STORMWATER REPORT FOR:

1513-1519 Massachusetts Avenue, Arlington, MA



Prepared by:

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12/18/2024

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1.0 Introduction

Spruhan Engineering, P.C. has prepared this Storm water Report for the proposed development located at 1513-1519 Massachusetts St, Arlington, Massachusetts.

The proposed development consists of a proposed 2 story dwelling, 5 Units, 1 garage and commercial level, and landscaped areas. The purpose of this report is to demonstrate that the proposed conditions do not create any increased flowrate or runoff from the site. This is achieved by installing an infiltration system.

2.0 Existing Conditions

The existing property is located at 1513-1519 Massachusetts St, Arlington, Massachusetts. The site is bounded by residential dwellings on the sides. The property is located in Massachusetts St Between Lancaster Rd and Hilbert St. The existing roof area on the lot is 2039.95 S.F., the existing paved area is 1482.24 S.F., the existing impervious areas are 259.07 S.F., and the existing landscaped areas on the lot are 5,193.74 S.F.

2.1 Existing Topography and Drainage Infrastructure.

In general, the property slopes from the East to the West of the lot ranging between approximately 8.5 %. As there is no drainage system currently installed, all storm water scours across the surface at grade.

3.0 Proposed Conditions

3.1 Project Description

The development consists of a proposed 2 story dwelling, 5 Units, 1 garage and commercial level, and landscaped areas. The total proposed development roof will have an area of 4,677.02 S.F, the unconnected impervious will have an area of 1181.78 S.F. and the remaining landscaped portion will have a footprint of 3,116.20 S.F.

3.2 Storm Water Runoff

HydroCAD was used to model the site for the existing and proposed conditions for the 2-year, 10-year, 25-year, and 100-year type III storm events based on Atlas-14 Rain information for Middlesex County Central Area. HydroCAD calculations can be seen in Appendix A. The following table shows a summary of the existing and proposed conditions on the site as they relate to flowrate and volume of storm water runoff for each of the storm events.

3.3 Infiltration system

An infiltration system was proposed to control the runoff rate from the post construction site. This system consists of a total of 10-Stormtech plastic chambers with 0.5 ft crushed stone below and a crush stone system around the Stormtech.

	Summary Table			
	Runoff Flow Rate		Volume of Runoff	
	EXISTING	PROPOSED	EXISTING	PROPOSED
2-Year Storm	0.28 cfs	0.00 cfs	1,006 cfs	31 cfs
10-Year Storm	0.50 cfs	0.04 cfs	1,850 cfs	181 cfs
25-Year Storm	0.69 cfs	0.09 cfs	2,452 cfs	320 cfs
100-Year Storm	1.0 cfs	0.18 cfs	3,454 cfs	579 cfs

4.0 Soil Information

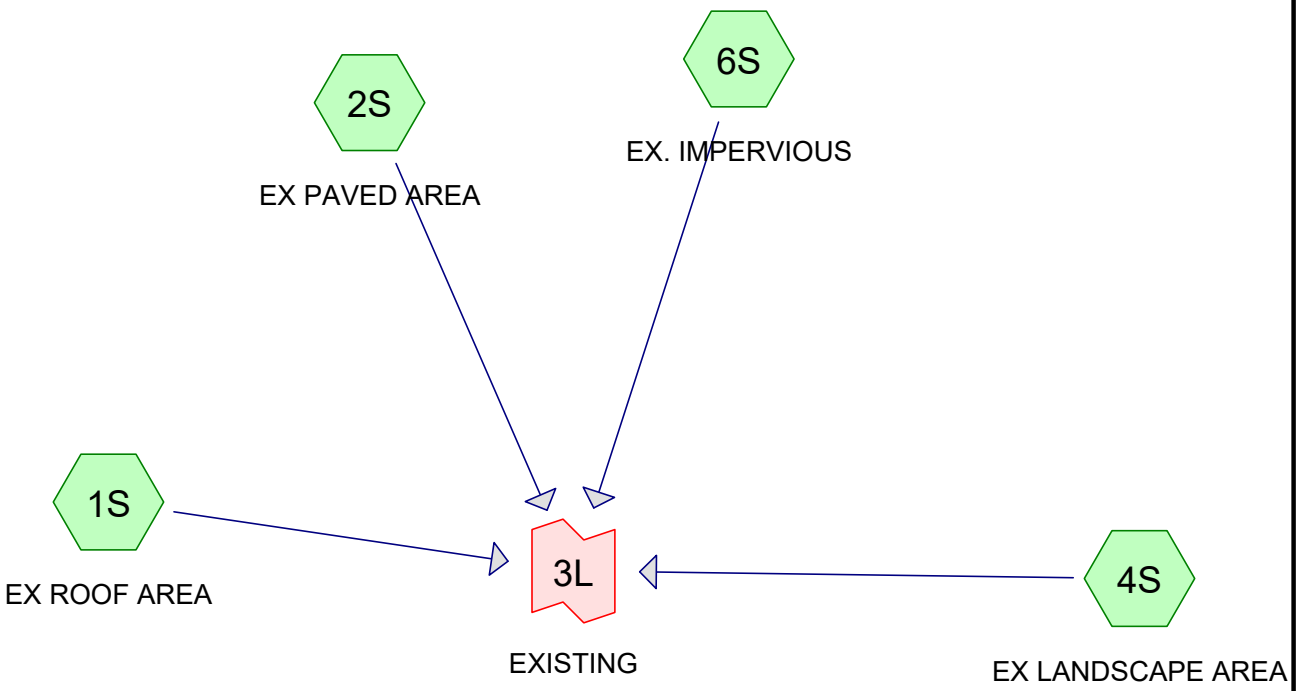
The NRCS Web Soil Survey shows two Map Units inside our area of interest. These are listed next and the percentages of Area of Interest in the Map unit Legend Table:

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
602	Urban land	0.1	38.2%
629C	Canton-Charlton-Urban land complex, 3 to 15 percent slopes	0.2	61.8%
Totals for Area of Interest		**0.3**	**100.0%**

Unit 602 and 629C shows Rock outcrop, Ledges, Sandy loam, and similar soils: 602 Shows no soil hydrological group and 629c Shows hydrological group A. however based on the test pit performed on the site, fill, silt load and ledge was found which don't have hydrological group and these properties were used on the HydroCAD model.

This information is shown in Appendix B, in the Map unit descriptions.

Appendix A – HydroCAD Calculations



Subcat Reach Pond Link

Routing Diagram for EXISTING
Prepared by {enter your company name here}, Printed 8/1/2024
HydroCAD® 10.00-25 s/n 09067 © 2019 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
5,194	49	50-75% Grass cover, Fair, HSG A (4S)
1,635	98	Paved parking, HSG A (2S)
2,040	98	Roofs, HSG A (1S)
106	98	Unconnected pavement, HSG A (6S)
8,975	**70**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
8,975	HSG A	1S, 2S, 4S, 6S
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
8,975		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Sub Num
5,194	0	0	0	0	5,194	50-75% Grass cover, Fair	
1,635	0	0	0	0	1,635	Paved parking	
2,040	0	0	0	0	2,040	Roofs	
106	0	0	0	0	106	Unconnected pavement	
8,975	**0**	**0**	**0**	**0**	**8,975**	**TOTAL AREA**	

Time span=0.00-30.00 hrs, dt=0.03 hrs, 1001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: EX ROOF AREA Runoff Area=2,040 sf 100.00% Impervious Runoff Depth=3.03"
Tc=5.0 min CN=98 Runoff=0.15 cfs 515 cf

Subcatchment 2S: EX PAVED AREA Runoff Area=1,635 sf 100.00% Impervious Runoff Depth=3.03"
Tc=5.0 min CN=98 Runoff=0.12 cfs 412 cf

Subcatchment 4S: EX LANDSCAPE AREA Runoff Area=5,194 sf 0.00% Impervious Runoff Depth=0.12"
Tc=5.0 min CN=49 Runoff=0.00 cfs 52 cf

Subcatchment 6S: EX. IMPERVIOUS Runoff Area=106 sf 100.00% Impervious Runoff Depth=3.03"
Tc=5.0 min CN=98 Runoff=0.01 cfs 27 cf

Link 3L: EXISTING Inflow=0.28 cfs 1,006 cf
Primary=0.28 cfs 1,006 cf

Total Runoff Area = 8,975 sf Runoff Volume = 1,006 cf Average Runoff Depth = 1.34"
57.87% Pervious = 5,194 sf 42.13% Impervious = 3,781 sf

Summary for Subcatchment 1S: EX ROOF AREA

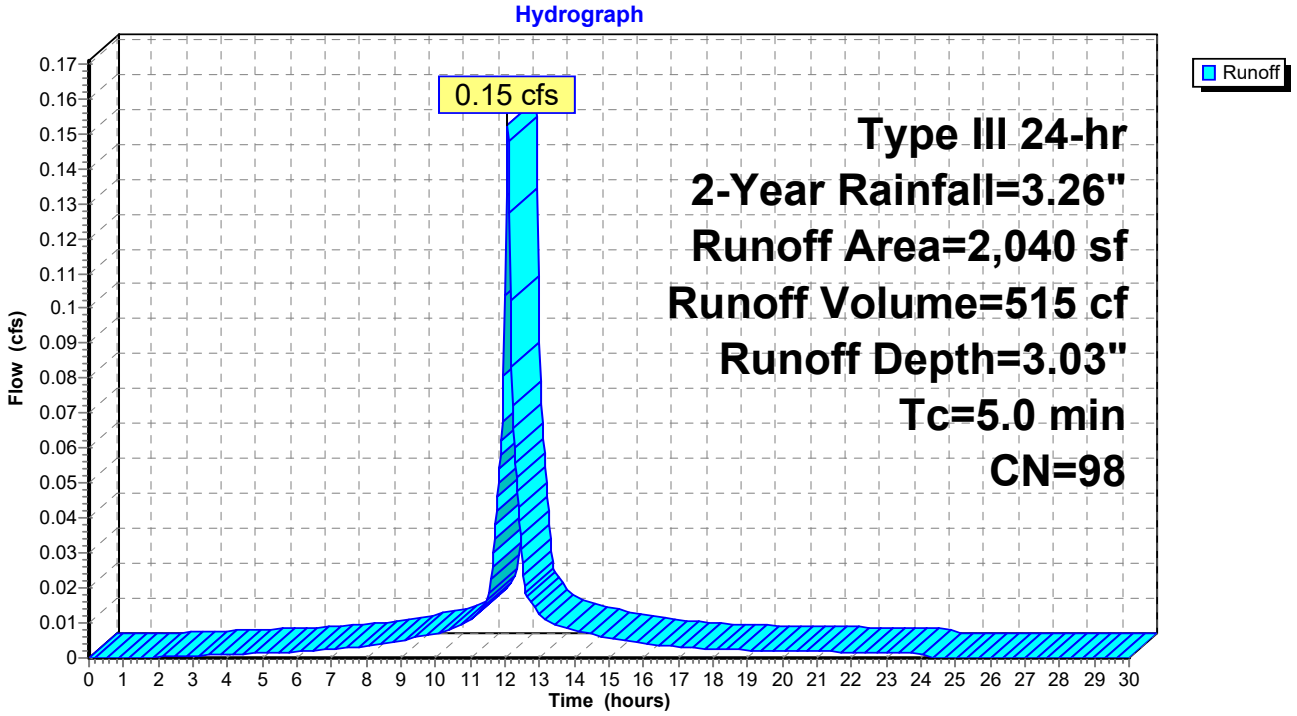
Runoff = 0.15 cfs @ 12.07 hrs, Volume= 515 cf, Depth= 3.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Year Rainfall=3.26"

Area (sf)	CN	Description
2,040	98	Roofs, HSG A
2,040		100.00% Impervious Area

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

Subcatchment 1S: EX ROOF AREA



Summary for Subcatchment 2S: EX PAVED AREA

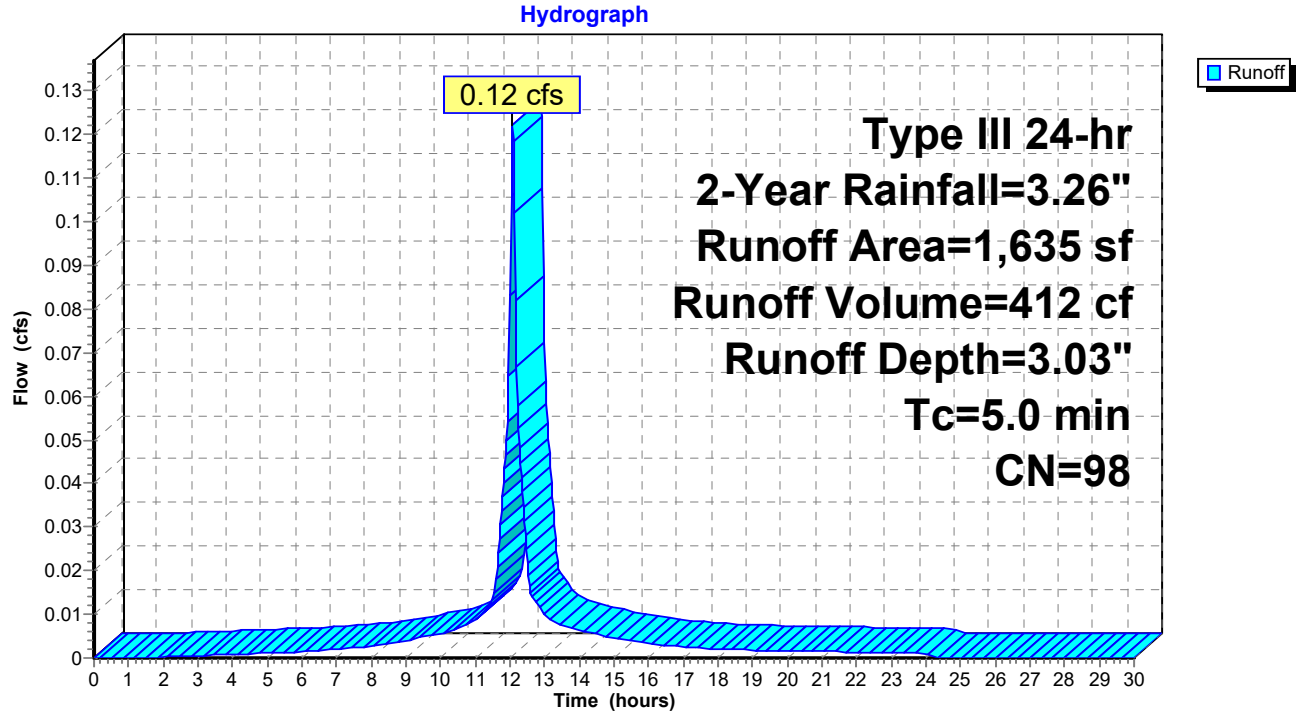
Runoff = 0.12 cfs @ 12.07 hrs, Volume= 412 cf, Depth= 3.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Year Rainfall=3.26"

Area (sf)	CN	Description
1,635	98	Paved parking, HSG A
1,635		100.00% Impervious Area

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

Subcatchment 2S: EX PAVED AREA



Summary for Subcatchment 4S: EX LANDSCAPE AREA

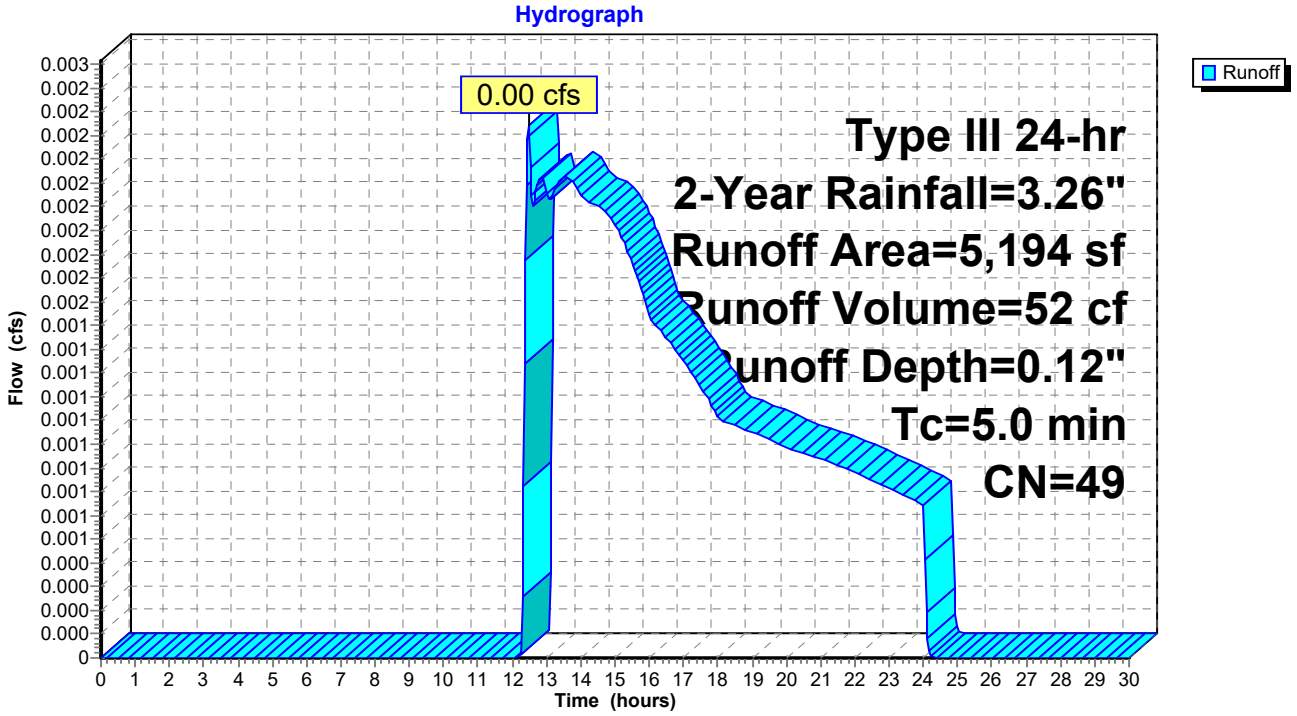
Runoff = 0.00 cfs @ 12.48 hrs, Volume= 52 cf, Depth= 0.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Year Rainfall=3.26"

Area (sf)	CN	Description
5,194	49	50-75% Grass cover, Fair, HSG A
5,194		100.00% Pervious Area

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

Subcatchment 4S: EX LANDSCAPE AREA



Summary for Subcatchment 6S: EX. IMPERVIOUS

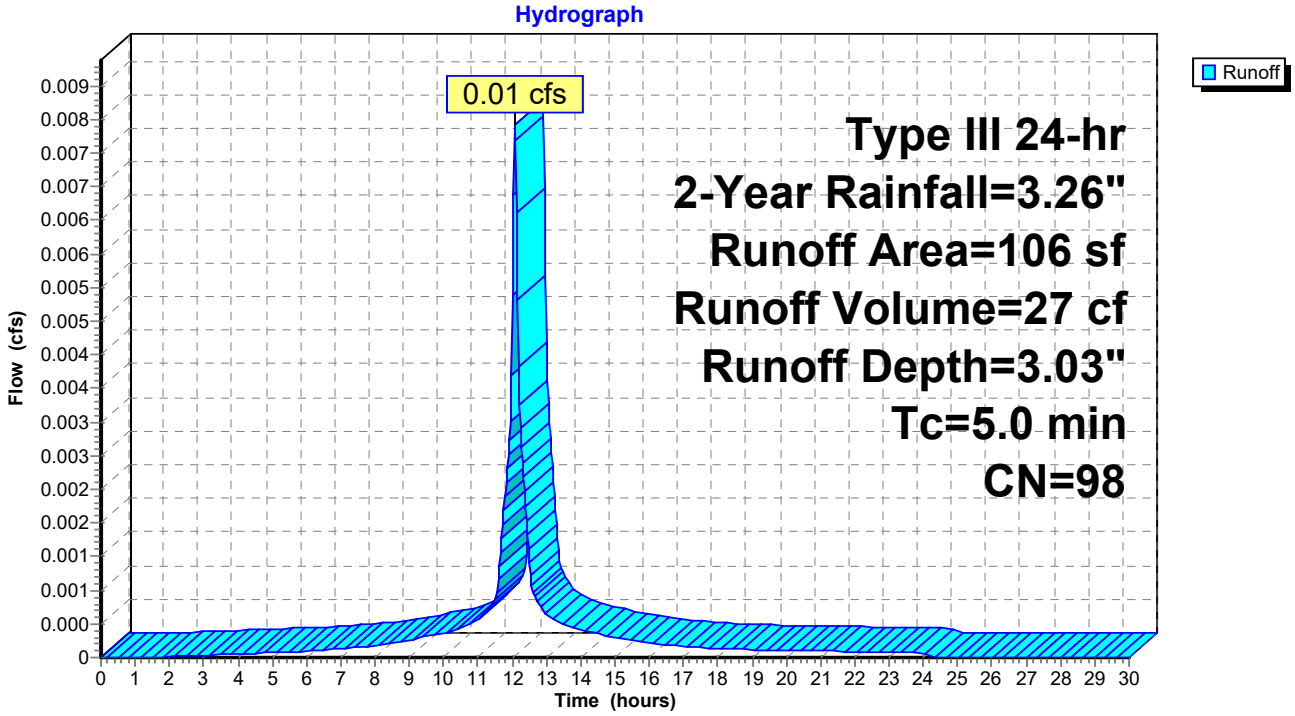
Runoff = 0.01 cfs @ 12.07 hrs, Volume= 27 cf, Depth= 3.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Year Rainfall=3.26"

Area (sf)	CN	Description
106	98	Unconnected pavement, HSG A
106		100.00% Impervious Area
106		100.00% Unconnected

