Sullivan Engineering Group, LLC
Civil Engineers & Land Development Consultants

September 23, 2025

Town of Reading
Conservation Commission

Re: Small Lane Extension, Reading
Drainage Design

This drainage study was conducted for the proposed roadway extension of Small Lane to access one house lot. This report is intended to accompany a Definitive Subdivision Plan Set prepared by Sullivan Engineering Group, LLC dated September 21, 2025.

Soil testing was conducted on-site on 11/5/2019 by John D. Sullivan III, P.E. Soil testing was conducted in four locations (testhole locations shown on the Site Plan). All testholes show highly suitable soils for groundwater recharge (coarse sand).

The proposed drainage system consists of a pair of deep sump/hooded catchbasins, drain manhole, outlet control structure with deep sump & gas hood on outlet pipe, sediment forebay, and detention basin with emergency rip-rap spillway. The soils are highly suitable for groundwater recharge (sand with a Rawl's Rate of 8.27 in/hr). The site was designed as "new construction" with only a small portion of the site being redevelopment (to be discussed later in this letter). The precipitation data for each storm event were taken from the National Oceanic & Atmospheric Administration's Atlas 14, Volume 10. The detention basin is situated 2 feet above the seasonal high groundwater. The forebay and detention pond have been sized per MassDEP guidelines. The proposed site development of Lot A is shown and is included in the drainage design analysis.

The HydroCAD report models the Predevelopment Condition vs. Postdevelopment Condition for the entire site area. The stormwater design reduces the peak rate of runoff and volume for the 1, 2, 10, 25, & 100 year storm event. The following is summary of the peak rate of runoff for various storm events at each Design Point.

Design Point 1 (HydroCAD symbol – Link "1L)

	Predevelopment		Postdevelopment	
	Peak Rate (cfs)	Volume (AF)	Peak Rate (cfs)	Volume (AF)
Storm Event				
1 Year	0.00	0.00	0.00	0.00
2 Year	0.00	0.00	0.00	0.00
10 Year	0.01	0.004	0.00	0.002
25 Year	0.05	0.016	0.03	0.009
100 Year	0.31	0.048	0.17	0.025

PO Box 2004 Woburn, MA 01888 (781) 854-8644 e-mail: jacksull53@comcast.net

Design Point 2 (HydroCAD symbol – Link "2L)

	Predevelopment		Postdevelopment	
	Peak Rate (cfs)	Volume (AF)	Peak Rate (cfs)	Volume (AF)
Storm Event				
1 Year	0.00	0.00	0.00	0.00
2 Year	0.00	0.00	0.00	0.00
10 Year	0.00	0.00	0.00	0.00
25 Year	0.01	0.006	0.01	0.004
100 Year	0.12	0.028	0.08	0.019

In the post development scenario, there is a small subcatchment that will drain back to the existing catchbasins in Small Lane. This area is predominately paved (therefore this portion of the project could be considered "redevelopment"). This subcatchment was modeled and the HydroCAD symbol – Link "3L" was used. It is my opinion that the flow back to the Small Lane catchbasins is "de minimis" (i.e. the 2 year storm constributes 0.12 cfs of peak flow to the existing catchbasins). Additionally, this area is extremely small in comparison of the full watershed.

HydroCAD calculations are attached which show that the infiltration fields are sized properly for the various storm events. The soil logs for this project are provided on the Existing Conditions Plan in the Civil set.

The following are part of this report:

1) NRCS soil map & descriptions
2) TSS removal worksheet
3) Forebay sizing
4) Stormwater quality (Standard 3+4)
5) Operation & Maintenance Plan
6) Mounding Analysis
7) Average Annual Load of Total Phosphorus worksheet

The following will be provided prior to construction:

1) Construction Period Pollution Prevention/Erosion & Sedimenation Control plan (Stormwater Standard #8)
2) Illicit Discharge Statement (Stormwater Standard #10)

Very Truly Yours,

9.23.2021

John (Jack) D. Sullivan III, PE

PO Box 2004 Woburn, MA 01888 (781) 854-8644 e-mail: jacksull53@comcast.net

Soil Map—Middlesex County, Massachusetts

Map Scale: 1:2,660 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

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

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

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

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

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

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

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

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

Soil Survey Area: Middlesex County, Massachusetts
Survey Area Data: Version 22, Sep 9, 2022

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

Date(s) aerial images were photographed: May 22, 2022—Jun 5, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
6A	Scarboro mucky fine sandy loam, 0 to 3 percent slopes	0.1	0.2%
51A	Swansea muck, 0 to 1 percent slopes	23.9	64.8%
52A	Freetown muck, 0 to 1 percent slopes	0.2	0.5%
254A	Merrimac fine sandy loam, 0 to 3 percent slopes	0.2	0.7%
255B	Windsor loamy sand, 3 to 8 percent slopes	0.5	1.3%
256B	Deerfield loamy fine sand, 3 to 8 percent slopes	1.3	3.4%
305C	Paxton fine sandy loam, 8 to 15 percent slopes	2.6	7.1%
626B	Merrimac-Urban land complex, 0 to 8 percent slopes	8.0	21.7%
629C	Canton-Charlton-Urban land complex, 3 to 15 percent slopes	0.1	0.2%
Totals for Area of Interest		**36.9**	**100.0%**

INSTRUCTIONS:
1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location: Small Lane Extension, Reading

TSS Removal Calculation Worksheet

B BMP[1]	C TSS Removal Rate[1]	D Starting TSS Load*	E Amount Removed (C*D)	F Remaining Load (D-E)
Deep Sump and Hooded Catch Basin	0.25	1.00	0.25	0.75
Deep Sump and Hooded Catch Basin	0.25	0.75	0.19	0.56
Sediment Forebay	0.25	0.56	0.14	0.42
Infiltration Basin	0.80	0.42	0.34	0.08
	0.00	0.08	0.00	0.08

Total TSS Removal = 92%

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project:
Prepared By: JDS
Date: 10/26/2022

*Equals remaining load from previous BMP (E) which enters the BMP

Non-automated TSS Calculation Sheet must be used if Proprietary BMP Proposed
1. From MassDEP Stormwater Handbook Vol. 1

SEDIMENT FOREBAY SIZING CALCULATION

REQUIRED SEDIMENT FOREBAY SIZING

Volume produced by 0.10" runoff/imperious acre

0.1"/acre x 1 ac/43560 sf x 12,804 s.f

0.029 inches of runoff

Total Volume produced 0.029 inches x 1 ft/12inches x 12,804 s.f.

Total Volume produced = 30.9 c.f.

Provided Volume of Sediment Forebay:

Bottom of Forebay = 81.9
Forebay Berm=82.2

Forebay Area (108 sf) x (82.2-81.9) = 32.4 cf (Volume provided) > 30.9 cf (ok)

STORMWATER QUALITY WORKSHEET

Stormwater Management Standard #3

Project:	Small Lane	**Calc By:**	JDS
Date:	10/26/22	**Client:**	

SECTION 1: **Water Quality Volume Calculation:**

REQUIRED:

Impervious Area:

12,804 S.F = 0.29 Acres

Volume Required:

$$12{,}804 \text{ S.F} \times 1 \text{ Inches} \times \frac{1 \text{ Ft}}{12 \text{ inches}} = 1{,}067 \text{ C.F.}$$

PROPOSED:

Basin = 1,177 C.F. (10 Year Storm)

SO	1,177 C.F.	>	1,067 C.F.

SECTION 2: **Recharge Volume Calculations**

REQUIRED:

Total Impervious Area:

12,804 S.F = 0.29 Acres

			Vol To Recharge (x Imp. Area)	
12,804	S.F. Over Soil Type "A" material	=	0.60	Inches of Runoff
	S.F. Over Soil Type "B" material	=	0.35	Inches of Runoff
	S.F. Over Soil Type "C" material	=	0.25	Inches of Runoff
	S.F. Over Soil Type "D" material		0.10	Inches of Runoff

Recharge Volume:

$$12{,}804 \text{ s.f.} \times 0.60 \times \frac{1 \text{ Ft}}{12 \text{ inches}} \text{ (Class A Soil)} = 640 \text{ C.F.}$$

Storage Calculation:
At bottom of basin (elev=82.1): 2,610 s.f.
At outlet of basin (elev=83.00): 3,364 s.f

Average Storage Area: (2610 + 3364)/2 = 2,987 s.f.
Storage Volume = 2,987 s.f. x 0.90 ft = 2,688 c.f.

SO	2,688 C.F.	>	640 C.F.

Post-Construction
Small Lane Extension, Reading
Stormwater Maintenance Plan

Beginning with the construction of the drainage system, and continuing in perpetuity thereafter, the owner(s) of the site shall maintain in accordance with the following schedule:

a. Pavement sweeping and snow plowing – Pavement shall be swept in the early spring immediately after snow melt and at least twice other times annually. Snow shall be plowed onto the snow stockpile area shown on the design plans to encourage infiltration during subsequent thawing periods. Sediments shall be removed from snow storage areas in the early spring.
b. Paving and curbing – Paving and curbing shall be maintained in good condition to channel surface runoff into the rip-rap pretreatment area at the rear of the parking lot.
c. Detention Basin – The level of water in the Detention Basin shall be monitored during and after heavy rain storms at least 3 times per year during the first year of operation and at least twice annually thereafter for evidence of clogging or other problems. The emergency overflow devices (spillway) shall be monitored to insure each is functioning properly and free of any obstructions.
d. Vegetation shall be maintained in healthy condition to prevent erosion and sedimentation in the drainage system and off-site wetland resource areas. .
e. Sediment Forebay & Emergency Overflow spillway shall be inspected 3 times per year to insure any debris, trash, accumulated sediment, or leaves is removed and properly disposed of to insure functionality of these areas.
f. The catchbasin sumps & outlet control structure shall be inspected at least 3 times per year. Sediments and debris shall be removed and disposed of in accordance with all applicable federal, state, and local laws. In no case shall sediment buildup exceed 2 feet in depth.

The Annual Stormwater Report (and repair information if performed) shall be submitted to the Town of Reading Engineering Department by January 15th of each calendar year.

* See attached inspection log
** See attached O&M sketch of BMP's

Inspection and Maintenance Report Checklist:

To be completed per Inspection/Maintenance schedule (see previous page)

Inspection/ Maintenance Item	**Date Completed**	**Depth of Sediment (inches)**	**Action Required (Yes or No)**	**Action Taken**	**Maintenance Required * (Yes or No)**
a		**N/A**	**N/A**	**N/A**	
b					
c					
d					
e					
f		N/A			

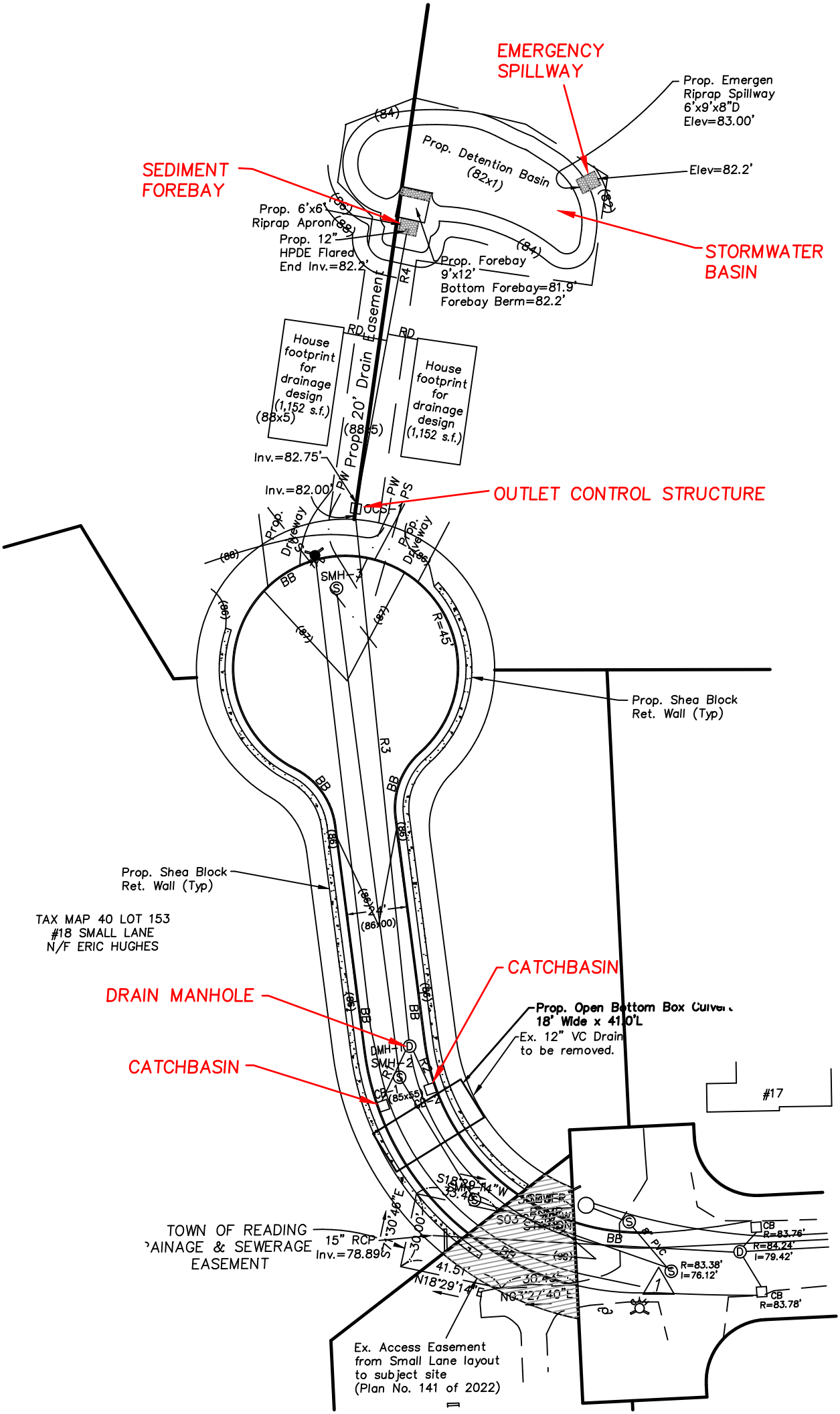
* If Maintenance is required (YES), list recommended maintenance item(s);

Inspector Notes:

Inspector Recommendations:

Inspector Name: _____ Date:_____

O&M SKETCH PLAN



GROUNDWATER MOUND UNDER A RECTANGULAR RECHARGE AREA Using the Hantush (1967) Derivation

Inputs

w (Percolation Rate): 0.98 **[L/T]*K (Hydraulic Conductivity*):** 16 **[L/T]*S***

(Specific Yield): 0.25 **[-]*t*(Time):** 0.1 **[T]h_i**

(Initial Saturated Thickness): 6 **[L]*a (Length of Recharge Area*):** 94 **[L]*b***

(Width of Recharge Area): 31 **[L]**

KEEP UNITS CONSISTENT

Calculate

Results

Note that because of estimations of an integral function, this is an estimate

Maximum hydraulic head: 6.39200000 **[L]Increase in hydraulic head:** 0.39200000 **[L]**

Therefore a mound of 0.39 ft will not encroach the storage capacity of the infiltration system.

Total Phosphorus Removal - MS4 worksheet

1. Management Objective			
Select Pollutant Type ->	TP	Total BMP Cost ($)	$22,300
Enter Target Load Reduction (%) ->	60.0%	Total Pollutant Load Reduction (%)	82.6%

2. Optimization Target			
Select an option ->	BMP Storage Capacity	Total BMP Storage Capacity (gal)	48,406

3. Watershed Information			
Enter Land Use Area ->	Click Here	Total Impervious Area (ac)	0.3

4. BMP Information			
Enter Drainage Area ->	Click Here	Total Treated Impervious Area (ac)	0.3

5. Optimal Solution

BMP Type	Design Storage Capacity (ft^3)	BMP Cost ($)	Treated Impervious Area (ac)	O&M (hr/yr)	Load Reduction (lbs)	Treated Runoff Depth (in)
Biofiltration with ISR	-	$ -	-	-	-	-
Bioretention	-	$ -	-	-	-	-
Dry Pond	-	$ -	-	-	-	-
Grass Swale*	-	$ -	-	-	-	-
Gravel Wetland	-	$ -	-	-	-	-
Infiltration Basin	6,471	$ 22,300	0.30	-	0.25	0.50
Infiltration Chambers*	-	$ -	-	-	-	-
Infiltration Trench	-	$ -	-	-	-	-
Porous Pavement*	-	$ -	-	-	-	-
Sand Filter	-	$ -	-	-	-	-
Wet Pond	-	$ -	-	-	-	-

Note:Only fill in the yellow highlighted cells.

* Place holder for future option (not implemented)

Planning Level Analysis

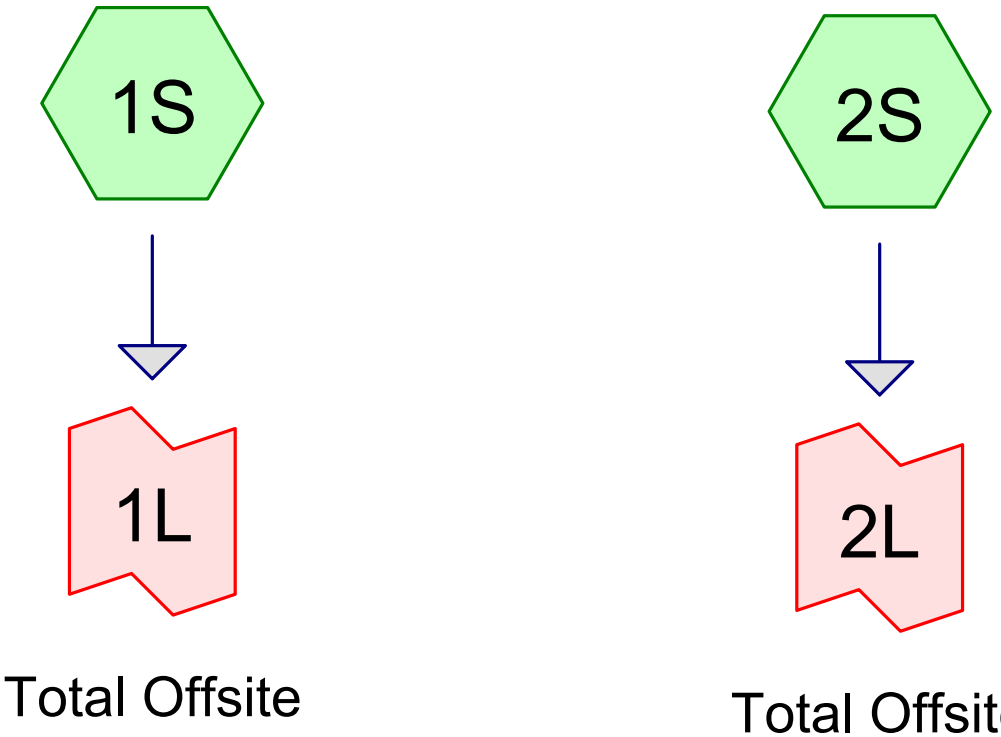
The purpose of this tool is to provide decision-makers a comprehensive overview of stormwater management opportunities in a given watershed. The tool will characterize the watershed characteristics and opportunities for applying a variety of BMP technologies to various source areas based on land use, soils, and impervious cover. There are two approaches of the planning-level analysis tool:

1: BMP Storage Capacity – to evaluate the changes in hydrologic and water quality benefits as the BMP/LID sizes are increased in fixed increments; and
2: BMP Drainage Area – to determine how much impervious area would require treatment if specified BMP design capacities are selected for each HRU type to be treated.

Run Single Scenario

Run Optimize Scenario

Return to Home Page



Subcat Reach Pond Link

Drainage Diagram for Predevelopment
Prepared by Sullivan Engineering Group, LLC 9/23/2025

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Runoff Area=36,743 sf Runoff Depth=0.00"
Flow Length=279' Tc=12.1 min CN=34 Runoff=0.00 cfs 0.000 af

Subcatchment 2S: Runoff Area=37,180 sf Runoff Depth=0.00"
Flow Length=212' Tc=10.0 min CN=30 Runoff=0.00 cfs 0.000 af

Link 1L: Total Offsite Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link 2L: Total Offsite Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 1.697 ac Runoff Volume = 0.000 af Average Runoff Depth = 0.00"

Subcatchment 1S:

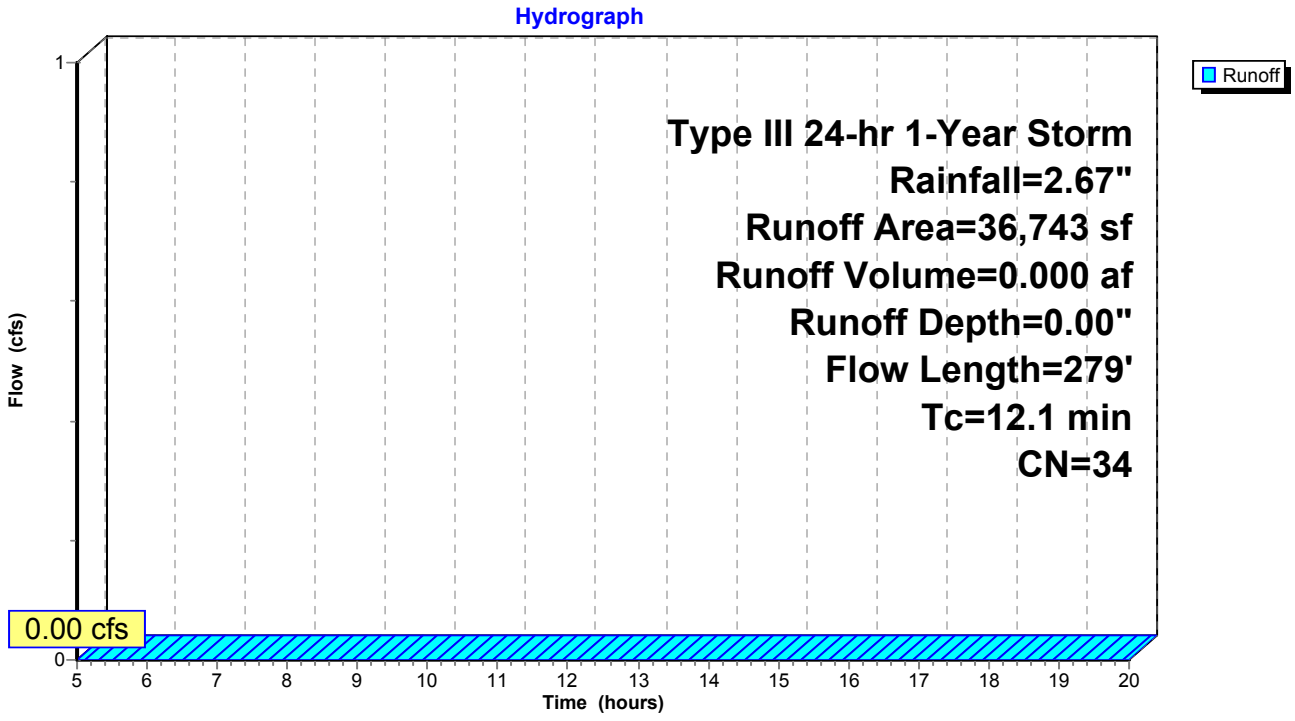
Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Storm Rainfall=2.67"

Area (sf)	CN	Description
34,749	30	Woods, Good, HSG A
1,994	98	Pavement
36,743	34	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	50	0.0600	0.1		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.31"
0.6	61	0.1300	1.8		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.7	168	0.0230	0.8		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.1	279	Total			

Subcatchment 1S:



Subcatchment 2S:

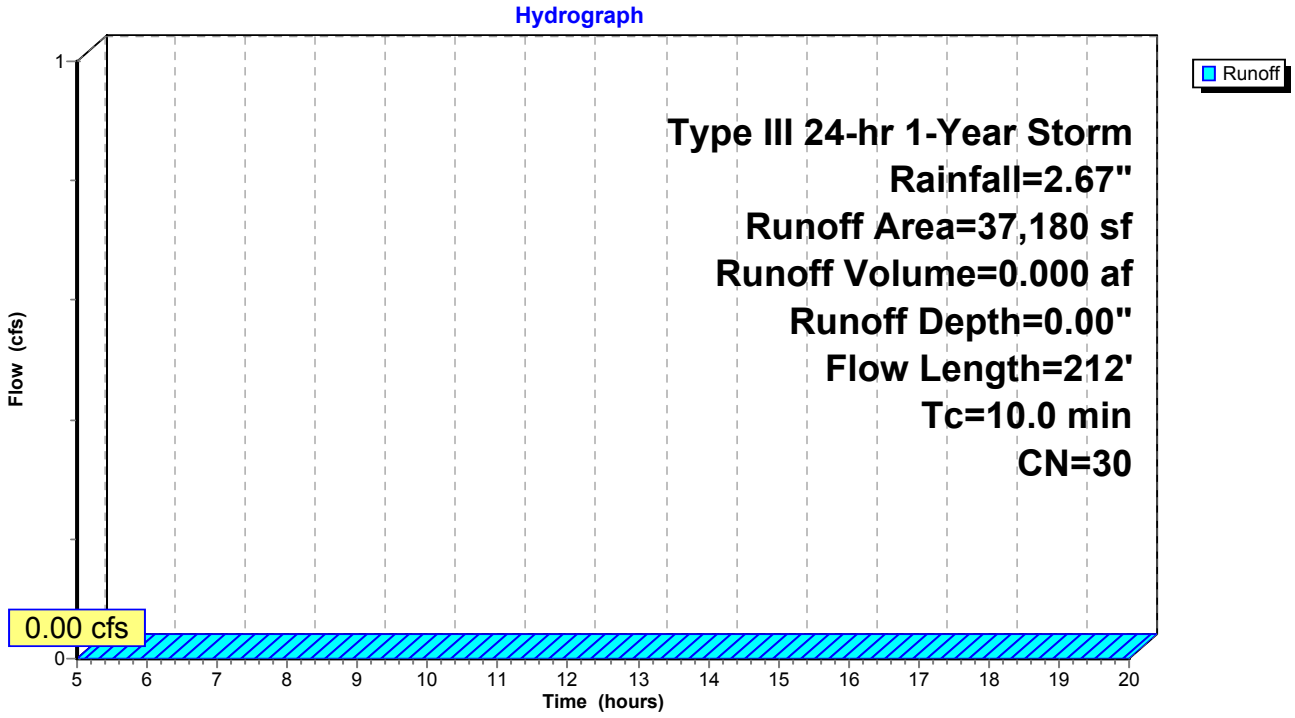
Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Storm Rainfall=2.67"

Area (sf)	CN	Description
37,180	30	Woods, Good, HSG A

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	50	0.1380	0.1		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.31"
0.8	47	0.0400	1.0		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.0	6	0.5000	3.5		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.6	109	0.0100	0.5		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.0	212	Total			

Subcatchment 2S:

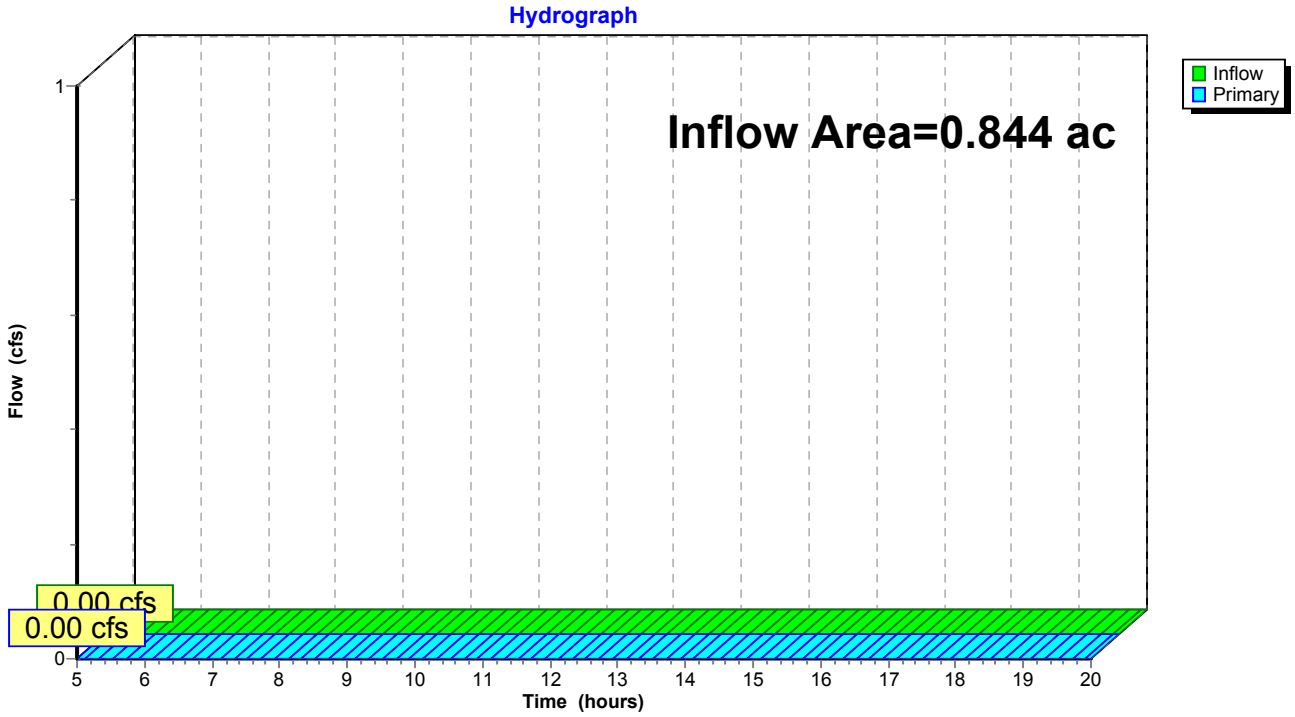


Link 1L: Total Offsite

Inflow Area = 0.844 ac, Inflow Depth = 0.00" for 1-Year Storm event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: Total Offsite

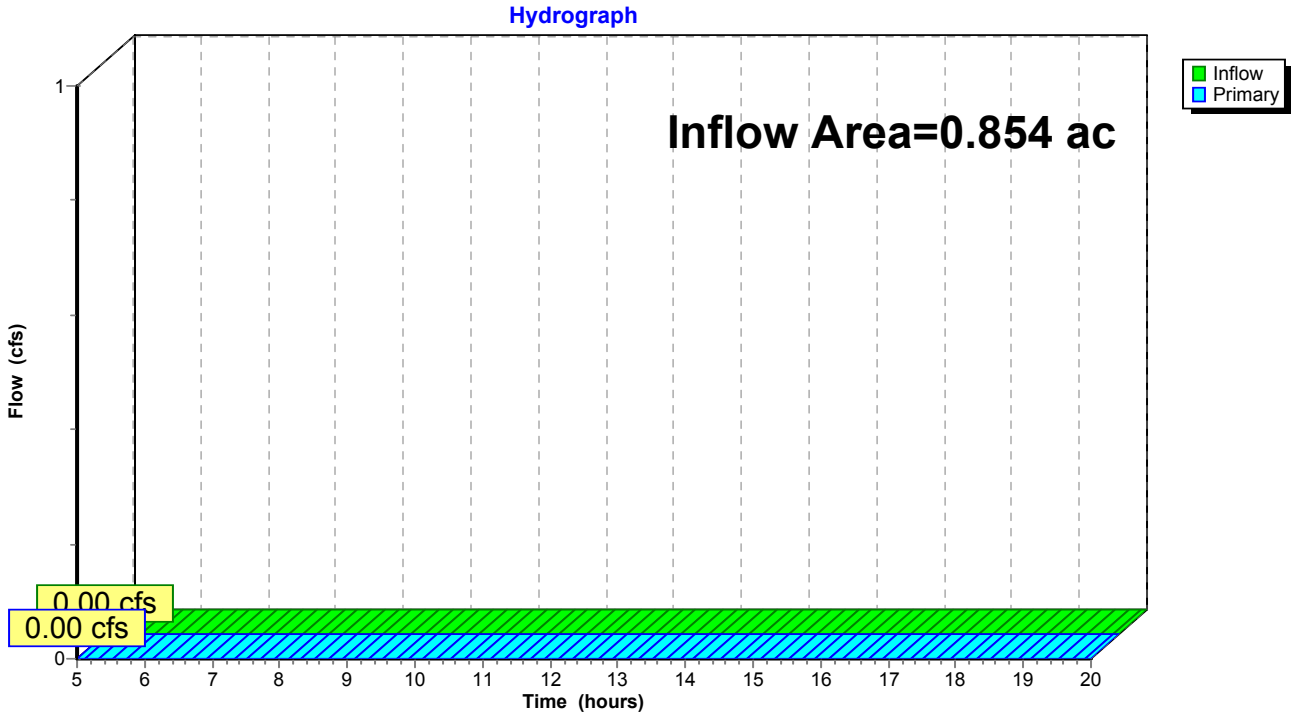


Link 2L: Total Offsite

Inflow Area = 0.854 ac, Inflow Depth = 0.00" for 1-Year Storm event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: Total Offsite



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Runoff Area=36,743 sf Runoff Depth=0.00"
Flow Length=279' Tc=12.1 min CN=34 Runoff=0.00 cfs 0.000 af

Subcatchment 2S: Runoff Area=37,180 sf Runoff Depth=0.00"
Flow Length=212' Tc=10.0 min CN=30 Runoff=0.00 cfs 0.000 af

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Link 2L: Total Offsite Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 1.697 ac Runoff Volume = 0.000 af Average Runoff Depth = 0.00"

Subcatchment 1S:

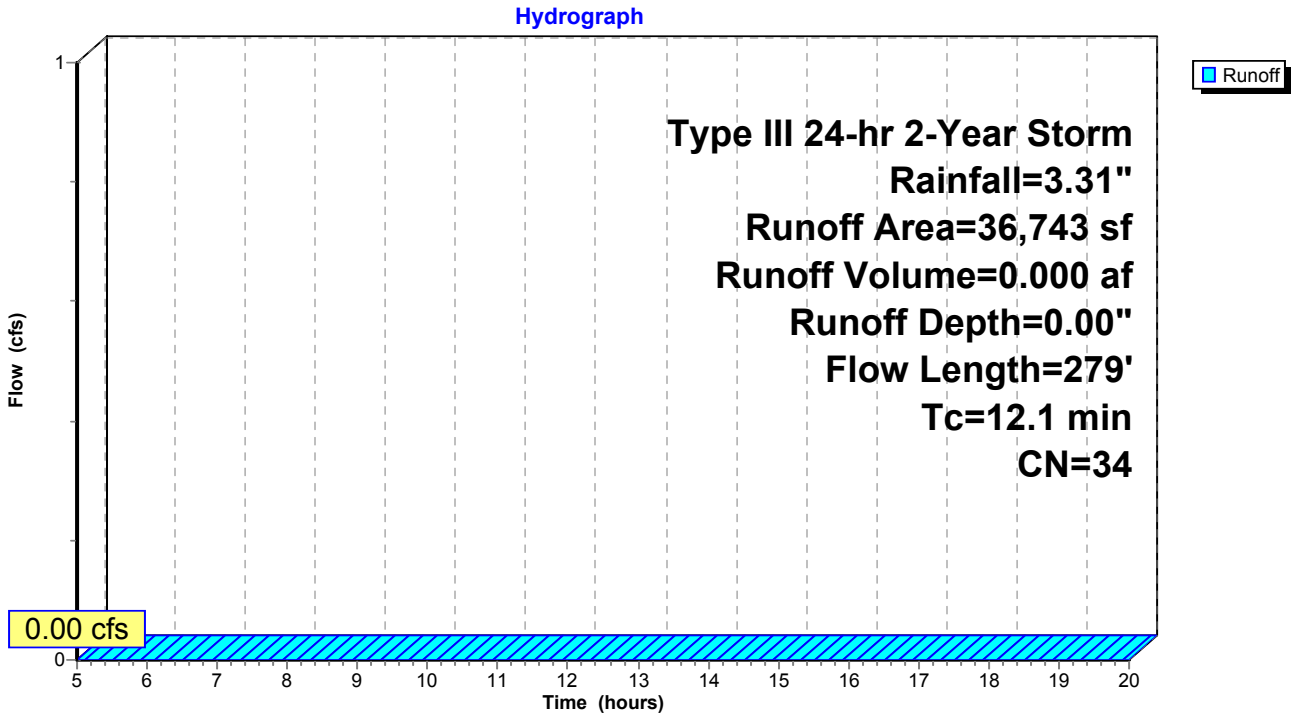
Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.31"

Area (sf)	CN	Description
34,749	30	Woods, Good, HSG A
1,994	98	Pavement
36,743	34	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	50	0.0600	0.1		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.31"
0.6	61	0.1300	1.8		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.7	168	0.0230	0.8		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.1	279	Total			

Subcatchment 1S:



Subcatchment 2S:

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
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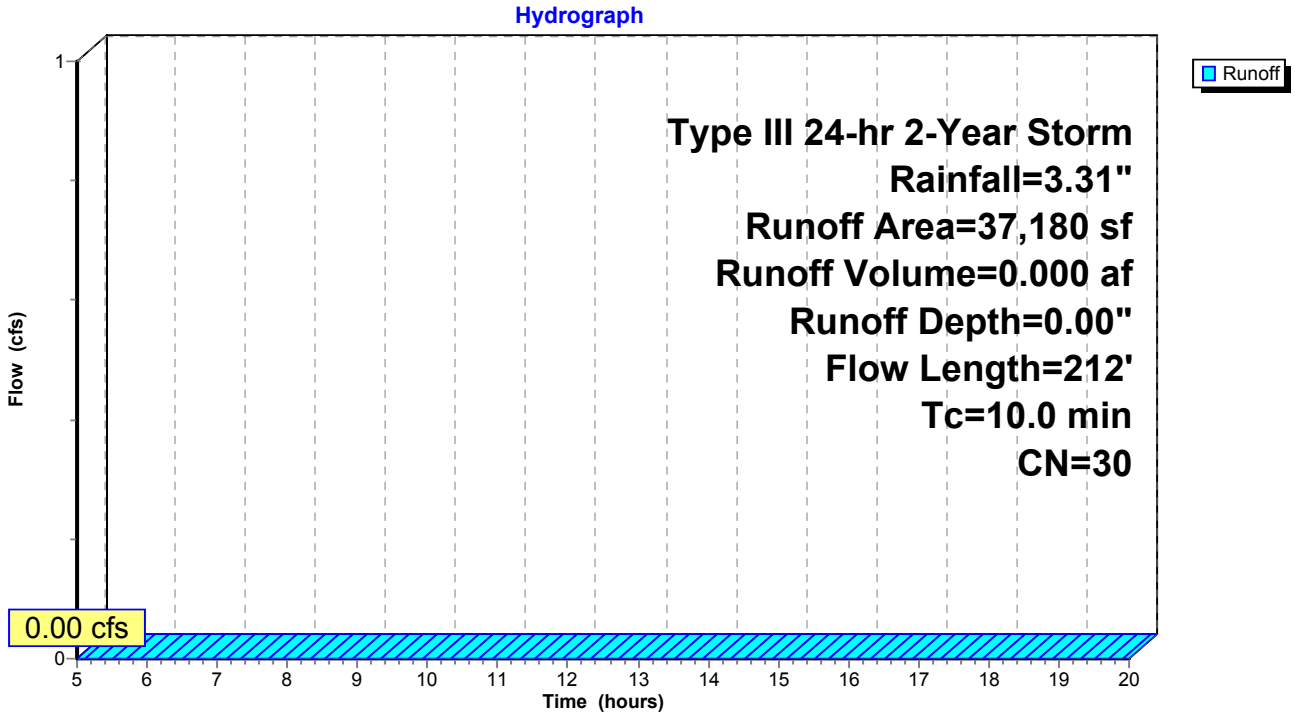
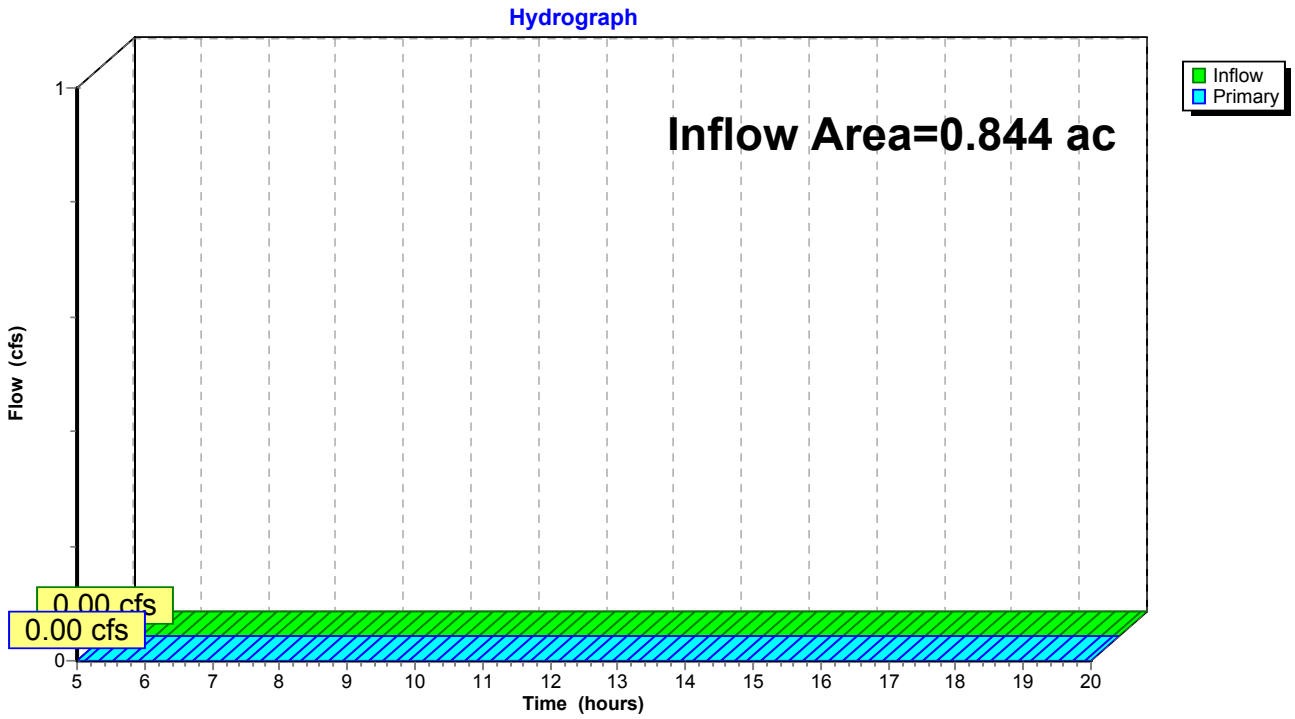


Link 1L: Total Offsite

Inflow Area = 0.844 ac, Inflow Depth = 0.00" for 2-Year Storm event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: Total Offsite

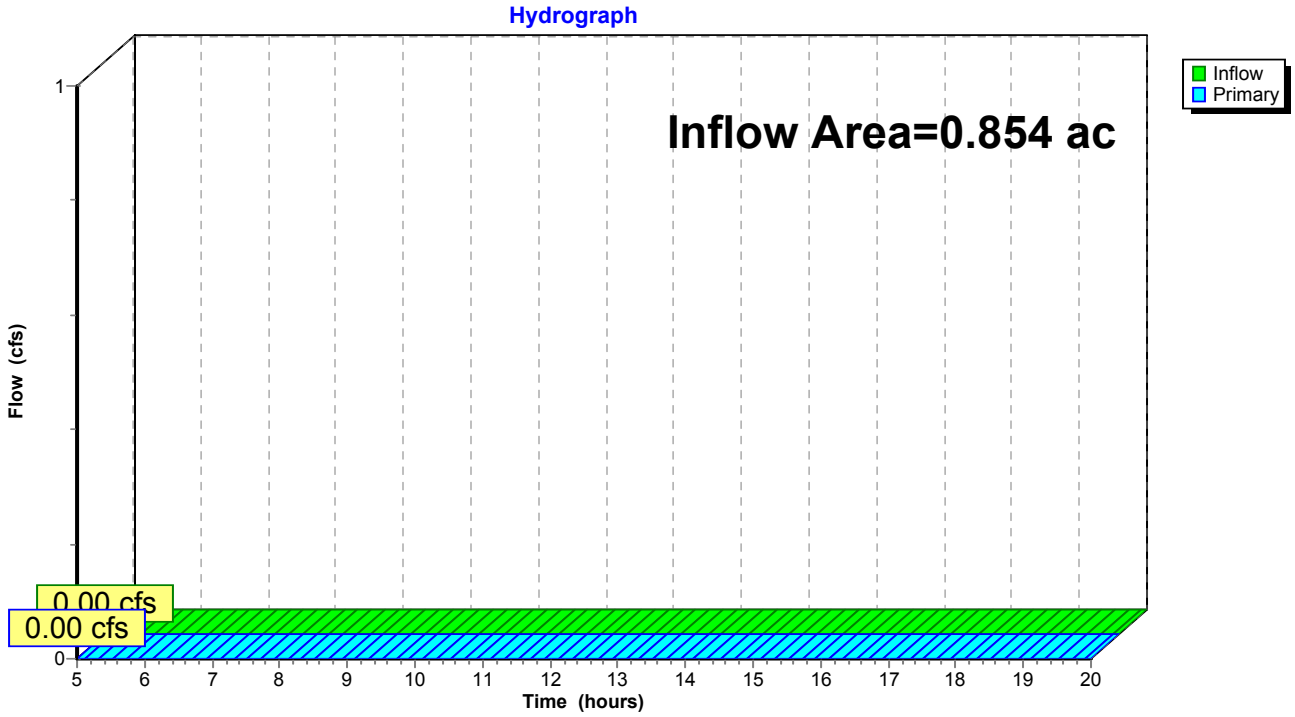


Link 2L: Total Offsite

Inflow Area = 0.854 ac, Inflow Depth = 0.00" for 2-Year Storm event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: Total Offsite



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Runoff Area=36,743 sf Runoff Depth=0.06"
Flow Length=279' Tc=12.1 min CN=34 Runoff=0.01 cfs 0.004 af

Subcatchment 2S: Runoff Area=37,180 sf Runoff Depth=0.00"
Flow Length=212' Tc=10.0 min CN=30 Runoff=0.00 cfs 0.000 af

Link 1L: Total Offsite Inflow=0.01 cfs 0.004 af
Primary=0.01 cfs 0.004 af

Link 2L: Total Offsite Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 1.697 ac Runoff Volume = 0.004 af Average Runoff Depth = 0.03"

Subcatchment 1S:

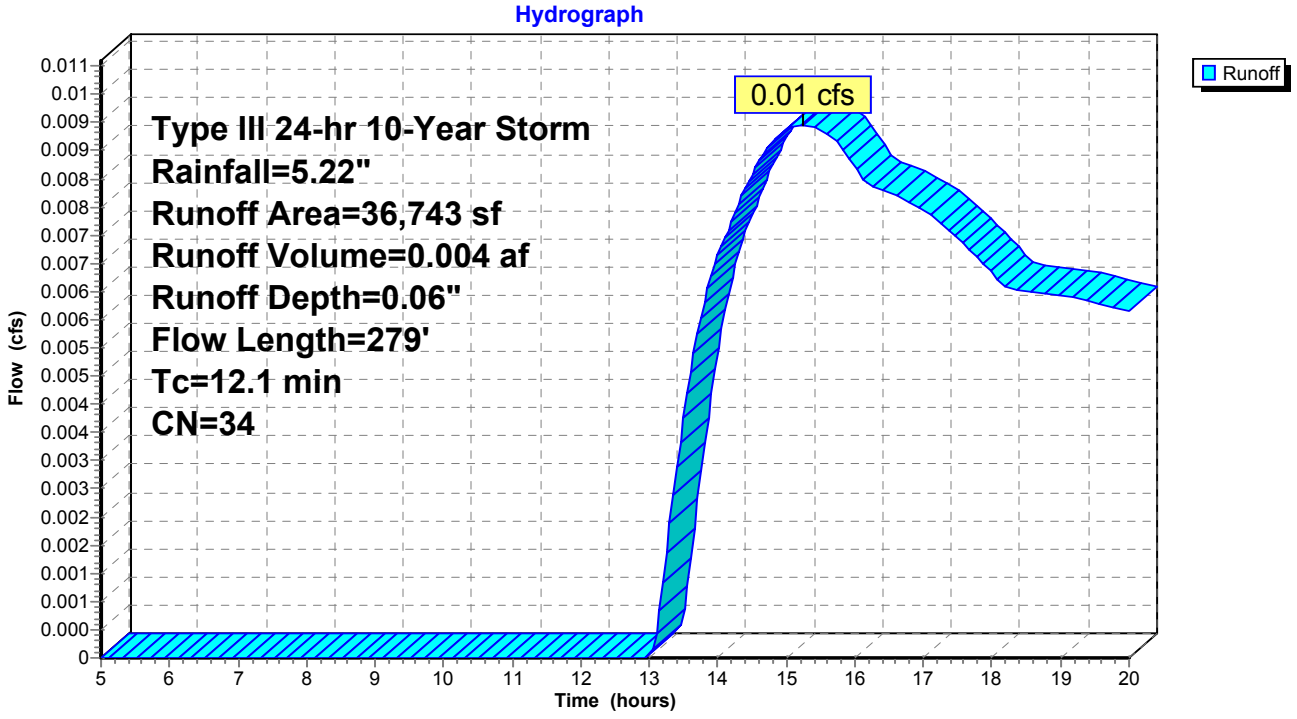
Runoff = 0.01 cfs @ 15.25 hrs, Volume= 0.004 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=5.22"

