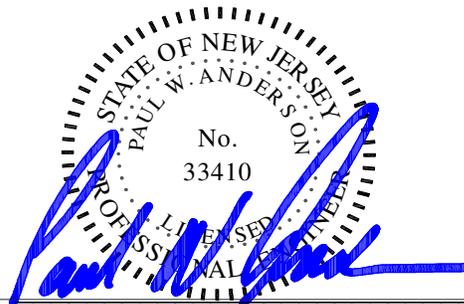




Stormwater Management Report
Hillcrest Farms
Block 708, Lot 1
November 26, 2025
Rev 1-January 28, 2026



Paul W. Anderson PE PP CME
NJ PE Lic. No. 33410

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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.



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 108 If based on where existing topography and site features concentrate flow.
Check McCuen-Speiss limitation

$$L = \frac{100(S)^{.5}}{n} \quad \text{With } n = .15 \text{ for grass, } S = .068 \quad L = 173 \text{ LF} \quad \text{use 108 from topographic conditions}$$

Using Hydrocad and a 2 year/ 24 hr rainfall of 3.47 inches The Tc for sheet flow is 6.1 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.

Total Tc= 6.1+ .2 = 6.3 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 104 If based on where existing topography and site features concentrate flow.
Check McCuen-Speiss limitation

$$L = \frac{100(S)^{.5}}{n} \quad \text{With } n = .011 \text{ for pavement, } S = .0347 \quad L = 1693 \text{ LF use 104 from topographic conditions}$$

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 .8 minutes.

Total Tc= .9+ .1 = 1.0 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	3.70
10YR	.41	.58	5.16	6.13
100 YR	.73	1.00	9.36	11.03
Future				
2 YR	.30	.44	3.75	4.48
10 YR	.49	.69	6.24	7.39
100 YR	.93	1.25	11.95	14.06

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 lf based on distance to the property line
Check McCuen-Speiss limitation

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

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 20 lf based on distance to the property line.
Check McCuen-Speiss limitation

$$L = \frac{100(S)^{.5}}{n} = \text{With } n = .015 \text{ for grass, } S = .015 \quad L = 81.6 \text{ LF use 20 from physical conditions}$$



n

Using Hydrocad and a 2 year/ 24 hr rainfall of 3.47 inches The Tc for sheet flow is 2.9 min.

Total Tc= 2.9 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

$$L = \frac{100(S)^{.5}}{n} = \text{With } n = .15 \text{ for grass } S = .0019 \quad L = 157 \text{ LF use 25 ft from physical conditions}$$

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	3.7	1.85	.06	.24	1.61	1.85
10YR	6.13	4.29	.13	.42	3.61	4.03
100YR	11.03	8.82	.27	.81	6.99	7.85
Future						
2YR	4.48	2.24	.08	.30	1.80	2.10
10 YR	7.39	5.17	.17	.53	4.54	5.10
100 YR	14.06	11.25	.36	1.06	9.32	10.51



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.

The detention system will drain within 24 hours of the end of the storm.

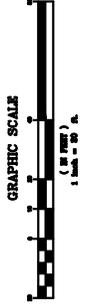
PAUL W. ANDERSON
 N.J. PROFESSIONAL ENGINEER
 LIC. NO. 33410

Revisions

www.pwpaer.com
 FAX: 973.975.0703
 TEL: 973.975.0703
 40 Miller Drive
 Bortom, NJ 07005
 CERTIFICATE OF AUTHORIZATION
 24CA28182400

EXISTING DRAINAGE AREA MAP
 383 BLOOMFIELD AVENUE
 BLOCK 708, LOT 1
 TOWNSHIP OF VERONA
 ESSEX COUNTY, NEW JERSEY

DA - 1
 SHEET 1 OF 7



REFERENCES:
 BOUNDARY AND FIELD SURVEY TAKEN FROM LAKELAND SURVEYING
 PREPARED BY RALPH LUPINE P.E. REGISTERED ON 10-01-2004.
 EXISTING TOPOGRAPHY IS MAID 1988
 ARCHITECTURAL FOOTPRINT TAKEN FROM PLANS PREPARED BY GMPG
 ON 12-04-2004.

DA 1
 3,811.8 SF
 Tc = 6.3 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

NEW JERSEY STATE LAW REQUIRES NOTIFICATION. A BUSINESS
 RESPONSIBLE FOR CALLING 811 OR 1-800-222-1000 FOR
 UTILITY LOCATIONS PRIOR TO ANY EXCAVATION OR
 PROVIDED BY THE SUPERVISOR AND IS CURRENT AT THE TIME
 OF THE SURVEY. THE SUPERVISOR IS NOT RESPONSIBLE FOR
 THE ACCURACY OF THE DATA.



PAUL W. ANDERSON
 N.J. PROFESSIONAL ENGINEER
 LIC. NO. 33410

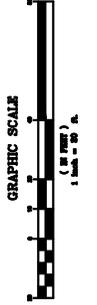
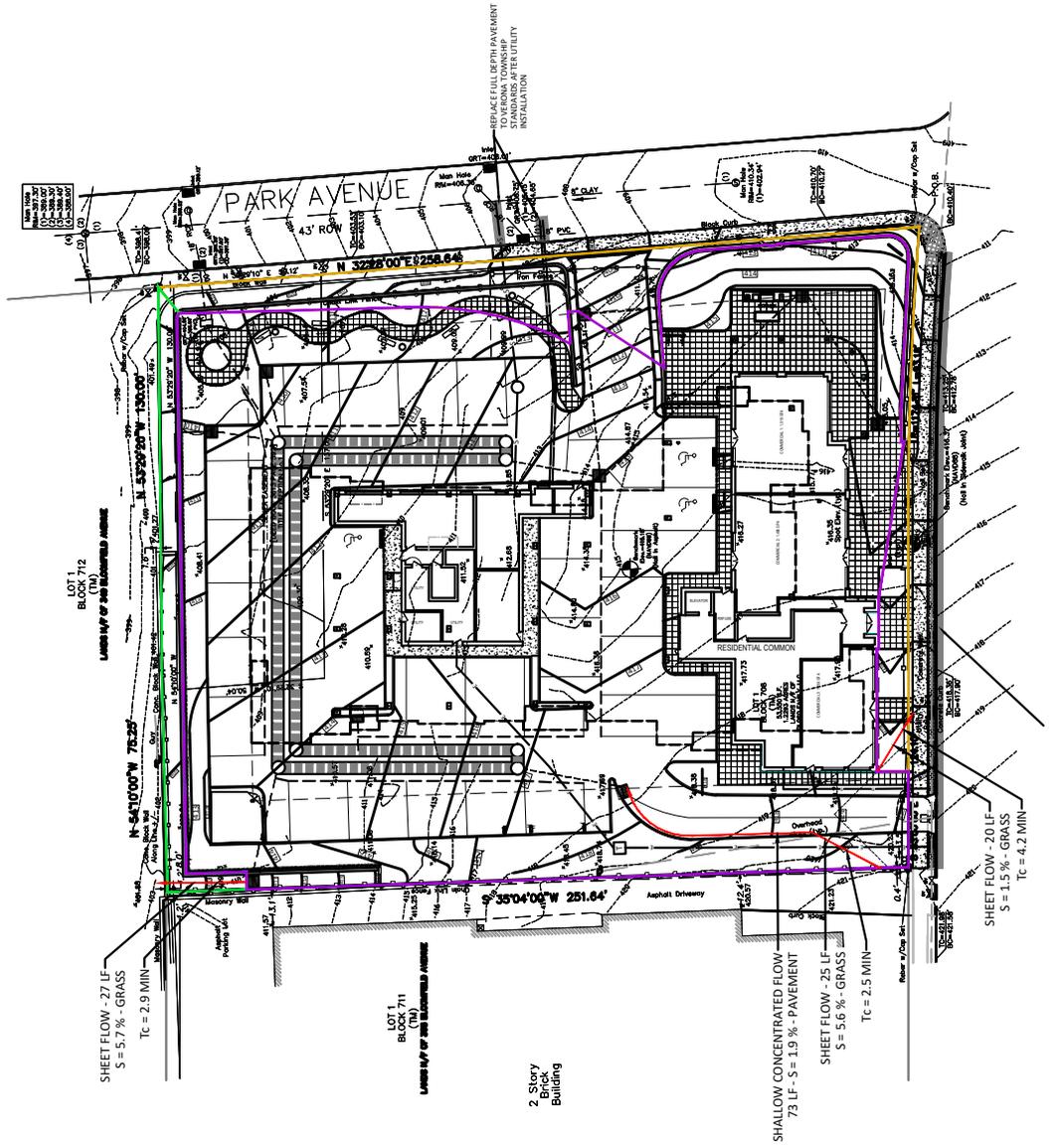
Revisions

CERTIFICATE OF AUTHORIZATION
 24CA28182400
 www.pwanderson-cs.com
 BOONTON, NJ 07005
 FAX: 973.975.0703
 TEL: 973.975.0703
ACS
 ANDERSON CONSULTANTS SERVICES LLC
 40 MILLER DRIVE
 BOONTON, NJ 07005

Scale AS SHOWN
 Checked by WMA
 Designed by WMA
 Drawn by BCA
 Date 09-13-25
 Proj. No. BLOOMFIELD

PROPOSED DRAINAGE AREA MAP
 383 BLOOMFIELD AVENUE
 BLOCK 708, LOT 1
 TOWNSHIP OF VERONA
 ESSEX COUNTY, NEW JERSEY

DA - 1
 SHEET 1 OF 7



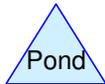
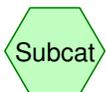
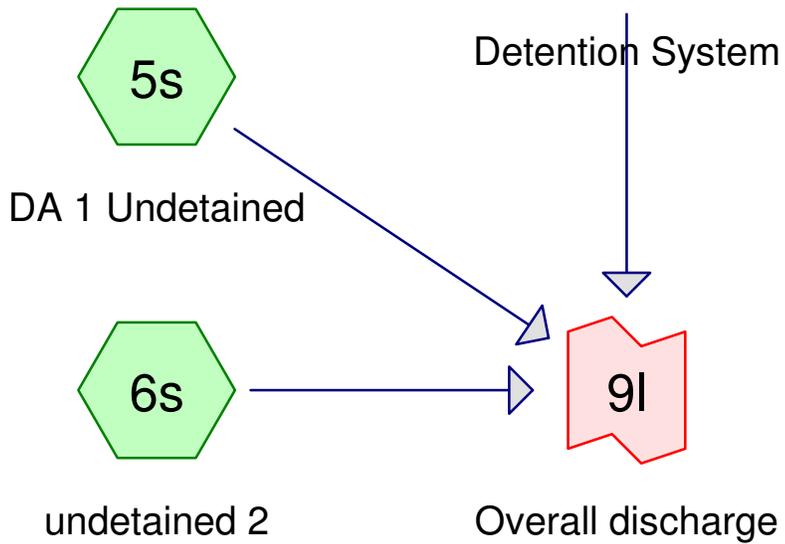
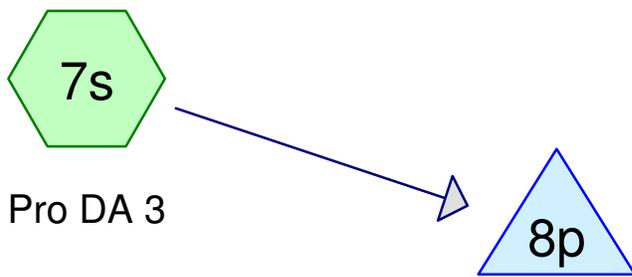
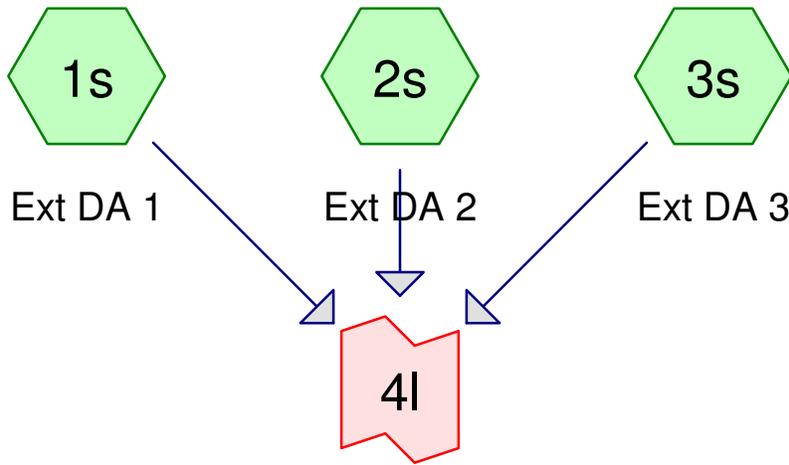
REFERENCES:
 BOUNDARY AND FIELD SURVEY TAKEN FROM LANDLORD SURVEYING
 PREPARED BY HARC LAUREN P.L.L.C. DATED ON 10-01-2024.
 EXISTING TOPOGRAPHY IS MAID 1985
 ARCHITECTURAL FOOTPRINT TAKEN FROM PLANS PREPARED BY GMPC
 ON 12-04-2024.

DA-1: 1,467.1 SF
 Tc = 2.2 MIN
 IMPV: 212.3 SF
 PV: 1,254.8 SF

DA-2: 4,202.4 SF
 Tc = 2.9 MIN
 IMPV: 1,802.4 SF
 PV: 2,400.0 SF

DA-3: 47,866.9 SF
 Tc = 2.5 MIN
 IMPV: 38,903.1 SF
 PV: 8,963.8 SF

NEW JERSEY STATE LAW REQUIRES NOTIFICATION. A BUSINESS RESPONSIBLE FOR CALLING 911 OR 1-800-922-1000 FOR EMERGENCY SERVICES SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE DATA PROVIDED BY THE SUBMITTER AND IS CURRENT AT THE TIME OF SUBMISSION. THE ENGINEER OR ARCHITECT IS NOT RESPONSIBLE FOR THE ACCURACY OF THE DATA.



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Page 2

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-2050	NOAA 24-hr	D	Default	24.00	1	4.09	2
5	10-Year-2050	NOAA 24-hr	D	Default	24.00	1	6.37	2
6	100-Year-2050	NOAA 24-hr	D	Default	24.00	1	11.52	2
7	WQ	NJ DEP 2-hr		Default	2.00	1	1.25	2

2025-09-22 HydroCad - hillcrest farms Rev 1

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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
26,977	74	>75% Grass cover, Good, HSG C (3s, 5s, 6s, 7s)
2,438	87	Dirt roads, HSG C (1s)
75,504	98	Paved parking, HSG C (1s, 2s, 3s, 7s)
1,802	98	Unconnected pavement, HSG C (6s)
212	98	Unconnected roofs, HSG C (5s)
106,933	92	TOTAL AREA

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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

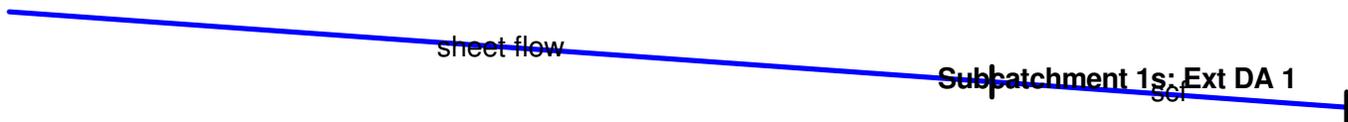
Summary for Subcatchment 1s: Ext DA 1

Runoff = 0.24 cfs @ 12.13 hrs, Volume= 809 cf, Depth= 2.55"
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"

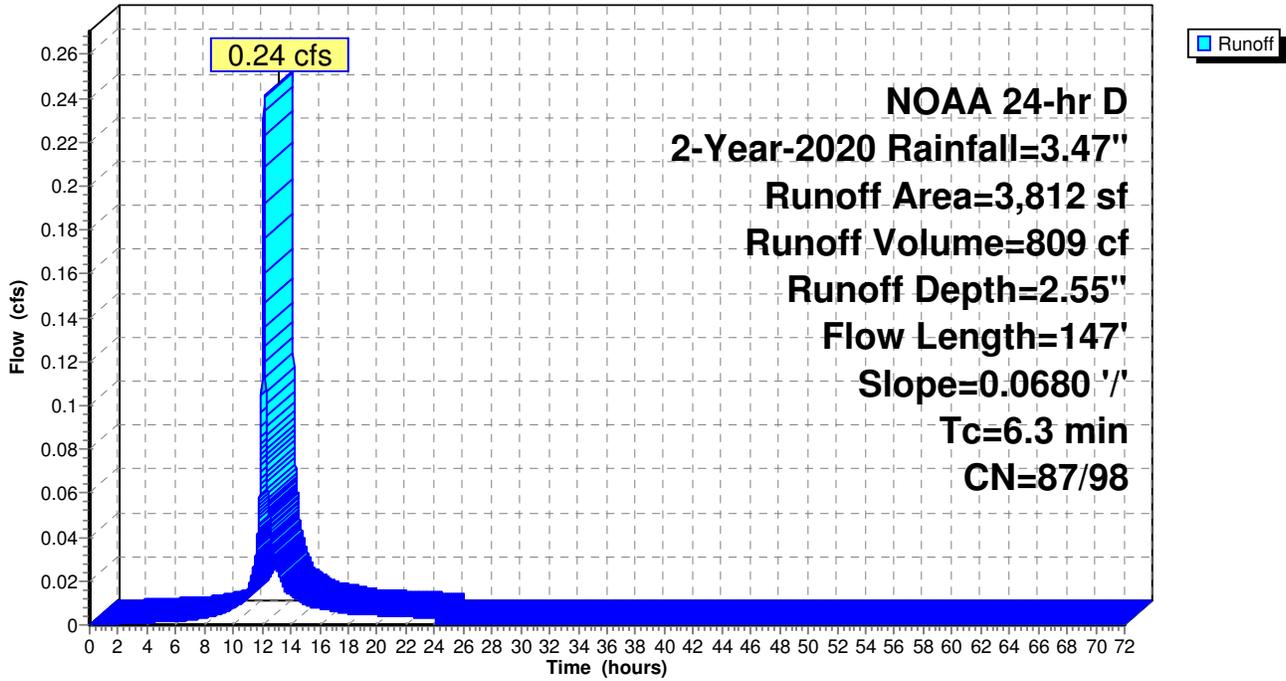
Area (sf)	CN	Description
1,374	98	Paved parking, HSG C
2,438	87	Dirt roads, HSG C
3,812	91	Weighted Average
2,438	87	63.96% Pervious Area
1,374	98	36.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	108	0.0680	0.29		Sheet Flow, sheet flow Grass: Short n= 0.150 P2= 3.47"
0.2	39	0.0680	4.20		Shallow Concentrated Flow, scf Unpaved Kv= 16.1 fps
6.3	147	Total			



Subcatchment 1s: 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 1s: 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	0.08	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	0.01	0.27	0.00
10.00	0.69	0.08	0.49	0.01
12.00	1.66	0.65	1.44	0.13
14.00	2.78	1.55	2.55	0.01
16.00	3.02	1.76	2.79	0.01
18.00	3.17	1.89	2.94	0.01
20.00	3.29	1.99	3.06	0.00
22.00	3.39	2.08	3.15	0.00
24.00	3.47	2.16	3.24	0.00
26.00	3.47	2.16	3.24	0.00
28.00	3.47	2.16	3.24	0.00
30.00	3.47	2.16	3.24	0.00
32.00	3.47	2.16	3.24	0.00
34.00	3.47	2.16	3.24	0.00
36.00	3.47	2.16	3.24	0.00
38.00	3.47	2.16	3.24	0.00
40.00	3.47	2.16	3.24	0.00
42.00	3.47	2.16	3.24	0.00
44.00	3.47	2.16	3.24	0.00
46.00	3.47	2.16	3.24	0.00
48.00	3.47	2.16	3.24	0.00
50.00	3.47	2.16	3.24	0.00
52.00	3.47	2.16	3.24	0.00
54.00	3.47	2.16	3.24	0.00
56.00	3.47	2.16	3.24	0.00
58.00	3.47	2.16	3.24	0.00
60.00	3.47	2.16	3.24	0.00
62.00	3.47	2.16	3.24	0.00
64.00	3.47	2.16	3.24	0.00
66.00	3.47	2.16	3.24	0.00
68.00	3.47	2.16	3.24	0.00
70.00	3.47	2.16	3.24	0.00
72.00	3.47	2.16	3.24	0.00

Summary for Subcatchment 2s: Ext DA 2

Runoff = 0.37 cfs @ 12.09 hrs, Volume= 1,217 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"

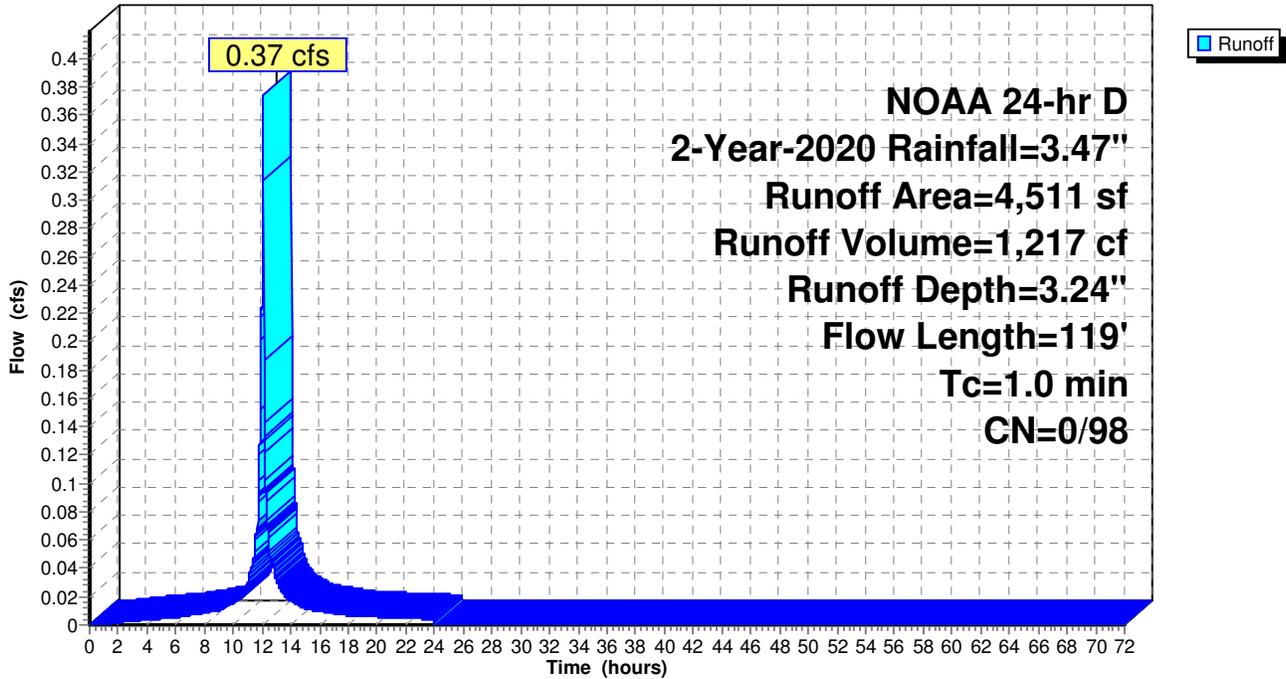
Area (sf)	CN	Description
4,185	98	Paved parking, HSG C
326	98	Paved parking, HSG C
4,511	98	Weighted Average
4,511	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	104	0.0385	1.88		Sheet Flow, sheet flow Smooth surfaces n= 0.011 P2= 3.47"
0.1	15	0.0150	2.49		Shallow Concentrated Flow, scf Paved Kv= 20.3 fps
1.0	119	Total			



Subcatchment 2s: Ext DA 2

Hydrograph



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Hillcrest Farms

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

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Page 10

Hydrograph for Subcatchment 2s: 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	0.08	0.00	0.01	0.00
4.00	0.18	0.00	0.06	0.00
6.00	0.30	0.00	0.14	0.01
8.00	0.45	0.00	0.27	0.01
10.00	0.69	0.00	0.49	0.02
12.00	1.66	0.00	1.44	0.22
14.00	2.78	0.00	2.55	0.02
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	3.47	0.00	3.24	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

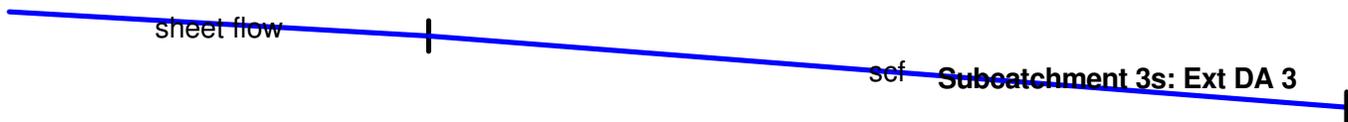
Summary for Subcatchment 3s: Ext DA 3

Runoff = 3.09 cfs @ 12.10 hrs, Volume= 9,743 cf, Depth= 2.59"
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"

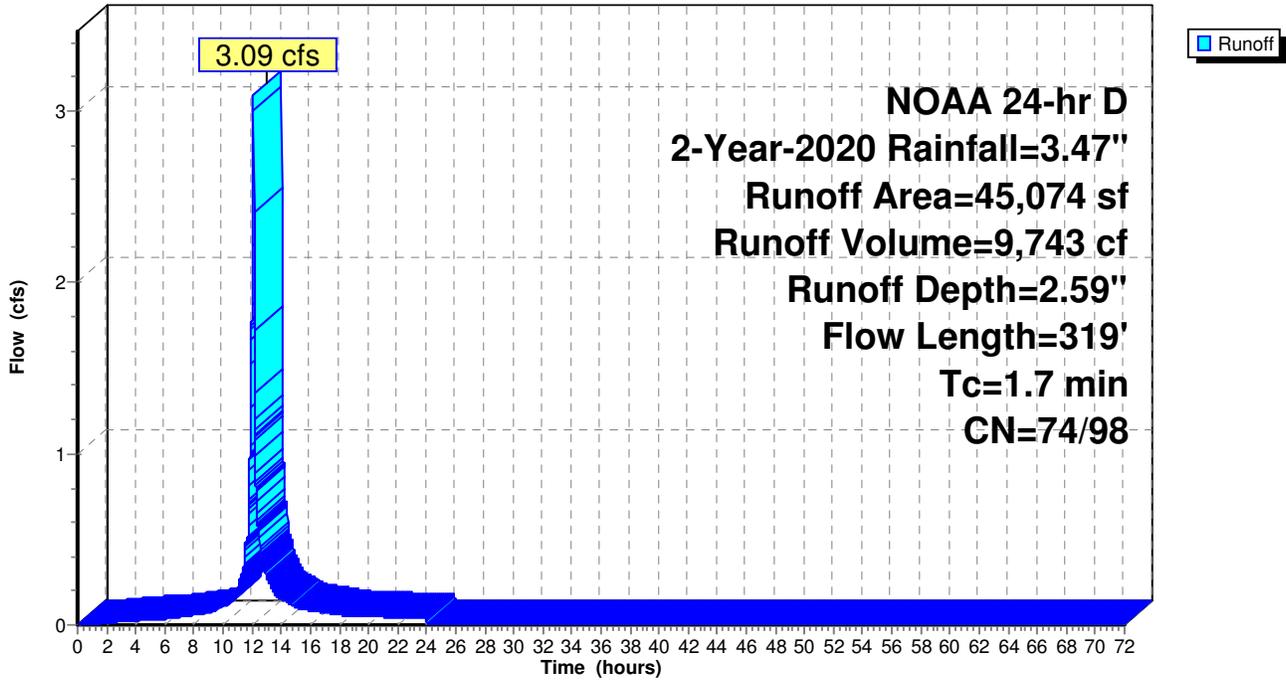
Area (sf)	CN	Description
30,716	98	Paved parking, HSG C
14,358	74	>75% Grass cover, Good, HSG C
45,074	90	Weighted Average
14,358	74	31.85% Pervious Area
30,716	98	68.15% Impervious Area

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



Subcatchment 3s: 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 3s: 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	0.08	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	0.21	1.44	1.79
14.00	2.78	0.77	2.55	0.15
16.00	3.02	0.92	2.79	0.09
18.00	3.17	1.02	2.94	0.06
20.00	3.29	1.10	3.06	0.05
22.00	3.39	1.16	3.15	0.04
24.00	3.47	1.22	3.24	0.04
26.00	3.47	1.22	3.24	0.00
28.00	3.47	1.22	3.24	0.00
30.00	3.47	1.22	3.24	0.00
32.00	3.47	1.22	3.24	0.00
34.00	3.47	1.22	3.24	0.00
36.00	3.47	1.22	3.24	0.00
38.00	3.47	1.22	3.24	0.00
40.00	3.47	1.22	3.24	0.00
42.00	3.47	1.22	3.24	0.00
44.00	3.47	1.22	3.24	0.00
46.00	3.47	1.22	3.24	0.00
48.00	3.47	1.22	3.24	0.00
50.00	3.47	1.22	3.24	0.00
52.00	3.47	1.22	3.24	0.00
54.00	3.47	1.22	3.24	0.00
56.00	3.47	1.22	3.24	0.00
58.00	3.47	1.22	3.24	0.00
60.00	3.47	1.22	3.24	0.00
62.00	3.47	1.22	3.24	0.00
64.00	3.47	1.22	3.24	0.00
66.00	3.47	1.22	3.24	0.00
68.00	3.47	1.22	3.24	0.00
70.00	3.47	1.22	3.24	0.00
72.00	3.47	1.22	3.24	0.00

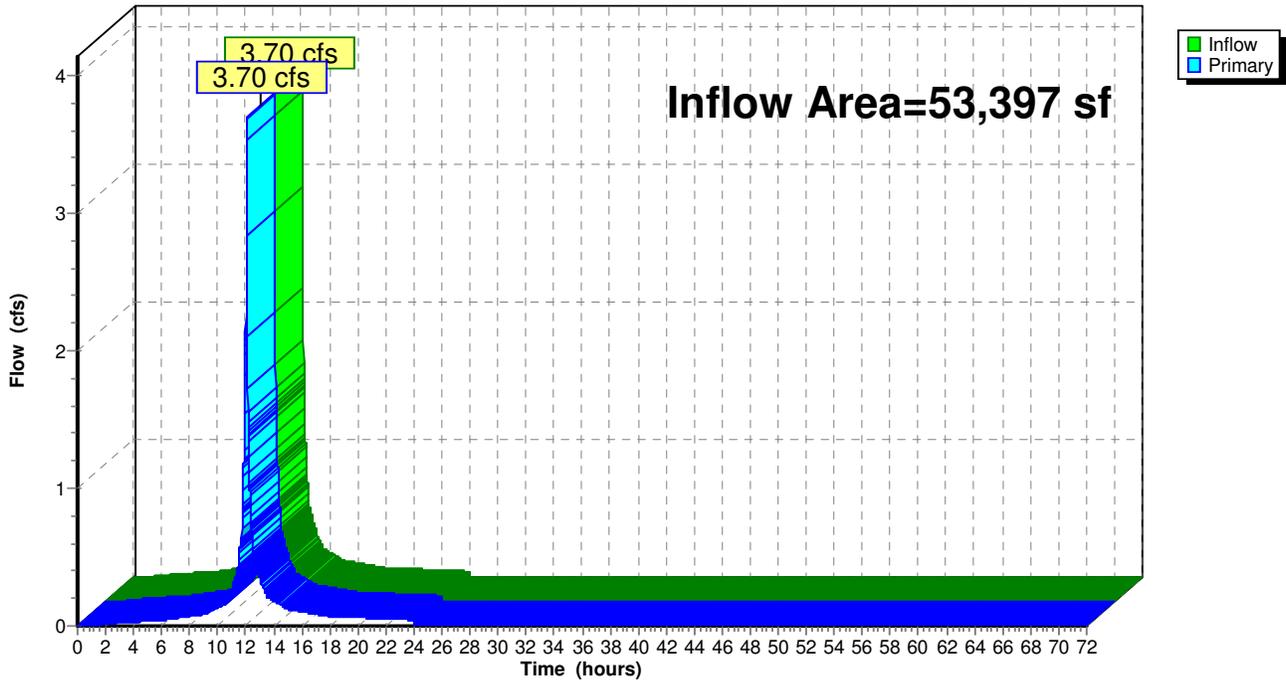
Summary for Link 4I: existing total discharge

Inflow Area = 53,397 sf, 68.55% Impervious, Inflow Depth = 2.64" for 2-Year-2020 event
Inflow = 3.70 cfs @ 12.10 hrs, Volume= 11,769 cf
Primary = 3.70 cfs @ 12.10 hrs, Volume= 11,769 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	0.06	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	0.08	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	2.14	0.00	2.14	63.00	0.00	0.00	0.00
13.00	0.35	0.00	0.35	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				

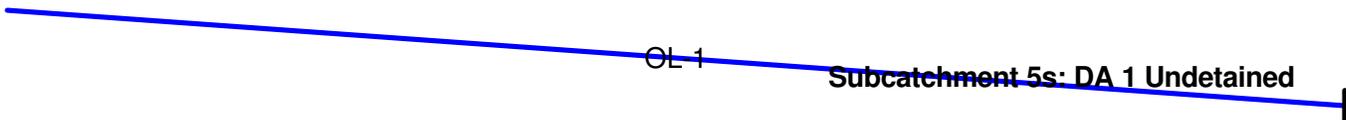
Summary for Subcatchment 5s: DA 1 Undetained

Runoff = 0.06 cfs @ 12.10 hrs, Volume= 185 cf, Depth= 1.51"
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"

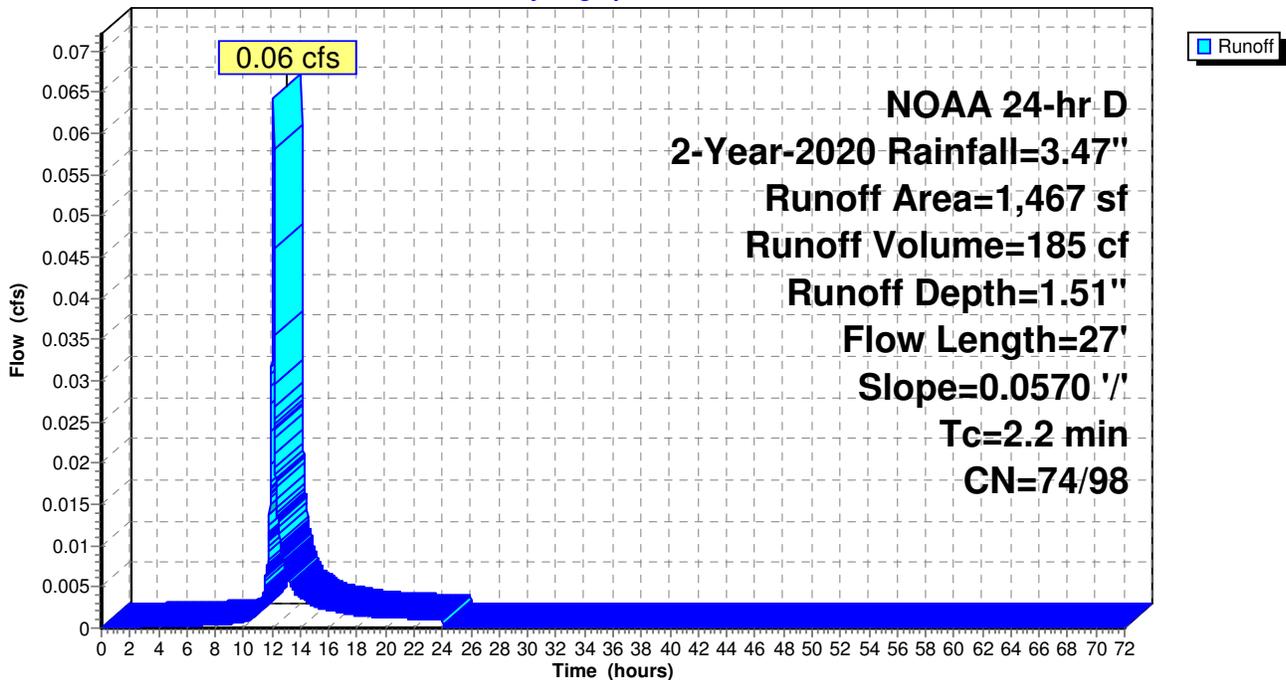
Area (sf)	CN	Description
1,255	74	>75% Grass cover, Good, HSG C
212	98	Unconnected roofs, HSG C
1,467	77	Weighted Average
1,255	74	85.55% Pervious Area
212	98	14.45% Impervious Area

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



Subcatchment 5s: 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 5s: 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	0.08	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	0.21	1.44	0.03
14.00	2.78	0.77	2.55	0.00
16.00	3.02	0.92	2.79	0.00
18.00	3.17	1.02	2.94	0.00
20.00	3.29	1.10	3.06	0.00
22.00	3.39	1.16	3.15	0.00
24.00	3.47	1.22	3.24	0.00
26.00	3.47	1.22	3.24	0.00
28.00	3.47	1.22	3.24	0.00
30.00	3.47	1.22	3.24	0.00
32.00	3.47	1.22	3.24	0.00
34.00	3.47	1.22	3.24	0.00
36.00	3.47	1.22	3.24	0.00
38.00	3.47	1.22	3.24	0.00
40.00	3.47	1.22	3.24	0.00
42.00	3.47	1.22	3.24	0.00
44.00	3.47	1.22	3.24	0.00
46.00	3.47	1.22	3.24	0.00
48.00	3.47	1.22	3.24	0.00
50.00	3.47	1.22	3.24	0.00
52.00	3.47	1.22	3.24	0.00
54.00	3.47	1.22	3.24	0.00
56.00	3.47	1.22	3.24	0.00
58.00	3.47	1.22	3.24	0.00
60.00	3.47	1.22	3.24	0.00
62.00	3.47	1.22	3.24	0.00
64.00	3.47	1.22	3.24	0.00
66.00	3.47	1.22	3.24	0.00
68.00	3.47	1.22	3.24	0.00
70.00	3.47	1.22	3.24	0.00
72.00	3.47	1.22	3.24	0.00

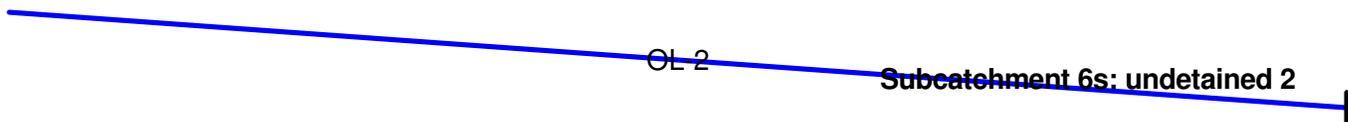
Summary for Subcatchment 6s: undetained 2

Runoff = 0.24 cfs @ 12.11 hrs, Volume= 730 cf, Depth= 2.08"
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"

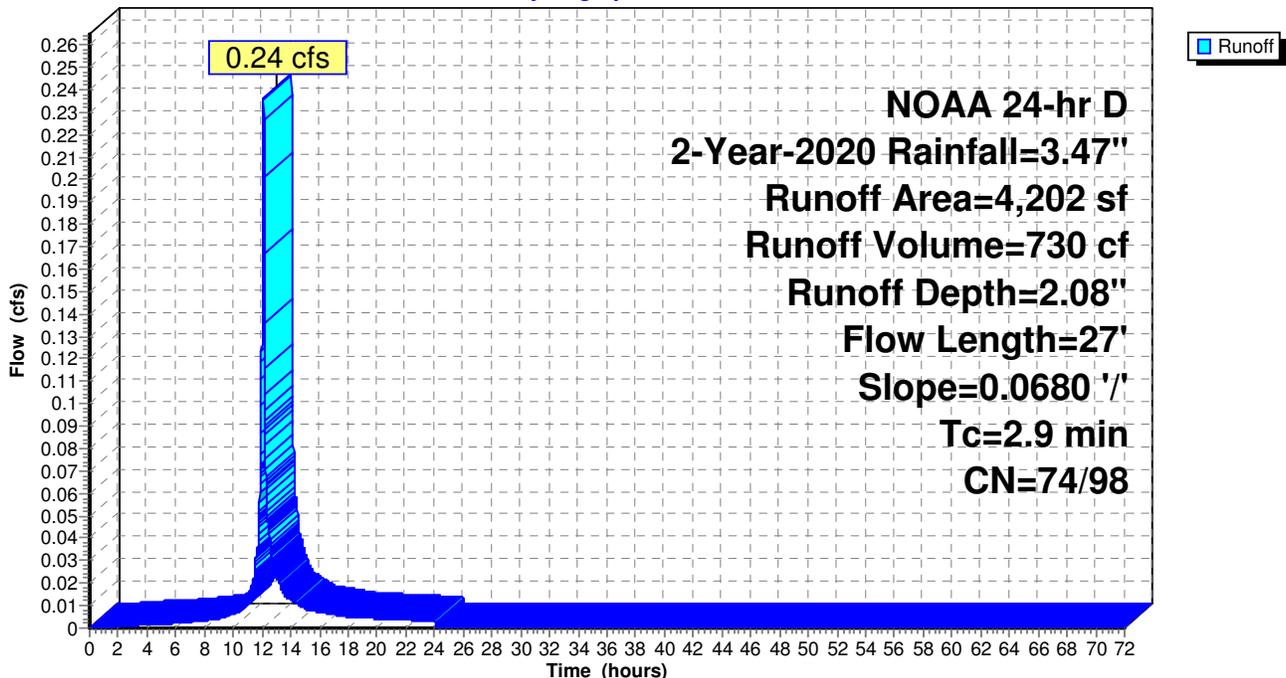
Area (sf)	CN	Description
1,802	98	Unconnected pavement, HSG C
2,400	74	>75% Grass cover, Good, HSG C
4,202	84	Weighted Average
2,400	74	57.12% Pervious Area
1,802	98	42.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	27	0.0680	0.15		Sheet Flow, OL-2 Grass: Dense n= 0.240 P2= 3.47"



Subcatchment 6s: undetained 2

Hydrograph



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Hydrograph for Subcatchment 6s: 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	0.08	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	0.21	1.44	0.13
14.00	2.78	0.77	2.55	0.01
16.00	3.02	0.92	2.79	0.01
18.00	3.17	1.02	2.94	0.00
20.00	3.29	1.10	3.06	0.00
22.00	3.39	1.16	3.15	0.00
24.00	3.47	1.22	3.24	0.00
26.00	3.47	1.22	3.24	0.00
28.00	3.47	1.22	3.24	0.00
30.00	3.47	1.22	3.24	0.00
32.00	3.47	1.22	3.24	0.00
34.00	3.47	1.22	3.24	0.00
36.00	3.47	1.22	3.24	0.00
38.00	3.47	1.22	3.24	0.00
40.00	3.47	1.22	3.24	0.00
42.00	3.47	1.22	3.24	0.00
44.00	3.47	1.22	3.24	0.00
46.00	3.47	1.22	3.24	0.00
48.00	3.47	1.22	3.24	0.00
50.00	3.47	1.22	3.24	0.00
52.00	3.47	1.22	3.24	0.00
54.00	3.47	1.22	3.24	0.00
56.00	3.47	1.22	3.24	0.00
58.00	3.47	1.22	3.24	0.00
60.00	3.47	1.22	3.24	0.00
62.00	3.47	1.22	3.24	0.00
64.00	3.47	1.22	3.24	0.00
66.00	3.47	1.22	3.24	0.00
68.00	3.47	1.22	3.24	0.00
70.00	3.47	1.22	3.24	0.00
72.00	3.47	1.22	3.24	0.00

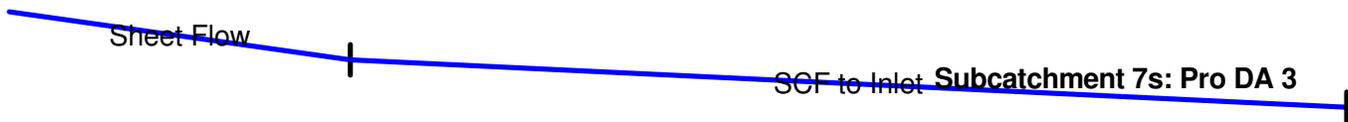
Summary for Subcatchment 7s: Pro DA 3

Runoff = 3.55 cfs @ 12.10 hrs, Volume= 11,403 cf, Depth= 2.86"
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"

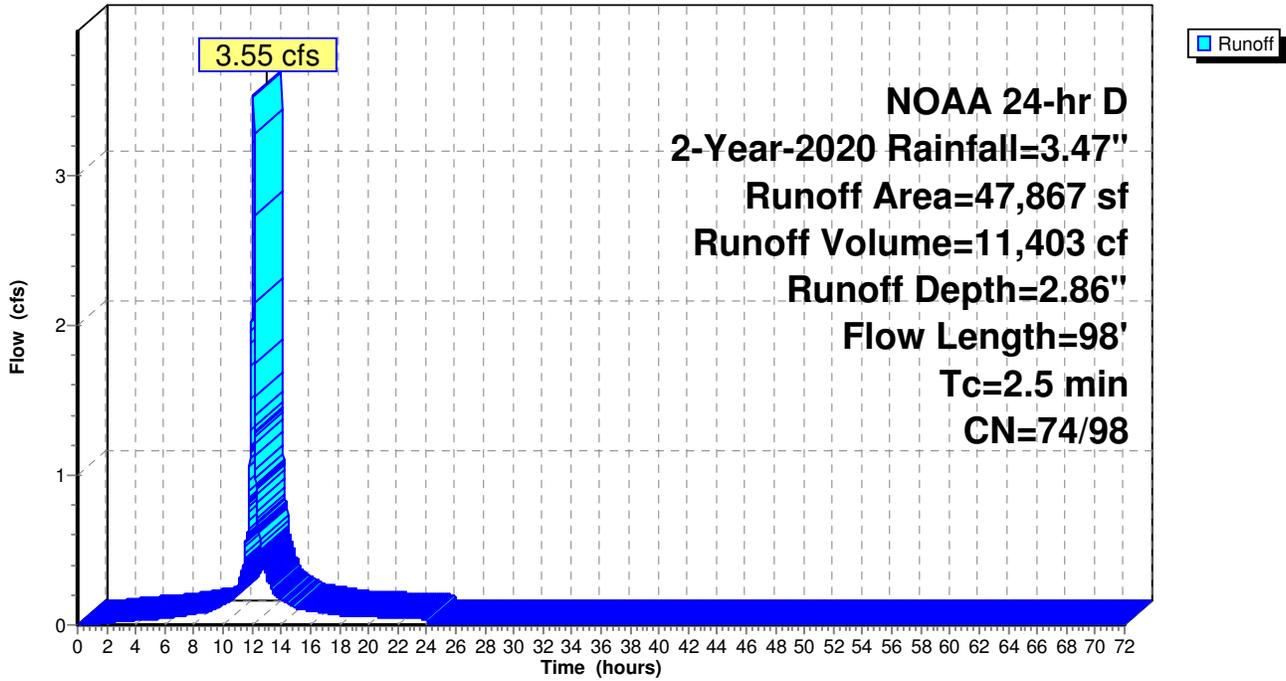
Area (sf)	CN	Description
38,903	98	Paved parking, HSG C
8,964	74	>75% Grass cover, Good, HSG C
47,867	94	Weighted Average
8,964	74	18.73% Pervious Area
38,903	98	81.27% Impervious Area