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

Subcatchment 6S: EX. IMPERVIOUS

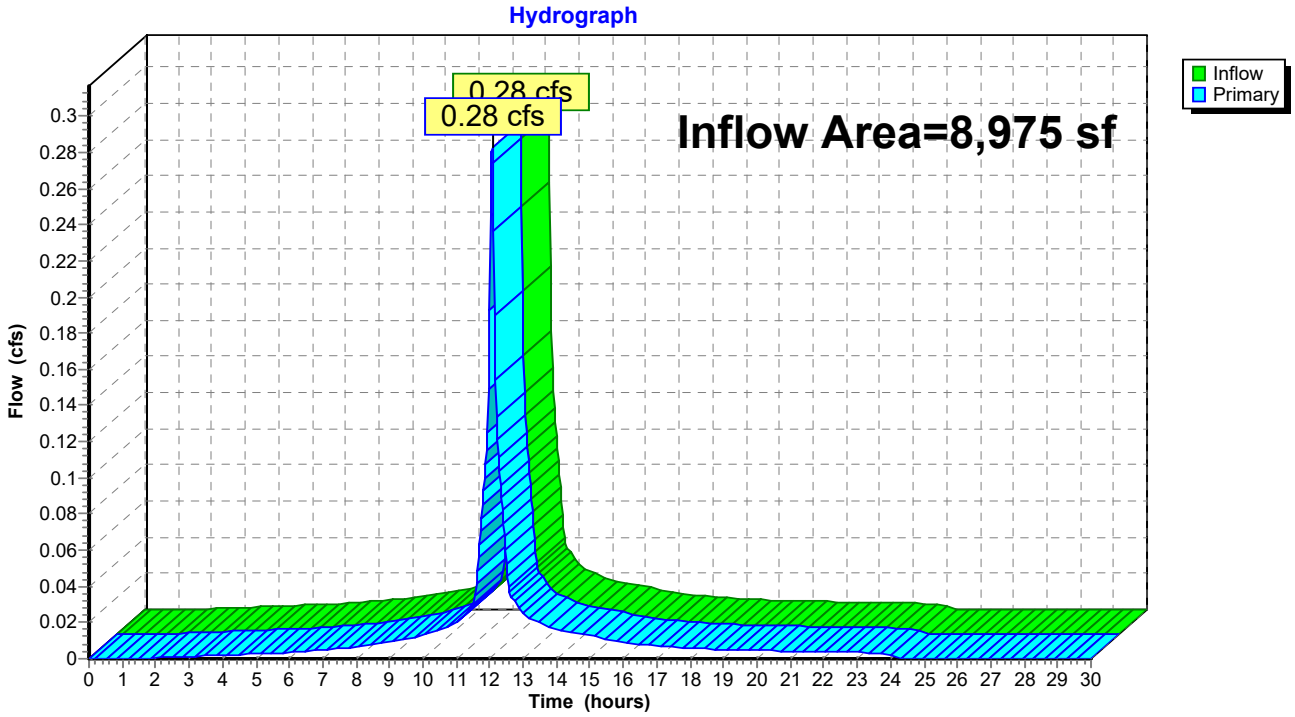


Summary for Link 3L: EXISTING

Inflow Area = 8,975 sf, 42.13% Impervious, Inflow Depth = 1.34" for 2-Year event
Inflow = 0.28 cfs @ 12.07 hrs, Volume= 1,006 cf
Primary = 0.28 cfs @ 12.07 hrs, Volume= 1,006 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Link 3L: EXISTING



Time span=0.00-30.00 hrs, dt=0.03 hrs, 1001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: EX ROOF AREA Runoff Area=2,040 sf 100.00% Impervious Runoff Depth=4.91"
Tc=5.0 min CN=98 Runoff=0.24 cfs 835 cf

Subcatchment 2S: EX PAVED AREA Runoff Area=1,635 sf 100.00% Impervious Runoff Depth=4.91"
Tc=5.0 min CN=98 Runoff=0.19 cfs 669 cf

Subcatchment 4S: EX LANDSCAPE AREA Runoff Area=5,194 sf 0.00% Impervious Runoff Depth=0.70"
Tc=5.0 min CN=49 Runoff=0.06 cfs 302 cf

Subcatchment 6S: EX. IMPERVIOUS Runoff Area=106 sf 100.00% Impervious Runoff Depth=4.91"
Tc=5.0 min CN=98 Runoff=0.01 cfs 43 cf

Link 3L: EXISTING Inflow=0.50 cfs 1,850 cf
Primary=0.50 cfs 1,850 cf

Total Runoff Area = 8,975 sf Runoff Volume = 1,850 cf Average Runoff Depth = 2.47"
57.87% Pervious = 5,194 sf 42.13% Impervious = 3,781 sf

Summary for Subcatchment 1S: EX ROOF AREA

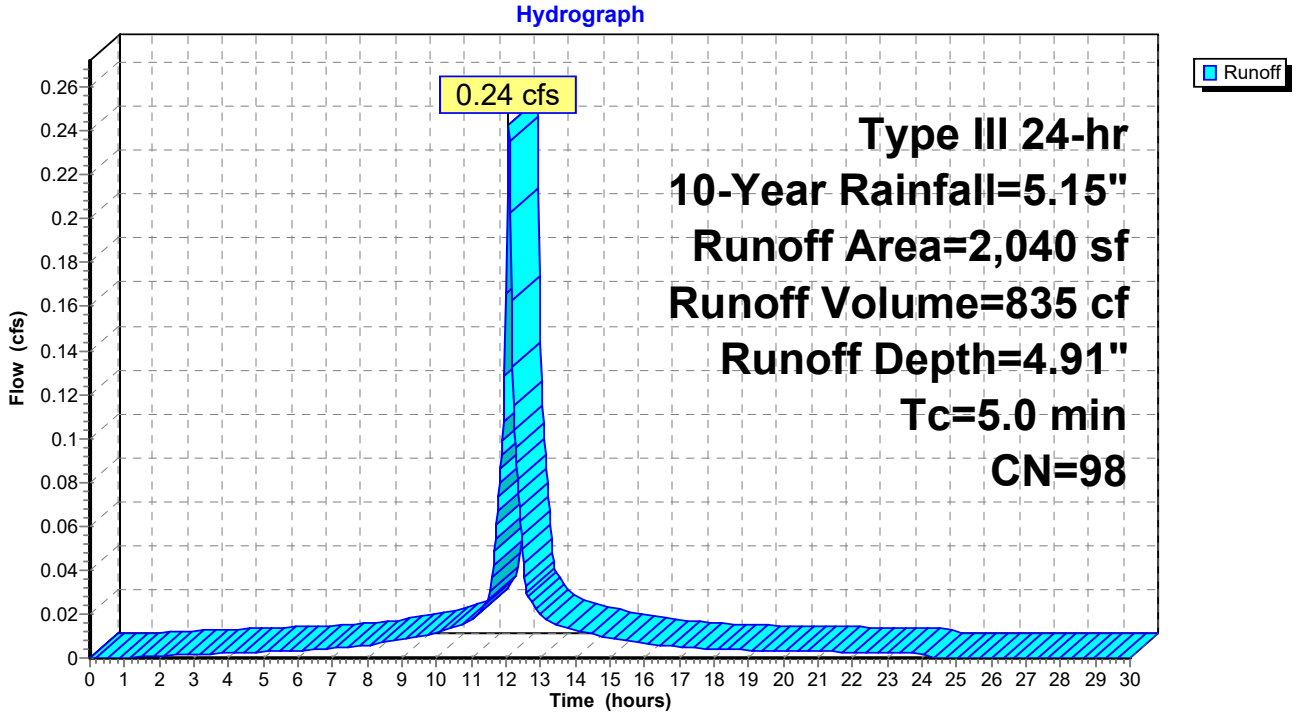
Runoff = 0.24 cfs @ 12.07 hrs, Volume= 835 cf, Depth= 4.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Year Rainfall=5.15"

Area (sf)	CN	Description
2,040	98	Roofs, HSG A
2,040		100.00% Impervious Area

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

Subcatchment 1S: EX ROOF AREA



Summary for Subcatchment 2S: EX PAVED AREA

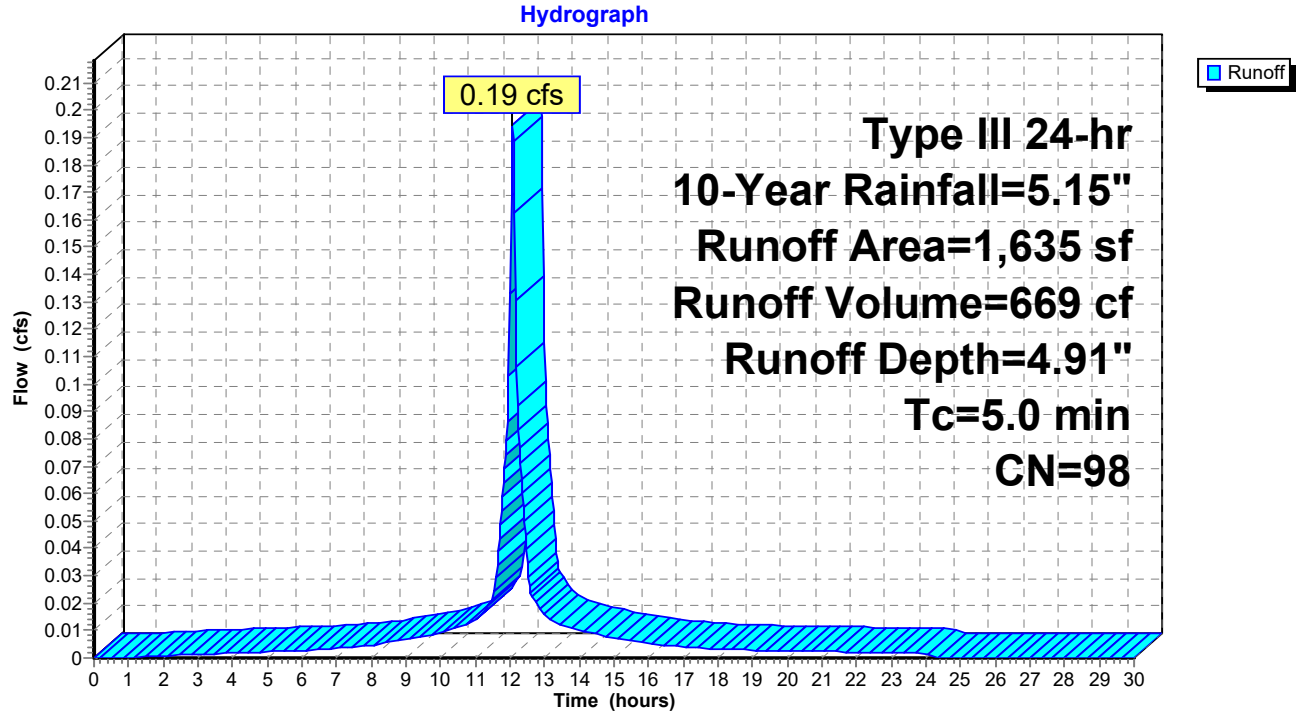
Runoff = 0.19 cfs @ 12.07 hrs, Volume= 669 cf, Depth= 4.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Year Rainfall=5.15"

Area (sf)	CN	Description
1,635	98	Paved parking, HSG A
1,635		100.00% Impervious Area

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

Subcatchment 2S: EX PAVED AREA



Summary for Subcatchment 4S: EX LANDSCAPE AREA

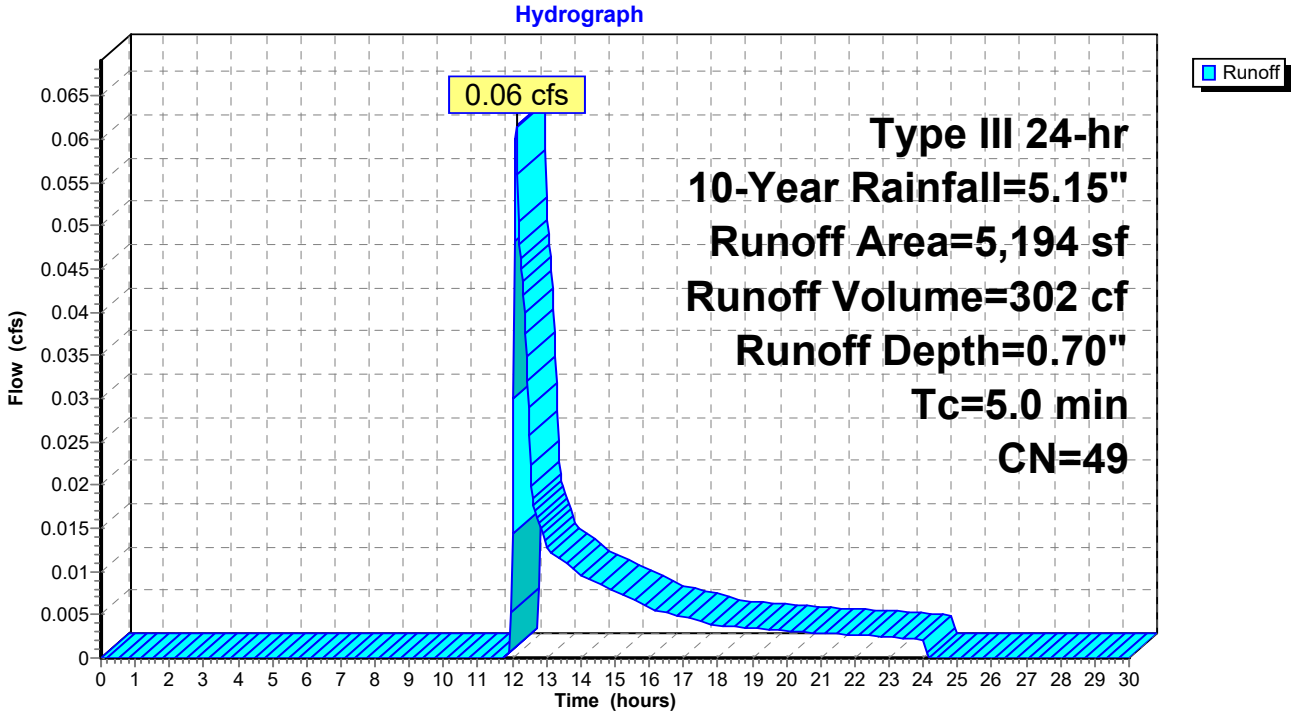
Runoff = 0.06 cfs @ 12.11 hrs, Volume= 302 cf, Depth= 0.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Year Rainfall=5.15"

Area (sf)	CN	Description
5,194	49	50-75% Grass cover, Fair, HSG A
5,194		100.00% Pervious Area

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

Subcatchment 4S: EX LANDSCAPE AREA



Summary for Subcatchment 6S: EX. IMPERVIOUS

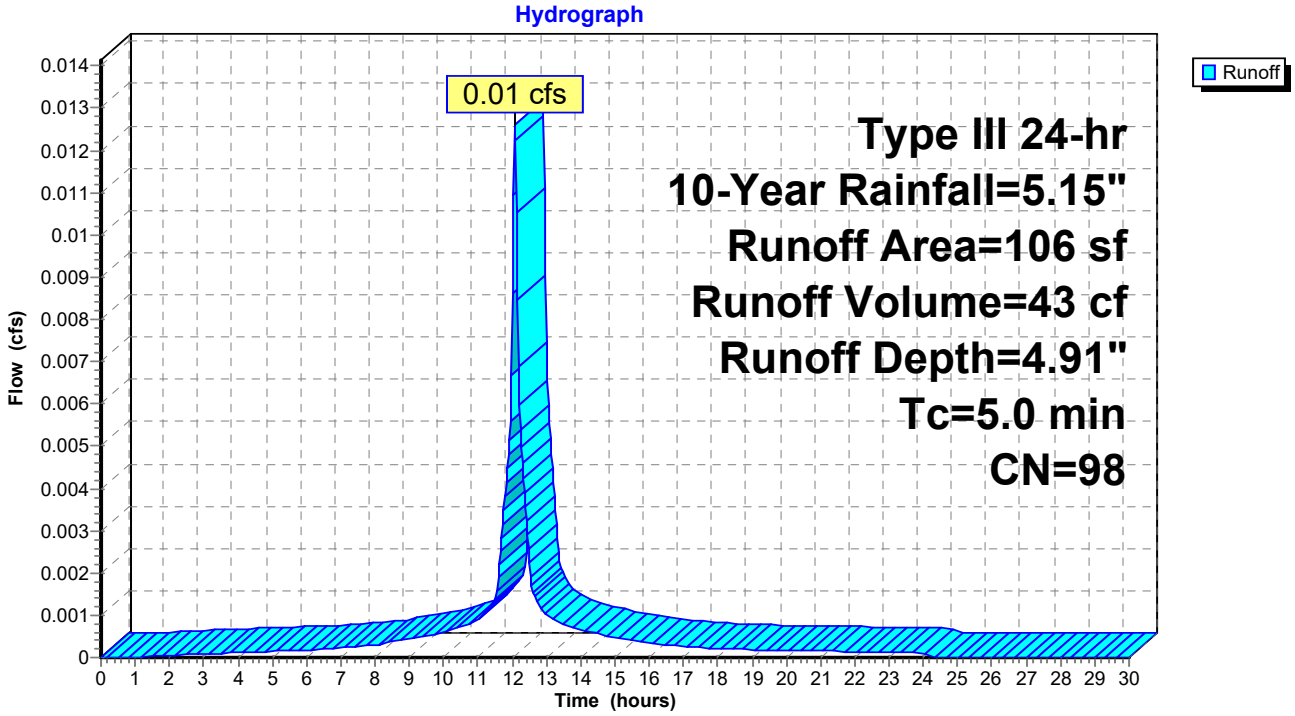
Runoff = 0.01 cfs @ 12.07 hrs, Volume= 43 cf, Depth= 4.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Year Rainfall=5.15"

Area (sf)	CN	Description
106	98	Unconnected pavement, HSG A
106		100.00% Impervious Area
106		100.00% Unconnected

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

Subcatchment 6S: EX. IMPERVIOUS

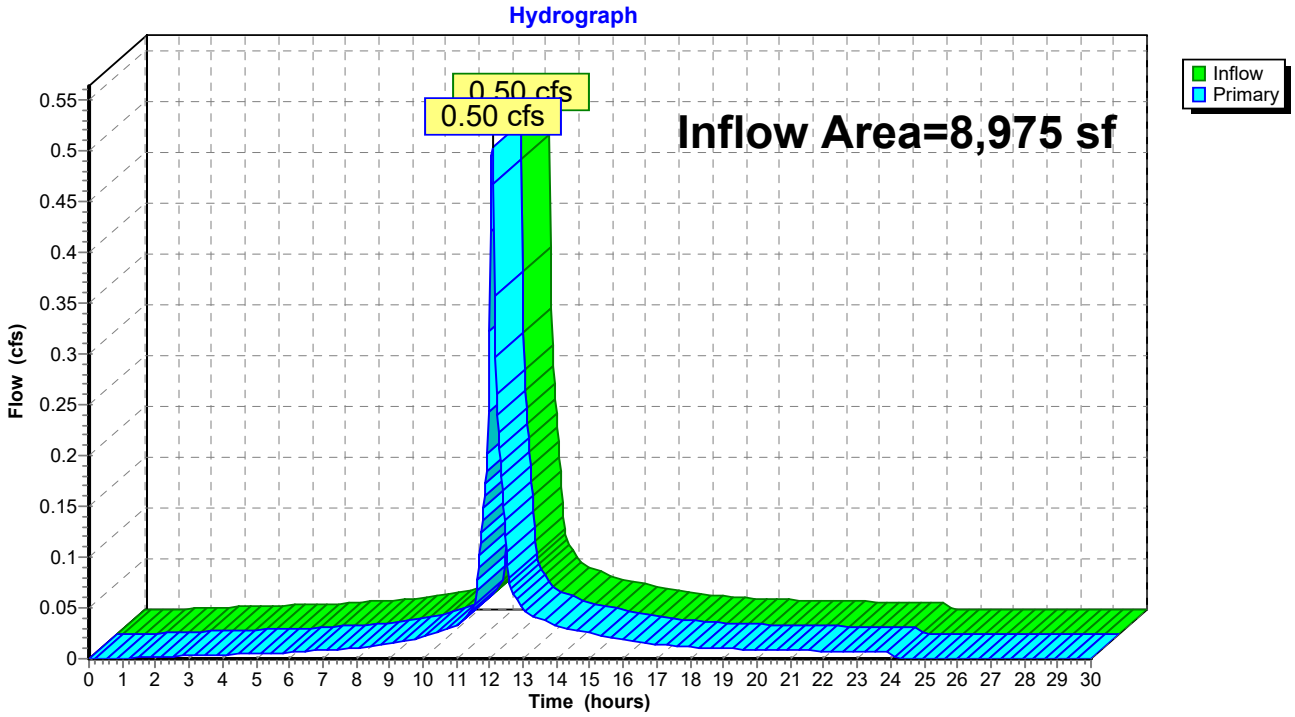


Summary for Link 3L: EXISTING

Inflow Area = 8,975 sf, 42.13% Impervious, Inflow Depth = 2.47" for 10-Year event
Inflow = 0.50 cfs @ 12.08 hrs, Volume= 1,850 cf
Primary = 0.50 cfs @ 12.08 hrs, Volume= 1,850 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Link 3L: EXISTING



Time span=0.00-30.00 hrs, dt=0.03 hrs, 1001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: EX ROOF AREA Runoff Area=2,040 sf 100.00% Impervious Runoff Depth=6.09"
Tc=5.0 min CN=98 Runoff=0.30 cfs 1,036 cf

Subcatchment 2S: EX PAVED AREA Runoff Area=1,635 sf 100.00% Impervious Runoff Depth=6.09"
Tc=5.0 min CN=98 Runoff=0.24 cfs 830 cf

Subcatchment 4S: EX LANDSCAPE AREA Runoff Area=5,194 sf 0.00% Impervious Runoff Depth=1.23"
Tc=5.0 min CN=49 Runoff=0.14 cfs 533 cf

Subcatchment 6S: EX. IMPERVIOUS Runoff Area=106 sf 100.00% Impervious Runoff Depth=6.09"
Tc=5.0 min CN=98 Runoff=0.02 cfs 54 cf

Link 3L: EXISTING Inflow=0.69 cfs 2,452 cf
Primary=0.69 cfs 2,452 cf

Total Runoff Area = 8,975 sf Runoff Volume = 2,452 cf Average Runoff Depth = 3.28"
57.87% Pervious = 5,194 sf 42.13% Impervious = 3,781 sf