Area (sf)	CN	Description
34,749	30	Woods, Good, HSG A
1,994	98	Pavement
36,743	34	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	50	0.0600	0.1		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.31"
0.6	61	0.1300	1.8		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.7	168	0.0230	0.8		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.1	279	Total			

Subcatchment 1S:



Subcatchment 2S:

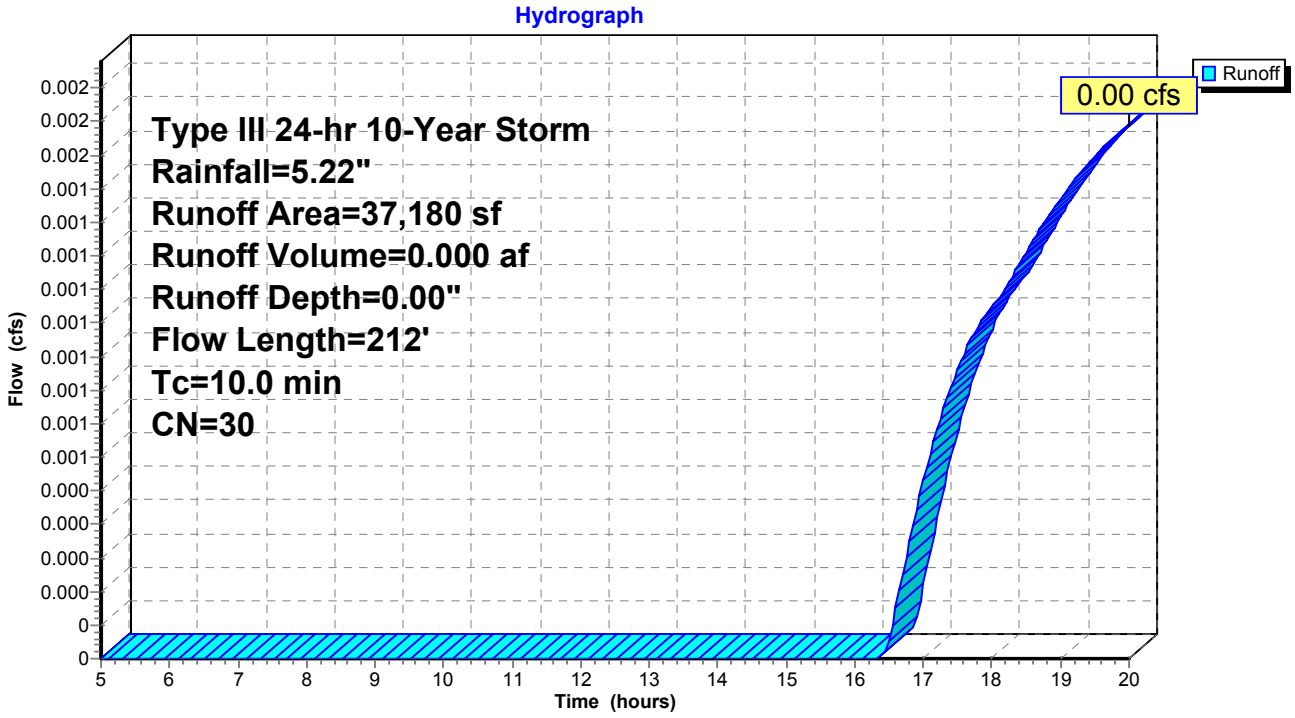
Runoff = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=5.22"

Area (sf)	CN	Description
37,180	30	Woods, Good, HSG A

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	50	0.1380	0.1		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.31"
0.8	47	0.0400	1.0		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.0	6	0.5000	3.5		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.6	109	0.0100	0.5		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.0	212	Total			

Subcatchment 2S:

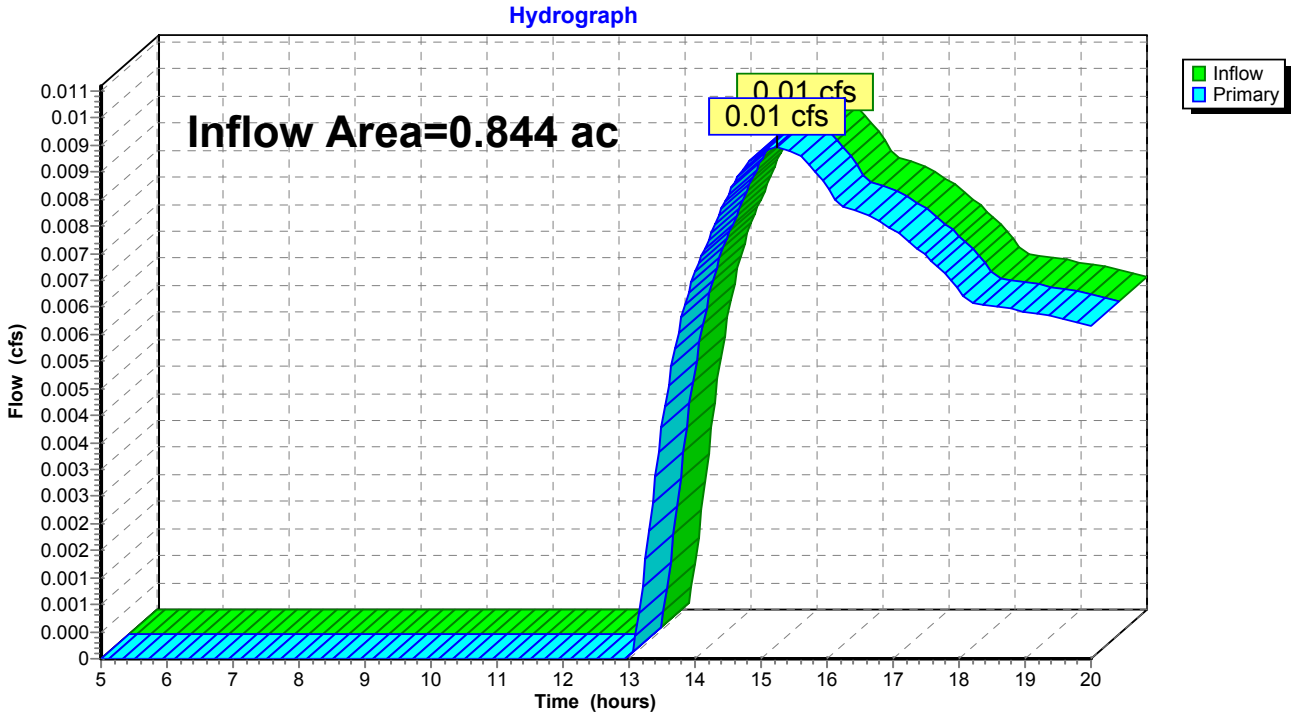


Link 1L: Total Offsite

Inflow Area = 0.844 ac, Inflow Depth = 0.06" for 10-Year Storm event
Inflow = 0.01 cfs @ 15.25 hrs, Volume= 0.004 af
Primary = 0.01 cfs @ 15.25 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: Total Offsite

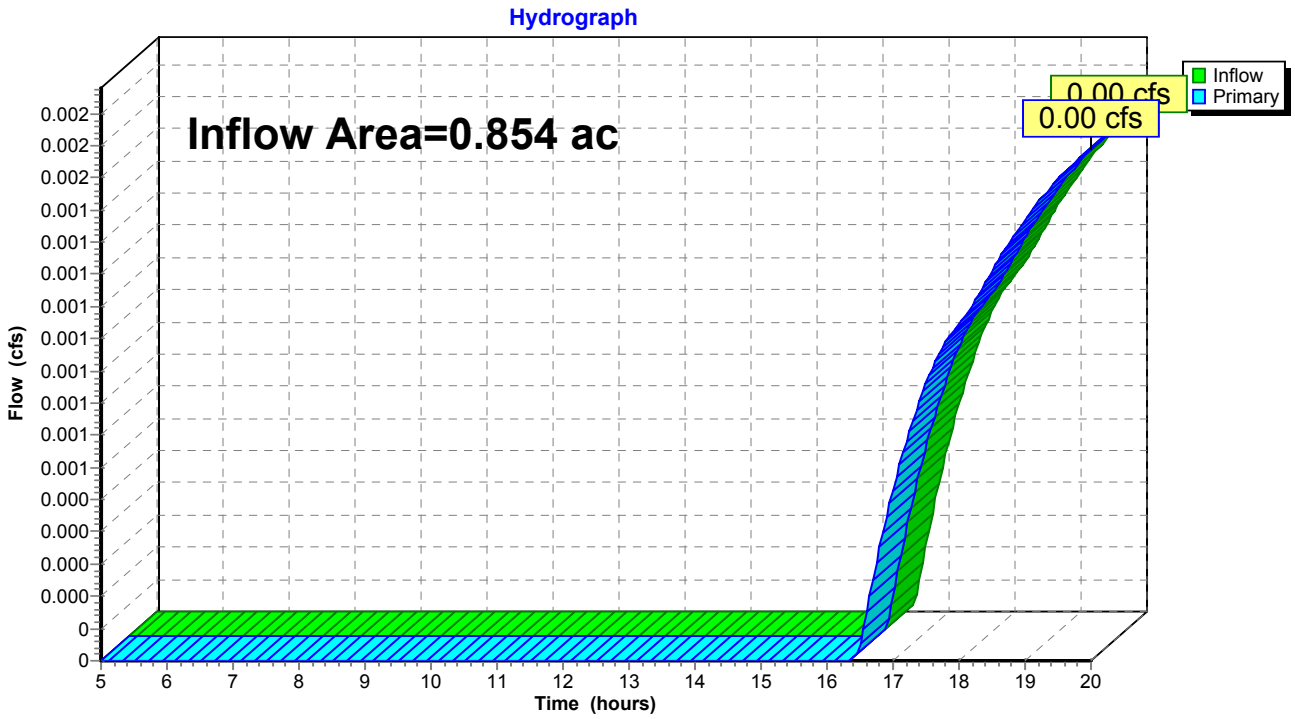


Link 2L: Total Offsite

Inflow Area = 0.854 ac, Inflow Depth = 0.00" for 10-Year Storm event
Inflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: Total Offsite



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Runoff Area=36,743 sf Runoff Depth=0.23"
Flow Length=279' Tc=12.1 min CN=34 Runoff=0.05 cfs 0.016 af

Subcatchment 2S: Runoff Area=37,180 sf Runoff Depth=0.09"
Flow Length=212' Tc=10.0 min CN=30 Runoff=0.01 cfs 0.006 af

Link 1L: Total Offsite Inflow=0.05 cfs 0.016 af
Primary=0.05 cfs 0.016 af

Link 2L: Total Offsite Inflow=0.01 cfs 0.006 af
Primary=0.01 cfs 0.006 af

Total Runoff Area = 1.697 ac Runoff Volume = 0.022 af Average Runoff Depth = 0.16"

Subcatchment 1S:

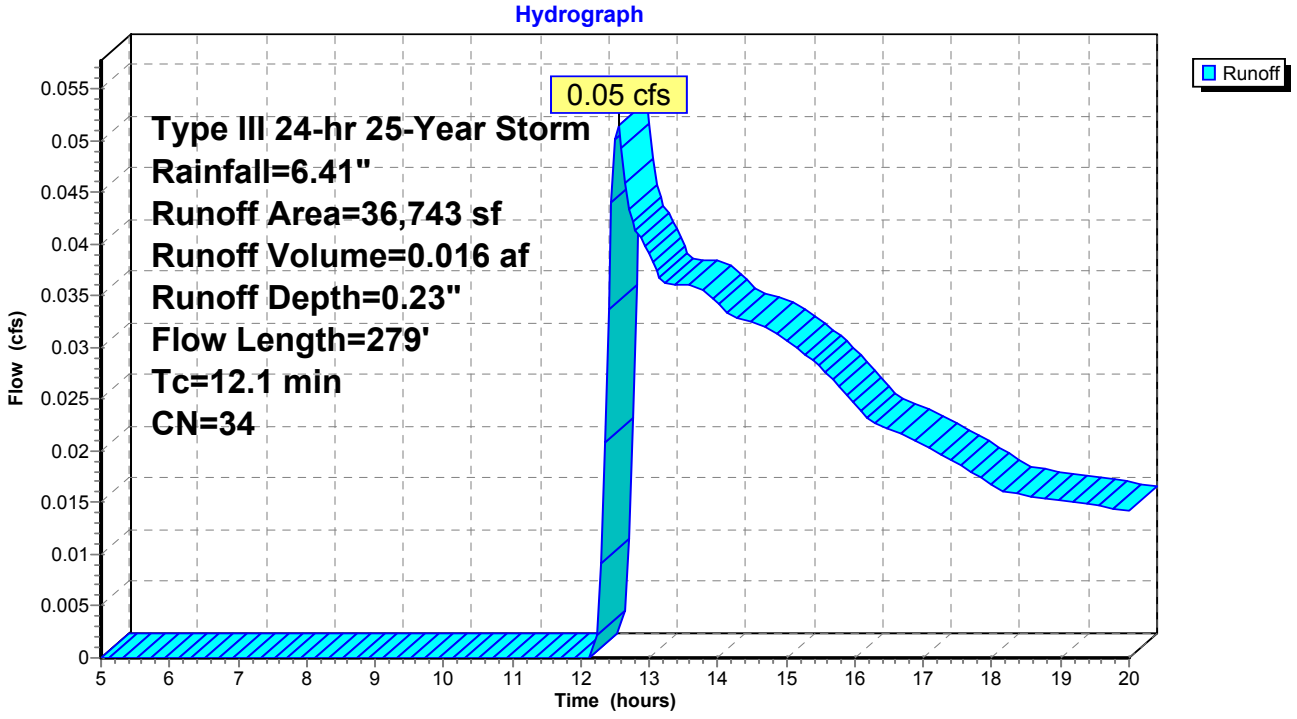
Runoff = 0.05 cfs @ 12.54 hrs, Volume= 0.016 af, Depth= 0.23"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=6.41"

Area (sf)	CN	Description
34,749	30	Woods, Good, HSG A
1,994	98	Pavement
36,743	34	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	50	0.0600	0.1		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.31"
0.6	61	0.1300	1.8		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.7	168	0.0230	0.8		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.1	279	Total			

Subcatchment 1S:



Subcatchment 2S:

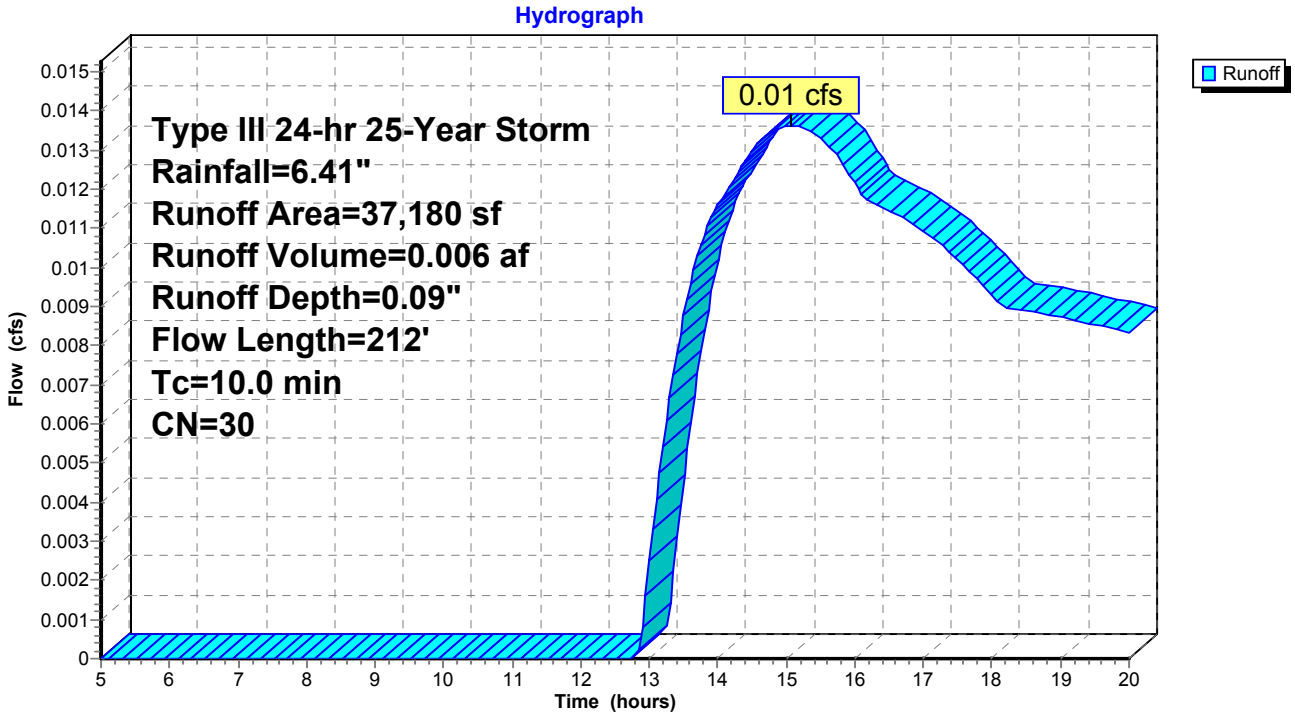
Runoff = 0.01 cfs @ 15.07 hrs, Volume= 0.006 af, Depth= 0.09"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=6.41"

Area (sf)	CN	Description
37,180	30	Woods, Good, HSG A

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	50	0.1380	0.1		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.31"
0.8	47	0.0400	1.0		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.0	6	0.5000	3.5		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.6	109	0.0100	0.5		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.0	212	Total			

Subcatchment 2S:

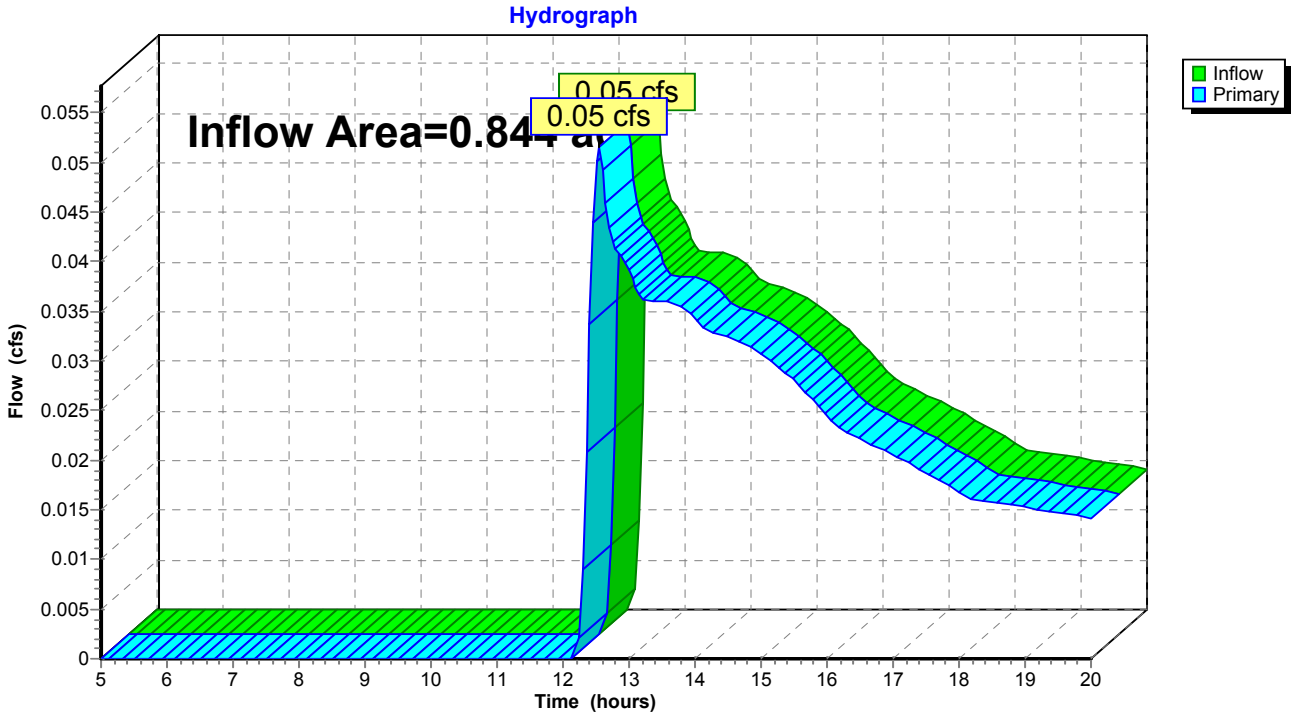


Link 1L: Total Offsite

Inflow Area = 0.844 ac, Inflow Depth = 0.23" for 25-Year Storm event
Inflow = 0.05 cfs @ 12.54 hrs, Volume= 0.016 af
Primary = 0.05 cfs @ 12.54 hrs, Volume= 0.016 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: Total Offsite

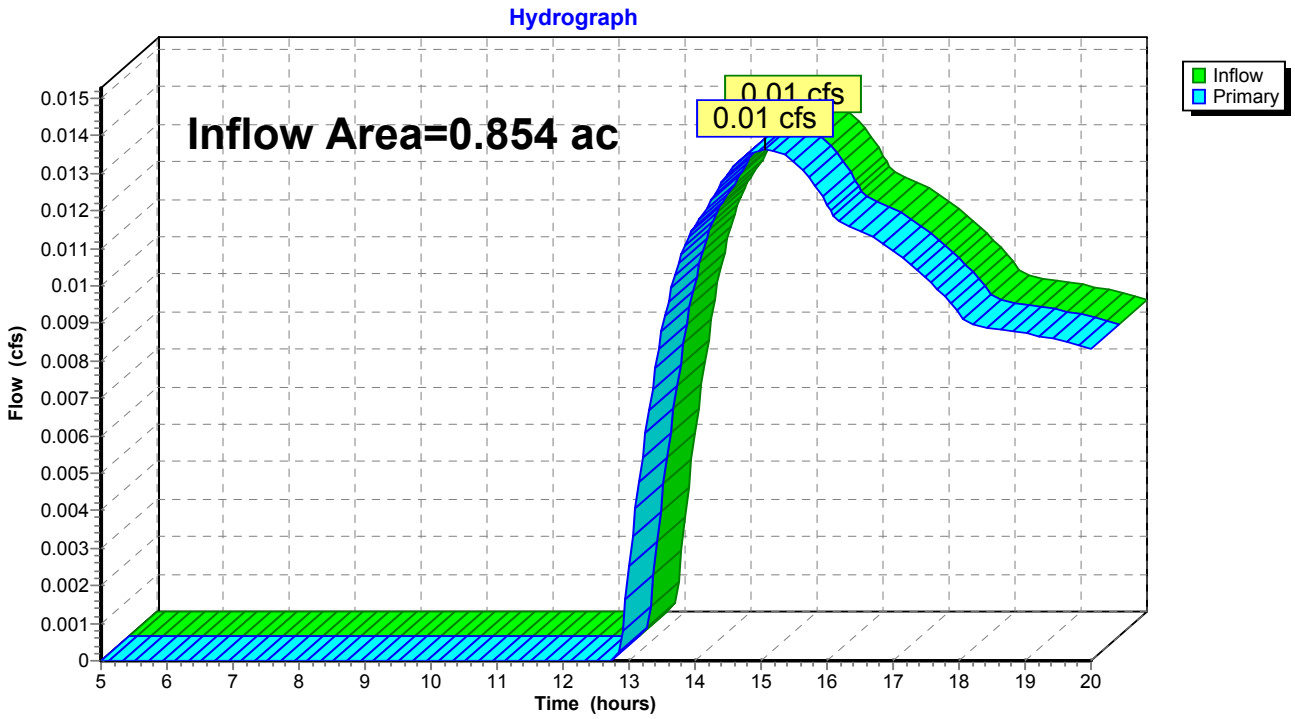


Link 2L: Total Offsite

Inflow Area = 0.854 ac, Inflow Depth = 0.09" for 25-Year Storm event
Inflow = 0.01 cfs @ 15.07 hrs, Volume= 0.006 af
Primary = 0.01 cfs @ 15.07 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: Total Offsite



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Runoff Area=36,743 sf Runoff Depth=0.68"
Flow Length=279' Tc=12.1 min CN=34 Runoff=0.31 cfs 0.048 af

Subcatchment 2S: Runoff Area=37,180 sf Runoff Depth=0.39"
Flow Length=212' Tc=10.0 min CN=30 Runoff=0.12 cfs 0.028 af

Link 1L: Total Offsite Inflow=0.31 cfs 0.048 af
Primary=0.31 cfs 0.048 af

Link 2L: Total Offsite Inflow=0.12 cfs 0.028 af
Primary=0.12 cfs 0.028 af

Total Runoff Area = 1.697 ac Runoff Volume = 0.076 af Average Runoff Depth = 0.53"

Subcatchment 1S:

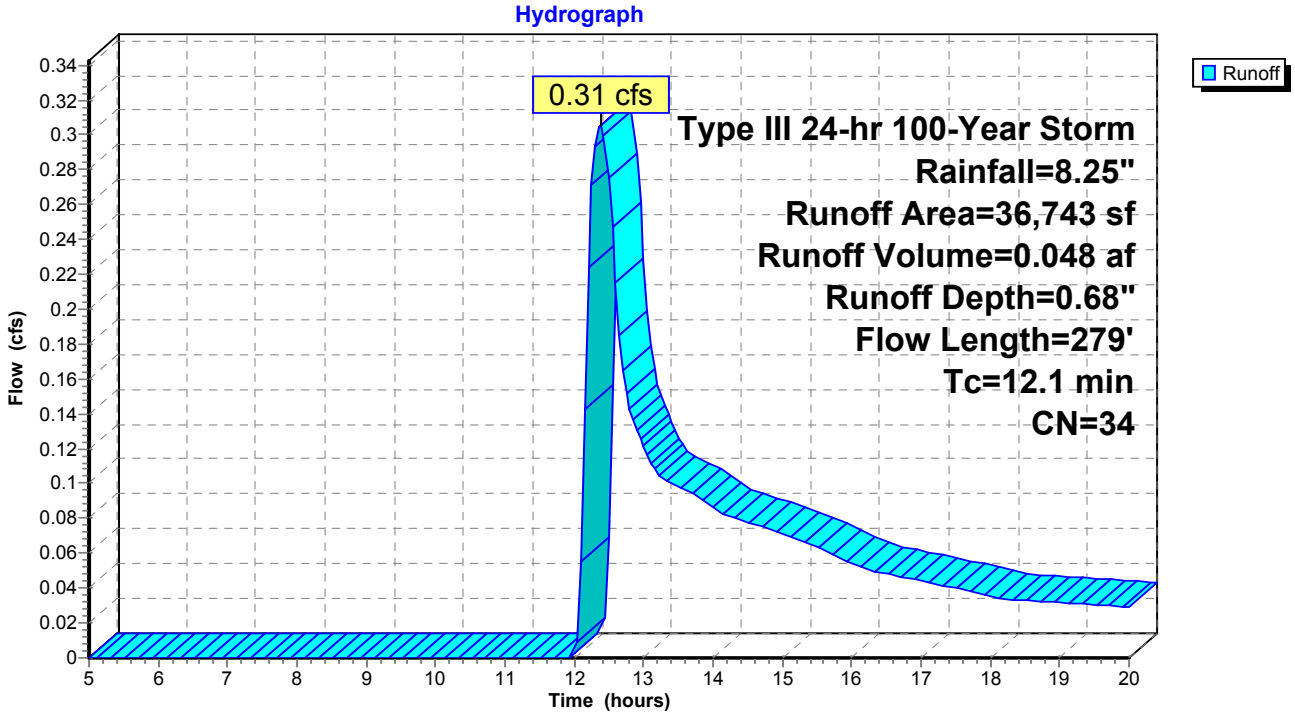
Runoff = 0.31 cfs @ 12.38 hrs, Volume= 0.048 af, Depth= 0.68"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Storm Rainfall=8.25"

Area (sf)	CN	Description
34,749	30	Woods, Good, HSG A
1,994	98	Pavement
36,743	34	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.8	50	0.0600	0.1		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.31"
0.6	61	0.1300	1.8		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.7	168	0.0230	0.8		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.1	279	Total			

Subcatchment 1S:



Subcatchment 2S:

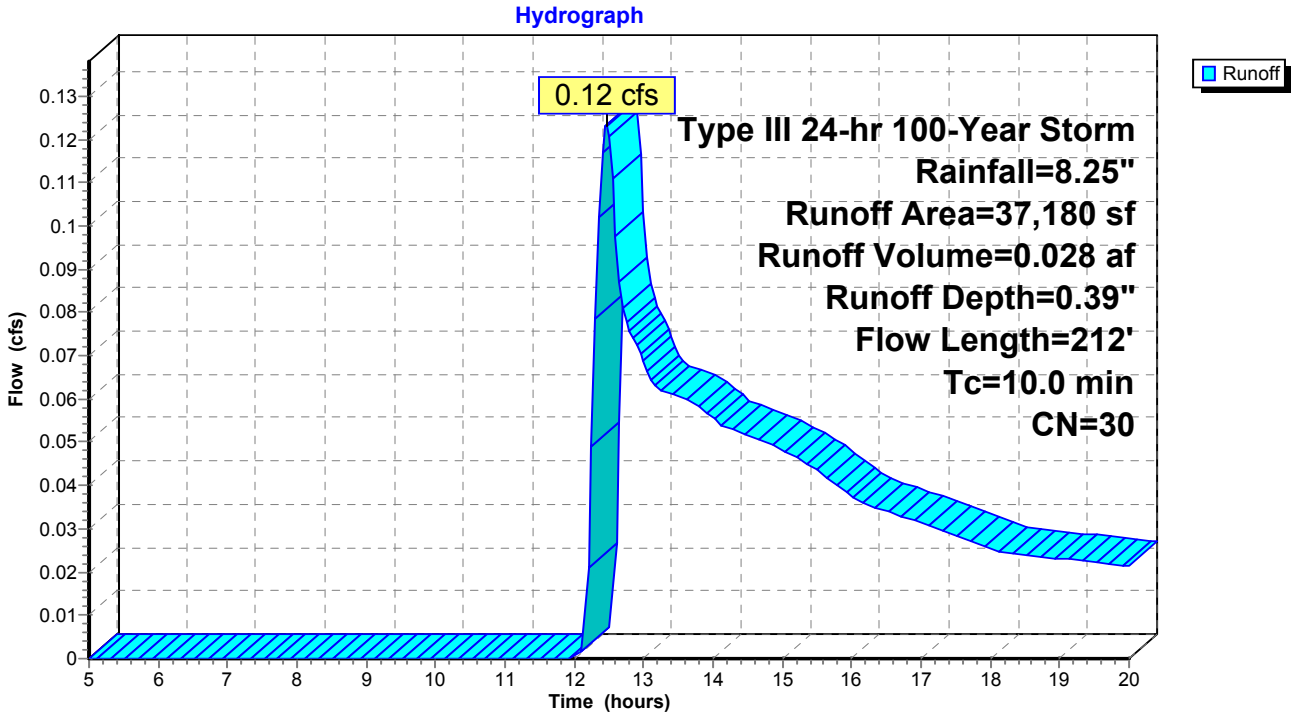
Runoff = 0.12 cfs @ 12.46 hrs, Volume= 0.028 af, Depth= 0.39"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Storm Rainfall=8.25"

Area (sf)	CN	Description
37,180	30	Woods, Good, HSG A

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	50	0.1380	0.1		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.31"
0.8	47	0.0400	1.0		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.0	6	0.5000	3.5		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.6	109	0.0100	0.5		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.0	212	Total			

Subcatchment 2S:

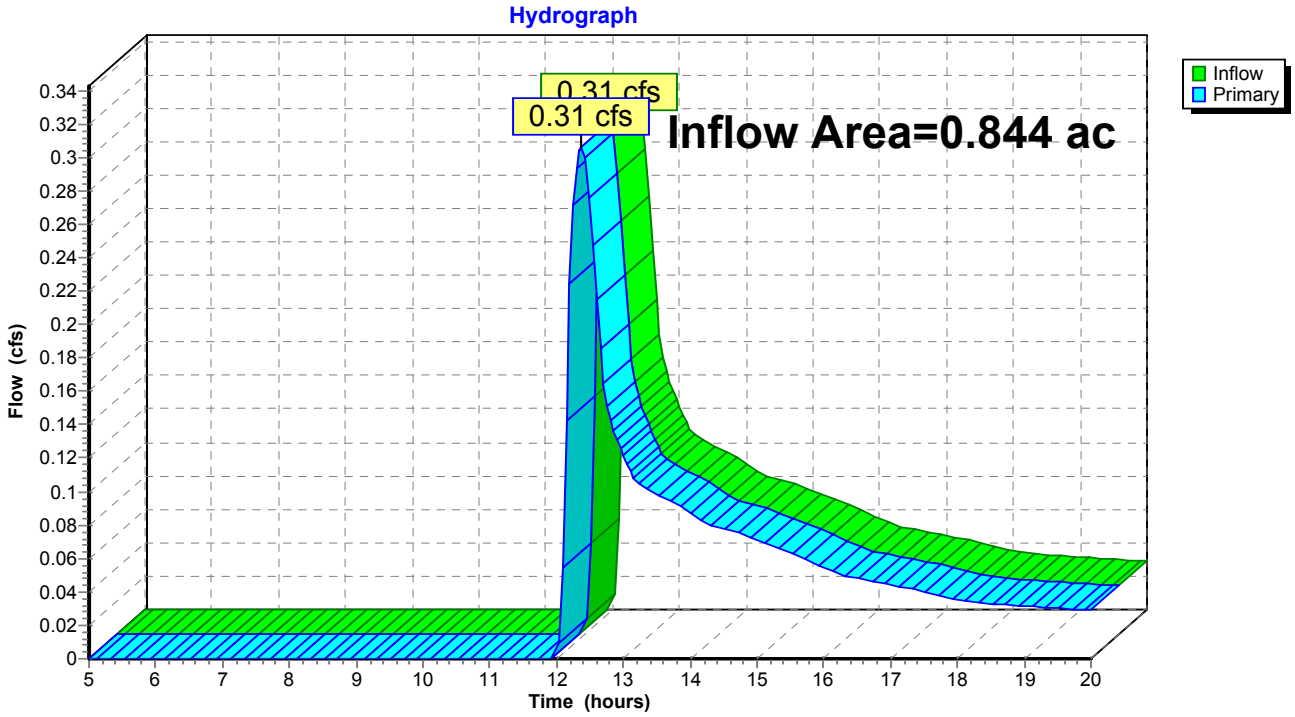


Link 1L: Total Offsite

Inflow Area = 0.844 ac, Inflow Depth = 0.68" for 100-Year Storm event
Inflow = 0.31 cfs @ 12.38 hrs, Volume= 0.048 af
Primary = 0.31 cfs @ 12.38 hrs, Volume= 0.048 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: Total Offsite

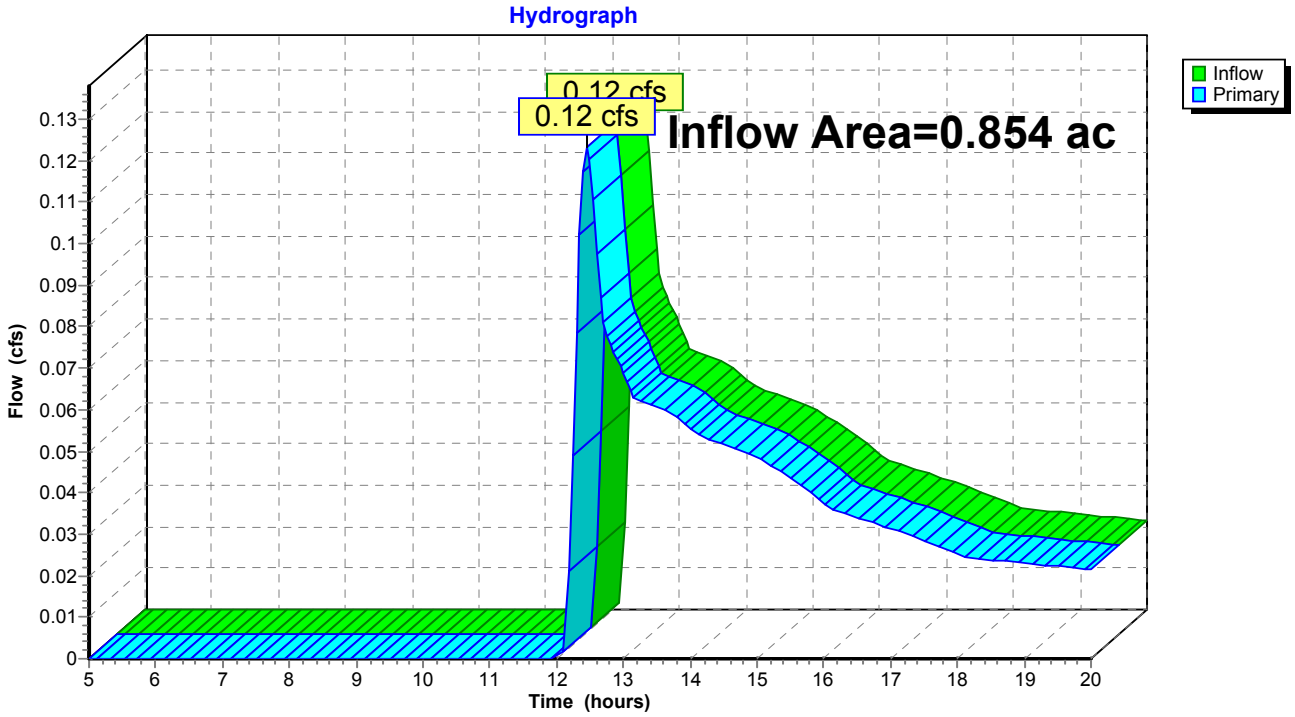


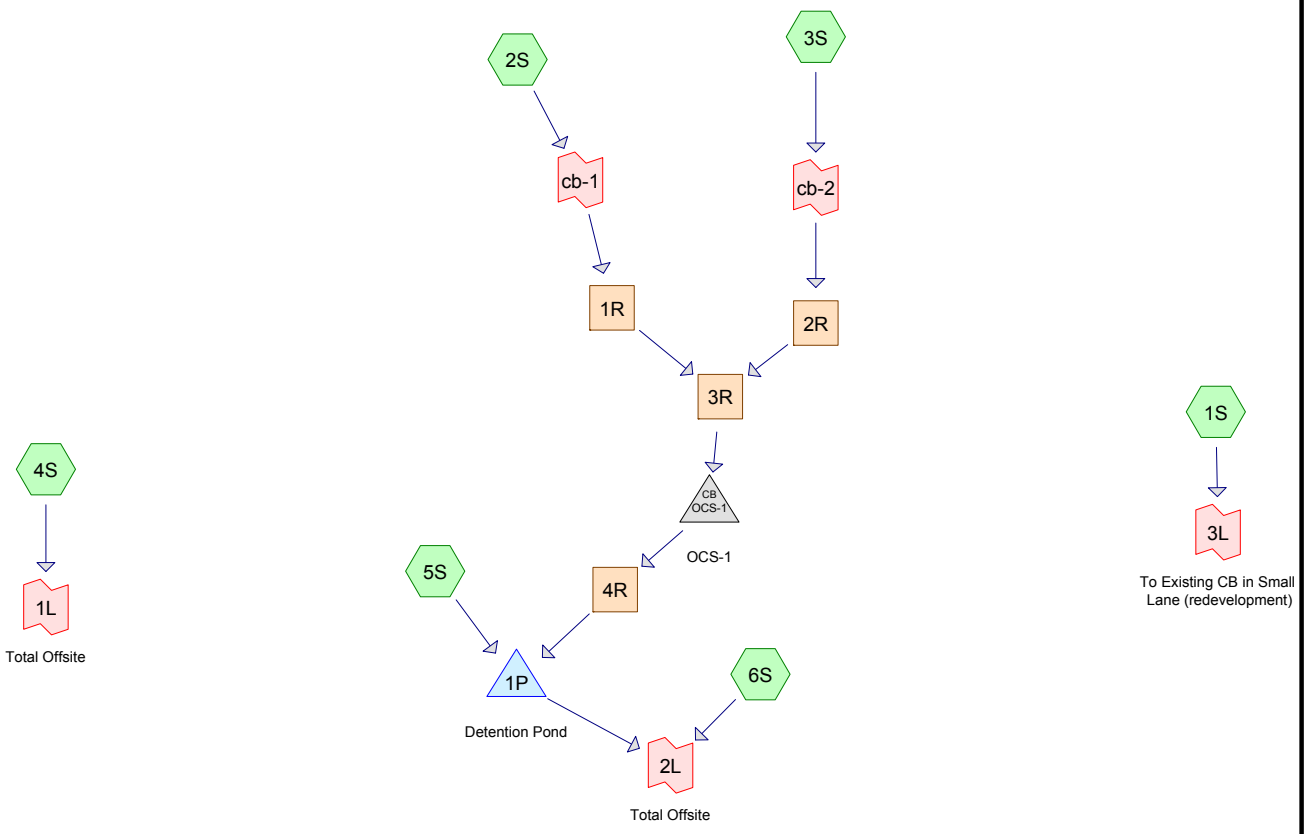
Link 2L: Total Offsite

Inflow Area = 0.854 ac, Inflow Depth = 0.39" for 100-Year Storm event
Inflow = 0.12 cfs @ 12.46 hrs, Volume= 0.028 af
Primary = 0.12 cfs @ 12.46 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: Total Offsite





Subcat Reach Pond Link

Drainage Diagram for Postdevelopment

Prepared by Sullivan Engineering Group, LLC 9/23/2025

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Runoff Area=2,120 sf Runoff Depth=1.50"
Tc=6.0 min CN=89 Runoff=0.09 cfs 0.006 af

Subcatchment 2S: Runoff Area=6,580 sf Runoff Depth=2.10"
Tc=6.0 min CN=96 Runoff=0.36 cfs 0.026 af

Subcatchment 3S: Runoff Area=6,474 sf Runoff Depth=2.20"
Tc=6.0 min CN=97 Runoff=0.37 cfs 0.027 af

Subcatchment 4S: Runoff Area=19,131 sf Runoff Depth=0.00"
Tc=6.0 min CN=34 Runoff=0.00 cfs 0.000 af

Subcatchment 5S: Runoff Area=12,045 sf Runoff Depth=0.03"
Flow Length=149' Tc=12.6 min CN=50 Runoff=0.00 cfs 0.001 af

Subcatchment 6S: Runoff Area=25,135 sf Runoff Depth=0.00"
Flow Length=144' Tc=11.3 min CN=30 Runoff=0.00 cfs 0.000 af

Reach 1R: Peak Depth=0.24' Max Vel=2.6 fps Inflow=0.36 cfs 0.026 af
D=12.0" n=0.011 L=22.0' S=0.0050 '/' Capacity=2.98 cfs Outflow=0.36 cfs 0.026 af

Reach 2R: Peak Depth=0.22' Max Vel=2.9 fps Inflow=0.37 cfs 0.027 af
D=12.0" n=0.011 L=16.0' S=0.0069 '/' Capacity=3.49 cfs Outflow=0.37 cfs 0.027 af

Reach 3R: Peak Depth=0.34' Max Vel=3.1 fps Inflow=0.73 cfs 0.054 af
D=12.0" n=0.011 L=213.0' S=0.0050 '/' Capacity=2.97 cfs Outflow=0.69 cfs 0.054 af

Reach 4R: Peak Depth=0.33' Max Vel=3.1 fps Inflow=0.69 cfs 0.054 af
D=12.0" n=0.011 L=111.0' S=0.0050 '/' Capacity=2.96 cfs Outflow=0.67 cfs 0.054 af

Pond 1P: Detention Pond Peak Elev=82.14' Storage=120 cf Inflow=0.67 cfs 0.054 af
Discarded=0.51 cfs 0.054 af Primary=0.00 cfs 0.000 af Outflow=0.51 cfs 0.054 af

Pond OCS-1: OCS-1 Peak Elev=83.17' Inflow=0.69 cfs 0.054 af
Outflow=0.69 cfs 0.054 af

Link 1L: Total Offsite Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link 2L: Total Offsite Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link 3L: To Existing CB in Small Lane (redevelopment) Inflow=0.09 cfs 0.006 af
Primary=0.09 cfs 0.006 af

Link cb-1: Inflow=0.36 cfs 0.026 af
Primary=0.36 cfs 0.026 af

Link cb-2: Inflow=0.37 cfs 0.027 af
Primary=0.37 cfs 0.027 af

Total Runoff Area = 1.641 ac Runoff Volume = 0.060 af Average Runoff Depth = 0.44"

Subcatchment 1S:

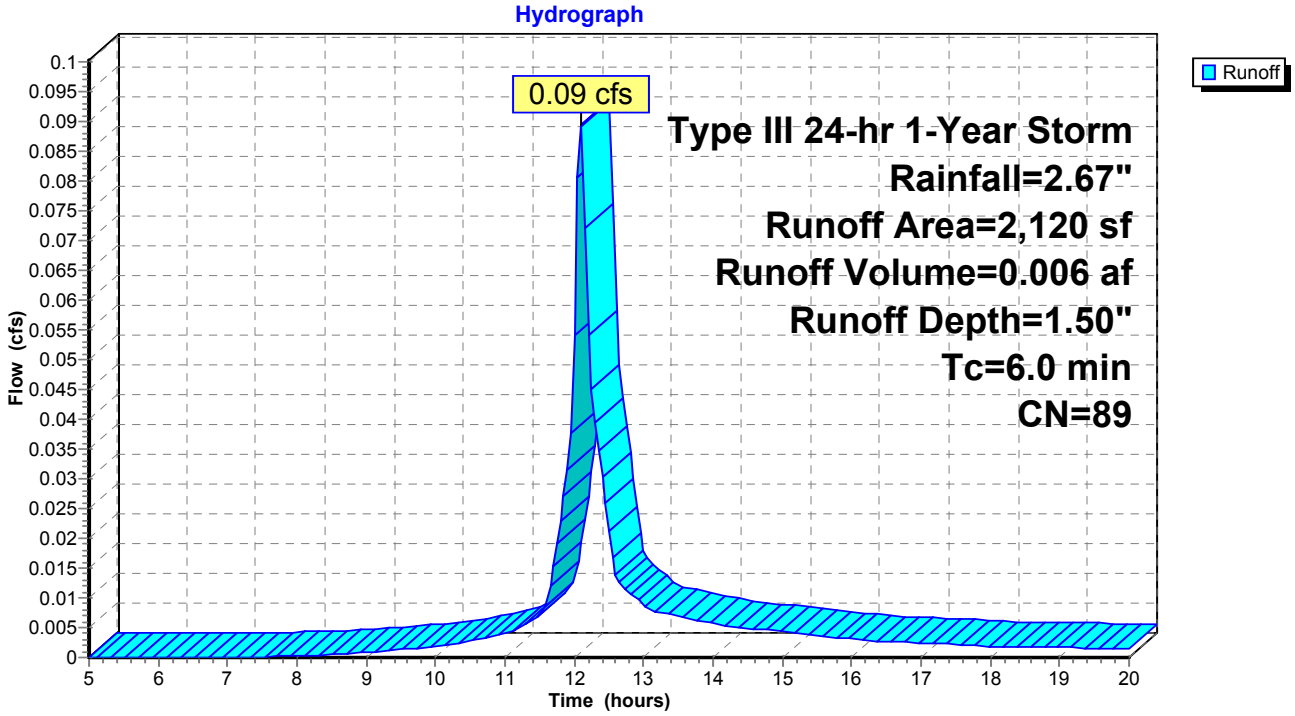
Runoff = 0.09 cfs @ 12.09 hrs, Volume= 0.006 af, Depth= 1.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Storm Rainfall=2.67"

Area (sf)	CN	Description
1,796	98	Pavement/Curb
324	39	>75% Grass cover, Good, HSG A
2,120	89	Weighted Average

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

Subcatchment 1S:



Subcatchment 2S:

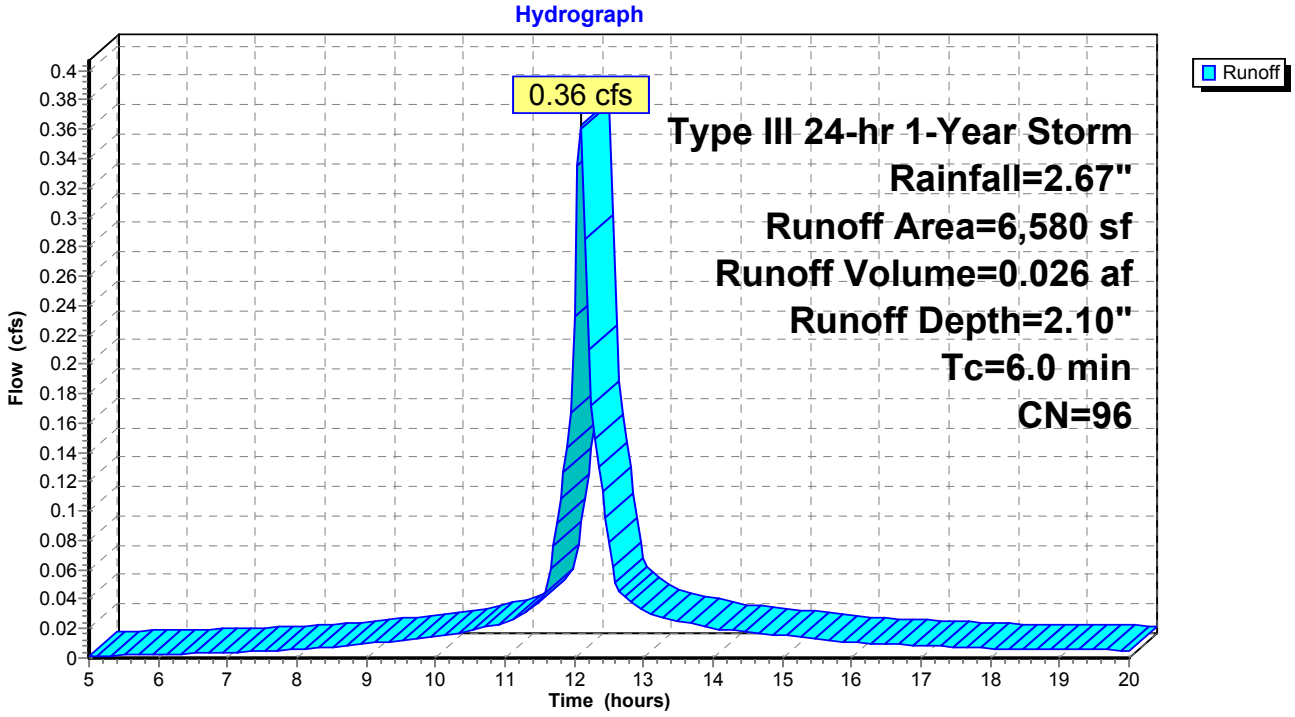
Runoff = 0.36 cfs @ 12.09 hrs, Volume= 0.026 af, Depth= 2.10"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Storm Rainfall=2.67"

Area (sf)	CN	Description
6,204	98	Roadway pavement/curb
198	98	Driveway Apron
178	39	>75% Grass cover, Good, HSG A
6,580	96	Weighted Average

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

Subcatchment 2S:



Subcatchment 3S:

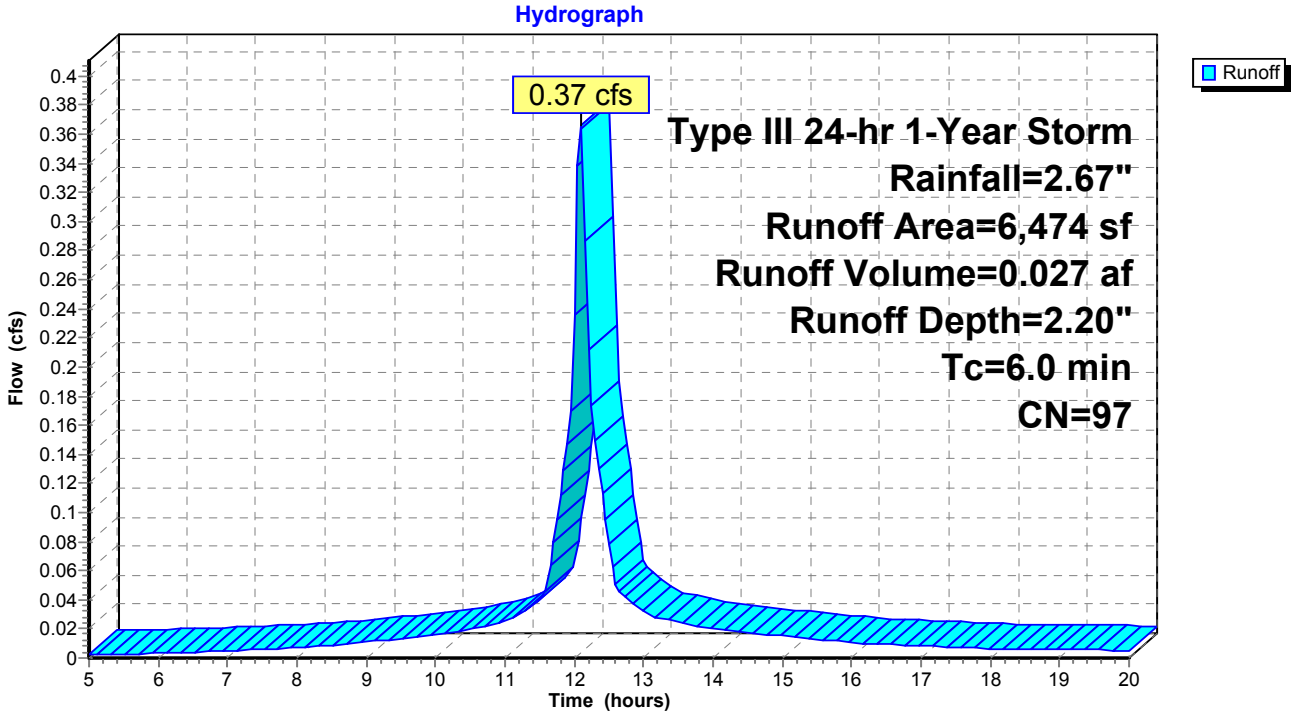
Runoff = 0.37 cfs @ 12.09 hrs, Volume= 0.027 af, Depth= 2.20"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Storm Rainfall=2.67"

Area (sf)	CN	Description
6,204	98	roadway pavement/curb
198	98	driveway apron
72	39	>75% Grass cover, Good, HSG A
6,474	97	Weighted Average

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

Subcatchment 3S:



Subcatchment 4S:

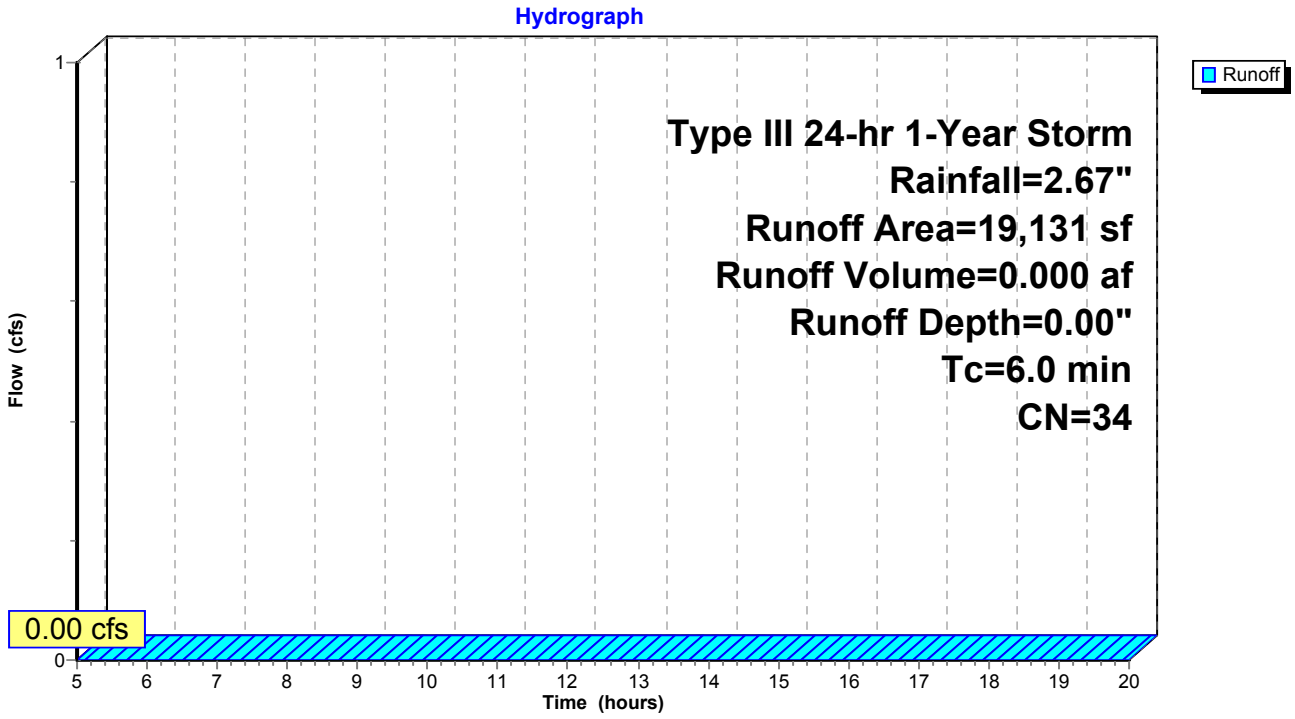
Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Storm Rainfall=2.67"

Area (sf)	CN	Description
14,635	30	Woods, Good, HSG A
560	98	ret. walls
3,936	39	>75% Grass cover, Good, HSG A
19,131	34	Weighted Average

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

Subcatchment 4S:



Subcatchment 5S:

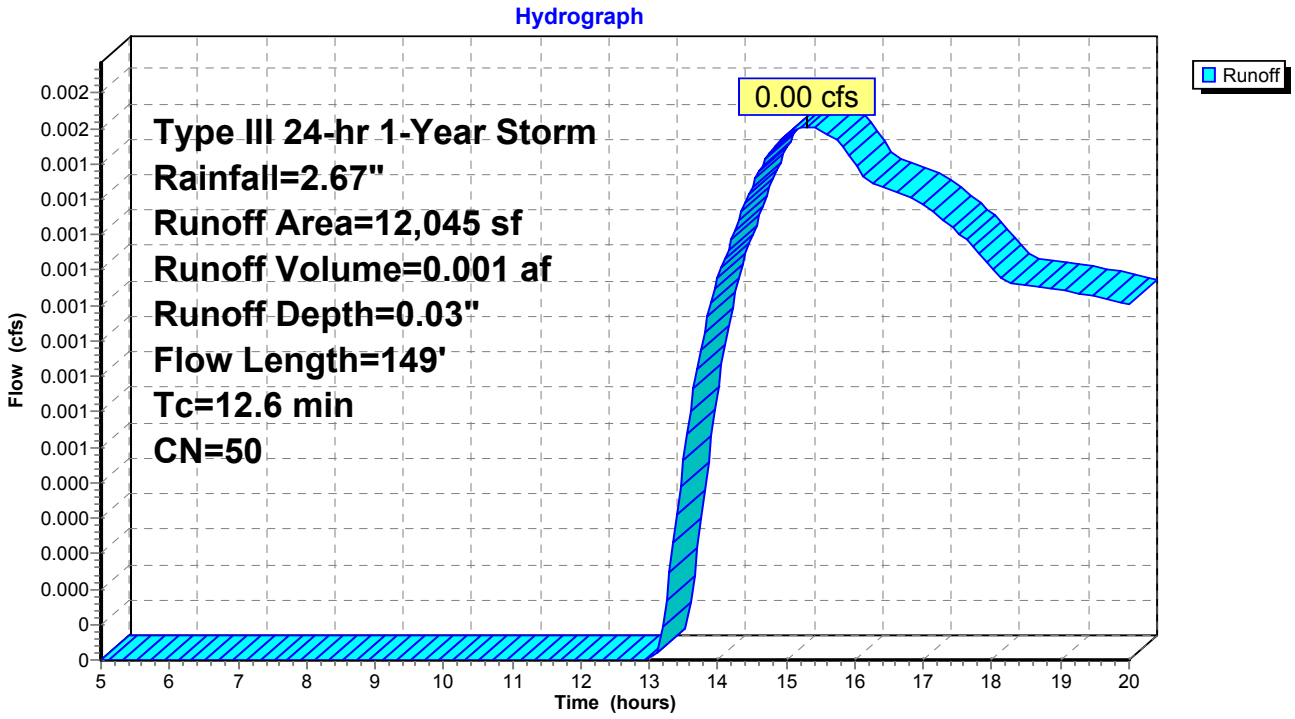
Runoff = 0.00 cfs @ 15.31 hrs, Volume= 0.001 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Storm Rainfall=2.67"

Area (sf)	CN	Description
9,759	39	>75% Grass cover, Good, HSG A
2,286	98	House Roof (Lot A)
12,045	50	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	50	0.0050	0.1		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
0.5	20	0.0100	0.7		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.0	12	0.3300	4.0		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	67	0.0050	0.5		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.6	149	Total			

Subcatchment 5S:



Subcatchment 6S:

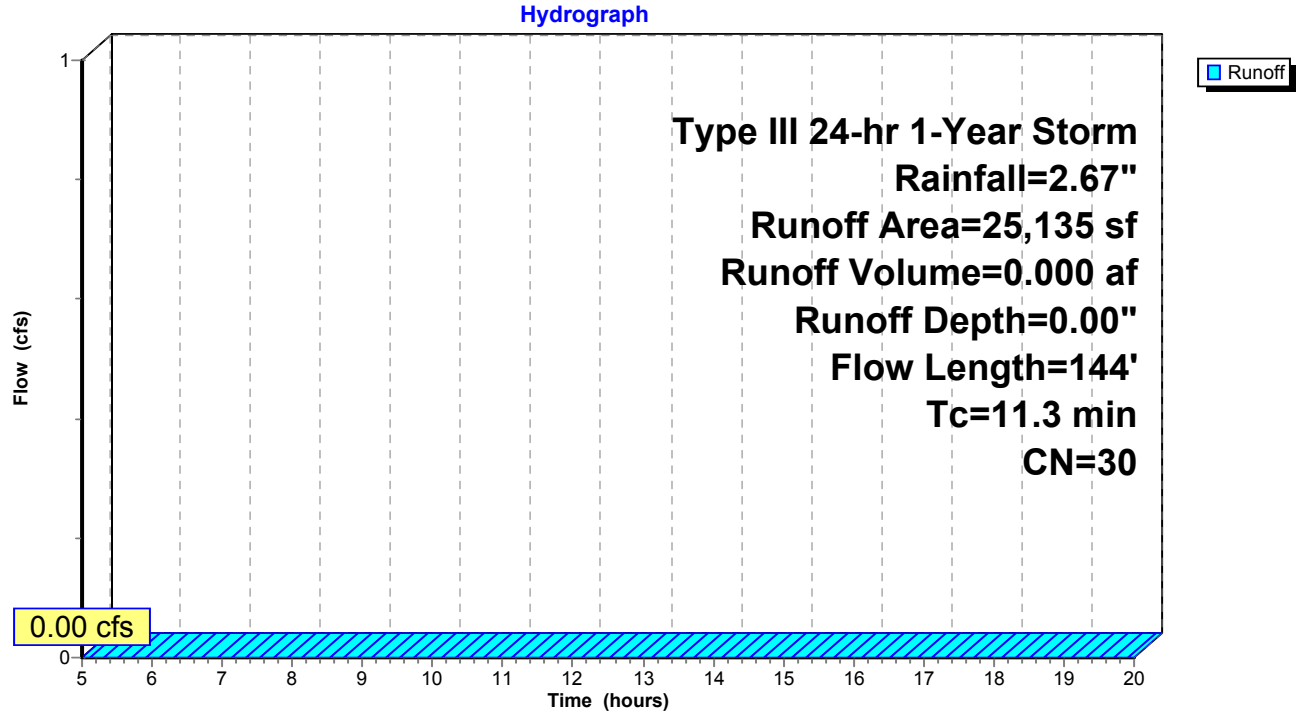
Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Storm Rainfall=2.67"

Area (sf)	CN	Description
25,135	30	Woods, Good, HSG A

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	50	0.0050	0.1		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
1.0	40	0.0100	0.7		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	54	0.1500	1.9		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.3	144	Total			

Subcatchment 6S:



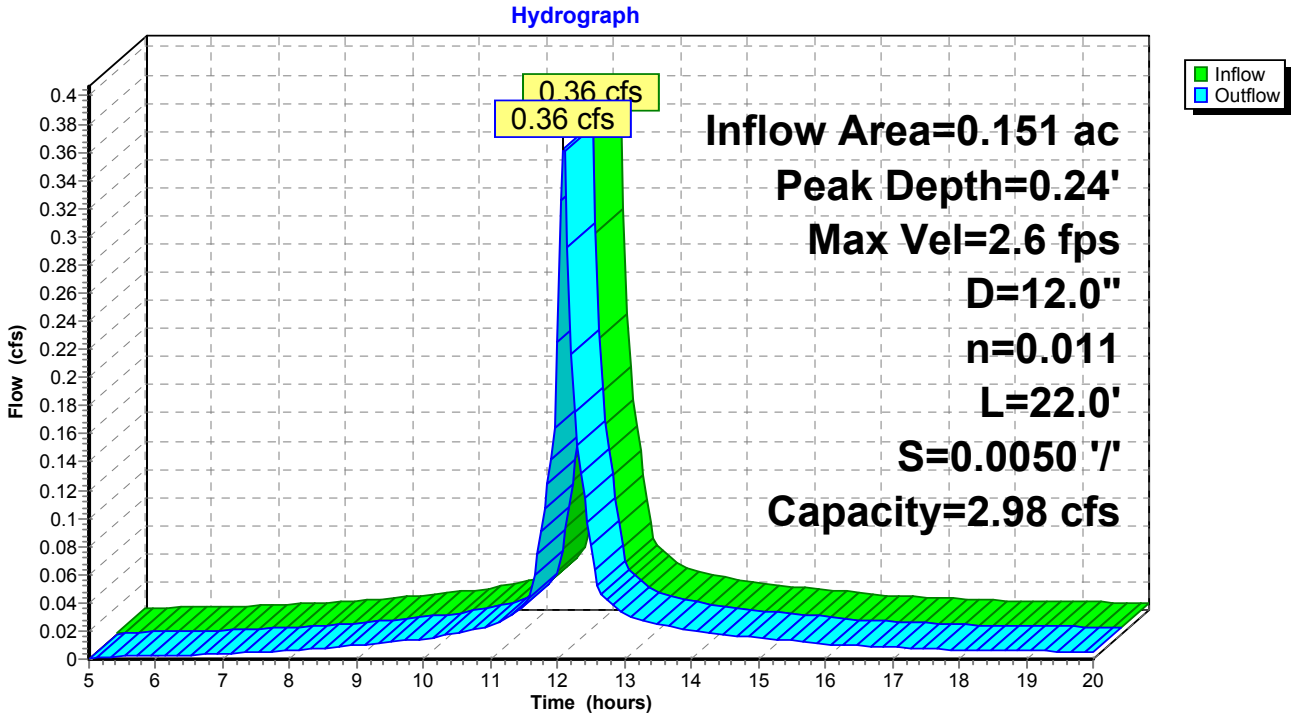
Reach 1R:

Inflow Area = 0.151 ac, Inflow Depth = 2.10" for 1-Year Storm event
Inflow = 0.36 cfs @ 12.09 hrs, Volume= 0.026 af
Outflow = 0.36 cfs @ 12.09 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.6 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 0.9 fps, Avg. Travel Time= 0.4 min

Peak Depth= 0.24' @ 12.09 hrs
Capacity at bank full= 2.98 cfs
Inlet Invert= 83.17', Outlet Invert= 83.06'
12.0" Diameter Pipe n= 0.011 Length= 22.0' Slope= 0.0050 '/'

Reach 1R:



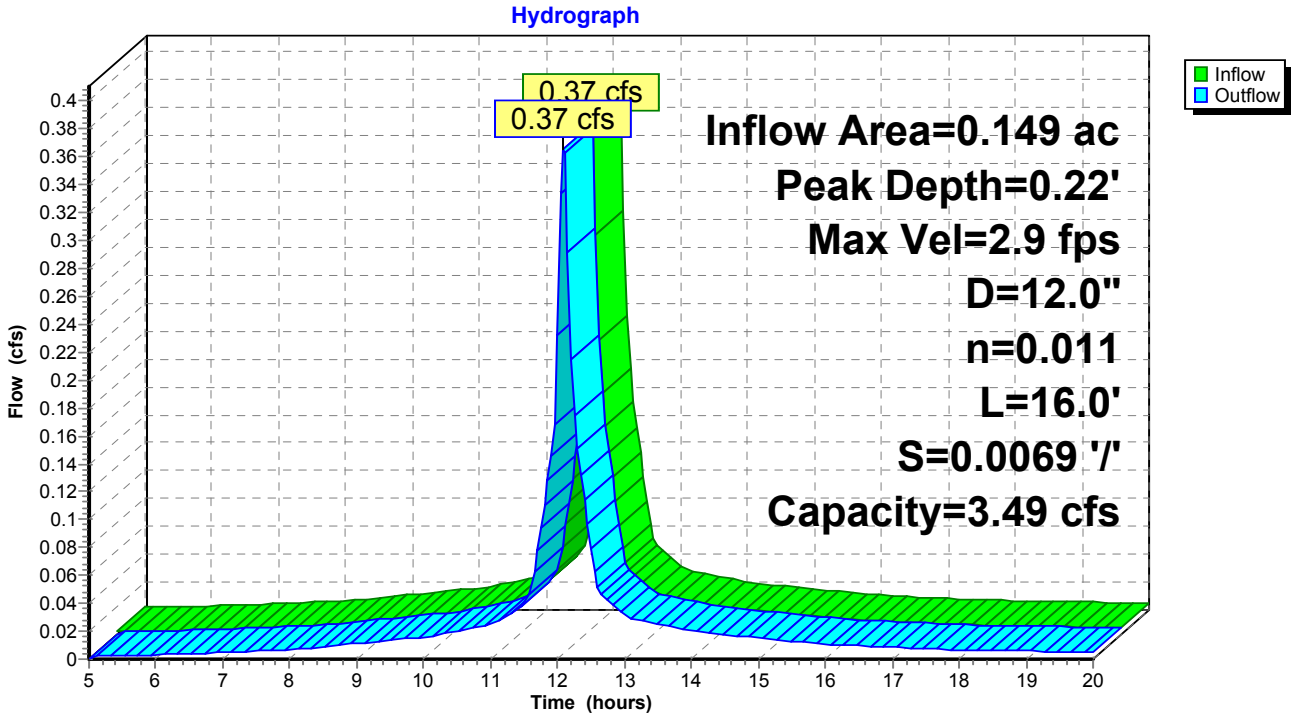
Reach 2R:

Inflow Area = 0.149 ac, Inflow Depth = 2.20" for 1-Year Storm event
Inflow = 0.37 cfs @ 12.09 hrs, Volume= 0.027 af
Outflow = 0.37 cfs @ 12.09 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.9 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.1 fps, Avg. Travel Time= 0.2 min

Peak Depth= 0.22' @ 12.09 hrs
Capacity at bank full= 3.49 cfs
Inlet Invert= 83.17', Outlet Invert= 83.06'
12.0" Diameter Pipe n= 0.011 Length= 16.0' Slope= 0.0069 '/'

Reach 2R:



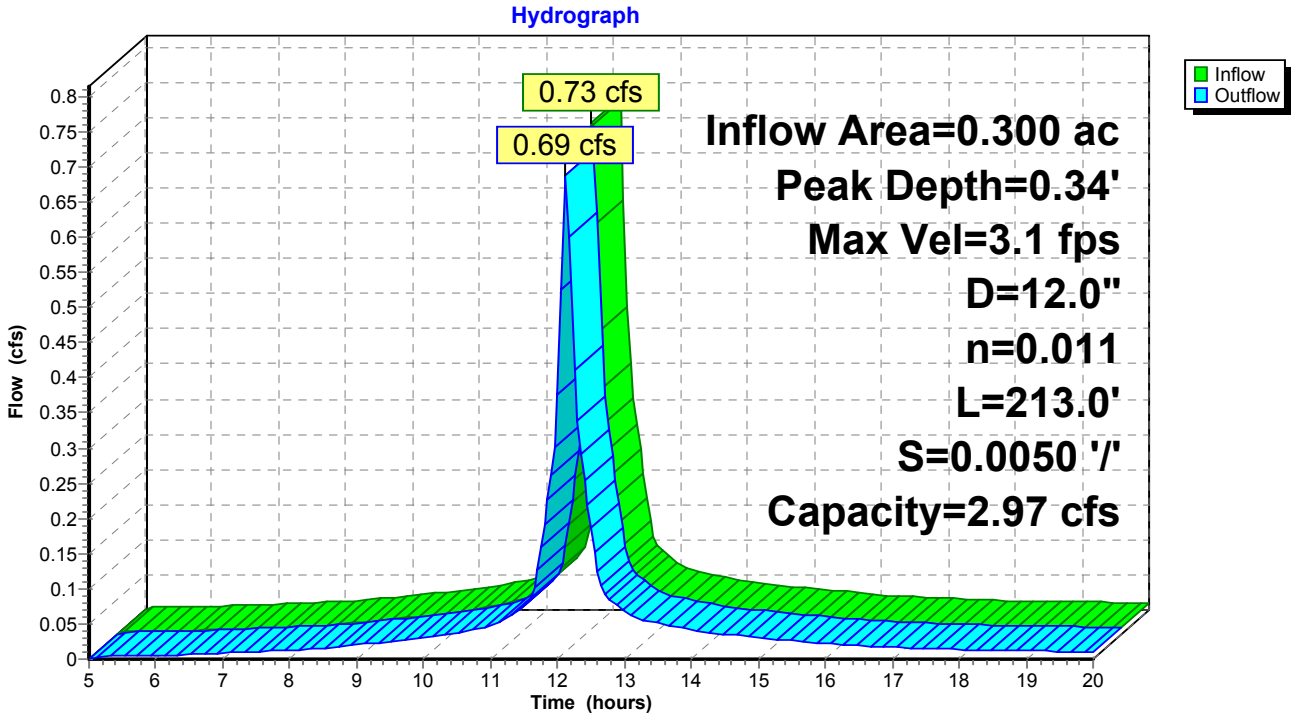
Reach 3R:

Inflow Area = 0.300 ac, Inflow Depth = 2.15" for 1-Year Storm event
Inflow = 0.73 cfs @ 12.09 hrs, Volume= 0.054 af
Outflow = 0.69 cfs @ 12.12 hrs, Volume= 0.054 af, Atten= 5%, Lag= 2.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.1 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 1.2 fps, Avg. Travel Time= 3.0 min

Peak Depth= 0.34' @ 12.10 hrs
Capacity at bank full= 2.97 cfs
Inlet Invert= 83.06', Outlet Invert= 82.00'
12.0" Diameter Pipe n= 0.011 Length= 213.0' Slope= 0.0050 '/'

Reach 3R:



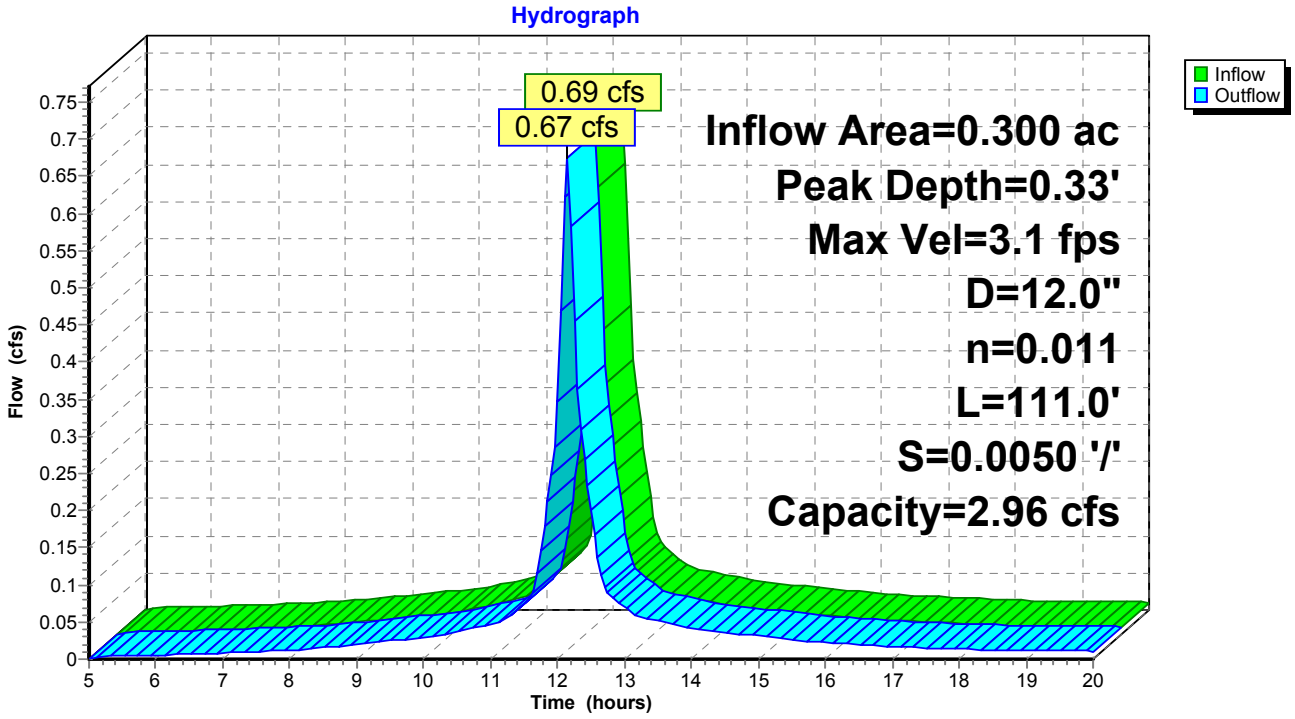
Reach 4R:

Inflow Area = 0.300 ac, Inflow Depth = 2.15" for 1-Year Storm event
Inflow = 0.69 cfs @ 12.12 hrs, Volume= 0.054 af
Outflow = 0.67 cfs @ 12.14 hrs, Volume= 0.054 af, Atten= 2%, Lag= 1.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.1 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 1.2 fps, Avg. Travel Time= 1.6 min

Peak Depth= 0.33' @ 12.13 hrs
Capacity at bank full= 2.96 cfs
Inlet Invert= 82.75', Outlet Invert= 82.20'
12.0" Diameter Pipe n= 0.011 Length= 111.0' Slope= 0.0050 '/'

Reach 4R:



Pond 1P: Detention Pond

Inflow Area = 0.576 ac, Inflow Depth = 1.13" for 1-Year Storm event
Inflow = 0.67 cfs @ 12.14 hrs, Volume= 0.054 af
Outflow = 0.51 cfs @ 12.23 hrs, Volume= 0.054 af, Atten= 25%, Lag= 5.3 min
Discarded = 0.51 cfs @ 12.23 hrs, Volume= 0.054 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.14' @ 12.23 hrs Surf.Area= 2,640 sf Storage= 120 cf
Plug-Flow detention time= 2.4 min calculated for 0.054 af (100% of inflow)
Center-of-Mass det. time= 2.1 min (758.9 - 756.8)

#	Invert	Avail.Storage	Storage Description
1	82.10'	6,471 cf	**Custom Stage Data (Prismatic)** Listed below

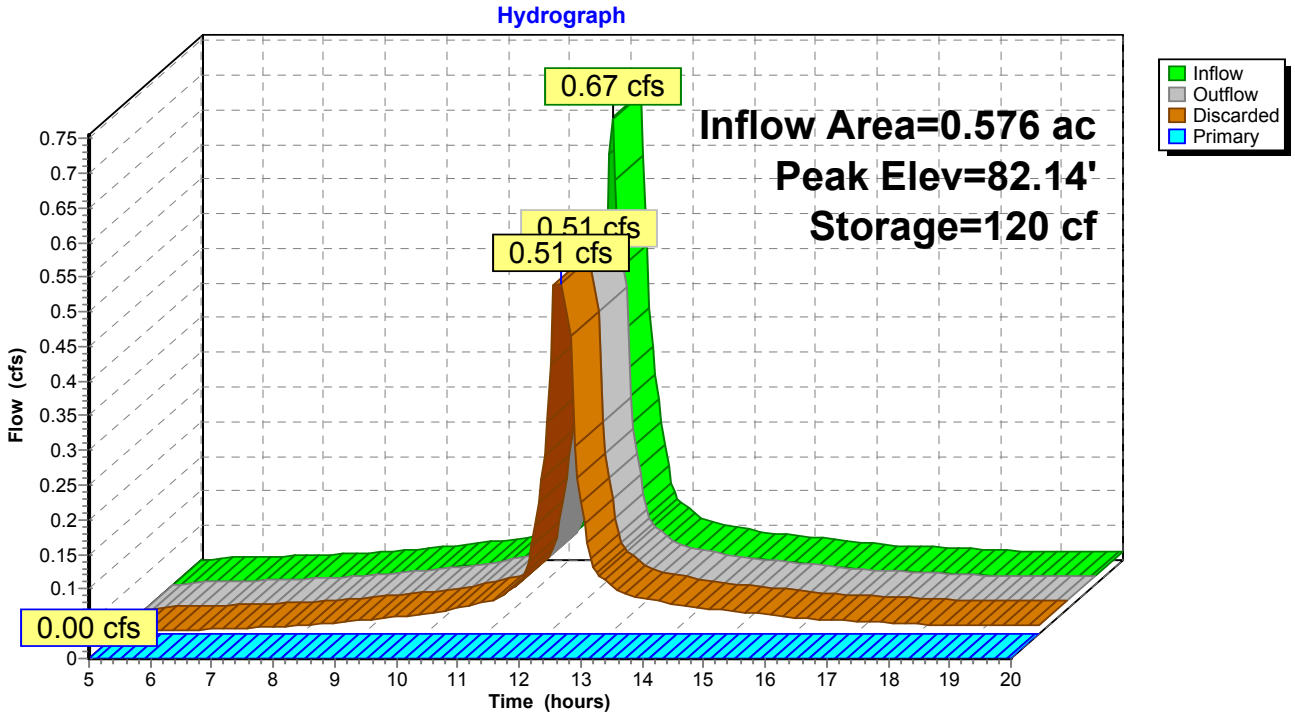
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
82.10	2,610	0	0
84.00	4,202	6,471	6,471

#	Routing	Invert	Outlet Devices
1	Discarded	0.00'	**0.011486 fpm Exfiltration over entire Surface area**
2	Primary	83.00'	**6.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.51 cfs @ 12.23 hrs HW=82.13' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.51 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=82.10' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Detention Pond



Pond OCS-1: OCS-1

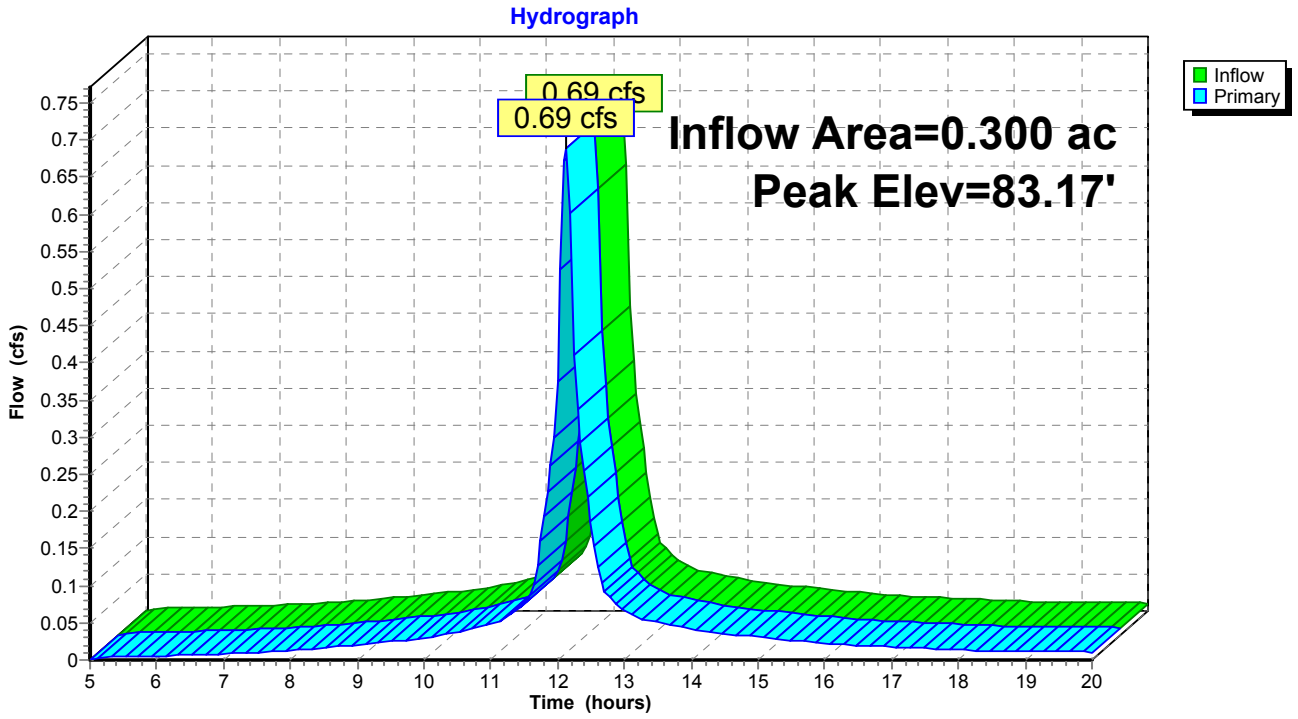
Inflow Area = 0.300 ac, Inflow Depth = 2.15" for 1-Year Storm event
Inflow = 0.69 cfs @ 12.12 hrs, Volume= 0.054 af
Outflow = 0.69 cfs @ 12.12 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 0.69 cfs @ 12.12 hrs, Volume= 0.054 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 83.17' @ 12.12 hrs
Plug-Flow detention time= 0.0 min calculated for 0.053 af (100% of inflow)
Center-of-Mass det. time= 0.0 min (752.4 - 752.4)

#	Routing	Invert	Outlet Devices
1	Primary	82.75'	**12.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.67 cfs @ 12.12 hrs HW=83.16' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.67 cfs @ 2.2 fps)

Pond OCS-1: OCS-1

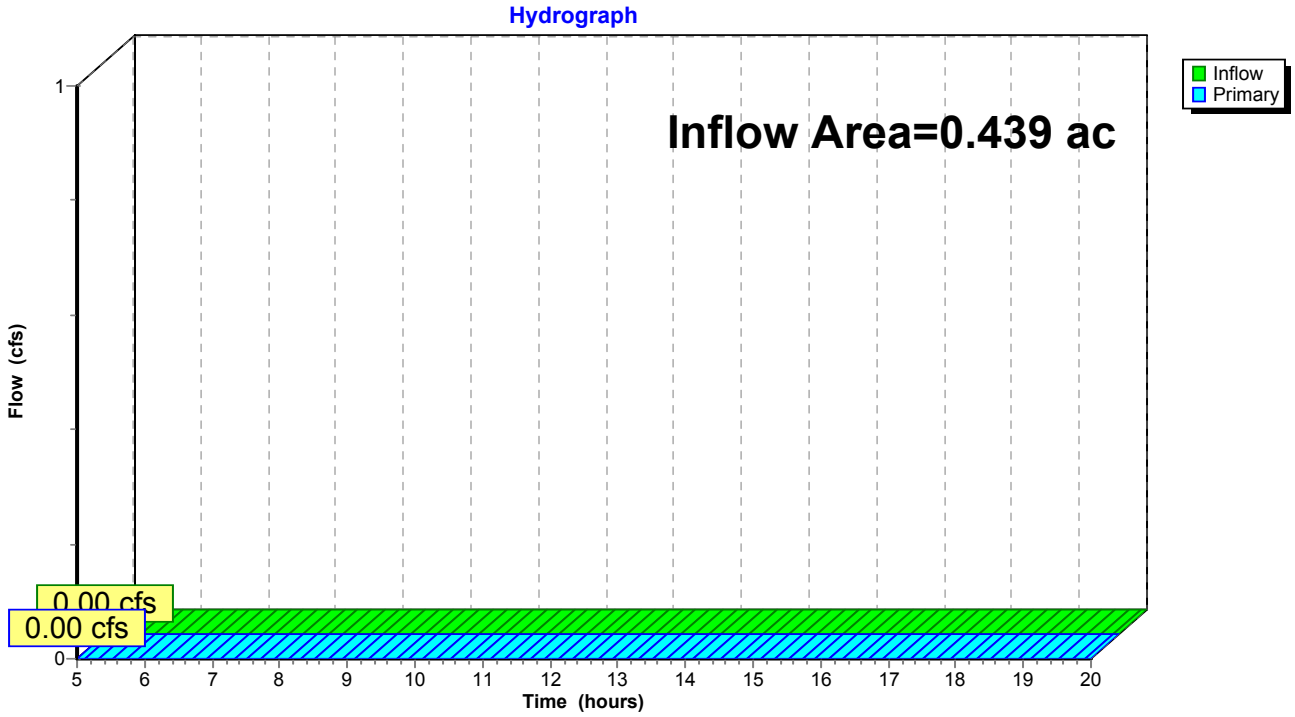


Link 1L: Total Offsite

Inflow Area = 0.439 ac, Inflow Depth = 0.00" for 1-Year Storm event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: Total Offsite

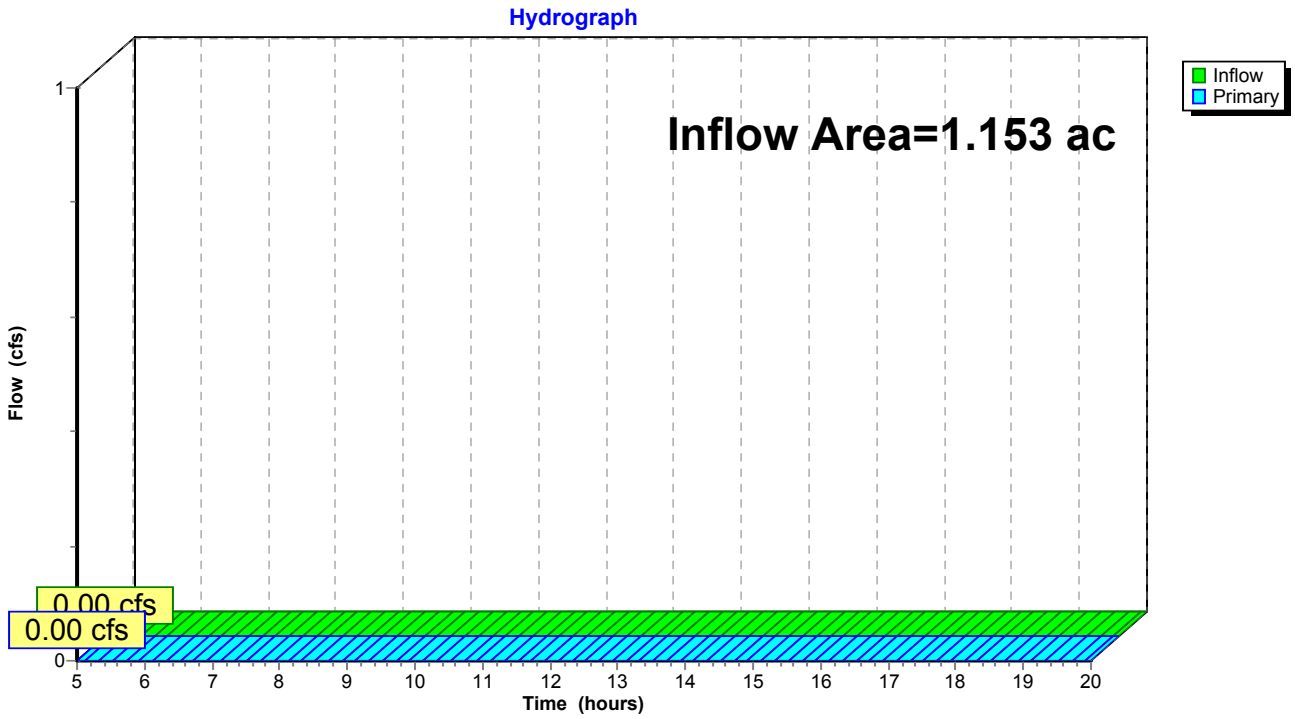


Link 2L: Total Offsite

Inflow Area = 1.153 ac, Inflow Depth = 0.00" for 1-Year Storm event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: Total Offsite

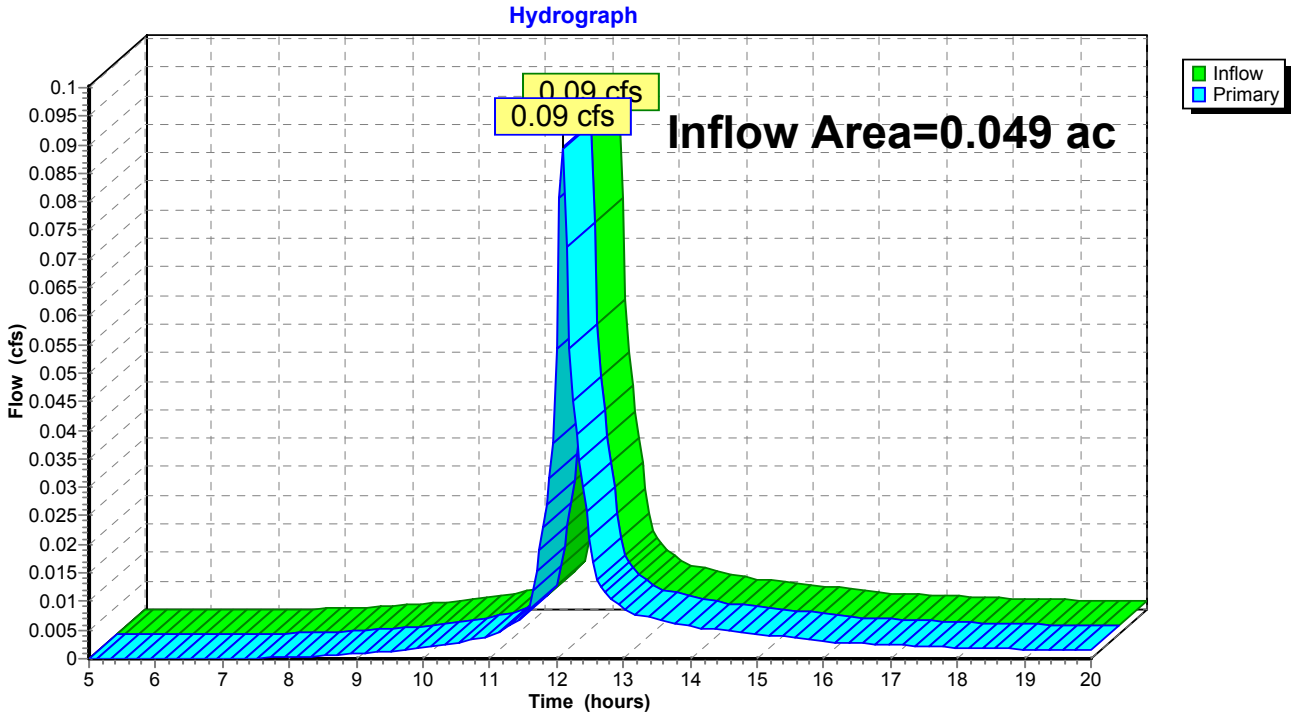


Link 3L: To Existing CB in Small Lane (redevelopment)

Inflow Area = 0.049 ac, Inflow Depth = 1.50" for 1-Year Storm event
Inflow = 0.09 cfs @ 12.09 hrs, Volume= 0.006 af
Primary = 0.09 cfs @ 12.09 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: To Existing CB in Small Lane (redevelopment)

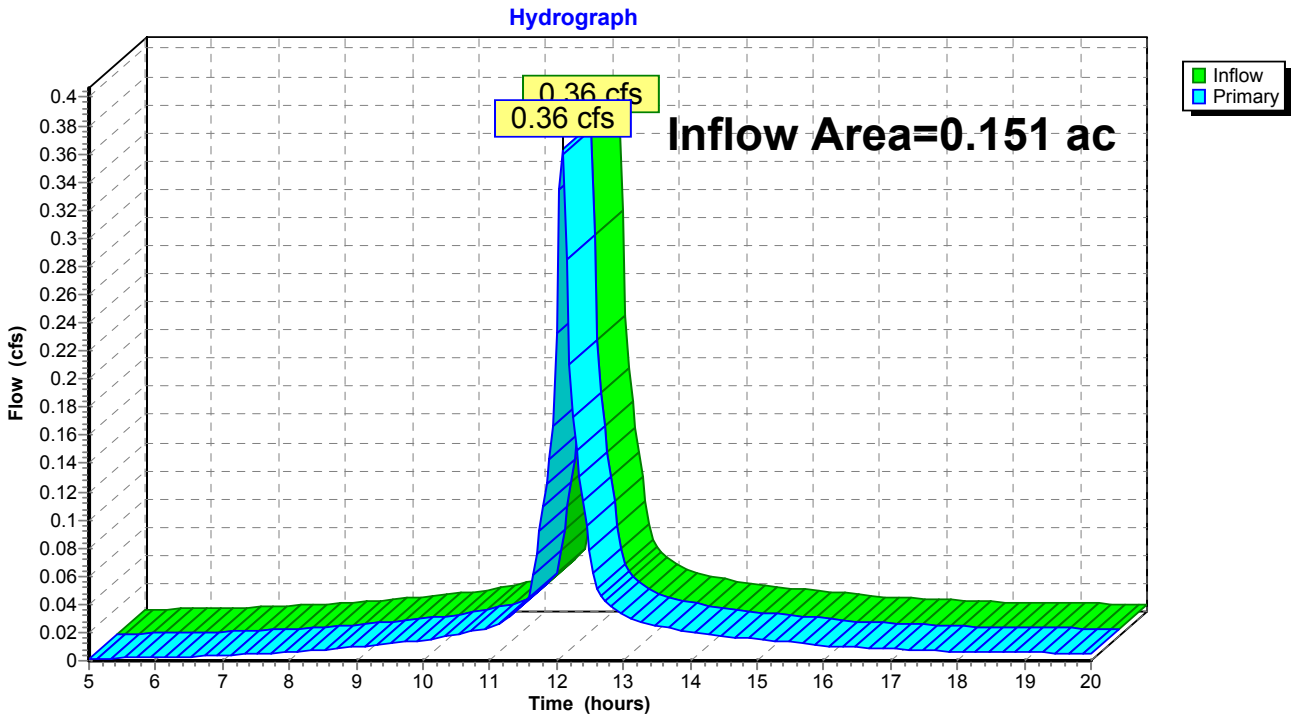


Link cb-1:

Inflow Area = 0.151 ac, Inflow Depth = 2.10" for 1-Year Storm event
Inflow = 0.36 cfs @ 12.09 hrs, Volume= 0.026 af
Primary = 0.36 cfs @ 12.09 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link cb-1:

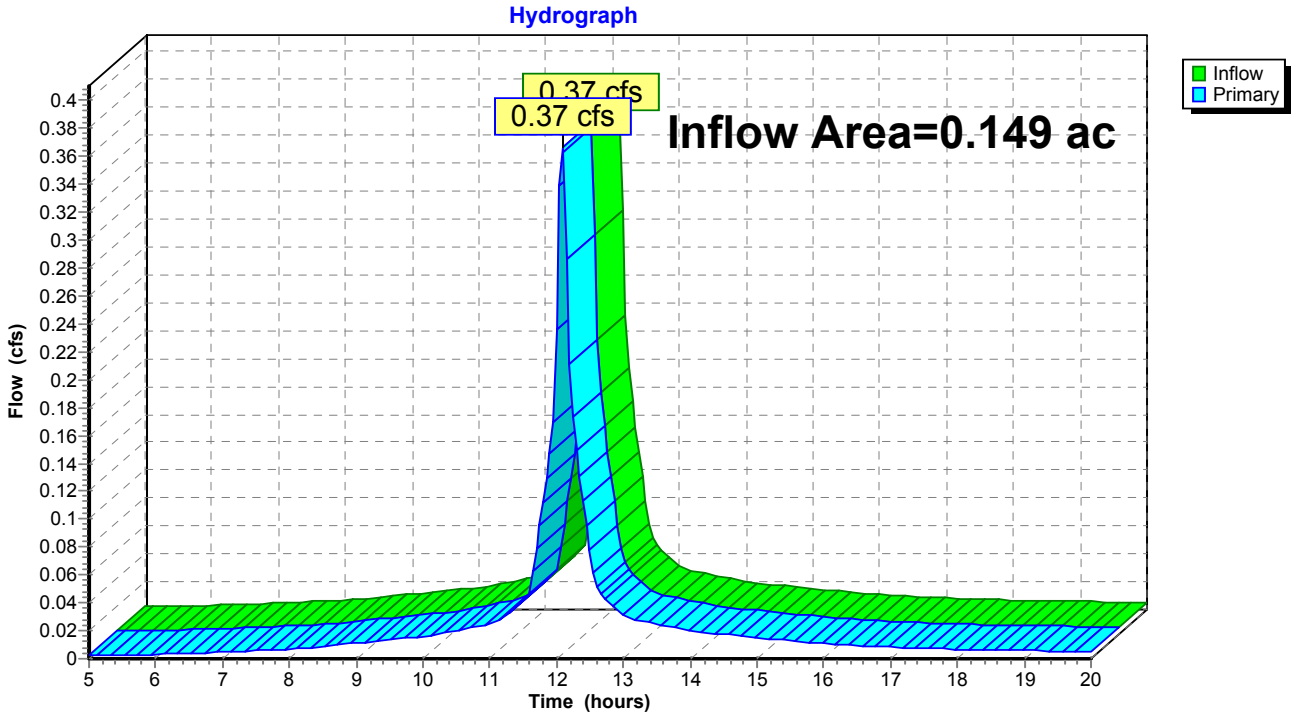


Link cb-2:

Inflow Area = 0.149 ac, Inflow Depth = 2.20" for 1-Year Storm event
Inflow = 0.37 cfs @ 12.09 hrs, Volume= 0.027 af
Primary = 0.37 cfs @ 12.09 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link cb-2:



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Runoff Area=2,120 sf Runoff Depth=2.05"
Tc=6.0 min CN=89 Runoff=0.12 cfs 0.008 af

Subcatchment 2S: Runoff Area=6,580 sf Runoff Depth=2.70"
Tc=6.0 min CN=96 Runoff=0.46 cfs 0.034 af

Subcatchment 3S: Runoff Area=6,474 sf Runoff Depth=2.79"
Tc=6.0 min CN=97 Runoff=0.46 cfs 0.035 af

Subcatchment 4S: Runoff Area=19,131 sf Runoff Depth=0.00"
Tc=6.0 min CN=34 Runoff=0.00 cfs 0.000 af

Subcatchment 5S: Runoff Area=12,045 sf Runoff Depth=0.12"
Flow Length=149' Tc=12.6 min CN=50 Runoff=0.01 cfs 0.003 af

Subcatchment 6S: Runoff Area=25,135 sf Runoff Depth=0.00"
Flow Length=144' Tc=11.3 min CN=30 Runoff=0.00 cfs 0.000 af

Reach 1R: Peak Depth=0.27' Max Vel=2.7 fps Inflow=0.46 cfs 0.034 af
D=12.0" n=0.011 L=22.0' S=0.0050 '/' Capacity=2.98 cfs Outflow=0.46 cfs 0.034 af

Reach 2R: Peak Depth=0.25' Max Vel=3.1 fps Inflow=0.46 cfs 0.035 af
D=12.0" n=0.011 L=16.0' S=0.0069 '/' Capacity=3.49 cfs Outflow=0.46 cfs 0.035 af

Reach 3R: Peak Depth=0.38' Max Vel=3.3 fps Inflow=0.92 cfs 0.068 af
D=12.0" n=0.011 L=213.0' S=0.0050 '/' Capacity=2.97 cfs Outflow=0.87 cfs 0.068 af

Reach 4R: Peak Depth=0.37' Max Vel=3.3 fps Inflow=0.87 cfs 0.068 af
D=12.0" n=0.011 L=111.0' S=0.0050 '/' Capacity=2.96 cfs Outflow=0.85 cfs 0.068 af

Pond 1P: Detention Pond Peak Elev=82.17' Storage=234 cf Inflow=0.85 cfs 0.071 af
Discarded=0.51 cfs 0.071 af Primary=0.00 cfs 0.000 af Outflow=0.51 cfs 0.071 af

Pond OCS-1: OCS-1 Peak Elev=83.23' Inflow=0.87 cfs 0.068 af
Outflow=0.87 cfs 0.068 af

Link 1L: Total Offsite Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link 2L: Total Offsite Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link 3L: To Existing CB in Small Lane (redevelopment) Inflow=0.12 cfs 0.008 af
Primary=0.12 cfs 0.008 af

Link cb-1: Inflow=0.46 cfs 0.034 af
Primary=0.46 cfs 0.034 af

Link cb-2: Inflow=0.46 cfs 0.035 af
Primary=0.46 cfs 0.035 af

Total Runoff Area = 1.641 ac Runoff Volume = 0.080 af Average Runoff Depth = 0.58"

Subcatchment 1S:

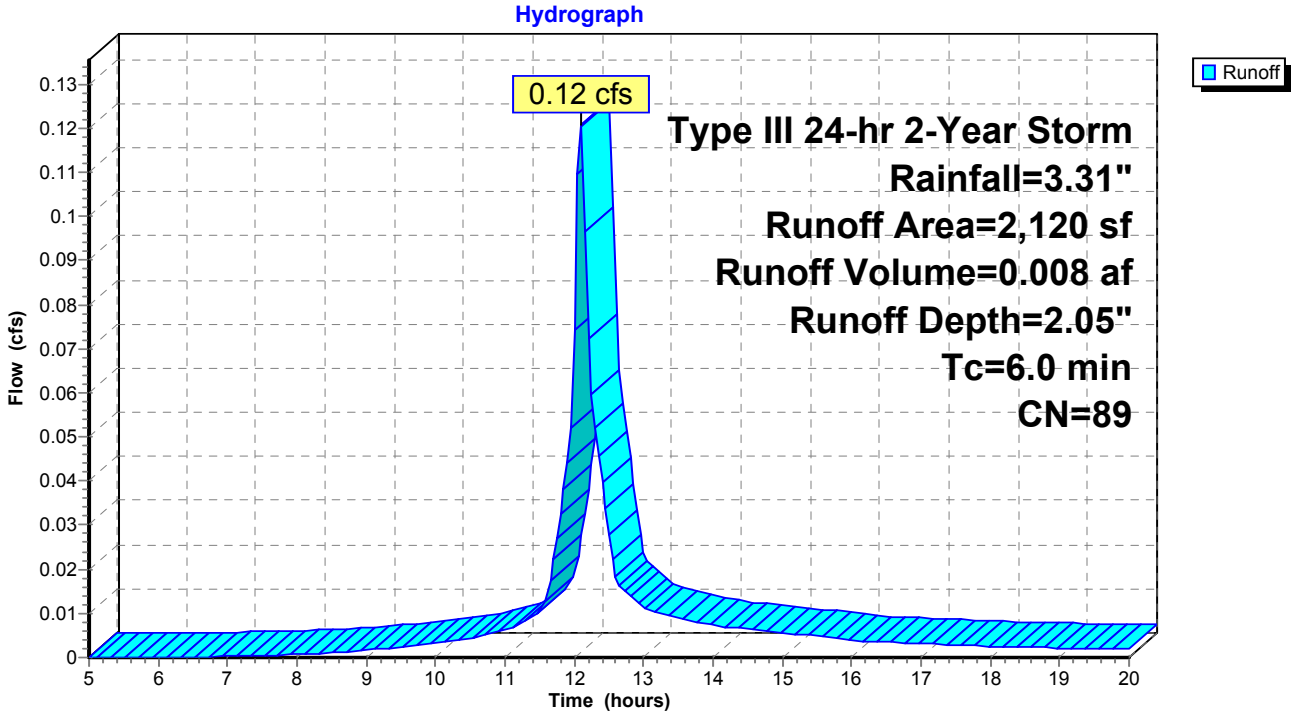
Runoff = 0.12 cfs @ 12.09 hrs, Volume= 0.008 af, Depth= 2.05"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.31"

Area (sf)	CN	Description
1,796	98	Pavement/Curb
324	39	>75% Grass cover, Good, HSG A
2,120	89	Weighted Average

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

Subcatchment 1S:



Subcatchment 2S:

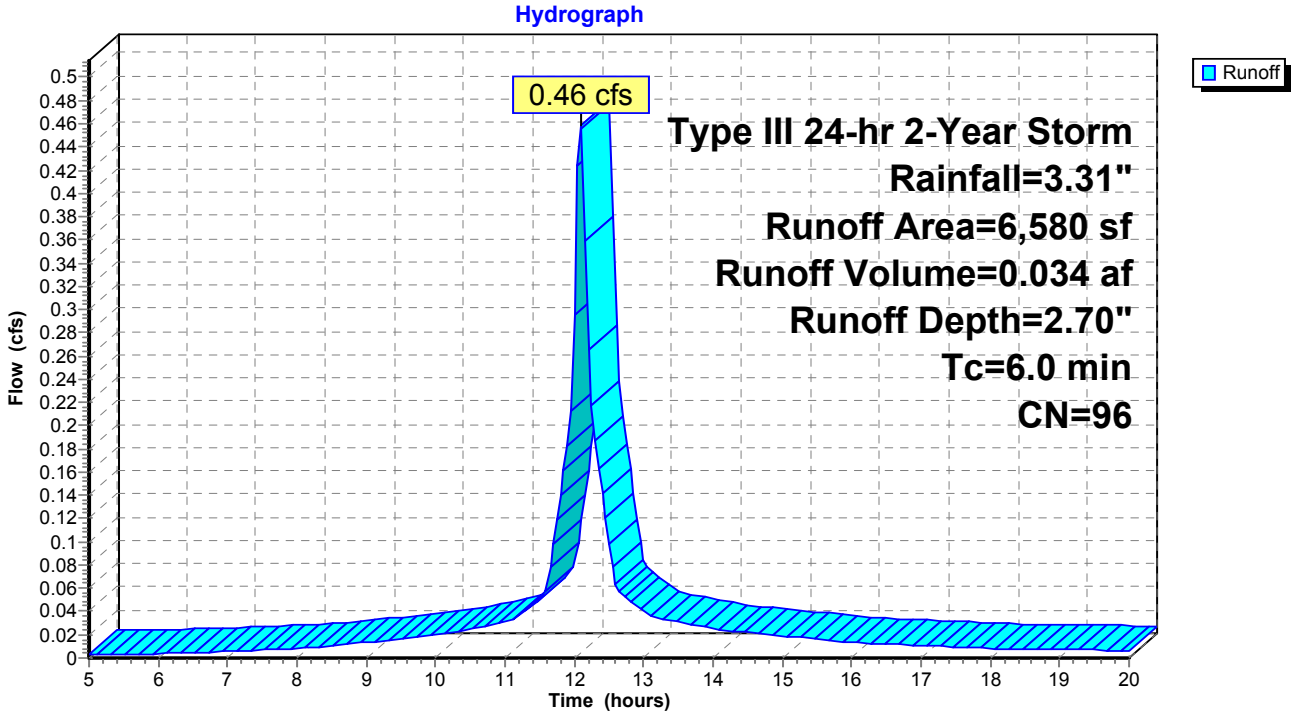
Runoff = 0.46 cfs @ 12.09 hrs, Volume= 0.034 af, Depth= 2.70"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.31"

Area (sf)	CN	Description
6,204	98	Roadway pavement/curb
198	98	Driveway Apron
178	39	>75% Grass cover, Good, HSG A
6,580	96	Weighted Average

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

Subcatchment 2S:



Subcatchment 3S:

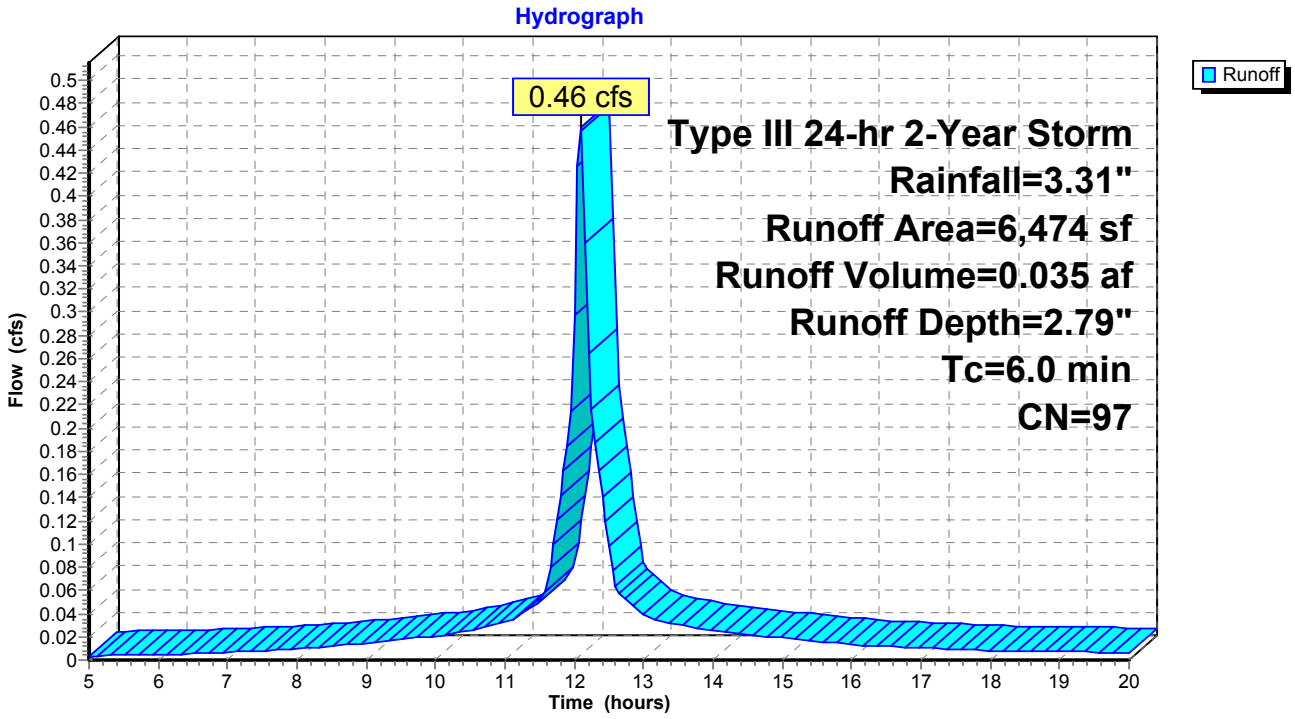
Runoff = 0.46 cfs @ 12.09 hrs, Volume= 0.035 af, Depth= 2.79"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.31"

Area (sf)	CN	Description
6,204	98	roadway pavement/curb
198	98	driveway apron
72	39	>75% Grass cover, Good, HSG A
6,474	97	Weighted Average

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

Subcatchment 3S:



Subcatchment 4S:

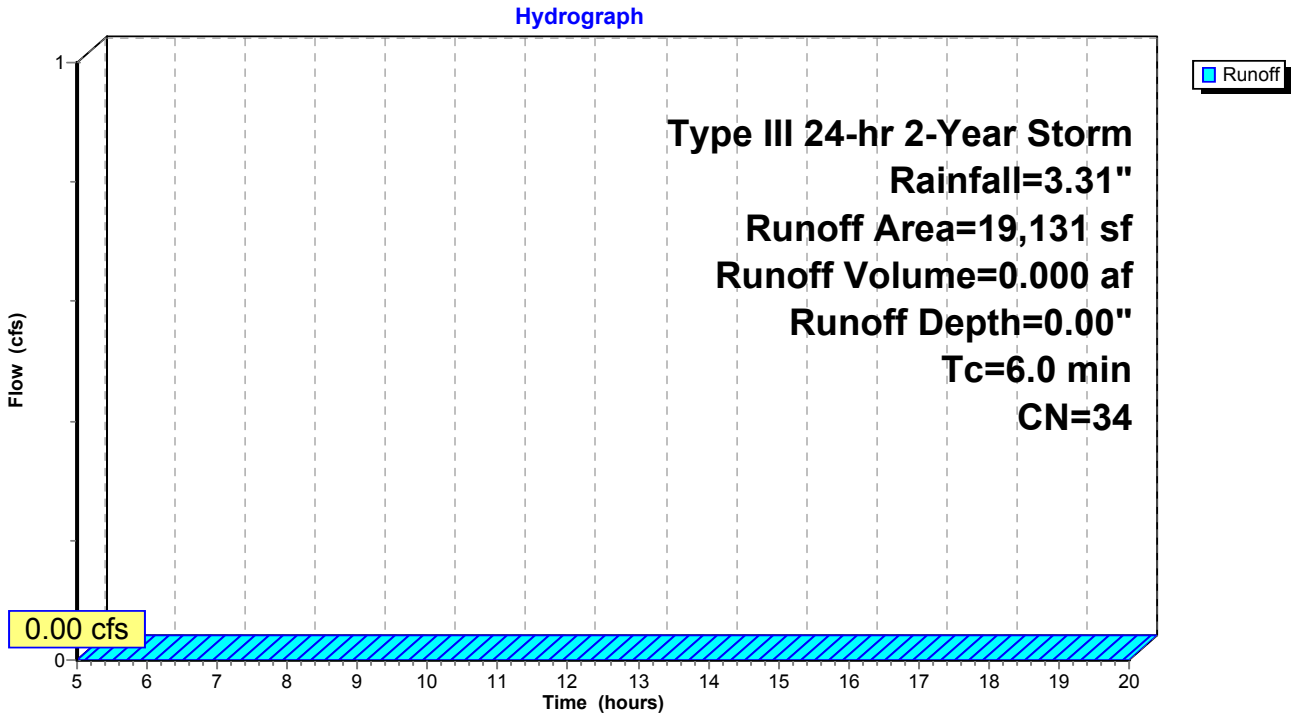
Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.31"

Area (sf)	CN	Description
14,635	30	Woods, Good, HSG A
560	98	ret. walls
3,936	39	>75% Grass cover, Good, HSG A
19,131	34	Weighted Average

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

Subcatchment 4S:



Subcatchment 5S:

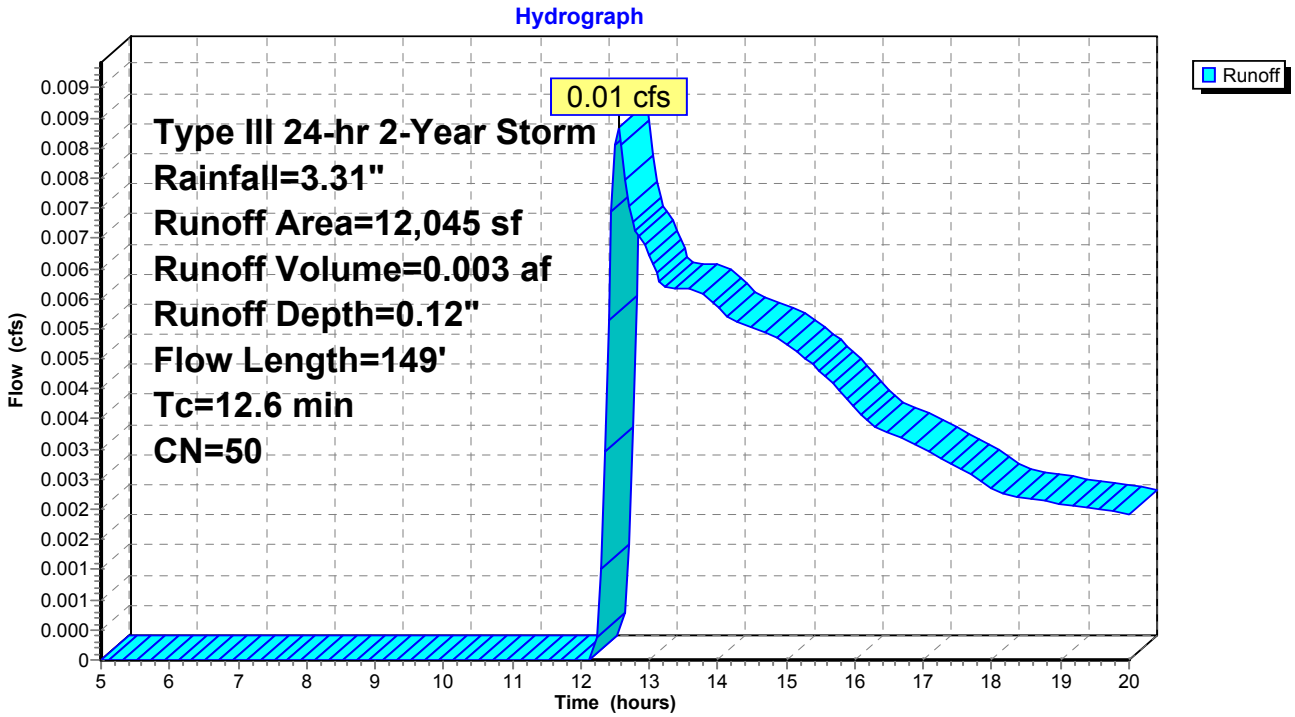
Runoff = 0.01 cfs @ 12.55 hrs, Volume= 0.003 af, Depth= 0.12"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.31"

Area (sf)	CN	Description
9,759	39	>75% Grass cover, Good, HSG A
2,286	98	House Roof (Lot A)
12,045	50	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	50	0.0050	0.1		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
0.5	20	0.0100	0.7		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.0	12	0.3300	4.0		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	67	0.0050	0.5		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.6	149	Total			

Subcatchment 5S:



Subcatchment 6S:

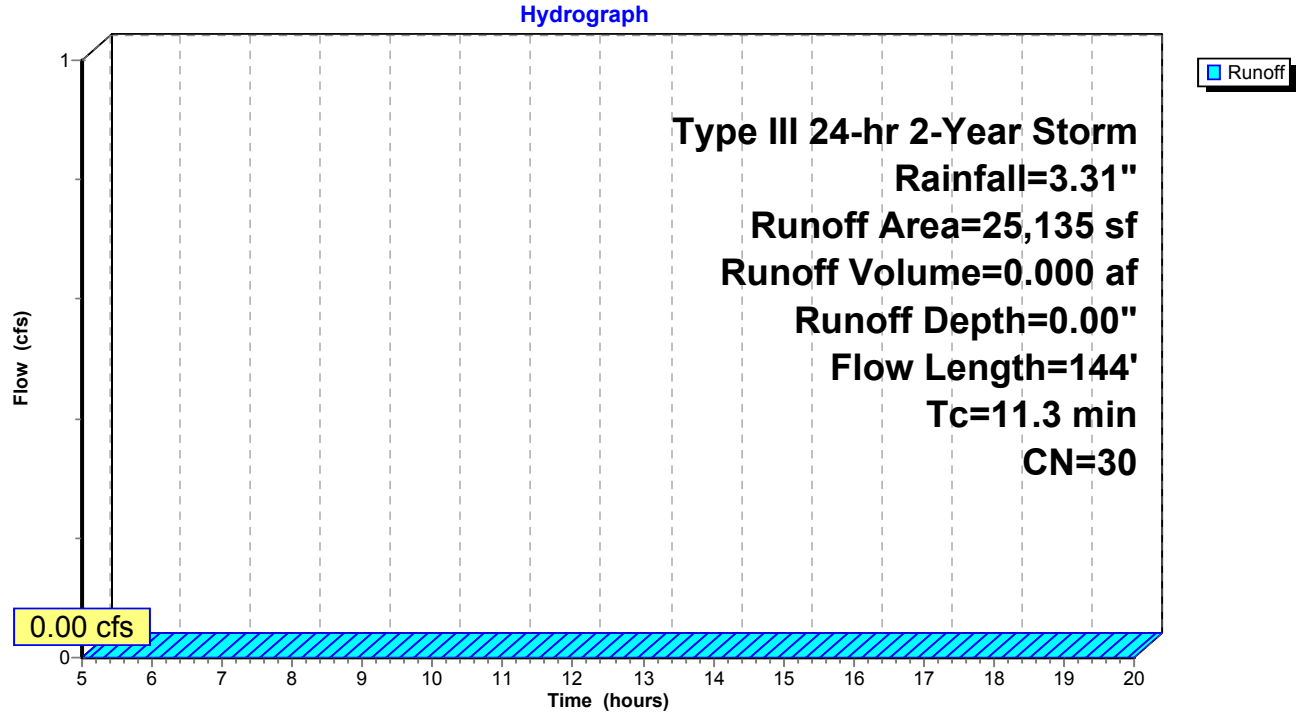
Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Storm Rainfall=3.31"

Area (sf)	CN	Description
25,135	30	Woods, Good, HSG A

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	50	0.0050	0.1		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
1.0	40	0.0100	0.7		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	54	0.1500	1.9		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.3	144	Total			

Subcatchment 6S:



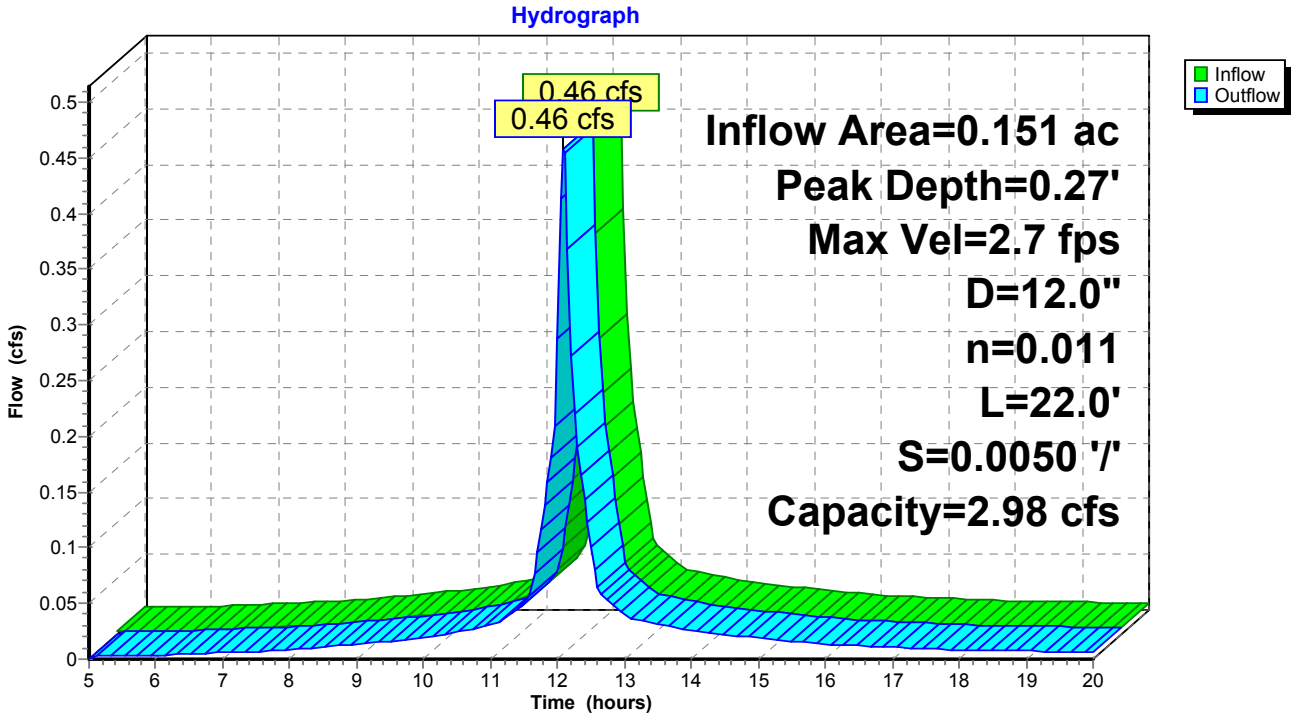
Reach 1R:

Inflow Area = 0.151 ac, Inflow Depth = 2.70" for 2-Year Storm event
Inflow = 0.46 cfs @ 12.09 hrs, Volume= 0.034 af
Outflow = 0.46 cfs @ 12.09 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.7 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.0 fps, Avg. Travel Time= 0.4 min

Peak Depth= 0.27' @ 12.09 hrs
Capacity at bank full= 2.98 cfs
Inlet Invert= 83.17', Outlet Invert= 83.06'
12.0" Diameter Pipe n= 0.011 Length= 22.0' Slope= 0.0050 '/'

Reach 1R:



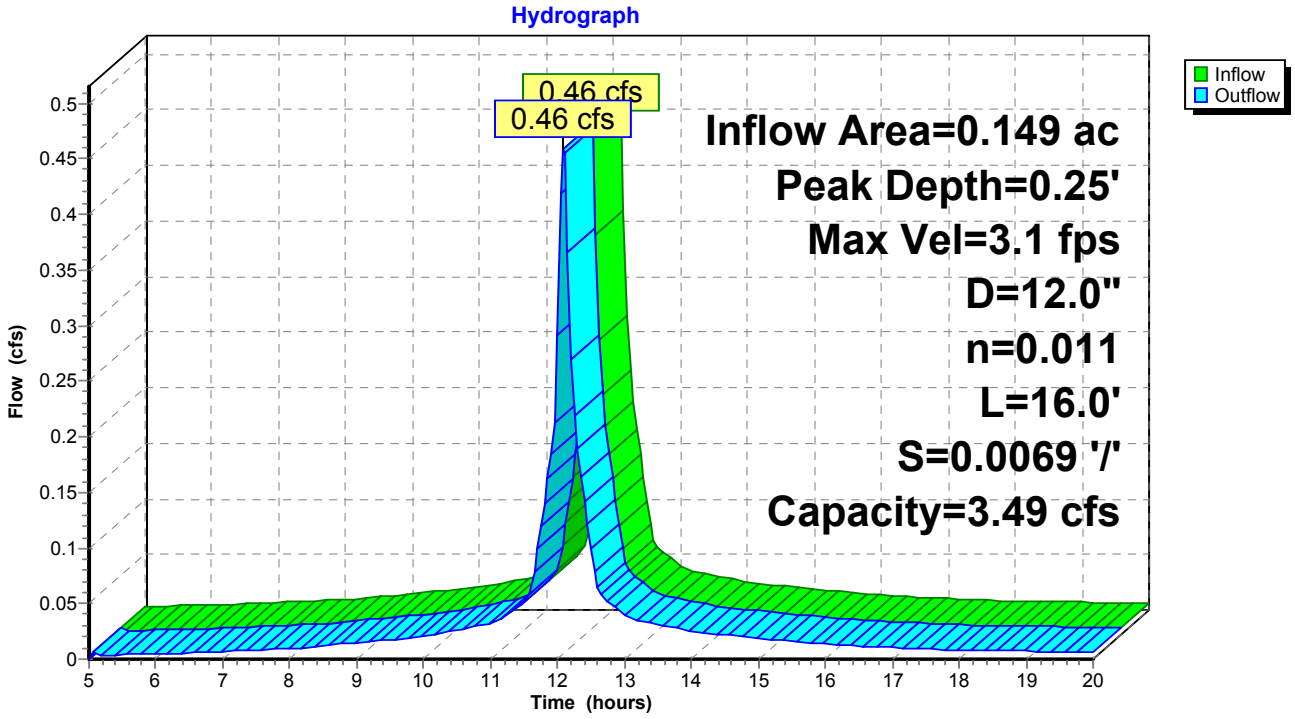
Reach 2R:

Inflow Area = 0.149 ac, Inflow Depth = 2.79" for 2-Year Storm event
Inflow = 0.46 cfs @ 12.09 hrs, Volume= 0.035 af
Outflow = 0.46 cfs @ 12.09 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.1 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.2 fps, Avg. Travel Time= 0.2 min

Peak Depth= 0.25' @ 12.09 hrs
Capacity at bank full= 3.49 cfs
Inlet Invert= 83.17', Outlet Invert= 83.06'
12.0" Diameter Pipe n= 0.011 Length= 16.0' Slope= 0.0069 '/'

Reach 2R:



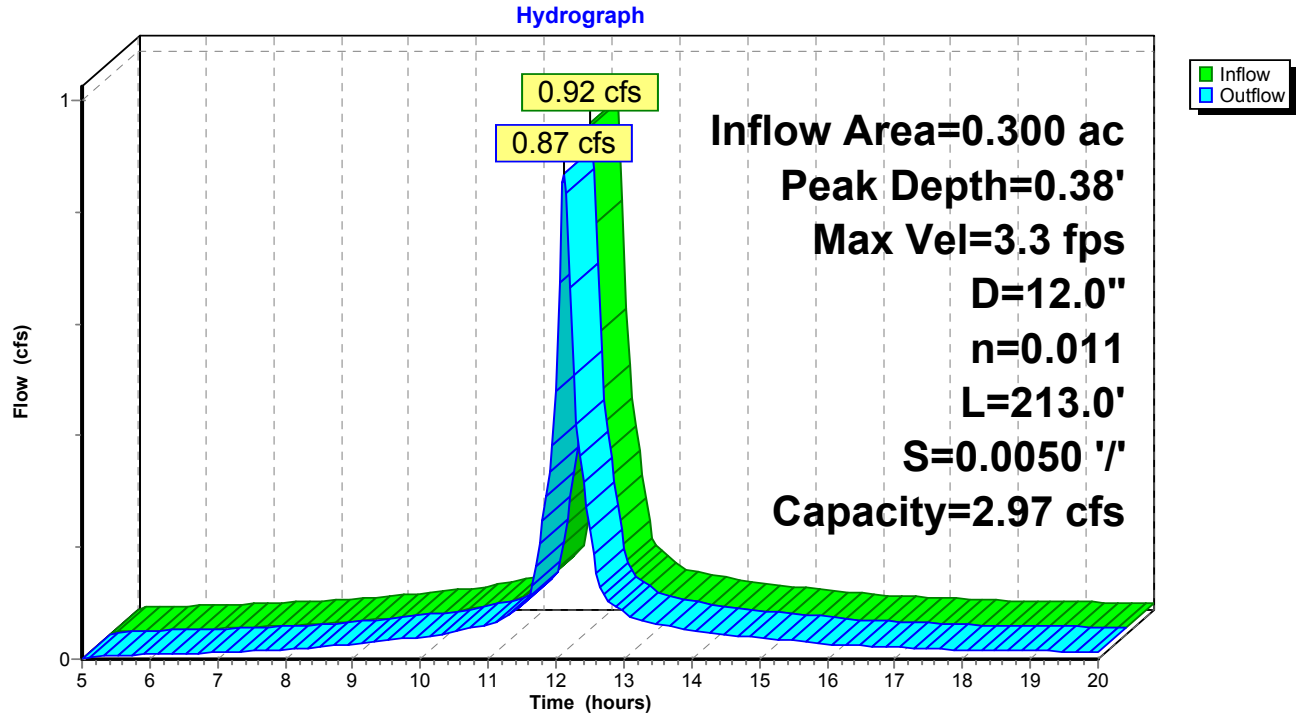
Reach 3R:

Inflow Area = 0.300 ac, Inflow Depth = 2.74" for 2-Year Storm event
Inflow = 0.92 cfs @ 12.09 hrs, Volume= 0.068 af
Outflow = 0.87 cfs @ 12.12 hrs, Volume= 0.068 af, Atten= 5%, Lag= 1.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.3 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 1.3 fps, Avg. Travel Time= 2.8 min

Peak Depth= 0.38' @ 12.10 hrs
Capacity at bank full= 2.97 cfs
Inlet Invert= 83.06', Outlet Invert= 82.00'
12.0" Diameter Pipe n= 0.011 Length= 213.0' Slope= 0.0050 '/'

Reach 3R:



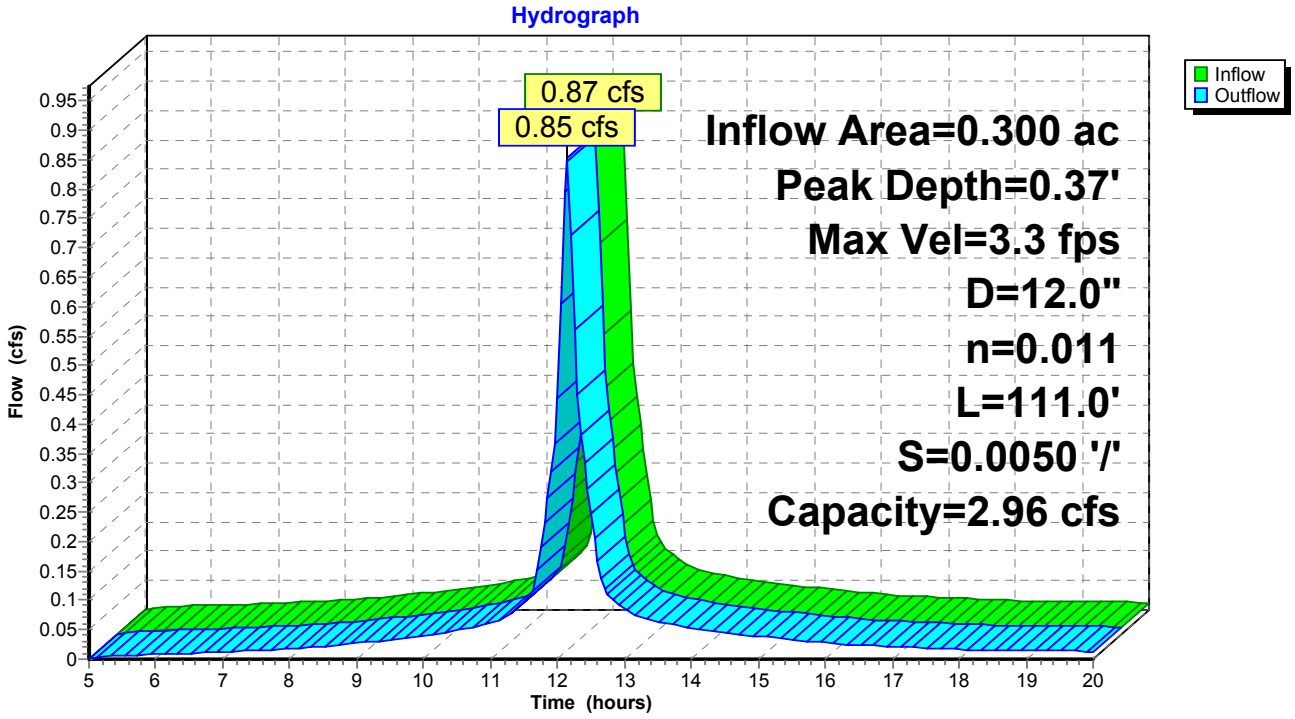
Reach 4R:

Inflow Area = 0.300 ac, Inflow Depth = 2.74" for 2-Year Storm event
Inflow = 0.87 cfs @ 12.12 hrs, Volume= 0.068 af
Outflow = 0.85 cfs @ 12.14 hrs, Volume= 0.068 af, Atten= 2%, Lag= 1.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.3 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 1.3 fps, Avg. Travel Time= 1.5 min

Peak Depth= 0.37' @ 12.13 hrs
Capacity at bank full= 2.96 cfs
Inlet Invert= 82.75', Outlet Invert= 82.20'
12.0" Diameter Pipe n= 0.011 Length= 111.0' Slope= 0.0050 '/'

Reach 4R:



Pond 1P: Detention Pond

Inflow Area = 0.576 ac, Inflow Depth = 1.48" for 2-Year Storm event
Inflow = 0.85 cfs @ 12.14 hrs, Volume= 0.071 af
Outflow = 0.51 cfs @ 12.27 hrs, Volume= 0.071 af, Atten= 40%, Lag= 8.0 min
Discarded = 0.51 cfs @ 12.27 hrs, Volume= 0.071 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.17' @ 12.27 hrs Surf.Area= 2,667 sf Storage= 234 cf
Plug-Flow detention time= 3.1 min calculated for 0.071 af (100% of inflow)
Center-of-Mass det. time= 2.8 min (759.4 - 756.6)

#	Invert	Avail.Storage	Storage Description
1	82.10'	6,471 cf	**Custom Stage Data (Prismatic)** Listed below

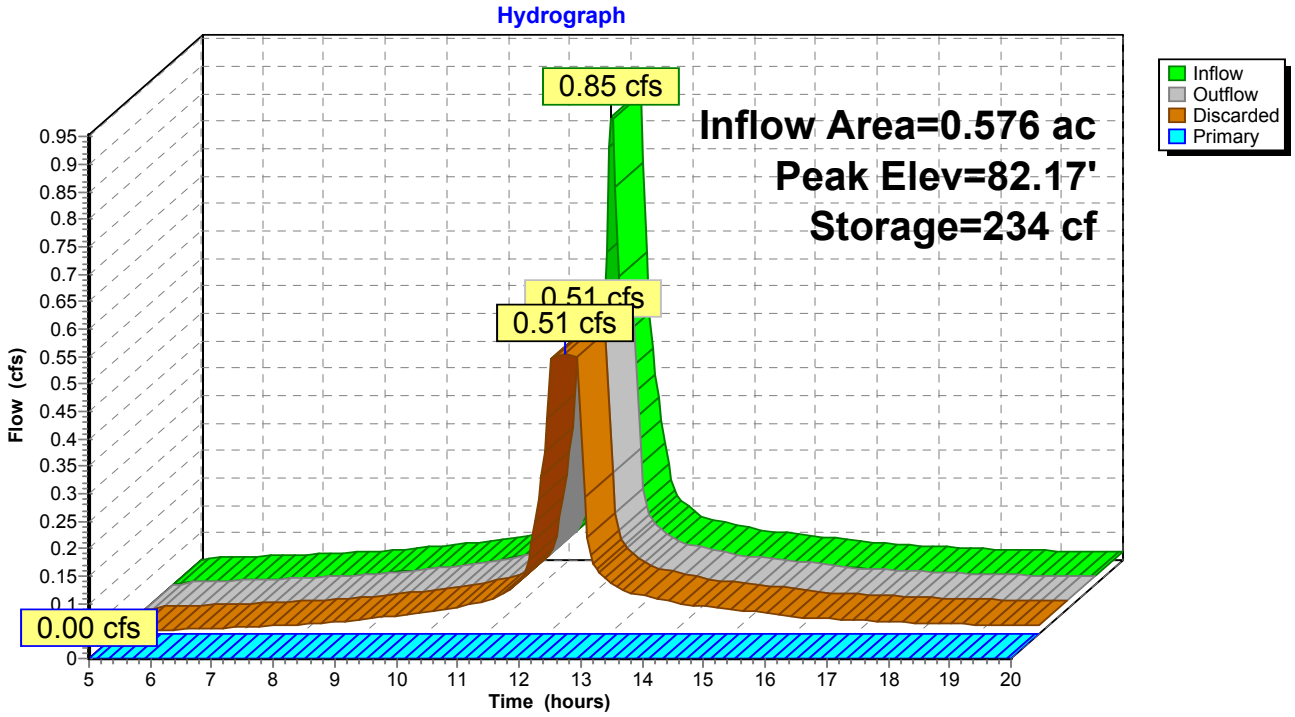
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
82.10	2,610	0	0
84.00	4,202	6,471	6,471

#	Routing	Invert	Outlet Devices
1	Discarded	0.00'	**0.011486 fpm Exfiltration over entire Surface area**
2	Primary	83.00'	**6.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.51 cfs @ 12.27 hrs HW=82.17' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.51 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=82.10' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Detention Pond



Pond OCS-1: OCS-1

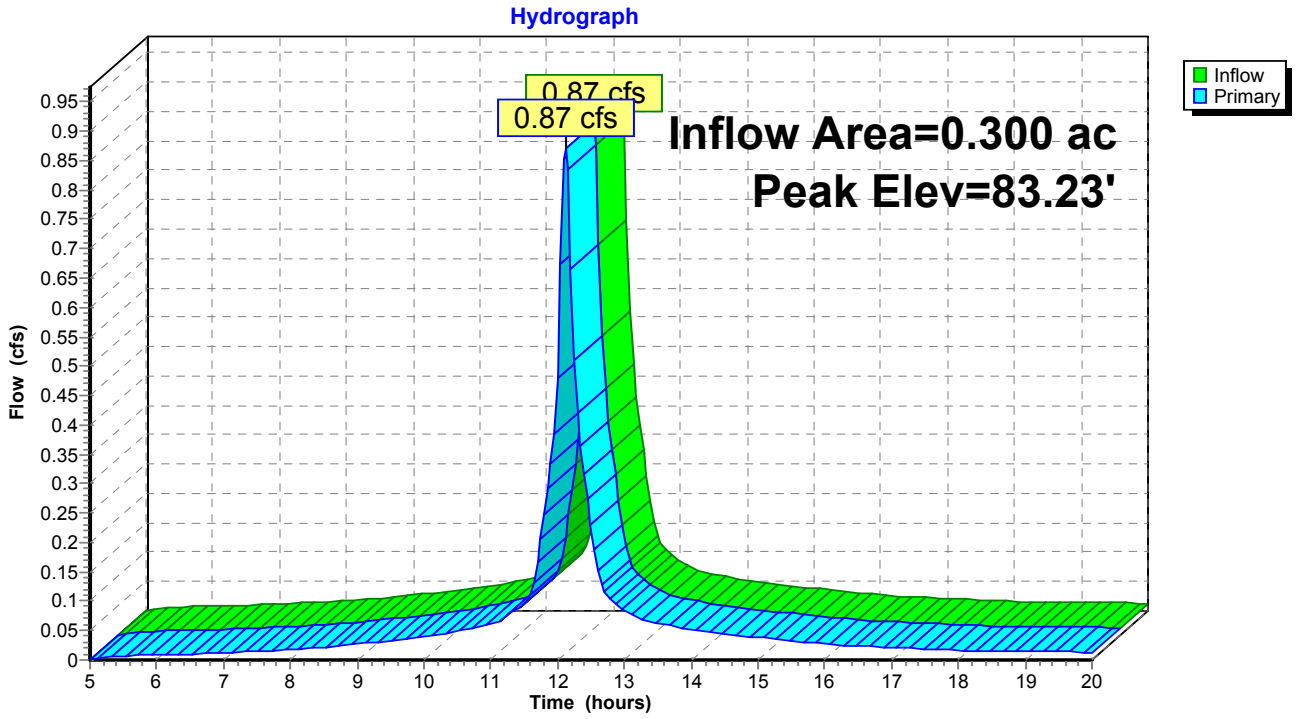
Inflow Area = 0.300 ac, Inflow Depth = 2.74" for 2-Year Storm event
Inflow = 0.87 cfs @ 12.12 hrs, Volume= 0.068 af
Outflow = 0.87 cfs @ 12.12 hrs, Volume= 0.068 af, Atten= 0%, Lag= 0.0 min
Primary = 0.87 cfs @ 12.12 hrs, Volume= 0.068 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 83.23' @ 12.12 hrs
Plug-Flow detention time= 0.0 min calculated for 0.068 af (100% of inflow)
Center-of-Mass det. time= 0.0 min (748.4 - 748.4)

#	Routing	Invert	Outlet Devices
1	Primary	82.75'	**12.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.85 cfs @ 12.12 hrs HW=83.22' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.85 cfs @ 2.3 fps)