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



Subcatchment 7s: 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 7s: 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	0.08	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	0.21	1.44	2.08
14.00	2.78	0.77	2.55	0.17
16.00	3.02	0.92	2.79	0.10
18.00	3.17	1.02	2.94	0.06
20.00	3.29	1.10	3.06	0.06
22.00	3.39	1.16	3.15	0.05
24.00	3.47	1.22	3.24	0.04
26.00	3.47	1.22	3.24	0.00
28.00	3.47	1.22	3.24	0.00
30.00	3.47	1.22	3.24	0.00
32.00	3.47	1.22	3.24	0.00
34.00	3.47	1.22	3.24	0.00
36.00	3.47	1.22	3.24	0.00
38.00	3.47	1.22	3.24	0.00
40.00	3.47	1.22	3.24	0.00
42.00	3.47	1.22	3.24	0.00
44.00	3.47	1.22	3.24	0.00
46.00	3.47	1.22	3.24	0.00
48.00	3.47	1.22	3.24	0.00
50.00	3.47	1.22	3.24	0.00
52.00	3.47	1.22	3.24	0.00
54.00	3.47	1.22	3.24	0.00
56.00	3.47	1.22	3.24	0.00
58.00	3.47	1.22	3.24	0.00
60.00	3.47	1.22	3.24	0.00
62.00	3.47	1.22	3.24	0.00
64.00	3.47	1.22	3.24	0.00
66.00	3.47	1.22	3.24	0.00
68.00	3.47	1.22	3.24	0.00
70.00	3.47	1.22	3.24	0.00
72.00	3.47	1.22	3.24	0.00

Summary for Pond 8p: Detention System

Inflow Area = 47,867 sf, 81.27% Impervious, Inflow Depth = 2.86" for 2-Year-2020 event
 Inflow = 3.55 cfs @ 12.10 hrs, Volume= 11,403 cf
 Outflow = 1.61 cfs @ 12.16 hrs, Volume= 11,403 cf, Atten= 55%, Lag= 3.4 min
 Primary = 1.61 cfs @ 12.16 hrs, Volume= 11,403 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= 404.25' @ 12.16 hrs Surf.Area= 1,854 sf Storage= 1,680 cf

Plug-Flow detention time= 14.7 min calculated for 11,402 cf (100% of inflow)
 Center-of-Mass det. time= 14.7 min (777.1 - 762.3)

Volume	Invert	Avail.Storage	Storage Description
#1	403.00'	6,283 cf	48.0" Round Pipe Storage L= 500.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	403.00'	8.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	404.50'	36.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	405.50'	24.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

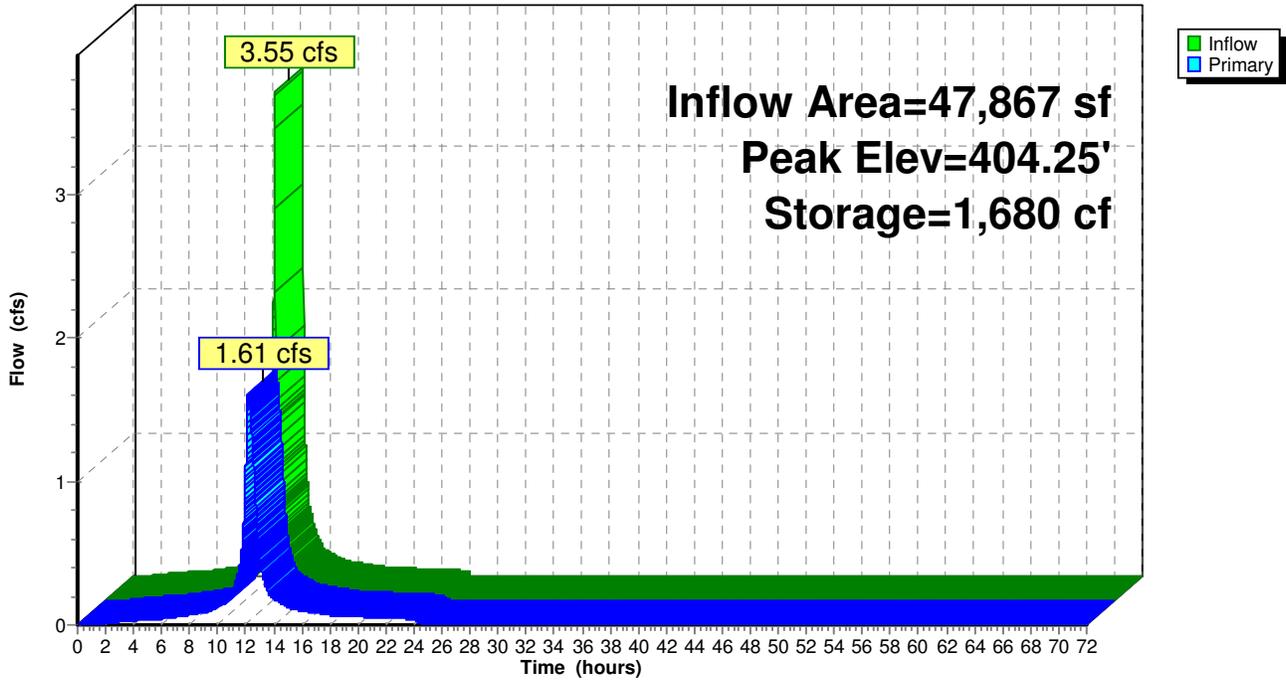
Primary OutFlow Max=1.61 cfs @ 12.16 hrs HW=404.25' (Free Discharge)

- 1=Orifice/Grate (Orifice Controls 1.61 cfs @ 4.61 fps)
- 2=Orifice/Grate (Controls 0.00 cfs)
- 3=Orifice/Grate (Controls 0.00 cfs)



Pond 8p: Detention System

Hydrograph



Hydrograph for Pond 8p: Detention System

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	403.00	0.00
2.00	0.01	13	403.04	0.01
4.00	0.03	35	403.09	0.03
6.00	0.04	48	403.11	0.04
8.00	0.07	71	403.14	0.07
10.00	0.14	113	403.19	0.13
12.00	2.08	833	403.76	1.10
14.00	0.17	150	403.24	0.18
16.00	0.10	92	403.17	0.10
18.00	0.06	69	403.14	0.07
20.00	0.06	59	403.13	0.06
22.00	0.05	53	403.12	0.05
24.00	0.04	46	403.11	0.04
26.00	0.00	1	403.00	0.00
28.00	0.00	0	403.00	0.00
30.00	0.00	0	403.00	0.00
32.00	0.00	0	403.00	0.00
34.00	0.00	0	403.00	0.00
36.00	0.00	0	403.00	0.00
38.00	0.00	0	403.00	0.00
40.00	0.00	0	403.00	0.00
42.00	0.00	0	403.00	0.00
44.00	0.00	0	403.00	0.00
46.00	0.00	0	403.00	0.00
48.00	0.00	0	403.00	0.00
50.00	0.00	0	403.00	0.00
52.00	0.00	0	403.00	0.00
54.00	0.00	0	403.00	0.00
56.00	0.00	0	403.00	0.00
58.00	0.00	0	403.00	0.00
60.00	0.00	0	403.00	0.00
62.00	0.00	0	403.00	0.00
64.00	0.00	0	403.00	0.00
66.00	0.00	0	403.00	0.00
68.00	0.00	0	403.00	0.00
70.00	0.00	0	403.00	0.00
72.00	0.00	0	403.00	0.00

Stage-Discharge for Pond 8p: Detention System

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
403.00	0.00	404.02	1.39	405.04	4.51	406.06	8.68
403.02	0.00	404.04	1.41	405.06	4.58	406.08	8.76
403.04	0.01	404.06	1.43	405.08	4.65	406.10	8.83
403.06	0.01	404.08	1.45	405.10	4.72	406.12	8.91
403.08	0.02	404.10	1.47	405.12	4.78	406.14	8.98
403.10	0.04	404.12	1.49	405.14	4.84	406.16	9.06
403.12	0.05	404.14	1.51	405.16	4.91	406.18	9.13
403.14	0.07	404.16	1.53	405.18	4.97	406.20	9.20
403.16	0.09	404.18	1.55	405.20	5.03	406.22	9.27
403.18	0.11	404.20	1.56	405.22	5.09	406.24	9.34
403.20	0.13	404.22	1.58	405.24	5.15	406.26	9.41
403.22	0.16	404.24	1.60	405.26	5.21	406.28	9.48
403.24	0.19	404.26	1.62	405.28	5.26	406.30	9.54
403.26	0.22	404.28	1.64	405.30	5.32	406.32	9.61
403.28	0.25	404.30	1.65	405.32	5.38	406.34	9.68
403.30	0.28	404.32	1.67	405.34	5.43	406.36	9.74
403.32	0.32	404.34	1.69	405.36	5.48	406.38	9.81
403.34	0.36	404.36	1.70	405.38	5.54	406.40	9.87
403.36	0.39	404.38	1.72	405.40	5.59	406.42	9.93
403.38	0.43	404.40	1.74	405.42	5.64	406.44	10.00
403.40	0.47	404.42	1.75	405.44	5.70	406.46	10.06
403.42	0.51	404.44	1.77	405.46	5.75	406.48	10.12
403.44	0.55	404.46	1.78	405.48	5.80	406.50	10.18
403.46	0.59	404.48	1.80	405.50	5.85	406.52	10.25
403.48	0.63	404.50	1.82	405.52	5.92	406.54	10.31
403.50	0.68	404.52	1.86	405.54	6.00	406.56	10.37
403.52	0.72	404.54	1.92	405.56	6.09	406.58	10.43
403.54	0.76	404.56	2.00	405.58	6.19	406.60	10.49
403.56	0.80	404.58	2.09	405.60	6.30	406.62	10.55
403.58	0.84	404.60	2.20	405.62	6.41	406.64	10.61
403.60	0.87	404.62	2.31	405.64	6.52	406.66	10.66
403.62	0.91	404.64	2.43	405.66	6.65	406.68	10.72
403.64	0.94	404.66	2.55	405.68	6.77	406.70	10.78
403.66	0.96	404.68	2.69	405.70	6.90	406.72	10.84
403.68	0.99	404.70	2.83	405.72	7.04	406.74	10.89
403.70	1.02	404.72	2.97	405.74	7.17	406.76	10.95
403.72	1.05	404.74	3.13	405.76	7.31	406.78	11.01
403.74	1.07	404.76	3.27	405.78	7.43	406.80	11.06
403.76	1.10	404.78	3.40	405.80	7.54	406.82	11.12
403.78	1.12	404.80	3.51	405.82	7.64	406.84	11.17
403.80	1.15	404.82	3.61	405.84	7.74	406.86	11.23
403.82	1.17	404.84	3.71	405.86	7.84	406.88	11.28
403.84	1.20	404.86	3.81	405.88	7.93	406.90	11.34
403.86	1.22	404.88	3.89	405.90	8.02	406.92	11.39
403.88	1.24	404.90	3.98	405.92	8.11	406.94	11.45
403.90	1.27	404.92	4.06	405.94	8.20	406.96	11.50
403.92	1.29	404.94	4.14	405.96	8.28	406.98	11.55
403.94	1.31	404.96	4.22	405.98	8.36	407.00	11.61
403.96	1.33	404.98	4.30	406.00	8.45		
403.98	1.35	405.00	4.37	406.02	8.53		
404.00	1.37	405.02	4.44	406.04	8.60		

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

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
403.00	0	405.55	4,228
403.05	15	405.60	4,323
403.10	42	405.65	4,418
403.15	77	405.70	4,512
403.20	117	405.75	4,606
403.25	164	405.80	4,698
403.30	214	405.85	4,789
403.35	269	405.90	4,879
403.40	327	405.95	4,968
403.45	389	406.00	5,055
403.50	453	406.05	5,141
403.55	521	406.10	5,225
403.60	591	406.15	5,308
403.65	664	406.20	5,389
403.70	739	406.25	5,468
403.75	816	406.30	5,545
403.80	895	406.35	5,620
403.85	976	406.40	5,692
403.90	1,058	406.45	5,762
403.95	1,143	406.50	5,830
404.00	1,228	406.55	5,895
404.05	1,316	406.60	5,956
404.10	1,404	406.65	6,014
404.15	1,494	406.70	6,069
404.20	1,585	406.75	6,120
404.25	1,678	406.80	6,166
404.30	1,771	406.85	6,207
404.35	1,865	406.90	6,241
404.40	1,960	406.95	6,268
404.45	2,056	407.00	6,283
404.50	2,152		
404.55	2,249		
404.60	2,347		
404.65	2,445		
404.70	2,544		
404.75	2,643		
404.80	2,742		
404.85	2,842		
404.90	2,942		
404.95	3,042		
405.00	3,142		
405.05	3,242		
405.10	3,342		
405.15	3,441		
405.20	3,541		
405.25	3,640		
405.30	3,739		
405.35	3,838		
405.40	3,936		
405.45	4,034		
405.50	4,131		

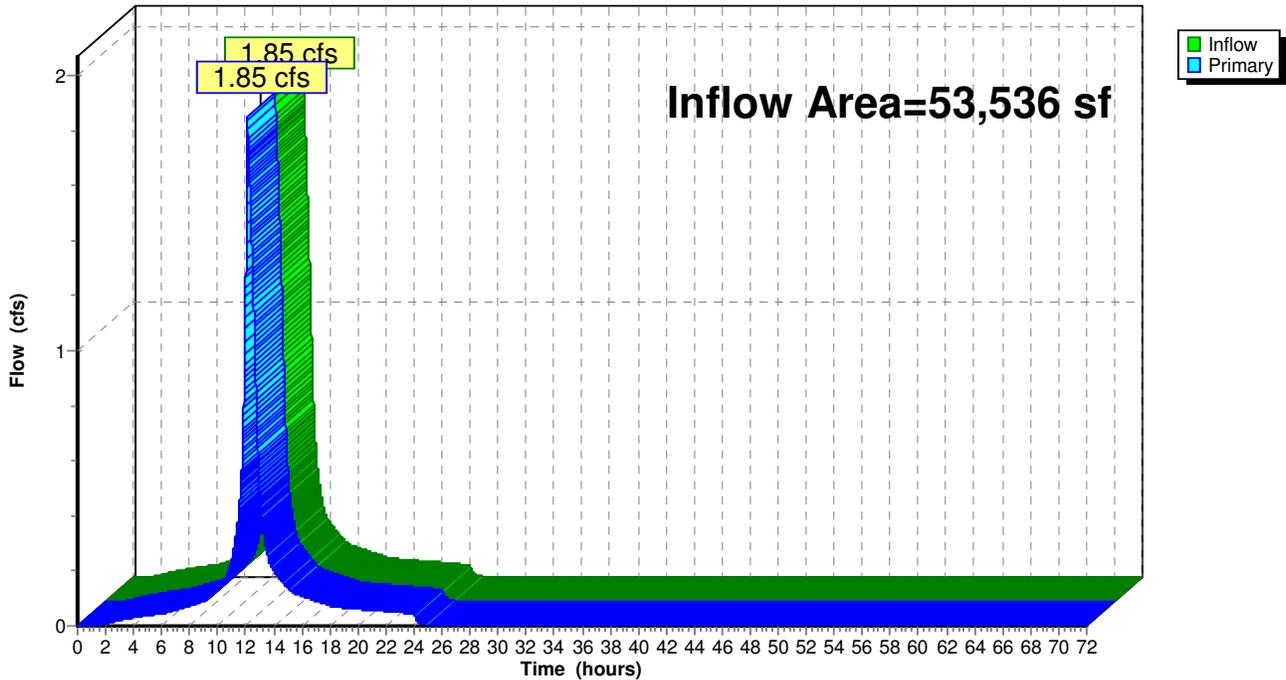
Summary for Link 9I: Overall discharge

Inflow Area = 53,536 sf, 76.43% Impervious, Inflow Depth = 2.76" for 2-Year-2020 event
Inflow = 1.85 cfs @ 12.12 hrs, Volume= 12,318 cf
Primary = 1.85 cfs @ 12.12 hrs, Volume= 12,318 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	0.01	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	0.06	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	0.14	0.00	0.14	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	1.26	0.00	1.26	63.00	0.00	0.00	0.00
13.00	0.49	0.00	0.49	64.00	0.00	0.00	0.00
14.00	0.20	0.00	0.20	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	0.07	0.00	0.07	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	0.04	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				

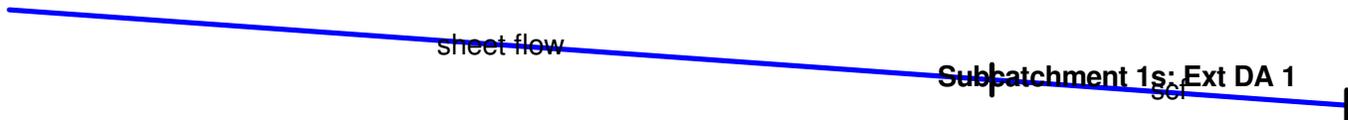
Summary for Subcatchment 1s: Ext DA 1

Runoff = 0.41 cfs @ 12.13 hrs, Volume= 1,387 cf, Depth= 4.36"
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"

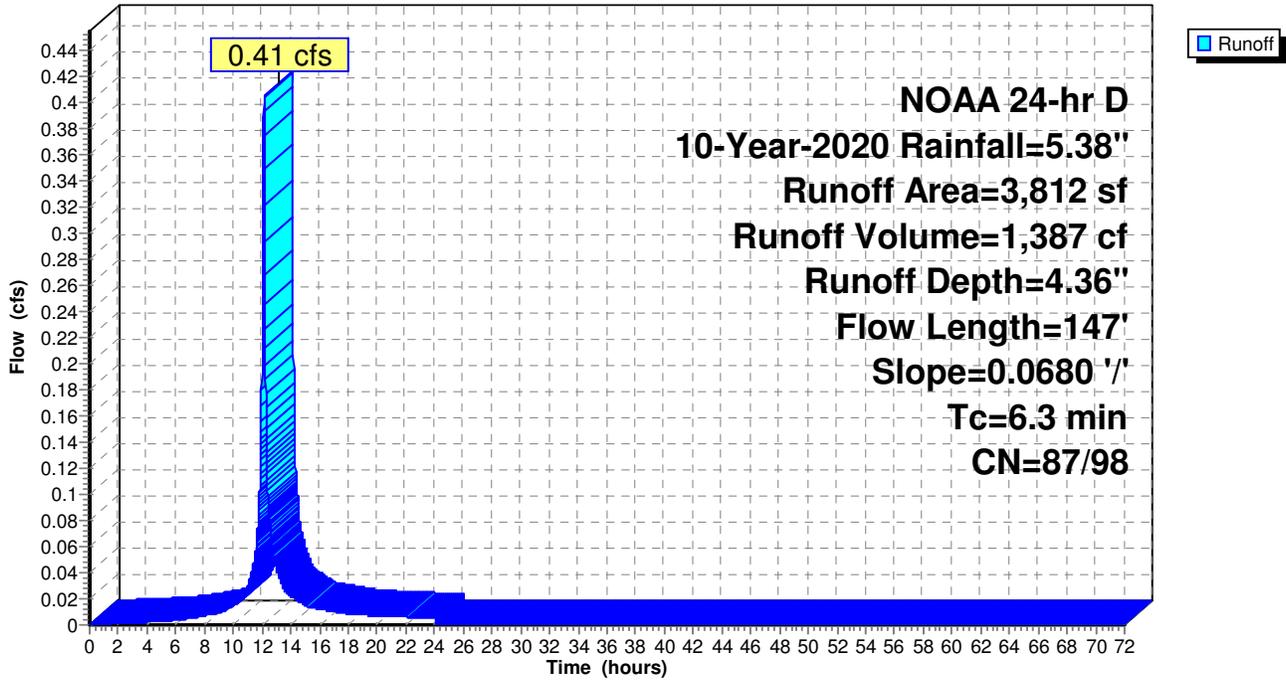
Area (sf)	CN	Description
1,374	98	Paved parking, HSG C
2,438	87	Dirt roads, HSG C
3,812	91	Weighted Average
2,438	87	63.96% Pervious Area
1,374	98	36.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	108	0.0680	0.29		Sheet Flow, sheet flow Grass: Short n= 0.150 P2= 3.47"
0.2	39	0.0680	4.20		Shallow Concentrated Flow, scf Unpaved Kv= 16.1 fps
6.3	147	Total			



Subcatchment 1s: Ext DA 1

Hydrograph



Hydrograph for Subcatchment 1s: 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	0.13	0.00	0.03	0.00
4.00	0.28	0.00	0.13	0.00
6.00	0.46	0.02	0.28	0.00
8.00	0.70	0.08	0.50	0.01
10.00	1.07	0.26	0.86	0.02
12.00	2.58	1.38	2.35	0.22
14.00	4.31	2.93	4.08	0.02
16.00	4.68	3.27	4.45	0.01
18.00	4.92	3.49	4.68	0.01
20.00	5.10	3.66	4.86	0.01
22.00	5.25	3.80	5.01	0.01
24.00	5.38	3.93	5.14	0.01
26.00	5.38	3.93	5.14	0.00
28.00	5.38	3.93	5.14	0.00
30.00	5.38	3.93	5.14	0.00
32.00	5.38	3.93	5.14	0.00
34.00	5.38	3.93	5.14	0.00
36.00	5.38	3.93	5.14	0.00
38.00	5.38	3.93	5.14	0.00
40.00	5.38	3.93	5.14	0.00
42.00	5.38	3.93	5.14	0.00
44.00	5.38	3.93	5.14	0.00
46.00	5.38	3.93	5.14	0.00
48.00	5.38	3.93	5.14	0.00
50.00	5.38	3.93	5.14	0.00
52.00	5.38	3.93	5.14	0.00
54.00	5.38	3.93	5.14	0.00
56.00	5.38	3.93	5.14	0.00
58.00	5.38	3.93	5.14	0.00
60.00	5.38	3.93	5.14	0.00
62.00	5.38	3.93	5.14	0.00
64.00	5.38	3.93	5.14	0.00
66.00	5.38	3.93	5.14	0.00
68.00	5.38	3.93	5.14	0.00
70.00	5.38	3.93	5.14	0.00
72.00	5.38	3.93	5.14	0.00

Summary for Subcatchment 2s: Ext DA 2

Runoff = 0.58 cfs @ 12.09 hrs, Volume= 1,933 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"

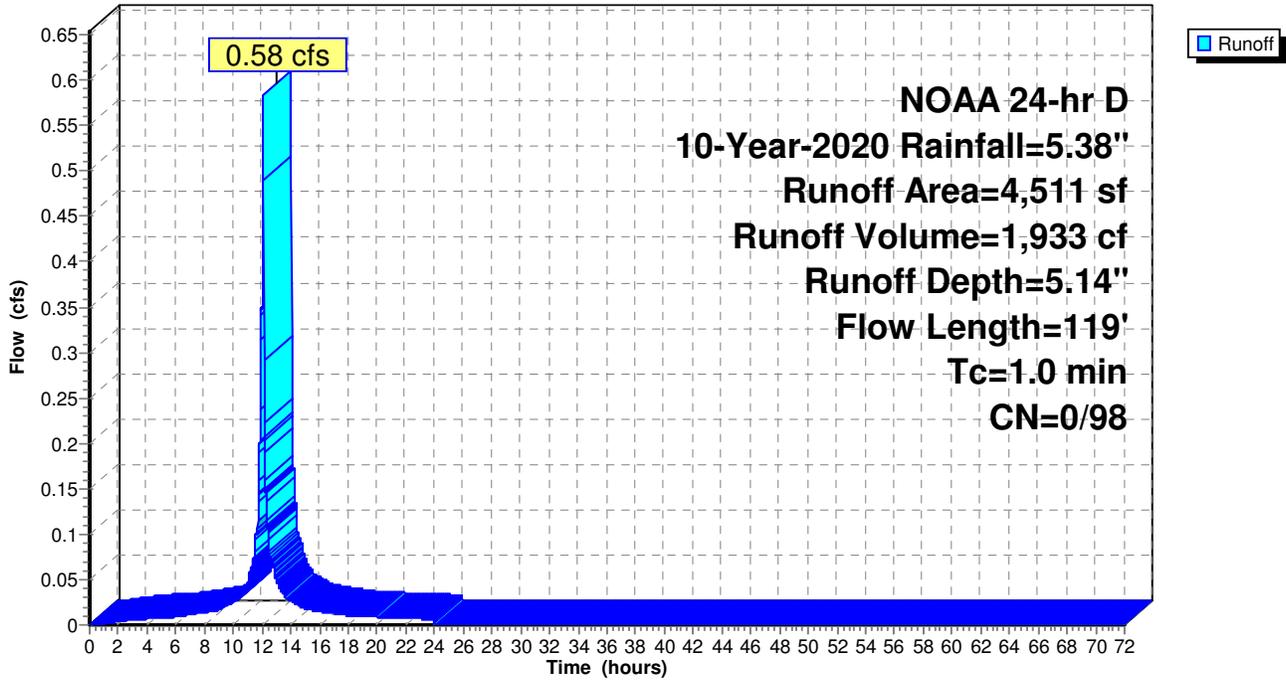
Area (sf)	CN	Description
4,185	98	Paved parking, HSG C
326	98	Paved parking, HSG C
4,511	98	Weighted Average
4,511	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	104	0.0385	1.88		Sheet Flow, sheet flow Smooth surfaces n= 0.011 P2= 3.47"
0.1	15	0.0150	2.49		Shallow Concentrated Flow, scf Paved Kv= 20.3 fps
1.0	119	Total			



Subcatchment 2s: Ext DA 2

Hydrograph



Hydrograph for Subcatchment 2s: 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	0.13	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	0.03
12.00	2.58	0.00	2.35	0.35
14.00	4.31	0.00	4.08	0.03
16.00	4.68	0.00	4.45	0.02
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	5.38	0.00	5.14	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

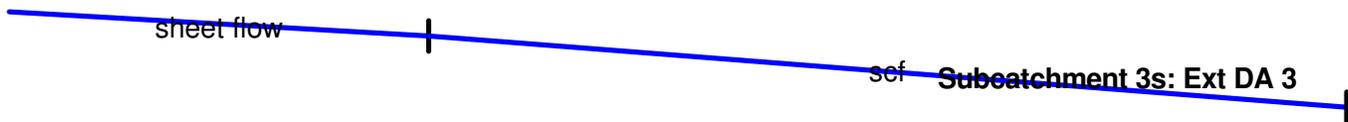
Summary for Subcatchment 3s: Ext DA 3

Runoff = 5.16 cfs @ 12.10 hrs, Volume= 16,359 cf, Depth= 4.36"
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"

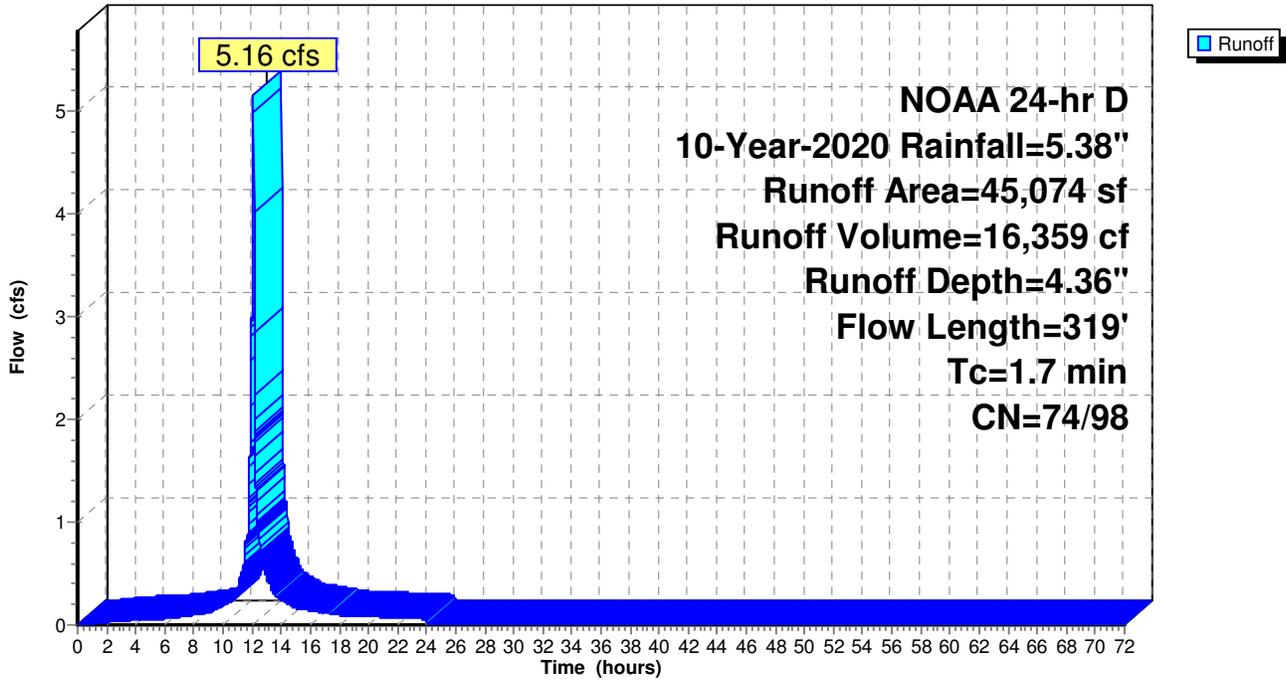
Area (sf)	CN	Description
30,716	98	Paved parking, HSG C
14,358	74	>75% Grass cover, Good, HSG C
45,074	90	Weighted Average
14,358	74	31.85% Pervious Area
30,716	98	68.15% Impervious Area

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



Subcatchment 3s: Ext DA 3

Hydrograph



Hydrograph for Subcatchment 3s: 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	0.13	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	0.03	0.86	0.19
12.00	2.58	0.65	2.35	3.01
14.00	4.31	1.83	4.08	0.25
16.00	4.68	2.11	4.45	0.14
18.00	4.92	2.30	4.68	0.09
20.00	5.10	2.44	4.86	0.08
22.00	5.25	2.57	5.01	0.07
24.00	5.38	2.67	5.14	0.06
26.00	5.38	2.67	5.14	0.00
28.00	5.38	2.67	5.14	0.00
30.00	5.38	2.67	5.14	0.00
32.00	5.38	2.67	5.14	0.00
34.00	5.38	2.67	5.14	0.00
36.00	5.38	2.67	5.14	0.00
38.00	5.38	2.67	5.14	0.00
40.00	5.38	2.67	5.14	0.00
42.00	5.38	2.67	5.14	0.00
44.00	5.38	2.67	5.14	0.00
46.00	5.38	2.67	5.14	0.00
48.00	5.38	2.67	5.14	0.00
50.00	5.38	2.67	5.14	0.00
52.00	5.38	2.67	5.14	0.00
54.00	5.38	2.67	5.14	0.00
56.00	5.38	2.67	5.14	0.00
58.00	5.38	2.67	5.14	0.00
60.00	5.38	2.67	5.14	0.00
62.00	5.38	2.67	5.14	0.00
64.00	5.38	2.67	5.14	0.00
66.00	5.38	2.67	5.14	0.00
68.00	5.38	2.67	5.14	0.00
70.00	5.38	2.67	5.14	0.00
72.00	5.38	2.67	5.14	0.00

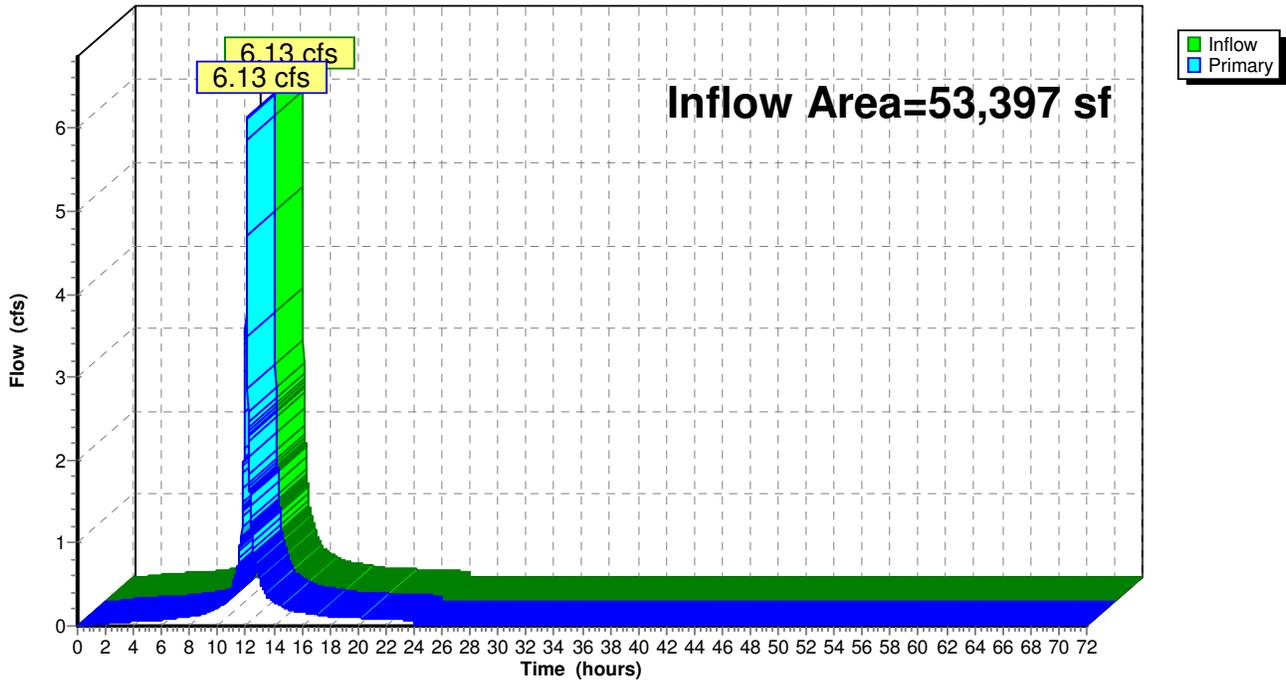
Summary for Link 4I: existing total discharge

Inflow Area = 53,397 sf, 68.55% Impervious, Inflow Depth = 4.42" for 10-Year-2020 event
Inflow = 6.13 cfs @ 12.10 hrs, Volume= 19,679 cf
Primary = 6.13 cfs @ 12.10 hrs, Volume= 19,679 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	3.57	0.00	3.57	63.00	0.00	0.00	0.00
13.00	0.58	0.00	0.58	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				

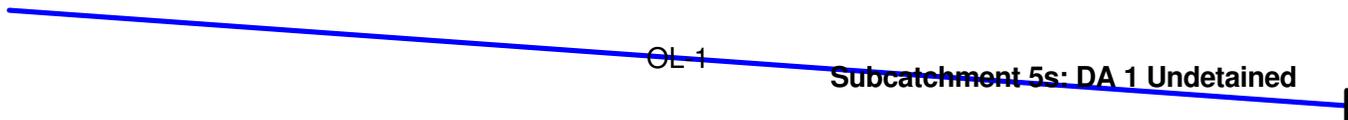
Summary for Subcatchment 5s: DA 1 Undetained

Runoff = 0.13 cfs @ 12.10 hrs, Volume= 370 cf, Depth= 3.03"
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
NOAA 24-hr D 10-Year-2020 Rainfall=5.38"

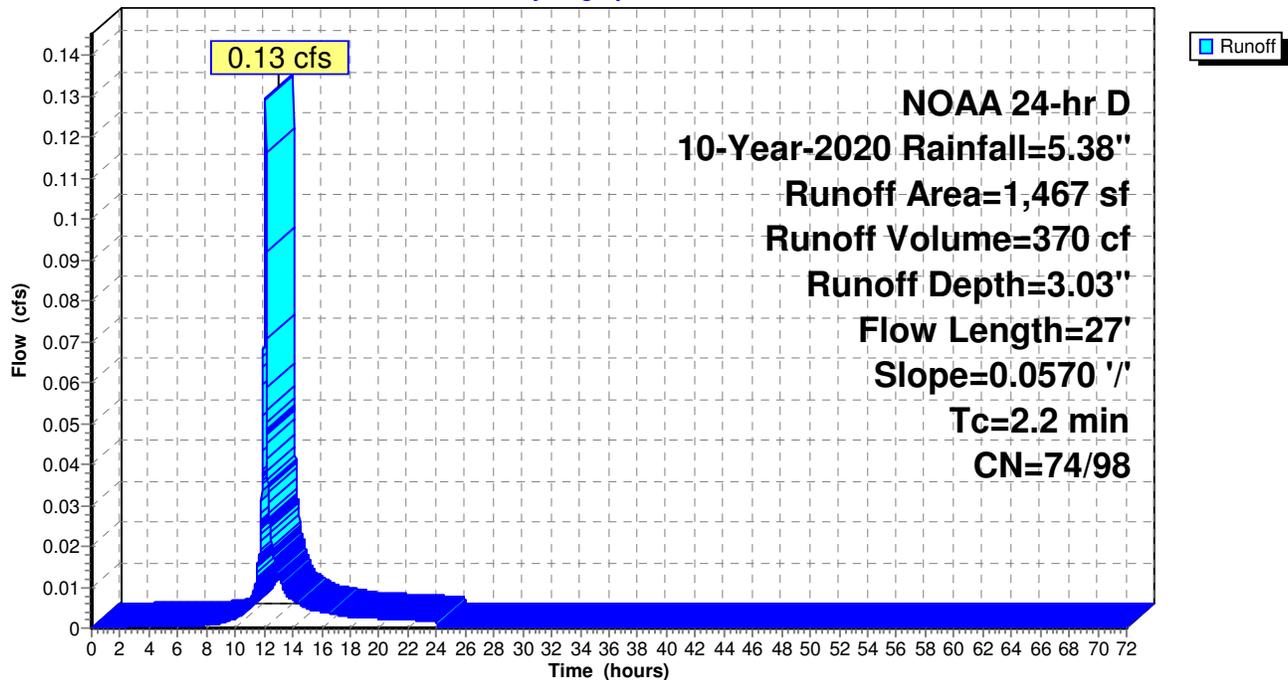
Area (sf)	CN	Description
1,255	74	>75% Grass cover, Good, HSG C
212	98	Unconnected roofs, HSG C
1,467	77	Weighted Average
1,255	74	85.55% Pervious Area
212	98	14.45% Impervious Area

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



Subcatchment 5s: DA 1 Undetained

Hydrograph



Hydrograph for Subcatchment 5s: 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	0.13	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	0.03	0.86	0.00
12.00	2.58	0.65	2.35	0.07
14.00	4.31	1.83	4.08	0.01
16.00	4.68	2.11	4.45	0.00
18.00	4.92	2.30	4.68	0.00
20.00	5.10	2.44	4.86	0.00
22.00	5.25	2.57	5.01	0.00
24.00	5.38	2.67	5.14	0.00
26.00	5.38	2.67	5.14	0.00
28.00	5.38	2.67	5.14	0.00
30.00	5.38	2.67	5.14	0.00
32.00	5.38	2.67	5.14	0.00
34.00	5.38	2.67	5.14	0.00
36.00	5.38	2.67	5.14	0.00
38.00	5.38	2.67	5.14	0.00
40.00	5.38	2.67	5.14	0.00
42.00	5.38	2.67	5.14	0.00
44.00	5.38	2.67	5.14	0.00
46.00	5.38	2.67	5.14	0.00
48.00	5.38	2.67	5.14	0.00
50.00	5.38	2.67	5.14	0.00
52.00	5.38	2.67	5.14	0.00
54.00	5.38	2.67	5.14	0.00
56.00	5.38	2.67	5.14	0.00
58.00	5.38	2.67	5.14	0.00
60.00	5.38	2.67	5.14	0.00
62.00	5.38	2.67	5.14	0.00
64.00	5.38	2.67	5.14	0.00
66.00	5.38	2.67	5.14	0.00
68.00	5.38	2.67	5.14	0.00
70.00	5.38	2.67	5.14	0.00
72.00	5.38	2.67	5.14	0.00

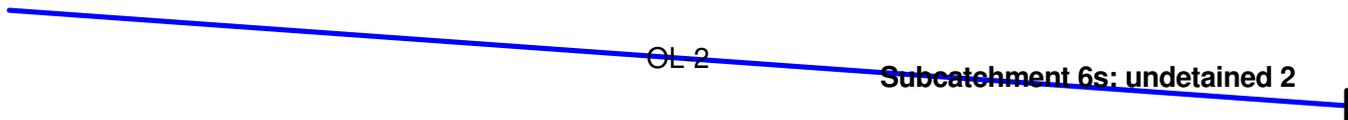
Summary for Subcatchment 6s: undetained 2

Runoff = 0.42 cfs @ 12.11 hrs, Volume= 1,306 cf, Depth= 3.73"
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"

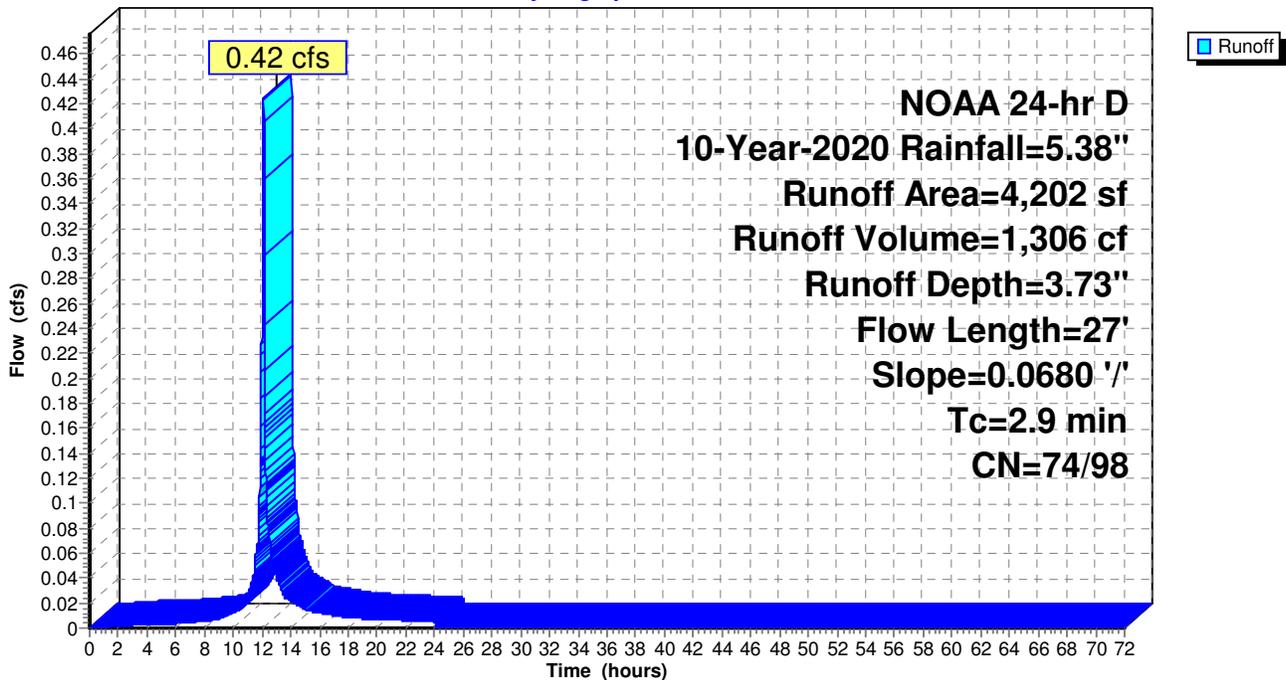
Area (sf)	CN	Description
1,802	98	Unconnected pavement, HSG C
2,400	74	>75% Grass cover, Good, HSG C
4,202	84	Weighted Average
2,400	74	57.12% Pervious Area
1,802	98	42.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	27	0.0680	0.15		Sheet Flow, OL-2 Grass: Dense n= 0.240 P2= 3.47"



Subcatchment 6s: undetained 2

Hydrograph



Hydrograph for Subcatchment 6s: 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	0.13	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	0.01
10.00	1.07	0.03	0.86	0.01
12.00	2.58	0.65	2.35	0.24
14.00	4.31	1.83	4.08	0.02
16.00	4.68	2.11	4.45	0.01
18.00	4.92	2.30	4.68	0.01
20.00	5.10	2.44	4.86	0.01
22.00	5.25	2.57	5.01	0.01
24.00	5.38	2.67	5.14	0.01
26.00	5.38	2.67	5.14	0.00
28.00	5.38	2.67	5.14	0.00
30.00	5.38	2.67	5.14	0.00
32.00	5.38	2.67	5.14	0.00
34.00	5.38	2.67	5.14	0.00
36.00	5.38	2.67	5.14	0.00
38.00	5.38	2.67	5.14	0.00
40.00	5.38	2.67	5.14	0.00
42.00	5.38	2.67	5.14	0.00
44.00	5.38	2.67	5.14	0.00
46.00	5.38	2.67	5.14	0.00
48.00	5.38	2.67	5.14	0.00
50.00	5.38	2.67	5.14	0.00
52.00	5.38	2.67	5.14	0.00
54.00	5.38	2.67	5.14	0.00
56.00	5.38	2.67	5.14	0.00
58.00	5.38	2.67	5.14	0.00
60.00	5.38	2.67	5.14	0.00
62.00	5.38	2.67	5.14	0.00
64.00	5.38	2.67	5.14	0.00
66.00	5.38	2.67	5.14	0.00
68.00	5.38	2.67	5.14	0.00
70.00	5.38	2.67	5.14	0.00
72.00	5.38	2.67	5.14	0.00

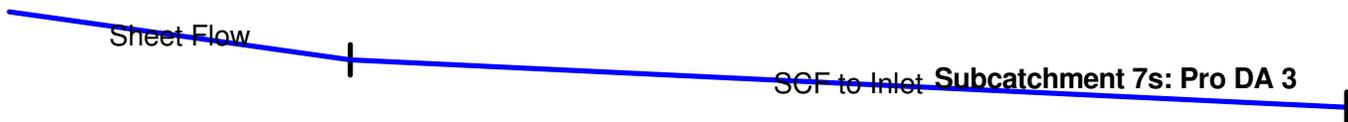
Summary for Subcatchment 7s: Pro DA 3

Runoff = 5.74 cfs @ 12.10 hrs, Volume= 18,667 cf, Depth= 4.68"
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"

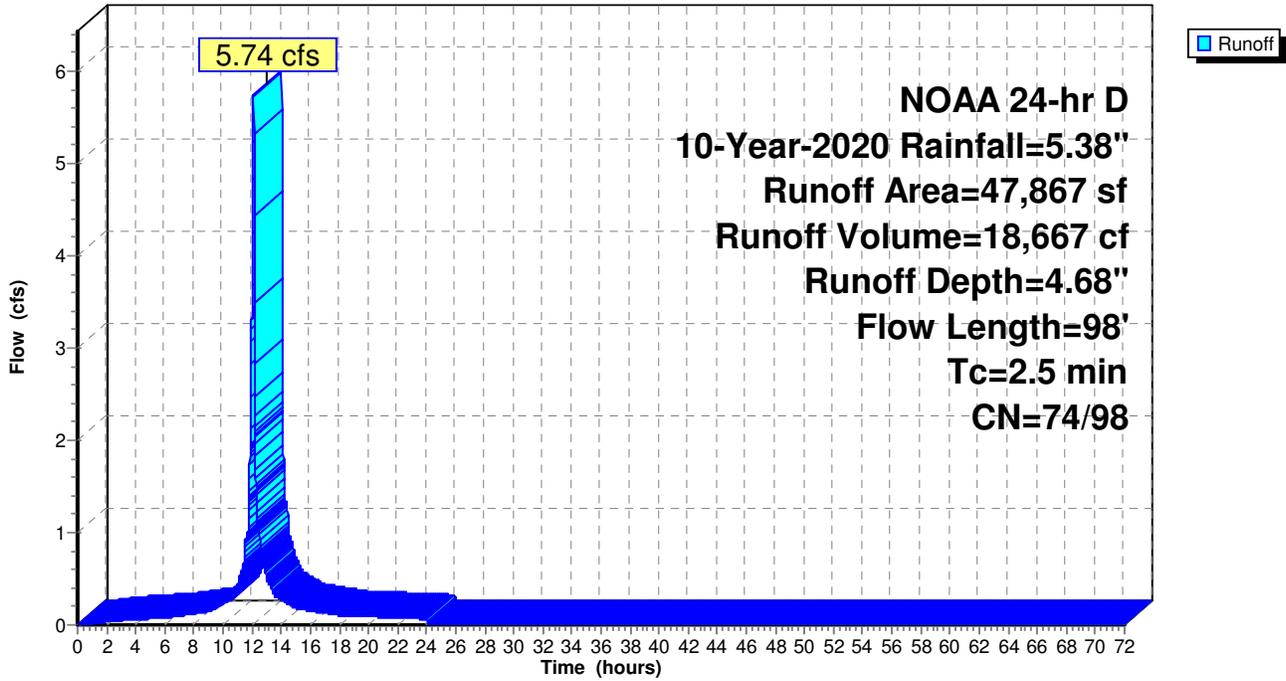
Area (sf)	CN	Description
38,903	98	Paved parking, HSG C
8,964	74	>75% Grass cover, Good, HSG C
47,867	94	Weighted Average
8,964	74	18.73% Pervious Area
38,903	98	81.27% Impervious Area