Summary for Subcatchment 1S: EX ROOF AREA

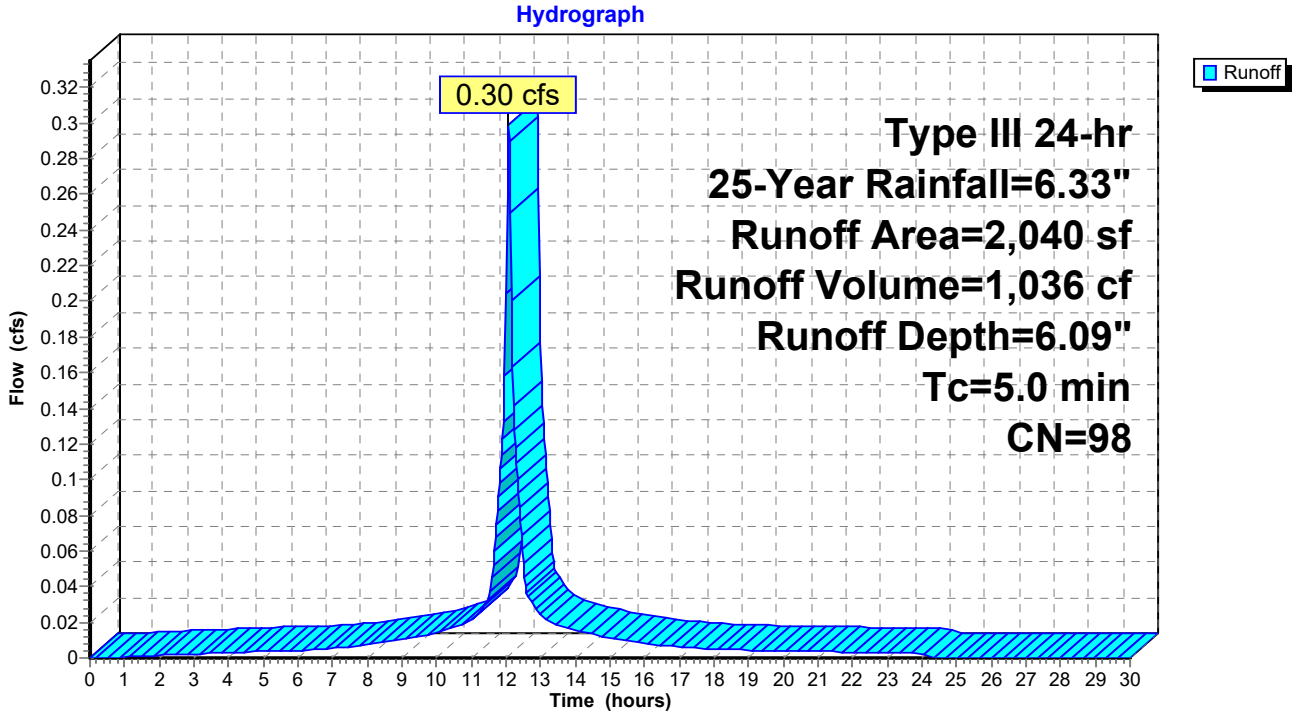
Runoff = 0.30 cfs @ 12.07 hrs, Volume= 1,036 cf, Depth= 6.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Year Rainfall=6.33"

Area (sf)	CN	Description
2,040	98	Roofs, HSG A
2,040		100.00% Impervious Area

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

Subcatchment 1S: EX ROOF AREA



Summary for Subcatchment 2S: EX PAVED AREA

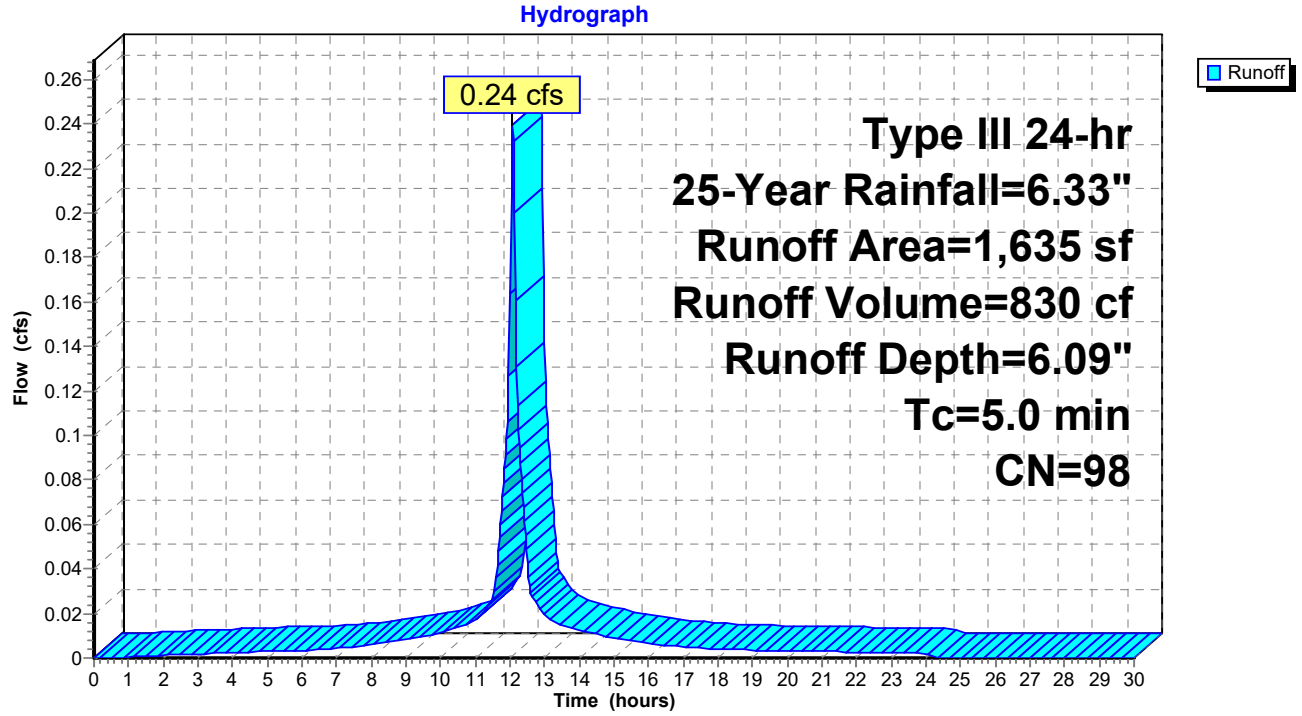
Runoff = 0.24 cfs @ 12.07 hrs, Volume= 830 cf, Depth= 6.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Year Rainfall=6.33"

Area (sf)	CN	Description
1,635	98	Paved parking, HSG A
1,635		100.00% Impervious Area

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

Subcatchment 2S: EX PAVED AREA



Summary for Subcatchment 4S: EX LANDSCAPE AREA

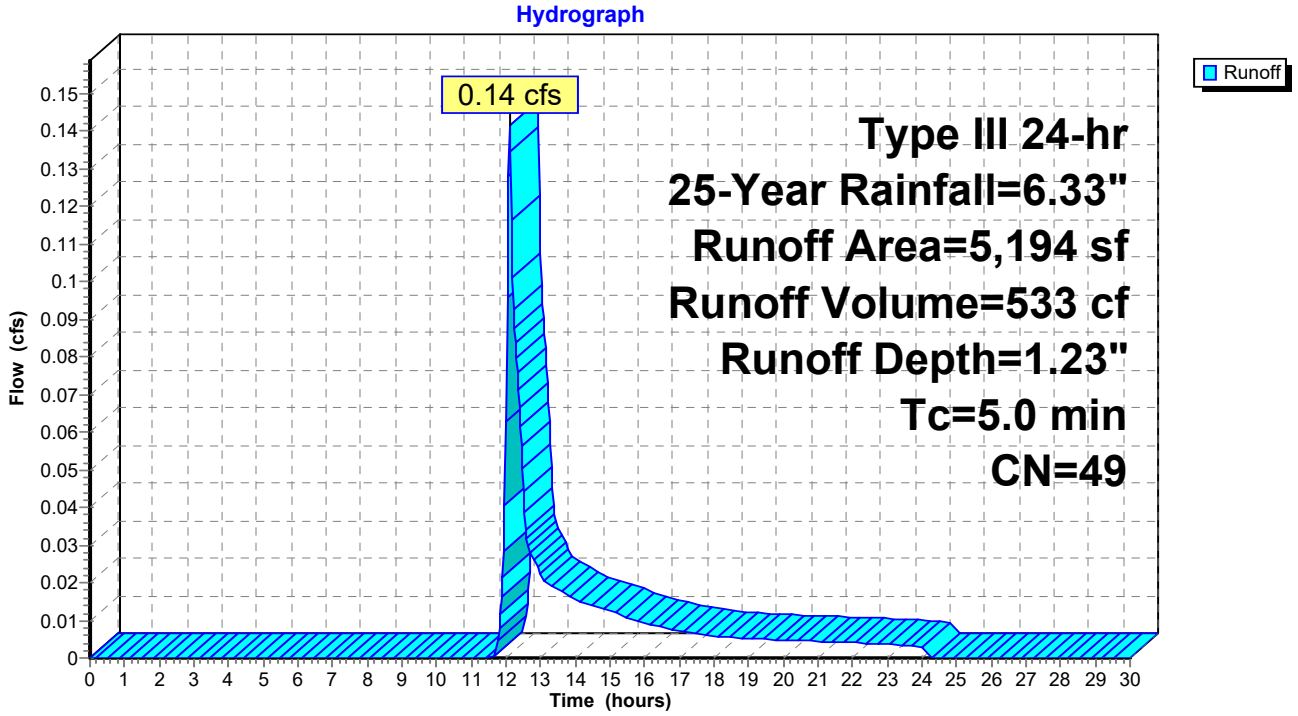
Runoff = 0.14 cfs @ 12.09 hrs, Volume= 533 cf, Depth= 1.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Year Rainfall=6.33"

Area (sf)	CN	Description
5,194	49	50-75% Grass cover, Fair, HSG A
5,194		100.00% Pervious Area

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

Subcatchment 4S: EX LANDSCAPE AREA



Summary for Subcatchment 6S: EX. IMPERVIOUS

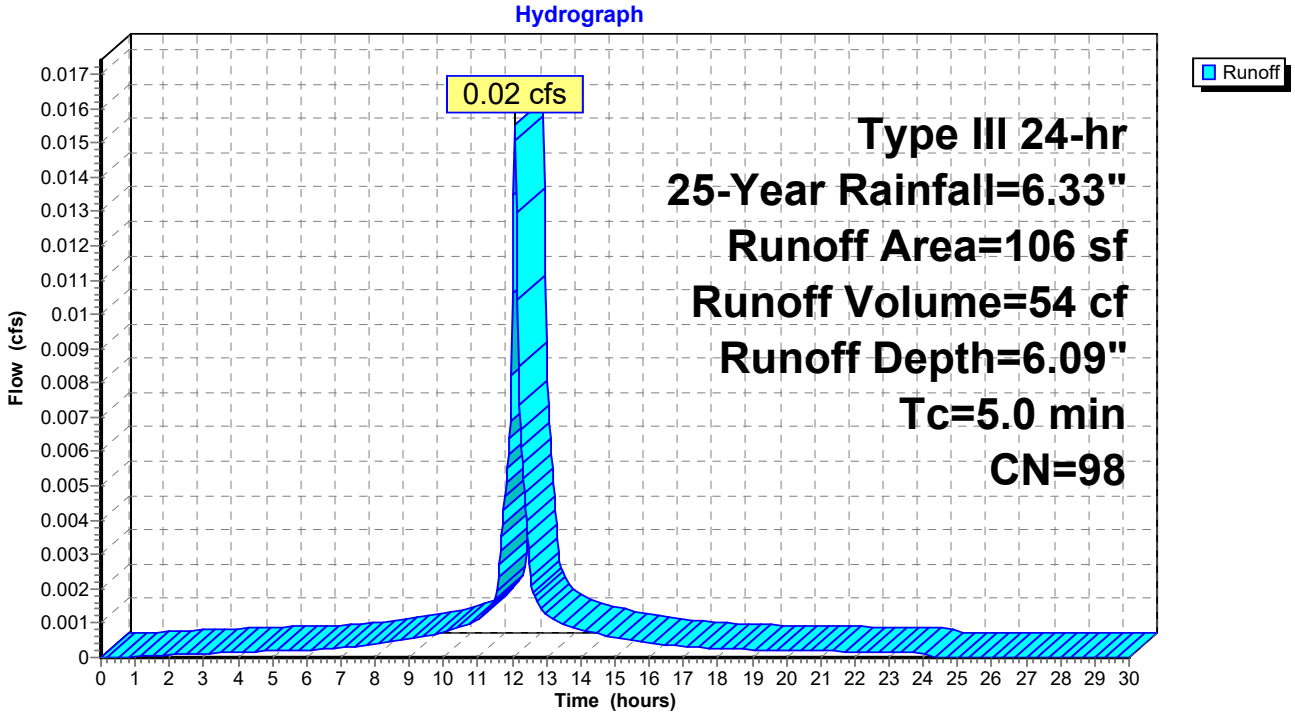
Runoff = 0.02 cfs @ 12.07 hrs, Volume= 54 cf, Depth= 6.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Year Rainfall=6.33"

Area (sf)	CN	Description
106	98	Unconnected pavement, HSG A
106		100.00% Impervious Area
106		100.00% Unconnected

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

Subcatchment 6S: EX. IMPERVIOUS

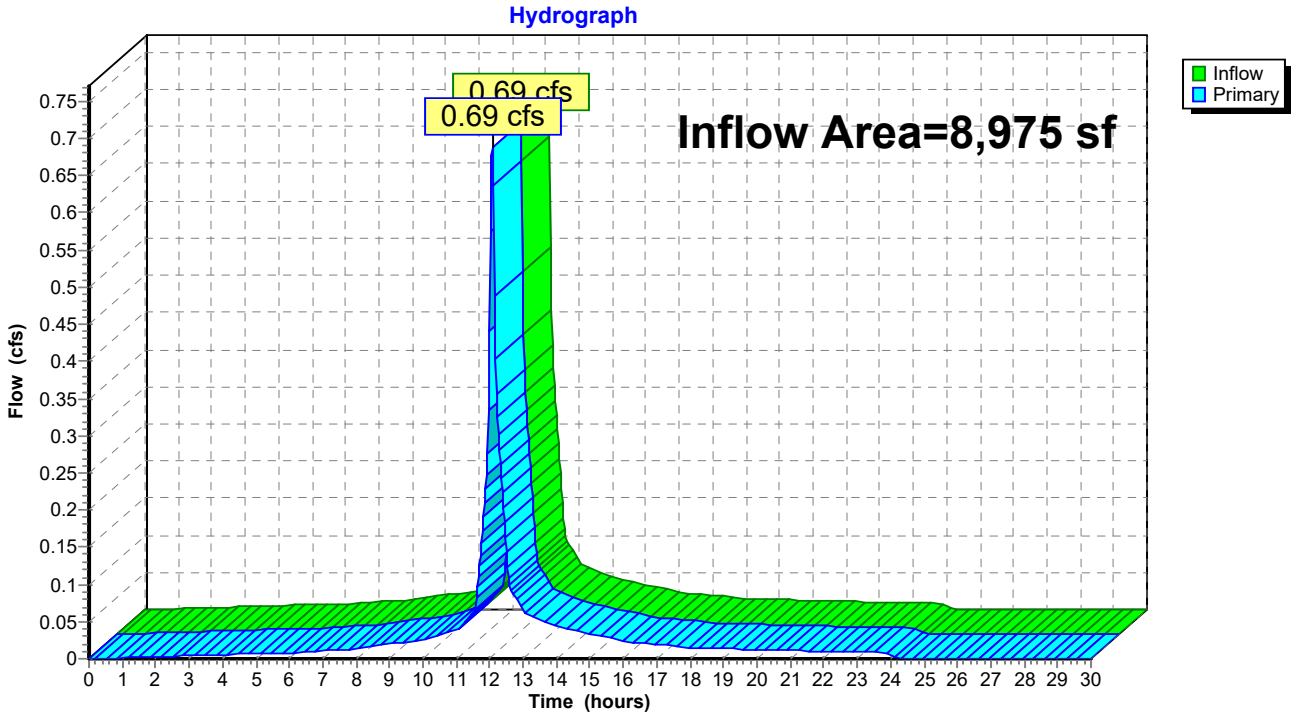


Summary for Link 3L: EXISTING

Inflow Area = 8,975 sf, 42.13% Impervious, Inflow Depth = 3.28" for 25-Year event
Inflow = 0.69 cfs @ 12.08 hrs, Volume= 2,452 cf
Primary = 0.69 cfs @ 12.08 hrs, Volume= 2,452 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Link 3L: EXISTING



Time span=0.00-30.00 hrs, dt=0.03 hrs, 1001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: EX ROOF AREA Runoff Area=2,040 sf 100.00% Impervious Runoff Depth=7.90"
Tc=5.0 min CN=98 Runoff=0.39 cfs 1,343 cf

Subcatchment 2S: EX PAVED AREA Runoff Area=1,635 sf 100.00% Impervious Runoff Depth=7.90"
Tc=5.0 min CN=98 Runoff=0.31 cfs 1,076 cf

Subcatchment 4S: EX LANDSCAPE AREA Runoff Area=5,194 sf 0.00% Impervious Runoff Depth=2.23"
Tc=5.0 min CN=49 Runoff=0.29 cfs 965 cf

Subcatchment 6S: EX. IMPERVIOUS Runoff Area=106 sf 100.00% Impervious Runoff Depth=7.90"
Tc=5.0 min CN=98 Runoff=0.02 cfs 70 cf

Link 3L: EXISTING Inflow=1.00 cfs 3,454 cf
Primary=1.00 cfs 3,454 cf

Total Runoff Area = 8,975 sf Runoff Volume = 3,454 cf Average Runoff Depth = 4.62"
57.87% Pervious = 5,194 sf 42.13% Impervious = 3,781 sf

Summary for Subcatchment 1S: EX ROOF AREA

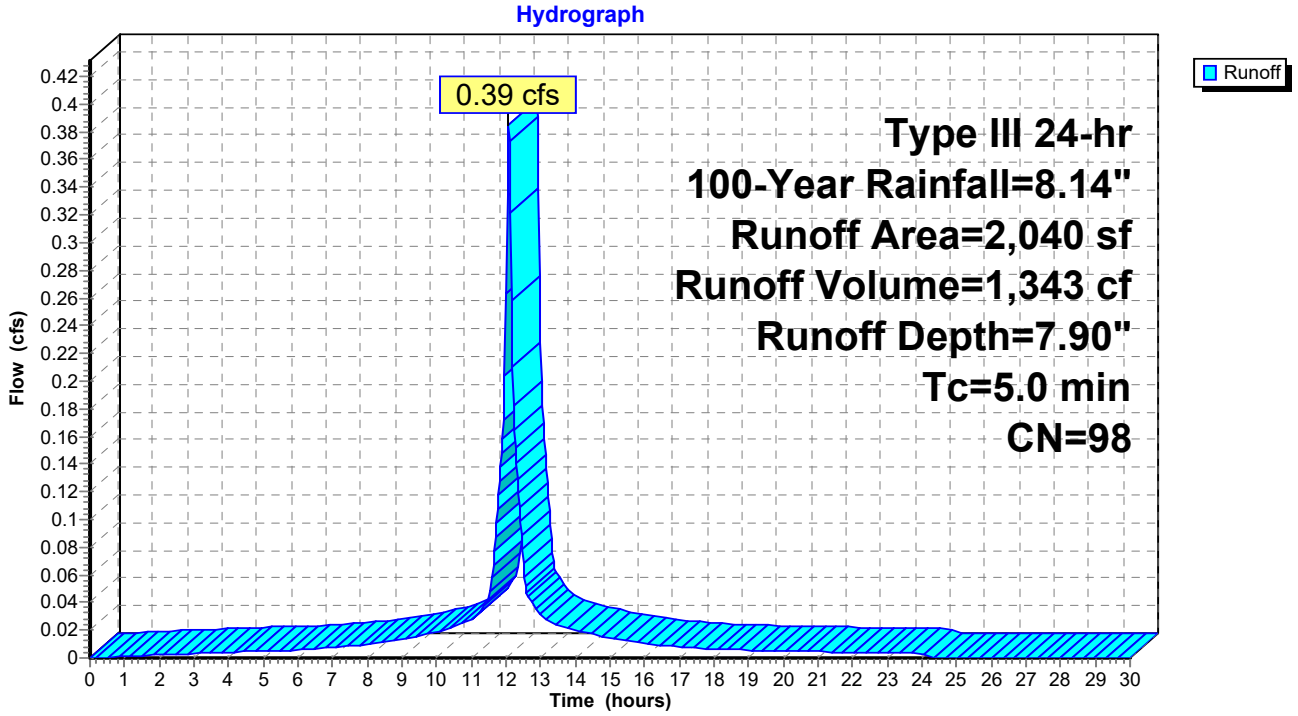
Runoff = 0.39 cfs @ 12.07 hrs, Volume= 1,343 cf, Depth= 7.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Year Rainfall=8.14"