Pond OCS-1: OCS-1

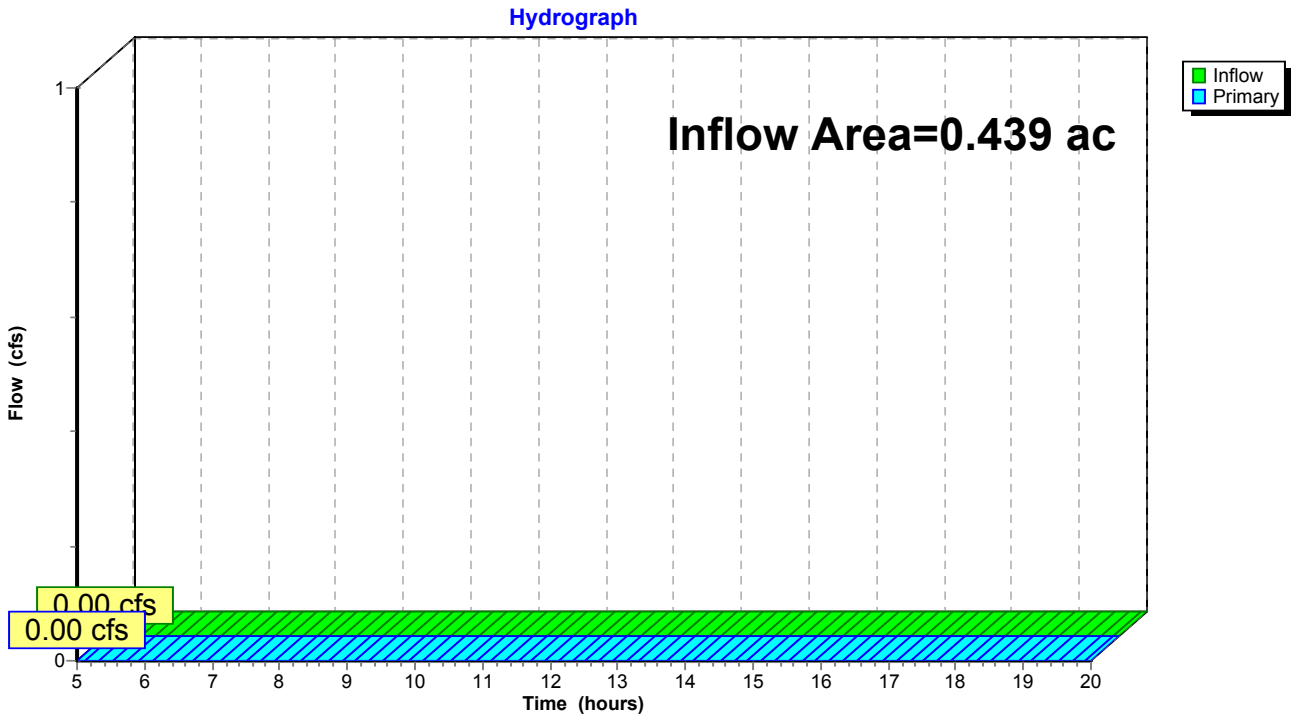


Link 1L: Total Offsite

Inflow Area = 0.439 ac, Inflow Depth = 0.00" for 2-Year Storm event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: Total Offsite

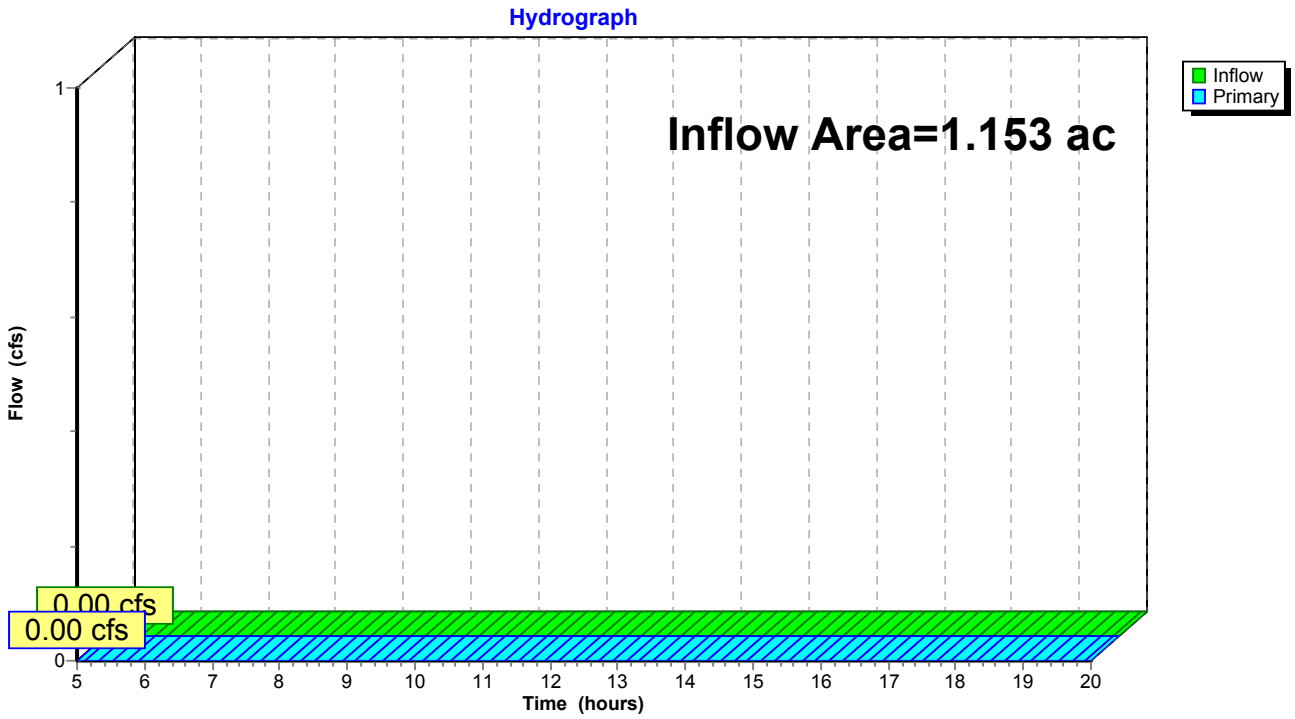


Link 2L: Total Offsite

Inflow Area = 1.153 ac, Inflow Depth = 0.00" for 2-Year Storm event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: Total Offsite

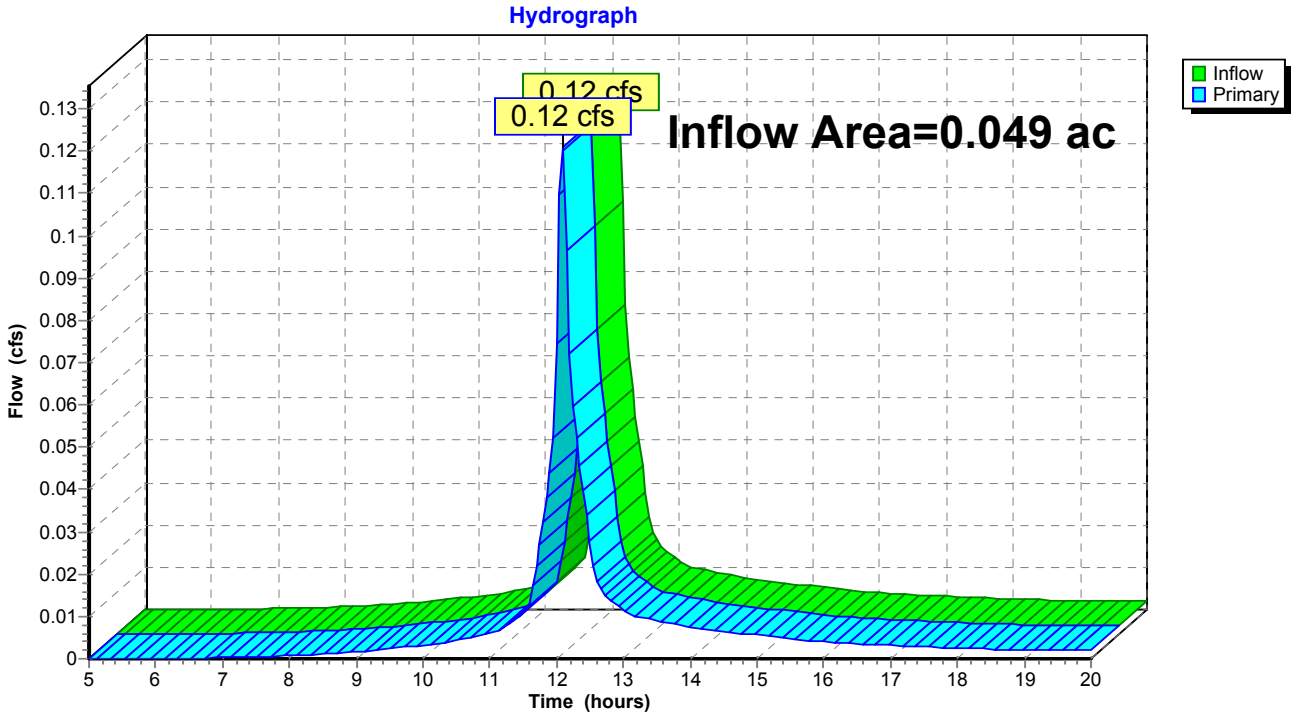


Link 3L: To Existing CB in Small Lane (redevelopment)

Inflow Area = 0.049 ac, Inflow Depth = 2.05" for 2-Year Storm event
Inflow = 0.12 cfs @ 12.09 hrs, Volume= 0.008 af
Primary = 0.12 cfs @ 12.09 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: To Existing CB in Small Lane (redevelopment)

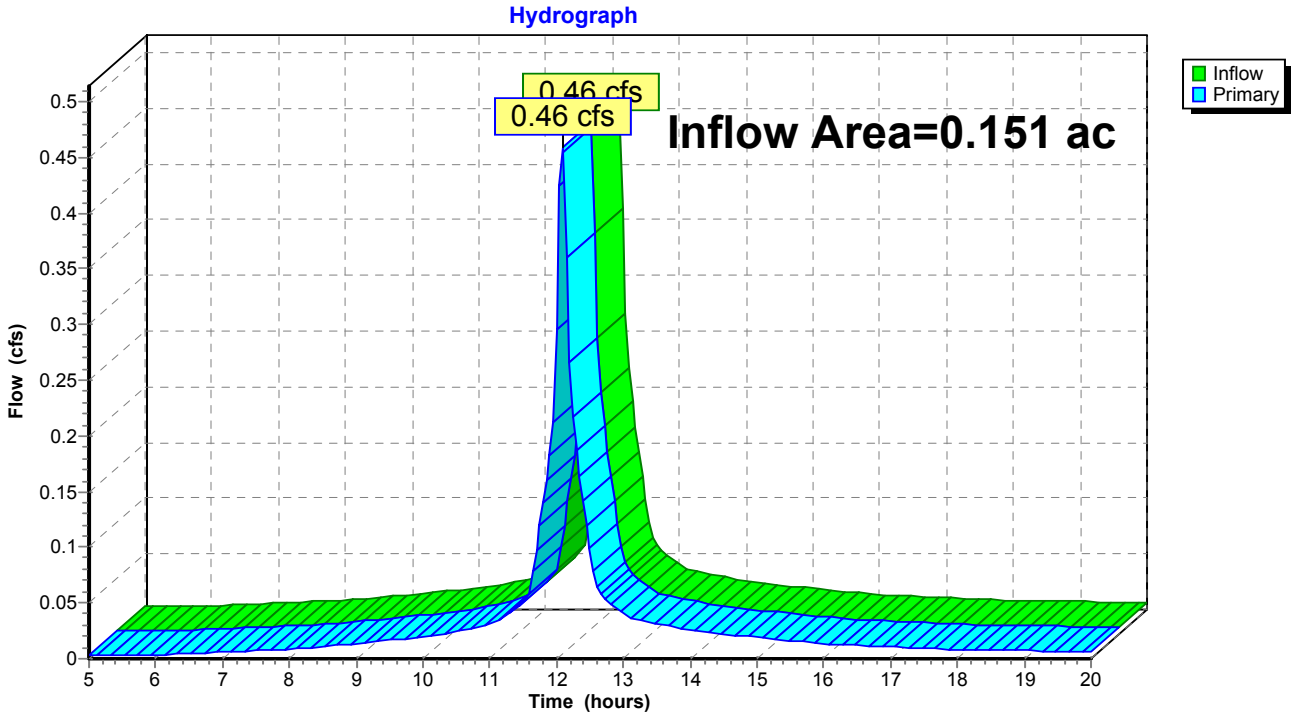


Link cb-1:

Inflow Area = 0.151 ac, Inflow Depth = 2.70" for 2-Year Storm event
Inflow = 0.46 cfs @ 12.09 hrs, Volume= 0.034 af
Primary = 0.46 cfs @ 12.09 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link cb-1:

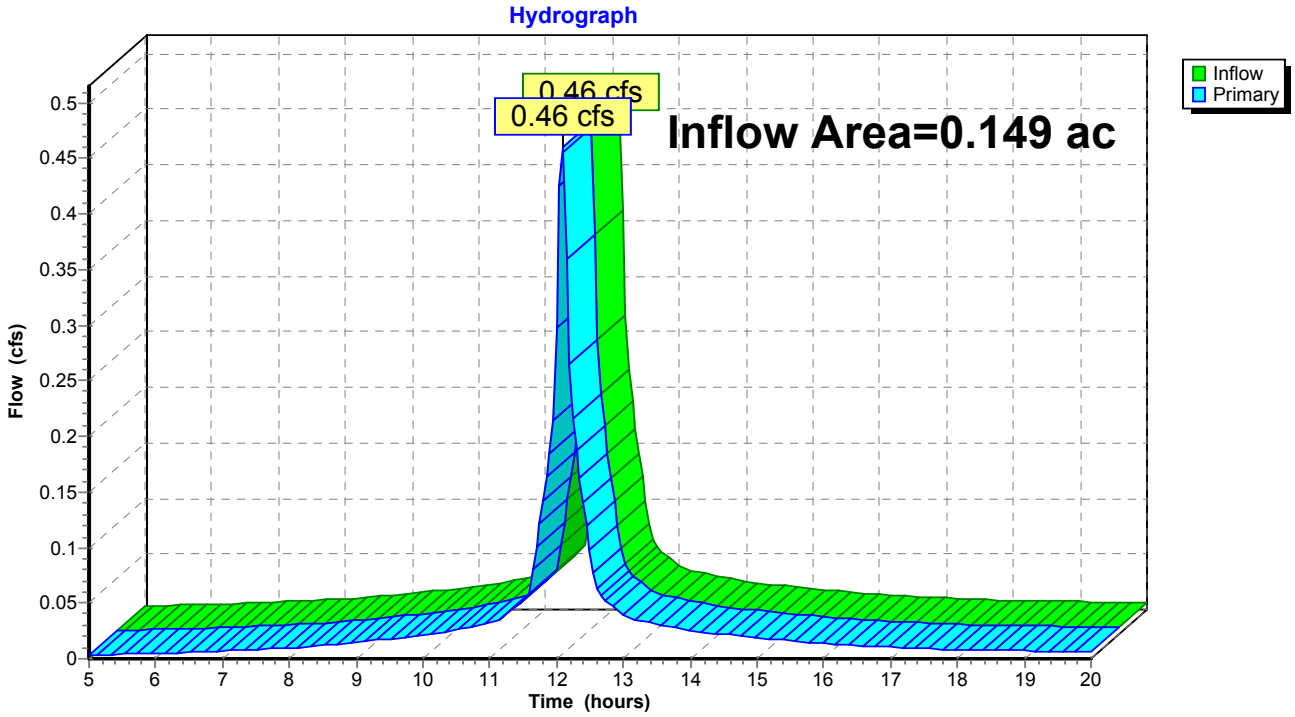


Link cb-2:

Inflow Area = 0.149 ac, Inflow Depth = 2.79" for 2-Year Storm event
Inflow = 0.46 cfs @ 12.09 hrs, Volume= 0.035 af
Primary = 0.46 cfs @ 12.09 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link cb-2:



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Runoff Area=2,120 sf Runoff Depth=3.76"
Tc=6.0 min CN=89 Runoff=0.22 cfs 0.015 af

Subcatchment 2S: Runoff Area=6,580 sf Runoff Depth=4.46"
Tc=6.0 min CN=96 Runoff=0.74 cfs 0.056 af

Subcatchment 3S: Runoff Area=6,474 sf Runoff Depth=4.54"
Tc=6.0 min CN=97 Runoff=0.74 cfs 0.056 af

Subcatchment 4S: Runoff Area=19,131 sf Runoff Depth=0.06"
Tc=6.0 min CN=34 Runoff=0.00 cfs 0.002 af

Subcatchment 5S: Runoff Area=12,045 sf Runoff Depth=0.69"
Flow Length=149' Tc=12.6 min CN=50 Runoff=0.14 cfs 0.016 af

Subcatchment 6S: Runoff Area=25,135 sf Runoff Depth=0.00"
Flow Length=144' Tc=11.3 min CN=30 Runoff=0.00 cfs 0.000 af

Reach 1R: Peak Depth=0.34' Max Vel=3.1 fps Inflow=0.74 cfs 0.056 af
D=12.0" n=0.011 L=22.0' S=0.0050 '/' Capacity=2.98 cfs Outflow=0.74 cfs 0.056 af

Reach 2R: Peak Depth=0.31' Max Vel=3.5 fps Inflow=0.74 cfs 0.056 af
D=12.0" n=0.011 L=16.0' S=0.0069 '/' Capacity=3.49 cfs Outflow=0.74 cfs 0.056 af

Reach 3R: Peak Depth=0.50' Max Vel=3.8 fps Inflow=1.47 cfs 0.112 af
D=12.0" n=0.011 L=213.0' S=0.0050 '/' Capacity=2.97 cfs Outflow=1.41 cfs 0.112 af

Reach 4R: Peak Depth=0.48' Max Vel=3.7 fps Inflow=1.41 cfs 0.112 af
D=12.0" n=0.011 L=111.0' S=0.0050 '/' Capacity=2.96 cfs Outflow=1.38 cfs 0.112 af

Pond 1P: Detention Pond Peak Elev=82.36' Storage=877 cf Inflow=1.48 cfs 0.128 af
Discarded=0.54 cfs 0.128 af Primary=0.00 cfs 0.000 af Outflow=0.54 cfs 0.128 af

Pond OCS-1: OCS-1 Peak Elev=83.38' Inflow=1.41 cfs 0.112 af
Outflow=1.41 cfs 0.112 af

Link 1L: Total Offsite Inflow=0.00 cfs 0.002 af
Primary=0.00 cfs 0.002 af

Link 2L: Total Offsite Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link 3L: To Existing CB in Small Lane (redevelopment) Inflow=0.22 cfs 0.015 af
Primary=0.22 cfs 0.015 af

Link cb-1: Inflow=0.74 cfs 0.056 af
Primary=0.74 cfs 0.056 af

Link cb-2: Inflow=0.74 cfs 0.056 af
Primary=0.74 cfs 0.056 af

Total Runoff Area = 1.641 ac Runoff Volume = 0.146 af Average Runoff Depth = 1.07"

Subcatchment 1S:

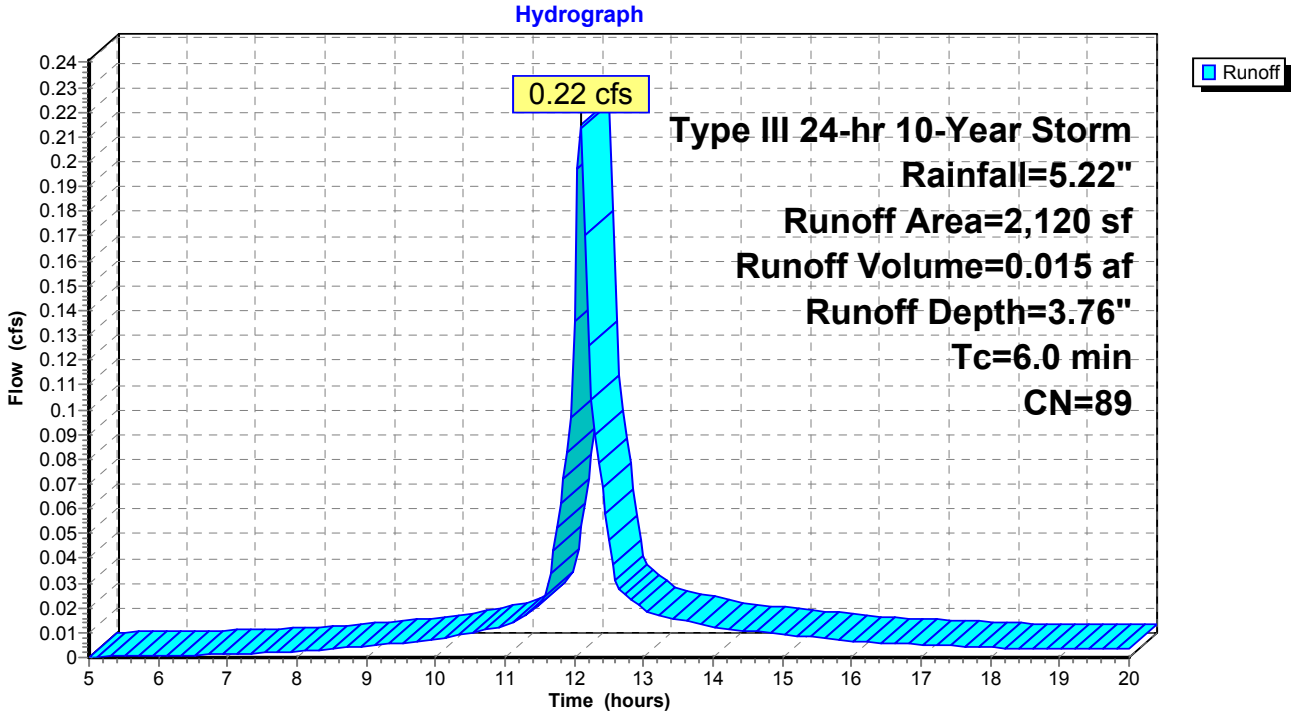
Runoff = 0.22 cfs @ 12.09 hrs, Volume= 0.015 af, Depth= 3.76"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=5.22"

Area (sf)	CN	Description
1,796	98	Pavement/Curb
324	39	>75% Grass cover, Good, HSG A
2,120	89	Weighted Average

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

Subcatchment 1S:



Subcatchment 2S:

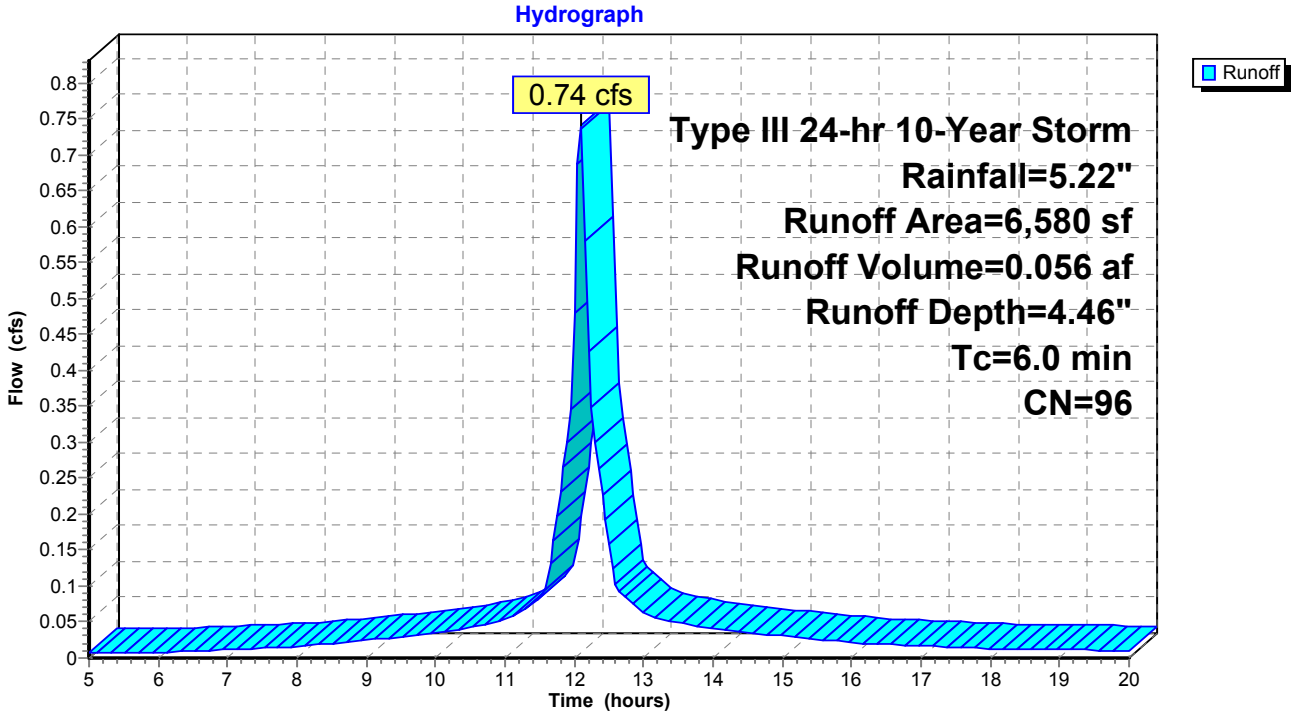
Runoff = 0.74 cfs @ 12.09 hrs, Volume= 0.056 af, Depth= 4.46"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=5.22"

Area (sf)	CN	Description
6,204	98	Roadway pavement/curb
198	98	Driveway Apron
178	39	>75% Grass cover, Good, HSG A
6,580	96	Weighted Average

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

Subcatchment 2S:



Subcatchment 3S:

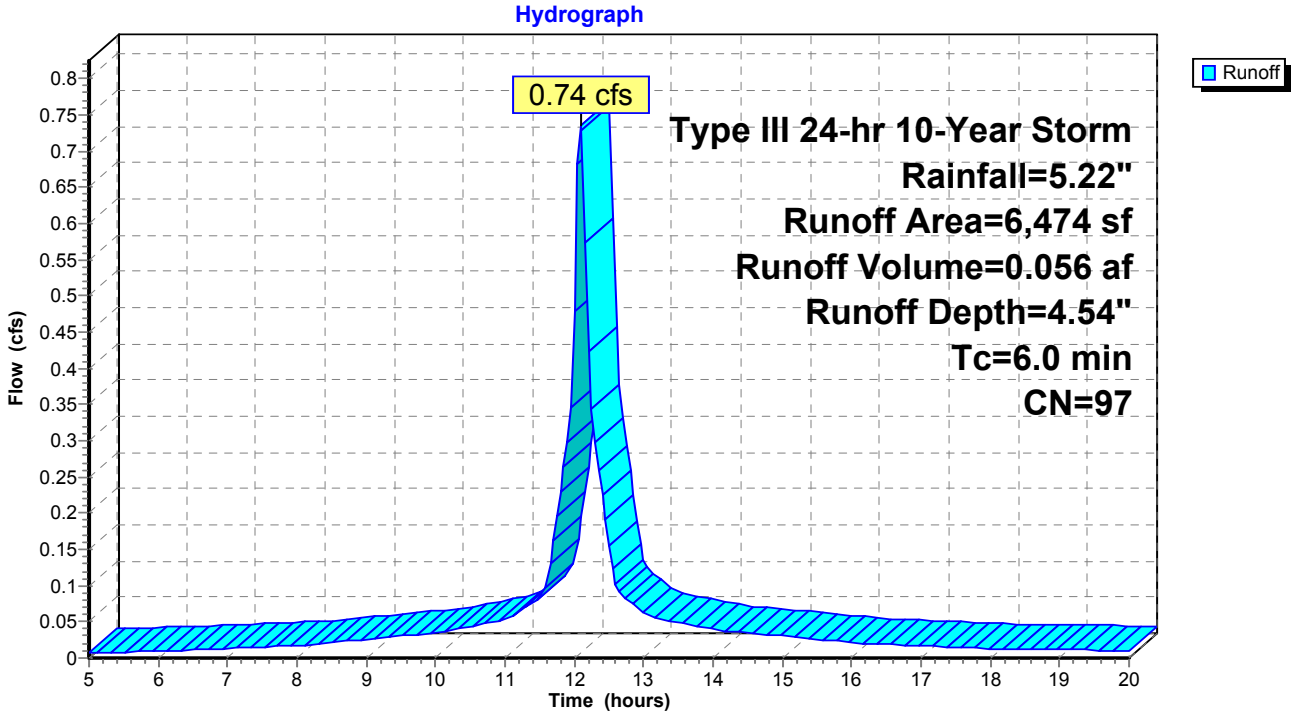
Runoff = 0.74 cfs @ 12.09 hrs, Volume= 0.056 af, Depth= 4.54"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=5.22"

Area (sf)	CN	Description
6,204	98	roadway pavement/curb
198	98	driveway apron
72	39	>75% Grass cover, Good, HSG A
6,474	97	Weighted Average

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

Subcatchment 3S:



Subcatchment 4S:

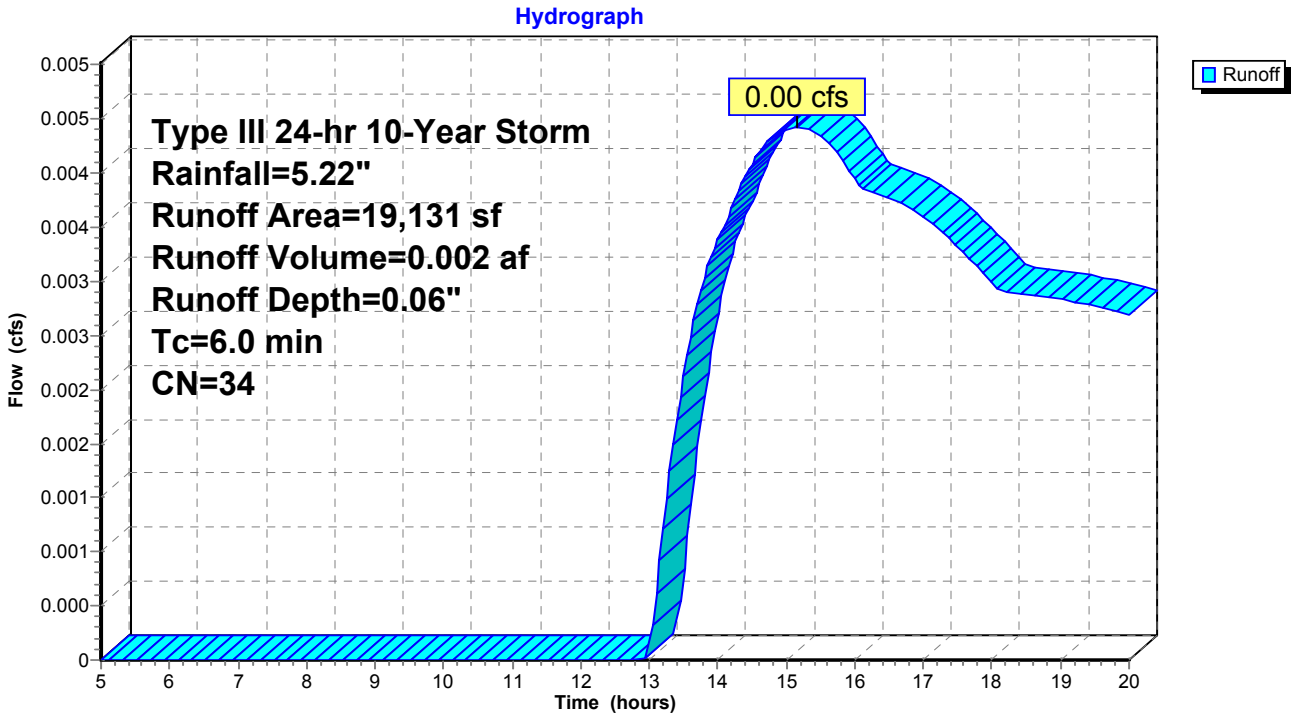
Runoff = 0.00 cfs @ 15.16 hrs, Volume= 0.002 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=5.22"

Area (sf)	CN	Description
14,635	30	Woods, Good, HSG A
560	98	ret. walls
3,936	39	>75% Grass cover, Good, HSG A
19,131	34	Weighted Average

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

Subcatchment 4S:



Subcatchment 5S:

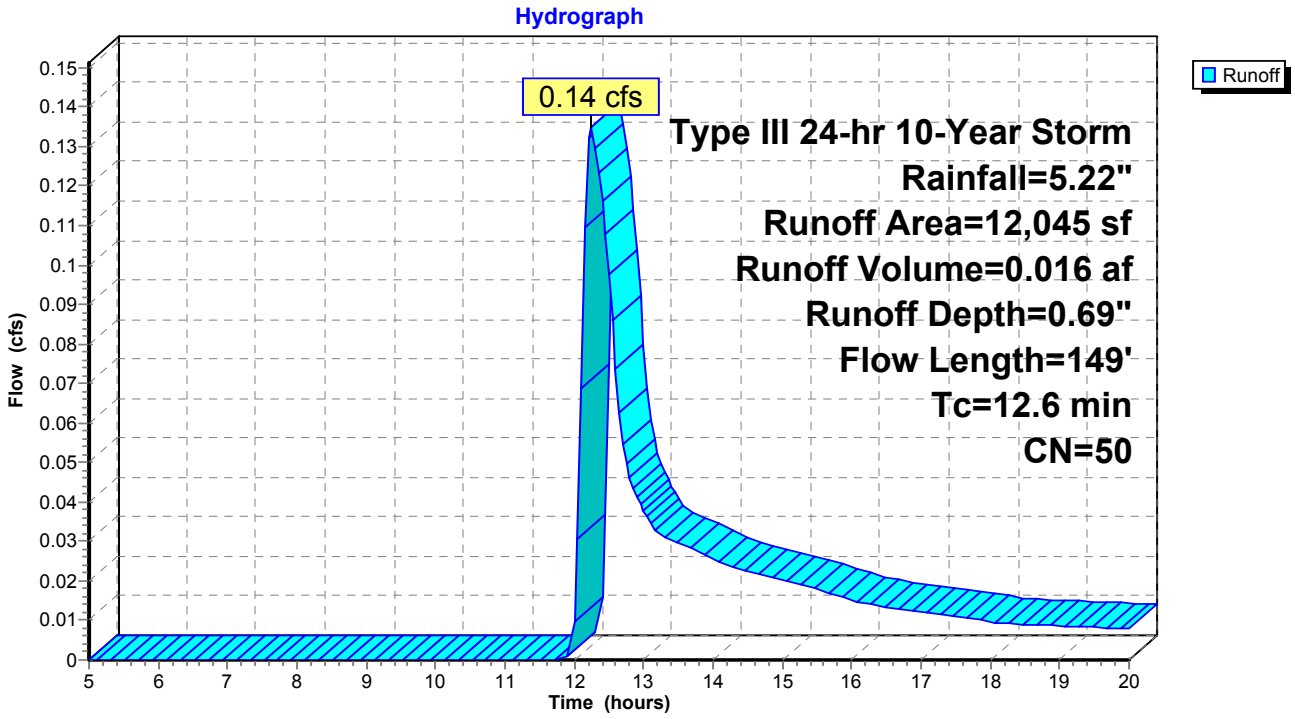
Runoff = 0.14 cfs @ 12.24 hrs, Volume= 0.016 af, Depth= 0.69"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=5.22"

Area (sf)	CN	Description
9,759	39	>75% Grass cover, Good, HSG A
2,286	98	House Roof (Lot A)
12,045	50	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	50	0.0050	0.1		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
0.5	20	0.0100	0.7		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.0	12	0.3300	4.0		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	67	0.0050	0.5		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.6	149	Total			

Subcatchment 5S:



Subcatchment 6S:

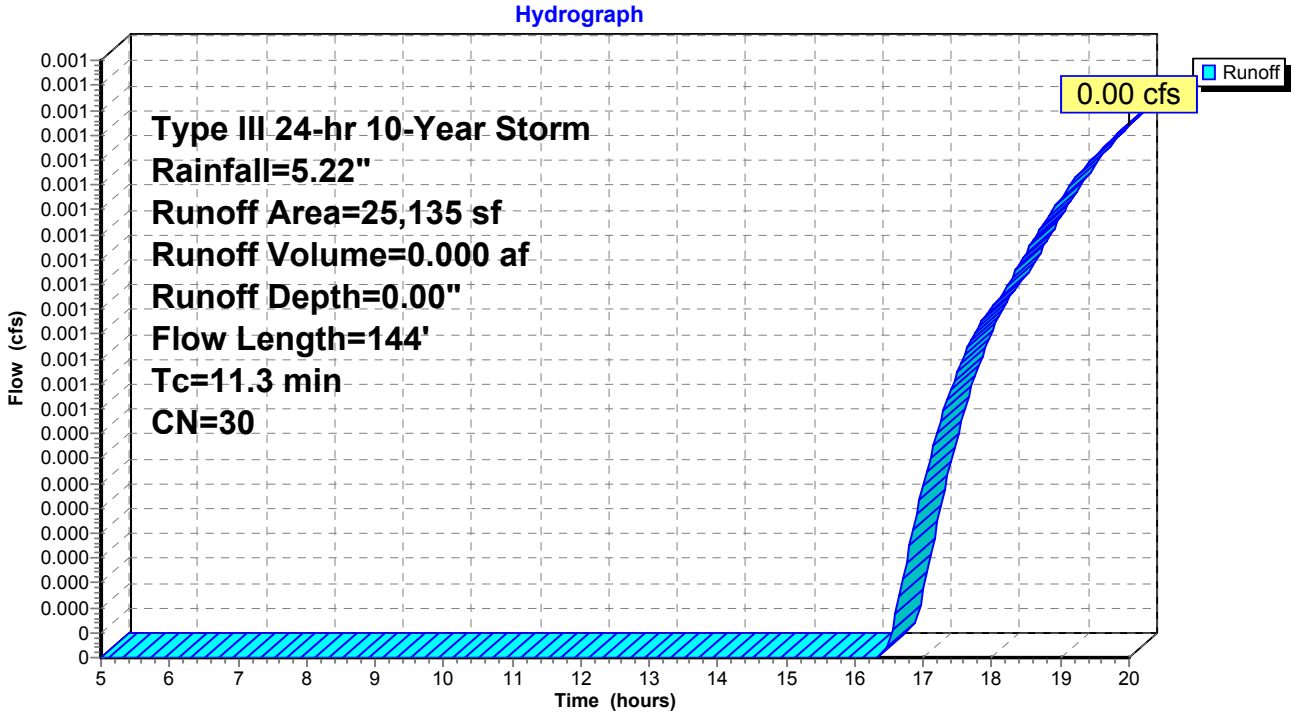
Runoff = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Storm Rainfall=5.22"

Area (sf)	CN	Description
25,135	30	Woods, Good, HSG A

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	50	0.0050	0.1		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
1.0	40	0.0100	0.7		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	54	0.1500	1.9		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.3	144	Total			

Subcatchment 6S:



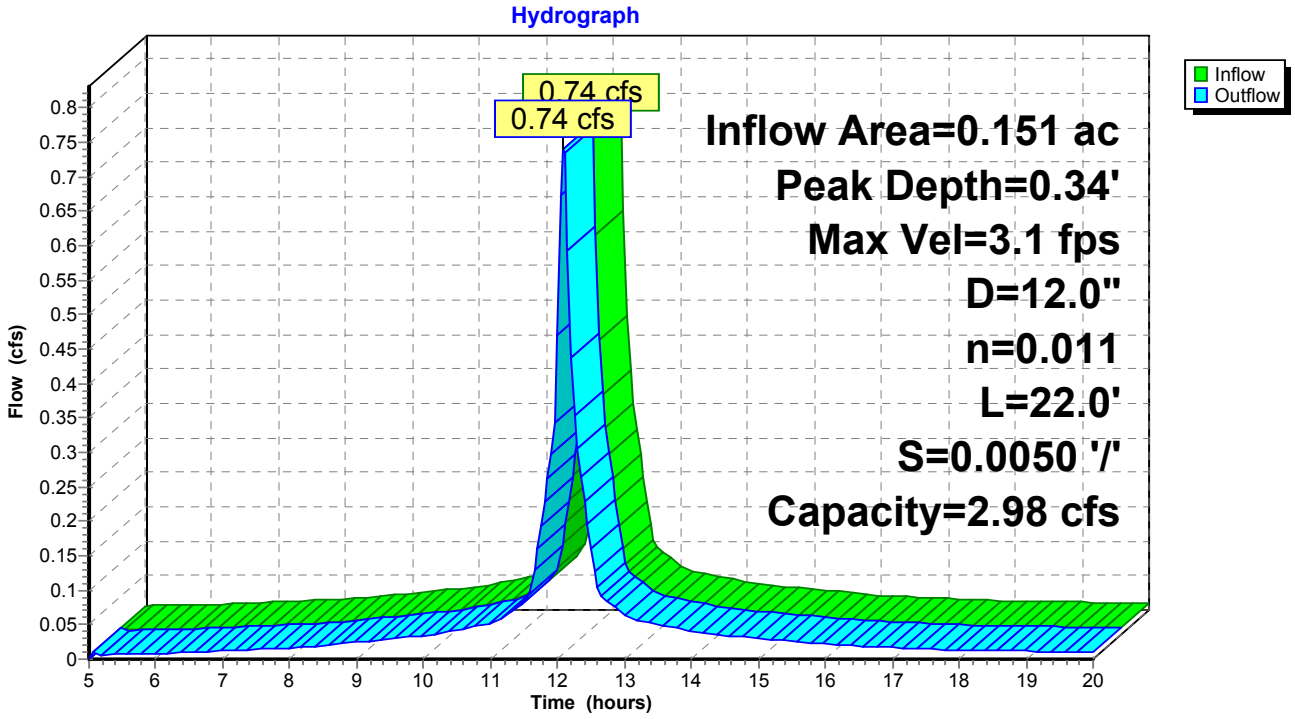
Reach 1R:

Inflow Area = 0.151 ac, Inflow Depth = 4.46" for 10-Year Storm event
Inflow = 0.74 cfs @ 12.09 hrs, Volume= 0.056 af
Outflow = 0.74 cfs @ 12.09 hrs, Volume= 0.056 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.1 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.2 fps, Avg. Travel Time= 0.3 min

Peak Depth= 0.34' @ 12.09 hrs
Capacity at bank full= 2.98 cfs
Inlet Invert= 83.17', Outlet Invert= 83.06'
12.0" Diameter Pipe n= 0.011 Length= 22.0' Slope= 0.0050 '/'

Reach 1R:



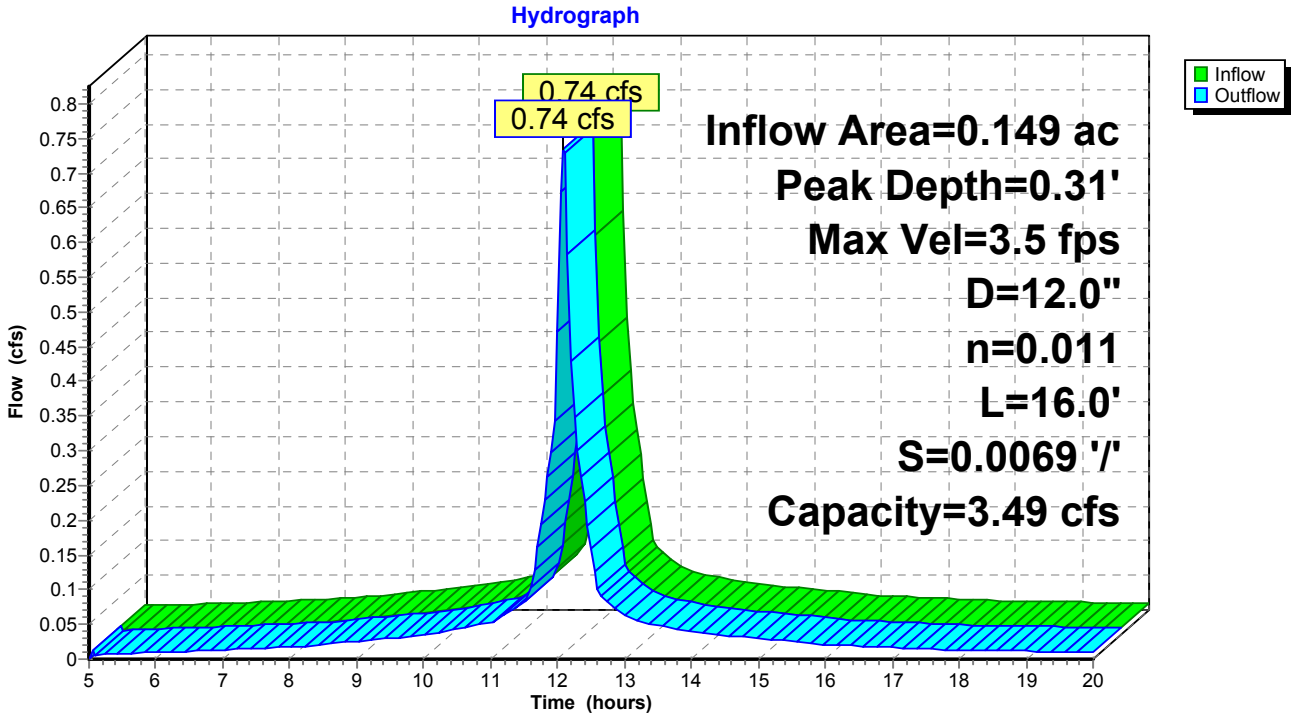
Reach 2R:

Inflow Area = 0.149 ac, Inflow Depth = 4.54" for 10-Year Storm event
Inflow = 0.74 cfs @ 12.09 hrs, Volume= 0.056 af
Outflow = 0.74 cfs @ 12.09 hrs, Volume= 0.056 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.5 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.4 fps, Avg. Travel Time= 0.2 min

Peak Depth= 0.31' @ 12.09 hrs
Capacity at bank full= 3.49 cfs
Inlet Invert= 83.17', Outlet Invert= 83.06'
12.0" Diameter Pipe n= 0.011 Length= 16.0' Slope= 0.0069 '/'

Reach 2R:



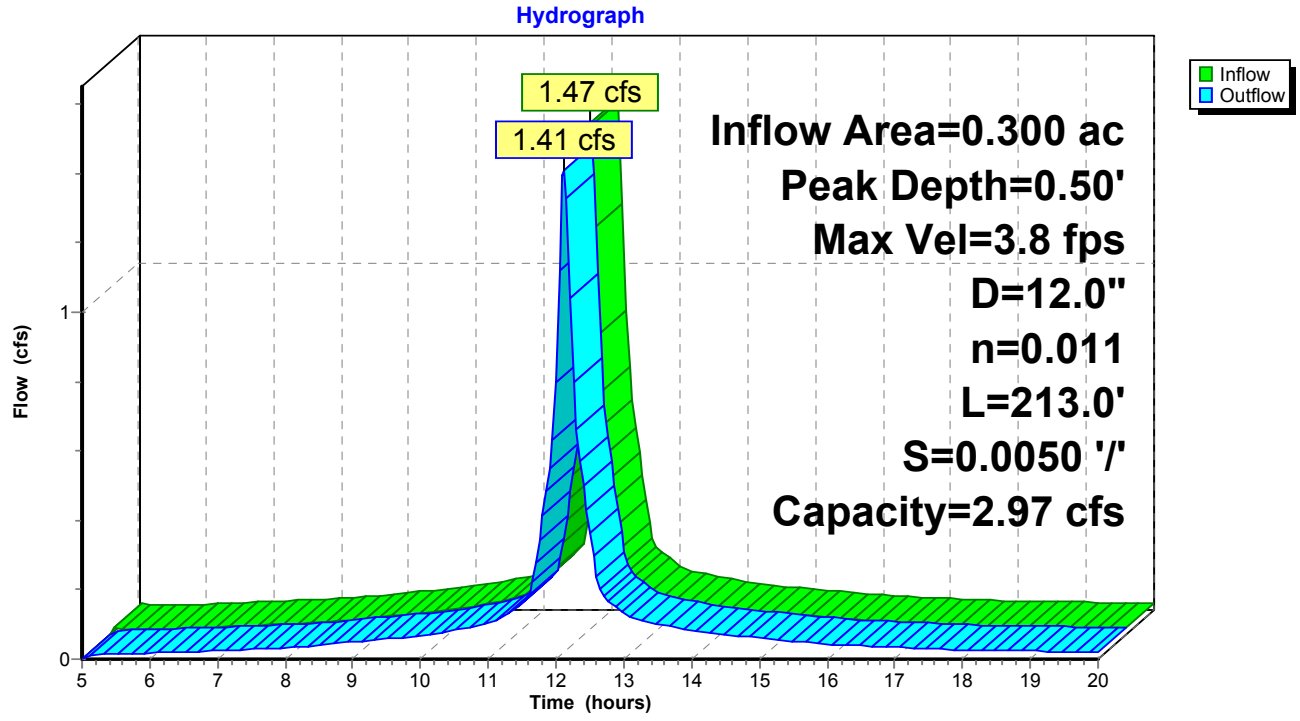
Reach 3R:

Inflow Area = 0.300 ac, Inflow Depth = 4.50" for 10-Year Storm event
Inflow = 1.47 cfs @ 12.09 hrs, Volume= 0.112 af
Outflow = 1.41 cfs @ 12.12 hrs, Volume= 0.112 af, Atten= 4%, Lag= 1.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.8 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 1.5 fps, Avg. Travel Time= 2.4 min

Peak Depth= 0.50' @ 12.10 hrs
Capacity at bank full= 2.97 cfs
Inlet Invert= 83.06', Outlet Invert= 82.00'
12.0" Diameter Pipe n= 0.011 Length= 213.0' Slope= 0.0050 '/'

Reach 3R:



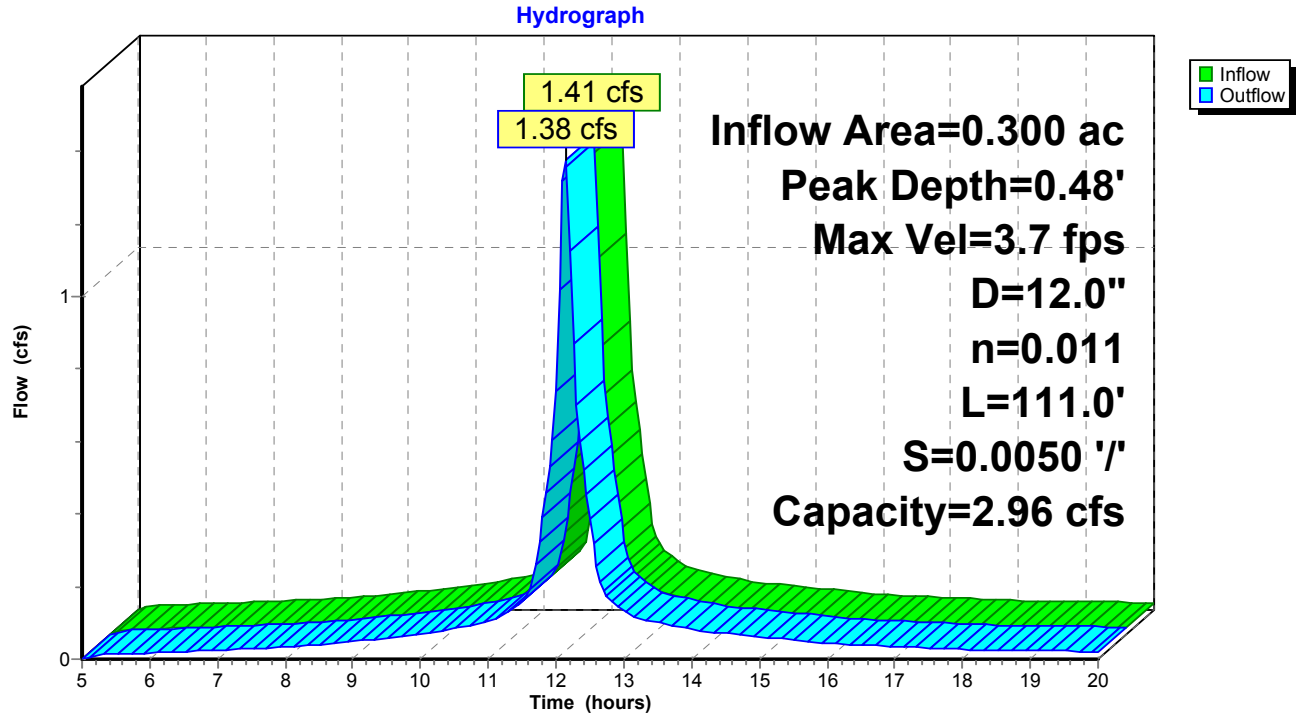
Reach 4R:

Inflow Area = 0.300 ac, Inflow Depth = 4.49" for 10-Year Storm event
Inflow = 1.41 cfs @ 12.12 hrs, Volume= 0.112 af
Outflow = 1.38 cfs @ 12.13 hrs, Volume= 0.112 af, Atten= 2%, Lag= 1.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.7 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.5 fps, Avg. Travel Time= 1.3 min

Peak Depth= 0.48' @ 12.12 hrs
Capacity at bank full= 2.96 cfs
Inlet Invert= 82.75', Outlet Invert= 82.20'
12.0" Diameter Pipe n= 0.011 Length= 111.0' Slope= 0.0050 '/'

Reach 4R:



Pond 1P: Detention Pond

Inflow Area = 0.576 ac, Inflow Depth = 2.66" for 10-Year Storm event
Inflow = 1.48 cfs @ 12.14 hrs, Volume= 0.128 af
Outflow = 0.54 cfs @ 12.46 hrs, Volume= 0.128 af, Atten= 63%, Lag= 19.4 min
Discarded = 0.54 cfs @ 12.46 hrs, Volume= 0.128 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.36' @ 12.46 hrs Surf.Area= 2,826 sf Storage= 877 cf
Plug-Flow detention time= 8.8 min calculated for 0.127 af (100% of inflow)
Center-of-Mass det. time= 8.5 min (765.8 - 757.4)

#	Invert	Avail.Storage	Storage Description
1	82.10'	6,471 cf	**Custom Stage Data (Prismatic)** Listed below

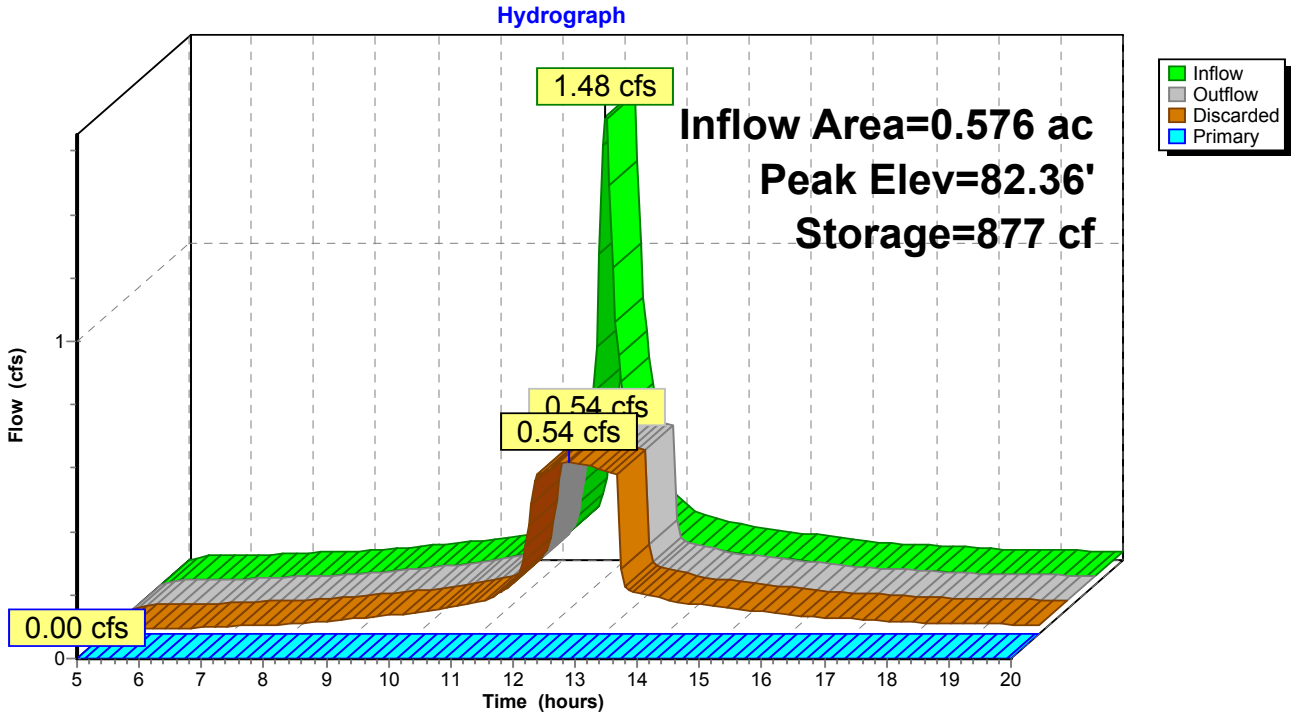
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
82.10	2,610	0	0
84.00	4,202	6,471	6,471

#	Routing	Invert	Outlet Devices
1	Discarded	0.00'	**0.011486 fpm Exfiltration over entire Surface area**
2	Primary	83.00'	**6.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.54 cfs @ 12.46 hrs HW=82.36' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.54 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=82.10' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Detention Pond



Pond OCS-1: OCS-1

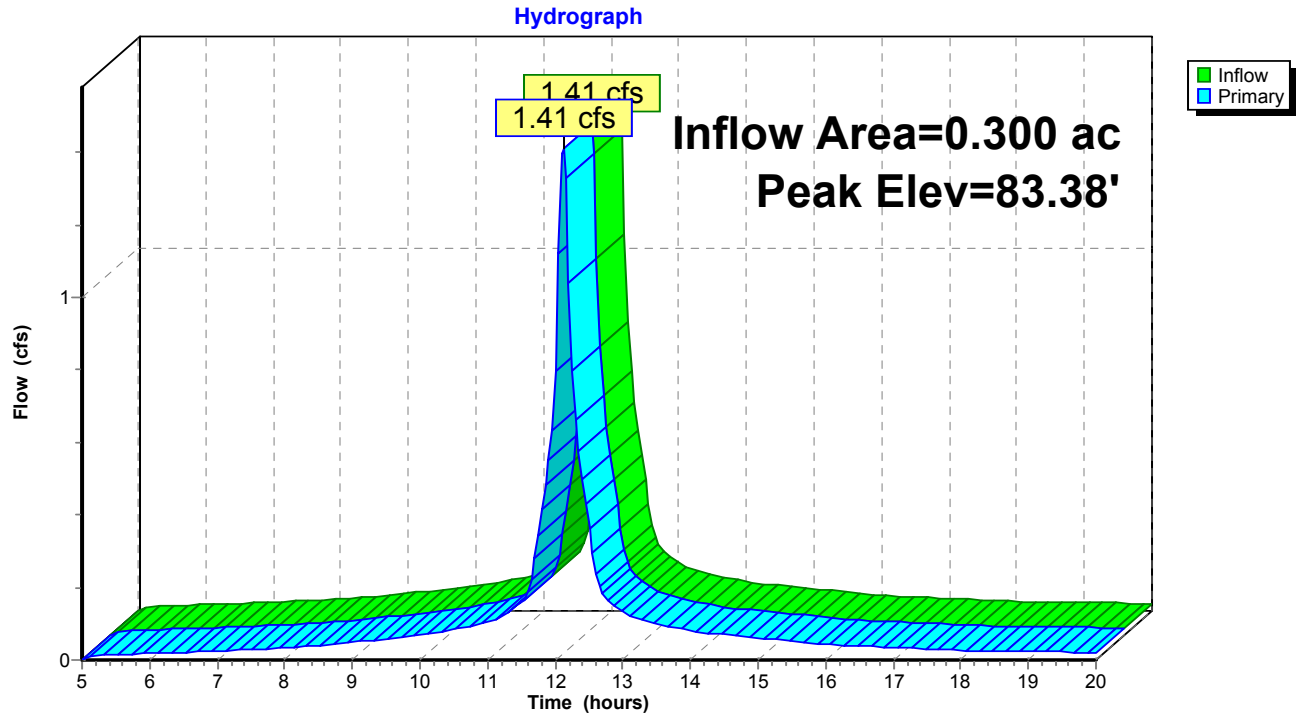
Inflow Area = 0.300 ac, Inflow Depth = 4.49" for 10-Year Storm event
Inflow = 1.41 cfs @ 12.12 hrs, Volume= 0.112 af
Outflow = 1.41 cfs @ 12.12 hrs, Volume= 0.112 af, Atten= 0%, Lag= 0.0 min
Primary = 1.41 cfs @ 12.12 hrs, Volume= 0.112 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 83.38' @ 12.12 hrs
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= (not calculated)

#	Routing	Invert	Outlet Devices
1	Primary	82.75'	**12.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=1.37 cfs @ 12.12 hrs HW=83.37' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 1.37 cfs @ 2.7 fps)

Pond OCS-1: OCS-1

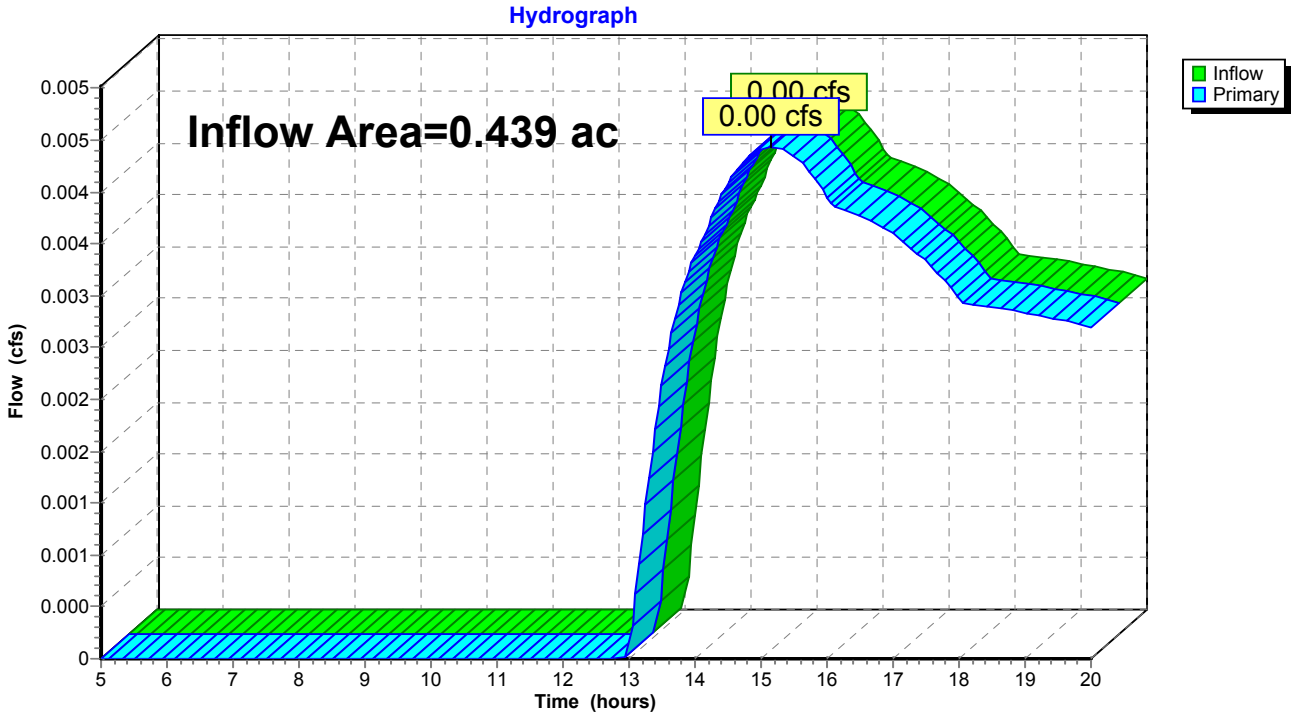


Link 1L: Total Offsite

Inflow Area = 0.439 ac, Inflow Depth = 0.06" for 10-Year Storm event
Inflow = 0.00 cfs @ 15.16 hrs, Volume= 0.002 af
Primary = 0.00 cfs @ 15.16 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: Total Offsite

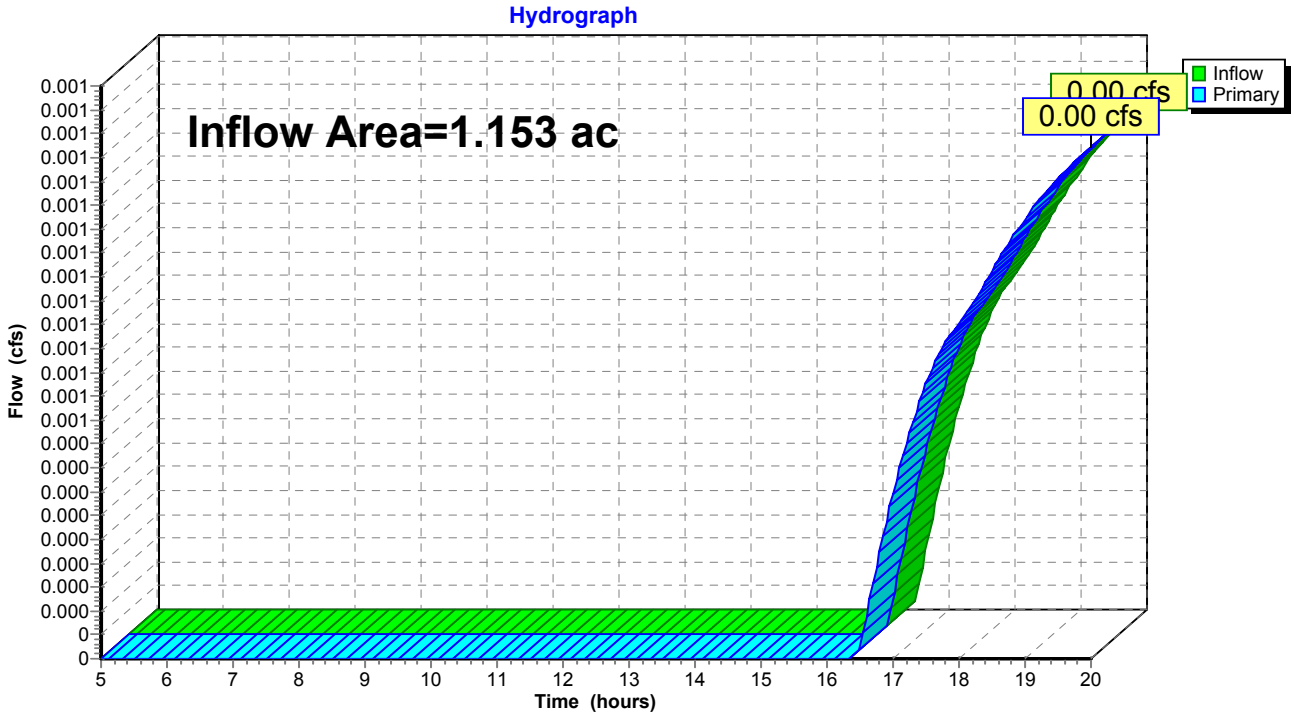


Link 2L: Total Offsite

Inflow Area = 1.153 ac, Inflow Depth = 0.00" for 10-Year Storm event
Inflow = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 20.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: Total Offsite

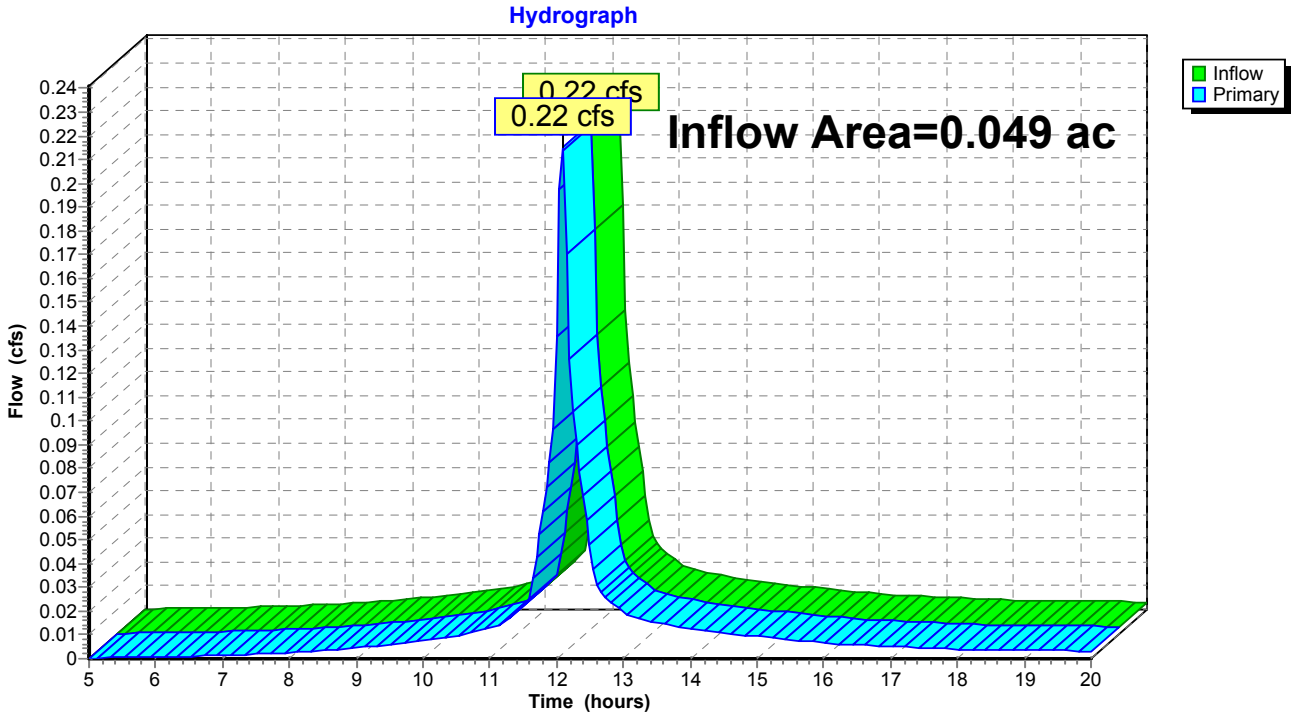


Link 3L: To Existing CB in Small Lane (redevelopment)

Inflow Area = 0.049 ac, Inflow Depth = 3.76" for 10-Year Storm event
Inflow = 0.22 cfs @ 12.09 hrs, Volume= 0.015 af
Primary = 0.22 cfs @ 12.09 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: To Existing CB in Small Lane (redevelopment)

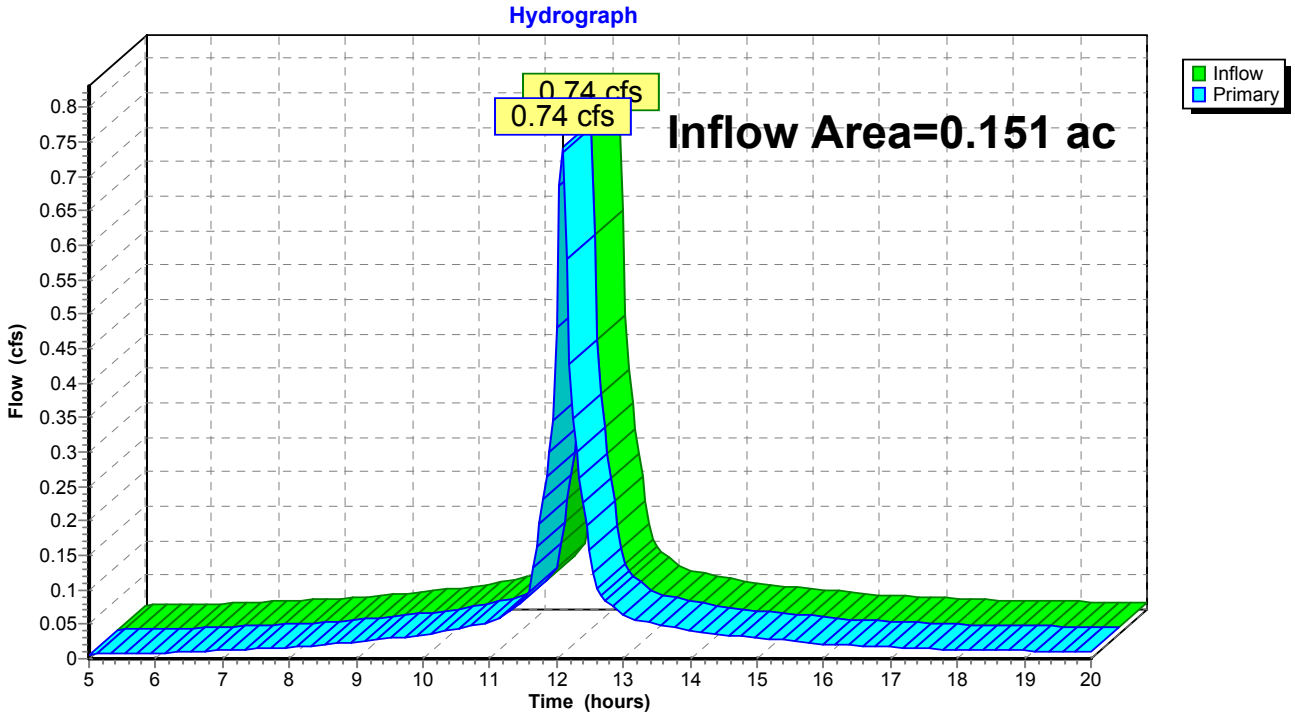


Link cb-1:

Inflow Area = 0.151 ac, Inflow Depth = 4.46" for 10-Year Storm event
Inflow = 0.74 cfs @ 12.09 hrs, Volume= 0.056 af
Primary = 0.74 cfs @ 12.09 hrs, Volume= 0.056 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link cb-1:

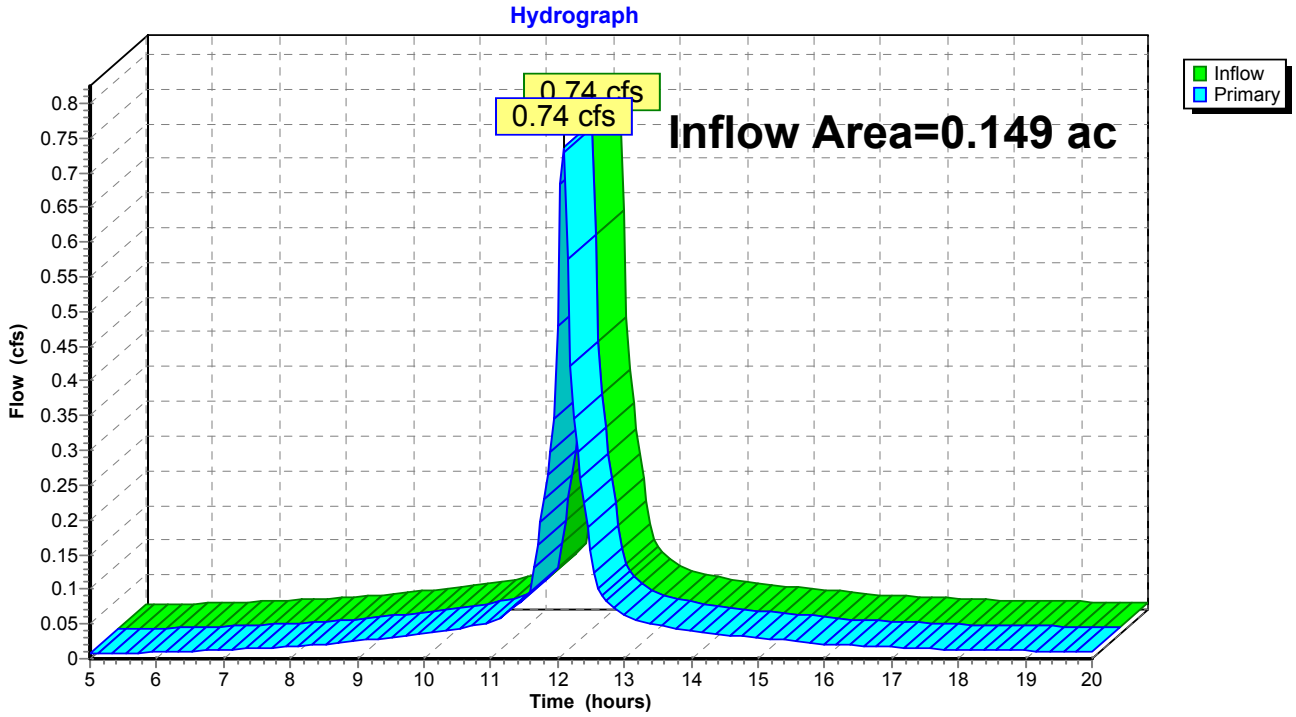


Link cb-2:

Inflow Area = 0.149 ac, Inflow Depth = 4.54" for 10-Year Storm event
Inflow = 0.74 cfs @ 12.09 hrs, Volume= 0.056 af
Primary = 0.74 cfs @ 12.09 hrs, Volume= 0.056 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link cb-2:



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Runoff Area=2,120 sf Runoff Depth=4.85"
Tc=6.0 min CN=89 Runoff=0.27 cfs 0.020 af

Subcatchment 2S: Runoff Area=6,580 sf Runoff Depth=5.55"
Tc=6.0 min CN=96 Runoff=0.92 cfs 0.070 af

Subcatchment 3S: Runoff Area=6,474 sf Runoff Depth=5.63"
Tc=6.0 min CN=97 Runoff=0.91 cfs 0.070 af

Subcatchment 4S: Runoff Area=19,131 sf Runoff Depth=0.23"
Tc=6.0 min CN=34 Runoff=0.03 cfs 0.009 af

Subcatchment 5S: Runoff Area=12,045 sf Runoff Depth=1.20"
Flow Length=149' Tc=12.6 min CN=50 Runoff=0.29 cfs 0.028 af

Subcatchment 6S: Runoff Area=25,135 sf Runoff Depth=0.09"
Flow Length=144' Tc=11.3 min CN=30 Runoff=0.01 cfs 0.004 af

Reach 1R: Peak Depth=0.38' Max Vel=3.3 fps Inflow=0.92 cfs 0.070 af
D=12.0" n=0.011 L=22.0' S=0.0050 '/' Capacity=2.98 cfs Outflow=0.91 cfs 0.070 af

Reach 2R: Peak Depth=0.35' Max Vel=3.7 fps Inflow=0.91 cfs 0.070 af
D=12.0" n=0.011 L=16.0' S=0.0069 '/' Capacity=3.49 cfs Outflow=0.91 cfs 0.070 af

Reach 3R: Peak Depth=0.56' Max Vel=4.0 fps Inflow=1.82 cfs 0.140 af
D=12.0" n=0.011 L=213.0' S=0.0050 '/' Capacity=2.97 cfs Outflow=1.75 cfs 0.139 af

Reach 4R: Peak Depth=0.55' Max Vel=3.9 fps Inflow=1.75 cfs 0.139 af
D=12.0" n=0.011 L=111.0' S=0.0050 '/' Capacity=2.96 cfs Outflow=1.70 cfs 0.139 af

Pond 1P: Detention Pond Peak Elev=82.54' Storage=1,499 cf Inflow=1.95 cfs 0.167 af
Discarded=0.57 cfs 0.167 af Primary=0.00 cfs 0.000 af Outflow=0.57 cfs 0.167 af

Pond OCS-1: OCS-1 Peak Elev=83.47' Inflow=1.75 cfs 0.139 af
Outflow=1.75 cfs 0.139 af

Link 1L: Total Offsite Inflow=0.03 cfs 0.009 af
Primary=0.03 cfs 0.009 af

Link 2L: Total Offsite Inflow=0.01 cfs 0.004 af
Primary=0.01 cfs 0.004 af

Link 3L: To Existing CB in Small Lane (redevelopment) Inflow=0.27 cfs 0.020 af
Primary=0.27 cfs 0.020 af

Link cb-1: Inflow=0.92 cfs 0.070 af
Primary=0.92 cfs 0.070 af

Link cb-2: Inflow=0.91 cfs 0.070 af
Primary=0.91 cfs 0.070 af

Total Runoff Area = 1.641 ac Runoff Volume = 0.200 af Average Runoff Depth = 1.46"

Subcatchment 1S:

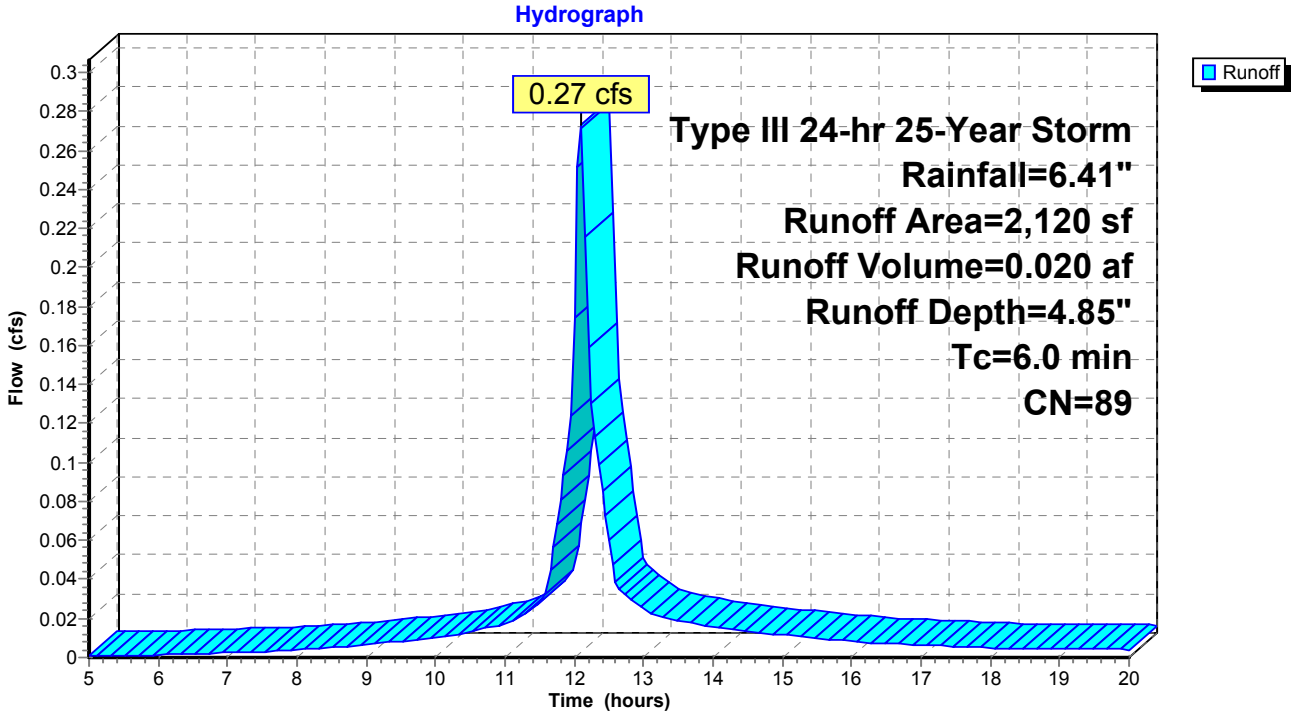
Runoff = 0.27 cfs @ 12.09 hrs, Volume= 0.020 af, Depth= 4.85"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=6.41"

Area (sf)	CN	Description
1,796	98	Pavement/Curb
324	39	>75% Grass cover, Good, HSG A
2,120	89	Weighted Average

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

Subcatchment 1S:



Subcatchment 2S:

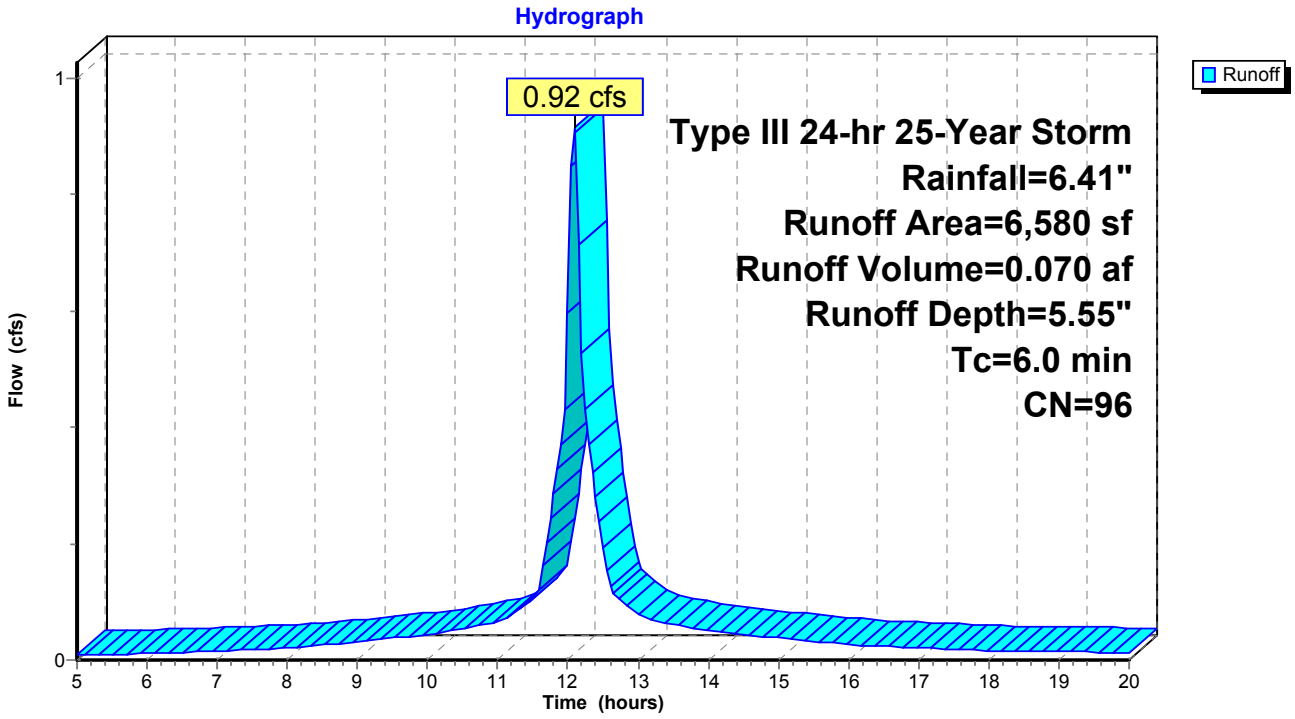
Runoff = 0.92 cfs @ 12.09 hrs, Volume= 0.070 af, Depth= 5.55"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=6.41"

Area (sf)	CN	Description
6,204	98	Roadway pavement/curb
198	98	Driveway Apron
178	39	>75% Grass cover, Good, HSG A
6,580	96	Weighted Average

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

Subcatchment 2S:



Subcatchment 3S:

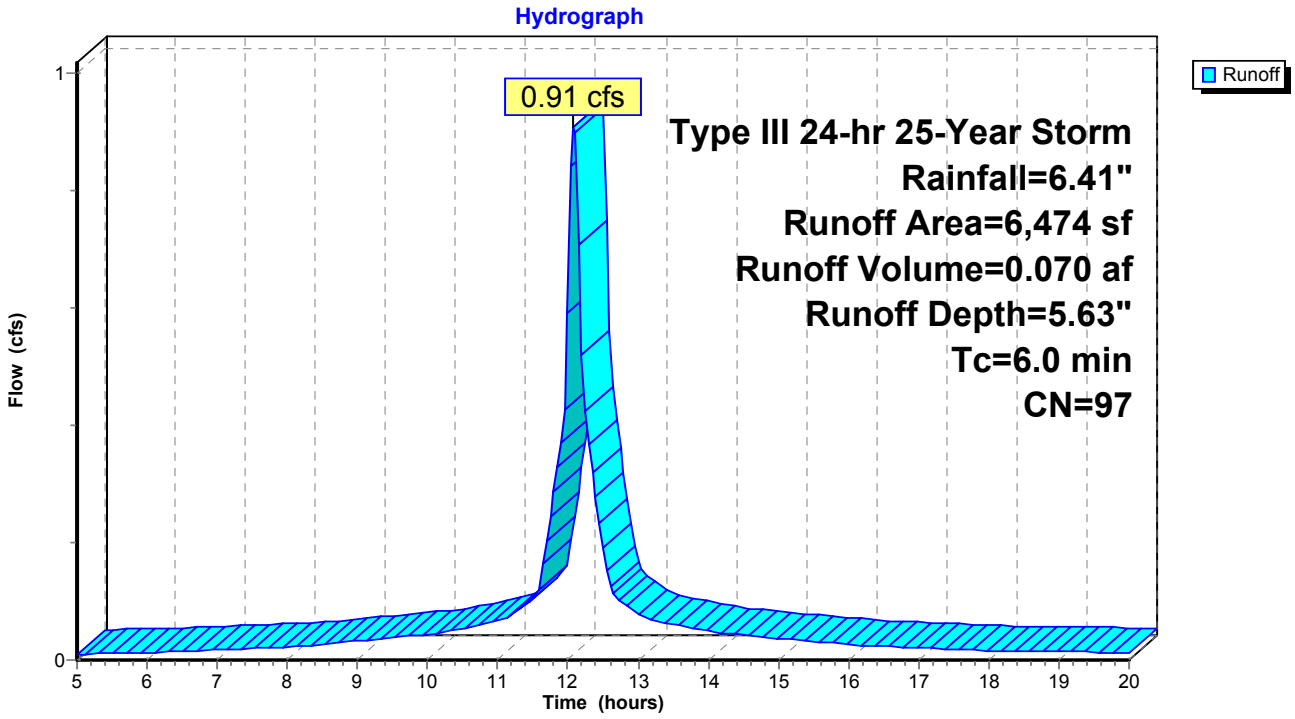
Runoff = 0.91 cfs @ 12.09 hrs, Volume= 0.070 af, Depth= 5.63"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=6.41"

Area (sf)	CN	Description
6,204	98	roadway pavement/curb
198	98	driveway apron
72	39	>75% Grass cover, Good, HSG A
6,474	97	Weighted Average

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

Subcatchment 3S:



Subcatchment 4S:

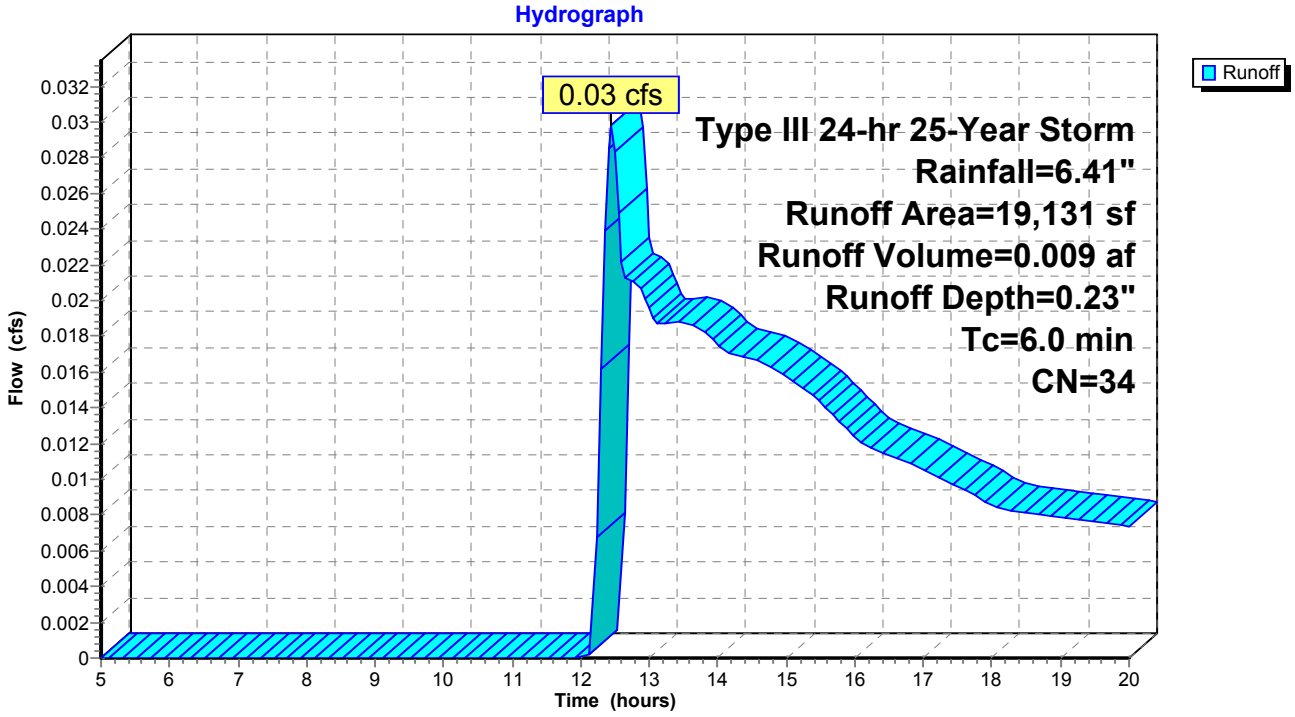
Runoff = 0.03 cfs @ 12.45 hrs, Volume= 0.009 af, Depth= 0.23"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=6.41"

Area (sf)	CN	Description
14,635	30	Woods, Good, HSG A
560	98	ret. walls
3,936	39	>75% Grass cover, Good, HSG A
19,131	34	Weighted Average

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

Subcatchment 4S:



Subcatchment 5S:

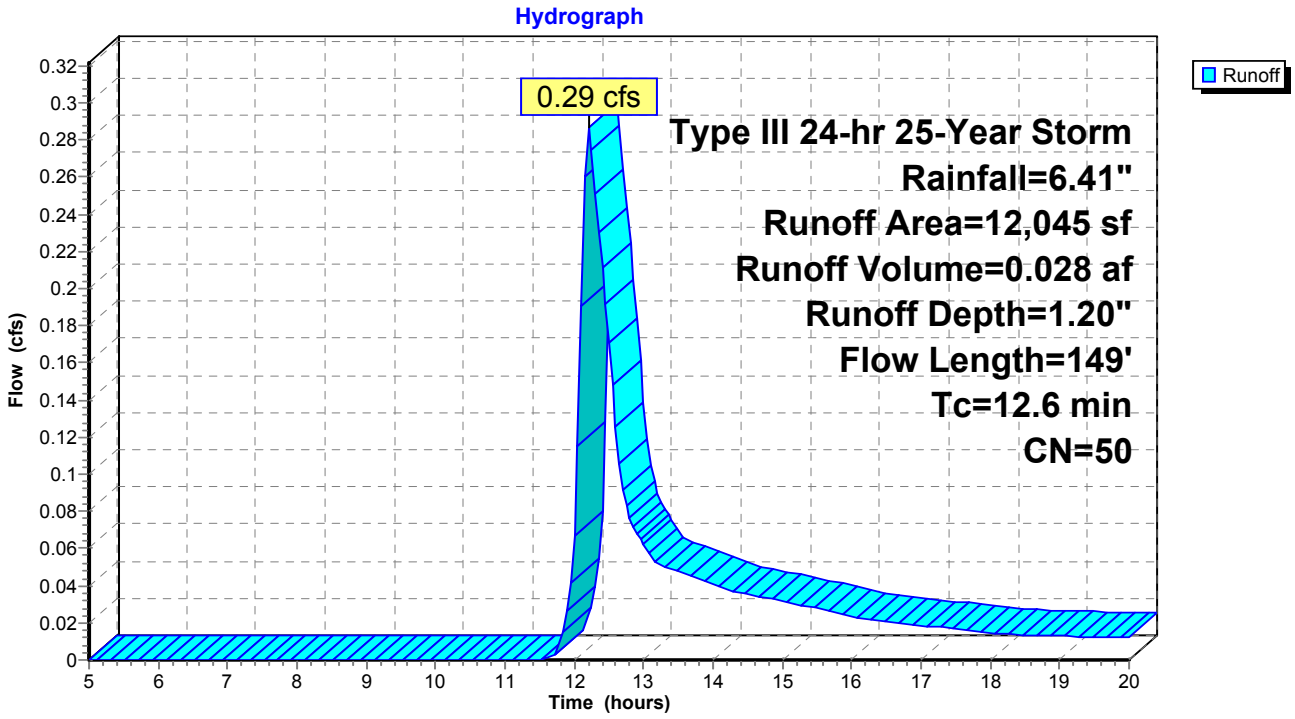
Runoff = 0.29 cfs @ 12.21 hrs, Volume= 0.028 af, Depth= 1.20"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=6.41"

Area (sf)	CN	Description
9,759	39	>75% Grass cover, Good, HSG A
2,286	98	House Roof (Lot A)
12,045	50	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	50	0.0050	0.1		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
0.5	20	0.0100	0.7		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.0	12	0.3300	4.0		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	67	0.0050	0.5		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.6	149	Total			

Subcatchment 5S:



Subcatchment 6S:

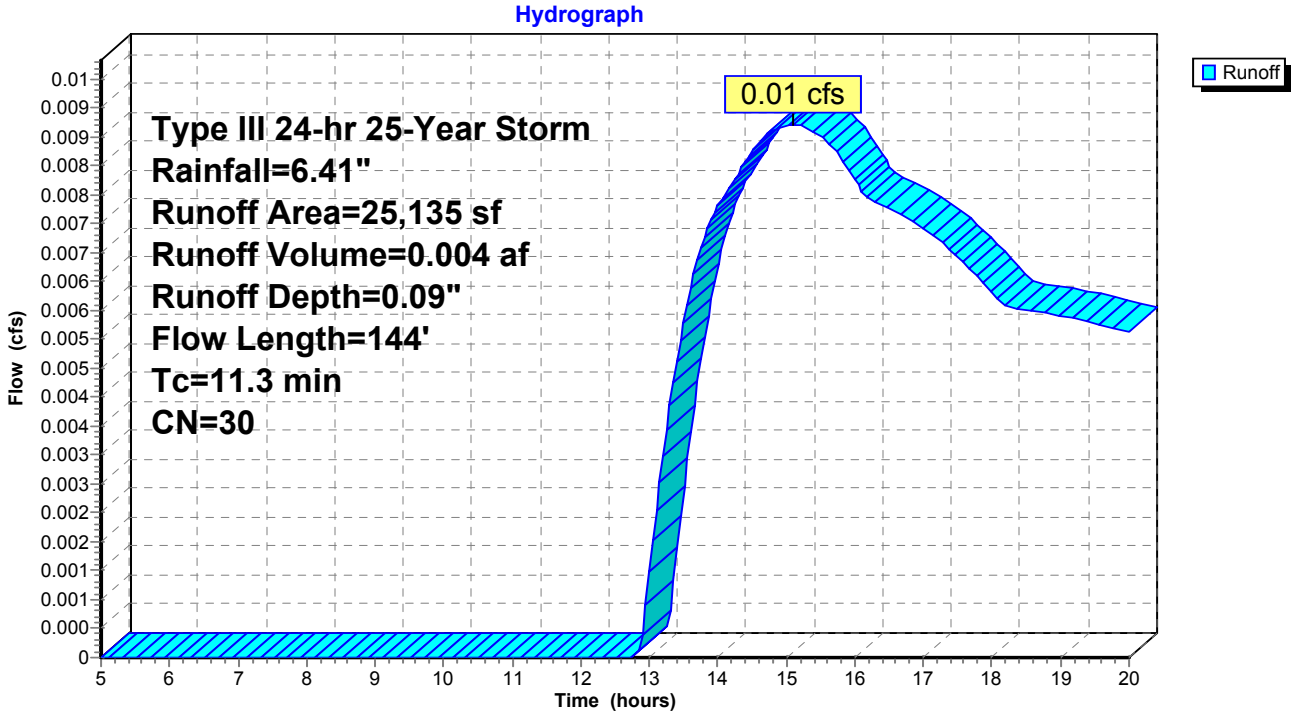
Runoff = 0.01 cfs @ 15.09 hrs, Volume= 0.004 af, Depth= 0.09"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Storm Rainfall=6.41"

