CASEY & KELLER, INC.

LAND SURVEYORS + CIVIL ENGINEERS + PLANNERS

N.J. STATE BOARD OF PROFESSIONAL ENGINEERS & LAND SURVEYORS
CERTIFICATE OF AUTHORIZATION NO. 24GA27985400

258 MAIN STREET, MILLBURN, NEW JERSEY, 07041
VOICE: 973-379-3280 FAX: 973-379-7993

STORM WATER MANAGEMENT REPORT

27 FAIRWAY DRIVE

TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NJ

Block 86.01—Lot 6

PROJECT # 1250703
DATE: October 20, 2026

MICHAEL LANZAFAMA, P.E. & P.L.S.
NJ REG. # GB 30084

STORM WATER MANAGEMENT REPORT SUMMARY

PROJECT LOCATION

The subject property is located at 27 Fairway Drive, in the Township of West Orange, Essex County, New Jersey. It is identified as Lot 6 in Block 86.01 on the current Tax Maps of the Township and is situated within the R-5 Residential Zone.

EXISTING CONDITIONS

The site is presently developed with a two-story single-family dwelling and an attached garage. The property is also presently developed with a pool, patio, and various impervious walkways. The property has a total area of 23,982 square feet (0.551 acres). The property is planned to be subdivided into 3 lots. All essential utilities, including water, gas, electric, sanitary sewer, and cable, are provided via underground pipelines and conduits. The surrounding area is developed with residential uses. The property is not located within a floodplain, and no freshwater wetlands have been identified on or adjacent to the site.

TOPOGRAPHY

The topography of the site exhibits one consistent pattern. The site slopes from the west to the east. Ground elevations range from a high point of approximately 109 feet at the western property line to a low point of approximately 85 feet at the eastern property line.

SOILS

The site contains one type. The Soil Survey of Essex County has identified the site having a soil type as Boonton-Urban Land, Boonton Substratum complex, red sandstone lowland, 0 to 8 percent slopes. The Natural Resources Conservation Service has classified these soils as being in Hydrologic Soil Group “C”. A soil log and percolation test were conducted by Casey and Keller, Inc. and the results of these tests have been included within this report.

IMPERVIOUS COVERAGE SUMMARY

IMPERVIOUS COVERAGE						
	EXISTING (LOT 6.01)	**PROPOSED (LOT 6.01)**	**EXISTING (LOT 6.02)**	**PROPOSED (LOT 6.02)**	**EXISTING (LOT 6.03)**	**PROPOSED (LOT 6.03)**
BUILDING(S)	0	1988	2309	2140	0	1467
DRIVEWAY(S)	0	756	2315	1142	133	608
WALKS/STEPS	143	115	315	180	0	95
PATIO/DECK	1866	110	505	302	0	210
POOL	582	0	0	0	0	0
MISC.	0	25	0	0	0	25
TOTAL	2591	2994	5444	3764	133	2405
NET COVERAGE		**403**		**-1680**		**2272**

STORMWATER MANAGEMENT

Stormwater management is a critical component of the development process, requiring careful coordination between the site designer's objectives, municipal ordinances, and the regulatory standards established by the New Jersey Department of Environmental Protection (see Hydrology section below). While best practices emphasize minimizing the use of structural stormwater controls, practical site constraints typically necessitate a balanced approach that incorporates both non-structural and structural measures. The existing site is already developed, with building coverage and paved surfaces.
In accordance with the Township of West Orange requires that stormwater analyses be performed for the 2-year, 10-year, 25-year, and 100-year storm events. The reduction factors applied to the 2-, 10-, and 100-year storm events are 50%, 25%, and 20%, respectively. Although this project does not meet the requirements for a major development, these reductions were applied to further enhance the site performance. The "Natural Resources Conservation Service Method," as outlined in Technical Release 55 (TR-55), was utilized to size and route stormwater through the proposed perforated pipe system. Stormwater hydrographs for both existing and proposed site conditions have been prepared and are included in this report to demonstrate compliance.

Site Discharge

The following table shows that the site would produce post-developed runoff rates and volumes that are lower than the site's existing rates of runoff. The existing and proposed peak runoff rates (Q) from the site are summarized as follows:

Summary Peak Detention Flow Lot 6.01

Frequency	Disturbed Q		Reduction		After Reduction Q		Q Non Disturb		Q Allowable		Total Q Proposed
2 - 2020	0.10	x	0.50	=	0.05	+	0.02	=	0.07		0.05
10 - 2020	0.19	x	0.25	=	0.14	+	0.04	=	0.18		0.12
25 - 2020	0.25	x	0.00	=	0.25	+	0.05	=	0.30		0.18
100 - 2020	0.37	x	0.20	=	0.30	+	0.08	=	0.38		0.28
2 - 2050	0.13	x	0.50	=	0.07	+	0.03	=	0.10		0.08
10 - 2050	0.23	x	0.25	=	0.17	+	0.05	=	0.22		0.16
25 - 2050	0.32	x	0.00	=	0.32	+	0.07	=	0.39		0.23
100 - 2050	0.49	x	0.20	=	0.39	+	0.11	=	0.50		0.38

Summary Peak Detention Flow Lot 6.03

Frequency	Disturbed Q		Reduction		After Reduction Q		Q Non Disturb		Q Allowable		Total Q Proposed
2 - 2020	0.04	x	0.50	=	0.02	+	0.05	=	0.07		0.07
10 - 2020	0.09	x	0.25	=	0.07	+	0.12	=	0.19		0.16
25 - 2020	0.13	x	0.00	=	0.13	+	0.18	=	0.31		0.23
100 - 2020	0.20	x	0.20	=	0.16	+	0.28	=	0.44		0.36
2 - 2050	0.05	x	0.50	=	0.03	+	0.08	=	0.11		0.10
10 - 2050	0.12	x	0.25	=	0.09	+	0.16	=	0.25		0.21
25 - 2050	0.17	x	0.00	=	0.17	+	0.24	=	0.41		0.30
100 - 2050	0.27	x	0.20	=	0.22	+	0.38	=	0.60		0.49

The Site Discharge table shows that the proposed project would result in post-developed runoff rates that are less than or equal to the site's existing runoff rates. The hydrographs for the 2-year, 10-year, 25-year, and 100-year storms do not exceed at any time the pre-developed hydrographs for the same events as required per West Orange's ordinance.

Based upon this analysis, it is our professional opinion that the proposed storm water management system would enhance the existing downstream conveyance systems and meet the required Municipal standards.

Calculations supporting these findings constitute the remainder of this report.

SOILS

Soil Map—Essex County, New Jersey
(27 Fairway Drive West Orange, NJ)



Map Scale: 1:487 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 5 10 20 30

Feet
0 20 40 80 120

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N 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 1:12,000.

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

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

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

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

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

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

Soil Survey Area: Essex County, New Jersey
Survey Area Data: Version 21, Aug 28, 2025

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

Date(s) aerial images were photographed: Oct 10, 2022—Oct 16, 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
BowrB	Boonton - Urban land, Boonton substratum complex, red sandstone lowland, 0 to 8 percent slopes	0.5	100.0%
Totals for Area of Interest		**0.5**	**100.0%**

Casey & Keller, Inc.

LAND surveyors + civil engineers + PLANNERS

N.J. STATE BOARD OF PROFESSIONAL ENGINEERS & LAND SURVEYORS

CERTIFICATE OF AUTHORIZATION NO. 24GA27985400

258 Main Street, Millburn, NEW JERSEY, 07041

voice: 973-379-3280 fax: 973-379-7993

Address			27 Fairway Drive, West Orange									
Test Pit No.	1		**Season Height Water Table**		N/A			**Date:**	9/25/2026			
Soil Type	C		**Water Table Present**		N/A			**Recorded By**	TF			
Horizon	**Depth**	**Color**					**Texture**	**% Coarse Fragments Gravel/ Cobble/ Stone**	**Structure**	**Consistence**	**Roots**	**Boundary**
		Moist	**Value Chroma**	**Mottles**						**Dry** **Moist** **Wet**		
				Abundance	**Size**	**Contrast**						
89.0± (Topsoil)	0"-24"	Borown	7.5 YR 4/2	N/A	N/A	N/A	Loamy Clay	0/0/0	Granular	Dry	Common	Clear
	24"-84"	Yellowish Red	5 YR 4/6	N/A	N/A	N/A	Sandy Loamy Clay	10/5/0	Granular	Dry	None	Clear
	84"-144"	Yellowish Red	5 YR 4/6	N/A	N/A	N/A	(Slate) Sandy Loamy Clay	0/75/0	Blocky	Dry	None	Clear
DEPTH TO STANDING WATER =			" @ AM				" @ AM					
DEPTH OF SEEPAGE =												
DEPTH OF LEDGEROCK =												

Percolation Test Data

Location of Property

27 Fairway Drive
West Orange
Lot # 6 Block # 86.01
C&K Job No. 1250703

Field Data

Date of Testing: 09/25/2026
Weather Conditions: ..... 62°
Recent Rainfall: 09/22/2026
C&K Technician: ..... Tony
Backhoe Operator: ..... Peter

TEST PIT #1

Depth: 7.0'
Location: Per Plan

Saturation Test

Time	Depth
10:59	2.0"
11:01	0"

Stabilization Test

Time	Depth
11:04	2"
11:06	0"

Final Percolation Rate

Time	Depth

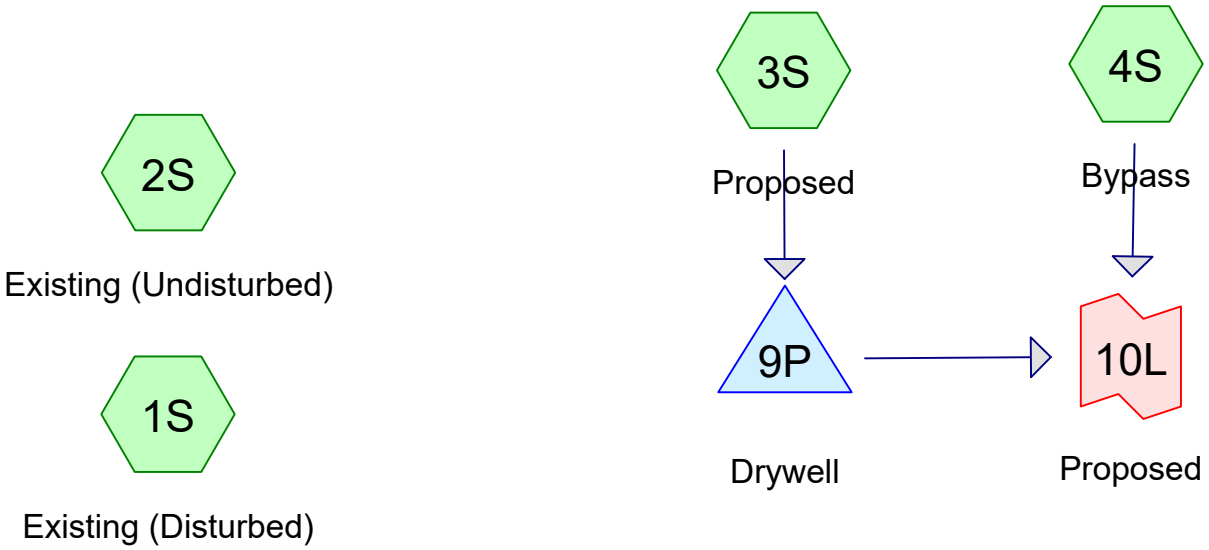
Rate= >20"/HR

Test hole percolated too quickly to fill up

Michael Lanzafama, PE, PLS Lic. #GB30084

HYDROLOGIC ANALYSIS
EXISTING & PROPOSED

HYDROLOGIC ANALYSIS
EXISTING & PROPOSED
LOT 6.01



Subcat Reach Pond Link

Routing Diagram for 1250703-6.01
Prepared by Casey & Keller, Inc, Printed 10/21/2026
HydroCAD® 10.20-9a s/n 03272 © 2026 HydroCAD Software Solutions LLC

Time span=0.00-72.00 hrs, dt=1.00 hrs, 73 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing (Disturbed) Runoff Area=5,759 sf 34.83% Impervious Runoff Depth=1.92"
Flow Length=74' Tc=5.3 min CN=74/98 Runoff=0.10 cfs 0.021 af

Subcatchment 2S: Existing (Undisturbed) Runoff Area=1,439 sf 0.00% Impervious Runoff Depth=1.22"
Flow Length=74' Tc=5.3 min CN=74/0 Runoff=0.02 cfs 0.003 af

Subcatchment 3S: Proposed Runoff Area=2,375 sf 99.07% Impervious Runoff Depth=3.22"
Flow Length=74' Tc=5.3 min CN=74/98 Runoff=0.07 cfs 0.015 af

Subcatchment 4S: Bypass Runoff Area=4,824 sf 0.00% Impervious Runoff Depth=1.22"
Flow Length=74' Tc=5.3 min CN=74/0 Runoff=0.05 cfs 0.011 af

Pond 9P: Drywell Peak Elev=92.54' Storage=64 cf Inflow=0.07 cfs 0.015 af
Discarded=0.04 cfs 0.015 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.015 af

Link 10L: Proposed Inflow=0.05 cfs 0.011 af
Primary=0.05 cfs 0.011 af

Total Runoff Area = 0.331 ac Runoff Volume = 0.050 af Average Runoff Depth = 1.83"
69.72% Pervious = 0.230 ac 30.28% Impervious = 0.100 ac

Summary for Subcatchment 1S: Existing (Disturbed)

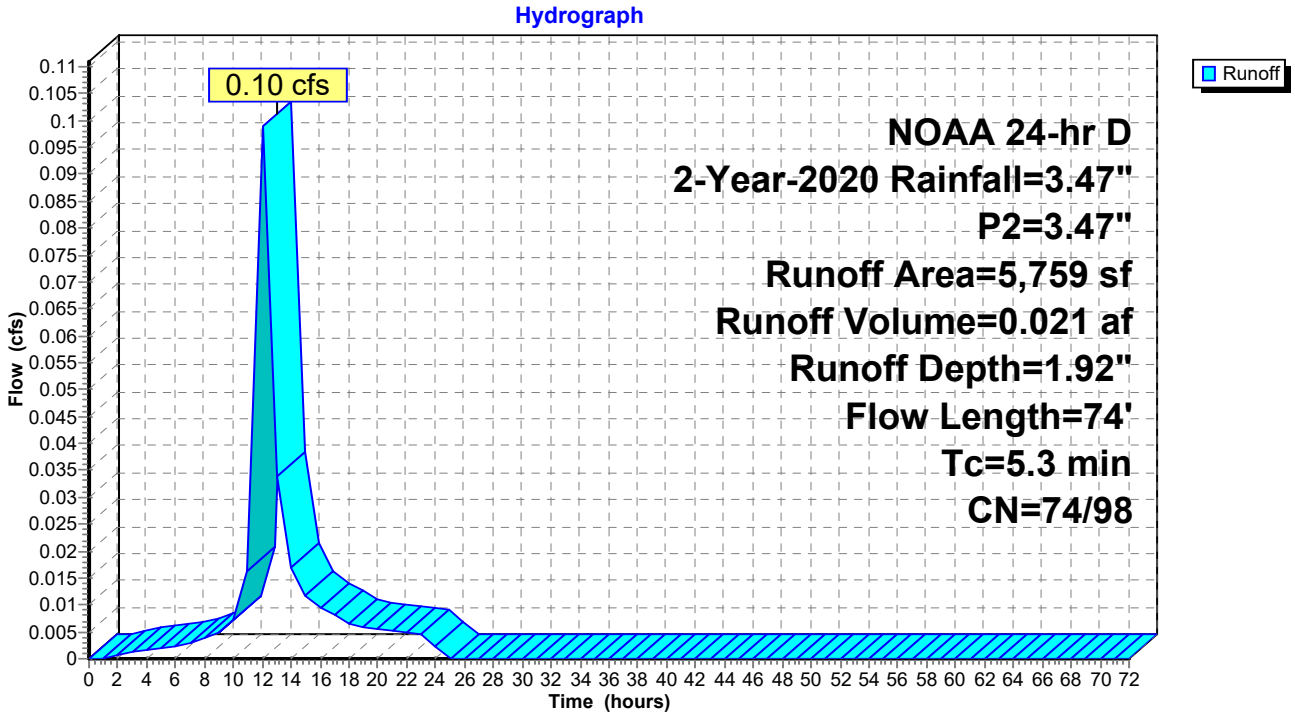
Runoff = 0.10 cfs @ 12.06 hrs, Volume= 0.021 af, Depth= 1.92"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 2-Year-2020 Rainfall=3.47", P2=3.47"

	Area (sf)	CN	Description
	3,753	74	>75% Grass cover, Good, HSG C
	582	98	Water Surface, HSG C
*	1,424	98	Patios & Walks, HSG C
	5,759	82	Weighted Average
	3,753	74	65.17% Pervious Area
	2,006	98	34.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	21	0.2520	0.36		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.0	22	0.0450	0.18		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
2.3	31	0.0650	0.22		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
5.3	74	Total			

Subcatchment 1S: Existing (Disturbed)



Summary for Subcatchment 2S: Existing (Undisturbed)

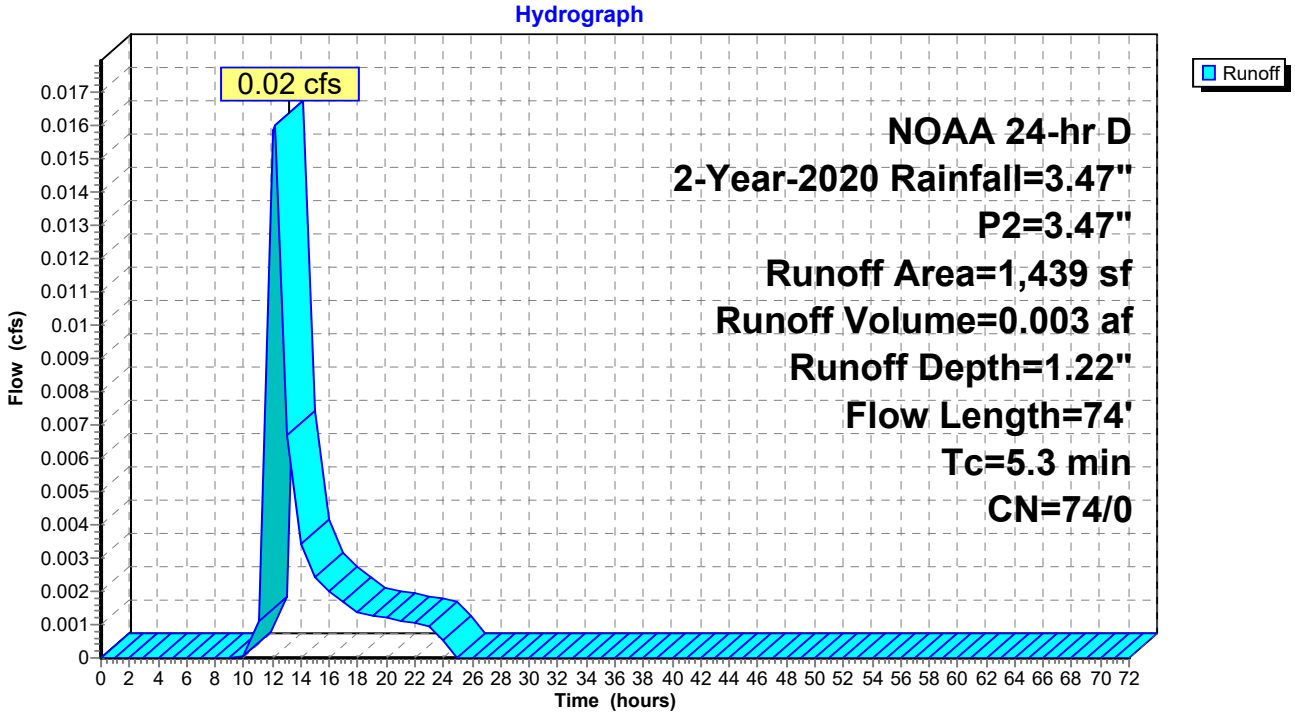
Runoff = 0.02 cfs @ 12.12 hrs, Volume= 0.003 af, Depth= 1.22"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 2-Year-2020 Rainfall=3.47", P2=3.47"

Area (sf)	CN	Description
1,439	74	>75% Grass cover, Good, HSG C
1,439	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	21	0.2520	0.36		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.0	22	0.0450	0.18		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
2.3	31	0.0650	0.22		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
5.3	74	Total			

Subcatchment 2S: Existing (Undisturbed)



Summary for Subcatchment 3S: Proposed

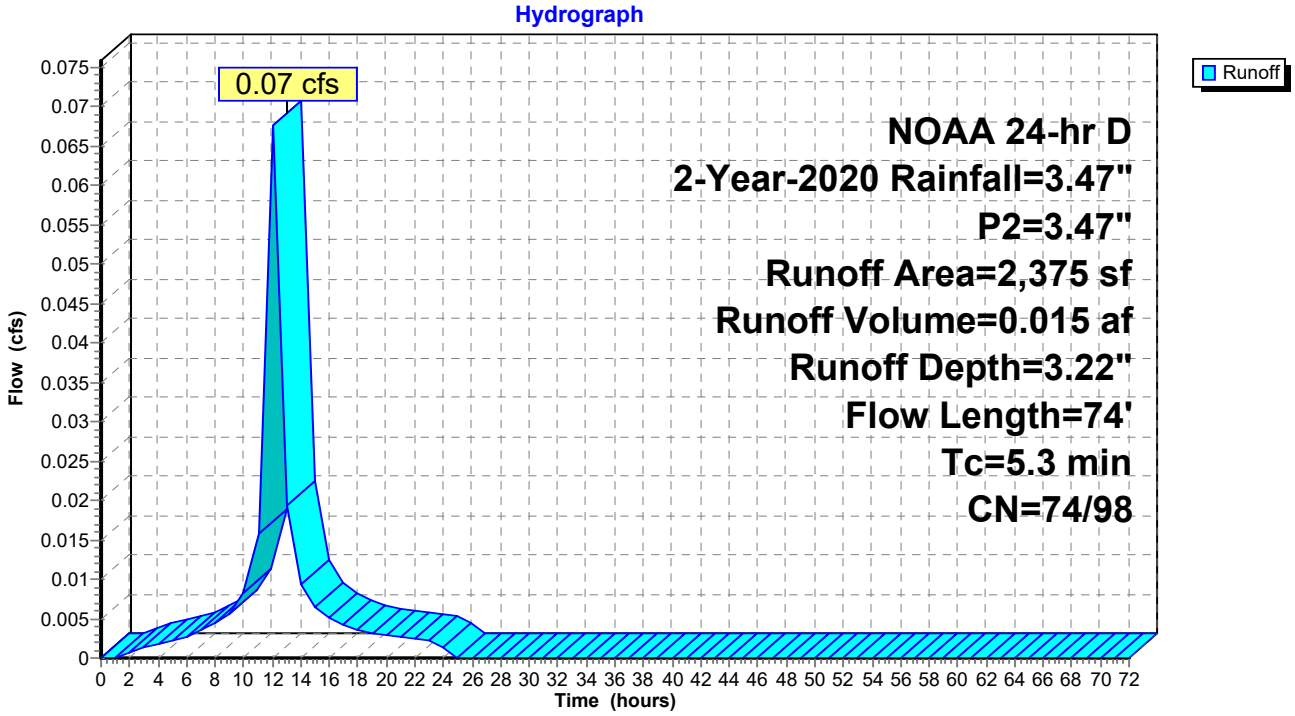
Runoff = 0.07 cfs @ 12.02 hrs, Volume= 0.015 af, Depth= 3.22"
Routed to Pond 9P : Drywell

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 2-Year-2020 Rainfall=3.47", P2=3.47"

	Area (sf)	CN	Description
	22	74	>75% Grass cover, Good, HSG C
*	85	98	Walk, HSG C
	1,988	98	Roofs, HSG B
*	280	98	Driveway, HSG C
	2,375	98	Weighted Average
	22	74	0.93% Pervious Area
	2,353	98	99.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	21	0.2520	0.36		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.0	22	0.0450	0.18		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
2.3	31	0.0650	0.22		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
5.3	74	Total			

Subcatchment 3S: Proposed



Summary for Subcatchment 4S: Bypass

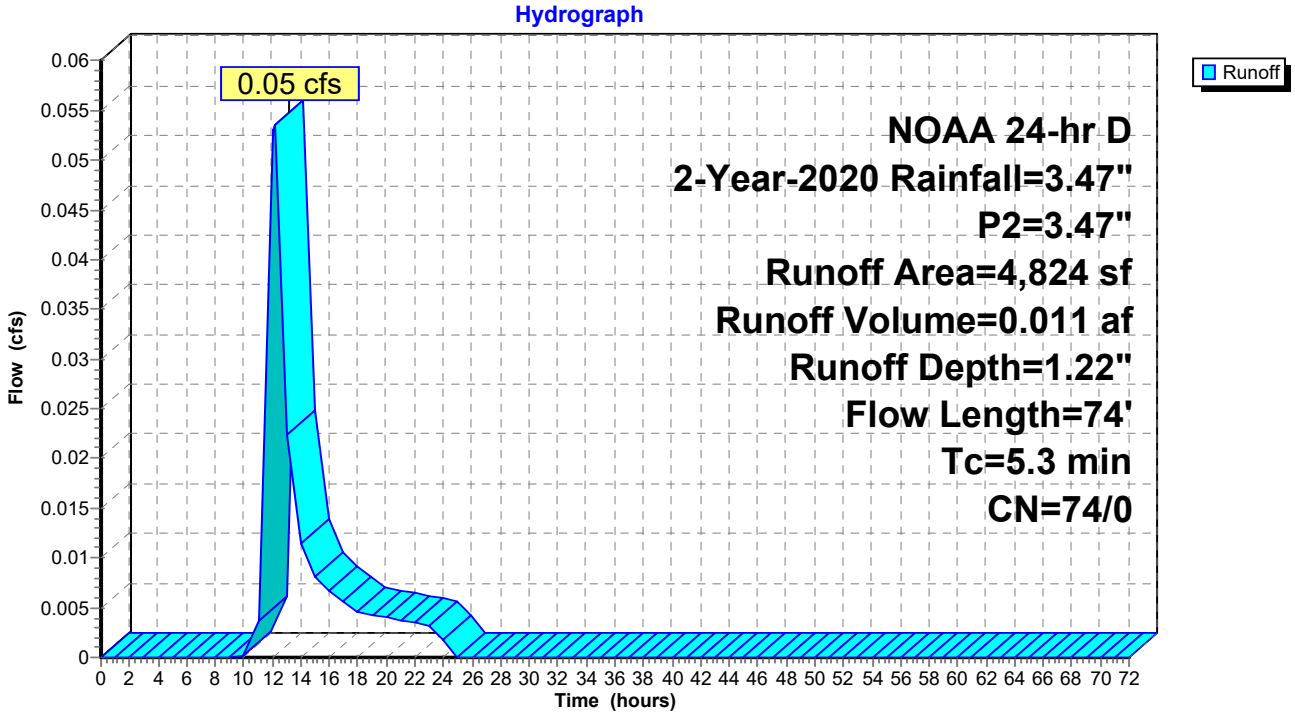
Runoff = 0.05 cfs @ 12.12 hrs, Volume= 0.011 af, Depth= 1.22"
Routed to Link 10L : Proposed

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 2-Year-2020 Rainfall=3.47", P2=3.47"

Area (sf)	CN	Description
4,824	74	>75% Grass cover, Good, HSG C
4,824	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	21	0.2520	0.36		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.0	22	0.0450	0.18		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
2.3	31	0.0650	0.22		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
5.3	74	Total			

Subcatchment 4S: Bypass



Summary for Pond 9P: Drywell

Inflow Area = 0.055 ac, 99.07% Impervious, Inflow Depth = 3.22" for 2-Year-2020 event
Inflow = 0.07 cfs @ 12.02 hrs, Volume= 0.015 af
Outflow = 0.04 cfs @ 12.50 hrs, Volume= 0.015 af, Atten= 34%, Lag= 28.9 min
Discarded = 0.04 cfs @ 12.50 hrs, Volume= 0.015 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 10L : Proposed

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs
Peak Elev= 92.54' @ 12.61 hrs Surf.Area= 225 sf Storage= 64 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 13.3 min (768.6 - 755.3)

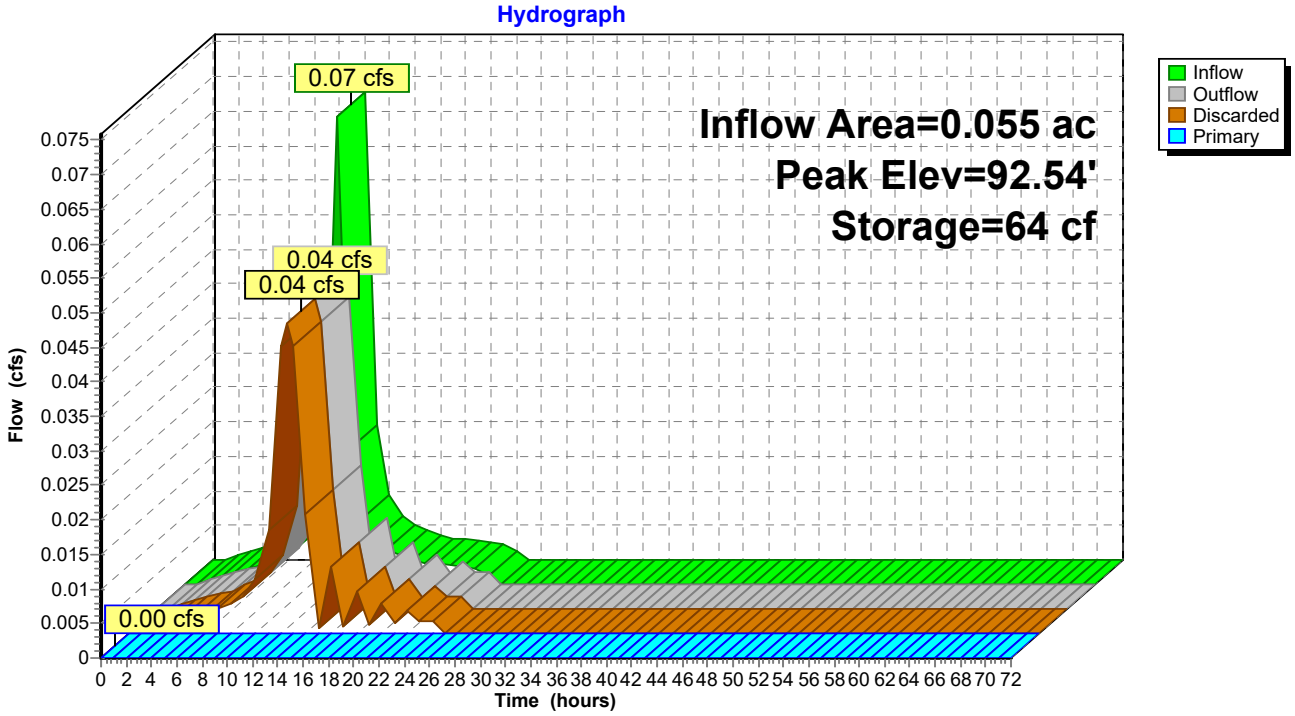
Volume	Invert	Avail.Storage	Storage Description
#1	93.83'	302 cf	**8.00'D x 6.00'H Drywell** Inside #2 354 cf Overall - 4.0" Wall Thickness = 302 cf
#2	91.83'	578 cf	**15.00'W x 15.00'L x 8.00'H Stone** 1,800 cf Overall - 354 cf Embedded = 1,446 cf x 40.0% Voids
#3	99.83'	5 cf	**2.00'D x 1.67'H Vertical Cone/Cylinder**
		885 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	91.83'	**8.000 in/hr Exfiltration over Surface area**
#2	Primary	101.50'	**24.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.04 cfs @ 12.50 hrs HW=92.45' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=91.83' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 9P: Drywell

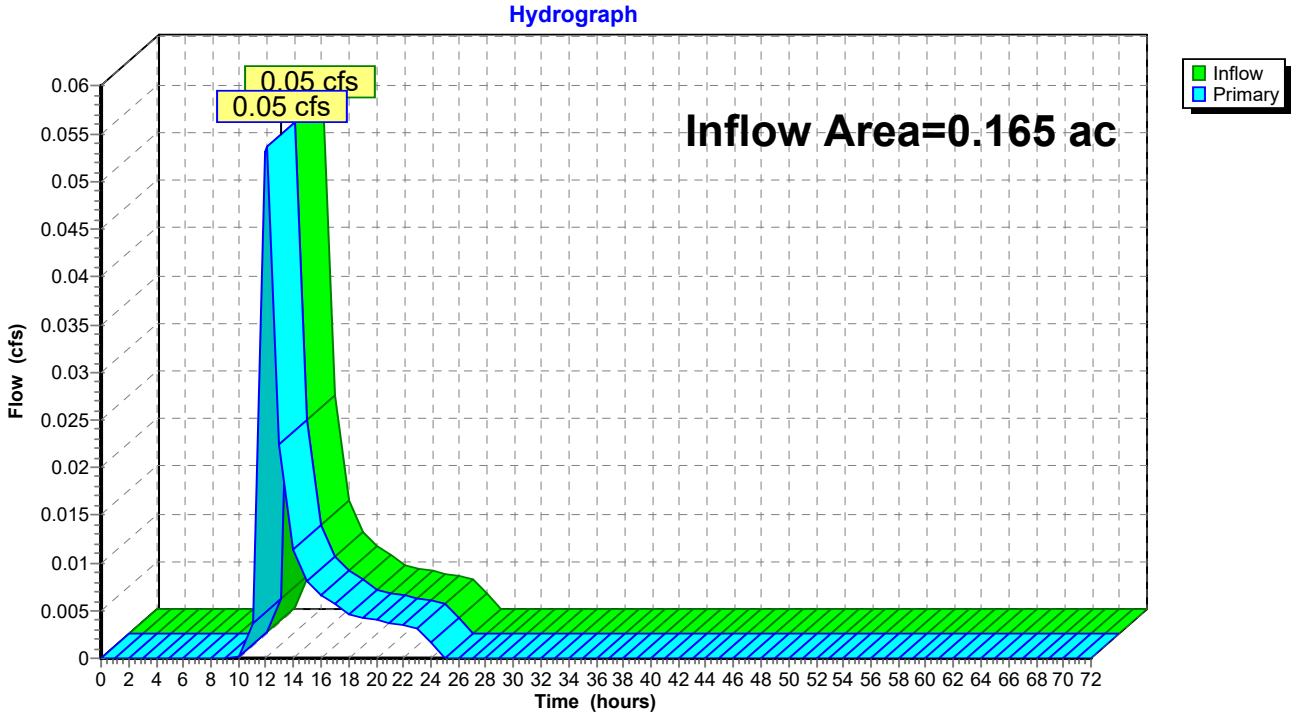


Summary for Link 10L: Proposed

Inflow Area = 0.165 ac, 32.69% Impervious, Inflow Depth = 0.82" for 2-Year-2020 event
Inflow = 0.05 cfs @ 12.12 hrs, Volume= 0.011 af
Primary = 0.05 cfs @ 12.12 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs

Link 10L: Proposed



Time span=0.00-72.00 hrs, dt=1.00 hrs, 73 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing (Disturbed) Runoff Area=5,759 sf 34.83% Impervious Runoff Depth=3.53"
Flow Length=74' Tc=5.3 min CN=74/98 Runoff=0.19 cfs 0.039 af

Subcatchment 2S: Existing (Undisturbed) Runoff Area=1,439 sf 0.00% Impervious Runoff Depth=2.67"
Flow Length=74' Tc=5.3 min CN=74/0 Runoff=0.04 cfs 0.007 af

Subcatchment 3S: Proposed Runoff Area=2,375 sf 99.07% Impervious Runoff Depth=5.12"
Flow Length=74' Tc=5.3 min CN=74/98 Runoff=0.11 cfs 0.023 af

Subcatchment 4S: Bypass Runoff Area=4,824 sf 0.00% Impervious Runoff Depth=2.67"
Flow Length=74' Tc=5.3 min CN=74/0 Runoff=0.12 cfs 0.025 af

Pond 9P: Drywell Peak Elev=94.17' Storage=220 cf Inflow=0.11 cfs 0.023 af
Discarded=0.04 cfs 0.023 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.023 af

Link 10L: Proposed Inflow=0.12 cfs 0.025 af
Primary=0.12 cfs 0.025 af

Total Runoff Area = 0.331 ac Runoff Volume = 0.094 af Average Runoff Depth = 3.42"
69.72% Pervious = 0.230 ac 30.28% Impervious = 0.100 ac

Summary for Subcatchment 1S: Existing (Disturbed)

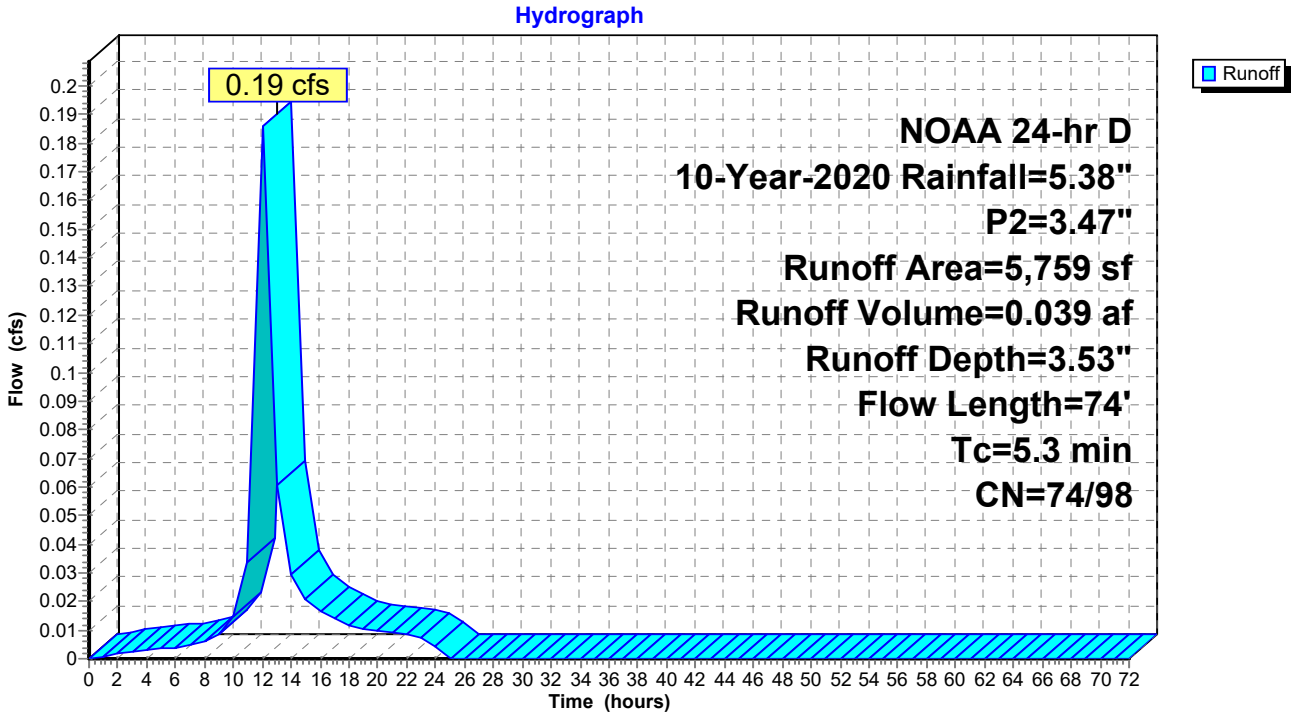
Runoff = 0.19 cfs @ 12.05 hrs, Volume= 0.039 af, Depth= 3.53"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 10-Year-2020 Rainfall=5.38", P2=3.47"

	Area (sf)	CN	Description
	3,753	74	>75% Grass cover, Good, HSG C
	582	98	Water Surface, HSG C
*	1,424	98	Patios & Walks, HSG C
	5,759	82	Weighted Average
	3,753	74	65.17% Pervious Area
	2,006	98	34.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	21	0.2520	0.36		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.0	22	0.0450	0.18		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
2.3	31	0.0650	0.22		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
5.3	74	Total			

Subcatchment 1S: Existing (Disturbed)



Summary for Subcatchment 2S: Existing (Undisturbed)

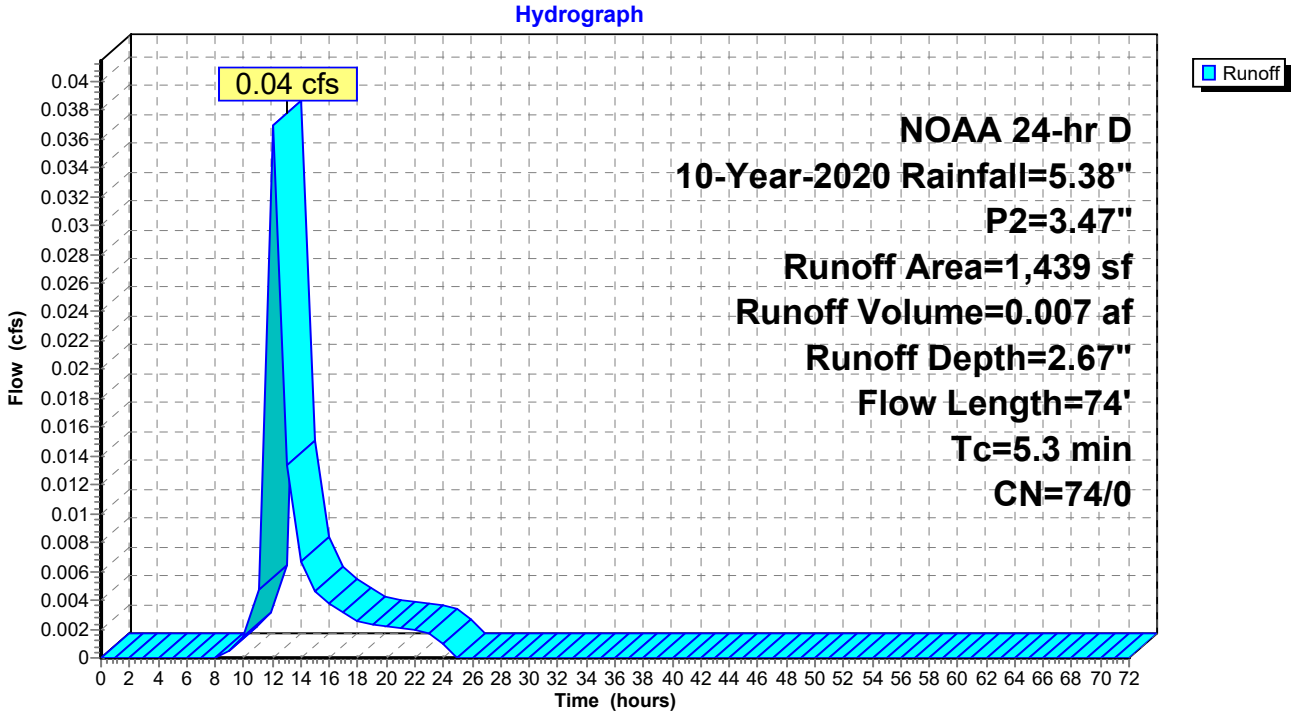
Runoff = 0.04 cfs @ 12.08 hrs, Volume= 0.007 af, Depth= 2.67"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 10-Year-2020 Rainfall=5.38", P2=3.47"

Area (sf)	CN	Description
1,439	74	>75% Grass cover, Good, HSG C
1,439	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	21	0.2520	0.36		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.0	22	0.0450	0.18		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
2.3	31	0.0650	0.22		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
5.3	74	Total			

Subcatchment 2S: Existing (Undisturbed)



Summary for Subcatchment 3S: Proposed

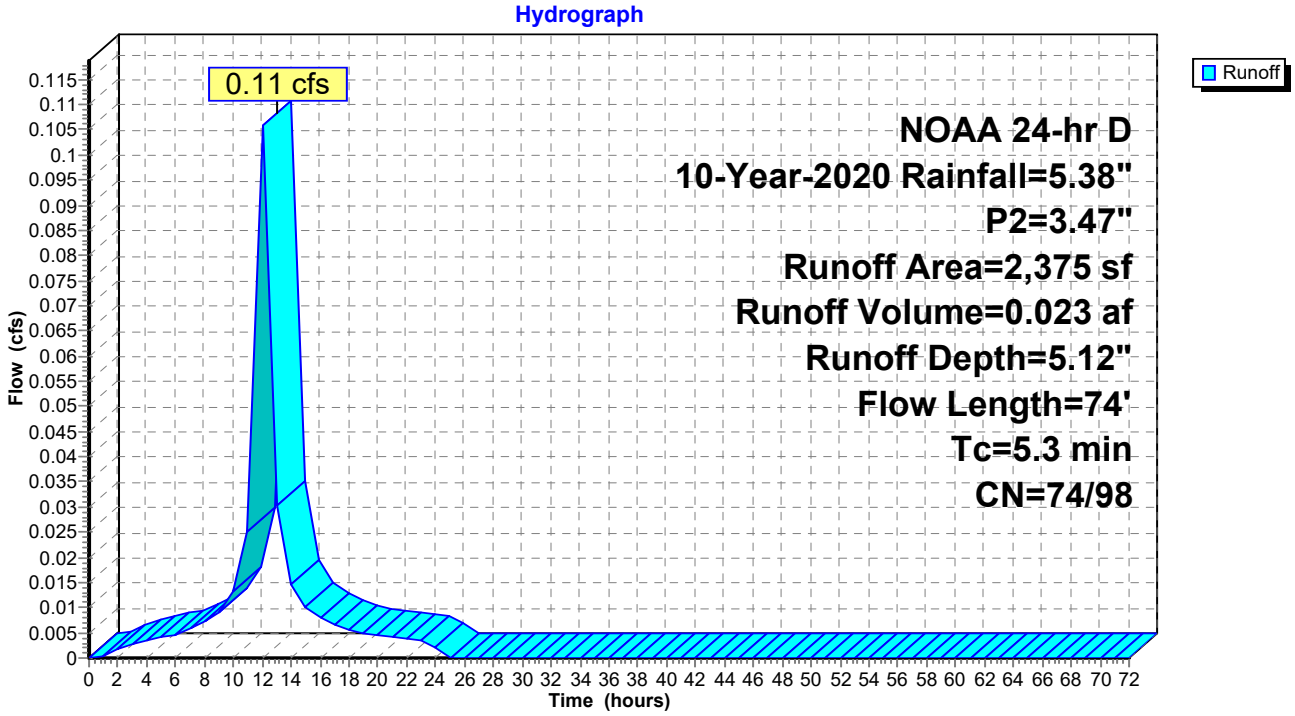
Runoff = 0.11 cfs @ 12.02 hrs, Volume= 0.023 af, Depth= 5.12"
Routed to Pond 9P : Drywell

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 10-Year-2020 Rainfall=5.38", P2=3.47"

	Area (sf)	CN	Description
	22	74	>75% Grass cover, Good, HSG C
*	85	98	Walk, HSG C
	1,988	98	Roofs, HSG B
*	280	98	Driveway, HSG C
	2,375	98	Weighted Average
	22	74	0.93% Pervious Area
	2,353	98	99.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	21	0.2520	0.36		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.0	22	0.0450	0.18		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
2.3	31	0.0650	0.22		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
5.3	74	Total			

Subcatchment 3S: Proposed



Summary for Subcatchment 4S: Bypass

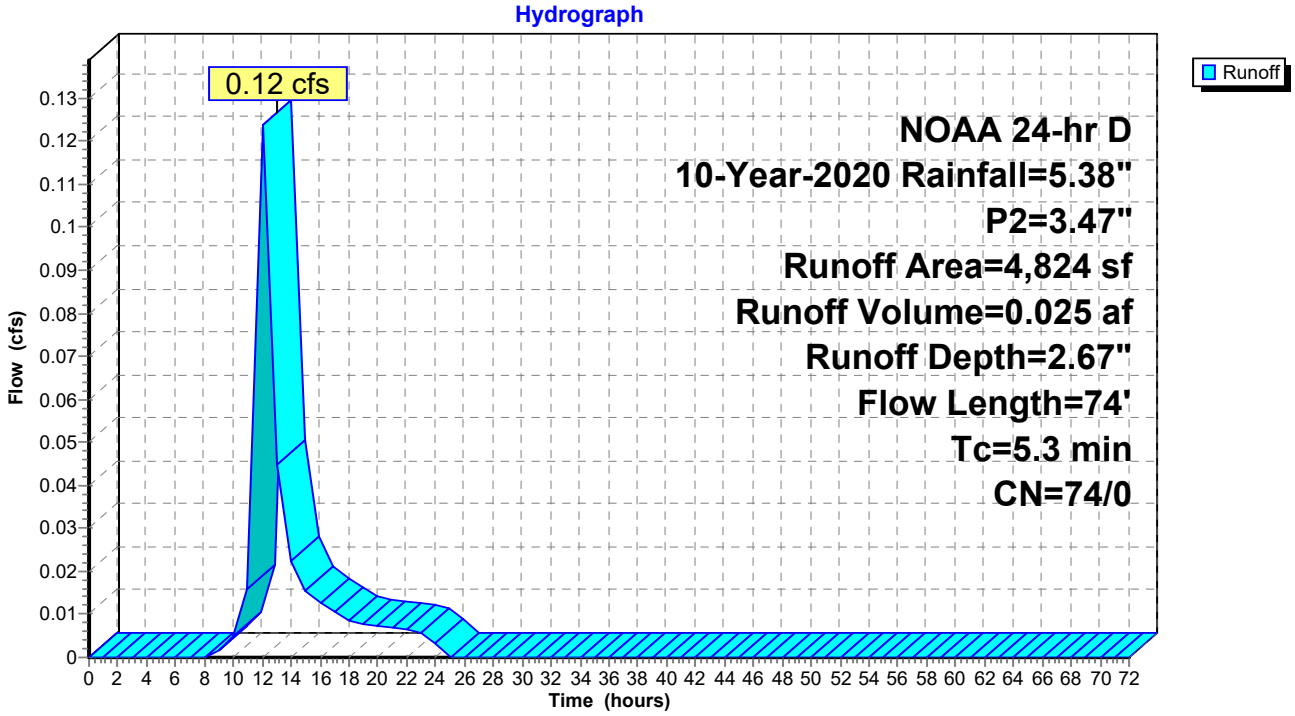
Runoff = 0.12 cfs @ 12.08 hrs, Volume= 0.025 af, Depth= 2.67"
Routed to Link 10L : Proposed

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 10-Year-2020 Rainfall=5.38", P2=3.47"

Area (sf)	CN	Description
4,824	74	>75% Grass cover, Good, HSG C
4,824	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	21	0.2520	0.36		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.0	22	0.0450	0.18		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
2.3	31	0.0650	0.22		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
5.3	74	Total			

Subcatchment 4S: Bypass



Summary for Pond 9P: Drywell

Inflow Area = 0.055 ac, 99.07% Impervious, Inflow Depth = 5.12" for 10-Year-2020 event
Inflow = 0.11 cfs @ 12.02 hrs, Volume= 0.023 af
Outflow = 0.04 cfs @ 12.00 hrs, Volume= 0.023 af, Atten= 61%, Lag= 0.0 min
Discarded = 0.04 cfs @ 12.00 hrs, Volume= 0.023 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 10L : Proposed

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs
Peak Elev= 94.17' @ 13.09 hrs Surf.Area= 225 sf Storage= 220 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 34.3 min (781.1 - 746.8)

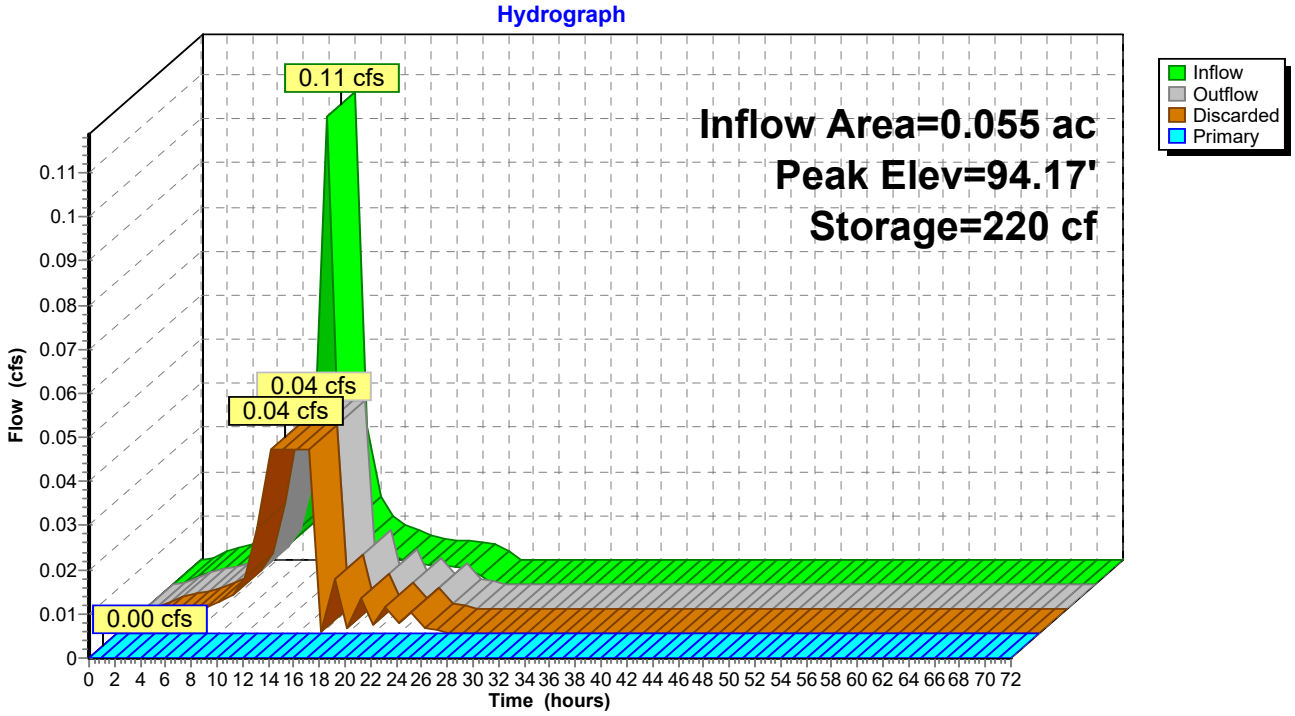
Volume	Invert	Avail.Storage	Storage Description
#1	93.83'	302 cf	**8.00'D x 6.00'H Drywell** Inside #2 354 cf Overall - 4.0" Wall Thickness = 302 cf
#2	91.83'	578 cf	**15.00'W x 15.00'L x 8.00'H Stone** 1,800 cf Overall - 354 cf Embedded = 1,446 cf x 40.0% Voids
#3	99.83'	5 cf	**2.00'D x 1.67'H Vertical Cone/Cylinder**
		885 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	91.83'	**8.000 in/hr Exfiltration over Surface area**
#2	Primary	101.50'	**24.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.04 cfs @ 12.00 hrs HW=93.21' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=91.83' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 9P: Drywell

