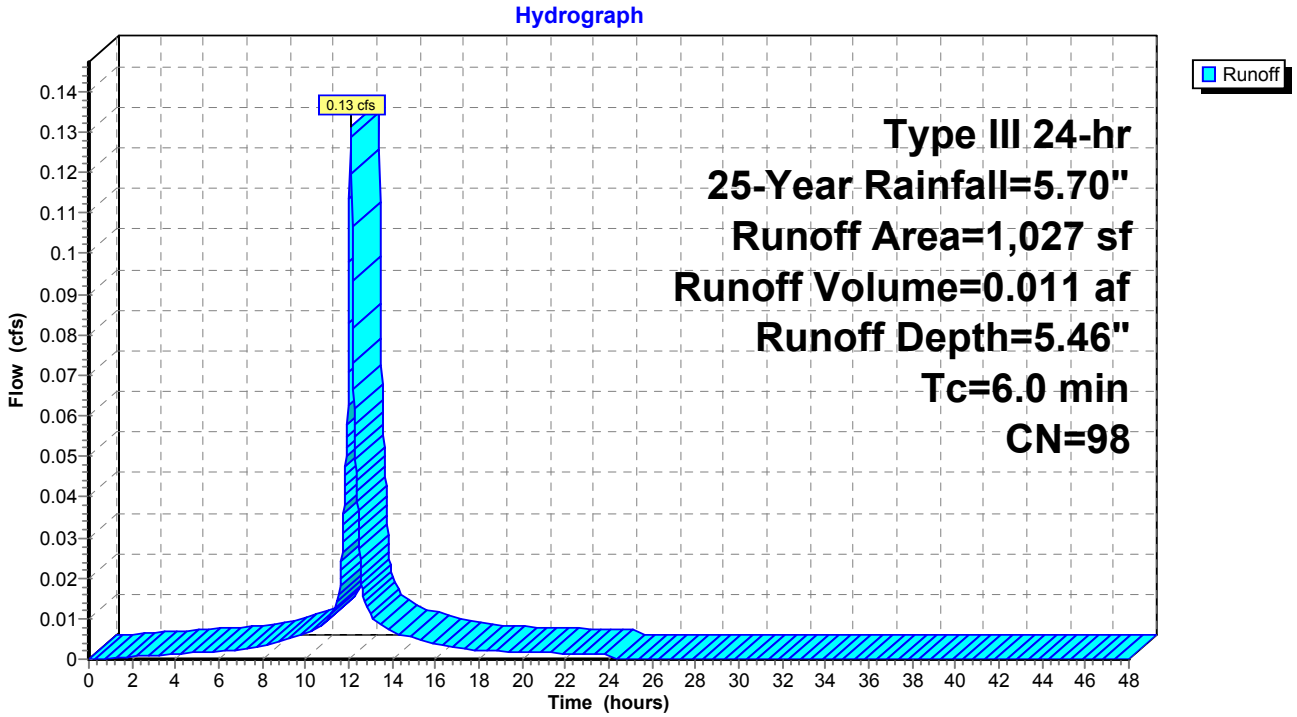
Runoff = 0.13 cfs @ 12.08 hrs, Volume= 0.011 af, Depth= 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

Area (sf)	CN	Description
1,027	98	Roofs, HSG A
1,027		100.00% Impervious Area

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

Subcatchment 3F-3R: Roofs 29 F



Summary for Subcatchment 3F-4R: Roofs 30 F

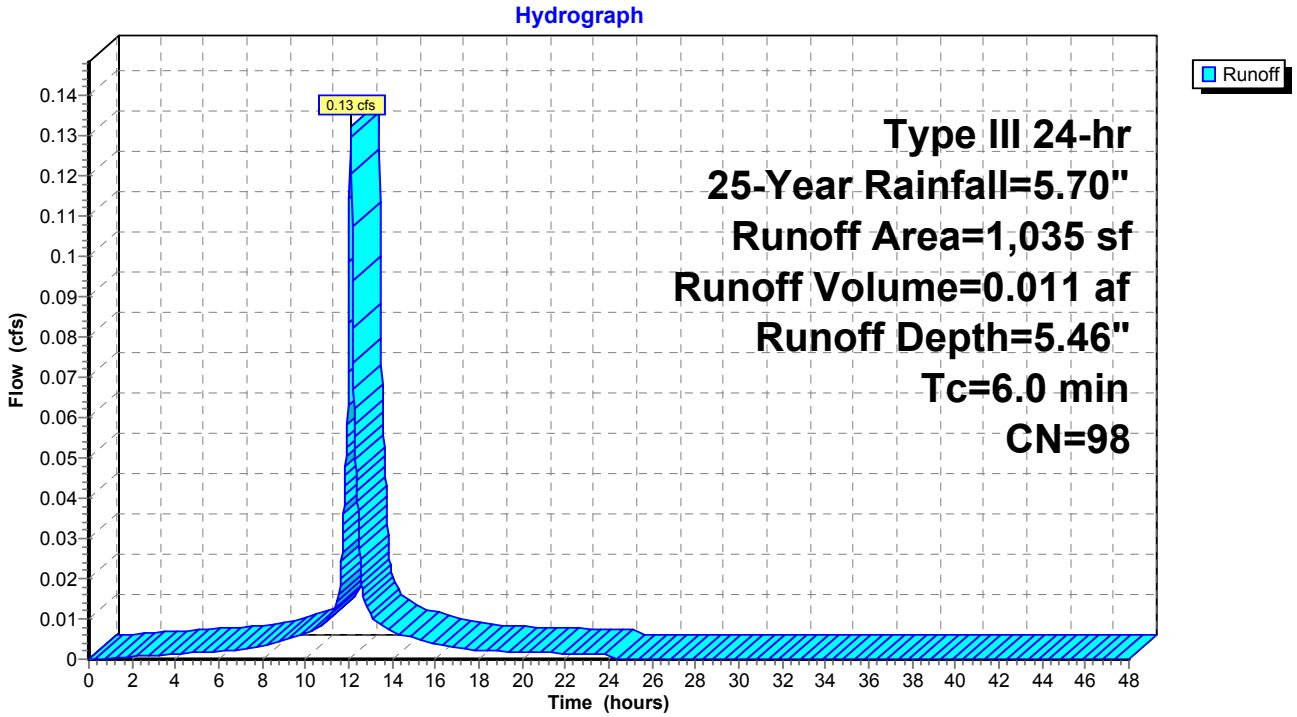
Runoff = 0.13 cfs @ 12.08 hrs, Volume= 0.011 af, Depth= 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

Area (sf)	CN	Description
1,035	98	Roofs, HSG A
1,035		100.00% Impervious Area

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

Subcatchment 3F-4R: Roofs 30 F



Summary for Subcatchment 3F-S: Sub-3F-S

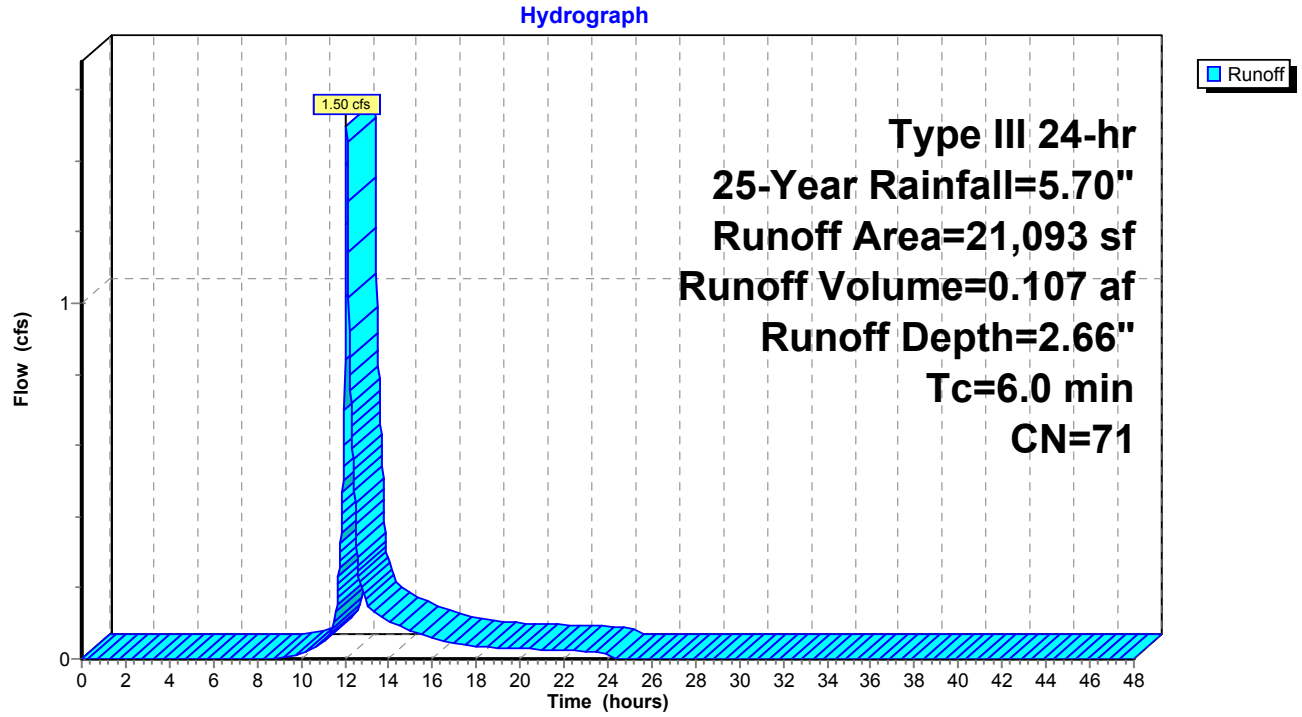
Runoff = 1.50 cfs @ 12.09 hrs, Volume= 0.107 af, Depth= 2.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
*	3,112	98	Paved drives, HSG A
*	85	98	Paved drives, HSG B
*	3,514	98	Paved roads w/curbs & sewers, HSG A
	2,279	98	Paved roads w/curbs & sewers, HSG B
*	1,089	98	Paved sidewalk, HSG A
*	508	98	Paved sidewalk, HSG B
*	209	98	Walks, HSG A
*	4	98	Walks, HSG B
*	371	98	Decks, HSG A
	9,065	39	>75% Grass cover, Good, HSG A
	857	61	>75% Grass cover, Good, HSG B
	21,093	71	Weighted Average
	9,922		47.04% Pervious Area
	11,171		52.96% Impervious Area

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

Subcatchment 3F-S: Sub-3F-S



Summary for Subcatchment 3G-1R: Roof 9 FB

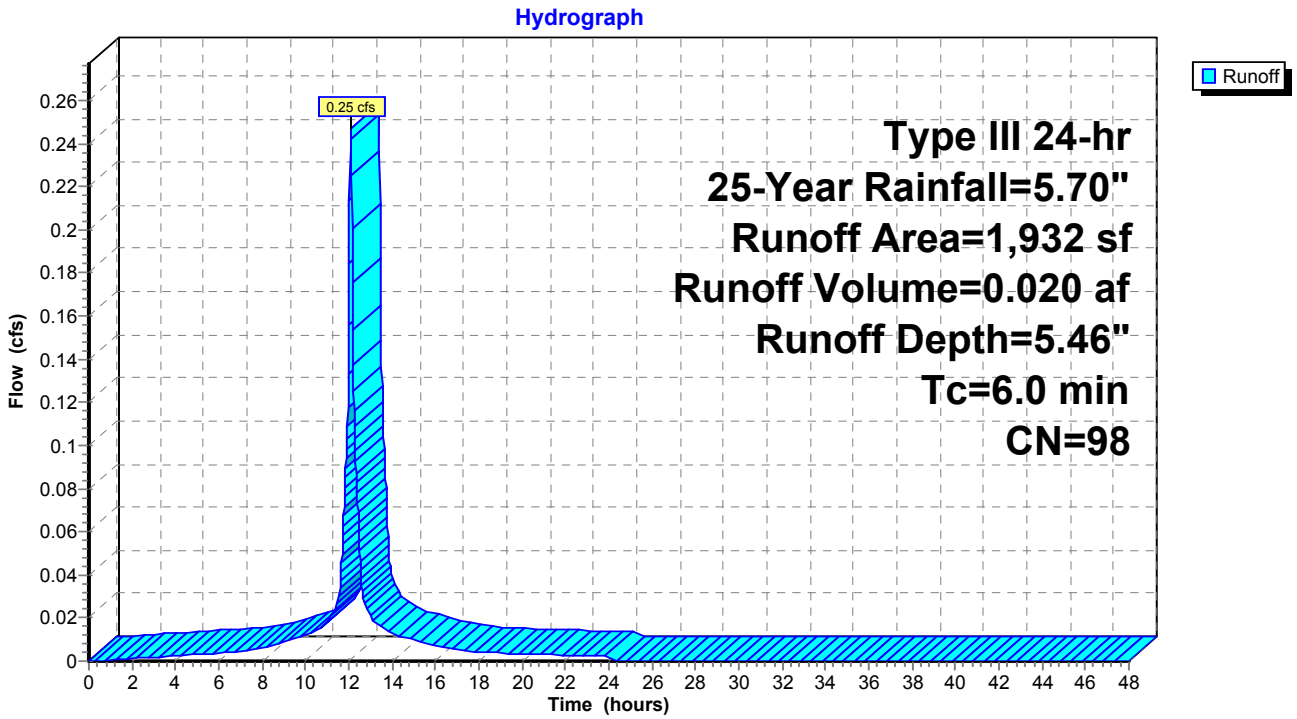
Runoff = 0.25 cfs @ 12.08 hrs, Volume= 0.020 af, Depth= 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
	1,085	98	Roofs, HSG A
*	847	98	Roofs, HSG B
	1,932	98	Weighted Average
	1,932		100.00% Impervious Area

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

Subcatchment 3G-1R: Roof 9 FB



Summary for Subcatchment 3G-2R: Roofs 11 F

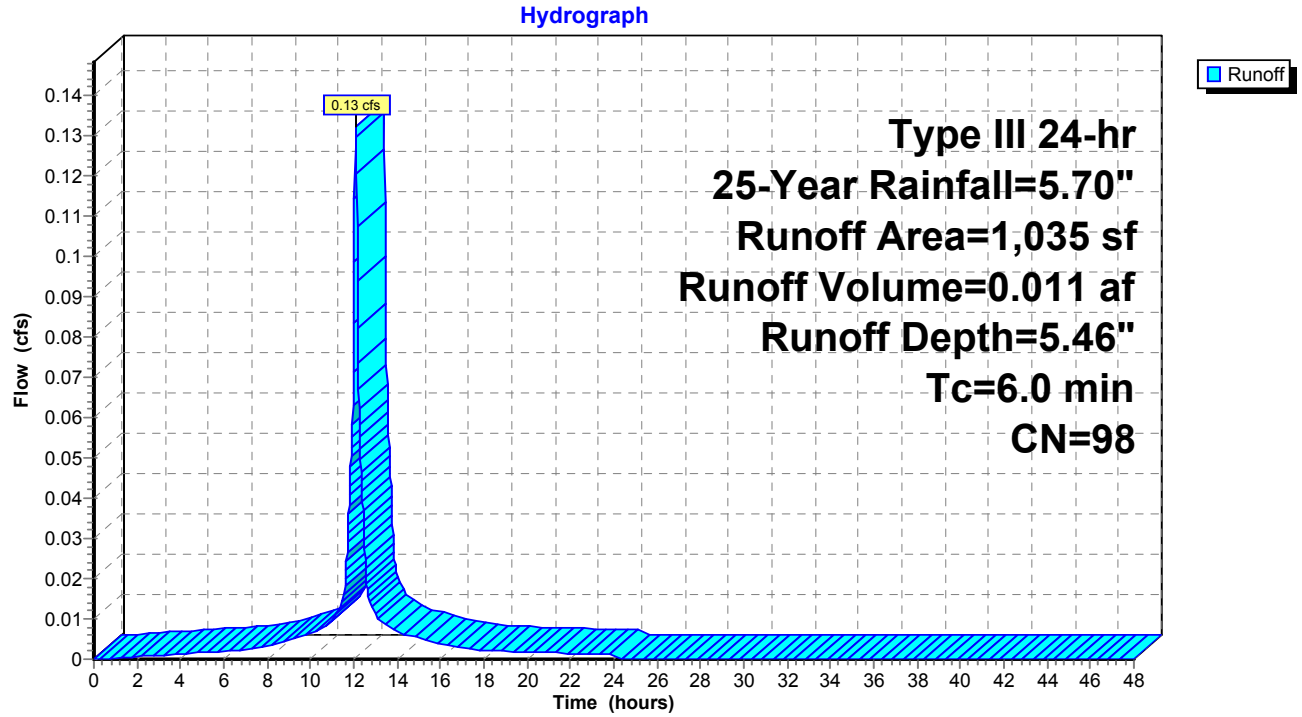
Runoff = 0.13 cfs @ 12.08 hrs, Volume= 0.011 af, Depth= 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
*	1,035	98	Roofs, HSG B
	1,035		100.00% Impervious Area

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

Subcatchment 3G-2R: Roofs 11 F



Summary for Subcatchment 3G-3R: Roofs 12 F

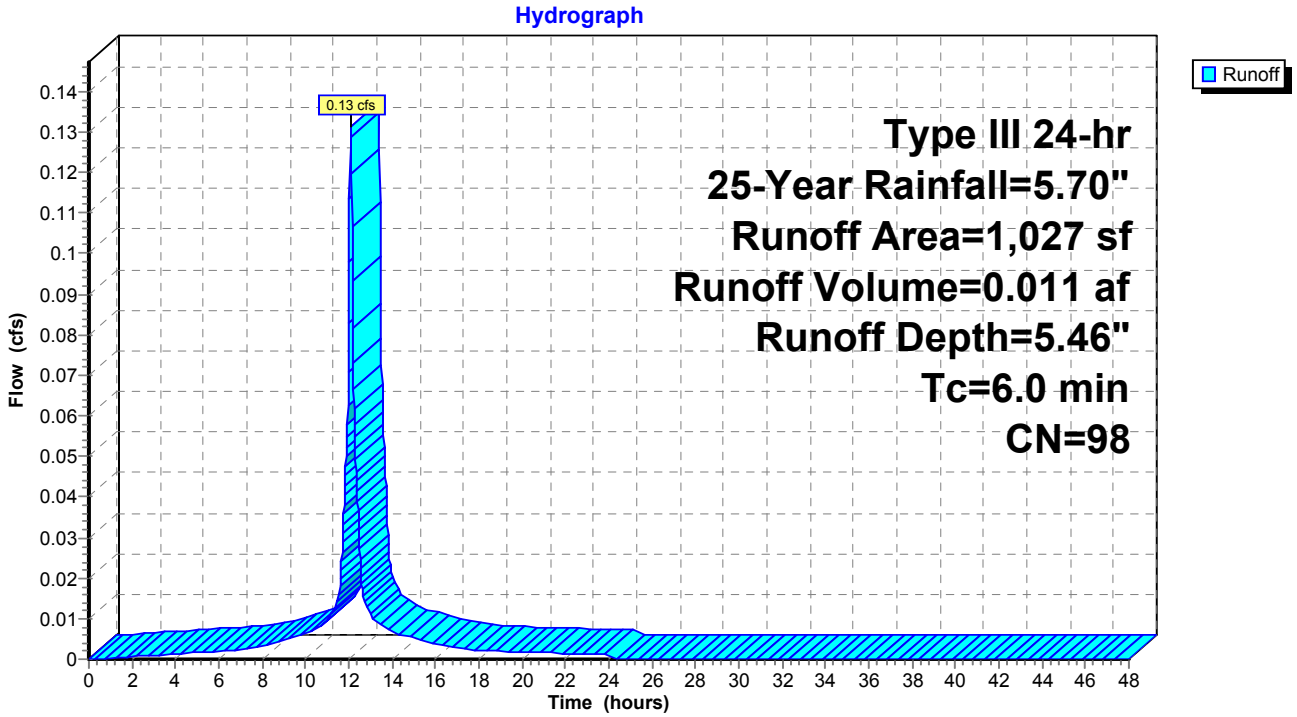
Runoff = 0.13 cfs @ 12.08 hrs, Volume= 0.011 af, Depth= 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
*	1,027	98	Roofs, HSG B
	1,027		100.00% Impervious Area

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

Subcatchment 3G-3R: Roofs 12 F



Summary for Subcatchment 3G-4R: Roofs 13 F

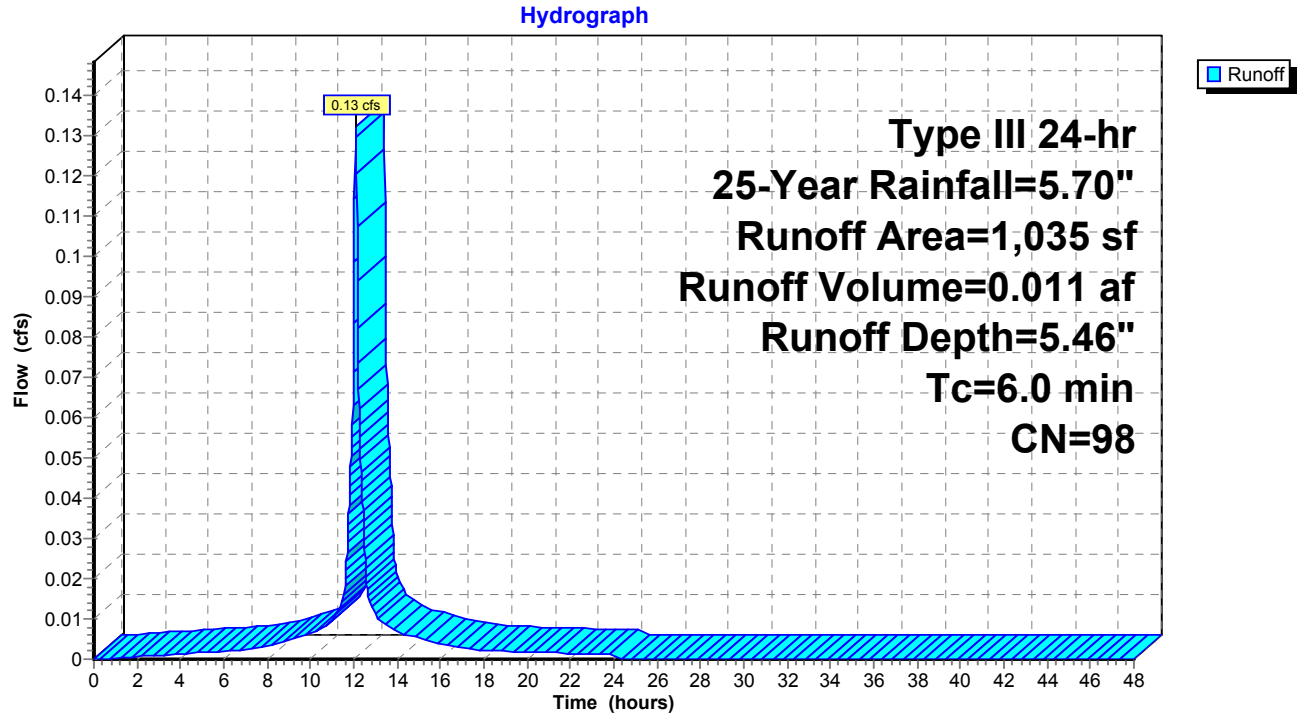
Runoff = 0.13 cfs @ 12.08 hrs, Volume= 0.011 af, Depth= 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
*	1,035	98	Roofs, HSG B
	1,035		100.00% Impervious Area

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

Subcatchment 3G-4R: Roofs 13 F



Summary for Subcatchment 3G-5R: Roofs 14 F

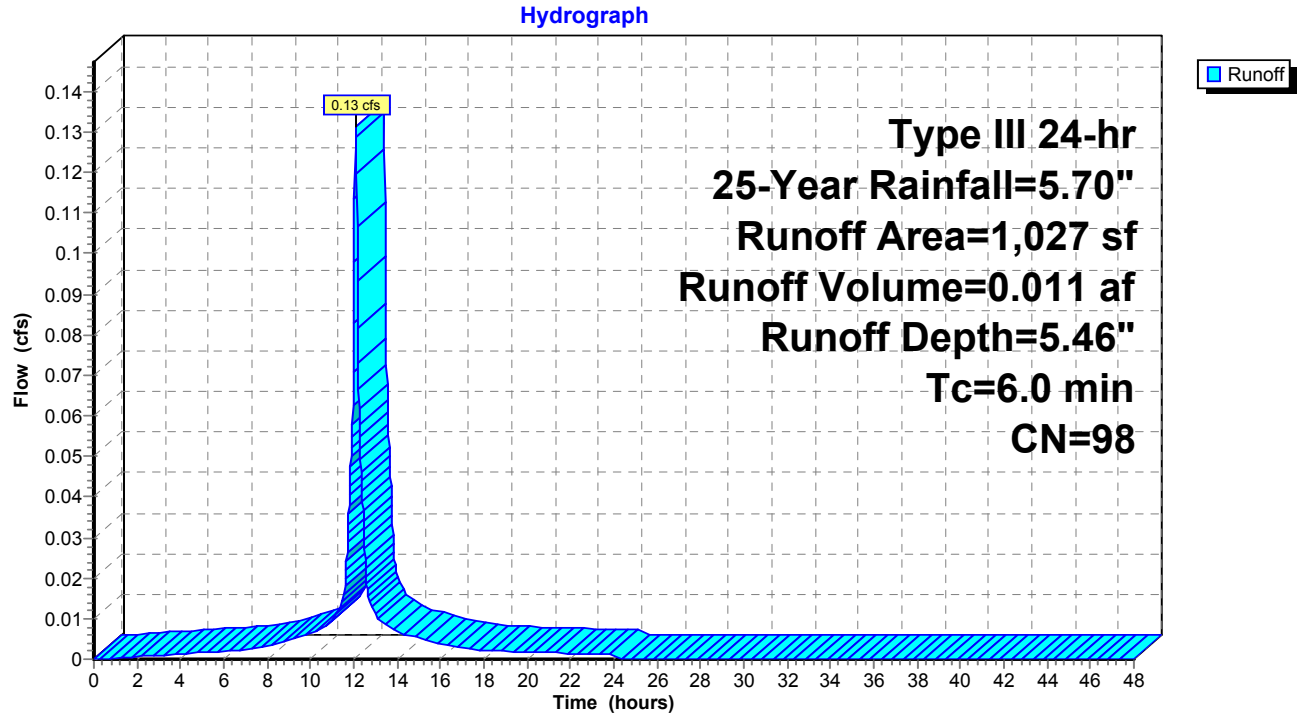
Runoff = 0.13 cfs @ 12.08 hrs, Volume= 0.011 af, Depth= 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
*	1,027	98	Roofs, HSG B
	1,027		100.00% Impervious Area

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

Subcatchment 3G-5R: Roofs 14 F



Summary for Subcatchment 3G-6R: Roofs 15 F

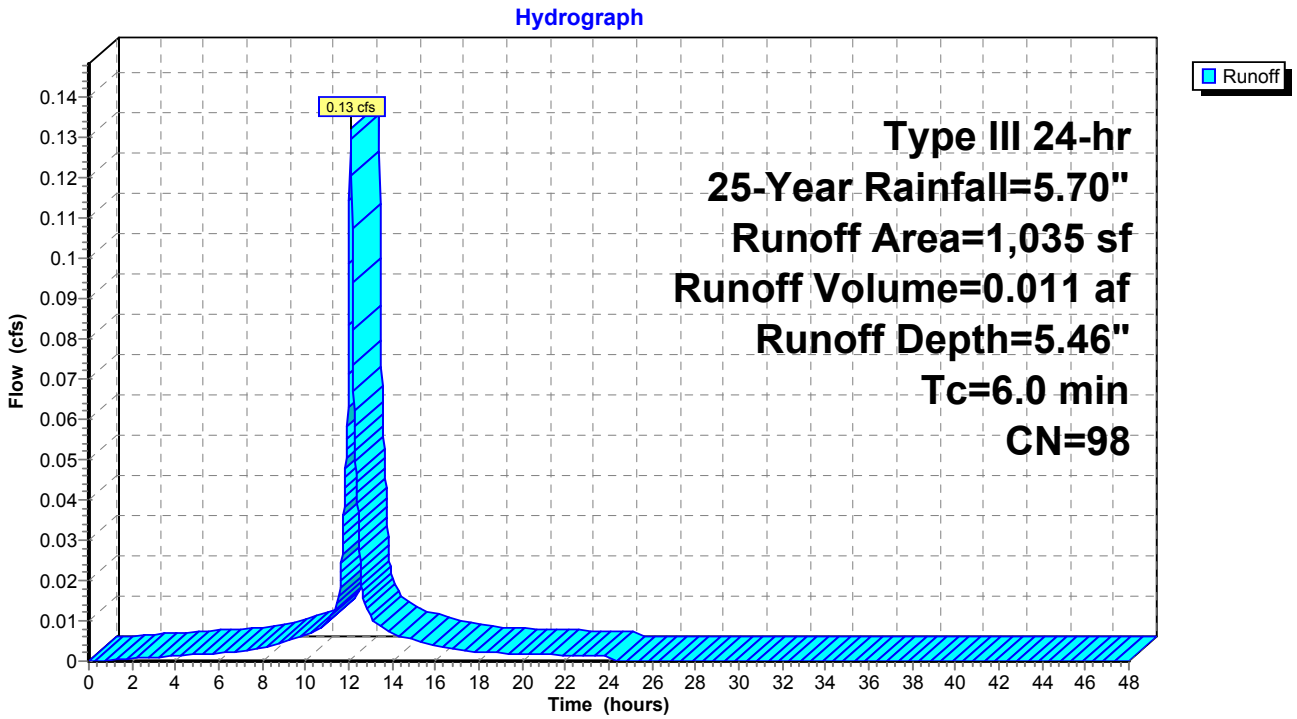
Runoff = 0.13 cfs @ 12.08 hrs, Volume= 0.011 af, Depth= 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
	98	98	Roofs, HSG A
*	937	98	Roofs, HSG B
	1,035	98	Weighted Average
	1,035		100.00% Impervious Area

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

Subcatchment 3G-6R: Roofs 15 F



Summary for Subcatchment 3G-S: Sub-3G-S

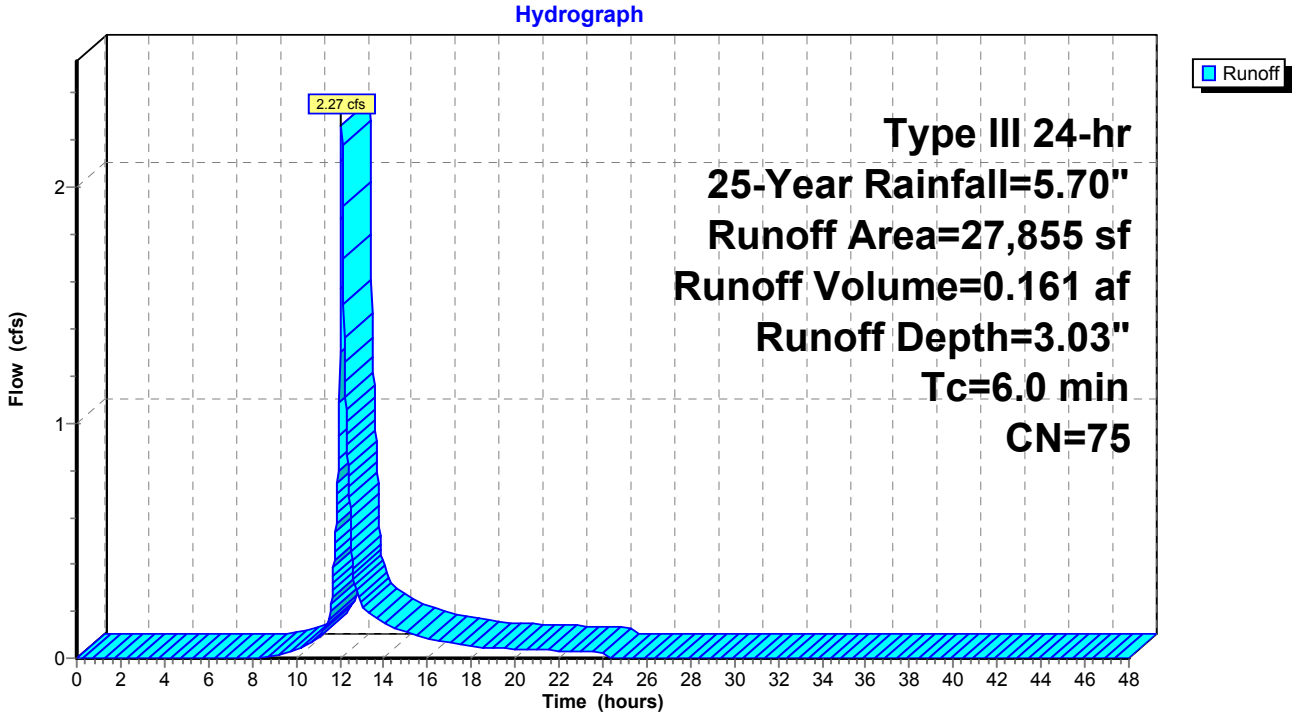
Runoff = 2.27 cfs @ 12.09 hrs, Volume= 0.161 af, Depth= 3.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
*	236	98	Paved drives, HSG A
*	3,067	98	Paved drives, HSG B
*	5,613	98	Paved roads w/curbs & sewers, HSG A
	4,837	98	Paved roads w/curbs & sewers, HSG B
*	1,272	98	Paved sidewalk, HSG A
*	617	98	Paved sidewalk, HSG B
*	42	98	Walks, HSG A
*	255	98	Walks, HSG B
	9,558	39	>75% Grass cover, Good, HSG A
	2,358	61	>75% Grass cover, Good, HSG B
	27,855	75	Weighted Average
	11,916		42.78% Pervious Area
	15,939		57.22% Impervious Area

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

Subcatchment 3G-S: Sub-3G-S



Summary for Subcatchment 3H-S: Sub-3A

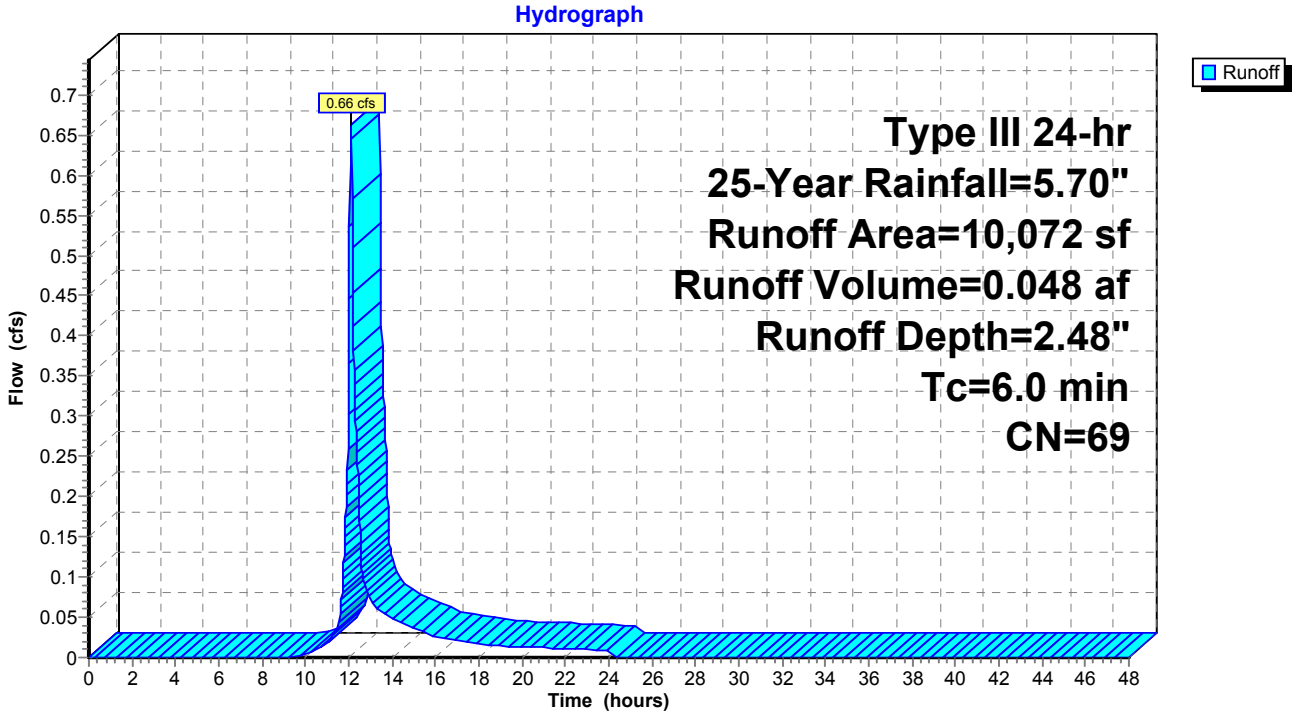
Runoff = 0.66 cfs @ 12.09 hrs, Volume= 0.048 af, Depth= 2.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
*	2,235	98	Paved drives, HSG A
	1,736	98	Paved roads w/curbs & sewers, HSG A
*	85	98	Walks, HSG A
	4,959	39	>75% Grass cover, Good, HSG A
*	889	98	Paved sidewalk, HSG A
*	168	98	Walls, HSG A
	10,072	69	Weighted Average
	4,959		49.24% Pervious Area
	5,113		50.76% Impervious Area

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

Subcatchment 3H-S: Sub-3A



Summary for Subcatchment 3I-S: Sub-3I-S

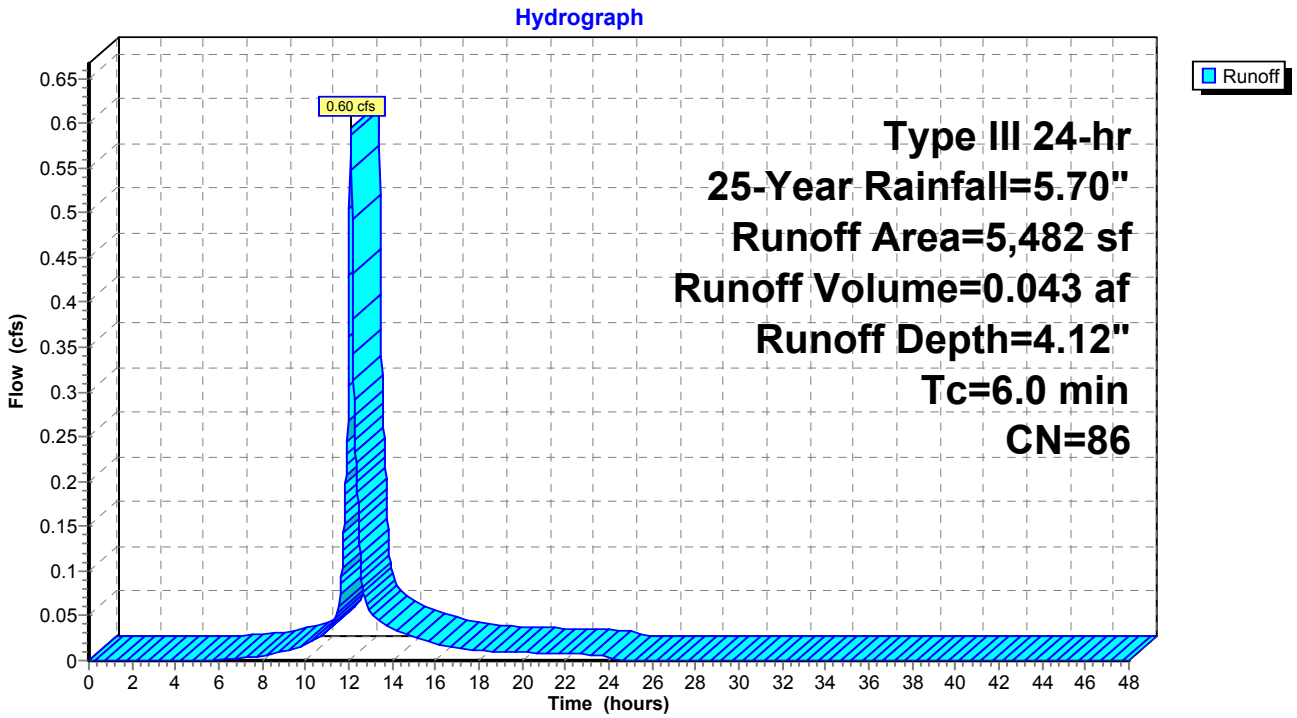
Runoff = 0.60 cfs @ 12.09 hrs, Volume= 0.043 af, Depth= 4.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
*	955	98	Paved drives, HSG A
*	3,322	98	Paved roads w/curbs & sewers, HSG A
*	85	98	Walks, HSG A
	1,120	39	>75% Grass cover, Good, HSG A
	5,482	86	Weighted Average
	1,120		20.43% Pervious Area
	4,362		79.57% Impervious Area

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

Subcatchment 3I-S: Sub-3I-S



Summary for Subcatchment 4S: Sub-4

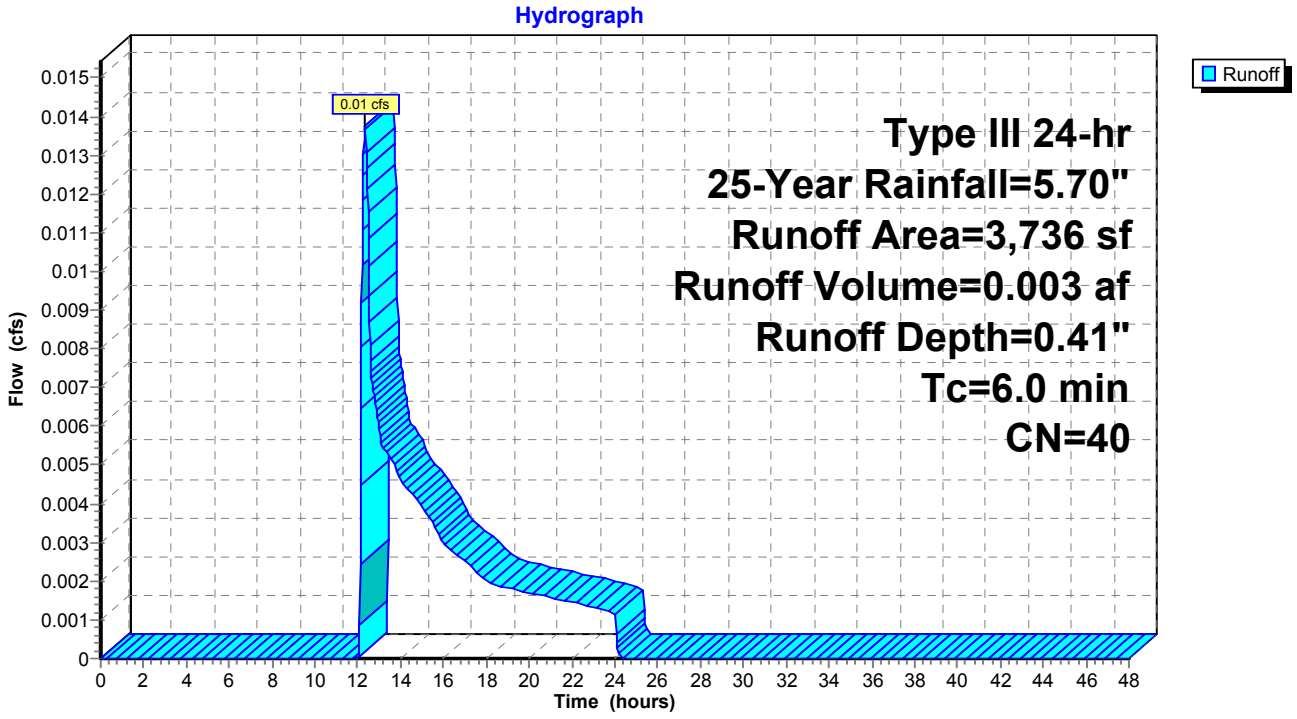
Runoff = 0.01 cfs @ 12.35 hrs, Volume= 0.003 af, Depth= 0.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
	3,694	39	>75% Grass cover, Good, HSG A
*	42	98	Walks, HSG A
	3,736	40	Weighted Average
	3,694		98.88% Pervious Area
	42		1.12% Impervious Area

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

Subcatchment 4S: Sub-4



Summary for Subcatchment 4S-1: Sub-4

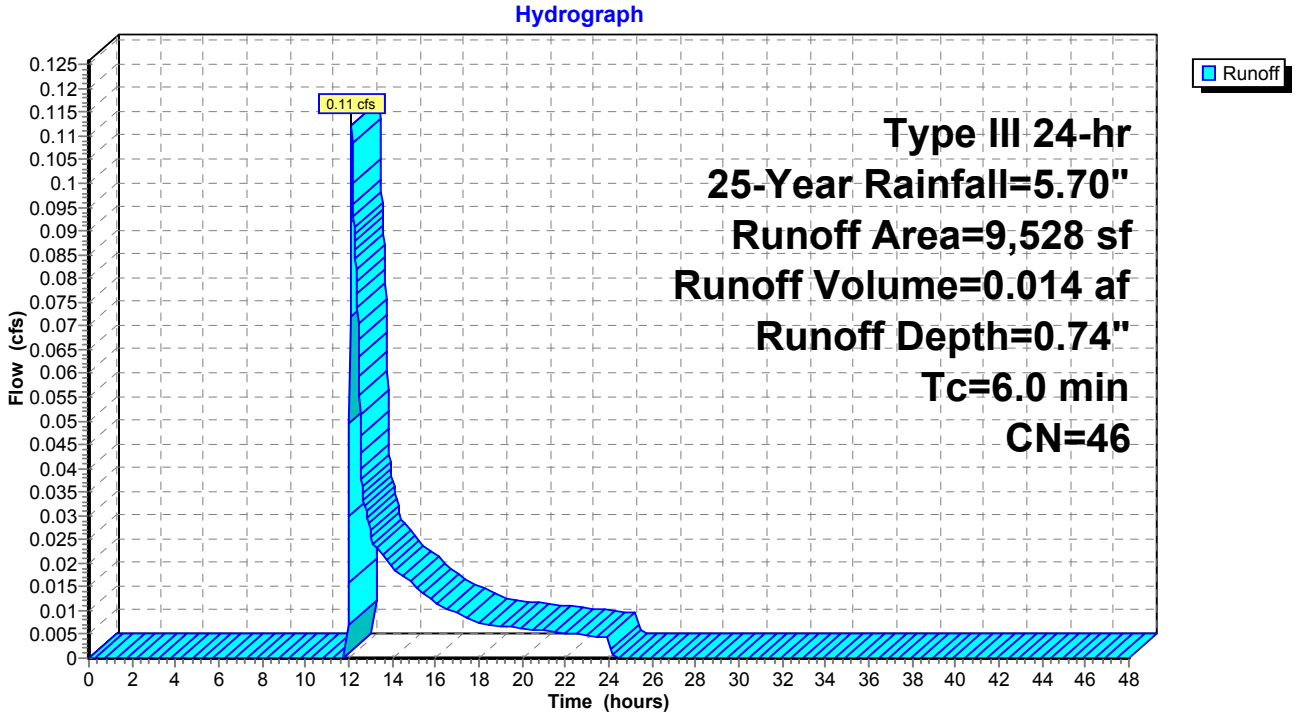
Runoff = 0.11 cfs @ 12.13 hrs, Volume= 0.014 af, Depth= 0.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
	8,378	39	>75% Grass cover, Good, HSG A
*	926	98	Decks, HSG A
*	224	98	Walls, HSG A
	9,528	46	Weighted Average
	8,378		87.93% Pervious Area
	1,150		12.07% Impervious Area

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

Subcatchment 4S-1: Sub-4



Summary for Subcatchment 4S-1R: Roofs 32 FB

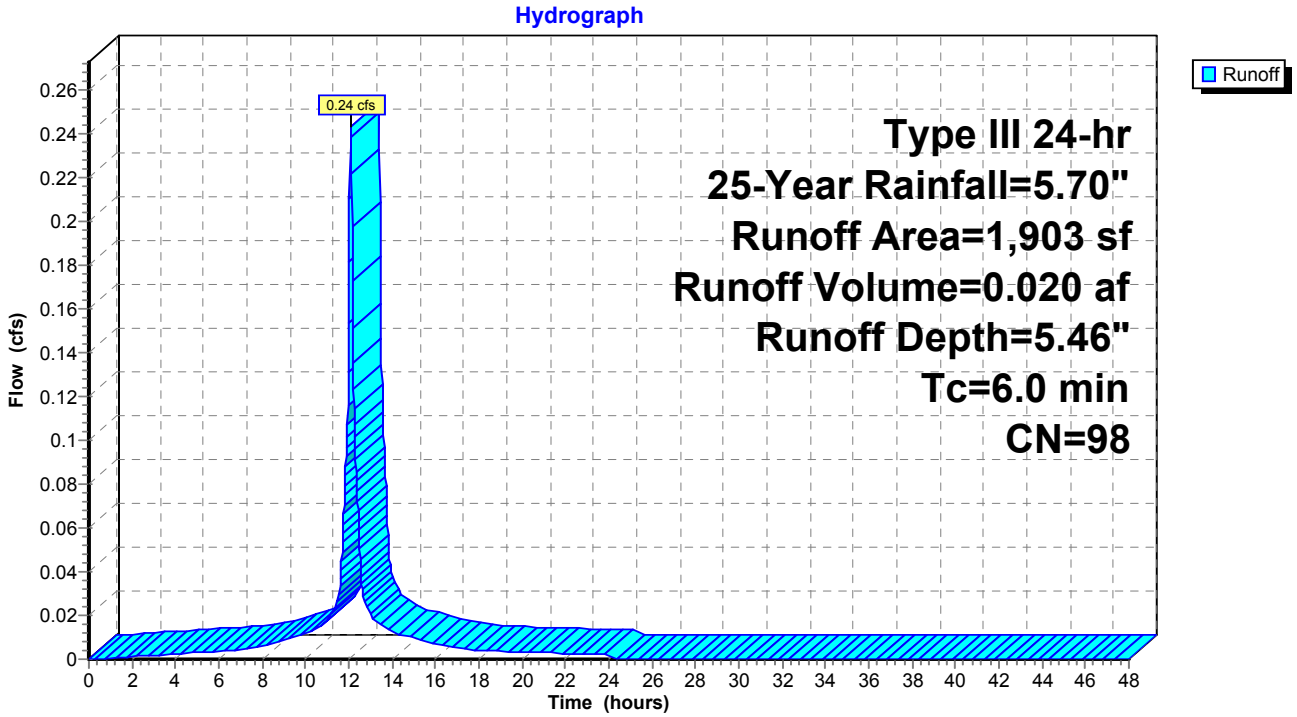
Runoff = 0.24 cfs @ 12.08 hrs, Volume= 0.020 af, Depth= 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

Area (sf)	CN	Description
1,903	98	Roofs, HSG A
1,903		100.00% Impervious Area

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

Subcatchment 4S-1R: Roofs 32 FB



Summary for Subcatchment 5S: Sub -5

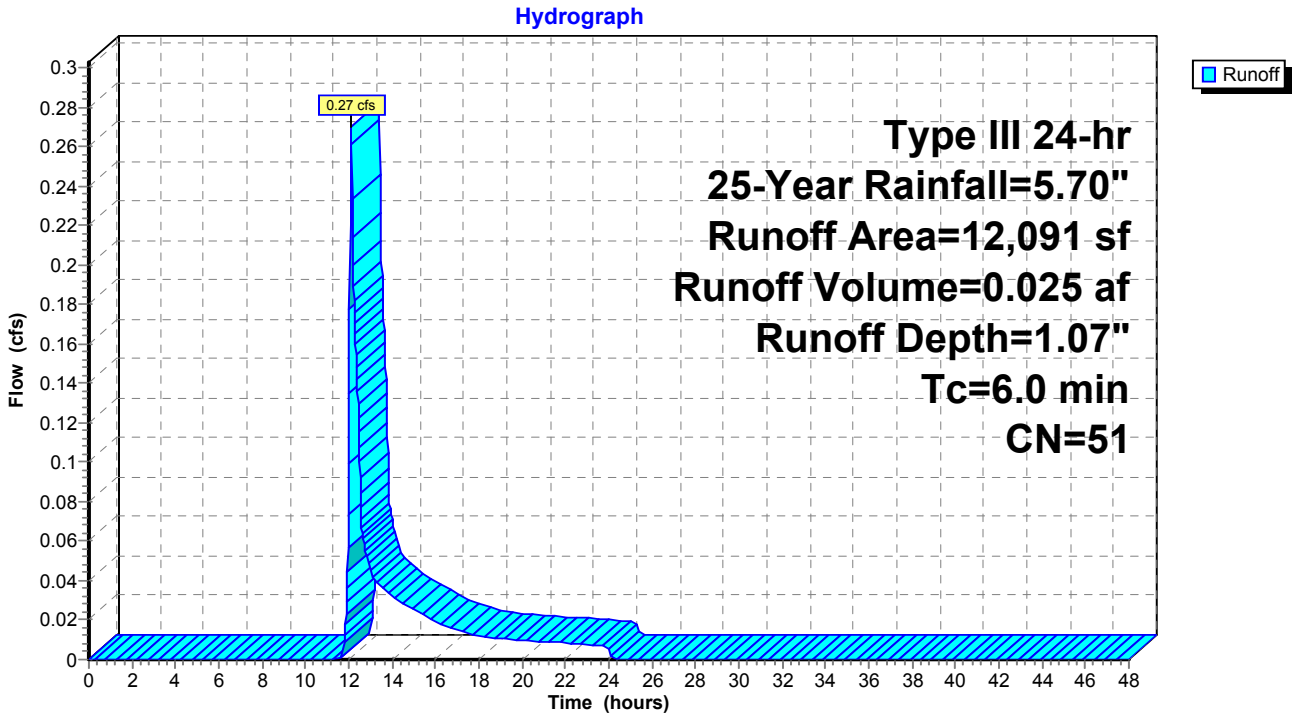
Runoff = 0.27 cfs @ 12.11 hrs, Volume= 0.025 af, Depth= 1.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
	6,491	39	>75% Grass cover, Good, HSG A
	365	80	>75% Grass cover, Good, HSG D
*	556	98	Decks, HSG A
*	261	98	Paved sidewalk, HSG A
*	62	98	Paved sidewalk, HSG D
	1,129	98	Paved roads w/curbs & sewers, HSG A
	286	98	Paved roads w/curbs & sewers, HSG D
	2,941	39	>75% Grass cover, Good, HSG A
	12,091	51	Weighted Average
	9,797		81.03% Pervious Area
	2,294		18.97% Impervious Area

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

Subcatchment 5S: Sub -5



Summary for Subcatchment 5S-1: Sub 5S-1

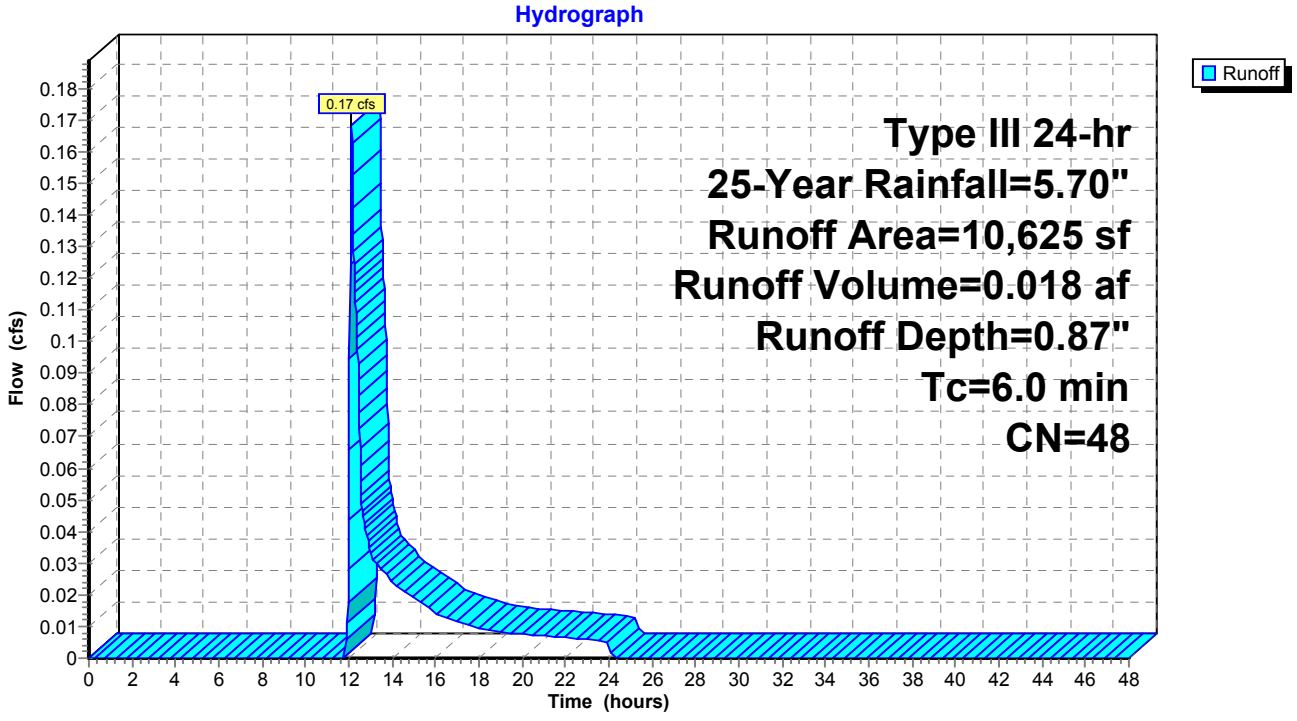
Runoff = 0.17 cfs @ 12.12 hrs, Volume= 0.018 af, Depth= 0.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
*	1,175	98	Walls, HSG A
*	371	98	Decks, HSG A
	9,079	39	>75% Grass cover, Good, HSG A
	10,625	48	Weighted Average
	9,079		85.45% Pervious Area
	1,546		14.55% Impervious Area

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

Subcatchment 5S-1: Sub 5S-1



Summary for Subcatchment 5S-1R: Roofs 19-21 FB

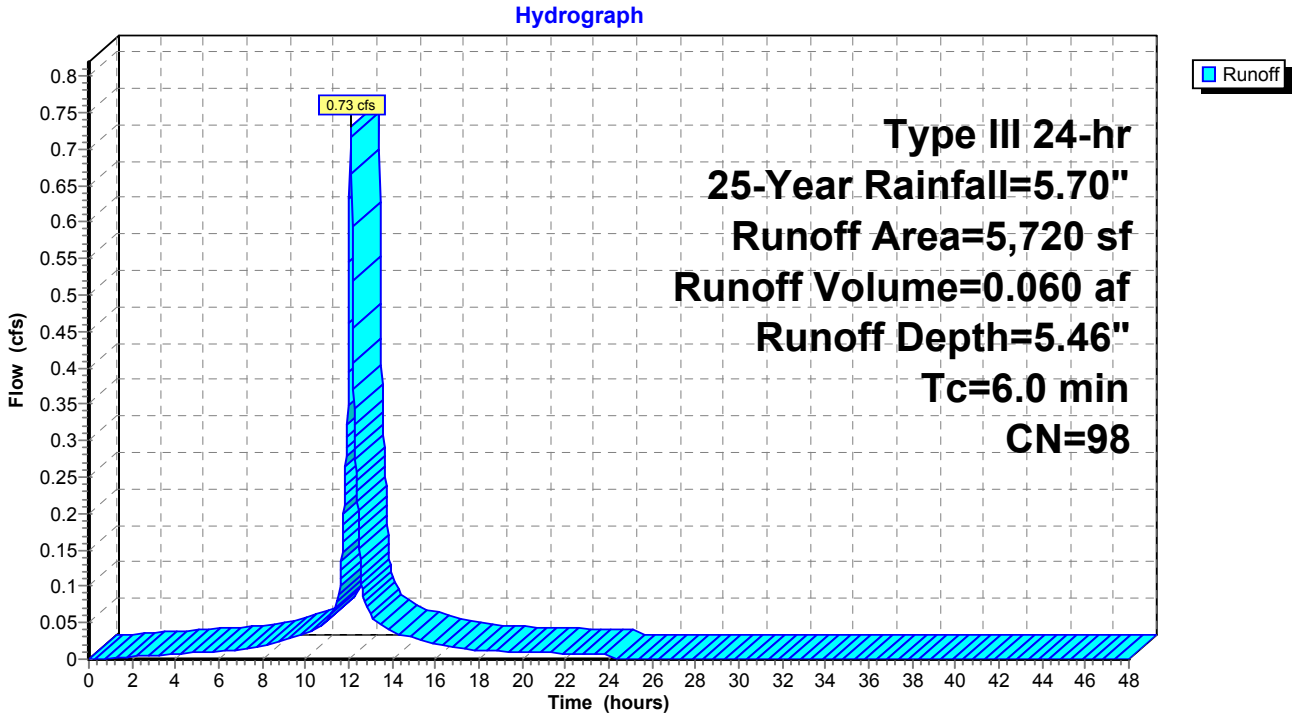
Runoff = 0.73 cfs @ 12.08 hrs, Volume= 0.060 af, Depth= 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

