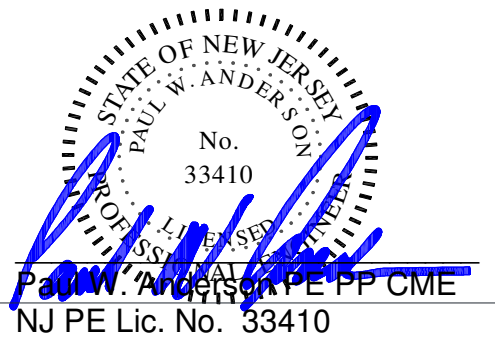




Stormwater Management Report  
Hillcrest Farms  
Block 708, Lot 1  
November 26, 2025  
Rev 1-January 28, 2026  
Rev 2 April 7, 2026  
Rev 3 April 17, 2026





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## **Introduction**

The Hillcrest Farms property is proposed to be redeveloped with a mixed-use development with first floor retail and apartments above. The property currently is developed with a garden center with multiple buildings and paved parking and storage areas. Because the redevelopment of the property will disturb more than one acre the project is classified as a major stormwater project and is subject to the stormwater requirements as outlined in the ordinance and state stormwater regulations.

This report outlines the design of the stormwater system and demonstrates the compliance with the standards. The calculations utilize Hydrocad, version 9.10, NJDEP approved intensity curves, and the SCS TR-20 methodology which conforms to the standards in the National Engineers Handbook part 630.

## **Discussion**

### Water Quantity

The stormwater system proposed has been designed to reduce the discharge from the site for the 2-, 10- and 100-year storms as required by the stormwater regulations. The results of the stormwater analysis for existing and proposed discharge are provided in the summary tables for each point of analysis. Detailed Hydrocad output is also included in the appendix of this report.

### Water Quality

The drainage system uses green technology to achieve the required 80% suspended solid removal rate. Porous pavement is specified for the vehicle surface area to meet this requirement. The porous pavement is under-drained with the underdrain connected to the proposed small scale detention system.

### Groundwater Recharge

In accordance with 7:8-5.4(b) 2, Groundwater recharge does not apply to projects within the urban redevelopment area. The project site is within the planning area 01 (PA-01). In preliminary designs, due to the size of the site and the proximity of neighboring properties the mounding of groundwater from a recharge system would be detrimental to adjoining properties.

Despite not being required we have added a recharge element to the proposed system. Located distant from the neighboring properties the mounding from the recharge element will not have a negative impact.



## Existing Conditions

The existing 1.23-acre property is covered with 67.9% impervious cover. The pervious areas are also utilized as part of the garden center operation and consist of compacted gravel/soil area. Credit for this compaction on permeability was not taken.

The drainage from the existing property goes in 3 directions.

**DA#1** is small area located in the southern corner of the site and drains towards the residential properties to the south. With a total area of 3811.8 sf with 1374.2 sf of impervious cover and a Tc of 6.3 minutes. The Tc is calculated as follows:

Sheet Flow 100 lf based on where existing topography and site features concentrate flow.  
Check McCuen-Speiss limitation

$$L = \frac{100(S)^{.5}}{n} \quad \text{With } n = .15 \text{ for grass, } S = .068 \quad L = 173 \text{ LF} \quad \text{use 100 lf from topographic conditions}$$

Using Hydrocad and a 2 year/ 24 hr rainfall of 3.47 inches The Tc for sheet flow is 5.8 min.

Shallow concentrated flow over 39 ft to the property line @ S= .068, velocity factor 16.1 ft/sec for unpaved Tc for the shallow concentrated flow segment is .2 minutes.

$$\text{Total Tc} = 5.8 + .2 = 6.0 \text{ min}$$

**DA#2** is small drainage area in the northern part of the property that drains to Bloomfield Ave and the intersection of Bloomfield and Park. It has a total drainage area of 4511.6 sf with 4185.3 impervious and a Tc of 1 minutes. It is made up of part of the main building onsite and part of the front parking area.

The Tc is calculated as follows:

Sheet Flow 100 lf based on where existing topography and site features concentrate flow.  
Check McCuen-Speiss limitation

$$L = \frac{100(S)^{.5}}{n} \quad \text{With } n = .011 \text{ for pavement, } S = .0347 \quad L = 1693 \text{ LF use 100 from topographic conditions}$$

Using Hydrocad and a 2 year/ 24 hr rainfall of 3.47 inches The Tc for sheet flow is .9 min.

Shallow concentrated flow over 15ft to the property line @ S= .015, velocity factor 20.3 ft/sec for paved Tc for the shallow concentrated flow segment is .1 minutes.

$$\text{Total Tc} = .9 + .1 = 1.0 \text{ min}$$



**DA#3** is the main draining area onsite in between areas 1&2 and drains to Park Street. It has a total drainage area of 45,073 sf with 30,715.5 sf of impervious. The Tc is 1.7 minutes.

The Tc is calculated as follows:

Sheet Flow 100 lf based on where existing topography and site features concentrate flow.  
Check McCuen-Speiss limitation

$$L = \frac{100(S)^{.5}}{n} \text{ With } n = .011 \text{ for pavement, } S = .0347 \quad L = 1693 \text{ LF use 100 from topographic conditions}$$

Using Hydrocad and a 2 year/ 24 hr rainfall of 3.47 inches The Tc for sheet flow is .9 min.

Shallow concentrated flow over 219 ft to the property line @ S= .057, velocity factor 20.3 ft/sec for paved Tc for the shallow concentrated flow segment is .8 minutes.

**Total Tc= .9+ .8 = 1.7 min**

The summary of the existing conditions discharges is as follows. Hydrocad output for the existing conditions is provided in the appendix of this report.

Current	DA#1	DA#2	DA#3	PEAK/TOTAL
2 YR	.24	.37	3.09	3.69
10YR	.41	.57	5.15	6.13
100 YR	.74	.99	9.36	11.03
Future				
2 YR	.30	.43	3.75	4.48
10 YR	.49	.68	6.24	7.39
100 YR	.94	1.24	11.95	14.07

### Proposed Conditions

The redevelopment of the property includes the removal of all existing buildings and the construction of a new building with parking under and around the building. Storm drainage will be captured by site drainage and the roof drainage system and routed to a small- scale underground detention basin.

The pipe network connecting inlets to the basin are designed to convey storms in excess of the 100-year frequency. The C values for each drainage area are calculated as a weighted average with impervious covered areas at c=.95 and landscape areas at c= .4

The Tc and 100 year intensity are taken for the future drainage analysis 100 year event.



## Stormwater Discharge Capacity Analysis

The detention system discharges to the inlet system in Park Ave. The capacity of the pipe leaving the existing inlet where the detention ties in based on the Mannings equation is 15.5 cfs based on a 15 in RCP , n= .013 and a slope of 5.5%

The flow upstream of the inlet is from a 3165 sf roadway area with a weighted C of .7. Using a future 100 YR intensity of 11.5 inches the flow to the inlet is .6 CFS. The future 100 discharge of the basin is 10.51 CFS. Combined flow to the pipe is 11.11 CFS. The pipe with 15.5 CFS capacity is adequately sized.

The proposed conditions for each of the post-development drainage area has been analyzed with the summary table of the results below verifying the compliance with the discharge quantity standards. The standards require a reduction in flow from the existing conditions. The discharges need to be reduced to 50%, 70% and 80% for the 2, 10 and 100 year storm respectively. To achieve this areas draining to DA#1 and DA#2 have been reduced and the impervious cover has been reduced.

In DA#3 the detention system reduces discharge from the main project drainage area which include the roof and parking lot. The parking lot drains through porous asphalt pavement for water quality conformance to the standard and is detained in the underground system. An outlet structure controls the rate of discharge to the drainage system in Park Avenue. Since the porous pavement is undertrained , no credit was taken for recharge to groundwater.

**DA#1** has a total drainage area of 1467.1 sf with 212.3 sf of impervious cover. The Tc is 2.9 minutes

The Tc is calculated as follows:

Sheet Flow 27 If based on distance to the property line

Check McCuen-Speiss limitation

$$L = \frac{100(S)^{.5}}{n} \quad \text{With } n = .15 \text{ for pavement, } S = .057 \quad L = 173 \text{ LF use 27 from physical conditions}$$

Using Hydrocad and a 2 year/ 24 hr rainfall of 3.47 inches The Tc for sheet flow is 2.2 min.

**Total Tc =2.2 min**

DA#2 has a total drainage area of 4202.4 sf with 1802.4 sf of impervious cover. The Tc is 4.2 minutes

The Tc is calculated as follows:

Sheet Flow 28 If based on distance to the property line.

Check McCuen-Speiss limitation

$$L = \frac{100(S)^{.5}}{n} \quad \text{With } n = .015 \text{ for grass, } S = .015 \quad L = 81.6 \text{ LF use 28 from physical conditions}$$

Using Hydrocad and a 2 year/ 24 hr rainfall of 3.47 inches The Tc for sheet flow is 4.6 mi

**Total Tc= 4.6 min**



**DA#3** has a total drainage area of 47,866.9 sf with 38,903.1 sf of impervious. The Tc is 2.5 minutes.

The Tc is calculated as follows:

Sheet Flow 25 lf based on where existing topography and site features concentrate flow.  
Check McCuen-Speiss limitation

$$L = \frac{100(S)^{.5}}{n} \text{ With } n = .15 \text{ for grass } S = .019 \quad L = 157 \text{ LF use 25 ft from physical conditions}$$

Using Hydrocad and a 2 year/ 24 hr rainfall of 3.47 inches The Tc for sheet flow is 2.1 min.

Shallow concentrated flow over 73 ft to the inlet @ S= .019, velocity factor 20.3 ft/sec for paved Tc for the shallow concentrated flow segment is .4 minutes.

**Total Tc= 2.1+ .4 = 2.5 min**

Overall the project proposes a modest increase in impervious cover from 67.9% to 76.4% or 4548 sf. It meets the permitted impervious cover in the ordinance of 80%.

The summary of the proposed conditions discharges is as follows. Hydrocad output for the existing conditions is provided in the appendix of this report.

Current	Existing Total CFS	Allowable CFS	DA#1	DA#2	DA#3	Total Discharge CFS
2YR	3.69	1.85	.06	.24	1.61	1.74
10YR	6.13	4.29	.13	.42	3.61	4.08
100YR	11.03	8.82	.27	.81	6.99	8.50
Future						
2YR	4.48	2.24	.08	.30	1.80	1.99
10 YR	7.39	5.17	.17	.53	4.54	5.15
100 YR	14.07	11.25	.36	1.06	9.32	10.90

### Drain Time for system

Discarded volume of future 100 year storm 1692 cf, recharge are 480 sf, recharge rate 1.29 in / hr with a FS of 2

$$T(\text{hrs}) = \frac{1692 \text{ cf} \times 12 \text{ in/ft}}{480 \text{ sf} \times 1.29 \text{ in/hr}} = 32.8 \text{ hrs}$$



## **Groundwater Mounding**

Test pits were performed onsite to determine the soil type, permeability and the elevation of the seasonal high groundwater table. Two test pits, Test Pits 3 and 5, were performed near the proposed infiltration element of the stormwater system. Test pit 5 was completed within the NJDEP approved testing window for evaluating the seasonal high groundwater table. Test pit 5 has a surface elevation of 407 and was dug to a depth of 12 ft without encountering groundwater or mottling. From this we can state that the seasonal high groundwater elevation is at or below elevation 395 (407-12). Test pit 3 had a surface elevation of 409 and encountered water seepage at 165 inches (13.75 ft) below the surface, resulting in an elevation of 395.25.

The infiltration system designed for the site will mound water above the seasonal high groundwater elevation immediately after the storm event. The mounding analysis identifies how high vertically and how far horizontally the water mounds, allowing us to evaluate whether the mounded groundwater impacts any adjacent properties or the proposed stormwater management system. The analysis resulted in a mounding height of 3.5 ft that extends horizontally 20 ft. before transitioning back to the seasonal high level, 60 ft from the system's centerline. From this the peak mounding height of 398.7 is established. The mounding does not impact the stormwater system's storage volume because its peak is 3.3 ft below the bottom of the system. The stormwater mounding also does not impact any adjacent properties because the mound dissipates back to the seasonal high-water level before leaving the property limits.

## **Maintenance Manual**

The maintenance manual for the project will be filed with Essex County after approval as required.

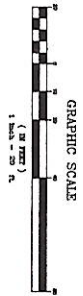
## **Conclusion**

The storm drainage system for the Hillcrest Farms project has been designed in accordance with Verona and NJ State stormwater standards for a major project. The discharge from the site meets the required reduction for both the current and future storm intensity and the water quality standard is met with green technology porous pavement.

**DA 1**  
 3,811.8 SF  
 Tc = 6.0 MIN  
 IMPERVIOUS  
 1,374.2 SF  
 PERVIOUS  
 2,437.6 SF

**DA 2**  
 4,511.6 SF  
 Tc = 1.0 MIN  
 IMPERVIOUS  
 4,185.3 SF  
 PERVIOUS  
 326.3 SF

**DA 3**  
 45,073 SF  
 Tc = 1.7 MIN  
 IMPERVIOUS  
 30,715.5 SF  
 PERVIOUS  
 14,357.5 SF



**REFERENCES:**  
 BOUNDARY AND FIELD SURVEY TAKEN FROM LAKELAND SURVEYS,  
 PREPARED BY MARC ALDRINE P.L.S. RECEIVED ON 10-9-2024.  
 EXISTING TOPOGRAPHY IS MAID 1989  
 ARCHITECTURAL FOOTPRINT TAKEN FROM PLANS PREPARED BY GARC  
 ON 12-04-2025. LAST REVISION 02-03-2025

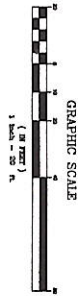
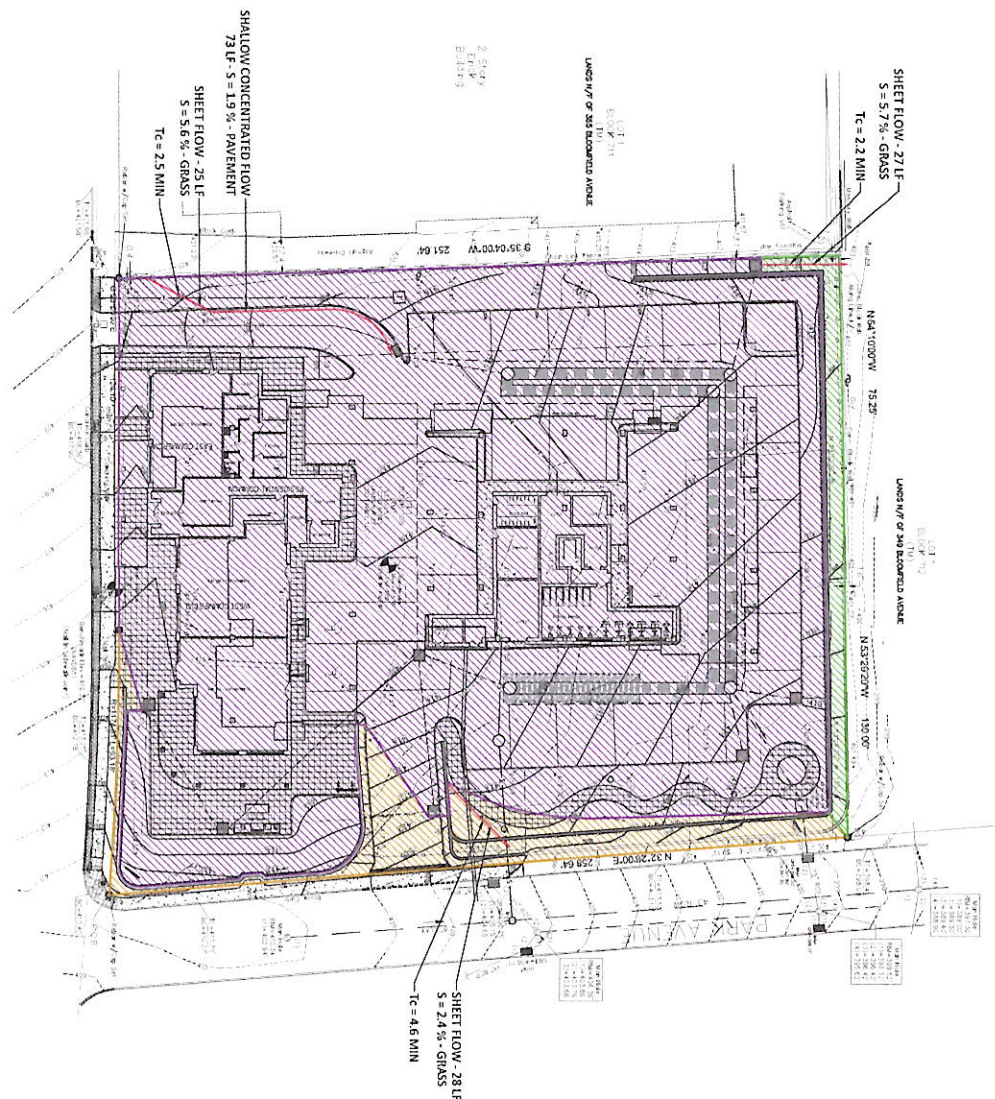
<b>DA - 1</b> SHEET 1 OF 8	383 BLOOMFIELD AVENUE BLOCK 708, LOT 1 TOWNSHIP OF VERONA ESSEX COUNTY, NEW JERSEY	Project No. BLOOMFIELD Version 1 Date 03.15.25 Drawn by BCA Designed by PWA Checked by PWA Scale AS SHOWN	 <b>ACS</b> Anderson Consulting Services LLC 40 Miller Drive Bohon, NJ 07005 TEL: 973-975-0703 FAX: 973-975-0703 WWW.GRAHDIRECT.COM	CERTIFICATE OF AUTHORIZATION 245A28102403	REV 2: 4-6-25 PER PLANNING BOARD & ENGINEERS COMMITTEE REV 1: 2-3-25 PER REVIEW COMMITTEE & ENGINEERS COMMITTEE	<b>PAUL W. ANDERSON</b> N.J. PROFESSIONAL ENGINEER LIC. NO. 33410  SIGNATURE INVALID WITHOUT RAISED SEAL OF P.E.
		<b>EXISTING DRAINAGE AREA MAP</b>				


  
 PAUL W. ANDERSON, N.J. PROFESSIONAL ENGINEER, LICENSE NO. 33410
   
 40 MILLER DRIVE, BOBOLINKS, NEW JERSEY 07005
   
 TEL: 973.975.0703 FAX: 973.975.0703
   
 WWW.PWANDERSON.COM

**DA-1: 1,485.0 SF**  
**Tc = 2.2 MIN**  
**IMPV: 212.0 SF**  
**PV: 1,273.0 SF**

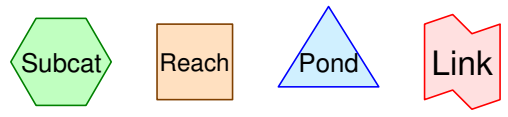
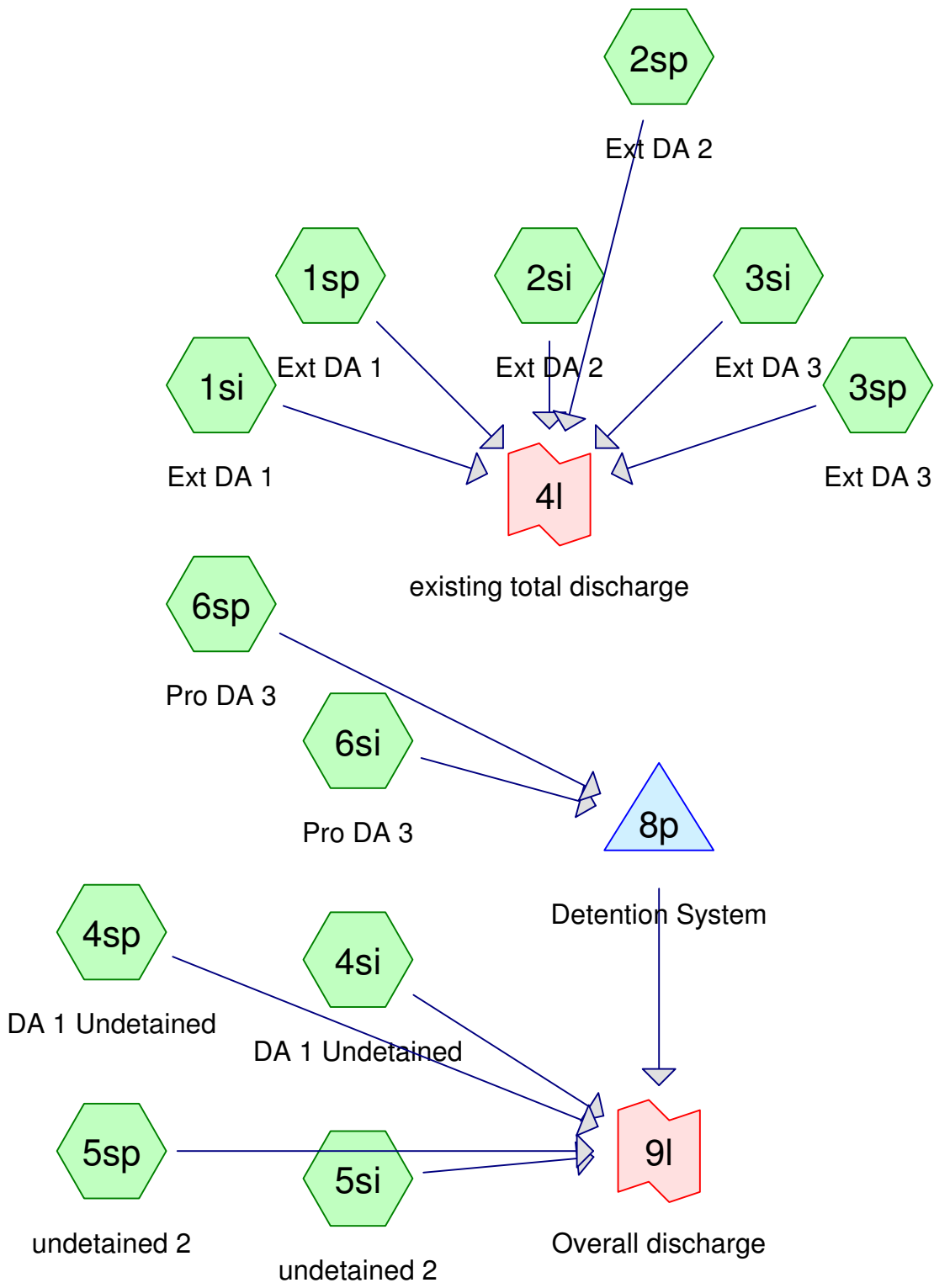
**DA-2: 3,536.0 SF**  
**Tc = 4.6 MIN**  
**IMPV: 1,572.0 SF**  
**PV: 1,964.0 SF**

**DA-3: 48,529.0 SF**  
**Tc = 2.5 MIN**  
**IMPV: 39,143.0 SF**  
**PV: 9,386.0 SF**



**REFERENCES:**  
 BOUNDARY AND FIELD SURVEY TAKEN FROM LANDLORD SURVEYS,  
 PREPARED BY MARC ALDRINE PLS, RECORDED ON 10-B-2524,  
 ARCHITECTURAL FOOTPRINT TAKEN FROM PLANS PREPARED BY CS&C  
 ON 12-04-2023. LAST REVISION 02-13-2023

<b>DA-1</b> SHEET 1 OF 8	383 BLOOMFIELD AVENUE BLOCK 708, LOT 1 TOWNSHIP OF VERONA ESSEX COUNTY, NEW JERSEY	Proj No: BLOOMFIELD Version: 1 Date: 09-18-23 Drawn by: BGA Designed by: PWA Checked by: PWA Scale: AS SHOWN	 <b>ACS</b> Anderson Consulting Services LLC 40 Miller Drive Bobolinks, NJ 07005 TEL: 973.975.0703 FAX: 973.975.0703 www.pwandsn.com	CERTIFICATE OF AUTHORIZATION 24GA2910240	REV 2: 4-6-26 PER PLANNING BOARD & ENGINEERS COMMENTS REV 1: 2-3-26 PER REVIEW COMMITTEE & ENGINEERS COMMENTS	<b>PAUL W. ANDERSON</b> N.J. PROFESSIONAL ENGINEER LIC. NO. 33410  SIGNATURE INVALID WITHOUT RAISED SEAL OF P.E.
	<b>PROPOSED DRAINAGE AREA MAP</b>					



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**Rainfall Events Listing (selected events)**

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year-2020	NOAA 24-hr	D	Default	24.00	1	3.47	2
2	10-Year-2020	NOAA 24-hr	D	Default	24.00	1	5.38	2
3	100-Year-2020	NOAA 24-hr	D	Default	24.00	1	9.18	2
4	2-Year-2100	NOAA 24-hr	D	Default	24.00	1	4.09	2
5	10-Year-2100	NOAA 24-hr	D	Default	24.00	1	6.37	2
6	100-Year-2100	NOAA 24-hr	D	Default	24.00	1	11.52	2
7	WQ	NJ DEP 2-hr		Default	2.00	1	1.25	2

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**Area Listing (all nodes)**

Area (sq-ft)	CN	Description (subcatchment-numbers)
326	79	50-75% Grass cover, Fair, HSG C (2sp)
28,108	74	>75% Grass cover, Good, HSG C (3sp, 4sp, 5sp, 6sp)
2,438	87	Dirt roads, HSG C (1sp)
77,202	98	Paved parking, HSG C (1si, 2si, 3si, 4si, 5si, 6si)
<b>108,074</b>	<b>91</b>	<b>TOTAL AREA</b>

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**Soil Listing (all nodes)**

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
108,074	HSG C	1si, 1sp, 2si, 2sp, 3si, 3sp, 4si, 4sp, 5si, 5sp, 6si, 6sp
0	HSG D	
0	Other	
<b>108,074</b>		<b>TOTAL AREA</b>

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**Ground Covers (all nodes)**

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover
0	0	326	0	0	326	50-75% Grass cover, Fair
0	0	28,108	0	0	28,108	>75% Grass cover, Good
0	0	2,438	0	0	2,438	Dirt roads
0	0	77,202	0	0	77,202	Paved parking
<b>0</b>	<b>0</b>	<b>108,074</b>	<b>0</b>	<b>0</b>	<b>108,074</b>	<b>TOTAL AREA</b>

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**Notes Listing (all nodes)**

Line#	Node Number	Notes
1	Project	Rainfall events imported from "NJ-2023-Rain.txt" for 6606 NJ Essex
2		Rainfall events imported from "NRCS2-Rain.txt" for 1167 NJ Essex-D
3		Rainfall events imported from "NRCS2-Rain.txt" for 1167 NJ Essex-D
4		Rainfall events imported from "NJ-2023-Rain.txt" for 6606 NJ Essex
5		Rainfall events imported from "NJ-2023-Rain.txt" for 6606 NJ Essex
6		Rainfall events imported from "NJ-2023-Rain.txt" for 6606 NJ Essex
7		Rainfall events imported from "NJ-2023-Rain.txt" for 6606 NJ Essex

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points  
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1si: Ext DA 1** Runoff Area=1,374 sf 100.00% Impervious Runoff Depth=3.24"  
Flow Length=139' Slope=0.0680 '/' Tc=6.0 min CN=0/98 Runoff=0.10 cfs 371 cf

**Subcatchment 1sp: Ext DA 1** Runoff Area=2,438 sf 0.00% Impervious Runoff Depth=2.16"  
Flow Length=139' Slope=0.0680 '/' Tc=6.0 min CN=87/0 Runoff=0.14 cfs 438 cf

**Subcatchment 2si: Ext DA 2** Runoff Area=4,185 sf 100.00% Impervious Runoff Depth=3.24"  
Flow Length=115' Tc=1.0 min CN=0/98 Runoff=0.35 cfs 1,129 cf

**Subcatchment 2sp: Ext DA 2** Runoff Area=326 sf 0.00% Impervious Runoff Depth=1.54"  
Flow Length=115' Tc=1.0 min CN=79/0 Runoff=0.02 cfs 42 cf

**Subcatchment 3si: Ext DA 3** Runoff Area=30,716 sf 100.00% Impervious Runoff Depth=3.24"  
Flow Length=319' Tc=1.7 min CN=0/98 Runoff=2.55 cfs 8,285 cf

**Subcatchment 3sp: Ext DA 3** Runoff Area=14,358 sf 0.00% Impervious Runoff Depth=1.22"  
Flow Length=319' Tc=1.7 min CN=74/0 Runoff=0.54 cfs 1,459 cf

**Subcatchment 4si: DA 1 Undetained** Runoff Area=212 sf 100.00% Impervious Runoff Depth=3.24"  
Flow Length=27' Slope=0.0570 '/' Tc=2.2 min CN=0/98 Runoff=0.02 cfs 57 cf

**Subcatchment 4sp: DA 1 Undetained** Runoff Area=1,964 sf 0.00% Impervious Runoff Depth=1.22"  
Flow Length=27' Slope=0.0570 '/' Tc=2.2 min CN=74/0 Runoff=0.07 cfs 200 cf

**Subcatchment 5si: undetained 2** Runoff Area=1,572 sf 100.00% Impervious Runoff Depth=3.24"  
Flow Length=28' Slope=0.0240 '/' Tc=4.6 min CN=0/98 Runoff=0.12 cfs 424 cf

**Subcatchment 5sp: undetained 2** Runoff Area=2,400 sf 0.00% Impervious Runoff Depth=1.22"  
Flow Length=28' Slope=0.0240 '/' Tc=4.6 min CN=74/0 Runoff=0.08 cfs 244 cf

**Subcatchment 6si: Pro DA 3** Runoff Area=39,143 sf 100.00% Impervious Runoff Depth=3.24"  
Flow Length=98' Tc=2.5 min CN=0/98 Runoff=3.24 cfs 10,557 cf

**Subcatchment 6sp: Pro DA 3** Runoff Area=9,386 sf 0.00% Impervious Runoff Depth=1.22"  
Flow Length=98' Tc=2.5 min CN=74/0 Runoff=0.35 cfs 954 cf

**Pond 8p: Detention System** Peak Elev=404.34' Storage=2,028 cf Inflow=3.58 cfs 11,511 cf  
Discarded=0.00 cfs 0 cf Primary=1.50 cfs 11,319 cf Outflow=1.50 cfs 11,319 cf

**Link 4l: existing total discharge** Inflow=3.69 cfs 11,723 cf  
Primary=3.69 cfs 11,723 cf

**Link 9l: Overall discharge** Inflow=1.74 cfs 12,244 cf  
Primary=1.74 cfs 12,244 cf

**Total Runoff Area = 108,074 sf Runoff Volume = 24,158 cf Average Runoff Depth = 2.68"**  
**28.57% Pervious = 30,872 sf 71.43% Impervious = 77,202 sf**

### Summary for Subcatchment 1si: Ext DA 1

Runoff = 0.10 cfs @ 12.13 hrs, Volume= 371 cf, Depth= 3.24"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 2-Year-2020 Rainfall=3.47"

Area (sf)	CN	Description
1,374	98	Paved parking, HSG C
1,374	98	100.00% Impervious Area

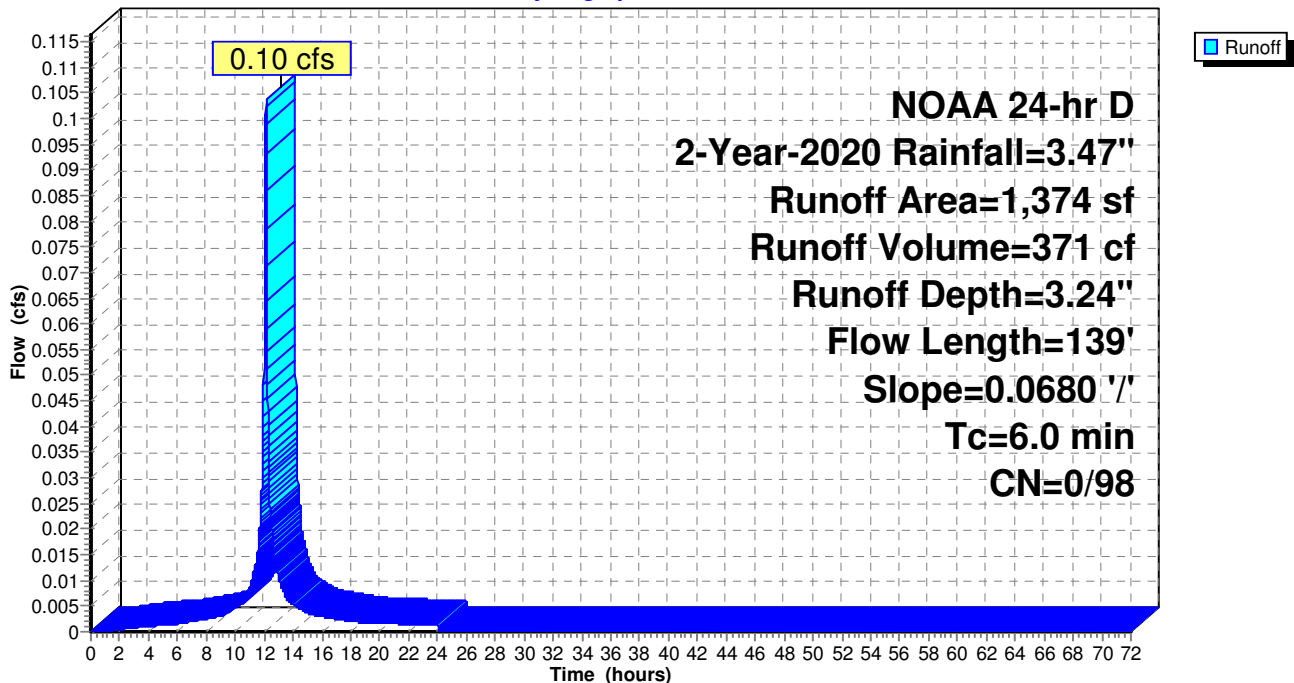
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	100	0.0680	0.29		<b>Sheet Flow, sheet flow</b>
					Grass: Short n= 0.150 P2= 3.47"
0.2	39	0.0680	4.20		<b>Shallow Concentrated Flow, scf</b>
					Unpaved Kv= 16.1 fps
6.0	139	Total			



### Subcatchment 1si: Ext DA 1

Hydrograph



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hillcrest farms  
NOAA 24-hr D 2-Year-2020 Rainfall=3.47"

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**Hydrograph for Subcatchment 1si: Ext DA 1**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.08	0.00	0.01	0.00
4.00	0.18	0.00	0.06	0.00
6.00	0.30	0.00	0.14	0.00
8.00	0.45	0.00	0.27	0.00
10.00	0.69	0.00	0.49	0.00
12.00	1.66	0.00	1.44	<b>0.06</b>
14.00	2.78	0.00	2.55	<b>0.01</b>
16.00	3.02	0.00	2.79	0.00
18.00	3.17	0.00	2.94	0.00
20.00	3.29	0.00	3.06	0.00
22.00	3.39	0.00	3.15	0.00
24.00	<b>3.47</b>	0.00	<b>3.24</b>	0.00
26.00	3.47	0.00	3.24	0.00
28.00	3.47	0.00	3.24	0.00
30.00	3.47	0.00	3.24	0.00
32.00	3.47	0.00	3.24	0.00
34.00	3.47	0.00	3.24	0.00
36.00	3.47	0.00	3.24	0.00
38.00	3.47	0.00	3.24	0.00
40.00	3.47	0.00	3.24	0.00
42.00	3.47	0.00	3.24	0.00
44.00	3.47	0.00	3.24	0.00
46.00	3.47	0.00	3.24	0.00
48.00	3.47	0.00	3.24	0.00
50.00	3.47	0.00	3.24	0.00
52.00	3.47	0.00	3.24	0.00
54.00	3.47	0.00	3.24	0.00
56.00	3.47	0.00	3.24	0.00
58.00	3.47	0.00	3.24	0.00
60.00	3.47	0.00	3.24	0.00
62.00	3.47	0.00	3.24	0.00
64.00	3.47	0.00	3.24	0.00
66.00	3.47	0.00	3.24	0.00
68.00	3.47	0.00	3.24	0.00
70.00	3.47	0.00	3.24	0.00
72.00	3.47	0.00	3.24	0.00

### Summary for Subcatchment 1sp: Ext DA 1

Runoff = 0.14 cfs @ 12.13 hrs, Volume= 438 cf, Depth= 2.16"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 2-Year-2020 Rainfall=3.47"

Area (sf)	CN	Description
2,438	87	Dirt roads, HSG C
2,438	87	100.00% Pervious Area

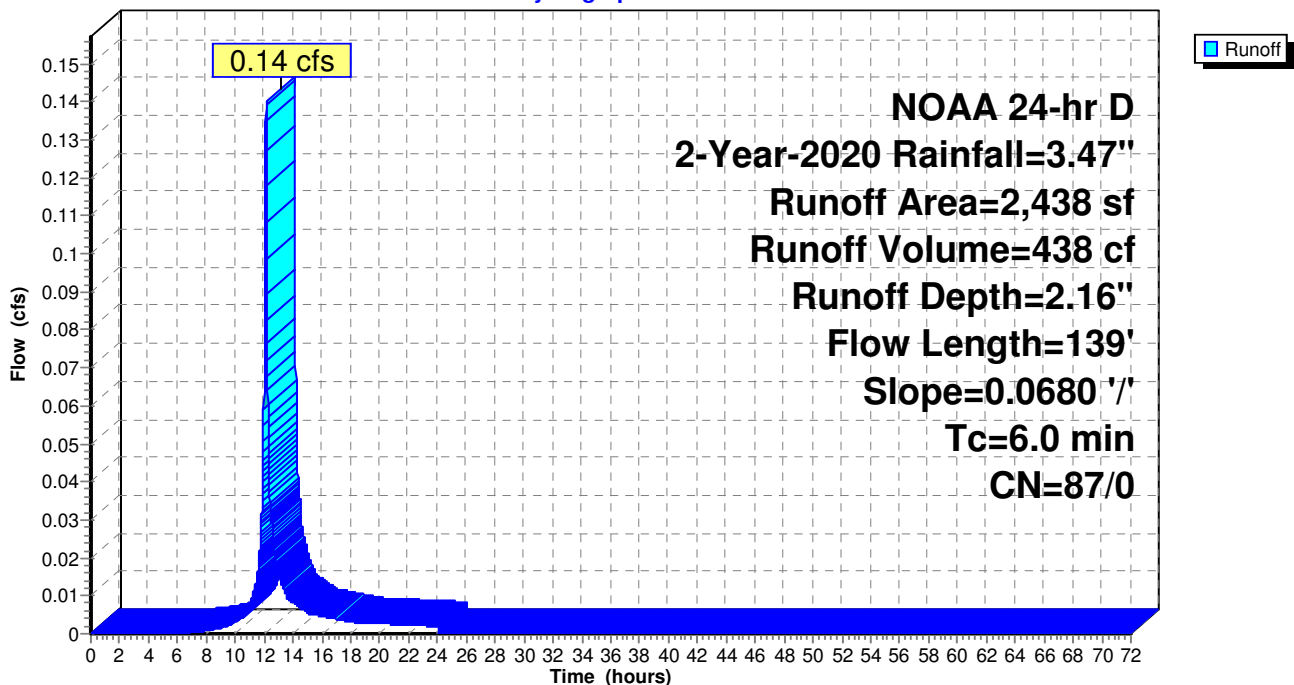
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	100	0.0680	0.29		<b>Sheet Flow, sheet flow</b> Grass: Short n= 0.150 P2= 3.47"
0.2	39	0.0680	4.20		<b>Shallow Concentrated Flow, scf</b> Unpaved Kv= 16.1 fps
6.0	139	Total			



### Subcatchment 1sp: Ext DA 1

Hydrograph



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**Hydrograph for Subcatchment 1sp: Ext DA 1**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.08	0.00	0.00	0.00
4.00	0.18	0.00	0.00	0.00
6.00	0.30	0.00	0.00	0.00
8.00	0.45	0.01	0.00	0.00
10.00	0.69	0.08	0.00	0.00
12.00	1.66	0.65	0.00	<b>0.07</b>
14.00	2.78	1.55	0.00	<b>0.01</b>
16.00	3.02	1.76	0.00	0.00
18.00	3.17	1.89	0.00	0.00
20.00	3.29	1.99	0.00	0.00
22.00	3.39	2.08	0.00	0.00
24.00	<b>3.47</b>	<b>2.16</b>	0.00	0.00
26.00	3.47	2.16	0.00	0.00
28.00	3.47	2.16	0.00	0.00
30.00	3.47	2.16	0.00	0.00
32.00	3.47	2.16	0.00	0.00
34.00	3.47	2.16	0.00	0.00
36.00	3.47	2.16	0.00	0.00
38.00	3.47	2.16	0.00	0.00
40.00	3.47	2.16	0.00	0.00
42.00	3.47	2.16	0.00	0.00
44.00	3.47	2.16	0.00	0.00
46.00	3.47	2.16	0.00	0.00
48.00	3.47	2.16	0.00	0.00
50.00	3.47	2.16	0.00	0.00
52.00	3.47	2.16	0.00	0.00
54.00	3.47	2.16	0.00	0.00
56.00	3.47	2.16	0.00	0.00
58.00	3.47	2.16	0.00	0.00
60.00	3.47	2.16	0.00	0.00
62.00	3.47	2.16	0.00	0.00
64.00	3.47	2.16	0.00	0.00
66.00	3.47	2.16	0.00	0.00
68.00	3.47	2.16	0.00	0.00
70.00	3.47	2.16	0.00	0.00
72.00	3.47	2.16	0.00	0.00

**Summary for Subcatchment 2si: Ext DA 2**

[49] Hint: Tc<2dt may require smaller dt

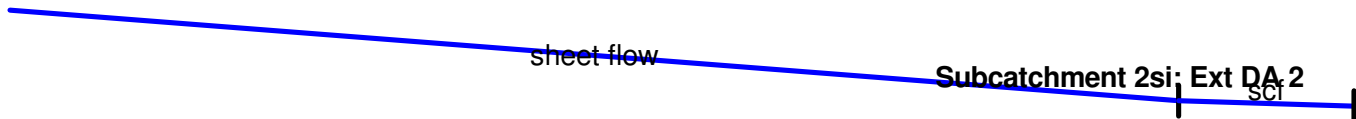
Runoff = 0.35 cfs @ 12.09 hrs, Volume= 1,129 cf, Depth= 3.24"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 2-Year-2020 Rainfall=3.47"

Area (sf)	CN	Description
4,185	98	Paved parking, HSG C
4,185	98	100.00% Impervious Area

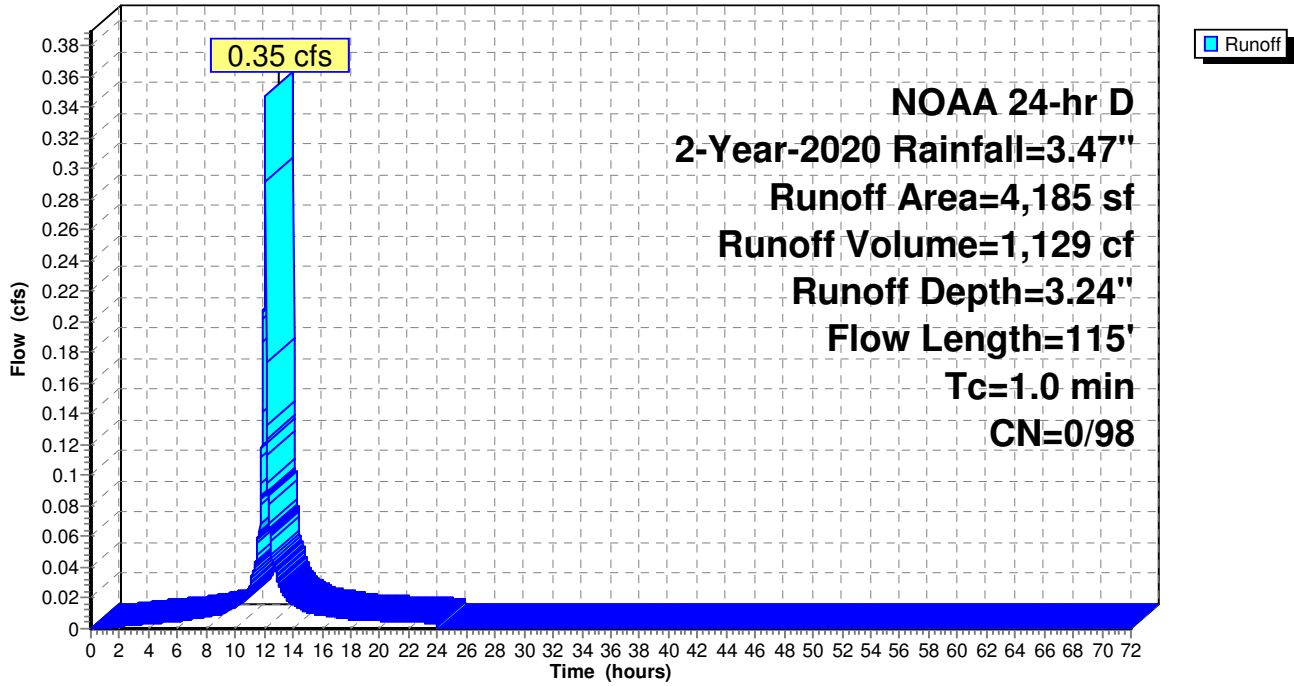
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0385	1.86		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.1	15	0.0150	2.49		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.0	115	Total			



### Subcatchment 2si: Ext DA 2

Hydrograph



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NOAA 24-hr D 2-Year-2020 Rainfall=3.47"

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**Hydrograph for Subcatchment 2si: Ext DA 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.08	0.00	0.01	0.00
4.00	0.18	0.00	0.06	0.00
6.00	0.30	0.00	0.14	0.00
8.00	0.45	0.00	0.27	0.01
10.00	0.69	0.00	0.49	0.01
12.00	1.66	0.00	1.44	<b>0.21</b>
14.00	2.78	0.00	2.55	<b>0.02</b>
16.00	3.02	0.00	2.79	0.01
18.00	3.17	0.00	2.94	0.01
20.00	3.29	0.00	3.06	0.01
22.00	3.39	0.00	3.15	0.00
24.00	<b>3.47</b>	0.00	<b>3.24</b>	0.00
26.00	3.47	0.00	3.24	0.00
28.00	3.47	0.00	3.24	0.00
30.00	3.47	0.00	3.24	0.00
32.00	3.47	0.00	3.24	0.00
34.00	3.47	0.00	3.24	0.00
36.00	3.47	0.00	3.24	0.00
38.00	3.47	0.00	3.24	0.00
40.00	3.47	0.00	3.24	0.00
42.00	3.47	0.00	3.24	0.00
44.00	3.47	0.00	3.24	0.00
46.00	3.47	0.00	3.24	0.00
48.00	3.47	0.00	3.24	0.00
50.00	3.47	0.00	3.24	0.00
52.00	3.47	0.00	3.24	0.00
54.00	3.47	0.00	3.24	0.00
56.00	3.47	0.00	3.24	0.00
58.00	3.47	0.00	3.24	0.00
60.00	3.47	0.00	3.24	0.00
62.00	3.47	0.00	3.24	0.00
64.00	3.47	0.00	3.24	0.00
66.00	3.47	0.00	3.24	0.00
68.00	3.47	0.00	3.24	0.00
70.00	3.47	0.00	3.24	0.00
72.00	3.47	0.00	3.24	0.00

**Summary for Subcatchment 2sp: Ext DA 2**

[49] Hint: Tc<2dt may require smaller dt

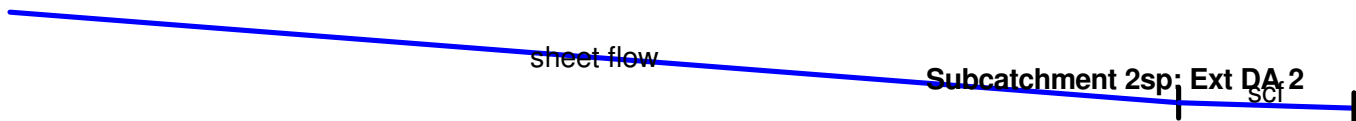
Runoff = 0.02 cfs @ 12.10 hrs, Volume= 42 cf, Depth= 1.54"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 2-Year-2020 Rainfall=3.47"

Area (sf)	CN	Description
326	79	50-75% Grass cover, Fair, HSG C
326	79	100.00% Pervious Area

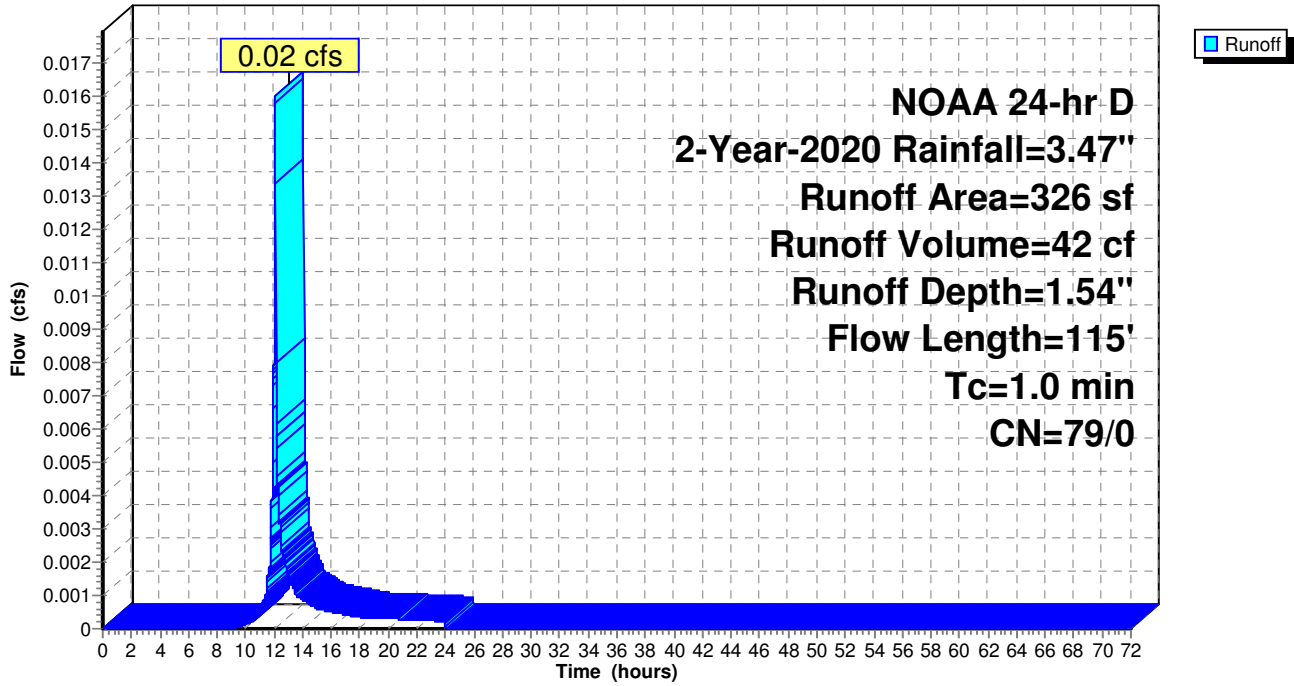
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0385	1.86		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.1	15	0.0150	2.49		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.0	115	Total			



### Subcatchment 2sp: Ext DA 2

Hydrograph



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NOAA 24-hr D 2-Year-2020 Rainfall=3.47"

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**Hydrograph for Subcatchment 2sp: Ext DA 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.08	0.00	0.00	0.00
4.00	0.18	0.00	0.00	0.00
6.00	0.30	0.00	0.00	0.00
8.00	0.45	0.00	0.00	0.00
10.00	0.69	0.01	0.00	0.00
12.00	1.66	0.34	0.00	<b>0.01</b>
14.00	2.78	1.03	0.00	<b>0.00</b>
16.00	3.02	1.20	0.00	0.00
18.00	3.17	1.32	0.00	0.00
20.00	3.29	1.40	0.00	0.00
22.00	3.39	1.48	0.00	0.00
24.00	<b>3.47</b>	<b>1.54</b>	0.00	0.00
26.00	3.47	1.54	0.00	0.00
28.00	3.47	1.54	0.00	0.00
30.00	3.47	1.54	0.00	0.00
32.00	3.47	1.54	0.00	0.00
34.00	3.47	1.54	0.00	0.00
36.00	3.47	1.54	0.00	0.00
38.00	3.47	1.54	0.00	0.00
40.00	3.47	1.54	0.00	0.00
42.00	3.47	1.54	0.00	0.00
44.00	3.47	1.54	0.00	0.00
46.00	3.47	1.54	0.00	0.00
48.00	3.47	1.54	0.00	0.00
50.00	3.47	1.54	0.00	0.00
52.00	3.47	1.54	0.00	0.00
54.00	3.47	1.54	0.00	0.00
56.00	3.47	1.54	0.00	0.00
58.00	3.47	1.54	0.00	0.00
60.00	3.47	1.54	0.00	0.00
62.00	3.47	1.54	0.00	0.00
64.00	3.47	1.54	0.00	0.00
66.00	3.47	1.54	0.00	0.00
68.00	3.47	1.54	0.00	0.00
70.00	3.47	1.54	0.00	0.00
72.00	3.47	1.54	0.00	0.00

### Summary for Subcatchment 3si: Ext DA 3

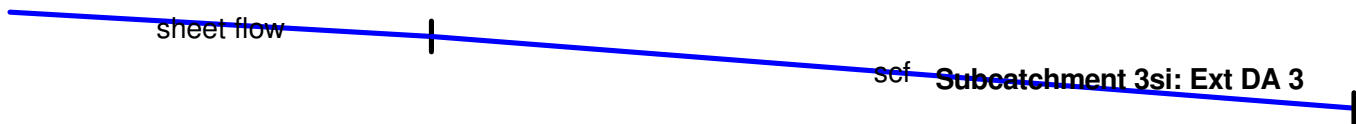
Runoff = 2.55 cfs @ 12.10 hrs, Volume= 8,285 cf, Depth= 3.24"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 2-Year-2020 Rainfall=3.47"

Area (sf)	CN	Description
30,716	98	Paved parking, HSG C
30,716	98	100.00% Impervious Area

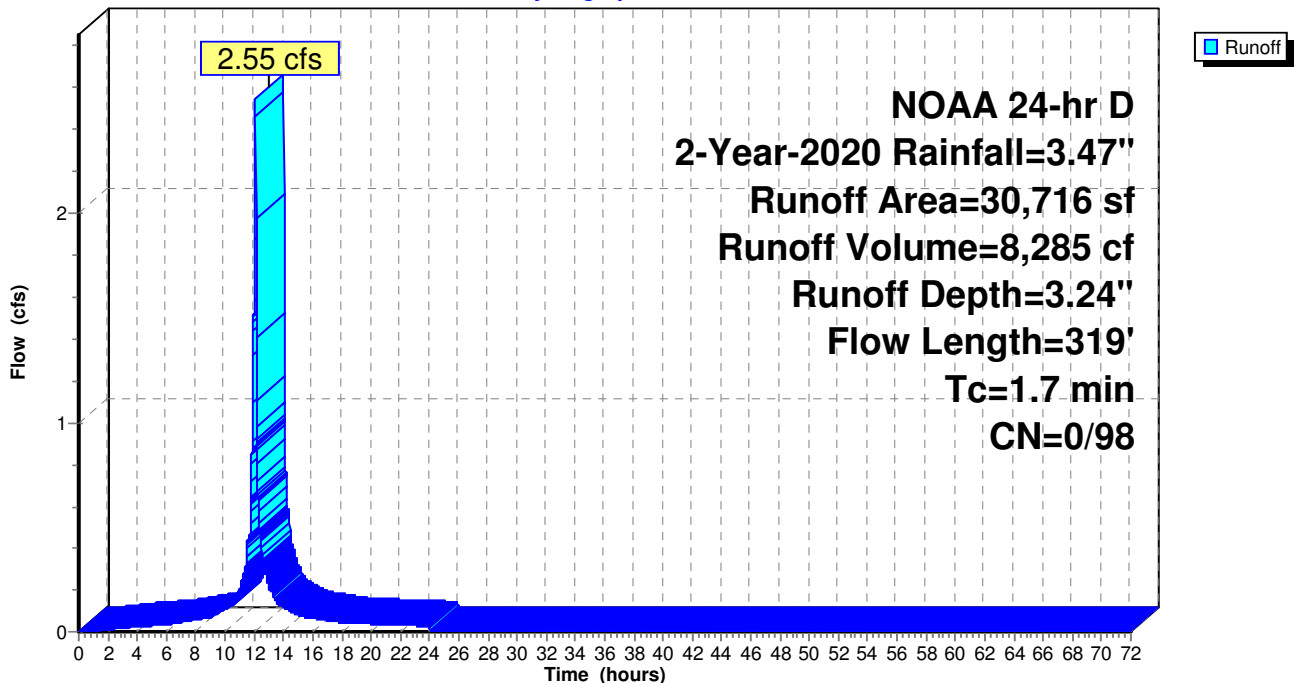
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0420	1.93		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.8	219	0.0570	4.85		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.7	319	Total			



### Subcatchment 3si: Ext DA 3

Hydrograph



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NOAA 24-hr D 2-Year-2020 Rainfall=3.47"

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**Hydrograph for Subcatchment 3si: Ext DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.08	0.00	0.01	0.01
4.00	0.18	0.00	0.06	0.02
6.00	0.30	0.00	0.14	0.03
8.00	0.45	0.00	0.27	0.06
10.00	0.69	0.00	0.49	0.11
12.00	1.66	0.00	1.44	<b>1.52</b>
14.00	2.78	0.00	2.55	<b>0.12</b>
16.00	3.02	0.00	2.79	0.07
18.00	3.17	0.00	2.94	0.04
20.00	3.29	0.00	3.06	0.04
22.00	3.39	0.00	3.15	0.03
24.00	<b>3.47</b>	0.00	<b>3.24</b>	0.03
26.00	3.47	0.00	3.24	0.00
28.00	3.47	0.00	3.24	0.00
30.00	3.47	0.00	3.24	0.00
32.00	3.47	0.00	3.24	0.00
34.00	3.47	0.00	3.24	0.00
36.00	3.47	0.00	3.24	0.00
38.00	3.47	0.00	3.24	0.00
40.00	3.47	0.00	3.24	0.00
42.00	3.47	0.00	3.24	0.00
44.00	3.47	0.00	3.24	0.00
46.00	3.47	0.00	3.24	0.00
48.00	3.47	0.00	3.24	0.00
50.00	3.47	0.00	3.24	0.00
52.00	3.47	0.00	3.24	0.00
54.00	3.47	0.00	3.24	0.00
56.00	3.47	0.00	3.24	0.00
58.00	3.47	0.00	3.24	0.00
60.00	3.47	0.00	3.24	0.00
62.00	3.47	0.00	3.24	0.00
64.00	3.47	0.00	3.24	0.00
66.00	3.47	0.00	3.24	0.00
68.00	3.47	0.00	3.24	0.00
70.00	3.47	0.00	3.24	0.00
72.00	3.47	0.00	3.24	0.00

### Summary for Subcatchment 3sp: Ext DA 3

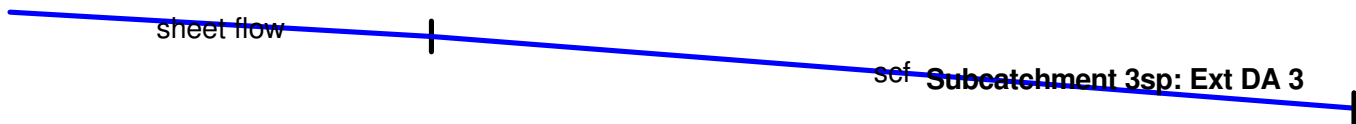
Runoff = 0.54 cfs @ 12.10 hrs, Volume= 1,459 cf, Depth= 1.22"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 2-Year-2020 Rainfall=3.47"

Area (sf)	CN	Description
14,358	74	>75% Grass cover, Good, HSG C
14,358	74	100.00% Pervious Area

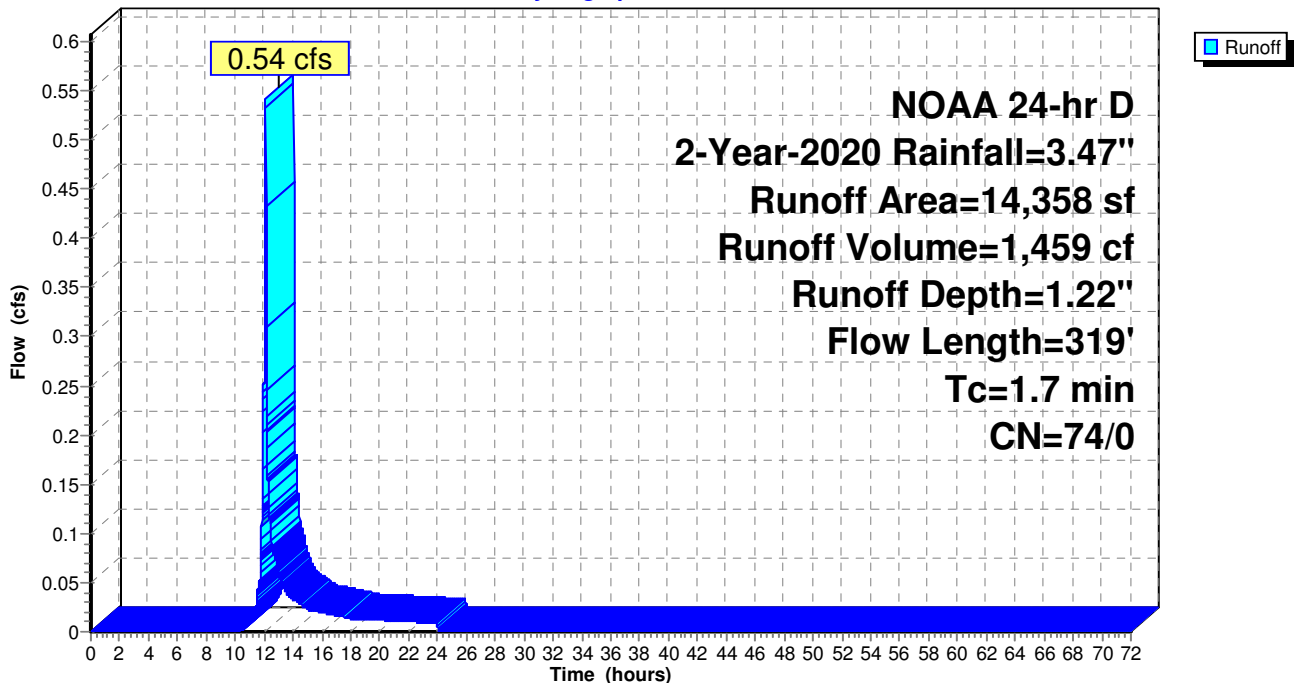
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0420	1.93		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.8	219	0.0570	4.85		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.7	319	Total			



### Subcatchment 3sp: Ext DA 3

Hydrograph



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**Hydrograph for Subcatchment 3sp: Ext DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.08	0.00	0.00	0.00
4.00	0.18	0.00	0.00	0.00
6.00	0.30	0.00	0.00	0.00
8.00	0.45	0.00	0.00	0.00
10.00	0.69	0.00	0.00	0.00
12.00	1.66	0.21	0.00	<b>0.26</b>
14.00	2.78	0.77	0.00	<b>0.03</b>
16.00	3.02	0.92	0.00	0.02
18.00	3.17	1.02	0.00	0.01
20.00	3.29	1.10	0.00	0.01
22.00	3.39	1.16	0.00	0.01
24.00	<b>3.47</b>	<b>1.22</b>	0.00	0.01
26.00	3.47	1.22	0.00	0.00
28.00	3.47	1.22	0.00	0.00
30.00	3.47	1.22	0.00	0.00
32.00	3.47	1.22	0.00	0.00
34.00	3.47	1.22	0.00	0.00
36.00	3.47	1.22	0.00	0.00
38.00	3.47	1.22	0.00	0.00
40.00	3.47	1.22	0.00	0.00
42.00	3.47	1.22	0.00	0.00
44.00	3.47	1.22	0.00	0.00
46.00	3.47	1.22	0.00	0.00
48.00	3.47	1.22	0.00	0.00
50.00	3.47	1.22	0.00	0.00
52.00	3.47	1.22	0.00	0.00
54.00	3.47	1.22	0.00	0.00
56.00	3.47	1.22	0.00	0.00
58.00	3.47	1.22	0.00	0.00
60.00	3.47	1.22	0.00	0.00
62.00	3.47	1.22	0.00	0.00
64.00	3.47	1.22	0.00	0.00
66.00	3.47	1.22	0.00	0.00
68.00	3.47	1.22	0.00	0.00
70.00	3.47	1.22	0.00	0.00
72.00	3.47	1.22	0.00	0.00

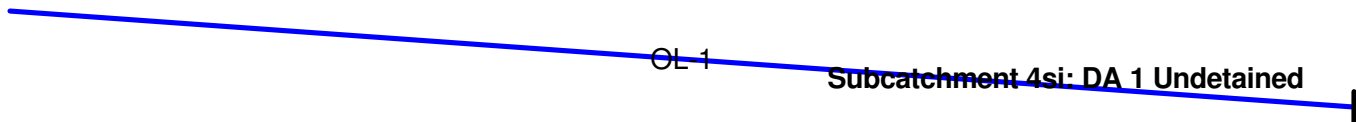
### Summary for Subcatchment 4si: DA 1 Undetained

Runoff = 0.02 cfs @ 12.10 hrs, Volume= 57 cf, Depth= 3.24"  
Routed to Link 9I : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 2-Year-2020 Rainfall=3.47"

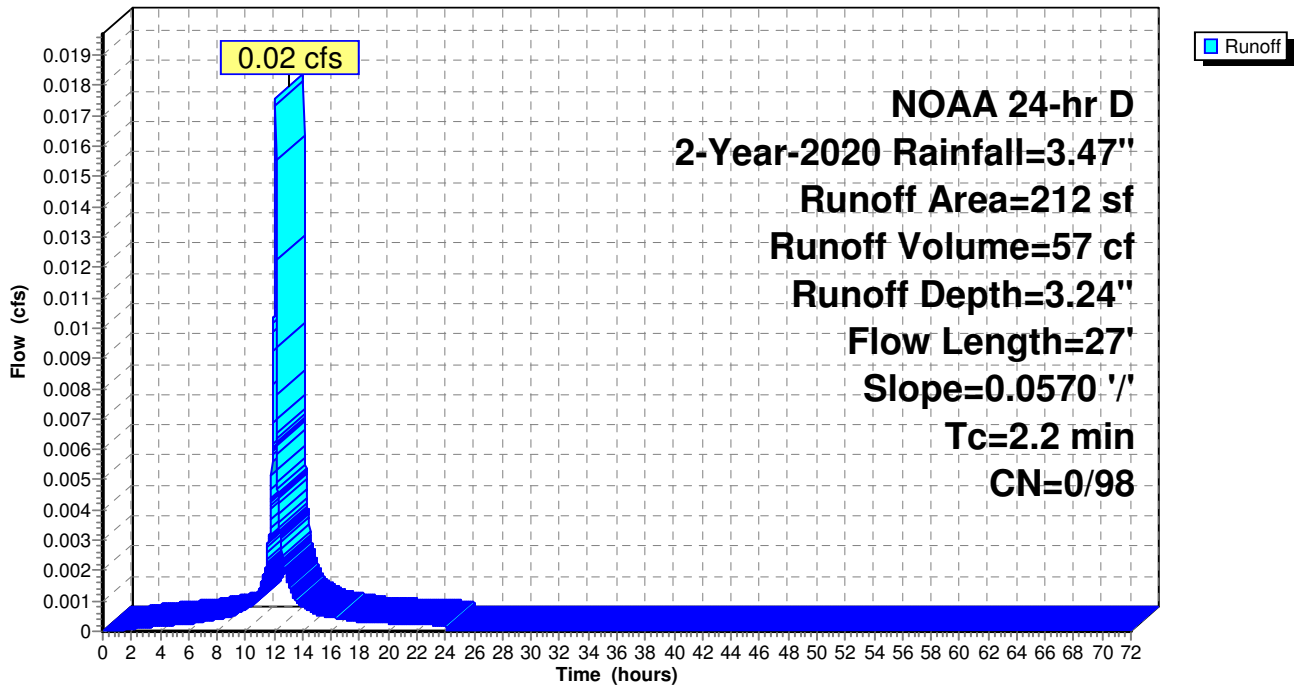
Area (sf)	CN	Description
212	98	Paved parking, HSG C
212	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	27	0.0570	0.21		<b>Sheet Flow, OL-1</b> n= 0.150 P2= 3.47"



### Subcatchment 4si: DA 1 Undetained

Hydrograph



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hillcrest farms

NOAA 24-hr D 2-Year-2020 Rainfall=3.47"

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**Hydrograph for Subcatchment 4si: DA 1 Undetained**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.08	0.00	0.01	0.00
4.00	0.18	0.00	0.06	0.00
6.00	0.30	0.00	0.14	0.00
8.00	0.45	0.00	0.27	0.00
10.00	0.69	0.00	0.49	0.00
12.00	1.66	0.00	1.44	<b>0.01</b>
14.00	2.78	0.00	2.55	<b>0.00</b>
16.00	3.02	0.00	2.79	0.00
18.00	3.17	0.00	2.94	0.00
20.00	3.29	0.00	3.06	0.00
22.00	3.39	0.00	3.15	0.00
24.00	<b>3.47</b>	0.00	<b>3.24</b>	0.00
26.00	3.47	0.00	3.24	0.00
28.00	3.47	0.00	3.24	0.00
30.00	3.47	0.00	3.24	0.00
32.00	3.47	0.00	3.24	0.00
34.00	3.47	0.00	3.24	0.00
36.00	3.47	0.00	3.24	0.00
38.00	3.47	0.00	3.24	0.00
40.00	3.47	0.00	3.24	0.00
42.00	3.47	0.00	3.24	0.00
44.00	3.47	0.00	3.24	0.00
46.00	3.47	0.00	3.24	0.00
48.00	3.47	0.00	3.24	0.00
50.00	3.47	0.00	3.24	0.00
52.00	3.47	0.00	3.24	0.00
54.00	3.47	0.00	3.24	0.00
56.00	3.47	0.00	3.24	0.00
58.00	3.47	0.00	3.24	0.00
60.00	3.47	0.00	3.24	0.00
62.00	3.47	0.00	3.24	0.00
64.00	3.47	0.00	3.24	0.00
66.00	3.47	0.00	3.24	0.00
68.00	3.47	0.00	3.24	0.00
70.00	3.47	0.00	3.24	0.00
72.00	3.47	0.00	3.24	0.00

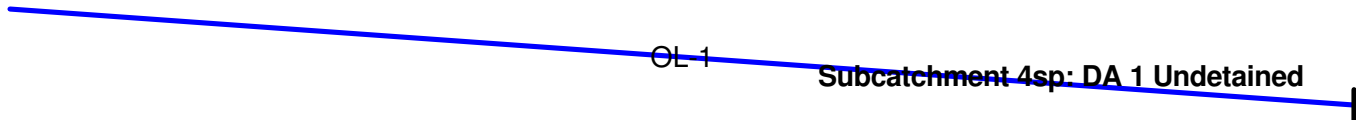
### Summary for Subcatchment 4sp: DA 1 Undetained

Runoff = 0.07 cfs @ 12.11 hrs, Volume= 200 cf, Depth= 1.22"  
 Routed to Link 9l : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 NOAA 24-hr D 2-Year-2020 Rainfall=3.47"

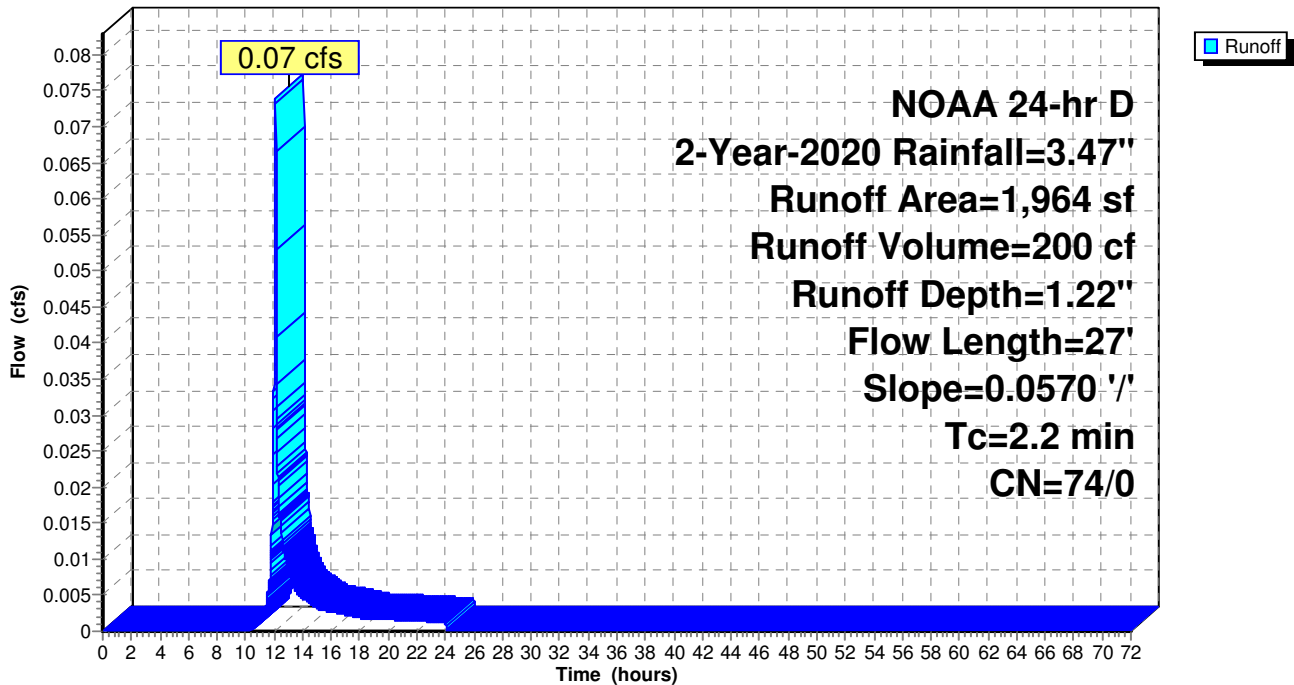
Area (sf)	CN	Description
1,964	74	>75% Grass cover, Good, HSG C
1,964	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	27	0.0570	0.21		<b>Sheet Flow, OL-1</b> n= 0.150 P2= 3.47"



### Subcatchment 4sp: DA 1 Undetained

Hydrograph



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NOAA 24-hr D 2-Year-2020 Rainfall=3.47"

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**Hydrograph for Subcatchment 4sp: DA 1 Undetained**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.08	0.00	0.00	0.00
4.00	0.18	0.00	0.00	0.00
6.00	0.30	0.00	0.00	0.00
8.00	0.45	0.00	0.00	0.00
10.00	0.69	0.00	0.00	0.00
12.00	1.66	0.21	0.00	<b>0.04</b>
14.00	2.78	0.77	0.00	<b>0.00</b>
16.00	3.02	0.92	0.00	0.00
18.00	3.17	1.02	0.00	0.00
20.00	3.29	1.10	0.00	0.00
22.00	3.39	1.16	0.00	0.00
24.00	<b>3.47</b>	<b>1.22</b>	0.00	0.00
26.00	3.47	1.22	0.00	0.00
28.00	3.47	1.22	0.00	0.00
30.00	3.47	1.22	0.00	0.00
32.00	3.47	1.22	0.00	0.00
34.00	3.47	1.22	0.00	0.00
36.00	3.47	1.22	0.00	0.00
38.00	3.47	1.22	0.00	0.00
40.00	3.47	1.22	0.00	0.00
42.00	3.47	1.22	0.00	0.00
44.00	3.47	1.22	0.00	0.00
46.00	3.47	1.22	0.00	0.00
48.00	3.47	1.22	0.00	0.00
50.00	3.47	1.22	0.00	0.00
52.00	3.47	1.22	0.00	0.00
54.00	3.47	1.22	0.00	0.00
56.00	3.47	1.22	0.00	0.00
58.00	3.47	1.22	0.00	0.00
60.00	3.47	1.22	0.00	0.00
62.00	3.47	1.22	0.00	0.00
64.00	3.47	1.22	0.00	0.00
66.00	3.47	1.22	0.00	0.00
68.00	3.47	1.22	0.00	0.00
70.00	3.47	1.22	0.00	0.00
72.00	3.47	1.22	0.00	0.00

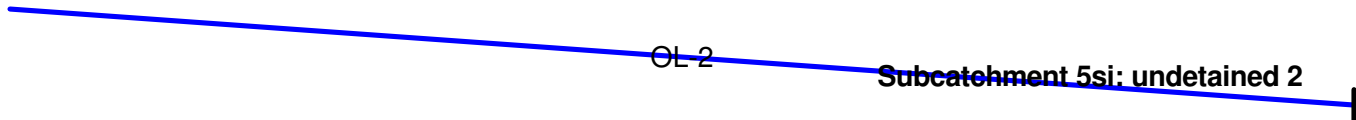
### Summary for Subcatchment 5si: undetained 2

Runoff = 0.12 cfs @ 12.12 hrs, Volume= 424 cf, Depth= 3.24"  
Routed to Link 9I : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 2-Year-2020 Rainfall=3.47"

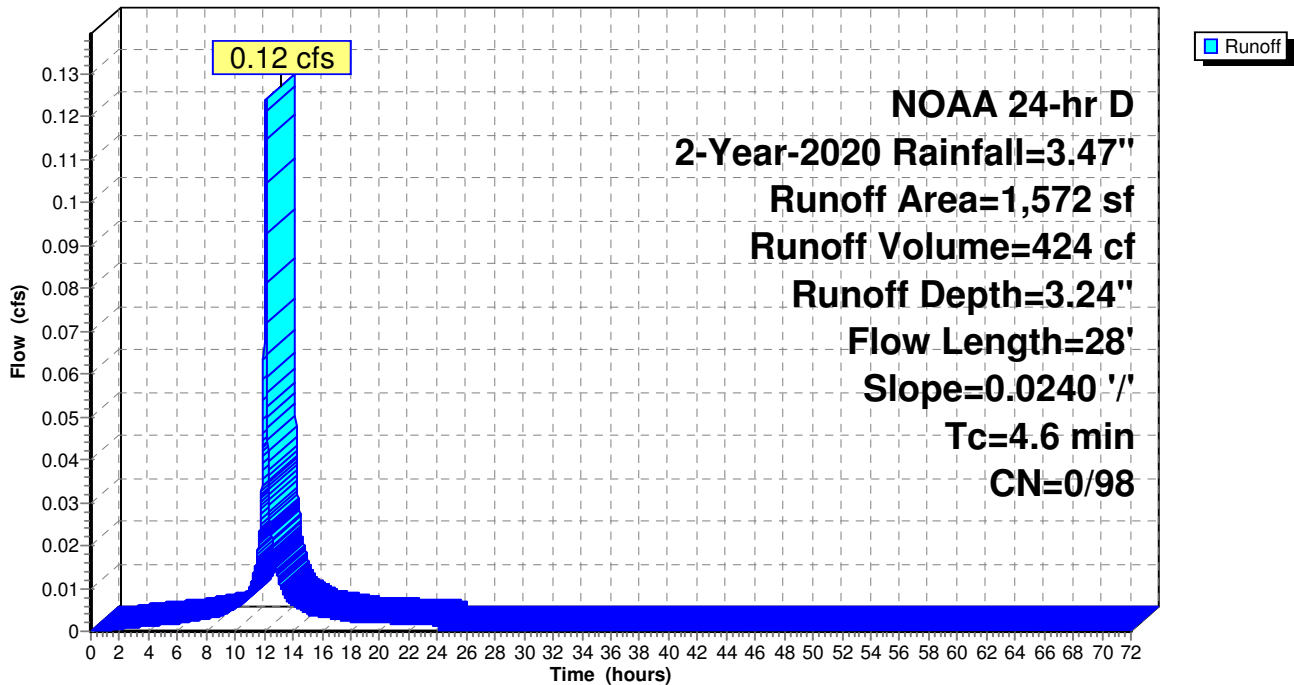
Area (sf)	CN	Description
1,572	98	Paved parking, HSG C
1,572	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	28	0.0240	0.10		<b>Sheet Flow, OL-2</b> Grass: Dense n= 0.240 P2= 3.47"



### Subcatchment 5si: undetained 2

Hydrograph



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**Hydrograph for Subcatchment 5si: undetained 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.08	0.00	0.01	0.00
4.00	0.18	0.00	0.06	0.00
6.00	0.30	0.00	0.14	0.00
8.00	0.45	0.00	0.27	0.00
10.00	0.69	0.00	0.49	0.01
12.00	1.66	0.00	1.44	<b>0.07</b>
14.00	2.78	0.00	2.55	<b>0.01</b>
16.00	3.02	0.00	2.79	0.00
18.00	3.17	0.00	2.94	0.00
20.00	3.29	0.00	3.06	0.00
22.00	3.39	0.00	3.15	0.00
24.00	<b>3.47</b>	0.00	<b>3.24</b>	0.00
26.00	3.47	0.00	3.24	0.00
28.00	3.47	0.00	3.24	0.00
30.00	3.47	0.00	3.24	0.00
32.00	3.47	0.00	3.24	0.00
34.00	3.47	0.00	3.24	0.00
36.00	3.47	0.00	3.24	0.00
38.00	3.47	0.00	3.24	0.00
40.00	3.47	0.00	3.24	0.00
42.00	3.47	0.00	3.24	0.00
44.00	3.47	0.00	3.24	0.00
46.00	3.47	0.00	3.24	0.00
48.00	3.47	0.00	3.24	0.00
50.00	3.47	0.00	3.24	0.00
52.00	3.47	0.00	3.24	0.00
54.00	3.47	0.00	3.24	0.00
56.00	3.47	0.00	3.24	0.00
58.00	3.47	0.00	3.24	0.00
60.00	3.47	0.00	3.24	0.00
62.00	3.47	0.00	3.24	0.00
64.00	3.47	0.00	3.24	0.00
66.00	3.47	0.00	3.24	0.00
68.00	3.47	0.00	3.24	0.00
70.00	3.47	0.00	3.24	0.00
72.00	3.47	0.00	3.24	0.00

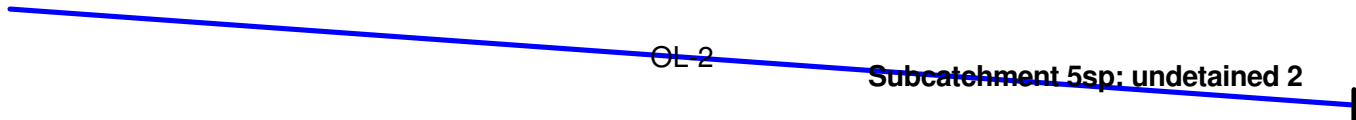
### Summary for Subcatchment 5sp: undetained 2

Runoff = 0.08 cfs @ 12.12 hrs, Volume= 244 cf, Depth= 1.22"  
Routed to Link 9I : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 2-Year-2020 Rainfall=3.47"

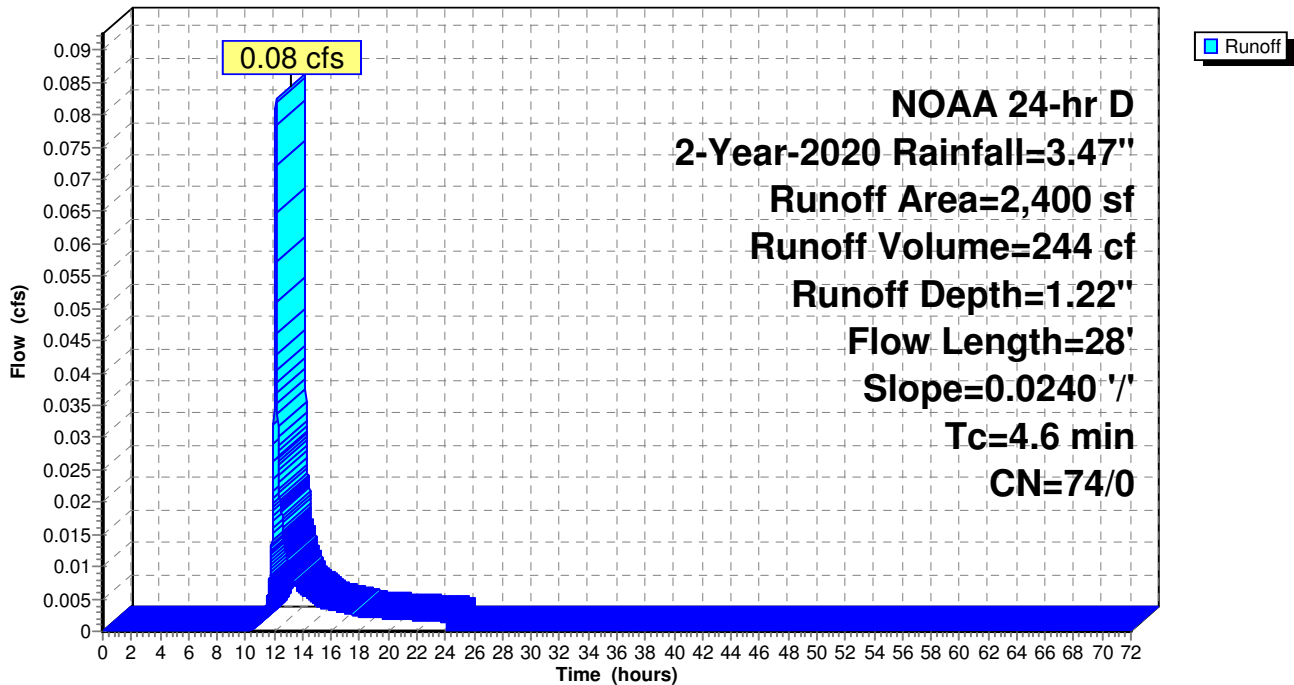
Area (sf)	CN	Description
2,400	74	>75% Grass cover, Good, HSG C
2,400	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	28	0.0240	0.10		<b>Sheet Flow, OL-2</b> Grass: Dense n= 0.240 P2= 3.47"



### Subcatchment 5sp: undetained 2

Hydrograph



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NOAA 24-hr D 2-Year-2020 Rainfall=3.47"

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**Hydrograph for Subcatchment 5sp: undetained 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.08	0.00	0.00	0.00
4.00	0.18	0.00	0.00	0.00
6.00	0.30	0.00	0.00	0.00
8.00	0.45	0.00	0.00	0.00
10.00	0.69	0.00	0.00	0.00
12.00	1.66	0.21	0.00	<b>0.04</b>
14.00	2.78	0.77	0.00	<b>0.01</b>
16.00	3.02	0.92	0.00	0.00
18.00	3.17	1.02	0.00	0.00
20.00	3.29	1.10	0.00	0.00
22.00	3.39	1.16	0.00	0.00
24.00	<b>3.47</b>	<b>1.22</b>	0.00	0.00
26.00	3.47	1.22	0.00	0.00
28.00	3.47	1.22	0.00	0.00
30.00	3.47	1.22	0.00	0.00
32.00	3.47	1.22	0.00	0.00
34.00	3.47	1.22	0.00	0.00
36.00	3.47	1.22	0.00	0.00
38.00	3.47	1.22	0.00	0.00
40.00	3.47	1.22	0.00	0.00
42.00	3.47	1.22	0.00	0.00
44.00	3.47	1.22	0.00	0.00
46.00	3.47	1.22	0.00	0.00
48.00	3.47	1.22	0.00	0.00
50.00	3.47	1.22	0.00	0.00
52.00	3.47	1.22	0.00	0.00
54.00	3.47	1.22	0.00	0.00
56.00	3.47	1.22	0.00	0.00
58.00	3.47	1.22	0.00	0.00
60.00	3.47	1.22	0.00	0.00
62.00	3.47	1.22	0.00	0.00
64.00	3.47	1.22	0.00	0.00
66.00	3.47	1.22	0.00	0.00
68.00	3.47	1.22	0.00	0.00
70.00	3.47	1.22	0.00	0.00
72.00	3.47	1.22	0.00	0.00

### Summary for Subcatchment 6si: Pro DA 3

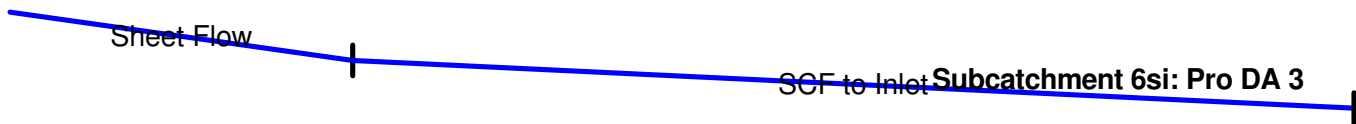
Runoff = 3.24 cfs @ 12.10 hrs, Volume= 10,557 cf, Depth= 3.24"  
Routed to Pond 8p : Detention System

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 2-Year-2020 Rainfall=3.47"

Area (sf)	CN	Description
39,143	98	Paved parking, HSG C
39,143	98	100.00% Impervious Area

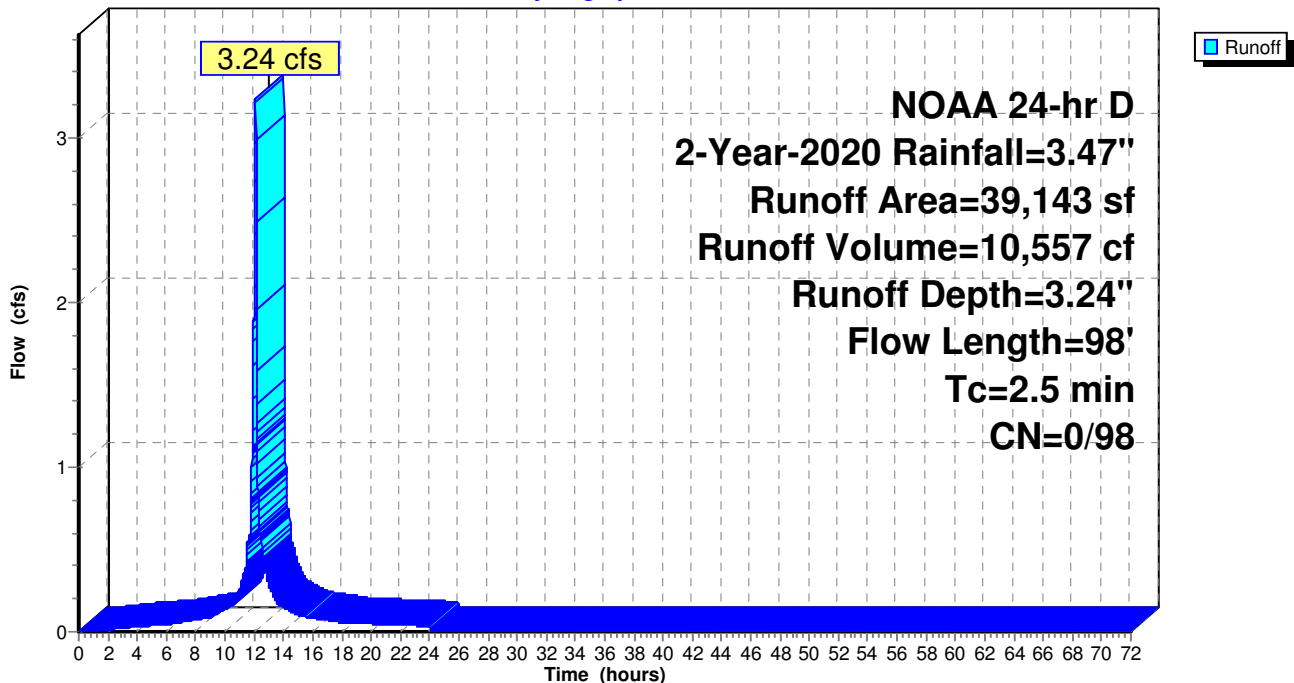
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	25	0.0560	0.20		Sheet Flow, Sheet Flow
0.4	73	0.0190	2.80		Grass: Short n= 0.150 P2= 3.47" Shallow Concentrated Flow, SCF to Inlet
2.5	98	Total			Paved Kv= 20.3 fps



### Subcatchment 6si: Pro DA 3

Hydrograph



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hillcrest farms  
NOAA 24-hr D 2-Year-2020 Rainfall=3.47"

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**Hydrograph for Subcatchment 6si: Pro DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.08	0.00	0.01	0.01
4.00	0.18	0.00	0.06	0.03
6.00	0.30	0.00	0.14	0.04
8.00	0.45	0.00	0.27	0.07
10.00	0.69	0.00	0.49	0.14
12.00	1.66	0.00	1.44	<b>1.93</b>
14.00	2.78	0.00	2.55	<b>0.15</b>
16.00	3.02	0.00	2.79	0.08
18.00	3.17	0.00	2.94	0.06
20.00	3.29	0.00	3.06	0.05
22.00	3.39	0.00	3.15	0.04
24.00	<b>3.47</b>	0.00	<b>3.24</b>	0.03
26.00	3.47	0.00	3.24	0.00
28.00	3.47	0.00	3.24	0.00
30.00	3.47	0.00	3.24	0.00
32.00	3.47	0.00	3.24	0.00
34.00	3.47	0.00	3.24	0.00
36.00	3.47	0.00	3.24	0.00
38.00	3.47	0.00	3.24	0.00
40.00	3.47	0.00	3.24	0.00
42.00	3.47	0.00	3.24	0.00
44.00	3.47	0.00	3.24	0.00
46.00	3.47	0.00	3.24	0.00
48.00	3.47	0.00	3.24	0.00
50.00	3.47	0.00	3.24	0.00
52.00	3.47	0.00	3.24	0.00
54.00	3.47	0.00	3.24	0.00
56.00	3.47	0.00	3.24	0.00
58.00	3.47	0.00	3.24	0.00
60.00	3.47	0.00	3.24	0.00
62.00	3.47	0.00	3.24	0.00
64.00	3.47	0.00	3.24	0.00
66.00	3.47	0.00	3.24	0.00
68.00	3.47	0.00	3.24	0.00
70.00	3.47	0.00	3.24	0.00
72.00	3.47	0.00	3.24	0.00

### Summary for Subcatchment 6sp: Pro DA 3

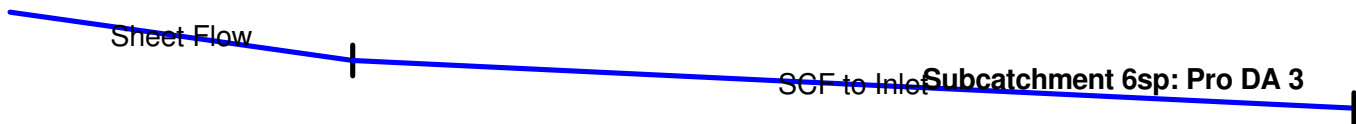
Runoff = 0.35 cfs @ 12.11 hrs, Volume= 954 cf, Depth= 1.22"  
Routed to Pond 8p : Detention System

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 2-Year-2020 Rainfall=3.47"

Area (sf)	CN	Description
9,386	74	>75% Grass cover, Good, HSG C
9,386	74	100.00% Pervious Area