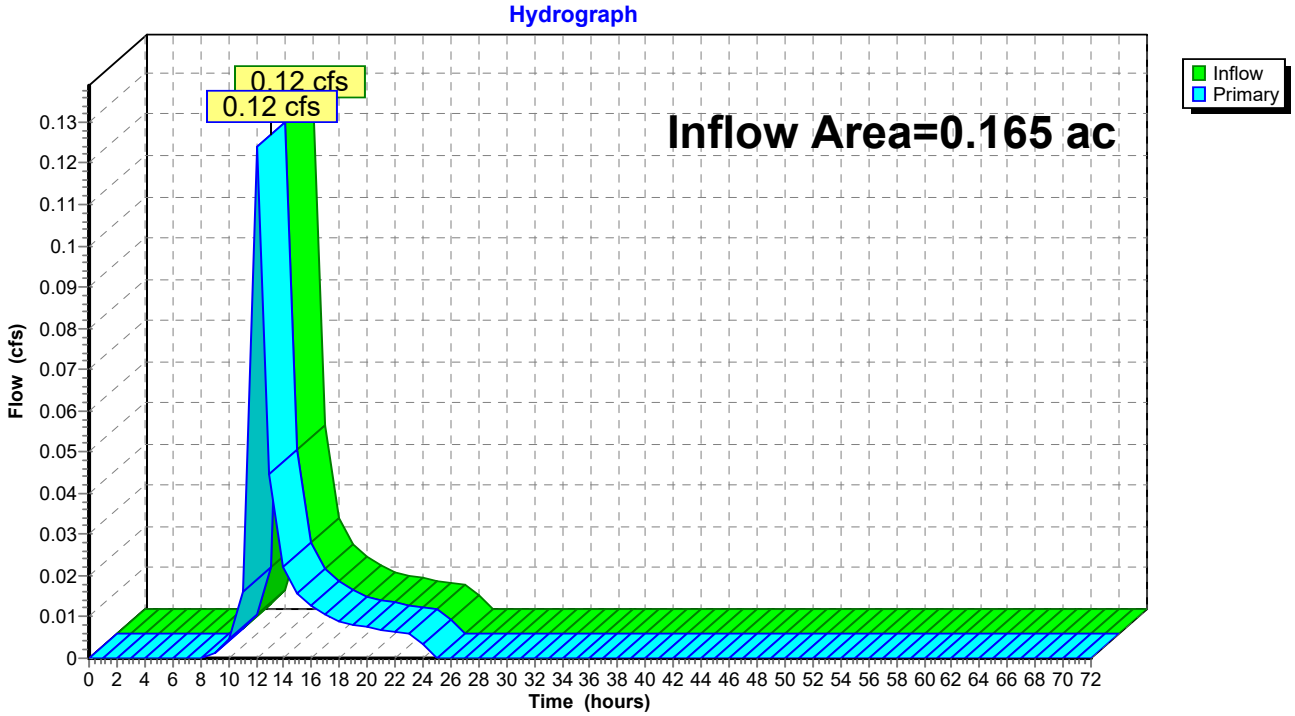


Summary for Link 10L: Proposed

Inflow Area = 0.165 ac, 32.69% Impervious, Inflow Depth = 1.79" for 10-Year-2020 event
Inflow = 0.12 cfs @ 12.08 hrs, Volume= 0.025 af
Primary = 0.12 cfs @ 12.08 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs

Link 10L: Proposed



Time span=0.00-72.00 hrs, dt=1.00 hrs, 73 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing (Disturbed) Runoff Area=5,759 sf 34.83% Impervious Runoff Depth=4.73"
Flow Length=74' Tc=5.3 min CN=74/98 Runoff=0.25 cfs 0.052 af

Subcatchment 2S: Existing (Undisturbed) Runoff Area=1,439 sf 0.00% Impervious Runoff Depth=3.80"
Flow Length=74' Tc=5.3 min CN=74/0 Runoff=0.05 cfs 0.010 af

Subcatchment 3S: Proposed Runoff Area=2,375 sf 99.07% Impervious Runoff Depth=6.46"
Flow Length=74' Tc=5.3 min CN=74/98 Runoff=0.13 cfs 0.029 af

Subcatchment 4S: Bypass Runoff Area=4,824 sf 0.00% Impervious Runoff Depth=3.80"
Flow Length=74' Tc=5.3 min CN=74/0 Runoff=0.18 cfs 0.035 af

Pond 9P: Drywell Peak Elev=95.19' Storage=339 cf Inflow=0.13 cfs 0.029 af
Discarded=0.04 cfs 0.029 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.029 af

Link 10L: Proposed Inflow=0.18 cfs 0.035 af
Primary=0.18 cfs 0.035 af

Total Runoff Area = 0.331 ac Runoff Volume = 0.127 af Average Runoff Depth = 4.61"
69.72% Pervious = 0.230 ac 30.28% Impervious = 0.100 ac

Summary for Subcatchment 1S: Existing (Disturbed)

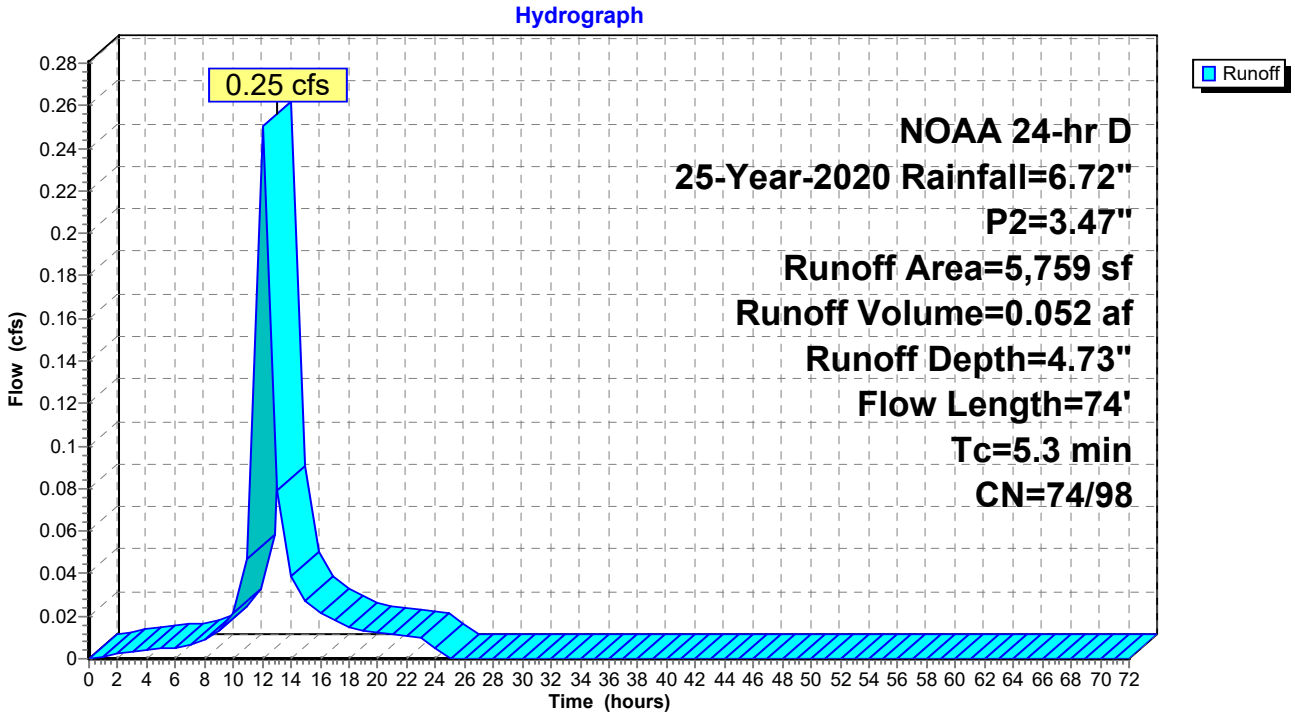
Runoff = 0.25 cfs @ 12.04 hrs, Volume= 0.052 af, Depth= 4.73"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 25-Year-2020 Rainfall=6.72", P2=3.47"

	Area (sf)	CN	Description
	3,753	74	>75% Grass cover, Good, HSG C
	582	98	Water Surface, HSG C
*	1,424	98	Patios & Walks, HSG C
	5,759	82	Weighted Average
	3,753	74	65.17% Pervious Area
	2,006	98	34.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	21	0.2520	0.36		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.0	22	0.0450	0.18		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
2.3	31	0.0650	0.22		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
5.3	74	Total			

Subcatchment 1S: Existing (Disturbed)



Summary for Subcatchment 2S: Existing (Undisturbed)

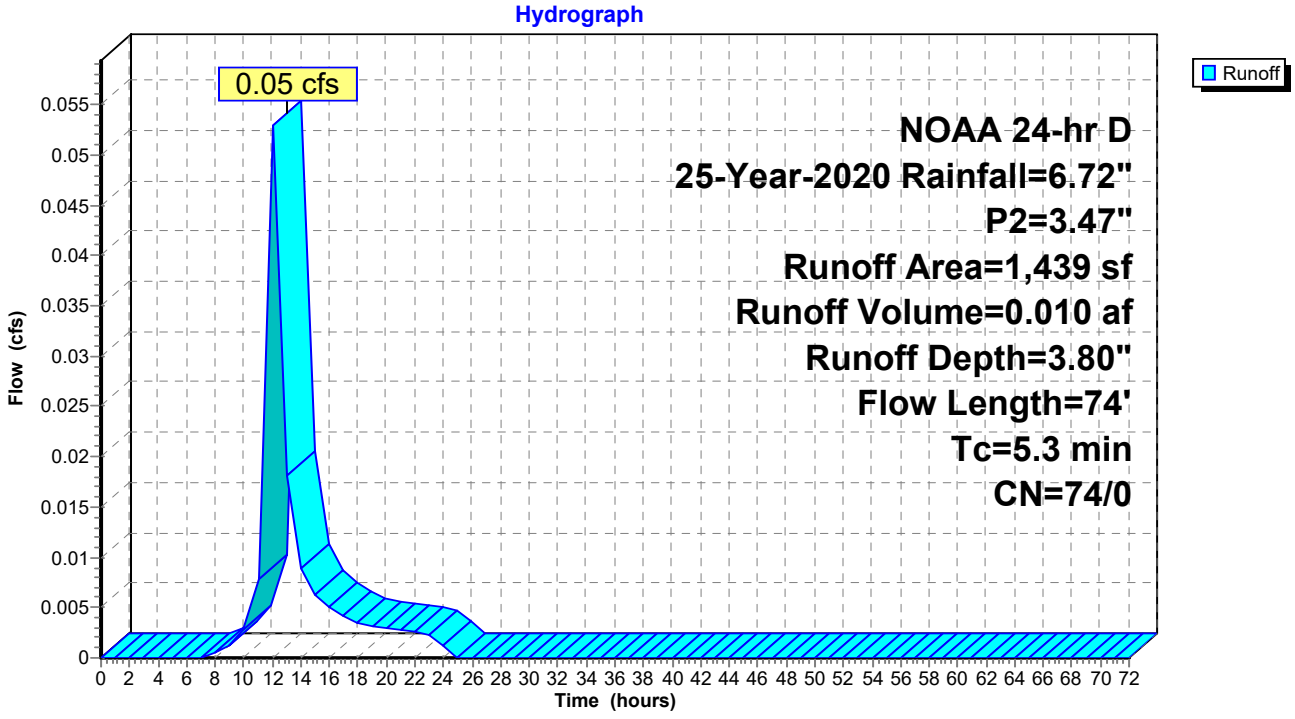
Runoff = 0.05 cfs @ 12.06 hrs, Volume= 0.010 af, Depth= 3.80"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 25-Year-2020 Rainfall=6.72", P2=3.47"

Area (sf)	CN	Description
1,439	74	>75% Grass cover, Good, HSG C
1,439	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	21	0.2520	0.36		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.0	22	0.0450	0.18		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
2.3	31	0.0650	0.22		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
5.3	74	Total			

Subcatchment 2S: Existing (Undisturbed)



Summary for Subcatchment 3S: Proposed

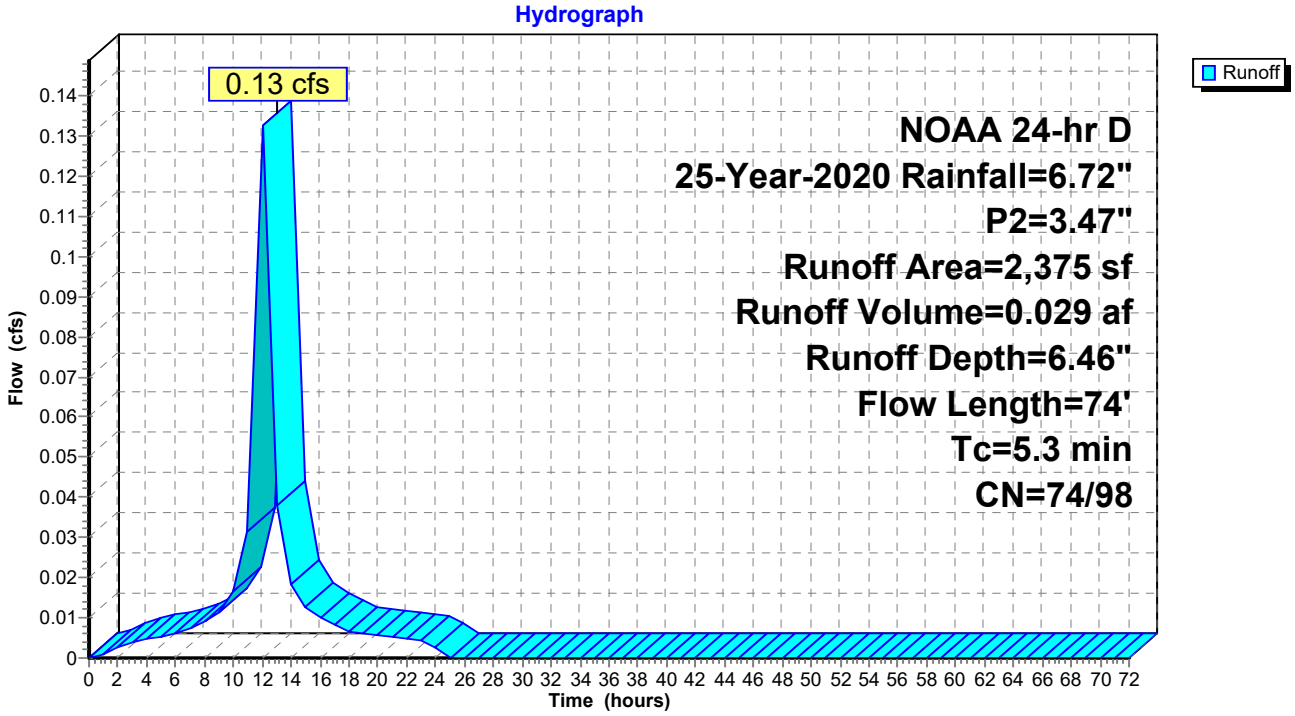
Runoff = 0.13 cfs @ 12.02 hrs, Volume= 0.029 af, Depth= 6.46"
Routed to Pond 9P : Drywell

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 25-Year-2020 Rainfall=6.72", P2=3.47"

	Area (sf)	CN	Description
	22	74	>75% Grass cover, Good, HSG C
*	85	98	Walk, HSG C
	1,988	98	Roofs, HSG B
*	280	98	Driveway, HSG C
	2,375	98	Weighted Average
	22	74	0.93% Pervious Area
	2,353	98	99.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	21	0.2520	0.36		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.0	22	0.0450	0.18		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
2.3	31	0.0650	0.22		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
5.3	74	Total			

Subcatchment 3S: Proposed



Summary for Subcatchment 4S: Bypass

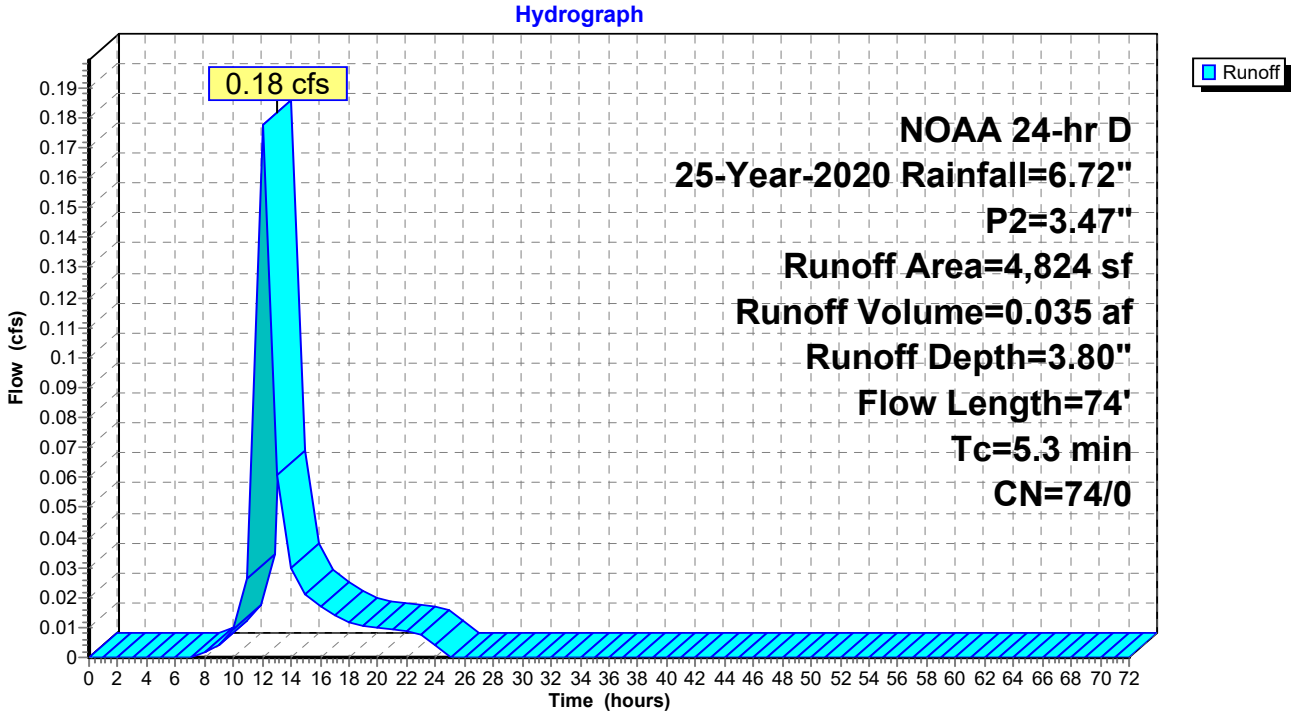
Runoff = 0.18 cfs @ 12.06 hrs, Volume= 0.035 af, Depth= 3.80"
Routed to Link 10L : Proposed

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 25-Year-2020 Rainfall=6.72", P2=3.47"

Area (sf)	CN	Description
4,824	74	>75% Grass cover, Good, HSG C
4,824	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	21	0.2520	0.36		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.0	22	0.0450	0.18		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
2.3	31	0.0650	0.22		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
5.3	74	Total			

Subcatchment 4S: Bypass



Summary for Pond 9P: Drywell

Inflow Area = 0.055 ac, 99.07% Impervious, Inflow Depth = 6.46" for 25-Year-2020 event
Inflow = 0.13 cfs @ 12.02 hrs, Volume= 0.029 af
Outflow = 0.04 cfs @ 12.00 hrs, Volume= 0.029 af, Atten= 69%, Lag= 0.0 min
Discarded = 0.04 cfs @ 12.00 hrs, Volume= 0.029 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 10L : Proposed

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs
Peak Elev= 95.19' @ 13.26 hrs Surf.Area= 225 sf Storage= 339 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 52.1 min (795.4 - 743.3)

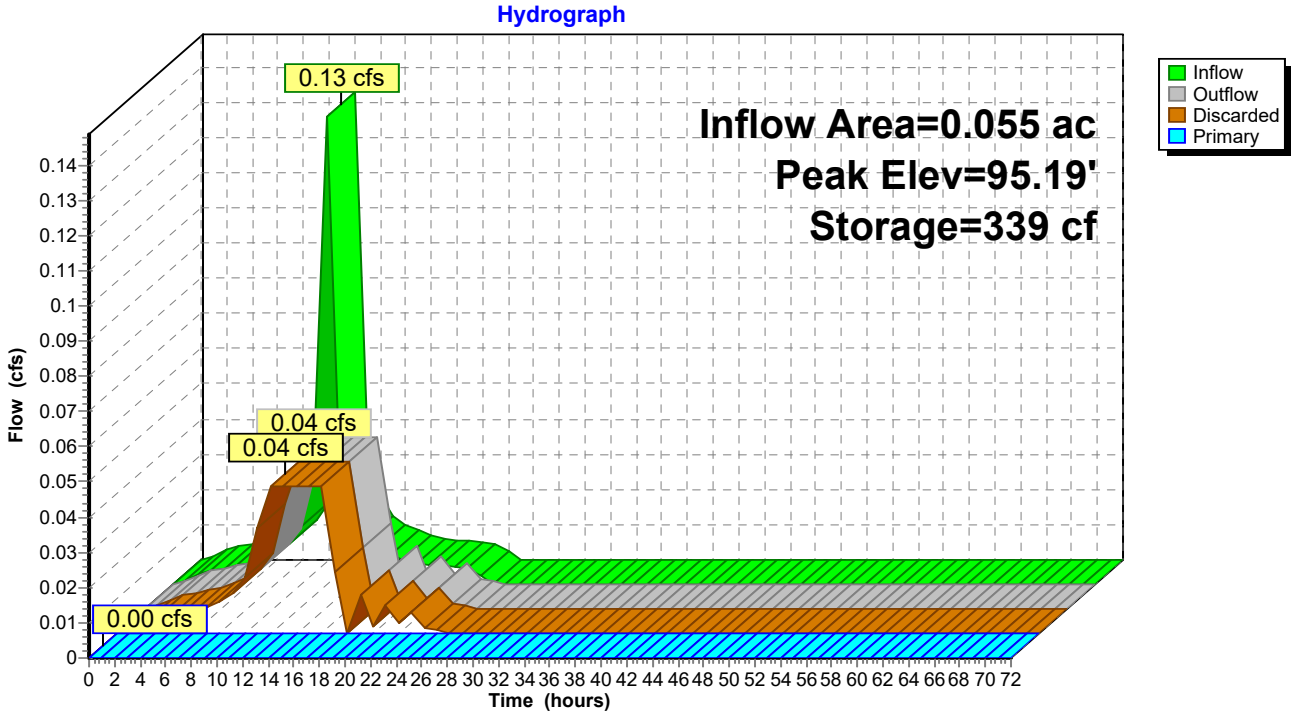
Volume	Invert	Avail.Storage	Storage Description
#1	93.83'	302 cf	**8.00'D x 6.00'H Drywell** Inside #2 354 cf Overall - 4.0" Wall Thickness = 302 cf
#2	91.83'	578 cf	**15.00'W x 15.00'L x 8.00'H Stone** 1,800 cf Overall - 354 cf Embedded = 1,446 cf x 40.0% Voids
#3	99.83'	5 cf	**2.00'D x 1.67'H Vertical Cone/Cylinder**
		885 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	91.83'	**8.000 in/hr Exfiltration over Surface area**
#2	Primary	101.50'	**24.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.04 cfs @ 12.00 hrs HW=93.76' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=91.83' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 9P: Drywell

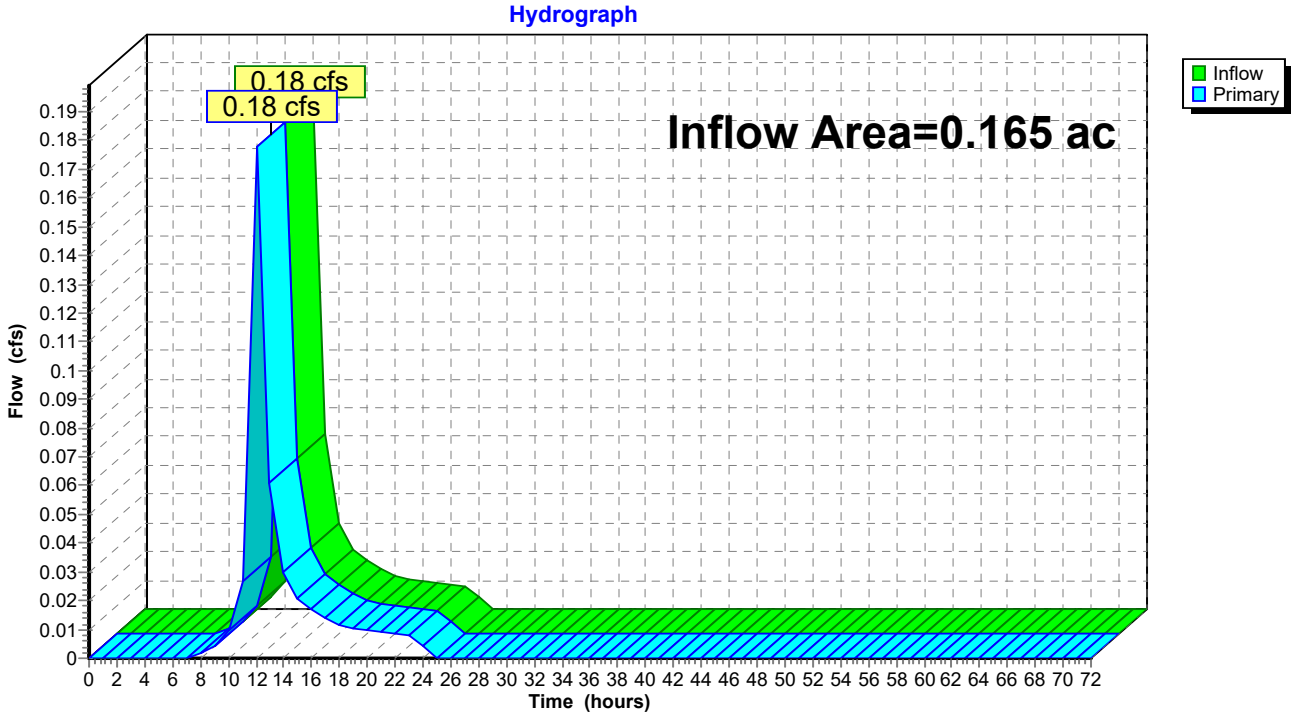


Summary for Link 10L: Proposed

Inflow Area = 0.165 ac, 32.69% Impervious, Inflow Depth = 2.55" for 25-Year-2020 event
Inflow = 0.18 cfs @ 12.06 hrs, Volume= 0.035 af
Primary = 0.18 cfs @ 12.06 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs

Link 10L: Proposed



Time span=0.00-72.00 hrs, dt=1.00 hrs, 73 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing (Disturbed) Runoff Area=5,759 sf 34.83% Impervious Runoff Depth=7.02"
Flow Length=74' Tc=5.3 min CN=74/98 Runoff=0.37 cfs 0.077 af

Subcatchment 2S: Existing (Undisturbed) Runoff Area=1,439 sf 0.00% Impervious Runoff Depth=5.99"
Flow Length=74' Tc=5.3 min CN=74/0 Runoff=0.08 cfs 0.016 af

Subcatchment 3S: Proposed Runoff Area=2,375 sf 99.07% Impervious Runoff Depth=8.91"
Flow Length=74' Tc=5.3 min CN=74/98 Runoff=0.18 cfs 0.040 af

Subcatchment 4S: Bypass Runoff Area=4,824 sf 0.00% Impervious Runoff Depth=5.99"
Flow Length=74' Tc=5.3 min CN=74/0 Runoff=0.28 cfs 0.055 af

Pond 9P: Drywell Peak Elev=97.14' Storage=567 cf Inflow=0.18 cfs 0.040 af
Discarded=0.04 cfs 0.041 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.041 af

Link 10L: Proposed Inflow=0.28 cfs 0.055 af
Primary=0.28 cfs 0.055 af

Total Runoff Area = 0.331 ac Runoff Volume = 0.190 af Average Runoff Depth = 6.89"
69.72% Pervious = 0.230 ac 30.28% Impervious = 0.100 ac

Summary for Subcatchment 1S: Existing (Disturbed)

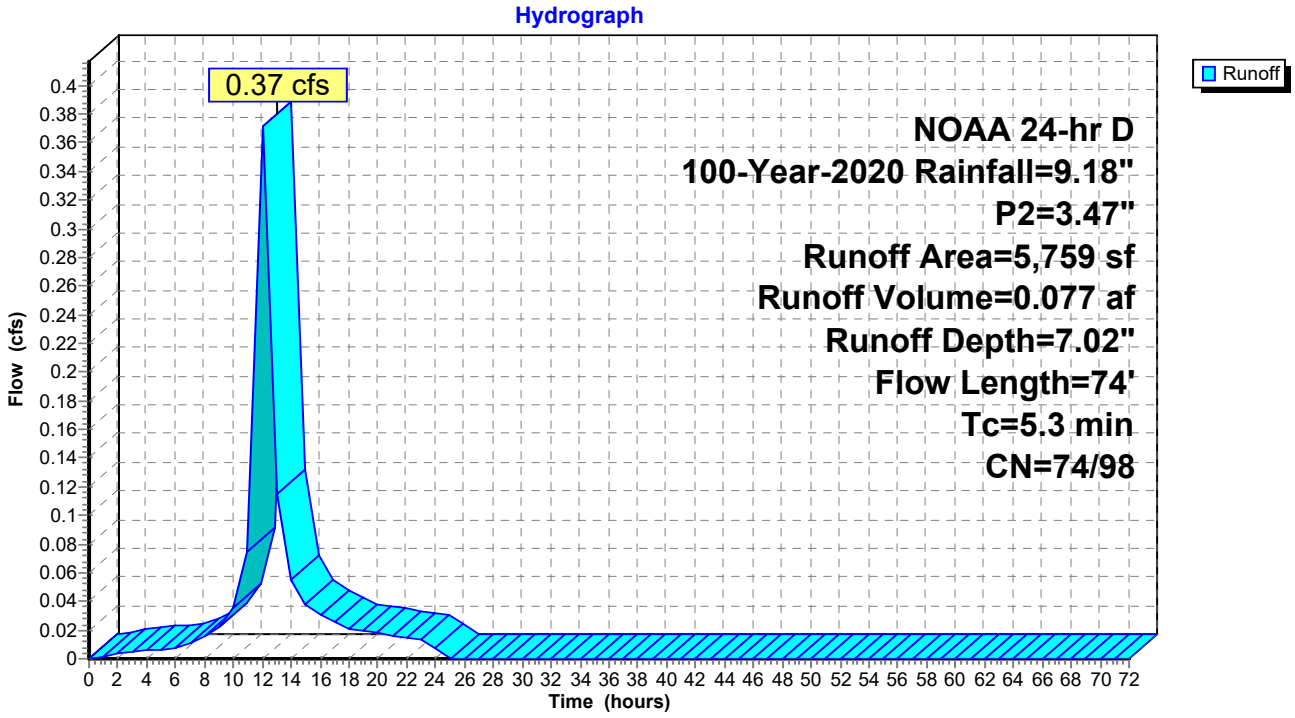
Runoff = 0.37 cfs @ 12.04 hrs, Volume= 0.077 af, Depth= 7.02"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 100-Year-2020 Rainfall=9.18", P2=3.47"

	Area (sf)	CN	Description
	3,753	74	>75% Grass cover, Good, HSG C
	582	98	Water Surface, HSG C
*	1,424	98	Patios & Walks, HSG C
	5,759	82	Weighted Average
	3,753	74	65.17% Pervious Area
	2,006	98	34.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	21	0.2520	0.36		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.0	22	0.0450	0.18		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
2.3	31	0.0650	0.22		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
5.3	74	Total			

Subcatchment 1S: Existing (Disturbed)



Summary for Subcatchment 2S: Existing (Undisturbed)

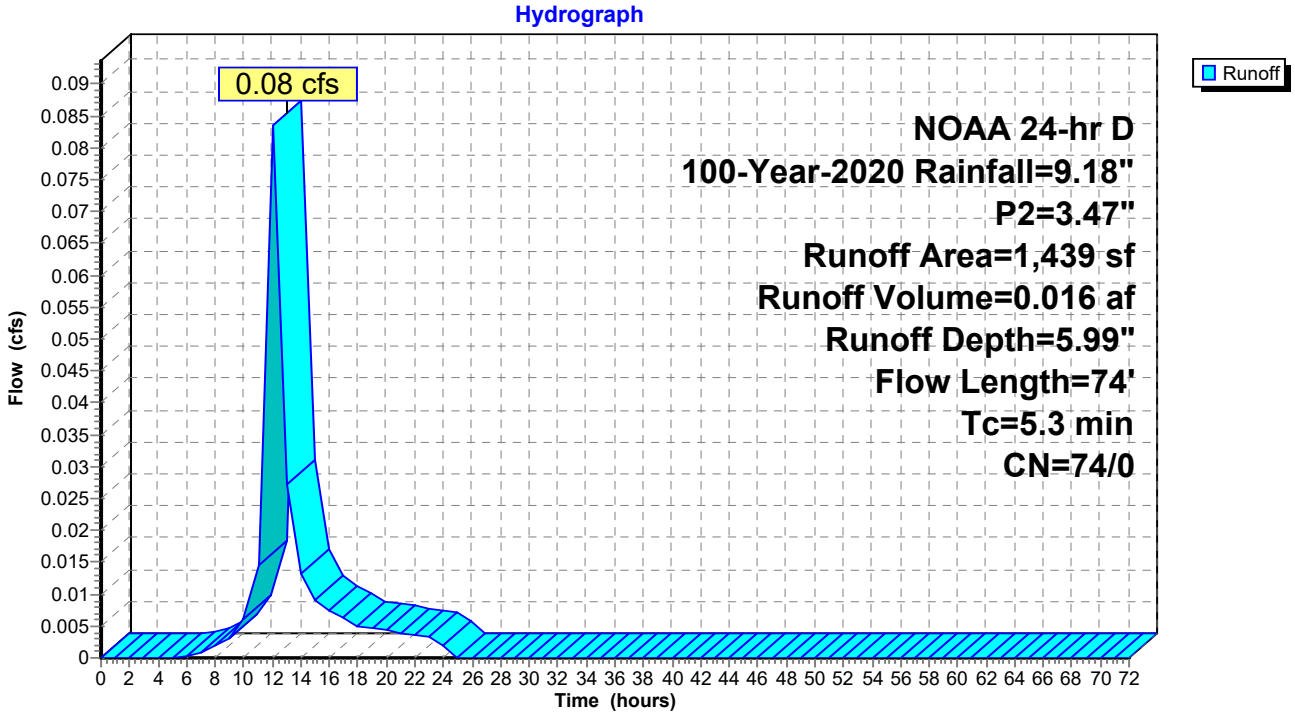
Runoff = 0.08 cfs @ 12.05 hrs, Volume= 0.016 af, Depth= 5.99"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 100-Year-2020 Rainfall=9.18", P2=3.47"

Area (sf)	CN	Description
1,439	74	>75% Grass cover, Good, HSG C
1,439	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	21	0.2520	0.36		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.0	22	0.0450	0.18		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
2.3	31	0.0650	0.22		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
5.3	74	Total			

Subcatchment 2S: Existing (Undisturbed)



Summary for Subcatchment 3S: Proposed

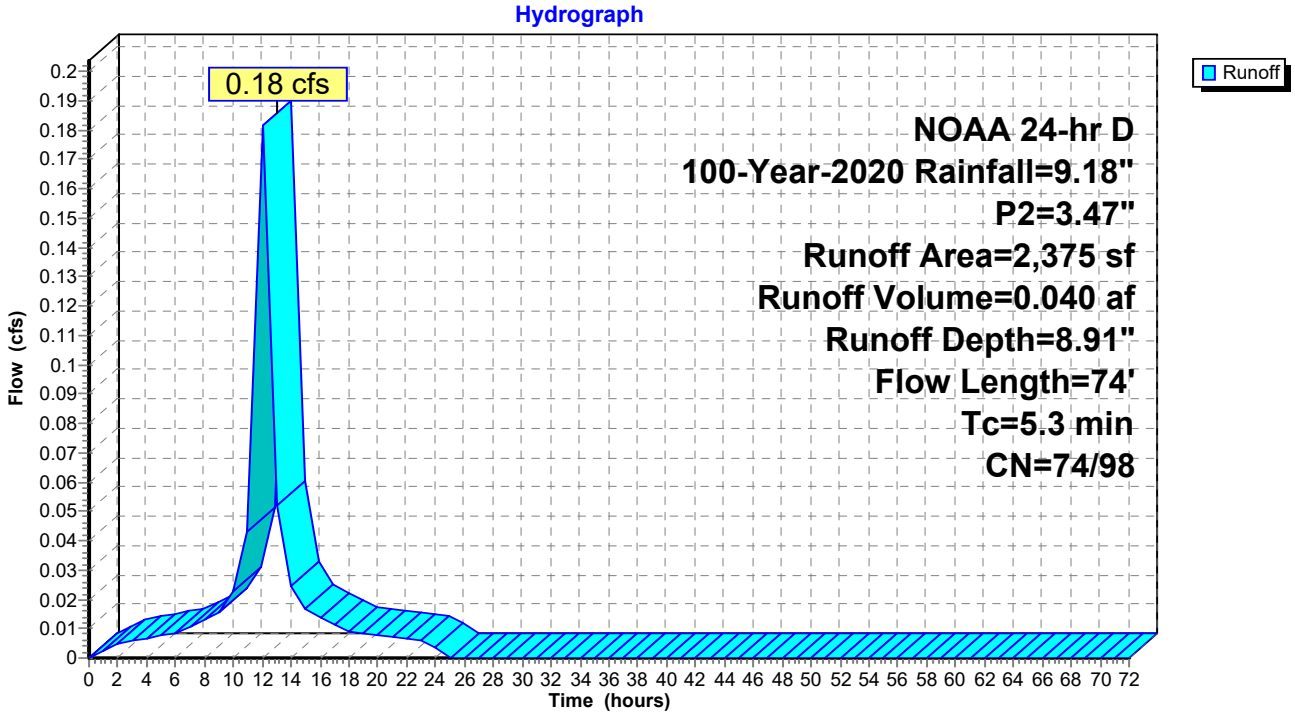
Runoff = 0.18 cfs @ 12.02 hrs, Volume= 0.040 af, Depth= 8.91"
Routed to Pond 9P : Drywell

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 100-Year-2020 Rainfall=9.18", P2=3.47"

	Area (sf)	CN	Description
	22	74	>75% Grass cover, Good, HSG C
*	85	98	Walk, HSG C
	1,988	98	Roofs, HSG B
*	280	98	Driveway, HSG C
	2,375	98	Weighted Average
	22	74	0.93% Pervious Area
	2,353	98	99.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	21	0.2520	0.36		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.0	22	0.0450	0.18		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
2.3	31	0.0650	0.22		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
5.3	74	Total			

Subcatchment 3S: Proposed



Summary for Subcatchment 4S: Bypass

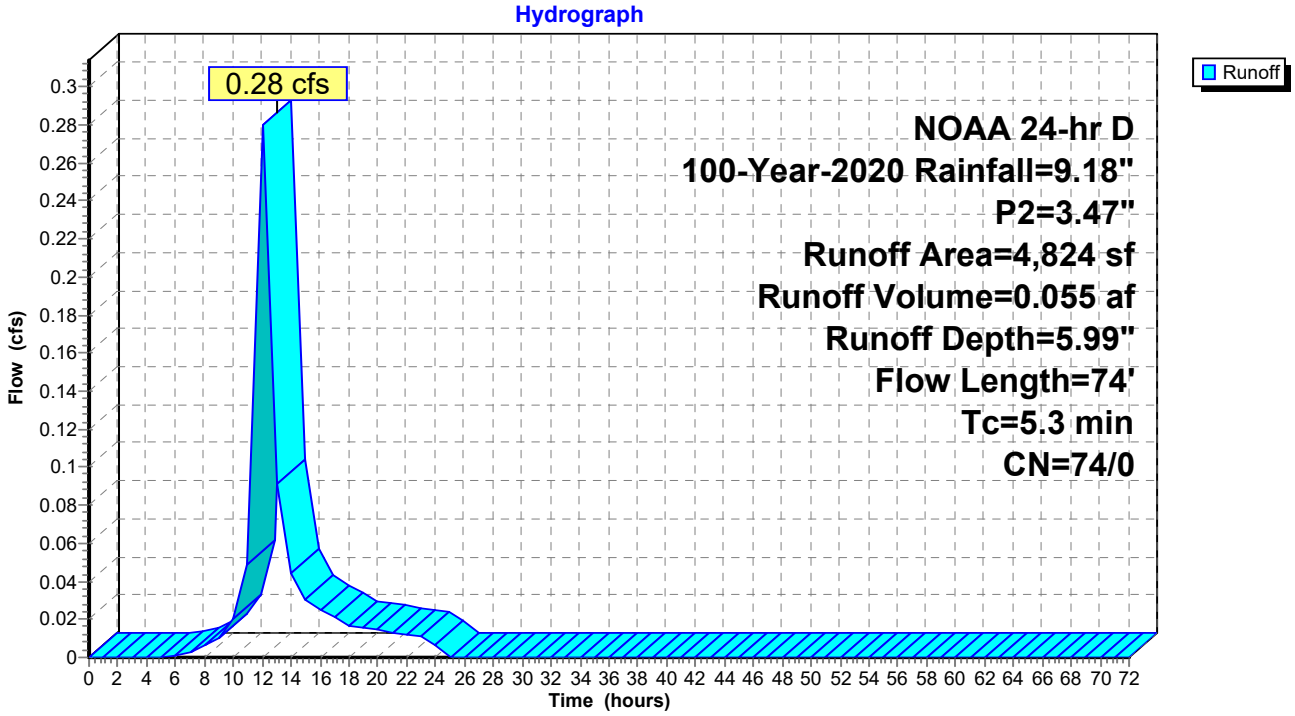
Runoff = 0.28 cfs @ 12.05 hrs, Volume= 0.055 af, Depth= 5.99"
Routed to Link 10L : Proposed

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 100-Year-2020 Rainfall=9.18", P2=3.47"

Area (sf)	CN	Description
4,824	74	>75% Grass cover, Good, HSG C
4,824	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	21	0.2520	0.36		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.0	22	0.0450	0.18		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
2.3	31	0.0650	0.22		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
5.3	74	Total			

Subcatchment 4S: Bypass



Summary for Pond 9P: Drywell

Inflow Area = 0.055 ac, 99.07% Impervious, Inflow Depth = 8.91" for 100-Year-2020 event
Inflow = 0.18 cfs @ 12.02 hrs, Volume= 0.040 af
Outflow = 0.04 cfs @ 12.00 hrs, Volume= 0.041 af, Atten= 77%, Lag= 0.0 min
Discarded = 0.04 cfs @ 12.00 hrs, Volume= 0.041 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 10L : Proposed

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs
Peak Elev= 97.14' @ 13.46 hrs Surf.Area= 225 sf Storage= 567 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 94.2 min (833.4 - 739.2)

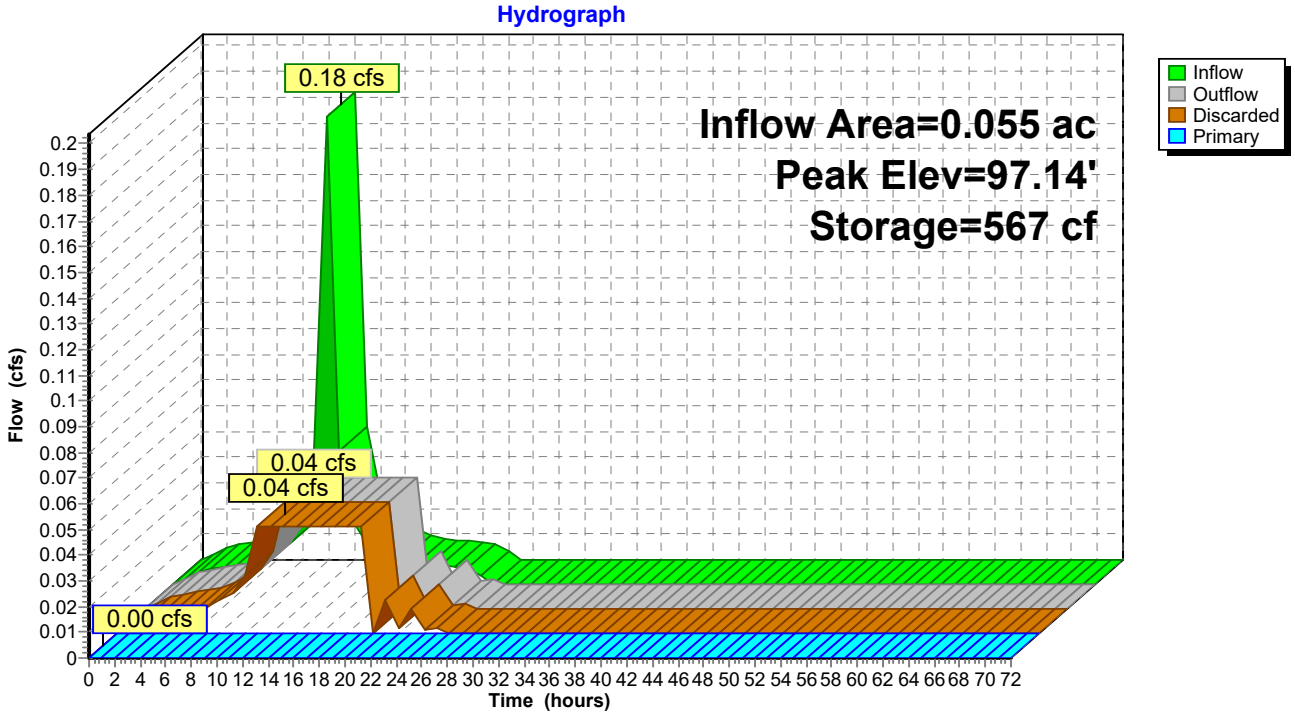
Volume	Invert	Avail.Storage	Storage Description
#1	93.83'	302 cf	**8.00'D x 6.00'H Drywell** Inside #2 354 cf Overall - 4.0" Wall Thickness = 302 cf
#2	91.83'	578 cf	**15.00'W x 15.00'L x 8.00'H Stone** 1,800 cf Overall - 354 cf Embedded = 1,446 cf x 40.0% Voids
#3	99.83'	5 cf	**2.00'D x 1.67'H Vertical Cone/Cylinder**
		885 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	91.83'	**8.000 in/hr Exfiltration over Surface area**
#2	Primary	101.50'	**24.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.04 cfs @ 12.00 hrs HW=94.57' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=91.83' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 9P: Drywell

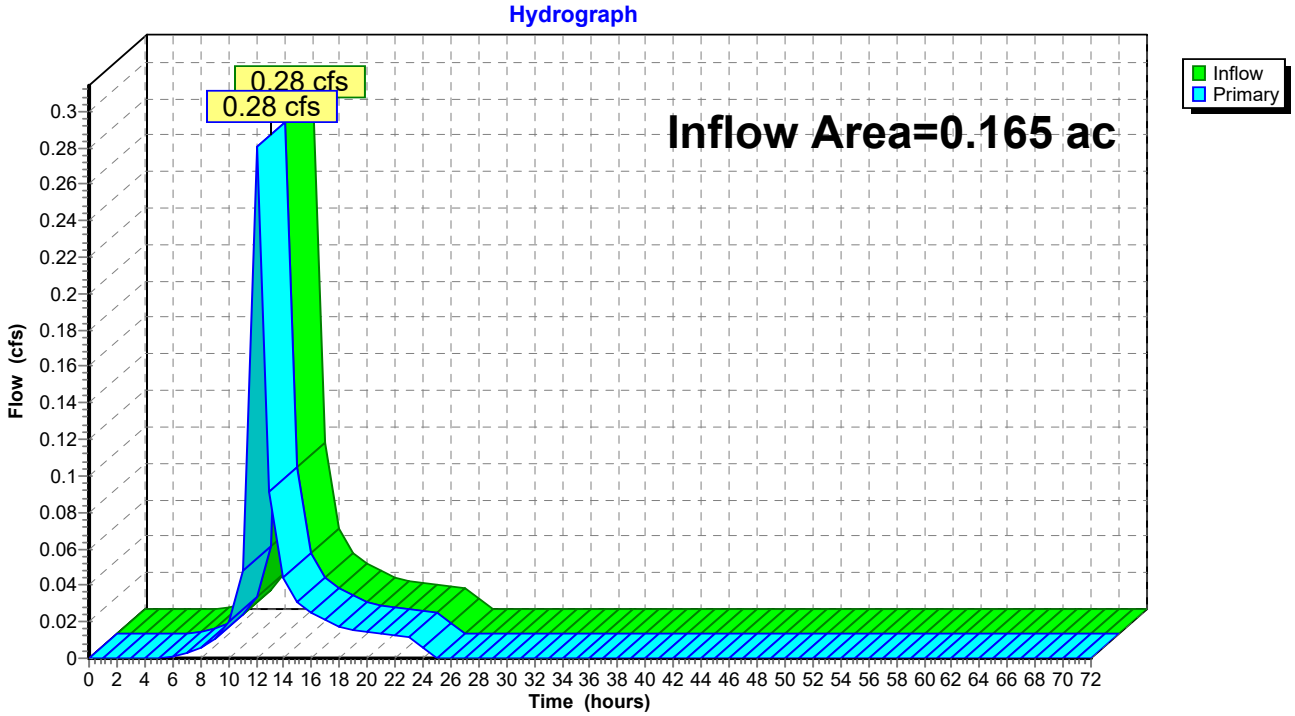


Summary for Link 10L: Proposed

Inflow Area = 0.165 ac, 32.69% Impervious, Inflow Depth = 4.02" for 100-Year-2020 event
Inflow = 0.28 cfs @ 12.05 hrs, Volume= 0.055 af
Primary = 0.28 cfs @ 12.05 hrs, Volume= 0.055 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs

Link 10L: Proposed



Time span=0.00-72.00 hrs, dt=1.00 hrs, 73 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing (Disturbed) Runoff Area=5,759 sf 34.83% Impervious Runoff Depth=2.43"
Flow Length=74' Tc=4.9 min CN=74/98 Runoff=0.13 cfs 0.027 af

Subcatchment 2S: Existing (Undisturbed) Runoff Area=1,439 sf 0.00% Impervious Runoff Depth=1.66"
Flow Length=74' Tc=4.9 min CN=74/0 Runoff=0.02 cfs 0.005 af

Subcatchment 3S: Proposed Runoff Area=2,375 sf 99.07% Impervious Runoff Depth=3.83"
Flow Length=74' Tc=4.9 min CN=74/98 Runoff=0.08 cfs 0.017 af

Subcatchment 4S: Bypass Runoff Area=4,824 sf 0.00% Impervious Runoff Depth=1.66"
Flow Length=74' Tc=4.9 min CN=74/0 Runoff=0.08 cfs 0.015 af

Pond 9P: Drywell Peak Elev=93.10' Storage=114 cf Inflow=0.08 cfs 0.017 af
Discarded=0.04 cfs 0.018 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.018 af

Link 10L: Proposed Inflow=0.08 cfs 0.015 af
Primary=0.08 cfs 0.015 af

Total Runoff Area = 0.331 ac Runoff Volume = 0.064 af Average Runoff Depth = 2.33"
69.72% Pervious = 0.230 ac 30.28% Impervious = 0.100 ac

Summary for Subcatchment 1S: Existing (Disturbed)

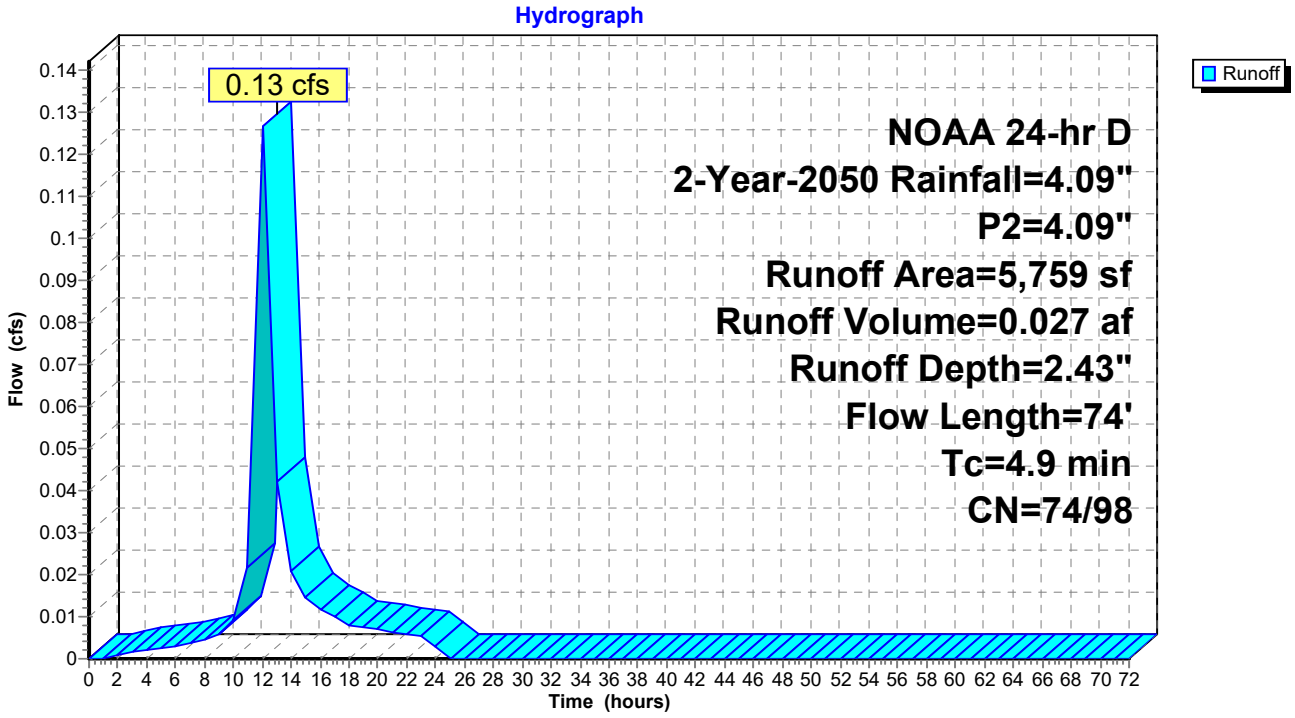
Runoff = 0.13 cfs @ 12.05 hrs, Volume= 0.027 af, Depth= 2.43"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 2-Year-2050 Rainfall=4.09", P2=4.09"

	Area (sf)	CN	Description
	3,753	74	>75% Grass cover, Good, HSG C
	582	98	Water Surface, HSG C
*	1,424	98	Patios & Walks, HSG C
	5,759	82	Weighted Average
	3,753	74	65.17% Pervious Area
	2,006	98	34.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2520	0.39		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	22	0.0450	0.20		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
2.1	31	0.0650	0.24		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
4.9	74	Total			

Subcatchment 1S: Existing (Disturbed)



Summary for Subcatchment 2S: Existing (Undisturbed)