Area (sf)	CN	Description
5,720	98	Roofs, HSG A
5,720		100.00% Impervious Area

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

Subcatchment 5S-1R: Roofs 19-21 FB



Summary for Subcatchment 5S-P: Pavement

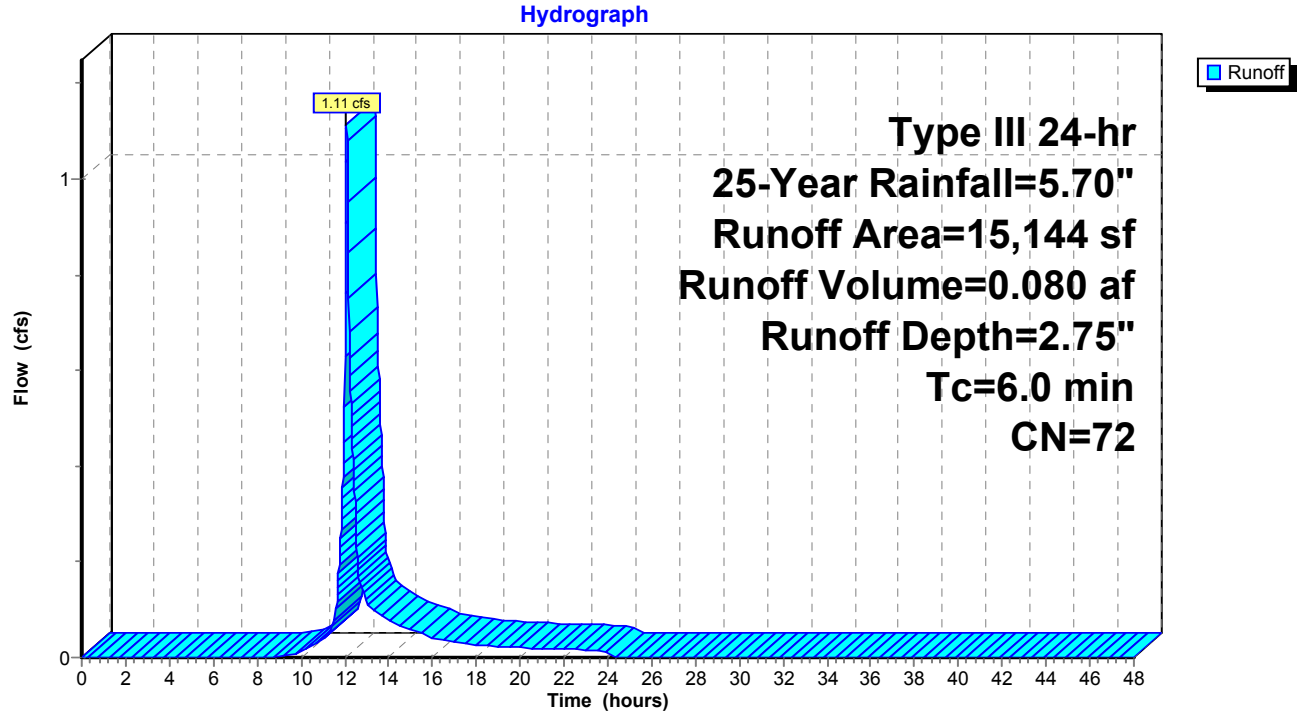
Runoff = 1.11 cfs @ 12.09 hrs, Volume= 0.080 af, Depth= 2.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-Year Rainfall=5.70"

	Area (sf)	CN	Description
*	2,816	98	Paved drives, HSG A
	4,704	98	Paved roads w/curbs & sewers, HSG A
	6,584	39	>75% Grass cover, Good, HSG A
*	643	98	Paved sidewalk, HSG A
*	297	98	Walks, HSG A
*	100	98	Kiosk, HSG A
	15,144	72	Weighted Average
	6,584		43.48% Pervious Area
	8,560		56.52% Impervious Area

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

Subcatchment 5S-P: Pavement

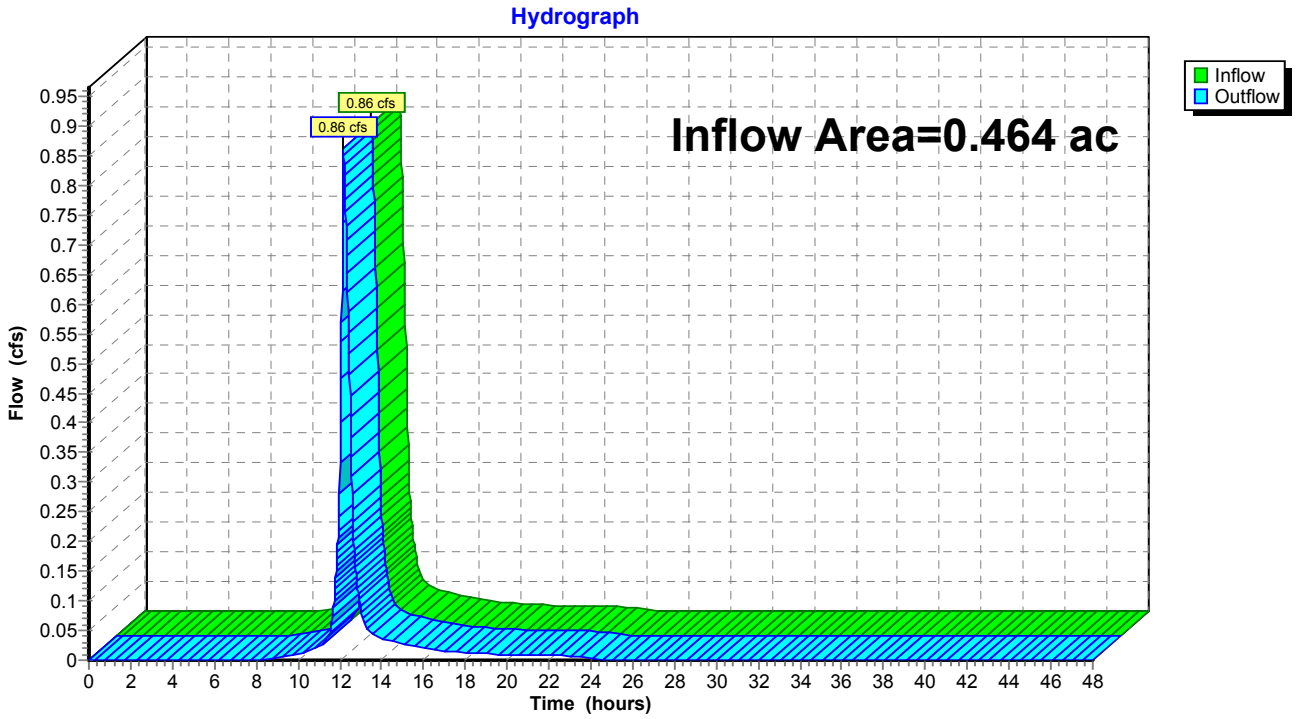


Summary for Reach DP-1: DMH

Inflow Area = 0.464 ac, 64.50% Impervious, Inflow Depth = 1.53" for 25-Year event
Inflow = 0.86 cfs @ 12.17 hrs, Volume= 0.059 af
Outflow = 0.86 cfs @ 12.17 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Reach DP-1: DMH

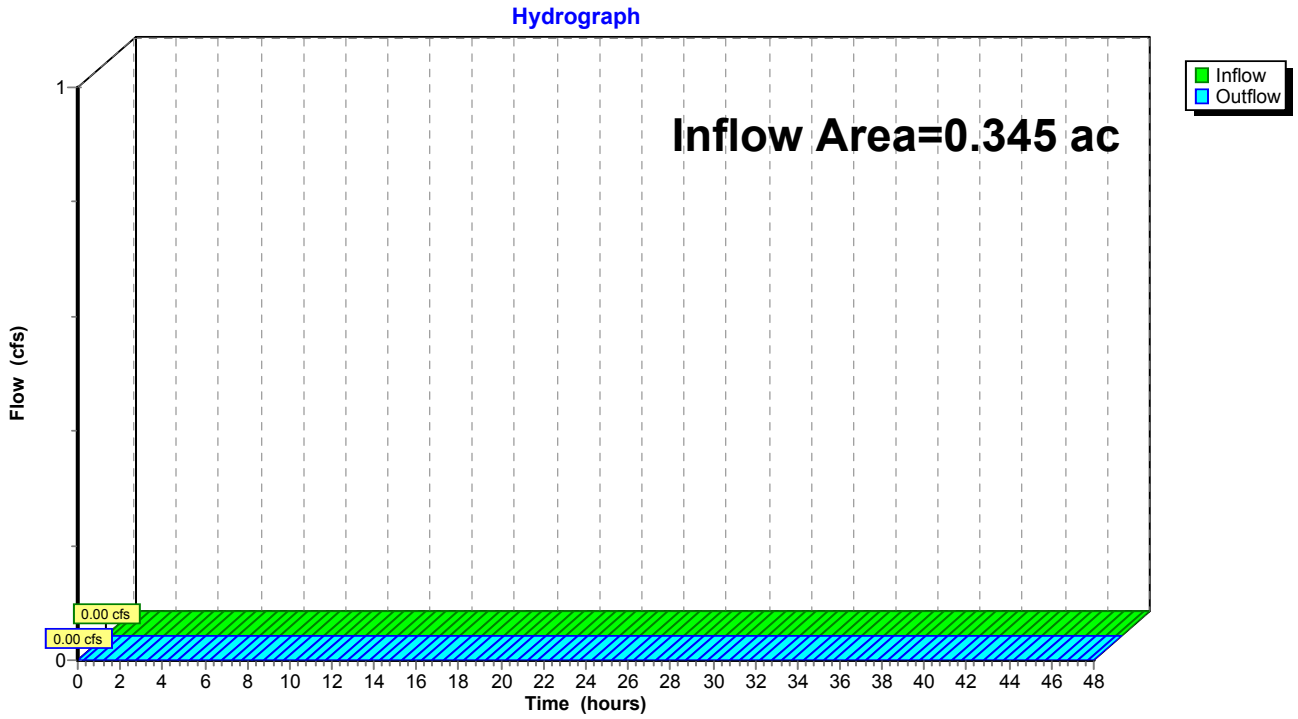


Summary for Reach DP-2: DP-2

Inflow Area = 0.345 ac, 10.74% Impervious, Inflow Depth = 0.00" for 25-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Reach DP-2: DP-2

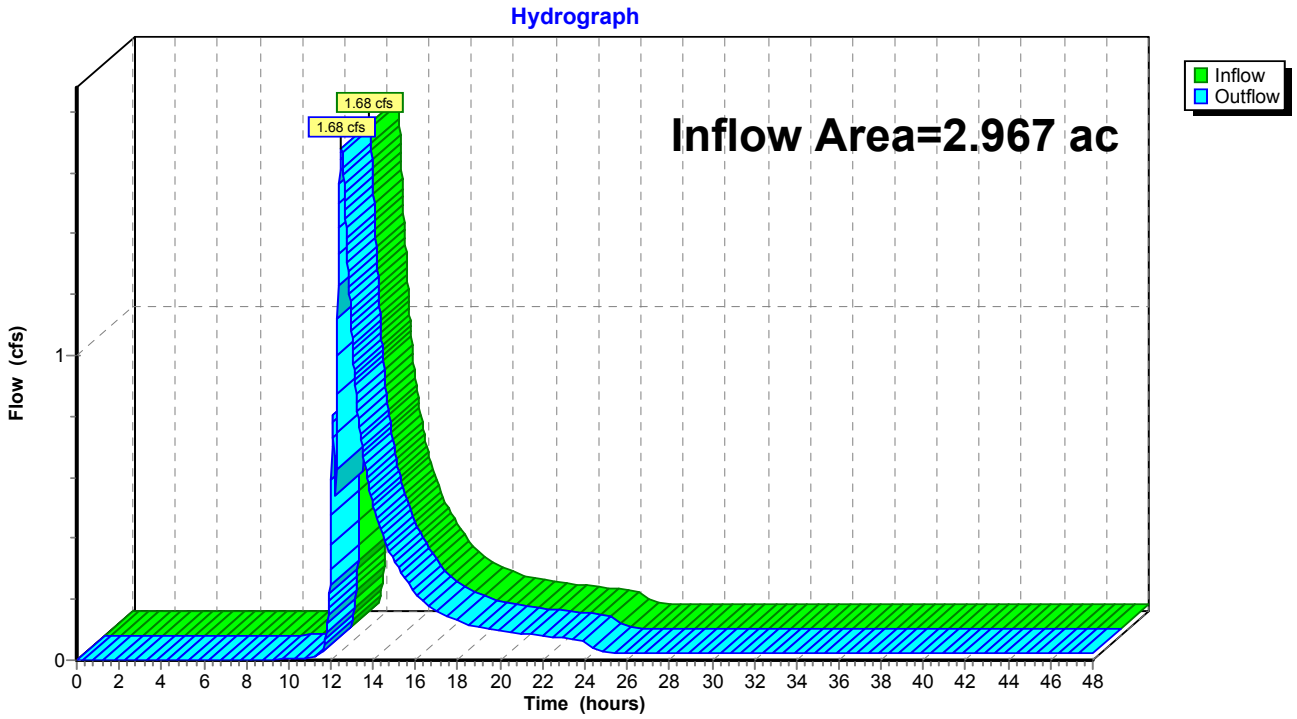


Summary for Reach DP-3: DP-3

Inflow Area = 2.967 ac, 48.40% Impervious, Inflow Depth > 1.38" for 25-Year event
Inflow = 1.68 cfs @ 12.51 hrs, Volume= 0.340 af
Outflow = 1.68 cfs @ 12.51 hrs, Volume= 0.340 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Reach DP-3: DP-3

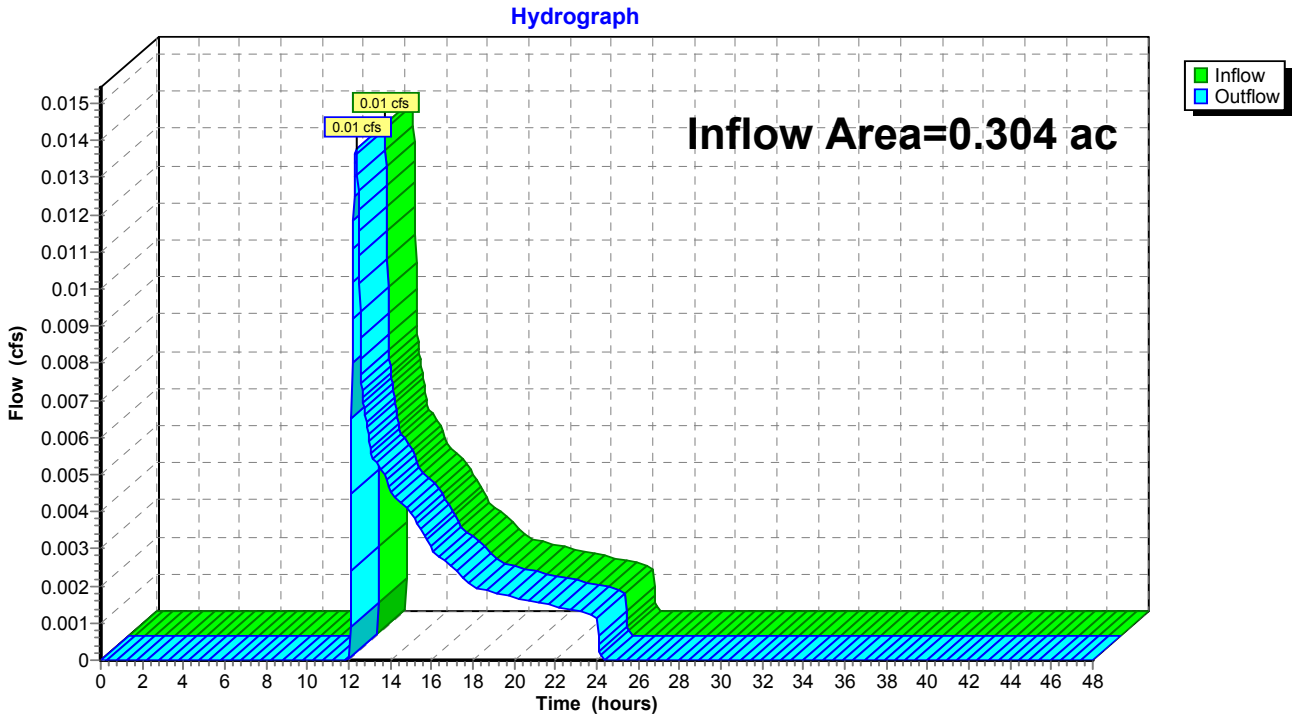


Summary for Reach DP-4: PL

Inflow Area = 0.304 ac, 8.99% Impervious, Inflow Depth = 0.12" for 25-Year event
Inflow = 0.01 cfs @ 12.35 hrs, Volume= 0.003 af
Outflow = 0.01 cfs @ 12.35 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Reach DP-4: PL

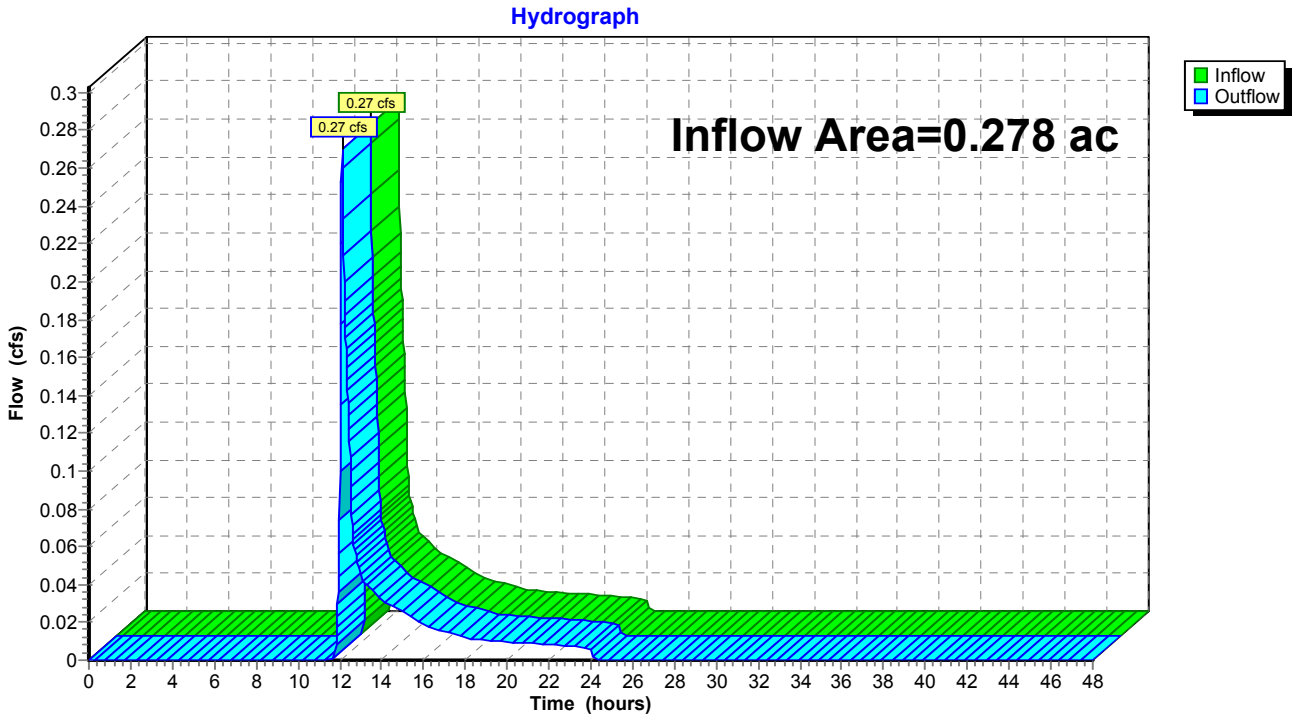


Summary for Reach DP-5: PL

Inflow Area = 0.278 ac, 18.97% Impervious, Inflow Depth = 1.07" for 25-Year event
Inflow = 0.27 cfs @ 12.11 hrs, Volume= 0.025 af
Outflow = 0.27 cfs @ 12.11 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Reach DP-5: PL



Summary for Pond D-1: Depression

Inflow Area = 0.345 ac, 10.74% Impervious, Inflow Depth = 0.63" for 25-Year event
Inflow = 0.12 cfs @ 12.14 hrs, Volume= 0.018 af
Outflow = 0.09 cfs @ 12.45 hrs, Volume= 0.018 af, Atten= 29%, Lag= 18.2 min
Discarded = 0.09 cfs @ 12.45 hrs, Volume= 0.018 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 59.08' @ 12.45 hrs Surf.Area= 449 sf Storage= 34 cf

Plug-Flow detention time= 1.8 min calculated for 0.018 af (100% of inflow)
Center-of-Mass det. time= 1.8 min (932.4 - 930.7)

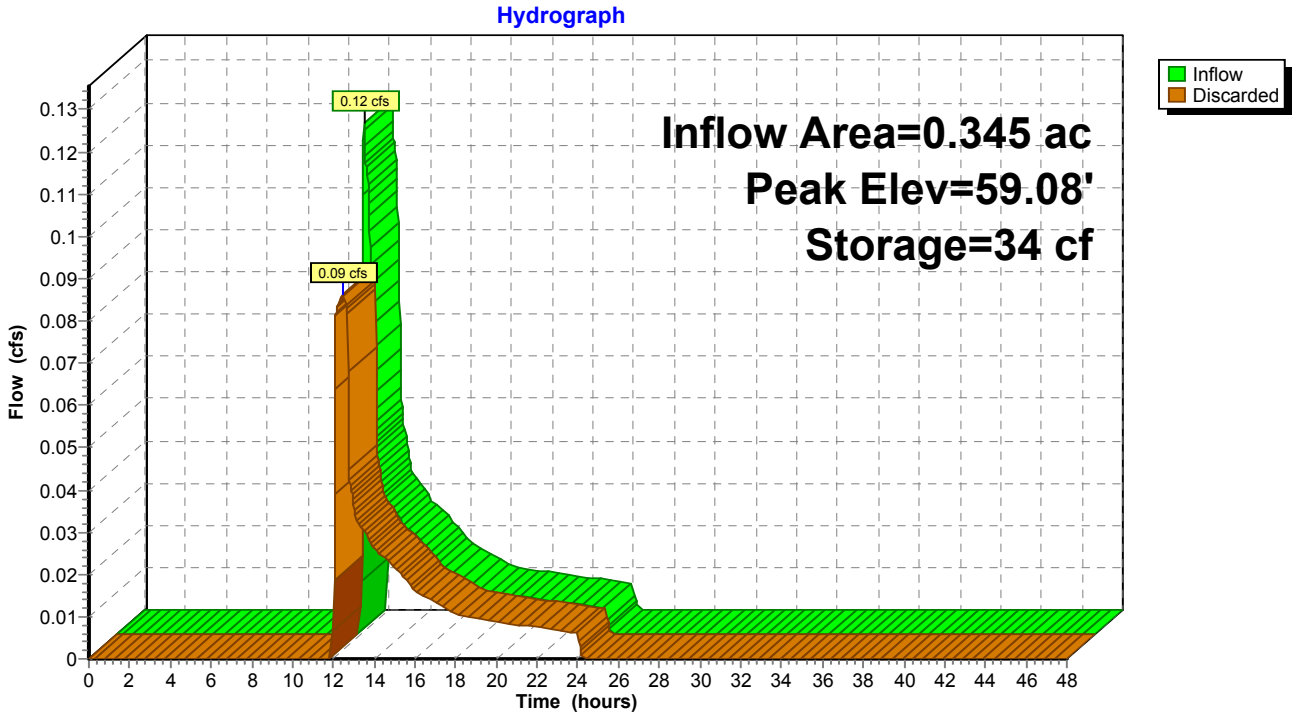
Volume	Invert	Avail.Storage	Storage Description
#1	59.00'	615 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
59.00	419	0	0
60.00	811	615	615

Device	Routing	Invert	Outlet Devices
#1	Discarded	59.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.09 cfs @ 12.45 hrs HW=59.08' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.09 cfs)

Pond D-1: Depression



Summary for Pond D-2: Depression

Inflow Area = 0.482 ac, 29.27% Impervious, Inflow Depth = 2.15" for 25-Year event
Inflow = 1.00 cfs @ 12.09 hrs, Volume= 0.086 af
Outflow = 0.17 cfs @ 12.61 hrs, Volume= 0.086 af, Atten= 83%, Lag= 31.2 min
Discarded = 0.17 cfs @ 12.61 hrs, Volume= 0.086 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 57.65' @ 12.61 hrs Surf.Area= 892 sf Storage= 1,036 cf

Plug-Flow detention time= 47.6 min calculated for 0.086 af (100% of inflow)
Center-of-Mass det. time= 47.6 min (849.3 - 801.7)

Volume	Invert	Avail.Storage	Storage Description
#1	56.00'	2,585 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

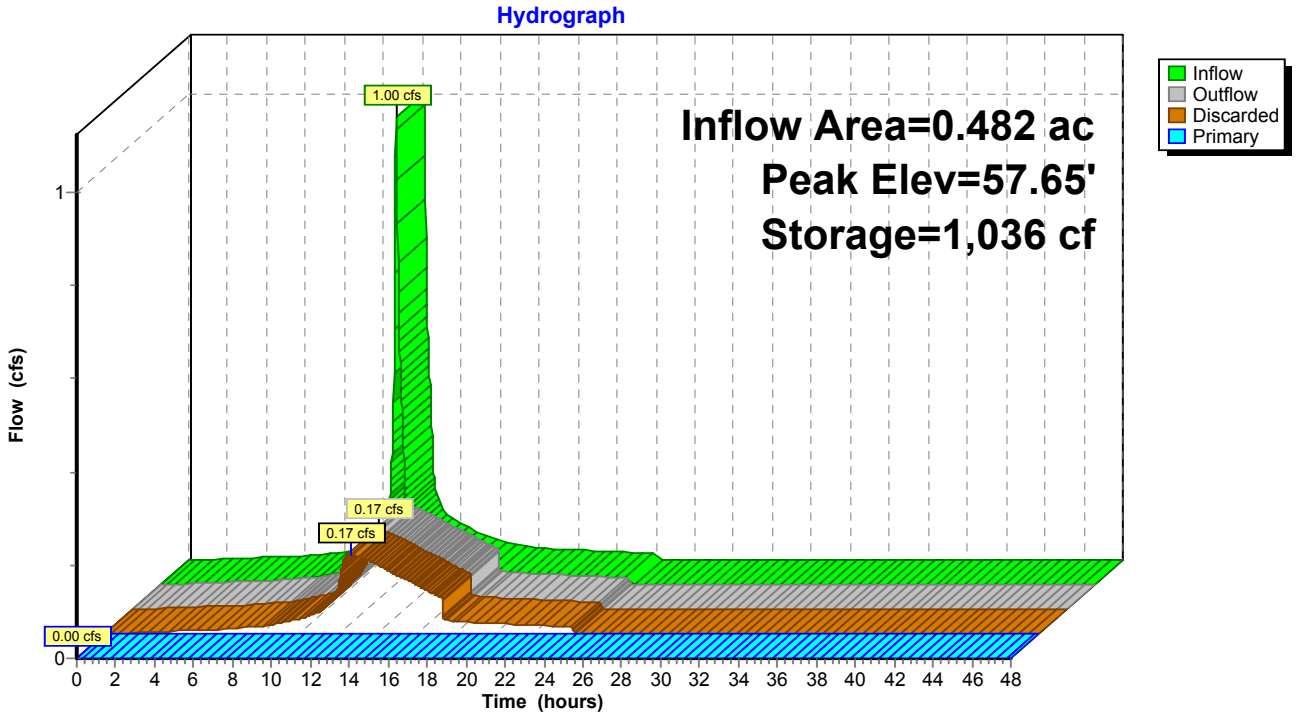
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.00	388	0	0
57.00	672	530	530
58.00	1,013	843	1,373
59.00	1,411	1,212	2,585

Device	Routing	Invert	Outlet Devices
#1	Primary	58.60'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.40 Width (feet) 5.00 20.00
#2	Discarded	56.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.17 cfs @ 12.61 hrs HW=57.65' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.17 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=56.00' TW=0.00' (Dynamic Tailwater)
↑—**1=Custom Weir/Orifice** (Controls 0.00 cfs)

Pond D-2: Depression



Summary for Pond D-3: Depression

Inflow Area = 0.219 ac, 12.07% Impervious, Inflow Depth = 0.74" for 25-Year event
Inflow = 0.11 cfs @ 12.13 hrs, Volume= 0.014 af
Outflow = 0.11 cfs @ 12.14 hrs, Volume= 0.014 af, Atten= 2%, Lag= 1.0 min
Discarded = 0.11 cfs @ 12.14 hrs, Volume= 0.014 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 63.01' @ 12.14 hrs Surf.Area= 762 sf Storage= 6 cf

Plug-Flow detention time= 0.9 min calculated for 0.014 af (100% of inflow)
Center-of-Mass det. time= 0.9 min (919.7 - 918.8)

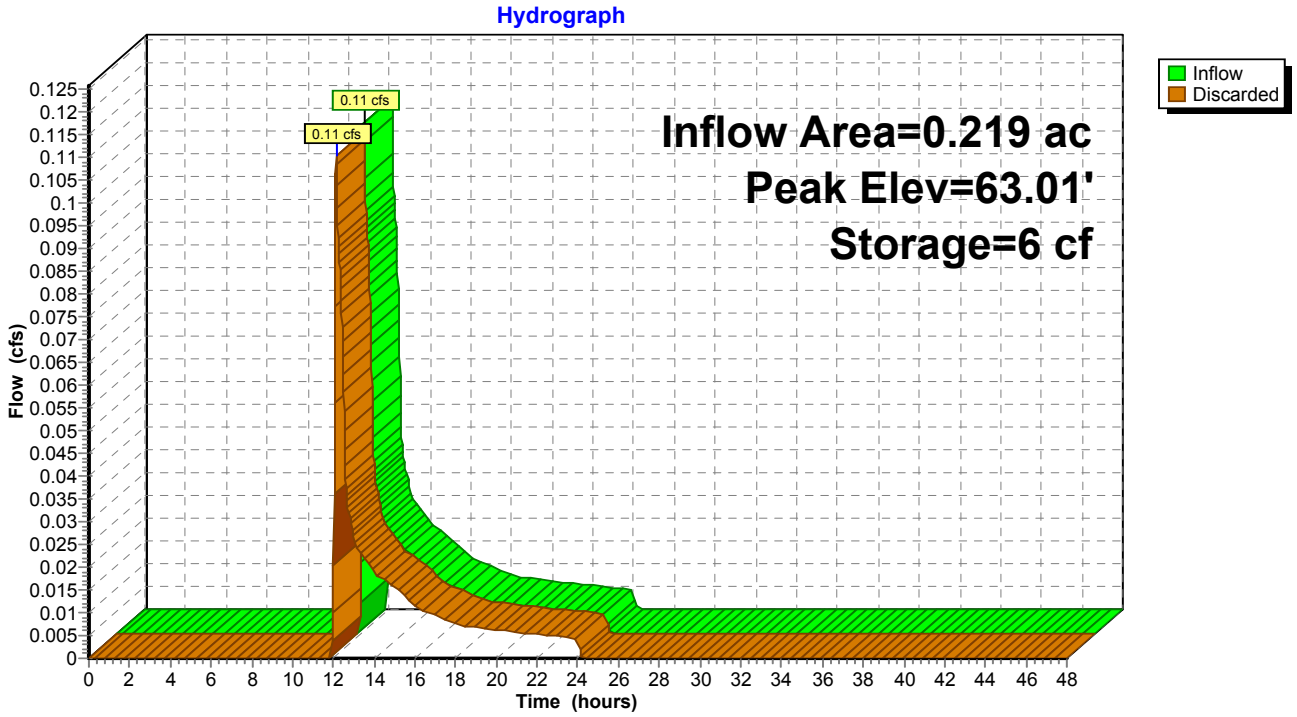
Volume	Invert	Avail.Storage	Storage Description
#1	63.00'	2,747 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
63.00	757	0	0
64.00	1,368	1,063	1,063
65.00	2,001	1,685	2,747

Device	Routing	Invert	Outlet Devices
#1	Discarded	63.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.11 cfs @ 12.14 hrs HW=63.01' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.11 cfs)

Pond D-3: Depression



Summary for Pond D-4: Depression

Inflow Area = 0.244 ac, 14.55% Impervious, Inflow Depth = 0.87" for 25-Year event
Inflow = 0.17 cfs @ 12.12 hrs, Volume= 0.018 af
Outflow = 0.17 cfs @ 12.13 hrs, Volume= 0.018 af, Atten= 2%, Lag= 0.9 min
Discarded = 0.17 cfs @ 12.13 hrs, Volume= 0.018 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 54.01' @ 12.13 hrs Surf.Area= 893 sf Storage= 9 cf

Plug-Flow detention time= 0.9 min calculated for 0.018 af (100% of inflow)
Center-of-Mass det. time= 0.9 min (909.4 - 908.6)

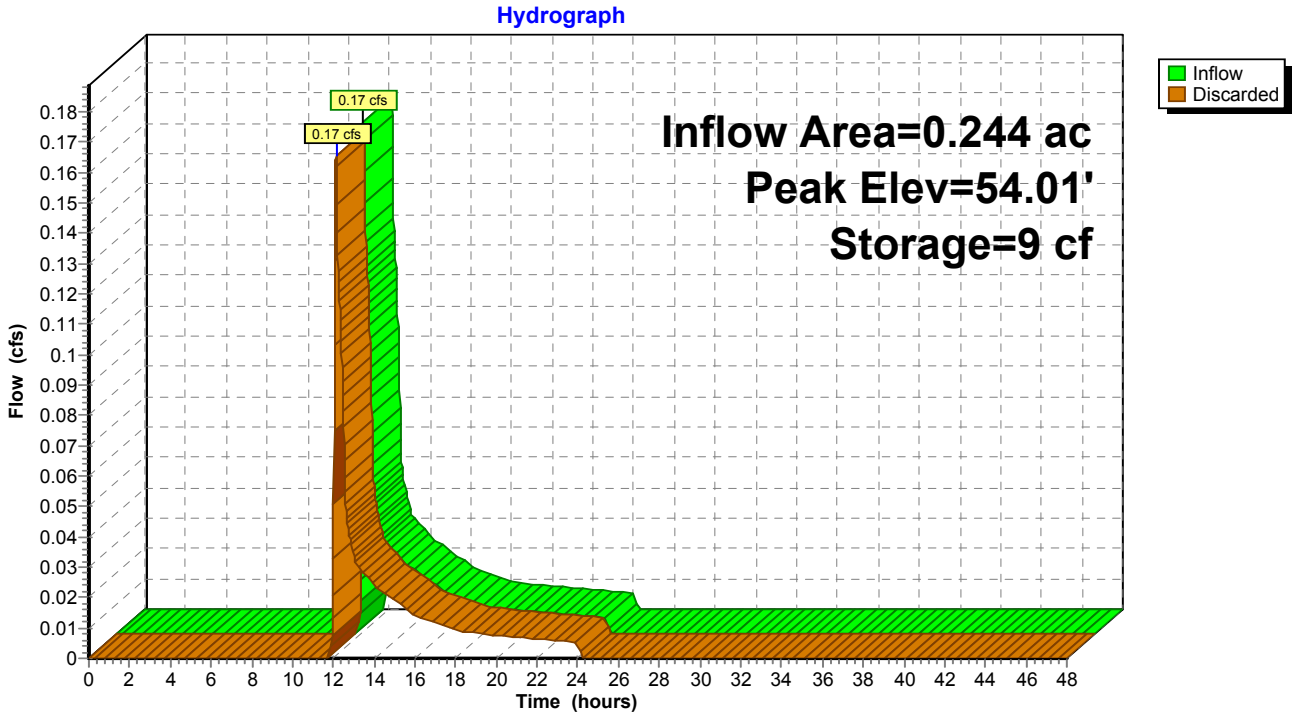
Volume	Invert	Avail.Storage	Storage Description
#1	54.00'	2,555 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
54.00	889	0	0
55.00	1,252	1,071	1,071
56.00	1,717	1,485	2,555

Device	Routing	Invert	Outlet Devices
#1	Discarded	54.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.16 cfs @ 12.13 hrs HW=54.01' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.16 cfs)

Pond D-4: Depression



Summary for Pond DB-1: Prop Detention Basin

Inflow Area = 1.952 ac, 65.30% Impervious, Inflow Depth = 2.48" for 25-Year event
Inflow = 6.87 cfs @ 12.11 hrs, Volume= 0.403 af
Outflow = 1.46 cfs @ 12.55 hrs, Volume= 0.277 af, Atten= 79%, Lag= 26.4 min
Primary = 1.46 cfs @ 12.55 hrs, Volume= 0.277 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 59.23' @ 12.55 hrs Surf.Area= 9,817 sf Storage= 9,629 cf

Plug-Flow detention time= 391.8 min calculated for 0.277 af (69% of inflow)
Center-of-Mass det. time= 313.2 min (1,109.8 - 796.6)

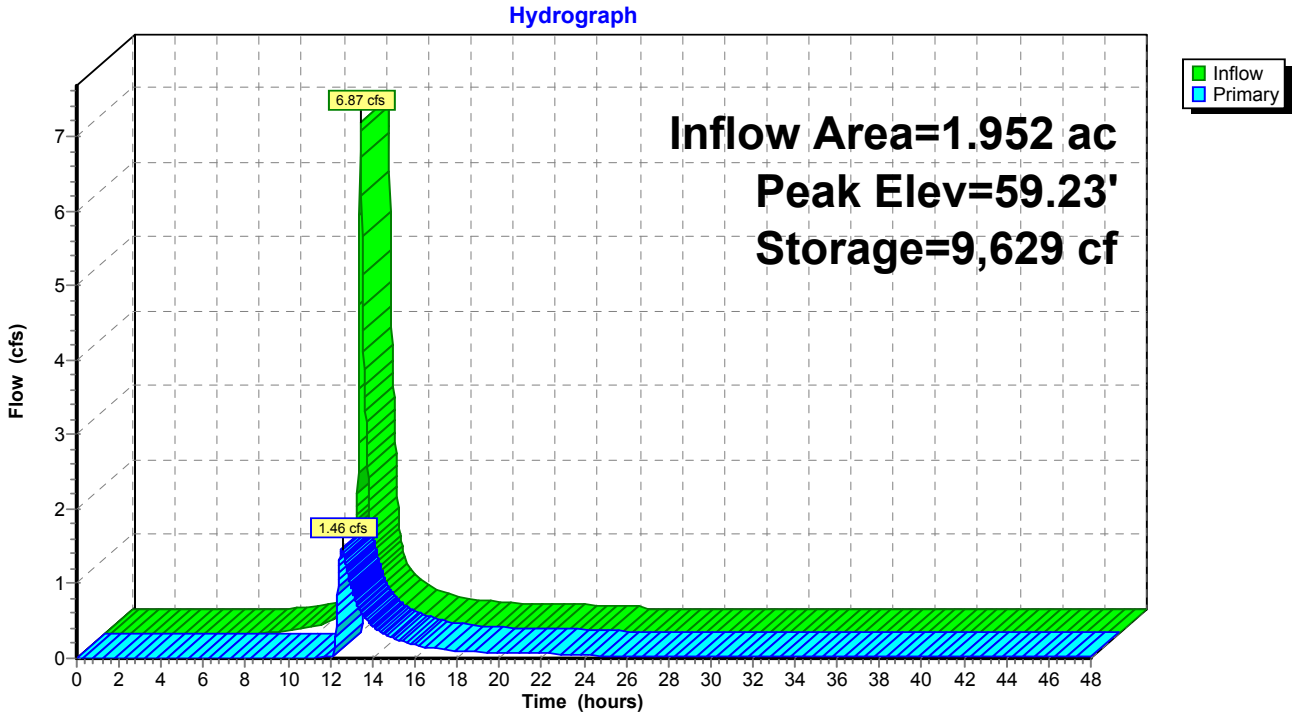
Volume	Invert	Avail.Storage	Storage Description
#1	58.00'	29,454 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
58.00	6,690	0	0
59.00	8,247	7,469	7,469
59.10	9,613	893	8,362
60.00	11,020	9,285	17,646
61.00	12,596	11,808	29,454

Device	Routing	Invert	Outlet Devices
#1	Primary	58.00'	**12.0" Round Culvert** L= 19.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 58.00' / 57.30' S= 0.0359 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	58.00'	**1.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	59.00'	**4.0' long x 1.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=1.46 cfs @ 12.55 hrs HW=59.23' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 1.46 cfs of 2.55 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.03 cfs @ 5.25 fps)
  └─**3=Sharp-Crested Rectangular Weir** (Weir Controls 1.43 cfs @ 1.57 fps)

Pond DB-1: Prop Detention Basin



Summary for Pond P1: Infiltration Chambers

Inflow Area = 0.044 ac,100.00% Impervious, Inflow Depth = 5.46" for 25-Year event
Inflow = 0.25 cfs @ 12.08 hrs, Volume= 0.020 af
Outflow = 0.04 cfs @ 11.68 hrs, Volume= 0.020 af, Atten= 85%, Lag= 0.0 min
Discarded = 0.04 cfs @ 11.68 hrs, Volume= 0.020 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 58.04' @ 12.57 hrs Surf.Area= 195 sf Storage= 236 cf

Plug-Flow detention time= 34.9 min calculated for 0.020 af (100% of inflow)
Center-of-Mass det. time= 34.9 min (780.9 - 745.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	56.20'	184 cf	**11.17'W x 17.50'L x 3.54'H Field A** 692 cf Overall - 231 cf Embedded = 461 cf x 40.0% Voids
#2A	56.70'	231 cf	**Cultec R-330XLHD** x 4 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		415 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.20'	**8.200 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.04 cfs @ 11.68 hrs HW=56.24' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Pond P1: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

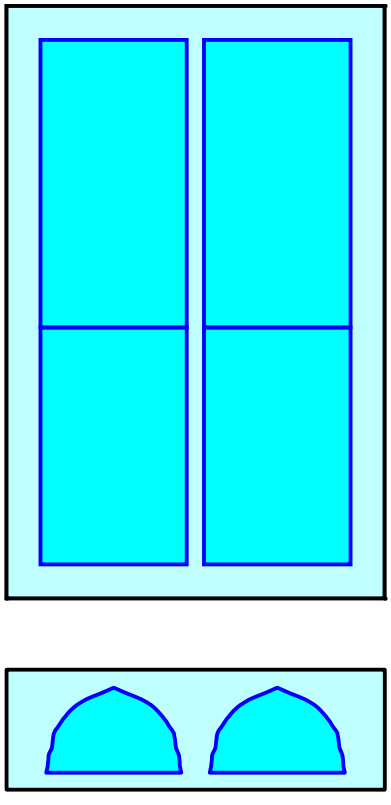
2 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 15.50' Row Length +12.0" End Stone x 2 = 17.50' Base Length
2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

4 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 231.0 cf Chamber Storage

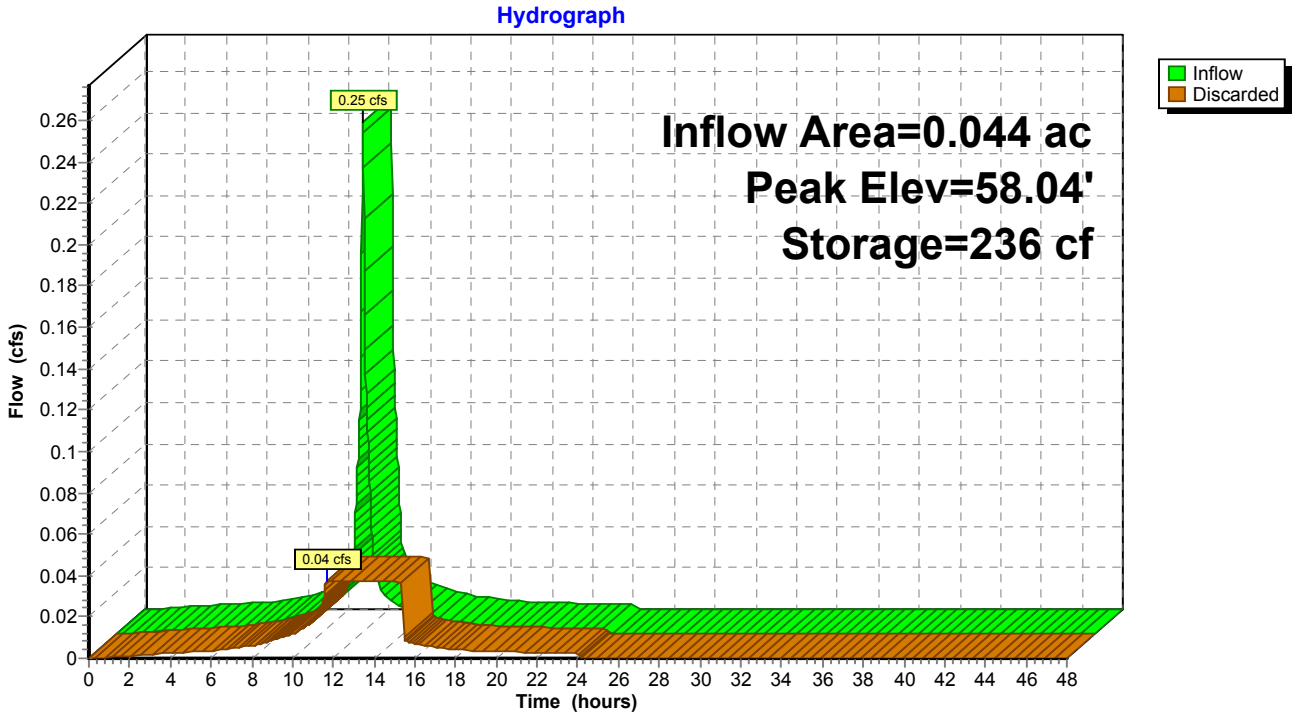
692.1 cf Field - 231.0 cf Chambers = 461.1 cf Stone x 40.0% Voids = 184.4 cf Stone Storage

Chamber Storage + Stone Storage = 415.4 cf = 0.010 af
Overall Storage Efficiency = 60.0%
Overall System Size = 17.50' x 11.17' x 3.54'

4 Chambers
25.6 cy Field
17.1 cy Stone



Pond P1: Infiltration Chambers



Summary for Pond P10: Infiltration Chambers

Inflow Area = 0.024 ac,100.00% Impervious, Inflow Depth = 5.46" for 25-Year event
Inflow = 0.13 cfs @ 12.08 hrs, Volume= 0.011 af
Outflow = 0.02 cfs @ 11.70 hrs, Volume= 0.011 af, Atten= 84%, Lag= 0.0 min
Discarded = 0.02 cfs @ 11.70 hrs, Volume= 0.011 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 61.44' @ 12.55 hrs Surf.Area= 111 sf Storage= 121 cf

Plug-Flow detention time= 30.2 min calculated for 0.011 af (100% of inflow)
Center-of-Mass det. time= 30.2 min (776.1 - 745.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	59.70'	111 cf	**6.33'W x 17.50'L x 3.54'H Field A** 393 cf Overall - 115 cf Embedded = 277 cf x 40.0% Voids
#2A	60.20'	115 cf	**Cultec R-330XLHD** x 2 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		226 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	59.70'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.02 cfs @ 11.70 hrs HW=59.74' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Pond P10: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 1 rows

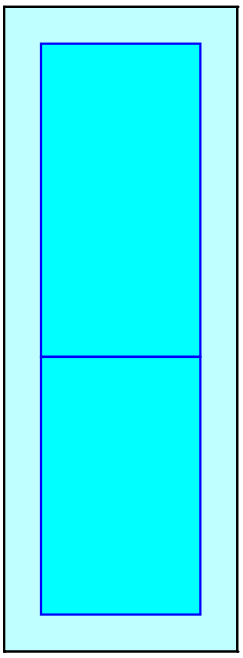
2 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 15.50' Row Length +12.0" End Stone x 2 = 17.50' Base Length
1 Rows x 52.0" Wide + 12.0" Side Stone x 2 = 6.33' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

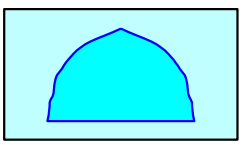
2 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 1 Rows = 115.5 cf Chamber Storage

392.5 cf Field - 115.5 cf Chambers = 277.0 cf Stone x 40.0% Voids = 110.8 cf Stone Storage

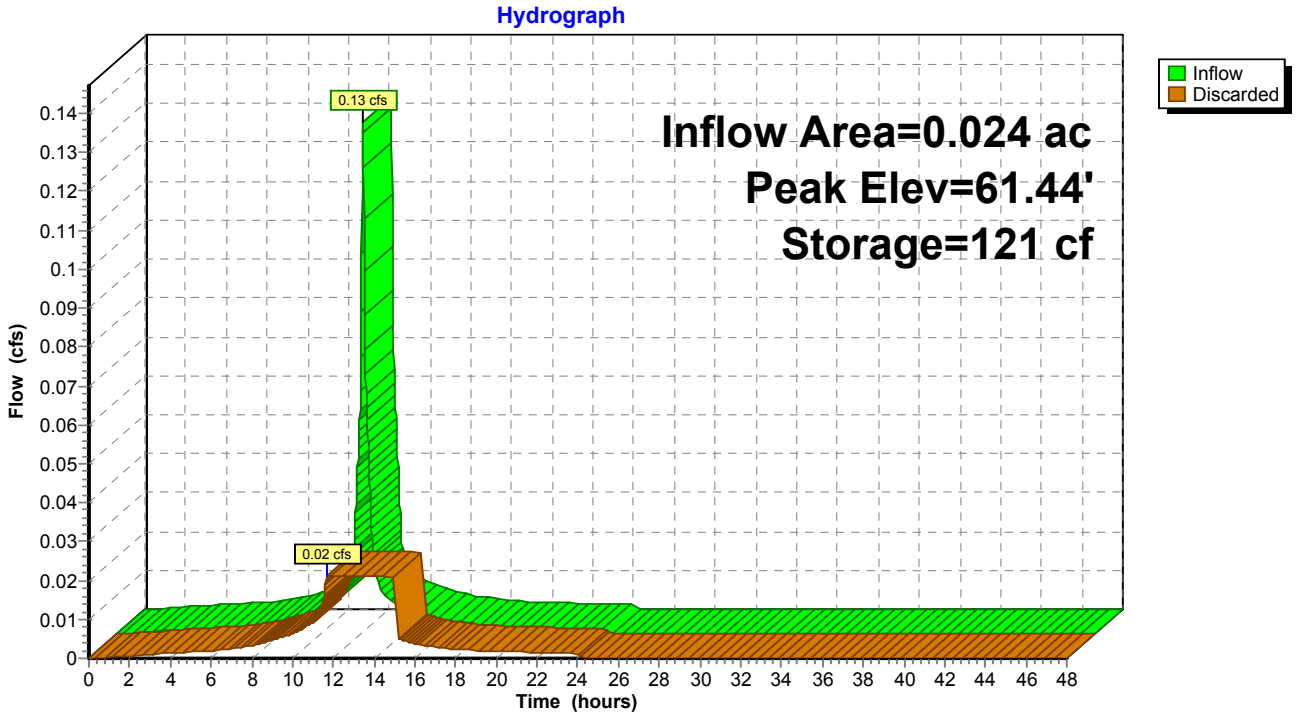
Chamber Storage + Stone Storage = 226.3 cf = 0.005 af
Overall Storage Efficiency = 57.7%
Overall System Size = 17.50' x 6.33' x 3.54'

2 Chambers
14.5 cy Field
10.3 cy Stone





Pond P10: Infiltration Chambers



Summary for Pond P11: Infiltration Chambers

Inflow Area = 0.024 ac,100.00% Impervious, Inflow Depth = 5.46" for 25-Year event
Inflow = 0.13 cfs @ 12.08 hrs, Volume= 0.011 af
Outflow = 0.02 cfs @ 11.70 hrs, Volume= 0.011 af, Atten= 84%, Lag= 0.0 min
Discarded = 0.02 cfs @ 11.70 hrs, Volume= 0.011 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 61.46' @ 12.55 hrs Surf.Area= 111 sf Storage= 122 cf

Plug-Flow detention time= 30.7 min calculated for 0.011 af (100% of inflow)
Center-of-Mass det. time= 30.7 min (776.6 - 745.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	59.70'	111 cf	**6.33'W x 17.50'L x 3.54'H Field A** 393 cf Overall - 115 cf Embedded = 277 cf x 40.0% Voids
#2A	60.20'	115 cf	**Cultec R-330XLHD** x 2 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		226 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	59.70'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.02 cfs @ 11.70 hrs HW=59.74' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Pond P11: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 1 rows

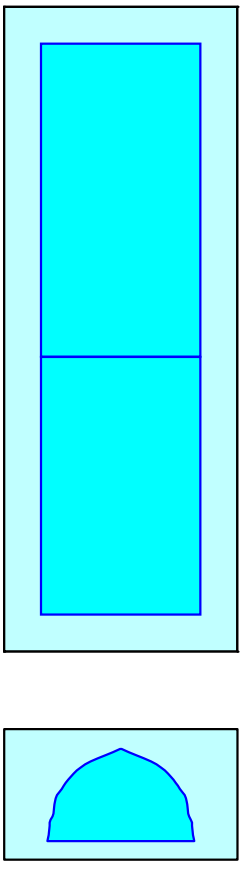
2 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 15.50' Row Length +12.0" End Stone x 2 = 17.50' Base Length
1 Rows x 52.0" Wide + 12.0" Side Stone x 2 = 6.33' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

2 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 1 Rows = 115.5 cf Chamber Storage

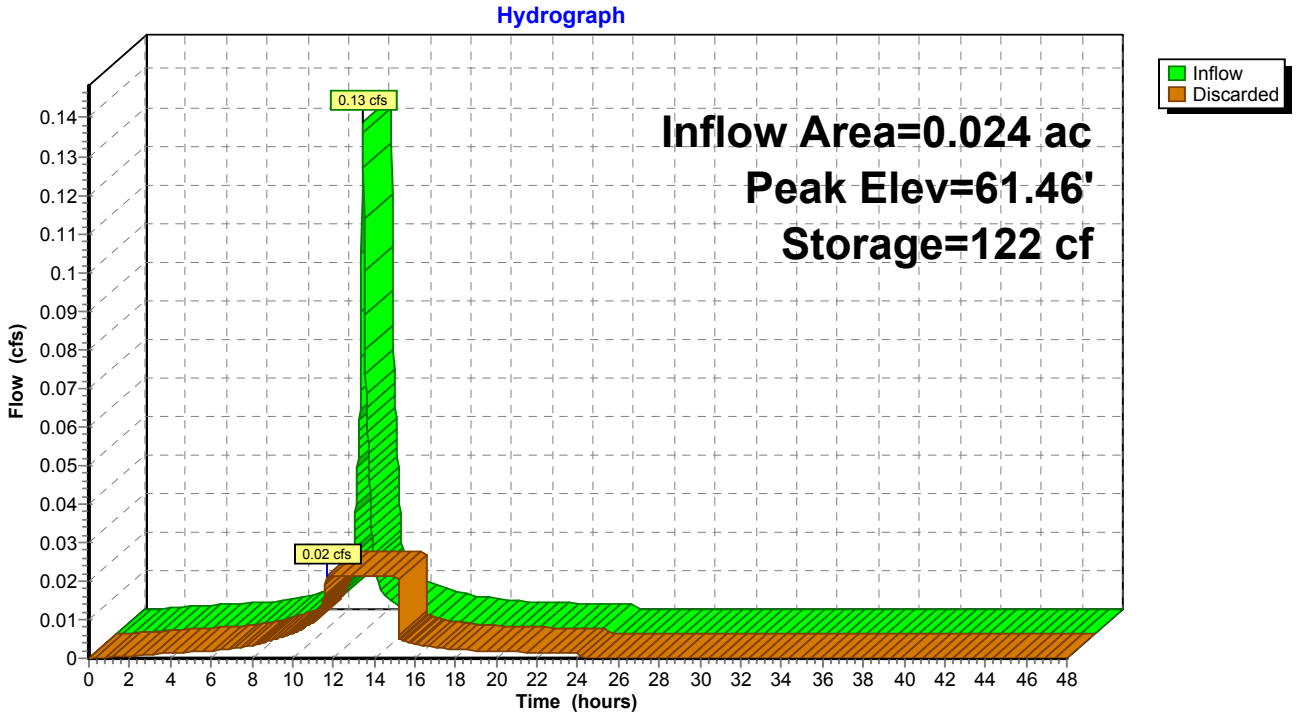
392.5 cf Field - 115.5 cf Chambers = 277.0 cf Stone x 40.0% Voids = 110.8 cf Stone Storage

Chamber Storage + Stone Storage = 226.3 cf = 0.005 af
Overall Storage Efficiency = 57.7%
Overall System Size = 17.50' x 6.33' x 3.54'

2 Chambers
14.5 cy Field
10.3 cy Stone



Pond P11: Infiltration Chambers



Summary for Pond P12: Infiltration Chambers

Inflow Area = 0.044 ac,100.00% Impervious, Inflow Depth = 5.46" for 25-Year event
Inflow = 0.24 cfs @ 12.08 hrs, Volume= 0.020 af
Outflow = 0.05 cfs @ 11.78 hrs, Volume= 0.020 af, Atten= 78%, Lag= 0.0 min
Discarded = 0.05 cfs @ 11.78 hrs, Volume= 0.020 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 59.60' @ 12.49 hrs Surf.Area= 274 sf Storage= 184 cf

Plug-Flow detention time= 16.6 min calculated for 0.020 af (100% of inflow)
Center-of-Mass det. time= 16.6 min (762.6 - 745.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	58.50'	253 cf	**11.17'W x 24.50'L x 3.54'H Field A** 969 cf Overall - 335 cf Embedded = 634 cf x 40.0% Voids
#2A	59.00'	335 cf	**Cultec R-330XLHD** x 6 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		589 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	58.50'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.05 cfs @ 11.78 hrs HW=58.54' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Pond P12: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

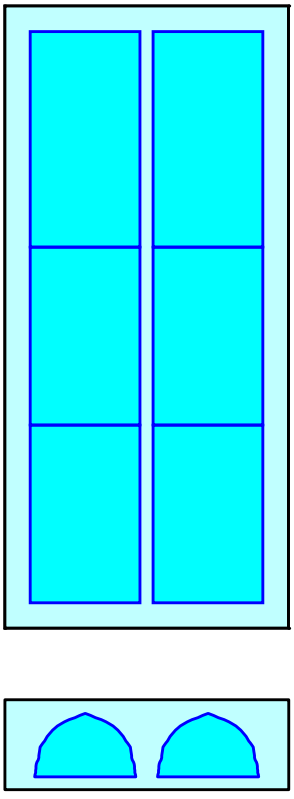
3 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 22.50' Row Length +12.0" End Stone x 2 = 24.50' Base Length
2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

6 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 335.3 cf Chamber Storage

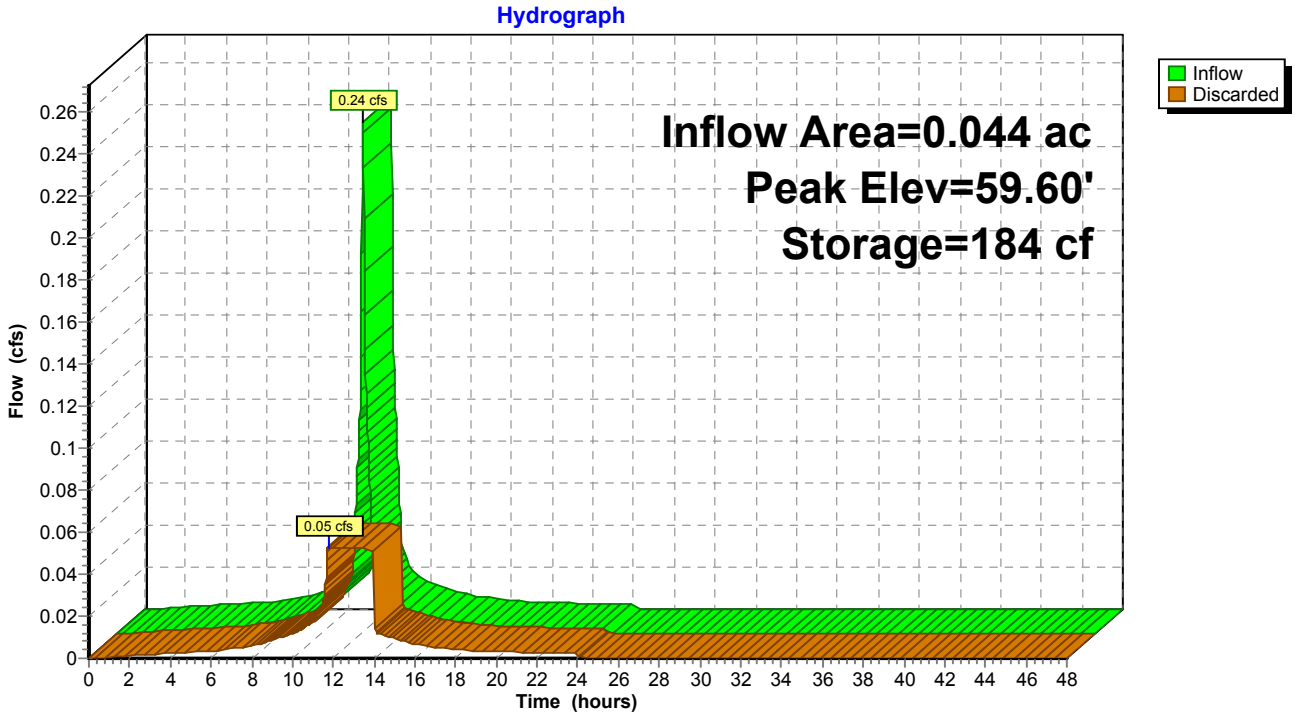
968.9 cf Field - 335.3 cf Chambers = 633.6 cf Stone x 40.0% Voids = 253.5 cf Stone Storage