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



Subcatchment 7s: Pro DA 3

Hydrograph



Hydrograph for Subcatchment 7s: 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	0.13	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	0.03	0.86	0.23
12.00	2.58	0.65	2.35	3.38
14.00	4.31	1.83	4.08	0.27
16.00	4.68	2.11	4.45	0.15
18.00	4.92	2.30	4.68	0.10
20.00	5.10	2.44	4.86	0.09
22.00	5.25	2.57	5.01	0.08
24.00	5.38	2.67	5.14	0.06
26.00	5.38	2.67	5.14	0.00
28.00	5.38	2.67	5.14	0.00
30.00	5.38	2.67	5.14	0.00
32.00	5.38	2.67	5.14	0.00
34.00	5.38	2.67	5.14	0.00
36.00	5.38	2.67	5.14	0.00
38.00	5.38	2.67	5.14	0.00
40.00	5.38	2.67	5.14	0.00
42.00	5.38	2.67	5.14	0.00
44.00	5.38	2.67	5.14	0.00
46.00	5.38	2.67	5.14	0.00
48.00	5.38	2.67	5.14	0.00
50.00	5.38	2.67	5.14	0.00
52.00	5.38	2.67	5.14	0.00
54.00	5.38	2.67	5.14	0.00
56.00	5.38	2.67	5.14	0.00
58.00	5.38	2.67	5.14	0.00
60.00	5.38	2.67	5.14	0.00
62.00	5.38	2.67	5.14	0.00
64.00	5.38	2.67	5.14	0.00
66.00	5.38	2.67	5.14	0.00
68.00	5.38	2.67	5.14	0.00
70.00	5.38	2.67	5.14	0.00
72.00	5.38	2.67	5.14	0.00

Summary for Pond 8p: Detention System

Inflow Area = 47,867 sf, 81.27% Impervious, Inflow Depth = 4.68" for 10-Year-2020 event
 Inflow = 5.74 cfs @ 12.10 hrs, Volume= 18,667 cf
 Outflow = 3.61 cfs @ 12.14 hrs, Volume= 18,667 cf, Atten= 37%, Lag= 2.4 min
 Primary = 3.61 cfs @ 12.14 hrs, Volume= 18,667 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= 404.82' @ 12.14 hrs Surf.Area= 1,992 sf Storage= 2,782 cf

Plug-Flow detention time= 14.6 min calculated for 18,667 cf (100% of inflow)
 Center-of-Mass det. time= 14.6 min (769.6 - 755.0)

Volume	Invert	Avail.Storage	Storage Description
#1	403.00'	6,283 cf	48.0" Round Pipe Storage L= 500.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	403.00'	8.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	404.50'	36.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	405.50'	24.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

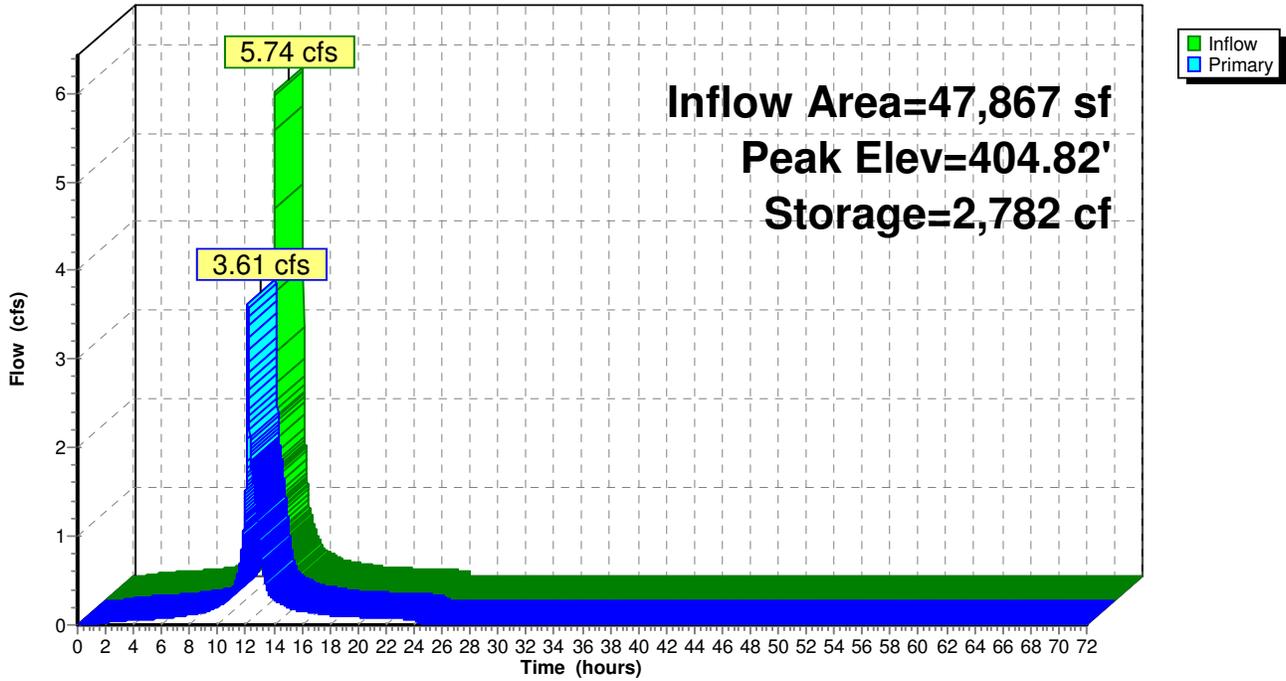
Primary OutFlow Max=3.61 cfs @ 12.14 hrs HW=404.82' (Free Discharge)

- 1=Orifice/Grate (Orifice Controls 2.05 cfs @ 5.87 fps)
- 2=Orifice/Grate (Orifice Controls 1.56 cfs @ 2.08 fps)
- 3=Orifice/Grate (Controls 0.00 cfs)



Pond 8p: Detention System

Hydrograph



Hydrograph for Pond 8p: Detention System

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	403.00	0.00
2.00	0.03	33	403.08	0.03
4.00	0.06	59	403.13	0.06
6.00	0.08	73	403.15	0.07
8.00	0.12	105	403.18	0.12
10.00	0.23	171	403.26	0.21
12.00	3.38	1,468	404.14	1.51
14.00	0.27	219	403.30	0.29
16.00	0.15	133	403.22	0.16
18.00	0.10	98	403.18	0.11
20.00	0.09	86	403.16	0.09
22.00	0.08	76	403.15	0.08
24.00	0.06	66	403.13	0.06
26.00	0.00	1	403.00	0.00
28.00	0.00	0	403.00	0.00
30.00	0.00	0	403.00	0.00
32.00	0.00	0	403.00	0.00
34.00	0.00	0	403.00	0.00
36.00	0.00	0	403.00	0.00
38.00	0.00	0	403.00	0.00
40.00	0.00	0	403.00	0.00
42.00	0.00	0	403.00	0.00
44.00	0.00	0	403.00	0.00
46.00	0.00	0	403.00	0.00
48.00	0.00	0	403.00	0.00
50.00	0.00	0	403.00	0.00
52.00	0.00	0	403.00	0.00
54.00	0.00	0	403.00	0.00
56.00	0.00	0	403.00	0.00
58.00	0.00	0	403.00	0.00
60.00	0.00	0	403.00	0.00
62.00	0.00	0	403.00	0.00
64.00	0.00	0	403.00	0.00
66.00	0.00	0	403.00	0.00
68.00	0.00	0	403.00	0.00
70.00	0.00	0	403.00	0.00
72.00	0.00	0	403.00	0.00

Stage-Discharge for Pond 8p: Detention System

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
403.00	0.00	404.02	1.39	405.04	4.51	406.06	8.68
403.02	0.00	404.04	1.41	405.06	4.58	406.08	8.76
403.04	0.01	404.06	1.43	405.08	4.65	406.10	8.83
403.06	0.01	404.08	1.45	405.10	4.72	406.12	8.91
403.08	0.02	404.10	1.47	405.12	4.78	406.14	8.98
403.10	0.04	404.12	1.49	405.14	4.84	406.16	9.06
403.12	0.05	404.14	1.51	405.16	4.91	406.18	9.13
403.14	0.07	404.16	1.53	405.18	4.97	406.20	9.20
403.16	0.09	404.18	1.55	405.20	5.03	406.22	9.27
403.18	0.11	404.20	1.56	405.22	5.09	406.24	9.34
403.20	0.13	404.22	1.58	405.24	5.15	406.26	9.41
403.22	0.16	404.24	1.60	405.26	5.21	406.28	9.48
403.24	0.19	404.26	1.62	405.28	5.26	406.30	9.54
403.26	0.22	404.28	1.64	405.30	5.32	406.32	9.61
403.28	0.25	404.30	1.65	405.32	5.38	406.34	9.68
403.30	0.28	404.32	1.67	405.34	5.43	406.36	9.74
403.32	0.32	404.34	1.69	405.36	5.48	406.38	9.81
403.34	0.36	404.36	1.70	405.38	5.54	406.40	9.87
403.36	0.39	404.38	1.72	405.40	5.59	406.42	9.93
403.38	0.43	404.40	1.74	405.42	5.64	406.44	10.00
403.40	0.47	404.42	1.75	405.44	5.70	406.46	10.06
403.42	0.51	404.44	1.77	405.46	5.75	406.48	10.12
403.44	0.55	404.46	1.78	405.48	5.80	406.50	10.18
403.46	0.59	404.48	1.80	405.50	5.85	406.52	10.25
403.48	0.63	404.50	1.82	405.52	5.92	406.54	10.31
403.50	0.68	404.52	1.86	405.54	6.00	406.56	10.37
403.52	0.72	404.54	1.92	405.56	6.09	406.58	10.43
403.54	0.76	404.56	2.00	405.58	6.19	406.60	10.49
403.56	0.80	404.58	2.09	405.60	6.30	406.62	10.55
403.58	0.84	404.60	2.20	405.62	6.41	406.64	10.61
403.60	0.87	404.62	2.31	405.64	6.52	406.66	10.66
403.62	0.91	404.64	2.43	405.66	6.65	406.68	10.72
403.64	0.94	404.66	2.55	405.68	6.77	406.70	10.78
403.66	0.96	404.68	2.69	405.70	6.90	406.72	10.84
403.68	0.99	404.70	2.83	405.72	7.04	406.74	10.89
403.70	1.02	404.72	2.97	405.74	7.17	406.76	10.95
403.72	1.05	404.74	3.13	405.76	7.31	406.78	11.01
403.74	1.07	404.76	3.27	405.78	7.43	406.80	11.06
403.76	1.10	404.78	3.40	405.80	7.54	406.82	11.12
403.78	1.12	404.80	3.51	405.82	7.64	406.84	11.17
403.80	1.15	404.82	3.61	405.84	7.74	406.86	11.23
403.82	1.17	404.84	3.71	405.86	7.84	406.88	11.28
403.84	1.20	404.86	3.81	405.88	7.93	406.90	11.34
403.86	1.22	404.88	3.89	405.90	8.02	406.92	11.39
403.88	1.24	404.90	3.98	405.92	8.11	406.94	11.45
403.90	1.27	404.92	4.06	405.94	8.20	406.96	11.50
403.92	1.29	404.94	4.14	405.96	8.28	406.98	11.55
403.94	1.31	404.96	4.22	405.98	8.36	407.00	11.61
403.96	1.33	404.98	4.30	406.00	8.45		
403.98	1.35	405.00	4.37	406.02	8.53		
404.00	1.37	405.02	4.44	406.04	8.60		

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

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
403.00	0	405.55	4,228
403.05	15	405.60	4,323
403.10	42	405.65	4,418
403.15	77	405.70	4,512
403.20	117	405.75	4,606
403.25	164	405.80	4,698
403.30	214	405.85	4,789
403.35	269	405.90	4,879
403.40	327	405.95	4,968
403.45	389	406.00	5,055
403.50	453	406.05	5,141
403.55	521	406.10	5,225
403.60	591	406.15	5,308
403.65	664	406.20	5,389
403.70	739	406.25	5,468
403.75	816	406.30	5,545
403.80	895	406.35	5,620
403.85	976	406.40	5,692
403.90	1,058	406.45	5,762
403.95	1,143	406.50	5,830
404.00	1,228	406.55	5,895
404.05	1,316	406.60	5,956
404.10	1,404	406.65	6,014
404.15	1,494	406.70	6,069
404.20	1,585	406.75	6,120
404.25	1,678	406.80	6,166
404.30	1,771	406.85	6,207
404.35	1,865	406.90	6,241
404.40	1,960	406.95	6,268
404.45	2,056	407.00	6,283
404.50	2,152		
404.55	2,249		
404.60	2,347		
404.65	2,445		
404.70	2,544		
404.75	2,643		
404.80	2,742		
404.85	2,842		
404.90	2,942		
404.95	3,042		
405.00	3,142		
405.05	3,242		
405.10	3,342		
405.15	3,441		
405.20	3,541		
405.25	3,640		
405.30	3,739		
405.35	3,838		
405.40	3,936		
405.45	4,034		
405.50	4,131		

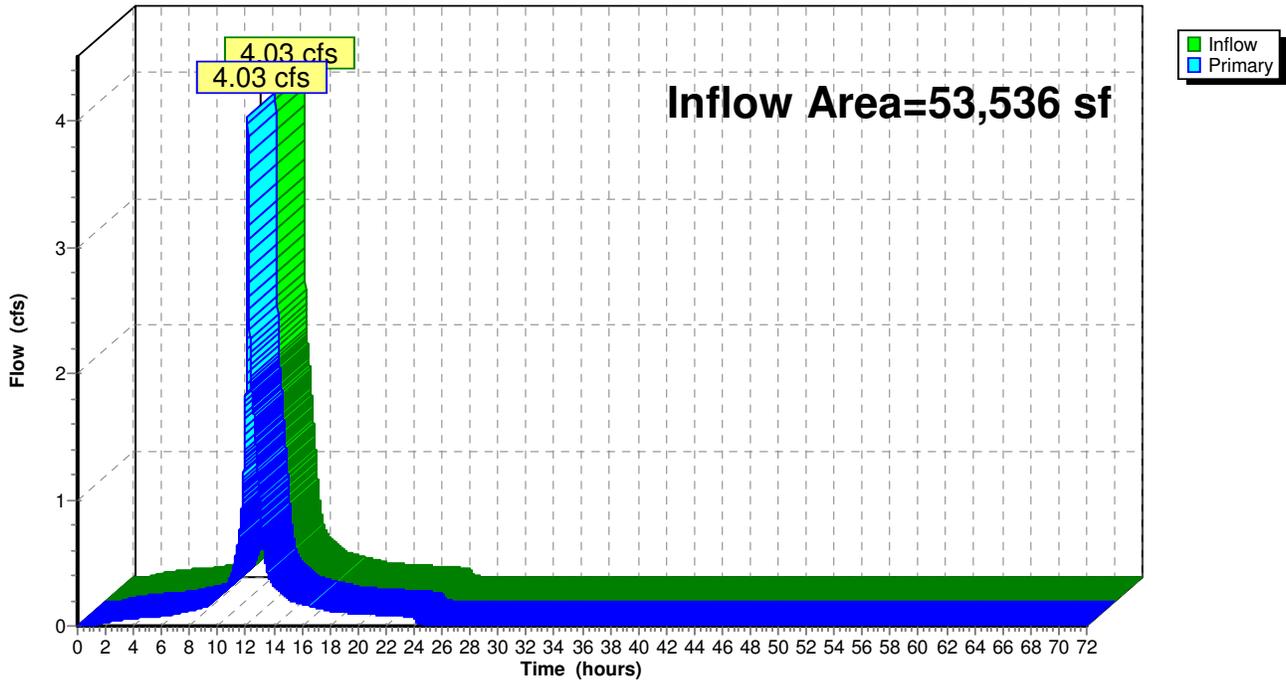
Summary for Link 9I: Overall discharge

Inflow Area = 53,536 sf, 76.43% Impervious, Inflow Depth = 4.56" for 10-Year-2020 event
Inflow = 4.03 cfs @ 12.13 hrs, Volume= 20,344 cf
Primary = 4.03 cfs @ 12.13 hrs, Volume= 20,344 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	0.03	0.00	0.03	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	0.06	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	1.82	0.00	1.82	63.00	0.00	0.00	0.00
13.00	1.00	0.00	1.00	64.00	0.00	0.00	0.00
14.00	0.32	0.00	0.32	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	0.17	0.00	0.17	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	0.00	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				

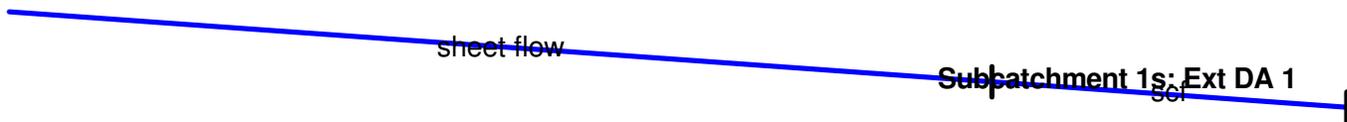
Summary for Subcatchment 1s: Ext DA 1

Runoff = 0.73 cfs @ 12.13 hrs, Volume= 2,568 cf, Depth= 8.08"
 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"

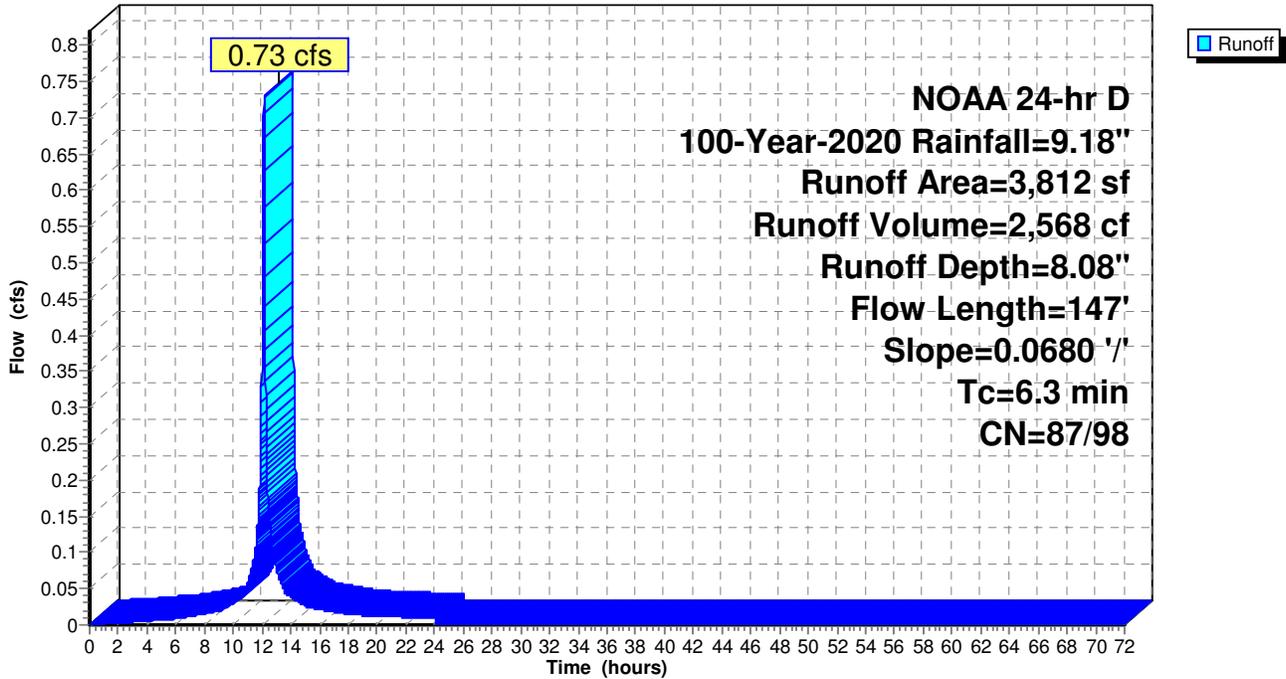
Area (sf)	CN	Description
1,374	98	Paved parking, HSG C
2,438	87	Dirt roads, HSG C
3,812	91	Weighted Average
2,438	87	63.96% Pervious Area
1,374	98	36.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	108	0.0680	0.29		Sheet Flow, sheet flow Grass: Short n= 0.150 P2= 3.47"
0.2	39	0.0680	4.20		Shallow Concentrated Flow, scf Unpaved Kv= 16.1 fps
6.3	147	Total			



Subcatchment 1s: Ext DA 1

Hydrograph



Hydrograph for Subcatchment 1s: 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	0.22	0.00	0.08	0.00
4.00	0.48	0.02	0.30	0.01
6.00	0.78	0.12	0.58	0.01
8.00	1.19	0.33	0.98	0.02
10.00	1.82	0.77	1.60	0.03
12.00	4.40	3.00	4.16	0.40
14.00	7.36	5.83	7.12	0.04
16.00	7.99	6.44	7.75	0.02
18.00	8.40	6.84	8.16	0.01
20.00	8.70	7.13	8.46	0.01
22.00	8.96	7.39	8.72	0.01
24.00	9.18	7.60	8.94	0.01
26.00	9.18	7.60	8.94	0.00
28.00	9.18	7.60	8.94	0.00
30.00	9.18	7.60	8.94	0.00
32.00	9.18	7.60	8.94	0.00
34.00	9.18	7.60	8.94	0.00
36.00	9.18	7.60	8.94	0.00
38.00	9.18	7.60	8.94	0.00
40.00	9.18	7.60	8.94	0.00
42.00	9.18	7.60	8.94	0.00
44.00	9.18	7.60	8.94	0.00
46.00	9.18	7.60	8.94	0.00
48.00	9.18	7.60	8.94	0.00
50.00	9.18	7.60	8.94	0.00
52.00	9.18	7.60	8.94	0.00
54.00	9.18	7.60	8.94	0.00
56.00	9.18	7.60	8.94	0.00
58.00	9.18	7.60	8.94	0.00
60.00	9.18	7.60	8.94	0.00
62.00	9.18	7.60	8.94	0.00
64.00	9.18	7.60	8.94	0.00
66.00	9.18	7.60	8.94	0.00
68.00	9.18	7.60	8.94	0.00
70.00	9.18	7.60	8.94	0.00
72.00	9.18	7.60	8.94	0.00

Summary for Subcatchment 2s: Ext DA 2

Runoff = 1.00 cfs @ 12.09 hrs, Volume= 3,361 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"

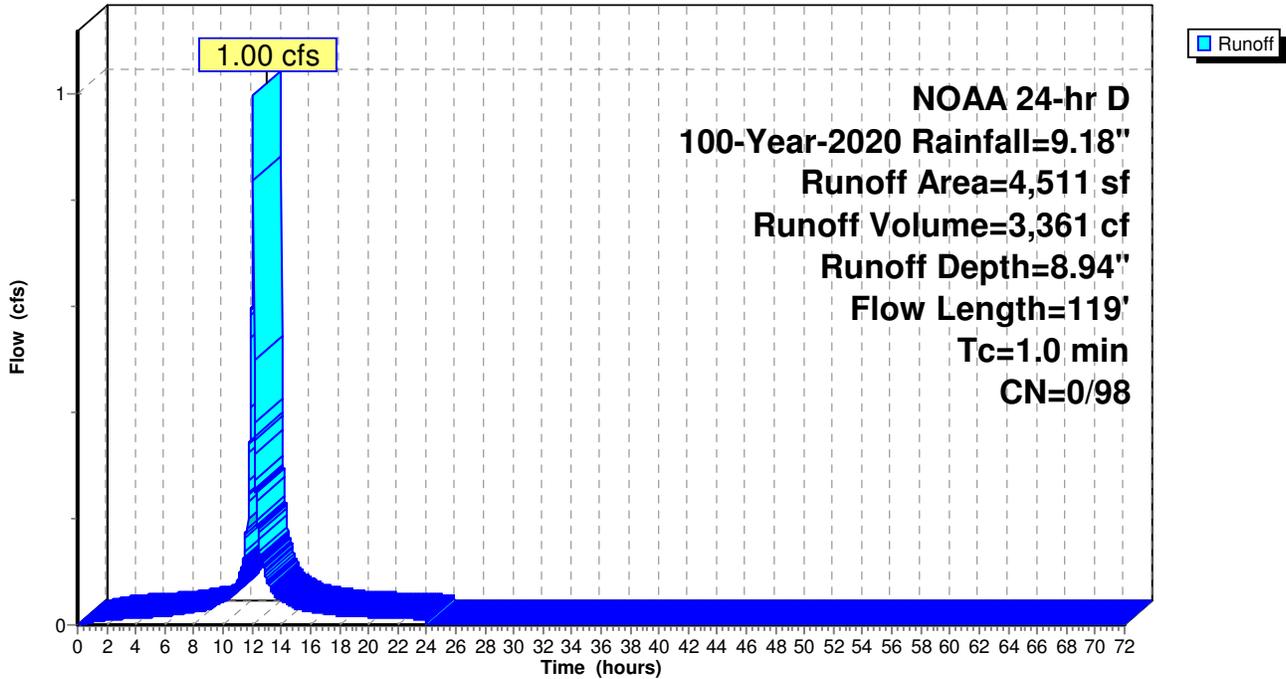
Area (sf)	CN	Description
4,185	98	Paved parking, HSG C
326	98	Paved parking, HSG C
4,511	98	Weighted Average
4,511	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	104	0.0385	1.88		Sheet Flow, sheet flow Smooth surfaces n= 0.011 P2= 3.47"
0.1	15	0.0150	2.49		Shallow Concentrated Flow, scf Paved Kv= 20.3 fps
1.0	119	Total			



Subcatchment 2s: Ext DA 2

Hydrograph



Hydrograph for Subcatchment 2s: 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	0.22	0.00	0.08	0.01
4.00	0.48	0.00	0.30	0.01
6.00	0.78	0.00	0.58	0.02
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	0.60
14.00	7.36	0.00	7.12	0.05
16.00	7.99	0.00	7.75	0.03
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	9.18	0.00	8.94	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

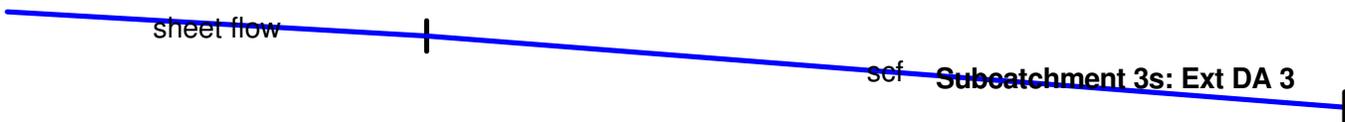
Summary for Subcatchment 3s: Ext DA 3

Runoff = 9.36 cfs @ 12.10 hrs, Volume= 30,053 cf, Depth= 8.00"
 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"

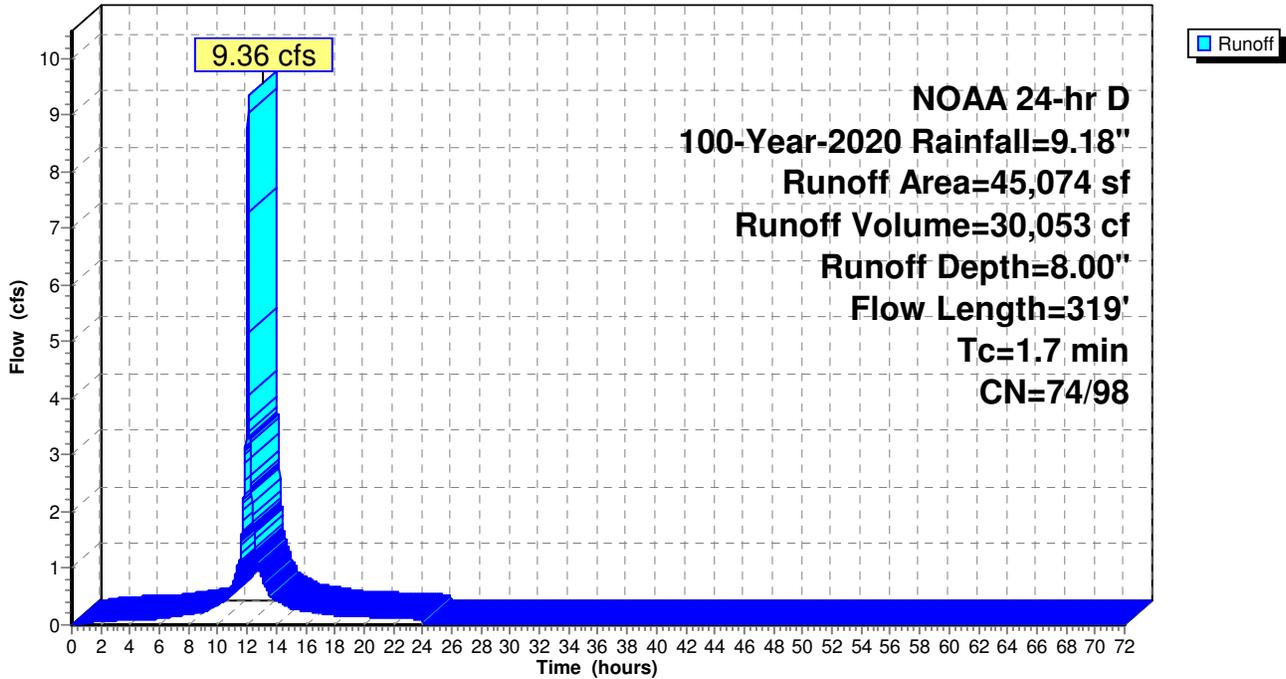
Area (sf)	CN	Description
30,716	98	Paved parking, HSG C
14,358	74	>75% Grass cover, Good, HSG C
45,074	90	Weighted Average
14,358	74	31.85% Pervious Area
30,716	98	68.15% Impervious Area

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



Subcatchment 3s: Ext DA 3

Hydrograph



Hydrograph for Subcatchment 3s: 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	0.22	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	0.06	0.98	0.19
10.00	1.82	0.27	1.60	0.36
12.00	4.40	1.89	4.16	5.51
14.00	7.36	4.36	7.12	0.44
16.00	7.99	4.92	7.75	0.25
18.00	8.40	5.28	8.16	0.17
20.00	8.70	5.55	8.46	0.14
22.00	8.96	5.79	8.72	0.12
24.00	9.18	5.99	8.94	0.10
26.00	9.18	5.99	8.94	0.00
28.00	9.18	5.99	8.94	0.00
30.00	9.18	5.99	8.94	0.00
32.00	9.18	5.99	8.94	0.00
34.00	9.18	5.99	8.94	0.00
36.00	9.18	5.99	8.94	0.00
38.00	9.18	5.99	8.94	0.00
40.00	9.18	5.99	8.94	0.00
42.00	9.18	5.99	8.94	0.00
44.00	9.18	5.99	8.94	0.00
46.00	9.18	5.99	8.94	0.00
48.00	9.18	5.99	8.94	0.00
50.00	9.18	5.99	8.94	0.00
52.00	9.18	5.99	8.94	0.00
54.00	9.18	5.99	8.94	0.00
56.00	9.18	5.99	8.94	0.00
58.00	9.18	5.99	8.94	0.00
60.00	9.18	5.99	8.94	0.00
62.00	9.18	5.99	8.94	0.00
64.00	9.18	5.99	8.94	0.00
66.00	9.18	5.99	8.94	0.00
68.00	9.18	5.99	8.94	0.00
70.00	9.18	5.99	8.94	0.00
72.00	9.18	5.99	8.94	0.00

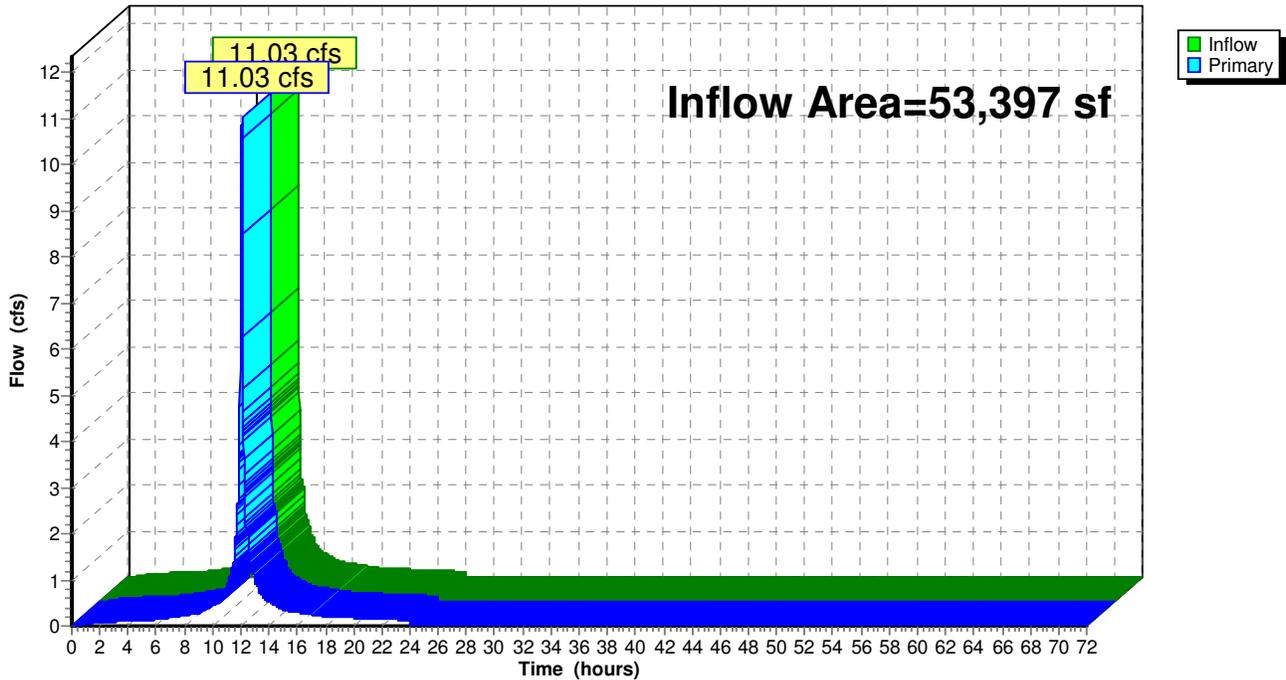
Summary for Link 4I: existing total discharge

Inflow Area = 53,397 sf, 68.55% Impervious, Inflow Depth = 8.09" for 100-Year-2020 event
 Inflow = 11.03 cfs @ 12.10 hrs, Volume= 35,982 cf
 Primary = 11.03 cfs @ 12.10 hrs, Volume= 35,982 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	0.04	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	0.14	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	0.44	0.00	0.44	61.00	0.00	0.00	0.00
11.00	0.82	0.00	0.82	62.00	0.00	0.00	0.00
12.00	6.51	0.00	6.51	63.00	0.00	0.00	0.00
13.00	1.03	0.00	1.03	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				

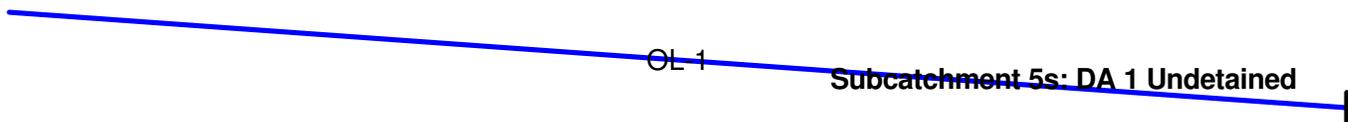
Summary for Subcatchment 5s: DA 1 Undetained

Runoff = 0.27 cfs @ 12.10 hrs, Volume= 785 cf, Depth= 6.42"
 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"

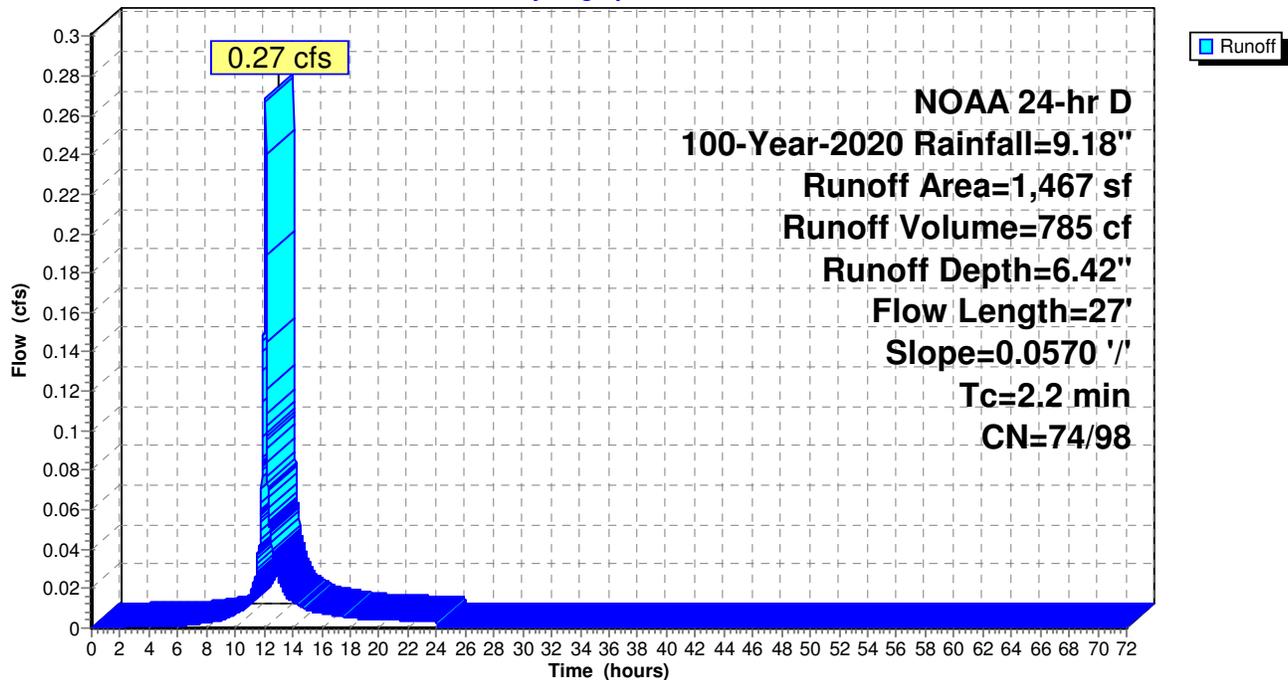
Area (sf)	CN	Description
1,255	74	>75% Grass cover, Good, HSG C
212	98	Unconnected roofs, HSG C
1,467	77	Weighted Average
1,255	74	85.55% Pervious Area
212	98	14.45% Impervious Area

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



Subcatchment 5s: DA 1 Undetained

Hydrograph



Hydrograph for Subcatchment 5s: 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	0.22	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	0.06	0.98	0.00
10.00	1.82	0.27	1.60	0.01
12.00	4.40	1.89	4.16	0.15
14.00	7.36	4.36	7.12	0.01
16.00	7.99	4.92	7.75	0.01
18.00	8.40	5.28	8.16	0.01
20.00	8.70	5.55	8.46	0.00
22.00	8.96	5.79	8.72	0.00
24.00	9.18	5.99	8.94	0.00
26.00	9.18	5.99	8.94	0.00
28.00	9.18	5.99	8.94	0.00
30.00	9.18	5.99	8.94	0.00
32.00	9.18	5.99	8.94	0.00
34.00	9.18	5.99	8.94	0.00
36.00	9.18	5.99	8.94	0.00
38.00	9.18	5.99	8.94	0.00
40.00	9.18	5.99	8.94	0.00
42.00	9.18	5.99	8.94	0.00
44.00	9.18	5.99	8.94	0.00
46.00	9.18	5.99	8.94	0.00
48.00	9.18	5.99	8.94	0.00
50.00	9.18	5.99	8.94	0.00
52.00	9.18	5.99	8.94	0.00
54.00	9.18	5.99	8.94	0.00
56.00	9.18	5.99	8.94	0.00
58.00	9.18	5.99	8.94	0.00
60.00	9.18	5.99	8.94	0.00
62.00	9.18	5.99	8.94	0.00
64.00	9.18	5.99	8.94	0.00
66.00	9.18	5.99	8.94	0.00
68.00	9.18	5.99	8.94	0.00
70.00	9.18	5.99	8.94	0.00
72.00	9.18	5.99	8.94	0.00

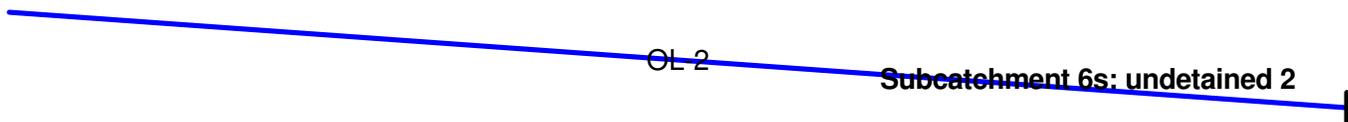
Summary for Subcatchment 6s: undetained 2

Runoff = 0.81 cfs @ 12.10 hrs, Volume= 2,541 cf, Depth= 7.26"
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"

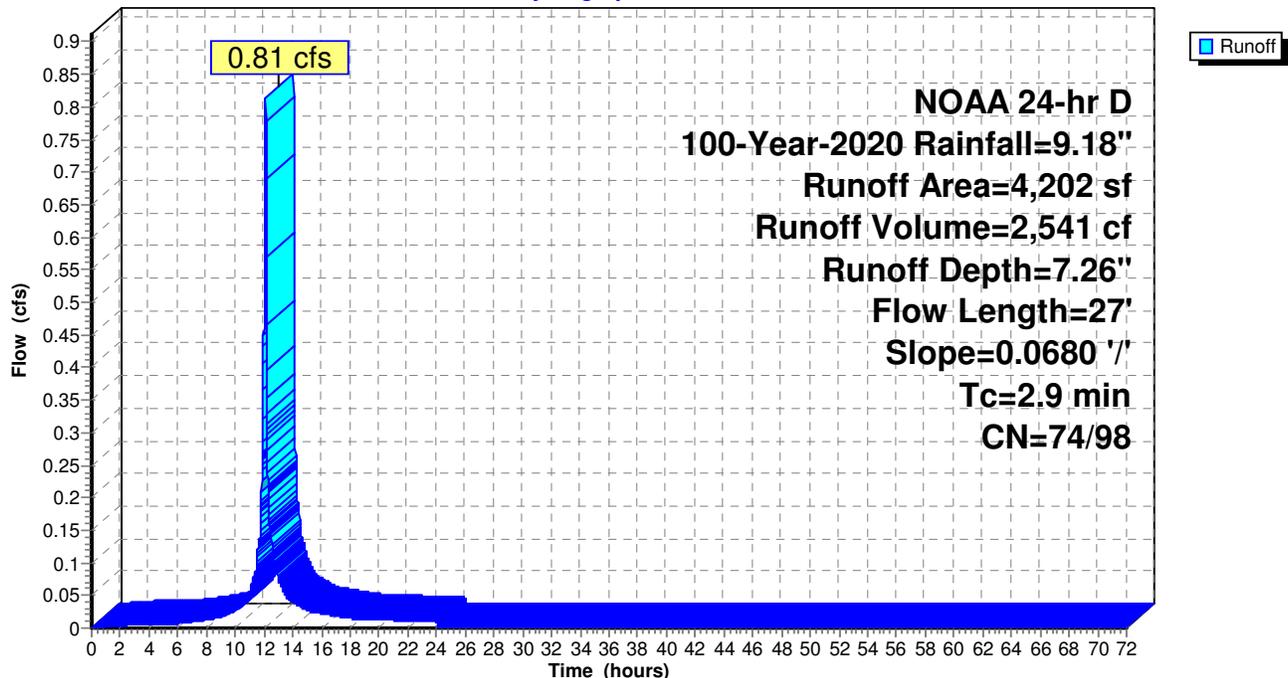
Area (sf)	CN	Description
1,802	98	Unconnected pavement, HSG C
2,400	74	>75% Grass cover, Good, HSG C
4,202	84	Weighted Average
2,400	74	57.12% Pervious Area
1,802	98	42.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	27	0.0680	0.15		Sheet Flow, OL-2 Grass: Dense n= 0.240 P2= 3.47"



Subcatchment 6s: undetained 2

Hydrograph



Hydrograph for Subcatchment 6s: 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	0.22	0.00	0.08	0.00
4.00	0.48	0.00	0.30	0.01
6.00	0.78	0.00	0.58	0.01
8.00	1.19	0.06	0.98	0.01
10.00	1.82	0.27	1.60	0.03
12.00	4.40	1.89	4.16	0.47
14.00	7.36	4.36	7.12	0.04
16.00	7.99	4.92	7.75	0.02
18.00	8.40	5.28	8.16	0.02
20.00	8.70	5.55	8.46	0.01
22.00	8.96	5.79	8.72	0.01
24.00	9.18	5.99	8.94	0.01
26.00	9.18	5.99	8.94	0.00
28.00	9.18	5.99	8.94	0.00
30.00	9.18	5.99	8.94	0.00
32.00	9.18	5.99	8.94	0.00
34.00	9.18	5.99	8.94	0.00
36.00	9.18	5.99	8.94	0.00
38.00	9.18	5.99	8.94	0.00
40.00	9.18	5.99	8.94	0.00
42.00	9.18	5.99	8.94	0.00
44.00	9.18	5.99	8.94	0.00
46.00	9.18	5.99	8.94	0.00
48.00	9.18	5.99	8.94	0.00
50.00	9.18	5.99	8.94	0.00
52.00	9.18	5.99	8.94	0.00
54.00	9.18	5.99	8.94	0.00
56.00	9.18	5.99	8.94	0.00
58.00	9.18	5.99	8.94	0.00
60.00	9.18	5.99	8.94	0.00
62.00	9.18	5.99	8.94	0.00
64.00	9.18	5.99	8.94	0.00
66.00	9.18	5.99	8.94	0.00
68.00	9.18	5.99	8.94	0.00
70.00	9.18	5.99	8.94	0.00
72.00	9.18	5.99	8.94	0.00

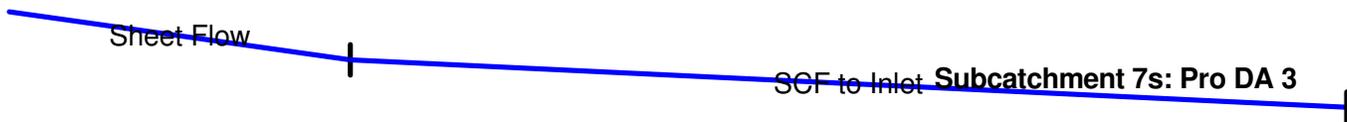
Summary for Subcatchment 7s: Pro DA 3

Runoff = 10.16 cfs @ 12.10 hrs, Volume= 33,458 cf, Depth= 8.39"
 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"