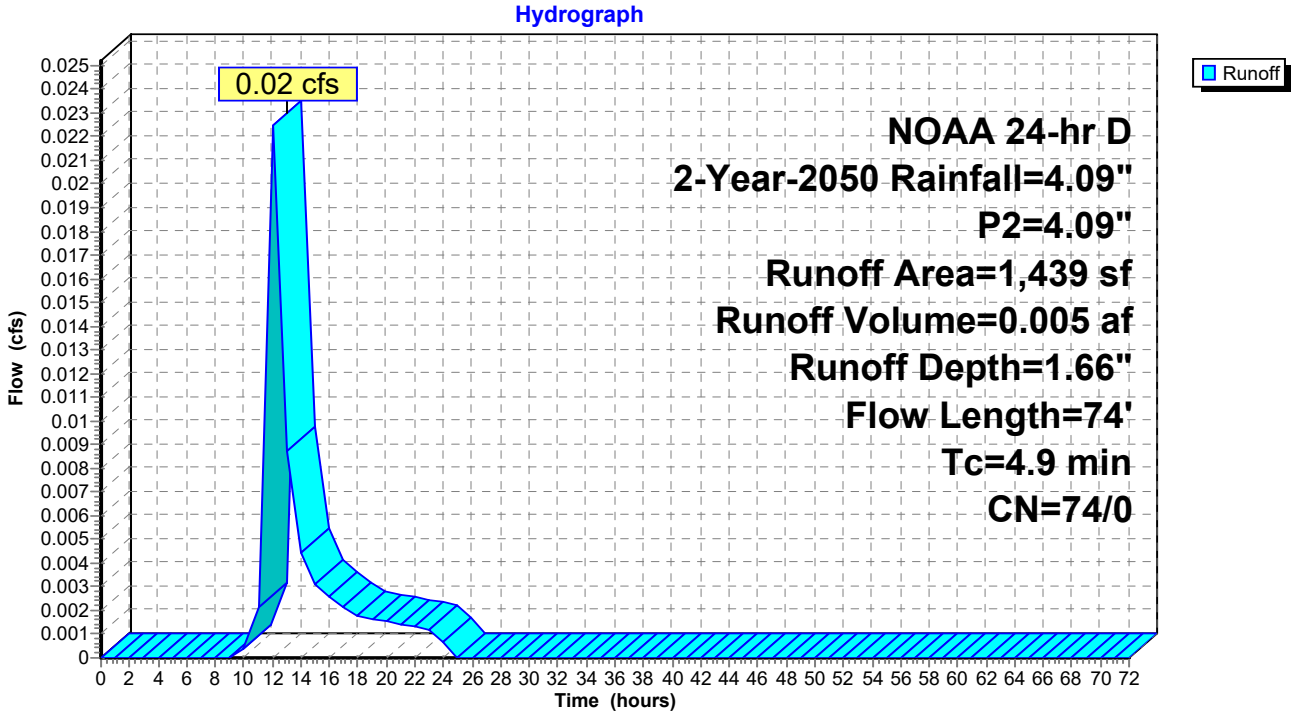
Runoff = 0.02 cfs @ 12.10 hrs, Volume= 0.005 af, Depth= 1.66"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 2-Year-2050 Rainfall=4.09", P2=4.09"

Area (sf)	CN	Description
1,439	74	>75% Grass cover, Good, HSG C
1,439	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2520	0.39		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	22	0.0450	0.20		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
2.1	31	0.0650	0.24		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
4.9	74	Total			

Subcatchment 2S: Existing (Undisturbed)



Summary for Subcatchment 3S: Proposed

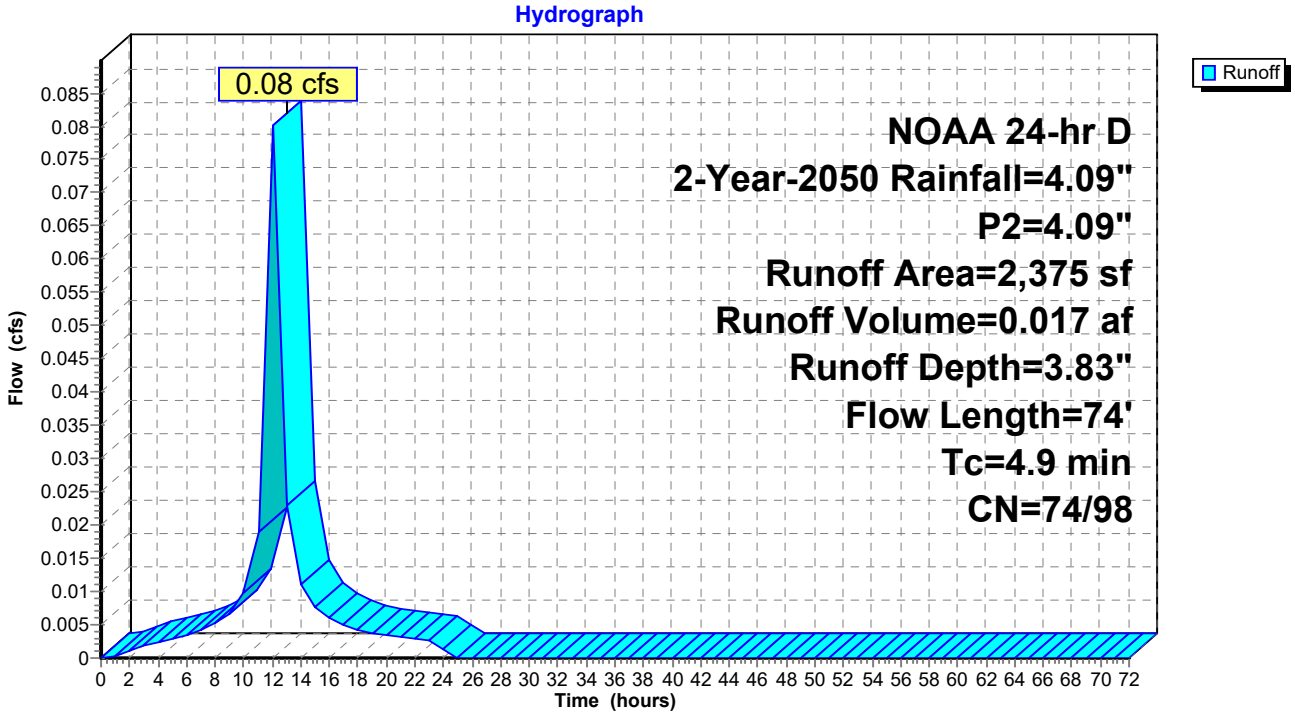
Runoff = 0.08 cfs @ 12.02 hrs, Volume= 0.017 af, Depth= 3.83"
Routed to Pond 9P : Drywell

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 2-Year-2050 Rainfall=4.09", P2=4.09"

	Area (sf)	CN	Description
	22	74	>75% Grass cover, Good, HSG C
*	85	98	Walk, HSG C
	1,988	98	Roofs, HSG B
*	280	98	Driveway, HSG C
	2,375	98	Weighted Average
	22	74	0.93% Pervious Area
	2,353	98	99.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2520	0.39		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	22	0.0450	0.20		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
2.1	31	0.0650	0.24		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
4.9	74	Total			

Subcatchment 3S: Proposed



Summary for Subcatchment 4S: Bypass

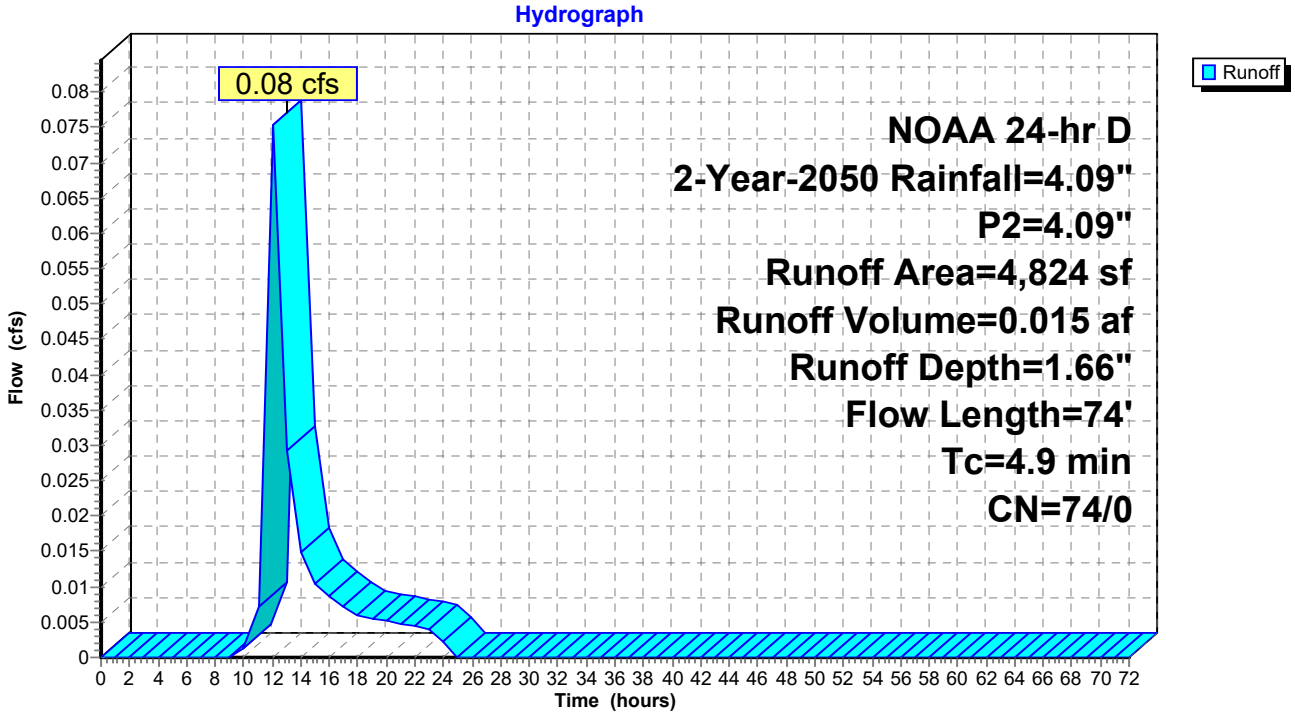
Runoff = 0.08 cfs @ 12.10 hrs, Volume= 0.015 af, Depth= 1.66"
Routed to Link 10L : Proposed

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 2-Year-2050 Rainfall=4.09", P2=4.09"

Area (sf)	CN	Description
4,824	74	>75% Grass cover, Good, HSG C
4,824	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2520	0.39		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	22	0.0450	0.20		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
2.1	31	0.0650	0.24		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
4.9	74	Total			

Subcatchment 4S: Bypass



Summary for Pond 9P: Drywell

Inflow Area = 0.055 ac, 99.07% Impervious, Inflow Depth = 3.83" for 2-Year-2050 event
Inflow = 0.08 cfs @ 12.02 hrs, Volume= 0.017 af
Outflow = 0.04 cfs @ 12.00 hrs, Volume= 0.018 af, Atten= 48%, Lag= 0.0 min
Discarded = 0.04 cfs @ 12.00 hrs, Volume= 0.018 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 10L : Proposed

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs
Peak Elev= 93.10' @ 12.78 hrs Surf.Area= 225 sf Storage= 114 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 21.6 min (773.1 - 751.6)

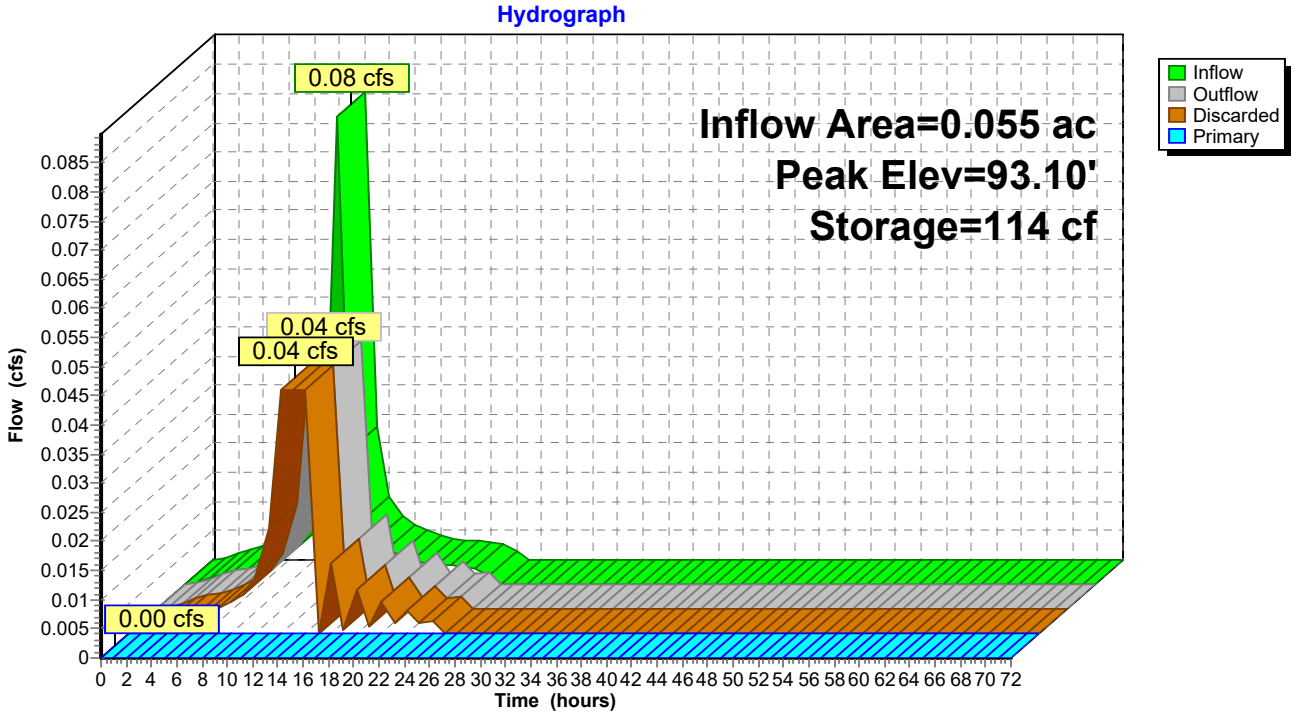
Volume	Invert	Avail.Storage	Storage Description
#1	93.83'	302 cf	**8.00'D x 6.00'H Drywell** Inside #2 354 cf Overall - 4.0" Wall Thickness = 302 cf
#2	91.83'	578 cf	**15.00'W x 15.00'L x 8.00'H Stone** 1,800 cf Overall - 354 cf Embedded = 1,446 cf x 40.0% Voids
#3	99.83'	5 cf	**2.00'D x 1.67'H Vertical Cone/Cylinder**
		885 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	91.83'	**8.000 in/hr Exfiltration over Surface area**
#2	Primary	101.50'	**24.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.04 cfs @ 12.00 hrs HW=92.67' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=91.83' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 9P: Drywell

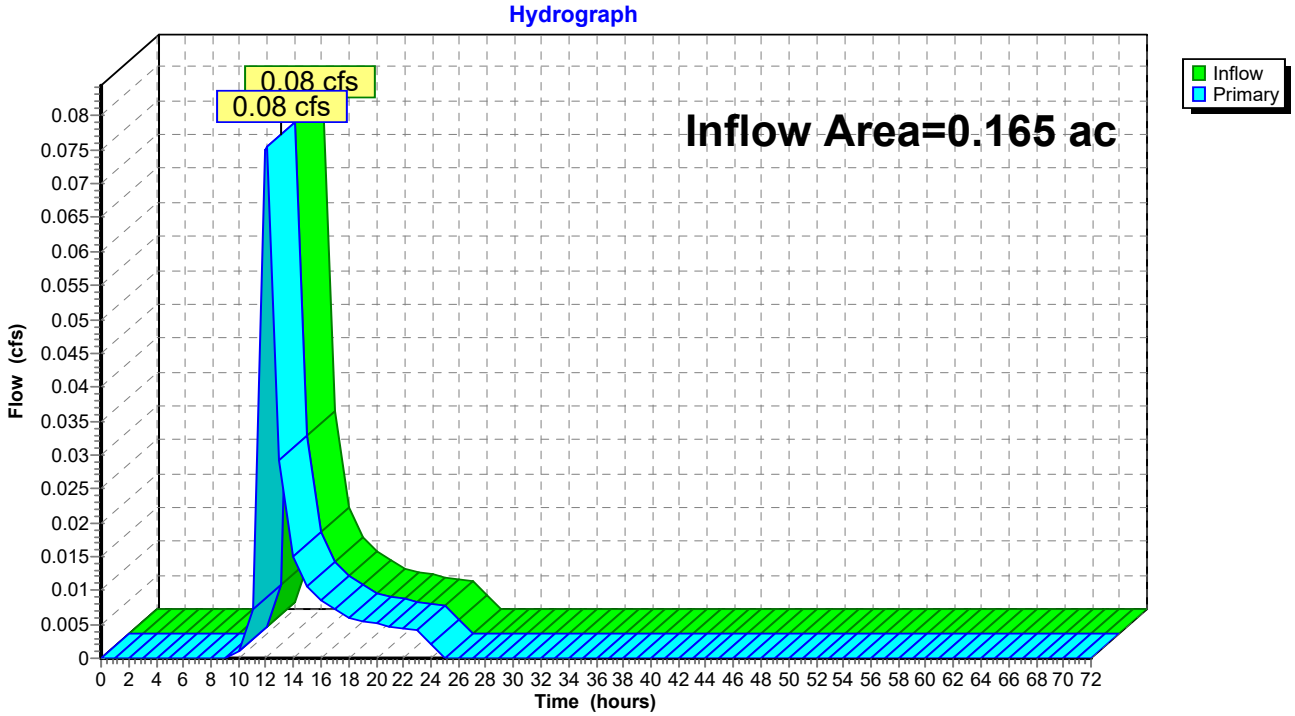


Summary for Link 10L: Proposed

Inflow Area = 0.165 ac, 32.69% Impervious, Inflow Depth = 1.11" for 2-Year-2050 event
Inflow = 0.08 cfs @ 12.10 hrs, Volume= 0.015 af
Primary = 0.08 cfs @ 12.10 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs

Link 10L: Proposed



Time span=0.00-72.00 hrs, dt=1.00 hrs, 73 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing (Disturbed) Runoff Area=5,759 sf 34.83% Impervious Runoff Depth=4.42"
Flow Length=74' Tc=4.9 min CN=74/98 Runoff=0.23 cfs 0.049 af

Subcatchment 2S: Existing (Undisturbed) Runoff Area=1,439 sf 0.00% Impervious Runoff Depth=3.50"
Flow Length=74' Tc=4.9 min CN=74/0 Runoff=0.05 cfs 0.010 af

Subcatchment 3S: Proposed Runoff Area=2,375 sf 99.07% Impervious Runoff Depth=6.11"
Flow Length=74' Tc=4.9 min CN=74/98 Runoff=0.13 cfs 0.028 af

Subcatchment 4S: Bypass Runoff Area=4,824 sf 0.00% Impervious Runoff Depth=3.50"
Flow Length=74' Tc=4.9 min CN=74/0 Runoff=0.16 cfs 0.032 af

Pond 9P: Drywell Peak Elev=94.92' Storage=307 cf Inflow=0.13 cfs 0.028 af
Discarded=0.04 cfs 0.028 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.028 af

Link 10L: Proposed Inflow=0.16 cfs 0.032 af
Primary=0.16 cfs 0.032 af

Total Runoff Area = 0.331 ac Runoff Volume = 0.118 af Average Runoff Depth = 4.30"
69.72% Pervious = 0.230 ac 30.28% Impervious = 0.100 ac

Summary for Subcatchment 1S: Existing (Disturbed)

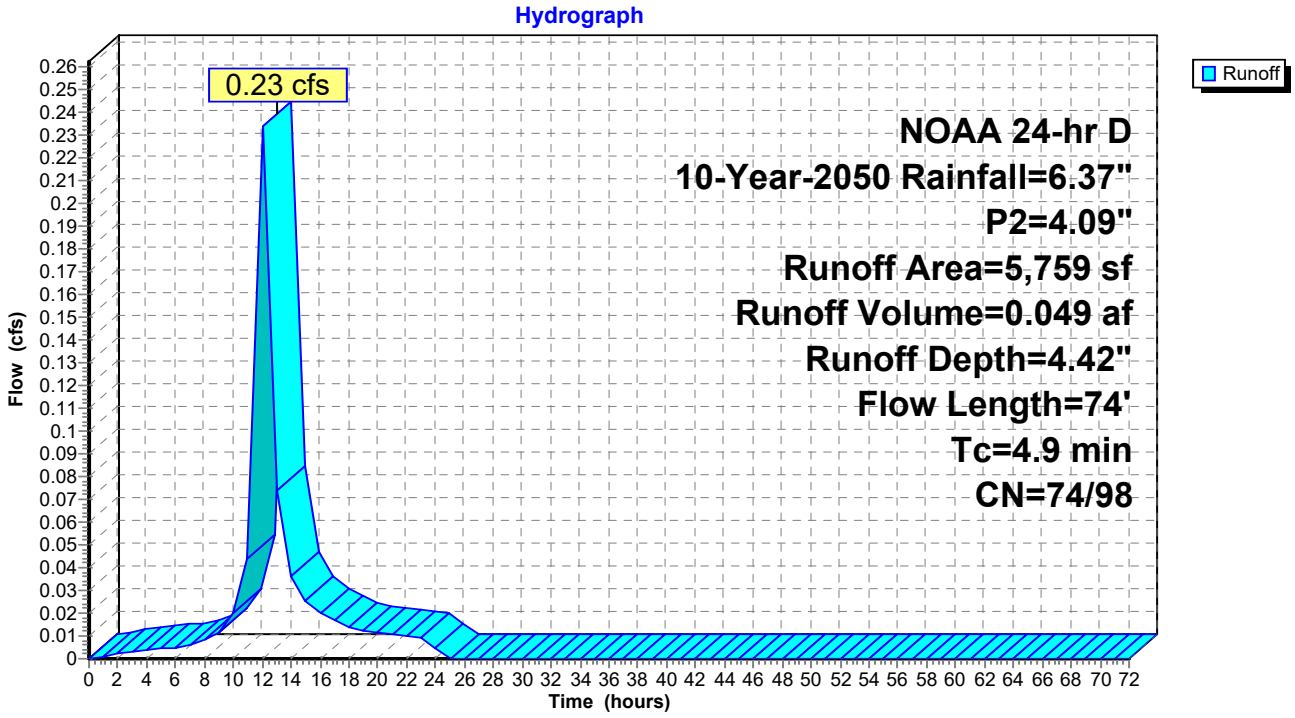
Runoff = 0.23 cfs @ 12.04 hrs, Volume= 0.049 af, Depth= 4.42"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 10-Year-2050 Rainfall=6.37", P2=4.09"

	Area (sf)	CN	Description
	3,753	74	>75% Grass cover, Good, HSG C
	582	98	Water Surface, HSG C
*	1,424	98	Patios & Walks, HSG C
	5,759	82	Weighted Average
	3,753	74	65.17% Pervious Area
	2,006	98	34.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2520	0.39		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	22	0.0450	0.20		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
2.1	31	0.0650	0.24		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
4.9	74	Total			

Subcatchment 1S: Existing (Disturbed)



Summary for Subcatchment 2S: Existing (Undisturbed)

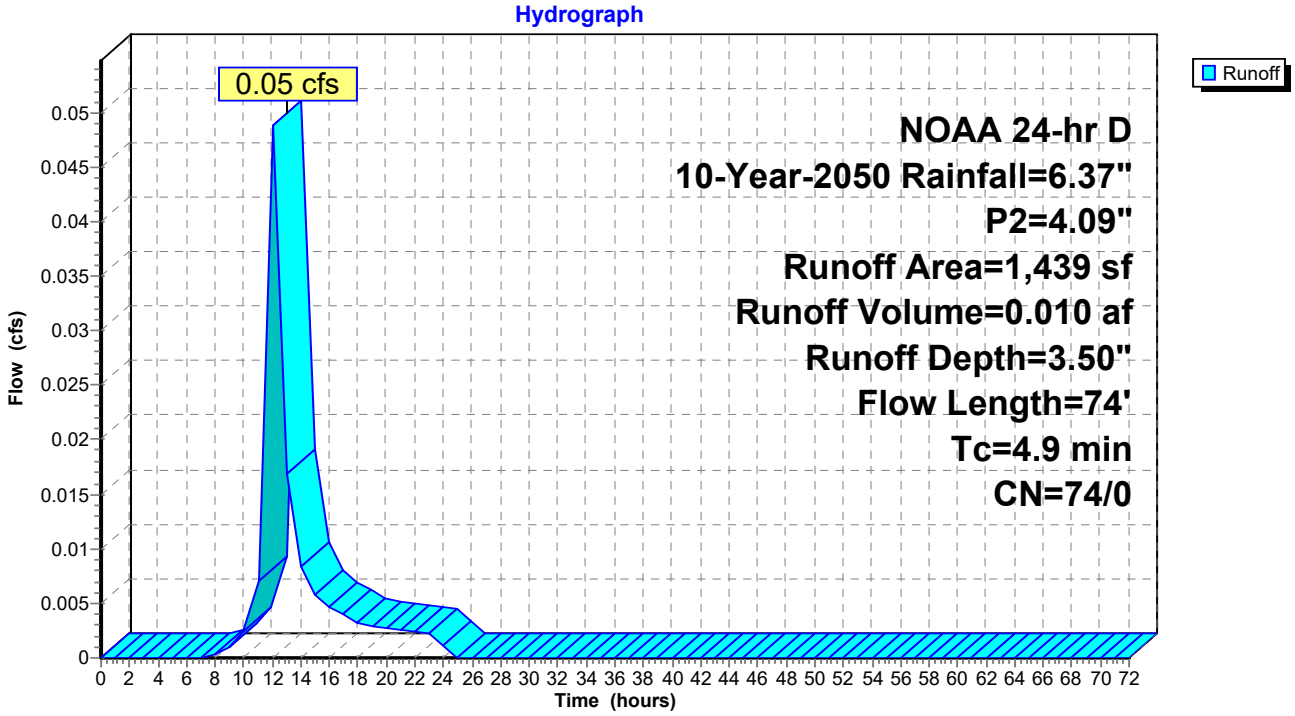
Runoff = 0.05 cfs @ 12.07 hrs, Volume= 0.010 af, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 10-Year-2050 Rainfall=6.37", P2=4.09"

Area (sf)	CN	Description
1,439	74	>75% Grass cover, Good, HSG C
1,439	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2520	0.39		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	22	0.0450	0.20		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
2.1	31	0.0650	0.24		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
4.9	74	Total			

Subcatchment 2S: Existing (Undisturbed)



Summary for Subcatchment 3S: Proposed

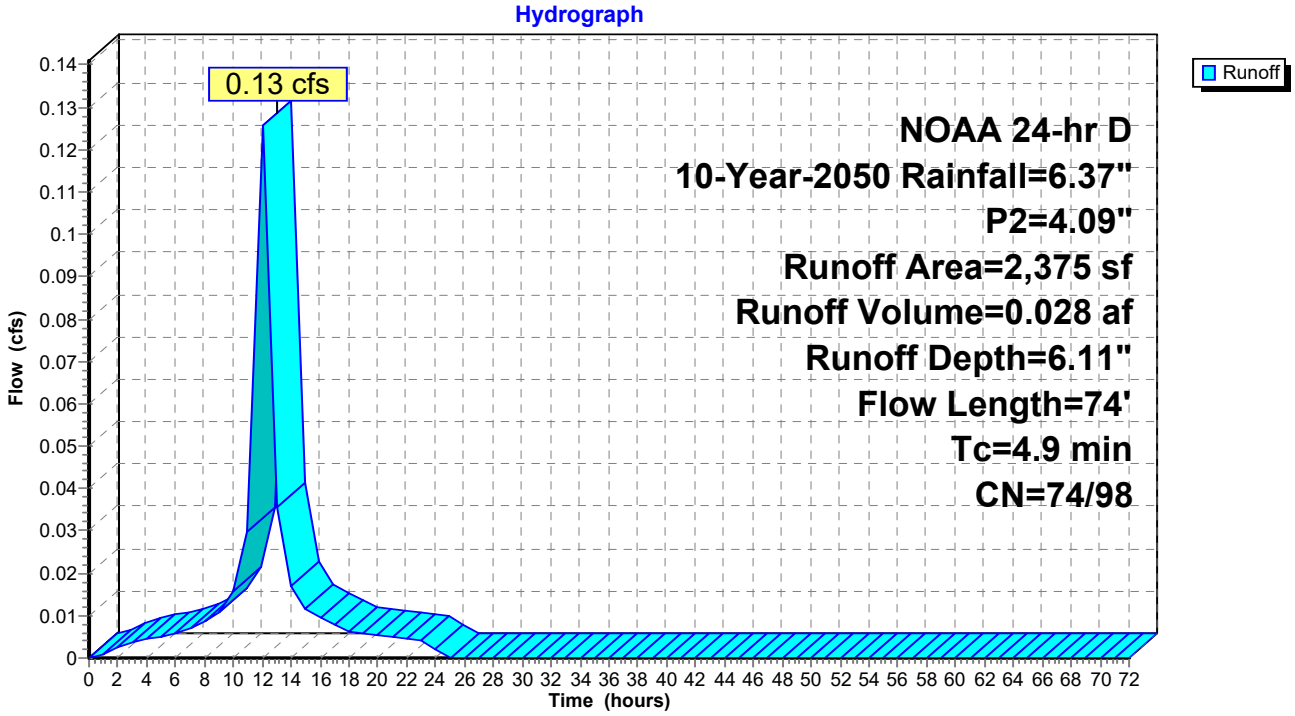
Runoff = 0.13 cfs @ 12.02 hrs, Volume= 0.028 af, Depth= 6.11"
Routed to Pond 9P : Drywell

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 10-Year-2050 Rainfall=6.37", P2=4.09"

	Area (sf)	CN	Description
	22	74	>75% Grass cover, Good, HSG C
*	85	98	Walk, HSG C
	1,988	98	Roofs, HSG B
*	280	98	Driveway, HSG C
	2,375	98	Weighted Average
	22	74	0.93% Pervious Area
	2,353	98	99.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2520	0.39		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	22	0.0450	0.20		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
2.1	31	0.0650	0.24		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
4.9	74	Total			

Subcatchment 3S: Proposed



Summary for Subcatchment 4S: Bypass

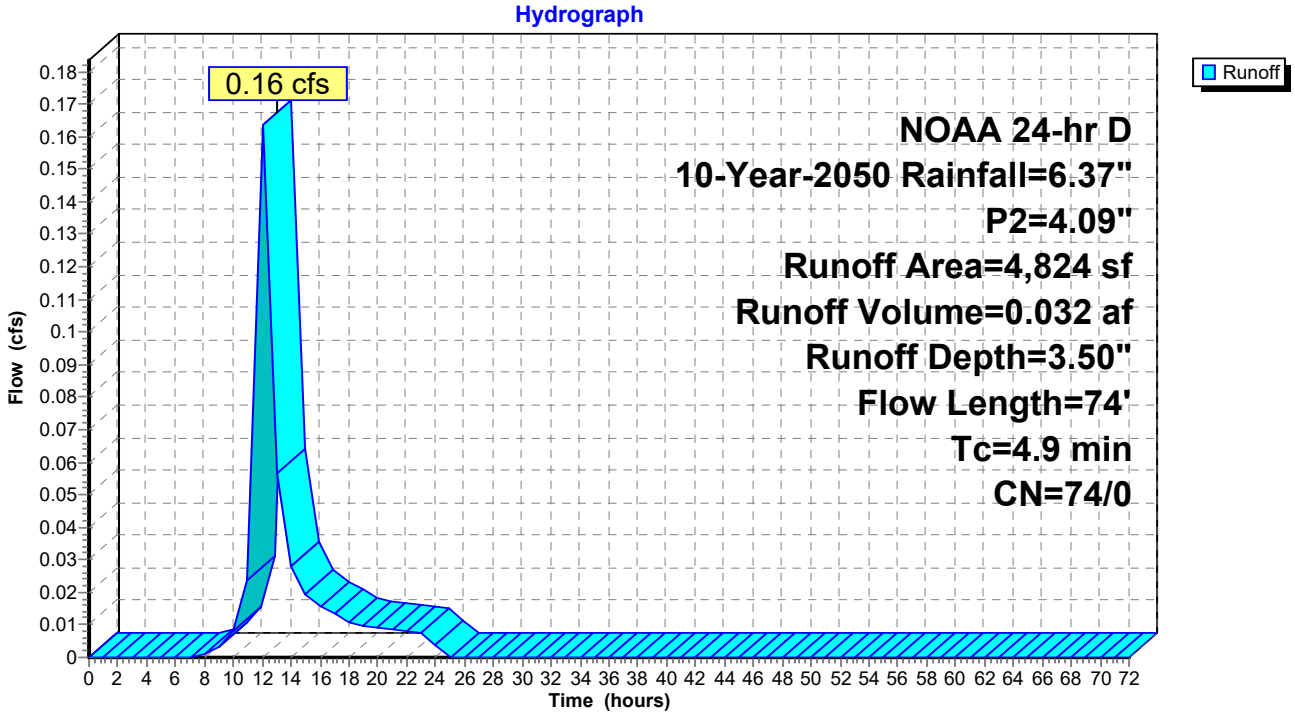
Runoff = 0.16 cfs @ 12.07 hrs, Volume= 0.032 af, Depth= 3.50"
Routed to Link 10L : Proposed

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 10-Year-2050 Rainfall=6.37", P2=4.09"

Area (sf)	CN	Description
4,824	74	>75% Grass cover, Good, HSG C
4,824	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2520	0.39		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	22	0.0450	0.20		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
2.1	31	0.0650	0.24		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
4.9	74	Total			

Subcatchment 4S: Bypass



Summary for Pond 9P: Drywell

Inflow Area = 0.055 ac, 99.07% Impervious, Inflow Depth = 6.11" for 10-Year-2050 event
Inflow = 0.13 cfs @ 12.02 hrs, Volume= 0.028 af
Outflow = 0.04 cfs @ 12.00 hrs, Volume= 0.028 af, Atten= 67%, Lag= 0.0 min
Discarded = 0.04 cfs @ 12.00 hrs, Volume= 0.028 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 10L : Proposed

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs
Peak Elev= 94.92' @ 13.23 hrs Surf.Area= 225 sf Storage= 307 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 48.1 min (791.9 - 743.8)

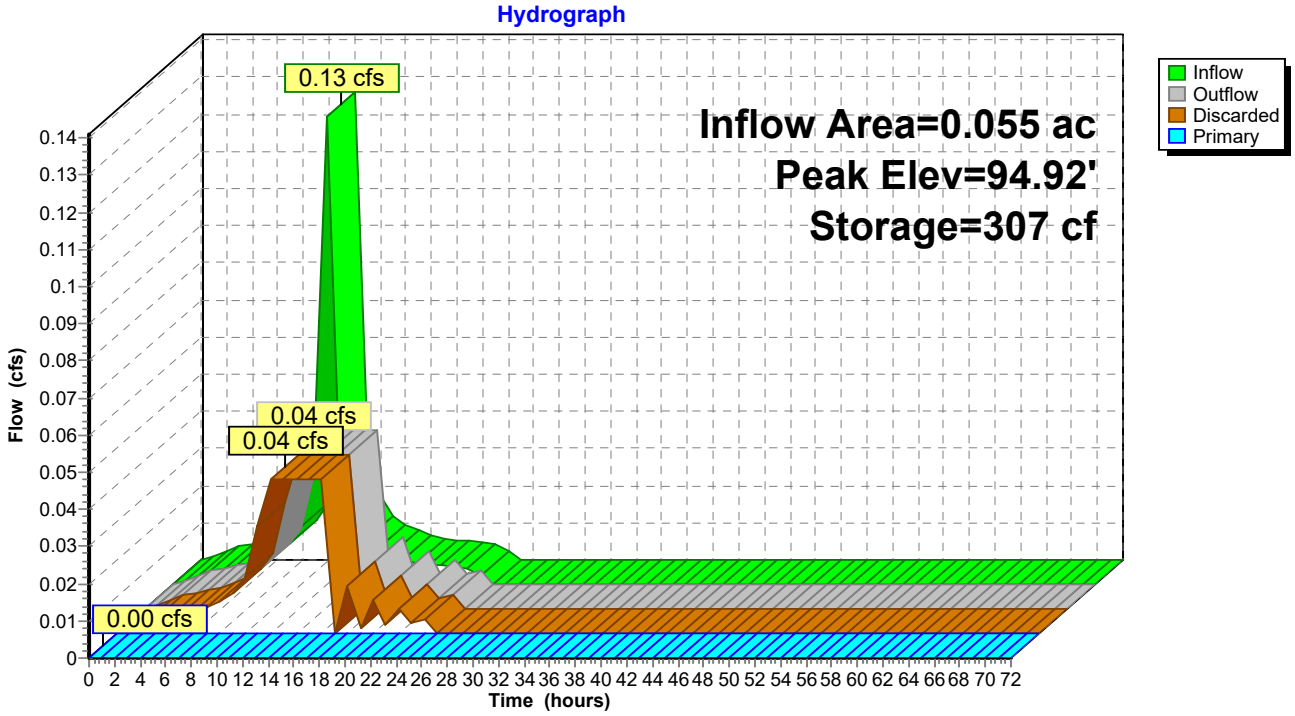
Volume	Invert	Avail.Storage	Storage Description
#1	93.83'	302 cf	**8.00'D x 6.00'H Drywell** Inside #2 354 cf Overall - 4.0" Wall Thickness = 302 cf
#2	91.83'	578 cf	**15.00'W x 15.00'L x 8.00'H Stone** 1,800 cf Overall - 354 cf Embedded = 1,446 cf x 40.0% Voids
#3	99.83'	5 cf	**2.00'D x 1.67'H Vertical Cone/Cylinder**
		885 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	91.83'	**8.000 in/hr Exfiltration over Surface area**
#2	Primary	101.50'	**24.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.04 cfs @ 12.00 hrs HW=93.62' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=91.83' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 9P: Drywell

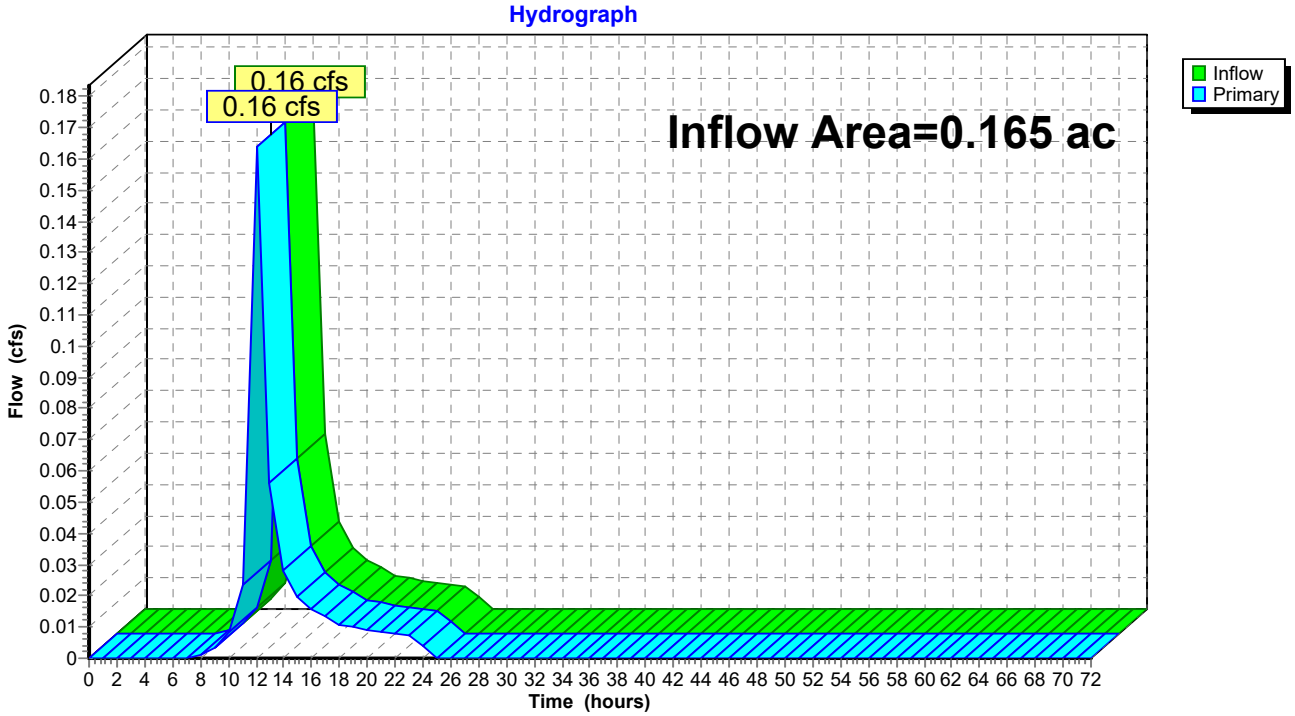


Summary for Link 10L: Proposed

Inflow Area = 0.165 ac, 32.69% Impervious, Inflow Depth = 2.34" for 10-Year-2050 event
Inflow = 0.16 cfs @ 12.07 hrs, Volume= 0.032 af
Primary = 0.16 cfs @ 12.07 hrs, Volume= 0.032 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs

Link 10L: Proposed



Time span=0.00-72.00 hrs, dt=1.00 hrs, 73 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing (Disturbed) Runoff Area=5,759 sf 34.83% Impervious Runoff Depth=5.99"
Flow Length=74' Tc=4.9 min CN=74/98 Runoff=0.32 cfs 0.066 af

Subcatchment 2S: Existing (Undisturbed) Runoff Area=1,439 sf 0.00% Impervious Runoff Depth=5.00"
Flow Length=74' Tc=4.9 min CN=74/0 Runoff=0.07 cfs 0.014 af

Subcatchment 3S: Proposed Runoff Area=2,375 sf 99.07% Impervious Runoff Depth=7.81"
Flow Length=74' Tc=4.9 min CN=74/98 Runoff=0.16 cfs 0.036 af

Subcatchment 4S: Bypass Runoff Area=4,824 sf 0.00% Impervious Runoff Depth=5.00"
Flow Length=74' Tc=4.9 min CN=74/0 Runoff=0.23 cfs 0.046 af

Pond 9P: Drywell Peak Elev=96.26' Storage=463 cf Inflow=0.16 cfs 0.036 af
Discarded=0.04 cfs 0.036 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.036 af

Link 10L: Proposed Inflow=0.23 cfs 0.046 af
Primary=0.23 cfs 0.046 af

Total Runoff Area = 0.331 ac Runoff Volume = 0.161 af Average Runoff Depth = 5.86"
69.72% Pervious = 0.230 ac 30.28% Impervious = 0.100 ac

Summary for Subcatchment 1S: Existing (Disturbed)

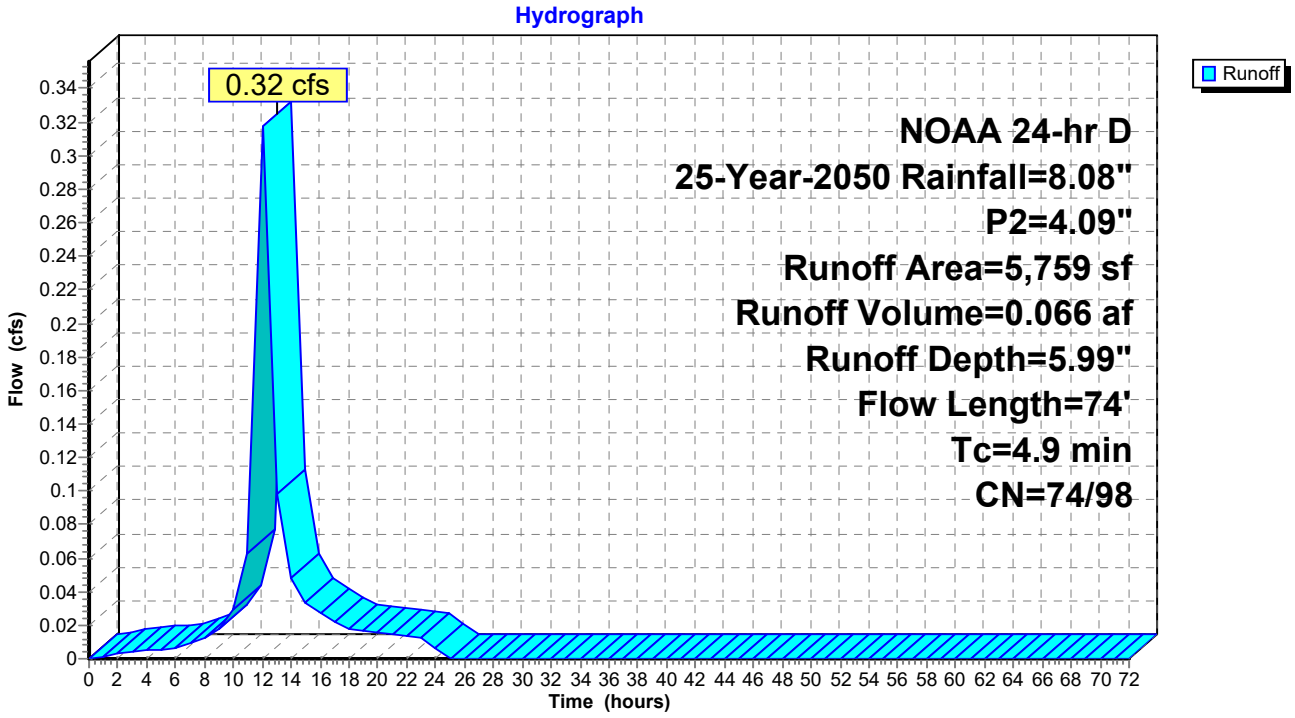
Runoff = 0.32 cfs @ 12.04 hrs, Volume= 0.066 af, Depth= 5.99"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 25-Year-2050 Rainfall=8.08", P2=4.09"

	Area (sf)	CN	Description
	3,753	74	>75% Grass cover, Good, HSG C
	582	98	Water Surface, HSG C
*	1,424	98	Patios & Walks, HSG C
	5,759	82	Weighted Average
	3,753	74	65.17% Pervious Area
	2,006	98	34.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2520	0.39		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	22	0.0450	0.20		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
2.1	31	0.0650	0.24		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
4.9	74	Total			

Subcatchment 1S: Existing (Disturbed)



Summary for Subcatchment 2S: Existing (Undisturbed)

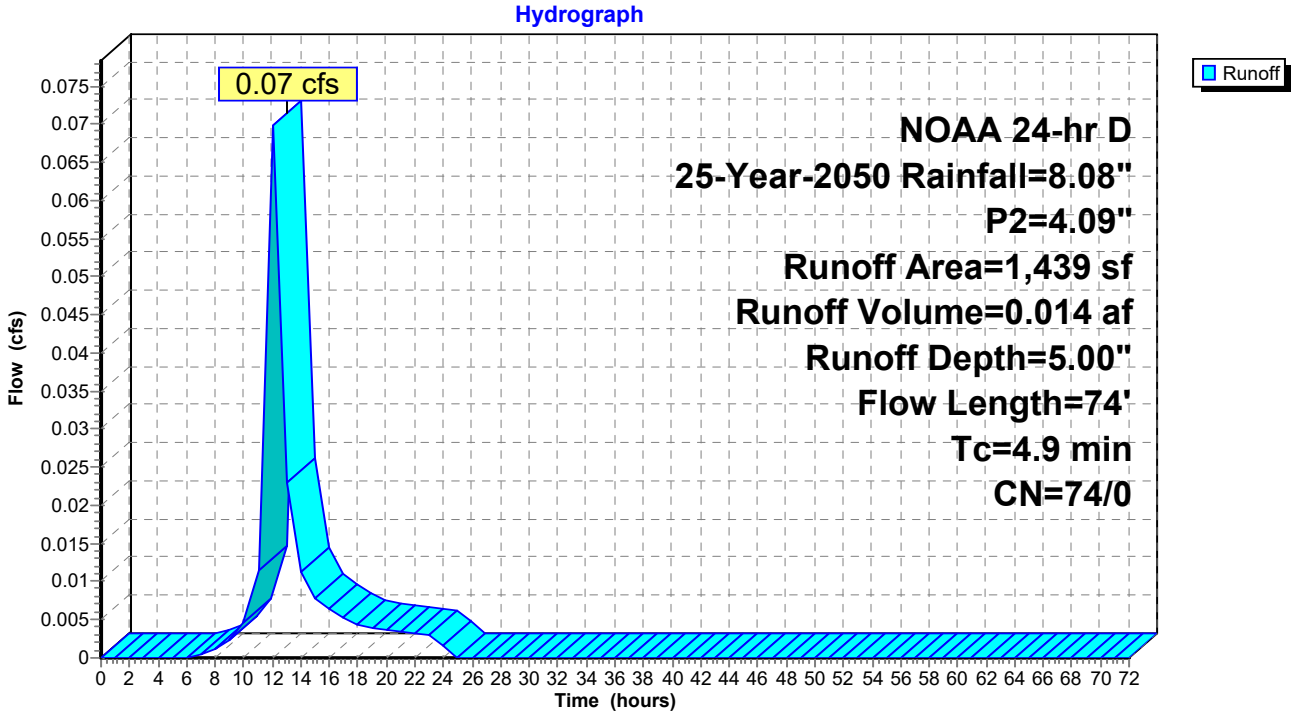
Runoff = 0.07 cfs @ 12.05 hrs, Volume= 0.014 af, Depth= 5.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 25-Year-2050 Rainfall=8.08", P2=4.09"

Area (sf)	CN	Description
1,439	74	>75% Grass cover, Good, HSG C
1,439	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2520	0.39		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	22	0.0450	0.20		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
2.1	31	0.0650	0.24		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
4.9	74	Total			

Subcatchment 2S: Existing (Undisturbed)



Summary for Subcatchment 3S: Proposed

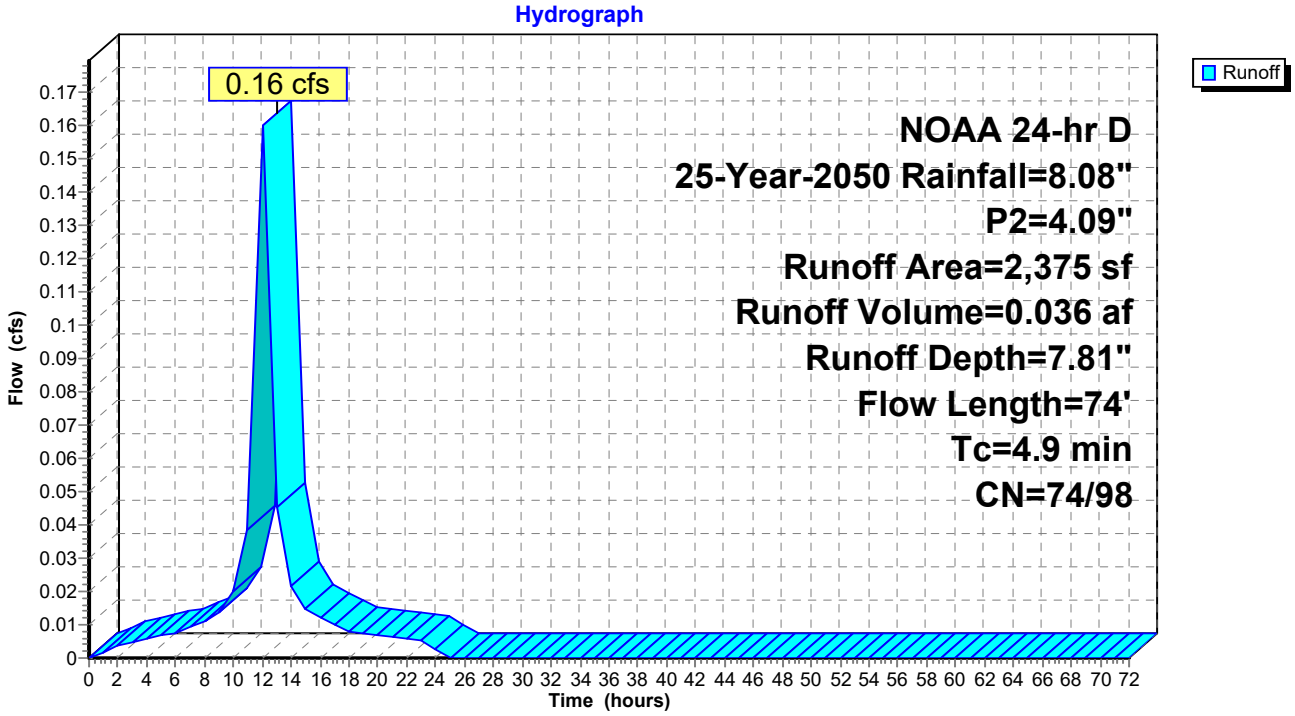
Runoff = 0.16 cfs @ 12.02 hrs, Volume= 0.036 af, Depth= 7.81"
Routed to Pond 9P : Drywell

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 25-Year-2050 Rainfall=8.08", P2=4.09"

	Area (sf)	CN	Description
	22	74	>75% Grass cover, Good, HSG C
*	85	98	Walk, HSG C
	1,988	98	Roofs, HSG B
*	280	98	Driveway, HSG C
	2,375	98	Weighted Average
	22	74	0.93% Pervious Area
	2,353	98	99.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2520	0.39		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	22	0.0450	0.20		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
2.1	31	0.0650	0.24		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
4.9	74	Total			

Subcatchment 3S: Proposed



Summary for Subcatchment 4S: Bypass

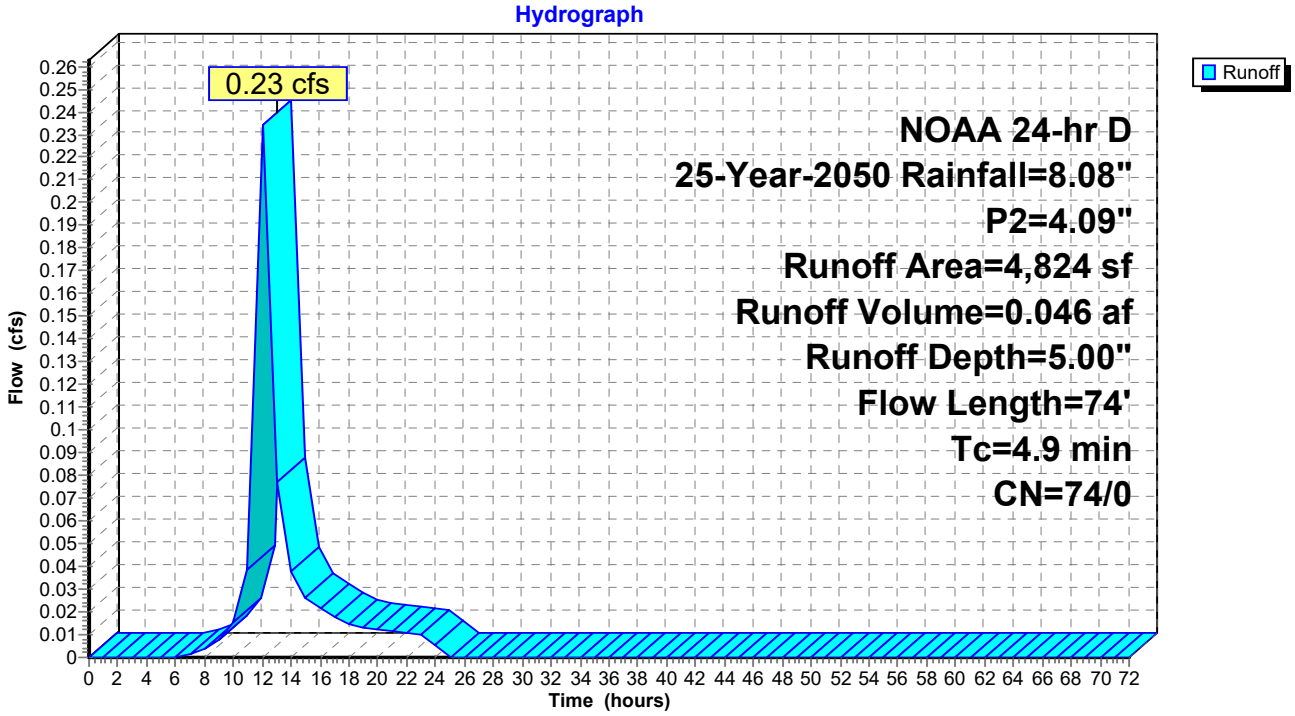
Runoff = 0.23 cfs @ 12.05 hrs, Volume= 0.046 af, Depth= 5.00"
Routed to Link 10L : Proposed