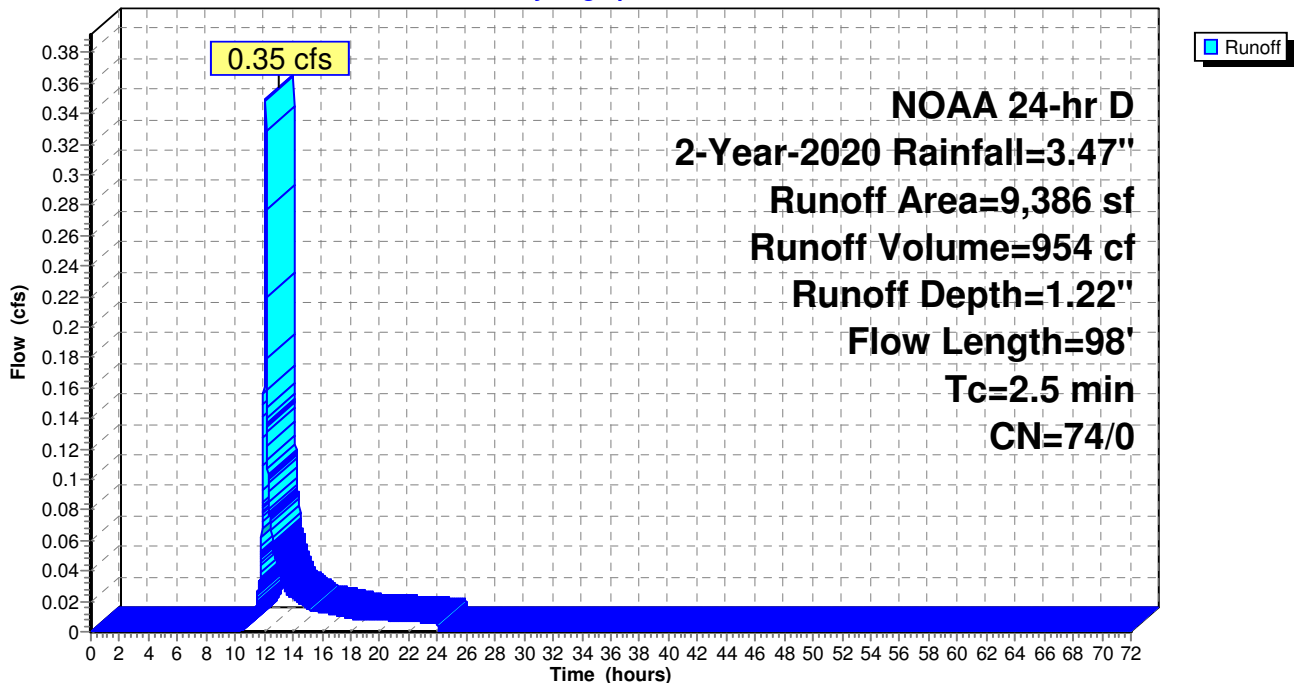
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	25	0.0560	0.20		Sheet Flow, Sheet Flow
0.4	73	0.0190	2.80		Grass: Short n= 0.150 P2= 3.47" Shallow Concentrated Flow, SCF to Inlet
2.5	98	Total			Paved Kv= 20.3 fps



### Subcatchment 6sp: Pro DA 3

Hydrograph



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NOAA 24-hr D 2-Year-2020 Rainfall=3.47"

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**Hydrograph for Subcatchment 6sp: Pro DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.08	0.00	0.00	0.00
4.00	0.18	0.00	0.00	0.00
6.00	0.30	0.00	0.00	0.00
8.00	0.45	0.00	0.00	0.00
10.00	0.69	0.00	0.00	0.00
12.00	1.66	0.21	0.00	<b>0.17</b>
14.00	2.78	0.77	0.00	<b>0.02</b>
16.00	3.02	0.92	0.00	0.01
18.00	3.17	1.02	0.00	0.01
20.00	3.29	1.10	0.00	0.01
22.00	3.39	1.16	0.00	0.01
24.00	<b>3.47</b>	<b>1.22</b>	0.00	0.01
26.00	3.47	1.22	0.00	0.00
28.00	3.47	1.22	0.00	0.00
30.00	3.47	1.22	0.00	0.00
32.00	3.47	1.22	0.00	0.00
34.00	3.47	1.22	0.00	0.00
36.00	3.47	1.22	0.00	0.00
38.00	3.47	1.22	0.00	0.00
40.00	3.47	1.22	0.00	0.00
42.00	3.47	1.22	0.00	0.00
44.00	3.47	1.22	0.00	0.00
46.00	3.47	1.22	0.00	0.00
48.00	3.47	1.22	0.00	0.00
50.00	3.47	1.22	0.00	0.00
52.00	3.47	1.22	0.00	0.00
54.00	3.47	1.22	0.00	0.00
56.00	3.47	1.22	0.00	0.00
58.00	3.47	1.22	0.00	0.00
60.00	3.47	1.22	0.00	0.00
62.00	3.47	1.22	0.00	0.00
64.00	3.47	1.22	0.00	0.00
66.00	3.47	1.22	0.00	0.00
68.00	3.47	1.22	0.00	0.00
70.00	3.47	1.22	0.00	0.00
72.00	3.47	1.22	0.00	0.00

### Summary for Pond 8p: Detention System

Inflow Area = 48,529 sf, 80.66% Impervious, Inflow Depth = 2.85" for 2-Year-2020 event  
 Inflow = 3.58 cfs @ 12.10 hrs, Volume= 11,511 cf  
 Outflow = 1.50 cfs @ 12.16 hrs, Volume= 11,319 cf, Atten= 58%, Lag= 3.8 min  
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
 Primary = 1.50 cfs @ 12.16 hrs, Volume= 11,319 cf  
 Routed to Link 9l : Overall discharge

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Peak Elev= 404.34' @ 12.16 hrs Surf.Area= 480 sf Storage= 2,028 cf

Plug-Flow detention time= 38.5 min calculated for 11,319 cf (98% of inflow)  
 Center-of-Mass det. time= 27.6 min ( 790.3 - 762.7 )

Volume	Invert	Avail.Storage	Storage Description
#1	403.00'	5,027 cf	<b>48.0" Round Pipe Storage</b> -Impervious L= 400.0'
#2	403.00'	578 cf	<b>48.0" Round Pipe Storage</b> Inside #3 L= 46.0'
#3	402.00'	825 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc) 2,640 cf Overall - 578 cf Embedded = 2,062 cf x 40.0% Voids
		6,429 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
402.00	480	0	0	480
407.50	480	2,640	2,640	907

Device	Routing	Invert	Outlet Devices
#1	Primary	403.00'	<b>7.5" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#2	Primary	404.60'	<b>36.0" W x 3.0" H Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Primary	405.50'	<b>24.0" W x 3.0" H Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#4	Discarded	402.00'	<b>1.290 in/hr Exfiltration over Surface area from 402.00' - 407.50'</b> Conductivity to Groundwater Elevation = 395.00' Excluded Surface area = 480 sf

**Discarded OutFlow** Max=0.00 cfs @ 0.00 hrs HW=402.00' (Free Discharge)  
 ↳4=Exfiltration ( Controls 0.00 cfs)

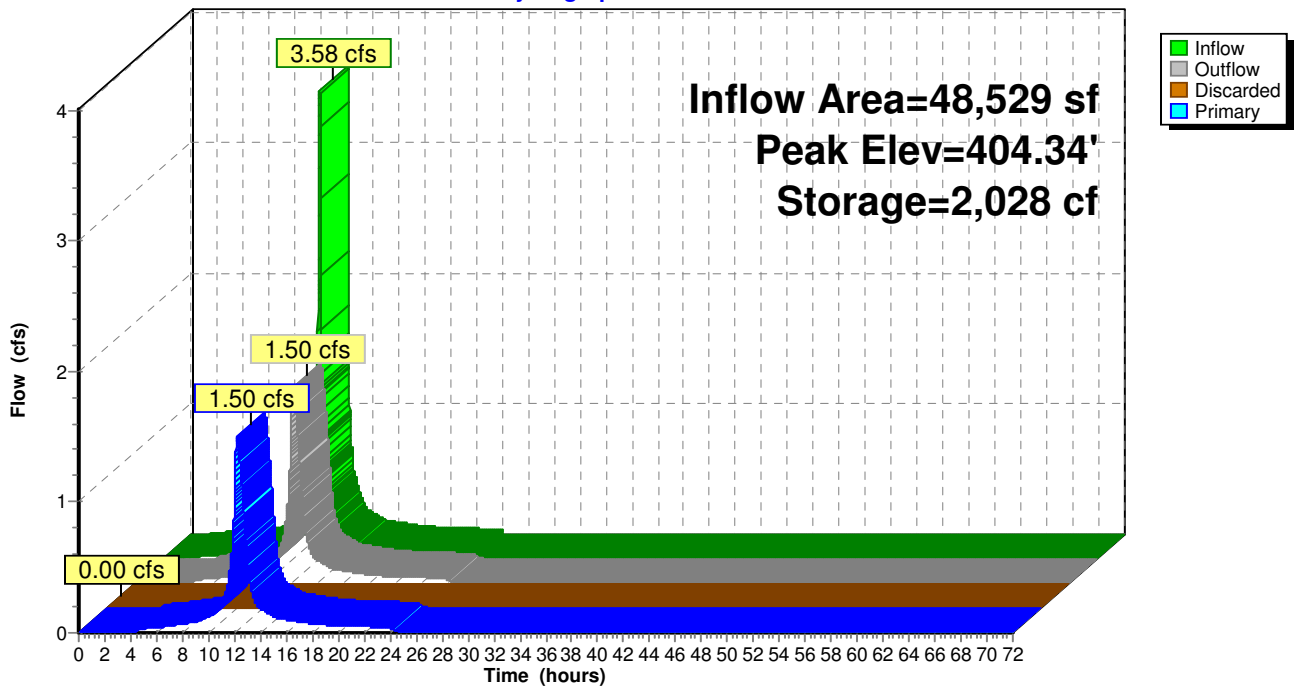
**Primary OutFlow** Max=1.50 cfs @ 12.16 hrs HW=404.34' (Free Discharge)  
 ↳1=Orifice/Grate (Orifice Controls 1.50 cfs @ 4.88 fps)  
 ↳2=Orifice/Grate ( Controls 0.00 cfs)  
 ↳3=Orifice/Grate ( Controls 0.00 cfs)

Pond 8p: Detention System

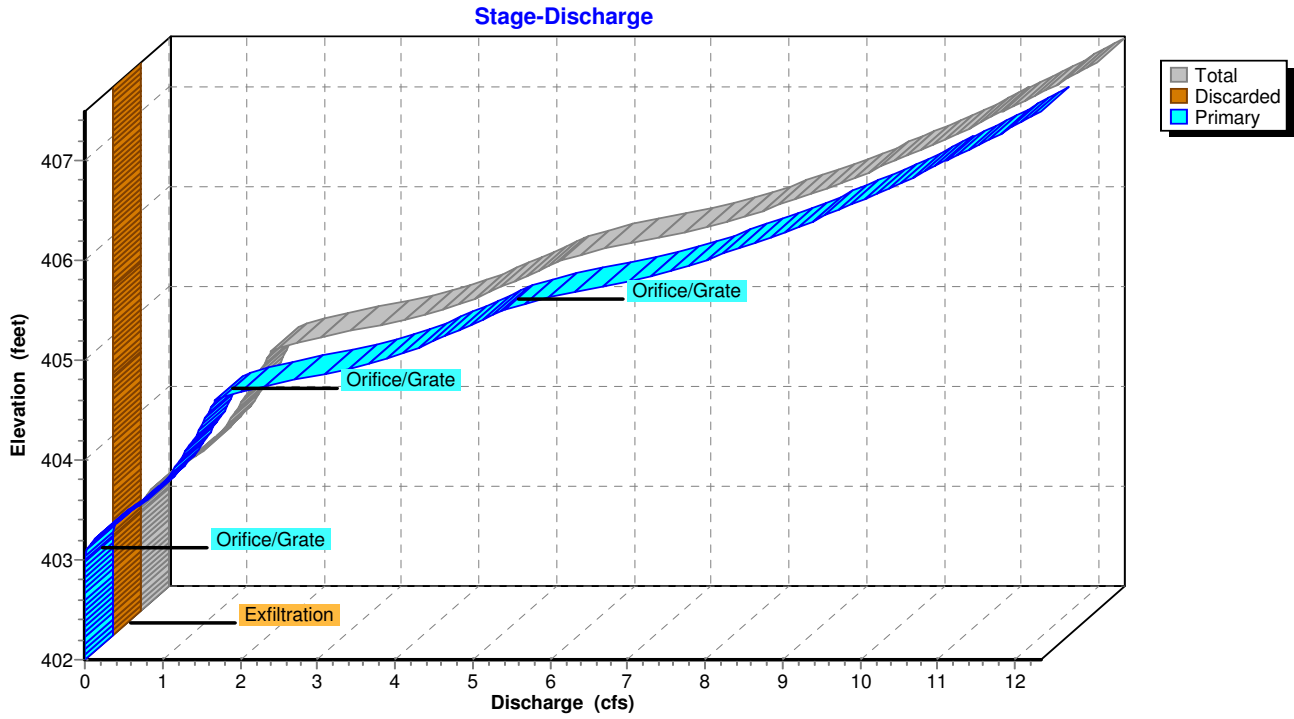
Orifice/Grate  
Orifice/Grate  
Orifice/Grate  
Exfiltration

Pond 8p: Detention System

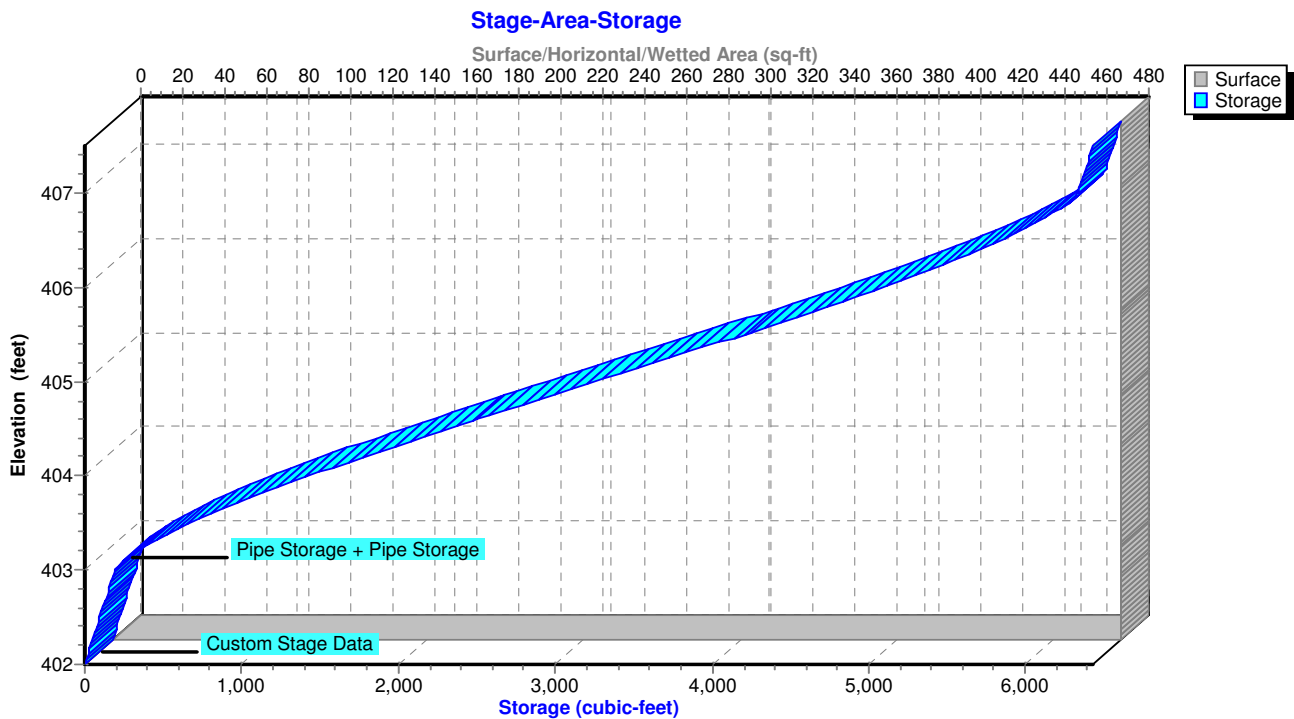
Hydrograph



### Pond 8p: Detention System



### Pond 8p: Detention System



**Hydrograph for Pond 8p: Detention System**

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	402.00	0.00	<b>0.00</b>	0.00
2.00	0.01	22	402.12	0.00	0.00	0.00
4.00	0.03	184	402.96	0.00	0.00	0.00
6.00	0.04	255	403.11	0.04	0.00	0.04
8.00	0.07	281	403.14	0.07	0.00	0.07
10.00	0.14	329	403.20	0.13	0.00	0.13
12.00	<b>2.10</b>	<b>1,109</b>	<b>403.80</b>	<b>1.03</b>	0.00	<b>1.03</b>
14.00	<b>0.17</b>	<b>374</b>	<b>403.24</b>	<b>0.19</b>	0.00	<b>0.19</b>
16.00	0.10	307	403.17	0.10	0.00	0.10
18.00	0.07	281	403.14	0.07	0.00	0.07
20.00	0.06	269	403.13	0.06	0.00	0.06
22.00	0.05	261	403.12	0.05	0.00	0.05
24.00	0.04	254	403.11	0.04	0.00	0.04
26.00	0.00	195	403.01	0.00	0.00	0.00
28.00	0.00	192	403.00	0.00	0.00	0.00
30.00	0.00	192	403.00	0.00	0.00	0.00
32.00	0.00	192	403.00	0.00	0.00	0.00
34.00	0.00	192	403.00	0.00	0.00	0.00
36.00	0.00	192	403.00	0.00	0.00	0.00
38.00	0.00	192	403.00	0.00	0.00	0.00
40.00	0.00	192	403.00	0.00	0.00	0.00
42.00	0.00	192	403.00	0.00	0.00	0.00
44.00	0.00	192	403.00	0.00	0.00	0.00
46.00	0.00	192	403.00	0.00	0.00	0.00
48.00	0.00	192	403.00	0.00	0.00	0.00
50.00	0.00	192	403.00	0.00	0.00	0.00
52.00	0.00	192	403.00	0.00	0.00	0.00
54.00	0.00	192	403.00	0.00	0.00	0.00
56.00	0.00	192	403.00	0.00	0.00	0.00
58.00	0.00	192	403.00	0.00	0.00	0.00
60.00	0.00	192	403.00	0.00	0.00	0.00
62.00	0.00	192	403.00	0.00	0.00	0.00
64.00	0.00	192	403.00	0.00	0.00	0.00
66.00	0.00	192	403.00	0.00	0.00	0.00
68.00	0.00	192	403.00	0.00	0.00	0.00
70.00	0.00	192	403.00	0.00	0.00	0.00
72.00	0.00	192	403.00	0.00	0.00	0.00

**Stage-Discharge for Pond 8p: Detention System**

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
402.00	0.00	0.00	0.00	407.10	11.36	0.00	11.36
402.10	0.00	0.00	0.00	407.20	11.61	0.00	11.61
402.20	0.00	0.00	0.00	407.30	11.86	0.00	11.86
402.30	0.00	0.00	0.00	407.40	12.10	0.00	12.10
402.40	0.00	0.00	0.00	407.50	<b>12.33</b>	0.00	<b>12.33</b>
402.50	0.00	0.00	0.00				
402.60	0.00	0.00	0.00				
402.70	0.00	0.00	0.00				
402.80	0.00	0.00	0.00				
402.90	0.00	0.00	0.00				
403.00	0.00	0.00	0.00				
403.10	0.03	0.00	0.03				
403.20	0.13	0.00	0.13				
403.30	0.27	0.00	0.27				
403.40	0.45	0.00	0.45				
403.50	0.63	0.00	0.63				
403.60	0.80	0.00	0.80				
403.70	0.92	0.00	0.92				
403.80	1.03	0.00	1.03				
403.90	1.13	0.00	1.13				
404.00	1.22	0.00	1.22				
404.10	1.31	0.00	1.31				
404.20	1.39	0.00	1.39				
404.30	1.47	0.00	1.47				
404.40	1.54	0.00	1.54				
404.50	1.61	0.00	1.61				
404.60	1.68	0.00	1.68				
404.70	2.04	0.00	2.04				
404.80	2.66	0.00	2.66				
404.90	3.34	0.00	3.34				
405.00	3.80	0.00	3.80				
405.10	4.18	0.00	4.18				
405.20	4.51	0.00	4.51				
405.30	4.82	0.00	4.82				
405.40	5.10	0.00	5.10				
405.50	5.36	0.00	5.36				
405.60	5.81	0.00	5.81				
405.70	6.42	0.00	6.42				
405.80	7.06	0.00	7.06				
405.90	7.54	0.00	7.54				
406.00	7.97	0.00	7.97				
406.10	8.35	0.00	8.35				
406.20	8.72	0.00	8.72				
406.30	9.06	0.00	9.06				
406.40	9.39	0.00	9.39				
406.50	9.70	0.00	9.70				
406.60	10.00	0.00	10.00				
406.70	10.29	0.00	10.29				
406.80	10.57	0.00	10.57				
406.90	10.84	0.00	10.84				
407.00	11.10	0.00	11.10				

**Stage-Area-Storage for Pond 8p: Detention System**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
402.00	480	0	407.10	480	6,353
402.10	480	19	407.20	480	6,372
402.20	480	38	407.30	480	6,391
402.30	480	58	407.40	480	6,410
402.40	480	77	407.50	480	<b>6,429</b>
402.50	480	96			
402.60	480	115			
402.70	480	134			
402.80	480	154			
402.90	480	173			
403.00	480	192			
403.10	480	247			
403.20	480	331			
403.30	480	433			
403.40	480	548			
403.50	480	676			
403.60	480	813			
403.70	480	958			
403.80	480	1,111			
403.90	480	1,270			
404.00	480	1,435			
404.10	480	1,604			
404.20	480	1,778			
404.30	480	1,956			
404.40	480	2,137			
404.50	480	2,320			
404.60	480	2,506			
404.70	480	2,694			
404.80	480	2,883			
404.90	480	3,073			
405.00	480	3,263			
405.10	480	3,453			
405.20	480	3,643			
405.30	480	3,831			
405.40	480	4,019			
405.50	480	4,205			
405.60	480	4,389			
405.70	480	4,569			
405.80	480	4,747			
405.90	480	4,921			
406.00	480	5,091			
406.10	480	5,256			
406.20	480	5,415			
406.30	480	5,567			
406.40	480	5,713			
406.50	480	5,850			
406.60	480	5,977			
406.70	480	6,093			
406.80	480	6,195			
406.90	480	6,278			
407.00	480	6,333			

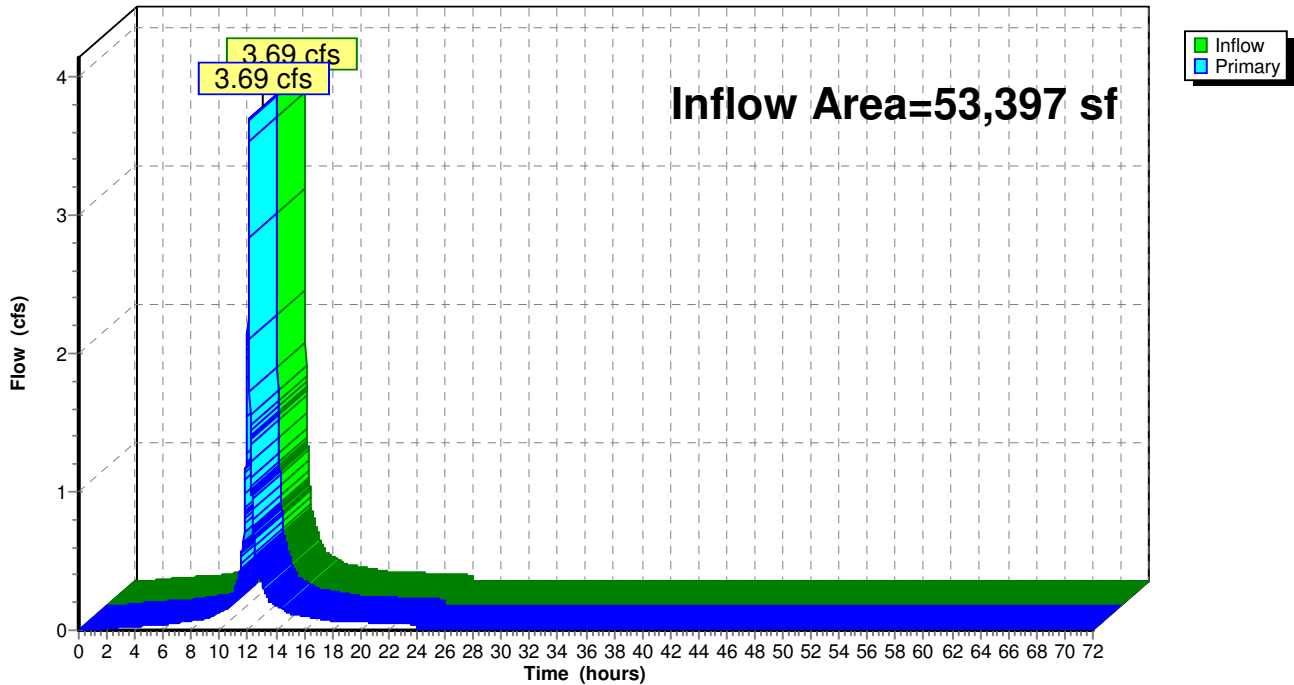
### Summary for Link 4I: existing total discharge

Inflow Area = 53,397 sf, 67.93% Impervious, Inflow Depth = 2.63" for 2-Year-2020 event  
Inflow = 3.69 cfs @ 12.10 hrs, Volume= 11,723 cf  
Primary = 3.69 cfs @ 12.10 hrs, Volume= 11,723 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Link 4I: existing total discharge

Hydrograph



**Hydrograph for Link 4I: existing total discharge**

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.01	0.00	0.01	53.00	0.00	0.00	0.00
3.00	0.02	0.00	0.02	54.00	0.00	0.00	0.00
4.00	0.03	0.00	0.03	55.00	0.00	0.00	0.00
5.00	0.04	0.00	0.04	56.00	0.00	0.00	0.00
6.00	0.04	0.00	0.04	57.00	0.00	0.00	0.00
7.00	0.05	0.00	0.05	58.00	0.00	0.00	0.00
8.00	0.07	0.00	0.07	59.00	0.00	0.00	0.00
9.00	0.08	0.00	0.08	60.00	0.00	0.00	0.00
10.00	0.13	0.00	0.13	61.00	0.00	0.00	0.00
11.00	0.25	0.00	0.25	62.00	0.00	0.00	0.00
12.00	<b>2.13</b>	0.00	<b>2.13</b>	63.00	0.00	0.00	0.00
13.00	<b>0.35</b>	0.00	<b>0.35</b>	64.00	0.00	0.00	0.00
14.00	0.18	0.00	0.18	65.00	0.00	0.00	0.00
15.00	0.12	0.00	0.12	66.00	0.00	0.00	0.00
16.00	0.10	0.00	0.10	67.00	0.00	0.00	0.00
17.00	0.09	0.00	0.09	68.00	0.00	0.00	0.00
18.00	0.07	0.00	0.07	69.00	0.00	0.00	0.00
19.00	0.06	0.00	0.06	70.00	0.00	0.00	0.00
20.00	0.06	0.00	0.06	71.00	0.00	0.00	0.00
21.00	0.06	0.00	0.06	72.00	0.00	0.00	0.00
22.00	0.05	0.00	0.05				
23.00	0.05	0.00	0.05				
24.00	0.04	0.00	0.04				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

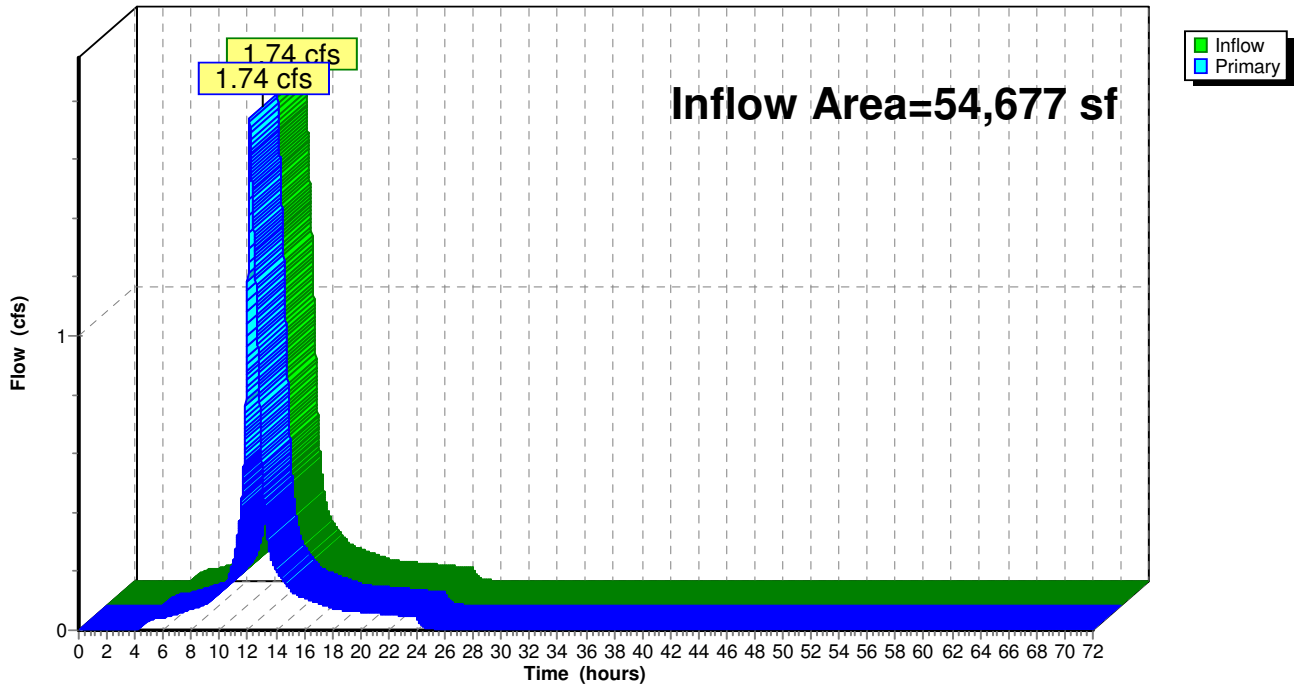
### Summary for Link 9I: Overall discharge

Inflow Area = 54,677 sf, 74.85% Impervious, Inflow Depth = 2.69" for 2-Year-2020 event  
Inflow = 1.74 cfs @ 12.13 hrs, Volume= 12,244 cf  
Primary = 1.74 cfs @ 12.13 hrs, Volume= 12,244 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Link 9I: Overall discharge

Hydrograph



Hydrograph for Link 9I: Overall discharge

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.03	0.00	0.03	56.00	0.00	0.00	0.00
6.00	0.04	0.00	0.04	57.00	0.00	0.00	0.00
7.00	0.06	0.00	0.06	58.00	0.00	0.00	0.00
8.00	0.07	0.00	0.07	59.00	0.00	0.00	0.00
9.00	0.09	0.00	0.09	60.00	0.00	0.00	0.00
10.00	0.13	0.00	0.13	61.00	0.00	0.00	0.00
11.00	0.24	0.00	0.24	62.00	0.00	0.00	0.00
12.00	1.19	0.00	1.19	63.00	0.00	0.00	0.00
13.00	0.57	0.00	0.57	64.00	0.00	0.00	0.00
14.00	0.21	0.00	0.21	65.00	0.00	0.00	0.00
15.00	0.14	0.00	0.14	66.00	0.00	0.00	0.00
16.00	0.11	0.00	0.11	67.00	0.00	0.00	0.00
17.00	0.09	0.00	0.09	68.00	0.00	0.00	0.00
18.00	0.08	0.00	0.08	69.00	0.00	0.00	0.00
19.00	0.07	0.00	0.07	70.00	0.00	0.00	0.00
20.00	0.06	0.00	0.06	71.00	0.00	0.00	0.00
21.00	0.06	0.00	0.06	72.00	0.00	0.00	0.00
22.00	0.05	0.00	0.05				
23.00	0.05	0.00	0.05				
24.00	0.05	0.00	0.05				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points  
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1si: Ext DA 1** Runoff Area=1,374 sf 100.00% Impervious Runoff Depth=5.14"  
Flow Length=139' Slope=0.0680 '/' Tc=6.0 min CN=0/98 Runoff=0.16 cfs 589 cf

**Subcatchment 1sp: Ext DA 1** Runoff Area=2,438 sf 0.00% Impervious Runoff Depth=3.93"  
Flow Length=139' Slope=0.0680 '/' Tc=6.0 min CN=87/0 Runoff=0.25 cfs 798 cf

**Subcatchment 2si: Ext DA 2** Runoff Area=4,185 sf 100.00% Impervious Runoff Depth=5.14"  
Flow Length=115' Tc=1.0 min CN=0/98 Runoff=0.54 cfs 1,793 cf

**Subcatchment 2sp: Ext DA 2** Runoff Area=326 sf 0.00% Impervious Runoff Depth=3.13"  
Flow Length=115' Tc=1.0 min CN=79/0 Runoff=0.03 cfs 85 cf

**Subcatchment 3si: Ext DA 3** Runoff Area=30,716 sf 100.00% Impervious Runoff Depth=5.14"  
Flow Length=319' Tc=1.7 min CN=0/98 Runoff=3.97 cfs 13,163 cf

**Subcatchment 3sp: Ext DA 3** Runoff Area=14,358 sf 0.00% Impervious Runoff Depth=2.67"  
Flow Length=319' Tc=1.7 min CN=74/0 Runoff=1.18 cfs 3,196 cf

**Subcatchment 4si: DA 1 Undetained** Runoff Area=212 sf 100.00% Impervious Runoff Depth=5.14"  
Flow Length=27' Slope=0.0570 '/' Tc=2.2 min CN=0/98 Runoff=0.03 cfs 91 cf

**Subcatchment 4sp: DA 1 Undetained** Runoff Area=1,964 sf 0.00% Impervious Runoff Depth=2.67"  
Flow Length=27' Slope=0.0570 '/' Tc=2.2 min CN=74/0 Runoff=0.16 cfs 437 cf

**Subcatchment 5si: undetained 2** Runoff Area=1,572 sf 100.00% Impervious Runoff Depth=5.14"  
Flow Length=28' Slope=0.0240 '/' Tc=4.6 min CN=0/98 Runoff=0.19 cfs 674 cf

**Subcatchment 5sp: undetained 2** Runoff Area=2,400 sf 0.00% Impervious Runoff Depth=2.67"  
Flow Length=28' Slope=0.0240 '/' Tc=4.6 min CN=74/0 Runoff=0.18 cfs 534 cf

**Subcatchment 6si: Pro DA 3** Runoff Area=39,143 sf 100.00% Impervious Runoff Depth=5.14"  
Flow Length=98' Tc=2.5 min CN=0/98 Runoff=5.05 cfs 16,775 cf

**Subcatchment 6sp: Pro DA 3** Runoff Area=9,386 sf 0.00% Impervious Runoff Depth=2.67"  
Flow Length=98' Tc=2.5 min CN=74/0 Runoff=0.77 cfs 2,089 cf

**Pond 8p: Detention System** Peak Elev=404.96' Storage=3,182 cf Inflow=5.80 cfs 18,864 cf  
Discarded=0.00 cfs 0 cf Primary=3.61 cfs 18,672 cf Outflow=3.61 cfs 18,672 cf

**Link 4I: existing total discharge** Inflow=6.13 cfs 19,624 cf  
Primary=6.13 cfs 19,624 cf

**Link 9I: Overall discharge** Inflow=4.08 cfs 20,408 cf  
Primary=4.08 cfs 20,408 cf

**Total Runoff Area = 108,074 sf Runoff Volume = 40,224 cf Average Runoff Depth = 4.47"**  
**28.57% Pervious = 30,872 sf 71.43% Impervious = 77,202 sf**

### Summary for Subcatchment 1si: Ext DA 1

Runoff = 0.16 cfs @ 12.13 hrs, Volume= 589 cf, Depth= 5.14"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 10-Year-2020 Rainfall=5.38"

Area (sf)	CN	Description
1,374	98	Paved parking, HSG C
1,374	98	100.00% Impervious Area

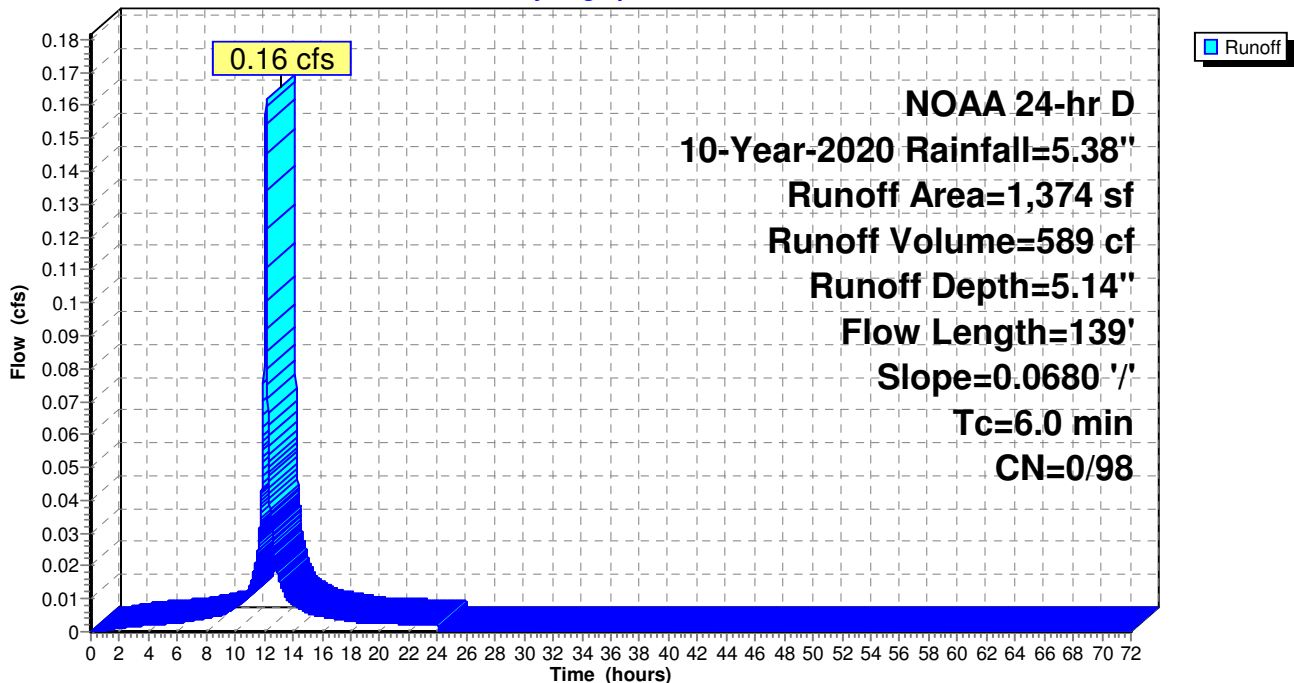
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	100	0.0680	0.29		<b>Sheet Flow, sheet flow</b>
0.2	39	0.0680	4.20		<b>Shallow Concentrated Flow, scf</b>
					Unpaved Kv= 16.1 fps
6.0	139	Total			



### Subcatchment 1si: Ext DA 1

Hydrograph



**Hydrograph for Subcatchment 1si: Ext DA 1**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.13	0.00	0.03	0.00
4.00	0.28	0.00	0.13	0.00
6.00	0.46	0.00	0.28	0.00
8.00	0.70	0.00	0.50	0.00
10.00	1.07	0.00	0.86	0.01
12.00	2.58	0.00	2.35	<b>0.09</b>
14.00	4.31	0.00	4.08	<b>0.01</b>
16.00	4.68	0.00	4.45	0.00
18.00	4.92	0.00	4.68	0.00
20.00	5.10	0.00	4.86	0.00
22.00	5.25	0.00	5.01	0.00
24.00	<b>5.38</b>	0.00	<b>5.14</b>	0.00
26.00	5.38	0.00	5.14	0.00
28.00	5.38	0.00	5.14	0.00
30.00	5.38	0.00	5.14	0.00
32.00	5.38	0.00	5.14	0.00
34.00	5.38	0.00	5.14	0.00
36.00	5.38	0.00	5.14	0.00
38.00	5.38	0.00	5.14	0.00
40.00	5.38	0.00	5.14	0.00
42.00	5.38	0.00	5.14	0.00
44.00	5.38	0.00	5.14	0.00
46.00	5.38	0.00	5.14	0.00
48.00	5.38	0.00	5.14	0.00
50.00	5.38	0.00	5.14	0.00
52.00	5.38	0.00	5.14	0.00
54.00	5.38	0.00	5.14	0.00
56.00	5.38	0.00	5.14	0.00
58.00	5.38	0.00	5.14	0.00
60.00	5.38	0.00	5.14	0.00
62.00	5.38	0.00	5.14	0.00
64.00	5.38	0.00	5.14	0.00
66.00	5.38	0.00	5.14	0.00
68.00	5.38	0.00	5.14	0.00
70.00	5.38	0.00	5.14	0.00
72.00	5.38	0.00	5.14	0.00

### Summary for Subcatchment 1sp: Ext DA 1

Runoff = 0.25 cfs @ 12.13 hrs, Volume= 798 cf, Depth= 3.93"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 10-Year-2020 Rainfall=5.38"

Area (sf)	CN	Description
2,438	87	Dirt roads, HSG C
2,438	87	100.00% Pervious Area

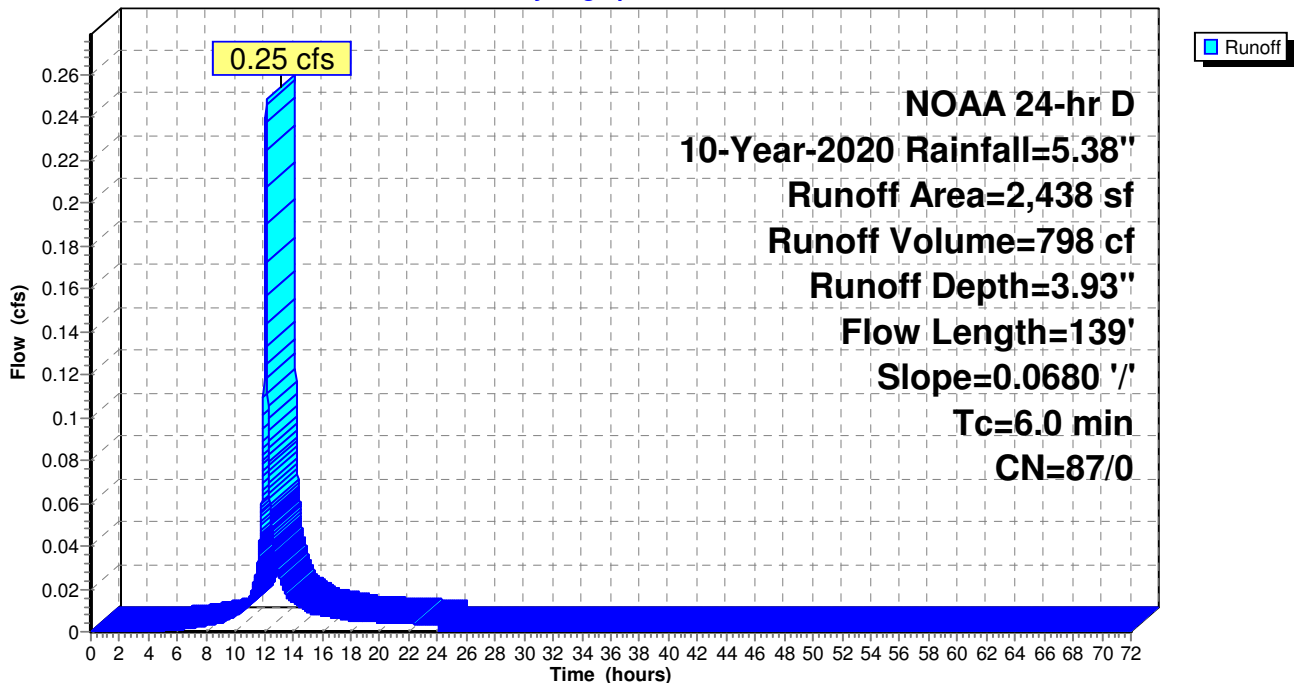
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	100	0.0680	0.29		<b>Sheet Flow, sheet flow</b> Grass: Short n= 0.150 P2= 3.47"
0.2	39	0.0680	4.20		<b>Shallow Concentrated Flow, scf</b> Unpaved Kv= 16.1 fps
6.0	139	Total			



### Subcatchment 1sp: Ext DA 1

Hydrograph



**Hydrograph for Subcatchment 1sp: Ext DA 1**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.13	0.00	0.00	0.00
4.00	0.28	0.00	0.00	0.00
6.00	0.46	0.02	0.00	0.00
8.00	0.70	0.08	0.00	0.00
10.00	1.07	0.26	0.00	0.01
12.00	2.58	1.38	0.00	<b>0.13</b>
14.00	4.31	2.93	0.00	<b>0.01</b>
16.00	4.68	3.27	0.00	0.01
18.00	4.92	3.49	0.00	0.01
20.00	5.10	3.66	0.00	0.00
22.00	5.25	3.80	0.00	0.00
24.00	<b>5.38</b>	<b>3.93</b>	0.00	0.00
26.00	5.38	3.93	0.00	0.00
28.00	5.38	3.93	0.00	0.00
30.00	5.38	3.93	0.00	0.00
32.00	5.38	3.93	0.00	0.00
34.00	5.38	3.93	0.00	0.00
36.00	5.38	3.93	0.00	0.00
38.00	5.38	3.93	0.00	0.00
40.00	5.38	3.93	0.00	0.00
42.00	5.38	3.93	0.00	0.00
44.00	5.38	3.93	0.00	0.00
46.00	5.38	3.93	0.00	0.00
48.00	5.38	3.93	0.00	0.00
50.00	5.38	3.93	0.00	0.00
52.00	5.38	3.93	0.00	0.00
54.00	5.38	3.93	0.00	0.00
56.00	5.38	3.93	0.00	0.00
58.00	5.38	3.93	0.00	0.00
60.00	5.38	3.93	0.00	0.00
62.00	5.38	3.93	0.00	0.00
64.00	5.38	3.93	0.00	0.00
66.00	5.38	3.93	0.00	0.00
68.00	5.38	3.93	0.00	0.00
70.00	5.38	3.93	0.00	0.00
72.00	5.38	3.93	0.00	0.00

**Summary for Subcatchment 2si: Ext DA 2**

[49] Hint: Tc<2dt may require smaller dt

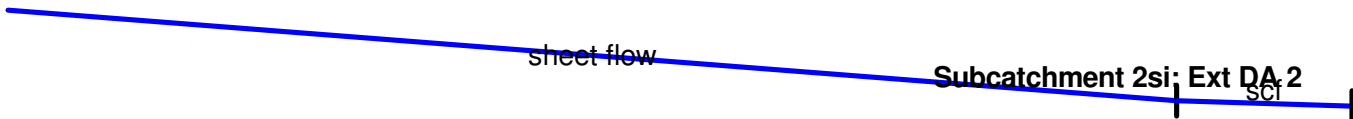
Runoff = 0.54 cfs @ 12.09 hrs, Volume= 1,793 cf, Depth= 5.14"  
 Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 NOAA 24-hr D 10-Year-2020 Rainfall=5.38"

Area (sf)	CN	Description
4,185	98	Paved parking, HSG C
4,185	98	100.00% Impervious Area

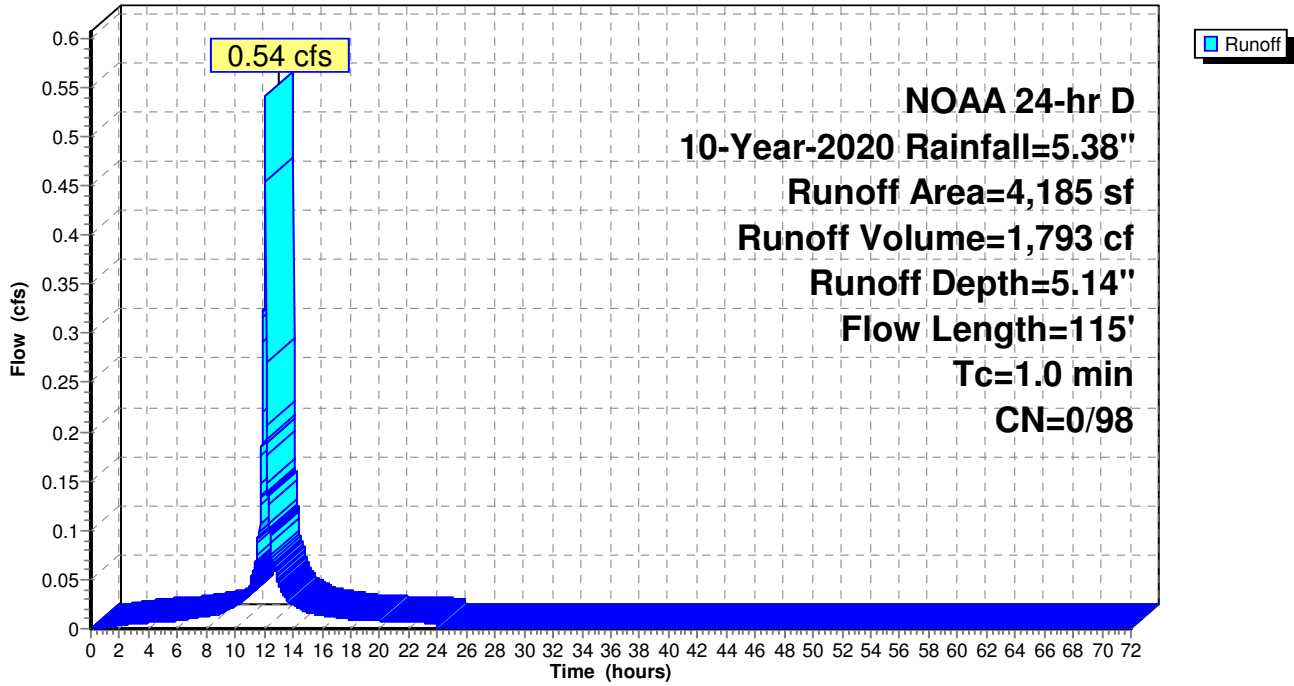
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0385	1.86		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.1	15	0.0150	2.49		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.0	115	Total			



### Subcatchment 2si: Ext DA 2

Hydrograph



**Hydrograph for Subcatchment 2si: Ext DA 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.13	0.00	0.03	0.00
4.00	0.28	0.00	0.13	0.01
6.00	0.46	0.00	0.28	0.01
8.00	0.70	0.00	0.50	0.01
10.00	1.07	0.00	0.86	0.02
12.00	2.58	0.00	2.35	<b>0.32</b>
14.00	4.31	0.00	4.08	<b>0.03</b>
16.00	4.68	0.00	4.45	0.01
18.00	4.92	0.00	4.68	0.01
20.00	5.10	0.00	4.86	0.01
22.00	5.25	0.00	5.01	0.01
24.00	<b>5.38</b>	0.00	<b>5.14</b>	0.01
26.00	5.38	0.00	5.14	0.00
28.00	5.38	0.00	5.14	0.00
30.00	5.38	0.00	5.14	0.00
32.00	5.38	0.00	5.14	0.00
34.00	5.38	0.00	5.14	0.00
36.00	5.38	0.00	5.14	0.00
38.00	5.38	0.00	5.14	0.00
40.00	5.38	0.00	5.14	0.00
42.00	5.38	0.00	5.14	0.00
44.00	5.38	0.00	5.14	0.00
46.00	5.38	0.00	5.14	0.00
48.00	5.38	0.00	5.14	0.00
50.00	5.38	0.00	5.14	0.00
52.00	5.38	0.00	5.14	0.00
54.00	5.38	0.00	5.14	0.00
56.00	5.38	0.00	5.14	0.00
58.00	5.38	0.00	5.14	0.00
60.00	5.38	0.00	5.14	0.00
62.00	5.38	0.00	5.14	0.00
64.00	5.38	0.00	5.14	0.00
66.00	5.38	0.00	5.14	0.00
68.00	5.38	0.00	5.14	0.00
70.00	5.38	0.00	5.14	0.00
72.00	5.38	0.00	5.14	0.00

**Summary for Subcatchment 2sp: Ext DA 2**

[49] Hint: Tc<2dt may require smaller dt

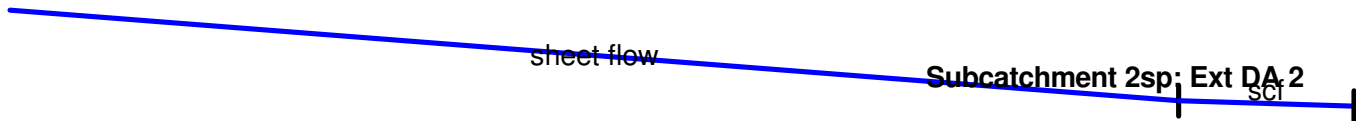
Runoff = 0.03 cfs @ 12.10 hrs, Volume= 85 cf, Depth= 3.13"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 10-Year-2020 Rainfall=5.38"

Area (sf)	CN	Description
326	79	50-75% Grass cover, Fair, HSG C
326	79	100.00% Pervious Area

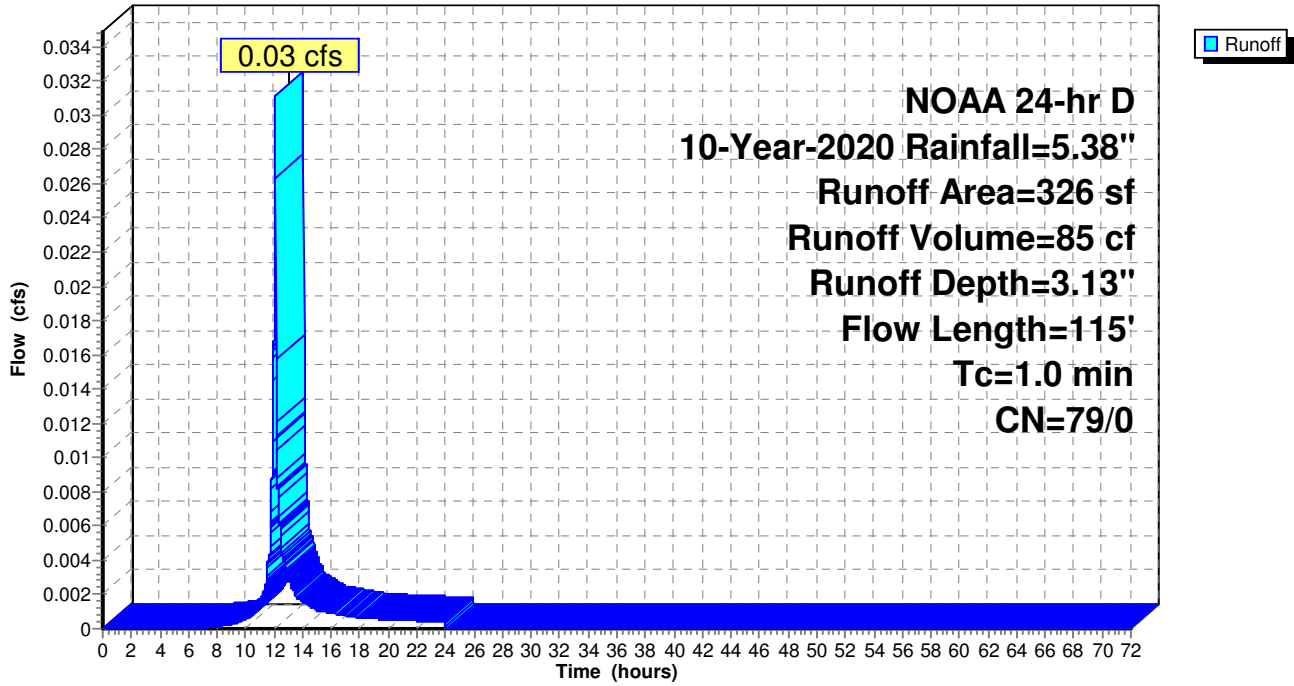
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0385	1.86		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.1	15	0.0150	2.49		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.0	115	Total			



### Subcatchment 2sp: Ext DA 2

Hydrograph



**Hydrograph for Subcatchment 2sp: Ext DA 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.13	0.00	0.00	0.00
4.00	0.28	0.00	0.00	0.00
6.00	0.46	0.00	0.00	0.00
8.00	0.70	0.01	0.00	0.00
10.00	1.07	0.09	0.00	0.00
12.00	2.58	0.89	0.00	<b>0.02</b>
14.00	4.31	2.22	0.00	<b>0.00</b>
16.00	4.68	2.53	0.00	0.00
18.00	4.92	2.73	0.00	0.00
20.00	5.10	2.89	0.00	0.00
22.00	5.25	3.02	0.00	0.00
24.00	<b>5.38</b>	<b>3.13</b>	0.00	0.00
26.00	5.38	3.13	0.00	0.00
28.00	5.38	3.13	0.00	0.00
30.00	5.38	3.13	0.00	0.00
32.00	5.38	3.13	0.00	0.00
34.00	5.38	3.13	0.00	0.00
36.00	5.38	3.13	0.00	0.00
38.00	5.38	3.13	0.00	0.00
40.00	5.38	3.13	0.00	0.00
42.00	5.38	3.13	0.00	0.00
44.00	5.38	3.13	0.00	0.00
46.00	5.38	3.13	0.00	0.00
48.00	5.38	3.13	0.00	0.00
50.00	5.38	3.13	0.00	0.00
52.00	5.38	3.13	0.00	0.00
54.00	5.38	3.13	0.00	0.00
56.00	5.38	3.13	0.00	0.00
58.00	5.38	3.13	0.00	0.00
60.00	5.38	3.13	0.00	0.00
62.00	5.38	3.13	0.00	0.00
64.00	5.38	3.13	0.00	0.00
66.00	5.38	3.13	0.00	0.00
68.00	5.38	3.13	0.00	0.00
70.00	5.38	3.13	0.00	0.00
72.00	5.38	3.13	0.00	0.00

### Summary for Subcatchment 3si: Ext DA 3

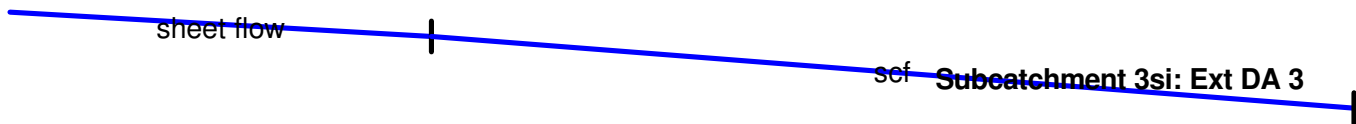
Runoff = 3.97 cfs @ 12.10 hrs, Volume= 13,163 cf, Depth= 5.14"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 10-Year-2020 Rainfall=5.38"

Area (sf)	CN	Description
30,716	98	Paved parking, HSG C
30,716	98	100.00% Impervious Area

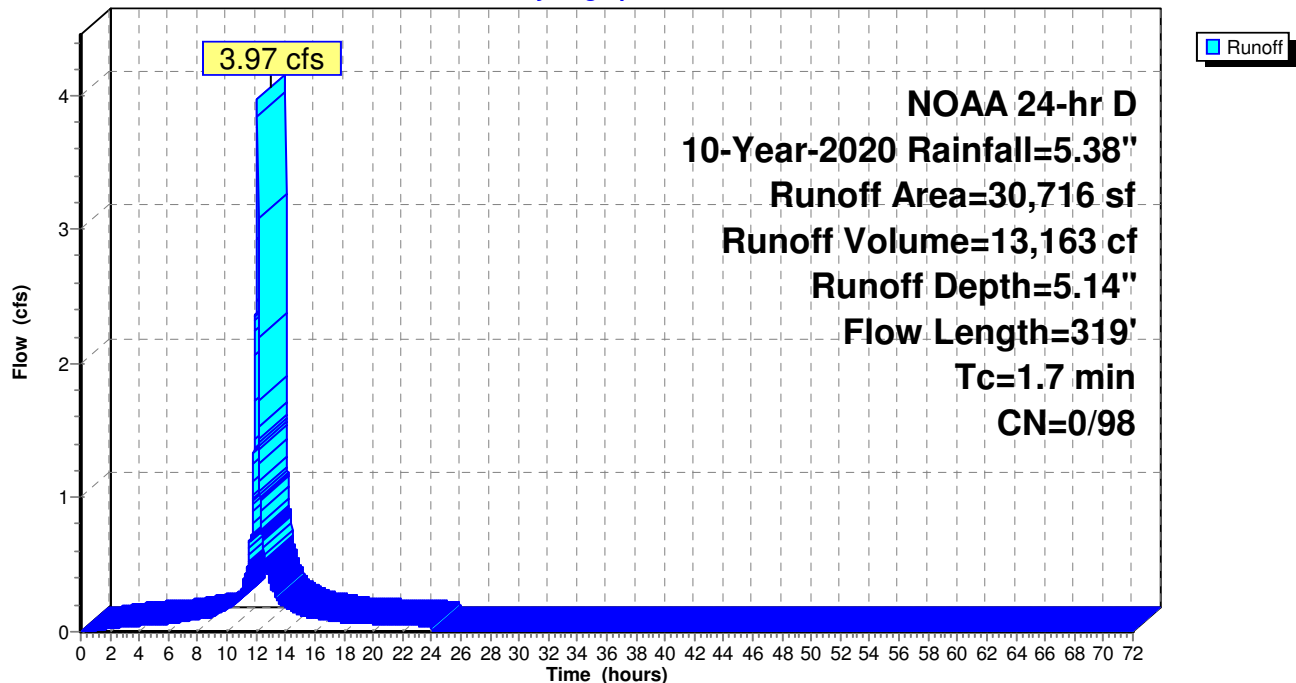
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0420	1.93		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.8	219	0.0570	4.85		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.7	319	Total			



### Subcatchment 3si: Ext DA 3

Hydrograph



**Hydrograph for Subcatchment 3si: Ext DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.13	0.00	0.03	0.03
4.00	0.28	0.00	0.13	0.05
6.00	0.46	0.00	0.28	0.06
8.00	0.70	0.00	0.50	0.10
10.00	1.07	0.00	0.86	0.17
12.00	2.58	0.00	2.35	<b>2.38</b>
14.00	4.31	0.00	4.08	<b>0.18</b>
16.00	4.68	0.00	4.45	0.10
18.00	4.92	0.00	4.68	0.07
20.00	5.10	0.00	4.86	0.06
22.00	5.25	0.00	5.01	0.05
24.00	<b>5.38</b>	0.00	<b>5.14</b>	0.04
26.00	5.38	0.00	5.14	0.00
28.00	5.38	0.00	5.14	0.00
30.00	5.38	0.00	5.14	0.00
32.00	5.38	0.00	5.14	0.00
34.00	5.38	0.00	5.14	0.00
36.00	5.38	0.00	5.14	0.00
38.00	5.38	0.00	5.14	0.00
40.00	5.38	0.00	5.14	0.00
42.00	5.38	0.00	5.14	0.00
44.00	5.38	0.00	5.14	0.00
46.00	5.38	0.00	5.14	0.00
48.00	5.38	0.00	5.14	0.00
50.00	5.38	0.00	5.14	0.00
52.00	5.38	0.00	5.14	0.00
54.00	5.38	0.00	5.14	0.00
56.00	5.38	0.00	5.14	0.00
58.00	5.38	0.00	5.14	0.00
60.00	5.38	0.00	5.14	0.00
62.00	5.38	0.00	5.14	0.00
64.00	5.38	0.00	5.14	0.00
66.00	5.38	0.00	5.14	0.00
68.00	5.38	0.00	5.14	0.00
70.00	5.38	0.00	5.14	0.00
72.00	5.38	0.00	5.14	0.00

### Summary for Subcatchment 3sp: Ext DA 3

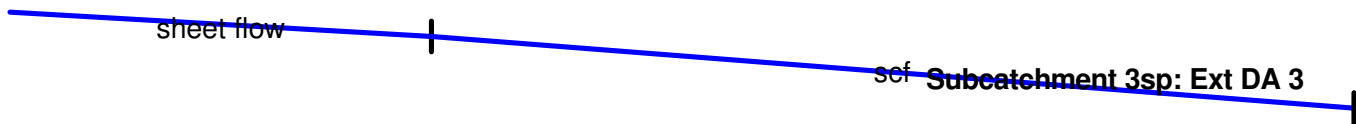
Runoff = 1.18 cfs @ 12.10 hrs, Volume= 3,196 cf, Depth= 2.67"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 10-Year-2020 Rainfall=5.38"

Area (sf)	CN	Description
14,358	74	>75% Grass cover, Good, HSG C
14,358	74	100.00% Pervious Area

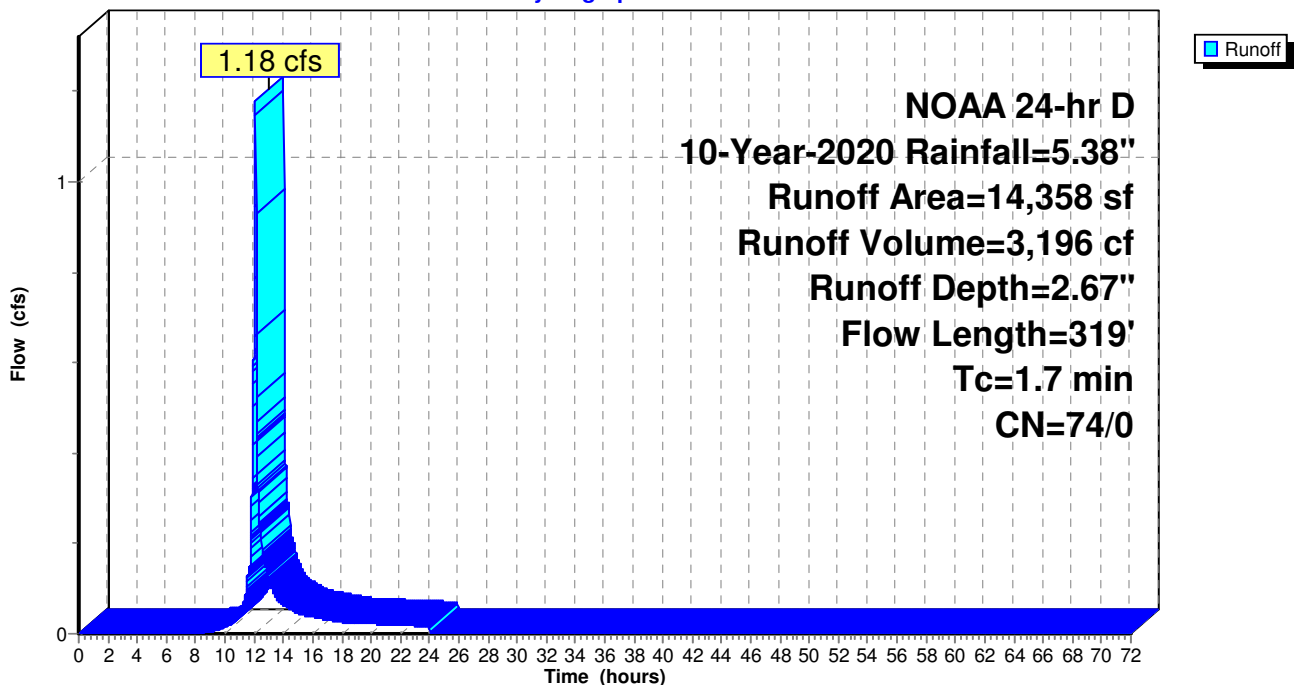
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0420	1.93		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.8	219	0.0570	4.85		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.7	319	Total			



### Subcatchment 3sp: Ext DA 3

Hydrograph



**Hydrograph for Subcatchment 3sp: Ext DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.13	0.00	0.00	0.00
4.00	0.28	0.00	0.00	0.00
6.00	0.46	0.00	0.00	0.00
8.00	0.70	0.00	0.00	0.00
10.00	1.07	0.03	0.00	0.01
12.00	2.58	0.65	0.00	<b>0.63</b>
14.00	4.31	1.83	0.00	<b>0.07</b>
16.00	4.68	2.11	0.00	0.04
18.00	4.92	2.30	0.00	0.03
20.00	5.10	2.44	0.00	0.02
22.00	5.25	2.57	0.00	0.02
24.00	<b>5.38</b>	<b>2.67</b>	0.00	0.02
26.00	5.38	2.67	0.00	0.00
28.00	5.38	2.67	0.00	0.00
30.00	5.38	2.67	0.00	0.00
32.00	5.38	2.67	0.00	0.00
34.00	5.38	2.67	0.00	0.00
36.00	5.38	2.67	0.00	0.00
38.00	5.38	2.67	0.00	0.00
40.00	5.38	2.67	0.00	0.00
42.00	5.38	2.67	0.00	0.00
44.00	5.38	2.67	0.00	0.00
46.00	5.38	2.67	0.00	0.00
48.00	5.38	2.67	0.00	0.00
50.00	5.38	2.67	0.00	0.00
52.00	5.38	2.67	0.00	0.00
54.00	5.38	2.67	0.00	0.00
56.00	5.38	2.67	0.00	0.00
58.00	5.38	2.67	0.00	0.00
60.00	5.38	2.67	0.00	0.00
62.00	5.38	2.67	0.00	0.00
64.00	5.38	2.67	0.00	0.00
66.00	5.38	2.67	0.00	0.00
68.00	5.38	2.67	0.00	0.00
70.00	5.38	2.67	0.00	0.00
72.00	5.38	2.67	0.00	0.00

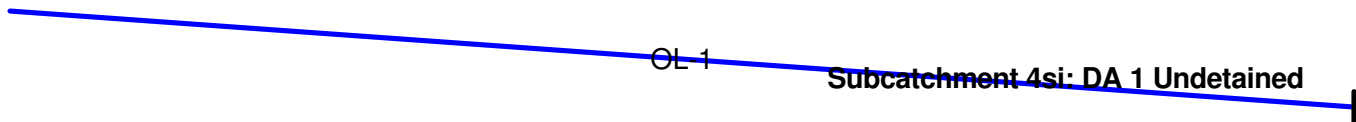
### Summary for Subcatchment 4si: DA 1 Undetained

Runoff = 0.03 cfs @ 12.10 hrs, Volume= 91 cf, Depth= 5.14"  
Routed to Link 9I : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 10-Year-2020 Rainfall=5.38"

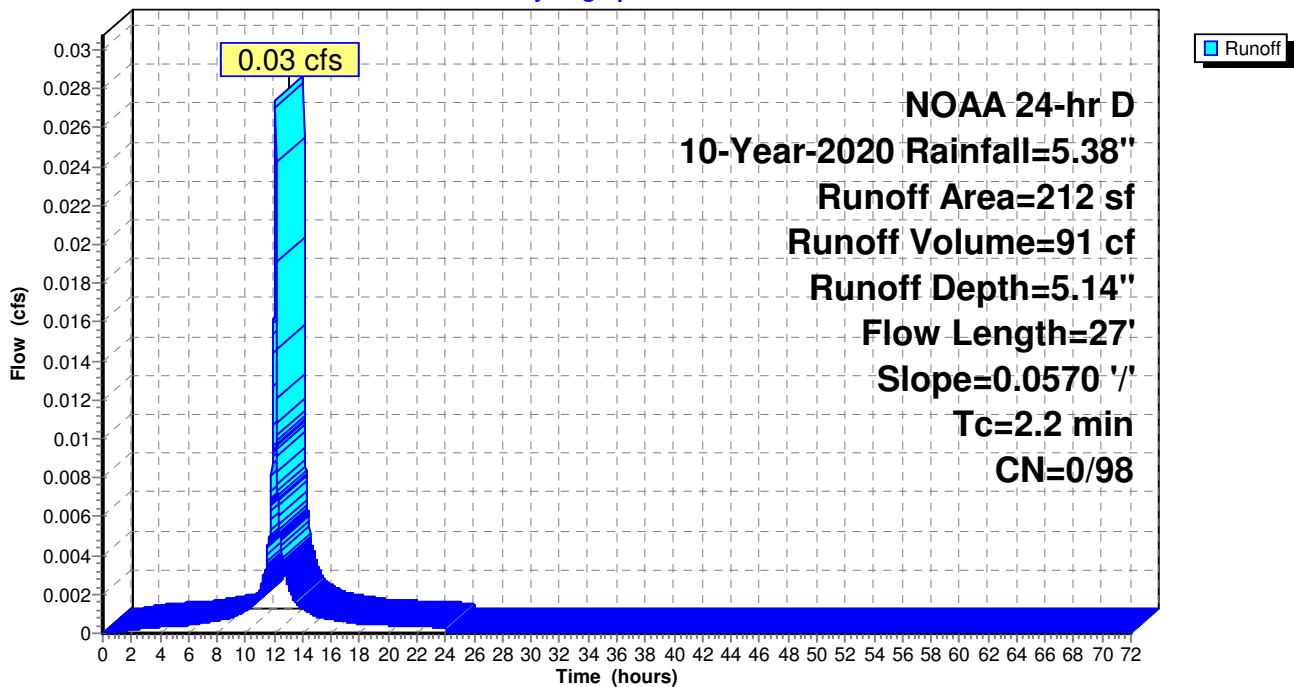
Area (sf)	CN	Description
212	98	Paved parking, HSG C
212	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	27	0.0570	0.21		<b>Sheet Flow, OL-1</b> n= 0.150 P2= 3.47"



### Subcatchment 4si: DA 1 Undetained

Hydrograph



**Hydrograph for Subcatchment 4si: DA 1 Undetained**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.13	0.00	0.03	0.00
4.00	0.28	0.00	0.13	0.00
6.00	0.46	0.00	0.28	0.00
8.00	0.70	0.00	0.50	0.00
10.00	1.07	0.00	0.86	0.00
12.00	2.58	0.00	2.35	<b>0.02</b>
14.00	4.31	0.00	4.08	<b>0.00</b>
16.00	4.68	0.00	4.45	0.00
18.00	4.92	0.00	4.68	0.00
20.00	5.10	0.00	4.86	0.00
22.00	5.25	0.00	5.01	0.00
24.00	<b>5.38</b>	0.00	<b>5.14</b>	0.00
26.00	5.38	0.00	5.14	0.00
28.00	5.38	0.00	5.14	0.00
30.00	5.38	0.00	5.14	0.00
32.00	5.38	0.00	5.14	0.00
34.00	5.38	0.00	5.14	0.00
36.00	5.38	0.00	5.14	0.00
38.00	5.38	0.00	5.14	0.00
40.00	5.38	0.00	5.14	0.00
42.00	5.38	0.00	5.14	0.00
44.00	5.38	0.00	5.14	0.00
46.00	5.38	0.00	5.14	0.00
48.00	5.38	0.00	5.14	0.00
50.00	5.38	0.00	5.14	0.00
52.00	5.38	0.00	5.14	0.00
54.00	5.38	0.00	5.14	0.00
56.00	5.38	0.00	5.14	0.00
58.00	5.38	0.00	5.14	0.00
60.00	5.38	0.00	5.14	0.00
62.00	5.38	0.00	5.14	0.00
64.00	5.38	0.00	5.14	0.00
66.00	5.38	0.00	5.14	0.00
68.00	5.38	0.00	5.14	0.00
70.00	5.38	0.00	5.14	0.00
72.00	5.38	0.00	5.14	0.00

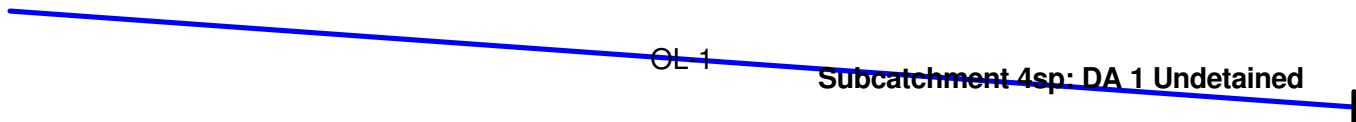
### Summary for Subcatchment 4sp: DA 1 Undetained

Runoff = 0.16 cfs @ 12.10 hrs, Volume= 437 cf, Depth= 2.67"  
Routed to Link 9I : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 10-Year-2020 Rainfall=5.38"

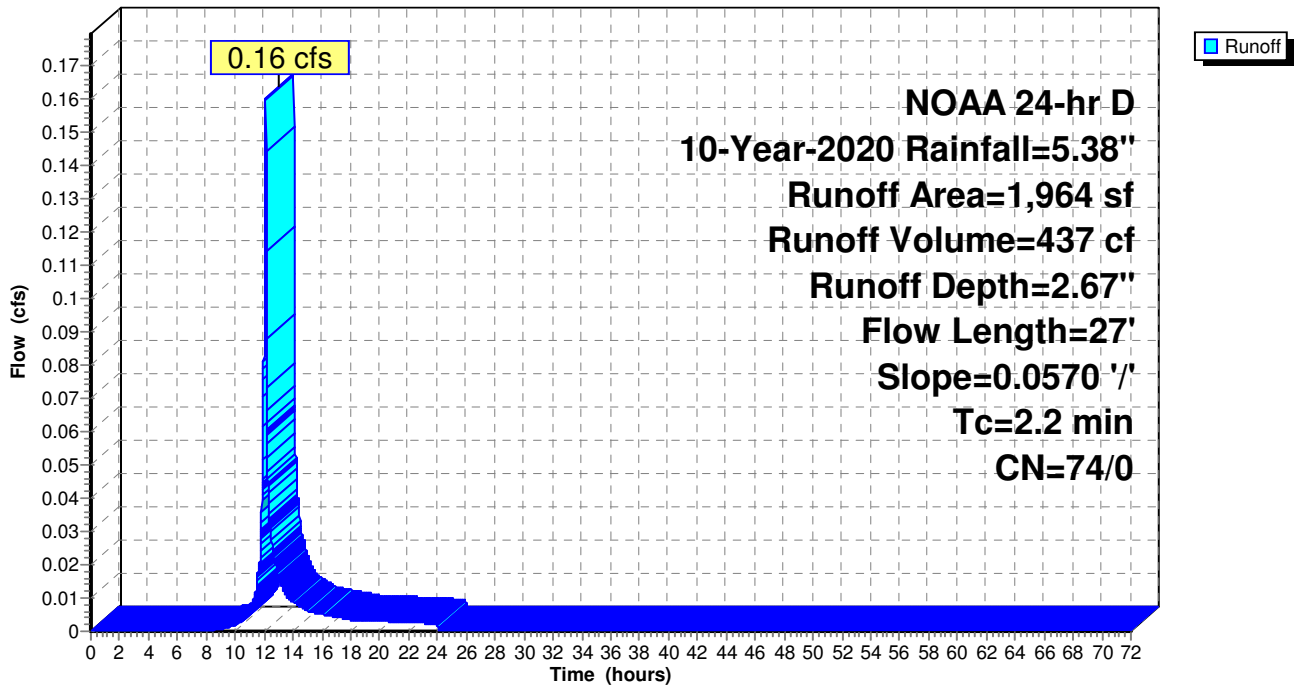
Area (sf)	CN	Description
1,964	74	>75% Grass cover, Good, HSG C
1,964	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	27	0.0570	0.21		<b>Sheet Flow, OL-1</b> n= 0.150 P2= 3.47"



### Subcatchment 4sp: DA 1 Undetained

Hydrograph



**Hydrograph for Subcatchment 4sp: DA 1 Undetained**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.13	0.00	0.00	0.00
4.00	0.28	0.00	0.00	0.00
6.00	0.46	0.00	0.00	0.00
8.00	0.70	0.00	0.00	0.00
10.00	1.07	0.03	0.00	0.00
12.00	2.58	0.65	0.00	<b>0.08</b>
14.00	4.31	1.83	0.00	<b>0.01</b>
16.00	4.68	2.11	0.00	0.01
18.00	4.92	2.30	0.00	0.00
20.00	5.10	2.44	0.00	0.00
22.00	5.25	2.57	0.00	0.00
24.00	<b>5.38</b>	<b>2.67</b>	0.00	0.00
26.00	5.38	2.67	0.00	0.00
28.00	5.38	2.67	0.00	0.00
30.00	5.38	2.67	0.00	0.00
32.00	5.38	2.67	0.00	0.00
34.00	5.38	2.67	0.00	0.00
36.00	5.38	2.67	0.00	0.00
38.00	5.38	2.67	0.00	0.00
40.00	5.38	2.67	0.00	0.00
42.00	5.38	2.67	0.00	0.00
44.00	5.38	2.67	0.00	0.00
46.00	5.38	2.67	0.00	0.00
48.00	5.38	2.67	0.00	0.00
50.00	5.38	2.67	0.00	0.00
52.00	5.38	2.67	0.00	0.00
54.00	5.38	2.67	0.00	0.00
56.00	5.38	2.67	0.00	0.00
58.00	5.38	2.67	0.00	0.00
60.00	5.38	2.67	0.00	0.00
62.00	5.38	2.67	0.00	0.00
64.00	5.38	2.67	0.00	0.00
66.00	5.38	2.67	0.00	0.00
68.00	5.38	2.67	0.00	0.00
70.00	5.38	2.67	0.00	0.00
72.00	5.38	2.67	0.00	0.00

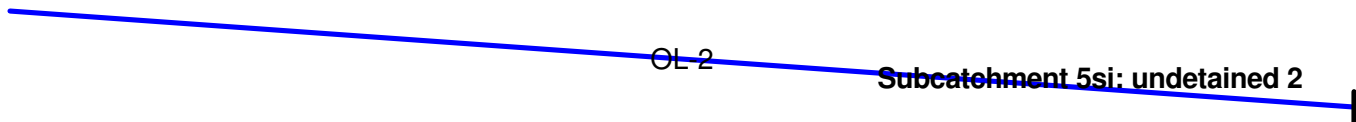
### Summary for Subcatchment 5si: undetained 2

Runoff = 0.19 cfs @ 12.12 hrs, Volume= 674 cf, Depth= 5.14"  
Routed to Link 9I : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 10-Year-2020 Rainfall=5.38"

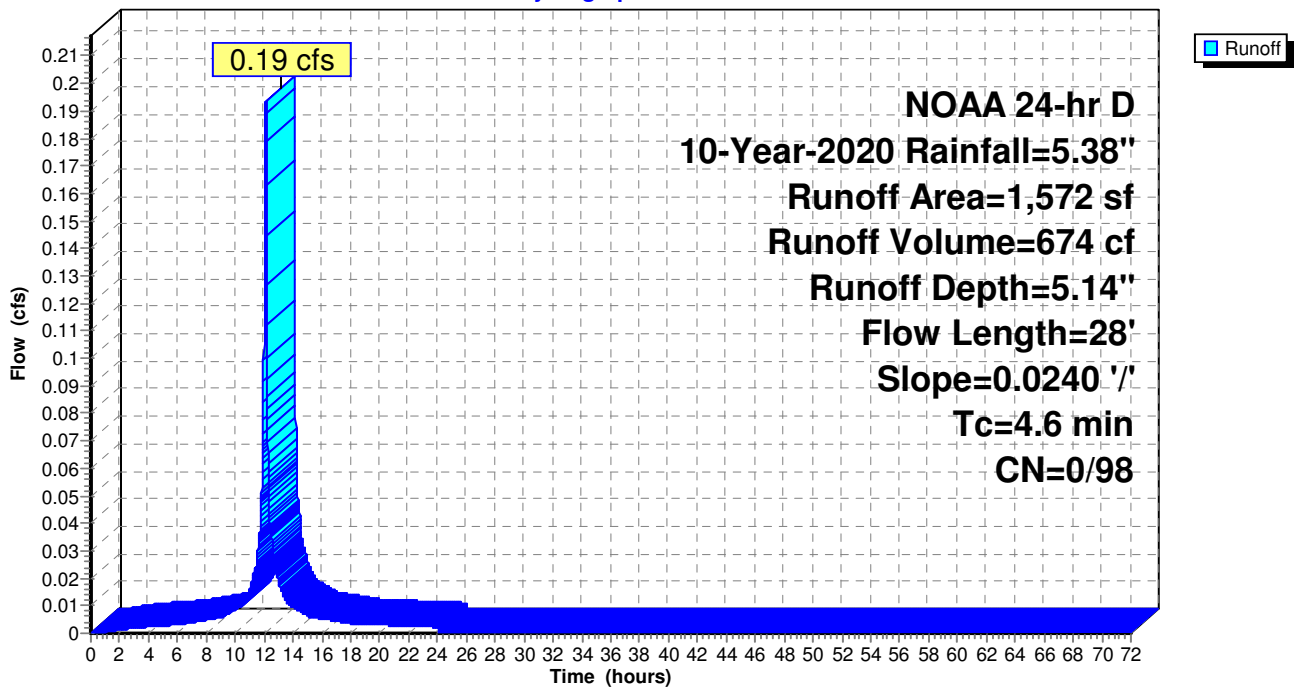
Area (sf)	CN	Description
1,572	98	Paved parking, HSG C
1,572	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	28	0.0240	0.10		<b>Sheet Flow, OL-2</b> Grass: Dense n= 0.240 P2= 3.47"



### Subcatchment 5si: undetained 2

Hydrograph



**Hydrograph for Subcatchment 5si: undetained 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.13	0.00	0.03	0.00
4.00	0.28	0.00	0.13	0.00
6.00	0.46	0.00	0.28	0.00
8.00	0.70	0.00	0.50	0.00
10.00	1.07	0.00	0.86	0.01
12.00	2.58	0.00	2.35	<b>0.11</b>
14.00	4.31	0.00	4.08	<b>0.01</b>
16.00	4.68	0.00	4.45	0.01
18.00	4.92	0.00	4.68	0.00
20.00	5.10	0.00	4.86	0.00
22.00	5.25	0.00	5.01	0.00
24.00	<b>5.38</b>	0.00	<b>5.14</b>	0.00
26.00	5.38	0.00	5.14	0.00
28.00	5.38	0.00	5.14	0.00
30.00	5.38	0.00	5.14	0.00
32.00	5.38	0.00	5.14	0.00
34.00	5.38	0.00	5.14	0.00
36.00	5.38	0.00	5.14	0.00
38.00	5.38	0.00	5.14	0.00
40.00	5.38	0.00	5.14	0.00
42.00	5.38	0.00	5.14	0.00
44.00	5.38	0.00	5.14	0.00
46.00	5.38	0.00	5.14	0.00
48.00	5.38	0.00	5.14	0.00
50.00	5.38	0.00	5.14	0.00
52.00	5.38	0.00	5.14	0.00
54.00	5.38	0.00	5.14	0.00
56.00	5.38	0.00	5.14	0.00
58.00	5.38	0.00	5.14	0.00
60.00	5.38	0.00	5.14	0.00
62.00	5.38	0.00	5.14	0.00
64.00	5.38	0.00	5.14	0.00
66.00	5.38	0.00	5.14	0.00
68.00	5.38	0.00	5.14	0.00
70.00	5.38	0.00	5.14	0.00
72.00	5.38	0.00	5.14	0.00

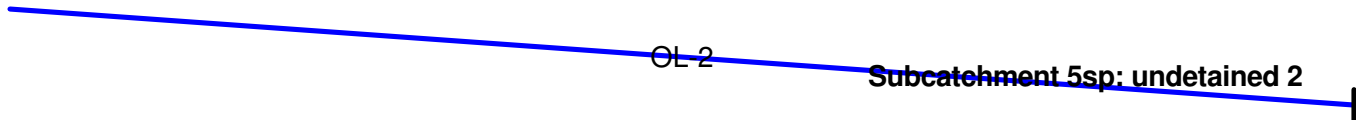
### Summary for Subcatchment 5sp: undetained 2

Runoff = 0.18 cfs @ 12.12 hrs, Volume= 534 cf, Depth= 2.67"  
Routed to Link 9I : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 10-Year-2020 Rainfall=5.38"

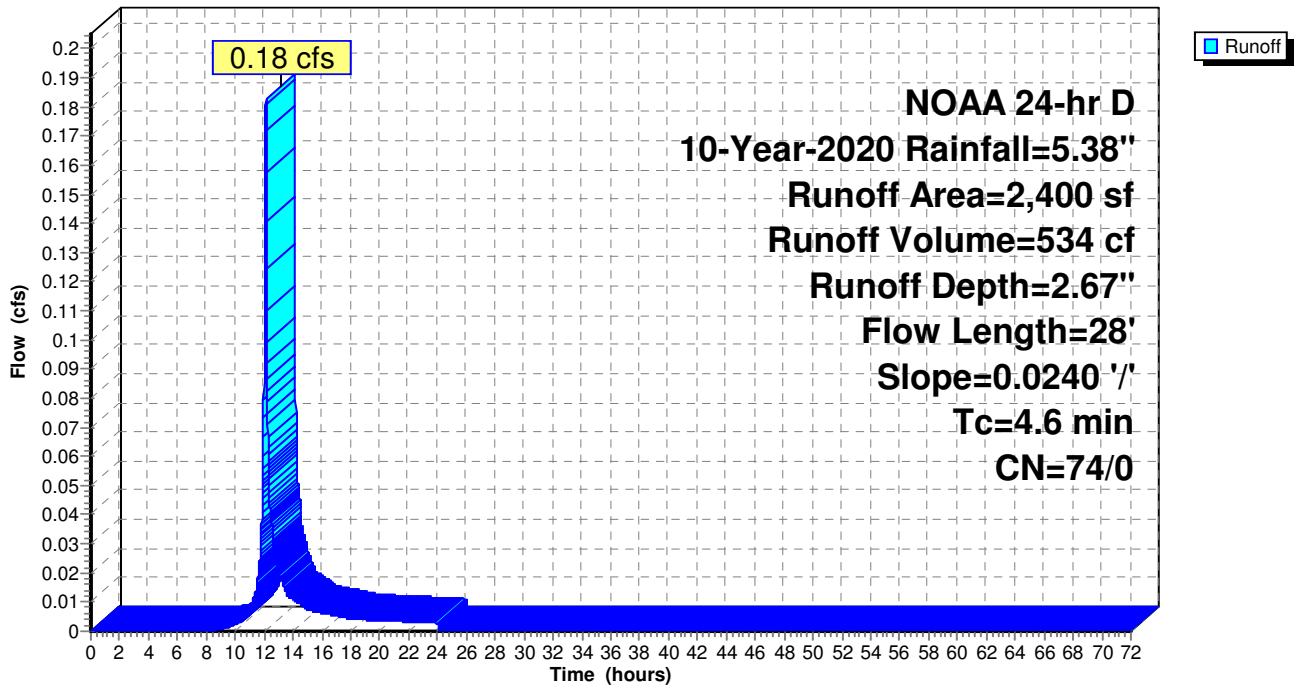
Area (sf)	CN	Description
2,400	74	>75% Grass cover, Good, HSG C
2,400	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	28	0.0240	0.10		<b>Sheet Flow, OL-2</b> Grass: Dense n= 0.240 P2= 3.47"



### Subcatchment 5sp: undetained 2

Hydrograph



**Hydrograph for Subcatchment 5sp: undetained 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.13	0.00	0.00	0.00
4.00	0.28	0.00	0.00	0.00
6.00	0.46	0.00	0.00	0.00
8.00	0.70	0.00	0.00	0.00
10.00	1.07	0.03	0.00	0.00
12.00	2.58	0.65	0.00	<b>0.09</b>
14.00	4.31	1.83	0.00	<b>0.01</b>
16.00	4.68	2.11	0.00	0.01
18.00	4.92	2.30	0.00	0.00
20.00	5.10	2.44	0.00	0.00
22.00	5.25	2.57	0.00	0.00
24.00	<b>5.38</b>	<b>2.67</b>	0.00	0.00
26.00	5.38	2.67	0.00	0.00
28.00	5.38	2.67	0.00	0.00
30.00	5.38	2.67	0.00	0.00
32.00	5.38	2.67	0.00	0.00
34.00	5.38	2.67	0.00	0.00
36.00	5.38	2.67	0.00	0.00
38.00	5.38	2.67	0.00	0.00
40.00	5.38	2.67	0.00	0.00
42.00	5.38	2.67	0.00	0.00
44.00	5.38	2.67	0.00	0.00
46.00	5.38	2.67	0.00	0.00
48.00	5.38	2.67	0.00	0.00
50.00	5.38	2.67	0.00	0.00
52.00	5.38	2.67	0.00	0.00
54.00	5.38	2.67	0.00	0.00
56.00	5.38	2.67	0.00	0.00
58.00	5.38	2.67	0.00	0.00
60.00	5.38	2.67	0.00	0.00
62.00	5.38	2.67	0.00	0.00
64.00	5.38	2.67	0.00	0.00
66.00	5.38	2.67	0.00	0.00
68.00	5.38	2.67	0.00	0.00
70.00	5.38	2.67	0.00	0.00
72.00	5.38	2.67	0.00	0.00

### Summary for Subcatchment 6si: Pro DA 3

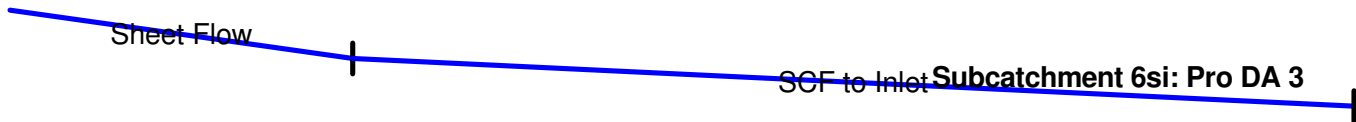
Runoff = 5.05 cfs @ 12.10 hrs, Volume= 16,775 cf, Depth= 5.14"  
Routed to Pond 8p : Detention System

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 10-Year-2020 Rainfall=5.38"

Area (sf)	CN	Description
39,143	98	Paved parking, HSG C
39,143	98	100.00% Impervious Area

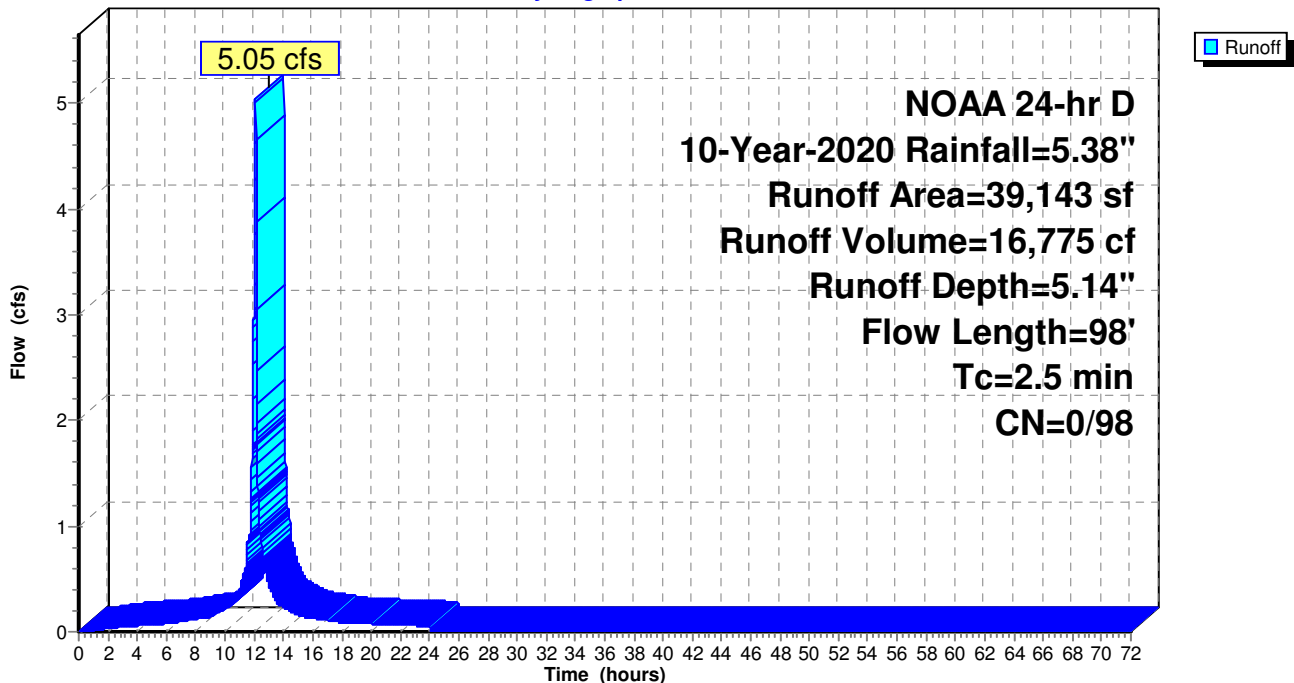
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	25	0.0560	0.20		<b>Sheet Flow, Sheet Flow</b>
0.4	73	0.0190	2.80		Grass: Short n= 0.150 P2= 3.47" <b>Shallow Concentrated Flow, SCF to Inlet</b>
2.5	98	Total			