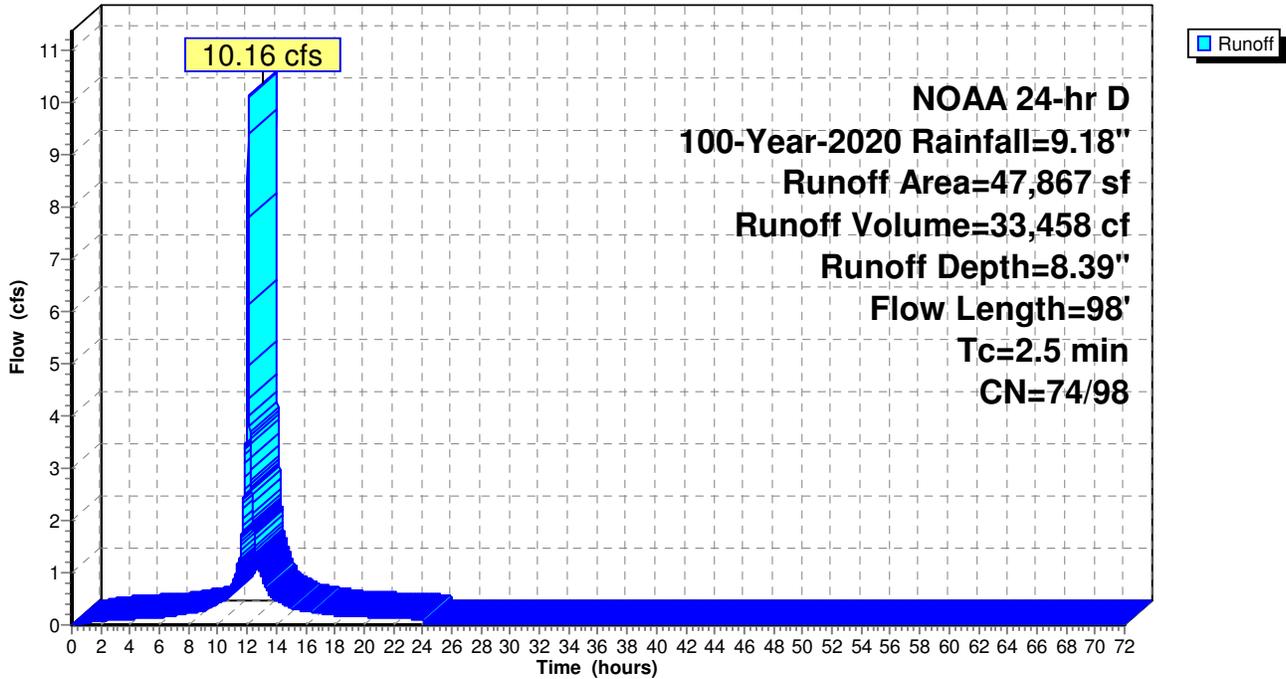
Area (sf)	CN	Description
38,903	98	Paved parking, HSG C
8,964	74	>75% Grass cover, Good, HSG C
47,867	94	Weighted Average
8,964	74	18.73% Pervious Area
38,903	98	81.27% Impervious Area

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



Subcatchment 7s: Pro DA 3

Hydrograph



Hydrograph for Subcatchment 7s: 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	0.22	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	0.06	0.98	0.23
10.00	1.82	0.27	1.60	0.42
12.00	4.40	1.89	4.16	6.02
14.00	7.36	4.36	7.12	0.48
16.00	7.99	4.92	7.75	0.27
18.00	8.40	5.28	8.16	0.18
20.00	8.70	5.55	8.46	0.15
22.00	8.96	5.79	8.72	0.13
24.00	9.18	5.99	8.94	0.11
26.00	9.18	5.99	8.94	0.00
28.00	9.18	5.99	8.94	0.00
30.00	9.18	5.99	8.94	0.00
32.00	9.18	5.99	8.94	0.00
34.00	9.18	5.99	8.94	0.00
36.00	9.18	5.99	8.94	0.00
38.00	9.18	5.99	8.94	0.00
40.00	9.18	5.99	8.94	0.00
42.00	9.18	5.99	8.94	0.00
44.00	9.18	5.99	8.94	0.00
46.00	9.18	5.99	8.94	0.00
48.00	9.18	5.99	8.94	0.00
50.00	9.18	5.99	8.94	0.00
52.00	9.18	5.99	8.94	0.00
54.00	9.18	5.99	8.94	0.00
56.00	9.18	5.99	8.94	0.00
58.00	9.18	5.99	8.94	0.00
60.00	9.18	5.99	8.94	0.00
62.00	9.18	5.99	8.94	0.00
64.00	9.18	5.99	8.94	0.00
66.00	9.18	5.99	8.94	0.00
68.00	9.18	5.99	8.94	0.00
70.00	9.18	5.99	8.94	0.00
72.00	9.18	5.99	8.94	0.00

Summary for Pond 8p: Detention System

Inflow Area = 47,867 sf, 81.27% Impervious, Inflow Depth = 8.39" for 100-Year-2020 event
 Inflow = 10.16 cfs @ 12.10 hrs, Volume= 33,458 cf
 Outflow = 6.99 cfs @ 12.14 hrs, Volume= 33,458 cf, Atten= 31%, Lag= 2.2 min
 Primary = 6.99 cfs @ 12.14 hrs, Volume= 33,458 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= 405.71' @ 12.14 hrs Surf.Area= 1,869 sf Storage= 4,537 cf

Plug-Flow detention time= 13.5 min calculated for 33,454 cf (100% of inflow)
 Center-of-Mass det. time= 13.5 min (761.0 - 747.5)

Volume	Invert	Avail.Storage	Storage Description
#1	403.00'	6,283 cf	48.0" Round Pipe Storage L= 500.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	403.00'	8.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	404.50'	36.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	405.50'	24.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

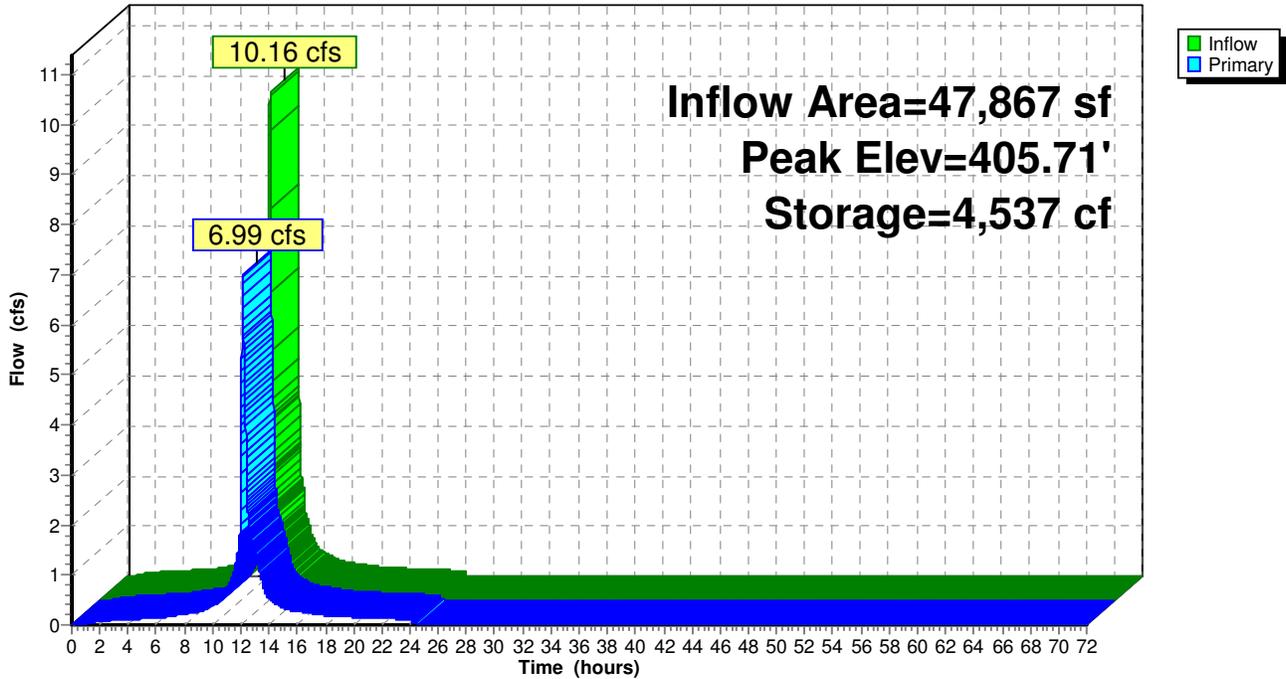
Primary OutFlow Max=6.97 cfs @ 12.14 hrs HW=405.71' (Free Discharge)

- 1=Orifice/Grate (Orifice Controls 2.59 cfs @ 7.42 fps)
- 2=Orifice/Grate (Orifice Controls 3.76 cfs @ 5.01 fps)
- 3=Orifice/Grate (Orifice Controls 0.62 cfs @ 1.47 fps)



Pond 8p: Detention System

Hydrograph



Hydrograph for Pond 8p: Detention System

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	403.00	0.00
2.00	0.08	70	403.14	0.07
4.00	0.11	101	403.18	0.11
6.00	0.14	119	403.20	0.14
8.00	0.23	172	403.26	0.22
10.00	0.42	282	403.36	0.40
12.00	6.02	2,869	404.86	3.82
14.00	0.48	359	403.43	0.52
16.00	0.27	208	403.29	0.27
18.00	0.18	153	403.24	0.19
20.00	0.15	132	403.22	0.16
22.00	0.13	117	403.20	0.13
24.00	0.11	101	403.18	0.11
26.00	0.00	1	403.00	0.00
28.00	0.00	0	403.00	0.00
30.00	0.00	0	403.00	0.00
32.00	0.00	0	403.00	0.00
34.00	0.00	0	403.00	0.00
36.00	0.00	0	403.00	0.00
38.00	0.00	0	403.00	0.00
40.00	0.00	0	403.00	0.00
42.00	0.00	0	403.00	0.00
44.00	0.00	0	403.00	0.00
46.00	0.00	0	403.00	0.00
48.00	0.00	0	403.00	0.00
50.00	0.00	0	403.00	0.00
52.00	0.00	0	403.00	0.00
54.00	0.00	0	403.00	0.00
56.00	0.00	0	403.00	0.00
58.00	0.00	0	403.00	0.00
60.00	0.00	0	403.00	0.00
62.00	0.00	0	403.00	0.00
64.00	0.00	0	403.00	0.00
66.00	0.00	0	403.00	0.00
68.00	0.00	0	403.00	0.00
70.00	0.00	0	403.00	0.00
72.00	0.00	0	403.00	0.00

Stage-Discharge for Pond 8p: Detention System

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
403.00	0.00	404.02	1.39	405.04	4.51	406.06	8.68
403.02	0.00	404.04	1.41	405.06	4.58	406.08	8.76
403.04	0.01	404.06	1.43	405.08	4.65	406.10	8.83
403.06	0.01	404.08	1.45	405.10	4.72	406.12	8.91
403.08	0.02	404.10	1.47	405.12	4.78	406.14	8.98
403.10	0.04	404.12	1.49	405.14	4.84	406.16	9.06
403.12	0.05	404.14	1.51	405.16	4.91	406.18	9.13
403.14	0.07	404.16	1.53	405.18	4.97	406.20	9.20
403.16	0.09	404.18	1.55	405.20	5.03	406.22	9.27
403.18	0.11	404.20	1.56	405.22	5.09	406.24	9.34
403.20	0.13	404.22	1.58	405.24	5.15	406.26	9.41
403.22	0.16	404.24	1.60	405.26	5.21	406.28	9.48
403.24	0.19	404.26	1.62	405.28	5.26	406.30	9.54
403.26	0.22	404.28	1.64	405.30	5.32	406.32	9.61
403.28	0.25	404.30	1.65	405.32	5.38	406.34	9.68
403.30	0.28	404.32	1.67	405.34	5.43	406.36	9.74
403.32	0.32	404.34	1.69	405.36	5.48	406.38	9.81
403.34	0.36	404.36	1.70	405.38	5.54	406.40	9.87
403.36	0.39	404.38	1.72	405.40	5.59	406.42	9.93
403.38	0.43	404.40	1.74	405.42	5.64	406.44	10.00
403.40	0.47	404.42	1.75	405.44	5.70	406.46	10.06
403.42	0.51	404.44	1.77	405.46	5.75	406.48	10.12
403.44	0.55	404.46	1.78	405.48	5.80	406.50	10.18
403.46	0.59	404.48	1.80	405.50	5.85	406.52	10.25
403.48	0.63	404.50	1.82	405.52	5.92	406.54	10.31
403.50	0.68	404.52	1.86	405.54	6.00	406.56	10.37
403.52	0.72	404.54	1.92	405.56	6.09	406.58	10.43
403.54	0.76	404.56	2.00	405.58	6.19	406.60	10.49
403.56	0.80	404.58	2.09	405.60	6.30	406.62	10.55
403.58	0.84	404.60	2.20	405.62	6.41	406.64	10.61
403.60	0.87	404.62	2.31	405.64	6.52	406.66	10.66
403.62	0.91	404.64	2.43	405.66	6.65	406.68	10.72
403.64	0.94	404.66	2.55	405.68	6.77	406.70	10.78
403.66	0.96	404.68	2.69	405.70	6.90	406.72	10.84
403.68	0.99	404.70	2.83	405.72	7.04	406.74	10.89
403.70	1.02	404.72	2.97	405.74	7.17	406.76	10.95
403.72	1.05	404.74	3.13	405.76	7.31	406.78	11.01
403.74	1.07	404.76	3.27	405.78	7.43	406.80	11.06
403.76	1.10	404.78	3.40	405.80	7.54	406.82	11.12
403.78	1.12	404.80	3.51	405.82	7.64	406.84	11.17
403.80	1.15	404.82	3.61	405.84	7.74	406.86	11.23
403.82	1.17	404.84	3.71	405.86	7.84	406.88	11.28
403.84	1.20	404.86	3.81	405.88	7.93	406.90	11.34
403.86	1.22	404.88	3.89	405.90	8.02	406.92	11.39
403.88	1.24	404.90	3.98	405.92	8.11	406.94	11.45
403.90	1.27	404.92	4.06	405.94	8.20	406.96	11.50
403.92	1.29	404.94	4.14	405.96	8.28	406.98	11.55
403.94	1.31	404.96	4.22	405.98	8.36	407.00	11.61
403.96	1.33	404.98	4.30	406.00	8.45		
403.98	1.35	405.00	4.37	406.02	8.53		
404.00	1.37	405.02	4.44	406.04	8.60		

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

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
403.00	0	405.55	4,228
403.05	15	405.60	4,323
403.10	42	405.65	4,418
403.15	77	405.70	4,512
403.20	117	405.75	4,606
403.25	164	405.80	4,698
403.30	214	405.85	4,789
403.35	269	405.90	4,879
403.40	327	405.95	4,968
403.45	389	406.00	5,055
403.50	453	406.05	5,141
403.55	521	406.10	5,225
403.60	591	406.15	5,308
403.65	664	406.20	5,389
403.70	739	406.25	5,468
403.75	816	406.30	5,545
403.80	895	406.35	5,620
403.85	976	406.40	5,692
403.90	1,058	406.45	5,762
403.95	1,143	406.50	5,830
404.00	1,228	406.55	5,895
404.05	1,316	406.60	5,956
404.10	1,404	406.65	6,014
404.15	1,494	406.70	6,069
404.20	1,585	406.75	6,120
404.25	1,678	406.80	6,166
404.30	1,771	406.85	6,207
404.35	1,865	406.90	6,241
404.40	1,960	406.95	6,268
404.45	2,056	407.00	6,283
404.50	2,152		
404.55	2,249		
404.60	2,347		
404.65	2,445		
404.70	2,544		
404.75	2,643		
404.80	2,742		
404.85	2,842		
404.90	2,942		
404.95	3,042		
405.00	3,142		
405.05	3,242		
405.10	3,342		
405.15	3,441		
405.20	3,541		
405.25	3,640		
405.30	3,739		
405.35	3,838		
405.40	3,936		
405.45	4,034		
405.50	4,131		

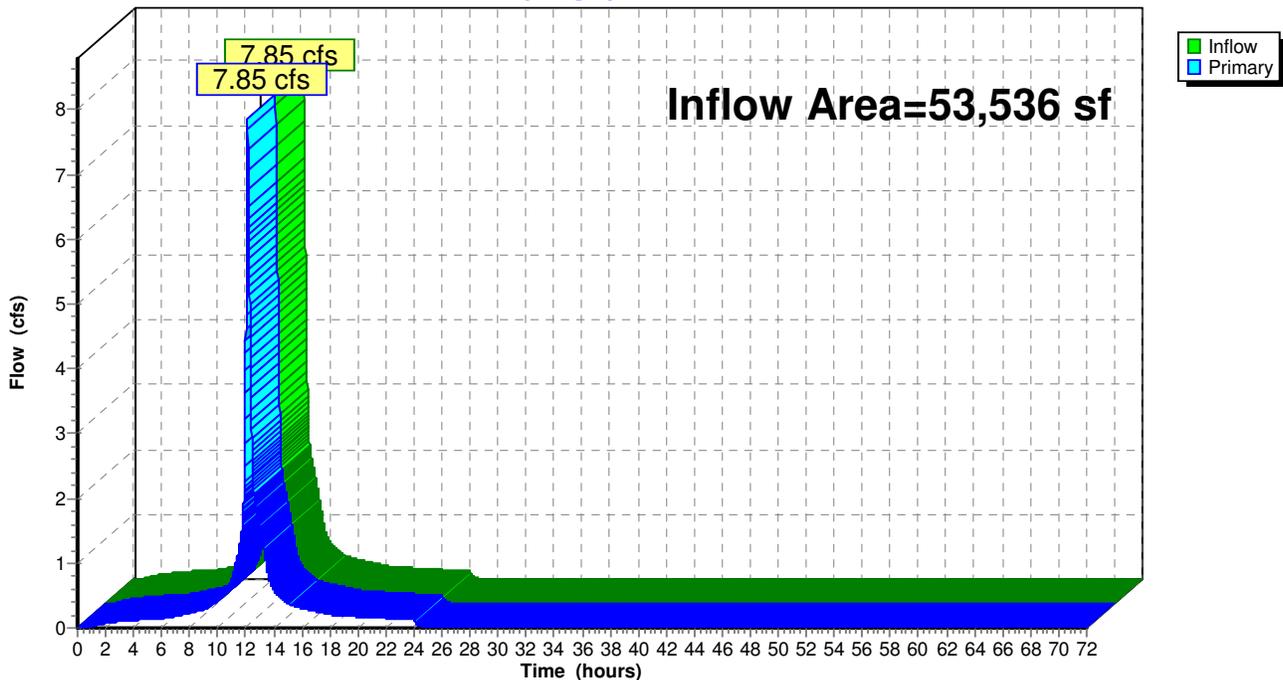
Summary for Link 9I: Overall discharge

Inflow Area = 53,536 sf, 76.43% Impervious, Inflow Depth = 8.25" for 100-Year-2020 event
Inflow = 7.85 cfs @ 12.13 hrs, Volume= 36,784 cf
Primary = 7.85 cfs @ 12.13 hrs, Volume= 36,784 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	0.02	0.00	0.02	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	0.10	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	0.19	0.00	0.19	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	0.76	0.00	0.76	62.00	0.00	0.00	0.00
12.00	4.44	0.00	4.44	63.00	0.00	0.00	0.00
13.00	1.57	0.00	1.57	64.00	0.00	0.00	0.00
14.00	0.58	0.00	0.58	65.00	0.00	0.00	0.00
15.00	0.38	0.00	0.38	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	0.17	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	0.14	0.00	0.14				
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				

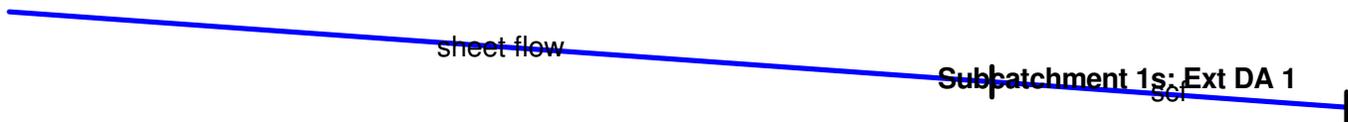
Summary for Subcatchment 1s: Ext DA 1

Runoff = 0.30 cfs @ 12.13 hrs, Volume= 994 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 2-Year-2050 Rainfall=4.09"

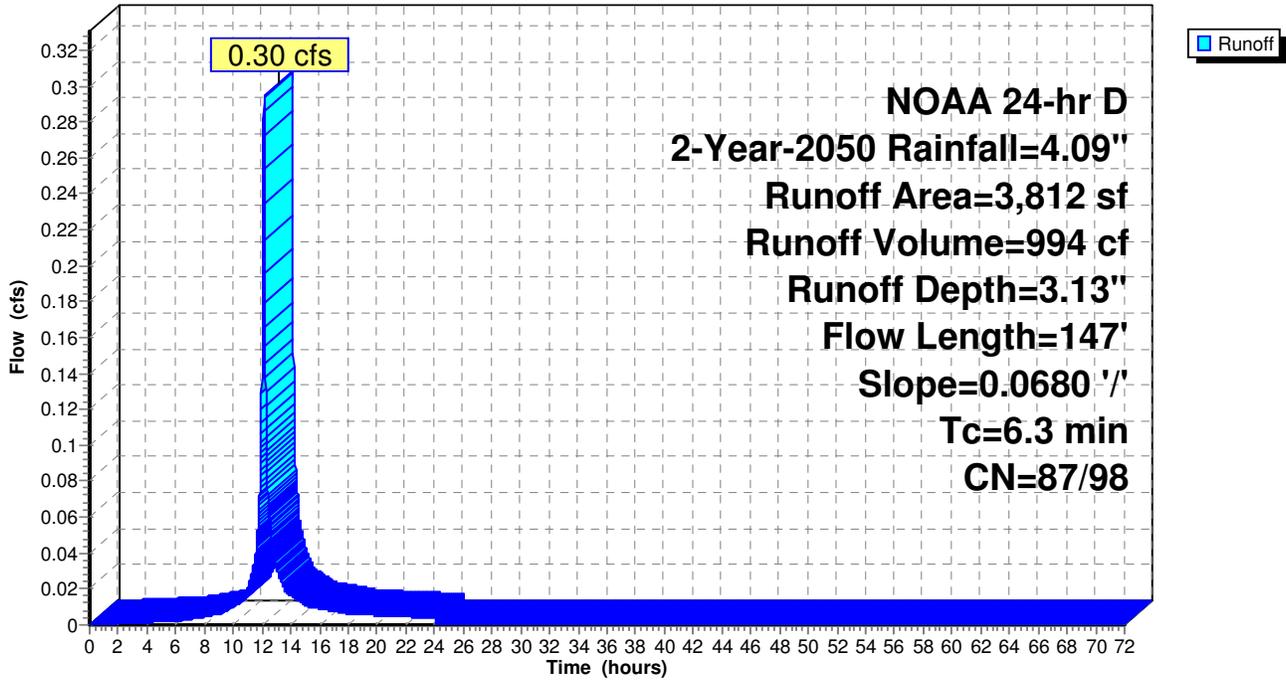
Area (sf)	CN	Description
1,374	98	Paved parking, HSG C
2,438	87	Dirt roads, HSG C
3,812	91	Weighted Average
2,438	87	63.96% Pervious Area
1,374	98	36.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	108	0.0680	0.29		Sheet Flow, sheet flow Grass: Short n= 0.150 P2= 3.47"
0.2	39	0.0680	4.20		Shallow Concentrated Flow, scf Unpaved Kv= 16.1 fps
6.3	147	Total			



Subcatchment 1s: Ext DA 1

Hydrograph



2025-09-22 HydroCad - hillcrest farms Rev 1

Prepared by Anderson Consulting Services

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Hillcrest Farms

NOAA 24-hr D 2-Year-2050 Rainfall=4.09"

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Hydrograph for Subcatchment 1s: 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	0.10	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	0.03	0.35	0.00
10.00	0.81	0.13	0.61	0.01
12.00	1.96	0.87	1.73	0.16
14.00	3.28	1.99	3.05	0.02
16.00	3.56	2.24	3.33	0.01
18.00	3.74	2.40	3.51	0.01
20.00	3.88	2.52	3.64	0.01
22.00	3.99	2.63	3.76	0.00
24.00	4.09	2.72	3.85	0.00
26.00	4.09	2.72	3.85	0.00
28.00	4.09	2.72	3.85	0.00
30.00	4.09	2.72	3.85	0.00
32.00	4.09	2.72	3.85	0.00
34.00	4.09	2.72	3.85	0.00
36.00	4.09	2.72	3.85	0.00
38.00	4.09	2.72	3.85	0.00
40.00	4.09	2.72	3.85	0.00
42.00	4.09	2.72	3.85	0.00
44.00	4.09	2.72	3.85	0.00
46.00	4.09	2.72	3.85	0.00
48.00	4.09	2.72	3.85	0.00
50.00	4.09	2.72	3.85	0.00
52.00	4.09	2.72	3.85	0.00
54.00	4.09	2.72	3.85	0.00
56.00	4.09	2.72	3.85	0.00
58.00	4.09	2.72	3.85	0.00
60.00	4.09	2.72	3.85	0.00
62.00	4.09	2.72	3.85	0.00
64.00	4.09	2.72	3.85	0.00
66.00	4.09	2.72	3.85	0.00
68.00	4.09	2.72	3.85	0.00
70.00	4.09	2.72	3.85	0.00
72.00	4.09	2.72	3.85	0.00

Summary for Subcatchment 2s: Ext DA 2

Runoff = 0.44 cfs @ 12.09 hrs, Volume= 1,449 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-2050 Rainfall=4.09"

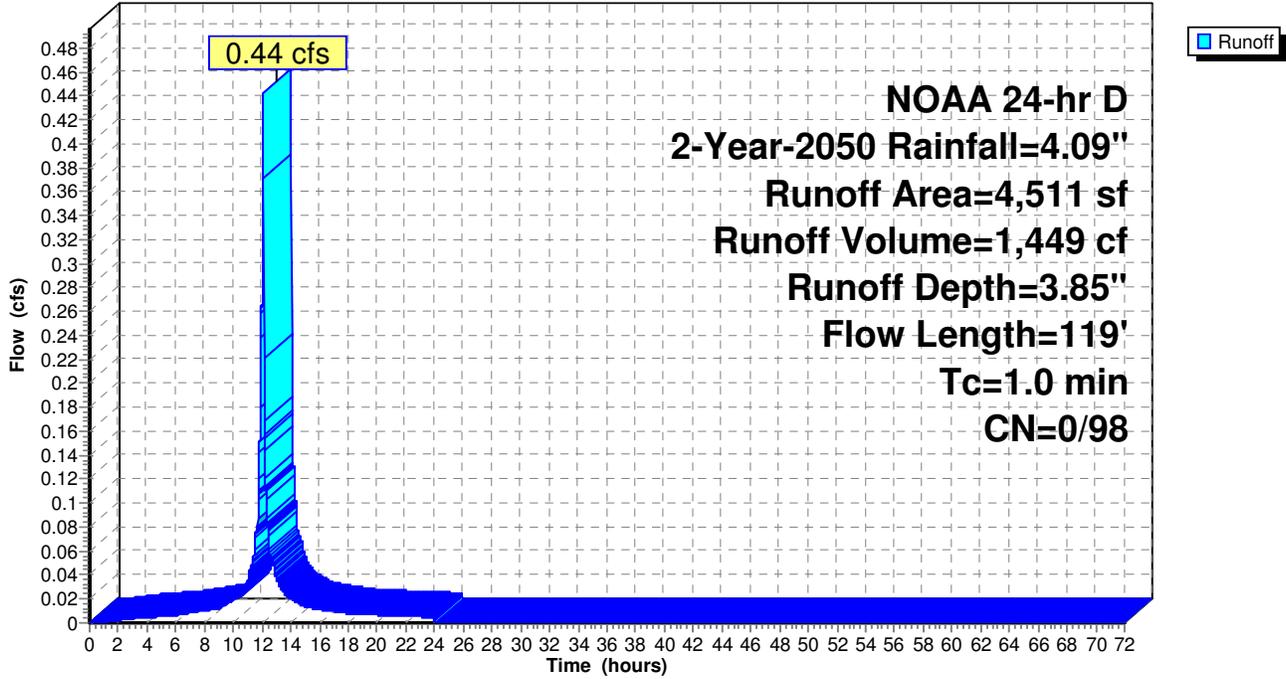
Area (sf)	CN	Description
4,185	98	Paved parking, HSG C
326	98	Paved parking, HSG C
4,511	98	Weighted Average
4,511	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	104	0.0385	1.88		Sheet Flow, sheet flow Smooth surfaces n= 0.011 P2= 3.47"
0.1	15	0.0150	2.49		Shallow Concentrated Flow, scf Paved Kv= 20.3 fps
1.0	119	Total			



Subcatchment 2s: Ext DA 2

Hydrograph



Hydrograph for Subcatchment 2s: 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	0.10	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	0.26
14.00	3.28	0.00	3.05	0.02
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	4.09	0.00	3.85	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

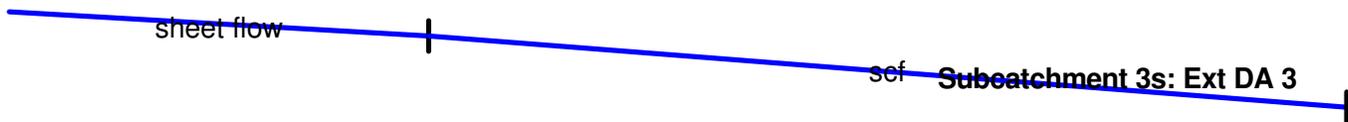
Summary for Subcatchment 3s: Ext DA 3

Runoff = 3.75 cfs @ 12.10 hrs, Volume= 11,857 cf, Depth= 3.16"
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-2050 Rainfall=4.09"

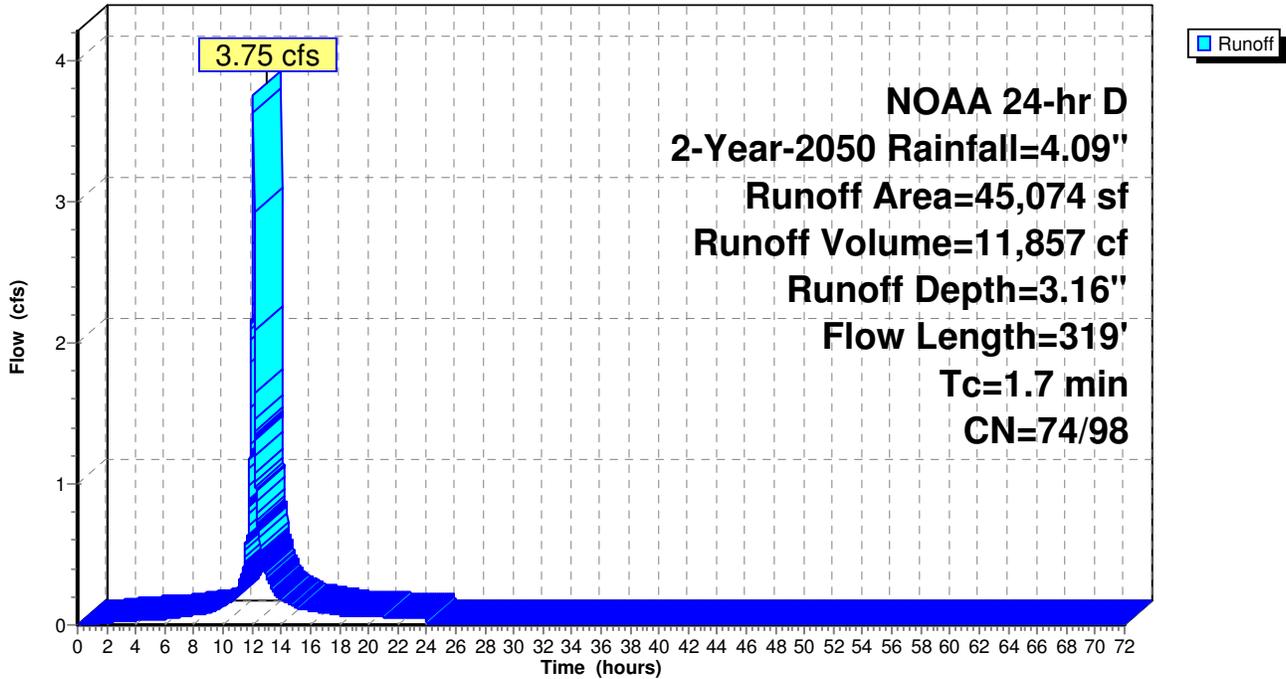
Area (sf)	CN	Description
30,716	98	Paved parking, HSG C
14,358	74	>75% Grass cover, Good, HSG C
45,074	90	Weighted Average
14,358	74	31.85% Pervious Area
30,716	98	68.15% Impervious Area

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



Subcatchment 3s: Ext DA 3

Hydrograph



Hydrograph for Subcatchment 3s: 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	0.10	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	0.33	1.73	2.18
14.00	3.28	1.09	3.05	0.18
16.00	3.56	1.28	3.33	0.10
18.00	3.74	1.41	3.51	0.07
20.00	3.88	1.51	3.64	0.06
22.00	3.99	1.59	3.76	0.05
24.00	4.09	1.66	3.85	0.04
26.00	4.09	1.66	3.85	0.00
28.00	4.09	1.66	3.85	0.00
30.00	4.09	1.66	3.85	0.00
32.00	4.09	1.66	3.85	0.00
34.00	4.09	1.66	3.85	0.00
36.00	4.09	1.66	3.85	0.00
38.00	4.09	1.66	3.85	0.00
40.00	4.09	1.66	3.85	0.00
42.00	4.09	1.66	3.85	0.00
44.00	4.09	1.66	3.85	0.00
46.00	4.09	1.66	3.85	0.00
48.00	4.09	1.66	3.85	0.00
50.00	4.09	1.66	3.85	0.00
52.00	4.09	1.66	3.85	0.00
54.00	4.09	1.66	3.85	0.00
56.00	4.09	1.66	3.85	0.00
58.00	4.09	1.66	3.85	0.00
60.00	4.09	1.66	3.85	0.00
62.00	4.09	1.66	3.85	0.00
64.00	4.09	1.66	3.85	0.00
66.00	4.09	1.66	3.85	0.00
68.00	4.09	1.66	3.85	0.00
70.00	4.09	1.66	3.85	0.00
72.00	4.09	1.66	3.85	0.00

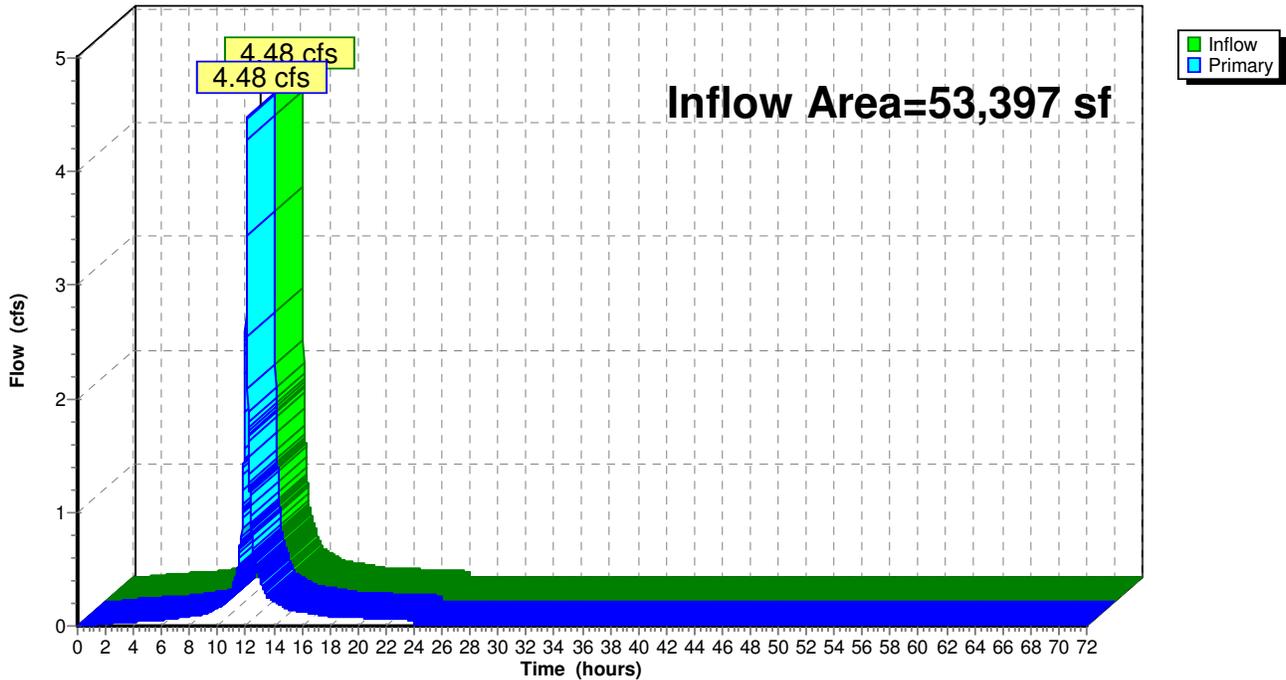
Summary for Link 4I: existing total discharge

Inflow Area = 53,397 sf, 68.55% Impervious, Inflow Depth = 3.21" for 2-Year-2050 event
Inflow = 4.48 cfs @ 12.10 hrs, Volume= 14,300 cf
Primary = 4.48 cfs @ 12.10 hrs, Volume= 14,300 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	0.09	0.00	0.09	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	2.60	0.00	2.60	63.00	0.00	0.00	0.00
13.00	0.43	0.00	0.43	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				

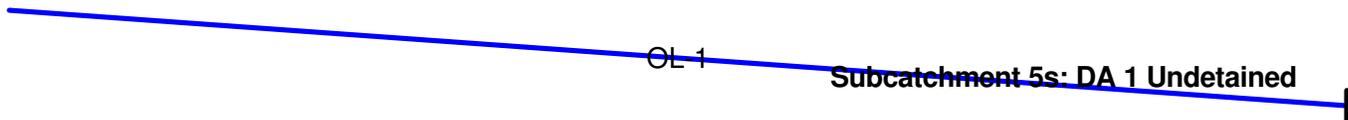
Summary for Subcatchment 5s: DA 1 Undetained

Runoff = 0.08 cfs @ 12.10 hrs, Volume= 242 cf, Depth= 1.98"
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-2050 Rainfall=4.09"

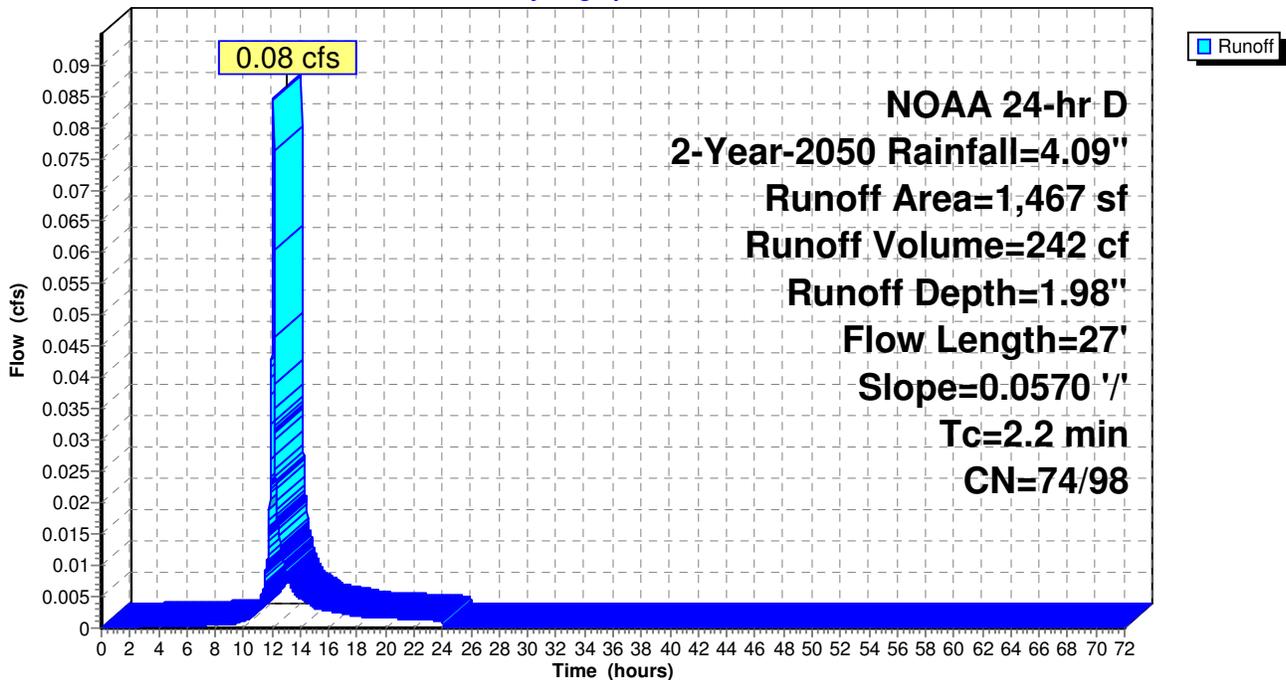
Area (sf)	CN	Description
1,255	74	>75% Grass cover, Good, HSG C
212	98	Unconnected roofs, HSG C
1,467	77	Weighted Average
1,255	74	85.55% Pervious Area
212	98	14.45% Impervious Area

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



Subcatchment 5s: DA 1 Undetained

Hydrograph



2025-09-22 HydroCad - hillcrest farms Rev 1

Prepared by Anderson Consulting Services

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Hillcrest Farms

NOAA 24-hr D 2-Year-2050 Rainfall=4.09"

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Hydrograph for Subcatchment 5s: 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	0.10	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	0.33	1.73	0.04
14.00	3.28	1.09	3.05	0.00
16.00	3.56	1.28	3.33	0.00
18.00	3.74	1.41	3.51	0.00
20.00	3.88	1.51	3.64	0.00
22.00	3.99	1.59	3.76	0.00
24.00	4.09	1.66	3.85	0.00
26.00	4.09	1.66	3.85	0.00
28.00	4.09	1.66	3.85	0.00
30.00	4.09	1.66	3.85	0.00
32.00	4.09	1.66	3.85	0.00
34.00	4.09	1.66	3.85	0.00
36.00	4.09	1.66	3.85	0.00
38.00	4.09	1.66	3.85	0.00
40.00	4.09	1.66	3.85	0.00
42.00	4.09	1.66	3.85	0.00
44.00	4.09	1.66	3.85	0.00
46.00	4.09	1.66	3.85	0.00
48.00	4.09	1.66	3.85	0.00
50.00	4.09	1.66	3.85	0.00
52.00	4.09	1.66	3.85	0.00
54.00	4.09	1.66	3.85	0.00
56.00	4.09	1.66	3.85	0.00
58.00	4.09	1.66	3.85	0.00
60.00	4.09	1.66	3.85	0.00
62.00	4.09	1.66	3.85	0.00
64.00	4.09	1.66	3.85	0.00
66.00	4.09	1.66	3.85	0.00
68.00	4.09	1.66	3.85	0.00
70.00	4.09	1.66	3.85	0.00
72.00	4.09	1.66	3.85	0.00

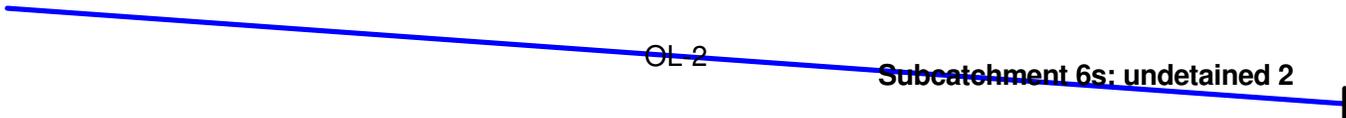
Summary for Subcatchment 6s: undetained 2

Runoff = 0.30 cfs @ 12.11 hrs, Volume= 911 cf, Depth= 2.60"
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-2050 Rainfall=4.09"

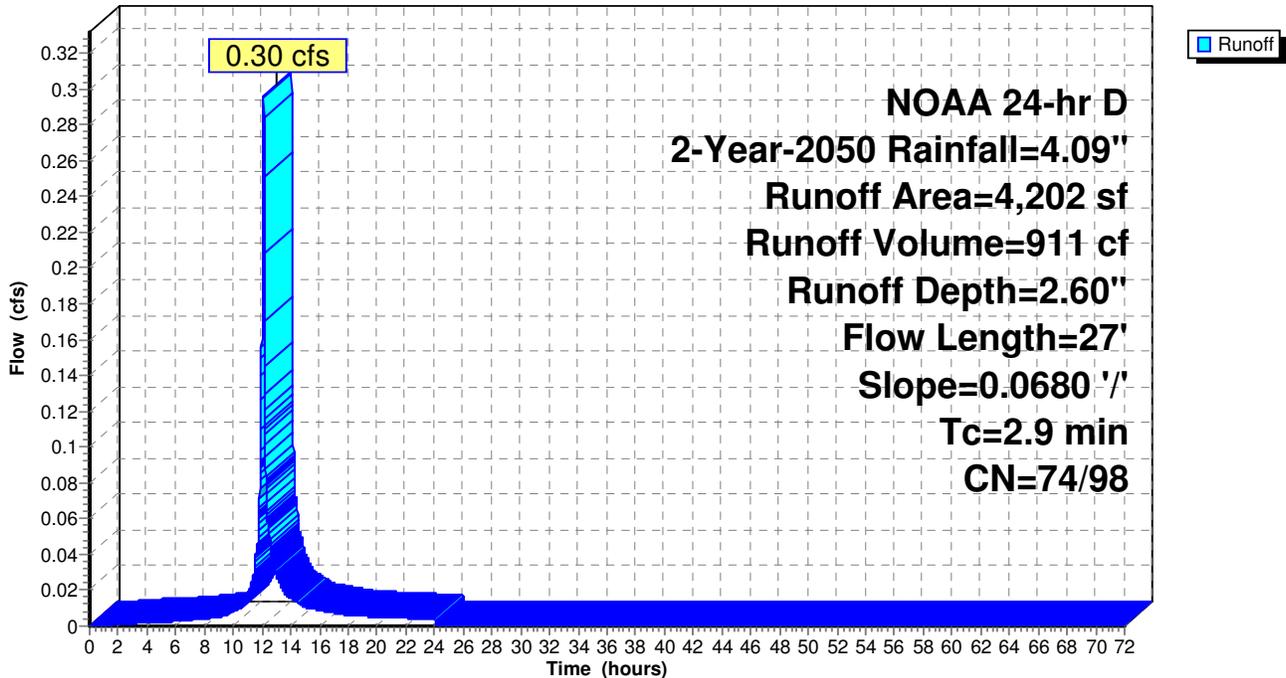
Area (sf)	CN	Description
1,802	98	Unconnected pavement, HSG C
2,400	74	>75% Grass cover, Good, HSG C
4,202	84	Weighted Average
2,400	74	57.12% Pervious Area
1,802	98	42.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	27	0.0680	0.15		Sheet Flow, OL-2 Grass: Dense n= 0.240 P2= 3.47"



Subcatchment 6s: undetained 2

Hydrograph



2025-09-22 HydroCad - hillcrest farms Rev 1

Prepared by Anderson Consulting Services

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Hillcrest Farms

NOAA 24-hr D 2-Year-2050 Rainfall=4.09"