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 25-Year-2050 Rainfall=8.08", P2=4.09"

Area (sf)	CN	Description
4,824	74	>75% Grass cover, Good, HSG C
4,824	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2520	0.39		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	22	0.0450	0.20		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
2.1	31	0.0650	0.24		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
4.9	74	Total			

Subcatchment 4S: Bypass



Summary for Pond 9P: Drywell

Inflow Area = 0.055 ac, 99.07% Impervious, Inflow Depth = 7.81" for 25-Year-2050 event
Inflow = 0.16 cfs @ 12.02 hrs, Volume= 0.036 af
Outflow = 0.04 cfs @ 12.00 hrs, Volume= 0.036 af, Atten= 74%, Lag= 0.0 min
Discarded = 0.04 cfs @ 12.00 hrs, Volume= 0.036 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 10L : Proposed

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs
Peak Elev= 96.26' @ 13.38 hrs Surf.Area= 225 sf Storage= 463 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 77.3 min (817.7 - 740.4)

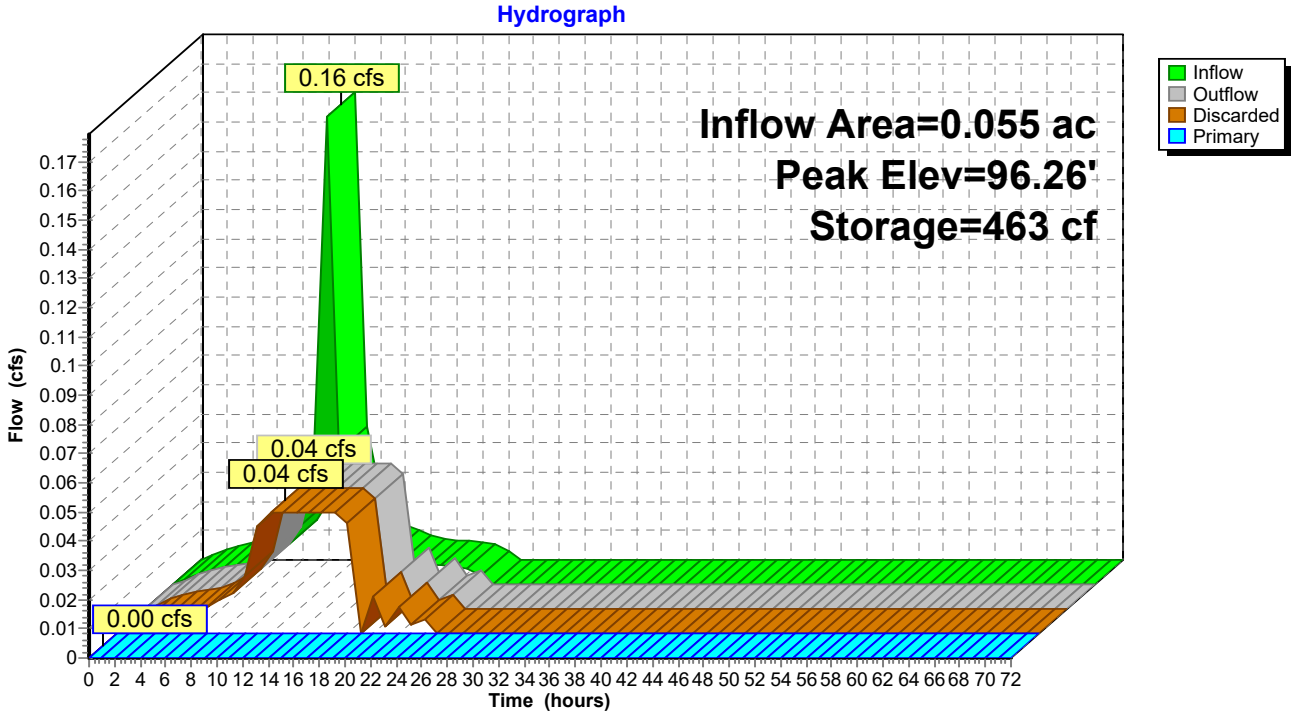
Volume	Invert	Avail.Storage	Storage Description
#1	93.83'	302 cf	**8.00'D x 6.00'H Drywell** Inside #2 354 cf Overall - 4.0" Wall Thickness = 302 cf
#2	91.83'	578 cf	**15.00'W x 15.00'L x 8.00'H Stone** 1,800 cf Overall - 354 cf Embedded = 1,446 cf x 40.0% Voids
#3	99.83'	5 cf	**2.00'D x 1.67'H Vertical Cone/Cylinder**
		885 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	91.83'	**8.000 in/hr Exfiltration over Surface area**
#2	Primary	101.50'	**24.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.04 cfs @ 12.00 hrs HW=94.22' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=91.83' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 9P: Drywell

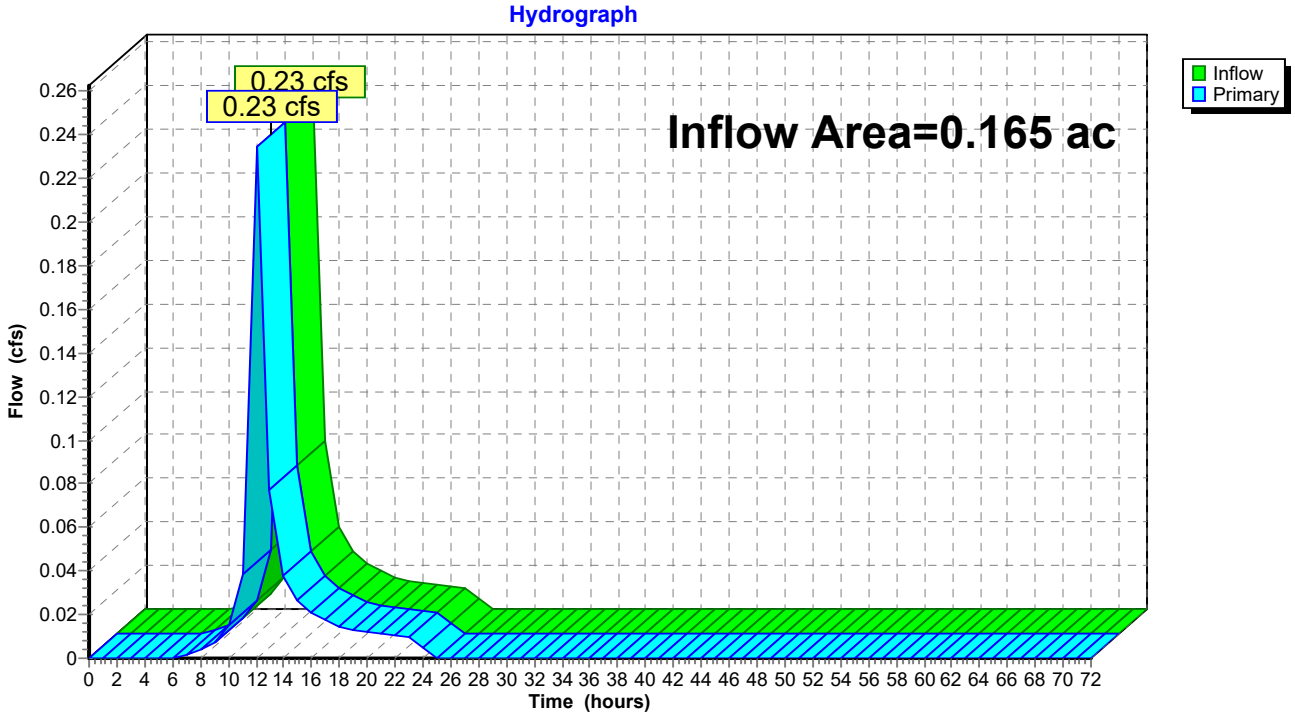


Summary for Link 10L: Proposed

Inflow Area = 0.165 ac, 32.69% Impervious, Inflow Depth = 3.35" for 25-Year-2050 event
Inflow = 0.23 cfs @ 12.05 hrs, Volume= 0.046 af
Primary = 0.23 cfs @ 12.05 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs

Link 10L: Proposed



Time span=0.00-72.00 hrs, dt=1.00 hrs, 73 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing (Disturbed) Runoff Area=5,759 sf 34.83% Impervious Runoff Depth=9.25"
Flow Length=74' Tc=4.9 min CN=74/98 Runoff=0.49 cfs 0.102 af

Subcatchment 2S: Existing (Undisturbed) Runoff Area=1,439 sf 0.00% Impervious Runoff Depth=8.17"
Flow Length=74' Tc=4.9 min CN=74/0 Runoff=0.11 cfs 0.022 af

Subcatchment 3S: Proposed Runoff Area=2,375 sf 99.07% Impervious Runoff Depth=11.25"
Flow Length=74' Tc=4.9 min CN=74/98 Runoff=0.23 cfs 0.051 af

Subcatchment 4S: Bypass Runoff Area=4,824 sf 0.00% Impervious Runoff Depth=8.17"
Flow Length=74' Tc=4.9 min CN=74/0 Runoff=0.38 cfs 0.075 af

Pond 9P: Drywell Peak Elev=99.10' Storage=794 cf Inflow=0.23 cfs 0.051 af
Discarded=0.04 cfs 0.052 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.052 af

Link 10L: Proposed Inflow=0.38 cfs 0.075 af
Primary=0.38 cfs 0.075 af

Total Runoff Area = 0.331 ac Runoff Volume = 0.251 af Average Runoff Depth = 9.11"
69.72% Pervious = 0.230 ac 30.28% Impervious = 0.100 ac

Summary for Subcatchment 1S: Existing (Disturbed)

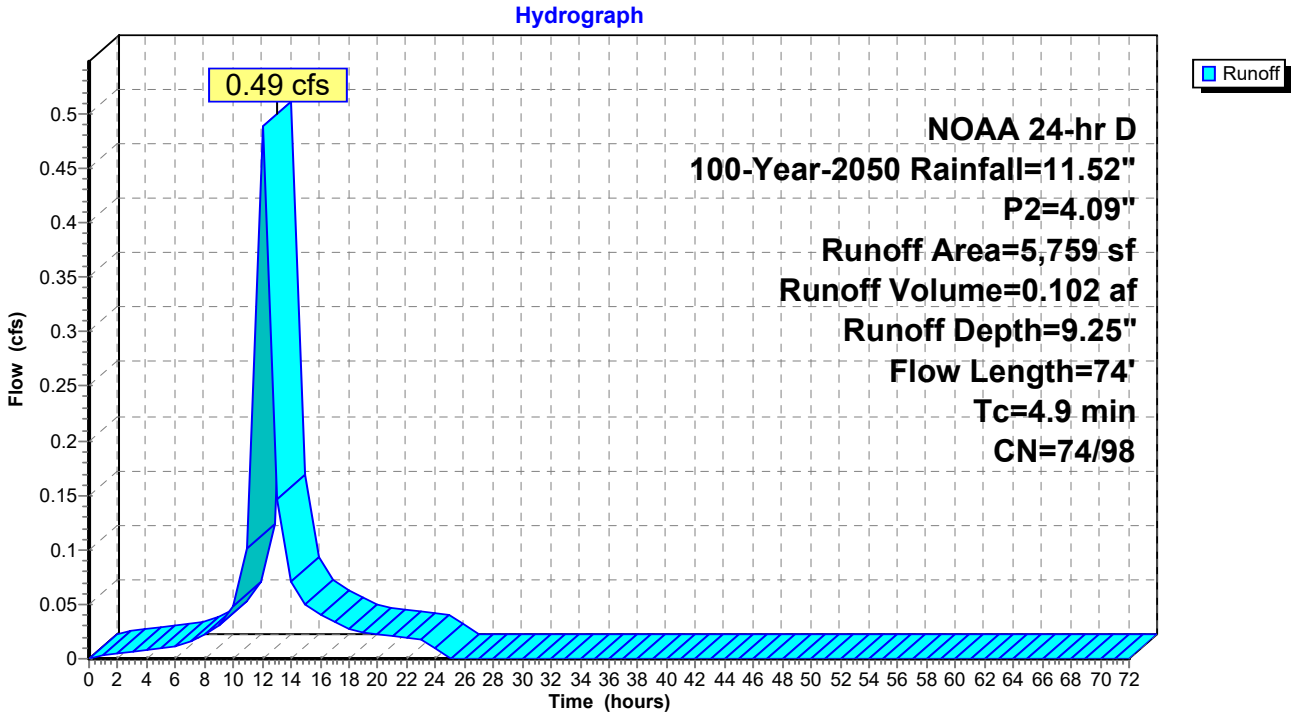
Runoff = 0.49 cfs @ 12.03 hrs, Volume= 0.102 af, Depth= 9.25"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 100-Year-2050 Rainfall=11.52", P2=4.09"

	Area (sf)	CN	Description
	3,753	74	>75% Grass cover, Good, HSG C
	582	98	Water Surface, HSG C
*	1,424	98	Patios & Walks, HSG C
	5,759	82	Weighted Average
	3,753	74	65.17% Pervious Area
	2,006	98	34.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2520	0.39		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	22	0.0450	0.20		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
2.1	31	0.0650	0.24		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
4.9	74	Total			

Subcatchment 1S: Existing (Disturbed)



Summary for Subcatchment 2S: Existing (Undisturbed)

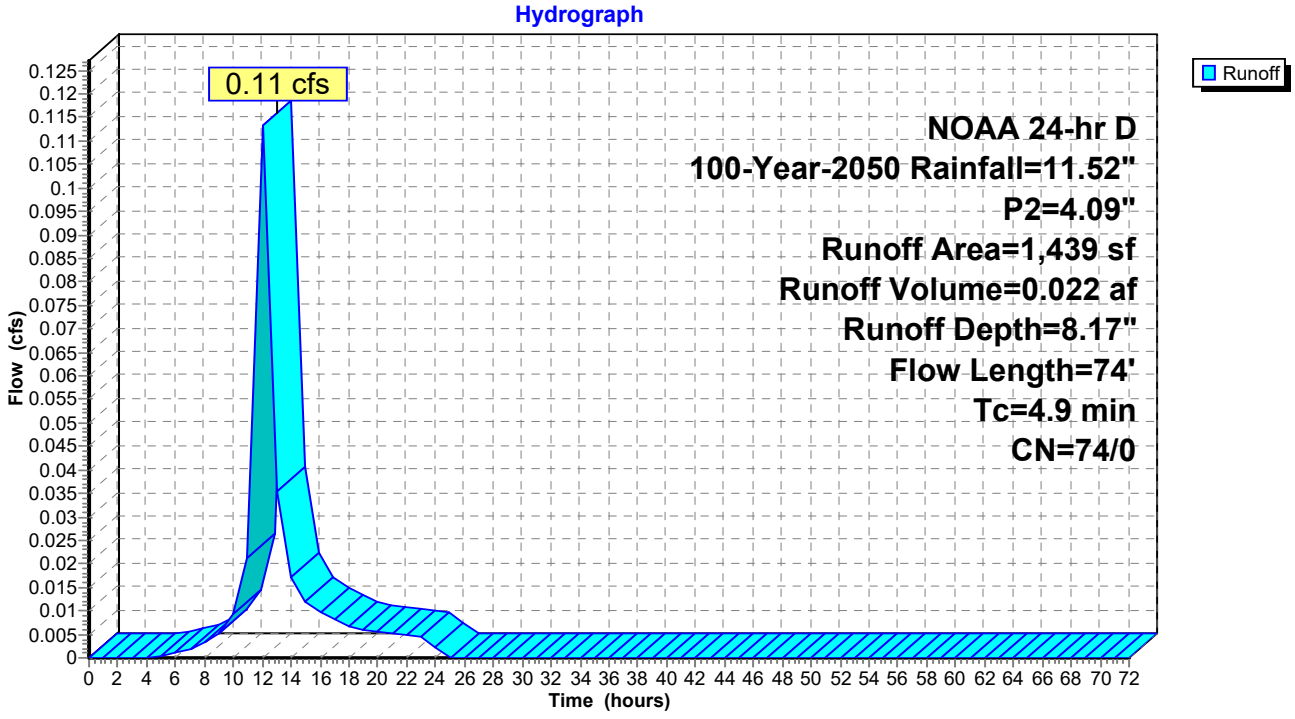
Runoff = 0.11 cfs @ 12.04 hrs, Volume= 0.022 af, Depth= 8.17"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 100-Year-2050 Rainfall=11.52", P2=4.09"

Area (sf)	CN	Description
1,439	74	>75% Grass cover, Good, HSG C
1,439	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2520	0.39		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	22	0.0450	0.20		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
2.1	31	0.0650	0.24		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
4.9	74	Total			

Subcatchment 2S: Existing (Undisturbed)



Summary for Subcatchment 3S: Proposed

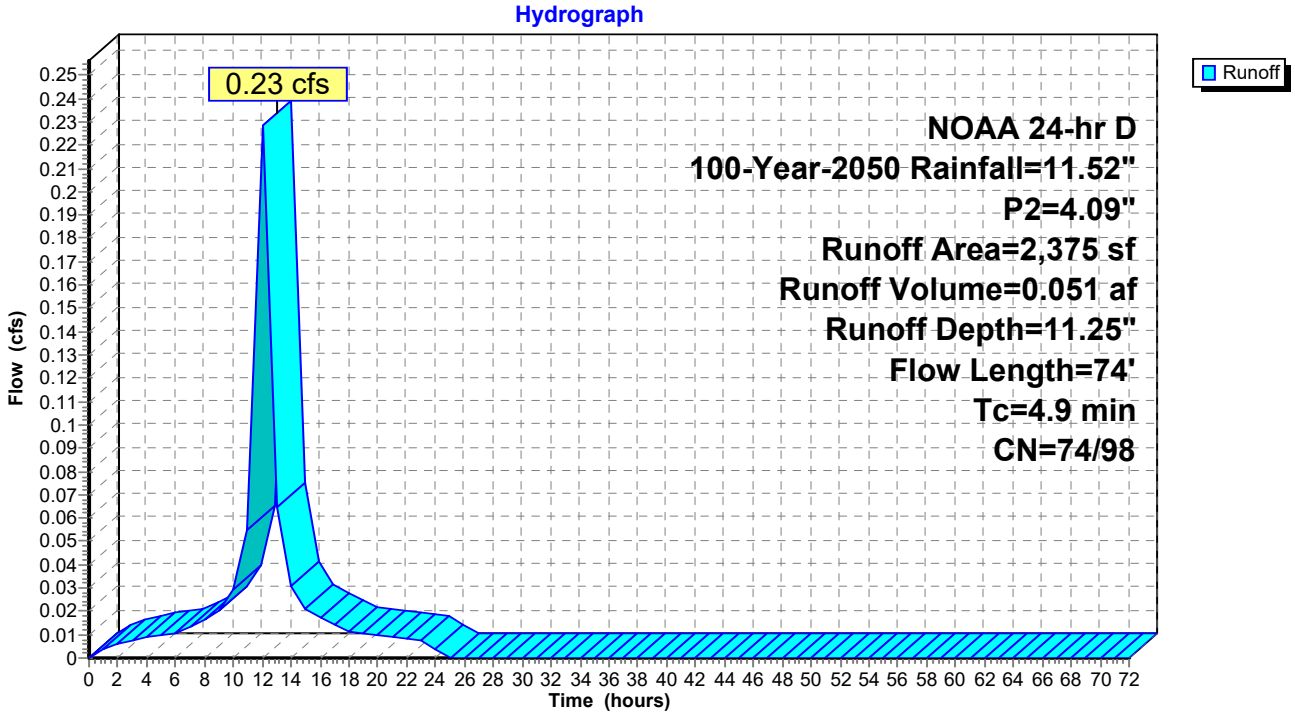
Runoff = 0.23 cfs @ 12.01 hrs, Volume= 0.051 af, Depth=11.25"
Routed to Pond 9P : Drywell

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 100-Year-2050 Rainfall=11.52", P2=4.09"

	Area (sf)	CN	Description
	22	74	>75% Grass cover, Good, HSG C
*	85	98	Walk, HSG C
	1,988	98	Roofs, HSG B
*	280	98	Driveway, HSG C
	2,375	98	Weighted Average
	22	74	0.93% Pervious Area
	2,353	98	99.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2520	0.39		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	22	0.0450	0.20		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
2.1	31	0.0650	0.24		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
4.9	74	Total			

Subcatchment 3S: Proposed



Summary for Subcatchment 4S: Bypass

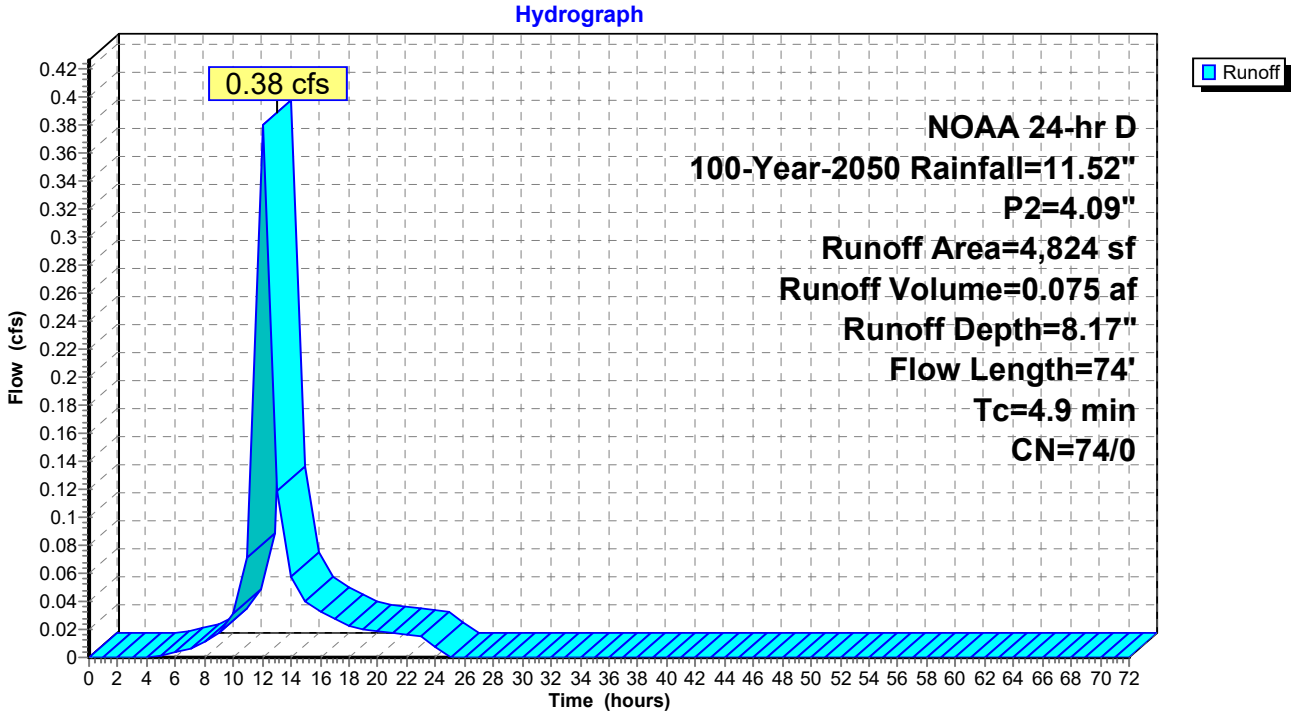
Runoff = 0.38 cfs @ 12.04 hrs, Volume= 0.075 af, Depth= 8.17"
Routed to Link 10L : Proposed

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 100-Year-2050 Rainfall=11.52", P2=4.09"

Area (sf)	CN	Description
4,824	74	>75% Grass cover, Good, HSG C
4,824	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2520	0.39		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	22	0.0450	0.20		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
2.1	31	0.0650	0.24		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
4.9	74	Total			

Subcatchment 4S: Bypass



Summary for Pond 9P: Drywell

Inflow Area = 0.055 ac, 99.07% Impervious, Inflow Depth = 11.25" for 100-Year-2050 event
Inflow = 0.23 cfs @ 12.01 hrs, Volume= 0.051 af
Outflow = 0.04 cfs @ 11.00 hrs, Volume= 0.052 af, Atten= 82%, Lag= 0.0 min
Discarded = 0.04 cfs @ 11.00 hrs, Volume= 0.052 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 10L : Proposed

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs
Peak Elev= 99.10' @ 13.78 hrs Surf.Area= 225 sf Storage= 794 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 146.8 min (883.1 - 736.3)

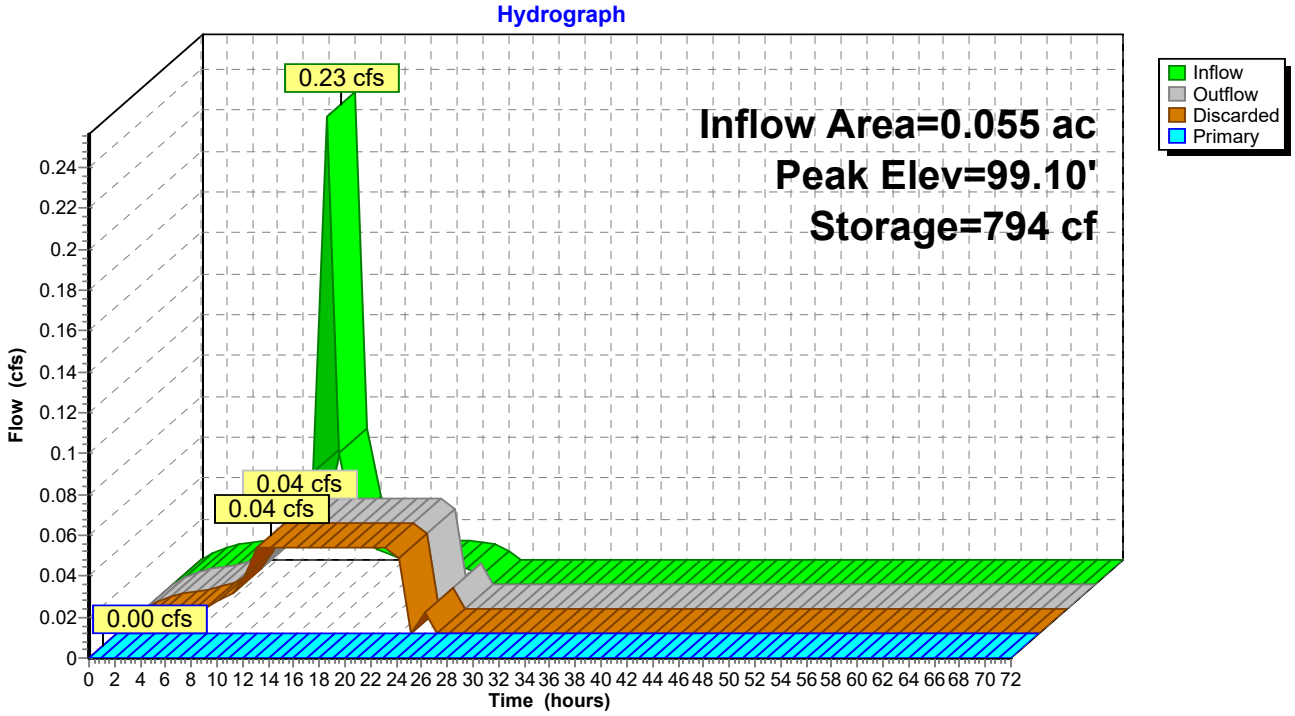
Volume	Invert	Avail.Storage	Storage Description
#1	93.83'	302 cf	**8.00'D x 6.00'H Drywell** Inside #2 354 cf Overall - 4.0" Wall Thickness = 302 cf
#2	91.83'	578 cf	**15.00'W x 15.00'L x 8.00'H Stone** 1,800 cf Overall - 354 cf Embedded = 1,446 cf x 40.0% Voids
#3	99.83'	5 cf	**2.00'D x 1.67'H Vertical Cone/Cylinder**
		885 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	91.83'	**8.000 in/hr Exfiltration over Surface area**
#2	Primary	101.50'	**24.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.04 cfs @ 11.00 hrs HW=92.19' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=91.83' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 9P: Drywell

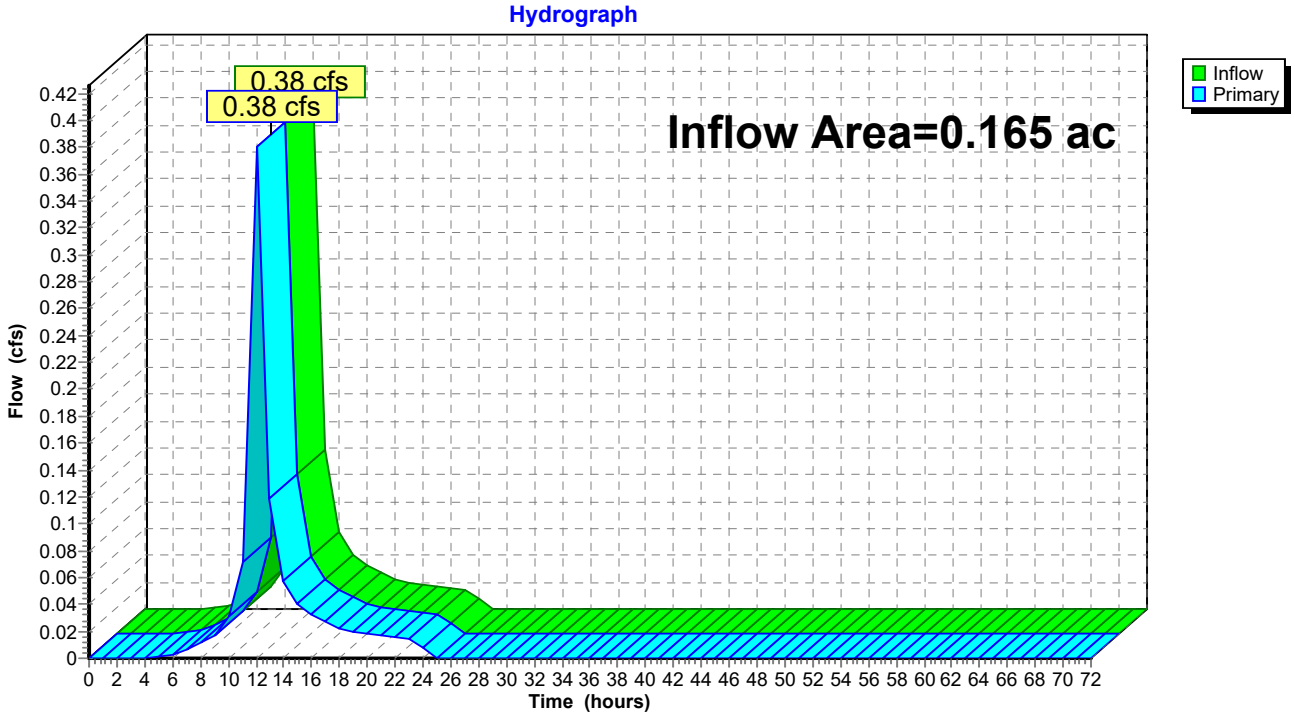


Summary for Link 10L: Proposed

Inflow Area = 0.165 ac, 32.69% Impervious, Inflow Depth = 5.47" for 100-Year-2050 event
Inflow = 0.38 cfs @ 12.04 hrs, Volume= 0.075 af
Primary = 0.38 cfs @ 12.04 hrs, Volume= 0.075 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs

Link 10L: Proposed



Time span=0.00-72.00 hrs, dt=1.00 hrs, 73 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing (Disturbed) Runoff Area=5,759 sf 34.83% Impervious Runoff Depth=0.41"
Flow Length=74' Tc=5.3 min CN=74/98 Runoff=0.04 cfs 0.004 af

Subcatchment 2S: Existing (Undisturbed) Runoff Area=1,439 sf 0.00% Impervious Runoff Depth=0.07"
Flow Length=74' Tc=5.3 min CN=74/0 Runoff=0.00 cfs 0.000 af

Subcatchment 3S: Proposed Runoff Area=2,375 sf 99.07% Impervious Runoff Depth=1.03"
Flow Length=74' Tc=5.3 min CN=74/98 Runoff=0.05 cfs 0.005 af

Subcatchment 4S: Bypass Runoff Area=4,824 sf 0.00% Impervious Runoff Depth=0.07"
Flow Length=74' Tc=5.3 min CN=74/0 Runoff=0.00 cfs 0.001 af

Pond 9P: Drywell Peak Elev=91.97' Storage=12 cf Inflow=0.05 cfs 0.005 af
Discarded=0.04 cfs 0.005 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.005 af

Link 10L: Proposed Inflow=0.00 cfs 0.001 af
Primary=0.00 cfs 0.001 af

Total Runoff Area = 0.331 ac Runoff Volume = 0.010 af Average Runoff Depth = 0.36"
69.72% Pervious = 0.230 ac 30.28% Impervious = 0.100 ac

Summary for Subcatchment 1S: Existing (Disturbed)

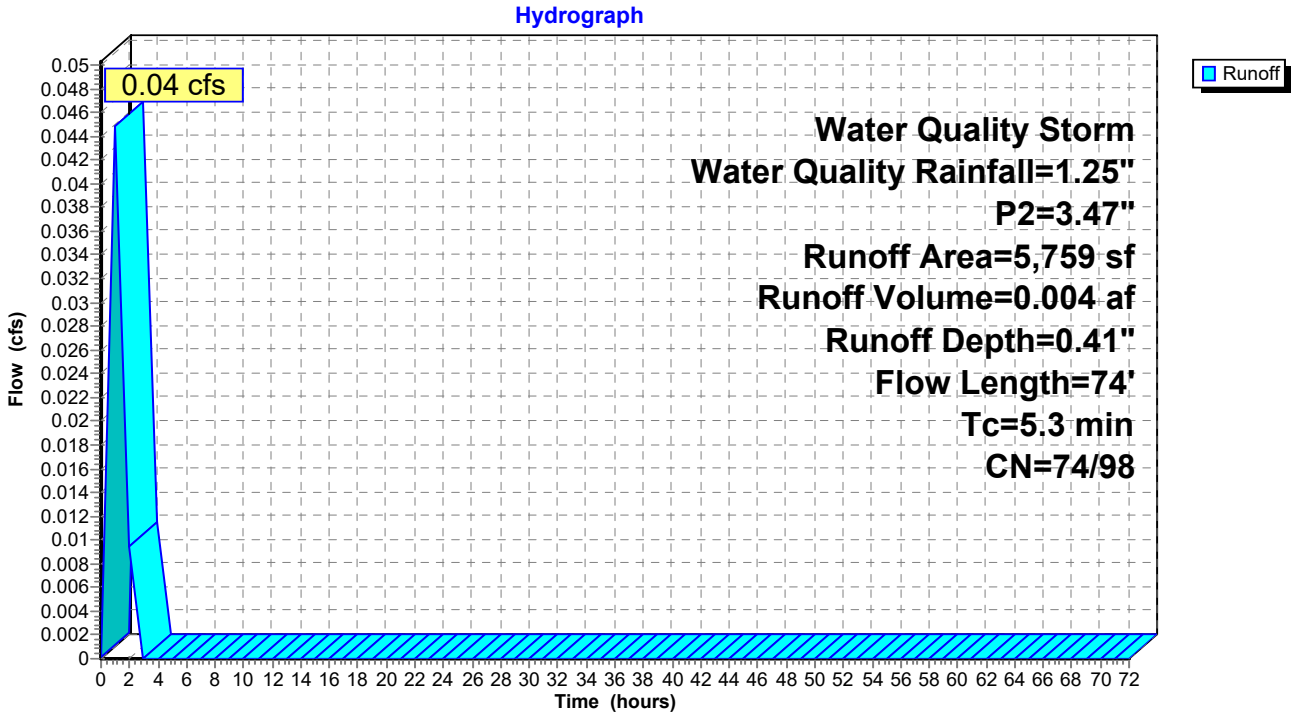
Runoff = 0.04 cfs @ 1.00 hrs, Volume= 0.004 af, Depth= 0.41"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
Water Quality Storm Water Quality Rainfall=1.25", P2=3.47"

	Area (sf)	CN	Description
	3,753	74	>75% Grass cover, Good, HSG C
	582	98	Water Surface, HSG C
*	1,424	98	Patios & Walks, HSG C
	5,759	82	Weighted Average
	3,753	74	65.17% Pervious Area
	2,006	98	34.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	21	0.2520	0.36		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.0	22	0.0450	0.18		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
2.3	31	0.0650	0.22		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
5.3	74	Total			

Subcatchment 1S: Existing (Disturbed)



Summary for Subcatchment 2S: Existing (Undisturbed)

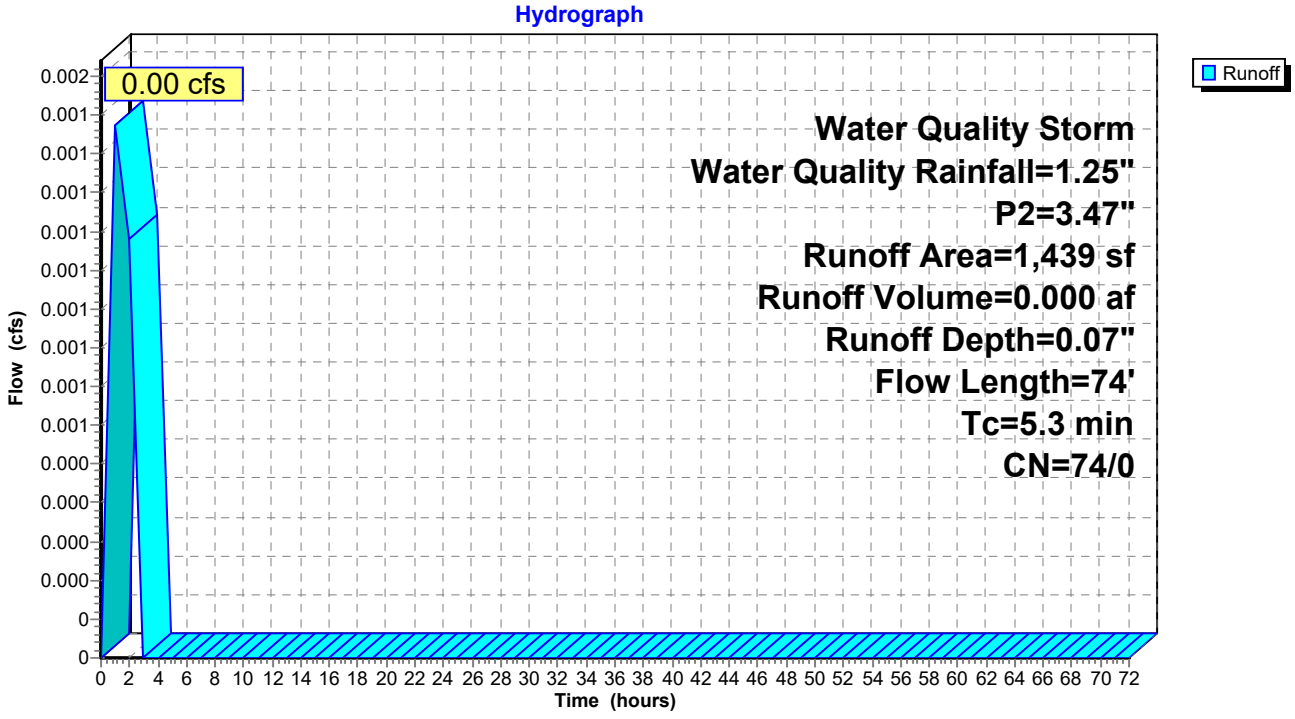
Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
Water Quality Storm Water Quality Rainfall=1.25", P2=3.47"

Area (sf)	CN	Description
1,439	74	>75% Grass cover, Good, HSG C
1,439	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	21	0.2520	0.36		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.0	22	0.0450	0.18		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
2.3	31	0.0650	0.22		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
5.3	74	Total			

Subcatchment 2S: Existing (Undisturbed)



Summary for Subcatchment 3S: Proposed

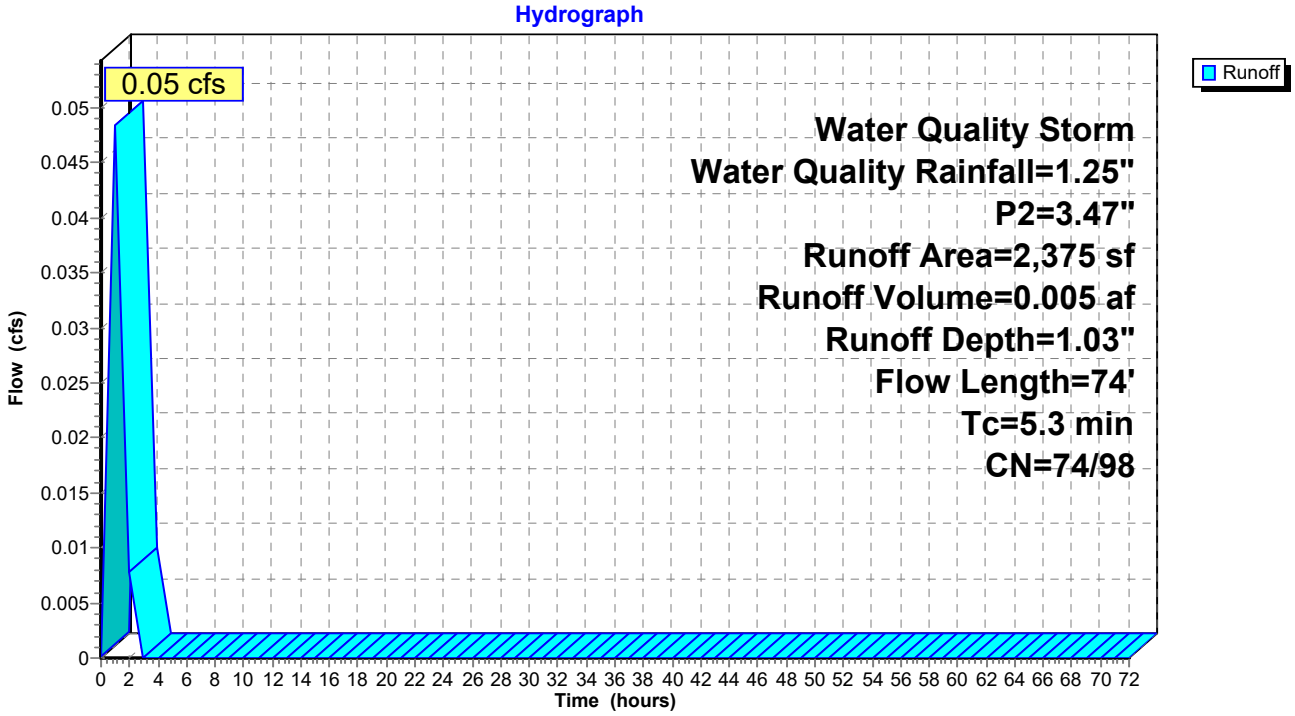
Runoff = 0.05 cfs @ 1.00 hrs, Volume= 0.005 af, Depth= 1.03"
Routed to Pond 9P : Drywell

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
Water Quality Storm Water Quality Rainfall=1.25", P2=3.47"

	Area (sf)	CN	Description
	22	74	>75% Grass cover, Good, HSG C
*	85	98	Walk, HSG C
	1,988	98	Roofs, HSG B
*	280	98	Driveway, HSG C
	2,375	98	Weighted Average
	22	74	0.93% Pervious Area
	2,353	98	99.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	21	0.2520	0.36		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.0	22	0.0450	0.18		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
2.3	31	0.0650	0.22		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
5.3	74	Total			

Subcatchment 3S: Proposed



Summary for Subcatchment 4S: Bypass

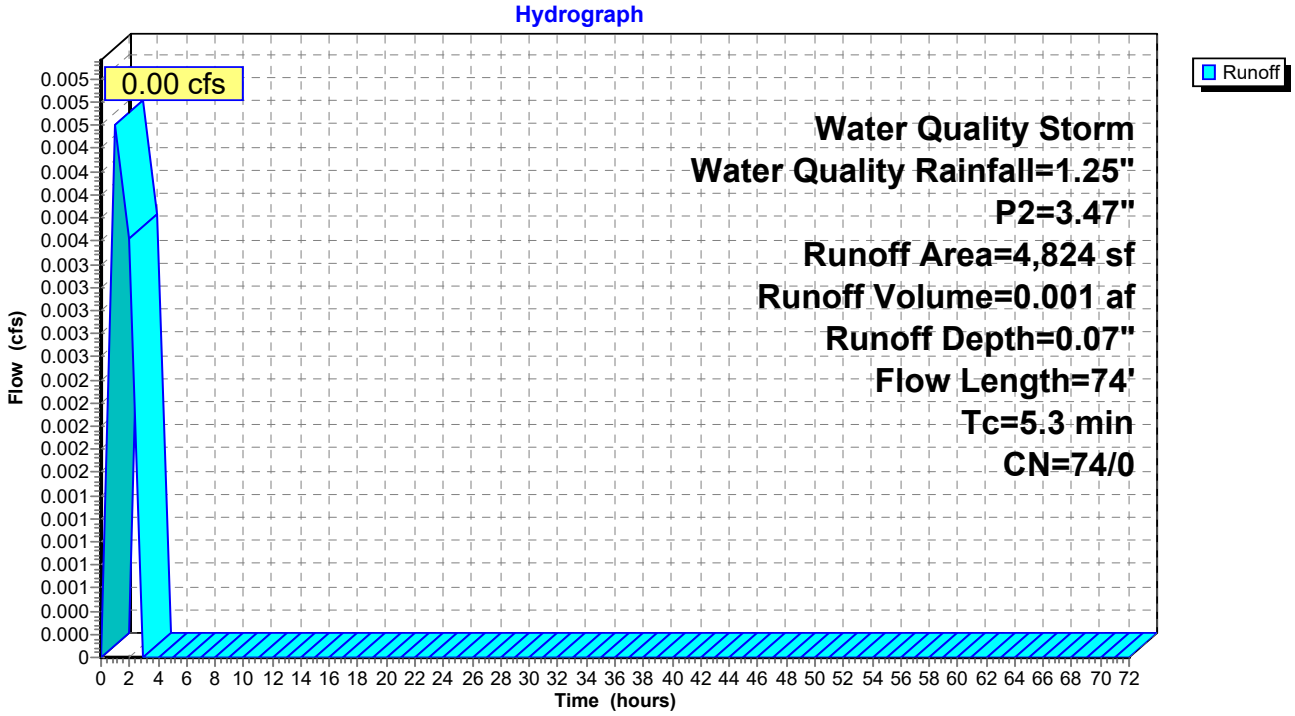
Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.001 af, Depth= 0.07"
Routed to Link 10L : Proposed

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
Water Quality Storm Water Quality Rainfall=1.25", P2=3.47"

Area (sf)	CN	Description
4,824	74	>75% Grass cover, Good, HSG C
4,824	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	21	0.2520	0.36		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.0	22	0.0450	0.18		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
2.3	31	0.0650	0.22		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
5.3	74	Total			

Subcatchment 4S: Bypass



Summary for Pond 9P: Drywell

Inflow Area = 0.055 ac, 99.07% Impervious, Inflow Depth = 1.03" for Water Quality event
Inflow = 0.05 cfs @ 1.00 hrs, Volume= 0.005 af
Outflow = 0.04 cfs @ 1.00 hrs, Volume= 0.005 af, Atten= 14%, Lag= 0.0 min
Discarded = 0.04 cfs @ 1.00 hrs, Volume= 0.005 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 10L : Proposed

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs
Peak Elev= 91.97' @ 1.00 hrs Surf.Area= 225 sf Storage= 12 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 10.4 min (78.5 - 68.1)

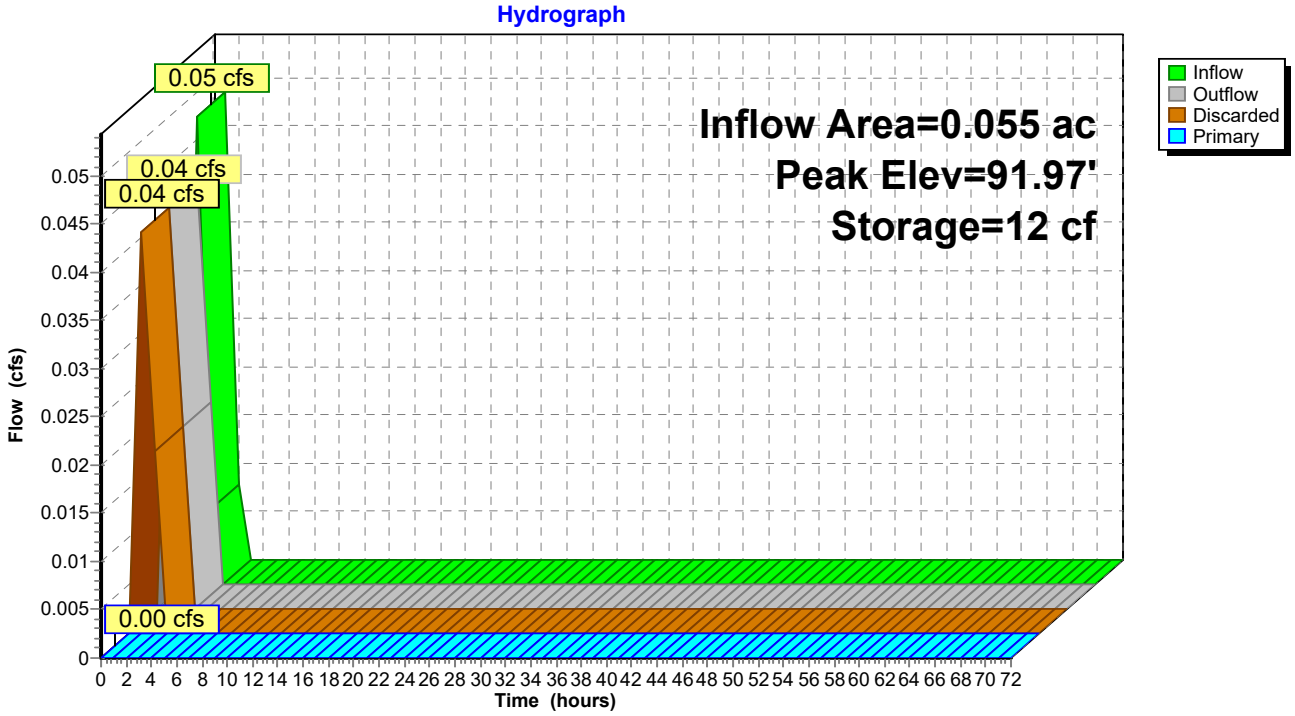
Volume	Invert	Avail.Storage	Storage Description
#1	93.83'	302 cf	**8.00'D x 6.00'H Drywell** Inside #2 354 cf Overall - 4.0" Wall Thickness = 302 cf
#2	91.83'	578 cf	**15.00'W x 15.00'L x 8.00'H Stone** 1,800 cf Overall - 354 cf Embedded = 1,446 cf x 40.0% Voids
#3	99.83'	5 cf	**2.00'D x 1.67'H Vertical Cone/Cylinder**
		885 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	91.83'	**8.000 in/hr Exfiltration over Surface area**
#2	Primary	101.50'	**24.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.04 cfs @ 1.00 hrs HW=91.97' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=91.83' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 9P: Drywell

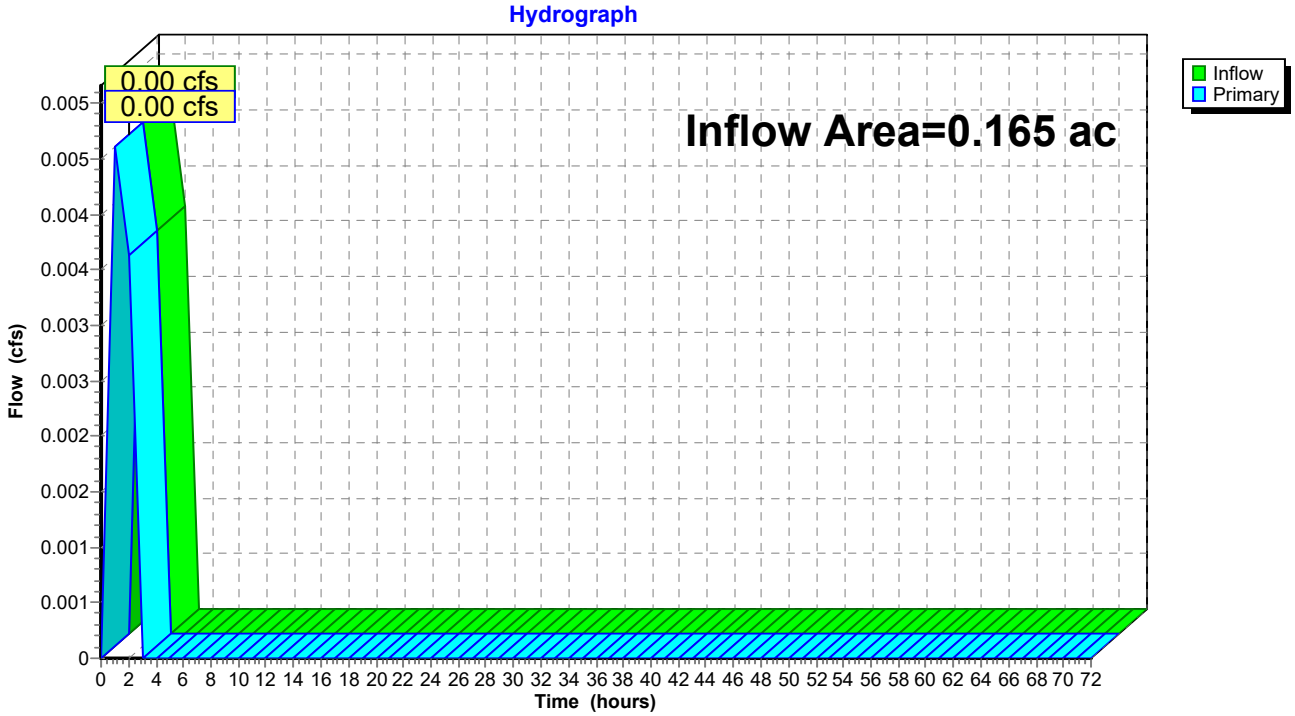


Summary for Link 10L: Proposed

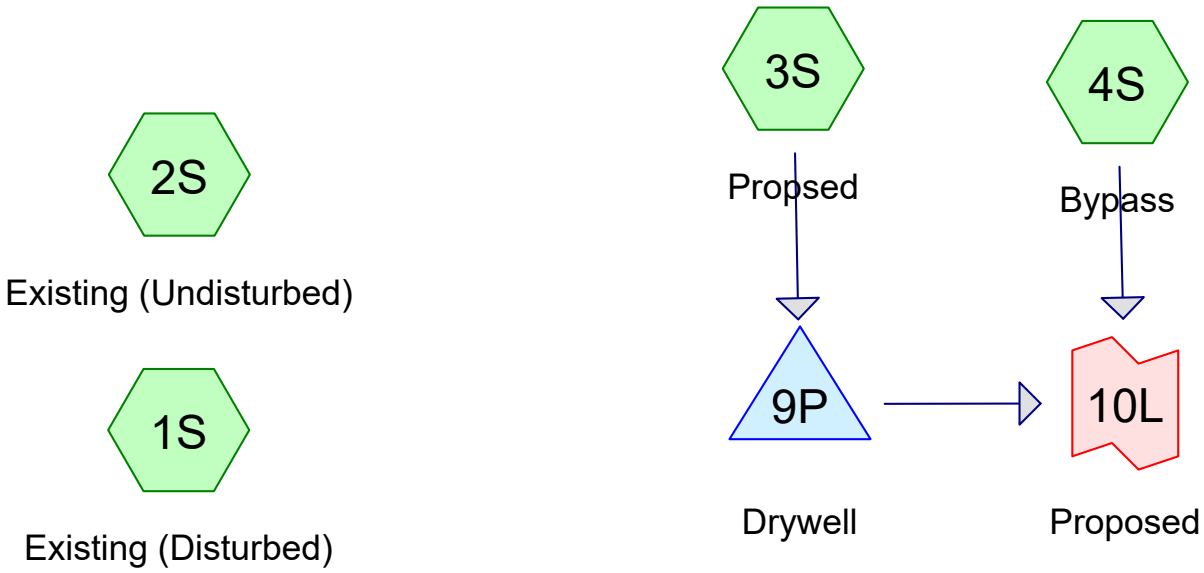
Inflow Area = 0.165 ac, 32.69% Impervious, Inflow Depth = 0.05" for Water Quality event
Inflow = 0.00 cfs @ 1.00 hrs, Volume= 0.001 af
Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs

Link 10L: Proposed



HYDROLOGIC ANALYSIS
EXISTING & PROPOSED
LOT 6.03



Subcat Reach Pond Link

Routing Diagram for 1250703-6.03
Prepared by Casey & Keller, Inc, Printed 10/21/2026
HydroCAD® 10.20-9a s/n 03272 © 2026 HydroCAD Software Solutions LLC

Time span=0.00-72.00 hrs, dt=1.00 hrs, 73 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing (Disturbed) Runoff Area=3,459 sf 0.00% Impervious Runoff Depth=1.22"
Flow Length=75' Tc=4.2 min CN=74/0 Runoff=0.04 cfs 0.008 af

Subcatchment 2S: Existing (Undisturbed) Runoff Area=4,819 sf 0.00% Impervious Runoff Depth=1.22"
Flow Length=75' Tc=4.2 min CN=74/0 Runoff=0.05 cfs 0.011 af

Subcatchment 3S: Propsed Runoff Area=2,157 sf 99.35% Impervious Runoff Depth=3.22"
Flow Length=75' Tc=4.2 min CN=74/98 Runoff=0.06 cfs 0.013 af

Subcatchment 4S: Bypass Runoff Area=6,121 sf 2.40% Impervious Runoff Depth=1.27"
Flow Length=75' Tc=4.2 min CN=74/98 Runoff=0.07 cfs 0.015 af

Pond 9P: Drywell Peak Elev=78.48' Storage=43 cf Inflow=0.06 cfs 0.013 af
Discarded=0.05 cfs 0.013 af Primary=0.00 cfs 0.000 af Outflow=0.05 cfs 0.013 af

Link 10L: Proposed Inflow=0.07 cfs 0.015 af
Primary=0.07 cfs 0.015 af

Total Runoff Area = 0.380 ac Runoff Volume = 0.047 af Average Runoff Depth = 1.50"
86.17% Pervious = 0.328 ac 13.83% Impervious = 0.053 ac

Summary for Subcatchment 1S: Existing (Disturbed)

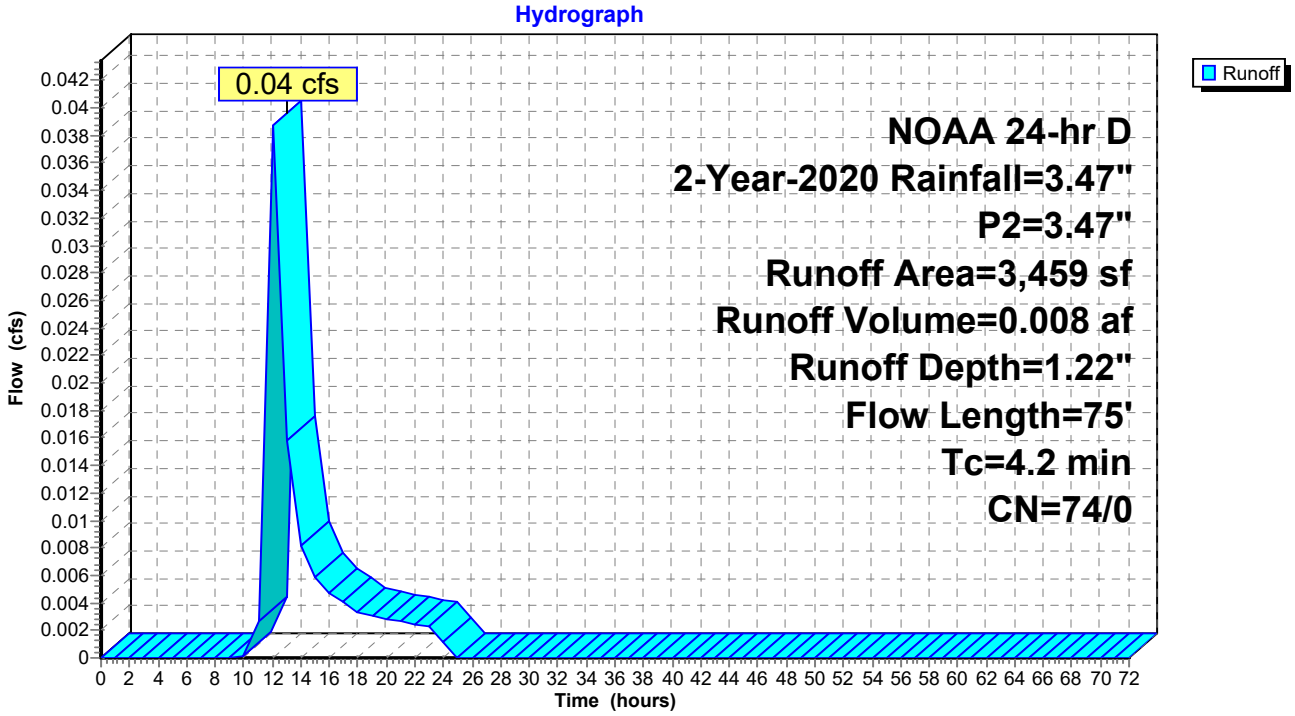
Runoff = 0.04 cfs @ 12.11 hrs, Volume= 0.008 af, Depth= 1.22"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 2-Year-2020 Rainfall=3.47", P2=3.47"

Area (sf)	CN	Description
3,459	74	>75% Grass cover, Good, HSG C
3,459	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.37		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.1	39	0.1270	0.31		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
1.2	15	0.0790	0.21		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
4.2	75	Total			

Subcatchment 1S: Existing (Disturbed)



Summary for Subcatchment 2S: Existing (Undisturbed)

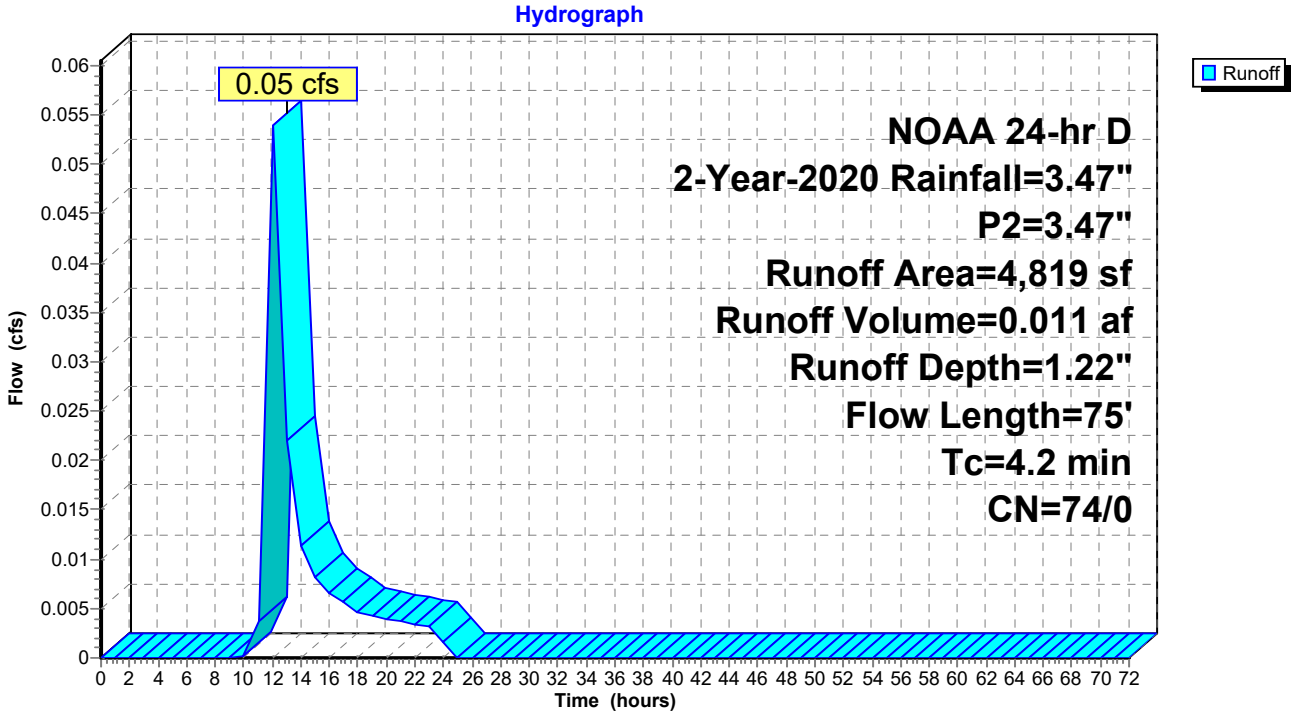
Runoff = 0.05 cfs @ 12.11 hrs, Volume= 0.011 af, Depth= 1.22"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 2-Year-2020 Rainfall=3.47", P2=3.47"

Area (sf)	CN	Description
4,819	74	>75% Grass cover, Good, HSG C
4,819	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.37		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.1	39	0.1270	0.31		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
1.2	15	0.0790	0.21		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
4.2	75	Total			

Subcatchment 2S: Existing (Undisturbed)



Summary for Subcatchment 3S: Propsed

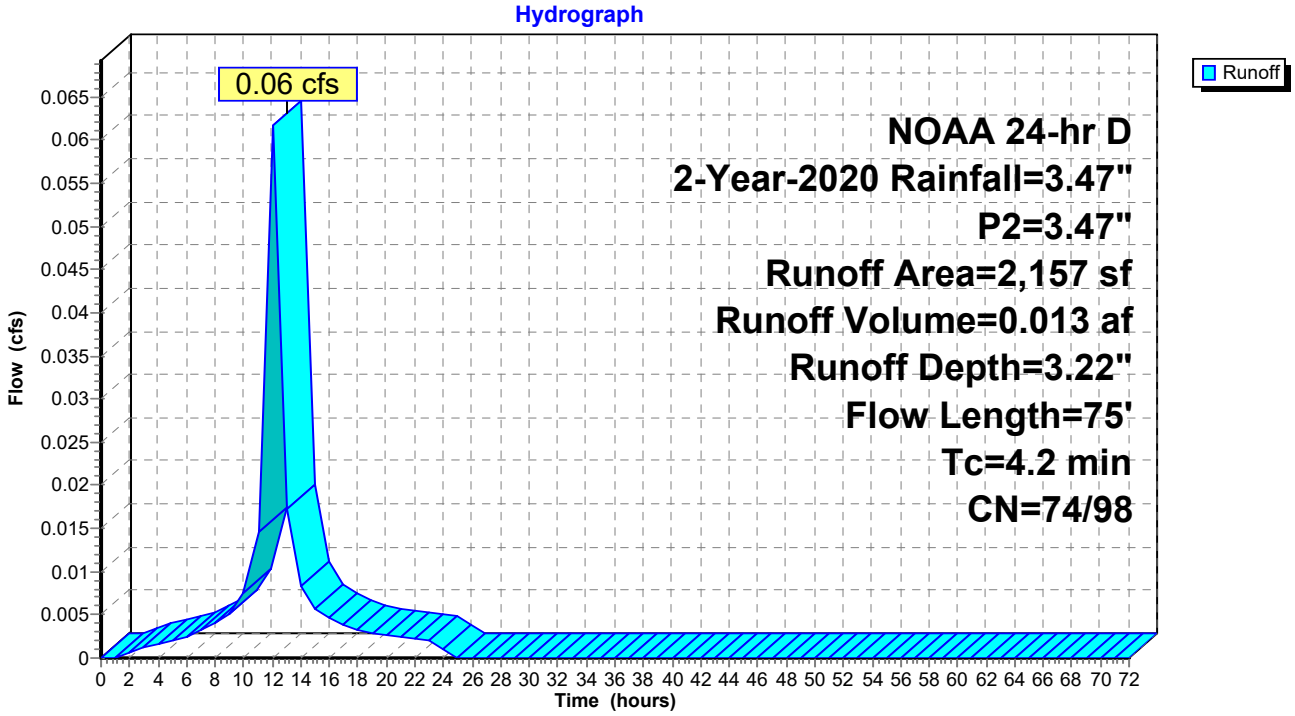
Runoff = 0.06 cfs @ 12.01 hrs, Volume= 0.013 af, Depth= 3.22"
Routed to Pond 9P : Drywell

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 2-Year-2020 Rainfall=3.47", P2=3.47"

	Area (sf)	CN	Description
	1,467	98	Roofs, HSG C
*	608	98	Driveway, HSG C
*	68	98	Front Walk, HSG C
	14	74	>75% Grass cover, Good, HSG C
	2,157	98	Weighted Average
	14	74	0.65% Pervious Area
	2,143	98	99.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.37		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.1	39	0.1270	0.31		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
1.2	15	0.0790	0.21		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
4.2	75	Total			

Subcatchment 3S: Propsed



Summary for Subcatchment 4S: Bypass

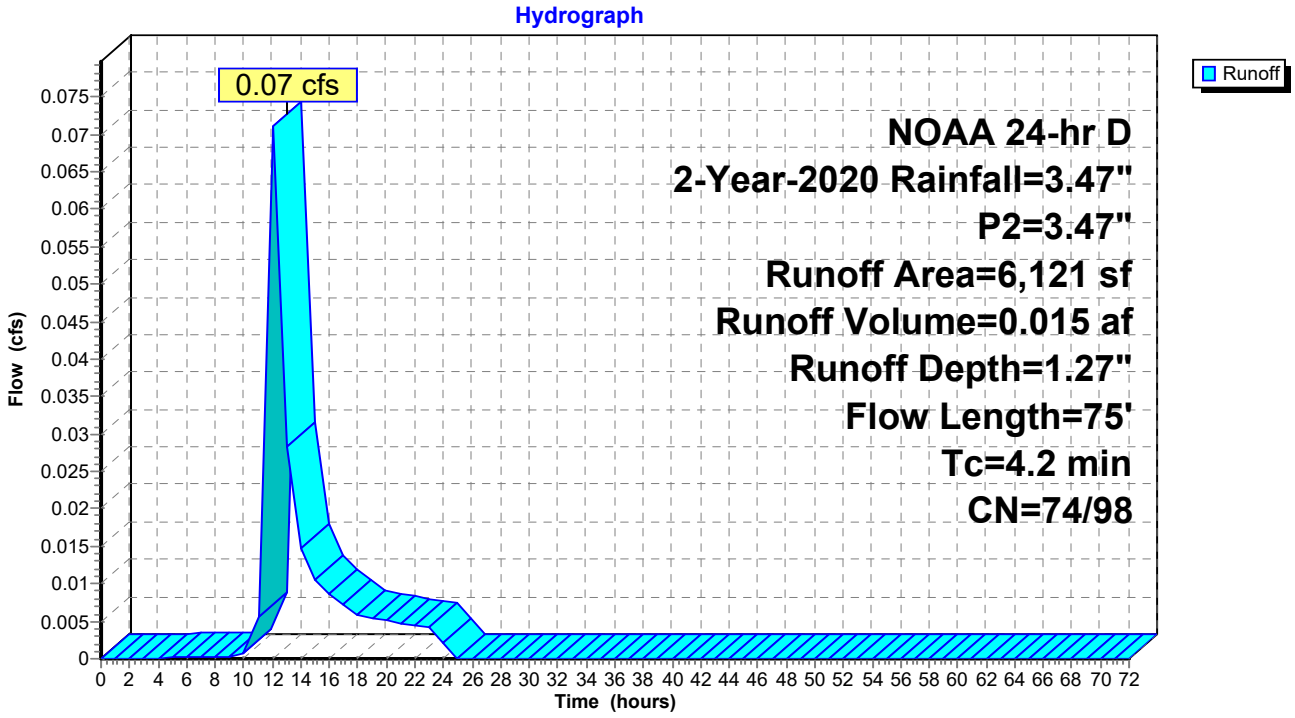
Runoff = 0.07 cfs @ 12.11 hrs, Volume= 0.015 af, Depth= 1.27"
Routed to Link 10L : Proposed

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 2-Year-2020 Rainfall=3.47", P2=3.47"

	Area (sf)	CN	Description
	5,974	74	>75% Grass cover, Good, HSG C
*	147	98	Deck & Steps, HSG C
	6,121	75	Weighted Average
	5,974	74	97.60% Pervious Area
	147	98	2.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.37		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.1	39	0.1270	0.31		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
1.2	15	0.0790	0.21		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
4.2	75	Total			

Subcatchment 4S: Bypass



Summary for Pond 9P: Drywell

Inflow Area = 0.050 ac, 99.35% Impervious, Inflow Depth = 3.22" for 2-Year-2020 event
Inflow = 0.06 cfs @ 12.01 hrs, Volume= 0.013 af
Outflow = 0.05 cfs @ 12.50 hrs, Volume= 0.013 af, Atten= 27%, Lag= 29.1 min
Discarded = 0.05 cfs @ 12.50 hrs, Volume= 0.013 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 10L : Proposed

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs
Peak Elev= 78.48' @ 12.33 hrs Surf.Area= 225 sf Storage= 43 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 10.4 min (764.7 - 754.3)

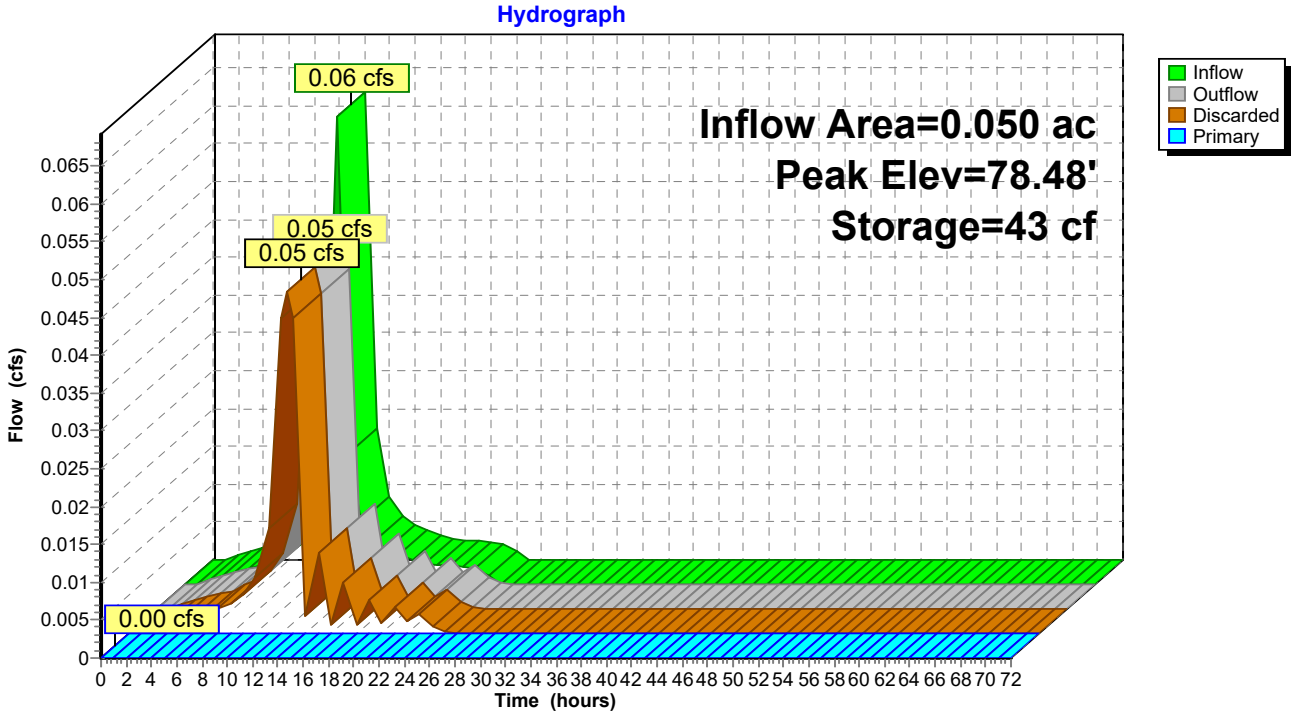
Volume	Invert	Avail.Storage	Storage Description
#1	80.00'	302 cf	**8.00'D x 6.00'H Drywell** Inside #2 354 cf Overall - 4.0" Wall Thickness = 302 cf
#2	78.00'	578 cf	**15.00'W x 15.00'L x 8.00'H Stone** 1,800 cf Overall - 354 cf Embedded = 1,446 cf x 40.0% Voids
#3	86.00'	5 cf	**2.00'D x 1.67'H Vertical Cone/Cylinder**
		885 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	78.00'	**8.000 in/hr Exfiltration over Surface area**
#2	Primary	87.67'	**24.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.04 cfs @ 12.50 hrs HW=78.41' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=78.00' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 9P: Drywell

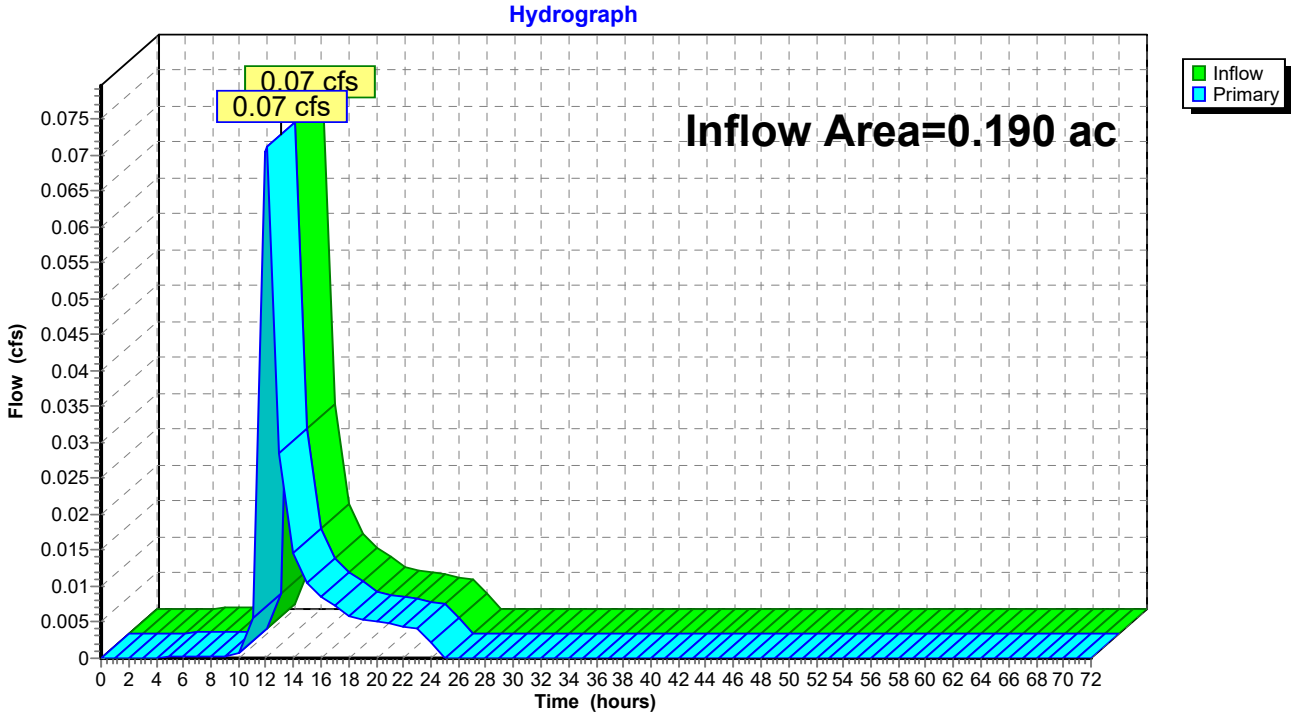


Summary for Link 10L: Proposed

Inflow Area = 0.190 ac, 27.66% Impervious, Inflow Depth = 0.94" for 2-Year-2020 event
Inflow = 0.07 cfs @ 12.11 hrs, Volume= 0.015 af
Primary = 0.07 cfs @ 12.11 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs

Link 10L: Proposed



Time span=0.00-72.00 hrs, dt=1.00 hrs, 73 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing (Disturbed) Runoff Area=3,459 sf 0.00% Impervious Runoff Depth=2.67"
Flow Length=75' Tc=4.2 min CN=74/0 Runoff=0.09 cfs 0.018 af

Subcatchment 2S: Existing (Undisturbed) Runoff Area=4,819 sf 0.00% Impervious Runoff Depth=2.67"
Flow Length=75' Tc=4.2 min CN=74/0 Runoff=0.12 cfs 0.025 af

Subcatchment 3S: Propsed Runoff Area=2,157 sf 99.35% Impervious Runoff Depth=5.13"
Flow Length=75' Tc=4.2 min CN=74/98 Runoff=0.10 cfs 0.021 af

Subcatchment 4S: Bypass Runoff Area=6,121 sf 2.40% Impervious Runoff Depth=2.73"
Flow Length=75' Tc=4.2 min CN=74/98 Runoff=0.16 cfs 0.032 af

Pond 9P: Drywell Peak Elev=79.99' Storage=179 cf Inflow=0.10 cfs 0.021 af
Discarded=0.04 cfs 0.022 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.022 af

Link 10L: Proposed Inflow=0.16 cfs 0.032 af
Primary=0.16 cfs 0.032 af

Total Runoff Area = 0.380 ac Runoff Volume = 0.095 af Average Runoff Depth = 3.01"
86.17% Pervious = 0.328 ac 13.83% Impervious = 0.053 ac

Summary for Subcatchment 1S: Existing (Disturbed)

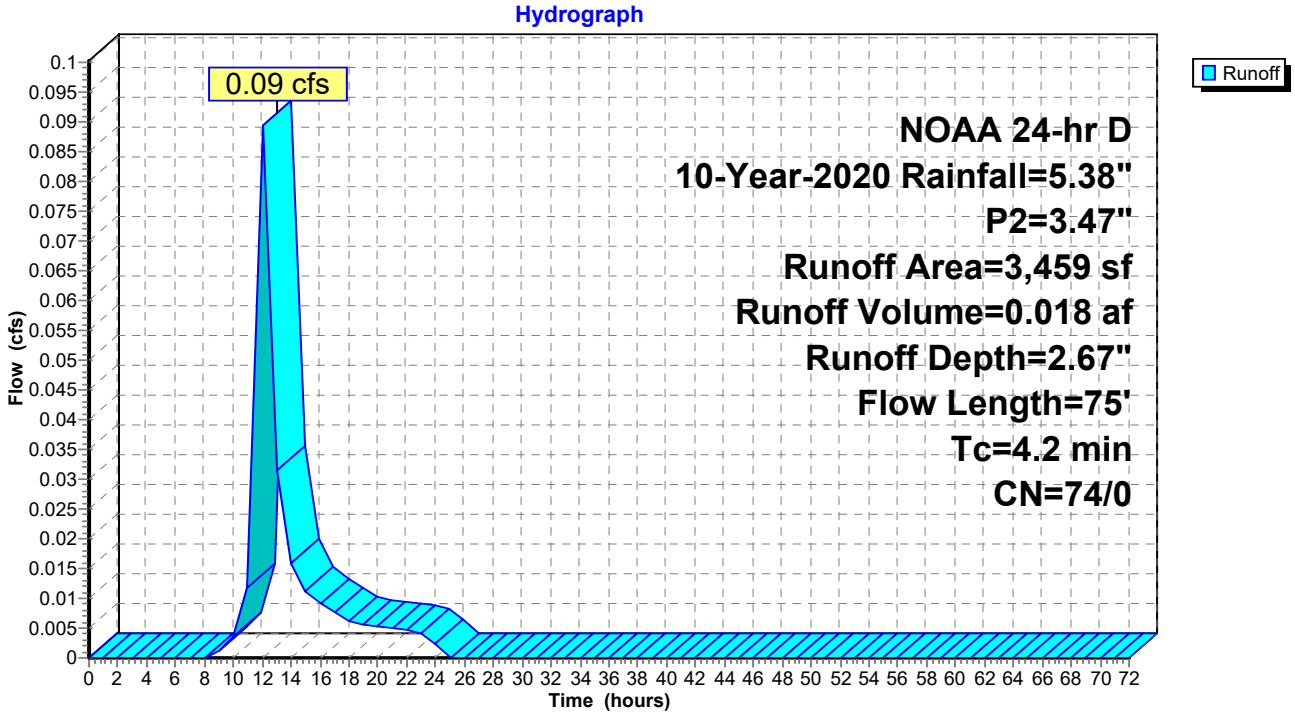
Runoff = 0.09 cfs @ 12.07 hrs, Volume= 0.018 af, Depth= 2.67"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 10-Year-2020 Rainfall=5.38", P2=3.47"

Area (sf)	CN	Description
3,459	74	>75% Grass cover, Good, HSG C
3,459	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.37		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.1	39	0.1270	0.31		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
1.2	15	0.0790	0.21		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
4.2	75	Total			

Subcatchment 1S: Existing (Disturbed)



Summary for Subcatchment 2S: Existing (Undisturbed)

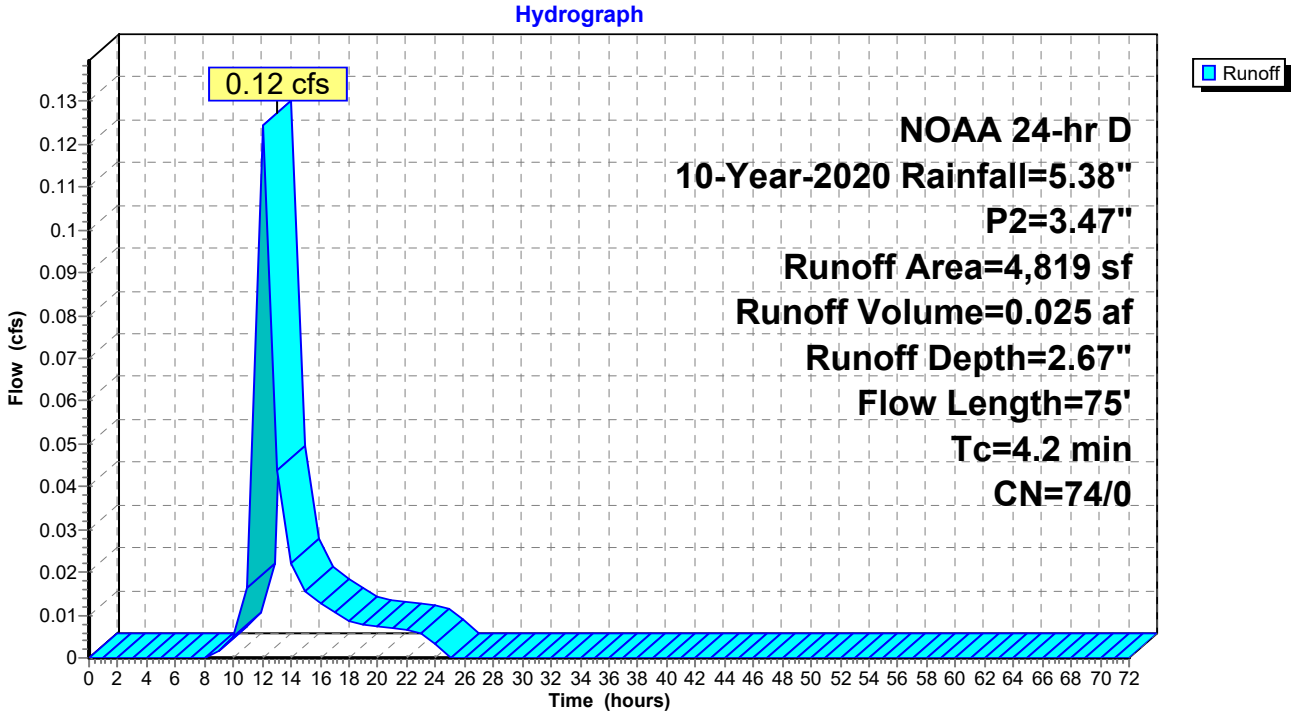
Runoff = 0.12 cfs @ 12.07 hrs, Volume= 0.025 af, Depth= 2.67"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 10-Year-2020 Rainfall=5.38", P2=3.47"

Area (sf)	CN	Description
4,819	74	>75% Grass cover, Good, HSG C
4,819	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.37		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.1	39	0.1270	0.31		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
1.2	15	0.0790	0.21		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
4.2	75	Total			

Subcatchment 2S: Existing (Undisturbed)



Summary for Subcatchment 3S: Propsed

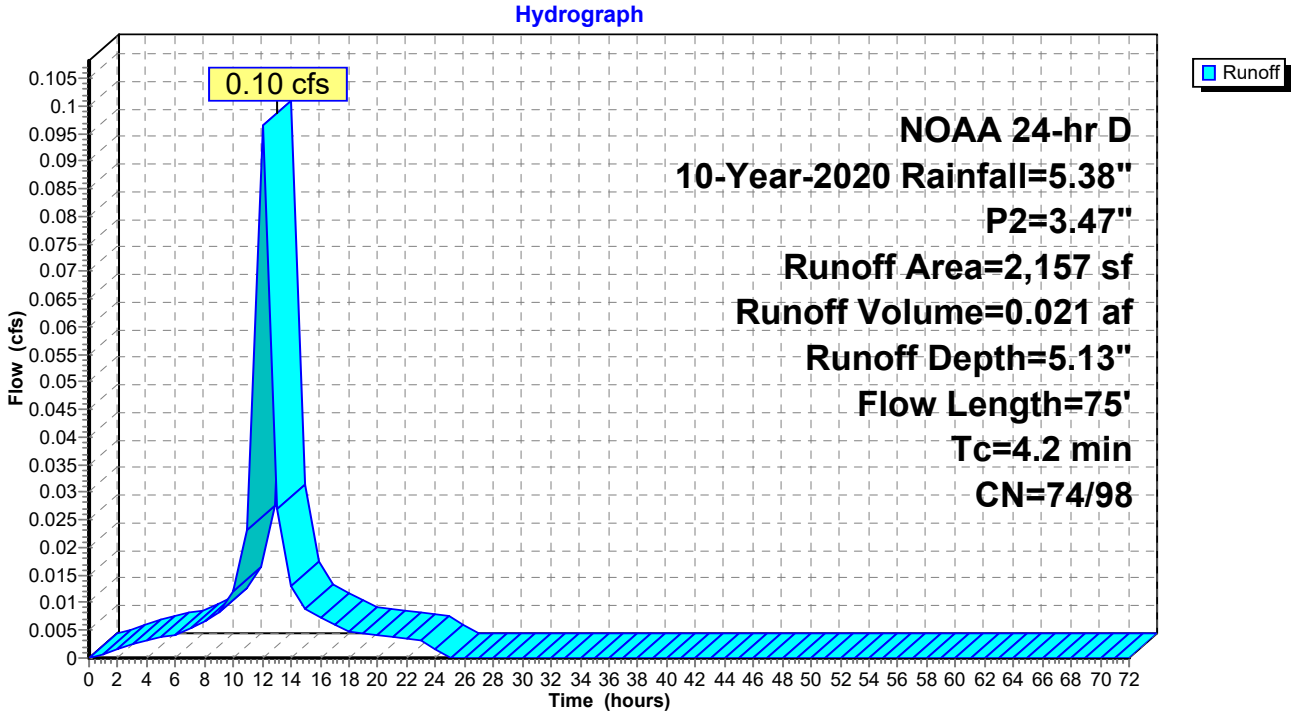
Runoff = 0.10 cfs @ 12.01 hrs, Volume= 0.021 af, Depth= 5.13"
Routed to Pond 9P : Drywell

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 10-Year-2020 Rainfall=5.38", P2=3.47"

	Area (sf)	CN	Description
	1,467	98	Roofs, HSG C
*	608	98	Driveway, HSG C
*	68	98	Front Walk, HSG C
	14	74	>75% Grass cover, Good, HSG C
	2,157	98	Weighted Average
	14	74	0.65% Pervious Area
	2,143	98	99.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.37		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.1	39	0.1270	0.31		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
1.2	15	0.0790	0.21		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
4.2	75	Total			

Subcatchment 3S: Propsed



Summary for Subcatchment 4S: Bypass

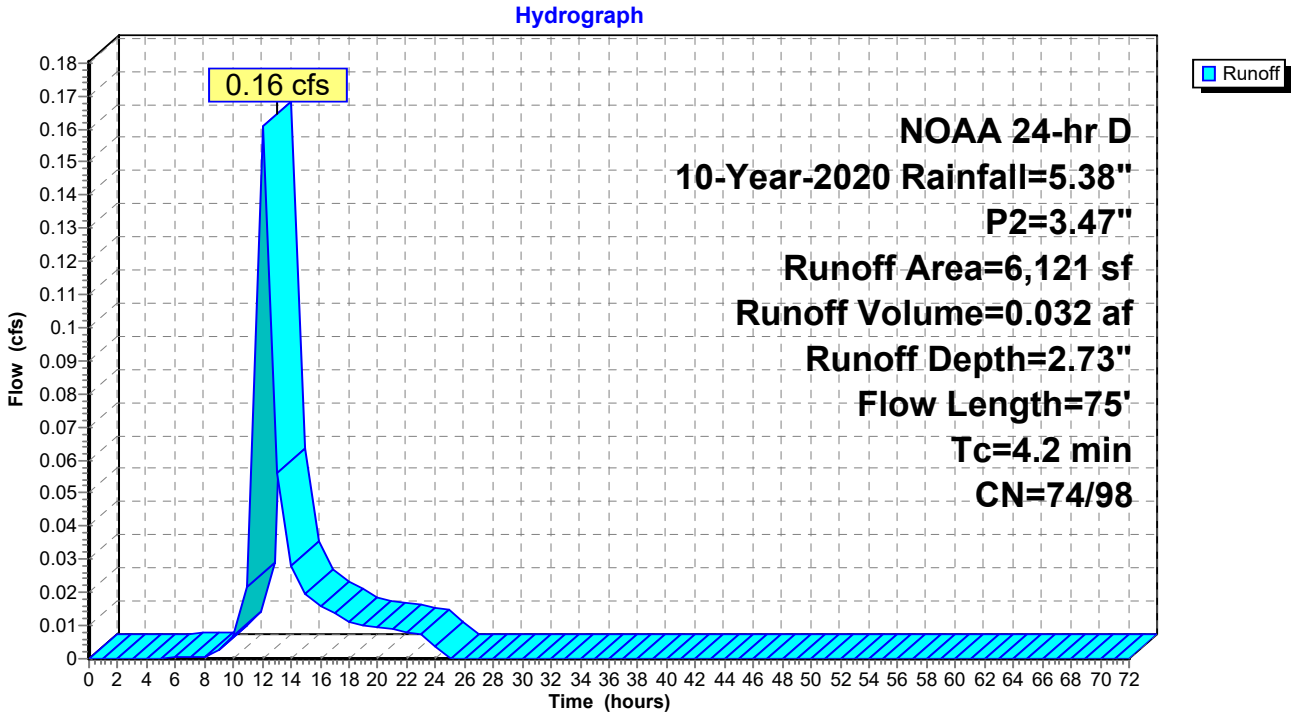
Runoff = 0.16 cfs @ 12.07 hrs, Volume= 0.032 af, Depth= 2.73"
Routed to Link 10L : Proposed

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 10-Year-2020 Rainfall=5.38", P2=3.47"

	Area (sf)	CN	Description
	5,974	74	>75% Grass cover, Good, HSG C
*	147	98	Deck & Steps, HSG C
	6,121	75	Weighted Average
	5,974	74	97.60% Pervious Area
	147	98	2.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.37		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.1	39	0.1270	0.31		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
1.2	15	0.0790	0.21		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
4.2	75	Total			

Subcatchment 4S: Bypass



Summary for Pond 9P: Drywell

Inflow Area = 0.050 ac, 99.35% Impervious, Inflow Depth = 5.13" for 10-Year-2020 event
Inflow = 0.10 cfs @ 12.01 hrs, Volume= 0.021 af
Outflow = 0.04 cfs @ 12.00 hrs, Volume= 0.022 af, Atten= 57%, Lag= 0.0 min
Discarded = 0.04 cfs @ 12.00 hrs, Volume= 0.022 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 10L : Proposed

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs
Peak Elev= 79.99' @ 12.98 hrs Surf.Area= 225 sf Storage= 179 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 31.6 min (777.5 - 745.9)

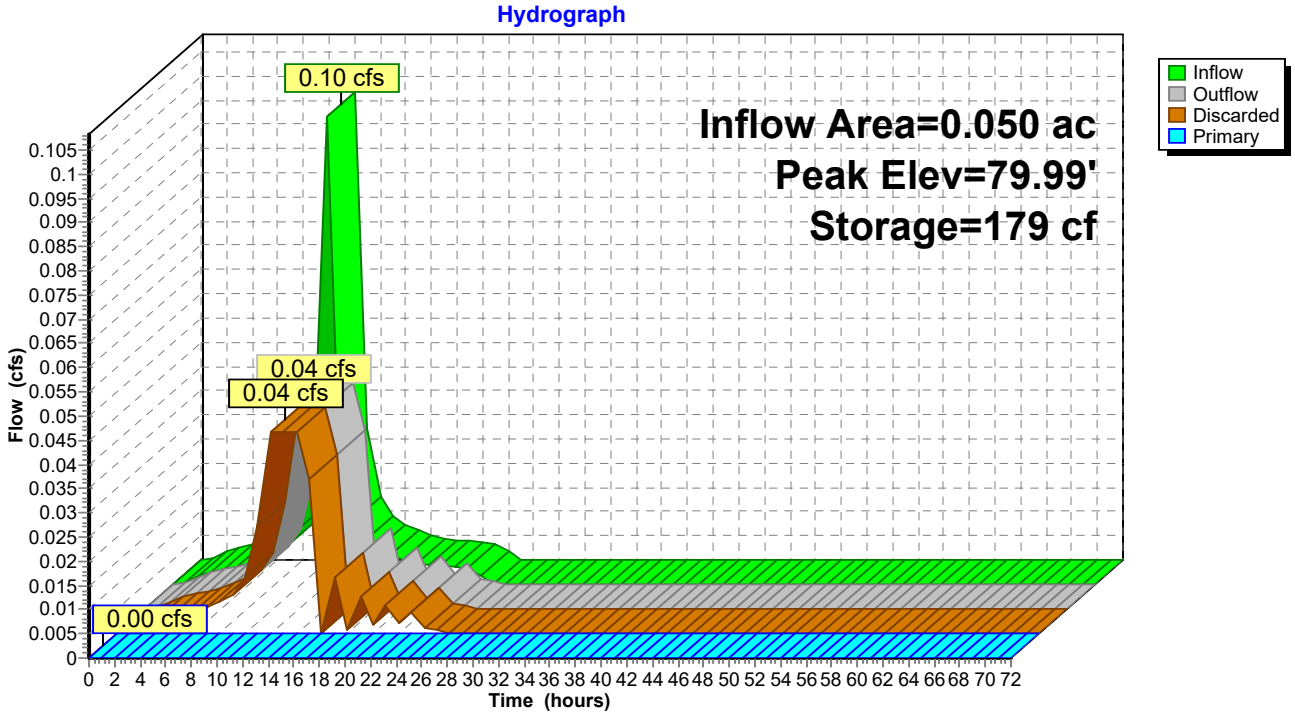
Volume	Invert	Avail.Storage	Storage Description
#1	80.00'	302 cf	**8.00'D x 6.00'H Drywell** Inside #2 354 cf Overall - 4.0" Wall Thickness = 302 cf
#2	78.00'	578 cf	**15.00'W x 15.00'L x 8.00'H Stone** 1,800 cf Overall - 354 cf Embedded = 1,446 cf x 40.0% Voids
#3	86.00'	5 cf	**2.00'D x 1.67'H Vertical Cone/Cylinder**
		885 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	78.00'	**8.000 in/hr Exfiltration over Surface area**
#2	Primary	87.67'	**24.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.04 cfs @ 12.00 hrs HW=79.18' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=78.00' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 9P: Drywell

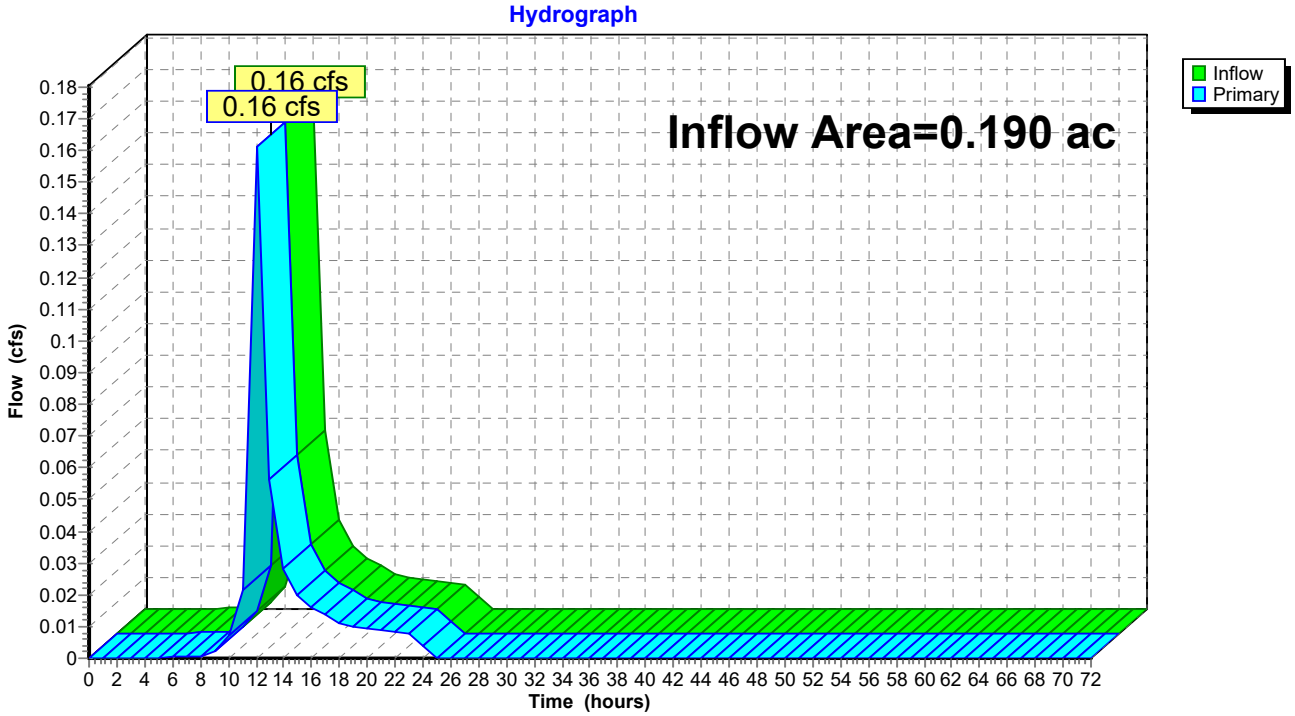


Summary for Link 10L: Proposed

Inflow Area = 0.190 ac, 27.66% Impervious, Inflow Depth = 2.02" for 10-Year-2020 event
Inflow = 0.16 cfs @ 12.07 hrs, Volume= 0.032 af
Primary = 0.16 cfs @ 12.07 hrs, Volume= 0.032 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs

Link 10L: Proposed



Time span=0.00-72.00 hrs, dt=1.00 hrs, 73 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing (Disturbed) Runoff Area=3,459 sf 0.00% Impervious Runoff Depth=3.80"
Flow Length=75' Tc=4.2 min CN=74/0 Runoff=0.13 cfs 0.025 af

Subcatchment 2S: Existing (Undisturbed) Runoff Area=4,819 sf 0.00% Impervious Runoff Depth=3.80"
Flow Length=75' Tc=4.2 min CN=74/0 Runoff=0.18 cfs 0.035 af

Subcatchment 3S: Propsed Runoff Area=2,157 sf 99.35% Impervious Runoff Depth=6.46"
Flow Length=75' Tc=4.2 min CN=74/98 Runoff=0.12 cfs 0.027 af

Subcatchment 4S: Bypass Runoff Area=6,121 sf 2.40% Impervious Runoff Depth=3.86"
Flow Length=75' Tc=4.2 min CN=74/98 Runoff=0.23 cfs 0.045 af

Pond 9P: Drywell Peak Elev=80.90' Storage=285 cf Inflow=0.12 cfs 0.027 af
Discarded=0.04 cfs 0.027 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.027 af

Link 10L: Proposed Inflow=0.23 cfs 0.045 af
Primary=0.23 cfs 0.045 af

Total Runoff Area = 0.380 ac Runoff Volume = 0.132 af Average Runoff Depth = 4.17"
86.17% Pervious = 0.328 ac 13.83% Impervious = 0.053 ac

Summary for Subcatchment 1S: Existing (Disturbed)

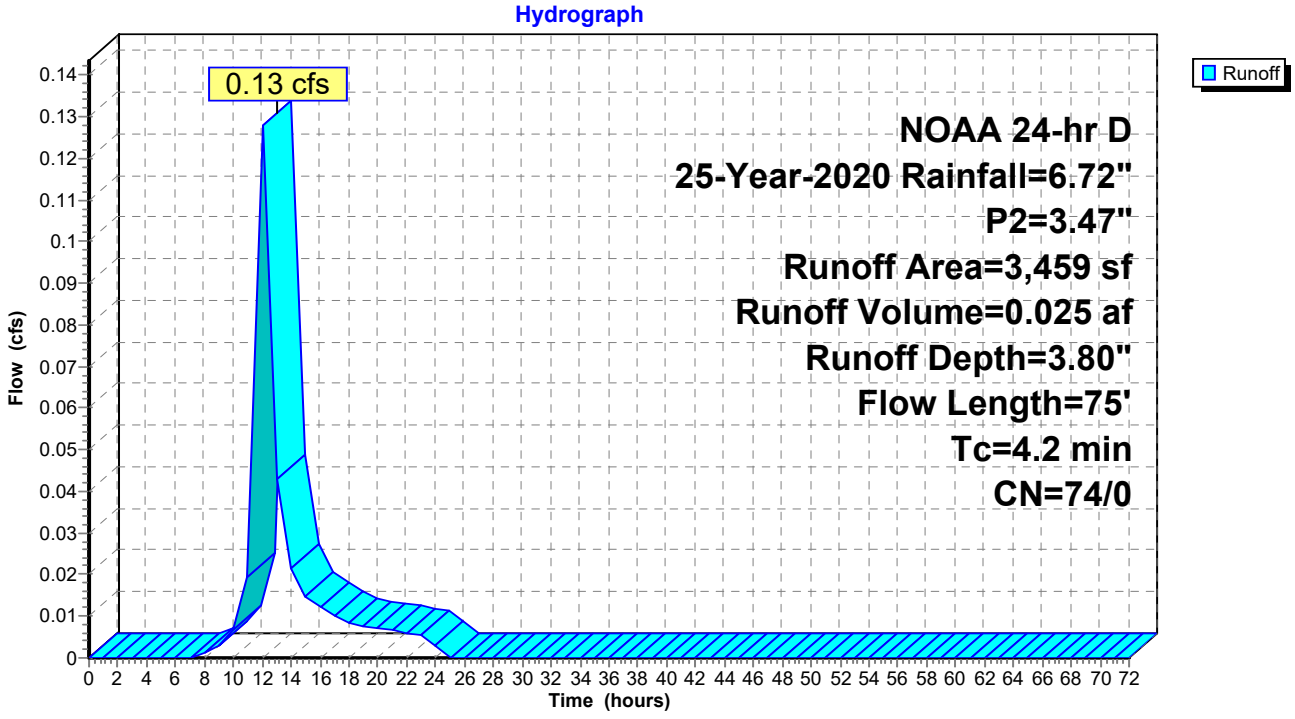
Runoff = 0.13 cfs @ 12.06 hrs, Volume= 0.025 af, Depth= 3.80"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 25-Year-2020 Rainfall=6.72", P2=3.47"

Area (sf)	CN	Description
3,459	74	>75% Grass cover, Good, HSG C
3,459	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.37		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.1	39	0.1270	0.31		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
1.2	15	0.0790	0.21		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
4.2	75	Total			

Subcatchment 1S: Existing (Disturbed)



Summary for Subcatchment 2S: Existing (Undisturbed)

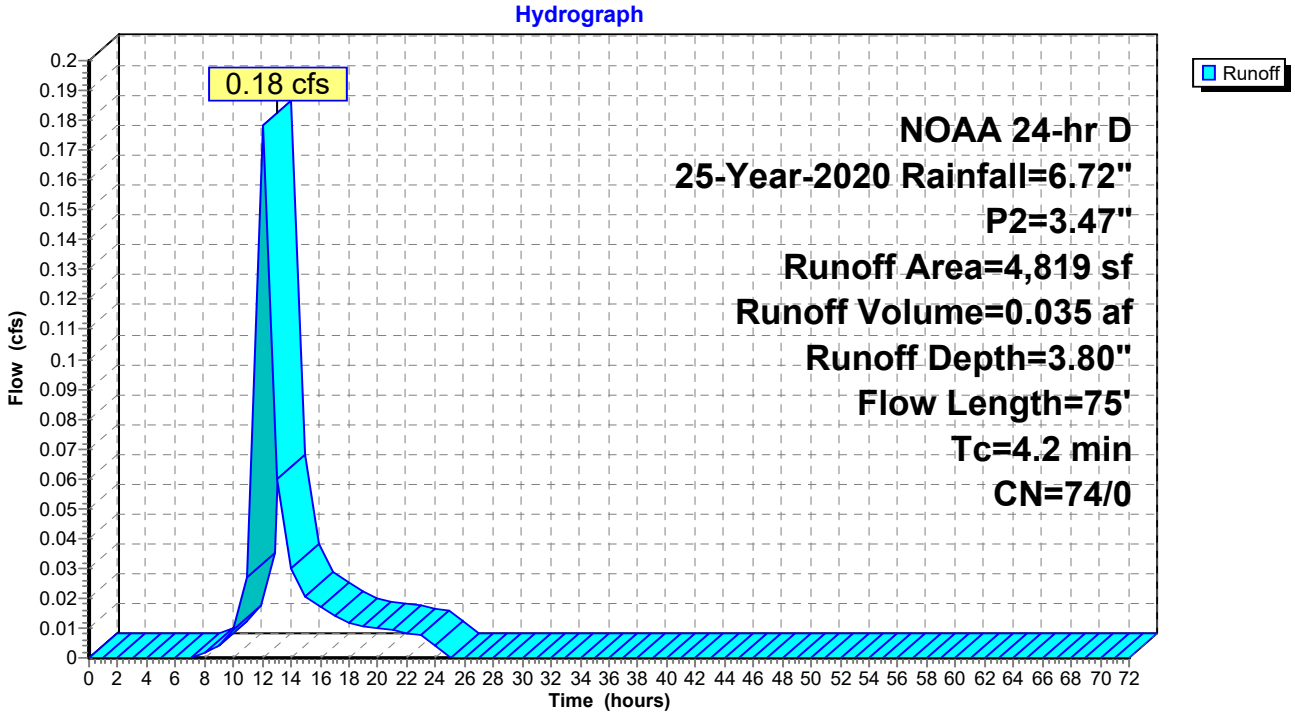
Runoff = 0.18 cfs @ 12.06 hrs, Volume= 0.035 af, Depth= 3.80"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 25-Year-2020 Rainfall=6.72", P2=3.47"