### Subcatchment 6si: Pro DA 3

Hydrograph



**Hydrograph for Subcatchment 6si: Pro DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.13	0.00	0.03	0.03
4.00	0.28	0.00	0.13	0.06
6.00	0.46	0.00	0.28	0.08
8.00	0.70	0.00	0.50	0.12
10.00	1.07	0.00	0.86	0.22
12.00	2.58	0.00	2.35	<b>3.02</b>
14.00	4.31	0.00	4.08	<b>0.24</b>
16.00	4.68	0.00	4.45	0.13
18.00	4.92	0.00	4.68	0.09
20.00	5.10	0.00	4.86	0.07
22.00	5.25	0.00	5.01	0.06
24.00	<b>5.38</b>	0.00	<b>5.14</b>	0.05
26.00	5.38	0.00	5.14	0.00
28.00	5.38	0.00	5.14	0.00
30.00	5.38	0.00	5.14	0.00
32.00	5.38	0.00	5.14	0.00
34.00	5.38	0.00	5.14	0.00
36.00	5.38	0.00	5.14	0.00
38.00	5.38	0.00	5.14	0.00
40.00	5.38	0.00	5.14	0.00
42.00	5.38	0.00	5.14	0.00
44.00	5.38	0.00	5.14	0.00
46.00	5.38	0.00	5.14	0.00
48.00	5.38	0.00	5.14	0.00
50.00	5.38	0.00	5.14	0.00
52.00	5.38	0.00	5.14	0.00
54.00	5.38	0.00	5.14	0.00
56.00	5.38	0.00	5.14	0.00
58.00	5.38	0.00	5.14	0.00
60.00	5.38	0.00	5.14	0.00
62.00	5.38	0.00	5.14	0.00
64.00	5.38	0.00	5.14	0.00
66.00	5.38	0.00	5.14	0.00
68.00	5.38	0.00	5.14	0.00
70.00	5.38	0.00	5.14	0.00
72.00	5.38	0.00	5.14	0.00

### Summary for Subcatchment 6sp: Pro DA 3

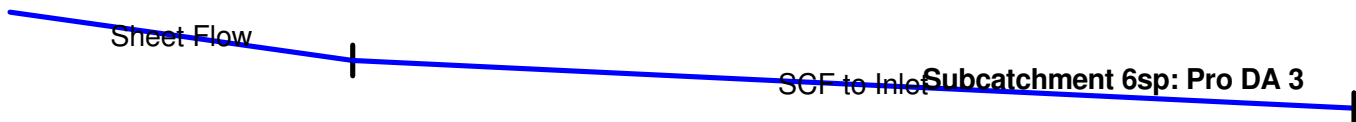
Runoff = 0.77 cfs @ 12.11 hrs, Volume= 2,089 cf, Depth= 2.67"  
Routed to Pond 8p : Detention System

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 10-Year-2020 Rainfall=5.38"

Area (sf)	CN	Description
9,386	74	>75% Grass cover, Good, HSG C
9,386	74	100.00% Pervious Area

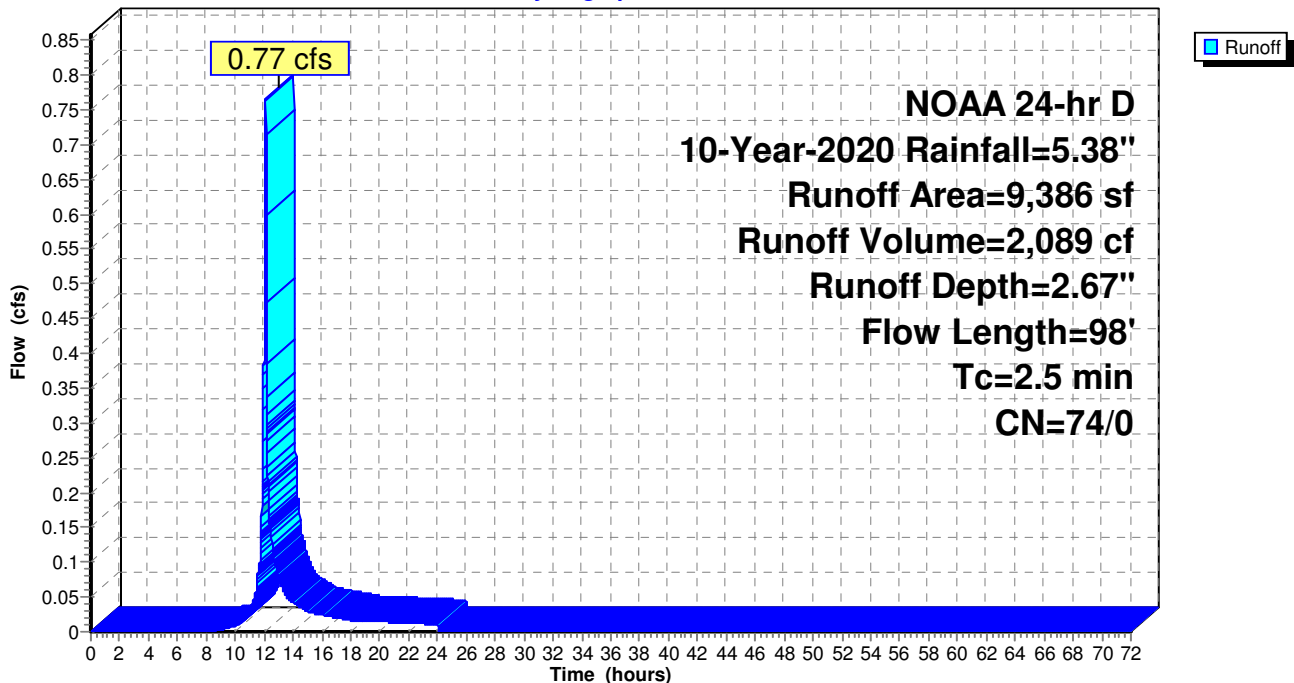
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	25	0.0560	0.20		<b>Sheet Flow, Sheet Flow</b> Grass: Short n= 0.150 P2= 3.47"
0.4	73	0.0190	2.80		<b>Shallow Concentrated Flow, SCF to Inlet</b> Paved Kv= 20.3 fps
2.5	98	Total			



### Subcatchment 6sp: Pro DA 3

Hydrograph



**Hydrograph for Subcatchment 6sp: Pro DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.13	0.00	0.00	0.00
4.00	0.28	0.00	0.00	0.00
6.00	0.46	0.00	0.00	0.00
8.00	0.70	0.00	0.00	0.00
10.00	1.07	0.03	0.00	0.01
12.00	2.58	0.65	0.00	<b>0.40</b>
14.00	4.31	1.83	0.00	<b>0.04</b>
16.00	4.68	2.11	0.00	0.02
18.00	4.92	2.30	0.00	0.02
20.00	5.10	2.44	0.00	0.01
22.00	5.25	2.57	0.00	0.01
24.00	<b>5.38</b>	<b>2.67</b>	0.00	0.01
26.00	5.38	2.67	0.00	0.00
28.00	5.38	2.67	0.00	0.00
30.00	5.38	2.67	0.00	0.00
32.00	5.38	2.67	0.00	0.00
34.00	5.38	2.67	0.00	0.00
36.00	5.38	2.67	0.00	0.00
38.00	5.38	2.67	0.00	0.00
40.00	5.38	2.67	0.00	0.00
42.00	5.38	2.67	0.00	0.00
44.00	5.38	2.67	0.00	0.00
46.00	5.38	2.67	0.00	0.00
48.00	5.38	2.67	0.00	0.00
50.00	5.38	2.67	0.00	0.00
52.00	5.38	2.67	0.00	0.00
54.00	5.38	2.67	0.00	0.00
56.00	5.38	2.67	0.00	0.00
58.00	5.38	2.67	0.00	0.00
60.00	5.38	2.67	0.00	0.00
62.00	5.38	2.67	0.00	0.00
64.00	5.38	2.67	0.00	0.00
66.00	5.38	2.67	0.00	0.00
68.00	5.38	2.67	0.00	0.00
70.00	5.38	2.67	0.00	0.00
72.00	5.38	2.67	0.00	0.00

### Summary for Pond 8p: Detention System

Inflow Area = 48,529 sf, 80.66% Impervious, Inflow Depth = 4.66" for 10-Year-2020 event  
 Inflow = 5.80 cfs @ 12.10 hrs, Volume= 18,864 cf  
 Outflow = 3.61 cfs @ 12.14 hrs, Volume= 18,672 cf, Atten= 38%, Lag= 2.4 min  
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
 Primary = 3.61 cfs @ 12.14 hrs, Volume= 18,672 cf  
 Routed to Link 9l : Overall discharge

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Peak Elev= 404.96' @ 12.14 hrs Surf.Area= 480 sf Storage= 3,182 cf

Plug-Flow detention time= 30.6 min calculated for 18,672 cf (99% of inflow)  
 Center-of-Mass det. time= 23.7 min ( 779.1 - 755.4 )

Volume	Invert	Avail.Storage	Storage Description
#1	403.00'	5,027 cf	<b>48.0" Round Pipe Storage</b> -Impervious L= 400.0'
#2	403.00'	578 cf	<b>48.0" Round Pipe Storage</b> Inside #3 L= 46.0'
#3	402.00'	825 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc) 2,640 cf Overall - 578 cf Embedded = 2,062 cf x 40.0% Voids
		6,429 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
402.00	480	0	0	480
407.50	480	2,640	2,640	907

Device	Routing	Invert	Outlet Devices
#1	Primary	403.00'	<b>7.5" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#2	Primary	404.60'	<b>36.0" W x 3.0" H Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Primary	405.50'	<b>24.0" W x 3.0" H Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#4	Discarded	402.00'	<b>1.290 in/hr Exfiltration over Surface area from 402.00' - 407.50'</b> Conductivity to Groundwater Elevation = 395.00' Excluded Surface area = 480 sf

**Discarded OutFlow** Max=0.00 cfs @ 0.00 hrs HW=402.00' (Free Discharge)  
 ↳4=Exfiltration ( Controls 0.00 cfs)

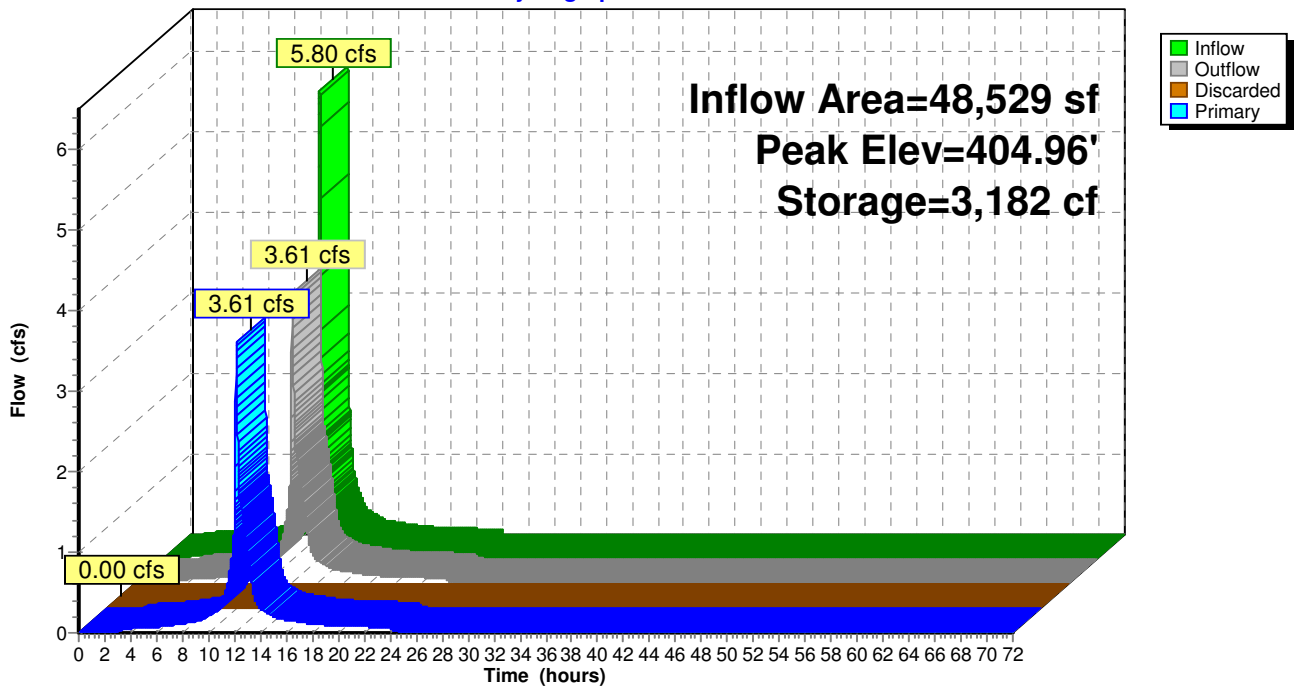
**Primary OutFlow** Max=3.61 cfs @ 12.14 hrs HW=404.96' (Free Discharge)  
 ↳1=Orifice/Grate (Orifice Controls 1.89 cfs @ 6.18 fps)  
 ↳2=Orifice/Grate (Orifice Controls 1.72 cfs @ 2.29 fps)  
 ↳3=Orifice/Grate ( Controls 0.00 cfs)

Pond 8p: Detention System

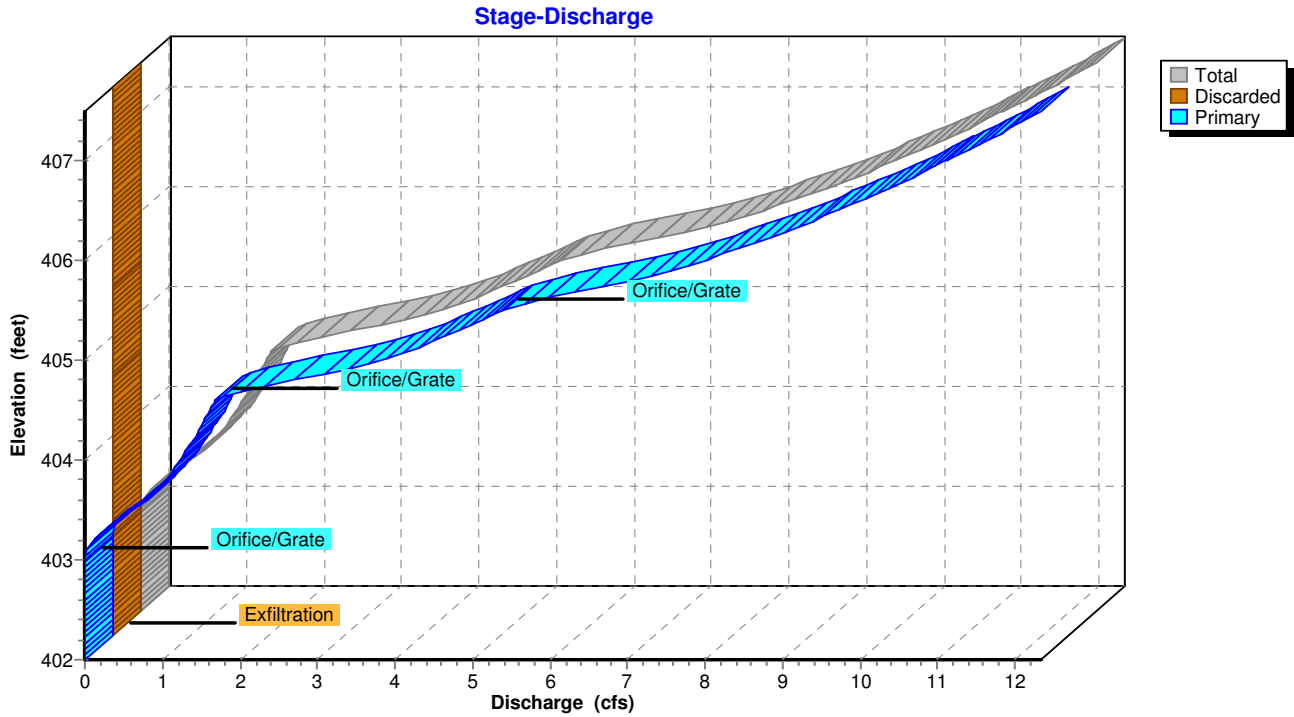
- Orifice/Grate
- Orifice/Grate
- Orifice/Grate
- Exfiltration

Pond 8p: Detention System

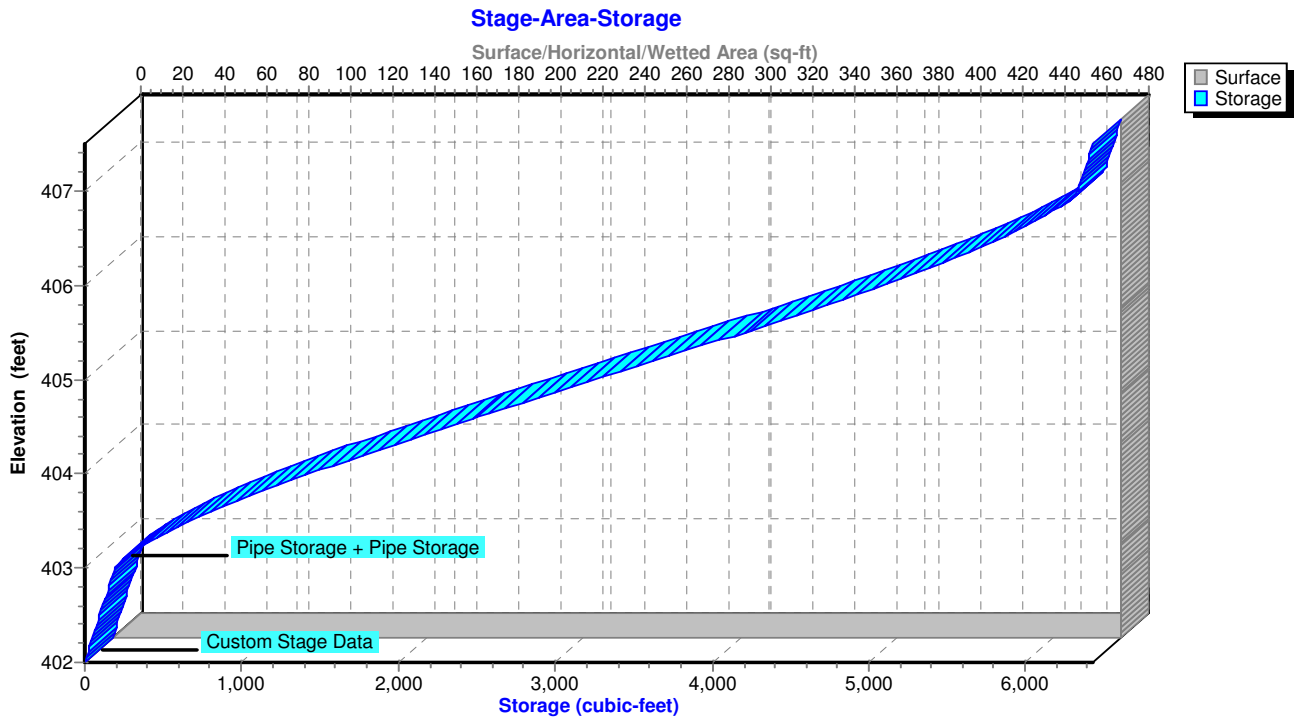
Hydrograph



### Pond 8p: Detention System



### Pond 8p: Detention System



**Hydrograph for Pond 8p: Detention System**

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	402.00	0.00	<b>0.00</b>	0.00
2.00	0.03	83	402.43	0.00	0.00	0.00
4.00	0.06	267	403.13	0.05	0.00	0.05
6.00	0.08	285	403.15	0.07	0.00	0.07
8.00	0.12	320	403.19	0.12	0.00	0.12
10.00	0.23	394	403.26	0.21	0.00	0.21
12.00	<b>3.42</b>	<b>1,812</b>	<b>404.22</b>	<b>1.41</b>	0.00	<b>1.41</b>
14.00	<b>0.28</b>	<b>453</b>	<b>403.32</b>	<b>0.30</b>	0.00	<b>0.30</b>
16.00	0.16	354	403.22	0.16	0.00	0.16
18.00	0.10	315	403.18	0.11	0.00	0.11
20.00	0.09	300	403.17	0.09	0.00	0.09
22.00	0.08	289	403.15	0.08	0.00	0.08
24.00	0.06	277	403.14	0.07	0.00	0.07
26.00	0.00	196	403.01	0.00	0.00	0.00
28.00	0.00	192	403.00	0.00	0.00	0.00
30.00	0.00	192	403.00	0.00	0.00	0.00
32.00	0.00	192	403.00	0.00	0.00	0.00
34.00	0.00	192	403.00	0.00	0.00	0.00
36.00	0.00	192	403.00	0.00	0.00	0.00
38.00	0.00	192	403.00	0.00	0.00	0.00
40.00	0.00	192	403.00	0.00	0.00	0.00
42.00	0.00	192	403.00	0.00	0.00	0.00
44.00	0.00	192	403.00	0.00	0.00	0.00
46.00	0.00	192	403.00	0.00	0.00	0.00
48.00	0.00	192	403.00	0.00	0.00	0.00
50.00	0.00	192	403.00	0.00	0.00	0.00
52.00	0.00	192	403.00	0.00	0.00	0.00
54.00	0.00	192	403.00	0.00	0.00	0.00
56.00	0.00	192	403.00	0.00	0.00	0.00
58.00	0.00	192	403.00	0.00	0.00	0.00
60.00	0.00	192	403.00	0.00	0.00	0.00
62.00	0.00	192	403.00	0.00	0.00	0.00
64.00	0.00	192	403.00	0.00	0.00	0.00
66.00	0.00	192	403.00	0.00	0.00	0.00
68.00	0.00	192	403.00	0.00	0.00	0.00
70.00	0.00	192	403.00	0.00	0.00	0.00
72.00	0.00	192	403.00	0.00	0.00	0.00

**Stage-Discharge for Pond 8p: Detention System**

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
402.00	0.00	0.00	0.00	407.10	11.36	0.00	11.36
402.10	0.00	0.00	0.00	407.20	11.61	0.00	11.61
402.20	0.00	0.00	0.00	407.30	11.86	0.00	11.86
402.30	0.00	0.00	0.00	407.40	12.10	0.00	12.10
402.40	0.00	0.00	0.00	407.50	<b>12.33</b>	0.00	<b>12.33</b>
402.50	0.00	0.00	0.00				
402.60	0.00	0.00	0.00				
402.70	0.00	0.00	0.00				
402.80	0.00	0.00	0.00				
402.90	0.00	0.00	0.00				
403.00	0.00	0.00	0.00				
403.10	0.03	0.00	0.03				
403.20	0.13	0.00	0.13				
403.30	0.27	0.00	0.27				
403.40	0.45	0.00	0.45				
403.50	0.63	0.00	0.63				
403.60	0.80	0.00	0.80				
403.70	0.92	0.00	0.92				
403.80	1.03	0.00	1.03				
403.90	1.13	0.00	1.13				
404.00	1.22	0.00	1.22				
404.10	1.31	0.00	1.31				
404.20	1.39	0.00	1.39				
404.30	1.47	0.00	1.47				
404.40	1.54	0.00	1.54				
404.50	1.61	0.00	1.61				
404.60	1.68	0.00	1.68				
404.70	2.04	0.00	2.04				
404.80	2.66	0.00	2.66				
404.90	3.34	0.00	3.34				
405.00	3.80	0.00	3.80				
405.10	4.18	0.00	4.18				
405.20	4.51	0.00	4.51				
405.30	4.82	0.00	4.82				
405.40	5.10	0.00	5.10				
405.50	5.36	0.00	5.36				
405.60	5.81	0.00	5.81				
405.70	6.42	0.00	6.42				
405.80	7.06	0.00	7.06				
405.90	7.54	0.00	7.54				
406.00	7.97	0.00	7.97				
406.10	8.35	0.00	8.35				
406.20	8.72	0.00	8.72				
406.30	9.06	0.00	9.06				
406.40	9.39	0.00	9.39				
406.50	9.70	0.00	9.70				
406.60	10.00	0.00	10.00				
406.70	10.29	0.00	10.29				
406.80	10.57	0.00	10.57				
406.90	10.84	0.00	10.84				
407.00	11.10	0.00	11.10				

Stage-Area-Storage for Pond 8p: Detention System

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
402.00	480	0	407.10	480	6,353
402.10	480	19	407.20	480	6,372
402.20	480	38	407.30	480	6,391
402.30	480	58	407.40	480	6,410
402.40	480	77	407.50	480	6,429
402.50	480	96			
402.60	480	115			
402.70	480	134			
402.80	480	154			
402.90	480	173			
403.00	480	192			
403.10	480	247			
403.20	480	331			
403.30	480	433			
403.40	480	548			
403.50	480	676			
403.60	480	813			
403.70	480	958			
403.80	480	1,111			
403.90	480	1,270			
404.00	480	1,435			
404.10	480	1,604			
404.20	480	1,778			
404.30	480	1,956			
404.40	480	2,137			
404.50	480	2,320			
404.60	480	2,506			
404.70	480	2,694			
404.80	480	2,883			
404.90	480	3,073			
405.00	480	3,263			
405.10	480	3,453			
405.20	480	3,643			
405.30	480	3,831			
405.40	480	4,019			
405.50	480	4,205			
405.60	480	4,389			
405.70	480	4,569			
405.80	480	4,747			
405.90	480	4,921			
406.00	480	5,091			
406.10	480	5,256			
406.20	480	5,415			
406.30	480	5,567			
406.40	480	5,713			
406.50	480	5,850			
406.60	480	5,977			
406.70	480	6,093			
406.80	480	6,195			
406.90	480	6,278			
407.00	480	6,333			

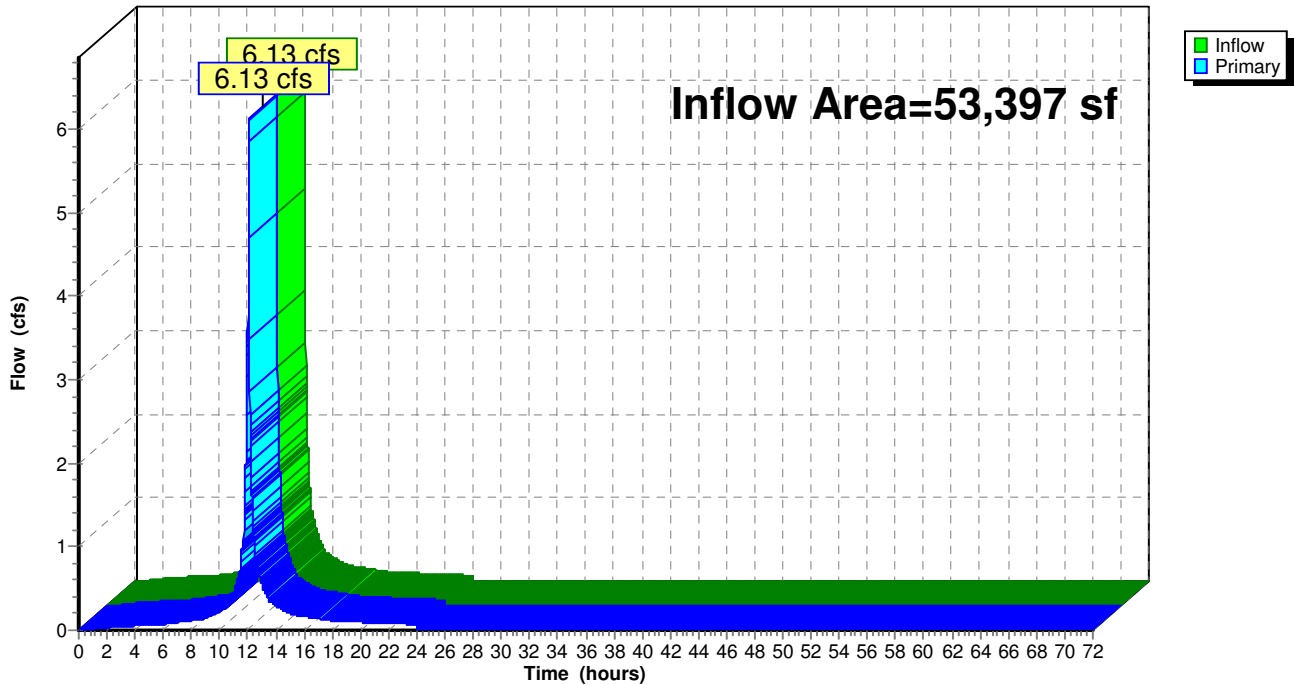
### Summary for Link 4I: existing total discharge

Inflow Area = 53,397 sf, 67.93% Impervious, Inflow Depth = 4.41" for 10-Year-2020 event  
Inflow = 6.13 cfs @ 12.10 hrs, Volume= 19,624 cf  
Primary = 6.13 cfs @ 12.10 hrs, Volume= 19,624 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Link 4I: existing total discharge

Hydrograph



Hydrograph for Link 4I: existing total discharge

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.01	0.00	0.01	52.00	0.00	0.00	0.00
2.00	0.03	0.00	0.03	53.00	0.00	0.00	0.00
3.00	0.04	0.00	0.04	54.00	0.00	0.00	0.00
4.00	0.05	0.00	0.05	55.00	0.00	0.00	0.00
5.00	0.06	0.00	0.06	56.00	0.00	0.00	0.00
6.00	0.07	0.00	0.07	57.00	0.00	0.00	0.00
7.00	0.09	0.00	0.09	58.00	0.00	0.00	0.00
8.00	0.12	0.00	0.12	59.00	0.00	0.00	0.00
9.00	0.14	0.00	0.14	60.00	0.00	0.00	0.00
10.00	0.23	0.00	0.23	61.00	0.00	0.00	0.00
11.00	0.43	0.00	0.43	62.00	0.00	0.00	0.00
12.00	<b>3.57</b>	0.00	<b>3.57</b>	63.00	0.00	0.00	0.00
13.00	<b>0.58</b>	0.00	<b>0.58</b>	64.00	0.00	0.00	0.00
14.00	0.30	0.00	0.30	65.00	0.00	0.00	0.00
15.00	0.20	0.00	0.20	66.00	0.00	0.00	0.00
16.00	0.17	0.00	0.17	67.00	0.00	0.00	0.00
17.00	0.14	0.00	0.14	68.00	0.00	0.00	0.00
18.00	0.11	0.00	0.11	69.00	0.00	0.00	0.00
19.00	0.10	0.00	0.10	70.00	0.00	0.00	0.00
20.00	0.10	0.00	0.10	71.00	0.00	0.00	0.00
21.00	0.09	0.00	0.09	72.00	0.00	0.00	0.00
22.00	0.08	0.00	0.08				
23.00	0.08	0.00	0.08				
24.00	0.07	0.00	0.07				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

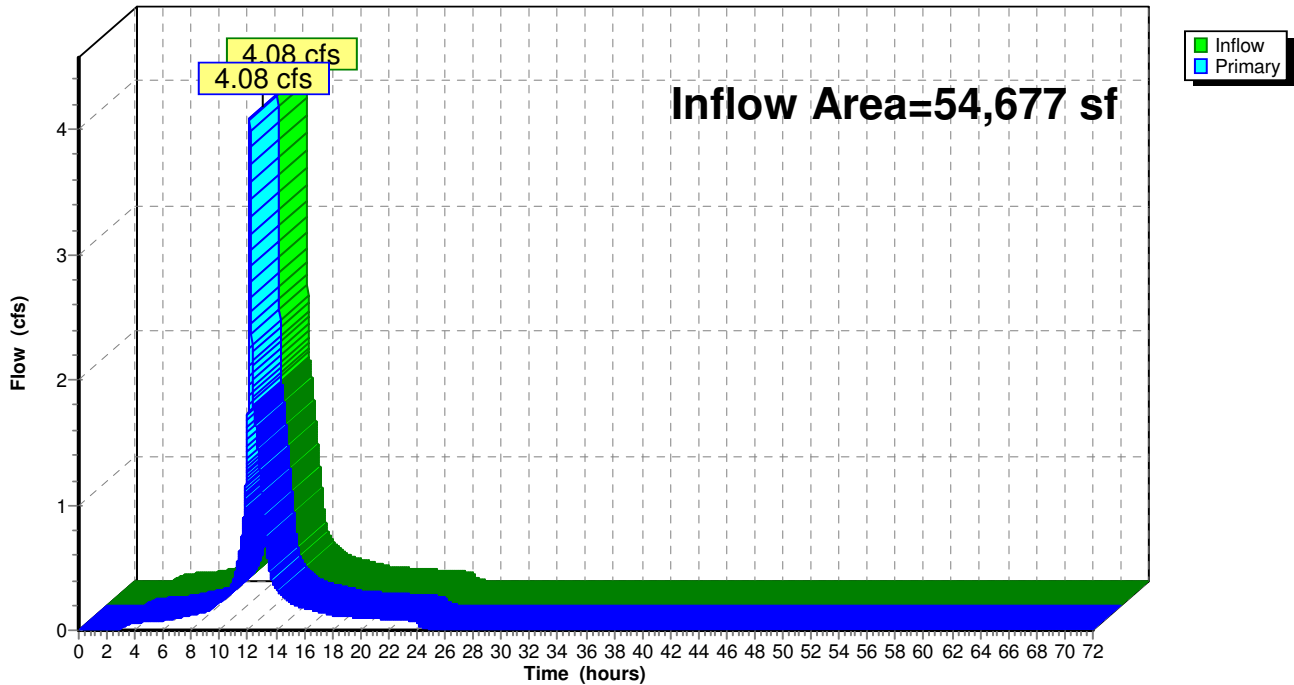
### Summary for Link 9I: Overall discharge

Inflow Area = 54,677 sf, 74.85% Impervious, Inflow Depth = 4.48" for 10-Year-2020 event  
Inflow = 4.08 cfs @ 12.13 hrs, Volume= 20,408 cf  
Primary = 4.08 cfs @ 12.13 hrs, Volume= 20,408 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Link 9I: Overall discharge

Hydrograph



Hydrograph for Link 9I: Overall discharge

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.02	0.00	0.02	54.00	0.00	0.00	0.00
4.00	0.06	0.00	0.06	55.00	0.00	0.00	0.00
5.00	0.07	0.00	0.07	56.00	0.00	0.00	0.00
6.00	0.08	0.00	0.08	57.00	0.00	0.00	0.00
7.00	0.10	0.00	0.10	58.00	0.00	0.00	0.00
8.00	0.12	0.00	0.12	59.00	0.00	0.00	0.00
9.00	0.15	0.00	0.15	60.00	0.00	0.00	0.00
10.00	0.23	0.00	0.23	61.00	0.00	0.00	0.00
11.00	0.41	0.00	0.41	62.00	0.00	0.00	0.00
12.00	1.71	0.00	1.71	63.00	0.00	0.00	0.00
13.00	1.10	0.00	1.10	64.00	0.00	0.00	0.00
14.00	0.33	0.00	0.33	65.00	0.00	0.00	0.00
15.00	0.22	0.00	0.22	66.00	0.00	0.00	0.00
16.00	0.18	0.00	0.18	67.00	0.00	0.00	0.00
17.00	0.15	0.00	0.15	68.00	0.00	0.00	0.00
18.00	0.12	0.00	0.12	69.00	0.00	0.00	0.00
19.00	0.11	0.00	0.11	70.00	0.00	0.00	0.00
20.00	0.10	0.00	0.10	71.00	0.00	0.00	0.00
21.00	0.09	0.00	0.09	72.00	0.00	0.00	0.00
22.00	0.09	0.00	0.09				
23.00	0.08	0.00	0.08				
24.00	0.07	0.00	0.07				
25.00	0.01	0.00	0.01				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points  
 Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1si: Ext DA 1**      Runoff Area=1,374 sf   100.00% Impervious   Runoff Depth=8.94"  
 Flow Length=139'   Slope=0.0680 '/'   Tc=6.0 min   CN=0/98   Runoff=0.28 cfs   1,024 cf

**Subcatchment 1sp: Ext DA 1**      Runoff Area=2,438 sf   0.00% Impervious   Runoff Depth=7.60"  
 Flow Length=139'   Slope=0.0680 '/'   Tc=6.0 min   CN=87/0   Runoff=0.46 cfs   1,544 cf

**Subcatchment 2si: Ext DA 2**      Runoff Area=4,185 sf   100.00% Impervious   Runoff Depth=8.94"  
 Flow Length=115'   Tc=1.0 min   CN=0/98   Runoff=0.93 cfs   3,118 cf

**Subcatchment 2sp: Ext DA 2**      Runoff Area=326 sf   0.00% Impervious   Runoff Depth=6.62"  
 Flow Length=115'   Tc=1.0 min   CN=79/0   Runoff=0.06 cfs   180 cf

**Subcatchment 3si: Ext DA 3**      Runoff Area=30,716 sf   100.00% Impervious   Runoff Depth=8.94"  
 Flow Length=319'   Tc=1.7 min   CN=0/98   Runoff=6.80 cfs   22,882 cf

**Subcatchment 3sp: Ext DA 3**      Runoff Area=14,358 sf   0.00% Impervious   Runoff Depth=5.99"  
 Flow Length=319'   Tc=1.7 min   CN=74/0   Runoff=2.56 cfs   7,171 cf

**Subcatchment 4si: DA 1 Undetained**      Runoff Area=212 sf   100.00% Impervious   Runoff Depth=8.94"  
 Flow Length=27'   Slope=0.0570 '/'   Tc=2.2 min   CN=0/98   Runoff=0.05 cfs   158 cf

**Subcatchment 4sp: DA 1 Undetained**      Runoff Area=1,964 sf   0.00% Impervious   Runoff Depth=5.99"  
 Flow Length=27'   Slope=0.0570 '/'   Tc=2.2 min   CN=74/0   Runoff=0.35 cfs   981 cf

**Subcatchment 5si: undetained 2**      Runoff Area=1,572 sf   100.00% Impervious   Runoff Depth=8.94"  
 Flow Length=28'   Slope=0.0240 '/'   Tc=4.6 min   CN=0/98   Runoff=0.33 cfs   1,171 cf

**Subcatchment 5sp: undetained 2**      Runoff Area=2,400 sf   0.00% Impervious   Runoff Depth=5.99"  
 Flow Length=28'   Slope=0.0240 '/'   Tc=4.6 min   CN=74/0   Runoff=0.40 cfs   1,199 cf

**Subcatchment 6si: Pro DA 3**      Runoff Area=39,143 sf   100.00% Impervious   Runoff Depth=8.94"  
 Flow Length=98'   Tc=2.5 min   CN=0/98   Runoff=8.63 cfs   29,160 cf

**Subcatchment 6sp: Pro DA 3**      Runoff Area=9,386 sf   0.00% Impervious   Runoff Depth=5.99"  
 Flow Length=98'   Tc=2.5 min   CN=74/0   Runoff=1.65 cfs   4,688 cf

**Pond 8p: Detention System**      Peak Elev=405.89'   Storage=4,905 cf   Inflow=10.28 cfs   33,848 cf  
 Discarded=0.00 cfs   0 cf   Primary=7.50 cfs   33,656 cf   Outflow=7.50 cfs   33,656 cf

**Link 4l: existing total discharge**      Inflow=11.03 cfs   35,919 cf  
 Primary=11.03 cfs   35,919 cf

**Link 9l: Overall discharge**      Inflow=8.50 cfs   37,164 cf  
 Primary=8.50 cfs   37,164 cf

**Total Runoff Area = 108,074 sf   Runoff Volume = 73,275 cf   Average Runoff Depth = 8.14"**  
**28.57% Pervious = 30,872 sf   71.43% Impervious = 77,202 sf**

### Summary for Subcatchment 1si: Ext DA 1

Runoff = 0.28 cfs @ 12.13 hrs, Volume= 1,024 cf, Depth= 8.94"  
 Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 NOAA 24-hr D 100-Year-2020 Rainfall=9.18"

Area (sf)	CN	Description
1,374	98	Paved parking, HSG C
1,374	98	100.00% Impervious Area

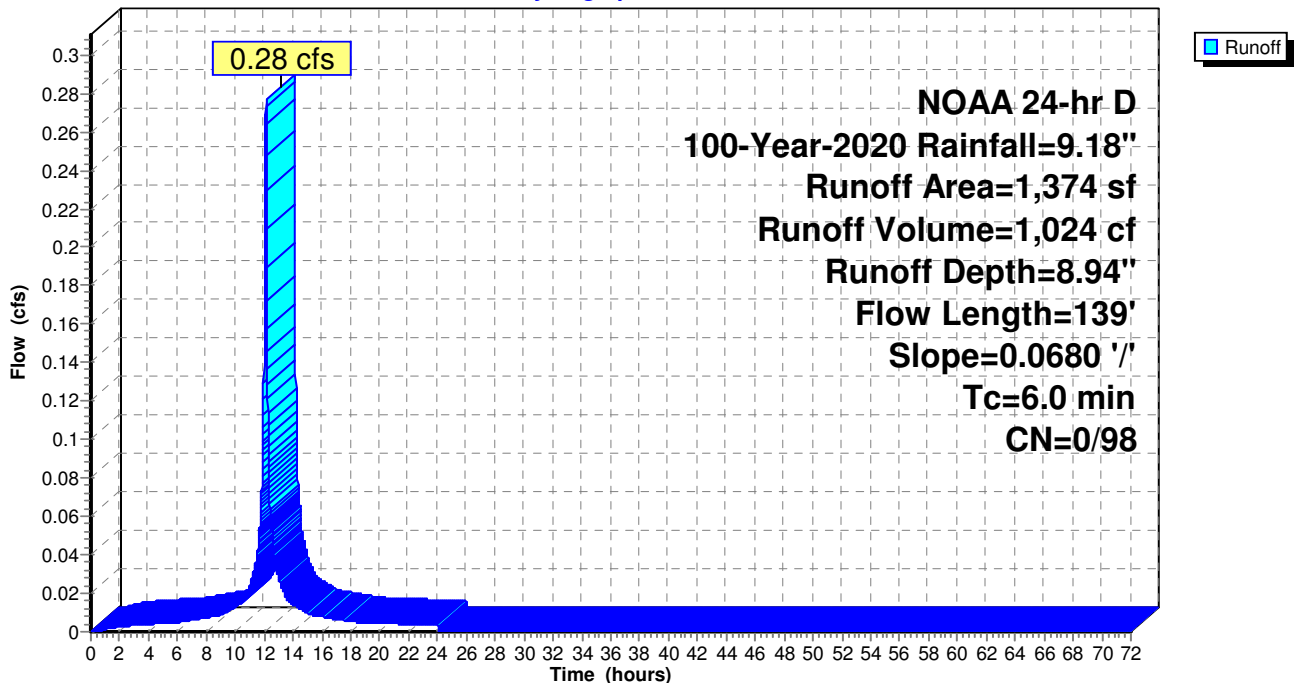
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	100	0.0680	0.29		<b>Sheet Flow, sheet flow</b>
					Grass: Short n= 0.150 P2= 3.47"
0.2	39	0.0680	4.20		<b>Shallow Concentrated Flow, scf</b>
					Unpaved Kv= 16.1 fps
6.0	139	Total			



### Subcatchment 1si: Ext DA 1

Hydrograph



**Hydrograph for Subcatchment 1si: Ext DA 1**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.22	0.00	0.08	0.00
4.00	0.48	0.00	0.30	0.00
6.00	0.78	0.00	0.58	0.00
8.00	1.19	0.00	0.98	0.01
10.00	1.82	0.00	1.60	0.01
12.00	4.40	0.00	4.16	<b>0.15</b>
14.00	7.36	0.00	7.12	<b>0.01</b>
16.00	7.99	0.00	7.75	0.01
18.00	8.40	0.00	8.16	0.01
20.00	8.70	0.00	8.46	0.00
22.00	8.96	0.00	8.72	0.00
24.00	<b>9.18</b>	0.00	<b>8.94</b>	0.00
26.00	9.18	0.00	8.94	0.00
28.00	9.18	0.00	8.94	0.00
30.00	9.18	0.00	8.94	0.00
32.00	9.18	0.00	8.94	0.00
34.00	9.18	0.00	8.94	0.00
36.00	9.18	0.00	8.94	0.00
38.00	9.18	0.00	8.94	0.00
40.00	9.18	0.00	8.94	0.00
42.00	9.18	0.00	8.94	0.00
44.00	9.18	0.00	8.94	0.00
46.00	9.18	0.00	8.94	0.00
48.00	9.18	0.00	8.94	0.00
50.00	9.18	0.00	8.94	0.00
52.00	9.18	0.00	8.94	0.00
54.00	9.18	0.00	8.94	0.00
56.00	9.18	0.00	8.94	0.00
58.00	9.18	0.00	8.94	0.00
60.00	9.18	0.00	8.94	0.00
62.00	9.18	0.00	8.94	0.00
64.00	9.18	0.00	8.94	0.00
66.00	9.18	0.00	8.94	0.00
68.00	9.18	0.00	8.94	0.00
70.00	9.18	0.00	8.94	0.00
72.00	9.18	0.00	8.94	0.00

### Summary for Subcatchment 1sp: Ext DA 1

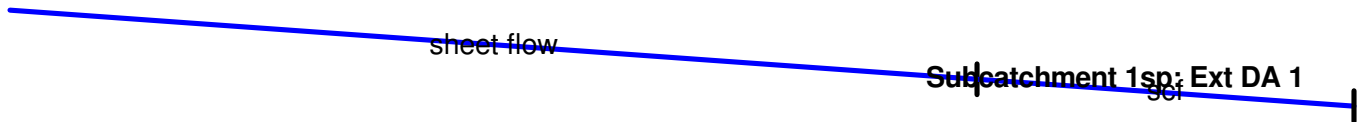
Runoff = 0.46 cfs @ 12.13 hrs, Volume= 1,544 cf, Depth= 7.60"  
 Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 NOAA 24-hr D 100-Year-2020 Rainfall=9.18"

Area (sf)	CN	Description
2,438	87	Dirt roads, HSG C
2,438	87	100.00% Pervious Area

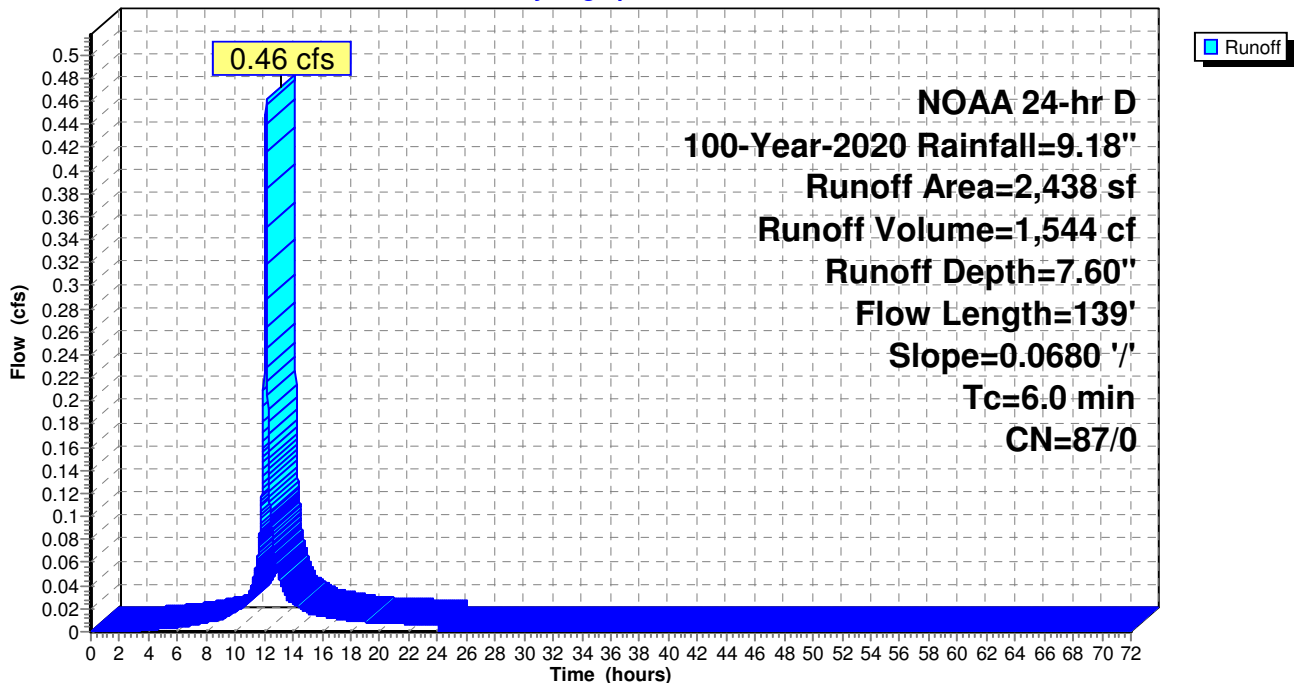
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	100	0.0680	0.29		<b>Sheet Flow, sheet flow</b> Grass: Short n= 0.150 P2= 3.47"
0.2	39	0.0680	4.20		<b>Shallow Concentrated Flow, scf</b> Unpaved Kv= 16.1 fps
6.0	139	Total			



### Subcatchment 1sp: Ext DA 1

Hydrograph



**Hydrograph for Subcatchment 1sp: Ext DA 1**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.22	0.00	0.00	0.00
4.00	0.48	0.02	0.00	0.00
6.00	0.78	0.12	0.00	0.00
8.00	1.19	0.33	0.00	0.01
10.00	1.82	0.77	0.00	0.02
12.00	4.40	3.00	0.00	<b>0.25</b>
14.00	7.36	5.83	0.00	<b>0.02</b>
16.00	7.99	6.44	0.00	0.01
18.00	8.40	6.84	0.00	0.01
20.00	8.70	7.13	0.00	0.01
22.00	8.96	7.39	0.00	0.01
24.00	<b>9.18</b>	<b>7.60</b>	0.00	0.01
26.00	9.18	7.60	0.00	0.00
28.00	9.18	7.60	0.00	0.00
30.00	9.18	7.60	0.00	0.00
32.00	9.18	7.60	0.00	0.00
34.00	9.18	7.60	0.00	0.00
36.00	9.18	7.60	0.00	0.00
38.00	9.18	7.60	0.00	0.00
40.00	9.18	7.60	0.00	0.00
42.00	9.18	7.60	0.00	0.00
44.00	9.18	7.60	0.00	0.00
46.00	9.18	7.60	0.00	0.00
48.00	9.18	7.60	0.00	0.00
50.00	9.18	7.60	0.00	0.00
52.00	9.18	7.60	0.00	0.00
54.00	9.18	7.60	0.00	0.00
56.00	9.18	7.60	0.00	0.00
58.00	9.18	7.60	0.00	0.00
60.00	9.18	7.60	0.00	0.00
62.00	9.18	7.60	0.00	0.00
64.00	9.18	7.60	0.00	0.00
66.00	9.18	7.60	0.00	0.00
68.00	9.18	7.60	0.00	0.00
70.00	9.18	7.60	0.00	0.00
72.00	9.18	7.60	0.00	0.00

### Summary for Subcatchment 2si: Ext DA 2

[49] Hint: Tc<2dt may require smaller dt

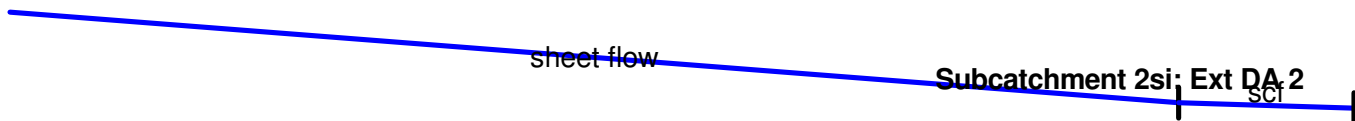
Runoff = 0.93 cfs @ 12.09 hrs, Volume= 3,118 cf, Depth= 8.94"  
 Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 NOAA 24-hr D 100-Year-2020 Rainfall=9.18"

Area (sf)	CN	Description
4,185	98	Paved parking, HSG C
4,185	98	100.00% Impervious Area

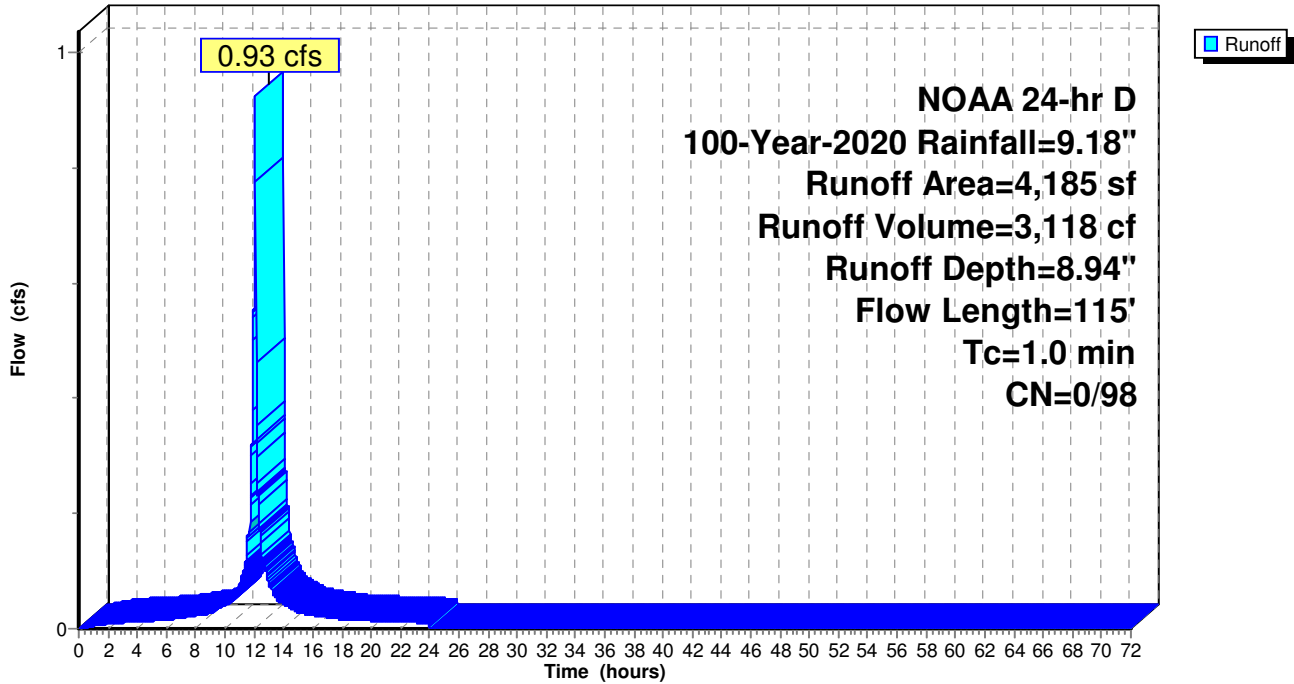
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0385	1.86		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.1	15	0.0150	2.49		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.0	115	Total			



### Subcatchment 2si: Ext DA 2

Hydrograph



**Hydrograph for Subcatchment 2si: Ext DA 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.22	0.00	0.08	0.01
4.00	0.48	0.00	0.30	0.01
6.00	0.78	0.00	0.58	0.01
8.00	1.19	0.00	0.98	0.02
10.00	1.82	0.00	1.60	0.04
12.00	4.40	0.00	4.16	<b>0.56</b>
14.00	7.36	0.00	7.12	<b>0.04</b>
16.00	7.99	0.00	7.75	0.02
18.00	8.40	0.00	8.16	0.02
20.00	8.70	0.00	8.46	0.01
22.00	8.96	0.00	8.72	0.01
24.00	<b>9.18</b>	0.00	<b>8.94</b>	0.01
26.00	9.18	0.00	8.94	0.00
28.00	9.18	0.00	8.94	0.00
30.00	9.18	0.00	8.94	0.00
32.00	9.18	0.00	8.94	0.00
34.00	9.18	0.00	8.94	0.00
36.00	9.18	0.00	8.94	0.00
38.00	9.18	0.00	8.94	0.00
40.00	9.18	0.00	8.94	0.00
42.00	9.18	0.00	8.94	0.00
44.00	9.18	0.00	8.94	0.00
46.00	9.18	0.00	8.94	0.00
48.00	9.18	0.00	8.94	0.00
50.00	9.18	0.00	8.94	0.00
52.00	9.18	0.00	8.94	0.00
54.00	9.18	0.00	8.94	0.00
56.00	9.18	0.00	8.94	0.00
58.00	9.18	0.00	8.94	0.00
60.00	9.18	0.00	8.94	0.00
62.00	9.18	0.00	8.94	0.00
64.00	9.18	0.00	8.94	0.00
66.00	9.18	0.00	8.94	0.00
68.00	9.18	0.00	8.94	0.00
70.00	9.18	0.00	8.94	0.00
72.00	9.18	0.00	8.94	0.00

### Summary for Subcatchment 2sp: Ext DA 2

[49] Hint: Tc<2dt may require smaller dt

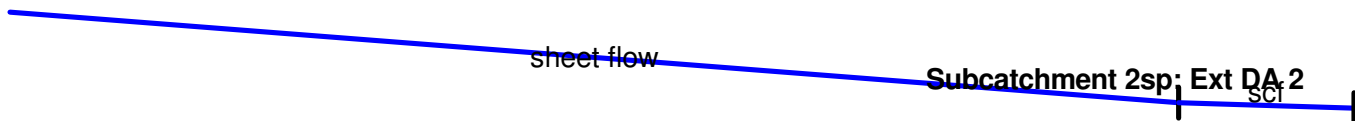
Runoff = 0.06 cfs @ 12.10 hrs, Volume= 180 cf, Depth= 6.62"  
 Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 NOAA 24-hr D 100-Year-2020 Rainfall=9.18"

Area (sf)	CN	Description
326	79	50-75% Grass cover, Fair, HSG C
326	79	100.00% Pervious Area

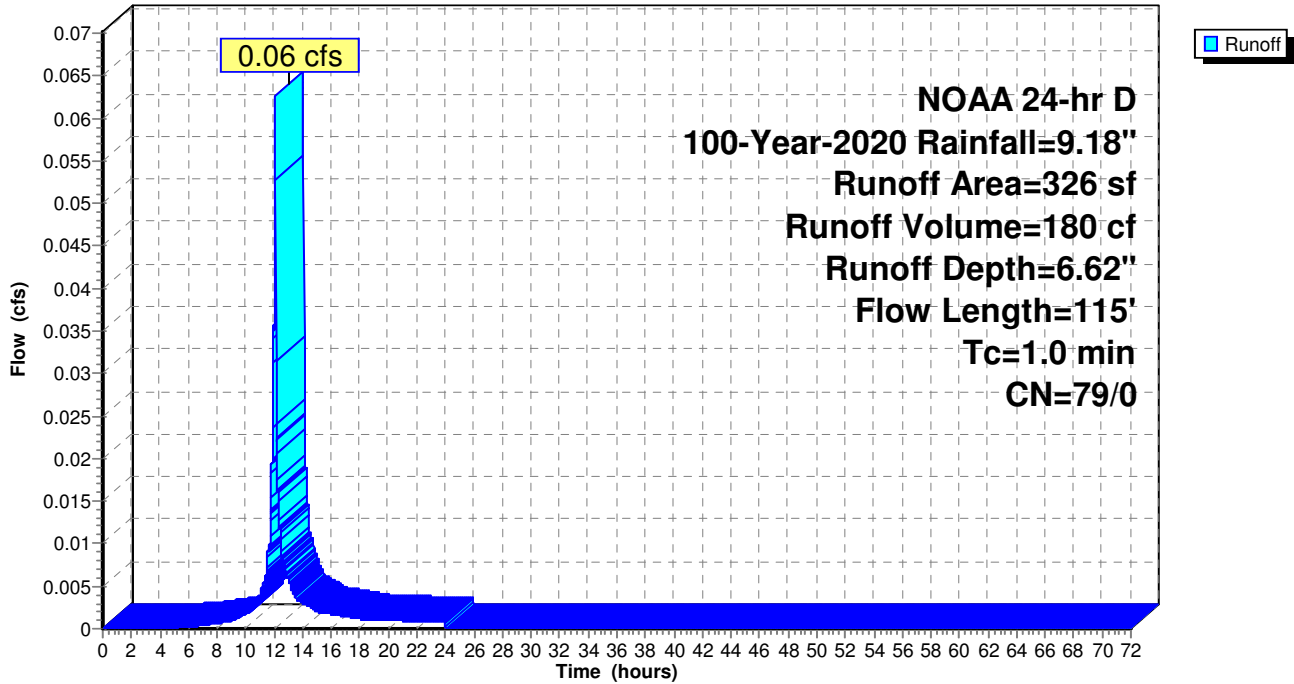
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0385	1.86		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.1	15	0.0150	2.49		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.0	115	Total			



### Subcatchment 2sp: Ext DA 2

Hydrograph



**Hydrograph for Subcatchment 2sp: Ext DA 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.22	0.00	0.00	0.00
4.00	0.48	0.00	0.00	0.00
6.00	0.78	0.02	0.00	0.00
8.00	1.19	0.13	0.00	0.00
10.00	1.82	0.42	0.00	0.00
12.00	4.40	2.29	0.00	<b>0.04</b>
14.00	7.36	4.92	0.00	<b>0.00</b>
16.00	7.99	5.50	0.00	0.00
18.00	8.40	5.88	0.00	0.00
20.00	8.70	6.16	0.00	0.00
22.00	8.96	6.41	0.00	0.00
24.00	<b>9.18</b>	<b>6.62</b>	0.00	0.00
26.00	9.18	6.62	0.00	0.00
28.00	9.18	6.62	0.00	0.00
30.00	9.18	6.62	0.00	0.00
32.00	9.18	6.62	0.00	0.00
34.00	9.18	6.62	0.00	0.00
36.00	9.18	6.62	0.00	0.00
38.00	9.18	6.62	0.00	0.00
40.00	9.18	6.62	0.00	0.00
42.00	9.18	6.62	0.00	0.00
44.00	9.18	6.62	0.00	0.00
46.00	9.18	6.62	0.00	0.00
48.00	9.18	6.62	0.00	0.00
50.00	9.18	6.62	0.00	0.00
52.00	9.18	6.62	0.00	0.00
54.00	9.18	6.62	0.00	0.00
56.00	9.18	6.62	0.00	0.00
58.00	9.18	6.62	0.00	0.00
60.00	9.18	6.62	0.00	0.00
62.00	9.18	6.62	0.00	0.00
64.00	9.18	6.62	0.00	0.00
66.00	9.18	6.62	0.00	0.00
68.00	9.18	6.62	0.00	0.00
70.00	9.18	6.62	0.00	0.00
72.00	9.18	6.62	0.00	0.00

### Summary for Subcatchment 3si: Ext DA 3

Runoff = 6.80 cfs @ 12.09 hrs, Volume= 22,882 cf, Depth= 8.94"  
 Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 NOAA 24-hr D 100-Year-2020 Rainfall=9.18"

Area (sf)	CN	Description
30,716	98	Paved parking, HSG C
30,716	98	100.00% Impervious Area

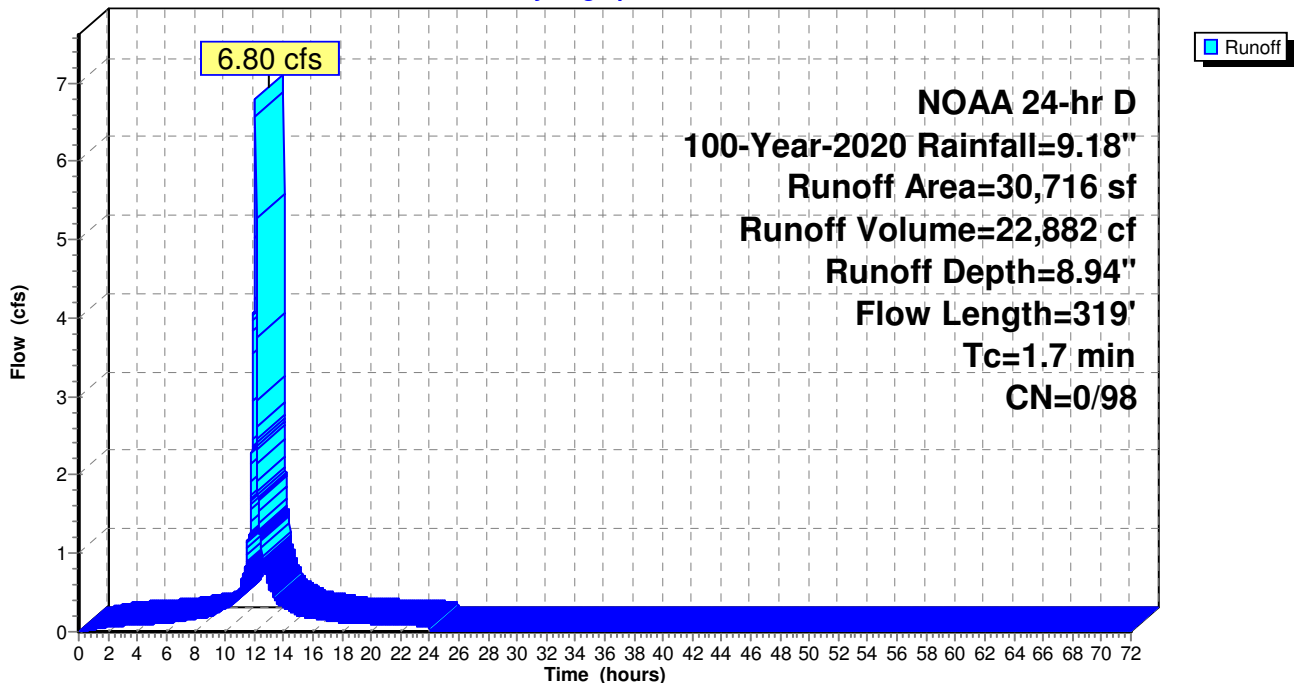
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0420	1.93		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.8	219	0.0570	4.85		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.7	319	Total			



### Subcatchment 3si: Ext DA 3

Hydrograph



**Hydrograph for Subcatchment 3si: Ext DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.22	0.00	0.08	0.06
4.00	0.48	0.00	0.30	0.09
6.00	0.78	0.00	0.58	0.11
8.00	1.19	0.00	0.98	0.17
10.00	1.82	0.00	1.60	0.30
12.00	4.40	0.00	4.16	<b>4.08</b>
14.00	7.36	0.00	7.12	<b>0.32</b>
16.00	7.99	0.00	7.75	0.18
18.00	8.40	0.00	8.16	0.12
20.00	8.70	0.00	8.46	0.10
22.00	8.96	0.00	8.72	0.09
24.00	<b>9.18</b>	0.00	<b>8.94</b>	0.07
26.00	9.18	0.00	8.94	0.00
28.00	9.18	0.00	8.94	0.00
30.00	9.18	0.00	8.94	0.00
32.00	9.18	0.00	8.94	0.00
34.00	9.18	0.00	8.94	0.00
36.00	9.18	0.00	8.94	0.00
38.00	9.18	0.00	8.94	0.00
40.00	9.18	0.00	8.94	0.00
42.00	9.18	0.00	8.94	0.00
44.00	9.18	0.00	8.94	0.00
46.00	9.18	0.00	8.94	0.00
48.00	9.18	0.00	8.94	0.00
50.00	9.18	0.00	8.94	0.00
52.00	9.18	0.00	8.94	0.00
54.00	9.18	0.00	8.94	0.00
56.00	9.18	0.00	8.94	0.00
58.00	9.18	0.00	8.94	0.00
60.00	9.18	0.00	8.94	0.00
62.00	9.18	0.00	8.94	0.00
64.00	9.18	0.00	8.94	0.00
66.00	9.18	0.00	8.94	0.00
68.00	9.18	0.00	8.94	0.00
70.00	9.18	0.00	8.94	0.00
72.00	9.18	0.00	8.94	0.00

### Summary for Subcatchment 3sp: Ext DA 3

Runoff = 2.56 cfs @ 12.10 hrs, Volume= 7,171 cf, Depth= 5.99"  
 Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 NOAA 24-hr D 100-Year-2020 Rainfall=9.18"

Area (sf)	CN	Description
14,358	74	>75% Grass cover, Good, HSG C
14,358	74	100.00% Pervious Area

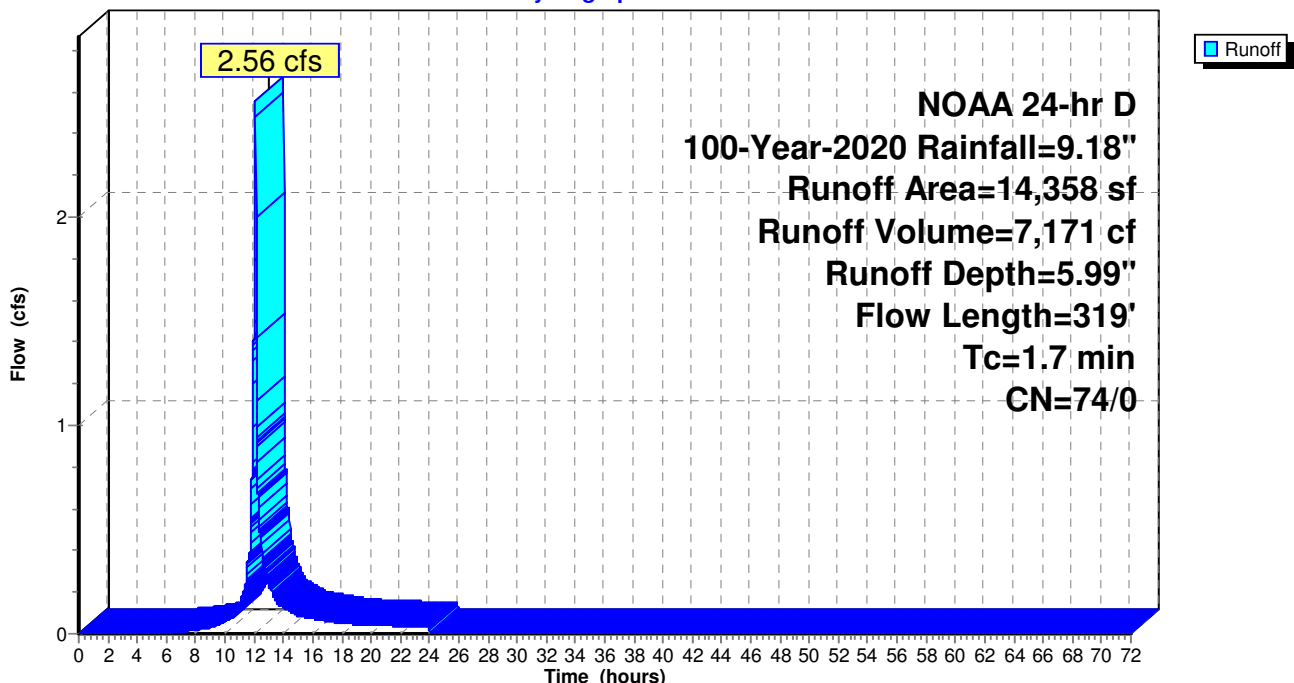
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0420	1.93		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.8	219	0.0570	4.85		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.7	319	Total			



### Subcatchment 3sp: Ext DA 3

Hydrograph



**Hydrograph for Subcatchment 3sp: Ext DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.22	0.00	0.00	0.00
4.00	0.48	0.00	0.00	0.00
6.00	0.78	0.00	0.00	0.00
8.00	1.19	0.06	0.00	0.02
10.00	1.82	0.27	0.00	0.06
12.00	4.40	1.89	0.00	<b>1.44</b>
14.00	7.36	4.36	0.00	<b>0.13</b>
16.00	7.99	4.92	0.00	0.07
18.00	8.40	5.28	0.00	0.05
20.00	8.70	5.55	0.00	0.04
22.00	8.96	5.79	0.00	0.04
24.00	<b>9.18</b>	<b>5.99</b>	0.00	0.03
26.00	9.18	5.99	0.00	0.00
28.00	9.18	5.99	0.00	0.00
30.00	9.18	5.99	0.00	0.00
32.00	9.18	5.99	0.00	0.00
34.00	9.18	5.99	0.00	0.00
36.00	9.18	5.99	0.00	0.00
38.00	9.18	5.99	0.00	0.00
40.00	9.18	5.99	0.00	0.00
42.00	9.18	5.99	0.00	0.00
44.00	9.18	5.99	0.00	0.00
46.00	9.18	5.99	0.00	0.00
48.00	9.18	5.99	0.00	0.00
50.00	9.18	5.99	0.00	0.00
52.00	9.18	5.99	0.00	0.00
54.00	9.18	5.99	0.00	0.00
56.00	9.18	5.99	0.00	0.00
58.00	9.18	5.99	0.00	0.00
60.00	9.18	5.99	0.00	0.00
62.00	9.18	5.99	0.00	0.00
64.00	9.18	5.99	0.00	0.00
66.00	9.18	5.99	0.00	0.00
68.00	9.18	5.99	0.00	0.00
70.00	9.18	5.99	0.00	0.00
72.00	9.18	5.99	0.00	0.00

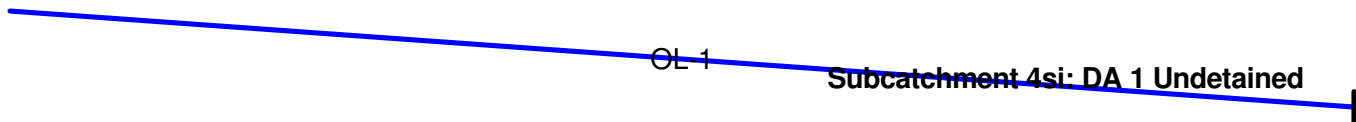
### Summary for Subcatchment 4si: DA 1 Undetained

Runoff = 0.05 cfs @ 12.10 hrs, Volume= 158 cf, Depth= 8.94"  
 Routed to Link 9l : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 NOAA 24-hr D 100-Year-2020 Rainfall=9.18"

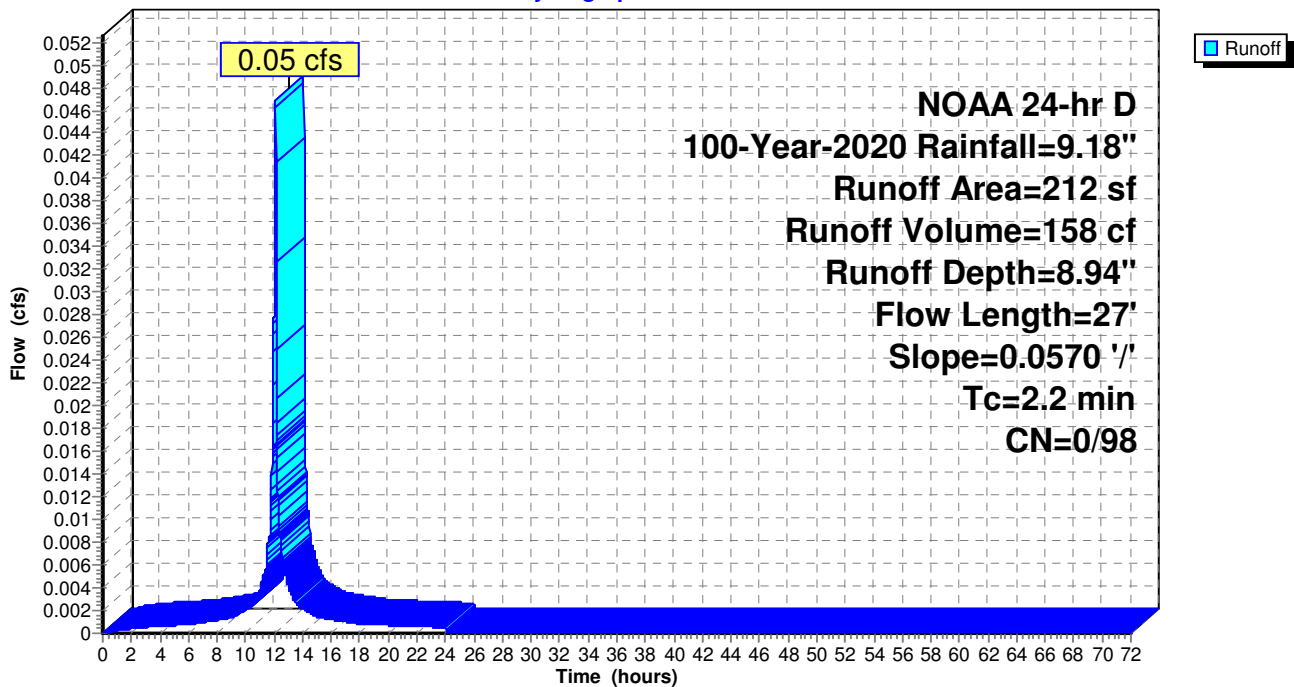
Area (sf)	CN	Description
212	98	Paved parking, HSG C
212	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	27	0.0570	0.21		<b>Sheet Flow, OL-1</b> n= 0.150 P2= 3.47"



### Subcatchment 4si: DA 1 Undetained

Hydrograph



**Hydrograph for Subcatchment 4si: DA 1 Undetained**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.22	0.00	0.08	0.00
4.00	0.48	0.00	0.30	0.00
6.00	0.78	0.00	0.58	0.00
8.00	1.19	0.00	0.98	0.00
10.00	1.82	0.00	1.60	0.00
12.00	4.40	0.00	4.16	<b>0.03</b>
14.00	7.36	0.00	7.12	<b>0.00</b>
16.00	7.99	0.00	7.75	0.00
18.00	8.40	0.00	8.16	0.00
20.00	8.70	0.00	8.46	0.00
22.00	8.96	0.00	8.72	0.00
24.00	<b>9.18</b>	0.00	<b>8.94</b>	0.00
26.00	9.18	0.00	8.94	0.00
28.00	9.18	0.00	8.94	0.00
30.00	9.18	0.00	8.94	0.00
32.00	9.18	0.00	8.94	0.00
34.00	9.18	0.00	8.94	0.00
36.00	9.18	0.00	8.94	0.00
38.00	9.18	0.00	8.94	0.00
40.00	9.18	0.00	8.94	0.00
42.00	9.18	0.00	8.94	0.00
44.00	9.18	0.00	8.94	0.00
46.00	9.18	0.00	8.94	0.00
48.00	9.18	0.00	8.94	0.00
50.00	9.18	0.00	8.94	0.00
52.00	9.18	0.00	8.94	0.00
54.00	9.18	0.00	8.94	0.00
56.00	9.18	0.00	8.94	0.00
58.00	9.18	0.00	8.94	0.00
60.00	9.18	0.00	8.94	0.00
62.00	9.18	0.00	8.94	0.00
64.00	9.18	0.00	8.94	0.00
66.00	9.18	0.00	8.94	0.00
68.00	9.18	0.00	8.94	0.00
70.00	9.18	0.00	8.94	0.00
72.00	9.18	0.00	8.94	0.00

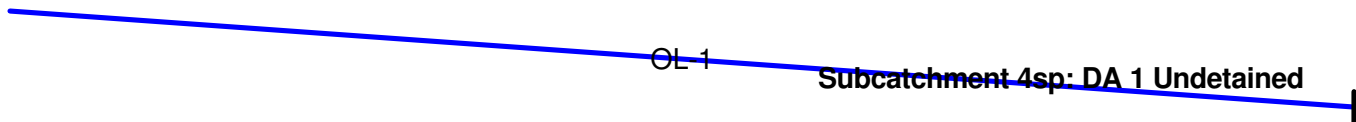
### Summary for Subcatchment 4sp: DA 1 Undetained

Runoff = 0.35 cfs @ 12.10 hrs, Volume= 981 cf, Depth= 5.99"  
 Routed to Link 9l : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 NOAA 24-hr D 100-Year-2020 Rainfall=9.18"

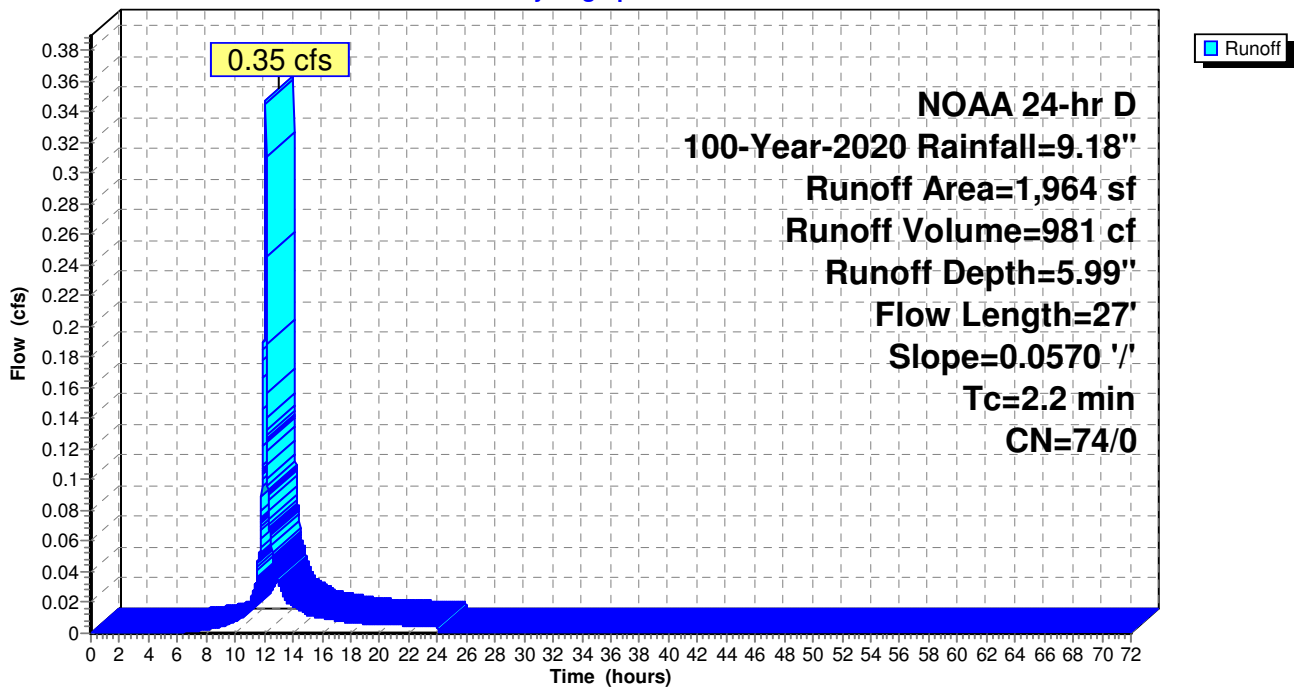
Area (sf)	CN	Description
1,964	74	>75% Grass cover, Good, HSG C
1,964	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	27	0.0570	0.21		<b>Sheet Flow, OL-1</b> n= 0.150 P2= 3.47"



### Subcatchment 4sp: DA 1 Undetained

Hydrograph



**Hydrograph for Subcatchment 4sp: DA 1 Undetained**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.22	0.00	0.00	0.00
4.00	0.48	0.00	0.00	0.00
6.00	0.78	0.00	0.00	0.00
8.00	1.19	0.06	0.00	0.00
10.00	1.82	0.27	0.00	0.01
12.00	4.40	1.89	0.00	<b>0.20</b>
14.00	7.36	4.36	0.00	<b>0.02</b>
16.00	7.99	4.92	0.00	0.01
18.00	8.40	5.28	0.00	0.01
20.00	8.70	5.55	0.00	0.01
22.00	8.96	5.79	0.00	0.01
24.00	<b>9.18</b>	<b>5.99</b>	0.00	0.00
26.00	9.18	5.99	0.00	0.00
28.00	9.18	5.99	0.00	0.00
30.00	9.18	5.99	0.00	0.00
32.00	9.18	5.99	0.00	0.00
34.00	9.18	5.99	0.00	0.00
36.00	9.18	5.99	0.00	0.00
38.00	9.18	5.99	0.00	0.00
40.00	9.18	5.99	0.00	0.00
42.00	9.18	5.99	0.00	0.00
44.00	9.18	5.99	0.00	0.00
46.00	9.18	5.99	0.00	0.00
48.00	9.18	5.99	0.00	0.00
50.00	9.18	5.99	0.00	0.00
52.00	9.18	5.99	0.00	0.00
54.00	9.18	5.99	0.00	0.00
56.00	9.18	5.99	0.00	0.00
58.00	9.18	5.99	0.00	0.00
60.00	9.18	5.99	0.00	0.00
62.00	9.18	5.99	0.00	0.00
64.00	9.18	5.99	0.00	0.00
66.00	9.18	5.99	0.00	0.00
68.00	9.18	5.99	0.00	0.00
70.00	9.18	5.99	0.00	0.00
72.00	9.18	5.99	0.00	0.00

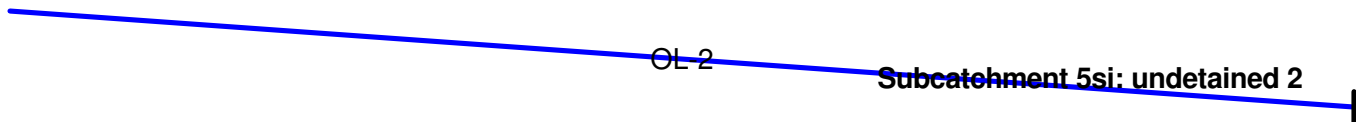
### Summary for Subcatchment 5si: undetained 2

Runoff = 0.33 cfs @ 12.12 hrs, Volume= 1,171 cf, Depth= 8.94"  
Routed to Link 9I : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 100-Year-2020 Rainfall=9.18"

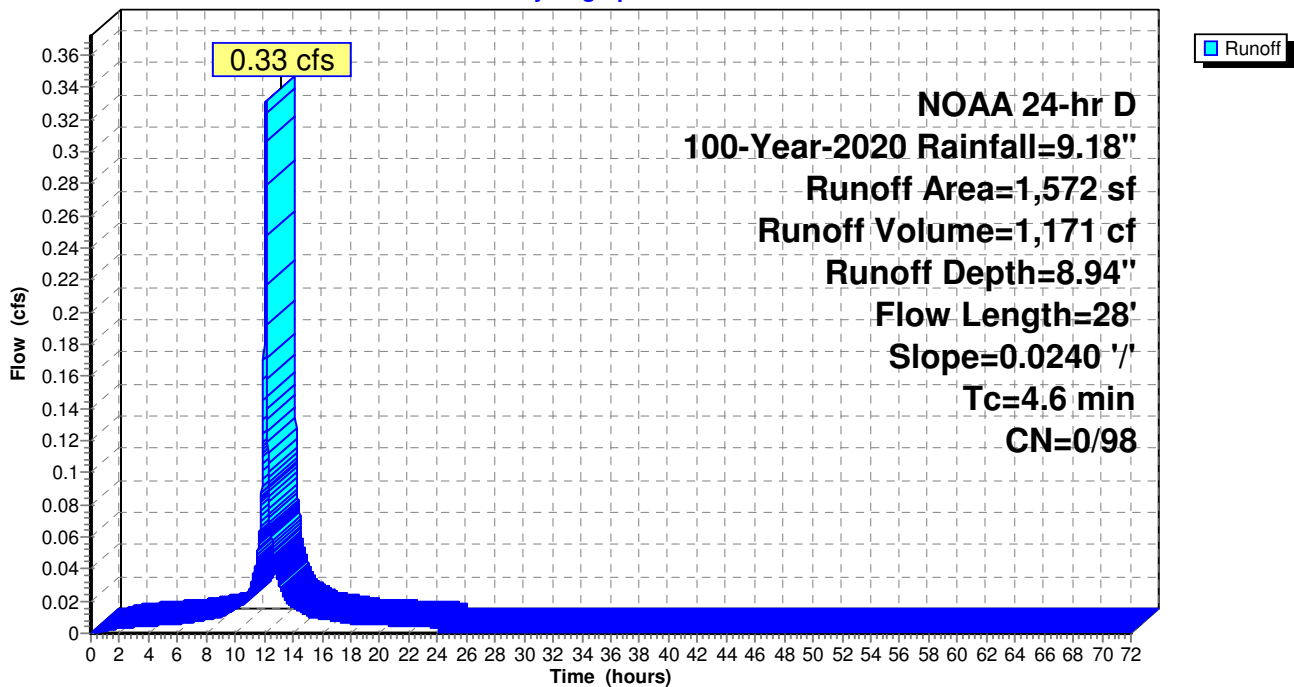
Area (sf)	CN	Description
1,572	98	Paved parking, HSG C
1,572	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	28	0.0240	0.10		<b>Sheet Flow, OL-2</b> Grass: Dense n= 0.240 P2= 3.47"



### Subcatchment 5si: undetained 2

Hydrograph



**Hydrograph for Subcatchment 5si: undetained 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.22	0.00	0.08	0.00
4.00	0.48	0.00	0.30	0.00
6.00	0.78	0.00	0.58	0.01
8.00	1.19	0.00	0.98	0.01
10.00	1.82	0.00	1.60	0.02
12.00	4.40	0.00	4.16	<b>0.19</b>
14.00	7.36	0.00	7.12	<b>0.02</b>
16.00	7.99	0.00	7.75	0.01
18.00	8.40	0.00	8.16	0.01
20.00	8.70	0.00	8.46	0.01
22.00	8.96	0.00	8.72	0.00
24.00	<b>9.18</b>	0.00	<b>8.94</b>	0.00
26.00	9.18	0.00	8.94	0.00
28.00	9.18	0.00	8.94	0.00
30.00	9.18	0.00	8.94	0.00
32.00	9.18	0.00	8.94	0.00
34.00	9.18	0.00	8.94	0.00
36.00	9.18	0.00	8.94	0.00
38.00	9.18	0.00	8.94	0.00
40.00	9.18	0.00	8.94	0.00
42.00	9.18	0.00	8.94	0.00
44.00	9.18	0.00	8.94	0.00
46.00	9.18	0.00	8.94	0.00
48.00	9.18	0.00	8.94	0.00
50.00	9.18	0.00	8.94	0.00
52.00	9.18	0.00	8.94	0.00
54.00	9.18	0.00	8.94	0.00
56.00	9.18	0.00	8.94	0.00
58.00	9.18	0.00	8.94	0.00
60.00	9.18	0.00	8.94	0.00
62.00	9.18	0.00	8.94	0.00
64.00	9.18	0.00	8.94	0.00
66.00	9.18	0.00	8.94	0.00
68.00	9.18	0.00	8.94	0.00
70.00	9.18	0.00	8.94	0.00
72.00	9.18	0.00	8.94	0.00

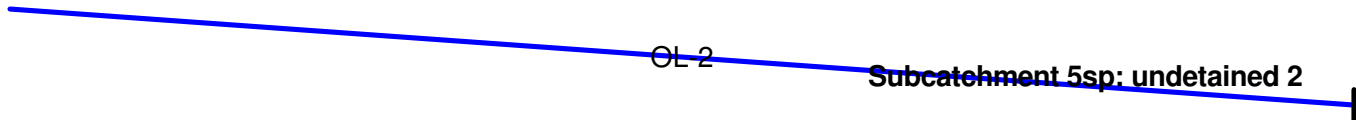
**Summary for Subcatchment 5sp: undetained 2**

Runoff = 0.40 cfs @ 12.12 hrs, Volume= 1,199 cf, Depth= 5.99"  
 Routed to Link 9I : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 NOAA 24-hr D 100-Year-2020 Rainfall=9.18"

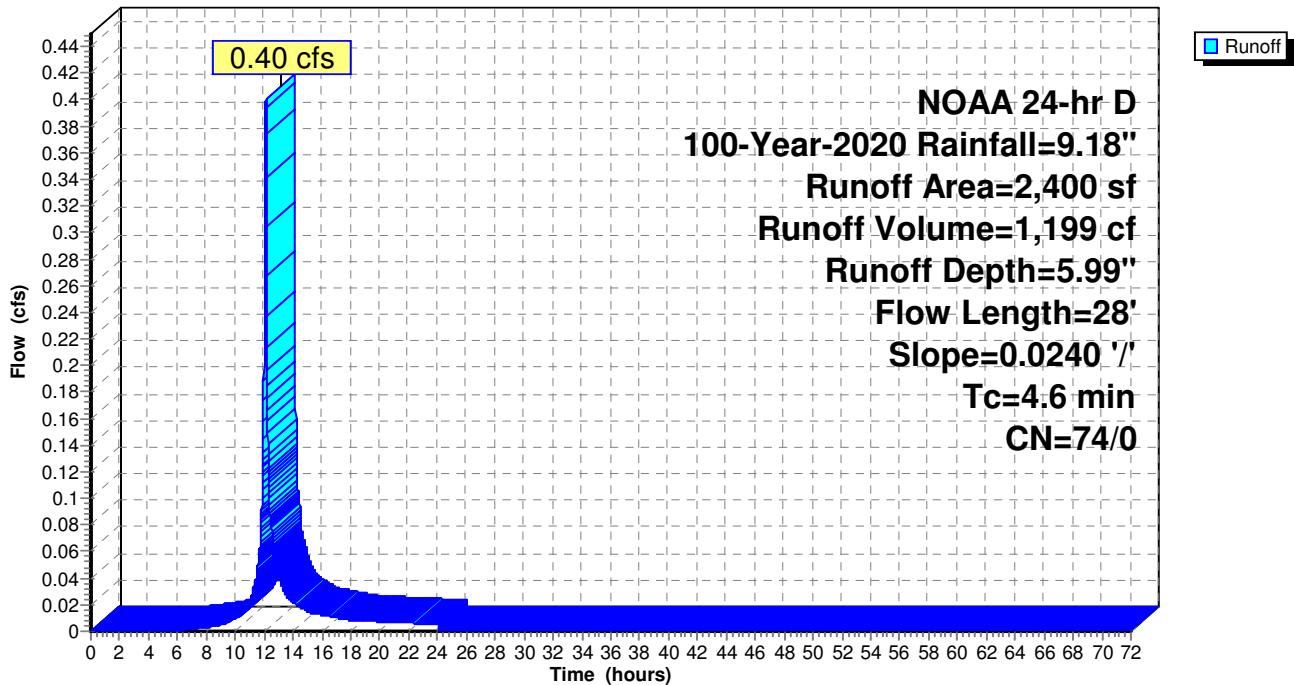
Area (sf)	CN	Description
2,400	74	>75% Grass cover, Good, HSG C
2,400	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	28	0.0240	0.10		<b>Sheet Flow, OL-2</b> Grass: Dense n= 0.240 P2= 3.47"



**Subcatchment 5sp: undetained 2**

Hydrograph



**Hydrograph for Subcatchment 5sp: undetained 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.22	0.00	0.00	0.00
4.00	0.48	0.00	0.00	0.00
6.00	0.78	0.00	0.00	0.00
8.00	1.19	0.06	0.00	0.00
10.00	1.82	0.27	0.00	0.01
12.00	4.40	1.89	0.00	<b>0.22</b>
14.00	7.36	4.36	0.00	<b>0.02</b>
16.00	7.99	4.92	0.00	0.01
18.00	8.40	5.28	0.00	0.01
20.00	8.70	5.55	0.00	0.01
22.00	8.96	5.79	0.00	0.01
24.00	<b>9.18</b>	<b>5.99</b>	0.00	0.01
26.00	9.18	5.99	0.00	0.00
28.00	9.18	5.99	0.00	0.00
30.00	9.18	5.99	0.00	0.00
32.00	9.18	5.99	0.00	0.00
34.00	9.18	5.99	0.00	0.00
36.00	9.18	5.99	0.00	0.00
38.00	9.18	5.99	0.00	0.00
40.00	9.18	5.99	0.00	0.00
42.00	9.18	5.99	0.00	0.00
44.00	9.18	5.99	0.00	0.00
46.00	9.18	5.99	0.00	0.00
48.00	9.18	5.99	0.00	0.00
50.00	9.18	5.99	0.00	0.00
52.00	9.18	5.99	0.00	0.00
54.00	9.18	5.99	0.00	0.00
56.00	9.18	5.99	0.00	0.00
58.00	9.18	5.99	0.00	0.00
60.00	9.18	5.99	0.00	0.00
62.00	9.18	5.99	0.00	0.00
64.00	9.18	5.99	0.00	0.00
66.00	9.18	5.99	0.00	0.00
68.00	9.18	5.99	0.00	0.00
70.00	9.18	5.99	0.00	0.00
72.00	9.18	5.99	0.00	0.00