Chamber Storage + Stone Storage = 588.8 cf = 0.014 af
Overall Storage Efficiency = 60.8%
Overall System Size = 24.50' x 11.17' x 3.54'

6 Chambers
35.9 cy Field
23.5 cy Stone



Pond P12: Infiltration Chambers



Summary for Pond P13: Infiltration Chambers

Inflow Area = 0.311 ac, 64.32% Impervious, Inflow Depth = 3.22" for 25-Year event
Inflow = 1.17 cfs @ 12.09 hrs, Volume= 0.084 af
Outflow = 0.62 cfs @ 12.23 hrs, Volume= 0.084 af, Atten= 47%, Lag= 8.7 min
Discarded = 0.11 cfs @ 11.66 hrs, Volume= 0.065 af
Primary = 0.50 cfs @ 12.23 hrs, Volume= 0.018 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 59.43' @ 12.23 hrs Surf.Area= 586 sf Storage= 775 cf

Plug-Flow detention time= 30.9 min calculated for 0.083 af (100% of inflow)
Center-of-Mass det. time= 30.9 min (854.7 - 823.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	57.50'	530 cf	**11.17'W x 52.50'L x 3.54'H Field A** 2,076 cf Overall - 753 cf Embedded = 1,324 cf x 40.0% Voids
#2A	58.00'	753 cf	**Cultec R-330XLHD** x 14 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		1,282 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	58.90'	**6.0" Round Culvert** L= 90.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 58.90' / 57.42' S= 0.0164 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Discarded	57.50'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.11 cfs @ 11.66 hrs HW=57.54' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=0.50 cfs @ 12.23 hrs HW=59.43' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.50 cfs @ 2.57 fps)

Pond P13: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

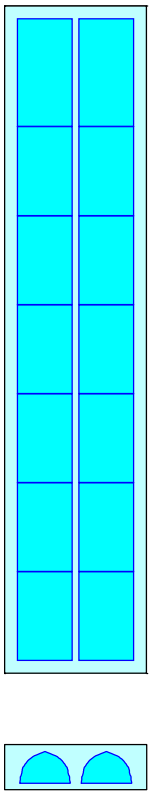
7 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 50.50' Row Length +12.0" End Stone x 2 = 52.50' Base Length
2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

14 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 752.6 cf Chamber Storage

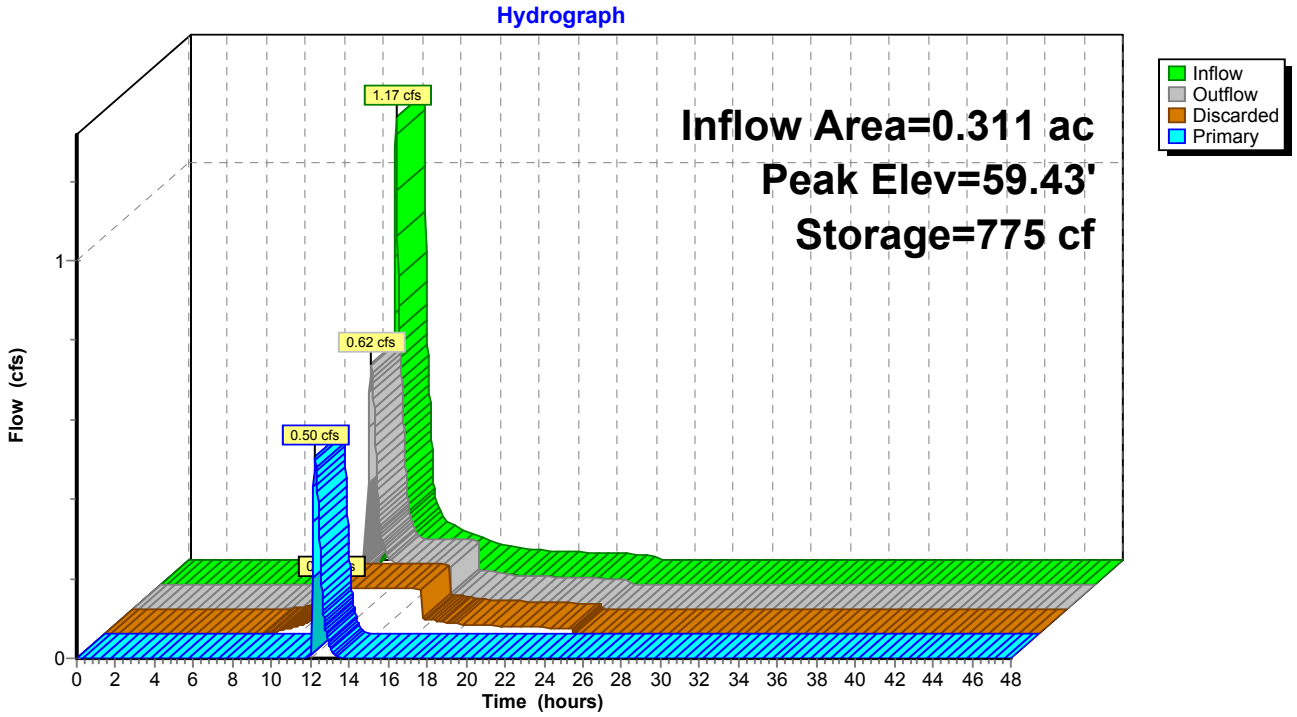
2,076.3 cf Field - 752.6 cf Chambers = 1,323.8 cf Stone x 40.0% Voids = 529.5 cf Stone Storage

Chamber Storage + Stone Storage = 1,282.1 cf = 0.029 af
Overall Storage Efficiency = 61.7%
Overall System Size = 52.50' x 11.17' x 3.54'

14 Chambers
76.9 cy Field
49.0 cy Stone



Pond P13: Infiltration Chambers



Summary for Pond P2: Infiltration Chambers

Inflow Area = 0.350 ac,100.00% Impervious, Inflow Depth = 5.46" for 25-Year event
Inflow = 1.95 cfs @ 12.08 hrs, Volume= 0.159 af
Outflow = 0.24 cfs @ 11.64 hrs, Volume= 0.159 af, Atten= 88%, Lag= 0.0 min
Discarded = 0.24 cfs @ 11.64 hrs, Volume= 0.159 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 58.47' @ 12.63 hrs Surf.Area= 1,265 sf Storage= 2,040 cf

Plug-Flow detention time= 50.1 min calculated for 0.159 af (100% of inflow)
Center-of-Mass det. time= 50.0 min (796.0 - 745.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	56.20'	1,089 cf	**40.17'W x 31.50'L x 3.54'H Field A** 4,481 cf Overall - 1,758 cf Embedded = 2,723 cf x 40.0% Voids
#2A	56.70'	1,758 cf	**Cultec R-330XLHD** x 32 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 8 rows
		2,847 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.20'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.24 cfs @ 11.64 hrs HW=56.24' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.24 cfs)

Pond P2: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 8 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

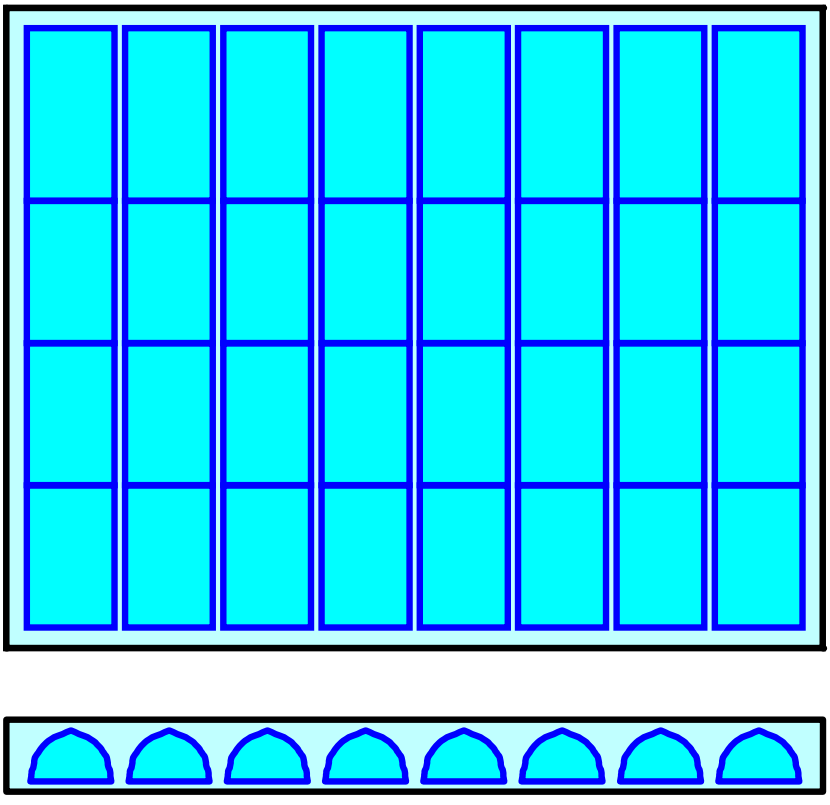
4 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 29.50' Row Length +12.0" End Stone x 2 = 31.50' Base Length
8 Rows x 52.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 40.17' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

32 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 8 Rows = 1,758.4 cf Chamber Storage

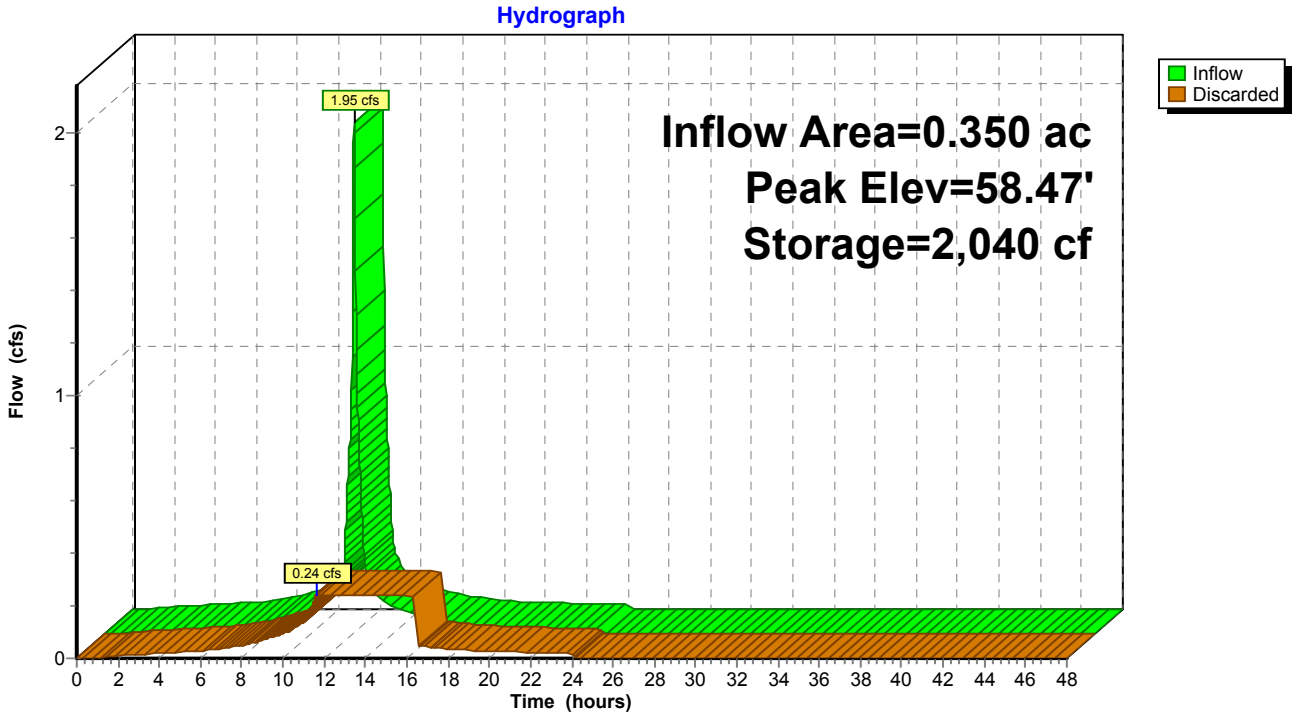
4,481.1 cf Field - 1,758.4 cf Chambers = 2,722.7 cf Stone x 40.0% Voids = 1,089.1 cf Stone Storage

Chamber Storage + Stone Storage = 2,847.5 cf = 0.065 af
Overall Storage Efficiency = 63.5%
Overall System Size = 31.50' x 40.17' x 3.54'

32 Chambers
166.0 cy Field
100.8 cy Stone



Pond P2: Infiltration Chambers



Summary for Pond P3: Infiltration Chambers

Inflow Area = 0.024 ac,100.00% Impervious, Inflow Depth = 5.46" for 25-Year event
Inflow = 0.13 cfs @ 12.08 hrs, Volume= 0.011 af
Outflow = 0.02 cfs @ 11.70 hrs, Volume= 0.011 af, Atten= 84%, Lag= 0.0 min
Discarded = 0.02 cfs @ 11.70 hrs, Volume= 0.011 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 57.94' @ 12.55 hrs Surf.Area= 111 sf Storage= 121 cf

Plug-Flow detention time= 30.2 min calculated for 0.011 af (100% of inflow)
Center-of-Mass det. time= 30.2 min (776.1 - 745.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	56.20'	111 cf	**6.33'W x 17.50'L x 3.54'H Field A** 393 cf Overall - 115 cf Embedded = 277 cf x 40.0% Voids
#2A	56.70'	115 cf	**Cultec R-330XLHD** x 2 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		226 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.20'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.02 cfs @ 11.70 hrs HW=56.24' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Pond P3: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 1 rows

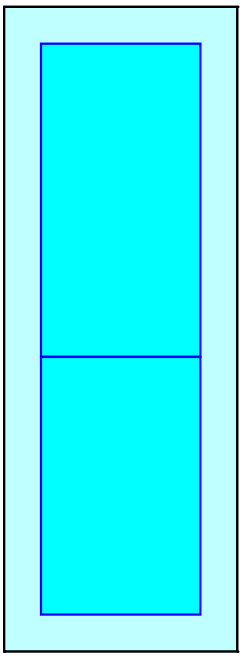
2 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 15.50' Row Length +12.0" End Stone x 2 = 17.50' Base Length
1 Rows x 52.0" Wide + 12.0" Side Stone x 2 = 6.33' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

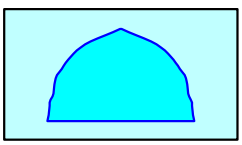
2 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 1 Rows = 115.5 cf Chamber Storage

392.5 cf Field - 115.5 cf Chambers = 277.0 cf Stone x 40.0% Voids = 110.8 cf Stone Storage

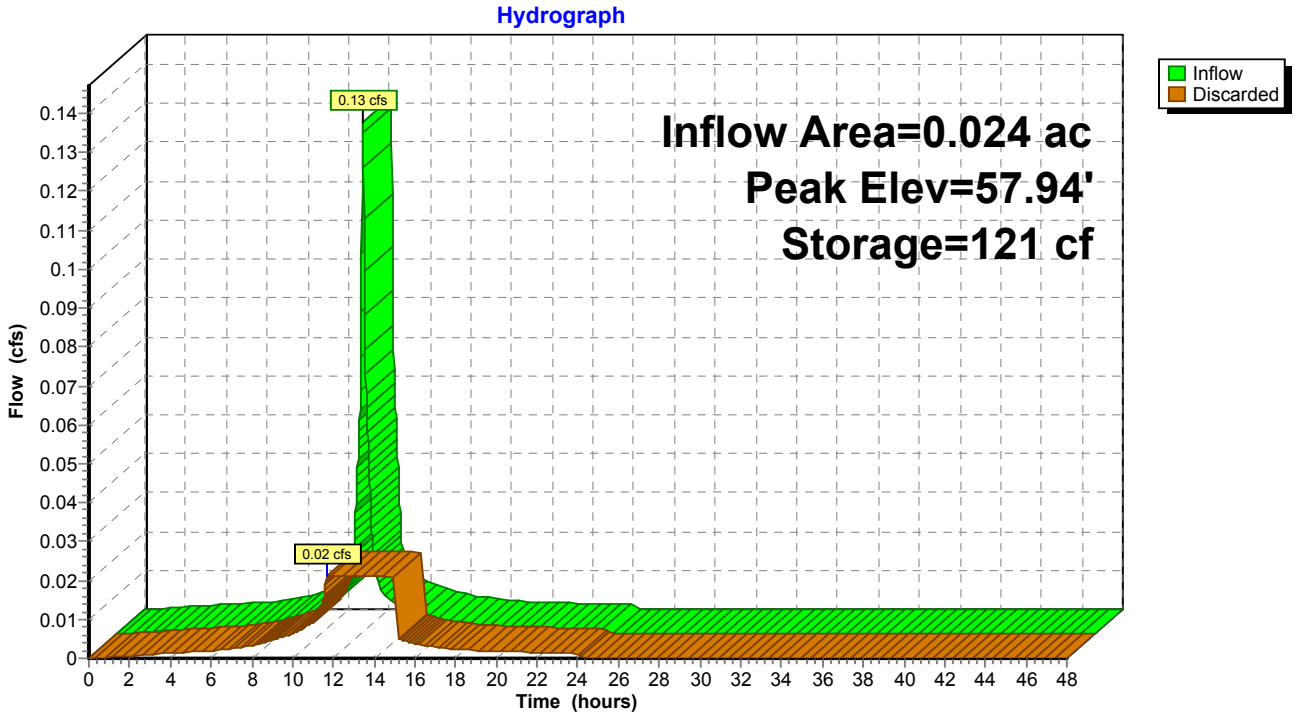
Chamber Storage + Stone Storage = 226.3 cf = 0.005 af
Overall Storage Efficiency = 57.7%
Overall System Size = 17.50' x 6.33' x 3.54'

2 Chambers
14.5 cy Field
10.3 cy Stone





Pond P3: Infiltration Chambers



Summary for Pond P4: Infiltration Chambers

Inflow Area = 0.047 ac,100.00% Impervious, Inflow Depth = 5.46" for 25-Year event
Inflow = 0.26 cfs @ 12.08 hrs, Volume= 0.022 af
Outflow = 0.04 cfs @ 11.68 hrs, Volume= 0.022 af, Atten= 86%, Lag= 0.0 min
Discarded = 0.04 cfs @ 11.68 hrs, Volume= 0.022 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 58.20' @ 12.58 hrs Surf.Area= 199 sf Storage= 257 cf

Plug-Flow detention time= 37.5 min calculated for 0.022 af (100% of inflow)
Center-of-Mass det. time= 37.5 min (783.4 - 745.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	56.20'	195 cf	**6.33'W x 31.50'L x 3.54'H Field A** 707 cf Overall - 220 cf Embedded = 487 cf x 40.0% Voids
#2A	56.70'	220 cf	**Cultec R-330XLHD** x 4 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		415 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.20'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.04 cfs @ 11.68 hrs HW=56.24' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Pond P4: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 1 rows

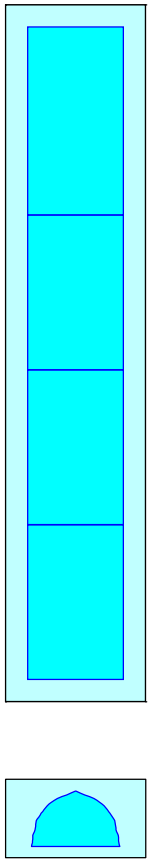
4 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 29.50' Row Length +12.0" End Stone x 2 = 31.50' Base Length
1 Rows x 52.0" Wide + 12.0" Side Stone x 2 = 6.33' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

4 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 1 Rows = 219.8 cf Chamber Storage

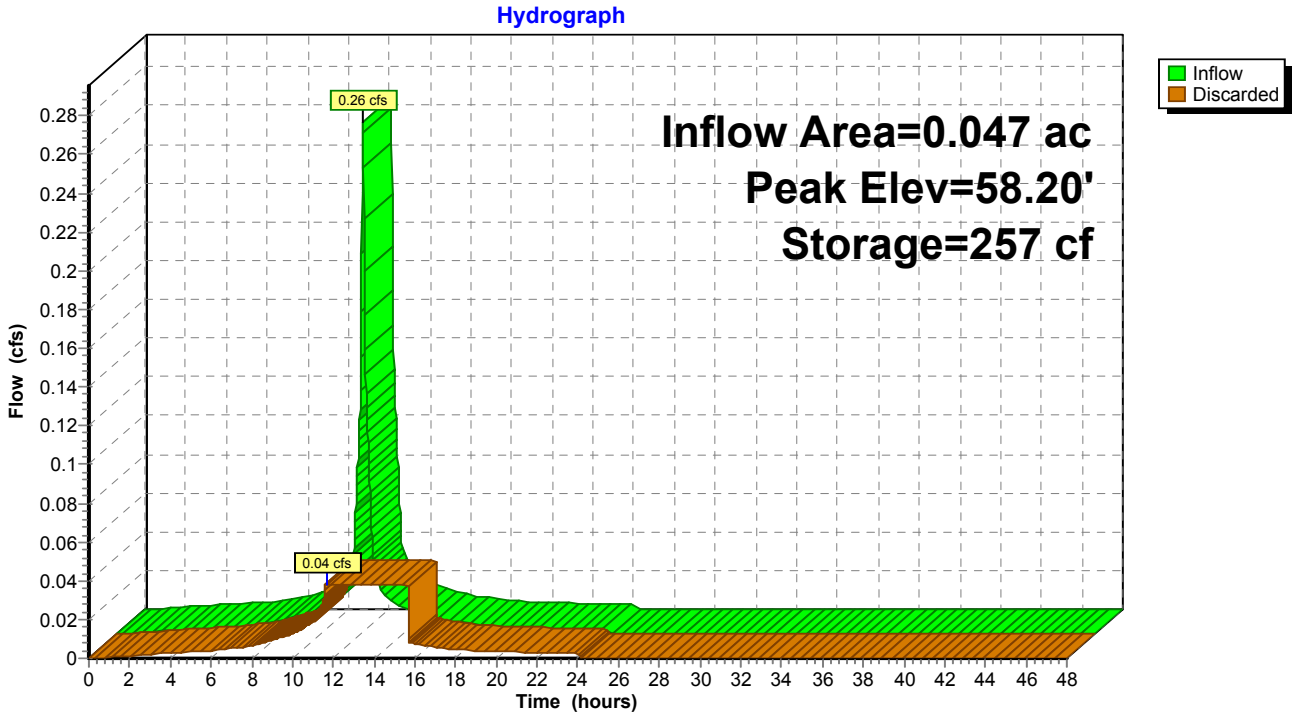
706.6 cf Field - 219.8 cf Chambers = 486.8 cf Stone x 40.0% Voids = 194.7 cf Stone Storage

Chamber Storage + Stone Storage = 414.5 cf = 0.010 af
Overall Storage Efficiency = 58.7%
Overall System Size = 31.50' x 6.33' x 3.54'

4 Chambers
26.2 cy Field
18.0 cy Stone



Pond P4: Infiltration Chambers



Summary for Pond P5: Infiltration Chambers

Inflow Area = 0.047 ac,100.00% Impervious, Inflow Depth = 5.46" for 25-Year event
Inflow = 0.26 cfs @ 12.08 hrs, Volume= 0.022 af
Outflow = 0.04 cfs @ 11.68 hrs, Volume= 0.022 af, Atten= 86%, Lag= 0.0 min
Discarded = 0.04 cfs @ 11.68 hrs, Volume= 0.022 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 61.70' @ 12.58 hrs Surf.Area= 199 sf Storage= 257 cf

Plug-Flow detention time= 37.5 min calculated for 0.022 af (100% of inflow)
Center-of-Mass det. time= 37.5 min (783.4 - 745.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	59.70'	195 cf	**6.33'W x 31.50'L x 3.54'H Field A** 707 cf Overall - 220 cf Embedded = 487 cf x 40.0% Voids
#2A	60.20'	220 cf	**Cultec R-330XLHD** x 4 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		415 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	59.70'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.04 cfs @ 11.68 hrs HW=59.74' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Pond P5: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 1 rows

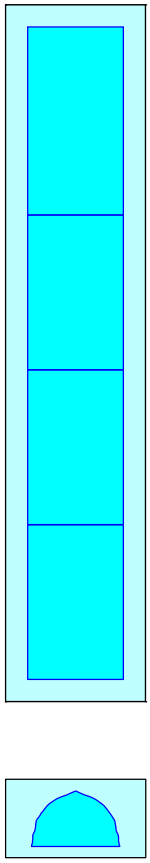
4 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 29.50' Row Length +12.0" End Stone x 2 = 31.50' Base Length
1 Rows x 52.0" Wide + 12.0" Side Stone x 2 = 6.33' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

4 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 1 Rows = 219.8 cf Chamber Storage

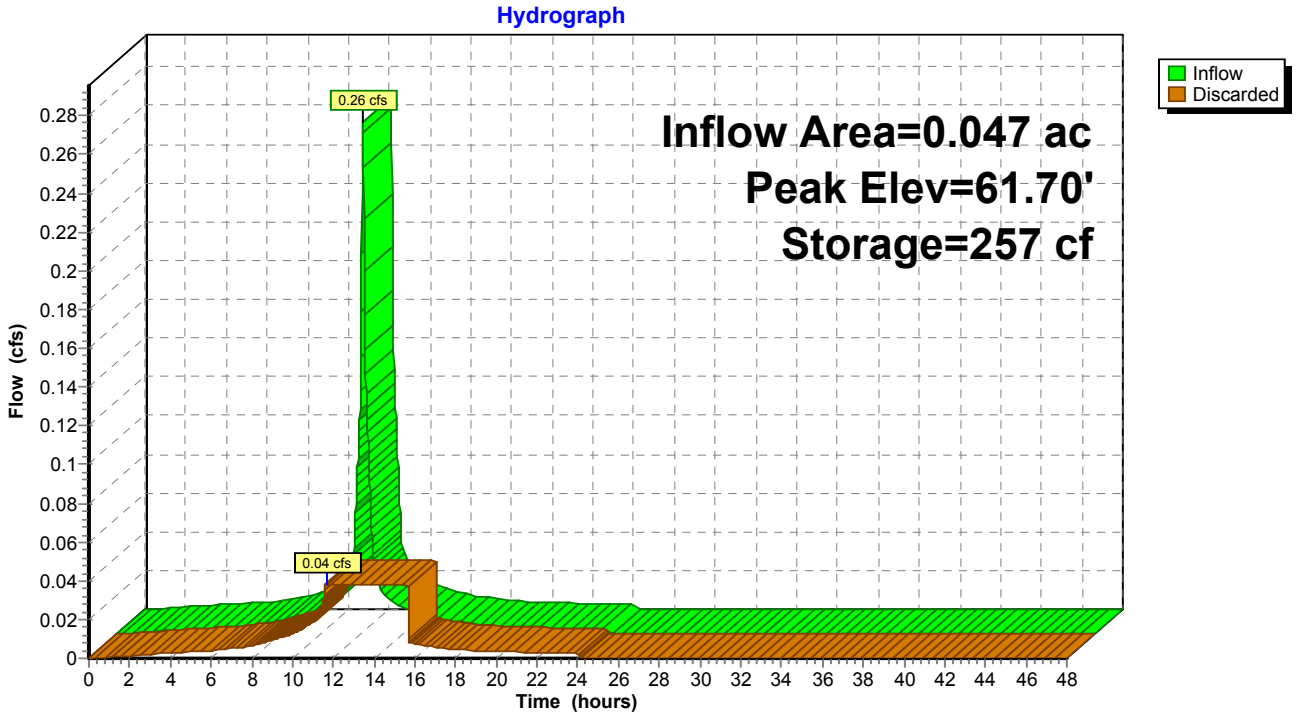
706.6 cf Field - 219.8 cf Chambers = 486.8 cf Stone x 40.0% Voids = 194.7 cf Stone Storage

Chamber Storage + Stone Storage = 414.5 cf = 0.010 af
Overall Storage Efficiency = 58.7%
Overall System Size = 31.50' x 6.33' x 3.54'

4 Chambers
26.2 cy Field
18.0 cy Stone



Pond P5: Infiltration Chambers



Summary for Pond P6: Infiltration Chambers

Inflow Area = 0.959 ac, 58.80% Impervious, Inflow Depth = 3.06" for 25-Year event
Inflow = 3.42 cfs @ 12.09 hrs, Volume= 0.245 af
Outflow = 3.00 cfs @ 12.13 hrs, Volume= 0.245 af, Atten= 12%, Lag= 2.7 min
Discarded = 0.17 cfs @ 11.34 hrs, Volume= 0.148 af
Primary = 2.83 cfs @ 12.13 hrs, Volume= 0.096 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 62.91' @ 12.13 hrs Surf.Area= 879 sf Storage= 1,667 cf

Plug-Flow detention time= 39.3 min calculated for 0.245 af (100% of inflow)
Center-of-Mass det. time= 39.3 min (865.1 - 825.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	60.00'	814 cf	**83.67'W x 10.50'L x 3.54'H Field A** 3,111 cf Overall - 1,077 cf Embedded = 2,035 cf x 40.0% Voids
#2A	60.50'	1,077 cf	**Cultec R-330XLHD** x 17 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 17 rows
		1,891 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	60.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'
#2	Primary	61.85'	**12.0" Round Culvert** L= 88.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 61.85' / 59.00' S= 0.0324 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.17 cfs @ 11.34 hrs HW=60.04' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.17 cfs)

Primary OutFlow Max=2.82 cfs @ 12.13 hrs HW=62.90' TW=58.81' (Dynamic Tailwater)
↑—**2=Culvert** (Inlet Controls 2.82 cfs @ 3.59 fps)

Pond P6: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 17 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

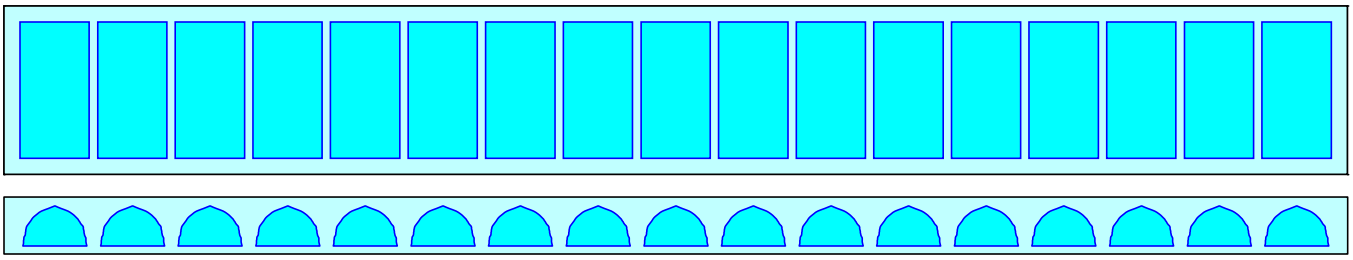
1 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 8.50' Row Length +12.0" End Stone x 2 = 10.50' Base Length
17 Rows x 52.0" Wide + 6.0" Spacing x 16 + 12.0" Side Stone x 2 = 83.67' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

17 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 17 Rows = 1,076.7 cf Chamber Storage

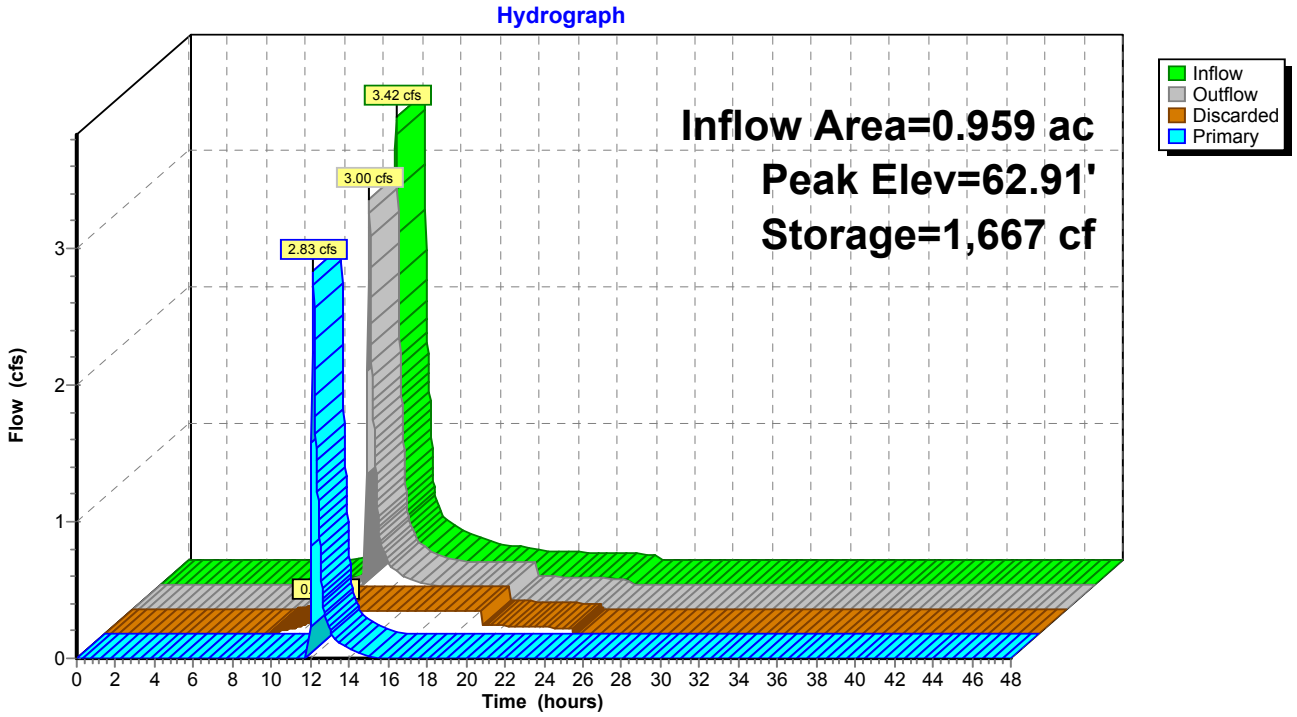
3,111.4 cf Field - 1,076.7 cf Chambers = 2,034.7 cf Stone x 40.0% Voids = 813.9 cf Stone Storage

Chamber Storage + Stone Storage = 1,890.5 cf = 0.043 af
Overall Storage Efficiency = 60.8%
Overall System Size = 10.50' x 83.67' x 3.54'

17 Chambers
115.2 cy Field
75.4 cy Stone



Pond P6: Infiltration Chambers



Summary for Pond P7: Infiltration Chambers

Inflow Area = 0.305 ac,100.00% Impervious, Inflow Depth = 5.46" for 25-Year event
Inflow = 1.70 cfs @ 12.08 hrs, Volume= 0.139 af
Outflow = 0.22 cfs @ 11.66 hrs, Volume= 0.139 af, Atten= 87%, Lag= 0.0 min
Discarded = 0.22 cfs @ 11.66 hrs, Volume= 0.139 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 62.25' @ 12.62 hrs Surf.Area= 1,133 sf Storage= 1,761 cf

Plug-Flow detention time= 47.7 min calculated for 0.139 af (100% of inflow)
Center-of-Mass det. time= 47.7 min (793.6 - 745.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	60.00'	1,013 cf	**11.17'W x 101.50'L x 3.54'H Field A** 4,014 cf Overall - 1,483 cf Embedded = 2,531 cf x 40.0% Voids
#2A	60.50'	1,483 cf	**Cultec R-330XLHD** x 28 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		2,495 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	60.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.22 cfs @ 11.66 hrs HW=60.05' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.22 cfs)

Pond P7: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

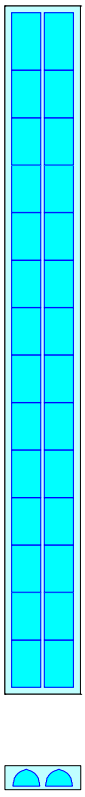
14 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 99.50' Row Length +12.0" End Stone x 2 = 101.50' Base Length
2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

28 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 1,482.7 cf Chamber Storage

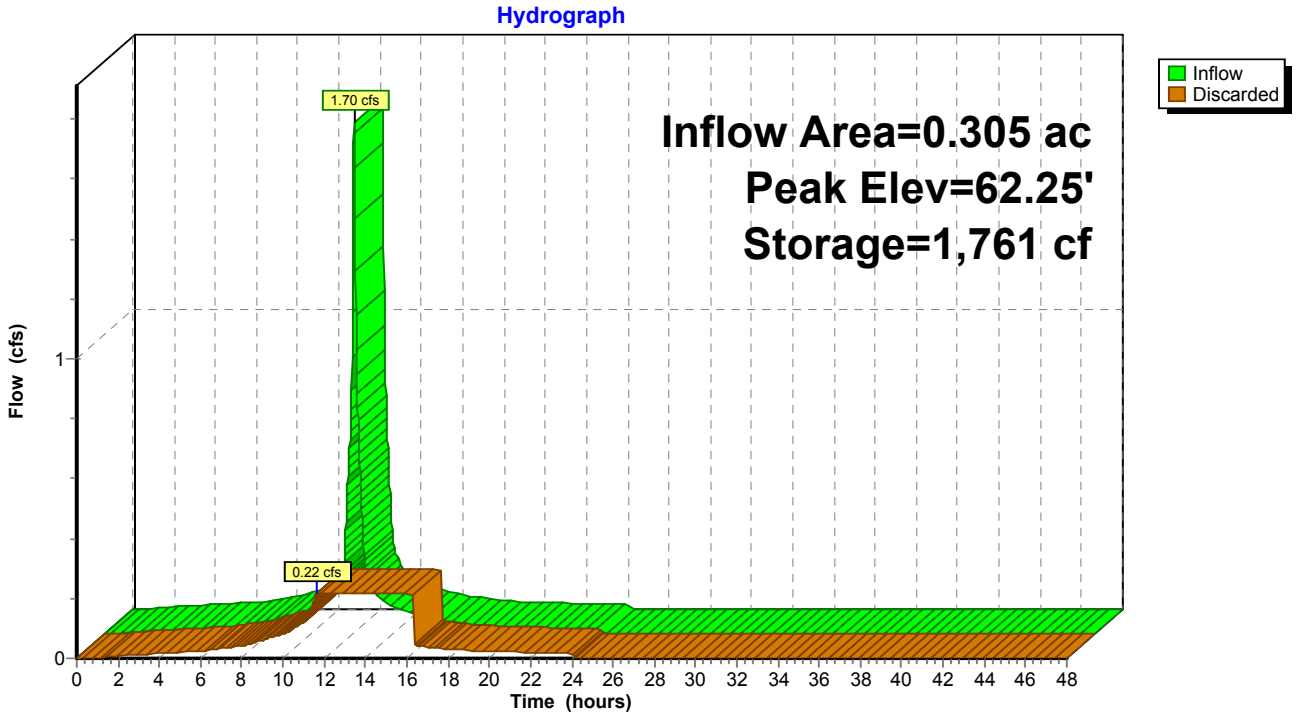
4,014.2 cf Field - 1,482.7 cf Chambers = 2,531.4 cf Stone x 40.0% Voids = 1,012.6 cf Stone Storage

Chamber Storage + Stone Storage = 2,495.3 cf = 0.057 af
Overall Storage Efficiency = 62.2%
Overall System Size = 101.50' x 11.17' x 3.54'

28 Chambers
148.7 cy Field
93.8 cy Stone



Pond P7: Infiltration Chambers



Summary for Pond P8: Infiltration Chambers

Inflow Area = 0.699 ac, 67.39% Impervious, Inflow Depth = 3.52" for 25-Year event
Inflow = 2.69 cfs @ 12.09 hrs, Volume= 0.205 af
Outflow = 0.36 cfs @ 11.70 hrs, Volume= 0.205 af, Atten= 87%, Lag= 0.0 min
Discarded = 0.36 cfs @ 11.70 hrs, Volume= 0.205 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 60.53' @ 12.68 hrs Surf.Area= 1,855 sf Storage= 2,699 cf

Plug-Flow detention time= 50.8 min calculated for 0.205 af (100% of inflow)
Center-of-Mass det. time= 50.8 min (845.1 - 794.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	58.50'	1,574 cf	**35.33'W x 52.50'L x 3.54'H Field A** 6,570 cf Overall - 2,634 cf Embedded = 3,936 cf x 40.0% Voids
#2A	59.00'	2,634 cf	**Cultec R-330XLHD** x 49 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 7 rows
		4,208 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	58.50'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.36 cfs @ 11.70 hrs HW=58.54' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.36 cfs)

Pond P8: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 7 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

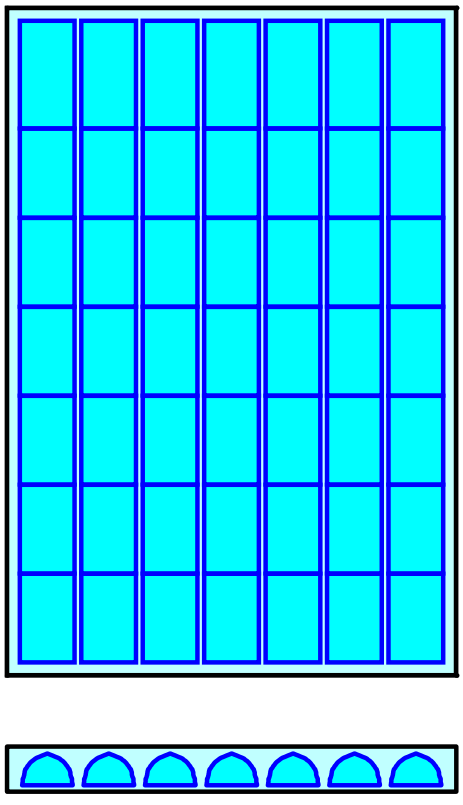
7 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 50.50' Row Length +12.0" End Stone x 2 = 52.50' Base Length
7 Rows x 52.0" Wide + 6.0" Spacing x 6 + 12.0" Side Stone x 2 = 35.33' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

49 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 7 Rows = 2,633.9 cf Chamber Storage

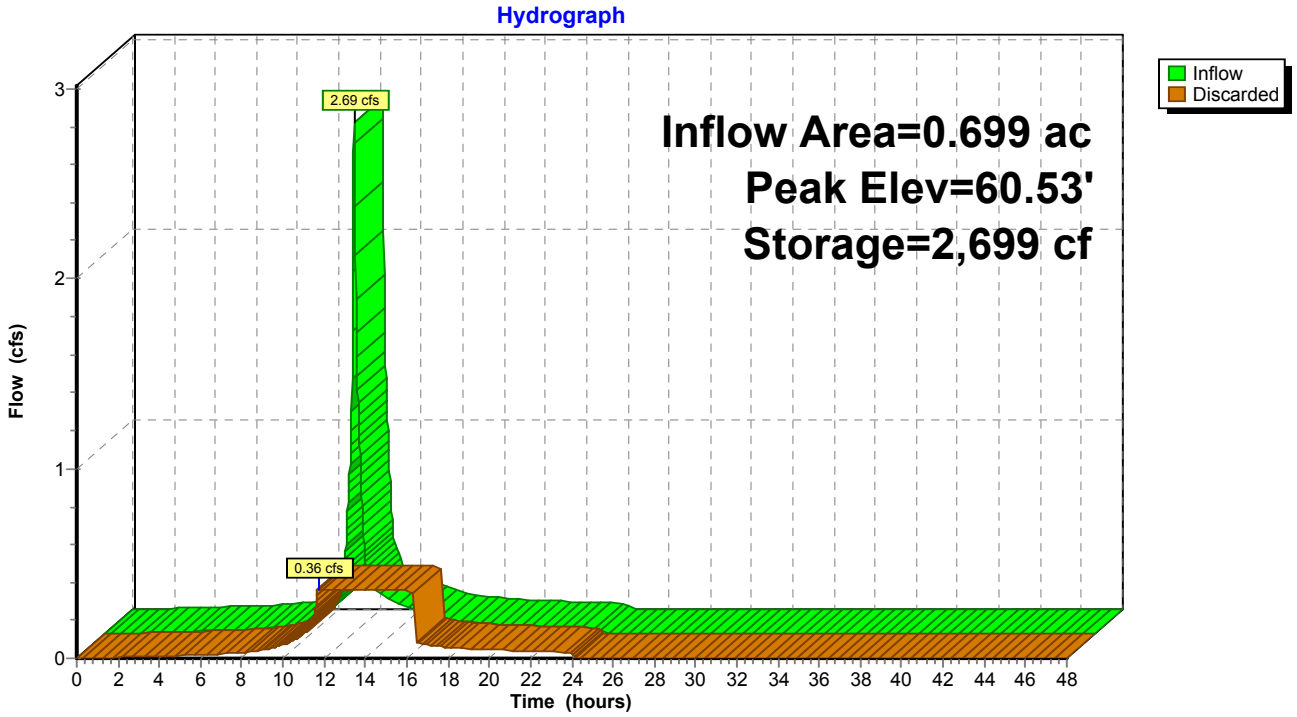
6,569.8 cf Field - 2,633.9 cf Chambers = 3,935.9 cf Stone x 40.0% Voids = 1,574.3 cf Stone Storage

Chamber Storage + Stone Storage = 4,208.3 cf = 0.097 af
Overall Storage Efficiency = 64.1%
Overall System Size = 52.50' x 35.33' x 3.54'

49 Chambers
243.3 cy Field
145.8 cy Stone



Pond P8: Infiltration Chambers



Summary for Pond P9: Infiltration Chambers

Inflow Area = 0.836 ac, 65.23% Impervious, Inflow Depth = 3.31" for 25-Year event
Inflow = 3.10 cfs @ 12.09 hrs, Volume= 0.230 af
Outflow = 0.43 cfs @ 11.72 hrs, Volume= 0.230 af, Atten= 86%, Lag= 0.0 min
Discarded = 0.43 cfs @ 11.72 hrs, Volume= 0.230 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 57.49' @ 12.65 hrs Surf.Area= 2,260 sf Storage= 3,021 cf

Plug-Flow detention time= 47.0 min calculated for 0.230 af (100% of inflow)
Center-of-Mass det. time= 47.0 min (854.3 - 807.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	55.60'	1,933 cf	**20.83'W x 108.50'L x 3.54'H Field A** 8,006 cf Overall - 3,174 cf Embedded = 4,832 cf x 40.0% Voids
#2A	56.10'	3,174 cf	**Cultec R-330XLHD** x 60 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 4 rows
		5,107 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	55.60'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.43 cfs @ 11.72 hrs HW=55.64' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.43 cfs)

Pond P9: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 4 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

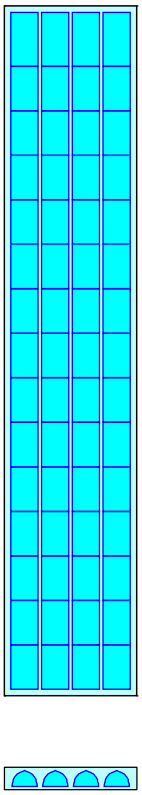
15 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 106.50' Row Length +12.0" End Stone x 2 = 108.50' Base Length
4 Rows x 52.0" Wide + 6.0" Spacing x 3 + 12.0" Side Stone x 2 = 20.83' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

60 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 4 Rows = 3,174.1 cf Chamber Storage

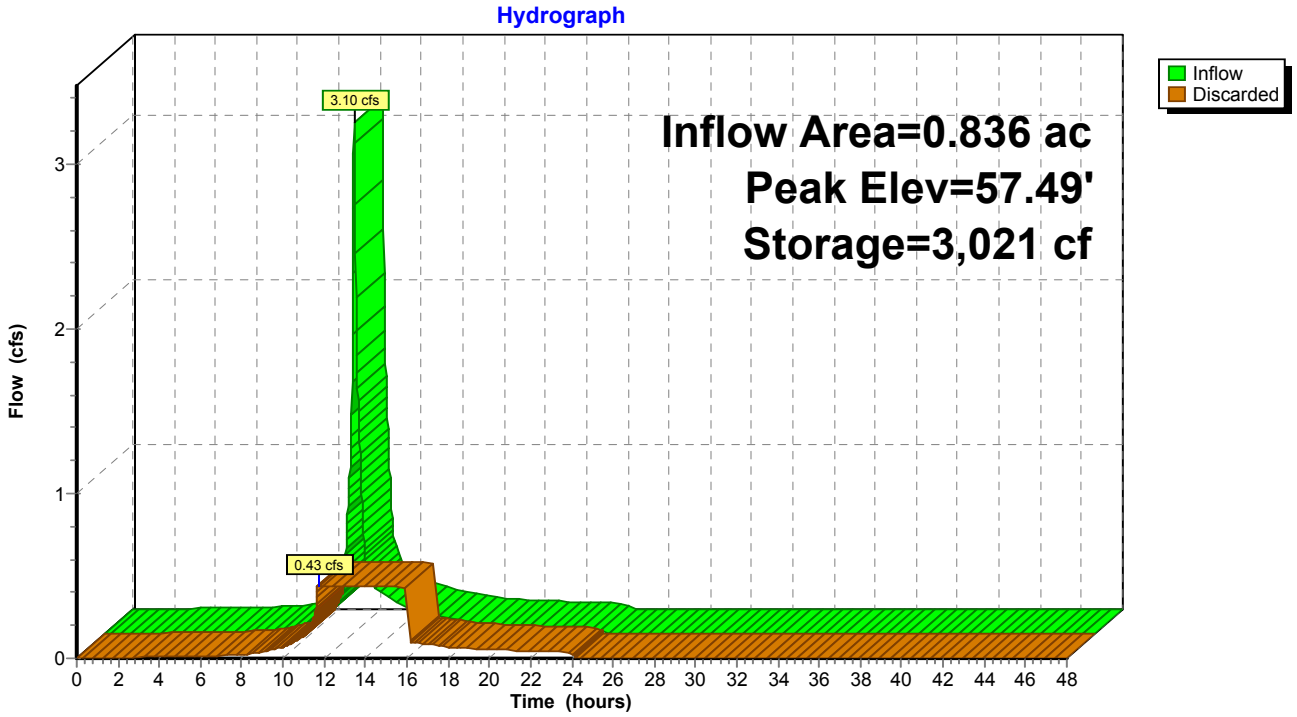
8,005.6 cf Field - 3,174.1 cf Chambers = 4,831.5 cf Stone x 40.0% Voids = 1,932.6 cf Stone Storage

Chamber Storage + Stone Storage = 5,106.7 cf = 0.117 af
Overall Storage Efficiency = 63.8%
Overall System Size = 108.50' x 20.83' x 3.54'

60 Chambers
296.5 cy Field
178.9 cy Stone



Pond P9: Infiltration Chambers



Time span=0.00-48.00 hrs, dt=0.02 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Sub-1 Runoff Area=6,628 sf 64.88% Impervious Runoff Depth=4.46"
Tc=6.0 min CN=77 Runoff=0.79 cfs 0.056 af

Subcatchment1S-1: Sub-1S-1 Runoff Area=13,563 sf 64.32% Impervious Runoff Depth=4.46"
Tc=6.0 min CN=77 Runoff=1.62 cfs 0.116 af

Subcatchment2S: Sub-2 Runoff Area=15,040 sf 10.74% Impervious Runoff Depth=1.20"
Tc=6.0 min CN=44 Runoff=0.36 cfs 0.035 af

Subcatchment3A-1R: Roofs 16 FB, 17, Runoff Area=13,300 sf 100.00% Impervious Runoff Depth=6.86"
Tc=6.0 min CN=98 Runoff=2.12 cfs 0.175 af

Subcatchment3A-S: Sub-3A Runoff Area=43,217 sf 71.58% Impervious Runoff Depth=5.01"
Tc=6.0 min CN=82 Runoff=5.72 cfs 0.414 af

Subcatchment3B-1R: Roofs 1-8 FB Runoff Area=15,230 sf 100.00% Impervious Runoff Depth=6.86"
Tc=6.0 min CN=98 Runoff=2.43 cfs 0.200 af

Subcatchment3B-S: Sub-3B-S Runoff Area=12,902 sf 58.89% Impervious Runoff Depth=4.13"
Tc=6.0 min CN=74 Runoff=1.43 cfs 0.102 af

Subcatchment3C-1R: Roofs 10 F Runoff Area=1,027 sf 100.00% Impervious Runoff Depth=6.86"
Tc=6.0 min CN=98 Runoff=0.16 cfs 0.013 af

Subcatchment3C-2R: Roofs 12-13 B Runoff Area=1,728 sf 100.00% Impervious Runoff Depth=6.86"
Tc=6.0 min CN=98 Runoff=0.28 cfs 0.023 af

Subcatchment3C-3R: Roofs 14-15 B Runoff Area=1,728 sf 100.00% Impervious Runoff Depth=6.86"
Tc=6.0 min CN=98 Runoff=0.28 cfs 0.023 af

Subcatchment3C-4R: Roofs 10-11 B Runoff Area=1,728 sf 100.00% Impervious Runoff Depth=6.86"
Tc=6.0 min CN=98 Runoff=0.28 cfs 0.023 af

Subcatchment3C-S: Sub-3C Runoff Area=15,793 sf 6.05% Impervious Runoff Depth=1.81"
Tc=6.0 min CN=51 Runoff=0.69 cfs 0.055 af

Subcatchment3D-S: Sub-3D-S Runoff Area=15,288 sf 5.25% Impervious Runoff Depth=2.38"
Tc=6.0 min CN=57 Runoff=0.93 cfs 0.070 af

Subcatchment3E-S: Sub-3E-S Runoff Area=7,970 sf 1.39% Impervious Runoff Depth=2.09"
Tc=6.0 min CN=54 Runoff=0.42 cfs 0.032 af

Subcatchment3F-1R: Roofs 26-28 FB Runoff Area=5,720 sf 100.00% Impervious Runoff Depth=6.86"
Tc=6.0 min CN=98 Runoff=0.91 cfs 0.075 af

Subcatchment3F-2R: Roofs 29-30 B, 31 FB Runoff Area=3,615 sf 100.00% Impervious Runoff Depth=6.86"
Tc=6.0 min CN=98 Runoff=0.58 cfs 0.047 af

Subcatchment3F-3R: Roofs 29 F Runoff Area=1,027 sf 100.00% Impervious Runoff Depth=6.86"
Tc=6.0 min CN=98 Runoff=0.16 cfs 0.013 af

Subcatchment3F-4R: Roofs 30 F Runoff Area=1,035 sf 100.00% Impervious Runoff Depth=6.86"
Tc=6.0 min CN=98 Runoff=0.17 cfs 0.014 af

Subcatchment3F-S: Sub-3F-S Runoff Area=21,093 sf 52.96% Impervious Runoff Depth=3.81"
Tc=6.0 min CN=71 Runoff=2.16 cfs 0.154 af

Subcatchment3G-1R: Roof 9 FB Runoff Area=1,932 sf 100.00% Impervious Runoff Depth=6.86"
Tc=6.0 min CN=98 Runoff=0.31 cfs 0.025 af

Subcatchment3G-2R: Roofs 11 F Runoff Area=1,035 sf 100.00% Impervious Runoff Depth=6.86"
Tc=6.0 min CN=98 Runoff=0.17 cfs 0.014 af

Subcatchment3G-3R: Roofs 12 F Runoff Area=1,027 sf 100.00% Impervious Runoff Depth=6.86"
Tc=6.0 min CN=98 Runoff=0.16 cfs 0.013 af

Subcatchment3G-4R: Roofs 13 F Runoff Area=1,035 sf 100.00% Impervious Runoff Depth=6.86"
Tc=6.0 min CN=98 Runoff=0.17 cfs 0.014 af

Subcatchment3G-5R: Roofs 14 F Runoff Area=1,027 sf 100.00% Impervious Runoff Depth=6.86"
Tc=6.0 min CN=98 Runoff=0.16 cfs 0.013 af

Subcatchment3G-6R: Roofs 15 F Runoff Area=1,035 sf 100.00% Impervious Runoff Depth=6.86"
Tc=6.0 min CN=98 Runoff=0.17 cfs 0.014 af

Subcatchment3G-S: Sub-3G-S Runoff Area=27,855 sf 57.22% Impervious Runoff Depth=4.24"
Tc=6.0 min CN=75 Runoff=3.17 cfs 0.226 af

Subcatchment3H-S: Sub-3A Runoff Area=10,072 sf 50.76% Impervious Runoff Depth=3.60"
Tc=6.0 min CN=69 Runoff=0.97 cfs 0.069 af

Subcatchment3I-S: Sub-3I-S Runoff Area=5,482 sf 79.57% Impervious Runoff Depth=5.46"
Tc=6.0 min CN=86 Runoff=0.78 cfs 0.057 af

Subcatchment4S: Sub-4 Runoff Area=3,736 sf 1.12% Impervious Runoff Depth=0.88"
Tc=6.0 min CN=40 Runoff=0.05 cfs 0.006 af

Subcatchment4S-1: Sub-4 Runoff Area=9,528 sf 12.07% Impervious Runoff Depth=1.37"
Tc=6.0 min CN=46 Runoff=0.28 cfs 0.025 af

Subcatchment4S-1R: Roofs 32 FB Runoff Area=1,903 sf 100.00% Impervious Runoff Depth=6.86"
Tc=6.0 min CN=98 Runoff=0.30 cfs 0.025 af

Subcatchment5S: Sub -5 Runoff Area=12,091 sf 18.97% Impervious Runoff Depth=1.81"
Tc=6.0 min CN=51 Runoff=0.52 cfs 0.042 af

Subcatchment5S-1: Sub 5S-1 Runoff Area=10,625 sf 14.55% Impervious Runoff Depth=1.54"
Tc=6.0 min CN=48 Runoff=0.37 cfs 0.031 af

Subcatchment5S-1R: Roofs 19-21 FB Runoff Area=5,720 sf 100.00% Impervious Runoff Depth=6.86"
Tc=6.0 min CN=98 Runoff=0.91 cfs 0.075 af

Subcatchment5S-P: Pavement Runoff Area=15,144 sf 56.52% Impervious Runoff Depth=3.91"
Tc=6.0 min CN=72 Runoff=1.59 cfs 0.113 af

Reach DP-1: DMH Inflow=1.46 cfs 0.093 af
Outflow=1.46 cfs 0.093 af

Reach DP-2: DP-2 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach DP-3: DP-3 Inflow=3.58 cfs 0.556 af
Outflow=3.58 cfs 0.556 af

Reach DP-4: PL Inflow=0.05 cfs 0.006 af
Outflow=0.05 cfs 0.006 af

Reach DP-5: PL Inflow=0.52 cfs 0.042 af
Outflow=0.52 cfs 0.042 af

Pond D-1: Depression Peak Elev=59.49' Storage=249 cf Inflow=0.36 cfs 0.035 af
Outflow=0.12 cfs 0.035 af

Pond D-2: Depression Peak Elev=58.30' Storage=1,694 cf Inflow=1.50 cfs 0.123 af
Discarded=0.22 cfs 0.123 af Primary=0.00 cfs 0.000 af Outflow=0.22 cfs 0.123 af

Pond D-3: Depression Peak Elev=63.09' Storage=73 cf Inflow=0.28 cfs 0.025 af
Outflow=0.16 cfs 0.025 af

Pond D-4: Depression Peak Elev=54.14' Storage=124 cf Inflow=0.37 cfs 0.031 af
Outflow=0.18 cfs 0.031 af

Pond DB-1: Prop Detention Basin Peak Elev=59.47' Storage=11,994 cf Inflow=9.59 cfs 0.581 af
Outflow=2.94 cfs 0.455 af

Pond P1: Infiltration Chambers Peak Elev=58.74' Storage=328 cf Inflow=0.31 cfs 0.025 af
Outflow=0.04 cfs 0.025 af

Pond P10: Infiltration Chambers Peak Elev=62.11' Storage=169 cf Inflow=0.16 cfs 0.013 af
Outflow=0.02 cfs 0.013 af

Pond P11: Infiltration Chambers Peak Elev=62.14' Storage=170 cf Inflow=0.17 cfs 0.014 af
Outflow=0.02 cfs 0.014 af

Pond P12: Infiltration Chambers Peak Elev=60.01' Storage=268 cf Inflow=0.30 cfs 0.025 af
Outflow=0.05 cfs 0.025 af

Pond P13: Infiltration Chambers Peak Elev=60.01' Storage=1,006 cf Inflow=1.62 cfs 0.116 af
Discarded=0.11 cfs 0.079 af Primary=0.78 cfs 0.036 af Outflow=0.89 cfs 0.116 af

Pond P2: Infiltration Chambers Peak Elev=59.67' Storage=2,810 cf Inflow=2.43 cfs 0.200 af
Outflow=0.24 cfs 0.200 af

Pond P3: Infiltration Chambers Peak Elev=58.61' Storage=169 cf Inflow=0.16 cfs 0.013 af
Outflow=0.02 cfs 0.013 af