Area (sf)	CN	Description
4,819	74	>75% Grass cover, Good, HSG C
4,819	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.37		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.1	39	0.1270	0.31		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
1.2	15	0.0790	0.21		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
4.2	75	Total			

Subcatchment 2S: Existing (Undisturbed)



Summary for Subcatchment 3S: Propsed

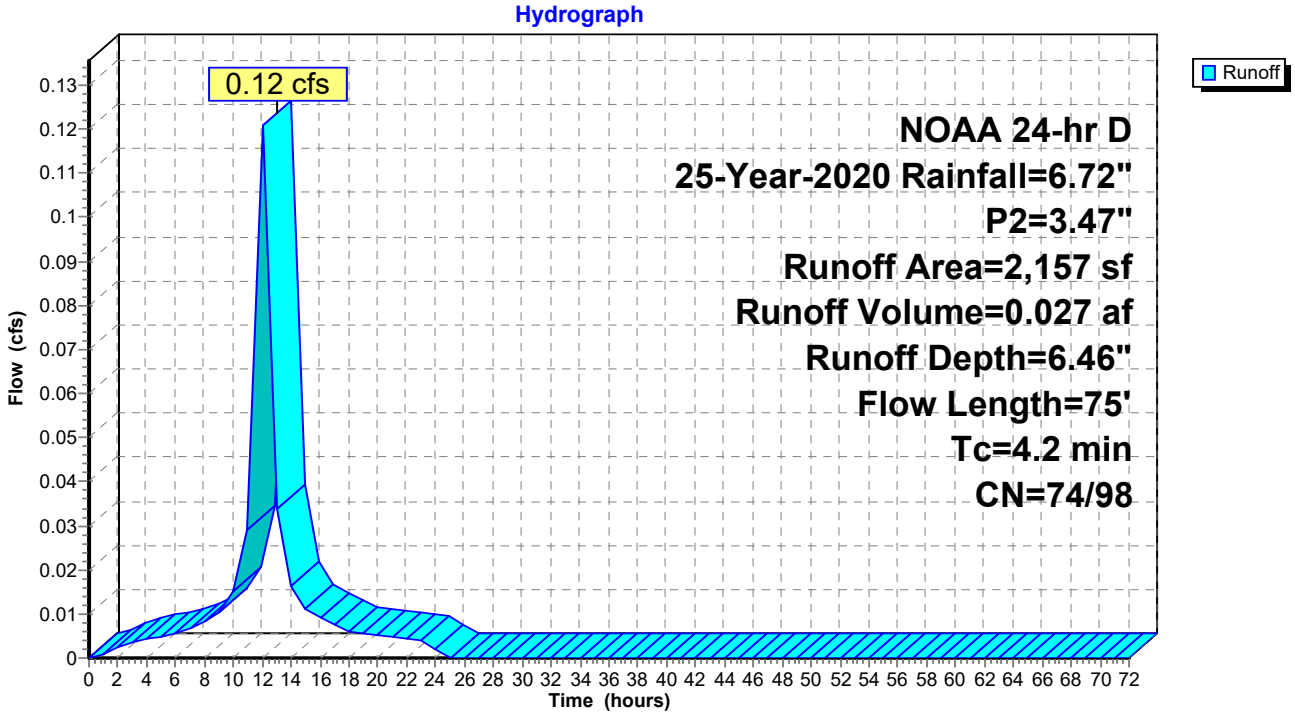
Runoff = 0.12 cfs @ 12.01 hrs, Volume= 0.027 af, Depth= 6.46"
Routed to Pond 9P : Drywell

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 25-Year-2020 Rainfall=6.72", P2=3.47"

	Area (sf)	CN	Description
	1,467	98	Roofs, HSG C
*	608	98	Driveway, HSG C
*	68	98	Front Walk, HSG C
	14	74	>75% Grass cover, Good, HSG C
	2,157	98	Weighted Average
	14	74	0.65% Pervious Area
	2,143	98	99.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.37		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.1	39	0.1270	0.31		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
1.2	15	0.0790	0.21		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
4.2	75	Total			

Subcatchment 3S: Propsed



Summary for Subcatchment 4S: Bypass

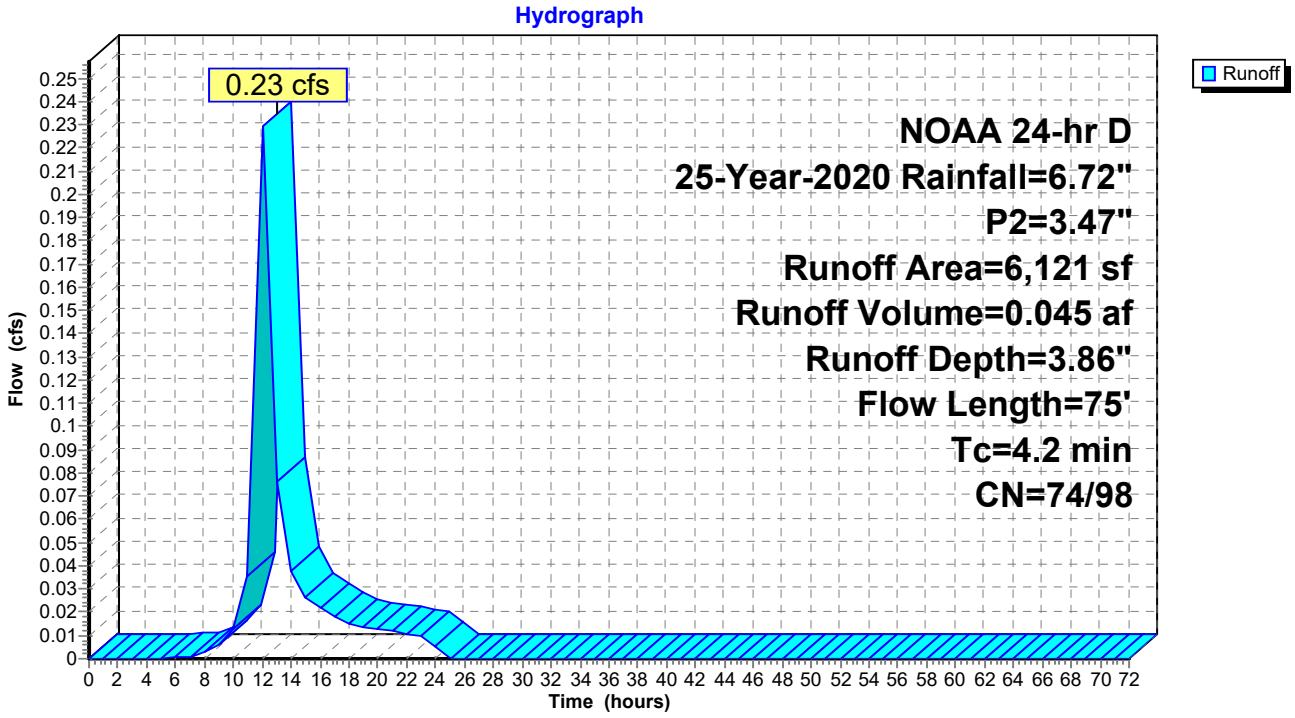
Runoff = 0.23 cfs @ 12.06 hrs, Volume= 0.045 af, Depth= 3.86"
Routed to Link 10L : Proposed

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 25-Year-2020 Rainfall=6.72", P2=3.47"

	Area (sf)	CN	Description
	5,974	74	>75% Grass cover, Good, HSG C
*	147	98	Deck & Steps, HSG C
	6,121	75	Weighted Average
	5,974	74	97.60% Pervious Area
	147	98	2.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.37		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.1	39	0.1270	0.31		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
1.2	15	0.0790	0.21		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
4.2	75	Total			

Subcatchment 4S: Bypass



Summary for Pond 9P: Drywell

Inflow Area = 0.050 ac, 99.35% Impervious, Inflow Depth = 6.46" for 25-Year-2020 event
Inflow = 0.12 cfs @ 12.01 hrs, Volume= 0.027 af
Outflow = 0.04 cfs @ 12.00 hrs, Volume= 0.027 af, Atten= 66%, Lag= 0.0 min
Discarded = 0.04 cfs @ 12.00 hrs, Volume= 0.027 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 10L : Proposed

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs
Peak Elev= 80.90' @ 13.20 hrs Surf.Area= 225 sf Storage= 285 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 48.5 min (790.8 - 742.3)

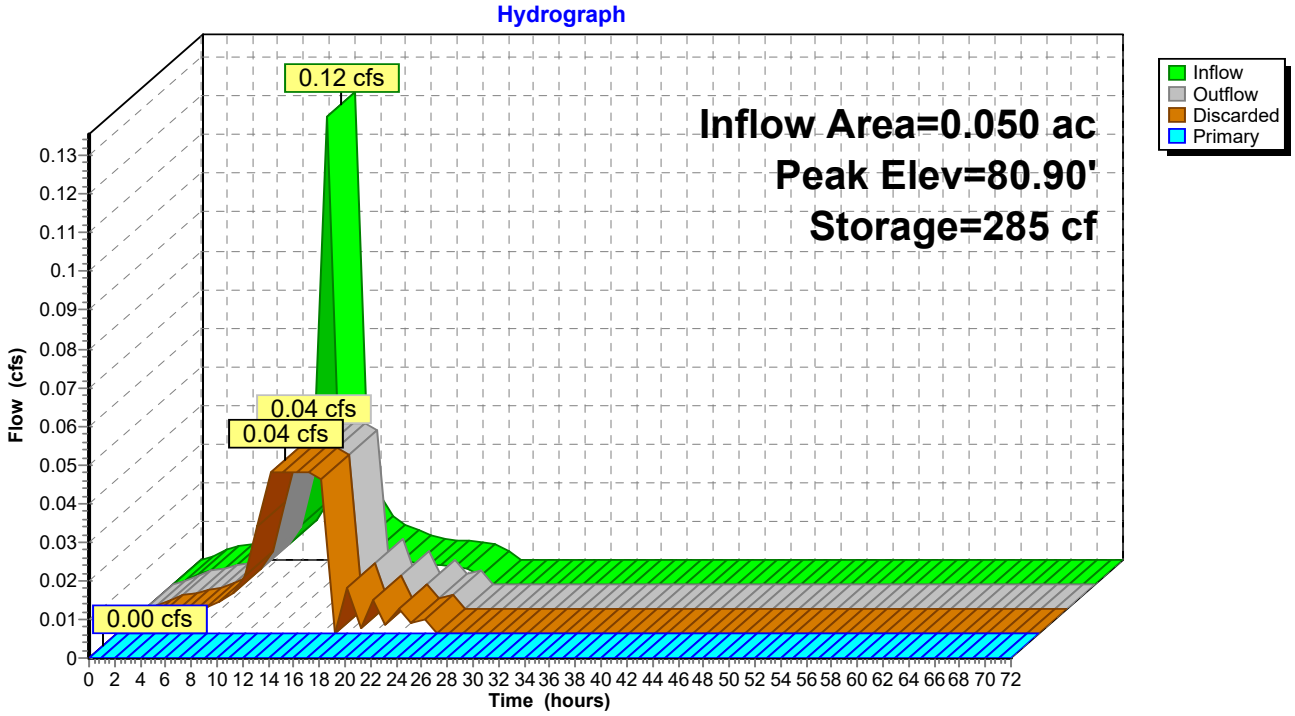
Volume	Invert	Avail.Storage	Storage Description
#1	80.00'	302 cf	**8.00'D x 6.00'H Drywell** Inside #2 354 cf Overall - 4.0" Wall Thickness = 302 cf
#2	78.00'	578 cf	**15.00'W x 15.00'L x 8.00'H Stone** 1,800 cf Overall - 354 cf Embedded = 1,446 cf x 40.0% Voids
#3	86.00'	5 cf	**2.00'D x 1.67'H Vertical Cone/Cylinder**
		885 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	78.00'	**8.000 in/hr Exfiltration over Surface area**
#2	Primary	87.67'	**24.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.04 cfs @ 12.00 hrs HW=79.69' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=78.00' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 9P: Drywell

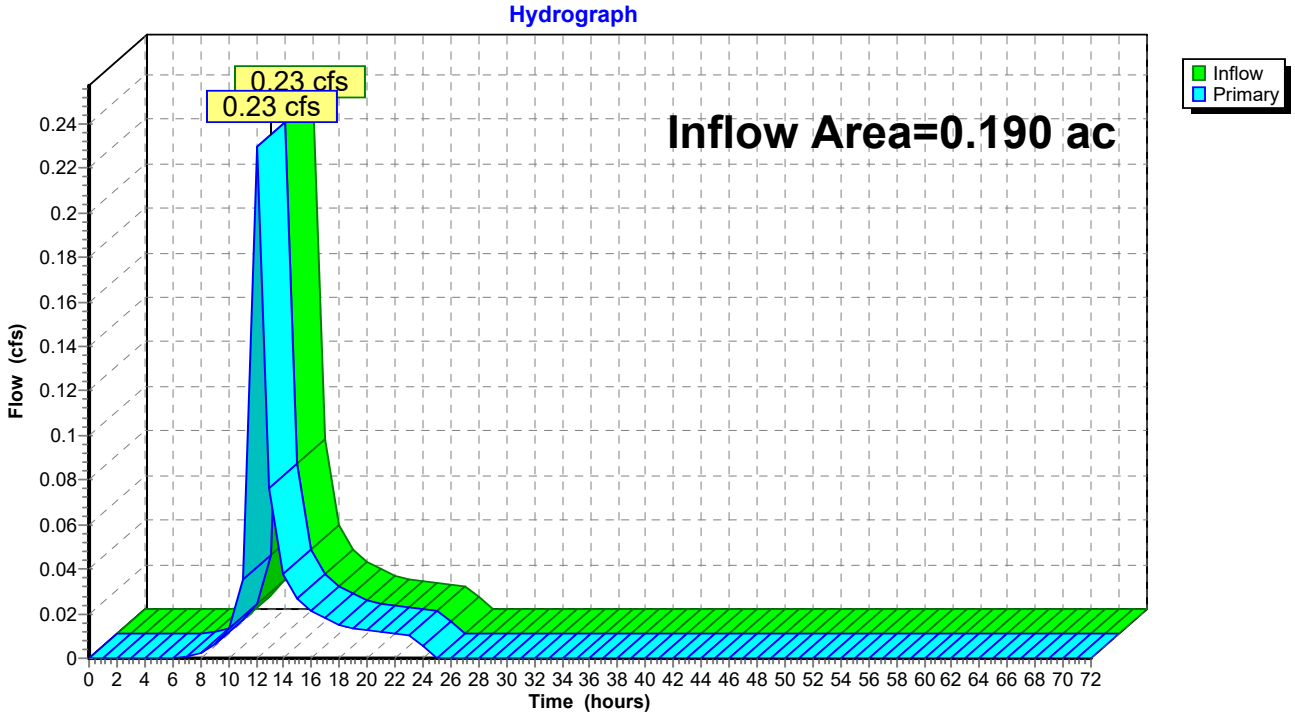


Summary for Link 10L: Proposed

Inflow Area = 0.190 ac, 27.66% Impervious, Inflow Depth = 2.86" for 25-Year-2020 event
Inflow = 0.23 cfs @ 12.06 hrs, Volume= 0.045 af
Primary = 0.23 cfs @ 12.06 hrs, Volume= 0.045 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs

Link 10L: Proposed



Time span=0.00-72.00 hrs, dt=1.00 hrs, 73 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing (Disturbed) Runoff Area=3,459 sf 0.00% Impervious Runoff Depth=5.99"
Flow Length=75' Tc=4.2 min CN=74/0 Runoff=0.20 cfs 0.040 af

Subcatchment 2S: Existing (Undisturbed) Runoff Area=4,819 sf 0.00% Impervious Runoff Depth=5.99"
Flow Length=75' Tc=4.2 min CN=74/0 Runoff=0.28 cfs 0.055 af

Subcatchment 3S: Propsed Runoff Area=2,157 sf 99.35% Impervious Runoff Depth=8.92"
Flow Length=75' Tc=4.2 min CN=74/98 Runoff=0.17 cfs 0.037 af

Subcatchment 4S: Bypass Runoff Area=6,121 sf 2.40% Impervious Runoff Depth=6.06"
Flow Length=75' Tc=4.2 min CN=74/98 Runoff=0.36 cfs 0.071 af

Pond 9P: Drywell Peak Elev=82.64' Storage=488 cf Inflow=0.17 cfs 0.037 af
Discarded=0.04 cfs 0.037 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.037 af

Link 10L: Proposed Inflow=0.36 cfs 0.071 af
Primary=0.36 cfs 0.071 af

Total Runoff Area = 0.380 ac Runoff Volume = 0.203 af Average Runoff Depth = 6.40"
86.17% Pervious = 0.328 ac 13.83% Impervious = 0.053 ac

Summary for Subcatchment 1S: Existing (Disturbed)

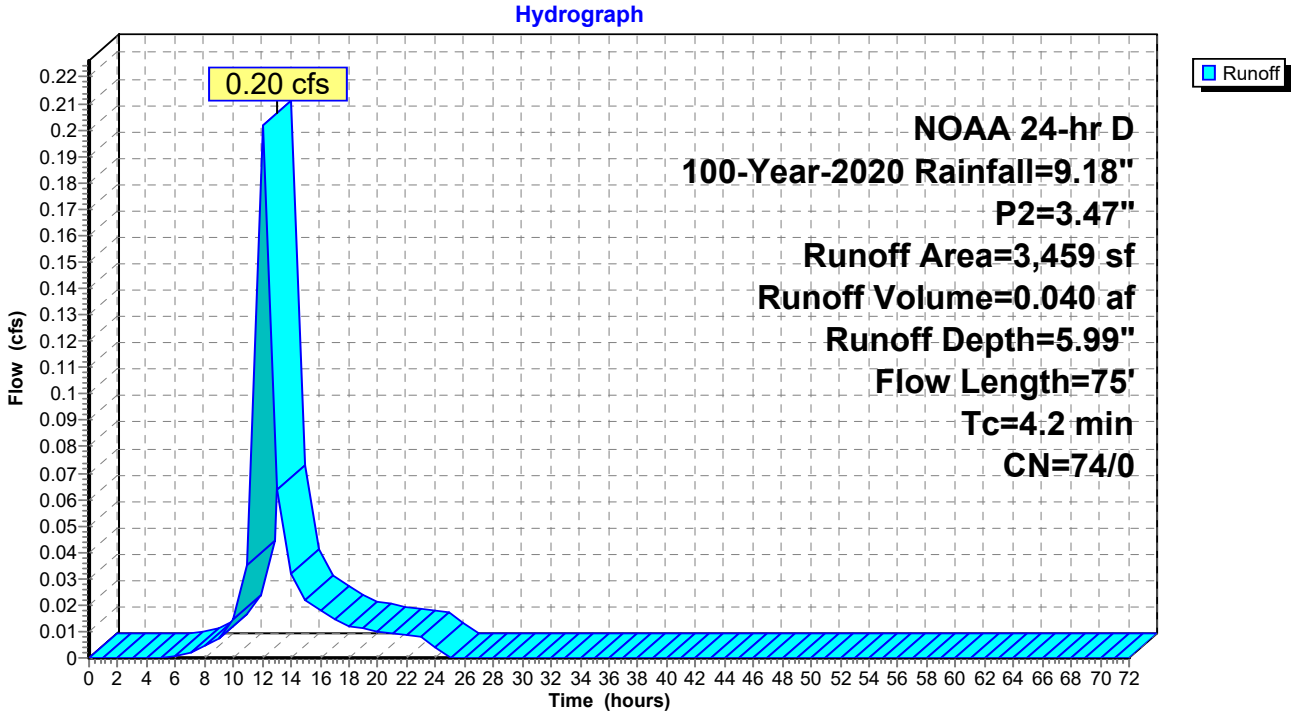
Runoff = 0.20 cfs @ 12.05 hrs, Volume= 0.040 af, Depth= 5.99"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 100-Year-2020 Rainfall=9.18", P2=3.47"

Area (sf)	CN	Description
3,459	74	>75% Grass cover, Good, HSG C
3,459	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.37		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.1	39	0.1270	0.31		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
1.2	15	0.0790	0.21		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
4.2	75	Total			

Subcatchment 1S: Existing (Disturbed)



Summary for Subcatchment 2S: Existing (Undisturbed)

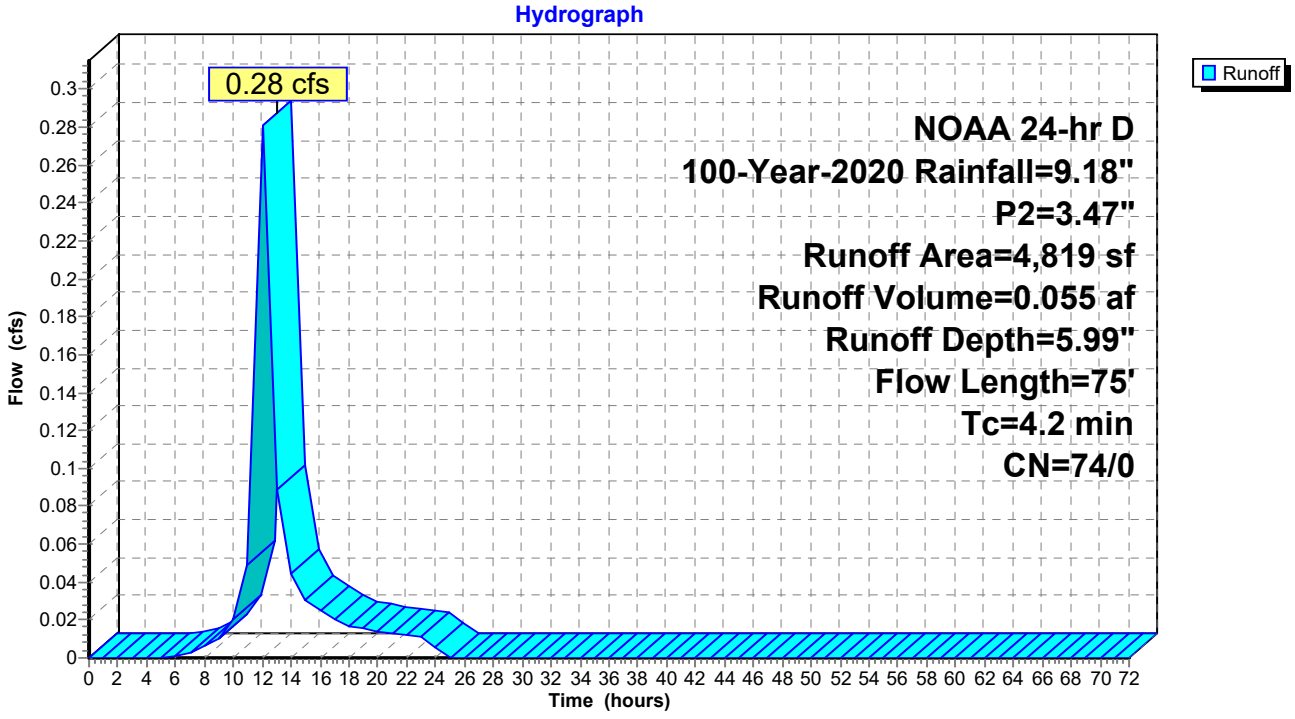
Runoff = 0.28 cfs @ 12.05 hrs, Volume= 0.055 af, Depth= 5.99"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 100-Year-2020 Rainfall=9.18", P2=3.47"

Area (sf)	CN	Description
4,819	74	>75% Grass cover, Good, HSG C
4,819	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.37		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.1	39	0.1270	0.31		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
1.2	15	0.0790	0.21		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
4.2	75	Total			

Subcatchment 2S: Existing (Undisturbed)



Summary for Subcatchment 3S: Propsed

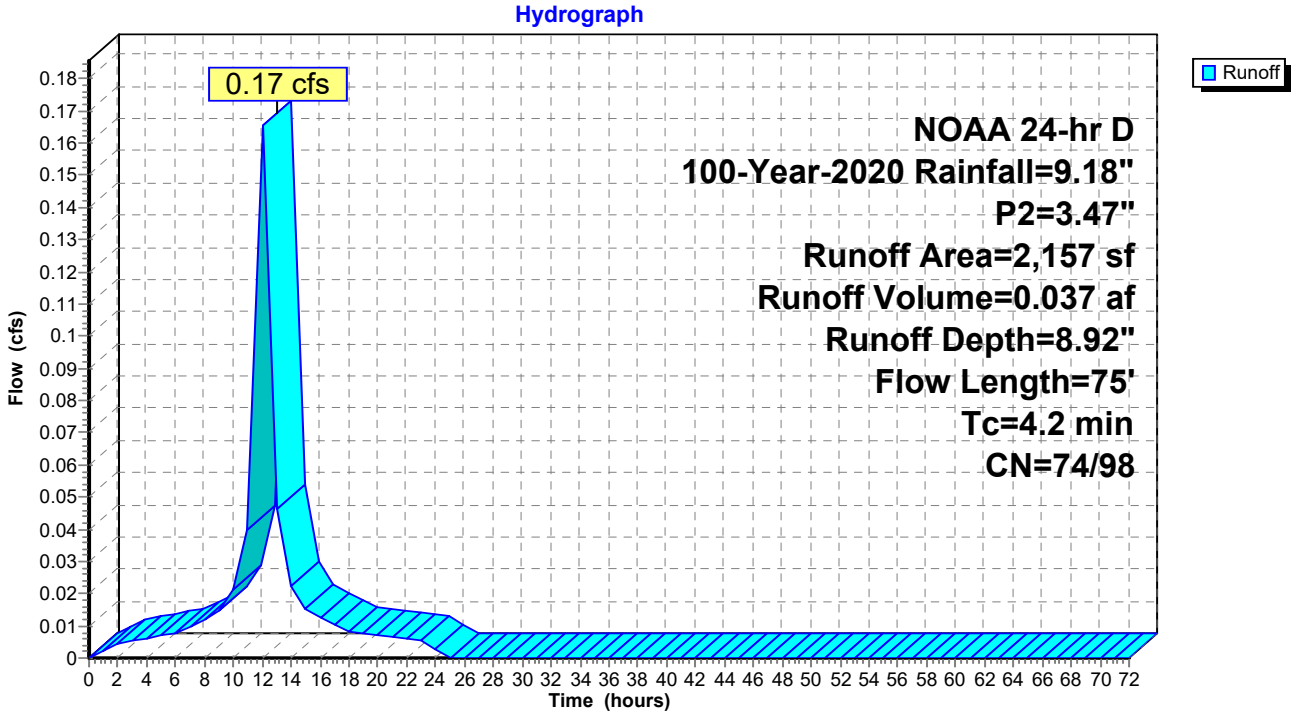
Runoff = 0.17 cfs @ 12.01 hrs, Volume= 0.037 af, Depth= 8.92"
Routed to Pond 9P : Drywell

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 100-Year-2020 Rainfall=9.18", P2=3.47"

	Area (sf)	CN	Description
	1,467	98	Roofs, HSG C
*	608	98	Driveway, HSG C
*	68	98	Front Walk, HSG C
	14	74	>75% Grass cover, Good, HSG C
	2,157	98	Weighted Average
	14	74	0.65% Pervious Area
	2,143	98	99.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.37		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.1	39	0.1270	0.31		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
1.2	15	0.0790	0.21		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
4.2	75	Total			

Subcatchment 3S: Propsed



Summary for Subcatchment 4S: Bypass

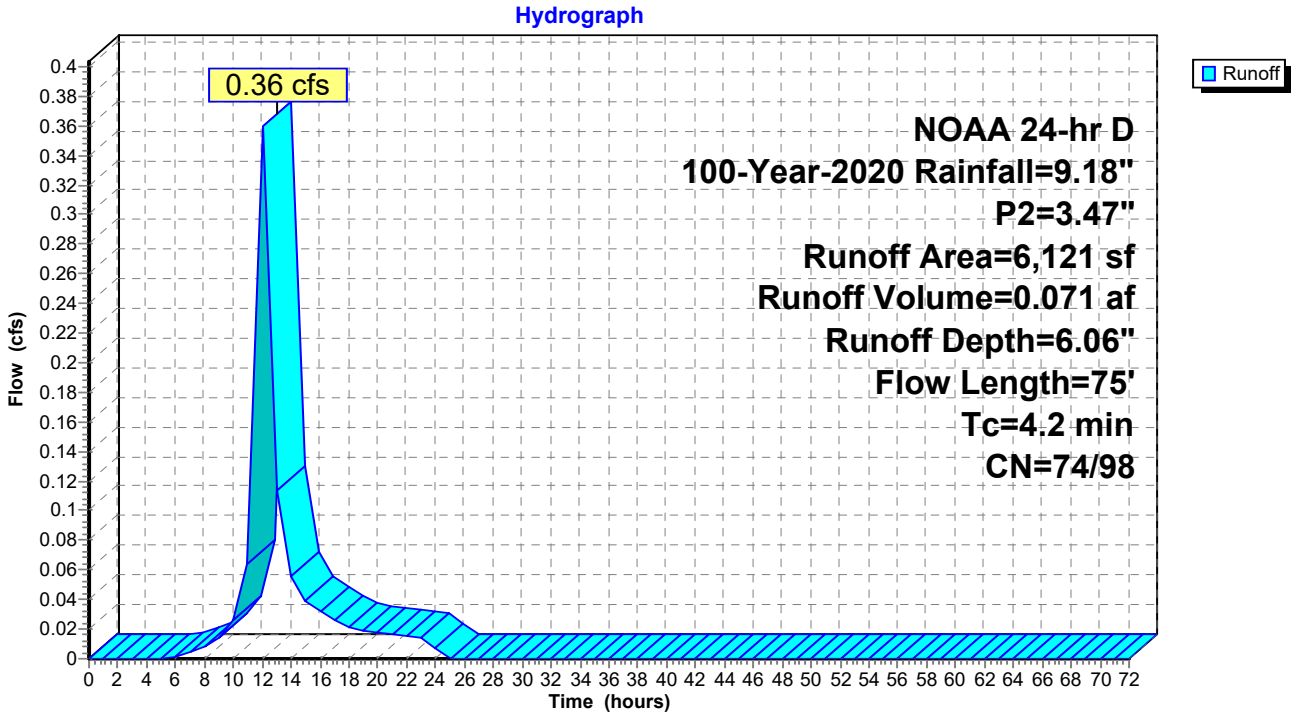
Runoff = 0.36 cfs @ 12.05 hrs, Volume= 0.071 af, Depth= 6.06"
Routed to Link 10L : Proposed

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 100-Year-2020 Rainfall=9.18", P2=3.47"

	Area (sf)	CN	Description
	5,974	74	>75% Grass cover, Good, HSG C
*	147	98	Deck & Steps, HSG C
	6,121	75	Weighted Average
	5,974	74	97.60% Pervious Area
	147	98	2.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.37		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.1	39	0.1270	0.31		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
1.2	15	0.0790	0.21		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
4.2	75	Total			

Subcatchment 4S: Bypass



Summary for Pond 9P: Drywell

Inflow Area = 0.050 ac, 99.35% Impervious, Inflow Depth = 8.92" for 100-Year-2020 event
Inflow = 0.17 cfs @ 12.01 hrs, Volume= 0.037 af
Outflow = 0.04 cfs @ 12.00 hrs, Volume= 0.037 af, Atten= 75%, Lag= 0.0 min
Discarded = 0.04 cfs @ 12.00 hrs, Volume= 0.037 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 10L : Proposed

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs
Peak Elev= 82.64' @ 13.40 hrs Surf.Area= 225 sf Storage= 488 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 77.8 min (815.9 - 738.2)

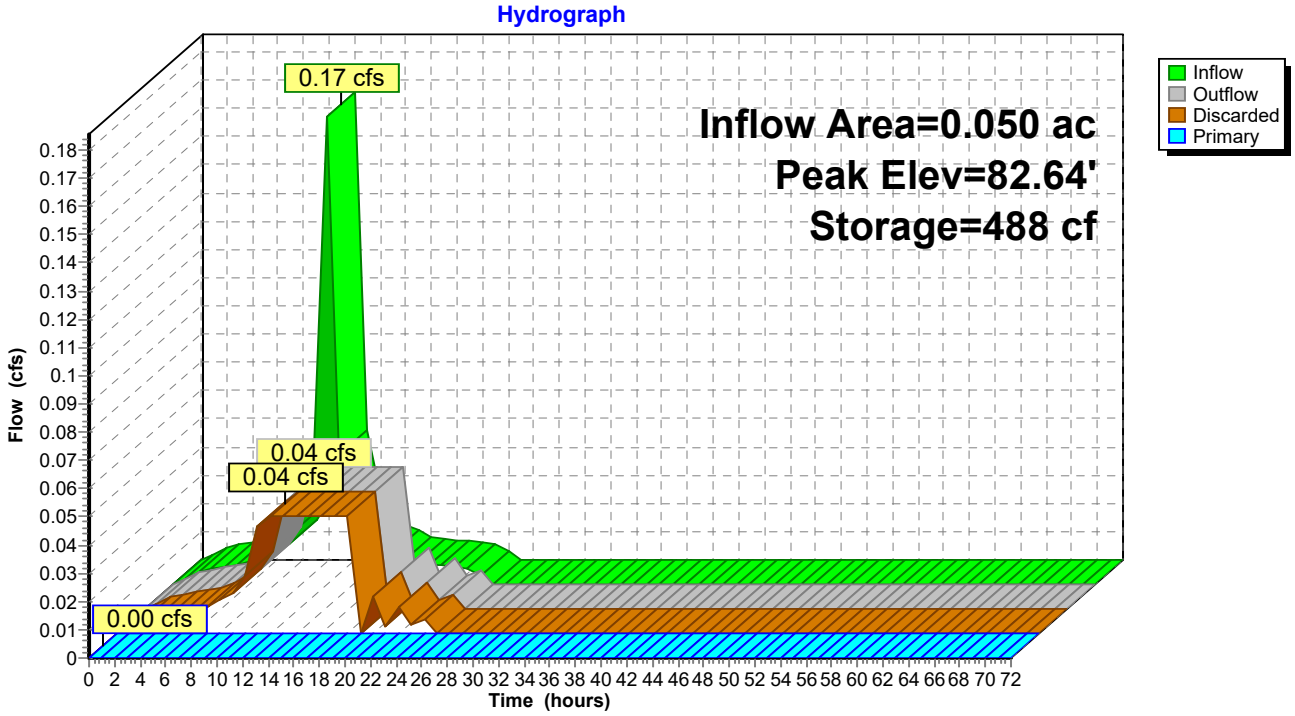
Volume	Invert	Avail.Storage	Storage Description
#1	80.00'	302 cf	**8.00'D x 6.00'H Drywell** Inside #2 354 cf Overall - 4.0" Wall Thickness = 302 cf
#2	78.00'	578 cf	**15.00'W x 15.00'L x 8.00'H Stone** 1,800 cf Overall - 354 cf Embedded = 1,446 cf x 40.0% Voids
#3	86.00'	5 cf	**2.00'D x 1.67'H Vertical Cone/Cylinder**
		885 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	78.00'	**8.000 in/hr Exfiltration over Surface area**
#2	Primary	87.67'	**24.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.04 cfs @ 12.00 hrs HW=80.48' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=78.00' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 9P: Drywell

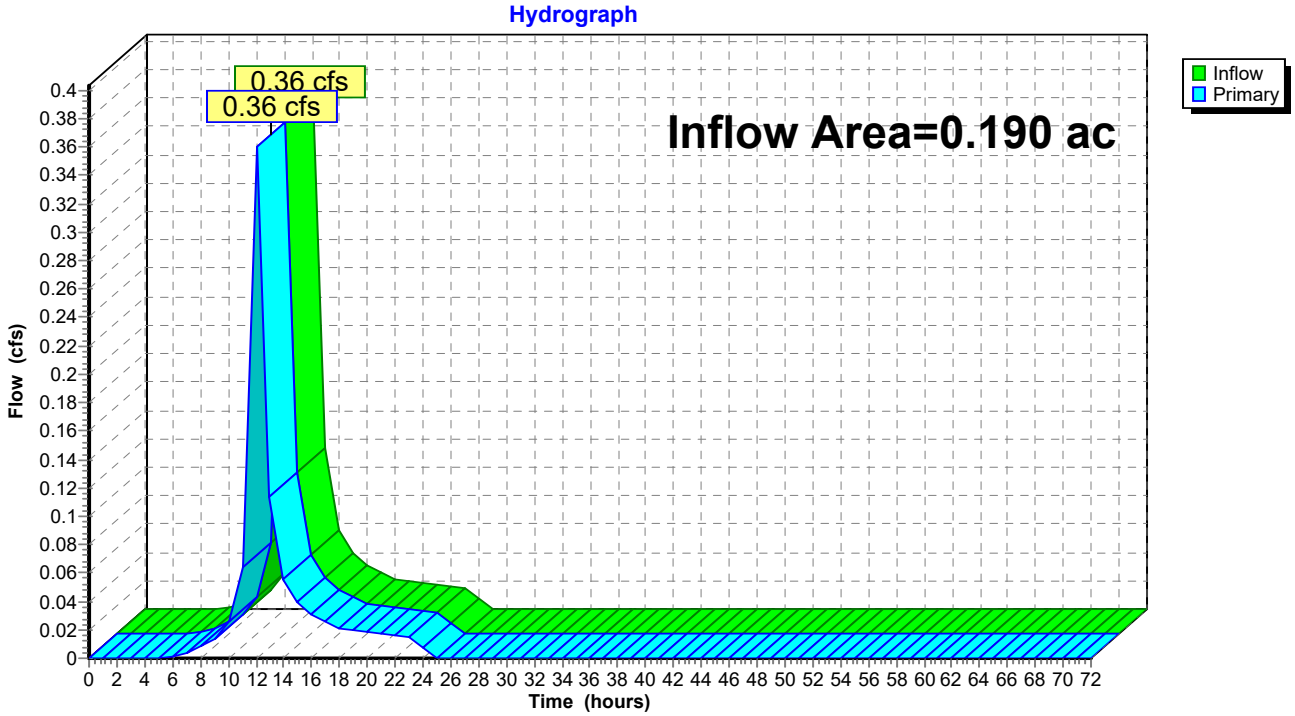


Summary for Link 10L: Proposed

Inflow Area = 0.190 ac, 27.66% Impervious, Inflow Depth = 4.48" for 100-Year-2020 event
Inflow = 0.36 cfs @ 12.05 hrs, Volume= 0.071 af
Primary = 0.36 cfs @ 12.05 hrs, Volume= 0.071 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs

Link 10L: Proposed



Time span=0.00-72.00 hrs, dt=1.00 hrs, 73 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing (Disturbed) Runoff Area=3,459 sf 0.00% Impervious Runoff Depth=1.66"
Flow Length=75' Tc=3.9 min CN=74/0 Runoff=0.05 cfs 0.011 af

Subcatchment 2S: Existing (Undisturbed) Runoff Area=4,819 sf 0.00% Impervious Runoff Depth=1.66"
Flow Length=75' Tc=3.9 min CN=74/0 Runoff=0.08 cfs 0.015 af

Subcatchment 3S: Propsed Runoff Area=2,157 sf 99.35% Impervious Runoff Depth=3.84"
Flow Length=75' Tc=3.9 min CN=74/98 Runoff=0.07 cfs 0.016 af

Subcatchment 4S: Bypass Runoff Area=6,121 sf 2.40% Impervious Runoff Depth=1.72"
Flow Length=75' Tc=3.9 min CN=74/98 Runoff=0.10 cfs 0.020 af

Pond 9P: Drywell Peak Elev=78.94' Storage=85 cf Inflow=0.07 cfs 0.016 af
Discarded=0.04 cfs 0.016 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.016 af

Link 10L: Proposed Inflow=0.10 cfs 0.020 af
Primary=0.10 cfs 0.020 af

Total Runoff Area = 0.380 ac Runoff Volume = 0.062 af Average Runoff Depth = 1.97"
86.17% Pervious = 0.328 ac 13.83% Impervious = 0.053 ac

Summary for Subcatchment 1S: Existing (Disturbed)

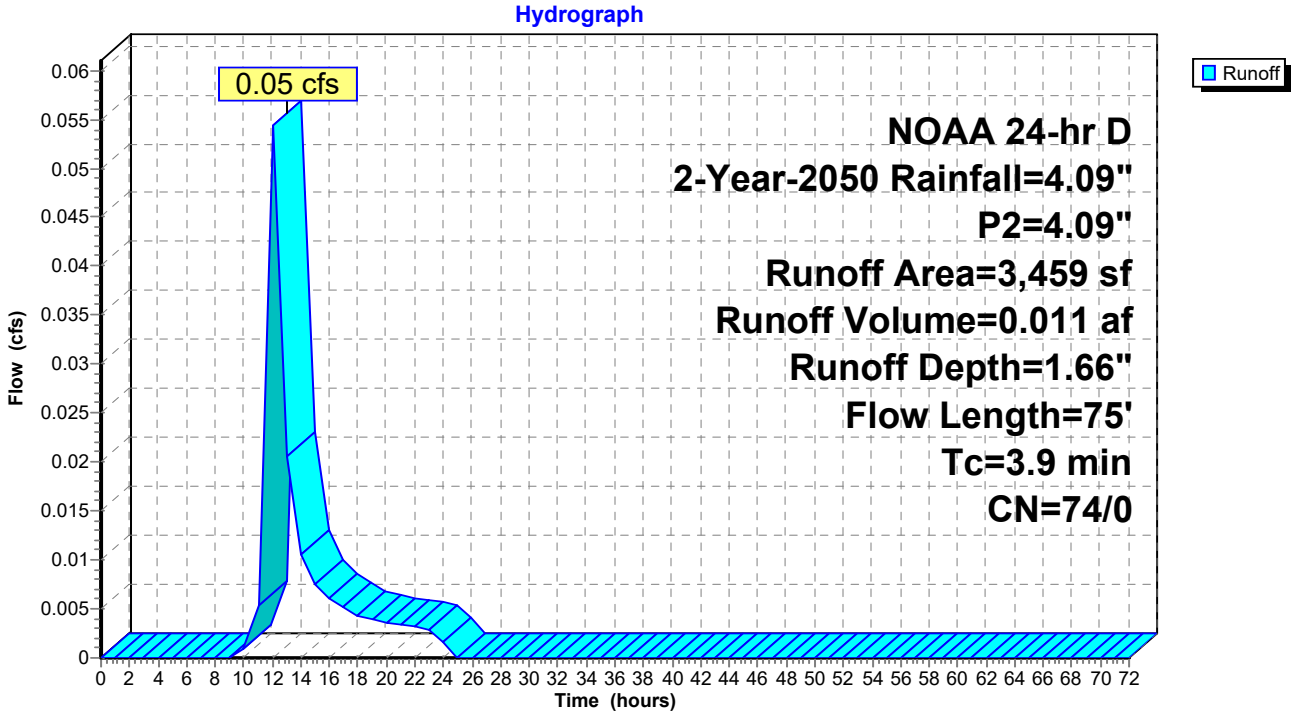
Runoff = 0.05 cfs @ 12.09 hrs, Volume= 0.011 af, Depth= 1.66"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 2-Year-2050 Rainfall=4.09", P2=4.09"

Area (sf)	CN	Description
3,459	74	>75% Grass cover, Good, HSG C
3,459	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.40		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	39	0.1270	0.33		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
1.1	15	0.0790	0.23		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
3.9	75	Total			

Subcatchment 1S: Existing (Disturbed)



Summary for Subcatchment 2S: Existing (Undisturbed)

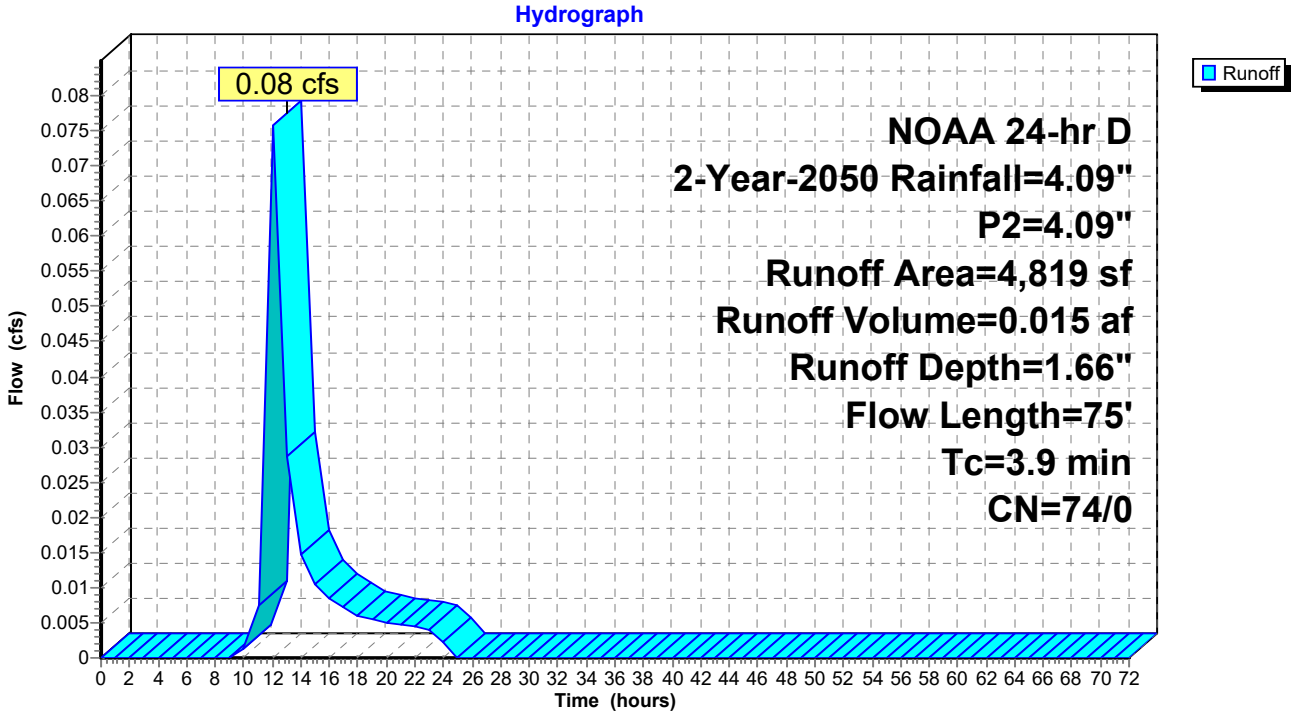
Runoff = 0.08 cfs @ 12.09 hrs, Volume= 0.015 af, Depth= 1.66"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 2-Year-2050 Rainfall=4.09", P2=4.09"

Area (sf)	CN	Description
4,819	74	>75% Grass cover, Good, HSG C
4,819	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.40		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	39	0.1270	0.33		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
1.1	15	0.0790	0.23		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
3.9	75	Total			

Subcatchment 2S: Existing (Undisturbed)



Summary for Subcatchment 3S: Propsed

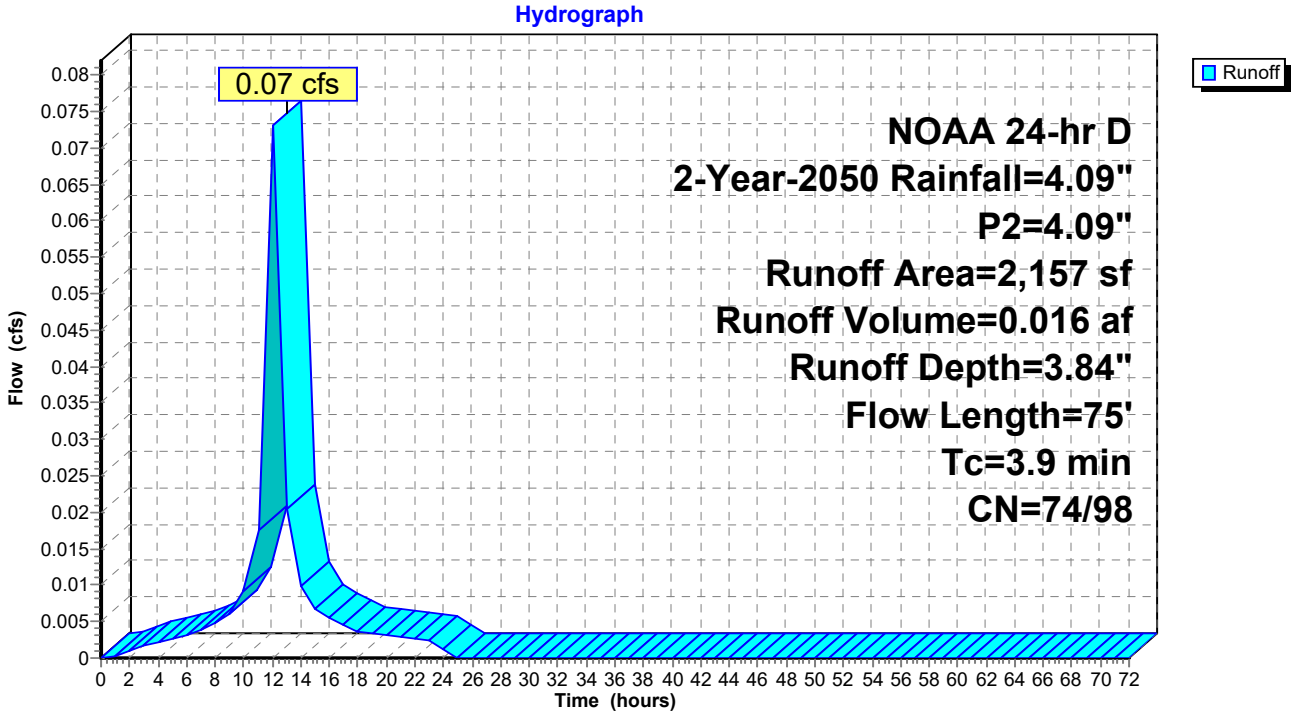
Runoff = 0.07 cfs @ 12.01 hrs, Volume= 0.016 af, Depth= 3.84"
Routed to Pond 9P : Drywell

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 2-Year-2050 Rainfall=4.09", P2=4.09"

	Area (sf)	CN	Description
	1,467	98	Roofs, HSG C
*	608	98	Driveway, HSG C
*	68	98	Front Walk, HSG C
	14	74	>75% Grass cover, Good, HSG C
	2,157	98	Weighted Average
	14	74	0.65% Pervious Area
	2,143	98	99.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.40		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	39	0.1270	0.33		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
1.1	15	0.0790	0.23		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
3.9	75	Total			

Subcatchment 3S: Propsed



Summary for Subcatchment 4S: Bypass

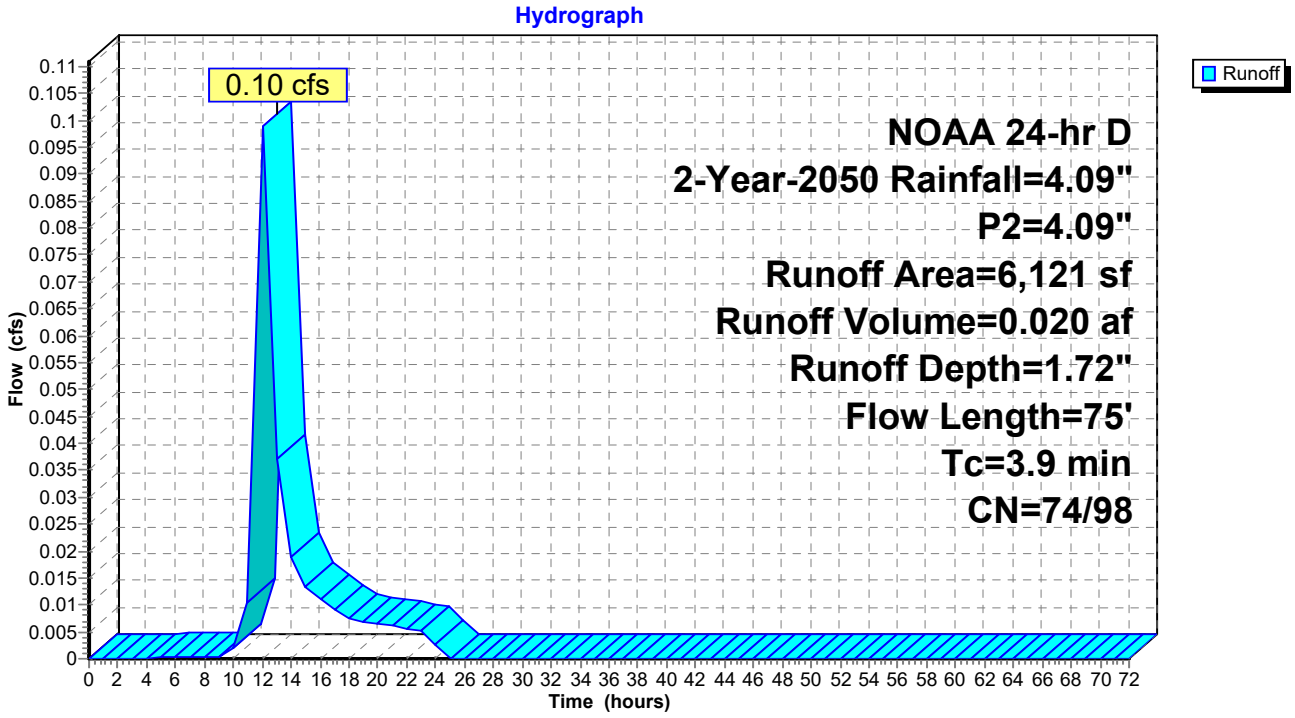
Runoff = 0.10 cfs @ 12.09 hrs, Volume= 0.020 af, Depth= 1.72"
Routed to Link 10L : Proposed

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 2-Year-2050 Rainfall=4.09", P2=4.09"

	Area (sf)	CN	Description
	5,974	74	>75% Grass cover, Good, HSG C
*	147	98	Deck & Steps, HSG C
	6,121	75	Weighted Average
	5,974	74	97.60% Pervious Area
	147	98	2.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.40		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	39	0.1270	0.33		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
1.1	15	0.0790	0.23		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
3.9	75	Total			

Subcatchment 4S: Bypass



Summary for Pond 9P: Drywell

Inflow Area = 0.050 ac, 99.35% Impervious, Inflow Depth = 3.84" for 2-Year-2050 event
Inflow = 0.07 cfs @ 12.01 hrs, Volume= 0.016 af
Outflow = 0.04 cfs @ 12.50 hrs, Volume= 0.016 af, Atten= 39%, Lag= 29.2 min
Discarded = 0.04 cfs @ 12.50 hrs, Volume= 0.016 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 10L : Proposed

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs
Peak Elev= 78.94' @ 12.70 hrs Surf.Area= 225 sf Storage= 85 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 17.9 min (768.6 - 750.7)