Area (sf)	CN	Description
2,040	98	Roofs, HSG A
2,040		100.00% Impervious Area

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

Subcatchment 1S: EX ROOF AREA



Summary for Subcatchment 2S: EX PAVED AREA

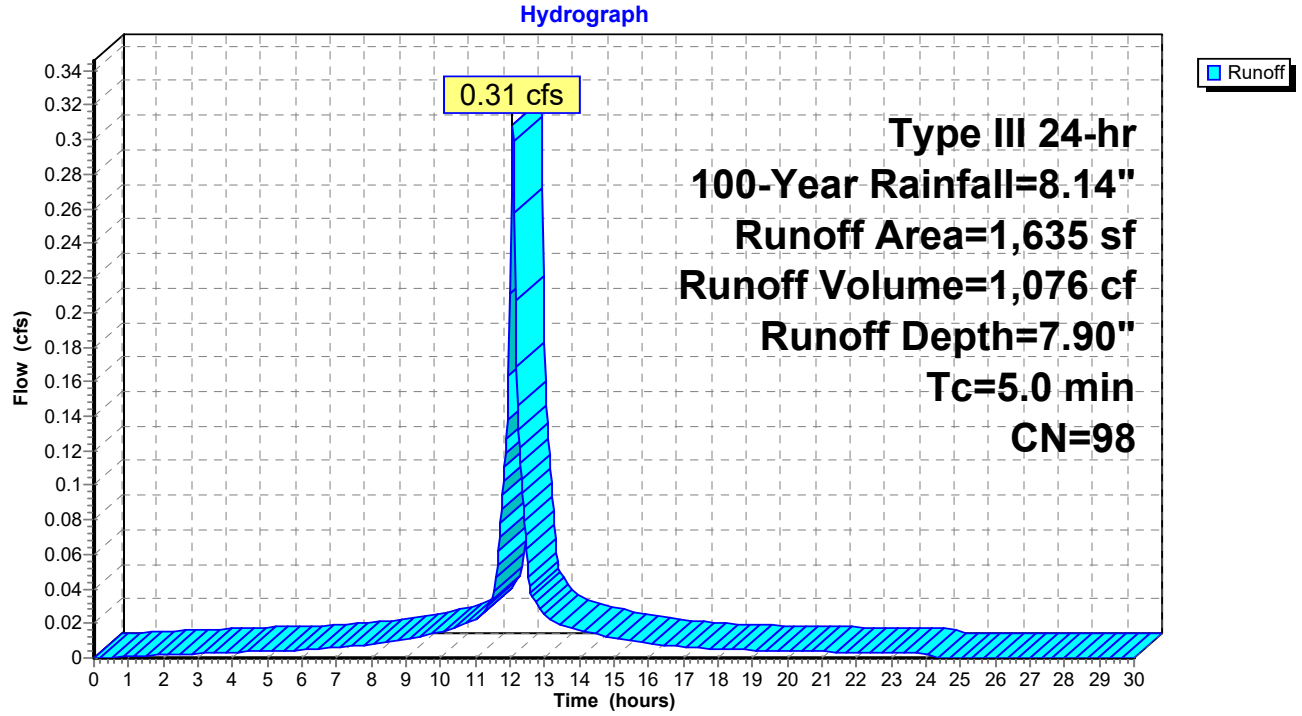
Runoff = 0.31 cfs @ 12.07 hrs, Volume= 1,076 cf, Depth= 7.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Year Rainfall=8.14"

Area (sf)	CN	Description
1,635	98	Paved parking, HSG A
1,635		100.00% Impervious Area

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

Subcatchment 2S: EX PAVED AREA



Summary for Subcatchment 4S: EX LANDSCAPE AREA

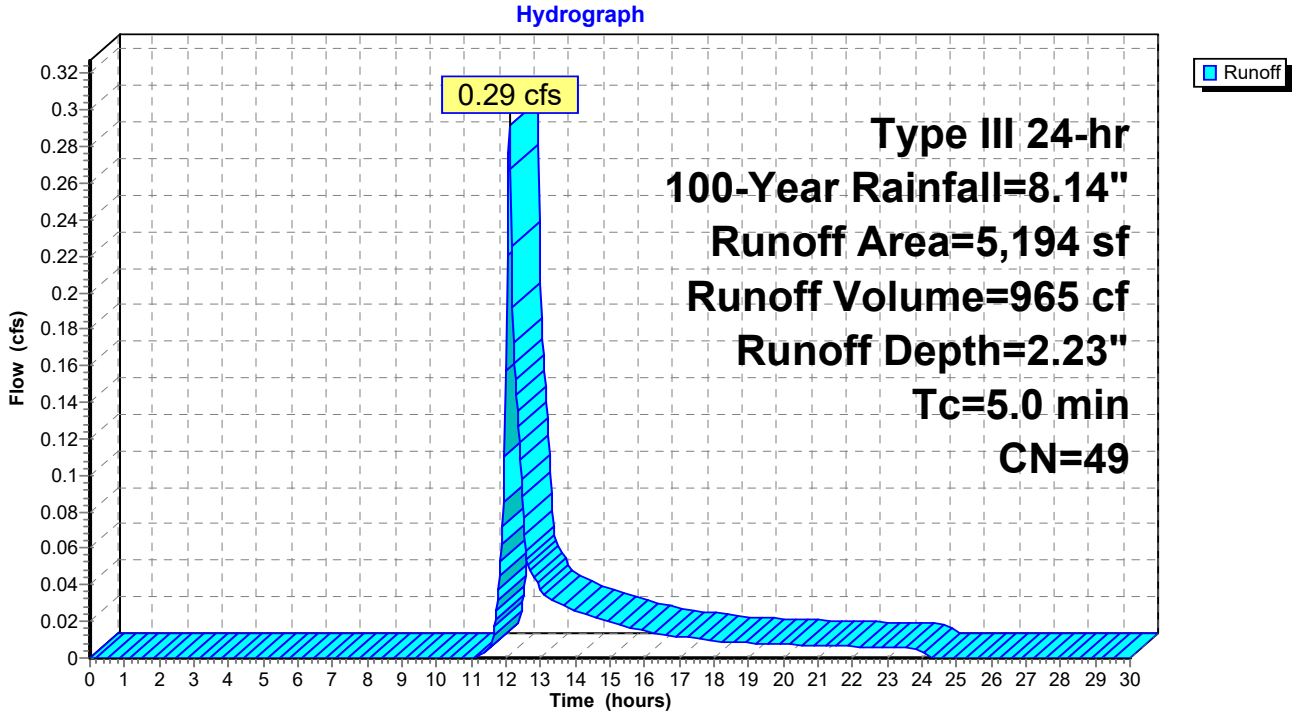
Runoff = 0.29 cfs @ 12.09 hrs, Volume= 965 cf, Depth= 2.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Year Rainfall=8.14"

Area (sf)	CN	Description
5,194	49	50-75% Grass cover, Fair, HSG A
5,194		100.00% Pervious Area

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

Subcatchment 4S: EX LANDSCAPE AREA



Summary for Subcatchment 6S: EX. IMPERVIOUS

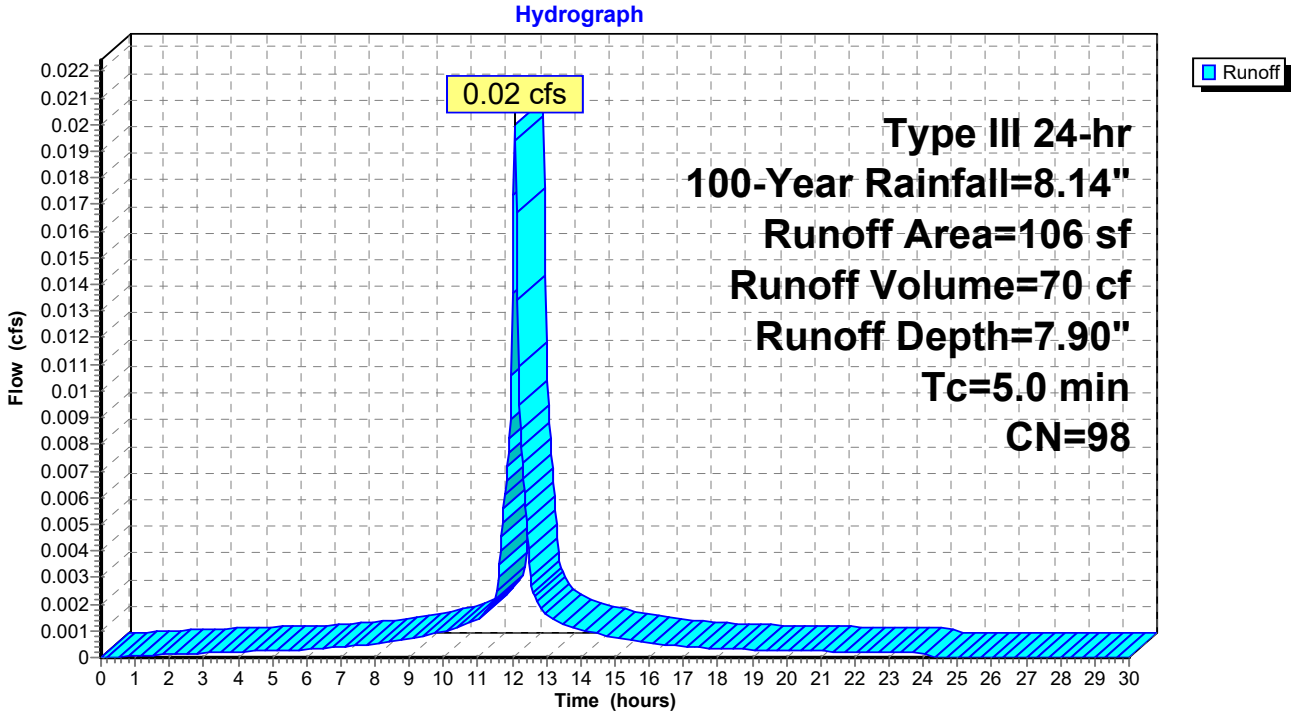
Runoff = 0.02 cfs @ 12.07 hrs, Volume= 70 cf, Depth= 7.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Year Rainfall=8.14"

Area (sf)	CN	Description
106	98	Unconnected pavement, HSG A
106		100.00% Impervious Area
106		100.00% Unconnected

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

Subcatchment 6S: EX. IMPERVIOUS

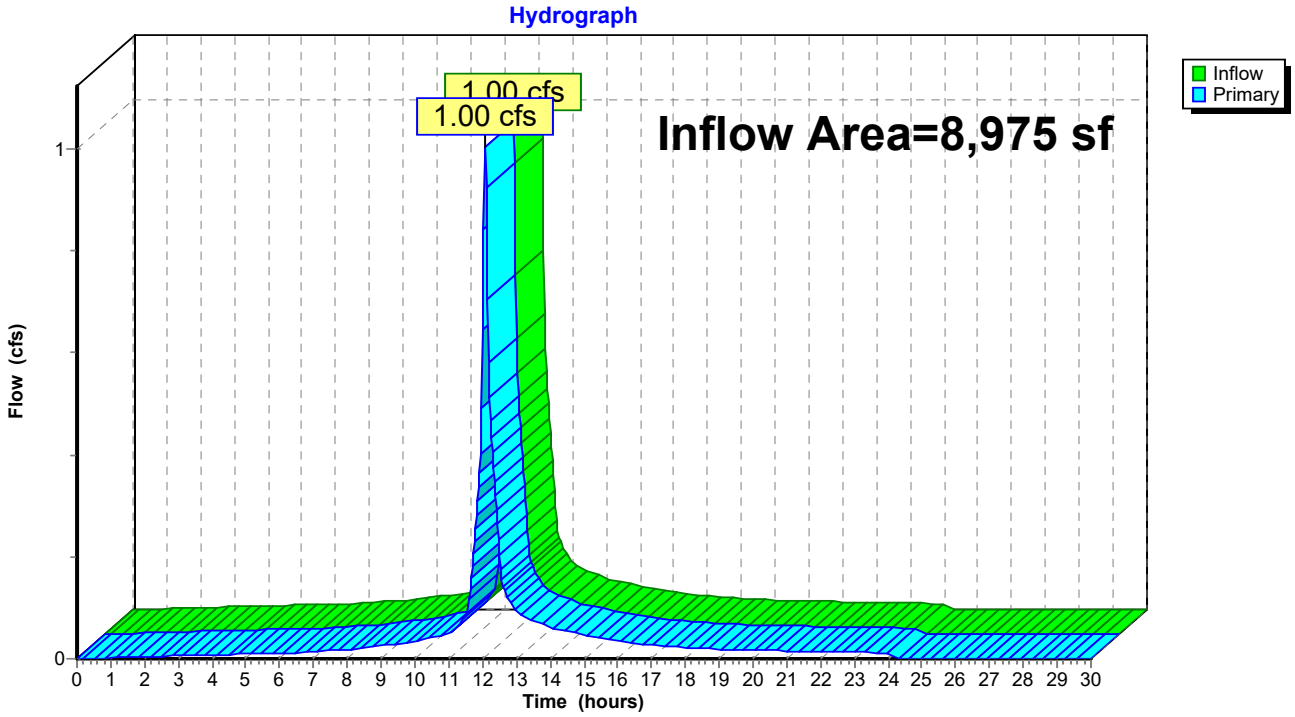


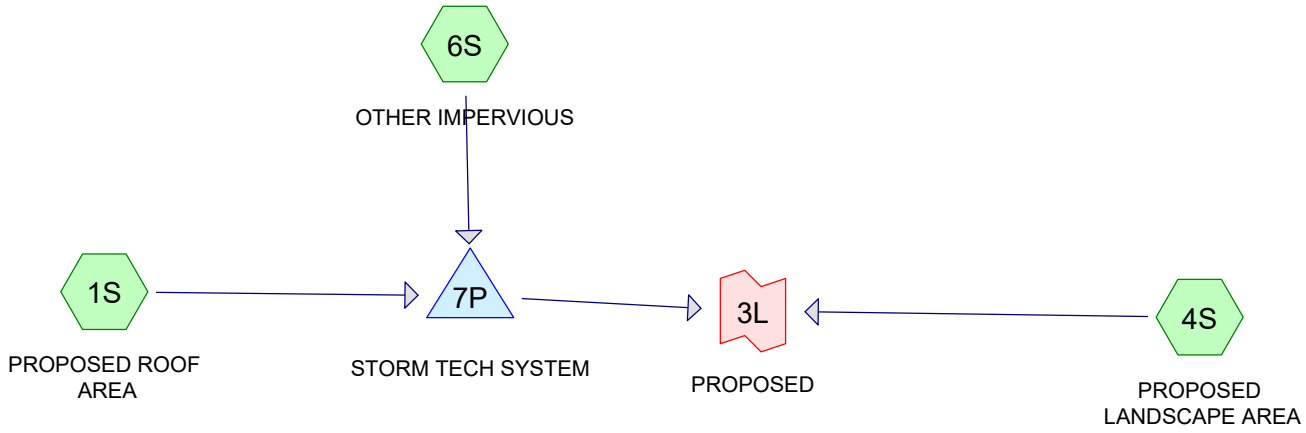
Summary for Link 3L: EXISTING

Inflow Area = 8,975 sf, 42.13% Impervious, Inflow Depth = 4.62" for 100-Year event
Inflow = 1.00 cfs @ 12.07 hrs, Volume= 3,454 cf
Primary = 1.00 cfs @ 12.07 hrs, Volume= 3,454 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Link 3L: EXISTING





Subcat Reach Pond Link

Routing Diagram for PROPOSED - Copy

Prepared by {enter your company name here}, Printed 12/18/2024

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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
3,116	49	50-75% Grass cover, Fair, HSG A (4S)
4,677	98	Roofs, HSG A (1S)
1,182	98	Unconnected pavement, HSG A (6S)
8,975	**81**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
8,975	HSG A	1S, 4S, 6S
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
8,975		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Sub Num
3,116	0	0	0	0	3,116	50-75% Grass cover, Fair	
4,677	0	0	0	0	4,677	Roofs	
1,182	0	0	0	0	1,182	Unconnected pavement	
8,975	**0**	**0**	**0**	**0**	**8,975**	**TOTAL AREA**	

Time span=0.00-30.00 hrs, dt=0.03 hrs, 1001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: PROPOSED ROOF Runoff Area=4,677 sf 100.00% Impervious Runoff Depth=3.03"
Tc=5.0 min CN=98 Runoff=0.35 cfs 1,180 cf

Subcatchment 4S: PROPOSED LANDSCAPE Runoff Area=3,116 sf 0.00% Impervious Runoff Depth=0.12"
Tc=5.0 min CN=49 Runoff=0.00 cfs 31 cf

Subcatchment 6S: OTHER IMPERVIOUS Runoff Area=1,182 sf 100.00% Impervious Runoff Depth=3.03"
Tc=5.0 min CN=98 Runoff=0.09 cfs 298 cf

Pond 7P: STORM TECH SYSTEM Peak Elev=167.28' Storage=648 cf Inflow=0.44 cfs 1,478 cf
Discarded=0.02 cfs 1,478 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 1,478 cf

Link 3L: PROPOSED Inflow=0.00 cfs 31 cf
Primary=0.00 cfs 31 cf

Total Runoff Area = 8,975 sf Runoff Volume = 1,509 cf Average Runoff Depth = 2.02"
34.72% Pervious = 3,116 sf 65.28% Impervious = 5,859 sf

Summary for Subcatchment 1S: PROPOSED ROOF AREA

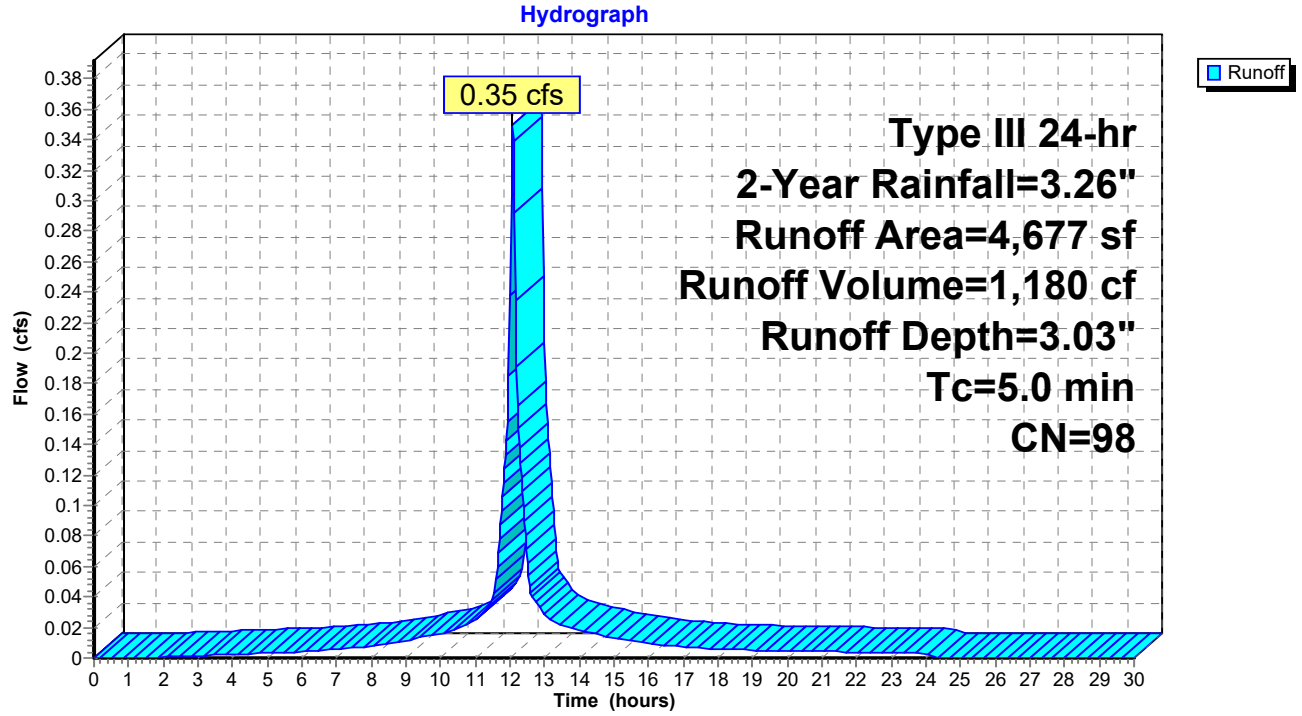
Runoff = 0.35 cfs @ 12.07 hrs, Volume= 1,180 cf, Depth= 3.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Year Rainfall=3.26"

Area (sf)	CN	Description
4,677	98	Roofs, HSG A
4,677		100.00% Impervious Area

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

Subcatchment 1S: PROPOSED ROOF AREA



Summary for Subcatchment 4S: PROPOSED LANDSCAPE AREA

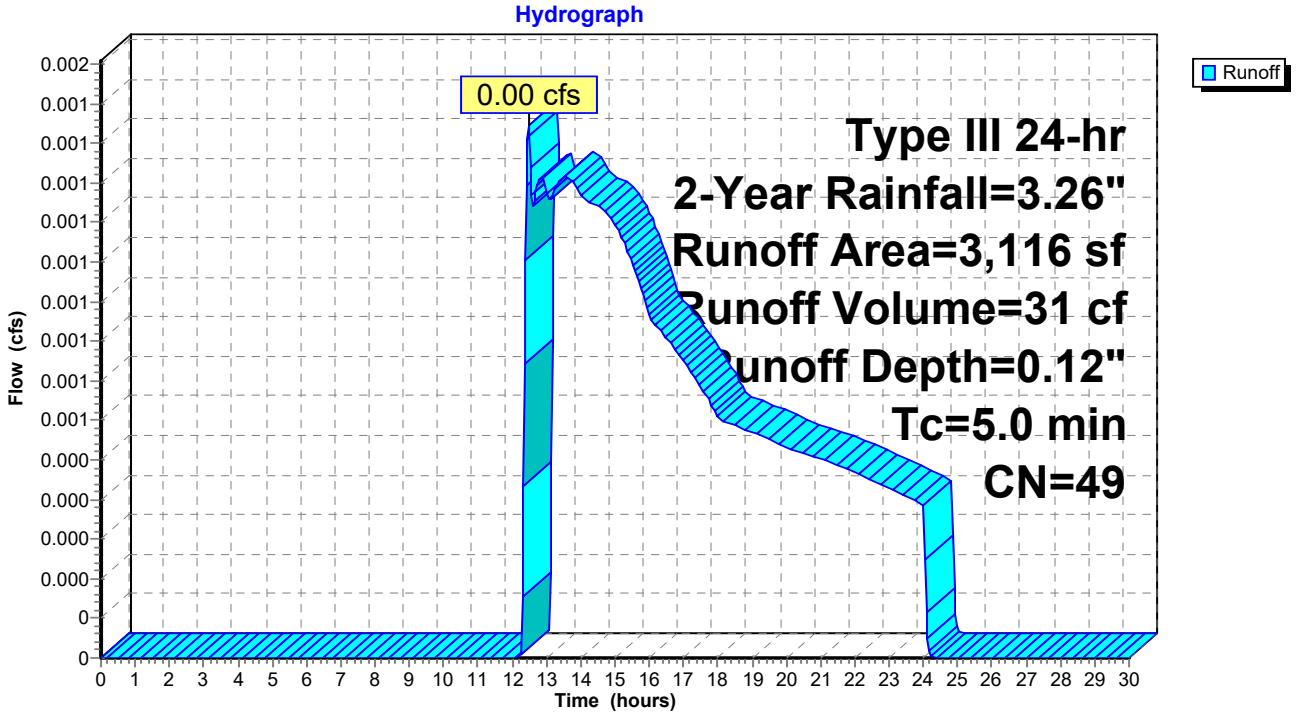
Runoff = 0.00 cfs @ 12.48 hrs, Volume= 31 cf, Depth= 0.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Year Rainfall=3.26"