Pond P4: Infiltration Chambers Peak Elev=59.02' Storage=355 cf Inflow=0.33 cfs 0.027 af
Outflow=0.04 cfs 0.027 af

Pond P5: Infiltration Chambers Peak Elev=62.52' Storage=355 cf Inflow=0.33 cfs 0.027 af
Outflow=0.04 cfs 0.027 af

Pond P6: Infiltration Chambers Peak Elev=63.53' Storage=1,886 cf Inflow=4.77 cfs 0.341 af
Discarded=0.17 cfs 0.174 af Primary=4.11 cfs 0.167 af Outflow=4.27 cfs 0.341 af

Pond P7: Infiltration Chambers Peak Elev=63.39' Storage=2,426 cf Inflow=2.12 cfs 0.175 af
Outflow=0.22 cfs 0.175 af

Pond P8: Infiltration Chambers Peak Elev=62.03' Storage=4,199 cf Inflow=3.65 cfs 0.276 af
Outflow=0.36 cfs 0.276 af

Pond P9: Infiltration Chambers Peak Elev=58.80' Storage=4,800 cf Inflow=4.26 cfs 0.315 af
Outflow=0.43 cfs 0.315 af

Total Runoff Area = 7.045 ac Runoff Volume = 2.402 af Average Runoff Depth = 4.09"
45.88% Pervious = 3.233 ac 54.12% Impervious = 3.812 ac

Summary for Subcatchment 1S: Sub-1

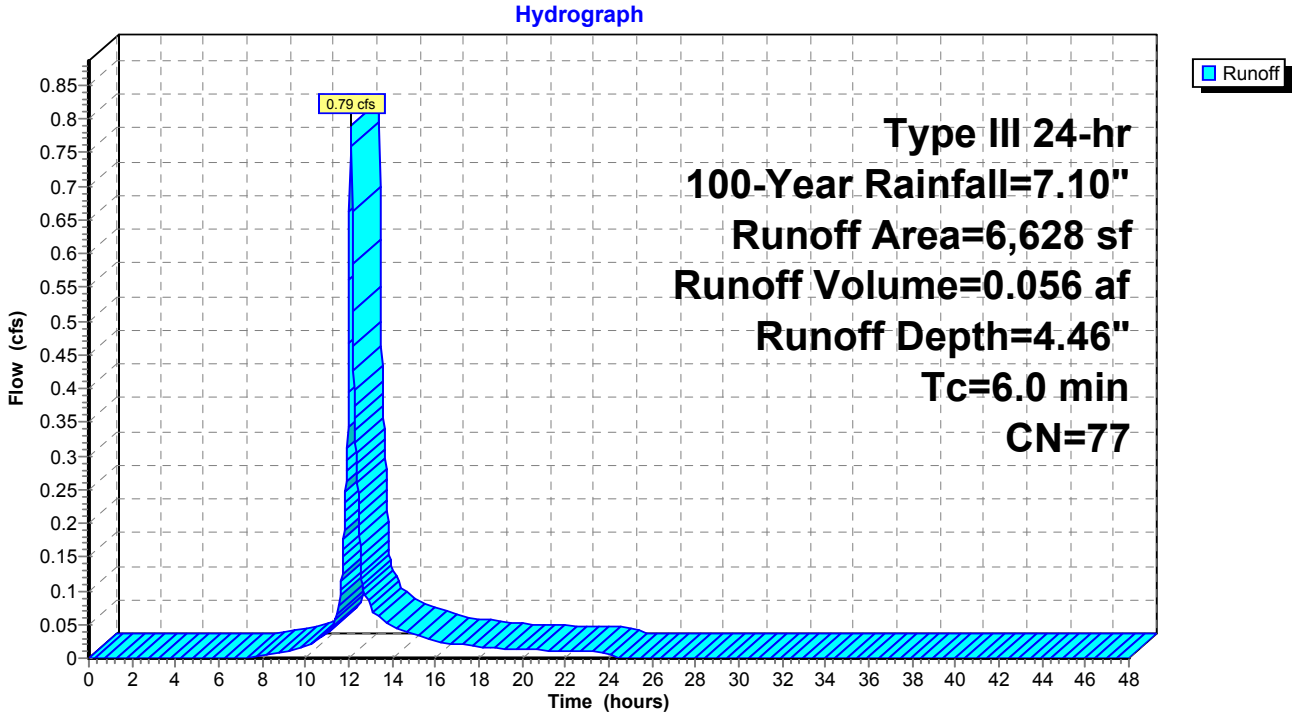
Runoff = 0.79 cfs @ 12.09 hrs, Volume= 0.056 af, Depth= 4.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
	2,328	39	>75% Grass cover, Good, HSG A
	3,451	98	Paved roads w/curbs & sewers, HSG A
*	849	98	Paved sidewalk, HSG A
	6,628	77	Weighted Average
	2,328		35.12% Pervious Area
	4,300		64.88% Impervious Area

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

Subcatchment 1S: Sub-1



Summary for Subcatchment 1S-1: Sub-1S-1

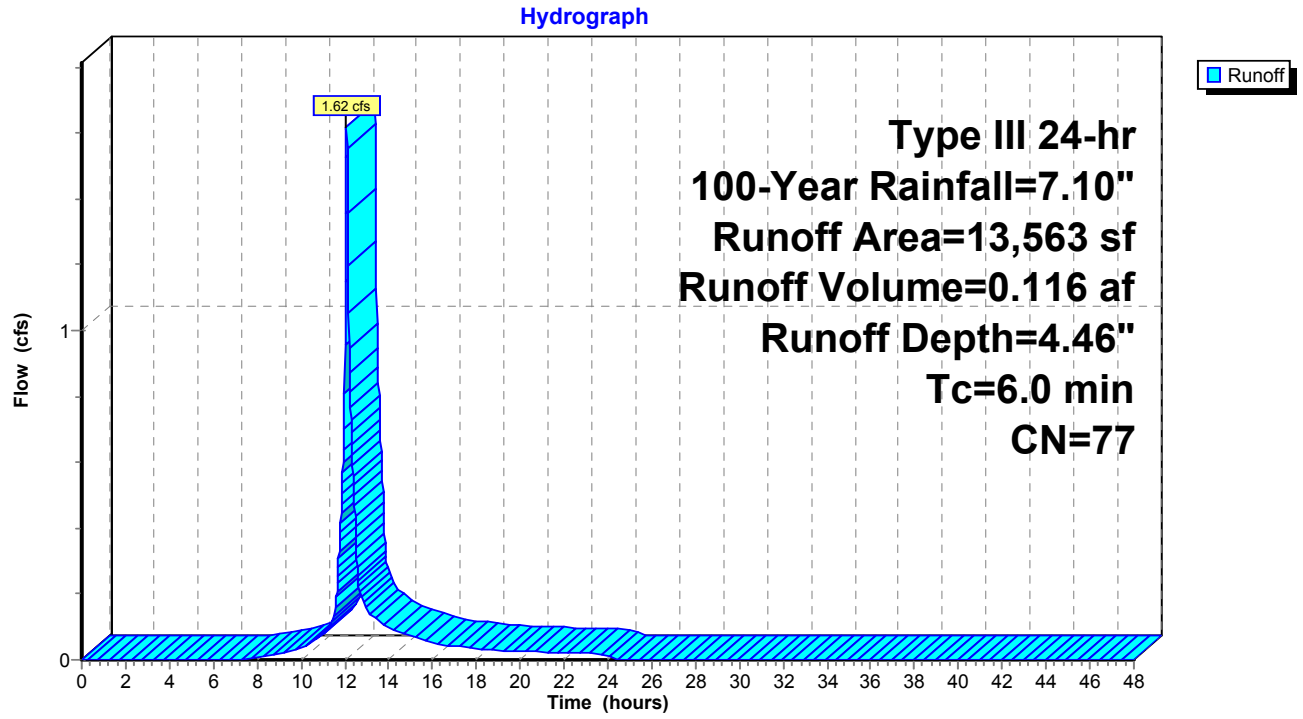
Runoff = 1.62 cfs @ 12.09 hrs, Volume= 0.116 af, Depth= 4.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
	4,839	39	>75% Grass cover, Good, HSG A
	6,500	98	Paved roads w/curbs & sewers, HSG A
*	1,077	98	Paved sidewalk, HSG A
*	163	98	Walls, HSG A
*	984	98	Paved drives, HSG A
	13,563	77	Weighted Average
	4,839		35.68% Pervious Area
	8,724		64.32% Impervious Area

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

Subcatchment 1S-1: Sub-1S-1



Summary for Subcatchment 2S: Sub-2

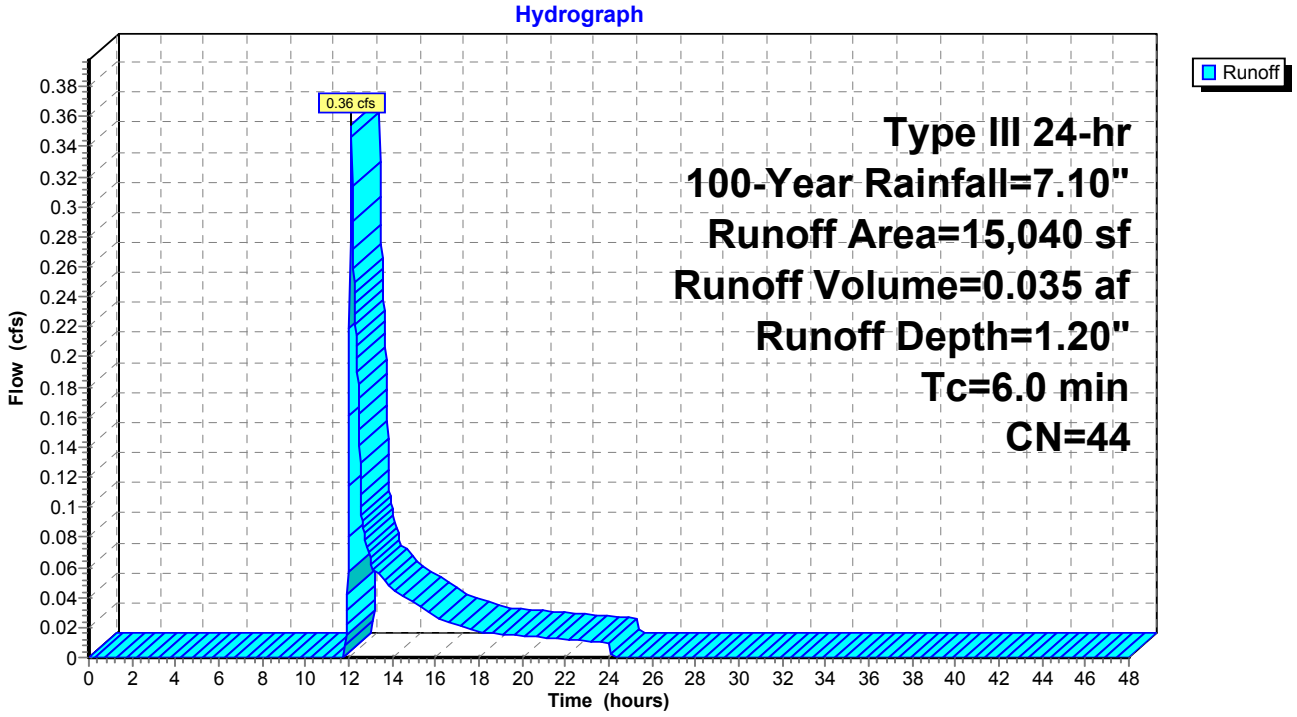
Runoff = 0.36 cfs @ 12.11 hrs, Volume= 0.035 af, Depth= 1.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
	7,795	39	>75% Grass cover, Good, HSG A
*	100	98	Walls, HSG A
*	570	98	Decks, HSG A
*	945	98	Decks, HSG A
	2,630	39	>75% Grass cover, Good, HSG A
*	3,000	30	Woods, Good, HSG A - offsite
	15,040	44	Weighted Average
	13,425		89.26% Pervious Area
	1,615		10.74% Impervious Area

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

Subcatchment 2S: Sub-2



Summary for Subcatchment 3A-1R: Roofs 16 FB, 17, 18-20 & 24-25 FB

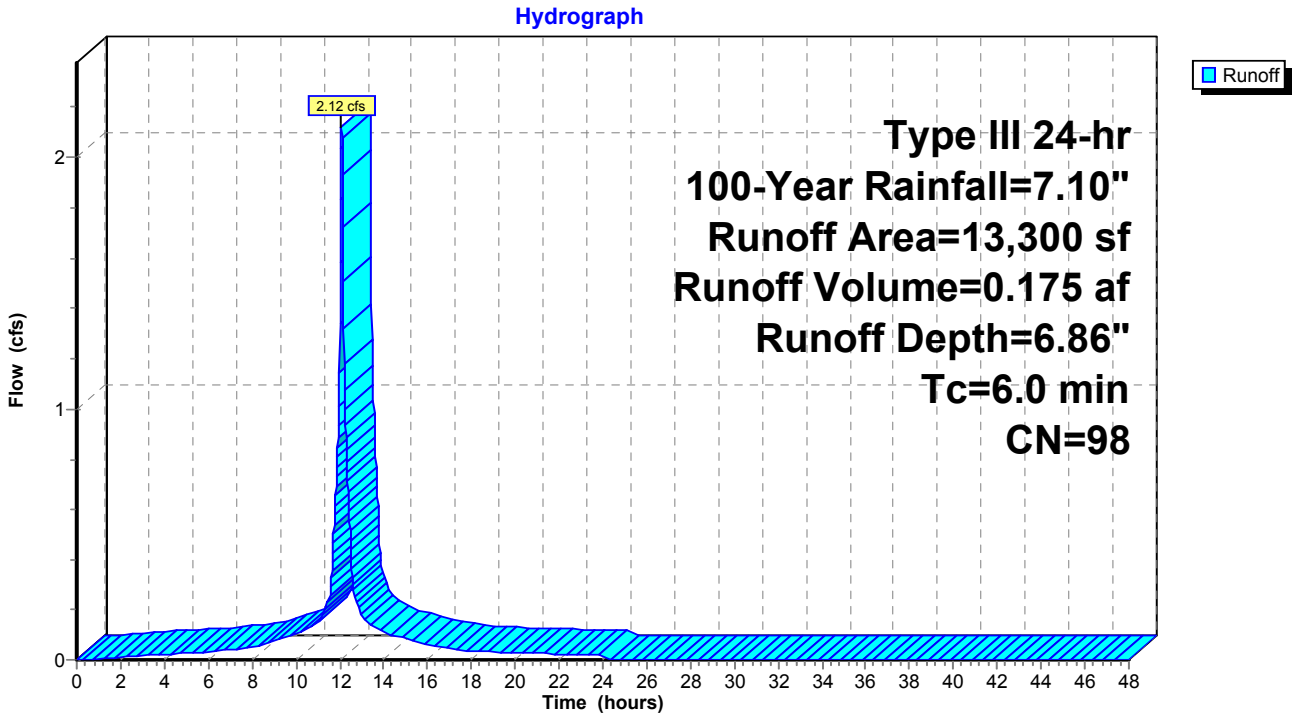
Runoff = 2.12 cfs @ 12.08 hrs, Volume= 0.175 af, Depth= 6.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
	5,720	98	Roofs, HSG A
	3,790	98	Roofs, HSG A
*	1,903	98	Roofs, HSG A
	837	98	Roofs, HSG A
	23	98	Roofs, HSG B
*	1,027	98	Roofs, HSG A
	13,300	98	Weighted Average
	13,300		100.00% Impervious Area

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

Subcatchment 3A-1R: Roofs 16 FB, 17, 18-20 & 24-25 FB



Summary for Subcatchment 3A-S: Sub-3A

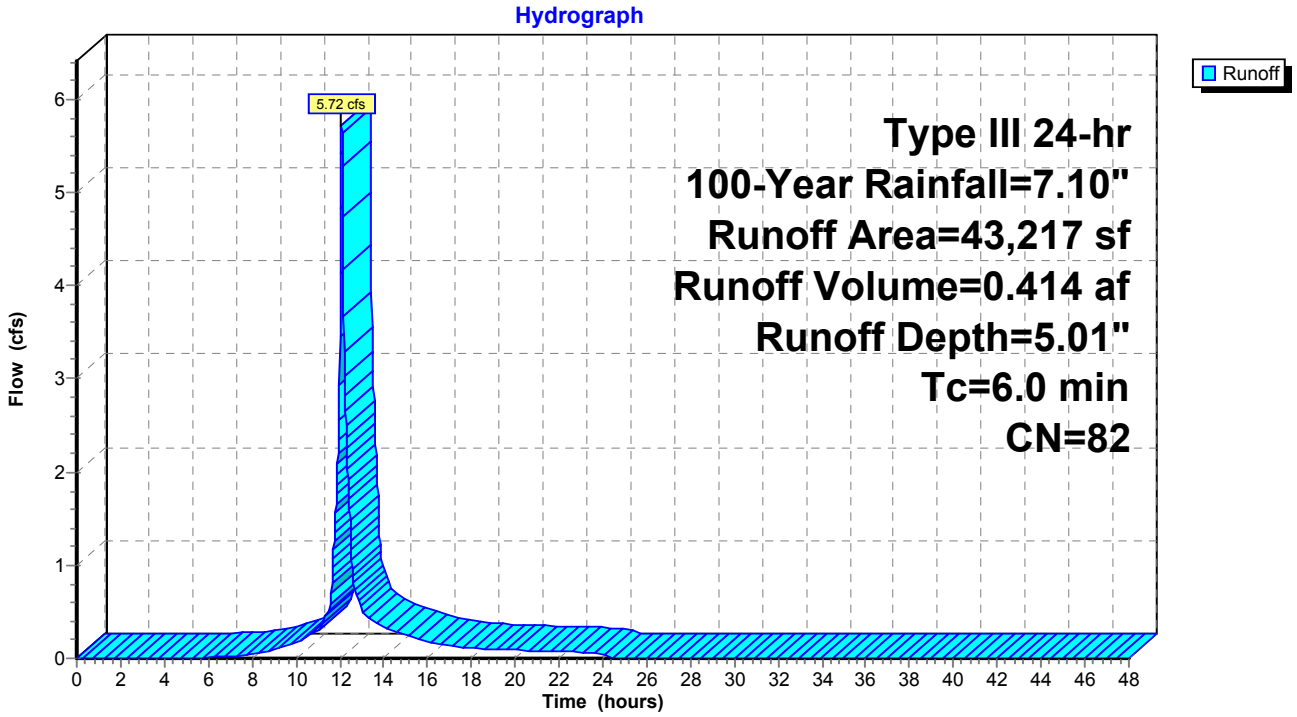
Runoff = 5.72 cfs @ 12.09 hrs, Volume= 0.414 af, Depth= 5.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
	7,575	39	>75% Grass cover, Good, HSG A
	1,836	61	>75% Grass cover, Good, HSG B
*	556	98	Decks, HSG A
*	8,140	98	Detention Basin, HSG A
*	4,387	98	Detention Basin, HSG B
*	146	98	Riprap, HSG A
*	70	98	Riprap, HSG B
*	113	98	Walls, HSG A
*	70	98	Walls, HSG B
*	1,384	98	Roofs, HSG A - offsite
*	16,069	98	Paved parking, HSG A - offsite
*	1,189	39	>75% Grass cover, Good, HSG A - offsite
*	1,682	30	Woods, Good, HSG A - offsite
	43,217	82	Weighted Average
	12,282		28.42% Pervious Area
	30,935		71.58% Impervious Area

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

Subcatchment 3A-S: Sub-3A



Summary for Subcatchment 3B-1R: Roofs 1-8 FB

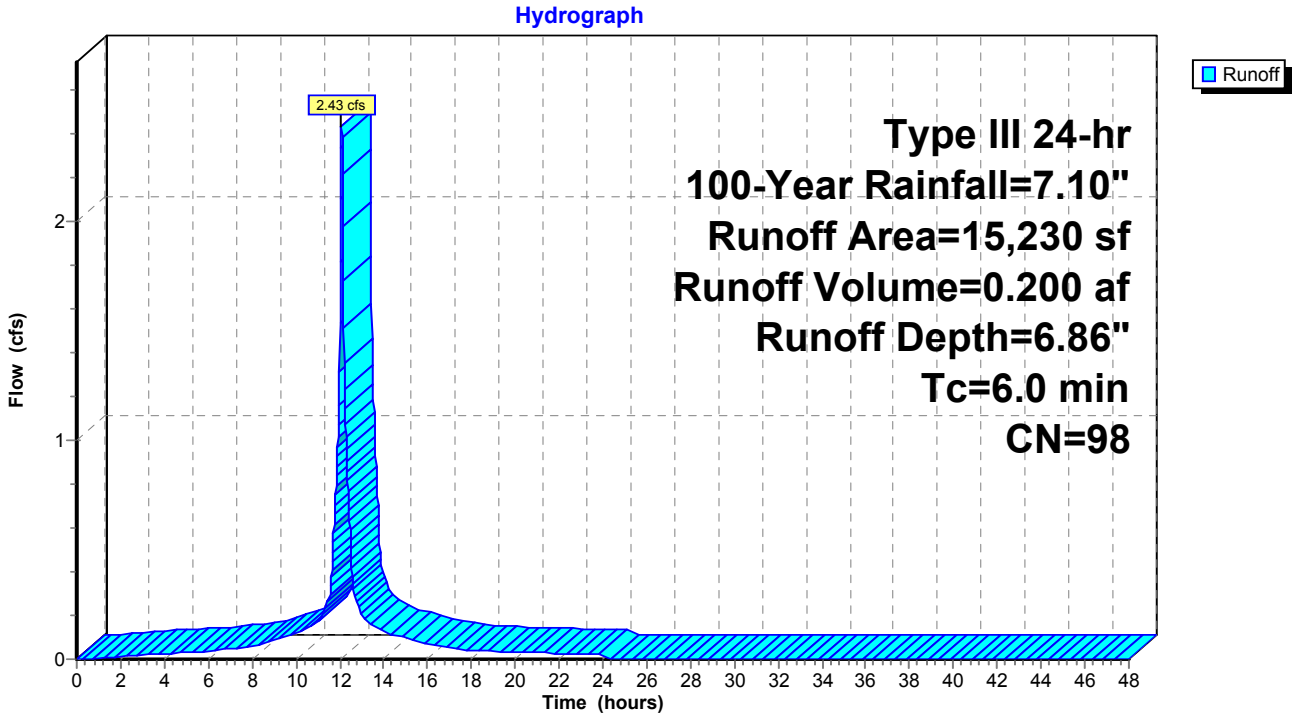
Runoff = 2.43 cfs @ 12.08 hrs, Volume= 0.200 af, Depth= 6.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

Area (sf)	CN	Description
15,230	98	Roofs, HSG A
15,230		100.00% Impervious Area

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

Subcatchment 3B-1R: Roofs 1-8 FB



Summary for Subcatchment 3B-S: Sub-3B-S

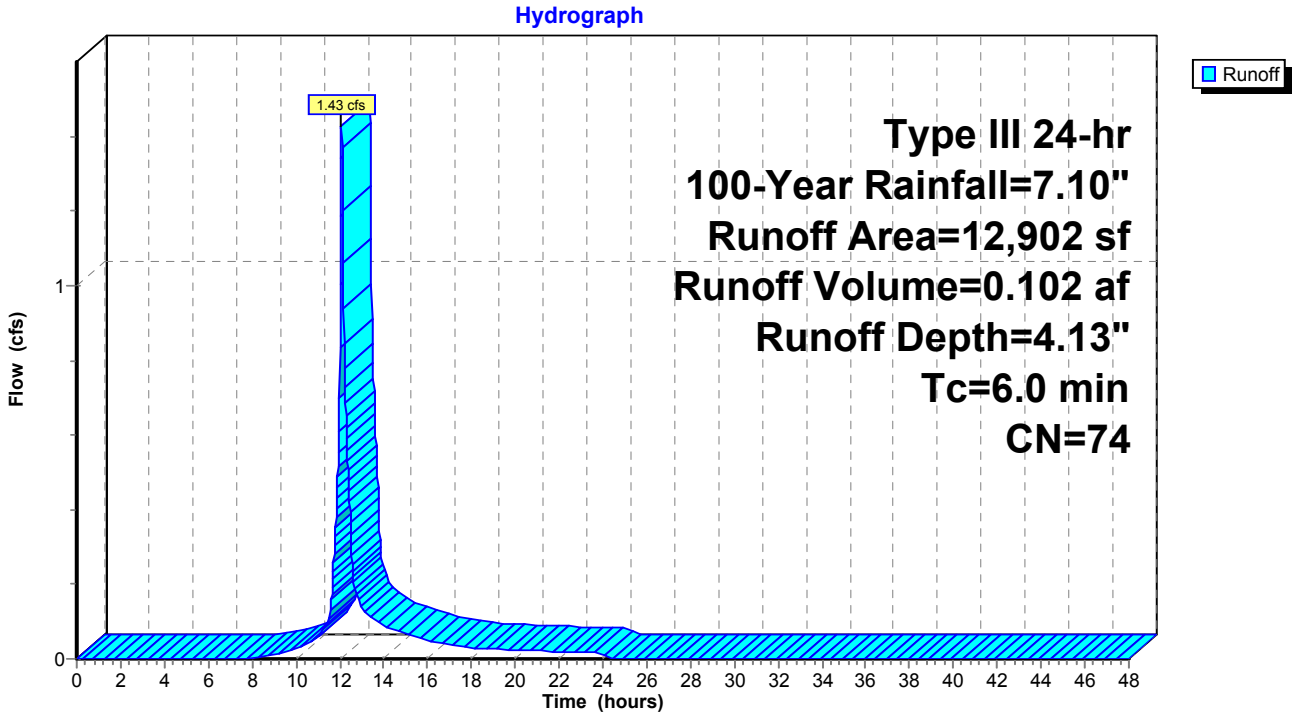
Runoff = 1.43 cfs @ 12.09 hrs, Volume= 0.102 af, Depth= 4.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
*	3,581	98	Paved drives, HSG A
*	185	98	Paved drives, HSG B
*	2,716	98	Paved roads w/curbs & sewers, HSG A
	776	98	Paved roads w/curbs & sewers, HSG B
*	340	98	Walks, HSG A
	5,125	39	>75% Grass cover, Good, HSG A
	179	61	>75% Grass cover, Good, HSG B
	12,902	74	Weighted Average
	5,304		41.11% Pervious Area
	7,598		58.89% Impervious Area

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

Subcatchment 3B-S: Sub-3B-S



Summary for Subcatchment 3C-1R: Roofs 10 F

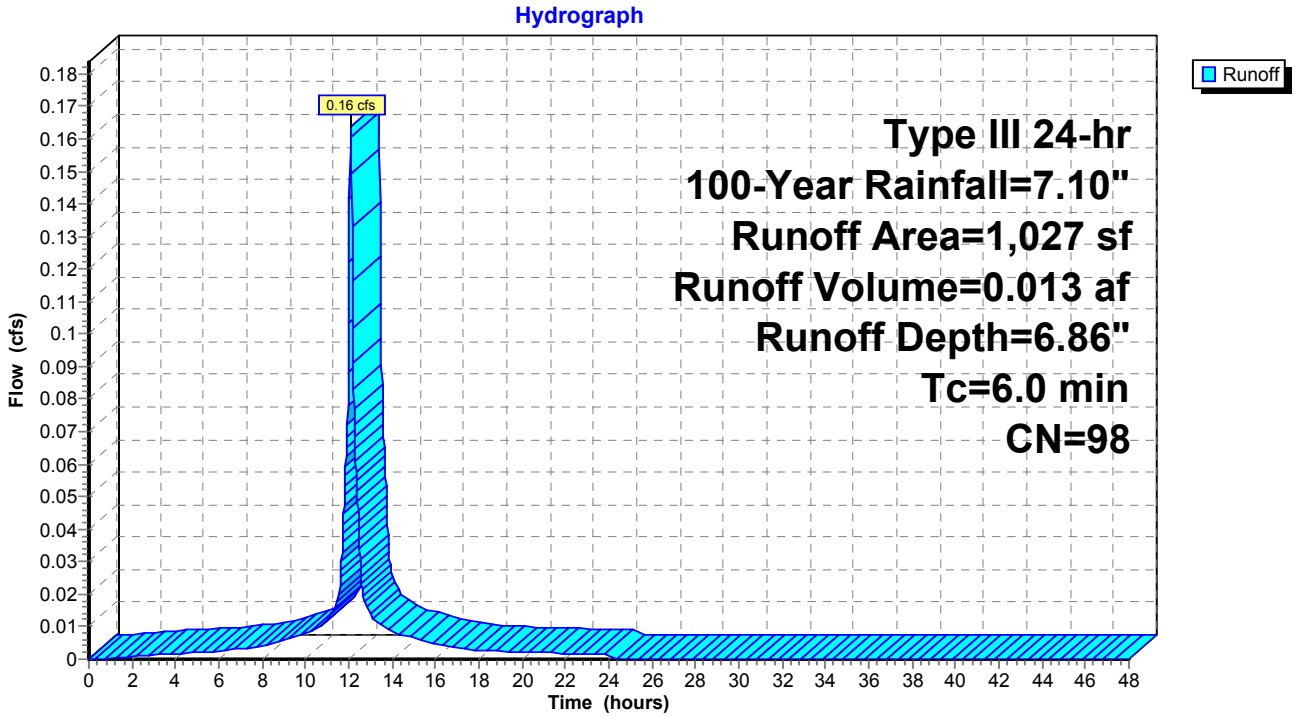
Runoff = 0.16 cfs @ 12.08 hrs, Volume= 0.013 af, Depth= 6.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
*	1,027	98	Roofs, HSG B
	1,027		100.00% Impervious Area

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

Subcatchment 3C-1R: Roofs 10 F



Summary for Subcatchment 3C-2R: Roofs 12-13 B

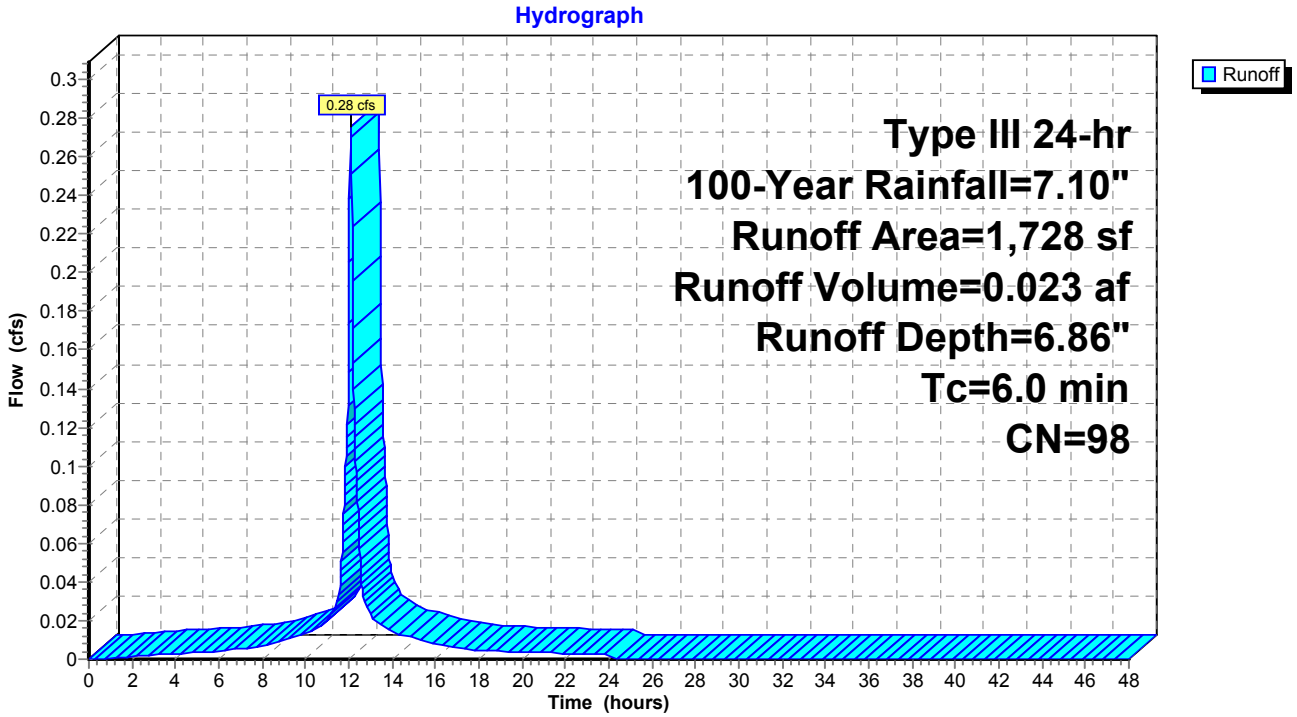
Runoff = 0.28 cfs @ 12.08 hrs, Volume= 0.023 af, Depth= 6.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
*	1,728	98	Roofs, HSG B
	1,728		100.00% Impervious Area

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

Subcatchment 3C-2R: Roofs 12-13 B



Summary for Subcatchment 3C-3R: Roofs 14-15 B

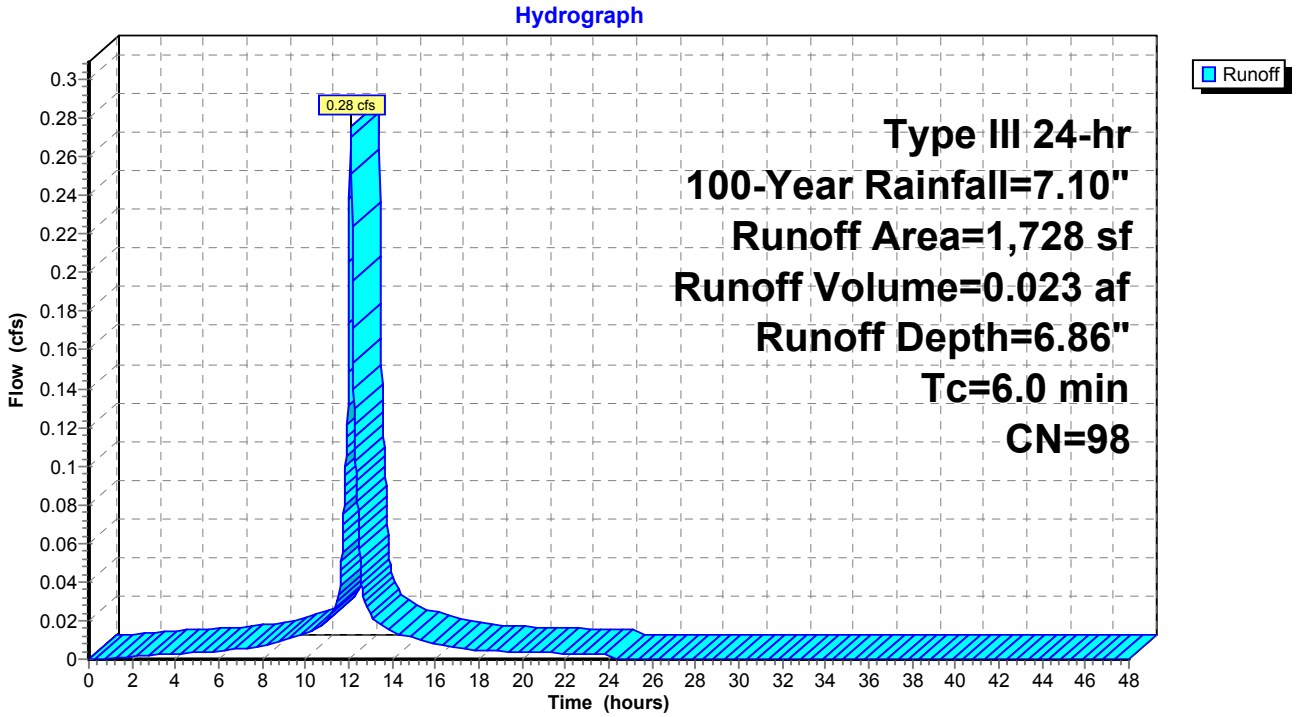
Runoff = 0.28 cfs @ 12.08 hrs, Volume= 0.023 af, Depth= 6.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
*	1,728	98	Roofs, HSG B
	1,728		100.00% Impervious Area

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

Subcatchment 3C-3R: Roofs 14-15 B



Summary for Subcatchment 3C-4R: Roofs 10-11 B

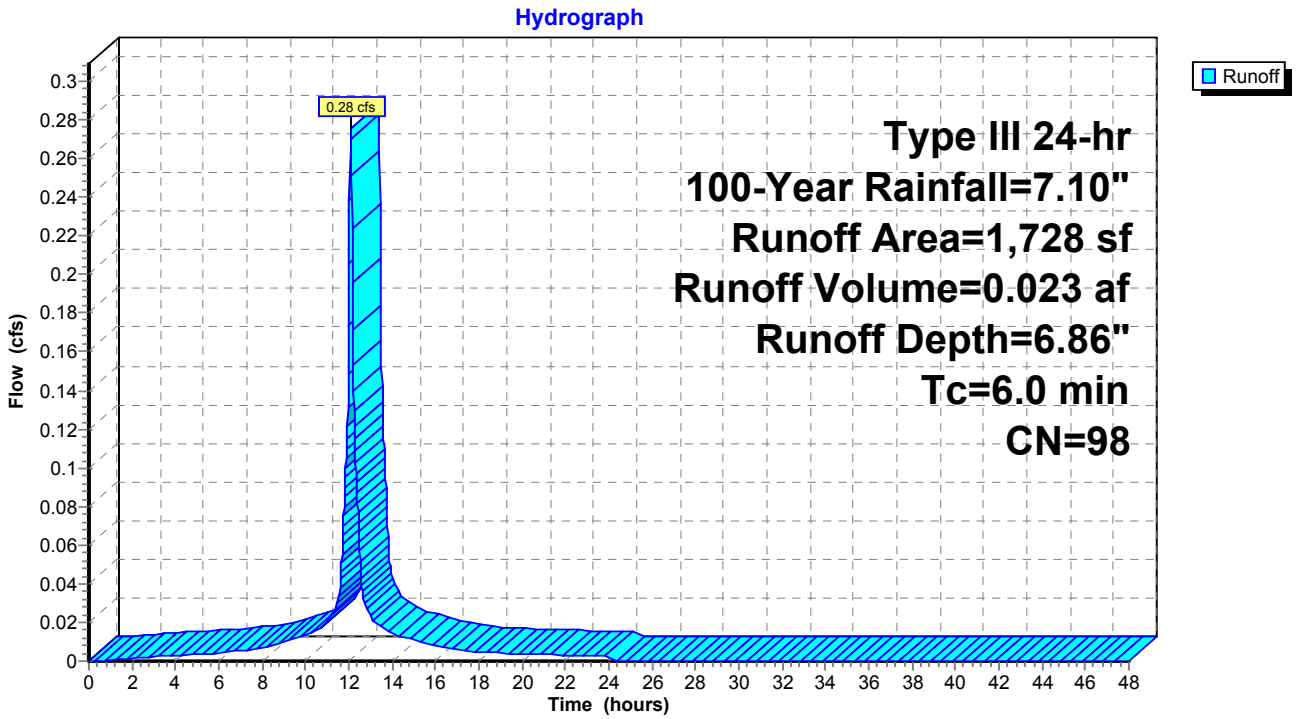
Runoff = 0.28 cfs @ 12.08 hrs, Volume= 0.023 af, Depth= 6.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
*	1,538	98	Roofs, HSG B
	190	98	Roofs, HSG A
	1,728	98	Weighted Average
	1,728		100.00% Impervious Area

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

Subcatchment 3C-4R: Roofs 10-11 B



Summary for Subcatchment 3C-S: Sub-3C

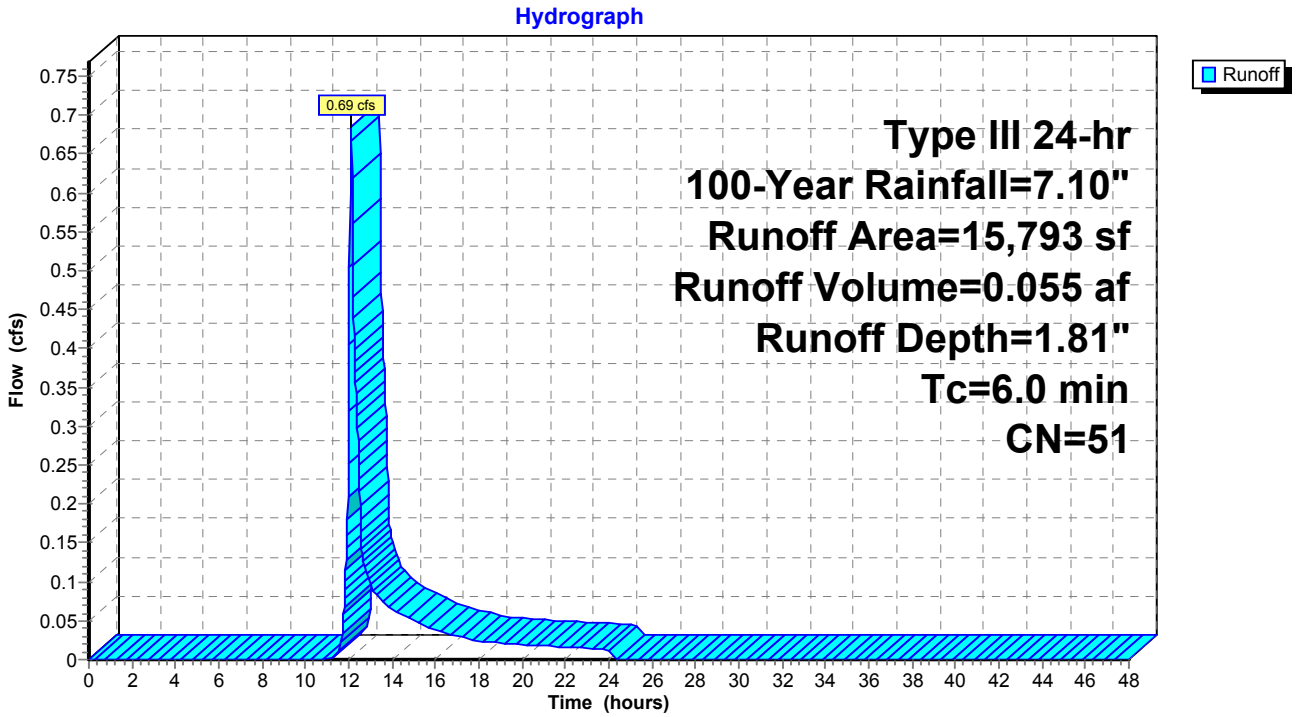
Runoff = 0.69 cfs @ 12.10 hrs, Volume= 0.055 af, Depth= 1.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
*	290	98	Paved drives, HSG A - offsite
*	2,113	30	Woods, Good, HSG A - offsite
*	3,045	39	>75% Grass cover, Good, HSG A - offsite
	6,567	61	>75% Grass cover, Good, HSG B
	3,112	39	>75% Grass cover, Good, HSG A
*	185	98	Decks, HSG A
*	371	98	Decks, HSG B
*	110	98	Riprap, HSG B
	15,793	51	Weighted Average
	14,837		93.95% Pervious Area
	956		6.05% Impervious Area

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

Subcatchment 3C-S: Sub-3C



Summary for Subcatchment 3D-S: Sub-3D-S

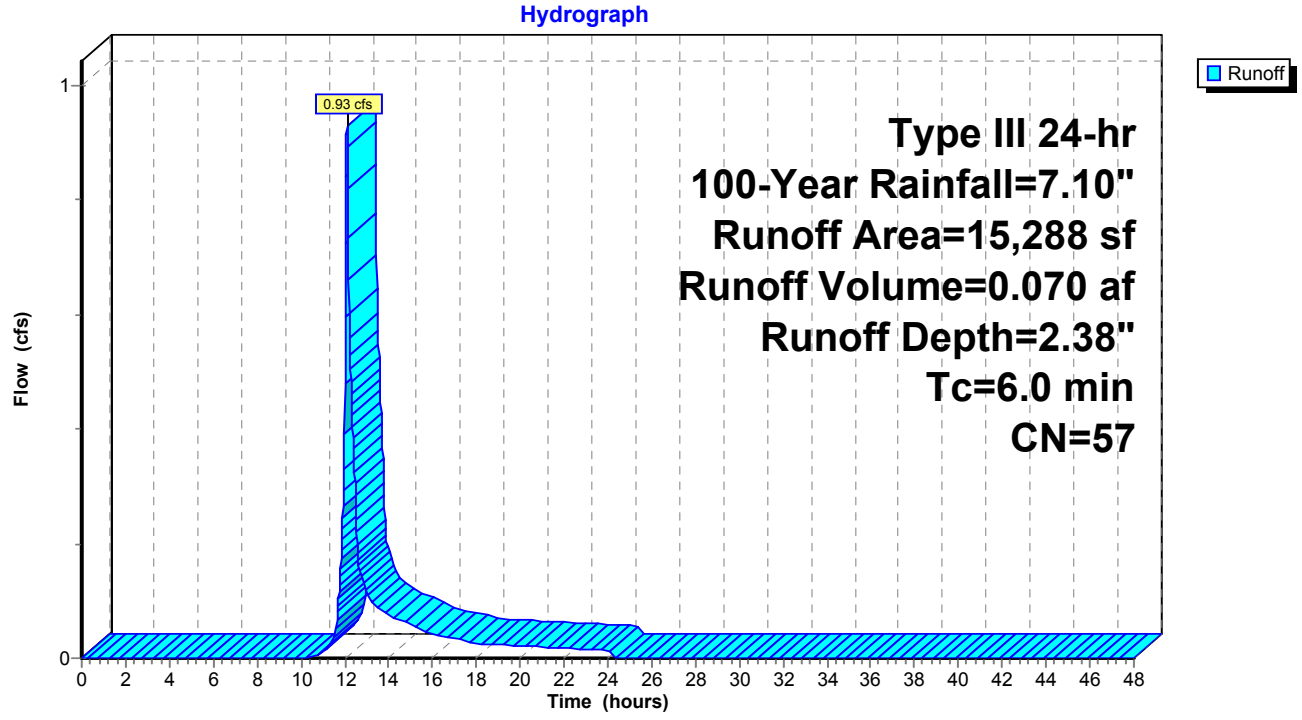
Runoff = 0.93 cfs @ 12.10 hrs, Volume= 0.070 af, Depth= 2.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
	3,098	55	Woods, Good, HSG B
	6,117	61	>75% Grass cover, Good, HSG B
	1,408	39	>75% Grass cover, Good, HSG A
*	641	98	Decks, HSG B
*	100	98	Decks, HSG A
*	61	98	Riprap, HSG B
*	96	30	Woods, Good, HSG A - offsite
*	1,076	39	>75% Grass cover, Good, HSG A - offsite
*	957	61	>75% Grass cover, Good, HSG B - offsite
*	1,734	55	Woods, Good, HSG B - offsite
	15,288	57	Weighted Average
	14,486		94.75% Pervious Area
	802		5.25% Impervious Area

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

Subcatchment 3D-S: Sub-3D-S



Summary for Subcatchment 3E-S: Sub-3E-S

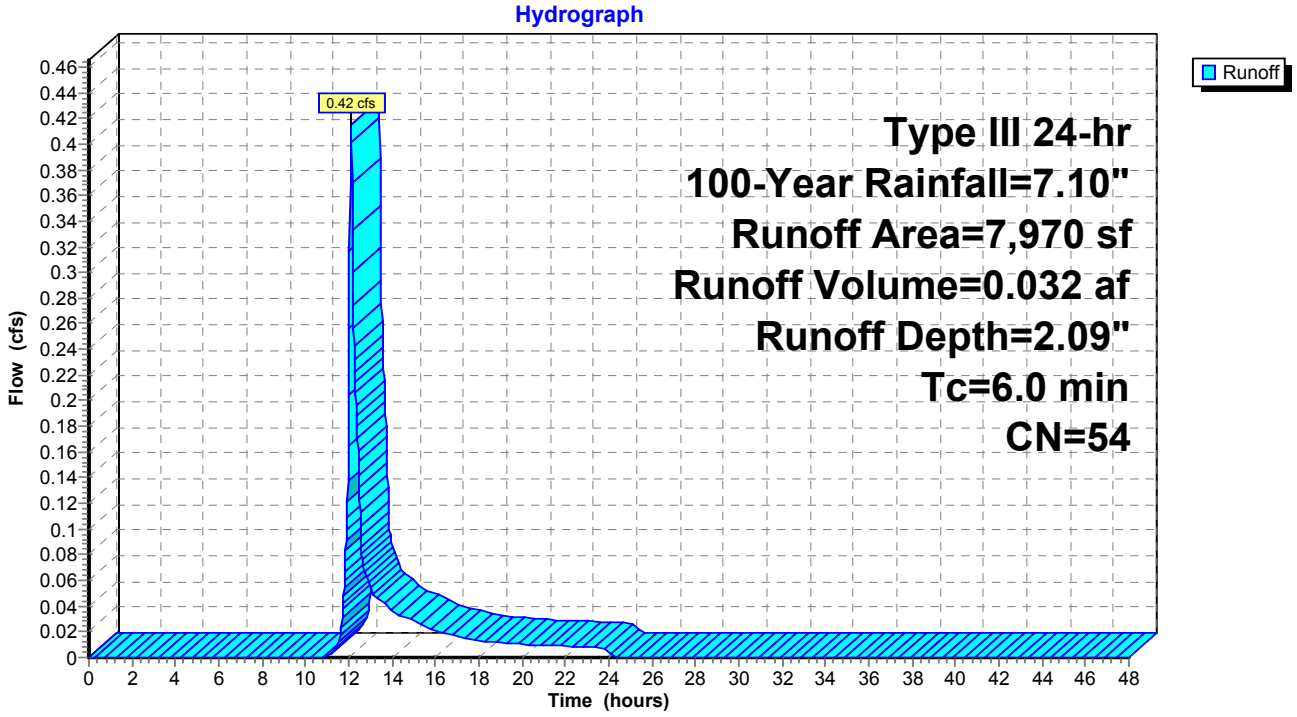
Runoff = 0.42 cfs @ 12.10 hrs, Volume= 0.032 af, Depth= 2.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
*	97	98	Riprap, HSG B
*	14	98	Riprap, HSG A
	4,411	55	Woods, Good, HSG B
	130	30	Woods, Good, HSG A
	1,396	39	>75% Grass cover, Good, HSG A
	1,922	61	>75% Grass cover, Good, HSG B
	7,970	54	Weighted Average
	7,859		98.61% Pervious Area
	111		1.39% Impervious Area

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

Subcatchment 3E-S: Sub-3E-S



Summary for Subcatchment 3F-1R: Roofs 26-28 FB

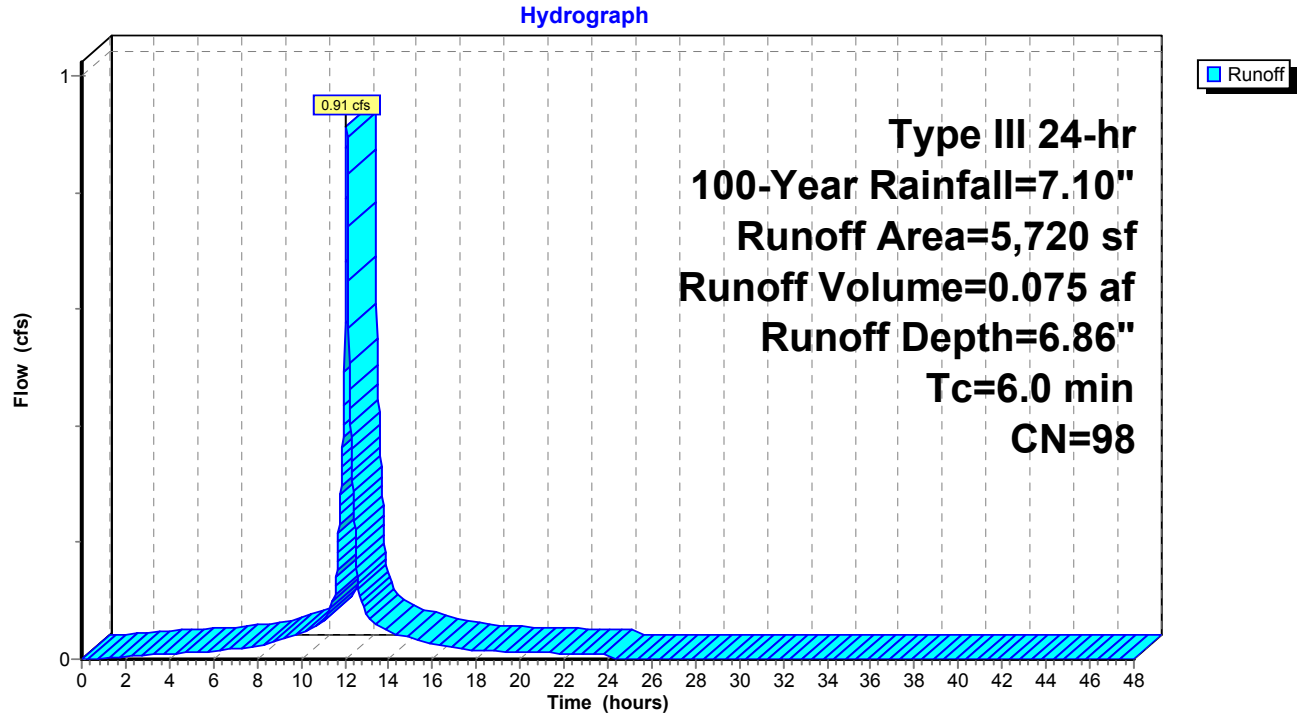
Runoff = 0.91 cfs @ 12.08 hrs, Volume= 0.075 af, Depth= 6.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

Area (sf)	CN	Description
5,720	98	Roofs, HSG A
5,720		100.00% Impervious Area

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

Subcatchment 3F-1R: Roofs 26-28 FB



Summary for Subcatchment 3F-2R: Roofs 29-30 B, 31 FB

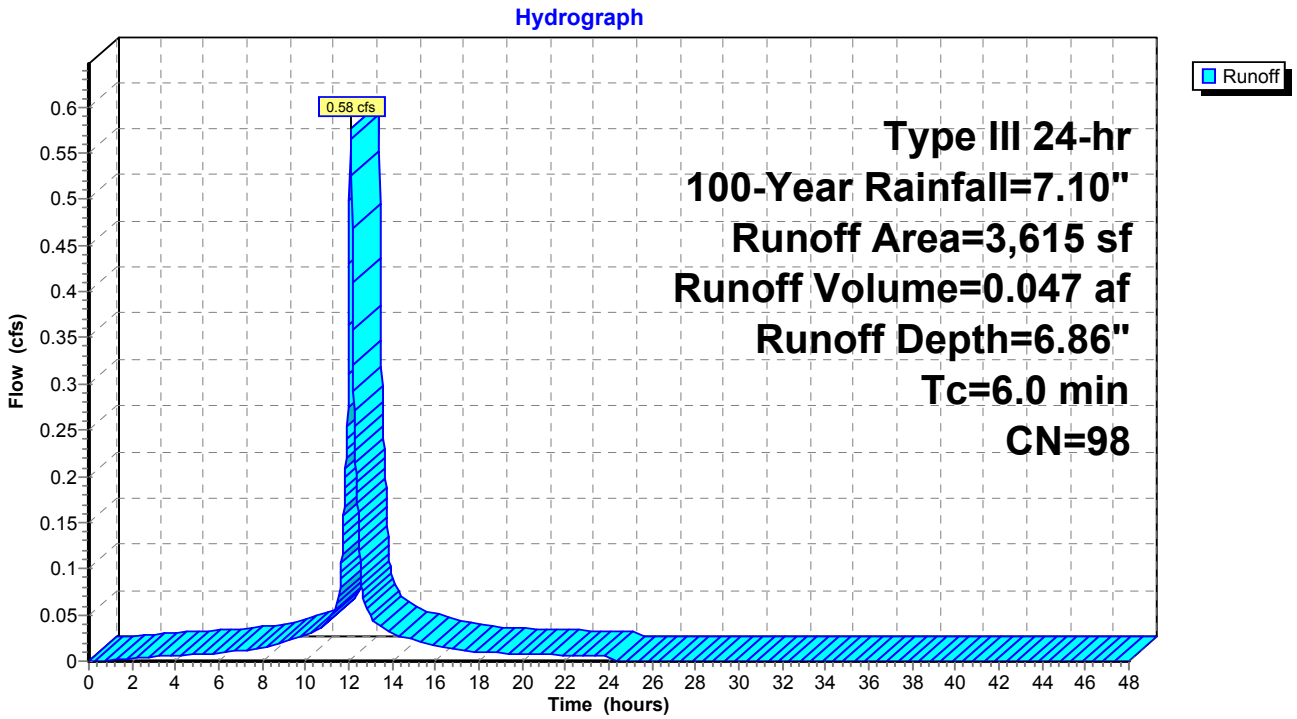
Runoff = 0.58 cfs @ 12.08 hrs, Volume= 0.047 af, Depth= 6.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
*	1,728	98	Roofs, HSG A
	1,887	98	Roofs, HSG A
	3,615	98	Weighted Average
	3,615		100.00% Impervious Area

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

Subcatchment 3F-2R: Roofs 29-30 B, 31 FB



Summary for Subcatchment 3F-3R: Roofs 29 F

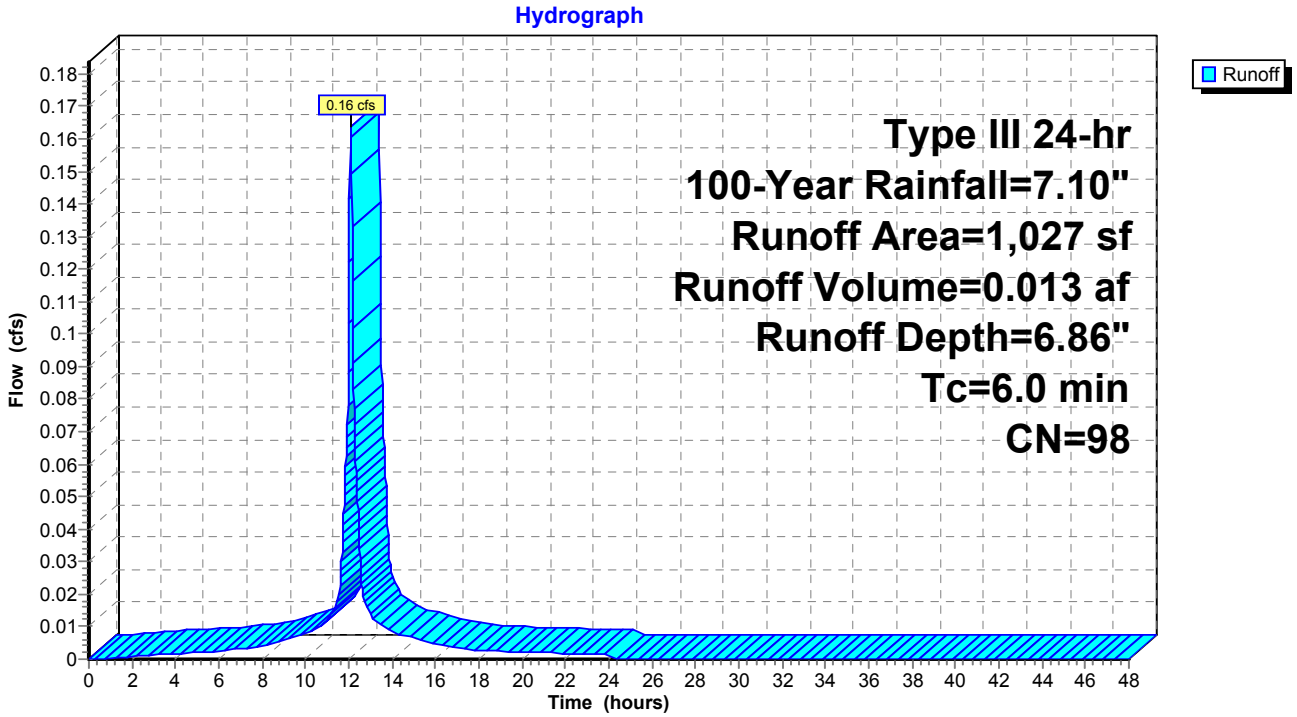
Runoff = 0.16 cfs @ 12.08 hrs, Volume= 0.013 af, Depth= 6.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