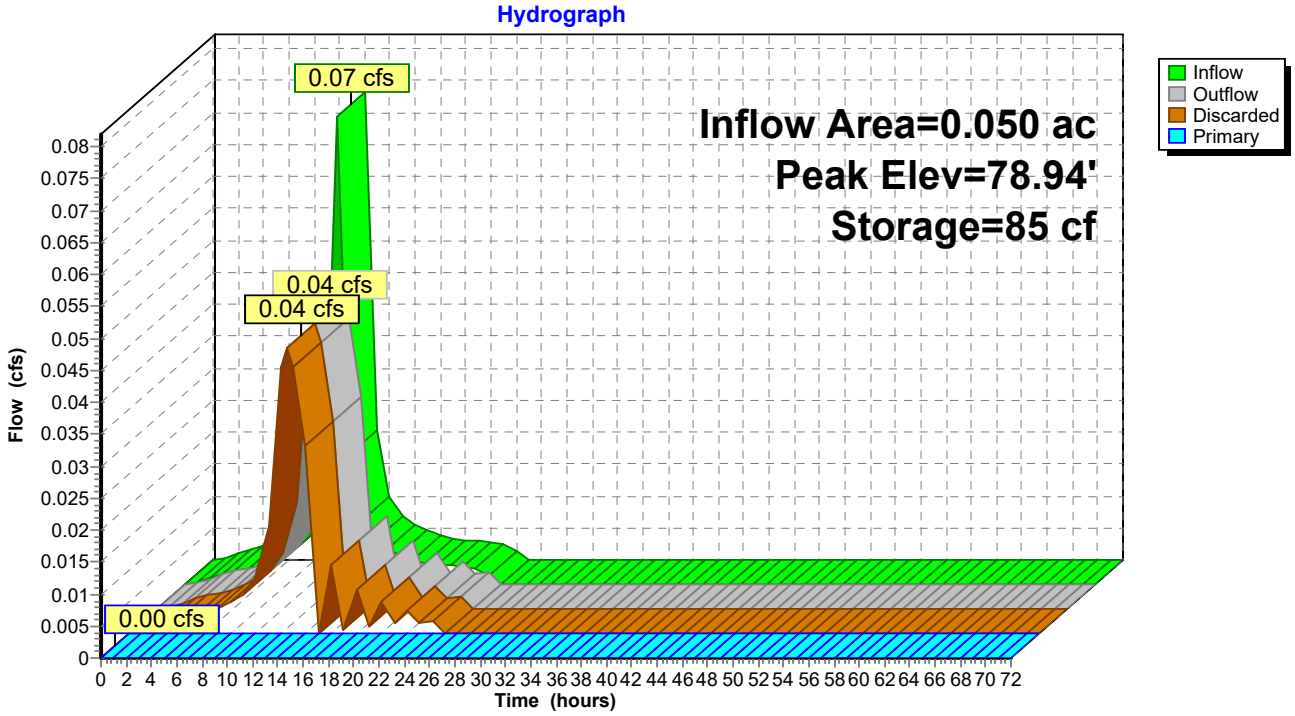
Volume	Invert	Avail.Storage	Storage Description
#1	80.00'	302 cf	**8.00'D x 6.00'H Drywell** Inside #2 354 cf Overall - 4.0" Wall Thickness = 302 cf
#2	78.00'	578 cf	**15.00'W x 15.00'L x 8.00'H Stone** 1,800 cf Overall - 354 cf Embedded = 1,446 cf x 40.0% Voids
#3	86.00'	5 cf	**2.00'D x 1.67'H Vertical Cone/Cylinder**
		885 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	78.00'	**8.000 in/hr Exfiltration over Surface area**
#2	Primary	87.67'	**24.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.04 cfs @ 12.50 hrs HW=78.79' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=78.00' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 9P: Drywell

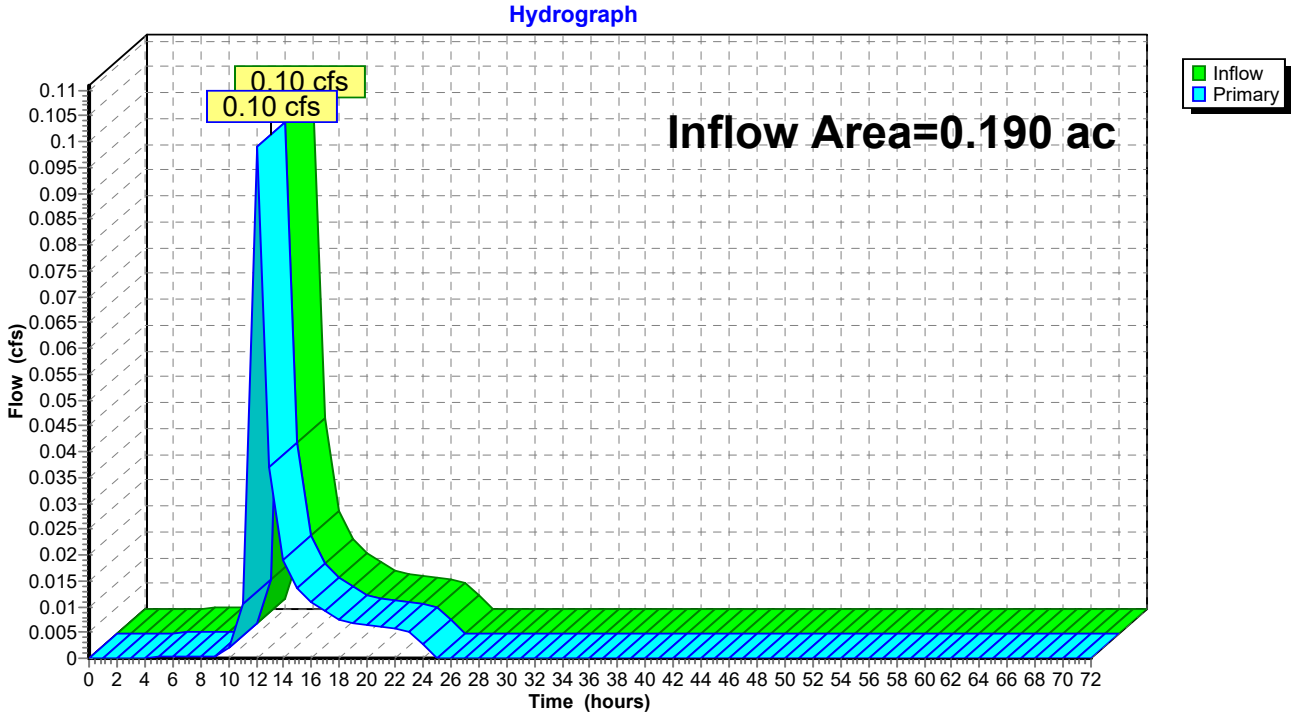


Summary for Link 10L: Proposed

Inflow Area = 0.190 ac, 27.66% Impervious, Inflow Depth = 1.27" for 2-Year-2050 event
Inflow = 0.10 cfs @ 12.09 hrs, Volume= 0.020 af
Primary = 0.10 cfs @ 12.09 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs

Link 10L: Proposed



Time span=0.00-72.00 hrs, dt=1.00 hrs, 73 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing (Disturbed) Runoff Area=3,459 sf 0.00% Impervious Runoff Depth=3.50"
Flow Length=75' Tc=3.9 min CN=74/0 Runoff=0.12 cfs 0.023 af

Subcatchment 2S: Existing (Undisturbed) Runoff Area=4,819 sf 0.00% Impervious Runoff Depth=3.50"
Flow Length=75' Tc=3.9 min CN=74/0 Runoff=0.16 cfs 0.032 af

Subcatchment 3S: Propsed Runoff Area=2,157 sf 99.35% Impervious Runoff Depth=6.11"
Flow Length=75' Tc=3.9 min CN=74/98 Runoff=0.11 cfs 0.025 af

Subcatchment 4S: Bypass Runoff Area=6,121 sf 2.40% Impervious Runoff Depth=3.56"
Flow Length=75' Tc=3.9 min CN=74/98 Runoff=0.21 cfs 0.042 af

Pond 9P: Drywell Peak Elev=80.66' Storage=257 cf Inflow=0.11 cfs 0.025 af
Discarded=0.04 cfs 0.025 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.025 af

Link 10L: Proposed Inflow=0.21 cfs 0.042 af
Primary=0.21 cfs 0.042 af

Total Runoff Area = 0.380 ac Runoff Volume = 0.122 af Average Runoff Depth = 3.86"
86.17% Pervious = 0.328 ac 13.83% Impervious = 0.053 ac

Summary for Subcatchment 1S: Existing (Disturbed)

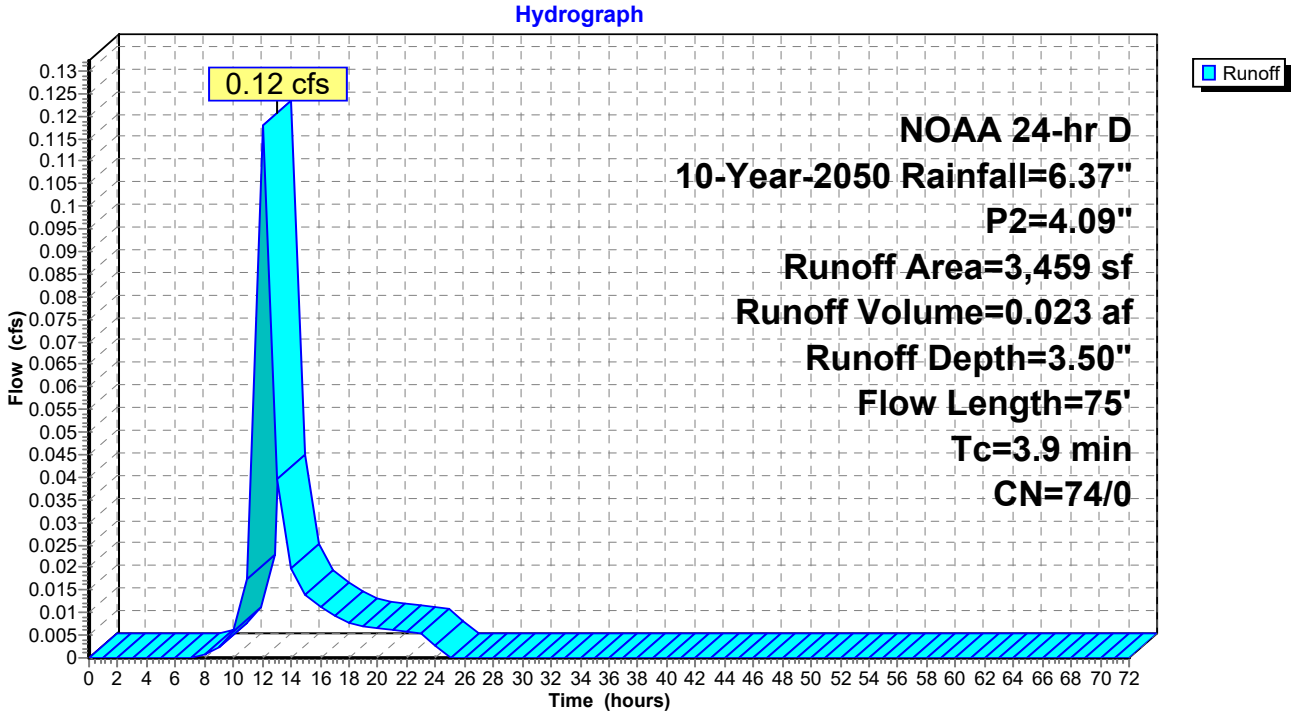
Runoff = 0.12 cfs @ 12.06 hrs, Volume= 0.023 af, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 10-Year-2050 Rainfall=6.37", P2=4.09"

Area (sf)	CN	Description
3,459	74	>75% Grass cover, Good, HSG C
3,459	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.40		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	39	0.1270	0.33		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
1.1	15	0.0790	0.23		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
3.9	75	Total			

Subcatchment 1S: Existing (Disturbed)



Summary for Subcatchment 2S: Existing (Undisturbed)

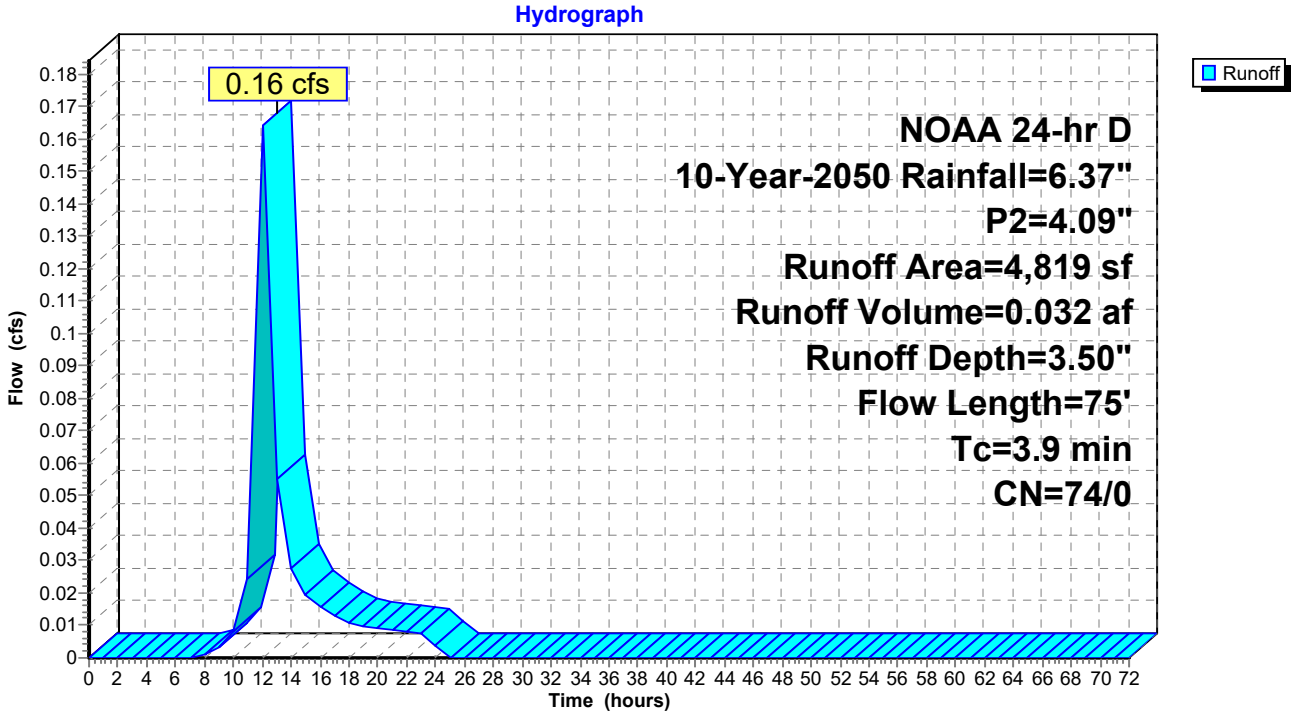
Runoff = 0.16 cfs @ 12.06 hrs, Volume= 0.032 af, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 10-Year-2050 Rainfall=6.37", P2=4.09"

Area (sf)	CN	Description
4,819	74	>75% Grass cover, Good, HSG C
4,819	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.40		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	39	0.1270	0.33		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
1.1	15	0.0790	0.23		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
3.9	75	Total			

Subcatchment 2S: Existing (Undisturbed)



Summary for Subcatchment 3S: Propsed

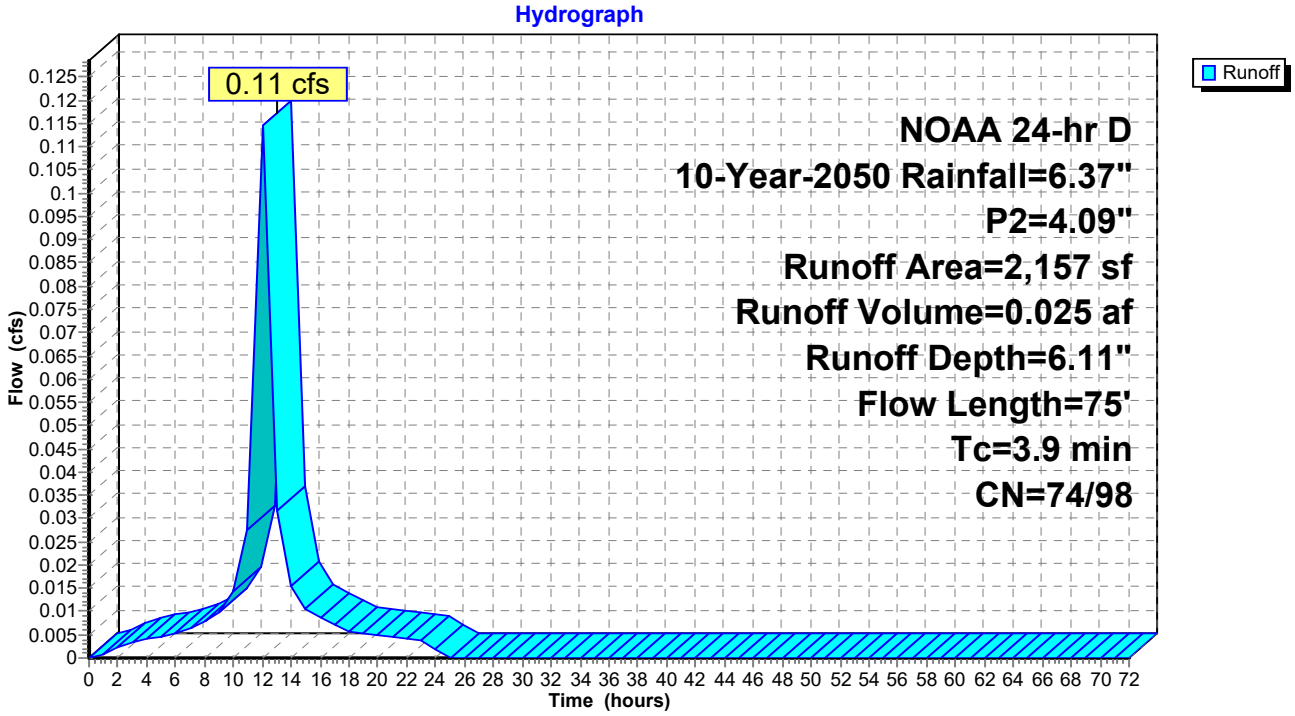
Runoff = 0.11 cfs @ 12.01 hrs, Volume= 0.025 af, Depth= 6.11"
Routed to Pond 9P : Drywell

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 10-Year-2050 Rainfall=6.37", P2=4.09"

	Area (sf)	CN	Description
	1,467	98	Roofs, HSG C
*	608	98	Driveway, HSG C
*	68	98	Front Walk, HSG C
	14	74	>75% Grass cover, Good, HSG C
	2,157	98	Weighted Average
	14	74	0.65% Pervious Area
	2,143	98	99.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.40		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	39	0.1270	0.33		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
1.1	15	0.0790	0.23		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
3.9	75	Total			

Subcatchment 3S: Propsed



Summary for Subcatchment 4S: Bypass

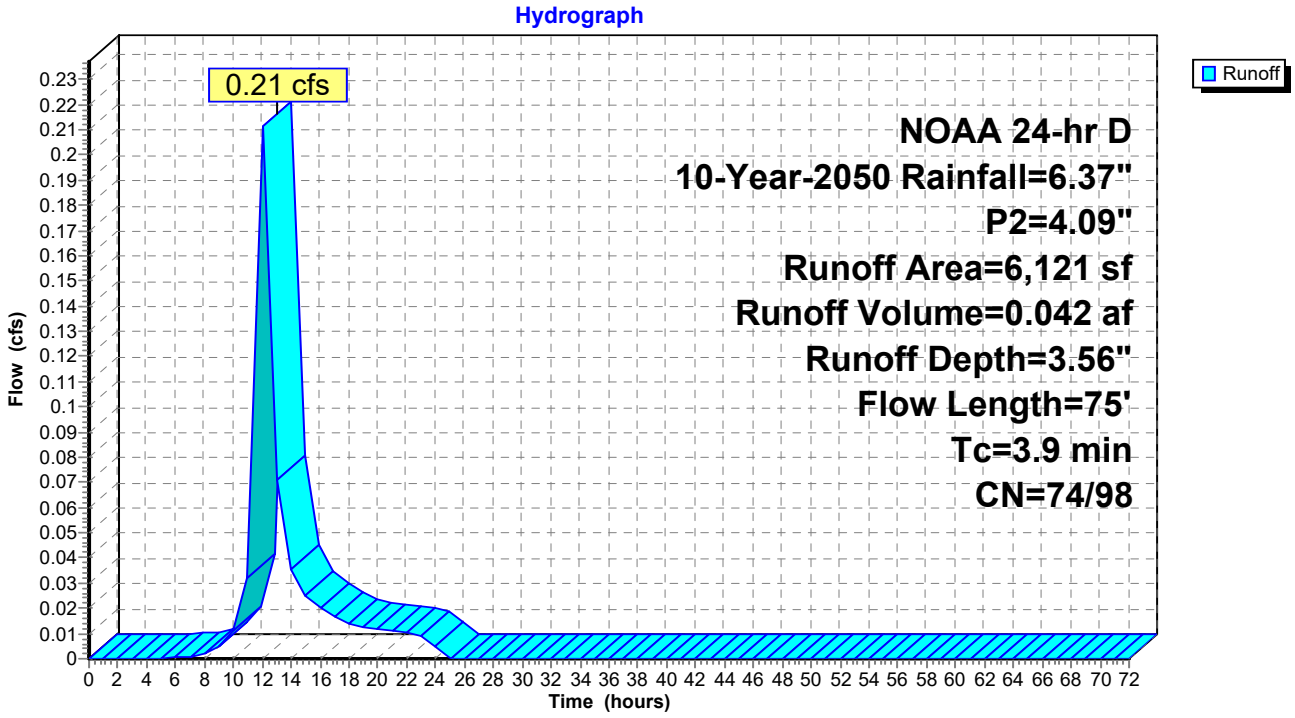
Runoff = 0.21 cfs @ 12.06 hrs, Volume= 0.042 af, Depth= 3.56"
Routed to Link 10L : Proposed

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 10-Year-2050 Rainfall=6.37", P2=4.09"

	Area (sf)	CN	Description
	5,974	74	>75% Grass cover, Good, HSG C
*	147	98	Deck & Steps, HSG C
	6,121	75	Weighted Average
	5,974	74	97.60% Pervious Area
	147	98	2.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.40		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	39	0.1270	0.33		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
1.1	15	0.0790	0.23		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
3.9	75	Total			

Subcatchment 4S: Bypass



Summary for Pond 9P: Drywell

Inflow Area = 0.050 ac, 99.35% Impervious, Inflow Depth = 6.11" for 10-Year-2050 event
Inflow = 0.11 cfs @ 12.01 hrs, Volume= 0.025 af
Outflow = 0.04 cfs @ 12.00 hrs, Volume= 0.025 af, Atten= 64%, Lag= 0.0 min
Discarded = 0.04 cfs @ 12.00 hrs, Volume= 0.025 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 10L : Proposed

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs
Peak Elev= 80.66' @ 13.16 hrs Surf.Area= 225 sf Storage= 257 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 40.6 min (783.5 - 742.9)

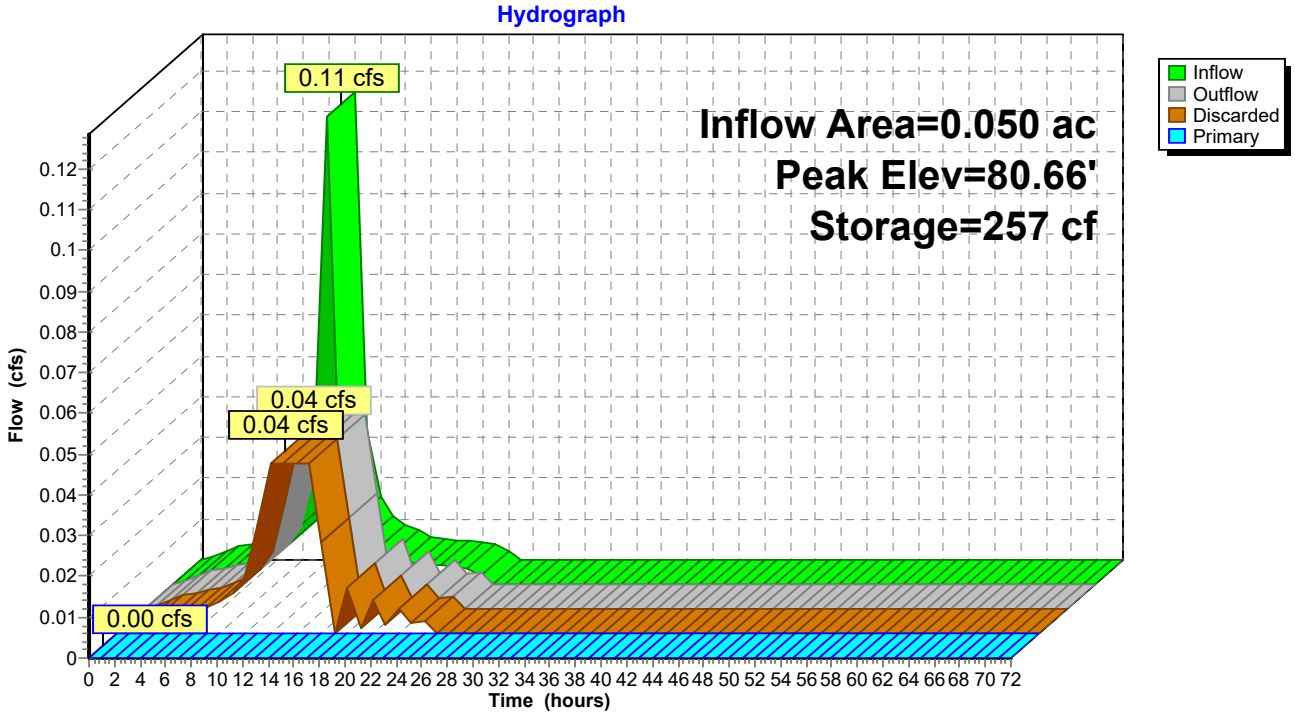
Volume	Invert	Avail.Storage	Storage Description
#1	80.00'	302 cf	**8.00'D x 6.00'H Drywell** Inside #2 354 cf Overall - 4.0" Wall Thickness = 302 cf
#2	78.00'	578 cf	**15.00'W x 15.00'L x 8.00'H Stone** 1,800 cf Overall - 354 cf Embedded = 1,446 cf x 40.0% Voids
#3	86.00'	5 cf	**2.00'D x 1.67'H Vertical Cone/Cylinder**
		885 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	78.00'	**8.000 in/hr Exfiltration over Surface area**
#2	Primary	87.67'	**24.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.04 cfs @ 12.00 hrs HW=79.56' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=78.00' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 9P: Drywell

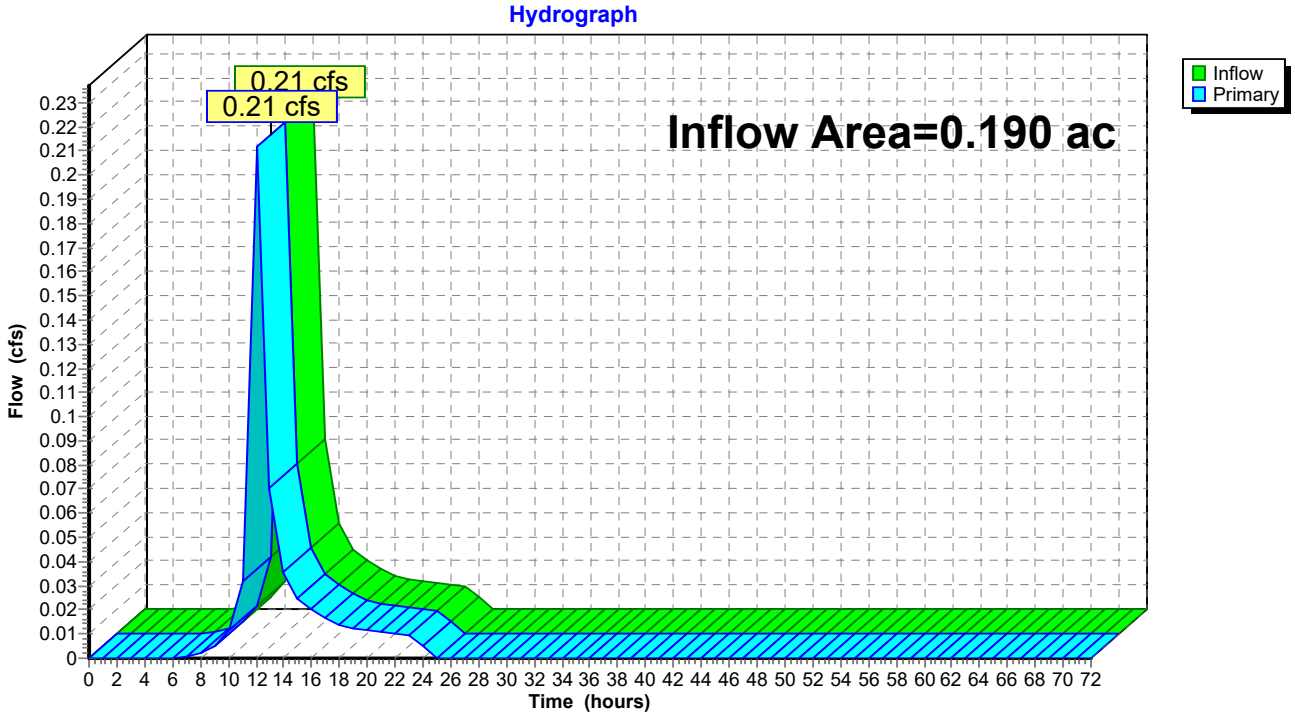


Summary for Link 10L: Proposed

Inflow Area = 0.190 ac, 27.66% Impervious, Inflow Depth = 2.63" for 10-Year-2050 event
Inflow = 0.21 cfs @ 12.06 hrs, Volume= 0.042 af
Primary = 0.21 cfs @ 12.06 hrs, Volume= 0.042 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs

Link 10L: Proposed



Time span=0.00-72.00 hrs, dt=1.00 hrs, 73 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing (Disturbed) Runoff Area=3,459 sf 0.00% Impervious Runoff Depth=5.00"
Flow Length=75' Tc=3.9 min CN=74/0 Runoff=0.17 cfs 0.033 af

Subcatchment 2S: Existing (Undisturbed) Runoff Area=4,819 sf 0.00% Impervious Runoff Depth=5.00"
Flow Length=75' Tc=3.9 min CN=74/0 Runoff=0.24 cfs 0.046 af

Subcatchment 3S: Propsed Runoff Area=2,157 sf 99.35% Impervious Runoff Depth=7.82"
Flow Length=75' Tc=3.9 min CN=74/98 Runoff=0.15 cfs 0.032 af

Subcatchment 4S: Bypass Runoff Area=6,121 sf 2.40% Impervious Runoff Depth=5.07"
Flow Length=75' Tc=3.9 min CN=74/98 Runoff=0.30 cfs 0.059 af

Pond 9P: Drywell Peak Elev=81.85' Storage=395 cf Inflow=0.15 cfs 0.032 af
Discarded=0.04 cfs 0.033 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.033 af

Link 10L: Proposed Inflow=0.30 cfs 0.059 af
Primary=0.30 cfs 0.059 af

Total Runoff Area = 0.380 ac Runoff Volume = 0.171 af Average Runoff Depth = 5.39"
86.17% Pervious = 0.328 ac 13.83% Impervious = 0.053 ac

Summary for Subcatchment 1S: Existing (Disturbed)

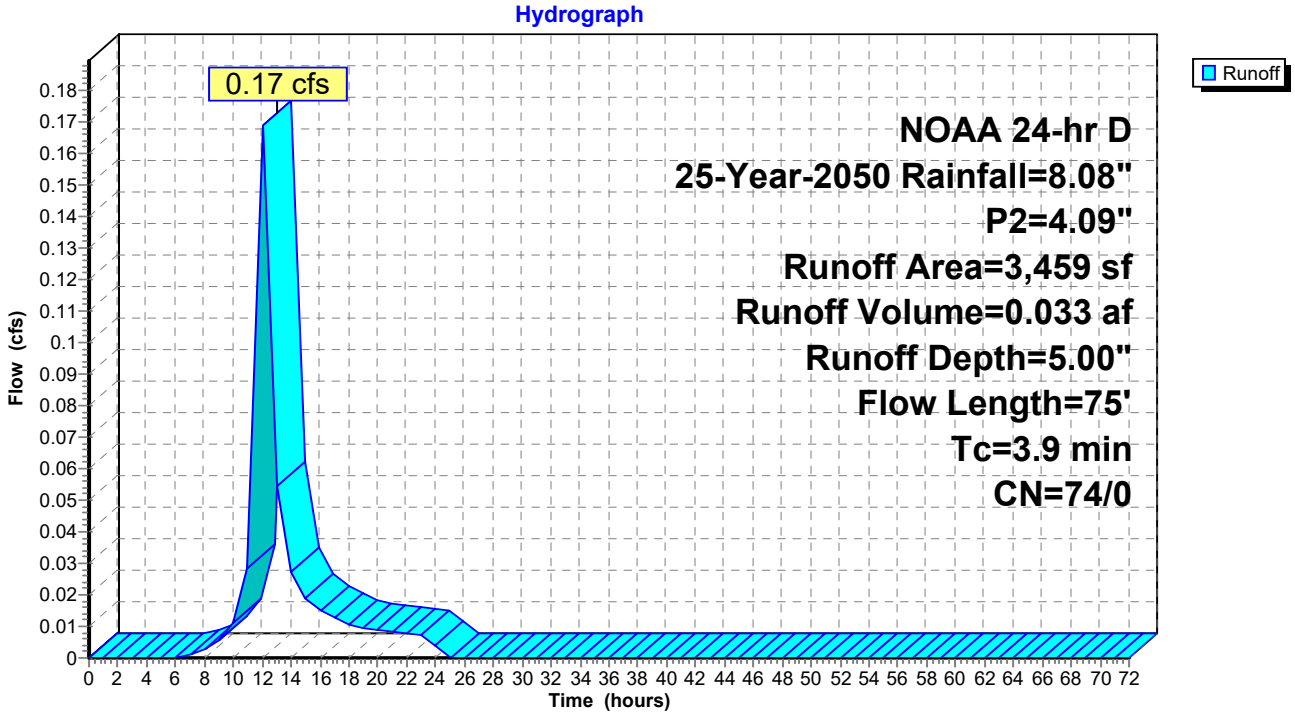
Runoff = 0.17 cfs @ 12.05 hrs, Volume= 0.033 af, Depth= 5.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 25-Year-2050 Rainfall=8.08", P2=4.09"

Area (sf)	CN	Description
3,459	74	>75% Grass cover, Good, HSG C
3,459	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.40		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	39	0.1270	0.33		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
1.1	15	0.0790	0.23		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
3.9	75	Total			

Subcatchment 1S: Existing (Disturbed)



Summary for Subcatchment 2S: Existing (Undisturbed)

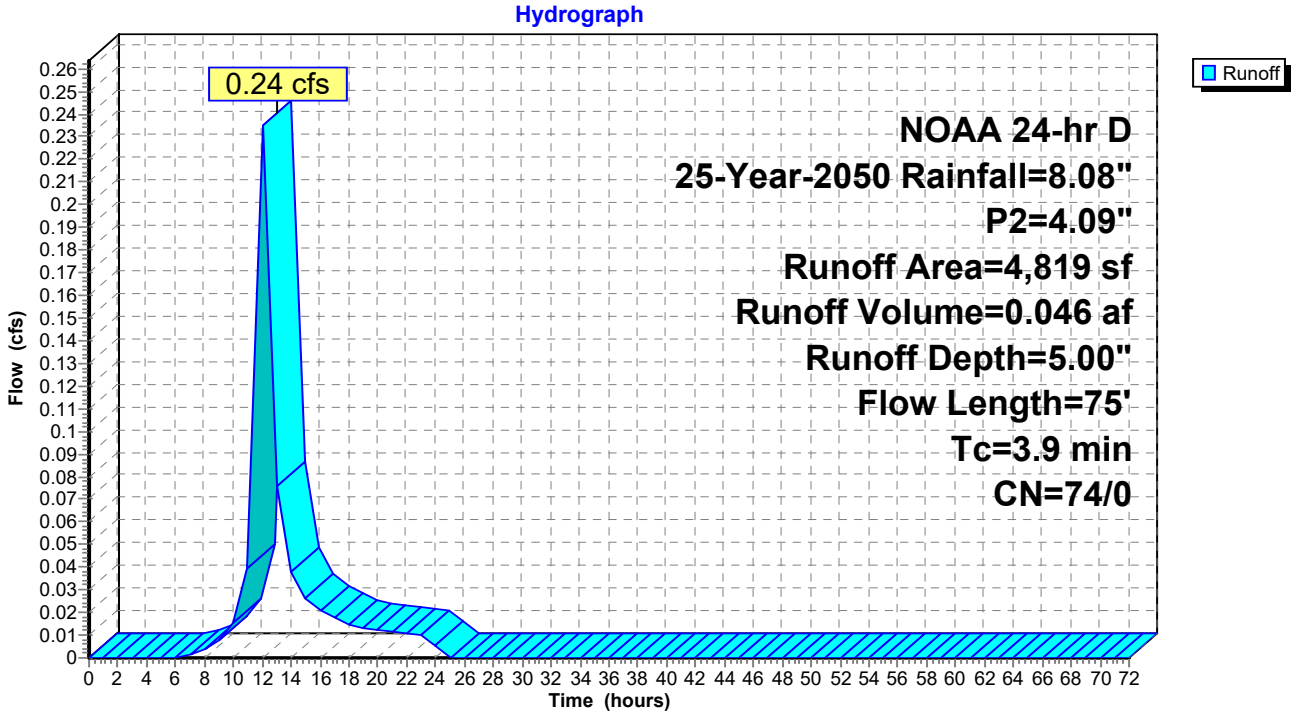
Runoff = 0.24 cfs @ 12.05 hrs, Volume= 0.046 af, Depth= 5.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 25-Year-2050 Rainfall=8.08", P2=4.09"

Area (sf)	CN	Description
4,819	74	>75% Grass cover, Good, HSG C
4,819	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.40		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	39	0.1270	0.33		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
1.1	15	0.0790	0.23		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
3.9	75	Total			

Subcatchment 2S: Existing (Undisturbed)



Summary for Subcatchment 3S: Propsed

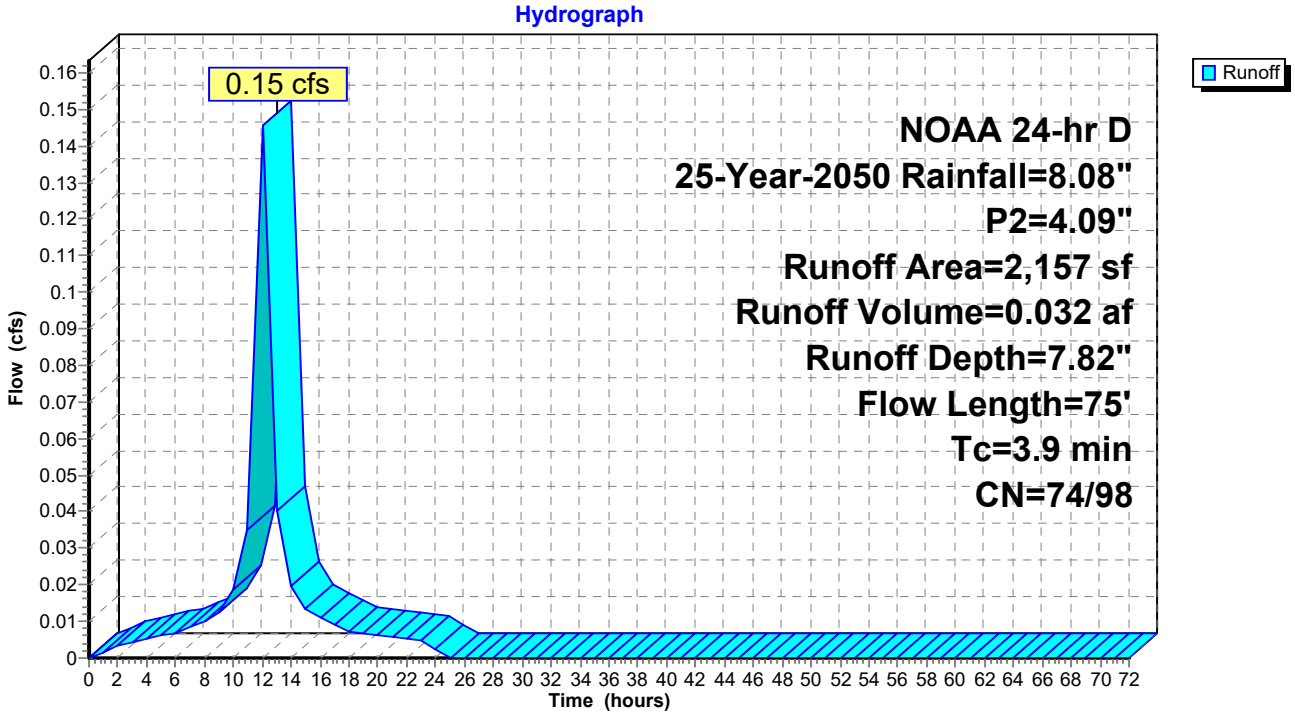
Runoff = 0.15 cfs @ 12.01 hrs, Volume= 0.032 af, Depth= 7.82"
Routed to Pond 9P : Drywell

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 25-Year-2050 Rainfall=8.08", P2=4.09"

	Area (sf)	CN	Description
	1,467	98	Roofs, HSG C
*	608	98	Driveway, HSG C
*	68	98	Front Walk, HSG C
	14	74	>75% Grass cover, Good, HSG C
	2,157	98	Weighted Average
	14	74	0.65% Pervious Area
	2,143	98	99.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.40		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	39	0.1270	0.33		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
1.1	15	0.0790	0.23		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
3.9	75	Total			

Subcatchment 3S: Propsed



Summary for Subcatchment 4S: Bypass

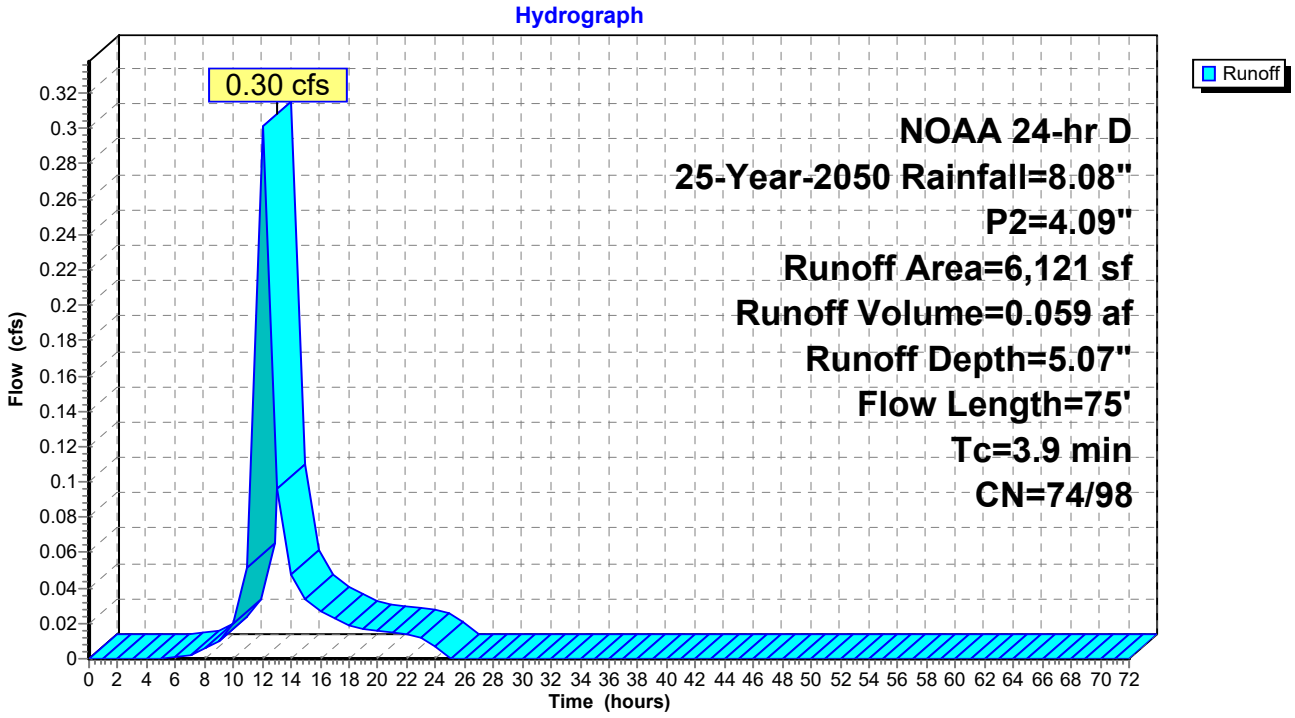
Runoff = 0.30 cfs @ 12.05 hrs, Volume= 0.059 af, Depth= 5.07"
Routed to Link 10L : Proposed

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 25-Year-2050 Rainfall=8.08", P2=4.09"

	Area (sf)	CN	Description
	5,974	74	>75% Grass cover, Good, HSG C
*	147	98	Deck & Steps, HSG C
	6,121	75	Weighted Average
	5,974	74	97.60% Pervious Area
	147	98	2.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.40		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	39	0.1270	0.33		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
1.1	15	0.0790	0.23		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
3.9	75	Total			

Subcatchment 4S: Bypass



Summary for Pond 9P: Drywell

Inflow Area = 0.050 ac, 99.35% Impervious, Inflow Depth = 7.82" for 25-Year-2050 event
Inflow = 0.15 cfs @ 12.01 hrs, Volume= 0.032 af
Outflow = 0.04 cfs @ 12.00 hrs, Volume= 0.033 af, Atten= 71%, Lag= 0.0 min
Discarded = 0.04 cfs @ 12.00 hrs, Volume= 0.033 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 10L : Proposed

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs
Peak Elev= 81.85' @ 13.32 hrs Surf.Area= 225 sf Storage= 395 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 62.7 min (802.3 - 739.5)

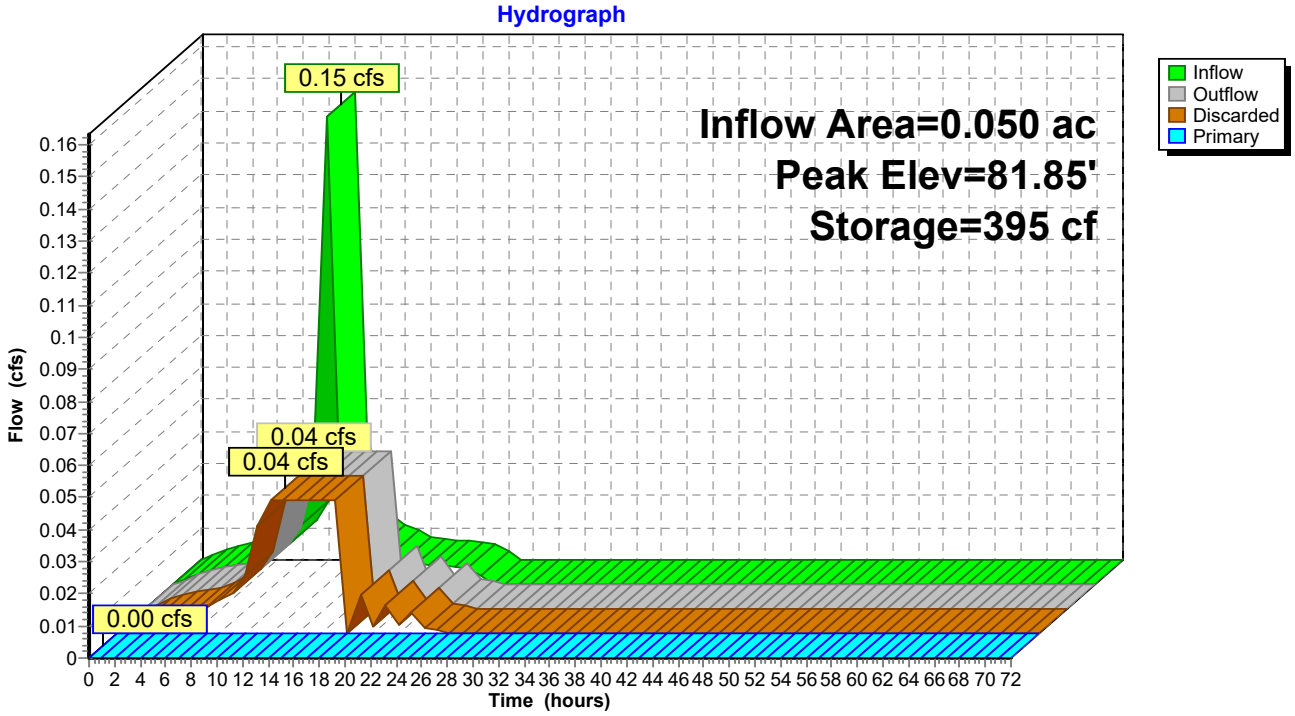
Volume	Invert	Avail.Storage	Storage Description
#1	80.00'	302 cf	**8.00'D x 6.00'H Drywell** Inside #2 354 cf Overall - 4.0" Wall Thickness = 302 cf
#2	78.00'	578 cf	**15.00'W x 15.00'L x 8.00'H Stone** 1,800 cf Overall - 354 cf Embedded = 1,446 cf x 40.0% Voids
#3	86.00'	5 cf	**2.00'D x 1.67'H Vertical Cone/Cylinder**
		885 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	78.00'	**8.000 in/hr Exfiltration over Surface area**
#2	Primary	87.67'	**24.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.04 cfs @ 12.00 hrs HW=80.16' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=78.00' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 9P: Drywell

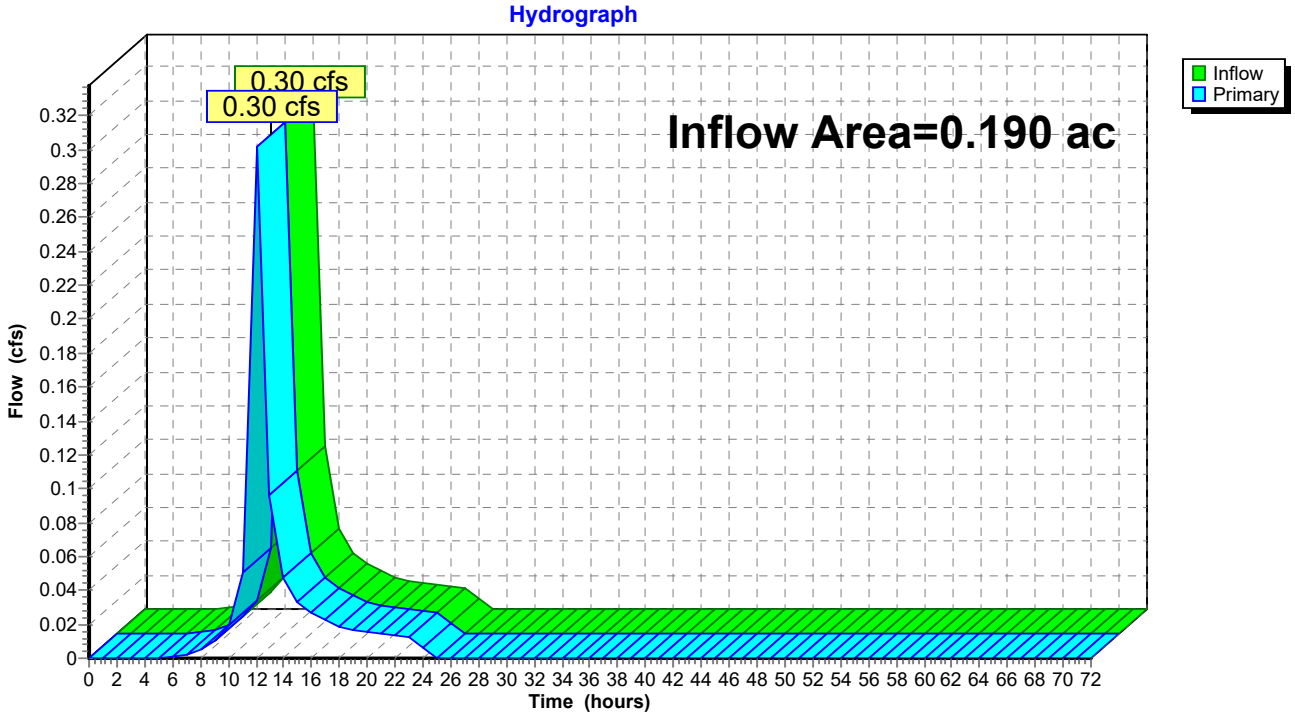


Summary for Link 10L: Proposed

Inflow Area = 0.190 ac, 27.66% Impervious, Inflow Depth = 3.75" for 25-Year-2050 event
Inflow = 0.30 cfs @ 12.05 hrs, Volume= 0.059 af
Primary = 0.30 cfs @ 12.05 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs

Link 10L: Proposed



Time span=0.00-72.00 hrs, dt=1.00 hrs, 73 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing (Disturbed) Runoff Area=3,459 sf 0.00% Impervious Runoff Depth=8.17"
Flow Length=75' Tc=3.9 min CN=74/0 Runoff=0.27 cfs 0.054 af

Subcatchment 2S: Existing (Undisturbed) Runoff Area=4,819 sf 0.00% Impervious Runoff Depth=8.17"
Flow Length=75' Tc=3.9 min CN=74/0 Runoff=0.38 cfs 0.075 af

Subcatchment 3S: Propsed Runoff Area=2,157 sf 99.35% Impervious Runoff Depth=11.26"
Flow Length=75' Tc=3.9 min CN=74/98 Runoff=0.21 cfs 0.046 af

Subcatchment 4S: Bypass Runoff Area=6,121 sf 2.40% Impervious Runoff Depth=8.24"
Flow Length=75' Tc=3.9 min CN=74/98 Runoff=0.49 cfs 0.096 af

Pond 9P: Drywell Peak Elev=84.28' Storage=679 cf Inflow=0.21 cfs 0.046 af
Discarded=0.04 cfs 0.047 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.047 af

Link 10L: Proposed Inflow=0.49 cfs 0.096 af
Primary=0.49 cfs 0.096 af

Total Runoff Area = 0.380 ac Runoff Volume = 0.272 af Average Runoff Depth = 8.60"
86.17% Pervious = 0.328 ac 13.83% Impervious = 0.053 ac

Summary for Subcatchment 1S: Existing (Disturbed)

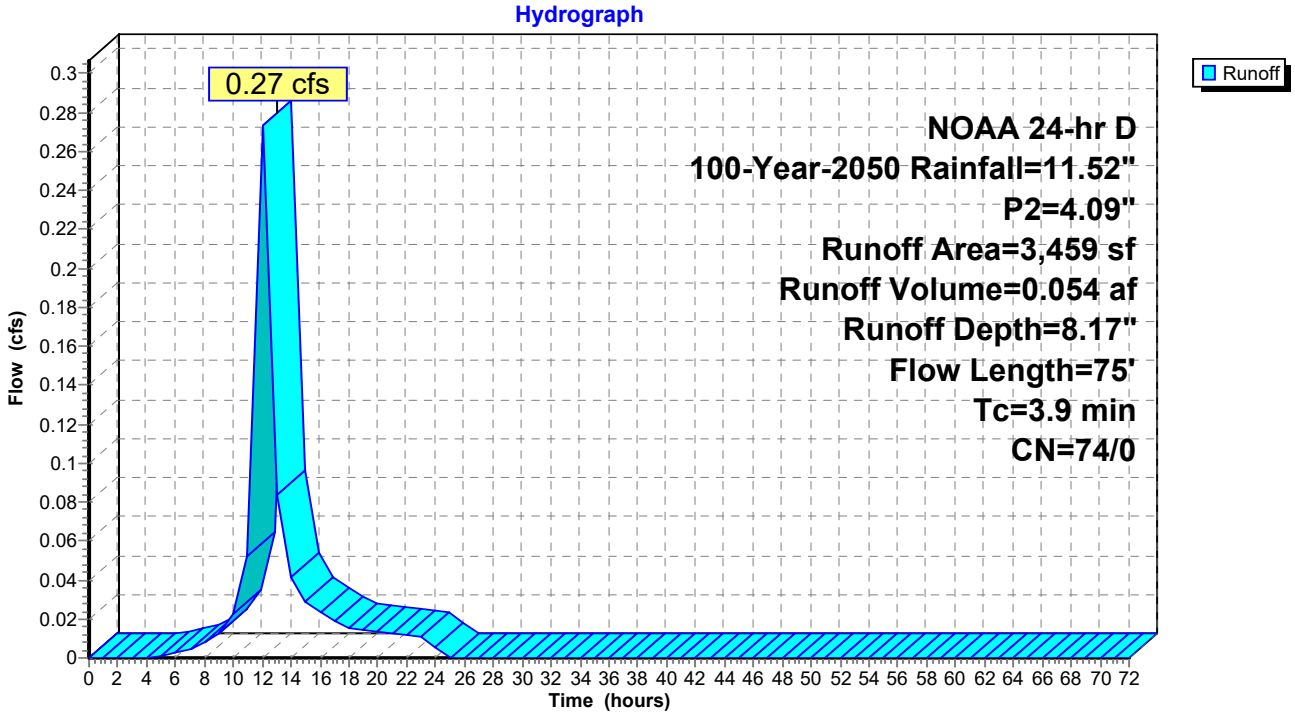
Runoff = 0.27 cfs @ 12.04 hrs, Volume= 0.054 af, Depth= 8.17"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 100-Year-2050 Rainfall=11.52", P2=4.09"