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Hydrograph for Subcatchment 6s: 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	0.10	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	0.33	1.73	0.17
14.00	3.28	1.09	3.05	0.02
16.00	3.56	1.28	3.33	0.01
18.00	3.74	1.41	3.51	0.01
20.00	3.88	1.51	3.64	0.01
22.00	3.99	1.59	3.76	0.00
24.00	4.09	1.66	3.85	0.00
26.00	4.09	1.66	3.85	0.00
28.00	4.09	1.66	3.85	0.00
30.00	4.09	1.66	3.85	0.00
32.00	4.09	1.66	3.85	0.00
34.00	4.09	1.66	3.85	0.00
36.00	4.09	1.66	3.85	0.00
38.00	4.09	1.66	3.85	0.00
40.00	4.09	1.66	3.85	0.00
42.00	4.09	1.66	3.85	0.00
44.00	4.09	1.66	3.85	0.00
46.00	4.09	1.66	3.85	0.00
48.00	4.09	1.66	3.85	0.00
50.00	4.09	1.66	3.85	0.00
52.00	4.09	1.66	3.85	0.00
54.00	4.09	1.66	3.85	0.00
56.00	4.09	1.66	3.85	0.00
58.00	4.09	1.66	3.85	0.00
60.00	4.09	1.66	3.85	0.00
62.00	4.09	1.66	3.85	0.00
64.00	4.09	1.66	3.85	0.00
66.00	4.09	1.66	3.85	0.00
68.00	4.09	1.66	3.85	0.00
70.00	4.09	1.66	3.85	0.00
72.00	4.09	1.66	3.85	0.00

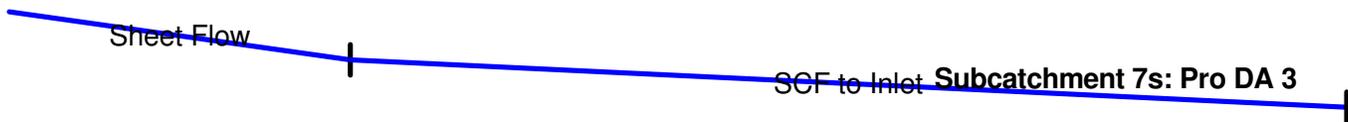
Summary for Subcatchment 7s: Pro DA 3

Runoff = 4.25 cfs @ 12.10 hrs, Volume= 13,739 cf, Depth= 3.44"
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-2050 Rainfall=4.09"

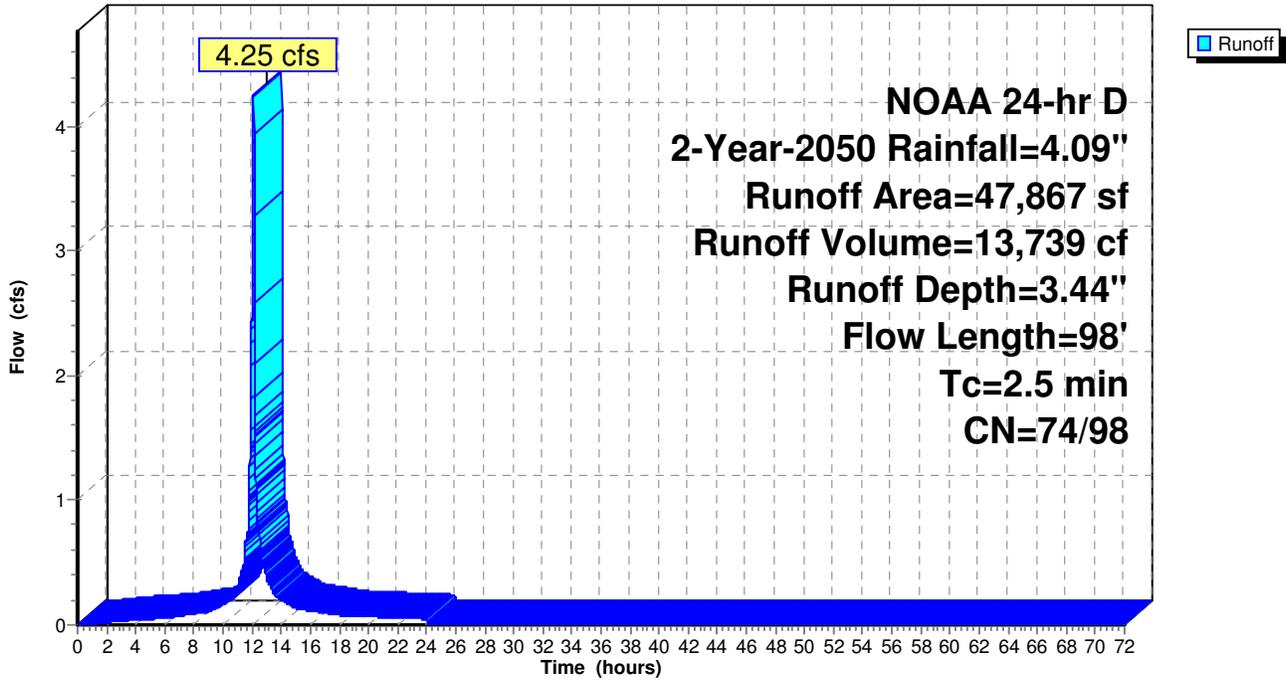
Area (sf)	CN	Description
38,903	98	Paved parking, HSG C
8,964	74	>75% Grass cover, Good, HSG C
47,867	94	Weighted Average
8,964	74	18.73% Pervious Area
38,903	98	81.27% Impervious Area

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



Subcatchment 7s: Pro DA 3

Hydrograph



2025-09-22 HydroCad - hillcrest farms Rev 1

Prepared by Anderson Consulting Services

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Hillcrest Farms

NOAA 24-hr D 2-Year-2050 Rainfall=4.09"

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Hydrograph for Subcatchment 7s: 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	0.10	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	0.33	1.73	2.50
14.00	3.28	1.09	3.05	0.20
16.00	3.56	1.28	3.33	0.11
18.00	3.74	1.41	3.51	0.08
20.00	3.88	1.51	3.64	0.07
22.00	3.99	1.59	3.76	0.06
24.00	4.09	1.66	3.85	0.05
26.00	4.09	1.66	3.85	0.00
28.00	4.09	1.66	3.85	0.00
30.00	4.09	1.66	3.85	0.00
32.00	4.09	1.66	3.85	0.00
34.00	4.09	1.66	3.85	0.00
36.00	4.09	1.66	3.85	0.00
38.00	4.09	1.66	3.85	0.00
40.00	4.09	1.66	3.85	0.00
42.00	4.09	1.66	3.85	0.00
44.00	4.09	1.66	3.85	0.00
46.00	4.09	1.66	3.85	0.00
48.00	4.09	1.66	3.85	0.00
50.00	4.09	1.66	3.85	0.00
52.00	4.09	1.66	3.85	0.00
54.00	4.09	1.66	3.85	0.00
56.00	4.09	1.66	3.85	0.00
58.00	4.09	1.66	3.85	0.00
60.00	4.09	1.66	3.85	0.00
62.00	4.09	1.66	3.85	0.00
64.00	4.09	1.66	3.85	0.00
66.00	4.09	1.66	3.85	0.00
68.00	4.09	1.66	3.85	0.00
70.00	4.09	1.66	3.85	0.00
72.00	4.09	1.66	3.85	0.00

Summary for Pond 8p: Detention System

Inflow Area = 47,867 sf, 81.27% Impervious, Inflow Depth = 3.44" for 2-Year-2050 event
 Inflow = 4.25 cfs @ 12.10 hrs, Volume= 13,739 cf
 Outflow = 1.80 cfs @ 12.16 hrs, Volume= 13,739 cf, Atten= 58%, Lag= 3.8 min
 Primary = 1.80 cfs @ 12.16 hrs, Volume= 13,739 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= 404.48' @ 12.16 hrs Surf.Area= 1,930 sf Storage= 2,105 cf

Plug-Flow detention time= 15.0 min calculated for 13,737 cf (100% of inflow)
 Center-of-Mass det. time= 15.0 min (774.4 - 759.5)

Volume	Invert	Avail.Storage	Storage Description
#1	403.00'	6,283 cf	48.0" Round Pipe Storage L= 500.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	403.00'	8.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	404.50'	36.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	405.50'	24.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

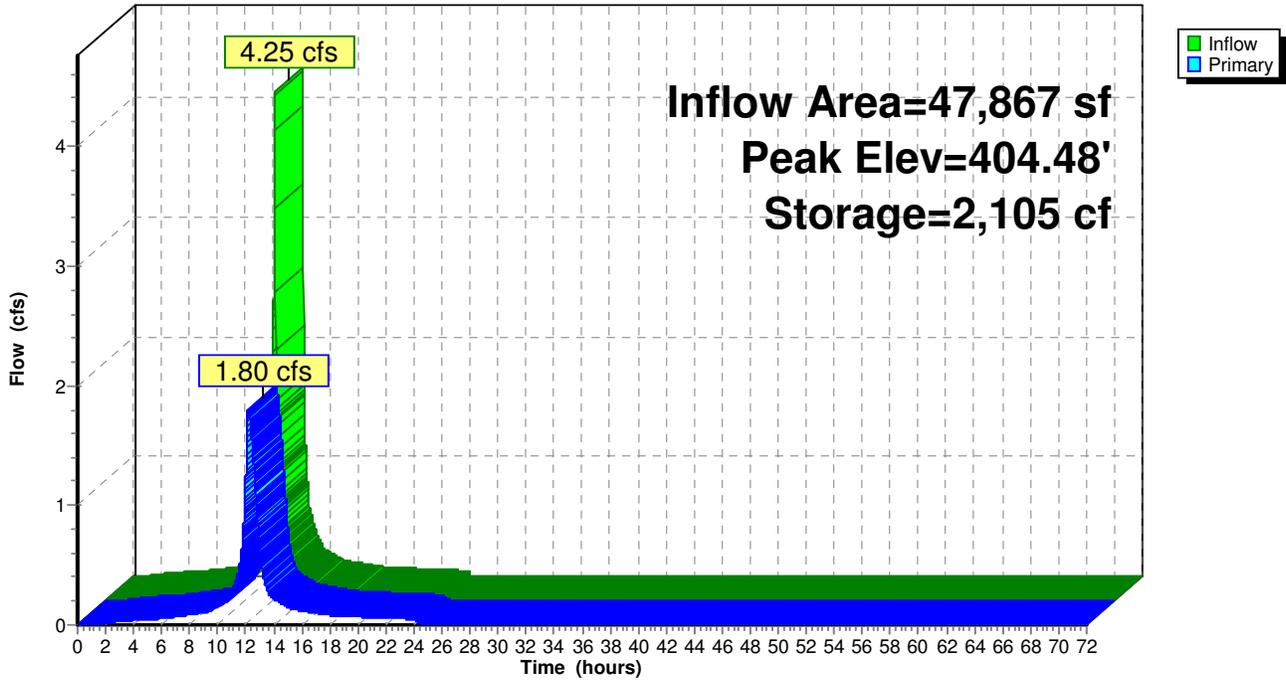
Primary OutFlow Max=1.80 cfs @ 12.16 hrs HW=404.48' (Free Discharge)

- 1=Orifice/Grate (Orifice Controls 1.80 cfs @ 5.14 fps)
- 2=Orifice/Grate (Controls 0.00 cfs)
- 3=Orifice/Grate (Controls 0.00 cfs)



Pond 8p: Detention System

Hydrograph



Hydrograph for Pond 8p: Detention System

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	403.00	0.00
2.00	0.02	19	403.06	0.01
4.00	0.04	43	403.10	0.04
6.00	0.05	57	403.12	0.05
8.00	0.09	82	403.16	0.09
10.00	0.17	132	403.22	0.16
12.00	2.50	1,023	403.88	1.24
14.00	0.20	173	403.26	0.22
16.00	0.11	106	403.19	0.12
18.00	0.08	79	403.15	0.08
20.00	0.07	68	403.14	0.07
22.00	0.06	61	403.13	0.06
24.00	0.05	53	403.12	0.05
26.00	0.00	1	403.00	0.00
28.00	0.00	0	403.00	0.00
30.00	0.00	0	403.00	0.00
32.00	0.00	0	403.00	0.00
34.00	0.00	0	403.00	0.00
36.00	0.00	0	403.00	0.00
38.00	0.00	0	403.00	0.00
40.00	0.00	0	403.00	0.00
42.00	0.00	0	403.00	0.00
44.00	0.00	0	403.00	0.00
46.00	0.00	0	403.00	0.00
48.00	0.00	0	403.00	0.00
50.00	0.00	0	403.00	0.00
52.00	0.00	0	403.00	0.00
54.00	0.00	0	403.00	0.00
56.00	0.00	0	403.00	0.00
58.00	0.00	0	403.00	0.00
60.00	0.00	0	403.00	0.00
62.00	0.00	0	403.00	0.00
64.00	0.00	0	403.00	0.00
66.00	0.00	0	403.00	0.00
68.00	0.00	0	403.00	0.00
70.00	0.00	0	403.00	0.00
72.00	0.00	0	403.00	0.00

Stage-Discharge for Pond 8p: Detention System

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
403.00	0.00	404.02	1.39	405.04	4.51	406.06	8.68
403.02	0.00	404.04	1.41	405.06	4.58	406.08	8.76
403.04	0.01	404.06	1.43	405.08	4.65	406.10	8.83
403.06	0.01	404.08	1.45	405.10	4.72	406.12	8.91
403.08	0.02	404.10	1.47	405.12	4.78	406.14	8.98
403.10	0.04	404.12	1.49	405.14	4.84	406.16	9.06
403.12	0.05	404.14	1.51	405.16	4.91	406.18	9.13
403.14	0.07	404.16	1.53	405.18	4.97	406.20	9.20
403.16	0.09	404.18	1.55	405.20	5.03	406.22	9.27
403.18	0.11	404.20	1.56	405.22	5.09	406.24	9.34
403.20	0.13	404.22	1.58	405.24	5.15	406.26	9.41
403.22	0.16	404.24	1.60	405.26	5.21	406.28	9.48
403.24	0.19	404.26	1.62	405.28	5.26	406.30	9.54
403.26	0.22	404.28	1.64	405.30	5.32	406.32	9.61
403.28	0.25	404.30	1.65	405.32	5.38	406.34	9.68
403.30	0.28	404.32	1.67	405.34	5.43	406.36	9.74
403.32	0.32	404.34	1.69	405.36	5.48	406.38	9.81
403.34	0.36	404.36	1.70	405.38	5.54	406.40	9.87
403.36	0.39	404.38	1.72	405.40	5.59	406.42	9.93
403.38	0.43	404.40	1.74	405.42	5.64	406.44	10.00
403.40	0.47	404.42	1.75	405.44	5.70	406.46	10.06
403.42	0.51	404.44	1.77	405.46	5.75	406.48	10.12
403.44	0.55	404.46	1.78	405.48	5.80	406.50	10.18
403.46	0.59	404.48	1.80	405.50	5.85	406.52	10.25
403.48	0.63	404.50	1.82	405.52	5.92	406.54	10.31
403.50	0.68	404.52	1.86	405.54	6.00	406.56	10.37
403.52	0.72	404.54	1.92	405.56	6.09	406.58	10.43
403.54	0.76	404.56	2.00	405.58	6.19	406.60	10.49
403.56	0.80	404.58	2.09	405.60	6.30	406.62	10.55
403.58	0.84	404.60	2.20	405.62	6.41	406.64	10.61
403.60	0.87	404.62	2.31	405.64	6.52	406.66	10.66
403.62	0.91	404.64	2.43	405.66	6.65	406.68	10.72
403.64	0.94	404.66	2.55	405.68	6.77	406.70	10.78
403.66	0.96	404.68	2.69	405.70	6.90	406.72	10.84
403.68	0.99	404.70	2.83	405.72	7.04	406.74	10.89
403.70	1.02	404.72	2.97	405.74	7.17	406.76	10.95
403.72	1.05	404.74	3.13	405.76	7.31	406.78	11.01
403.74	1.07	404.76	3.27	405.78	7.43	406.80	11.06
403.76	1.10	404.78	3.40	405.80	7.54	406.82	11.12
403.78	1.12	404.80	3.51	405.82	7.64	406.84	11.17
403.80	1.15	404.82	3.61	405.84	7.74	406.86	11.23
403.82	1.17	404.84	3.71	405.86	7.84	406.88	11.28
403.84	1.20	404.86	3.81	405.88	7.93	406.90	11.34
403.86	1.22	404.88	3.89	405.90	8.02	406.92	11.39
403.88	1.24	404.90	3.98	405.92	8.11	406.94	11.45
403.90	1.27	404.92	4.06	405.94	8.20	406.96	11.50
403.92	1.29	404.94	4.14	405.96	8.28	406.98	11.55
403.94	1.31	404.96	4.22	405.98	8.36	407.00	11.61
403.96	1.33	404.98	4.30	406.00	8.45		
403.98	1.35	405.00	4.37	406.02	8.53		
404.00	1.37	405.02	4.44	406.04	8.60		

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

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
403.00	0	405.55	4,228
403.05	15	405.60	4,323
403.10	42	405.65	4,418
403.15	77	405.70	4,512
403.20	117	405.75	4,606
403.25	164	405.80	4,698
403.30	214	405.85	4,789
403.35	269	405.90	4,879
403.40	327	405.95	4,968
403.45	389	406.00	5,055
403.50	453	406.05	5,141
403.55	521	406.10	5,225
403.60	591	406.15	5,308
403.65	664	406.20	5,389
403.70	739	406.25	5,468
403.75	816	406.30	5,545
403.80	895	406.35	5,620
403.85	976	406.40	5,692
403.90	1,058	406.45	5,762
403.95	1,143	406.50	5,830
404.00	1,228	406.55	5,895
404.05	1,316	406.60	5,956
404.10	1,404	406.65	6,014
404.15	1,494	406.70	6,069
404.20	1,585	406.75	6,120
404.25	1,678	406.80	6,166
404.30	1,771	406.85	6,207
404.35	1,865	406.90	6,241
404.40	1,960	406.95	6,268
404.45	2,056	407.00	6,283
404.50	2,152		
404.55	2,249		
404.60	2,347		
404.65	2,445		
404.70	2,544		
404.75	2,643		
404.80	2,742		
404.85	2,842		
404.90	2,942		
404.95	3,042		
405.00	3,142		
405.05	3,242		
405.10	3,342		
405.15	3,441		
405.20	3,541		
405.25	3,640		
405.30	3,739		
405.35	3,838		
405.40	3,936		
405.45	4,034		
405.50	4,131		

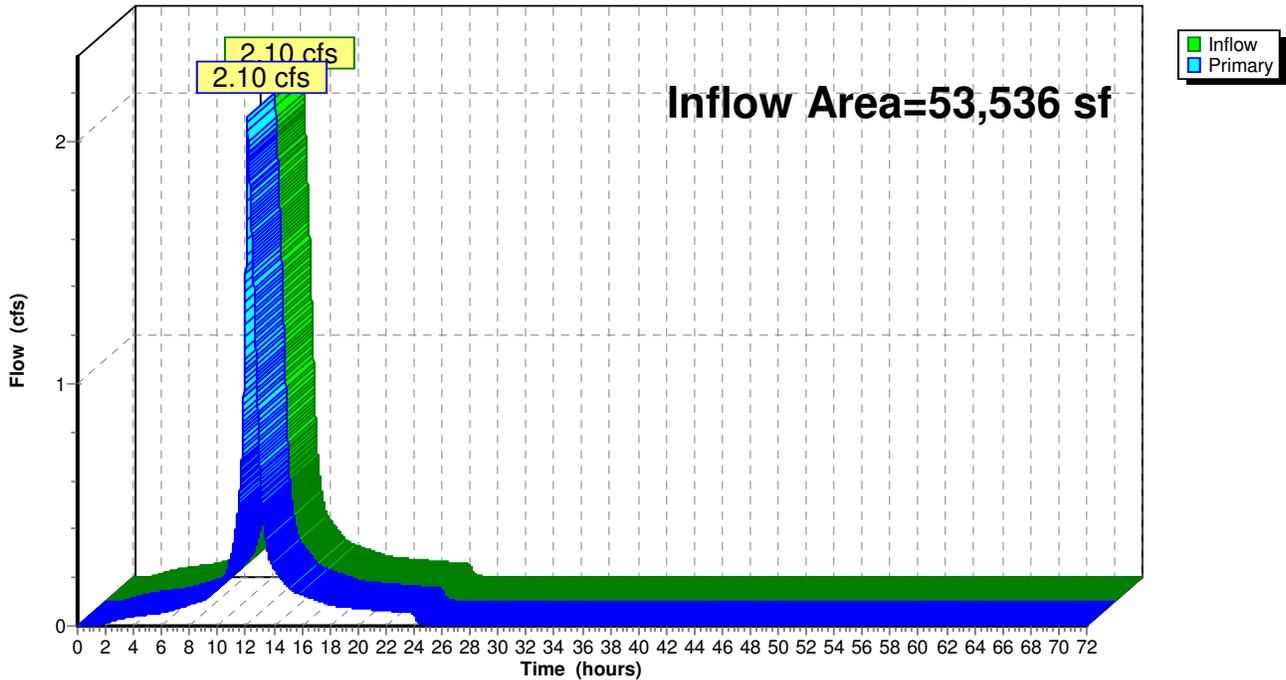
Summary for Link 9I: Overall discharge

Inflow Area = 53,536 sf, 76.43% Impervious, Inflow Depth = 3.34" for 2-Year-2050 event
Inflow = 2.10 cfs @ 12.12 hrs, Volume= 14,893 cf
Primary = 2.10 cfs @ 12.12 hrs, Volume= 14,893 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	0.01	0.00	0.01	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	0.05	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	0.30	0.00	0.30	62.00	0.00	0.00	0.00
12.00	1.45	0.00	1.45	63.00	0.00	0.00	0.00
13.00	0.65	0.00	0.65	64.00	0.00	0.00	0.00
14.00	0.24	0.00	0.24	65.00	0.00	0.00	0.00
15.00	0.16	0.00	0.16	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	0.07	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				

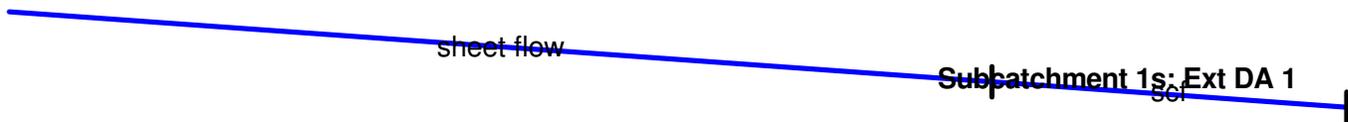
Summary for Subcatchment 1s: Ext DA 1

Runoff = 0.49 cfs @ 12.13 hrs, Volume= 1,692 cf, Depth= 5.33"
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-2050 Rainfall=6.37"

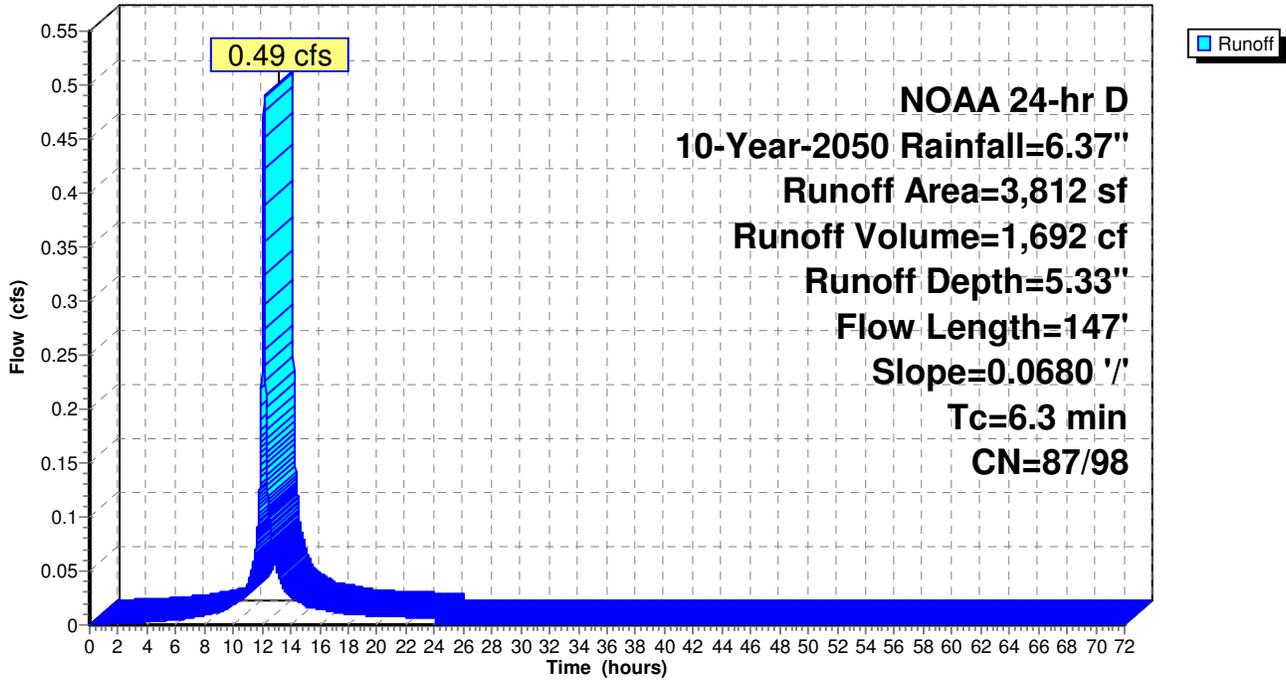
Area (sf)	CN	Description
1,374	98	Paved parking, HSG C
2,438	87	Dirt roads, HSG C
3,812	91	Weighted Average
2,438	87	63.96% Pervious Area
1,374	98	36.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	108	0.0680	0.29		Sheet Flow, sheet flow Grass: Short n= 0.150 P2= 3.47"
0.2	39	0.0680	4.20		Shallow Concentrated Flow, scf Unpaved Kv= 16.1 fps
6.3	147	Total			



Subcatchment 1s: Ext DA 1

Hydrograph



Hydrograph for Subcatchment 1s: 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	0.15	0.00	0.04	0.00
4.00	0.33	0.00	0.17	0.00
6.00	0.54	0.03	0.36	0.00
8.00	0.83	0.14	0.62	0.01
10.00	1.26	0.38	1.05	0.02
12.00	3.05	1.78	2.82	0.26
14.00	5.11	3.67	4.87	0.03
16.00	5.54	4.08	5.31	0.01
18.00	5.83	4.35	5.59	0.01
20.00	6.04	4.55	5.80	0.01
22.00	6.22	4.73	5.98	0.01
24.00	6.37	4.87	6.13	0.01
26.00	6.37	4.87	6.13	0.00
28.00	6.37	4.87	6.13	0.00
30.00	6.37	4.87	6.13	0.00
32.00	6.37	4.87	6.13	0.00
34.00	6.37	4.87	6.13	0.00
36.00	6.37	4.87	6.13	0.00
38.00	6.37	4.87	6.13	0.00
40.00	6.37	4.87	6.13	0.00
42.00	6.37	4.87	6.13	0.00
44.00	6.37	4.87	6.13	0.00
46.00	6.37	4.87	6.13	0.00
48.00	6.37	4.87	6.13	0.00
50.00	6.37	4.87	6.13	0.00
52.00	6.37	4.87	6.13	0.00
54.00	6.37	4.87	6.13	0.00
56.00	6.37	4.87	6.13	0.00
58.00	6.37	4.87	6.13	0.00
60.00	6.37	4.87	6.13	0.00
62.00	6.37	4.87	6.13	0.00
64.00	6.37	4.87	6.13	0.00
66.00	6.37	4.87	6.13	0.00
68.00	6.37	4.87	6.13	0.00
70.00	6.37	4.87	6.13	0.00
72.00	6.37	4.87	6.13	0.00

Summary for Subcatchment 2s: Ext DA 2

Runoff = 0.69 cfs @ 12.09 hrs, Volume= 2,305 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-2050 Rainfall=6.37"

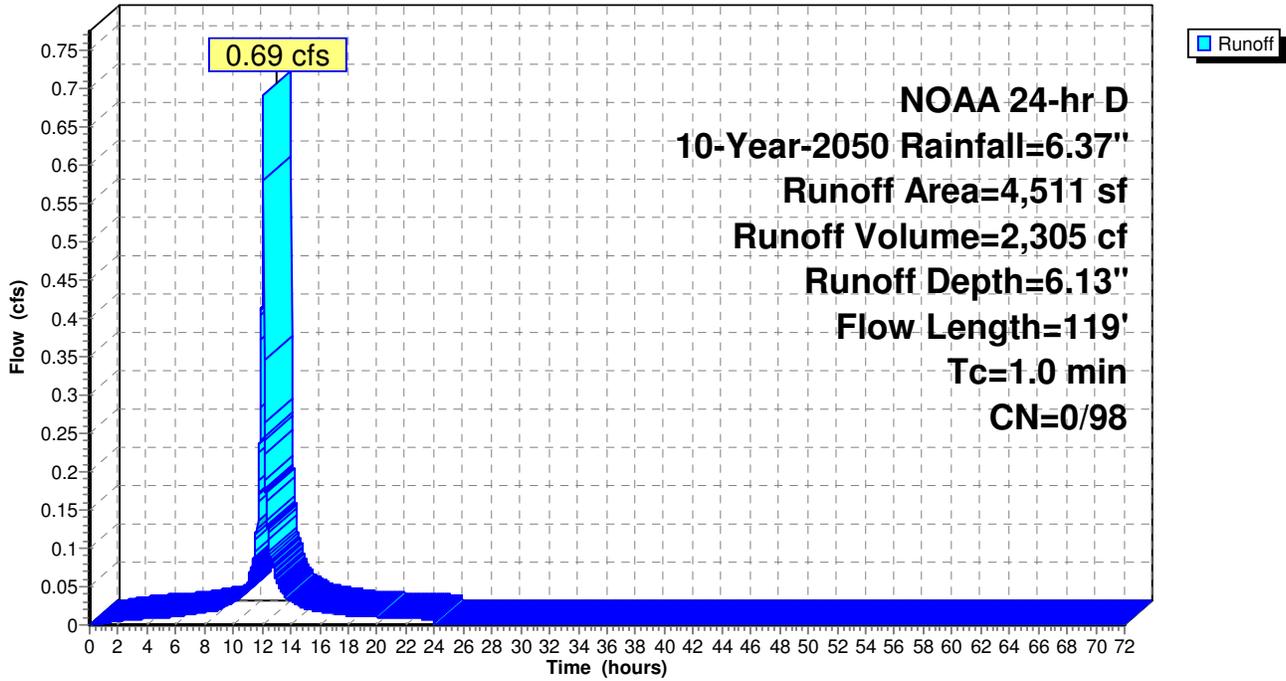
Area (sf)	CN	Description
4,185	98	Paved parking, HSG C
326	98	Paved parking, HSG C
4,511	98	Weighted Average
4,511	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	104	0.0385	1.88		Sheet Flow, sheet flow Smooth surfaces n= 0.011 P2= 3.47"
0.1	15	0.0150	2.49		Shallow Concentrated Flow, scf Paved Kv= 20.3 fps
1.0	119	Total			



Subcatchment 2s: Ext DA 2

Hydrograph



Hydrograph for Subcatchment 2s: 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	0.01
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	0.41
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

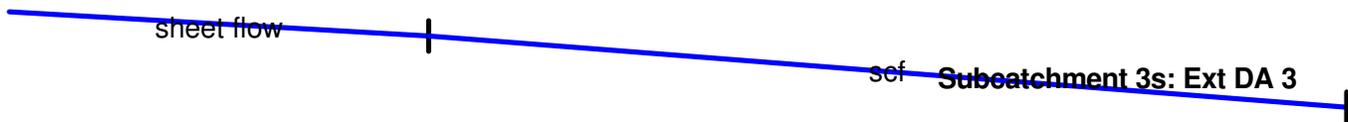
Summary for Subcatchment 3s: Ext DA 3

Runoff = 6.24 cfs @ 12.10 hrs, Volume= 19,880 cf, Depth= 5.29"
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-2050 Rainfall=6.37"

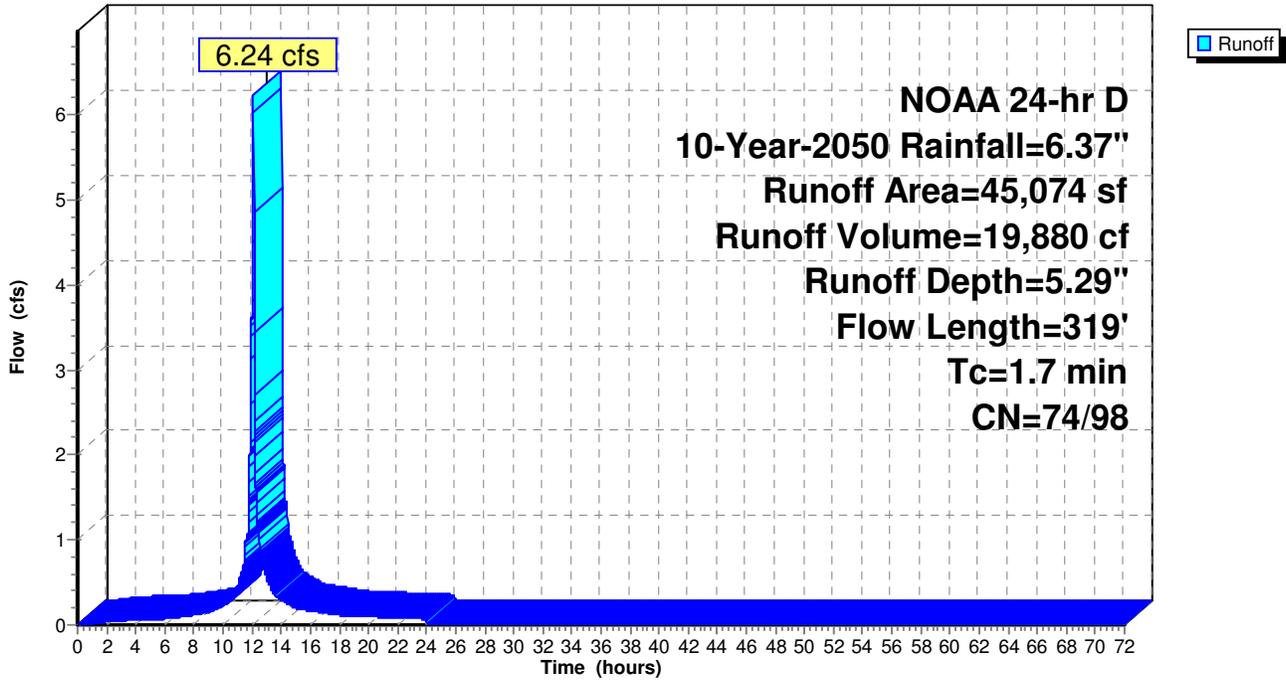
Area (sf)	CN	Description
30,716	98	Paved parking, HSG C
14,358	74	>75% Grass cover, Good, HSG C
45,074	90	Weighted Average
14,358	74	31.85% Pervious Area
30,716	98	68.15% Impervious Area

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



Subcatchment 3s: Ext DA 3

Hydrograph



Hydrograph for Subcatchment 3s: 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	0.12
10.00	1.26	0.08	1.05	0.23
12.00	3.05	0.94	2.82	3.65
14.00	5.11	2.45	4.87	0.30
16.00	5.54	2.80	5.31	0.17
18.00	5.83	3.04	5.59	0.11
20.00	6.04	3.22	5.80	0.10
22.00	6.22	3.37	5.98	0.08
24.00	6.37	3.50	6.13	0.07
26.00	6.37	3.50	6.13	0.00
28.00	6.37	3.50	6.13	0.00
30.00	6.37	3.50	6.13	0.00
32.00	6.37	3.50	6.13	0.00
34.00	6.37	3.50	6.13	0.00
36.00	6.37	3.50	6.13	0.00
38.00	6.37	3.50	6.13	0.00
40.00	6.37	3.50	6.13	0.00
42.00	6.37	3.50	6.13	0.00
44.00	6.37	3.50	6.13	0.00
46.00	6.37	3.50	6.13	0.00
48.00	6.37	3.50	6.13	0.00
50.00	6.37	3.50	6.13	0.00
52.00	6.37	3.50	6.13	0.00
54.00	6.37	3.50	6.13	0.00
56.00	6.37	3.50	6.13	0.00
58.00	6.37	3.50	6.13	0.00
60.00	6.37	3.50	6.13	0.00
62.00	6.37	3.50	6.13	0.00
64.00	6.37	3.50	6.13	0.00
66.00	6.37	3.50	6.13	0.00
68.00	6.37	3.50	6.13	0.00
70.00	6.37	3.50	6.13	0.00
72.00	6.37	3.50	6.13	0.00

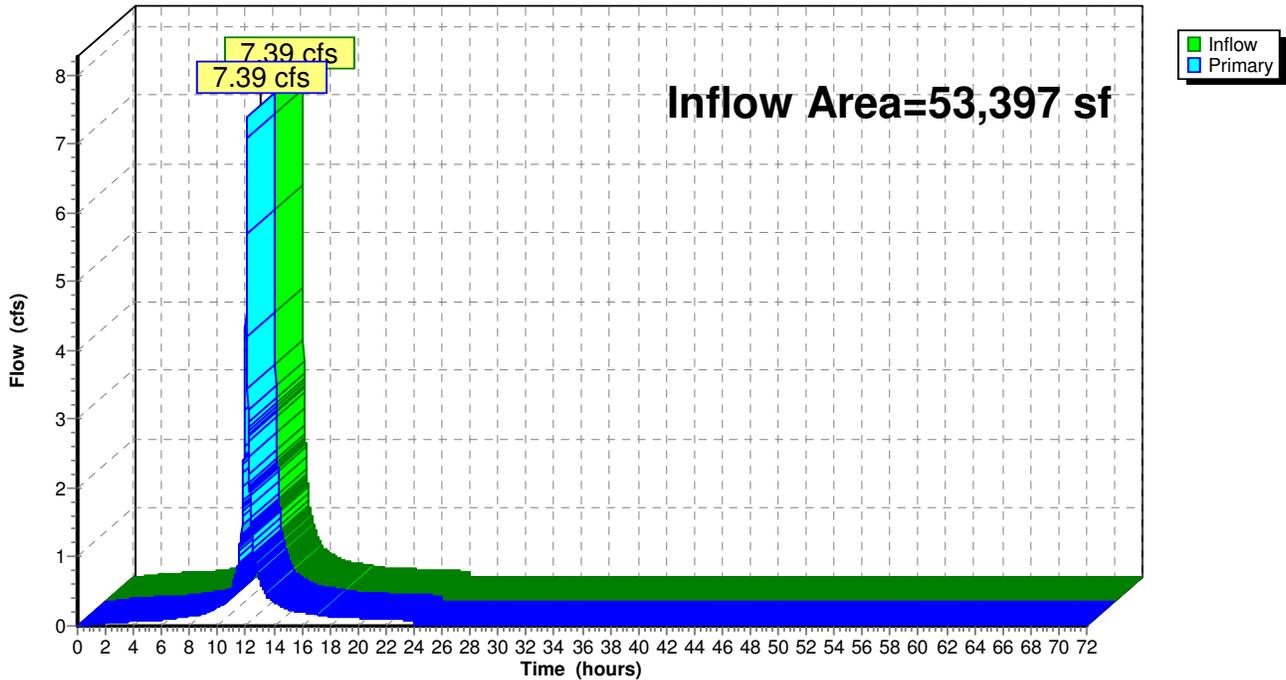
Summary for Link 4I: existing total discharge

Inflow Area = 53,397 sf, 68.55% Impervious, Inflow Depth = 5.37" for 10-Year-2050 event
Inflow = 7.39 cfs @ 12.10 hrs, Volume= 23,877 cf
Primary = 7.39 cfs @ 12.10 hrs, Volume= 23,877 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	4.33	0.00	4.33	63.00	0.00	0.00	0.00
13.00	0.69	0.00	0.69	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	0.14	0.00	0.14	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				

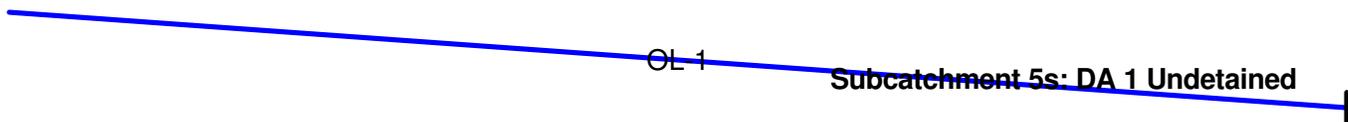
Summary for Subcatchment 5s: DA 1 Undetained

Runoff = 0.17 cfs @ 12.10 hrs, Volume= 474 cf, Depth= 3.88"
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 10-Year-2050 Rainfall=6.37"

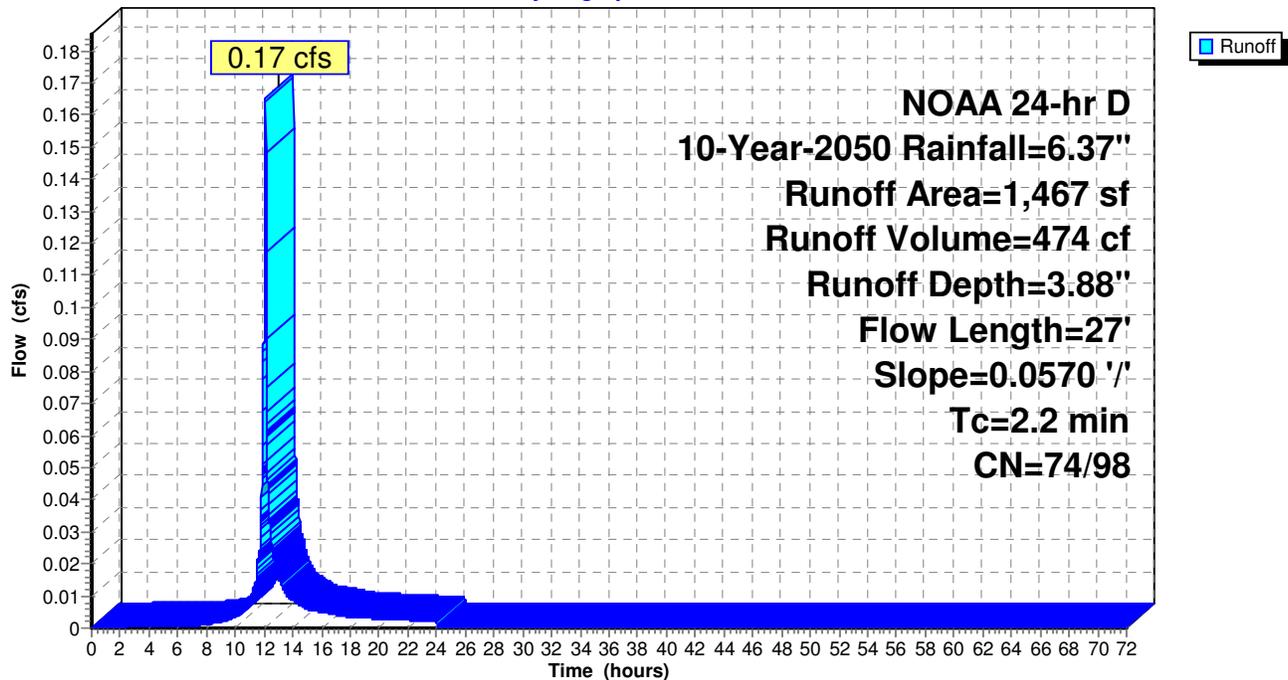
Area (sf)	CN	Description
1,255	74	>75% Grass cover, Good, HSG C
212	98	Unconnected roofs, HSG C
1,467	77	Weighted Average
1,255	74	85.55% Pervious Area
212	98	14.45% Impervious Area

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



Subcatchment 5s: DA 1 Undetained

Hydrograph



Hydrograph for Subcatchment 5s: 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	0.08	1.05	0.00
12.00	3.05	0.94	2.82	0.09
14.00	5.11	2.45	4.87	0.01
16.00	5.54	2.80	5.31	0.00
18.00	5.83	3.04	5.59	0.00
20.00	6.04	3.22	5.80	0.00
22.00	6.22	3.37	5.98	0.00
24.00	6.37	3.50	6.13	0.00
26.00	6.37	3.50	6.13	0.00
28.00	6.37	3.50	6.13	0.00
30.00	6.37	3.50	6.13	0.00
32.00	6.37	3.50	6.13	0.00
34.00	6.37	3.50	6.13	0.00
36.00	6.37	3.50	6.13	0.00
38.00	6.37	3.50	6.13	0.00
40.00	6.37	3.50	6.13	0.00
42.00	6.37	3.50	6.13	0.00
44.00	6.37	3.50	6.13	0.00
46.00	6.37	3.50	6.13	0.00
48.00	6.37	3.50	6.13	0.00
50.00	6.37	3.50	6.13	0.00
52.00	6.37	3.50	6.13	0.00
54.00	6.37	3.50	6.13	0.00
56.00	6.37	3.50	6.13	0.00
58.00	6.37	3.50	6.13	0.00
60.00	6.37	3.50	6.13	0.00
62.00	6.37	3.50	6.13	0.00
64.00	6.37	3.50	6.13	0.00
66.00	6.37	3.50	6.13	0.00
68.00	6.37	3.50	6.13	0.00
70.00	6.37	3.50	6.13	0.00
72.00	6.37	3.50	6.13	0.00

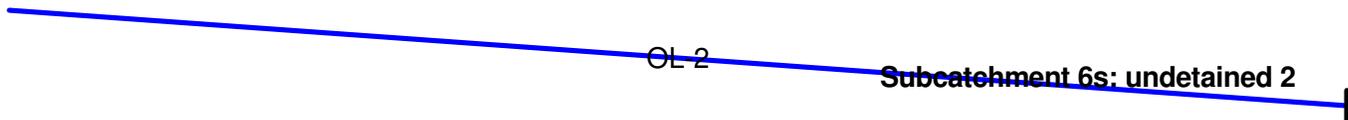
Summary for Subcatchment 6s: undetained 2

Runoff = 0.53 cfs @ 12.11 hrs, Volume= 1,620 cf, Depth= 4.63"
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-2050 Rainfall=6.37"