Area (sf)	CN	Description
1,027	98	Roofs, HSG A
1,027		100.00% Impervious Area

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

Subcatchment 3F-3R: Roofs 29 F



Summary for Subcatchment 3F-4R: Roofs 30 F

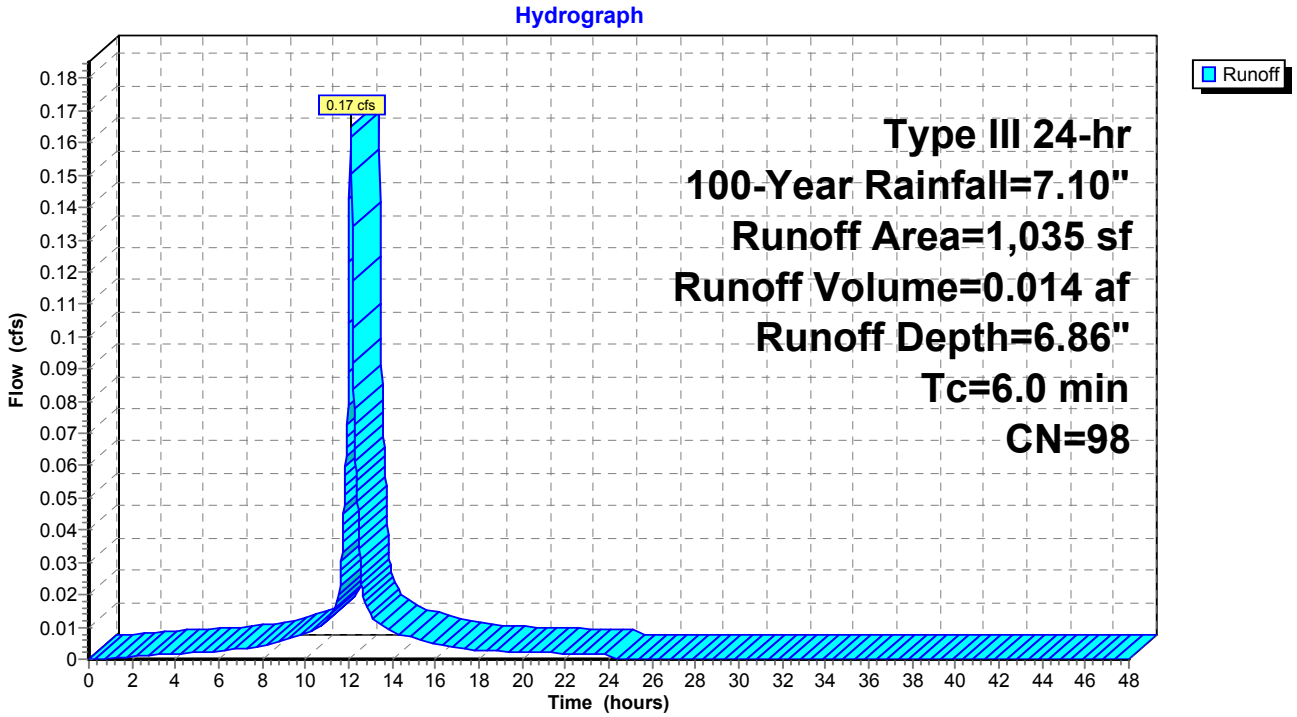
Runoff = 0.17 cfs @ 12.08 hrs, Volume= 0.014 af, Depth= 6.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

Area (sf)	CN	Description
1,035	98	Roofs, HSG A
1,035		100.00% Impervious Area

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

Subcatchment 3F-4R: Roofs 30 F



Summary for Subcatchment 3F-S: Sub-3F-S

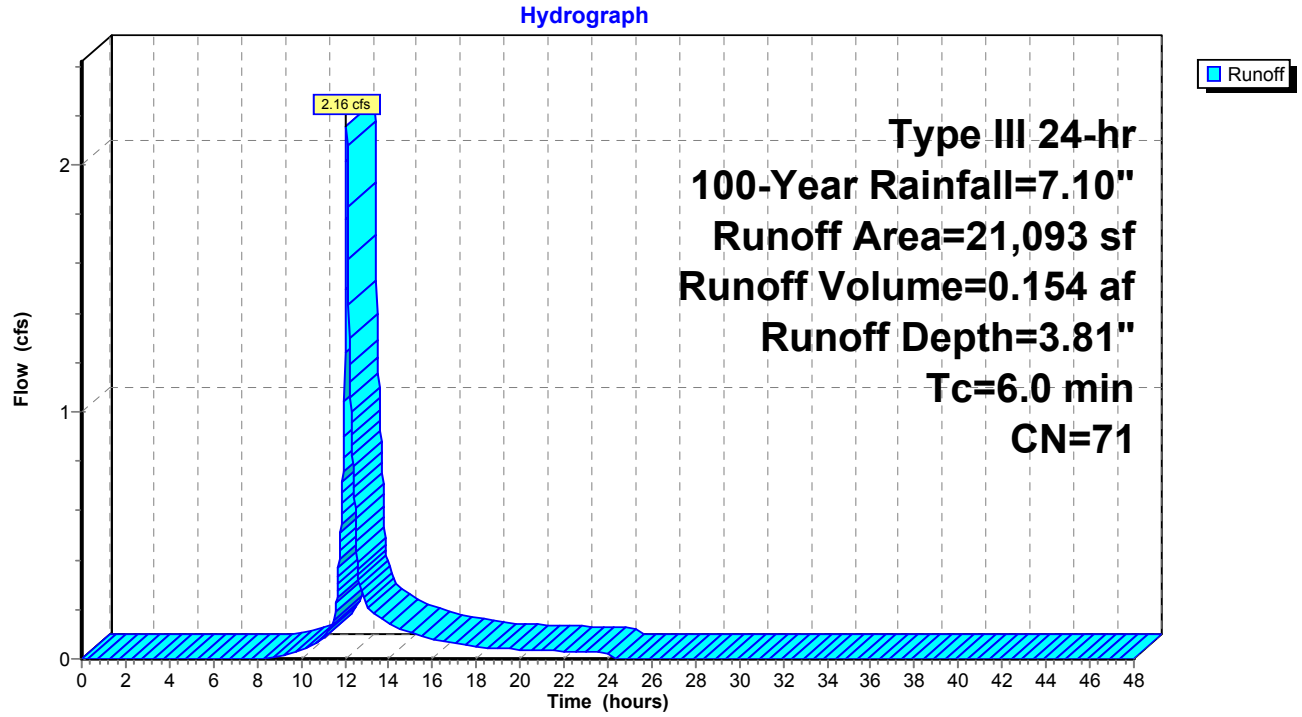
Runoff = 2.16 cfs @ 12.09 hrs, Volume= 0.154 af, Depth= 3.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
*	3,112	98	Paved drives, HSG A
*	85	98	Paved drives, HSG B
*	3,514	98	Paved roads w/curbs & sewers, HSG A
	2,279	98	Paved roads w/curbs & sewers, HSG B
*	1,089	98	Paved sidewalk, HSG A
*	508	98	Paved sidewalk, HSG B
*	209	98	Walks, HSG A
*	4	98	Walks, HSG B
*	371	98	Decks, HSG A
	9,065	39	>75% Grass cover, Good, HSG A
	857	61	>75% Grass cover, Good, HSG B
	21,093	71	Weighted Average
	9,922		47.04% Pervious Area
	11,171		52.96% Impervious Area

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

Subcatchment 3F-S: Sub-3F-S



Summary for Subcatchment 3G-1R: Roof 9 FB

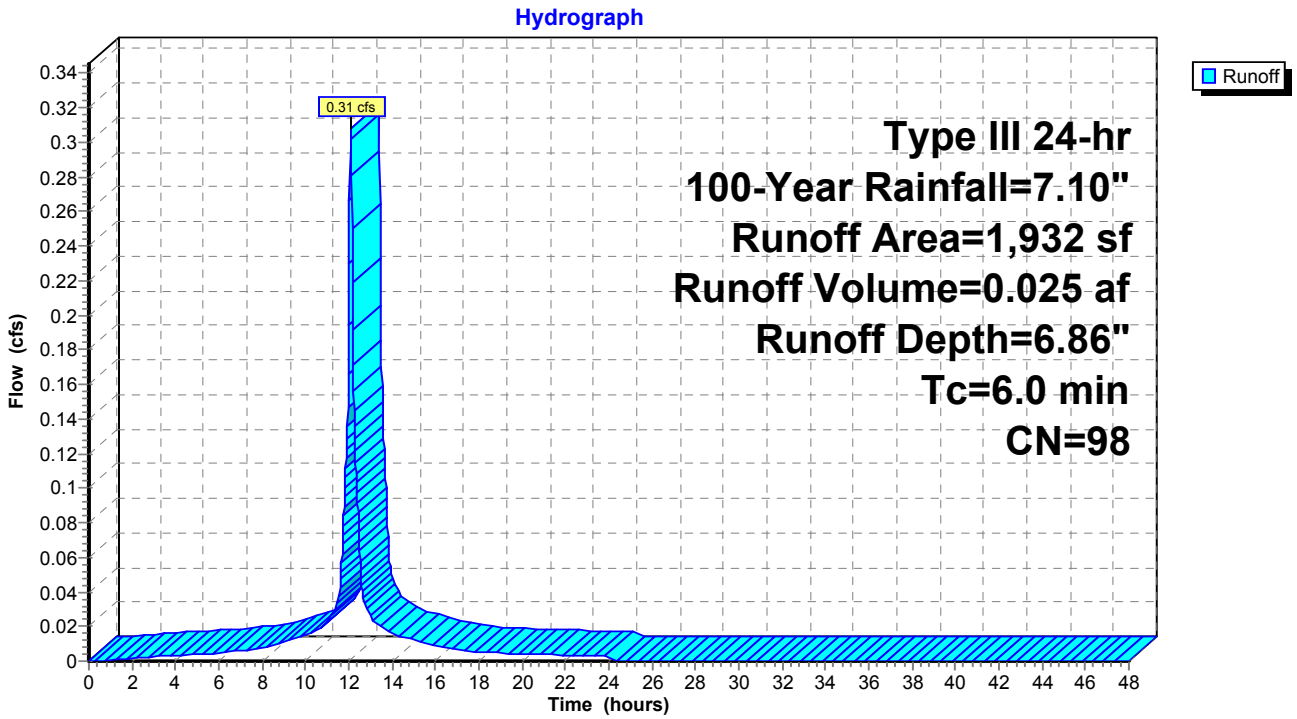
Runoff = 0.31 cfs @ 12.08 hrs, Volume= 0.025 af, Depth= 6.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
	1,085	98	Roofs, HSG A
*	847	98	Roofs, HSG B
	1,932	98	Weighted Average
	1,932		100.00% Impervious Area

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

Subcatchment 3G-1R: Roof 9 FB



Summary for Subcatchment 3G-2R: Roofs 11 F

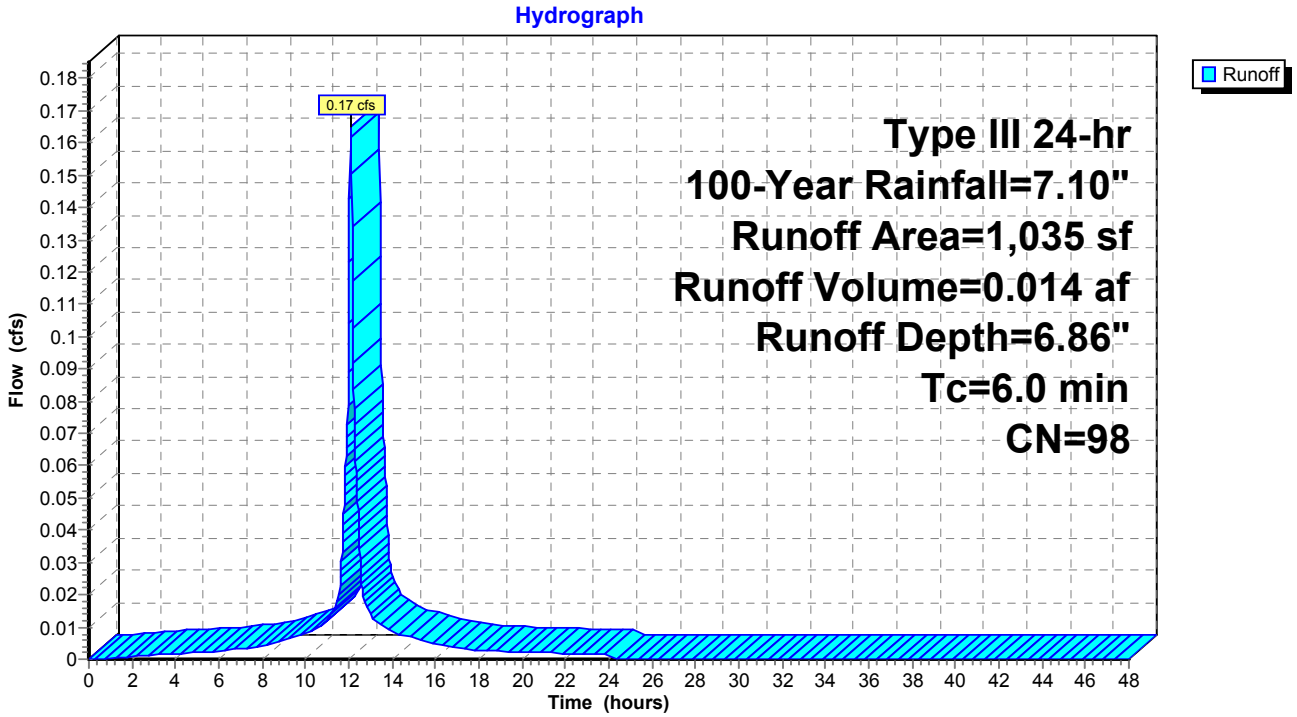
Runoff = 0.17 cfs @ 12.08 hrs, Volume= 0.014 af, Depth= 6.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
*	1,035	98	Roofs, HSG B
	1,035		100.00% Impervious Area

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

Subcatchment 3G-2R: Roofs 11 F



Summary for Subcatchment 3G-3R: Roofs 12 F

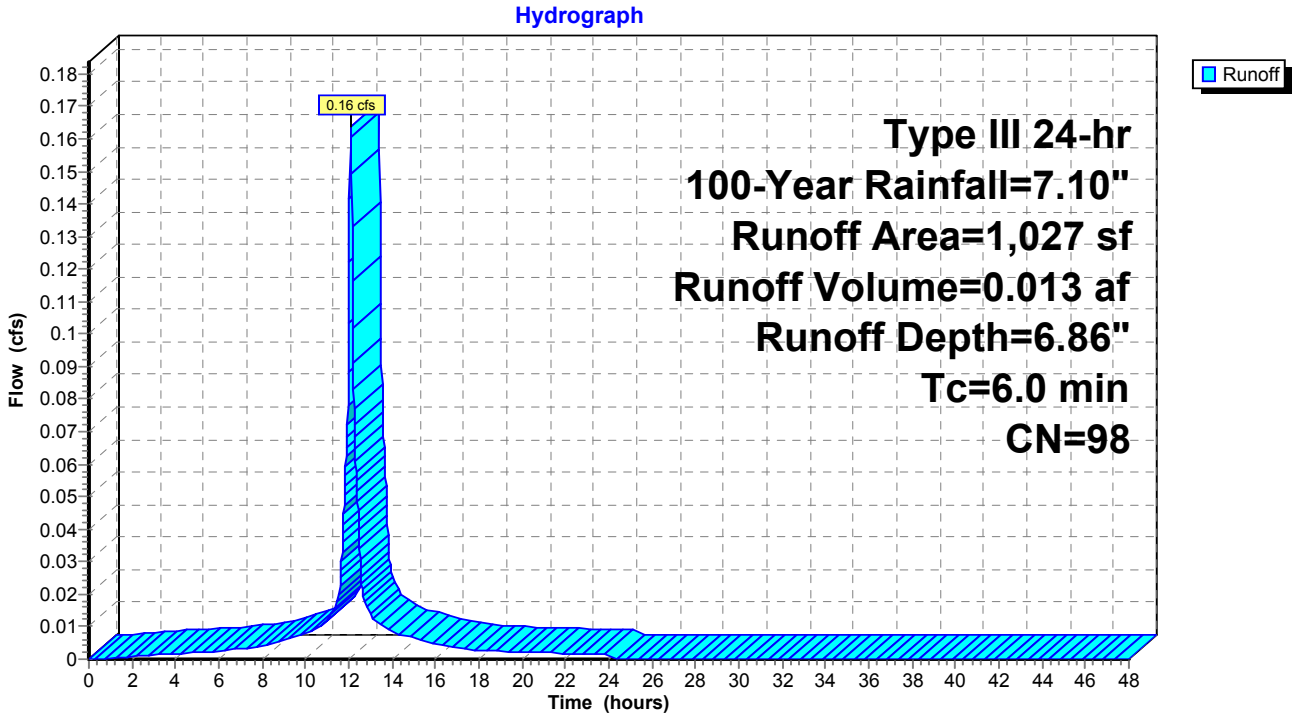
Runoff = 0.16 cfs @ 12.08 hrs, Volume= 0.013 af, Depth= 6.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
*	1,027	98	Roofs, HSG B
	1,027		100.00% Impervious Area

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

Subcatchment 3G-3R: Roofs 12 F



Summary for Subcatchment 3G-4R: Roofs 13 F

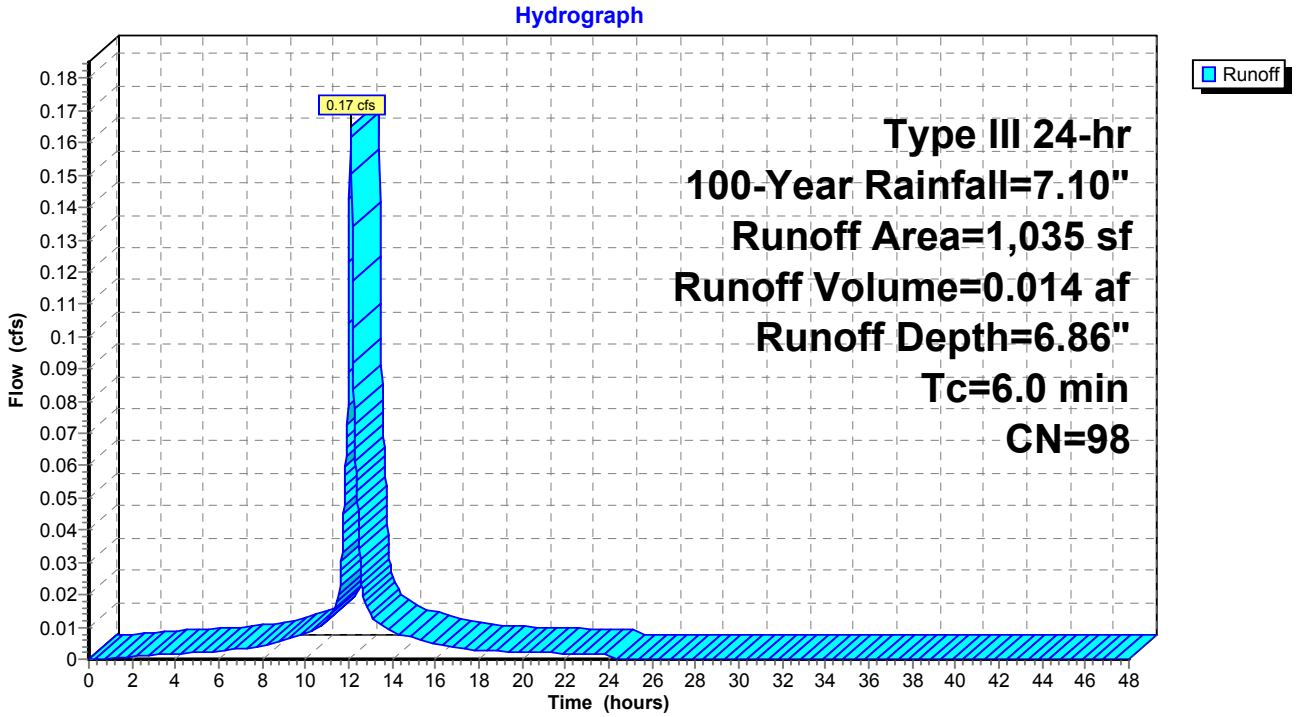
Runoff = 0.17 cfs @ 12.08 hrs, Volume= 0.014 af, Depth= 6.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
*	1,035	98	Roofs, HSG B
	1,035		100.00% Impervious Area

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

Subcatchment 3G-4R: Roofs 13 F



Summary for Subcatchment 3G-5R: Roofs 14 F

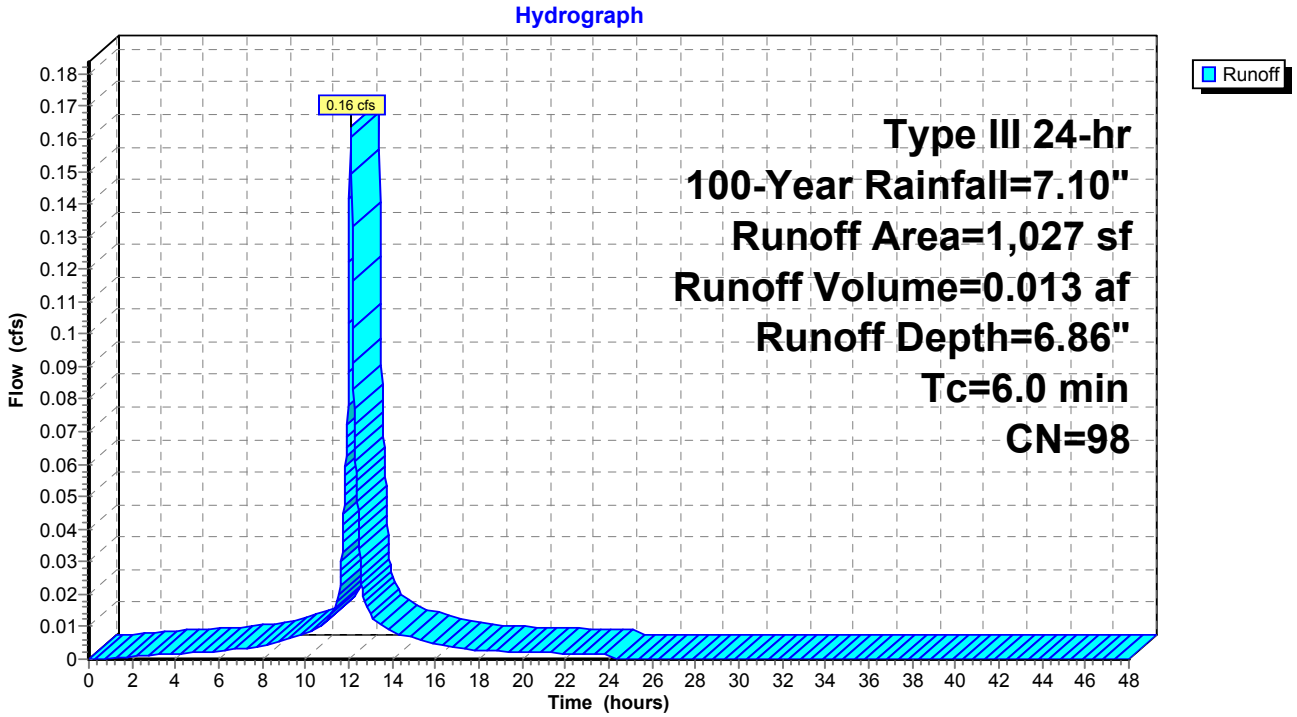
Runoff = 0.16 cfs @ 12.08 hrs, Volume= 0.013 af, Depth= 6.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
*	1,027	98	Roofs, HSG B
	1,027		100.00% Impervious Area

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

Subcatchment 3G-5R: Roofs 14 F



Summary for Subcatchment 3G-6R: Roofs 15 F

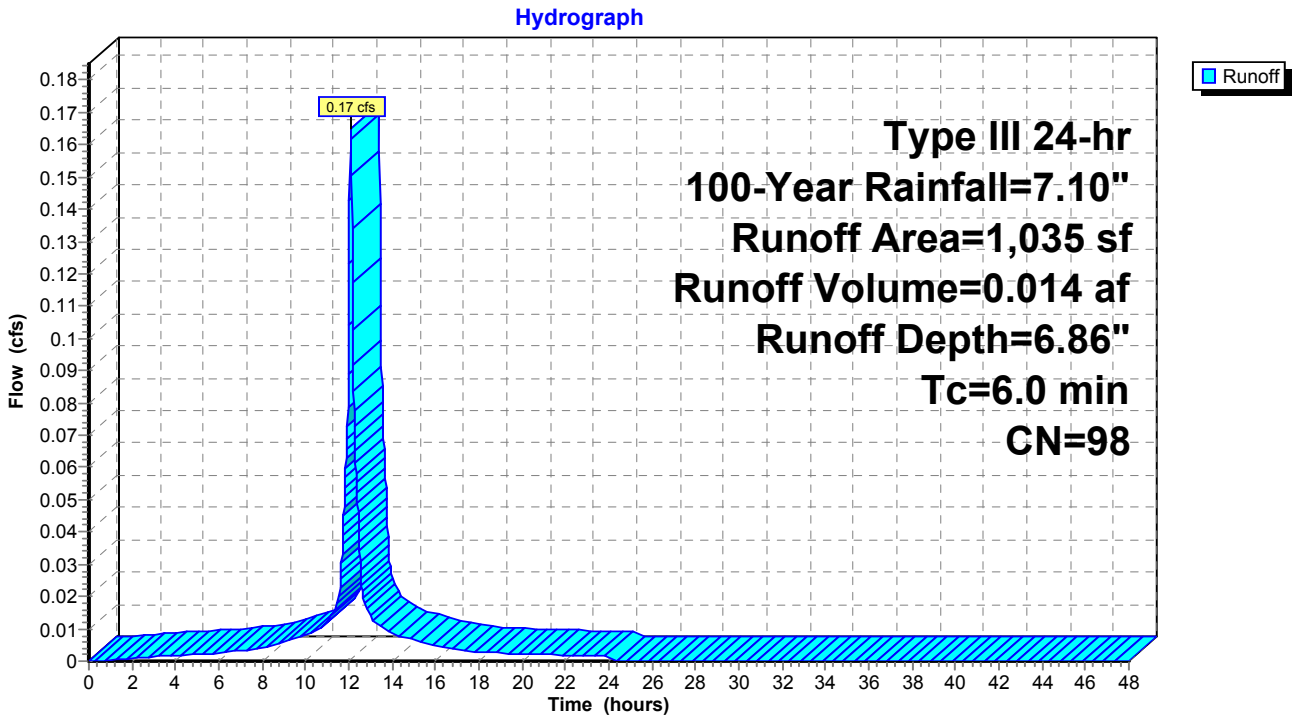
Runoff = 0.17 cfs @ 12.08 hrs, Volume= 0.014 af, Depth= 6.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
	98	98	Roofs, HSG A
*	937	98	Roofs, HSG B
	1,035	98	Weighted Average
	1,035		100.00% Impervious Area

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

Subcatchment 3G-6R: Roofs 15 F



Summary for Subcatchment 3G-S: Sub-3G-S

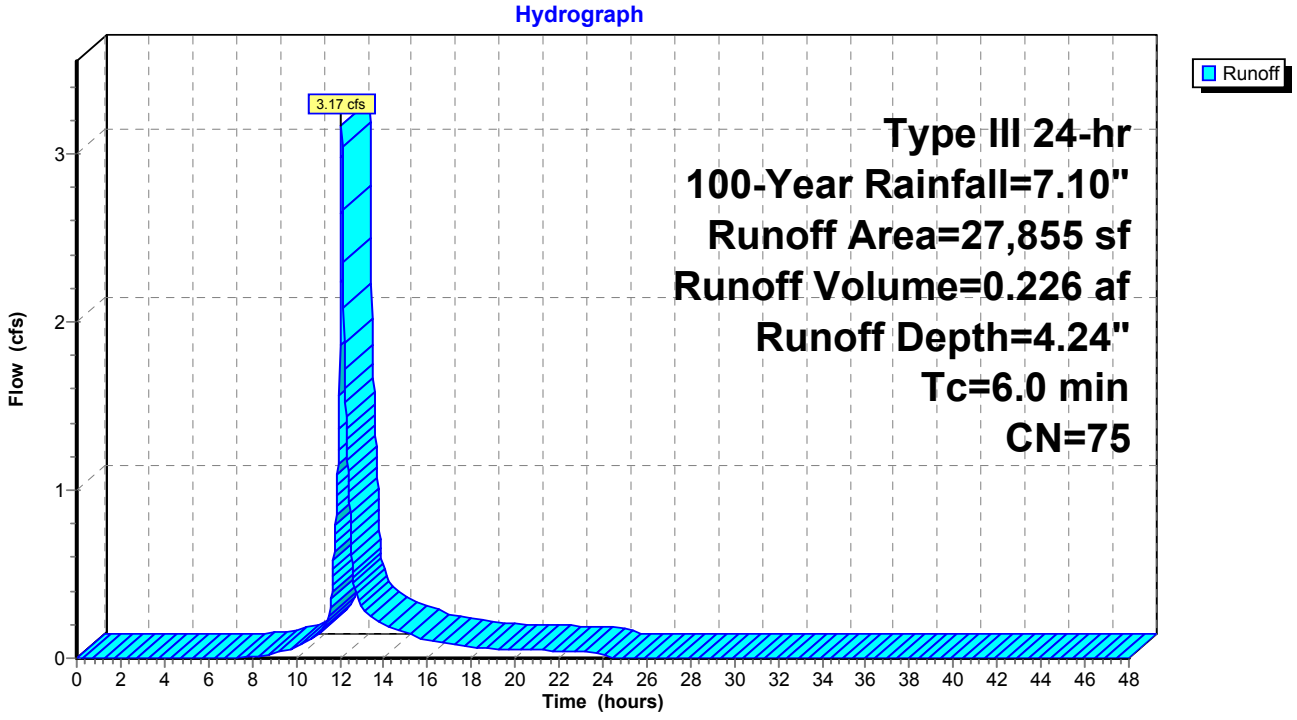
Runoff = 3.17 cfs @ 12.09 hrs, Volume= 0.226 af, Depth= 4.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
*	236	98	Paved drives, HSG A
*	3,067	98	Paved drives, HSG B
*	5,613	98	Paved roads w/curbs & sewers, HSG A
	4,837	98	Paved roads w/curbs & sewers, HSG B
*	1,272	98	Paved sidewalk, HSG A
*	617	98	Paved sidewalk, HSG B
*	42	98	Walks, HSG A
*	255	98	Walks, HSG B
	9,558	39	>75% Grass cover, Good, HSG A
	2,358	61	>75% Grass cover, Good, HSG B
	27,855	75	Weighted Average
	11,916		42.78% Pervious Area
	15,939		57.22% Impervious Area

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

Subcatchment 3G-S: Sub-3G-S



Summary for Subcatchment 3H-S: Sub-3A

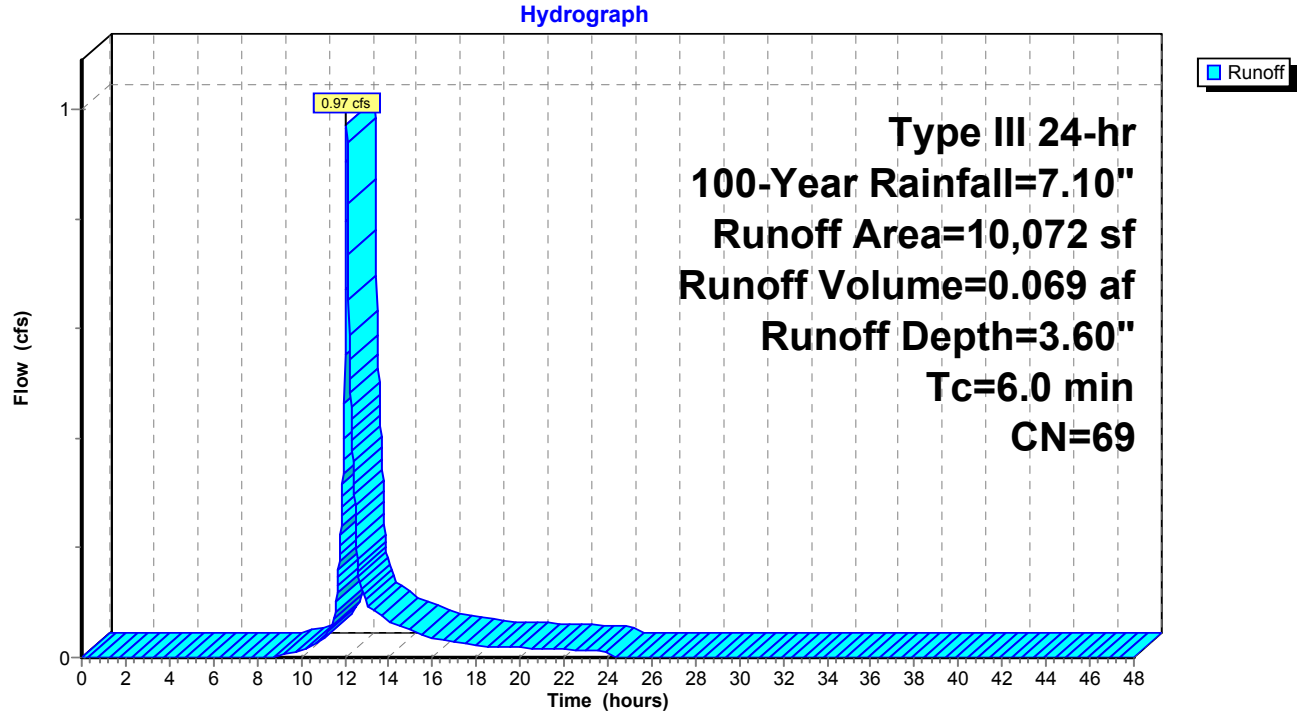
Runoff = 0.97 cfs @ 12.09 hrs, Volume= 0.069 af, Depth= 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
*	2,235	98	Paved drives, HSG A
	1,736	98	Paved roads w/curbs & sewers, HSG A
*	85	98	Walks, HSG A
	4,959	39	>75% Grass cover, Good, HSG A
*	889	98	Paved sidewalk, HSG A
*	168	98	Walls, HSG A
	10,072	69	Weighted Average
	4,959		49.24% Pervious Area
	5,113		50.76% Impervious Area

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

Subcatchment 3H-S: Sub-3A



Summary for Subcatchment 3I-S: Sub-3I-S

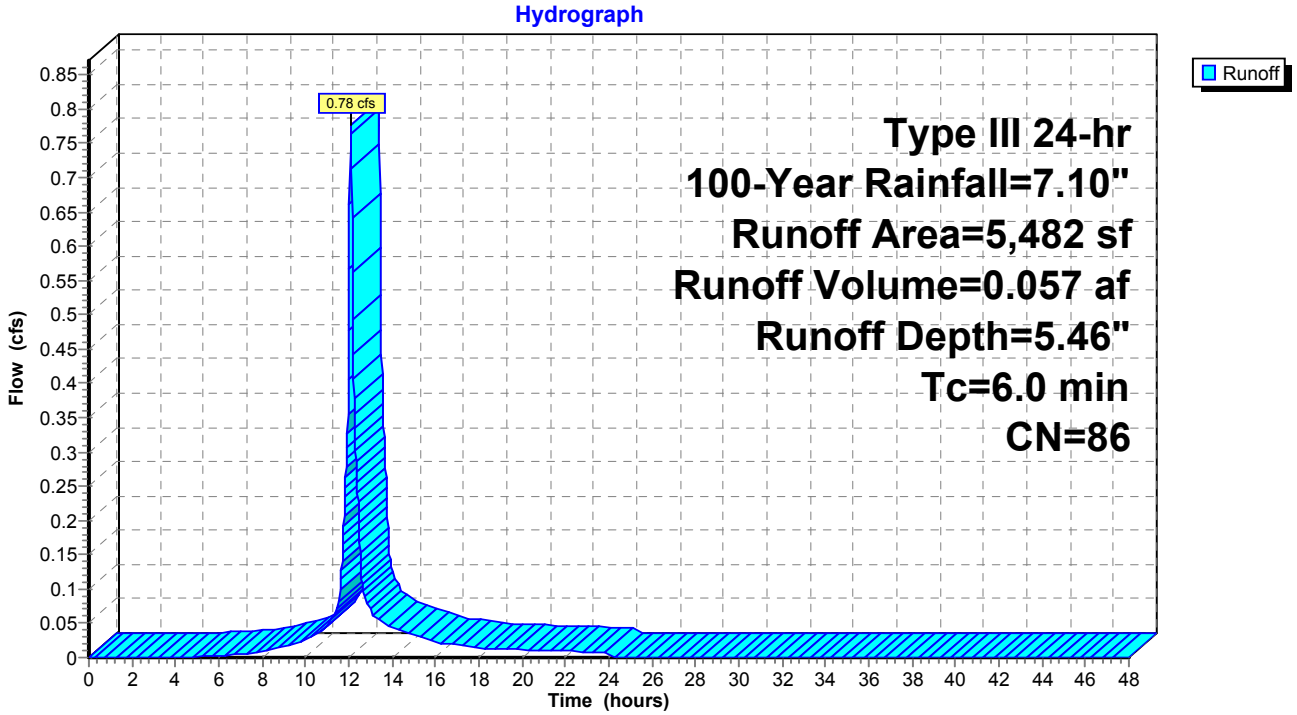
Runoff = 0.78 cfs @ 12.09 hrs, Volume= 0.057 af, Depth= 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
*	955	98	Paved drives, HSG A
*	3,322	98	Paved roads w/curbs & sewers, HSG A
*	85	98	Walks, HSG A
	1,120	39	>75% Grass cover, Good, HSG A
	5,482	86	Weighted Average
	1,120		20.43% Pervious Area
	4,362		79.57% Impervious Area

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

Subcatchment 3I-S: Sub-3I-S



Summary for Subcatchment 4S: Sub-4

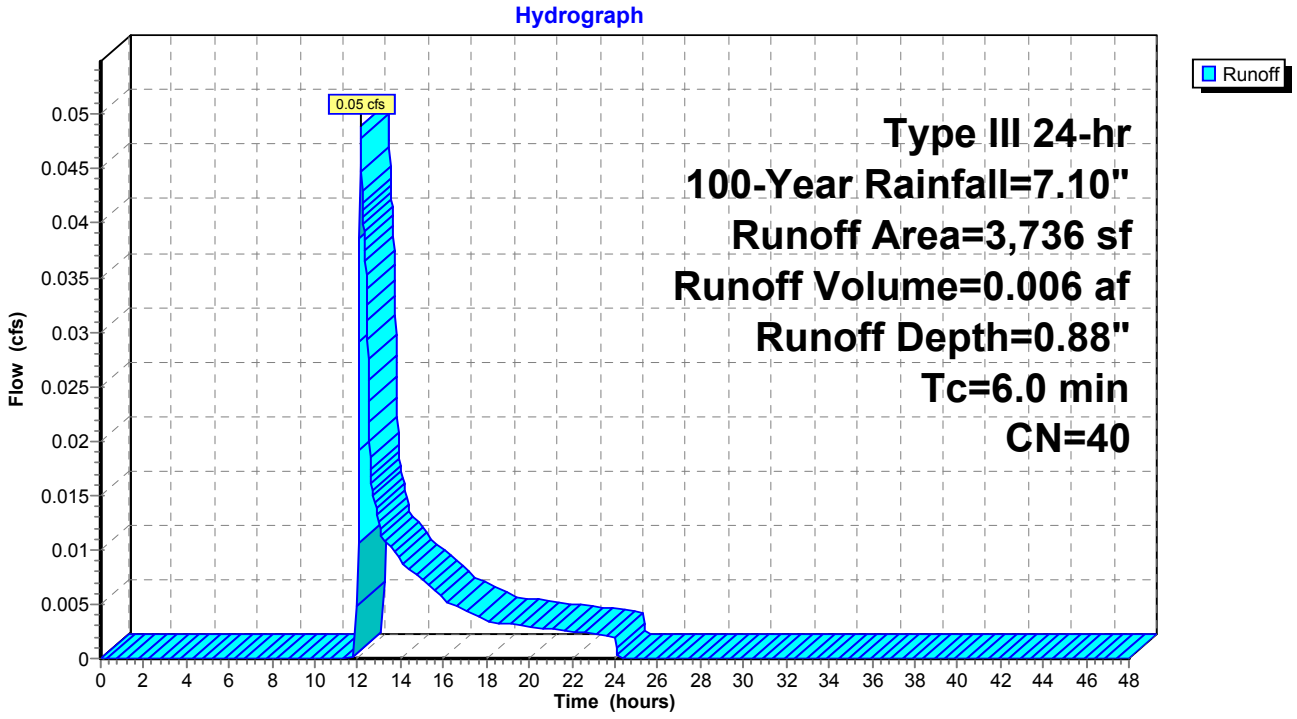
Runoff = 0.05 cfs @ 12.13 hrs, Volume= 0.006 af, Depth= 0.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
	3,694	39	>75% Grass cover, Good, HSG A
*	42	98	Walks, HSG A
	3,736	40	Weighted Average
	3,694		98.88% Pervious Area
	42		1.12% Impervious Area

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

Subcatchment 4S: Sub-4



Summary for Subcatchment 4S-1: Sub-4

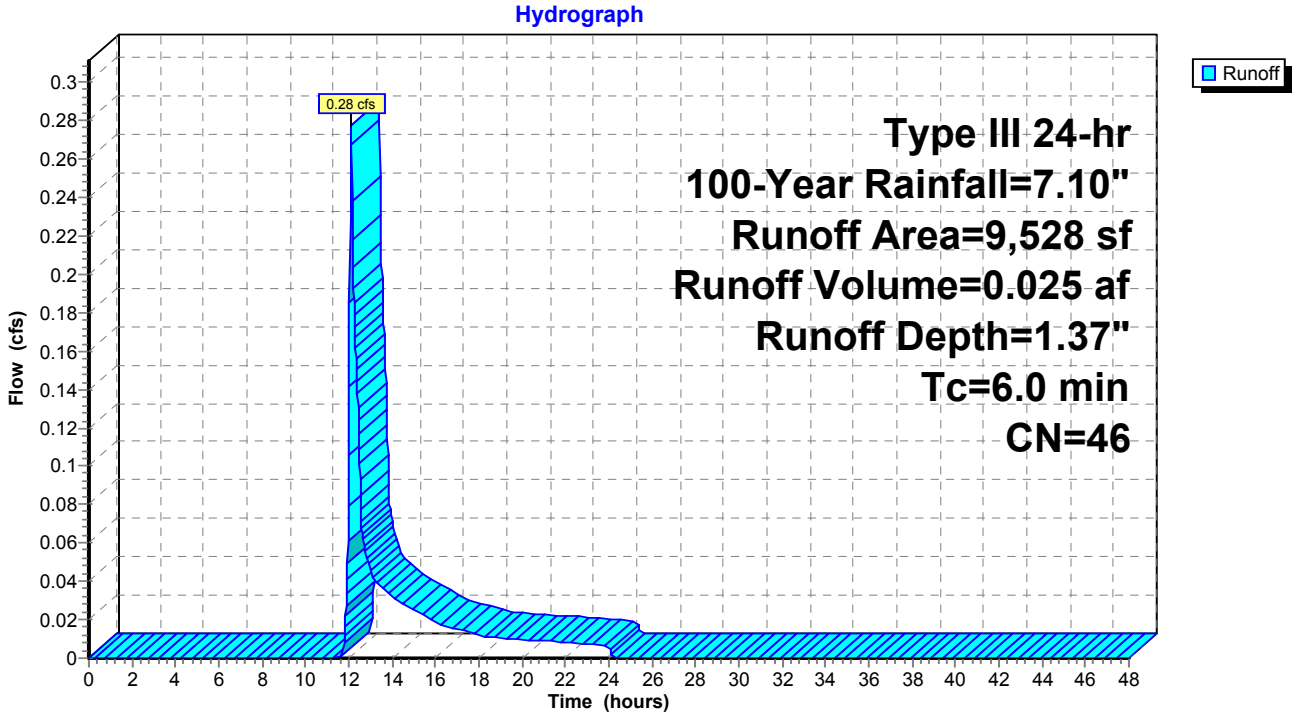
Runoff = 0.28 cfs @ 12.11 hrs, Volume= 0.025 af, Depth= 1.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
	8,378	39	>75% Grass cover, Good, HSG A
*	926	98	Decks, HSG A
*	224	98	Walls, HSG A
	9,528	46	Weighted Average
	8,378		87.93% Pervious Area
	1,150		12.07% Impervious Area

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

Subcatchment 4S-1: Sub-4



Summary for Subcatchment 4S-1R: Roofs 32 FB

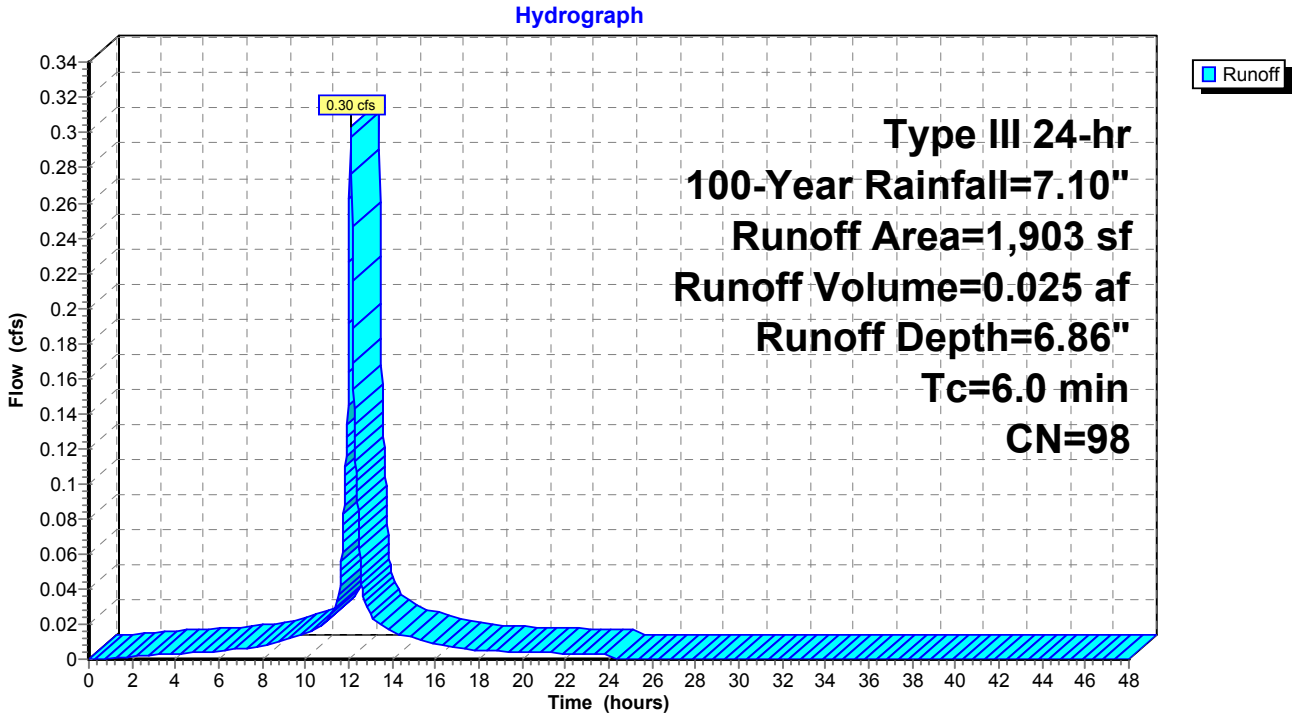
Runoff = 0.30 cfs @ 12.08 hrs, Volume= 0.025 af, Depth= 6.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

Area (sf)	CN	Description
1,903	98	Roofs, HSG A
1,903		100.00% Impervious Area

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

Subcatchment 4S-1R: Roofs 32 FB



Summary for Subcatchment 5S: Sub -5

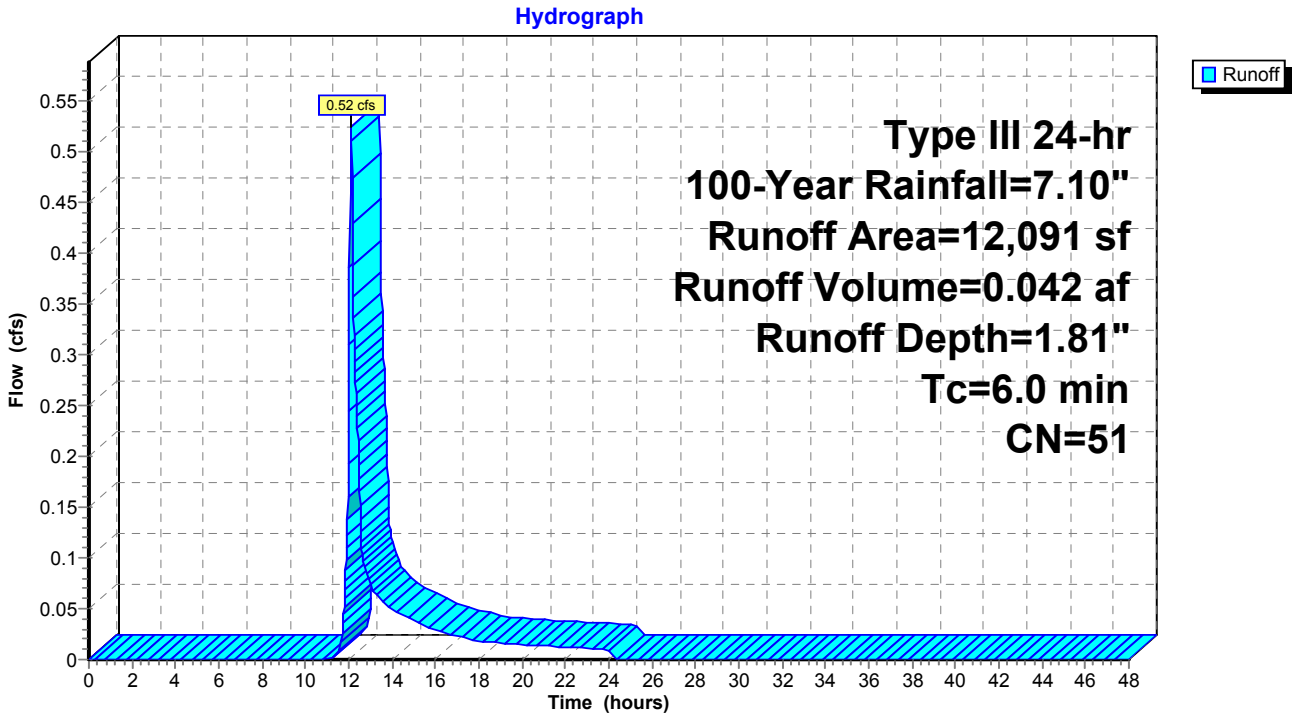
Runoff = 0.52 cfs @ 12.10 hrs, Volume= 0.042 af, Depth= 1.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
	6,491	39	>75% Grass cover, Good, HSG A
	365	80	>75% Grass cover, Good, HSG D
*	556	98	Decks, HSG A
*	261	98	Paved sidewalk, HSG A
*	62	98	Paved sidewalk, HSG D
	1,129	98	Paved roads w/curbs & sewers, HSG A
	286	98	Paved roads w/curbs & sewers, HSG D
	2,941	39	>75% Grass cover, Good, HSG A
	12,091	51	Weighted Average
	9,797		81.03% Pervious Area
	2,294		18.97% Impervious Area

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

Subcatchment 5S: Sub -5



Summary for Subcatchment 5S-1: Sub 5S-1

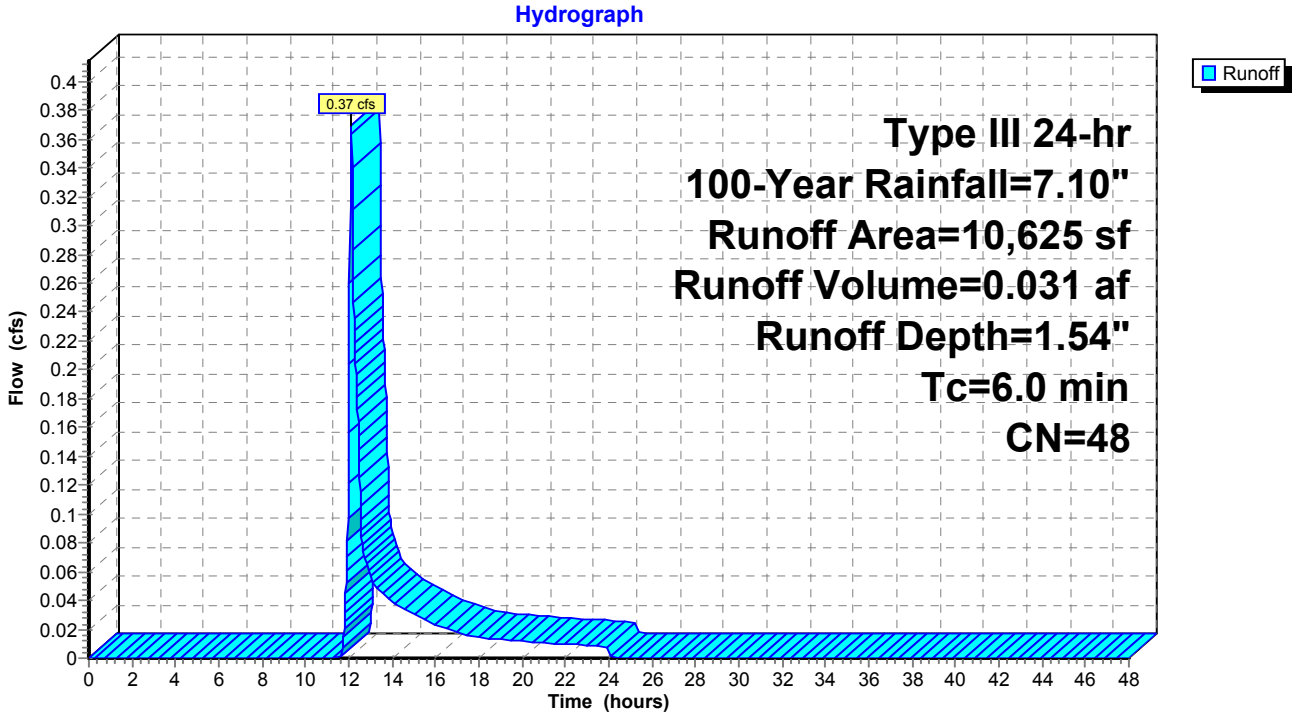
Runoff = 0.37 cfs @ 12.10 hrs, Volume= 0.031 af, Depth= 1.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
*	1,175	98	Walls, HSG A
*	371	98	Decks, HSG A
	9,079	39	>75% Grass cover, Good, HSG A
	10,625	48	Weighted Average
	9,079		85.45% Pervious Area
	1,546		14.55% Impervious Area

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

Subcatchment 5S-1: Sub 5S-1



Summary for Subcatchment 5S-1R: Roofs 19-21 FB

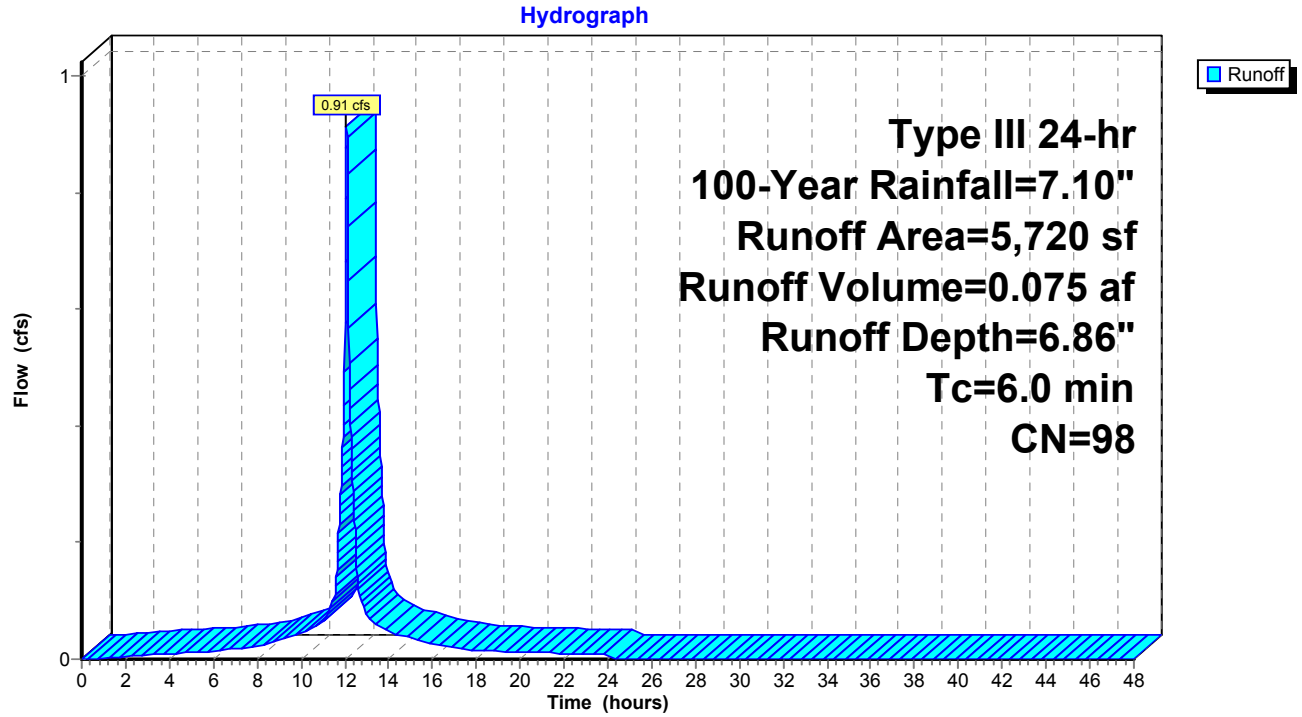
Runoff = 0.91 cfs @ 12.08 hrs, Volume= 0.075 af, Depth= 6.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

Area (sf)	CN	Description
5,720	98	Roofs, HSG A
5,720		100.00% Impervious Area

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

Subcatchment 5S-1R: Roofs 19-21 FB



Summary for Subcatchment 5S-P: Pavement

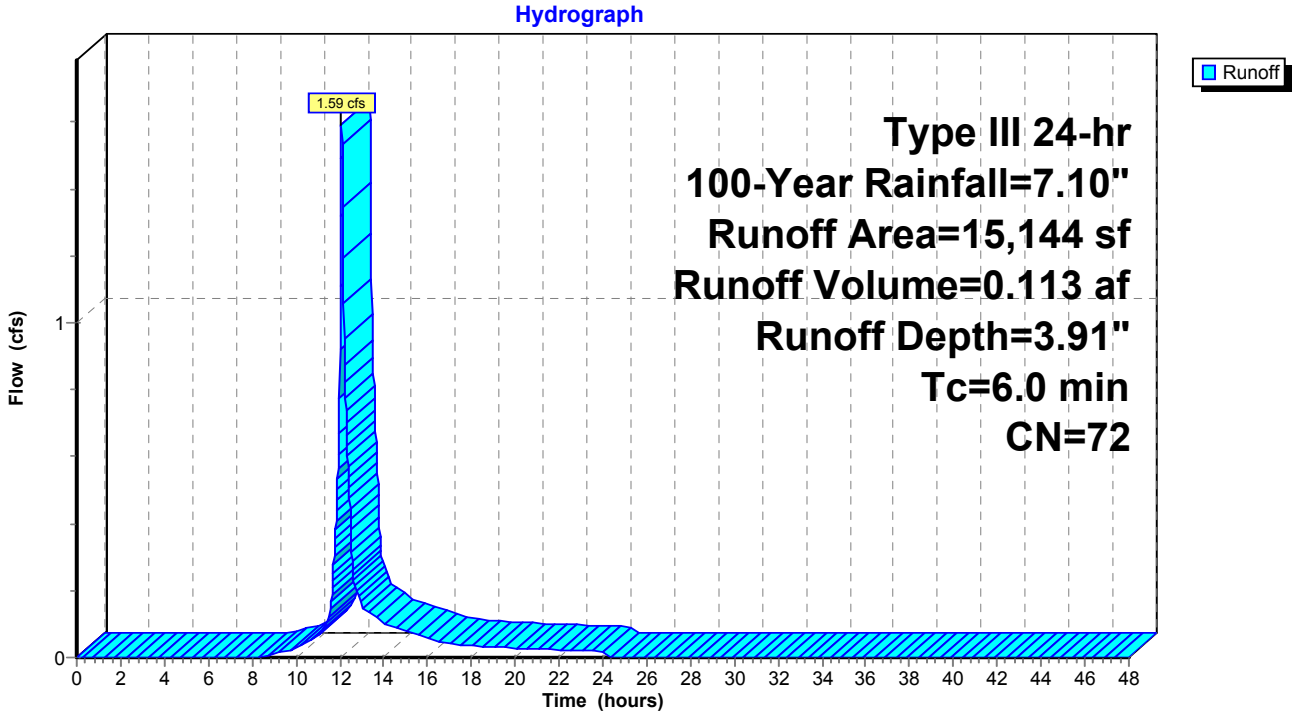
Runoff = 1.59 cfs @ 12.09 hrs, Volume= 0.113 af, Depth= 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-Year Rainfall=7.10"

	Area (sf)	CN	Description
*	2,816	98	Paved drives, HSG A
	4,704	98	Paved roads w/curbs & sewers, HSG A
	6,584	39	>75% Grass cover, Good, HSG A
*	643	98	Paved sidewalk, HSG A
*	297	98	Walks, HSG A
*	100	98	Kiosk, HSG A
	15,144	72	Weighted Average
	6,584		43.48% Pervious Area
	8,560		56.52% Impervious Area