Area (sf)	CN	Description
3,116	49	50-75% Grass cover, Fair, HSG A
3,116		100.00% Pervious Area

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

Subcatchment 4S: PROPOSED LANDSCAPE AREA



Summary for Subcatchment 6S: OTHER IMPERVIOUS

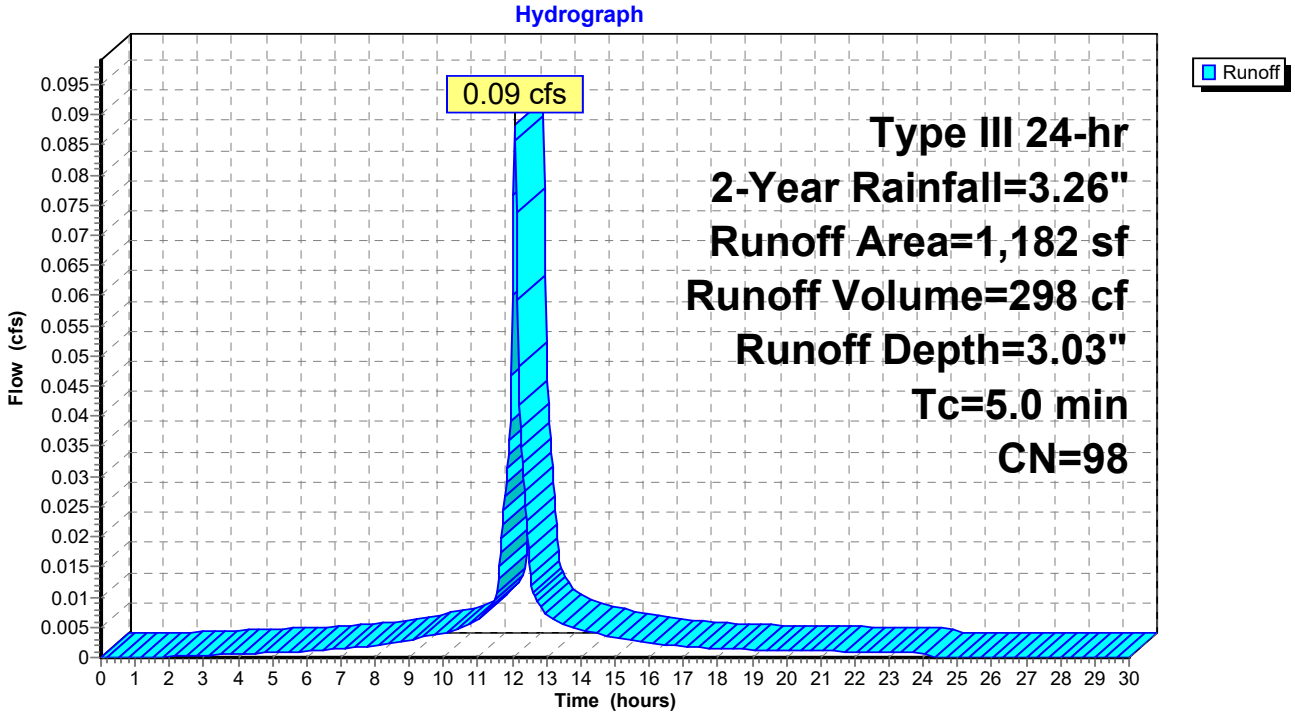
Runoff = 0.09 cfs @ 12.07 hrs, Volume= 298 cf, Depth= 3.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Year Rainfall=3.26"

Area (sf)	CN	Description
1,182	98	Unconnected pavement, HSG A
1,182		100.00% Impervious Area
1,182		100.00% Unconnected

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

Subcatchment 6S: OTHER IMPERVIOUS



Summary for Pond 7P: STORM TECH SYSTEM

Inflow Area = 5,859 sf,100.00% Impervious, Inflow Depth = 3.03" for 2-Year event
Inflow = 0.44 cfs @ 12.07 hrs, Volume= 1,478 cf
Outflow = 0.02 cfs @ 10.62 hrs, Volume= 1,478 cf, Atten= 94%, Lag= 0.0 min
Discarded = 0.02 cfs @ 10.62 hrs, Volume= 1,478 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 167.28' @ 13.83 hrs Surf.Area= 1,022 sf Storage= 648 cf

Plug-Flow detention time= 221.8 min calculated for 1,477 cf (100% of inflow)
Center-of-Mass det. time= 221.7 min (976.8 - 755.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	166.40'	510 cf	**16.25'W x 32.10'L x 3.50'H Field A** 1,825 cf Overall - 551 cf Embedded = 1,274 cf x 40.0% Voids
#2A	166.90'	551 cf	**ADS_StormTech SC-740 +Cap** x 12 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 12 Chambers in 3 Rows
#3	166.50'	1,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		2,511 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
166.50	500	0	0
169.40	500	1,450	1,450

Device	Routing	Invert	Outlet Devices
#1	Discarded	166.40'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	169.50'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 10.62 hrs HW=166.50' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=166.40' (Free Discharge)
↑**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 7P: STORM TECH SYSTEM - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 5.0" Spacing = 56.0" C-C Row Spacing

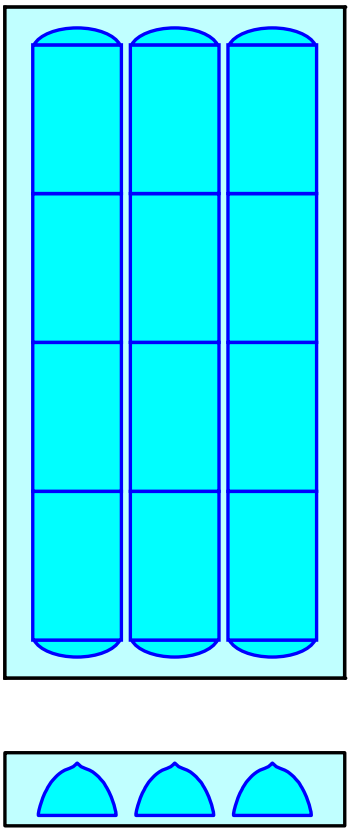
4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length
3 Rows x 51.0" Wide + 5.0" Spacing x 2 + 16.0" Side Stone x 2 = 16.25' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

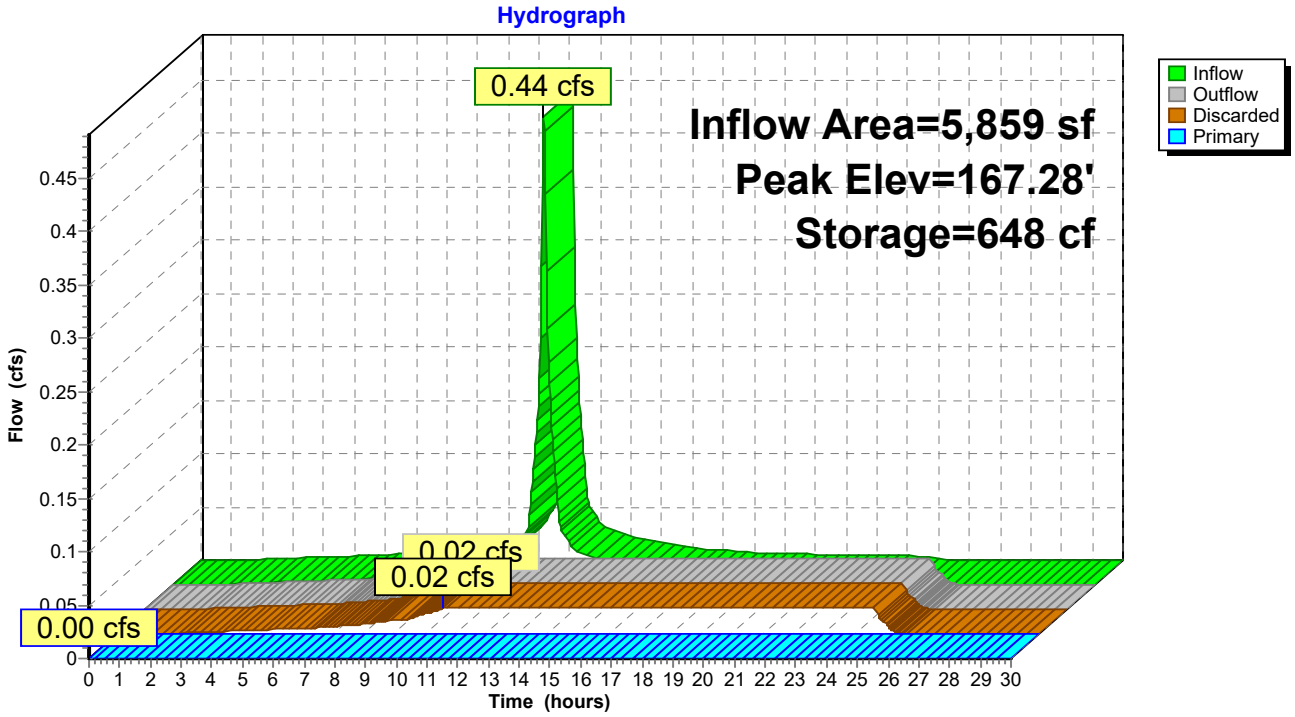
1,825.5 cf Field - 551.3 cf Chambers = 1,274.2 cf Stone x 40.0% Voids = 509.7 cf Stone Storage

Chamber Storage + Stone Storage = 1,061.0 cf = 0.024 af
Overall Storage Efficiency = 58.1%
Overall System Size = 32.10' x 16.25' x 3.50'

12 Chambers
67.6 cy Field
47.2 cy Stone



Pond 7P: STORM TECH SYSTEM

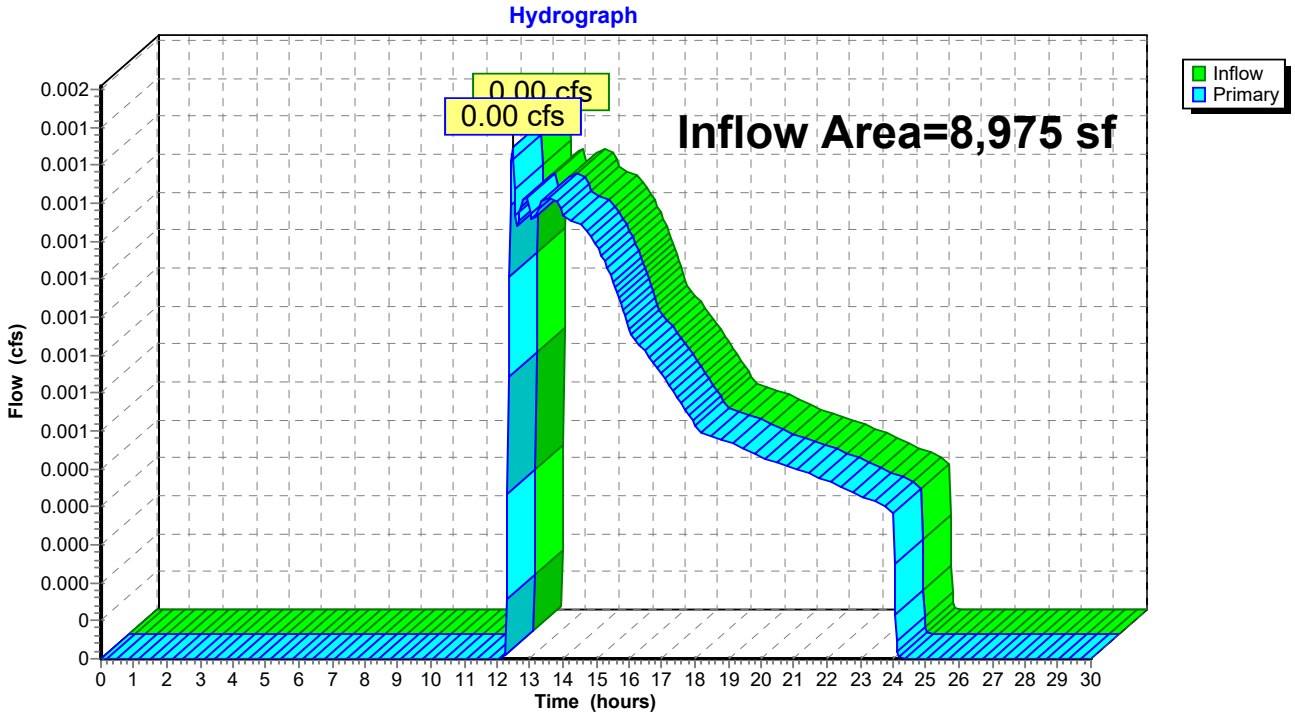


Summary for Link 3L: PROPOSED

Inflow Area = 8,975 sf, 65.28% Impervious, Inflow Depth = 0.04" for 2-Year event
Inflow = 0.00 cfs @ 12.48 hrs, Volume= 31 cf
Primary = 0.00 cfs @ 12.48 hrs, Volume= 31 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Link 3L: PROPOSED



Time span=0.00-30.00 hrs, dt=0.03 hrs, 1001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: PROPOSED ROOF Runoff Area=4,677 sf 100.00% Impervious Runoff Depth=4.91"
Tc=5.0 min CN=98 Runoff=0.56 cfs 1,915 cf

Subcatchment 4S: PROPOSED LANDSCAPE Runoff Area=3,116 sf 0.00% Impervious Runoff Depth=0.70"
Tc=5.0 min CN=49 Runoff=0.04 cfs 181 cf

Subcatchment 6S: OTHER IMPERVIOUS Runoff Area=1,182 sf 100.00% Impervious Runoff Depth=4.91"
Tc=5.0 min CN=98 Runoff=0.14 cfs 484 cf

Pond 7P: STORM TECH SYSTEM Peak Elev=167.98' Storage=1,264 cf Inflow=0.70 cfs 2,399 cf
Discarded=0.02 cfs 2,067 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 2,067 cf

Link 3L: PROPOSED Inflow=0.04 cfs 181 cf
Primary=0.04 cfs 181 cf

Total Runoff Area = 8,975 sf Runoff Volume = 2,580 cf Average Runoff Depth = 3.45"
34.72% Pervious = 3,116 sf 65.28% Impervious = 5,859 sf

Summary for Subcatchment 1S: PROPOSED ROOF AREA

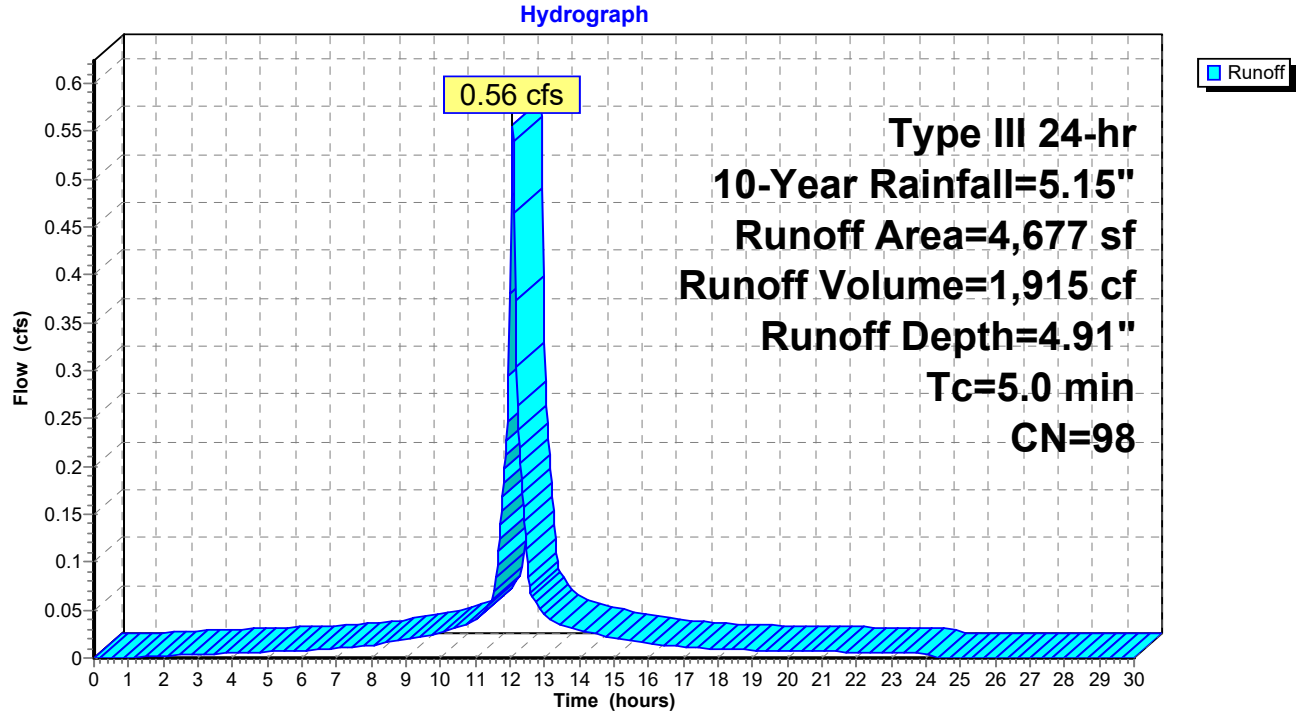
Runoff = 0.56 cfs @ 12.07 hrs, Volume= 1,915 cf, Depth= 4.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Year Rainfall=5.15"

Area (sf)	CN	Description
4,677	98	Roofs, HSG A
4,677		100.00% Impervious Area

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

Subcatchment 1S: PROPOSED ROOF AREA



Summary for Subcatchment 4S: PROPOSED LANDSCAPE AREA

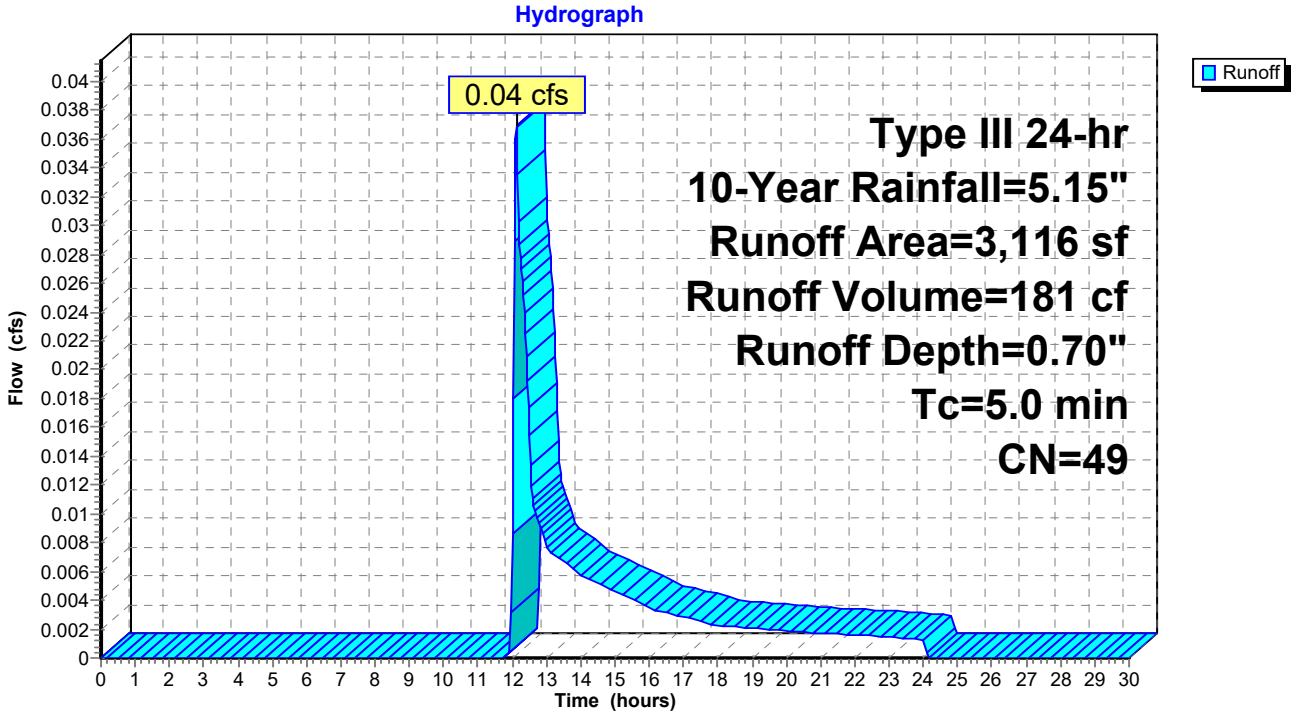
Runoff = 0.04 cfs @ 12.11 hrs, Volume= 181 cf, Depth= 0.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Year Rainfall=5.15"

Area (sf)	CN	Description
3,116	49	50-75% Grass cover, Fair, HSG A
3,116		100.00% Pervious Area