### Summary for Subcatchment 6si: Pro DA 3

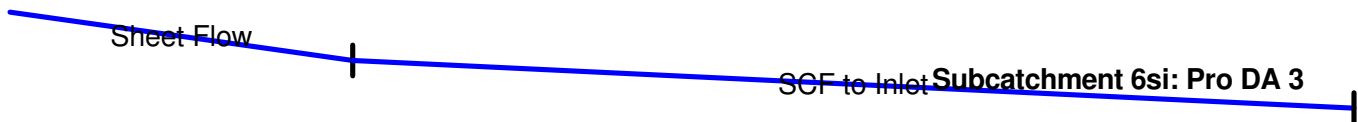
Runoff = 8.63 cfs @ 12.10 hrs, Volume= 29,160 cf, Depth= 8.94"  
 Routed to Pond 8p : Detention System

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 NOAA 24-hr D 100-Year-2020 Rainfall=9.18"

Area (sf)	CN	Description
39,143	98	Paved parking, HSG C
39,143	98	100.00% Impervious Area

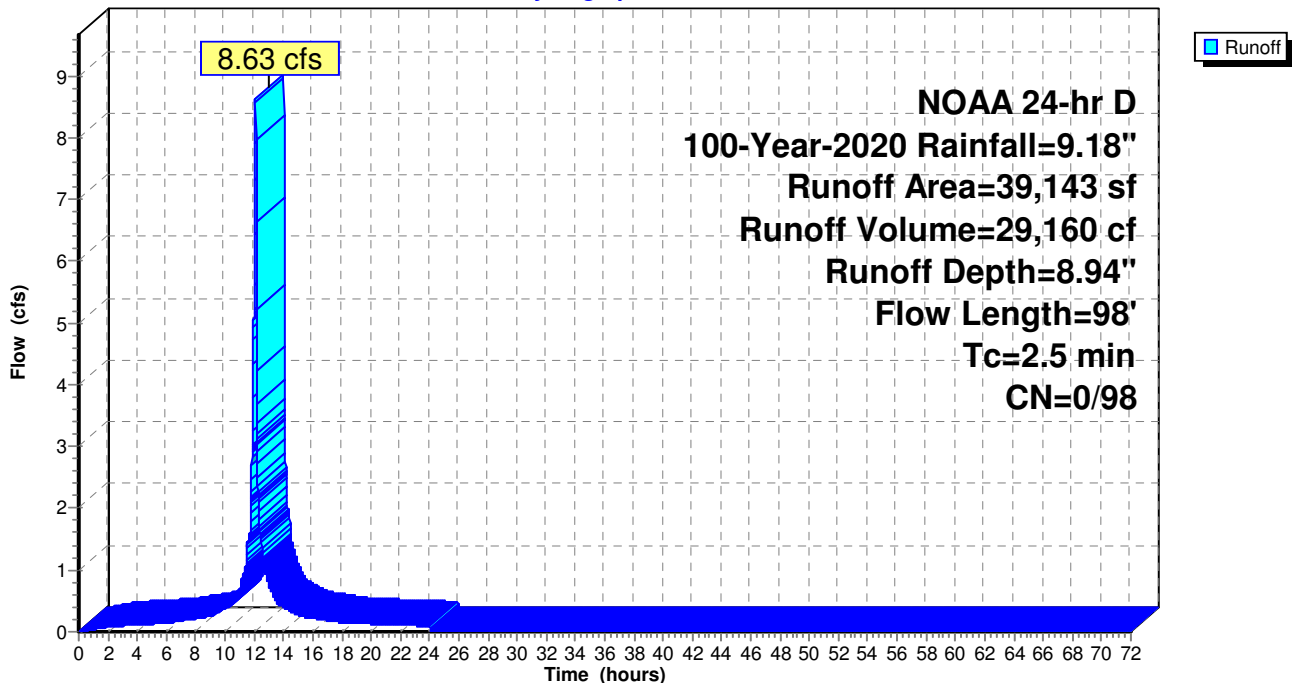
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	25	0.0560	0.20		<b>Sheet Flow, Sheet Flow</b>
0.4	73	0.0190	2.80		Grass: Short n= 0.150 P2= 3.47" <b>Shallow Concentrated Flow, SCF to Inlet</b>
2.5	98	Total			



### Subcatchment 6si: Pro DA 3

Hydrograph



**Hydrograph for Subcatchment 6si: Pro DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.22	0.00	0.08	0.08
4.00	0.48	0.00	0.30	0.11
6.00	0.78	0.00	0.58	0.14
8.00	1.19	0.00	0.98	0.22
10.00	1.82	0.00	1.60	0.38
12.00	4.40	0.00	4.16	<b>5.17</b>
14.00	7.36	0.00	7.12	<b>0.40</b>
16.00	7.99	0.00	7.75	0.22
18.00	8.40	0.00	8.16	0.15
20.00	8.70	0.00	8.46	0.13
22.00	8.96	0.00	8.72	0.11
24.00	<b>9.18</b>	0.00	<b>8.94</b>	0.09
26.00	9.18	0.00	8.94	0.00
28.00	9.18	0.00	8.94	0.00
30.00	9.18	0.00	8.94	0.00
32.00	9.18	0.00	8.94	0.00
34.00	9.18	0.00	8.94	0.00
36.00	9.18	0.00	8.94	0.00
38.00	9.18	0.00	8.94	0.00
40.00	9.18	0.00	8.94	0.00
42.00	9.18	0.00	8.94	0.00
44.00	9.18	0.00	8.94	0.00
46.00	9.18	0.00	8.94	0.00
48.00	9.18	0.00	8.94	0.00
50.00	9.18	0.00	8.94	0.00
52.00	9.18	0.00	8.94	0.00
54.00	9.18	0.00	8.94	0.00
56.00	9.18	0.00	8.94	0.00
58.00	9.18	0.00	8.94	0.00
60.00	9.18	0.00	8.94	0.00
62.00	9.18	0.00	8.94	0.00
64.00	9.18	0.00	8.94	0.00
66.00	9.18	0.00	8.94	0.00
68.00	9.18	0.00	8.94	0.00
70.00	9.18	0.00	8.94	0.00
72.00	9.18	0.00	8.94	0.00

### Summary for Subcatchment 6sp: Pro DA 3

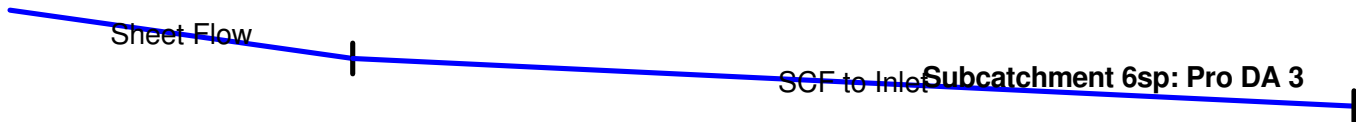
Runoff = 1.65 cfs @ 12.10 hrs, Volume= 4,688 cf, Depth= 5.99"  
Routed to Pond 8p : Detention System

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 100-Year-2020 Rainfall=9.18"

Area (sf)	CN	Description
9,386	74	>75% Grass cover, Good, HSG C
9,386	74	100.00% Pervious Area

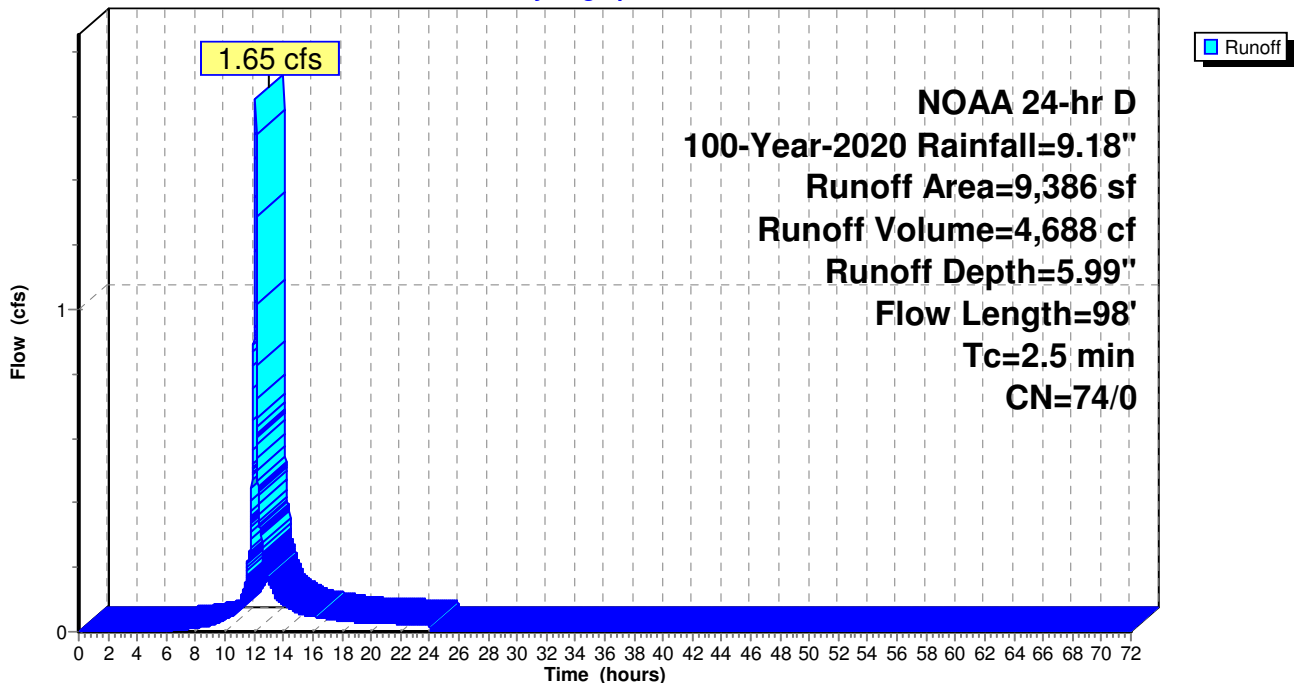
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	25	0.0560	0.20		<b>Sheet Flow, Sheet Flow</b> Grass: Short n= 0.150 P2= 3.47"
0.4	73	0.0190	2.80		<b>Shallow Concentrated Flow, SCF to Inlet</b> Paved Kv= 20.3 fps
2.5	98	Total			



### Subcatchment 6sp: Pro DA 3

Hydrograph



**Hydrograph for Subcatchment 6sp: Pro DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.22	0.00	0.00	0.00
4.00	0.48	0.00	0.00	0.00
6.00	0.78	0.00	0.00	0.00
8.00	1.19	0.06	0.00	0.01
10.00	1.82	0.27	0.00	0.04
12.00	4.40	1.89	0.00	<b>0.93</b>
14.00	7.36	4.36	0.00	<b>0.08</b>
16.00	7.99	4.92	0.00	0.05
18.00	8.40	5.28	0.00	0.03
20.00	8.70	5.55	0.00	0.03
22.00	8.96	5.79	0.00	0.02
24.00	<b>9.18</b>	<b>5.99</b>	0.00	0.02
26.00	9.18	5.99	0.00	0.00
28.00	9.18	5.99	0.00	0.00
30.00	9.18	5.99	0.00	0.00
32.00	9.18	5.99	0.00	0.00
34.00	9.18	5.99	0.00	0.00
36.00	9.18	5.99	0.00	0.00
38.00	9.18	5.99	0.00	0.00
40.00	9.18	5.99	0.00	0.00
42.00	9.18	5.99	0.00	0.00
44.00	9.18	5.99	0.00	0.00
46.00	9.18	5.99	0.00	0.00
48.00	9.18	5.99	0.00	0.00
50.00	9.18	5.99	0.00	0.00
52.00	9.18	5.99	0.00	0.00
54.00	9.18	5.99	0.00	0.00
56.00	9.18	5.99	0.00	0.00
58.00	9.18	5.99	0.00	0.00
60.00	9.18	5.99	0.00	0.00
62.00	9.18	5.99	0.00	0.00
64.00	9.18	5.99	0.00	0.00
66.00	9.18	5.99	0.00	0.00
68.00	9.18	5.99	0.00	0.00
70.00	9.18	5.99	0.00	0.00
72.00	9.18	5.99	0.00	0.00

### Summary for Pond 8p: Detention System

Inflow Area = 48,529 sf, 80.66% Impervious, Inflow Depth = 8.37" for 100-Year-2020 event  
 Inflow = 10.28 cfs @ 12.10 hrs, Volume= 33,848 cf  
 Outflow = 7.50 cfs @ 12.13 hrs, Volume= 33,656 cf, Atten= 27%, Lag= 2.0 min  
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
 Primary = 7.50 cfs @ 12.13 hrs, Volume= 33,656 cf  
 Routed to Link 9I : Overall discharge

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Peak Elev= 405.89' @ 12.13 hrs Surf.Area= 480 sf Storage= 4,905 cf

Plug-Flow detention time= 23.3 min calculated for 33,656 cf (99% of inflow)  
 Center-of-Mass det. time= 19.3 min ( 767.2 - 747.9 )

Volume	Invert	Avail.Storage	Storage Description
#1	403.00'	5,027 cf	<b>48.0" Round Pipe Storage</b> -Impervious L= 400.0'
#2	403.00'	578 cf	<b>48.0" Round Pipe Storage</b> Inside #3 L= 46.0'
#3	402.00'	825 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc) 2,640 cf Overall - 578 cf Embedded = 2,062 cf x 40.0% Voids
		6,429 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
402.00	480	0	0	480
407.50	480	2,640	2,640	907

Device	Routing	Invert	Outlet Devices
#1	Primary	403.00'	<b>7.5" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#2	Primary	404.60'	<b>36.0" W x 3.0" H Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Primary	405.50'	<b>24.0" W x 3.0" H Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#4	Discarded	402.00'	<b>1.290 in/hr Exfiltration over Surface area from 402.00' - 407.50'</b> Conductivity to Groundwater Elevation = 395.00' Excluded Surface area = 480 sf

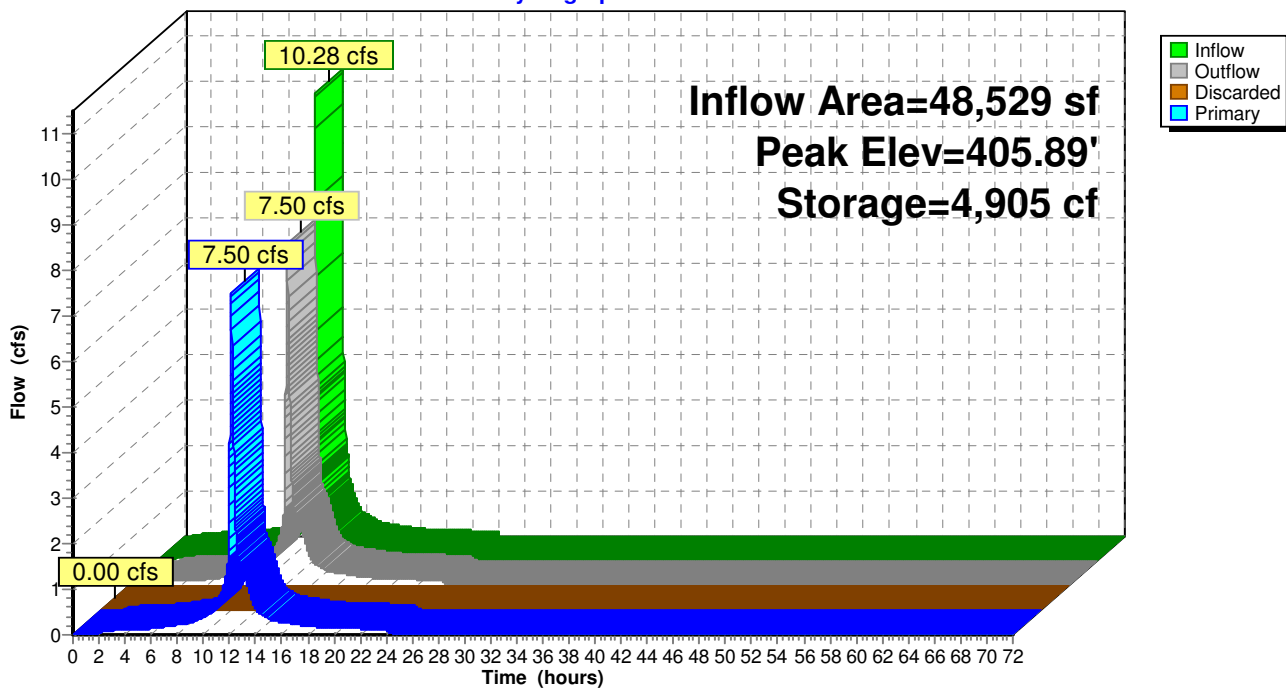
**Discarded OutFlow** Max=0.00 cfs @ 0.00 hrs HW=402.00' (Free Discharge)  
 ↳4=Exfiltration ( Controls 0.00 cfs)

**Primary OutFlow** Max=7.48 cfs @ 12.13 hrs HW=405.89' (Free Discharge)  
 ↳1=Orifice/Grate (Orifice Controls 2.37 cfs @ 7.73 fps)  
 ↳2=Orifice/Grate (Orifice Controls 3.89 cfs @ 5.19 fps)  
 ↳3=Orifice/Grate (Orifice Controls 1.22 cfs @ 2.44 fps)

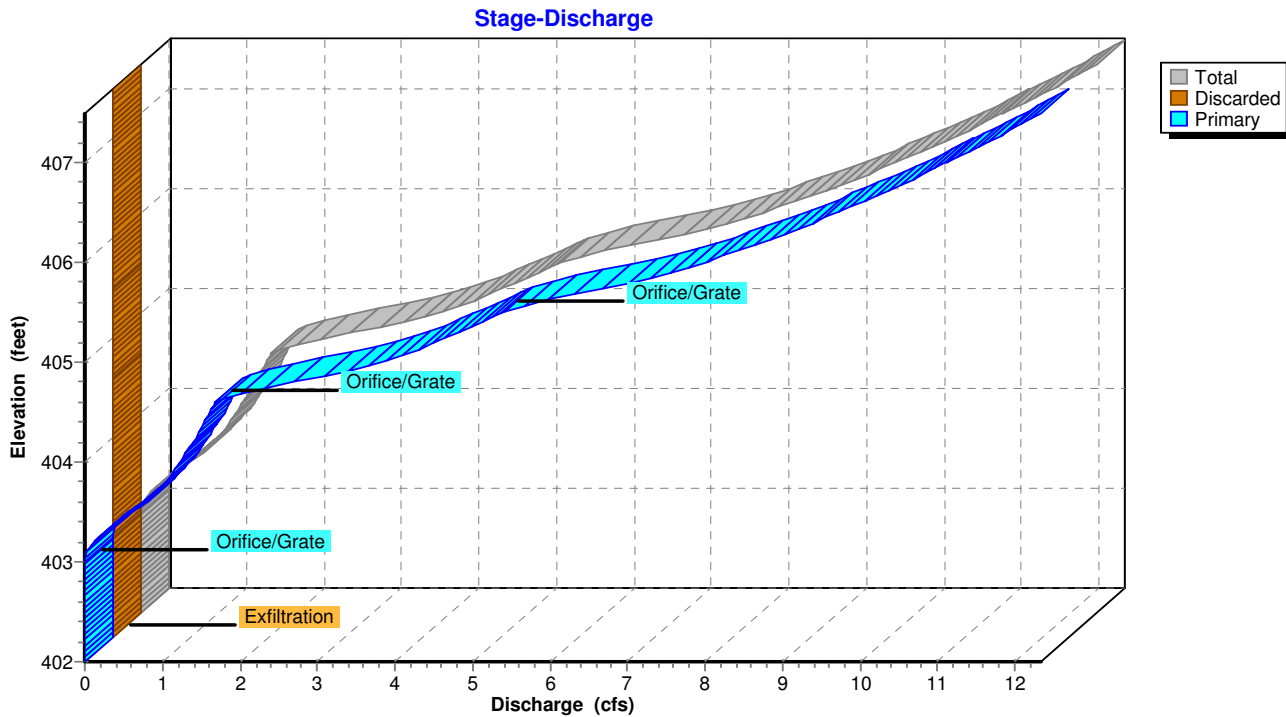


### Pond 8p: Detention System

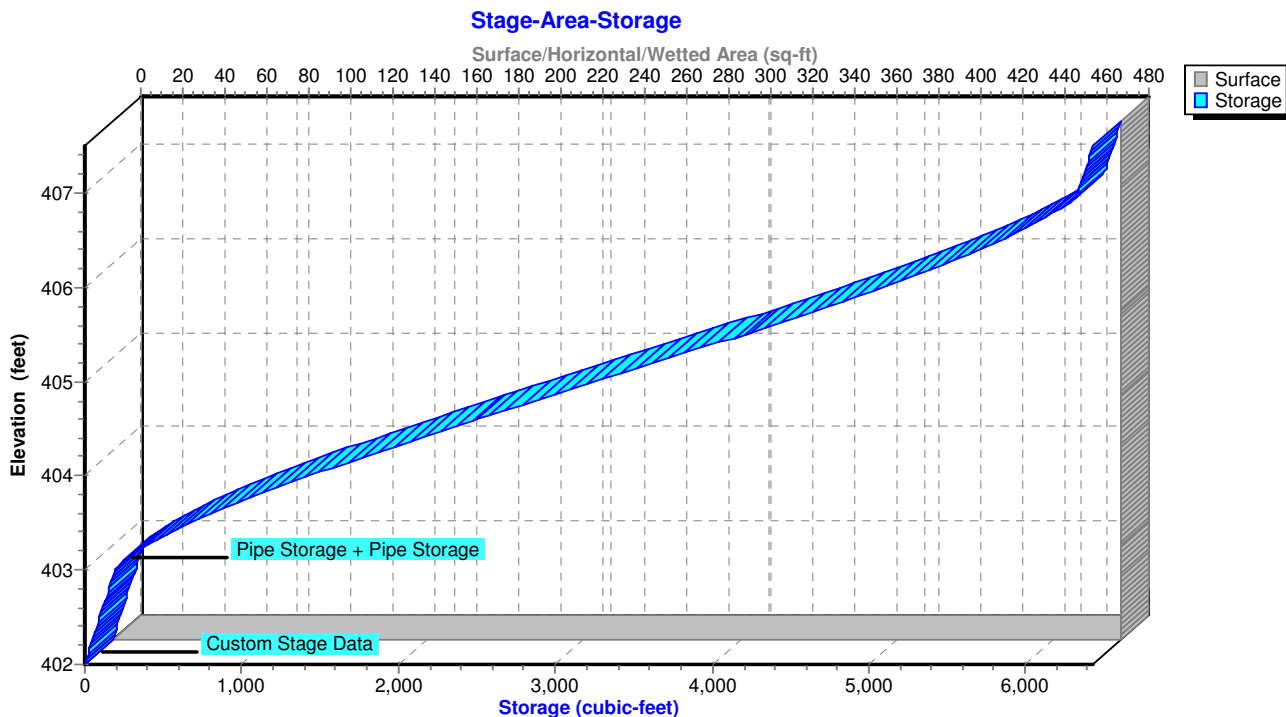
Hydrograph



### Pond 8p: Detention System



### Pond 8p: Detention System



Hydrograph for Pond 8p: Detention System

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	402.00	0.00	0.00	0.00
2.00	0.08	247	403.10	0.03	0.00	0.03
4.00	0.11	316	403.18	0.11	0.00	0.11
6.00	0.14	337	403.21	0.14	0.00	0.14
8.00	0.23	396	403.27	0.22	0.00	0.22
10.00	0.42	516	403.37	0.40	0.00	0.40
12.00	<b>6.10</b>	<b>3,301</b>	<b>405.02</b>	<b>3.88</b>	0.00	<b>3.88</b>
14.00	<b>0.49</b>	<b>635</b>	<b>403.47</b>	<b>0.57</b>	0.00	<b>0.57</b>
16.00	0.27	438	403.30	0.28	0.00	0.28
18.00	0.18	376	403.25	0.19	0.00	0.19
20.00	0.16	352	403.22	0.16	0.00	0.16
22.00	0.13	336	403.21	0.14	0.00	0.14
24.00	0.11	318	403.19	0.11	0.00	0.11
26.00	0.00	197	403.01	0.00	0.00	0.00
28.00	0.00	192	403.00	0.00	0.00	0.00
30.00	0.00	192	403.00	0.00	0.00	0.00
32.00	0.00	192	403.00	0.00	0.00	0.00
34.00	0.00	192	403.00	0.00	0.00	0.00
36.00	0.00	192	403.00	0.00	0.00	0.00
38.00	0.00	192	403.00	0.00	0.00	0.00
40.00	0.00	192	403.00	0.00	0.00	0.00
42.00	0.00	192	403.00	0.00	0.00	0.00
44.00	0.00	192	403.00	0.00	0.00	0.00
46.00	0.00	192	403.00	0.00	0.00	0.00
48.00	0.00	192	403.00	0.00	0.00	0.00
50.00	0.00	192	403.00	0.00	0.00	0.00
52.00	0.00	192	403.00	0.00	0.00	0.00
54.00	0.00	192	403.00	0.00	0.00	0.00
56.00	0.00	192	403.00	0.00	0.00	0.00
58.00	0.00	192	403.00	0.00	0.00	0.00
60.00	0.00	192	403.00	0.00	0.00	0.00
62.00	0.00	192	403.00	0.00	0.00	0.00
64.00	0.00	192	403.00	0.00	0.00	0.00
66.00	0.00	192	403.00	0.00	0.00	0.00
68.00	0.00	192	403.00	0.00	0.00	0.00
70.00	0.00	192	403.00	0.00	0.00	0.00
72.00	0.00	192	403.00	0.00	0.00	0.00

Stage-Discharge for Pond 8p: Detention System

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
402.00	0.00	0.00	0.00	407.10	11.36	0.00	11.36
402.10	0.00	0.00	0.00	407.20	11.61	0.00	11.61
402.20	0.00	0.00	0.00	407.30	11.86	0.00	11.86
402.30	0.00	0.00	0.00	407.40	12.10	0.00	12.10
402.40	0.00	0.00	0.00	407.50	12.33	0.00	12.33
402.50	0.00	0.00	0.00				
402.60	0.00	0.00	0.00				
402.70	0.00	0.00	0.00				
402.80	0.00	0.00	0.00				
402.90	0.00	0.00	0.00				
403.00	0.00	0.00	0.00				
403.10	0.03	0.00	0.03				
403.20	0.13	0.00	0.13				
403.30	0.27	0.00	0.27				
403.40	0.45	0.00	0.45				
403.50	0.63	0.00	0.63				
403.60	0.80	0.00	0.80				
403.70	0.92	0.00	0.92				
403.80	1.03	0.00	1.03				
403.90	1.13	0.00	1.13				
404.00	1.22	0.00	1.22				
404.10	1.31	0.00	1.31				
404.20	1.39	0.00	1.39				
404.30	1.47	0.00	1.47				
404.40	1.54	0.00	1.54				
404.50	1.61	0.00	1.61				
404.60	1.68	0.00	1.68				
404.70	2.04	0.00	2.04				
404.80	2.66	0.00	2.66				
404.90	3.34	0.00	3.34				
405.00	3.80	0.00	3.80				
405.10	4.18	0.00	4.18				
405.20	4.51	0.00	4.51				
405.30	4.82	0.00	4.82				
405.40	5.10	0.00	5.10				
405.50	5.36	0.00	5.36				
405.60	5.81	0.00	5.81				
405.70	6.42	0.00	6.42				
405.80	7.06	0.00	7.06				
405.90	7.54	0.00	7.54				
406.00	7.97	0.00	7.97				
406.10	8.35	0.00	8.35				
406.20	8.72	0.00	8.72				
406.30	9.06	0.00	9.06				
406.40	9.39	0.00	9.39				
406.50	9.70	0.00	9.70				
406.60	10.00	0.00	10.00				
406.70	10.29	0.00	10.29				
406.80	10.57	0.00	10.57				
406.90	10.84	0.00	10.84				
407.00	11.10	0.00	11.10				

Stage-Area-Storage for Pond 8p: Detention System

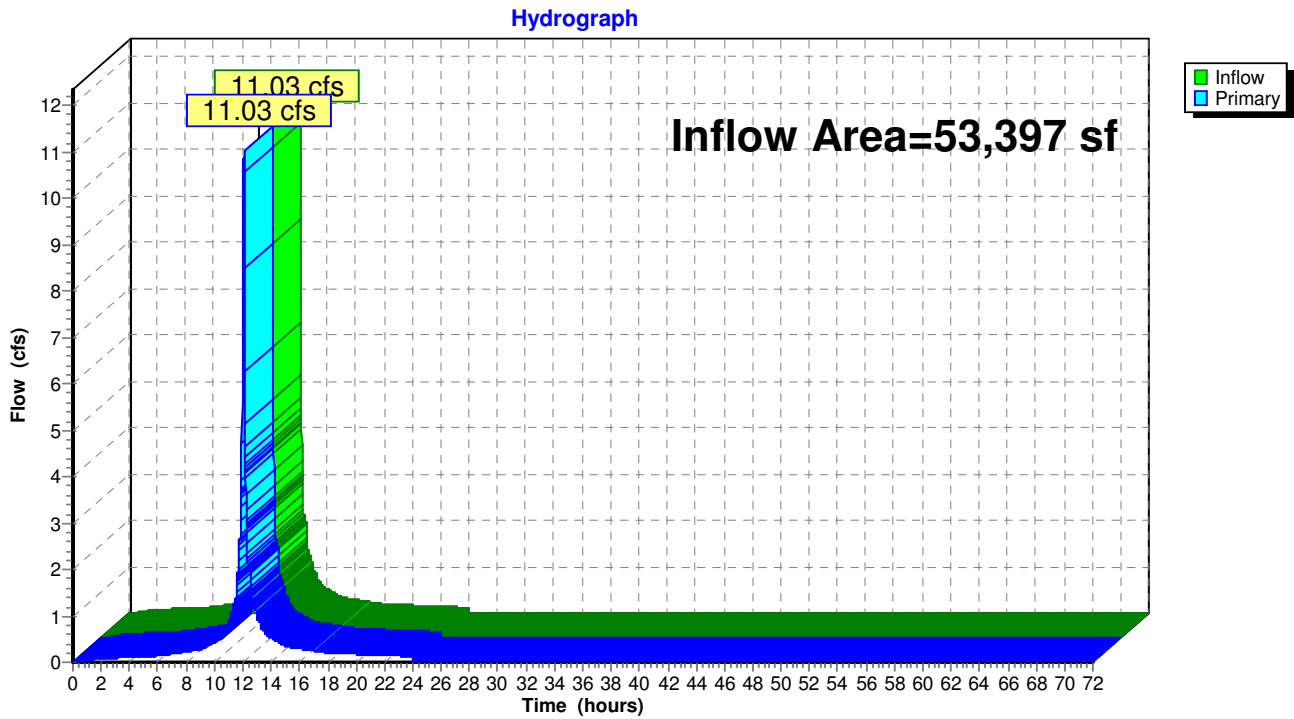
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
402.00	480	0	407.10	480	6,353
402.10	480	19	407.20	480	6,372
402.20	480	38	407.30	480	6,391
402.30	480	58	407.40	480	6,410
402.40	480	77	407.50	480	6,429
402.50	480	96			
402.60	480	115			
402.70	480	134			
402.80	480	154			
402.90	480	173			
403.00	480	192			
403.10	480	247			
403.20	480	331			
403.30	480	433			
403.40	480	548			
403.50	480	676			
403.60	480	813			
403.70	480	958			
403.80	480	1,111			
403.90	480	1,270			
404.00	480	1,435			
404.10	480	1,604			
404.20	480	1,778			
404.30	480	1,956			
404.40	480	2,137			
404.50	480	2,320			
404.60	480	2,506			
404.70	480	2,694			
404.80	480	2,883			
404.90	480	3,073			
405.00	480	3,263			
405.10	480	3,453			
405.20	480	3,643			
405.30	480	3,831			
405.40	480	4,019			
405.50	480	4,205			
405.60	480	4,389			
405.70	480	4,569			
405.80	480	4,747			
405.90	480	4,921			
406.00	480	5,091			
406.10	480	5,256			
406.20	480	5,415			
406.30	480	5,567			
406.40	480	5,713			
406.50	480	5,850			
406.60	480	5,977			
406.70	480	6,093			
406.80	480	6,195			
406.90	480	6,278			
407.00	480	6,333			

### Summary for Link 4I: existing total discharge

Inflow Area = 53,397 sf, 67.93% Impervious, Inflow Depth = 8.07" for 100-Year-2020 event  
Inflow = 11.03 cfs @ 12.10 hrs, Volume= 35,919 cf  
Primary = 11.03 cfs @ 12.10 hrs, Volume= 35,919 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Link 4I: existing total discharge



Hydrograph for Link 4I: existing total discharge

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.04	0.00	0.04	52.00	0.00	0.00	0.00
2.00	0.07	0.00	0.07	53.00	0.00	0.00	0.00
3.00	0.09	0.00	0.09	54.00	0.00	0.00	0.00
4.00	0.11	0.00	0.11	55.00	0.00	0.00	0.00
5.00	0.12	0.00	0.12	56.00	0.00	0.00	0.00
6.00	0.13	0.00	0.13	57.00	0.00	0.00	0.00
7.00	0.18	0.00	0.18	58.00	0.00	0.00	0.00
8.00	0.23	0.00	0.23	59.00	0.00	0.00	0.00
9.00	0.28	0.00	0.28	60.00	0.00	0.00	0.00
10.00	0.44	0.00	0.44	61.00	0.00	0.00	0.00
11.00	0.81	0.00	0.81	62.00	0.00	0.00	0.00
12.00	<b>6.51</b>	0.00	<b>6.51</b>	63.00	0.00	0.00	0.00
13.00	<b>1.03</b>	0.00	<b>1.03</b>	64.00	0.00	0.00	0.00
14.00	0.53	0.00	0.53	65.00	0.00	0.00	0.00
15.00	0.36	0.00	0.36	66.00	0.00	0.00	0.00
16.00	0.30	0.00	0.30	67.00	0.00	0.00	0.00
17.00	0.25	0.00	0.25	68.00	0.00	0.00	0.00
18.00	0.20	0.00	0.20	69.00	0.00	0.00	0.00
19.00	0.18	0.00	0.18	70.00	0.00	0.00	0.00
20.00	0.17	0.00	0.17	71.00	0.00	0.00	0.00
21.00	0.16	0.00	0.16	72.00	0.00	0.00	0.00
22.00	0.15	0.00	0.15				
23.00	0.13	0.00	0.13				
24.00	0.12	0.00	0.12				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

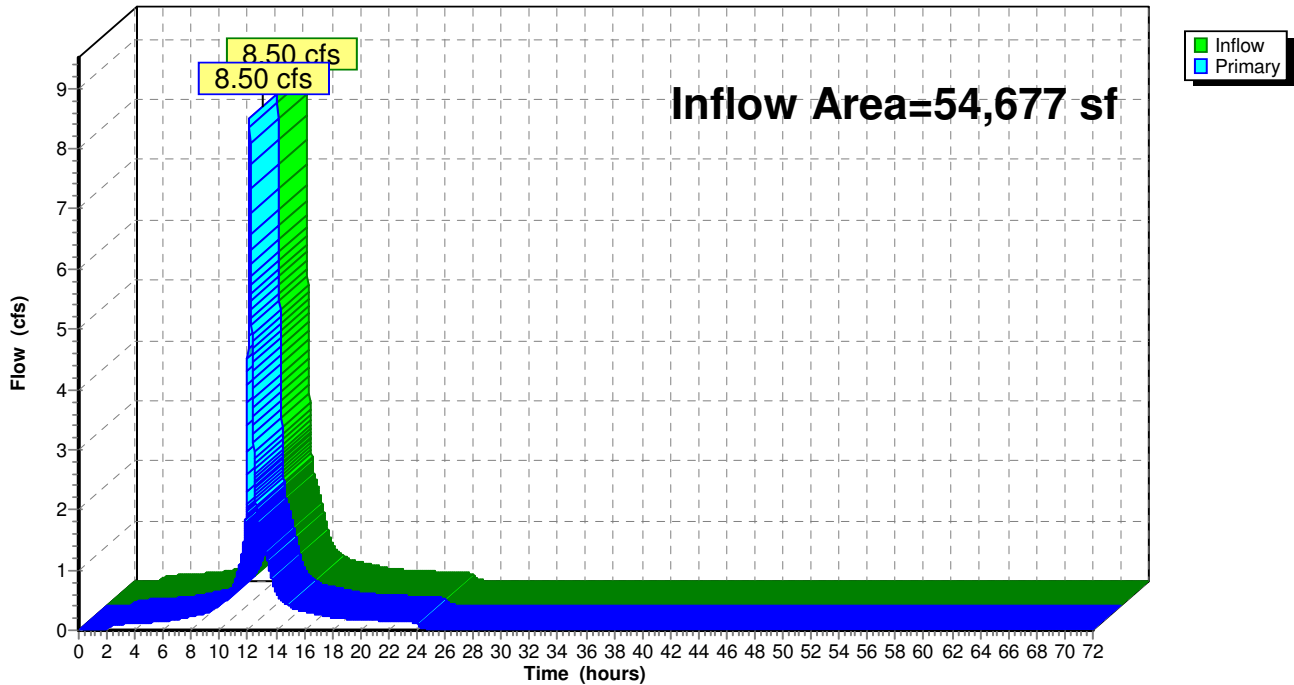
### Summary for Link 9I: Overall discharge

Inflow Area = 54,677 sf, 74.85% Impervious, Inflow Depth = 8.16" for 100-Year-2020 event  
 Inflow = 8.50 cfs @ 12.13 hrs, Volume= 37,164 cf  
 Primary = 8.50 cfs @ 12.13 hrs, Volume= 37,164 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Link 9I: Overall discharge

Hydrograph



Hydrograph for Link 9I: Overall discharge

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.04	0.00	0.04	53.00	0.00	0.00	0.00
3.00	0.10	0.00	0.10	54.00	0.00	0.00	0.00
4.00	0.12	0.00	0.12	55.00	0.00	0.00	0.00
5.00	0.13	0.00	0.13	56.00	0.00	0.00	0.00
6.00	0.14	0.00	0.14	57.00	0.00	0.00	0.00
7.00	0.18	0.00	0.18	58.00	0.00	0.00	0.00
8.00	0.23	0.00	0.23	59.00	0.00	0.00	0.00
9.00	0.28	0.00	0.28	60.00	0.00	0.00	0.00
10.00	0.43	0.00	0.43	61.00	0.00	0.00	0.00
11.00	0.75	0.00	0.75	62.00	0.00	0.00	0.00
12.00	4.51	0.00	4.51	63.00	0.00	0.00	0.00
13.00	1.56	0.00	1.56	64.00	0.00	0.00	0.00
14.00	0.63	0.00	0.63	65.00	0.00	0.00	0.00
15.00	0.39	0.00	0.39	66.00	0.00	0.00	0.00
16.00	0.31	0.00	0.31	67.00	0.00	0.00	0.00
17.00	0.26	0.00	0.26	68.00	0.00	0.00	0.00
18.00	0.21	0.00	0.21	69.00	0.00	0.00	0.00
19.00	0.19	0.00	0.19	70.00	0.00	0.00	0.00
20.00	0.18	0.00	0.18	71.00	0.00	0.00	0.00
21.00	0.16	0.00	0.16	72.00	0.00	0.00	0.00
22.00	0.15	0.00	0.15				
23.00	0.14	0.00	0.14				
24.00	0.13	0.00	0.13				
25.00	0.01	0.00	0.01				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points  
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1si: Ext DA 1** Runoff Area=1,374 sf 100.00% Impervious Runoff Depth=3.85"  
Flow Length=139' Slope=0.0680 '/' Tc=6.0 min CN=0/98 Runoff=0.12 cfs 441 cf

**Subcatchment 1sp: Ext DA 1** Runoff Area=2,438 sf 0.00% Impervious Runoff Depth=2.72"  
Flow Length=139' Slope=0.0680 '/' Tc=6.0 min CN=87/0 Runoff=0.18 cfs 552 cf

**Subcatchment 2si: Ext DA 2** Runoff Area=4,185 sf 100.00% Impervious Runoff Depth=3.85"  
Flow Length=115' Tc=1.0 min CN=0/98 Runoff=0.41 cfs 1,344 cf

**Subcatchment 2sp: Ext DA 2** Runoff Area=326 sf 0.00% Impervious Runoff Depth=2.04"  
Flow Length=115' Tc=1.0 min CN=79/0 Runoff=0.02 cfs 55 cf

**Subcatchment 3si: Ext DA 3** Runoff Area=30,716 sf 100.00% Impervious Runoff Depth=3.85"  
Flow Length=319' Tc=1.7 min CN=0/98 Runoff=3.01 cfs 9,867 cf

**Subcatchment 3sp: Ext DA 3** Runoff Area=14,358 sf 0.00% Impervious Runoff Depth=1.66"  
Flow Length=319' Tc=1.7 min CN=74/0 Runoff=0.74 cfs 1,989 cf

**Subcatchment 4si: DA 1 Undetained** Runoff Area=212 sf 100.00% Impervious Runoff Depth=3.85"  
Flow Length=27' Slope=0.0570 '/' Tc=2.2 min CN=0/98 Runoff=0.02 cfs 68 cf

**Subcatchment 4sp: DA 1 Undetained** Runoff Area=1,964 sf 0.00% Impervious Runoff Depth=1.66"  
Flow Length=27' Slope=0.0570 '/' Tc=2.2 min CN=74/0 Runoff=0.10 cfs 272 cf

**Subcatchment 5si: undetained 2** Runoff Area=1,572 sf 100.00% Impervious Runoff Depth=3.85"  
Flow Length=28' Slope=0.0240 '/' Tc=4.6 min CN=0/98 Runoff=0.15 cfs 505 cf

**Subcatchment 5sp: undetained 2** Runoff Area=2,400 sf 0.00% Impervious Runoff Depth=1.66"  
Flow Length=28' Slope=0.0240 '/' Tc=4.6 min CN=74/0 Runoff=0.11 cfs 333 cf

**Subcatchment 6si: Pro DA 3** Runoff Area=39,143 sf 100.00% Impervious Runoff Depth=3.85"  
Flow Length=98' Tc=2.5 min CN=0/98 Runoff=3.82 cfs 12,574 cf

**Subcatchment 6sp: Pro DA 3** Runoff Area=9,386 sf 0.00% Impervious Runoff Depth=1.66"  
Flow Length=98' Tc=2.5 min CN=74/0 Runoff=0.48 cfs 1,300 cf

**Pond 8p: Detention System** Peak Elev=404.59' Storage=2,489 cf Inflow=4.30 cfs 13,875 cf  
Discarded=0.00 cfs 0 cf Primary=1.67 cfs 13,683 cf Outflow=1.67 cfs 13,683 cf

**Link 4I: existing total discharge** Inflow=4.48 cfs 14,250 cf  
Primary=4.48 cfs 14,250 cf

**Link 9I: Overall discharge** Inflow=1.99 cfs 14,861 cf  
Primary=1.99 cfs 14,861 cf

**Total Runoff Area = 108,074 sf Runoff Volume = 29,303 cf Average Runoff Depth = 3.25"**  
**28.57% Pervious = 30,872 sf 71.43% Impervious = 77,202 sf**

### Summary for Subcatchment 1si: Ext DA 1

Runoff = 0.12 cfs @ 12.13 hrs, Volume= 441 cf, Depth= 3.85"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 2-Year-2100 Rainfall=4.09"

Area (sf)	CN	Description
1,374	98	Paved parking, HSG C
1,374	98	100.00% Impervious Area

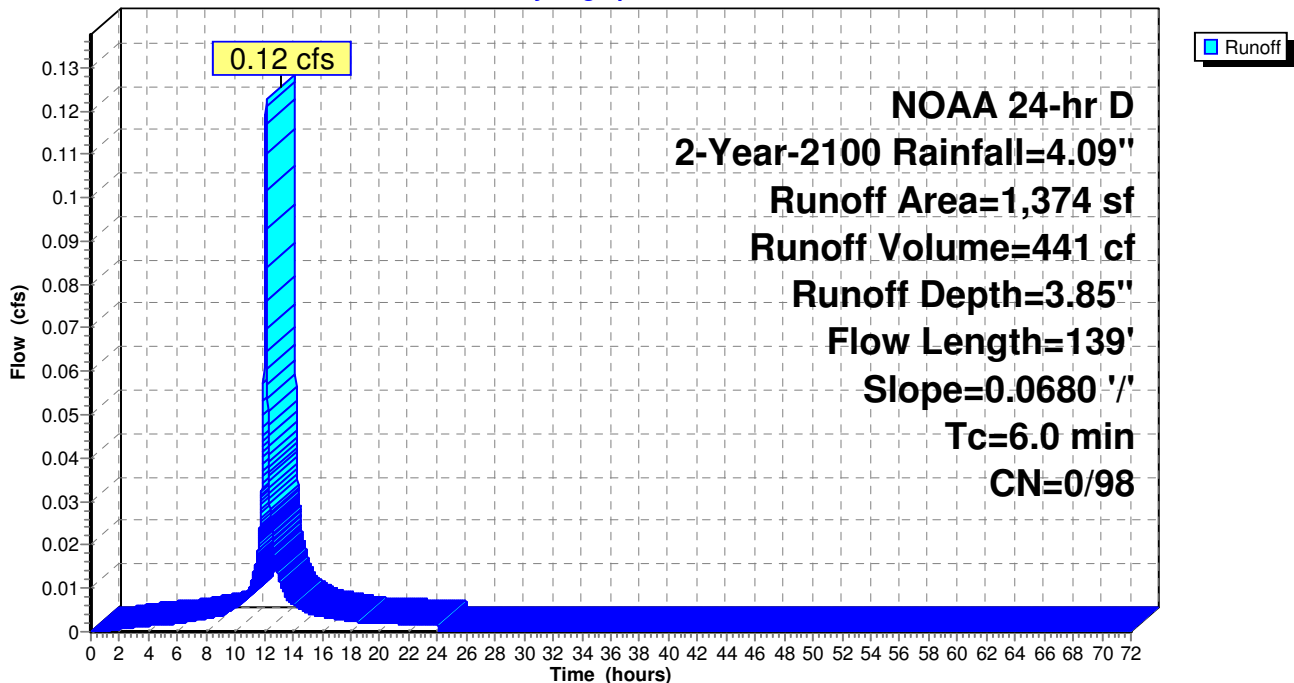
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	100	0.0680	0.29		<b>Sheet Flow, sheet flow</b>
0.2	39	0.0680	4.20		<b>Shallow Concentrated Flow, scf</b>
					Unpaved Kv= 16.1 fps
6.0	139	Total			



### Subcatchment 1si: Ext DA 1

Hydrograph



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NOAA 24-hr D 2-Year-2100 Rainfall=4.09"

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**Hydrograph for Subcatchment 1si: Ext DA 1**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.10	0.00	0.01	0.00
4.00	0.21	0.00	0.08	0.00
6.00	0.35	0.00	0.19	0.00
8.00	0.53	0.00	0.35	0.00
10.00	0.81	0.00	0.61	0.01
12.00	1.96	0.00	1.73	<b>0.07</b>
14.00	3.28	0.00	3.05	<b>0.01</b>
16.00	3.56	0.00	3.33	0.00
18.00	3.74	0.00	3.51	0.00
20.00	3.88	0.00	3.64	0.00
22.00	3.99	0.00	3.76	0.00
24.00	<b>4.09</b>	0.00	<b>3.85</b>	0.00
26.00	4.09	0.00	3.85	0.00
28.00	4.09	0.00	3.85	0.00
30.00	4.09	0.00	3.85	0.00
32.00	4.09	0.00	3.85	0.00
34.00	4.09	0.00	3.85	0.00
36.00	4.09	0.00	3.85	0.00
38.00	4.09	0.00	3.85	0.00
40.00	4.09	0.00	3.85	0.00
42.00	4.09	0.00	3.85	0.00
44.00	4.09	0.00	3.85	0.00
46.00	4.09	0.00	3.85	0.00
48.00	4.09	0.00	3.85	0.00
50.00	4.09	0.00	3.85	0.00
52.00	4.09	0.00	3.85	0.00
54.00	4.09	0.00	3.85	0.00
56.00	4.09	0.00	3.85	0.00
58.00	4.09	0.00	3.85	0.00
60.00	4.09	0.00	3.85	0.00
62.00	4.09	0.00	3.85	0.00
64.00	4.09	0.00	3.85	0.00
66.00	4.09	0.00	3.85	0.00
68.00	4.09	0.00	3.85	0.00
70.00	4.09	0.00	3.85	0.00
72.00	4.09	0.00	3.85	0.00

### Summary for Subcatchment 1sp: Ext DA 1

Runoff = 0.18 cfs @ 12.13 hrs, Volume= 552 cf, Depth= 2.72"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 2-Year-2100 Rainfall=4.09"

Area (sf)	CN	Description
2,438	87	Dirt roads, HSG C
2,438	87	100.00% Pervious Area

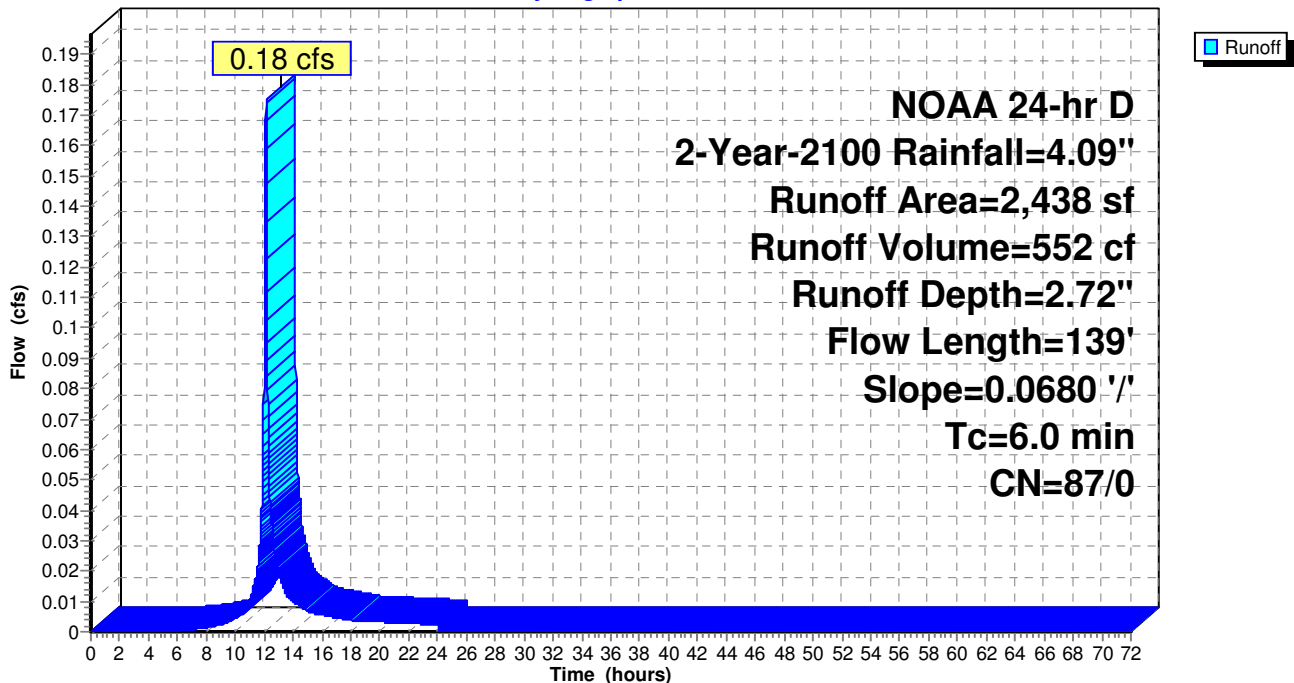
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	100	0.0680	0.29		<b>Sheet Flow, sheet flow</b> Grass: Short n= 0.150 P2= 3.47"
0.2	39	0.0680	4.20		<b>Shallow Concentrated Flow, scf</b> Unpaved Kv= 16.1 fps
6.0	139	Total			



### Subcatchment 1sp: Ext DA 1

Hydrograph



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**Hydrograph for Subcatchment 1sp: Ext DA 1**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.10	0.00	0.00	0.00
4.00	0.21	0.00	0.00	0.00
6.00	0.35	0.00	0.00	0.00
8.00	0.53	0.03	0.00	0.00
10.00	0.81	0.13	0.00	0.00
12.00	1.96	0.87	0.00	<b>0.09</b>
14.00	3.28	1.99	0.00	<b>0.01</b>
16.00	3.56	2.24	0.00	0.01
18.00	3.74	2.40	0.00	0.00
20.00	3.88	2.52	0.00	0.00
22.00	3.99	2.63	0.00	0.00
24.00	<b>4.09</b>	<b>2.72</b>	0.00	0.00
26.00	4.09	2.72	0.00	0.00
28.00	4.09	2.72	0.00	0.00
30.00	4.09	2.72	0.00	0.00
32.00	4.09	2.72	0.00	0.00
34.00	4.09	2.72	0.00	0.00
36.00	4.09	2.72	0.00	0.00
38.00	4.09	2.72	0.00	0.00
40.00	4.09	2.72	0.00	0.00
42.00	4.09	2.72	0.00	0.00
44.00	4.09	2.72	0.00	0.00
46.00	4.09	2.72	0.00	0.00
48.00	4.09	2.72	0.00	0.00
50.00	4.09	2.72	0.00	0.00
52.00	4.09	2.72	0.00	0.00
54.00	4.09	2.72	0.00	0.00
56.00	4.09	2.72	0.00	0.00
58.00	4.09	2.72	0.00	0.00
60.00	4.09	2.72	0.00	0.00
62.00	4.09	2.72	0.00	0.00
64.00	4.09	2.72	0.00	0.00
66.00	4.09	2.72	0.00	0.00
68.00	4.09	2.72	0.00	0.00
70.00	4.09	2.72	0.00	0.00
72.00	4.09	2.72	0.00	0.00

**Summary for Subcatchment 2si: Ext DA 2**

[49] Hint: Tc<2dt may require smaller dt

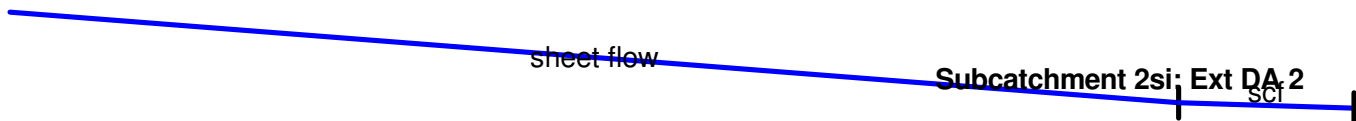
Runoff = 0.41 cfs @ 12.09 hrs, Volume= 1,344 cf, Depth= 3.85"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 2-Year-2100 Rainfall=4.09"

Area (sf)	CN	Description
4,185	98	Paved parking, HSG C
4,185	98	100.00% Impervious Area

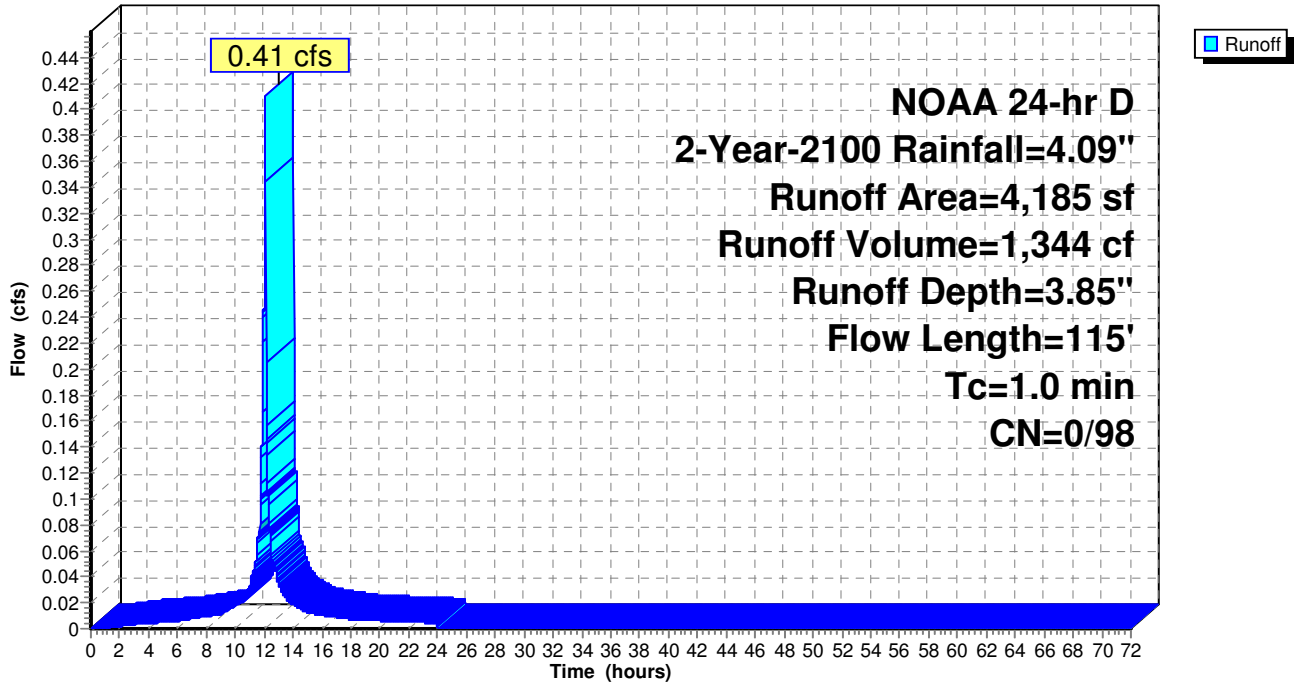
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0385	1.86		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.1	15	0.0150	2.49		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.0	115	Total			



### Subcatchment 2si: Ext DA 2

Hydrograph



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**Hydrograph for Subcatchment 2si: Ext DA 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.10	0.00	0.01	0.00
4.00	0.21	0.00	0.08	0.00
6.00	0.35	0.00	0.19	0.01
8.00	0.53	0.00	0.35	0.01
10.00	0.81	0.00	0.61	0.02
12.00	1.96	0.00	1.73	<b>0.25</b>
14.00	3.28	0.00	3.05	<b>0.02</b>
16.00	3.56	0.00	3.33	0.01
18.00	3.74	0.00	3.51	0.01
20.00	3.88	0.00	3.64	0.01
22.00	3.99	0.00	3.76	0.01
24.00	<b>4.09</b>	0.00	<b>3.85</b>	0.00
26.00	4.09	0.00	3.85	0.00
28.00	4.09	0.00	3.85	0.00
30.00	4.09	0.00	3.85	0.00
32.00	4.09	0.00	3.85	0.00
34.00	4.09	0.00	3.85	0.00
36.00	4.09	0.00	3.85	0.00
38.00	4.09	0.00	3.85	0.00
40.00	4.09	0.00	3.85	0.00
42.00	4.09	0.00	3.85	0.00
44.00	4.09	0.00	3.85	0.00
46.00	4.09	0.00	3.85	0.00
48.00	4.09	0.00	3.85	0.00
50.00	4.09	0.00	3.85	0.00
52.00	4.09	0.00	3.85	0.00
54.00	4.09	0.00	3.85	0.00
56.00	4.09	0.00	3.85	0.00
58.00	4.09	0.00	3.85	0.00
60.00	4.09	0.00	3.85	0.00
62.00	4.09	0.00	3.85	0.00
64.00	4.09	0.00	3.85	0.00
66.00	4.09	0.00	3.85	0.00
68.00	4.09	0.00	3.85	0.00
70.00	4.09	0.00	3.85	0.00
72.00	4.09	0.00	3.85	0.00

**Summary for Subcatchment 2sp: Ext DA 2**

[49] Hint: Tc<2dt may require smaller dt

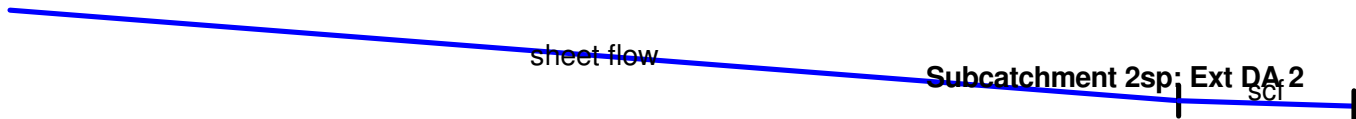
Runoff = 0.02 cfs @ 12.10 hrs, Volume= 55 cf, Depth= 2.04"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 2-Year-2100 Rainfall=4.09"

Area (sf)	CN	Description
326	79	50-75% Grass cover, Fair, HSG C
326	79	100.00% Pervious Area

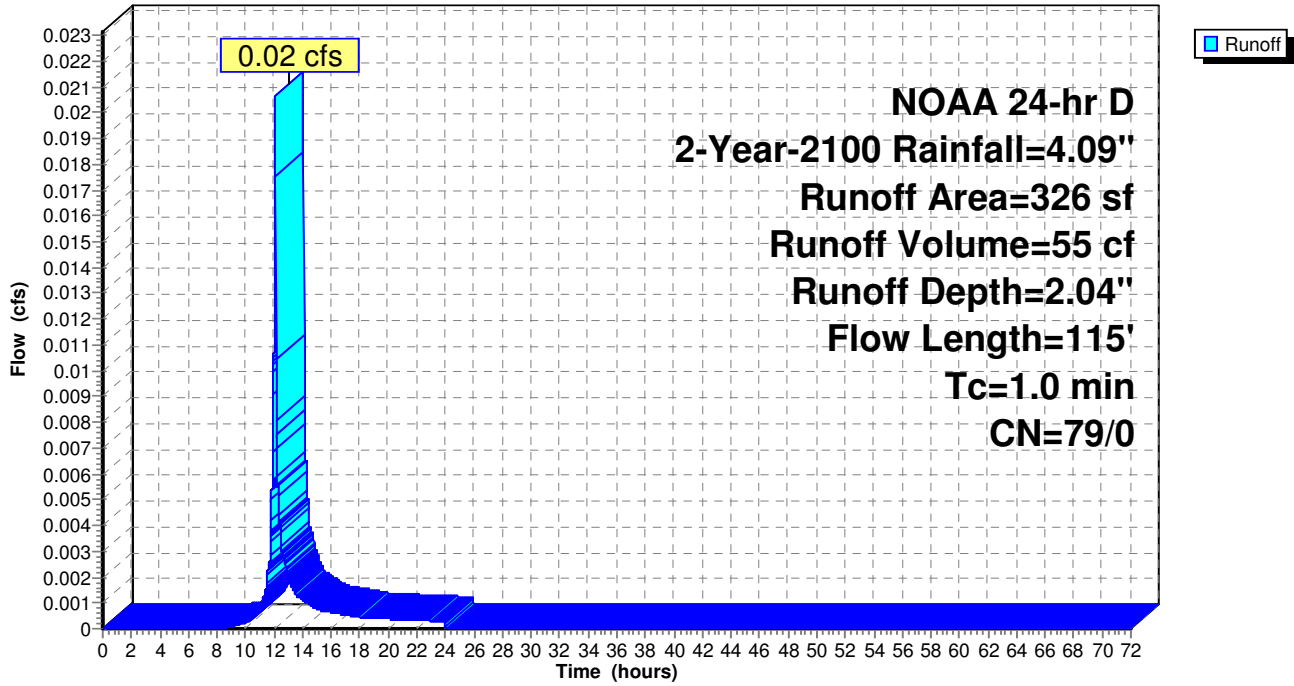
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0385	1.86		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.1	15	0.0150	2.49		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.0	115	Total			



### Subcatchment 2sp: Ext DA 2

Hydrograph



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**Hydrograph for Subcatchment 2sp: Ext DA 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.10	0.00	0.00	0.00
4.00	0.21	0.00	0.00	0.00
6.00	0.35	0.00	0.00	0.00
8.00	0.53	0.00	0.00	0.00
10.00	0.81	0.03	0.00	0.00
12.00	1.96	0.50	0.00	<b>0.01</b>
14.00	3.28	1.40	0.00	<b>0.00</b>
16.00	3.56	1.61	0.00	0.00
18.00	3.74	1.76	0.00	0.00
20.00	3.88	1.86	0.00	0.00
22.00	3.99	1.96	0.00	0.00
24.00	<b>4.09</b>	<b>2.04</b>	0.00	0.00
26.00	4.09	2.04	0.00	0.00
28.00	4.09	2.04	0.00	0.00
30.00	4.09	2.04	0.00	0.00
32.00	4.09	2.04	0.00	0.00
34.00	4.09	2.04	0.00	0.00
36.00	4.09	2.04	0.00	0.00
38.00	4.09	2.04	0.00	0.00
40.00	4.09	2.04	0.00	0.00
42.00	4.09	2.04	0.00	0.00
44.00	4.09	2.04	0.00	0.00
46.00	4.09	2.04	0.00	0.00
48.00	4.09	2.04	0.00	0.00
50.00	4.09	2.04	0.00	0.00
52.00	4.09	2.04	0.00	0.00
54.00	4.09	2.04	0.00	0.00
56.00	4.09	2.04	0.00	0.00
58.00	4.09	2.04	0.00	0.00
60.00	4.09	2.04	0.00	0.00
62.00	4.09	2.04	0.00	0.00
64.00	4.09	2.04	0.00	0.00
66.00	4.09	2.04	0.00	0.00
68.00	4.09	2.04	0.00	0.00
70.00	4.09	2.04	0.00	0.00
72.00	4.09	2.04	0.00	0.00

### Summary for Subcatchment 3si: Ext DA 3

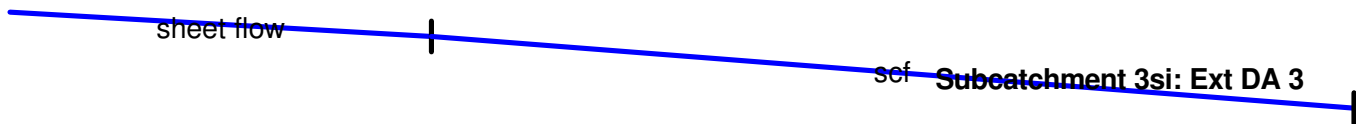
Runoff = 3.01 cfs @ 12.10 hrs, Volume= 9,867 cf, Depth= 3.85"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 2-Year-2100 Rainfall=4.09"

Area (sf)	CN	Description
30,716	98	Paved parking, HSG C
30,716	98	100.00% Impervious Area

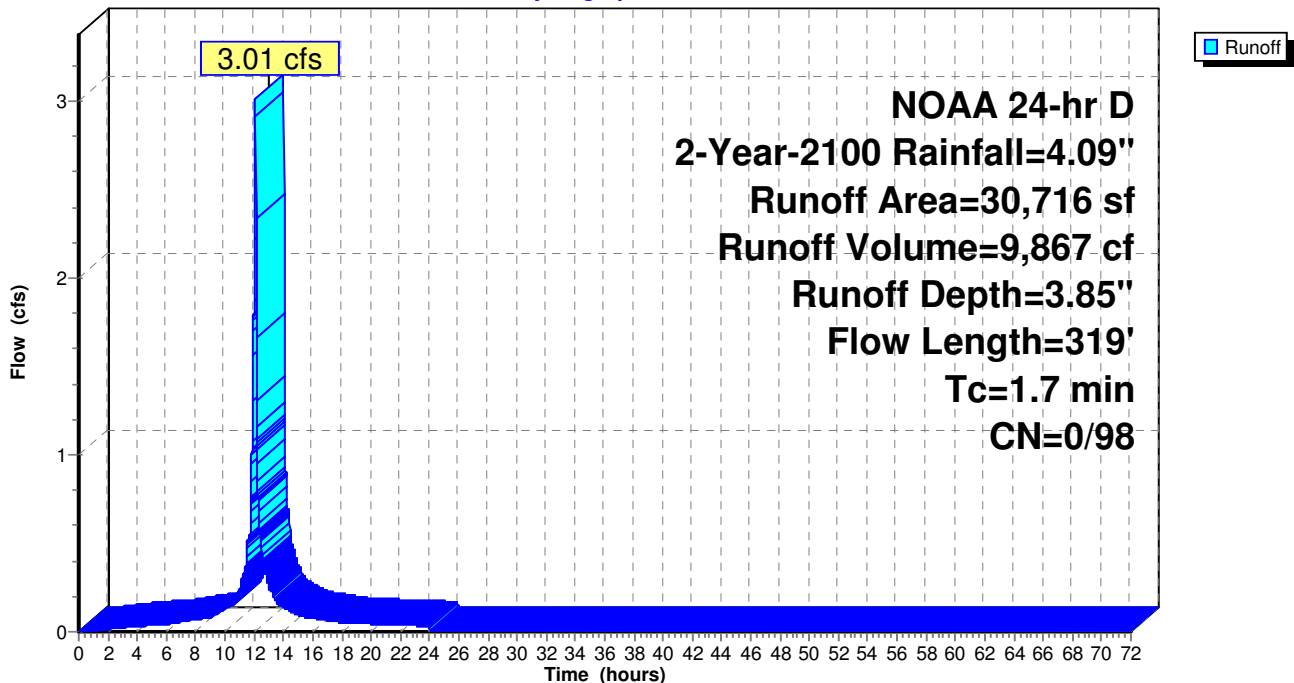
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0420	1.93		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.8	219	0.0570	4.85		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.7	319	Total			



### Subcatchment 3si: Ext DA 3

Hydrograph



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NOAA 24-hr D 2-Year-2100 Rainfall=4.09"

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**Hydrograph for Subcatchment 3si: Ext DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.10	0.00	0.01	0.01
4.00	0.21	0.00	0.08	0.03
6.00	0.35	0.00	0.19	0.04
8.00	0.53	0.00	0.35	0.07
10.00	0.81	0.00	0.61	0.13
12.00	1.96	0.00	1.73	<b>1.80</b>
14.00	3.28	0.00	3.05	<b>0.14</b>
16.00	3.56	0.00	3.33	0.08
18.00	3.74	0.00	3.51	0.05
20.00	3.88	0.00	3.64	0.04
22.00	3.99	0.00	3.76	0.04
24.00	<b>4.09</b>	0.00	<b>3.85</b>	0.03
26.00	4.09	0.00	3.85	0.00
28.00	4.09	0.00	3.85	0.00
30.00	4.09	0.00	3.85	0.00
32.00	4.09	0.00	3.85	0.00
34.00	4.09	0.00	3.85	0.00
36.00	4.09	0.00	3.85	0.00
38.00	4.09	0.00	3.85	0.00
40.00	4.09	0.00	3.85	0.00
42.00	4.09	0.00	3.85	0.00
44.00	4.09	0.00	3.85	0.00
46.00	4.09	0.00	3.85	0.00
48.00	4.09	0.00	3.85	0.00
50.00	4.09	0.00	3.85	0.00
52.00	4.09	0.00	3.85	0.00
54.00	4.09	0.00	3.85	0.00
56.00	4.09	0.00	3.85	0.00
58.00	4.09	0.00	3.85	0.00
60.00	4.09	0.00	3.85	0.00
62.00	4.09	0.00	3.85	0.00
64.00	4.09	0.00	3.85	0.00
66.00	4.09	0.00	3.85	0.00
68.00	4.09	0.00	3.85	0.00
70.00	4.09	0.00	3.85	0.00
72.00	4.09	0.00	3.85	0.00

### Summary for Subcatchment 3sp: Ext DA 3

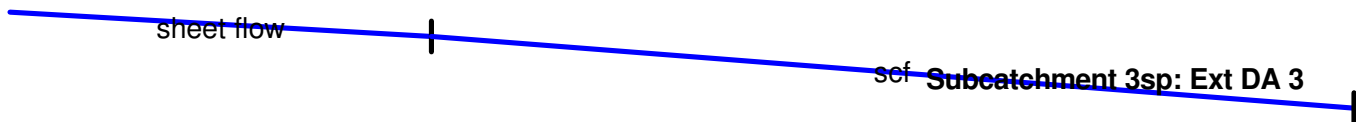
Runoff = 0.74 cfs @ 12.10 hrs, Volume= 1,989 cf, Depth= 1.66"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 2-Year-2100 Rainfall=4.09"

Area (sf)	CN	Description
14,358	74	>75% Grass cover, Good, HSG C
14,358	74	100.00% Pervious Area

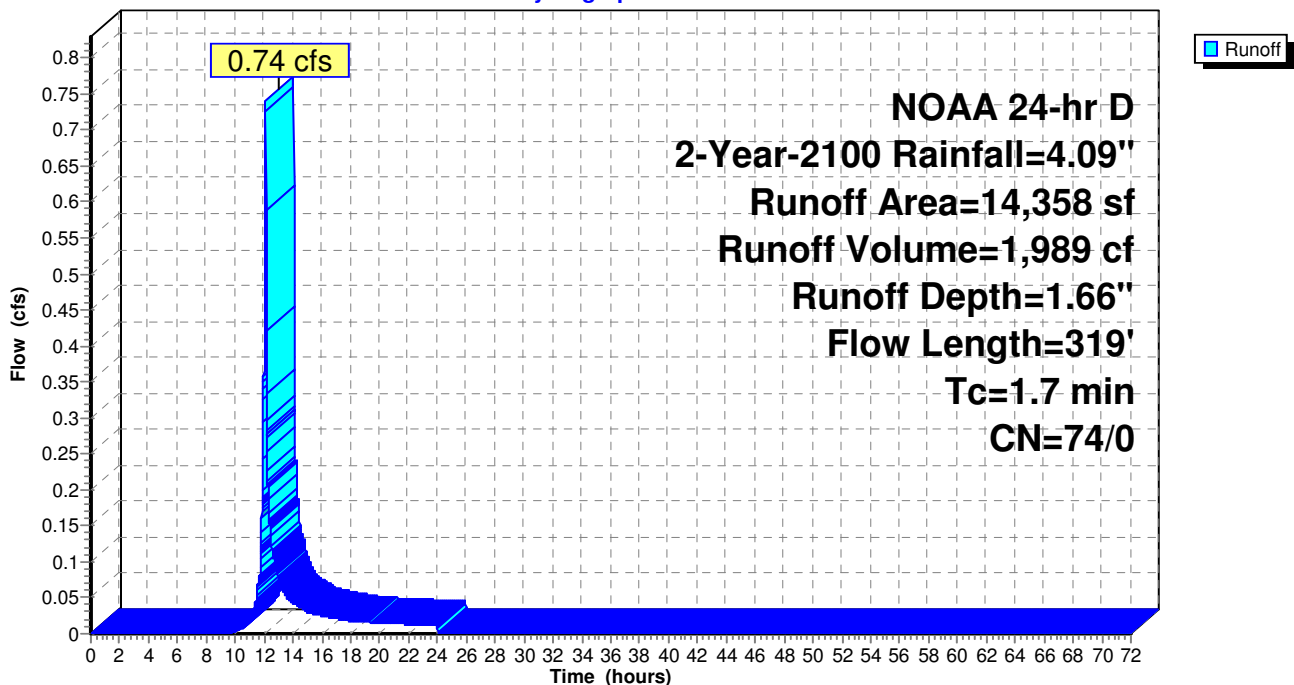
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0420	1.93		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.8	219	0.0570	4.85		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.7	319	Total			



### Subcatchment 3sp: Ext DA 3

Hydrograph



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**Hydrograph for Subcatchment 3sp: Ext DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.10	0.00	0.00	0.00
4.00	0.21	0.00	0.00	0.00
6.00	0.35	0.00	0.00	0.00
8.00	0.53	0.00	0.00	0.00
10.00	0.81	0.00	0.00	0.00
12.00	1.96	0.33	0.00	<b>0.38</b>
14.00	3.28	1.09	0.00	<b>0.04</b>
16.00	3.56	1.28	0.00	0.03
18.00	3.74	1.41	0.00	0.02
20.00	3.88	1.51	0.00	0.02
22.00	3.99	1.59	0.00	0.01
24.00	<b>4.09</b>	<b>1.66</b>	0.00	0.01
26.00	4.09	1.66	0.00	0.00
28.00	4.09	1.66	0.00	0.00
30.00	4.09	1.66	0.00	0.00
32.00	4.09	1.66	0.00	0.00
34.00	4.09	1.66	0.00	0.00
36.00	4.09	1.66	0.00	0.00
38.00	4.09	1.66	0.00	0.00
40.00	4.09	1.66	0.00	0.00
42.00	4.09	1.66	0.00	0.00
44.00	4.09	1.66	0.00	0.00
46.00	4.09	1.66	0.00	0.00
48.00	4.09	1.66	0.00	0.00
50.00	4.09	1.66	0.00	0.00
52.00	4.09	1.66	0.00	0.00
54.00	4.09	1.66	0.00	0.00
56.00	4.09	1.66	0.00	0.00
58.00	4.09	1.66	0.00	0.00
60.00	4.09	1.66	0.00	0.00
62.00	4.09	1.66	0.00	0.00
64.00	4.09	1.66	0.00	0.00
66.00	4.09	1.66	0.00	0.00
68.00	4.09	1.66	0.00	0.00
70.00	4.09	1.66	0.00	0.00
72.00	4.09	1.66	0.00	0.00

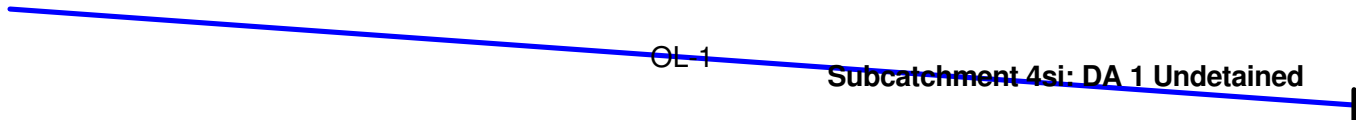
### Summary for Subcatchment 4si: DA 1 Undetained

Runoff = 0.02 cfs @ 12.10 hrs, Volume= 68 cf, Depth= 3.85"  
Routed to Link 9I : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 2-Year-2100 Rainfall=4.09"

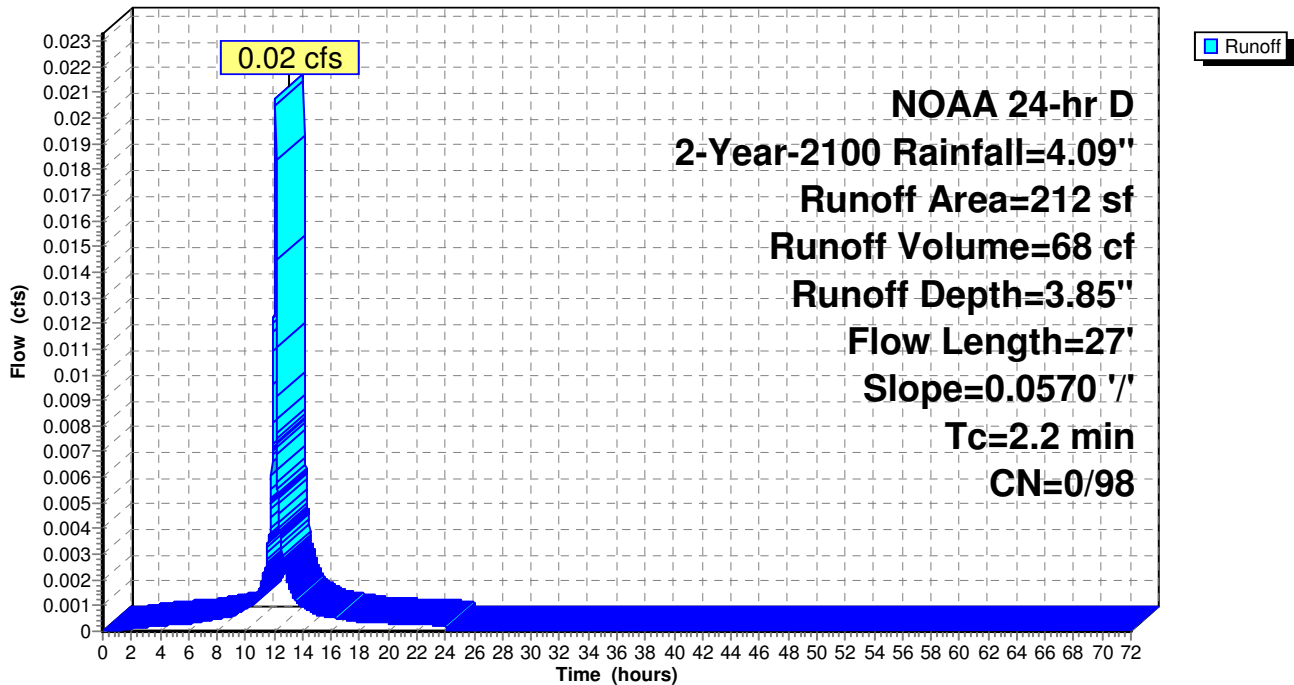
Area (sf)	CN	Description
212	98	Paved parking, HSG C
212	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	27	0.0570	0.21		<b>Sheet Flow, OL-1</b> n= 0.150 P2= 3.47"



### Subcatchment 4si: DA 1 Undetained

Hydrograph



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NOAA 24-hr D 2-Year-2100 Rainfall=4.09"

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**Hydrograph for Subcatchment 4si: DA 1 Undetained**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.10	0.00	0.01	0.00
4.00	0.21	0.00	0.08	0.00
6.00	0.35	0.00	0.19	0.00
8.00	0.53	0.00	0.35	0.00
10.00	0.81	0.00	0.61	0.00
12.00	1.96	0.00	1.73	<b>0.01</b>
14.00	3.28	0.00	3.05	<b>0.00</b>
16.00	3.56	0.00	3.33	0.00
18.00	3.74	0.00	3.51	0.00
20.00	3.88	0.00	3.64	0.00
22.00	3.99	0.00	3.76	0.00
24.00	<b>4.09</b>	0.00	<b>3.85</b>	0.00
26.00	4.09	0.00	3.85	0.00
28.00	4.09	0.00	3.85	0.00
30.00	4.09	0.00	3.85	0.00
32.00	4.09	0.00	3.85	0.00
34.00	4.09	0.00	3.85	0.00
36.00	4.09	0.00	3.85	0.00
38.00	4.09	0.00	3.85	0.00
40.00	4.09	0.00	3.85	0.00
42.00	4.09	0.00	3.85	0.00
44.00	4.09	0.00	3.85	0.00
46.00	4.09	0.00	3.85	0.00
48.00	4.09	0.00	3.85	0.00
50.00	4.09	0.00	3.85	0.00
52.00	4.09	0.00	3.85	0.00
54.00	4.09	0.00	3.85	0.00
56.00	4.09	0.00	3.85	0.00
58.00	4.09	0.00	3.85	0.00
60.00	4.09	0.00	3.85	0.00
62.00	4.09	0.00	3.85	0.00
64.00	4.09	0.00	3.85	0.00
66.00	4.09	0.00	3.85	0.00
68.00	4.09	0.00	3.85	0.00
70.00	4.09	0.00	3.85	0.00
72.00	4.09	0.00	3.85	0.00

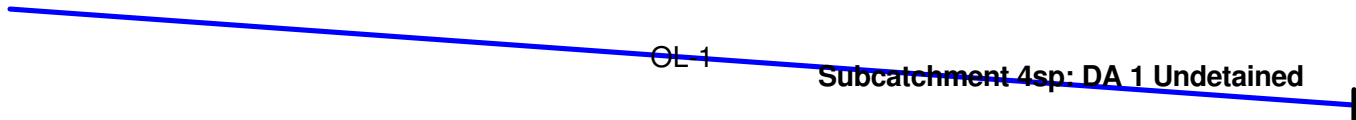
### Summary for Subcatchment 4sp: DA 1 Undetained

Runoff = 0.10 cfs @ 12.11 hrs, Volume= 272 cf, Depth= 1.66"  
Routed to Link 9l : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 2-Year-2100 Rainfall=4.09"

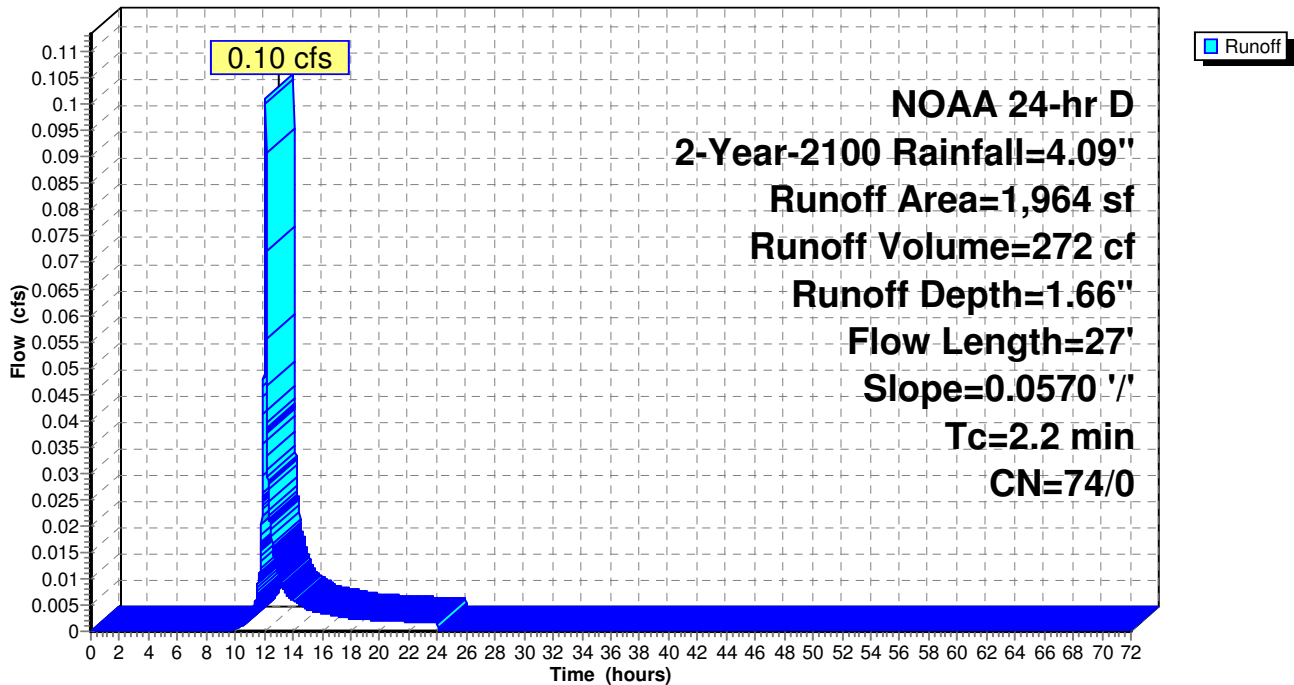
Area (sf)	CN	Description
1,964	74	>75% Grass cover, Good, HSG C
1,964	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	27	0.0570	0.21		<b>Sheet Flow, OL-1</b> n= 0.150 P2= 3.47"



### Subcatchment 4sp: DA 1 Undetained

Hydrograph



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**Hydrograph for Subcatchment 4sp: DA 1 Undetained**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.10	0.00	0.00	0.00
4.00	0.21	0.00	0.00	0.00
6.00	0.35	0.00	0.00	0.00
8.00	0.53	0.00	0.00	0.00
10.00	0.81	0.00	0.00	0.00
12.00	1.96	0.33	0.00	<b>0.05</b>
14.00	3.28	1.09	0.00	<b>0.01</b>
16.00	3.56	1.28	0.00	0.00
18.00	3.74	1.41	0.00	0.00
20.00	3.88	1.51	0.00	0.00
22.00	3.99	1.59	0.00	0.00
24.00	<b>4.09</b>	<b>1.66</b>	0.00	0.00
26.00	4.09	1.66	0.00	0.00
28.00	4.09	1.66	0.00	0.00
30.00	4.09	1.66	0.00	0.00
32.00	4.09	1.66	0.00	0.00
34.00	4.09	1.66	0.00	0.00
36.00	4.09	1.66	0.00	0.00
38.00	4.09	1.66	0.00	0.00
40.00	4.09	1.66	0.00	0.00
42.00	4.09	1.66	0.00	0.00
44.00	4.09	1.66	0.00	0.00
46.00	4.09	1.66	0.00	0.00
48.00	4.09	1.66	0.00	0.00
50.00	4.09	1.66	0.00	0.00
52.00	4.09	1.66	0.00	0.00
54.00	4.09	1.66	0.00	0.00
56.00	4.09	1.66	0.00	0.00
58.00	4.09	1.66	0.00	0.00
60.00	4.09	1.66	0.00	0.00
62.00	4.09	1.66	0.00	0.00
64.00	4.09	1.66	0.00	0.00
66.00	4.09	1.66	0.00	0.00
68.00	4.09	1.66	0.00	0.00
70.00	4.09	1.66	0.00	0.00
72.00	4.09	1.66	0.00	0.00

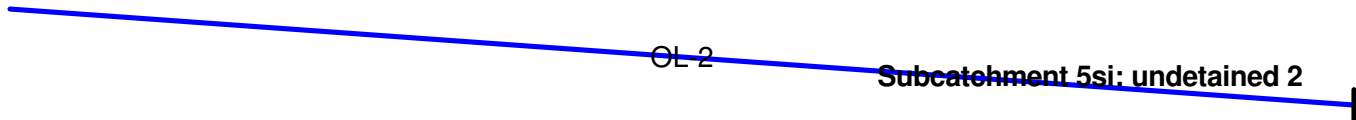
**Summary for Subcatchment 5si: undetained 2**

Runoff = 0.15 cfs @ 12.12 hrs, Volume= 505 cf, Depth= 3.85"  
Routed to Link 9l : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 2-Year-2100 Rainfall=4.09"

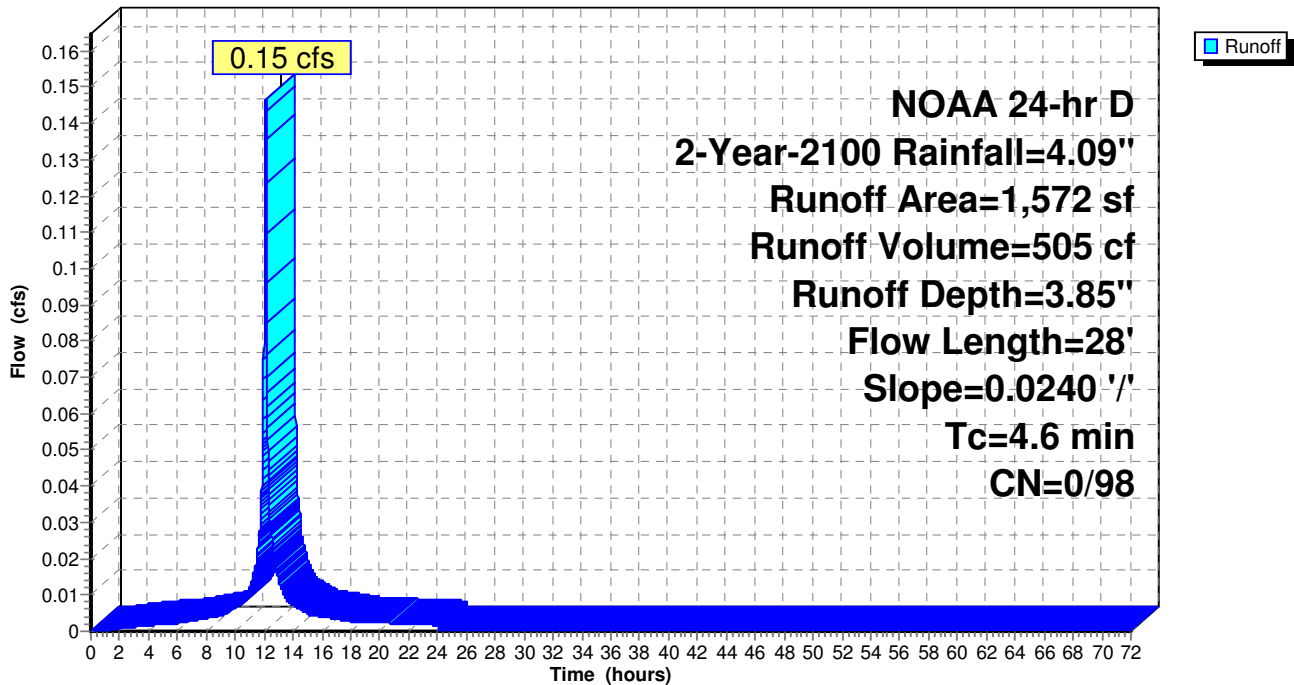
Area (sf)	CN	Description
1,572	98	Paved parking, HSG C
1,572	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	28	0.0240	0.10		<b>Sheet Flow, OL-2</b> Grass: Dense n= 0.240 P2= 3.47"



**Subcatchment 5si: undetained 2**

Hydrograph



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**Hydrograph for Subcatchment 5si: undetained 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.10	0.00	0.01	0.00
4.00	0.21	0.00	0.08	0.00
6.00	0.35	0.00	0.19	0.00
8.00	0.53	0.00	0.35	0.00
10.00	0.81	0.00	0.61	0.01
12.00	1.96	0.00	1.73	<b>0.09</b>
14.00	3.28	0.00	3.05	<b>0.01</b>
16.00	3.56	0.00	3.33	0.00
18.00	3.74	0.00	3.51	0.00
20.00	3.88	0.00	3.64	0.00
22.00	3.99	0.00	3.76	0.00
24.00	<b>4.09</b>	0.00	<b>3.85</b>	0.00
26.00	4.09	0.00	3.85	0.00
28.00	4.09	0.00	3.85	0.00
30.00	4.09	0.00	3.85	0.00
32.00	4.09	0.00	3.85	0.00
34.00	4.09	0.00	3.85	0.00
36.00	4.09	0.00	3.85	0.00
38.00	4.09	0.00	3.85	0.00
40.00	4.09	0.00	3.85	0.00
42.00	4.09	0.00	3.85	0.00
44.00	4.09	0.00	3.85	0.00
46.00	4.09	0.00	3.85	0.00
48.00	4.09	0.00	3.85	0.00
50.00	4.09	0.00	3.85	0.00
52.00	4.09	0.00	3.85	0.00
54.00	4.09	0.00	3.85	0.00
56.00	4.09	0.00	3.85	0.00
58.00	4.09	0.00	3.85	0.00
60.00	4.09	0.00	3.85	0.00
62.00	4.09	0.00	3.85	0.00
64.00	4.09	0.00	3.85	0.00
66.00	4.09	0.00	3.85	0.00
68.00	4.09	0.00	3.85	0.00
70.00	4.09	0.00	3.85	0.00
72.00	4.09	0.00	3.85	0.00

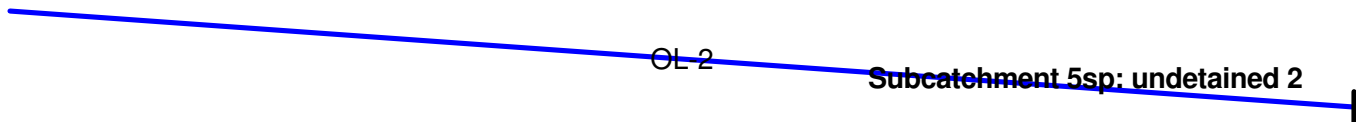
### Summary for Subcatchment 5sp: undetained 2

Runoff = 0.11 cfs @ 12.12 hrs, Volume= 333 cf, Depth= 1.66"  
Routed to Link 9I : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 2-Year-2100 Rainfall=4.09"