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

Subcatchment 5S-P: Pavement

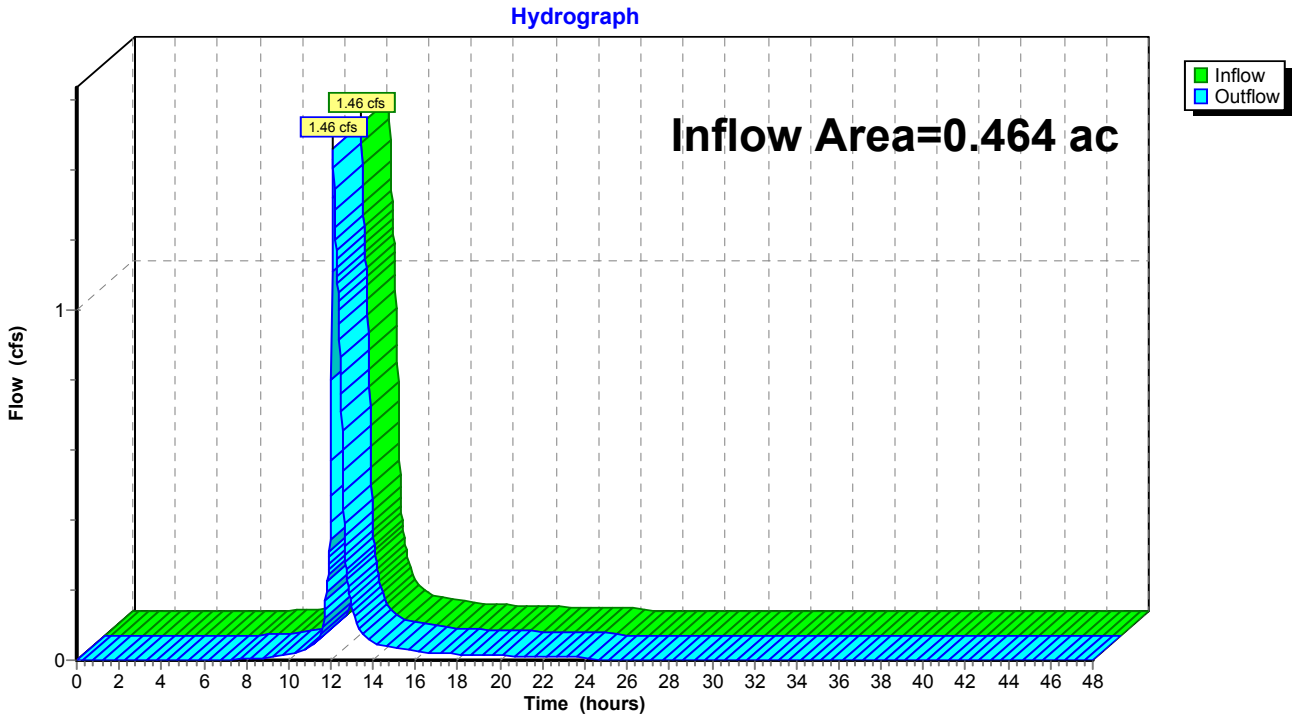


Summary for Reach DP-1: DMH

Inflow Area = 0.464 ac, 64.50% Impervious, Inflow Depth = 2.40" for 100-Year event
Inflow = 1.46 cfs @ 12.12 hrs, Volume= 0.093 af
Outflow = 1.46 cfs @ 12.12 hrs, Volume= 0.093 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Reach DP-1: DMH

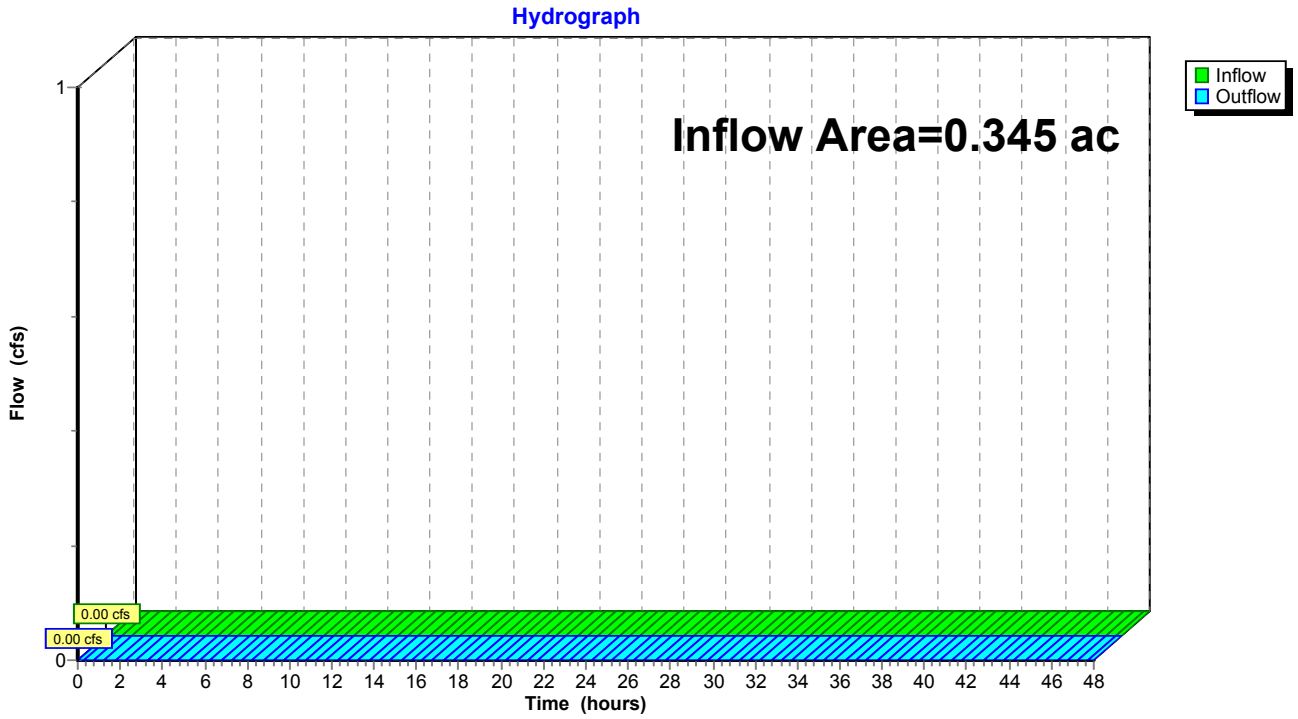


Summary for Reach DP-2: DP-2

Inflow Area = 0.345 ac, 10.74% Impervious, Inflow Depth = 0.00" for 100-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Reach DP-2: DP-2

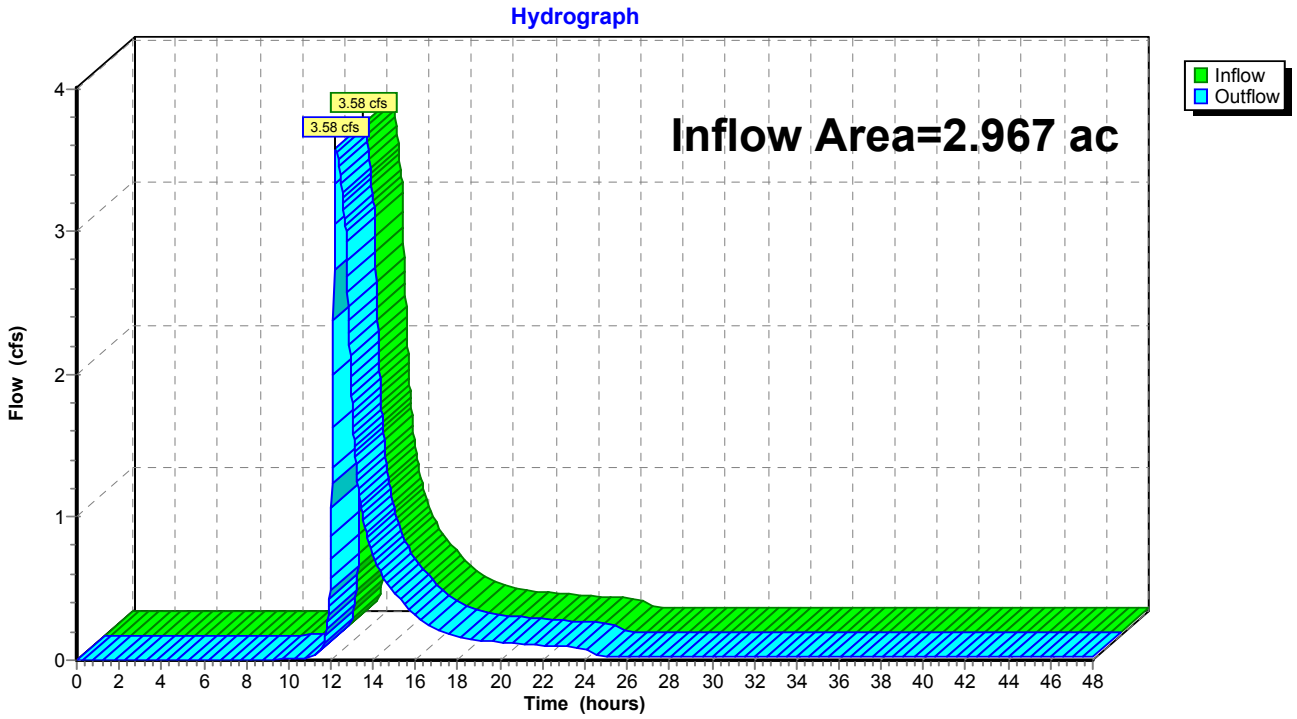


Summary for Reach DP-3: DP-3

Inflow Area = 2.967 ac, 48.40% Impervious, Inflow Depth > 2.25" for 100-Year event
Inflow = 3.58 cfs @ 12.22 hrs, Volume= 0.556 af
Outflow = 3.58 cfs @ 12.22 hrs, Volume= 0.556 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Reach DP-3: DP-3

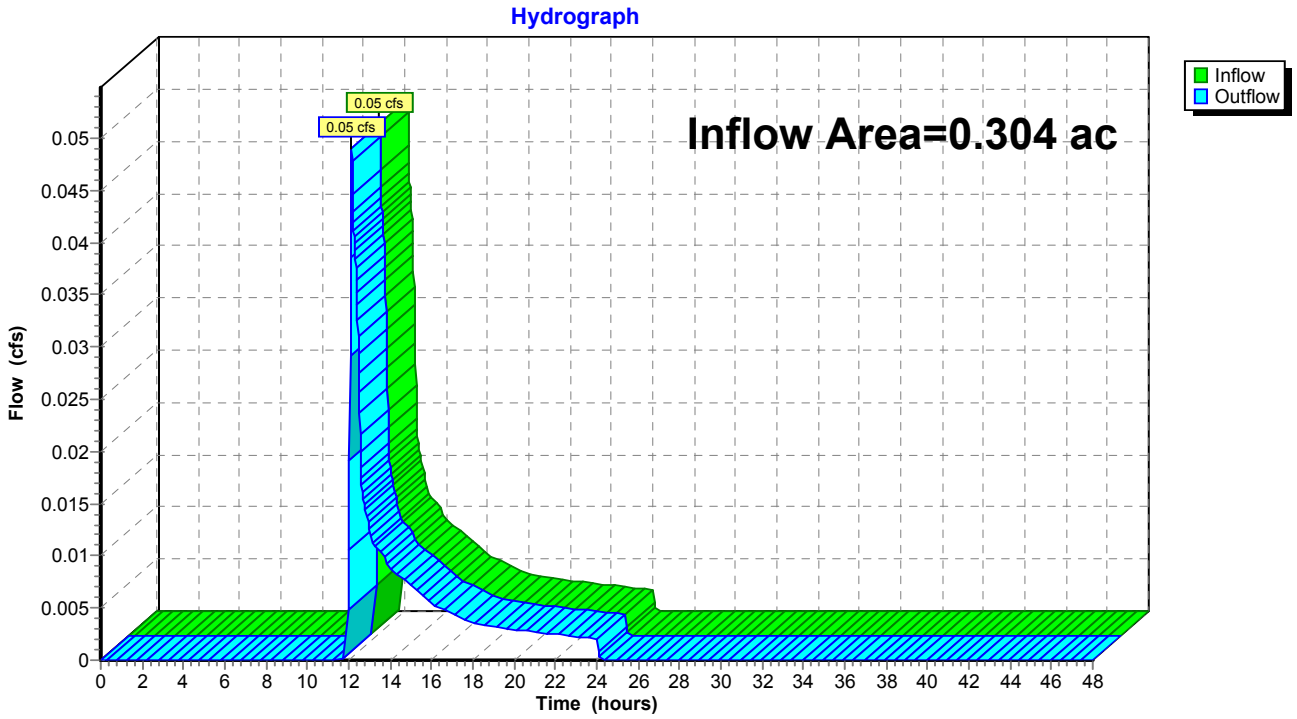


Summary for Reach DP-4: PL

Inflow Area = 0.304 ac, 8.99% Impervious, Inflow Depth = 0.25" for 100-Year event
Inflow = 0.05 cfs @ 12.13 hrs, Volume= 0.006 af
Outflow = 0.05 cfs @ 12.13 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Reach DP-4: PL

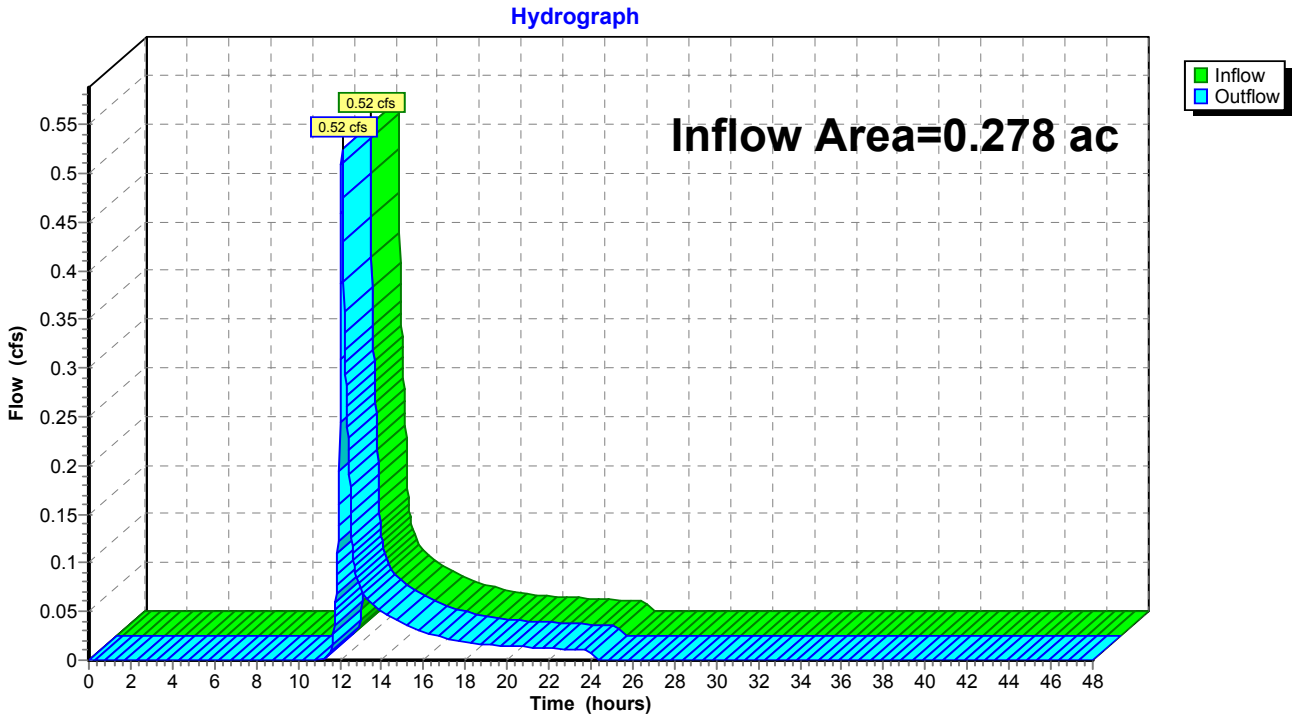


Summary for Reach DP-5: PL

Inflow Area = 0.278 ac, 18.97% Impervious, Inflow Depth = 1.81" for 100-Year event
Inflow = 0.52 cfs @ 12.10 hrs, Volume= 0.042 af
Outflow = 0.52 cfs @ 12.10 hrs, Volume= 0.042 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Reach DP-5: PL



Summary for Pond D-1: Depression

Inflow Area = 0.345 ac, 10.74% Impervious, Inflow Depth = 1.20" for 100-Year event
Inflow = 0.36 cfs @ 12.11 hrs, Volume= 0.035 af
Outflow = 0.12 cfs @ 12.54 hrs, Volume= 0.035 af, Atten= 67%, Lag= 25.9 min
Discarded = 0.12 cfs @ 12.54 hrs, Volume= 0.035 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 59.49' @ 12.54 hrs Surf.Area= 609 sf Storage= 249 cf

Plug-Flow detention time= 12.6 min calculated for 0.035 af (100% of inflow)
Center-of-Mass det. time= 12.6 min (914.5 - 901.9)

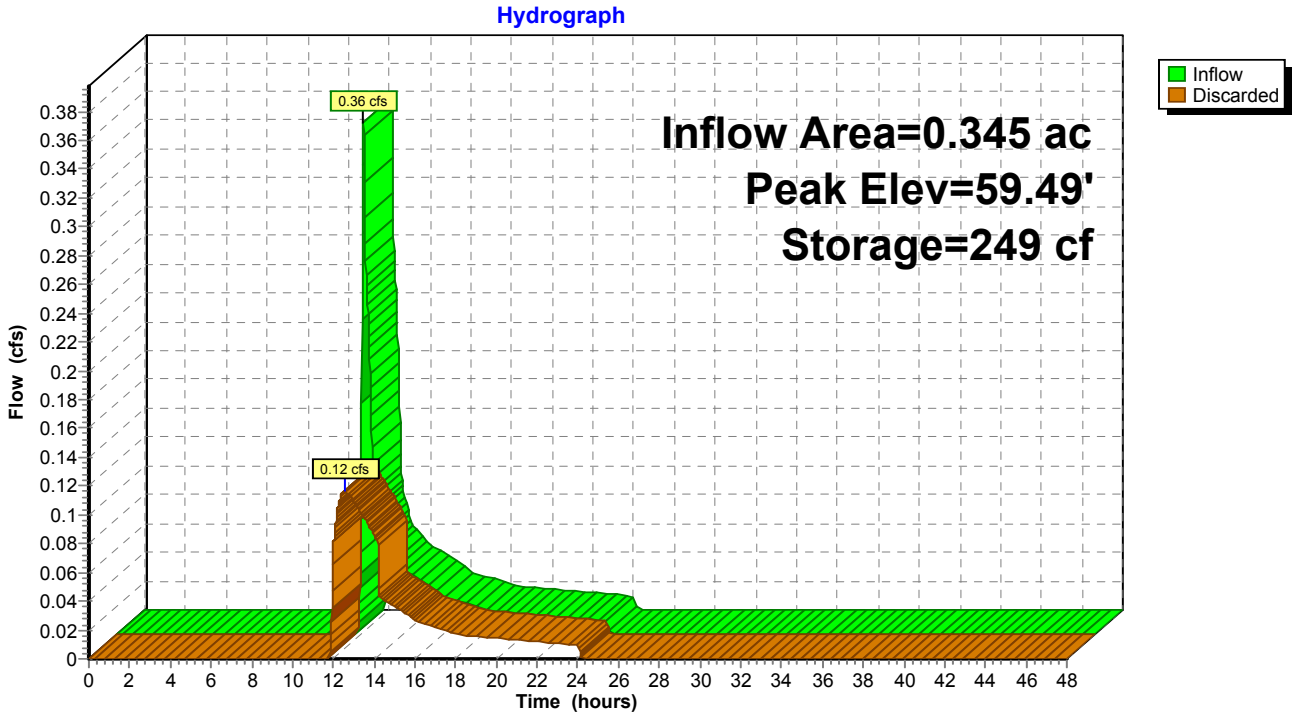
Volume	Invert	Avail.Storage	Storage Description
#1	59.00'	615 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
59.00	419	0	0
60.00	811	615	615

Device	Routing	Invert	Outlet Devices
#1	Discarded	59.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.12 cfs @ 12.54 hrs HW=59.49' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.12 cfs)

Pond D-1: Depression



Summary for Pond D-2: Depression

Inflow Area = 0.482 ac, 29.27% Impervious, Inflow Depth = 3.06" for 100-Year event
Inflow = 1.50 cfs @ 12.09 hrs, Volume= 0.123 af
Outflow = 0.22 cfs @ 12.70 hrs, Volume= 0.123 af, Atten= 86%, Lag= 36.6 min
Discarded = 0.22 cfs @ 12.70 hrs, Volume= 0.123 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 58.30' @ 12.70 hrs Surf.Area= 1,132 sf Storage= 1,694 cf

Plug-Flow detention time= 70.3 min calculated for 0.123 af (100% of inflow)
Center-of-Mass det. time= 70.3 min (872.7 - 802.4)

Volume	Invert	Avail.Storage	Storage Description
#1	56.00'	2,585 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

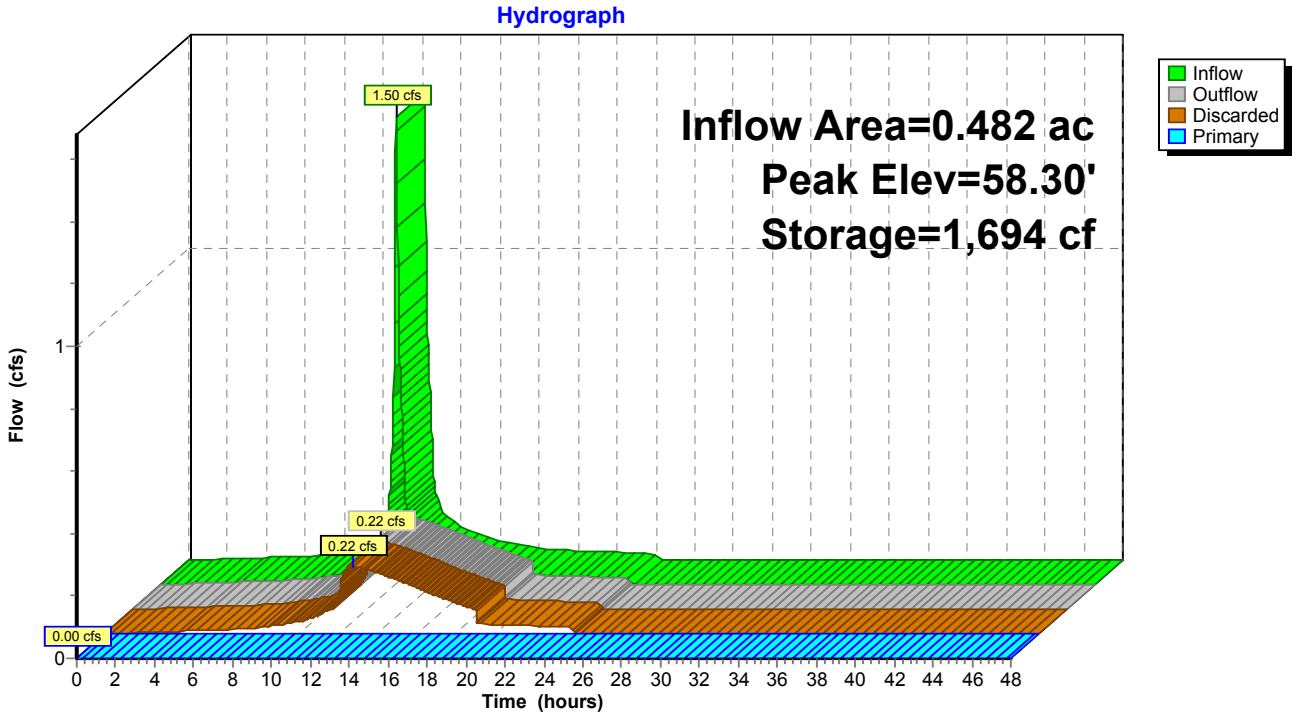
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.00	388	0	0
57.00	672	530	530
58.00	1,013	843	1,373
59.00	1,411	1,212	2,585

Device	Routing	Invert	Outlet Devices
#1	Primary	58.60'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.40 Width (feet) 5.00 20.00
#2	Discarded	56.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.22 cfs @ 12.70 hrs HW=58.30' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.22 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=56.00' TW=0.00' (Dynamic Tailwater)
↑—**1=Custom Weir/Orifice** (Controls 0.00 cfs)

Pond D-2: Depression



Summary for Pond D-3: Depression

Inflow Area = 0.219 ac, 12.07% Impervious, Inflow Depth = 1.37" for 100-Year event
Inflow = 0.28 cfs @ 12.11 hrs, Volume= 0.025 af
Outflow = 0.16 cfs @ 12.34 hrs, Volume= 0.025 af, Atten= 44%, Lag= 14.0 min
Discarded = 0.16 cfs @ 12.34 hrs, Volume= 0.025 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 63.09' @ 12.34 hrs Surf.Area= 814 sf Storage= 73 cf

Plug-Flow detention time= 2.4 min calculated for 0.025 af (100% of inflow)
Center-of-Mass det. time= 2.4 min (896.1 - 893.6)

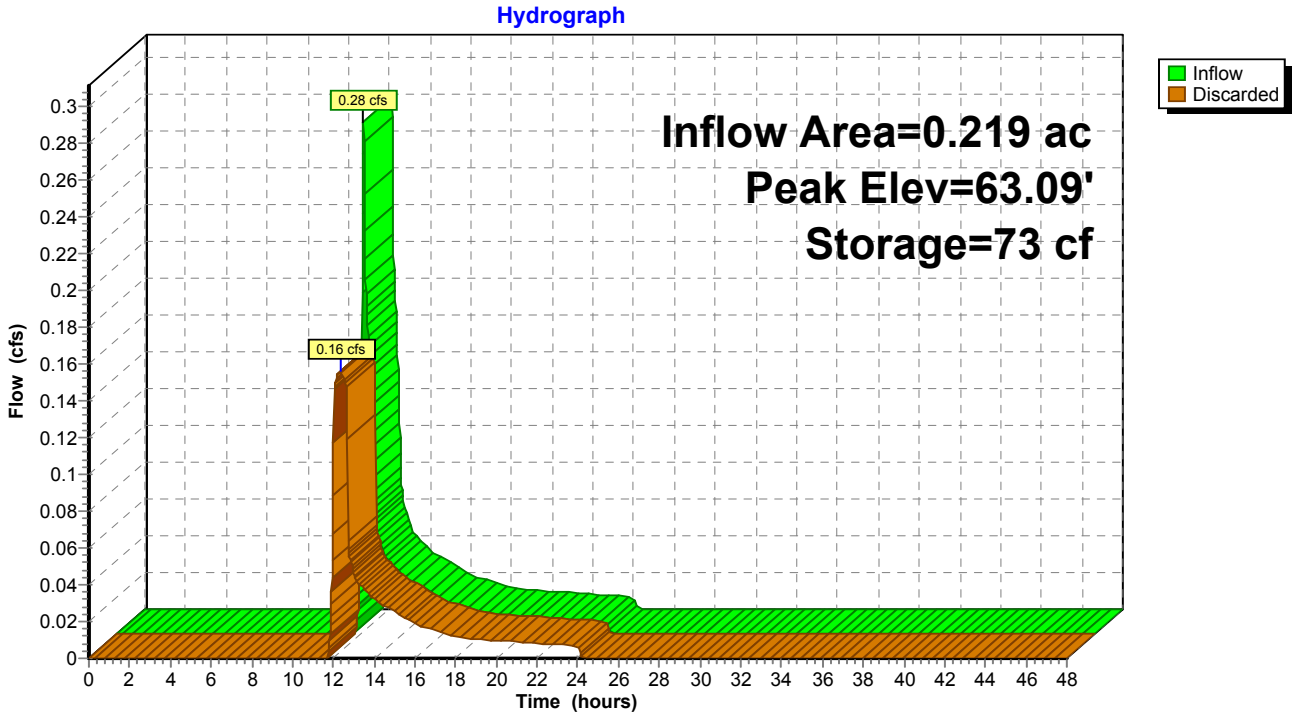
Volume	Invert	Avail.Storage	Storage Description
#1	63.00'	2,747 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
63.00	757	0	0
64.00	1,368	1,063	1,063
65.00	2,001	1,685	2,747

Device	Routing	Invert	Outlet Devices
#1	Discarded	63.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.16 cfs @ 12.34 hrs HW=63.09' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.16 cfs)

Pond D-3: Depression



Summary for Pond D-4: Depression

Inflow Area = 0.244 ac, 14.55% Impervious, Inflow Depth = 1.54" for 100-Year event
Inflow = 0.37 cfs @ 12.10 hrs, Volume= 0.031 af
Outflow = 0.18 cfs @ 12.38 hrs, Volume= 0.031 af, Atten= 51%, Lag= 16.7 min
Discarded = 0.18 cfs @ 12.38 hrs, Volume= 0.031 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 54.14' @ 12.38 hrs Surf.Area= 938 sf Storage= 124 cf

Plug-Flow detention time= 3.4 min calculated for 0.031 af (100% of inflow)
Center-of-Mass det. time= 3.4 min (889.7 - 886.3)

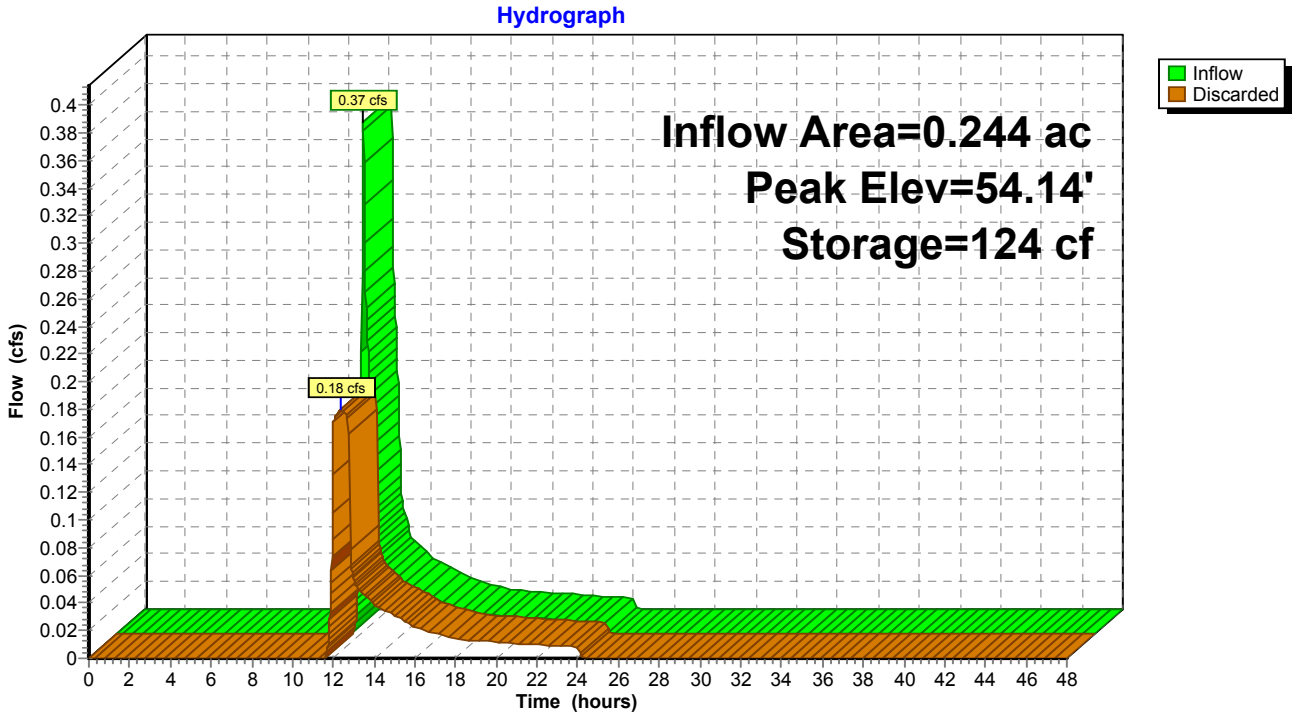
Volume	Invert	Avail.Storage	Storage Description
#1	54.00'	2,555 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
54.00	889	0	0
55.00	1,252	1,071	1,071
56.00	1,717	1,485	2,555

Device	Routing	Invert	Outlet Devices
#1	Discarded	54.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.18 cfs @ 12.38 hrs HW=54.14' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.18 cfs)

Pond D-4: Depression



Summary for Pond DB-1: Prop Detention Basin

Inflow Area = 1.952 ac, 65.30% Impervious, Inflow Depth = 3.57" for 100-Year event
Inflow = 9.59 cfs @ 12.10 hrs, Volume= 0.581 af
Outflow = 2.94 cfs @ 12.45 hrs, Volume= 0.455 af, Atten= 69%, Lag= 20.8 min
Primary = 2.94 cfs @ 12.45 hrs, Volume= 0.455 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 59.47' @ 12.45 hrs Surf.Area= 10,187 sf Storage= 11,994 cf

Plug-Flow detention time= 269.1 min calculated for 0.454 af (78% of inflow)
Center-of-Mass det. time= 204.8 min (993.3 - 788.5)

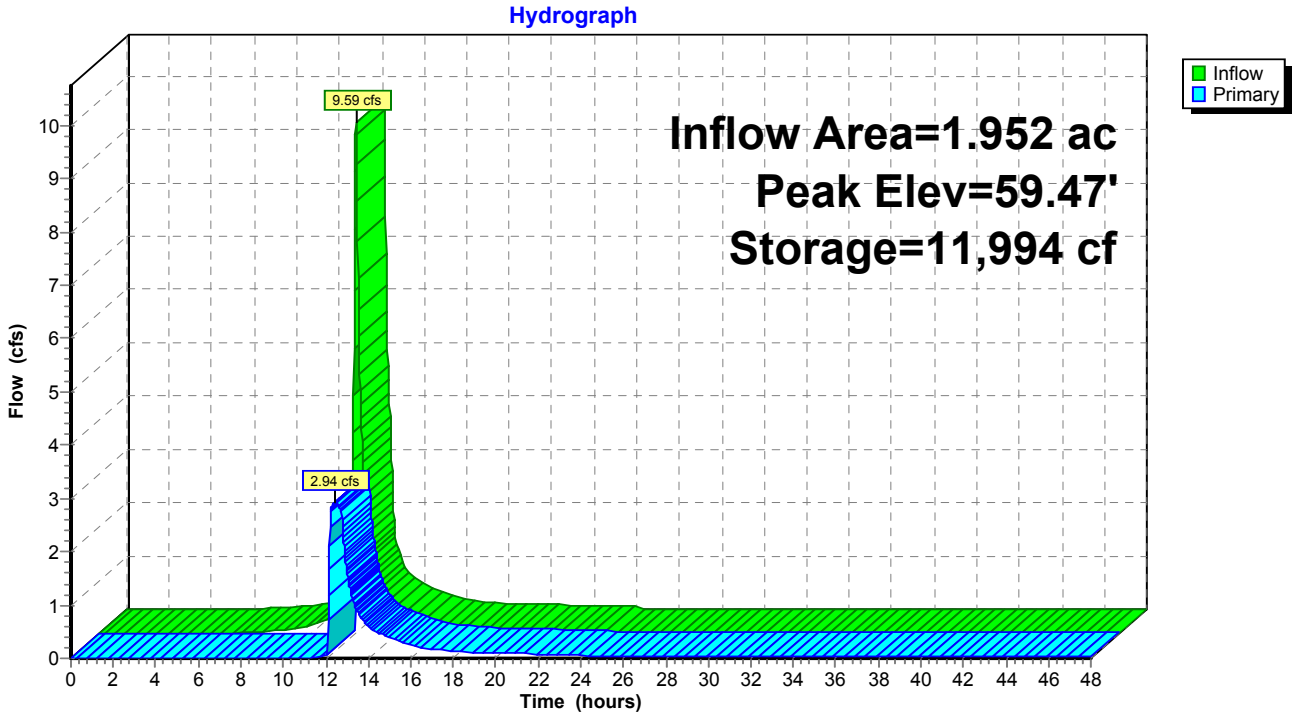
Volume	Invert	Avail.Storage	Storage Description
#1	58.00'	29,454 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
58.00	6,690	0	0
59.00	8,247	7,469	7,469
59.10	9,613	893	8,362
60.00	11,020	9,285	17,646
61.00	12,596	11,808	29,454

Device	Routing	Invert	Outlet Devices
#1	Primary	58.00'	**12.0" Round Culvert** L= 19.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 58.00' / 57.30' S= 0.0359 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	58.00'	**1.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	59.00'	**4.0' long x 1.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=2.94 cfs @ 12.45 hrs HW=59.47' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 2.94 cfs @ 3.74 fps)
  ├─**2=Orifice/Grate** (Passes < 0.03 cfs potential flow)
  └─**3=Sharp-Crested Rectangular Weir** (Passes < 4.07 cfs potential flow)

Pond DB-1: Prop Detention Basin



Summary for Pond P1: Infiltration Chambers

Inflow Area = 0.044 ac,100.00% Impervious, Inflow Depth = 6.86" for 100-Year event
Inflow = 0.31 cfs @ 12.08 hrs, Volume= 0.025 af
Outflow = 0.04 cfs @ 11.64 hrs, Volume= 0.025 af, Atten= 88%, Lag= 0.0 min
Discarded = 0.04 cfs @ 11.64 hrs, Volume= 0.025 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 58.74' @ 12.65 hrs Surf.Area= 195 sf Storage= 328 cf

Plug-Flow detention time= 52.9 min calculated for 0.025 af (100% of inflow)
Center-of-Mass det. time= 52.9 min (795.6 - 742.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	56.20'	184 cf	**11.17'W x 17.50'L x 3.54'H Field A** 692 cf Overall - 231 cf Embedded = 461 cf x 40.0% Voids
#2A	56.70'	231 cf	**Cultec R-330XLHD** x 4 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		415 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.20'	**8.200 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.04 cfs @ 11.64 hrs HW=56.24' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Pond P1: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

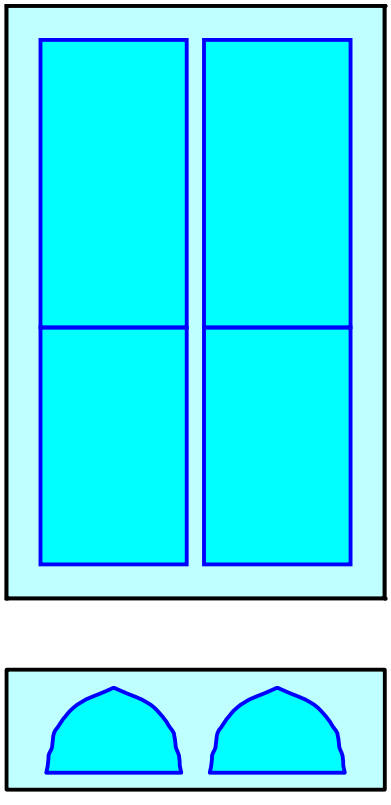
2 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 15.50' Row Length +12.0" End Stone x 2 = 17.50' Base Length
2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

4 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 231.0 cf Chamber Storage

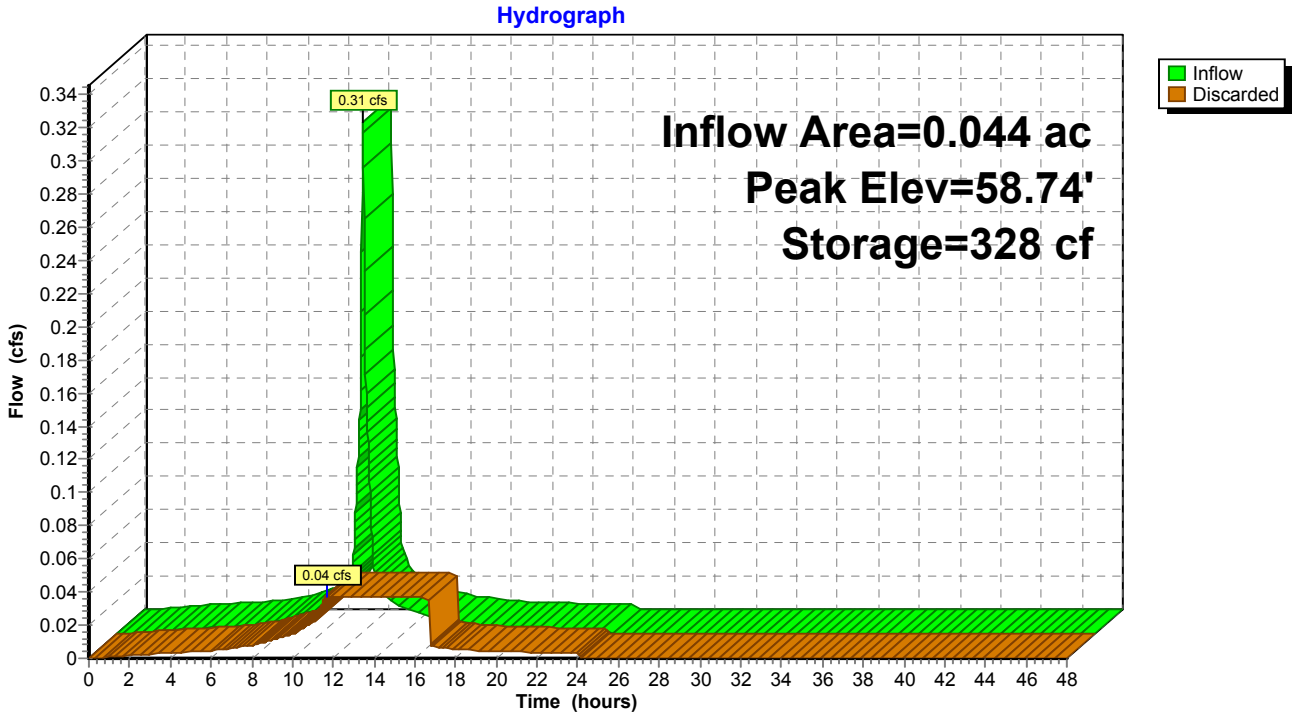
692.1 cf Field - 231.0 cf Chambers = 461.1 cf Stone x 40.0% Voids = 184.4 cf Stone Storage

Chamber Storage + Stone Storage = 415.4 cf = 0.010 af
Overall Storage Efficiency = 60.0%
Overall System Size = 17.50' x 11.17' x 3.54'

4 Chambers
25.6 cy Field
17.1 cy Stone



Pond P1: Infiltration Chambers



Summary for Pond P10: Infiltration Chambers

Inflow Area = 0.024 ac,100.00% Impervious, Inflow Depth = 6.86" for 100-Year event
Inflow = 0.16 cfs @ 12.08 hrs, Volume= 0.013 af
Outflow = 0.02 cfs @ 11.66 hrs, Volume= 0.013 af, Atten= 87%, Lag= 0.0 min
Discarded = 0.02 cfs @ 11.66 hrs, Volume= 0.013 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 62.11' @ 12.61 hrs Surf.Area= 111 sf Storage= 169 cf

Plug-Flow detention time= 46.1 min calculated for 0.013 af (100% of inflow)
Center-of-Mass det. time= 46.1 min (788.9 - 742.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	59.70'	111 cf	**6.33'W x 17.50'L x 3.54'H Field A** 393 cf Overall - 115 cf Embedded = 277 cf x 40.0% Voids
#2A	60.20'	115 cf	**Cultec R-330XLHD** x 2 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		226 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	59.70'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.02 cfs @ 11.66 hrs HW=59.75' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Pond P10: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 1 rows

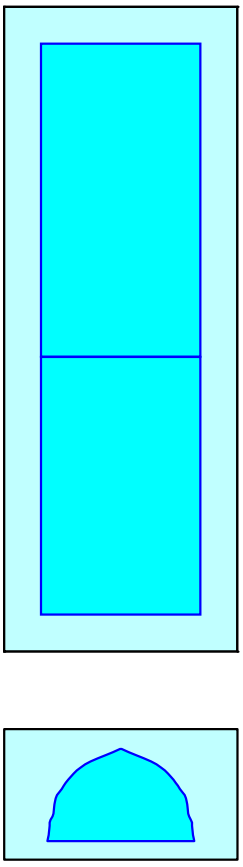
2 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 15.50' Row Length +12.0" End Stone x 2 = 17.50' Base Length
1 Rows x 52.0" Wide + 12.0" Side Stone x 2 = 6.33' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

2 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 1 Rows = 115.5 cf Chamber Storage

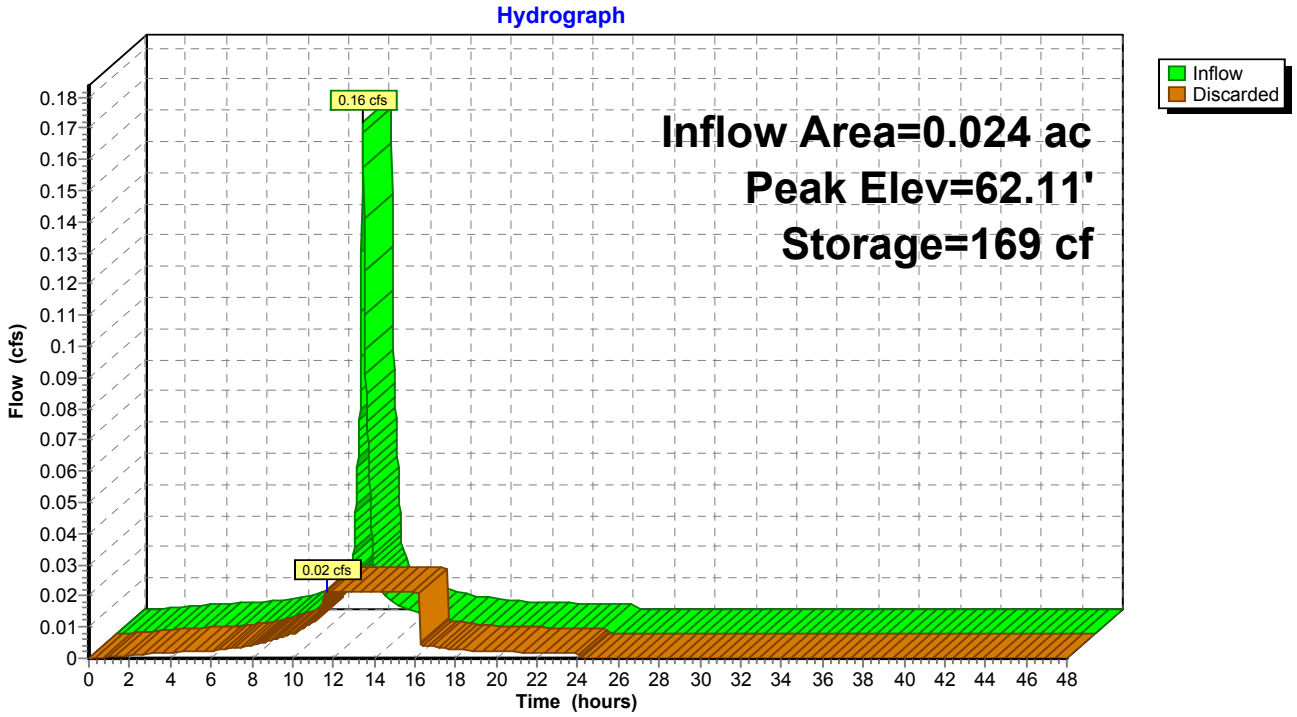
392.5 cf Field - 115.5 cf Chambers = 277.0 cf Stone x 40.0% Voids = 110.8 cf Stone Storage

Chamber Storage + Stone Storage = 226.3 cf = 0.005 af
Overall Storage Efficiency = 57.7%
Overall System Size = 17.50' x 6.33' x 3.54'

2 Chambers
14.5 cy Field
10.3 cy Stone



Pond P10: Infiltration Chambers



Summary for Pond P11: Infiltration Chambers

Inflow Area = 0.024 ac,100.00% Impervious, Inflow Depth = 6.86" for 100-Year event
Inflow = 0.17 cfs @ 12.08 hrs, Volume= 0.014 af
Outflow = 0.02 cfs @ 11.66 hrs, Volume= 0.014 af, Atten= 87%, Lag= 0.0 min
Discarded = 0.02 cfs @ 11.66 hrs, Volume= 0.014 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 62.14' @ 12.62 hrs Surf.Area= 111 sf Storage= 170 cf

Plug-Flow detention time= 46.8 min calculated for 0.014 af (100% of inflow)
Center-of-Mass det. time= 46.8 min (789.5 - 742.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	59.70'	111 cf	**6.33'W x 17.50'L x 3.54'H Field A** 393 cf Overall - 115 cf Embedded = 277 cf x 40.0% Voids
#2A	60.20'	115 cf	**Cultec R-330XLHD** x 2 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		226 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	59.70'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.02 cfs @ 11.66 hrs HW=59.75' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Pond P11: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 1 rows

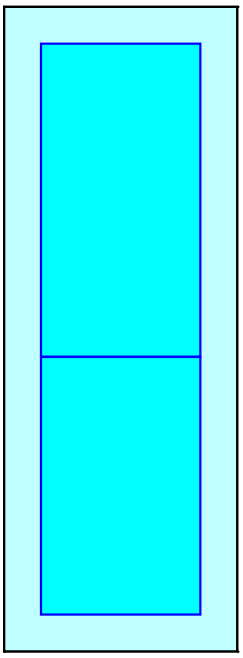
2 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 15.50' Row Length +12.0" End Stone x 2 = 17.50' Base Length
1 Rows x 52.0" Wide + 12.0" Side Stone x 2 = 6.33' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

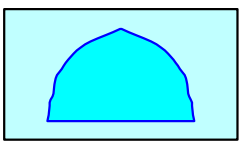
2 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 1 Rows = 115.5 cf Chamber Storage

392.5 cf Field - 115.5 cf Chambers = 277.0 cf Stone x 40.0% Voids = 110.8 cf Stone Storage

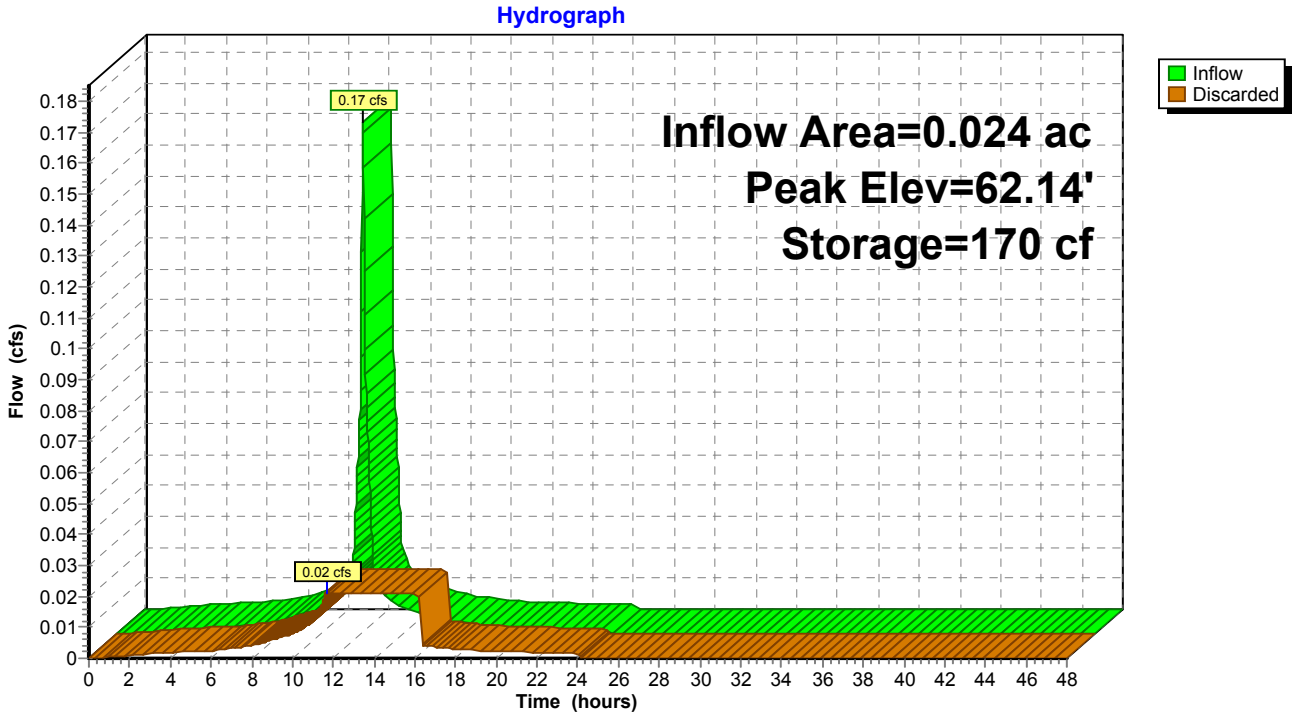
Chamber Storage + Stone Storage = 226.3 cf = 0.005 af
Overall Storage Efficiency = 57.7%
Overall System Size = 17.50' x 6.33' x 3.54'

2 Chambers
14.5 cy Field
10.3 cy Stone





Pond P11: Infiltration Chambers



Summary for Pond P12: Infiltration Chambers

Inflow Area = 0.044 ac,100.00% Impervious, Inflow Depth = 6.86" for 100-Year event
Inflow = 0.30 cfs @ 12.08 hrs, Volume= 0.025 af
Outflow = 0.05 cfs @ 11.72 hrs, Volume= 0.025 af, Atten= 83%, Lag= 0.0 min
Discarded = 0.05 cfs @ 11.72 hrs, Volume= 0.025 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 60.01' @ 12.54 hrs Surf.Area= 274 sf Storage= 268 cf

Plug-Flow detention time= 26.3 min calculated for 0.025 af (100% of inflow)
Center-of-Mass det. time= 26.3 min (769.1 - 742.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	58.50'	253 cf	**11.17'W x 24.50'L x 3.54'H Field A** 969 cf Overall - 335 cf Embedded = 634 cf x 40.0% Voids
#2A	59.00'	335 cf	**Cultec R-330XLHD** x 6 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		589 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	58.50'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.05 cfs @ 11.72 hrs HW=58.54' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Pond P12: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

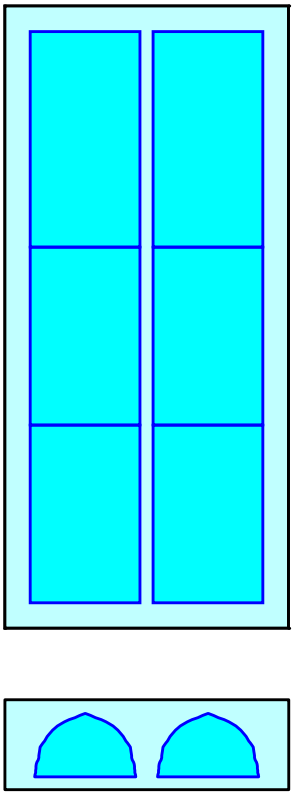
3 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 22.50' Row Length +12.0" End Stone x 2 = 24.50' Base Length
2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

6 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 335.3 cf Chamber Storage

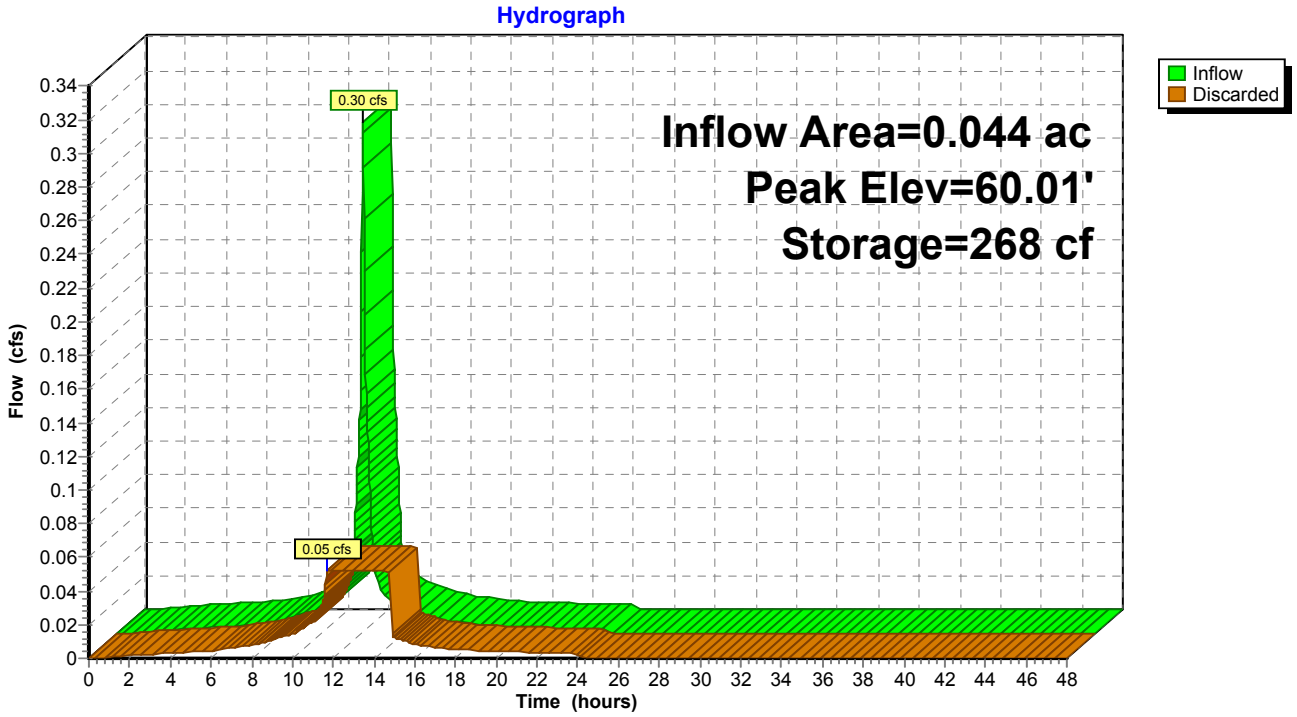
968.9 cf Field - 335.3 cf Chambers = 633.6 cf Stone x 40.0% Voids = 253.5 cf Stone Storage

Chamber Storage + Stone Storage = 588.8 cf = 0.014 af
Overall Storage Efficiency = 60.8%
Overall System Size = 24.50' x 11.17' x 3.54'

6 Chambers
35.9 cy Field
23.5 cy Stone



Pond P12: Infiltration Chambers



Summary for Pond P13: Infiltration Chambers

Inflow Area = 0.311 ac, 64.32% Impervious, Inflow Depth = 4.46" for 100-Year event
Inflow = 1.62 cfs @ 12.09 hrs, Volume= 0.116 af
Outflow = 0.89 cfs @ 12.22 hrs, Volume= 0.116 af, Atten= 45%, Lag= 7.7 min
Discarded = 0.11 cfs @ 11.48 hrs, Volume= 0.079 af
Primary = 0.78 cfs @ 12.22 hrs, Volume= 0.036 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 60.01' @ 12.22 hrs Surf.Area= 586 sf Storage= 1,006 cf

Plug-Flow detention time= 29.7 min calculated for 0.116 af (100% of inflow)
Center-of-Mass det. time= 29.7 min (844.2 - 814.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	57.50'	530 cf	**11.17'W x 52.50'L x 3.54'H Field A** 2,076 cf Overall - 753 cf Embedded = 1,324 cf x 40.0% Voids
#2A	58.00'	753 cf	**Cultec R-330XLHD** x 14 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		1,282 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	58.90'	**6.0" Round Culvert** L= 90.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 58.90' / 57.42' S= 0.0164 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.20 sf
#2	Discarded	57.50'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.11 cfs @ 11.48 hrs HW=57.54' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=0.78 cfs @ 12.22 hrs HW=60.01' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 0.78 cfs @ 3.95 fps)

Pond P13: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

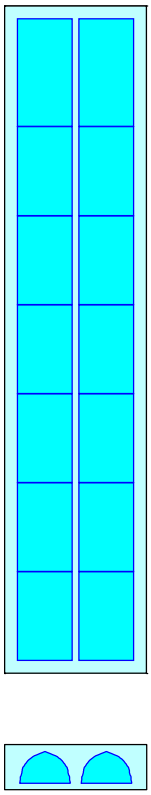
7 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 50.50' Row Length +12.0" End Stone x 2 = 52.50' Base Length
2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

14 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 752.6 cf Chamber Storage