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

Subcatchment 4S: PROPOSED LANDSCAPE AREA



Summary for Subcatchment 6S: OTHER IMPERVIOUS

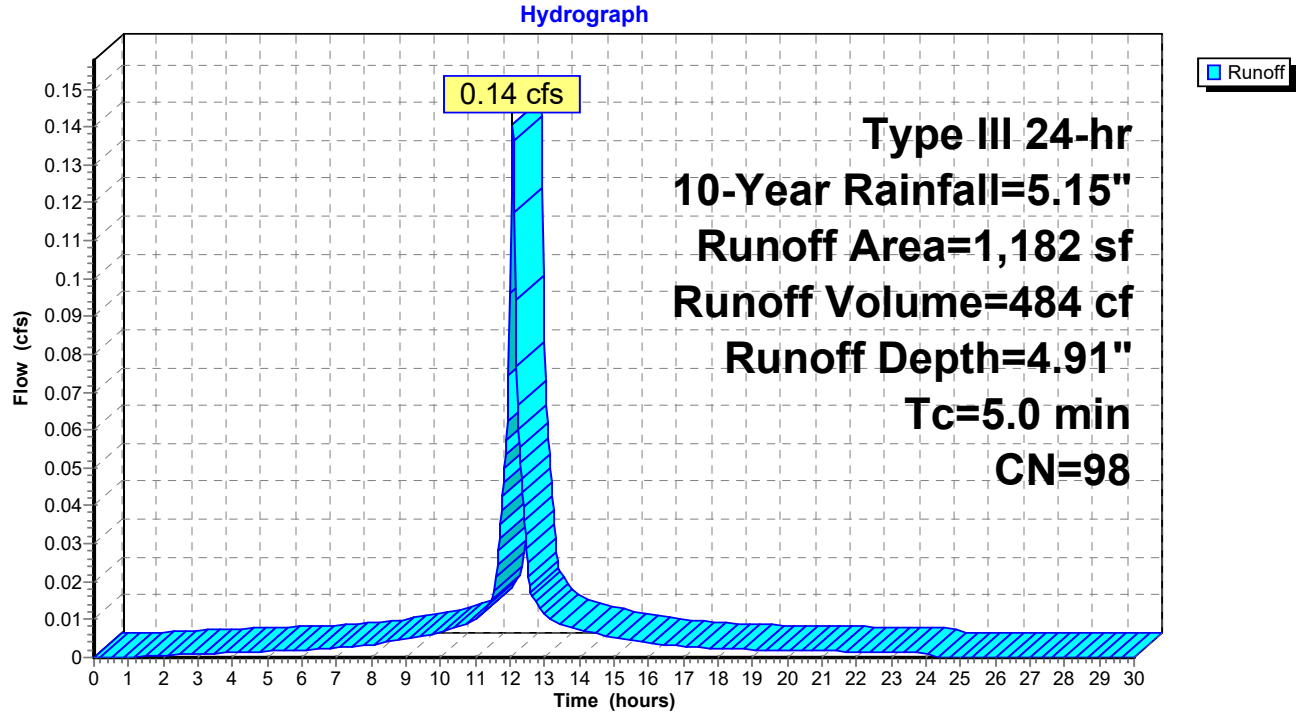
Runoff = 0.14 cfs @ 12.07 hrs, Volume= 484 cf, Depth= 4.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Year Rainfall=5.15"

Area (sf)	CN	Description
1,182	98	Unconnected pavement, HSG A
1,182		100.00% Impervious Area
1,182		100.00% Unconnected

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

Subcatchment 6S: OTHER IMPERVIOUS



Summary for Pond 7P: STORM TECH SYSTEM

Inflow Area = 5,859 sf,100.00% Impervious, Inflow Depth = 4.91" for 10-Year event
Inflow = 0.70 cfs @ 12.07 hrs, Volume= 2,399 cf
Outflow = 0.02 cfs @ 9.15 hrs, Volume= 2,067 cf, Atten= 97%, Lag= 0.0 min
Discarded = 0.02 cfs @ 9.15 hrs, Volume= 2,067 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 167.98' @ 15.33 hrs Surf.Area= 1,022 sf Storage= 1,264 cf

Plug-Flow detention time= 393.4 min calculated for 2,065 cf (86% of inflow)
Center-of-Mass det. time= 331.8 min (1,078.4 - 746.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	166.40'	510 cf	**16.25'W x 32.10'L x 3.50'H Field A** 1,825 cf Overall - 551 cf Embedded = 1,274 cf x 40.0% Voids
#2A	166.90'	551 cf	**ADS_StormTech SC-740 +Cap** x 12 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 12 Chambers in 3 Rows
#3	166.50'	1,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		2,511 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
166.50	500	0	0
169.40	500	1,450	1,450

Device	Routing	Invert	Outlet Devices
#1	Discarded	166.40'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	169.50'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 9.15 hrs HW=166.50' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=166.40' (Free Discharge)
↑**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 7P: STORM TECH SYSTEM - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 5.0" Spacing = 56.0" C-C Row Spacing

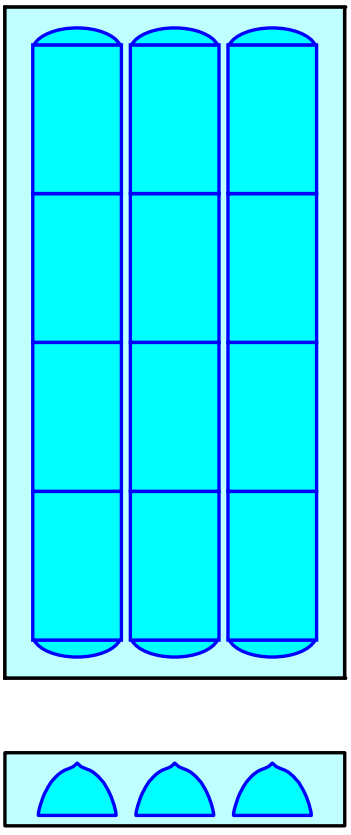
4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length
3 Rows x 51.0" Wide + 5.0" Spacing x 2 + 16.0" Side Stone x 2 = 16.25' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

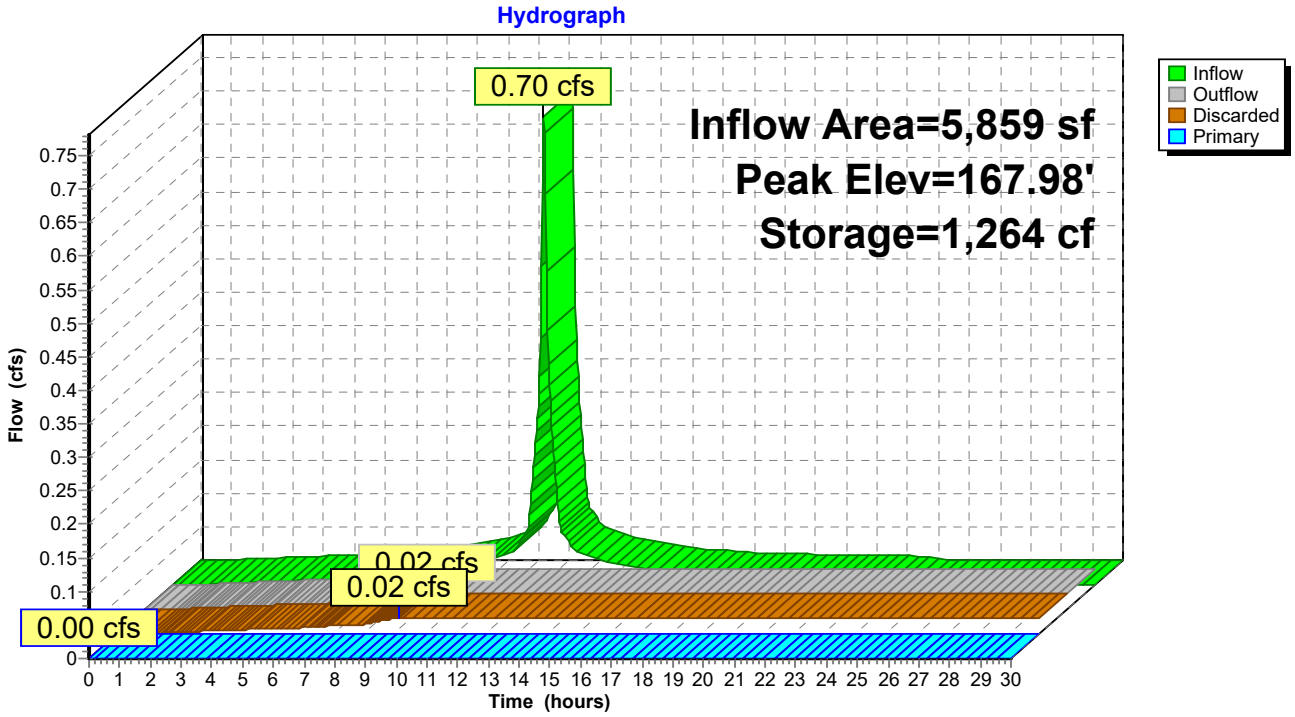
1,825.5 cf Field - 551.3 cf Chambers = 1,274.2 cf Stone x 40.0% Voids = 509.7 cf Stone Storage

Chamber Storage + Stone Storage = 1,061.0 cf = 0.024 af
Overall Storage Efficiency = 58.1%
Overall System Size = 32.10' x 16.25' x 3.50'

12 Chambers
67.6 cy Field
47.2 cy Stone



Pond 7P: STORM TECH SYSTEM

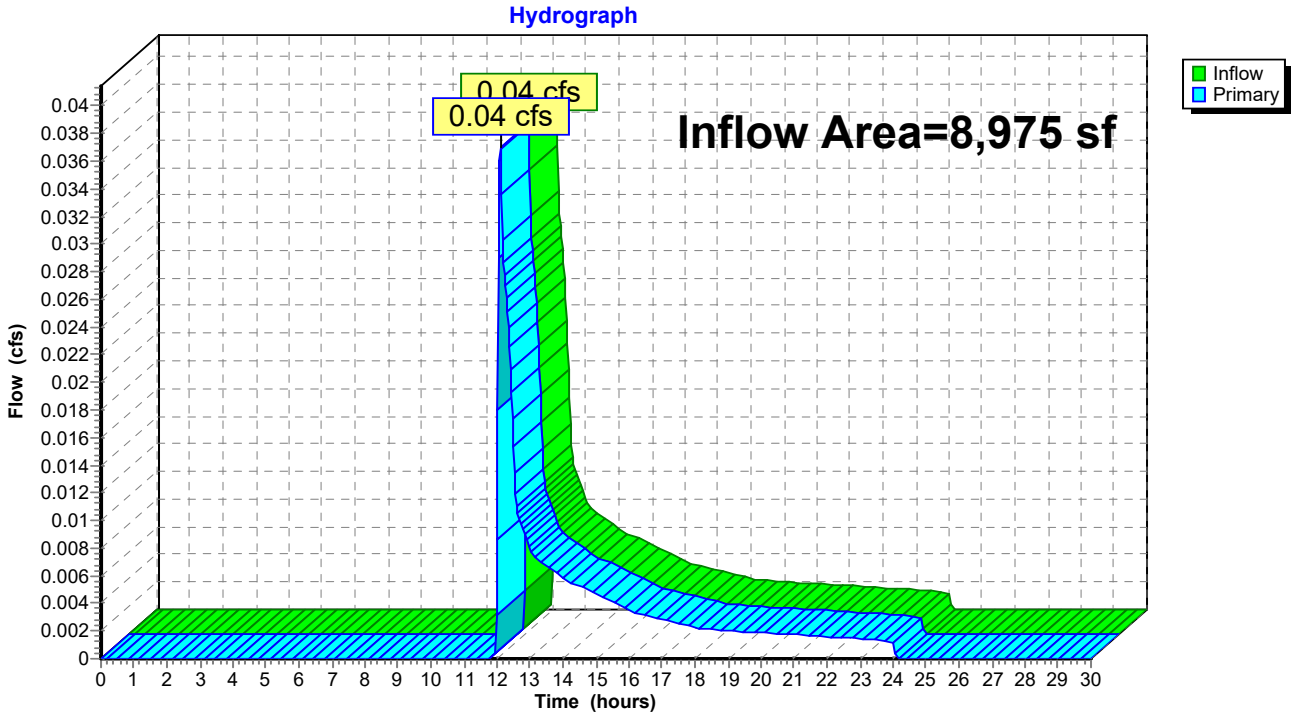


Summary for Link 3L: PROPOSED

Inflow Area = 8,975 sf, 65.28% Impervious, Inflow Depth = 0.24" for 10-Year event
Inflow = 0.04 cfs @ 12.11 hrs, Volume= 181 cf
Primary = 0.04 cfs @ 12.11 hrs, Volume= 181 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Link 3L: PROPOSED



Time span=0.00-30.00 hrs, dt=0.03 hrs, 1001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: PROPOSED ROOF Runoff Area=4,677 sf 100.00% Impervious Runoff Depth=6.09"
Tc=5.0 min CN=98 Runoff=0.69 cfs 2,374 cf

Subcatchment 4S: PROPOSED LANDSCAPE Runoff Area=3,116 sf 0.00% Impervious Runoff Depth=1.23"
Tc=5.0 min CN=49 Runoff=0.09 cfs 320 cf

Subcatchment 6S: OTHER IMPERVIOUS Runoff Area=1,182 sf 100.00% Impervious Runoff Depth=6.09"
Tc=5.0 min CN=98 Runoff=0.17 cfs 600 cf

Pond 7P: STORM TECH SYSTEM Peak Elev=168.49' Storage=1,695 cf Inflow=0.86 cfs 2,974 cf
Discarded=0.02 cfs 2,139 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 2,139 cf

Link 3L: PROPOSED Inflow=0.09 cfs 320 cf
Primary=0.09 cfs 320 cf

Total Runoff Area = 8,975 sf Runoff Volume = 3,294 cf Average Runoff Depth = 4.40"
34.72% Pervious = 3,116 sf 65.28% Impervious = 5,859 sf

Summary for Subcatchment 1S: PROPOSED ROOF AREA

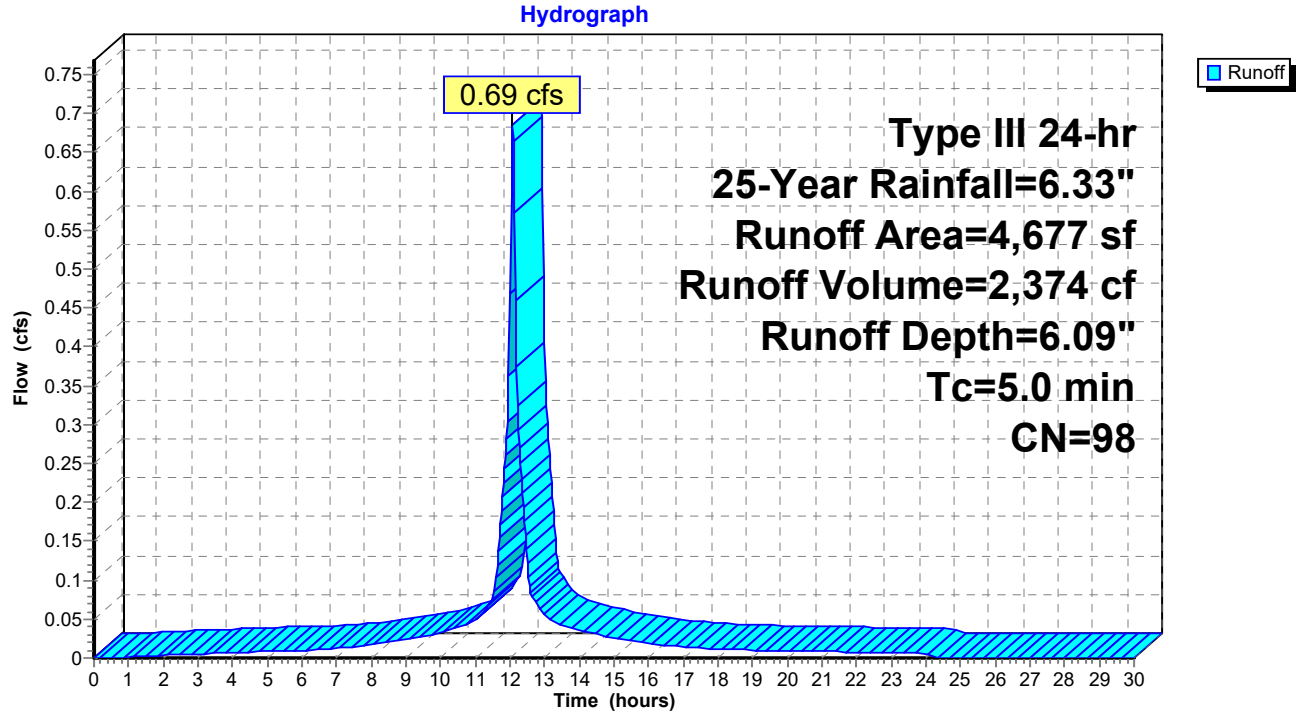
Runoff = 0.69 cfs @ 12.07 hrs, Volume= 2,374 cf, Depth= 6.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Year Rainfall=6.33"

Area (sf)	CN	Description
4,677	98	Roofs, HSG A
4,677		100.00% Impervious Area

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

Subcatchment 1S: PROPOSED ROOF AREA



Summary for Subcatchment 4S: PROPOSED LANDSCAPE AREA

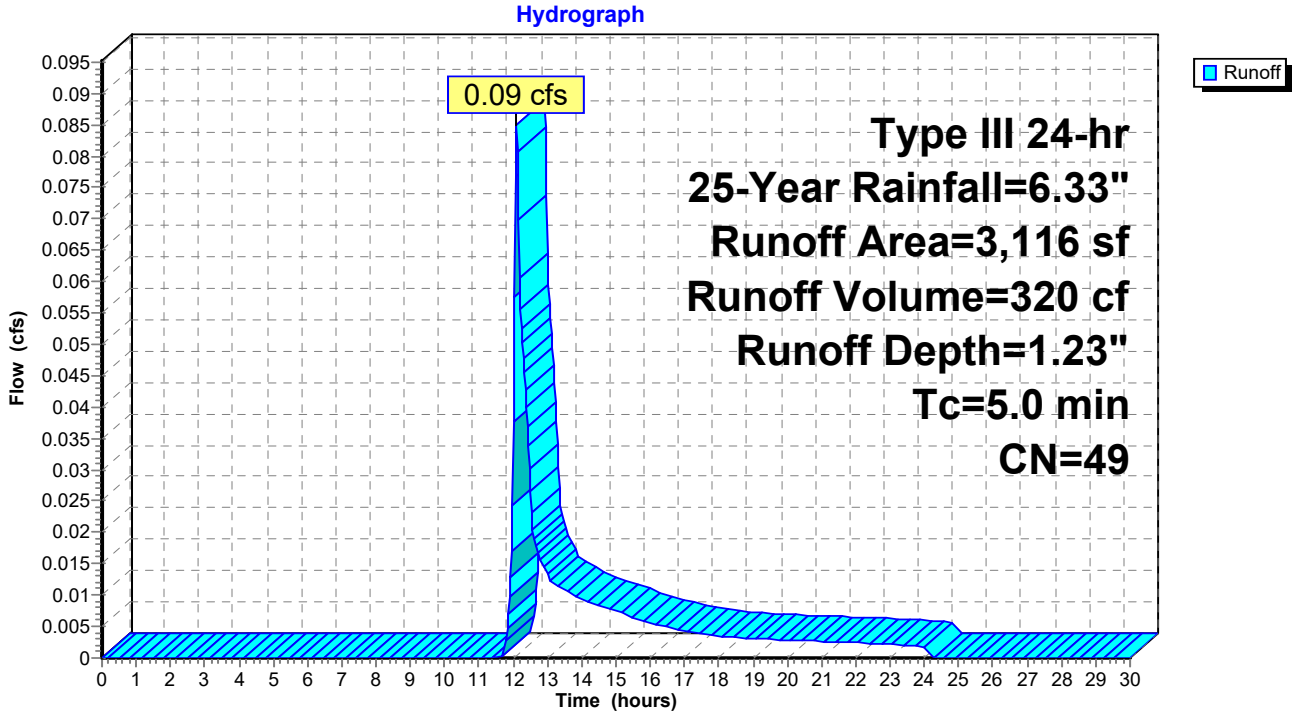
Runoff = 0.09 cfs @ 12.09 hrs, Volume= 320 cf, Depth= 1.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Year Rainfall=6.33"

Area (sf)	CN	Description
3,116	49	50-75% Grass cover, Fair, HSG A
3,116		100.00% Pervious Area

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

Subcatchment 4S: PROPOSED LANDSCAPE AREA



Summary for Subcatchment 6S: OTHER IMPERVIOUS

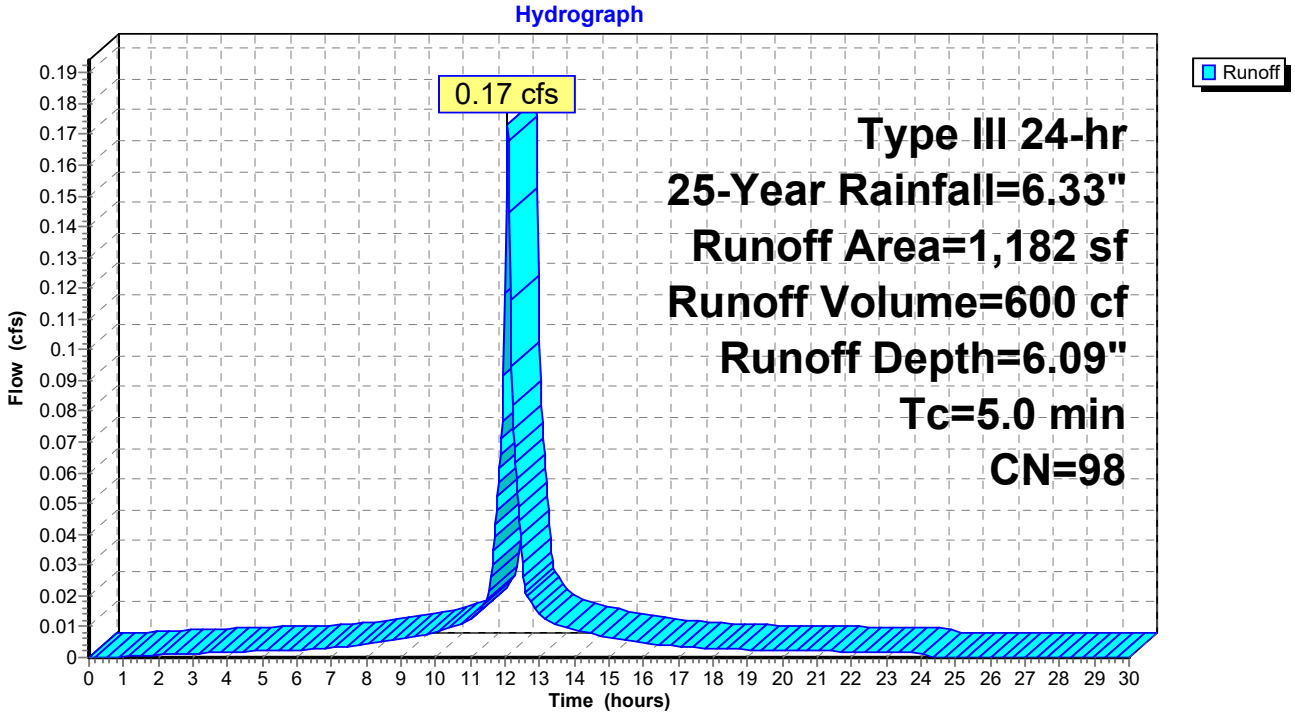
Runoff = 0.17 cfs @ 12.07 hrs, Volume= 600 cf, Depth= 6.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Year Rainfall=6.33"