Area (sf)	CN	Description
25,135	30	Woods, Good, HSG A

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	50	0.0050	0.1		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
1.0	40	0.0100	0.7		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	54	0.1500	1.9		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.3	144	Total			

Subcatchment 6S:



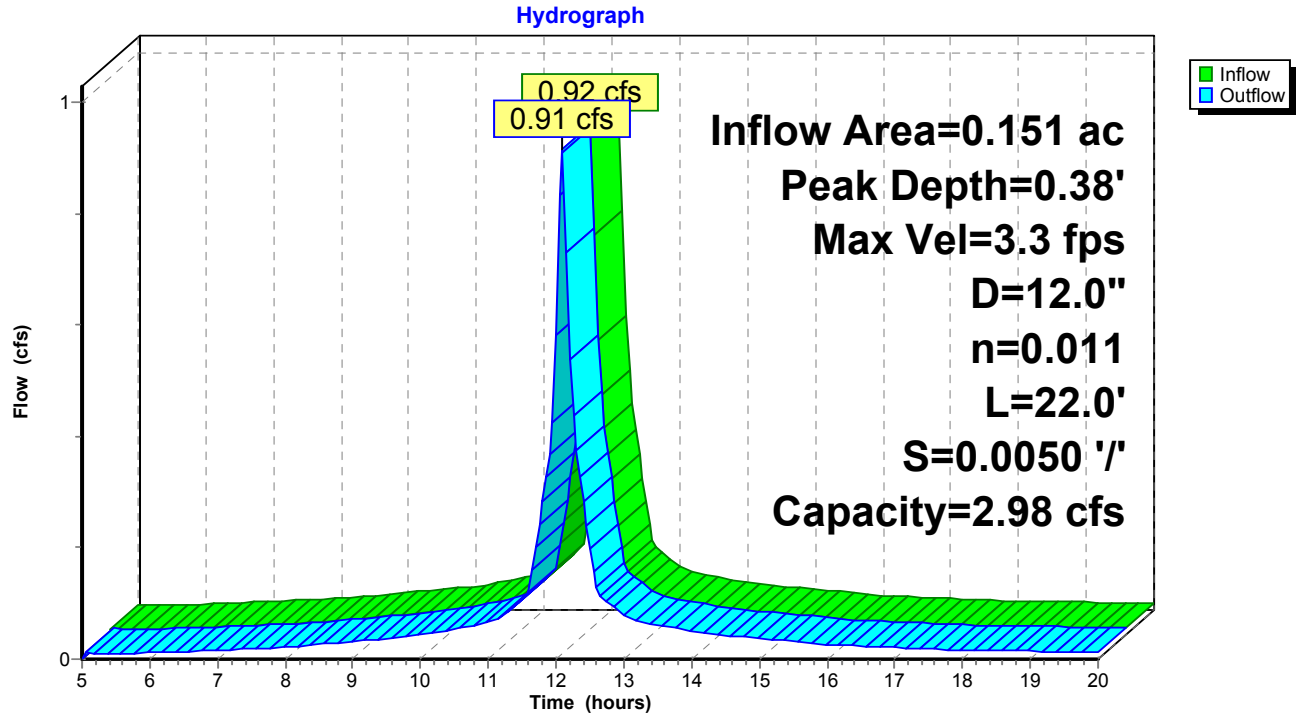
Reach 1R:

Inflow Area = 0.151 ac, Inflow Depth = 5.55" for 25-Year Storm event
Inflow = 0.92 cfs @ 12.09 hrs, Volume= 0.070 af
Outflow = 0.91 cfs @ 12.09 hrs, Volume= 0.070 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.3 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.3 fps, Avg. Travel Time= 0.3 min

Peak Depth= 0.38' @ 12.09 hrs
Capacity at bank full= 2.98 cfs
Inlet Invert= 83.17', Outlet Invert= 83.06'
12.0" Diameter Pipe n= 0.011 Length= 22.0' Slope= 0.0050 '/'

Reach 1R:



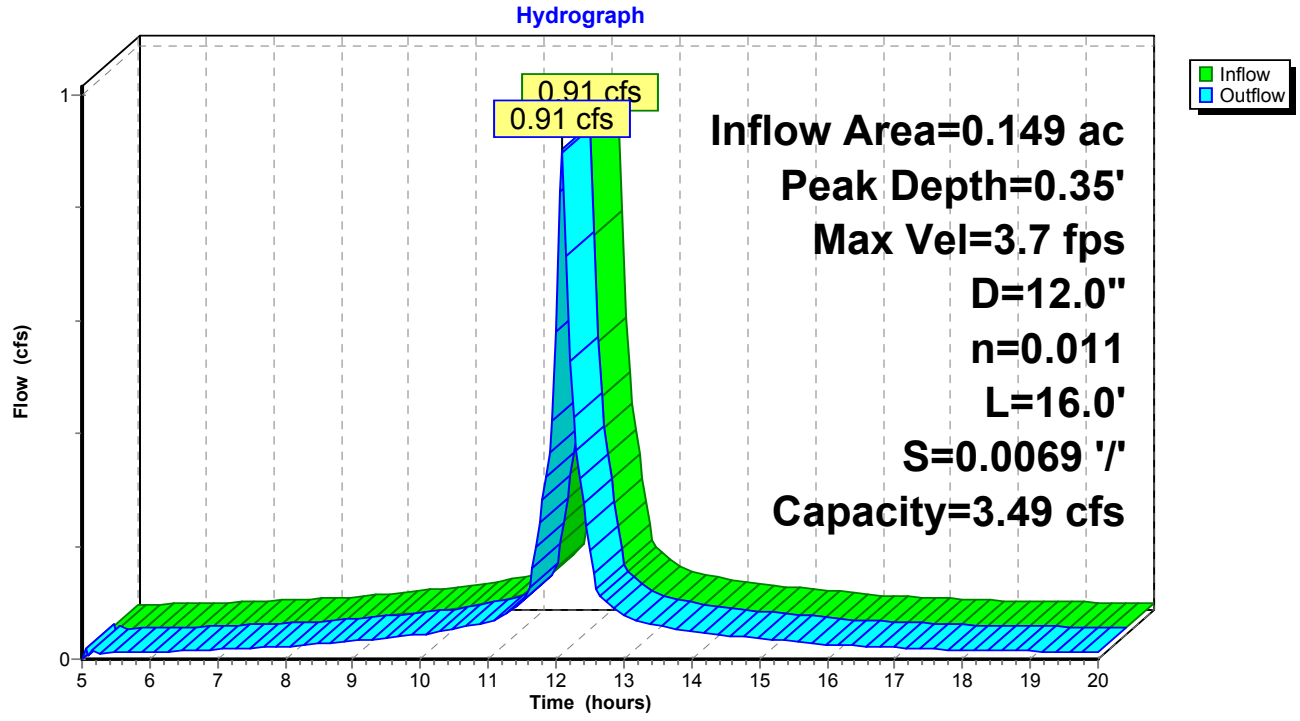
Reach 2R:

Inflow Area = 0.149 ac, Inflow Depth = 5.63" for 25-Year Storm event
Inflow = 0.91 cfs @ 12.09 hrs, Volume= 0.070 af
Outflow = 0.91 cfs @ 12.09 hrs, Volume= 0.070 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.7 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.4 fps, Avg. Travel Time= 0.2 min

Peak Depth= 0.35' @ 12.09 hrs
Capacity at bank full= 3.49 cfs
Inlet Invert= 83.17', Outlet Invert= 83.06'
12.0" Diameter Pipe n= 0.011 Length= 16.0' Slope= 0.0069 '/'

Reach 2R:



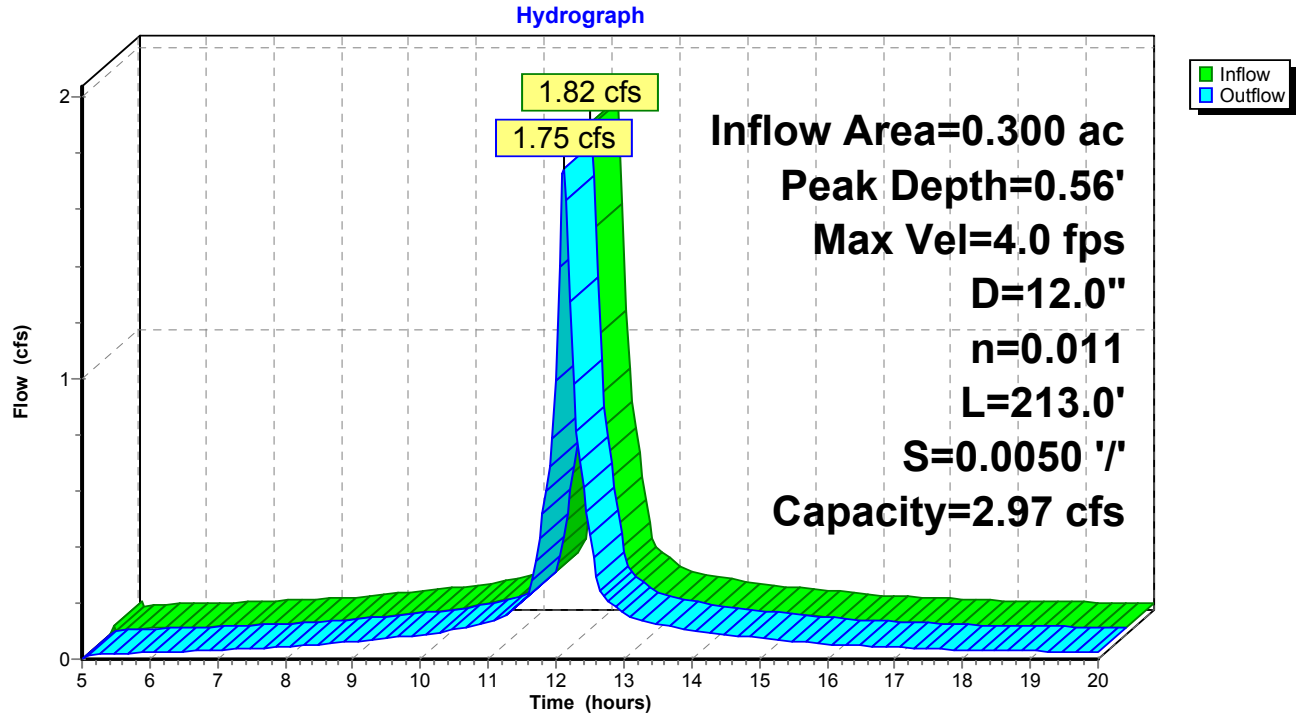
Reach 3R:

Inflow Area = 0.300 ac, Inflow Depth = 5.59" for 25-Year Storm event
Inflow = 1.82 cfs @ 12.09 hrs, Volume= 0.140 af
Outflow = 1.75 cfs @ 12.11 hrs, Volume= 0.139 af, Atten= 4%, Lag= 1.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.0 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 1.6 fps, Avg. Travel Time= 2.2 min

Peak Depth= 0.56' @ 12.10 hrs
Capacity at bank full= 2.97 cfs
Inlet Invert= 83.06', Outlet Invert= 82.00'
12.0" Diameter Pipe n= 0.011 Length= 213.0' Slope= 0.0050 '/'

Reach 3R:



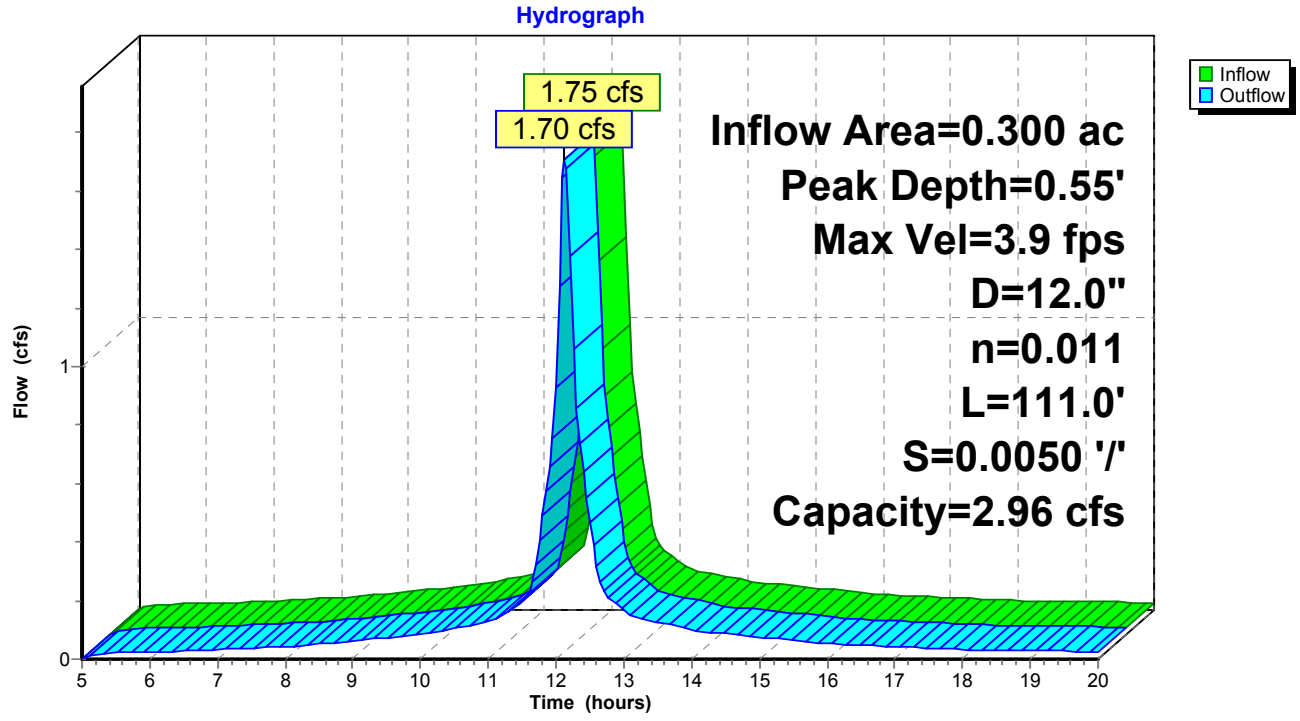
Reach 4R:

Inflow Area = 0.300 ac, Inflow Depth = 5.58" for 25-Year Storm event
Inflow = 1.75 cfs @ 12.11 hrs, Volume= 0.139 af
Outflow = 1.70 cfs @ 12.13 hrs, Volume= 0.139 af, Atten= 3%, Lag= 1.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.9 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.6 fps, Avg. Travel Time= 1.2 min

Peak Depth= 0.55' @ 12.12 hrs
Capacity at bank full= 2.96 cfs
Inlet Invert= 82.75', Outlet Invert= 82.20'
12.0" Diameter Pipe n= 0.011 Length= 111.0' Slope= 0.0050 '/'

Reach 4R:



Pond 1P: Detention Pond

Inflow Area = 0.576 ac, Inflow Depth = 3.48" for 25-Year Storm event
Inflow = 1.95 cfs @ 12.14 hrs, Volume= 0.167 af
Outflow = 0.57 cfs @ 12.53 hrs, Volume= 0.167 af, Atten= 71%, Lag= 23.7 min
Discarded = 0.57 cfs @ 12.53 hrs, Volume= 0.167 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.54' @ 12.53 hrs Surf.Area= 2,979 sf Storage= 1,499 cf
Plug-Flow detention time= 14.9 min calculated for 0.167 af (100% of inflow)
Center-of-Mass det. time= 14.6 min (772.5 - 757.9)

#	Invert	Avail.Storage	Storage Description
1	82.10'	6,471 cf	**Custom Stage Data (Prismatic)** Listed below

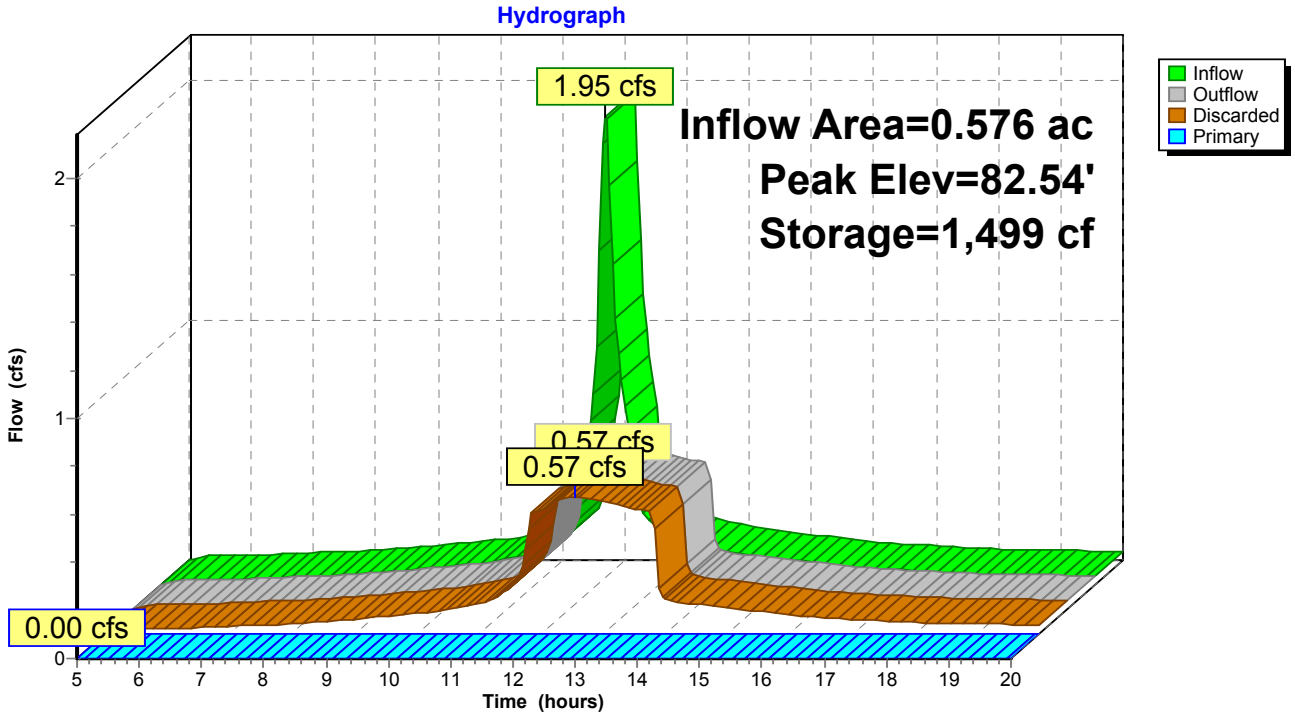
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
82.10	2,610	0	0
84.00	4,202	6,471	6,471

#	Routing	Invert	Outlet Devices
1	Discarded	0.00'	**0.011486 fpm Exfiltration over entire Surface area**
2	Primary	83.00'	**6.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.57 cfs @ 12.53 hrs HW=82.54' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.57 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=82.10' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Detention Pond



Pond OCS-1: OCS-1

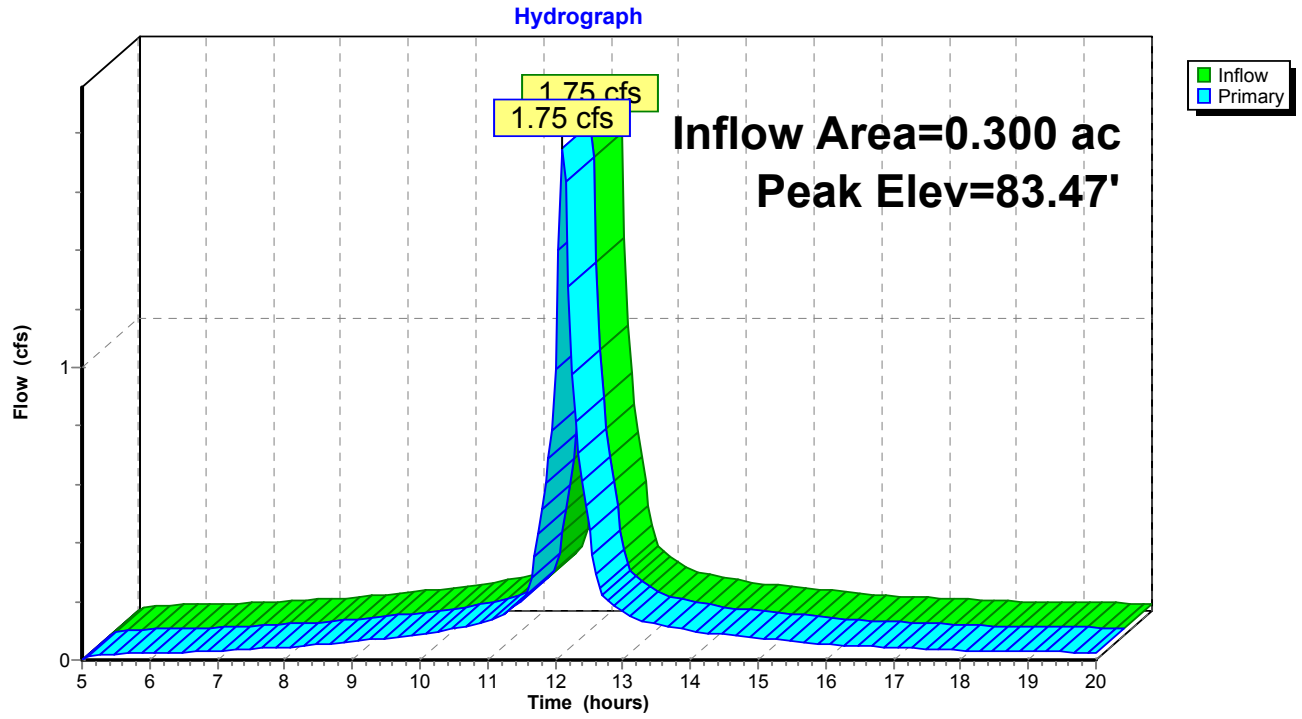
Inflow Area = 0.300 ac, Inflow Depth = 5.58" for 25-Year Storm event
Inflow = 1.75 cfs @ 12.11 hrs, Volume= 0.139 af
Outflow = 1.75 cfs @ 12.11 hrs, Volume= 0.139 af, Atten= 0%, Lag= 0.0 min
Primary = 1.75 cfs @ 12.11 hrs, Volume= 0.139 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 83.47' @ 12.11 hrs
Plug-Flow detention time= 0.0 min calculated for 0.139 af (100% of inflow)
Center-of-Mass det. time= 0.0 min (740.0 - 740.0)

#	Routing	Invert	Outlet Devices
1	Primary	82.75'	**12.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=1.70 cfs @ 12.11 hrs HW=83.46' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 1.70 cfs @ 2.9 fps)

Pond OCS-1: OCS-1

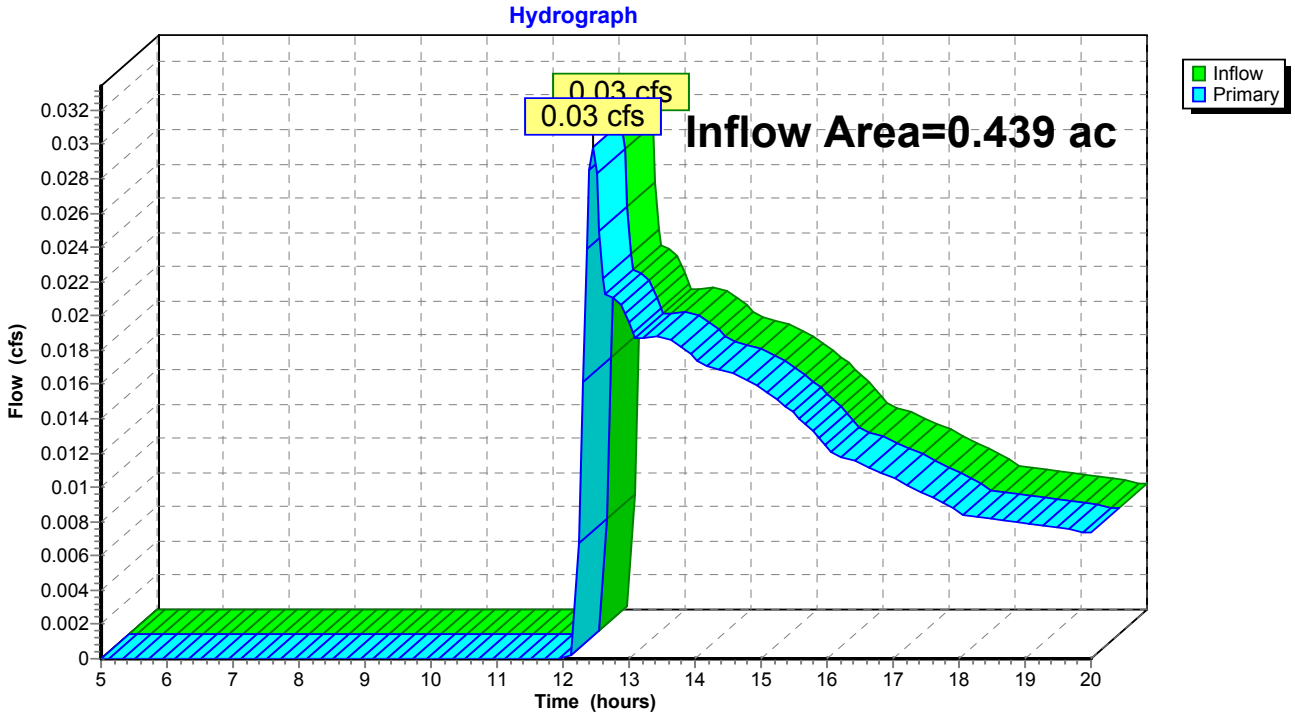


Link 1L: Total Offsite

Inflow Area = 0.439 ac, Inflow Depth = 0.23" for 25-Year Storm event
Inflow = 0.03 cfs @ 12.45 hrs, Volume= 0.009 af
Primary = 0.03 cfs @ 12.45 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: Total Offsite

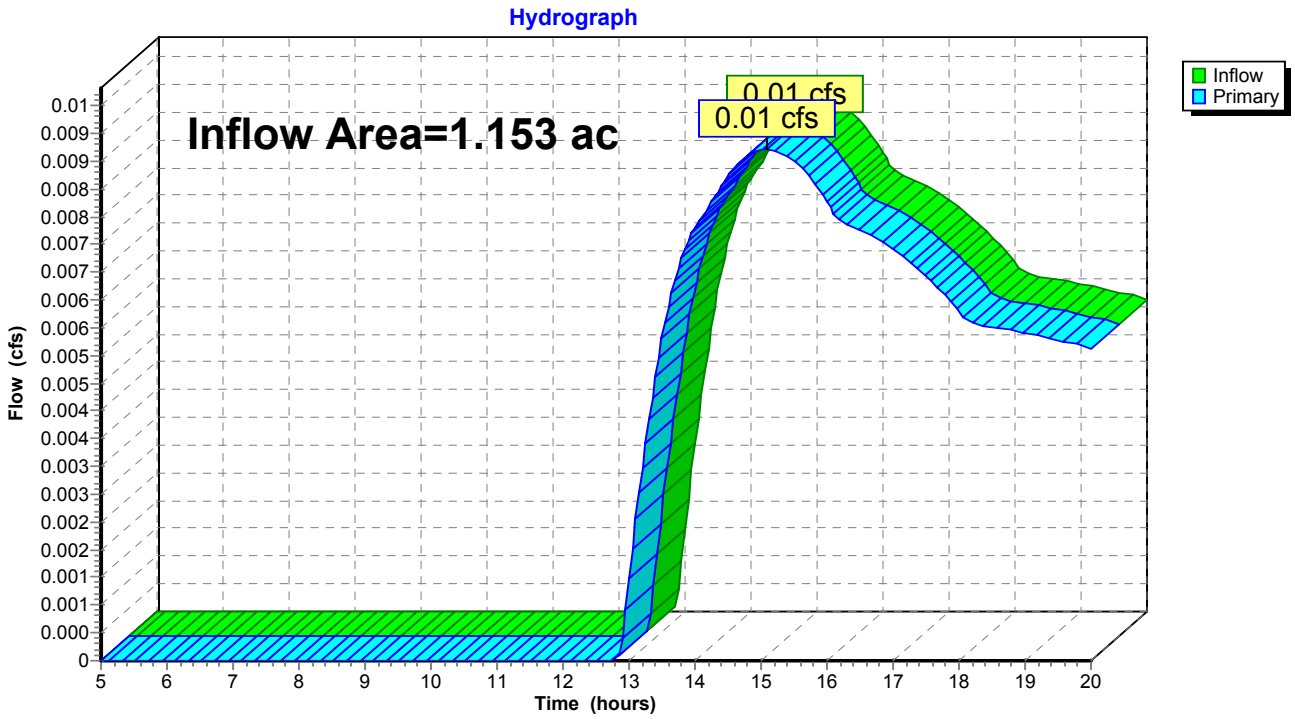


Link 2L: Total Offsite

Inflow Area = 1.153 ac, Inflow Depth = 0.04" for 25-Year Storm event
Inflow = 0.01 cfs @ 15.09 hrs, Volume= 0.004 af
Primary = 0.01 cfs @ 15.09 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: Total Offsite

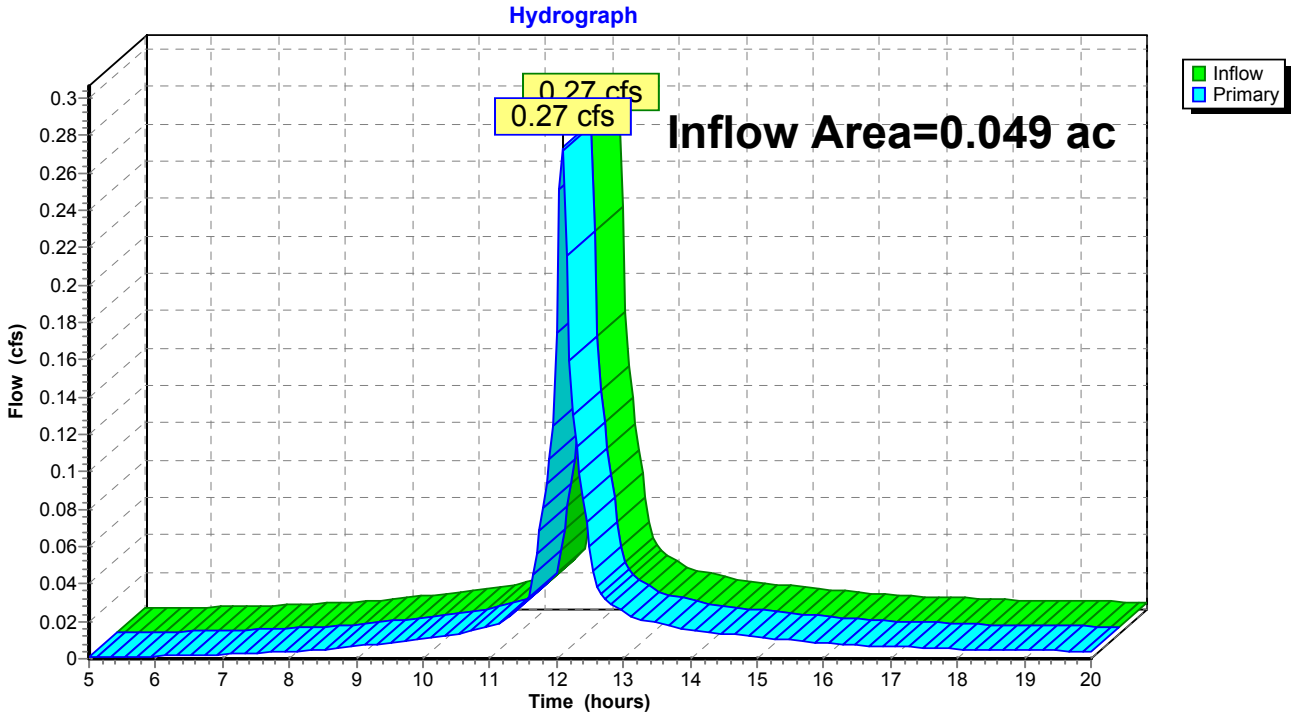


Link 3L: To Existing CB in Small Lane (redevelopment)

Inflow Area = 0.049 ac, Inflow Depth = 4.85" for 25-Year Storm event
Inflow = 0.27 cfs @ 12.09 hrs, Volume= 0.020 af
Primary = 0.27 cfs @ 12.09 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: To Existing CB in Small Lane (redevelopment)

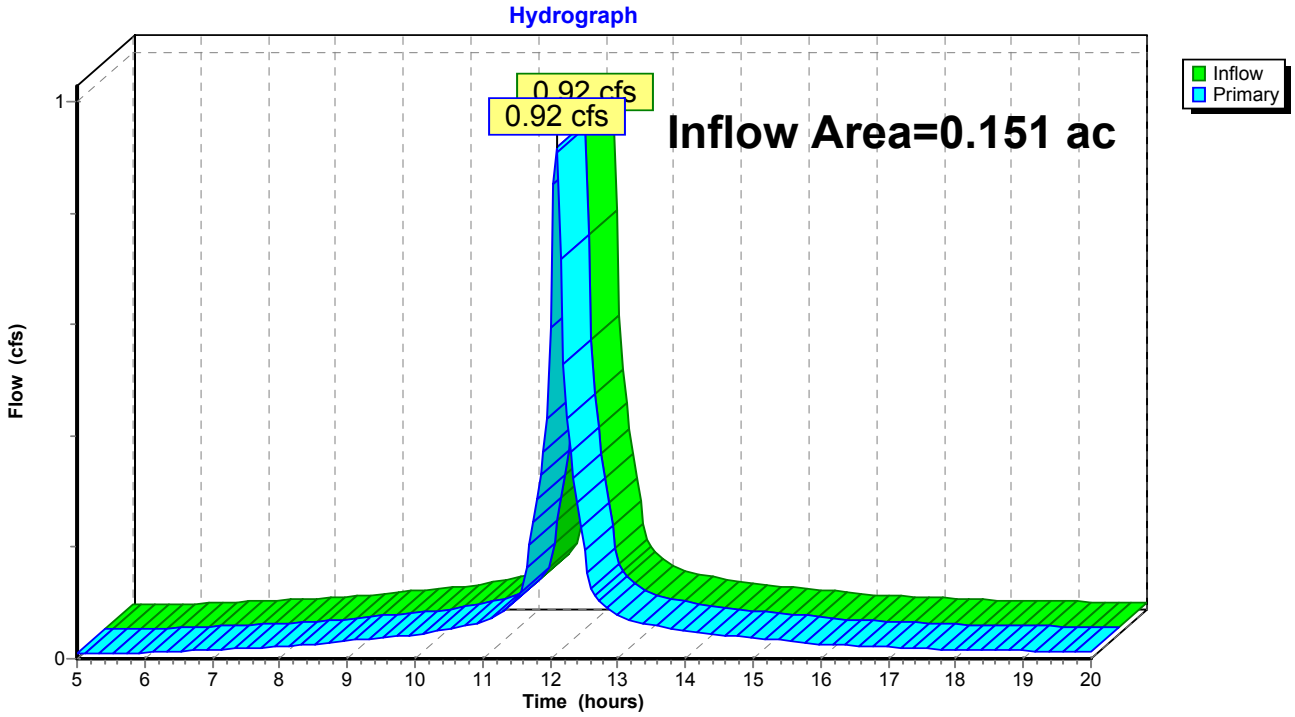


Link cb-1:

Inflow Area = 0.151 ac, Inflow Depth = 5.55" for 25-Year Storm event
Inflow = 0.92 cfs @ 12.09 hrs, Volume= 0.070 af
Primary = 0.92 cfs @ 12.09 hrs, Volume= 0.070 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link cb-1:

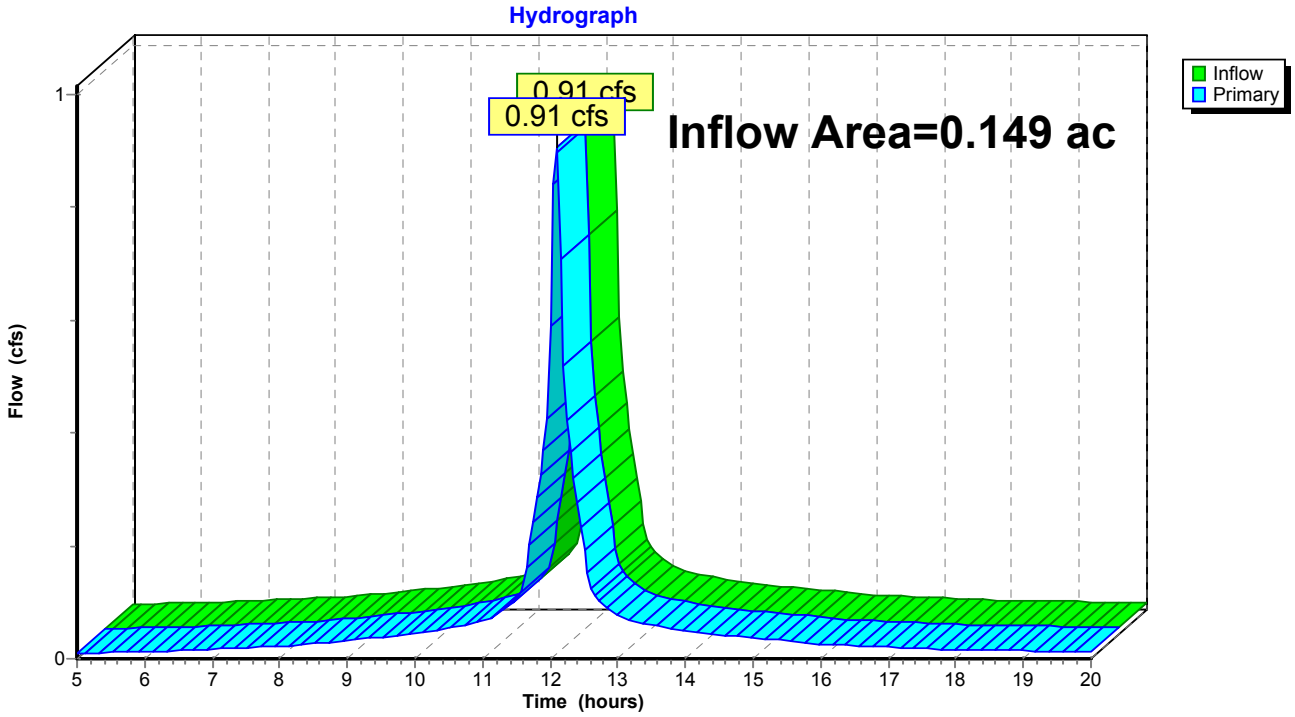


Link cb-2:

Inflow Area = 0.149 ac, Inflow Depth = 5.63" for 25-Year Storm event
Inflow = 0.91 cfs @ 12.09 hrs, Volume= 0.070 af
Primary = 0.91 cfs @ 12.09 hrs, Volume= 0.070 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link cb-2:



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Runoff Area=2,120 sf Runoff Depth=6.55"
Tc=6.0 min CN=89 Runoff=0.36 cfs 0.027 af

Subcatchment 2S: Runoff Area=6,580 sf Runoff Depth=7.23"
Tc=6.0 min CN=96 Runoff=1.19 cfs 0.091 af

Subcatchment 3S: Runoff Area=6,474 sf Runoff Depth=7.31"
Tc=6.0 min CN=97 Runoff=1.17 cfs 0.091 af

Subcatchment 4S: Runoff Area=19,131 sf Runoff Depth=0.69"
Tc=6.0 min CN=34 Runoff=0.17 cfs 0.025 af

Subcatchment 5S: Runoff Area=12,045 sf Runoff Depth=2.18"
Flow Length=149' Tc=12.6 min CN=50 Runoff=0.57 cfs 0.050 af

Subcatchment 6S: Runoff Area=25,135 sf Runoff Depth=0.39"
Flow Length=144' Tc=11.3 min CN=30 Runoff=0.08 cfs 0.019 af

Reach 1R: Peak Depth=0.44' Max Vel=3.6 fps Inflow=1.19 cfs 0.091 af
D=12.0" n=0.011 L=22.0' S=0.0050 '/' Capacity=2.98 cfs Outflow=1.18 cfs 0.091 af

Reach 2R: Peak Depth=0.40' Max Vel=4.0 fps Inflow=1.17 cfs 0.091 af
D=12.0" n=0.011 L=16.0' S=0.0069 '/' Capacity=3.49 cfs Outflow=1.17 cfs 0.090 af

Reach 3R: Peak Depth=0.67' Max Vel=4.2 fps Inflow=2.35 cfs 0.182 af
D=12.0" n=0.011 L=213.0' S=0.0050 '/' Capacity=2.97 cfs Outflow=2.26 cfs 0.181 af

Reach 4R: Peak Depth=0.65' Max Vel=4.1 fps Inflow=2.26 cfs 0.181 af
D=12.0" n=0.011 L=111.0' S=0.0050 '/' Capacity=2.96 cfs Outflow=2.20 cfs 0.181 af

Pond 1P: Detention Pond Peak Elev=82.87' Storage=2,635 cf Inflow=2.72 cfs 0.231 af
Discarded=0.62 cfs 0.231 af Primary=0.00 cfs 0.000 af Outflow=0.62 cfs 0.231 af

Pond OCS-1: OCS-1 Peak Elev=83.61' Inflow=2.26 cfs 0.181 af
Outflow=2.26 cfs 0.181 af

Link 1L: Total Offsite Inflow=0.17 cfs 0.025 af
Primary=0.17 cfs 0.025 af

Link 2L: Total Offsite Inflow=0.08 cfs 0.019 af
Primary=0.08 cfs 0.019 af

Link 3L: To Existing CB in Small Lane (redevelopment) Inflow=0.36 cfs 0.027 af
Primary=0.36 cfs 0.027 af

Link cb-1: Inflow=1.19 cfs 0.091 af
Primary=1.19 cfs 0.091 af

Link cb-2: Inflow=1.17 cfs 0.091 af
Primary=1.17 cfs 0.091 af

Total Runoff Area = 1.641 ac Runoff Volume = 0.302 af Average Runoff Depth = 2.21"

Subcatchment 1S:

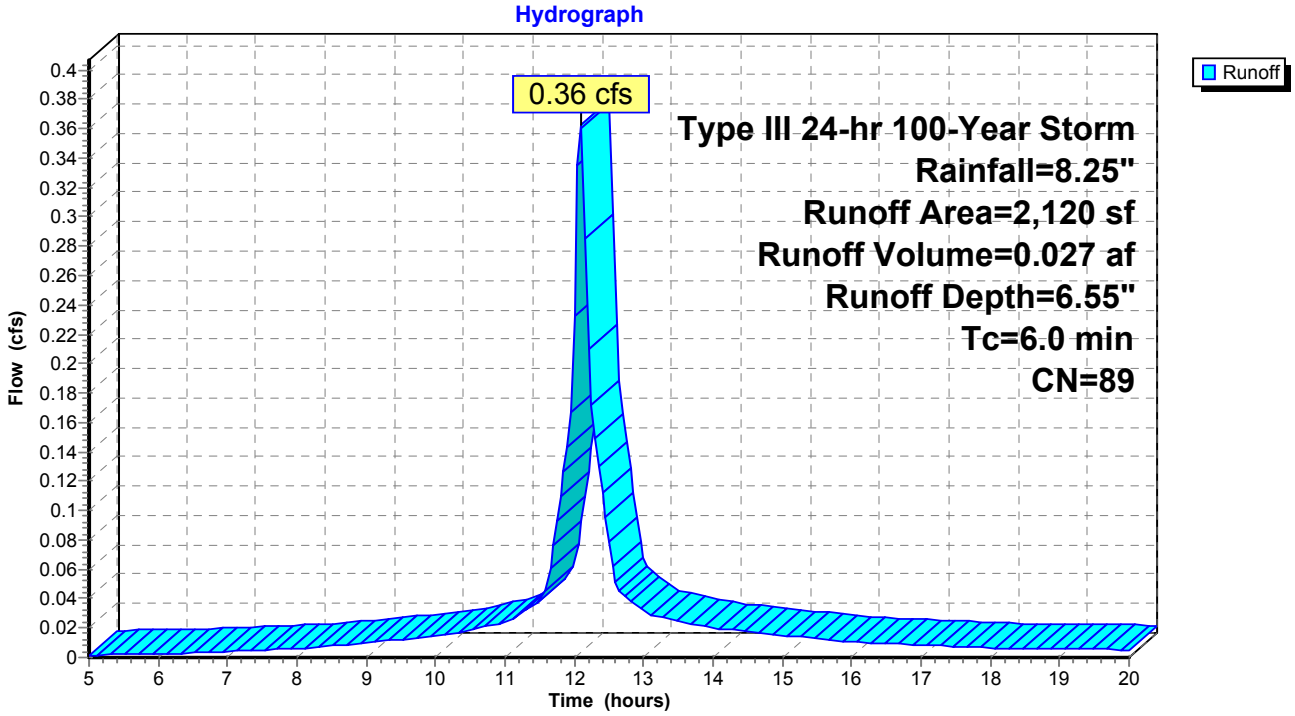
Runoff = 0.36 cfs @ 12.09 hrs, Volume= 0.027 af, Depth= 6.55"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Storm Rainfall=8.25"

Area (sf)	CN	Description
1,796	98	Pavement/Curb
324	39	>75% Grass cover, Good, HSG A
2,120	89	Weighted Average

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

Subcatchment 1S:



Subcatchment 2S:

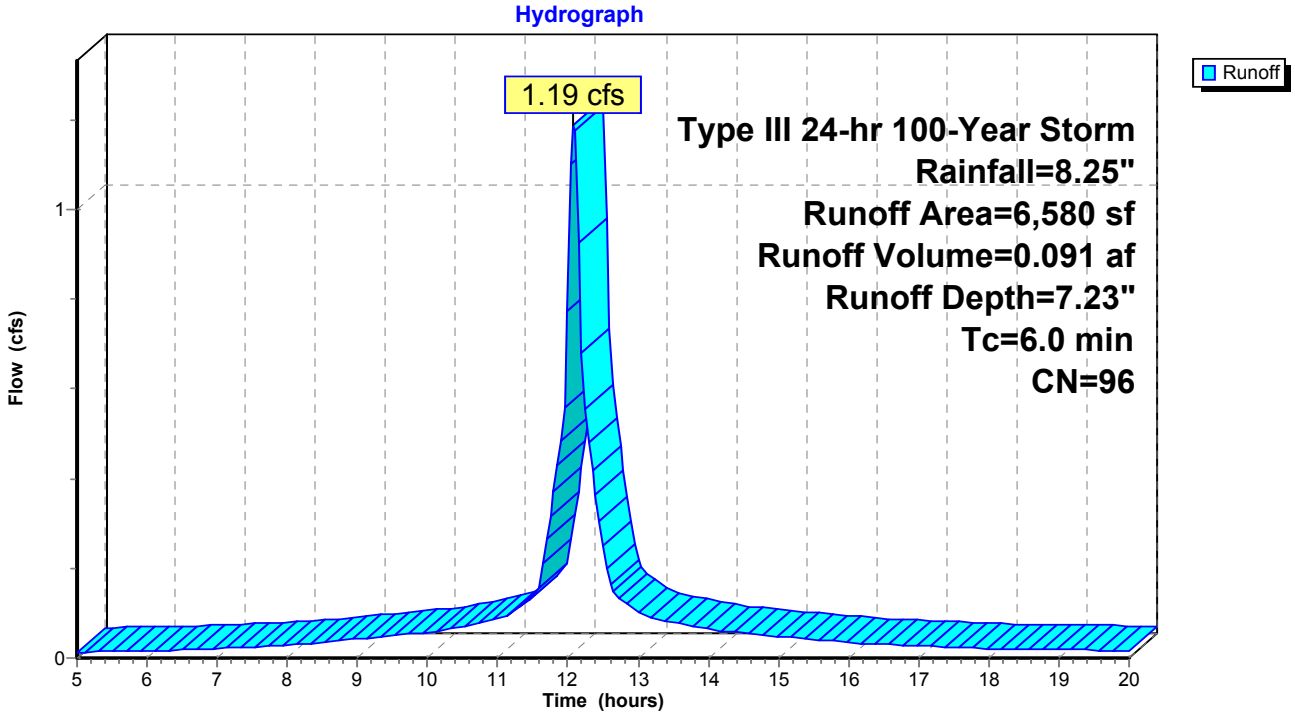
Runoff = 1.19 cfs @ 12.09 hrs, Volume= 0.091 af, Depth= 7.23"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Storm Rainfall=8.25"