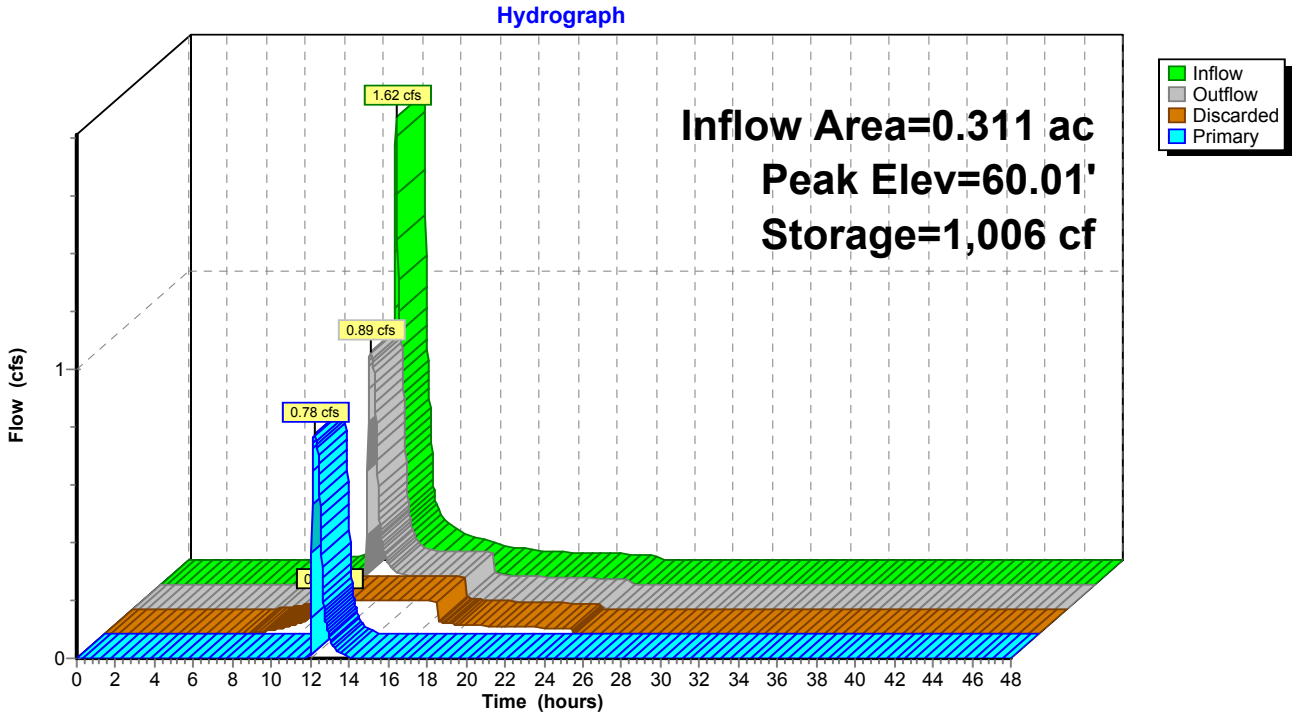
2,076.3 cf Field - 752.6 cf Chambers = 1,323.8 cf Stone x 40.0% Voids = 529.5 cf Stone Storage

Chamber Storage + Stone Storage = 1,282.1 cf = 0.029 af
Overall Storage Efficiency = 61.7%
Overall System Size = 52.50' x 11.17' x 3.54'

14 Chambers
76.9 cy Field
49.0 cy Stone



Pond P13: Infiltration Chambers



Summary for Pond P2: Infiltration Chambers

Inflow Area = 0.350 ac,100.00% Impervious, Inflow Depth = 6.86" for 100-Year event
Inflow = 2.43 cfs @ 12.08 hrs, Volume= 0.200 af
Outflow = 0.24 cfs @ 11.50 hrs, Volume= 0.200 af, Atten= 90%, Lag= 0.0 min
Discarded = 0.24 cfs @ 11.50 hrs, Volume= 0.200 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 59.67' @ 12.83 hrs Surf.Area= 1,265 sf Storage= 2,810 cf

Plug-Flow detention time= 74.8 min calculated for 0.200 af (100% of inflow)
Center-of-Mass det. time= 74.8 min (817.5 - 742.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	56.20'	1,089 cf	**40.17'W x 31.50'L x 3.54'H Field A** 4,481 cf Overall - 1,758 cf Embedded = 2,723 cf x 40.0% Voids
#2A	56.70'	1,758 cf	**Cultec R-330XLHD** x 32 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 8 rows
		2,847 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.20'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.24 cfs @ 11.50 hrs HW=56.24' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.24 cfs)

Pond P2: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 8 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

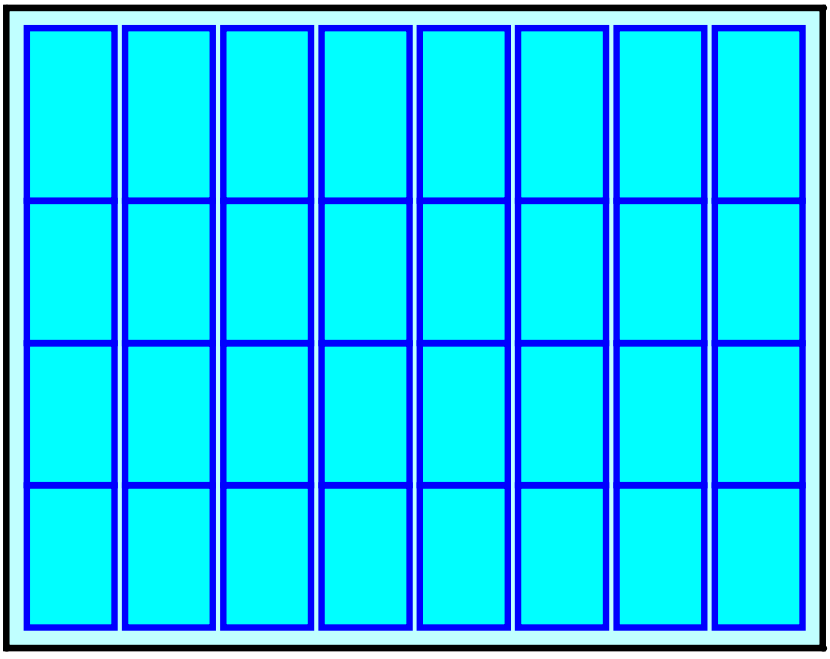
4 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 29.50' Row Length +12.0" End Stone x 2 = 31.50' Base Length
8 Rows x 52.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 40.17' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

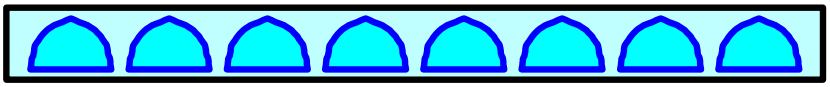
32 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 8 Rows = 1,758.4 cf Chamber Storage

4,481.1 cf Field - 1,758.4 cf Chambers = 2,722.7 cf Stone x 40.0% Voids = 1,089.1 cf Stone Storage

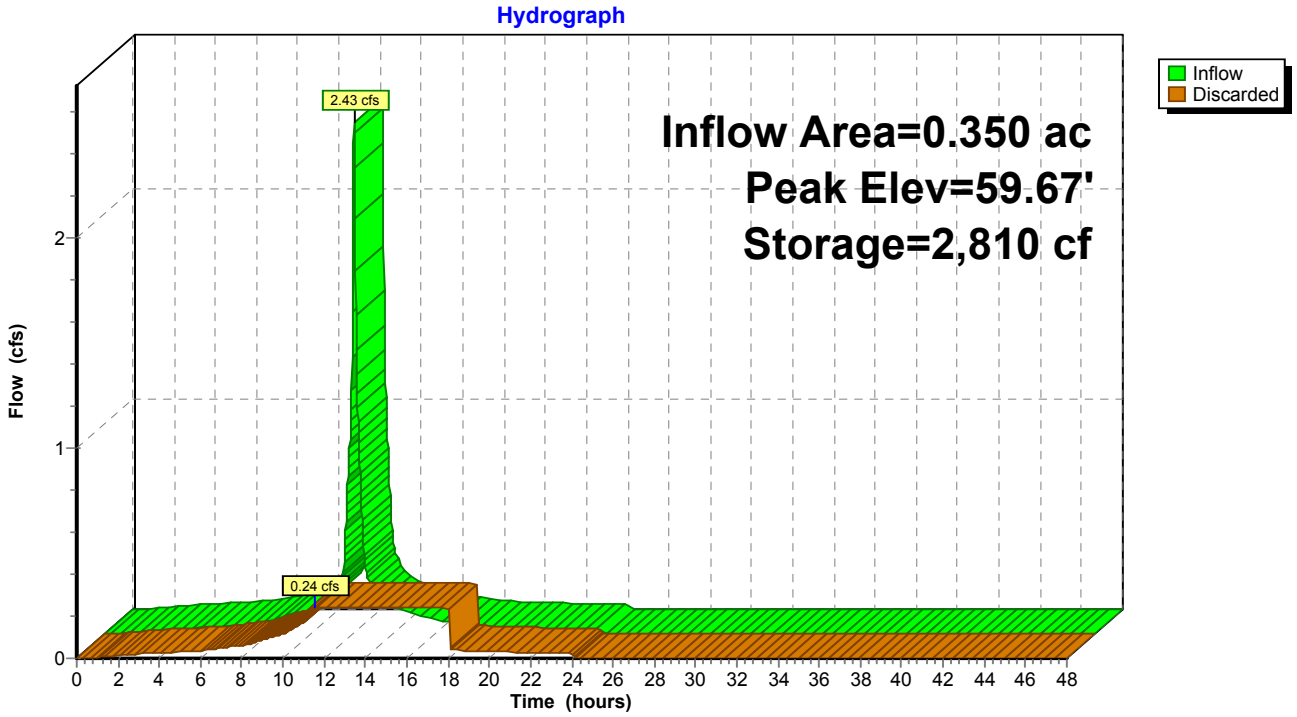
Chamber Storage + Stone Storage = 2,847.5 cf = 0.065 af
Overall Storage Efficiency = 63.5%
Overall System Size = 31.50' x 40.17' x 3.54'

32 Chambers
166.0 cy Field
100.8 cy Stone





Pond P2: Infiltration Chambers



Summary for Pond P3: Infiltration Chambers

Inflow Area = 0.024 ac,100.00% Impervious, Inflow Depth = 6.86" for 100-Year event
Inflow = 0.16 cfs @ 12.08 hrs, Volume= 0.013 af
Outflow = 0.02 cfs @ 11.66 hrs, Volume= 0.013 af, Atten= 87%, Lag= 0.0 min
Discarded = 0.02 cfs @ 11.66 hrs, Volume= 0.013 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 58.61' @ 12.61 hrs Surf.Area= 111 sf Storage= 169 cf

Plug-Flow detention time= 46.1 min calculated for 0.013 af (100% of inflow)
Center-of-Mass det. time= 46.1 min (788.9 - 742.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	56.20'	111 cf	**6.33'W x 17.50'L x 3.54'H Field A** 393 cf Overall - 115 cf Embedded = 277 cf x 40.0% Voids
#2A	56.70'	115 cf	**Cultec R-330XLHD** x 2 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		226 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.20'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.02 cfs @ 11.66 hrs HW=56.25' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Pond P3: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 1 rows

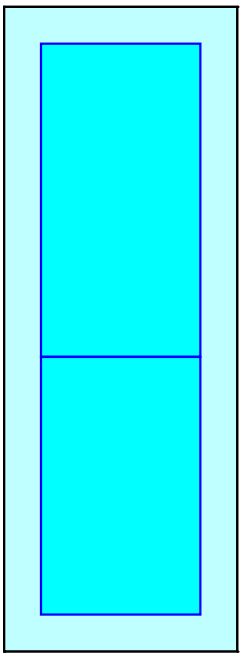
2 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 15.50' Row Length +12.0" End Stone x 2 = 17.50' Base Length
1 Rows x 52.0" Wide + 12.0" Side Stone x 2 = 6.33' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

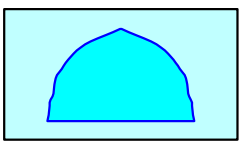
2 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 1 Rows = 115.5 cf Chamber Storage

392.5 cf Field - 115.5 cf Chambers = 277.0 cf Stone x 40.0% Voids = 110.8 cf Stone Storage

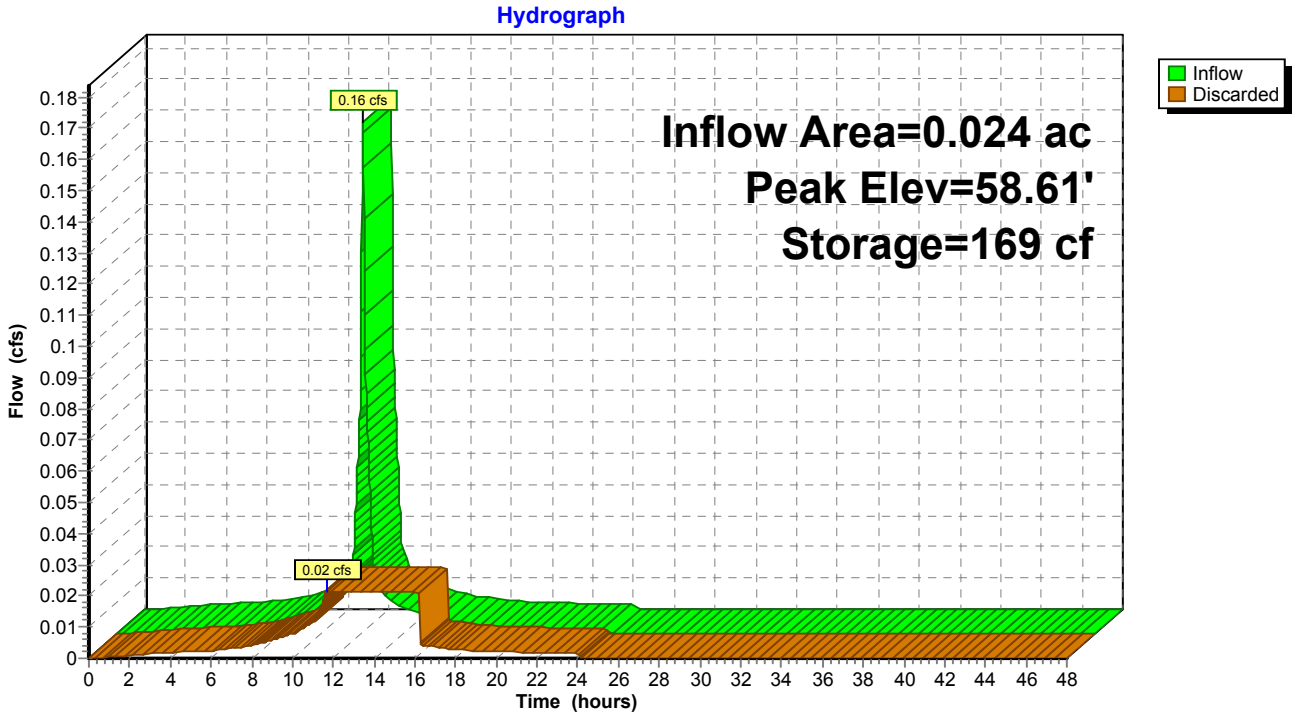
Chamber Storage + Stone Storage = 226.3 cf = 0.005 af
Overall Storage Efficiency = 57.7%
Overall System Size = 17.50' x 6.33' x 3.54'

2 Chambers
14.5 cy Field
10.3 cy Stone





Pond P3: Infiltration Chambers



Summary for Pond P4: Infiltration Chambers

Inflow Area = 0.047 ac,100.00% Impervious, Inflow Depth = 6.86" for 100-Year event
Inflow = 0.33 cfs @ 12.08 hrs, Volume= 0.027 af
Outflow = 0.04 cfs @ 11.62 hrs, Volume= 0.027 af, Atten= 88%, Lag= 0.0 min
Discarded = 0.04 cfs @ 11.62 hrs, Volume= 0.027 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 59.02' @ 12.68 hrs Surf.Area= 199 sf Storage= 355 cf

Plug-Flow detention time= 56.5 min calculated for 0.027 af (100% of inflow)
Center-of-Mass det. time= 56.5 min (799.2 - 742.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	56.20'	195 cf	**6.33'W x 31.50'L x 3.54'H Field A** 707 cf Overall - 220 cf Embedded = 487 cf x 40.0% Voids
#2A	56.70'	220 cf	**Cultec R-330XLHD** x 4 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		415 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	56.20'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.04 cfs @ 11.62 hrs HW=56.24' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Pond P4: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 1 rows

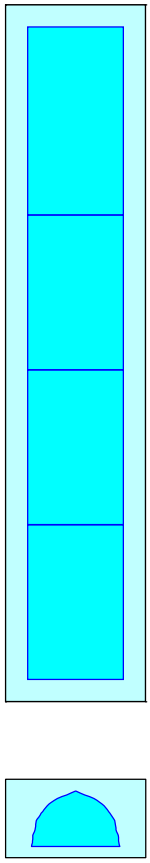
4 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 29.50' Row Length +12.0" End Stone x 2 = 31.50' Base Length
1 Rows x 52.0" Wide + 12.0" Side Stone x 2 = 6.33' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

4 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 1 Rows = 219.8 cf Chamber Storage

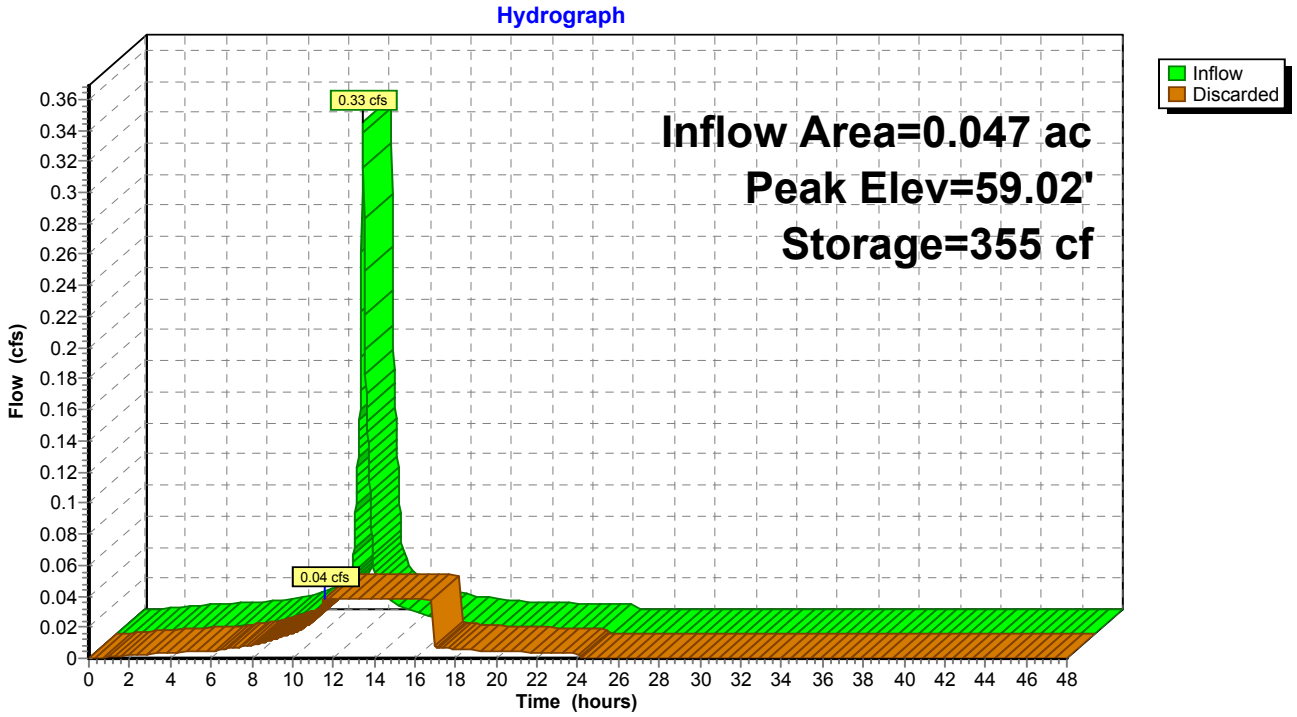
706.6 cf Field - 219.8 cf Chambers = 486.8 cf Stone x 40.0% Voids = 194.7 cf Stone Storage

Chamber Storage + Stone Storage = 414.5 cf = 0.010 af
Overall Storage Efficiency = 58.7%
Overall System Size = 31.50' x 6.33' x 3.54'

4 Chambers
26.2 cy Field
18.0 cy Stone



Pond P4: Infiltration Chambers



Summary for Pond P5: Infiltration Chambers

Inflow Area = 0.047 ac,100.00% Impervious, Inflow Depth = 6.86" for 100-Year event
Inflow = 0.33 cfs @ 12.08 hrs, Volume= 0.027 af
Outflow = 0.04 cfs @ 11.62 hrs, Volume= 0.027 af, Atten= 88%, Lag= 0.0 min
Discarded = 0.04 cfs @ 11.62 hrs, Volume= 0.027 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 62.52' @ 12.68 hrs Surf.Area= 199 sf Storage= 355 cf

Plug-Flow detention time= 56.5 min calculated for 0.027 af (100% of inflow)
Center-of-Mass det. time= 56.5 min (799.2 - 742.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	59.70'	195 cf	**6.33'W x 31.50'L x 3.54'H Field A** 707 cf Overall - 220 cf Embedded = 487 cf x 40.0% Voids
#2A	60.20'	220 cf	**Cultec R-330XLHD** x 4 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		415 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	59.70'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.04 cfs @ 11.62 hrs HW=59.74' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Pond P5: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 1 rows

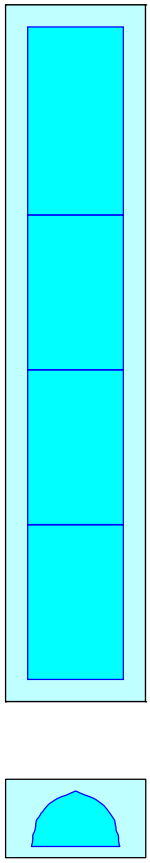
4 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 29.50' Row Length +12.0" End Stone x 2 = 31.50' Base Length
1 Rows x 52.0" Wide + 12.0" Side Stone x 2 = 6.33' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

4 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 1 Rows = 219.8 cf Chamber Storage

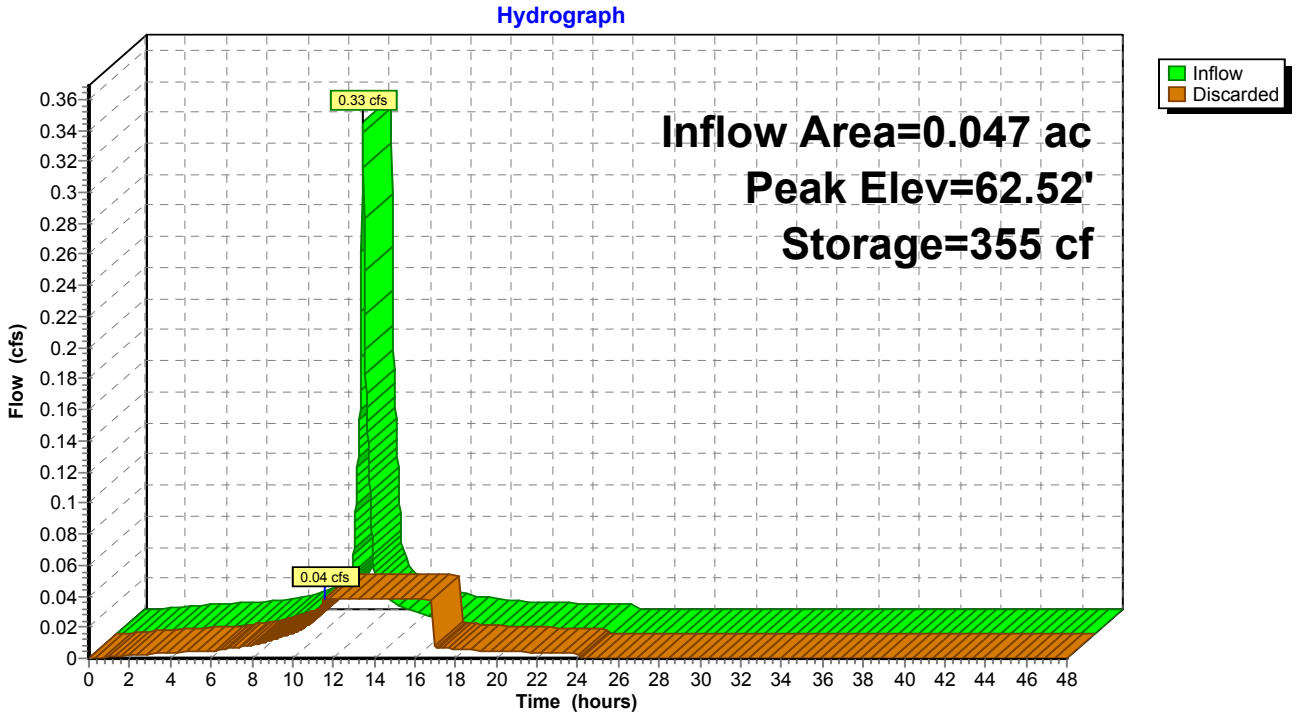
706.6 cf Field - 219.8 cf Chambers = 486.8 cf Stone x 40.0% Voids = 194.7 cf Stone Storage

Chamber Storage + Stone Storage = 414.5 cf = 0.010 af
Overall Storage Efficiency = 58.7%
Overall System Size = 31.50' x 6.33' x 3.54'

4 Chambers
26.2 cy Field
18.0 cy Stone



Pond P5: Infiltration Chambers



Summary for Pond P6: Infiltration Chambers

Inflow Area = 0.959 ac, 58.80% Impervious, Inflow Depth = 4.27" for 100-Year event
Inflow = 4.77 cfs @ 12.09 hrs, Volume= 0.341 af
Outflow = 4.27 cfs @ 12.13 hrs, Volume= 0.341 af, Atten= 10%, Lag= 2.4 min
Discarded = 0.17 cfs @ 10.84 hrs, Volume= 0.174 af
Primary = 4.11 cfs @ 12.13 hrs, Volume= 0.167 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 63.53' @ 12.13 hrs Surf.Area= 879 sf Storage= 1,886 cf

Plug-Flow detention time= 34.9 min calculated for 0.341 af (100% of inflow)
Center-of-Mass det. time= 34.9 min (851.6 - 816.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	60.00'	814 cf	**83.67'W x 10.50'L x 3.54'H Field A** 3,111 cf Overall - 1,077 cf Embedded = 2,035 cf x 40.0% Voids
#2A	60.50'	1,077 cf	**Cultec R-330XLHD** x 17 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 17 rows
		1,891 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	60.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'
#2	Primary	61.85'	**12.0" Round Culvert** L= 88.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 61.85' / 59.00' S= 0.0324 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.17 cfs @ 10.84 hrs HW=60.04' (Free Discharge)
↑└**1=Exfiltration** (Exfiltration Controls 0.17 cfs)

Primary OutFlow Max=4.09 cfs @ 12.13 hrs HW=63.52' TW=59.16' (Dynamic Tailwater)
↑└**2=Culvert** (Inlet Controls 4.09 cfs @ 5.20 fps)

Pond P6: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 17 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

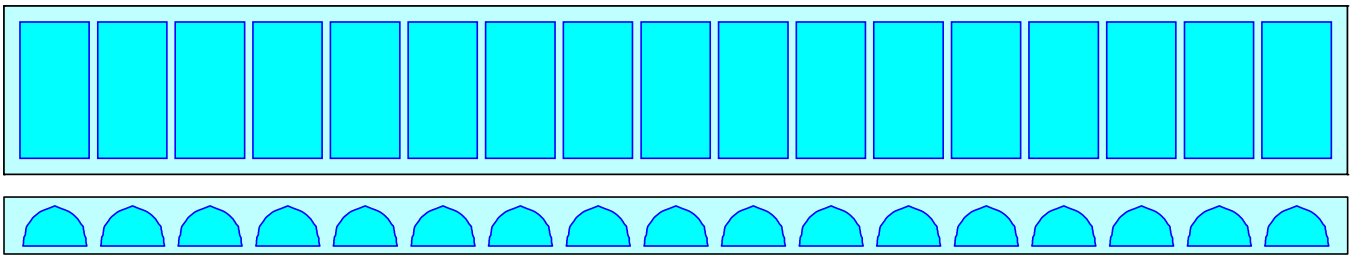
1 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 8.50' Row Length +12.0" End Stone x 2 = 10.50' Base Length
17 Rows x 52.0" Wide + 6.0" Spacing x 16 + 12.0" Side Stone x 2 = 83.67' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

17 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 17 Rows = 1,076.7 cf Chamber Storage

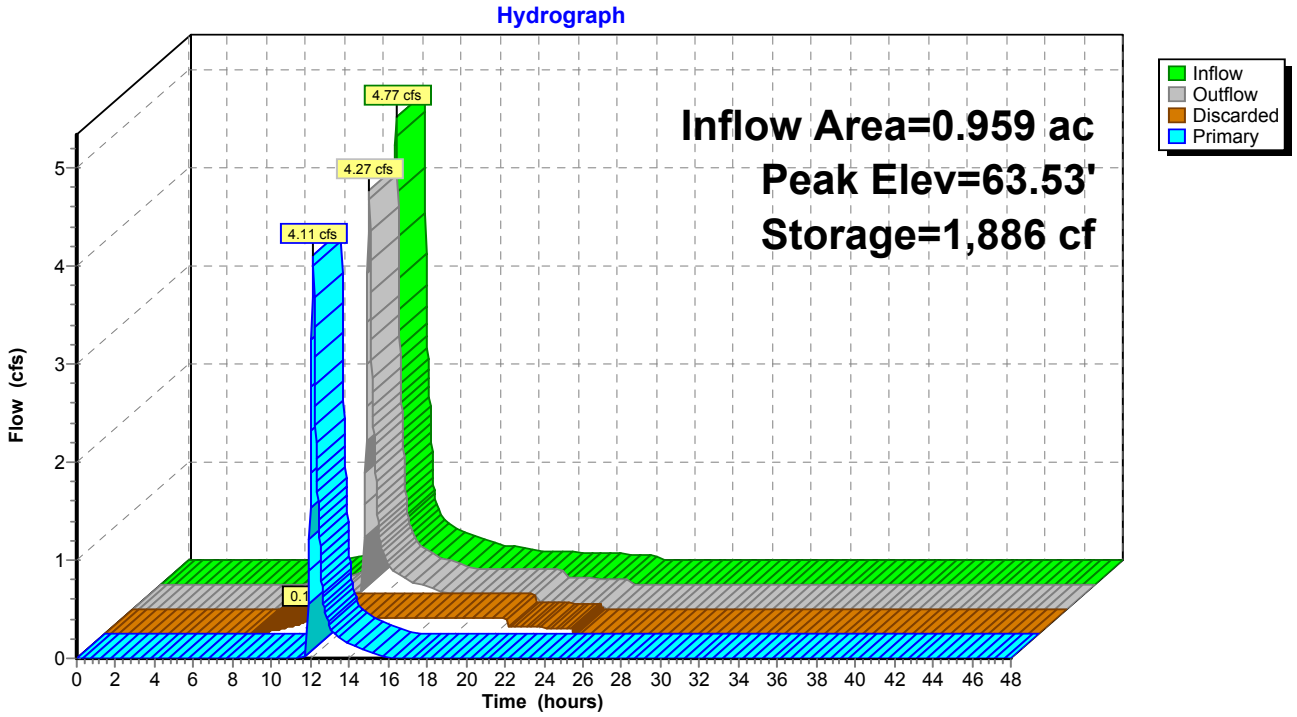
3,111.4 cf Field - 1,076.7 cf Chambers = 2,034.7 cf Stone x 40.0% Voids = 813.9 cf Stone Storage

Chamber Storage + Stone Storage = 1,890.5 cf = 0.043 af
Overall Storage Efficiency = 60.8%
Overall System Size = 10.50' x 83.67' x 3.54'

17 Chambers
115.2 cy Field
75.4 cy Stone



Pond P6: Infiltration Chambers



Summary for Pond P7: Infiltration Chambers

Inflow Area = 0.305 ac,100.00% Impervious, Inflow Depth = 6.86" for 100-Year event
Inflow = 2.12 cfs @ 12.08 hrs, Volume= 0.175 af
Outflow = 0.22 cfs @ 11.54 hrs, Volume= 0.175 af, Atten= 90%, Lag= 0.0 min
Discarded = 0.22 cfs @ 11.54 hrs, Volume= 0.175 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 63.39' @ 12.81 hrs Surf.Area= 1,133 sf Storage= 2,426 cf

Plug-Flow detention time= 71.4 min calculated for 0.175 af (100% of inflow)
Center-of-Mass det. time= 71.4 min (814.1 - 742.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	60.00'	1,013 cf	**11.17'W x 101.50'L x 3.54'H Field A** 4,014 cf Overall - 1,483 cf Embedded = 2,531 cf x 40.0% Voids
#2A	60.50'	1,483 cf	**Cultec R-330XLHD** x 28 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		2,495 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	60.00'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.22 cfs @ 11.54 hrs HW=60.04' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.22 cfs)

Pond P7: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

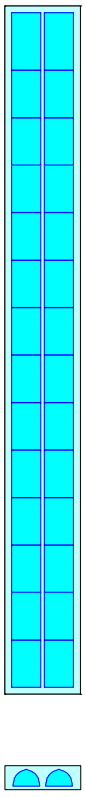
14 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 99.50' Row Length +12.0" End Stone x 2 = 101.50' Base Length
2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

28 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 1,482.7 cf Chamber Storage

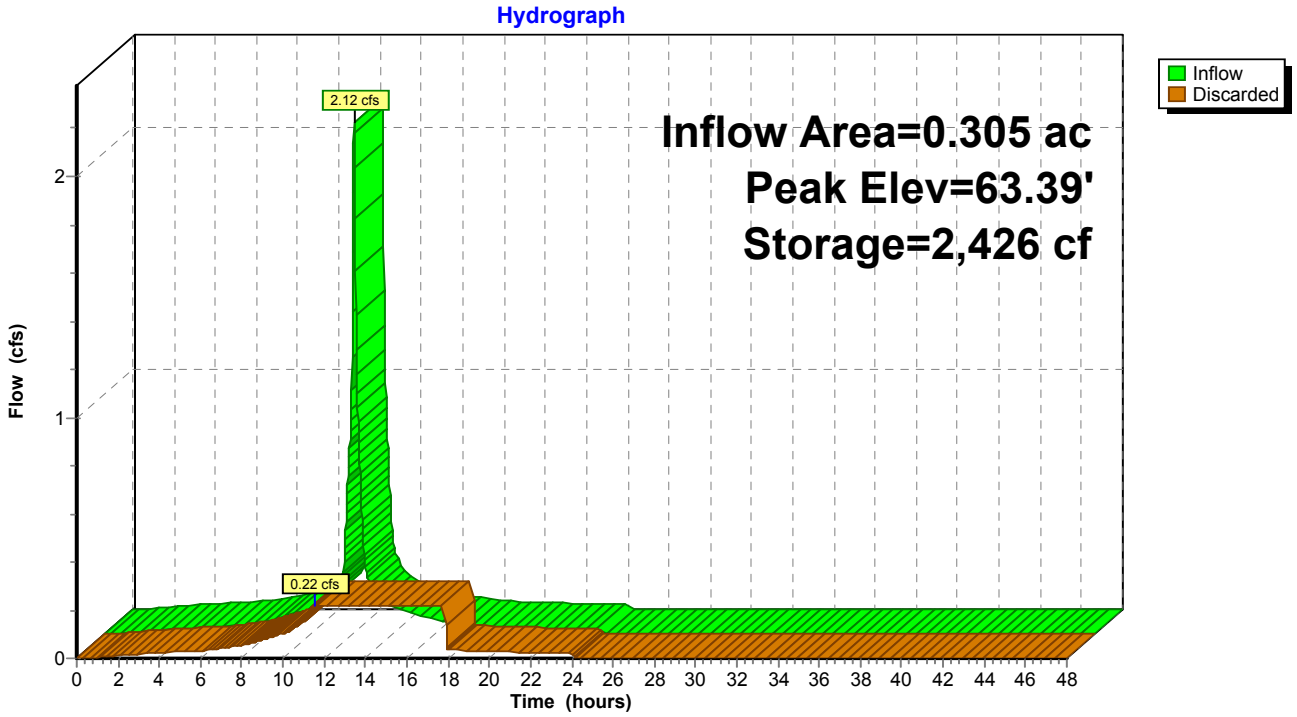
4,014.2 cf Field - 1,482.7 cf Chambers = 2,531.4 cf Stone x 40.0% Voids = 1,012.6 cf Stone Storage

Chamber Storage + Stone Storage = 2,495.3 cf = 0.057 af
Overall Storage Efficiency = 62.2%
Overall System Size = 101.50' x 11.17' x 3.54'

28 Chambers
148.7 cy Field
93.8 cy Stone



Pond P7: Infiltration Chambers



Summary for Pond P8: Infiltration Chambers

Inflow Area = 0.699 ac, 67.39% Impervious, Inflow Depth = 4.74" for 100-Year event
Inflow = 3.65 cfs @ 12.09 hrs, Volume= 0.276 af
Outflow = 0.36 cfs @ 11.64 hrs, Volume= 0.276 af, Atten= 90%, Lag= 0.0 min
Discarded = 0.36 cfs @ 11.64 hrs, Volume= 0.276 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 62.03' @ 12.97 hrs Surf.Area= 1,855 sf Storage= 4,199 cf

Plug-Flow detention time= 88.7 min calculated for 0.276 af (100% of inflow)
Center-of-Mass det. time= 88.6 min (878.8 - 790.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	58.50'	1,574 cf	**35.33'W x 52.50'L x 3.54'H Field A** 6,570 cf Overall - 2,634 cf Embedded = 3,936 cf x 40.0% Voids
#2A	59.00'	2,634 cf	**Cultec R-330XLHD** x 49 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 7 rows
		4,208 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	58.50'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.36 cfs @ 11.64 hrs HW=58.54' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.36 cfs)

Pond P8: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 7 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

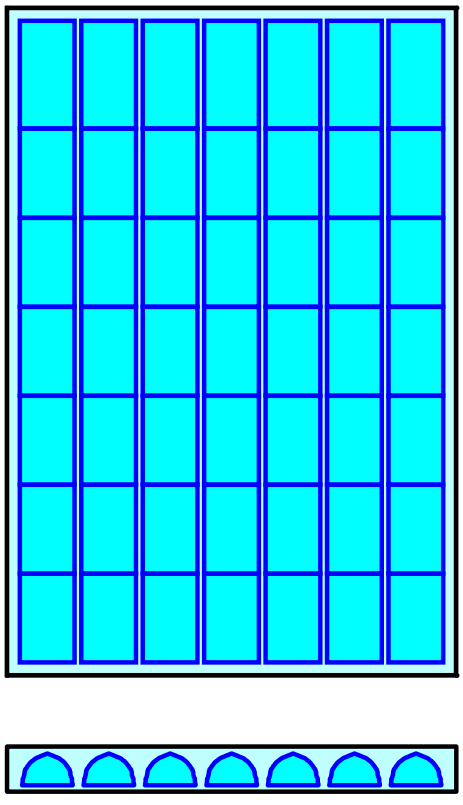
7 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 50.50' Row Length +12.0" End Stone x 2 = 52.50' Base Length
7 Rows x 52.0" Wide + 6.0" Spacing x 6 + 12.0" Side Stone x 2 = 35.33' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

49 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 7 Rows = 2,633.9 cf Chamber Storage

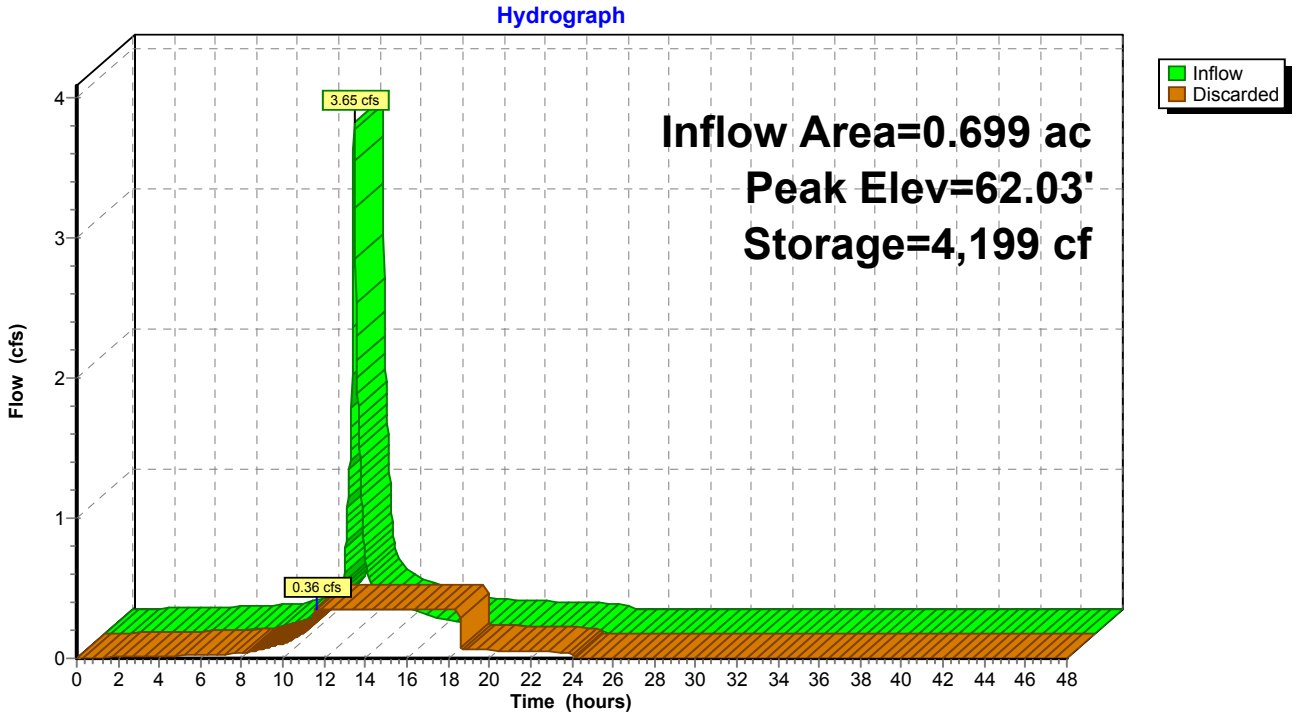
6,569.8 cf Field - 2,633.9 cf Chambers = 3,935.9 cf Stone x 40.0% Voids = 1,574.3 cf Stone Storage

Chamber Storage + Stone Storage = 4,208.3 cf = 0.097 af
Overall Storage Efficiency = 64.1%
Overall System Size = 52.50' x 35.33' x 3.54'

49 Chambers
243.3 cy Field
145.8 cy Stone



Pond P8: Infiltration Chambers



Summary for Pond P9: Infiltration Chambers

Inflow Area = 0.836 ac, 65.23% Impervious, Inflow Depth = 4.52" for 100-Year event
Inflow = 4.26 cfs @ 12.09 hrs, Volume= 0.315 af
Outflow = 0.43 cfs @ 11.66 hrs, Volume= 0.315 af, Atten= 90%, Lag= 0.0 min
Discarded = 0.43 cfs @ 11.66 hrs, Volume= 0.315 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 58.80' @ 12.94 hrs Surf.Area= 2,260 sf Storage= 4,800 cf

Plug-Flow detention time= 84.3 min calculated for 0.315 af (100% of inflow)
Center-of-Mass det. time= 84.2 min (885.5 - 801.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	55.60'	1,933 cf	**20.83'W x 108.50'L x 3.54'H Field A** 8,006 cf Overall - 3,174 cf Embedded = 4,832 cf x 40.0% Voids
#2A	56.10'	3,174 cf	**Cultec R-330XLHD** x 60 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 4 rows
		5,107 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	55.60'	**8.270 in/hr Exfiltration over Surface area** Phase-In= 0.02'

Discarded OutFlow Max=0.43 cfs @ 11.66 hrs HW=55.65' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.43 cfs)

Pond P9: Infiltration Chambers - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 4 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

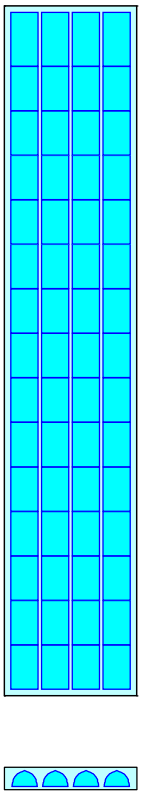
15 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 106.50' Row Length +12.0" End Stone x 2 = 108.50' Base Length
4 Rows x 52.0" Wide + 6.0" Spacing x 3 + 12.0" Side Stone x 2 = 20.83' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

60 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 4 Rows = 3,174.1 cf Chamber Storage

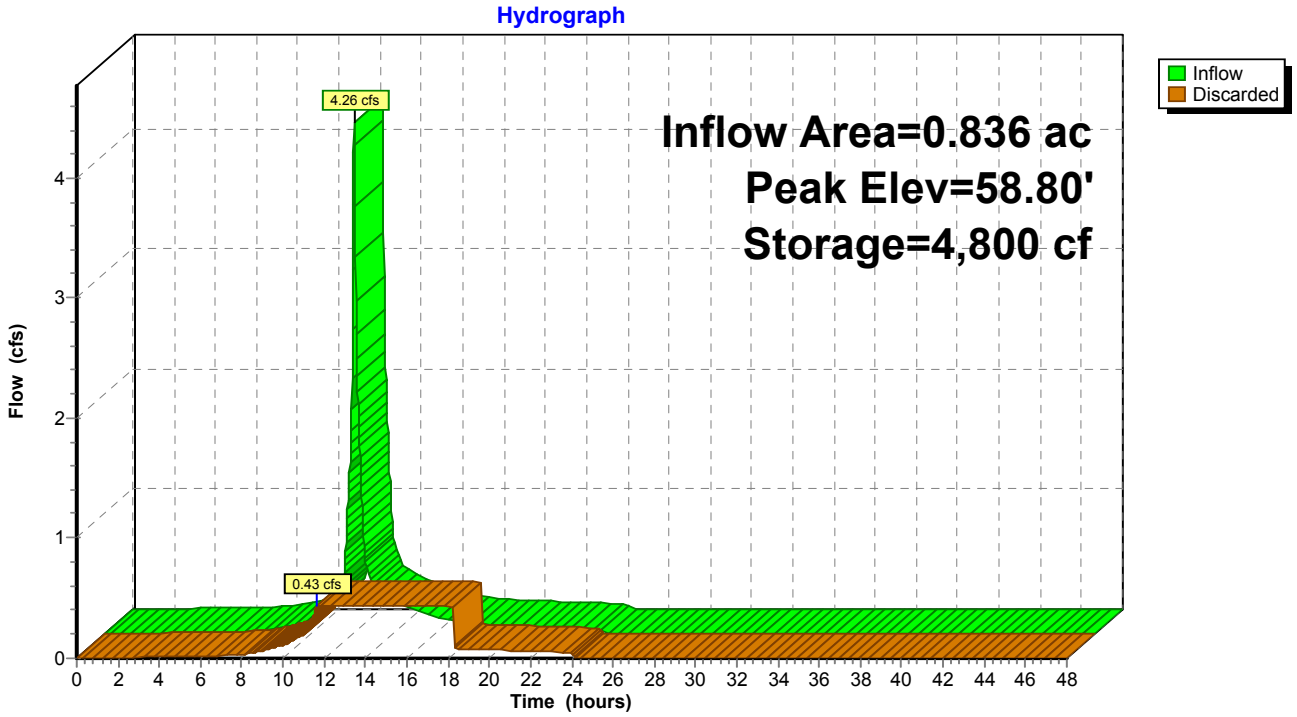
8,005.6 cf Field - 3,174.1 cf Chambers = 4,831.5 cf Stone x 40.0% Voids = 1,932.6 cf Stone Storage

Chamber Storage + Stone Storage = 5,106.7 cf = 0.117 af
Overall Storage Efficiency = 63.8%
Overall System Size = 108.50' x 20.83' x 3.54'

60 Chambers
296.5 cy Field
178.9 cy Stone



Pond P9: Infiltration Chambers



A P P E N D I X C

Soil Testing

OBSERVATION HOLE DATA

OBSERVATION HOLE #101 — TESTED BY: RALPH COLE
GRND ELEV.= 61.2 — WITNESSED BY: PAUL BROGNA, P.E. SEACOAST ENGINEERING
GW ELEV.= NOT ENC. — CERTIFIED BY: RALPH COLE
DATE: 10-22-2003 — MOTTLING ELEV.= NOT ENC.

ELEV. 61.2	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
60.7	0"– 6"	OA	LOAMY SAND	10YR 3/3		FRIABLE
51.9	6"–112"	C1	GRAVELLY SAND	2.5Y 7/1		LOOSE 10–15% GRAVEL
51.2	112"–120"	C2	SANDY LOAM	10YR 7/3		HARD

NO GROUNDWATER OBSERVED @ 120" (ELEV.= 51.2) — TOP OF PERC 18" HOLE @ ELEV. 59.7 — PERC RATE < 2 MIN./INCH

OBSERVATION HOLE DATA

OBSERVATION HOLE #102 — TESTED BY: RALPH COLE
GRND ELEV.= 61.3 — WITNESSED BY: PAUL BROGNA, P.E. SEACOAST ENGINEERING
GW ELEV.= – — CERTIFIED BY: RALPH COLE
DATE: 10-22-2003 — MOTTLING ELEV.= 56.6

ELEV. 61.3	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
60.5	0"– 10"	A	SANDY LOAM	10YR 4/3		FRIABLE
56.6	10"– 57"	C1	GRAVELLY SAND	2.5Y 7/1	Y 57" 7.5YR 5/8	LOOSE GRAVELLY SAND
54.3	57"– 84"	C2	SANDY LOAM	10YR 7/3		HARD

SOIL MOTTLES OBSERVED @ 57" (ELEV.= 56.6) — TOP OF PERC – HOLE @ ELEV. – — PERC RATE – MIN./INCH

OBSERVATION HOLE DATA

OBSERVATION HOLE #103 — TESTED BY: RALPH COLE
GRND ELEV.= 63.5 — WITNESSED BY: PAUL BROGNA, P.E. SEACOAST ENGINEERING
GW ELEV.= NOT ENC. — CERTIFIED BY: RALPH COLE
DATE: 10-22-2003 — LEDGE ELEV.= 57.5

ELEV. 63.5	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
62.7	0"– 10"	A FILL	SANDY LOAM	10YR 4/3		FRIABLE
58.9	10"– 58"	C1	GRAVELLY SAND	2.5Y 7/1		LOOSE GRAVELLY SAND
57.5	58"– 72"	C2	SANDY LOAM	10YR 7/3		HARD
57.5	72" LEDGE	LEDGE				LEDGE

LEDGE OBSERVED @ 72" (ELEV.= 57.5) — TOP OF PERC – HOLE @ ELEV. – — PERC RATE – MIN./INCH

OBSERVATION HOLE DATA

OBSERVATION HOLE #104 — TESTED BY: RALPH COLE
GRND ELEV.= 61.4 — WITNESSED BY: PAUL BROGNA, P.E. SEACOAST ENGINEERING
GW ELEV.= – — CERTIFIED BY: RALPH COLE
DATE: 10-23-2003 — MOTTLING ELEV.= 56.7

ELEV. 61.4	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
60.2	0"– 14"	AO	LOAMY SAND	10YR 4/3		FRIABLE
50.6	14"–130"	C	GRAVEL	2.5Y 7/1	Y 57" 7.5YR 5/8	LOOSE GRAVELLY SAND
50.6	LEDGE				LEDGE	LEDGE

SOIL MOTTLES OBSERVED @ 57" (ELEV.= 56.7) — TOP OF PERC 31" HOLE @ ELEV. 58.8' — PERC RATE < 2 MIN./INCH

OBSERVATION HOLE DATA

OBSERVATION HOLE #105 — TESTED BY: RALPH COLE
GRND ELEV.= 63.9 — WITNESSED BY: PAUL BROGNA, P.E. SEACOAST ENGINEERING
GW ELEV.= NOT ENC. — CERTIFIED BY: RALPH COLE
DATE: 10-23-2003 — MOTTLING ELEV.= NOT ENC.

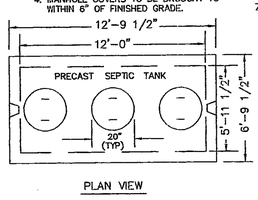
ELEV. 63.9	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
63.1	0"– 10"	OA	LOAMY SAND	10YR 4/3		FRIABLE
57.1	10"– 82"	C	GRAVEL	2.5Y 7/1		LOOSE GRAVEL 20–25% MEDIUM SAND

NO GROUNDWATER OBSERVED @ 82" (ELEV.= 57.1) — TOP OF PERC 24" HOLE @ ELEV. – — PERC RATE < 2 MIN./INCH

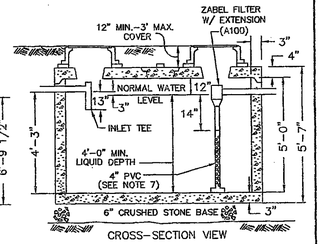
SEPTIC TANK DETAIL: 2000 GALLON

NOTE: TANK TO BE MONOLITHIC
NOT TO SCALE

NOTES:
1. SEPTIC TANK SHALL BE STEEL REINFORCED CONCRETE, WITH THREE (3) 20" MANHOLES.
2. SEPTIC TANK TO WITHSTAND H-10 LOADING UNLESS UNDER PAVEMENT, DRIVES, OR TRAVELED WAYS WHERE BY H-20 LOADING SHALL APPLY.
3. ALL PIPE CONNECTIONS AND CONCRETE CONSTRUCTION SHALL BE WATERTIGHT.
4. MANHOLE COVERS TO BE BROUGHT TO WITHIN 6" OF FINISHED GRADE.
5. RECOMMENDED MANUFACTURER– PEMBROKE CONCRETE OR APPROVED EQUAL.
6. INLET TEE TO BE CAST IRON, SCHEDULE 40 PVC OR CAST–IN–PLACE CONCRETE. OUTLET TEE TO BE ZABEL FILTER (A100) WITH EXTENSION. TEES TO BE CENTERED UNDER MANHOLE COVERS.
7. 4" SCH 40 PVC PIPE EXTENDED TO BOTTOM OF TANK WITH 2" DIA. HOLES DRILLED WITHIN PIPE. INSTALL 4"X4" SCH 40 PVC TEE ON BOTTOM



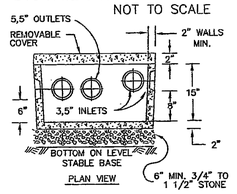
PLAN VIEW



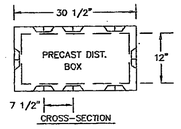
CROSS–SECTION VIEW

DISTRIBUTION BOX DETAIL:

NOT TO SCALE — NO. OF OUTLETS 3

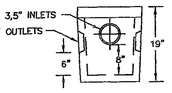


PLAN VIEW



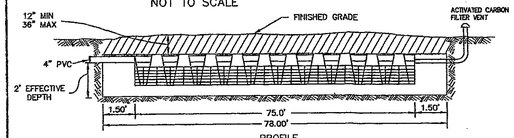
CROSS–SECTION

NOTES:
1. DIST. BOX TO WITHSTAND H–10 LOADING UNLESS UNDER PAVEMENT, DRIVES OR TRAVELED WAYS WHEREIN H–20 LOADING SHALL APPLY.
2. PROVIDE INLET TEE OR BAFFLE WHERE SLOPE OF PIPE EXCEEDS 0.08 FT./FT OR IN PUMPED SYSTEM.
3. FIRST TWO FEET OF PIPE OUT OF DIST. BOX TO BE LAID LEVEL.
4. RECOMMENDED MANUFACTURER–ROTONDO OR APPROVED EQUAL.
5. ALL PIPE CONNECTIONS AND CONCRETE CONSTRUCTION SHALL BE WATERTIGHT.



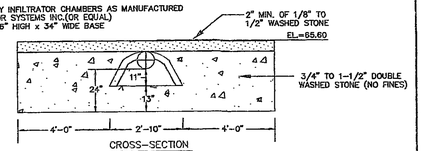
LEACHING TRENCH DETAIL: HIGH CAPACITY INFILTRATOR

NOT TO SCALE

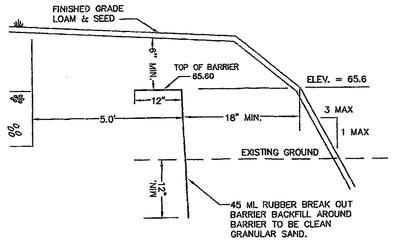


PROFILE

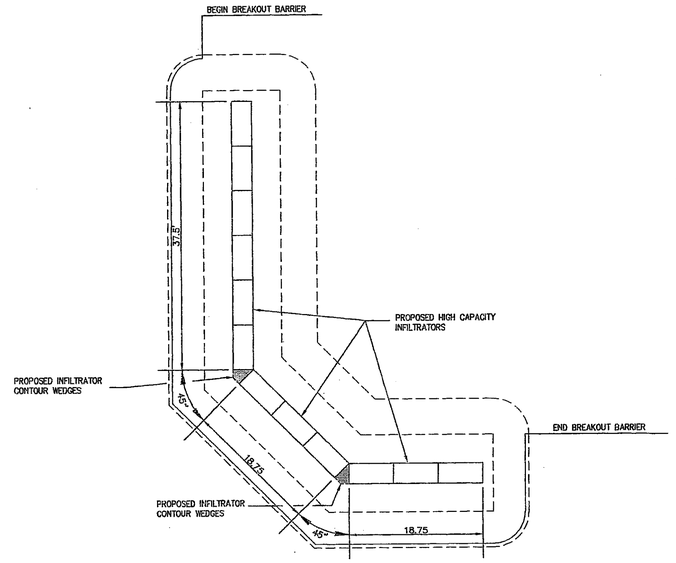
HIGH CAPACITY INFILTRATOR CHAMBERS AS MANUFACTURED BY INFILTRATOR SYSTEMS INC.(OR EQUAL) 75" LONG x 16" HIGH x 34" WIDE BASE



CROSS–SECTION

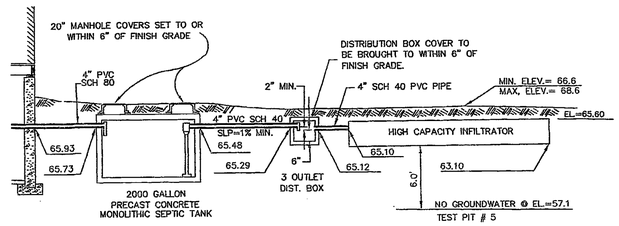


SECTION A – A
NOT TO SCALE



SYSTEM LAYOUT
– NOT TO SCALE –

PROFILE: NOT TO SCALE:



REVISIONS:

No.	DESCRIPTION	DATE
1	NO REV. THIS SHT.	2/6/06

PHILLIP SPATH P.E. — DATE

PREPARED BY:
ROSANO • DAVIS • SPATH ENGINEERING
9 ROCKY LANE
COHASSET, MA 02025
781–383–1234

SURVEY SERVICES PROVIDED BY:
mr *SURVEYING*, INC.
P.O. BOX 5104
NORWELL, MA 02061

PROJECT TITLE:
SEWAGE DISPOSAL SYSTEM DESIGN
AT
LOT 1 VIKING LANE
HINGHAM, MA
ASSESSORS' MAP 124, LOT 24

PREPARED FOR:
XERXES REALTY TRUST
293 Washington Street
Norwell, MA 02061

DATE: SEPT. 12, 2005	
COMP./DESIGN: P.H.SPATH	
CHECK: P.H.SPATH / R.H.COLE	
DRAWN: M.W.C.	
FIELD: M.W.C./J.B.T.	VIKING LOT 1.DWG
RDS JOB # RDS 458	SHEET 2 OF 2
mr JOB # mr–415	

OBSERVATION HOLE DATA

OBSERVATION HOLE # 201 — GRND ELEV.= 63.6 — GW ELEV.= – — DATE: 10-22-2003 — MOTTLING ELEV.= 57.4 — TESTED BY: RALPH COLE — WITNESSED BY: PAUL BROGNA, P.E. SEACOAST ENGINEERING — CERTIFIED BY: RALPH COLE

ELEV.	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
63.6						
63.4	0"– 3"	OA	LOAMY SAND	10YR 4/3		FRIABLE
57.4	3"– 75"	C1	GRAVELLY SAND	2.5Y 7/1	NONE	LOOSE 15–20% GRAVEL
56.7	75"– 83"	C2	FINE LOAMY SAND	10YR 7/2	Y 75" 7.5YR 5/8	HARD

SOIL MOTTLES OBSERVED @ 75" (ELEV.= 57.4) — TOP OF PERC 6" HOLE @ ELEV. 631 — PERC RATE < 2 MIN./INCH

OBSERVATION HOLE DATA

OBSERVATION HOLE # 202 — GRND ELEV.= 64.5 — GW ELEV.= – — DATE: 10-22-2003 — MOTTLING ELEV.= – — TESTED BY: RALPH COLE — WITNESSED BY: PAUL BROGNA, P.E. SEACOAST ENGINEERING — CERTIFIED BY: RALPH COLE

ELEV.	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
64.5						
64.3	0"– 3"	A FILL	SANDY LOAM	10YR 4/3		FRIABLE
53.9	3"–127"	C1	GRAVELLY SAND	2.5Y 7/1	NONE	LOOSE 20–25% GRAVEL

NO SOIL MOTTLES OBSERVED @ 127" (ELEV.= 53.9) — TOP OF PERC 6" HOLE @ ELEV. 64.0 — PERC RATE < 2 MIN./INCH

OBSERVATION HOLE DATA

OBSERVATION HOLE # 203 — GRND ELEV.= 65.3 — GW ELEV.= – — DATE: 10-22-2003 — MOTTLING ELEV.= – — TESTED BY: RALPH COLE — WITNESSED BY: PAUL BROGNA, P.E. SEACOAST ENGINEERING — CERTIFIED BY: RALPH COLE

ELEV.	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
65.3						
64.3	0"– 12"	A FILL	SANDY LOAM	10YR 4/3		FRIABLE
60.9	12"– 53"	C1	GRAVELLY SAND	2.5Y 7/1		LOOSE GRAVEL, SAND
60.9	53"	LEDGE				LEDGE

LEDGE OBSERVED @ 53.0 (ELEV.= 60.9) — TOP OF PERC – HOLE @ ELEV. – — PERC RATE – MIN./INCH

OBSERVATION HOLE DATA

OBSERVATION HOLE # 204 — GRND ELEV.= 65.2 — GW ELEV.= – — DATE: 10-23-2003 — MOTTLING ELEV.= 59.0 — TESTED BY: RALPH COLE — WITNESSED BY: PAUL BROGNA, P.E. SEACOAST ENGINEERING — CERTIFIED BY: RALPH COLE

ELEV.	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
65.2						
65.0	0"– 3"	A0	LOAMY SAND	10YR 4/3		FRIABLE
59.0	3"– 75"	C1	GRAVELLY SAND	2.5Y 7/1	NONE	LOOSE GRAVELLY SAND
56.9	75"–100"	C2	SANDY LOAM	10YR 7/3	Y 75" 7.5YR 5/8	HARD

SOIL MOTTLES OBSERVED @ 75" (ELEV.= 59.0) — TOP OF PERC 12" HOLE @ ELEV. 64.2 — PERC RATE < 2 MIN./INCH

OBSERVATION HOLE DATA

OBSERVATION HOLE # 205 — GRND ELEV.= 67.2 — GW ELEV.= – — DATE: 10-23-2003 — MOTTLING ELEV.= – — TESTED BY: RALPH COLE — WITNESSED BY: PAUL BROGNA, P.E. SEACOAST ENGINEERING — CERTIFIED BY: RALPH COLE

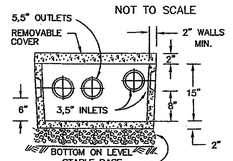
ELEV.	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
67.2						
67.0	0"– 3"	OA	LOAMY SAND	10YR 4/3		FRIABLE
60.4	3"– 82"	C1	GRAVEL SAND	2.5Y 7/1		LOOSE GRAVEL 10–15%

NO SOIL MOTTLES OBSERVED @ 82" (ELEV.= 60.4) — TOP OF PERC 12" HOLE @ ELEV. 66.2 — PERC RATE < 2 MIN./INCH

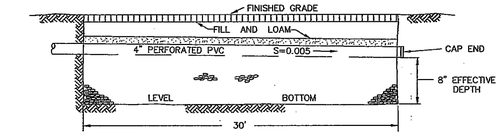
DISTRIBUTION BOX DETAIL:

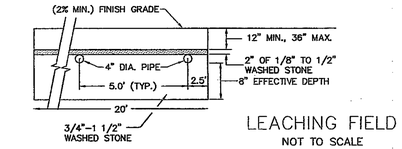
NOT TO SCALE

NO. OF OUTLETS 4

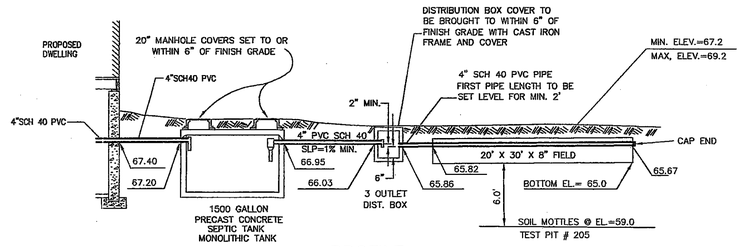


NOTES:
1. DIST. BOX TO WITHSTAND H-10 LOADING UNLESS UNDER PAVEMENT, DRIVES OR TRAVELED WAYS WHEREIN H-20 LOADING SHALL APPLY.
2. PROVIDE INLET TEE OR BAFFLE WHERE SLOPE OF PIPE EXCEEDS 0.08 FT./FT OR IN PUMPED SYSTEM.
3. FIRST TWO FEET OF PIPE OUT OF DIST. BOX TO BE LAID LEVEL.
4. RECOMMENDED MANUFACTURER–ROTONDO OR APPROVED EQUAL.
5. ALL PIPE CONNECTIONS AND CONCRETE CONSTRUCTION SHALL BE WATERTIGHT.