Area (sf)	CN	Description
1,182	98	Unconnected pavement, HSG A
1,182		100.00% Impervious Area
1,182		100.00% Unconnected

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

Subcatchment 6S: OTHER IMPERVIOUS



Summary for Pond 7P: STORM TECH SYSTEM

Inflow Area = 5,859 sf,100.00% Impervious, Inflow Depth = 6.09" for 25-Year event
Inflow = 0.86 cfs @ 12.07 hrs, Volume= 2,974 cf
Outflow = 0.02 cfs @ 8.55 hrs, Volume= 2,139 cf, Atten= 97%, Lag= 0.0 min
Discarded = 0.02 cfs @ 8.55 hrs, Volume= 2,139 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 168.49' @ 15.89 hrs Surf.Area= 1,022 sf Storage= 1,695 cf

Plug-Flow detention time= 403.0 min calculated for 2,136 cf (72% of inflow)
Center-of-Mass det. time= 310.7 min (1,054.1 - 743.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	166.40'	510 cf	**16.25'W x 32.10'L x 3.50'H Field A** 1,825 cf Overall - 551 cf Embedded = 1,274 cf x 40.0% Voids
#2A	166.90'	551 cf	**ADS_StormTech SC-740 +Cap** x 12 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 12 Chambers in 3 Rows
#3	166.50'	1,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		2,511 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
166.50	500	0	0
169.40	500	1,450	1,450

Device	Routing	Invert	Outlet Devices
#1	Discarded	166.40'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	169.50'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 8.55 hrs HW=166.50' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=166.40' (Free Discharge)
↑**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 7P: STORM TECH SYSTEM - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 5.0" Spacing = 56.0" C-C Row Spacing

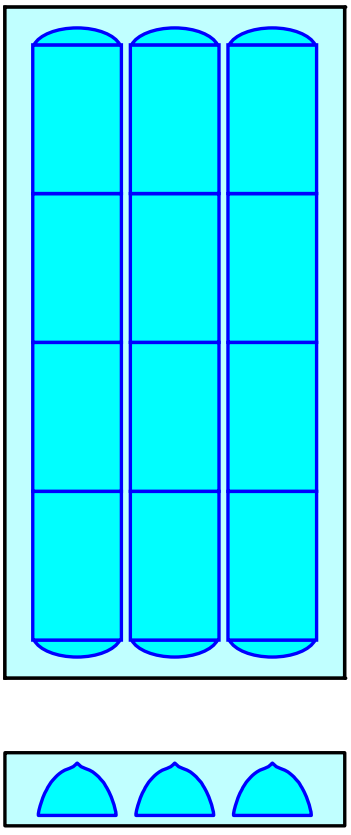
4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length
3 Rows x 51.0" Wide + 5.0" Spacing x 2 + 16.0" Side Stone x 2 = 16.25' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

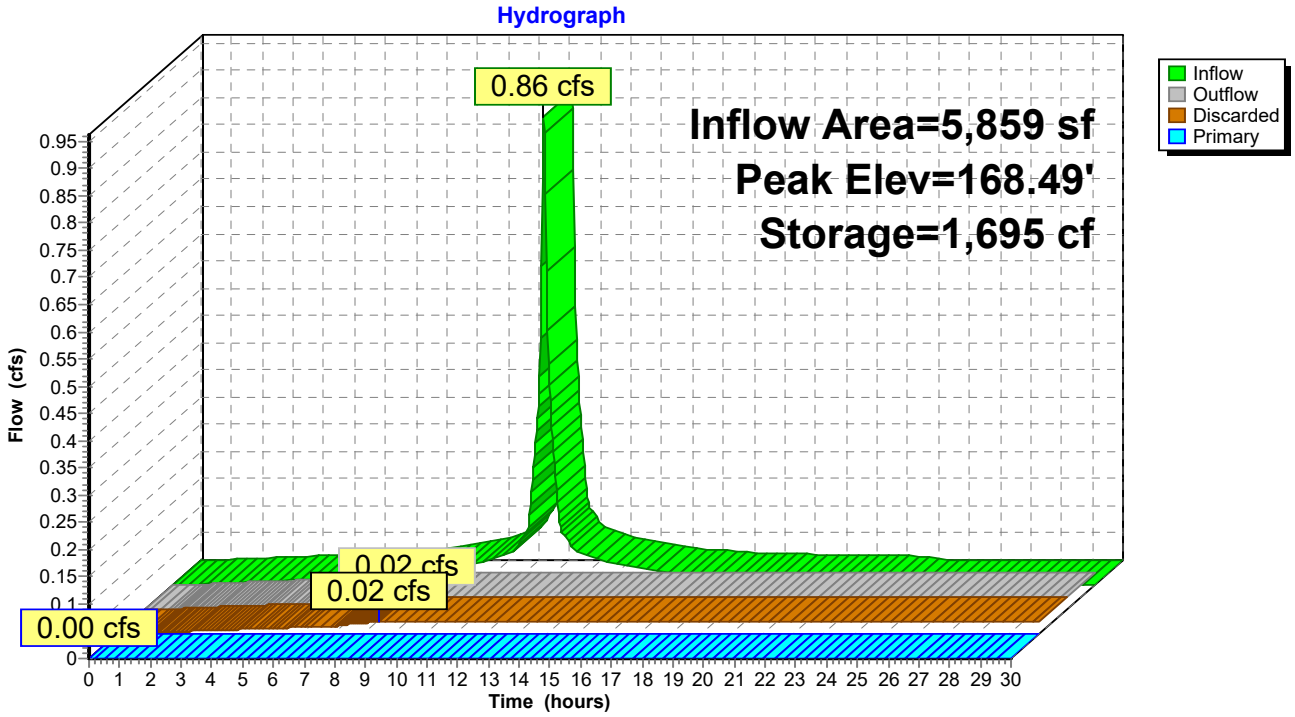
1,825.5 cf Field - 551.3 cf Chambers = 1,274.2 cf Stone x 40.0% Voids = 509.7 cf Stone Storage

Chamber Storage + Stone Storage = 1,061.0 cf = 0.024 af
Overall Storage Efficiency = 58.1%
Overall System Size = 32.10' x 16.25' x 3.50'

12 Chambers
67.6 cy Field
47.2 cy Stone



Pond 7P: STORM TECH SYSTEM

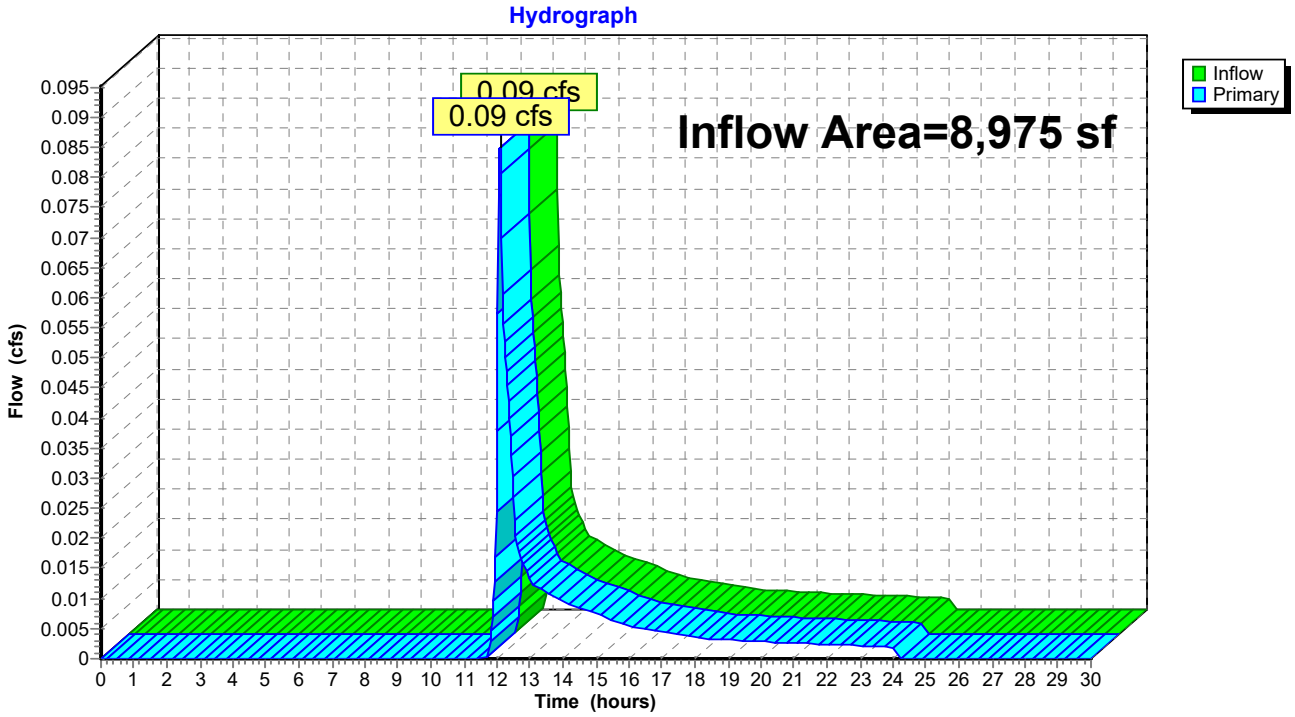


Summary for Link 3L: PROPOSED

Inflow Area = 8,975 sf, 65.28% Impervious, Inflow Depth = 0.43" for 25-Year event
Inflow = 0.09 cfs @ 12.09 hrs, Volume= 320 cf
Primary = 0.09 cfs @ 12.09 hrs, Volume= 320 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Link 3L: PROPOSED



Time span=0.00-30.00 hrs, dt=0.03 hrs, 1001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: PROPOSED ROOF Runoff Area=4,677 sf 100.00% Impervious Runoff Depth=7.90"
Tc=5.0 min CN=98 Runoff=0.88 cfs 3,079 cf

Subcatchment 4S: PROPOSED LANDSCAPE Runoff Area=3,116 sf 0.00% Impervious Runoff Depth=2.23"
Tc=5.0 min CN=49 Runoff=0.18 cfs 579 cf

Subcatchment 6S: OTHER IMPERVIOUS Runoff Area=1,182 sf 100.00% Impervious Runoff Depth=7.90"
Tc=5.0 min CN=98 Runoff=0.22 cfs 778 cf

Pond 7P: STORM TECH SYSTEM Peak Elev=169.38' Storage=2,389 cf Inflow=1.11 cfs 3,857 cf
Discarded=0.02 cfs 2,232 cf Primary=0.00 cfs 0 cf Outflow=0.02 cfs 2,232 cf

Link 3L: PROPOSED Inflow=0.18 cfs 579 cf
Primary=0.18 cfs 579 cf

Total Runoff Area = 8,975 sf Runoff Volume = 4,436 cf Average Runoff Depth = 5.93"
34.72% Pervious = 3,116 sf 65.28% Impervious = 5,859 sf

Summary for Subcatchment 1S: PROPOSED ROOF AREA

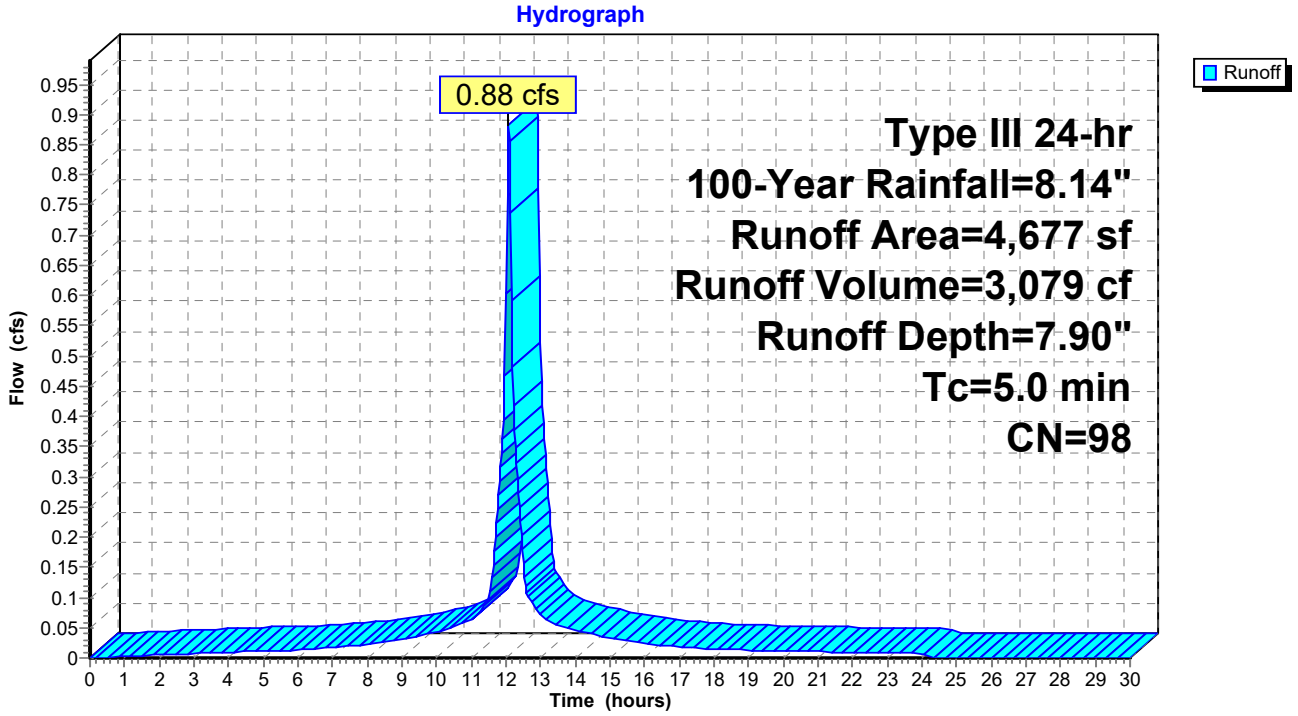
Runoff = 0.88 cfs @ 12.07 hrs, Volume= 3,079 cf, Depth= 7.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Year Rainfall=8.14"

Area (sf)	CN	Description
4,677	98	Roofs, HSG A
4,677		100.00% Impervious Area

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

Subcatchment 1S: PROPOSED ROOF AREA



Summary for Subcatchment 4S: PROPOSED LANDSCAPE AREA

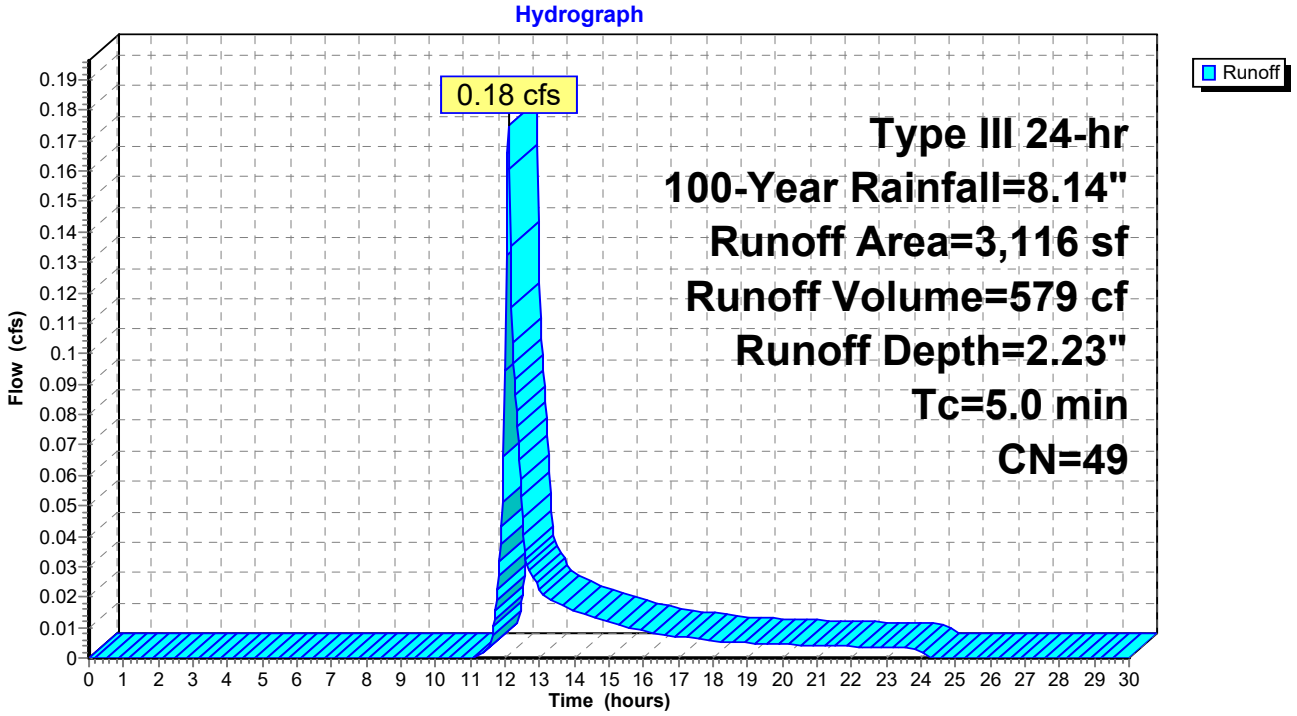
Runoff = 0.18 cfs @ 12.09 hrs, Volume= 579 cf, Depth= 2.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Year Rainfall=8.14"

Area (sf)	CN	Description
3,116	49	50-75% Grass cover, Fair, HSG A
3,116		100.00% Pervious Area

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

Subcatchment 4S: PROPOSED LANDSCAPE AREA



Summary for Subcatchment 6S: OTHER IMPERVIOUS

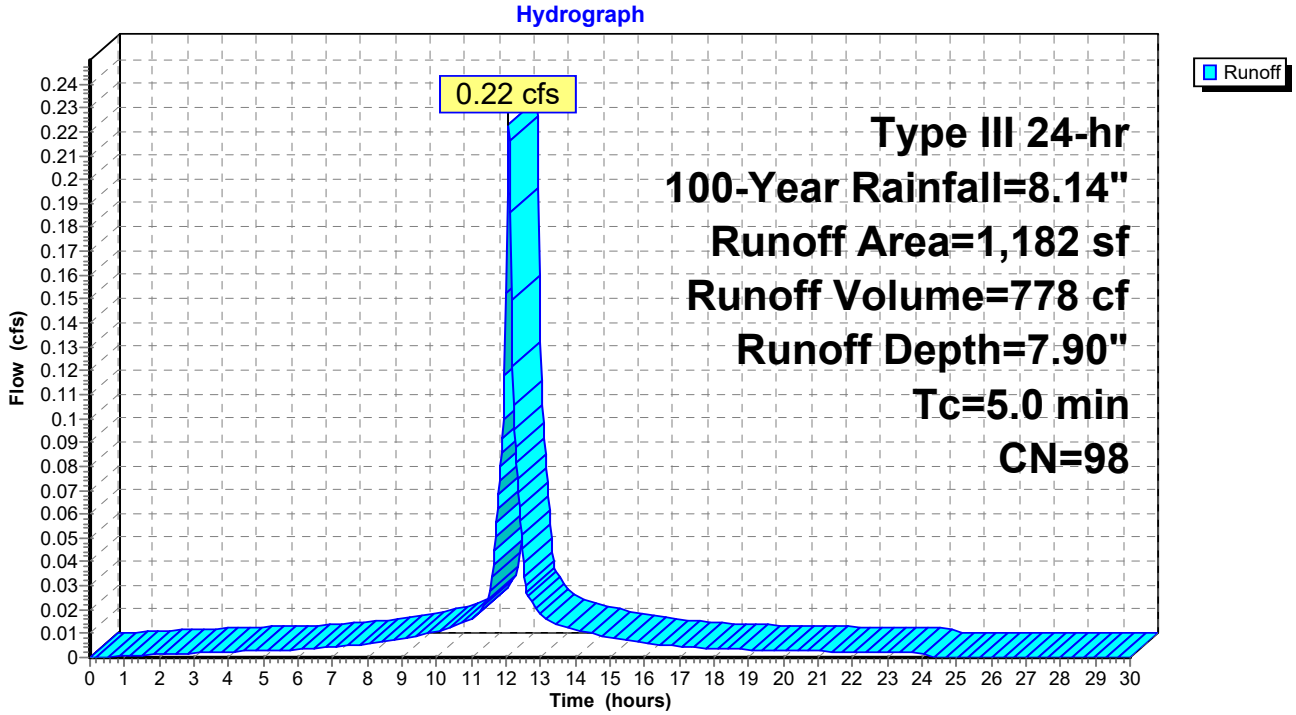
Runoff = 0.22 cfs @ 12.07 hrs, Volume= 778 cf, Depth= 7.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Year Rainfall=8.14"

Area (sf)	CN	Description
1,182	98	Unconnected pavement, HSG A
1,182		100.00% Impervious Area
1,182		100.00% Unconnected

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

Subcatchment 6S: OTHER IMPERVIOUS



Summary for Pond 7P: STORM TECH SYSTEM

Inflow Area = 5,859 sf,100.00% Impervious, Inflow Depth = 7.90" for 100-Year event
Inflow = 1.11 cfs @ 12.07 hrs, Volume= 3,857 cf
Outflow = 0.02 cfs @ 7.62 hrs, Volume= 2,232 cf, Atten= 98%, Lag= 0.0 min
Discarded = 0.02 cfs @ 7.62 hrs, Volume= 2,232 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Peak Elev= 169.38' @ 16.90 hrs Surf.Area= 1,022 sf Storage= 2,389 cf

Plug-Flow detention time= 399.9 min calculated for 2,230 cf (58% of inflow)
Center-of-Mass det. time= 283.2 min (1,023.2 - 740.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	166.40'	510 cf	**16.25'W x 32.10'L x 3.50'H Field A** 1,825 cf Overall - 551 cf Embedded = 1,274 cf x 40.0% Voids
#2A	166.90'	551 cf	**ADS_StormTech SC-740 +Cap** x 12 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 12 Chambers in 3 Rows
#3	166.50'	1,450 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		2,511 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
166.50	500	0	0
169.40	500	1,450	1,450