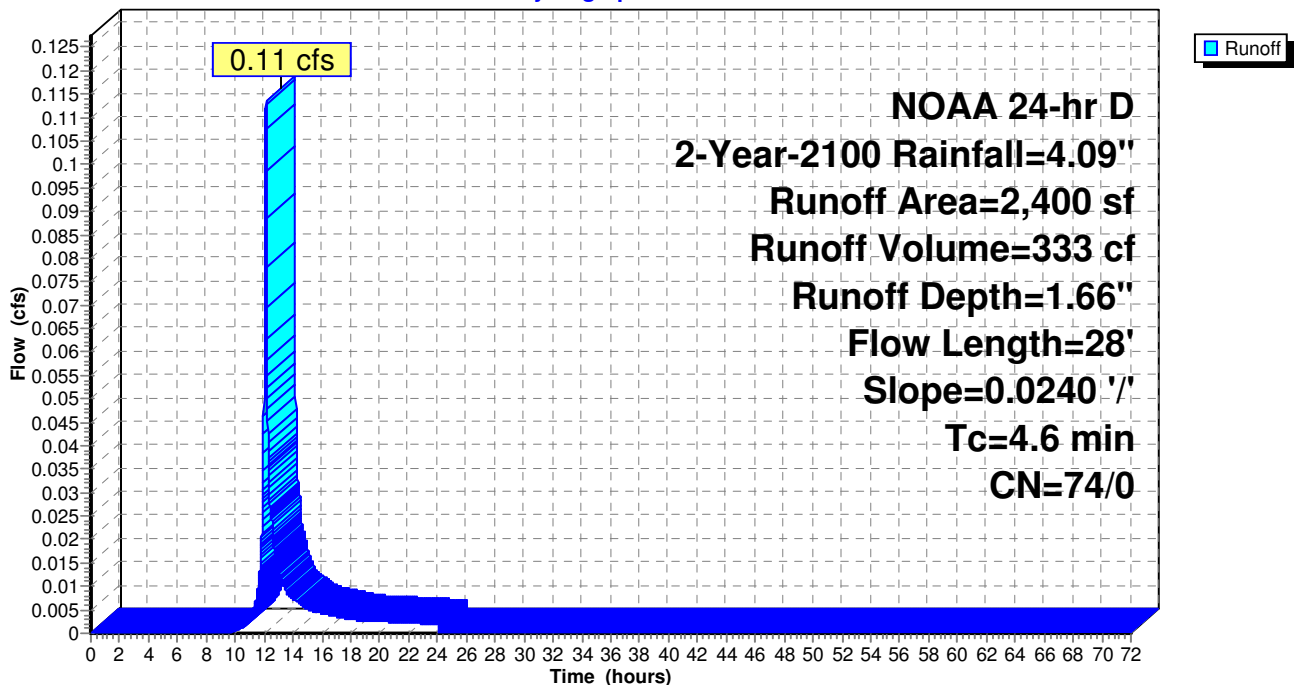
Area (sf)	CN	Description
2,400	74	>75% Grass cover, Good, HSG C
2,400	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	28	0.0240	0.10		<b>Sheet Flow, OL-2</b> Grass: Dense n= 0.240 P2= 3.47"



### Subcatchment 5sp: undetained 2

Hydrograph



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NOAA 24-hr D 2-Year-2100 Rainfall=4.09"

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**Hydrograph for Subcatchment 5sp: undetained 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.10	0.00	0.00	0.00
4.00	0.21	0.00	0.00	0.00
6.00	0.35	0.00	0.00	0.00
8.00	0.53	0.00	0.00	0.00
10.00	0.81	0.00	0.00	0.00
12.00	1.96	0.33	0.00	<b>0.06</b>
14.00	3.28	1.09	0.00	<b>0.01</b>
16.00	3.56	1.28	0.00	0.00
18.00	3.74	1.41	0.00	0.00
20.00	3.88	1.51	0.00	0.00
22.00	3.99	1.59	0.00	0.00
24.00	<b>4.09</b>	<b>1.66</b>	0.00	0.00
26.00	4.09	1.66	0.00	0.00
28.00	4.09	1.66	0.00	0.00
30.00	4.09	1.66	0.00	0.00
32.00	4.09	1.66	0.00	0.00
34.00	4.09	1.66	0.00	0.00
36.00	4.09	1.66	0.00	0.00
38.00	4.09	1.66	0.00	0.00
40.00	4.09	1.66	0.00	0.00
42.00	4.09	1.66	0.00	0.00
44.00	4.09	1.66	0.00	0.00
46.00	4.09	1.66	0.00	0.00
48.00	4.09	1.66	0.00	0.00
50.00	4.09	1.66	0.00	0.00
52.00	4.09	1.66	0.00	0.00
54.00	4.09	1.66	0.00	0.00
56.00	4.09	1.66	0.00	0.00
58.00	4.09	1.66	0.00	0.00
60.00	4.09	1.66	0.00	0.00
62.00	4.09	1.66	0.00	0.00
64.00	4.09	1.66	0.00	0.00
66.00	4.09	1.66	0.00	0.00
68.00	4.09	1.66	0.00	0.00
70.00	4.09	1.66	0.00	0.00
72.00	4.09	1.66	0.00	0.00

### Summary for Subcatchment 6si: Pro DA 3

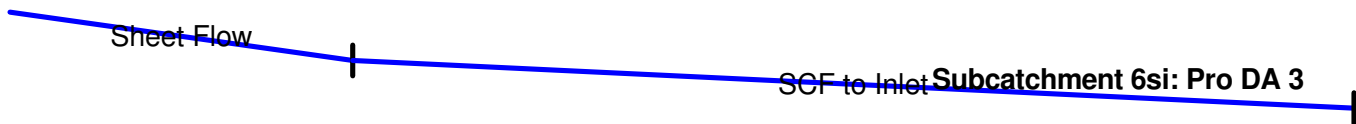
Runoff = 3.82 cfs @ 12.10 hrs, Volume= 12,574 cf, Depth= 3.85"  
Routed to Pond 8p : Detention System

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 2-Year-2100 Rainfall=4.09"

Area (sf)	CN	Description
39,143	98	Paved parking, HSG C
39,143	98	100.00% Impervious Area

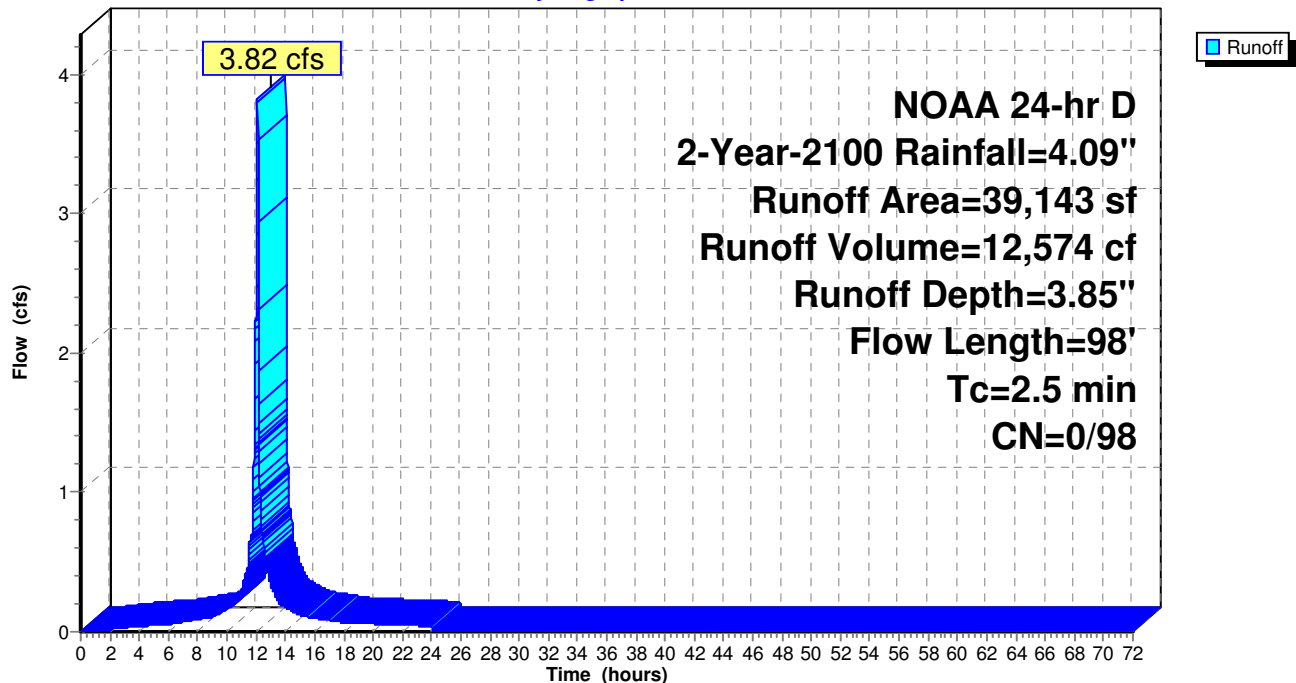
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	25	0.0560	0.20		<b>Sheet Flow, Sheet Flow</b>
0.4	73	0.0190	2.80		Grass: Short n= 0.150 P2= 3.47" <b>Shallow Concentrated Flow, SCF to Inlet</b>
2.5	98	Total			



### Subcatchment 6si: Pro DA 3

Hydrograph



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**Hydrograph for Subcatchment 6si: Pro DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.10	0.00	0.01	0.02
4.00	0.21	0.00	0.08	0.04
6.00	0.35	0.00	0.19	0.05
8.00	0.53	0.00	0.35	0.09
10.00	0.81	0.00	0.61	0.17
12.00	1.96	0.00	1.73	<b>2.28</b>
14.00	3.28	0.00	3.05	<b>0.18</b>
16.00	3.56	0.00	3.33	0.10
18.00	3.74	0.00	3.51	0.07
20.00	3.88	0.00	3.64	0.06
22.00	3.99	0.00	3.76	0.05
24.00	<b>4.09</b>	0.00	<b>3.85</b>	0.04
26.00	4.09	0.00	3.85	0.00
28.00	4.09	0.00	3.85	0.00
30.00	4.09	0.00	3.85	0.00
32.00	4.09	0.00	3.85	0.00
34.00	4.09	0.00	3.85	0.00
36.00	4.09	0.00	3.85	0.00
38.00	4.09	0.00	3.85	0.00
40.00	4.09	0.00	3.85	0.00
42.00	4.09	0.00	3.85	0.00
44.00	4.09	0.00	3.85	0.00
46.00	4.09	0.00	3.85	0.00
48.00	4.09	0.00	3.85	0.00
50.00	4.09	0.00	3.85	0.00
52.00	4.09	0.00	3.85	0.00
54.00	4.09	0.00	3.85	0.00
56.00	4.09	0.00	3.85	0.00
58.00	4.09	0.00	3.85	0.00
60.00	4.09	0.00	3.85	0.00
62.00	4.09	0.00	3.85	0.00
64.00	4.09	0.00	3.85	0.00
66.00	4.09	0.00	3.85	0.00
68.00	4.09	0.00	3.85	0.00
70.00	4.09	0.00	3.85	0.00
72.00	4.09	0.00	3.85	0.00

### Summary for Subcatchment 6sp: Pro DA 3

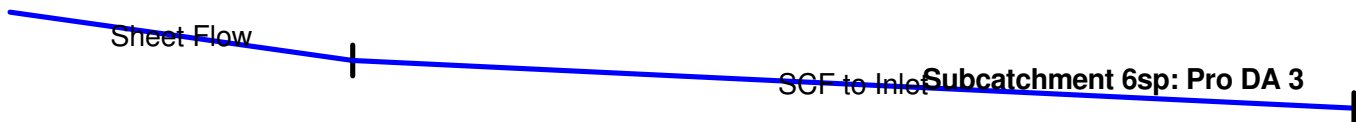
Runoff = 0.48 cfs @ 12.11 hrs, Volume= 1,300 cf, Depth= 1.66"  
Routed to Pond 8p : Detention System

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 2-Year-2100 Rainfall=4.09"

Area (sf)	CN	Description
9,386	74	>75% Grass cover, Good, HSG C
9,386	74	100.00% Pervious Area

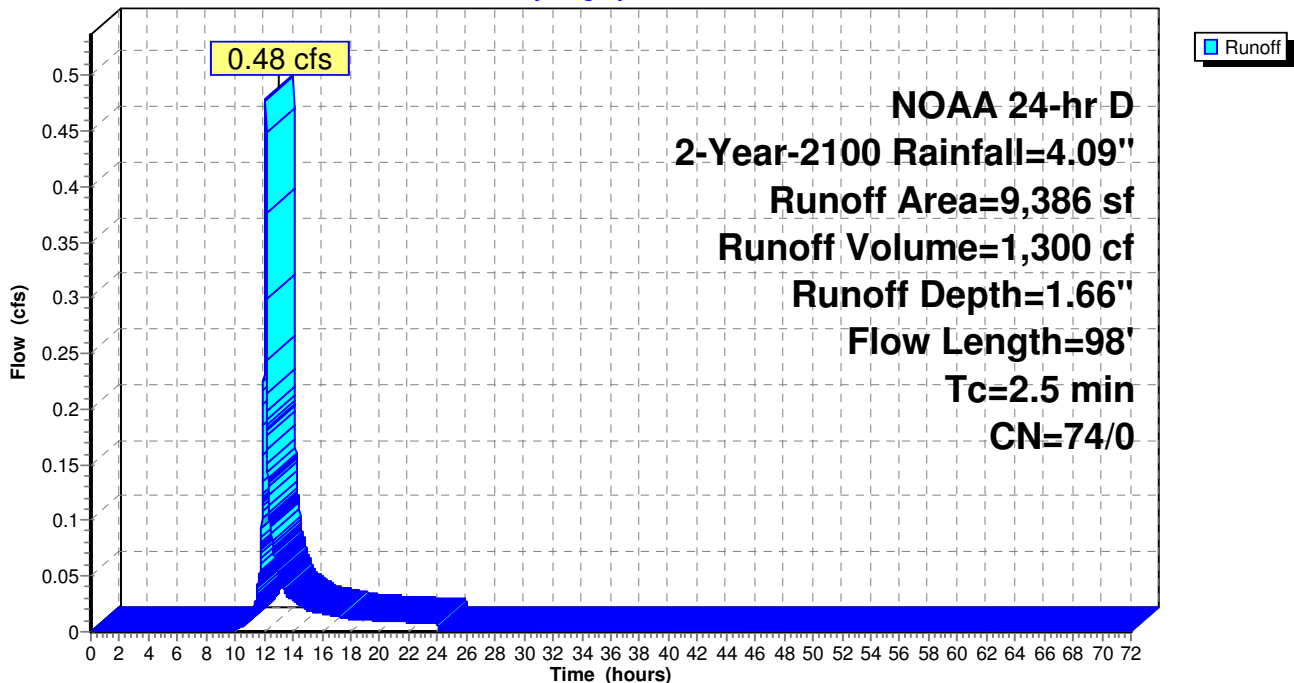
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	25	0.0560	0.20		<b>Sheet Flow, Sheet Flow</b> Grass: Short n= 0.150 P2= 3.47"
0.4	73	0.0190	2.80		<b>Shallow Concentrated Flow, SCF to Inlet</b> Paved Kv= 20.3 fps
2.5	98	Total			



### Subcatchment 6sp: Pro DA 3

Hydrograph



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**Hydrograph for Subcatchment 6sp: Pro DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.10	0.00	0.00	0.00
4.00	0.21	0.00	0.00	0.00
6.00	0.35	0.00	0.00	0.00
8.00	0.53	0.00	0.00	0.00
10.00	0.81	0.00	0.00	0.00
12.00	1.96	0.33	0.00	<b>0.24</b>
14.00	3.28	1.09	0.00	<b>0.03</b>
16.00	3.56	1.28	0.00	0.02
18.00	3.74	1.41	0.00	0.01
20.00	3.88	1.51	0.00	0.01
22.00	3.99	1.59	0.00	0.01
24.00	<b>4.09</b>	<b>1.66</b>	0.00	0.01
26.00	4.09	1.66	0.00	0.00
28.00	4.09	1.66	0.00	0.00
30.00	4.09	1.66	0.00	0.00
32.00	4.09	1.66	0.00	0.00
34.00	4.09	1.66	0.00	0.00
36.00	4.09	1.66	0.00	0.00
38.00	4.09	1.66	0.00	0.00
40.00	4.09	1.66	0.00	0.00
42.00	4.09	1.66	0.00	0.00
44.00	4.09	1.66	0.00	0.00
46.00	4.09	1.66	0.00	0.00
48.00	4.09	1.66	0.00	0.00
50.00	4.09	1.66	0.00	0.00
52.00	4.09	1.66	0.00	0.00
54.00	4.09	1.66	0.00	0.00
56.00	4.09	1.66	0.00	0.00
58.00	4.09	1.66	0.00	0.00
60.00	4.09	1.66	0.00	0.00
62.00	4.09	1.66	0.00	0.00
64.00	4.09	1.66	0.00	0.00
66.00	4.09	1.66	0.00	0.00
68.00	4.09	1.66	0.00	0.00
70.00	4.09	1.66	0.00	0.00
72.00	4.09	1.66	0.00	0.00

### Summary for Pond 8p: Detention System

Inflow Area = 48,529 sf, 80.66% Impervious, Inflow Depth = 3.43" for 2-Year-2100 event  
 Inflow = 4.30 cfs @ 12.10 hrs, Volume= 13,875 cf  
 Outflow = 1.67 cfs @ 12.17 hrs, Volume= 13,683 cf, Atten= 61%, Lag= 4.4 min  
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
 Primary = 1.67 cfs @ 12.17 hrs, Volume= 13,683 cf  
 Routed to Link 9l : Overall discharge

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Peak Elev= 404.59' @ 12.17 hrs Surf.Area= 480 sf Storage= 2,489 cf

Plug-Flow detention time= 35.6 min calculated for 13,683 cf (99% of inflow)  
 Center-of-Mass det. time= 26.5 min ( 786.3 - 759.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	403.00'	5,027 cf	<b>48.0" Round Pipe Storage</b> -Impervious L= 400.0'
#2	403.00'	578 cf	<b>48.0" Round Pipe Storage</b> Inside #3 L= 46.0'
#3	402.00'	825 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc) 2,640 cf Overall - 578 cf Embedded = 2,062 cf x 40.0% Voids
		6,429 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
402.00	480	0	0	480
407.50	480	2,640	2,640	907

Device	Routing	Invert	Outlet Devices
#1	Primary	403.00'	<b>7.5" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#2	Primary	404.60'	<b>36.0" W x 3.0" H Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Primary	405.50'	<b>24.0" W x 3.0" H Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#4	Discarded	402.00'	<b>1.290 in/hr Exfiltration over Surface area from 402.00' - 407.50'</b> Conductivity to Groundwater Elevation = 395.00' Excluded Surface area = 480 sf

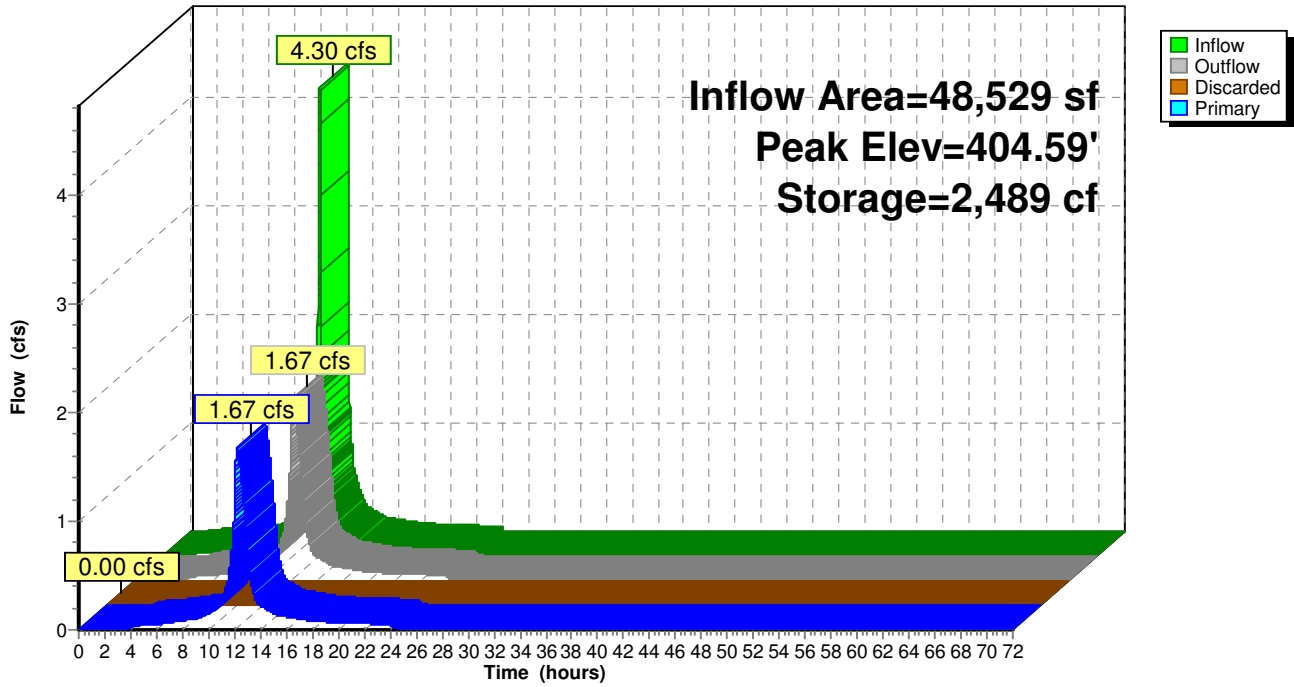
**Discarded OutFlow** Max=0.00 cfs @ 0.00 hrs HW=402.00' (Free Discharge)  
 ↳4=Exfiltration ( Controls 0.00 cfs)

**Primary OutFlow** Max=1.67 cfs @ 12.17 hrs HW=404.59' (Free Discharge)  
 ↳1=Orifice/Grate (Orifice Controls 1.67 cfs @ 5.44 fps)  
 ↳2=Orifice/Grate ( Controls 0.00 cfs)  
 ↳3=Orifice/Grate ( Controls 0.00 cfs)

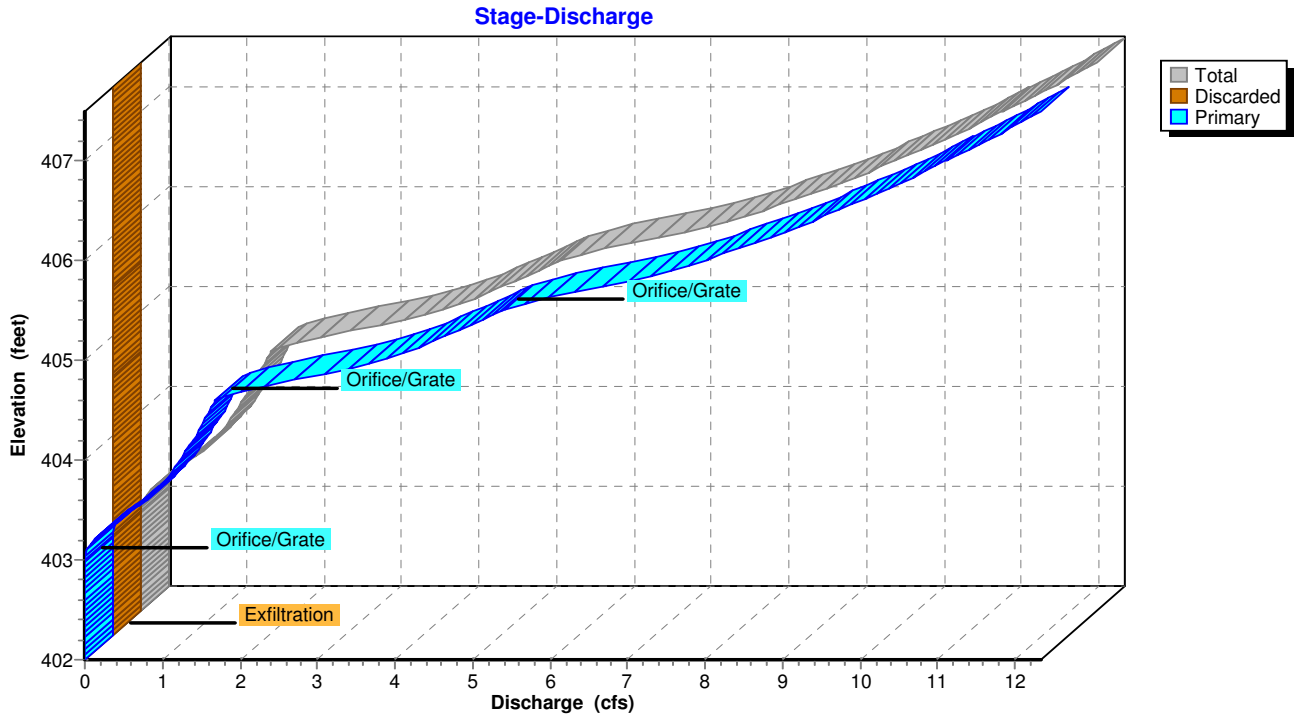


### Pond 8p: Detention System

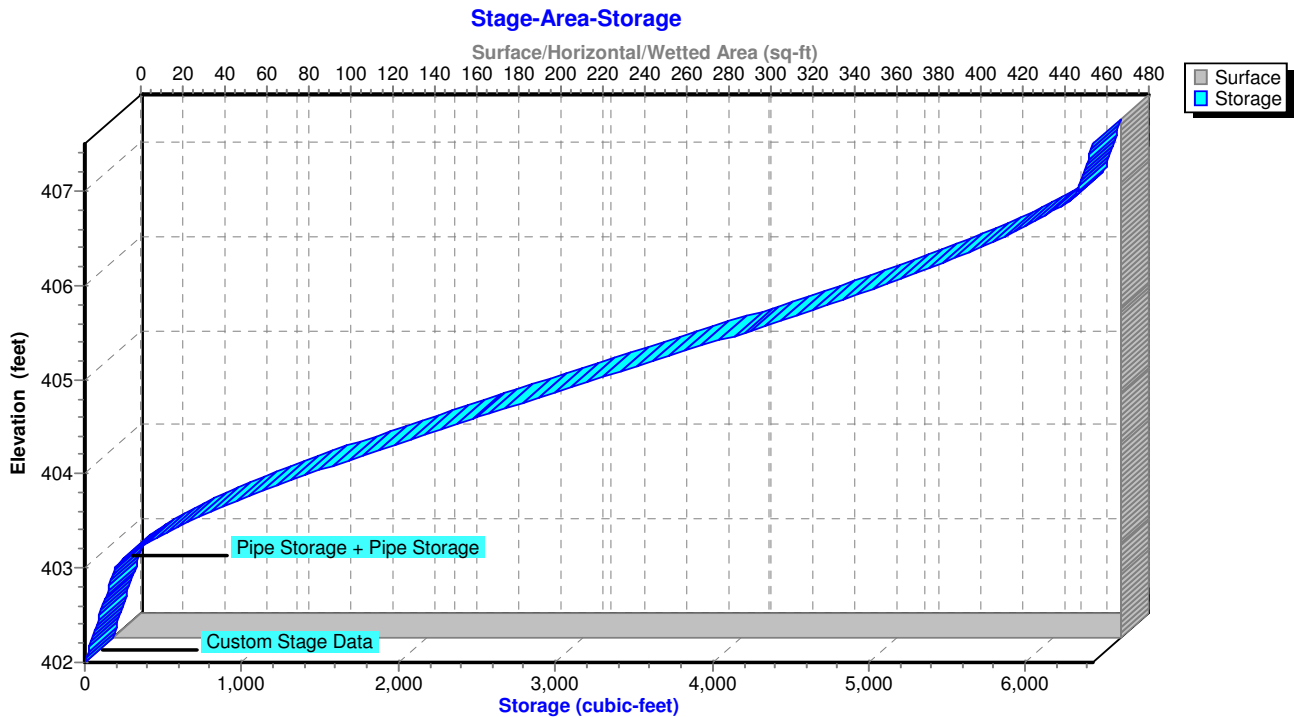
Hydrograph



### Pond 8p: Detention System



### Pond 8p: Detention System



**Hydrograph for Pond 8p: Detention System**

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	402.00	0.00	<b>0.00</b>	0.00
2.00	0.02	38	402.20	0.00	0.00	0.00
4.00	0.04	235	403.08	0.02	0.00	0.02
6.00	0.05	265	403.12	0.05	0.00	0.05
8.00	0.09	295	403.16	0.09	0.00	0.09
10.00	0.17	351	403.22	0.16	0.00	0.16
12.00	<b>2.53</b>	<b>1,320</b>	<b>403.93</b>	<b>1.16</b>	0.00	<b>1.16</b>
14.00	<b>0.21</b>	<b>400</b>	<b>403.27</b>	<b>0.22</b>	0.00	<b>0.22</b>
16.00	0.12	323	403.19	0.12	0.00	0.12
18.00	0.08	292	403.16	0.08	0.00	0.08
20.00	0.07	280	403.14	0.07	0.00	0.07
22.00	0.06	270	403.13	0.06	0.00	0.06
24.00	0.05	261	403.12	0.05	0.00	0.05
26.00	0.00	196	403.01	0.00	0.00	0.00
28.00	0.00	192	403.00	0.00	0.00	0.00
30.00	0.00	192	403.00	0.00	0.00	0.00
32.00	0.00	192	403.00	0.00	0.00	0.00
34.00	0.00	192	403.00	0.00	0.00	0.00
36.00	0.00	192	403.00	0.00	0.00	0.00
38.00	0.00	192	403.00	0.00	0.00	0.00
40.00	0.00	192	403.00	0.00	0.00	0.00
42.00	0.00	192	403.00	0.00	0.00	0.00
44.00	0.00	192	403.00	0.00	0.00	0.00
46.00	0.00	192	403.00	0.00	0.00	0.00
48.00	0.00	192	403.00	0.00	0.00	0.00
50.00	0.00	192	403.00	0.00	0.00	0.00
52.00	0.00	192	403.00	0.00	0.00	0.00
54.00	0.00	192	403.00	0.00	0.00	0.00
56.00	0.00	192	403.00	0.00	0.00	0.00
58.00	0.00	192	403.00	0.00	0.00	0.00
60.00	0.00	192	403.00	0.00	0.00	0.00
62.00	0.00	192	403.00	0.00	0.00	0.00
64.00	0.00	192	403.00	0.00	0.00	0.00
66.00	0.00	192	403.00	0.00	0.00	0.00
68.00	0.00	192	403.00	0.00	0.00	0.00
70.00	0.00	192	403.00	0.00	0.00	0.00
72.00	0.00	192	403.00	0.00	0.00	0.00

**Stage-Discharge for Pond 8p: Detention System**

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
402.00	0.00	0.00	0.00	407.10	11.36	0.00	11.36
402.10	0.00	0.00	0.00	407.20	11.61	0.00	11.61
402.20	0.00	0.00	0.00	407.30	11.86	0.00	11.86
402.30	0.00	0.00	0.00	407.40	12.10	0.00	12.10
402.40	0.00	0.00	0.00	407.50	<b>12.33</b>	0.00	<b>12.33</b>
402.50	0.00	0.00	0.00				
402.60	0.00	0.00	0.00				
402.70	0.00	0.00	0.00				
402.80	0.00	0.00	0.00				
402.90	0.00	0.00	0.00				
403.00	0.00	0.00	0.00				
403.10	0.03	0.00	0.03				
403.20	0.13	0.00	0.13				
403.30	0.27	0.00	0.27				
403.40	0.45	0.00	0.45				
403.50	0.63	0.00	0.63				
403.60	0.80	0.00	0.80				
403.70	0.92	0.00	0.92				
403.80	1.03	0.00	1.03				
403.90	1.13	0.00	1.13				
404.00	1.22	0.00	1.22				
404.10	1.31	0.00	1.31				
404.20	1.39	0.00	1.39				
404.30	1.47	0.00	1.47				
404.40	1.54	0.00	1.54				
404.50	1.61	0.00	1.61				
404.60	1.68	0.00	1.68				
404.70	2.04	0.00	2.04				
404.80	2.66	0.00	2.66				
404.90	3.34	0.00	3.34				
405.00	3.80	0.00	3.80				
405.10	4.18	0.00	4.18				
405.20	4.51	0.00	4.51				
405.30	4.82	0.00	4.82				
405.40	5.10	0.00	5.10				
405.50	5.36	0.00	5.36				
405.60	5.81	0.00	5.81				
405.70	6.42	0.00	6.42				
405.80	7.06	0.00	7.06				
405.90	7.54	0.00	7.54				
406.00	7.97	0.00	7.97				
406.10	8.35	0.00	8.35				
406.20	8.72	0.00	8.72				
406.30	9.06	0.00	9.06				
406.40	9.39	0.00	9.39				
406.50	9.70	0.00	9.70				
406.60	10.00	0.00	10.00				
406.70	10.29	0.00	10.29				
406.80	10.57	0.00	10.57				
406.90	10.84	0.00	10.84				
407.00	11.10	0.00	11.10				

**Stage-Area-Storage for Pond 8p: Detention System**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
402.00	480	0	407.10	480	6,353
402.10	480	19	407.20	480	6,372
402.20	480	38	407.30	480	6,391
402.30	480	58	407.40	480	6,410
402.40	480	77	407.50	480	<b>6,429</b>
402.50	480	96			
402.60	480	115			
402.70	480	134			
402.80	480	154			
402.90	480	173			
403.00	480	192			
403.10	480	247			
403.20	480	331			
403.30	480	433			
403.40	480	548			
403.50	480	676			
403.60	480	813			
403.70	480	958			
403.80	480	1,111			
403.90	480	1,270			
404.00	480	1,435			
404.10	480	1,604			
404.20	480	1,778			
404.30	480	1,956			
404.40	480	2,137			
404.50	480	2,320			
404.60	480	2,506			
404.70	480	2,694			
404.80	480	2,883			
404.90	480	3,073			
405.00	480	3,263			
405.10	480	3,453			
405.20	480	3,643			
405.30	480	3,831			
405.40	480	4,019			
405.50	480	4,205			
405.60	480	4,389			
405.70	480	4,569			
405.80	480	4,747			
405.90	480	4,921			
406.00	480	5,091			
406.10	480	5,256			
406.20	480	5,415			
406.30	480	5,567			
406.40	480	5,713			
406.50	480	5,850			
406.60	480	5,977			
406.70	480	6,093			
406.80	480	6,195			
406.90	480	6,278			
407.00	480	6,333			

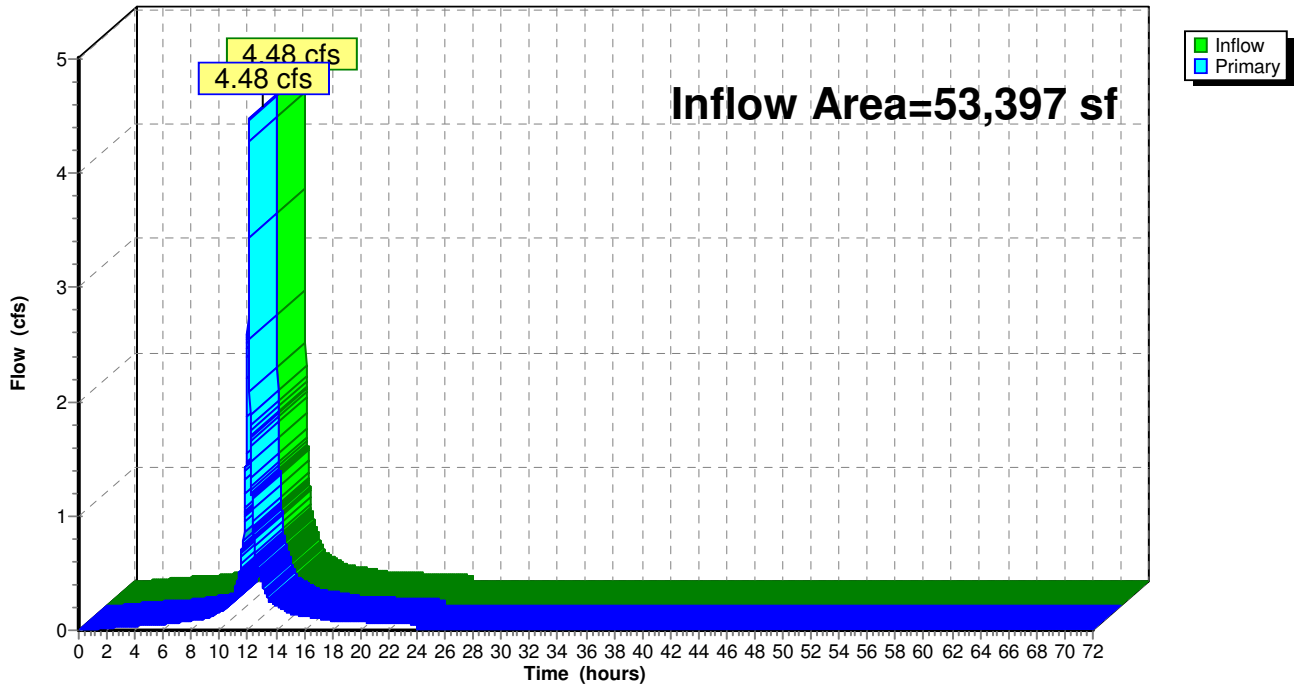
### Summary for Link 4I: existing total discharge

Inflow Area = 53,397 sf, 67.93% Impervious, Inflow Depth = 3.20" for 2-Year-2100 event  
Inflow = 4.48 cfs @ 12.10 hrs, Volume= 14,250 cf  
Primary = 4.48 cfs @ 12.10 hrs, Volume= 14,250 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Link 4I: existing total discharge

Hydrograph



Hydrograph for Link 4I: existing total discharge

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.02	0.00	0.02	53.00	0.00	0.00	0.00
3.00	0.03	0.00	0.03	54.00	0.00	0.00	0.00
4.00	0.04	0.00	0.04	55.00	0.00	0.00	0.00
5.00	0.04	0.00	0.04	56.00	0.00	0.00	0.00
6.00	0.05	0.00	0.05	57.00	0.00	0.00	0.00
7.00	0.07	0.00	0.07	58.00	0.00	0.00	0.00
8.00	0.08	0.00	0.08	59.00	0.00	0.00	0.00
9.00	0.10	0.00	0.10	60.00	0.00	0.00	0.00
10.00	0.16	0.00	0.16	61.00	0.00	0.00	0.00
11.00	0.31	0.00	0.31	62.00	0.00	0.00	0.00
12.00	<b>2.59</b>	0.00	<b>2.59</b>	63.00	0.00	0.00	0.00
13.00	<b>0.42</b>	0.00	<b>0.42</b>	64.00	0.00	0.00	0.00
14.00	0.22	0.00	0.22	65.00	0.00	0.00	0.00
15.00	0.15	0.00	0.15	66.00	0.00	0.00	0.00
16.00	0.12	0.00	0.12	67.00	0.00	0.00	0.00
17.00	0.10	0.00	0.10	68.00	0.00	0.00	0.00
18.00	0.08	0.00	0.08	69.00	0.00	0.00	0.00
19.00	0.08	0.00	0.08	70.00	0.00	0.00	0.00
20.00	0.07	0.00	0.07	71.00	0.00	0.00	0.00
21.00	0.07	0.00	0.07	72.00	0.00	0.00	0.00
22.00	0.06	0.00	0.06				
23.00	0.06	0.00	0.06				
24.00	0.05	0.00	0.05				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

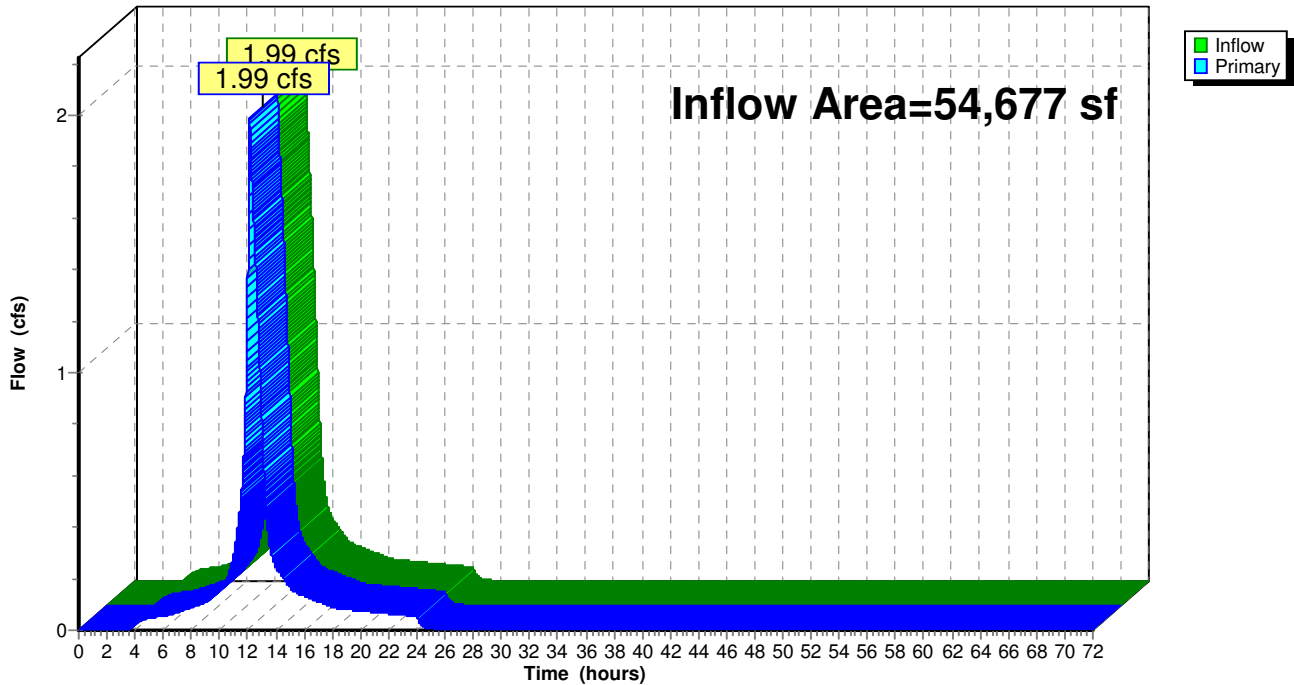
### Summary for Link 9I: Overall discharge

Inflow Area = 54,677 sf, 74.85% Impervious, Inflow Depth = 3.26" for 2-Year-2100 event  
Inflow = 1.99 cfs @ 12.12 hrs, Volume= 14,861 cf  
Primary = 1.99 cfs @ 12.12 hrs, Volume= 14,861 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Link 9I: Overall discharge

Hydrograph



**Hydrograph for Link 9I: Overall discharge**

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.03	0.00	0.03	55.00	0.00	0.00	0.00
5.00	0.05	0.00	0.05	56.00	0.00	0.00	0.00
6.00	0.06	0.00	0.06	57.00	0.00	0.00	0.00
7.00	0.07	0.00	0.07	58.00	0.00	0.00	0.00
8.00	0.09	0.00	0.09	59.00	0.00	0.00	0.00
9.00	0.11	0.00	0.11	60.00	0.00	0.00	0.00
10.00	0.16	0.00	0.16	61.00	0.00	0.00	0.00
11.00	0.29	0.00	0.29	62.00	0.00	0.00	0.00
12.00	1.37	0.00	1.37	63.00	0.00	0.00	0.00
13.00	0.81	0.00	0.81	64.00	0.00	0.00	0.00
14.00	0.25	0.00	0.25	65.00	0.00	0.00	0.00
15.00	0.17	0.00	0.17	66.00	0.00	0.00	0.00
16.00	0.13	0.00	0.13	67.00	0.00	0.00	0.00
17.00	0.11	0.00	0.11	68.00	0.00	0.00	0.00
18.00	0.09	0.00	0.09	69.00	0.00	0.00	0.00
19.00	0.08	0.00	0.08	70.00	0.00	0.00	0.00
20.00	0.08	0.00	0.08	71.00	0.00	0.00	0.00
21.00	0.07	0.00	0.07	72.00	0.00	0.00	0.00
22.00	0.06	0.00	0.06				
23.00	0.06	0.00	0.06				
24.00	0.05	0.00	0.05				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points  
 Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

<b>Subcatchment 1si: Ext DA 1</b>	Runoff Area=1,374 sf   100.00% Impervious   Runoff Depth=6.13" Flow Length=139'   Slope=0.0680 '/'   Tc=6.0 min   CN=0/98   Runoff=0.19 cfs   702 cf
<b>Subcatchment 1sp: Ext DA 1</b>	Runoff Area=2,438 sf   0.00% Impervious   Runoff Depth=4.87" Flow Length=139'   Slope=0.0680 '/'   Tc=6.0 min   CN=87/0   Runoff=0.30 cfs   990 cf
<b>Subcatchment 2si: Ext DA 2</b>	Runoff Area=4,185 sf   100.00% Impervious   Runoff Depth=6.13" Flow Length=115'   Tc=1.0 min   CN=0/98   Runoff=0.64 cfs   2,138 cf
<b>Subcatchment 2sp: Ext DA 2</b>	Runoff Area=326 sf   0.00% Impervious   Runoff Depth=4.01" Flow Length=115'   Tc=1.0 min   CN=79/0   Runoff=0.04 cfs   109 cf
<b>Subcatchment 3si: Ext DA 3</b>	Runoff Area=30,716 sf   100.00% Impervious   Runoff Depth=6.13" Flow Length=319'   Tc=1.7 min   CN=0/98   Runoff=4.71 cfs   15,695 cf
<b>Subcatchment 3sp: Ext DA 3</b>	Runoff Area=14,358 sf   0.00% Impervious   Runoff Depth=3.50" Flow Length=319'   Tc=1.7 min   CN=74/0   Runoff=1.53 cfs   4,186 cf
<b>Subcatchment 4si: DA 1 Undetained</b>	Runoff Area=212 sf   100.00% Impervious   Runoff Depth=6.13" Flow Length=27'   Slope=0.0570 '/'   Tc=2.2 min   CN=0/98   Runoff=0.03 cfs   108 cf
<b>Subcatchment 4sp: DA 1 Undetained</b>	Runoff Area=1,964 sf   0.00% Impervious   Runoff Depth=3.50" Flow Length=27'   Slope=0.0570 '/'   Tc=2.2 min   CN=74/0   Runoff=0.21 cfs   573 cf
<b>Subcatchment 5si: undetained 2</b>	Runoff Area=1,572 sf   100.00% Impervious   Runoff Depth=6.13" Flow Length=28'   Slope=0.0240 '/'   Tc=4.6 min   CN=0/98   Runoff=0.23 cfs   803 cf
<b>Subcatchment 5sp: undetained 2</b>	Runoff Area=2,400 sf   0.00% Impervious   Runoff Depth=3.50" Flow Length=28'   Slope=0.0240 '/'   Tc=4.6 min   CN=74/0   Runoff=0.24 cfs   700 cf
<b>Subcatchment 6si: Pro DA 3</b>	Runoff Area=39,143 sf   100.00% Impervious   Runoff Depth=6.13" Flow Length=98'   Tc=2.5 min   CN=0/98   Runoff=5.98 cfs   20,000 cf
<b>Subcatchment 6sp: Pro DA 3</b>	Runoff Area=9,386 sf   0.00% Impervious   Runoff Depth=3.50" Flow Length=98'   Tc=2.5 min   CN=74/0   Runoff=1.00 cfs   2,736 cf
<b>Pond 8p: Detention System</b>	Peak Elev=405.21'   Storage=3,658 cf   Inflow=6.97 cfs   22,737 cf Discarded=0.00 cfs   0 cf   Primary=4.54 cfs   22,545 cf   Outflow=4.54 cfs   22,545 cf
<b>Link 4I: existing total discharge</b>	Inflow=7.39 cfs   23,820 cf Primary=7.39 cfs   23,820 cf
<b>Link 9I: Overall discharge</b>	Inflow=5.15 cfs   24,729 cf Primary=5.15 cfs   24,729 cf

**Total Runoff Area = 108,074 sf   Runoff Volume = 48,740 cf   Average Runoff Depth = 5.41"**  
**28.57% Pervious = 30,872 sf   71.43% Impervious = 77,202 sf**

### Summary for Subcatchment 1si: Ext DA 1

Runoff = 0.19 cfs @ 12.13 hrs, Volume= 702 cf, Depth= 6.13"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 10-Year-2100 Rainfall=6.37"

Area (sf)	CN	Description
1,374	98	Paved parking, HSG C
1,374	98	100.00% Impervious Area

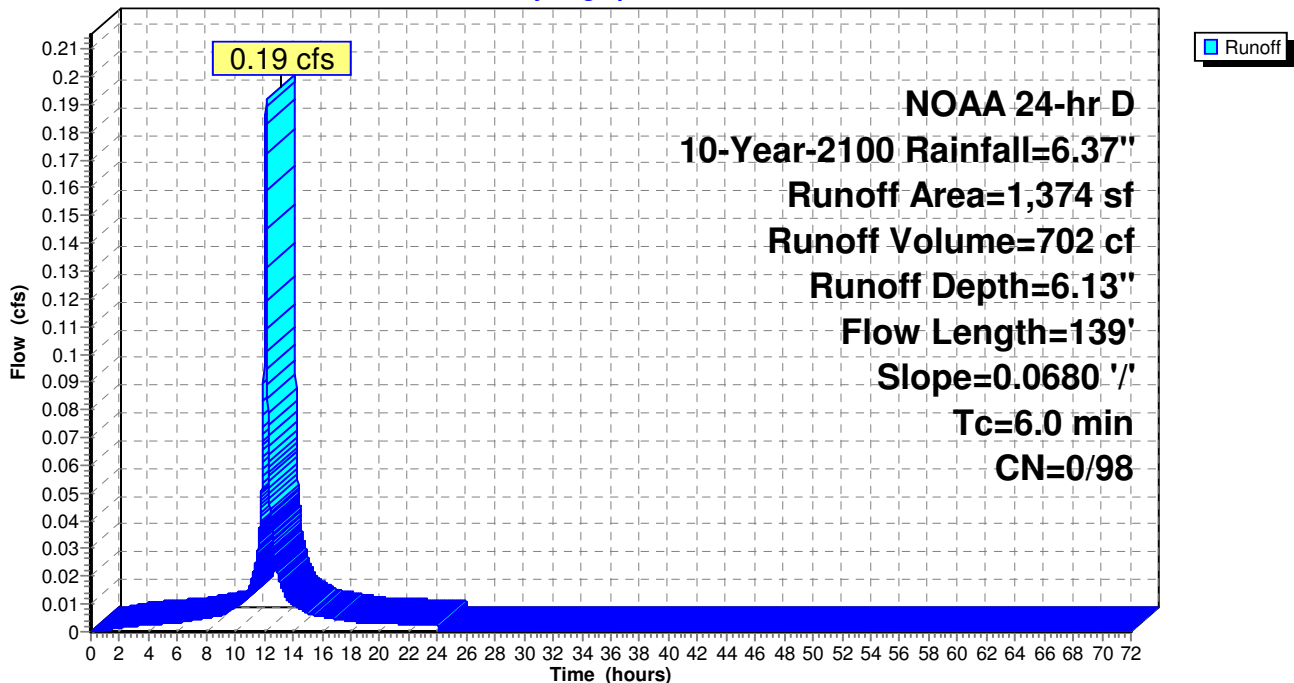
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	100	0.0680	0.29		<b>Sheet Flow, sheet flow</b>
0.2	39	0.0680	4.20		<b>Shallow Concentrated Flow, scf</b>
					Unpaved Kv= 16.1 fps
6.0	139	Total			



### Subcatchment 1si: Ext DA 1

Hydrograph



**Hydrograph for Subcatchment 1si: Ext DA 1**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.15	0.00	0.04	0.00
4.00	0.33	0.00	0.17	0.00
6.00	0.54	0.00	0.36	0.00
8.00	0.83	0.00	0.62	0.01
10.00	1.26	0.00	1.05	0.01
12.00	3.05	0.00	2.82	<b>0.11</b>
14.00	5.11	0.00	4.87	<b>0.01</b>
16.00	5.54	0.00	5.31	0.01
18.00	5.83	0.00	5.59	0.00
20.00	6.04	0.00	5.80	0.00
22.00	6.22	0.00	5.98	0.00
24.00	<b>6.37</b>	0.00	<b>6.13</b>	0.00
26.00	6.37	0.00	6.13	0.00
28.00	6.37	0.00	6.13	0.00
30.00	6.37	0.00	6.13	0.00
32.00	6.37	0.00	6.13	0.00
34.00	6.37	0.00	6.13	0.00
36.00	6.37	0.00	6.13	0.00
38.00	6.37	0.00	6.13	0.00
40.00	6.37	0.00	6.13	0.00
42.00	6.37	0.00	6.13	0.00
44.00	6.37	0.00	6.13	0.00
46.00	6.37	0.00	6.13	0.00
48.00	6.37	0.00	6.13	0.00
50.00	6.37	0.00	6.13	0.00
52.00	6.37	0.00	6.13	0.00
54.00	6.37	0.00	6.13	0.00
56.00	6.37	0.00	6.13	0.00
58.00	6.37	0.00	6.13	0.00
60.00	6.37	0.00	6.13	0.00
62.00	6.37	0.00	6.13	0.00
64.00	6.37	0.00	6.13	0.00
66.00	6.37	0.00	6.13	0.00
68.00	6.37	0.00	6.13	0.00
70.00	6.37	0.00	6.13	0.00
72.00	6.37	0.00	6.13	0.00

### Summary for Subcatchment 1sp: Ext DA 1

Runoff = 0.30 cfs @ 12.13 hrs, Volume= 990 cf, Depth= 4.87"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 10-Year-2100 Rainfall=6.37"

Area (sf)	CN	Description
2,438	87	Dirt roads, HSG C
2,438	87	100.00% Pervious Area

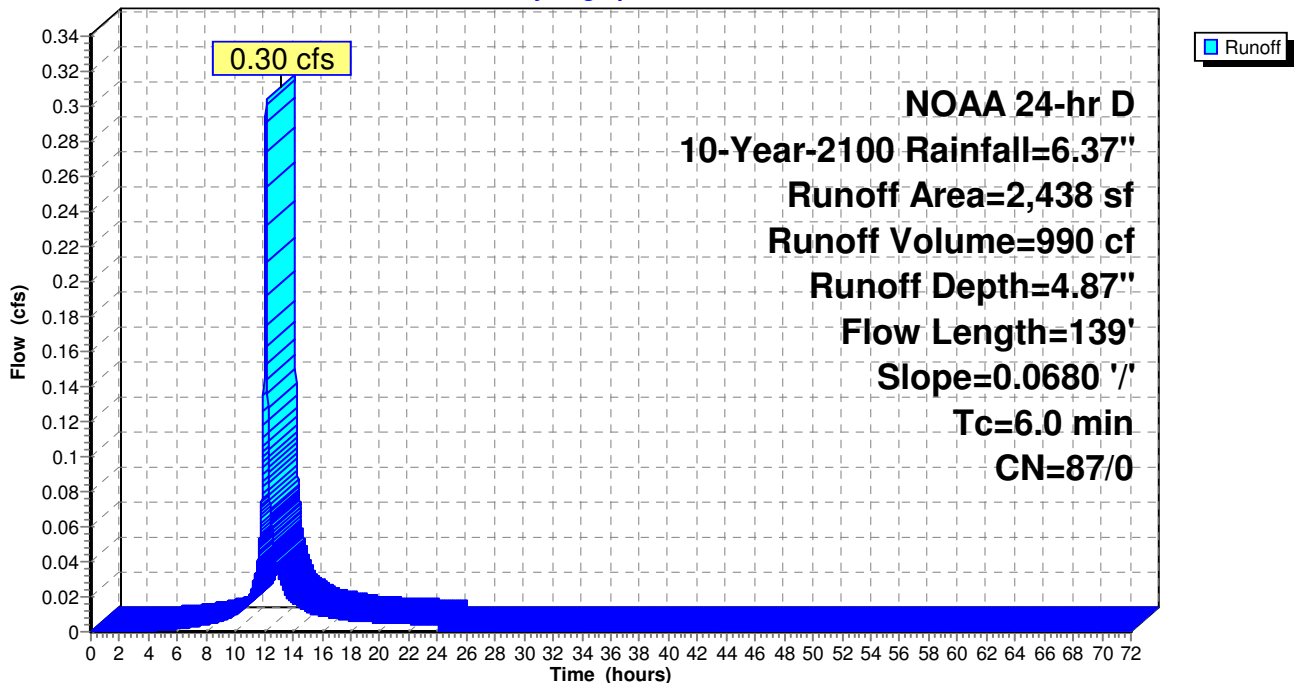
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	100	0.0680	0.29		<b>Sheet Flow, sheet flow</b> Grass: Short n= 0.150 P2= 3.47"
0.2	39	0.0680	4.20		<b>Shallow Concentrated Flow, scf</b> Unpaved Kv= 16.1 fps
6.0	139	Total			



### Subcatchment 1sp: Ext DA 1

Hydrograph



**Hydrograph for Subcatchment 1sp: Ext DA 1**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.15	0.00	0.00	0.00
4.00	0.33	0.00	0.00	0.00
6.00	0.54	0.03	0.00	0.00
8.00	0.83	0.14	0.00	0.00
10.00	1.26	0.38	0.00	0.01
12.00	3.05	1.78	0.00	<b>0.16</b>
14.00	5.11	3.67	0.00	<b>0.02</b>
16.00	5.54	4.08	0.00	0.01
18.00	5.83	4.35	0.00	0.01
20.00	6.04	4.55	0.00	0.01
22.00	6.22	4.73	0.00	0.00
24.00	<b>6.37</b>	<b>4.87</b>	0.00	0.00
26.00	6.37	4.87	0.00	0.00
28.00	6.37	4.87	0.00	0.00
30.00	6.37	4.87	0.00	0.00
32.00	6.37	4.87	0.00	0.00
34.00	6.37	4.87	0.00	0.00
36.00	6.37	4.87	0.00	0.00
38.00	6.37	4.87	0.00	0.00
40.00	6.37	4.87	0.00	0.00
42.00	6.37	4.87	0.00	0.00
44.00	6.37	4.87	0.00	0.00
46.00	6.37	4.87	0.00	0.00
48.00	6.37	4.87	0.00	0.00
50.00	6.37	4.87	0.00	0.00
52.00	6.37	4.87	0.00	0.00
54.00	6.37	4.87	0.00	0.00
56.00	6.37	4.87	0.00	0.00
58.00	6.37	4.87	0.00	0.00
60.00	6.37	4.87	0.00	0.00
62.00	6.37	4.87	0.00	0.00
64.00	6.37	4.87	0.00	0.00
66.00	6.37	4.87	0.00	0.00
68.00	6.37	4.87	0.00	0.00
70.00	6.37	4.87	0.00	0.00
72.00	6.37	4.87	0.00	0.00

**Summary for Subcatchment 2si: Ext DA 2**

[49] Hint: Tc<2dt may require smaller dt

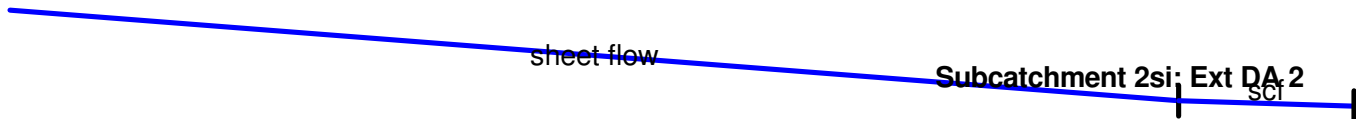
Runoff = 0.64 cfs @ 12.09 hrs, Volume= 2,138 cf, Depth= 6.13"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 10-Year-2100 Rainfall=6.37"

Area (sf)	CN	Description
4,185	98	Paved parking, HSG C
4,185	98	100.00% Impervious Area

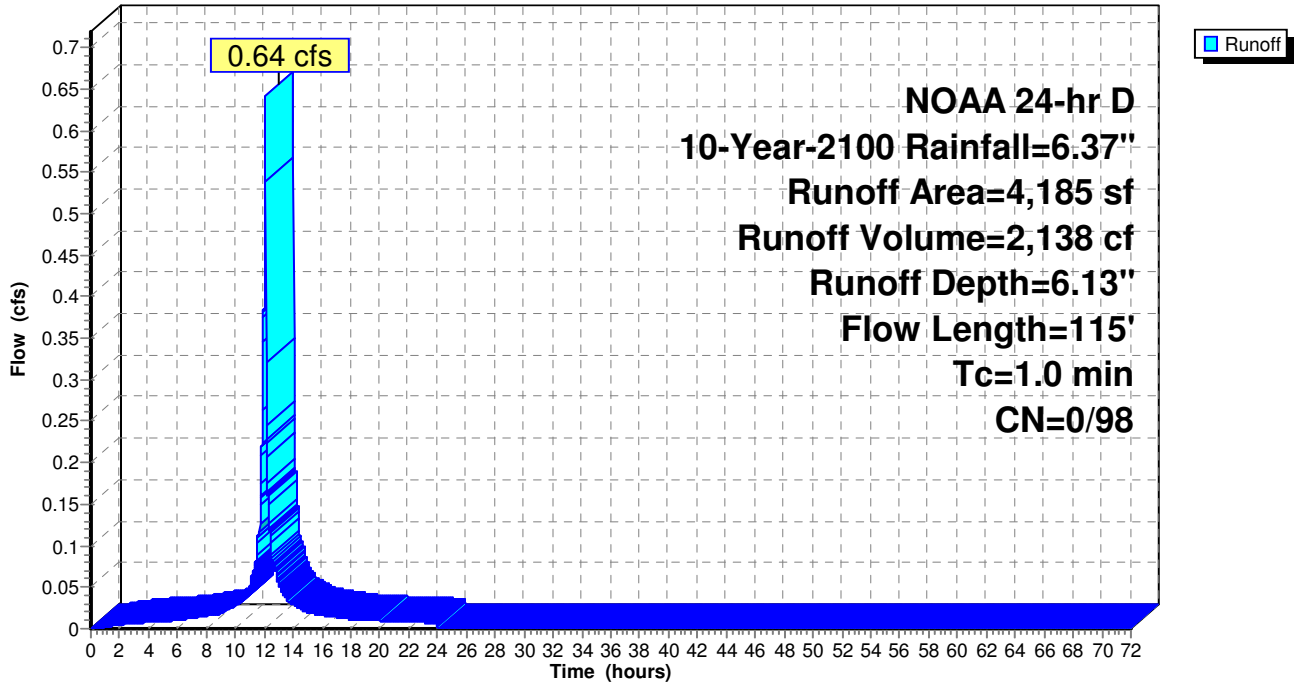
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0385	1.86		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.1	15	0.0150	2.49		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.0	115	Total			



### Subcatchment 2si: Ext DA 2

Hydrograph



**Hydrograph for Subcatchment 2si: Ext DA 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
2.00	0.15	0.00	0.04	0.00
4.00	0.33	0.00	0.17	0.01
6.00	0.54	0.00	0.36	0.01
8.00	0.83	0.00	0.62	0.02
10.00	1.26	0.00	1.05	0.03
12.00	3.05	0.00	2.82	0.38
14.00	5.11	0.00	4.87	0.03
16.00	5.54	0.00	5.31	0.02
18.00	5.83	0.00	5.59	0.01
20.00	6.04	0.00	5.80	0.01
22.00	6.22	0.00	5.98	0.01
24.00	6.37	0.00	6.13	0.01
26.00	6.37	0.00	6.13	0.00
28.00	6.37	0.00	6.13	0.00
30.00	6.37	0.00	6.13	0.00
32.00	6.37	0.00	6.13	0.00
34.00	6.37	0.00	6.13	0.00
36.00	6.37	0.00	6.13	0.00
38.00	6.37	0.00	6.13	0.00
40.00	6.37	0.00	6.13	0.00
42.00	6.37	0.00	6.13	0.00
44.00	6.37	0.00	6.13	0.00
46.00	6.37	0.00	6.13	0.00
48.00	6.37	0.00	6.13	0.00
50.00	6.37	0.00	6.13	0.00
52.00	6.37	0.00	6.13	0.00
54.00	6.37	0.00	6.13	0.00
56.00	6.37	0.00	6.13	0.00
58.00	6.37	0.00	6.13	0.00
60.00	6.37	0.00	6.13	0.00
62.00	6.37	0.00	6.13	0.00
64.00	6.37	0.00	6.13	0.00
66.00	6.37	0.00	6.13	0.00
68.00	6.37	0.00	6.13	0.00
70.00	6.37	0.00	6.13	0.00
72.00	6.37	0.00	6.13	0.00

**Summary for Subcatchment 2sp: Ext DA 2**

[49] Hint: Tc<2dt may require smaller dt

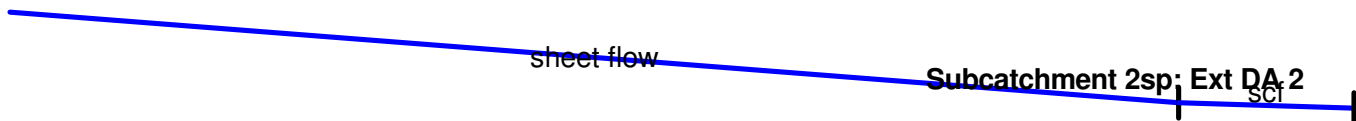
Runoff = 0.04 cfs @ 12.10 hrs, Volume= 109 cf, Depth= 4.01"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 10-Year-2100 Rainfall=6.37"

Area (sf)	CN	Description
326	79	50-75% Grass cover, Fair, HSG C
326	79	100.00% Pervious Area

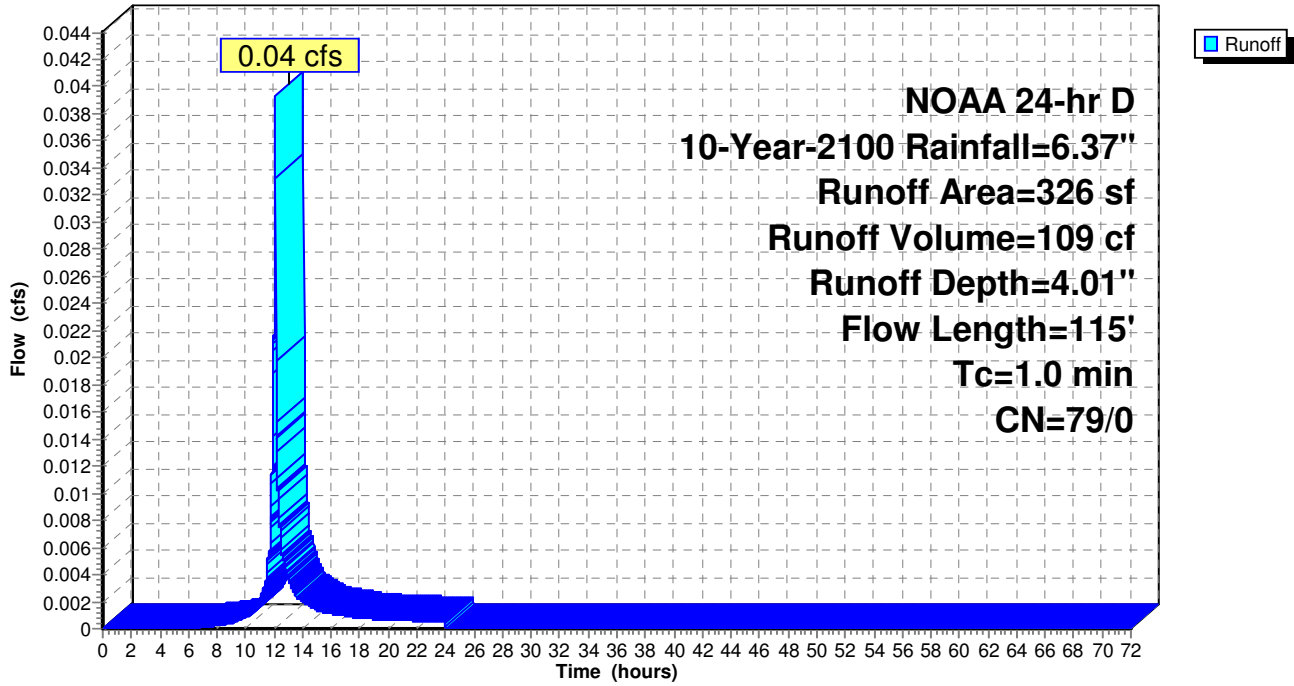
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0385	1.86		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.1	15	0.0150	2.49		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.0	115	Total			



### Subcatchment 2sp: Ext DA 2

Hydrograph



**Hydrograph for Subcatchment 2sp: Ext DA 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.15	0.00	0.00	0.00
4.00	0.33	0.00	0.00	0.00
6.00	0.54	0.00	0.00	0.00
8.00	0.83	0.03	0.00	0.00
10.00	1.26	0.16	0.00	0.00
12.00	3.05	1.23	0.00	<b>0.02</b>
14.00	5.11	2.89	0.00	<b>0.00</b>
16.00	5.54	3.27	0.00	0.00
18.00	5.83	3.52	0.00	0.00
20.00	6.04	3.71	0.00	0.00
22.00	6.22	3.87	0.00	0.00
24.00	<b>6.37</b>	<b>4.01</b>	0.00	0.00
26.00	6.37	4.01	0.00	0.00
28.00	6.37	4.01	0.00	0.00
30.00	6.37	4.01	0.00	0.00
32.00	6.37	4.01	0.00	0.00
34.00	6.37	4.01	0.00	0.00
36.00	6.37	4.01	0.00	0.00
38.00	6.37	4.01	0.00	0.00
40.00	6.37	4.01	0.00	0.00
42.00	6.37	4.01	0.00	0.00
44.00	6.37	4.01	0.00	0.00
46.00	6.37	4.01	0.00	0.00
48.00	6.37	4.01	0.00	0.00
50.00	6.37	4.01	0.00	0.00
52.00	6.37	4.01	0.00	0.00
54.00	6.37	4.01	0.00	0.00
56.00	6.37	4.01	0.00	0.00
58.00	6.37	4.01	0.00	0.00
60.00	6.37	4.01	0.00	0.00
62.00	6.37	4.01	0.00	0.00
64.00	6.37	4.01	0.00	0.00
66.00	6.37	4.01	0.00	0.00
68.00	6.37	4.01	0.00	0.00
70.00	6.37	4.01	0.00	0.00
72.00	6.37	4.01	0.00	0.00

### Summary for Subcatchment 3si: Ext DA 3

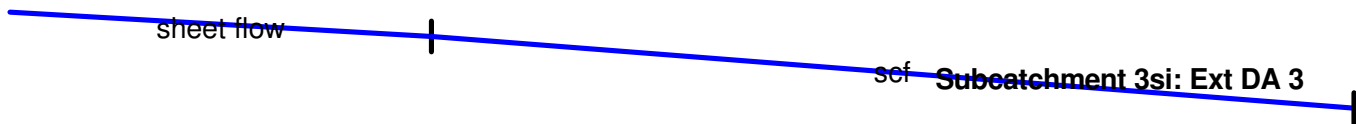
Runoff = 4.71 cfs @ 12.10 hrs, Volume= 15,695 cf, Depth= 6.13"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 10-Year-2100 Rainfall=6.37"

Area (sf)	CN	Description
30,716	98	Paved parking, HSG C
30,716	98	100.00% Impervious Area

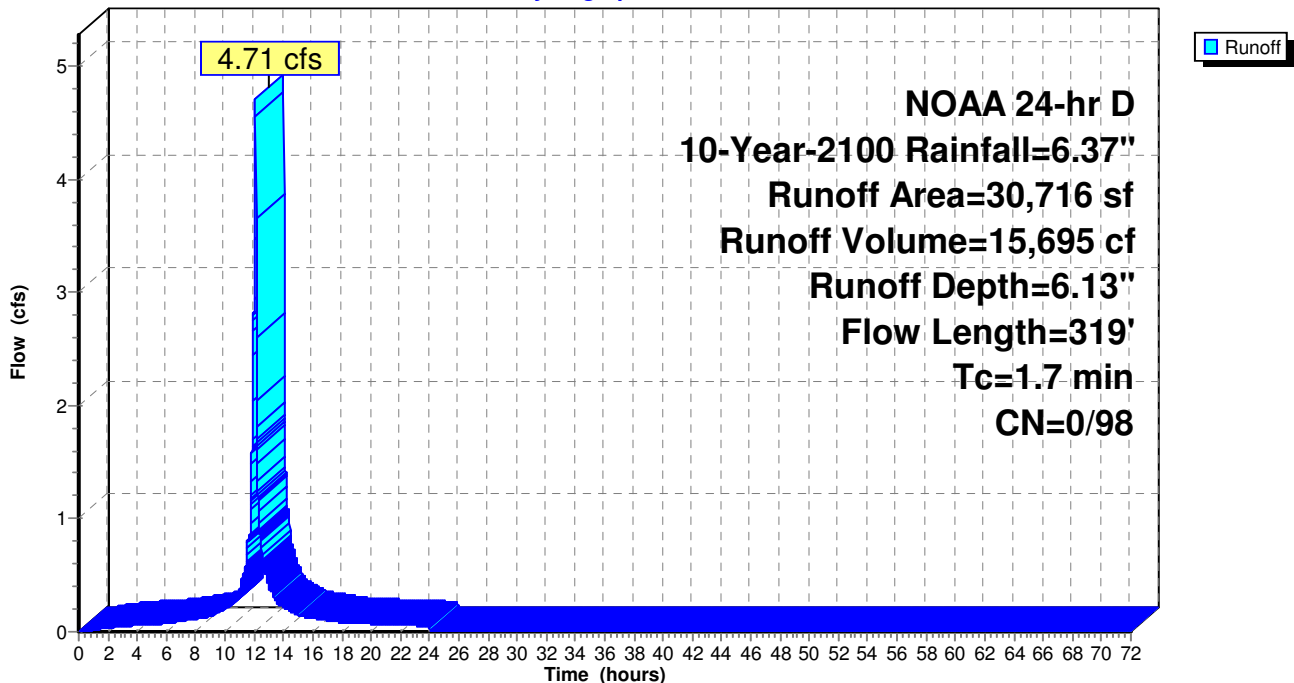
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0420	1.93		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.8	219	0.0570	4.85		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.7	319	Total			



### Subcatchment 3si: Ext DA 3

Hydrograph



**Hydrograph for Subcatchment 3si: Ext DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
2.00	0.15	0.00	0.04	0.03
4.00	0.33	0.00	0.17	0.06
6.00	0.54	0.00	0.36	0.07
8.00	0.83	0.00	0.62	0.11
10.00	1.26	0.00	1.05	0.21
12.00	3.05	0.00	2.82	<b>2.82</b>
14.00	5.11	0.00	4.87	<b>0.22</b>
16.00	5.54	0.00	5.31	0.12
18.00	5.83	0.00	5.59	0.08
20.00	6.04	0.00	5.80	0.07
22.00	6.22	0.00	5.98	0.06
24.00	<b>6.37</b>	0.00	<b>6.13</b>	0.05
26.00	6.37	0.00	6.13	0.00
28.00	6.37	0.00	6.13	0.00
30.00	6.37	0.00	6.13	0.00
32.00	6.37	0.00	6.13	0.00
34.00	6.37	0.00	6.13	0.00
36.00	6.37	0.00	6.13	0.00
38.00	6.37	0.00	6.13	0.00
40.00	6.37	0.00	6.13	0.00
42.00	6.37	0.00	6.13	0.00
44.00	6.37	0.00	6.13	0.00
46.00	6.37	0.00	6.13	0.00
48.00	6.37	0.00	6.13	0.00
50.00	6.37	0.00	6.13	0.00
52.00	6.37	0.00	6.13	0.00
54.00	6.37	0.00	6.13	0.00
56.00	6.37	0.00	6.13	0.00
58.00	6.37	0.00	6.13	0.00
60.00	6.37	0.00	6.13	0.00
62.00	6.37	0.00	6.13	0.00
64.00	6.37	0.00	6.13	0.00
66.00	6.37	0.00	6.13	0.00
68.00	6.37	0.00	6.13	0.00
70.00	6.37	0.00	6.13	0.00
72.00	6.37	0.00	6.13	0.00

### Summary for Subcatchment 3sp: Ext DA 3

Runoff = 1.53 cfs @ 12.10 hrs, Volume= 4,186 cf, Depth= 3.50"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 10-Year-2100 Rainfall=6.37"

Area (sf)	CN	Description
14,358	74	>75% Grass cover, Good, HSG C
14,358	74	100.00% Pervious Area

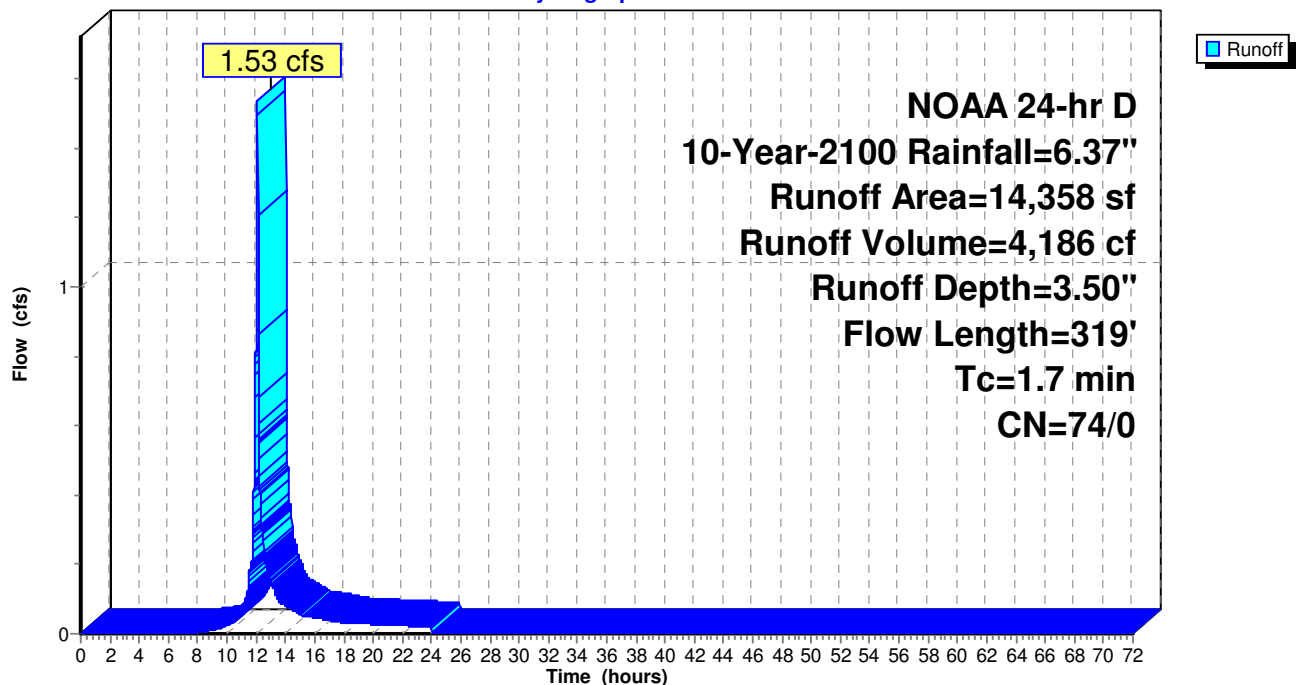
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0420	1.93		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.8	219	0.0570	4.85		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.7	319	Total			



### Subcatchment 3sp: Ext DA 3

Hydrograph



**Hydrograph for Subcatchment 3sp: Ext DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.15	0.00	0.00	0.00
4.00	0.33	0.00	0.00	0.00
6.00	0.54	0.00	0.00	0.00
8.00	0.83	0.00	0.00	0.00
10.00	1.26	0.08	0.00	0.03
12.00	3.05	0.94	0.00	<b>0.83</b>
14.00	5.11	2.45	0.00	<b>0.08</b>
16.00	5.54	2.80	0.00	0.05
18.00	5.83	3.04	0.00	0.03
20.00	6.04	3.22	0.00	0.03
22.00	6.22	3.37	0.00	0.02
24.00	<b>6.37</b>	<b>3.50</b>	0.00	0.02
26.00	6.37	3.50	0.00	0.00
28.00	6.37	3.50	0.00	0.00
30.00	6.37	3.50	0.00	0.00
32.00	6.37	3.50	0.00	0.00
34.00	6.37	3.50	0.00	0.00
36.00	6.37	3.50	0.00	0.00
38.00	6.37	3.50	0.00	0.00
40.00	6.37	3.50	0.00	0.00
42.00	6.37	3.50	0.00	0.00
44.00	6.37	3.50	0.00	0.00
46.00	6.37	3.50	0.00	0.00
48.00	6.37	3.50	0.00	0.00
50.00	6.37	3.50	0.00	0.00
52.00	6.37	3.50	0.00	0.00
54.00	6.37	3.50	0.00	0.00
56.00	6.37	3.50	0.00	0.00
58.00	6.37	3.50	0.00	0.00
60.00	6.37	3.50	0.00	0.00
62.00	6.37	3.50	0.00	0.00
64.00	6.37	3.50	0.00	0.00
66.00	6.37	3.50	0.00	0.00
68.00	6.37	3.50	0.00	0.00
70.00	6.37	3.50	0.00	0.00
72.00	6.37	3.50	0.00	0.00

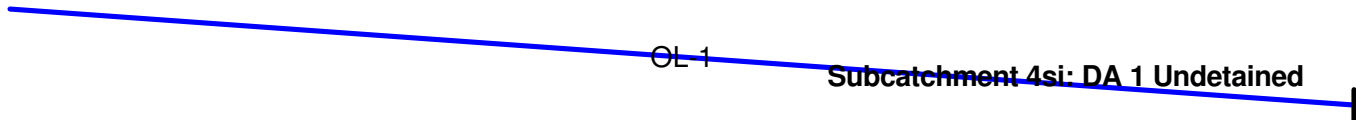
### Summary for Subcatchment 4si: DA 1 Undetained

Runoff = 0.03 cfs @ 12.10 hrs, Volume= 108 cf, Depth= 6.13"  
Routed to Link 9I : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 10-Year-2100 Rainfall=6.37"

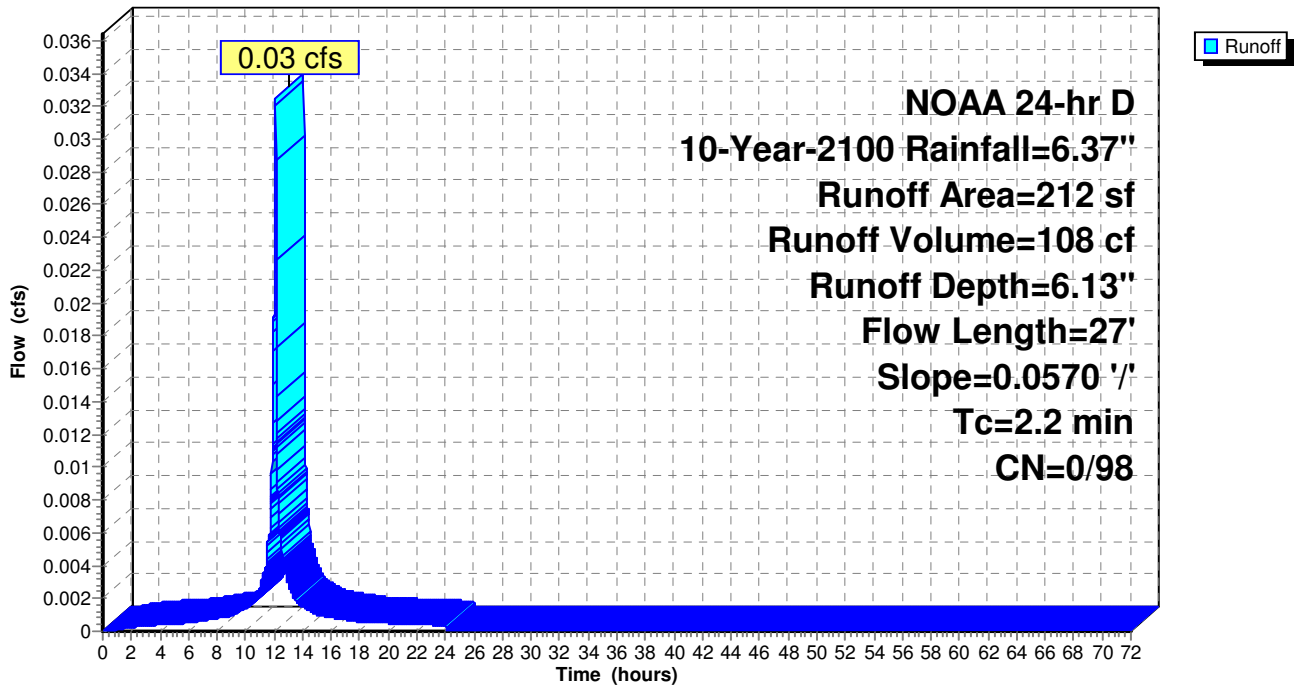
Area (sf)	CN	Description
212	98	Paved parking, HSG C
212	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	27	0.0570	0.21		<b>Sheet Flow, OL-1</b> n= 0.150 P2= 3.47"



### Subcatchment 4si: DA 1 Undetained

Hydrograph



**Hydrograph for Subcatchment 4si: DA 1 Undetained**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
2.00	0.15	0.00	0.04	0.00
4.00	0.33	0.00	0.17	0.00
6.00	0.54	0.00	0.36	0.00
8.00	0.83	0.00	0.62	0.00
10.00	1.26	0.00	1.05	0.00
12.00	3.05	0.00	2.82	0.02
14.00	5.11	0.00	4.87	0.00
16.00	5.54	0.00	5.31	0.00
18.00	5.83	0.00	5.59	0.00
20.00	6.04	0.00	5.80	0.00
22.00	6.22	0.00	5.98	0.00
24.00	6.37	0.00	6.13	0.00
26.00	6.37	0.00	6.13	0.00
28.00	6.37	0.00	6.13	0.00
30.00	6.37	0.00	6.13	0.00
32.00	6.37	0.00	6.13	0.00
34.00	6.37	0.00	6.13	0.00
36.00	6.37	0.00	6.13	0.00
38.00	6.37	0.00	6.13	0.00
40.00	6.37	0.00	6.13	0.00
42.00	6.37	0.00	6.13	0.00
44.00	6.37	0.00	6.13	0.00
46.00	6.37	0.00	6.13	0.00
48.00	6.37	0.00	6.13	0.00
50.00	6.37	0.00	6.13	0.00
52.00	6.37	0.00	6.13	0.00
54.00	6.37	0.00	6.13	0.00
56.00	6.37	0.00	6.13	0.00
58.00	6.37	0.00	6.13	0.00
60.00	6.37	0.00	6.13	0.00
62.00	6.37	0.00	6.13	0.00
64.00	6.37	0.00	6.13	0.00
66.00	6.37	0.00	6.13	0.00
68.00	6.37	0.00	6.13	0.00
70.00	6.37	0.00	6.13	0.00
72.00	6.37	0.00	6.13	0.00

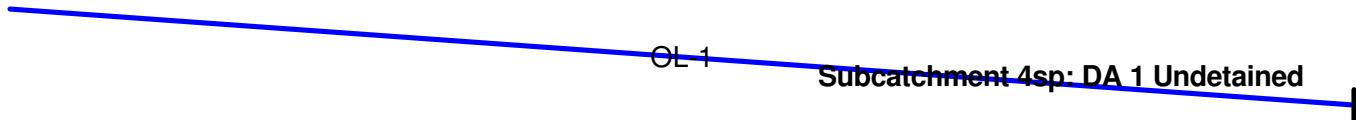
### Summary for Subcatchment 4sp: DA 1 Undetained

Runoff = 0.21 cfs @ 12.10 hrs, Volume= 573 cf, Depth= 3.50"  
Routed to Link 9I : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 10-Year-2100 Rainfall=6.37"

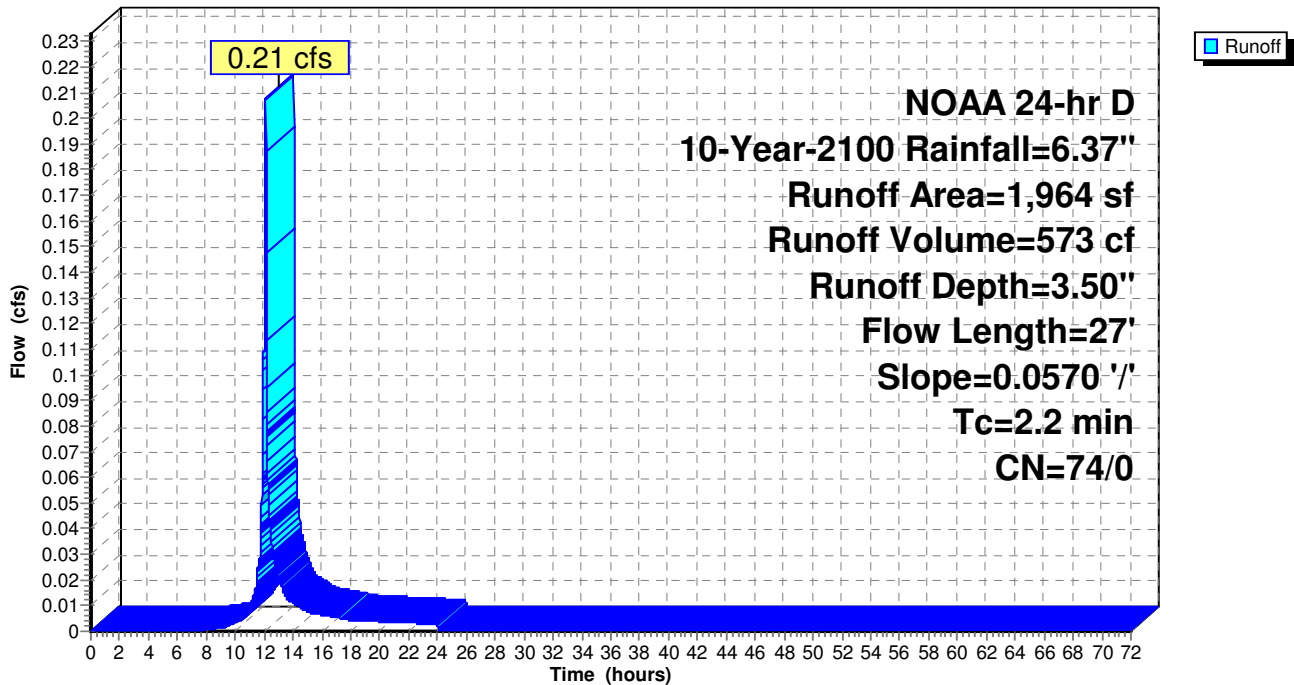
Area (sf)	CN	Description
1,964	74	>75% Grass cover, Good, HSG C
1,964	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	27	0.0570	0.21		<b>Sheet Flow, OL-1</b> n= 0.150 P2= 3.47"



### Subcatchment 4sp: DA 1 Undetained

Hydrograph



**Hydrograph for Subcatchment 4sp: DA 1 Undetained**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.15	0.00	0.00	0.00
4.00	0.33	0.00	0.00	0.00
6.00	0.54	0.00	0.00	0.00
8.00	0.83	0.00	0.00	0.00
10.00	1.26	0.08	0.00	0.00
12.00	3.05	0.94	0.00	<b>0.11</b>
14.00	5.11	2.45	0.00	<b>0.01</b>
16.00	5.54	2.80	0.00	0.01
18.00	5.83	3.04	0.00	0.00
20.00	6.04	3.22	0.00	0.00
22.00	6.22	3.37	0.00	0.00
24.00	<b>6.37</b>	<b>3.50</b>	0.00	0.00
26.00	6.37	3.50	0.00	0.00
28.00	6.37	3.50	0.00	0.00
30.00	6.37	3.50	0.00	0.00
32.00	6.37	3.50	0.00	0.00
34.00	6.37	3.50	0.00	0.00
36.00	6.37	3.50	0.00	0.00
38.00	6.37	3.50	0.00	0.00
40.00	6.37	3.50	0.00	0.00
42.00	6.37	3.50	0.00	0.00
44.00	6.37	3.50	0.00	0.00
46.00	6.37	3.50	0.00	0.00
48.00	6.37	3.50	0.00	0.00
50.00	6.37	3.50	0.00	0.00
52.00	6.37	3.50	0.00	0.00
54.00	6.37	3.50	0.00	0.00
56.00	6.37	3.50	0.00	0.00
58.00	6.37	3.50	0.00	0.00
60.00	6.37	3.50	0.00	0.00
62.00	6.37	3.50	0.00	0.00
64.00	6.37	3.50	0.00	0.00
66.00	6.37	3.50	0.00	0.00
68.00	6.37	3.50	0.00	0.00
70.00	6.37	3.50	0.00	0.00
72.00	6.37	3.50	0.00	0.00

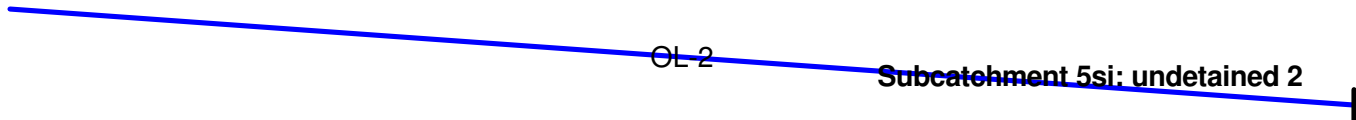
**Summary for Subcatchment 5si: undetained 2**

Runoff = 0.23 cfs @ 12.12 hrs, Volume= 803 cf, Depth= 6.13"  
Routed to Link 9I : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 10-Year-2100 Rainfall=6.37"

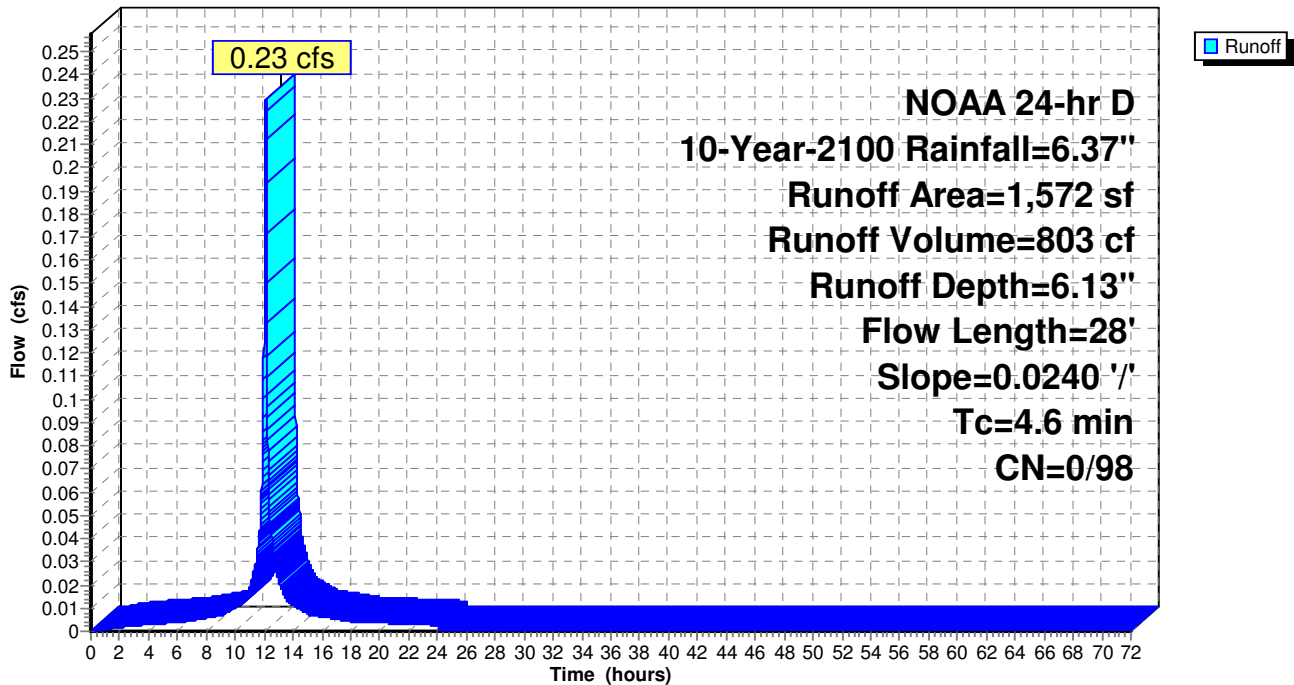
Area (sf)	CN	Description
1,572	98	Paved parking, HSG C
1,572	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	28	0.0240	0.10		<b>Sheet Flow, OL-2</b> Grass: Dense n= 0.240 P2= 3.47"