LEACHING FIELD
NOT TO SCALE



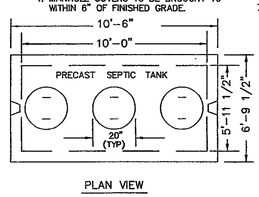
PROFILE
NOT TO SCALE

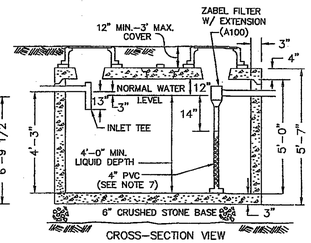
SEPTIC TANK DETAIL: 1500 GALLON

NOTE: TANK TO BE MONOLITHIC

NOT TO SCALE

NOTES:
1. SEPTIC TANK SHALL BE STEEL REINFORCED CONCRETE, WITH THREE (3) 20" MANHOLES.
2. SEPTIC TANK TO WITHSTAND H-10 LOADING UNLESS UNDER PAVEMENT, DRIVES, OR TRAVELED WAYS WHERE BY H-20 LOADING SHALL APPLY.
3. ALL PIPE CONNECTIONS AND CONCRETE CONSTRUCTION SHALL BE WATERTIGHT.
4. MANHOLE COVERS TO BE BROUGHT TO WITHIN 6" OF FINISHED GRADE.
5. RECOMMENDED MANUFACTURER– PEMBROKE CONCRETE OR APPROVED EQUAL.
6. INLET TEE TO BE CAST IRON, SCHEDULE 40 PVC OR CAST–IN–PLACE CONCRETE. OUTLET TEE TO BE ZABEL FILTER (A100) WITH EXTENSION. TEES TO BE CENTERED UNDER MANHOLE COVERS.
7. 4" SCH 40 PVC PIPE EXTENDED TO BOTTOM OF TANK WITH 2" DIA. HOLES DRILLED WITHIN PIPE. INSTALL 4"X4" SCH 40 PVC TEE ON BOTTOM





REVISIONS:

No.	DESCRIPTION	DATE
1	REV. SAS	5–16–06

COMMONWEALTH OF MASSACHUSETTS — PHILLIP H. SPATH — No. 29394 — REGISTERED PROFESSIONAL ENGINEER

PHILLIP SPATH P.E. — DATE

PREPARED BY:
ROSANO • DAVIS • SPATH ENGINEERING
9 ROCKY LANE
COHASSET, MA 02025
781–383–1234

SURVEY SERVICES PROVIDED BY:
mr *SURVEYING*, INC.
P.O. BOX 5104
NORWELL, MA 02061

PROJECT TITLE:
SEWAGE DISPOSAL SYSTEM DESIGN
AT
LOT 2 VIKING LANE
HINGHAM, MA
ASSESSORS' MAP 124, LOT 24

PREPARED FOR:
XERXES REALTY TRUST
293 WASHINGTON STREET
NORWELL, MA 02061

DATE: JUNE 27, 2005
COMP./DESIGN: P.H.SPATH
CHECK: P.H.SPATH / R.H.COLE
DRAWN: M.W.C.
FIELD: M.W.C./J.B.T. — LOT 2 VIKING LANE
RDS JOB # RDS 458
mr JOB # mr–
SHEET 2 OF 2

OBSERVATION HOLE DATA

OBSERVATION HOLE #301
DATE: 10-22-2003

TESTED BY: PHILLIP SPATH P.E. & RALPH COLE P.L.S.
GRND ELEV.= 62.0
GW ELEV.= –
MOTTLING ELEV.= 52.9
WITNESSED BY: PAUL A BROGNA P.E.
CERTIFIED BY: PHILLIP SPATH P.E.

ELEV. 62.0	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
60.7	0"– 16"	A	SANDY LOAM	10YR 4/3		– FRIABLE –
59.5	16"– 30"	B	LOAMY SAND	10YR 5/8	NONE	FRIABLE 10–15% GRAVEL –
52.0	30"–120"	C	GRAVELLY SAND	2.5Y 7/4	Y 109" 7.5YR 5/8	LOOSE 10–15% GRAVEL VEINS OF MEDIUM SAND

SOIL MOTTLES OBSERVED @ 109" (ELEV.= 52.9)
TOP OF PERC 18" HOLE @ ELEV. 60.5
PERC RATE 2 MIN./INCH

OBSERVATION HOLE DATA

OBSERVATION HOLE #302
DATE: 10-22-2003

TESTED BY: PHILLIP SPATH P.E. & RALPH COLE P.L.S.
GRND ELEV.= 62.9
GW ELEV.= –
NO MOTTLING ELEV.= 51.9
WITNESSED BY: PAUL A BROGNA P.E.
CERTIFIED BY: PHILLIP SPATH P.E.

ELEV. 62.9	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
62.2	0"– 8"	A	SANDY LOAM	10YR 4/3		FRIABLE
60.4	8"– 30"	B	SANDY LOAM	10YR 5/8	NONE	FRIABLE
51.9	30"–132"	C	GRAVELLY SAND	2.5Y 7/1	NONE	LOOSE 15–20% GRAVEL

NO SOIL MOTTLES OBSERVED @ 132" (ELEV.= 51.9)
TOP OF PERC 17" HOLE @ ELEV. 61.5
PERC RATE < 2 MIN./INCH

OBSERVATION HOLE DATA

OBSERVATION HOLE #303
DATE: 10-22-2003

TESTED BY: PHILLIP SPATH P.E. & RALPH COLE P.L.S.
GRND ELEV.= 65.1
GW ELEV.= –
NO MOTTLING ELEV.= 54.1
WITNESSED BY: PAUL A BROGNA P.E.
CERTIFIED BY: PHILLIP SPATH P.E.

ELEV. 65.1	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
64.6	0"– 6"	A	SANDY LOAM	10YR 4/3		FRIABLE
63.1	6"– 24"	B	SANDY LOAM	2.5Y 7/1	NONE	FRIABLE
54.1	24"–132"	C	GRAVELLY SAND	2.5Y 7/1	NONE	LOOSE 20–25% GRAVEL

NO SOIL MOTTLES OBSERVED @ 132" (ELEV.= 54.1)
TOP OF PERC 37" HOLE @ ELEV. 62.0
PERC RATE < 2 MIN./INCH

OBSERVATION HOLE DATA

OBSERVATION HOLE #304
DATE: 10-22-2003

TESTED BY: PHILLIP SPATH P.E. & RALPH COLE P.L.S.
GRND ELEV.= 66.2
GW ELEV.= –
NO MOTTLING ELEV.= 55.7
WITNESSED BY: PAUL A BROGNA P.E.
CERTIFIED BY: PHILLIP SPATH P.E.

ELEV. 66.2	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
65.2	0"– 12"	A	LOAMY SAND	10YR 4/3		FRIABLE
63.9	12"– 28"	B	SANDY LOAM	10YR 5/8		FRIABLE
55.7	28"–126"	C	GRAVELLY SAND	2.5Y 7/1	NONE	LOOSE 20–25% GRAVEL MEDIUM SAND

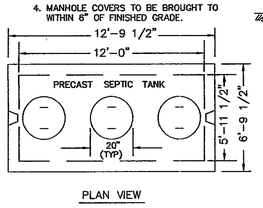
NO SOIL MOTTLES OBSERVED @ 126" (ELEV.= 55.7)
TOP OF PERC 31" HOLE @ ELEV. 63.6
PERC RATE < 2 MIN./INCH

SEPTIC TANK DETAIL: 2000 GALLON

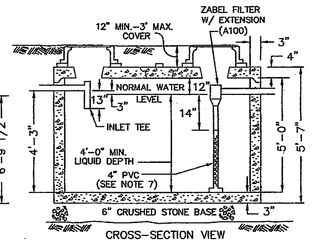
NOTE: TANK TO BE MONOLITHIC

NOT TO SCALE

NOTES:
1. SEPTIC TANK SHALL BE STEEL REINFORCED CONCRETE, WITH THREE (3) 20" MANHOLES.
2. SEPTIC TANK TO WITHSTAND H–10 LOADING UNLESS UNDER PAVEMENT, DRIVES, OR TRAVELED WAYS WHERE BY H–20 LOADING SHALL APPLY.
3. ALL PIPE CONNECTIONS AND CONCRETE CONSTRUCTION SHALL BE WATERTIGHT.
4. MANHOLE COVERS TO BE BROUGHT TO WITHIN 6" OF FINISHED GRADE.
5. RECOMMENDED MANUFACTURER– PEMBROKE CONCRETE OR APPROVED EQUAL.
6. INLET TEE TO BE CAST IRON, SCHEDULE 40 PVC OR CAST–IN–PLACE CONCRETE. OUTLET TEE TO BE ZABEL FILTER (A100) WITH EXTENSION. TEES TO BE CENTERED UNDER MANHOLE COVERS.
7. 4" SCH 40 PVC PIPE EXTENDED TO BOTTOM OF TANK WITH 2" DIA. HOLES DRILLED WITHIN PIPE. INSTALL 4"X4" SCH 40 PVC TEE ON BOTTOM



PLAN VIEW

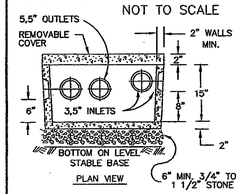


CROSS–SECTION VIEW

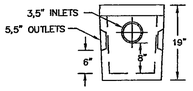
DISTRIBUTION BOX DETAIL:

NOT TO SCALE

NO. OF OUTLETS 3

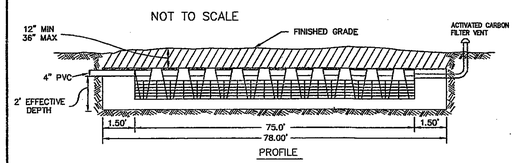


NOTES:
1. DIST. BOX TO WITHSTAND H–10 LOADING UNLESS UNDER PAVEMENT, DRIVES OR TRAVELED WAYS WHEREIN H–20 LOADING SHALL APPLY.
2. PROVIDE INLET TEE OR BAFFLE WHERE SLOPE OF PIPE EXCEEDS 0.08 FT./FT OR IN PUMPED SYSTEM.
3. FIRST TWO FEET OF PIPE OUT OF DIST. BOX TO BE LAID LEVEL.
4. RECOMMENDED MANUFACTURER–ROTONDO OR APPROVED EQUAL.
5. ALL PIPE CONNECTIONS AND CONCRETE CONSTRUCTION SHALL BE WATERTIGHT.



LEACHING TRENCH DETAIL: HIGH CAPACITY INFILTRATOR

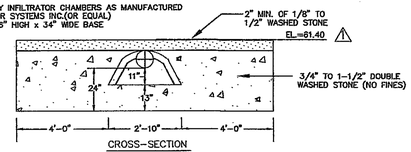
NOT TO SCALE



PROFILE

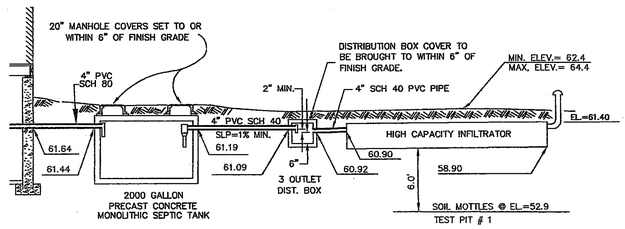
HIGH CAPACITY INFILTRATOR CHAMBERS AS MANUFACTURED BY INFILTRATOR SYSTEMS INC.(OR EQUAL) 75" LONG x 16" HIGH x 34" WIDE BASE

2" MIN. OF 1/8" TO 1/2" WASHED STONE
EL.=61.40 ⚠
3/4" TO 1–1/2" DOUBLE WASHED STONE (NO FINES)



CROSS–SECTION

PROFILE: NOT TO SCALE: ⚠



REVISIONS:

No.	DESCRIPTION	DATE
⚠	REV. PER BOH	2/6/06

PHILLIP SPATH No. 39201 REGISTERED PROFESSIONAL ENGINEER

PHILLIP SPATH P.E. DATE

PREPARED BY:
ROSANO • DAVIS • SPATH ENGINEERING
9 ROCKY LANE
COHASSET, MA 02025
781–383–1234

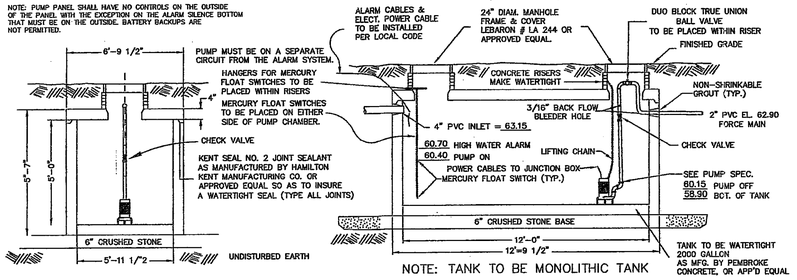
SURVEY SERVICES PROVIDED BY:
mr *SURVEYING*, INC.
P.O. BOX 5104
NORWELL, MA 02061

PROJECT TITLE:
SEWAGE DISPOSAL SYSTEM DESIGN
AT
LOT 3 VIKING LANE
HINGHAM, MA
ASSESSORS' MAP 124, LOT 24

PREPARED FOR:
XERXES REALTY TRUST
293 WASHINGTON STREET
NORWELL, MA 02061

DATE: SEPT. 12, 2005
COMP./DESIGN: P.H.SPATH
CHECK: P.H.SPATH / R.H.COLE
DRAWN: M.W.C.
FIELD: M.W.C./J.B.T. | LOT 2 VIKING LANE
RDS JOB # RDS 458
mr JOB # mr–415
SHEET 2 OF 2

NOTE: PUMP PANEL SHALL HAVE NO CONTROLS ON THE OUTSIDE OF THE PANEL WITH THE EXCEPTION ON THE ALARM SILENCE BOTTOM THAT MUST BE ON THE OUTSIDE. BATTERY BACKUPS ARE NOT PERMITTED.



NOTE: TANK TO BE MONOLITHIC TANK

PUMP SPECIFICATIONS

47 GPM AT 28' TDH
DISCHARGE 2"
NON CLOG IMPELLERS
SINGLE PHASE SUBMERSIBLE PUMP
MIN. DIA. SOLIDS 1 ¼"

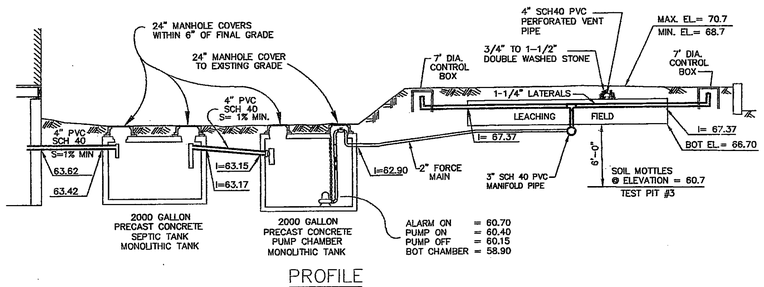
NOTES:
CONTROL PANEL, ALARM AND SWITCHBOX TO BE LOCATED WITHIN DWELLING

ONE DAY FLOW FOR EMERGENCY STORAGE PROVIDED IN PUMP STATION ABOVE HIGH WATER ALARM ELEVATION.

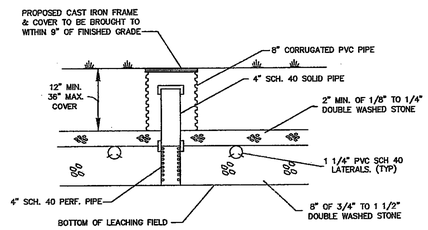
INSTALL PUMP & CONTROLS PER MANUFACTURERS SPECIFICATIONS.

NOTE:
THE CONTRACTOR SHALL SUBMIT TO THE DESIGN ENGINEER, FOR HIS REVIEW AND APPROVAL, THE MANUFACTURERS SPECIFICATIONS FOR THE PUMP AND ACCESSORIES (MERCURY SWITCHES, VALVES, ETC.) PRIOR TO THE CONSTRUCTION OF THE SYSTEM.

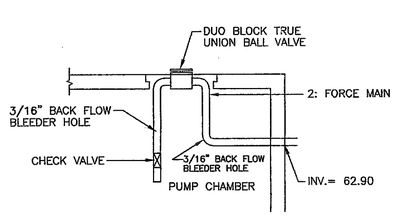
SEWAGE PUMP STATION DETAIL
NOT TO SCALE



PROFILE
NOT TO SCALE



INSPECTION PORT DETAIL
NOT TO SCALE



BALL VALVE PLACEMENT DETAIL
NOT TO SCALE

SECTION A – A
NOT TO SCALE

OBSERVATION HOLE DATA

OBSERVATION HOLE # 401
GRND ELEV.= 74.3
GW ELEV.= –
MOTTLING ELEV.= 68.1
DATE: 10-14-2003
TESTED BY: RALPH COLE
WITNESSED BY: PAUL BROGNA, P.E. SEACOAST ENGINEERING
CERTIFIED BY: RALPH COLE

ELEV.	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
74.3						
73.7	0"– 7"	A	LOAMY SAND	10YR 3/3		FRIABLE
72.0	7"– 28"	B	LOAMY SAND	10YR 5/4	NONE	FRIABLE STONES
64.3	28"–120"	C	GRAVEL	10YR 7/3	Y 75" 7.5YR 5/8	LOOSE GRAVEL MEDIUM SAND STONES COBBLES

SOIL MOTTLES OBSERVED @ 75" (ELEV.= 68.1)
TOP OF PERC 30" HOLE @ ELEV. 71.8
PERC RATE < 2 MIN./INCH

OBSERVATION HOLE DATA

OBSERVATION HOLE # 402
GRND ELEV.= 72.3
NO GW AT ELEV.= 62.3
NO MOTTLING AT ELEV.= 62.3
DATE: 10-14-2003
TESTED BY: RALPH COLE
WITNESSED BY: PAUL BROGNA, P.E. SEACOAST ENGINEERING
CERTIFIED BY: RALPH COLE

ELEV.	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
72.3						
71.7	0"– 7"	A	LOAMY SAND	10YR 3/3	–	FRIABLE
70.5	7"– 22"	B	LOAMY SAND	10YR 5/4	NONE	FRIABLE STONES
62.3	22"–120"	C	GRAVEL	10YR 7/3	NONE	LOOSE GRAVEL MEDIUM SAND, STONES

NO MOTTLES OR G.W. OBSERVED @ 120" (ELEV.= 62.3)
TOP OF PERC 25" HOLE @ ELEV. 70.2
PERC RATE < 2 MIN./INCH

OBSERVATION HOLE DATA

OBSERVATION HOLE # 403
GRND ELEV.= 70.7
GW ELEV.= –
NO MOTTLING AT ELEV.= 60.7
DATE: 10-14-2003
TESTED BY: RALPH COLE
WITNESSED BY: PAUL BROGNA, P.E. SEACOAST ENGINEERING
CERTIFIED BY: RALPH COLE

ELEV.	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
70.7						
70.1	0"– 7"	A	LOAMY SAND	10YR 3/3	–	FRIABLE
68.9	7"– 22"	B	LOAMY SAND	10YR 5/4	–	FRIABLE STONES
60.7	22"–120"	C	GRAVEL	10YR 7/3	–	LOOSE GRAVEL MEDIUM SAND, STONES

NO MOTTLES OR G.W. OBSERVED @ 120" (ELEV.= 60.7)
TOP OF PERC 35" HOLE @ ELEV. 67.8
PERC RATE < 2 MIN./INCH

OBSERVATION HOLE DATA

OBSERVATION HOLE # 404
GRND ELEV.= 72.7
GW ELEV.= –
NO MOTTLING AT ELEV.= 62.7
DATE: 10-14-2003
TESTED BY: RALPH COLE
WITNESSED BY: PAUL BROGNA, P.E. SEACOAST ENGINEERING
CERTIFIED BY: RALPH COLE

ELEV.	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
72.7						
72.0	0"– 8"	A	LOAMY SAND	10YR 3/3	–	FRIABLE
70.5	8"– 26"	B	LOAMY SAND	10YR 5/4	–	FRIABLE STONES
62.7	26"–120"	C	GRAVEL	10YR 7/3	NONE	LOOSE GRAVEL MEDIUM SAND, STONES

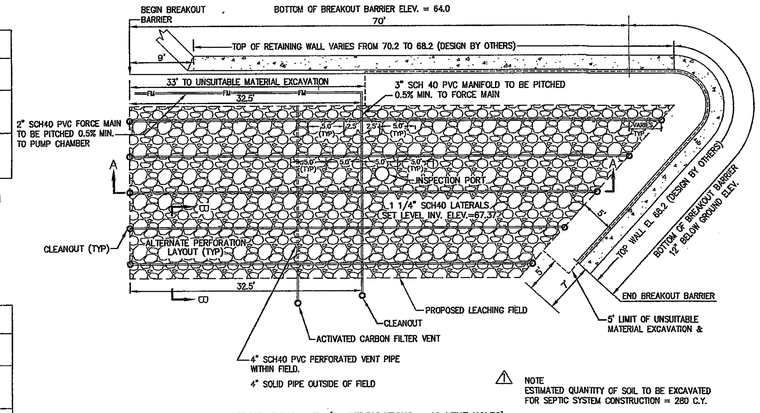
NO MOTTLES OBSERVED @ 120" (ELEV.= 62.7)
TOP OF PERC 22" HOLE @ ELEV. 70.9
PERC RATE < 2 MIN./INCH

OBSERVATION HOLE DATA

OBSERVATION HOLE # 405
GRND ELEV.= 65.4
GW ELEV.= –
MOTTLING ELEV.= 57.5
DATE: 10-14-2003
TESTED BY: RALPH COLE
WITNESSED BY: PAUL BROGNA, P.E. SEACOAST ENGINEERING
CERTIFIED BY: RALPH COLE

ELEV.	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
65.4						
64.2	0"– 5"	A	LOAMY SAND	10YR 3/3	–	FRIABLE
63.9	5"– 16"	B	LOAMY SAND	10YR 5/4	–	FRIABLE STONES
56.1	16"–112"	C	SAND	10YR 7/3	Y 95" 7.5YR 5/6	LOOSE MEDIUM SAND 10% GRAVEL

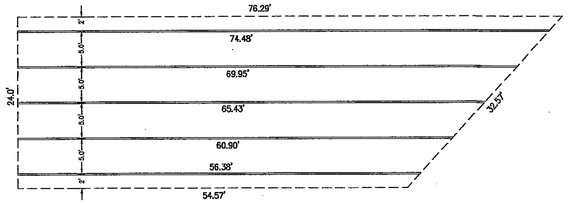
SOIL MOTTLES OBSERVED @ 95" (ELEV.= 57.5)
TOP OF PERC – HOLE @ ELEV. –
PERC RATE – MIN./INCH



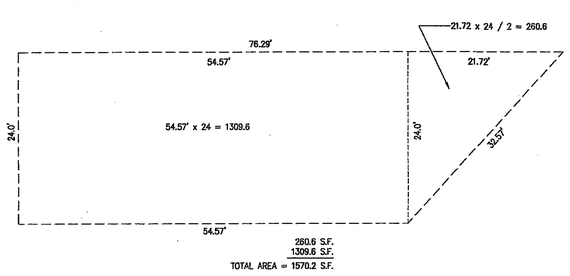
⚠ NOTE
ESTIMATED QUANTITY OF SOIL TO BE EXCAVATED FOR SEPTIC SYSTEM CONSTRUCTION = 280 C.Y.

TOTAL PERFORATIONS = 71 (61 PERFORATIONS + 10 VENT HOLES)

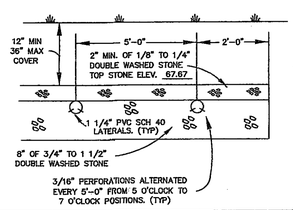
SYSTEM LAYOUT
– NOT TO SCALE –



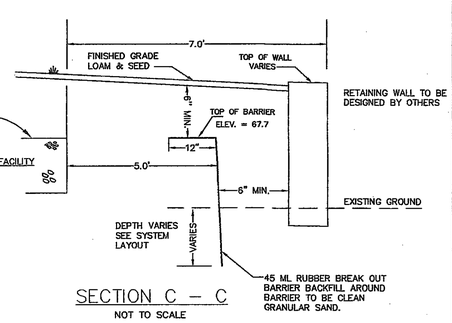
SYSTEM DIMENSIONS
– NOT TO SCALE –



SYSTEM AREA CALCULATION
– NOT TO SCALE –



SECTION B – B
NOT TO SCALE



SECTION C – C
NOT TO SCALE

REVISIONS:

No.	DESCRIPTION	DATE
⚠	REV. PER BOH	2/6/06

PHILLIP SPATH P.E. — DATE

PREPARED BY:
ROSANO • DAVIS • SPATH ENGINEERING
9 ROCKY LANE
COHASSET, MA 02025
781–383–1234

SURVEY SERVICES PROVIDED BY:
mr SURVEYING, INC.
P.O. BOX 5104
NORWELL, MA 02061

PROJECT TITLE:
SEWAGE DISPOSAL SYSTEM DESIGN
AT
LOT 4 VIKING LANE
NORWELL, MA
ASSESSORS MAP 124 LOT 24

PREPARED FOR:
XERXES REALTY TRUST
293 WASHINGTON STREET
NORWELL, MA 02061

DATE: JUNE 29, 2005	
COMP./DESIGN: P.H.SPATH	
CHECK: P.H.SPATH / R.H.COLE	
DRAWN: M.W.C.	
FIELD: M.W.C./J.B.T.	VIKING LOT 4.DWG
RDS JOB # RDS 458	SHEET 2 OF 2
mr JOB # mr–415	

OBSERVATION HOLE DATA

OBSERVATION HOLE # 501 — GRND ELEV.= 68.6 — GW ELEV.= — — DATE: 10-14-2003 — NO MOTTLING @ ELEV.= 59.0 — TESTED BY: RALPH COLE — WITNESSED BY: PAUL BROGNA, P.E. SEACOAST ENGINEERING — CERTIFIED BY: RALPH COLE

ELEV.	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
68.6						
67.9	0"– 8"	A	LOAMY SAND	10YR 3/3		FRIABLE
65.9	8"– 32"	B	LOAMY SAND	10YR 5/4	NONE	FRIABLE STONES
59.0	32"–115"	C	SAND	10YR 7/3	NONE	LOOSE GRAVEL MEDIUM SAND 10% GRAVEL

NO GROUNDWATER OBSERVED @ 115" (ELEV.= 59.0) — TOP OF PERC 45" HOLE @ ELEV. 64.9 — PERC RATE < 2 MIN./INCH

OBSERVATION HOLE DATA

OBSERVATION HOLE # 502 — GRND ELEV.= 71.9 — GW ELEV.= — — DATE: 10-22-2003 — MOTTLING ELEV.= 65.9 — TESTED BY: RALPH COLE — WITNESSED BY: PAUL BROGNA, P.E. SEACOAST ENGINEERING — CERTIFIED BY: RALPH COLE

ELEV.	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
71.9						
71.4	0"– 6"	OA	LOAMY SAND	10YR 3/3		FRIABLE
69.9	6"– 24"	B	LOAMY SAND	10YR 5/8		FRIABLE STONES
65.9	24"– 72"	C1	GRAVELLY SAND	2.5Y 7/4	72" 7.5YR 5/8	LOOSE GRAVEL 10% – 15% GRAVEL
60.4	72"–138"	C2	SANDY LOAM	10YR 7/3		HARD SILTY SAND

SOIL MOTTLES OBSERVED @ 72" (ELEV.= 65.9) — TOP OF PERC – HOLE @ ELEV. – — PERC RATE – MIN./INCH

OBSERVATION HOLE DATA

OBSERVATION HOLE # 503 — GRND ELEV.= 70.0 — GW ELEV.= — — DATE: 10-22-2003 — MOTTLING ELEV.= 57.5 — TESTED BY: RALPH COLE — WITNESSED BY: PAUL BROGNA, P.E. SEACOAST ENGINEERING — CERTIFIED BY: RALPH COLE

ELEV.	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
70.0						
69.5	0"– 6"	OA	LOAMY SAND	10YR 4/1		FRIABLE
57.5	6"–150"	C1	GRAVELLY SAND	2.5Y 7/1	NONE	LOOSE 15% – 20% GRAVEL
57.5	150"– "	C2	SANDY LOAM	10YR 7/3	Y 150" 7.5YR 5/8	HARD

SOIL MOTTLES OBSERVED @ 150" (ELEV.= 57.5) — TOP OF PERC 36" HOLE @ ELEV. 67.0 — PERC RATE < 2 MIN./INCH

OBSERVATION HOLE DATA

OBSERVATION HOLE # 504 — GRND ELEV.= 67.5 — GW ELEV.= — — DATE: 10-22-2003 — MOTTLING ELEV.= 55.5 — TESTED BY: RALPH COLE — WITNESSED BY: PAUL BROGNA, P.E. SEACOAST ENGINEERING — CERTIFIED BY: RALPH COLE

ELEV.	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
67.5						
65.5	0"– 24"	A	SANDY LOAM	10YR 4/3		FRIABLE
64.2	24"– 40"	B	LOAMY SAND	10YR 6/4		FRIABLE STONES
55.5	40"–144"	C1	GRAVELLY SAND	2.5Y 7/1		LOOSE GRAVEL MEDIUM SAND STONES
55.5	144"– "	C2	SANDY LOAM	10YR 7/3	Y 144" 7.5YR 5/8	HARD

SOIL MOTTLES OBSERVED @ 144" (ELEV.= 55.5) — TOP OF PERC 36" HOLE @ ELEV. 64.5 — PERC RATE < 2 MIN./INCH

OBSERVATION HOLE DATA

OBSERVATION HOLE # 505 — GRND ELEV.= 67.8 — GW ELEV.= — — DATE: 10-22-2003 — MOTTLING ELEV.= 56.1 — TESTED BY: RALPH COLE — WITNESSED BY: PAUL BROGNA, P.E. SEACOAST ENGINEERING — CERTIFIED BY: RALPH COLE

ELEV.	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
67.8						
64.4	0"– 41"	FILL				
56.1	41"–140"	C1	GRAVELLY SAND	2.5Y 7/1	NONE	LOOSE 10% – 15% GRAVEL
56.1	140"	C2	SANDY LOAM	10YR 7/2	Y 140" 7.5YR 5/8	HARD

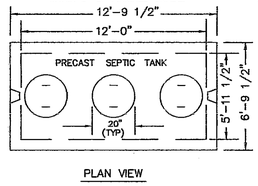
SOIL MOTTLES OBSERVED @ 140" (ELEV.= 56.1) — TOP OF PERC 41" HOLE @ ELEV. 64.4 — PERC RATE < 2 MIN./INCH

SEPTIC TANK DETAIL: 2000 GALLON

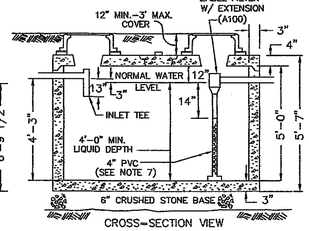
NOTE: TANK TO BE MONOLITHIC

NOT TO SCALE

NOTES:
1. SEPTIC TANK SHALL BE STEEL REINFORCED CONCRETE, WITH THREE (3) 20" MANHOLES.
2. SEPTIC TANK TO WITHSTAND H–10 LOADING UNLESS UNDER PAVEMENT, DRIVES, OR TRAVELED WAYS WHERE BY H–20 LOADING SHALL APPLY.
3. ALL PIPE CONNECTIONS AND CONCRETE CONSTRUCTION SHALL BE WATERTIGHT.
4. MANHOLE COVERS TO BE BROUGHT TO WITHIN 6" OF FINISHED GRADE.
5. RECOMMENDED MANUFACTURER– PEMBROKE CONCRETE OR APPROVED EQUAL.
6. INLET TEE TO BE CAST IRON, SCHEDULE 40 PVC OR CAST–IN–PLACE CONCRETE. OUTLET TEE TO BE ZABEL FILTER (A100) WITH EXTENSION. TEES TO BE CENTERED UNDER MANHOLE COVERS.
7. 4" SCH 40 PVC PIPE EXTENDED TO BOTTOM OF TANK WITH 2" DIA. HOLES DRILLED WITHIN PIPE. INSTALL 4"X4" SCH 40 PVC TEE ON BOTTOM



PLAN VIEW

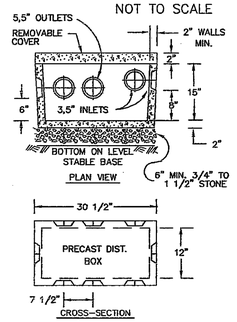


CROSS–SECTION VIEW

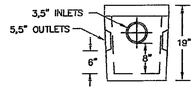
DISTRIBUTION BOX DETAIL:

NOT TO SCALE

NO. OF OUTLETS 3

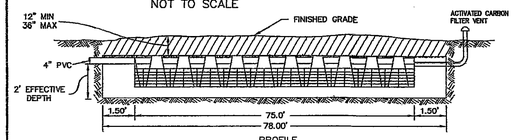


NOTES:
1. DIST. BOX TO WITHSTAND H–10 LOADING UNLESS UNDER PAVEMENT, DRIVES OR TRAVELED WAYS WHEREIN H–20 LOADING SHALL APPLY.
2. PROVIDE INLET TEE OR BAFFLE WHERE SLOPE OF PIPE EXCEEDS 0.08 FT./FT OR IN PUMPED SYSTEM.
3. FIRST TWO FEET OF PIPE OUT OF DIST. BOX TO BE LAID LEVEL.
4. RECOMMENDED MANUFACTURER–ROTONDO OR APPROVED EQUAL.
5. ALL PIPE CONNECTIONS AND CONCRETE CONSTRUCTION SHALL BE WATERTIGHT.



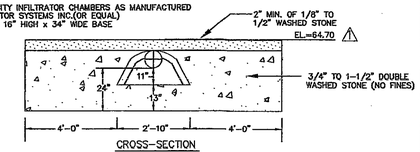
LEACHING TRENCH DETAIL: HIGH CAPACITY INFILTRATOR

NOT TO SCALE

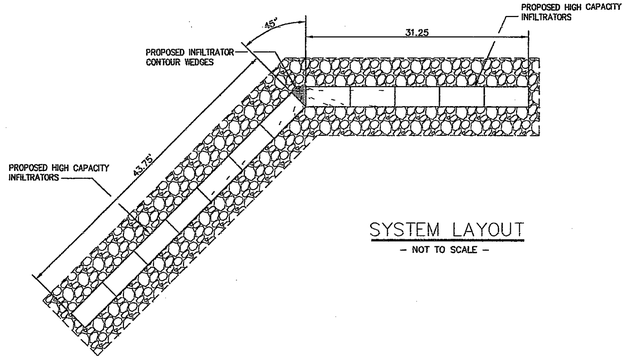


PROFILE

HIGH CAPACITY INFILTRATOR CHAMBERS AS MANUFACTURED BY INFILTRATOR SYSTEMS INC.(OR EQUAL) 75" LONG x 16" HIGH x 34" WIDE BASE



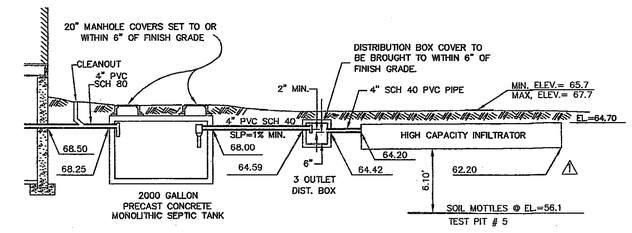
CROSS–SECTION



SYSTEM LAYOUT

– NOT TO SCALE –

PROFILE: NOT TO SCALE:



REVISIONS:

No.	DESCRIPTION	DATE
1	REV. PER BOH	2/6/06

PHILLIP SPATH P.E. — DATE

PREPARED BY:
ROSANO • DAVIS • SPATH ENGINEERING
9 ROCKY LANE
COHASSET, MA 02025
781–383–1234

SURVEY SERVICES PROVIDED BY:
mr SURVEYING, INC.
P.O. BOX 5104
NORWELL, MA 02061

PROJECT TITLE:
SEWAGE DISPOSAL SYSTEM DESIGN
AT
LOT 5 VIKING LANE
HINGHAM, MA
ASSESSORS' MAP 124, LOT 24

PREPARED FOR:
XERXES REALTY TRUST
293 WASHINGTON STREET
HINGHAM, MA 02061

DATE: JUNE 29, 2005
COMP./DESIGN: P.H.SPATH
CHECK: P.H.SPATH / R.H.COLE
DRAWN: M.W.C.
FIELD: M.W.C./J.B.T. — LOT 5 VIKING LANE
RDS JOB # RDS 458
mr JOB # mr–415
SHEET 2 OF 2

OBSERVATION HOLE DATA

OBSERVATION HOLE #6A-1 — GRND ELEV.= 77.1 — GW ELEV.= — — DATE: 11-3-04 — MOTTLING ELEV.= — — TESTED BY: RALPH COLE — WITNESSED BY: PAUL BROGNA, P.E. SEACOAST ENGINEERING — CERTIFIED BY: RALPH COLE

ELEV. 77.1	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
76.1	0"- 12"	O	LEAVES PINE NEEDLES	10YR 3/3		LEAVES, PINE NEEDLES
75.1	12"- 24"	A	GRAVELLY SAND	10YR 3/3		FRIABLE ROOTS
74.1	24"- 36"	B	SANDY LOAM	10YR 5/4	NONE	FRIABLE ROOTS
67.1	36"-120"	C	GRAVEL	2.5Y 7/3	NONE	LOOSE MEDIUM SAND 25% STONES 10%, COBBLES 10%

SOIL MOTTLES OBSERVED @ 120" (ELEV.= 67.1) — TOP OF PERC 39" HOLE @ ELEV. 73.8 — PERC RATE < 2 MIN./INCH

OBSERVATION HOLE DATA

OBSERVATION HOLE #6A-2 — GRND ELEV.= 68.6 — GW ELEV.= — — DATE: 11-3-04 — MOTTLING ELEV.= — — TESTED BY: RALPH COLE — WITNESSED BY: PAUL BROGNA, P.E. SEACOAST ENGINEERING — CERTIFIED BY: RALPH COLE

ELEV. 68.6	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
67.6	0"- 12"	O				LEAVES, PINE NEEDLES
66.6	12"- 24"	A	LOAMY SAND	10YR 3/3		FRIABLE ROOTS
65.6	24"- 36"	B	LOAMY SAND	10YR 5/4		FRIABLE ROOTS
58.6	36"-120"	C	GRAVEL	2.5Y 7/3		LOOSE MEDIUM SAND 25% STONES 10%, COBBLES 10%

SOIL MOTTLES OBSERVED @ 120" (ELEV.= 58.6) — TOP OF PERC 80" HOLE @ ELEV. 61.9 — PERC RATE < 2 MIN./INCH

OBSERVATION HOLE DATA

OBSERVATION HOLE #6A-3 — GRND ELEV.= 70.0 — GW ELEV.= — — DATE: 11-3-04 — MOTTLING ELEV.= — — TESTED BY: RALPH COLE — WITNESSED BY: PAUL BROGNA, P.E. SEACOAST ENGINEERING — CERTIFIED BY: RALPH COLE

ELEV. 7.0	SURFACE DEPTH EAST	SURFACE DEPTH WEST	SOIL HOR.	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
69.2	0"- 10"	0"- 10"	A	LOAMY SAND	10YR 3/3		FRIABLE ROOTS
69.6	10"- 47"	10"- 52"	B	LOAMY SAND	10YR 5/4		FRIABLE
61.5	47"-102"	52" LEDGE	C	GRAVEL	2.5Y 7/3		LOOSE MEDIUM SAND 25% STONES 10%, COBBLES 10%

SOIL MOTTLES OBSERVED @ 102" (ELEV.= 61.5) — TOP OF PERC 57" HOLE @ ELEV. 65.2 — PERC RATE < 2 MIN./INCH

OBSERVATION HOLE DATA

OBSERVATION HOLE #6A-4 — GRND ELEV.= 61.1 — GW ELEV.= — — DATE: 11-3-04 — MOTTLING ELEV.= — — TESTED BY: RALPH COLE — WITNESSED BY: PAUL BROGNA, P.E. SEACOAST ENGINEERING — CERTIFIED BY: RALPH COLE

ELEV. 61.2	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
60.1	0"- 12"	A	LOAMY SAND	10YR 3/3		FRIABLE
57.8	12"- 52"	B	LOAMY SAND	10YR 5/4		FRIABLE
52.7	52"- 101"	C	GRAVEL	2.5Y 7/3		LOOSE MEDIUM SAND 25% STONES 10%, COBBLES 10%

SOIL MOTTLES OBSERVED @ 101" (ELEV.= 52.7) — TOP OF PERC 52" HOLE @ ELEV. - — PERC RATE < 2 MIN./INCH

OBSERVATION HOLE DATA

OBSERVATION HOLE #504 — GRND ELEV.= 67.5 — GW ELEV.= — — DATE: 10-22-2003 — MOTTLING ELEV.= 55.5 — TESTED BY: RALPH COLE — WITNESSED BY: PAUL BROGNA, P.E. SEACOAST ENGINEERING — CERTIFIED BY: RALPH COLE

ELEV. 67.5	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
65.5	0"- 24"	A	SANDY LOAM	10YR 4/3		FRIABLE
64.2	24"- 40"	B	LOAMY SAND	10YR 6/4		FRIABLE STONES
55.5	40"-144"	C1	GRAVELLY SAND	2.5Y 7/1		LOOSE GRAVEL MEDIUM SAND STONES
55.5	144"- "	C2	SANDY LOAM	10YR 7/3	Y 144" 7.5YR 5/8	HARD

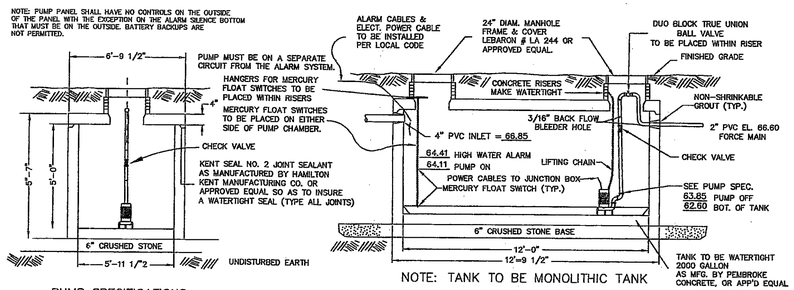
SOIL MOTTLES OBSERVED @ 144" (ELEV.= 55.5) — TOP OF PERC 36" HOLE @ ELEV. 64.5 — PERC RATE < 2 MIN./INCH

OBSERVATION HOLE DATA

OBSERVATION HOLE #505 — GRND ELEV.= 67.8 — GW ELEV.= — — DATE: 10-22-2003 — MOTTLING ELEV.= 58.1 — TESTED BY: RALPH COLE — WITNESSED BY: PAUL BROGNA, P.E. SEACOAST ENGINEERING — CERTIFIED BY: RALPH COLE

ELEV. 67.8	SURFACE DEPTH	SOIL HORIZON	SOIL TEXTURE	SOIL COLOR	SOIL MOTTLING	OTHER
64.4	0"- 41"	FILL				
56.1	41"-140"	C1	GRAVELLY SAND	2.5Y 7/1	NONE	LOOSE 10% - 15% GRAVEL
56.1	140"	C2	SANDY LOAM	10YR 7/2	Y 140" 7.5YR 5/8	HARD

SOIL MOTTLES OBSERVED @ 140" (ELEV.= 56.1) — TOP OF PERC 41" HOLE @ ELEV. 64.4 — PERC RATE < 2 MIN./INCH



NOTE: TANK TO BE MONOLITHIC TANK

PUMP SPECIFICATIONS

30 GPM AT 35' TDH
DISCHARGE 2"
NON CLOG IMPELLERS
SINGLE PHASE SUBMERSIBLE PUMP
MIN. DIA. SOLIDS 1 1/4"

NOTES:
CONTROL PANEL, ALARM AND SWITCHBOX TO BE LOCATED WITHIN DWELLING

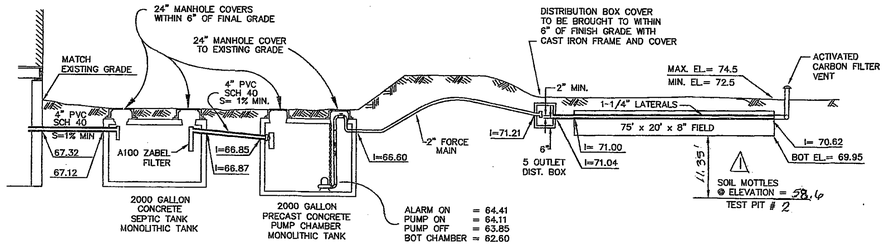
ONE DAY FLOW FOR EMERGENCY STORAGE PROVIDED IN PUMP STATION ABOVE HIGH WATER ALARM ELEVATION.

INSTALL PUMP & CONTROLS PER MANUFACTURERS SPECIFICATIONS.

NOTE:
THE CONTRACTOR SHALL SUBMIT TO THE DESIGN ENGINEER, FOR HIS REVIEW AND APPROVAL, THE MANUFACTURERS SPECIFICATIONS FOR THE PUMP AND ACCESSORIES (MERCURY SWITCHES, VALVES, ETC.) PRIOR TO THE CONSTRUCTION OF THE SYSTEM.

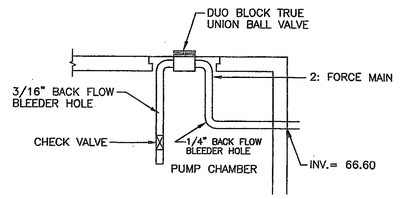
SEWAGE PUMP STATION DETAIL

NOT TO SCALE



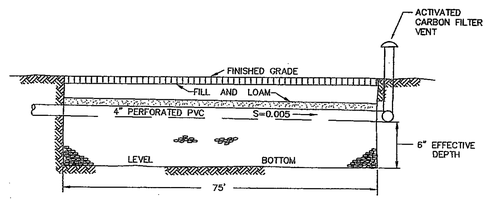
PROFILE

NOT TO SCALE

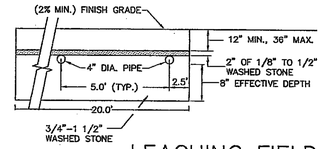


BALL VALVE PLACEMENT DETAIL

NOT TO SCALE



PROFILE

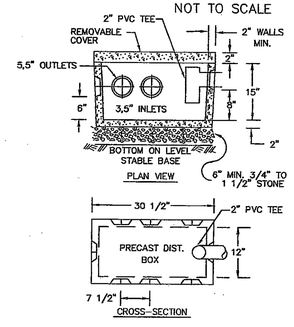


LEACHING FIELD

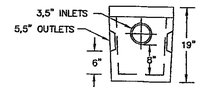
NOT TO SCALE

DISTRIBUTION BOX DETAIL:

NOT TO SCALE — NO. OF OUTLETS 5



NOTES:
1. DIST. BOX TO WITHSTAND H-10 LOADING UNLESS UNDER PAVEMENT, DRIVES OR TRAVELED WAYS WHEREIN H-20 LOADING SHALL APPLY.
2. PROVIDE INLET TEE OR BAFFLE WHERE SLOPE OF PIPE EXCEEDS 0.08 FT./FT OR IN PUMPED SYSTEM.
3. FIRST TWO FEET OF PIPE OUT OF DIST. BOX TO BE LAID LEVEL.
4. RECOMMENDED MANUFACTURER-ROTONDO OR APPROVED EQUAL.
5. ALL PIPE CONNECTIONS AND CONCRETE CONSTRUCTION SHALL BE WATERTIGHT.



REVISIONS:

No.	DESCRIPTION	DATE
1	REV. PER BOH COMMENTS	2-15-06

PHILLIP SPATH P.E. — DATE

PREPARED BY:
ROSANO • DAVIS • SPATH ENGINEERING
9 ROCKY LANE
COHASSET, MA 02025
781-383-1234

SURVEY SERVICES PROVIDED BY:
mr SURVEYING, INC.
P.O. BOX 5104
NORWELL, MA 02061

PROJECT TITLE:
SEWAGE DISPOSAL SYSTEM DESIGN
AT
LOT 6 VIKING LANE
HINGHAM, MA
ASSESSORS' MAP 124, LOT 24

PREPARED FOR:
XERXES REALTY TRUST
2932 WASHINGTON STREET
NORWELL, MA 02061

DATE: JUNE 29, 2005
COMP./DESIGN: P.H.SPATH
CHECK: P.H.SPATH / R.H.COLE
DRAWN: M.W.C.
FIELD: M.W.C./J.B.T. — VIKING LOT 6
RDS JOB # RDS 458
mr JOB # mr-415
SHEET 2 OF 2

A P P E N D I X D

Closed Drainage System Calculations

MCKENZIE ENGINEERING GROUP
Assinippi Office Park
150 Longwater Drive, Suite 101
Norwell, MA 02061

Storm Drainage Computations

Name: River Stone
Hingham, MA
Client: River Stone, LLC

Proj. No.: **27-135**
Date: **9-Mar-18** **Rev 12/19/18**
Computed by: **SBS**
Checked by: **BCM**

Design Parameters:
100 **Year Storm** Boston, MA
k_e= **0.5**

NOTE:

FD=First Defense Unit

DESCRIPTION	LOCATION		AREA	C	C x A	SUM	FLOW TIME (MIN)		i*	DESIGN					CAPACITY		PROFILE						
	FROM	TO	(AC.)			C x A	PIPE	CONC TIME		Q cfs	V fps	n	PIPE SIZE	SLOPE	Q full ft^3/s	V full ft/s	LENGTH ft	FALL ft	RIM	INV UPPER	INV LOWER	W.S.E. ft	Freeboard ft
	CB 2A	FD-2	0.186	0.56	0.11	0.11	0.14	6.0	7.0	0.7	3.5	0.013	12	0.0165	4.6	5.8	29	0.48	65.94	60.13	59.65	60.9	5.0
	FD-2	EX DMH	---	---	---	0.11	0.38	6.1	7.0	0.7	2.3	0.013	12	0.0050	2.5	3.2	53	0.27	65.92	59.60	59.33	61.2	4.7
	EX CB	EX DMH	0.070	0.79	0.06	0.06	0.05	6.0	7.0	0.4	2.2	0.013	12	0.0080	3.2	4.1	6	0.05	64.20	60.98	60.93	61.8	2.4
	EX CB	EX DMH	0.070	0.62	0.04	0.04	0.07	6.0	7.0	0.3	1.8	0.013	12	0.0060	2.8	3.5	8	0.05	64.20	60.98	60.93	61.8	2.4
	EX DMH	CHAMBER	---	---	---	0.20	0.02	6.0	7.0	1.4	4.9	0.013	12	0.0240	5.5	7.0	7	0.17	64.35	58.97	58.80	60.6	3.8
	CHAMBER	DMH 1A	---	---	---	0.20	0.01	6.1	7.0	1.4	4.6	0.013	8	0.0164	1.5	4.4	4	0.07	64.20	58.90	58.83	60.5	3.7
	DMH 1A	FD-1	---	---	---	0.20	0.32	6.1	7.0	1.4	4.2	0.013	12	0.0146	4.3	5.5	82	1.20	64.20	58.05	56.85	59.6	4.6
	CB 1	FD-1	0.072	0.78	0.06	0.06	0.04	6.0	7.0	0.4	2.3	0.013	12	0.0100	3.6	4.5	6	0.06	59.84	56.91	56.85	57.7	2.1
	CB 2	FD-1	0.092	0.71	0.07	0.07	0.08	6.0	7.0	0.5	2.4	0.013	12	0.0100	3.6	4.5	12	0.12	59.86	56.97	56.85	57.7	2.2
	FD-1	EX DMH	---	---	---	0.32	0.18	6.1	7.0	2.3	3.7	0.013	12	0.0073	3.0	3.9	39	0.29	60.03	56.85	56.56	58.4	1.6
	CB 6	FD-3	0.052	0.90	0.05	0.05	0.10	6.0	7.0	0.3	2.2	0.013	12	0.0100	3.6	4.5	14	0.14	66.24	61.12	60.98	61.6	4.6
	DCB 7	FD-3	0.434	0.58	0.25	0.25	0.09	6.1	7.0	1.8	3.8	0.013	12	0.0100	3.6	4.5	21	0.21	65.95	61.19	60.98	61.5	4.5
	FD-3	DMH 1	---	----	----	0.30	0.30	6.2	7.0	2.1	4.0	0.013	12	0.0100	3.6	4.5	72	0.72	66.51	60.98	60.26	61.2	5.3
	DMH 1	CHAMBER	---	----	----	0.30	0.02	6.5	6.9	2.1	3.9	0.013	12	0.0100	3.6	4.5	5	0.05	64.40	60.26	60.21	60.7	3.7
	CB 3	DMH 2	0.296	0.65	0.19	0.19	0.13	6.0	7.0	1.4	2.8	0.013	12	0.0050	2.5	3.2	22	0.11	64.64	61.98	61.87	63.0	1.6
	CB 4	DMH 2	0.456	0.58	0.26	0.26	0.13	6.0	7.0	1.8	3.0	0.013	12	0.0050	2.5	3.2	23	0.12	64.62	61.99	61.87	62.7	1.9
	CB 5	DMH 2	0.170	0.80	0.14	0.14	0.04	6.0	7.0	1.0	2.5	0.013	12	0.0050	2.5	3.2	6	0.03	64.56	61.90	61.87	63.5	1.0
	DMH 2	DMH 3	---	---	---	0.59	0.38	6.1	7.0	4.1	3.8	0.013	15	0.0050	4.6	3.7	87	0.44	64.63	61.87	61.43	62.8	1.9
	DMH 3	FD-4	---	---	---	0.59	0.78	6.5	6.9	4.1	3.8	0.013	15	0.0050	4.6	3.7	178	0.89	65.86	61.43	60.54	62.3	3.5
	FD-4	CHAMBER	---	---	---	0.59	0.03	7.3	6.7	4.0	3.8	0.013	15	0.0050	4.6	3.7	7	0.04	67.99	60.54	60.50	62.3	5.7
	CHAMBER	FES-1	---	---	---	0.59	0.21	7.3	6.7	3.9	7.1	0.013	12	0.0306	6.2	7.9	88	2.69	68.00	61.70	59.00	63.1	5.0
	CB C-2	DMH C-1	0.230	0.61	0.14	0.14	0.11	6.0	7.0	1.0	3.2	0.013	12	0.0100	3.6	4.5	22	0.22	62.17	56.77	56.55	58.2	4.0
	CB C-3	DMH C-1	0.130	0.76	0.10	0.10	0.02	6.0	7.0	0.7	2.9	0.013	12	0.0100	3.6	4.5	3	0.03	61.20	56.58	56.55	58.2	3.0
	DMH C-1	FD-D1	---	---	---	0.24	0.15	6.1	7.0	1.7	3.8	0.013	12	0.0100	3.6	4.5	34	0.34	60.59	56.55	56.21	56.8	3.8

MCKENZIE ENGINEERING GROUP
Assinippi Office Park
150 Longwater Drive, Suite 101
Norwell, MA 02061

Storm Drainage Computations

Name: River Stone
Hingham, MA
Client: River Stone, LLC

Proj. No.: **27-135**
Date: **9-Mar-18** Rev 12/19/18
Computed by: **SBS**
Checked by: **BCM**

Design Parameters:
100 **Year Storm** Boston, MA
k_e= **0.5**

NOTE:

FD=First Defense Unit

DESCRIPTION	LOCATION		AREA	C	C x A	SUM	FLOW TIME (MIN)		i*	DESIGN					CAPACITY		PROFILE						
	FROM	TO	(AC.)			C x A	PIPE	CONC TIME		Q cfs	V fps	n	PIPE SIZE	SLOPE	Q full ft^3/s	V full ft/s	LENGTH ft	FALL ft	RIM	INV UPPER	INV LOWER	W.S.E. ft	Freeboard ft
	TRENCH	FD-D1	0.054	0.63	0.03	0.03	0.25	6.0	7.0	0.2	1.6	0.013	12	0.0050	2.5	3.2	24	0.12	57.20	56.33	56.21	57.2	0.0
	CB D-1	FD-D1	0.090	0.83	0.07	0.07	0.06	6.0	7.0	0.5	2.6	0.013	12	0.0100	3.6	4.5	10	0.10	58.90	56.31	56.21	57.1	1.8
	CB D-2	FD-D1	0.097	0.72	0.07	0.07	0.01	6.0	7.0	0.5	2.5	0.013	12	0.0100	3.6	4.5	1	0.01	58.90	56.22	56.21	57.9	1.0
	FD-D1	CHAMBER	---	---	---	0.42	0.11	6.3	6.9	2.9	3.3	0.013	15	0.0050	4.6	3.7	22	0.11	59.13	56.21	56.10	56.8	2.3