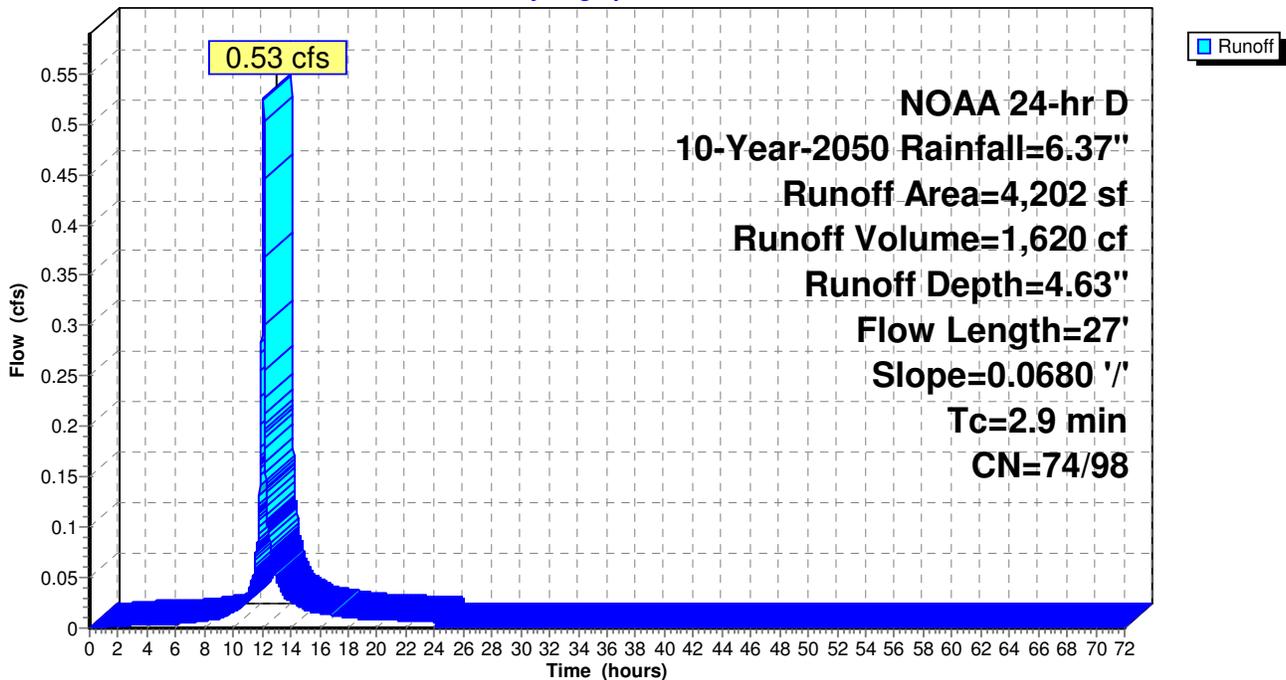
Area (sf)	CN	Description
1,802	98	Unconnected pavement, HSG C
2,400	74	>75% Grass cover, Good, HSG C
4,202	84	Weighted Average
2,400	74	57.12% Pervious Area
1,802	98	42.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	27	0.0680	0.15		Sheet Flow, OL-2 Grass: Dense n= 0.240 P2= 3.47"



Subcatchment 6s: undetained 2

Hydrograph



Hydrograph for Subcatchment 6s: 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	0.08	1.05	0.02
12.00	3.05	0.94	2.82	0.30
14.00	5.11	2.45	4.87	0.03
16.00	5.54	2.80	5.31	0.01
18.00	5.83	3.04	5.59	0.01
20.00	6.04	3.22	5.80	0.01
22.00	6.22	3.37	5.98	0.01
24.00	6.37	3.50	6.13	0.01
26.00	6.37	3.50	6.13	0.00
28.00	6.37	3.50	6.13	0.00
30.00	6.37	3.50	6.13	0.00
32.00	6.37	3.50	6.13	0.00
34.00	6.37	3.50	6.13	0.00
36.00	6.37	3.50	6.13	0.00
38.00	6.37	3.50	6.13	0.00
40.00	6.37	3.50	6.13	0.00
42.00	6.37	3.50	6.13	0.00
44.00	6.37	3.50	6.13	0.00
46.00	6.37	3.50	6.13	0.00
48.00	6.37	3.50	6.13	0.00
50.00	6.37	3.50	6.13	0.00
52.00	6.37	3.50	6.13	0.00
54.00	6.37	3.50	6.13	0.00
56.00	6.37	3.50	6.13	0.00
58.00	6.37	3.50	6.13	0.00
60.00	6.37	3.50	6.13	0.00
62.00	6.37	3.50	6.13	0.00
64.00	6.37	3.50	6.13	0.00
66.00	6.37	3.50	6.13	0.00
68.00	6.37	3.50	6.13	0.00
70.00	6.37	3.50	6.13	0.00
72.00	6.37	3.50	6.13	0.00

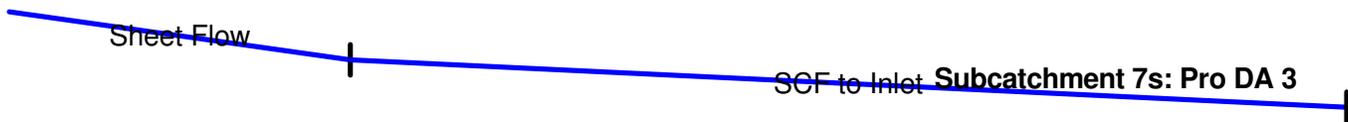
Summary for Subcatchment 7s: Pro DA 3

Runoff = 6.89 cfs @ 12.10 hrs, Volume= 22,491 cf, Depth= 5.64"
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-2050 Rainfall=6.37"

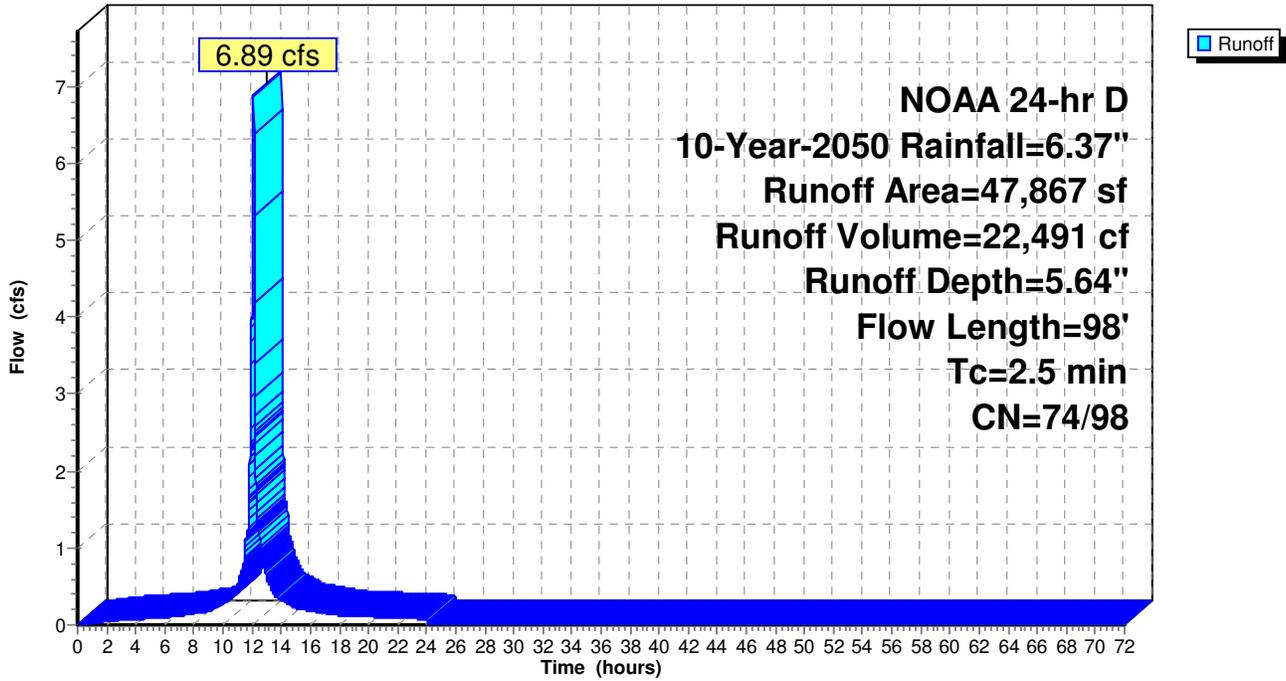
Area (sf)	CN	Description
38,903	98	Paved parking, HSG C
8,964	74	>75% Grass cover, Good, HSG C
47,867	94	Weighted Average
8,964	74	18.73% Pervious Area
38,903	98	81.27% Impervious Area

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



Subcatchment 7s: Pro DA 3

Hydrograph



Hydrograph for Subcatchment 7s: 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	0.15	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	0.08	1.05	0.28
12.00	3.05	0.94	2.82	4.07
14.00	5.11	2.45	4.87	0.33
16.00	5.54	2.80	5.31	0.18
18.00	5.83	3.04	5.59	0.12
20.00	6.04	3.22	5.80	0.11
22.00	6.22	3.37	5.98	0.09
24.00	6.37	3.50	6.13	0.08
26.00	6.37	3.50	6.13	0.00
28.00	6.37	3.50	6.13	0.00
30.00	6.37	3.50	6.13	0.00
32.00	6.37	3.50	6.13	0.00
34.00	6.37	3.50	6.13	0.00
36.00	6.37	3.50	6.13	0.00
38.00	6.37	3.50	6.13	0.00
40.00	6.37	3.50	6.13	0.00
42.00	6.37	3.50	6.13	0.00
44.00	6.37	3.50	6.13	0.00
46.00	6.37	3.50	6.13	0.00
48.00	6.37	3.50	6.13	0.00
50.00	6.37	3.50	6.13	0.00
52.00	6.37	3.50	6.13	0.00
54.00	6.37	3.50	6.13	0.00
56.00	6.37	3.50	6.13	0.00
58.00	6.37	3.50	6.13	0.00
60.00	6.37	3.50	6.13	0.00
62.00	6.37	3.50	6.13	0.00
64.00	6.37	3.50	6.13	0.00
66.00	6.37	3.50	6.13	0.00
68.00	6.37	3.50	6.13	0.00
70.00	6.37	3.50	6.13	0.00
72.00	6.37	3.50	6.13	0.00

Summary for Pond 8p: Detention System

Inflow Area = 47,867 sf, 81.27% Impervious, Inflow Depth = 5.64" for 10-Year-2050 event
 Inflow = 6.89 cfs @ 12.10 hrs, Volume= 22,491 cf
 Outflow = 4.54 cfs @ 12.14 hrs, Volume= 22,491 cf, Atten= 34%, Lag= 2.3 min
 Primary = 4.54 cfs @ 12.14 hrs, Volume= 22,491 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= 405.05' @ 12.14 hrs Surf.Area= 1,999 sf Storage= 3,235 cf

Plug-Flow detention time= 14.2 min calculated for 22,488 cf (100% of inflow)
 Center-of-Mass det. time= 14.2 min (766.7 - 752.5)

Volume	Invert	Avail.Storage	Storage Description
#1	403.00'	6,283 cf	48.0" Round Pipe Storage L= 500.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	403.00'	8.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	404.50'	36.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	405.50'	24.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

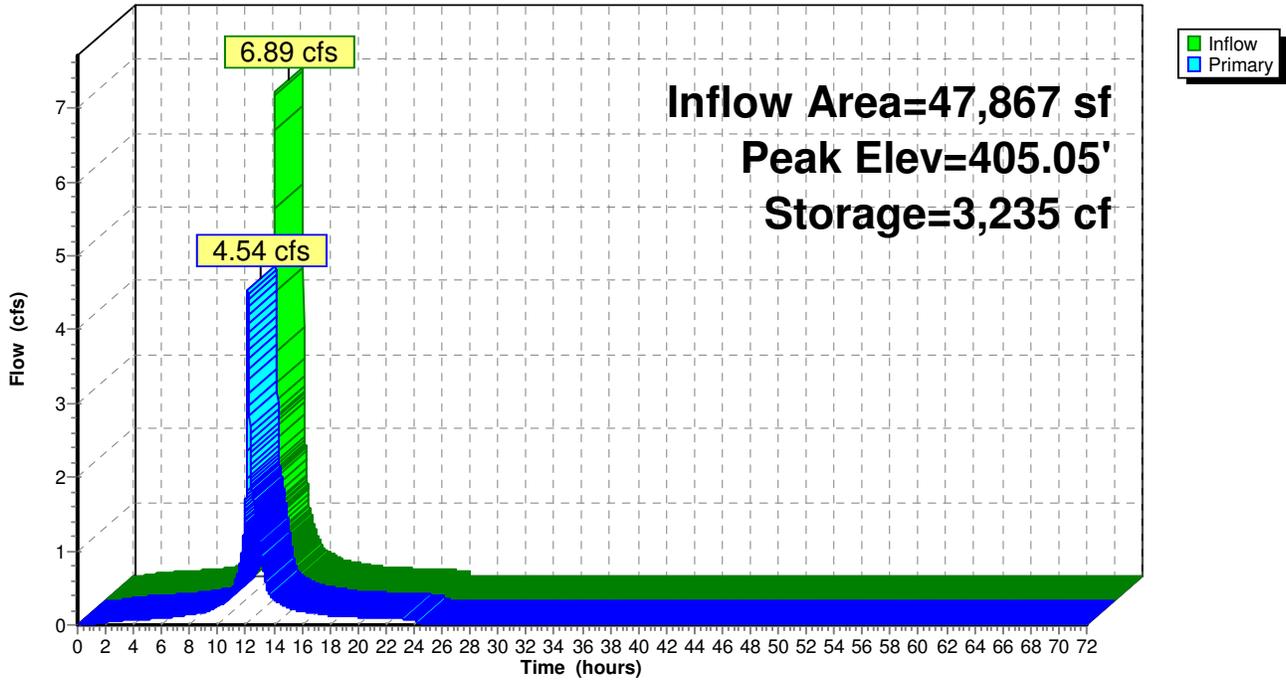
Primary OutFlow Max=4.53 cfs @ 12.14 hrs HW=405.04' (Free Discharge)

- 1=Orifice/Grate (Orifice Controls 2.20 cfs @ 6.30 fps)
- 2=Orifice/Grate (Orifice Controls 2.33 cfs @ 3.11 fps)
- 3=Orifice/Grate (Controls 0.00 cfs)



Pond 8p: Detention System

Hydrograph



Hydrograph for Pond 8p: Detention System

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	403.00	0.00
2.00	0.04	43	403.10	0.04
4.00	0.07	71	403.14	0.07
6.00	0.09	86	403.16	0.09
8.00	0.15	123	403.21	0.14
10.00	0.28	200	403.29	0.26
12.00	4.07	1,849	404.34	1.69
14.00	0.33	255	403.34	0.35
16.00	0.18	154	403.24	0.19
18.00	0.12	113	403.20	0.13
20.00	0.11	98	403.18	0.11
22.00	0.09	87	403.16	0.09
24.00	0.08	76	403.15	0.08
26.00	0.00	1	403.00	0.00
28.00	0.00	0	403.00	0.00
30.00	0.00	0	403.00	0.00
32.00	0.00	0	403.00	0.00
34.00	0.00	0	403.00	0.00
36.00	0.00	0	403.00	0.00
38.00	0.00	0	403.00	0.00
40.00	0.00	0	403.00	0.00
42.00	0.00	0	403.00	0.00
44.00	0.00	0	403.00	0.00
46.00	0.00	0	403.00	0.00
48.00	0.00	0	403.00	0.00
50.00	0.00	0	403.00	0.00
52.00	0.00	0	403.00	0.00
54.00	0.00	0	403.00	0.00
56.00	0.00	0	403.00	0.00
58.00	0.00	0	403.00	0.00
60.00	0.00	0	403.00	0.00
62.00	0.00	0	403.00	0.00
64.00	0.00	0	403.00	0.00
66.00	0.00	0	403.00	0.00
68.00	0.00	0	403.00	0.00
70.00	0.00	0	403.00	0.00
72.00	0.00	0	403.00	0.00

Stage-Discharge for Pond 8p: Detention System

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
403.00	0.00	404.02	1.39	405.04	4.51	406.06	8.68
403.02	0.00	404.04	1.41	405.06	4.58	406.08	8.76
403.04	0.01	404.06	1.43	405.08	4.65	406.10	8.83
403.06	0.01	404.08	1.45	405.10	4.72	406.12	8.91
403.08	0.02	404.10	1.47	405.12	4.78	406.14	8.98
403.10	0.04	404.12	1.49	405.14	4.84	406.16	9.06
403.12	0.05	404.14	1.51	405.16	4.91	406.18	9.13
403.14	0.07	404.16	1.53	405.18	4.97	406.20	9.20
403.16	0.09	404.18	1.55	405.20	5.03	406.22	9.27
403.18	0.11	404.20	1.56	405.22	5.09	406.24	9.34
403.20	0.13	404.22	1.58	405.24	5.15	406.26	9.41
403.22	0.16	404.24	1.60	405.26	5.21	406.28	9.48
403.24	0.19	404.26	1.62	405.28	5.26	406.30	9.54
403.26	0.22	404.28	1.64	405.30	5.32	406.32	9.61
403.28	0.25	404.30	1.65	405.32	5.38	406.34	9.68
403.30	0.28	404.32	1.67	405.34	5.43	406.36	9.74
403.32	0.32	404.34	1.69	405.36	5.48	406.38	9.81
403.34	0.36	404.36	1.70	405.38	5.54	406.40	9.87
403.36	0.39	404.38	1.72	405.40	5.59	406.42	9.93
403.38	0.43	404.40	1.74	405.42	5.64	406.44	10.00
403.40	0.47	404.42	1.75	405.44	5.70	406.46	10.06
403.42	0.51	404.44	1.77	405.46	5.75	406.48	10.12
403.44	0.55	404.46	1.78	405.48	5.80	406.50	10.18
403.46	0.59	404.48	1.80	405.50	5.85	406.52	10.25
403.48	0.63	404.50	1.82	405.52	5.92	406.54	10.31
403.50	0.68	404.52	1.86	405.54	6.00	406.56	10.37
403.52	0.72	404.54	1.92	405.56	6.09	406.58	10.43
403.54	0.76	404.56	2.00	405.58	6.19	406.60	10.49
403.56	0.80	404.58	2.09	405.60	6.30	406.62	10.55
403.58	0.84	404.60	2.20	405.62	6.41	406.64	10.61
403.60	0.87	404.62	2.31	405.64	6.52	406.66	10.66
403.62	0.91	404.64	2.43	405.66	6.65	406.68	10.72
403.64	0.94	404.66	2.55	405.68	6.77	406.70	10.78
403.66	0.96	404.68	2.69	405.70	6.90	406.72	10.84
403.68	0.99	404.70	2.83	405.72	7.04	406.74	10.89
403.70	1.02	404.72	2.97	405.74	7.17	406.76	10.95
403.72	1.05	404.74	3.13	405.76	7.31	406.78	11.01
403.74	1.07	404.76	3.27	405.78	7.43	406.80	11.06
403.76	1.10	404.78	3.40	405.80	7.54	406.82	11.12
403.78	1.12	404.80	3.51	405.82	7.64	406.84	11.17
403.80	1.15	404.82	3.61	405.84	7.74	406.86	11.23
403.82	1.17	404.84	3.71	405.86	7.84	406.88	11.28
403.84	1.20	404.86	3.81	405.88	7.93	406.90	11.34
403.86	1.22	404.88	3.89	405.90	8.02	406.92	11.39
403.88	1.24	404.90	3.98	405.92	8.11	406.94	11.45
403.90	1.27	404.92	4.06	405.94	8.20	406.96	11.50
403.92	1.29	404.94	4.14	405.96	8.28	406.98	11.55
403.94	1.31	404.96	4.22	405.98	8.36	407.00	11.61
403.96	1.33	404.98	4.30	406.00	8.45		
403.98	1.35	405.00	4.37	406.02	8.53		
404.00	1.37	405.02	4.44	406.04	8.60		

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

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
403.00	0	405.55	4,228
403.05	15	405.60	4,323
403.10	42	405.65	4,418
403.15	77	405.70	4,512
403.20	117	405.75	4,606
403.25	164	405.80	4,698
403.30	214	405.85	4,789
403.35	269	405.90	4,879
403.40	327	405.95	4,968
403.45	389	406.00	5,055
403.50	453	406.05	5,141
403.55	521	406.10	5,225
403.60	591	406.15	5,308
403.65	664	406.20	5,389
403.70	739	406.25	5,468
403.75	816	406.30	5,545
403.80	895	406.35	5,620
403.85	976	406.40	5,692
403.90	1,058	406.45	5,762
403.95	1,143	406.50	5,830
404.00	1,228	406.55	5,895
404.05	1,316	406.60	5,956
404.10	1,404	406.65	6,014
404.15	1,494	406.70	6,069
404.20	1,585	406.75	6,120
404.25	1,678	406.80	6,166
404.30	1,771	406.85	6,207
404.35	1,865	406.90	6,241
404.40	1,960	406.95	6,268
404.45	2,056	407.00	6,283
404.50	2,152		
404.55	2,249		
404.60	2,347		
404.65	2,445		
404.70	2,544		
404.75	2,643		
404.80	2,742		
404.85	2,842		
404.90	2,942		
404.95	3,042		
405.00	3,142		
405.05	3,242		
405.10	3,342		
405.15	3,441		
405.20	3,541		
405.25	3,640		
405.30	3,739		
405.35	3,838		
405.40	3,936		
405.45	4,034		
405.50	4,131		

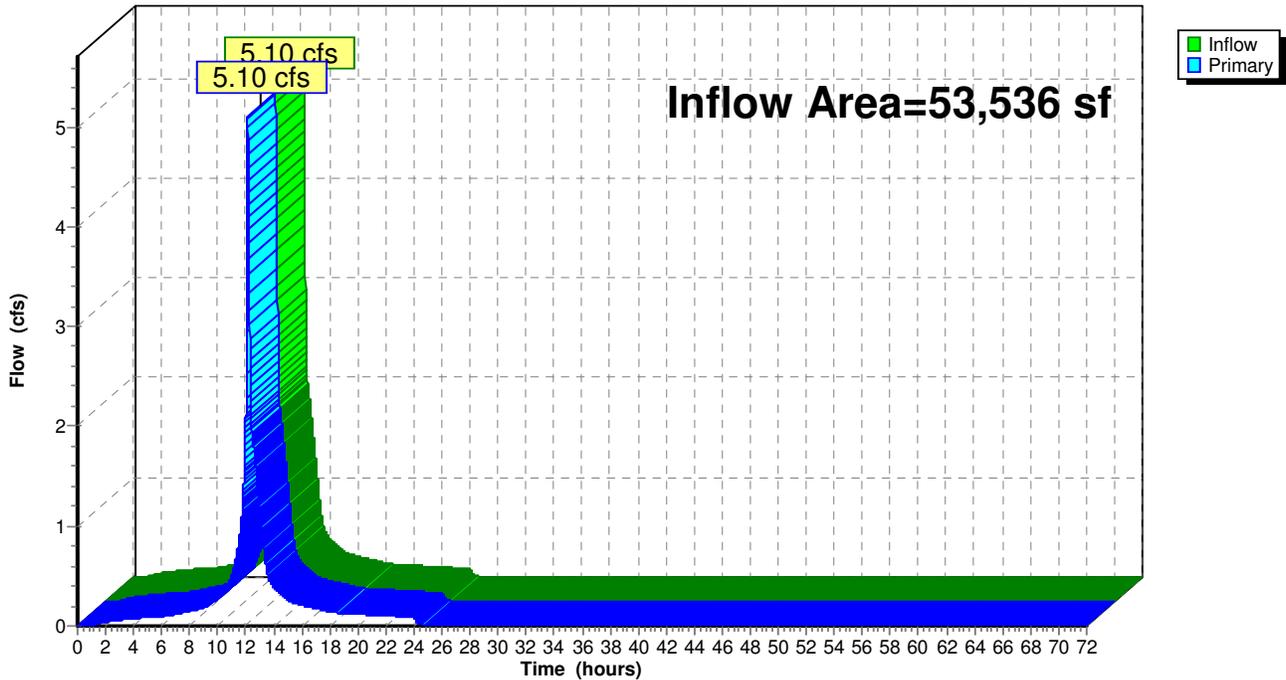
Summary for Link 9I: Overall discharge

Inflow Area = 53,536 sf, 76.43% Impervious, Inflow Depth = 5.51" for 10-Year-2050 event
Inflow = 5.10 cfs @ 12.12 hrs, Volume= 24,586 cf
Primary = 5.10 cfs @ 12.12 hrs, Volume= 24,586 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	0.01	0.00	0.01	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	0.09	0.00	0.09	56.00	0.00	0.00	0.00
6.00	0.10	0.00	0.10	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	2.08	0.00	2.08	63.00	0.00	0.00	0.00
13.00	1.19	0.00	1.19	64.00	0.00	0.00	0.00
14.00	0.39	0.00	0.39	65.00	0.00	0.00	0.00
15.00	0.26	0.00	0.26	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	0.17	0.00	0.17	68.00	0.00	0.00	0.00
18.00	0.14	0.00	0.14	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	0.09	0.00	0.09				
24.00	0.09	0.00	0.09				
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				

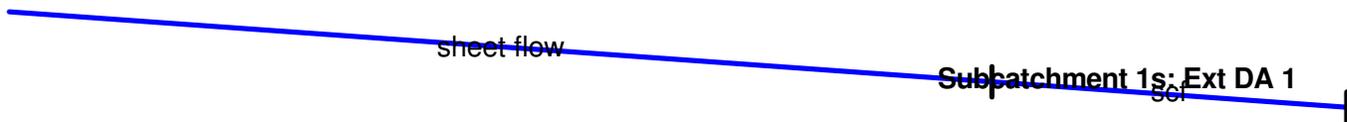
Summary for Subcatchment 1s: Ext DA 1

Runoff = 0.93 cfs @ 12.13 hrs, Volume= 3,303 cf, Depth=10.40"
 Routed to Link 4l : existing total discharge

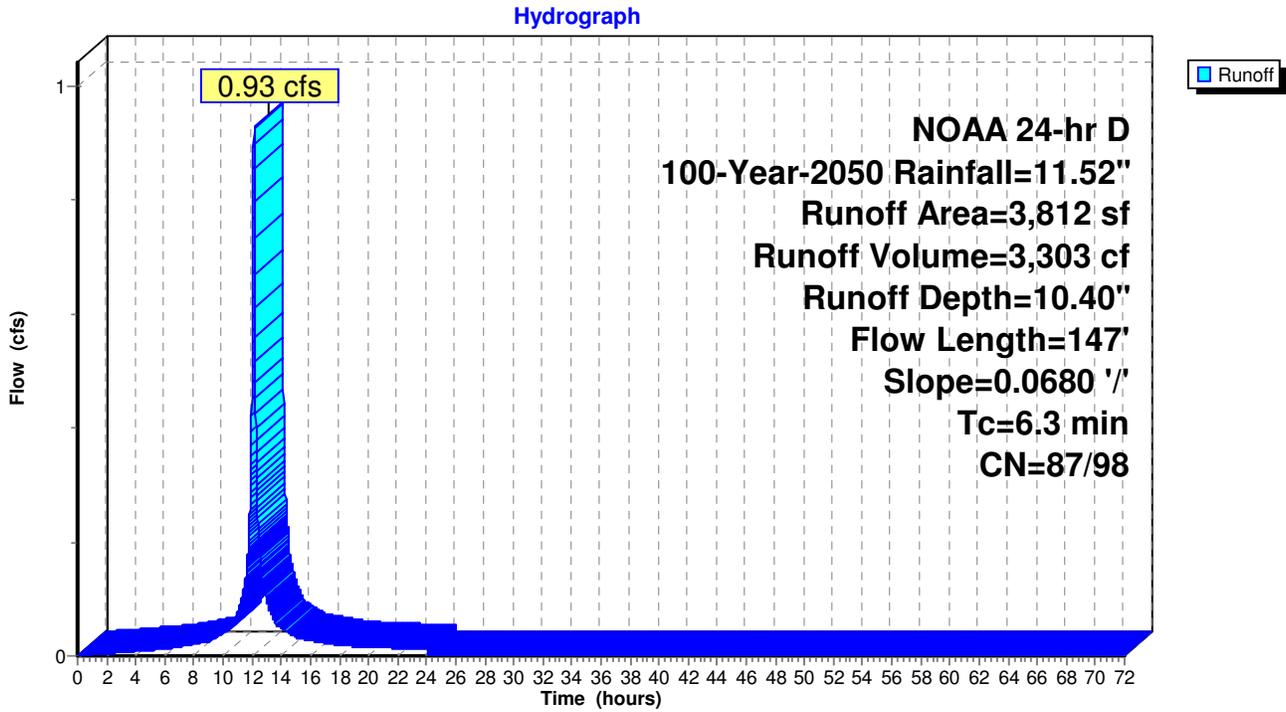
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D 100-Year-2050 Rainfall=11.52"

Area (sf)	CN	Description
1,374	98	Paved parking, HSG C
2,438	87	Dirt roads, HSG C
3,812	91	Weighted Average
2,438	87	63.96% Pervious Area
1,374	98	36.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	108	0.0680	0.29		Sheet Flow, sheet flow Grass: Short n= 0.150 P2= 3.47"
0.2	39	0.0680	4.20		Shallow Concentrated Flow, scf Unpaved Kv= 16.1 fps
6.3	147	Total			



Subcatchment 1s: Ext DA 1



Hydrograph for Subcatchment 1s: 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	0.05	0.41	0.01
6.00	0.98	0.22	0.77	0.01
8.00	1.49	0.53	1.28	0.02
10.00	2.28	1.13	2.06	0.04
12.00	5.52	4.06	5.28	0.51
14.00	9.24	7.66	9.00	0.05
16.00	10.03	8.43	9.78	0.03
18.00	10.54	8.93	10.30	0.02
20.00	10.92	9.31	10.67	0.02
22.00	11.24	9.63	11.00	0.01
24.00	11.52	9.90	11.28	0.01
26.00	11.52	9.90	11.28	0.00
28.00	11.52	9.90	11.28	0.00
30.00	11.52	9.90	11.28	0.00
32.00	11.52	9.90	11.28	0.00
34.00	11.52	9.90	11.28	0.00
36.00	11.52	9.90	11.28	0.00
38.00	11.52	9.90	11.28	0.00
40.00	11.52	9.90	11.28	0.00
42.00	11.52	9.90	11.28	0.00
44.00	11.52	9.90	11.28	0.00
46.00	11.52	9.90	11.28	0.00
48.00	11.52	9.90	11.28	0.00
50.00	11.52	9.90	11.28	0.00
52.00	11.52	9.90	11.28	0.00
54.00	11.52	9.90	11.28	0.00
56.00	11.52	9.90	11.28	0.00
58.00	11.52	9.90	11.28	0.00
60.00	11.52	9.90	11.28	0.00
62.00	11.52	9.90	11.28	0.00
64.00	11.52	9.90	11.28	0.00
66.00	11.52	9.90	11.28	0.00
68.00	11.52	9.90	11.28	0.00
70.00	11.52	9.90	11.28	0.00
72.00	11.52	9.90	11.28	0.00

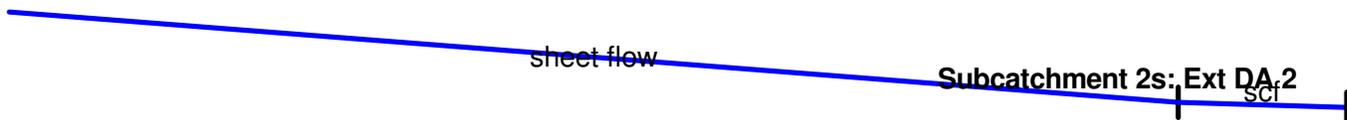
Summary for Subcatchment 2s: Ext DA 2

Runoff = 1.25 cfs @ 12.09 hrs, Volume= 4,240 cf, Depth=11.28"
 Routed to Link 4l : existing total discharge

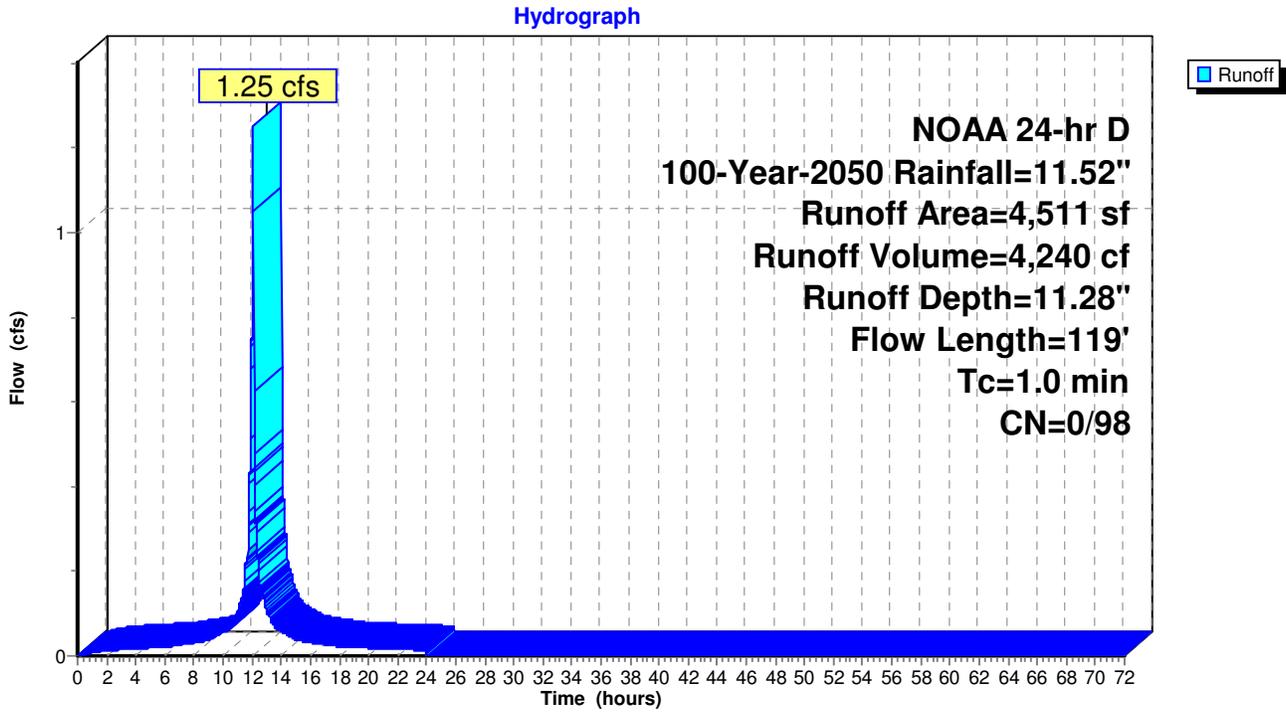
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NOAA 24-hr D 100-Year-2050 Rainfall=11.52"

Area (sf)	CN	Description
4,185	98	Paved parking, HSG C
326	98	Paved parking, HSG C
4,511	98	Weighted Average
4,511	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	104	0.0385	1.88		Sheet Flow, sheet flow Smooth surfaces n= 0.011 P2= 3.47"
0.1	15	0.0150	2.49		Shallow Concentrated Flow, scf Paved Kv= 20.3 fps
1.0	119	Total			



Subcatchment 2s: Ext DA 2



Hydrograph for Subcatchment 2s: 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	0.28	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	0.06
12.00	5.52	0.00	5.28	0.75
14.00	9.24	0.00	9.00	0.06
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	0.02
24.00	11.52	0.00	11.28	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

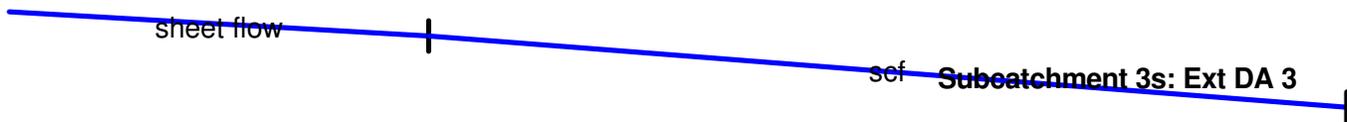
Summary for Subcatchment 3s: Ext DA 3

Runoff = 11.95 cfs @ 12.10 hrs, Volume= 38,639 cf, Depth=10.29"
 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-2050 Rainfall=11.52"

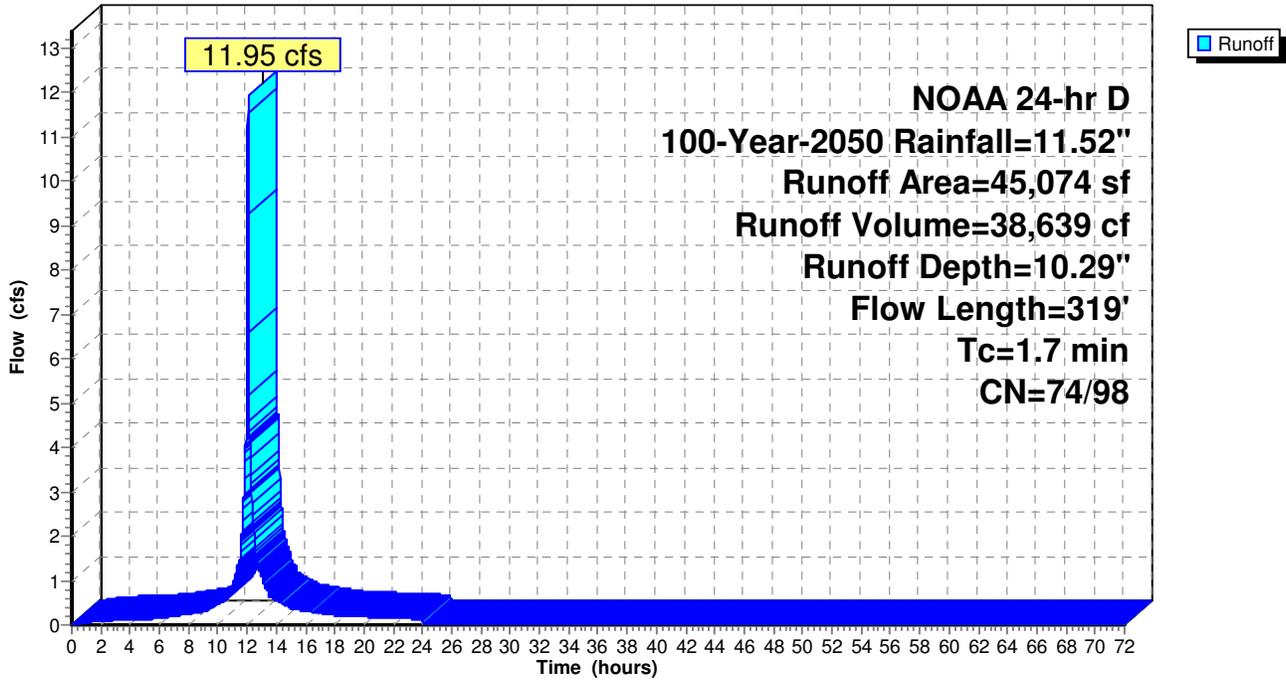
Area (sf)	CN	Description
30,716	98	Paved parking, HSG C
14,358	74	>75% Grass cover, Good, HSG C
45,074	90	Weighted Average
14,358	74	31.85% Pervious Area
30,716	98	68.15% Impervious Area

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



Subcatchment 3s: Ext DA 3

Hydrograph



Hydrograph for Subcatchment 3s: 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	0.28	0.00	0.13	0.08
4.00	0.60	0.00	0.41	0.12
6.00	0.98	0.02	0.77	0.15
8.00	1.49	0.15	1.28	0.25
10.00	2.28	0.49	2.06	0.47
12.00	5.52	2.78	5.28	7.07
14.00	9.24	6.04	9.00	0.56
16.00	10.03	6.77	9.78	0.32
18.00	10.54	7.25	10.30	0.21
20.00	10.92	7.60	10.67	0.18
22.00	11.24	7.91	11.00	0.16
24.00	11.52	8.17	11.28	0.13
26.00	11.52	8.17	11.28	0.00
28.00	11.52	8.17	11.28	0.00
30.00	11.52	8.17	11.28	0.00
32.00	11.52	8.17	11.28	0.00
34.00	11.52	8.17	11.28	0.00
36.00	11.52	8.17	11.28	0.00
38.00	11.52	8.17	11.28	0.00
40.00	11.52	8.17	11.28	0.00
42.00	11.52	8.17	11.28	0.00
44.00	11.52	8.17	11.28	0.00
46.00	11.52	8.17	11.28	0.00
48.00	11.52	8.17	11.28	0.00
50.00	11.52	8.17	11.28	0.00
52.00	11.52	8.17	11.28	0.00
54.00	11.52	8.17	11.28	0.00
56.00	11.52	8.17	11.28	0.00
58.00	11.52	8.17	11.28	0.00
60.00	11.52	8.17	11.28	0.00
62.00	11.52	8.17	11.28	0.00
64.00	11.52	8.17	11.28	0.00
66.00	11.52	8.17	11.28	0.00
68.00	11.52	8.17	11.28	0.00
70.00	11.52	8.17	11.28	0.00
72.00	11.52	8.17	11.28	0.00

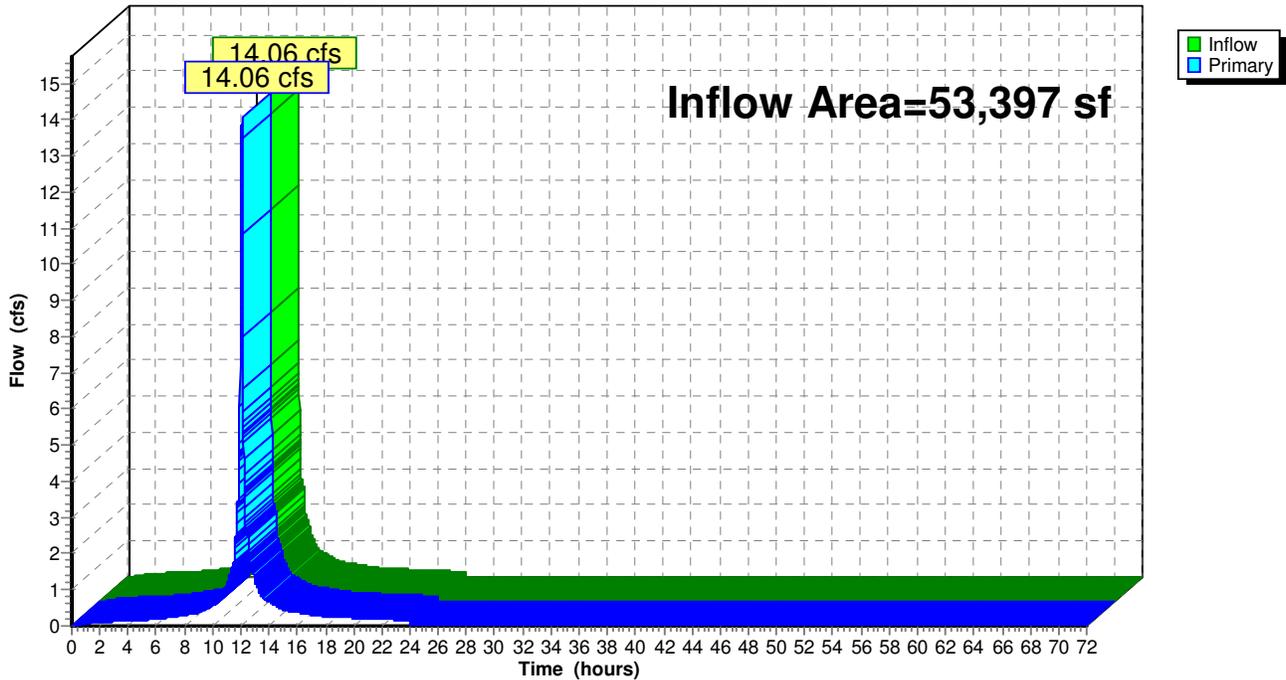
Summary for Link 4I: existing total discharge

Inflow Area = 53,397 sf, 68.55% Impervious, Inflow Depth = 10.38" for 100-Year-2050 event
 Inflow = 14.06 cfs @ 12.10 hrs, Volume= 46,182 cf
 Primary = 14.06 cfs @ 12.10 hrs, Volume= 46,182 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	8.33	0.00	8.33	63.00	0.00	0.00	0.00
13.00	1.30	0.00	1.30	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	0.38	0.00	0.38	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				

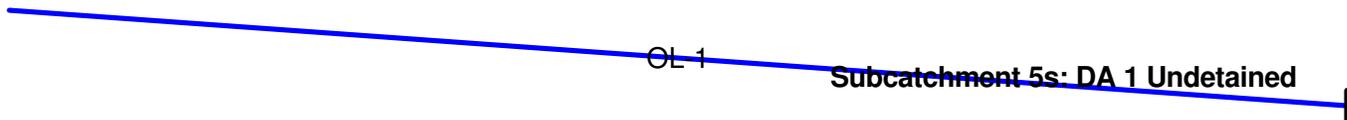
Summary for Subcatchment 5s: DA 1 Undetained

Runoff = 0.36 cfs @ 12.10 hrs, Volume= 1,053 cf, Depth= 8.62"
 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-2050 Rainfall=11.52"

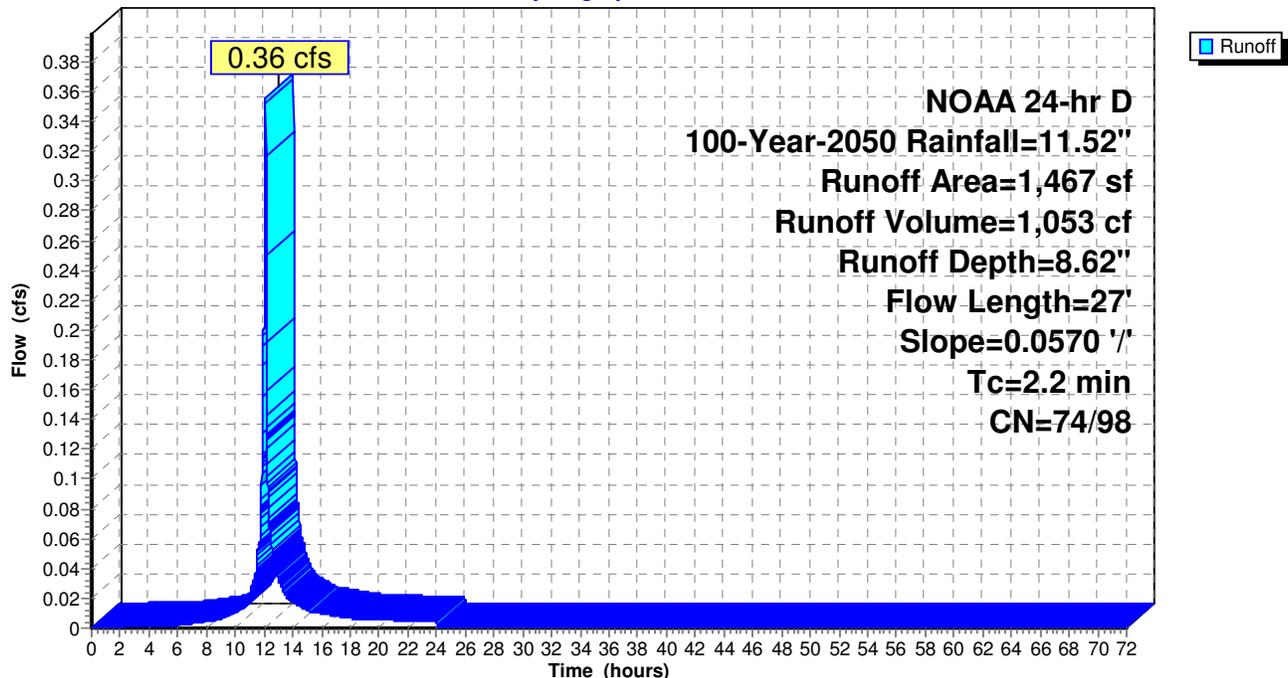
Area (sf)	CN	Description
1,255	74	>75% Grass cover, Good, HSG C
212	98	Unconnected roofs, HSG C
1,467	77	Weighted Average
1,255	74	85.55% Pervious Area
212	98	14.45% Impervious Area