**Subcatchment 5si: undetained 2**

Hydrograph



**Hydrograph for Subcatchment 5si: undetained 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
2.00	0.15	0.00	0.04	0.00
4.00	0.33	0.00	0.17	0.00
6.00	0.54	0.00	0.36	0.00
8.00	0.83	0.00	0.62	0.01
10.00	1.26	0.00	1.05	0.01
12.00	3.05	0.00	2.82	0.13
14.00	5.11	0.00	4.87	0.01
16.00	5.54	0.00	5.31	0.01
18.00	5.83	0.00	5.59	0.00
20.00	6.04	0.00	5.80	0.00
22.00	6.22	0.00	5.98	0.00
24.00	6.37	0.00	6.13	0.00
26.00	6.37	0.00	6.13	0.00
28.00	6.37	0.00	6.13	0.00
30.00	6.37	0.00	6.13	0.00
32.00	6.37	0.00	6.13	0.00
34.00	6.37	0.00	6.13	0.00
36.00	6.37	0.00	6.13	0.00
38.00	6.37	0.00	6.13	0.00
40.00	6.37	0.00	6.13	0.00
42.00	6.37	0.00	6.13	0.00
44.00	6.37	0.00	6.13	0.00
46.00	6.37	0.00	6.13	0.00
48.00	6.37	0.00	6.13	0.00
50.00	6.37	0.00	6.13	0.00
52.00	6.37	0.00	6.13	0.00
54.00	6.37	0.00	6.13	0.00
56.00	6.37	0.00	6.13	0.00
58.00	6.37	0.00	6.13	0.00
60.00	6.37	0.00	6.13	0.00
62.00	6.37	0.00	6.13	0.00
64.00	6.37	0.00	6.13	0.00
66.00	6.37	0.00	6.13	0.00
68.00	6.37	0.00	6.13	0.00
70.00	6.37	0.00	6.13	0.00
72.00	6.37	0.00	6.13	0.00

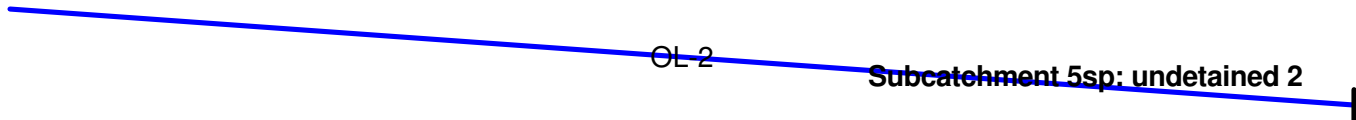
### Summary for Subcatchment 5sp: undetained 2

Runoff = 0.24 cfs @ 12.12 hrs, Volume= 700 cf, Depth= 3.50"  
Routed to Link 9I : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 10-Year-2100 Rainfall=6.37"

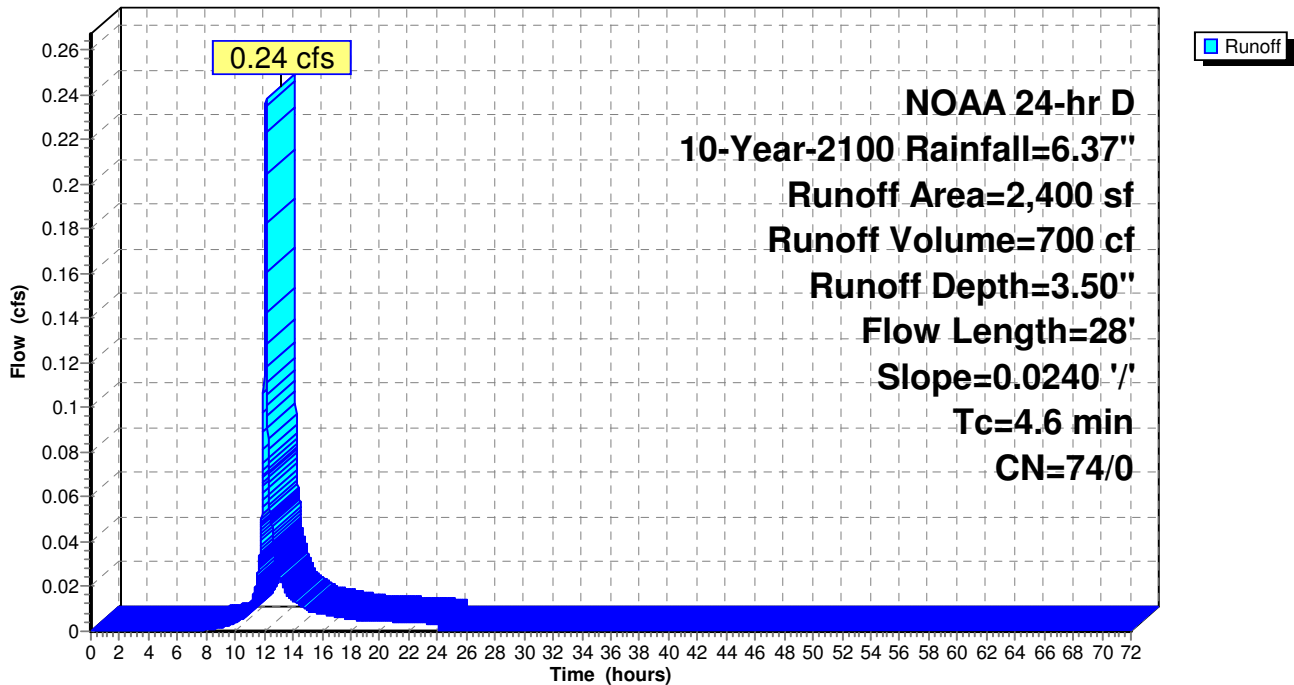
Area (sf)	CN	Description
2,400	74	>75% Grass cover, Good, HSG C
2,400	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	28	0.0240	0.10		<b>Sheet Flow, OL-2</b> Grass: Dense n= 0.240 P2= 3.47"



### Subcatchment 5sp: undetained 2

Hydrograph



**Hydrograph for Subcatchment 5sp: undetained 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.15	0.00	0.00	0.00
4.00	0.33	0.00	0.00	0.00
6.00	0.54	0.00	0.00	0.00
8.00	0.83	0.00	0.00	0.00
10.00	1.26	0.08	0.00	0.00
12.00	3.05	0.94	0.00	<b>0.12</b>
14.00	5.11	2.45	0.00	<b>0.01</b>
16.00	5.54	2.80	0.00	0.01
18.00	5.83	3.04	0.00	0.01
20.00	6.04	3.22	0.00	0.00
22.00	6.22	3.37	0.00	0.00
24.00	<b>6.37</b>	<b>3.50</b>	0.00	0.00
26.00	6.37	3.50	0.00	0.00
28.00	6.37	3.50	0.00	0.00
30.00	6.37	3.50	0.00	0.00
32.00	6.37	3.50	0.00	0.00
34.00	6.37	3.50	0.00	0.00
36.00	6.37	3.50	0.00	0.00
38.00	6.37	3.50	0.00	0.00
40.00	6.37	3.50	0.00	0.00
42.00	6.37	3.50	0.00	0.00
44.00	6.37	3.50	0.00	0.00
46.00	6.37	3.50	0.00	0.00
48.00	6.37	3.50	0.00	0.00
50.00	6.37	3.50	0.00	0.00
52.00	6.37	3.50	0.00	0.00
54.00	6.37	3.50	0.00	0.00
56.00	6.37	3.50	0.00	0.00
58.00	6.37	3.50	0.00	0.00
60.00	6.37	3.50	0.00	0.00
62.00	6.37	3.50	0.00	0.00
64.00	6.37	3.50	0.00	0.00
66.00	6.37	3.50	0.00	0.00
68.00	6.37	3.50	0.00	0.00
70.00	6.37	3.50	0.00	0.00
72.00	6.37	3.50	0.00	0.00

### Summary for Subcatchment 6si: Pro DA 3

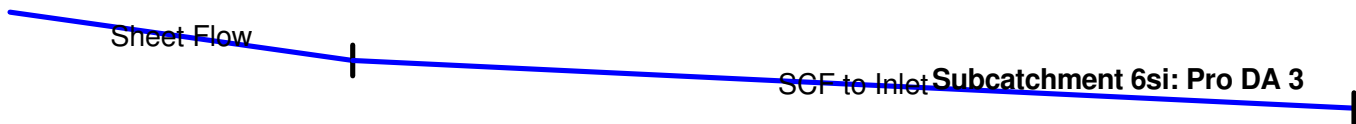
Runoff = 5.98 cfs @ 12.10 hrs, Volume= 20,000 cf, Depth= 6.13"  
Routed to Pond 8p : Detention System

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 10-Year-2100 Rainfall=6.37"

Area (sf)	CN	Description
39,143	98	Paved parking, HSG C
39,143	98	100.00% Impervious Area

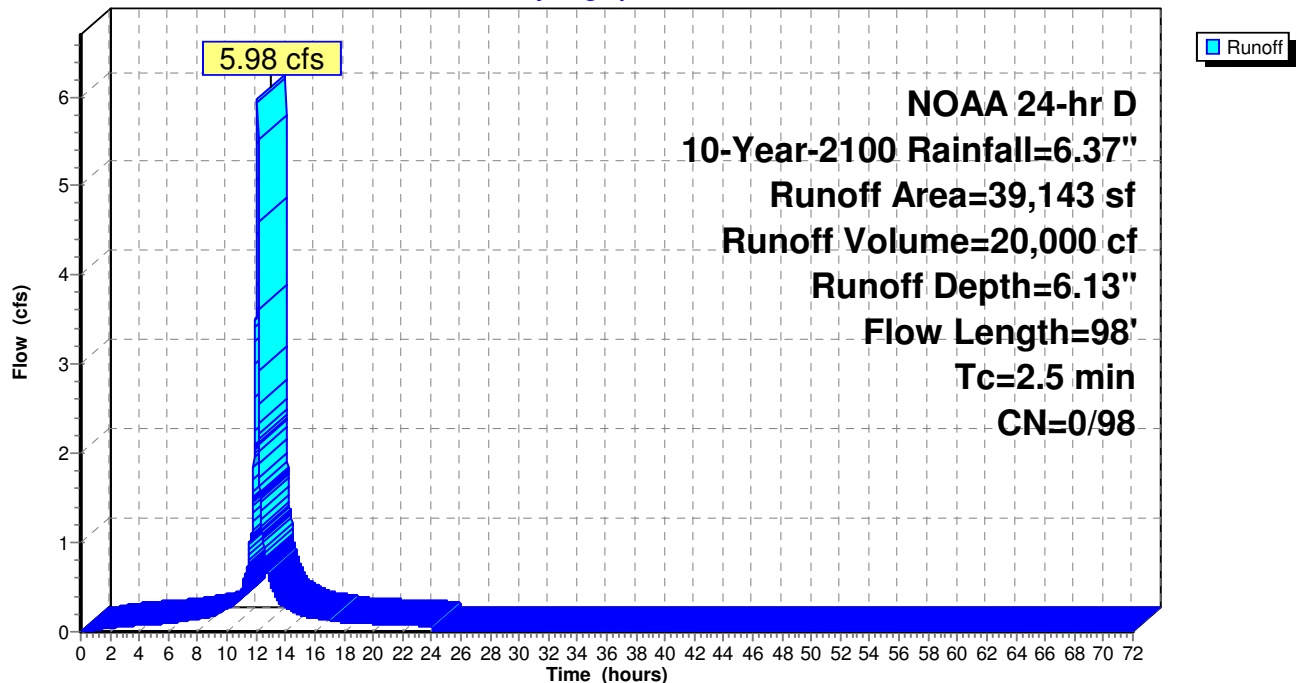
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	25	0.0560	0.20		<b>Sheet Flow, Sheet Flow</b>
0.4	73	0.0190	2.80		Grass: Short n= 0.150 P2= 3.47" <b>Shallow Concentrated Flow, SCF to Inlet</b>
2.5	98	Total			Paved Kv= 20.3 fps



### Subcatchment 6si: Pro DA 3

Hydrograph



**Hydrograph for Subcatchment 6si: Pro DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.15	0.00	0.04	0.04
4.00	0.33	0.00	0.17	0.07
6.00	0.54	0.00	0.36	0.09
8.00	0.83	0.00	0.62	0.15
10.00	1.26	0.00	1.05	0.26
12.00	3.05	0.00	2.82	<b>3.58</b>
14.00	5.11	0.00	4.87	<b>0.28</b>
16.00	5.54	0.00	5.31	0.16
18.00	5.83	0.00	5.59	0.10
20.00	6.04	0.00	5.80	0.09
22.00	6.22	0.00	5.98	0.08
24.00	<b>6.37</b>	0.00	<b>6.13</b>	0.06
26.00	6.37	0.00	6.13	0.00
28.00	6.37	0.00	6.13	0.00
30.00	6.37	0.00	6.13	0.00
32.00	6.37	0.00	6.13	0.00
34.00	6.37	0.00	6.13	0.00
36.00	6.37	0.00	6.13	0.00
38.00	6.37	0.00	6.13	0.00
40.00	6.37	0.00	6.13	0.00
42.00	6.37	0.00	6.13	0.00
44.00	6.37	0.00	6.13	0.00
46.00	6.37	0.00	6.13	0.00
48.00	6.37	0.00	6.13	0.00
50.00	6.37	0.00	6.13	0.00
52.00	6.37	0.00	6.13	0.00
54.00	6.37	0.00	6.13	0.00
56.00	6.37	0.00	6.13	0.00
58.00	6.37	0.00	6.13	0.00
60.00	6.37	0.00	6.13	0.00
62.00	6.37	0.00	6.13	0.00
64.00	6.37	0.00	6.13	0.00
66.00	6.37	0.00	6.13	0.00
68.00	6.37	0.00	6.13	0.00
70.00	6.37	0.00	6.13	0.00
72.00	6.37	0.00	6.13	0.00

### Summary for Subcatchment 6sp: Pro DA 3

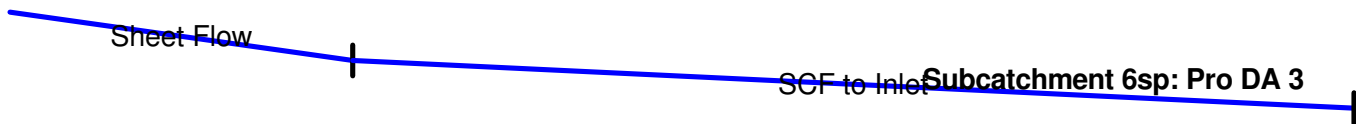
Runoff = 1.00 cfs @ 12.11 hrs, Volume= 2,736 cf, Depth= 3.50"  
Routed to Pond 8p : Detention System

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 10-Year-2100 Rainfall=6.37"

Area (sf)	CN	Description
9,386	74	>75% Grass cover, Good, HSG C
9,386	74	100.00% Pervious Area

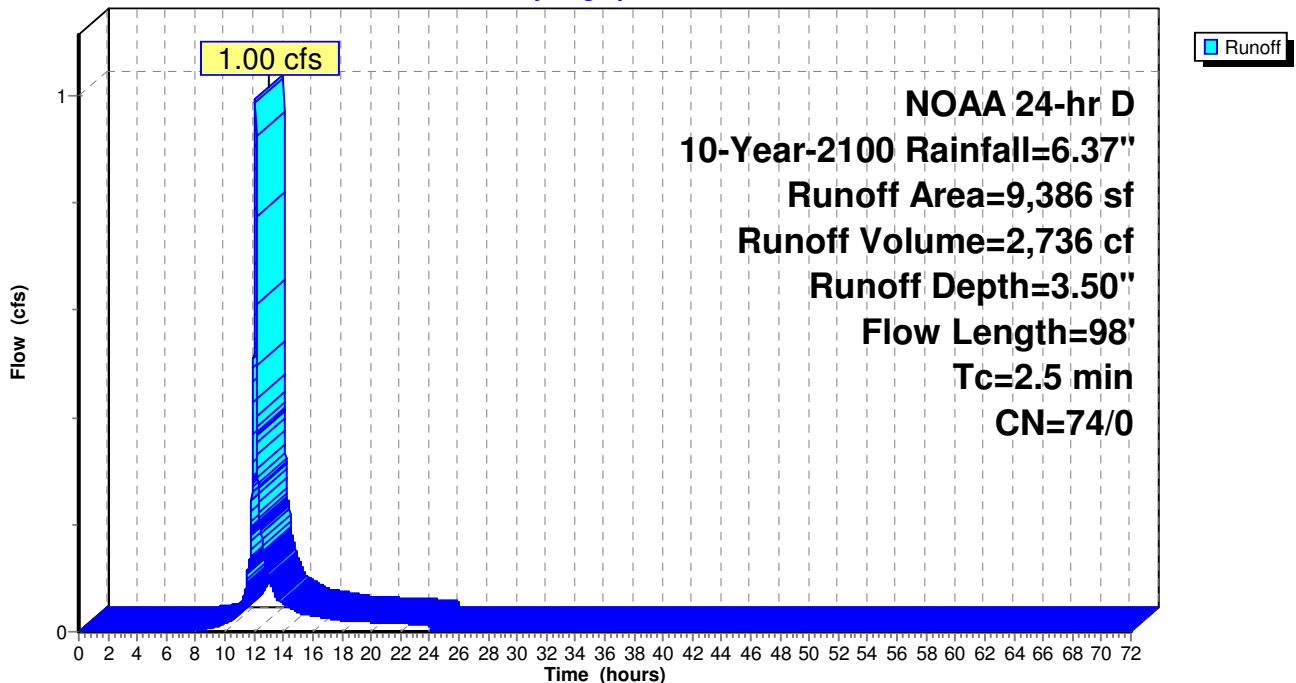
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	25	0.0560	0.20		<b>Sheet Flow, Sheet Flow</b> Grass: Short n= 0.150 P2= 3.47"
0.4	73	0.0190	2.80		<b>Shallow Concentrated Flow, SCF to Inlet</b> Paved Kv= 20.3 fps
2.5	98	Total			



### Subcatchment 6sp: Pro DA 3

Hydrograph



**Hydrograph for Subcatchment 6sp: Pro DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.15	0.00	0.00	0.00
4.00	0.33	0.00	0.00	0.00
6.00	0.54	0.00	0.00	0.00
8.00	0.83	0.00	0.00	0.00
10.00	1.26	0.08	0.00	0.02
12.00	3.05	0.94	0.00	<b>0.54</b>
14.00	5.11	2.45	0.00	<b>0.05</b>
16.00	5.54	2.80	0.00	0.03
18.00	5.83	3.04	0.00	0.02
20.00	6.04	3.22	0.00	0.02
22.00	6.22	3.37	0.00	0.02
24.00	<b>6.37</b>	<b>3.50</b>	0.00	0.01
26.00	6.37	3.50	0.00	0.00
28.00	6.37	3.50	0.00	0.00
30.00	6.37	3.50	0.00	0.00
32.00	6.37	3.50	0.00	0.00
34.00	6.37	3.50	0.00	0.00
36.00	6.37	3.50	0.00	0.00
38.00	6.37	3.50	0.00	0.00
40.00	6.37	3.50	0.00	0.00
42.00	6.37	3.50	0.00	0.00
44.00	6.37	3.50	0.00	0.00
46.00	6.37	3.50	0.00	0.00
48.00	6.37	3.50	0.00	0.00
50.00	6.37	3.50	0.00	0.00
52.00	6.37	3.50	0.00	0.00
54.00	6.37	3.50	0.00	0.00
56.00	6.37	3.50	0.00	0.00
58.00	6.37	3.50	0.00	0.00
60.00	6.37	3.50	0.00	0.00
62.00	6.37	3.50	0.00	0.00
64.00	6.37	3.50	0.00	0.00
66.00	6.37	3.50	0.00	0.00
68.00	6.37	3.50	0.00	0.00
70.00	6.37	3.50	0.00	0.00
72.00	6.37	3.50	0.00	0.00

### Summary for Pond 8p: Detention System

Inflow Area = 48,529 sf, 80.66% Impervious, Inflow Depth = 5.62" for 10-Year-2100 event  
 Inflow = 6.97 cfs @ 12.10 hrs, Volume= 22,737 cf  
 Outflow = 4.54 cfs @ 12.14 hrs, Volume= 22,545 cf, Atten= 35%, Lag= 2.3 min  
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
 Primary = 4.54 cfs @ 12.14 hrs, Volume= 22,545 cf  
 Routed to Link 9l : Overall discharge

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Peak Elev= 405.21' @ 12.14 hrs Surf.Area= 480 sf Storage= 3,658 cf

Plug-Flow detention time= 27.8 min calculated for 22,542 cf (99% of inflow)  
 Center-of-Mass det. time= 22.1 min ( 775.0 - 752.9 )

Volume	Invert	Avail.Storage	Storage Description
#1	403.00'	5,027 cf	<b>48.0" Round Pipe Storage</b> -Impervious L= 400.0'
#2	403.00'	578 cf	<b>48.0" Round Pipe Storage</b> Inside #3 L= 46.0'
#3	402.00'	825 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc) 2,640 cf Overall - 578 cf Embedded = 2,062 cf x 40.0% Voids
		6,429 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
402.00	480	0	0	480
407.50	480	2,640	2,640	907

Device	Routing	Invert	Outlet Devices
#1	Primary	403.00'	<b>7.5" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#2	Primary	404.60'	<b>36.0" W x 3.0" H Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Primary	405.50'	<b>24.0" W x 3.0" H Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#4	Discarded	402.00'	<b>1.290 in/hr Exfiltration over Surface area from 402.00' - 407.50'</b> Conductivity to Groundwater Elevation = 395.00' Excluded Surface area = 480 sf

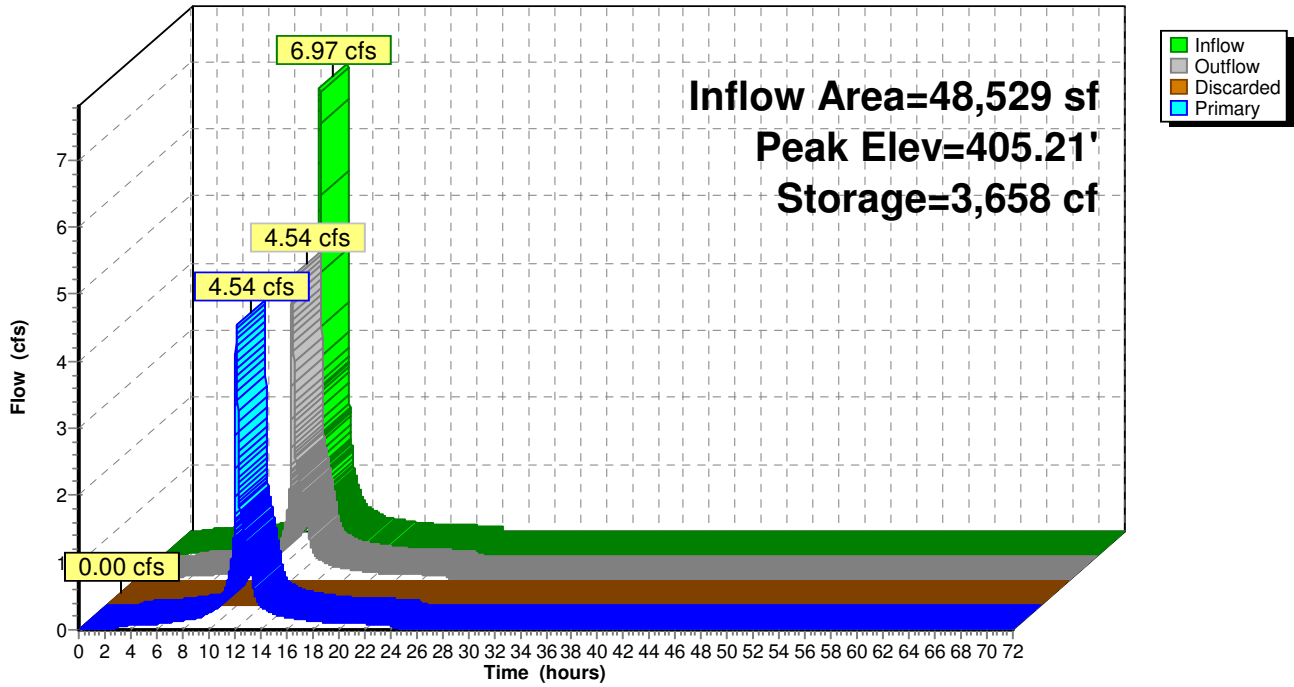
**Discarded OutFlow** Max=0.00 cfs @ 0.00 hrs HW=402.00' (Free Discharge)  
 ↳4=Exfiltration ( Controls 0.00 cfs)

**Primary OutFlow** Max=4.53 cfs @ 12.14 hrs HW=405.21' (Free Discharge)  
 ↳1=Orifice/Grate (Orifice Controls 2.03 cfs @ 6.63 fps)  
 ↳2=Orifice/Grate (Orifice Controls 2.50 cfs @ 3.33 fps)  
 ↳3=Orifice/Grate ( Controls 0.00 cfs)

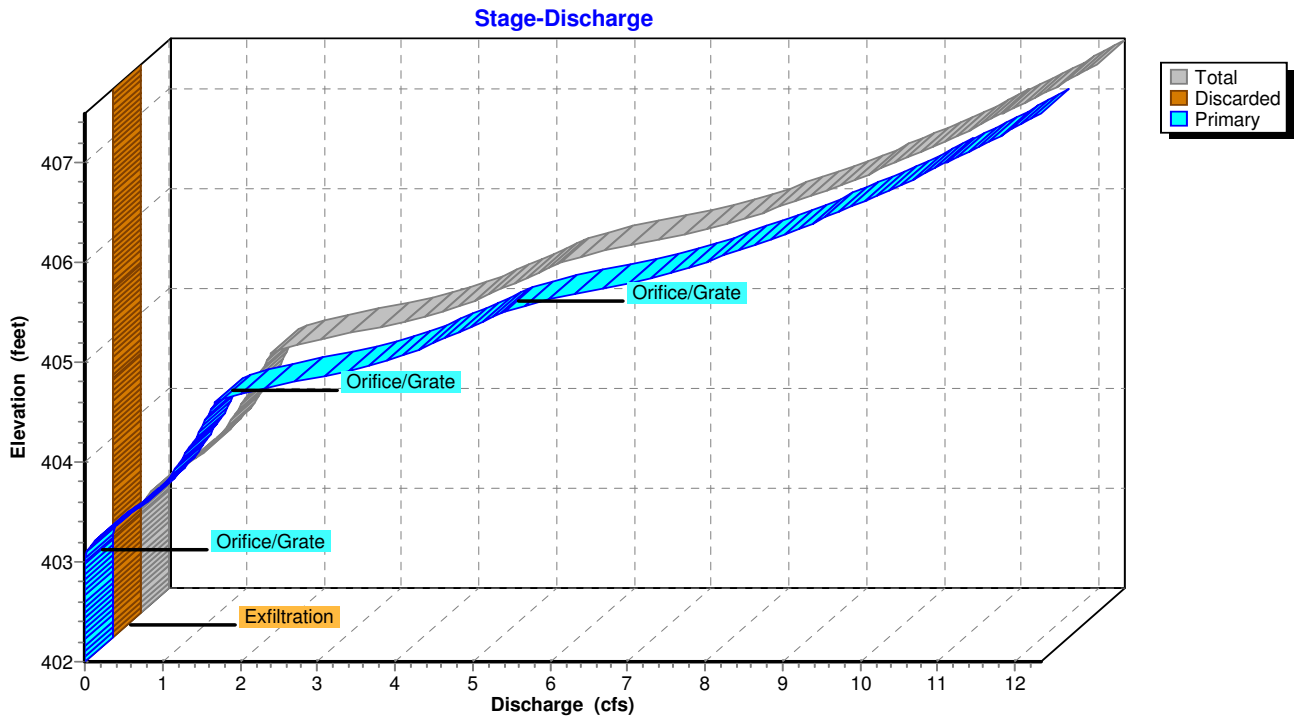


### Pond 8p: Detention System

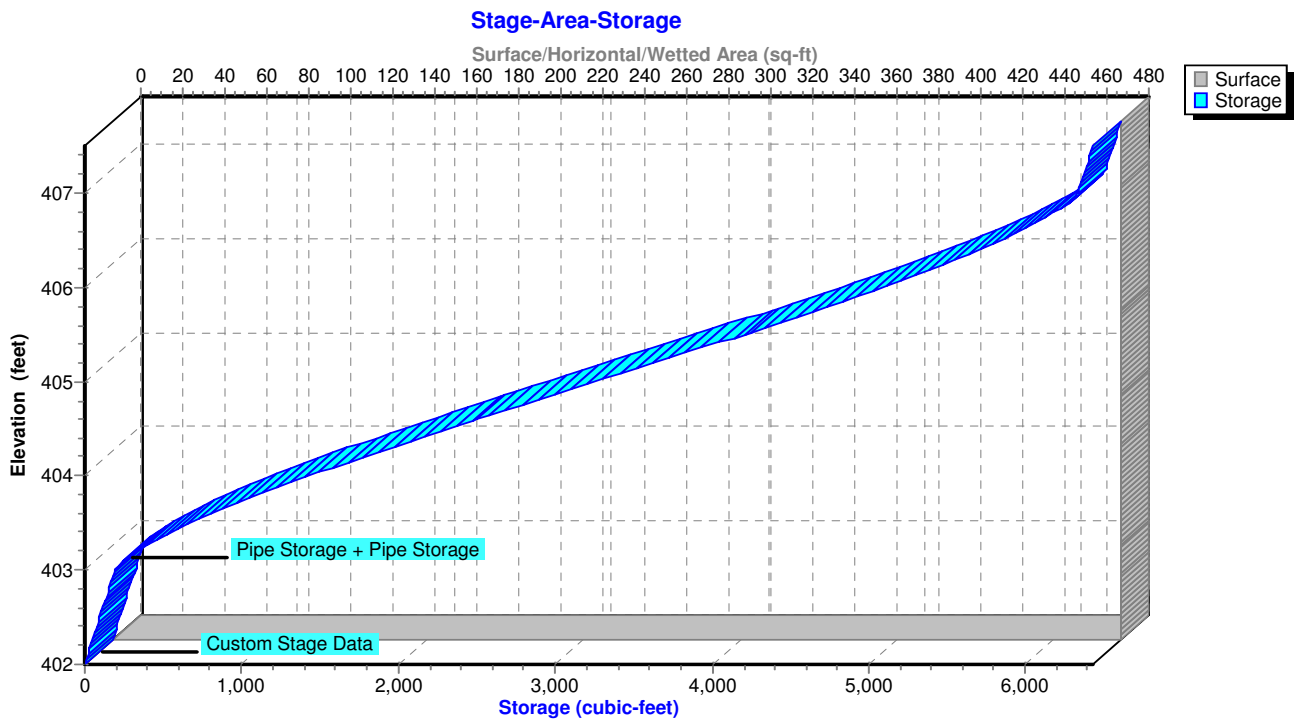
Hydrograph



### Pond 8p: Detention System



### Pond 8p: Detention System



**Hydrograph for Pond 8p: Detention System**

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	402.00	0.00	<b>0.00</b>	0.00
2.00	0.04	124	402.64	0.00	0.00	0.00
4.00	0.07	281	403.14	0.07	0.00	0.07
6.00	0.09	300	403.16	0.09	0.00	0.09
8.00	0.15	341	403.21	0.14	0.00	0.14
10.00	0.28	426	403.29	0.26	0.00	0.26
12.00	<b>4.11</b>	<b>2,232</b>	<b>404.45</b>	<b>1.58</b>	0.00	<b>1.58</b>
14.00	<b>0.33</b>	<b>495</b>	<b>403.35</b>	<b>0.36</b>	0.00	<b>0.36</b>
16.00	0.19	377	403.25	0.19	0.00	0.19
18.00	0.12	332	403.20	0.13	0.00	0.13
20.00	0.11	314	403.18	0.11	0.00	0.11
22.00	0.09	302	403.17	0.09	0.00	0.09
24.00	0.08	289	403.15	0.08	0.00	0.08
26.00	0.00	196	403.01	0.00	0.00	0.00
28.00	0.00	192	403.00	0.00	0.00	0.00
30.00	0.00	192	403.00	0.00	0.00	0.00
32.00	0.00	192	403.00	0.00	0.00	0.00
34.00	0.00	192	403.00	0.00	0.00	0.00
36.00	0.00	192	403.00	0.00	0.00	0.00
38.00	0.00	192	403.00	0.00	0.00	0.00
40.00	0.00	192	403.00	0.00	0.00	0.00
42.00	0.00	192	403.00	0.00	0.00	0.00
44.00	0.00	192	403.00	0.00	0.00	0.00
46.00	0.00	192	403.00	0.00	0.00	0.00
48.00	0.00	192	403.00	0.00	0.00	0.00
50.00	0.00	192	403.00	0.00	0.00	0.00
52.00	0.00	192	403.00	0.00	0.00	0.00
54.00	0.00	192	403.00	0.00	0.00	0.00
56.00	0.00	192	403.00	0.00	0.00	0.00
58.00	0.00	192	403.00	0.00	0.00	0.00
60.00	0.00	192	403.00	0.00	0.00	0.00
62.00	0.00	192	403.00	0.00	0.00	0.00
64.00	0.00	192	403.00	0.00	0.00	0.00
66.00	0.00	192	403.00	0.00	0.00	0.00
68.00	0.00	192	403.00	0.00	0.00	0.00
70.00	0.00	192	403.00	0.00	0.00	0.00
72.00	0.00	192	403.00	0.00	0.00	0.00

Stage-Discharge for Pond 8p: Detention System

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
402.00	0.00	0.00	0.00	407.10	11.36	0.00	11.36
402.10	0.00	0.00	0.00	407.20	11.61	0.00	11.61
402.20	0.00	0.00	0.00	407.30	11.86	0.00	11.86
402.30	0.00	0.00	0.00	407.40	12.10	0.00	12.10
402.40	0.00	0.00	0.00	407.50	12.33	0.00	12.33
402.50	0.00	0.00	0.00				
402.60	0.00	0.00	0.00				
402.70	0.00	0.00	0.00				
402.80	0.00	0.00	0.00				
402.90	0.00	0.00	0.00				
403.00	0.00	0.00	0.00				
403.10	0.03	0.00	0.03				
403.20	0.13	0.00	0.13				
403.30	0.27	0.00	0.27				
403.40	0.45	0.00	0.45				
403.50	0.63	0.00	0.63				
403.60	0.80	0.00	0.80				
403.70	0.92	0.00	0.92				
403.80	1.03	0.00	1.03				
403.90	1.13	0.00	1.13				
404.00	1.22	0.00	1.22				
404.10	1.31	0.00	1.31				
404.20	1.39	0.00	1.39				
404.30	1.47	0.00	1.47				
404.40	1.54	0.00	1.54				
404.50	1.61	0.00	1.61				
404.60	1.68	0.00	1.68				
404.70	2.04	0.00	2.04				
404.80	2.66	0.00	2.66				
404.90	3.34	0.00	3.34				
405.00	3.80	0.00	3.80				
405.10	4.18	0.00	4.18				
405.20	4.51	0.00	4.51				
405.30	4.82	0.00	4.82				
405.40	5.10	0.00	5.10				
405.50	5.36	0.00	5.36				
405.60	5.81	0.00	5.81				
405.70	6.42	0.00	6.42				
405.80	7.06	0.00	7.06				
405.90	7.54	0.00	7.54				
406.00	7.97	0.00	7.97				
406.10	8.35	0.00	8.35				
406.20	8.72	0.00	8.72				
406.30	9.06	0.00	9.06				
406.40	9.39	0.00	9.39				
406.50	9.70	0.00	9.70				
406.60	10.00	0.00	10.00				
406.70	10.29	0.00	10.29				
406.80	10.57	0.00	10.57				
406.90	10.84	0.00	10.84				
407.00	11.10	0.00	11.10				

Stage-Area-Storage for Pond 8p: Detention System

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
402.00	480	0	407.10	480	6,353
402.10	480	19	407.20	480	6,372
402.20	480	38	407.30	480	6,391
402.30	480	58	407.40	480	6,410
402.40	480	77	407.50	480	6,429
402.50	480	96			
402.60	480	115			
402.70	480	134			
402.80	480	154			
402.90	480	173			
403.00	480	192			
403.10	480	247			
403.20	480	331			
403.30	480	433			
403.40	480	548			
403.50	480	676			
403.60	480	813			
403.70	480	958			
403.80	480	1,111			
403.90	480	1,270			
404.00	480	1,435			
404.10	480	1,604			
404.20	480	1,778			
404.30	480	1,956			
404.40	480	2,137			
404.50	480	2,320			
404.60	480	2,506			
404.70	480	2,694			
404.80	480	2,883			
404.90	480	3,073			
405.00	480	3,263			
405.10	480	3,453			
405.20	480	3,643			
405.30	480	3,831			
405.40	480	4,019			
405.50	480	4,205			
405.60	480	4,389			
405.70	480	4,569			
405.80	480	4,747			
405.90	480	4,921			
406.00	480	5,091			
406.10	480	5,256			
406.20	480	5,415			
406.30	480	5,567			
406.40	480	5,713			
406.50	480	5,850			
406.60	480	5,977			
406.70	480	6,093			
406.80	480	6,195			
406.90	480	6,278			
407.00	480	6,333			

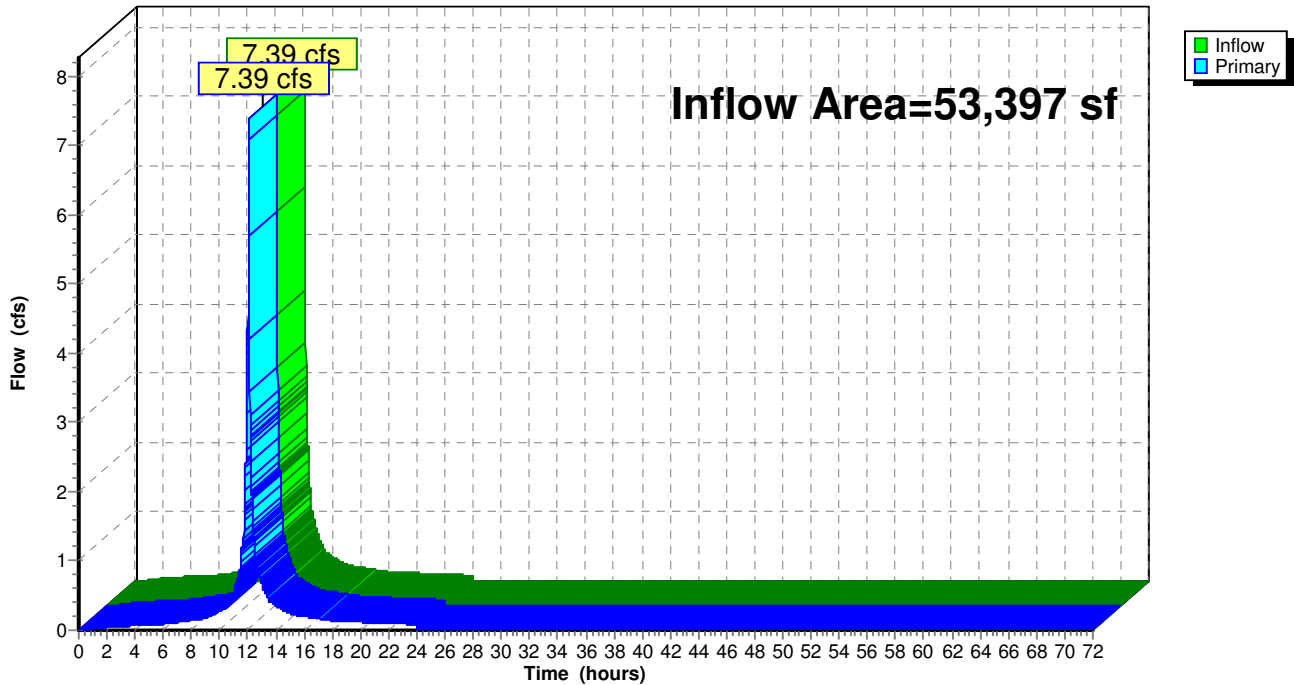
### Summary for Link 4I: existing total discharge

Inflow Area = 53,397 sf, 67.93% Impervious, Inflow Depth = 5.35" for 10-Year-2100 event  
Inflow = 7.39 cfs @ 12.10 hrs, Volume= 23,820 cf  
Primary = 7.39 cfs @ 12.10 hrs, Volume= 23,820 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Link 4I: existing total discharge

Hydrograph



Hydrograph for Link 4I: existing total discharge

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.02	0.00	0.02	52.00	0.00	0.00	0.00
2.00	0.04	0.00	0.04	53.00	0.00	0.00	0.00
3.00	0.06	0.00	0.06	54.00	0.00	0.00	0.00
4.00	0.07	0.00	0.07	55.00	0.00	0.00	0.00
5.00	0.08	0.00	0.08	56.00	0.00	0.00	0.00
6.00	0.09	0.00	0.09	57.00	0.00	0.00	0.00
7.00	0.11	0.00	0.11	58.00	0.00	0.00	0.00
8.00	0.14	0.00	0.14	59.00	0.00	0.00	0.00
9.00	0.18	0.00	0.18	60.00	0.00	0.00	0.00
10.00	0.28	0.00	0.28	61.00	0.00	0.00	0.00
11.00	0.53	0.00	0.53	62.00	0.00	0.00	0.00
12.00	<b>4.33</b>	0.00	<b>4.33</b>	63.00	0.00	0.00	0.00
13.00	<b>0.69</b>	0.00	<b>0.69</b>	64.00	0.00	0.00	0.00
14.00	0.36	0.00	0.36	65.00	0.00	0.00	0.00
15.00	0.24	0.00	0.24	66.00	0.00	0.00	0.00
16.00	0.20	0.00	0.20	67.00	0.00	0.00	0.00
17.00	0.17	0.00	0.17	68.00	0.00	0.00	0.00
18.00	0.13	0.00	0.13	69.00	0.00	0.00	0.00
19.00	0.12	0.00	0.12	70.00	0.00	0.00	0.00
20.00	0.12	0.00	0.12	71.00	0.00	0.00	0.00
21.00	0.11	0.00	0.11	72.00	0.00	0.00	0.00
22.00	0.10	0.00	0.10				
23.00	0.09	0.00	0.09				
24.00	0.08	0.00	0.08				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

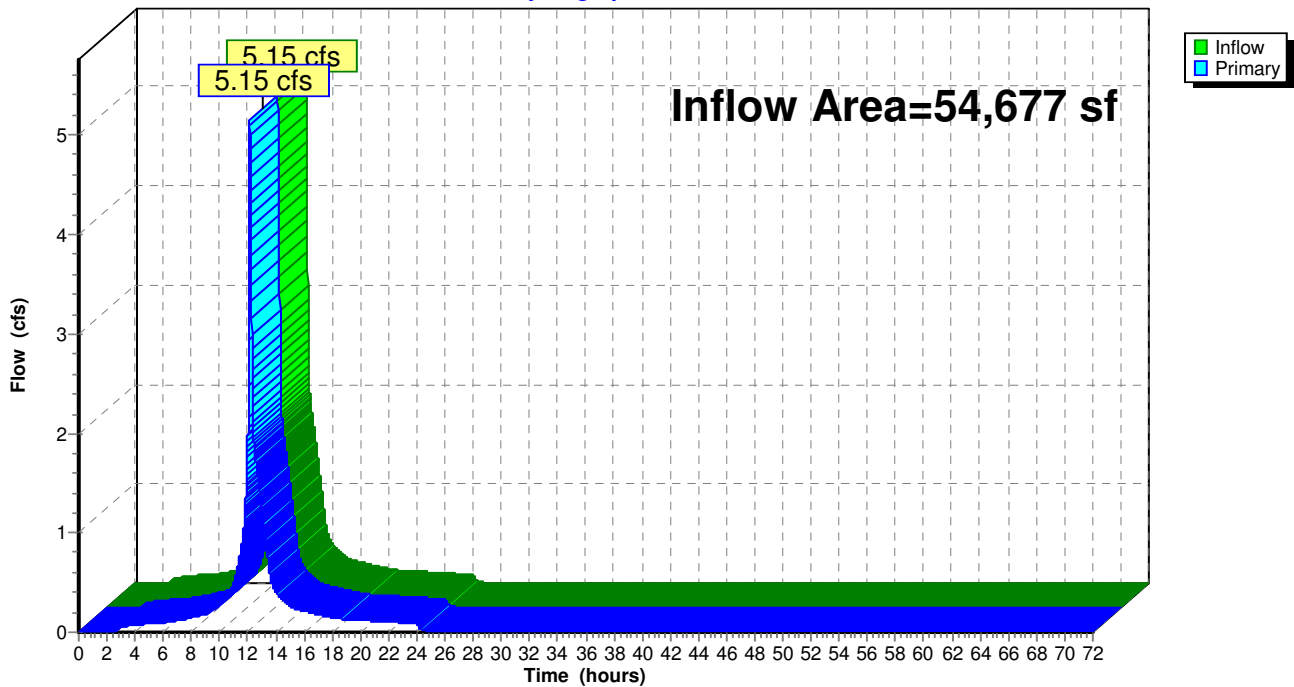
### Summary for Link 9I: Overall discharge

Inflow Area = 54,677 sf, 74.85% Impervious, Inflow Depth = 5.43" for 10-Year-2100 event  
Inflow = 5.15 cfs @ 12.13 hrs, Volume= 24,729 cf  
Primary = 5.15 cfs @ 12.13 hrs, Volume= 24,729 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Link 9I: Overall discharge

Hydrograph



Hydrograph for Link 9I: Overall discharge

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.05	0.00	0.05	54.00	0.00	0.00	0.00
4.00	0.07	0.00	0.07	55.00	0.00	0.00	0.00
5.00	0.08	0.00	0.08	56.00	0.00	0.00	0.00
6.00	0.09	0.00	0.09	57.00	0.00	0.00	0.00
7.00	0.12	0.00	0.12	58.00	0.00	0.00	0.00
8.00	0.15	0.00	0.15	59.00	0.00	0.00	0.00
9.00	0.18	0.00	0.18	60.00	0.00	0.00	0.00
10.00	0.28	0.00	0.28	61.00	0.00	0.00	0.00
11.00	0.50	0.00	0.50	62.00	0.00	0.00	0.00
12.00	1.97	0.00	1.97	63.00	0.00	0.00	0.00
13.00	1.25	0.00	1.25	64.00	0.00	0.00	0.00
14.00	0.40	0.00	0.40	65.00	0.00	0.00	0.00
15.00	0.27	0.00	0.27	66.00	0.00	0.00	0.00
16.00	0.21	0.00	0.21	67.00	0.00	0.00	0.00
17.00	0.18	0.00	0.18	68.00	0.00	0.00	0.00
18.00	0.15	0.00	0.15	69.00	0.00	0.00	0.00
19.00	0.13	0.00	0.13	70.00	0.00	0.00	0.00
20.00	0.12	0.00	0.12	71.00	0.00	0.00	0.00
21.00	0.11	0.00	0.11	72.00	0.00	0.00	0.00
22.00	0.10	0.00	0.10				
23.00	0.10	0.00	0.10				
24.00	0.09	0.00	0.09				
25.00	0.01	0.00	0.01				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points  
 Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

<b>Subcatchment 1si: Ext DA 1</b>	Runoff Area=1,374 sf 100.00% Impervious Runoff Depth=11.28" Flow Length=139' Slope=0.0680 '/' Tc=6.0 min CN=0/98 Runoff=0.35 cfs 1,291 cf
<b>Subcatchment 1sp: Ext DA 1</b>	Runoff Area=2,438 sf 0.00% Impervious Runoff Depth=9.90" Flow Length=139' Slope=0.0680 '/' Tc=6.0 min CN=87/0 Runoff=0.59 cfs 2,012 cf
<b>Subcatchment 2si: Ext DA 2</b>	Runoff Area=4,185 sf 100.00% Impervious Runoff Depth=11.28" Flow Length=115' Tc=1.0 min CN=0/98 Runoff=1.16 cfs 3,933 cf
<b>Subcatchment 2sp: Ext DA 2</b>	Runoff Area=326 sf 0.00% Impervious Runoff Depth=8.85" Flow Length=115' Tc=1.0 min CN=79/0 Runoff=0.08 cfs 240 cf
<b>Subcatchment 3si: Ext DA 3</b>	Runoff Area=30,716 sf 100.00% Impervious Runoff Depth=11.28" Flow Length=319' Tc=1.7 min CN=0/98 Runoff=8.54 cfs 28,870 cf
<b>Subcatchment 3sp: Ext DA 3</b>	Runoff Area=14,358 sf 0.00% Impervious Runoff Depth=8.17" Flow Length=319' Tc=1.7 min CN=74/0 Runoff=3.41 cfs 9,770 cf
<b>Subcatchment 4si: DA 1 Undetained</b>	Runoff Area=212 sf 100.00% Impervious Runoff Depth=11.28" Flow Length=27' Slope=0.0570 '/' Tc=2.2 min CN=0/98 Runoff=0.06 cfs 199 cf
<b>Subcatchment 4sp: DA 1 Undetained</b>	Runoff Area=1,964 sf 0.00% Impervious Runoff Depth=8.17" Flow Length=27' Slope=0.0570 '/' Tc=2.2 min CN=74/0 Runoff=0.46 cfs 1,336 cf
<b>Subcatchment 5si: undetained 2</b>	Runoff Area=1,572 sf 100.00% Impervious Runoff Depth=11.28" Flow Length=28' Slope=0.0240 '/' Tc=4.6 min CN=0/98 Runoff=0.42 cfs 1,478 cf
<b>Subcatchment 5sp: undetained 2</b>	Runoff Area=2,400 sf 0.00% Impervious Runoff Depth=8.17" Flow Length=28' Slope=0.0240 '/' Tc=4.6 min CN=74/0 Runoff=0.54 cfs 1,633 cf
<b>Subcatchment 6si: Pro DA 3</b>	Runoff Area=39,143 sf 100.00% Impervious Runoff Depth=11.28" Flow Length=98' Tc=2.5 min CN=0/98 Runoff=10.84 cfs 36,790 cf
<b>Subcatchment 6sp: Pro DA 3</b>	Runoff Area=9,386 sf 0.00% Impervious Runoff Depth=8.17" Flow Length=98' Tc=2.5 min CN=74/0 Runoff=2.21 cfs 6,387 cf
<b>Pond 8p: Detention System</b>	Peak Elev=406.47' Storage=5,804 cf Inflow=13.05 cfs 43,177 cf Discarded=0.00 cfs 0 cf Primary=9.59 cfs 42,985 cf Outflow=9.59 cfs 42,985 cf
<b>Link 4l: existing total discharge</b>	Inflow=14.07 cfs 46,116 cf Primary=14.07 cfs 46,116 cf
<b>Link 9l: Overall discharge</b>	Inflow=10.91 cfs 47,631 cf Primary=10.91 cfs 47,631 cf

**Total Runoff Area = 108,074 sf Runoff Volume = 93,939 cf Average Runoff Depth = 10.43"**  
**28.57% Pervious = 30,872 sf 71.43% Impervious = 77,202 sf**

### Summary for Subcatchment 1si: Ext DA 1

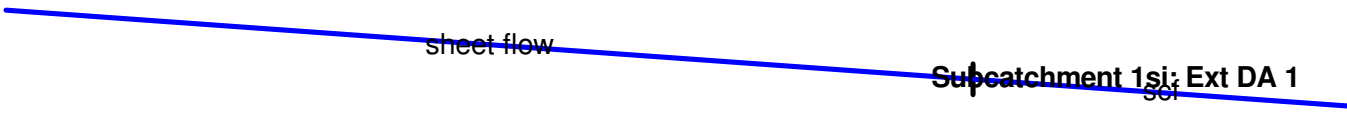
Runoff = 0.35 cfs @ 12.13 hrs, Volume= 1,291 cf, Depth=11.28"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 100-Year-2100 Rainfall=11.52"

Area (sf)	CN	Description
1,374	98	Paved parking, HSG C
1,374	98	100.00% Impervious Area

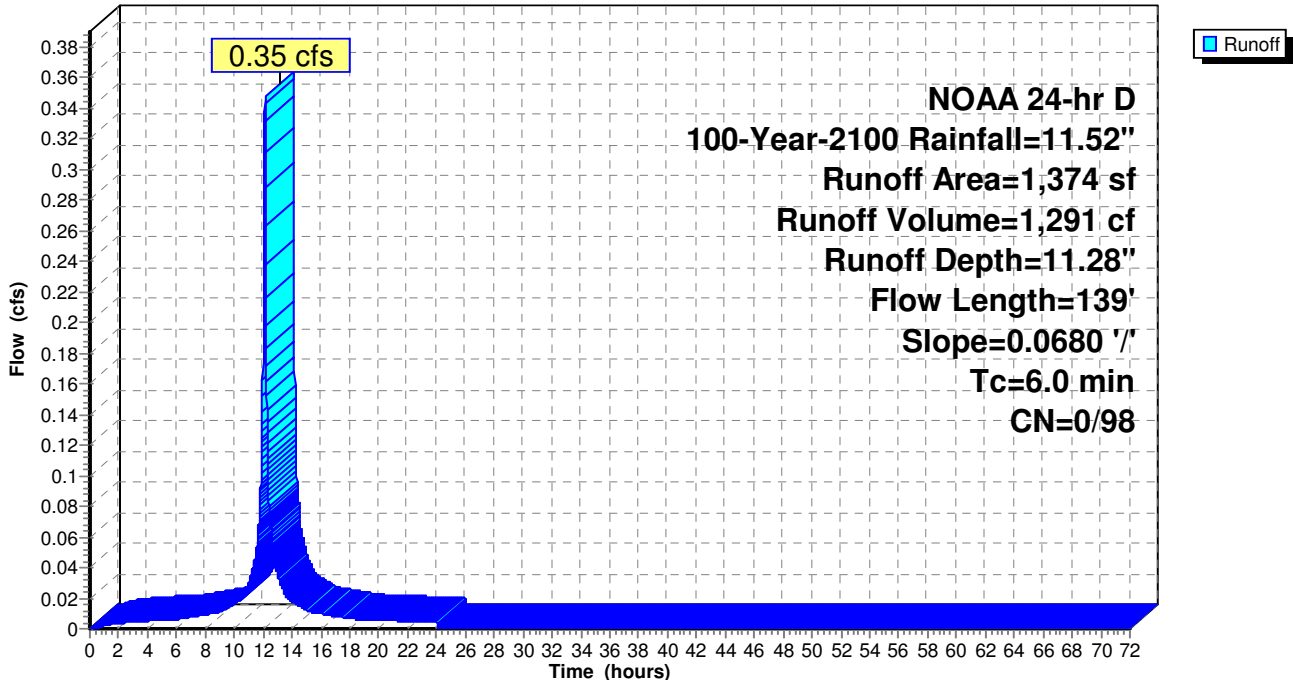
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	100	0.0680	0.29		<b>Sheet Flow, sheet flow</b>
0.2	39	0.0680	4.20		<b>Shallow Concentrated Flow, scf</b>
					Unpaved Kv= 16.1 fps
6.0	139	Total			



### Subcatchment 1si: Ext DA 1

Hydrograph



Hydrograph for Subcatchment 1si: Ext DA 1

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
2.00	0.28	0.00	0.13	0.00
4.00	0.60	0.00	0.41	0.01
6.00	0.98	0.00	0.77	0.01
8.00	1.49	0.00	1.28	0.01
10.00	2.28	0.00	2.06	0.02
12.00	5.52	0.00	5.28	0.19
14.00	9.24	0.00	9.00	0.02
16.00	10.03	0.00	9.78	0.01
18.00	10.54	0.00	10.30	0.01
20.00	10.92	0.00	10.67	0.01
22.00	11.24	0.00	11.00	0.00
24.00	11.52	0.00	11.28	0.00
26.00	11.52	0.00	11.28	0.00
28.00	11.52	0.00	11.28	0.00
30.00	11.52	0.00	11.28	0.00
32.00	11.52	0.00	11.28	0.00
34.00	11.52	0.00	11.28	0.00
36.00	11.52	0.00	11.28	0.00
38.00	11.52	0.00	11.28	0.00
40.00	11.52	0.00	11.28	0.00
42.00	11.52	0.00	11.28	0.00
44.00	11.52	0.00	11.28	0.00
46.00	11.52	0.00	11.28	0.00
48.00	11.52	0.00	11.28	0.00
50.00	11.52	0.00	11.28	0.00
52.00	11.52	0.00	11.28	0.00
54.00	11.52	0.00	11.28	0.00
56.00	11.52	0.00	11.28	0.00
58.00	11.52	0.00	11.28	0.00
60.00	11.52	0.00	11.28	0.00
62.00	11.52	0.00	11.28	0.00
64.00	11.52	0.00	11.28	0.00
66.00	11.52	0.00	11.28	0.00
68.00	11.52	0.00	11.28	0.00
70.00	11.52	0.00	11.28	0.00
72.00	11.52	0.00	11.28	0.00

### Summary for Subcatchment 1sp: Ext DA 1

Runoff = 0.59 cfs @ 12.13 hrs, Volume= 2,012 cf, Depth= 9.90"  
 Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 NOAA 24-hr D 100-Year-2100 Rainfall=11.52"

Area (sf)	CN	Description
2,438	87	Dirt roads, HSG C
2,438	87	100.00% Pervious Area

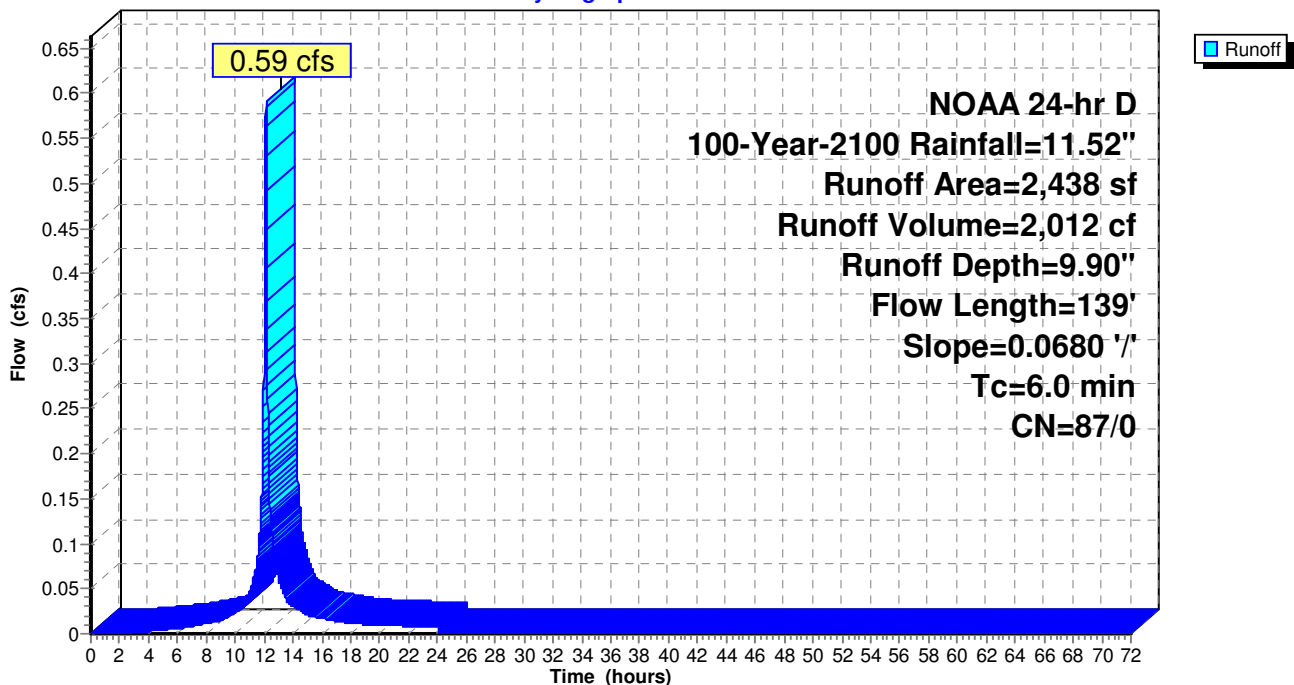
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	100	0.0680	0.29		<b>Sheet Flow, sheet flow</b> Grass: Short n= 0.150 P2= 3.47"
0.2	39	0.0680	4.20		<b>Shallow Concentrated Flow, scf</b> Unpaved Kv= 16.1 fps
6.0	139	Total			



### Subcatchment 1sp: Ext DA 1

Hydrograph



**Hydrograph for Subcatchment 1sp: Ext DA 1**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.28	0.00	0.00	0.00
4.00	0.60	0.05	0.00	0.00
6.00	0.98	0.22	0.00	0.01
8.00	1.49	0.53	0.00	0.01
10.00	2.28	1.13	0.00	0.02
12.00	5.52	4.06	0.00	<b>0.32</b>
14.00	9.24	7.66	0.00	<b>0.03</b>
16.00	10.03	8.43	0.00	0.02
18.00	10.54	8.93	0.00	0.01
20.00	10.92	9.31	0.00	0.01
22.00	11.24	9.63	0.00	0.01
24.00	<b>11.52</b>	<b>9.90</b>	0.00	0.01
26.00	11.52	9.90	0.00	0.00
28.00	11.52	9.90	0.00	0.00
30.00	11.52	9.90	0.00	0.00
32.00	11.52	9.90	0.00	0.00
34.00	11.52	9.90	0.00	0.00
36.00	11.52	9.90	0.00	0.00
38.00	11.52	9.90	0.00	0.00
40.00	11.52	9.90	0.00	0.00
42.00	11.52	9.90	0.00	0.00
44.00	11.52	9.90	0.00	0.00
46.00	11.52	9.90	0.00	0.00
48.00	11.52	9.90	0.00	0.00
50.00	11.52	9.90	0.00	0.00
52.00	11.52	9.90	0.00	0.00
54.00	11.52	9.90	0.00	0.00
56.00	11.52	9.90	0.00	0.00
58.00	11.52	9.90	0.00	0.00
60.00	11.52	9.90	0.00	0.00
62.00	11.52	9.90	0.00	0.00
64.00	11.52	9.90	0.00	0.00
66.00	11.52	9.90	0.00	0.00
68.00	11.52	9.90	0.00	0.00
70.00	11.52	9.90	0.00	0.00
72.00	11.52	9.90	0.00	0.00

### Summary for Subcatchment 2si: Ext DA 2

[49] Hint: Tc<2dt may require smaller dt

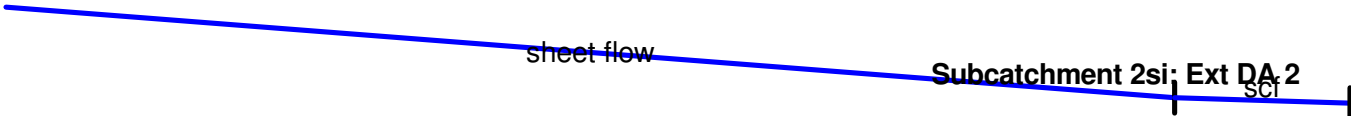
Runoff = 1.16 cfs @ 12.09 hrs, Volume= 3,933 cf, Depth=11.28"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NOAA 24-hr D 100-Year-2100 Rainfall=11.52"

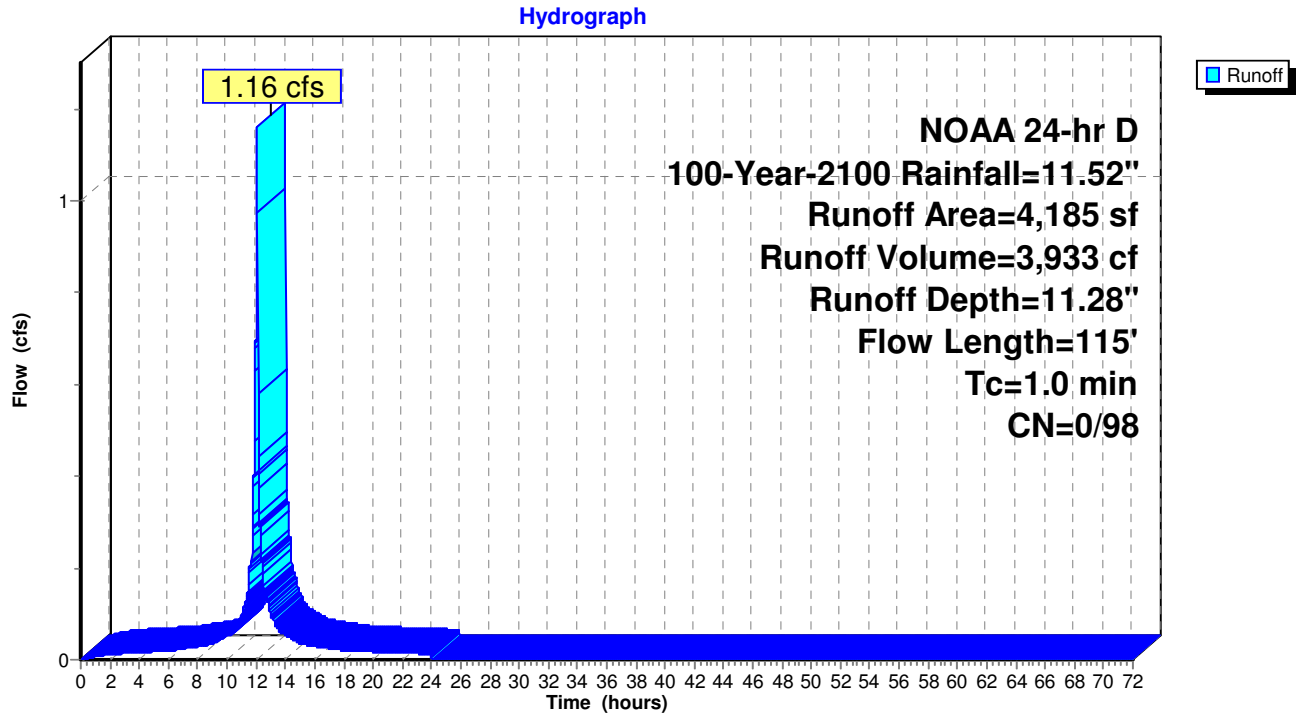
Area (sf)	CN	Description
4,185	98	Paved parking, HSG C
4,185	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0385	1.86		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.1	15	0.0150	2.49		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.0	115	Total			



### Subcatchment 2si: Ext DA 2



**Hydrograph for Subcatchment 2si: Ext DA 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.28	0.00	0.13	0.01
4.00	0.60	0.00	0.41	0.02
6.00	0.98	0.00	0.77	0.02
8.00	1.49	0.00	1.28	0.03
10.00	2.28	0.00	2.06	0.05
12.00	5.52	0.00	5.28	<b>0.70</b>
14.00	9.24	0.00	9.00	<b>0.05</b>
16.00	10.03	0.00	9.78	0.03
18.00	10.54	0.00	10.30	0.02
20.00	10.92	0.00	10.67	0.02
22.00	11.24	0.00	11.00	0.01
24.00	<b>11.52</b>	0.00	<b>11.28</b>	0.01
26.00	11.52	0.00	11.28	0.00
28.00	11.52	0.00	11.28	0.00
30.00	11.52	0.00	11.28	0.00
32.00	11.52	0.00	11.28	0.00
34.00	11.52	0.00	11.28	0.00
36.00	11.52	0.00	11.28	0.00
38.00	11.52	0.00	11.28	0.00
40.00	11.52	0.00	11.28	0.00
42.00	11.52	0.00	11.28	0.00
44.00	11.52	0.00	11.28	0.00
46.00	11.52	0.00	11.28	0.00
48.00	11.52	0.00	11.28	0.00
50.00	11.52	0.00	11.28	0.00
52.00	11.52	0.00	11.28	0.00
54.00	11.52	0.00	11.28	0.00
56.00	11.52	0.00	11.28	0.00
58.00	11.52	0.00	11.28	0.00
60.00	11.52	0.00	11.28	0.00
62.00	11.52	0.00	11.28	0.00
64.00	11.52	0.00	11.28	0.00
66.00	11.52	0.00	11.28	0.00
68.00	11.52	0.00	11.28	0.00
70.00	11.52	0.00	11.28	0.00
72.00	11.52	0.00	11.28	0.00

### Summary for Subcatchment 2sp: Ext DA 2

[49] Hint: Tc<2dt may require smaller dt

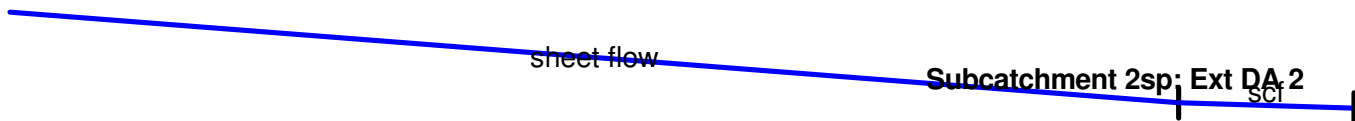
Runoff = 0.08 cfs @ 12.10 hrs, Volume= 240 cf, Depth= 8.85"  
 Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 NOAA 24-hr D 100-Year-2100 Rainfall=11.52"

Area (sf)	CN	Description
326	79	50-75% Grass cover, Fair, HSG C
326	79	100.00% Pervious Area

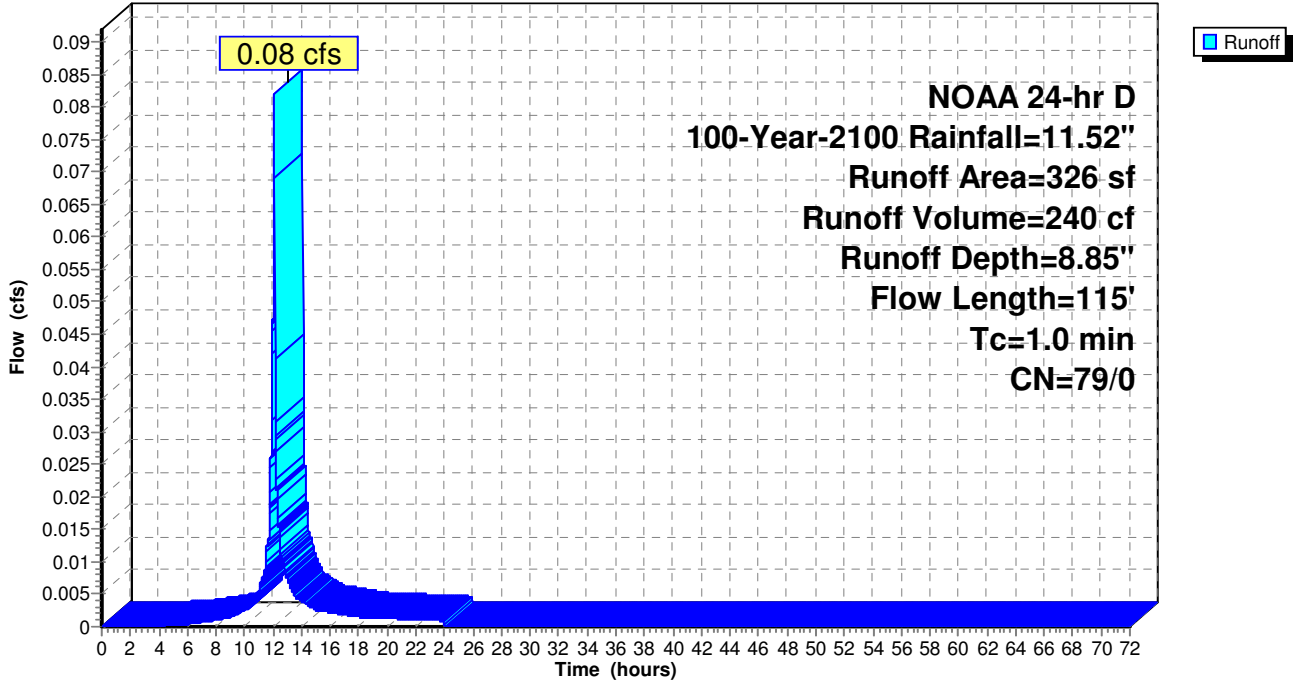
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0385	1.86		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.1	15	0.0150	2.49		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.0	115	Total			



### Subcatchment 2sp: Ext DA 2

Hydrograph



**Hydrograph for Subcatchment 2sp: Ext DA 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.28	0.00	0.00	0.00
4.00	0.60	0.00	0.00	0.00
6.00	0.98	0.07	0.00	0.00
8.00	1.49	0.26	0.00	0.00
10.00	2.28	0.70	0.00	0.00
12.00	5.52	3.25	0.00	<b>0.05</b>
14.00	9.24	6.67	0.00	<b>0.00</b>
16.00	10.03	7.42	0.00	0.00
18.00	10.54	7.90	0.00	0.00
20.00	10.92	8.27	0.00	0.00
22.00	11.24	8.58	0.00	0.00
24.00	<b>11.52</b>	<b>8.85</b>	0.00	0.00
26.00	11.52	8.85	0.00	0.00
28.00	11.52	8.85	0.00	0.00
30.00	11.52	8.85	0.00	0.00
32.00	11.52	8.85	0.00	0.00
34.00	11.52	8.85	0.00	0.00
36.00	11.52	8.85	0.00	0.00
38.00	11.52	8.85	0.00	0.00
40.00	11.52	8.85	0.00	0.00
42.00	11.52	8.85	0.00	0.00
44.00	11.52	8.85	0.00	0.00
46.00	11.52	8.85	0.00	0.00
48.00	11.52	8.85	0.00	0.00
50.00	11.52	8.85	0.00	0.00
52.00	11.52	8.85	0.00	0.00
54.00	11.52	8.85	0.00	0.00
56.00	11.52	8.85	0.00	0.00
58.00	11.52	8.85	0.00	0.00
60.00	11.52	8.85	0.00	0.00
62.00	11.52	8.85	0.00	0.00
64.00	11.52	8.85	0.00	0.00
66.00	11.52	8.85	0.00	0.00
68.00	11.52	8.85	0.00	0.00
70.00	11.52	8.85	0.00	0.00
72.00	11.52	8.85	0.00	0.00

### Summary for Subcatchment 3si: Ext DA 3

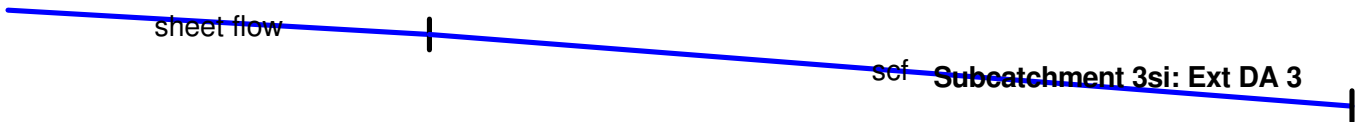
Runoff = 8.54 cfs @ 12.09 hrs, Volume= 28,870 cf, Depth=11.28"  
 Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 NOAA 24-hr D 100-Year-2100 Rainfall=11.52"

Area (sf)	CN	Description
30,716	98	Paved parking, HSG C
30,716	98	100.00% Impervious Area

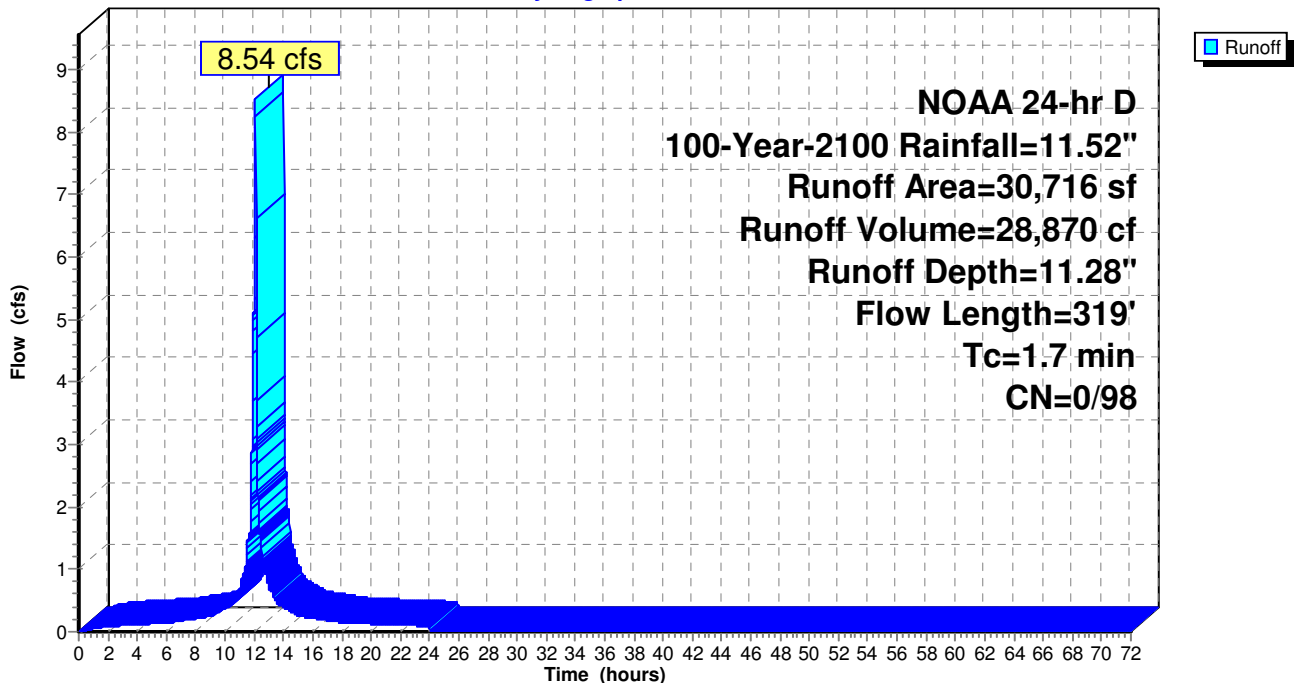
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0420	1.93		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.8	219	0.0570	4.85		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.7	319	Total			



### Subcatchment 3si: Ext DA 3

Hydrograph



**Hydrograph for Subcatchment 3si: Ext DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.28	0.00	0.13	0.08
4.00	0.60	0.00	0.41	0.12
6.00	0.98	0.00	0.77	0.14
8.00	1.49	0.00	1.28	0.21
10.00	2.28	0.00	2.06	0.38
12.00	5.52	0.00	5.28	<b>5.12</b>
14.00	9.24	0.00	9.00	<b>0.40</b>
16.00	10.03	0.00	9.78	0.22
18.00	10.54	0.00	10.30	0.15
20.00	10.92	0.00	10.67	0.13
22.00	11.24	0.00	11.00	0.11
24.00	<b>11.52</b>	0.00	<b>11.28</b>	0.09
26.00	11.52	0.00	11.28	0.00
28.00	11.52	0.00	11.28	0.00
30.00	11.52	0.00	11.28	0.00
32.00	11.52	0.00	11.28	0.00
34.00	11.52	0.00	11.28	0.00
36.00	11.52	0.00	11.28	0.00
38.00	11.52	0.00	11.28	0.00
40.00	11.52	0.00	11.28	0.00
42.00	11.52	0.00	11.28	0.00
44.00	11.52	0.00	11.28	0.00
46.00	11.52	0.00	11.28	0.00
48.00	11.52	0.00	11.28	0.00
50.00	11.52	0.00	11.28	0.00
52.00	11.52	0.00	11.28	0.00
54.00	11.52	0.00	11.28	0.00
56.00	11.52	0.00	11.28	0.00
58.00	11.52	0.00	11.28	0.00
60.00	11.52	0.00	11.28	0.00
62.00	11.52	0.00	11.28	0.00
64.00	11.52	0.00	11.28	0.00
66.00	11.52	0.00	11.28	0.00
68.00	11.52	0.00	11.28	0.00
70.00	11.52	0.00	11.28	0.00
72.00	11.52	0.00	11.28	0.00

### Summary for Subcatchment 3sp: Ext DA 3

Runoff = 3.41 cfs @ 12.10 hrs, Volume= 9,770 cf, Depth= 8.17"  
 Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 NOAA 24-hr D 100-Year-2100 Rainfall=11.52"

Area (sf)	CN	Description
14,358	74	>75% Grass cover, Good, HSG C
14,358	74	100.00% Pervious Area

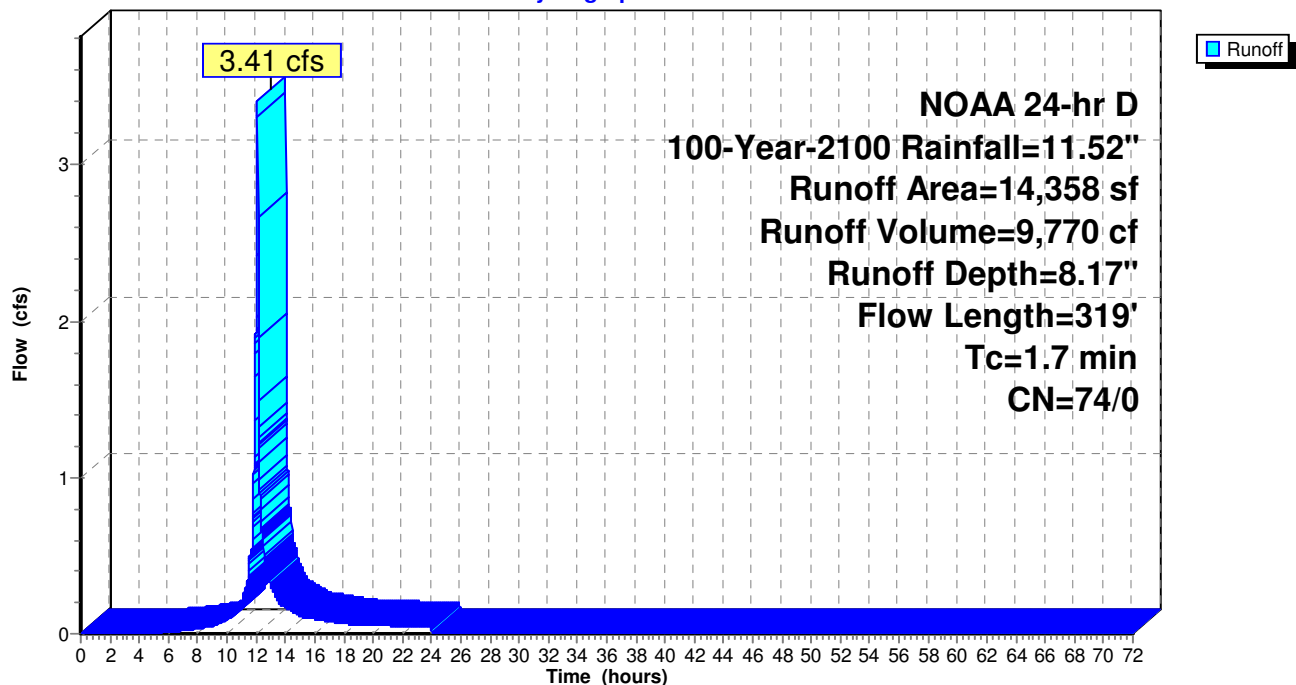
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0420	1.93		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.8	219	0.0570	4.85		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.7	319	Total			



### Subcatchment 3sp: Ext DA 3

Hydrograph



**Hydrograph for Subcatchment 3sp: Ext DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.28	0.00	0.00	0.00
4.00	0.60	0.00	0.00	0.00
6.00	0.98	0.02	0.00	0.01
8.00	1.49	0.15	0.00	0.03
10.00	2.28	0.49	0.00	0.09
12.00	5.52	2.78	0.00	<b>1.95</b>
14.00	9.24	6.04	0.00	<b>0.17</b>
16.00	10.03	6.77	0.00	0.10
18.00	10.54	7.25	0.00	0.06
20.00	10.92	7.60	0.00	0.06
22.00	11.24	7.91	0.00	0.05
24.00	<b>11.52</b>	<b>8.17</b>	0.00	0.04
26.00	11.52	8.17	0.00	0.00
28.00	11.52	8.17	0.00	0.00
30.00	11.52	8.17	0.00	0.00
32.00	11.52	8.17	0.00	0.00
34.00	11.52	8.17	0.00	0.00
36.00	11.52	8.17	0.00	0.00
38.00	11.52	8.17	0.00	0.00
40.00	11.52	8.17	0.00	0.00
42.00	11.52	8.17	0.00	0.00
44.00	11.52	8.17	0.00	0.00
46.00	11.52	8.17	0.00	0.00
48.00	11.52	8.17	0.00	0.00
50.00	11.52	8.17	0.00	0.00
52.00	11.52	8.17	0.00	0.00
54.00	11.52	8.17	0.00	0.00
56.00	11.52	8.17	0.00	0.00
58.00	11.52	8.17	0.00	0.00
60.00	11.52	8.17	0.00	0.00
62.00	11.52	8.17	0.00	0.00
64.00	11.52	8.17	0.00	0.00
66.00	11.52	8.17	0.00	0.00
68.00	11.52	8.17	0.00	0.00
70.00	11.52	8.17	0.00	0.00
72.00	11.52	8.17	0.00	0.00

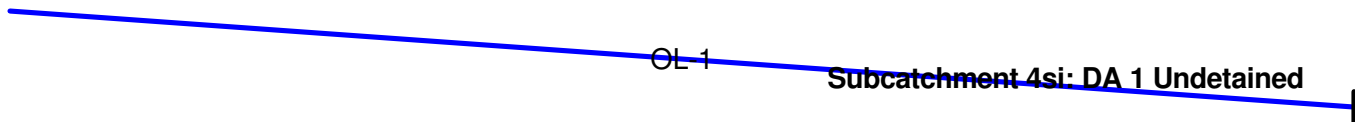
### Summary for Subcatchment 4si: DA 1 Undetained

Runoff = 0.06 cfs @ 12.10 hrs, Volume= 199 cf, Depth=11.28"  
 Routed to Link 9l : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 NOAA 24-hr D 100-Year-2100 Rainfall=11.52"

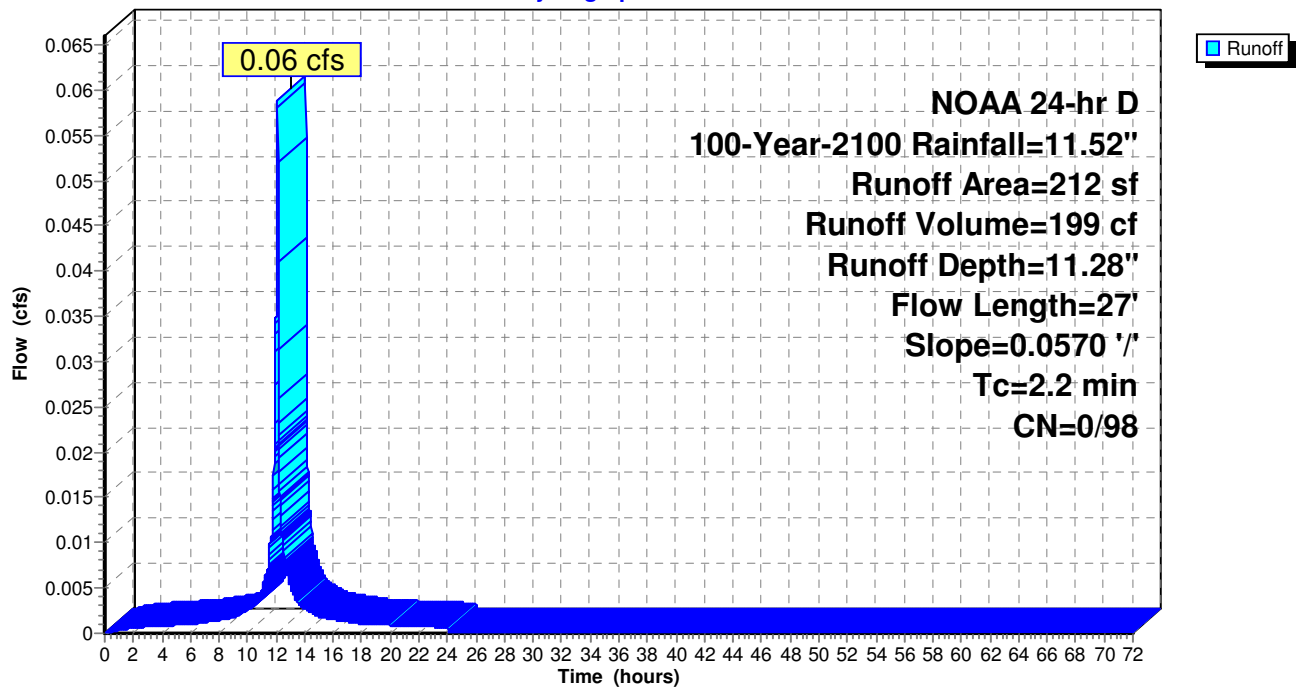
Area (sf)	CN	Description
212	98	Paved parking, HSG C
212	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	27	0.0570	0.21		<b>Sheet Flow, OL-1</b> n= 0.150 P2= 3.47"



### Subcatchment 4si: DA 1 Undetained

Hydrograph



**Hydrograph for Subcatchment 4si: DA 1 Undetained**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.28	0.00	0.13	0.00
4.00	0.60	0.00	0.41	0.00
6.00	0.98	0.00	0.77	0.00
8.00	1.49	0.00	1.28	0.00
10.00	2.28	0.00	2.06	0.00
12.00	5.52	0.00	5.28	<b>0.04</b>
14.00	9.24	0.00	9.00	<b>0.00</b>
16.00	10.03	0.00	9.78	0.00
18.00	10.54	0.00	10.30	0.00
20.00	10.92	0.00	10.67	0.00
22.00	11.24	0.00	11.00	0.00
24.00	<b>11.52</b>	0.00	<b>11.28</b>	0.00
26.00	11.52	0.00	11.28	0.00
28.00	11.52	0.00	11.28	0.00
30.00	11.52	0.00	11.28	0.00
32.00	11.52	0.00	11.28	0.00
34.00	11.52	0.00	11.28	0.00
36.00	11.52	0.00	11.28	0.00
38.00	11.52	0.00	11.28	0.00
40.00	11.52	0.00	11.28	0.00
42.00	11.52	0.00	11.28	0.00
44.00	11.52	0.00	11.28	0.00
46.00	11.52	0.00	11.28	0.00
48.00	11.52	0.00	11.28	0.00
50.00	11.52	0.00	11.28	0.00
52.00	11.52	0.00	11.28	0.00
54.00	11.52	0.00	11.28	0.00
56.00	11.52	0.00	11.28	0.00
58.00	11.52	0.00	11.28	0.00
60.00	11.52	0.00	11.28	0.00
62.00	11.52	0.00	11.28	0.00
64.00	11.52	0.00	11.28	0.00
66.00	11.52	0.00	11.28	0.00
68.00	11.52	0.00	11.28	0.00
70.00	11.52	0.00	11.28	0.00
72.00	11.52	0.00	11.28	0.00

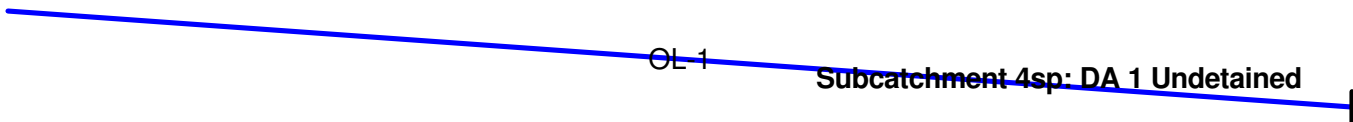
### Summary for Subcatchment 4sp: DA 1 Undetained

Runoff = 0.46 cfs @ 12.10 hrs, Volume= 1,336 cf, Depth= 8.17"  
 Routed to Link 9l : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 NOAA 24-hr D 100-Year-2100 Rainfall=11.52"

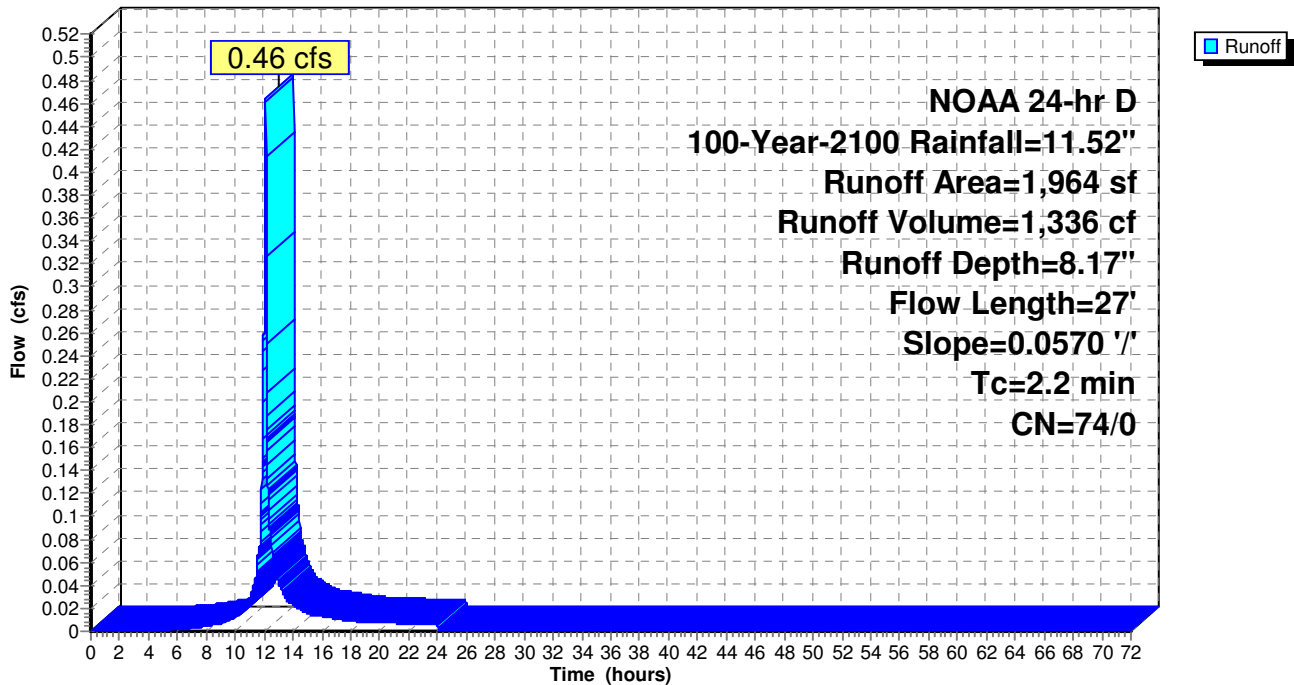
Area (sf)	CN	Description
1,964	74	>75% Grass cover, Good, HSG C
1,964	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	27	0.0570	0.21		<b>Sheet Flow, OL-1</b> n= 0.150 P2= 3.47"