Area (sf)	CN	Description
3,459	74	>75% Grass cover, Good, HSG C
3,459	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.40		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	39	0.1270	0.33		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
1.1	15	0.0790	0.23		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
3.9	75	Total			

Subcatchment 1S: Existing (Disturbed)



Summary for Subcatchment 2S: Existing (Undisturbed)

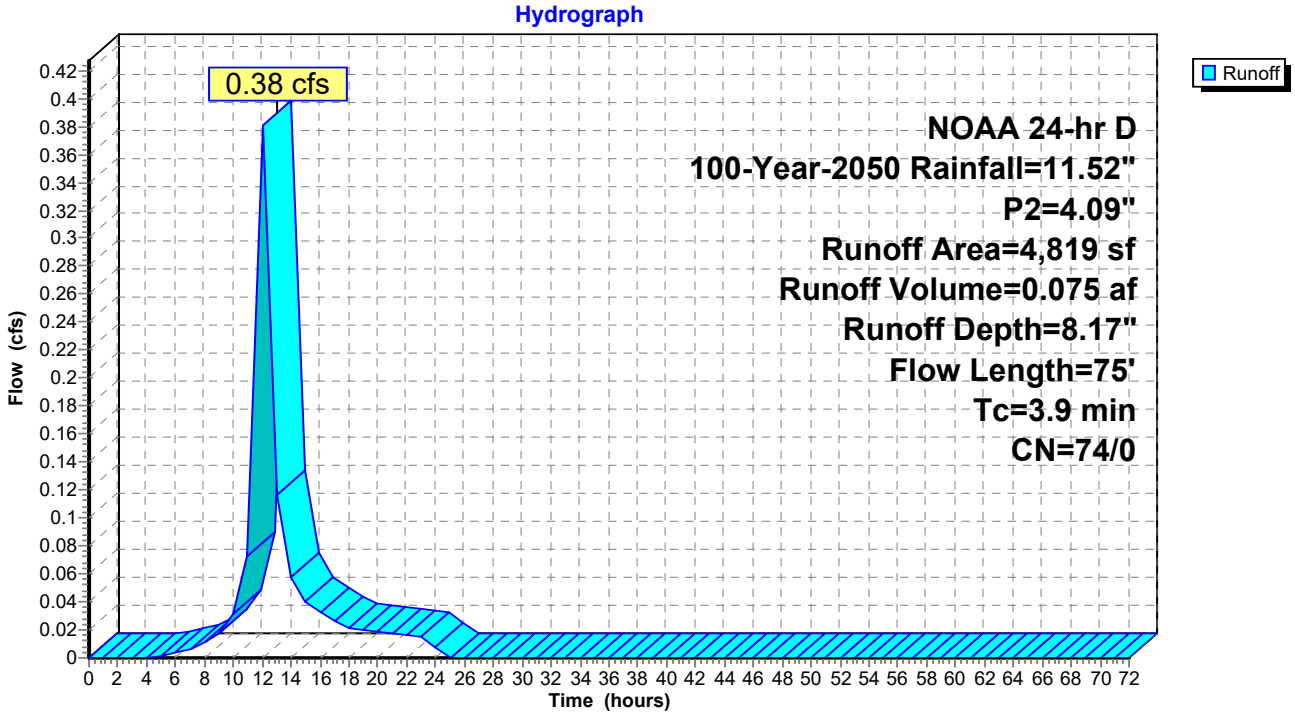
Runoff = 0.38 cfs @ 12.04 hrs, Volume= 0.075 af, Depth= 8.17"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 100-Year-2050 Rainfall=11.52", P2=4.09"

Area (sf)	CN	Description
4,819	74	>75% Grass cover, Good, HSG C
4,819	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.40		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	39	0.1270	0.33		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
1.1	15	0.0790	0.23		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
3.9	75	Total			

Subcatchment 2S: Existing (Undisturbed)



Summary for Subcatchment 3S: Propsed

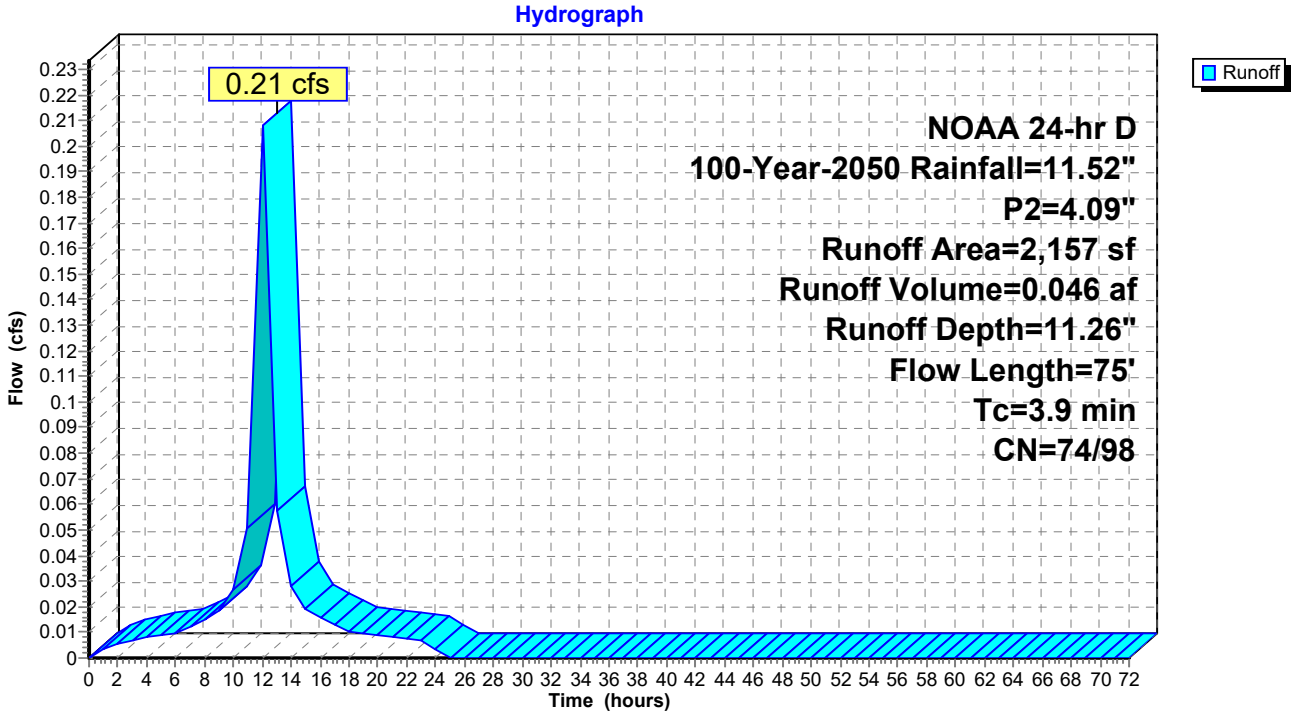
Runoff = 0.21 cfs @ 12.01 hrs, Volume= 0.046 af, Depth=11.26"
Routed to Pond 9P : Drywell

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 100-Year-2050 Rainfall=11.52", P2=4.09"

	Area (sf)	CN	Description
	1,467	98	Roofs, HSG C
*	608	98	Driveway, HSG C
*	68	98	Front Walk, HSG C
	14	74	>75% Grass cover, Good, HSG C
	2,157	98	Weighted Average
	14	74	0.65% Pervious Area
	2,143	98	99.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.40		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	39	0.1270	0.33		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
1.1	15	0.0790	0.23		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
3.9	75	Total			

Subcatchment 3S: Propsed



Summary for Subcatchment 4S: Bypass

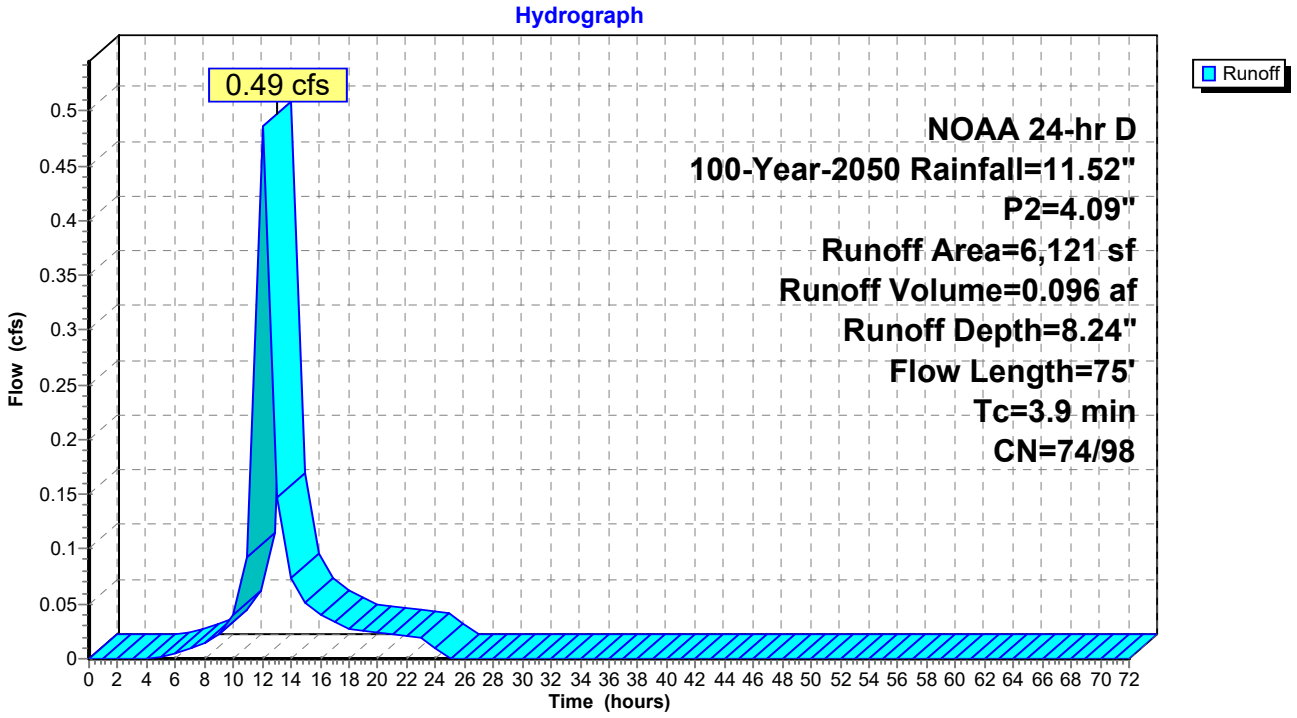
Runoff = 0.49 cfs @ 12.04 hrs, Volume= 0.096 af, Depth= 8.24"
Routed to Link 10L : Proposed

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
NOAA 24-hr D 100-Year-2050 Rainfall=11.52", P2=4.09"

	Area (sf)	CN	Description
	5,974	74	>75% Grass cover, Good, HSG C
*	147	98	Deck & Steps, HSG C
	6,121	75	Weighted Average
	5,974	74	97.60% Pervious Area
	147	98	2.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.40		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 4.09"
1.9	39	0.1270	0.33		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 4.09"
1.1	15	0.0790	0.23		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 4.09"
3.9	75	Total			

Subcatchment 4S: Bypass



Summary for Pond 9P: Drywell

Inflow Area = 0.050 ac, 99.35% Impervious, Inflow Depth = 11.26" for 100-Year-2050 event
Inflow = 0.21 cfs @ 12.01 hrs, Volume= 0.046 af
Outflow = 0.04 cfs @ 11.00 hrs, Volume= 0.047 af, Atten= 80%, Lag= 0.0 min
Discarded = 0.04 cfs @ 11.00 hrs, Volume= 0.047 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 10L : Proposed

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs
Peak Elev= 84.28' @ 13.56 hrs Surf.Area= 225 sf Storage= 679 cf

Plug-Flow detention time= 116.8 min calculated for 0.046 af (99% of inflow)
Center-of-Mass det. time= 117.0 min (852.4 - 735.4)

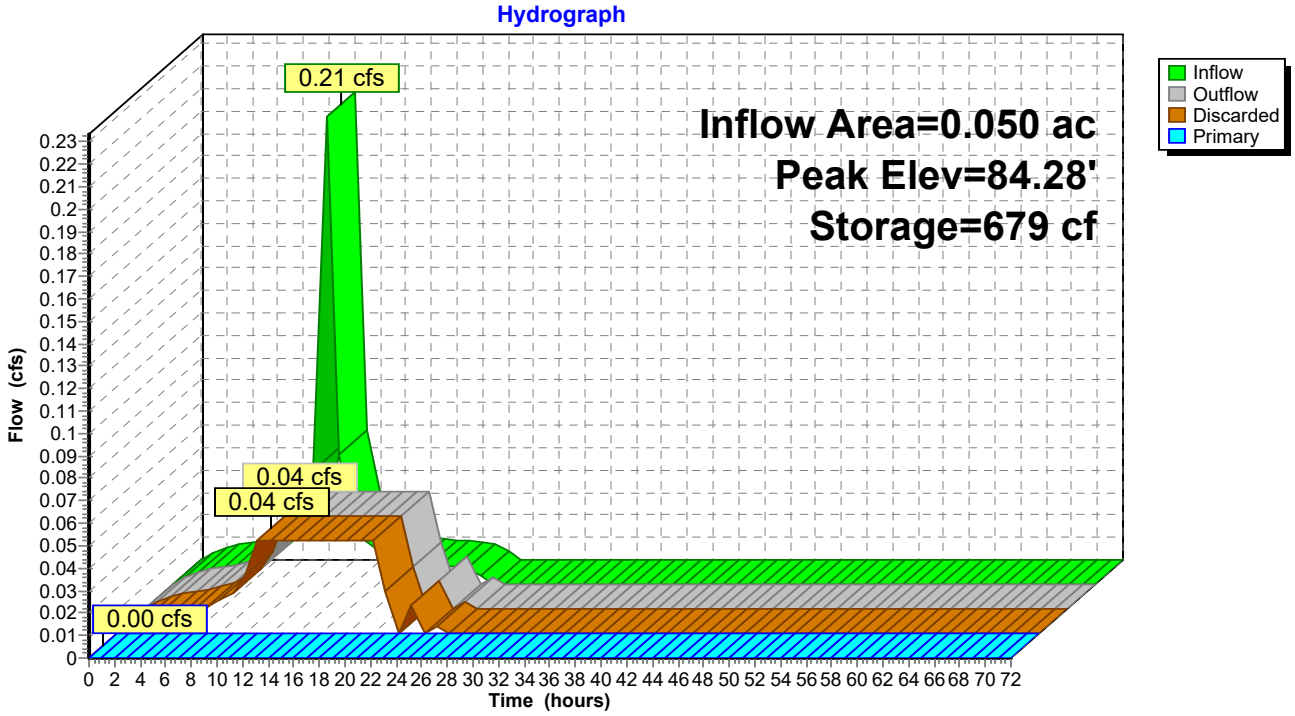
Volume	Invert	Avail.Storage	Storage Description
#1	80.00'	302 cf	**8.00'D x 6.00'H Drywell** Inside #2 354 cf Overall - 4.0" Wall Thickness = 302 cf
#2	78.00'	578 cf	**15.00'W x 15.00'L x 8.00'H Stone** 1,800 cf Overall - 354 cf Embedded = 1,446 cf x 40.0% Voids
#3	86.00'	5 cf	**2.00'D x 1.67'H Vertical Cone/Cylinder**
		885 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	78.00'	**8.000 in/hr Exfiltration over Surface area**
#2	Primary	87.67'	**24.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.04 cfs @ 11.00 hrs HW=78.26' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=78.00' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 9P: Drywell

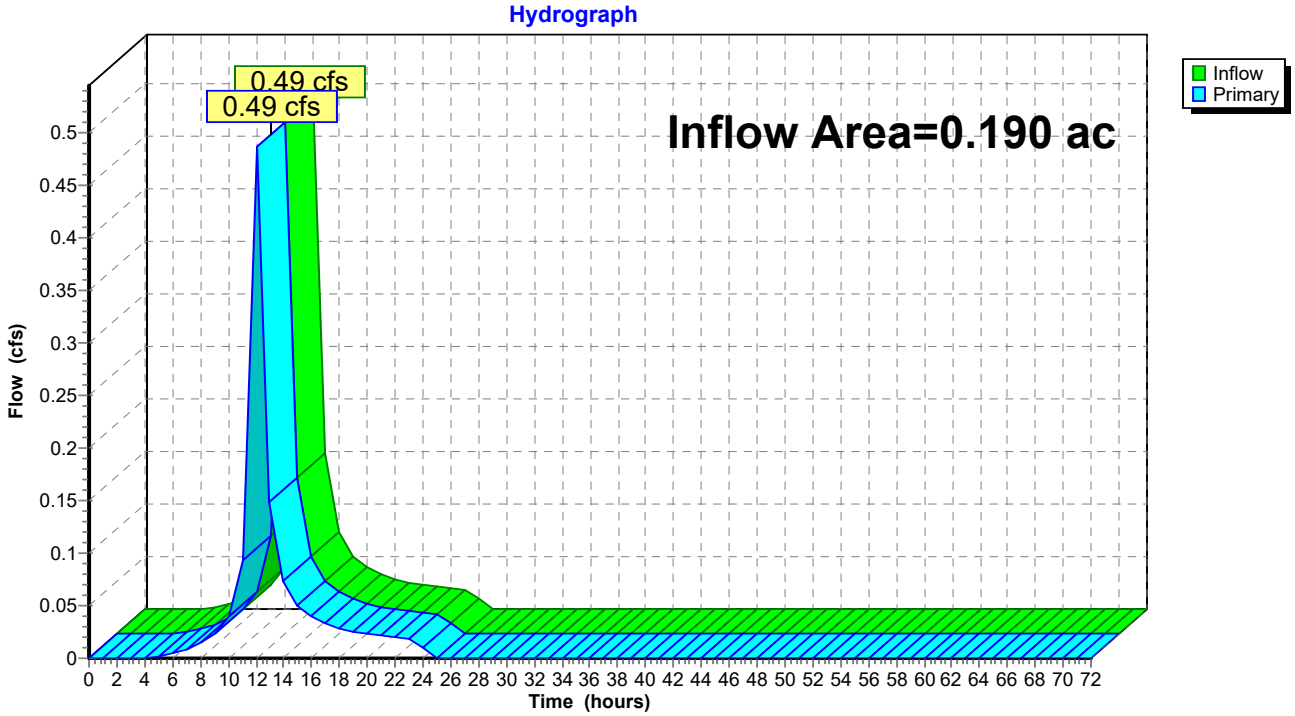


Summary for Link 10L: Proposed

Inflow Area = 0.190 ac, 27.66% Impervious, Inflow Depth = 6.09" for 100-Year-2050 event
Inflow = 0.49 cfs @ 12.04 hrs, Volume= 0.096 af
Primary = 0.49 cfs @ 12.04 hrs, Volume= 0.096 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs

Link 10L: Proposed



Time span=0.00-72.00 hrs, dt=1.00 hrs, 73 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing (Disturbed) Runoff Area=3,459 sf 0.00% Impervious Runoff Depth=0.07"
Flow Length=75' Tc=4.2 min CN=74/0 Runoff=0.00 cfs 0.000 af

Subcatchment 2S: Existing (Undisturbed) Runoff Area=4,819 sf 0.00% Impervious Runoff Depth=0.07"
Flow Length=75' Tc=4.2 min CN=74/0 Runoff=0.00 cfs 0.001 af

Subcatchment 3S: Propsed Runoff Area=2,157 sf 99.35% Impervious Runoff Depth=1.03"
Flow Length=75' Tc=4.2 min CN=74/98 Runoff=0.04 cfs 0.004 af

Subcatchment 4S: Bypass Runoff Area=6,121 sf 2.40% Impervious Runoff Depth=0.10"
Flow Length=75' Tc=4.2 min CN=74/98 Runoff=0.01 cfs 0.001 af

Pond 9P: Drywell Peak Elev=78.11' Storage=10 cf Inflow=0.04 cfs 0.004 af
Discarded=0.04 cfs 0.005 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.005 af

Link 10L: Proposed Inflow=0.01 cfs 0.001 af
Primary=0.01 cfs 0.001 af

Total Runoff Area = 0.380 ac Runoff Volume = 0.007 af Average Runoff Depth = 0.21"
86.17% Pervious = 0.328 ac 13.83% Impervious = 0.053 ac

Summary for Subcatchment 1S: Existing (Disturbed)

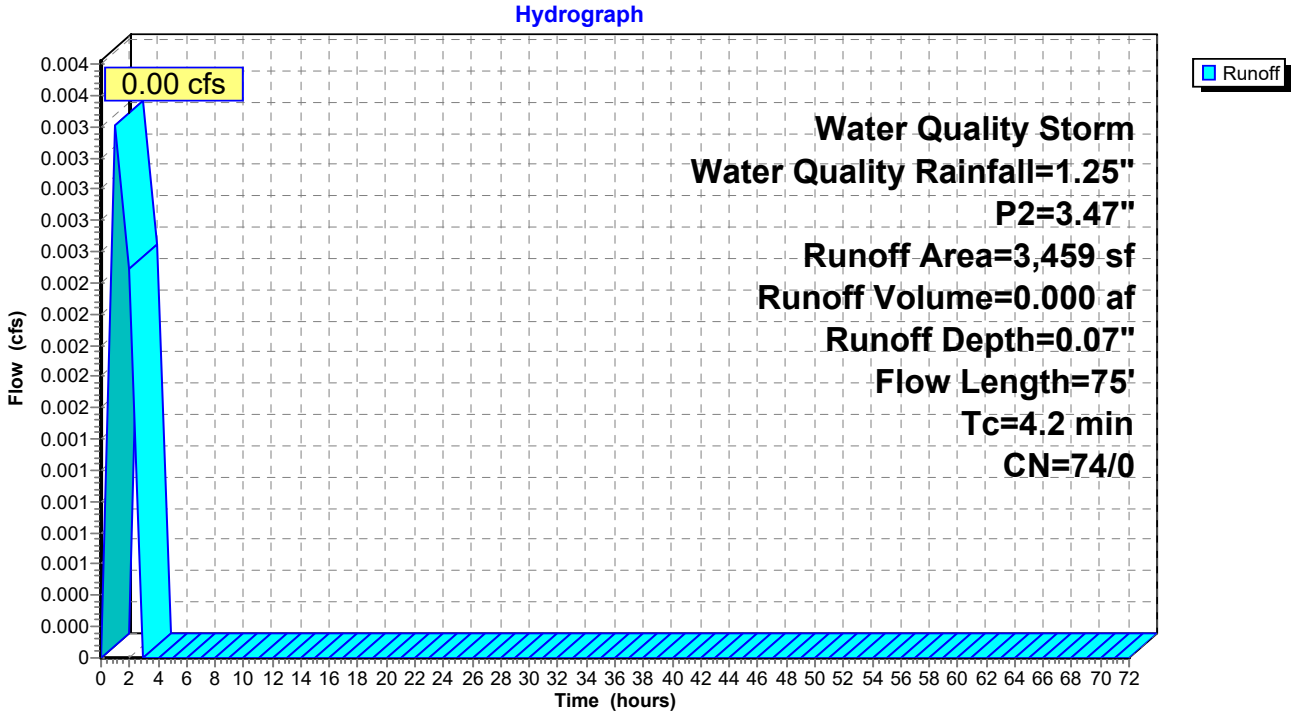
Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
Water Quality Storm Water Quality Rainfall=1.25", P2=3.47"

Area (sf)	CN	Description
3,459	74	>75% Grass cover, Good, HSG C
3,459	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.37		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.1	39	0.1270	0.31		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
1.2	15	0.0790	0.21		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
4.2	75	Total			

Subcatchment 1S: Existing (Disturbed)



Summary for Subcatchment 2S: Existing (Undisturbed)

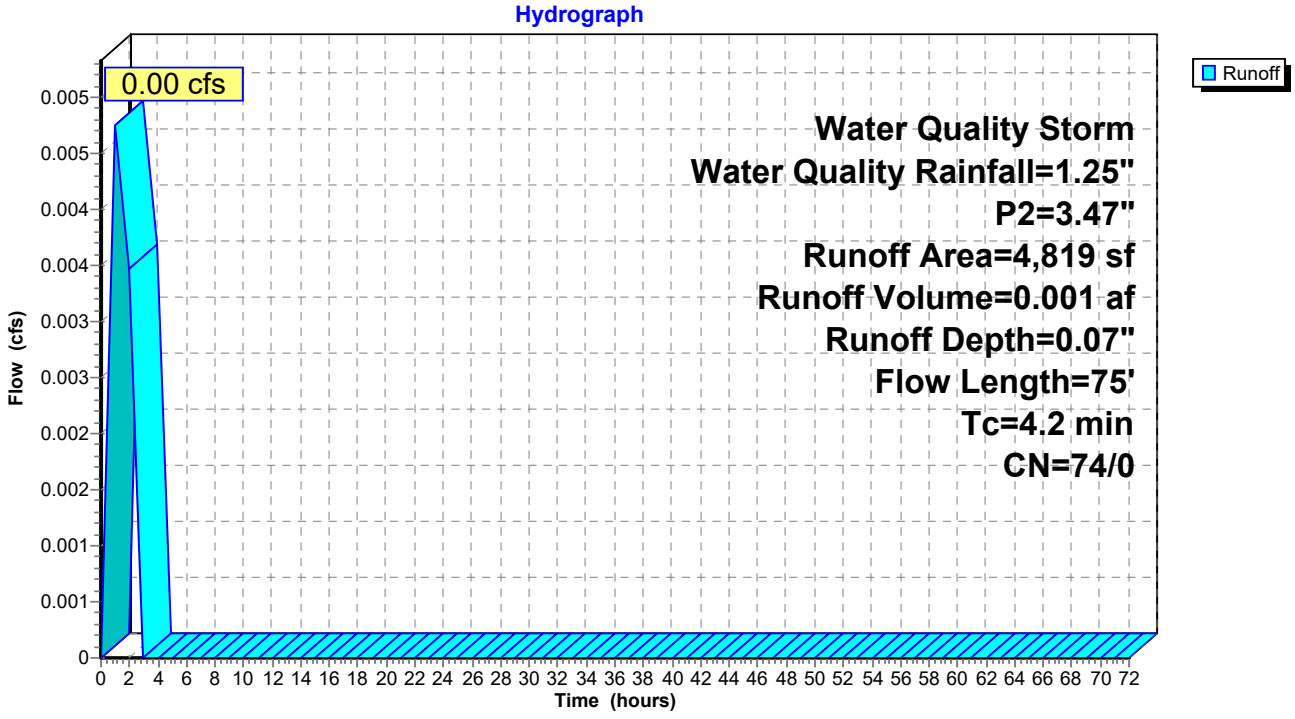
Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.001 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
Water Quality Storm Water Quality Rainfall=1.25", P2=3.47"

Area (sf)	CN	Description
4,819	74	>75% Grass cover, Good, HSG C
4,819	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.37		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.1	39	0.1270	0.31		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
1.2	15	0.0790	0.21		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
4.2	75	Total			

Subcatchment 2S: Existing (Undisturbed)



Summary for Subcatchment 3S: Propsed

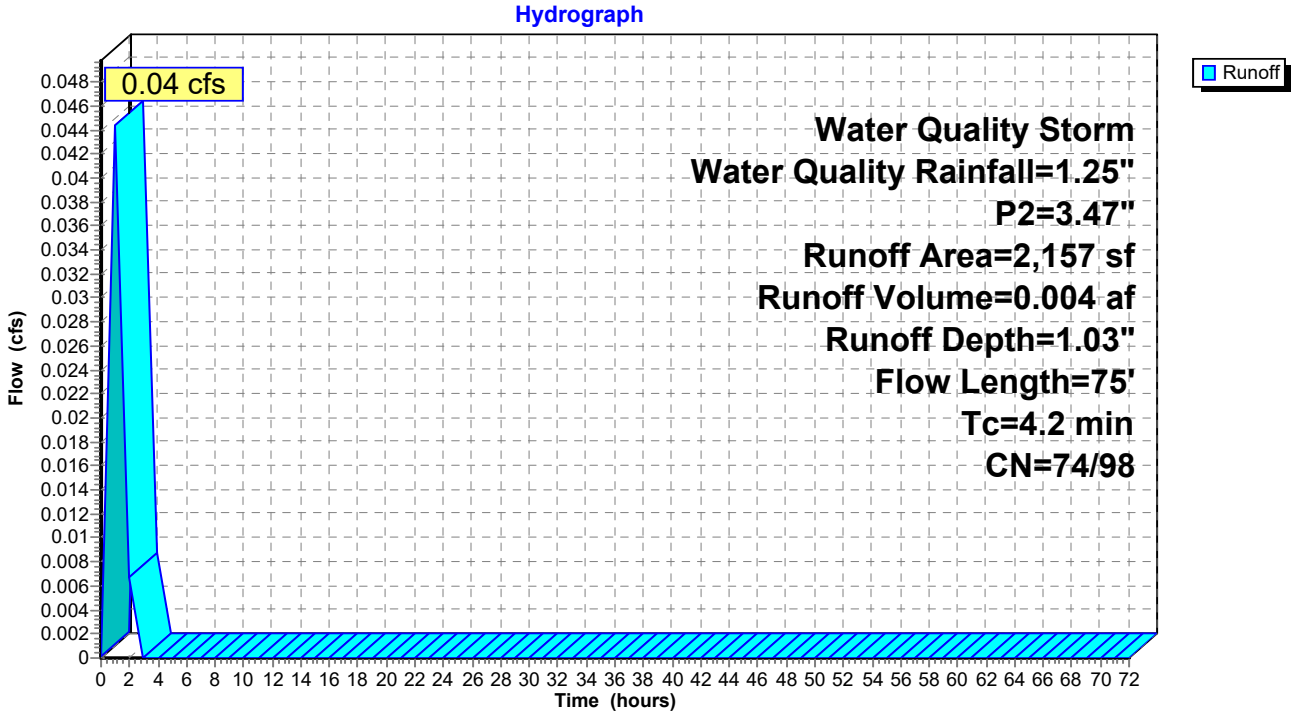
Runoff = 0.04 cfs @ 1.00 hrs, Volume= 0.004 af, Depth= 1.03"
Routed to Pond 9P : Drywell

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
Water Quality Storm Water Quality Rainfall=1.25", P2=3.47"

	Area (sf)	CN	Description
	1,467	98	Roofs, HSG C
*	608	98	Driveway, HSG C
*	68	98	Front Walk, HSG C
	14	74	>75% Grass cover, Good, HSG C
	2,157	98	Weighted Average
	14	74	0.65% Pervious Area
	2,143	98	99.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.37		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.1	39	0.1270	0.31		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
1.2	15	0.0790	0.21		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
4.2	75	Total			

Subcatchment 3S: Propsed



Summary for Subcatchment 4S: Bypass

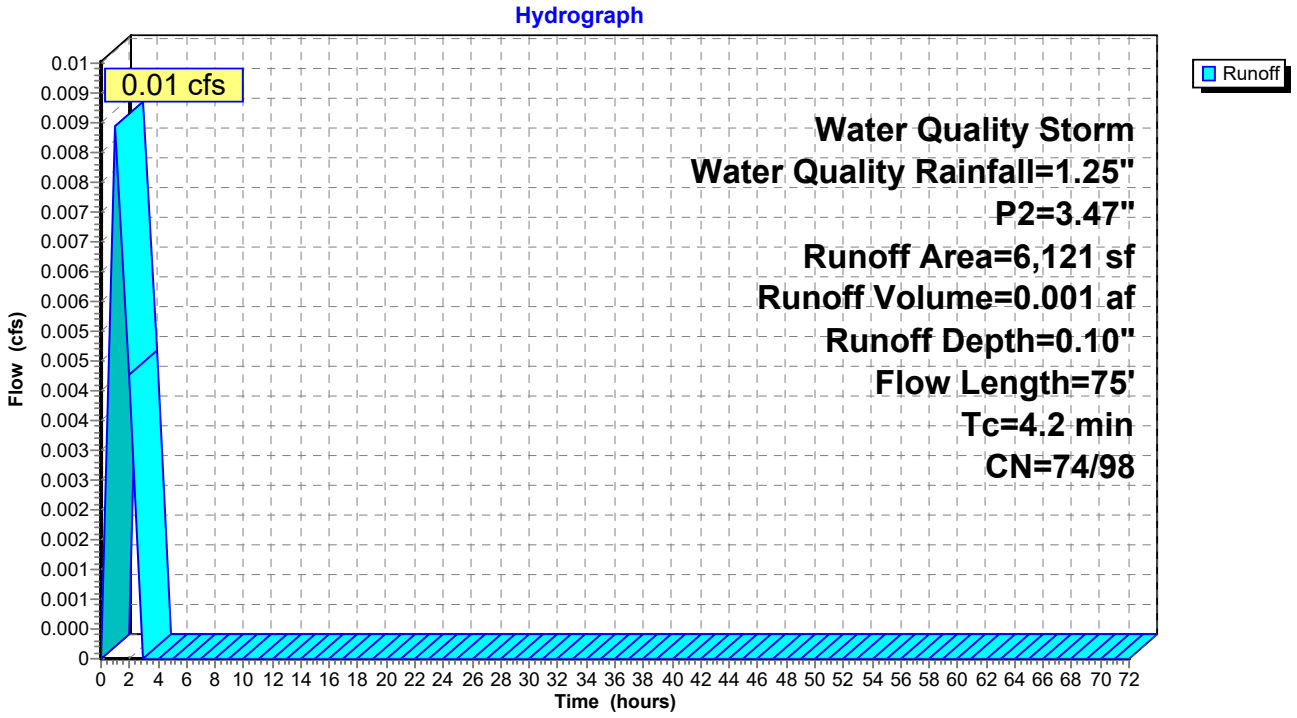
Runoff = 0.01 cfs @ 1.00 hrs, Volume= 0.001 af, Depth= 0.10"
Routed to Link 10L : Proposed

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 1.00
Water Quality Storm Water Quality Rainfall=1.25", P2=3.47"

	Area (sf)	CN	Description
	5,974	74	>75% Grass cover, Good, HSG C
*	147	98	Deck & Steps, HSG C
	6,121	75	Weighted Average
	5,974	74	97.60% Pervious Area
	147	98	2.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	21	0.2800	0.37		**Sheet Flow, 1** Grass: Short n= 0.150 P2= 3.47"
2.1	39	0.1270	0.31		**Sheet Flow, 2** Grass: Short n= 0.150 P2= 3.47"
1.2	15	0.0790	0.21		**Sheet Flow, 3** Grass: Short n= 0.150 P2= 3.47"
4.2	75	Total			

Subcatchment 4S: Bypass



Summary for Pond 9P: Drywell

Inflow Area = 0.050 ac, 99.35% Impervious, Inflow Depth = 1.03" for Water Quality event
Inflow = 0.04 cfs @ 1.00 hrs, Volume= 0.004 af
Outflow = 0.04 cfs @ 1.00 hrs, Volume= 0.005 af, Atten= 12%, Lag= 0.0 min
Discarded = 0.04 cfs @ 1.00 hrs, Volume= 0.005 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 10L : Proposed

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs
Peak Elev= 78.11' @ 1.00 hrs Surf.Area= 225 sf Storage= 10 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 9.1 min (76.8 - 67.7)

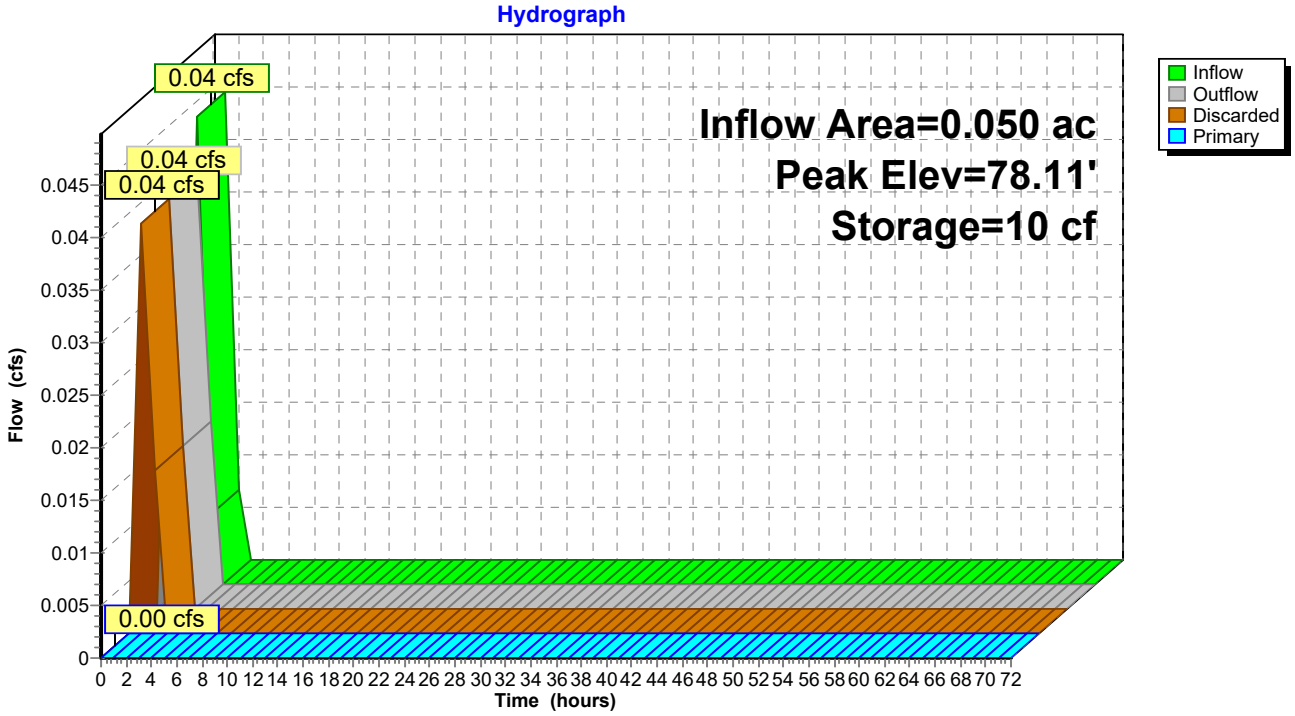
Volume	Invert	Avail.Storage	Storage Description
#1	80.00'	302 cf	**8.00'D x 6.00'H Drywell** Inside #2 354 cf Overall - 4.0" Wall Thickness = 302 cf
#2	78.00'	578 cf	**15.00'W x 15.00'L x 8.00'H Stone** 1,800 cf Overall - 354 cf Embedded = 1,446 cf x 40.0% Voids
#3	86.00'	5 cf	**2.00'D x 1.67'H Vertical Cone/Cylinder**
		885 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	78.00'	**8.000 in/hr Exfiltration over Surface area**
#2	Primary	87.67'	**24.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.04 cfs @ 1.00 hrs HW=78.11' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=78.00' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 9P: Drywell

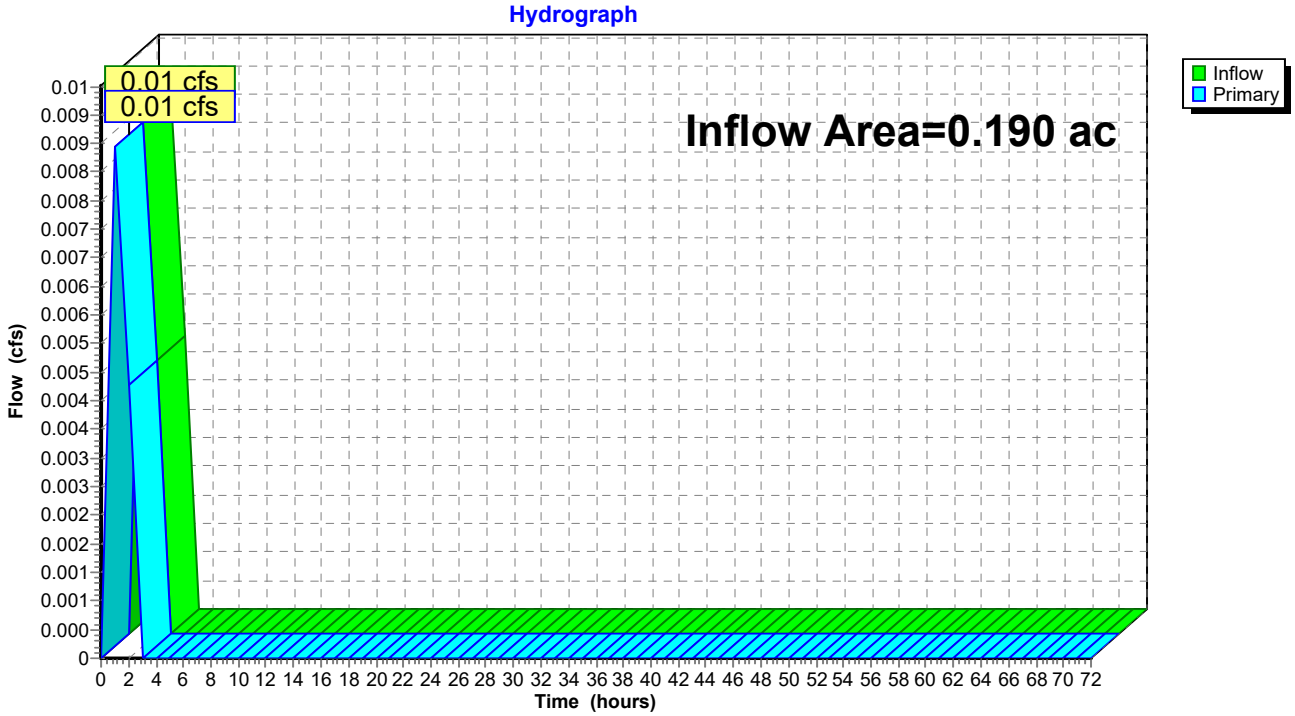


Summary for Link 10L: Proposed

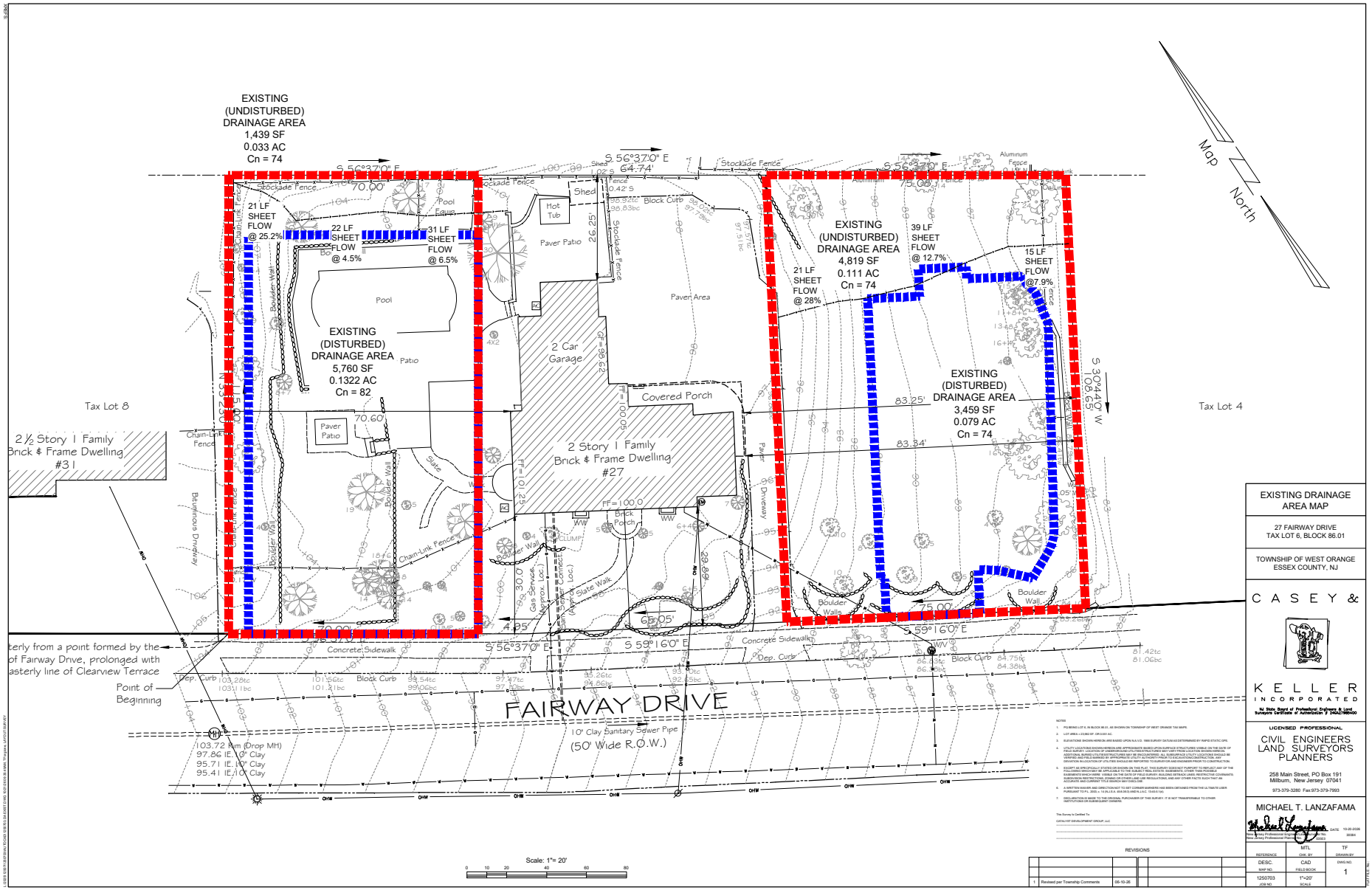
Inflow Area = 0.190 ac, 27.66% Impervious, Inflow Depth = 0.07" for Water Quality event
Inflow = 0.01 cfs @ 1.00 hrs, Volume= 0.001 af
Primary = 0.01 cfs @ 1.00 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 1.00 hrs

Link 10L: Proposed



DRAINAGE AREA MAPS



EXISTING DRAINAGE AREA MAP

27 FAIRWAY DRIVE
TAX LOT 6, BLOCK 86.01

TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NJ

C A S E Y &

K E L L E R
INCORPORATED
NJ State Board of Professional Engineers & Land Surveyors Certificate of Authorization # 24GA27980400

LICENSED PROFESSIONAL
CIVIL ENGINEERS
LAND SURVEYORS
PLANNERS

258 Main Street, PO Box 191
Millburn, New Jersey 07041

973-379-3280 Fax:973-379-7993

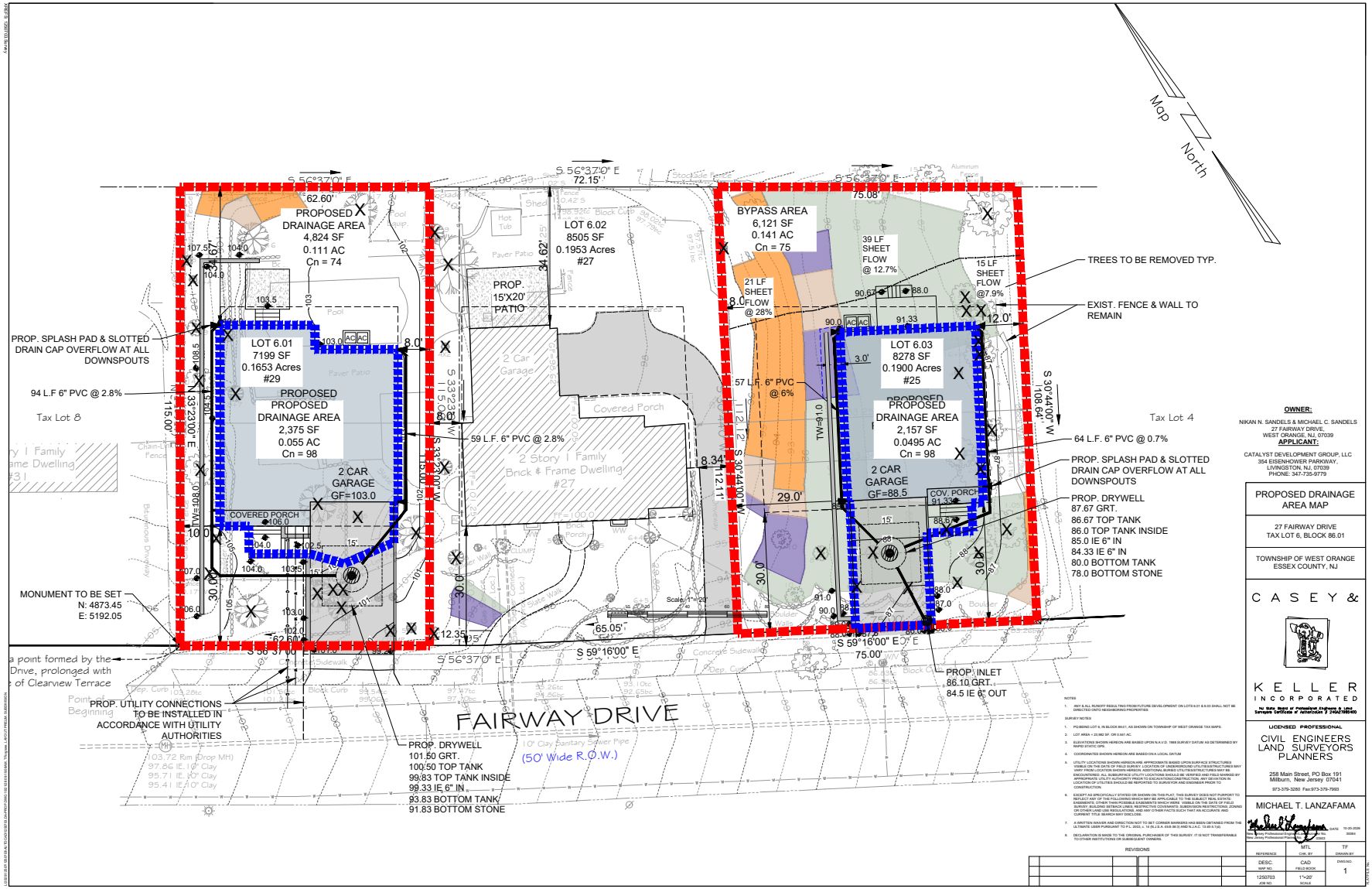
MICHAEL T. LANZAFAMA
New Jersey Professional Engineer & Land Surveyor License No. 24GS03

DATE 10-20-2026
JOB# 30384

REFERENCE	MTL BY	TF DRAWN BY
DESC.	CAD	DWG NO.
MAP NO.	FIELD BOOK	1
1250703 JOB NO.	1"=20' SCALE	

REVISIONS

1	Revised per Township Comments	05-10-26



OWNER:
NIKAN N. SANDELS & MICHAEL C. SANDELS
27 FAIRWAY DRIVE,
WEST ORANGE, NJ, 07039
APPLICANT:
CATALYST DEVELOPMENT GROUP, LLC
354 EISENHOWER PARKWAY,
LIVINGSTON, NJ, 07039
PHONE: 347-735-9779

PROPOSED DRAINAGE AREA MAP

27 FAIRWAY DRIVE
TAX LOT 6, BLOCK 86.01

TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NJ

C A S E Y &
K E L L E R
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258 Main Street, PO Box 191
Millburn, New Jersey 07041
973-379-3280 Fax-973-379-7993

MICHAEL T. LANZAFAMA
License No. 24GA27985400 DATE 10-20-2026
New Jersey Professional Engineer & Land Surveyor No. 35084
New Jersey Professional Planner No. 33563

NOTES
1. ANY & ALL RUNOFF RESULTING FROM FUTURE DEVELOPMENT ON LOTS 6.01 & 6.03 SHALL NOT BE DIRECTED ONTO NEIGHBORING PROPERTIES.

SURVEY NOTES
1. PO BEING LOT 6, IN BLOCK 86.01, AS SHOWN ON TOWNSHIP OF WEST ORANGE TAX MAPS.
2. LOT AREA = 23,982 SF. OR 0.551 AC.
3. ELEVATIONS SHOWN HEREON ARE BASED UPON N.A.V.D. 1988 SURVEY DATUM AS DETERMINED BY RAPID STATIC GPS.
4. COORDINATES SHOWN HEREON ARE BASED ON A LOCAL DATUM
5. UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE BASED UPON SURFACE STRUCTURES VISIBLE ON THE DATE OF FIELD SURVEY. LOCATION OF UNDERGROUND UTILITIES/STRUCTURES MAY VARY FROM LOCATION SHOWN HEREON. ADDITIONAL BURIED UTILITIES/STRUCTURES MAY BE ENCOUNTERED. ALL SUBSURFACE UTILITY LOCATIONS SHOULD BE VERIFIED AND FIELD MARKED BY APPROPRIATE UTILITY AUTHORITY PRIOR TO EXCAVATION/CONSTRUCTION. ANY DEVIATION IN LOCATION OF UTILITIES SHOULD BE REPORTED TO SURVEYOR AND ENGINEER PRIOR TO CONSTRUCTION.
6. EXCEPT AS SPECIFICALLY STATED OR SHOWN ON THIS PLAT, THIS SURVEY DOES NOT PURPORT TO REFLECT ANY OF THE FOLLOWING WHICH MAY BE APPLICABLE TO THE SUBJECT REAL ESTATE: EASEMENTS, OTHER THAN POSSIBLE EASEMENTS WHICH WERE "OPEN ON THE GROUND" AT THE TIME OF FIELD SURVEY; BUILDING SETBACK LINES; RESTRICTIVE COVENANTS; SUBDIVISION RESTRICTIONS; ZONING OR OTHER LAND USE REGULATIONS; AND ANY OTHER FACTS SUCH THAT AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE.
7. A WRITTEN WAIVER AND DIRECTION NOT TO SET CORNER MARKERS HAS BEEN OBTAINED FROM THE ULTIMATE USER PURSUANT TO P.L. 2003, c. 14 (N.J.S.A. 46:26-3) AND N.J.A.C. 13:40-5.1(d).
8. DECLARATION IS MADE TO THE ORIGINAL PURCHASER OF THIS SURVEY. IT IS NOT TRANSFERABLE TO OTHER INSTITUTIONS OR SUBSEQUENT OWNERS.

REVISIONS

REFERENCE	CHK. BY	MTL / TF
DESC. MAP NO.	CAD FIELD BOOK	DRAWN BY / DWG NO. 1
1250703 JOB NO.	1"=20' SCALE	