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



Subcatchment 5s: DA 1 Undetained

Hydrograph



Hydrograph for Subcatchment 5s: 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	0.28	0.00	0.13	0.00
4.00	0.60	0.00	0.41	0.00
6.00	0.98	0.02	0.77	0.00
8.00	1.49	0.15	1.28	0.00
10.00	2.28	0.49	2.06	0.01
12.00	5.52	2.78	5.28	0.20
14.00	9.24	6.04	9.00	0.02
16.00	10.03	6.77	9.78	0.01
18.00	10.54	7.25	10.30	0.01
20.00	10.92	7.60	10.67	0.01
22.00	11.24	7.91	11.00	0.00
24.00	11.52	8.17	11.28	0.00
26.00	11.52	8.17	11.28	0.00
28.00	11.52	8.17	11.28	0.00
30.00	11.52	8.17	11.28	0.00
32.00	11.52	8.17	11.28	0.00
34.00	11.52	8.17	11.28	0.00
36.00	11.52	8.17	11.28	0.00
38.00	11.52	8.17	11.28	0.00
40.00	11.52	8.17	11.28	0.00
42.00	11.52	8.17	11.28	0.00
44.00	11.52	8.17	11.28	0.00
46.00	11.52	8.17	11.28	0.00
48.00	11.52	8.17	11.28	0.00
50.00	11.52	8.17	11.28	0.00
52.00	11.52	8.17	11.28	0.00
54.00	11.52	8.17	11.28	0.00
56.00	11.52	8.17	11.28	0.00
58.00	11.52	8.17	11.28	0.00
60.00	11.52	8.17	11.28	0.00
62.00	11.52	8.17	11.28	0.00
64.00	11.52	8.17	11.28	0.00
66.00	11.52	8.17	11.28	0.00
68.00	11.52	8.17	11.28	0.00
70.00	11.52	8.17	11.28	0.00
72.00	11.52	8.17	11.28	0.00

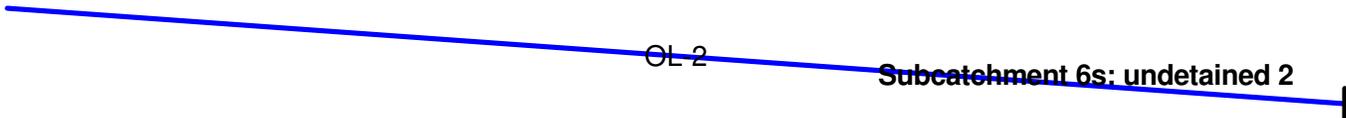
Summary for Subcatchment 6s: undetained 2

Runoff = 1.06 cfs @ 12.10 hrs, Volume= 3,327 cf, Depth= 9.50"
 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-2050 Rainfall=11.52"

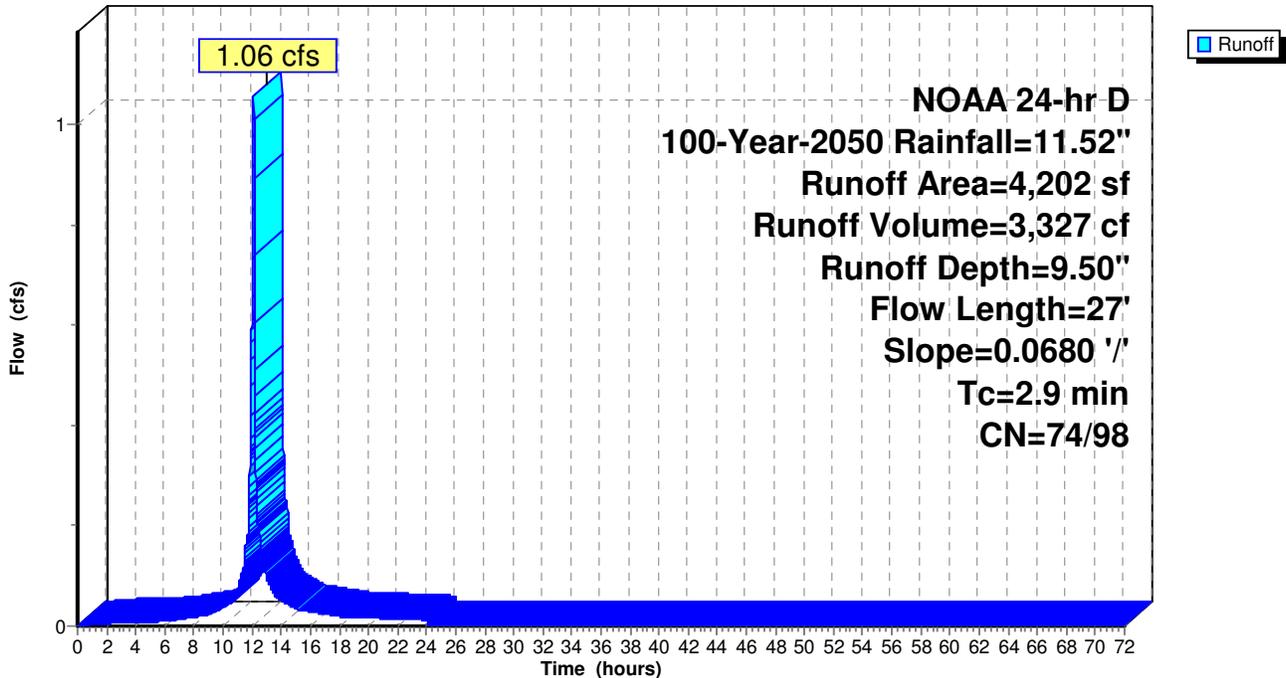
Area (sf)	CN	Description
1,802	98	Unconnected pavement, HSG C
2,400	74	>75% Grass cover, Good, HSG C
4,202	84	Weighted Average
2,400	74	57.12% Pervious Area
1,802	98	42.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	27	0.0680	0.15		Sheet Flow, OL-2 Grass: Dense n= 0.240 P2= 3.47"



Subcatchment 6s: undetained 2

Hydrograph



Hydrograph for Subcatchment 6s: 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	0.28	0.00	0.13	0.00
4.00	0.60	0.00	0.41	0.01
6.00	0.98	0.02	0.77	0.01
8.00	1.49	0.15	1.28	0.02
10.00	2.28	0.49	2.06	0.04
12.00	5.52	2.78	5.28	0.62
14.00	9.24	6.04	9.00	0.05
16.00	10.03	6.77	9.78	0.03
18.00	10.54	7.25	10.30	0.02
20.00	10.92	7.60	10.67	0.02
22.00	11.24	7.91	11.00	0.01
24.00	11.52	8.17	11.28	0.01
26.00	11.52	8.17	11.28	0.00
28.00	11.52	8.17	11.28	0.00
30.00	11.52	8.17	11.28	0.00
32.00	11.52	8.17	11.28	0.00
34.00	11.52	8.17	11.28	0.00
36.00	11.52	8.17	11.28	0.00
38.00	11.52	8.17	11.28	0.00
40.00	11.52	8.17	11.28	0.00
42.00	11.52	8.17	11.28	0.00
44.00	11.52	8.17	11.28	0.00
46.00	11.52	8.17	11.28	0.00
48.00	11.52	8.17	11.28	0.00
50.00	11.52	8.17	11.28	0.00
52.00	11.52	8.17	11.28	0.00
54.00	11.52	8.17	11.28	0.00
56.00	11.52	8.17	11.28	0.00
58.00	11.52	8.17	11.28	0.00
60.00	11.52	8.17	11.28	0.00
62.00	11.52	8.17	11.28	0.00
64.00	11.52	8.17	11.28	0.00
66.00	11.52	8.17	11.28	0.00
68.00	11.52	8.17	11.28	0.00
70.00	11.52	8.17	11.28	0.00
72.00	11.52	8.17	11.28	0.00

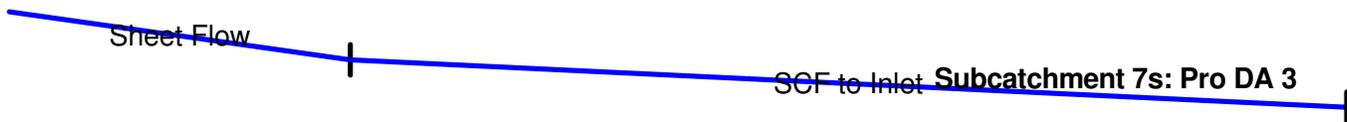
Summary for Subcatchment 7s: Pro DA 3

Runoff = 12.88 cfs @ 12.10 hrs, Volume= 42,664 cf, Depth=10.70"
 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-2050 Rainfall=11.52"

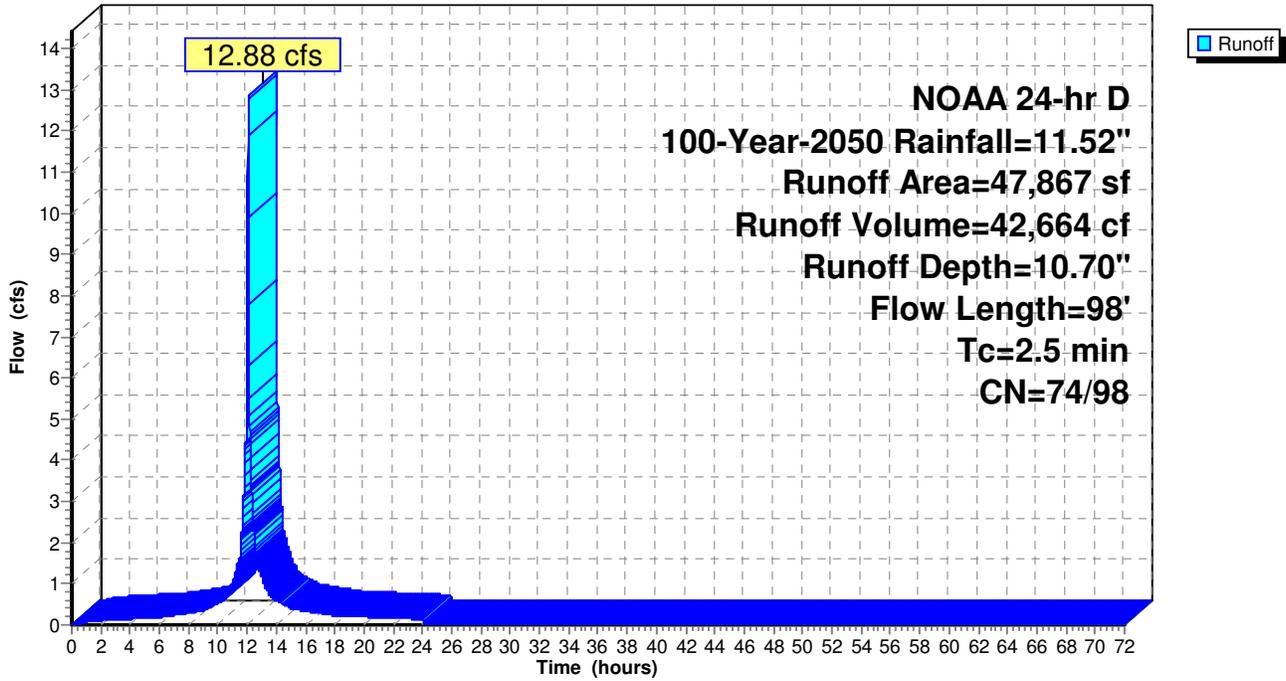
Area (sf)	CN	Description
38,903	98	Paved parking, HSG C
8,964	74	>75% Grass cover, Good, HSG C
47,867	94	Weighted Average
8,964	74	18.73% Pervious Area
38,903	98	81.27% Impervious Area

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



Subcatchment 7s: Pro DA 3

Hydrograph



Hydrograph for Subcatchment 7s: 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	0.02	0.77	0.18
8.00	1.49	0.15	1.28	0.29
10.00	2.28	0.49	2.06	0.54
12.00	5.52	2.78	5.28	7.66
14.00	9.24	6.04	9.00	0.61
16.00	10.03	6.77	9.78	0.34
18.00	10.54	7.25	10.30	0.23
20.00	10.92	7.60	10.67	0.19
22.00	11.24	7.91	11.00	0.17
24.00	11.52	8.17	11.28	0.14
26.00	11.52	8.17	11.28	0.00
28.00	11.52	8.17	11.28	0.00
30.00	11.52	8.17	11.28	0.00
32.00	11.52	8.17	11.28	0.00
34.00	11.52	8.17	11.28	0.00
36.00	11.52	8.17	11.28	0.00
38.00	11.52	8.17	11.28	0.00
40.00	11.52	8.17	11.28	0.00
42.00	11.52	8.17	11.28	0.00
44.00	11.52	8.17	11.28	0.00
46.00	11.52	8.17	11.28	0.00
48.00	11.52	8.17	11.28	0.00
50.00	11.52	8.17	11.28	0.00
52.00	11.52	8.17	11.28	0.00
54.00	11.52	8.17	11.28	0.00
56.00	11.52	8.17	11.28	0.00
58.00	11.52	8.17	11.28	0.00
60.00	11.52	8.17	11.28	0.00
62.00	11.52	8.17	11.28	0.00
64.00	11.52	8.17	11.28	0.00
66.00	11.52	8.17	11.28	0.00
68.00	11.52	8.17	11.28	0.00
70.00	11.52	8.17	11.28	0.00
72.00	11.52	8.17	11.28	0.00

Summary for Pond 8p: Detention System

Inflow Area = 47,867 sf, 81.27% Impervious, Inflow Depth = 10.70" for 100-Year-2050 event
 Inflow = 12.88 cfs @ 12.10 hrs, Volume= 42,664 cf
 Outflow = 9.32 cfs @ 12.13 hrs, Volume= 42,664 cf, Atten= 28%, Lag= 2.0 min
 Primary = 9.32 cfs @ 12.13 hrs, Volume= 42,664 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= 406.23' @ 12.13 hrs Surf.Area= 1,574 sf Storage= 5,442 cf

Plug-Flow detention time= 13.1 min calculated for 42,664 cf (100% of inflow)
 Center-of-Mass det. time= 13.1 min (757.8 - 744.7)

Volume	Invert	Avail.Storage	Storage Description
#1	403.00'	6,283 cf	48.0" Round Pipe Storage L= 500.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	403.00'	8.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	404.50'	36.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	405.50'	24.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

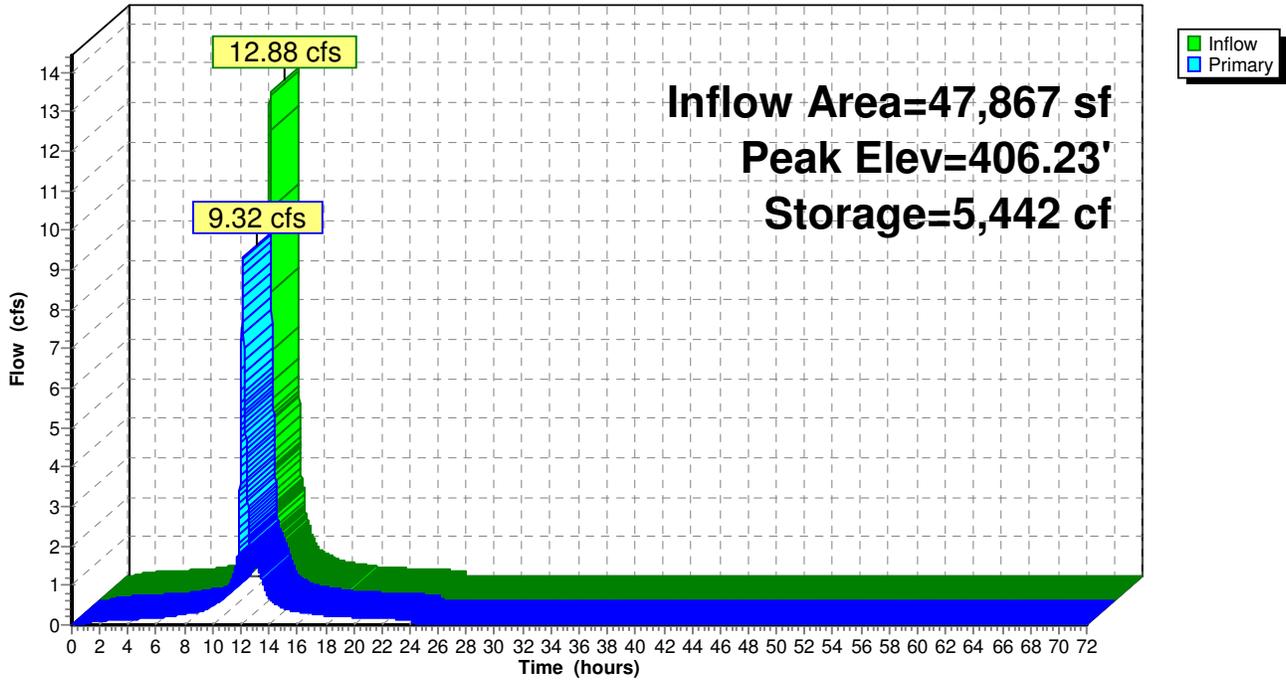
Primary OutFlow Max=9.30 cfs @ 12.13 hrs HW=406.23' (Free Discharge)

- 1=Orifice/Grate (Orifice Controls 2.86 cfs @ 8.19 fps)
- 2=Orifice/Grate (Orifice Controls 4.57 cfs @ 6.10 fps)
- 3=Orifice/Grate (Orifice Controls 1.87 cfs @ 3.73 fps)



Pond 8p: Detention System

Hydrograph



Hydrograph for Pond 8p: Detention System

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	403.00	0.00
2.00	0.11	92	403.17	0.10
4.00	0.15	124	403.21	0.14
6.00	0.18	147	403.23	0.18
8.00	0.29	213	403.30	0.28
10.00	0.54	350	403.42	0.51
12.00	7.66	3,484	405.17	4.94
14.00	0.61	467	403.51	0.70
16.00	0.34	252	403.34	0.35
18.00	0.23	184	403.27	0.24
20.00	0.19	159	403.24	0.20
22.00	0.17	141	403.23	0.17
24.00	0.14	122	403.20	0.14
26.00	0.00	1	403.00	0.00
28.00	0.00	0	403.00	0.00
30.00	0.00	0	403.00	0.00
32.00	0.00	0	403.00	0.00
34.00	0.00	0	403.00	0.00
36.00	0.00	0	403.00	0.00
38.00	0.00	0	403.00	0.00
40.00	0.00	0	403.00	0.00
42.00	0.00	0	403.00	0.00
44.00	0.00	0	403.00	0.00
46.00	0.00	0	403.00	0.00
48.00	0.00	0	403.00	0.00
50.00	0.00	0	403.00	0.00
52.00	0.00	0	403.00	0.00
54.00	0.00	0	403.00	0.00
56.00	0.00	0	403.00	0.00
58.00	0.00	0	403.00	0.00
60.00	0.00	0	403.00	0.00
62.00	0.00	0	403.00	0.00
64.00	0.00	0	403.00	0.00
66.00	0.00	0	403.00	0.00
68.00	0.00	0	403.00	0.00
70.00	0.00	0	403.00	0.00
72.00	0.00	0	403.00	0.00

Stage-Discharge for Pond 8p: Detention System

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
403.00	0.00	404.02	1.39	405.04	4.51	406.06	8.68
403.02	0.00	404.04	1.41	405.06	4.58	406.08	8.76
403.04	0.01	404.06	1.43	405.08	4.65	406.10	8.83
403.06	0.01	404.08	1.45	405.10	4.72	406.12	8.91
403.08	0.02	404.10	1.47	405.12	4.78	406.14	8.98
403.10	0.04	404.12	1.49	405.14	4.84	406.16	9.06
403.12	0.05	404.14	1.51	405.16	4.91	406.18	9.13
403.14	0.07	404.16	1.53	405.18	4.97	406.20	9.20
403.16	0.09	404.18	1.55	405.20	5.03	406.22	9.27
403.18	0.11	404.20	1.56	405.22	5.09	406.24	9.34
403.20	0.13	404.22	1.58	405.24	5.15	406.26	9.41
403.22	0.16	404.24	1.60	405.26	5.21	406.28	9.48
403.24	0.19	404.26	1.62	405.28	5.26	406.30	9.54
403.26	0.22	404.28	1.64	405.30	5.32	406.32	9.61
403.28	0.25	404.30	1.65	405.32	5.38	406.34	9.68
403.30	0.28	404.32	1.67	405.34	5.43	406.36	9.74
403.32	0.32	404.34	1.69	405.36	5.48	406.38	9.81
403.34	0.36	404.36	1.70	405.38	5.54	406.40	9.87
403.36	0.39	404.38	1.72	405.40	5.59	406.42	9.93
403.38	0.43	404.40	1.74	405.42	5.64	406.44	10.00
403.40	0.47	404.42	1.75	405.44	5.70	406.46	10.06
403.42	0.51	404.44	1.77	405.46	5.75	406.48	10.12
403.44	0.55	404.46	1.78	405.48	5.80	406.50	10.18
403.46	0.59	404.48	1.80	405.50	5.85	406.52	10.25
403.48	0.63	404.50	1.82	405.52	5.92	406.54	10.31
403.50	0.68	404.52	1.86	405.54	6.00	406.56	10.37
403.52	0.72	404.54	1.92	405.56	6.09	406.58	10.43
403.54	0.76	404.56	2.00	405.58	6.19	406.60	10.49
403.56	0.80	404.58	2.09	405.60	6.30	406.62	10.55
403.58	0.84	404.60	2.20	405.62	6.41	406.64	10.61
403.60	0.87	404.62	2.31	405.64	6.52	406.66	10.66
403.62	0.91	404.64	2.43	405.66	6.65	406.68	10.72
403.64	0.94	404.66	2.55	405.68	6.77	406.70	10.78
403.66	0.96	404.68	2.69	405.70	6.90	406.72	10.84
403.68	0.99	404.70	2.83	405.72	7.04	406.74	10.89
403.70	1.02	404.72	2.97	405.74	7.17	406.76	10.95
403.72	1.05	404.74	3.13	405.76	7.31	406.78	11.01
403.74	1.07	404.76	3.27	405.78	7.43	406.80	11.06
403.76	1.10	404.78	3.40	405.80	7.54	406.82	11.12
403.78	1.12	404.80	3.51	405.82	7.64	406.84	11.17
403.80	1.15	404.82	3.61	405.84	7.74	406.86	11.23
403.82	1.17	404.84	3.71	405.86	7.84	406.88	11.28
403.84	1.20	404.86	3.81	405.88	7.93	406.90	11.34
403.86	1.22	404.88	3.89	405.90	8.02	406.92	11.39
403.88	1.24	404.90	3.98	405.92	8.11	406.94	11.45
403.90	1.27	404.92	4.06	405.94	8.20	406.96	11.50
403.92	1.29	404.94	4.14	405.96	8.28	406.98	11.55
403.94	1.31	404.96	4.22	405.98	8.36	407.00	11.61
403.96	1.33	404.98	4.30	406.00	8.45		
403.98	1.35	405.00	4.37	406.02	8.53		
404.00	1.37	405.02	4.44	406.04	8.60		

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

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
403.00	0	405.55	4,228
403.05	15	405.60	4,323
403.10	42	405.65	4,418
403.15	77	405.70	4,512
403.20	117	405.75	4,606
403.25	164	405.80	4,698
403.30	214	405.85	4,789
403.35	269	405.90	4,879
403.40	327	405.95	4,968
403.45	389	406.00	5,055
403.50	453	406.05	5,141
403.55	521	406.10	5,225
403.60	591	406.15	5,308
403.65	664	406.20	5,389
403.70	739	406.25	5,468
403.75	816	406.30	5,545
403.80	895	406.35	5,620
403.85	976	406.40	5,692
403.90	1,058	406.45	5,762
403.95	1,143	406.50	5,830
404.00	1,228	406.55	5,895
404.05	1,316	406.60	5,956
404.10	1,404	406.65	6,014
404.15	1,494	406.70	6,069
404.20	1,585	406.75	6,120
404.25	1,678	406.80	6,166
404.30	1,771	406.85	6,207
404.35	1,865	406.90	6,241
404.40	1,960	406.95	6,268
404.45	2,056	407.00	6,283
404.50	2,152		
404.55	2,249		
404.60	2,347		
404.65	2,445		
404.70	2,544		
404.75	2,643		
404.80	2,742		
404.85	2,842		
404.90	2,942		
404.95	3,042		
405.00	3,142		
405.05	3,242		
405.10	3,342		
405.15	3,441		
405.20	3,541		
405.25	3,640		
405.30	3,739		
405.35	3,838		
405.40	3,936		
405.45	4,034		
405.50	4,131		

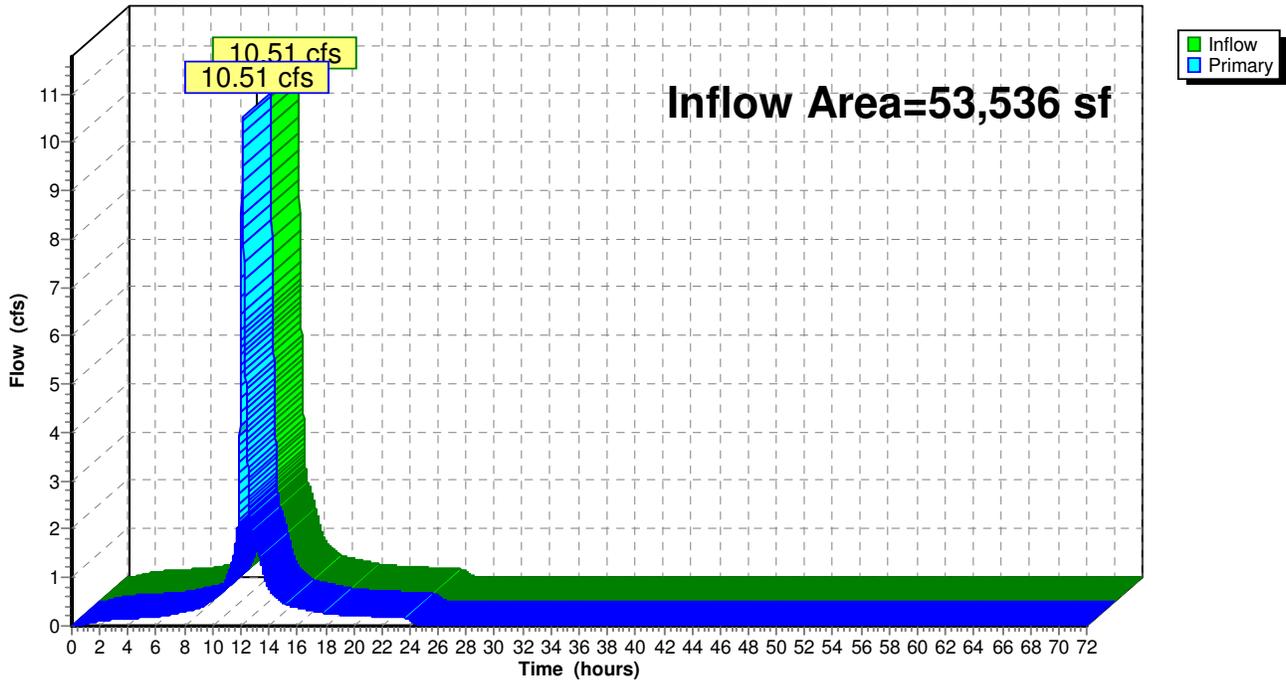
Summary for Link 9I: Overall discharge

Inflow Area = 53,536 sf, 76.43% Impervious, Inflow Depth = 10.54" for 100-Year-2050 event
Inflow = 10.51 cfs @ 12.12 hrs, Volume= 47,044 cf
Primary = 10.51 cfs @ 12.12 hrs, Volume= 47,044 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	0.04	0.00	0.04	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	0.13	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	0.30	0.00	0.30	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	0.96	0.00	0.96	62.00	0.00	0.00	0.00
12.00	5.76	0.00	5.76	63.00	0.00	0.00	0.00
13.00	1.78	0.00	1.78	64.00	0.00	0.00	0.00
14.00	0.77	0.00	0.77	65.00	0.00	0.00	0.00
15.00	0.49	0.00	0.49	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	0.32	0.00	0.32	68.00	0.00	0.00	0.00
18.00	0.26	0.00	0.26	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	0.19	0.00	0.19				
23.00	0.17	0.00	0.17				
24.00	0.16	0.00	0.16				
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				

2025-09-22 HydroCad - hillcrest farms Rev 1

Prepared by Anderson Consulting Services

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Hillcrest Farms
NJ DEP 2-hr WQ Rainfall=1.25"

Printed 1/30/2026

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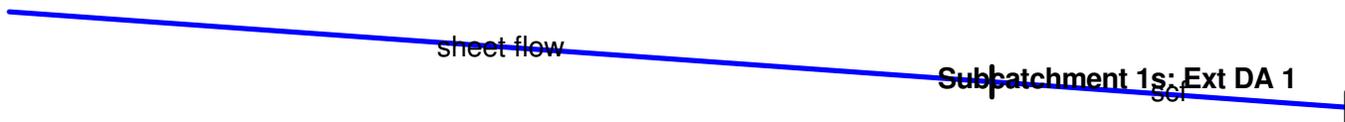
Summary for Subcatchment 1s: Ext DA 1

Runoff = 0.15 cfs @ 1.12 hrs, Volume= 194 cf, Depth= 0.61"
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"

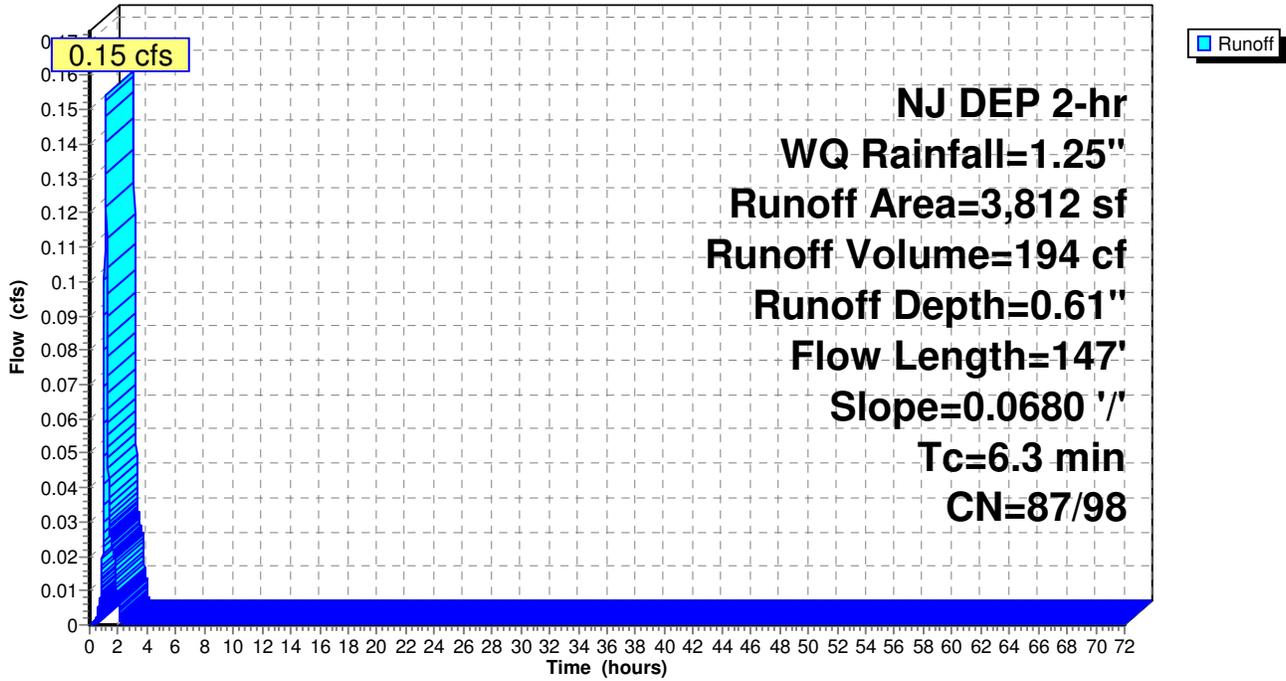
Area (sf)	CN	Description
1,374	98	Paved parking, HSG C
2,438	87	Dirt roads, HSG C
3,812	91	Weighted Average
2,438	87	63.96% Pervious Area
1,374	98	36.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	108	0.0680	0.29		Sheet Flow, sheet flow Grass: Short n= 0.150 P2= 3.47"
0.2	39	0.0680	4.20		Shallow Concentrated Flow, scf Unpaved Kv= 16.1 fps
6.3	147	Total			



Subcatchment 1s: Ext DA 1

Hydrograph



2025-09-22 HydroCad - hillcrest farms Rev 1

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Hillcrest Farms
NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment 1s: 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	1.25	0.37	1.03	0.01
4.00	1.25	0.37	1.03	0.00
6.00	1.25	0.37	1.03	0.00
8.00	1.25	0.37	1.03	0.00
10.00	1.25	0.37	1.03	0.00
12.00	1.25	0.37	1.03	0.00
14.00	1.25	0.37	1.03	0.00
16.00	1.25	0.37	1.03	0.00
18.00	1.25	0.37	1.03	0.00
20.00	1.25	0.37	1.03	0.00
22.00	1.25	0.37	1.03	0.00
24.00	1.25	0.37	1.03	0.00
26.00	1.25	0.37	1.03	0.00
28.00	1.25	0.37	1.03	0.00
30.00	1.25	0.37	1.03	0.00
32.00	1.25	0.37	1.03	0.00
34.00	1.25	0.37	1.03	0.00
36.00	1.25	0.37	1.03	0.00
38.00	1.25	0.37	1.03	0.00
40.00	1.25	0.37	1.03	0.00
42.00	1.25	0.37	1.03	0.00
44.00	1.25	0.37	1.03	0.00
46.00	1.25	0.37	1.03	0.00
48.00	1.25	0.37	1.03	0.00
50.00	1.25	0.37	1.03	0.00
52.00	1.25	0.37	1.03	0.00
54.00	1.25	0.37	1.03	0.00
56.00	1.25	0.37	1.03	0.00
58.00	1.25	0.37	1.03	0.00
60.00	1.25	0.37	1.03	0.00
62.00	1.25	0.37	1.03	0.00
64.00	1.25	0.37	1.03	0.00
66.00	1.25	0.37	1.03	0.00
68.00	1.25	0.37	1.03	0.00
70.00	1.25	0.37	1.03	0.00
72.00	1.25	0.37	1.03	0.00

2025-09-22 HydroCad - hillcrest farms Rev 1

Prepared by Anderson Consulting Services

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Hillcrest Farms
NJ DEP 2-hr WQ Rainfall=1.25"

Printed 1/30/2026

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Summary for Subcatchment 2s: Ext DA 2

Runoff = 0.32 cfs @ 1.08 hrs, Volume= 389 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"

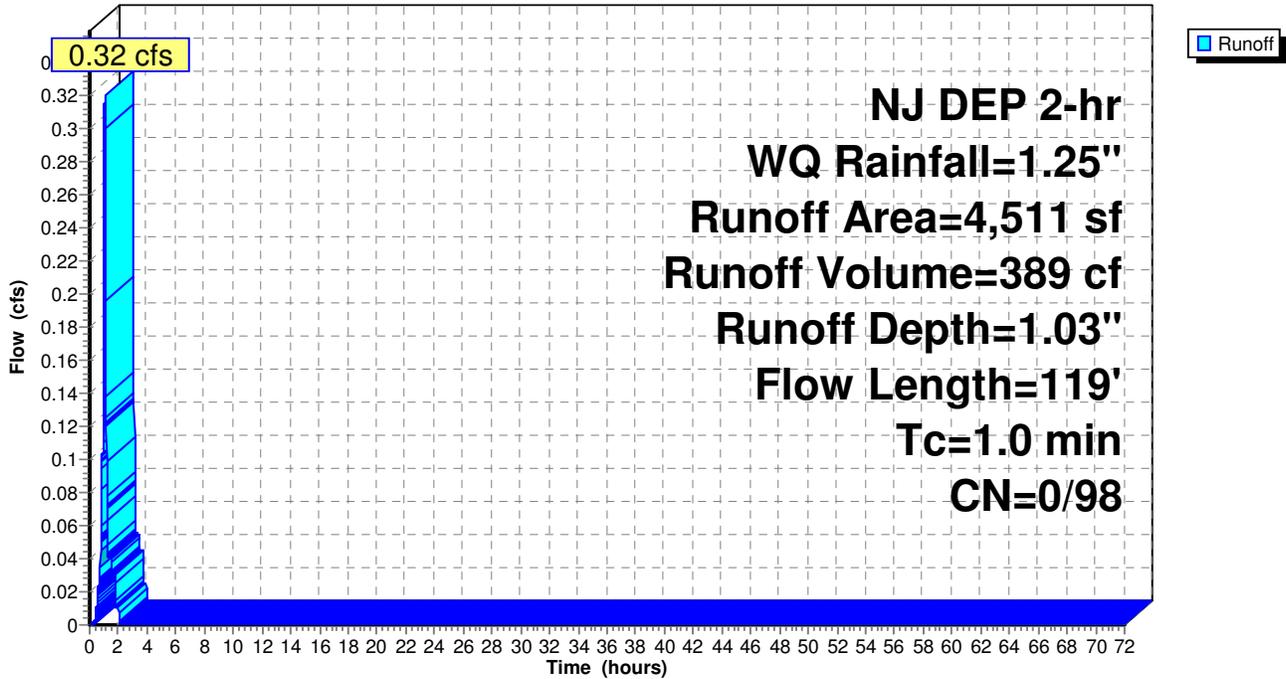
Area (sf)	CN	Description
4,185	98	Paved parking, HSG C
326	98	Paved parking, HSG C
4,511	98	Weighted Average
4,511	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	104	0.0385	1.88		Sheet Flow, sheet flow Smooth surfaces n= 0.011 P2= 3.47"
0.1	15	0.0150	2.49		Shallow Concentrated Flow, scf Paved Kv= 20.3 fps
1.0	119	Total			



Subcatchment 2s: Ext DA 2

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment 2s: 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	1.25	0.00	1.03	0.01
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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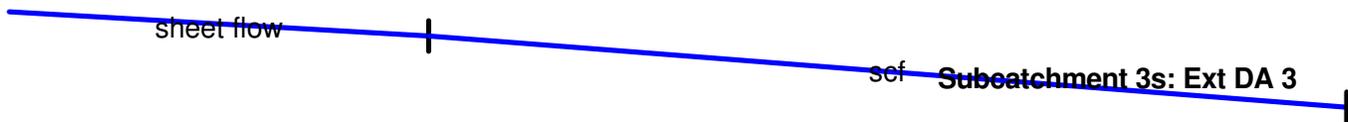
Summary for Subcatchment 3s: Ext DA 3

Runoff = 2.23 cfs @ 1.08 hrs, Volume= 2,736 cf, Depth= 0.73"
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"

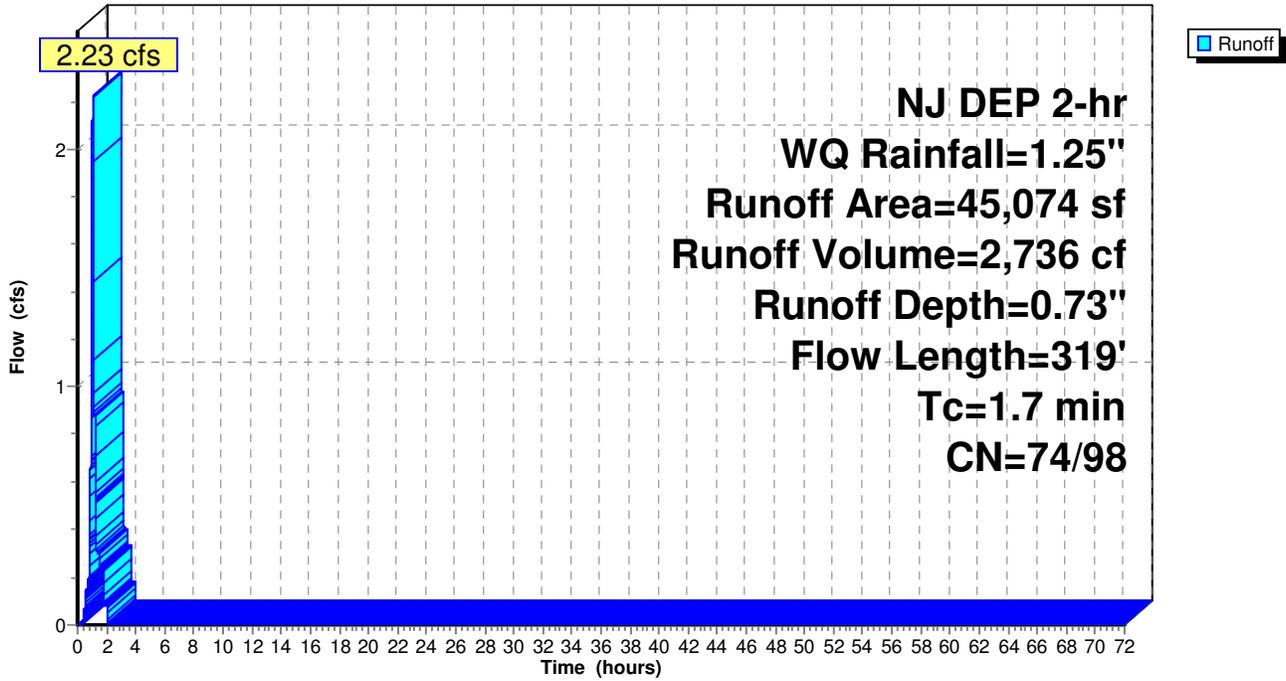
Area (sf)	CN	Description
30,716	98	Paved parking, HSG C
14,358	74	>75% Grass cover, Good, HSG C
45,074	90	Weighted Average
14,358	74	31.85% Pervious Area
30,716	98	68.15% Impervious Area

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



Subcatchment 3s: Ext DA 3

Hydrograph



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Hydrograph for Subcatchment 3s: Ext DA 3

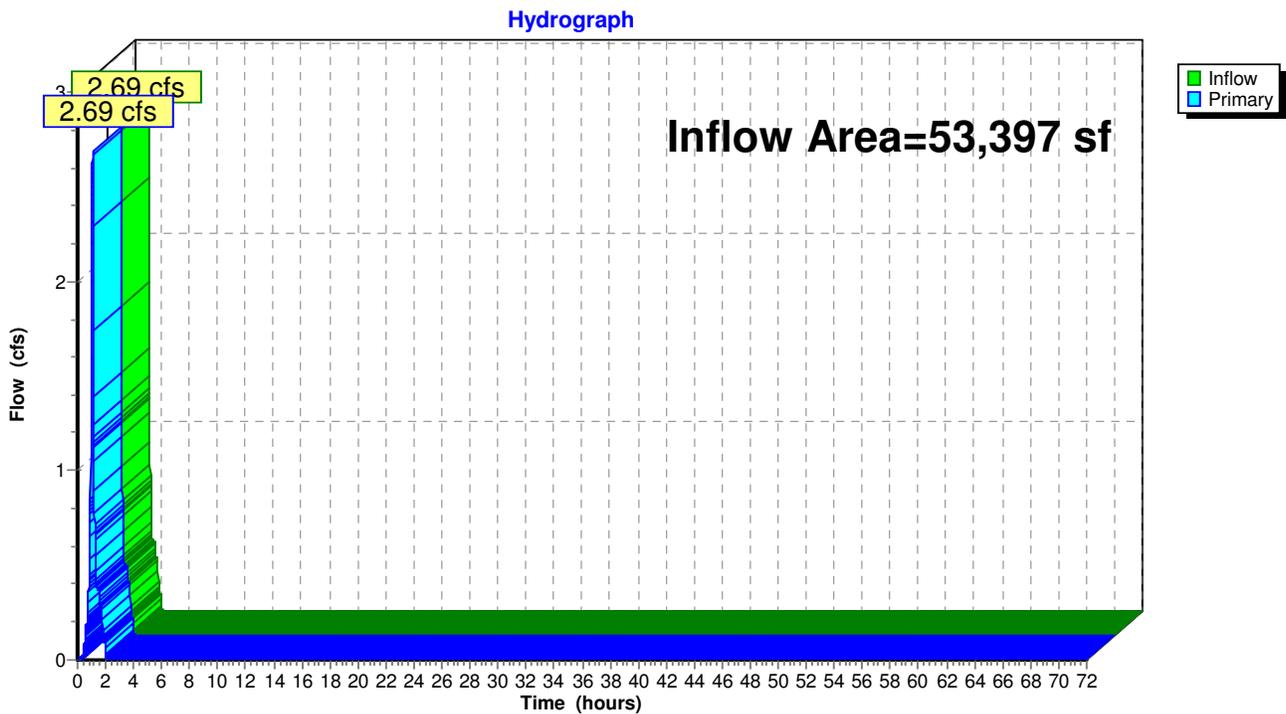
Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	0.00
2.00	1.25	0.07	1.03	0.08
4.00	1.25	0.07	1.03	0.00
6.00	1.25	0.07	1.03	0.00
8.00	1.25	0.07	1.03	0.00
10.00	1.25	0.07	1.03	0.00
12.00	1.25	0.07	1.03	0.00
14.00	1.25	0.07	1.03	0.00
16.00	1.25	0.07	1.03	0.00
18.00	1.25	0.07	1.03	0.00
20.00	1.25	0.07	1.03	0.00
22.00	1.25	0.07	1.03	0.00
24.00	1.25	0.07	1.03	0.00
26.00	1.25	0.07	1.03	0.00
28.00	1.25	0.07	1.03	0.00
30.00	1.25	0.07	1.03	0.00
32.00	1.25	0.07	1.03	0.00
34.00	1.25	0.07	1.03	0.00
36.00	1.25	0.07	1.03	0.00
38.00	1.25	0.07	1.03	0.00
40.00	1.25	0.07	1.03	0.00
42.00	1.25	0.07	1.03	0.00
44.00	1.25	0.07	1.03	0.00
46.00	1.25	0.07	1.03	0.00
48.00	1.25	0.07	1.03	0.00
50.00	1.25	0.07	1.03	0.00
52.00	1.25	0.07	1.03	0.00
54.00	1.25	0.07	1.03	0.00
56.00	1.25	0.07	1.03	0.00
58.00	1.25	0.07	1.03	0.00
60.00	1.25	0.07	1.03	0.00
62.00	1.25	0.07	1.03	0.00
64.00	1.25	0.07	1.03	0.00
66.00	1.25	0.07	1.03	0.00
68.00	1.25	0.07	1.03	0.00
70.00	1.25	0.07	1.03	0.00
72.00	1.25	0.07	1.03	0.00

Summary for Link 4I: existing total discharge

Inflow Area = 53,397 sf, 68.55% Impervious, Inflow Depth = 0.75" for WQ event
Inflow = 2.69 cfs @ 1.08 hrs, Volume= 3,319 cf
Primary = 2.69 cfs @ 1.08 hrs, Volume= 3,319 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	2.46	0.00	2.46	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				
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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NJ DEP 2-hr WQ Rainfall=1.25"

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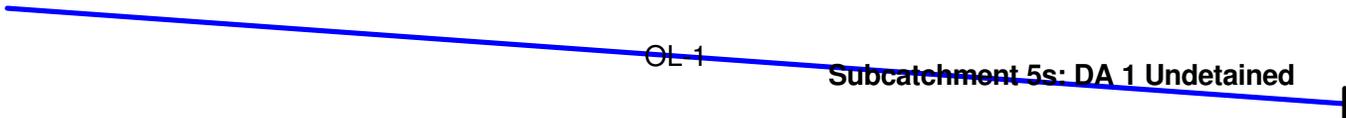
Summary for Subcatchment 5s: DA 1 Undetained

Runoff = 0.02 cfs @ 1.09 hrs, Volume= 26 cf, Depth= 0.21"
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"