### Subcatchment 4sp: DA 1 Undetained

Hydrograph



**Hydrograph for Subcatchment 4sp: DA 1 Undetained**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.28	0.00	0.00	0.00
4.00	0.60	0.00	0.00	0.00
6.00	0.98	0.02	0.00	0.00
8.00	1.49	0.15	0.00	0.00
10.00	2.28	0.49	0.00	0.01
12.00	5.52	2.78	0.00	<b>0.27</b>
14.00	9.24	6.04	0.00	<b>0.02</b>
16.00	10.03	6.77	0.00	0.01
18.00	10.54	7.25	0.00	0.01
20.00	10.92	7.60	0.00	0.01
22.00	11.24	7.91	0.00	0.01
24.00	<b>11.52</b>	<b>8.17</b>	0.00	0.01
26.00	11.52	8.17	0.00	0.00
28.00	11.52	8.17	0.00	0.00
30.00	11.52	8.17	0.00	0.00
32.00	11.52	8.17	0.00	0.00
34.00	11.52	8.17	0.00	0.00
36.00	11.52	8.17	0.00	0.00
38.00	11.52	8.17	0.00	0.00
40.00	11.52	8.17	0.00	0.00
42.00	11.52	8.17	0.00	0.00
44.00	11.52	8.17	0.00	0.00
46.00	11.52	8.17	0.00	0.00
48.00	11.52	8.17	0.00	0.00
50.00	11.52	8.17	0.00	0.00
52.00	11.52	8.17	0.00	0.00
54.00	11.52	8.17	0.00	0.00
56.00	11.52	8.17	0.00	0.00
58.00	11.52	8.17	0.00	0.00
60.00	11.52	8.17	0.00	0.00
62.00	11.52	8.17	0.00	0.00
64.00	11.52	8.17	0.00	0.00
66.00	11.52	8.17	0.00	0.00
68.00	11.52	8.17	0.00	0.00
70.00	11.52	8.17	0.00	0.00
72.00	11.52	8.17	0.00	0.00

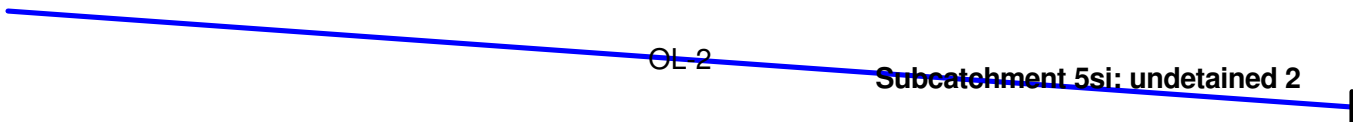
### Summary for Subcatchment 5si: undetained 2

Runoff = 0.42 cfs @ 12.12 hrs, Volume= 1,478 cf, Depth=11.28"  
 Routed to Link 9I : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 NOAA 24-hr D 100-Year-2100 Rainfall=11.52"

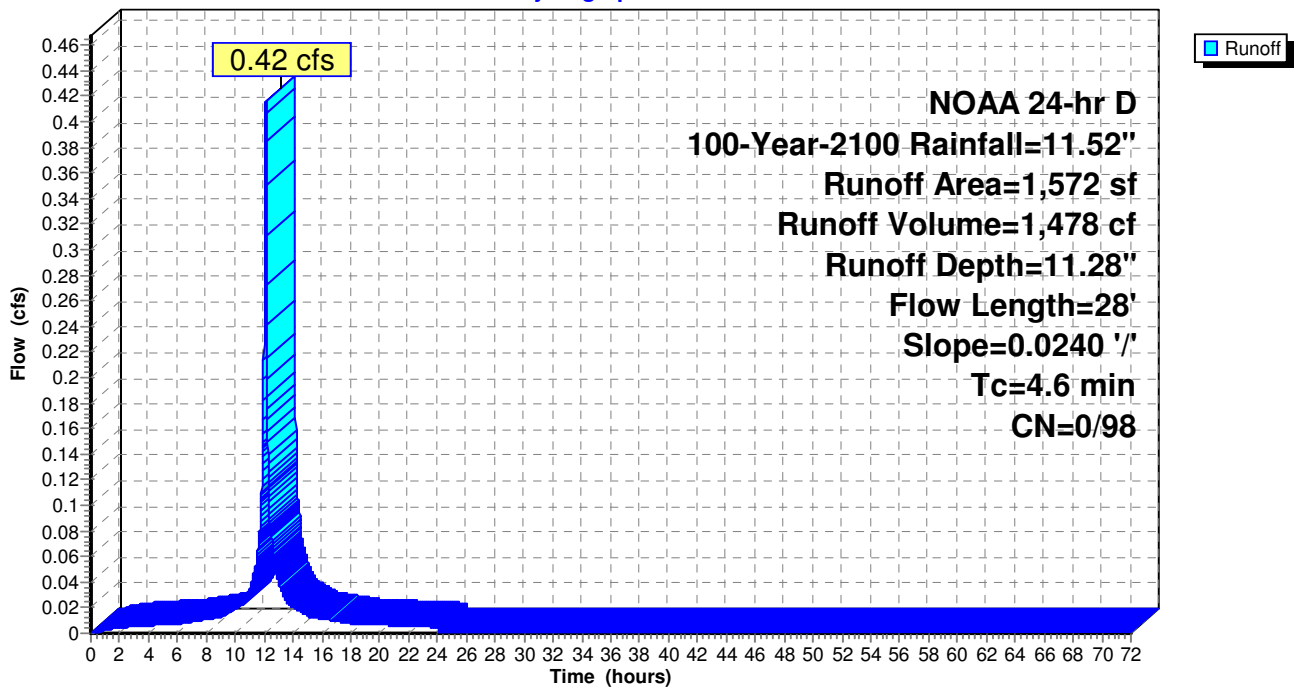
Area (sf)	CN	Description
1,572	98	Paved parking, HSG C
1,572	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	28	0.0240	0.10		<b>Sheet Flow, OL-2</b> Grass: Dense n= 0.240 P2= 3.47"



### Subcatchment 5si: undetained 2

Hydrograph



**Hydrograph for Subcatchment 5si: undetained 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	0.00
2.00	0.28	0.00	0.13	0.00
4.00	0.60	0.00	0.41	0.01
6.00	0.98	0.00	0.77	0.01
8.00	1.49	0.00	1.28	0.01
10.00	2.28	0.00	2.06	0.02
12.00	5.52	0.00	5.28	<b>0.24</b>
14.00	9.24	0.00	9.00	<b>0.02</b>
16.00	10.03	0.00	9.78	0.01
18.00	10.54	0.00	10.30	0.01
20.00	10.92	0.00	10.67	0.01
22.00	11.24	0.00	11.00	0.01
24.00	<b>11.52</b>	0.00	<b>11.28</b>	0.00
26.00	11.52	0.00	11.28	0.00
28.00	11.52	0.00	11.28	0.00
30.00	11.52	0.00	11.28	0.00
32.00	11.52	0.00	11.28	0.00
34.00	11.52	0.00	11.28	0.00
36.00	11.52	0.00	11.28	0.00
38.00	11.52	0.00	11.28	0.00
40.00	11.52	0.00	11.28	0.00
42.00	11.52	0.00	11.28	0.00
44.00	11.52	0.00	11.28	0.00
46.00	11.52	0.00	11.28	0.00
48.00	11.52	0.00	11.28	0.00
50.00	11.52	0.00	11.28	0.00
52.00	11.52	0.00	11.28	0.00
54.00	11.52	0.00	11.28	0.00
56.00	11.52	0.00	11.28	0.00
58.00	11.52	0.00	11.28	0.00
60.00	11.52	0.00	11.28	0.00
62.00	11.52	0.00	11.28	0.00
64.00	11.52	0.00	11.28	0.00
66.00	11.52	0.00	11.28	0.00
68.00	11.52	0.00	11.28	0.00
70.00	11.52	0.00	11.28	0.00
72.00	11.52	0.00	11.28	0.00

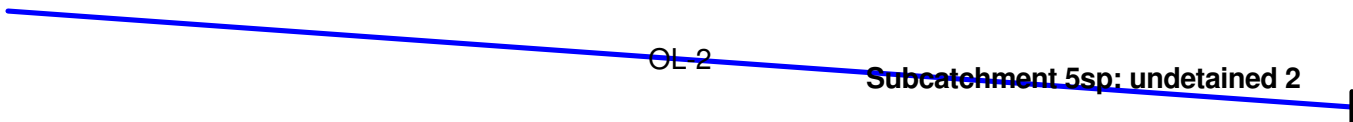
### Summary for Subcatchment 5sp: undetained 2

Runoff = 0.54 cfs @ 12.12 hrs, Volume= 1,633 cf, Depth= 8.17"  
 Routed to Link 9I : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 NOAA 24-hr D 100-Year-2100 Rainfall=11.52"

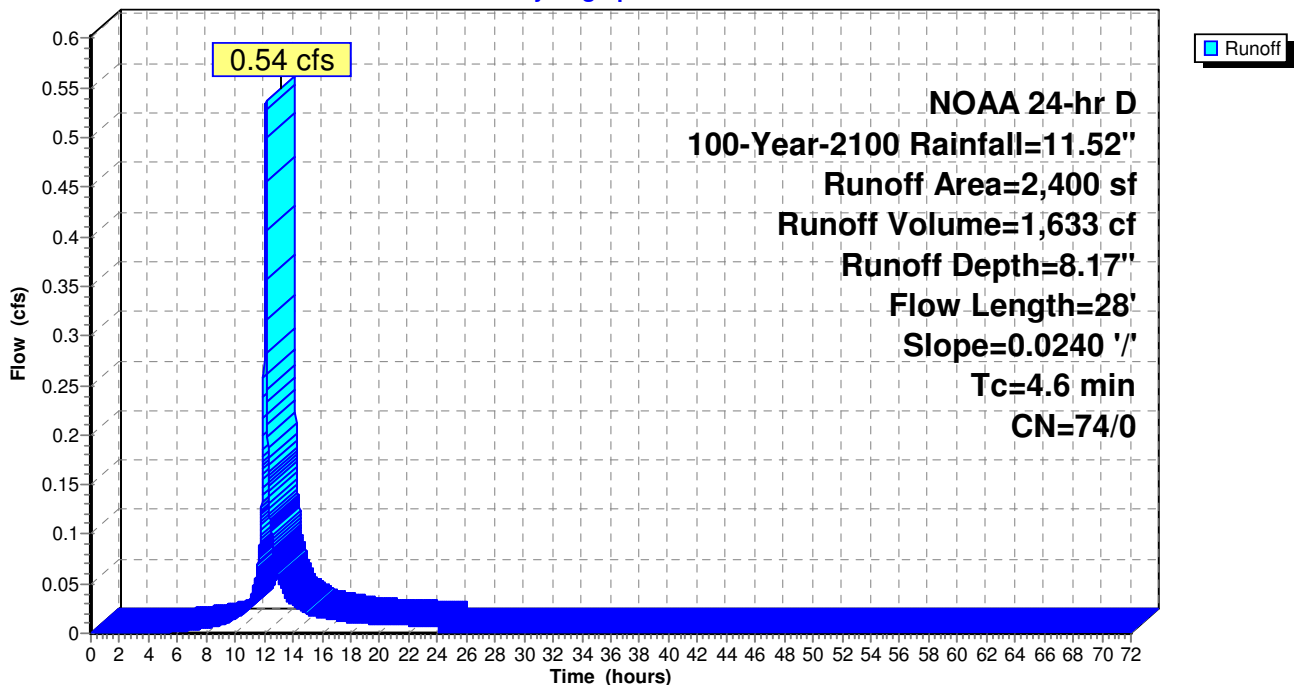
Area (sf)	CN	Description
2,400	74	>75% Grass cover, Good, HSG C
2,400	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	28	0.0240	0.10		<b>Sheet Flow, OL-2</b> Grass: Dense n= 0.240 P2= 3.47"



### Subcatchment 5sp: undetained 2

Hydrograph



**Hydrograph for Subcatchment 5sp: undetained 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.28	0.00	0.00	0.00
4.00	0.60	0.00	0.00	0.00
6.00	0.98	0.02	0.00	0.00
8.00	1.49	0.15	0.00	0.01
10.00	2.28	0.49	0.00	0.02
12.00	5.52	2.78	0.00	<b>0.30</b>
14.00	9.24	6.04	0.00	<b>0.03</b>
16.00	10.03	6.77	0.00	0.02
18.00	10.54	7.25	0.00	0.01
20.00	10.92	7.60	0.00	0.01
22.00	11.24	7.91	0.00	0.01
24.00	<b>11.52</b>	<b>8.17</b>	0.00	0.01
26.00	11.52	8.17	0.00	0.00
28.00	11.52	8.17	0.00	0.00
30.00	11.52	8.17	0.00	0.00
32.00	11.52	8.17	0.00	0.00
34.00	11.52	8.17	0.00	0.00
36.00	11.52	8.17	0.00	0.00
38.00	11.52	8.17	0.00	0.00
40.00	11.52	8.17	0.00	0.00
42.00	11.52	8.17	0.00	0.00
44.00	11.52	8.17	0.00	0.00
46.00	11.52	8.17	0.00	0.00
48.00	11.52	8.17	0.00	0.00
50.00	11.52	8.17	0.00	0.00
52.00	11.52	8.17	0.00	0.00
54.00	11.52	8.17	0.00	0.00
56.00	11.52	8.17	0.00	0.00
58.00	11.52	8.17	0.00	0.00
60.00	11.52	8.17	0.00	0.00
62.00	11.52	8.17	0.00	0.00
64.00	11.52	8.17	0.00	0.00
66.00	11.52	8.17	0.00	0.00
68.00	11.52	8.17	0.00	0.00
70.00	11.52	8.17	0.00	0.00
72.00	11.52	8.17	0.00	0.00

**Summary for Subcatchment 6si: Pro DA 3**

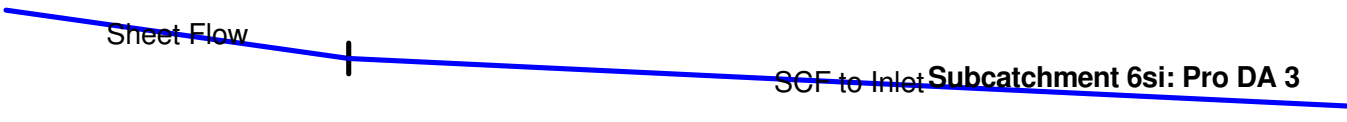
Runoff = 10.84 cfs @ 12.10 hrs, Volume= 36,790 cf, Depth=11.28"  
 Routed to Pond 8p : Detention System

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 NOAA 24-hr D 100-Year-2100 Rainfall=11.52"

Area (sf)	CN	Description
39,143	98	Paved parking, HSG C
39,143	98	100.00% Impervious Area

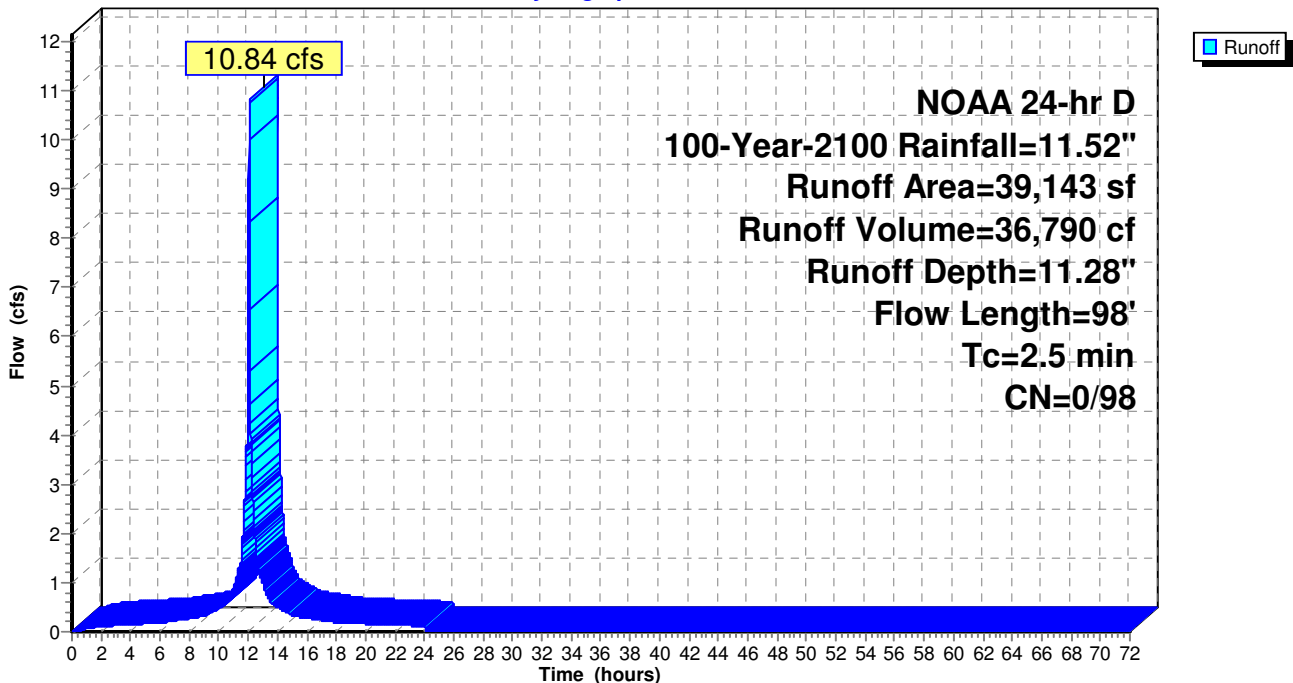
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	25	0.0560	0.20		<b>Sheet Flow, Sheet Flow</b>
0.4	73	0.0190	2.80		Grass: Short n= 0.150 P2= 3.47" <b>Shallow Concentrated Flow, SCF to Inlet</b>
2.5	98	Total			



**Subcatchment 6si: Pro DA 3**

Hydrograph



Hydrograph for Subcatchment 6si: Pro DA 3

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
2.00	0.28	0.00	0.13	0.11
4.00	0.60	0.00	0.41	0.15
6.00	0.98	0.00	0.77	0.18
8.00	1.49	0.00	1.28	0.27
10.00	2.28	0.00	2.06	0.48
12.00	5.52	0.00	5.28	6.49
14.00	9.24	0.00	9.00	0.50
16.00	10.03	0.00	9.78	0.28
18.00	10.54	0.00	10.30	0.19
20.00	10.92	0.00	10.67	0.16
22.00	11.24	0.00	11.00	0.14
24.00	11.52	0.00	11.28	0.11
26.00	11.52	0.00	11.28	0.00
28.00	11.52	0.00	11.28	0.00
30.00	11.52	0.00	11.28	0.00
32.00	11.52	0.00	11.28	0.00
34.00	11.52	0.00	11.28	0.00
36.00	11.52	0.00	11.28	0.00
38.00	11.52	0.00	11.28	0.00
40.00	11.52	0.00	11.28	0.00
42.00	11.52	0.00	11.28	0.00
44.00	11.52	0.00	11.28	0.00
46.00	11.52	0.00	11.28	0.00
48.00	11.52	0.00	11.28	0.00
50.00	11.52	0.00	11.28	0.00
52.00	11.52	0.00	11.28	0.00
54.00	11.52	0.00	11.28	0.00
56.00	11.52	0.00	11.28	0.00
58.00	11.52	0.00	11.28	0.00
60.00	11.52	0.00	11.28	0.00
62.00	11.52	0.00	11.28	0.00
64.00	11.52	0.00	11.28	0.00
66.00	11.52	0.00	11.28	0.00
68.00	11.52	0.00	11.28	0.00
70.00	11.52	0.00	11.28	0.00
72.00	11.52	0.00	11.28	0.00

### Summary for Subcatchment 6sp: Pro DA 3

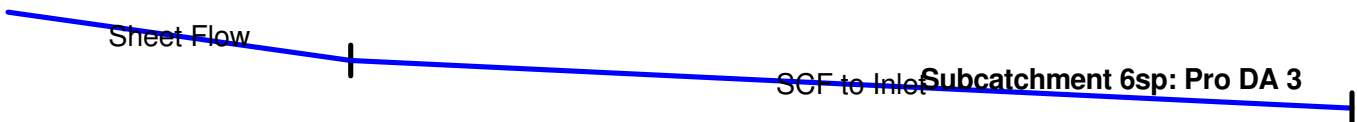
Runoff = 2.21 cfs @ 12.10 hrs, Volume= 6,387 cf, Depth= 8.17"  
 Routed to Pond 8p : Detention System

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 NOAA 24-hr D 100-Year-2100 Rainfall=11.52"

Area (sf)	CN	Description
9,386	74	>75% Grass cover, Good, HSG C
9,386	74	100.00% Pervious Area

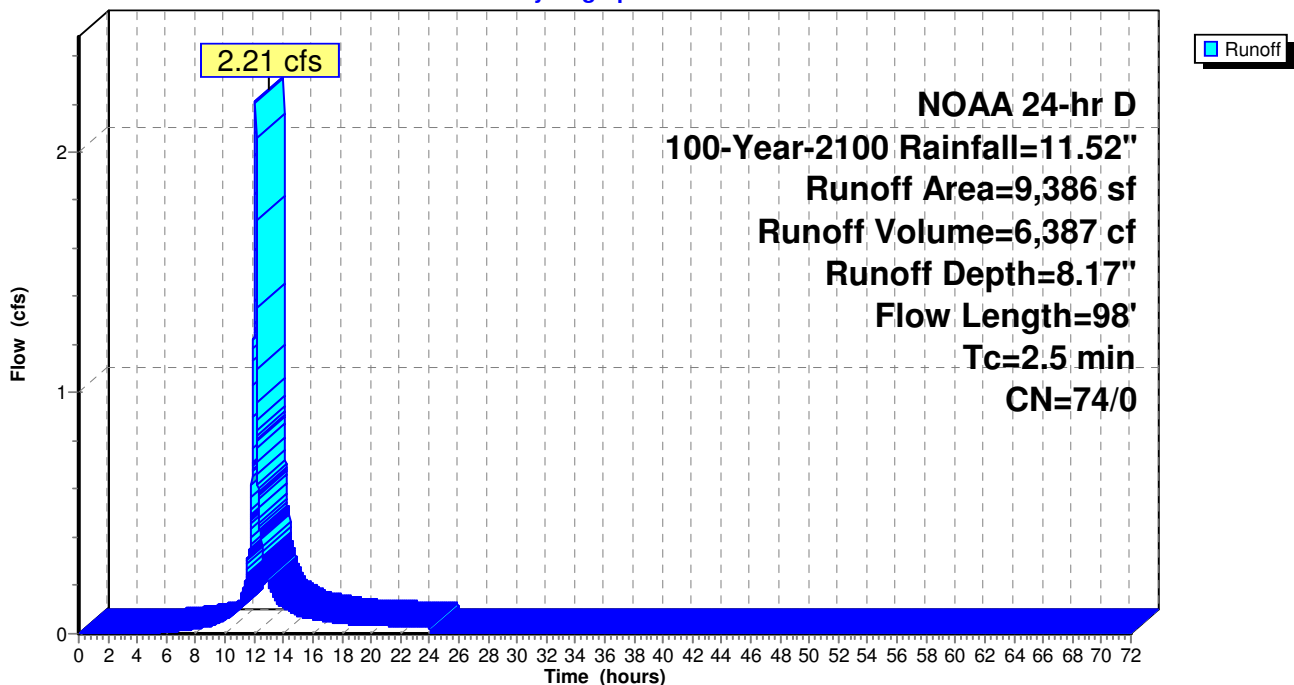
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	25	0.0560	0.20		<b>Sheet Flow, Sheet Flow</b> Grass: Short n= 0.150 P2= 3.47"
0.4	73	0.0190	2.80		<b>Shallow Concentrated Flow, SCF to Inlet</b> Paved Kv= 20.3 fps
2.5	98	Total			



### Subcatchment 6sp: Pro DA 3

Hydrograph



**Hydrograph for Subcatchment 6sp: Pro DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	0.00
2.00	0.28	0.00	0.00	0.00
4.00	0.60	0.00	0.00	0.00
6.00	0.98	0.02	0.00	0.01
8.00	1.49	0.15	0.00	0.02
10.00	2.28	0.49	0.00	0.06
12.00	5.52	2.78	0.00	<b>1.26</b>
14.00	9.24	6.04	0.00	<b>0.11</b>
16.00	10.03	6.77	0.00	0.06
18.00	10.54	7.25	0.00	0.04
20.00	10.92	7.60	0.00	0.04
22.00	11.24	7.91	0.00	0.03
24.00	<b>11.52</b>	<b>8.17</b>	0.00	0.03
26.00	11.52	8.17	0.00	0.00
28.00	11.52	8.17	0.00	0.00
30.00	11.52	8.17	0.00	0.00
32.00	11.52	8.17	0.00	0.00
34.00	11.52	8.17	0.00	0.00
36.00	11.52	8.17	0.00	0.00
38.00	11.52	8.17	0.00	0.00
40.00	11.52	8.17	0.00	0.00
42.00	11.52	8.17	0.00	0.00
44.00	11.52	8.17	0.00	0.00
46.00	11.52	8.17	0.00	0.00
48.00	11.52	8.17	0.00	0.00
50.00	11.52	8.17	0.00	0.00
52.00	11.52	8.17	0.00	0.00
54.00	11.52	8.17	0.00	0.00
56.00	11.52	8.17	0.00	0.00
58.00	11.52	8.17	0.00	0.00
60.00	11.52	8.17	0.00	0.00
62.00	11.52	8.17	0.00	0.00
64.00	11.52	8.17	0.00	0.00
66.00	11.52	8.17	0.00	0.00
68.00	11.52	8.17	0.00	0.00
70.00	11.52	8.17	0.00	0.00
72.00	11.52	8.17	0.00	0.00

### Summary for Pond 8p: Detention System

Inflow Area = 48,529 sf, 80.66% Impervious, Inflow Depth = 10.68" for 100-Year-2100 event  
 Inflow = 13.05 cfs @ 12.10 hrs, Volume= 43,177 cf  
 Outflow = 9.59 cfs @ 12.13 hrs, Volume= 42,985 cf, Atten= 27%, Lag= 2.0 min  
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
 Primary = 9.59 cfs @ 12.13 hrs, Volume= 42,985 cf  
 Routed to Link 9I : Overall discharge

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Peak Elev= 406.47' @ 12.13 hrs Surf.Area= 480 sf Storage= 5,804 cf

Plug-Flow detention time= 21.0 min calculated for 42,979 cf (100% of inflow)  
 Center-of-Mass det. time= 18.0 min ( 763.0 - 745.0 )

Volume	Invert	Avail.Storage	Storage Description
#1	403.00'	5,027 cf	<b>48.0" Round Pipe Storage</b> -Impervious L= 400.0'
#2	403.00'	578 cf	<b>48.0" Round Pipe Storage</b> Inside #3 L= 46.0'
#3	402.00'	825 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc) 2,640 cf Overall - 578 cf Embedded = 2,062 cf x 40.0% Voids
		6,429 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
402.00	480	0	0	480
407.50	480	2,640	2,640	907

Device	Routing	Invert	Outlet Devices
#1	Primary	403.00'	<b>7.5" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#2	Primary	404.60'	<b>36.0" W x 3.0" H Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Primary	405.50'	<b>24.0" W x 3.0" H Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#4	Discarded	402.00'	<b>1.290 in/hr Exfiltration over Surface area from 402.00' - 407.50'</b> Conductivity to Groundwater Elevation = 395.00' Excluded Surface area = 480 sf

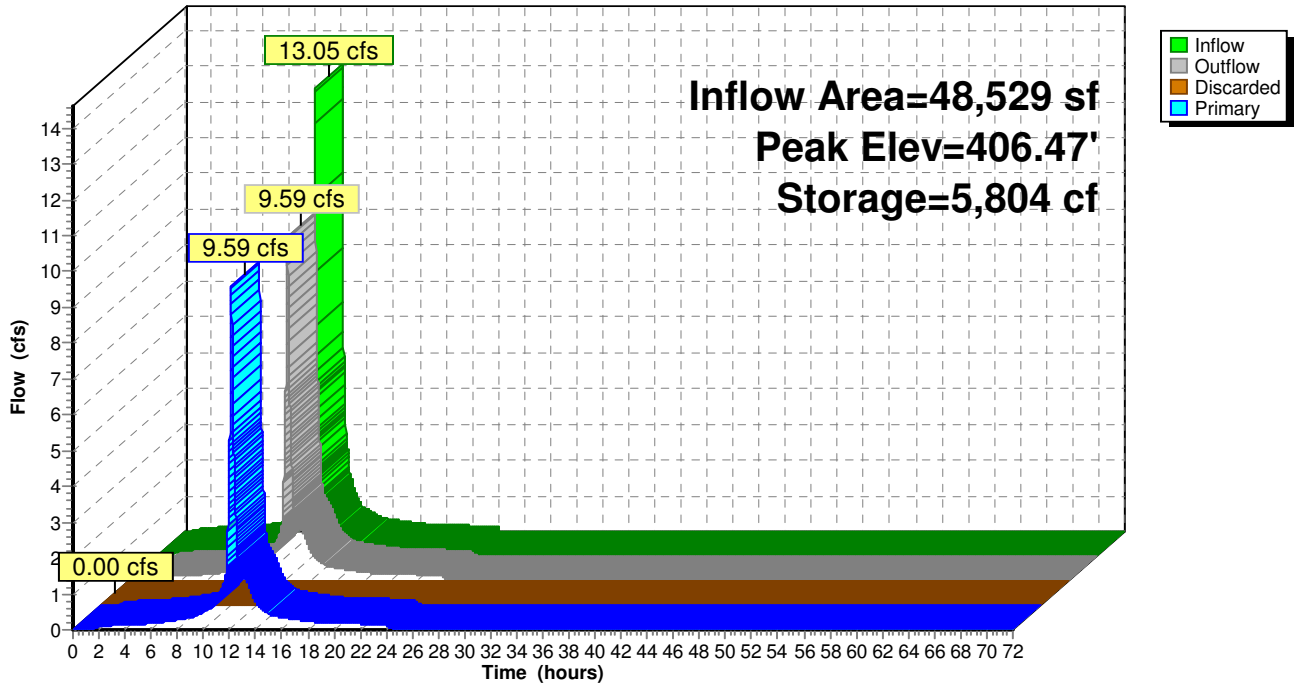
**Discarded OutFlow** Max=0.00 cfs @ 0.00 hrs HW=402.00' (Free Discharge)  
 ↳4=Exfiltration ( Controls 0.00 cfs)

**Primary OutFlow** Max=9.58 cfs @ 12.13 hrs HW=406.46' (Free Discharge)  
 ↳1=Orifice/Grate (Orifice Controls 2.62 cfs @ 8.54 fps)  
 ↳2=Orifice/Grate (Orifice Controls 4.76 cfs @ 6.34 fps)  
 ↳3=Orifice/Grate (Orifice Controls 2.20 cfs @ 4.40 fps)

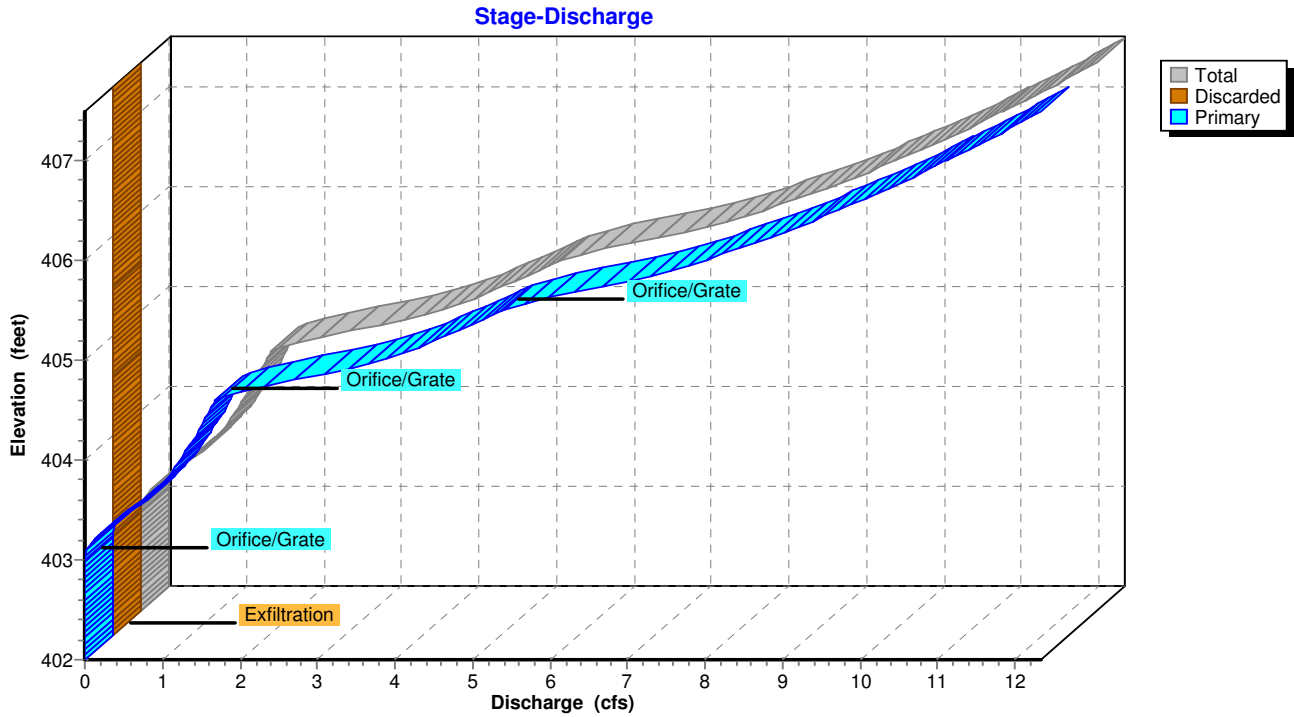


Pond 8p: Detention System

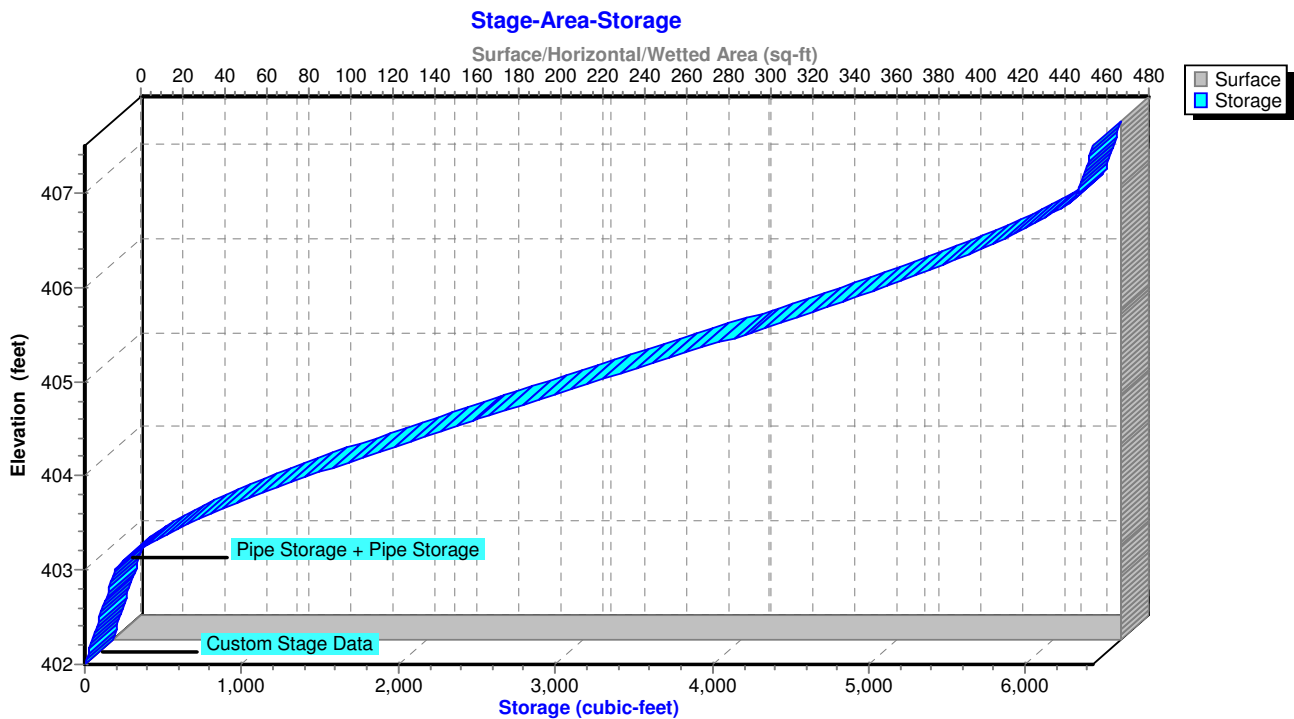
Hydrograph



### Pond 8p: Detention System



### Pond 8p: Detention System



**Hydrograph for Pond 8p: Detention System**

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	402.00	0.00	<b>0.00</b>	0.00
2.00	0.11	296	403.16	0.09	0.00	0.09
4.00	0.15	343	403.21	0.14	0.00	0.14
6.00	0.18	368	403.24	0.18	0.00	0.18
8.00	0.29	440	403.31	0.28	0.00	0.28
10.00	0.54	591	403.43	0.51	0.00	0.51
12.00	<b>7.75</b>	<b>3,929</b>	<b>405.35</b>	<b>4.96</b>	0.00	<b>4.96</b>
14.00	<b>0.61</b>	<b>824</b>	<b>403.61</b>	<b>0.81</b>	0.00	<b>0.81</b>
16.00	0.34	486	403.35	0.35	0.00	0.35
18.00	0.23	411	403.28	0.24	0.00	0.24
20.00	0.20	382	403.25	0.20	0.00	0.20
22.00	0.17	362	403.23	0.17	0.00	0.17
24.00	0.14	342	403.21	0.14	0.00	0.14
26.00	0.00	197	403.01	0.00	0.00	0.00
28.00	0.00	192	403.00	0.00	0.00	0.00
30.00	0.00	192	403.00	0.00	0.00	0.00
32.00	0.00	192	403.00	0.00	0.00	0.00
34.00	0.00	192	403.00	0.00	0.00	0.00
36.00	0.00	192	403.00	0.00	0.00	0.00
38.00	0.00	192	403.00	0.00	0.00	0.00
40.00	0.00	192	403.00	0.00	0.00	0.00
42.00	0.00	192	403.00	0.00	0.00	0.00
44.00	0.00	192	403.00	0.00	0.00	0.00
46.00	0.00	192	403.00	0.00	0.00	0.00
48.00	0.00	192	403.00	0.00	0.00	0.00
50.00	0.00	192	403.00	0.00	0.00	0.00
52.00	0.00	192	403.00	0.00	0.00	0.00
54.00	0.00	192	403.00	0.00	0.00	0.00
56.00	0.00	192	403.00	0.00	0.00	0.00
58.00	0.00	192	403.00	0.00	0.00	0.00
60.00	0.00	192	403.00	0.00	0.00	0.00
62.00	0.00	192	403.00	0.00	0.00	0.00
64.00	0.00	192	403.00	0.00	0.00	0.00
66.00	0.00	192	403.00	0.00	0.00	0.00
68.00	0.00	192	403.00	0.00	0.00	0.00
70.00	0.00	192	403.00	0.00	0.00	0.00
72.00	0.00	192	403.00	0.00	0.00	0.00

Stage-Discharge for Pond 8p: Detention System

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
402.00	0.00	0.00	0.00	407.10	11.36	0.00	11.36
402.10	0.00	0.00	0.00	407.20	11.61	0.00	11.61
402.20	0.00	0.00	0.00	407.30	11.86	0.00	11.86
402.30	0.00	0.00	0.00	407.40	12.10	0.00	12.10
402.40	0.00	0.00	0.00	407.50	12.33	0.00	12.33
402.50	0.00	0.00	0.00				
402.60	0.00	0.00	0.00				
402.70	0.00	0.00	0.00				
402.80	0.00	0.00	0.00				
402.90	0.00	0.00	0.00				
403.00	0.00	0.00	0.00				
403.10	0.03	0.00	0.03				
403.20	0.13	0.00	0.13				
403.30	0.27	0.00	0.27				
403.40	0.45	0.00	0.45				
403.50	0.63	0.00	0.63				
403.60	0.80	0.00	0.80				
403.70	0.92	0.00	0.92				
403.80	1.03	0.00	1.03				
403.90	1.13	0.00	1.13				
404.00	1.22	0.00	1.22				
404.10	1.31	0.00	1.31				
404.20	1.39	0.00	1.39				
404.30	1.47	0.00	1.47				
404.40	1.54	0.00	1.54				
404.50	1.61	0.00	1.61				
404.60	1.68	0.00	1.68				
404.70	2.04	0.00	2.04				
404.80	2.66	0.00	2.66				
404.90	3.34	0.00	3.34				
405.00	3.80	0.00	3.80				
405.10	4.18	0.00	4.18				
405.20	4.51	0.00	4.51				
405.30	4.82	0.00	4.82				
405.40	5.10	0.00	5.10				
405.50	5.36	0.00	5.36				
405.60	5.81	0.00	5.81				
405.70	6.42	0.00	6.42				
405.80	7.06	0.00	7.06				
405.90	7.54	0.00	7.54				
406.00	7.97	0.00	7.97				
406.10	8.35	0.00	8.35				
406.20	8.72	0.00	8.72				
406.30	9.06	0.00	9.06				
406.40	9.39	0.00	9.39				
406.50	9.70	0.00	9.70				
406.60	10.00	0.00	10.00				
406.70	10.29	0.00	10.29				
406.80	10.57	0.00	10.57				
406.90	10.84	0.00	10.84				
407.00	11.10	0.00	11.10				

Stage-Area-Storage for Pond 8p: Detention System

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
402.00	480	0	407.10	480	6,353
402.10	480	19	407.20	480	6,372
402.20	480	38	407.30	480	6,391
402.30	480	58	407.40	480	6,410
402.40	480	77	407.50	480	6,429
402.50	480	96			
402.60	480	115			
402.70	480	134			
402.80	480	154			
402.90	480	173			
403.00	480	192			
403.10	480	247			
403.20	480	331			
403.30	480	433			
403.40	480	548			
403.50	480	676			
403.60	480	813			
403.70	480	958			
403.80	480	1,111			
403.90	480	1,270			
404.00	480	1,435			
404.10	480	1,604			
404.20	480	1,778			
404.30	480	1,956			
404.40	480	2,137			
404.50	480	2,320			
404.60	480	2,506			
404.70	480	2,694			
404.80	480	2,883			
404.90	480	3,073			
405.00	480	3,263			
405.10	480	3,453			
405.20	480	3,643			
405.30	480	3,831			
405.40	480	4,019			
405.50	480	4,205			
405.60	480	4,389			
405.70	480	4,569			
405.80	480	4,747			
405.90	480	4,921			
406.00	480	5,091			
406.10	480	5,256			
406.20	480	5,415			
406.30	480	5,567			
406.40	480	5,713			
406.50	480	5,850			
406.60	480	5,977			
406.70	480	6,093			
406.80	480	6,195			
406.90	480	6,278			
407.00	480	6,333			

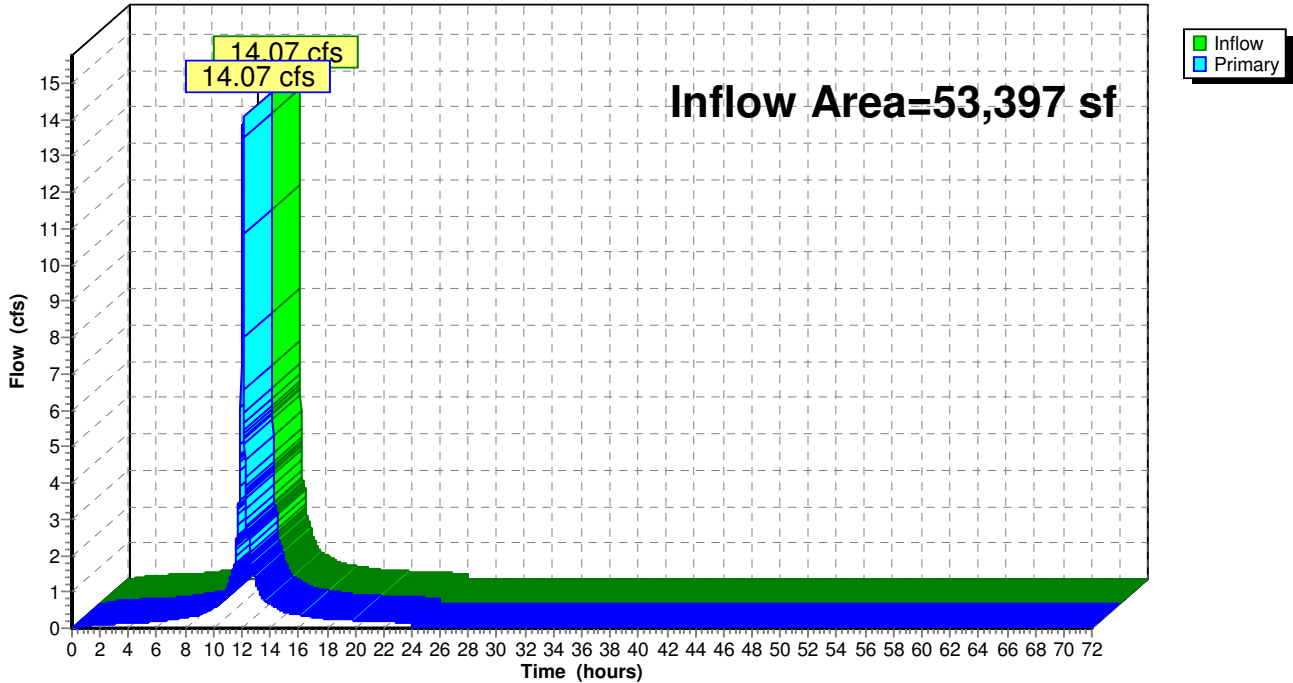
### Summary for Link 4I: existing total discharge

Inflow Area = 53,397 sf, 67.93% Impervious, Inflow Depth = 10.36" for 100-Year-2100 event  
Inflow = 14.07 cfs @ 12.10 hrs, Volume= 46,116 cf  
Primary = 14.07 cfs @ 12.10 hrs, Volume= 46,116 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Link 4I: existing total discharge

Hydrograph



Hydrograph for Link 4I: existing total discharge

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.06	0.00	0.06	52.00	0.00	0.00	0.00
2.00	0.10	0.00	0.10	53.00	0.00	0.00	0.00
3.00	0.12	0.00	0.12	54.00	0.00	0.00	0.00
4.00	0.14	0.00	0.14	55.00	0.00	0.00	0.00
5.00	0.16	0.00	0.16	56.00	0.00	0.00	0.00
6.00	0.18	0.00	0.18	57.00	0.00	0.00	0.00
7.00	0.24	0.00	0.24	58.00	0.00	0.00	0.00
8.00	0.30	0.00	0.30	59.00	0.00	0.00	0.00
9.00	0.36	0.00	0.36	60.00	0.00	0.00	0.00
10.00	0.57	0.00	0.57	61.00	0.00	0.00	0.00
11.00	1.06	0.00	1.06	62.00	0.00	0.00	0.00
12.00	<b>8.33</b>	0.00	<b>8.33</b>	63.00	0.00	0.00	0.00
13.00	<b>1.30</b>	0.00	<b>1.30</b>	64.00	0.00	0.00	0.00
14.00	0.67	0.00	0.67	65.00	0.00	0.00	0.00
15.00	0.45	0.00	0.45	66.00	0.00	0.00	0.00
16.00	0.37	0.00	0.37	67.00	0.00	0.00	0.00
17.00	0.31	0.00	0.31	68.00	0.00	0.00	0.00
18.00	0.25	0.00	0.25	69.00	0.00	0.00	0.00
19.00	0.23	0.00	0.23	70.00	0.00	0.00	0.00
20.00	0.22	0.00	0.22	71.00	0.00	0.00	0.00
21.00	0.20	0.00	0.20	72.00	0.00	0.00	0.00
22.00	0.18	0.00	0.18				
23.00	0.17	0.00	0.17				
24.00	0.15	0.00	0.15				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

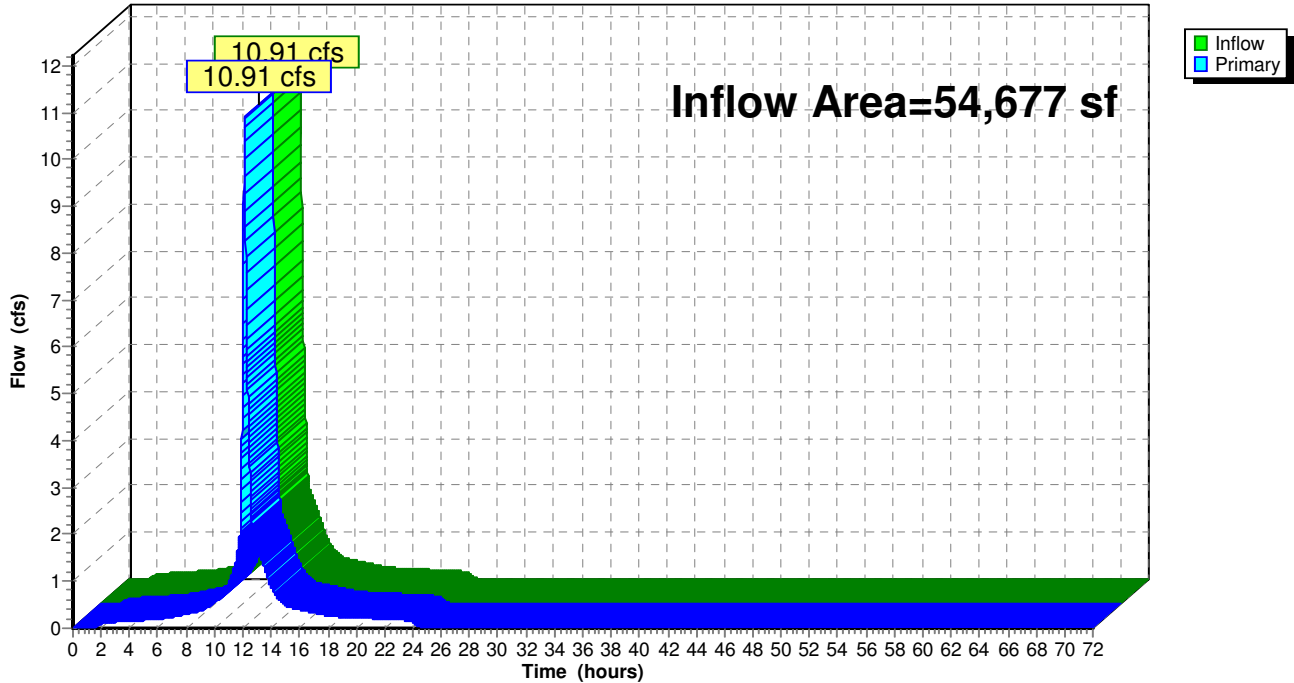
### Summary for Link 9I: Overall discharge

Inflow Area = 54,677 sf, 74.85% Impervious, Inflow Depth = 10.45" for 100-Year-2100 event  
Inflow = 10.91 cfs @ 12.13 hrs, Volume= 47,631 cf  
Primary = 10.91 cfs @ 12.13 hrs, Volume= 47,631 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Link 9I: Overall discharge

Hydrograph



Hydrograph for Link 9I: Overall discharge

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.09	0.00	0.09	53.00	0.00	0.00	0.00
3.00	0.13	0.00	0.13	54.00	0.00	0.00	0.00
4.00	0.15	0.00	0.15	55.00	0.00	0.00	0.00
5.00	0.17	0.00	0.17	56.00	0.00	0.00	0.00
6.00	0.19	0.00	0.19	57.00	0.00	0.00	0.00
7.00	0.24	0.00	0.24	58.00	0.00	0.00	0.00
8.00	0.31	0.00	0.31	59.00	0.00	0.00	0.00
9.00	0.37	0.00	0.37	60.00	0.00	0.00	0.00
10.00	0.56	0.00	0.56	61.00	0.00	0.00	0.00
11.00	0.94	0.00	0.94	62.00	0.00	0.00	0.00
12.00	<b>5.81</b>	0.00	<b>5.81</b>	63.00	0.00	0.00	0.00
13.00	<b>1.74</b>	0.00	<b>1.74</b>	64.00	0.00	0.00	0.00
14.00	0.88	0.00	0.88	65.00	0.00	0.00	0.00
15.00	0.50	0.00	0.50	66.00	0.00	0.00	0.00
16.00	0.39	0.00	0.39	67.00	0.00	0.00	0.00
17.00	0.33	0.00	0.33	68.00	0.00	0.00	0.00
18.00	0.27	0.00	0.27	69.00	0.00	0.00	0.00
19.00	0.24	0.00	0.24	70.00	0.00	0.00	0.00
20.00	0.22	0.00	0.22	71.00	0.00	0.00	0.00
21.00	0.21	0.00	0.21	72.00	0.00	0.00	0.00
22.00	0.19	0.00	0.19				
23.00	0.18	0.00	0.18				
24.00	0.16	0.00	0.16				
25.00	0.01	0.00	0.01				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

**2025-09-22 HydroCad - hillcrest farms Rev 1**

Prepared by Anderson Consulting Services

HydroCAD® 10.20-8a s/n 06666 © 2025 HydroCAD Software Solutions LLC

hillcrest farms  
NJ DEP 2-hr WQ Rainfall=1.25"

Printed 4/17/2026

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points  
 Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1si: Ext DA 1** Runoff Area=1,374 sf 100.00% Impervious Runoff Depth=1.03"  
 Flow Length=139' Slope=0.0680 '/' Tc=6.0 min CN=0/98 Runoff=0.09 cfs 118 cf

**Subcatchment 1sp: Ext DA 1** Runoff Area=2,438 sf 0.00% Impervious Runoff Depth=0.37"  
 Flow Length=139' Slope=0.0680 '/' Tc=6.0 min CN=87/0 Runoff=0.07 cfs 75 cf

**Subcatchment 2si: Ext DA 2** Runoff Area=4,185 sf 100.00% Impervious Runoff Depth=1.03"  
 Flow Length=115' Tc=1.0 min CN=0/98 Runoff=0.30 cfs 361 cf

**Subcatchment 2sp: Ext DA 2** Runoff Area=326 sf 0.00% Impervious Runoff Depth=0.15"  
 Flow Length=115' Tc=1.0 min CN=79/0 Runoff=0.00 cfs 4 cf

**Subcatchment 3si: Ext DA 3** Runoff Area=30,716 sf 100.00% Impervious Runoff Depth=1.03"  
 Flow Length=319' Tc=1.7 min CN=0/98 Runoff=2.17 cfs 2,648 cf

**Subcatchment 3sp: Ext DA 3** Runoff Area=14,358 sf 0.00% Impervious Runoff Depth=0.07"  
 Flow Length=319' Tc=1.7 min CN=74/0 Runoff=0.07 cfs 88 cf

**Subcatchment 4si: DA 1 Undetained** Runoff Area=212 sf 100.00% Impervious Runoff Depth=1.03"  
 Flow Length=27' Slope=0.0570 '/' Tc=2.2 min CN=0/98 Runoff=0.01 cfs 18 cf

**Subcatchment 4sp: DA 1 Undetained** Runoff Area=1,964 sf 0.00% Impervious Runoff Depth=0.07"  
 Flow Length=27' Slope=0.0570 '/' Tc=2.2 min CN=74/0 Runoff=0.01 cfs 12 cf

**Subcatchment 5si: undetained 2** Runoff Area=1,572 sf 100.00% Impervious Runoff Depth=1.03"  
 Flow Length=28' Slope=0.0240 '/' Tc=4.6 min CN=0/98 Runoff=0.11 cfs 136 cf

**Subcatchment 5sp: undetained 2** Runoff Area=2,400 sf 0.00% Impervious Runoff Depth=0.07"  
 Flow Length=28' Slope=0.0240 '/' Tc=4.6 min CN=74/0 Runoff=0.01 cfs 15 cf

**Subcatchment 6si: Pro DA 3** Runoff Area=39,143 sf 100.00% Impervious Runoff Depth=1.03"  
 Flow Length=98' Tc=2.5 min CN=0/98 Runoff=2.76 cfs 3,375 cf

**Subcatchment 6sp: Pro DA 3** Runoff Area=9,386 sf 0.00% Impervious Runoff Depth=0.07"  
 Flow Length=98' Tc=2.5 min CN=74/0 Runoff=0.04 cfs 58 cf

**Pond 8p: Detention System** Peak Elev=404.06' Storage=1,530 cf Inflow=2.80 cfs 3,432 cf  
 Discarded=0.00 cfs 0 cf Primary=1.27 cfs 3,240 cf Outflow=1.27 cfs 3,240 cf

**Link 4l: existing total discharge** Inflow=2.67 cfs 3,295 cf  
 Primary=2.67 cfs 3,295 cf

**Link 9l: Overall discharge** Inflow=1.39 cfs 3,421 cf  
 Primary=1.39 cfs 3,421 cf

**Total Runoff Area = 108,074 sf Runoff Volume = 6,908 cf Average Runoff Depth = 0.77"**  
**28.57% Pervious = 30,872 sf 71.43% Impervious = 77,202 sf**

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NJ DEP 2-hr WQ Rainfall=1.25"

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**Summary for Subcatchment 1si: Ext DA 1**

Runoff = 0.09 cfs @ 1.11 hrs, Volume= 118 cf, Depth= 1.03"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
1,374	98	Paved parking, HSG C
1,374	98	100.00% Impervious Area

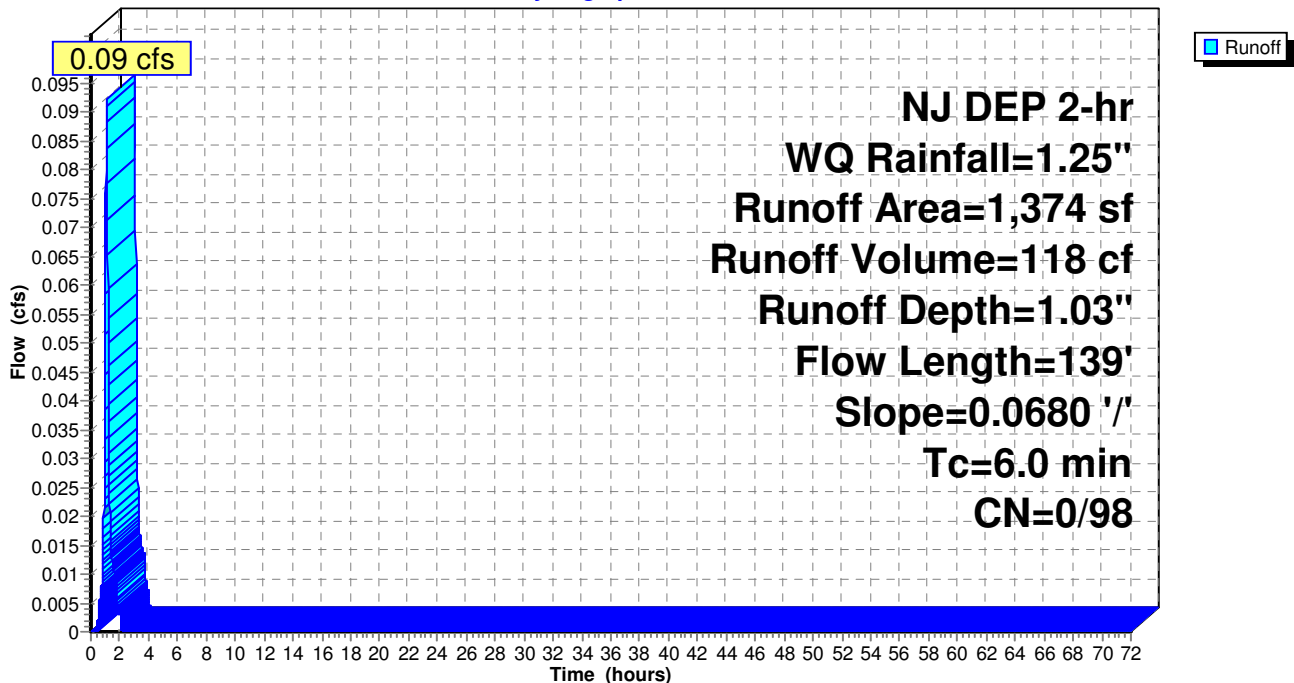
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	100	0.0680	0.29		<b>Sheet Flow, sheet flow</b> Grass: Short n= 0.150 P2= 3.47"
0.2	39	0.0680	4.20		<b>Shallow Concentrated Flow, scf</b> Unpaved Kv= 16.1 fps
6.0	139	Total			



**Subcatchment 1si: Ext DA 1**

Hydrograph



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**Hydrograph for Subcatchment 1si: Ext DA 1**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	<b>0.00</b>
2.00	<b>1.25</b>	0.00	<b>1.03</b>	<b>0.00</b>
4.00	1.25	0.00	1.03	0.00
6.00	1.25	0.00	1.03	0.00
8.00	1.25	0.00	1.03	0.00
10.00	1.25	0.00	1.03	0.00
12.00	1.25	0.00	1.03	0.00
14.00	1.25	0.00	1.03	0.00
16.00	1.25	0.00	1.03	0.00
18.00	1.25	0.00	1.03	0.00
20.00	1.25	0.00	1.03	0.00
22.00	1.25	0.00	1.03	0.00
24.00	1.25	0.00	1.03	0.00
26.00	1.25	0.00	1.03	0.00
28.00	1.25	0.00	1.03	0.00
30.00	1.25	0.00	1.03	0.00
32.00	1.25	0.00	1.03	0.00
34.00	1.25	0.00	1.03	0.00
36.00	1.25	0.00	1.03	0.00
38.00	1.25	0.00	1.03	0.00
40.00	1.25	0.00	1.03	0.00
42.00	1.25	0.00	1.03	0.00
44.00	1.25	0.00	1.03	0.00
46.00	1.25	0.00	1.03	0.00
48.00	1.25	0.00	1.03	0.00
50.00	1.25	0.00	1.03	0.00
52.00	1.25	0.00	1.03	0.00
54.00	1.25	0.00	1.03	0.00
56.00	1.25	0.00	1.03	0.00
58.00	1.25	0.00	1.03	0.00
60.00	1.25	0.00	1.03	0.00
62.00	1.25	0.00	1.03	0.00
64.00	1.25	0.00	1.03	0.00
66.00	1.25	0.00	1.03	0.00
68.00	1.25	0.00	1.03	0.00
70.00	1.25	0.00	1.03	0.00
72.00	1.25	0.00	1.03	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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**Summary for Subcatchment 1sp: Ext DA 1**

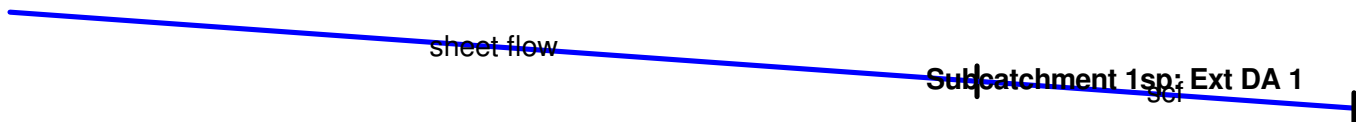
Runoff = 0.07 cfs @ 1.13 hrs, Volume= 75 cf, Depth= 0.37"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
2,438	87	Dirt roads, HSG C
2,438	87	100.00% Pervious Area

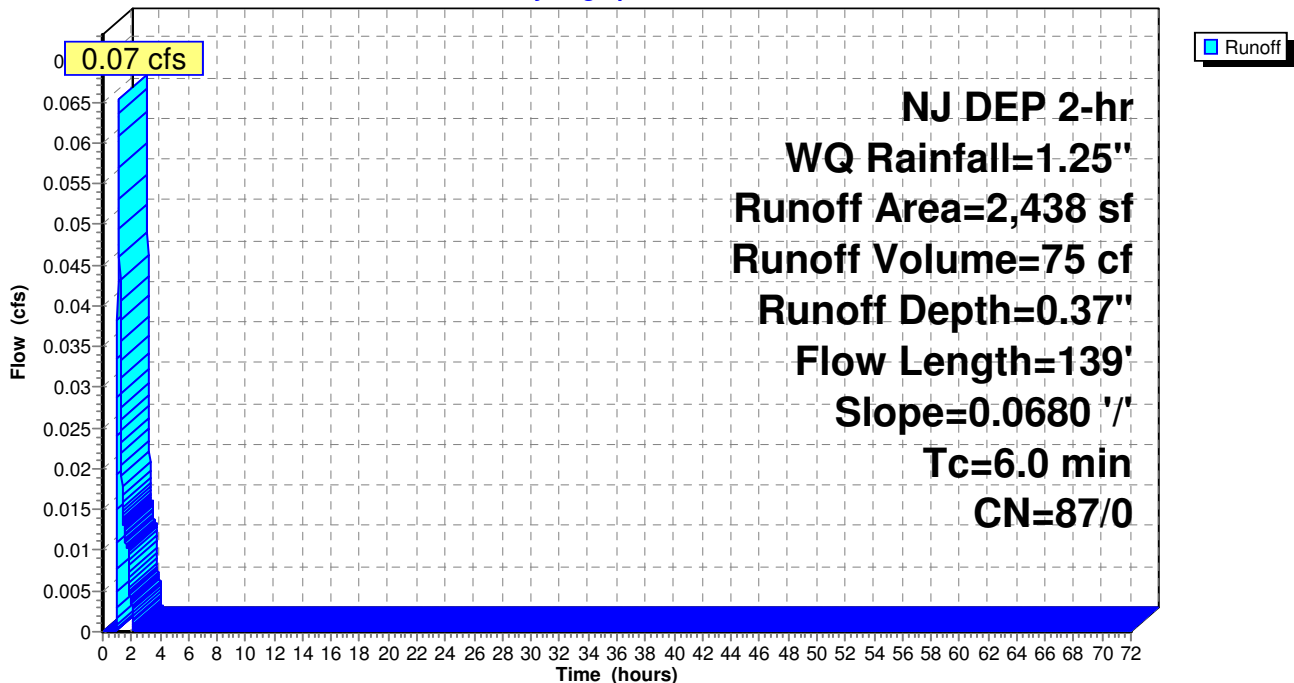
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	100	0.0680	0.29		<b>Sheet Flow, sheet flow</b> Grass: Short n= 0.150 P2= 3.47"
0.2	39	0.0680	4.20		<b>Shallow Concentrated Flow, scf</b> Unpaved Kv= 16.1 fps
6.0	139	Total			



**Subcatchment 1sp: Ext DA 1**

Hydrograph



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**Hydrograph for Subcatchment 1sp: Ext DA 1**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	<b>0.00</b>
2.00	<b>1.25</b>	<b>0.37</b>	0.00	<b>0.00</b>
4.00	1.25	0.37	0.00	0.00
6.00	1.25	0.37	0.00	0.00
8.00	1.25	0.37	0.00	0.00
10.00	1.25	0.37	0.00	0.00
12.00	1.25	0.37	0.00	0.00
14.00	1.25	0.37	0.00	0.00
16.00	1.25	0.37	0.00	0.00
18.00	1.25	0.37	0.00	0.00
20.00	1.25	0.37	0.00	0.00
22.00	1.25	0.37	0.00	0.00
24.00	1.25	0.37	0.00	0.00
26.00	1.25	0.37	0.00	0.00
28.00	1.25	0.37	0.00	0.00
30.00	1.25	0.37	0.00	0.00
32.00	1.25	0.37	0.00	0.00
34.00	1.25	0.37	0.00	0.00
36.00	1.25	0.37	0.00	0.00
38.00	1.25	0.37	0.00	0.00
40.00	1.25	0.37	0.00	0.00
42.00	1.25	0.37	0.00	0.00
44.00	1.25	0.37	0.00	0.00
46.00	1.25	0.37	0.00	0.00
48.00	1.25	0.37	0.00	0.00
50.00	1.25	0.37	0.00	0.00
52.00	1.25	0.37	0.00	0.00
54.00	1.25	0.37	0.00	0.00
56.00	1.25	0.37	0.00	0.00
58.00	1.25	0.37	0.00	0.00
60.00	1.25	0.37	0.00	0.00
62.00	1.25	0.37	0.00	0.00
64.00	1.25	0.37	0.00	0.00
66.00	1.25	0.37	0.00	0.00
68.00	1.25	0.37	0.00	0.00
70.00	1.25	0.37	0.00	0.00
72.00	1.25	0.37	0.00	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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**Summary for Subcatchment 2si: Ext DA 2**

[49] Hint: Tc<2dt may require smaller dt

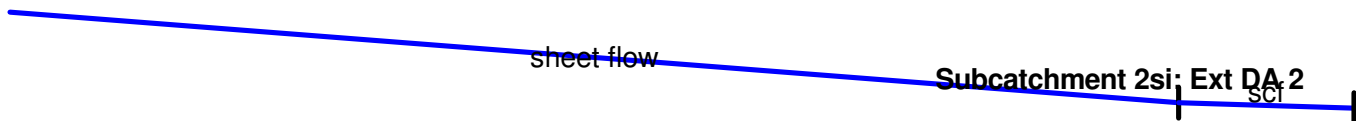
Runoff = 0.30 cfs @ 1.08 hrs, Volume= 361 cf, Depth= 1.03"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
4,185	98	Paved parking, HSG C
4,185	98	100.00% Impervious Area

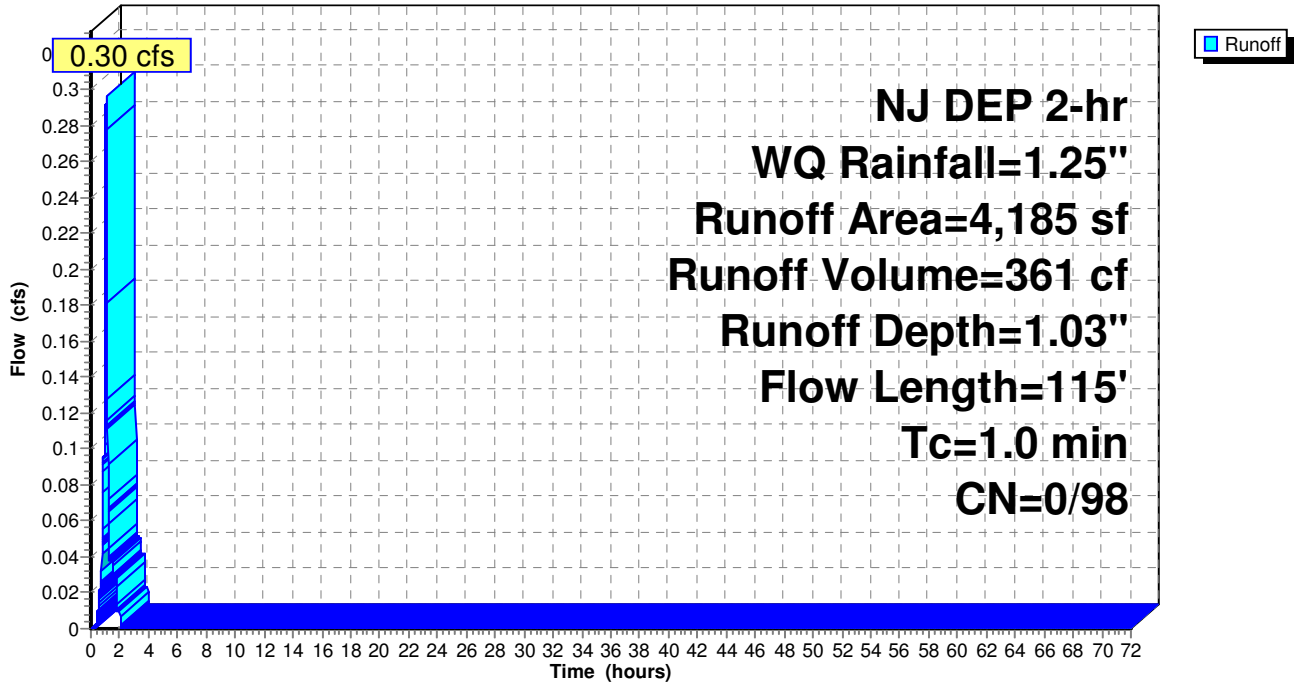
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0385	1.86		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.1	15	0.0150	2.49		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.0	115	Total			



### Subcatchment 2si: Ext DA 2

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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**Hydrograph for Subcatchment 2si: Ext DA 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	<b>0.00</b>
2.00	<b>1.25</b>	0.00	<b>1.03</b>	<b>0.01</b>
4.00	1.25	0.00	1.03	0.00
6.00	1.25	0.00	1.03	0.00
8.00	1.25	0.00	1.03	0.00
10.00	1.25	0.00	1.03	0.00
12.00	1.25	0.00	1.03	0.00
14.00	1.25	0.00	1.03	0.00
16.00	1.25	0.00	1.03	0.00
18.00	1.25	0.00	1.03	0.00
20.00	1.25	0.00	1.03	0.00
22.00	1.25	0.00	1.03	0.00
24.00	1.25	0.00	1.03	0.00
26.00	1.25	0.00	1.03	0.00
28.00	1.25	0.00	1.03	0.00
30.00	1.25	0.00	1.03	0.00
32.00	1.25	0.00	1.03	0.00
34.00	1.25	0.00	1.03	0.00
36.00	1.25	0.00	1.03	0.00
38.00	1.25	0.00	1.03	0.00
40.00	1.25	0.00	1.03	0.00
42.00	1.25	0.00	1.03	0.00
44.00	1.25	0.00	1.03	0.00
46.00	1.25	0.00	1.03	0.00
48.00	1.25	0.00	1.03	0.00
50.00	1.25	0.00	1.03	0.00
52.00	1.25	0.00	1.03	0.00
54.00	1.25	0.00	1.03	0.00
56.00	1.25	0.00	1.03	0.00
58.00	1.25	0.00	1.03	0.00
60.00	1.25	0.00	1.03	0.00
62.00	1.25	0.00	1.03	0.00
64.00	1.25	0.00	1.03	0.00
66.00	1.25	0.00	1.03	0.00
68.00	1.25	0.00	1.03	0.00
70.00	1.25	0.00	1.03	0.00
72.00	1.25	0.00	1.03	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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**Summary for Subcatchment 2sp: Ext DA 2**

[49] Hint: Tc<2dt may require smaller dt

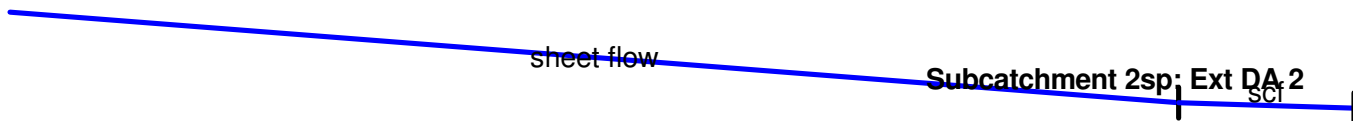
Runoff = 0.00 cfs @ 1.09 hrs, Volume= 4 cf, Depth= 0.15"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
326	79	50-75% Grass cover, Fair, HSG C
326	79	100.00% Pervious Area

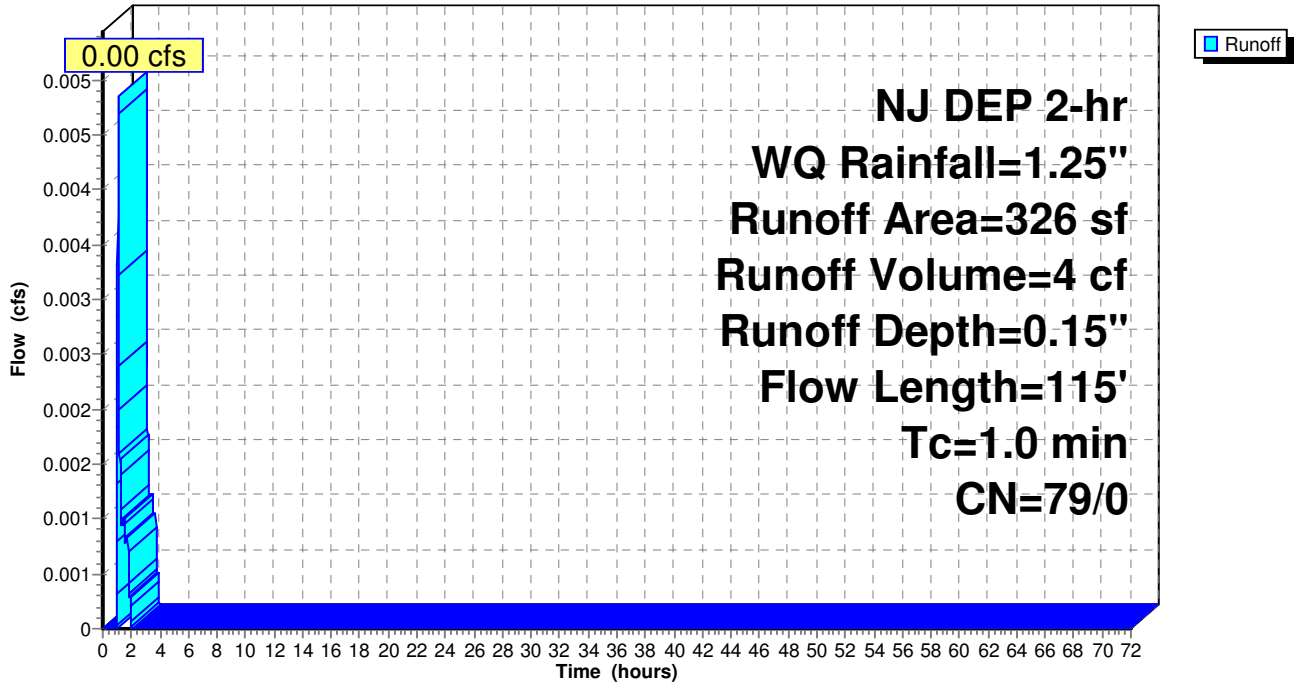
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0385	1.86		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.1	15	0.0150	2.49		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.0	115	Total			



### Subcatchment 2sp: Ext DA 2

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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**Hydrograph for Subcatchment 2sp: Ext DA 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	<b>0.00</b>
2.00	<b>1.25</b>	<b>0.15</b>	0.00	<b>0.00</b>
4.00	1.25	0.15	0.00	0.00
6.00	1.25	0.15	0.00	0.00
8.00	1.25	0.15	0.00	0.00
10.00	1.25	0.15	0.00	0.00
12.00	1.25	0.15	0.00	0.00
14.00	1.25	0.15	0.00	0.00
16.00	1.25	0.15	0.00	0.00
18.00	1.25	0.15	0.00	0.00
20.00	1.25	0.15	0.00	0.00
22.00	1.25	0.15	0.00	0.00
24.00	1.25	0.15	0.00	0.00
26.00	1.25	0.15	0.00	0.00
28.00	1.25	0.15	0.00	0.00
30.00	1.25	0.15	0.00	0.00
32.00	1.25	0.15	0.00	0.00
34.00	1.25	0.15	0.00	0.00
36.00	1.25	0.15	0.00	0.00
38.00	1.25	0.15	0.00	0.00
40.00	1.25	0.15	0.00	0.00
42.00	1.25	0.15	0.00	0.00
44.00	1.25	0.15	0.00	0.00
46.00	1.25	0.15	0.00	0.00
48.00	1.25	0.15	0.00	0.00
50.00	1.25	0.15	0.00	0.00
52.00	1.25	0.15	0.00	0.00
54.00	1.25	0.15	0.00	0.00
56.00	1.25	0.15	0.00	0.00
58.00	1.25	0.15	0.00	0.00
60.00	1.25	0.15	0.00	0.00
62.00	1.25	0.15	0.00	0.00
64.00	1.25	0.15	0.00	0.00
66.00	1.25	0.15	0.00	0.00
68.00	1.25	0.15	0.00	0.00
70.00	1.25	0.15	0.00	0.00
72.00	1.25	0.15	0.00	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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**Summary for Subcatchment 3si: Ext DA 3**

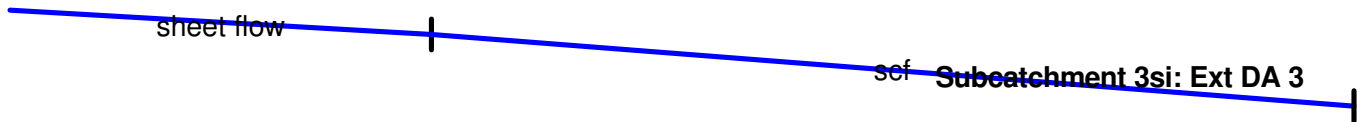
Runoff = 2.17 cfs @ 1.08 hrs, Volume= 2,648 cf, Depth= 1.03"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
30,716	98	Paved parking, HSG C
30,716	98	100.00% Impervious Area

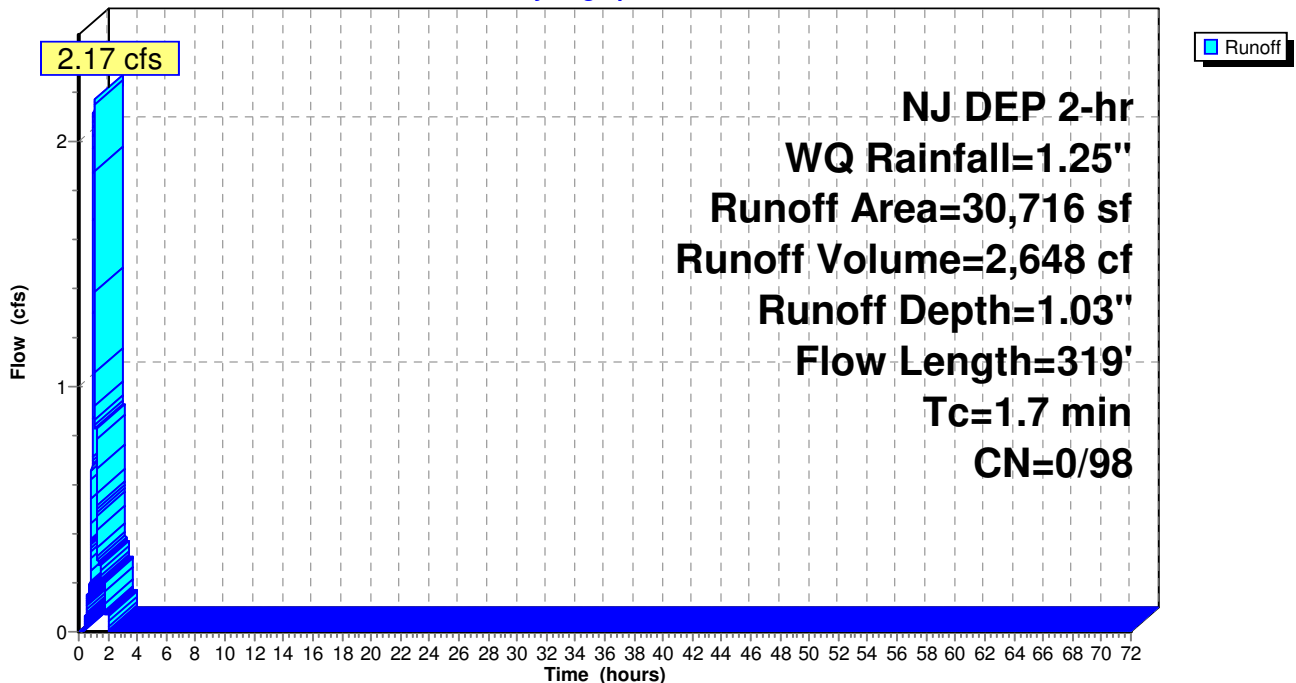
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0420	1.93		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.8	219	0.0570	4.85		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.7	319	Total			



**Subcatchment 3si: Ext DA 3**

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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**Hydrograph for Subcatchment 3si: Ext DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	<b>0.00</b>
2.00	<b>1.25</b>	0.00	<b>1.03</b>	<b>0.07</b>
4.00	1.25	0.00	1.03	0.00
6.00	1.25	0.00	1.03	0.00
8.00	1.25	0.00	1.03	0.00
10.00	1.25	0.00	1.03	0.00
12.00	1.25	0.00	1.03	0.00
14.00	1.25	0.00	1.03	0.00
16.00	1.25	0.00	1.03	0.00
18.00	1.25	0.00	1.03	0.00
20.00	1.25	0.00	1.03	0.00
22.00	1.25	0.00	1.03	0.00
24.00	1.25	0.00	1.03	0.00
26.00	1.25	0.00	1.03	0.00
28.00	1.25	0.00	1.03	0.00
30.00	1.25	0.00	1.03	0.00
32.00	1.25	0.00	1.03	0.00
34.00	1.25	0.00	1.03	0.00
36.00	1.25	0.00	1.03	0.00
38.00	1.25	0.00	1.03	0.00
40.00	1.25	0.00	1.03	0.00
42.00	1.25	0.00	1.03	0.00
44.00	1.25	0.00	1.03	0.00
46.00	1.25	0.00	1.03	0.00
48.00	1.25	0.00	1.03	0.00
50.00	1.25	0.00	1.03	0.00
52.00	1.25	0.00	1.03	0.00
54.00	1.25	0.00	1.03	0.00
56.00	1.25	0.00	1.03	0.00
58.00	1.25	0.00	1.03	0.00
60.00	1.25	0.00	1.03	0.00
62.00	1.25	0.00	1.03	0.00
64.00	1.25	0.00	1.03	0.00
66.00	1.25	0.00	1.03	0.00
68.00	1.25	0.00	1.03	0.00
70.00	1.25	0.00	1.03	0.00
72.00	1.25	0.00	1.03	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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**Summary for Subcatchment 3sp: Ext DA 3**

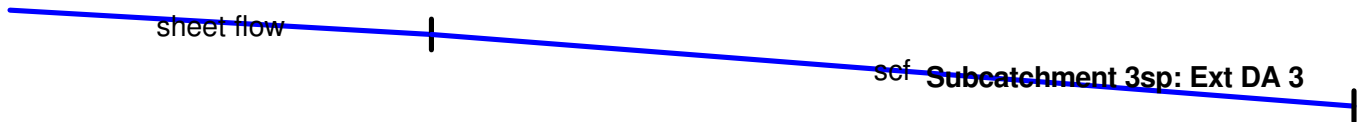
Runoff = 0.07 cfs @ 1.10 hrs, Volume= 88 cf, Depth= 0.07"  
Routed to Link 4l : existing total discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
14,358	74	>75% Grass cover, Good, HSG C
14,358	74	100.00% Pervious Area

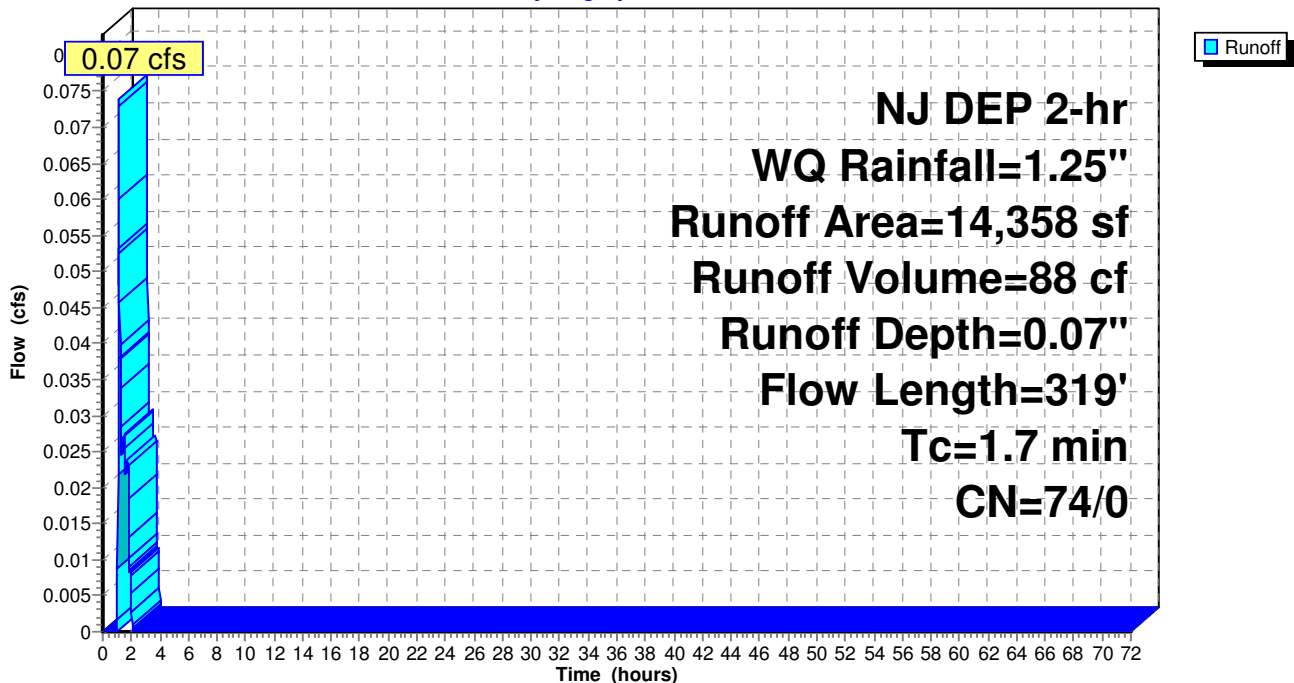
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0420	1.93		<b>Sheet Flow, sheet flow</b> Smooth surfaces n= 0.011 P2= 3.47"
0.8	219	0.0570	4.85		<b>Shallow Concentrated Flow, scf</b> Paved Kv= 20.3 fps
1.7	319	Total			



**Subcatchment 3sp: Ext DA 3**

Hydrograph



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**Hydrograph for Subcatchment 3sp: Ext DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	<b>0.00</b>
2.00	<b>1.25</b>	<b>0.07</b>	0.00	<b>0.01</b>
4.00	1.25	0.07	0.00	0.00
6.00	1.25	0.07	0.00	0.00
8.00	1.25	0.07	0.00	0.00
10.00	1.25	0.07	0.00	0.00
12.00	1.25	0.07	0.00	0.00
14.00	1.25	0.07	0.00	0.00
16.00	1.25	0.07	0.00	0.00
18.00	1.25	0.07	0.00	0.00
20.00	1.25	0.07	0.00	0.00
22.00	1.25	0.07	0.00	0.00
24.00	1.25	0.07	0.00	0.00
26.00	1.25	0.07	0.00	0.00
28.00	1.25	0.07	0.00	0.00
30.00	1.25	0.07	0.00	0.00
32.00	1.25	0.07	0.00	0.00
34.00	1.25	0.07	0.00	0.00
36.00	1.25	0.07	0.00	0.00
38.00	1.25	0.07	0.00	0.00
40.00	1.25	0.07	0.00	0.00
42.00	1.25	0.07	0.00	0.00
44.00	1.25	0.07	0.00	0.00
46.00	1.25	0.07	0.00	0.00
48.00	1.25	0.07	0.00	0.00
50.00	1.25	0.07	0.00	0.00
52.00	1.25	0.07	0.00	0.00
54.00	1.25	0.07	0.00	0.00
56.00	1.25	0.07	0.00	0.00
58.00	1.25	0.07	0.00	0.00
60.00	1.25	0.07	0.00	0.00
62.00	1.25	0.07	0.00	0.00
64.00	1.25	0.07	0.00	0.00
66.00	1.25	0.07	0.00	0.00
68.00	1.25	0.07	0.00	0.00
70.00	1.25	0.07	0.00	0.00
72.00	1.25	0.07	0.00	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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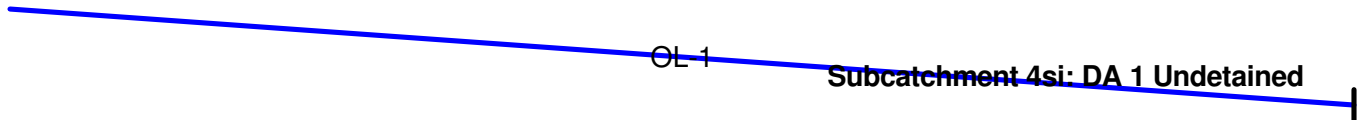
**Summary for Subcatchment 4si: DA 1 Undetained**

Runoff = 0.01 cfs @ 1.08 hrs, Volume= 18 cf, Depth= 1.03"  
Routed to Link 9I : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NJ DEP 2-hr WQ Rainfall=1.25"

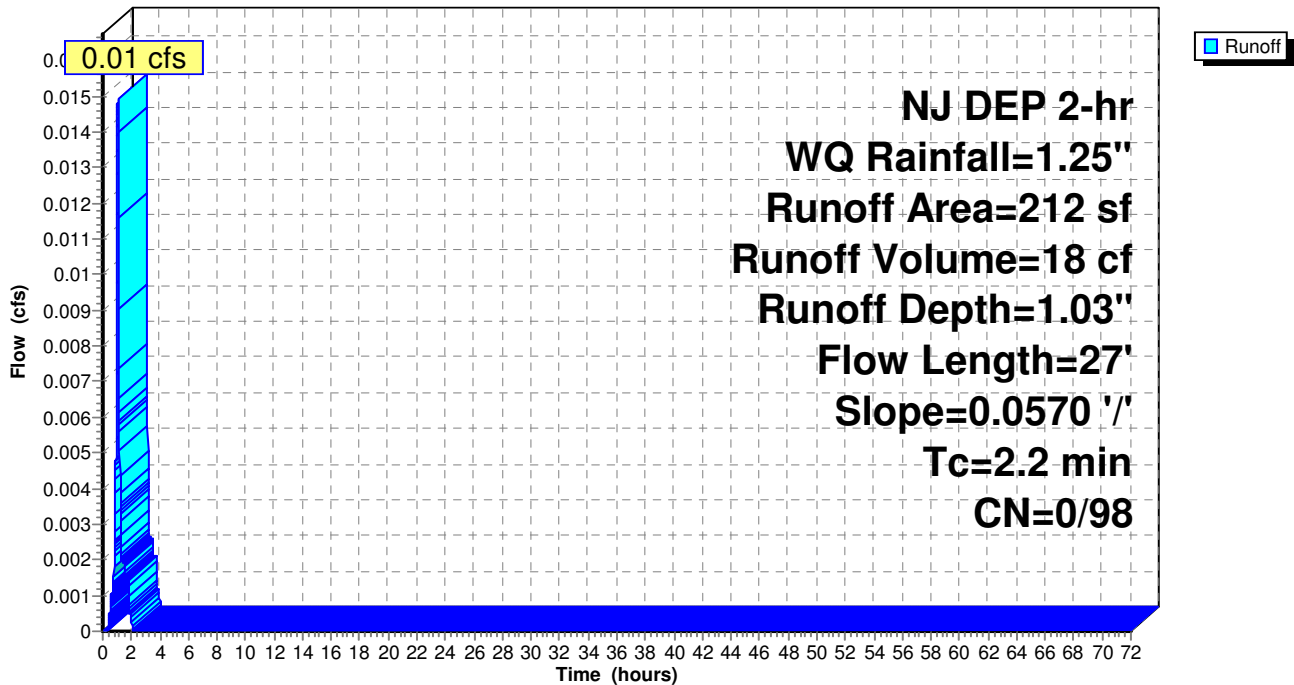
Area (sf)	CN	Description
212	98	Paved parking, HSG C
212	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	27	0.0570	0.21		<b>Sheet Flow, OL-1</b> n= 0.150 P2= 3.47"



**Subcatchment 4si: DA 1 Undetained**

Hydrograph



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**Hydrograph for Subcatchment 4si: DA 1 Undetained**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	<b>0.00</b>
2.00	<b>1.25</b>	0.00	<b>1.03</b>	<b>0.00</b>
4.00	1.25	0.00	1.03	0.00
6.00	1.25	0.00	1.03	0.00
8.00	1.25	0.00	1.03	0.00
10.00	1.25	0.00	1.03	0.00
12.00	1.25	0.00	1.03	0.00
14.00	1.25	0.00	1.03	0.00
16.00	1.25	0.00	1.03	0.00
18.00	1.25	0.00	1.03	0.00
20.00	1.25	0.00	1.03	0.00
22.00	1.25	0.00	1.03	0.00
24.00	1.25	0.00	1.03	0.00
26.00	1.25	0.00	1.03	0.00
28.00	1.25	0.00	1.03	0.00
30.00	1.25	0.00	1.03	0.00
32.00	1.25	0.00	1.03	0.00
34.00	1.25	0.00	1.03	0.00
36.00	1.25	0.00	1.03	0.00
38.00	1.25	0.00	1.03	0.00
40.00	1.25	0.00	1.03	0.00
42.00	1.25	0.00	1.03	0.00
44.00	1.25	0.00	1.03	0.00
46.00	1.25	0.00	1.03	0.00
48.00	1.25	0.00	1.03	0.00
50.00	1.25	0.00	1.03	0.00
52.00	1.25	0.00	1.03	0.00
54.00	1.25	0.00	1.03	0.00
56.00	1.25	0.00	1.03	0.00
58.00	1.25	0.00	1.03	0.00
60.00	1.25	0.00	1.03	0.00
62.00	1.25	0.00	1.03	0.00
64.00	1.25	0.00	1.03	0.00
66.00	1.25	0.00	1.03	0.00
68.00	1.25	0.00	1.03	0.00
70.00	1.25	0.00	1.03	0.00
72.00	1.25	0.00	1.03	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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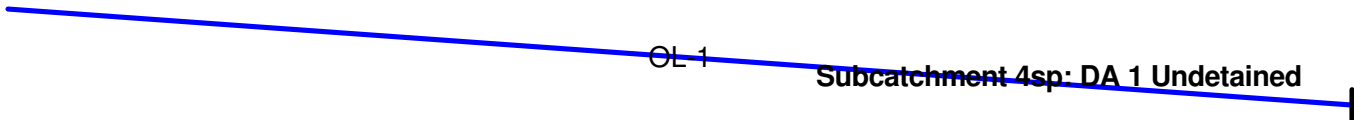
**Summary for Subcatchment 4sp: DA 1 Undetained**