Device	Routing	Invert	Outlet Devices
#1	Discarded	166.40'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	169.50'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 7.62 hrs HW=166.50' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=166.40' (Free Discharge)
↑**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 7P: STORM TECH SYSTEM - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 5.0" Spacing = 56.0" C-C Row Spacing

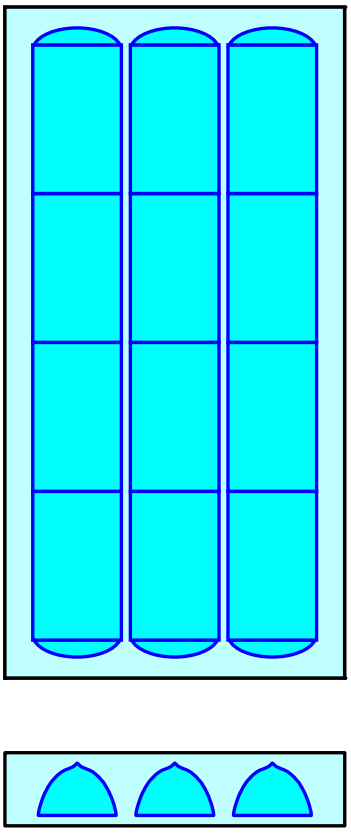
4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length
3 Rows x 51.0" Wide + 5.0" Spacing x 2 + 16.0" Side Stone x 2 = 16.25' Base Width
6.0" Base + 30.0" Chamber Height + 6.0" Cover = 3.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

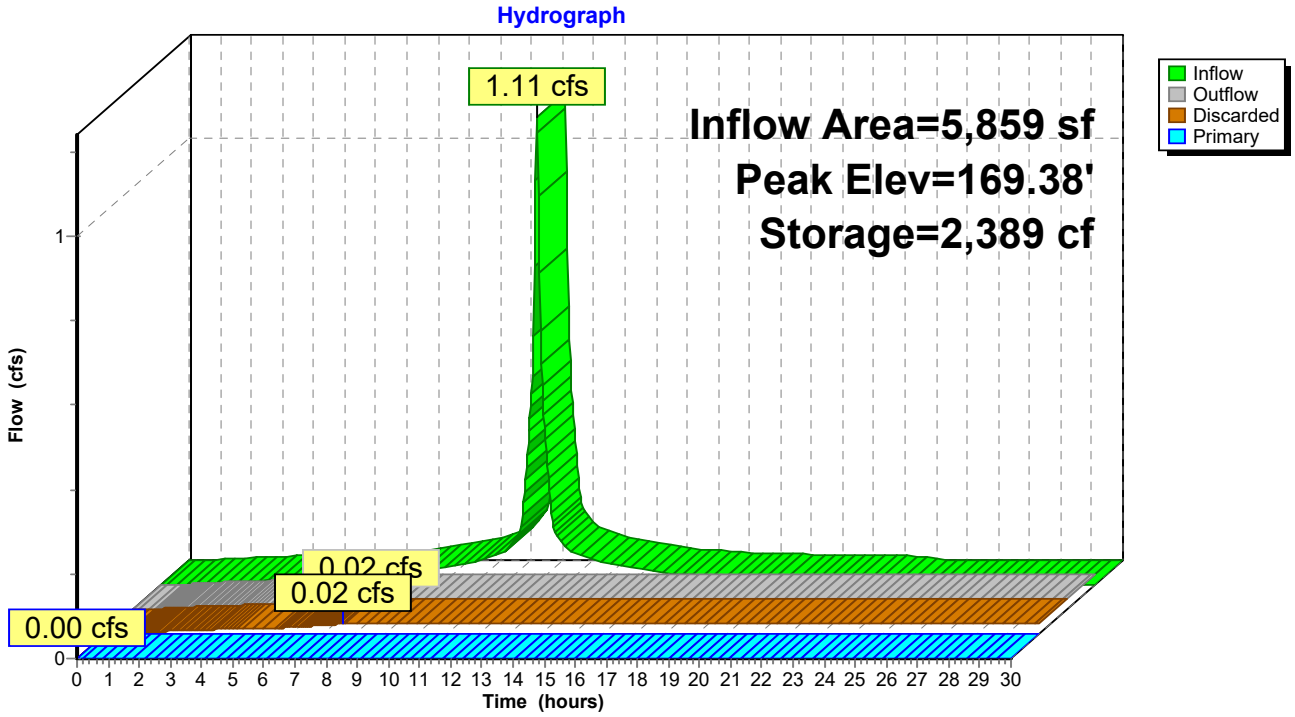
1,825.5 cf Field - 551.3 cf Chambers = 1,274.2 cf Stone x 40.0% Voids = 509.7 cf Stone Storage

Chamber Storage + Stone Storage = 1,061.0 cf = 0.024 af
Overall Storage Efficiency = 58.1%
Overall System Size = 32.10' x 16.25' x 3.50'

12 Chambers
67.6 cy Field
47.2 cy Stone



Pond 7P: STORM TECH SYSTEM

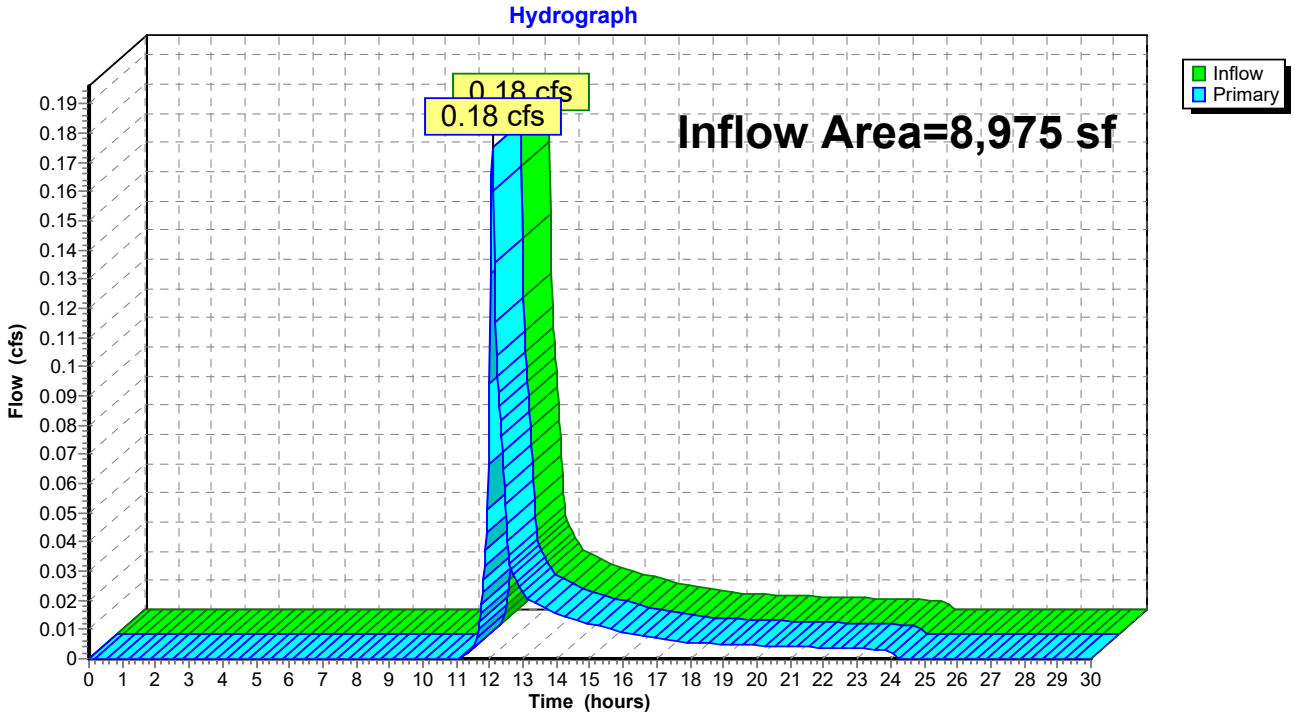


Summary for Link 3L: PROPOSED

Inflow Area = 8,975 sf, 65.28% Impervious, Inflow Depth = 0.77" for 100-Year event
Inflow = 0.18 cfs @ 12.09 hrs, Volume= 579 cf
Primary = 0.18 cfs @ 12.09 hrs, Volume= 579 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Link 3L: PROPOSED



Appendix B – Soils Information

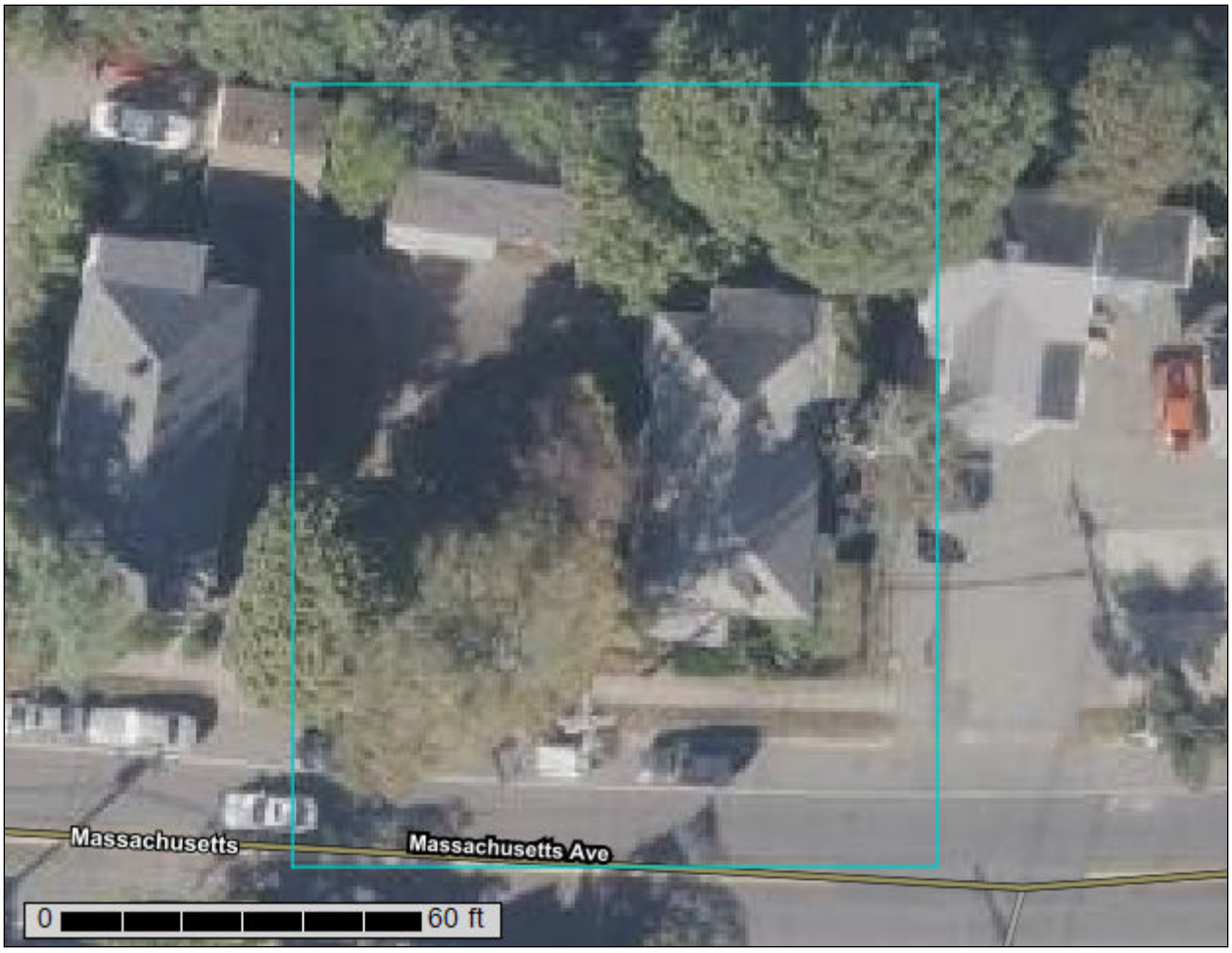
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Middlesex County, Massachusetts



August 1, 2024

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



Map Scale: 1:253 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 3 7 14 21

Feet
0 10 20 40 60

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 1:24,000.

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

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

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

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

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

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

Soil Survey Area: Middlesex County, Massachusetts
Survey Area Data: Version 23, Sep 12, 2023

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

Date(s) aerial images were photographed: Mar 1, 2023—Sep 1, 2023

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
602	Urban land	0.1	38.2%
629C	Canton-Charlton-Urban land complex, 3 to 15 percent slopes	0.2	61.8%
Totals for Area of Interest		**0.3**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Middlesex County, Massachusetts

602—Urban land

Map Unit Setting

National map unit symbol: 9950
Elevation: 0 to 3,000 feet
Mean annual precipitation: 32 to 50 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Excavated and filled land

Minor Components

Rock outcrop

Percent of map unit: 5 percent
Landform: Ledges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Head slope
Down-slope shape: Concave
Across-slope shape: Concave

Udorthents, wet substratum

Percent of map unit: 5 percent
Hydric soil rating: No

Udorthents, loamy

Percent of map unit: 5 percent
Hydric soil rating: No

629C—Canton-Charlton-Urban land complex, 3 to 15 percent slopes

Map Unit Setting

National map unit symbol: 9959
Elevation: 0 to 1,000 feet
Mean annual precipitation: 32 to 54 inches

Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 110 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Canton and similar soils: 40 percent
Charlton and similar soils: 30 percent
Urban land: 25 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton

Setting

Landform: Hills
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Friable loamy eolian deposits over friable sandy basal till derived from granite and gneiss

Typical profile

H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 21 inches: fine sandy loam
H3 - 21 to 65 inches: gravelly loamy sand

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: 18 to 30 inches to strongly contrasting textural stratification
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Charlton

Setting

Landform: Ground moraines, drumlins
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Friable loamy eolian deposits over friable loamy basal till derived from granite and gneiss

Typical profile

H1 - 0 to 5 inches: fine sandy loam
H2 - 5 to 22 inches: sandy loam
H3 - 22 to 65 inches: gravelly sandy loam

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Urban Land

Setting

Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Excavated and filled land

Minor Components

Montauk

Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Head slope, nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Scituate

Percent of map unit: 2 percent
Landform: Hillslopes, depressions
Landform position (two-dimensional): Summit, toeslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

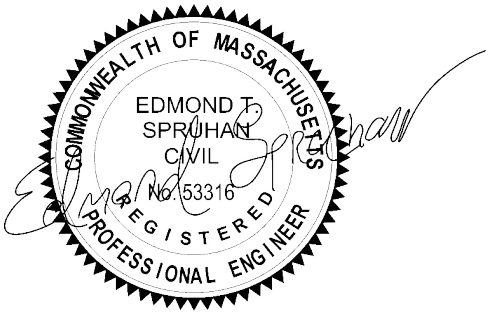
Udorthents, loamy

Percent of map unit: 1 percent
Hydric soil rating: No

SPRUHAN ENGINEERING, P.C.

OPERATIONS & MAINTENANCE PLAN

1513-1519 MASSACHUSETTS AVENUE, ARLINGTON, MA.



Prepared by: Spruhan Engineering, P.C.

December 18, 2024

Operations & Maintenance Plan

Introduction

The following Stormwater Operations & Maintenance plan is for **1513-1519 Massachusetts avenue, Arlington, MA**. All erosion and sediment control measures to be used are to be constructed and installed according to the 'Massachusetts Erosion and Sediment Control Guidelines for Urban and Sub-Urban Areas.'
The plan consists of the following elements:

- Owners' information
- Operation and maintenance guidance – Pre and Post Construction
- Landscape installation and maintenance guidance
- Proposed inspection log

All erosion and sediment control measures must be installed prior to the commencement of any work. All sediment and erosion control measures shall remain in place until the entire site has been stabilized. The site is deemed stabilized when all landscaped areas have been loamed and seeded with vegetation having had the chance to establish itself. Any proposed paved areas shall have their binder course of pavement installed prior to the removal of these control measures.

The long-term operation and maintenance of a stormwater management system is as critical to its performance as its design and construction. Proper operation and maintenance ensure that the BMP will continue to remove pollutants effectively over the long-term, decreases the risk of re-suspending sediment; and therefore, improves water quality. Without proper maintenance, BMPs are likely to fail and no longer provide the necessary stormwater treatment.

The maintenance of the Drainage System is the exclusive responsibility of the Property Owner. Annual reports (example below) should be submitted to the Town Engineer every January for the prior year.

Property Owners: **IG Investments LLC**

Name and contact information:

Managers: ILYA ZVENIGORODSKIY
Address: 226 Harvard St, Brookline, MA, 02446
Contact info: 860-833-4081

Change on ownership: The owner(s) of the stormwater management systems, with the exception of those associated with two-family dwellings, shall notify the Department of Public Works and Conservation Commission of changes in ownership or assignment of financial responsibility.

This plan is valid in perpetuity and any future property owners are solely responsible for the management of the stormwater system on-site in accordance with this O&M Plan

Operations & Maintenance

The following operations and maintenance plan has been developed in order to preserve the drainage infrastructure that will be constructed and to ensure the drainage and infiltration system continues to function as designed.

- **Before & During Construction Operation and Maintenance Plan:**
    - Significant efforts shall be made to only disturb the minimum amount of area necessary to reduce potential erosion and sediment runoff. The control of dust in disturbed areas shall consist of at the least, wetting of disturbed soil or application of calcium chloride as required to minimize airborne dust.
    - A stabilized construction entrance shall be installed to reduce the tracking of material onto the main road, &, if necessary, a wheel wash station put in place.
    - Hay wattles shall be installed per the site plan to prevent sediment from being washed off site.
    - All drainage structures shall be protected by filter fabric (or approved equal) to prevent sedimentation from entering the drainage system during the construction period.
    - Driveway, pavement, and roadway (if required) areas shall be swept to remove sediments prior to introduction into the storm water management system.
    - Drainage structures shall be inspected daily and cleaned as necessary of all sedimentation and construction materials during the construction period.
    - The contractor is required to contact the engineer of record for drainage system inspection at least 72 hours prior to backfilling in order to receive inspection signoff.
- **Post Construction Operation and Maintenance Plan**

    Once the construction is completed, it is the owner's responsibility to maintain the items outlined below to ensure the efficiency and integrity of the drainage systems. The post construction inspections shall take place at a minimum of once during the Spring (March-May), and a minimum of once during the fall (September – November) and after every major storm.

    - **Pipes** shall be inspected on a minimum on a semi-annual basis. These inspections shall take place during the spring and fall months of the year. The inspector shall take note of any debris/sediment/clogging and shall document the condition of each structure. Based upon the observed condition, the inspector shall make recommendations if any further action is required.

    - **All drainage structures, including manholes trench drains, area drains, cleanouts and catch basins**, shall be inspected four times per year and shall be cleaned of all sand, debris, and sediment four times per year or whenever the depth of deposits is greater than or equal to one half the depth from the bottom of the invert of the lowest pipe in the basin.

    - **Roof Gutters** shall be inspected annually and after major rain events. Remove leaves and sediment as necessary to allow rainwater to flow to system.

- **Storm-tech SC-740 Maintenance procedures:**
  - Storm-tech system shall be inspected at a minimum on a semi-annual basis, or after a major storm event.
  - Remove lid and cap from inspection ports which must be brought to finished grade.
  - Using a flashlight and stadia rod, measure the depth of sediment
  - If sediment is above 3" depth, then cleaning is required
  - A licensed professional shall provide cleanout/ flushing services of all sediment and debris via cleanouts and catch basins located per plans.
  - All caps and covers shall be replaced

Other Activities:

Pavement Sweeping: The paved areas shall be swept every quarter, so four (4) times per year.

Lawn and Landscape Repairs: The lawn and landscaped areas on the site shall be inspected in the spring and fall of each year and the areas shall be restabilized as needed by seeding as lawn or mulching landscaped areas.

An INSPECTION LOG example format is shown below on Table B.1. This must be filled every time an inspection or maintenance activity is performed on any element of the stormwater management on site, included but not limited to:

- Pretreatment devices.
- Vegetation or filter media.
- Control structures.
- Embankments and slopes.
- Inlet and outlet channels and structures.
- Underground drainage.
- Sediment and debris accumulation in storage and forebay areas (including catch basins).
- Any nonstructural practices.
- Any other item that could affect the proper function of the stormwater management system

*** FINAL IMPORTANT NOTE: PROVISIONS MUST EXIST ALLOWING THE CITY OF NEWTON OR ITS DESIGNEE TO ENTER THE PROPERTY AT REASONABLE TIMES AND IN A REASONABLE MANNER FOR THE PURPOSE OF INSPECTION.**

_____

ILYA ZVENIGORODSKIY
PROPERTY OWNER

ATTACHMENT A. LOG SHEET AND TABLES

OPERATION & MAINTENANCE PLAN
LOG SHEET
1513-1519 MASSACHUSETTS AVENUE, ARLINGTON, MA.

INSPECTION REPORT:

Inspection Firm:_____

Inspector's Name:_____Date:_____

Components Inspected: _____

Signed: _____

SYSTEM MAINTENANCE:

Maintenance Firm:_____Date:_____

Catch Basin Cleaned: Yes_____No_____Comments:_____

_____

Manhole & Sumps Cleaned: Yes____No_____Comments:_____

_____

Drain Lines Inspected: Yes_____No_____Comments:_____

_____

Stormwater unit System Cleaned: Yes___No_____Comments:_____

_____

Estimate of Material Removed: _____

Other Comments: _____

Signed: _____

Table 1 - Inspection log for BMP's

STORMWATER MANAGEMENT SYSTEMS INSPECTION LOG						
DATE	NAME OF INSPECTOR	NAME/TYPE OF BMP INSPECTED	CONDITION OF BMP OBSERVED	DESCRIPTION OF NEED FOR MAINTENANCE	OBSERVATIONS OF ANY PHYSICAL CHANGES TO SYSTEM COMPARED TO AS BUILT PLAN	ANNUAL SUBMISSION TO DPW