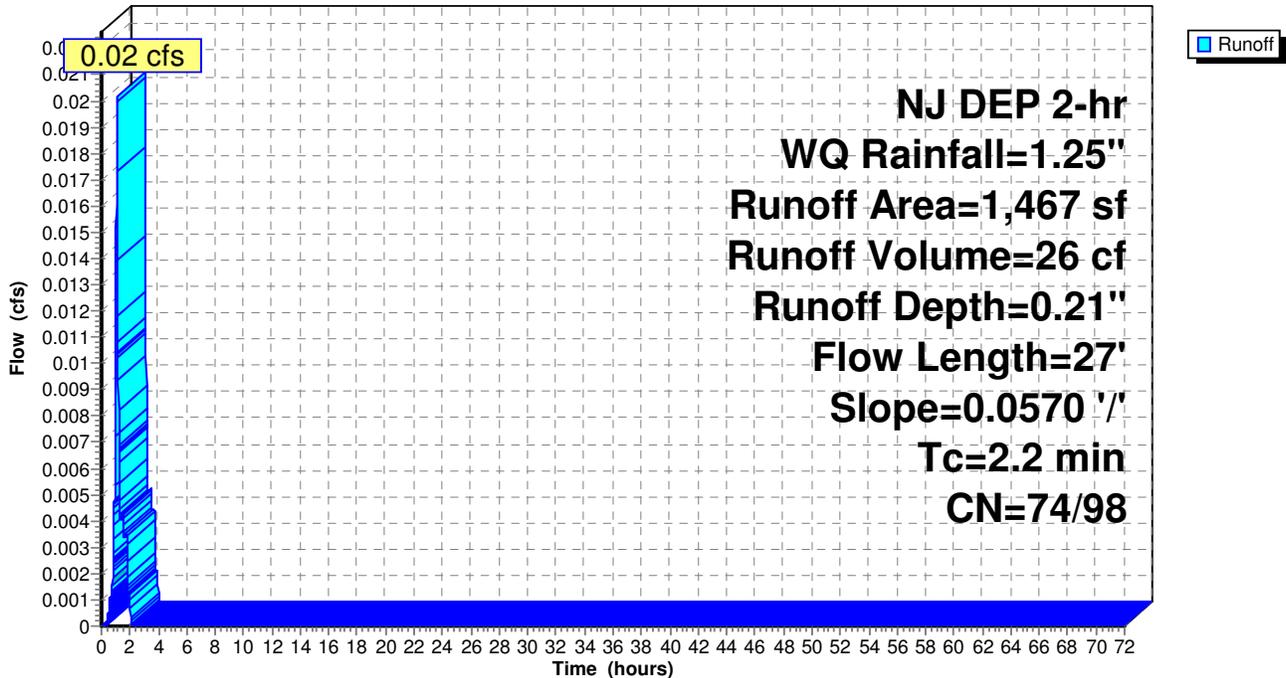
Area (sf)	CN	Description
1,255	74	>75% Grass cover, Good, HSG C
212	98	Unconnected roofs, HSG C
1,467	77	Weighted Average
1,255	74	85.55% Pervious Area
212	98	14.45% Impervious Area

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



Subcatchment 5s: DA 1 Undetained

Hydrograph



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Hydrograph for Subcatchment 5s: 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	1.25	0.07	1.03	0.00
4.00	1.25	0.07	1.03	0.00
6.00	1.25	0.07	1.03	0.00
8.00	1.25	0.07	1.03	0.00
10.00	1.25	0.07	1.03	0.00
12.00	1.25	0.07	1.03	0.00
14.00	1.25	0.07	1.03	0.00
16.00	1.25	0.07	1.03	0.00
18.00	1.25	0.07	1.03	0.00
20.00	1.25	0.07	1.03	0.00
22.00	1.25	0.07	1.03	0.00
24.00	1.25	0.07	1.03	0.00
26.00	1.25	0.07	1.03	0.00
28.00	1.25	0.07	1.03	0.00
30.00	1.25	0.07	1.03	0.00
32.00	1.25	0.07	1.03	0.00
34.00	1.25	0.07	1.03	0.00
36.00	1.25	0.07	1.03	0.00
38.00	1.25	0.07	1.03	0.00
40.00	1.25	0.07	1.03	0.00
42.00	1.25	0.07	1.03	0.00
44.00	1.25	0.07	1.03	0.00
46.00	1.25	0.07	1.03	0.00
48.00	1.25	0.07	1.03	0.00
50.00	1.25	0.07	1.03	0.00
52.00	1.25	0.07	1.03	0.00
54.00	1.25	0.07	1.03	0.00
56.00	1.25	0.07	1.03	0.00
58.00	1.25	0.07	1.03	0.00
60.00	1.25	0.07	1.03	0.00
62.00	1.25	0.07	1.03	0.00
64.00	1.25	0.07	1.03	0.00
66.00	1.25	0.07	1.03	0.00
68.00	1.25	0.07	1.03	0.00
70.00	1.25	0.07	1.03	0.00
72.00	1.25	0.07	1.03	0.00

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NJ DEP 2-hr WQ Rainfall=1.25"

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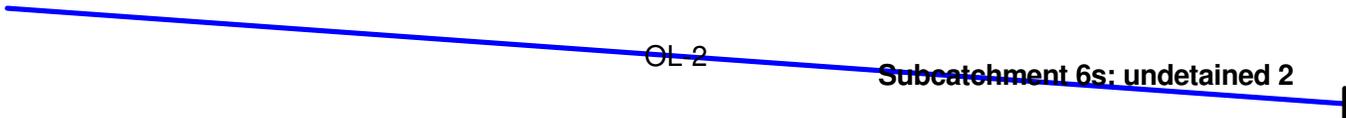
Summary for Subcatchment 6s: undetained 2

Runoff = 0.13 cfs @ 1.09 hrs, Volume= 170 cf, Depth= 0.49"
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"

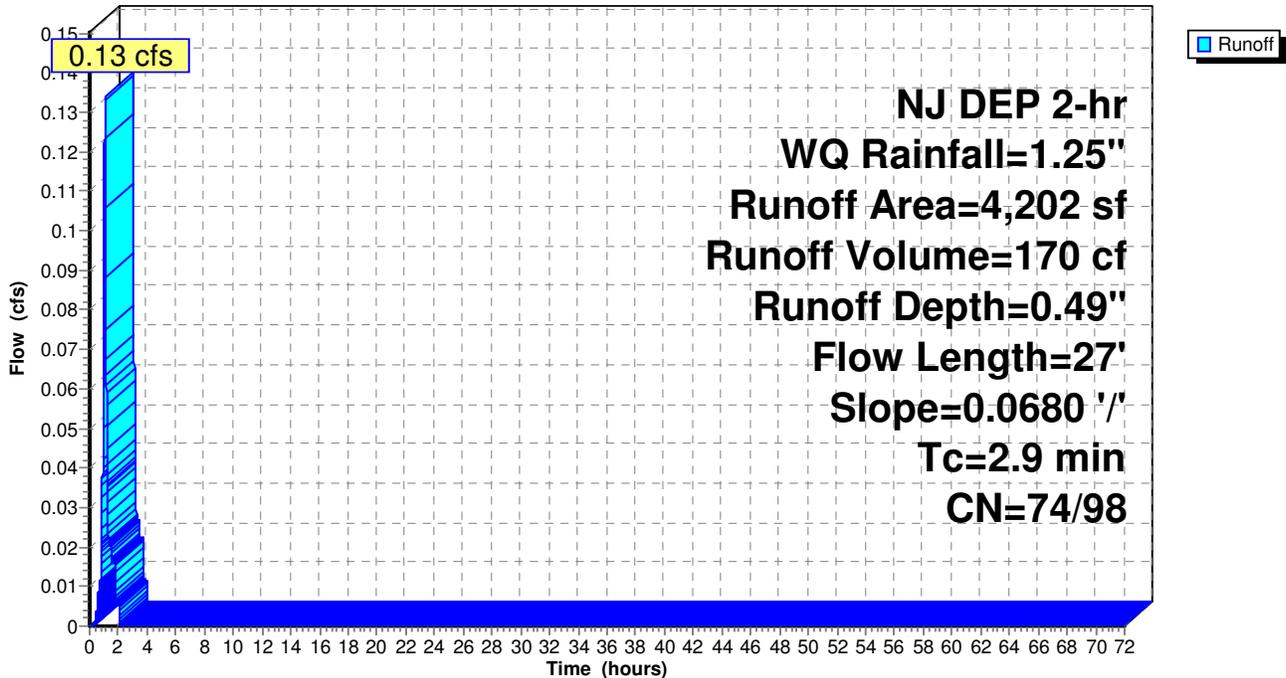
Area (sf)	CN	Description
1,802	98	Unconnected pavement, HSG C
2,400	74	>75% Grass cover, Good, HSG C
4,202	84	Weighted Average
2,400	74	57.12% Pervious Area
1,802	98	42.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	27	0.0680	0.15		Sheet Flow, OL-2 Grass: Dense n= 0.240 P2= 3.47"



Subcatchment 6s: undetained 2

Hydrograph



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Hydrograph for Subcatchment 6s: 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	1.25	0.07	1.03	0.01
4.00	1.25	0.07	1.03	0.00
6.00	1.25	0.07	1.03	0.00
8.00	1.25	0.07	1.03	0.00
10.00	1.25	0.07	1.03	0.00
12.00	1.25	0.07	1.03	0.00
14.00	1.25	0.07	1.03	0.00
16.00	1.25	0.07	1.03	0.00
18.00	1.25	0.07	1.03	0.00
20.00	1.25	0.07	1.03	0.00
22.00	1.25	0.07	1.03	0.00
24.00	1.25	0.07	1.03	0.00
26.00	1.25	0.07	1.03	0.00
28.00	1.25	0.07	1.03	0.00
30.00	1.25	0.07	1.03	0.00
32.00	1.25	0.07	1.03	0.00
34.00	1.25	0.07	1.03	0.00
36.00	1.25	0.07	1.03	0.00
38.00	1.25	0.07	1.03	0.00
40.00	1.25	0.07	1.03	0.00
42.00	1.25	0.07	1.03	0.00
44.00	1.25	0.07	1.03	0.00
46.00	1.25	0.07	1.03	0.00
48.00	1.25	0.07	1.03	0.00
50.00	1.25	0.07	1.03	0.00
52.00	1.25	0.07	1.03	0.00
54.00	1.25	0.07	1.03	0.00
56.00	1.25	0.07	1.03	0.00
58.00	1.25	0.07	1.03	0.00
60.00	1.25	0.07	1.03	0.00
62.00	1.25	0.07	1.03	0.00
64.00	1.25	0.07	1.03	0.00
66.00	1.25	0.07	1.03	0.00
68.00	1.25	0.07	1.03	0.00
70.00	1.25	0.07	1.03	0.00
72.00	1.25	0.07	1.03	0.00

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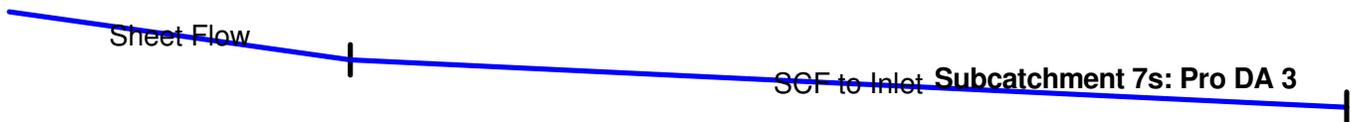
Summary for Subcatchment 7s: Pro DA 3

Runoff = 2.78 cfs @ 1.09 hrs, Volume= 3,409 cf, Depth= 0.85"
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
NJ DEP 2-hr WQ Rainfall=1.25"

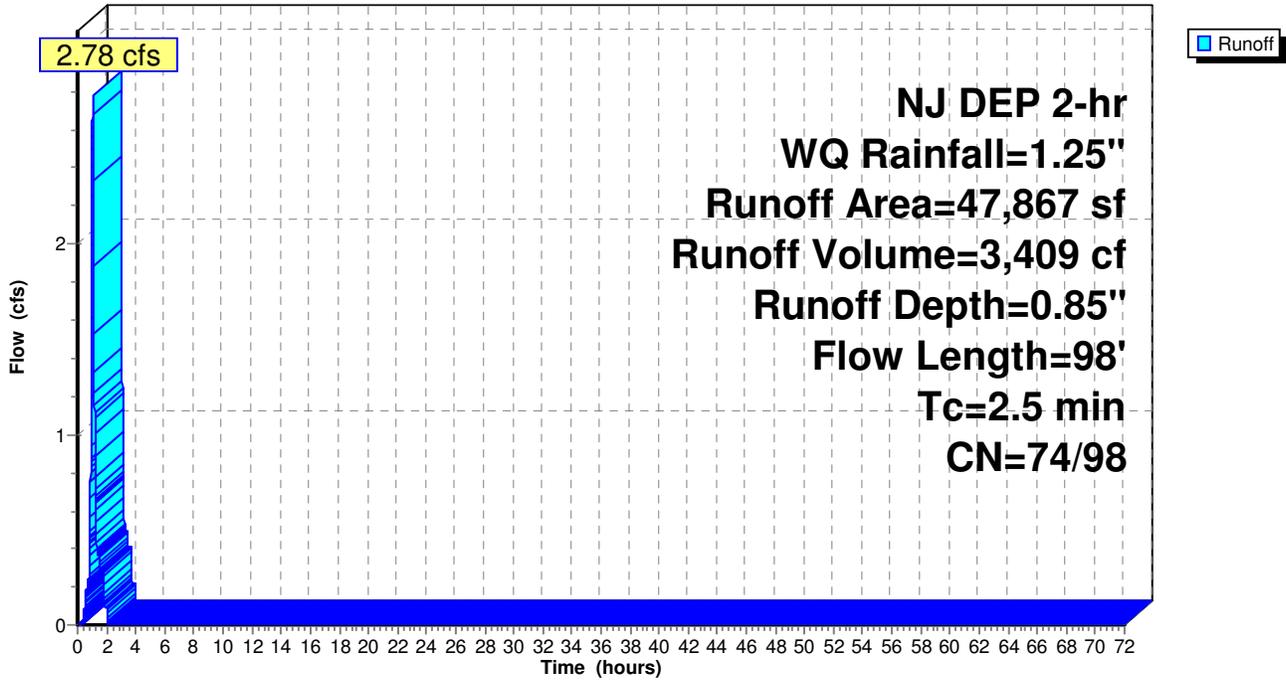
Area (sf)	CN	Description
38,903	98	Paved parking, HSG C
8,964	74	>75% Grass cover, Good, HSG C
47,867	94	Weighted Average
8,964	74	18.73% Pervious Area
38,903	98	81.27% Impervious Area

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



Subcatchment 7s: Pro DA 3

Hydrograph



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Hydrograph for Subcatchment 7s: 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	1.25	0.07	1.03	0.09
4.00	1.25	0.07	1.03	0.00
6.00	1.25	0.07	1.03	0.00
8.00	1.25	0.07	1.03	0.00
10.00	1.25	0.07	1.03	0.00
12.00	1.25	0.07	1.03	0.00
14.00	1.25	0.07	1.03	0.00
16.00	1.25	0.07	1.03	0.00
18.00	1.25	0.07	1.03	0.00
20.00	1.25	0.07	1.03	0.00
22.00	1.25	0.07	1.03	0.00
24.00	1.25	0.07	1.03	0.00
26.00	1.25	0.07	1.03	0.00
28.00	1.25	0.07	1.03	0.00
30.00	1.25	0.07	1.03	0.00
32.00	1.25	0.07	1.03	0.00
34.00	1.25	0.07	1.03	0.00
36.00	1.25	0.07	1.03	0.00
38.00	1.25	0.07	1.03	0.00
40.00	1.25	0.07	1.03	0.00
42.00	1.25	0.07	1.03	0.00
44.00	1.25	0.07	1.03	0.00
46.00	1.25	0.07	1.03	0.00
48.00	1.25	0.07	1.03	0.00
50.00	1.25	0.07	1.03	0.00
52.00	1.25	0.07	1.03	0.00
54.00	1.25	0.07	1.03	0.00
56.00	1.25	0.07	1.03	0.00
58.00	1.25	0.07	1.03	0.00
60.00	1.25	0.07	1.03	0.00
62.00	1.25	0.07	1.03	0.00
64.00	1.25	0.07	1.03	0.00
66.00	1.25	0.07	1.03	0.00
68.00	1.25	0.07	1.03	0.00
70.00	1.25	0.07	1.03	0.00
72.00	1.25	0.07	1.03	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 = 47,867 sf, 81.27% Impervious, Inflow Depth = 0.85" for WQ event
 Inflow = 2.78 cfs @ 1.09 hrs, Volume= 3,409 cf
 Outflow = 1.40 cfs @ 1.14 hrs, Volume= 3,409 cf, Atten= 50%, Lag= 3.0 min
 Primary = 1.40 cfs @ 1.14 hrs, Volume= 3,409 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= 404.02' @ 1.14 hrs Surf.Area= 1,745 sf Storage= 1,269 cf

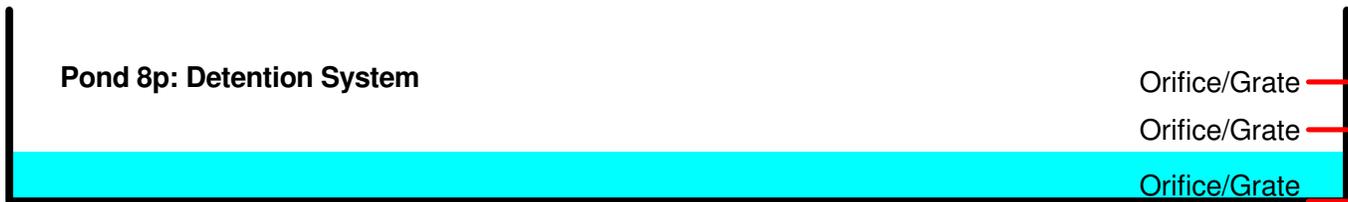
Plug-Flow detention time= 13.2 min calculated for 3,409 cf (100% of inflow)
 Center-of-Mass det. time= 13.3 min (80.6 - 67.3)

Volume	Invert	Avail.Storage	Storage Description
#1	403.00'	6,283 cf	48.0" Round Pipe Storage L= 500.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	403.00'	8.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	404.50'	36.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	405.50'	24.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

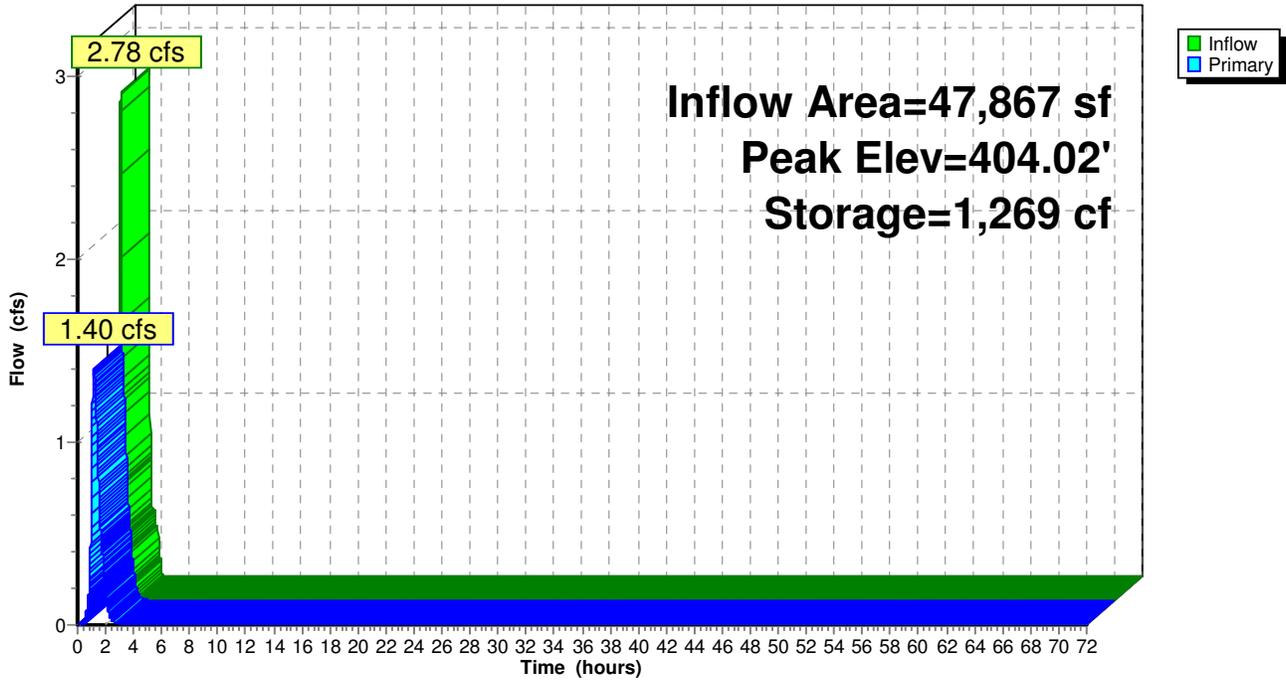
Primary OutFlow Max=1.40 cfs @ 1.14 hrs HW=404.02' (Free Discharge)

- 1=Orifice/Grate (Orifice Controls 1.40 cfs @ 4.00 fps)
- 2=Orifice/Grate (Controls 0.00 cfs)
- 3=Orifice/Grate (Controls 0.00 cfs)



Pond 8p: Detention System

Hydrograph



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Hydrograph for Pond 8p: Detention System

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	403.00	0.00
2.00	0.09	147	403.23	0.18
4.00	0.00	1	403.00	0.00
6.00	0.00	0	403.00	0.00
8.00	0.00	0	403.00	0.00
10.00	0.00	0	403.00	0.00
12.00	0.00	0	403.00	0.00
14.00	0.00	0	403.00	0.00
16.00	0.00	0	403.00	0.00
18.00	0.00	0	403.00	0.00
20.00	0.00	0	403.00	0.00
22.00	0.00	0	403.00	0.00
24.00	0.00	0	403.00	0.00
26.00	0.00	0	403.00	0.00
28.00	0.00	0	403.00	0.00
30.00	0.00	0	403.00	0.00
32.00	0.00	0	403.00	0.00
34.00	0.00	0	403.00	0.00
36.00	0.00	0	403.00	0.00
38.00	0.00	0	403.00	0.00
40.00	0.00	0	403.00	0.00
42.00	0.00	0	403.00	0.00
44.00	0.00	0	403.00	0.00
46.00	0.00	0	403.00	0.00
48.00	0.00	0	403.00	0.00
50.00	0.00	0	403.00	0.00
52.00	0.00	0	403.00	0.00
54.00	0.00	0	403.00	0.00
56.00	0.00	0	403.00	0.00
58.00	0.00	0	403.00	0.00
60.00	0.00	0	403.00	0.00
62.00	0.00	0	403.00	0.00
64.00	0.00	0	403.00	0.00
66.00	0.00	0	403.00	0.00
68.00	0.00	0	403.00	0.00
70.00	0.00	0	403.00	0.00
72.00	0.00	0	403.00	0.00

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Stage-Discharge for Pond 8p: Detention System

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
403.00	0.00	404.02	1.39	405.04	4.51	406.06	8.68
403.02	0.00	404.04	1.41	405.06	4.58	406.08	8.76
403.04	0.01	404.06	1.43	405.08	4.65	406.10	8.83
403.06	0.01	404.08	1.45	405.10	4.72	406.12	8.91
403.08	0.02	404.10	1.47	405.12	4.78	406.14	8.98
403.10	0.04	404.12	1.49	405.14	4.84	406.16	9.06
403.12	0.05	404.14	1.51	405.16	4.91	406.18	9.13
403.14	0.07	404.16	1.53	405.18	4.97	406.20	9.20
403.16	0.09	404.18	1.55	405.20	5.03	406.22	9.27
403.18	0.11	404.20	1.56	405.22	5.09	406.24	9.34
403.20	0.13	404.22	1.58	405.24	5.15	406.26	9.41
403.22	0.16	404.24	1.60	405.26	5.21	406.28	9.48
403.24	0.19	404.26	1.62	405.28	5.26	406.30	9.54
403.26	0.22	404.28	1.64	405.30	5.32	406.32	9.61
403.28	0.25	404.30	1.65	405.32	5.38	406.34	9.68
403.30	0.28	404.32	1.67	405.34	5.43	406.36	9.74
403.32	0.32	404.34	1.69	405.36	5.48	406.38	9.81
403.34	0.36	404.36	1.70	405.38	5.54	406.40	9.87
403.36	0.39	404.38	1.72	405.40	5.59	406.42	9.93
403.38	0.43	404.40	1.74	405.42	5.64	406.44	10.00
403.40	0.47	404.42	1.75	405.44	5.70	406.46	10.06
403.42	0.51	404.44	1.77	405.46	5.75	406.48	10.12
403.44	0.55	404.46	1.78	405.48	5.80	406.50	10.18
403.46	0.59	404.48	1.80	405.50	5.85	406.52	10.25
403.48	0.63	404.50	1.82	405.52	5.92	406.54	10.31
403.50	0.68	404.52	1.86	405.54	6.00	406.56	10.37
403.52	0.72	404.54	1.92	405.56	6.09	406.58	10.43
403.54	0.76	404.56	2.00	405.58	6.19	406.60	10.49
403.56	0.80	404.58	2.09	405.60	6.30	406.62	10.55
403.58	0.84	404.60	2.20	405.62	6.41	406.64	10.61
403.60	0.87	404.62	2.31	405.64	6.52	406.66	10.66
403.62	0.91	404.64	2.43	405.66	6.65	406.68	10.72
403.64	0.94	404.66	2.55	405.68	6.77	406.70	10.78
403.66	0.96	404.68	2.69	405.70	6.90	406.72	10.84
403.68	0.99	404.70	2.83	405.72	7.04	406.74	10.89
403.70	1.02	404.72	2.97	405.74	7.17	406.76	10.95
403.72	1.05	404.74	3.13	405.76	7.31	406.78	11.01
403.74	1.07	404.76	3.27	405.78	7.43	406.80	11.06
403.76	1.10	404.78	3.40	405.80	7.54	406.82	11.12
403.78	1.12	404.80	3.51	405.82	7.64	406.84	11.17
403.80	1.15	404.82	3.61	405.84	7.74	406.86	11.23
403.82	1.17	404.84	3.71	405.86	7.84	406.88	11.28
403.84	1.20	404.86	3.81	405.88	7.93	406.90	11.34
403.86	1.22	404.88	3.89	405.90	8.02	406.92	11.39
403.88	1.24	404.90	3.98	405.92	8.11	406.94	11.45
403.90	1.27	404.92	4.06	405.94	8.20	406.96	11.50
403.92	1.29	404.94	4.14	405.96	8.28	406.98	11.55
403.94	1.31	404.96	4.22	405.98	8.36	407.00	11.61
403.96	1.33	404.98	4.30	406.00	8.45		
403.98	1.35	405.00	4.37	406.02	8.53		
404.00	1.37	405.02	4.44	406.04	8.60		

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

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
403.00	0	405.55	4,228
403.05	15	405.60	4,323
403.10	42	405.65	4,418
403.15	77	405.70	4,512
403.20	117	405.75	4,606
403.25	164	405.80	4,698
403.30	214	405.85	4,789
403.35	269	405.90	4,879
403.40	327	405.95	4,968
403.45	389	406.00	5,055
403.50	453	406.05	5,141
403.55	521	406.10	5,225
403.60	591	406.15	5,308
403.65	664	406.20	5,389
403.70	739	406.25	5,468
403.75	816	406.30	5,545
403.80	895	406.35	5,620
403.85	976	406.40	5,692
403.90	1,058	406.45	5,762
403.95	1,143	406.50	5,830
404.00	1,228	406.55	5,895
404.05	1,316	406.60	5,956
404.10	1,404	406.65	6,014
404.15	1,494	406.70	6,069
404.20	1,585	406.75	6,120
404.25	1,678	406.80	6,166
404.30	1,771	406.85	6,207
404.35	1,865	406.90	6,241
404.40	1,960	406.95	6,268
404.45	2,056	407.00	6,283
404.50	2,152		
404.55	2,249		
404.60	2,347		
404.65	2,445		
404.70	2,544		
404.75	2,643		
404.80	2,742		
404.85	2,842		
404.90	2,942		
404.95	3,042		
405.00	3,142		
405.05	3,242		
405.10	3,342		
405.15	3,441		
405.20	3,541		
405.25	3,640		
405.30	3,739		
405.35	3,838		
405.40	3,936		
405.45	4,034		
405.50	4,131		

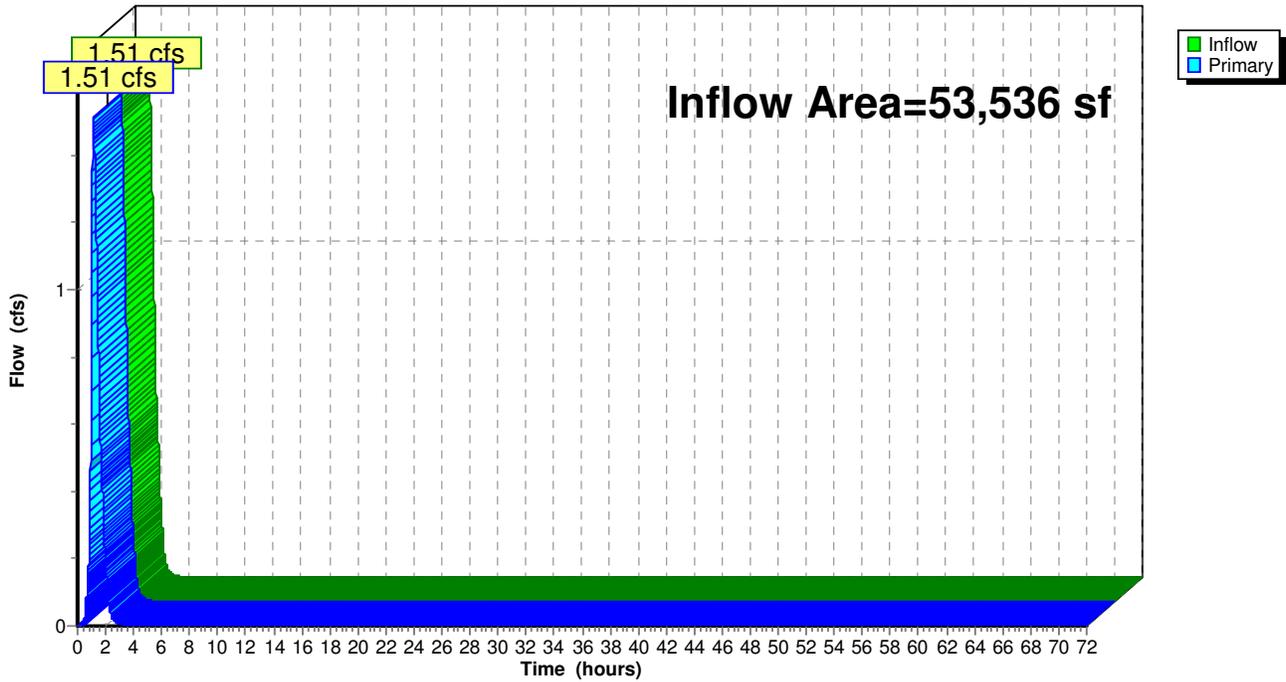
Summary for Link 9I: Overall discharge

Inflow Area = 53,536 sf, 76.43% Impervious, Inflow Depth = 0.81" for WQ event
Inflow = 1.51 cfs @ 1.11 hrs, Volume= 3,605 cf
Primary = 1.51 cfs @ 1.11 hrs, Volume= 3,605 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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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	1.06	0.00	1.06	52.00	0.00	0.00	0.00
2.00	0.18	0.00	0.18	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				
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 1s: Ext DA 1

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year-2020	3.47	0.24	809	2.55
10-Year-2020	5.38	0.41	1,387	4.36
100-Year-2020	9.18	0.73	2,568	8.08
2-Year-2050	4.09	0.30	994	3.13
10-Year-2050	6.37	0.49	1,692	5.33
100-Year-2050	11.52	0.93	3,303	10.40
WQ	1.25	0.15	194	0.61

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Events for Subcatchment 2s: Ext DA 2

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year-2020	3.47	0.37	1,217	3.24
10-Year-2020	5.38	0.58	1,933	5.14
100-Year-2020	9.18	1.00	3,361	8.94
2-Year-2050	4.09	0.44	1,449	3.85
10-Year-2050	6.37	0.69	2,305	6.13
100-Year-2050	11.52	1.25	4,240	11.28
WQ	1.25	0.32	389	1.03

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Events for Subcatchment 3s: Ext DA 3

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year-2020	3.47	3.09	9,743	2.59
10-Year-2020	5.38	5.16	16,359	4.36
100-Year-2020	9.18	9.36	30,053	8.00
2-Year-2050	4.09	3.75	11,857	3.16
10-Year-2050	6.37	6.24	19,880	5.29
100-Year-2050	11.52	11.95	38,639	10.29
WQ	1.25	2.23	2,736	0.73

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Events for Link 4I: existing total discharge

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
2-Year-2020	3.70	3.70	0.00
10-Year-2020	6.13	6.13	0.00
100-Year-2020	11.03	11.03	0.00
2-Year-2050	4.48	4.48	0.00
10-Year-2050	7.39	7.39	0.00
100-Year-2050	14.06	14.06	0.00
WQ	2.69	2.69	0.00

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Events for Subcatchment 5s: DA 1 Undetained

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year-2020	3.47	0.06	185	1.51
10-Year-2020	5.38	0.13	370	3.03
100-Year-2020	9.18	0.27	785	6.42
2-Year-2050	4.09	0.08	242	1.98
10-Year-2050	6.37	0.17	474	3.88
100-Year-2050	11.52	0.36	1,053	8.62
WQ	1.25	0.02	26	0.21

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Events for Subcatchment 6s: undetained 2

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year-2020	3.47	0.24	730	2.08
10-Year-2020	5.38	0.42	1,306	3.73
100-Year-2020	9.18	0.81	2,541	7.26
2-Year-2050	4.09	0.30	911	2.60
10-Year-2050	6.37	0.53	1,620	4.63
100-Year-2050	11.52	1.06	3,327	9.50
WQ	1.25	0.13	170	0.49

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Hillcrest Farms
Multi-Event Tables

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Events for Subcatchment 7s: Pro DA 3

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year-2020	3.47	3.55	11,403	2.86
10-Year-2020	5.38	5.74	18,667	4.68
100-Year-2020	9.18	10.16	33,458	8.39
2-Year-2050	4.09	4.25	13,739	3.44
10-Year-2050	6.37	6.89	22,491	5.64
100-Year-2050	11.52	12.88	42,664	10.70
WQ	1.25	2.78	3,409	0.85

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Hillcrest Farms
Multi-Event Tables

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Events for Pond 8p: Detention System

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
2-Year-2020	3.55	1.61	404.25	1,680
10-Year-2020	5.74	3.61	404.82	2,782
100-Year-2020	10.16	6.99	405.71	4,537
2-Year-2050	4.25	1.80	404.48	2,105
10-Year-2050	6.89	4.54	405.05	3,235
100-Year-2050	12.88	9.32	406.23	5,442
WQ	2.78	1.40	404.02	1,269

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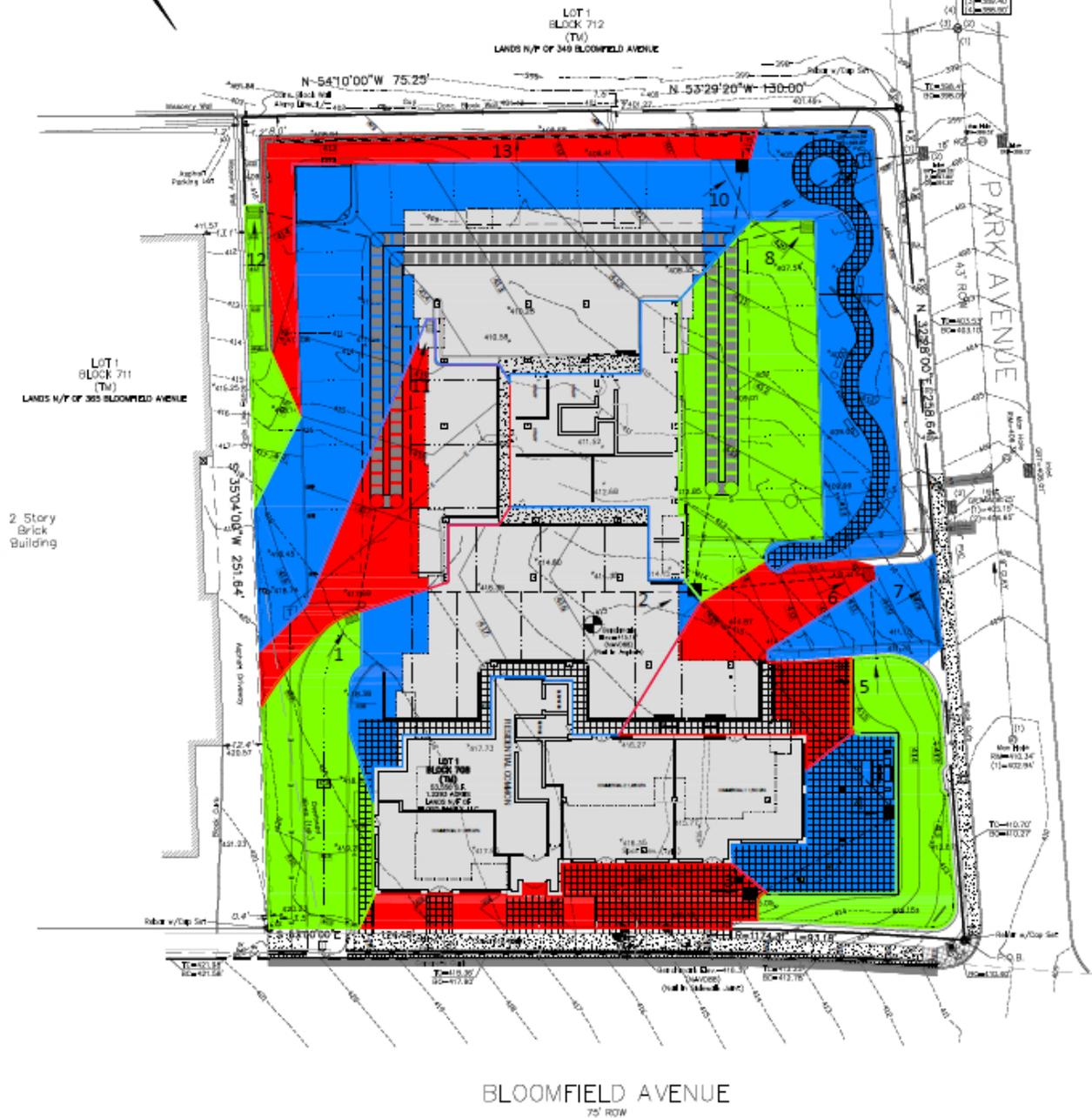
Hillcrest Farms
Multi-Event Tables

Printed 1/30/2026

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Events for Link 9I: Overall discharge

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
2-Year-2020	1.85	1.85	0.00
10-Year-2020	4.03	4.03	0.00
100-Year-2020	7.85	7.85	0.00
2-Year-2050	2.10	2.10	0.00
10-Year-2050	5.10	5.10	0.00
100-Year-2050	10.51	10.51	0.00
WQ	1.51	1.51	0.00



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 PWA Sheet 1 of 1

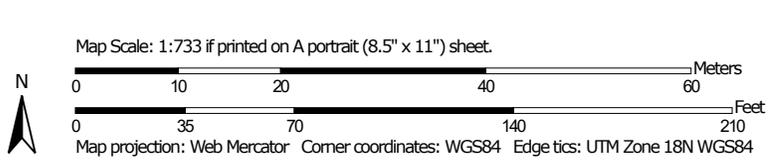
ID NO	From	To	Area Ac.	Coef C.	Axe	Axc Tot	Time of Conc. Min.	Int. Year in/hr	Area Ruroff CFS	Ruroff CFS Length	Tot. Ruroff CFS	Length Slope Ft. %	Δ H Ft.	Beg. Inv.	End Inv.	Dia.	CAP Full CFS	Vel. Act. Flow fps	Time In Pipe min.
1	#1	DET	.06	.73	.04		2.3	11.5	.44	-	.44	33	4.6	1.5	410.7	408.4	12	10.2	
3	#3	#4	.04	.81	.03		2.3	11.5	.135		.135	48	1.5	7	413.7	413.0	12	5.8	
4	#4	#2	.04	.95	.04	.07	2.3	11.5	.44	.81	.81	90	5	4.5	413.0	408.5	12	10.5	
5	#5	#6	.05	.42	.02		2.3	11.5	.123		.123	24	4.2	1.0	410.0	409.0	6	1.5	
6	#6	#2	.04	.93	.04	.06	2.3	11.5	.46	.69	.69	51	1.0	.5	409.0	408.5	12	4.8	
7	#2	DET	.02	.84	.02	.13	2.3	11.5	.22	1.5	1.5	28	1.0	2.8	408.5	408.0	12	4.8	
8	#8	DET	.1	.95	.095		2.3	11.5	1.1		1.1	20	7.5	1.5	406.5	405	12	13	
10	#13	#10	.04	.4	.02		2.3	11.5	.23		.23	8	12.5	1.0	407.5	406.5	4	.8	
11	#10	DET	.14	.88	.12	.14	2.3	11.5	1.38	1.61	1.61	19	7.9	1.5	406.5	405	12	13	
12	#11	DET	.02	.44	.01		2.3	11.5	.12		.12	10	1.0	1	410	409	12	15	
13	#12	DET	.04	.47	.02		2.3	11.5	.26		.26	35	2.4	.9	408.0	407.1	12	7.6	

*-100yr Storm Intensity usso - Hydrocad model
 - Piers Greatly Exceed 100 yr Flow Requirements

Soil Map—Essex County, New Jersey



Soil Map may not be valid at this scale.



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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

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

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

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Essex County, New Jersey

Survey Area Data: Version 21, Aug 28, 2025

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

Date(s) aerial images were photographed: Oct 10, 2022—Oct 16, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BouB	Boonton - Urban land, Boonton substratum complex, 0 to 8 percent slopes	1.3	100.0%
Totals for Area of Interest		1.3	100.0%

Low Impact Development Checklist

A checklist for identifying nonstructural stormwater management strategies incorporated into proposed land development

Municipality: Verona

County: ESSEX Date: 1-29-26

Review board or agency: Planning Board

Proposed land development name: Hillcrest FARMS

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@Hillcrestforms.biz

Designer's name: Anderson Consulting SERVICES LLC

Designer's address: 40 Miller Dr

Bonham NJ 07005

Telephone: 973-975-0703 Fax: 973-975-0703

Email address: PANDERSON PE@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 property is currently fully developed with a garden center. The project is a redevelopment project in the PA-DI Planning Area.

Due to the limited site area & goals of the redevelopment plan the use of non-structural design is not feasible.

The use of BMP's to meet water quality and discharge rate are employed. Recharge to groundwater is not required in the PA-DI Planning Area

Part 2: Review of Local Stormwater Management Regulations

Title and date of stormwater management regulations used in development design:

Do regulations include nonstructural requirements? Yes: _____ No:

If yes, briefly describe: _____

List LID-BMPs prohibited by local regulations: NA

Pre-design meeting held? Yes: _____ Date: _____ No:

Meeting held with: _____

Pre-design site walk held? Yes: _____ Date: _____ No:

Site walk held with: _____

Other agencies with stormwater review jurisdiction:

Name: NA

Required approval: _____

Name: _____

Required approval: _____

Name: _____

Required approval: _____

Part 3: Nonstructural Strategies and LID-BMPs in Design

3.1 Vegetation and Landscaping

Effective management of both existing and proposed site vegetation can reduce a development's adverse impacts on groundwater recharges and runoff quality and quantity. This section of the checklist helps identify the vegetation and landscaping strategies and nonstructural LID-BMPs that have been incorporated into the proposed development's design to help maintain existing recharge rates and/or minimize or prevent increases in runoff quantity and pollutant loading.

A. Has an inventory of existing site vegetation been performed? Yes: _____ No:

If yes, was this inventory a factor in the site's layout and design? Yes: _____ No: _____

B. Does the site design utilize any of the following nonstructural LID-BMPs?

Preservation of natural areas? Yes: _____ No: If yes, specify % of site: _____

Native ground cover? Yes: No: _____ If yes, specify % of site: _____

Vegetated buffers? Yes: No: _____ If yes, specify % of site: 20%

C. Do the land development regulations require these nonstructural LID-BMPs?

Preservation of natural areas? Yes: _____ No: If yes, specify % of site: _____

Native ground cover? Yes: _____ No: If yes, specify % of site: _____

Vegetated buffers? Yes: _____ No: If yes, specify % of site: _____

D. If vegetated filter strips or buffers are utilized, specify their functions: NA

Reduce runoff volume increases through lower runoff coefficient: Yes: _____ No: _____

Reduce runoff pollutant loads through runoff treatment: Yes: _____ No: _____

Maintain groundwater recharge by preserving natural areas: Yes: _____ No: _____

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: _____

B. Does the development's design utilize any of the following nonstructural LID-BMPs?

Restrict permanent site disturbance by land owners? Yes: _____ No:

If yes, how: _____

Restrict temporary site disturbance during construction? Yes: _____ No:

If yes, how: _____

Consider soils and slopes in selecting disturbance limits? Yes: _____ No:

If yes, how: _____

C. Specify percentage of site to be cleared: 100% Regraded: 100%

D. Specify percentage of cleared areas done so for buildings: 50%

For driveways and parking: 40% For roadways: _____

E. What design criteria and/or site changes would be required to reduce the percentages in C and D above?

Change the goals of the Project

F. Specify site's hydrologic soil group (HSG) percentages:

HSG A: _____ HSG B: _____ HSG C: 100% HSG D: _____

G. Specify percentage of each HSG that will be permanently disturbed:

HSG A: _____ HSG B: _____ HSG C: 80% HSG D: _____

H. Locating site disturbance within areas with less permeable soils (HSG C and D) and minimizing disturbance within areas with greater permeable soils (HSG A and B) can help maintain groundwater recharge rates and reduce runoff volume increases. In light of the HSG percentages in F and G above, what other practical measures if any can be taken to achieve this?

No soil Group A or B are onsite
BECAUSE of close proximity of neighbors
The magnitude of groundwater impact
Adjacent developments No recharge REQ'D
in P A-01

I. Does the site include Karst topography?

Yes: _____ No:

If yes, discuss measures taken to limit Karst impacts:

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: 35,260 SF Proposed: 40,912 SF
 B. Specify maximum site impervious coverage allowed by regulations: 80%, 42,840
 C. Compare proposed street cartway widths with those required by regulations: NA

Type of Street	Proposed Cartway Width (feet)	Required Cartway Width (feet)
Residential access – low intensity	35,260 SF	
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: 20,875 SF
By driveways and parking: 20,027 By roadways: -

G. What design criteria and/or site changes would be required to reduce the percentages in F above?

Change to zoning density -
Buildings/site zoning specified to
fit within the existing neighborhood

H. Specify percentage of total impervious area that will be unconnected:

Total site: 0 Buildings: _____ Driveways and parking: _____ Roads: _____

I. Specify percentage of total impervious area that will be porous:

Total site: 61% Buildings: 0 Driveways and parking: 100% Roads: -

J. Specify percentage of total building roof area that will be vegetated: 0%

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: 306 LF Vegetated swale: - Natural channel: -

Stormwater management facility: 500 LF Other: _____

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?

change in zoning

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: minimal/no opportunity
for additional

Increase overland flow roughness: specified in Plan already

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: NA Regulations: _____

B. Pet Waste Stations

Specify the number of pet waste stations provided: 1

Specify the spacing between the pet waste stations: -

Compare pet waste stations proposed with those required by regulations:

Proposed: NA Regulations: _____

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:

E. Prevention and Containment of Spills **N/A**

Identify locations where pollutants are located on the site, and the features that prevent these pollutants from being exposed to stormwater runoff:

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: _____

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.		✓
2.	Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces.		✓
3.	Maximize the protection of natural drainage features and vegetation.		✓
4.	Minimize the decrease in the pre-construction time of concentration.	✓	
5.	Minimize land disturbance including clearing and grading.		✓
6.	Minimize soil compaction.	✓	
7.	Provide low maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers, and pesticides.	✓	
8.	Provide vegetated open-channel conveyance systems discharge into and through stable vegetated areas.		✓
9.	Provide preventative source controls.	✓	

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 with the proposed zoning does NOT allow for some non-structural strategies. Since it is in the PA-01 Planning Area it should NOT have to comply with this standard.