Runoff = 0.01 cfs @ 1.10 hrs, Volume= 12 cf, Depth= 0.07"  
Routed to Link 9I : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NJ DEP 2-hr WQ Rainfall=1.25"

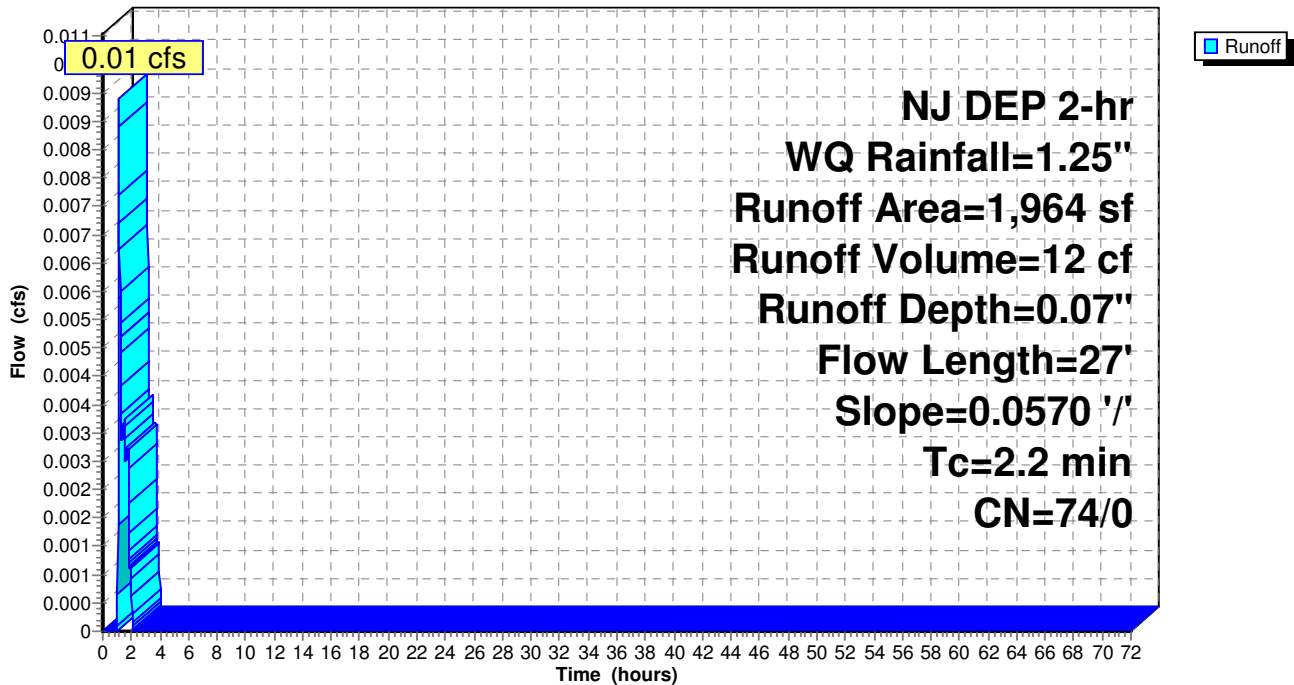
Area (sf)	CN	Description
1,964	74	>75% Grass cover, Good, HSG C
1,964	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	27	0.0570	0.21		<b>Sheet Flow, OL-1</b> n= 0.150 P2= 3.47"



**Subcatchment 4sp: DA 1 Undetained**

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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**Hydrograph for Subcatchment 4sp: DA 1 Undetained**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	<b>0.00</b>
2.00	<b>1.25</b>	<b>0.07</b>	0.00	<b>0.00</b>
4.00	1.25	0.07	0.00	0.00
6.00	1.25	0.07	0.00	0.00
8.00	1.25	0.07	0.00	0.00
10.00	1.25	0.07	0.00	0.00
12.00	1.25	0.07	0.00	0.00
14.00	1.25	0.07	0.00	0.00
16.00	1.25	0.07	0.00	0.00
18.00	1.25	0.07	0.00	0.00
20.00	1.25	0.07	0.00	0.00
22.00	1.25	0.07	0.00	0.00
24.00	1.25	0.07	0.00	0.00
26.00	1.25	0.07	0.00	0.00
28.00	1.25	0.07	0.00	0.00
30.00	1.25	0.07	0.00	0.00
32.00	1.25	0.07	0.00	0.00
34.00	1.25	0.07	0.00	0.00
36.00	1.25	0.07	0.00	0.00
38.00	1.25	0.07	0.00	0.00
40.00	1.25	0.07	0.00	0.00
42.00	1.25	0.07	0.00	0.00
44.00	1.25	0.07	0.00	0.00
46.00	1.25	0.07	0.00	0.00
48.00	1.25	0.07	0.00	0.00
50.00	1.25	0.07	0.00	0.00
52.00	1.25	0.07	0.00	0.00
54.00	1.25	0.07	0.00	0.00
56.00	1.25	0.07	0.00	0.00
58.00	1.25	0.07	0.00	0.00
60.00	1.25	0.07	0.00	0.00
62.00	1.25	0.07	0.00	0.00
64.00	1.25	0.07	0.00	0.00
66.00	1.25	0.07	0.00	0.00
68.00	1.25	0.07	0.00	0.00
70.00	1.25	0.07	0.00	0.00
72.00	1.25	0.07	0.00	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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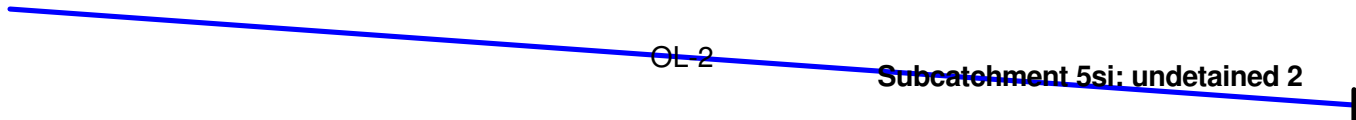
**Summary for Subcatchment 5si: undetained 2**

Runoff = 0.11 cfs @ 1.10 hrs, Volume= 136 cf, Depth= 1.03"  
Routed to Link 9l : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NJ DEP 2-hr WQ Rainfall=1.25"

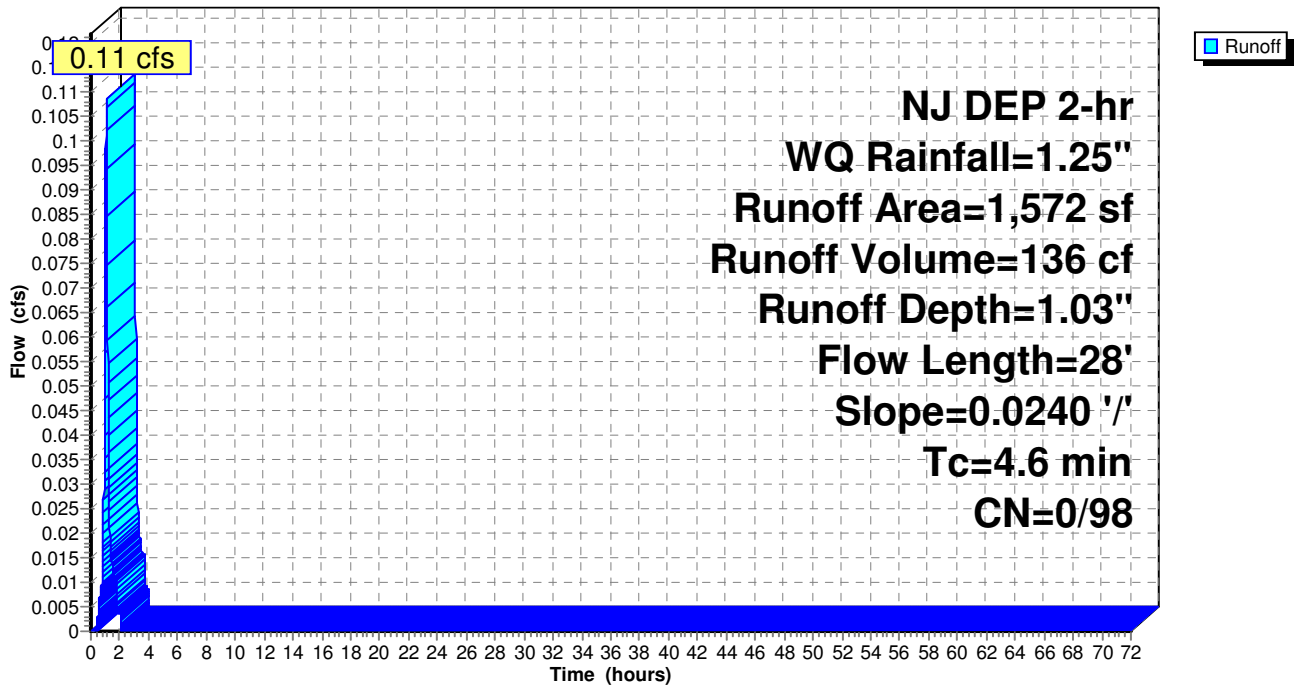
Area (sf)	CN	Description
1,572	98	Paved parking, HSG C
1,572	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	28	0.0240	0.10		<b>Sheet Flow, OL-2</b> Grass: Dense n= 0.240 P2= 3.47"



**Subcatchment 5si: undetained 2**

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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**Hydrograph for Subcatchment 5si: undetained 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	<b>0.00</b>
2.00	<b>1.25</b>	0.00	<b>1.03</b>	<b>0.00</b>
4.00	1.25	0.00	1.03	0.00
6.00	1.25	0.00	1.03	0.00
8.00	1.25	0.00	1.03	0.00
10.00	1.25	0.00	1.03	0.00
12.00	1.25	0.00	1.03	0.00
14.00	1.25	0.00	1.03	0.00
16.00	1.25	0.00	1.03	0.00
18.00	1.25	0.00	1.03	0.00
20.00	1.25	0.00	1.03	0.00
22.00	1.25	0.00	1.03	0.00
24.00	1.25	0.00	1.03	0.00
26.00	1.25	0.00	1.03	0.00
28.00	1.25	0.00	1.03	0.00
30.00	1.25	0.00	1.03	0.00
32.00	1.25	0.00	1.03	0.00
34.00	1.25	0.00	1.03	0.00
36.00	1.25	0.00	1.03	0.00
38.00	1.25	0.00	1.03	0.00
40.00	1.25	0.00	1.03	0.00
42.00	1.25	0.00	1.03	0.00
44.00	1.25	0.00	1.03	0.00
46.00	1.25	0.00	1.03	0.00
48.00	1.25	0.00	1.03	0.00
50.00	1.25	0.00	1.03	0.00
52.00	1.25	0.00	1.03	0.00
54.00	1.25	0.00	1.03	0.00
56.00	1.25	0.00	1.03	0.00
58.00	1.25	0.00	1.03	0.00
60.00	1.25	0.00	1.03	0.00
62.00	1.25	0.00	1.03	0.00
64.00	1.25	0.00	1.03	0.00
66.00	1.25	0.00	1.03	0.00
68.00	1.25	0.00	1.03	0.00
70.00	1.25	0.00	1.03	0.00
72.00	1.25	0.00	1.03	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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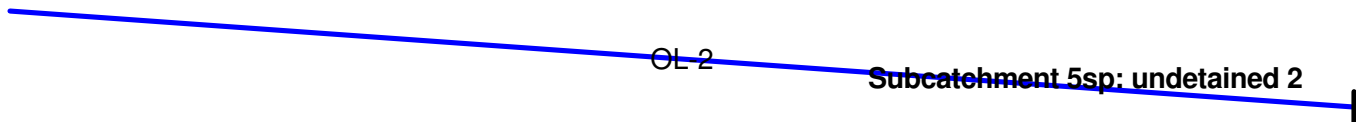
**Summary for Subcatchment 5sp: undetained 2**

Runoff = 0.01 cfs @ 1.14 hrs, Volume= 15 cf, Depth= 0.07"  
Routed to Link 9I : Overall discharge

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NJ DEP 2-hr WQ Rainfall=1.25"

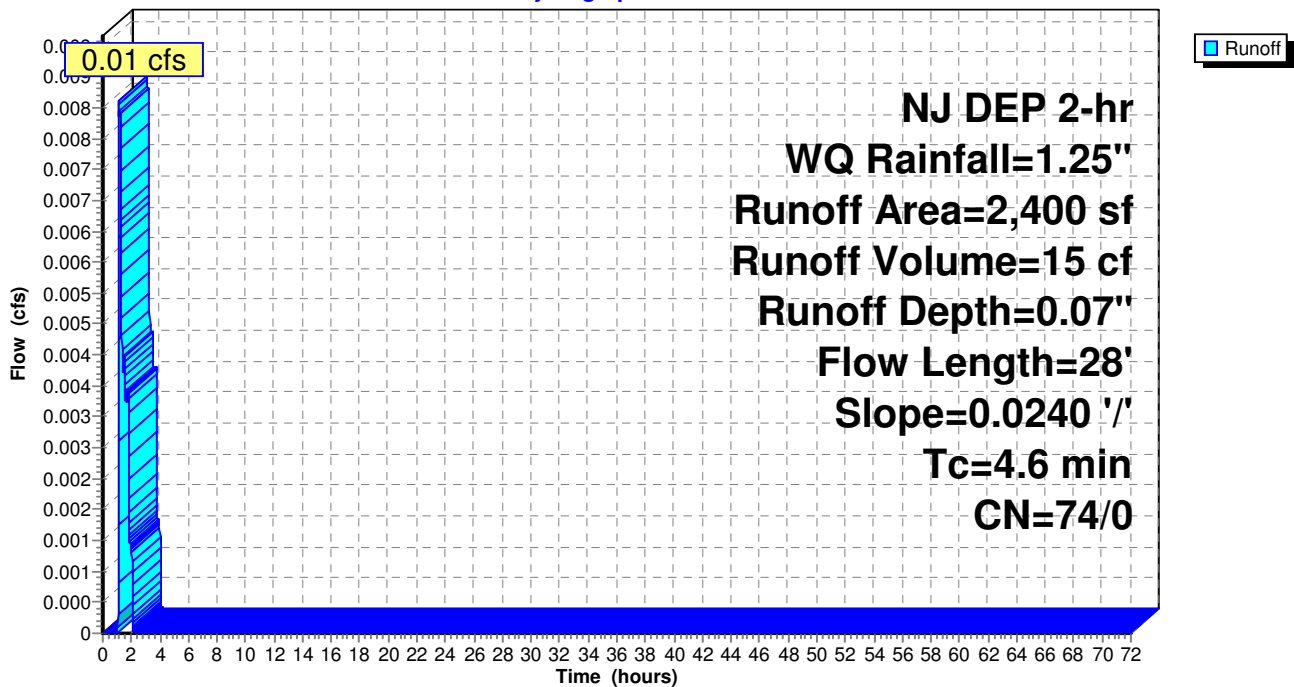
Area (sf)	CN	Description
2,400	74	>75% Grass cover, Good, HSG C
2,400	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	28	0.0240	0.10		<b>Sheet Flow, OL-2</b> Grass: Dense n= 0.240 P2= 3.47"



**Subcatchment 5sp: undetained 2**

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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**Hydrograph for Subcatchment 5sp: undetained 2**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	<b>0.00</b>
2.00	<b>1.25</b>	<b>0.07</b>	0.00	<b>0.00</b>
4.00	1.25	0.07	0.00	0.00
6.00	1.25	0.07	0.00	0.00
8.00	1.25	0.07	0.00	0.00
10.00	1.25	0.07	0.00	0.00
12.00	1.25	0.07	0.00	0.00
14.00	1.25	0.07	0.00	0.00
16.00	1.25	0.07	0.00	0.00
18.00	1.25	0.07	0.00	0.00
20.00	1.25	0.07	0.00	0.00
22.00	1.25	0.07	0.00	0.00
24.00	1.25	0.07	0.00	0.00
26.00	1.25	0.07	0.00	0.00
28.00	1.25	0.07	0.00	0.00
30.00	1.25	0.07	0.00	0.00
32.00	1.25	0.07	0.00	0.00
34.00	1.25	0.07	0.00	0.00
36.00	1.25	0.07	0.00	0.00
38.00	1.25	0.07	0.00	0.00
40.00	1.25	0.07	0.00	0.00
42.00	1.25	0.07	0.00	0.00
44.00	1.25	0.07	0.00	0.00
46.00	1.25	0.07	0.00	0.00
48.00	1.25	0.07	0.00	0.00
50.00	1.25	0.07	0.00	0.00
52.00	1.25	0.07	0.00	0.00
54.00	1.25	0.07	0.00	0.00
56.00	1.25	0.07	0.00	0.00
58.00	1.25	0.07	0.00	0.00
60.00	1.25	0.07	0.00	0.00
62.00	1.25	0.07	0.00	0.00
64.00	1.25	0.07	0.00	0.00
66.00	1.25	0.07	0.00	0.00
68.00	1.25	0.07	0.00	0.00
70.00	1.25	0.07	0.00	0.00
72.00	1.25	0.07	0.00	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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**Summary for Subcatchment 6si: Pro DA 3**

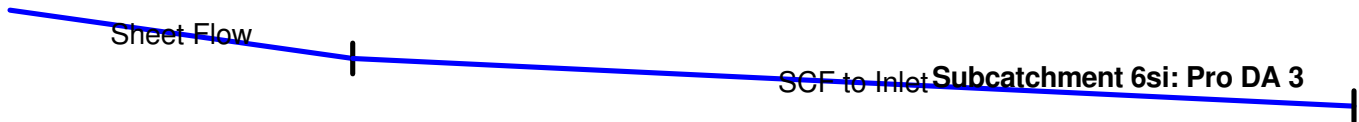
Runoff = 2.76 cfs @ 1.09 hrs, Volume= 3,375 cf, Depth= 1.03"  
Routed to Pond 8p : Detention System

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
39,143	98	Paved parking, HSG C
39,143	98	100.00% Impervious Area

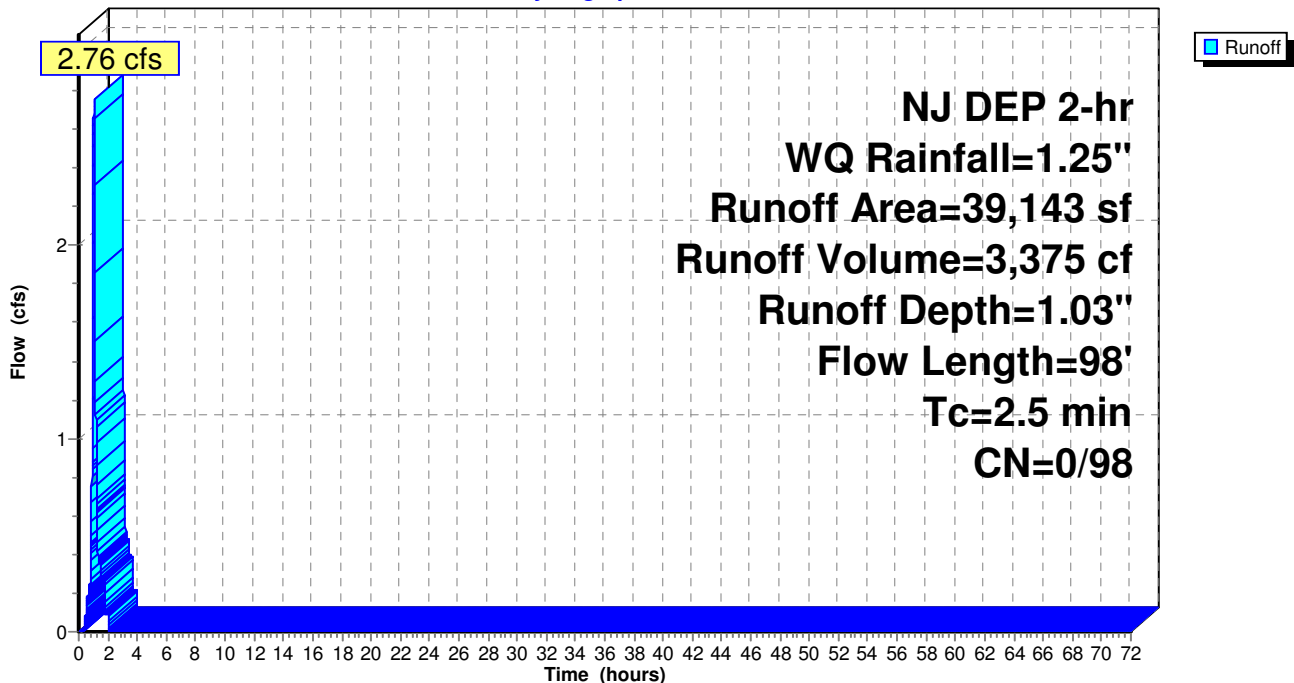
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	25	0.0560	0.20		<b>Sheet Flow, Sheet Flow</b> Grass: Short n= 0.150 P2= 3.47"
0.4	73	0.0190	2.80		<b>Shallow Concentrated Flow, SCF to Inlet</b> Paved Kv= 20.3 fps
2.5	98	Total			



**Subcatchment 6si: Pro DA 3**

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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**Hydrograph for Subcatchment 6si: Pro DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	<b>0.00</b>	0.00	<b>0.00</b>
2.00	<b>1.25</b>	0.00	<b>1.03</b>	<b>0.09</b>
4.00	1.25	0.00	1.03	0.00
6.00	1.25	0.00	1.03	0.00
8.00	1.25	0.00	1.03	0.00
10.00	1.25	0.00	1.03	0.00
12.00	1.25	0.00	1.03	0.00
14.00	1.25	0.00	1.03	0.00
16.00	1.25	0.00	1.03	0.00
18.00	1.25	0.00	1.03	0.00
20.00	1.25	0.00	1.03	0.00
22.00	1.25	0.00	1.03	0.00
24.00	1.25	0.00	1.03	0.00
26.00	1.25	0.00	1.03	0.00
28.00	1.25	0.00	1.03	0.00
30.00	1.25	0.00	1.03	0.00
32.00	1.25	0.00	1.03	0.00
34.00	1.25	0.00	1.03	0.00
36.00	1.25	0.00	1.03	0.00
38.00	1.25	0.00	1.03	0.00
40.00	1.25	0.00	1.03	0.00
42.00	1.25	0.00	1.03	0.00
44.00	1.25	0.00	1.03	0.00
46.00	1.25	0.00	1.03	0.00
48.00	1.25	0.00	1.03	0.00
50.00	1.25	0.00	1.03	0.00
52.00	1.25	0.00	1.03	0.00
54.00	1.25	0.00	1.03	0.00
56.00	1.25	0.00	1.03	0.00
58.00	1.25	0.00	1.03	0.00
60.00	1.25	0.00	1.03	0.00
62.00	1.25	0.00	1.03	0.00
64.00	1.25	0.00	1.03	0.00
66.00	1.25	0.00	1.03	0.00
68.00	1.25	0.00	1.03	0.00
70.00	1.25	0.00	1.03	0.00
72.00	1.25	0.00	1.03	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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**Summary for Subcatchment 6sp: Pro DA 3**

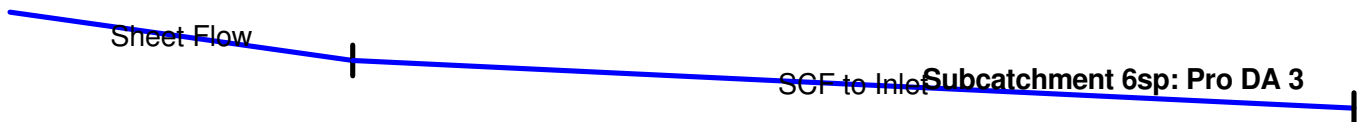
Runoff = 0.04 cfs @ 1.11 hrs, Volume= 58 cf, Depth= 0.07"  
Routed to Pond 8p : Detention System

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
9,386	74	>75% Grass cover, Good, HSG C
9,386	74	100.00% Pervious Area

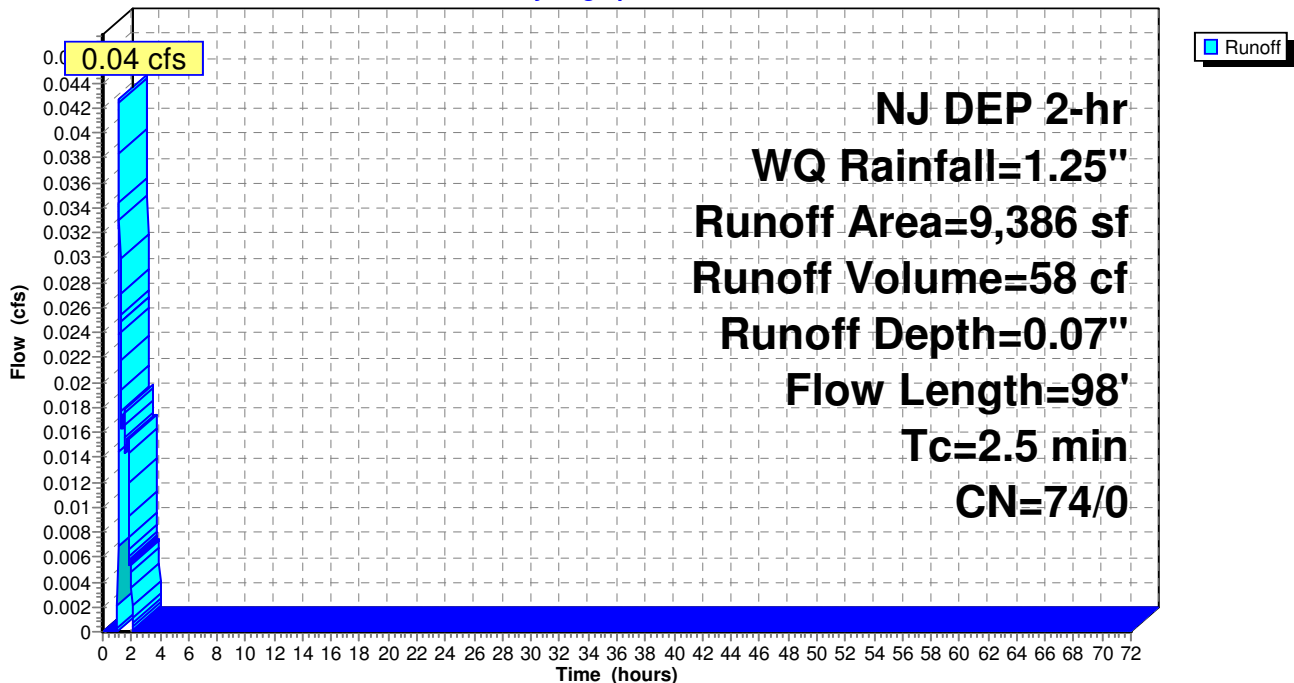
  

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	25	0.0560	0.20		<b>Sheet Flow, Sheet Flow</b> Grass: Short n= 0.150 P2= 3.47"
0.4	73	0.0190	2.80		<b>Shallow Concentrated Flow, SCF to Inlet</b> Paved Kv= 20.3 fps
2.5	98	Total			



**Subcatchment 6sp: Pro DA 3**

Hydrograph



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**Hydrograph for Subcatchment 6sp: Pro DA 3**

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	<b>0.00</b>	<b>0.00</b>
2.00	<b>1.25</b>	<b>0.07</b>	0.00	<b>0.01</b>
4.00	1.25	0.07	0.00	0.00
6.00	1.25	0.07	0.00	0.00
8.00	1.25	0.07	0.00	0.00
10.00	1.25	0.07	0.00	0.00
12.00	1.25	0.07	0.00	0.00
14.00	1.25	0.07	0.00	0.00
16.00	1.25	0.07	0.00	0.00
18.00	1.25	0.07	0.00	0.00
20.00	1.25	0.07	0.00	0.00
22.00	1.25	0.07	0.00	0.00
24.00	1.25	0.07	0.00	0.00
26.00	1.25	0.07	0.00	0.00
28.00	1.25	0.07	0.00	0.00
30.00	1.25	0.07	0.00	0.00
32.00	1.25	0.07	0.00	0.00
34.00	1.25	0.07	0.00	0.00
36.00	1.25	0.07	0.00	0.00
38.00	1.25	0.07	0.00	0.00
40.00	1.25	0.07	0.00	0.00
42.00	1.25	0.07	0.00	0.00
44.00	1.25	0.07	0.00	0.00
46.00	1.25	0.07	0.00	0.00
48.00	1.25	0.07	0.00	0.00
50.00	1.25	0.07	0.00	0.00
52.00	1.25	0.07	0.00	0.00
54.00	1.25	0.07	0.00	0.00
56.00	1.25	0.07	0.00	0.00
58.00	1.25	0.07	0.00	0.00
60.00	1.25	0.07	0.00	0.00
62.00	1.25	0.07	0.00	0.00
64.00	1.25	0.07	0.00	0.00
66.00	1.25	0.07	0.00	0.00
68.00	1.25	0.07	0.00	0.00
70.00	1.25	0.07	0.00	0.00
72.00	1.25	0.07	0.00	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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**Summary for Pond 8p: Detention System**

Inflow Area = 48,529 sf, 80.66% Impervious, Inflow Depth = 0.85" for WQ event  
 Inflow = 2.80 cfs @ 1.09 hrs, Volume= 3,432 cf  
 Outflow = 1.27 cfs @ 1.15 hrs, Volume= 3,240 cf, Atten= 54%, Lag= 3.5 min  
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
 Primary = 1.27 cfs @ 1.15 hrs, Volume= 3,240 cf  
 Routed to Link 9l : Overall discharge

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs  
 Peak Elev= 404.06' @ 1.15 hrs Surf.Area= 480 sf Storage= 1,530 cf

Plug-Flow detention time= 20.0 min calculated for 3,240 cf (94% of inflow)  
 Center-of-Mass det. time= 17.4 min ( 84.7 - 67.3 )

Volume	Invert	Avail.Storage	Storage Description
#1	403.00'	5,027 cf	<b>48.0" Round Pipe Storage</b> -Impervious L= 400.0'
#2	403.00'	578 cf	<b>48.0" Round Pipe Storage</b> Inside #3 L= 46.0'
#3	402.00'	825 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc) 2,640 cf Overall - 578 cf Embedded = 2,062 cf x 40.0% Voids
		6,429 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
402.00	480	0	0	480
407.50	480	2,640	2,640	907

Device	Routing	Invert	Outlet Devices
#1	Primary	403.00'	<b>7.5" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#2	Primary	404.60'	<b>36.0" W x 3.0" H Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Primary	405.50'	<b>24.0" W x 3.0" H Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#4	Discarded	402.00'	<b>1.290 in/hr Exfiltration over Surface area from 402.00' - 407.50'</b> Conductivity to Groundwater Elevation = 395.00' Excluded Surface area = 480 sf

**Discarded OutFlow** Max=0.00 cfs @ 0.00 hrs HW=402.00' (Free Discharge)  
 ↳4=Exfiltration ( Controls 0.00 cfs)

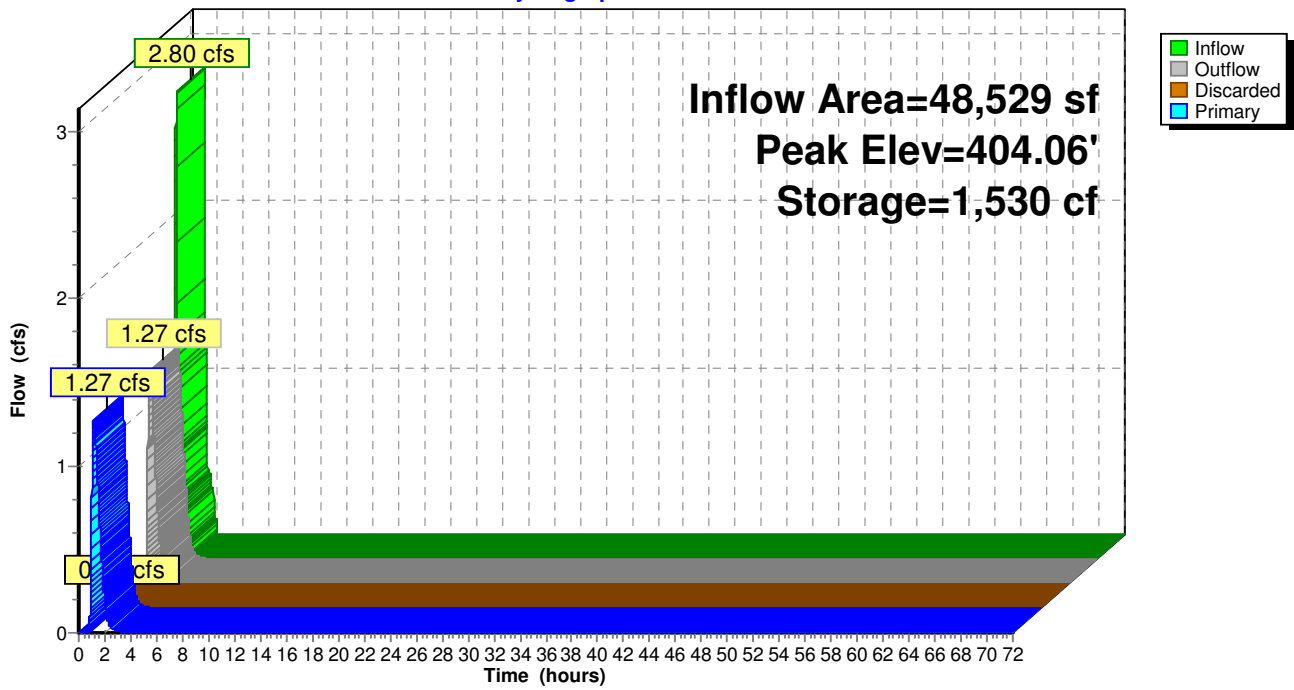
**Primary OutFlow** Max=1.27 cfs @ 1.15 hrs HW=404.06' (Free Discharge)  
 ↳1=Orifice/Grate (Orifice Controls 1.27 cfs @ 4.15 fps)  
 ↳2=Orifice/Grate ( Controls 0.00 cfs)  
 ↳3=Orifice/Grate ( Controls 0.00 cfs)

Pond 8p: Detention System

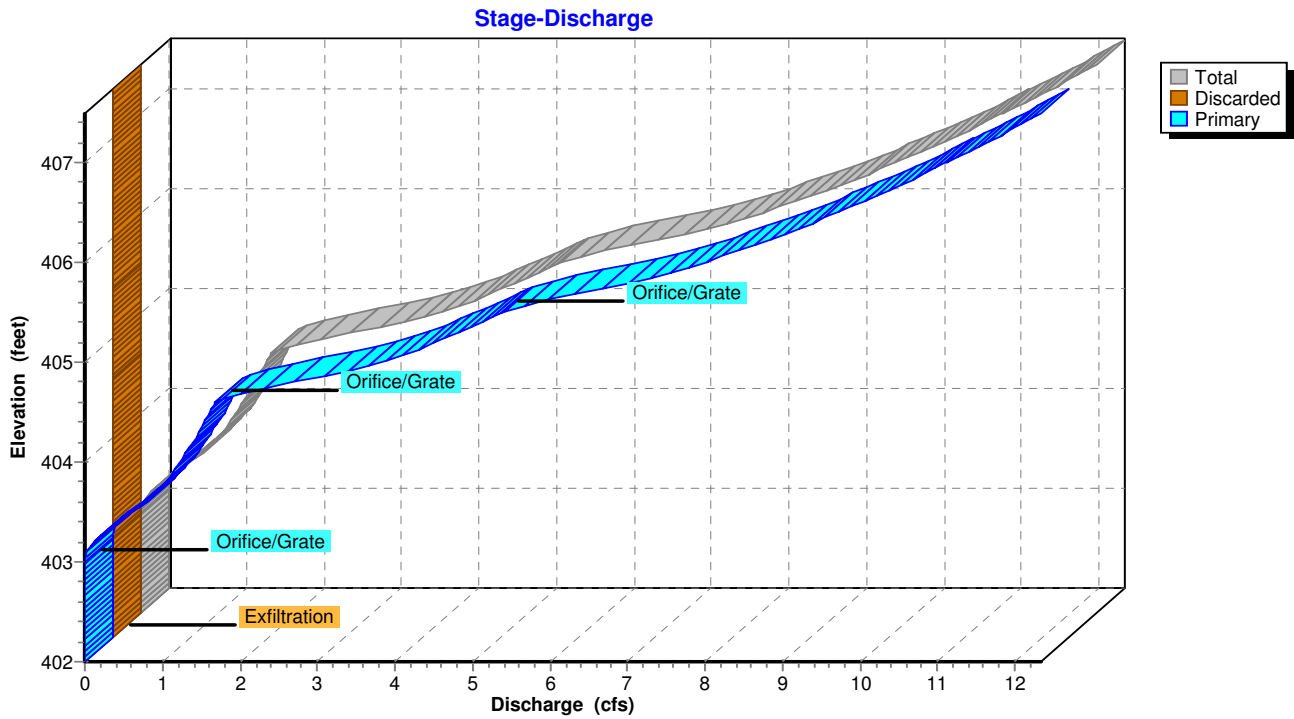
- Orifice/Grate
- Orifice/Grate
- Orifice/Grate
- Exfiltration

Pond 8p: Detention System

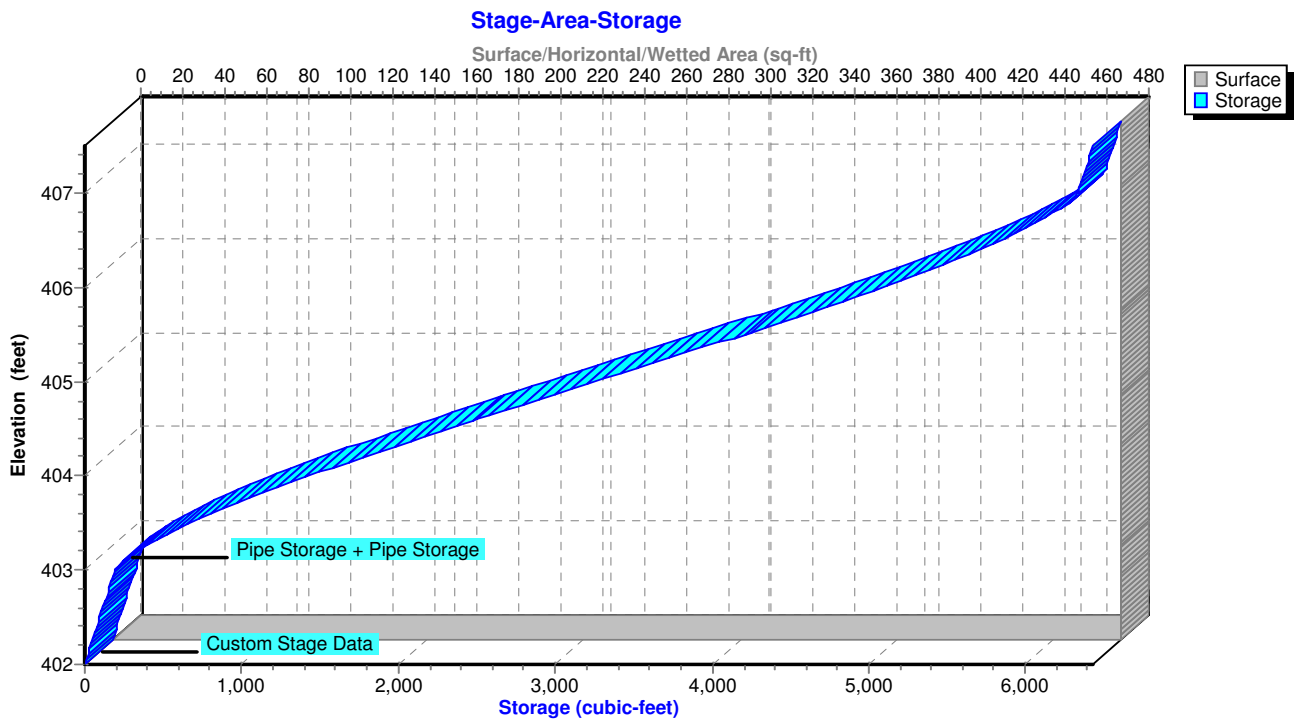
Hydrograph



### Pond 8p: Detention System



### Pond 8p: Detention System



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**Hydrograph for Pond 8p: Detention System**

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	<b>0.00</b>	<b>0</b>	<b>402.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
2.00	<b>0.09</b>	<b>383</b>	<b>403.25</b>	<b>0.20</b>	0.00	<b>0.20</b>
4.00	0.00	197	403.01	0.00	0.00	0.00
6.00	0.00	192	403.00	0.00	0.00	0.00
8.00	0.00	192	403.00	0.00	0.00	0.00
10.00	0.00	192	403.00	0.00	0.00	0.00
12.00	0.00	192	403.00	0.00	0.00	0.00
14.00	0.00	192	403.00	0.00	0.00	0.00
16.00	0.00	192	403.00	0.00	0.00	0.00
18.00	0.00	192	403.00	0.00	0.00	0.00
20.00	0.00	192	403.00	0.00	0.00	0.00
22.00	0.00	192	403.00	0.00	0.00	0.00
24.00	0.00	192	403.00	0.00	0.00	0.00
26.00	0.00	192	403.00	0.00	0.00	0.00
28.00	0.00	192	403.00	0.00	0.00	0.00
30.00	0.00	192	403.00	0.00	0.00	0.00
32.00	0.00	192	403.00	0.00	0.00	0.00
34.00	0.00	192	403.00	0.00	0.00	0.00
36.00	0.00	192	403.00	0.00	0.00	0.00
38.00	0.00	192	403.00	0.00	0.00	0.00
40.00	0.00	192	403.00	0.00	0.00	0.00
42.00	0.00	192	403.00	0.00	0.00	0.00
44.00	0.00	192	403.00	0.00	0.00	0.00
46.00	0.00	192	403.00	0.00	0.00	0.00
48.00	0.00	192	403.00	0.00	0.00	0.00
50.00	0.00	192	403.00	0.00	0.00	0.00
52.00	0.00	192	403.00	0.00	0.00	0.00
54.00	0.00	192	403.00	0.00	0.00	0.00
56.00	0.00	192	403.00	0.00	0.00	0.00
58.00	0.00	192	403.00	0.00	0.00	0.00
60.00	0.00	192	403.00	0.00	0.00	0.00
62.00	0.00	192	403.00	0.00	0.00	0.00
64.00	0.00	192	403.00	0.00	0.00	0.00
66.00	0.00	192	403.00	0.00	0.00	0.00
68.00	0.00	192	403.00	0.00	0.00	0.00
70.00	0.00	192	403.00	0.00	0.00	0.00
72.00	0.00	192	403.00	0.00	0.00	0.00

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**Stage-Discharge for Pond 8p: Detention System**

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
402.00	0.00	<b>0.00</b>	0.00	407.10	11.36	0.00	11.36
402.10	0.00	0.00	0.00	407.20	11.61	0.00	11.61
402.20	0.00	0.00	0.00	407.30	11.86	0.00	11.86
402.30	0.00	0.00	0.00	407.40	12.10	0.00	12.10
402.40	0.00	0.00	0.00	407.50	<b>12.33</b>	0.00	<b>12.33</b>
402.50	0.00	0.00	0.00				
402.60	0.00	0.00	0.00				
402.70	0.00	0.00	0.00				
402.80	0.00	0.00	0.00				
402.90	0.00	0.00	0.00				
403.00	0.00	0.00	0.00				
403.10	0.03	0.00	0.03				
403.20	0.13	0.00	0.13				
403.30	0.27	0.00	0.27				
403.40	0.45	0.00	0.45				
403.50	0.63	0.00	0.63				
403.60	0.80	0.00	0.80				
403.70	0.92	0.00	0.92				
403.80	1.03	0.00	1.03				
403.90	1.13	0.00	1.13				
404.00	1.22	0.00	1.22				
404.10	1.31	0.00	1.31				
404.20	1.39	0.00	1.39				
404.30	1.47	0.00	1.47				
404.40	1.54	0.00	1.54				
404.50	1.61	0.00	1.61				
404.60	1.68	0.00	1.68				
404.70	2.04	0.00	2.04				
404.80	2.66	0.00	2.66				
404.90	3.34	0.00	3.34				
405.00	3.80	0.00	3.80				
405.10	4.18	0.00	4.18				
405.20	4.51	0.00	4.51				
405.30	4.82	0.00	4.82				
405.40	5.10	0.00	5.10				
405.50	5.36	0.00	5.36				
405.60	5.81	0.00	5.81				
405.70	6.42	0.00	6.42				
405.80	7.06	0.00	7.06				
405.90	7.54	0.00	7.54				
406.00	7.97	0.00	7.97				
406.10	8.35	0.00	8.35				
406.20	8.72	0.00	8.72				
406.30	9.06	0.00	9.06				
406.40	9.39	0.00	9.39				
406.50	9.70	0.00	9.70				
406.60	10.00	0.00	10.00				
406.70	10.29	0.00	10.29				
406.80	10.57	0.00	10.57				
406.90	10.84	0.00	10.84				
407.00	11.10	0.00	11.10				

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**Stage-Area-Storage for Pond 8p: Detention System**

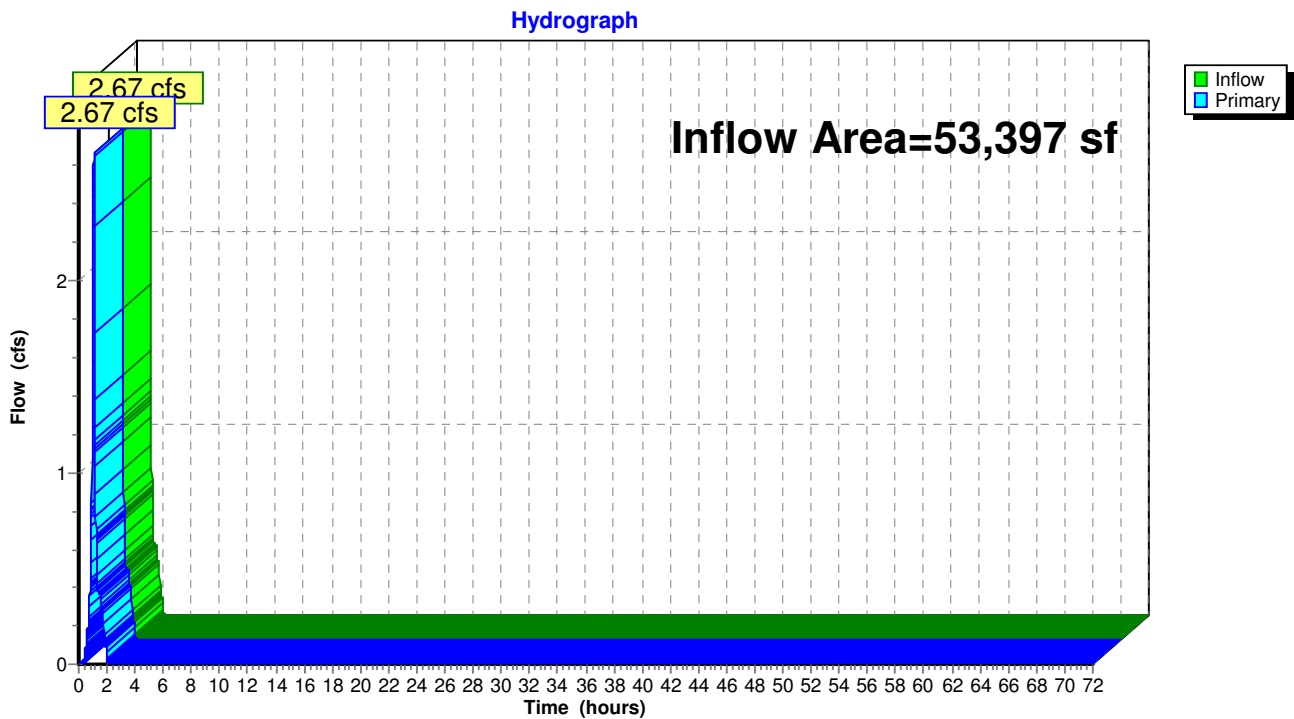
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
402.00	<b>480</b>	0	407.10	480	6,353
402.10	480	19	407.20	480	6,372
402.20	480	38	407.30	480	6,391
402.30	480	58	407.40	480	6,410
402.40	480	77	407.50	480	<b>6,429</b>
402.50	480	96			
402.60	480	115			
402.70	480	134			
402.80	480	154			
402.90	480	173			
403.00	480	192			
403.10	480	247			
403.20	480	331			
403.30	480	433			
403.40	480	548			
403.50	480	676			
403.60	480	813			
403.70	480	958			
403.80	480	1,111			
403.90	480	1,270			
404.00	480	1,435			
404.10	480	1,604			
404.20	480	1,778			
404.30	480	1,956			
404.40	480	2,137			
404.50	480	2,320			
404.60	480	2,506			
404.70	480	2,694			
404.80	480	2,883			
404.90	480	3,073			
405.00	480	3,263			
405.10	480	3,453			
405.20	480	3,643			
405.30	480	3,831			
405.40	480	4,019			
405.50	480	4,205			
405.60	480	4,389			
405.70	480	4,569			
405.80	480	4,747			
405.90	480	4,921			
406.00	480	5,091			
406.10	480	5,256			
406.20	480	5,415			
406.30	480	5,567			
406.40	480	5,713			
406.50	480	5,850			
406.60	480	5,977			
406.70	480	6,093			
406.80	480	6,195			
406.90	480	6,278			
407.00	480	6,333			

### Summary for Link 4I: existing total discharge

Inflow Area = 53,397 sf, 67.93% Impervious, Inflow Depth = 0.74" for WQ event  
Inflow = 2.67 cfs @ 1.08 hrs, Volume= 3,295 cf  
Primary = 2.67 cfs @ 1.08 hrs, Volume= 3,295 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Link 4I: existing total discharge



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**Hydrograph for Link 4I: existing total discharge**

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	2.44	0.00	2.44	52.00	0.00	0.00	0.00
2.00	0.09	0.00	0.09	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
12.00	0.00	0.00	0.00	63.00	0.00	0.00	0.00
13.00	0.00	0.00	0.00	64.00	0.00	0.00	0.00
14.00	0.00	0.00	0.00	65.00	0.00	0.00	0.00
15.00	0.00	0.00	0.00	66.00	0.00	0.00	0.00
16.00	0.00	0.00	0.00	67.00	0.00	0.00	0.00
17.00	0.00	0.00	0.00	68.00	0.00	0.00	0.00
18.00	0.00	0.00	0.00	69.00	0.00	0.00	0.00
19.00	0.00	0.00	0.00	70.00	0.00	0.00	0.00
20.00	0.00	0.00	0.00	71.00	0.00	0.00	0.00
21.00	0.00	0.00	0.00	72.00	0.00	0.00	0.00
22.00	0.00	0.00	0.00				
23.00	0.00	0.00	0.00				
24.00	0.00	0.00	0.00				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
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50.00	0.00	0.00	0.00				

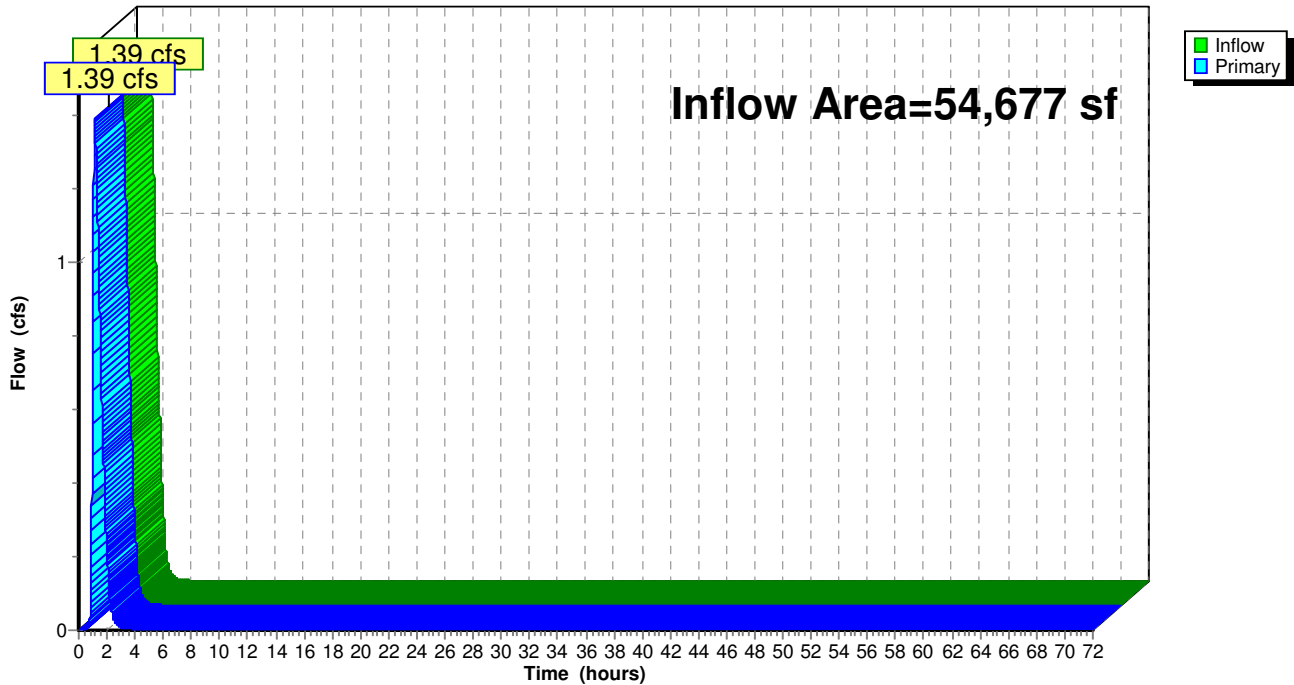
### Summary for Link 9I: Overall discharge

Inflow Area = 54,677 sf, 74.85% Impervious, Inflow Depth = 0.75" for WQ event  
Inflow = 1.39 cfs @ 1.12 hrs, Volume= 3,421 cf  
Primary = 1.39 cfs @ 1.12 hrs, Volume= 3,421 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

### Link 9I: Overall discharge

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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**Hydrograph for Link 9I: Overall discharge**

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	51.00	0.00	0.00	0.00
1.00	0.91	0.00	0.91	52.00	0.00	0.00	0.00
2.00	0.21	0.00	0.21	53.00	0.00	0.00	0.00
3.00	0.01	0.00	0.01	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
12.00	0.00	0.00	0.00	63.00	0.00	0.00	0.00
13.00	0.00	0.00	0.00	64.00	0.00	0.00	0.00
14.00	0.00	0.00	0.00	65.00	0.00	0.00	0.00
15.00	0.00	0.00	0.00	66.00	0.00	0.00	0.00
16.00	0.00	0.00	0.00	67.00	0.00	0.00	0.00
17.00	0.00	0.00	0.00	68.00	0.00	0.00	0.00
18.00	0.00	0.00	0.00	69.00	0.00	0.00	0.00
19.00	0.00	0.00	0.00	70.00	0.00	0.00	0.00
20.00	0.00	0.00	0.00	71.00	0.00	0.00	0.00
21.00	0.00	0.00	0.00	72.00	0.00	0.00	0.00
22.00	0.00	0.00	0.00				
23.00	0.00	0.00	0.00				
24.00	0.00	0.00	0.00				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				

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**Events for Subcatchment 1si: Ext DA 1**

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year-2020	3.47	0.10	371	3.24
10-Year-2020	5.38	0.16	589	5.14
100-Year-2020	9.18	0.28	1,024	8.94
2-Year-2100	4.09	0.12	441	3.85
10-Year-2100	6.37	0.19	702	6.13
100-Year-2100	<b>11.52</b>	<b>0.35</b>	<b>1,291</b>	<b>11.28</b>
WQ	1.25	0.09	118	1.03

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**Events for Subcatchment 1sp: Ext DA 1**

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year-2020	3.47	0.14	438	2.16
10-Year-2020	5.38	0.25	798	3.93
100-Year-2020	9.18	0.46	1,544	7.60
2-Year-2100	4.09	0.18	552	2.72
10-Year-2100	6.37	0.30	990	4.87
100-Year-2100	<b>11.52</b>	<b>0.59</b>	<b>2,012</b>	<b>9.90</b>
WQ	1.25	0.07	75	0.37

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**Events for Subcatchment 2si: Ext DA 2**

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year-2020	3.47	0.35	1,129	3.24
10-Year-2020	5.38	0.54	1,793	5.14
100-Year-2020	9.18	0.93	3,118	8.94
2-Year-2100	4.09	0.41	1,344	3.85
10-Year-2100	6.37	0.64	2,138	6.13
100-Year-2100	<b>11.52</b>	<b>1.16</b>	<b>3,933</b>	<b>11.28</b>
WQ	1.25	0.30	361	1.03

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**Events for Subcatchment 2sp: Ext DA 2**

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year-2020	3.47	0.02	42	1.54
10-Year-2020	5.38	0.03	85	3.13
100-Year-2020	9.18	0.06	180	6.62
2-Year-2100	4.09	0.02	55	2.04
10-Year-2100	6.37	0.04	109	4.01
100-Year-2100	<b>11.52</b>	<b>0.08</b>	<b>240</b>	<b>8.85</b>
WQ	1.25	0.00	4	0.15

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**Events for Subcatchment 3si: Ext DA 3**

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year-2020	3.47	2.55	8,285	3.24
10-Year-2020	5.38	3.97	13,163	5.14
100-Year-2020	9.18	6.80	22,882	8.94
2-Year-2100	4.09	3.01	9,867	3.85
10-Year-2100	6.37	4.71	15,695	6.13
100-Year-2100	<b>11.52</b>	<b>8.54</b>	<b>28,870</b>	<b>11.28</b>
WQ	1.25	2.17	2,648	1.03

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**Events for Subcatchment 3sp: Ext DA 3**

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year-2020	3.47	0.54	1,459	1.22
10-Year-2020	5.38	1.18	3,196	2.67
100-Year-2020	9.18	2.56	7,171	5.99
2-Year-2100	4.09	0.74	1,989	1.66
10-Year-2100	6.37	1.53	4,186	3.50
100-Year-2100	<b>11.52</b>	<b>3.41</b>	<b>9,770</b>	<b>8.17</b>
WQ	1.25	0.07	88	0.07

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**Events for Subcatchment 4si: DA 1 Undetained**

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year-2020	3.47	0.02	57	3.24
10-Year-2020	5.38	0.03	91	5.14
100-Year-2020	9.18	0.05	158	8.94
2-Year-2100	4.09	0.02	68	3.85
10-Year-2100	6.37	0.03	108	6.13
100-Year-2100	<b>11.52</b>	<b>0.06</b>	<b>199</b>	<b>11.28</b>
WQ	1.25	0.01	18	1.03

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**Events for Subcatchment 4sp: DA 1 Undetained**

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year-2020	3.47	0.07	200	1.22
10-Year-2020	5.38	0.16	437	2.67
100-Year-2020	9.18	0.35	981	5.99
2-Year-2100	4.09	0.10	272	1.66
10-Year-2100	6.37	0.21	573	3.50
100-Year-2100	<b>11.52</b>	<b>0.46</b>	<b>1,336</b>	<b>8.17</b>
WQ	1.25	0.01	12	0.07

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**Events for Subcatchment 5si: undetained 2**

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year-2020	3.47	0.12	424	3.24
10-Year-2020	5.38	0.19	674	5.14
100-Year-2020	9.18	0.33	1,171	8.94
2-Year-2100	4.09	0.15	505	3.85
10-Year-2100	6.37	0.23	803	6.13
100-Year-2100	<b>11.52</b>	<b>0.42</b>	<b>1,478</b>	<b>11.28</b>
WQ	1.25	0.11	136	1.03

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**Events for Subcatchment 5sp: undetained 2**

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year-2020	3.47	0.08	244	1.22
10-Year-2020	5.38	0.18	534	2.67
100-Year-2020	9.18	0.40	1,199	5.99
2-Year-2100	4.09	0.11	333	1.66
10-Year-2100	6.37	0.24	700	3.50
100-Year-2100	<b>11.52</b>	<b>0.54</b>	<b>1,633</b>	<b>8.17</b>
WQ	1.25	0.01	15	0.07

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**Events for Subcatchment 6si: Pro DA 3**

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year-2020	3.47	3.24	10,557	3.24
10-Year-2020	5.38	5.05	16,775	5.14
100-Year-2020	9.18	8.63	29,160	8.94
2-Year-2100	4.09	3.82	12,574	3.85
10-Year-2100	6.37	5.98	20,000	6.13
100-Year-2100	<b>11.52</b>	<b>10.84</b>	<b>36,790</b>	<b>11.28</b>
WQ	1.25	2.76	3,375	1.03

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**Events for Subcatchment 6sp: Pro DA 3**

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year-2020	3.47	0.35	954	1.22
10-Year-2020	5.38	0.77	2,089	2.67
100-Year-2020	9.18	1.65	4,688	5.99
2-Year-2100	4.09	0.48	1,300	1.66
10-Year-2100	6.37	1.00	2,736	3.50
100-Year-2100	<b>11.52</b>	<b>2.21</b>	<b>6,387</b>	<b>8.17</b>
WQ	1.25	0.04	58	0.07

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**Events for Pond 8p: Detention System**

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
2-Year-2020	3.58	1.50	<b>0.00</b>	1.50	404.34	2,028
10-Year-2020	5.80	3.61	0.00	3.61	404.96	3,182
100-Year-2020	10.28	7.50	0.00	7.50	405.89	4,905
2-Year-2100	4.30	1.67	0.00	1.67	404.59	2,489
10-Year-2100	6.97	4.54	0.00	4.54	405.21	3,658
100-Year-2100	<b>13.05</b>	<b>9.59</b>	0.00	<b>9.59</b>	<b>406.47</b>	<b>5,804</b>
WQ	2.80	1.27	0.00	1.27	404.06	1,530

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**Events for Link 4I: existing total discharge**

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
2-Year-2020	3.69	3.69	<b>0.00</b>
10-Year-2020	6.13	6.13	0.00
100-Year-2020	11.03	11.03	0.00
2-Year-2100	4.48	4.48	0.00
10-Year-2100	7.39	7.39	0.00
100-Year-2100	<b>14.07</b>	<b>14.07</b>	0.00
WQ	2.67	2.67	0.00

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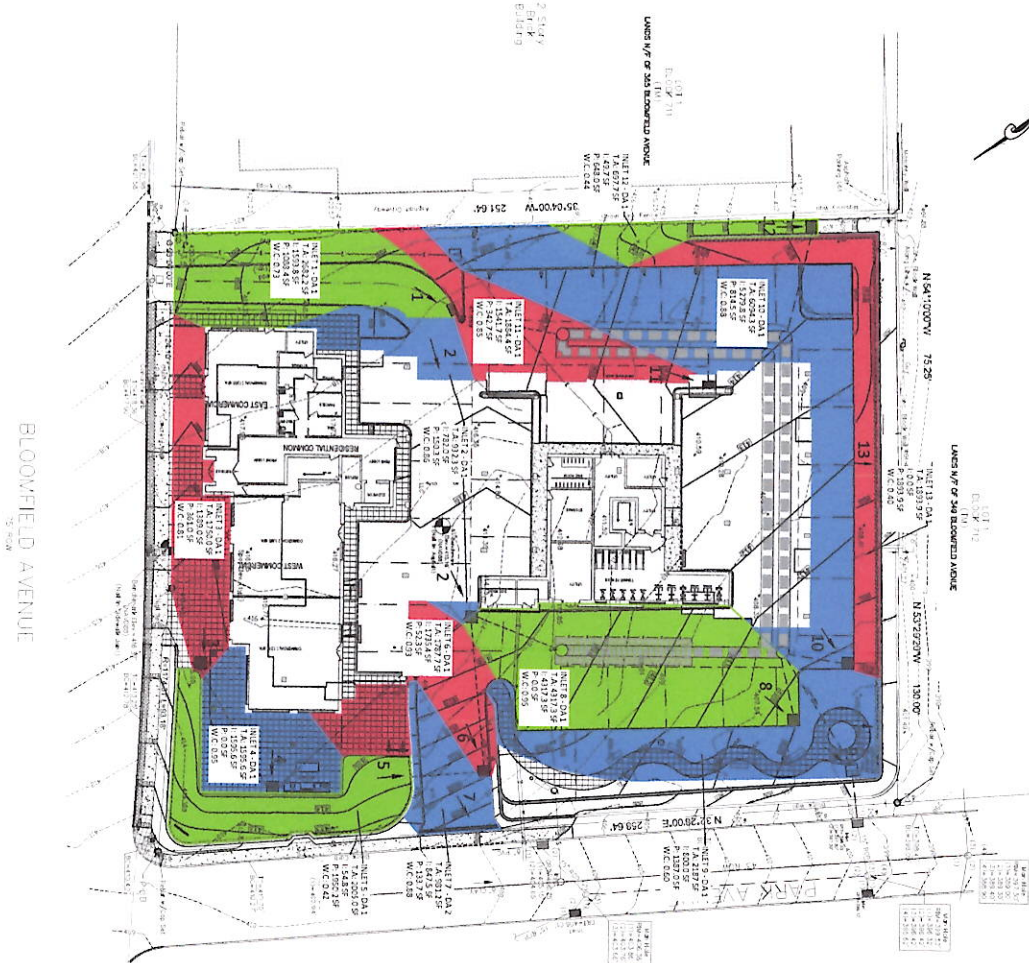
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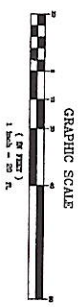
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**Events for Link 9I: Overall discharge**

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
2-Year-2020	1.74	1.74	<b>0.00</b>
10-Year-2020	4.08	4.08	0.00
100-Year-2020	8.50	8.50	0.00
2-Year-2100	1.99	1.99	0.00
10-Year-2100	5.15	5.15	0.00
100-Year-2100	<b>10.91</b>	<b>10.91</b>	0.00
WQ	1.39	1.39	0.00



INLET #	OUTSIDE ROOF AREA	IMPERVIOUS C = 0.95	PENVIOUS C = 0.4	WEIGHTED C
1	2,692.2 SF	1,593.8 SF	1,088.4 SF	0.72
2	932.3 SF	782.0 SF	150.3 SF	0.86
3	1,750.0 SF	1,369.0 SF	381.0 SF	0.84
4	1,595.6 SF	1,356.5 SF	0.0 SF	0.95
5	2,005.0 SF	5,488.5 SF	1,950.2 SF	0.42
6	1,787.7 SF	1,735.4 SF	52.3 SF	0.93
7	981.2 SF	847.5 SF	133.7 SF	0.88
8	4,317.3 SF	4,317.3 SF	0.0 SF	0.95
9	2,187.0 SF	800.0 SF	1,387.0 SF	0.60
10	6,094.3 SF	5,279.8 SF	814.5 SF	0.88
11	1,884.4 SF	1,541.7 SF	342.7 SF	0.85
12	697.7 SF	49.7 SF	648.0 SF	0.44
13	1,893.9 SF	0.0 SF	1,893.9 SF	0.40



**REFERENCES:**  
 BOUNDARY AND FIELD SURVEY TAKEN FROM LAKELAND SURVEYING, INC. RECORD DRAWING PLAT, RECEIVED ON 10-01-2024.  
 EXISTING TOPOGRAPHY IS NAVD 1988.  
 ARCHITECTURAL FOOTPRINT TAKEN FROM PLANS PROVIDED BY CSAPC ON 10-01-2024. USE THESE FOR REFERENCE ONLY.

INLET #	OUTSIDE ROOF AREA	IMPERVIOUS C = 0.95	PERVIOUS C = 0.4	WEIGHTED C
1	2,682.2 SF	1,593.8 SF	1,088.4 SF	0.73
2	932.3 SF	782.0 SF	150.3 SF	0.86
3	1,845.1 SF	1,389.4 SF	455.7 SF	0.81
4	1,595.6 SF	1,595.6 SF	0.0 SF	0.95
5	2,015.6 SF	65.4 SF	1,950.2 SF	0.42
6	1,787.7 SF	1,735.4 SF	52.3 SF	0.93
7	981.2 SF	847.5 SF	133.7 SF	0.88
8	4,317.3 SF	4,317.3 SF	0.0 SF	0.95
9	3,522.2 SF	964.9 SF	2,557.3 SF	0.55
10	6,094.3 SF	5,279.8 SF	814.5 SF	0.88
11	1,884.4 SF	1,541.7 SF	342.7 SF	0.85
12	697.7 SF	49.7 SF	648.0 SF	0.44
13	1,893.9 SF	0.0 SF	1,893.9 SF	0.40

LRAINAGE COMPUTATIONS

Project Hillcrest Farms Date 1-28-26 By PJM Sheet 1 of 1

ID NO	From	To	Area Ac.	Coef C.	Ax C	Ax C Tot	Time of Conc. Min.	Int. $\frac{1}{2}$ Year	Area Rprof CFS	Rprof CFS Length	Tot. Rprof CFS	Length Ft.	Slope %	$\Delta H$ Ft.	Req. Inv.	End Inv.	Dia.	CAP Full CFS	Vel. Act. Flow fps	Time In Pipe min.
1	#1	DET .04	1.73	.04	.07	2.3	11.5	11.5	1.35	-	1.35	33	4.6	1.5	410.7	407.1	12	10.2	3.75	15
3	#3	#4 .04	.84	.03	.07	2.3	11.5	1.35	1.35	1.35	48'	1.57	7	413.7	413.0	12	5.8	2.5	32	
4	#4	#2 .04	.95	.04	.07	2.3	11.5	1.35	1.35	1.35	90'	5	4.5	413.0	408.5	12	10.5	4.5	33	
5	#5	#6 .05	.42	.02	.06	2.3	11.5	1.23	1.23	1.23	24'	4.2	1.0	410.0	409.0	6	1.5	2.1	0.7	
6	#6	#2 .04	.93	.04	.06	2.3	11.5	1.46	1.46	1.46	51'	1.0	.5	409.0	408.5	12	4.8	3.0	28	
7	#2	DET .02	.88	.02	1.13	2.3	11.5	1.23	1.5	1.5	28'	1.0	2.8	408.5	408.0	12	4.8	4.0	10	
8	#8	DET .01	.95	.095	1.1	2.3	11.5	1.1	1.1	1.1	20'	7.5	1.5	406.5	405	12	5.75	0.6		
10	#13	#10 .04	.4	.02	1.14	2.3	11.5	.23	.23	.23	8'	12.5	1.0	407.5	406.5	4	3.0	0.4		
11	#10	DET .14	.88	.12	1.4	2.3	11.5	1.38	1.41	1.41	19'	7.9	1.5	406.5	405	12	7.5	0.4		
12	#11	DET .07	.44	.01	1.12	2.3	11.5	.12	.12	.12	10'	1.0	1	410	409	12	15	5.0	0.3	
13	#12	DET .04	.47	.02	1.12	2.3	11.5	.26	.26	.26	35'	2.6	.9	408.0	407.1	12	7.6	2.0	0.7	

\*-100yr Storm Intensity us50 - Hydrocad model  
 - pipes Greater Exceed 100 yr Flow Requirements

## Essex County, New Jersey

### **BouB—Boonton - Urban land, Boonton substratum complex, 0 to 8 percent slopes**

#### **Map Unit Setting**

*National map unit symbol:* b12f  
*Landscape:* Till plains  
*Elevation:* 50 to 500 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days  
*Farmland classification:* Not prime farmland

#### **Map Unit Composition**

*Boonton and similar soils:* 50 percent  
*Urban land, boonton substratum:* 40 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### **Description of Boonton**

##### **Setting**

*Landscape:* Till plains  
*Landform:* Ground moraines  
*Landform position (three-dimensional):* Upper third of mountainflank, center third of mountainflank  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Parent material:* Coarse-loamy basal till derived from basalt

##### **Typical profile**

*A - 0 to 5 inches:* loam  
*BA - 5 to 8 inches:* silt loam  
*BE - 8 to 17 inches:* silt loam  
*Bt - 17 to 30 inches:* silt loam  
*Btx1 - 30 to 40 inches:* gravelly fine sandy loam  
*Btx2 - 40 to 47 inches:* fine sandy loam  
*CBt1 - 47 to 58 inches:* loamy sand  
*CBt2 - 58 to 72 inches:* loamy sand

##### **Properties and qualities**

*Slope:* 0 to 8 percent  
*Depth to restrictive feature:* 20 to 36 inches to fragipan  
*Drainage class:* Well drained  
*Runoff class:* Low  
*Capacity of the most limiting layer to transmit water (Ksat):*  
Moderately low to moderately high (0.06 to 0.20 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* Low (about 4.4 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2e

*Hydrologic Soil Group:* C

*Ecological site:* F144AY037MA - Moist Dense Till Uplands

*Hydric soil rating:* No

#### **Description of Urban Land, Boonton Substratum**

##### **Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Landform position (three-dimensional):* Lower third of mountainflank, upper third of mountainflank, center third of mountainflank

*Anthropogenic Feature:* Urban land

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Parent material:* Surface covered by pavement, concrete, buildings, and other structures underlain by disturbed and natural soil material

##### **Typical profile**

*H1 - 0 to 12 inches:* material

*H2 - 12 to 47 inches:* silt loam

*2CBt1 - 47 to 58 inches:* loamy sand

*2CBt2 - 58 to 72 inches:* loamy sand

##### **Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 8s

*Hydric soil rating:* Unranked

#### **Minor Components**

##### **Udorthents, boonton substratum**

*Percent of map unit:* 10 percent

*Landscape:* Till plains

*Landform:* Ground moraines

*Landform position (three-dimensional):* Lower third of mountainflank, upper third of mountainflank, center third of mountainflank

*Anthropogenic features:* Artificial levees

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil rating:* No

## **Data Source Information**

Soil Survey Area: Essex County, New Jersey

Survey Area Data: Version 21, Aug 28, 2025

# New Jersey Stormwater Best Management Practices Manual

February 2004

<http://www.state.nj.us/dep/watershedmgt/bmpmanualfeb2004.htm>

## A P P E N D I X A

# Low Impact Development Checklist

A checklist for identifying nonstructural stormwater management strategies incorporated into proposed land development

According to the NJDEP Stormwater Management Rules at N.J.A.C. 7:8, the groundwater recharge, stormwater quality, and stormwater quantity standards established by the Rules for major land development projects must be met by incorporating nine specific nonstructural stormwater management strategies into the project's design to the maximum extent practicable.

To accomplish this, the Rules require an applicant seeking land development approval from a regulatory board or agency to identify those nonstructural strategies that have been incorporated into the project's design. In addition, if an applicant contends that it is not feasible to incorporate any of the specific strategies into the project's design, particularly for engineering, environmental, or safety reasons, the Rules further require that the applicant provide a basis for that contention.

This checklist has been prepared to assist applicants, site designers, and regulatory boards and agencies in ensuring that the nonstructural stormwater management requirements of the Rules are met. It provides an applicant with a means to identify both the nonstructural strategies incorporated into the development's design and the specific low impact development BMPs (LID-BMPs) that have been used to do so. It can also help an applicant explain the engineering, environmental, and/or safety reasons that a specific nonstructural strategy could not be incorporated into the development's design.

The checklist can also assist municipalities and other land development review agencies in the development of specific requirements for both nonstructural strategies and LID-BMPs in zoning and/or land use ordinances and regulations. As such, where requirements consistent with the Rules have been adopted, they may supersede this checklist.

Finally, the checklist can be used during a pre-design meeting between an applicant and pertinent review personnel to discuss local nonstructural strategies and LID-BMPs requirements in order to optimize the development's nonstructural stormwater management design.

Since this checklist is intended to promote the use of nonstructural stormwater management strategies and provide guidance in their incorporation in land development projects, municipalities are

permitted to revise it as necessary to meet the goals and objectives of their specific stormwater management program and plan within the limits of N.J.A.C. 7:8.

# Low Impact Development Checklist

A checklist for identifying nonstructural stormwater management strategies incorporated into proposed land development

Municipality: Verona

County: Essex Date: 4-2-26

Review board or agency: *Verona Planning Board*

Proposed land development name: *Hillcrest Farms Mixed Use Re-development*

Lot(s): *1* Block(s): *708*

Project or application number:

Applicant's name: *Filoso Family LLC*

Applicant's address: *383 Bloomfield Ave, Verona NJ*

Telephone: *305-297-1009* Fax:

Email address: *Pat @Hillcrestfarms.biz*

Designer's name: *Anderson Consulting Services LLC*

Designer's address: *40 Miller Drive, Boonton NJ 07005*

Telephone: *973-975-0703* Fax: *973-975-0703*

Email address: *pandersonpe@gmail.com*

## Part 1: Description of Nonstructural Approach to Site Design

In narrative form, provide an overall description of the nonstructural stormwater management approach and strategies incorporated into the proposed site's design. Attach additional pages as necessary. Details of each nonstructural strategy are provided in Part 3 below.

*The Hillcrest Farms project proposed to re-develop the property located on the corner of Park Ave and Bloomfield Ave. in Verona. The property is fully developed with a landscape nursery with no natural area present onsite. The re-development of the property will include a green buffer around the perimeter of the property and a stormwater management system that will greatly improve the quality and quantity of stormwater from the site.*

*The approach to the stormwater design starts with an increase in the time of concentration for the site with green buffers around the perimeter, planted with native non-invasive plants that will reduce discharge from the current fully developed condition. The project will have porous pavement onsite to provide water quality. Porous pavement with underdrains is listed as green technology for water quality in the BMP manual and the municipal stormwater ordinance. The porous pavement underdrains and inlets will discharge to a subsurface detention system with outlet control which will control the rate of discharge to meet the discharge rate reduction requirements of the Stormwater ordinance. This reduction in rate of flow will reduce the impact of the site on the municipal stormwater system.*

*Per the Municipal stormwater ordinance developed sites are not required to meet the groundwater recharge standards. The soil conditions onsite are suitable for recharge with porous native material encountered below the surface layers and no groundwater encountered in test pits up to 16 ft deep. The design challenge with providing recharge to groundwater comes with the mounding of groundwater. Initial designs with the entire underground system allowing recharge created a groundwater mounding impact on the property to the South. The amended design includes a section of the detention pipe to be porous, allowing some recharge to groundwater. The porous section of pipe is located away from the property to the south eliminating the mounding impact.*

*Also included in the project design but not quantified in the drainage calculations is a section of green roof on the building and the use of a cistern to collect rainwater to irrigate the green buffer.*

Part 2: Review of Local Stormwater Management Regulations

Title and date of stormwater management regulations used in development design:

*Verona Stormwater Control Ordinance*

Do regulations include nonstructural requirements?

Yes:            No:

If yes, briefly describe: *Green technology per ordinance and state standards is required*

List LID-BMPs prohibited by local regulations: *NA*

Pre-design meeting held? Yes:            Date:            No:  *Site inspection by design engineer without municipal attendance*

Meeting held with: *NA*

Pre-design site walk held? Yes:  Date:            No:            *By design engineer*

Site walk held with: *NA*

Other agencies with stormwater review jurisdiction:

Name: *HEP SCD*

Required approval: *Soil Erosion and Sediment Control*

Name: *Essex County*

Required approval: *County Planning board approval for Bloomfield Ave Modifications*

Name:

Required approval:



D. If vegetated filter strips or buffers are utilized, specify their functions:

Reduce runoff volume increases through lower runoff coefficient:

Yes:            No:  *Vegetative filter strips are not proposed. Stormwater collected through porous pavement*

Reduce runoff pollutant loads through runoff treatment:

Yes:  No:            *Porous Pavement, 80% suspended solid removal*

Maintain groundwater recharge by preserving natural areas:

Yes:            No:  *There are no native areas to preserve but the addition of native plantings in a vegetative buffer will increase the groundwater recharge from the current conditions*

### 3.2 Minimize Land Disturbance

Minimizing land disturbance is a nonstructural LID-BMP that can be applied during both the development's construction and post-construction phases. This section of the checklist helps identify those land disturbance strategies and nonstructural LID-BMPs that have been incorporated into the proposed development's design to minimize land disturbance and the resultant change in the site's hydrologic character.

A. Have inventories of existing site soils and slopes been performed?  
Yes:  No:

If yes, were these inventories factors in the site's layout and design? Yes:  No:  *The site is fully developed with a layer of fill over the native soils. Most of the surface conditions encountered were asphalt or packed gravel with limited surface permeability*

B. Does the development's design utilize any of the following nonstructural LID-BMPs?

Restrict permanent site disturbance by land owners?

Yes:  No:  *The permanent disturbance is the building and pavement proposed for approval by the planning board. Although there is not a restriction on modification to the plannings in the green buffer it is unlike they can change without an amended board approval*

If yes, how:

Restrict temporary site disturbance during construction?

Yes:  No:

If yes, how:

Consider soils and slopes in selecting disturbance limits?

Yes:  No:  *There are no steep slopes onsite and only one soil type. Avoidance of soils and slopes was not a factor in the layout*

If yes, how:

C. Specify percentage of site to be cleared: *0 %* Regraded: *100 %* *The site will be cleared of buildings and pavement and regraded for the proposed project*

D. Specify percentage of cleared areas done so for buildings: *39%*

For driveways and parking: *37.4%* For roadways: *NA*



### 3.3 Impervious Area Management

New impervious surfaces at a development site can have the greatest adverse effect on groundwater recharge and stormwater quality and quantity. This section of the checklist helps identify those nonstructural strategies and LID-BMPs that have been incorporated into a proposed development's design to comprehensively manage the extent and impacts of new impervious surfaces.

A. Specify impervious cover at site: Existing: *67.9%* Proposed: *76.4%*

B. Specify maximum site impervious coverage allowed by regulations: *80%*

C. Compare proposed street cartway widths with those required by regulations: *NA, No streets are proposed*

Type of Street	Proposed Cartway Width (feet)	Required Cartway Width (feet)
Residential access – low intensity		
Residential access – medium intensity		
Residential access – high intensity with parking		
Residential access – high intensity without parking		
Neighborhood		
Minor collector – low intensity without parking		
Minor collector – with one parking lane		
Minor collector – with two parking lanes		
Minor collector – without parking		
Major collector		

D. Compare proposed parking space dimensions with those required by regulations:

Proposed: *9x18* Regulations: *9x18*

E. Compare proposed number of parking spaces with those required by regulations:

Proposed: *63* Regulations: *63*

F. Specify percentage of total site impervious cover created by buildings: *39%*

By driveways and parking: *37.4%* By roadways: *n/a*

G. What design criteria and/or site changes would be required to reduce the percentages in F above?

*The project follows the bulk requirements of the redevelopment zone and improves the conditions with a native planted vegetative buffer and porous pavement. The porous pavement is counted as impervious despite it being porous.*

H. Specify percentage of total impervious area that will be unconnected:

Total site: *0%* Buildings:            Driveways and parking:            Roads:

*All sections of the roof and pavement are piped direction to the stormwater system to manage discharge rate. The roof water is considered clean and the porous pavement is green technology for water quality. The recharge section of pipe added to the detention system will achieve the recharge intended with unconnected areas*

I. Specify percentage of total impervious area that will be porous:

Total site: *61%* Buildings: *0%* Driveways and parking: *100%* Roads: *NA*

J. Specify percentage of total building roof area that will be vegetated: *5%*

K. Specify percentage of total parking area located beneath buildings: *38%*

L. Specify percentage of total parking located within multi-level parking deck: *0%*

### 3.4 Time of Concentration Modifications

Decreasing a site's time of concentration (Tc) can lead directly to increased site runoff rates which, in turn, can create new and/or aggravate existing erosion and flooding problems downstream. This section of the checklist helps identify those nonstructural strategies and LID-BMPs that have been incorporated into the proposed development's design to effectively minimize such Tc decreases.

When reviewing Tc modification strategies, it is important to remember that a drainage area's Tc should reflect the general conditions throughout the area. As a result, Tc modifications must generally be applied throughout a drainage area, not just along a specific Tc route.

A. Specify percentage of site's total stormwater conveyance system length that will be:

Storm sewer: 8% Vegetated swale:            Natural channel:

Stormwater management facility: 67 Other: 25% *overland flow*

Note: the total length of the stormwater conveyance system should be measured from the site's downstream property line to the downstream limit of sheet flow at the system's headwaters.

B. What design criteria and/or site changes would be required to reduce the storm sewer percentages and increase the vegetated swale and natural channel percentages in A above?

*The project meets the bulk zoning requirements of the redevelopment zone. It employs green technology that fits with the zone standards that permit 80% impervious cover*

C. In conveyance system subareas that have overland or sheet flow over impervious surfaces or turf grass, what practical and effective site changes can be made to:

Decrease overland flow slope: *The project minimizes onsite slopes in the current design and requires retaining walls to makeup the vertical change at the downhill side of the site*

Increase overland flow roughness: *The project proposes a significant native planting area to increase roughness and encourage infiltration. The porous pavement proposed onsite drains vertically making roughness increases less important.*

### 3.5 Preventative Source Controls

The most effective way to address water quality concerns is by pollution prevention. This section of the checklist helps identify those nonstructural strategies and LID-BMPs that have been incorporated into the proposed development's design to reduce the exposure of pollutants to prevent their release into the stormwater runoff.

#### A. Trash Receptacles

Specify the number of trash receptacles provided: *3*

Specify the spacing between the trash receptacles: *45 ft*

Compare trash receptacles proposed with those required by regulations:

Proposed: *3* Regulations: *0*

#### B. Pet Waste Stations

Specify the number of pet waste stations provided: *1*

Specify the spacing between the pet waste stations: *n/a*

Compare pet waste stations proposed with those required by regulations:

Proposed: *1* Regulations: *0*

#### C. Inlets, Trash Racks, and Other Devices that Prevent Discharge of Large Trash and Debris

Specify percentage of total inlets that comply with the NJPDES storm drain inlet criteria: *100%*

#### D. Maintenance

Specify the frequency of the following maintenance activities:

Street sweeping: Proposed: *Bi-annually* Regulations: -

Litter collection: Proposed: *Weekly* Regulations: -

Identify other stormwater management measures on the site that prevent discharge of large trash and debris:

*Trash rack in outlet structure to be regularly maintained. Head pieces on inlets restrict trash washing into system*

E. Prevention and Containment of Spills No know sources of contaminants are proposed on site

Identify locations where pollutants are located on the site, and the features that prevent these pollutants from being exposed to stormwater runoff:

Pollutant: *NA* Location:

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant:            Location:

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant:            Location:

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant:            Location:

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant:            Location:

## Part 4: Compliance with Nonstructural Requirements of NJDEP Stormwater Management Rules

1. Based upon the checklist responses above, indicate which nonstructural strategies have been incorporated into the proposed development's design in accordance with N.J.A.C. 7:8-5.3(b):

No.	Nonstructural Strategy	Yes	No
1.	Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment loss.	x	
2.	Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces.		x
3.	Maximize the protection of natural drainage features and vegetation.		NA
4.	Minimize the decrease in the pre-construction time of concentration.	x	
5.	Minimize land disturbance including clearing and grading.	NA see above	
6.	Minimize soil compaction.	x	
7.	Provide low maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers, and pesticides.	x	
8.	Provide vegetated open-channel conveyance systems discharge into and through stable vegetated areas.		x
9.	Provide preventative source controls.	x none proposed	

2. For those strategies that have not been incorporated into the proposed development's design, provide engineering, environmental, and/or safety reasons. Attached additional pages as necessary.

*The re-development of this property follows the redevelopment zone bulk standards which includes up to 80% impervious coverage. Since the site is currently fully developed and there are essentially no natural conditions that are beneficial in stormwater management, the improvements proposed are a substantial improvement from a stormwater perspective. Due to the density of development permitted in the zone some Green Infrastructure stormwater methods do not work well with the site. The project does employ green infrastructure of porous pavement, green roof and a vegetative buffer with native low maintenance plants to achieve conformance with the ordinance requirements.*

This spreadsheet will calculate the height of a groundwater mound beneath a stormwater infiltration basin. Morris Scientific Investigations Report 2010-5102 "Simulation of groundwater mounding beneath hypothetical stormwat

The user must specify infiltration rate (R), specific yield (Sy), horizontal hydraulic conductivity (Kh), basin dimension thickness of the saturated zone (hi(0), height of the water table if the bottom of the aquifer is the datum). For a rectangular basin, if the user wants the water-table changes perpendicular to the long side, specify x as the short dimension, if the user wants the values perpendicular to the short side, specify y as the short dimension, x as the long dimension. The distances from the center of the basin at which water-table aquifer thickness are calculated. Cells highlighted in yellow are values that can be changed by the user. Cells highlighted in red are output values by the "Re-Calculate Now" button each time ANY of the user-specified inputs are changed otherwise necessary iteration values shown will be incorrect. Use consistent units for all input values (for example, feet and days)

use consistent units (e.g. feet & days or inches & hours)

Input Values

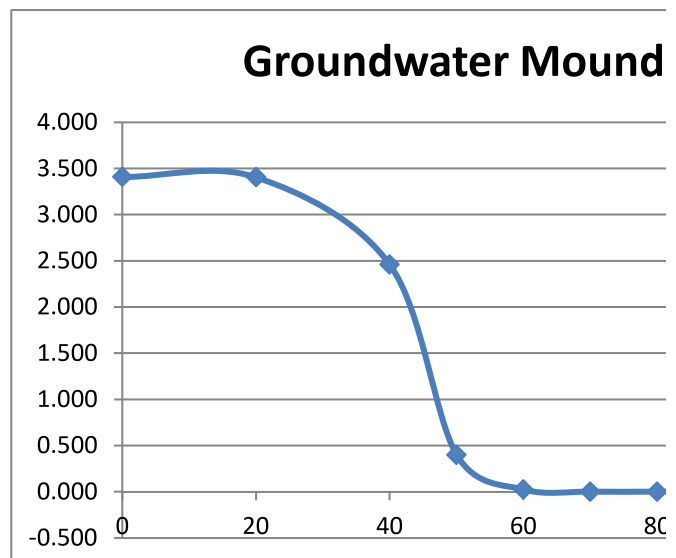
2.5800	R	Recharge (infiltration) rate (feet/day)
0.150	Sy	Specific yield, Sy (dimensionless, between 0 and 1)
2.58	K	Horizontal hydraulic conductivity, Kh (feet/day)*
43.000	x	1/2 length of basin (x direction, in feet)
10.000	y	1/2 width of basin (y direction, in feet)
0.230	t	duration of infiltration period (days)
10.000	hi(0)	initial thickness of saturated zone (feet)
13.410	h(max)	maximum thickness of saturated zone (beneath center of basin)
3.410	Δh(max)	maximum groundwater mounding (beneath center of basin at

Ground-water Mounding, in feet      Distance from center of basin in x direction, in feet

3.410	0
3.405	20
2.460	40
0.399	50
0.025	60
0.002	70
0.001	80
0.001	90
0.001	100
0.001	120



Re-Calculate Now



**Disclaimer**



**Hillcrest Farms**  
**Township of Verona**  
**County of Essex, NJ**  
*Block 708, Lot 1*  
*10-24-25*  
*Rev 1: 2-11-26*

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Paul W. Anderson PE, PP  
NJ P.E. License # 33410

## Introduction

The Hillcrest Farms property is located at 383 Bloomfield Avenue in Verona. The property is proposed to be redeveloped with a mixed-use building with commercial on the first floor and residential on the floors above.

The project will be classified as a major stormwater design project, and the design will be required to meet the NJ State stormwater standards for water quality, groundwater recharge and discharge rate. The soil data required to design this system is the subject of this report.

The soil exploration for this project will be conducted in two phases. The initial phase to determine soil permeability and the second stage to be completed in the January to April soil testing window will verify seasonal high ground water. In total 2 test pits will be performed in Phase 1 and 3 test pits will performed in Phase 2. The test pits were dug to approximately 15 ft in each location with soil logs for each location prepared and soil samples taken for laboratory permeability testing  
Soil logs and lab test results are attached.

Test Pits 2 & 3 found a predominantly silty sand with K-4 and K-3 permeability. This deep running layer is suitable for groundwater recharge.

### Rev 1:

Test pits 1, 4, & 5 performed in February during the seasonal high groundwater testing window. The soil types found were sandy silt loams similar to those found in the initial testing. The test pits were dug to 12 ft and there was no evidence of ground water or mottling. The drainage system design is not influenced by the groundwater table.

October 21, 2025

Sunny, 65F

**Soil Logs**

*Contents: (Depth of sample, color, texture, description)*

**Test Pit #2**

**Soil Sample at 65 inches**

0-6 inches Asphalt & gravel

6-38 Brown silty clay

38-192 in Brown Silty Sand

\* no ground water seepage, no mottles

**Test Pit #3**

**Soil sample at 55 inches**

0-28 Fill material with bricks & blocks

28-65 Brown silty sand with gravel

65-115 Brown sandy silt loam w/ gravel

115-180 in reddish brown silt loam w/gravel

Perched water seepage at 165 in. no mottles

---

**REV 1**

February 11, 2026

Overcast, 40F

**Test Pit #1**

**Soil sample at 11 ft**

0-60" Organic soil & fill material

60-120" Brown silt loam w/ 6" stones

120-132" Brown sandy silt loam

\* no groundwater seepage, no mottles

**Test Pit #4**

0-42" Reddish brown silty clay with fill material and large stones (12"+)

42-72" Light grey sandy silt loam with fill material, bricks, gravel

72-144" Brown silty sandy loam with small stones

\* no groundwater seepage, no mottles

**Test Pit #5**

0-84" Large stones & gravel mixed with fill material, bricks, etc

84-120" Gray silty clay

120-144" Brown sandy silt loam with small stones

\* no groundwater seepage, no mottles



# SOR TESTING LABORATORIES, INC.

Geotechnical Engineering - Materials Testing - Forensic Studies  
98 Sand Park Rd., Cedar Grove, NJ 07009  
(973) 239-6001 Fax (973) 239-8380  
www.sorlabs.com

Kamil Sor, Ph.D.  
Orhun Sor, P.E.  
Atilla Sencar, P.E.

This report is the confidential property of the Client, and information contained may not be published or reproduced without our written permission.

Client:	Anderson Consulting Services				
Project:	Hillcrest Farm, Verona, New Jersey				
Subject:	Laboratory Testing of Soil/Aggregate Samples				
Job No.:	25-104	Report No.:	25-672	Date:	10/24/2025


On **October 21, 2025**, the client delivered two (2) soil/aggregate samples to our laboratory for testing. The client labeled the samples TP-2 (65 inches) and TP-3 (55 inches).

At the client's request, the samples were tested for the Water Permeability Rate. The table below provides our test results.

Sample ID	Water Permeability Rate
TP-2 (65")	5.3 x 10 <sup>-3</sup> cm/s (7.67 in/hr) K4
TP-3 (55")	1.8 x 10 <sup>-3</sup> cm/s (2.58 in/hr) K3

Very truly yours,

SOR TESTING LABORATORIES, INC.

  
Orhun Sor, M.S.  
Vice President

OS/gs

cc: (1) Client, Attn: Paul Anderson (E-mail: PAnderson@gmail.com)