Area (sf)	CN	Description
6,204	98	Roadway pavement/curb
198	98	Driveway Apron
178	39	>75% Grass cover, Good, HSG A
6,580	96	Weighted Average

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

Subcatchment 2S:



Subcatchment 3S:

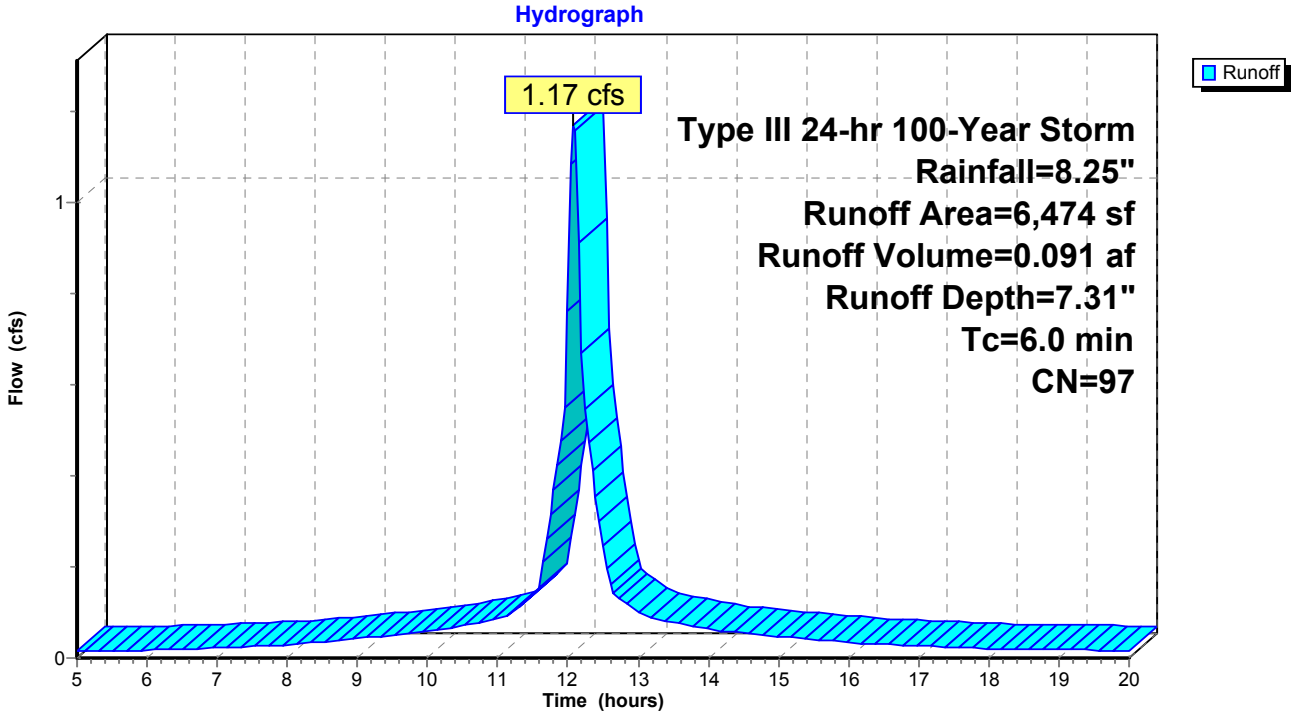
Runoff = 1.17 cfs @ 12.09 hrs, Volume= 0.091 af, Depth= 7.31"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Storm Rainfall=8.25"

Area (sf)	CN	Description
6,204	98	roadway pavement/curb
198	98	driveway apron
72	39	>75% Grass cover, Good, HSG A
6,474	97	Weighted Average

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

Subcatchment 3S:



Subcatchment 4S:

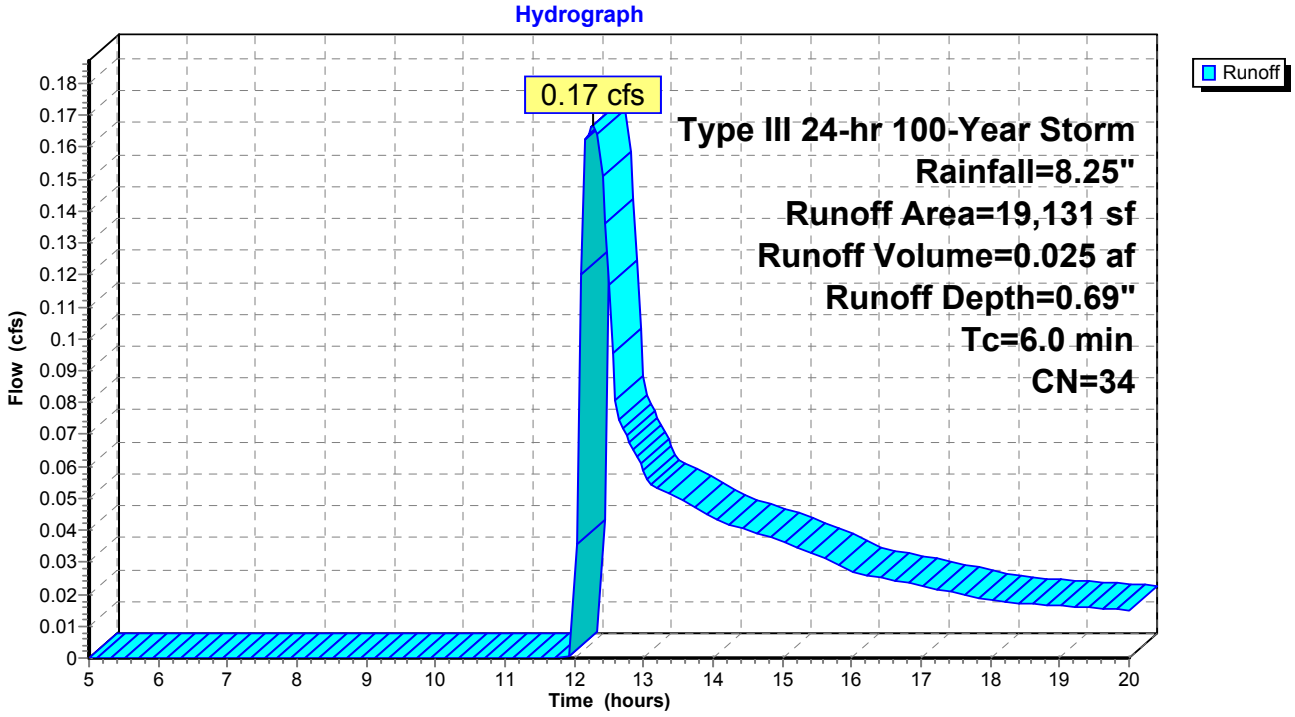
Runoff = 0.17 cfs @ 12.28 hrs, Volume= 0.025 af, Depth= 0.69"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Storm Rainfall=8.25"

Area (sf)	CN	Description
14,635	30	Woods, Good, HSG A
560	98	ret. walls
3,936	39	>75% Grass cover, Good, HSG A
19,131	34	Weighted Average

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

Subcatchment 4S:



Subcatchment 5S:

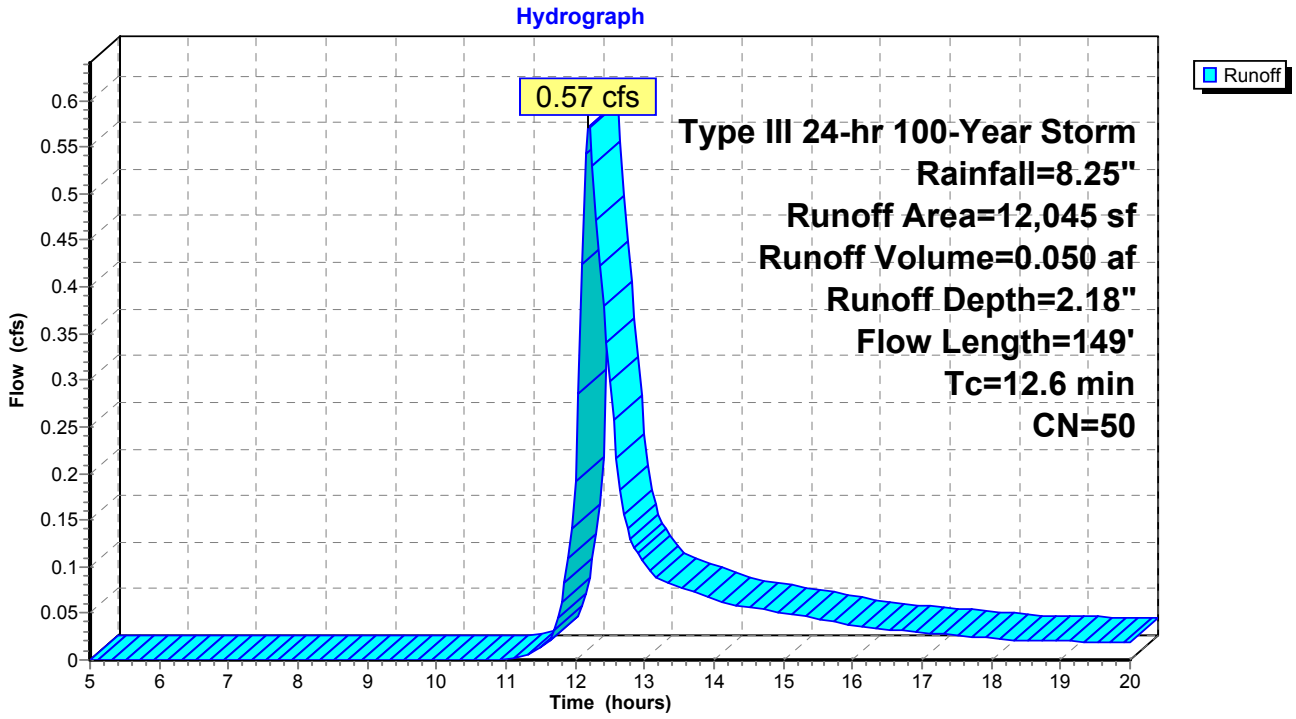
Runoff = 0.57 cfs @ 12.20 hrs, Volume= 0.050 af, Depth= 2.18"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Storm Rainfall=8.25"

Area (sf)	CN	Description
9,759	39	>75% Grass cover, Good, HSG A
2,286	98	House Roof (Lot A)
12,045	50	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	50	0.0050	0.1		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
0.5	20	0.0100	0.7		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.0	12	0.3300	4.0		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	67	0.0050	0.5		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.6	149	Total			

Subcatchment 5S:



Subcatchment 6S:

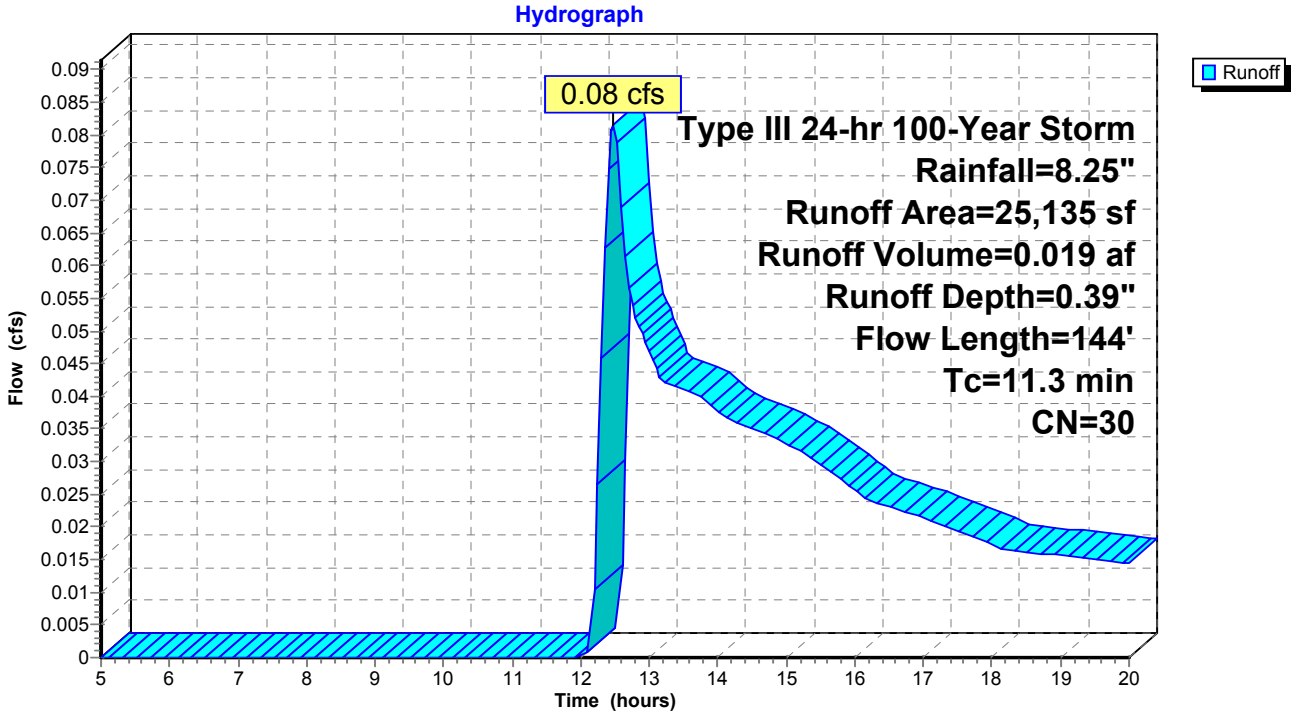
Runoff = 0.08 cfs @ 12.48 hrs, Volume= 0.019 af, Depth= 0.39"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Storm Rainfall=8.25"

Area (sf)	CN	Description
25,135	30	Woods, Good, HSG A

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	50	0.0050	0.1		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
1.0	40	0.0100	0.7		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	54	0.1500	1.9		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.3	144	Total			

Subcatchment 6S:



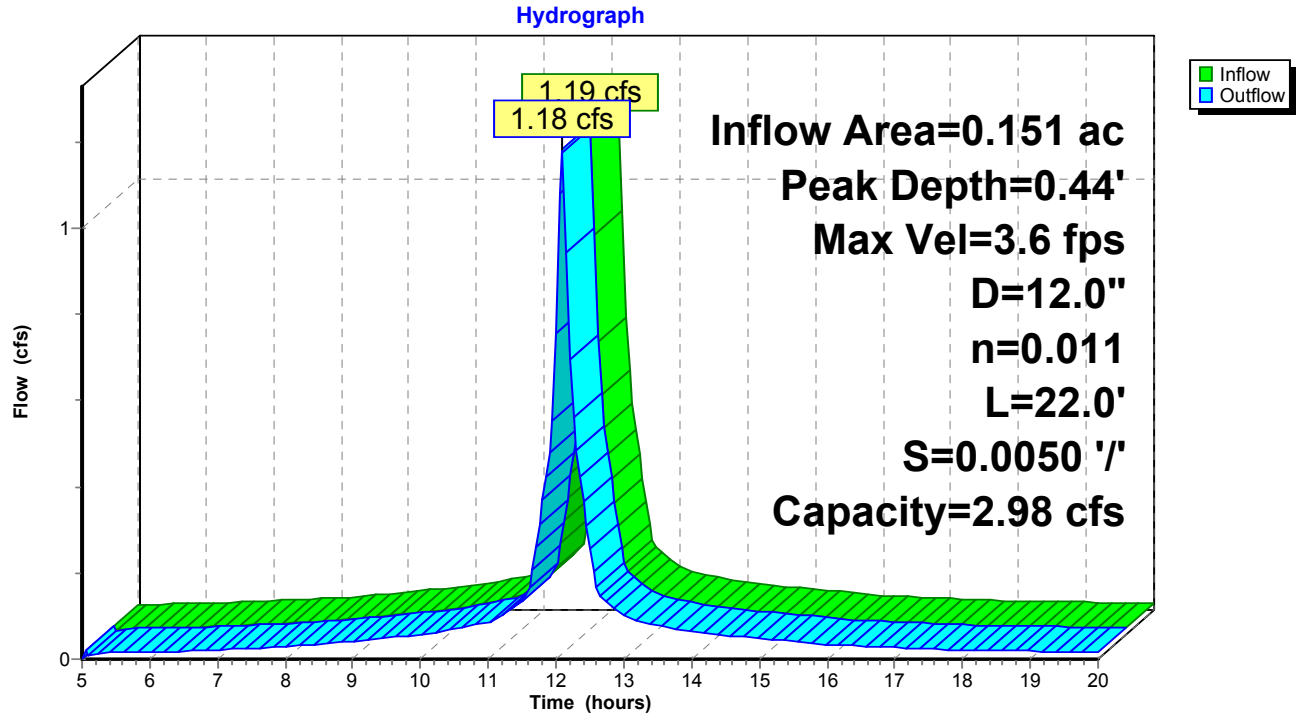
Reach 1R:

Inflow Area = 0.151 ac, Inflow Depth = 7.23" for 100-Year Storm event
Inflow = 1.19 cfs @ 12.09 hrs, Volume= 0.091 af
Outflow = 1.18 cfs @ 12.09 hrs, Volume= 0.091 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.6 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.4 fps, Avg. Travel Time= 0.3 min

Peak Depth= 0.44' @ 12.09 hrs
Capacity at bank full= 2.98 cfs
Inlet Invert= 83.17', Outlet Invert= 83.06'
12.0" Diameter Pipe n= 0.011 Length= 22.0' Slope= 0.0050 '/'

Reach 1R:



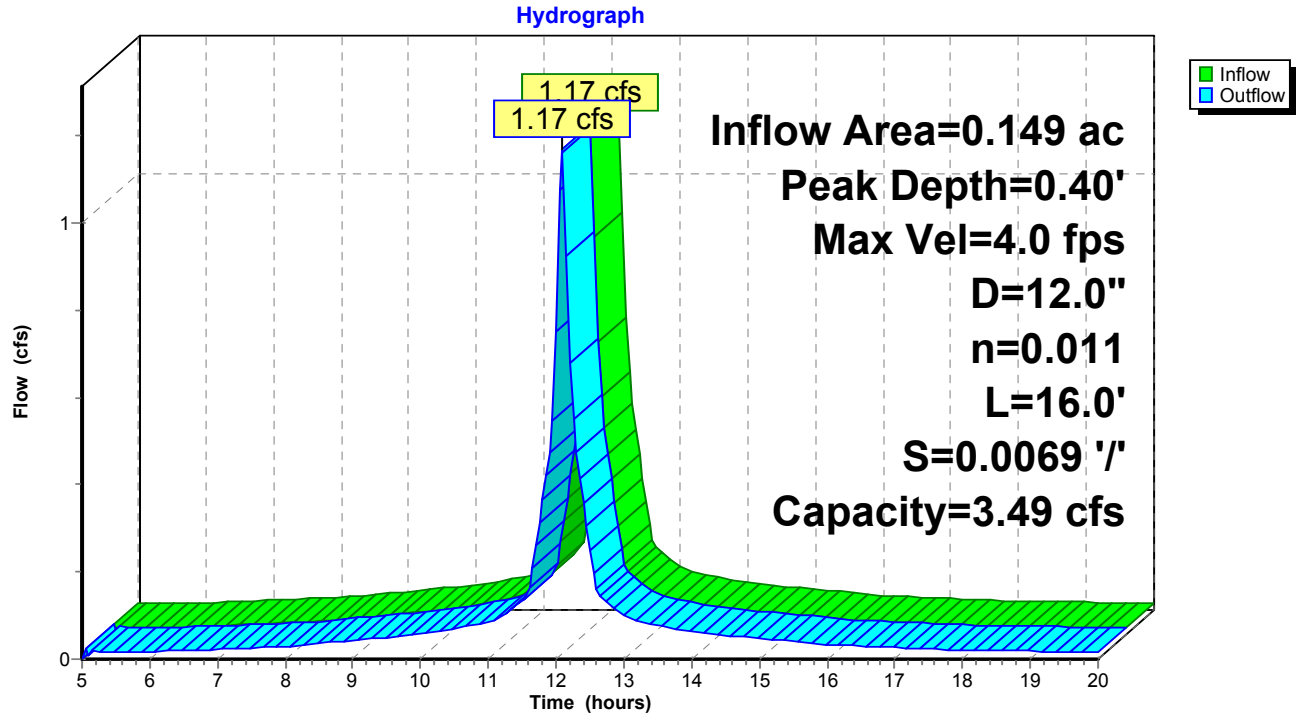
Reach 2R:

Inflow Area = 0.149 ac, Inflow Depth = 7.31" for 100-Year Storm event
Inflow = 1.17 cfs @ 12.09 hrs, Volume= 0.091 af
Outflow = 1.17 cfs @ 12.09 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.0 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.6 fps, Avg. Travel Time= 0.2 min

Peak Depth= 0.40' @ 12.09 hrs
Capacity at bank full= 3.49 cfs
Inlet Invert= 83.17', Outlet Invert= 83.06'
12.0" Diameter Pipe n= 0.011 Length= 16.0' Slope= 0.0069 '/'

Reach 2R:



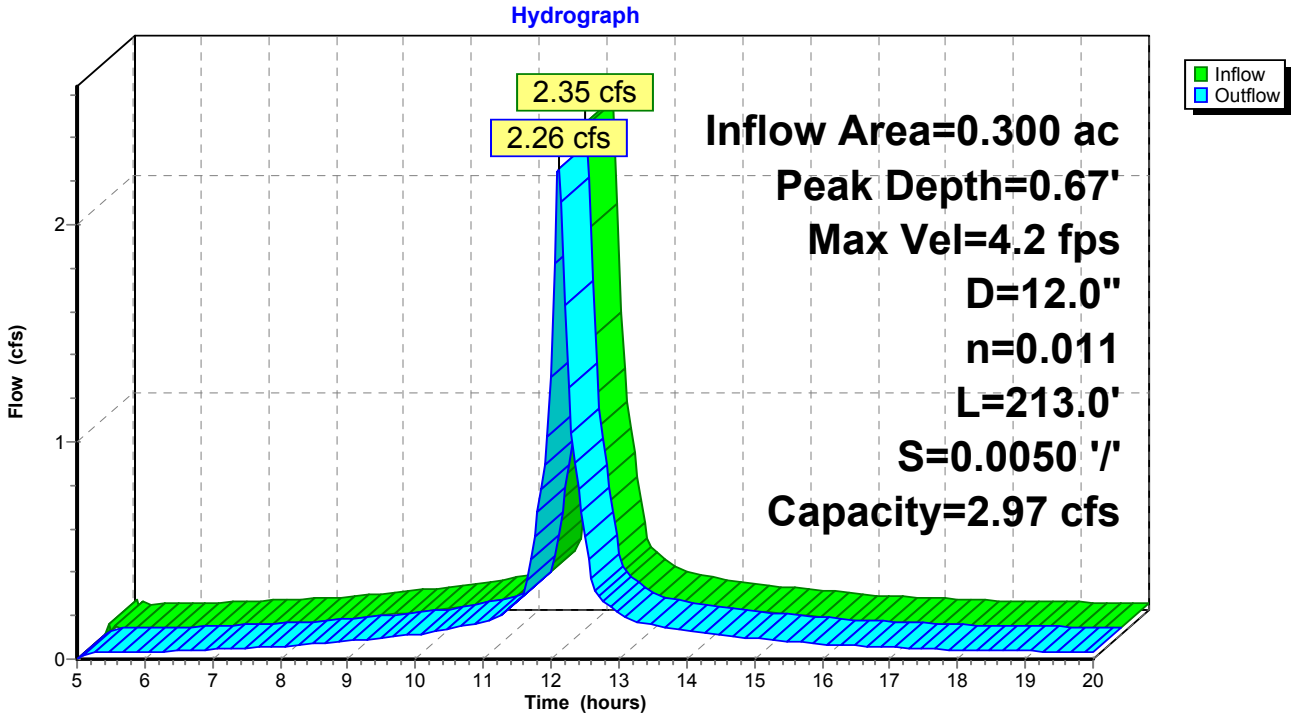
Reach 3R:

Inflow Area = 0.300 ac, Inflow Depth = 7.27" for 100-Year Storm event
Inflow = 2.35 cfs @ 12.09 hrs, Volume= 0.182 af
Outflow = 2.26 cfs @ 12.11 hrs, Volume= 0.181 af, Atten= 4%, Lag= 1.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.2 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 1.7 fps, Avg. Travel Time= 2.1 min

Peak Depth= 0.67' @ 12.10 hrs
Capacity at bank full= 2.97 cfs
Inlet Invert= 83.06', Outlet Invert= 82.00'
12.0" Diameter Pipe n= 0.011 Length= 213.0' Slope= 0.0050 '/'

Reach 3R:



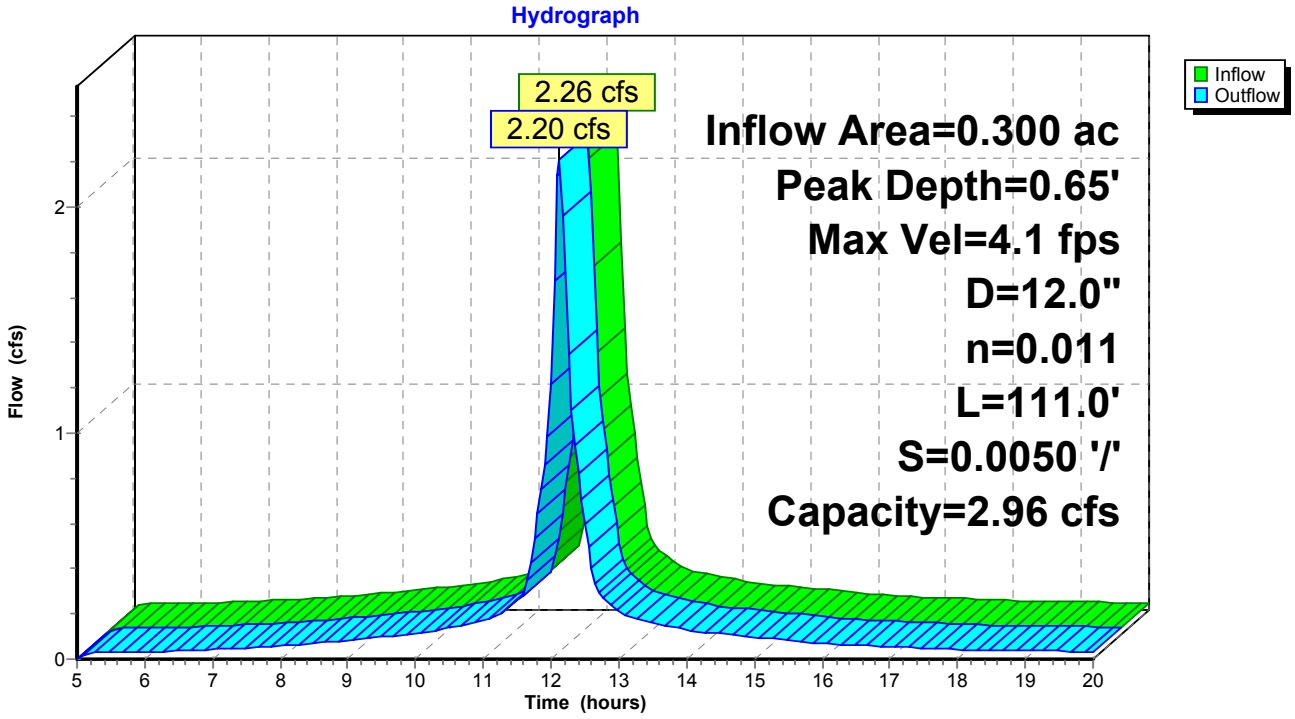
Reach 4R:

Inflow Area = 0.300 ac, Inflow Depth = 7.26" for 100-Year Storm event
Inflow = 2.26 cfs @ 12.11 hrs, Volume= 0.181 af
Outflow = 2.20 cfs @ 12.13 hrs, Volume= 0.181 af, Atten= 3%, Lag= 0.9 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.1 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.7 fps, Avg. Travel Time= 1.1 min

Peak Depth= 0.65' @ 12.12 hrs
Capacity at bank full= 2.96 cfs
Inlet Invert= 82.75', Outlet Invert= 82.20'
12.0" Diameter Pipe n= 0.011 Length= 111.0' Slope= 0.0050 '/'

Reach 4R:



Pond 1P: Detention Pond

Inflow Area = 0.576 ac, Inflow Depth = 4.82" for 100-Year Storm event
Inflow = 2.72 cfs @ 12.14 hrs, Volume= 0.231 af
Outflow = 0.62 cfs @ 12.60 hrs, Volume= 0.231 af, Atten= 77%, Lag= 27.7 min
Discarded = 0.62 cfs @ 12.60 hrs, Volume= 0.231 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 82.87' @ 12.60 hrs Surf.Area= 3,258 sf Storage= 2,635 cf
Plug-Flow detention time= 27.1 min calculated for 0.231 af (100% of inflow)
Center-of-Mass det. time= 26.8 min (785.1 - 758.3)

#	Invert	Avail.Storage	Storage Description
1	82.10'	6,471 cf	**Custom Stage Data (Prismatic)** Listed below

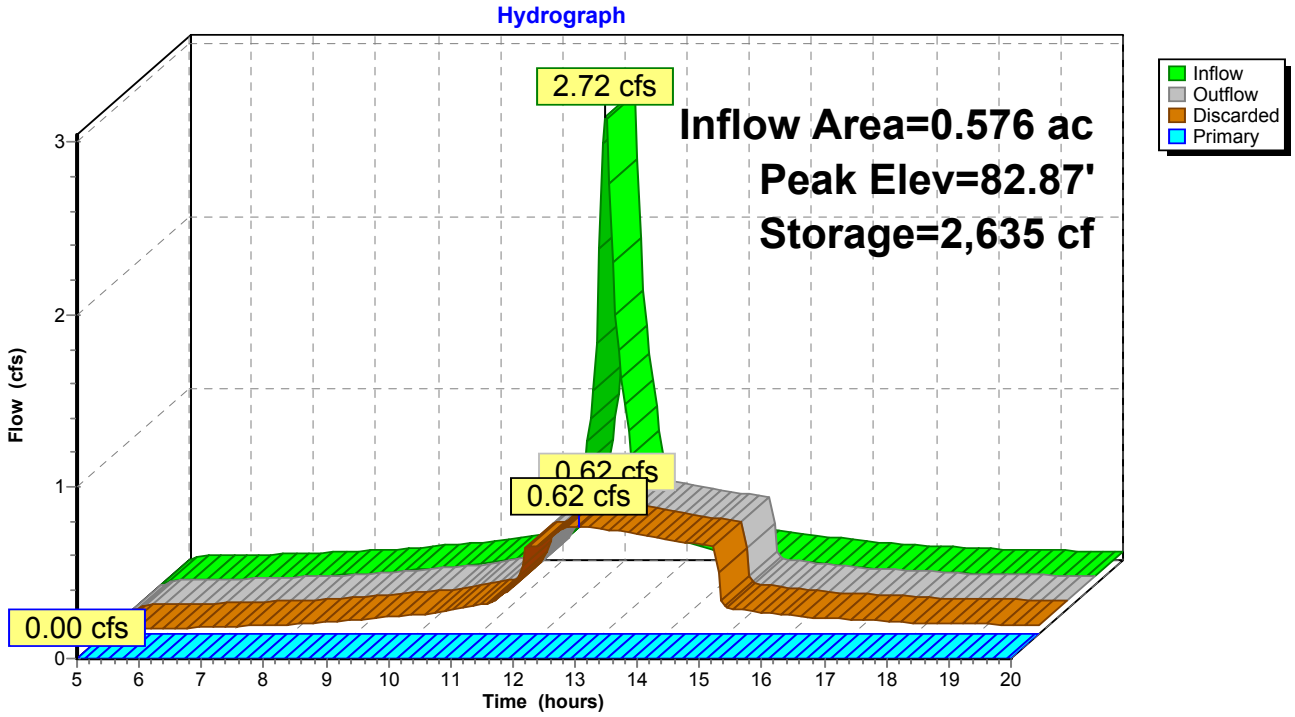
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
82.10	2,610	0	0
84.00	4,202	6,471	6,471

#	Routing	Invert	Outlet Devices
1	Discarded	0.00'	**0.011486 fpm Exfiltration over entire Surface area**
2	Primary	83.00'	**6.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.62 cfs @ 12.60 hrs HW=82.87' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.62 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=82.10' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Detention Pond



Pond OCS-1: OCS-1

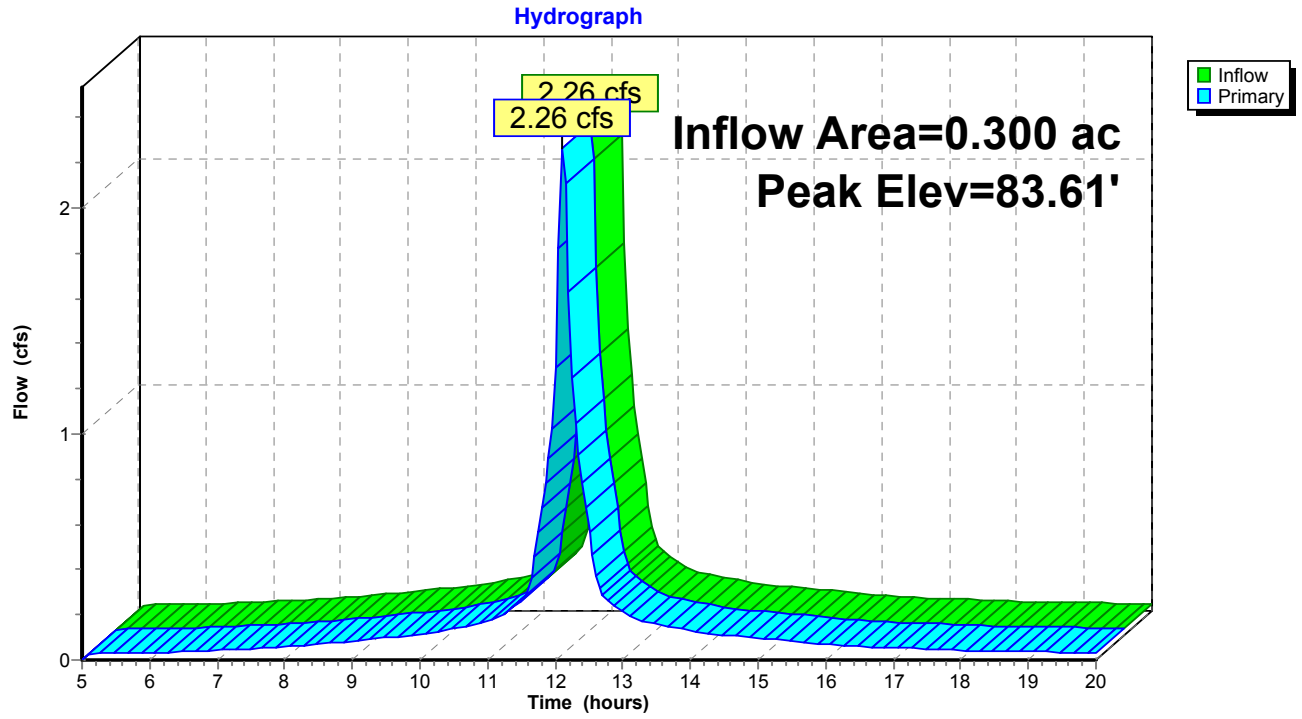
Inflow Area = 0.300 ac, Inflow Depth = 7.26" for 100-Year Storm event
Inflow = 2.26 cfs @ 12.11 hrs, Volume= 0.181 af
Outflow = 2.26 cfs @ 12.11 hrs, Volume= 0.181 af, Atten= 0%, Lag= 0.0 min
Primary = 2.26 cfs @ 12.11 hrs, Volume= 0.181 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 83.61' @ 12.11 hrs
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= (not calculated)

#	Routing	Invert	Outlet Devices
1	Primary	82.75'	**12.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=2.21 cfs @ 12.11 hrs HW=83.59' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 2.21 cfs @ 3.1 fps)

Pond OCS-1: OCS-1

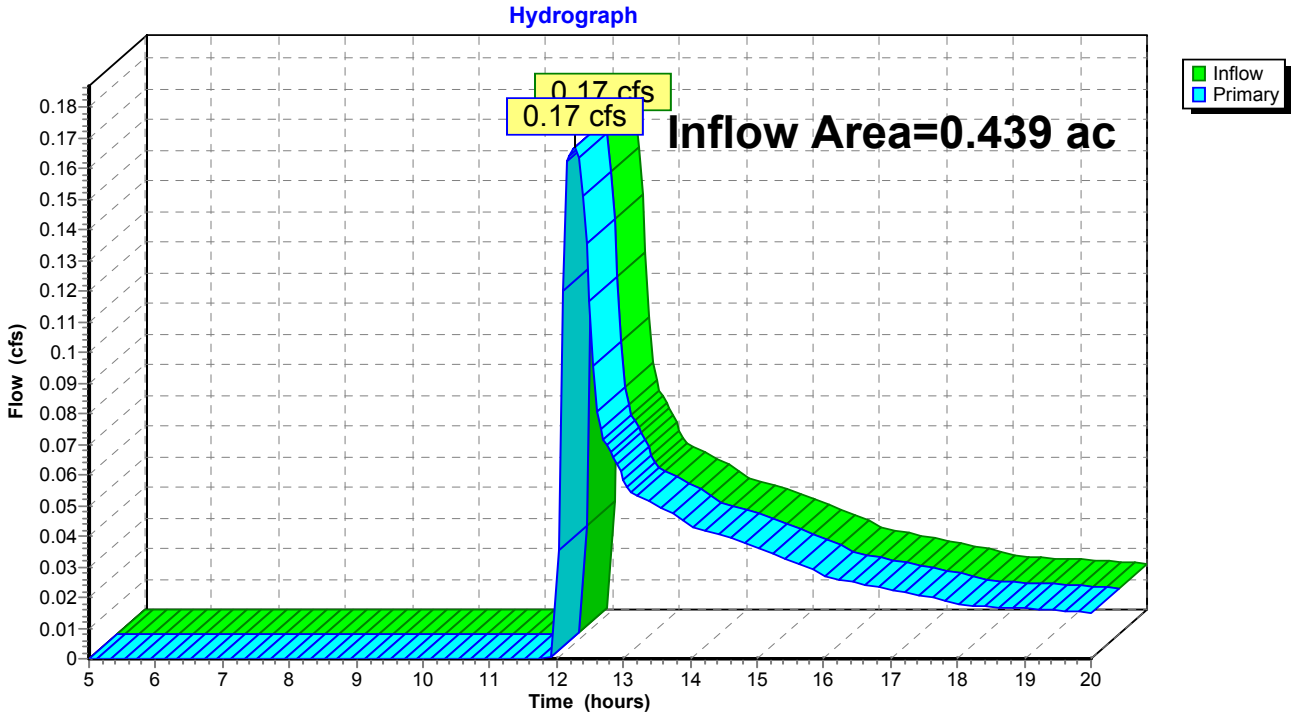


Link 1L: Total Offsite

Inflow Area = 0.439 ac, Inflow Depth = 0.69" for 100-Year Storm event
Inflow = 0.17 cfs @ 12.28 hrs, Volume= 0.025 af
Primary = 0.17 cfs @ 12.28 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: Total Offsite

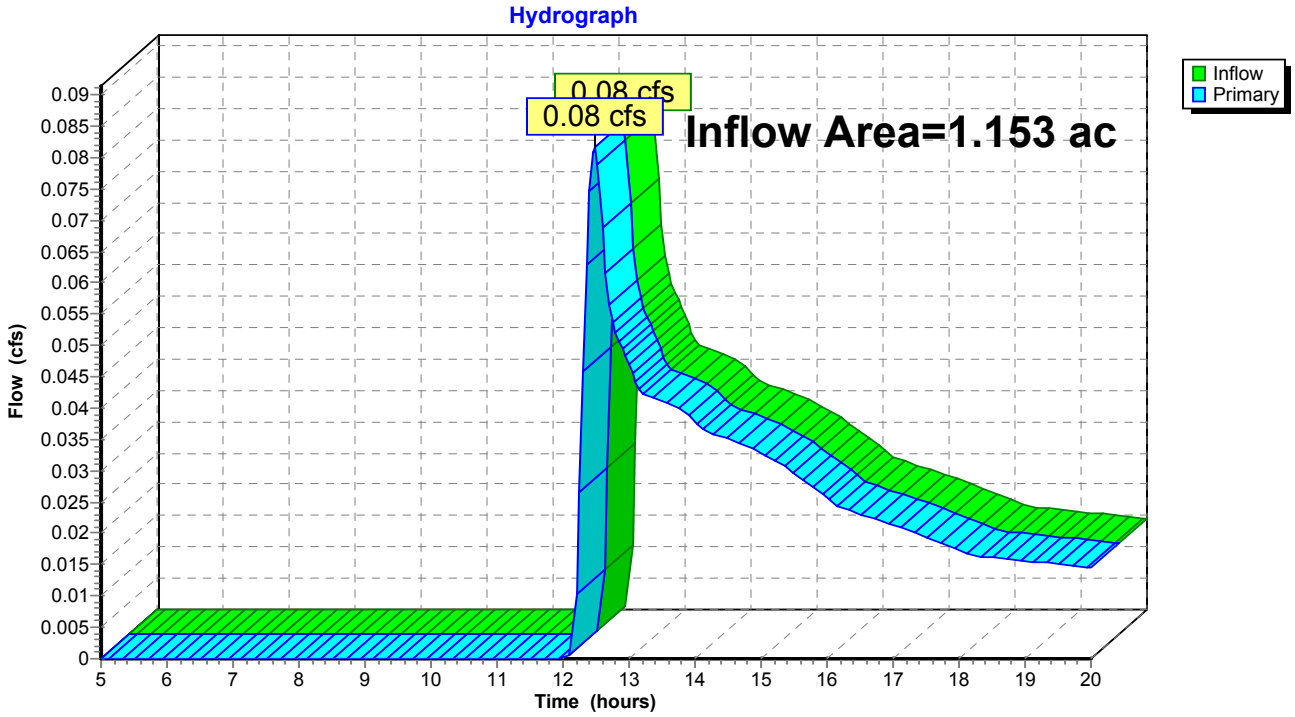


Link 2L: Total Offsite

Inflow Area = 1.153 ac, Inflow Depth = 0.19" for 100-Year Storm event
Inflow = 0.08 cfs @ 12.48 hrs, Volume= 0.019 af
Primary = 0.08 cfs @ 12.48 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: Total Offsite

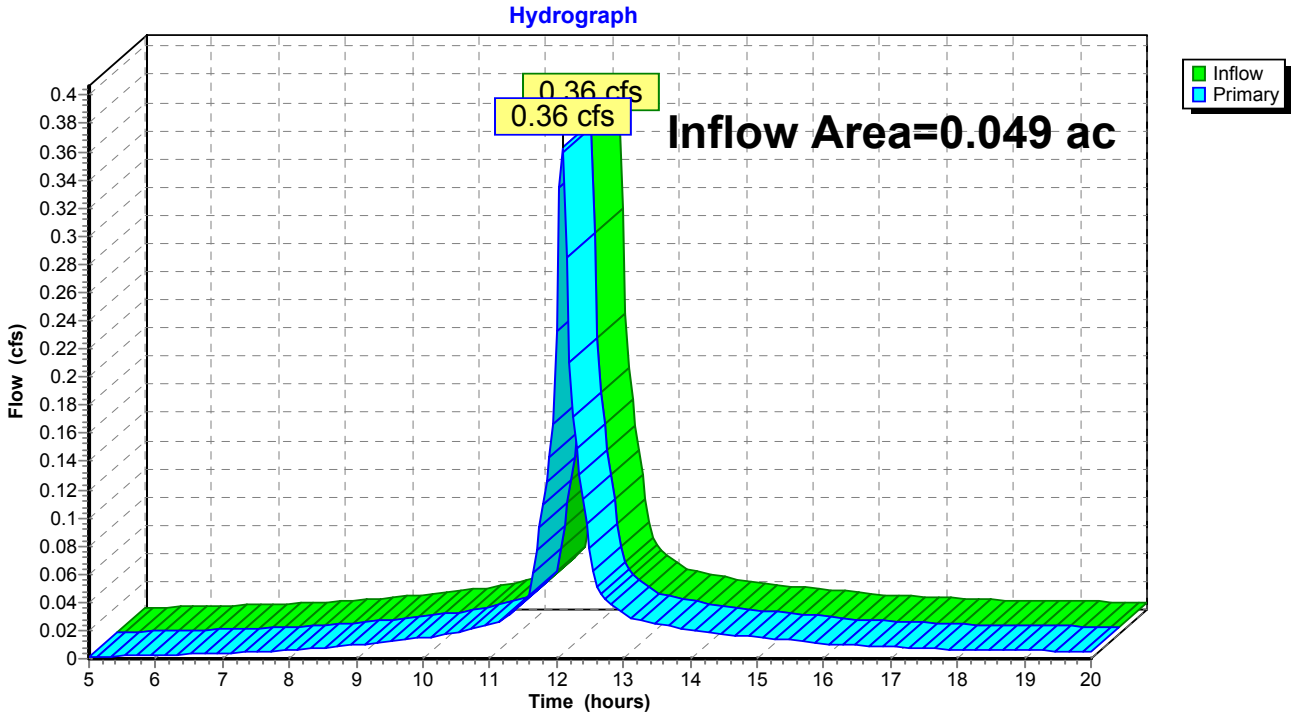


Link 3L: To Existing CB in Small Lane (redevelopment)

Inflow Area = 0.049 ac, Inflow Depth = 6.55" for 100-Year Storm event
Inflow = 0.36 cfs @ 12.09 hrs, Volume= 0.027 af
Primary = 0.36 cfs @ 12.09 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 3L: To Existing CB in Small Lane (redevelopment)

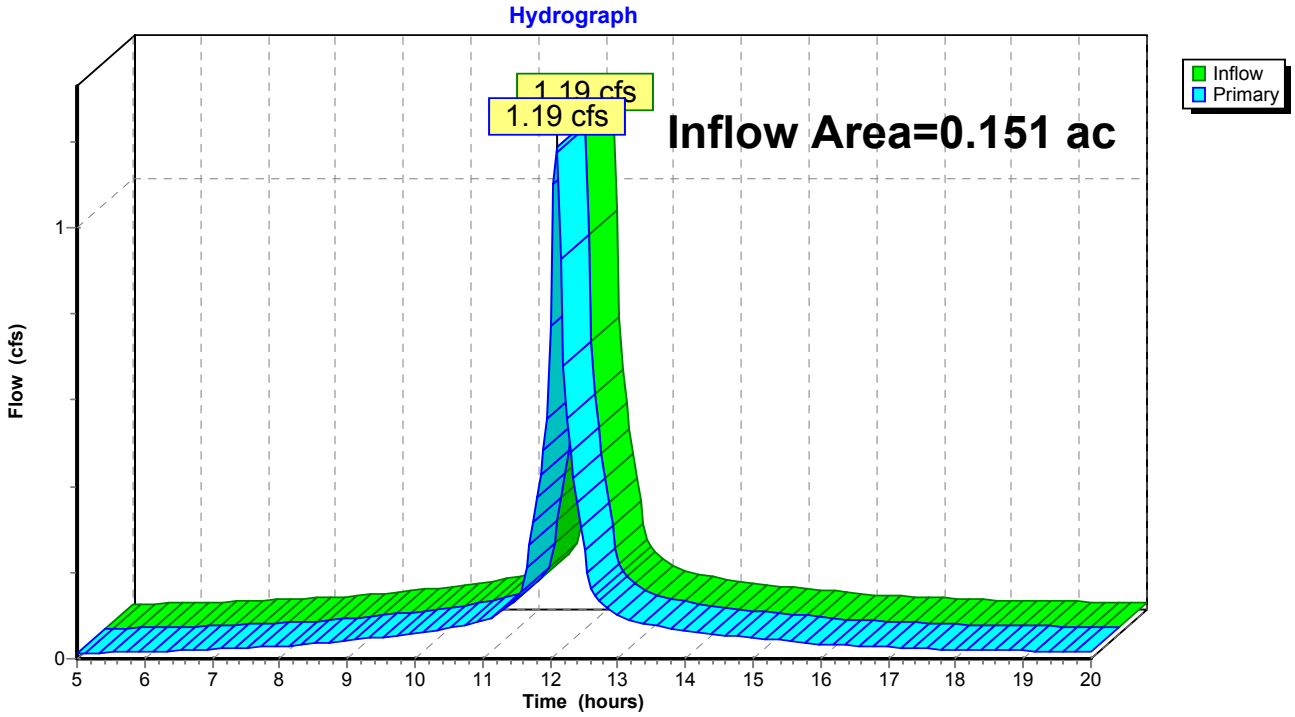


Link cb-1:

Inflow Area = 0.151 ac, Inflow Depth = 7.23" for 100-Year Storm event
Inflow = 1.19 cfs @ 12.09 hrs, Volume= 0.091 af
Primary = 1.19 cfs @ 12.09 hrs, Volume= 0.091 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link cb-1:



Link cb-2:

Inflow Area = 0.149 ac, Inflow Depth = 7.31" for 100-Year Storm event
Inflow = 1.17 cfs @ 12.09 hrs, Volume= 0.091 af
Primary = 1.17 cfs @ 12.09 hrs, Volume= 0.091 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link cb-2: