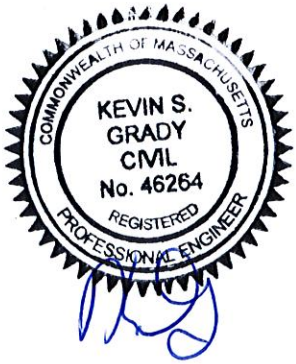
GRADY CONSULTING, L.L.C.
Registered Professional Civil Engineers & Land Surveyors

STORMWATER MANAGEMENT DESIGN CALCULATIONS

#817 Country Way, Scituate.

Assessors Map
12-2-38-F
Scituate, Massachusetts



Prepared for

Option C Properties, LLC
PO Box 263
Weymouth, MA 02190

Latest Revision:
June 19, 2023

January 16, 2023

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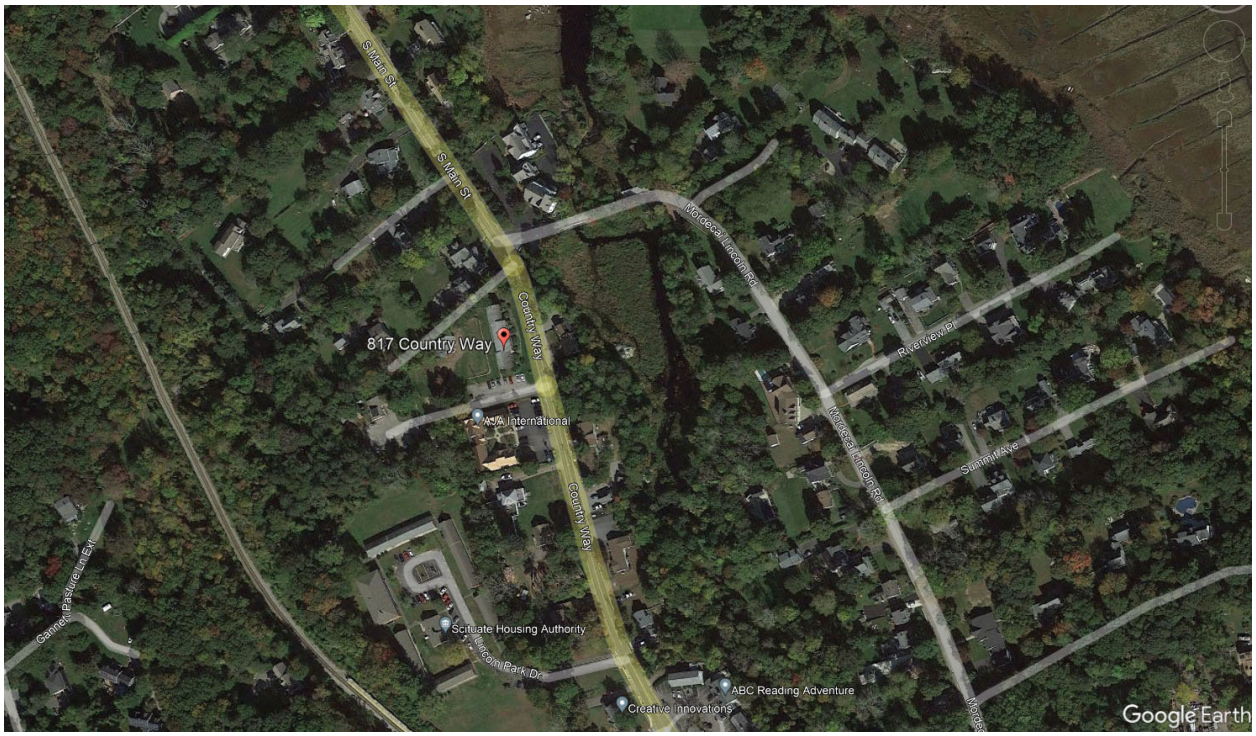
SUMMARY

This analysis was prepared to demonstrate Compliance with the Town of Scituate Stormwater Regulations. The proposed project is for the construction of a mixed use, multi-family building with associated septic system and strormwater controls.

The area of the proposed work is developed with an 8 unit apartment building and 2 dwellings in the same lot. The stormwater runoff currently flows from the site towards 3 different design points (DP). DP 1 lies on the western side of the lot, DP 2 & DP 4 lie on the southern side of the lot and DP 3 lies to the eastern side of the lot towards Country Way.



The attenuation of storm water flows has been achieved by capturing runoff from impervious areas and treat any runoff prior to discharge.

The post development runoff is analyzed in 4 design points.

DP 1 - The areas draining towards the wetland to the west, this includes sections of roofs, driveways and grassed areas.

DP 2 - The areas draining towards south, this includes sections of roofs and grassed areas

DP 3 - The areas draining towards Country Way, this includes sections of roof, driveways, and grassed areas.
DP 4 - The areas draining towards south, this includes sections of roofs and grassed areas

The design as proposed reduces peak runoff rates, improves and promotes infiltration and improves stormwater quality with the use of BMPs.

This analysis is divided into the following sections:

Section I	Overall Site Analysis
Section II	Compliance with Massachusetts Storm water Management Regulations
Section III	Operation And Maintenance Plan

The calculations have been performed for the 1, 2, 10, 25, 100-year 24 hour storm event, using the HydroCAD computer program. This computer program is based upon the Soils Conservation Service (SCS) TR-20 and TR-55 computer models and uses the SCS Curvilinear Unit rainfall distribution.

SUMMARY OF STORMWATER FLOWS

PRE-DEVELOPMENT

	100 YR	25 YR	10 YR	2 YR	1 YR
DP1	2.23	1.31	0.88	0.38	0.23
DP2	0.78	0.45	0.30	0.13	0.08
DP3	8.16	5.14	3.66	1.87	1.28
DP4	2.68	1.74	1.28	0.70	0.50

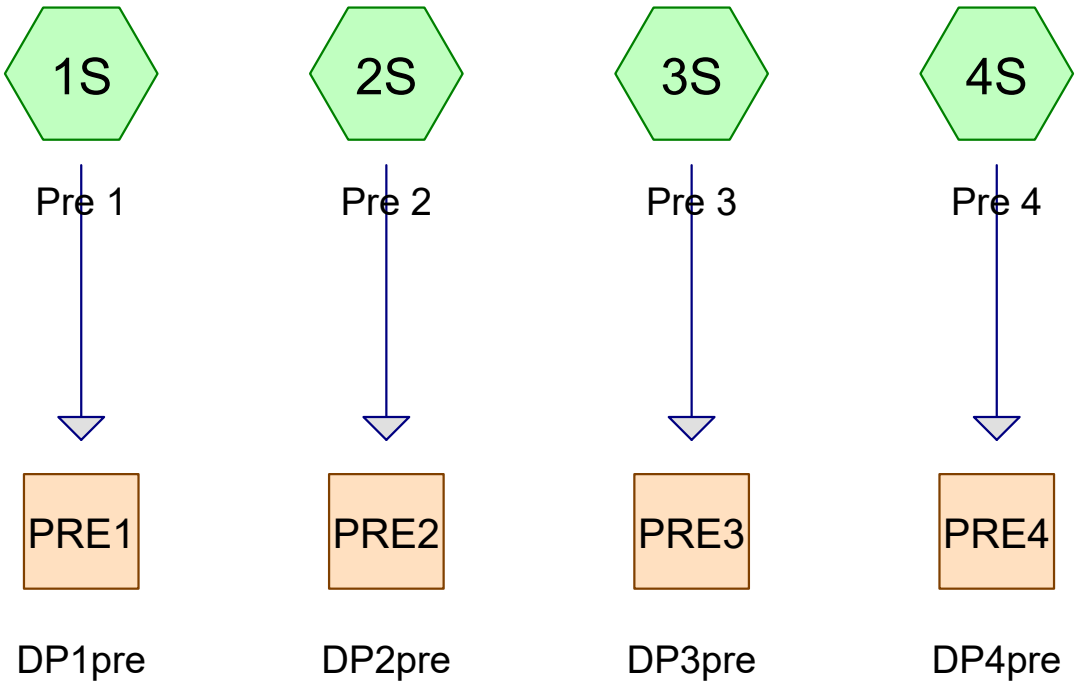
POST-DEVELOPMENT

	100 YR	25 YR	10 YR	2 YR	1 YR
DP1	1.98	1.17	0.67	0.28	0.17
DP2	0.44	0.32	0.24	0.05	0.01
DP3	8.08	5.14	3.39	1.24	0.62
DP4	0.47	0.28	0.19	0.09	0.06

DIFFERENCE

	100 YR	25 YR	10 YR	2 YR	1 YR
DP1	0.25	0.14	0.21	0.10	0.06
DP2	0.34	0.13	0.06	0.08	0.07
DP3	0.08	0.00	0.27	0.63	0.66
DP4	2.21	1.46	1.09	0.61	0.44

Section I
Overall Site Analysis



Subcat Reach Pond Link

Routing Diagram for 817 Country Way Pre
Prepared by Grady Consulting LLC

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
43,800	74	>75% Grass cover, Good, HSG C (1S, 3S, 4S)
2,822	89	Gravel roads, HSG C (3S, 4S)
13,284	98	Paved parking, HSG C (1S, 3S, 4S)
8,204	98	Unconnected roofs, HSG C (1S, 3S, 4S)
38,875	70	Woods, Good, HSG C (1S, 2S, 3S, 4S)
106,985	**78**	**TOTAL AREA**

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Pre 1 Runoff Area=21,077 sf 1.90% Impervious Runoff Depth>0.63"
Flow Length=283' Tc=14.6 min CN=71 Runoff=0.23 cfs 1,115 cf

Subcatchment 2S: Pre 2 Runoff Area=7,332 sf 0.00% Impervious Runoff Depth>0.59"
Flow Length=106' Slope=0.0200 '/' Tc=13.4 min CN=70 Runoff=0.08 cfs 362 cf

Subcatchment 3S: Pre 3 Runoff Area=60,325 sf 24.98% Impervious Runoff Depth>0.97"
Flow Length=589' Tc=10.8 min UI Adjusted CN=78 Runoff=1.28 cfs 4,889 cf

Subcatchment 4S: Pre 4 Runoff Area=18,251 sf 32.99% Impervious Runoff Depth>1.21"
Flow Length=262' Tc=10.1 min CN=82 Runoff=0.50 cfs 1,834 cf

Reach PRE1: DP1pre Inflow=0.23 cfs 1,115 cf
Outflow=0.23 cfs 1,115 cf

Reach PRE2: DP2pre Inflow=0.08 cfs 362 cf
Outflow=0.08 cfs 362 cf

Reach PRE3: DP3pre Inflow=1.28 cfs 4,889 cf
Outflow=1.28 cfs 4,889 cf

Reach PRE4: DP4pre Inflow=0.50 cfs 1,834 cf
Outflow=0.50 cfs 1,834 cf

Total Runoff Area = 106,985 sf Runoff Volume = 8,200 cf Average Runoff Depth = 0.92"
79.91% Pervious = 85,497 sf 20.09% Impervious = 21,488 sf

Summary for Subcatchment 1S: Pre 1

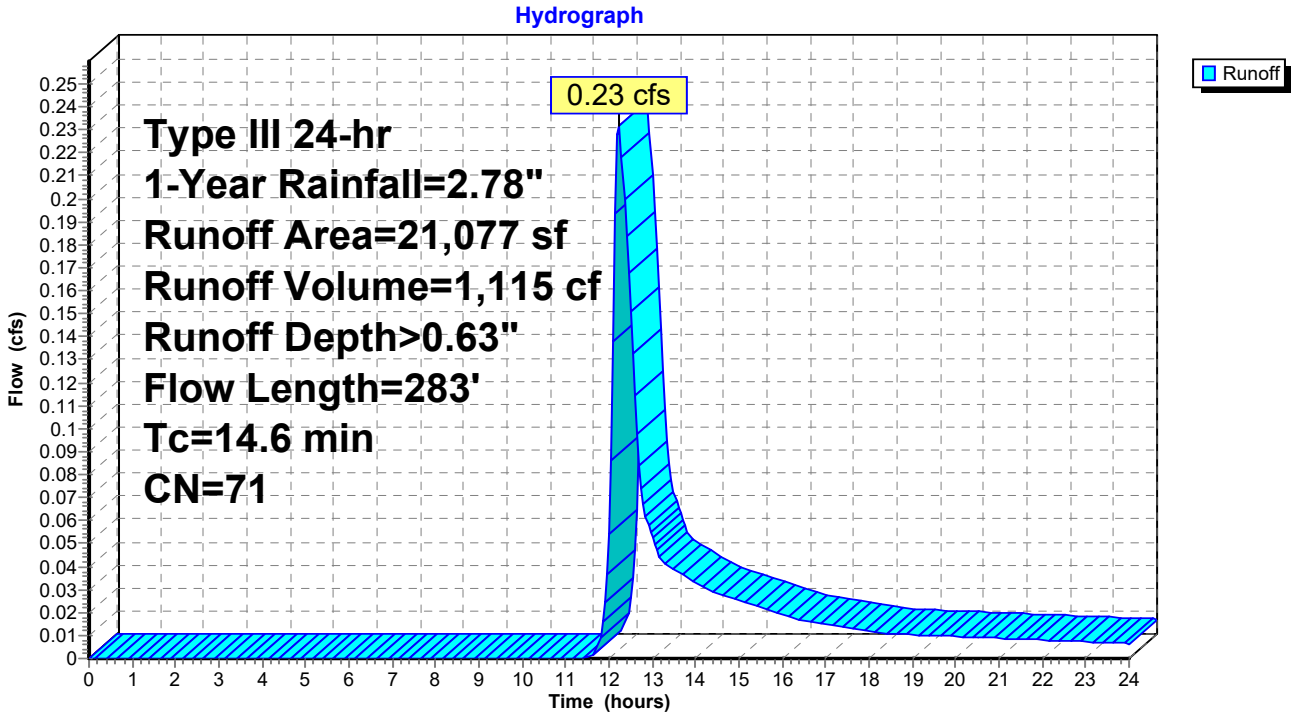
Runoff = 0.23 cfs @ 12.24 hrs, Volume= 1,115 cf, Depth> 0.63"
Routed to Reach PRE1 : DP1pre

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.78"

Area (sf)	CN	Description
298	98	Unconnected roofs, HSG C
1,495	74	>75% Grass cover, Good, HSG C
19,182	70	Woods, Good, HSG C
102	98	Paved parking, HSG C
21,077	71	Weighted Average
20,677		98.10% Pervious Area
400		1.90% Impervious Area
298		74.50% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.3	50	0.0400	0.09		**Sheet Flow, Grass** Grass: Bermuda n= 0.410 P2= 3.35"
0.1	14	0.0500	1.57		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
1.7	73	0.0200	0.71		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.6	48	0.0100	0.50		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.9	98	0.0300	0.87		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
14.6	283	Total			

Subcatchment 1S: Pre 1



Summary for Subcatchment 2S: Pre 2

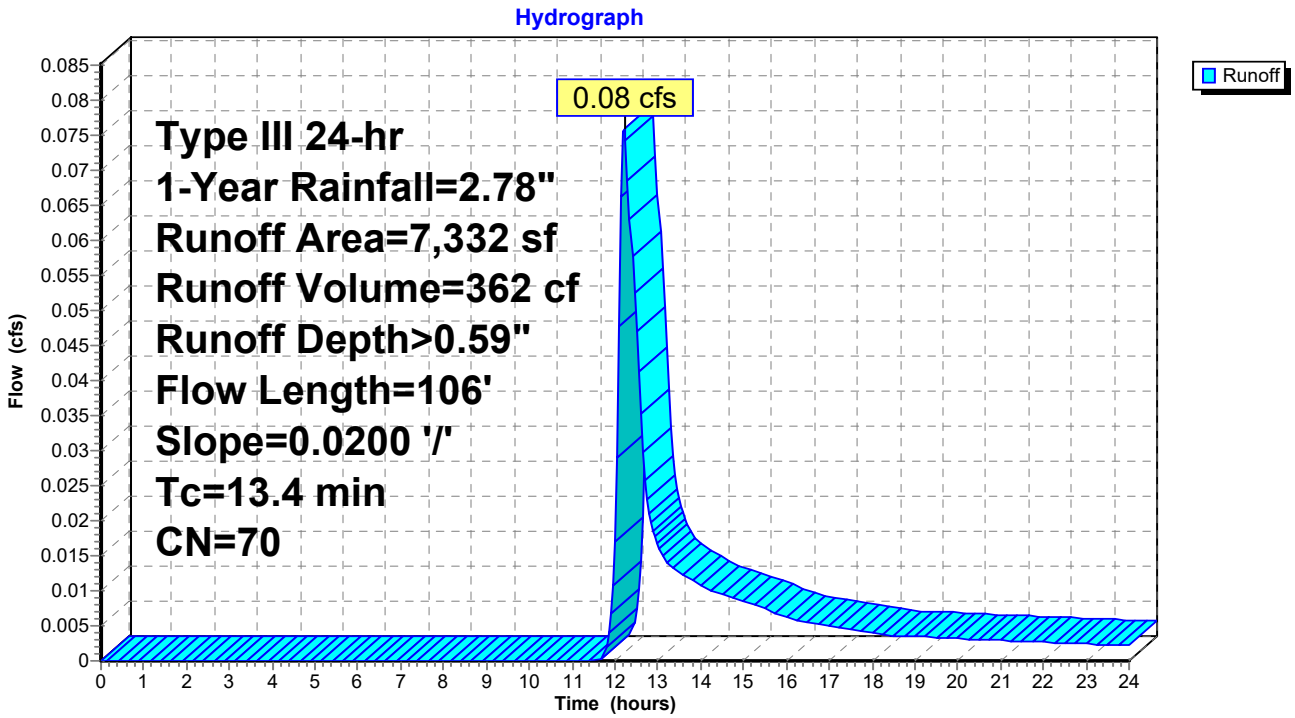
Runoff = 0.08 cfs @ 12.22 hrs, Volume= 362 cf, Depth> 0.59"
Routed to Reach PRE2 : DP2pre

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.78"

Area (sf)	CN	Description
7,332	70	Woods, Good, HSG C
7,332		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	50	0.0200	0.07		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.35"
1.3	56	0.0200	0.71		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
13.4	106	Total			

Subcatchment 2S: Pre 2



Summary for Subcatchment 3S: Pre 3

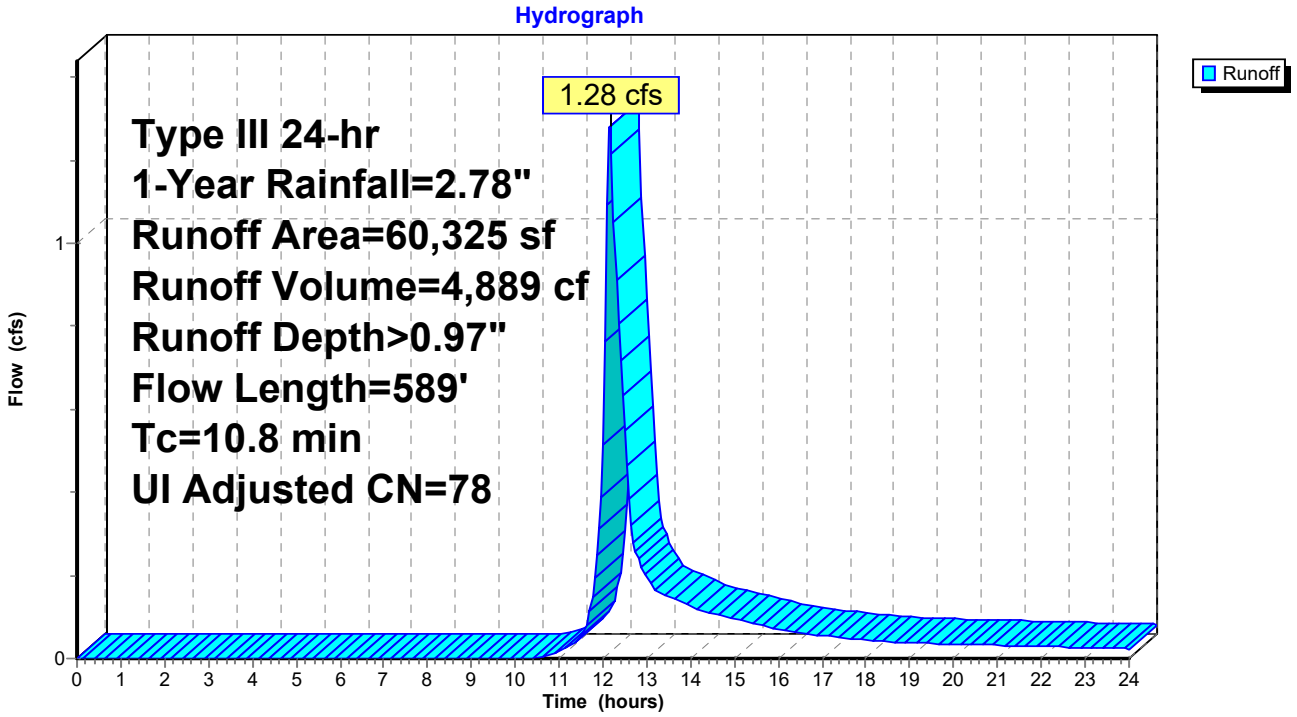
Runoff = 1.28 cfs @ 12.16 hrs, Volume= 4,889 cf, Depth> 0.97"
Routed to Reach PRE3 : DP3pre

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.78"

Area (sf)	CN	Adj	Description
1,411	89		Gravel roads, HSG C
6,896	98		Unconnected roofs, HSG C
35,480	74		>75% Grass cover, Good, HSG C
8,367	70		Woods, Good, HSG C
8,171	98		Paved parking, HSG C
60,325	80	78	Weighted Average, UI Adjusted
45,258			75.02% Pervious Area
15,067			24.98% Impervious Area
6,896			45.77% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	23	0.0800	0.10		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.35"
2.8	27	0.0800	0.16		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.35"
0.9	56	0.0400	1.00		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.5	40	0.0400	1.40		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.8	88	0.0700	1.85		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.6	138	0.0400	4.06		**Shallow Concentrated Flow, Asphalt** Paved Kv= 20.3 fps
1.5	217	0.0140	2.40		**Shallow Concentrated Flow, Gutter** Paved Kv= 20.3 fps
10.8	589	Total			

Subcatchment 3S: Pre 3



Summary for Subcatchment 4S: Pre 4

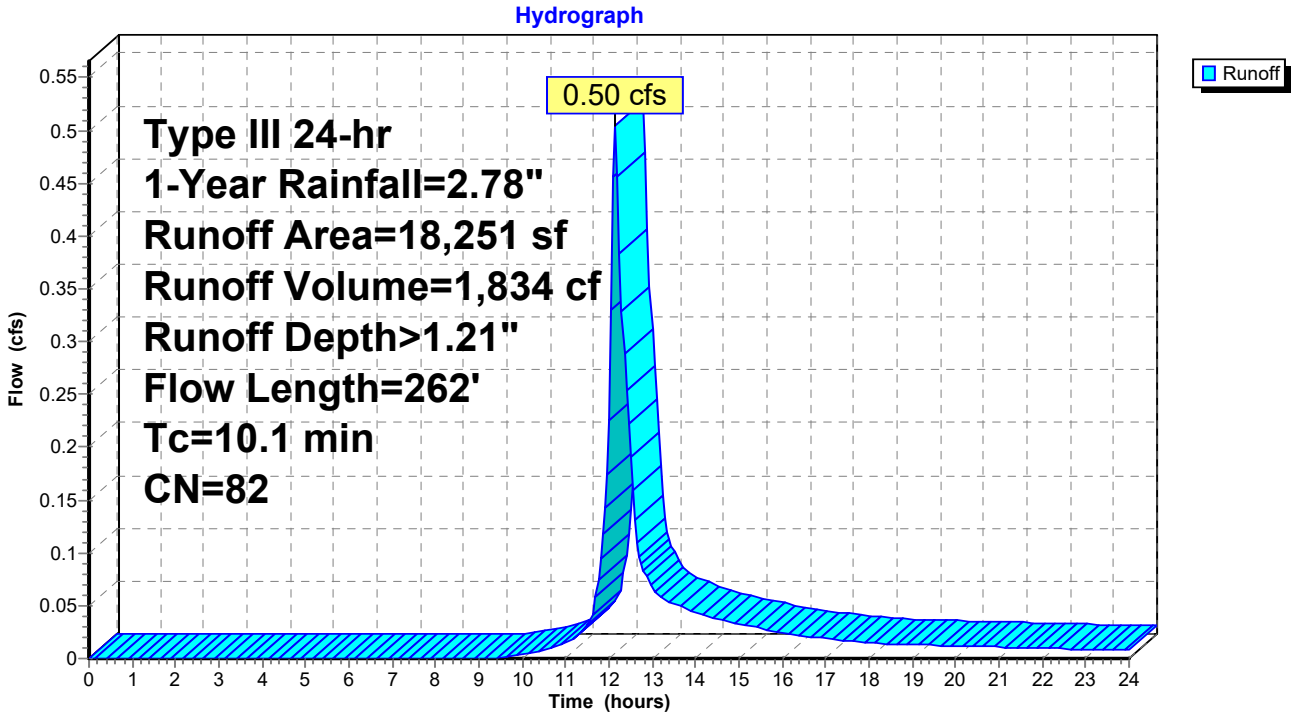
Runoff = 0.50 cfs @ 12.15 hrs, Volume= 1,834 cf, Depth> 1.21"
Routed to Reach PRE4 : DP4pre

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.78"

Area (sf)	CN	Description
1,411	89	Gravel roads, HSG C
1,010	98	Unconnected roofs, HSG C
6,825	74	>75% Grass cover, Good, HSG C
3,994	70	Woods, Good, HSG C
5,011	98	Paved parking, HSG C
18,251	82	Weighted Average
12,230		67.01% Pervious Area
6,021		32.99% Impervious Area
1,010		16.77% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	50	0.0700	0.11		**Sheet Flow, Grass** Grass: Bermuda n= 0.410 P2= 3.35"
0.1	10	0.0400	3.22		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.4	88	0.0400	4.06		**Shallow Concentrated Flow, Asphalt** Paved Kv= 20.3 fps
0.5	42	0.0400	1.40		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.7	42	0.0400	1.00		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.0	30	0.0100	0.50		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
10.1	262	Total			

Subcatchment 4S: Pre 4

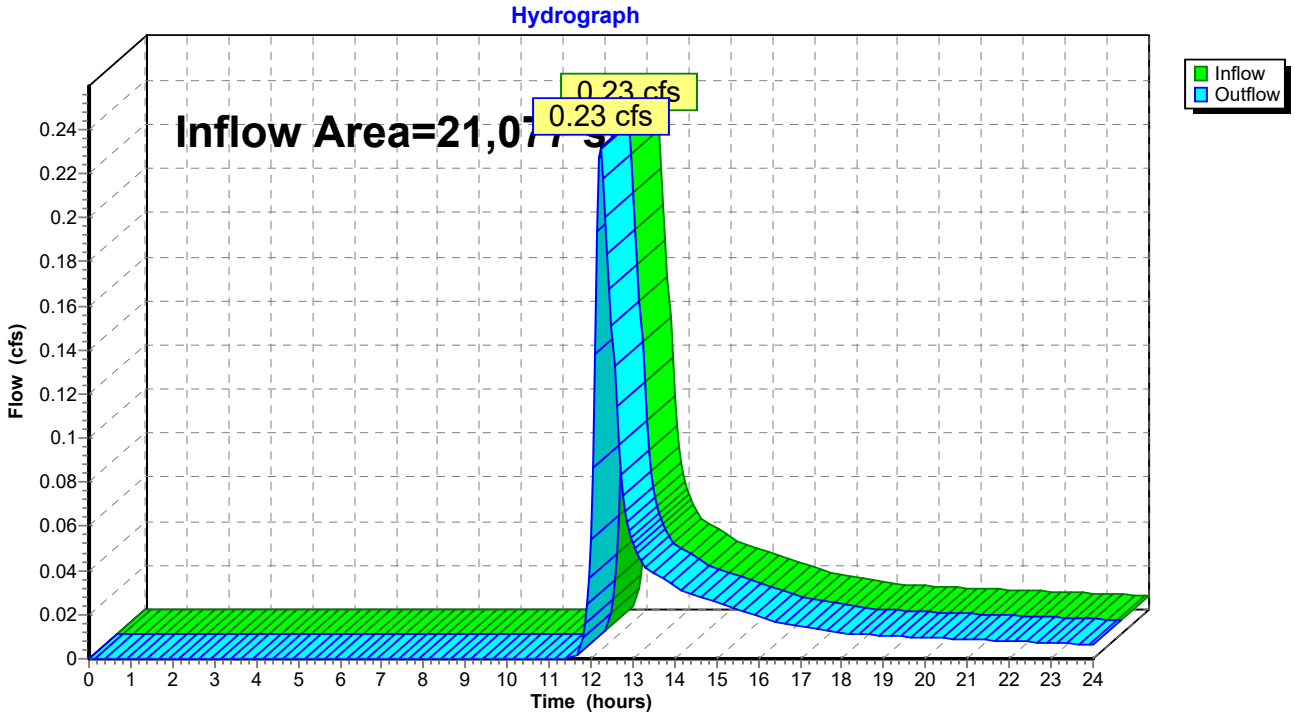


Summary for Reach PRE1: DP1pre

Inflow Area = 21,077 sf, 1.90% Impervious, Inflow Depth > 0.63" for 1-Year event
Inflow = 0.23 cfs @ 12.24 hrs, Volume= 1,115 cf
Outflow = 0.23 cfs @ 12.24 hrs, Volume= 1,115 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach PRE1: DP1pre

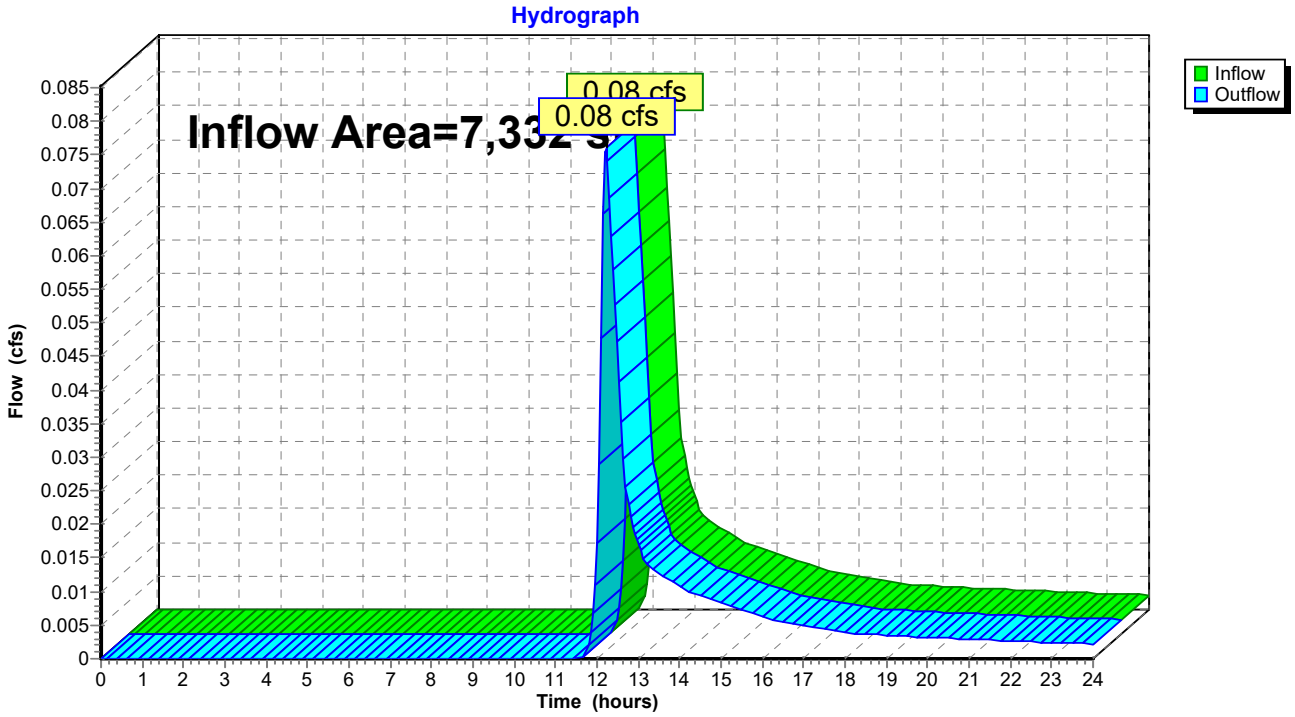


Summary for Reach PRE2: DP2pre

Inflow Area = 7,332 sf, 0.00% Impervious, Inflow Depth > 0.59" for 1-Year event
Inflow = 0.08 cfs @ 12.22 hrs, Volume= 362 cf
Outflow = 0.08 cfs @ 12.22 hrs, Volume= 362 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach PRE2: DP2pre

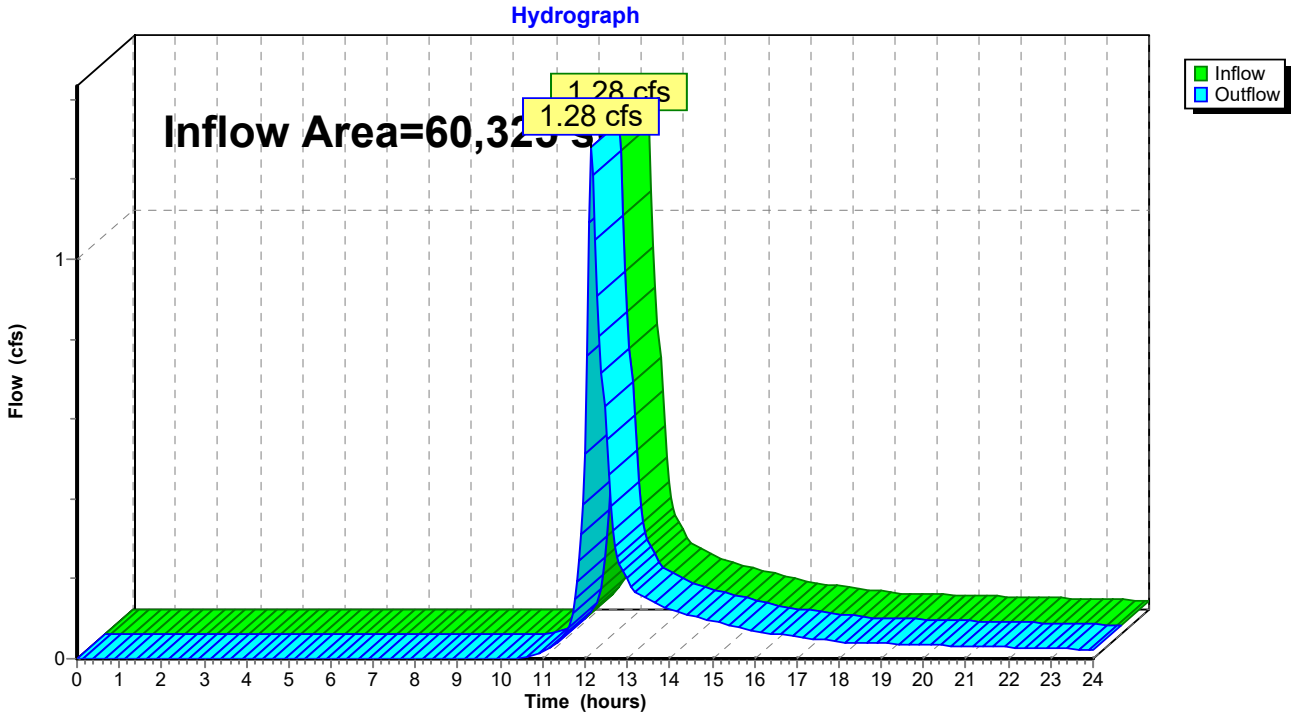


Summary for Reach PRE3: DP3pre

Inflow Area = 60,325 sf, 24.98% Impervious, Inflow Depth > 0.97" for 1-Year event
Inflow = 1.28 cfs @ 12.16 hrs, Volume= 4,889 cf
Outflow = 1.28 cfs @ 12.16 hrs, Volume= 4,889 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach PRE3: DP3pre

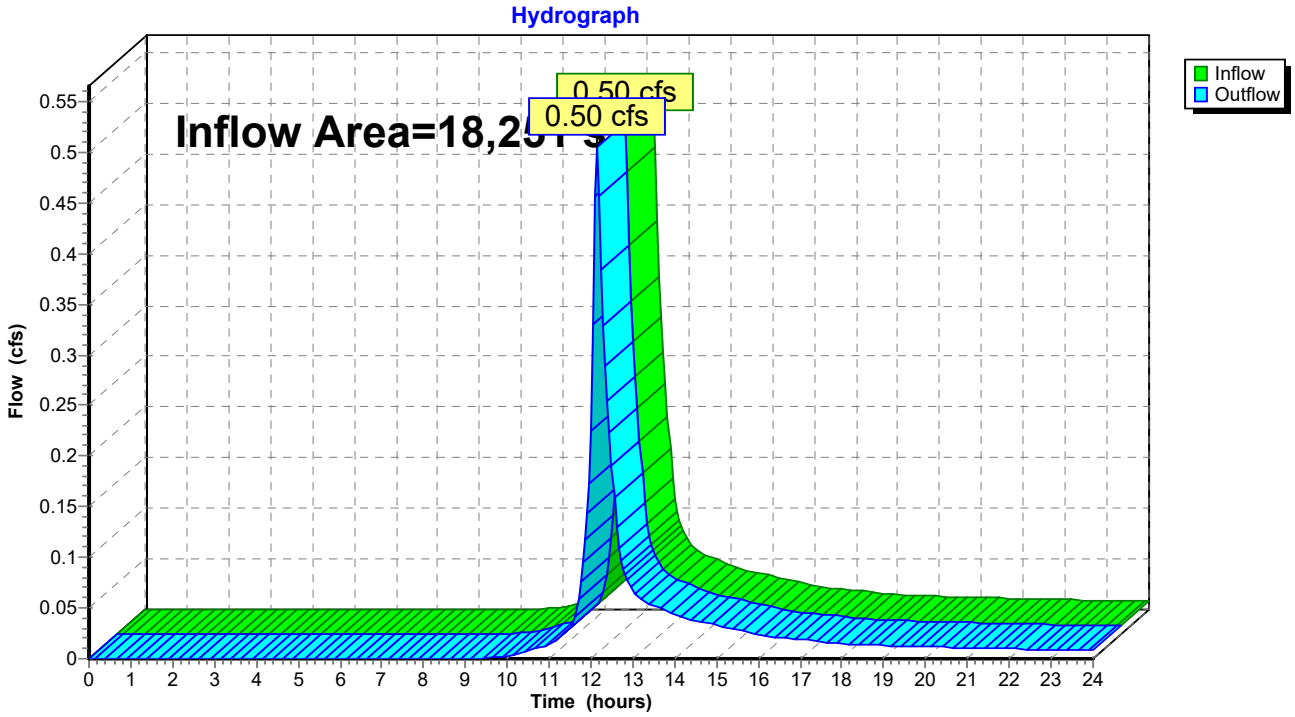


Summary for Reach PRE4: DP4pre

Inflow Area = 18,251 sf, 32.99% Impervious, Inflow Depth > 1.21" for 1-Year event
Inflow = 0.50 cfs @ 12.15 hrs, Volume= 1,834 cf
Outflow = 0.50 cfs @ 12.15 hrs, Volume= 1,834 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach PRE4: DP4pre



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Pre 1 Runoff Area=21,077 sf 1.90% Impervious Runoff Depth>0.97"
Flow Length=283' Tc=14.6 min CN=71 Runoff=0.38 cfs 1,697 cf

Subcatchment 2S: Pre 2 Runoff Area=7,332 sf 0.00% Impervious Runoff Depth>0.91"
Flow Length=106' Slope=0.0200 '/' Tc=13.4 min CN=70 Runoff=0.13 cfs 558 cf

Subcatchment 3S: Pre 3 Runoff Area=60,325 sf 24.98% Impervious Runoff Depth>1.38"
Flow Length=589' Tc=10.8 min UI Adjusted CN=78 Runoff=1.87 cfs 6,944 cf

Subcatchment 4S: Pre 4 Runoff Area=18,251 sf 32.99% Impervious Runoff Depth>1.66"
Flow Length=262' Tc=10.1 min CN=82 Runoff=0.70 cfs 2,519 cf

Reach PRE1: DP1pre Inflow=0.38 cfs 1,697 cf
Outflow=0.38 cfs 1,697 cf

Reach PRE2: DP2pre Inflow=0.13 cfs 558 cf
Outflow=0.13 cfs 558 cf

Reach PRE3: DP3pre Inflow=1.87 cfs 6,944 cf
Outflow=1.87 cfs 6,944 cf

Reach PRE4: DP4pre Inflow=0.70 cfs 2,519 cf
Outflow=0.70 cfs 2,519 cf

Total Runoff Area = 106,985 sf Runoff Volume = 11,718 cf Average Runoff Depth = 1.31"
79.91% Pervious = 85,497 sf 20.09% Impervious = 21,488 sf

Summary for Subcatchment 1S: Pre 1

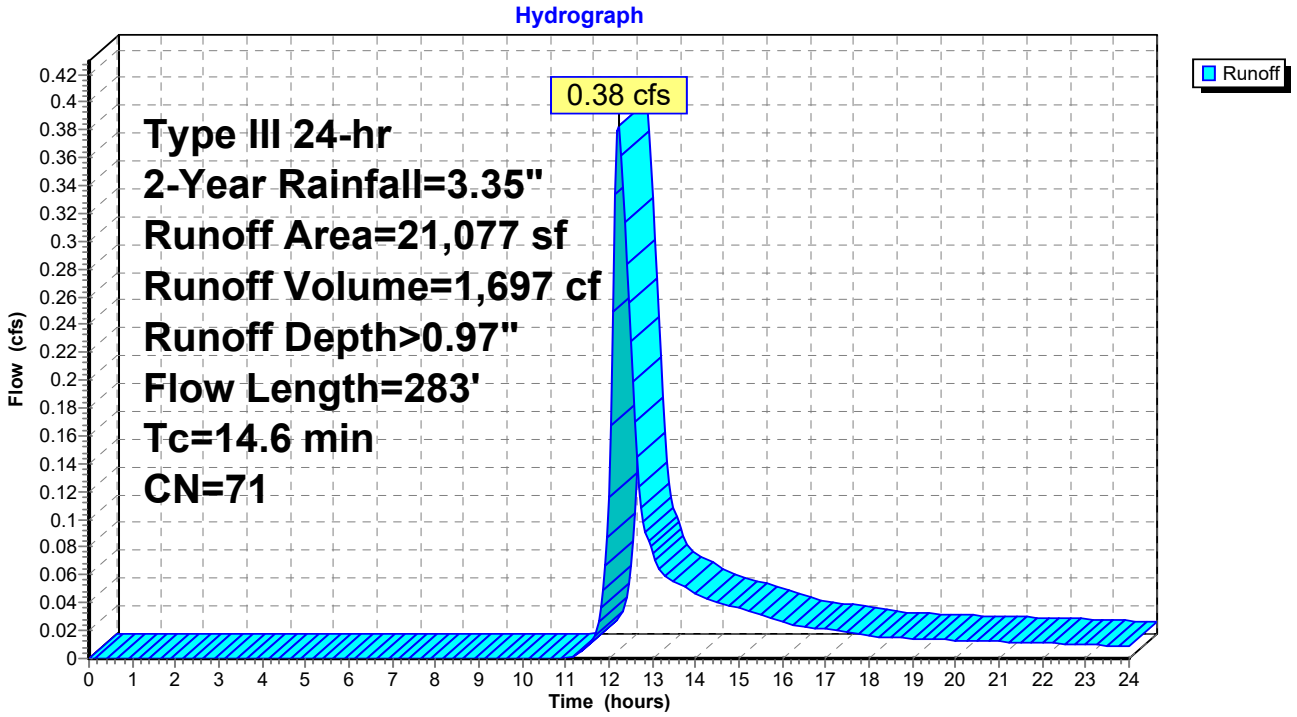
Runoff = 0.38 cfs @ 12.22 hrs, Volume= 1,697 cf, Depth> 0.97"
Routed to Reach PRE1 : DP1pre

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.35"

Area (sf)	CN	Description
298	98	Unconnected roofs, HSG C
1,495	74	>75% Grass cover, Good, HSG C
19,182	70	Woods, Good, HSG C
102	98	Paved parking, HSG C
21,077	71	Weighted Average
20,677		98.10% Pervious Area
400		1.90% Impervious Area
298		74.50% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.3	50	0.0400	0.09		**Sheet Flow, Grass** Grass: Bermuda n= 0.410 P2= 3.35"
0.1	14	0.0500	1.57		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
1.7	73	0.0200	0.71		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.6	48	0.0100	0.50		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.9	98	0.0300	0.87		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
14.6	283	Total			

Subcatchment 1S: Pre 1



Summary for Subcatchment 2S: Pre 2

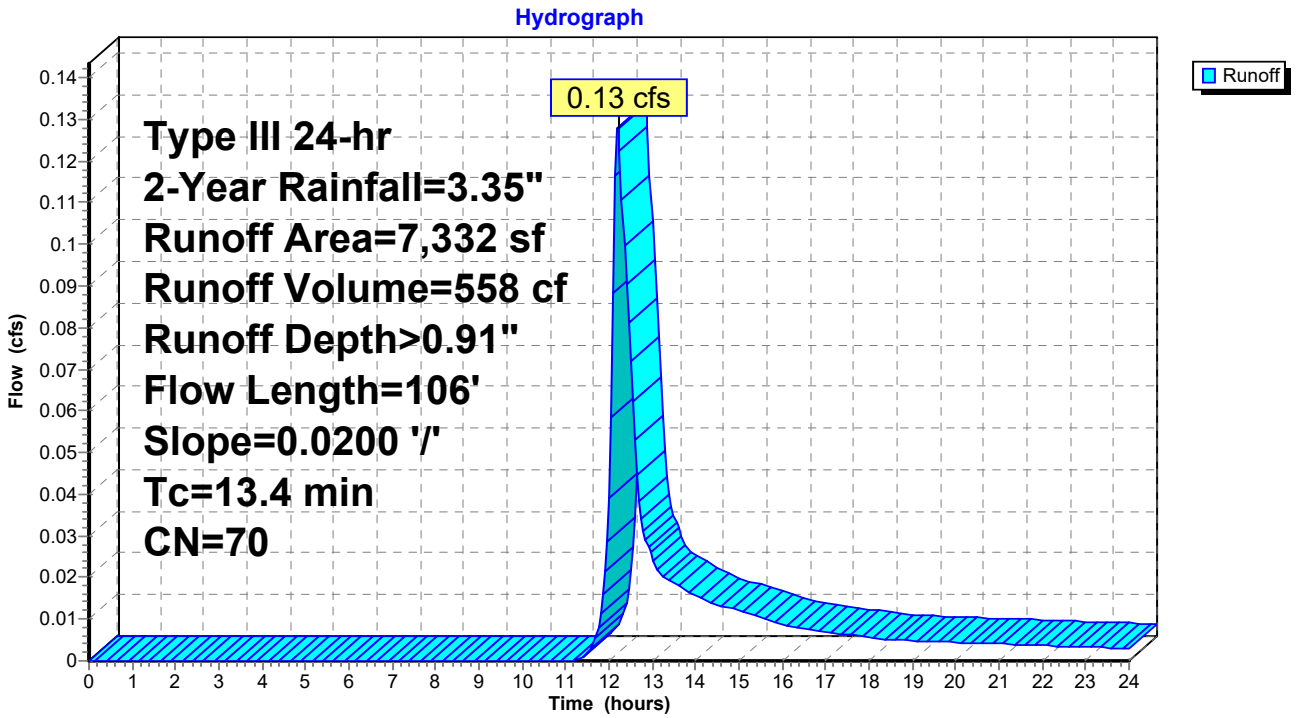
Runoff = 0.13 cfs @ 12.21 hrs, Volume= 558 cf, Depth> 0.91"
Routed to Reach PRE2 : DP2pre

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.35"

Area (sf)	CN	Description
7,332	70	Woods, Good, HSG C
7,332		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	50	0.0200	0.07		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.35"
1.3	56	0.0200	0.71		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
13.4	106	Total			

Subcatchment 2S: Pre 2



Summary for Subcatchment 3S: Pre 3

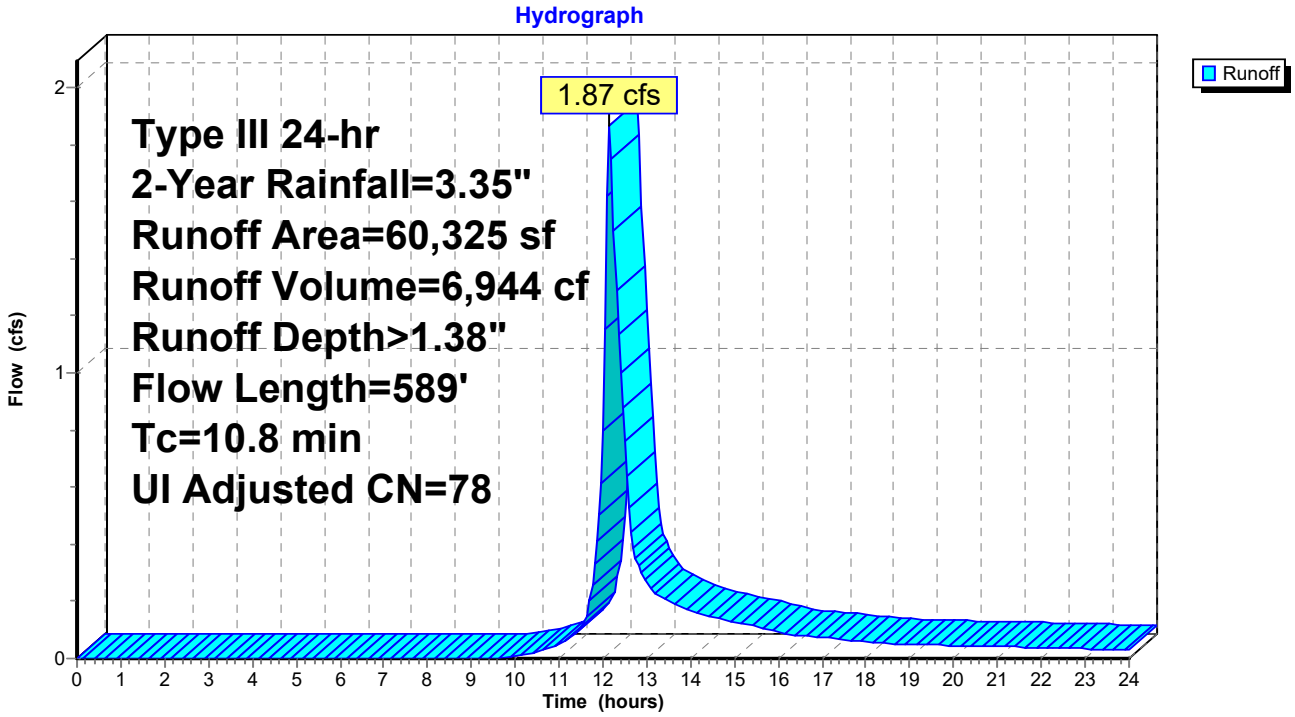
Runoff = 1.87 cfs @ 12.16 hrs, Volume= 6,944 cf, Depth> 1.38"
Routed to Reach PRE3 : DP3pre

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.35"

Area (sf)	CN	Adj	Description
1,411	89		Gravel roads, HSG C
6,896	98		Unconnected roofs, HSG C
35,480	74		>75% Grass cover, Good, HSG C
8,367	70		Woods, Good, HSG C
8,171	98		Paved parking, HSG C
60,325	80	78	Weighted Average, UI Adjusted
45,258			75.02% Pervious Area
15,067			24.98% Impervious Area
6,896			45.77% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	23	0.0800	0.10		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.35"
2.8	27	0.0800	0.16		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.35"
0.9	56	0.0400	1.00		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.5	40	0.0400	1.40		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.8	88	0.0700	1.85		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.6	138	0.0400	4.06		**Shallow Concentrated Flow, Asphalt** Paved Kv= 20.3 fps
1.5	217	0.0140	2.40		**Shallow Concentrated Flow, Gutter** Paved Kv= 20.3 fps
10.8	589	Total			

Subcatchment 3S: Pre 3



Summary for Subcatchment 4S: Pre 4

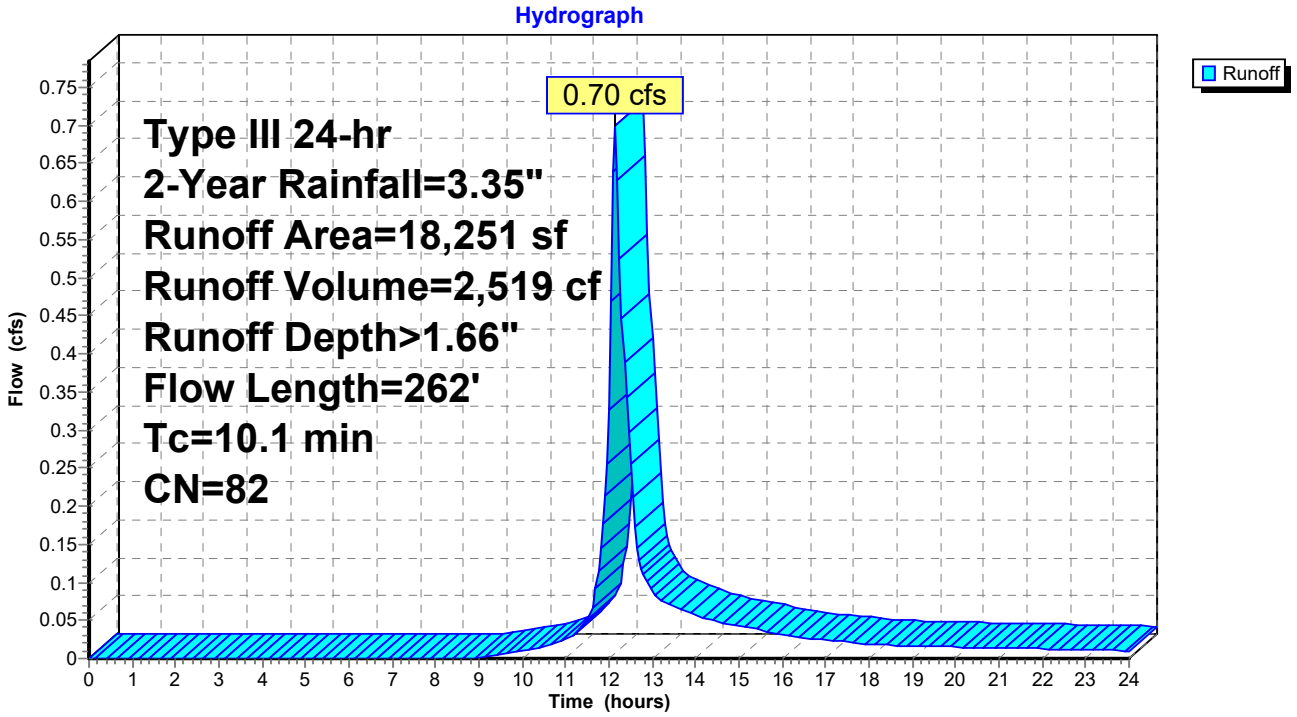
Runoff = 0.70 cfs @ 12.15 hrs, Volume= 2,519 cf, Depth> 1.66"
Routed to Reach PRE4 : DP4pre

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.35"

Area (sf)	CN	Description
1,411	89	Gravel roads, HSG C
1,010	98	Unconnected roofs, HSG C
6,825	74	>75% Grass cover, Good, HSG C
3,994	70	Woods, Good, HSG C
5,011	98	Paved parking, HSG C
18,251	82	Weighted Average
12,230		67.01% Pervious Area
6,021		32.99% Impervious Area
1,010		16.77% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	50	0.0700	0.11		**Sheet Flow, Grass** Grass: Bermuda n= 0.410 P2= 3.35"
0.1	10	0.0400	3.22		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.4	88	0.0400	4.06		**Shallow Concentrated Flow, Asphalt** Paved Kv= 20.3 fps
0.5	42	0.0400	1.40		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.7	42	0.0400	1.00		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.0	30	0.0100	0.50		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
10.1	262	Total			

Subcatchment 4S: Pre 4

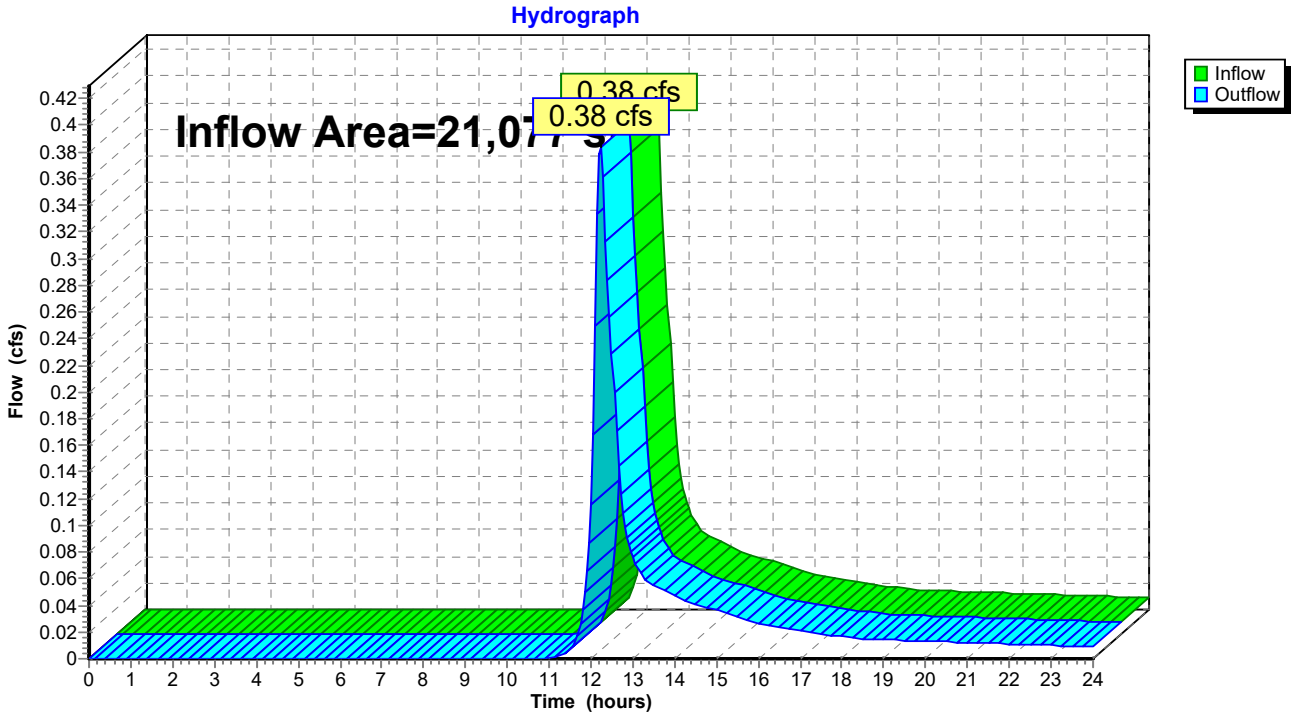


Summary for Reach PRE1: DP1pre

Inflow Area = 21,077 sf, 1.90% Impervious, Inflow Depth > 0.97" for 2-Year event
Inflow = 0.38 cfs @ 12.22 hrs, Volume= 1,697 cf
Outflow = 0.38 cfs @ 12.22 hrs, Volume= 1,697 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach PRE1: DP1pre

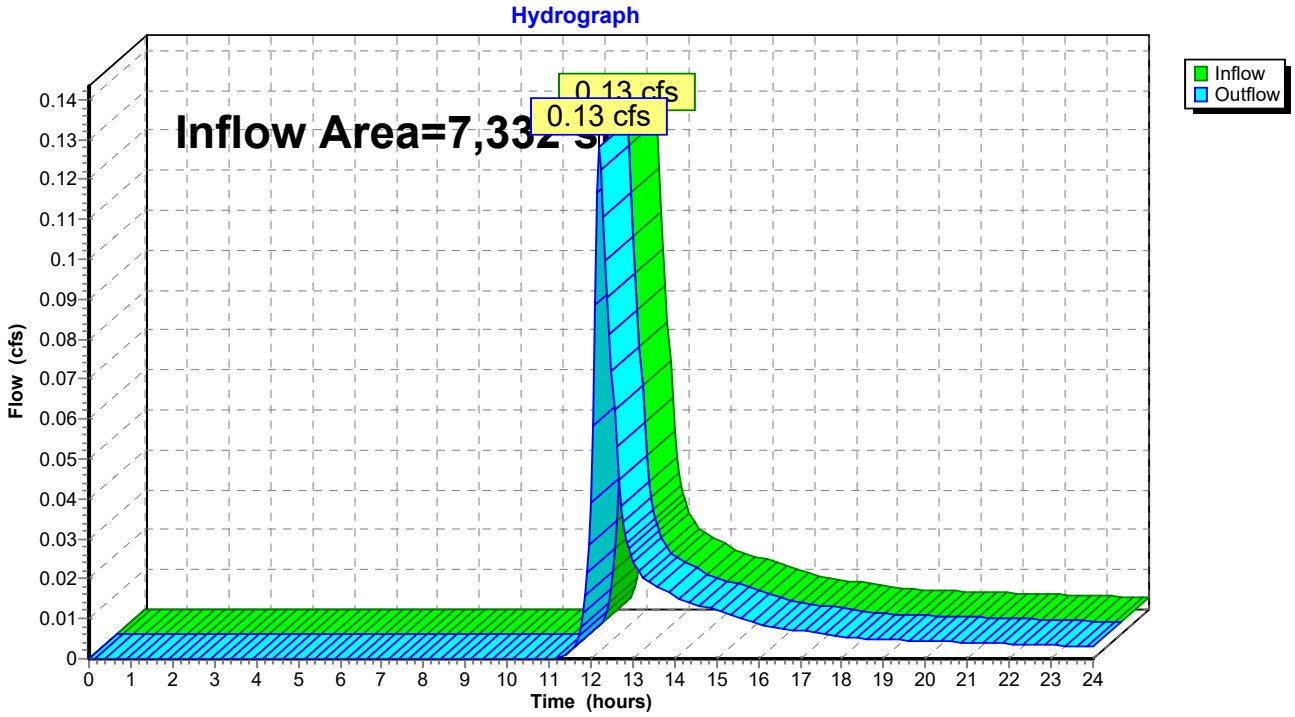


Summary for Reach PRE2: DP2pre

Inflow Area = 7,332 sf, 0.00% Impervious, Inflow Depth > 0.91" for 2-Year event
Inflow = 0.13 cfs @ 12.21 hrs, Volume= 558 cf
Outflow = 0.13 cfs @ 12.21 hrs, Volume= 558 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach PRE2: DP2pre

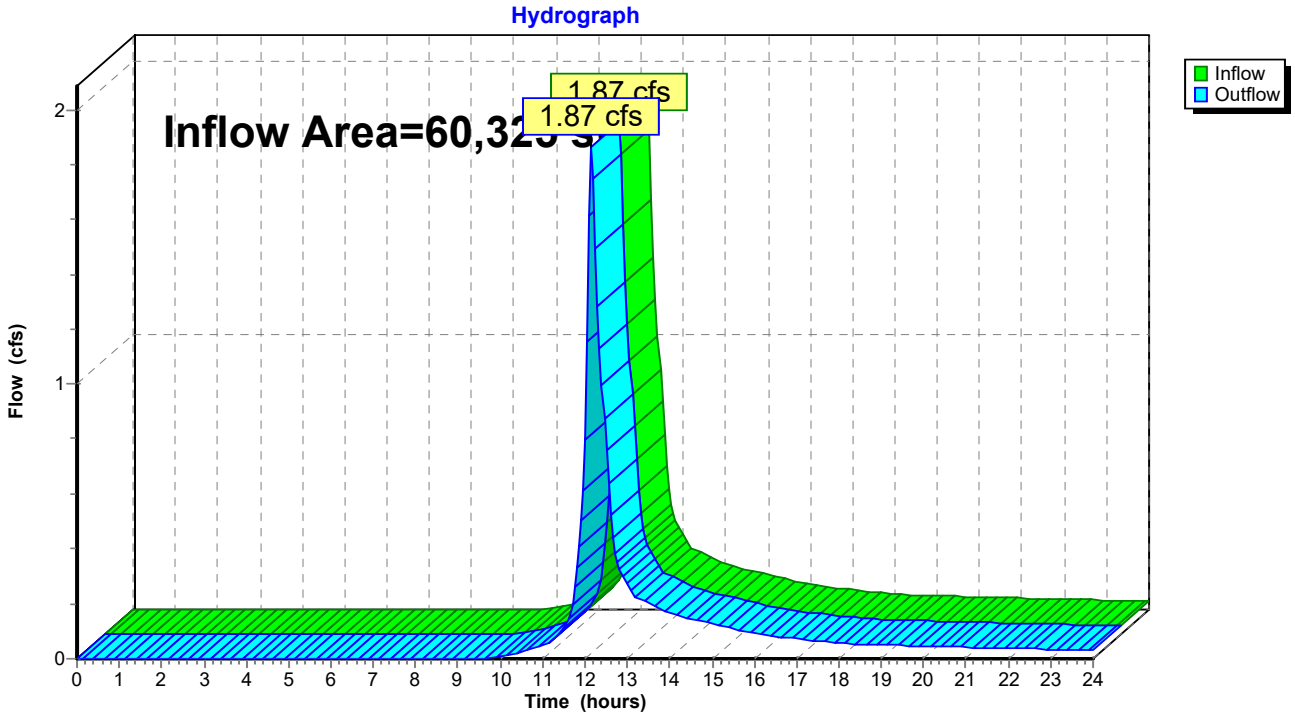


Summary for Reach PRE3: DP3pre

Inflow Area = 60,325 sf, 24.98% Impervious, Inflow Depth > 1.38" for 2-Year event
Inflow = 1.87 cfs @ 12.16 hrs, Volume= 6,944 cf
Outflow = 1.87 cfs @ 12.16 hrs, Volume= 6,944 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach PRE3: DP3pre

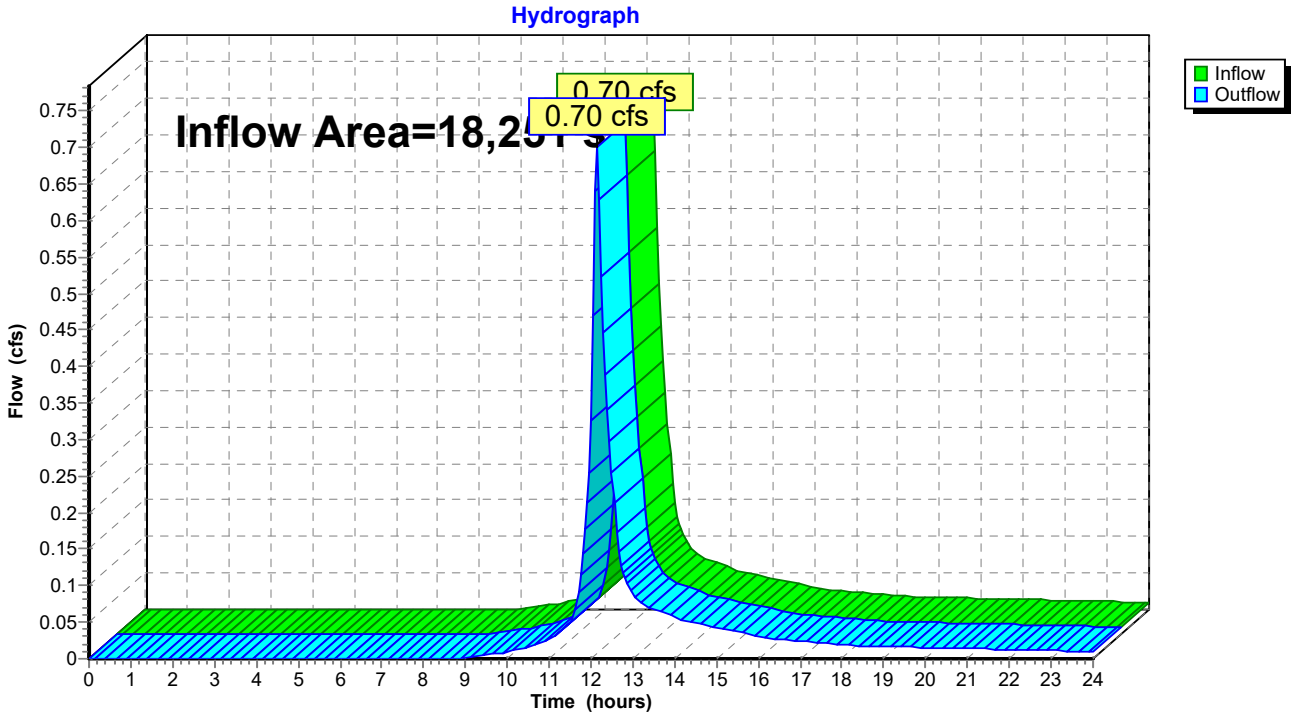


Summary for Reach PRE4: DP4pre

Inflow Area = 18,251 sf, 32.99% Impervious, Inflow Depth > 1.66" for 2-Year event
Inflow = 0.70 cfs @ 12.15 hrs, Volume= 2,519 cf
Outflow = 0.70 cfs @ 12.15 hrs, Volume= 2,519 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach PRE4: DP4pre



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Pre 1 Runoff Area=21,077 sf 1.90% Impervious Runoff Depth>2.07"
Flow Length=283' Tc=14.6 min CN=71 Runoff=0.88 cfs 3,640 cf

Subcatchment 2S: Pre 2 Runoff Area=7,332 sf 0.00% Impervious Runoff Depth>1.99"
Flow Length=106' Slope=0.0200 '/' Tc=13.4 min CN=70 Runoff=0.30 cfs 1,218 cf

Subcatchment 3S: Pre 3 Runoff Area=60,325 sf 24.98% Impervious Runoff Depth>2.66"
Flow Length=589' Tc=10.8 min UI Adjusted CN=78 Runoff=3.66 cfs 13,393 cf

Subcatchment 4S: Pre 4 Runoff Area=18,251 sf 32.99% Impervious Runoff Depth>3.03"
Flow Length=262' Tc=10.1 min CN=82 Runoff=1.28 cfs 4,607 cf

Reach PRE1: DP1pre Inflow=0.88 cfs 3,640 cf
Outflow=0.88 cfs 3,640 cf

Reach PRE2: DP2pre Inflow=0.30 cfs 1,218 cf
Outflow=0.30 cfs 1,218 cf

Reach PRE3: DP3pre Inflow=3.66 cfs 13,393 cf
Outflow=3.66 cfs 13,393 cf

Reach PRE4: DP4pre Inflow=1.28 cfs 4,607 cf
Outflow=1.28 cfs 4,607 cf

Total Runoff Area = 106,985 sf Runoff Volume = 22,858 cf Average Runoff Depth = 2.56"
79.91% Pervious = 85,497 sf 20.09% Impervious = 21,488 sf

Summary for Subcatchment 1S: Pre 1

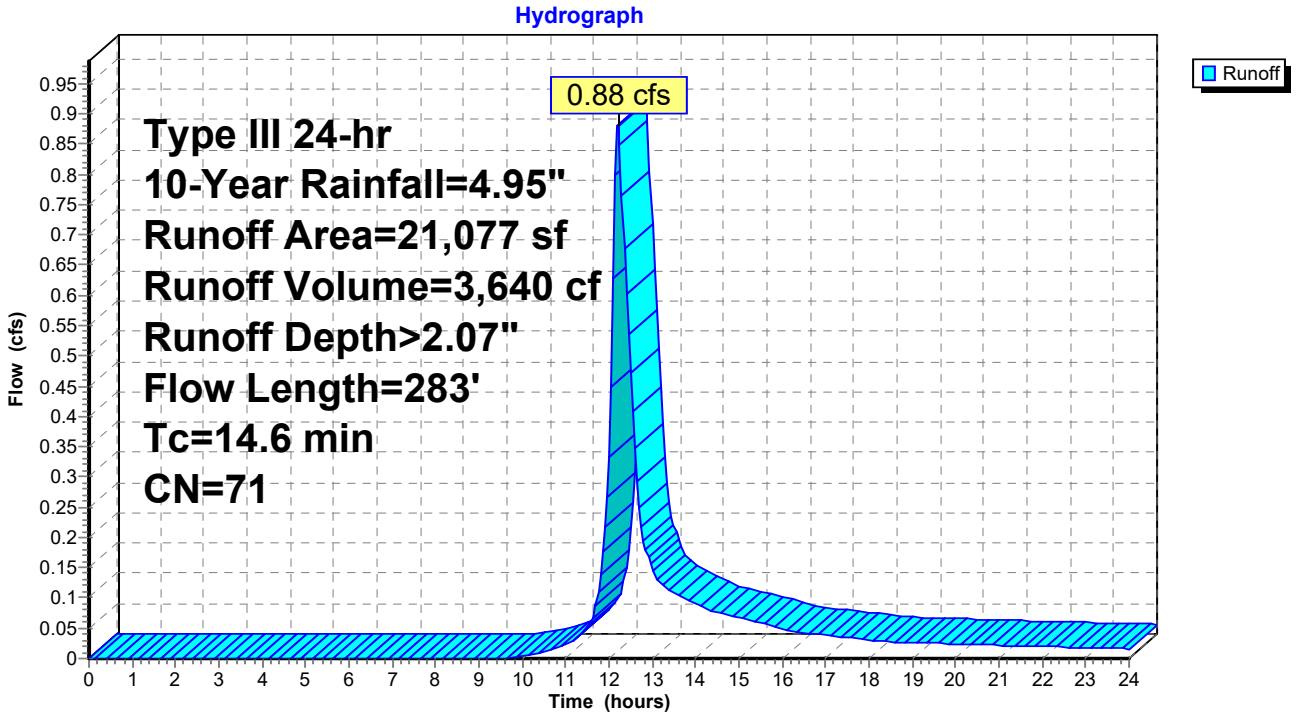
Runoff = 0.88 cfs @ 12.21 hrs, Volume= 3,640 cf, Depth> 2.07"
Routed to Reach PRE1 : DP1pre

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.95"

Area (sf)	CN	Description
298	98	Unconnected roofs, HSG C
1,495	74	>75% Grass cover, Good, HSG C
19,182	70	Woods, Good, HSG C
102	98	Paved parking, HSG C
21,077	71	Weighted Average
20,677		98.10% Pervious Area
400		1.90% Impervious Area
298		74.50% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.3	50	0.0400	0.09		**Sheet Flow, Grass** Grass: Bermuda n= 0.410 P2= 3.35"
0.1	14	0.0500	1.57		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
1.7	73	0.0200	0.71		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.6	48	0.0100	0.50		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.9	98	0.0300	0.87		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
14.6	283	Total			

Subcatchment 1S: Pre 1



Summary for Subcatchment 2S: Pre 2

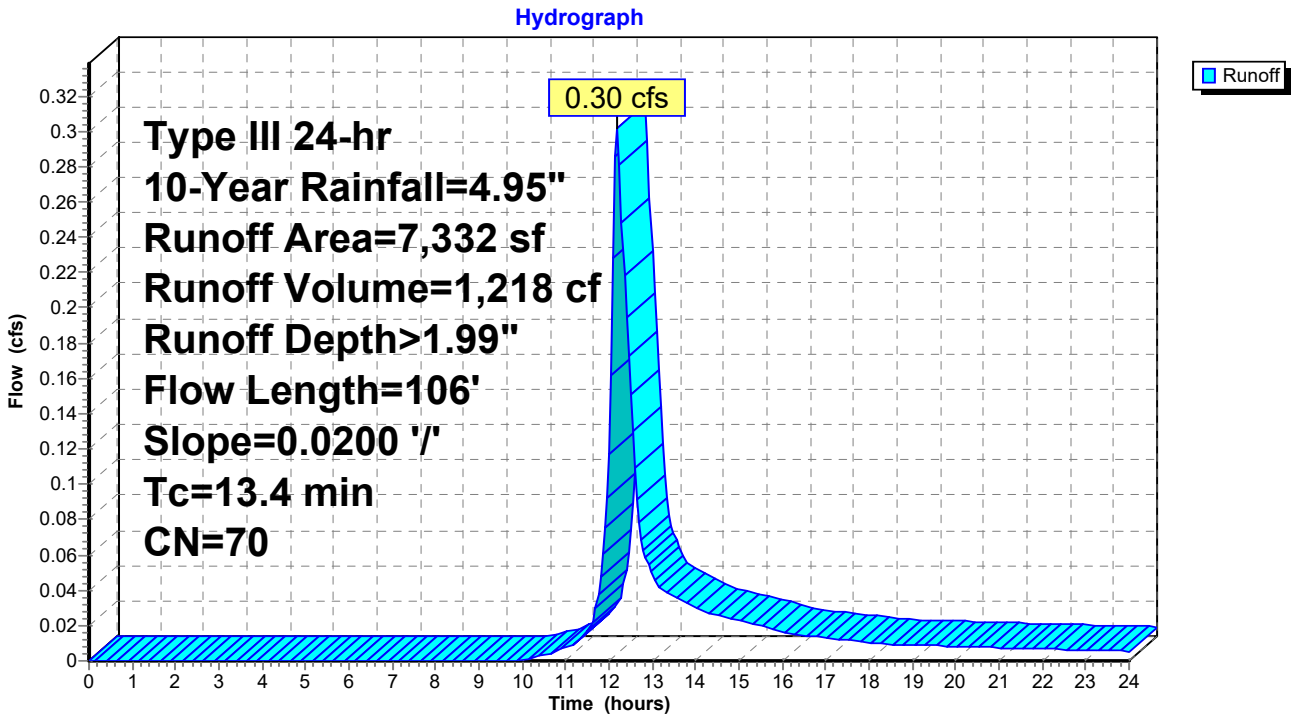
Runoff = 0.30 cfs @ 12.20 hrs, Volume= 1,218 cf, Depth> 1.99"
Routed to Reach PRE2 : DP2pre

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.95"

Area (sf)	CN	Description
7,332	70	Woods, Good, HSG C
7,332		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	50	0.0200	0.07		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.35"
1.3	56	0.0200	0.71		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
13.4	106	Total			

Subcatchment 2S: Pre 2



Summary for Subcatchment 3S: Pre 3

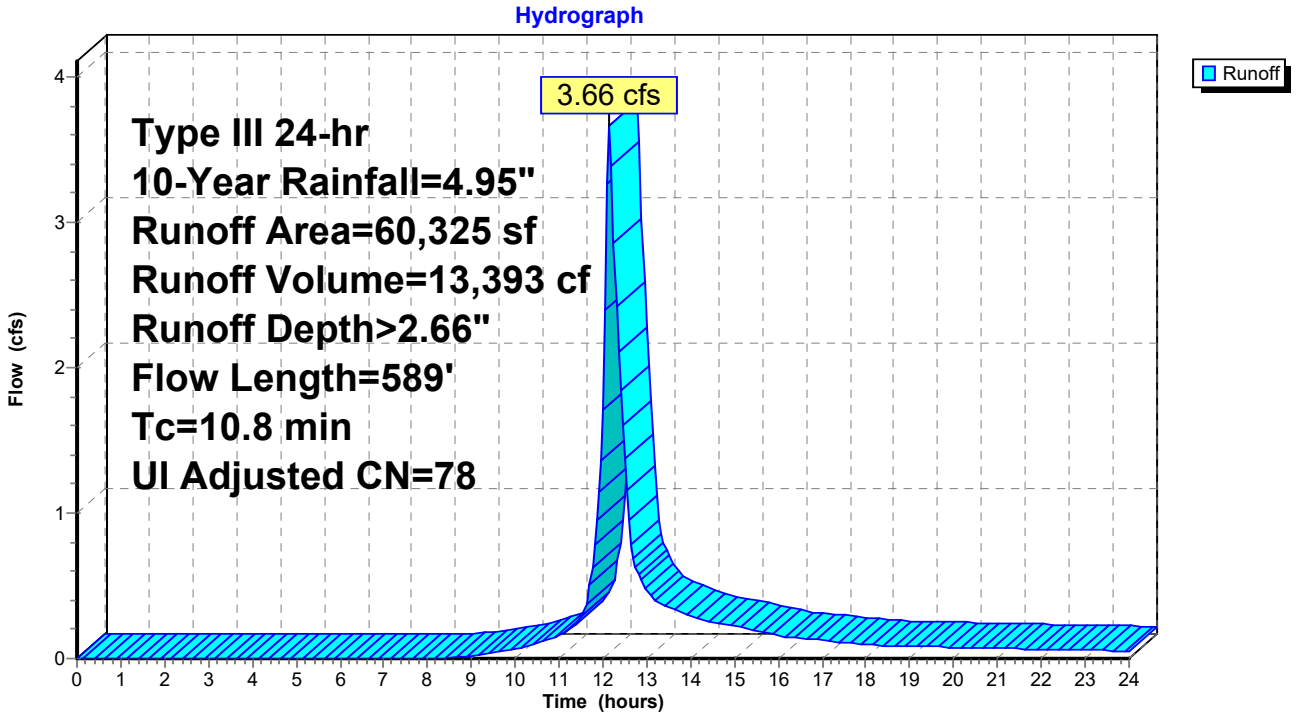
Runoff = 3.66 cfs @ 12.15 hrs, Volume= 13,393 cf, Depth> 2.66"
Routed to Reach PRE3 : DP3pre

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.95"

Area (sf)	CN	Adj	Description
1,411	89		Gravel roads, HSG C
6,896	98		Unconnected roofs, HSG C
35,480	74		>75% Grass cover, Good, HSG C
8,367	70		Woods, Good, HSG C
8,171	98		Paved parking, HSG C
60,325	80	78	Weighted Average, UI Adjusted
45,258			75.02% Pervious Area
15,067			24.98% Impervious Area
6,896			45.77% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	23	0.0800	0.10		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.35"
2.8	27	0.0800	0.16		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.35"
0.9	56	0.0400	1.00		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.5	40	0.0400	1.40		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.8	88	0.0700	1.85		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.6	138	0.0400	4.06		**Shallow Concentrated Flow, Asphalt** Paved Kv= 20.3 fps
1.5	217	0.0140	2.40		**Shallow Concentrated Flow, Gutter** Paved Kv= 20.3 fps
10.8	589	Total			

Subcatchment 3S: Pre 3



Summary for Subcatchment 4S: Pre 4

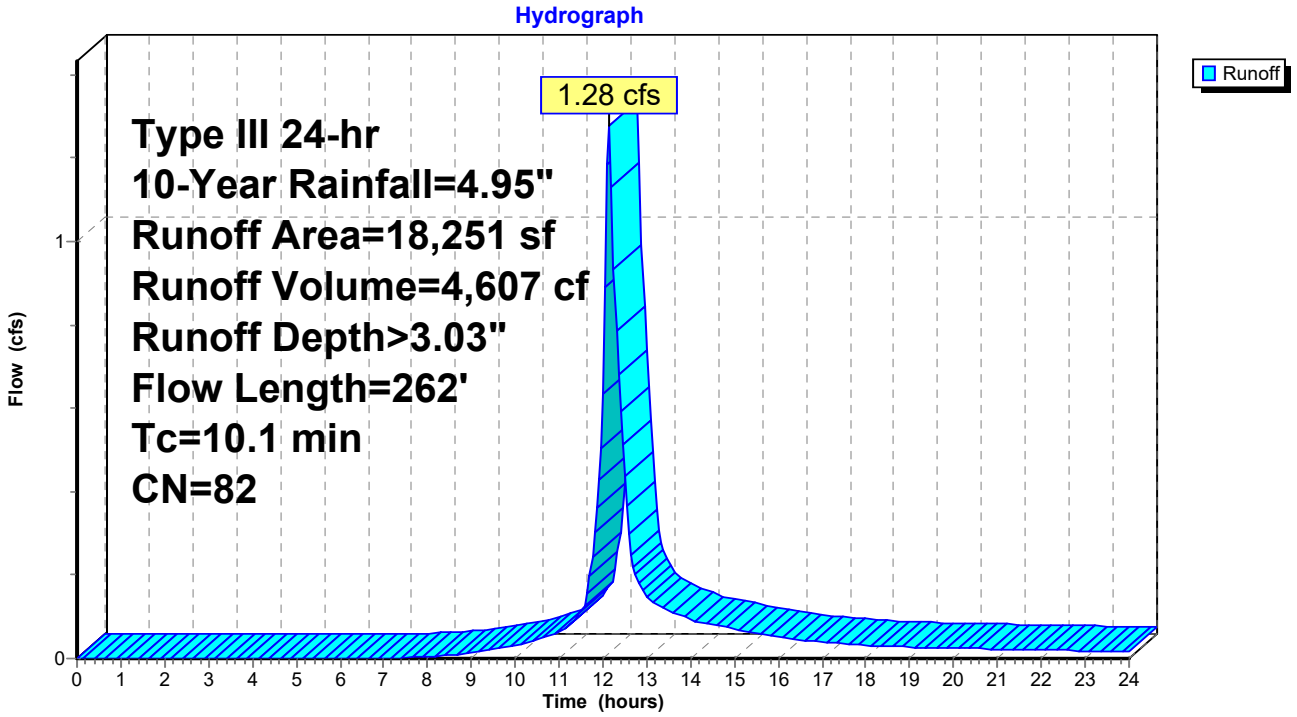
Runoff = 1.28 cfs @ 12.14 hrs, Volume= 4,607 cf, Depth> 3.03"
Routed to Reach PRE4 : DP4pre

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.95"

Area (sf)	CN	Description
1,411	89	Gravel roads, HSG C
1,010	98	Unconnected roofs, HSG C
6,825	74	>75% Grass cover, Good, HSG C
3,994	70	Woods, Good, HSG C
5,011	98	Paved parking, HSG C
18,251	82	Weighted Average
12,230		67.01% Pervious Area
6,021		32.99% Impervious Area
1,010		16.77% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	50	0.0700	0.11		**Sheet Flow, Grass** Grass: Bermuda n= 0.410 P2= 3.35"
0.1	10	0.0400	3.22		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.4	88	0.0400	4.06		**Shallow Concentrated Flow, Asphalt** Paved Kv= 20.3 fps
0.5	42	0.0400	1.40		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.7	42	0.0400	1.00		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.0	30	0.0100	0.50		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
10.1	262	Total			

Subcatchment 4S: Pre 4

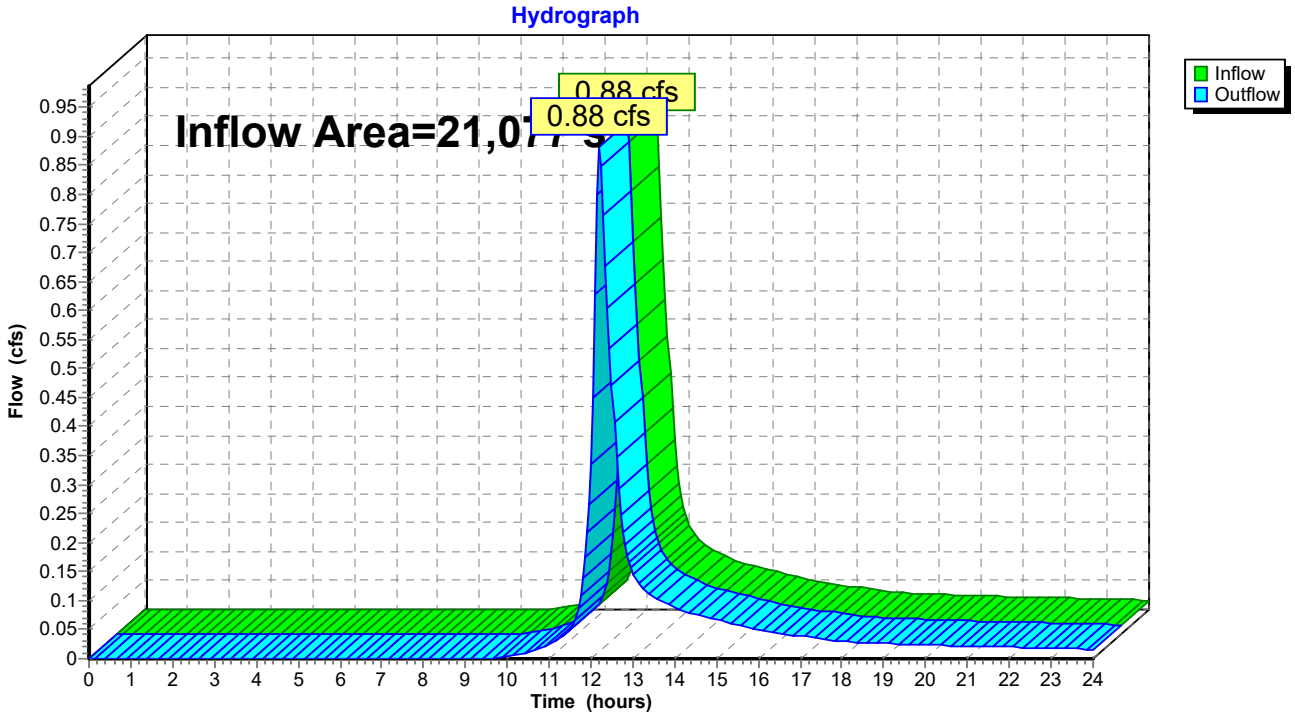


Summary for Reach PRE1: DP1pre

Inflow Area = 21,077 sf, 1.90% Impervious, Inflow Depth > 2.07" for 10-Year event
Inflow = 0.88 cfs @ 12.21 hrs, Volume= 3,640 cf
Outflow = 0.88 cfs @ 12.21 hrs, Volume= 3,640 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach PRE1: DP1pre

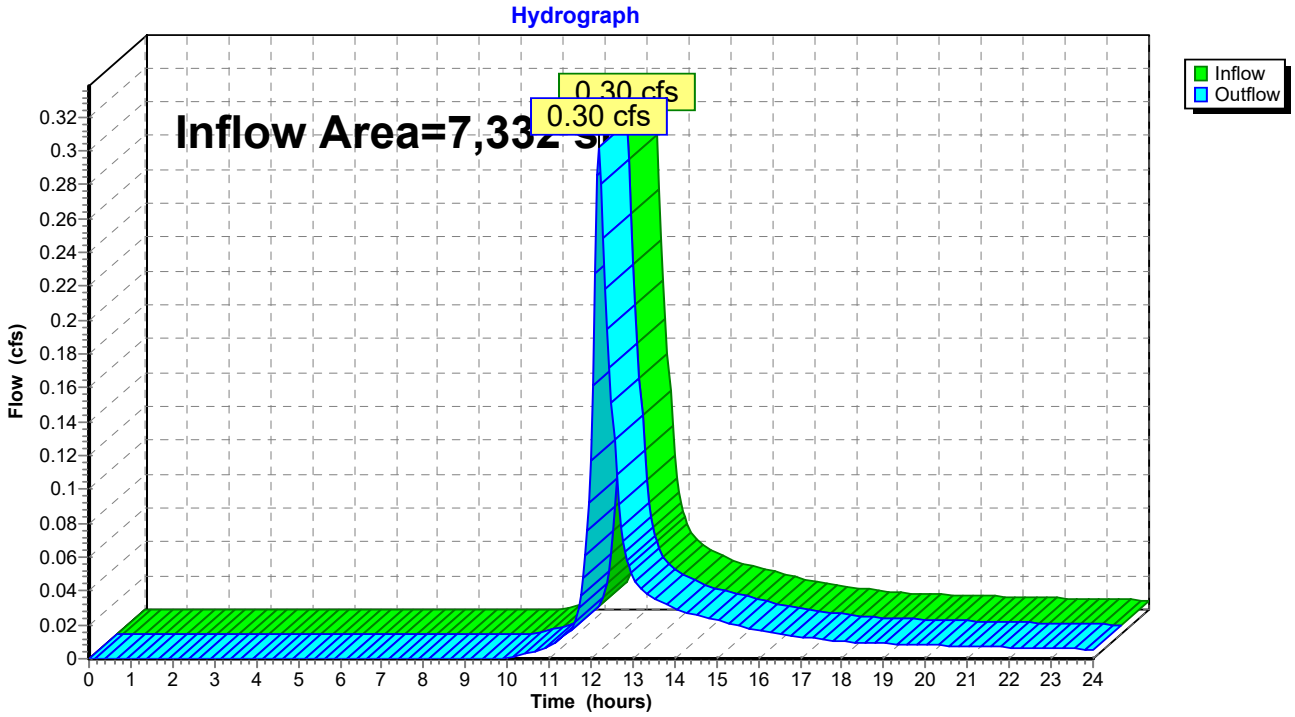


Summary for Reach PRE2: DP2pre

Inflow Area = 7,332 sf, 0.00% Impervious, Inflow Depth > 1.99" for 10-Year event
Inflow = 0.30 cfs @ 12.20 hrs, Volume= 1,218 cf
Outflow = 0.30 cfs @ 12.20 hrs, Volume= 1,218 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach PRE2: DP2pre

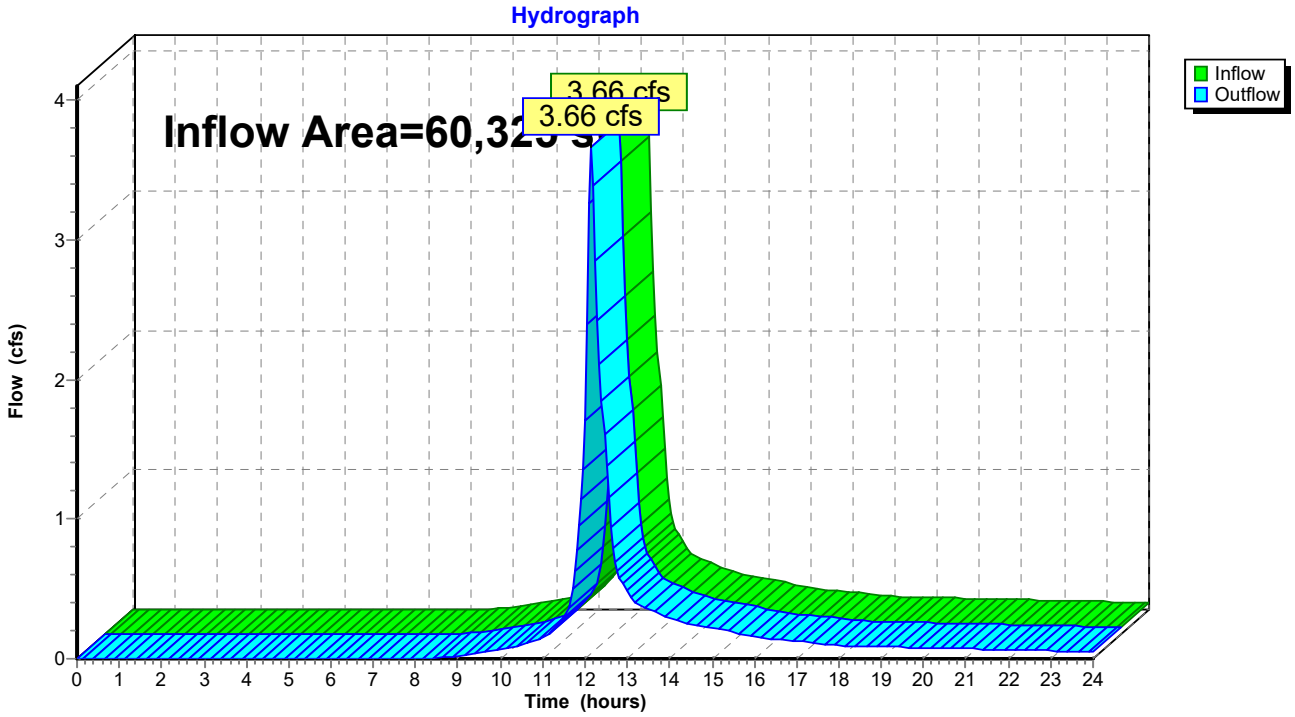


Summary for Reach PRE3: DP3pre

Inflow Area = 60,325 sf, 24.98% Impervious, Inflow Depth > 2.66" for 10-Year event
Inflow = 3.66 cfs @ 12.15 hrs, Volume= 13,393 cf
Outflow = 3.66 cfs @ 12.15 hrs, Volume= 13,393 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach PRE3: DP3pre

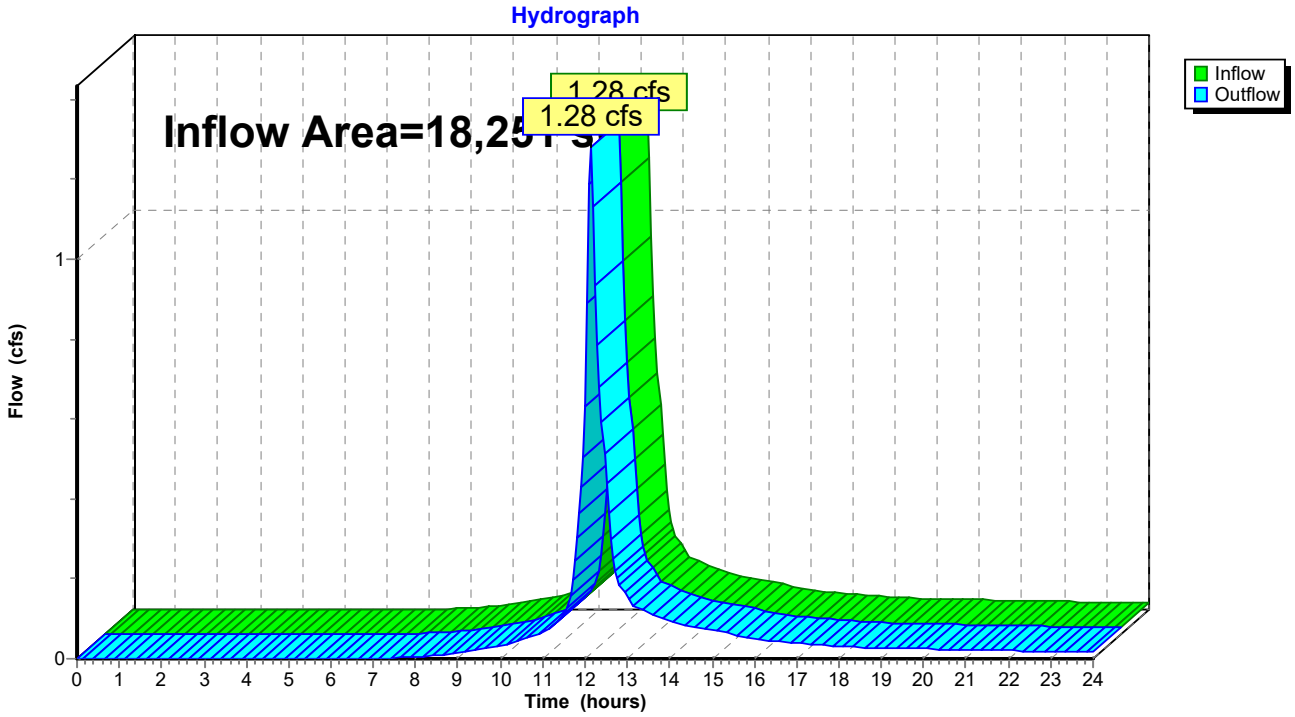


Summary for Reach PRE4: DP4pre

Inflow Area = 18,251 sf, 32.99% Impervious, Inflow Depth > 3.03" for 10-Year event
Inflow = 1.28 cfs @ 12.14 hrs, Volume= 4,607 cf
Outflow = 1.28 cfs @ 12.14 hrs, Volume= 4,607 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach PRE4: DP4pre



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Pre 1 Runoff Area=21,077 sf 1.90% Impervious Runoff Depth>3.04"
Flow Length=283' Tc=14.6 min CN=71 Runoff=1.31 cfs 5,346 cf

Subcatchment 2S: Pre 2 Runoff Area=7,332 sf 0.00% Impervious Runoff Depth>2.95"
Flow Length=106' Slope=0.0200 '/' Tc=13.4 min CN=70 Runoff=0.45 cfs 1,802 cf

Subcatchment 3S: Pre 3 Runoff Area=60,325 sf 24.98% Impervious Runoff Depth>3.74"
Flow Length=589' Tc=10.8 min UI Adjusted CN=78 Runoff=5.14 cfs 18,804 cf

Subcatchment 4S: Pre 4 Runoff Area=18,251 sf 32.99% Impervious Runoff Depth>4.16"
Flow Length=262' Tc=10.1 min CN=82 Runoff=1.74 cfs 6,321 cf

Reach PRE1: DP1pre Inflow=1.31 cfs 5,346 cf
Outflow=1.31 cfs 5,346 cf

Reach PRE2: DP2pre Inflow=0.45 cfs 1,802 cf
Outflow=0.45 cfs 1,802 cf

Reach PRE3: DP3pre Inflow=5.14 cfs 18,804 cf
Outflow=5.14 cfs 18,804 cf

Reach PRE4: DP4pre Inflow=1.74 cfs 6,321 cf
Outflow=1.74 cfs 6,321 cf

Total Runoff Area = 106,985 sf Runoff Volume = 32,273 cf Average Runoff Depth = 3.62"
79.91% Pervious = 85,497 sf 20.09% Impervious = 21,488 sf

Summary for Subcatchment 1S: Pre 1

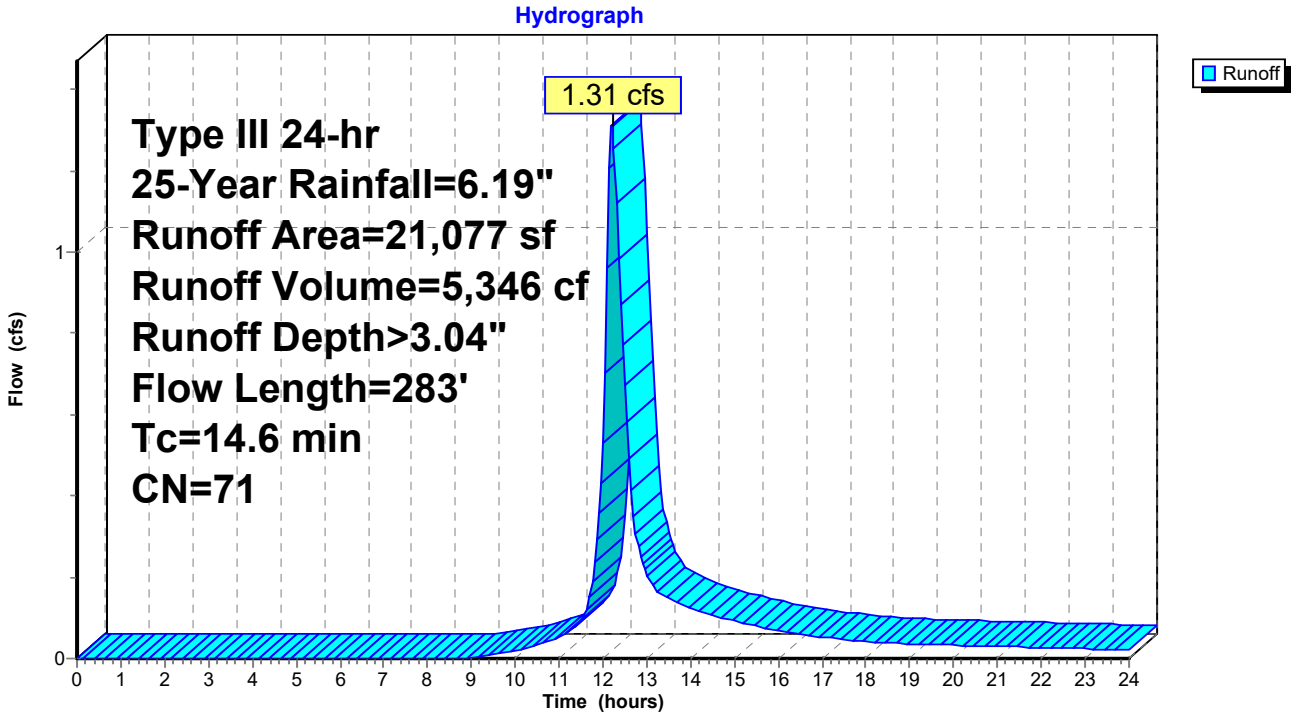
Runoff = 1.31 cfs @ 12.21 hrs, Volume= 5,346 cf, Depth> 3.04"
Routed to Reach PRE1 : DP1pre

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.19"

Area (sf)	CN	Description
298	98	Unconnected roofs, HSG C
1,495	74	>75% Grass cover, Good, HSG C
19,182	70	Woods, Good, HSG C
102	98	Paved parking, HSG C
21,077	71	Weighted Average
20,677		98.10% Pervious Area
400		1.90% Impervious Area
298		74.50% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.3	50	0.0400	0.09		**Sheet Flow, Grass** Grass: Bermuda n= 0.410 P2= 3.35"
0.1	14	0.0500	1.57		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
1.7	73	0.0200	0.71		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.6	48	0.0100	0.50		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.9	98	0.0300	0.87		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
14.6	283	Total			

Subcatchment 1S: Pre 1



Summary for Subcatchment 2S: Pre 2

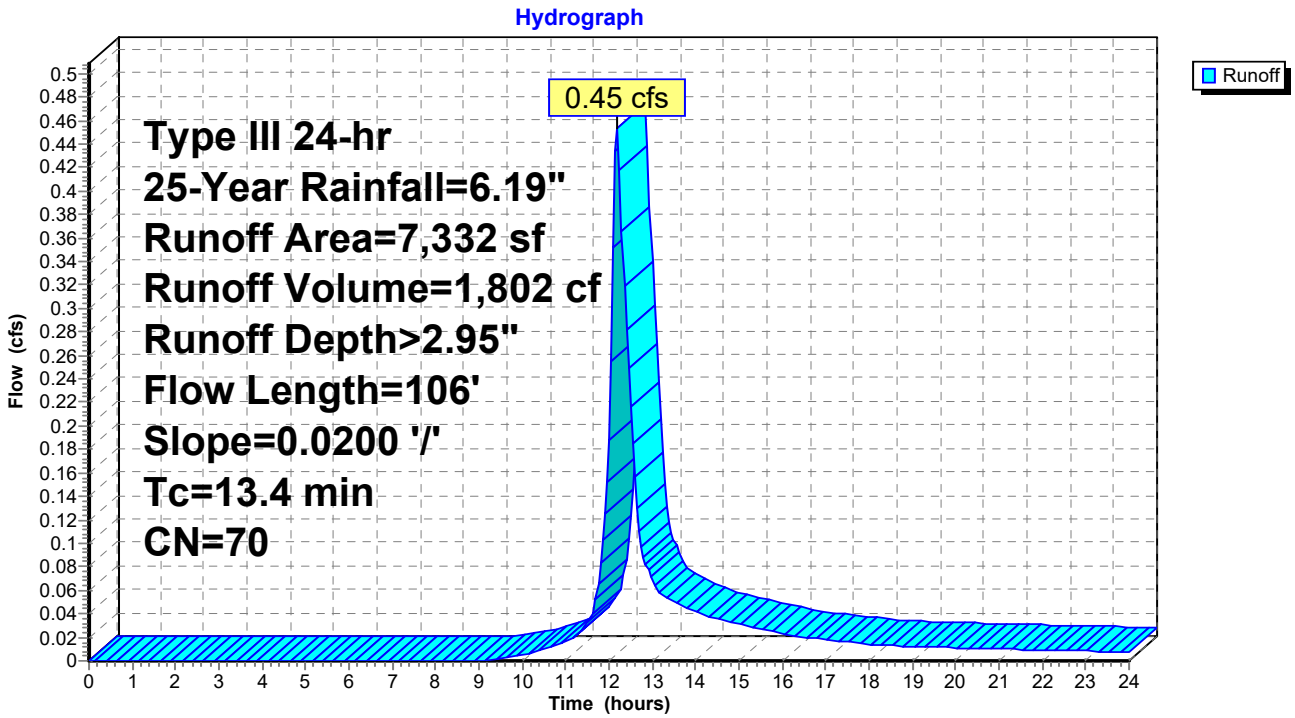
Runoff = 0.45 cfs @ 12.19 hrs, Volume= 1,802 cf, Depth> 2.95"
Routed to Reach PRE2 : DP2pre

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.19"

Area (sf)	CN	Description
7,332	70	Woods, Good, HSG C
7,332		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	50	0.0200	0.07		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.35"
1.3	56	0.0200	0.71		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
13.4	106	Total			

Subcatchment 2S: Pre 2



Summary for Subcatchment 3S: Pre 3

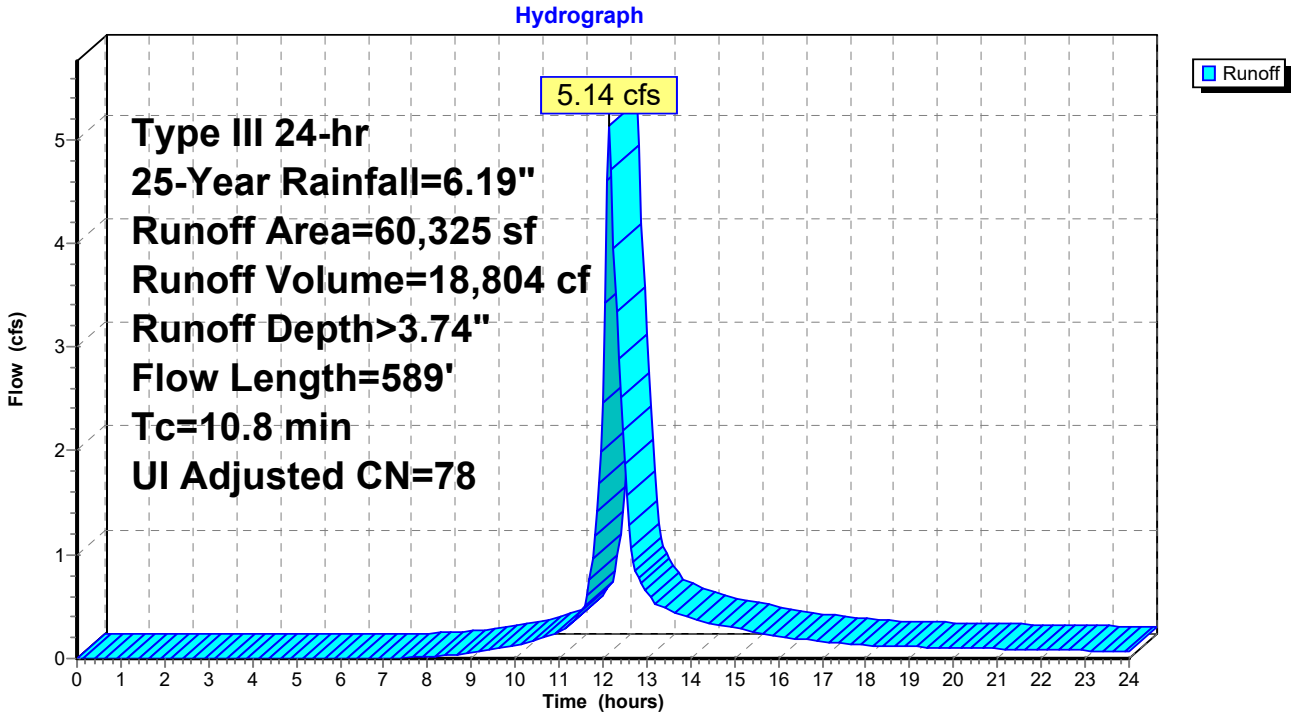
Runoff = 5.14 cfs @ 12.15 hrs, Volume= 18,804 cf, Depth> 3.74"
Routed to Reach PRE3 : DP3pre

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.19"

Area (sf)	CN	Adj	Description
1,411	89		Gravel roads, HSG C
6,896	98		Unconnected roofs, HSG C
35,480	74		>75% Grass cover, Good, HSG C
8,367	70		Woods, Good, HSG C
8,171	98		Paved parking, HSG C
60,325	80	78	Weighted Average, UI Adjusted
45,258			75.02% Pervious Area
15,067			24.98% Impervious Area
6,896			45.77% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	23	0.0800	0.10		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.35"
2.8	27	0.0800	0.16		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.35"
0.9	56	0.0400	1.00		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.5	40	0.0400	1.40		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.8	88	0.0700	1.85		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.6	138	0.0400	4.06		**Shallow Concentrated Flow, Asphalt** Paved Kv= 20.3 fps
1.5	217	0.0140	2.40		**Shallow Concentrated Flow, Gutter** Paved Kv= 20.3 fps
10.8	589	Total			

Subcatchment 3S: Pre 3



Summary for Subcatchment 4S: Pre 4

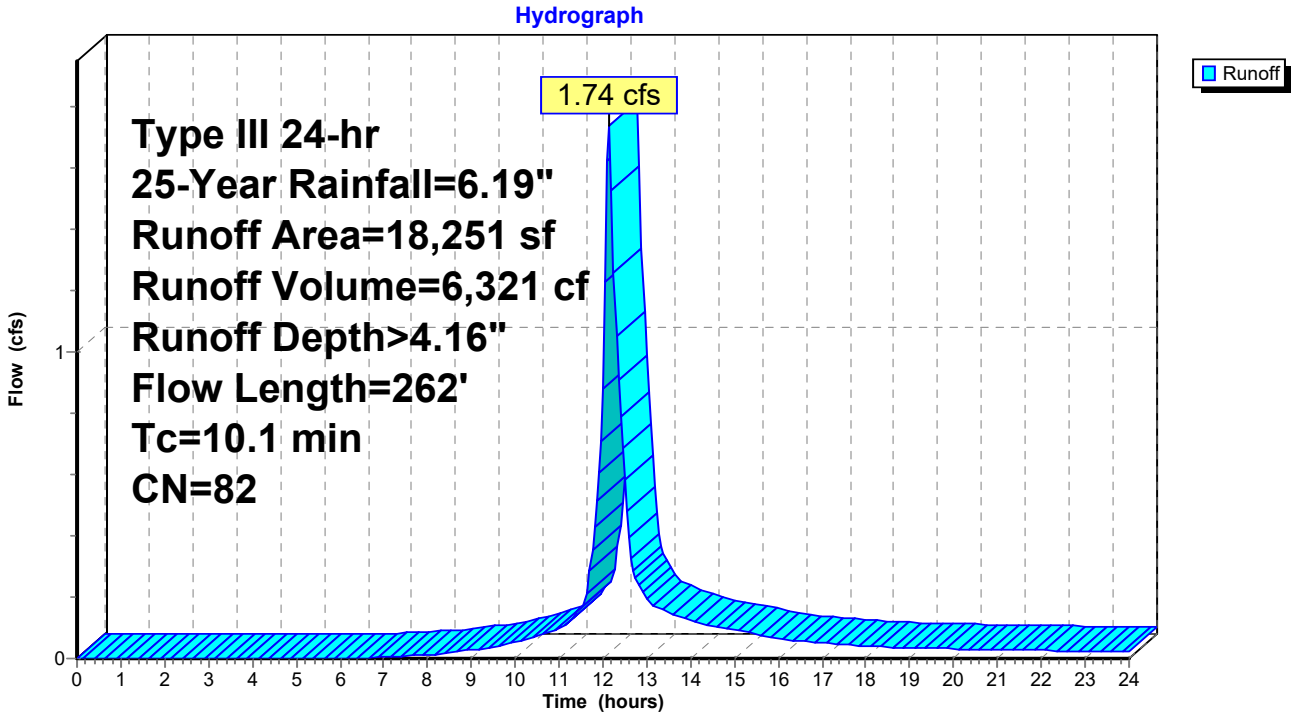
Runoff = 1.74 cfs @ 12.14 hrs, Volume= 6,321 cf, Depth> 4.16"
Routed to Reach PRE4 : DP4pre

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.19"

Area (sf)	CN	Description
1,411	89	Gravel roads, HSG C
1,010	98	Unconnected roofs, HSG C
6,825	74	>75% Grass cover, Good, HSG C
3,994	70	Woods, Good, HSG C
5,011	98	Paved parking, HSG C
18,251	82	Weighted Average
12,230		67.01% Pervious Area
6,021		32.99% Impervious Area
1,010		16.77% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	50	0.0700	0.11		**Sheet Flow, Grass** Grass: Bermuda n= 0.410 P2= 3.35"
0.1	10	0.0400	3.22		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.4	88	0.0400	4.06		**Shallow Concentrated Flow, Asphalt** Paved Kv= 20.3 fps
0.5	42	0.0400	1.40		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.7	42	0.0400	1.00		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.0	30	0.0100	0.50		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
10.1	262	Total			

Subcatchment 4S: Pre 4

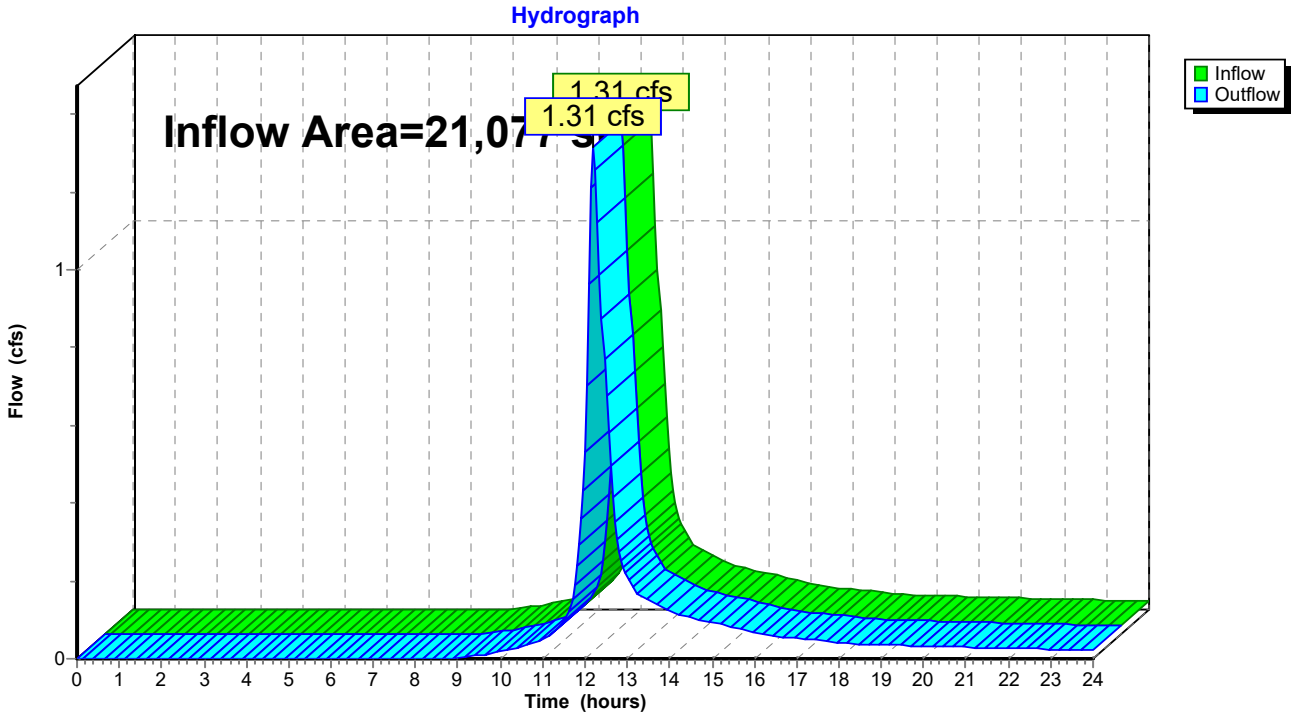


Summary for Reach PRE1: DP1pre

Inflow Area = 21,077 sf, 1.90% Impervious, Inflow Depth > 3.04" for 25-Year event
Inflow = 1.31 cfs @ 12.21 hrs, Volume= 5,346 cf
Outflow = 1.31 cfs @ 12.21 hrs, Volume= 5,346 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach PRE1: DP1pre

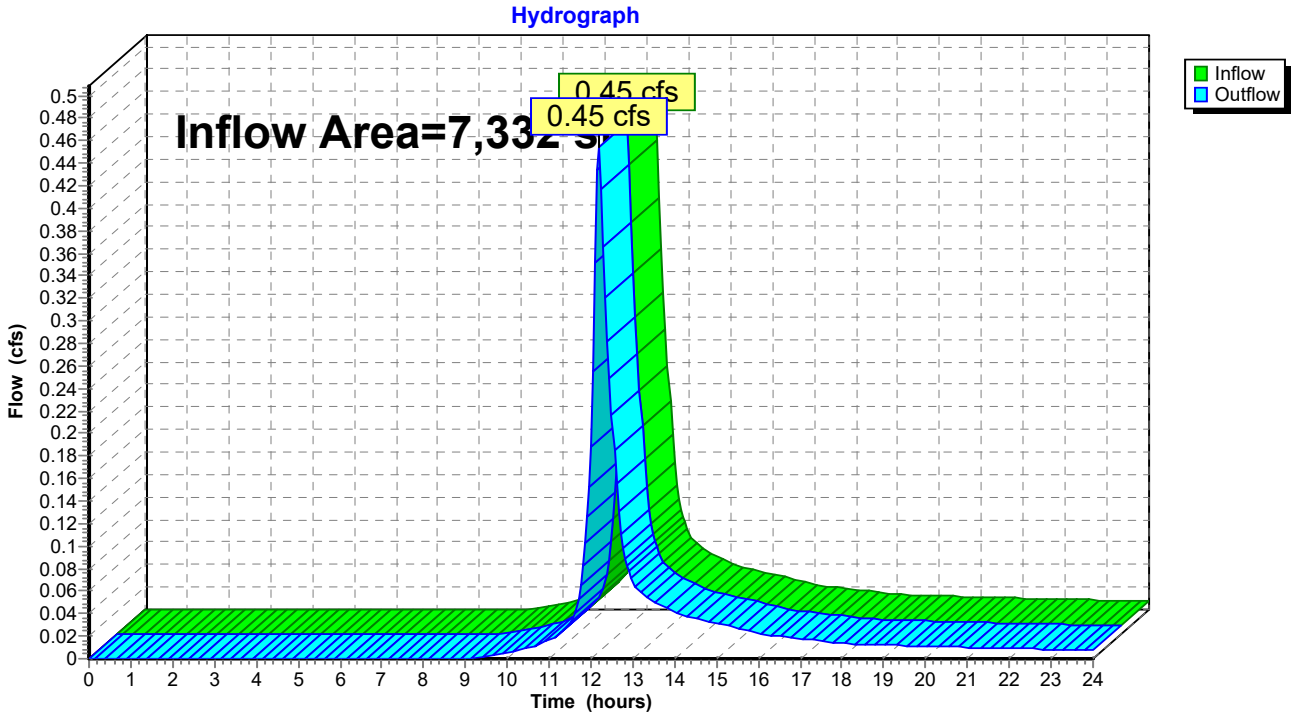


Summary for Reach PRE2: DP2pre

Inflow Area = 7,332 sf, 0.00% Impervious, Inflow Depth > 2.95" for 25-Year event
Inflow = 0.45 cfs @ 12.19 hrs, Volume= 1,802 cf
Outflow = 0.45 cfs @ 12.19 hrs, Volume= 1,802 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach PRE2: DP2pre

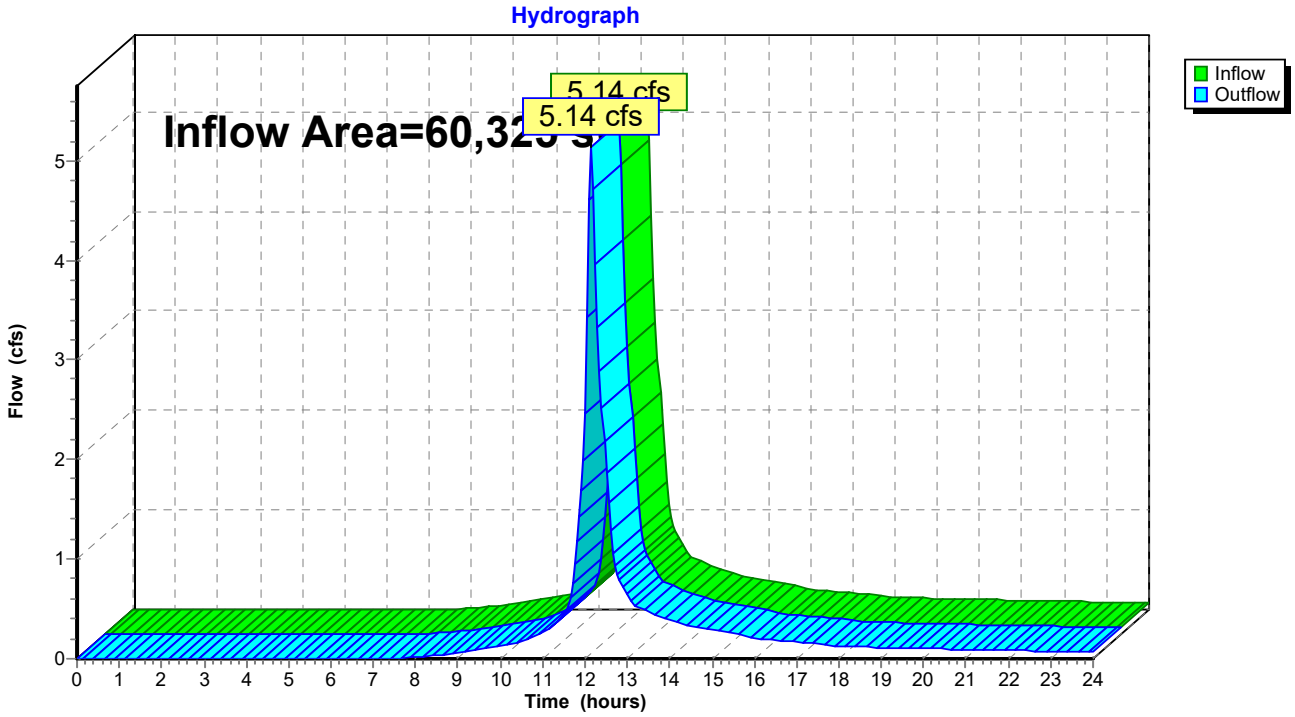


Summary for Reach PRE3: DP3pre

Inflow Area = 60,325 sf, 24.98% Impervious, Inflow Depth > 3.74" for 25-Year event
Inflow = 5.14 cfs @ 12.15 hrs, Volume= 18,804 cf
Outflow = 5.14 cfs @ 12.15 hrs, Volume= 18,804 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach PRE3: DP3pre

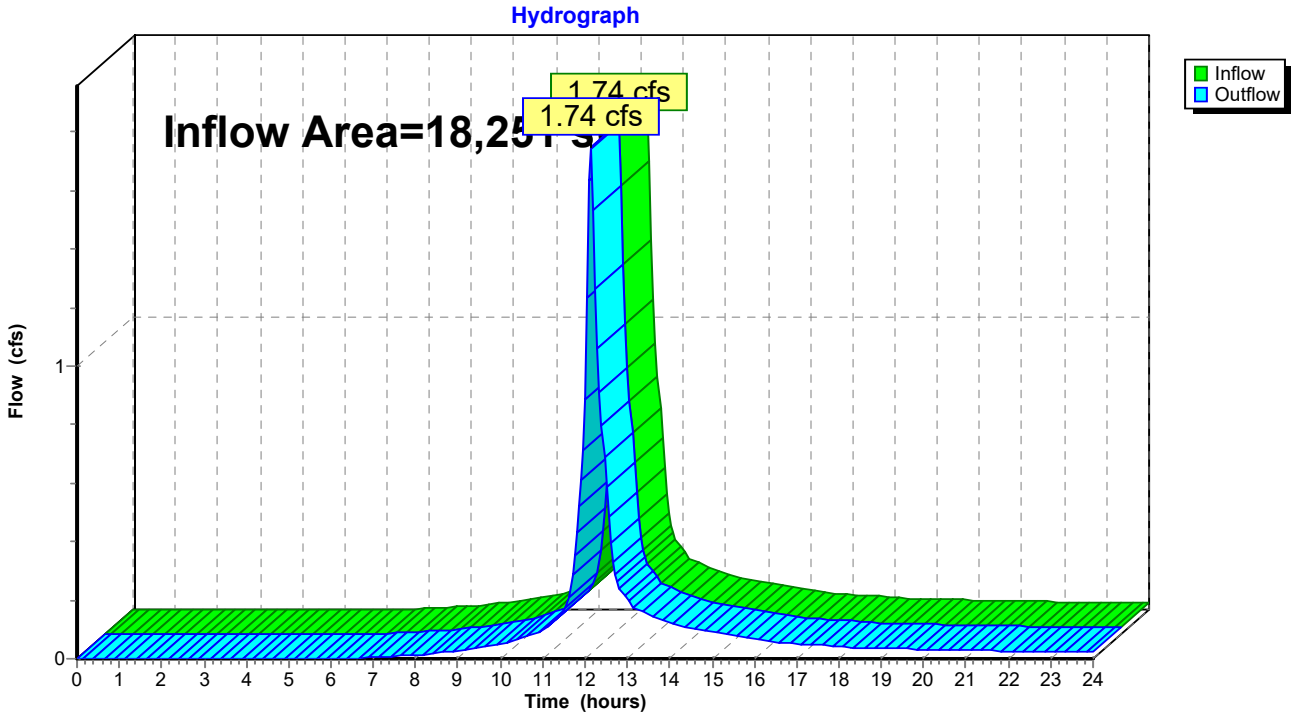


Summary for Reach PRE4: DP4pre

Inflow Area = 18,251 sf, 32.99% Impervious, Inflow Depth > 4.16" for 25-Year event
Inflow = 1.74 cfs @ 12.14 hrs, Volume= 6,321 cf
Outflow = 1.74 cfs @ 12.14 hrs, Volume= 6,321 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach PRE4: DP4pre



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Pre 1 Runoff Area=21,077 sf 1.90% Impervious Runoff Depth>5.16"
Flow Length=283' Tc=14.6 min CN=71 Runoff=2.23 cfs 9,066 cf

Subcatchment 2S: Pre 2 Runoff Area=7,332 sf 0.00% Impervious Runoff Depth>5.04"
Flow Length=106' Slope=0.0200 '/' Tc=13.4 min CN=70 Runoff=0.78 cfs 3,081 cf

Subcatchment 3S: Pre 3 Runoff Area=60,325 sf 24.98% Impervious Runoff Depth>6.01"
Flow Length=589' Tc=10.8 min UI Adjusted CN=78 Runoff=8.16 cfs 30,227 cf

Subcatchment 4S: Pre 4 Runoff Area=18,251 sf 32.99% Impervious Runoff Depth>6.50"
Flow Length=262' Tc=10.1 min CN=82 Runoff=2.68 cfs 9,883 cf

Reach PRE1: DP1pre Inflow=2.23 cfs 9,066 cf
Outflow=2.23 cfs 9,066 cf

Reach PRE2: DP2pre Inflow=0.78 cfs 3,081 cf
Outflow=0.78 cfs 3,081 cf

Reach PRE3: DP3pre Inflow=8.16 cfs 30,227 cf
Outflow=8.16 cfs 30,227 cf

Reach PRE4: DP4pre Inflow=2.68 cfs 9,883 cf
Outflow=2.68 cfs 9,883 cf

Total Runoff Area = 106,985 sf Runoff Volume = 52,257 cf Average Runoff Depth = 5.86"
79.91% Pervious = 85,497 sf 20.09% Impervious = 21,488 sf

Summary for Subcatchment 1S: Pre 1

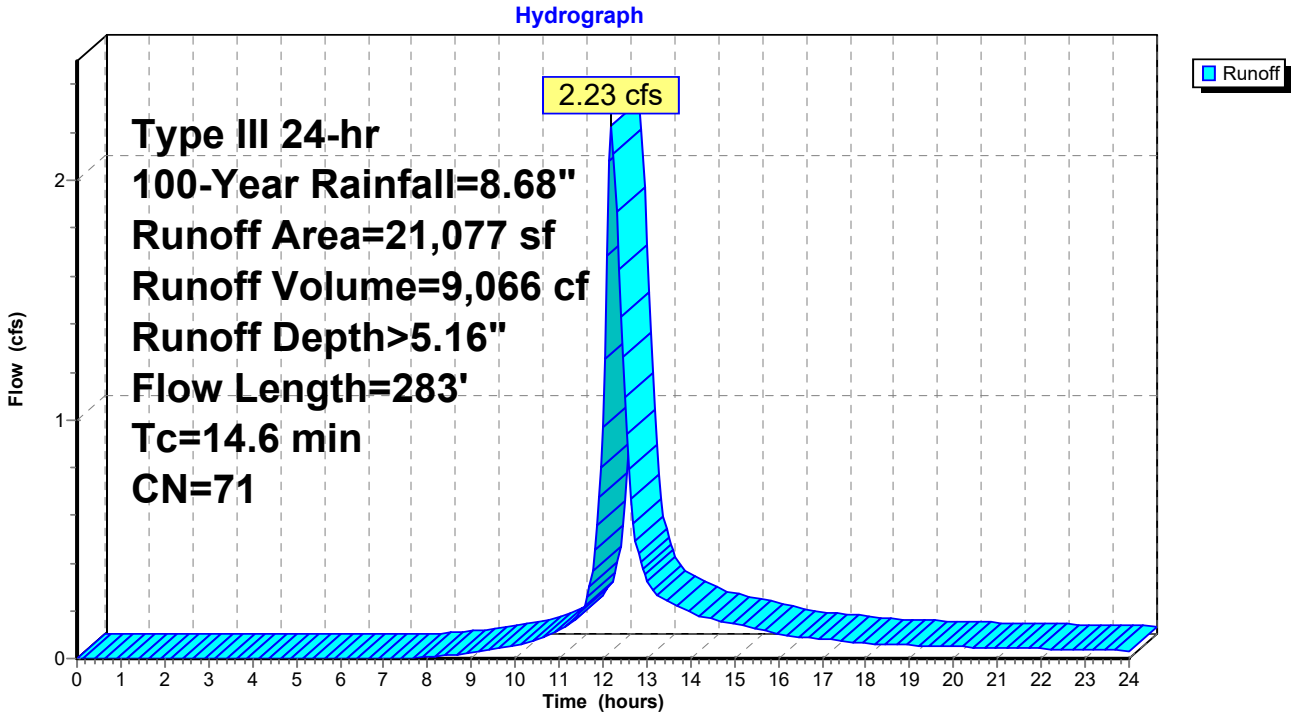
Runoff = 2.23 cfs @ 12.20 hrs, Volume= 9,066 cf, Depth> 5.16"
Routed to Reach PRE1 : DP1pre

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.68"

Area (sf)	CN	Description
298	98	Unconnected roofs, HSG C
1,495	74	>75% Grass cover, Good, HSG C
19,182	70	Woods, Good, HSG C
102	98	Paved parking, HSG C
21,077	71	Weighted Average
20,677		98.10% Pervious Area
400		1.90% Impervious Area
298		74.50% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.3	50	0.0400	0.09		**Sheet Flow, Grass** Grass: Bermuda n= 0.410 P2= 3.35"
0.1	14	0.0500	1.57		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
1.7	73	0.0200	0.71		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.6	48	0.0100	0.50		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.9	98	0.0300	0.87		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
14.6	283	Total			

Subcatchment 1S: Pre 1



Summary for Subcatchment 2S: Pre 2

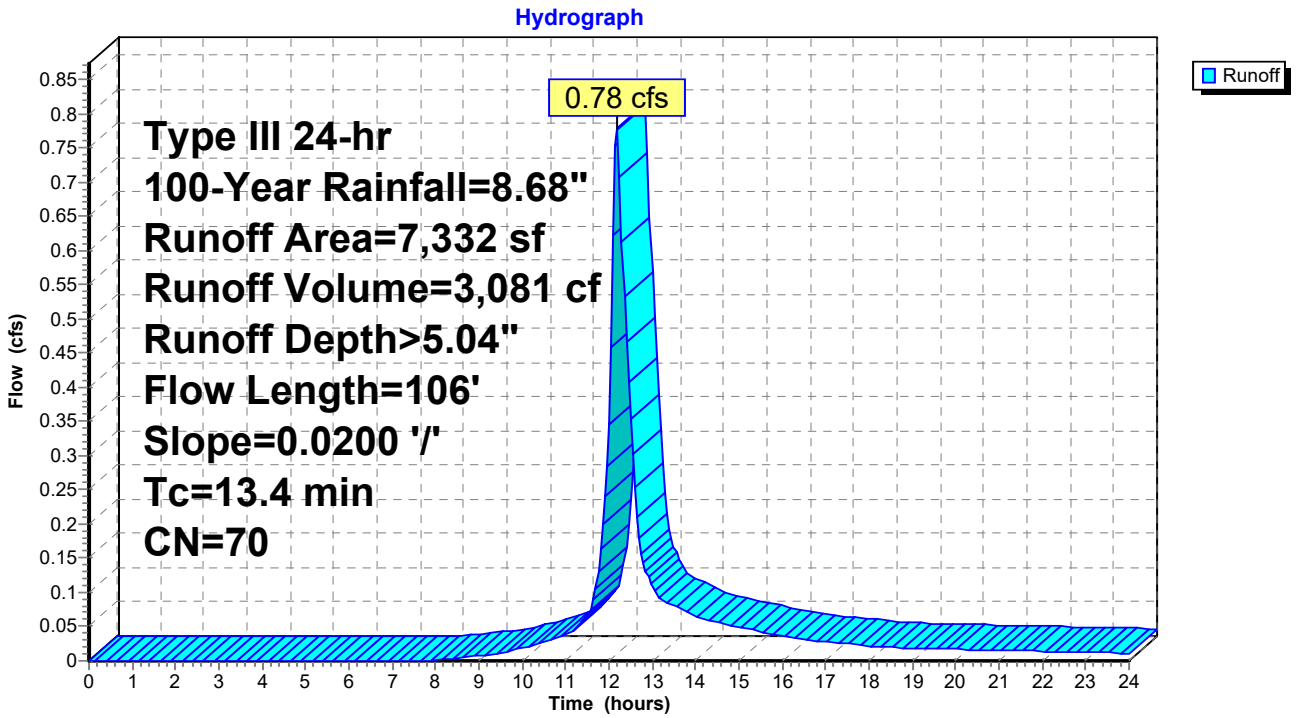
Runoff = 0.78 cfs @ 12.19 hrs, Volume= 3,081 cf, Depth> 5.04"
Routed to Reach PRE2 : DP2pre

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.68"

Area (sf)	CN	Description
7,332	70	Woods, Good, HSG C
7,332		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	50	0.0200	0.07		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.35"
1.3	56	0.0200	0.71		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
13.4	106	Total			

Subcatchment 2S: Pre 2



Summary for Subcatchment 3S: Pre 3

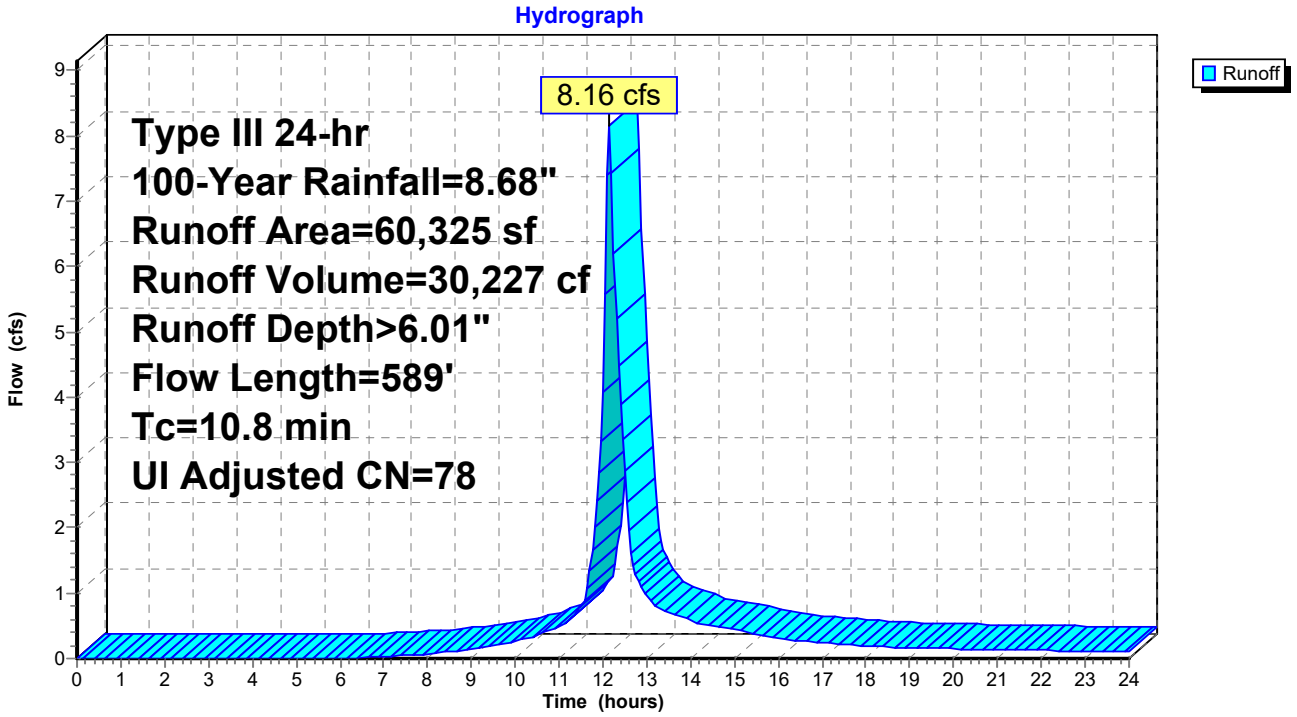
Runoff = 8.16 cfs @ 12.15 hrs, Volume= 30,227 cf, Depth> 6.01"
Routed to Reach PRE3 : DP3pre

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.68"

Area (sf)	CN	Adj	Description
1,411	89		Gravel roads, HSG C
6,896	98		Unconnected roofs, HSG C
35,480	74		>75% Grass cover, Good, HSG C
8,367	70		Woods, Good, HSG C
8,171	98		Paved parking, HSG C
60,325	80	78	Weighted Average, UI Adjusted
45,258			75.02% Pervious Area
15,067			24.98% Impervious Area
6,896			45.77% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	23	0.0800	0.10		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.35"
2.8	27	0.0800	0.16		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.35"
0.9	56	0.0400	1.00		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.5	40	0.0400	1.40		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.8	88	0.0700	1.85		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.6	138	0.0400	4.06		**Shallow Concentrated Flow, Asphalt** Paved Kv= 20.3 fps
1.5	217	0.0140	2.40		**Shallow Concentrated Flow, Gutter** Paved Kv= 20.3 fps
10.8	589	Total			

Subcatchment 3S: Pre 3



Summary for Subcatchment 4S: Pre 4

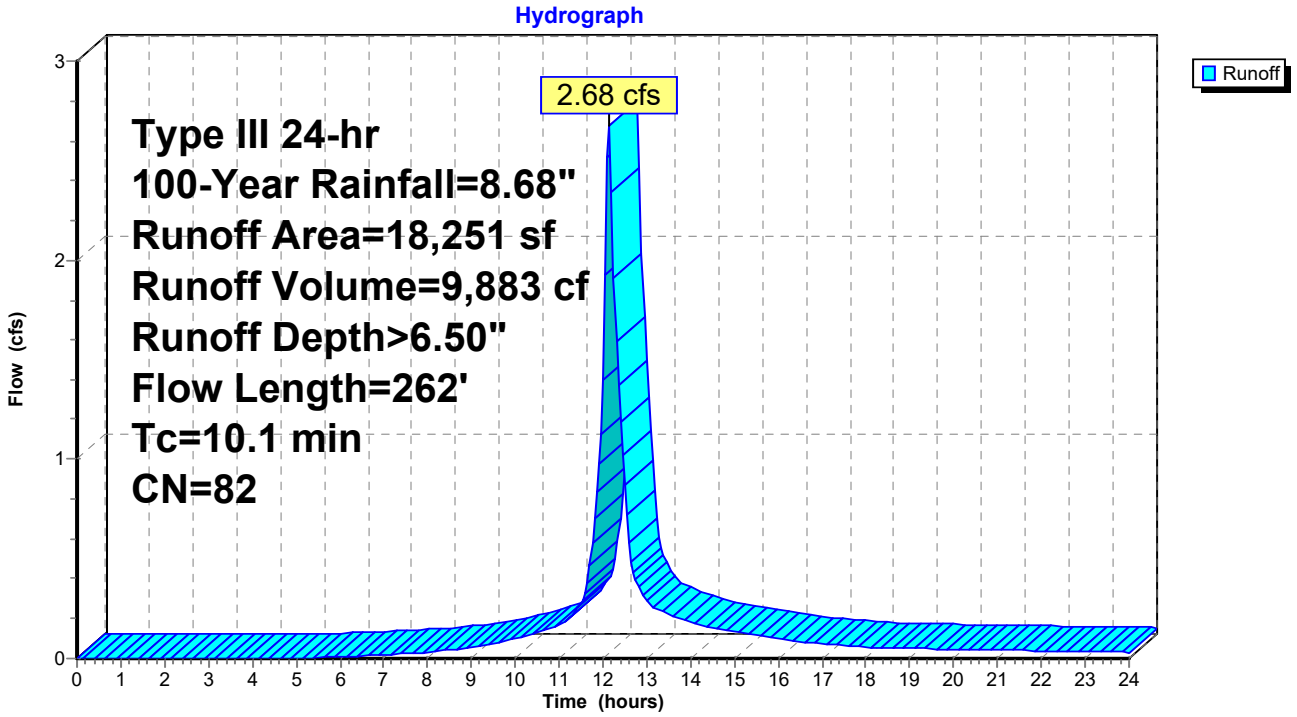
Runoff = 2.68 cfs @ 12.14 hrs, Volume= 9,883 cf, Depth> 6.50"
Routed to Reach PRE4 : DP4pre

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.68"

Area (sf)	CN	Description
1,411	89	Gravel roads, HSG C
1,010	98	Unconnected roofs, HSG C
6,825	74	>75% Grass cover, Good, HSG C
3,994	70	Woods, Good, HSG C
5,011	98	Paved parking, HSG C
18,251	82	Weighted Average
12,230		67.01% Pervious Area
6,021		32.99% Impervious Area
1,010		16.77% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	50	0.0700	0.11		**Sheet Flow, Grass** Grass: Bermuda n= 0.410 P2= 3.35"
0.1	10	0.0400	3.22		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.4	88	0.0400	4.06		**Shallow Concentrated Flow, Asphalt** Paved Kv= 20.3 fps
0.5	42	0.0400	1.40		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.7	42	0.0400	1.00		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.0	30	0.0100	0.50		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
10.1	262	Total			

Subcatchment 4S: Pre 4

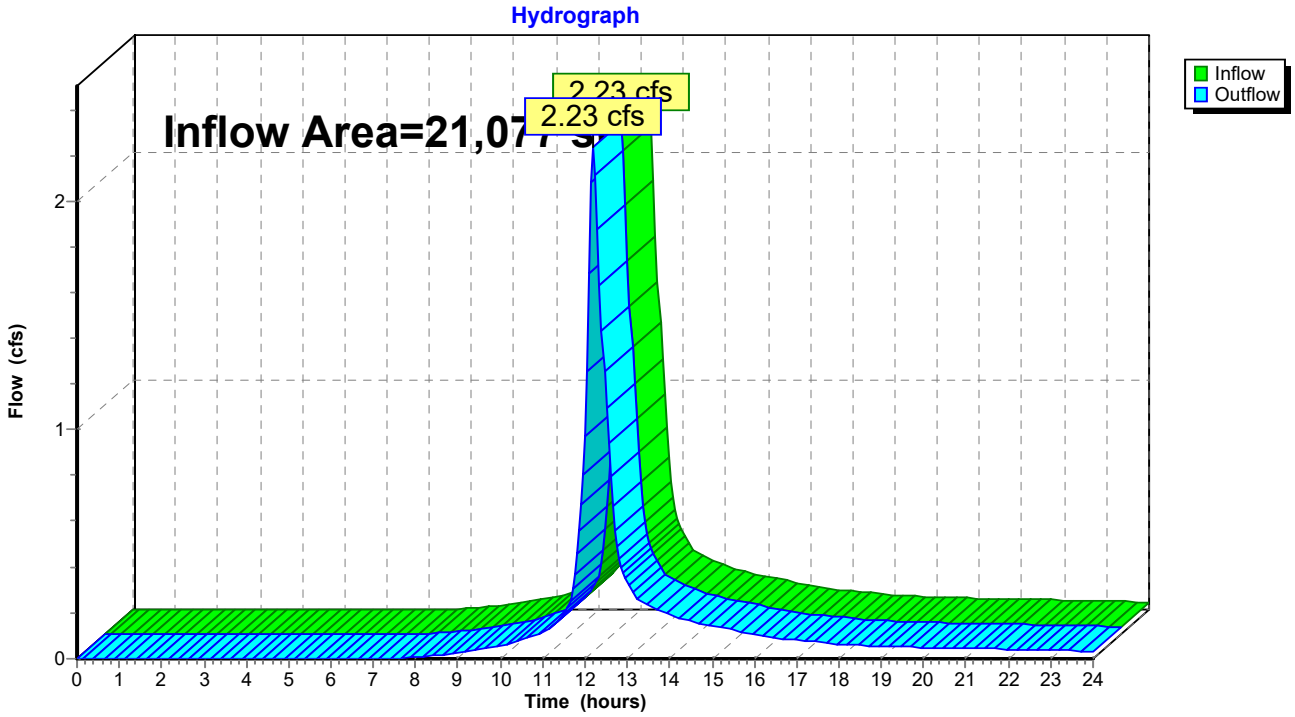


Summary for Reach PRE1: DP1pre

Inflow Area = 21,077 sf, 1.90% Impervious, Inflow Depth > 5.16" for 100-Year event
Inflow = 2.23 cfs @ 12.20 hrs, Volume= 9,066 cf
Outflow = 2.23 cfs @ 12.20 hrs, Volume= 9,066 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach PRE1: DP1pre

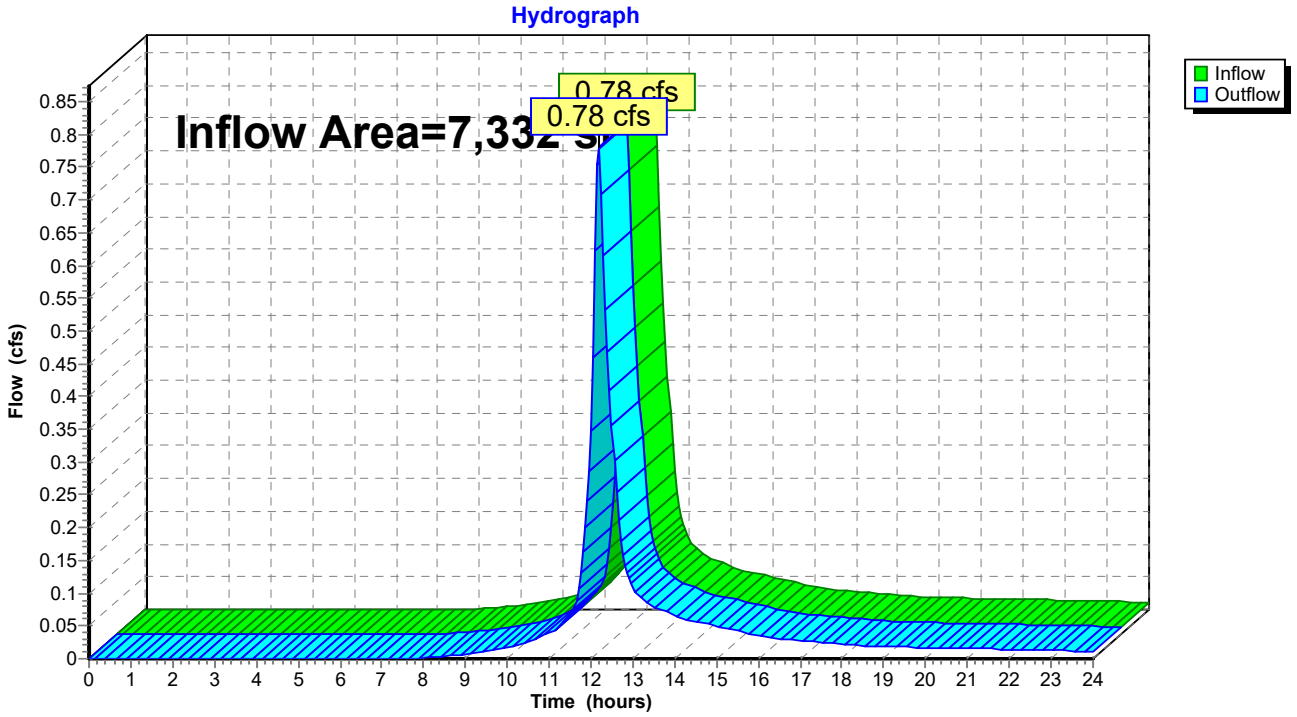


Summary for Reach PRE2: DP2pre

Inflow Area = 7,332 sf, 0.00% Impervious, Inflow Depth > 5.04" for 100-Year event
Inflow = 0.78 cfs @ 12.19 hrs, Volume= 3,081 cf
Outflow = 0.78 cfs @ 12.19 hrs, Volume= 3,081 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach PRE2: DP2pre

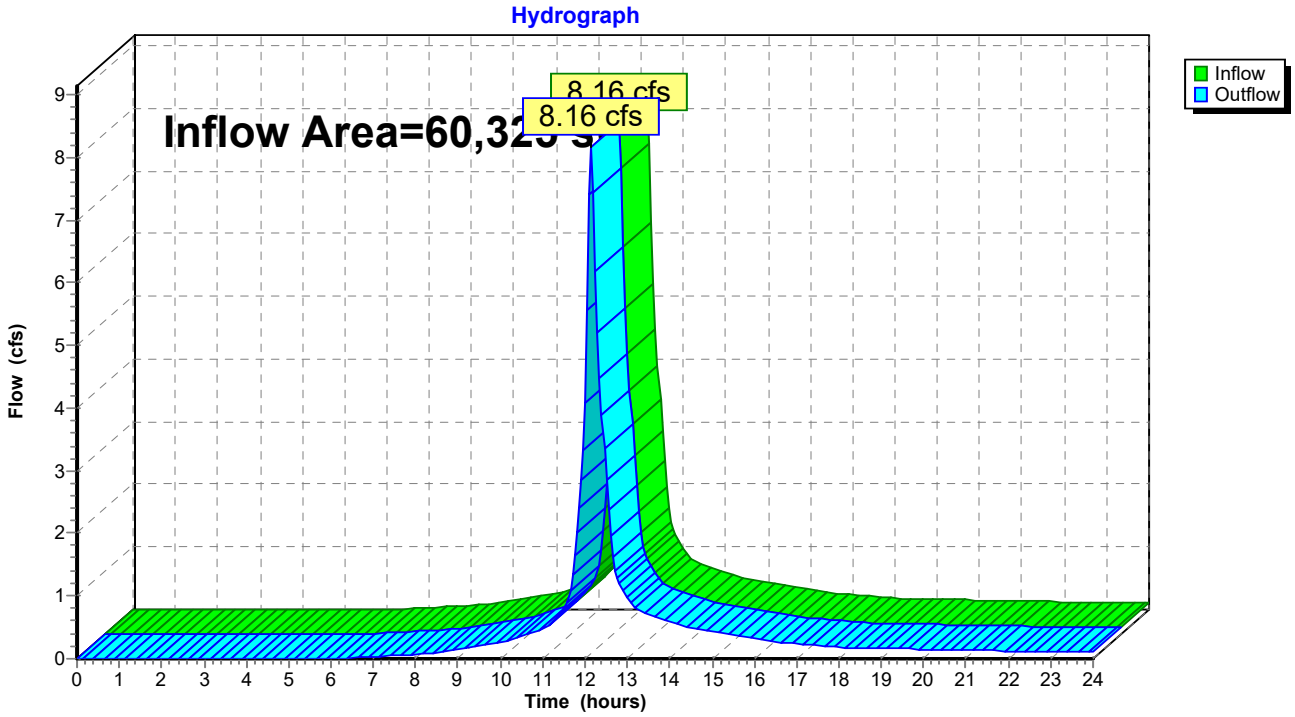


Summary for Reach PRE3: DP3pre

Inflow Area = 60,325 sf, 24.98% Impervious, Inflow Depth > 6.01" for 100-Year event
Inflow = 8.16 cfs @ 12.15 hrs, Volume= 30,227 cf
Outflow = 8.16 cfs @ 12.15 hrs, Volume= 30,227 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach PRE3: DP3pre

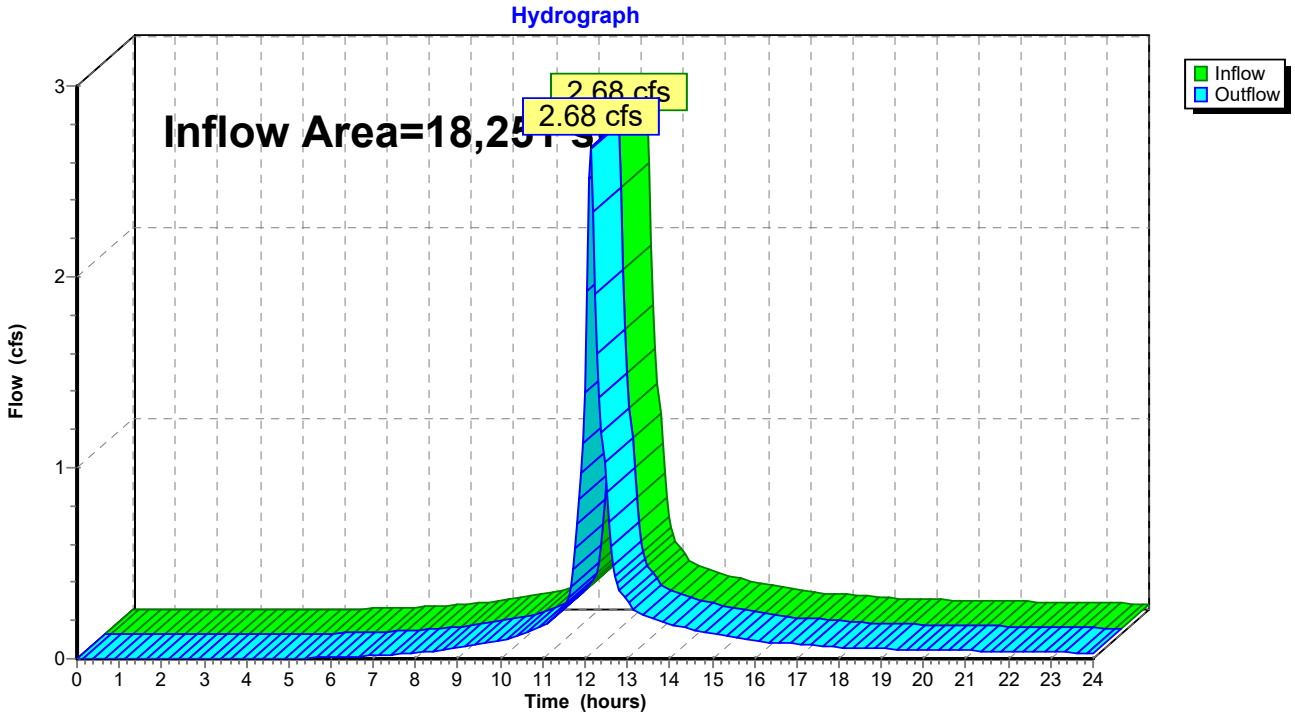


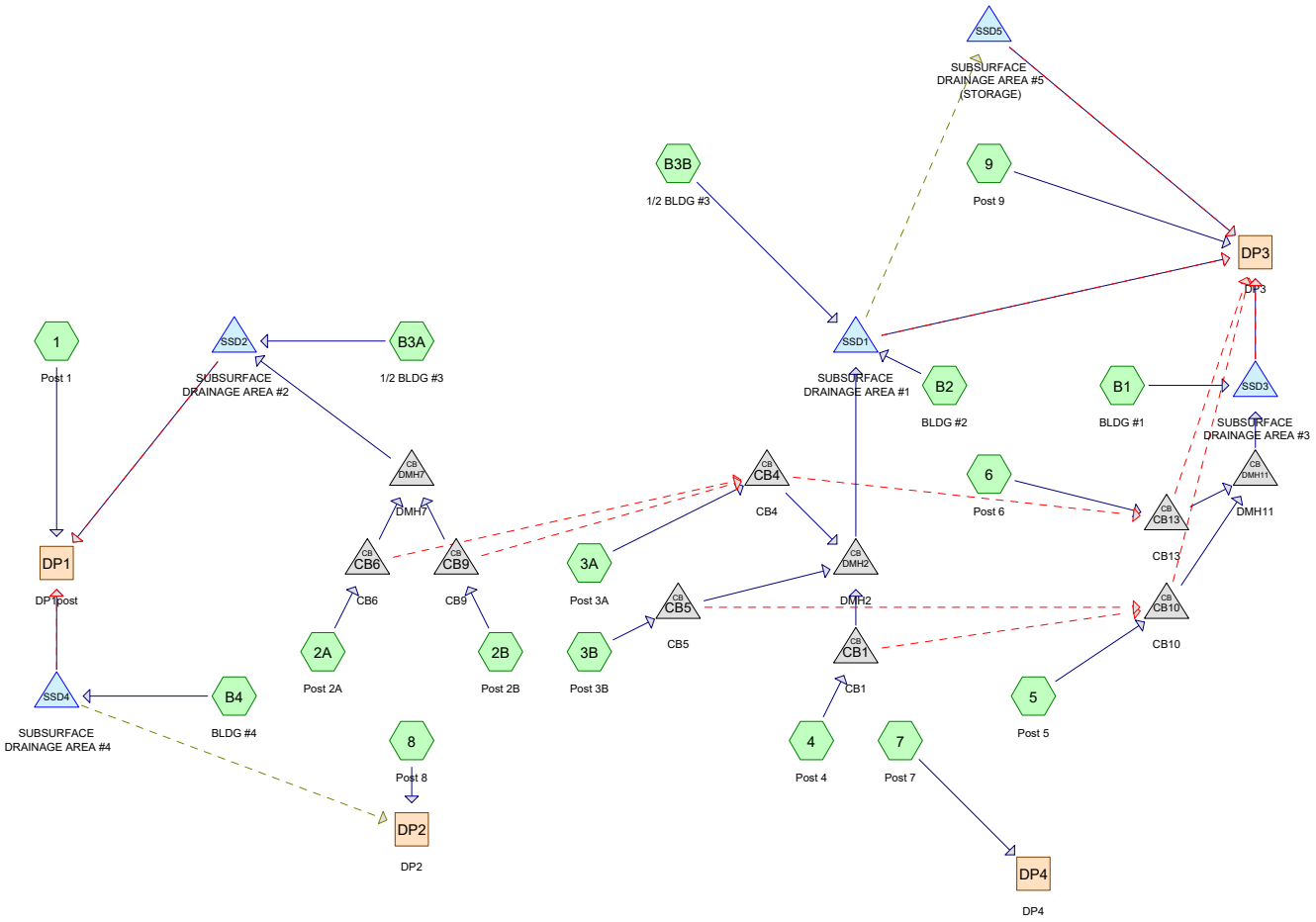
Summary for Reach PRE4: DP4pre

Inflow Area = 18,251 sf, 32.99% Impervious, Inflow Depth > 6.50" for 100-Year event
Inflow = 2.68 cfs @ 12.14 hrs, Volume= 9,883 cf
Outflow = 2.68 cfs @ 12.14 hrs, Volume= 9,883 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach PRE4: DP4pre





Subcat Reach Pond Link

Routing Diagram for 817 Country Way Post
Prepared by Grady Consulting LLC
HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
46,624	74	>75% Grass cover, Good, HSG C (1, 2A, 2B, 3A, 3B, 4, 5, 6, 7, 9)
27,477	98	Paved parking, HSG C (2A, 2B, 3A, 3B, 4, 5, 6, 9)
21,127	98	Unconnected roofs, HSG C (5, B1, B2, B3A, B3B, B4)
11,687	70	Woods, Good, HSG C (1, 2A, 2B, 7, 8, 9)
106,915	**84**	**TOTAL AREA**

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1: Post 1 Runoff Area=13,803 sf 0.00% Impervious Runoff Depth>0.68"
Flow Length=229' Tc=13.3 min CN=72 Runoff=0.17 cfs 780 cf

Subcatchment 2A: Post 2A Runoff Area=5,633 sf 67.30% Impervious Runoff Depth>1.78"
Tc=5.0 min CN=90 Runoff=0.27 cfs 837 cf

Subcatchment 2B: Post 2B Runoff Area=5,351 sf 75.91% Impervious Runoff Depth>1.95"
Tc=5.0 min CN=92 Runoff=0.28 cfs 871 cf

Subcatchment 3A: Post 3A Runoff Area=4,243 sf 86.57% Impervious Runoff Depth>2.23"
Tc=5.0 min CN=95 Runoff=0.25 cfs 790 cf

Subcatchment 3B: Post 3B Runoff Area=2,714 sf 96.35% Impervious Runoff Depth>2.44"
Tc=5.0 min CN=97 Runoff=0.17 cfs 552 cf

Subcatchment 4: Post 4 Runoff Area=5,122 sf 56.07% Impervious Runoff Depth>1.55"
Flow Length=131' Tc=8.6 min CN=87 Runoff=0.19 cfs 660 cf

Subcatchment 5: Post 5 Runoff Area=7,742 sf 59.11% Impervious Runoff Depth>1.62"
Flow Length=131' Tc=8.6 min CN=88 Runoff=0.31 cfs 1,046 cf

Subcatchment 6: Post 6 Runoff Area=9,340 sf 71.57% Impervious Runoff Depth>1.87"
Tc=5.0 min CN=91 Runoff=0.47 cfs 1,452 cf

Subcatchment 7: Post 7 Runoff Area=3,875 sf 0.00% Impervious Runoff Depth>0.72"
Flow Length=170' Tc=11.1 min CN=73 Runoff=0.06 cfs 234 cf

Subcatchment 8: Post 8 Runoff Area=1,030 sf 0.00% Impervious Runoff Depth>0.59"
Tc=5.0 min CN=70 Runoff=0.01 cfs 51 cf

Subcatchment 9: Post 9 Runoff Area=28,758 sf 3.57% Impervious Runoff Depth>0.82"
Tc=5.0 min CN=75 Runoff=0.59 cfs 1,963 cf

Subcatchment B1: BLDG #1 Runoff Area=3,522 sf 100.00% Impervious Runoff Depth>2.55"
Tc=5.0 min CN=98 Runoff=0.22 cfs 748 cf

Subcatchment B2: BLDG #2 Runoff Area=5,607 sf 100.00% Impervious Runoff Depth>2.55"
Tc=5.0 min CN=98 Runoff=0.35 cfs 1,191 cf

Subcatchment B3A: 1/2 BLDG #3 Runoff Area=2,283 sf 100.00% Impervious Runoff Depth>2.55"
Tc=5.0 min CN=98 Runoff=0.14 cfs 485 cf

Subcatchment B3B: 1/2 BLDG #3 Runoff Area=2,283 sf 100.00% Impervious Runoff Depth>2.55"
Tc=5.0 min CN=98 Runoff=0.14 cfs 485 cf

Subcatchment B4: BLDG #4 Runoff Area=5,609 sf 100.00% Impervious Runoff Depth>2.55"
Tc=5.0 min CN=98 Runoff=0.35 cfs 1,191 cf

Reach DP1: DP1post Inflow=0.17 cfs 780 cf
Outflow=0.17 cfs 780 cf

Reach DP2: DP2 Inflow=0.01 cfs 66 cf
Outflow=0.01 cfs 66 cf

Reach DP3: DP3 Inflow=0.62 cfs 3,027 cf
Outflow=0.62 cfs 3,027 cf

Reach DP4: DP4 Inflow=0.06 cfs 234 cf
Outflow=0.06 cfs 234 cf

Pond CB1: CB1 Peak Elev=34.17' Inflow=0.19 cfs 660 cf
Primary=0.19 cfs 660 cf Secondary=0.00 cfs 0 cf Outflow=0.19 cfs 660 cf

Pond CB10: CB10 Peak Elev=19.84' Inflow=0.31 cfs 1,046 cf
Primary=0.31 cfs 1,046 cf Secondary=0.00 cfs 0 cf Outflow=0.31 cfs 1,046 cf

Pond CB13: CB13 Peak Elev=20.29' Inflow=0.47 cfs 1,452 cf
Primary=0.47 cfs 1,452 cf Secondary=0.00 cfs 0 cf Outflow=0.47 cfs 1,452 cf

Pond CB4: CB4 Peak Elev=34.17' Inflow=0.25 cfs 790 cf
Primary=0.25 cfs 790 cf Secondary=0.00 cfs 0 cf Outflow=0.25 cfs 790 cf

Pond CB5: CB5 Peak Elev=34.23' Inflow=0.17 cfs 552 cf
Primary=0.17 cfs 552 cf Secondary=0.00 cfs 0 cf Outflow=0.17 cfs 552 cf

Pond CB6: CB6 Peak Elev=37.20' Inflow=0.27 cfs 837 cf
Primary=0.27 cfs 837 cf Secondary=0.00 cfs 0 cf Outflow=0.27 cfs 837 cf

Pond CB9: CB9 Peak Elev=37.20' Inflow=0.28 cfs 871 cf
Primary=0.28 cfs 871 cf Secondary=0.00 cfs 0 cf Outflow=0.28 cfs 871 cf

Pond DMH11: DMH11 Peak Elev=20.08' Inflow=0.75 cfs 2,499 cf
12.0" Round Culvert n=0.013 L=42.0' S=0.0024 '/' Outflow=0.75 cfs 2,499 cf

Pond DMH2: DMH2 Peak Elev=34.18' Inflow=0.58 cfs 2,002 cf
12.0" Round Culvert n=0.013 L=29.0' S=0.0034 '/' Outflow=0.58 cfs 2,002 cf

Pond DMH7: DMH7 Peak Elev=37.17' Inflow=0.55 cfs 1,707 cf
12.0" Round Culvert n=0.013 L=30.0' S=0.0033 '/' Outflow=0.55 cfs 1,707 cf

Pond SSD1: SUBSURFACE DRAINAGE AREA Peak Elev=34.91' Storage=2,003 cf Inflow=1.06 cfs 3,677 cf
Discarded=0.04 cfs 2,298 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=0.04 cfs 2,298 cf

Pond SSD2: SUBSURFACE DRAINAGE AREA Peak Elev=36.80' Storage=952 cf Inflow=0.69 cfs 2,192 cf
Discarded=0.05 cfs 2,186 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.05 cfs 2,186 cf

Pond SSD3: SUBSURFACE DRAINAGE AREA Peak Elev=19.66' Storage=1,165 cf Inflow=0.96 cfs 3,246 cf
Discarded=0.03 cfs 1,595 cf Primary=0.34 cfs 1,064 cf Secondary=0.00 cfs 0 cf Outflow=0.37 cfs 2,659 cf

Pond SSD4: SUBSURFACE DRAINAGE AREA Peak Elev=36.53' Storage=648 cf Inflow=0.35 cfs 1,191 cf
Discarded=0.01 cfs 716 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 15 cf Outflow=0.01 cfs 731 cf

Pond SSD5: SUBSURFACE DRAINAGE AREA #5 Peak Elev=31.00' Storage=0 cf Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.00 cfs 0 cf

Total Runoff Area = 106,915 sf Runoff Volume = 13,334 cf Average Runoff Depth = 1.50"
54.54% Pervious = 58,311 sf 45.46% Impervious = 48,604 sf

Summary for Subcatchment 1: Post 1

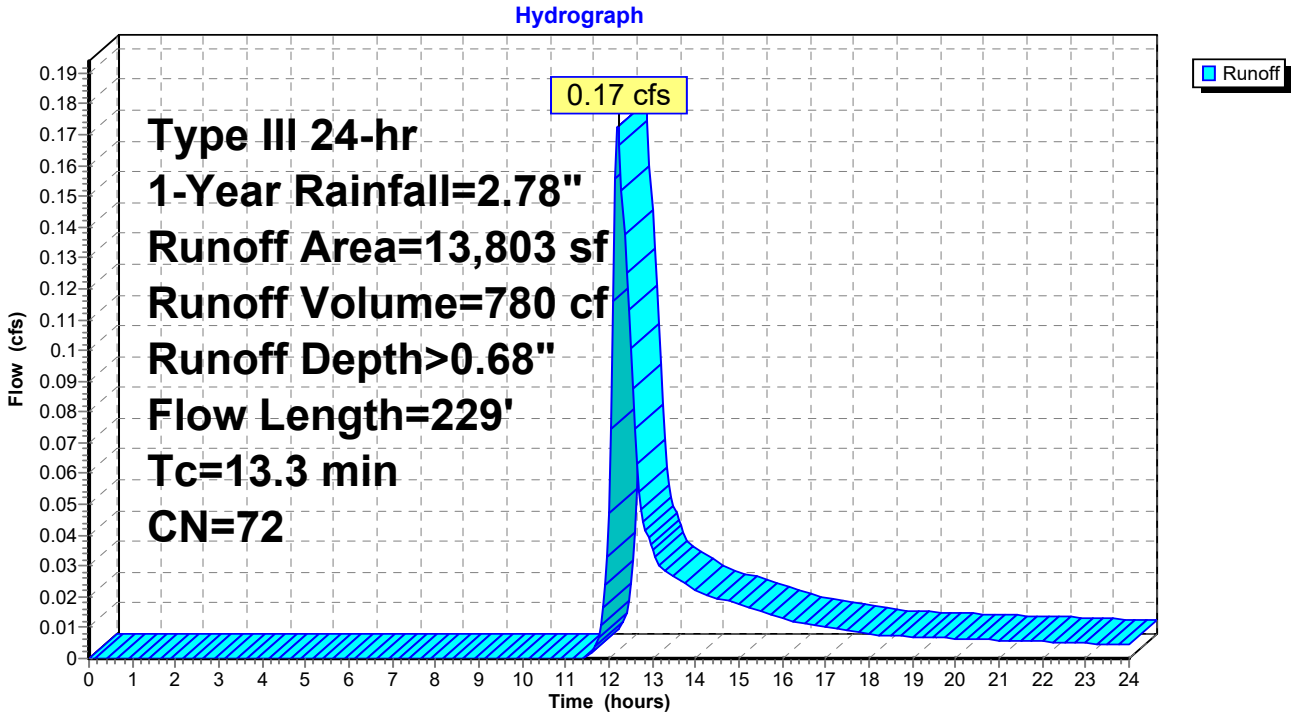
Runoff = 0.17 cfs @ 12.21 hrs, Volume= 780 cf, Depth> 0.68"
Routed to Reach DP1 : DP1post

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.78"

Area (sf)	CN	Description
5,871	74	>75% Grass cover, Good, HSG C
7,932	70	Woods, Good, HSG C
0	98	Paved parking, HSG C
0	98	Paved parking, HSG C
13,803	72	Weighted Average
13,803		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	50	0.0300	0.08		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.35"
1.1	67	0.0400	1.00		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.1	58	0.0300	0.87		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.9	54	0.0400	1.00		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
13.3	229	Total			

Subcatchment 1: Post 1



Summary for Subcatchment 2A: Post 2A

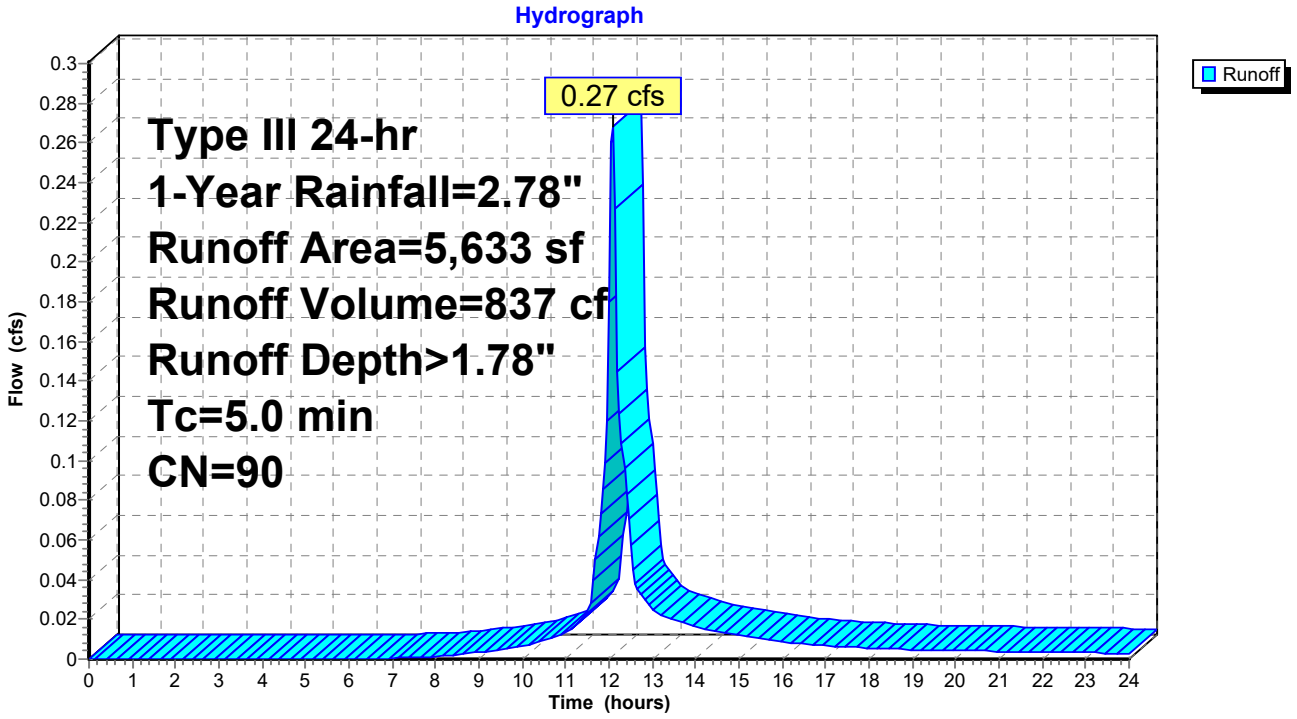
Runoff = 0.27 cfs @ 12.08 hrs, Volume= 837 cf, Depth> 1.78"
Routed to Pond CB6 : CB6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.78"

Area (sf)	CN	Description
1,714	74	>75% Grass cover, Good, HSG C
128	70	Woods, Good, HSG C
3,315	98	Paved parking, HSG C
476	98	Paved parking, HSG C
5,633	90	Weighted Average
1,842		32.70% Pervious Area
3,791		67.30% Impervious Area

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

Subcatchment 2A: Post 2A



Summary for Subcatchment 2B: Post 2B

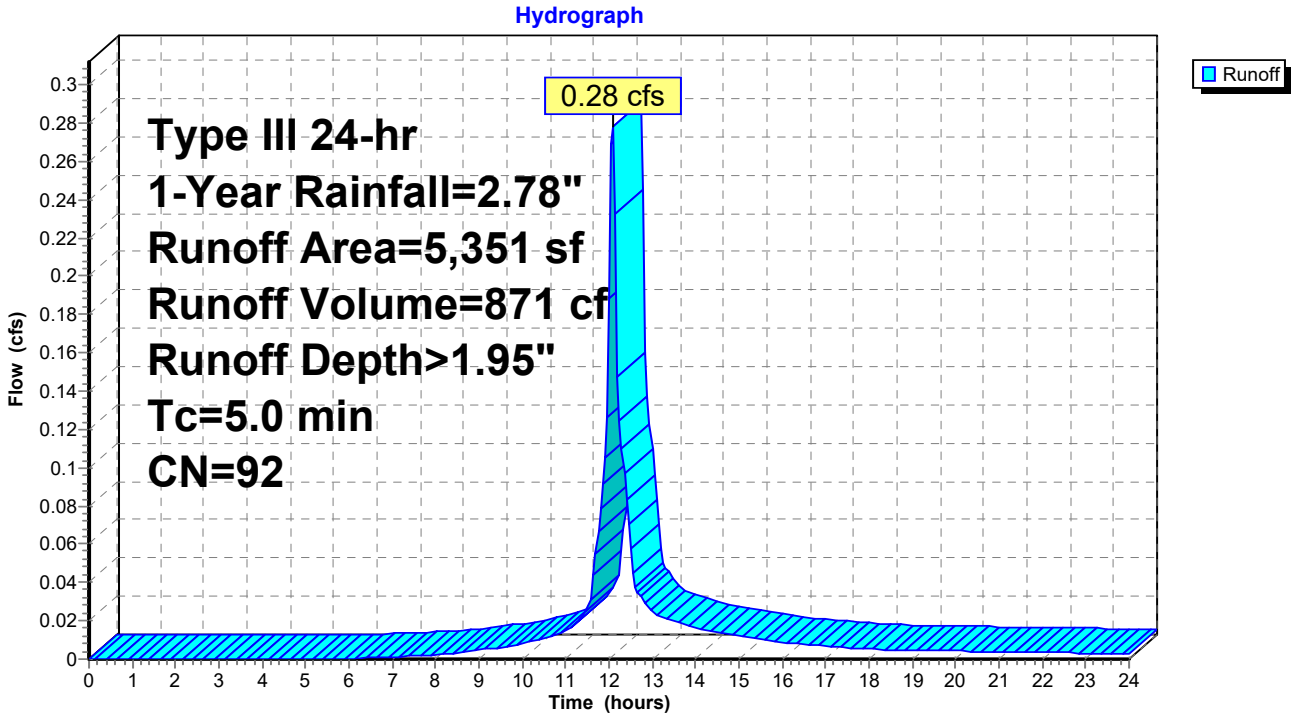
Runoff = 0.28 cfs @ 12.07 hrs, Volume= 871 cf, Depth> 1.95"
Routed to Pond CB9 : CB9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.78"

Area (sf)	CN	Description
1,174	74	>75% Grass cover, Good, HSG C
115	70	Woods, Good, HSG C
3,796	98	Paved parking, HSG C
266	98	Paved parking, HSG C
5,351	92	Weighted Average
1,289		24.09% Pervious Area
4,062		75.91% Impervious Area

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

Subcatchment 2B: Post 2B



Summary for Subcatchment 3A: Post 3A

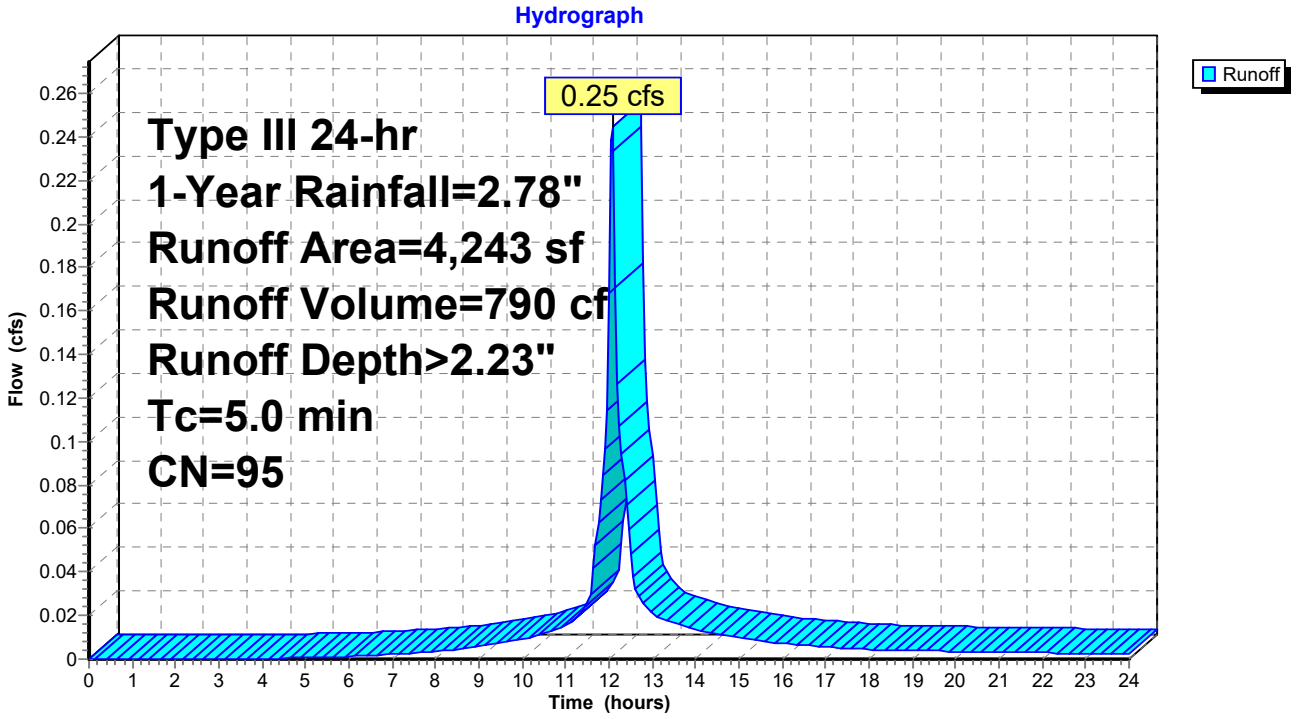
Runoff = 0.25 cfs @ 12.07 hrs, Volume= 790 cf, Depth> 2.23"
Routed to Pond CB4 : CB4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.78"

Area (sf)	CN	Description
570	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
3,241	98	Paved parking, HSG C
432	98	Paved parking, HSG C
4,243	95	Weighted Average
570		13.43% Pervious Area
3,673		86.57% Impervious Area

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

Subcatchment 3A: Post 3A



Summary for Subcatchment 3B: Post 3B

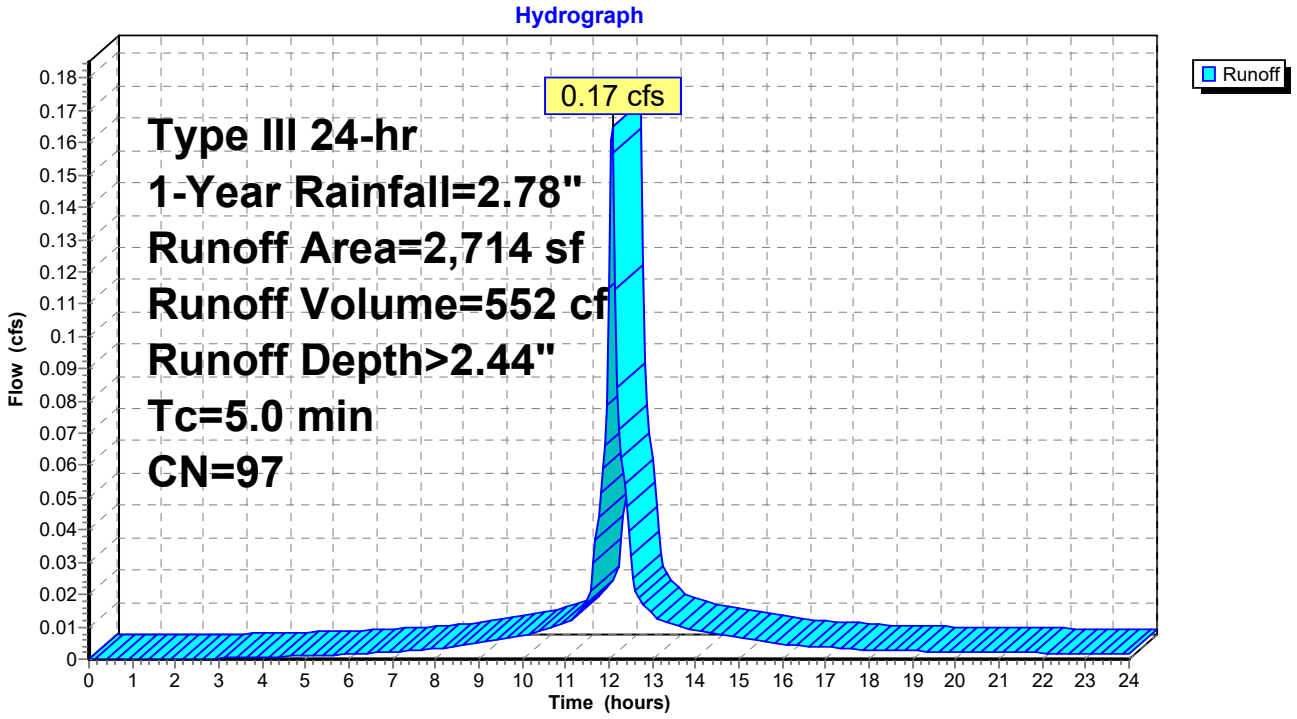
Runoff = 0.17 cfs @ 12.07 hrs, Volume= 552 cf, Depth> 2.44"
Routed to Pond CB5 : CB5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.78"

Area (sf)	CN	Description
99	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
2,615	98	Paved parking, HSG C
0	98	Paved parking, HSG C
2,714	97	Weighted Average
99		3.65% Pervious Area
2,615		96.35% Impervious Area

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

Subcatchment 3B: Post 3B



Summary for Subcatchment 4: Post 4

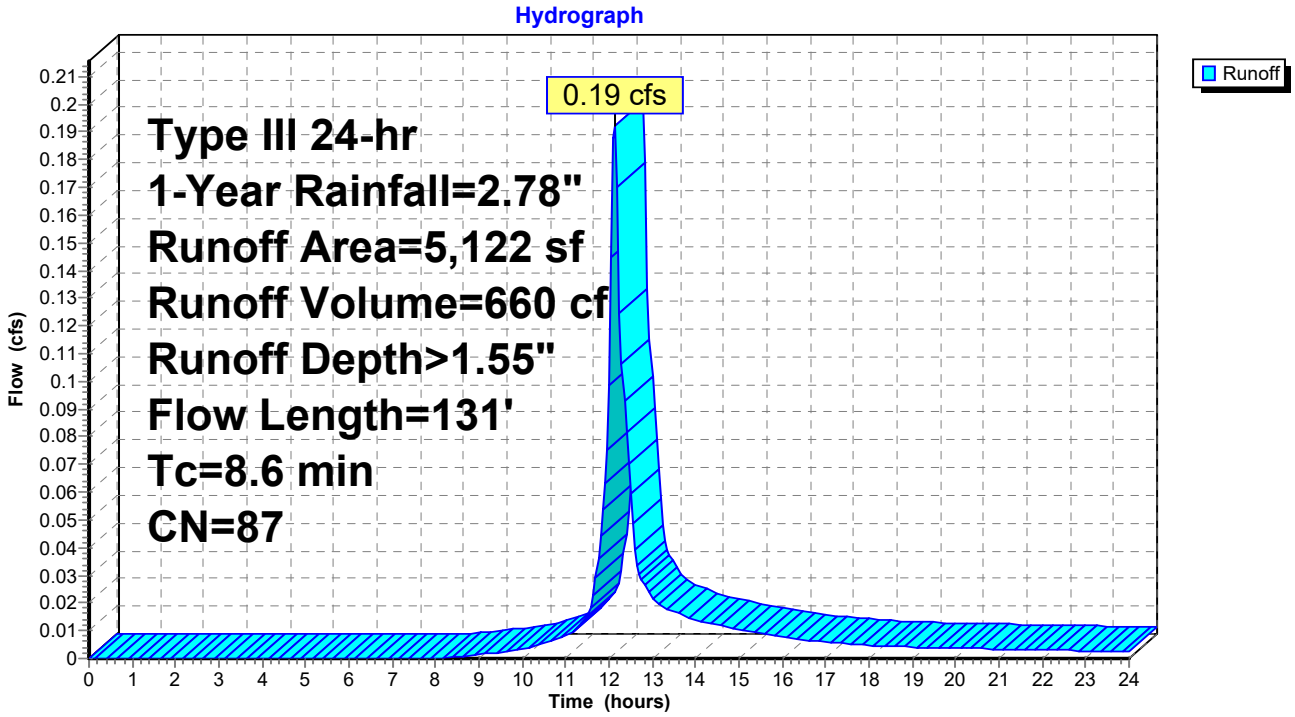
Runoff = 0.19 cfs @ 12.12 hrs, Volume= 660 cf, Depth> 1.55"
Routed to Pond CB1 : CB1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.78"

Area (sf)	CN	Description
2,250	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
2,872	98	Paved parking, HSG C
0	98	Paved parking, HSG C
5,122	87	Weighted Average
2,250		43.93% Pervious Area
2,872		56.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0200	0.10		**Sheet Flow, GRASS** Grass: Dense n= 0.240 P2= 3.35"
0.5	39	0.0300	1.21		**Shallow Concentrated Flow, GRASS** Short Grass Pasture Kv= 7.0 fps
0.0	13	0.0800	5.74		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
0.1	29	0.0300	3.52		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
8.6	131	Total			

Subcatchment 4: Post 4



Summary for Subcatchment 5: Post 5

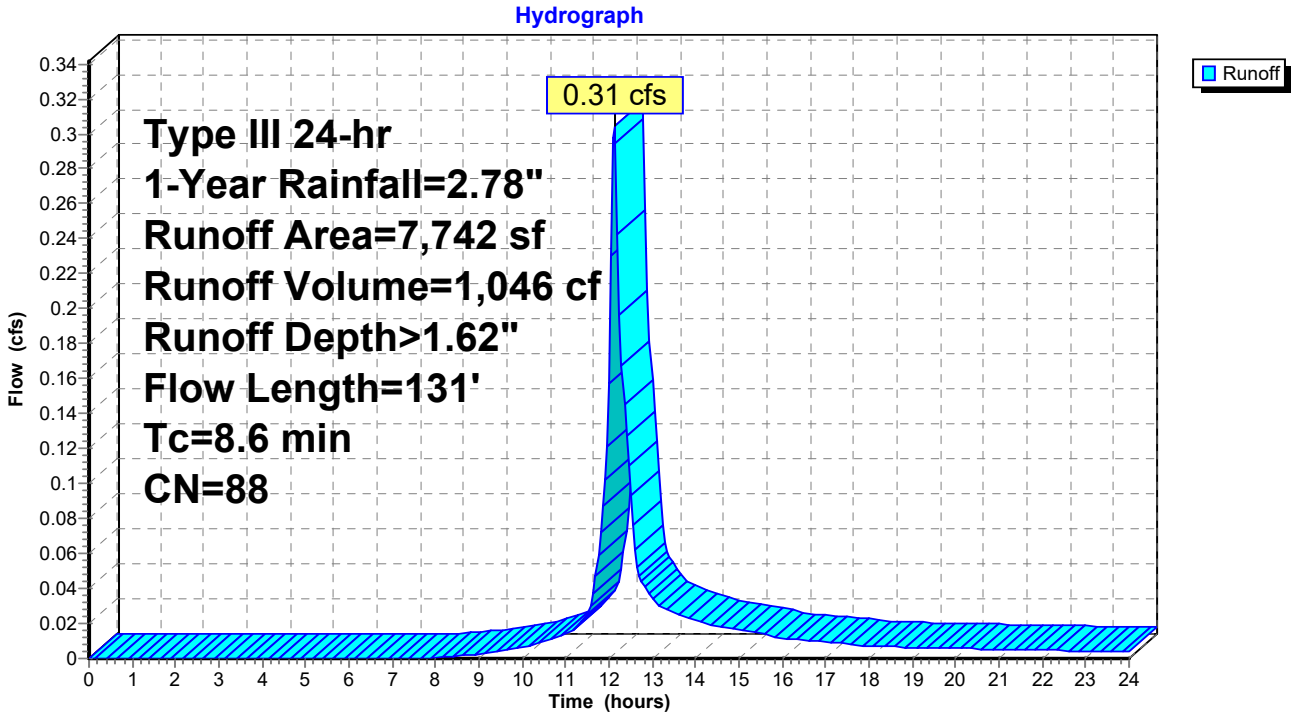
Runoff = 0.31 cfs @ 12.12 hrs, Volume= 1,046 cf, Depth> 1.62"
Routed to Pond CB10 : CB10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.78"

Area (sf)	CN	Description
1,823	98	Unconnected roofs, HSG C
3,166	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
2,753	98	Paved parking, HSG C
0	98	Paved parking, HSG C
7,742	88	Weighted Average
3,166		40.89% Pervious Area
4,576		59.11% Impervious Area
1,823		39.84% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0200	0.10		**Sheet Flow, GRASS** Grass: Dense n= 0.240 P2= 3.35"
0.5	39	0.0300	1.21		**Shallow Concentrated Flow, GRASS** Short Grass Pasture Kv= 7.0 fps
0.0	13	0.0800	5.74		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
0.1	29	0.0300	3.52		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
8.6	131	Total			

Subcatchment 5: Post 5



Summary for Subcatchment 6: Post 6

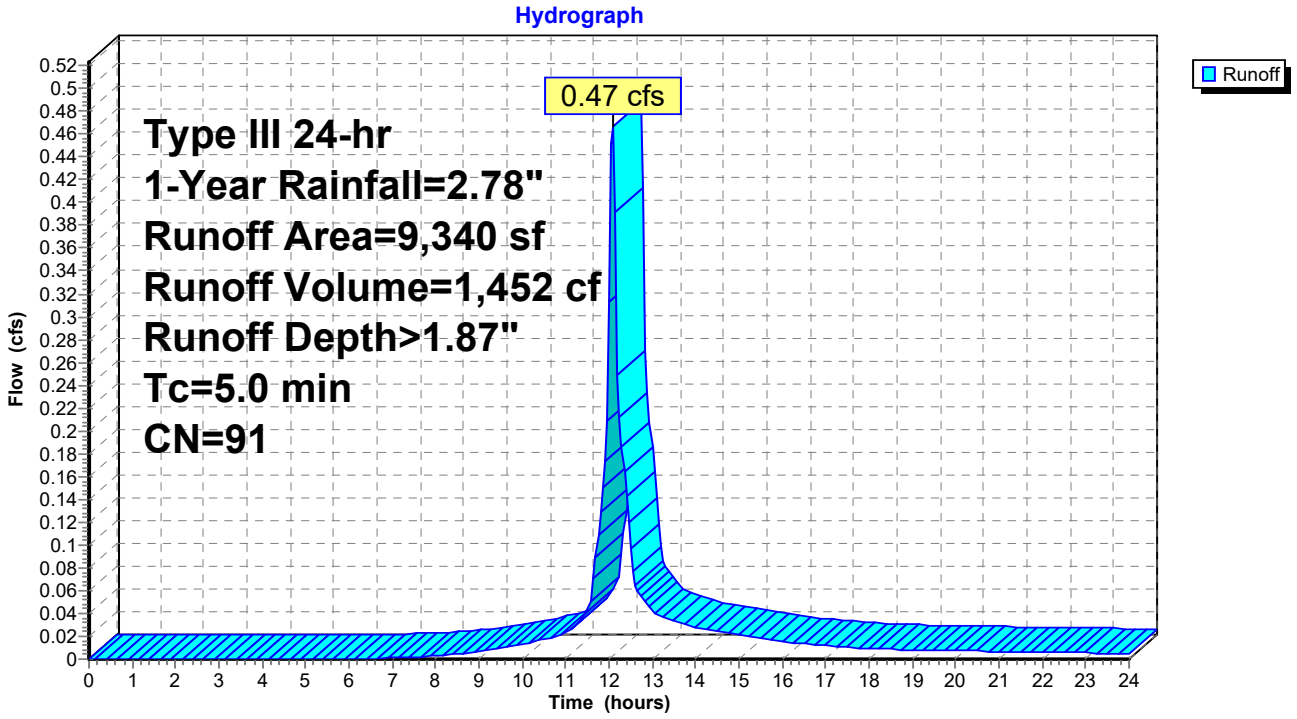
Runoff = 0.47 cfs @ 12.07 hrs, Volume= 1,452 cf, Depth> 1.87"
Routed to Pond CB13 : CB13

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.78"

Area (sf)	CN	Description
2,655	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
5,754	98	Paved parking, HSG C
931	98	Paved parking, HSG C
9,340	91	Weighted Average
2,655		28.43% Pervious Area
6,685		71.57% Impervious Area

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

Subcatchment 6: Post 6



Summary for Subcatchment 7: Post 7

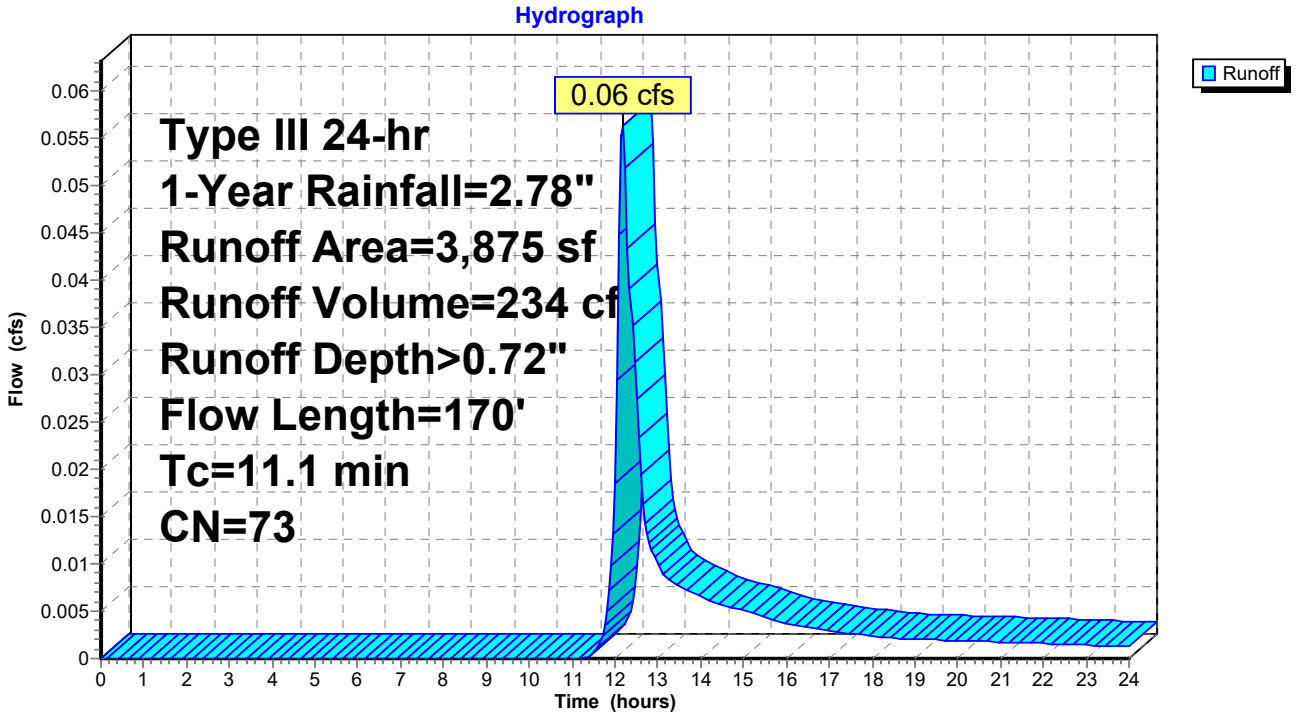
Runoff = 0.06 cfs @ 12.17 hrs, Volume= 234 cf, Depth> 0.72"
Routed to Reach DP4 : DP4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.78"

Area (sf)	CN	Description
3,170	74	>75% Grass cover, Good, HSG C
705	70	Woods, Good, HSG C
0	98	Paved parking, HSG C
0	98	Paved parking, HSG C
3,875	73	Weighted Average
3,875		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	50	0.0400	0.09		**Sheet Flow, WOODS** Woods: Light underbrush n= 0.400 P2= 3.35"
0.7	55	0.0400	1.40		**Shallow Concentrated Flow, WOODS** Short Grass Pasture Kv= 7.0 fps
1.2	53	0.0200	0.71		**Shallow Concentrated Flow, WOODS** Woodland Kv= 5.0 fps
0.1	12	0.0700	1.85		**Shallow Concentrated Flow, GRASS** Short Grass Pasture Kv= 7.0 fps
11.1	170	Total			

Subcatchment 7: Post 7



Summary for Subcatchment 8: Post 8

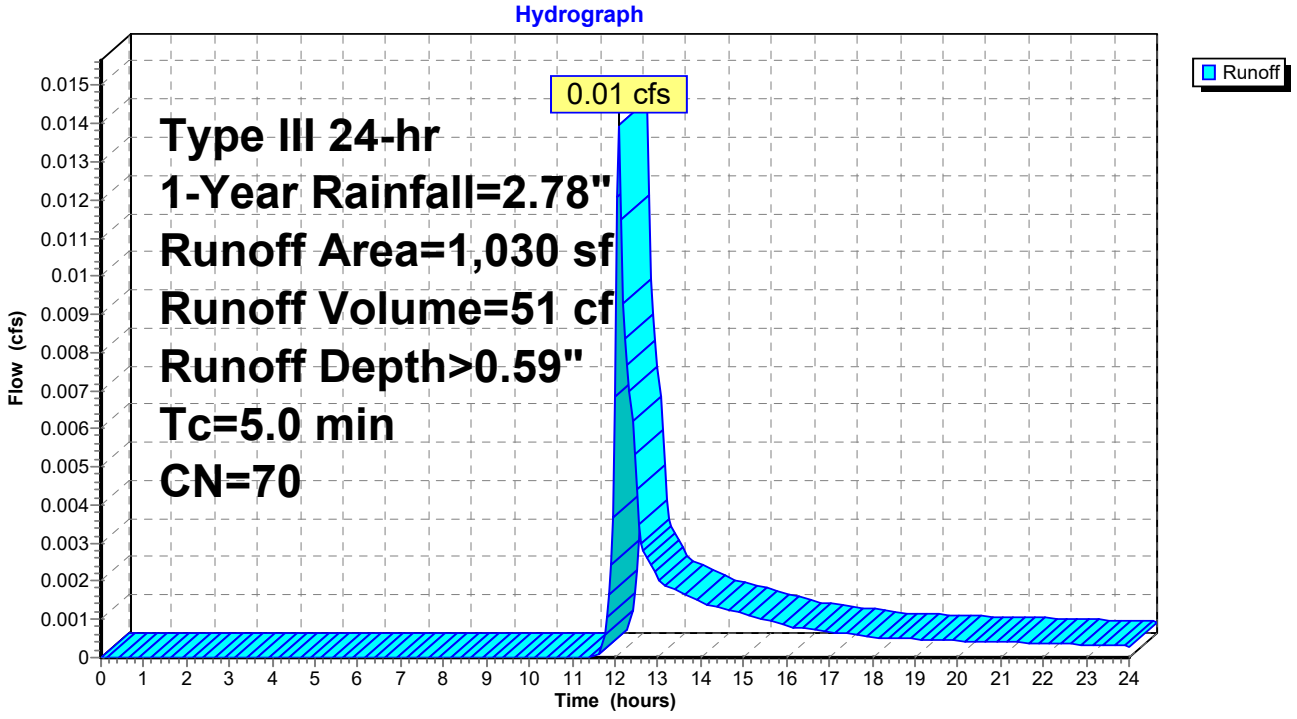
Runoff = 0.01 cfs @ 12.10 hrs, Volume= 51 cf, Depth> 0.59"
Routed to Reach DP2 : DP2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.78"

Area (sf)	CN	Description
0	74	>75% Grass cover, Good, HSG C
1,030	70	Woods, Good, HSG C
0	98	Paved parking, HSG C
0	98	Paved parking, HSG C
1,030	70	Weighted Average
1,030		100.00% Pervious Area

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

Subcatchment 8: Post 8



Summary for Subcatchment 9: Post 9

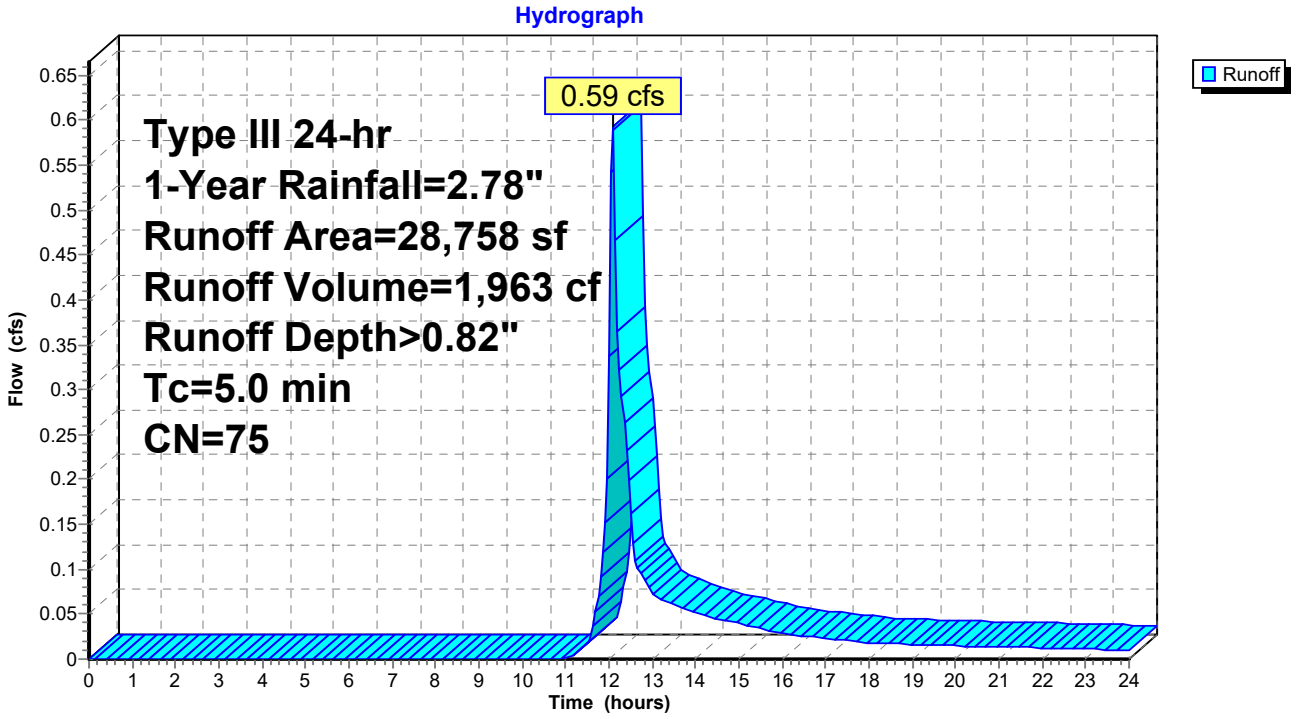
Runoff = 0.59 cfs @ 12.09 hrs, Volume= 1,963 cf, Depth> 0.82"
Routed to Reach DP3 : DP3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.78"

Area (sf)	CN	Description
25,955	74	>75% Grass cover, Good, HSG C
1,777	70	Woods, Good, HSG C
0	98	Paved parking, HSG C
1,026	98	Paved parking, HSG C
28,758	75	Weighted Average
27,732		96.43% Pervious Area
1,026		3.57% Impervious Area

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

Subcatchment 9: Post 9



Summary for Subcatchment B1: BLDG #1

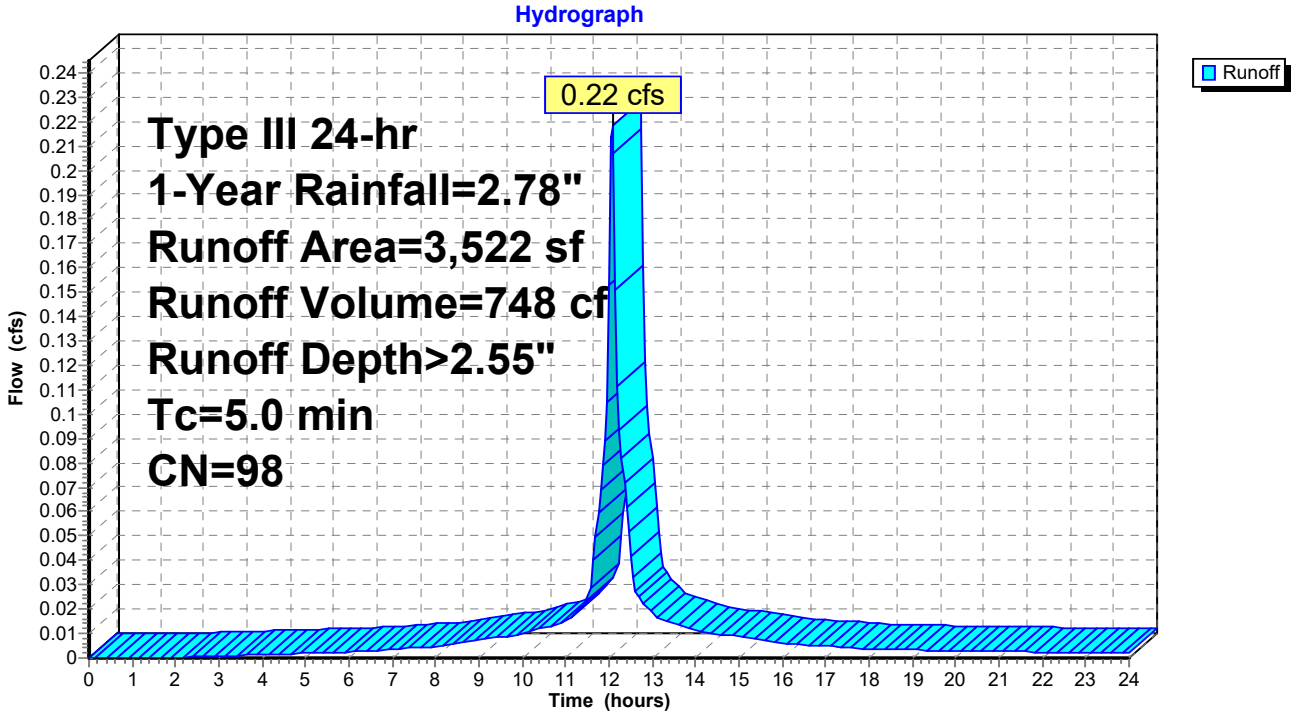
Runoff = 0.22 cfs @ 12.07 hrs, Volume= 748 cf, Depth> 2.55"
Routed to Pond SSD3 : SUBSURFACE DRAINAGE AREA #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.78"

Area (sf)	CN	Description
3,522	98	Unconnected roofs, HSG C
3,522		100.00% Impervious Area
3,522		100.00% Unconnected

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

Subcatchment B1: BLDG #1



Summary for Subcatchment B2: BLDG #2

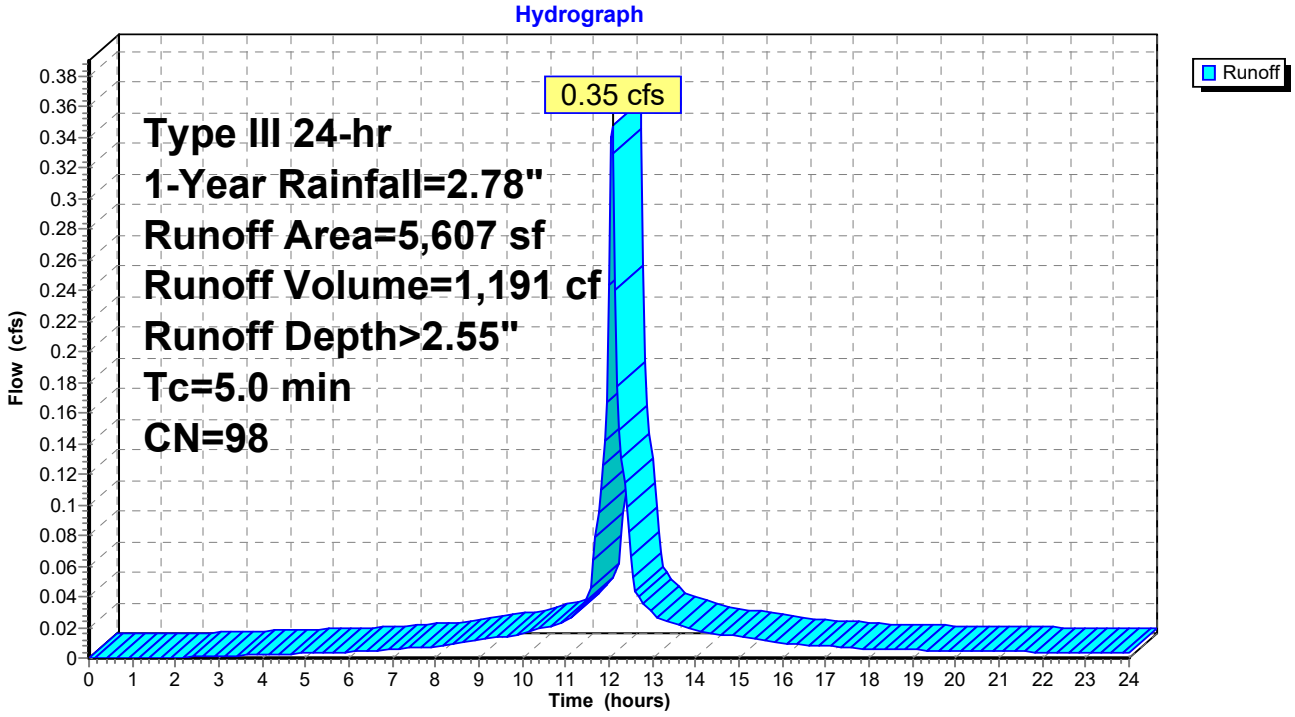
Runoff = 0.35 cfs @ 12.07 hrs, Volume= 1,191 cf, Depth> 2.55"
Routed to Pond SSD1 : SUBSURFACE DRAINAGE AREA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.78"

Area (sf)	CN	Description
5,607	98	Unconnected roofs, HSG C
5,607		100.00% Impervious Area
5,607		100.00% Unconnected

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

Subcatchment B2: BLDG #2



Summary for Subcatchment B3A: 1/2 BLDG #3

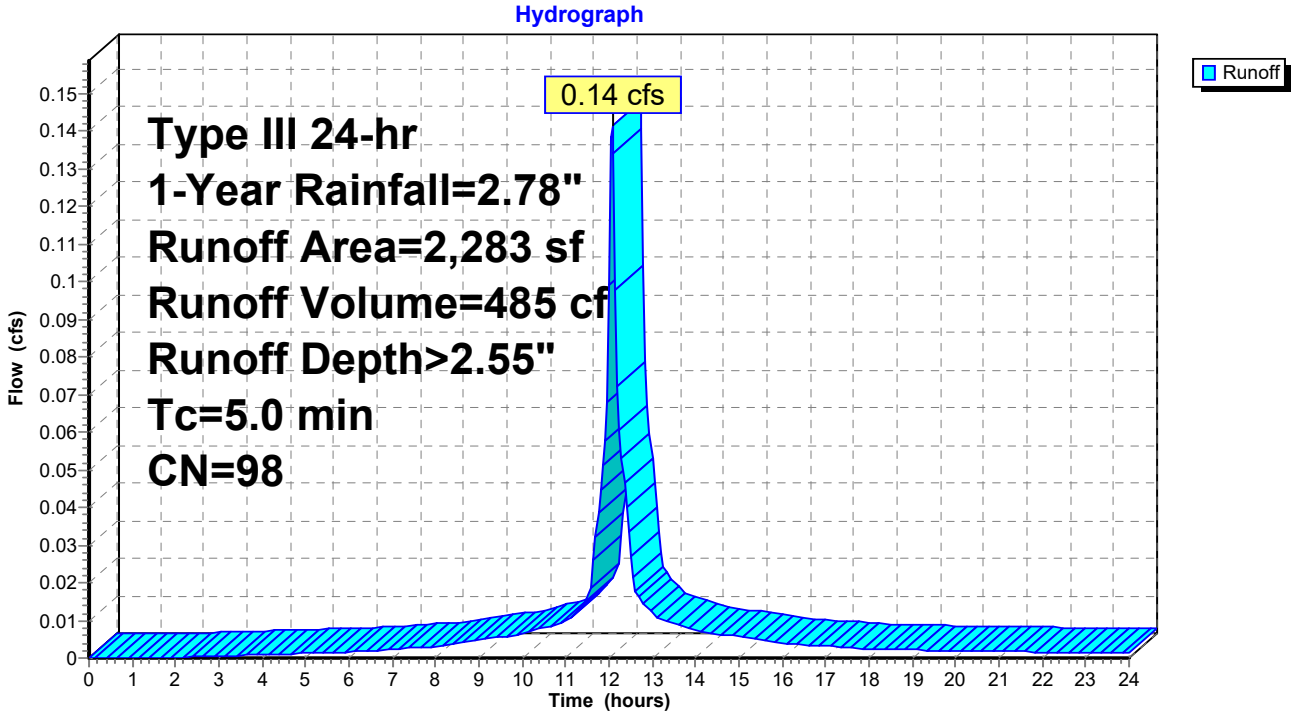
Runoff = 0.14 cfs @ 12.07 hrs, Volume= 485 cf, Depth> 2.55"
Routed to Pond SSD2 : SUBSURFACE DRAINAGE AREA #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.78"

Area (sf)	CN	Description
2,283	98	Unconnected roofs, HSG C
2,283		100.00% Impervious Area
2,283		100.00% Unconnected

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

Subcatchment B3A: 1/2 BLDG #3



Summary for Subcatchment B3B: 1/2 BLDG #3

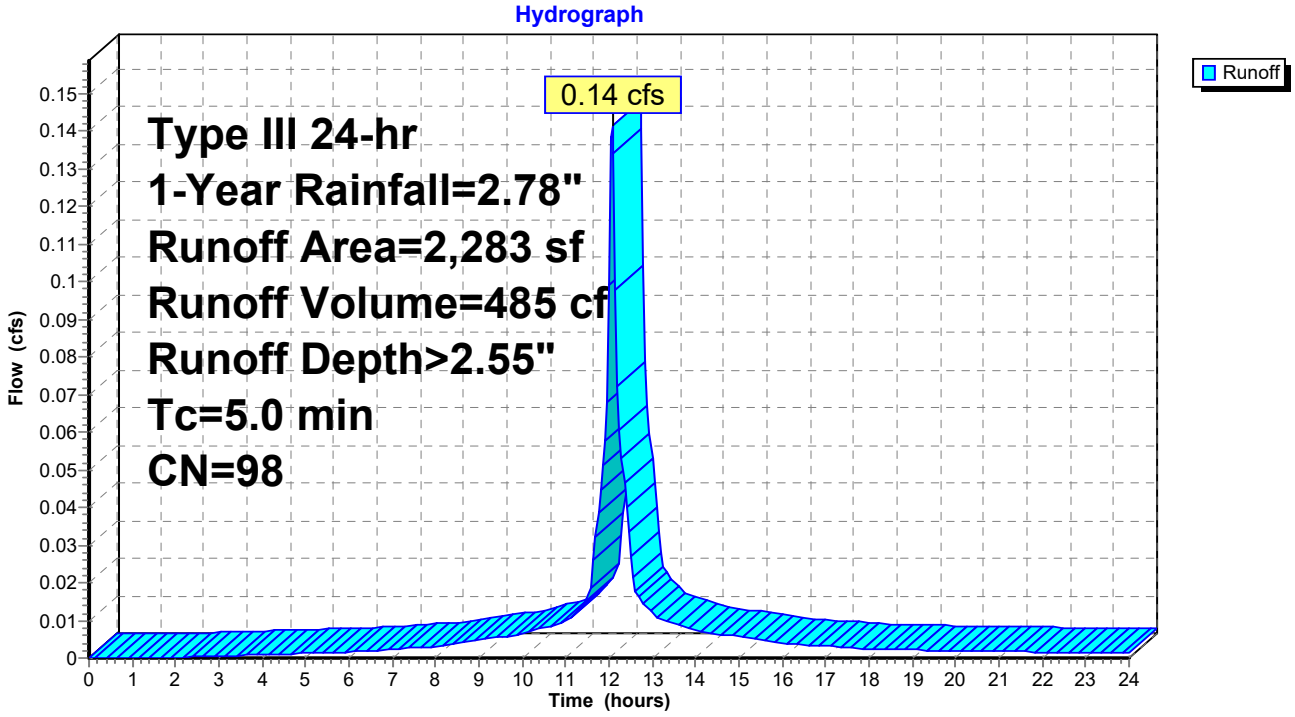
Runoff = 0.14 cfs @ 12.07 hrs, Volume= 485 cf, Depth> 2.55"
Routed to Pond SSD1 : SUBSURFACE DRAINAGE AREA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.78"

Area (sf)	CN	Description
2,283	98	Unconnected roofs, HSG C
2,283		100.00% Impervious Area
2,283		100.00% Unconnected

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

Subcatchment B3B: 1/2 BLDG #3



Summary for Subcatchment B4: BLDG #4

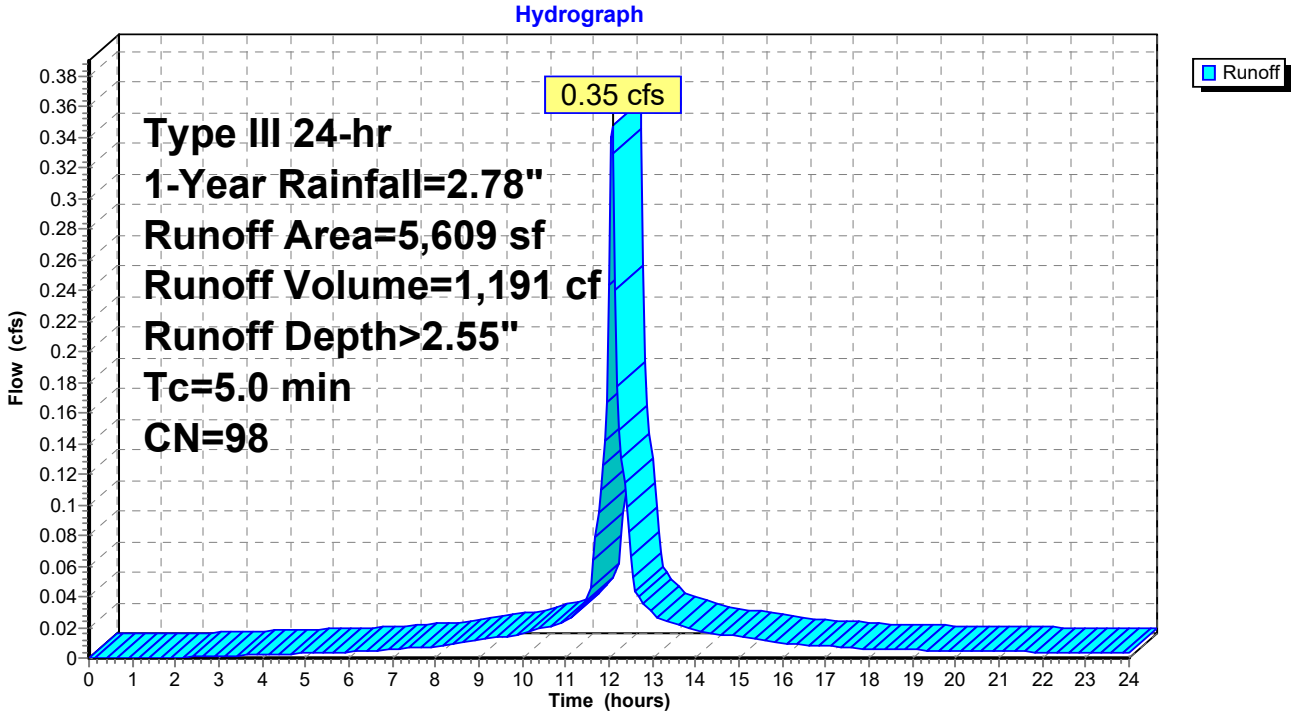
Runoff = 0.35 cfs @ 12.07 hrs, Volume= 1,191 cf, Depth> 2.55"
Routed to Pond SSD4 : SUBSURFACE DRAINAGE AREA #4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.78"

Area (sf)	CN	Description
5,609	98	Unconnected roofs, HSG C
5,609		100.00% Impervious Area
5,609		100.00% Unconnected

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

Subcatchment B4: BLDG #4

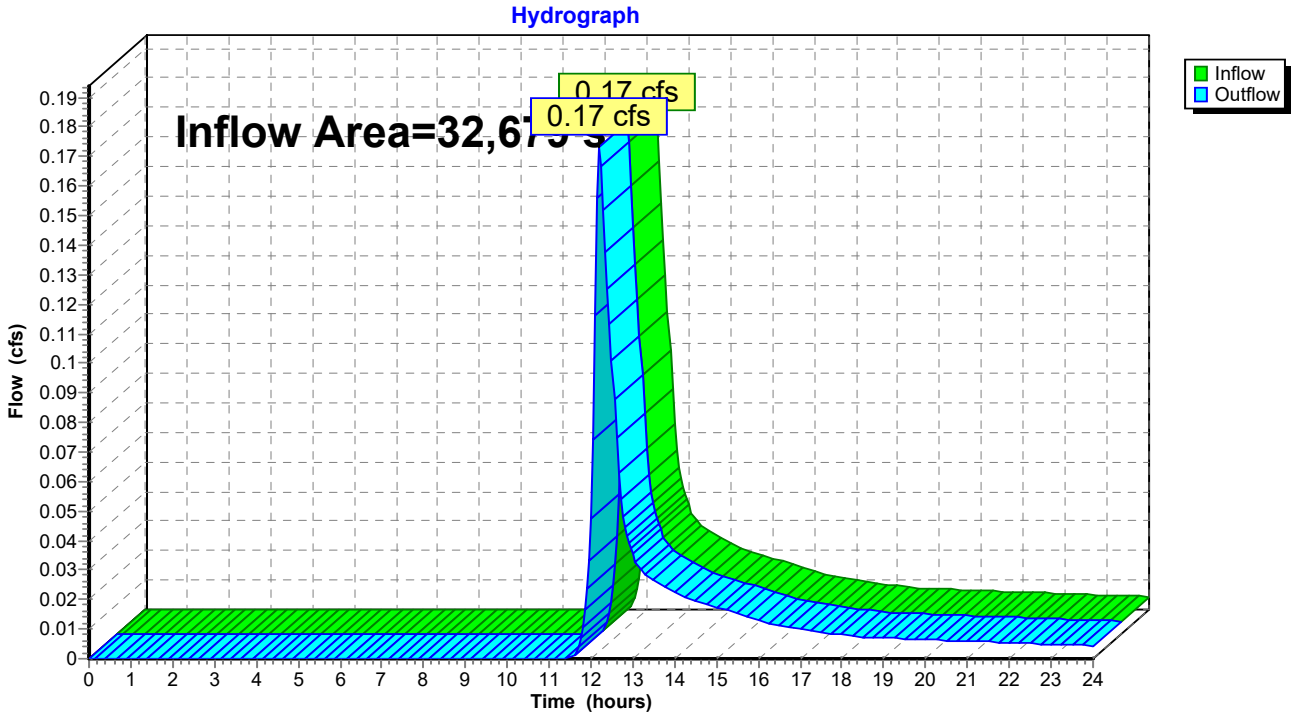


Summary for Reach DP1: DP1post

Inflow Area = 32,679 sf, 48.18% Impervious, Inflow Depth > 0.29" for 1-Year event
Inflow = 0.17 cfs @ 12.21 hrs, Volume= 780 cf
Outflow = 0.17 cfs @ 12.21 hrs, Volume= 780 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP1: DP1post

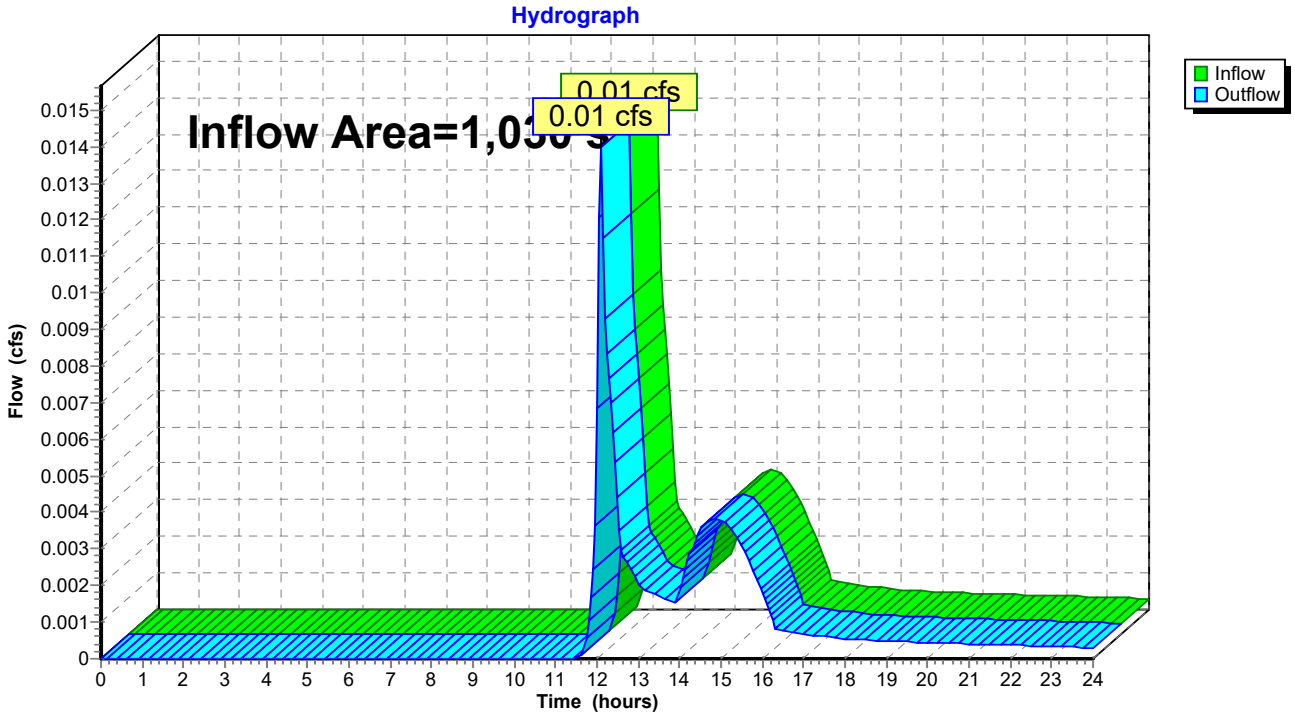


Summary for Reach DP2: DP2

Inflow Area = 1,030 sf, 0.00% Impervious, Inflow Depth > 0.77" for 1-Year event
Inflow = 0.01 cfs @ 12.10 hrs, Volume= 66 cf
Outflow = 0.01 cfs @ 12.10 hrs, Volume= 66 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP2: DP2

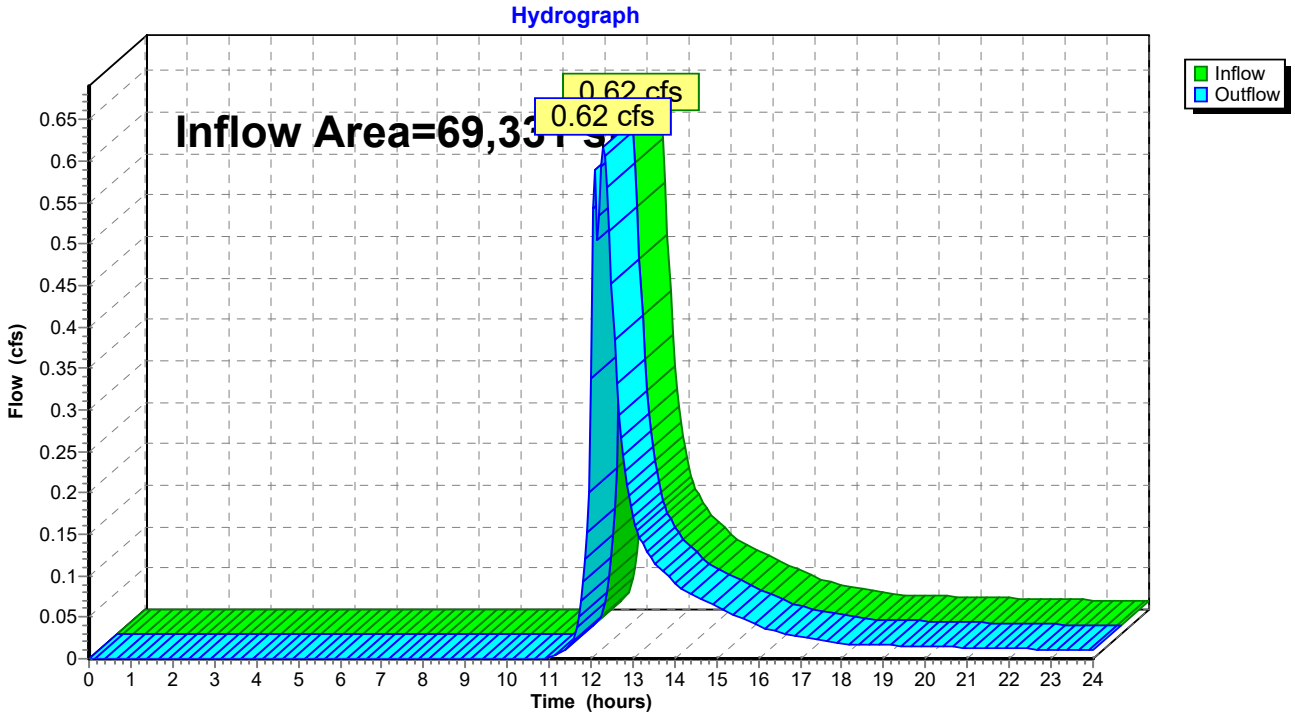


Summary for Reach DP3: DP3

Inflow Area = 69,331 sf, 47.39% Impervious, Inflow Depth > 0.52" for 1-Year event
Inflow = 0.62 cfs @ 12.31 hrs, Volume= 3,027 cf
Outflow = 0.62 cfs @ 12.31 hrs, Volume= 3,027 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP3: DP3

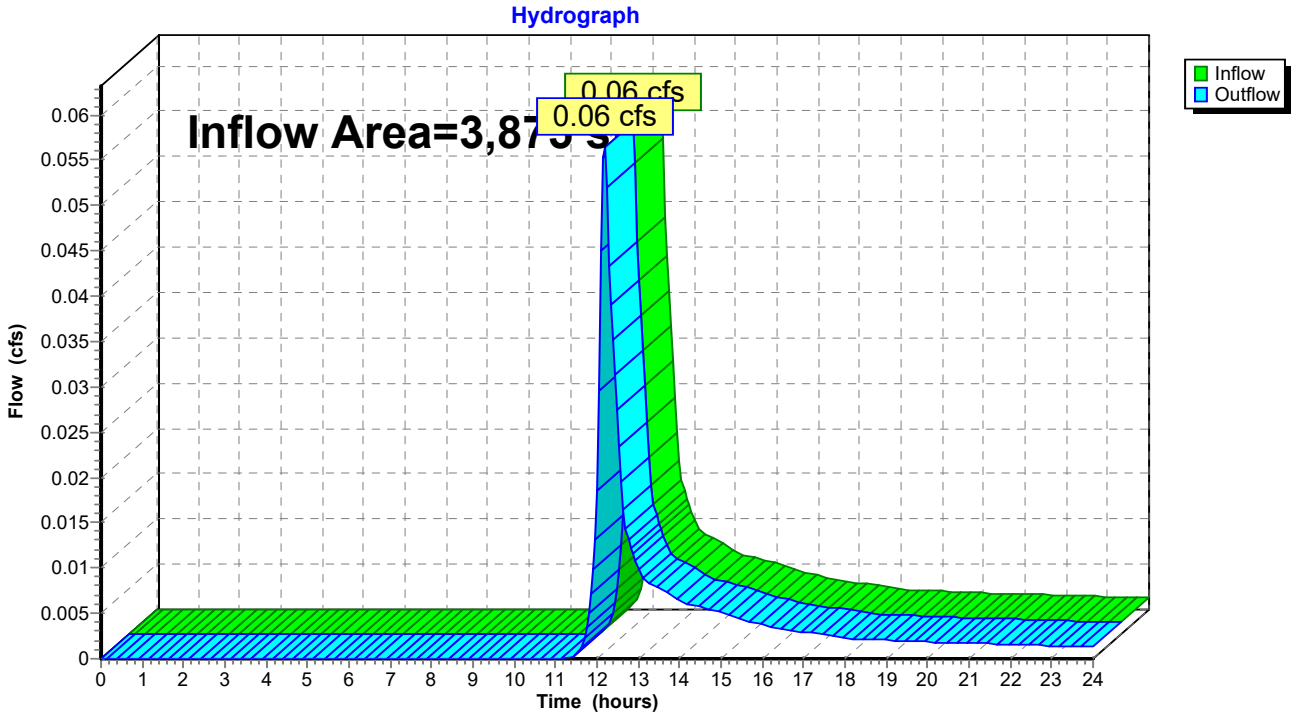


Summary for Reach DP4: DP4

Inflow Area = 3,875 sf, 0.00% Impervious, Inflow Depth > 0.72" for 1-Year event
Inflow = 0.06 cfs @ 12.17 hrs, Volume= 234 cf
Outflow = 0.06 cfs @ 12.17 hrs, Volume= 234 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP4: DP4



Summary for Pond CB1: CB1

Inflow Area = 5,122 sf, 56.07% Impervious, Inflow Depth > 1.55" for 1-Year event
Inflow = 0.19 cfs @ 12.12 hrs, Volume= 660 cf
Outflow = 0.19 cfs @ 12.12 hrs, Volume= 660 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.19 cfs @ 12.12 hrs, Volume= 660 cf
Routed to Pond DMH2 : DMH2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond CB10 : CB10

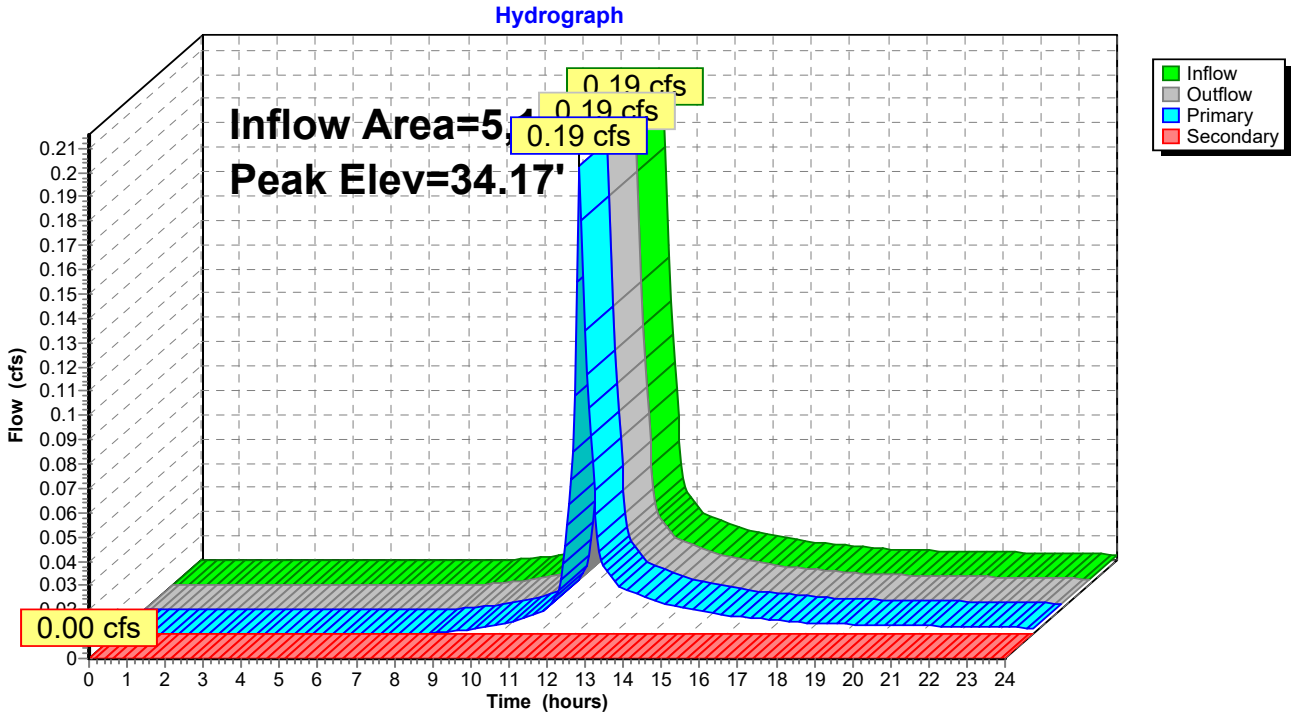
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 34.17' @ 12.12 hrs
Flood Elev= 36.27'

Device	Routing	Invert	Outlet Devices
#1	Primary	33.90'	**12.0" Round Culvert** L= 29.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 33.90' / 33.80' S= 0.0034 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	36.27'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.19 cfs @ 12.12 hrs HW=34.17' (Free Discharge)
1=Culvert (Barrel Controls 0.19 cfs @ 1.66 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=33.90' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB1: CB1


Hydrograph
Inflow Area=5,
Peak Elev=34.17'
0.19 cfs
0.19 cfs
0.19 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)

Stage-Discharge for Pond CB1: CB1

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
33.90	0.00	0.00	**0.00**
33.95	0.01	0.01	0.00
34.00	0.02	0.02	0.00
34.05	0.06	0.06	0.00
34.10	0.10	0.10	0.00
34.15	0.16	0.16	0.00
34.20	0.23	0.23	0.00
34.25	0.32	0.32	0.00
34.30	0.41	0.41	0.00
34.35	0.51	0.51	0.00
34.40	0.62	0.62	0.00
34.45	0.74	0.74	0.00
34.50	0.87	0.87	0.00
34.55	1.00	1.00	0.00
34.60	1.14	1.14	0.00
34.65	1.28	1.28	0.00
34.70	1.43	1.43	0.00
34.75	1.58	1.58	0.00
34.80	1.72	1.72	0.00
34.85	1.87	1.87	0.00
34.90	2.02	2.02	0.00
34.95	2.16	2.16	0.00
35.00	2.30	2.30	0.00
35.05	2.42	2.42	0.00
35.10	2.54	2.54	0.00
35.15	2.63	2.63	0.00
35.20	2.69	2.69	0.00
35.25	2.72	2.72	0.00
35.30	2.87	2.87	0.00
35.35	3.01	3.01	0.00
35.40	3.14	3.14	0.00
35.45	3.27	3.27	0.00
35.50	3.40	3.40	0.00
35.55	3.52	3.52	0.00
35.60	3.63	3.63	0.00
35.65	3.74	3.74	0.00
35.70	3.85	3.85	0.00
35.75	3.96	3.96	0.00
35.80	4.06	4.06	0.00
35.85	4.16	4.16	0.00
35.90	4.26	4.26	0.00
35.95	4.35	4.35	0.00
36.00	4.45	4.45	0.00
36.05	4.54	4.54	0.00
36.10	4.63	4.63	0.00
36.15	4.72	4.72	0.00
36.20	4.80	4.80	0.00
36.25	**4.89**	**4.89**	0.00

Stage-Area-Storage for Pond CB1: CB1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
33.90	**0**	34.96	0	36.02	0
33.92	0	34.98	0	36.04	0
33.94	0	35.00	0	36.06	0
33.96	0	35.02	0	36.08	0
33.98	0	35.04	0	36.10	0
34.00	0	35.06	0	36.12	0
34.02	0	35.08	0	36.14	0
34.04	0	35.10	0	36.16	0
34.06	0	35.12	0	36.18	0
34.08	0	35.14	0	36.20	0
34.10	0	35.16	0	36.22	0
34.12	0	35.18	0	36.24	0
34.14	0	35.20	0	36.26	0
34.16	0	35.22	0		
34.18	0	35.24	0		
34.20	0	35.26	0		
34.22	0	35.28	0		
34.24	0	35.30	0		
34.26	0	35.32	0		
34.28	0	35.34	0		
34.30	0	35.36	0		
34.32	0	35.38	0		
34.34	0	35.40	0		
34.36	0	35.42	0		
34.38	0	35.44	0		
34.40	0	35.46	0		
34.42	0	35.48	0		
34.44	0	35.50	0		
34.46	0	35.52	0		
34.48	0	35.54	0		
34.50	0	35.56	0		
34.52	0	35.58	0		
34.54	0	35.60	0		
34.56	0	35.62	0		
34.58	0	35.64	0		
34.60	0	35.66	0		
34.62	0	35.68	0		
34.64	0	35.70	0		
34.66	0	35.72	0		
34.68	0	35.74	0		
34.70	0	35.76	0		
34.72	0	35.78	0		
34.74	0	35.80	0		
34.76	0	35.82	0		
34.78	0	35.84	0		
34.80	0	35.86	0		
34.82	0	35.88	0		
34.84	0	35.90	0		
34.86	0	35.92	0		
34.88	0	35.94	0		
34.90	0	35.96	0		
34.92	0	35.98	0		
34.94	0	36.00	0		

Summary for Pond CB10: CB10

Inflow Area = 7,742 sf, 59.11% Impervious, Inflow Depth > 1.62" for 1-Year event
Inflow = 0.31 cfs @ 12.12 hrs, Volume= 1,046 cf
Outflow = 0.31 cfs @ 12.12 hrs, Volume= 1,046 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.31 cfs @ 12.12 hrs, Volume= 1,046 cf
Routed to Pond DMH11 : DMH11
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3

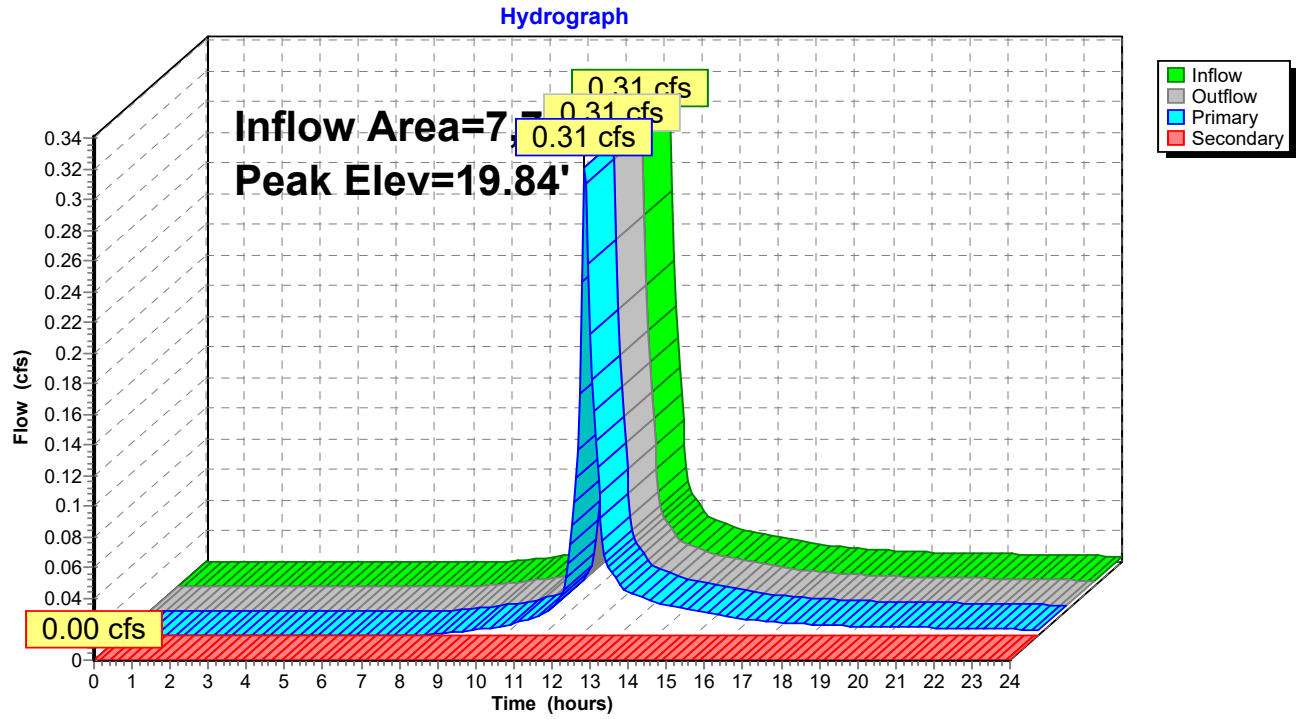
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 19.84' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	19.50'	**12.0" Round Culvert** L= 30.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 19.50' / 19.40' S= 0.0033 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	22.00'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.30 cfs @ 12.12 hrs HW=19.84' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.30 cfs @ 1.88 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=19.50' (Free Discharge)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Pond CB10: CB10



Stage-Discharge for Pond CB10: CB10

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
19.50	0.00	0.00	**0.00**
19.55	0.01	0.01	0.00
19.60	0.02	0.02	0.00
19.65	0.06	0.06	0.00
19.70	0.10	0.10	0.00
19.75	0.16	0.16	0.00
19.80	0.23	0.23	0.00
19.85	0.31	0.31	0.00
19.90	0.41	0.41	0.00
19.95	0.51	0.51	0.00
20.00	0.62	0.62	0.00
20.05	0.74	0.74	0.00
20.10	0.86	0.86	0.00
20.15	1.00	1.00	0.00
20.20	1.13	1.13	0.00
20.25	1.28	1.28	0.00
20.30	1.42	1.42	0.00
20.35	1.57	1.57	0.00
20.40	1.72	1.72	0.00
20.45	1.86	1.86	0.00
20.50	2.01	2.01	0.00
20.55	2.15	2.15	0.00
20.60	2.28	2.28	0.00
20.65	2.41	2.41	0.00
20.70	2.52	2.52	0.00
20.75	2.62	2.62	0.00
20.80	2.68	2.68	0.00
20.85	2.71	2.71	0.00
20.90	2.85	2.85	0.00
20.95	2.99	2.99	0.00
21.00	3.12	3.12	0.00
21.05	3.25	3.25	0.00
21.10	3.37	3.37	0.00
21.15	3.49	3.49	0.00
21.20	3.61	3.61	0.00
21.25	3.72	3.72	0.00
21.30	3.83	3.83	0.00
21.35	3.93	3.93	0.00
21.40	4.03	4.03	0.00
21.45	4.13	4.13	0.00
21.50	4.23	4.23	0.00
21.55	4.33	4.33	0.00
21.60	4.42	4.42	0.00
21.65	4.51	4.51	0.00
21.70	4.60	4.60	0.00
21.75	4.69	4.69	0.00
21.80	4.77	4.77	0.00
21.85	4.86	4.86	0.00
21.90	4.94	4.94	0.00
21.95	5.02	5.02	0.00
22.00	**5.10**	**5.10**	0.00

Stage-Area-Storage for Pond CB10: CB10

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
19.50	**0**	20.56	0	21.62	0
19.52	0	20.58	0	21.64	0
19.54	0	20.60	0	21.66	0
19.56	0	20.62	0	21.68	0
19.58	0	20.64	0	21.70	0
19.60	0	20.66	0	21.72	0
19.62	0	20.68	0	21.74	0
19.64	0	20.70	0	21.76	0
19.66	0	20.72	0	21.78	0
19.68	0	20.74	0	21.80	0
19.70	0	20.76	0	21.82	0
19.72	0	20.78	0	21.84	0
19.74	0	20.80	0	21.86	0
19.76	0	20.82	0	21.88	0
19.78	0	20.84	0	21.90	0
19.80	0	20.86	0	21.92	0
19.82	0	20.88	0	21.94	0
19.84	0	20.90	0	21.96	0
19.86	0	20.92	0	21.98	0
19.88	0	20.94	0	22.00	0
19.90	0	20.96	0		
19.92	0	20.98	0		
19.94	0	21.00	0		
19.96	0	21.02	0		
19.98	0	21.04	0		
20.00	0	21.06	0		
20.02	0	21.08	0		
20.04	0	21.10	0		
20.06	0	21.12	0		
20.08	0	21.14	0		
20.10	0	21.16	0		
20.12	0	21.18	0		
20.14	0	21.20	0		
20.16	0	21.22	0		
20.18	0	21.24	0		
20.20	0	21.26	0		
20.22	0	21.28	0		
20.24	0	21.30	0		
20.26	0	21.32	0		
20.28	0	21.34	0		
20.30	0	21.36	0		
20.32	0	21.38	0		
20.34	0	21.40	0		
20.36	0	21.42	0		
20.38	0	21.44	0		
20.40	0	21.46	0		
20.42	0	21.48	0		
20.44	0	21.50	0		
20.46	0	21.52	0		
20.48	0	21.54	0		
20.50	0	21.56	0		
20.52	0	21.58	0		
20.54	0	21.60	0		

Summary for Pond CB13: CB13

Inflow Area = 9,340 sf, 71.57% Impervious, Inflow Depth > 1.87" for 1-Year event
Inflow = 0.47 cfs @ 12.07 hrs, Volume= 1,452 cf
Outflow = 0.47 cfs @ 12.07 hrs, Volume= 1,452 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.47 cfs @ 12.07 hrs, Volume= 1,452 cf
Routed to Pond DMH11 : DMH11
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3

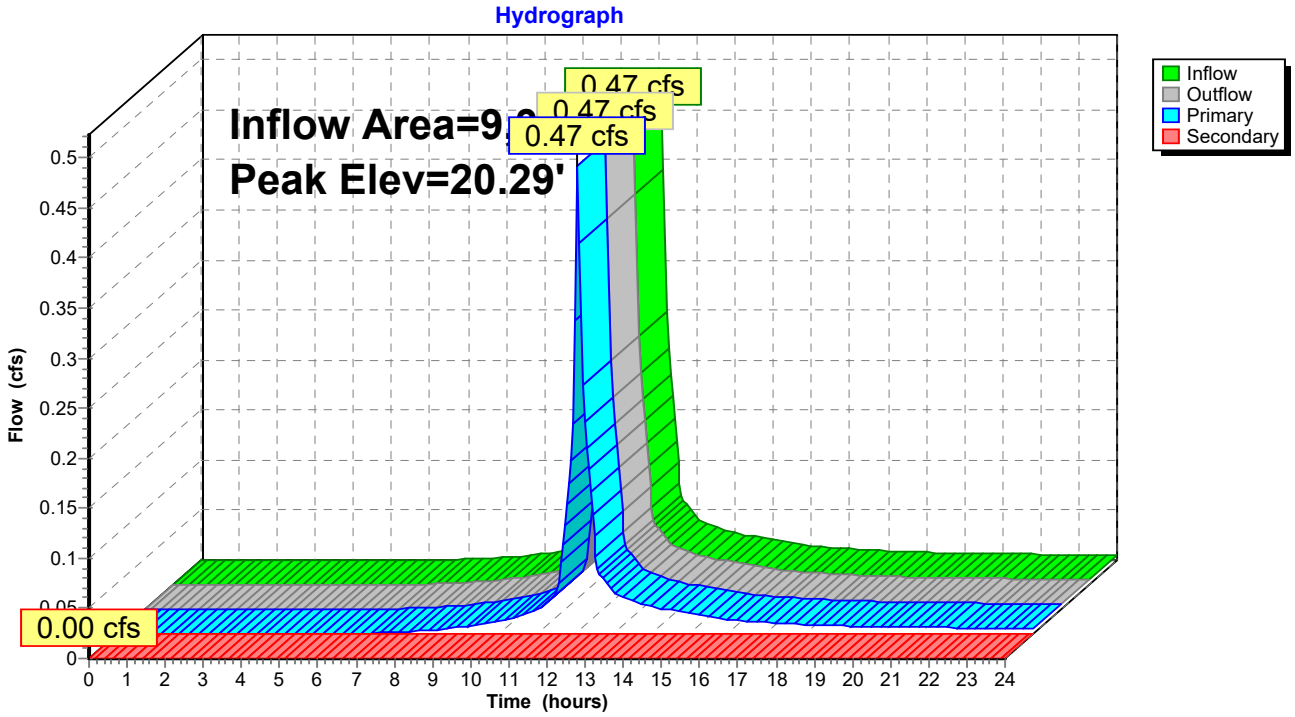
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 20.29' @ 12.07 hrs
Flood Elev= 22.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	19.90'	**12.0" Round Culvert** L= 12.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 19.90' / 19.80' S= 0.0083 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	22.00'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.45 cfs @ 12.07 hrs HW=20.28' (Free Discharge)
1=Culvert (Barrel Controls 0.45 cfs @ 2.42 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=19.90' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB13: CB13



Stage-Discharge for Pond CB13: CB13

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
19.90	0.00	0.00	**0.00**	20.96	2.43	2.43	0.00
19.92	0.00	0.00	0.00	20.98	2.49	2.49	0.00
19.94	0.01	0.01	0.00	21.00	2.55	2.55	0.00
19.96	0.01	0.01	0.00	21.02	2.60	2.60	0.00
19.98	0.02	0.02	0.00	21.04	2.66	2.66	0.00
20.00	0.03	0.03	0.00	21.06	2.71	2.71	0.00
20.02	0.05	0.05	0.00	21.08	2.77	2.77	0.00
20.04	0.07	0.07	0.00	21.10	2.82	2.82	0.00
20.06	0.09	0.09	0.00	21.12	2.87	2.87	0.00
20.08	0.11	0.11	0.00	21.14	2.91	2.91	0.00
20.10	0.13	0.13	0.00	21.16	2.95	2.95	0.00
20.12	0.16	0.16	0.00	21.18	2.99	2.99	0.00
20.14	0.19	0.19	0.00	21.20	3.02	3.02	0.00
20.16	0.22	0.22	0.00	21.22	3.04	3.04	0.00
20.18	0.25	0.25	0.00	21.24	3.05	3.05	0.00
20.20	0.29	0.29	0.00	21.26	3.12	3.12	0.00
20.22	0.33	0.33	0.00	21.28	3.19	3.19	0.00
20.24	0.36	0.36	0.00	21.30	3.25	3.25	0.00
20.26	0.40	0.40	0.00	21.32	3.32	3.32	0.00
20.28	0.44	0.44	0.00	21.34	3.38	3.38	0.00
20.30	0.49	0.49	0.00	21.36	3.44	3.44	0.00
20.32	0.53	0.53	0.00	21.38	3.50	3.50	0.00
20.34	0.58	0.58	0.00	21.40	3.56	3.56	0.00
20.36	0.63	0.63	0.00	21.42	3.62	3.62	0.00
20.38	0.68	0.68	0.00	21.44	3.68	3.68	0.00
20.40	0.73	0.73	0.00	21.46	3.74	3.74	0.00
20.42	0.78	0.78	0.00	21.48	3.79	3.79	0.00
20.44	0.83	0.83	0.00	21.50	3.85	3.85	0.00
20.46	0.88	0.88	0.00	21.52	3.90	3.90	0.00
20.48	0.94	0.94	0.00	21.54	3.96	3.96	0.00
20.50	0.99	0.99	0.00	21.56	4.01	4.01	0.00
20.52	1.05	1.05	0.00	21.58	4.06	4.06	0.00
20.54	1.11	1.11	0.00	21.60	4.12	4.12	0.00
20.56	1.17	1.17	0.00	21.62	4.17	4.17	0.00
20.58	1.23	1.23	0.00	21.64	4.21	4.21	0.00
20.60	1.29	1.29	0.00	21.66	4.24	4.24	0.00
20.62	1.35	1.35	0.00	21.68	4.28	4.28	0.00
20.64	1.41	1.41	0.00	21.70	4.31	4.31	0.00
20.66	1.47	1.47	0.00	21.72	4.34	4.34	0.00
20.68	1.54	1.54	0.00	21.74	4.38	4.38	0.00
20.70	1.60	1.60	0.00	21.76	4.41	4.41	0.00
20.72	1.66	1.66	0.00	21.78	4.44	4.44	0.00
20.74	1.73	1.73	0.00	21.80	4.47	4.47	0.00
20.76	1.79	1.79	0.00	21.82	4.51	4.51	0.00
20.78	1.86	1.86	0.00	21.84	4.54	4.54	0.00
20.80	1.92	1.92	0.00	21.86	4.57	4.57	0.00
20.82	1.98	1.98	0.00	21.88	4.60	4.60	0.00
20.84	2.05	2.05	0.00	21.90	4.63	4.63	0.00
20.86	2.11	2.11	0.00	21.92	4.66	4.66	0.00
20.88	2.18	2.18	0.00	21.94	4.69	4.69	0.00
20.90	2.24	2.24	0.00	21.96	4.72	4.72	0.00
20.92	2.30	2.30	0.00	21.98	4.75	4.75	0.00
20.94	2.36	2.36	0.00	22.00	**4.78**	**4.78**	0.00

Stage-Area-Storage for Pond CB13: CB13

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
19.90	**0**	20.96	0
19.92	0	20.98	0
19.94	0	21.00	0
19.96	0	21.02	0
19.98	0	21.04	0
20.00	0	21.06	0
20.02	0	21.08	0
20.04	0	21.10	0
20.06	0	21.12	0
20.08	0	21.14	0
20.10	0	21.16	0
20.12	0	21.18	0
20.14	0	21.20	0
20.16	0	21.22	0
20.18	0	21.24	0
20.20	0	21.26	0
20.22	0	21.28	0
20.24	0	21.30	0
20.26	0	21.32	0
20.28	0	21.34	0
20.30	0	21.36	0
20.32	0	21.38	0
20.34	0	21.40	0
20.36	0	21.42	0
20.38	0	21.44	0
20.40	0	21.46	0
20.42	0	21.48	0
20.44	0	21.50	0
20.46	0	21.52	0
20.48	0	21.54	0
20.50	0	21.56	0
20.52	0	21.58	0
20.54	0	21.60	0
20.56	0	21.62	0
20.58	0	21.64	0
20.60	0	21.66	0
20.62	0	21.68	0
20.64	0	21.70	0
20.66	0	21.72	0
20.68	0	21.74	0
20.70	0	21.76	0
20.72	0	21.78	0
20.74	0	21.80	0
20.76	0	21.82	0
20.78	0	21.84	0
20.80	0	21.86	0
20.82	0	21.88	0
20.84	0	21.90	0
20.86	0	21.92	0
20.88	0	21.94	0
20.90	0	21.96	0
20.92	0	21.98	0
20.94	0	22.00	0

Summary for Pond CB4: CB4

Inflow Area = 4,243 sf, 86.57% Impervious, Inflow Depth > 2.23" for 1-Year event
Inflow = 0.25 cfs @ 12.07 hrs, Volume= 790 cf
Outflow = 0.25 cfs @ 12.07 hrs, Volume= 790 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.25 cfs @ 12.07 hrs, Volume= 790 cf
Routed to Pond DMH2 : DMH2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond CB13 : CB13

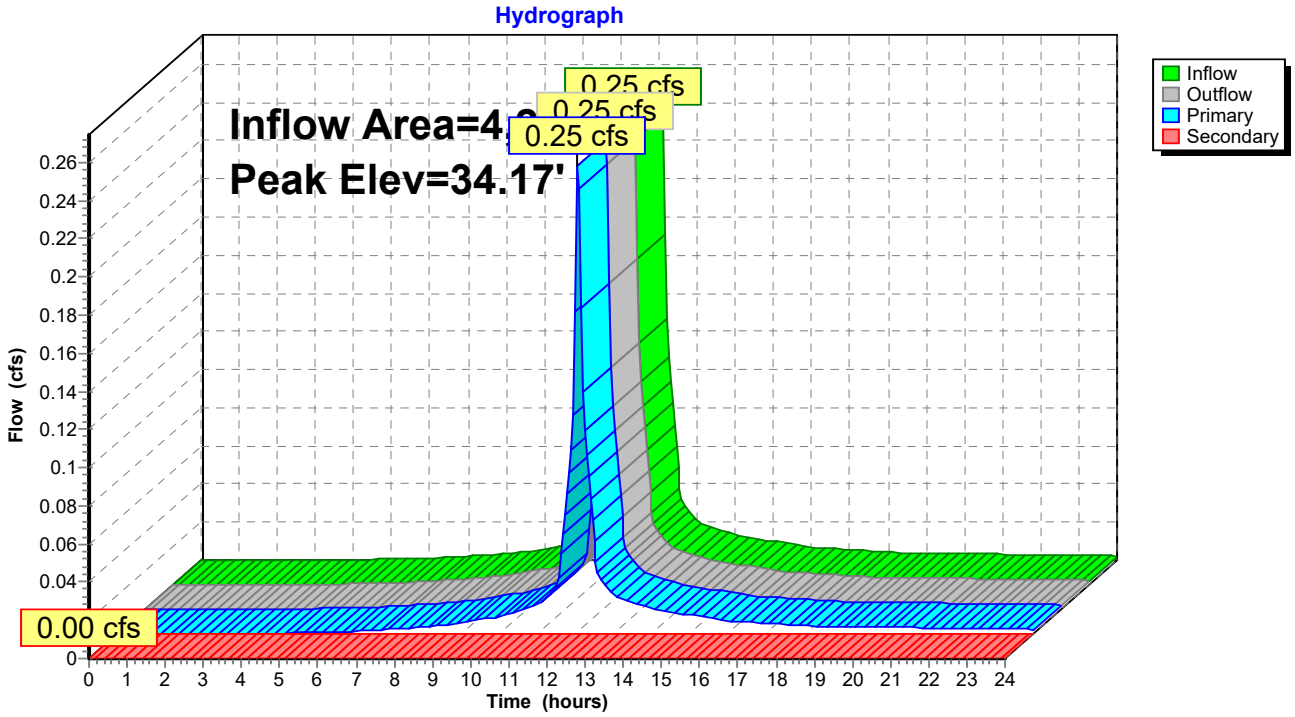
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 34.17' @ 12.07 hrs
Flood Elev= 37.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	33.90'	**12.0" Round Culvert** L= 10.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 33.90' / 33.80' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	37.00'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.24 cfs @ 12.07 hrs HW=34.16' (Free Discharge)
1=Culvert (Barrel Controls 0.24 cfs @ 2.14 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=33.90' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB4: CB4


Hydrograph
Inflow Area=4.
Peak Elev=34.17'
0.25 cfs
0.25 cfs
0.25 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
0 0.04 0.06 0.08 0.1 0.12 0.14 0.16 0.18 0.2 0.22 0.24 0.26
Time (hours)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Stage-Discharge for Pond CB4: CB4

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
33.90	0.00	0.00	**0.00**
33.95	0.01	0.01	0.00
34.00	0.04	0.04	0.00
34.05	0.08	0.08	0.00
34.10	0.14	0.14	0.00
34.15	0.21	0.21	0.00
34.20	0.30	0.30	0.00
34.25	0.39	0.39	0.00
34.30	0.50	0.50	0.00
34.35	0.62	0.62	0.00
34.40	0.74	0.74	0.00
34.45	0.87	0.87	0.00
34.50	1.01	1.01	0.00
34.55	1.16	1.16	0.00
34.60	1.31	1.31	0.00
34.65	1.47	1.47	0.00
34.70	1.62	1.62	0.00
34.75	1.79	1.79	0.00
34.80	1.95	1.95	0.00
34.85	2.11	2.11	0.00
34.90	2.27	2.27	0.00
34.95	2.43	2.43	0.00
35.00	2.58	2.58	0.00
35.05	2.72	2.72	0.00
35.10	2.86	2.86	0.00
35.15	2.97	2.97	0.00
35.20	3.06	3.06	0.00
35.25	3.14	3.14	0.00
35.30	3.31	3.31	0.00
35.35	3.47	3.47	0.00
35.40	3.62	3.62	0.00
35.45	3.77	3.77	0.00
35.50	3.92	3.92	0.00
35.55	4.05	4.05	0.00
35.60	4.14	4.14	0.00
35.65	4.23	4.23	0.00
35.70	4.31	4.31	0.00
35.75	4.39	4.39	0.00
35.80	4.47	4.47	0.00
35.85	4.55	4.55	0.00
35.90	4.63	4.63	0.00
35.95	4.71	4.71	0.00
36.00	4.78	4.78	0.00
36.05	4.86	4.86	0.00
36.10	4.93	4.93	0.00
36.15	5.00	5.00	0.00
36.20	5.07	5.07	0.00
36.25	5.14	5.14	0.00
36.30	5.21	5.21	0.00
36.35	5.28	5.28	0.00
36.40	5.35	5.35	0.00
36.45	5.41	5.41	0.00
36.50	5.48	5.48	0.00
36.55	5.55	5.55	0.00
36.60	5.61	5.61	0.00
36.65	5.67	5.67	0.00
36.70	5.74	5.74	0.00
36.75	5.80	5.80	0.00
36.80	5.86	5.86	0.00
36.85	5.92	5.92	0.00
36.90	5.98	5.98	0.00
36.95	6.04	6.04	0.00
37.00	**6.10**	**6.10**	0.00

Stage-Area-Storage for Pond CB4: CB4

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
33.90	**0**	34.96	0	36.02	0
33.92	0	34.98	0	36.04	0
33.94	0	35.00	0	36.06	0
33.96	0	35.02	0	36.08	0
33.98	0	35.04	0	36.10	0
34.00	0	35.06	0	36.12	0
34.02	0	35.08	0	36.14	0
34.04	0	35.10	0	36.16	0
34.06	0	35.12	0	36.18	0
34.08	0	35.14	0	36.20	0
34.10	0	35.16	0	36.22	0
34.12	0	35.18	0	36.24	0
34.14	0	35.20	0	36.26	0
34.16	0	35.22	0	36.28	0
34.18	0	35.24	0	36.30	0
34.20	0	35.26	0	36.32	0
34.22	0	35.28	0	36.34	0
34.24	0	35.30	0	36.36	0
34.26	0	35.32	0	36.38	0
34.28	0	35.34	0	36.40	0
34.30	0	35.36	0	36.42	0
34.32	0	35.38	0	36.44	0
34.34	0	35.40	0	36.46	0
34.36	0	35.42	0	36.48	0
34.38	0	35.44	0	36.50	0
34.40	0	35.46	0	36.52	0
34.42	0	35.48	0	36.54	0
34.44	0	35.50	0	36.56	0
34.46	0	35.52	0	36.58	0
34.48	0	35.54	0	36.60	0
34.50	0	35.56	0	36.62	0
34.52	0	35.58	0	36.64	0
34.54	0	35.60	0	36.66	0
34.56	0	35.62	0	36.68	0
34.58	0	35.64	0	36.70	0
34.60	0	35.66	0	36.72	0
34.62	0	35.68	0	36.74	0
34.64	0	35.70	0	36.76	0
34.66	0	35.72	0	36.78	0
34.68	0	35.74	0	36.80	0
34.70	0	35.76	0	36.82	0
34.72	0	35.78	0	36.84	0
34.74	0	35.80	0	36.86	0
34.76	0	35.82	0	36.88	0
34.78	0	35.84	0	36.90	0
34.80	0	35.86	0	36.92	0
34.82	0	35.88	0	36.94	0
34.84	0	35.90	0	36.96	0
34.86	0	35.92	0	36.98	0
34.88	0	35.94	0	37.00	0
34.90	0	35.96	0		
34.92	0	35.98	0		
34.94	0	36.00	0		

Summary for Pond CB5: CB5

Inflow Area = 2,714 sf, 96.35% Impervious, Inflow Depth > 2.44" for 1-Year event
Inflow = 0.17 cfs @ 12.07 hrs, Volume= 552 cf
Outflow = 0.17 cfs @ 12.07 hrs, Volume= 552 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.17 cfs @ 12.07 hrs, Volume= 552 cf
Routed to Pond DMH2 : DMH2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond CB10 : CB10

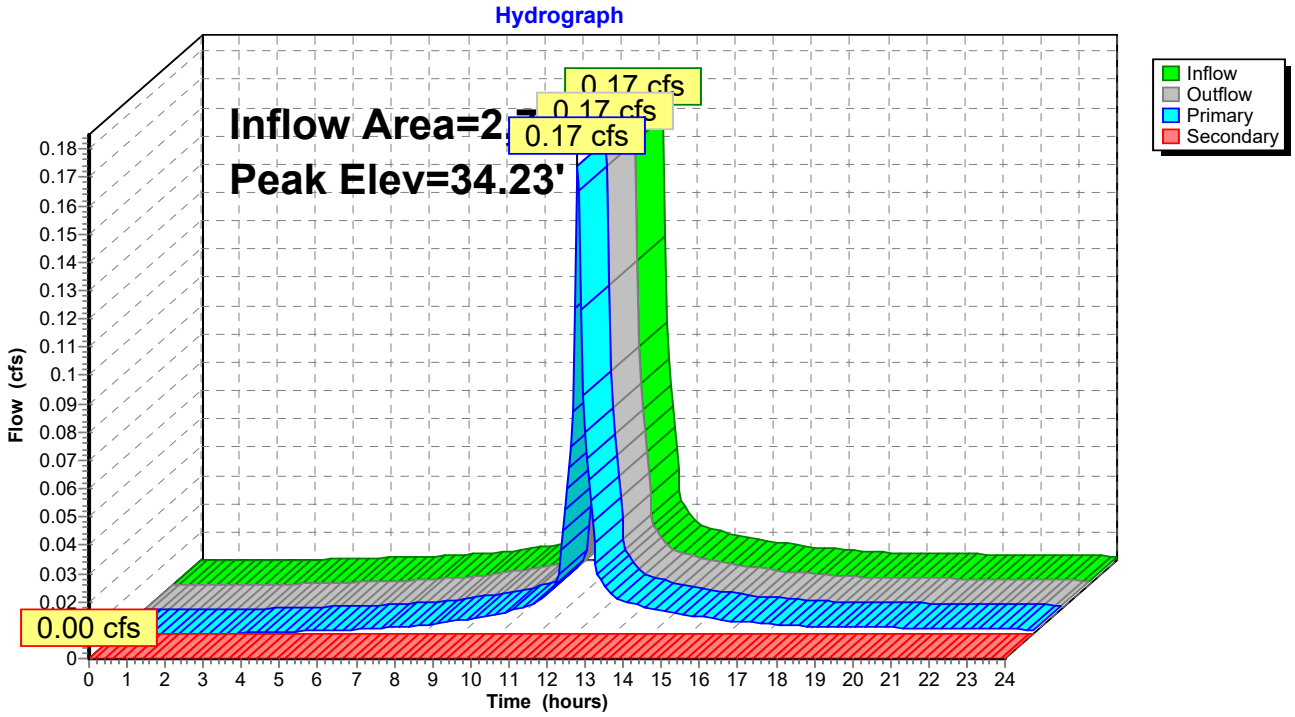
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 34.23' @ 12.07 hrs
Flood Elev= 37.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	34.00'	**12.0" Round Culvert** L= 35.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 34.00' / 33.80' S= 0.0057 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	37.50'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.16 cfs @ 12.07 hrs HW=34.23' (Free Discharge)
1=Culvert (Barrel Controls 0.16 cfs @ 1.81 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=34.00' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB5: CB5


Hydrograph
Inflow Area=2.
Peak Elev=34.23'
0.17 cfs
0.17 cfs
0.17 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)

Stage-Discharge for Pond CB5: CB5

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
34.00	0.00	0.00	**0.00**
34.05	0.01	0.01	0.00
34.10	0.03	0.03	0.00
34.15	0.07	0.07	0.00
34.20	0.13	0.13	0.00
34.25	0.19	0.19	0.00
34.30	0.28	0.28	0.00
34.35	0.37	0.37	0.00
34.40	0.48	0.48	0.00
34.45	0.59	0.59	0.00
34.50	0.72	0.72	0.00
34.55	0.85	0.85	0.00
34.60	0.99	0.99	0.00
34.65	1.13	1.13	0.00
34.70	1.28	1.28	0.00
34.75	1.44	1.44	0.00
34.80	1.59	1.59	0.00
34.85	1.75	1.75	0.00
34.90	1.91	1.91	0.00
34.95	2.06	2.06	0.00
35.00	2.22	2.22	0.00
35.05	2.36	2.36	0.00
35.10	2.50	2.50	0.00
35.15	2.63	2.63	0.00
35.20	2.74	2.74	0.00
35.25	2.84	2.84	0.00
35.30	2.89	2.89	0.00
35.35	2.90	2.90	0.00
35.40	3.03	3.03	0.00
35.45	3.15	3.15	0.00
35.50	3.27	3.27	0.00
35.55	3.39	3.39	0.00
35.60	3.50	3.50	0.00
35.65	3.60	3.60	0.00
35.70	3.71	3.71	0.00
35.75	3.81	3.81	0.00
35.80	3.91	3.91	0.00
35.85	4.01	4.01	0.00
35.90	4.10	4.10	0.00
35.95	4.19	4.19	0.00
36.00	4.28	4.28	0.00
36.05	4.37	4.37	0.00
36.10	4.46	4.46	0.00
36.15	4.54	4.54	0.00
36.20	4.63	4.63	0.00
36.25	4.71	4.71	0.00
36.30	4.79	4.79	0.00
36.35	4.87	4.87	0.00
36.40	4.95	4.95	0.00
36.45	5.02	5.02	0.00
36.50	5.10	5.10	0.00
36.55	5.17	5.17	0.00
36.60	5.25	5.25	0.00
36.65	5.32	5.32	0.00
36.70	5.39	5.39	0.00
36.75	5.46	5.46	0.00
36.80	5.53	5.53	0.00
36.85	5.60	5.60	0.00
36.90	5.67	5.67	0.00
36.95	5.73	5.73	0.00
37.00	5.80	5.80	0.00
37.05	5.86	5.86	0.00
37.10	5.93	5.93	0.00
37.15	5.99	5.99	0.00
37.20	6.06	6.06	0.00
37.25	6.12	6.12	0.00
37.30	6.18	6.18	0.00
37.35	6.24	6.24	0.00
37.40	6.30	6.30	0.00
37.45	6.36	6.36	0.00
37.50	**6.42**	**6.42**	0.00

Stage-Area-Storage for Pond CB5: CB5

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
34.00	**0**	36.65	0
34.05	0	36.70	0
34.10	0	36.75	0
34.15	0	36.80	0
34.20	0	36.85	0
34.25	0	36.90	0
34.30	0	36.95	0
34.35	0	37.00	0
34.40	0	37.05	0
34.45	0	37.10	0
34.50	0	37.15	0
34.55	0	37.20	0
34.60	0	37.25	0
34.65	0	37.30	0
34.70	0	37.35	0
34.75	0	37.40	0
34.80	0	37.45	0
34.85	0	37.50	0
34.90	0		
34.95	0		
35.00	0		
35.05	0		
35.10	0		
35.15	0		
35.20	0		
35.25	0		
35.30	0		
35.35	0		
35.40	0		
35.45	0		
35.50	0		
35.55	0		
35.60	0		
35.65	0		
35.70	0		
35.75	0		
35.80	0		
35.85	0		
35.90	0		
35.95	0		
36.00	0		
36.05	0		
36.10	0		
36.15	0		
36.20	0		
36.25	0		
36.30	0		
36.35	0		
36.40	0		
36.45	0		
36.50	0		
36.55	0		
36.60	0		

Summary for Pond CB6: CB6

Inflow Area = 5,633 sf, 67.30% Impervious, Inflow Depth > 1.78" for 1-Year event
Inflow = 0.27 cfs @ 12.08 hrs, Volume= 837 cf
Outflow = 0.27 cfs @ 12.08 hrs, Volume= 837 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.27 cfs @ 12.08 hrs, Volume= 837 cf
Routed to Pond DMH7 : DMH7
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond CB4 : CB4

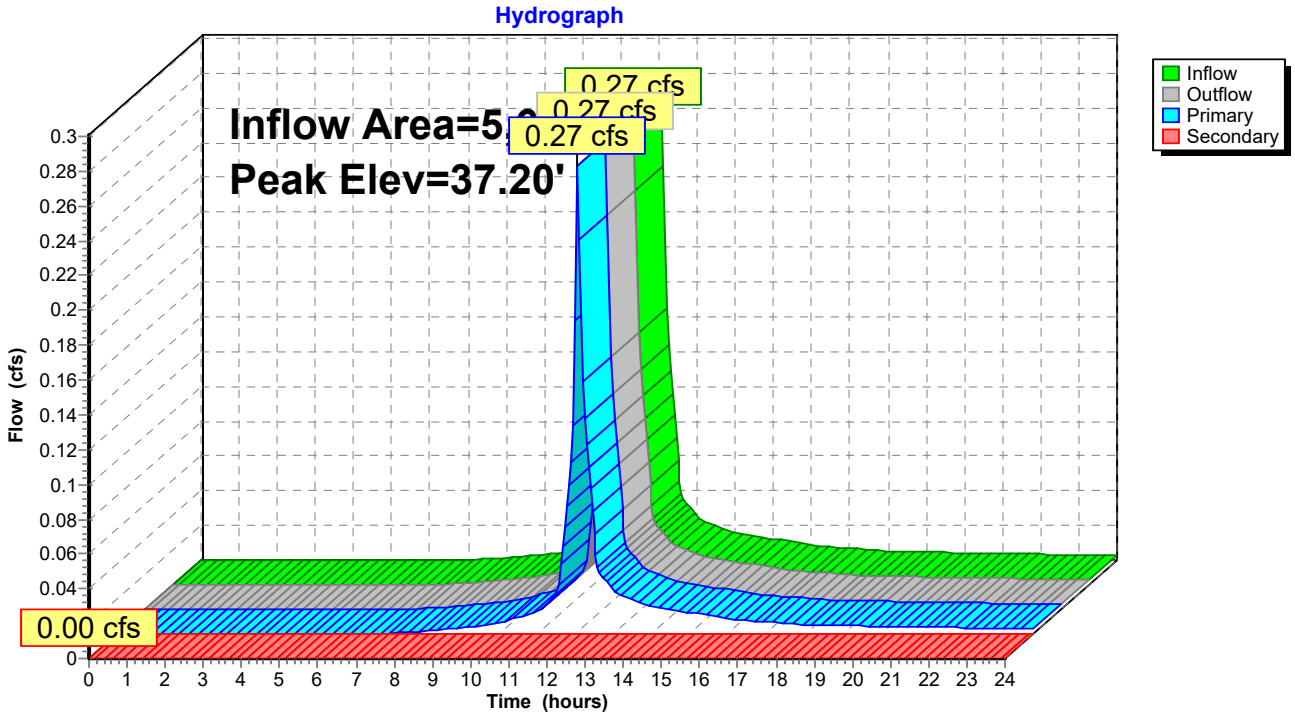
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 37.20' @ 12.08 hrs
Flood Elev= 39.42'

Device	Routing	Invert	Outlet Devices
#1	Primary	36.90'	**12.0" Round Culvert** L= 16.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 36.90' / 36.80' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	39.42'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 24.0" x 24.0" Grate (69% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.26 cfs @ 12.08 hrs HW=37.19' (Free Discharge)
1=Culvert (Barrel Controls 0.26 cfs @ 2.04 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=36.90' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB6: CB6


Hydrograph
Inflow Area=5.
Peak Elev=37.20'
0.27 cfs
0.27 cfs
0.27 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0
0.04
0.08
0.12
0.16
0.2
0.24
0.28
0.3
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Stage-Discharge for Pond CB6: CB6

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
36.90	0.00	0.00	**0.00**
36.95	0.01	0.01	0.00
37.00	0.03	0.03	0.00
37.05	0.07	0.07	0.00
37.10	0.12	0.12	0.00
37.15	0.19	0.19	0.00
37.20	0.27	0.27	0.00
37.25	0.36	0.36	0.00
37.30	0.47	0.47	0.00
37.35	0.58	0.58	0.00
37.40	0.70	0.70	0.00
37.45	0.83	0.83	0.00
37.50	0.96	0.96	0.00
37.55	1.10	1.10	0.00
37.60	1.25	1.25	0.00
37.65	1.40	1.40	0.00
37.70	1.55	1.55	0.00
37.75	1.71	1.71	0.00
37.80	1.87	1.87	0.00
37.85	2.03	2.03	0.00
37.90	2.18	2.18	0.00
37.95	2.33	2.33	0.00
38.00	2.48	2.48	0.00
38.05	2.62	2.62	0.00
38.10	2.74	2.74	0.00
38.15	2.85	2.85	0.00
38.20	2.93	2.93	0.00
38.25	2.99	2.99	0.00
38.30	3.15	3.15	0.00
38.35	3.30	3.30	0.00
38.40	3.45	3.45	0.00
38.45	3.59	3.59	0.00
38.50	3.73	3.73	0.00
38.55	3.86	3.86	0.00
38.60	3.98	3.98	0.00
38.65	4.11	4.11	0.00
38.70	4.23	4.23	0.00
38.75	4.34	4.34	0.00
38.80	4.45	4.45	0.00
38.85	4.55	4.55	0.00
38.90	4.63	4.63	0.00
38.95	4.71	4.71	0.00
39.00	4.78	4.78	0.00
39.05	4.86	4.86	0.00
39.10	4.93	4.93	0.00
39.15	5.00	5.00	0.00
39.20	5.07	5.07	0.00
39.25	5.14	5.14	0.00
39.30	5.21	5.21	0.00
39.35	5.28	5.28	0.00
39.40	**5.35**	**5.35**	0.00

Stage-Area-Storage for Pond CB6: CB6

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
36.90	**0**	37.96	0	39.02	0
36.92	0	37.98	0	39.04	0
36.94	0	38.00	0	39.06	0
36.96	0	38.02	0	39.08	0
36.98	0	38.04	0	39.10	0
37.00	0	38.06	0	39.12	0
37.02	0	38.08	0	39.14	0
37.04	0	38.10	0	39.16	0
37.06	0	38.12	0	39.18	0
37.08	0	38.14	0	39.20	0
37.10	0	38.16	0	39.22	0
37.12	0	38.18	0	39.24	0
37.14	0	38.20	0	39.26	0
37.16	0	38.22	0	39.28	0
37.18	0	38.24	0	39.30	0
37.20	0	38.26	0	39.32	0
37.22	0	38.28	0	39.34	0
37.24	0	38.30	0	39.36	0
37.26	0	38.32	0	39.38	0
37.28	0	38.34	0	39.40	0
37.30	0	38.36	0	39.42	0
37.32	0	38.38	0		
37.34	0	38.40	0		
37.36	0	38.42	0		
37.38	0	38.44	0		
37.40	0	38.46	0		
37.42	0	38.48	0		
37.44	0	38.50	0		
37.46	0	38.52	0		
37.48	0	38.54	0		
37.50	0	38.56	0		
37.52	0	38.58	0		
37.54	0	38.60	0		
37.56	0	38.62	0		
37.58	0	38.64	0		
37.60	0	38.66	0		
37.62	0	38.68	0		
37.64	0	38.70	0		
37.66	0	38.72	0		
37.68	0	38.74	0		
37.70	0	38.76	0		
37.72	0	38.78	0		
37.74	0	38.80	0		
37.76	0	38.82	0		
37.78	0	38.84	0		
37.80	0	38.86	0		
37.82	0	38.88	0		
37.84	0	38.90	0		
37.86	0	38.92	0		
37.88	0	38.94	0		
37.90	0	38.96	0		
37.92	0	38.98	0		
37.94	0	39.00	0		

Summary for Pond CB9: CB9

Inflow Area = 5,351 sf, 75.91% Impervious, Inflow Depth > 1.95" for 1-Year event
Inflow = 0.28 cfs @ 12.07 hrs, Volume= 871 cf
Outflow = 0.28 cfs @ 12.07 hrs, Volume= 871 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.28 cfs @ 12.07 hrs, Volume= 871 cf
Routed to Pond DMH7 : DMH7
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond CB4 : CB4

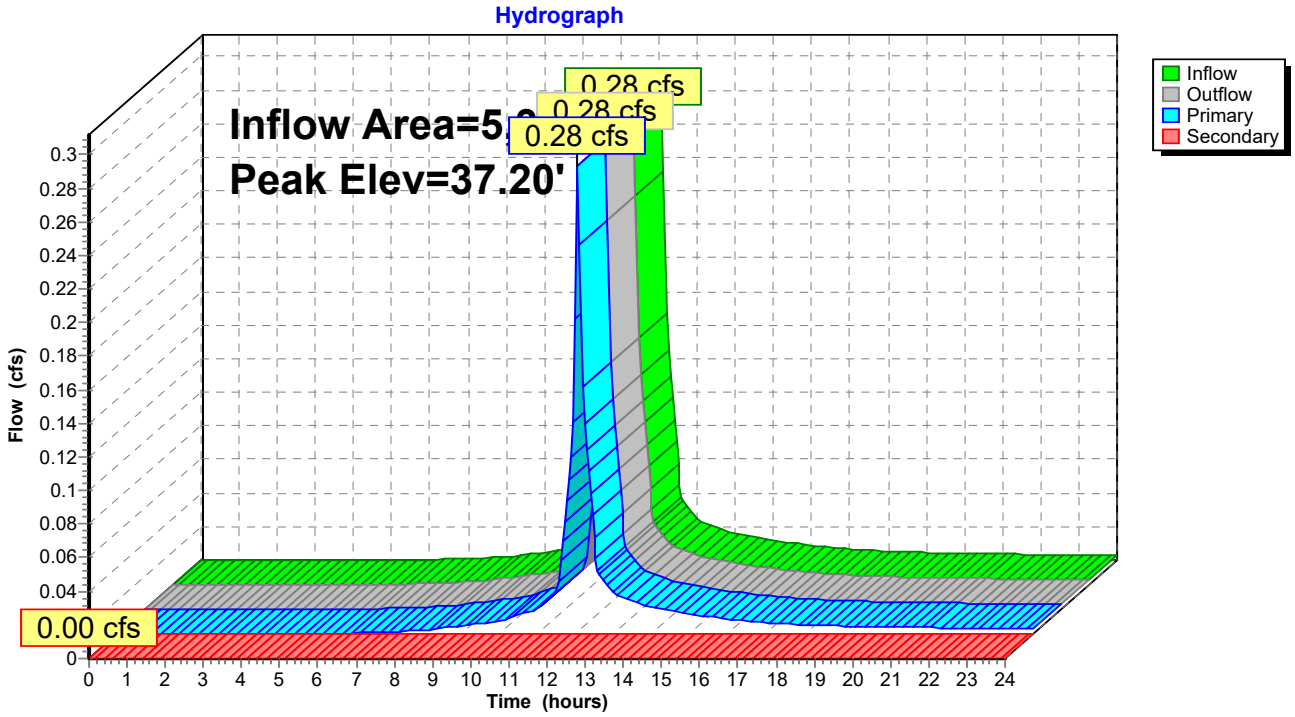
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 37.20' @ 12.07 hrs
Flood Elev= 39.42'

Device	Routing	Invert	Outlet Devices
#1	Primary	36.90'	**12.0" Round Culvert** L= 16.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 36.90' / 36.80' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	39.42'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.27 cfs @ 12.07 hrs HW=37.20' (Free Discharge)
1=Culvert (Barrel Controls 0.27 cfs @ 2.05 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=36.90' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB9: CB9


Hydrograph
Inflow Area=5.
Peak Elev=37.20'
0.28 cfs
0.28 cfs
0.28 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0
0.04
0.06
0.08
0.1
0.12
0.14
0.16
0.18
0.2
0.22
0.24
0.26
0.28
0.3
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Stage-Discharge for Pond CB9: CB9

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
36.90	0.00	0.00	**0.00**
36.95	0.01	0.01	0.00
37.00	0.03	0.03	0.00
37.05	0.07	0.07	0.00
37.10	0.12	0.12	0.00
37.15	0.19	0.19	0.00
37.20	0.27	0.27	0.00
37.25	0.36	0.36	0.00
37.30	0.47	0.47	0.00
37.35	0.58	0.58	0.00
37.40	0.70	0.70	0.00
37.45	0.83	0.83	0.00
37.50	0.96	0.96	0.00
37.55	1.10	1.10	0.00
37.60	1.25	1.25	0.00
37.65	1.40	1.40	0.00
37.70	1.55	1.55	0.00
37.75	1.71	1.71	0.00
37.80	1.87	1.87	0.00
37.85	2.03	2.03	0.00
37.90	2.18	2.18	0.00
37.95	2.33	2.33	0.00
38.00	2.48	2.48	0.00
38.05	2.62	2.62	0.00
38.10	2.74	2.74	0.00
38.15	2.85	2.85	0.00
38.20	2.93	2.93	0.00
38.25	2.99	2.99	0.00
38.30	3.15	3.15	0.00
38.35	3.30	3.30	0.00
38.40	3.45	3.45	0.00
38.45	3.59	3.59	0.00
38.50	3.73	3.73	0.00
38.55	3.86	3.86	0.00
38.60	3.98	3.98	0.00
38.65	4.11	4.11	0.00
38.70	4.23	4.23	0.00
38.75	4.34	4.34	0.00
38.80	4.45	4.45	0.00
38.85	4.55	4.55	0.00
38.90	4.63	4.63	0.00
38.95	4.71	4.71	0.00
39.00	4.78	4.78	0.00
39.05	4.86	4.86	0.00
39.10	4.93	4.93	0.00
39.15	5.00	5.00	0.00
39.20	5.07	5.07	0.00
39.25	5.14	5.14	0.00
39.30	5.21	5.21	0.00
39.35	5.28	5.28	0.00
39.40	**5.35**	**5.35**	0.00

Stage-Area-Storage for Pond CB9: CB9

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
36.90	**0**	37.96	0	39.02	0
36.92	0	37.98	0	39.04	0
36.94	0	38.00	0	39.06	0
36.96	0	38.02	0	39.08	0
36.98	0	38.04	0	39.10	0
37.00	0	38.06	0	39.12	0
37.02	0	38.08	0	39.14	0
37.04	0	38.10	0	39.16	0
37.06	0	38.12	0	39.18	0
37.08	0	38.14	0	39.20	0
37.10	0	38.16	0	39.22	0
37.12	0	38.18	0	39.24	0
37.14	0	38.20	0	39.26	0
37.16	0	38.22	0	39.28	0
37.18	0	38.24	0	39.30	0
37.20	0	38.26	0	39.32	0
37.22	0	38.28	0	39.34	0
37.24	0	38.30	0	39.36	0
37.26	0	38.32	0	39.38	0
37.28	0	38.34	0	39.40	0
37.30	0	38.36	0	39.42	0
37.32	0	38.38	0		
37.34	0	38.40	0		
37.36	0	38.42	0		
37.38	0	38.44	0		
37.40	0	38.46	0		
37.42	0	38.48	0		
37.44	0	38.50	0		
37.46	0	38.52	0		
37.48	0	38.54	0		
37.50	0	38.56	0		
37.52	0	38.58	0		
37.54	0	38.60	0		
37.56	0	38.62	0		
37.58	0	38.64	0		
37.60	0	38.66	0		
37.62	0	38.68	0		
37.64	0	38.70	0		
37.66	0	38.72	0		
37.68	0	38.74	0		
37.70	0	38.76	0		
37.72	0	38.78	0		
37.74	0	38.80	0		
37.76	0	38.82	0		
37.78	0	38.84	0		
37.80	0	38.86	0		
37.82	0	38.88	0		
37.84	0	38.90	0		
37.86	0	38.92	0		
37.88	0	38.94	0		
37.90	0	38.96	0		
37.92	0	38.98	0		
37.94	0	39.00	0		

Summary for Pond DMH11: DMH11

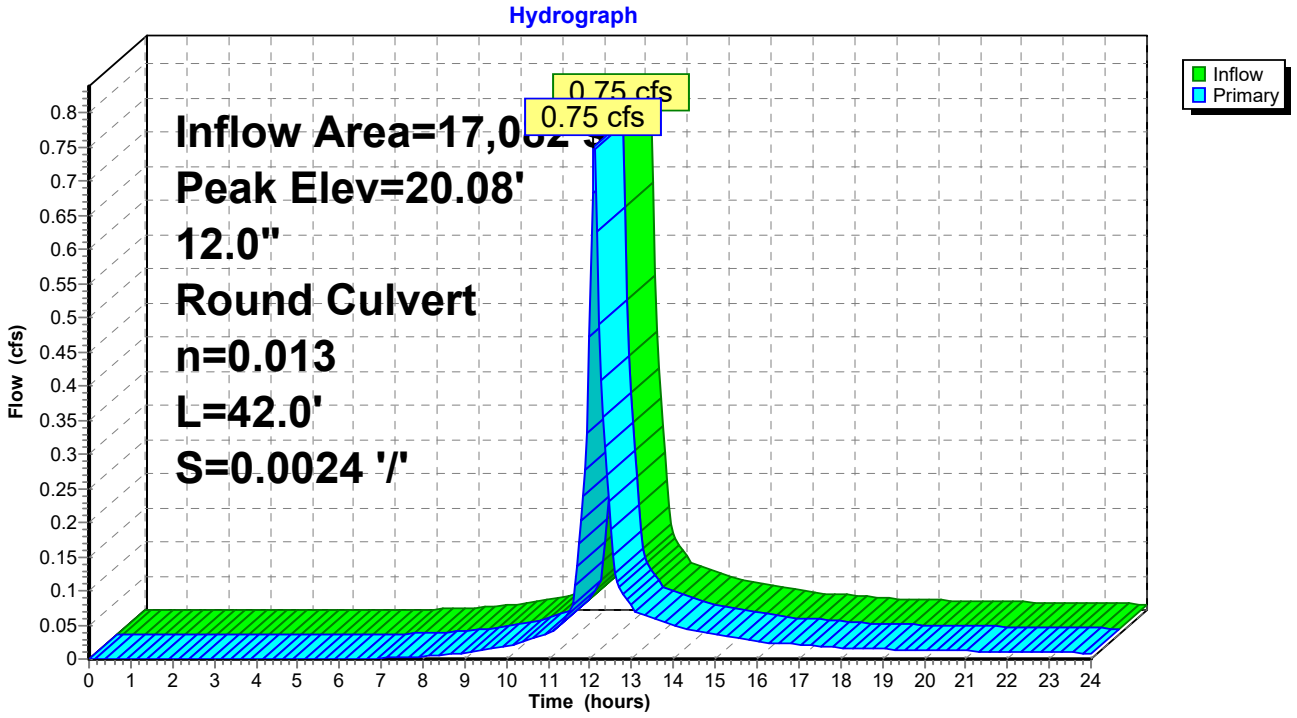
Inflow Area = 17,082 sf, 65.92% Impervious, Inflow Depth > 1.76" for 1-Year event
Inflow = 0.75 cfs @ 12.09 hrs, Volume= 2,499 cf
Outflow = 0.75 cfs @ 12.09 hrs, Volume= 2,499 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.75 cfs @ 12.09 hrs, Volume= 2,499 cf
Routed to Pond SSD3 : SUBSURFACE DRAINAGE AREA #3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 20.08' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	19.50'	**12.0" Round Culvert** L= 42.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 19.50' / 19.40' S= 0.0024 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.74 cfs @ 12.09 hrs HW=20.07' (Free Discharge)
1=Culvert (Barrel Controls 0.74 cfs @ 2.28 fps)

Pond DMH11: DMH11



Stage-Discharge for Pond DMH11: DMH11

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
19.50	0.00	20.03	0.64
19.51	0.00	20.04	0.66
19.52	0.00	20.05	0.68
19.53	0.00	20.06	0.71
19.54	0.00	20.07	0.73
19.55	0.00	20.08	0.75
19.56	0.01	20.09	0.78
19.57	0.01	20.10	0.80
19.58	0.01	20.11	0.83
19.59	0.02	20.12	0.85
19.60	0.02	20.13	0.88
19.61	0.03	20.14	0.90
19.62	0.03	20.15	0.93
19.63	0.04	20.16	0.95
19.64	0.04	20.17	0.98
19.65	0.05	20.18	1.00
19.66	0.06	20.19	1.03
19.67	0.06	20.20	1.06
19.68	0.07	20.21	1.08
19.69	0.08	20.22	1.11
19.70	0.09	20.23	1.14
19.71	0.10	20.24	1.16
19.72	0.11	20.25	1.19
19.73	0.12	20.26	1.22
19.74	0.13	20.27	1.25
19.75	0.14	20.28	1.27
19.76	0.16	20.29	1.30
19.77	0.17	20.30	1.33
19.78	0.18	20.31	1.36
19.79	0.19	20.32	1.39
19.80	0.21	20.33	1.41
19.81	0.22	20.34	1.44
19.82	0.24	20.35	1.47
19.83	0.25	20.36	1.50
19.84	0.27	20.37	1.53
19.85	0.28	20.38	1.55
19.86	0.30	20.39	1.58
19.87	0.32	20.40	1.61
19.88	0.33	20.41	1.64
19.89	0.35	20.42	1.67
19.90	0.37	20.43	1.69
19.91	0.39	20.44	1.72
19.92	0.41	20.45	1.75
19.93	0.43	20.46	1.78
19.94	0.45	20.47	1.81
19.95	0.47	20.48	1.83
19.96	0.49	20.49	1.86
19.97	0.51	20.50	**1.89**
19.98	0.53		
19.99	0.55		
20.00	0.57		
20.01	0.59		
20.02	0.61		

Stage-Area-Storage for Pond DMH11: DMH11

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
19.50	**0**	20.03	0
19.51	0	20.04	0
19.52	0	20.05	0
19.53	0	20.06	0
19.54	0	20.07	0
19.55	0	20.08	0
19.56	0	20.09	0
19.57	0	20.10	0
19.58	0	20.11	0
19.59	0	20.12	0
19.60	0	20.13	0
19.61	0	20.14	0
19.62	0	20.15	0
19.63	0	20.16	0
19.64	0	20.17	0
19.65	0	20.18	0
19.66	0	20.19	0
19.67	0	20.20	0
19.68	0	20.21	0
19.69	0	20.22	0
19.70	0	20.23	0
19.71	0	20.24	0
19.72	0	20.25	0
19.73	0	20.26	0
19.74	0	20.27	0
19.75	0	20.28	0
19.76	0	20.29	0
19.77	0	20.30	0
19.78	0	20.31	0
19.79	0	20.32	0
19.80	0	20.33	0
19.81	0	20.34	0
19.82	0	20.35	0
19.83	0	20.36	0
19.84	0	20.37	0
19.85	0	20.38	0
19.86	0	20.39	0
19.87	0	20.40	0
19.88	0	20.41	0
19.89	0	20.42	0
19.90	0	20.43	0
19.91	0	20.44	0
19.92	0	20.45	0
19.93	0	20.46	0
19.94	0	20.47	0
19.95	0	20.48	0
19.96	0	20.49	0
19.97	0	20.50	0
19.98	0		
19.99	0		
20.00	0		
20.01	0		
20.02	0		

Summary for Pond DMH2: DMH2

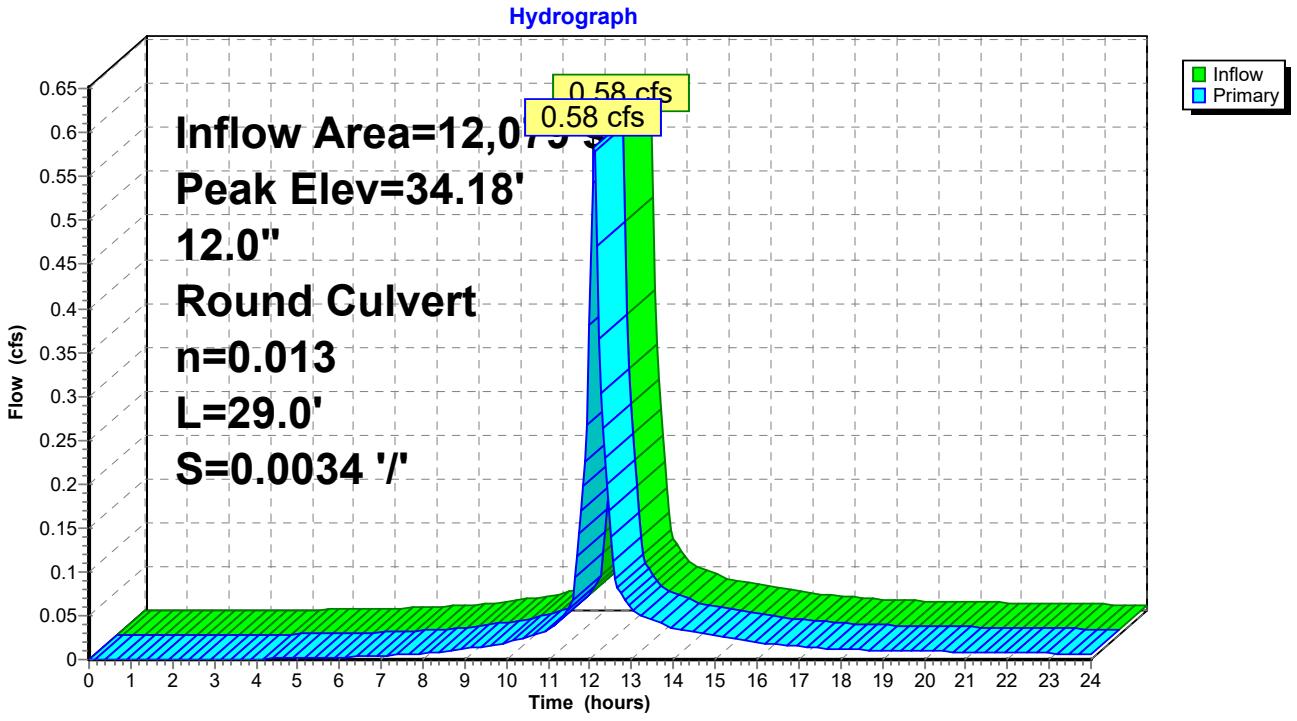
Inflow Area = 12,079 sf, 75.83% Impervious, Inflow Depth > 1.99" for 1-Year event
Inflow = 0.58 cfs @ 12.09 hrs, Volume= 2,002 cf
Outflow = 0.58 cfs @ 12.09 hrs, Volume= 2,002 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.58 cfs @ 12.09 hrs, Volume= 2,002 cf
Routed to Pond SSD1 : SUBSURFACE DRAINAGE AREA #1

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 34.18' @ 12.09 hrs
Flood Elev= 36.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	33.70'	**12.0" Round Culvert** L= 29.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 33.70' / 33.60' S= 0.0034 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.57 cfs @ 12.09 hrs HW=34.18' (Free Discharge)
1=Culvert (Barrel Controls 0.57 cfs @ 2.26 fps)

Pond DMH2: DMH2



Stage-Discharge for Pond DMH2: DMH2

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
33.70	0.00	34.76	2.19	35.82	4.48
33.72	0.00	34.78	2.24	35.84	4.52
33.74	0.00	34.80	2.30	35.86	4.56
33.76	0.01	34.82	2.35	35.88	4.59
33.78	0.02	34.84	2.40	35.90	4.63
33.80	0.02	34.86	2.45	35.92	4.66
33.82	0.04	34.88	2.49	35.94	4.70
33.84	0.05	34.90	2.54	35.96	4.73
33.86	0.07	34.92	2.58	35.98	4.77
33.88	0.08	34.94	2.61	36.00	4.80
33.90	0.10	34.96	2.65	36.02	4.84
33.92	0.13	34.98	2.67	36.04	4.87
33.94	0.15	35.00	2.69	36.06	4.91
33.96	0.18	35.02	2.70	36.08	4.94
33.98	0.20	35.04	2.69	36.10	4.97
34.00	0.23	35.06	2.75	36.12	5.00
34.02	0.27	35.08	2.81	36.14	5.04
34.04	0.30	35.10	2.87	36.16	5.07
34.06	0.33	35.12	2.93	36.18	5.10
34.08	0.37	35.14	2.98	36.20	5.13
34.10	0.41	35.16	3.04	36.22	5.17
34.12	0.45	35.18	3.09	36.24	5.20
34.14	0.49	35.20	3.14	36.26	5.23
34.16	0.53	35.22	3.20	36.28	5.26
34.18	0.58	35.24	3.25	36.30	5.29
34.20	0.62	35.26	3.30	36.32	5.32
34.22	0.67	35.28	3.35	36.34	5.35
34.24	0.72	35.30	3.40	36.36	5.39
34.26	0.77	35.32	3.44	36.38	5.42
34.28	0.82	35.34	3.49	36.40	5.45
34.30	0.87	35.36	3.54	36.42	5.48
34.32	0.92	35.38	3.59	36.44	5.51
34.34	0.98	35.40	3.63	36.46	5.54
34.36	1.03	35.42	3.68	36.48	5.57
34.38	1.08	35.44	3.72	36.50	5.60
34.40	1.14	35.46	3.76	36.52	5.63
34.42	1.20	35.48	3.81	36.54	5.65
34.44	1.25	35.50	3.85	36.56	5.68
34.46	1.31	35.52	3.89	36.58	5.71
34.48	1.37	35.54	3.94	36.60	5.74
34.50	1.43	35.56	3.98	36.62	5.77
34.52	1.49	35.58	4.02	36.64	5.80
34.54	1.55	35.60	4.06	36.66	5.83
34.56	1.61	35.62	4.10	36.68	5.85
34.58	1.67	35.64	4.14	36.70	5.88
34.60	1.72	35.66	4.18	36.72	5.91
34.62	1.78	35.68	4.22	36.74	**5.94**
34.64	1.84	35.70	4.26		
34.66	1.90	35.72	4.30		
34.68	1.96	35.74	4.33		
34.70	2.02	35.76	4.37		
34.72	2.08	35.78	4.41		
34.74	2.13	35.80	4.45		

Stage-Area-Storage for Pond DMH2: DMH2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
33.70	**0**	34.76	0	35.82	0
33.72	0	34.78	0	35.84	0
33.74	0	34.80	0	35.86	0
33.76	0	34.82	0	35.88	0
33.78	0	34.84	0	35.90	0
33.80	0	34.86	0	35.92	0
33.82	0	34.88	0	35.94	0
33.84	0	34.90	0	35.96	0
33.86	0	34.92	0	35.98	0
33.88	0	34.94	0	36.00	0
33.90	0	34.96	0	36.02	0
33.92	0	34.98	0	36.04	0
33.94	0	35.00	0	36.06	0
33.96	0	35.02	0	36.08	0
33.98	0	35.04	0	36.10	0
34.00	0	35.06	0	36.12	0
34.02	0	35.08	0	36.14	0
34.04	0	35.10	0	36.16	0
34.06	0	35.12	0	36.18	0
34.08	0	35.14	0	36.20	0
34.10	0	35.16	0	36.22	0
34.12	0	35.18	0	36.24	0
34.14	0	35.20	0	36.26	0
34.16	0	35.22	0	36.28	0
34.18	0	35.24	0	36.30	0
34.20	0	35.26	0	36.32	0
34.22	0	35.28	0	36.34	0
34.24	0	35.30	0	36.36	0
34.26	0	35.32	0	36.38	0
34.28	0	35.34	0	36.40	0
34.30	0	35.36	0	36.42	0
34.32	0	35.38	0	36.44	0
34.34	0	35.40	0	36.46	0
34.36	0	35.42	0	36.48	0
34.38	0	35.44	0	36.50	0
34.40	0	35.46	0	36.52	0
34.42	0	35.48	0	36.54	0
34.44	0	35.50	0	36.56	0
34.46	0	35.52	0	36.58	0
34.48	0	35.54	0	36.60	0
34.50	0	35.56	0	36.62	0
34.52	0	35.58	0	36.64	0
34.54	0	35.60	0	36.66	0
34.56	0	35.62	0	36.68	0
34.58	0	35.64	0	36.70	0
34.60	0	35.66	0	36.72	0
34.62	0	35.68	0	36.74	0
34.64	0	35.70	0		
34.66	0	35.72	0		
34.68	0	35.74	0		
34.70	0	35.76	0		
34.72	0	35.78	0		
34.74	0	35.80	0		

Summary for Pond DMH7: DMH7

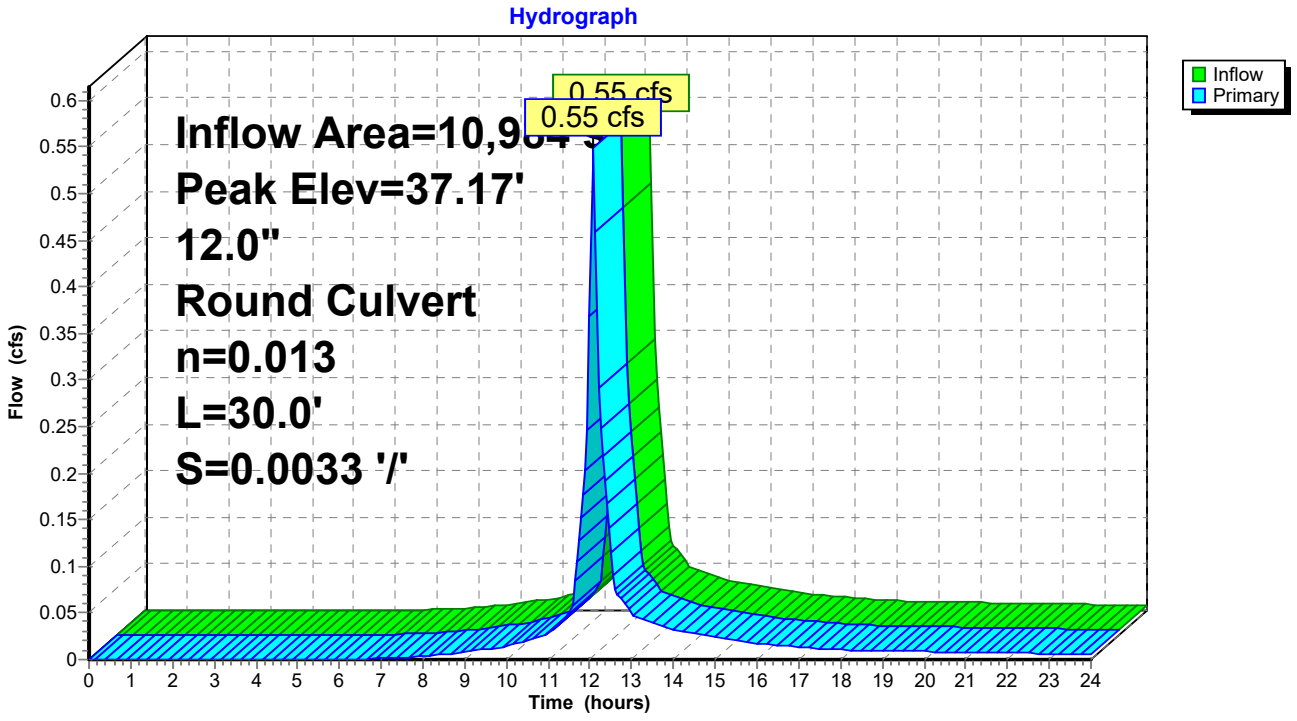
Inflow Area = 10,984 sf, 71.49% Impervious, Inflow Depth > 1.87" for 1-Year event
Inflow = 0.55 cfs @ 12.07 hrs, Volume= 1,707 cf
Outflow = 0.55 cfs @ 12.07 hrs, Volume= 1,707 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.55 cfs @ 12.07 hrs, Volume= 1,707 cf
Routed to Pond SSD2 : SUBSURFACE DRAINAGE AREA #2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 37.17' @ 12.07 hrs
Flood Elev= 39.67'

Device	Routing	Invert	Outlet Devices
#1	Primary	36.70'	**12.0" Round Culvert** L= 30.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 36.70' / 36.60' S= 0.0033 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.53 cfs @ 12.07 hrs HW=37.16' (Free Discharge)
1=Culvert (Barrel Controls 0.53 cfs @ 2.20 fps)

Pond DMH7: DMH7



Stage-Discharge for Pond DMH7: DMH7

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
36.70	0.00	37.76	2.18	38.82	4.45
36.72	0.00	37.78	2.23	38.84	4.49
36.74	0.00	37.80	2.28	38.86	4.53
36.76	0.01	37.82	2.33	38.88	4.56
36.78	0.01	37.84	2.38	38.90	4.60
36.80	0.02	37.86	2.43	38.92	4.63
36.82	0.04	37.88	2.48	38.94	4.67
36.84	0.05	37.90	2.52	38.96	4.70
36.86	0.06	37.92	2.56	38.98	4.74
36.88	0.08	37.94	2.60	39.00	4.77
36.90	0.10	37.96	2.63	39.02	4.81
36.92	0.12	37.98	2.66	39.04	4.84
36.94	0.15	38.00	2.68	39.06	4.87
36.96	0.17	38.02	2.68	39.08	4.91
36.98	0.20	38.04	2.68	39.10	4.94
37.00	0.23	38.06	2.74	39.12	4.97
37.02	0.26	38.08	2.79	39.14	5.01
37.04	0.30	38.10	2.85	39.16	5.04
37.06	0.33	38.12	2.91	39.18	5.07
37.08	0.37	38.14	2.96	39.20	5.10
37.10	0.41	38.16	3.02	39.22	5.13
37.12	0.45	38.18	3.07	39.24	5.17
37.14	0.49	38.20	3.12	39.26	5.20
37.16	0.53	38.22	3.18	39.28	5.23
37.18	0.57	38.24	3.23	39.30	5.26
37.20	0.62	38.26	3.28	39.32	5.29
37.22	0.67	38.28	3.33	39.34	5.32
37.24	0.71	38.30	3.37	39.36	5.35
37.26	0.76	38.32	3.42	39.38	5.38
37.28	0.81	38.34	3.47	39.40	5.41
37.30	0.86	38.36	3.52	39.42	5.44
37.32	0.92	38.38	3.56	39.44	5.47
37.34	0.97	38.40	3.61	39.46	5.50
37.36	1.02	38.42	3.65	39.48	5.53
37.38	1.08	38.44	3.70	39.50	5.56
37.40	1.13	38.46	3.74	39.52	5.59
37.42	1.19	38.48	3.78	39.54	5.62
37.44	1.25	38.50	3.83	39.56	5.65
37.46	1.30	38.52	3.87	39.58	5.68
37.48	1.36	38.54	3.91	39.60	5.70
37.50	1.42	38.56	3.95	39.62	5.73
37.52	1.48	38.58	3.99	39.64	5.76
37.54	1.54	38.60	4.03	39.66	**5.79**
37.56	1.60	38.62	4.07		
37.58	1.66	38.64	4.11		
37.60	1.72	38.66	4.15		
37.62	1.77	38.68	4.19		
37.64	1.83	38.70	4.23		
37.66	1.89	38.72	4.27		
37.68	1.95	38.74	4.31		
37.70	2.01	38.76	4.34		
37.72	2.06	38.78	4.38		
37.74	2.12	38.80	4.42		

Stage-Area-Storage for Pond DMH7: DMH7

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
36.70	**0**	37.76	0	38.82	0
36.72	0	37.78	0	38.84	0
36.74	0	37.80	0	38.86	0
36.76	0	37.82	0	38.88	0
36.78	0	37.84	0	38.90	0
36.80	0	37.86	0	38.92	0
36.82	0	37.88	0	38.94	0
36.84	0	37.90	0	38.96	0
36.86	0	37.92	0	38.98	0
36.88	0	37.94	0	39.00	0
36.90	0	37.96	0	39.02	0
36.92	0	37.98	0	39.04	0
36.94	0	38.00	0	39.06	0
36.96	0	38.02	0	39.08	0
36.98	0	38.04	0	39.10	0
37.00	0	38.06	0	39.12	0
37.02	0	38.08	0	39.14	0
37.04	0	38.10	0	39.16	0
37.06	0	38.12	0	39.18	0
37.08	0	38.14	0	39.20	0
37.10	0	38.16	0	39.22	0
37.12	0	38.18	0	39.24	0
37.14	0	38.20	0	39.26	0
37.16	0	38.22	0	39.28	0
37.18	0	38.24	0	39.30	0
37.20	0	38.26	0	39.32	0
37.22	0	38.28	0	39.34	0
37.24	0	38.30	0	39.36	0
37.26	0	38.32	0	39.38	0
37.28	0	38.34	0	39.40	0
37.30	0	38.36	0	39.42	0
37.32	0	38.38	0	39.44	0
37.34	0	38.40	0	39.46	0
37.36	0	38.42	0	39.48	0
37.38	0	38.44	0	39.50	0
37.40	0	38.46	0	39.52	0
37.42	0	38.48	0	39.54	0
37.44	0	38.50	0	39.56	0
37.46	0	38.52	0	39.58	0
37.48	0	38.54	0	39.60	0
37.50	0	38.56	0	39.62	0
37.52	0	38.58	0	39.64	0
37.54	0	38.60	0	39.66	0
37.56	0	38.62	0		
37.58	0	38.64	0		
37.60	0	38.66	0		
37.62	0	38.68	0		
37.64	0	38.70	0		
37.66	0	38.72	0		
37.68	0	38.74	0		
37.70	0	38.76	0		
37.72	0	38.78	0		
37.74	0	38.80	0		

Summary for Pond SSD1: SUBSURFACE DRAINAGE AREA #1

Inflow Area = 19,969 sf, 85.38% Impervious, Inflow Depth > 2.21" for 1-Year event
Inflow = 1.06 cfs @ 12.08 hrs, Volume= 3,677 cf
Outflow = 0.04 cfs @ 10.00 hrs, Volume= 2,298 cf, Atten= 96%, Lag= 0.0 min
Discarded = 0.04 cfs @ 10.00 hrs, Volume= 2,298 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SSD5 : SUBSURFACE DRAINAGE AREA #5 (STORAGE)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 34.91' @ 15.55 hrs Surf.Area= 1,654 sf Storage= 2,003 cf

Plug-Flow detention time= 268.0 min calculated for 2,293 cf (62% of inflow)
Center-of-Mass det. time= 165.6 min (943.1 - 777.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	33.16'	1,246 cf	**25.67'W x 52.50'L x 3.71'H Field A** 4,997 cf Overall - 1,881 cf Embedded = 3,116 cf x 40.0% Voids
#2A	33.66'	1,881 cf	**Cultec R-330XLHD** x 35 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 5 rows
#3B	33.16'	197 cf	**11.17'W x 17.50'L x 3.71'H Field B** 725 cf Overall - 231 cf Embedded = 494 cf x 40.0% Voids
#4B	33.66'	231 cf	**Cultec R-330XLHD** x 4 Inside #3 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
#5C	33.16'	118 cf	**6.33'W x 17.50'L x 3.71'H Field C** 411 cf Overall - 115 cf Embedded = 296 cf x 40.0% Voids
#6C	33.66'	115 cf	**Cultec R-330XLHD** x 2 Inside #5 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		3,790 cf	Total Available Storage

Storage Group A created with Chamber Wizard
Storage Group B created with Chamber Wizard
Storage Group C created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	33.16'	**1.020 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#2	Primary	35.00'	**6.0" Round Culvert** L= 150.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.00' / 28.00' S= 0.0467 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf
#3	Secondary	37.20'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

#4 Tertiary 35.10' **6.0" Round Culvert**
L= 30.0' CPP, square edge headwall, Ke= 0.500
Inlet / Outlet Invert= 35.10' / 34.00' S= 0.0367 '/' Cc= 0.900
n= 0.013, Flow Area= 0.20 sf

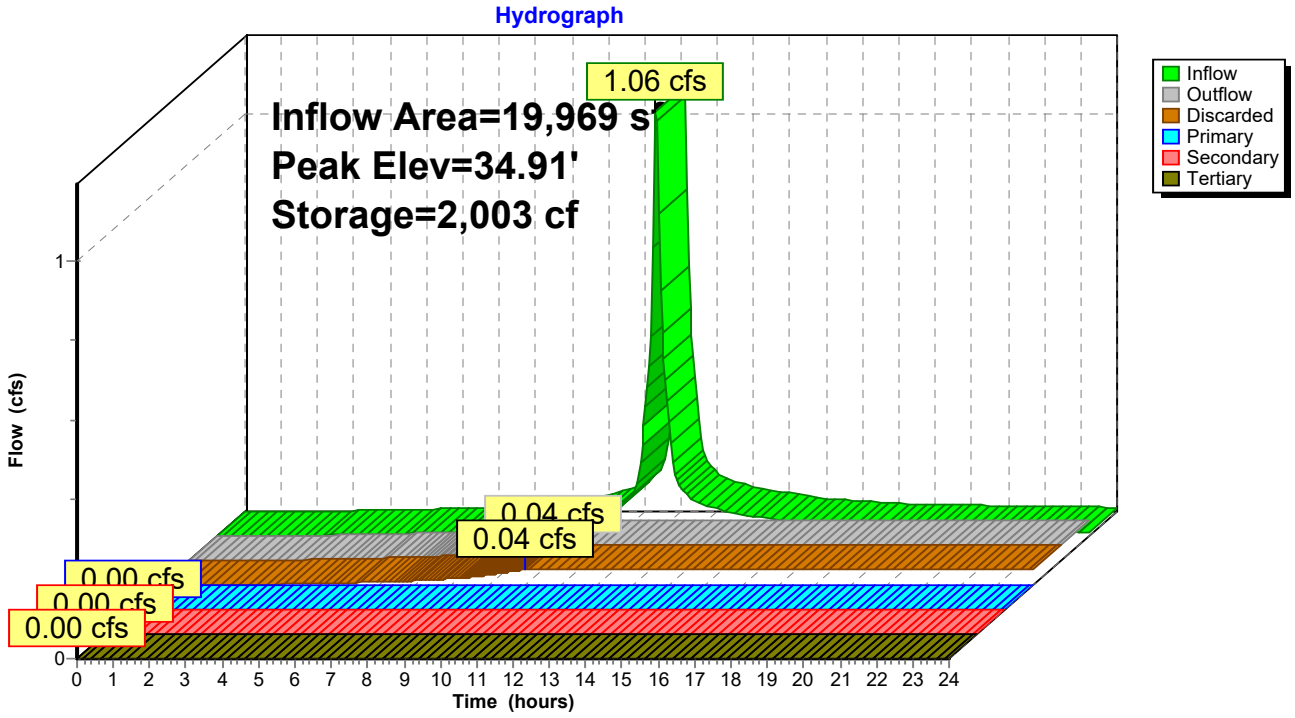
Discarded OutFlow Max=0.04 cfs @ 10.00 hrs HW=33.20' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=33.16' (Free Discharge)
└**2=Culvert** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=33.16' (Free Discharge)
└**3=Orifice/Grate** (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=33.16' (Free Discharge)
└**4=Culvert** (Controls 0.00 cfs)

Pond SSD1: SUBSURFACE DRAINAGE AREA #1



Stage-Discharge for Pond SSD1: SUBSURFACE DRAINAGE AREA #1

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)	Tertiary (cfs)
33.16	0.00	**0.00**	0.00	**0.00**	0.00
33.26	0.04	**0.04**	0.00	0.00	0.00
33.36	0.04	0.04	0.00	0.00	0.00
33.46	0.04	0.04	0.00	0.00	0.00
33.56	0.04	0.04	0.00	0.00	0.00
33.66	0.04	0.04	0.00	0.00	0.00
33.76	0.04	0.04	0.00	0.00	0.00
33.86	0.04	0.04	0.00	0.00	0.00
33.96	0.04	0.04	0.00	0.00	0.00
34.06	0.04	0.04	0.00	0.00	0.00
34.16	0.04	0.04	0.00	0.00	0.00
34.26	0.04	0.04	0.00	0.00	0.00
34.36	0.04	0.04	0.00	0.00	0.00
34.46	0.04	0.04	0.00	0.00	0.00
34.56	0.04	0.04	0.00	0.00	0.00
34.66	0.04	0.04	0.00	0.00	0.00
34.76	0.04	0.04	0.00	0.00	0.00
34.86	0.04	0.04	0.00	0.00	0.00
34.96	0.04	0.04	0.00	0.00	0.00
35.06	0.05	0.04	0.01	0.00	0.00
35.16	0.12	0.04	0.07	0.00	0.01
35.26	0.29	0.04	0.18	0.00	0.07
35.36	0.53	0.04	0.31	0.00	0.18
35.46	0.78	0.04	0.44	0.00	0.31
35.56	1.00	0.04	0.53	0.00	0.44
35.66	1.17	0.04	0.61	0.00	0.53
35.76	1.32	0.04	0.68	0.00	0.61
35.86	1.45	0.04	0.74	0.00	0.68
35.96	1.57	0.04	0.80	0.00	0.74
36.06	1.69	0.04	0.85	0.00	0.80
36.16	1.79	0.04	0.90	0.00	0.85
36.26	1.89	0.04	0.95	0.00	0.90
36.36	1.99	0.04	1.00	0.00	0.95
36.46	2.08	0.04	1.04	0.00	1.00
36.56	2.16	0.04	1.08	0.00	1.04
36.66	2.24	0.04	1.12	0.00	1.08
36.76	2.32	0.04	1.16	0.00	1.12
36.86	2.40	0.04	1.20	0.00	1.16
36.96	2.47	0.04	1.24	0.00	1.20
37.06	2.54	0.04	1.26	0.00	1.24
37.16	**2.58**	0.04	**1.27**	0.00	**1.27**

Stage-Area-Storage for Pond SSD1: SUBSURFACE DRAINAGE AREA #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
33.16	**1,654**	0
33.21	1,654	33
33.26	1,654	66
33.31	1,654	99
33.36	1,654	132
33.41	1,654	165
33.46	1,654	198
33.51	1,654	232
33.56	1,654	265
33.61	1,654	298
33.66	1,654	331
33.71	1,654	399
33.76	1,654	468
33.81	1,654	536
33.86	1,654	605
33.91	1,654	673
33.96	1,654	741
34.01	1,654	808
34.06	1,654	876
34.11	1,654	944
34.16	1,654	1,012
34.21	1,654	1,079
34.26	1,654	1,147
34.31	1,654	1,213
34.36	1,654	1,280
34.41	1,654	1,346
34.46	1,654	1,412
34.51	1,654	1,477
34.56	1,654	1,543
34.61	1,654	1,609
34.66	1,654	1,674
34.71	1,654	1,739
34.76	1,654	1,804
34.81	1,654	1,869
34.86	1,654	1,934
34.91	1,654	1,999
34.96	1,654	2,062
35.01	1,654	2,125
35.06	1,654	2,188
35.11	1,654	2,249
35.16	1,654	2,311
35.21	1,654	2,371
35.26	1,654	2,431
35.31	1,654	2,491
35.36	1,654	2,549
35.41	1,654	2,607
35.46	1,654	2,664
35.51	1,654	2,720
35.56	1,654	2,776
35.61	1,654	2,830
35.66	1,654	2,883
35.71	1,654	2,935
35.76	1,654	2,986
35.81	1,654	3,035
35.86	1,654	3,083
35.91	1,654	3,128
35.96	1,654	3,171
36.01	1,654	3,212
36.06	1,654	3,250
36.11	1,654	3,287
36.16	1,654	3,321
36.21	1,654	3,354
36.26	1,654	3,387
36.31	1,654	3,420
36.36	1,654	3,454
36.41	1,654	3,487
36.46	1,654	3,520
36.51	1,654	3,553
36.56	1,654	3,586
36.61	1,654	3,619
36.66	1,654	3,652
36.71	1,654	3,685
36.76	1,654	3,718
36.81	1,654	3,751
36.86	1,654	**3,784**
36.91	1,654	**3,790**
36.96	1,654	3,790
37.01	1,654	3,790
37.06	1,654	3,790
37.11	1,654	3,790
37.16	1,654	3,790

Summary for Pond SSD2: SUBSURFACE DRAINAGE AREA #2

Inflow Area = 13,267 sf, 76.40% Impervious, Inflow Depth > 1.98" for 1-Year event
Inflow = 0.69 cfs @ 12.07 hrs, Volume= 2,192 cf
Outflow = 0.05 cfs @ 11.40 hrs, Volume= 2,186 cf, Atten= 93%, Lag= 0.0 min
Discarded = 0.05 cfs @ 11.40 hrs, Volume= 2,186 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP1 : DP1post
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP1 : DP1post

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 36.80' @ 13.63 hrs Surf.Area= 1,960 sf Storage= 952 cf

Plug-Flow detention time= 182.4 min calculated for 2,182 cf (100% of inflow)
Center-of-Mass det. time= 180.4 min (976.0 - 795.6)

Volume	Invert	Avail.Storage	Storage Description
#1B	35.70'	2,483 cf	**16.00'W x 122.50'L x 4.54'H Field B** 8,902 cf Overall - 2,694 cf Embedded = 6,208 cf x 40.0% Voids
#2B	36.70'	2,694 cf	**Cultec R-330XLHD** x 51 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 3 rows
		5,177 cf	Total Available Storage

Storage Group B created with Chamber Wizard

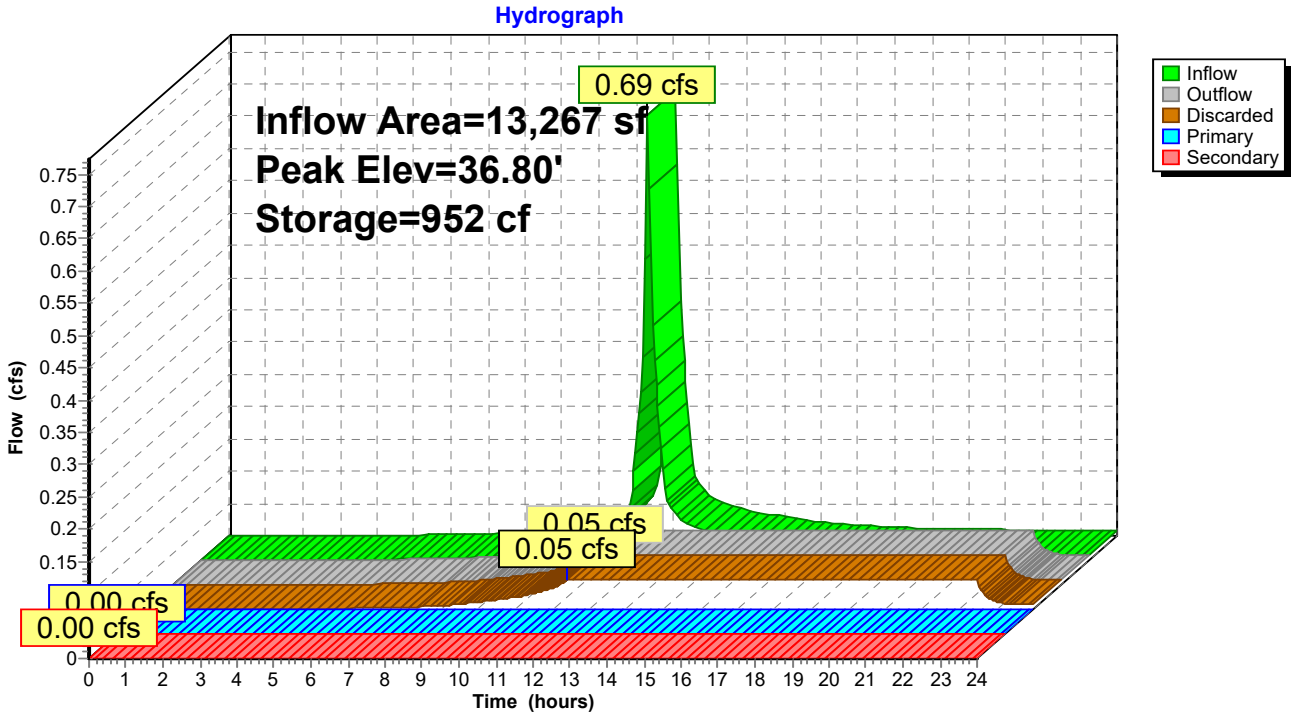
Device	Routing	Invert	Outlet Devices
#1	Discarded	35.70'	**1.020 in/hr Exfiltration over Surface area**
#2	Secondary	40.60'	**4.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	38.70'	**6.0" Round Culvert** L= 23.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 38.70' / 35.60' S= 0.1348 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf

Discarded OutFlow Max=0.05 cfs @ 11.40 hrs HW=35.75' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=35.70' (Free Discharge)
↑**3=Culvert** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=35.70' (Free Discharge)
↑**2=Orifice/Grate** (Controls 0.00 cfs)

Pond SSD2: SUBSURFACE DRAINAGE AREA #2



Stage-Discharge for Pond SSD2: SUBSURFACE DRAINAGE AREA #2

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
35.70	0.00	**0.00**	0.00	**0.00**
35.80	0.05	**0.05**	0.00	0.00
35.90	0.05	0.05	0.00	0.00
36.00	0.05	0.05	0.00	0.00
36.10	0.05	0.05	0.00	0.00
36.20	0.05	0.05	0.00	0.00
36.30	0.05	0.05	0.00	0.00
36.40	0.05	0.05	0.00	0.00
36.50	0.05	0.05	0.00	0.00
36.60	0.05	0.05	0.00	0.00
36.70	0.05	0.05	0.00	0.00
36.80	0.05	0.05	0.00	0.00
36.90	0.05	0.05	0.00	0.00
37.00	0.05	0.05	0.00	0.00
37.10	0.05	0.05	0.00	0.00
37.20	0.05	0.05	0.00	0.00
37.30	0.05	0.05	0.00	0.00
37.40	0.05	0.05	0.00	0.00
37.50	0.05	0.05	0.00	0.00
37.60	0.05	0.05	0.00	0.00
37.70	0.05	0.05	0.00	0.00
37.80	0.05	0.05	0.00	0.00
37.90	0.05	0.05	0.00	0.00
38.00	0.05	0.05	0.00	0.00
38.10	0.05	0.05	0.00	0.00
38.20	0.05	0.05	0.00	0.00
38.30	0.05	0.05	0.00	0.00
38.40	0.05	0.05	0.00	0.00
38.50	0.05	0.05	0.00	0.00
38.60	0.05	0.05	0.00	0.00
38.70	0.05	0.05	0.00	0.00
38.80	0.08	0.05	0.03	0.00
38.90	0.16	0.05	0.11	0.00
39.00	0.28	0.05	0.23	0.00
39.10	0.41	0.05	0.36	0.00
39.20	0.52	0.05	0.47	0.00
39.30	0.61	0.05	0.56	0.00
39.40	0.68	0.05	0.63	0.00
39.50	0.75	0.05	0.70	0.00
39.60	0.81	0.05	0.76	0.00
39.70	0.87	0.05	0.82	0.00
39.80	0.92	0.05	0.87	0.00
39.90	0.97	0.05	0.92	0.00
40.00	1.02	0.05	0.97	0.00
40.10	1.06	0.05	1.01	0.00
40.20	1.10	0.05	1.06	0.00
40.30	1.14	0.05	1.10	0.00
40.40	1.18	0.05	1.14	0.00
40.50	1.22	0.05	1.18	0.00
40.60	**1.26**	0.05	**1.21**	0.00

Stage-Area-Storage for Pond SSD2: SUBSURFACE DRAINAGE AREA #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
35.70	**1,960**	0
35.75	1,960	39
35.80	1,960	78
35.85	1,960	118
35.90	1,960	157
35.95	1,960	196
36.00	1,960	235
36.05	1,960	274
36.10	1,960	314
36.15	1,960	353
36.20	1,960	392
36.25	1,960	431
36.30	1,960	470
36.35	1,960	510
36.40	1,960	549
36.45	1,960	588
36.50	1,960	627
36.55	1,960	666
36.60	1,960	706
36.65	1,960	745
36.70	1,960	784
36.75	1,960	866
36.80	1,960	948
36.85	1,960	1,030
36.90	1,960	1,112
36.95	1,960	1,193
37.00	1,960	1,275
37.05	1,960	1,356
37.10	1,960	1,437
37.15	1,960	1,518
37.20	1,960	1,600
37.25	1,960	1,680
37.30	1,960	1,761
37.35	1,960	1,841
37.40	1,960	1,920
37.45	1,960	1,999
37.50	1,960	2,078
37.55	1,960	2,157
37.60	1,960	2,236
37.65	1,960	2,314
37.70	1,960	2,392
37.75	1,960	2,470
37.80	1,960	2,548
37.85	1,960	2,626
37.90	1,960	2,704
37.95	1,960	2,781
38.00	1,960	2,857
38.05	1,960	2,932
38.10	1,960	3,007
38.15	1,960	3,081
38.20	1,960	3,154
38.25	1,960	3,227
38.30	1,960	3,298
38.35	1,960	3,369
38.40	1,960	3,439
38.45	1,960	3,509
38.50	1,960	3,577
38.55	1,960	3,644
38.60	1,960	3,710
38.65	1,960	3,775
38.70	1,960	3,839
38.75	1,960	3,901
38.80	1,960	3,961
38.85	1,960	4,020
38.90	1,960	4,076
38.95	1,960	4,130
39.00	1,960	4,182
39.05	1,960	4,230
39.10	1,960	4,276
39.15	1,960	4,319
39.20	1,960	4,360
39.25	1,960	4,399
39.30	1,960	4,439
39.35	1,960	4,478
39.40	1,960	4,517
39.45	1,960	4,556
39.50	1,960	4,595
39.55	1,960	4,635
39.60	1,960	4,674
39.65	1,960	4,713
39.70	1,960	4,752
39.75	1,960	4,791
39.80	1,960	4,831
39.85	1,960	4,870
39.90	1,960	4,909
39.95	1,960	4,948
40.00	1,960	4,987
40.05	1,960	5,027
40.10	1,960	5,066
40.15	1,960	5,105
40.20	1,960	5,144
40.25	1,960	**5,177**
40.30	1,960	5,177
40.35	1,960	5,177
40.40	1,960	5,177
40.45	1,960	5,177
40.50	1,960	5,177
40.55	1,960	5,177
40.60	1,960	5,177

Summary for Pond SSD3: SUBSURFACE DRAINAGE AREA #3

Inflow Area = 20,604 sf, 71.75% Impervious, Inflow Depth > 1.89" for 1-Year event
Inflow = 0.96 cfs @ 12.09 hrs, Volume= 3,246 cf
Outflow = 0.37 cfs @ 12.36 hrs, Volume= 2,659 cf, Atten= 61%, Lag= 16.6 min
Discarded = 0.03 cfs @ 10.20 hrs, Volume= 1,595 cf
Primary = 0.34 cfs @ 12.36 hrs, Volume= 1,064 cf
Routed to Reach DP3 : DP3
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 19.66' @ 12.36 hrs Surf.Area= 1,203 sf Storage= 1,165 cf

Plug-Flow detention time= 167.7 min calculated for 2,653 cf (82% of inflow)
Center-of-Mass det. time= 96.2 min (896.7 - 800.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	18.00'	722 cf	**8.33'W x 81.00'L x 3.54'H Field A** 2,391 cf Overall - 585 cf Embedded = 1,806 cf x 40.0% Voids
#2A	18.50'	585 cf	**Cultec R-330XLHD** x 11 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
#3B	18.00'	362 cf	**12.50'W x 28.00'L x 3.54'H Field B** 1,240 cf Overall - 335 cf Embedded = 904 cf x 40.0% Voids
#4B	18.50'	335 cf	**Cultec R-330XLHD** x 6 Inside #3 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
#5C	18.00'	201 cf	**13.00'W x 13.67'L x 3.54'H Field C** 629 cf Overall - 127 cf Embedded = 503 cf x 40.0% Voids
#6C	18.50'	127 cf	**Cultec R-330XLHD** x 2 Inside #5 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		2,332 cf	Total Available Storage

Storage Group A created with Chamber Wizard
Storage Group B created with Chamber Wizard
Storage Group C created with Chamber Wizard

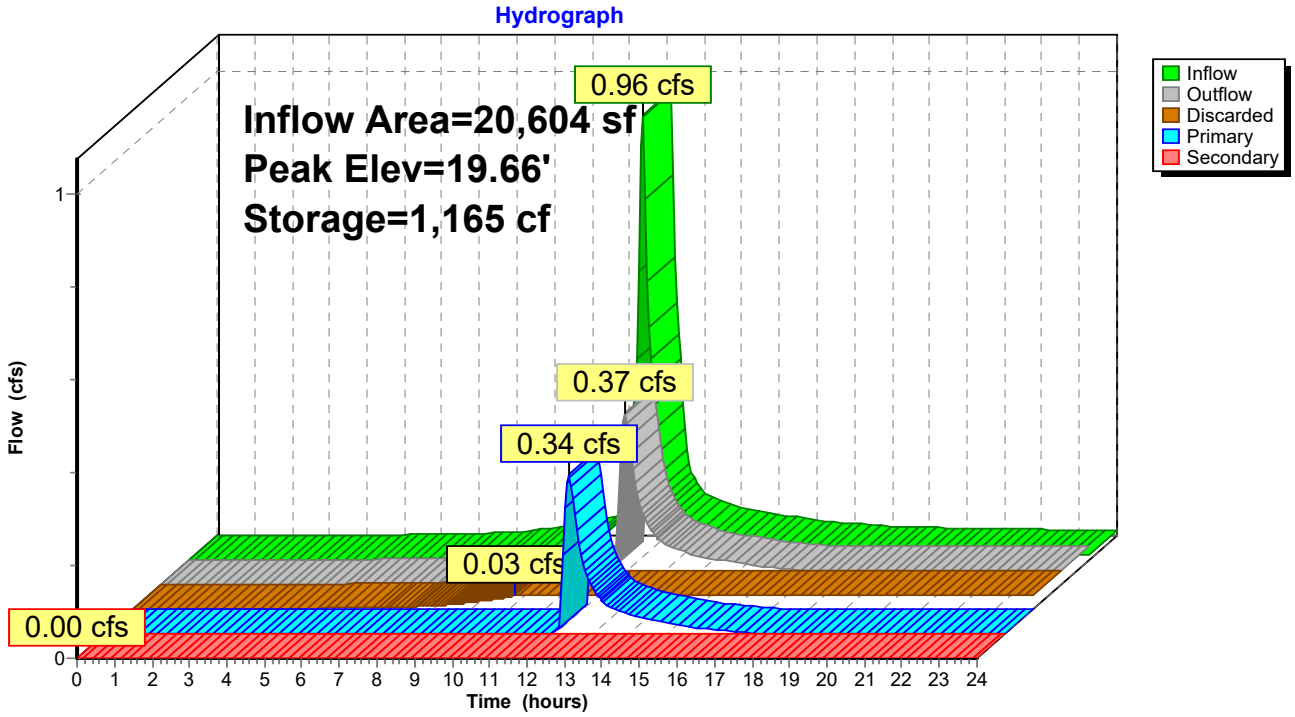
Device	Routing	Invert	Outlet Devices
#1	Discarded	18.00'	**1.020 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#2	Primary	19.30'	**10.0" Round Culvert** L= 14.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 19.30' / 19.20' S= 0.0071 '/' Cc= 0.900 n= 0.013, Flow Area= 0.55 sf
#3	Secondary	22.00'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.03 cfs @ 10.20 hrs HW=18.04' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.34 cfs @ 12.36 hrs HW=19.66' (Free Discharge)
└**2=Culvert** (Barrel Controls 0.34 cfs @ 2.27 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=18.00' (Free Discharge)
└**3=Orifice/Grate** (Controls 0.00 cfs)

Pond SSD3: SUBSURFACE DRAINAGE AREA #3



Stage-Discharge for Pond SSD3: SUBSURFACE DRAINAGE AREA #3

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
18.00	0.00	**0.00**	0.00	**0.00**
18.10	0.03	**0.03**	0.00	0.00
18.20	0.03	0.03	0.00	0.00
18.30	0.03	0.03	0.00	0.00
18.40	0.03	0.03	0.00	0.00
18.50	0.03	0.03	0.00	0.00
18.60	0.03	0.03	0.00	0.00
18.70	0.03	0.03	0.00	0.00
18.80	0.03	0.03	0.00	0.00
18.90	0.03	0.03	0.00	0.00
19.00	0.03	0.03	0.00	0.00
19.10	0.03	0.03	0.00	0.00
19.20	0.03	0.03	0.00	0.00
19.30	0.03	0.03	0.00	0.00
19.40	0.06	0.03	0.03	0.00
19.50	0.14	0.03	0.12	0.00
19.60	0.28	0.03	0.25	0.00
19.70	0.45	0.03	0.42	0.00
19.80	0.65	0.03	0.62	0.00
19.90	0.88	0.03	0.85	0.00
20.00	1.11	0.03	1.08	0.00
20.10	1.35	0.03	1.33	0.00
20.20	1.59	0.03	1.56	0.00
20.30	1.79	0.03	1.76	0.00
20.40	1.91	0.03	1.89	0.00
20.50	2.11	0.03	2.08	0.00
20.60	2.32	0.03	2.30	0.00
20.70	2.52	0.03	2.49	0.00
20.80	2.70	0.03	2.67	0.00
20.90	2.87	0.03	2.84	0.00
21.00	3.00	0.03	2.98	0.00
21.10	3.12	0.03	3.09	0.00
21.20	3.23	0.03	3.20	0.00
21.30	3.33	0.03	3.30	0.00
21.40	3.44	0.03	3.41	0.00
21.50	3.54	0.03	3.51	0.00
21.60	3.63	0.03	3.60	0.00
21.70	3.73	0.03	3.70	0.00
21.80	3.82	0.03	3.79	0.00
21.90	3.91	0.03	3.88	0.00
22.00	**4.00**	0.03	**3.97**	0.00

Stage-Area-Storage for Pond SSD3: SUBSURFACE DRAINAGE AREA #3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
18.00	**1,203**	0
18.05	1,203	24
18.10	1,203	48
18.15	1,203	72
18.20	1,203	96
18.25	1,203	120
18.30	1,203	144
18.35	1,203	168
18.40	1,203	192
18.45	1,203	216
18.50	1,203	241
18.55	1,203	281
18.60	1,203	322
18.65	1,203	363
18.70	1,203	403
18.75	1,203	444
18.80	1,203	484
18.85	1,203	525
18.90	1,203	565
18.95	1,203	605
19.00	1,203	646
19.05	1,203	686
19.10	1,203	726
19.15	1,203	766
19.20	1,203	806
19.25	1,203	845
19.30	1,203	885
19.35	1,203	924
19.40	1,203	963
19.45	1,203	1,003
19.50	1,203	1,042
19.55	1,203	1,081
19.60	1,203	1,120
19.65	1,203	1,159
19.70	1,203	1,198
19.75	1,203	1,237
19.80	1,203	1,275
19.85	1,203	1,314
19.90	1,203	1,351
19.95	1,203	1,389
20.00	1,203	1,426
20.05	1,203	1,463
20.10	1,203	1,500
20.15	1,203	1,536
20.20	1,203	1,572
20.25	1,203	1,608
20.30	1,203	1,643
20.35	1,203	1,678
20.40	1,203	1,713
20.45	1,203	1,747
20.50	1,203	1,780
20.55	1,203	1,813
20.60	1,203	1,846
20.65	1,203	1,877
20.70	1,203	1,908
20.75	1,203	1,938
20.80	1,203	1,967
20.85	1,203	1,994
20.90	1,203	2,021
20.95	1,203	2,047
21.00	1,203	2,071
21.05	1,203	2,095
21.10	1,203	2,119
21.15	1,203	2,143
21.20	1,203	2,168
21.25	1,203	2,192
21.30	1,203	2,216
21.35	1,203	2,240
21.40	1,203	2,264
21.45	1,203	2,288
21.50	1,203	2,312
21.55	1,203	**2,332**
21.60	1,203	2,332
21.65	1,203	2,332
21.70	1,203	2,332
21.75	1,203	2,332
21.80	1,203	2,332
21.85	1,203	2,332
21.90	1,203	2,332
21.95	1,203	2,332
22.00	1,203	2,332

Summary for Pond SSD4: SUBSURFACE DRAINAGE AREA #4

Inflow Area = 5,609 sf,100.00% Impervious, Inflow Depth > 2.55" for 1-Year event
Inflow = 0.35 cfs @ 12.07 hrs, Volume= 1,191 cf
Outflow = 0.01 cfs @ 14.92 hrs, Volume= 731 cf, Atten= 96%, Lag= 170.9 min
Discarded = 0.01 cfs @ 9.25 hrs, Volume= 716 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP1 : DP1post
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP1 : DP1post
Tertiary = 0.00 cfs @ 14.92 hrs, Volume= 15 cf
Routed to Reach DP2 : DP2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 36.53' @ 14.92 hrs Surf.Area= 485 sf Storage= 648 cf

Plug-Flow detention time= 258.9 min calculated for 731 cf (61% of inflow)
Center-of-Mass det. time= 153.8 min (912.0 - 758.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	34.50'	475 cf	**11.17'W x 31.50'L x 4.63'H Field A** 1,627 cf Overall - 440 cf Embedded = 1,187 cf x 40.0% Voids
#2A	35.00'	440 cf	**Cultec R-330XLHD** x 8 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
#3B	34.50'	95 cf	**6.33'W x 10.50'L x 4.54'H Field B** 302 cf Overall - 63 cf Embedded = 239 cf x 40.0% Voids
#4B	35.00'	63 cf	**Cultec R-330XLHD** Inside #3 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
#5C	34.50'	98 cf	**6.33'W x 10.50'L x 4.63'H Field C** 308 cf Overall - 63 cf Embedded = 244 cf x 40.0% Voids
#6C	35.00'	63 cf	**Cultec R-330XLHD** Inside #5 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		1,234 cf	Total Available Storage

Storage Group A created with Chamber Wizard
Storage Group B created with Chamber Wizard
Storage Group C created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	34.50'	**1.020 in/hr Exfiltration over Surface area**
#2	Secondary	39.50'	**4.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	37.00'	**4.0" Round Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 37.00' / 34.80' S= 0.2200 '/' Cc= 0.900 n= 0.013, Flow Area= 0.09 sf

#4 Tertiary 36.50' **4.0" Round Culvert**
L= 60.0' CPP, end-section conforming to fill, Ke= 0.500
Inlet / Outlet Invert= 36.50' / 36.00' S= 0.0083 '/' Cc= 0.900
n= 0.013, Flow Area= 0.09 sf

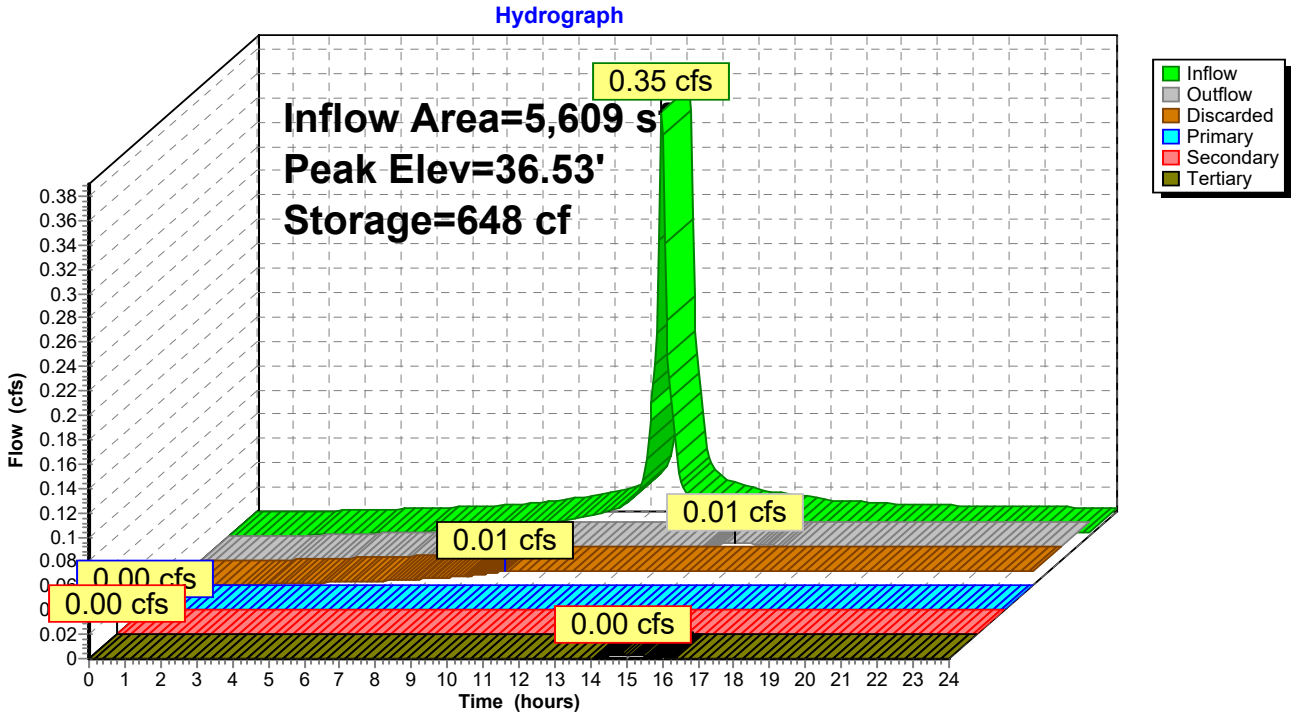
Discarded OutFlow Max=0.01 cfs @ 9.25 hrs HW=34.55' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=34.50' (Free Discharge)
└**3=Culvert** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=34.50' (Free Discharge)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 14.92 hrs HW=36.53' (Free Discharge)
└**4=Culvert** (Barrel Controls 0.00 cfs @ 0.60 fps)

Pond SSD4: SUBSURFACE DRAINAGE AREA #4



Stage-Discharge for Pond SSD4: SUBSURFACE DRAINAGE AREA #4

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)	Tertiary (cfs)
34.50	0.00	**0.00**	0.00	**0.00**	0.00
34.60	0.01	**0.01**	0.00	0.00	0.00
34.70	0.01	0.01	0.00	0.00	0.00
34.80	0.01	0.01	0.00	0.00	0.00
34.90	0.01	0.01	0.00	0.00	0.00
35.00	0.01	0.01	0.00	0.00	0.00
35.10	0.01	0.01	0.00	0.00	0.00
35.20	0.01	0.01	0.00	0.00	0.00
35.30	0.01	0.01	0.00	0.00	0.00
35.40	0.01	0.01	0.00	0.00	0.00
35.50	0.01	0.01	0.00	0.00	0.00
35.60	0.01	0.01	0.00	0.00	0.00
35.70	0.01	0.01	0.00	0.00	0.00
35.80	0.01	0.01	0.00	0.00	0.00
35.90	0.01	0.01	0.00	0.00	0.00
36.00	0.01	0.01	0.00	0.00	0.00
36.10	0.01	0.01	0.00	0.00	0.00
36.20	0.01	0.01	0.00	0.00	0.00
36.30	0.01	0.01	0.00	0.00	0.00
36.40	0.01	0.01	0.00	0.00	0.00
36.50	0.01	0.01	0.00	0.00	0.00
36.60	0.03	0.01	0.00	0.00	0.02
36.70	0.08	0.01	0.00	0.00	0.07
36.80	0.15	0.01	0.00	0.00	0.13
36.90	0.19	0.01	0.00	0.00	0.18
37.00	0.20	0.01	0.00	0.00	0.18
37.10	0.23	0.01	0.02	0.00	0.20
37.20	0.30	0.01	0.08	0.00	0.21
37.30	0.39	0.01	0.15	0.00	0.22
37.40	0.45	0.01	0.20	0.00	0.23
37.50	0.50	0.01	0.24	0.00	0.24
37.60	0.54	0.01	0.28	0.00	0.25
37.70	0.58	0.01	0.31	0.00	0.26
37.80	0.62	0.01	0.33	0.00	0.27
37.90	0.65	0.01	0.36	0.00	0.28
38.00	0.69	0.01	0.38	0.00	0.29
38.10	0.72	0.01	0.41	0.00	0.30
38.20	0.75	0.01	0.43	0.00	0.31
38.30	0.77	0.01	0.45	0.00	0.32
38.40	0.80	0.01	0.47	0.00	0.32
38.50	0.83	0.01	0.49	0.00	0.33
38.60	0.85	0.01	0.50	0.00	0.34
38.70	0.88	0.01	0.52	0.00	0.35
38.80	0.90	0.01	0.54	0.00	0.35
38.90	0.93	0.01	0.55	0.00	0.36
39.00	0.95	0.01	0.57	0.00	0.37
39.10	0.97	0.01	0.58	0.00	0.38
39.20	0.99	0.01	0.60	0.00	0.38
39.30	1.01	0.01	0.61	0.00	0.39
39.40	1.03	0.01	0.63	0.00	0.39
39.50	**1.05**	0.01	**0.64**	0.00	**0.40**

Stage-Area-Storage for Pond SSD4: SUBSURFACE DRAINAGE AREA #4

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
34.50	**485**	0
34.55	485	10
34.60	485	19
34.65	485	29
34.70	485	39
34.75	485	48
34.80	485	58
34.85	485	68
34.90	485	78
34.95	485	87
35.00	485	97
35.05	485	116
35.10	485	134
35.15	485	153
35.20	485	172
35.25	485	190
35.30	485	209
35.35	485	227
35.40	485	246
35.45	485	264
35.50	485	283
35.55	485	301
35.60	485	320
35.65	485	338
35.70	485	356
35.75	485	374
35.80	485	392
35.85	485	410
35.90	485	428
35.95	485	446
36.00	485	464
36.05	485	482
36.10	485	500
36.15	485	518
36.20	485	535
36.25	485	553
36.30	485	571
36.35	485	588
36.40	485	605
36.45	485	622
36.50	485	639
36.55	485	656
36.60	485	672
36.65	485	688
36.70	485	705
36.75	485	721
36.80	485	736
36.85	485	752
36.90	485	767
36.95	485	782
37.00	485	797
37.05	485	812
37.10	485	826
37.15	485	840
37.20	485	853
37.25	485	866
37.30	485	878
37.35	485	890
37.40	485	901
37.45	485	911
37.50	485	921
37.55	485	931
37.60	485	941
37.65	485	951
37.70	485	960
37.75	485	970
37.80	485	980
37.85	485	989
37.90	485	999
37.95	485	1,009
38.00	485	1,018
38.05	485	1,028
38.10	485	1,038
38.15	485	1,048
38.20	485	1,057
38.25	485	1,067
38.30	485	1,077
38.35	485	1,086
38.40	485	1,096
38.45	485	1,106
38.50	485	1,115
38.55	485	1,125
38.60	485	1,135
38.65	485	1,144
38.70	485	1,154
38.75	485	1,164
38.80	485	1,174
38.85	485	1,183
38.90	485	1,193
38.95	485	1,203
39.00	485	1,212
39.05	485	1,222
39.10	485	**1,230**
39.15	485	**1,234**
39.20	485	1,234
39.25	485	1,234
39.30	485	1,234
39.35	485	1,234
39.40	485	1,234
39.45	485	1,234
39.50	485	1,234

Summary for Pond SSD5: SUBSURFACE DRAINAGE AREA #5 (STORAGE)

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 31.00' @ 0.00 hrs Surf.Area= 1,174 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1A	31.00'	1,011 cf	**30.50'W x 38.50'L x 3.54'H Field A** 4,159 cf Overall - 1,632 cf Embedded = 2,527 cf x 40.0% Voids
#2A	31.50'	1,632 cf	**Cultec R-330XLHD** x 30 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 6 rows
		2,643 cf	Total Available Storage

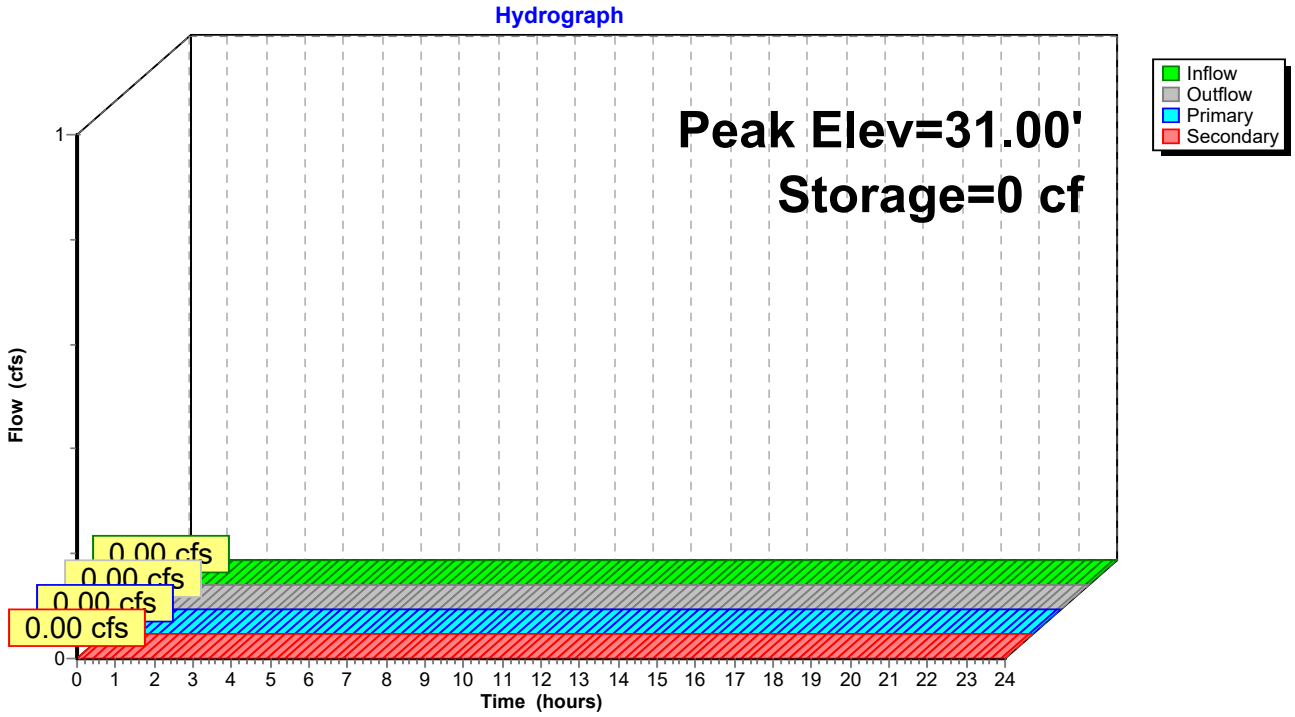
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	31.00'	**2.0" Round Culvert** L= 175.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 31.00' / 19.00' S= 0.0686 '/' Cc= 0.900 n= 0.013, Flow Area= 0.02 sf
#2	Secondary	37.00'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=31.00' (Free Discharge)
↑—**1=Culvert** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=31.00' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond SSD5: SUBSURFACE DRAINAGE AREA #5 (STORAGE)



Stage-Discharge for Pond SSD5: SUBSURFACE DRAINAGE AREA #5 (STORAGE)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
31.00	0.00	0.00	**0.00**
31.10	0.01	0.01	0.00
31.20	0.04	0.04	0.00
31.30	0.05	0.05	0.00
31.40	0.06	0.06	0.00
31.50	0.07	0.07	0.00
31.60	0.08	0.08	0.00
31.70	0.08	0.08	0.00
31.80	0.08	0.08	0.00
31.90	0.08	0.08	0.00
32.00	0.08	0.08	0.00
32.10	0.08	0.08	0.00
32.20	0.08	0.08	0.00
32.30	0.08	0.08	0.00
32.40	0.08	0.08	0.00
32.50	0.08	0.08	0.00
32.60	0.08	0.08	0.00
32.70	0.08	0.08	0.00
32.80	0.08	0.08	0.00
32.90	0.08	0.08	0.00
33.00	0.08	0.08	0.00
33.10	0.08	0.08	0.00
33.20	0.08	0.08	0.00
33.30	0.08	0.08	0.00
33.40	0.08	0.08	0.00
33.50	0.08	0.08	0.00
33.60	0.08	0.08	0.00
33.70	0.09	0.09	0.00
33.80	0.09	0.09	0.00
33.90	0.09	0.09	0.00
34.00	0.09	0.09	0.00
34.10	0.09	0.09	0.00
34.20	0.09	0.09	0.00
34.30	0.09	0.09	0.00
34.40	0.09	0.09	0.00
34.50	0.09	0.09	0.00
34.60	0.09	0.09	0.00
34.70	0.09	0.09	0.00
34.80	0.09	0.09	0.00
34.90	0.09	0.09	0.00
35.00	0.09	0.09	0.00
35.10	0.09	0.09	0.00
35.20	0.09	0.09	0.00
35.30	0.09	0.09	0.00
35.40	0.09	0.09	0.00
35.50	0.09	0.09	0.00
35.60	0.09	0.09	0.00
35.70	0.09	0.09	0.00
35.80	0.09	0.09	0.00
35.90	0.09	0.09	0.00
36.00	0.09	0.09	0.00
36.10	0.09	0.09	0.00
36.20	0.09	0.09	0.00
36.30	0.09	0.09	0.00
36.40	0.09	0.09	0.00
36.50	0.09	0.09	0.00
36.60	0.09	0.09	0.00
36.70	0.09	0.09	0.00
36.80	0.09	0.09	0.00
36.90	0.09	0.09	0.00
37.00	**0.09**	**0.09**	0.00

Stage-Area-Storage for Pond SSD5: SUBSURFACE DRAINAGE AREA #5 (STORAGE)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
31.00	0	33.65	2,184	36.30	2,643
31.05	23	33.70	2,218	36.35	2,643
31.10	47	33.75	2,250	36.40	2,643
31.15	70	33.80	2,281	36.45	2,643
31.20	94	33.85	2,310	36.50	2,643
31.25	117	33.90	2,338	36.55	2,643
31.30	141	33.95	2,364	36.60	2,643
31.35	164	34.00	2,388	36.65	2,643
31.40	188	34.05	2,412	36.70	2,643
31.45	211	34.10	2,435	36.75	2,643
31.50	235	34.15	2,459	36.80	2,643
31.55	284	34.20	2,482	36.85	2,643
31.60	334	34.25	2,506	36.90	2,643
31.65	383	34.30	2,529	36.95	2,643
31.70	432	34.35	2,553	37.00	2,643
31.75	482	34.40	2,576		
31.80	531	34.45	2,600		
31.85	580	34.50	2,623		
31.90	629	34.55	**2,643**		
31.95	677	34.60	2,643		
32.00	726	34.65	2,643		
32.05	775	34.70	2,643		
32.10	824	34.75	2,643		
32.15	872	34.80	2,643		
32.20	920	34.85	2,643		
32.25	967	34.90	2,643		
32.30	1,015	34.95	2,643		
32.35	1,062	35.00	2,643		
32.40	1,109	35.05	2,643		
32.45	1,157	35.10	2,643		
32.50	1,204	35.15	2,643		
32.55	1,251	35.20	2,643		
32.60	1,298	35.25	2,643		
32.65	1,345	35.30	2,643		
32.70	1,391	35.35	2,643		
32.75	1,438	35.40	2,643		
32.80	1,484	35.45	2,643		
32.85	1,529	35.50	2,643		
32.90	1,574	35.55	2,643		
32.95	1,619	35.60	2,643		
33.00	1,663	35.65	2,643		
33.05	1,706	35.70	2,643		
33.10	1,750	35.75	2,643		
33.15	1,792	35.80	2,643		
33.20	1,835	35.85	2,643		
33.25	1,876	35.90	2,643		
33.30	1,917	35.95	2,643		
33.35	1,958	36.00	2,643		
33.40	1,998	36.05	2,643		
33.45	2,037	36.10	2,643		
33.50	2,075	36.15	2,643		
33.55	2,112	36.20	2,643		
33.60	2,149	36.25	2,643		

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1: Post 1 Runoff Area=13,803 sf 0.00% Impervious Runoff Depth>1.02"
Flow Length=229' Tc=13.3 min CN=72 Runoff=0.28 cfs 1,174 cf

Subcatchment 2A: Post 2A Runoff Area=5,633 sf 67.30% Impervious Runoff Depth>2.31"
Tc=5.0 min CN=90 Runoff=0.35 cfs 1,083 cf

Subcatchment 2B: Post 2B Runoff Area=5,351 sf 75.91% Impervious Runoff Depth>2.49"
Tc=5.0 min CN=92 Runoff=0.35 cfs 1,111 cf

Subcatchment 3A: Post 3A Runoff Area=4,243 sf 86.57% Impervious Runoff Depth>2.79"
Tc=5.0 min CN=95 Runoff=0.30 cfs 987 cf

Subcatchment 3B: Post 3B Runoff Area=2,714 sf 96.35% Impervious Runoff Depth>3.00"
Tc=5.0 min CN=97 Runoff=0.20 cfs 679 cf

Subcatchment 4: Post 4 Runoff Area=5,122 sf 56.07% Impervious Runoff Depth>2.05"
Flow Length=131' Tc=8.6 min CN=87 Runoff=0.25 cfs 873 cf

Subcatchment 5: Post 5 Runoff Area=7,742 sf 59.11% Impervious Runoff Depth>2.13"
Flow Length=131' Tc=8.6 min CN=88 Runoff=0.40 cfs 1,374 cf

Subcatchment 6: Post 6 Runoff Area=9,340 sf 71.57% Impervious Runoff Depth>2.40"
Tc=5.0 min CN=91 Runoff=0.60 cfs 1,866 cf

Subcatchment 7: Post 7 Runoff Area=3,875 sf 0.00% Impervious Runoff Depth>1.08"
Flow Length=170' Tc=11.1 min CN=73 Runoff=0.09 cfs 348 cf

Subcatchment 8: Post 8 Runoff Area=1,030 sf 0.00% Impervious Runoff Depth>0.92"
Tc=5.0 min CN=70 Runoff=0.02 cfs 79 cf

Subcatchment 9: Post 9 Runoff Area=28,758 sf 3.57% Impervious Runoff Depth>1.20"
Tc=5.0 min CN=75 Runoff=0.90 cfs 2,865 cf

Subcatchment B1: BLDG #1 Runoff Area=3,522 sf 100.00% Impervious Runoff Depth>3.12"
Tc=5.0 min CN=98 Runoff=0.26 cfs 914 cf

Subcatchment B2: BLDG #2 Runoff Area=5,607 sf 100.00% Impervious Runoff Depth>3.12"
Tc=5.0 min CN=98 Runoff=0.42 cfs 1,456 cf

Subcatchment B3A: 1/2 BLDG #3 Runoff Area=2,283 sf 100.00% Impervious Runoff Depth>3.12"
Tc=5.0 min CN=98 Runoff=0.17 cfs 593 cf

Subcatchment B3B: 1/2 BLDG #3 Runoff Area=2,283 sf 100.00% Impervious Runoff Depth>3.12"
Tc=5.0 min CN=98 Runoff=0.17 cfs 593 cf

Subcatchment B4: BLDG #4 Runoff Area=5,609 sf 100.00% Impervious Runoff Depth>3.12"
Tc=5.0 min CN=98 Runoff=0.42 cfs 1,456 cf

Reach DP1: DP1post Inflow=0.28 cfs 1,174 cf
Outflow=0.28 cfs 1,174 cf

Reach DP2: DP2 Inflow=0.05 cfs 294 cf
Outflow=0.05 cfs 294 cf

Reach DP3: DP3 Inflow=1.24 cfs 5,207 cf
Outflow=1.24 cfs 5,207 cf

Reach DP4: DP4 Inflow=0.09 cfs 348 cf
Outflow=0.09 cfs 348 cf

Pond CB1: CB1 Peak Elev=34.21' Inflow=0.25 cfs 873 cf
Primary=0.25 cfs 873 cf Secondary=0.00 cfs 0 cf Outflow=0.25 cfs 873 cf

Pond CB10: CB10 Peak Elev=19.90' Inflow=0.40 cfs 1,374 cf
Primary=0.40 cfs 1,374 cf Secondary=0.00 cfs 0 cf Outflow=0.40 cfs 1,374 cf

Pond CB13: CB13 Peak Elev=20.35' Inflow=0.60 cfs 1,866 cf
Primary=0.60 cfs 1,866 cf Secondary=0.00 cfs 0 cf Outflow=0.60 cfs 1,866 cf

Pond CB4: CB4 Peak Elev=34.20' Inflow=0.30 cfs 987 cf
Primary=0.30 cfs 987 cf Secondary=0.00 cfs 0 cf Outflow=0.30 cfs 987 cf

Pond CB5: CB5 Peak Elev=34.25' Inflow=0.20 cfs 679 cf
Primary=0.20 cfs 679 cf Secondary=0.00 cfs 0 cf Outflow=0.20 cfs 679 cf

Pond CB6: CB6 Peak Elev=37.24' Inflow=0.35 cfs 1,083 cf
Primary=0.35 cfs 1,083 cf Secondary=0.00 cfs 0 cf Outflow=0.35 cfs 1,083 cf

Pond CB9: CB9 Peak Elev=37.24' Inflow=0.35 cfs 1,111 cf
Primary=0.35 cfs 1,111 cf Secondary=0.00 cfs 0 cf Outflow=0.35 cfs 1,111 cf

Pond DMH11: DMH11 Peak Elev=20.16' Inflow=0.96 cfs 3,240 cf
12.0" Round Culvert n=0.013 L=42.0' S=0.0024 '/' Outflow=0.96 cfs 3,240 cf

Pond DMH2: DMH2 Peak Elev=34.25' Inflow=0.73 cfs 2,539 cf
12.0" Round Culvert n=0.013 L=29.0' S=0.0034 '/' Outflow=0.73 cfs 2,539 cf

Pond DMH7: DMH7 Peak Elev=37.23' Inflow=0.70 cfs 2,194 cf
12.0" Round Culvert n=0.013 L=30.0' S=0.0033 '/' Outflow=0.70 cfs 2,194 cf

Pond SSD1: SUBSURFACE DRAINAGE AREA Peak Elev=35.15' Storage=2,296 cf Inflow=1.32 cfs 4,587 cf
ded=0.04 cfs 2,399 cf Primary=0.06 cfs 508 cf Secondary=0.00 cfs 0 cf Tertiary=0.01 cfs 28 cf Outflow=0.11 cfs 2,935 cf

Pond SSD2: SUBSURFACE DRAINAGE AREA Peak Elev=37.02' Storage=1,315 cf Inflow=0.87 cfs 2,787 cf
Discarded=0.05 cfs 2,470 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.05 cfs 2,470 cf

Pond SSD3: SUBSURFACE DRAINAGE AREA Peak Elev=19.82' Storage=1,293 cf Inflow=1.22 cfs 4,155 cf
Discarded=0.03 cfs 1,668 cf Primary=0.67 cfs 1,806 cf Secondary=0.00 cfs 0 cf Outflow=0.70 cfs 3,474 cf

Pond SSD4: SUBSURFACE DRAINAGE AREA Peak Elev=36.66' Storage=692 cf Inflow=0.42 cfs 1,456 cf
iscarded=0.01 cfs 747 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Tertiary=0.05 cfs 216 cf Outflow=0.06 cfs 962 cf

Pond SSD5: SUBSURFACE DRAINAGE AREA #5 Peak Elev=31.03' Storage=15 cf Inflow=0.01 cfs 28 cf
Primary=0.00 cfs 28 cf Secondary=0.00 cfs 0 cf Outflow=0.00 cfs 28 cf

Total Runoff Area = 106,915 sf Runoff Volume = 17,451 cf Average Runoff Depth = 1.96"
54.54% Pervious = 58,311 sf 45.46% Impervious = 48,604 sf

Summary for Subcatchment 1: Post 1

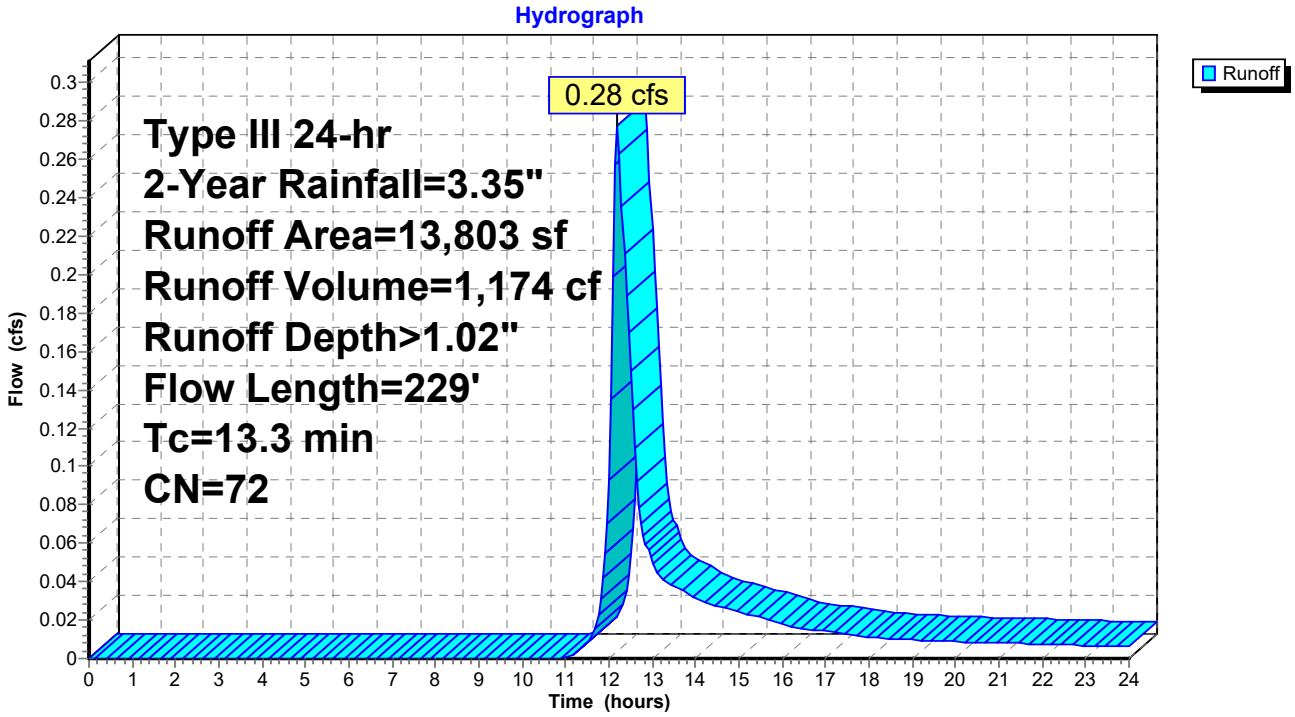
Runoff = 0.28 cfs @ 12.20 hrs, Volume= 1,174 cf, Depth> 1.02"
Routed to Reach DP1 : DP1post

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.35"

Area (sf)	CN	Description
5,871	74	>75% Grass cover, Good, HSG C
7,932	70	Woods, Good, HSG C
0	98	Paved parking, HSG C
0	98	Paved parking, HSG C
13,803	72	Weighted Average
13,803		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	50	0.0300	0.08		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.35"
1.1	67	0.0400	1.00		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.1	58	0.0300	0.87		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.9	54	0.0400	1.00		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
13.3	229	Total			

Subcatchment 1: Post 1



Summary for Subcatchment 2A: Post 2A

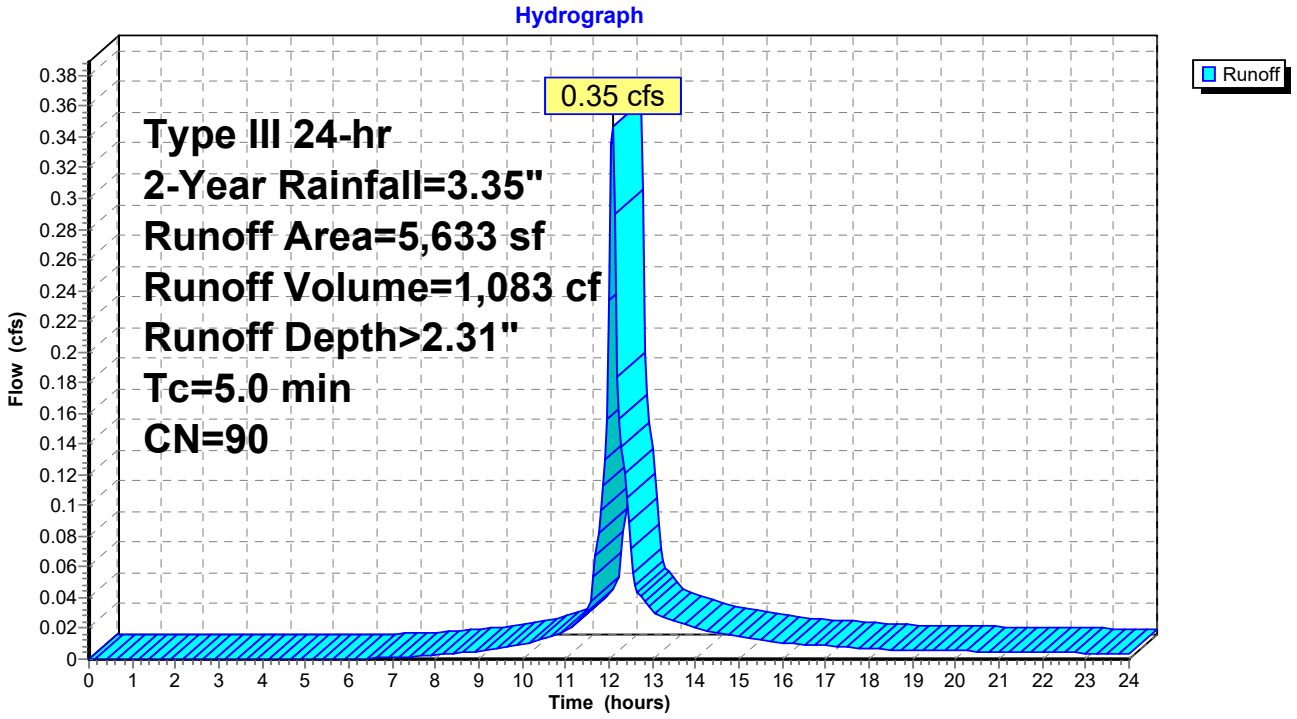
Runoff = 0.35 cfs @ 12.07 hrs, Volume= 1,083 cf, Depth> 2.31"
Routed to Pond CB6 : CB6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.35"

Area (sf)	CN	Description
1,714	74	>75% Grass cover, Good, HSG C
128	70	Woods, Good, HSG C
3,315	98	Paved parking, HSG C
476	98	Paved parking, HSG C
5,633	90	Weighted Average
1,842		32.70% Pervious Area
3,791		67.30% Impervious Area

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

Subcatchment 2A: Post 2A



Summary for Subcatchment 2B: Post 2B

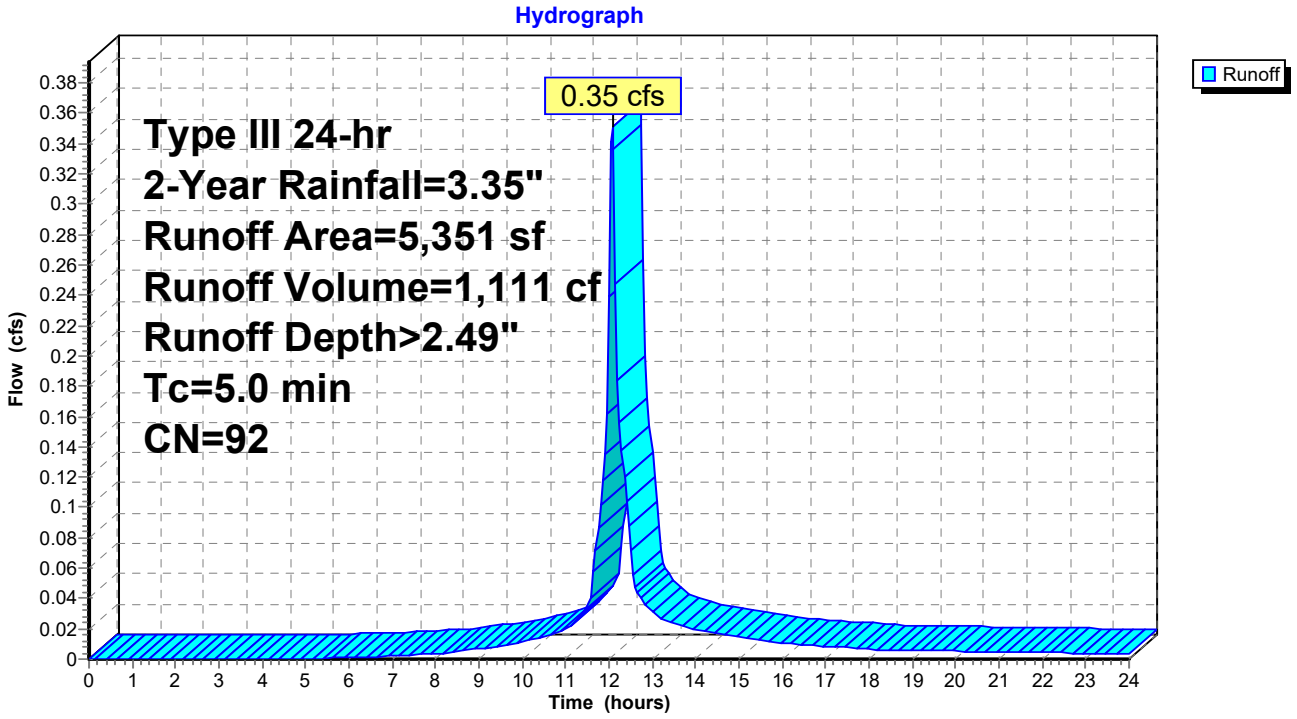
Runoff = 0.35 cfs @ 12.07 hrs, Volume= 1,111 cf, Depth> 2.49"
Routed to Pond CB9 : CB9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.35"

Area (sf)	CN	Description
1,174	74	>75% Grass cover, Good, HSG C
115	70	Woods, Good, HSG C
3,796	98	Paved parking, HSG C
266	98	Paved parking, HSG C
5,351	92	Weighted Average
1,289		24.09% Pervious Area
4,062		75.91% Impervious Area

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

Subcatchment 2B: Post 2B



Summary for Subcatchment 3A: Post 3A

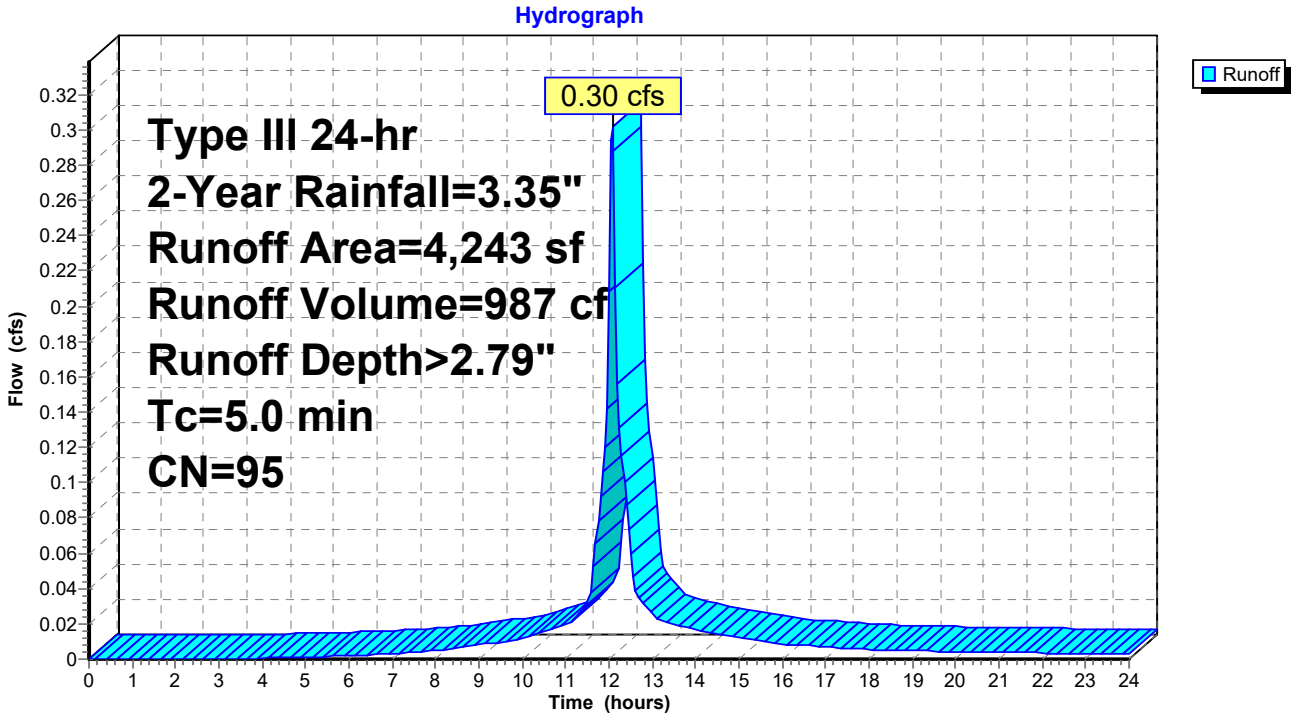
Runoff = 0.30 cfs @ 12.07 hrs, Volume= 987 cf, Depth> 2.79"
Routed to Pond CB4 : CB4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.35"

Area (sf)	CN	Description
570	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
3,241	98	Paved parking, HSG C
432	98	Paved parking, HSG C
4,243	95	Weighted Average
570		13.43% Pervious Area
3,673		86.57% Impervious Area

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

Subcatchment 3A: Post 3A



Summary for Subcatchment 3B: Post 3B

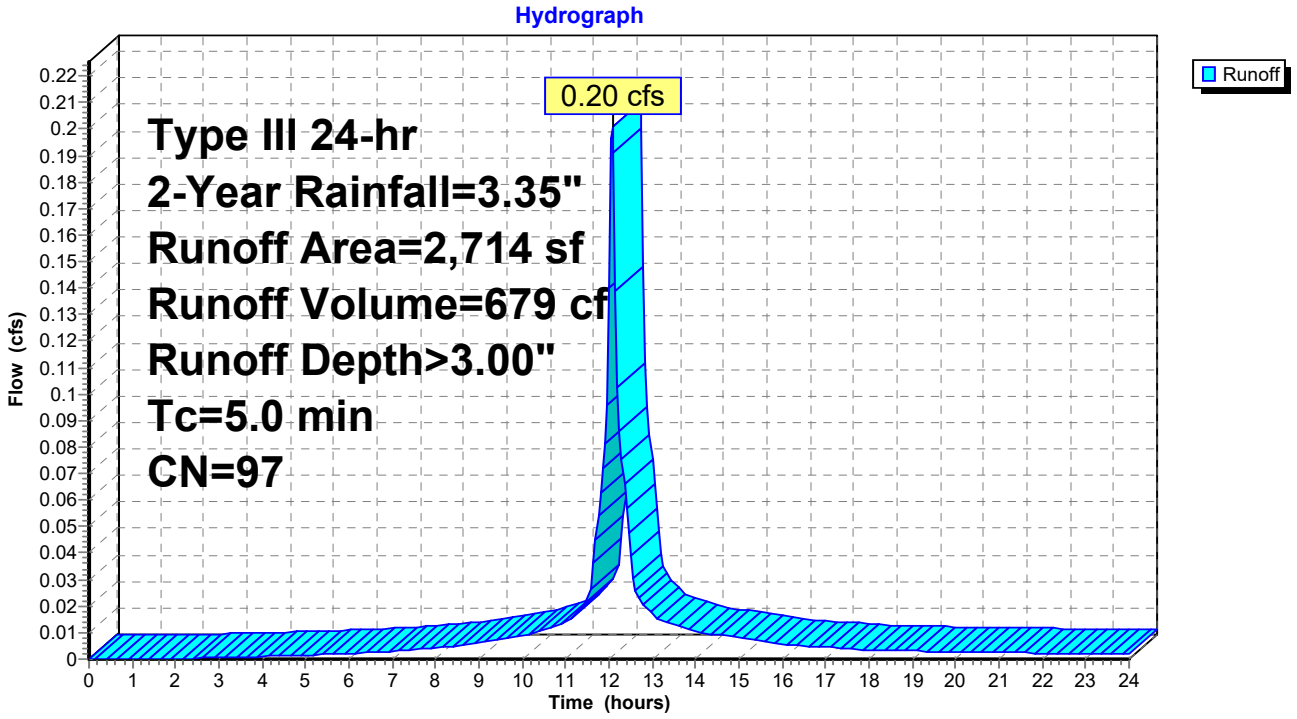
Runoff = 0.20 cfs @ 12.07 hrs, Volume= 679 cf, Depth> 3.00"
Routed to Pond CB5 : CB5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.35"

Area (sf)	CN	Description
99	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
2,615	98	Paved parking, HSG C
0	98	Paved parking, HSG C
2,714	97	Weighted Average
99		3.65% Pervious Area
2,615		96.35% Impervious Area

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

Subcatchment 3B: Post 3B



Summary for Subcatchment 4: Post 4

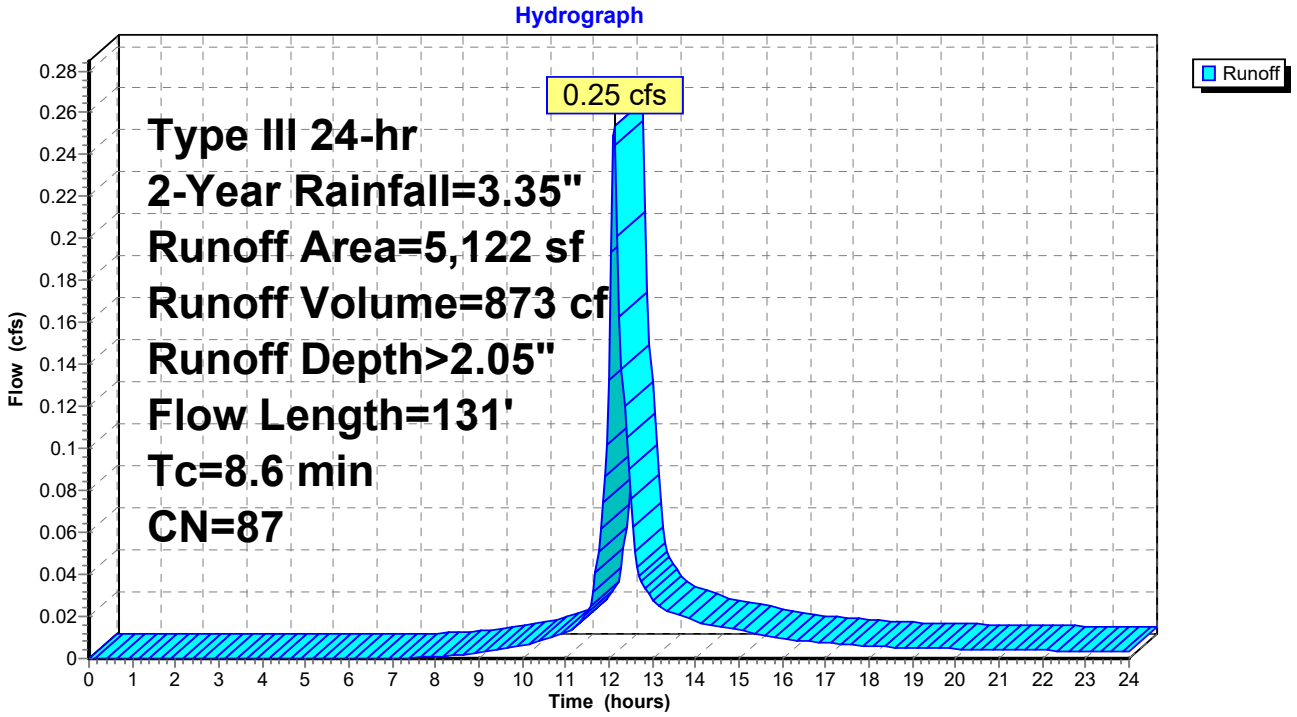
Runoff = 0.25 cfs @ 12.12 hrs, Volume= 873 cf, Depth> 2.05"
Routed to Pond CB1 : CB1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.35"

Area (sf)	CN	Description
2,250	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
2,872	98	Paved parking, HSG C
0	98	Paved parking, HSG C
5,122	87	Weighted Average
2,250		43.93% Pervious Area
2,872		56.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0200	0.10		**Sheet Flow, GRASS** Grass: Dense n= 0.240 P2= 3.35"
0.5	39	0.0300	1.21		**Shallow Concentrated Flow, GRASS** Short Grass Pasture Kv= 7.0 fps
0.0	13	0.0800	5.74		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
0.1	29	0.0300	3.52		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
8.6	131	Total			

Subcatchment 4: Post 4



Summary for Subcatchment 5: Post 5

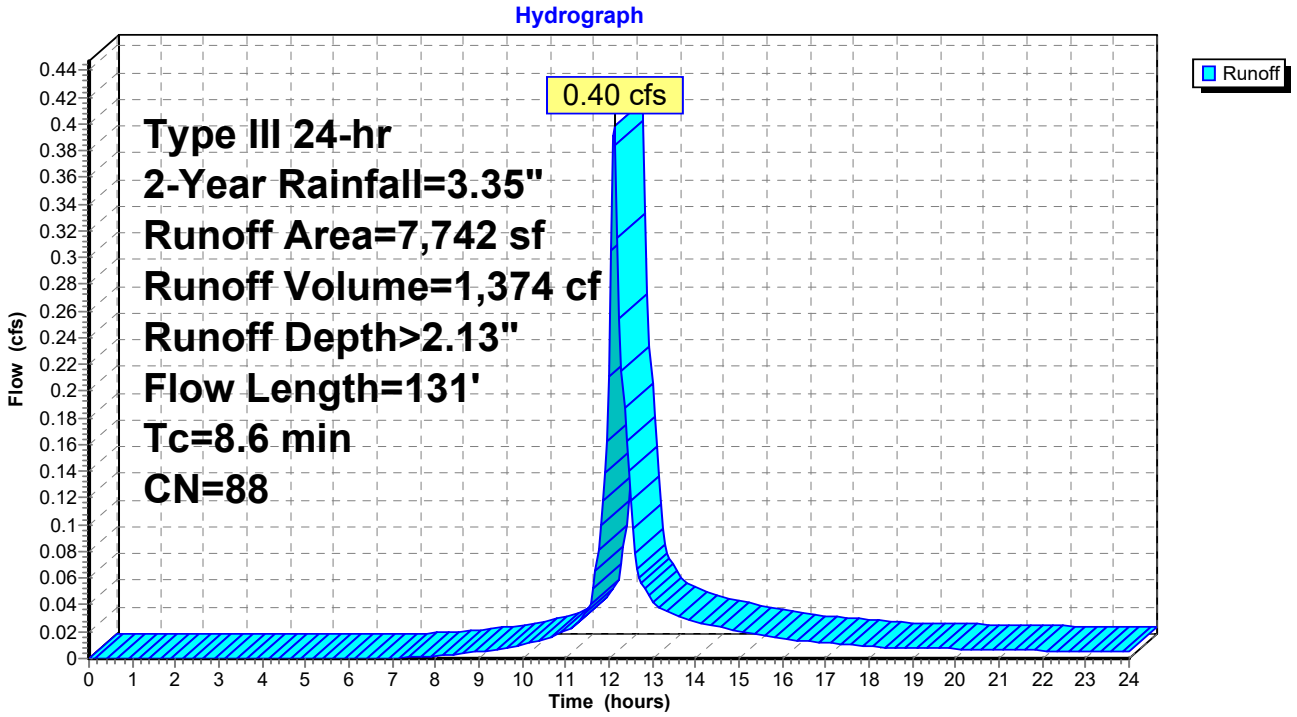
Runoff = 0.40 cfs @ 12.12 hrs, Volume= 1,374 cf, Depth> 2.13"
Routed to Pond CB10 : CB10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.35"

Area (sf)	CN	Description
1,823	98	Unconnected roofs, HSG C
3,166	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
2,753	98	Paved parking, HSG C
0	98	Paved parking, HSG C
7,742	88	Weighted Average
3,166		40.89% Pervious Area
4,576		59.11% Impervious Area
1,823		39.84% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0200	0.10		**Sheet Flow, GRASS** Grass: Dense n= 0.240 P2= 3.35"
0.5	39	0.0300	1.21		**Shallow Concentrated Flow, GRASS** Short Grass Pasture Kv= 7.0 fps
0.0	13	0.0800	5.74		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
0.1	29	0.0300	3.52		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
8.6	131	Total			

Subcatchment 5: Post 5



Summary for Subcatchment 6: Post 6

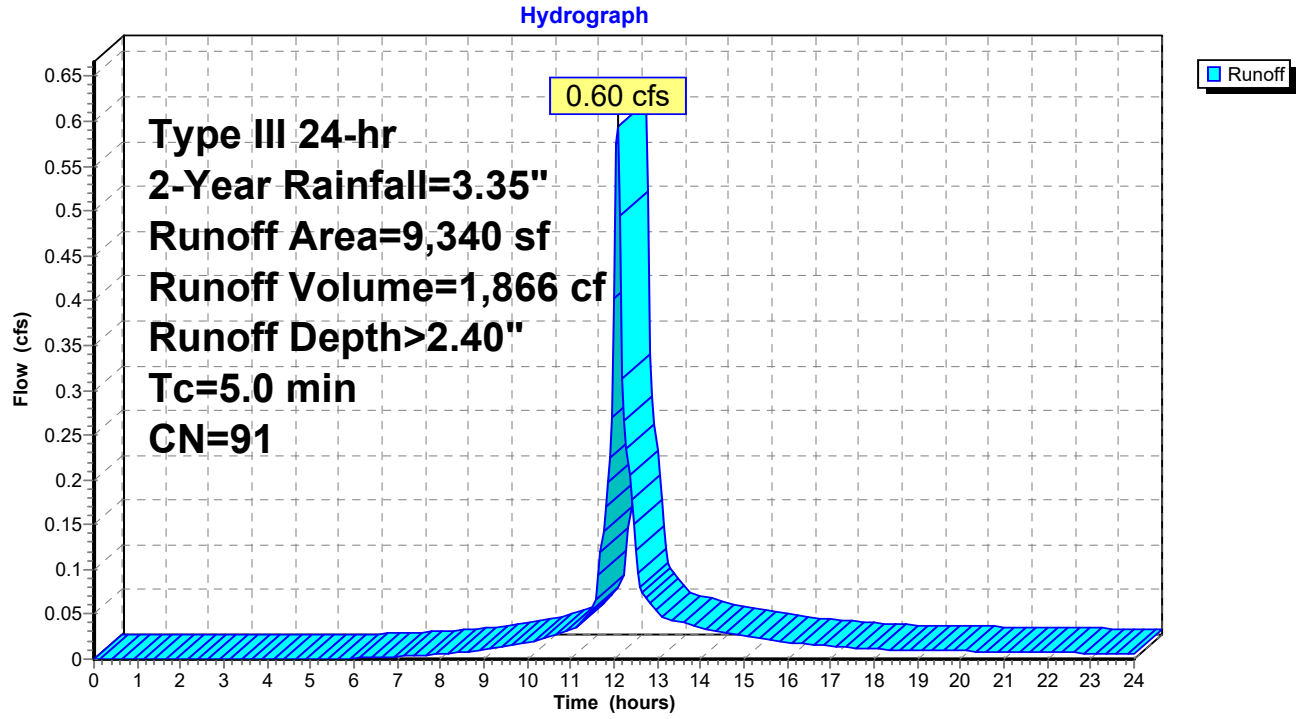
Runoff = 0.60 cfs @ 12.07 hrs, Volume= 1,866 cf, Depth> 2.40"
Routed to Pond CB13 : CB13

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.35"

Area (sf)	CN	Description
2,655	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
5,754	98	Paved parking, HSG C
931	98	Paved parking, HSG C
9,340	91	Weighted Average
2,655		28.43% Pervious Area
6,685		71.57% Impervious Area

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

Subcatchment 6: Post 6



Summary for Subcatchment 7: Post 7

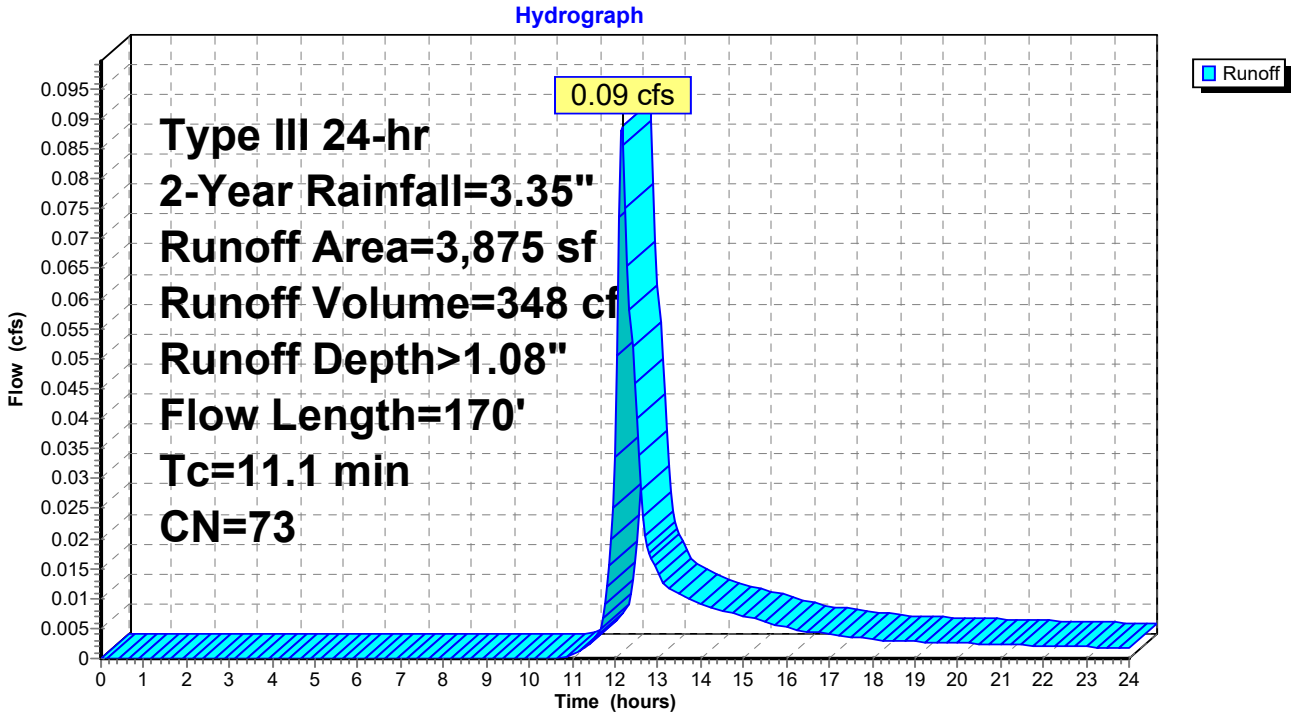
Runoff = 0.09 cfs @ 12.17 hrs, Volume= 348 cf, Depth> 1.08"
Routed to Reach DP4 : DP4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.35"

Area (sf)	CN	Description
3,170	74	>75% Grass cover, Good, HSG C
705	70	Woods, Good, HSG C
0	98	Paved parking, HSG C
0	98	Paved parking, HSG C
3,875	73	Weighted Average
3,875		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	50	0.0400	0.09		**Sheet Flow, WOODS** Woods: Light underbrush n= 0.400 P2= 3.35"
0.7	55	0.0400	1.40		**Shallow Concentrated Flow, WOODS** Short Grass Pasture Kv= 7.0 fps
1.2	53	0.0200	0.71		**Shallow Concentrated Flow, WOODS** Woodland Kv= 5.0 fps
0.1	12	0.0700	1.85		**Shallow Concentrated Flow, GRASS** Short Grass Pasture Kv= 7.0 fps
11.1	170	Total			

Subcatchment 7: Post 7



Summary for Subcatchment 8: Post 8

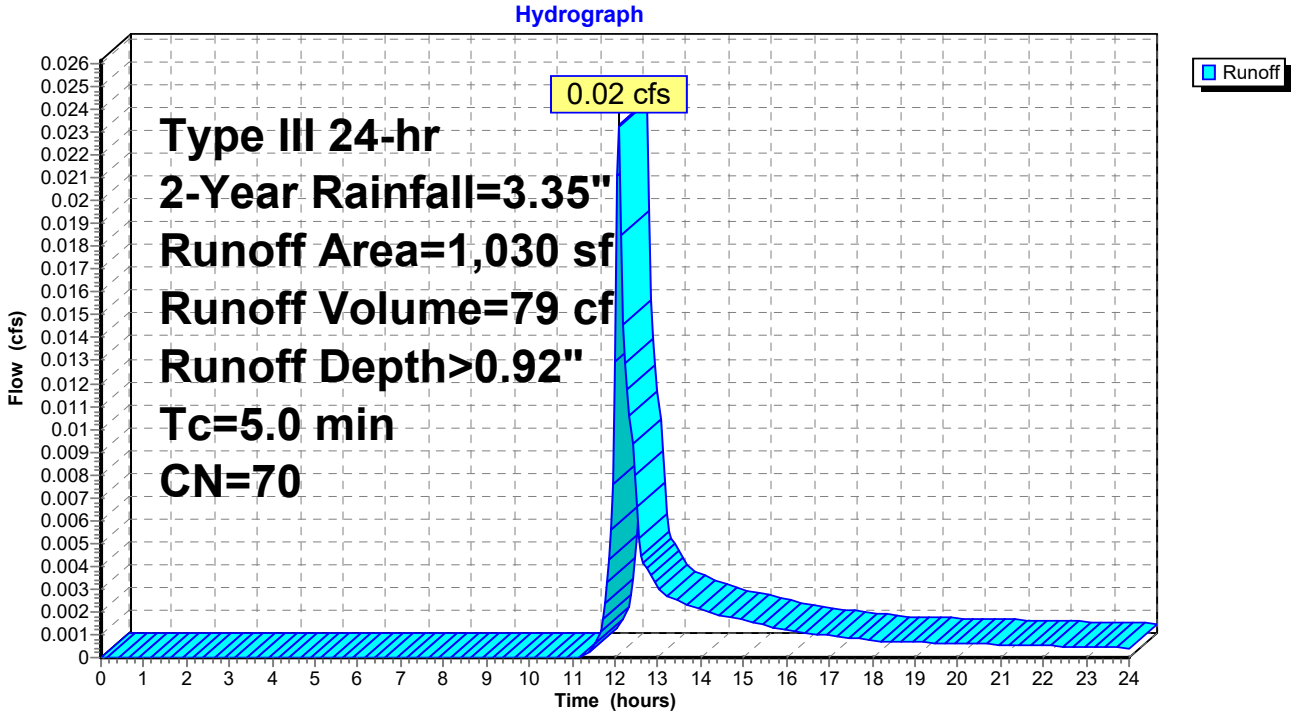
Runoff = 0.02 cfs @ 12.09 hrs, Volume= 79 cf, Depth> 0.92"
Routed to Reach DP2 : DP2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.35"

Area (sf)	CN	Description
0	74	>75% Grass cover, Good, HSG C
1,030	70	Woods, Good, HSG C
0	98	Paved parking, HSG C
0	98	Paved parking, HSG C
1,030	70	Weighted Average
1,030		100.00% Pervious Area

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

Subcatchment 8: Post 8



Summary for Subcatchment 9: Post 9

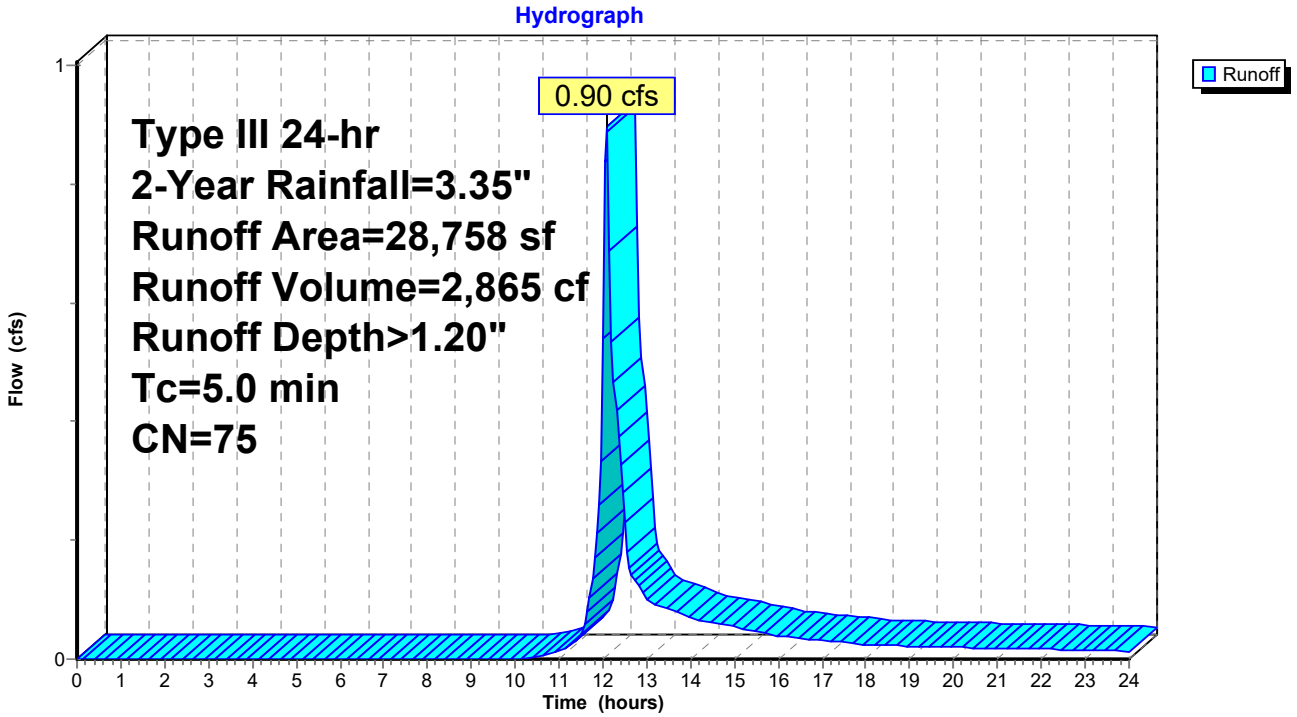
Runoff = 0.90 cfs @ 12.09 hrs, Volume= 2,865 cf, Depth> 1.20"
Routed to Reach DP3 : DP3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.35"

Area (sf)	CN	Description
25,955	74	>75% Grass cover, Good, HSG C
1,777	70	Woods, Good, HSG C
0	98	Paved parking, HSG C
1,026	98	Paved parking, HSG C
28,758	75	Weighted Average
27,732		96.43% Pervious Area
1,026		3.57% Impervious Area

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

Subcatchment 9: Post 9



Summary for Subcatchment B1: BLDG #1

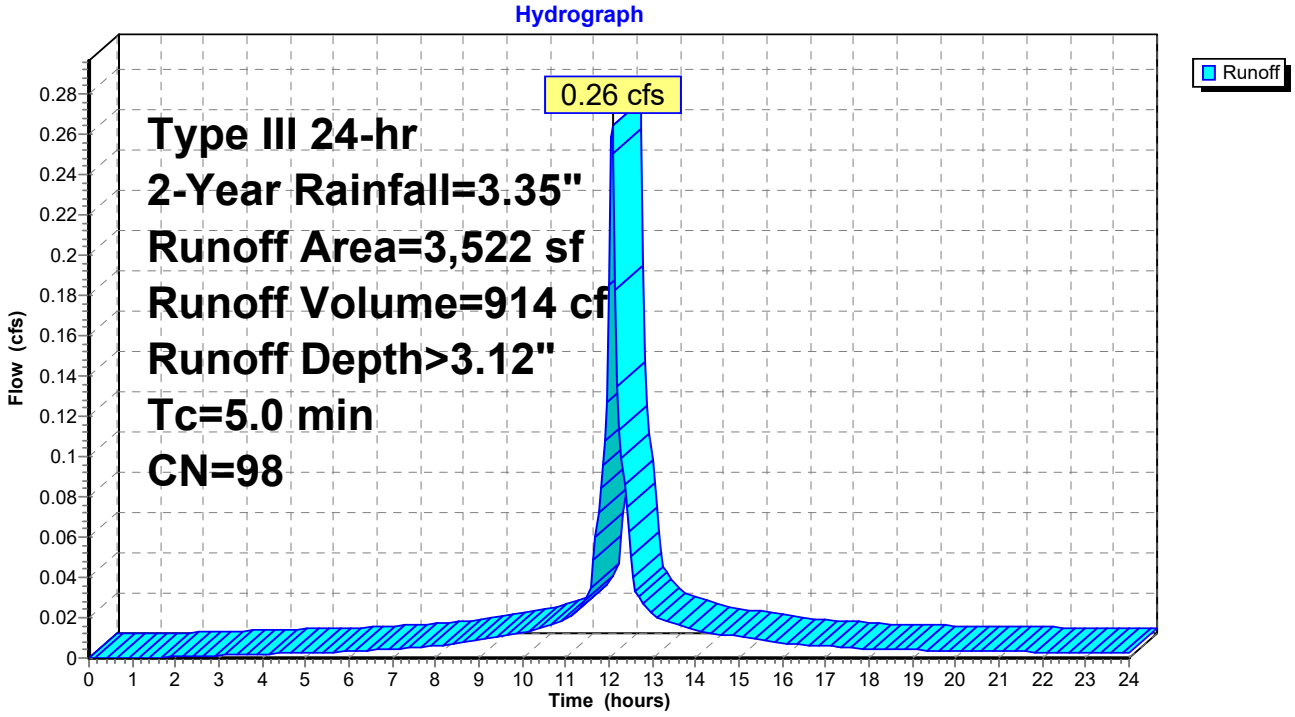
Runoff = 0.26 cfs @ 12.07 hrs, Volume= 914 cf, Depth> 3.12"
Routed to Pond SSD3 : SUBSURFACE DRAINAGE AREA #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.35"

Area (sf)	CN	Description
3,522	98	Unconnected roofs, HSG C
3,522		100.00% Impervious Area
3,522		100.00% Unconnected

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

Subcatchment B1: BLDG #1



Summary for Subcatchment B2: BLDG #2

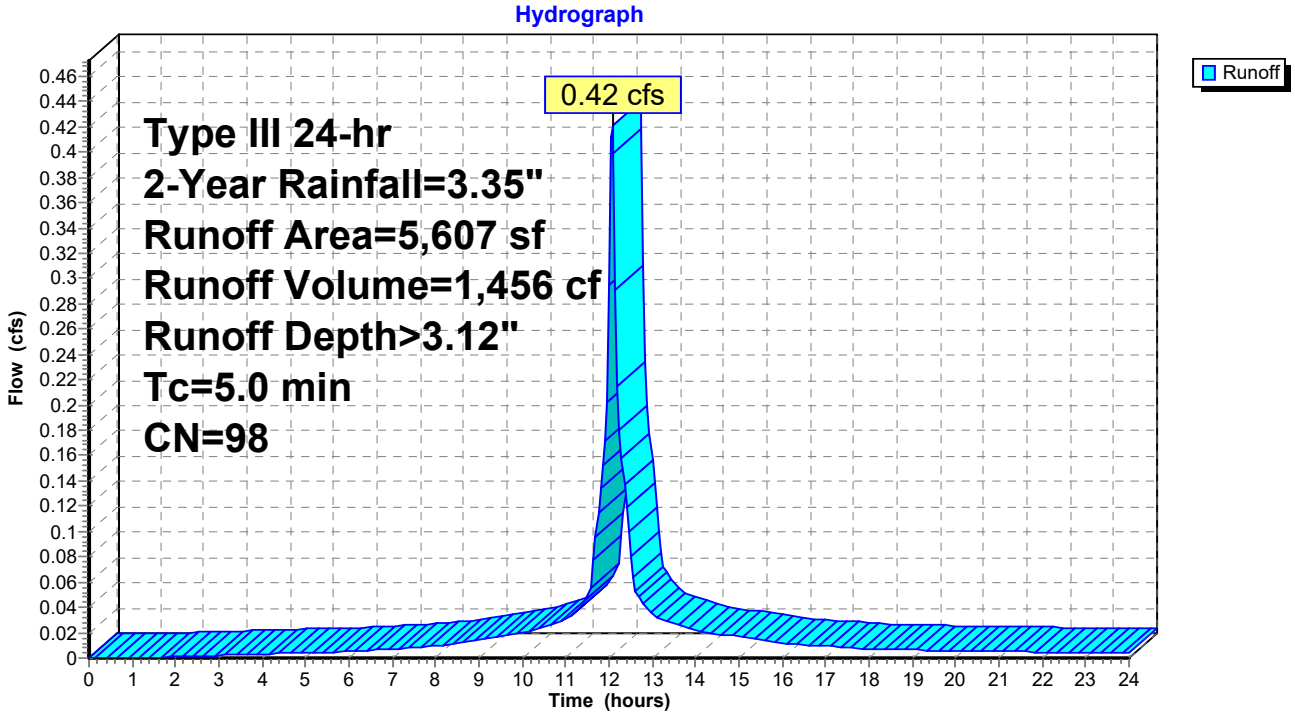
Runoff = 0.42 cfs @ 12.07 hrs, Volume= 1,456 cf, Depth> 3.12"
Routed to Pond SSD1 : SUBSURFACE DRAINAGE AREA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.35"

Area (sf)	CN	Description
5,607	98	Unconnected roofs, HSG C
5,607		100.00% Impervious Area
5,607		100.00% Unconnected

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

Subcatchment B2: BLDG #2



Summary for Subcatchment B3A: 1/2 BLDG #3

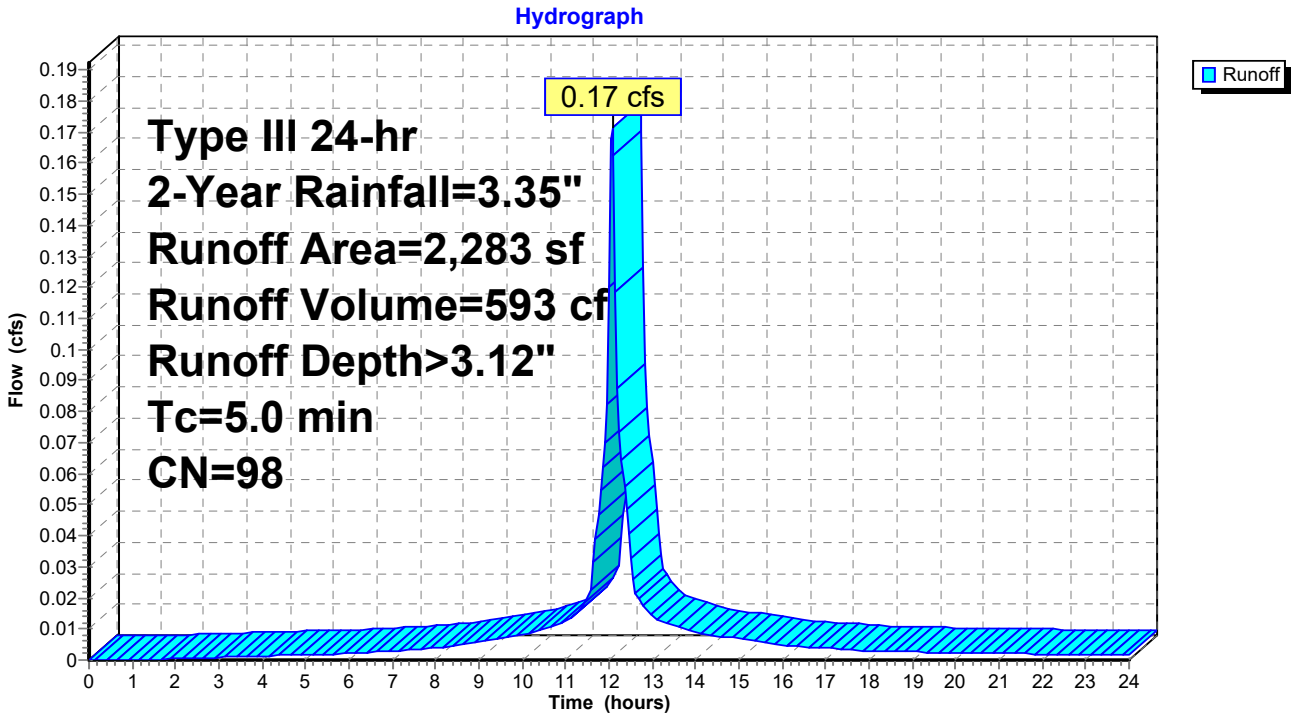
Runoff = 0.17 cfs @ 12.07 hrs, Volume= 593 cf, Depth> 3.12"
Routed to Pond SSD2 : SUBSURFACE DRAINAGE AREA #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.35"

Area (sf)	CN	Description
2,283	98	Unconnected roofs, HSG C
2,283		100.00% Impervious Area
2,283		100.00% Unconnected

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

Subcatchment B3A: 1/2 BLDG #3



Summary for Subcatchment B3B: 1/2 BLDG #3

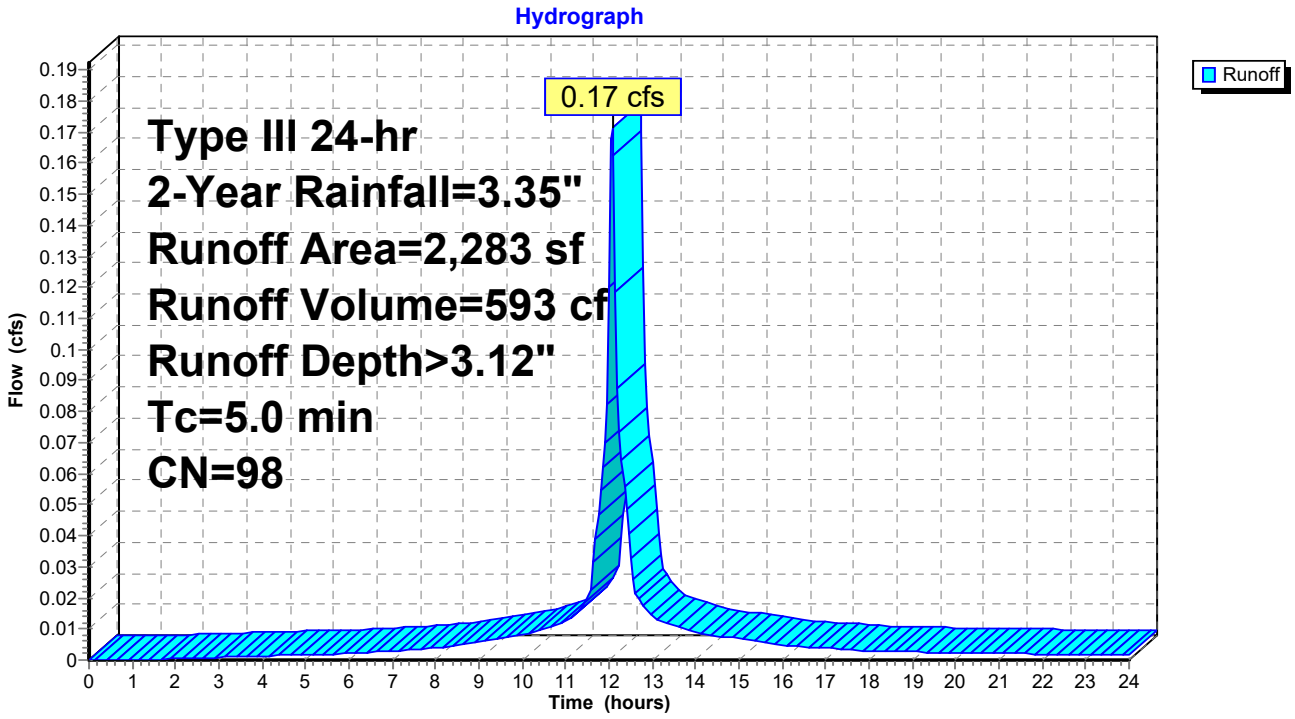
Runoff = 0.17 cfs @ 12.07 hrs, Volume= 593 cf, Depth> 3.12"
Routed to Pond SSD1 : SUBSURFACE DRAINAGE AREA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.35"

Area (sf)	CN	Description
2,283	98	Unconnected roofs, HSG C
2,283		100.00% Impervious Area
2,283		100.00% Unconnected

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

Subcatchment B3B: 1/2 BLDG #3



Summary for Subcatchment B4: BLDG #4

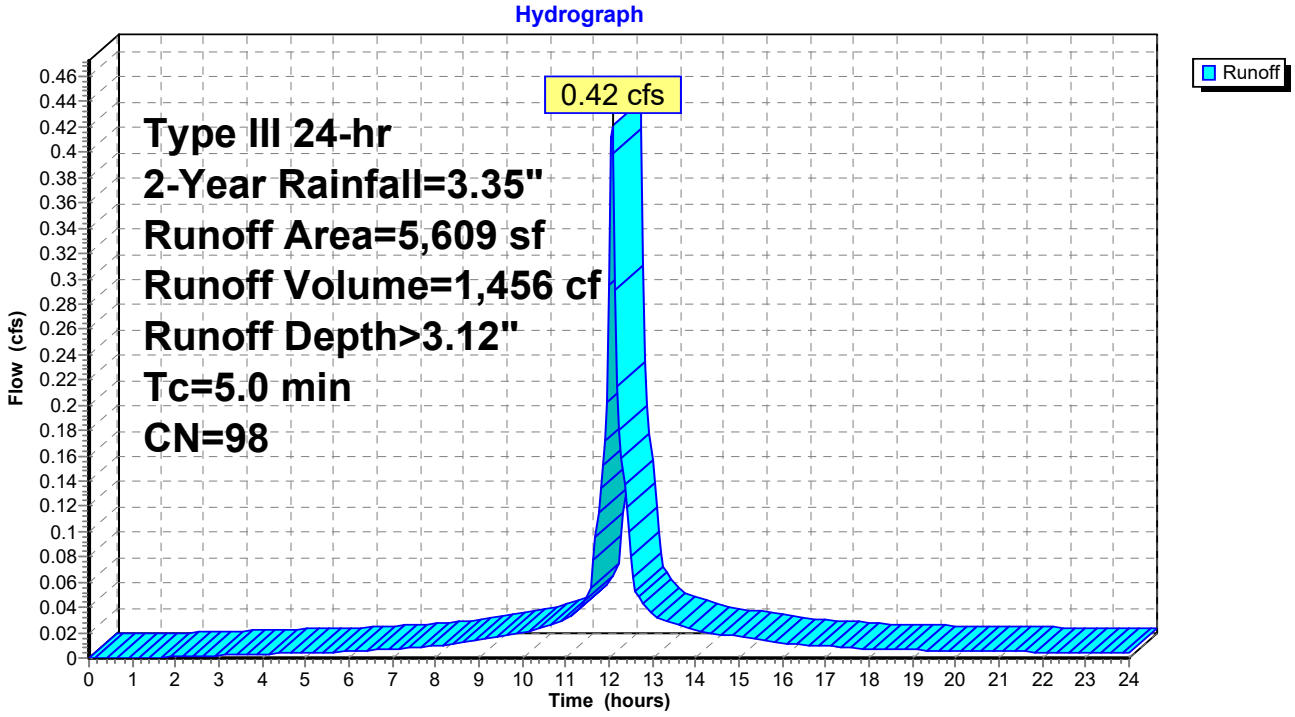
Runoff = 0.42 cfs @ 12.07 hrs, Volume= 1,456 cf, Depth> 3.12"
Routed to Pond SSD4 : SUBSURFACE DRAINAGE AREA #4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.35"

Area (sf)	CN	Description
5,609	98	Unconnected roofs, HSG C
5,609		100.00% Impervious Area
5,609		100.00% Unconnected

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

Subcatchment B4: BLDG #4

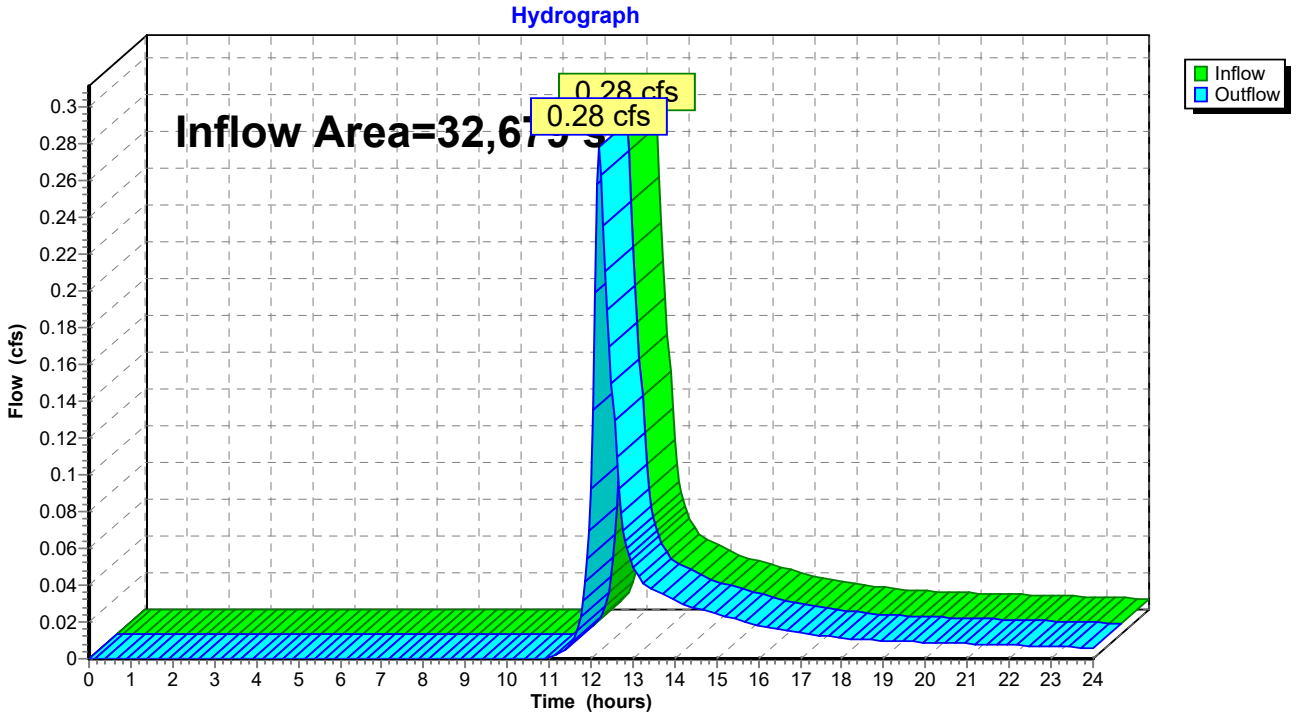


Summary for Reach DP1: DP1post

Inflow Area = 32,679 sf, 48.18% Impervious, Inflow Depth > 0.43" for 2-Year event
Inflow = 0.28 cfs @ 12.20 hrs, Volume= 1,174 cf
Outflow = 0.28 cfs @ 12.20 hrs, Volume= 1,174 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP1: DP1post

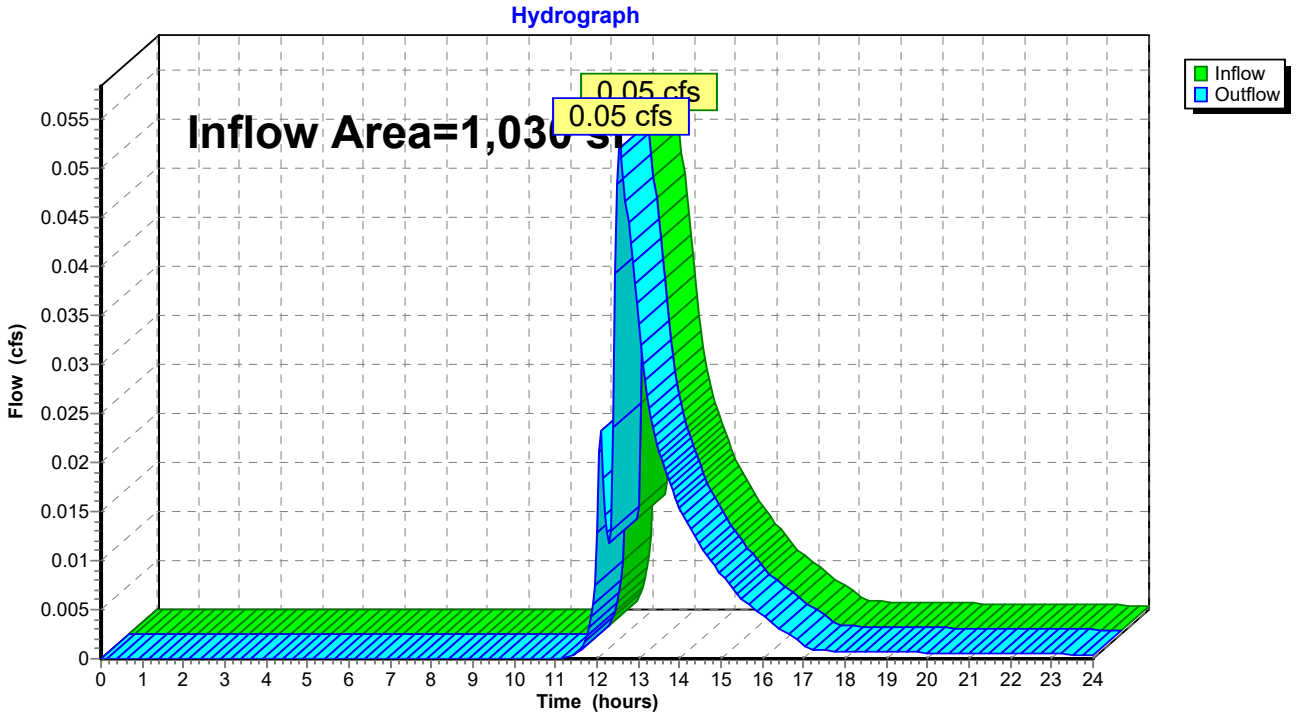


Summary for Reach DP2: DP2

Inflow Area = 1,030 sf, 0.00% Impervious, Inflow Depth > 3.43" for 2-Year event
Inflow = 0.05 cfs @ 12.57 hrs, Volume= 294 cf
Outflow = 0.05 cfs @ 12.57 hrs, Volume= 294 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP2: DP2

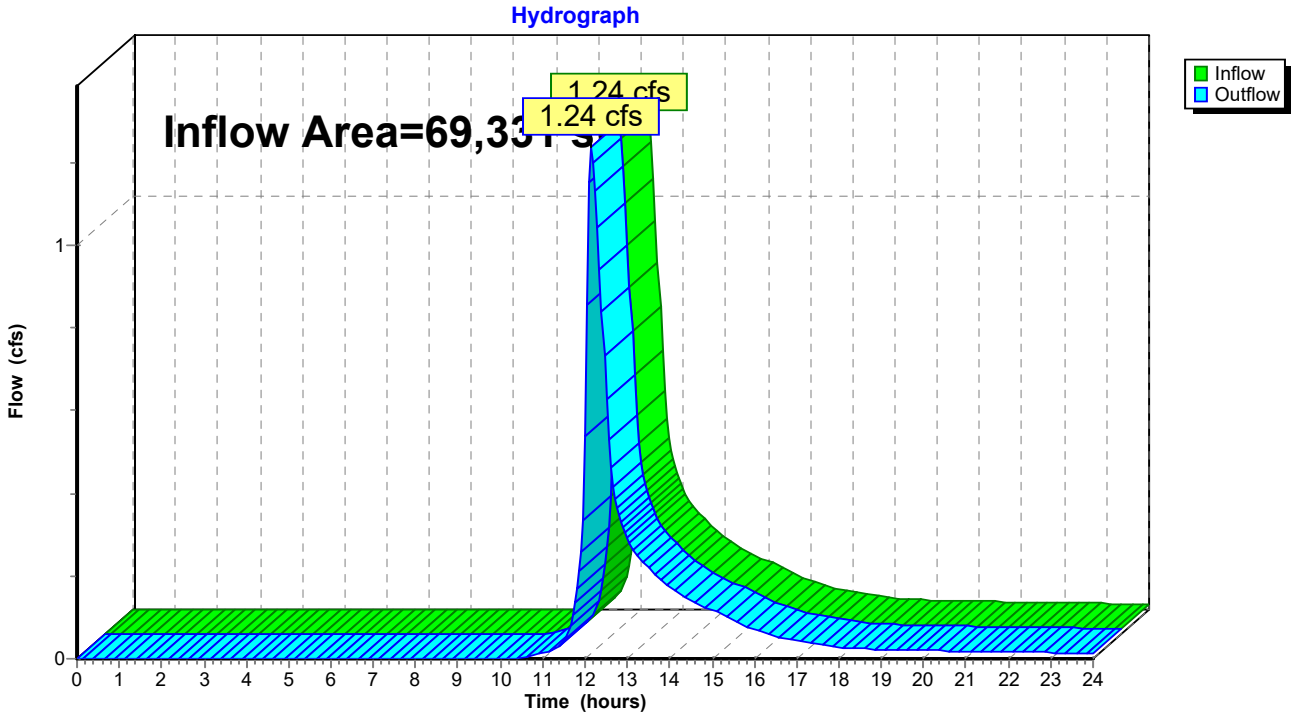


Summary for Reach DP3: DP3

Inflow Area = 69,331 sf, 47.39% Impervious, Inflow Depth > 0.90" for 2-Year event
Inflow = 1.24 cfs @ 12.16 hrs, Volume= 5,207 cf
Outflow = 1.24 cfs @ 12.16 hrs, Volume= 5,207 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP3: DP3

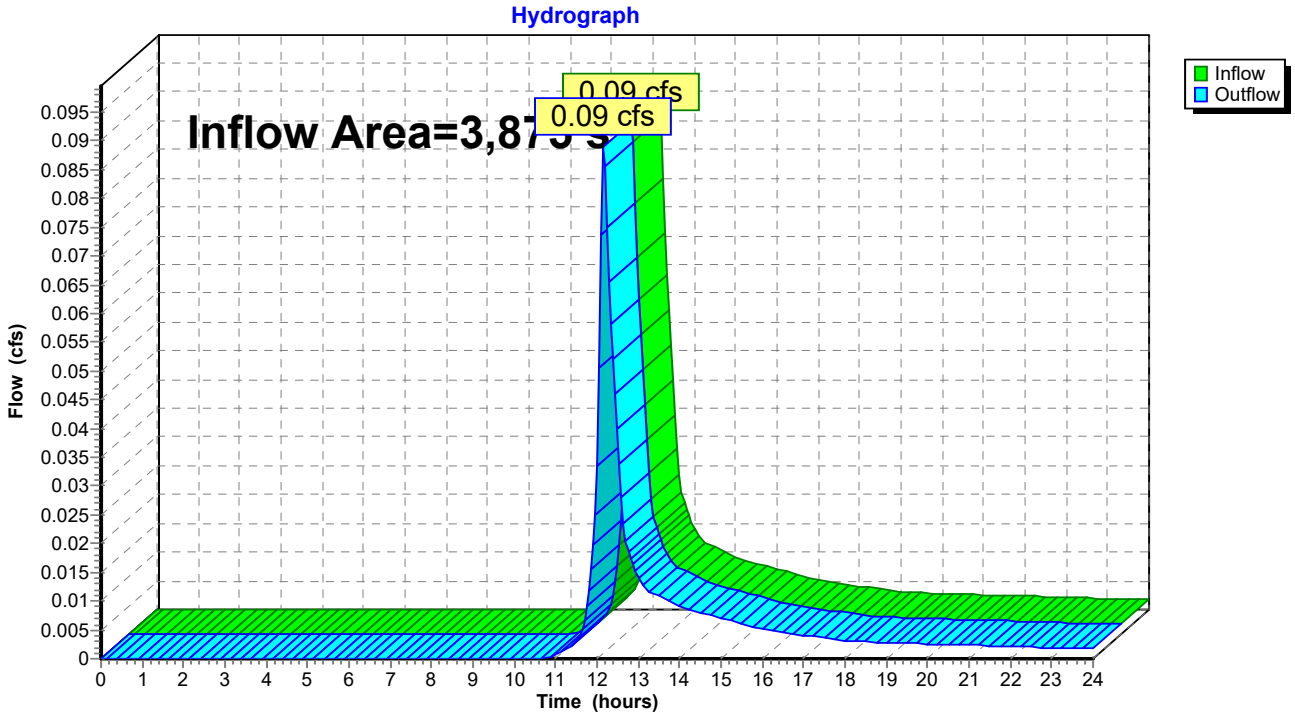


Summary for Reach DP4: DP4

Inflow Area = 3,875 sf, 0.00% Impervious, Inflow Depth > 1.08" for 2-Year event
Inflow = 0.09 cfs @ 12.17 hrs, Volume= 348 cf
Outflow = 0.09 cfs @ 12.17 hrs, Volume= 348 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP4: DP4



Summary for Pond CB1: CB1

Inflow Area = 5,122 sf, 56.07% Impervious, Inflow Depth > 2.05" for 2-Year event
Inflow = 0.25 cfs @ 12.12 hrs, Volume= 873 cf
Outflow = 0.25 cfs @ 12.12 hrs, Volume= 873 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.25 cfs @ 12.12 hrs, Volume= 873 cf
Routed to Pond DMH2 : DMH2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond CB10 : CB10

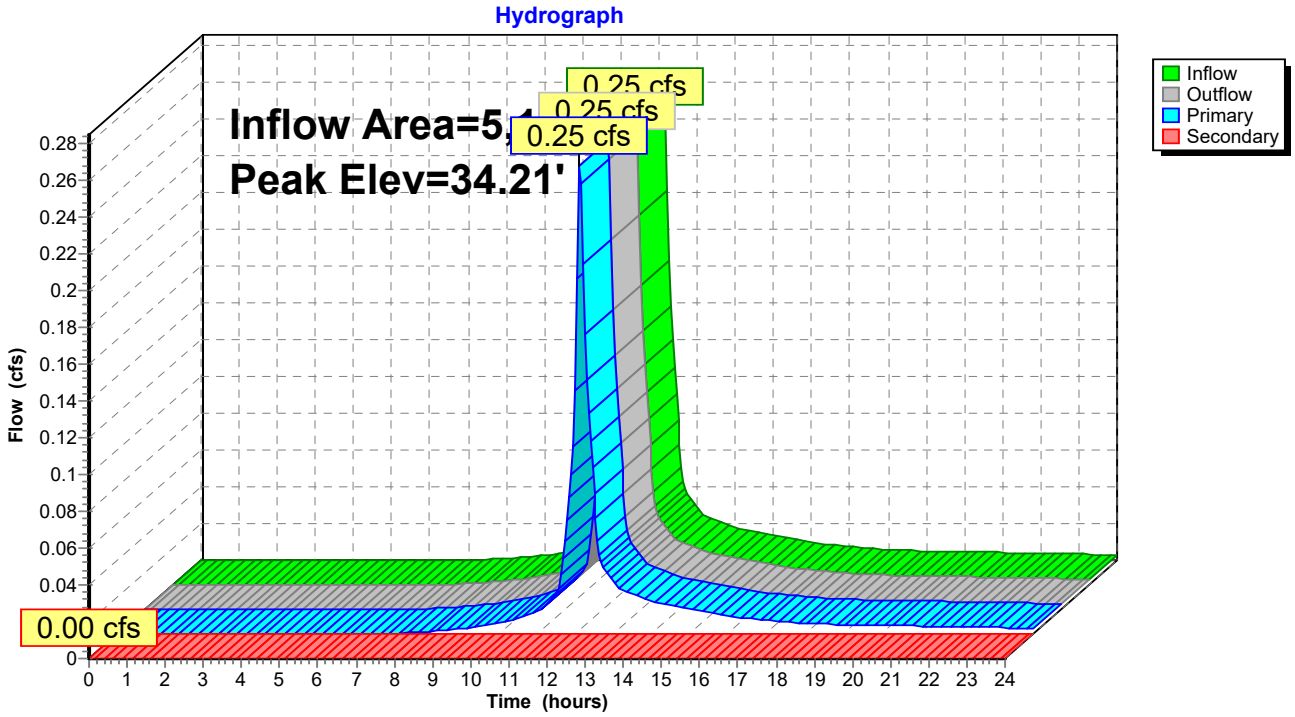
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 34.21' @ 12.12 hrs
Flood Elev= 36.27'

Device	Routing	Invert	Outlet Devices
#1	Primary	33.90'	**12.0" Round Culvert** L= 29.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 33.90' / 33.80' S= 0.0034 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	36.27'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.25 cfs @ 12.12 hrs HW=34.21' (Free Discharge)
1=Culvert (Barrel Controls 0.25 cfs @ 1.80 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=33.90' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB1: CB1


Hydrograph
Inflow Area=5,
Peak Elev=34.21'
0.25 cfs
0.25 cfs
0.25 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
0.28
0.26
0.24
0.22
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Time (hours)

Stage-Discharge for Pond CB1: CB1

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
33.90	0.00	0.00	**0.00**
33.95	0.01	0.01	0.00
34.00	0.02	0.02	0.00
34.05	0.06	0.06	0.00
34.10	0.10	0.10	0.00
34.15	0.16	0.16	0.00
34.20	0.23	0.23	0.00
34.25	0.32	0.32	0.00
34.30	0.41	0.41	0.00
34.35	0.51	0.51	0.00
34.40	0.62	0.62	0.00
34.45	0.74	0.74	0.00
34.50	0.87	0.87	0.00
34.55	1.00	1.00	0.00
34.60	1.14	1.14	0.00
34.65	1.28	1.28	0.00
34.70	1.43	1.43	0.00
34.75	1.58	1.58	0.00
34.80	1.72	1.72	0.00
34.85	1.87	1.87	0.00
34.90	2.02	2.02	0.00
34.95	2.16	2.16	0.00
35.00	2.30	2.30	0.00
35.05	2.42	2.42	0.00
35.10	2.54	2.54	0.00
35.15	2.63	2.63	0.00
35.20	2.69	2.69	0.00
35.25	2.72	2.72	0.00
35.30	2.87	2.87	0.00
35.35	3.01	3.01	0.00
35.40	3.14	3.14	0.00
35.45	3.27	3.27	0.00
35.50	3.40	3.40	0.00
35.55	3.52	3.52	0.00
35.60	3.63	3.63	0.00
35.65	3.74	3.74	0.00
35.70	3.85	3.85	0.00
35.75	3.96	3.96	0.00
35.80	4.06	4.06	0.00
35.85	4.16	4.16	0.00
35.90	4.26	4.26	0.00
35.95	4.35	4.35	0.00
36.00	4.45	4.45	0.00
36.05	4.54	4.54	0.00
36.10	4.63	4.63	0.00
36.15	4.72	4.72	0.00
36.20	4.80	4.80	0.00
36.25	**4.89**	**4.89**	0.00

Stage-Area-Storage for Pond CB1: CB1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
33.90	**0**	34.96	0	36.02	0
33.92	0	34.98	0	36.04	0
33.94	0	35.00	0	36.06	0
33.96	0	35.02	0	36.08	0
33.98	0	35.04	0	36.10	0
34.00	0	35.06	0	36.12	0
34.02	0	35.08	0	36.14	0
34.04	0	35.10	0	36.16	0
34.06	0	35.12	0	36.18	0
34.08	0	35.14	0	36.20	0
34.10	0	35.16	0	36.22	0
34.12	0	35.18	0	36.24	0
34.14	0	35.20	0	36.26	0
34.16	0	35.22	0		
34.18	0	35.24	0		
34.20	0	35.26	0		
34.22	0	35.28	0		
34.24	0	35.30	0		
34.26	0	35.32	0		
34.28	0	35.34	0		
34.30	0	35.36	0		
34.32	0	35.38	0		
34.34	0	35.40	0		
34.36	0	35.42	0		
34.38	0	35.44	0		
34.40	0	35.46	0		
34.42	0	35.48	0		
34.44	0	35.50	0		
34.46	0	35.52	0		
34.48	0	35.54	0		
34.50	0	35.56	0		
34.52	0	35.58	0		
34.54	0	35.60	0		
34.56	0	35.62	0		
34.58	0	35.64	0		
34.60	0	35.66	0		
34.62	0	35.68	0		
34.64	0	35.70	0		
34.66	0	35.72	0		
34.68	0	35.74	0		
34.70	0	35.76	0		
34.72	0	35.78	0		
34.74	0	35.80	0		
34.76	0	35.82	0		
34.78	0	35.84	0		
34.80	0	35.86	0		
34.82	0	35.88	0		
34.84	0	35.90	0		
34.86	0	35.92	0		
34.88	0	35.94	0		
34.90	0	35.96	0		
34.92	0	35.98	0		
34.94	0	36.00	0		

Summary for Pond CB10: CB10

Inflow Area = 7,742 sf, 59.11% Impervious, Inflow Depth > 2.13" for 2-Year event
Inflow = 0.40 cfs @ 12.12 hrs, Volume= 1,374 cf
Outflow = 0.40 cfs @ 12.12 hrs, Volume= 1,374 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.40 cfs @ 12.12 hrs, Volume= 1,374 cf
Routed to Pond DMH11 : DMH11
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3

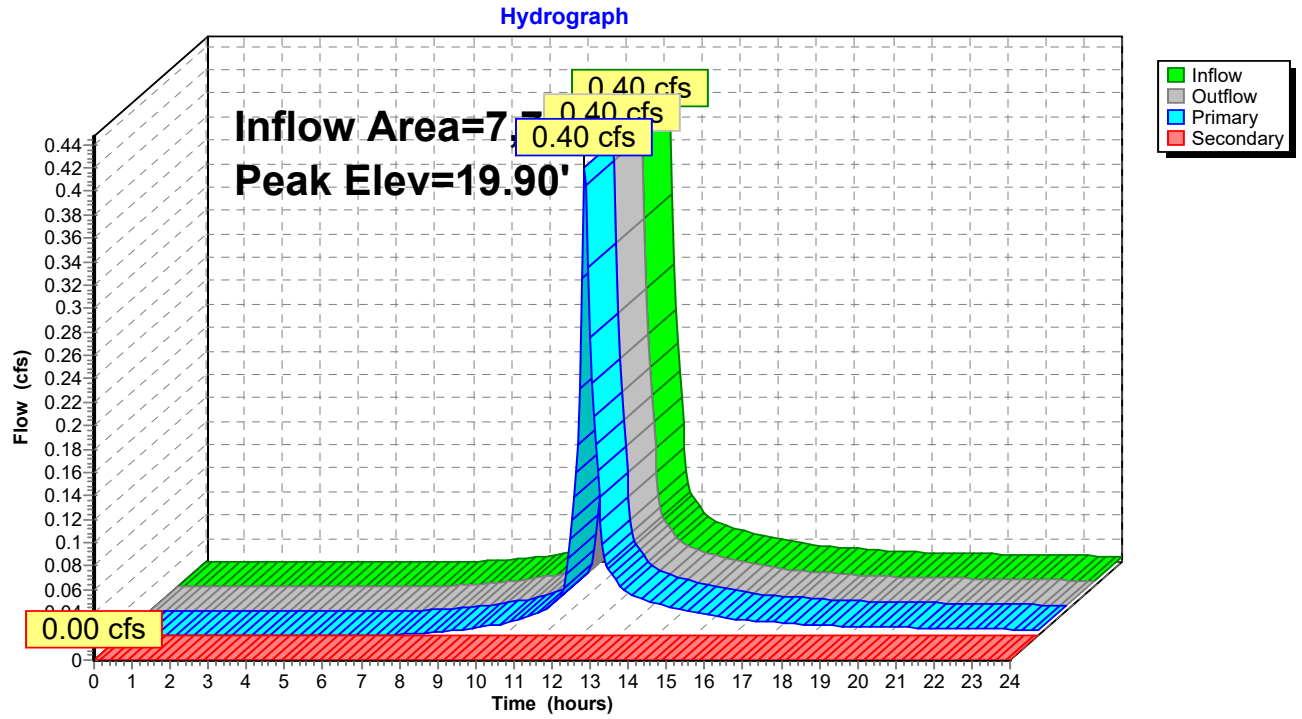
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 19.90' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	19.50'	**12.0" Round Culvert** L= 30.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 19.50' / 19.40' S= 0.0033 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	22.00'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.39 cfs @ 12.12 hrs HW=19.89' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.39 cfs @ 2.02 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=19.50' (Free Discharge)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Pond CB10: CB10



Stage-Discharge for Pond CB10: CB10

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
19.50	0.00	0.00	**0.00**
19.55	0.01	0.01	0.00
19.60	0.02	0.02	0.00
19.65	0.06	0.06	0.00
19.70	0.10	0.10	0.00
19.75	0.16	0.16	0.00
19.80	0.23	0.23	0.00
19.85	0.31	0.31	0.00
19.90	0.41	0.41	0.00
19.95	0.51	0.51	0.00
20.00	0.62	0.62	0.00
20.05	0.74	0.74	0.00
20.10	0.86	0.86	0.00
20.15	1.00	1.00	0.00
20.20	1.13	1.13	0.00
20.25	1.28	1.28	0.00
20.30	1.42	1.42	0.00
20.35	1.57	1.57	0.00
20.40	1.72	1.72	0.00
20.45	1.86	1.86	0.00
20.50	2.01	2.01	0.00
20.55	2.15	2.15	0.00
20.60	2.28	2.28	0.00
20.65	2.41	2.41	0.00
20.70	2.52	2.52	0.00
20.75	2.62	2.62	0.00
20.80	2.68	2.68	0.00
20.85	2.71	2.71	0.00
20.90	2.85	2.85	0.00
20.95	2.99	2.99	0.00
21.00	3.12	3.12	0.00
21.05	3.25	3.25	0.00
21.10	3.37	3.37	0.00
21.15	3.49	3.49	0.00
21.20	3.61	3.61	0.00
21.25	3.72	3.72	0.00
21.30	3.83	3.83	0.00
21.35	3.93	3.93	0.00
21.40	4.03	4.03	0.00
21.45	4.13	4.13	0.00
21.50	4.23	4.23	0.00
21.55	4.33	4.33	0.00
21.60	4.42	4.42	0.00
21.65	4.51	4.51	0.00
21.70	4.60	4.60	0.00
21.75	4.69	4.69	0.00
21.80	4.77	4.77	0.00
21.85	4.86	4.86	0.00
21.90	4.94	4.94	0.00
21.95	5.02	5.02	0.00
22.00	**5.10**	**5.10**	0.00

Stage-Area-Storage for Pond CB10: CB10

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
19.50	**0**	20.56	0	21.62	0
19.52	0	20.58	0	21.64	0
19.54	0	20.60	0	21.66	0
19.56	0	20.62	0	21.68	0
19.58	0	20.64	0	21.70	0
19.60	0	20.66	0	21.72	0
19.62	0	20.68	0	21.74	0
19.64	0	20.70	0	21.76	0
19.66	0	20.72	0	21.78	0
19.68	0	20.74	0	21.80	0
19.70	0	20.76	0	21.82	0
19.72	0	20.78	0	21.84	0
19.74	0	20.80	0	21.86	0
19.76	0	20.82	0	21.88	0
19.78	0	20.84	0	21.90	0
19.80	0	20.86	0	21.92	0
19.82	0	20.88	0	21.94	0
19.84	0	20.90	0	21.96	0
19.86	0	20.92	0	21.98	0
19.88	0	20.94	0	22.00	0
19.90	0	20.96	0		
19.92	0	20.98	0		
19.94	0	21.00	0		
19.96	0	21.02	0		
19.98	0	21.04	0		
20.00	0	21.06	0		
20.02	0	21.08	0		
20.04	0	21.10	0		
20.06	0	21.12	0		
20.08	0	21.14	0		
20.10	0	21.16	0		
20.12	0	21.18	0		
20.14	0	21.20	0		
20.16	0	21.22	0		
20.18	0	21.24	0		
20.20	0	21.26	0		
20.22	0	21.28	0		
20.24	0	21.30	0		
20.26	0	21.32	0		
20.28	0	21.34	0		
20.30	0	21.36	0		
20.32	0	21.38	0		
20.34	0	21.40	0		
20.36	0	21.42	0		
20.38	0	21.44	0		
20.40	0	21.46	0		
20.42	0	21.48	0		
20.44	0	21.50	0		
20.46	0	21.52	0		
20.48	0	21.54	0		
20.50	0	21.56	0		
20.52	0	21.58	0		
20.54	0	21.60	0		

Summary for Pond CB13: CB13

Inflow Area = 9,340 sf, 71.57% Impervious, Inflow Depth > 2.40" for 2-Year event
Inflow = 0.60 cfs @ 12.07 hrs, Volume= 1,866 cf
Outflow = 0.60 cfs @ 12.07 hrs, Volume= 1,866 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.60 cfs @ 12.07 hrs, Volume= 1,866 cf
Routed to Pond DMH11 : DMH11
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3

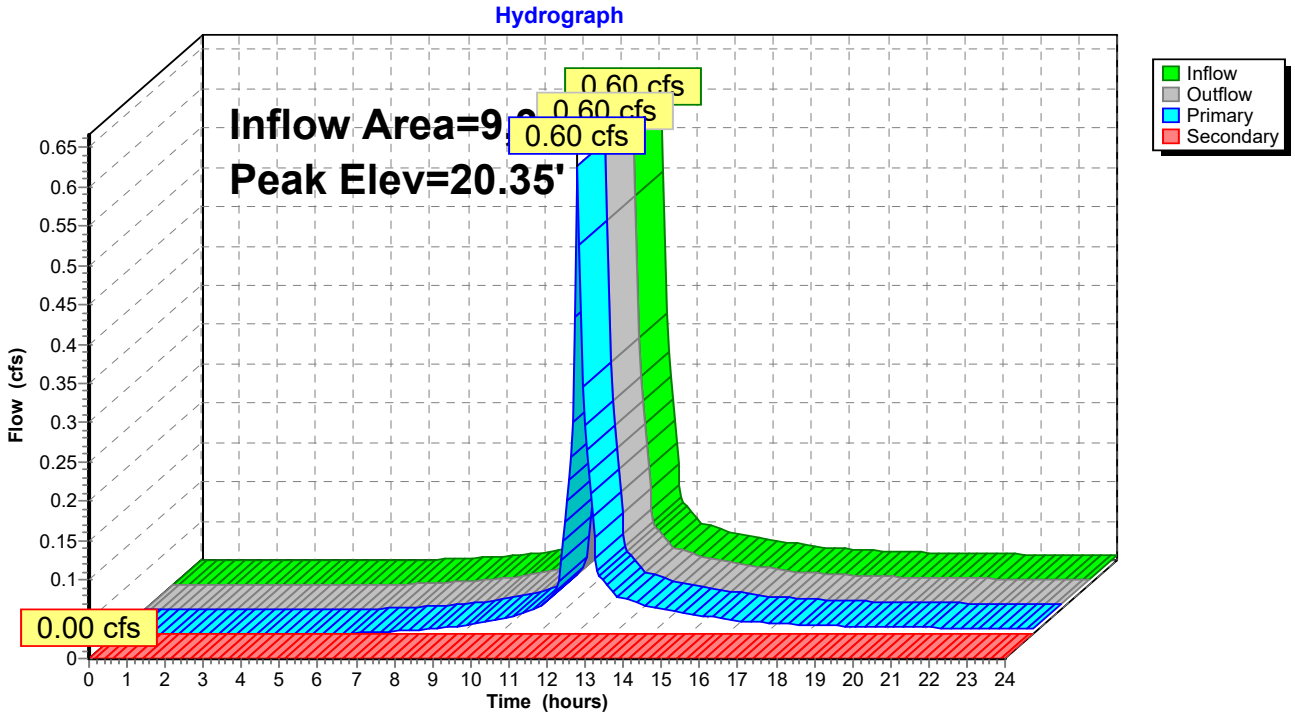
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 20.35' @ 12.07 hrs
Flood Elev= 22.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	19.90'	**12.0" Round Culvert** L= 12.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 19.90' / 19.80' S= 0.0083 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	22.00'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.57 cfs @ 12.07 hrs HW=20.34' (Free Discharge)
1=Culvert (Barrel Controls 0.57 cfs @ 2.55 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=19.90' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB13: CB13



Stage-Discharge for Pond CB13: CB13

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
19.90	0.00	0.00	**0.00**	20.96	2.43	2.43	0.00
19.92	0.00	0.00	0.00	20.98	2.49	2.49	0.00
19.94	0.01	0.01	0.00	21.00	2.55	2.55	0.00
19.96	0.01	0.01	0.00	21.02	2.60	2.60	0.00
19.98	0.02	0.02	0.00	21.04	2.66	2.66	0.00
20.00	0.03	0.03	0.00	21.06	2.71	2.71	0.00
20.02	0.05	0.05	0.00	21.08	2.77	2.77	0.00
20.04	0.07	0.07	0.00	21.10	2.82	2.82	0.00
20.06	0.09	0.09	0.00	21.12	2.87	2.87	0.00
20.08	0.11	0.11	0.00	21.14	2.91	2.91	0.00
20.10	0.13	0.13	0.00	21.16	2.95	2.95	0.00
20.12	0.16	0.16	0.00	21.18	2.99	2.99	0.00
20.14	0.19	0.19	0.00	21.20	3.02	3.02	0.00
20.16	0.22	0.22	0.00	21.22	3.04	3.04	0.00
20.18	0.25	0.25	0.00	21.24	3.05	3.05	0.00
20.20	0.29	0.29	0.00	21.26	3.12	3.12	0.00
20.22	0.33	0.33	0.00	21.28	3.19	3.19	0.00
20.24	0.36	0.36	0.00	21.30	3.25	3.25	0.00
20.26	0.40	0.40	0.00	21.32	3.32	3.32	0.00
20.28	0.44	0.44	0.00	21.34	3.38	3.38	0.00
20.30	0.49	0.49	0.00	21.36	3.44	3.44	0.00
20.32	0.53	0.53	0.00	21.38	3.50	3.50	0.00
20.34	0.58	0.58	0.00	21.40	3.56	3.56	0.00
20.36	0.63	0.63	0.00	21.42	3.62	3.62	0.00
20.38	0.68	0.68	0.00	21.44	3.68	3.68	0.00
20.40	0.73	0.73	0.00	21.46	3.74	3.74	0.00
20.42	0.78	0.78	0.00	21.48	3.79	3.79	0.00
20.44	0.83	0.83	0.00	21.50	3.85	3.85	0.00
20.46	0.88	0.88	0.00	21.52	3.90	3.90	0.00
20.48	0.94	0.94	0.00	21.54	3.96	3.96	0.00
20.50	0.99	0.99	0.00	21.56	4.01	4.01	0.00
20.52	1.05	1.05	0.00	21.58	4.06	4.06	0.00
20.54	1.11	1.11	0.00	21.60	4.12	4.12	0.00
20.56	1.17	1.17	0.00	21.62	4.17	4.17	0.00
20.58	1.23	1.23	0.00	21.64	4.21	4.21	0.00
20.60	1.29	1.29	0.00	21.66	4.24	4.24	0.00
20.62	1.35	1.35	0.00	21.68	4.28	4.28	0.00
20.64	1.41	1.41	0.00	21.70	4.31	4.31	0.00
20.66	1.47	1.47	0.00	21.72	4.34	4.34	0.00
20.68	1.54	1.54	0.00	21.74	4.38	4.38	0.00
20.70	1.60	1.60	0.00	21.76	4.41	4.41	0.00
20.72	1.66	1.66	0.00	21.78	4.44	4.44	0.00
20.74	1.73	1.73	0.00	21.80	4.47	4.47	0.00
20.76	1.79	1.79	0.00	21.82	4.51	4.51	0.00
20.78	1.86	1.86	0.00	21.84	4.54	4.54	0.00
20.80	1.92	1.92	0.00	21.86	4.57	4.57	0.00
20.82	1.98	1.98	0.00	21.88	4.60	4.60	0.00
20.84	2.05	2.05	0.00	21.90	4.63	4.63	0.00
20.86	2.11	2.11	0.00	21.92	4.66	4.66	0.00
20.88	2.18	2.18	0.00	21.94	4.69	4.69	0.00
20.90	2.24	2.24	0.00	21.96	4.72	4.72	0.00
20.92	2.30	2.30	0.00	21.98	4.75	4.75	0.00
20.94	2.36	2.36	0.00	22.00	**4.78**	**4.78**	0.00

Stage-Area-Storage for Pond CB13: CB13

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
19.90	**0**	20.96	0
19.92	0	20.98	0
19.94	0	21.00	0
19.96	0	21.02	0
19.98	0	21.04	0
20.00	0	21.06	0
20.02	0	21.08	0
20.04	0	21.10	0
20.06	0	21.12	0
20.08	0	21.14	0
20.10	0	21.16	0
20.12	0	21.18	0
20.14	0	21.20	0
20.16	0	21.22	0
20.18	0	21.24	0
20.20	0	21.26	0
20.22	0	21.28	0
20.24	0	21.30	0
20.26	0	21.32	0
20.28	0	21.34	0
20.30	0	21.36	0
20.32	0	21.38	0
20.34	0	21.40	0
20.36	0	21.42	0
20.38	0	21.44	0
20.40	0	21.46	0
20.42	0	21.48	0
20.44	0	21.50	0
20.46	0	21.52	0
20.48	0	21.54	0
20.50	0	21.56	0
20.52	0	21.58	0
20.54	0	21.60	0
20.56	0	21.62	0
20.58	0	21.64	0
20.60	0	21.66	0
20.62	0	21.68	0
20.64	0	21.70	0
20.66	0	21.72	0
20.68	0	21.74	0
20.70	0	21.76	0
20.72	0	21.78	0
20.74	0	21.80	0
20.76	0	21.82	0
20.78	0	21.84	0
20.80	0	21.86	0
20.82	0	21.88	0
20.84	0	21.90	0
20.86	0	21.92	0
20.88	0	21.94	0
20.90	0	21.96	0
20.92	0	21.98	0
20.94	0	22.00	0

Summary for Pond CB4: CB4

Inflow Area = 4,243 sf, 86.57% Impervious, Inflow Depth > 2.79" for 2-Year event
Inflow = 0.30 cfs @ 12.07 hrs, Volume= 987 cf
Outflow = 0.30 cfs @ 12.07 hrs, Volume= 987 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.30 cfs @ 12.07 hrs, Volume= 987 cf
Routed to Pond DMH2 : DMH2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond CB13 : CB13

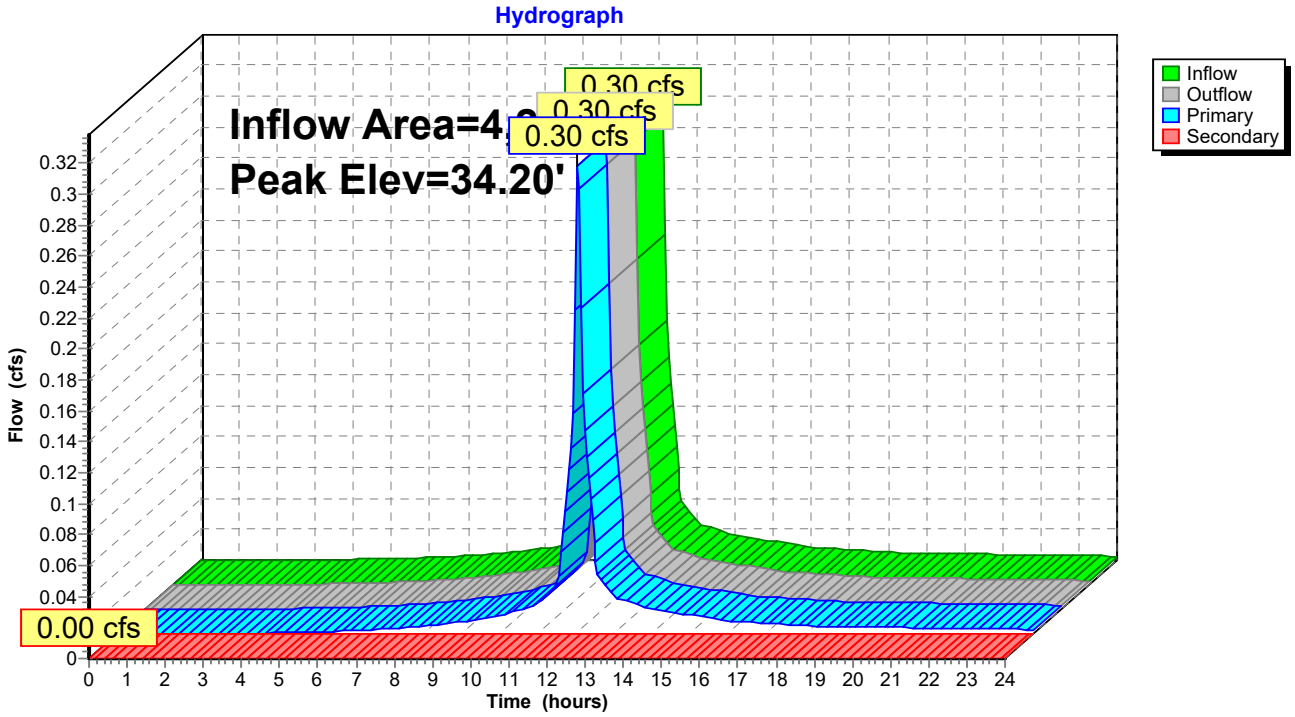
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 34.20' @ 12.07 hrs
Flood Elev= 37.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	33.90'	**12.0" Round Culvert** L= 10.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 33.90' / 33.80' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	37.00'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.29 cfs @ 12.07 hrs HW=34.20' (Free Discharge)
1=Culvert (Barrel Controls 0.29 cfs @ 2.24 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=33.90' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB4: CB4


Hydrograph
Inflow Area=4.
Peak Elev=34.20'
0.30 cfs
0.30 cfs
0.30 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
0 0.04 0.06 0.08 0.1 0.12 0.14 0.16 0.18 0.2 0.22 0.24 0.26 0.28 0.3 0.32
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Time (hours)

Stage-Discharge for Pond CB4: CB4

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
33.90	0.00	0.00	**0.00**
33.95	0.01	0.01	0.00
34.00	0.04	0.04	0.00
34.05	0.08	0.08	0.00
34.10	0.14	0.14	0.00
34.15	0.21	0.21	0.00
34.20	0.30	0.30	0.00
34.25	0.39	0.39	0.00
34.30	0.50	0.50	0.00
34.35	0.62	0.62	0.00
34.40	0.74	0.74	0.00
34.45	0.87	0.87	0.00
34.50	1.01	1.01	0.00
34.55	1.16	1.16	0.00
34.60	1.31	1.31	0.00
34.65	1.47	1.47	0.00
34.70	1.62	1.62	0.00
34.75	1.79	1.79	0.00
34.80	1.95	1.95	0.00
34.85	2.11	2.11	0.00
34.90	2.27	2.27	0.00
34.95	2.43	2.43	0.00
35.00	2.58	2.58	0.00
35.05	2.72	2.72	0.00
35.10	2.86	2.86	0.00
35.15	2.97	2.97	0.00
35.20	3.06	3.06	0.00
35.25	3.14	3.14	0.00
35.30	3.31	3.31	0.00
35.35	3.47	3.47	0.00
35.40	3.62	3.62	0.00
35.45	3.77	3.77	0.00
35.50	3.92	3.92	0.00
35.55	4.05	4.05	0.00
35.60	4.14	4.14	0.00
35.65	4.23	4.23	0.00
35.70	4.31	4.31	0.00
35.75	4.39	4.39	0.00
35.80	4.47	4.47	0.00
35.85	4.55	4.55	0.00
35.90	4.63	4.63	0.00
35.95	4.71	4.71	0.00
36.00	4.78	4.78	0.00
36.05	4.86	4.86	0.00
36.10	4.93	4.93	0.00
36.15	5.00	5.00	0.00
36.20	5.07	5.07	0.00
36.25	5.14	5.14	0.00
36.30	5.21	5.21	0.00
36.35	5.28	5.28	0.00
36.40	5.35	5.35	0.00
36.45	5.41	5.41	0.00
36.50	5.48	5.48	0.00
36.55	5.55	5.55	0.00
36.60	5.61	5.61	0.00
36.65	5.67	5.67	0.00
36.70	5.74	5.74	0.00
36.75	5.80	5.80	0.00
36.80	5.86	5.86	0.00
36.85	5.92	5.92	0.00
36.90	5.98	5.98	0.00
36.95	6.04	6.04	0.00
37.00	**6.10**	**6.10**	0.00

Stage-Area-Storage for Pond CB4: CB4

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
33.90	**0**	34.96	0	36.02	0
33.92	0	34.98	0	36.04	0
33.94	0	35.00	0	36.06	0
33.96	0	35.02	0	36.08	0
33.98	0	35.04	0	36.10	0
34.00	0	35.06	0	36.12	0
34.02	0	35.08	0	36.14	0
34.04	0	35.10	0	36.16	0
34.06	0	35.12	0	36.18	0
34.08	0	35.14	0	36.20	0
34.10	0	35.16	0	36.22	0
34.12	0	35.18	0	36.24	0
34.14	0	35.20	0	36.26	0
34.16	0	35.22	0	36.28	0
34.18	0	35.24	0	36.30	0
34.20	0	35.26	0	36.32	0
34.22	0	35.28	0	36.34	0
34.24	0	35.30	0	36.36	0
34.26	0	35.32	0	36.38	0
34.28	0	35.34	0	36.40	0
34.30	0	35.36	0	36.42	0
34.32	0	35.38	0	36.44	0
34.34	0	35.40	0	36.46	0
34.36	0	35.42	0	36.48	0
34.38	0	35.44	0	36.50	0
34.40	0	35.46	0	36.52	0
34.42	0	35.48	0	36.54	0
34.44	0	35.50	0	36.56	0
34.46	0	35.52	0	36.58	0
34.48	0	35.54	0	36.60	0
34.50	0	35.56	0	36.62	0
34.52	0	35.58	0	36.64	0
34.54	0	35.60	0	36.66	0
34.56	0	35.62	0	36.68	0
34.58	0	35.64	0	36.70	0
34.60	0	35.66	0	36.72	0
34.62	0	35.68	0	36.74	0
34.64	0	35.70	0	36.76	0
34.66	0	35.72	0	36.78	0
34.68	0	35.74	0	36.80	0
34.70	0	35.76	0	36.82	0
34.72	0	35.78	0	36.84	0
34.74	0	35.80	0	36.86	0
34.76	0	35.82	0	36.88	0
34.78	0	35.84	0	36.90	0
34.80	0	35.86	0	36.92	0
34.82	0	35.88	0	36.94	0
34.84	0	35.90	0	36.96	0
34.86	0	35.92	0	36.98	0
34.88	0	35.94	0	37.00	0
34.90	0	35.96	0		
34.92	0	35.98	0		
34.94	0	36.00	0		

Summary for Pond CB5: CB5

Inflow Area = 2,714 sf, 96.35% Impervious, Inflow Depth > 3.00" for 2-Year event
Inflow = 0.20 cfs @ 12.07 hrs, Volume= 679 cf
Outflow = 0.20 cfs @ 12.07 hrs, Volume= 679 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.20 cfs @ 12.07 hrs, Volume= 679 cf
Routed to Pond DMH2 : DMH2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond CB10 : CB10

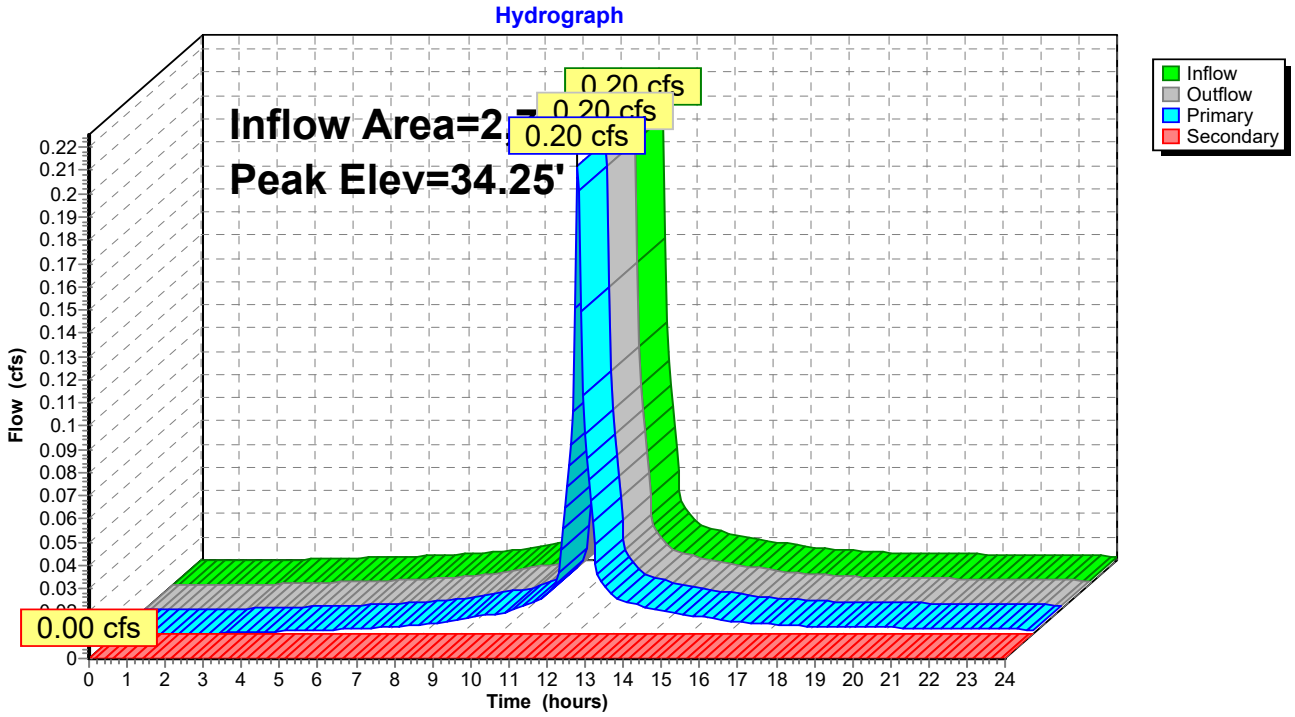
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 34.25' @ 12.07 hrs
Flood Elev= 37.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	34.00'	**12.0" Round Culvert** L= 35.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 34.00' / 33.80' S= 0.0057 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	37.50'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.19 cfs @ 12.07 hrs HW=34.25' (Free Discharge)
1=Culvert (Barrel Controls 0.19 cfs @ 1.91 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=34.00' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB5: CB5


Hydrograph
Inflow Area=2.
Peak Elev=34.25'
0.20 cfs
0.20 cfs
0.20 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)

Stage-Discharge for Pond CB5: CB5

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
34.00	0.00	0.00	**0.00**
34.05	0.01	0.01	0.00
34.10	0.03	0.03	0.00
34.15	0.07	0.07	0.00
34.20	0.13	0.13	0.00
34.25	0.19	0.19	0.00
34.30	0.28	0.28	0.00
34.35	0.37	0.37	0.00
34.40	0.48	0.48	0.00
34.45	0.59	0.59	0.00
34.50	0.72	0.72	0.00
34.55	0.85	0.85	0.00
34.60	0.99	0.99	0.00
34.65	1.13	1.13	0.00
34.70	1.28	1.28	0.00
34.75	1.44	1.44	0.00
34.80	1.59	1.59	0.00
34.85	1.75	1.75	0.00
34.90	1.91	1.91	0.00
34.95	2.06	2.06	0.00
35.00	2.22	2.22	0.00
35.05	2.36	2.36	0.00
35.10	2.50	2.50	0.00
35.15	2.63	2.63	0.00
35.20	2.74	2.74	0.00
35.25	2.84	2.84	0.00
35.30	2.89	2.89	0.00
35.35	2.90	2.90	0.00
35.40	3.03	3.03	0.00
35.45	3.15	3.15	0.00
35.50	3.27	3.27	0.00
35.55	3.39	3.39	0.00
35.60	3.50	3.50	0.00
35.65	3.60	3.60	0.00
35.70	3.71	3.71	0.00
35.75	3.81	3.81	0.00
35.80	3.91	3.91	0.00
35.85	4.01	4.01	0.00
35.90	4.10	4.10	0.00
35.95	4.19	4.19	0.00
36.00	4.28	4.28	0.00
36.05	4.37	4.37	0.00
36.10	4.46	4.46	0.00
36.15	4.54	4.54	0.00
36.20	4.63	4.63	0.00
36.25	4.71	4.71	0.00
36.30	4.79	4.79	0.00
36.35	4.87	4.87	0.00
36.40	4.95	4.95	0.00
36.45	5.02	5.02	0.00
36.50	5.10	5.10	0.00
36.55	5.17	5.17	0.00
36.60	5.25	5.25	0.00
36.65	5.32	5.32	0.00
36.70	5.39	5.39	0.00
36.75	5.46	5.46	0.00
36.80	5.53	5.53	0.00
36.85	5.60	5.60	0.00
36.90	5.67	5.67	0.00
36.95	5.73	5.73	0.00
37.00	5.80	5.80	0.00
37.05	5.86	5.86	0.00
37.10	5.93	5.93	0.00
37.15	5.99	5.99	0.00
37.20	6.06	6.06	0.00
37.25	6.12	6.12	0.00
37.30	6.18	6.18	0.00
37.35	6.24	6.24	0.00
37.40	6.30	6.30	0.00
37.45	6.36	6.36	0.00
37.50	**6.42**	**6.42**	0.00

Stage-Area-Storage for Pond CB5: CB5

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
34.00	**0**	36.65	0
34.05	0	36.70	0
34.10	0	36.75	0
34.15	0	36.80	0
34.20	0	36.85	0
34.25	0	36.90	0
34.30	0	36.95	0
34.35	0	37.00	0
34.40	0	37.05	0
34.45	0	37.10	0
34.50	0	37.15	0
34.55	0	37.20	0
34.60	0	37.25	0
34.65	0	37.30	0
34.70	0	37.35	0
34.75	0	37.40	0
34.80	0	37.45	0
34.85	0	37.50	0
34.90	0		
34.95	0		
35.00	0		
35.05	0		
35.10	0		
35.15	0		
35.20	0		
35.25	0		
35.30	0		
35.35	0		
35.40	0		
35.45	0		
35.50	0		
35.55	0		
35.60	0		
35.65	0		
35.70	0		
35.75	0		
35.80	0		
35.85	0		
35.90	0		
35.95	0		
36.00	0		
36.05	0		
36.10	0		
36.15	0		
36.20	0		
36.25	0		
36.30	0		
36.35	0		
36.40	0		
36.45	0		
36.50	0		
36.55	0		
36.60	0		

Summary for Pond CB6: CB6

Inflow Area = 5,633 sf, 67.30% Impervious, Inflow Depth > 2.31" for 2-Year event
Inflow = 0.35 cfs @ 12.07 hrs, Volume= 1,083 cf
Outflow = 0.35 cfs @ 12.07 hrs, Volume= 1,083 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.35 cfs @ 12.07 hrs, Volume= 1,083 cf
Routed to Pond DMH7 : DMH7
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond CB4 : CB4

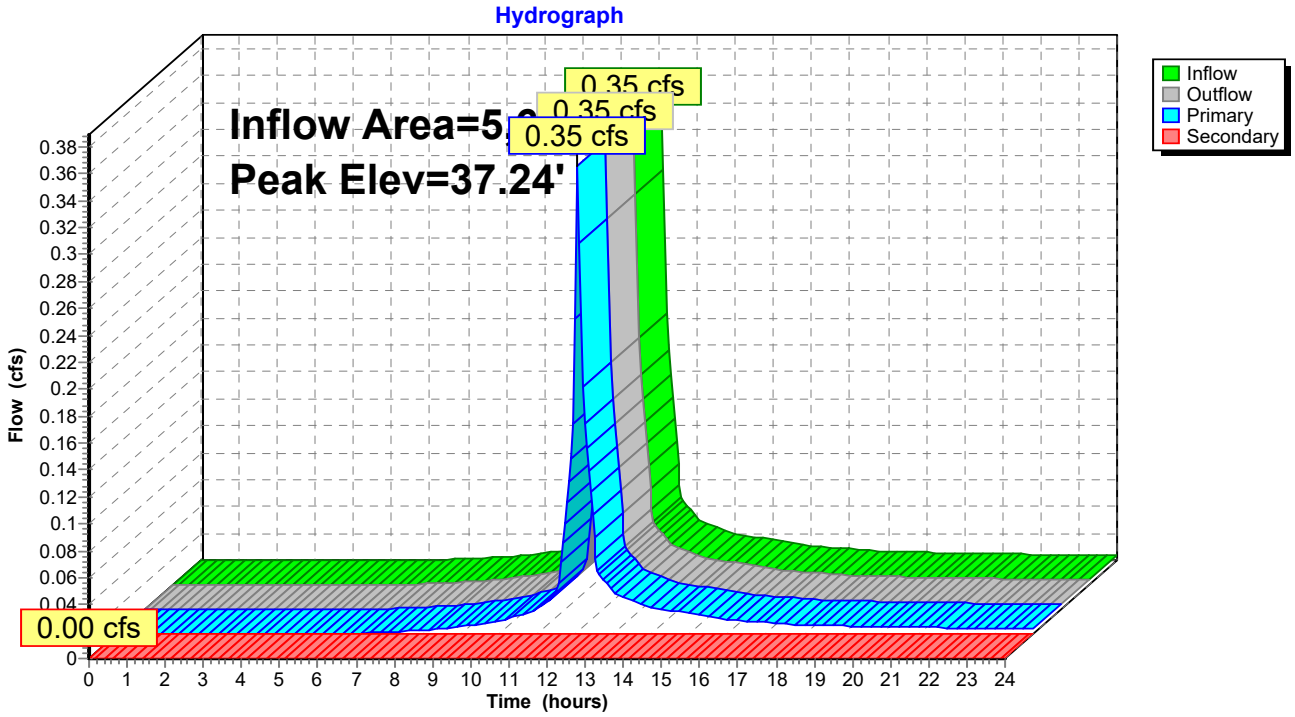
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 37.24' @ 12.07 hrs
Flood Elev= 39.42'

Device	Routing	Invert	Outlet Devices
#1	Primary	36.90'	**12.0" Round Culvert** L= 16.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 36.90' / 36.80' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	39.42'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 24.0" x 24.0" Grate (69% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.33 cfs @ 12.07 hrs HW=37.23' (Free Discharge)
1=Culvert (Barrel Controls 0.33 cfs @ 2.17 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=36.90' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB6: CB6


Hydrograph
Inflow Area=5.
Peak Elev=37.24'
0.35 cfs
0.35 cfs
0.35 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
0 0.02 0.04 0.06 0.08 0.1 0.12 0.14 0.16 0.18 0.2 0.22 0.24 0.26 0.28 0.3 0.32 0.34 0.36 0.38

Stage-Discharge for Pond CB6: CB6

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
36.90	0.00	0.00	**0.00**
36.95	0.01	0.01	0.00
37.00	0.03	0.03	0.00
37.05	0.07	0.07	0.00
37.10	0.12	0.12	0.00
37.15	0.19	0.19	0.00
37.20	0.27	0.27	0.00
37.25	0.36	0.36	0.00
37.30	0.47	0.47	0.00
37.35	0.58	0.58	0.00
37.40	0.70	0.70	0.00
37.45	0.83	0.83	0.00
37.50	0.96	0.96	0.00
37.55	1.10	1.10	0.00
37.60	1.25	1.25	0.00
37.65	1.40	1.40	0.00
37.70	1.55	1.55	0.00
37.75	1.71	1.71	0.00
37.80	1.87	1.87	0.00
37.85	2.03	2.03	0.00
37.90	2.18	2.18	0.00
37.95	2.33	2.33	0.00
38.00	2.48	2.48	0.00
38.05	2.62	2.62	0.00
38.10	2.74	2.74	0.00
38.15	2.85	2.85	0.00
38.20	2.93	2.93	0.00
38.25	2.99	2.99	0.00
38.30	3.15	3.15	0.00
38.35	3.30	3.30	0.00
38.40	3.45	3.45	0.00
38.45	3.59	3.59	0.00
38.50	3.73	3.73	0.00
38.55	3.86	3.86	0.00
38.60	3.98	3.98	0.00
38.65	4.11	4.11	0.00
38.70	4.23	4.23	0.00
38.75	4.34	4.34	0.00
38.80	4.45	4.45	0.00
38.85	4.55	4.55	0.00
38.90	4.63	4.63	0.00
38.95	4.71	4.71	0.00
39.00	4.78	4.78	0.00
39.05	4.86	4.86	0.00
39.10	4.93	4.93	0.00
39.15	5.00	5.00	0.00
39.20	5.07	5.07	0.00
39.25	5.14	5.14	0.00
39.30	5.21	5.21	0.00
39.35	5.28	5.28	0.00
39.40	**5.35**	**5.35**	0.00

Stage-Area-Storage for Pond CB6: CB6

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
36.90	**0**	37.96	0	39.02	0
36.92	0	37.98	0	39.04	0
36.94	0	38.00	0	39.06	0
36.96	0	38.02	0	39.08	0
36.98	0	38.04	0	39.10	0
37.00	0	38.06	0	39.12	0
37.02	0	38.08	0	39.14	0
37.04	0	38.10	0	39.16	0
37.06	0	38.12	0	39.18	0
37.08	0	38.14	0	39.20	0
37.10	0	38.16	0	39.22	0
37.12	0	38.18	0	39.24	0
37.14	0	38.20	0	39.26	0
37.16	0	38.22	0	39.28	0
37.18	0	38.24	0	39.30	0
37.20	0	38.26	0	39.32	0
37.22	0	38.28	0	39.34	0
37.24	0	38.30	0	39.36	0
37.26	0	38.32	0	39.38	0
37.28	0	38.34	0	39.40	0
37.30	0	38.36	0	39.42	0
37.32	0	38.38	0		
37.34	0	38.40	0		
37.36	0	38.42	0		
37.38	0	38.44	0		
37.40	0	38.46	0		
37.42	0	38.48	0		
37.44	0	38.50	0		
37.46	0	38.52	0		
37.48	0	38.54	0		
37.50	0	38.56	0		
37.52	0	38.58	0		
37.54	0	38.60	0		
37.56	0	38.62	0		
37.58	0	38.64	0		
37.60	0	38.66	0		
37.62	0	38.68	0		
37.64	0	38.70	0		
37.66	0	38.72	0		
37.68	0	38.74	0		
37.70	0	38.76	0		
37.72	0	38.78	0		
37.74	0	38.80	0		
37.76	0	38.82	0		
37.78	0	38.84	0		
37.80	0	38.86	0		
37.82	0	38.88	0		
37.84	0	38.90	0		
37.86	0	38.92	0		
37.88	0	38.94	0		
37.90	0	38.96	0		
37.92	0	38.98	0		
37.94	0	39.00	0		

Summary for Pond CB9: CB9

Inflow Area = 5,351 sf, 75.91% Impervious, Inflow Depth > 2.49" for 2-Year event
Inflow = 0.35 cfs @ 12.07 hrs, Volume= 1,111 cf
Outflow = 0.35 cfs @ 12.07 hrs, Volume= 1,111 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.35 cfs @ 12.07 hrs, Volume= 1,111 cf
Routed to Pond DMH7 : DMH7
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond CB4 : CB4

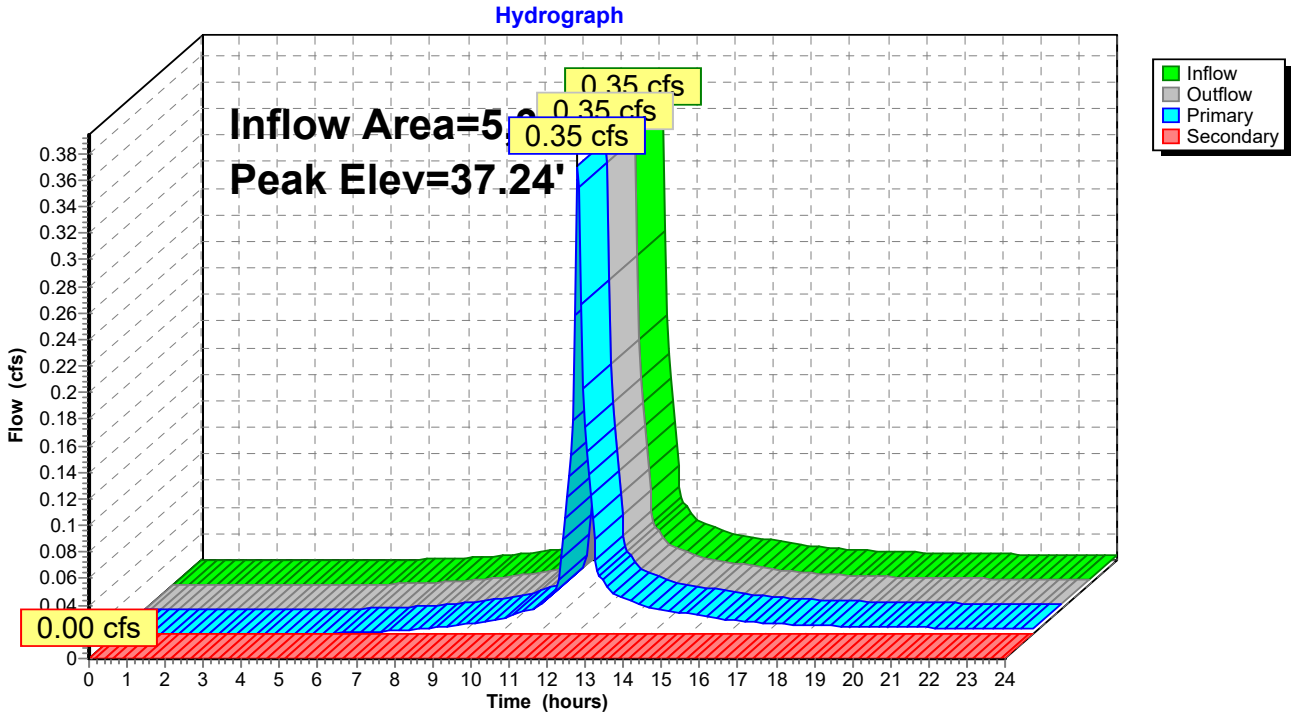
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 37.24' @ 12.07 hrs
Flood Elev= 39.42'

Device	Routing	Invert	Outlet Devices
#1	Primary	36.90'	**12.0" Round Culvert** L= 16.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 36.90' / 36.80' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	39.42'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.34 cfs @ 12.07 hrs HW=37.24' (Free Discharge)
1=Culvert (Barrel Controls 0.34 cfs @ 2.17 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=36.90' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB9: CB9


Hydrograph
Inflow Area=5.
Peak Elev=37.24'
0.35 cfs
0.35 cfs
0.35 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0 0.02 0.04 0.06 0.08 0.1 0.12 0.14 0.16 0.18 0.2 0.22 0.24 0.26 0.28 0.3 0.32 0.34 0.36 0.38
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Stage-Discharge for Pond CB9: CB9

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
36.90	0.00	0.00	**0.00**
36.95	0.01	0.01	0.00
37.00	0.03	0.03	0.00
37.05	0.07	0.07	0.00
37.10	0.12	0.12	0.00
37.15	0.19	0.19	0.00
37.20	0.27	0.27	0.00
37.25	0.36	0.36	0.00
37.30	0.47	0.47	0.00
37.35	0.58	0.58	0.00
37.40	0.70	0.70	0.00
37.45	0.83	0.83	0.00
37.50	0.96	0.96	0.00
37.55	1.10	1.10	0.00
37.60	1.25	1.25	0.00
37.65	1.40	1.40	0.00
37.70	1.55	1.55	0.00
37.75	1.71	1.71	0.00
37.80	1.87	1.87	0.00
37.85	2.03	2.03	0.00
37.90	2.18	2.18	0.00
37.95	2.33	2.33	0.00
38.00	2.48	2.48	0.00
38.05	2.62	2.62	0.00
38.10	2.74	2.74	0.00
38.15	2.85	2.85	0.00
38.20	2.93	2.93	0.00
38.25	2.99	2.99	0.00
38.30	3.15	3.15	0.00
38.35	3.30	3.30	0.00
38.40	3.45	3.45	0.00
38.45	3.59	3.59	0.00
38.50	3.73	3.73	0.00
38.55	3.86	3.86	0.00
38.60	3.98	3.98	0.00
38.65	4.11	4.11	0.00
38.70	4.23	4.23	0.00
38.75	4.34	4.34	0.00
38.80	4.45	4.45	0.00
38.85	4.55	4.55	0.00
38.90	4.63	4.63	0.00
38.95	4.71	4.71	0.00
39.00	4.78	4.78	0.00
39.05	4.86	4.86	0.00
39.10	4.93	4.93	0.00
39.15	5.00	5.00	0.00
39.20	5.07	5.07	0.00
39.25	5.14	5.14	0.00
39.30	5.21	5.21	0.00
39.35	5.28	5.28	0.00
39.40	**5.35**	**5.35**	0.00

Stage-Area-Storage for Pond CB9: CB9

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
36.90	**0**	37.96	0	39.02	0
36.92	0	37.98	0	39.04	0
36.94	0	38.00	0	39.06	0
36.96	0	38.02	0	39.08	0
36.98	0	38.04	0	39.10	0
37.00	0	38.06	0	39.12	0
37.02	0	38.08	0	39.14	0
37.04	0	38.10	0	39.16	0
37.06	0	38.12	0	39.18	0
37.08	0	38.14	0	39.20	0
37.10	0	38.16	0	39.22	0
37.12	0	38.18	0	39.24	0
37.14	0	38.20	0	39.26	0
37.16	0	38.22	0	39.28	0
37.18	0	38.24	0	39.30	0
37.20	0	38.26	0	39.32	0
37.22	0	38.28	0	39.34	0
37.24	0	38.30	0	39.36	0
37.26	0	38.32	0	39.38	0
37.28	0	38.34	0	39.40	0
37.30	0	38.36	0	39.42	0
37.32	0	38.38	0		
37.34	0	38.40	0		
37.36	0	38.42	0		
37.38	0	38.44	0		
37.40	0	38.46	0		
37.42	0	38.48	0		
37.44	0	38.50	0		
37.46	0	38.52	0		
37.48	0	38.54	0		
37.50	0	38.56	0		
37.52	0	38.58	0		
37.54	0	38.60	0		
37.56	0	38.62	0		
37.58	0	38.64	0		
37.60	0	38.66	0		
37.62	0	38.68	0		
37.64	0	38.70	0		
37.66	0	38.72	0		
37.68	0	38.74	0		
37.70	0	38.76	0		
37.72	0	38.78	0		
37.74	0	38.80	0		
37.76	0	38.82	0		
37.78	0	38.84	0		
37.80	0	38.86	0		
37.82	0	38.88	0		
37.84	0	38.90	0		
37.86	0	38.92	0		
37.88	0	38.94	0		
37.90	0	38.96	0		
37.92	0	38.98	0		
37.94	0	39.00	0		

Summary for Pond DMH11: DMH11

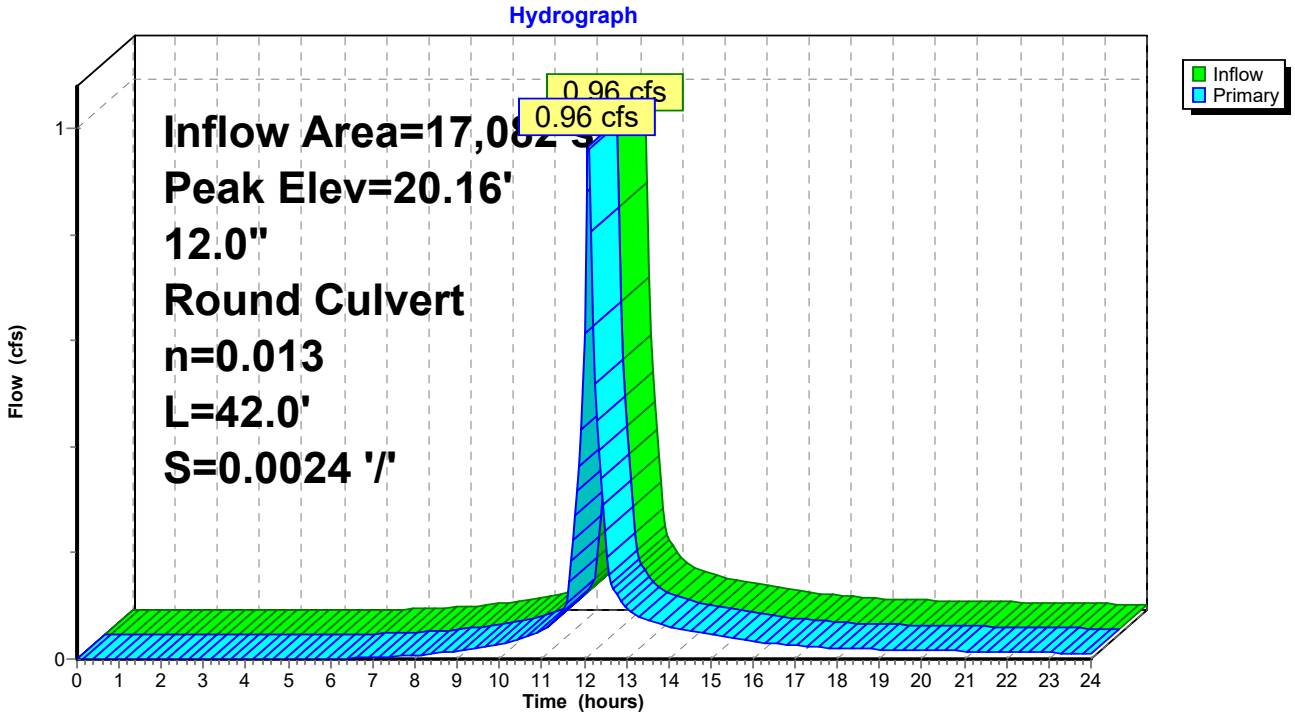
Inflow Area = 17,082 sf, 65.92% Impervious, Inflow Depth > 2.28" for 2-Year event
Inflow = 0.96 cfs @ 12.09 hrs, Volume= 3,240 cf
Outflow = 0.96 cfs @ 12.09 hrs, Volume= 3,240 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.96 cfs @ 12.09 hrs, Volume= 3,240 cf
Routed to Pond SSD3 : SUBSURFACE DRAINAGE AREA #3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 20.16' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	19.50'	**12.0" Round Culvert** L= 42.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 19.50' / 19.40' S= 0.0024 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.95 cfs @ 12.09 hrs HW=20.16' (Free Discharge)
1=Culvert (Barrel Controls 0.95 cfs @ 2.45 fps)

Pond DMH11: DMH11



Stage-Discharge for Pond DMH11: DMH11

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
19.50	0.00	20.03	0.64
19.51	0.00	20.04	0.66
19.52	0.00	20.05	0.68
19.53	0.00	20.06	0.71
19.54	0.00	20.07	0.73
19.55	0.00	20.08	0.75
19.56	0.01	20.09	0.78
19.57	0.01	20.10	0.80
19.58	0.01	20.11	0.83
19.59	0.02	20.12	0.85
19.60	0.02	20.13	0.88
19.61	0.03	20.14	0.90
19.62	0.03	20.15	0.93
19.63	0.04	20.16	0.95
19.64	0.04	20.17	0.98
19.65	0.05	20.18	1.00
19.66	0.06	20.19	1.03
19.67	0.06	20.20	1.06
19.68	0.07	20.21	1.08
19.69	0.08	20.22	1.11
19.70	0.09	20.23	1.14
19.71	0.10	20.24	1.16
19.72	0.11	20.25	1.19
19.73	0.12	20.26	1.22
19.74	0.13	20.27	1.25
19.75	0.14	20.28	1.27
19.76	0.16	20.29	1.30
19.77	0.17	20.30	1.33
19.78	0.18	20.31	1.36
19.79	0.19	20.32	1.39
19.80	0.21	20.33	1.41
19.81	0.22	20.34	1.44
19.82	0.24	20.35	1.47
19.83	0.25	20.36	1.50
19.84	0.27	20.37	1.53
19.85	0.28	20.38	1.55
19.86	0.30	20.39	1.58
19.87	0.32	20.40	1.61
19.88	0.33	20.41	1.64
19.89	0.35	20.42	1.67
19.90	0.37	20.43	1.69
19.91	0.39	20.44	1.72
19.92	0.41	20.45	1.75
19.93	0.43	20.46	1.78
19.94	0.45	20.47	1.81
19.95	0.47	20.48	1.83
19.96	0.49	20.49	1.86
19.97	0.51	20.50	**1.89**
19.98	0.53		
19.99	0.55		
20.00	0.57		
20.01	0.59		
20.02	0.61		

Stage-Area-Storage for Pond DMH11: DMH11

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
19.50	**0**	20.03	0
19.51	0	20.04	0
19.52	0	20.05	0
19.53	0	20.06	0
19.54	0	20.07	0
19.55	0	20.08	0
19.56	0	20.09	0
19.57	0	20.10	0
19.58	0	20.11	0
19.59	0	20.12	0
19.60	0	20.13	0
19.61	0	20.14	0
19.62	0	20.15	0
19.63	0	20.16	0
19.64	0	20.17	0
19.65	0	20.18	0
19.66	0	20.19	0
19.67	0	20.20	0
19.68	0	20.21	0
19.69	0	20.22	0
19.70	0	20.23	0
19.71	0	20.24	0
19.72	0	20.25	0
19.73	0	20.26	0
19.74	0	20.27	0
19.75	0	20.28	0
19.76	0	20.29	0
19.77	0	20.30	0
19.78	0	20.31	0
19.79	0	20.32	0
19.80	0	20.33	0
19.81	0	20.34	0
19.82	0	20.35	0
19.83	0	20.36	0
19.84	0	20.37	0
19.85	0	20.38	0
19.86	0	20.39	0
19.87	0	20.40	0
19.88	0	20.41	0
19.89	0	20.42	0
19.90	0	20.43	0
19.91	0	20.44	0
19.92	0	20.45	0
19.93	0	20.46	0
19.94	0	20.47	0
19.95	0	20.48	0
19.96	0	20.49	0
19.97	0	20.50	0
19.98	0		
19.99	0		
20.00	0		
20.01	0		
20.02	0		

Summary for Pond DMH2: DMH2

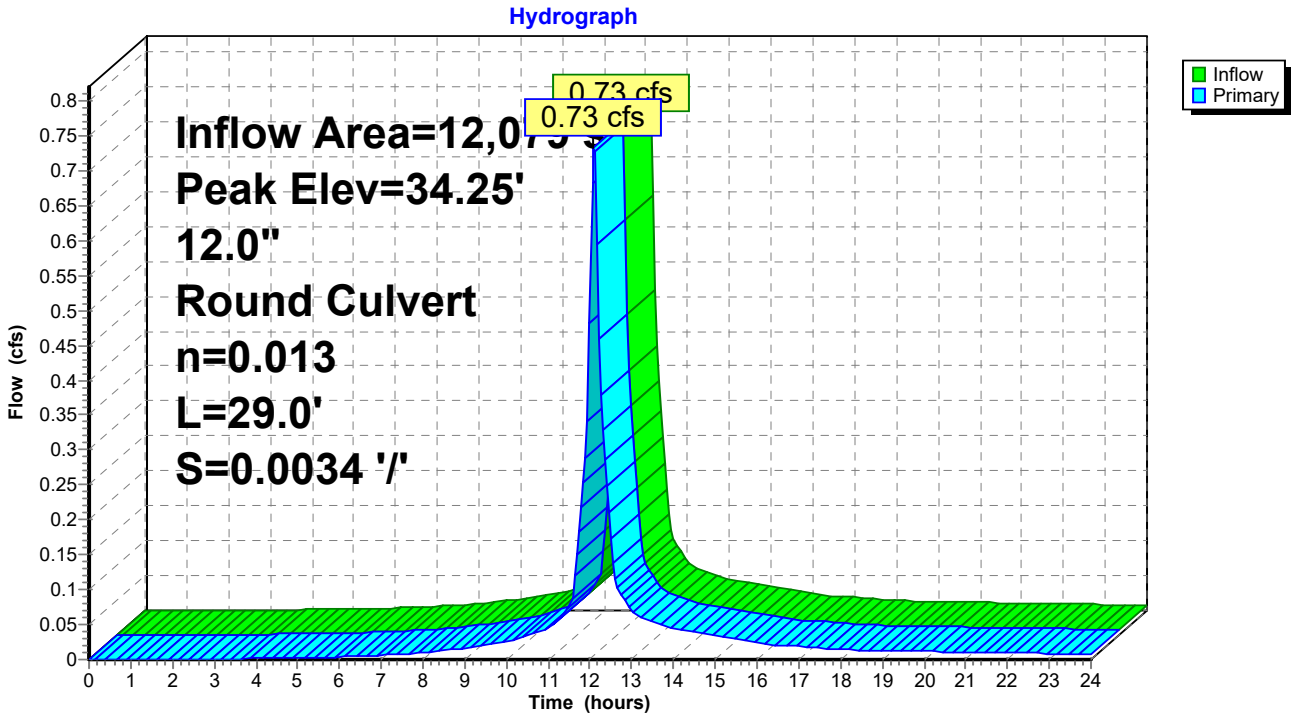
Inflow Area = 12,079 sf, 75.83% Impervious, Inflow Depth > 2.52" for 2-Year event
Inflow = 0.73 cfs @ 12.09 hrs, Volume= 2,539 cf
Outflow = 0.73 cfs @ 12.09 hrs, Volume= 2,539 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.73 cfs @ 12.09 hrs, Volume= 2,539 cf
Routed to Pond SSD1 : SUBSURFACE DRAINAGE AREA #1

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 34.25' @ 12.09 hrs
Flood Elev= 36.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	33.70'	**12.0" Round Culvert** L= 29.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 33.70' / 33.60' S= 0.0034 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.72 cfs @ 12.09 hrs HW=34.24' (Free Discharge)
1=Culvert (Barrel Controls 0.72 cfs @ 2.41 fps)

Pond DMH2: DMH2



Stage-Discharge for Pond DMH2: DMH2

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
33.70	0.00	34.76	2.19	35.82	4.48
33.72	0.00	34.78	2.24	35.84	4.52
33.74	0.00	34.80	2.30	35.86	4.56
33.76	0.01	34.82	2.35	35.88	4.59
33.78	0.02	34.84	2.40	35.90	4.63
33.80	0.02	34.86	2.45	35.92	4.66
33.82	0.04	34.88	2.49	35.94	4.70
33.84	0.05	34.90	2.54	35.96	4.73
33.86	0.07	34.92	2.58	35.98	4.77
33.88	0.08	34.94	2.61	36.00	4.80
33.90	0.10	34.96	2.65	36.02	4.84
33.92	0.13	34.98	2.67	36.04	4.87
33.94	0.15	35.00	2.69	36.06	4.91
33.96	0.18	35.02	2.70	36.08	4.94
33.98	0.20	35.04	2.69	36.10	4.97
34.00	0.23	35.06	2.75	36.12	5.00
34.02	0.27	35.08	2.81	36.14	5.04
34.04	0.30	35.10	2.87	36.16	5.07
34.06	0.33	35.12	2.93	36.18	5.10
34.08	0.37	35.14	2.98	36.20	5.13
34.10	0.41	35.16	3.04	36.22	5.17
34.12	0.45	35.18	3.09	36.24	5.20
34.14	0.49	35.20	3.14	36.26	5.23
34.16	0.53	35.22	3.20	36.28	5.26
34.18	0.58	35.24	3.25	36.30	5.29
34.20	0.62	35.26	3.30	36.32	5.32
34.22	0.67	35.28	3.35	36.34	5.35
34.24	0.72	35.30	3.40	36.36	5.39
34.26	0.77	35.32	3.44	36.38	5.42
34.28	0.82	35.34	3.49	36.40	5.45
34.30	0.87	35.36	3.54	36.42	5.48
34.32	0.92	35.38	3.59	36.44	5.51
34.34	0.98	35.40	3.63	36.46	5.54
34.36	1.03	35.42	3.68	36.48	5.57
34.38	1.08	35.44	3.72	36.50	5.60
34.40	1.14	35.46	3.76	36.52	5.63
34.42	1.20	35.48	3.81	36.54	5.65
34.44	1.25	35.50	3.85	36.56	5.68
34.46	1.31	35.52	3.89	36.58	5.71
34.48	1.37	35.54	3.94	36.60	5.74
34.50	1.43	35.56	3.98	36.62	5.77
34.52	1.49	35.58	4.02	36.64	5.80
34.54	1.55	35.60	4.06	36.66	5.83
34.56	1.61	35.62	4.10	36.68	5.85
34.58	1.67	35.64	4.14	36.70	5.88
34.60	1.72	35.66	4.18	36.72	5.91
34.62	1.78	35.68	4.22	36.74	**5.94**
34.64	1.84	35.70	4.26		
34.66	1.90	35.72	4.30		
34.68	1.96	35.74	4.33		
34.70	2.02	35.76	4.37		
34.72	2.08	35.78	4.41		
34.74	2.13	35.80	4.45		

Stage-Area-Storage for Pond DMH2: DMH2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
33.70	**0**	34.76	0	35.82	0
33.72	0	34.78	0	35.84	0
33.74	0	34.80	0	35.86	0
33.76	0	34.82	0	35.88	0
33.78	0	34.84	0	35.90	0
33.80	0	34.86	0	35.92	0
33.82	0	34.88	0	35.94	0
33.84	0	34.90	0	35.96	0
33.86	0	34.92	0	35.98	0
33.88	0	34.94	0	36.00	0
33.90	0	34.96	0	36.02	0
33.92	0	34.98	0	36.04	0
33.94	0	35.00	0	36.06	0
33.96	0	35.02	0	36.08	0
33.98	0	35.04	0	36.10	0
34.00	0	35.06	0	36.12	0
34.02	0	35.08	0	36.14	0
34.04	0	35.10	0	36.16	0
34.06	0	35.12	0	36.18	0
34.08	0	35.14	0	36.20	0
34.10	0	35.16	0	36.22	0
34.12	0	35.18	0	36.24	0
34.14	0	35.20	0	36.26	0
34.16	0	35.22	0	36.28	0
34.18	0	35.24	0	36.30	0
34.20	0	35.26	0	36.32	0
34.22	0	35.28	0	36.34	0
34.24	0	35.30	0	36.36	0
34.26	0	35.32	0	36.38	0
34.28	0	35.34	0	36.40	0
34.30	0	35.36	0	36.42	0
34.32	0	35.38	0	36.44	0
34.34	0	35.40	0	36.46	0
34.36	0	35.42	0	36.48	0
34.38	0	35.44	0	36.50	0
34.40	0	35.46	0	36.52	0
34.42	0	35.48	0	36.54	0
34.44	0	35.50	0	36.56	0
34.46	0	35.52	0	36.58	0
34.48	0	35.54	0	36.60	0
34.50	0	35.56	0	36.62	0
34.52	0	35.58	0	36.64	0
34.54	0	35.60	0	36.66	0
34.56	0	35.62	0	36.68	0
34.58	0	35.64	0	36.70	0
34.60	0	35.66	0	36.72	0
34.62	0	35.68	0	36.74	0
34.64	0	35.70	0		
34.66	0	35.72	0		
34.68	0	35.74	0		
34.70	0	35.76	0		
34.72	0	35.78	0		
34.74	0	35.80	0		

Summary for Pond DMH7: DMH7

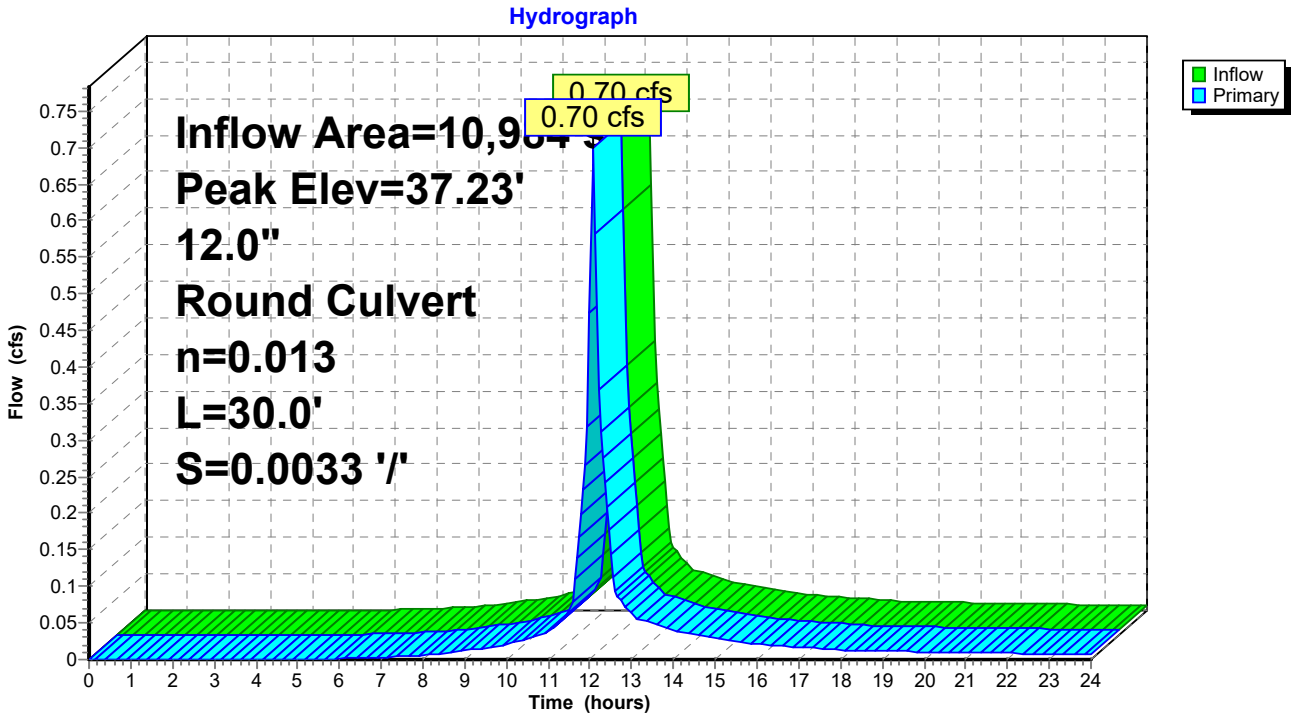
Inflow Area = 10,984 sf, 71.49% Impervious, Inflow Depth > 2.40" for 2-Year event
Inflow = 0.70 cfs @ 12.07 hrs, Volume= 2,194 cf
Outflow = 0.70 cfs @ 12.07 hrs, Volume= 2,194 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.70 cfs @ 12.07 hrs, Volume= 2,194 cf
Routed to Pond SSD2 : SUBSURFACE DRAINAGE AREA #2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 37.23' @ 12.07 hrs
Flood Elev= 39.67'

Device	Routing	Invert	Outlet Devices
#1	Primary	36.70'	**12.0" Round Culvert** L= 30.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 36.70' / 36.60' S= 0.0033 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.67 cfs @ 12.07 hrs HW=37.22' (Free Discharge)
1=Culvert (Barrel Controls 0.67 cfs @ 2.35 fps)

Pond DMH7: DMH7



Stage-Discharge for Pond DMH7: DMH7

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
36.70	0.00	37.76	2.18	38.82	4.45
36.72	0.00	37.78	2.23	38.84	4.49
36.74	0.00	37.80	2.28	38.86	4.53
36.76	0.01	37.82	2.33	38.88	4.56
36.78	0.01	37.84	2.38	38.90	4.60
36.80	0.02	37.86	2.43	38.92	4.63
36.82	0.04	37.88	2.48	38.94	4.67
36.84	0.05	37.90	2.52	38.96	4.70
36.86	0.06	37.92	2.56	38.98	4.74
36.88	0.08	37.94	2.60	39.00	4.77
36.90	0.10	37.96	2.63	39.02	4.81
36.92	0.12	37.98	2.66	39.04	4.84
36.94	0.15	38.00	2.68	39.06	4.87
36.96	0.17	38.02	2.68	39.08	4.91
36.98	0.20	38.04	2.68	39.10	4.94
37.00	0.23	38.06	2.74	39.12	4.97
37.02	0.26	38.08	2.79	39.14	5.01
37.04	0.30	38.10	2.85	39.16	5.04
37.06	0.33	38.12	2.91	39.18	5.07
37.08	0.37	38.14	2.96	39.20	5.10
37.10	0.41	38.16	3.02	39.22	5.13
37.12	0.45	38.18	3.07	39.24	5.17
37.14	0.49	38.20	3.12	39.26	5.20
37.16	0.53	38.22	3.18	39.28	5.23
37.18	0.57	38.24	3.23	39.30	5.26
37.20	0.62	38.26	3.28	39.32	5.29
37.22	0.67	38.28	3.33	39.34	5.32
37.24	0.71	38.30	3.37	39.36	5.35
37.26	0.76	38.32	3.42	39.38	5.38
37.28	0.81	38.34	3.47	39.40	5.41
37.30	0.86	38.36	3.52	39.42	5.44
37.32	0.92	38.38	3.56	39.44	5.47
37.34	0.97	38.40	3.61	39.46	5.50
37.36	1.02	38.42	3.65	39.48	5.53
37.38	1.08	38.44	3.70	39.50	5.56
37.40	1.13	38.46	3.74	39.52	5.59
37.42	1.19	38.48	3.78	39.54	5.62
37.44	1.25	38.50	3.83	39.56	5.65
37.46	1.30	38.52	3.87	39.58	5.68
37.48	1.36	38.54	3.91	39.60	5.70
37.50	1.42	38.56	3.95	39.62	5.73
37.52	1.48	38.58	3.99	39.64	5.76
37.54	1.54	38.60	4.03	39.66	**5.79**
37.56	1.60	38.62	4.07		
37.58	1.66	38.64	4.11		
37.60	1.72	38.66	4.15		
37.62	1.77	38.68	4.19		
37.64	1.83	38.70	4.23		
37.66	1.89	38.72	4.27		
37.68	1.95	38.74	4.31		
37.70	2.01	38.76	4.34		
37.72	2.06	38.78	4.38		
37.74	2.12	38.80	4.42		

Stage-Area-Storage for Pond DMH7: DMH7

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
36.70	**0**	37.76	0	38.82	0
36.72	0	37.78	0	38.84	0
36.74	0	37.80	0	38.86	0
36.76	0	37.82	0	38.88	0
36.78	0	37.84	0	38.90	0
36.80	0	37.86	0	38.92	0
36.82	0	37.88	0	38.94	0
36.84	0	37.90	0	38.96	0
36.86	0	37.92	0	38.98	0
36.88	0	37.94	0	39.00	0
36.90	0	37.96	0	39.02	0
36.92	0	37.98	0	39.04	0
36.94	0	38.00	0	39.06	0
36.96	0	38.02	0	39.08	0
36.98	0	38.04	0	39.10	0
37.00	0	38.06	0	39.12	0
37.02	0	38.08	0	39.14	0
37.04	0	38.10	0	39.16	0
37.06	0	38.12	0	39.18	0
37.08	0	38.14	0	39.20	0
37.10	0	38.16	0	39.22	0
37.12	0	38.18	0	39.24	0
37.14	0	38.20	0	39.26	0
37.16	0	38.22	0	39.28	0
37.18	0	38.24	0	39.30	0
37.20	0	38.26	0	39.32	0
37.22	0	38.28	0	39.34	0
37.24	0	38.30	0	39.36	0
37.26	0	38.32	0	39.38	0
37.28	0	38.34	0	39.40	0
37.30	0	38.36	0	39.42	0
37.32	0	38.38	0	39.44	0
37.34	0	38.40	0	39.46	0
37.36	0	38.42	0	39.48	0
37.38	0	38.44	0	39.50	0
37.40	0	38.46	0	39.52	0
37.42	0	38.48	0	39.54	0
37.44	0	38.50	0	39.56	0
37.46	0	38.52	0	39.58	0
37.48	0	38.54	0	39.60	0
37.50	0	38.56	0	39.62	0
37.52	0	38.58	0	39.64	0
37.54	0	38.60	0	39.66	0
37.56	0	38.62	0		
37.58	0	38.64	0		
37.60	0	38.66	0		
37.62	0	38.68	0		
37.64	0	38.70	0		
37.66	0	38.72	0		
37.68	0	38.74	0		
37.70	0	38.76	0		
37.72	0	38.78	0		
37.74	0	38.80	0		

Summary for Pond SSD1: SUBSURFACE DRAINAGE AREA #1

Inflow Area = 19,969 sf, 85.38% Impervious, Inflow Depth > 2.76" for 2-Year event
Inflow = 1.32 cfs @ 12.08 hrs, Volume= 4,587 cf
Outflow = 0.11 cfs @ 13.08 hrs, Volume= 2,935 cf, Atten= 92%, Lag= 60.2 min
Discarded = 0.04 cfs @ 9.35 hrs, Volume= 2,399 cf
Primary = 0.06 cfs @ 13.08 hrs, Volume= 508 cf
Routed to Reach DP3 : DP3
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3
Tertiary = 0.01 cfs @ 13.08 hrs, Volume= 28 cf
Routed to Pond SSD5 : SUBSURFACE DRAINAGE AREA #5 (STORAGE)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 35.15' @ 13.08 hrs Surf.Area= 1,654 sf Storage= 2,296 cf

Plug-Flow detention time= 235.3 min calculated for 2,929 cf (64% of inflow)
Center-of-Mass det. time= 134.6 min (907.6 - 773.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	33.16'	1,246 cf	**25.67'W x 52.50'L x 3.71'H Field A** 4,997 cf Overall - 1,881 cf Embedded = 3,116 cf x 40.0% Voids
#2A	33.66'	1,881 cf	**Cultec R-330XLHD** x 35 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 5 rows
#3B	33.16'	197 cf	**11.17'W x 17.50'L x 3.71'H Field B** 725 cf Overall - 231 cf Embedded = 494 cf x 40.0% Voids
#4B	33.66'	231 cf	**Cultec R-330XLHD** x 4 Inside #3 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
#5C	33.16'	118 cf	**6.33'W x 17.50'L x 3.71'H Field C** 411 cf Overall - 115 cf Embedded = 296 cf x 40.0% Voids
#6C	33.66'	115 cf	**Cultec R-330XLHD** x 2 Inside #5 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		3,790 cf	Total Available Storage

Storage Group A created with Chamber Wizard
Storage Group B created with Chamber Wizard
Storage Group C created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	33.16'	**1.020 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#2	Primary	35.00'	**6.0" Round Culvert** L= 150.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.00' / 28.00' S= 0.0467 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf
#3	Secondary	37.20'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

#4 Tertiary 35.10' **6.0" Round Culvert**
L= 30.0' CPP, square edge headwall, Ke= 0.500
Inlet / Outlet Invert= 35.10' / 34.00' S= 0.0367 '/' Cc= 0.900
n= 0.013, Flow Area= 0.20 sf

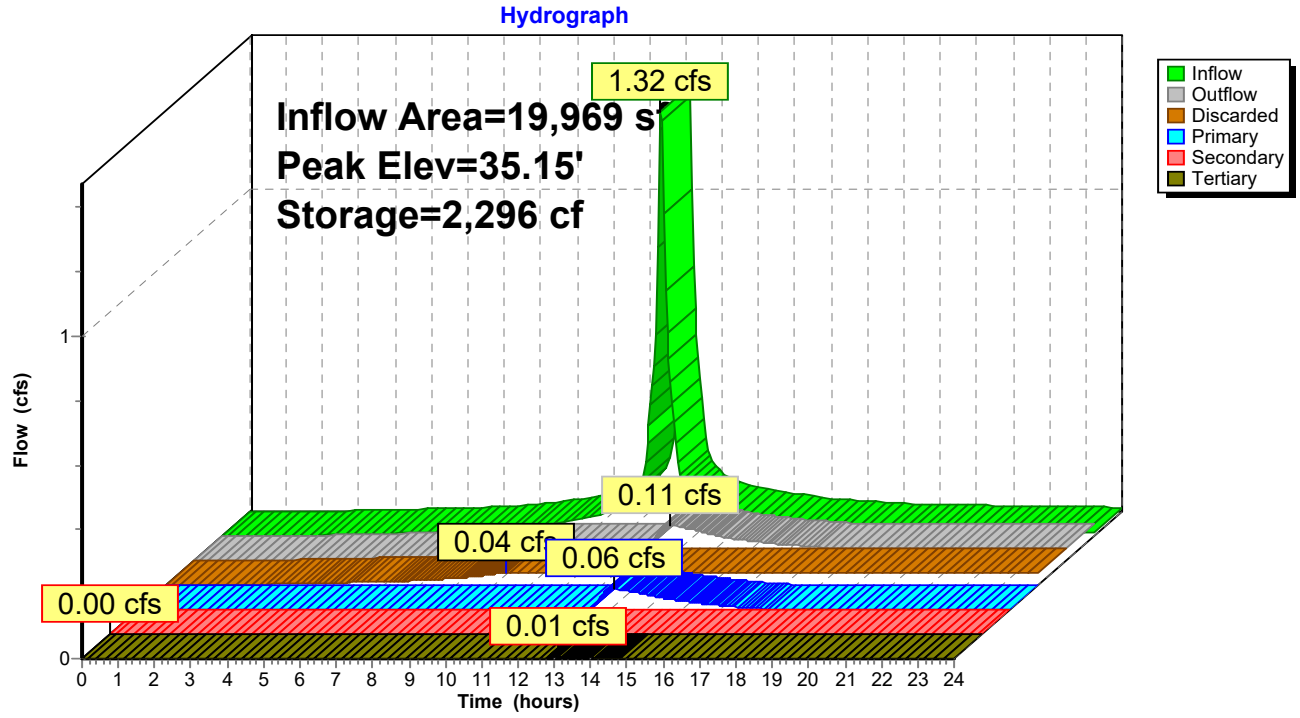
Discarded OutFlow Max=0.04 cfs @ 9.35 hrs HW=33.20' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.06 cfs @ 13.08 hrs HW=35.15' (Free Discharge)
└**2=Culvert** (Inlet Controls 0.06 cfs @ 1.31 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=33.16' (Free Discharge)
└**3=Orifice/Grate** (Controls 0.00 cfs)

Tertiary OutFlow Max=0.01 cfs @ 13.08 hrs HW=35.15' (Free Discharge)
└**4=Culvert** (Inlet Controls 0.01 cfs @ 0.74 fps)

Pond SSD1: SUBSURFACE DRAINAGE AREA #1



Stage-Discharge for Pond SSD1: SUBSURFACE DRAINAGE AREA #1

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)	Tertiary (cfs)
33.16	0.00	**0.00**	0.00	**0.00**	0.00
33.26	0.04	**0.04**	0.00	0.00	0.00
33.36	0.04	0.04	0.00	0.00	0.00
33.46	0.04	0.04	0.00	0.00	0.00
33.56	0.04	0.04	0.00	0.00	0.00
33.66	0.04	0.04	0.00	0.00	0.00
33.76	0.04	0.04	0.00	0.00	0.00
33.86	0.04	0.04	0.00	0.00	0.00
33.96	0.04	0.04	0.00	0.00	0.00
34.06	0.04	0.04	0.00	0.00	0.00
34.16	0.04	0.04	0.00	0.00	0.00
34.26	0.04	0.04	0.00	0.00	0.00
34.36	0.04	0.04	0.00	0.00	0.00
34.46	0.04	0.04	0.00	0.00	0.00
34.56	0.04	0.04	0.00	0.00	0.00
34.66	0.04	0.04	0.00	0.00	0.00
34.76	0.04	0.04	0.00	0.00	0.00
34.86	0.04	0.04	0.00	0.00	0.00
34.96	0.04	0.04	0.00	0.00	0.00
35.06	0.05	0.04	0.01	0.00	0.00
35.16	0.12	0.04	0.07	0.00	0.01
35.26	0.29	0.04	0.18	0.00	0.07
35.36	0.53	0.04	0.31	0.00	0.18
35.46	0.78	0.04	0.44	0.00	0.31
35.56	1.00	0.04	0.53	0.00	0.44
35.66	1.17	0.04	0.61	0.00	0.53
35.76	1.32	0.04	0.68	0.00	0.61
35.86	1.45	0.04	0.74	0.00	0.68
35.96	1.57	0.04	0.80	0.00	0.74
36.06	1.69	0.04	0.85	0.00	0.80
36.16	1.79	0.04	0.90	0.00	0.85
36.26	1.89	0.04	0.95	0.00	0.90
36.36	1.99	0.04	1.00	0.00	0.95
36.46	2.08	0.04	1.04	0.00	1.00
36.56	2.16	0.04	1.08	0.00	1.04
36.66	2.24	0.04	1.12	0.00	1.08
36.76	2.32	0.04	1.16	0.00	1.12
36.86	2.40	0.04	1.20	0.00	1.16
36.96	2.47	0.04	1.24	0.00	1.20
37.06	2.54	0.04	1.26	0.00	1.24
37.16	**2.58**	0.04	**1.27**	0.00	**1.27**

Stage-Area-Storage for Pond SSD1: SUBSURFACE DRAINAGE AREA #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
33.16	**1,654**	0
33.21	1,654	33
33.26	1,654	66
33.31	1,654	99
33.36	1,654	132
33.41	1,654	165
33.46	1,654	198
33.51	1,654	232
33.56	1,654	265
33.61	1,654	298
33.66	1,654	331
33.71	1,654	399
33.76	1,654	468
33.81	1,654	536
33.86	1,654	605
33.91	1,654	673
33.96	1,654	741
34.01	1,654	808
34.06	1,654	876
34.11	1,654	944
34.16	1,654	1,012
34.21	1,654	1,079
34.26	1,654	1,147
34.31	1,654	1,213
34.36	1,654	1,280
34.41	1,654	1,346
34.46	1,654	1,412
34.51	1,654	1,477
34.56	1,654	1,543
34.61	1,654	1,609
34.66	1,654	1,674
34.71	1,654	1,739
34.76	1,654	1,804
34.81	1,654	1,869
34.86	1,654	1,934
34.91	1,654	1,999
34.96	1,654	2,062
35.01	1,654	2,125
35.06	1,654	2,188
35.11	1,654	2,249
35.16	1,654	2,311
35.21	1,654	2,371
35.26	1,654	2,431
35.31	1,654	2,491
35.36	1,654	2,549
35.41	1,654	2,607
35.46	1,654	2,664
35.51	1,654	2,720
35.56	1,654	2,776
35.61	1,654	2,830
35.66	1,654	2,883
35.71	1,654	2,935
35.76	1,654	2,986
35.81	1,654	3,035
35.86	1,654	3,083
35.91	1,654	3,128
35.96	1,654	3,171
36.01	1,654	3,212
36.06	1,654	3,250
36.11	1,654	3,287
36.16	1,654	3,321
36.21	1,654	3,354
36.26	1,654	3,387
36.31	1,654	3,420
36.36	1,654	3,454
36.41	1,654	3,487
36.46	1,654	3,520
36.51	1,654	3,553
36.56	1,654	3,586
36.61	1,654	3,619
36.66	1,654	3,652
36.71	1,654	3,685
36.76	1,654	3,718
36.81	1,654	3,751
36.86	1,654	**3,784**
36.91	1,654	**3,790**
36.96	1,654	3,790
37.01	1,654	3,790
37.06	1,654	3,790
37.11	1,654	3,790
37.16	1,654	3,790

Summary for Pond SSD2: SUBSURFACE DRAINAGE AREA #2

Inflow Area = 13,267 sf, 76.40% Impervious, Inflow Depth > 2.52" for 2-Year event
Inflow = 0.87 cfs @ 12.07 hrs, Volume= 2,787 cf
Outflow = 0.05 cfs @ 11.10 hrs, Volume= 2,470 cf, Atten= 95%, Lag= 0.0 min
Discarded = 0.05 cfs @ 11.10 hrs, Volume= 2,470 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP1 : DP1post
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP1 : DP1post

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 37.02' @ 14.15 hrs Surf.Area= 1,960 sf Storage= 1,315 cf

Plug-Flow detention time= 253.4 min calculated for 2,465 cf (88% of inflow)
Center-of-Mass det. time= 200.4 min (990.1 - 789.7)

Volume	Invert	Avail.Storage	Storage Description
#1B	35.70'	2,483 cf	**16.00'W x 122.50'L x 4.54'H Field B** 8,902 cf Overall - 2,694 cf Embedded = 6,208 cf x 40.0% Voids
#2B	36.70'	2,694 cf	**Cultec R-330XLHD** x 51 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 3 rows
		5,177 cf	Total Available Storage

Storage Group B created with Chamber Wizard

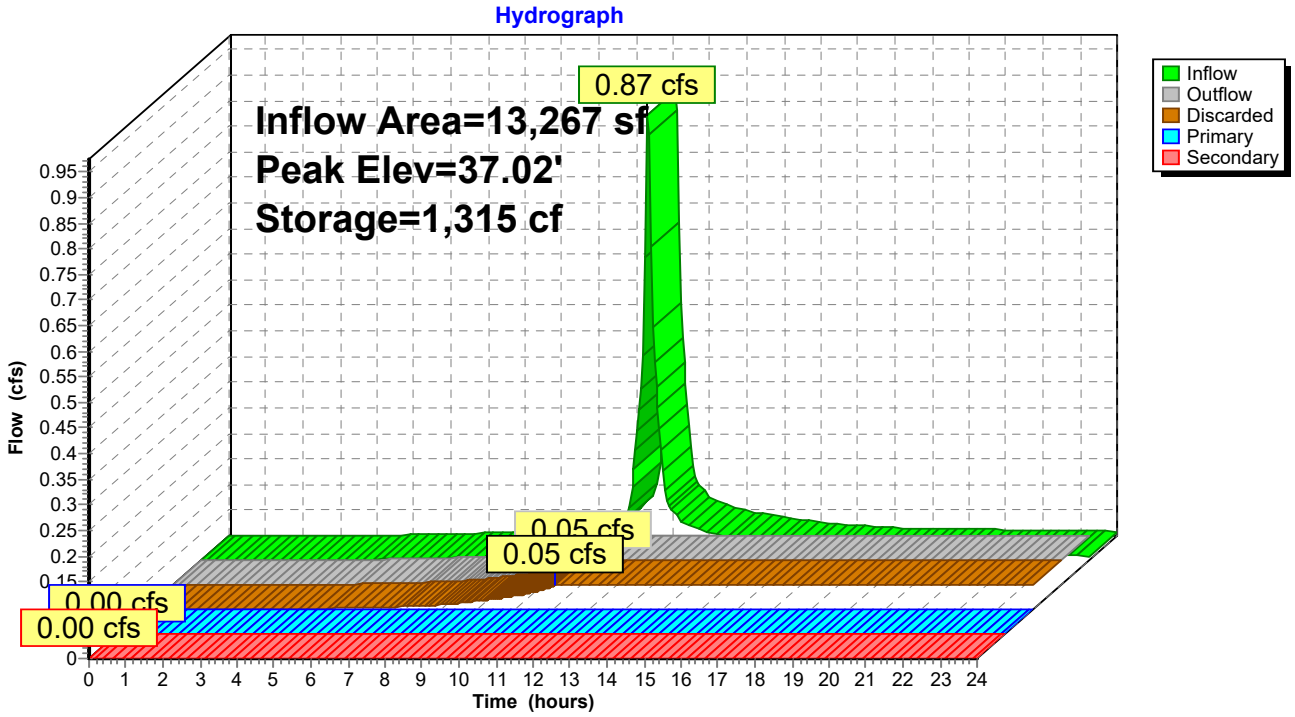
Device	Routing	Invert	Outlet Devices
#1	Discarded	35.70'	**1.020 in/hr Exfiltration over Surface area**
#2	Secondary	40.60'	**4.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	38.70'	**6.0" Round Culvert** L= 23.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 38.70' / 35.60' S= 0.1348 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf

Discarded OutFlow Max=0.05 cfs @ 11.10 hrs HW=35.75' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=35.70' (Free Discharge)
↑**3=Culvert** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=35.70' (Free Discharge)
↑**2=Orifice/Grate** (Controls 0.00 cfs)

Pond SSD2: SUBSURFACE DRAINAGE AREA #2



Stage-Discharge for Pond SSD2: SUBSURFACE DRAINAGE AREA #2

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
35.70	0.00	**0.00**	0.00	**0.00**
35.80	0.05	**0.05**	0.00	0.00
35.90	0.05	0.05	0.00	0.00
36.00	0.05	0.05	0.00	0.00
36.10	0.05	0.05	0.00	0.00
36.20	0.05	0.05	0.00	0.00
36.30	0.05	0.05	0.00	0.00
36.40	0.05	0.05	0.00	0.00
36.50	0.05	0.05	0.00	0.00
36.60	0.05	0.05	0.00	0.00
36.70	0.05	0.05	0.00	0.00
36.80	0.05	0.05	0.00	0.00
36.90	0.05	0.05	0.00	0.00
37.00	0.05	0.05	0.00	0.00
37.10	0.05	0.05	0.00	0.00
37.20	0.05	0.05	0.00	0.00
37.30	0.05	0.05	0.00	0.00
37.40	0.05	0.05	0.00	0.00
37.50	0.05	0.05	0.00	0.00
37.60	0.05	0.05	0.00	0.00
37.70	0.05	0.05	0.00	0.00
37.80	0.05	0.05	0.00	0.00
37.90	0.05	0.05	0.00	0.00
38.00	0.05	0.05	0.00	0.00
38.10	0.05	0.05	0.00	0.00
38.20	0.05	0.05	0.00	0.00
38.30	0.05	0.05	0.00	0.00
38.40	0.05	0.05	0.00	0.00
38.50	0.05	0.05	0.00	0.00
38.60	0.05	0.05	0.00	0.00
38.70	0.05	0.05	0.00	0.00
38.80	0.08	0.05	0.03	0.00
38.90	0.16	0.05	0.11	0.00
39.00	0.28	0.05	0.23	0.00
39.10	0.41	0.05	0.36	0.00
39.20	0.52	0.05	0.47	0.00
39.30	0.61	0.05	0.56	0.00
39.40	0.68	0.05	0.63	0.00
39.50	0.75	0.05	0.70	0.00
39.60	0.81	0.05	0.76	0.00
39.70	0.87	0.05	0.82	0.00
39.80	0.92	0.05	0.87	0.00
39.90	0.97	0.05	0.92	0.00
40.00	1.02	0.05	0.97	0.00
40.10	1.06	0.05	1.01	0.00
40.20	1.10	0.05	1.06	0.00
40.30	1.14	0.05	1.10	0.00
40.40	1.18	0.05	1.14	0.00
40.50	1.22	0.05	1.18	0.00
40.60	**1.26**	0.05	**1.21**	0.00

Stage-Area-Storage for Pond SSD2: SUBSURFACE DRAINAGE AREA #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
35.70	**1,960**	0
35.75	1,960	39
35.80	1,960	78
35.85	1,960	118
35.90	1,960	157
35.95	1,960	196
36.00	1,960	235
36.05	1,960	274
36.10	1,960	314
36.15	1,960	353
36.20	1,960	392
36.25	1,960	431
36.30	1,960	470
36.35	1,960	510
36.40	1,960	549
36.45	1,960	588
36.50	1,960	627
36.55	1,960	666
36.60	1,960	706
36.65	1,960	745
36.70	1,960	784
36.75	1,960	866
36.80	1,960	948
36.85	1,960	1,030
36.90	1,960	1,112
36.95	1,960	1,193
37.00	1,960	1,275
37.05	1,960	1,356
37.10	1,960	1,437
37.15	1,960	1,518
37.20	1,960	1,600
37.25	1,960	1,680
37.30	1,960	1,761
37.35	1,960	1,841
37.40	1,960	1,920
37.45	1,960	1,999
37.50	1,960	2,078
37.55	1,960	2,157
37.60	1,960	2,236
37.65	1,960	2,314
37.70	1,960	2,392
37.75	1,960	2,470
37.80	1,960	2,548
37.85	1,960	2,626
37.90	1,960	2,704
37.95	1,960	2,781
38.00	1,960	2,857
38.05	1,960	2,932
38.10	1,960	3,007
38.15	1,960	3,081
38.20	1,960	3,154
38.25	1,960	3,227
38.30	1,960	3,298
38.35	1,960	3,369
38.40	1,960	3,439
38.45	1,960	3,509
38.50	1,960	3,577
38.55	1,960	3,644
38.60	1,960	3,710
38.65	1,960	3,775
38.70	1,960	3,839
38.75	1,960	3,901
38.80	1,960	3,961
38.85	1,960	4,020
38.90	1,960	4,076
38.95	1,960	4,130
39.00	1,960	4,182
39.05	1,960	4,230
39.10	1,960	4,276
39.15	1,960	4,319
39.20	1,960	4,360
39.25	1,960	4,399
39.30	1,960	4,439
39.35	1,960	4,478
39.40	1,960	4,517
39.45	1,960	4,556
39.50	1,960	4,595
39.55	1,960	4,635
39.60	1,960	4,674
39.65	1,960	4,713
39.70	1,960	4,752
39.75	1,960	4,791
39.80	1,960	4,831
39.85	1,960	4,870
39.90	1,960	4,909
39.95	1,960	4,948
40.00	1,960	4,987
40.05	1,960	5,027
40.10	1,960	5,066
40.15	1,960	5,105
40.20	1,960	5,144
40.25	1,960	**5,177**
40.30	1,960	5,177
40.35	1,960	5,177
40.40	1,960	5,177
40.45	1,960	5,177
40.50	1,960	5,177
40.55	1,960	5,177
40.60	1,960	5,177

Summary for Pond SSD3: SUBSURFACE DRAINAGE AREA #3

Inflow Area = 20,604 sf, 71.75% Impervious, Inflow Depth > 2.42" for 2-Year event
Inflow = 1.22 cfs @ 12.09 hrs, Volume= 4,155 cf
Outflow = 0.70 cfs @ 12.23 hrs, Volume= 3,474 cf, Atten= 43%, Lag= 8.3 min
Discarded = 0.03 cfs @ 9.50 hrs, Volume= 1,668 cf
Primary = 0.67 cfs @ 12.23 hrs, Volume= 1,806 cf
Routed to Reach DP3 : DP3
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 19.82' @ 12.23 hrs Surf.Area= 1,203 sf Storage= 1,293 cf

Plug-Flow detention time= 135.5 min calculated for 3,474 cf (84% of inflow)
Center-of-Mass det. time= 67.8 min (862.3 - 794.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	18.00'	722 cf	**8.33'W x 81.00'L x 3.54'H Field A** 2,391 cf Overall - 585 cf Embedded = 1,806 cf x 40.0% Voids
#2A	18.50'	585 cf	**Cultec R-330XLHD** x 11 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
#3B	18.00'	362 cf	**12.50'W x 28.00'L x 3.54'H Field B** 1,240 cf Overall - 335 cf Embedded = 904 cf x 40.0% Voids
#4B	18.50'	335 cf	**Cultec R-330XLHD** x 6 Inside #3 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
#5C	18.00'	201 cf	**13.00'W x 13.67'L x 3.54'H Field C** 629 cf Overall - 127 cf Embedded = 503 cf x 40.0% Voids
#6C	18.50'	127 cf	**Cultec R-330XLHD** x 2 Inside #5 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		2,332 cf	Total Available Storage

Storage Group A created with Chamber Wizard
Storage Group B created with Chamber Wizard
Storage Group C created with Chamber Wizard

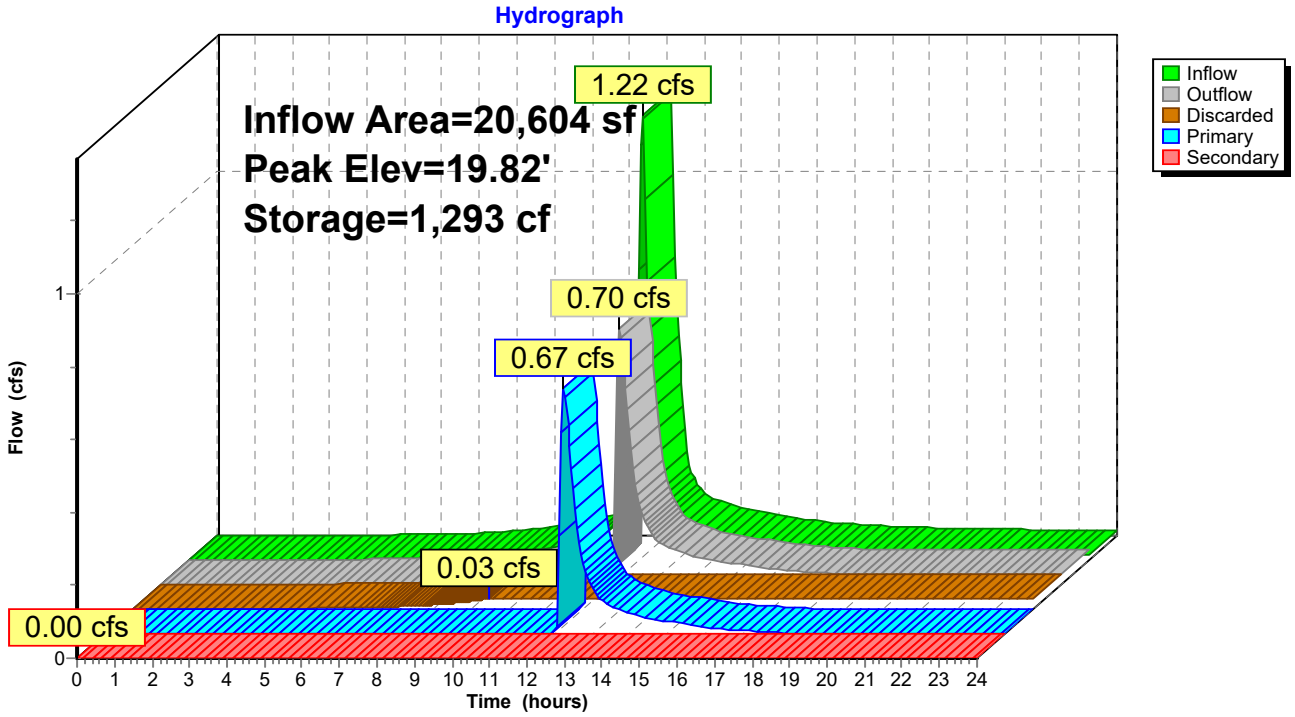
Device	Routing	Invert	Outlet Devices
#1	Discarded	18.00'	**1.020 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#2	Primary	19.30'	**10.0" Round Culvert** L= 14.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 19.30' / 19.20' S= 0.0071 '/' Cc= 0.900 n= 0.013, Flow Area= 0.55 sf
#3	Secondary	22.00'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.03 cfs @ 9.50 hrs HW=18.04' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.67 cfs @ 12.23 hrs HW=19.82' (Free Discharge)
└**2=Culvert** (Barrel Controls 0.67 cfs @ 2.66 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=18.00' (Free Discharge)
└**3=Orifice/Grate** (Controls 0.00 cfs)

Pond SSD3: SUBSURFACE DRAINAGE AREA #3



Stage-Discharge for Pond SSD3: SUBSURFACE DRAINAGE AREA #3

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
18.00	0.00	**0.00**	0.00	**0.00**
18.10	0.03	**0.03**	0.00	0.00
18.20	0.03	0.03	0.00	0.00
18.30	0.03	0.03	0.00	0.00
18.40	0.03	0.03	0.00	0.00
18.50	0.03	0.03	0.00	0.00
18.60	0.03	0.03	0.00	0.00
18.70	0.03	0.03	0.00	0.00
18.80	0.03	0.03	0.00	0.00
18.90	0.03	0.03	0.00	0.00
19.00	0.03	0.03	0.00	0.00
19.10	0.03	0.03	0.00	0.00
19.20	0.03	0.03	0.00	0.00
19.30	0.03	0.03	0.00	0.00
19.40	0.06	0.03	0.03	0.00
19.50	0.14	0.03	0.12	0.00
19.60	0.28	0.03	0.25	0.00
19.70	0.45	0.03	0.42	0.00
19.80	0.65	0.03	0.62	0.00
19.90	0.88	0.03	0.85	0.00
20.00	1.11	0.03	1.08	0.00
20.10	1.35	0.03	1.33	0.00
20.20	1.59	0.03	1.56	0.00
20.30	1.79	0.03	1.76	0.00
20.40	1.91	0.03	1.89	0.00
20.50	2.11	0.03	2.08	0.00
20.60	2.32	0.03	2.30	0.00
20.70	2.52	0.03	2.49	0.00
20.80	2.70	0.03	2.67	0.00
20.90	2.87	0.03	2.84	0.00
21.00	3.00	0.03	2.98	0.00
21.10	3.12	0.03	3.09	0.00
21.20	3.23	0.03	3.20	0.00
21.30	3.33	0.03	3.30	0.00
21.40	3.44	0.03	3.41	0.00
21.50	3.54	0.03	3.51	0.00
21.60	3.63	0.03	3.60	0.00
21.70	3.73	0.03	3.70	0.00
21.80	3.82	0.03	3.79	0.00
21.90	3.91	0.03	3.88	0.00
22.00	**4.00**	0.03	**3.97**	0.00

Stage-Area-Storage for Pond SSD3: SUBSURFACE DRAINAGE AREA #3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
18.00	**1,203**	0
18.05	1,203	24
18.10	1,203	48
18.15	1,203	72
18.20	1,203	96
18.25	1,203	120
18.30	1,203	144
18.35	1,203	168
18.40	1,203	192
18.45	1,203	216
18.50	1,203	241
18.55	1,203	281
18.60	1,203	322
18.65	1,203	363
18.70	1,203	403
18.75	1,203	444
18.80	1,203	484
18.85	1,203	525
18.90	1,203	565
18.95	1,203	605
19.00	1,203	646
19.05	1,203	686
19.10	1,203	726
19.15	1,203	766
19.20	1,203	806
19.25	1,203	845
19.30	1,203	885
19.35	1,203	924
19.40	1,203	963
19.45	1,203	1,003
19.50	1,203	1,042
19.55	1,203	1,081
19.60	1,203	1,120
19.65	1,203	1,159
19.70	1,203	1,198
19.75	1,203	1,237
19.80	1,203	1,275
19.85	1,203	1,314
19.90	1,203	1,351
19.95	1,203	1,389
20.00	1,203	1,426
20.05	1,203	1,463
20.10	1,203	1,500
20.15	1,203	1,536
20.20	1,203	1,572
20.25	1,203	1,608
20.30	1,203	1,643
20.35	1,203	1,678
20.40	1,203	1,713
20.45	1,203	1,747
20.50	1,203	1,780
20.55	1,203	1,813
20.60	1,203	1,846
20.65	1,203	1,877
20.70	1,203	1,908
20.75	1,203	1,938
20.80	1,203	1,967
20.85	1,203	1,994
20.90	1,203	2,021
20.95	1,203	2,047
21.00	1,203	2,071
21.05	1,203	2,095
21.10	1,203	2,119
21.15	1,203	2,143
21.20	1,203	2,168
21.25	1,203	2,192
21.30	1,203	2,216
21.35	1,203	2,240
21.40	1,203	2,264
21.45	1,203	2,288
21.50	1,203	2,312
21.55	1,203	**2,332**
21.60	1,203	2,332
21.65	1,203	2,332
21.70	1,203	2,332
21.75	1,203	2,332
21.80	1,203	2,332
21.85	1,203	2,332
21.90	1,203	2,332
21.95	1,203	2,332
22.00	1,203	2,332

Summary for Pond SSD4: SUBSURFACE DRAINAGE AREA #4

Inflow Area = 5,609 sf,100.00% Impervious, Inflow Depth > 3.12" for 2-Year event
Inflow = 0.42 cfs @ 12.07 hrs, Volume= 1,456 cf
Outflow = 0.06 cfs @ 12.57 hrs, Volume= 962 cf, Atten= 86%, Lag= 30.3 min
Discarded = 0.01 cfs @ 8.70 hrs, Volume= 747 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP1 : DP1post
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP1 : DP1post
Tertiary = 0.05 cfs @ 12.57 hrs, Volume= 216 cf
Routed to Reach DP2 : DP2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 36.66' @ 12.57 hrs Surf.Area= 485 sf Storage= 692 cf

Plug-Flow detention time= 217.1 min calculated for 960 cf (66% of inflow)
Center-of-Mass det. time= 118.8 min (873.0 - 754.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	34.50'	475 cf	**11.17'W x 31.50'L x 4.63'H Field A** 1,627 cf Overall - 440 cf Embedded = 1,187 cf x 40.0% Voids
#2A	35.00'	440 cf	**Cultec R-330XLHD** x 8 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
#3B	34.50'	95 cf	**6.33'W x 10.50'L x 4.54'H Field B** 302 cf Overall - 63 cf Embedded = 239 cf x 40.0% Voids
#4B	35.00'	63 cf	**Cultec R-330XLHD** Inside #3 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
#5C	34.50'	98 cf	**6.33'W x 10.50'L x 4.63'H Field C** 308 cf Overall - 63 cf Embedded = 244 cf x 40.0% Voids
#6C	35.00'	63 cf	**Cultec R-330XLHD** Inside #5 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		1,234 cf	Total Available Storage

Storage Group A created with Chamber Wizard
Storage Group B created with Chamber Wizard
Storage Group C created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	34.50'	**1.020 in/hr Exfiltration over Surface area**
#2	Secondary	39.50'	**4.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	37.00'	**4.0" Round Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 37.00' / 34.80' S= 0.2200 '/' Cc= 0.900 n= 0.013, Flow Area= 0.09 sf

#4 Tertiary 36.50' **4.0" Round Culvert**
L= 60.0' CPP, end-section conforming to fill, Ke= 0.500
Inlet / Outlet Invert= 36.50' / 36.00' S= 0.0083 '/' Cc= 0.900
n= 0.013, Flow Area= 0.09 sf

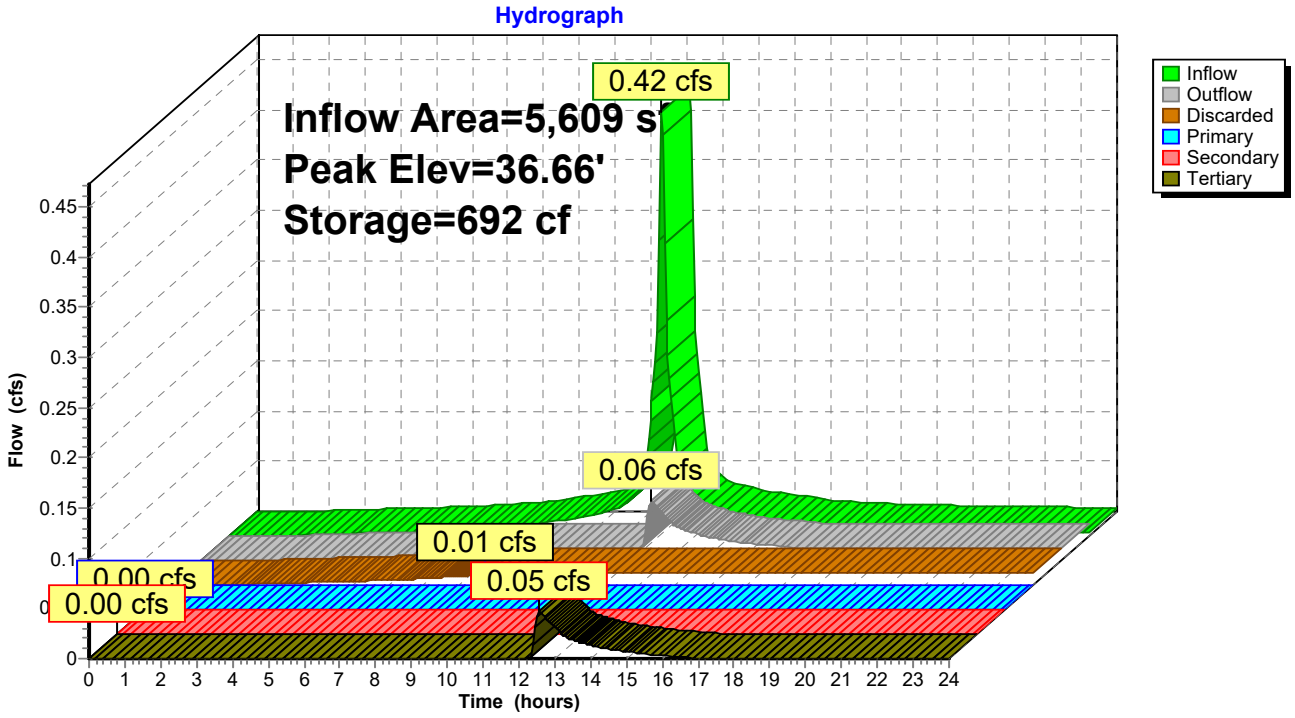
Discarded OutFlow Max=0.01 cfs @ 8.70 hrs HW=34.55' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=34.50' (Free Discharge)
└**3=Culvert** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=34.50' (Free Discharge)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Tertiary OutFlow Max=0.05 cfs @ 12.57 hrs HW=36.66' (Free Discharge)
└**4=Culvert** (Barrel Controls 0.05 cfs @ 1.66 fps)

Pond SSD4: SUBSURFACE DRAINAGE AREA #4



Stage-Discharge for Pond SSD4: SUBSURFACE DRAINAGE AREA #4

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)	Tertiary (cfs)
34.50	0.00	**0.00**	0.00	**0.00**	0.00
34.60	0.01	**0.01**	0.00	0.00	0.00
34.70	0.01	0.01	0.00	0.00	0.00
34.80	0.01	0.01	0.00	0.00	0.00
34.90	0.01	0.01	0.00	0.00	0.00
35.00	0.01	0.01	0.00	0.00	0.00
35.10	0.01	0.01	0.00	0.00	0.00
35.20	0.01	0.01	0.00	0.00	0.00
35.30	0.01	0.01	0.00	0.00	0.00
35.40	0.01	0.01	0.00	0.00	0.00
35.50	0.01	0.01	0.00	0.00	0.00
35.60	0.01	0.01	0.00	0.00	0.00
35.70	0.01	0.01	0.00	0.00	0.00
35.80	0.01	0.01	0.00	0.00	0.00
35.90	0.01	0.01	0.00	0.00	0.00
36.00	0.01	0.01	0.00	0.00	0.00
36.10	0.01	0.01	0.00	0.00	0.00
36.20	0.01	0.01	0.00	0.00	0.00
36.30	0.01	0.01	0.00	0.00	0.00
36.40	0.01	0.01	0.00	0.00	0.00
36.50	0.01	0.01	0.00	0.00	0.00
36.60	0.03	0.01	0.00	0.00	0.02
36.70	0.08	0.01	0.00	0.00	0.07
36.80	0.15	0.01	0.00	0.00	0.13
36.90	0.19	0.01	0.00	0.00	0.18
37.00	0.20	0.01	0.00	0.00	0.18
37.10	0.23	0.01	0.02	0.00	0.20
37.20	0.30	0.01	0.08	0.00	0.21
37.30	0.39	0.01	0.15	0.00	0.22
37.40	0.45	0.01	0.20	0.00	0.23
37.50	0.50	0.01	0.24	0.00	0.24
37.60	0.54	0.01	0.28	0.00	0.25
37.70	0.58	0.01	0.31	0.00	0.26
37.80	0.62	0.01	0.33	0.00	0.27
37.90	0.65	0.01	0.36	0.00	0.28
38.00	0.69	0.01	0.38	0.00	0.29
38.10	0.72	0.01	0.41	0.00	0.30
38.20	0.75	0.01	0.43	0.00	0.31
38.30	0.77	0.01	0.45	0.00	0.32
38.40	0.80	0.01	0.47	0.00	0.32
38.50	0.83	0.01	0.49	0.00	0.33
38.60	0.85	0.01	0.50	0.00	0.34
38.70	0.88	0.01	0.52	0.00	0.35
38.80	0.90	0.01	0.54	0.00	0.35
38.90	0.93	0.01	0.55	0.00	0.36
39.00	0.95	0.01	0.57	0.00	0.37
39.10	0.97	0.01	0.58	0.00	0.38
39.20	0.99	0.01	0.60	0.00	0.38
39.30	1.01	0.01	0.61	0.00	0.39
39.40	1.03	0.01	0.63	0.00	0.39
39.50	**1.05**	0.01	**0.64**	0.00	**0.40**

Stage-Area-Storage for Pond SSD4: SUBSURFACE DRAINAGE AREA #4

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
34.50	**485**	0
34.55	485	10
34.60	485	19
34.65	485	29
34.70	485	39
34.75	485	48
34.80	485	58
34.85	485	68
34.90	485	78
34.95	485	87
35.00	485	97
35.05	485	116
35.10	485	134
35.15	485	153
35.20	485	172
35.25	485	190
35.30	485	209
35.35	485	227
35.40	485	246
35.45	485	264
35.50	485	283
35.55	485	301
35.60	485	320
35.65	485	338
35.70	485	356
35.75	485	374
35.80	485	392
35.85	485	410
35.90	485	428
35.95	485	446
36.00	485	464
36.05	485	482
36.10	485	500
36.15	485	518
36.20	485	535
36.25	485	553
36.30	485	571
36.35	485	588
36.40	485	605
36.45	485	622
36.50	485	639
36.55	485	656
36.60	485	672
36.65	485	688
36.70	485	705
36.75	485	721
36.80	485	736
36.85	485	752
36.90	485	767
36.95	485	782
37.00	485	797
37.05	485	812
37.10	485	826
37.15	485	840
37.20	485	853
37.25	485	866
37.30	485	878
37.35	485	890
37.40	485	901
37.45	485	911
37.50	485	921
37.55	485	931
37.60	485	941
37.65	485	951
37.70	485	960
37.75	485	970
37.80	485	980
37.85	485	989
37.90	485	999
37.95	485	1,009
38.00	485	1,018
38.05	485	1,028
38.10	485	1,038
38.15	485	1,048
38.20	485	1,057
38.25	485	1,067
38.30	485	1,077
38.35	485	1,086
38.40	485	1,096
38.45	485	1,106
38.50	485	1,115
38.55	485	1,125
38.60	485	1,135
38.65	485	1,144
38.70	485	1,154
38.75	485	1,164
38.80	485	1,174
38.85	485	1,183
38.90	485	1,193
38.95	485	1,203
39.00	485	1,212
39.05	485	1,222
39.10	485	**1,230**
39.15	485	**1,234**
39.20	485	1,234
39.25	485	1,234
39.30	485	1,234
39.35	485	1,234
39.40	485	1,234
39.45	485	1,234
39.50	485	1,234

Summary for Pond SSD5: SUBSURFACE DRAINAGE AREA #5 (STORAGE)

Inflow = 0.01 cfs @ 13.08 hrs, Volume= 28 cf
Outflow = 0.00 cfs @ 13.98 hrs, Volume= 28 cf, Atten= 58%, Lag= 53.5 min
Primary = 0.00 cfs @ 13.98 hrs, Volume= 28 cf
Routed to Reach DP3 : DP3
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 31.03' @ 13.98 hrs Surf.Area= 1,174 sf Storage= 15 cf

Plug-Flow detention time= 78.7 min calculated for 28 cf (100% of inflow)
Center-of-Mass det. time= 79.4 min (886.0 - 806.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	31.00'	1,011 cf	**30.50'W x 38.50'L x 3.54'H Field A** 4,159 cf Overall - 1,632 cf Embedded = 2,527 cf x 40.0% Voids
#2A	31.50'	1,632 cf	**Cultec R-330XLHD** x 30 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 6 rows
		2,643 cf	Total Available Storage

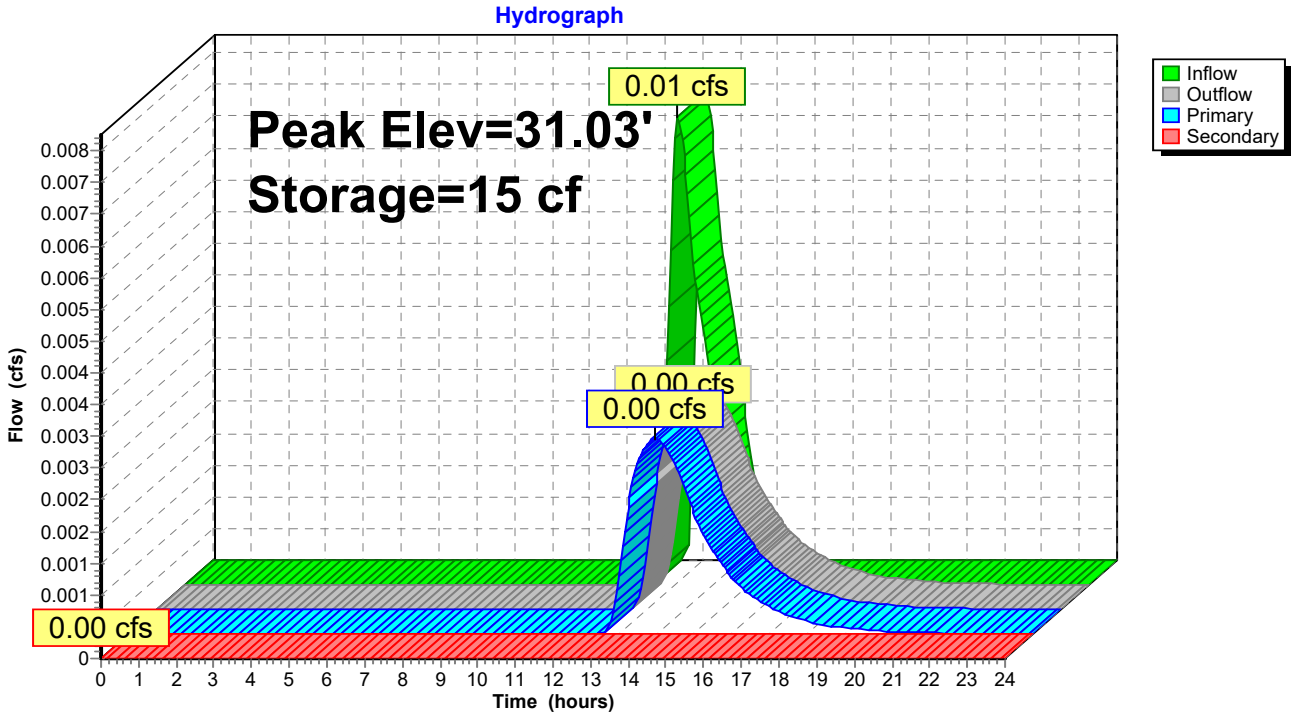
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	31.00'	**2.0" Round Culvert** L= 175.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 31.00' / 19.00' S= 0.0686 '/' Cc= 0.900 n= 0.013, Flow Area= 0.02 sf
#2	Secondary	37.00'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 13.98 hrs HW=31.03' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 0.00 cfs @ 0.60 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=31.00' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond SSD5: SUBSURFACE DRAINAGE AREA #5 (STORAGE)



Stage-Discharge for Pond SSD5: SUBSURFACE DRAINAGE AREA #5 (STORAGE)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
31.00	0.00	0.00	**0.00**
31.10	0.01	0.01	0.00
31.20	0.04	0.04	0.00
31.30	0.05	0.05	0.00
31.40	0.06	0.06	0.00
31.50	0.07	0.07	0.00
31.60	0.08	0.08	0.00
31.70	0.08	0.08	0.00
31.80	0.08	0.08	0.00
31.90	0.08	0.08	0.00
32.00	0.08	0.08	0.00
32.10	0.08	0.08	0.00
32.20	0.08	0.08	0.00
32.30	0.08	0.08	0.00
32.40	0.08	0.08	0.00
32.50	0.08	0.08	0.00
32.60	0.08	0.08	0.00
32.70	0.08	0.08	0.00
32.80	0.08	0.08	0.00
32.90	0.08	0.08	0.00
33.00	0.08	0.08	0.00
33.10	0.08	0.08	0.00
33.20	0.08	0.08	0.00
33.30	0.08	0.08	0.00
33.40	0.08	0.08	0.00
33.50	0.08	0.08	0.00
33.60	0.08	0.08	0.00
33.70	0.09	0.09	0.00
33.80	0.09	0.09	0.00
33.90	0.09	0.09	0.00
34.00	0.09	0.09	0.00
34.10	0.09	0.09	0.00
34.20	0.09	0.09	0.00
34.30	0.09	0.09	0.00
34.40	0.09	0.09	0.00
34.50	0.09	0.09	0.00
34.60	0.09	0.09	0.00
34.70	0.09	0.09	0.00
34.80	0.09	0.09	0.00
34.90	0.09	0.09	0.00
35.00	0.09	0.09	0.00
35.10	0.09	0.09	0.00
35.20	0.09	0.09	0.00
35.30	0.09	0.09	0.00
35.40	0.09	0.09	0.00
35.50	0.09	0.09	0.00
35.60	0.09	0.09	0.00
35.70	0.09	0.09	0.00
35.80	0.09	0.09	0.00
35.90	0.09	0.09	0.00
36.00	0.09	0.09	0.00
36.10	0.09	0.09	0.00
36.20	0.09	0.09	0.00
36.30	0.09	0.09	0.00
36.40	0.09	0.09	0.00
36.50	0.09	0.09	0.00
36.60	0.09	0.09	0.00
36.70	0.09	0.09	0.00
36.80	0.09	0.09	0.00
36.90	0.09	0.09	0.00
37.00	**0.09**	**0.09**	0.00

Stage-Area-Storage for Pond SSD5: SUBSURFACE DRAINAGE AREA #5 (STORAGE)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
31.00	0	33.65	2,184	36.30	2,643
31.05	23	33.70	2,218	36.35	2,643
31.10	47	33.75	2,250	36.40	2,643
31.15	70	33.80	2,281	36.45	2,643
31.20	94	33.85	2,310	36.50	2,643
31.25	117	33.90	2,338	36.55	2,643
31.30	141	33.95	2,364	36.60	2,643
31.35	164	34.00	2,388	36.65	2,643
31.40	188	34.05	2,412	36.70	2,643
31.45	211	34.10	2,435	36.75	2,643
31.50	235	34.15	2,459	36.80	2,643
31.55	284	34.20	2,482	36.85	2,643
31.60	334	34.25	2,506	36.90	2,643
31.65	383	34.30	2,529	36.95	2,643
31.70	432	34.35	2,553	37.00	2,643
31.75	482	34.40	2,576		
31.80	531	34.45	2,600		
31.85	580	34.50	2,623		
31.90	629	34.55	**2,643**		
31.95	677	34.60	2,643		
32.00	726	34.65	2,643		
32.05	775	34.70	2,643		
32.10	824	34.75	2,643		
32.15	872	34.80	2,643		
32.20	920	34.85	2,643		
32.25	967	34.90	2,643		
32.30	1,015	34.95	2,643		
32.35	1,062	35.00	2,643		
32.40	1,109	35.05	2,643		
32.45	1,157	35.10	2,643		
32.50	1,204	35.15	2,643		
32.55	1,251	35.20	2,643		
32.60	1,298	35.25	2,643		
32.65	1,345	35.30	2,643		
32.70	1,391	35.35	2,643		
32.75	1,438	35.40	2,643		
32.80	1,484	35.45	2,643		
32.85	1,529	35.50	2,643		
32.90	1,574	35.55	2,643		
32.95	1,619	35.60	2,643		
33.00	1,663	35.65	2,643		
33.05	1,706	35.70	2,643		
33.10	1,750	35.75	2,643		
33.15	1,792	35.80	2,643		
33.20	1,835	35.85	2,643		
33.25	1,876	35.90	2,643		
33.30	1,917	35.95	2,643		
33.35	1,958	36.00	2,643		
33.40	1,998	36.05	2,643		
33.45	2,037	36.10	2,643		
33.50	2,075	36.15	2,643		
33.55	2,112	36.20	2,643		
33.60	2,149	36.25	2,643		

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1: Post 1 Runoff Area=13,803 sf 0.00% Impervious Runoff Depth>2.15"
Flow Length=229' Tc=13.3 min CN=72 Runoff=0.62 cfs 2,477 cf

Subcatchment 2A: Post 2A Runoff Area=5,633 sf 67.30% Impervious Runoff Depth>3.83"
Tc=5.0 min CN=90 Runoff=0.56 cfs 1,796 cf

Subcatchment 2B: Post 2B Runoff Area=5,351 sf 75.91% Impervious Runoff Depth>4.04"
Tc=5.0 min CN=92 Runoff=0.56 cfs 1,801 cf

Subcatchment 3A: Post 3A Runoff Area=4,243 sf 86.57% Impervious Runoff Depth>4.37"
Tc=5.0 min CN=95 Runoff=0.46 cfs 1,544 cf

Subcatchment 3B: Post 3B Runoff Area=2,714 sf 96.35% Impervious Runoff Depth>4.60"
Tc=5.0 min CN=97 Runoff=0.30 cfs 1,039 cf

Subcatchment 4: Post 4 Runoff Area=5,122 sf 56.07% Impervious Runoff Depth>3.52"
Flow Length=131' Tc=8.6 min CN=87 Runoff=0.43 cfs 1,501 cf

Subcatchment 5: Post 5 Runoff Area=7,742 sf 59.11% Impervious Runoff Depth>3.62"
Flow Length=131' Tc=8.6 min CN=88 Runoff=0.67 cfs 2,334 cf

Subcatchment 6: Post 6 Runoff Area=9,340 sf 71.57% Impervious Runoff Depth>3.93"
Tc=5.0 min CN=91 Runoff=0.95 cfs 3,060 cf

Subcatchment 7: Post 7 Runoff Area=3,875 sf 0.00% Impervious Runoff Depth>2.24"
Flow Length=170' Tc=11.1 min CN=73 Runoff=0.19 cfs 722 cf

Subcatchment 8: Post 8 Runoff Area=1,030 sf 0.00% Impervious Runoff Depth>2.00"
Tc=5.0 min CN=70 Runoff=0.05 cfs 171 cf

Subcatchment 9: Post 9 Runoff Area=28,758 sf 3.57% Impervious Runoff Depth>2.41"
Tc=5.0 min CN=75 Runoff=1.86 cfs 5,768 cf

Subcatchment B1: BLDG #1 Runoff Area=3,522 sf 100.00% Impervious Runoff Depth>4.71"
Tc=5.0 min CN=98 Runoff=0.39 cfs 1,383 cf

Subcatchment B2: BLDG #2 Runoff Area=5,607 sf 100.00% Impervious Runoff Depth>4.71"
Tc=5.0 min CN=98 Runoff=0.63 cfs 2,201 cf

Subcatchment B3A: 1/2 BLDG #3 Runoff Area=2,283 sf 100.00% Impervious Runoff Depth>4.71"
Tc=5.0 min CN=98 Runoff=0.26 cfs 896 cf

Subcatchment B3B: 1/2 BLDG #3 Runoff Area=2,283 sf 100.00% Impervious Runoff Depth>4.71"
Tc=5.0 min CN=98 Runoff=0.26 cfs 896 cf

Subcatchment B4: BLDG #4 Runoff Area=5,609 sf 100.00% Impervious Runoff Depth>4.71"
Tc=5.0 min CN=98 Runoff=0.63 cfs 2,202 cf

Reach DP1: DP1post Inflow=0.67 cfs 2,520 cf
Outflow=0.67 cfs 2,520 cf

Reach DP2: DP2 Inflow=0.24 cfs 952 cf
Outflow=0.24 cfs 952 cf

Reach DP3: DP3 Inflow=3.39 cfs 12,528 cf
Outflow=3.39 cfs 12,528 cf

Reach DP4: DP4 Inflow=0.19 cfs 722 cf
Outflow=0.19 cfs 722 cf

Pond CB1: CB1 Peak Elev=34.31' Inflow=0.43 cfs 1,501 cf
Primary=0.43 cfs 1,501 cf Secondary=0.00 cfs 0 cf Outflow=0.43 cfs 1,501 cf

Pond CB10: CB10 Peak Elev=20.02' Inflow=0.67 cfs 2,334 cf
Primary=0.67 cfs 2,334 cf Secondary=0.00 cfs 0 cf Outflow=0.67 cfs 2,334 cf

Pond CB13: CB13 Peak Elev=20.49' Inflow=0.95 cfs 3,060 cf
Primary=0.95 cfs 3,060 cf Secondary=0.00 cfs 0 cf Outflow=0.95 cfs 3,060 cf

Pond CB4: CB4 Peak Elev=34.28' Inflow=0.46 cfs 1,544 cf
Primary=0.46 cfs 1,544 cf Secondary=0.00 cfs 0 cf Outflow=0.46 cfs 1,544 cf

Pond CB5: CB5 Peak Elev=34.31' Inflow=0.30 cfs 1,039 cf
Primary=0.30 cfs 1,039 cf Secondary=0.00 cfs 0 cf Outflow=0.30 cfs 1,039 cf

Pond CB6: CB6 Peak Elev=37.34' Inflow=0.56 cfs 1,796 cf
Primary=0.56 cfs 1,796 cf Secondary=0.00 cfs 0 cf Outflow=0.56 cfs 1,796 cf

Pond CB9: CB9 Peak Elev=37.34' Inflow=0.56 cfs 1,801 cf
Primary=0.56 cfs 1,801 cf Secondary=0.00 cfs 0 cf Outflow=0.56 cfs 1,801 cf

Pond DMH11: DMH11 Peak Elev=20.39' Inflow=1.57 cfs 5,394 cf
12.0" Round Culvert n=0.013 L=42.0' S=0.0024 '/' Outflow=1.57 cfs 5,394 cf

Pond DMH2: DMH2 Peak Elev=34.41' Inflow=1.15 cfs 4,084 cf
12.0" Round Culvert n=0.013 L=29.0' S=0.0034 '/' Outflow=1.15 cfs 4,084 cf

Pond DMH7: DMH7 Peak Elev=37.40' Inflow=1.12 cfs 3,597 cf
12.0" Round Culvert n=0.013 L=30.0' S=0.0033 '/' Outflow=1.12 cfs 3,597 cf

Pond SSD1: SUBSURFACE DRAINAGE AREA Peak Elev=35.52' Storage=2,734 cf Inflow=2.02 cfs 7,182 cf
=0.04 cfs 2,625 cf Primary=0.49 cfs 1,902 cf Secondary=0.00 cfs 0 cf Tertiary=0.39 cfs 759 cf Outflow=0.92 cfs 5,286 cf

Pond SSD2: SUBSURFACE DRAINAGE AREA Peak Elev=37.78' Storage=2,510 cf Inflow=1.37 cfs 4,493 cf
Discarded=0.05 cfs 2,710 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.05 cfs 2,710 cf

Pond SSD3: SUBSURFACE DRAINAGE AREA Peak Elev=20.20' Storage=1,575 cf Inflow=1.95 cfs 6,776 cf
Discarded=0.03 cfs 1,831 cf Primary=1.57 cfs 4,098 cf Secondary=0.00 cfs 0 cf Outflow=1.59 cfs 5,929 cf

Pond SSD4: SUBSURFACE DRAINAGE AREA Peak Elev=37.16' Storage=844 cf Inflow=0.63 cfs 2,202 cf
arded=0.01 cfs 816 cf Primary=0.06 cfs 43 cf Secondary=0.00 cfs 0 cf Tertiary=0.21 cfs 781 cf Outflow=0.28 cfs 1,639 cf

Pond SSD5: SUBSURFACE DRAINAGE AREA #5 Peak Elev=31.71' Storage=438 cf Inflow=0.39 cfs 759 cf
Primary=0.08 cfs 759 cf Secondary=0.00 cfs 0 cf Outflow=0.08 cfs 759 cf

Total Runoff Area = 106,915 sf Runoff Volume = 29,792 cf Average Runoff Depth = 3.34"
54.54% Pervious = 58,311 sf 45.46% Impervious = 48,604 sf

Summary for Subcatchment 1: Post 1

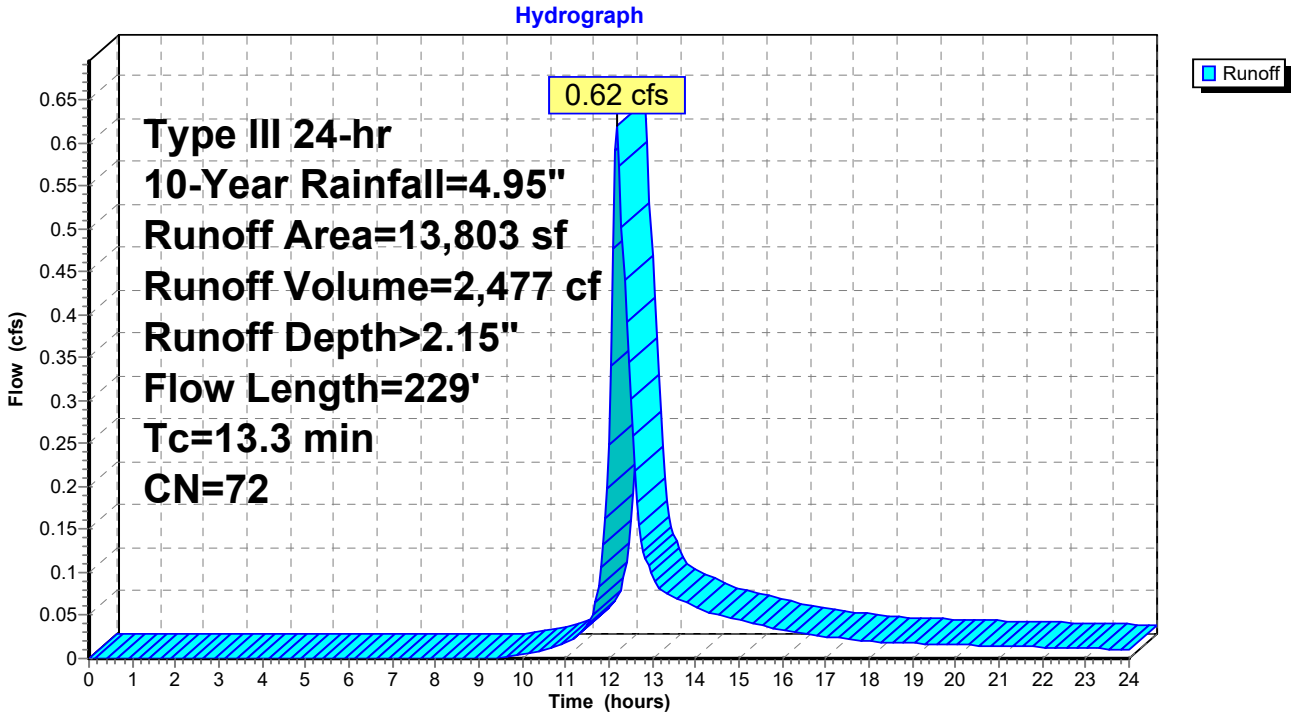
Runoff = 0.62 cfs @ 12.19 hrs, Volume= 2,477 cf, Depth> 2.15"
Routed to Reach DP1 : DP1post

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.95"

Area (sf)	CN	Description
5,871	74	>75% Grass cover, Good, HSG C
7,932	70	Woods, Good, HSG C
0	98	Paved parking, HSG C
0	98	Paved parking, HSG C
13,803	72	Weighted Average
13,803		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	50	0.0300	0.08		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.35"
1.1	67	0.0400	1.00		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.1	58	0.0300	0.87		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.9	54	0.0400	1.00		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
13.3	229	Total			

Subcatchment 1: Post 1



Summary for Subcatchment 2A: Post 2A

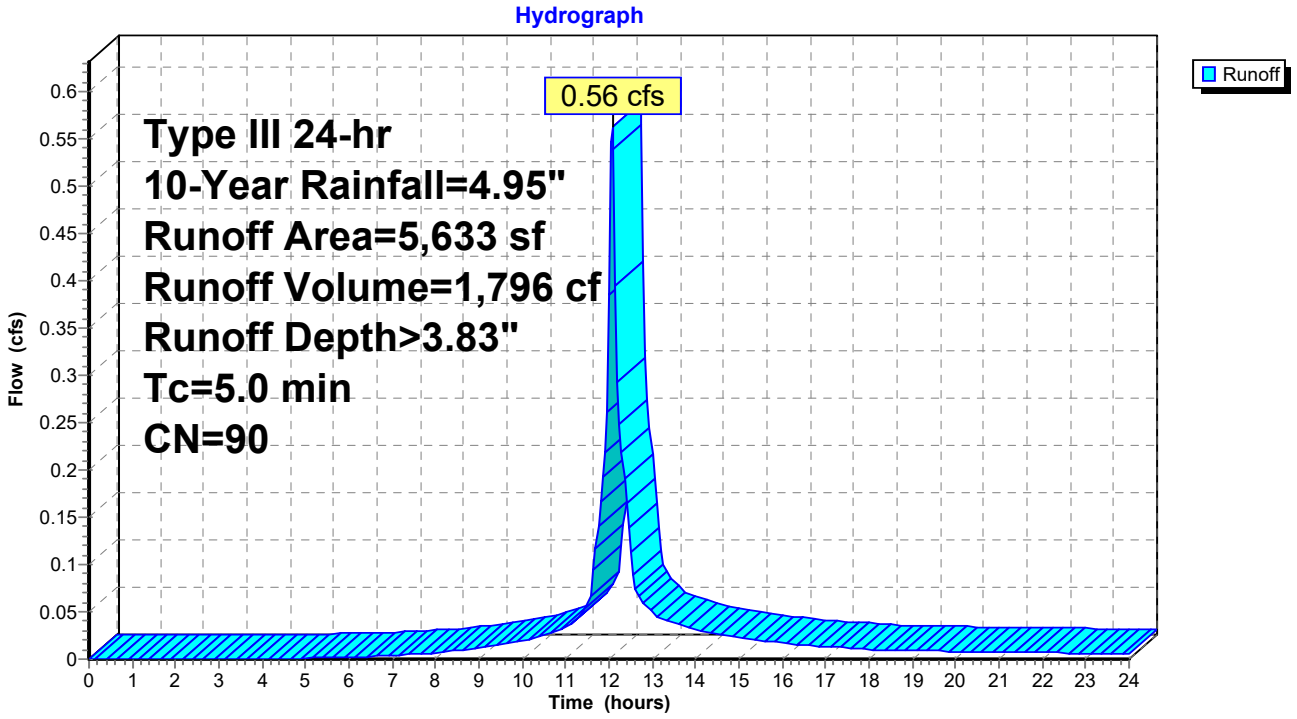
Runoff = 0.56 cfs @ 12.07 hrs, Volume= 1,796 cf, Depth> 3.83"
Routed to Pond CB6 : CB6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.95"

Area (sf)	CN	Description
1,714	74	>75% Grass cover, Good, HSG C
128	70	Woods, Good, HSG C
3,315	98	Paved parking, HSG C
476	98	Paved parking, HSG C
5,633	90	Weighted Average
1,842		32.70% Pervious Area
3,791		67.30% Impervious Area

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

Subcatchment 2A: Post 2A



Summary for Subcatchment 2B: Post 2B

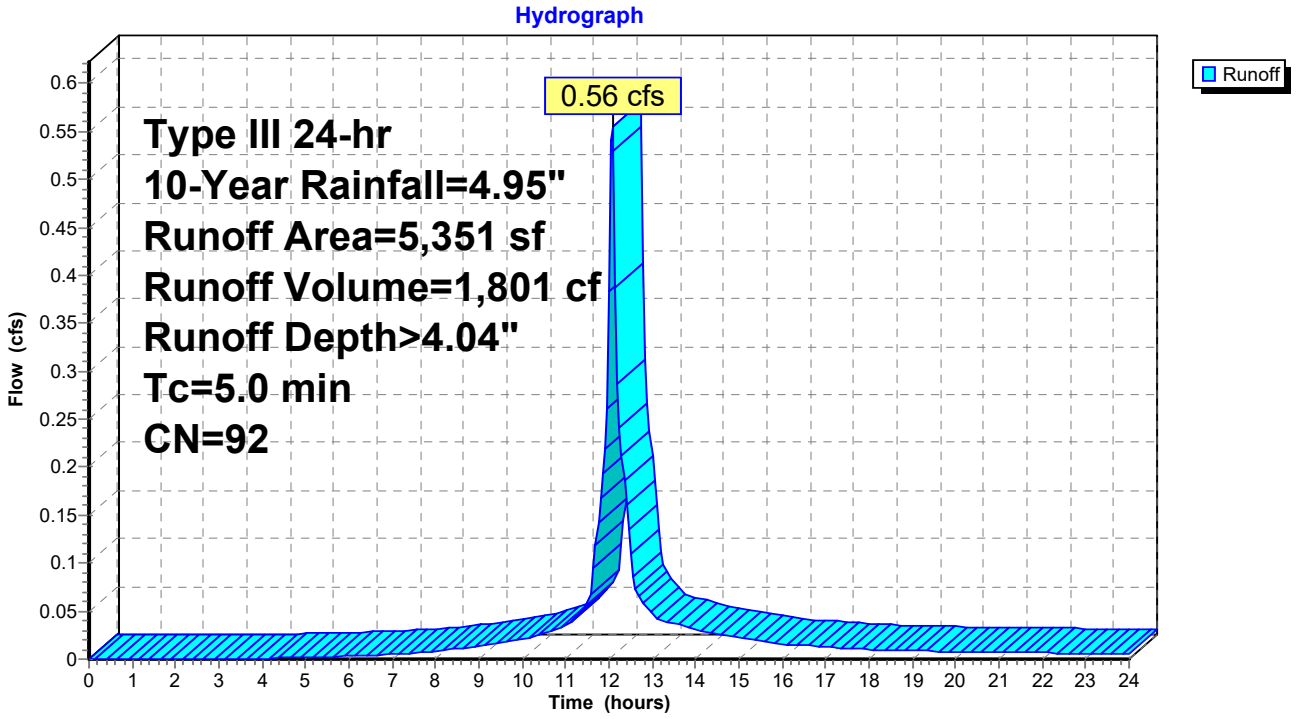
Runoff = 0.56 cfs @ 12.07 hrs, Volume= 1,801 cf, Depth> 4.04"
Routed to Pond CB9 : CB9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.95"

Area (sf)	CN	Description
1,174	74	>75% Grass cover, Good, HSG C
115	70	Woods, Good, HSG C
3,796	98	Paved parking, HSG C
266	98	Paved parking, HSG C
5,351	92	Weighted Average
1,289		24.09% Pervious Area
4,062		75.91% Impervious Area

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

Subcatchment 2B: Post 2B



Summary for Subcatchment 3A: Post 3A

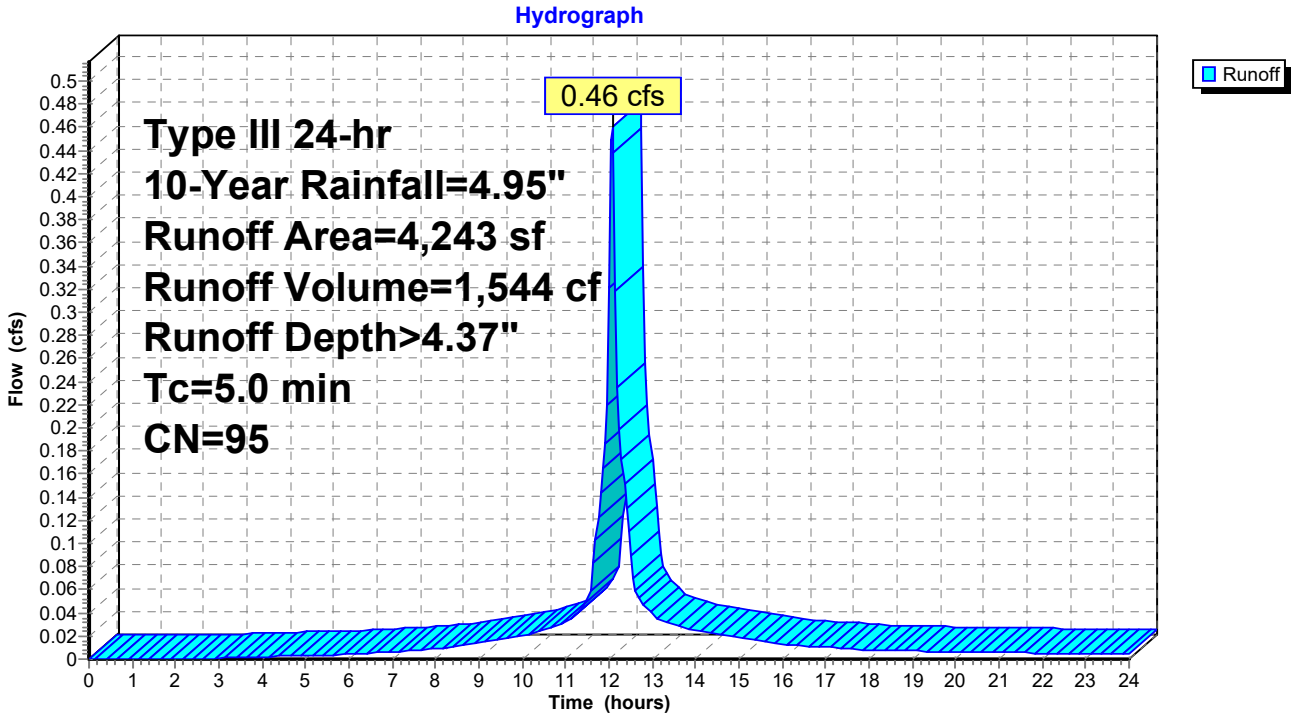
Runoff = 0.46 cfs @ 12.07 hrs, Volume= 1,544 cf, Depth> 4.37"
Routed to Pond CB4 : CB4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.95"

Area (sf)	CN	Description
570	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
3,241	98	Paved parking, HSG C
432	98	Paved parking, HSG C
4,243	95	Weighted Average
570		13.43% Pervious Area
3,673		86.57% Impervious Area

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

Subcatchment 3A: Post 3A



Summary for Subcatchment 3B: Post 3B

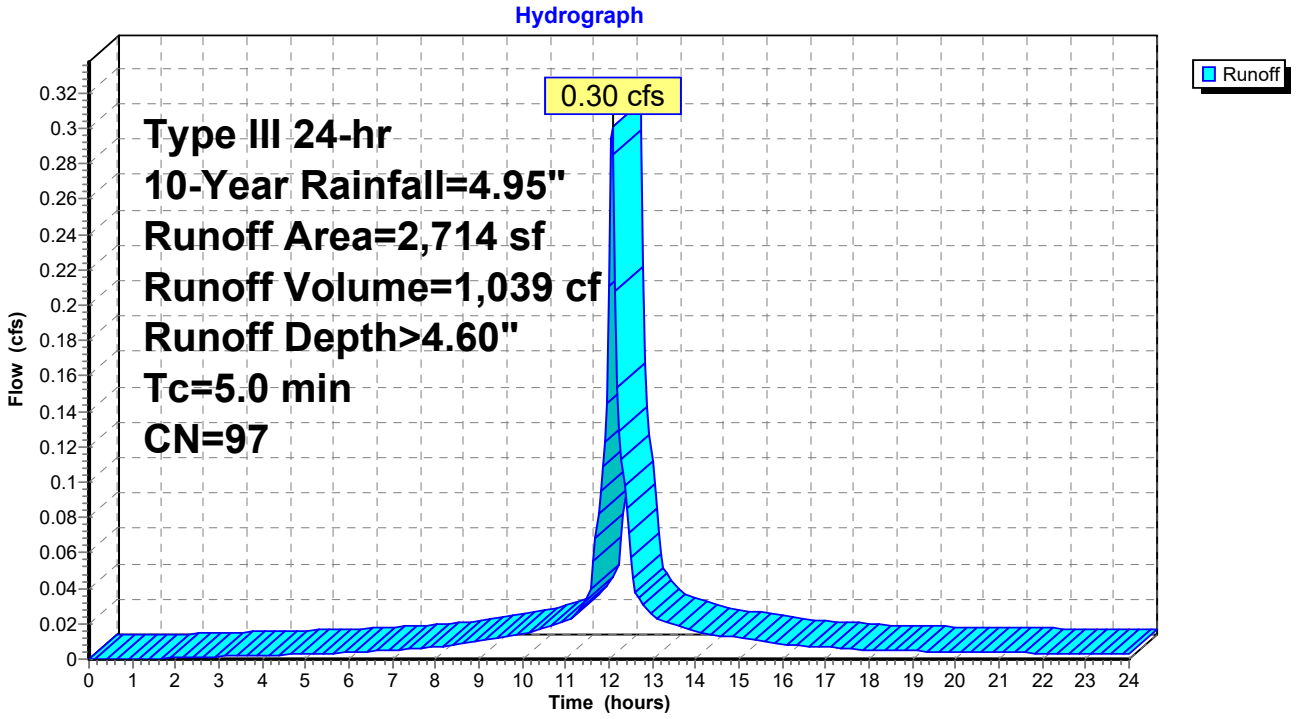
Runoff = 0.30 cfs @ 12.07 hrs, Volume= 1,039 cf, Depth> 4.60"
Routed to Pond CB5 : CB5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.95"

Area (sf)	CN	Description
99	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
2,615	98	Paved parking, HSG C
0	98	Paved parking, HSG C
2,714	97	Weighted Average
99		3.65% Pervious Area
2,615		96.35% Impervious Area

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

Subcatchment 3B: Post 3B



Summary for Subcatchment 4: Post 4

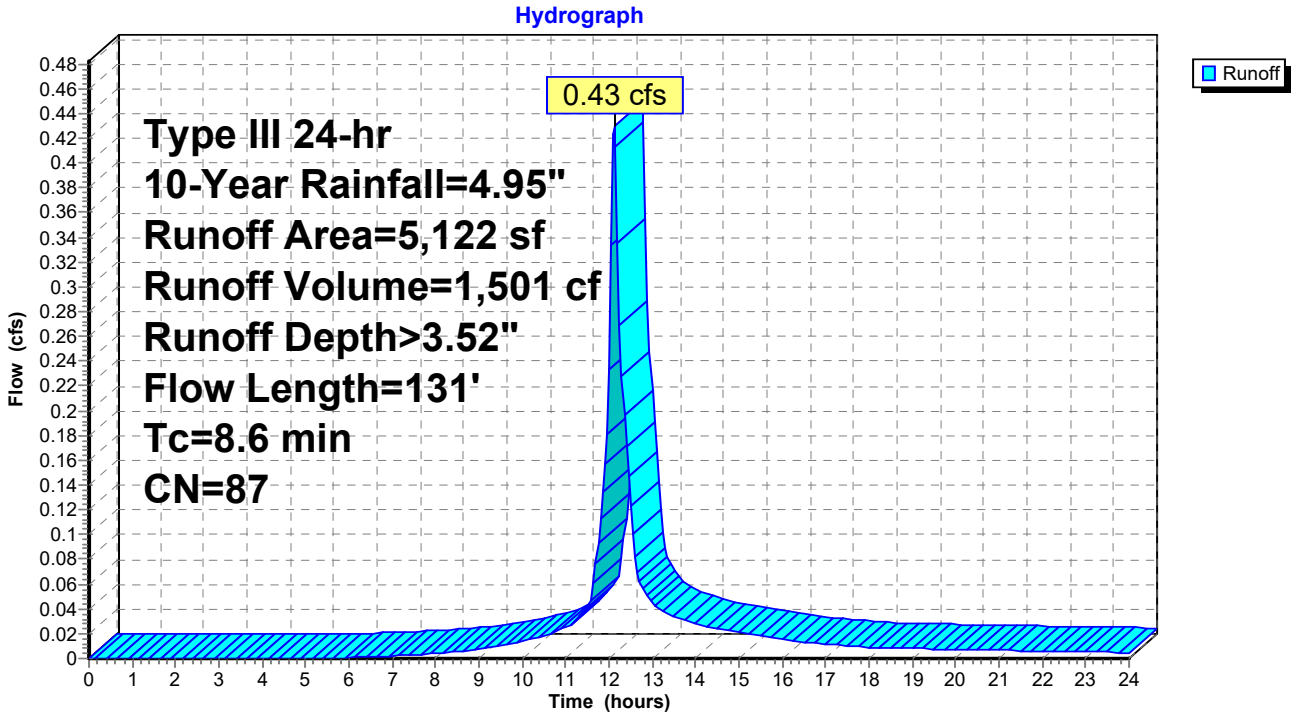
Runoff = 0.43 cfs @ 12.12 hrs, Volume= 1,501 cf, Depth> 3.52"
Routed to Pond CB1 : CB1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.95"

Area (sf)	CN	Description
2,250	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
2,872	98	Paved parking, HSG C
0	98	Paved parking, HSG C
5,122	87	Weighted Average
2,250		43.93% Pervious Area
2,872		56.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0200	0.10		**Sheet Flow, GRASS** Grass: Dense n= 0.240 P2= 3.35"
0.5	39	0.0300	1.21		**Shallow Concentrated Flow, GRASS** Short Grass Pasture Kv= 7.0 fps
0.0	13	0.0800	5.74		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
0.1	29	0.0300	3.52		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
8.6	131	Total			

Subcatchment 4: Post 4



Summary for Subcatchment 5: Post 5

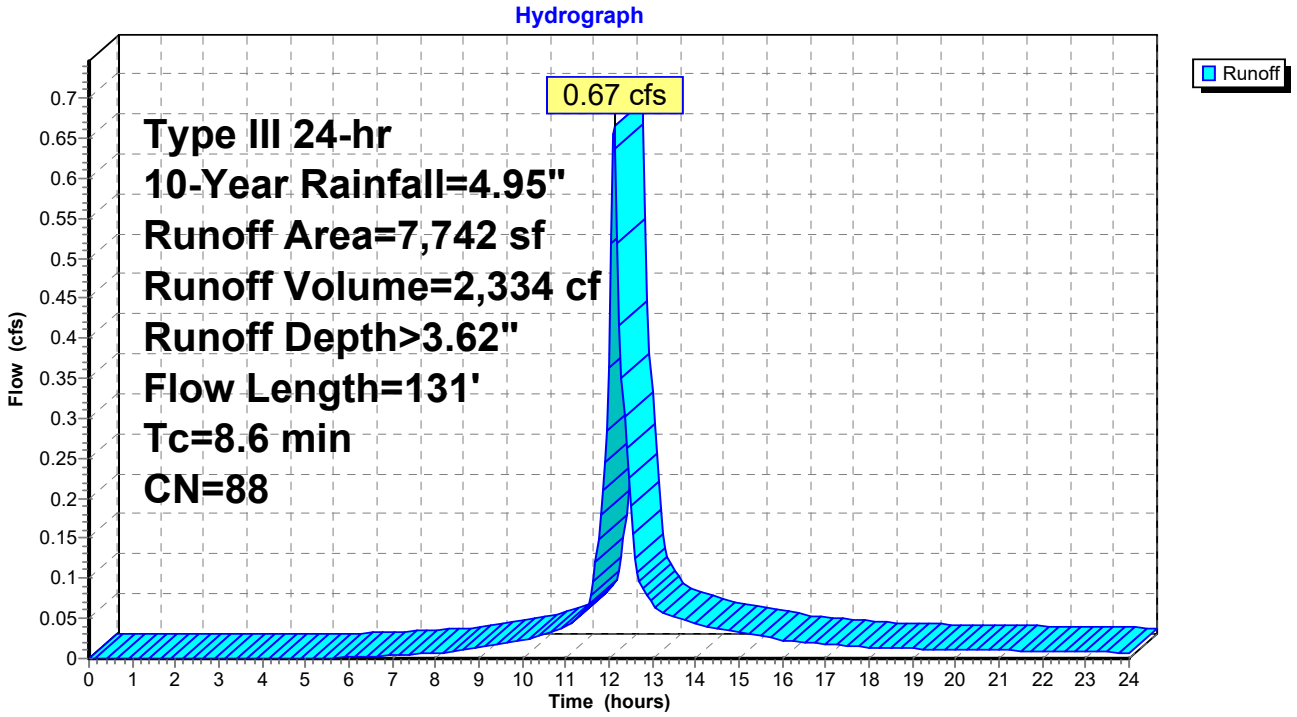
Runoff = 0.67 cfs @ 12.12 hrs, Volume= 2,334 cf, Depth> 3.62"
Routed to Pond CB10 : CB10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.95"

Area (sf)	CN	Description
1,823	98	Unconnected roofs, HSG C
3,166	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
2,753	98	Paved parking, HSG C
0	98	Paved parking, HSG C
7,742	88	Weighted Average
3,166		40.89% Pervious Area
4,576		59.11% Impervious Area
1,823		39.84% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0200	0.10		**Sheet Flow, GRASS** Grass: Dense n= 0.240 P2= 3.35"
0.5	39	0.0300	1.21		**Shallow Concentrated Flow, GRASS** Short Grass Pasture Kv= 7.0 fps
0.0	13	0.0800	5.74		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
0.1	29	0.0300	3.52		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
8.6	131	Total			

Subcatchment 5: Post 5



Summary for Subcatchment 6: Post 6

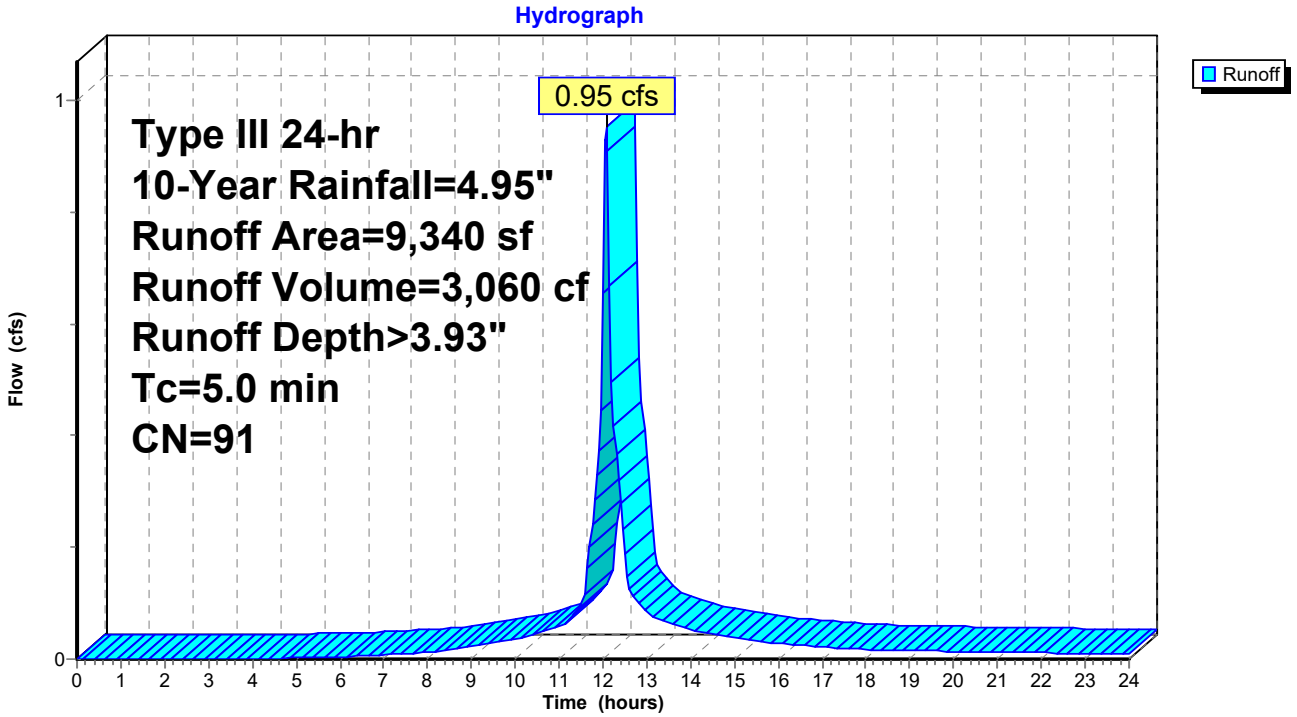
Runoff = 0.95 cfs @ 12.07 hrs, Volume= 3,060 cf, Depth> 3.93"
Routed to Pond CB13 : CB13

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.95"

Area (sf)	CN	Description
2,655	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
5,754	98	Paved parking, HSG C
931	98	Paved parking, HSG C
9,340	91	Weighted Average
2,655		28.43% Pervious Area
6,685		71.57% Impervious Area

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

Subcatchment 6: Post 6



Summary for Subcatchment 7: Post 7

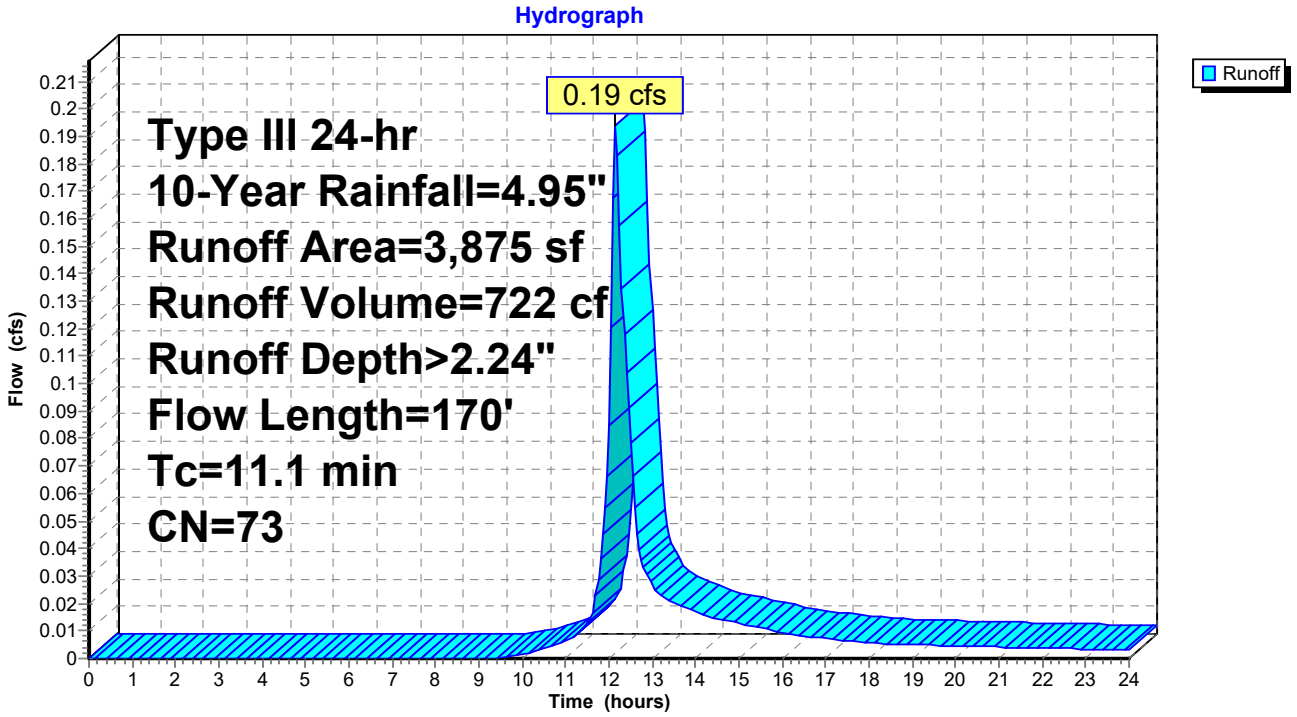
Runoff = 0.19 cfs @ 12.16 hrs, Volume= 722 cf, Depth> 2.24"
Routed to Reach DP4 : DP4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.95"

Area (sf)	CN	Description
3,170	74	>75% Grass cover, Good, HSG C
705	70	Woods, Good, HSG C
0	98	Paved parking, HSG C
0	98	Paved parking, HSG C
3,875	73	Weighted Average
3,875		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	50	0.0400	0.09		**Sheet Flow, WOODS** Woods: Light underbrush n= 0.400 P2= 3.35"
0.7	55	0.0400	1.40		**Shallow Concentrated Flow, WOODS** Short Grass Pasture Kv= 7.0 fps
1.2	53	0.0200	0.71		**Shallow Concentrated Flow, WOODS** Woodland Kv= 5.0 fps
0.1	12	0.0700	1.85		**Shallow Concentrated Flow, GRASS** Short Grass Pasture Kv= 7.0 fps
11.1	170	Total			

Subcatchment 7: Post 7



Summary for Subcatchment 8: Post 8

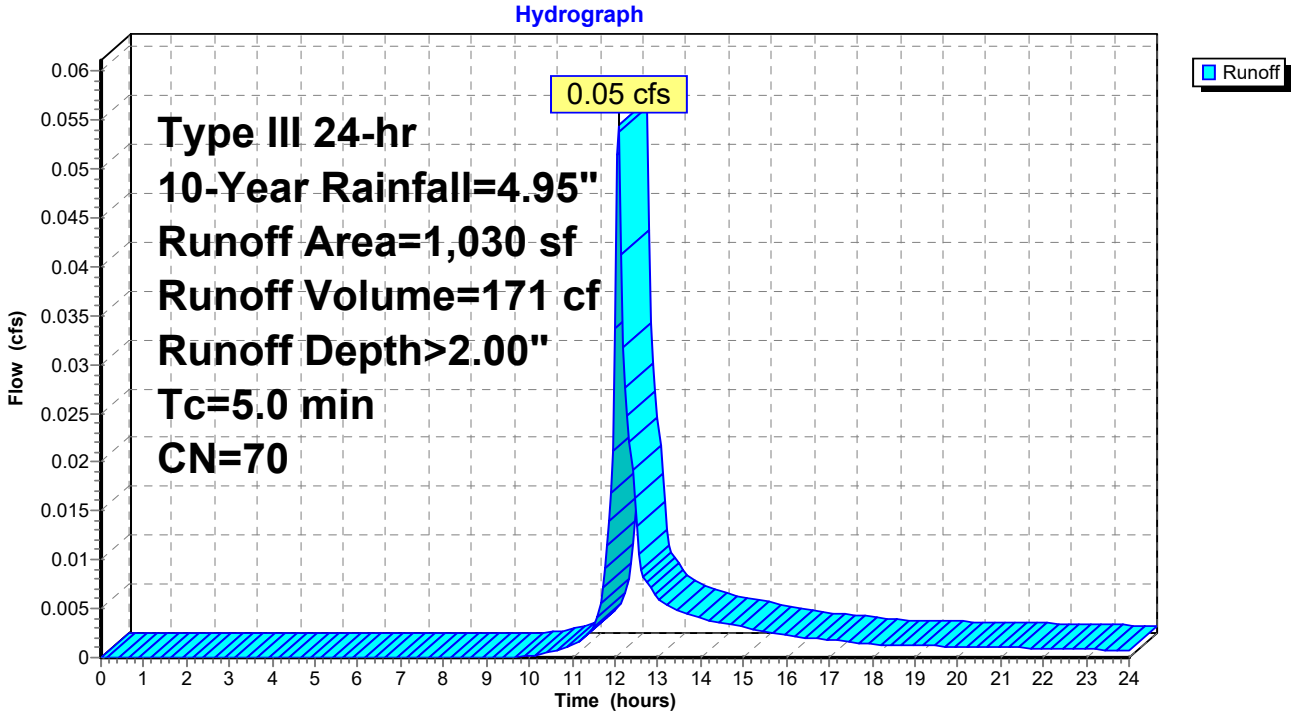
Runoff = 0.05 cfs @ 12.08 hrs, Volume= 171 cf, Depth> 2.00"
Routed to Reach DP2 : DP2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.95"

Area (sf)	CN	Description
0	74	>75% Grass cover, Good, HSG C
1,030	70	Woods, Good, HSG C
0	98	Paved parking, HSG C
0	98	Paved parking, HSG C
1,030	70	Weighted Average
1,030		100.00% Pervious Area

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

Subcatchment 8: Post 8



Summary for Subcatchment 9: Post 9

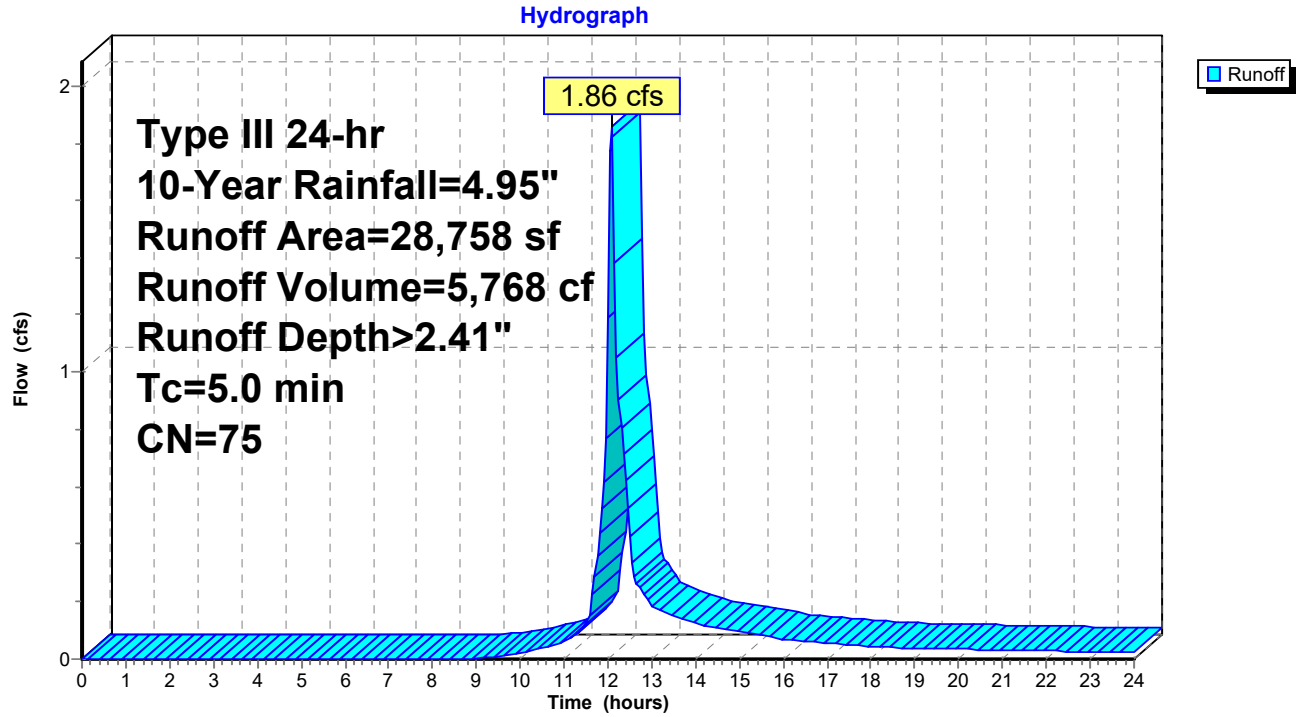
Runoff = 1.86 cfs @ 12.08 hrs, Volume= 5,768 cf, Depth> 2.41"
Routed to Reach DP3 : DP3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.95"

Area (sf)	CN	Description
25,955	74	>75% Grass cover, Good, HSG C
1,777	70	Woods, Good, HSG C
0	98	Paved parking, HSG C
1,026	98	Paved parking, HSG C
28,758	75	Weighted Average
27,732		96.43% Pervious Area
1,026		3.57% Impervious Area

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

Subcatchment 9: Post 9



Summary for Subcatchment B1: BLDG #1

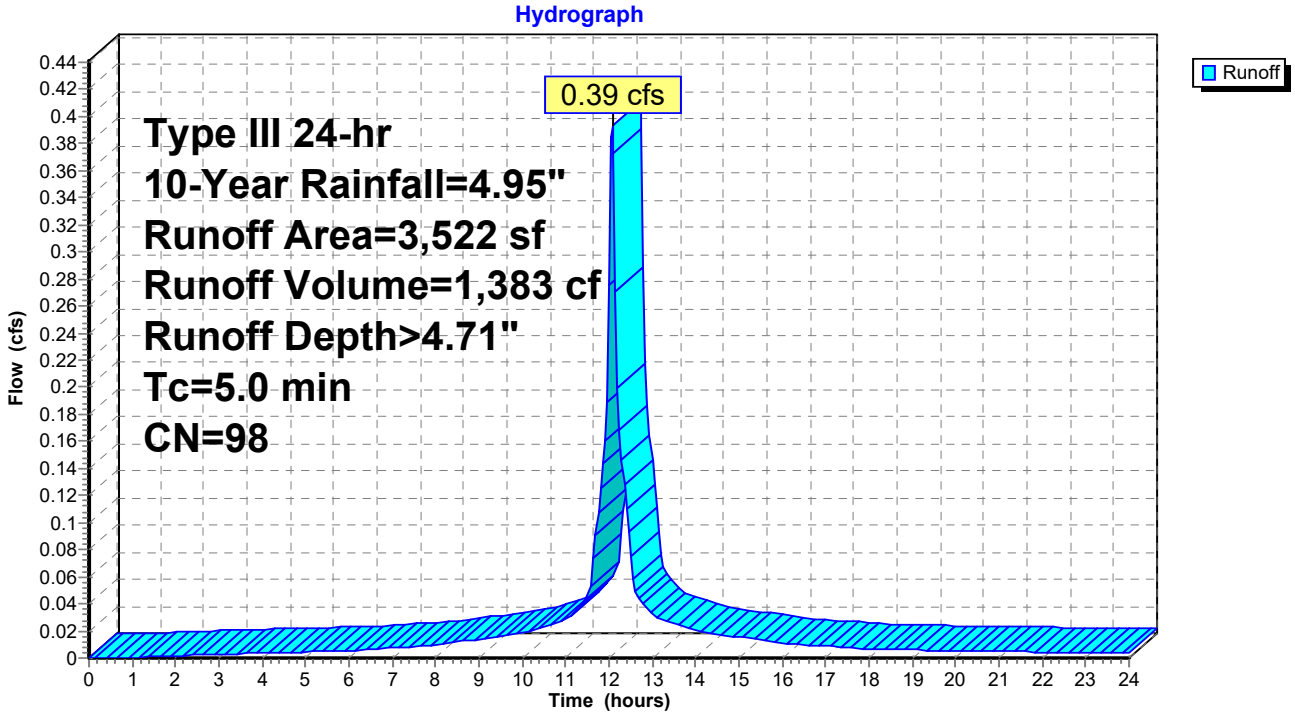
Runoff = 0.39 cfs @ 12.07 hrs, Volume= 1,383 cf, Depth> 4.71"
Routed to Pond SSD3 : SUBSURFACE DRAINAGE AREA #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.95"

Area (sf)	CN	Description
3,522	98	Unconnected roofs, HSG C
3,522		100.00% Impervious Area
3,522		100.00% Unconnected

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

Subcatchment B1: BLDG #1



Summary for Subcatchment B2: BLDG #2

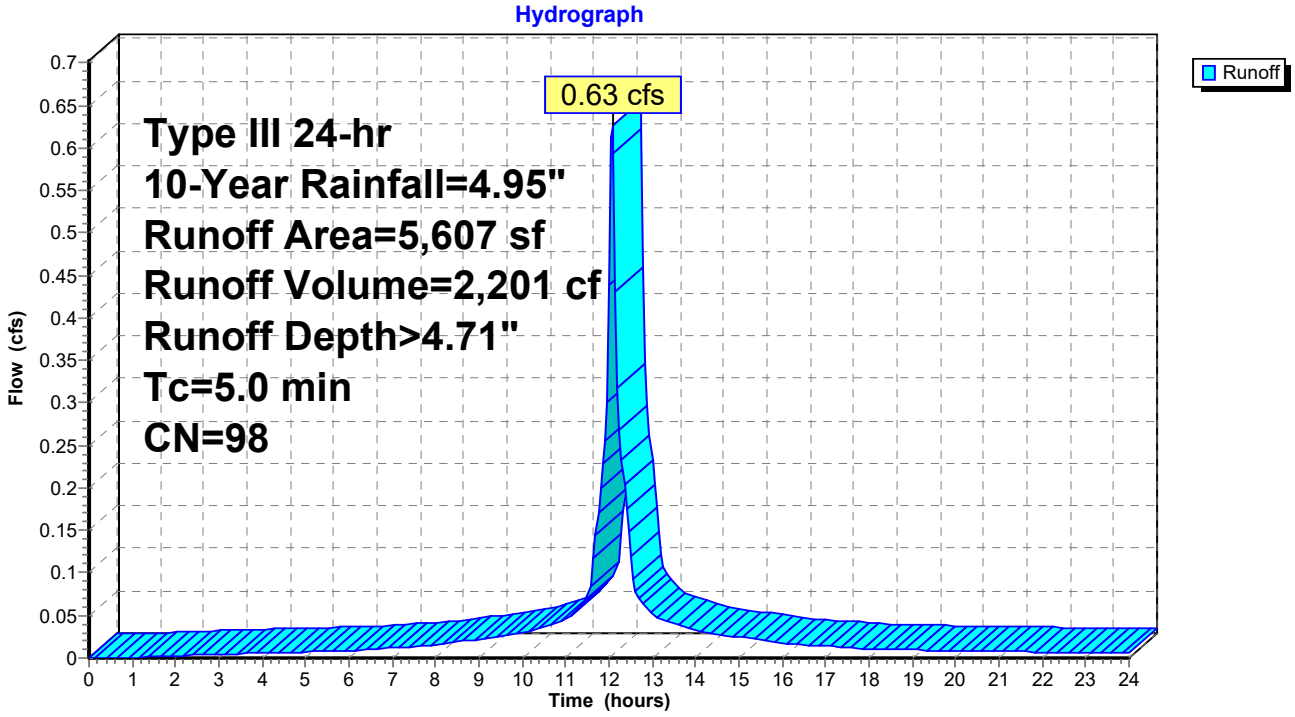
Runoff = 0.63 cfs @ 12.07 hrs, Volume= 2,201 cf, Depth> 4.71"
Routed to Pond SSD1 : SUBSURFACE DRAINAGE AREA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.95"

Area (sf)	CN	Description
5,607	98	Unconnected roofs, HSG C
5,607		100.00% Impervious Area
5,607		100.00% Unconnected

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

Subcatchment B2: BLDG #2



Summary for Subcatchment B3A: 1/2 BLDG #3

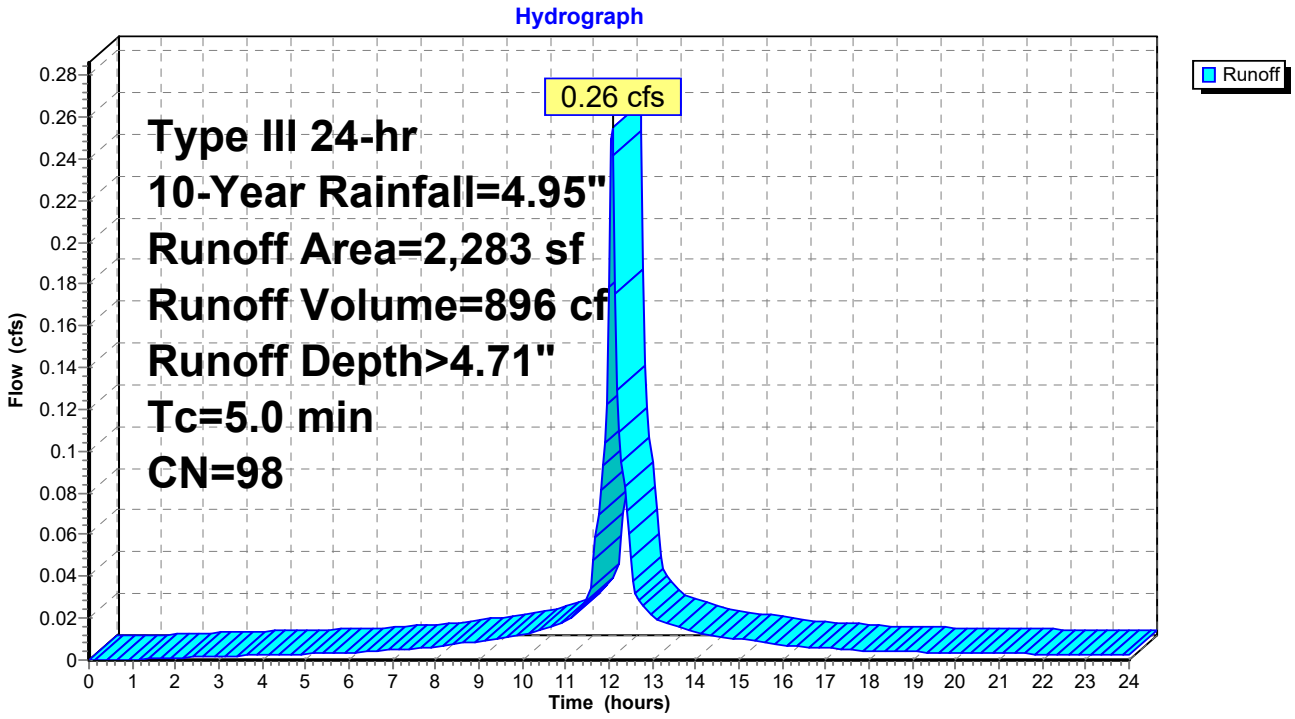
Runoff = 0.26 cfs @ 12.07 hrs, Volume= 896 cf, Depth> 4.71"
Routed to Pond SSD2 : SUBSURFACE DRAINAGE AREA #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.95"

Area (sf)	CN	Description
2,283	98	Unconnected roofs, HSG C
2,283		100.00% Impervious Area
2,283		100.00% Unconnected

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

Subcatchment B3A: 1/2 BLDG #3



Summary for Subcatchment B3B: 1/2 BLDG #3

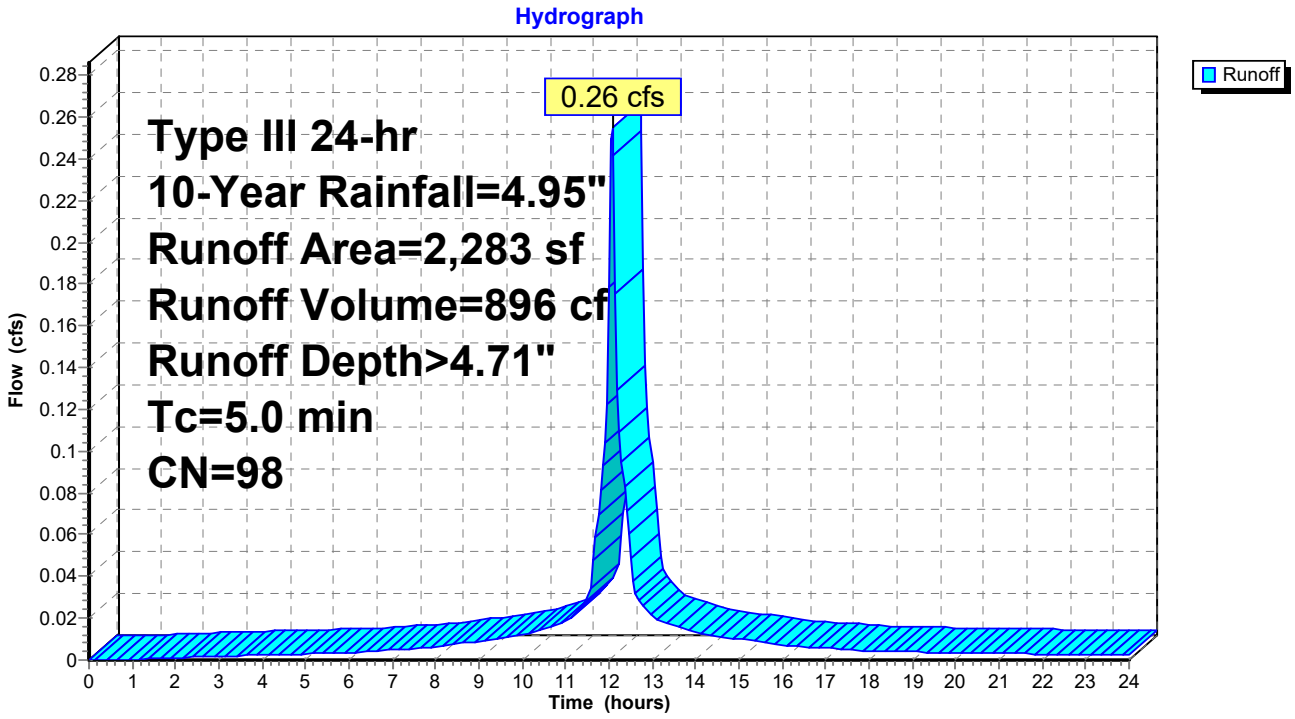
Runoff = 0.26 cfs @ 12.07 hrs, Volume= 896 cf, Depth> 4.71"
Routed to Pond SSD1 : SUBSURFACE DRAINAGE AREA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.95"

Area (sf)	CN	Description
2,283	98	Unconnected roofs, HSG C
2,283		100.00% Impervious Area
2,283		100.00% Unconnected

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

Subcatchment B3B: 1/2 BLDG #3



Summary for Subcatchment B4: BLDG #4

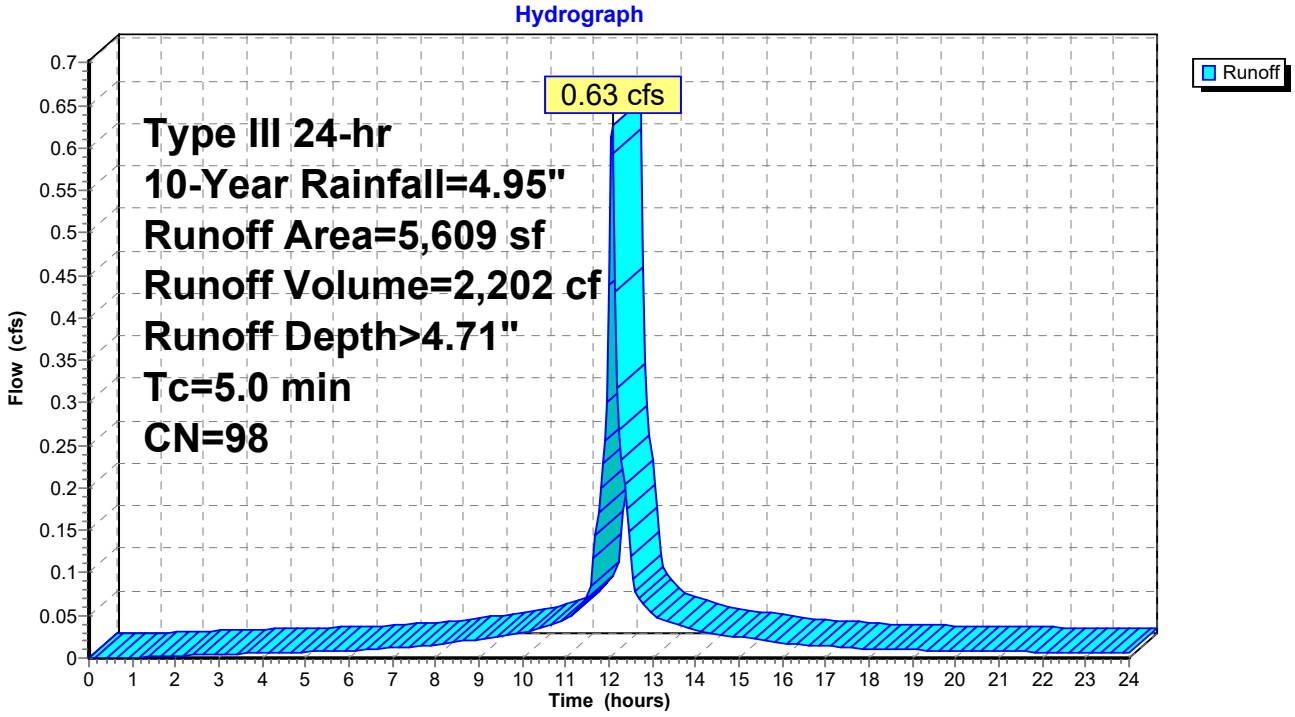
Runoff = 0.63 cfs @ 12.07 hrs, Volume= 2,202 cf, Depth> 4.71"
Routed to Pond SSD4 : SUBSURFACE DRAINAGE AREA #4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.95"

Area (sf)	CN	Description
5,609	98	Unconnected roofs, HSG C
5,609		100.00% Impervious Area
5,609		100.00% Unconnected

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

Subcatchment B4: BLDG #4

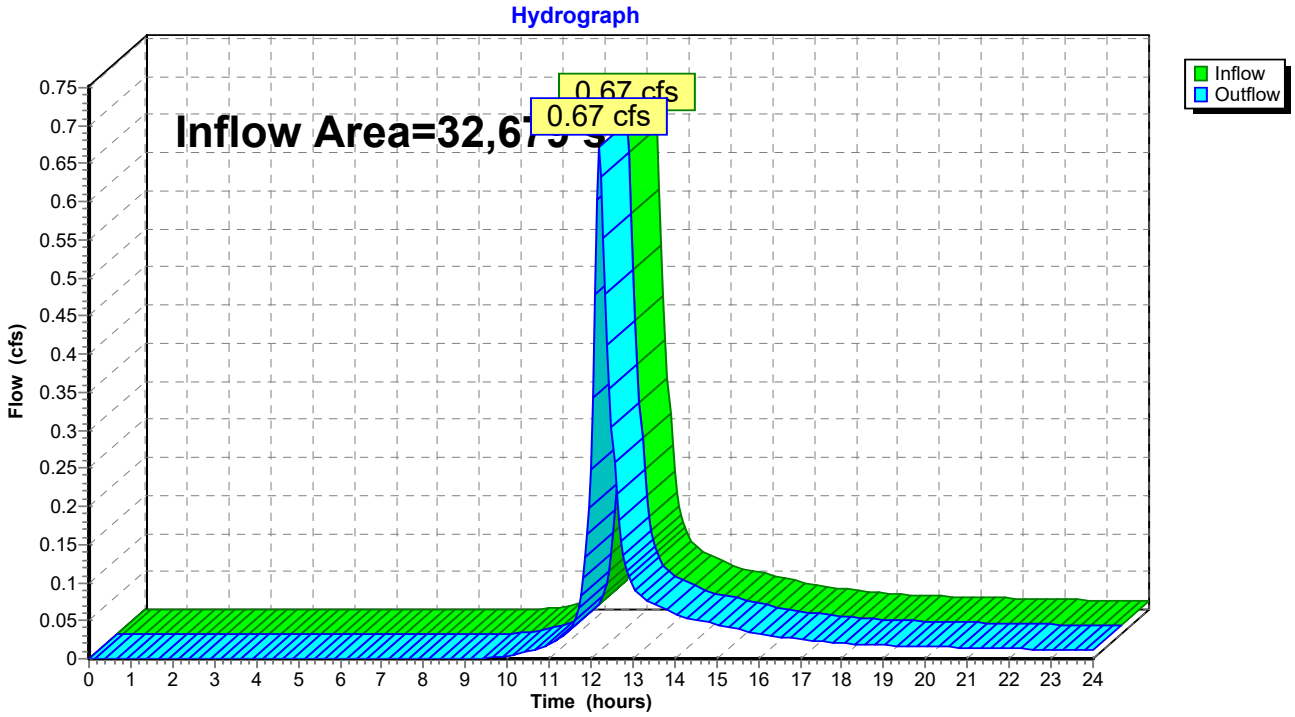


Summary for Reach DP1: DP1post

Inflow Area = 32,679 sf, 48.18% Impervious, Inflow Depth > 0.93" for 10-Year event
Inflow = 0.67 cfs @ 12.21 hrs, Volume= 2,520 cf
Outflow = 0.67 cfs @ 12.21 hrs, Volume= 2,520 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP1: DP1post

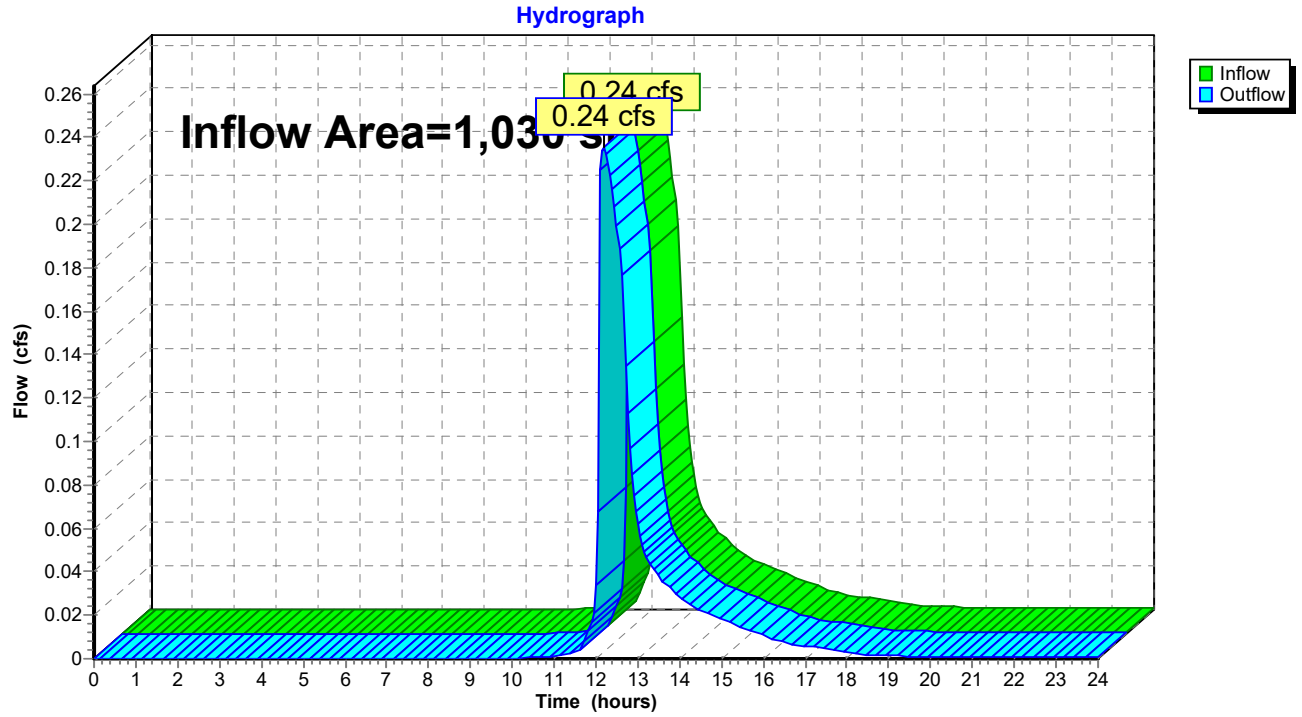


Summary for Reach DP2: DP2

Inflow Area = 1,030 sf, 0.00% Impervious, Inflow Depth > 11.09" for 10-Year event
Inflow = 0.24 cfs @ 12.20 hrs, Volume= 952 cf
Outflow = 0.24 cfs @ 12.20 hrs, Volume= 952 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP2: DP2

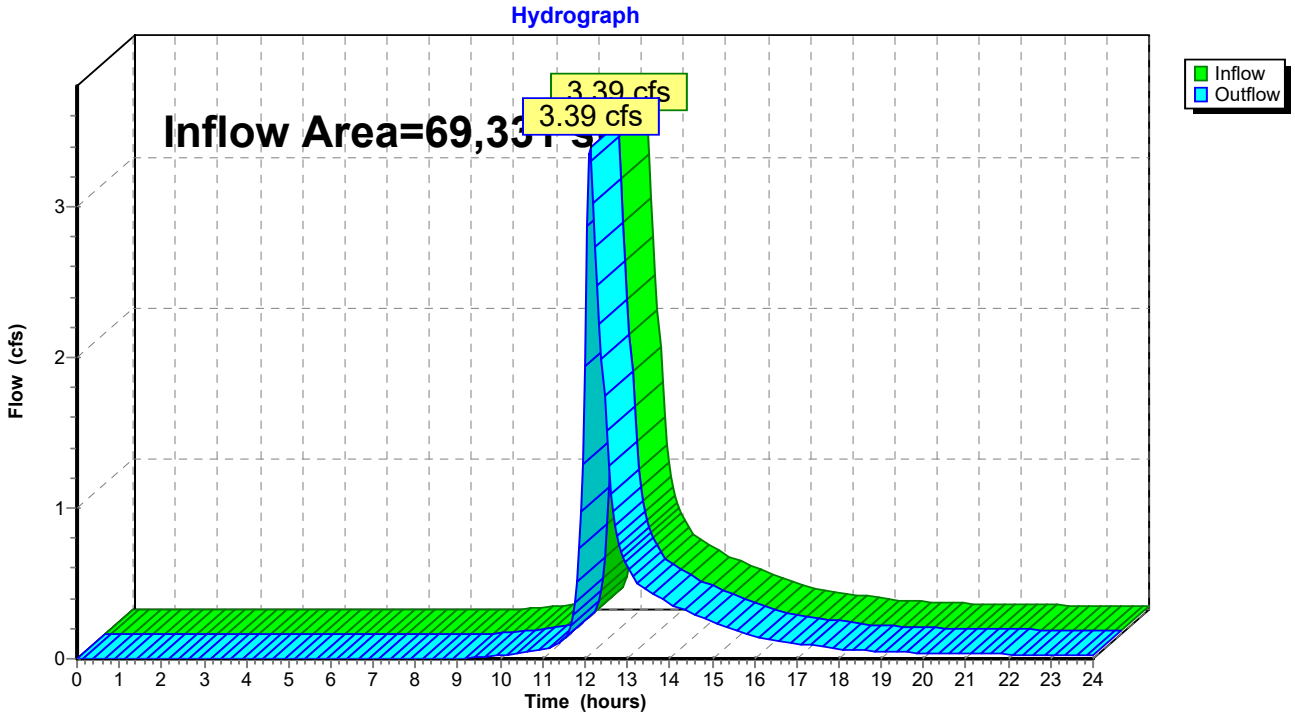


Summary for Reach DP3: DP3

Inflow Area = 69,331 sf, 47.39% Impervious, Inflow Depth > 2.17" for 10-Year event
Inflow = 3.39 cfs @ 12.12 hrs, Volume= 12,528 cf
Outflow = 3.39 cfs @ 12.12 hrs, Volume= 12,528 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP3: DP3

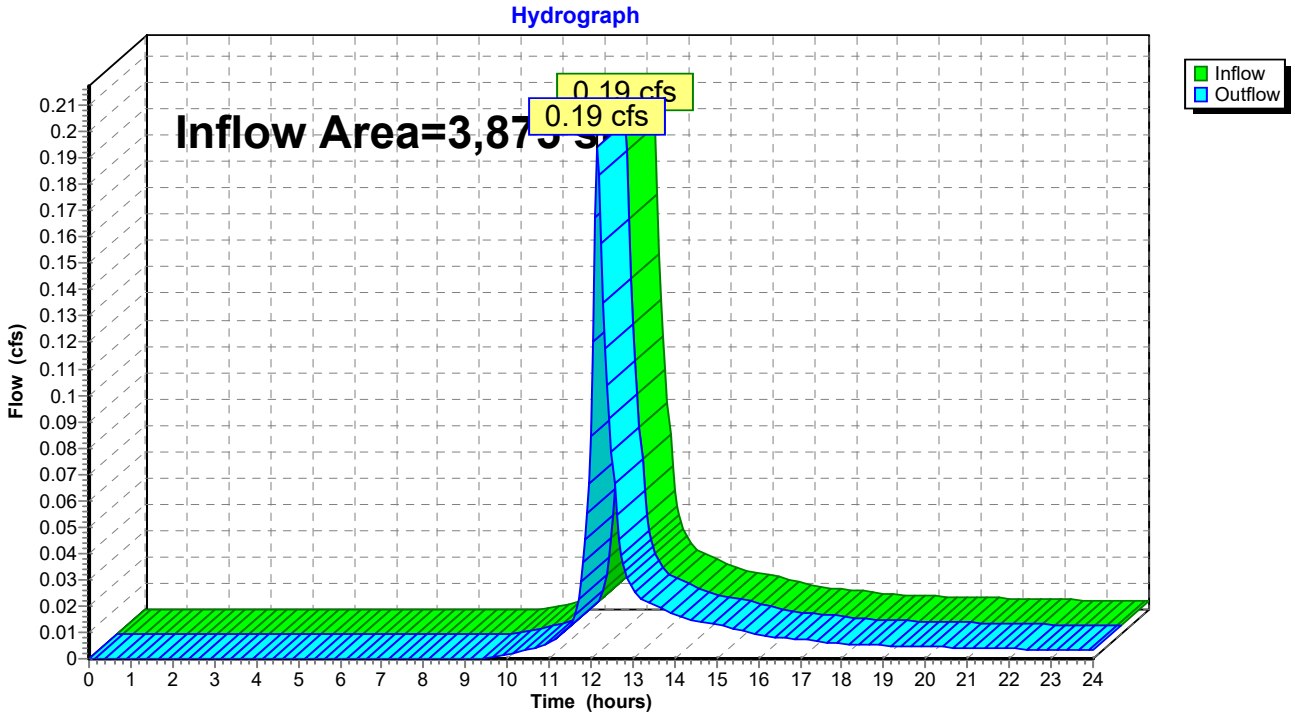


Summary for Reach DP4: DP4

Inflow Area = 3,875 sf, 0.00% Impervious, Inflow Depth > 2.24" for 10-Year event
Inflow = 0.19 cfs @ 12.16 hrs, Volume= 722 cf
Outflow = 0.19 cfs @ 12.16 hrs, Volume= 722 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP4: DP4



Summary for Pond CB1: CB1

Inflow Area = 5,122 sf, 56.07% Impervious, Inflow Depth > 3.52" for 10-Year event
Inflow = 0.43 cfs @ 12.12 hrs, Volume= 1,501 cf
Outflow = 0.43 cfs @ 12.12 hrs, Volume= 1,501 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.43 cfs @ 12.12 hrs, Volume= 1,501 cf
Routed to Pond DMH2 : DMH2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond CB10 : CB10

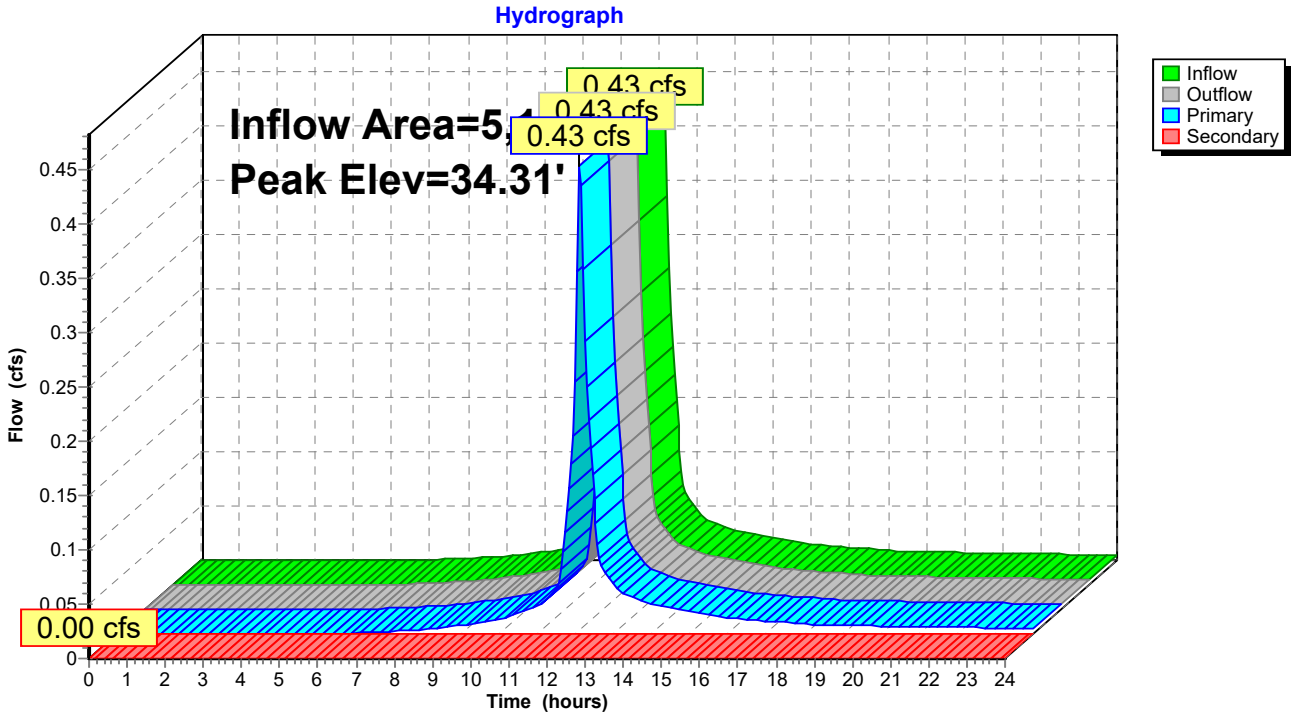
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 34.31' @ 12.12 hrs
Flood Elev= 36.27'

Device	Routing	Invert	Outlet Devices
#1	Primary	33.90'	**12.0" Round Culvert** L= 29.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 33.90' / 33.80' S= 0.0034 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	36.27'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.42 cfs @ 12.12 hrs HW=34.30' (Free Discharge)
1=Culvert (Barrel Controls 0.42 cfs @ 2.08 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=33.90' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB1: CB1


Hydrograph
Inflow Area=5,
Peak Elev=34.31'
0.43 cfs
0.43 cfs
0.43 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Time (hours)

Stage-Discharge for Pond CB1: CB1

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
33.90	0.00	0.00	**0.00**
33.95	0.01	0.01	0.00
34.00	0.02	0.02	0.00
34.05	0.06	0.06	0.00
34.10	0.10	0.10	0.00
34.15	0.16	0.16	0.00
34.20	0.23	0.23	0.00
34.25	0.32	0.32	0.00
34.30	0.41	0.41	0.00
34.35	0.51	0.51	0.00
34.40	0.62	0.62	0.00
34.45	0.74	0.74	0.00
34.50	0.87	0.87	0.00
34.55	1.00	1.00	0.00
34.60	1.14	1.14	0.00
34.65	1.28	1.28	0.00
34.70	1.43	1.43	0.00
34.75	1.58	1.58	0.00
34.80	1.72	1.72	0.00
34.85	1.87	1.87	0.00
34.90	2.02	2.02	0.00
34.95	2.16	2.16	0.00
35.00	2.30	2.30	0.00
35.05	2.42	2.42	0.00
35.10	2.54	2.54	0.00
35.15	2.63	2.63	0.00
35.20	2.69	2.69	0.00
35.25	2.72	2.72	0.00
35.30	2.87	2.87	0.00
35.35	3.01	3.01	0.00
35.40	3.14	3.14	0.00
35.45	3.27	3.27	0.00
35.50	3.40	3.40	0.00
35.55	3.52	3.52	0.00
35.60	3.63	3.63	0.00
35.65	3.74	3.74	0.00
35.70	3.85	3.85	0.00
35.75	3.96	3.96	0.00
35.80	4.06	4.06	0.00
35.85	4.16	4.16	0.00
35.90	4.26	4.26	0.00
35.95	4.35	4.35	0.00
36.00	4.45	4.45	0.00
36.05	4.54	4.54	0.00
36.10	4.63	4.63	0.00
36.15	4.72	4.72	0.00
36.20	4.80	4.80	0.00
36.25	**4.89**	**4.89**	0.00

Stage-Area-Storage for Pond CB1: CB1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
33.90	**0**	34.96	0	36.02	0
33.92	0	34.98	0	36.04	0
33.94	0	35.00	0	36.06	0
33.96	0	35.02	0	36.08	0
33.98	0	35.04	0	36.10	0
34.00	0	35.06	0	36.12	0
34.02	0	35.08	0	36.14	0
34.04	0	35.10	0	36.16	0
34.06	0	35.12	0	36.18	0
34.08	0	35.14	0	36.20	0
34.10	0	35.16	0	36.22	0
34.12	0	35.18	0	36.24	0
34.14	0	35.20	0	36.26	0
34.16	0	35.22	0		
34.18	0	35.24	0		
34.20	0	35.26	0		
34.22	0	35.28	0		
34.24	0	35.30	0		
34.26	0	35.32	0		
34.28	0	35.34	0		
34.30	0	35.36	0		
34.32	0	35.38	0		
34.34	0	35.40	0		
34.36	0	35.42	0		
34.38	0	35.44	0		
34.40	0	35.46	0		
34.42	0	35.48	0		
34.44	0	35.50	0		
34.46	0	35.52	0		
34.48	0	35.54	0		
34.50	0	35.56	0		
34.52	0	35.58	0		
34.54	0	35.60	0		
34.56	0	35.62	0		
34.58	0	35.64	0		
34.60	0	35.66	0		
34.62	0	35.68	0		
34.64	0	35.70	0		
34.66	0	35.72	0		
34.68	0	35.74	0		
34.70	0	35.76	0		
34.72	0	35.78	0		
34.74	0	35.80	0		
34.76	0	35.82	0		
34.78	0	35.84	0		
34.80	0	35.86	0		
34.82	0	35.88	0		
34.84	0	35.90	0		
34.86	0	35.92	0		
34.88	0	35.94	0		
34.90	0	35.96	0		
34.92	0	35.98	0		
34.94	0	36.00	0		

Summary for Pond CB10: CB10

Inflow Area = 7,742 sf, 59.11% Impervious, Inflow Depth > 3.62" for 10-Year event
Inflow = 0.67 cfs @ 12.12 hrs, Volume= 2,334 cf
Outflow = 0.67 cfs @ 12.12 hrs, Volume= 2,334 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.67 cfs @ 12.12 hrs, Volume= 2,334 cf
Routed to Pond DMH11 : DMH11
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3

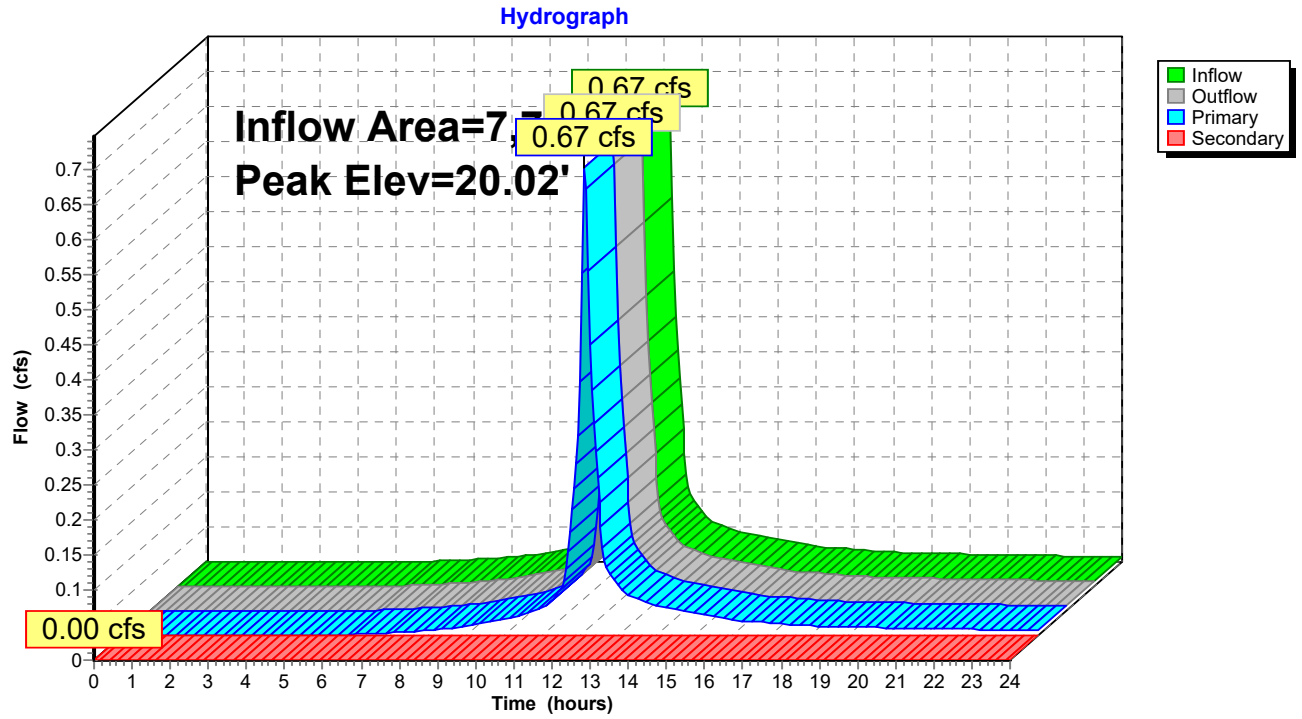
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 20.02' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	19.50'	**12.0" Round Culvert** L= 30.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 19.50' / 19.40' S= 0.0033 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	22.00'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.65 cfs @ 12.12 hrs HW=20.01' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.65 cfs @ 2.33 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=19.50' (Free Discharge)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Pond CB10: CB10



Stage-Discharge for Pond CB10: CB10

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
19.50	0.00	0.00	**0.00**
19.55	0.01	0.01	0.00
19.60	0.02	0.02	0.00
19.65	0.06	0.06	0.00
19.70	0.10	0.10	0.00
19.75	0.16	0.16	0.00
19.80	0.23	0.23	0.00
19.85	0.31	0.31	0.00
19.90	0.41	0.41	0.00
19.95	0.51	0.51	0.00
20.00	0.62	0.62	0.00
20.05	0.74	0.74	0.00
20.10	0.86	0.86	0.00
20.15	1.00	1.00	0.00
20.20	1.13	1.13	0.00
20.25	1.28	1.28	0.00
20.30	1.42	1.42	0.00
20.35	1.57	1.57	0.00
20.40	1.72	1.72	0.00
20.45	1.86	1.86	0.00
20.50	2.01	2.01	0.00
20.55	2.15	2.15	0.00
20.60	2.28	2.28	0.00
20.65	2.41	2.41	0.00
20.70	2.52	2.52	0.00
20.75	2.62	2.62	0.00
20.80	2.68	2.68	0.00
20.85	2.71	2.71	0.00
20.90	2.85	2.85	0.00
20.95	2.99	2.99	0.00
21.00	3.12	3.12	0.00
21.05	3.25	3.25	0.00
21.10	3.37	3.37	0.00
21.15	3.49	3.49	0.00
21.20	3.61	3.61	0.00
21.25	3.72	3.72	0.00
21.30	3.83	3.83	0.00
21.35	3.93	3.93	0.00
21.40	4.03	4.03	0.00
21.45	4.13	4.13	0.00
21.50	4.23	4.23	0.00
21.55	4.33	4.33	0.00
21.60	4.42	4.42	0.00
21.65	4.51	4.51	0.00
21.70	4.60	4.60	0.00
21.75	4.69	4.69	0.00
21.80	4.77	4.77	0.00
21.85	4.86	4.86	0.00
21.90	4.94	4.94	0.00
21.95	5.02	5.02	0.00
22.00	**5.10**	**5.10**	0.00

Stage-Area-Storage for Pond CB10: CB10

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
19.50	**0**	20.56	0	21.62	0
19.52	0	20.58	0	21.64	0
19.54	0	20.60	0	21.66	0
19.56	0	20.62	0	21.68	0
19.58	0	20.64	0	21.70	0
19.60	0	20.66	0	21.72	0
19.62	0	20.68	0	21.74	0
19.64	0	20.70	0	21.76	0
19.66	0	20.72	0	21.78	0
19.68	0	20.74	0	21.80	0
19.70	0	20.76	0	21.82	0
19.72	0	20.78	0	21.84	0
19.74	0	20.80	0	21.86	0
19.76	0	20.82	0	21.88	0
19.78	0	20.84	0	21.90	0
19.80	0	20.86	0	21.92	0
19.82	0	20.88	0	21.94	0
19.84	0	20.90	0	21.96	0
19.86	0	20.92	0	21.98	0
19.88	0	20.94	0	22.00	0
19.90	0	20.96	0		
19.92	0	20.98	0		
19.94	0	21.00	0		
19.96	0	21.02	0		
19.98	0	21.04	0		
20.00	0	21.06	0		
20.02	0	21.08	0		
20.04	0	21.10	0		
20.06	0	21.12	0		
20.08	0	21.14	0		
20.10	0	21.16	0		
20.12	0	21.18	0		
20.14	0	21.20	0		
20.16	0	21.22	0		
20.18	0	21.24	0		
20.20	0	21.26	0		
20.22	0	21.28	0		
20.24	0	21.30	0		
20.26	0	21.32	0		
20.28	0	21.34	0		
20.30	0	21.36	0		
20.32	0	21.38	0		
20.34	0	21.40	0		
20.36	0	21.42	0		
20.38	0	21.44	0		
20.40	0	21.46	0		
20.42	0	21.48	0		
20.44	0	21.50	0		
20.46	0	21.52	0		
20.48	0	21.54	0		
20.50	0	21.56	0		
20.52	0	21.58	0		
20.54	0	21.60	0		

Summary for Pond CB13: CB13

Inflow Area = 9,340 sf, 71.57% Impervious, Inflow Depth > 3.93" for 10-Year event
Inflow = 0.95 cfs @ 12.07 hrs, Volume= 3,060 cf
Outflow = 0.95 cfs @ 12.07 hrs, Volume= 3,060 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.95 cfs @ 12.07 hrs, Volume= 3,060 cf
Routed to Pond DMH11 : DMH11
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3

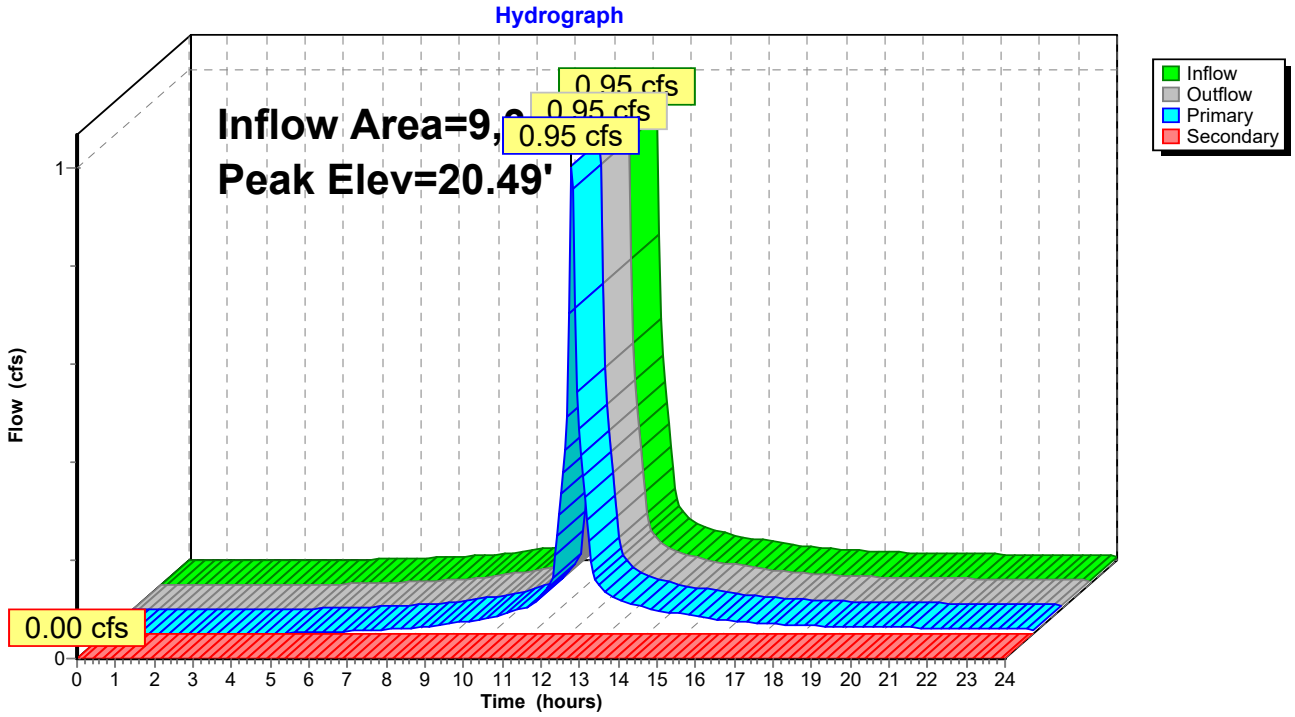
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 20.49' @ 12.07 hrs
Flood Elev= 22.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	19.90'	**12.0" Round Culvert** L= 12.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 19.90' / 19.80' S= 0.0083 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	22.00'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.92 cfs @ 12.07 hrs HW=20.47' (Free Discharge)
1=Culvert (Barrel Controls 0.92 cfs @ 2.85 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=19.90' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB13: CB13



Stage-Discharge for Pond CB13: CB13

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
19.90	0.00	0.00	**0.00**	20.96	2.43	2.43	0.00
19.92	0.00	0.00	0.00	20.98	2.49	2.49	0.00
19.94	0.01	0.01	0.00	21.00	2.55	2.55	0.00
19.96	0.01	0.01	0.00	21.02	2.60	2.60	0.00
19.98	0.02	0.02	0.00	21.04	2.66	2.66	0.00
20.00	0.03	0.03	0.00	21.06	2.71	2.71	0.00
20.02	0.05	0.05	0.00	21.08	2.77	2.77	0.00
20.04	0.07	0.07	0.00	21.10	2.82	2.82	0.00
20.06	0.09	0.09	0.00	21.12	2.87	2.87	0.00
20.08	0.11	0.11	0.00	21.14	2.91	2.91	0.00
20.10	0.13	0.13	0.00	21.16	2.95	2.95	0.00
20.12	0.16	0.16	0.00	21.18	2.99	2.99	0.00
20.14	0.19	0.19	0.00	21.20	3.02	3.02	0.00
20.16	0.22	0.22	0.00	21.22	3.04	3.04	0.00
20.18	0.25	0.25	0.00	21.24	3.05	3.05	0.00
20.20	0.29	0.29	0.00	21.26	3.12	3.12	0.00
20.22	0.33	0.33	0.00	21.28	3.19	3.19	0.00
20.24	0.36	0.36	0.00	21.30	3.25	3.25	0.00
20.26	0.40	0.40	0.00	21.32	3.32	3.32	0.00
20.28	0.44	0.44	0.00	21.34	3.38	3.38	0.00
20.30	0.49	0.49	0.00	21.36	3.44	3.44	0.00
20.32	0.53	0.53	0.00	21.38	3.50	3.50	0.00
20.34	0.58	0.58	0.00	21.40	3.56	3.56	0.00
20.36	0.63	0.63	0.00	21.42	3.62	3.62	0.00
20.38	0.68	0.68	0.00	21.44	3.68	3.68	0.00
20.40	0.73	0.73	0.00	21.46	3.74	3.74	0.00
20.42	0.78	0.78	0.00	21.48	3.79	3.79	0.00
20.44	0.83	0.83	0.00	21.50	3.85	3.85	0.00
20.46	0.88	0.88	0.00	21.52	3.90	3.90	0.00
20.48	0.94	0.94	0.00	21.54	3.96	3.96	0.00
20.50	0.99	0.99	0.00	21.56	4.01	4.01	0.00
20.52	1.05	1.05	0.00	21.58	4.06	4.06	0.00
20.54	1.11	1.11	0.00	21.60	4.12	4.12	0.00
20.56	1.17	1.17	0.00	21.62	4.17	4.17	0.00
20.58	1.23	1.23	0.00	21.64	4.21	4.21	0.00
20.60	1.29	1.29	0.00	21.66	4.24	4.24	0.00
20.62	1.35	1.35	0.00	21.68	4.28	4.28	0.00
20.64	1.41	1.41	0.00	21.70	4.31	4.31	0.00
20.66	1.47	1.47	0.00	21.72	4.34	4.34	0.00
20.68	1.54	1.54	0.00	21.74	4.38	4.38	0.00
20.70	1.60	1.60	0.00	21.76	4.41	4.41	0.00
20.72	1.66	1.66	0.00	21.78	4.44	4.44	0.00
20.74	1.73	1.73	0.00	21.80	4.47	4.47	0.00
20.76	1.79	1.79	0.00	21.82	4.51	4.51	0.00
20.78	1.86	1.86	0.00	21.84	4.54	4.54	0.00
20.80	1.92	1.92	0.00	21.86	4.57	4.57	0.00
20.82	1.98	1.98	0.00	21.88	4.60	4.60	0.00
20.84	2.05	2.05	0.00	21.90	4.63	4.63	0.00
20.86	2.11	2.11	0.00	21.92	4.66	4.66	0.00
20.88	2.18	2.18	0.00	21.94	4.69	4.69	0.00
20.90	2.24	2.24	0.00	21.96	4.72	4.72	0.00
20.92	2.30	2.30	0.00	21.98	4.75	4.75	0.00
20.94	2.36	2.36	0.00	22.00	**4.78**	**4.78**	0.00

Stage-Area-Storage for Pond CB13: CB13

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
19.90	**0**	20.96	0
19.92	0	20.98	0
19.94	0	21.00	0
19.96	0	21.02	0
19.98	0	21.04	0
20.00	0	21.06	0
20.02	0	21.08	0
20.04	0	21.10	0
20.06	0	21.12	0
20.08	0	21.14	0
20.10	0	21.16	0
20.12	0	21.18	0
20.14	0	21.20	0
20.16	0	21.22	0
20.18	0	21.24	0
20.20	0	21.26	0
20.22	0	21.28	0
20.24	0	21.30	0
20.26	0	21.32	0
20.28	0	21.34	0
20.30	0	21.36	0
20.32	0	21.38	0
20.34	0	21.40	0
20.36	0	21.42	0
20.38	0	21.44	0
20.40	0	21.46	0
20.42	0	21.48	0
20.44	0	21.50	0
20.46	0	21.52	0
20.48	0	21.54	0
20.50	0	21.56	0
20.52	0	21.58	0
20.54	0	21.60	0
20.56	0	21.62	0
20.58	0	21.64	0
20.60	0	21.66	0
20.62	0	21.68	0
20.64	0	21.70	0
20.66	0	21.72	0
20.68	0	21.74	0
20.70	0	21.76	0
20.72	0	21.78	0
20.74	0	21.80	0
20.76	0	21.82	0
20.78	0	21.84	0
20.80	0	21.86	0
20.82	0	21.88	0
20.84	0	21.90	0
20.86	0	21.92	0
20.88	0	21.94	0
20.90	0	21.96	0
20.92	0	21.98	0
20.94	0	22.00	0

Summary for Pond CB4: CB4

Inflow Area = 4,243 sf, 86.57% Impervious, Inflow Depth > 4.37" for 10-Year event
Inflow = 0.46 cfs @ 12.07 hrs, Volume= 1,544 cf
Outflow = 0.46 cfs @ 12.07 hrs, Volume= 1,544 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.46 cfs @ 12.07 hrs, Volume= 1,544 cf
Routed to Pond DMH2 : DMH2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond CB13 : CB13

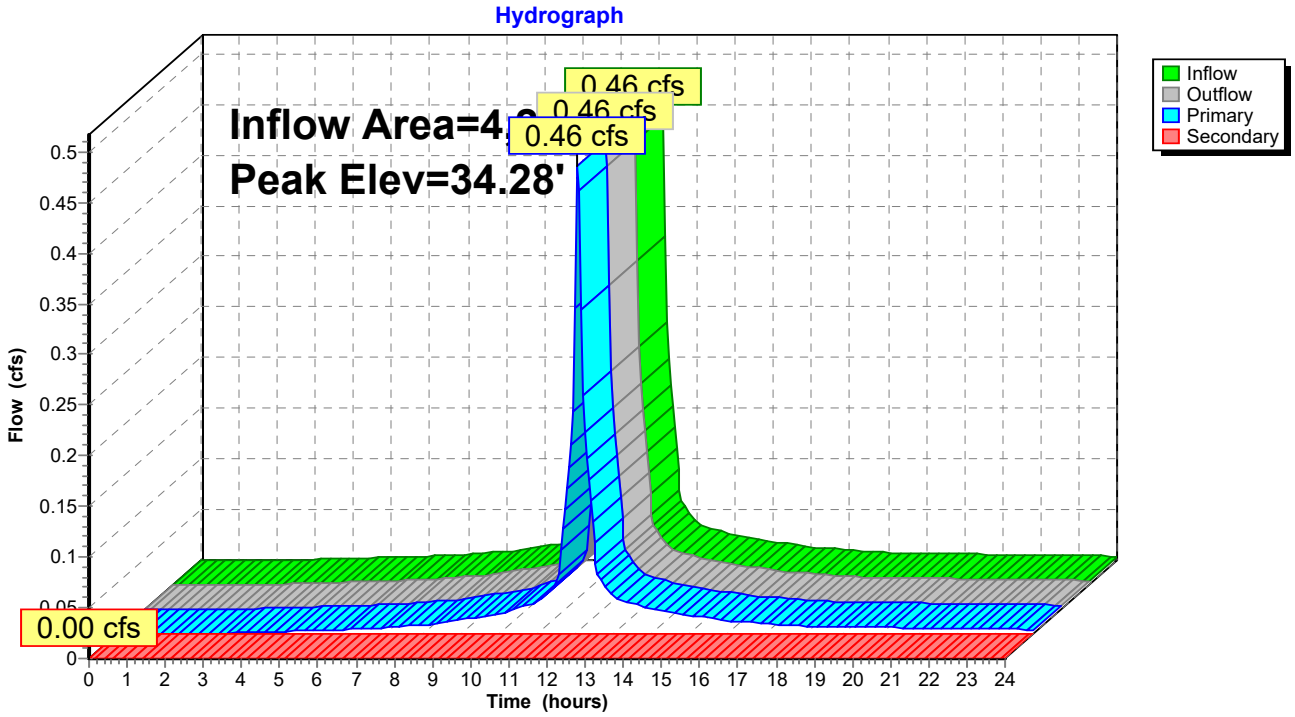
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 34.28' @ 12.07 hrs
Flood Elev= 37.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	33.90'	**12.0" Round Culvert** L= 10.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 33.90' / 33.80' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	37.00'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.44 cfs @ 12.07 hrs HW=34.27' (Free Discharge)
1=Culvert (Barrel Controls 0.44 cfs @ 2.46 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=33.90' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB4: CB4


Hydrograph
Inflow Area=4.
Peak Elev=34.28'
0.46 cfs
0.46 cfs
0.46 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Time (hours)

Stage-Discharge for Pond CB4: CB4

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
33.90	0.00	0.00	**0.00**
33.95	0.01	0.01	0.00
34.00	0.04	0.04	0.00
34.05	0.08	0.08	0.00
34.10	0.14	0.14	0.00
34.15	0.21	0.21	0.00
34.20	0.30	0.30	0.00
34.25	0.39	0.39	0.00
34.30	0.50	0.50	0.00
34.35	0.62	0.62	0.00
34.40	0.74	0.74	0.00
34.45	0.87	0.87	0.00
34.50	1.01	1.01	0.00
34.55	1.16	1.16	0.00
34.60	1.31	1.31	0.00
34.65	1.47	1.47	0.00
34.70	1.62	1.62	0.00
34.75	1.79	1.79	0.00
34.80	1.95	1.95	0.00
34.85	2.11	2.11	0.00
34.90	2.27	2.27	0.00
34.95	2.43	2.43	0.00
35.00	2.58	2.58	0.00
35.05	2.72	2.72	0.00
35.10	2.86	2.86	0.00
35.15	2.97	2.97	0.00
35.20	3.06	3.06	0.00
35.25	3.14	3.14	0.00
35.30	3.31	3.31	0.00
35.35	3.47	3.47	0.00
35.40	3.62	3.62	0.00
35.45	3.77	3.77	0.00
35.50	3.92	3.92	0.00
35.55	4.05	4.05	0.00
35.60	4.14	4.14	0.00
35.65	4.23	4.23	0.00
35.70	4.31	4.31	0.00
35.75	4.39	4.39	0.00
35.80	4.47	4.47	0.00
35.85	4.55	4.55	0.00
35.90	4.63	4.63	0.00
35.95	4.71	4.71	0.00
36.00	4.78	4.78	0.00
36.05	4.86	4.86	0.00
36.10	4.93	4.93	0.00
36.15	5.00	5.00	0.00
36.20	5.07	5.07	0.00
36.25	5.14	5.14	0.00
36.30	5.21	5.21	0.00
36.35	5.28	5.28	0.00
36.40	5.35	5.35	0.00
36.45	5.41	5.41	0.00
36.50	5.48	5.48	0.00
36.55	5.55	5.55	0.00
36.60	5.61	5.61	0.00
36.65	5.67	5.67	0.00
36.70	5.74	5.74	0.00
36.75	5.80	5.80	0.00
36.80	5.86	5.86	0.00
36.85	5.92	5.92	0.00
36.90	5.98	5.98	0.00
36.95	6.04	6.04	0.00
37.00	**6.10**	**6.10**	0.00

Stage-Area-Storage for Pond CB4: CB4

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
33.90	**0**	34.96	0	36.02	0
33.92	0	34.98	0	36.04	0
33.94	0	35.00	0	36.06	0
33.96	0	35.02	0	36.08	0
33.98	0	35.04	0	36.10	0
34.00	0	35.06	0	36.12	0
34.02	0	35.08	0	36.14	0
34.04	0	35.10	0	36.16	0
34.06	0	35.12	0	36.18	0
34.08	0	35.14	0	36.20	0
34.10	0	35.16	0	36.22	0
34.12	0	35.18	0	36.24	0
34.14	0	35.20	0	36.26	0
34.16	0	35.22	0	36.28	0
34.18	0	35.24	0	36.30	0
34.20	0	35.26	0	36.32	0
34.22	0	35.28	0	36.34	0
34.24	0	35.30	0	36.36	0
34.26	0	35.32	0	36.38	0
34.28	0	35.34	0	36.40	0
34.30	0	35.36	0	36.42	0
34.32	0	35.38	0	36.44	0
34.34	0	35.40	0	36.46	0
34.36	0	35.42	0	36.48	0
34.38	0	35.44	0	36.50	0
34.40	0	35.46	0	36.52	0
34.42	0	35.48	0	36.54	0
34.44	0	35.50	0	36.56	0
34.46	0	35.52	0	36.58	0
34.48	0	35.54	0	36.60	0
34.50	0	35.56	0	36.62	0
34.52	0	35.58	0	36.64	0
34.54	0	35.60	0	36.66	0
34.56	0	35.62	0	36.68	0
34.58	0	35.64	0	36.70	0
34.60	0	35.66	0	36.72	0
34.62	0	35.68	0	36.74	0
34.64	0	35.70	0	36.76	0
34.66	0	35.72	0	36.78	0
34.68	0	35.74	0	36.80	0
34.70	0	35.76	0	36.82	0
34.72	0	35.78	0	36.84	0
34.74	0	35.80	0	36.86	0
34.76	0	35.82	0	36.88	0
34.78	0	35.84	0	36.90	0
34.80	0	35.86	0	36.92	0
34.82	0	35.88	0	36.94	0
34.84	0	35.90	0	36.96	0
34.86	0	35.92	0	36.98	0
34.88	0	35.94	0	37.00	0
34.90	0	35.96	0		
34.92	0	35.98	0		
34.94	0	36.00	0		

Summary for Pond CB5: CB5

Inflow Area = 2,714 sf, 96.35% Impervious, Inflow Depth > 4.60" for 10-Year event
Inflow = 0.30 cfs @ 12.07 hrs, Volume= 1,039 cf
Outflow = 0.30 cfs @ 12.07 hrs, Volume= 1,039 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.30 cfs @ 12.07 hrs, Volume= 1,039 cf
Routed to Pond DMH2 : DMH2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond CB10 : CB10

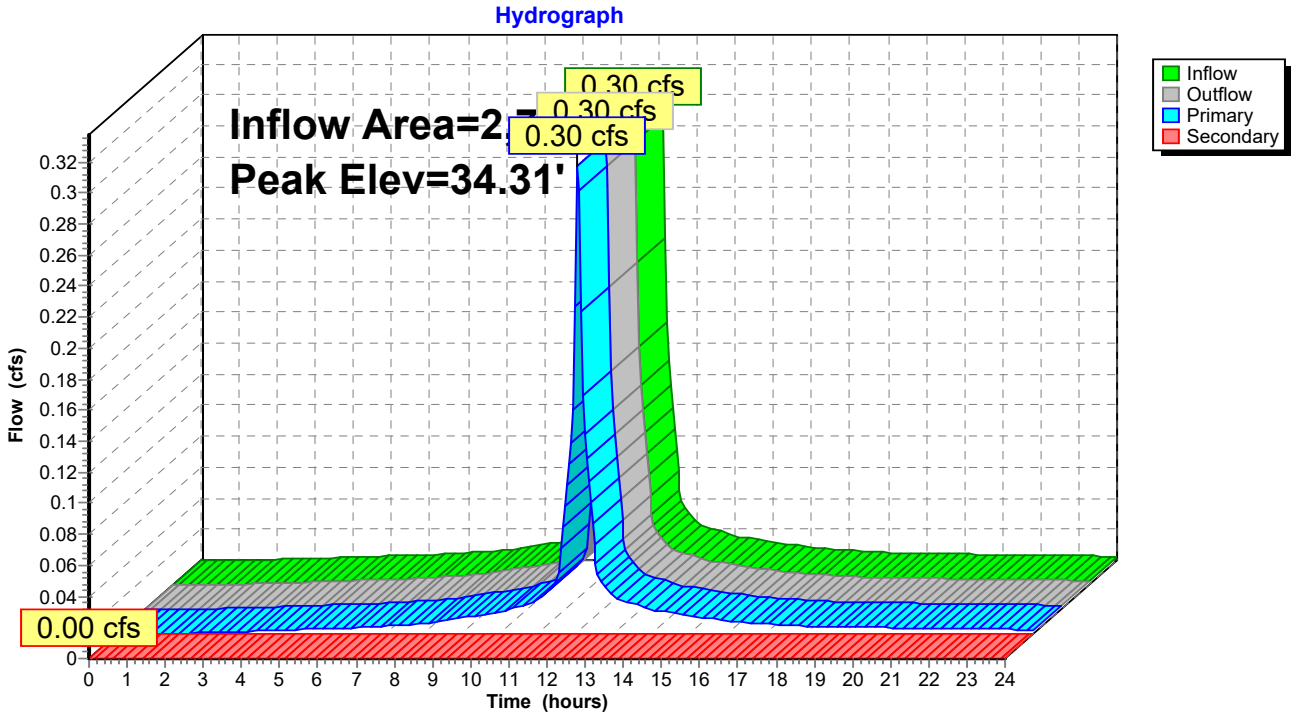
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 34.31' @ 12.07 hrs
Flood Elev= 37.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	34.00'	**12.0" Round Culvert** L= 35.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 34.00' / 33.80' S= 0.0057 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	37.50'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.29 cfs @ 12.07 hrs HW=34.31' (Free Discharge)
1=Culvert (Barrel Controls 0.29 cfs @ 2.12 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=34.00' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB5: CB5


Hydrograph
Inflow Area=2.
Peak Elev=34.31'
0.30 cfs
0.30 cfs
0.30 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
0 0.04 0.06 0.08 0.1 0.12 0.14 0.16 0.18 0.2 0.22 0.24 0.26 0.28 0.3 0.32
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Time (hours)

Stage-Discharge for Pond CB5: CB5

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
34.00	0.00	0.00	**0.00**
34.05	0.01	0.01	0.00
34.10	0.03	0.03	0.00
34.15	0.07	0.07	0.00
34.20	0.13	0.13	0.00
34.25	0.19	0.19	0.00
34.30	0.28	0.28	0.00
34.35	0.37	0.37	0.00
34.40	0.48	0.48	0.00
34.45	0.59	0.59	0.00
34.50	0.72	0.72	0.00
34.55	0.85	0.85	0.00
34.60	0.99	0.99	0.00
34.65	1.13	1.13	0.00
34.70	1.28	1.28	0.00
34.75	1.44	1.44	0.00
34.80	1.59	1.59	0.00
34.85	1.75	1.75	0.00
34.90	1.91	1.91	0.00
34.95	2.06	2.06	0.00
35.00	2.22	2.22	0.00
35.05	2.36	2.36	0.00
35.10	2.50	2.50	0.00
35.15	2.63	2.63	0.00
35.20	2.74	2.74	0.00
35.25	2.84	2.84	0.00
35.30	2.89	2.89	0.00
35.35	2.90	2.90	0.00
35.40	3.03	3.03	0.00
35.45	3.15	3.15	0.00
35.50	3.27	3.27	0.00
35.55	3.39	3.39	0.00
35.60	3.50	3.50	0.00
35.65	3.60	3.60	0.00
35.70	3.71	3.71	0.00
35.75	3.81	3.81	0.00
35.80	3.91	3.91	0.00
35.85	4.01	4.01	0.00
35.90	4.10	4.10	0.00
35.95	4.19	4.19	0.00
36.00	4.28	4.28	0.00
36.05	4.37	4.37	0.00
36.10	4.46	4.46	0.00
36.15	4.54	4.54	0.00
36.20	4.63	4.63	0.00
36.25	4.71	4.71	0.00
36.30	4.79	4.79	0.00
36.35	4.87	4.87	0.00
36.40	4.95	4.95	0.00
36.45	5.02	5.02	0.00
36.50	5.10	5.10	0.00
36.55	5.17	5.17	0.00
36.60	5.25	5.25	0.00
36.65	5.32	5.32	0.00
36.70	5.39	5.39	0.00
36.75	5.46	5.46	0.00
36.80	5.53	5.53	0.00
36.85	5.60	5.60	0.00
36.90	5.67	5.67	0.00
36.95	5.73	5.73	0.00
37.00	5.80	5.80	0.00
37.05	5.86	5.86	0.00
37.10	5.93	5.93	0.00
37.15	5.99	5.99	0.00
37.20	6.06	6.06	0.00
37.25	6.12	6.12	0.00
37.30	6.18	6.18	0.00
37.35	6.24	6.24	0.00
37.40	6.30	6.30	0.00
37.45	6.36	6.36	0.00
37.50	**6.42**	**6.42**	0.00

Stage-Area-Storage for Pond CB5: CB5

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
34.00	**0**	36.65	0
34.05	0	36.70	0
34.10	0	36.75	0
34.15	0	36.80	0
34.20	0	36.85	0
34.25	0	36.90	0
34.30	0	36.95	0
34.35	0	37.00	0
34.40	0	37.05	0
34.45	0	37.10	0
34.50	0	37.15	0
34.55	0	37.20	0
34.60	0	37.25	0
34.65	0	37.30	0
34.70	0	37.35	0
34.75	0	37.40	0
34.80	0	37.45	0
34.85	0	37.50	0
34.90	0		
34.95	0		
35.00	0		
35.05	0		
35.10	0		
35.15	0		
35.20	0		
35.25	0		
35.30	0		
35.35	0		
35.40	0		
35.45	0		
35.50	0		
35.55	0		
35.60	0		
35.65	0		
35.70	0		
35.75	0		
35.80	0		
35.85	0		
35.90	0		
35.95	0		
36.00	0		
36.05	0		
36.10	0		
36.15	0		
36.20	0		
36.25	0		
36.30	0		
36.35	0		
36.40	0		
36.45	0		
36.50	0		
36.55	0		
36.60	0		

Summary for Pond CB6: CB6

Inflow Area = 5,633 sf, 67.30% Impervious, Inflow Depth > 3.83" for 10-Year event
Inflow = 0.56 cfs @ 12.07 hrs, Volume= 1,796 cf
Outflow = 0.56 cfs @ 12.07 hrs, Volume= 1,796 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.56 cfs @ 12.07 hrs, Volume= 1,796 cf
Routed to Pond DMH7 : DMH7
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond CB4 : CB4

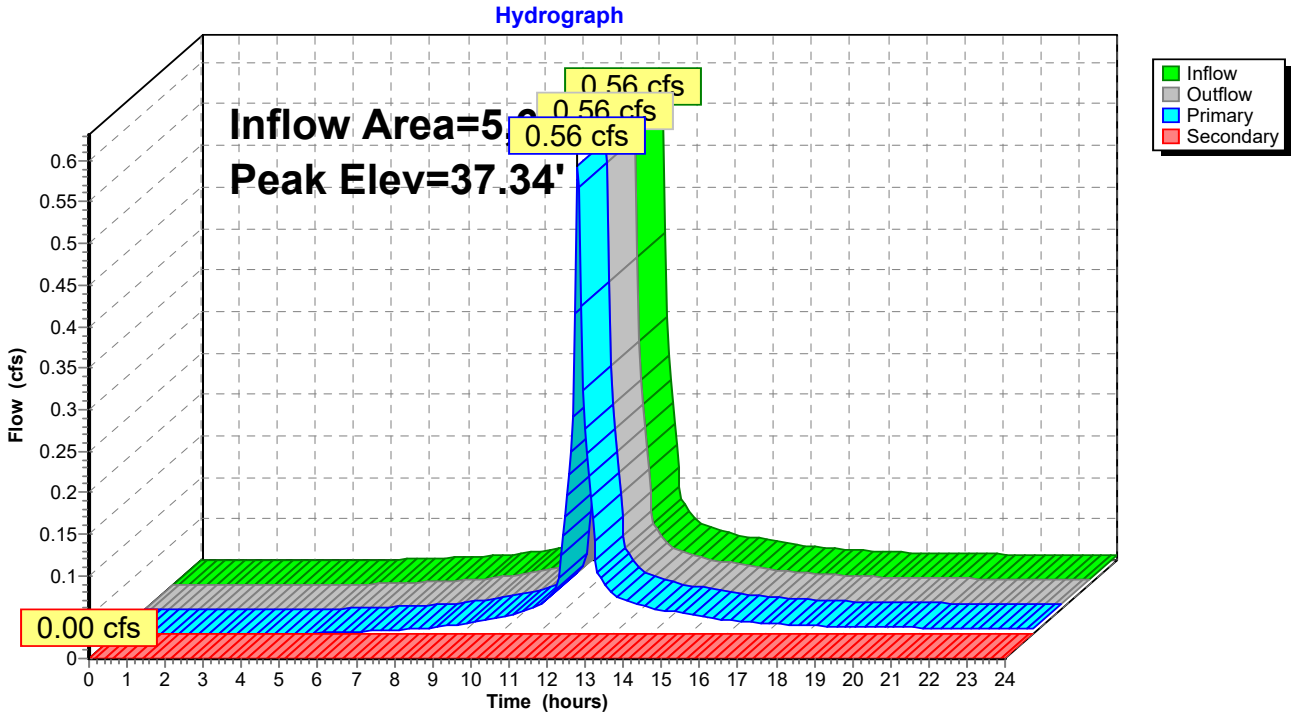
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 37.34' @ 12.07 hrs
Flood Elev= 39.42'

Device	Routing	Invert	Outlet Devices
#1	Primary	36.90'	**12.0" Round Culvert** L= 16.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 36.90' / 36.80' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	39.42'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 24.0" x 24.0" Grate (69% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.54 cfs @ 12.07 hrs HW=37.33' (Free Discharge)
1=Culvert (Barrel Controls 0.54 cfs @ 2.44 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=36.90' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB6: CB6


Hydrograph
Inflow Area=5.
Peak Elev=37.34'
0.56 cfs
0.56 cfs
0.56 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
0.55
0.6
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Stage-Discharge for Pond CB6: CB6

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
36.90	0.00	0.00	**0.00**
36.95	0.01	0.01	0.00
37.00	0.03	0.03	0.00
37.05	0.07	0.07	0.00
37.10	0.12	0.12	0.00
37.15	0.19	0.19	0.00
37.20	0.27	0.27	0.00
37.25	0.36	0.36	0.00
37.30	0.47	0.47	0.00
37.35	0.58	0.58	0.00
37.40	0.70	0.70	0.00
37.45	0.83	0.83	0.00
37.50	0.96	0.96	0.00
37.55	1.10	1.10	0.00
37.60	1.25	1.25	0.00
37.65	1.40	1.40	0.00
37.70	1.55	1.55	0.00
37.75	1.71	1.71	0.00
37.80	1.87	1.87	0.00
37.85	2.03	2.03	0.00
37.90	2.18	2.18	0.00
37.95	2.33	2.33	0.00
38.00	2.48	2.48	0.00
38.05	2.62	2.62	0.00
38.10	2.74	2.74	0.00
38.15	2.85	2.85	0.00
38.20	2.93	2.93	0.00
38.25	2.99	2.99	0.00
38.30	3.15	3.15	0.00
38.35	3.30	3.30	0.00
38.40	3.45	3.45	0.00
38.45	3.59	3.59	0.00
38.50	3.73	3.73	0.00
38.55	3.86	3.86	0.00
38.60	3.98	3.98	0.00
38.65	4.11	4.11	0.00
38.70	4.23	4.23	0.00
38.75	4.34	4.34	0.00
38.80	4.45	4.45	0.00
38.85	4.55	4.55	0.00
38.90	4.63	4.63	0.00
38.95	4.71	4.71	0.00
39.00	4.78	4.78	0.00
39.05	4.86	4.86	0.00
39.10	4.93	4.93	0.00
39.15	5.00	5.00	0.00
39.20	5.07	5.07	0.00
39.25	5.14	5.14	0.00
39.30	5.21	5.21	0.00
39.35	5.28	5.28	0.00
39.40	**5.35**	**5.35**	0.00

Stage-Area-Storage for Pond CB6: CB6

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
36.90	**0**	37.96	0	39.02	0
36.92	0	37.98	0	39.04	0
36.94	0	38.00	0	39.06	0
36.96	0	38.02	0	39.08	0
36.98	0	38.04	0	39.10	0
37.00	0	38.06	0	39.12	0
37.02	0	38.08	0	39.14	0
37.04	0	38.10	0	39.16	0
37.06	0	38.12	0	39.18	0
37.08	0	38.14	0	39.20	0
37.10	0	38.16	0	39.22	0
37.12	0	38.18	0	39.24	0
37.14	0	38.20	0	39.26	0
37.16	0	38.22	0	39.28	0
37.18	0	38.24	0	39.30	0
37.20	0	38.26	0	39.32	0
37.22	0	38.28	0	39.34	0
37.24	0	38.30	0	39.36	0
37.26	0	38.32	0	39.38	0
37.28	0	38.34	0	39.40	0
37.30	0	38.36	0	39.42	0
37.32	0	38.38	0		
37.34	0	38.40	0		
37.36	0	38.42	0		
37.38	0	38.44	0		
37.40	0	38.46	0		
37.42	0	38.48	0		
37.44	0	38.50	0		
37.46	0	38.52	0		
37.48	0	38.54	0		
37.50	0	38.56	0		
37.52	0	38.58	0		
37.54	0	38.60	0		
37.56	0	38.62	0		
37.58	0	38.64	0		
37.60	0	38.66	0		
37.62	0	38.68	0		
37.64	0	38.70	0		
37.66	0	38.72	0		
37.68	0	38.74	0		
37.70	0	38.76	0		
37.72	0	38.78	0		
37.74	0	38.80	0		
37.76	0	38.82	0		
37.78	0	38.84	0		
37.80	0	38.86	0		
37.82	0	38.88	0		
37.84	0	38.90	0		
37.86	0	38.92	0		
37.88	0	38.94	0		
37.90	0	38.96	0		
37.92	0	38.98	0		
37.94	0	39.00	0		

Summary for Pond CB9: CB9

Inflow Area = 5,351 sf, 75.91% Impervious, Inflow Depth > 4.04" for 10-Year event
Inflow = 0.56 cfs @ 12.07 hrs, Volume= 1,801 cf
Outflow = 0.56 cfs @ 12.07 hrs, Volume= 1,801 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.56 cfs @ 12.07 hrs, Volume= 1,801 cf
Routed to Pond DMH7 : DMH7
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond CB4 : CB4

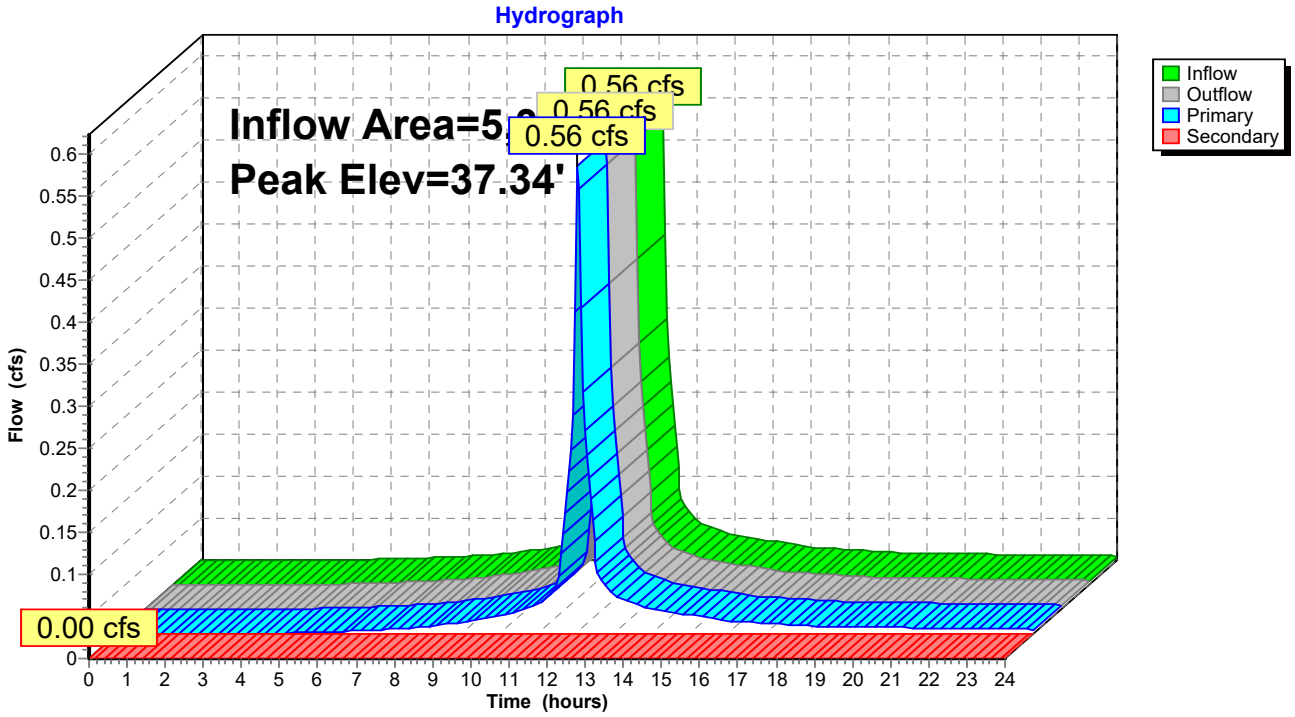
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 37.34' @ 12.07 hrs
Flood Elev= 39.42'

Device	Routing	Invert	Outlet Devices
#1	Primary	36.90'	**12.0" Round Culvert** L= 16.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 36.90' / 36.80' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	39.42'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.54 cfs @ 12.07 hrs HW=37.33' (Free Discharge)
1=Culvert (Barrel Controls 0.54 cfs @ 2.43 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=36.90' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB9: CB9


Hydrograph
Inflow Area=5.
Peak Elev=37.34'
0.56 cfs
0.56 cfs
0.56 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
0.55
0.6
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Stage-Discharge for Pond CB9: CB9

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
36.90	0.00	0.00	**0.00**
36.95	0.01	0.01	0.00
37.00	0.03	0.03	0.00
37.05	0.07	0.07	0.00
37.10	0.12	0.12	0.00
37.15	0.19	0.19	0.00
37.20	0.27	0.27	0.00
37.25	0.36	0.36	0.00
37.30	0.47	0.47	0.00
37.35	0.58	0.58	0.00
37.40	0.70	0.70	0.00
37.45	0.83	0.83	0.00
37.50	0.96	0.96	0.00
37.55	1.10	1.10	0.00
37.60	1.25	1.25	0.00
37.65	1.40	1.40	0.00
37.70	1.55	1.55	0.00
37.75	1.71	1.71	0.00
37.80	1.87	1.87	0.00
37.85	2.03	2.03	0.00
37.90	2.18	2.18	0.00
37.95	2.33	2.33	0.00
38.00	2.48	2.48	0.00
38.05	2.62	2.62	0.00
38.10	2.74	2.74	0.00
38.15	2.85	2.85	0.00
38.20	2.93	2.93	0.00
38.25	2.99	2.99	0.00
38.30	3.15	3.15	0.00
38.35	3.30	3.30	0.00
38.40	3.45	3.45	0.00
38.45	3.59	3.59	0.00
38.50	3.73	3.73	0.00
38.55	3.86	3.86	0.00
38.60	3.98	3.98	0.00
38.65	4.11	4.11	0.00
38.70	4.23	4.23	0.00
38.75	4.34	4.34	0.00
38.80	4.45	4.45	0.00
38.85	4.55	4.55	0.00
38.90	4.63	4.63	0.00
38.95	4.71	4.71	0.00
39.00	4.78	4.78	0.00
39.05	4.86	4.86	0.00
39.10	4.93	4.93	0.00
39.15	5.00	5.00	0.00
39.20	5.07	5.07	0.00
39.25	5.14	5.14	0.00
39.30	5.21	5.21	0.00
39.35	5.28	5.28	0.00
39.40	**5.35**	**5.35**	0.00

Stage-Area-Storage for Pond CB9: CB9

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
36.90	**0**	37.96	0	39.02	0
36.92	0	37.98	0	39.04	0
36.94	0	38.00	0	39.06	0
36.96	0	38.02	0	39.08	0
36.98	0	38.04	0	39.10	0
37.00	0	38.06	0	39.12	0
37.02	0	38.08	0	39.14	0
37.04	0	38.10	0	39.16	0
37.06	0	38.12	0	39.18	0
37.08	0	38.14	0	39.20	0
37.10	0	38.16	0	39.22	0
37.12	0	38.18	0	39.24	0
37.14	0	38.20	0	39.26	0
37.16	0	38.22	0	39.28	0
37.18	0	38.24	0	39.30	0
37.20	0	38.26	0	39.32	0
37.22	0	38.28	0	39.34	0
37.24	0	38.30	0	39.36	0
37.26	0	38.32	0	39.38	0
37.28	0	38.34	0	39.40	0
37.30	0	38.36	0	39.42	0
37.32	0	38.38	0		
37.34	0	38.40	0		
37.36	0	38.42	0		
37.38	0	38.44	0		
37.40	0	38.46	0		
37.42	0	38.48	0		
37.44	0	38.50	0		
37.46	0	38.52	0		
37.48	0	38.54	0		
37.50	0	38.56	0		
37.52	0	38.58	0		
37.54	0	38.60	0		
37.56	0	38.62	0		
37.58	0	38.64	0		
37.60	0	38.66	0		
37.62	0	38.68	0		
37.64	0	38.70	0		
37.66	0	38.72	0		
37.68	0	38.74	0		
37.70	0	38.76	0		
37.72	0	38.78	0		
37.74	0	38.80	0		
37.76	0	38.82	0		
37.78	0	38.84	0		
37.80	0	38.86	0		
37.82	0	38.88	0		
37.84	0	38.90	0		
37.86	0	38.92	0		
37.88	0	38.94	0		
37.90	0	38.96	0		
37.92	0	38.98	0		
37.94	0	39.00	0		

Summary for Pond DMH11: DMH11

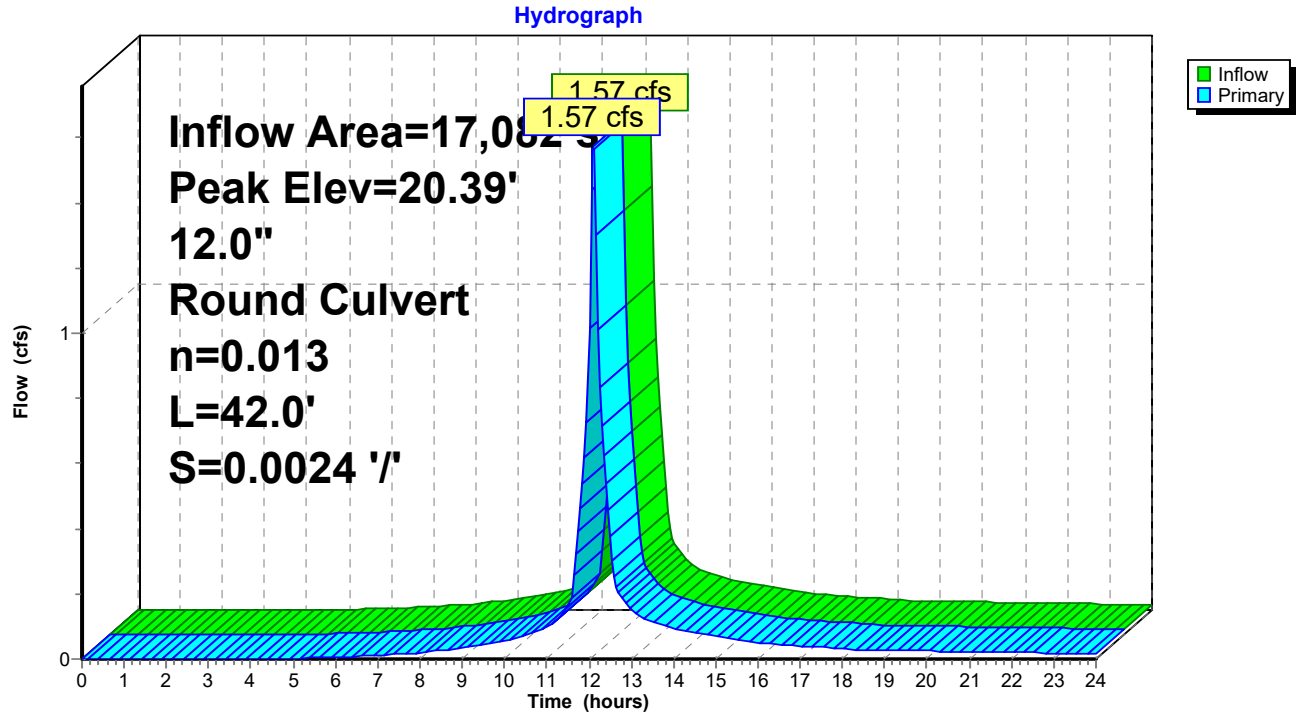
Inflow Area = 17,082 sf, 65.92% Impervious, Inflow Depth > 3.79" for 10-Year event
Inflow = 1.57 cfs @ 12.09 hrs, Volume= 5,394 cf
Outflow = 1.57 cfs @ 12.09 hrs, Volume= 5,394 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.57 cfs @ 12.09 hrs, Volume= 5,394 cf
Routed to Pond SSD3 : SUBSURFACE DRAINAGE AREA #3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 20.39' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	19.50'	**12.0" Round Culvert** L= 42.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 19.50' / 19.40' S= 0.0024 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.54 cfs @ 12.09 hrs HW=20.38' (Free Discharge)
1=Culvert (Barrel Controls 1.54 cfs @ 2.82 fps)

Pond DMH11: DMH11



Stage-Discharge for Pond DMH11: DMH11

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
19.50	0.00	20.03	0.64
19.51	0.00	20.04	0.66
19.52	0.00	20.05	0.68
19.53	0.00	20.06	0.71
19.54	0.00	20.07	0.73
19.55	0.00	20.08	0.75
19.56	0.01	20.09	0.78
19.57	0.01	20.10	0.80
19.58	0.01	20.11	0.83
19.59	0.02	20.12	0.85
19.60	0.02	20.13	0.88
19.61	0.03	20.14	0.90
19.62	0.03	20.15	0.93
19.63	0.04	20.16	0.95
19.64	0.04	20.17	0.98
19.65	0.05	20.18	1.00
19.66	0.06	20.19	1.03
19.67	0.06	20.20	1.06
19.68	0.07	20.21	1.08
19.69	0.08	20.22	1.11
19.70	0.09	20.23	1.14
19.71	0.10	20.24	1.16
19.72	0.11	20.25	1.19
19.73	0.12	20.26	1.22
19.74	0.13	20.27	1.25
19.75	0.14	20.28	1.27
19.76	0.16	20.29	1.30
19.77	0.17	20.30	1.33
19.78	0.18	20.31	1.36
19.79	0.19	20.32	1.39
19.80	0.21	20.33	1.41
19.81	0.22	20.34	1.44
19.82	0.24	20.35	1.47
19.83	0.25	20.36	1.50
19.84	0.27	20.37	1.53
19.85	0.28	20.38	1.55
19.86	0.30	20.39	1.58
19.87	0.32	20.40	1.61
19.88	0.33	20.41	1.64
19.89	0.35	20.42	1.67
19.90	0.37	20.43	1.69
19.91	0.39	20.44	1.72
19.92	0.41	20.45	1.75
19.93	0.43	20.46	1.78
19.94	0.45	20.47	1.81
19.95	0.47	20.48	1.83
19.96	0.49	20.49	1.86
19.97	0.51	20.50	**1.89**
19.98	0.53		
19.99	0.55		
20.00	0.57		
20.01	0.59		
20.02	0.61		

Stage-Area-Storage for Pond DMH11: DMH11

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
19.50	**0**	20.03	0
19.51	0	20.04	0
19.52	0	20.05	0
19.53	0	20.06	0
19.54	0	20.07	0
19.55	0	20.08	0
19.56	0	20.09	0
19.57	0	20.10	0
19.58	0	20.11	0
19.59	0	20.12	0
19.60	0	20.13	0
19.61	0	20.14	0
19.62	0	20.15	0
19.63	0	20.16	0
19.64	0	20.17	0
19.65	0	20.18	0
19.66	0	20.19	0
19.67	0	20.20	0
19.68	0	20.21	0
19.69	0	20.22	0
19.70	0	20.23	0
19.71	0	20.24	0
19.72	0	20.25	0
19.73	0	20.26	0
19.74	0	20.27	0
19.75	0	20.28	0
19.76	0	20.29	0
19.77	0	20.30	0
19.78	0	20.31	0
19.79	0	20.32	0
19.80	0	20.33	0
19.81	0	20.34	0
19.82	0	20.35	0
19.83	0	20.36	0
19.84	0	20.37	0
19.85	0	20.38	0
19.86	0	20.39	0
19.87	0	20.40	0
19.88	0	20.41	0
19.89	0	20.42	0
19.90	0	20.43	0
19.91	0	20.44	0
19.92	0	20.45	0
19.93	0	20.46	0
19.94	0	20.47	0
19.95	0	20.48	0
19.96	0	20.49	0
19.97	0	20.50	0
19.98	0		
19.99	0		
20.00	0		
20.01	0		
20.02	0		

Summary for Pond DMH2: DMH2

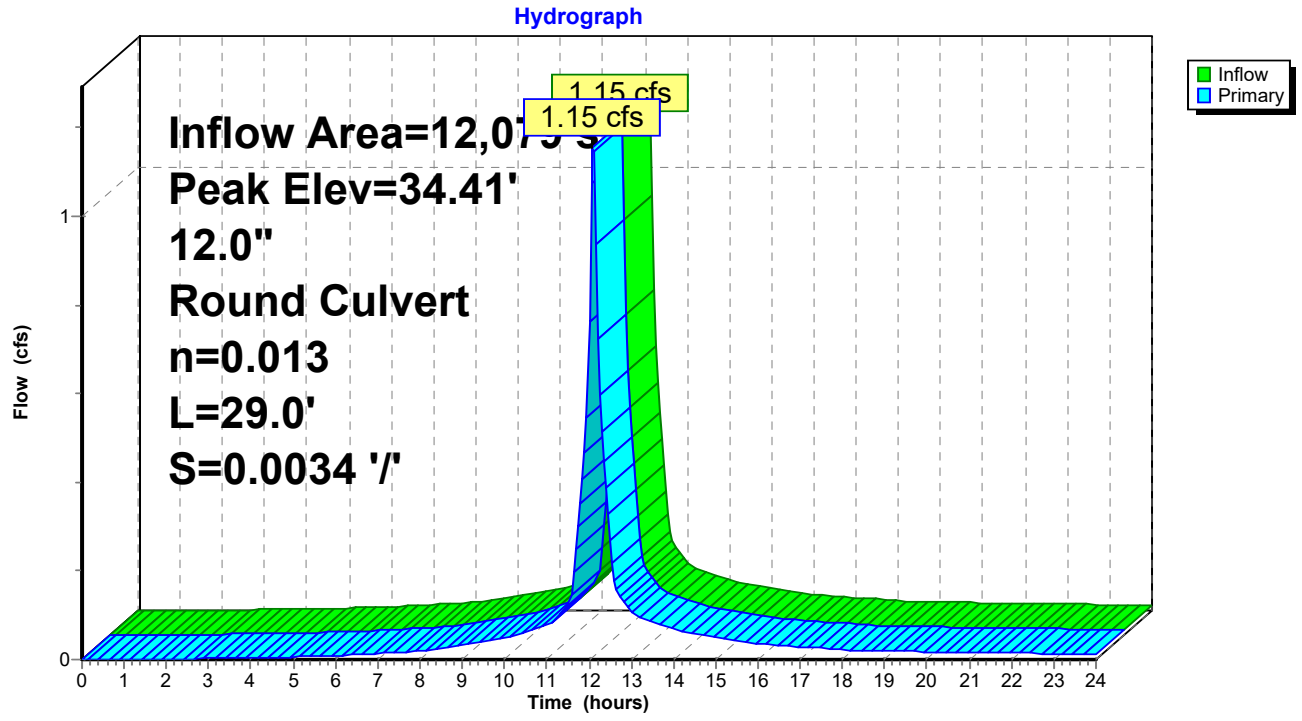
Inflow Area = 12,079 sf, 75.83% Impervious, Inflow Depth > 4.06" for 10-Year event
Inflow = 1.15 cfs @ 12.09 hrs, Volume= 4,084 cf
Outflow = 1.15 cfs @ 12.09 hrs, Volume= 4,084 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.15 cfs @ 12.09 hrs, Volume= 4,084 cf
Routed to Pond SSD1 : SUBSURFACE DRAINAGE AREA #1

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 34.41' @ 12.09 hrs
Flood Elev= 36.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	33.70'	**12.0" Round Culvert** L= 29.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 33.70' / 33.60' S= 0.0034 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.13 cfs @ 12.09 hrs HW=34.40' (Free Discharge)
1=Culvert (Barrel Controls 1.13 cfs @ 2.72 fps)

Pond DMH2: DMH2



Stage-Discharge for Pond DMH2: DMH2

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
33.70	0.00	34.76	2.19	35.82	4.48
33.72	0.00	34.78	2.24	35.84	4.52
33.74	0.00	34.80	2.30	35.86	4.56
33.76	0.01	34.82	2.35	35.88	4.59
33.78	0.02	34.84	2.40	35.90	4.63
33.80	0.02	34.86	2.45	35.92	4.66
33.82	0.04	34.88	2.49	35.94	4.70
33.84	0.05	34.90	2.54	35.96	4.73
33.86	0.07	34.92	2.58	35.98	4.77
33.88	0.08	34.94	2.61	36.00	4.80
33.90	0.10	34.96	2.65	36.02	4.84
33.92	0.13	34.98	2.67	36.04	4.87
33.94	0.15	35.00	2.69	36.06	4.91
33.96	0.18	35.02	2.70	36.08	4.94
33.98	0.20	35.04	2.69	36.10	4.97
34.00	0.23	35.06	2.75	36.12	5.00
34.02	0.27	35.08	2.81	36.14	5.04
34.04	0.30	35.10	2.87	36.16	5.07
34.06	0.33	35.12	2.93	36.18	5.10
34.08	0.37	35.14	2.98	36.20	5.13
34.10	0.41	35.16	3.04	36.22	5.17
34.12	0.45	35.18	3.09	36.24	5.20
34.14	0.49	35.20	3.14	36.26	5.23
34.16	0.53	35.22	3.20	36.28	5.26
34.18	0.58	35.24	3.25	36.30	5.29
34.20	0.62	35.26	3.30	36.32	5.32
34.22	0.67	35.28	3.35	36.34	5.35
34.24	0.72	35.30	3.40	36.36	5.39
34.26	0.77	35.32	3.44	36.38	5.42
34.28	0.82	35.34	3.49	36.40	5.45
34.30	0.87	35.36	3.54	36.42	5.48
34.32	0.92	35.38	3.59	36.44	5.51
34.34	0.98	35.40	3.63	36.46	5.54
34.36	1.03	35.42	3.68	36.48	5.57
34.38	1.08	35.44	3.72	36.50	5.60
34.40	1.14	35.46	3.76	36.52	5.63
34.42	1.20	35.48	3.81	36.54	5.65
34.44	1.25	35.50	3.85	36.56	5.68
34.46	1.31	35.52	3.89	36.58	5.71
34.48	1.37	35.54	3.94	36.60	5.74
34.50	1.43	35.56	3.98	36.62	5.77
34.52	1.49	35.58	4.02	36.64	5.80
34.54	1.55	35.60	4.06	36.66	5.83
34.56	1.61	35.62	4.10	36.68	5.85
34.58	1.67	35.64	4.14	36.70	5.88
34.60	1.72	35.66	4.18	36.72	5.91
34.62	1.78	35.68	4.22	36.74	**5.94**
34.64	1.84	35.70	4.26		
34.66	1.90	35.72	4.30		
34.68	1.96	35.74	4.33		
34.70	2.02	35.76	4.37		
34.72	2.08	35.78	4.41		
34.74	2.13	35.80	4.45		

Stage-Area-Storage for Pond DMH2: DMH2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
33.70	**0**	34.76	0	35.82	0
33.72	0	34.78	0	35.84	0
33.74	0	34.80	0	35.86	0
33.76	0	34.82	0	35.88	0
33.78	0	34.84	0	35.90	0
33.80	0	34.86	0	35.92	0
33.82	0	34.88	0	35.94	0
33.84	0	34.90	0	35.96	0
33.86	0	34.92	0	35.98	0
33.88	0	34.94	0	36.00	0
33.90	0	34.96	0	36.02	0
33.92	0	34.98	0	36.04	0
33.94	0	35.00	0	36.06	0
33.96	0	35.02	0	36.08	0
33.98	0	35.04	0	36.10	0
34.00	0	35.06	0	36.12	0
34.02	0	35.08	0	36.14	0
34.04	0	35.10	0	36.16	0
34.06	0	35.12	0	36.18	0
34.08	0	35.14	0	36.20	0
34.10	0	35.16	0	36.22	0
34.12	0	35.18	0	36.24	0
34.14	0	35.20	0	36.26	0
34.16	0	35.22	0	36.28	0
34.18	0	35.24	0	36.30	0
34.20	0	35.26	0	36.32	0
34.22	0	35.28	0	36.34	0
34.24	0	35.30	0	36.36	0
34.26	0	35.32	0	36.38	0
34.28	0	35.34	0	36.40	0
34.30	0	35.36	0	36.42	0
34.32	0	35.38	0	36.44	0
34.34	0	35.40	0	36.46	0
34.36	0	35.42	0	36.48	0
34.38	0	35.44	0	36.50	0
34.40	0	35.46	0	36.52	0
34.42	0	35.48	0	36.54	0
34.44	0	35.50	0	36.56	0
34.46	0	35.52	0	36.58	0
34.48	0	35.54	0	36.60	0
34.50	0	35.56	0	36.62	0
34.52	0	35.58	0	36.64	0
34.54	0	35.60	0	36.66	0
34.56	0	35.62	0	36.68	0
34.58	0	35.64	0	36.70	0
34.60	0	35.66	0	36.72	0
34.62	0	35.68	0	36.74	0
34.64	0	35.70	0		
34.66	0	35.72	0		
34.68	0	35.74	0		
34.70	0	35.76	0		
34.72	0	35.78	0		
34.74	0	35.80	0		

Summary for Pond DMH7: DMH7

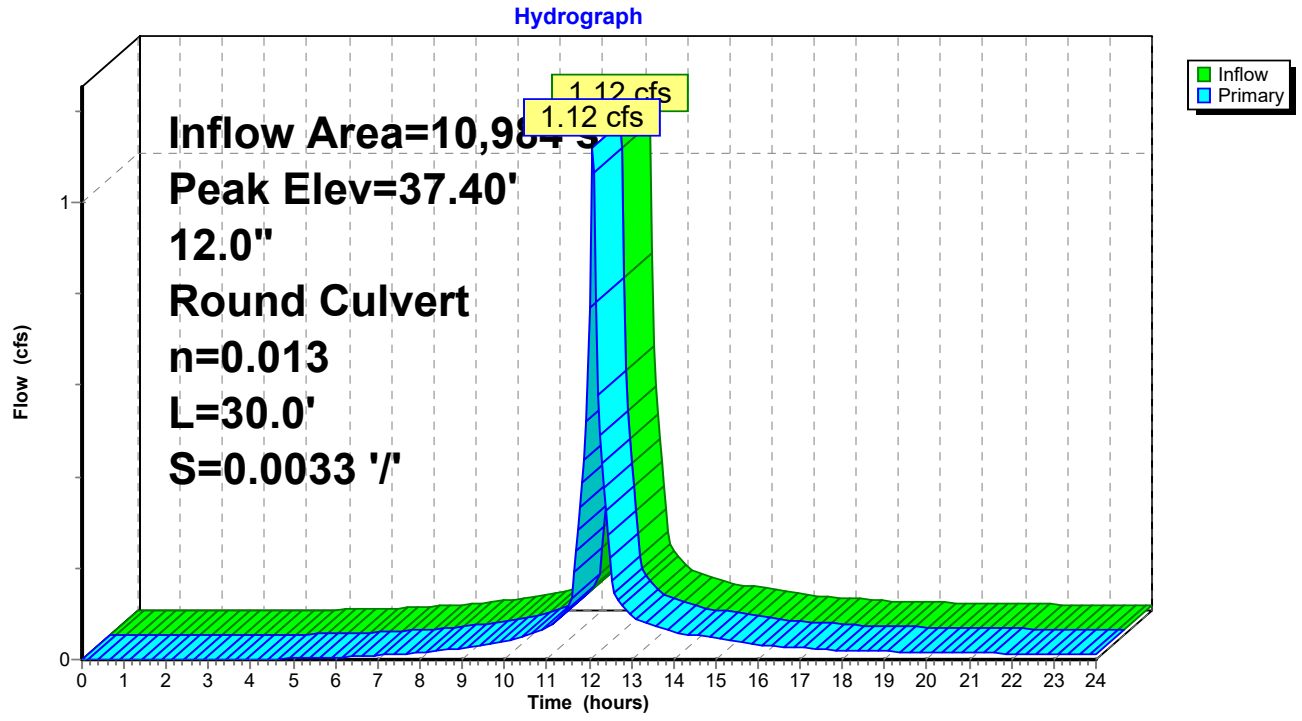
Inflow Area = 10,984 sf, 71.49% Impervious, Inflow Depth > 3.93" for 10-Year event
Inflow = 1.12 cfs @ 12.07 hrs, Volume= 3,597 cf
Outflow = 1.12 cfs @ 12.07 hrs, Volume= 3,597 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.12 cfs @ 12.07 hrs, Volume= 3,597 cf
Routed to Pond SSD2 : SUBSURFACE DRAINAGE AREA #2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 37.40' @ 12.07 hrs
Flood Elev= 39.67'

Device	Routing	Invert	Outlet Devices
#1	Primary	36.70'	**12.0" Round Culvert** L= 30.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 36.70' / 36.60' S= 0.0033 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.08 cfs @ 12.07 hrs HW=37.38' (Free Discharge)
1=Culvert (Barrel Controls 1.08 cfs @ 2.68 fps)

Pond DMH7: DMH7



Stage-Discharge for Pond DMH7: DMH7

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
36.70	0.00	37.76	2.18	38.82	4.45
36.72	0.00	37.78	2.23	38.84	4.49
36.74	0.00	37.80	2.28	38.86	4.53
36.76	0.01	37.82	2.33	38.88	4.56
36.78	0.01	37.84	2.38	38.90	4.60
36.80	0.02	37.86	2.43	38.92	4.63
36.82	0.04	37.88	2.48	38.94	4.67
36.84	0.05	37.90	2.52	38.96	4.70
36.86	0.06	37.92	2.56	38.98	4.74
36.88	0.08	37.94	2.60	39.00	4.77
36.90	0.10	37.96	2.63	39.02	4.81
36.92	0.12	37.98	2.66	39.04	4.84
36.94	0.15	38.00	2.68	39.06	4.87
36.96	0.17	38.02	2.68	39.08	4.91
36.98	0.20	38.04	2.68	39.10	4.94
37.00	0.23	38.06	2.74	39.12	4.97
37.02	0.26	38.08	2.79	39.14	5.01
37.04	0.30	38.10	2.85	39.16	5.04
37.06	0.33	38.12	2.91	39.18	5.07
37.08	0.37	38.14	2.96	39.20	5.10
37.10	0.41	38.16	3.02	39.22	5.13
37.12	0.45	38.18	3.07	39.24	5.17
37.14	0.49	38.20	3.12	39.26	5.20
37.16	0.53	38.22	3.18	39.28	5.23
37.18	0.57	38.24	3.23	39.30	5.26
37.20	0.62	38.26	3.28	39.32	5.29
37.22	0.67	38.28	3.33	39.34	5.32
37.24	0.71	38.30	3.37	39.36	5.35
37.26	0.76	38.32	3.42	39.38	5.38
37.28	0.81	38.34	3.47	39.40	5.41
37.30	0.86	38.36	3.52	39.42	5.44
37.32	0.92	38.38	3.56	39.44	5.47
37.34	0.97	38.40	3.61	39.46	5.50
37.36	1.02	38.42	3.65	39.48	5.53
37.38	1.08	38.44	3.70	39.50	5.56
37.40	1.13	38.46	3.74	39.52	5.59
37.42	1.19	38.48	3.78	39.54	5.62
37.44	1.25	38.50	3.83	39.56	5.65
37.46	1.30	38.52	3.87	39.58	5.68
37.48	1.36	38.54	3.91	39.60	5.70
37.50	1.42	38.56	3.95	39.62	5.73
37.52	1.48	38.58	3.99	39.64	5.76
37.54	1.54	38.60	4.03	39.66	**5.79**
37.56	1.60	38.62	4.07		
37.58	1.66	38.64	4.11		
37.60	1.72	38.66	4.15		
37.62	1.77	38.68	4.19		
37.64	1.83	38.70	4.23		
37.66	1.89	38.72	4.27		
37.68	1.95	38.74	4.31		
37.70	2.01	38.76	4.34		
37.72	2.06	38.78	4.38		
37.74	2.12	38.80	4.42		

Stage-Area-Storage for Pond DMH7: DMH7

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
36.70	**0**	37.76	0	38.82	0
36.72	0	37.78	0	38.84	0
36.74	0	37.80	0	38.86	0
36.76	0	37.82	0	38.88	0
36.78	0	37.84	0	38.90	0
36.80	0	37.86	0	38.92	0
36.82	0	37.88	0	38.94	0
36.84	0	37.90	0	38.96	0
36.86	0	37.92	0	38.98	0
36.88	0	37.94	0	39.00	0
36.90	0	37.96	0	39.02	0
36.92	0	37.98	0	39.04	0
36.94	0	38.00	0	39.06	0
36.96	0	38.02	0	39.08	0
36.98	0	38.04	0	39.10	0
37.00	0	38.06	0	39.12	0
37.02	0	38.08	0	39.14	0
37.04	0	38.10	0	39.16	0
37.06	0	38.12	0	39.18	0
37.08	0	38.14	0	39.20	0
37.10	0	38.16	0	39.22	0
37.12	0	38.18	0	39.24	0
37.14	0	38.20	0	39.26	0
37.16	0	38.22	0	39.28	0
37.18	0	38.24	0	39.30	0
37.20	0	38.26	0	39.32	0
37.22	0	38.28	0	39.34	0
37.24	0	38.30	0	39.36	0
37.26	0	38.32	0	39.38	0
37.28	0	38.34	0	39.40	0
37.30	0	38.36	0	39.42	0
37.32	0	38.38	0	39.44	0
37.34	0	38.40	0	39.46	0
37.36	0	38.42	0	39.48	0
37.38	0	38.44	0	39.50	0
37.40	0	38.46	0	39.52	0
37.42	0	38.48	0	39.54	0
37.44	0	38.50	0	39.56	0
37.46	0	38.52	0	39.58	0
37.48	0	38.54	0	39.60	0
37.50	0	38.56	0	39.62	0
37.52	0	38.58	0	39.64	0
37.54	0	38.60	0	39.66	0
37.56	0	38.62	0		
37.58	0	38.64	0		
37.60	0	38.66	0		
37.62	0	38.68	0		
37.64	0	38.70	0		
37.66	0	38.72	0		
37.68	0	38.74	0		
37.70	0	38.76	0		
37.72	0	38.78	0		
37.74	0	38.80	0		

Summary for Pond SSD1: SUBSURFACE DRAINAGE AREA #1

Inflow Area = 19,969 sf, 85.38% Impervious, Inflow Depth > 4.32" for 10-Year event
Inflow = 2.02 cfs @ 12.08 hrs, Volume= 7,182 cf
Outflow = 0.92 cfs @ 12.27 hrs, Volume= 5,286 cf, Atten= 54%, Lag= 11.6 min
Discarded = 0.04 cfs @ 8.05 hrs, Volume= 2,625 cf
Primary = 0.49 cfs @ 12.27 hrs, Volume= 1,902 cf
Routed to Reach DP3 : DP3
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3
Tertiary = 0.39 cfs @ 12.27 hrs, Volume= 759 cf
Routed to Pond SSD5 : SUBSURFACE DRAINAGE AREA #5 (STORAGE)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 35.52' @ 12.27 hrs Surf.Area= 1,654 sf Storage= 2,734 cf

Plug-Flow detention time= 157.6 min calculated for 5,275 cf (73% of inflow)
Center-of-Mass det. time= 70.2 min (834.4 - 764.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	33.16'	1,246 cf	**25.67'W x 52.50'L x 3.71'H Field A** 4,997 cf Overall - 1,881 cf Embedded = 3,116 cf x 40.0% Voids
#2A	33.66'	1,881 cf	**Cultec R-330XLHD** x 35 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 5 rows
#3B	33.16'	197 cf	**11.17'W x 17.50'L x 3.71'H Field B** 725 cf Overall - 231 cf Embedded = 494 cf x 40.0% Voids
#4B	33.66'	231 cf	**Cultec R-330XLHD** x 4 Inside #3 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
#5C	33.16'	118 cf	**6.33'W x 17.50'L x 3.71'H Field C** 411 cf Overall - 115 cf Embedded = 296 cf x 40.0% Voids
#6C	33.66'	115 cf	**Cultec R-330XLHD** x 2 Inside #5 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		3,790 cf	Total Available Storage

Storage Group A created with Chamber Wizard
Storage Group B created with Chamber Wizard
Storage Group C created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	33.16'	**1.020 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#2	Primary	35.00'	**6.0" Round Culvert** L= 150.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.00' / 28.00' S= 0.0467 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf
#3	Secondary	37.20'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

#4 Tertiary 35.10' **6.0" Round Culvert**
L= 30.0' CPP, square edge headwall, Ke= 0.500
Inlet / Outlet Invert= 35.10' / 34.00' S= 0.0367 '/' Cc= 0.900
n= 0.013, Flow Area= 0.20 sf

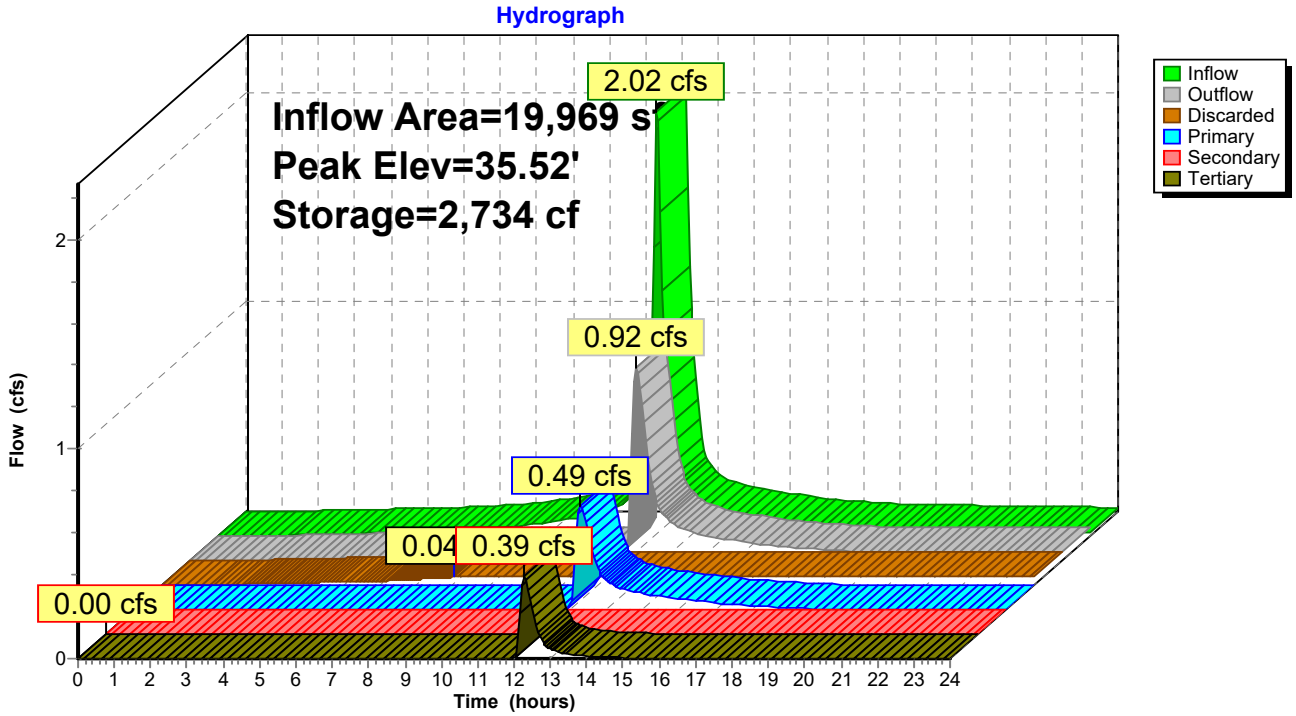
Discarded OutFlow Max=0.04 cfs @ 8.05 hrs HW=33.20' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.49 cfs @ 12.27 hrs HW=35.52' (Free Discharge)
└**2=Culvert** (Inlet Controls 0.49 cfs @ 2.49 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=33.16' (Free Discharge)
└**3=Orifice/Grate** (Controls 0.00 cfs)

Tertiary OutFlow Max=0.39 cfs @ 12.27 hrs HW=35.52' (Free Discharge)
└**4=Culvert** (Inlet Controls 0.39 cfs @ 2.20 fps)

Pond SSD1: SUBSURFACE DRAINAGE AREA #1



Stage-Discharge for Pond SSD1: SUBSURFACE DRAINAGE AREA #1

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)	Tertiary (cfs)
33.16	0.00	**0.00**	0.00	**0.00**	0.00
33.26	0.04	**0.04**	0.00	0.00	0.00
33.36	0.04	0.04	0.00	0.00	0.00
33.46	0.04	0.04	0.00	0.00	0.00
33.56	0.04	0.04	0.00	0.00	0.00
33.66	0.04	0.04	0.00	0.00	0.00
33.76	0.04	0.04	0.00	0.00	0.00
33.86	0.04	0.04	0.00	0.00	0.00
33.96	0.04	0.04	0.00	0.00	0.00
34.06	0.04	0.04	0.00	0.00	0.00
34.16	0.04	0.04	0.00	0.00	0.00
34.26	0.04	0.04	0.00	0.00	0.00
34.36	0.04	0.04	0.00	0.00	0.00
34.46	0.04	0.04	0.00	0.00	0.00
34.56	0.04	0.04	0.00	0.00	0.00
34.66	0.04	0.04	0.00	0.00	0.00
34.76	0.04	0.04	0.00	0.00	0.00
34.86	0.04	0.04	0.00	0.00	0.00
34.96	0.04	0.04	0.00	0.00	0.00
35.06	0.05	0.04	0.01	0.00	0.00
35.16	0.12	0.04	0.07	0.00	0.01
35.26	0.29	0.04	0.18	0.00	0.07
35.36	0.53	0.04	0.31	0.00	0.18
35.46	0.78	0.04	0.44	0.00	0.31
35.56	1.00	0.04	0.53	0.00	0.44
35.66	1.17	0.04	0.61	0.00	0.53
35.76	1.32	0.04	0.68	0.00	0.61
35.86	1.45	0.04	0.74	0.00	0.68
35.96	1.57	0.04	0.80	0.00	0.74
36.06	1.69	0.04	0.85	0.00	0.80
36.16	1.79	0.04	0.90	0.00	0.85
36.26	1.89	0.04	0.95	0.00	0.90
36.36	1.99	0.04	1.00	0.00	0.95
36.46	2.08	0.04	1.04	0.00	1.00
36.56	2.16	0.04	1.08	0.00	1.04
36.66	2.24	0.04	1.12	0.00	1.08
36.76	2.32	0.04	1.16	0.00	1.12
36.86	2.40	0.04	1.20	0.00	1.16
36.96	2.47	0.04	1.24	0.00	1.20
37.06	2.54	0.04	1.26	0.00	1.24
37.16	**2.58**	0.04	**1.27**	0.00	**1.27**

Stage-Area-Storage for Pond SSD1: SUBSURFACE DRAINAGE AREA #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
33.16	**1,654**	0
33.21	1,654	33
33.26	1,654	66
33.31	1,654	99
33.36	1,654	132
33.41	1,654	165
33.46	1,654	198
33.51	1,654	232
33.56	1,654	265
33.61	1,654	298
33.66	1,654	331
33.71	1,654	399
33.76	1,654	468
33.81	1,654	536
33.86	1,654	605
33.91	1,654	673
33.96	1,654	741
34.01	1,654	808
34.06	1,654	876
34.11	1,654	944
34.16	1,654	1,012
34.21	1,654	1,079
34.26	1,654	1,147
34.31	1,654	1,213
34.36	1,654	1,280
34.41	1,654	1,346
34.46	1,654	1,412
34.51	1,654	1,477
34.56	1,654	1,543
34.61	1,654	1,609
34.66	1,654	1,674
34.71	1,654	1,739
34.76	1,654	1,804
34.81	1,654	1,869
34.86	1,654	1,934
34.91	1,654	1,999
34.96	1,654	2,062
35.01	1,654	2,125
35.06	1,654	2,188
35.11	1,654	2,249
35.16	1,654	2,311
35.21	1,654	2,371
35.26	1,654	2,431
35.31	1,654	2,491
35.36	1,654	2,549
35.41	1,654	2,607
35.46	1,654	2,664
35.51	1,654	2,720
35.56	1,654	2,776
35.61	1,654	2,830
35.66	1,654	2,883
35.71	1,654	2,935
35.76	1,654	2,986
35.81	1,654	3,035
35.86	1,654	3,083
35.91	1,654	3,128
35.96	1,654	3,171
36.01	1,654	3,212
36.06	1,654	3,250
36.11	1,654	3,287
36.16	1,654	3,321
36.21	1,654	3,354
36.26	1,654	3,387
36.31	1,654	3,420
36.36	1,654	3,454
36.41	1,654	3,487
36.46	1,654	3,520
36.51	1,654	3,553
36.56	1,654	3,586
36.61	1,654	3,619
36.66	1,654	3,652
36.71	1,654	3,685
36.76	1,654	3,718
36.81	1,654	3,751
36.86	1,654	**3,784**
36.91	1,654	**3,790**
36.96	1,654	3,790
37.01	1,654	3,790
37.06	1,654	3,790
37.11	1,654	3,790
37.16	1,654	3,790

Summary for Pond SSD2: SUBSURFACE DRAINAGE AREA #2

Inflow Area = 13,267 sf, 76.40% Impervious, Inflow Depth > 4.06" for 10-Year event
Inflow = 1.37 cfs @ 12.07 hrs, Volume= 4,493 cf
Outflow = 0.05 cfs @ 9.90 hrs, Volume= 2,710 cf, Atten= 97%, Lag= 0.0 min
Discarded = 0.05 cfs @ 9.90 hrs, Volume= 2,710 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP1 : DP1post
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP1 : DP1post

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 37.78' @ 15.60 hrs Surf.Area= 1,960 sf Storage= 2,510 cf

Plug-Flow detention time= 272.1 min calculated for 2,704 cf (60% of inflow)
Center-of-Mass det. time= 168.8 min (946.8 - 778.0)

Volume	Invert	Avail.Storage	Storage Description
#1B	35.70'	2,483 cf	**16.00'W x 122.50'L x 4.54'H Field B** 8,902 cf Overall - 2,694 cf Embedded = 6,208 cf x 40.0% Voids
#2B	36.70'	2,694 cf	**Cultec R-330XLHD** x 51 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 3 rows
		5,177 cf	Total Available Storage

Storage Group B created with Chamber Wizard

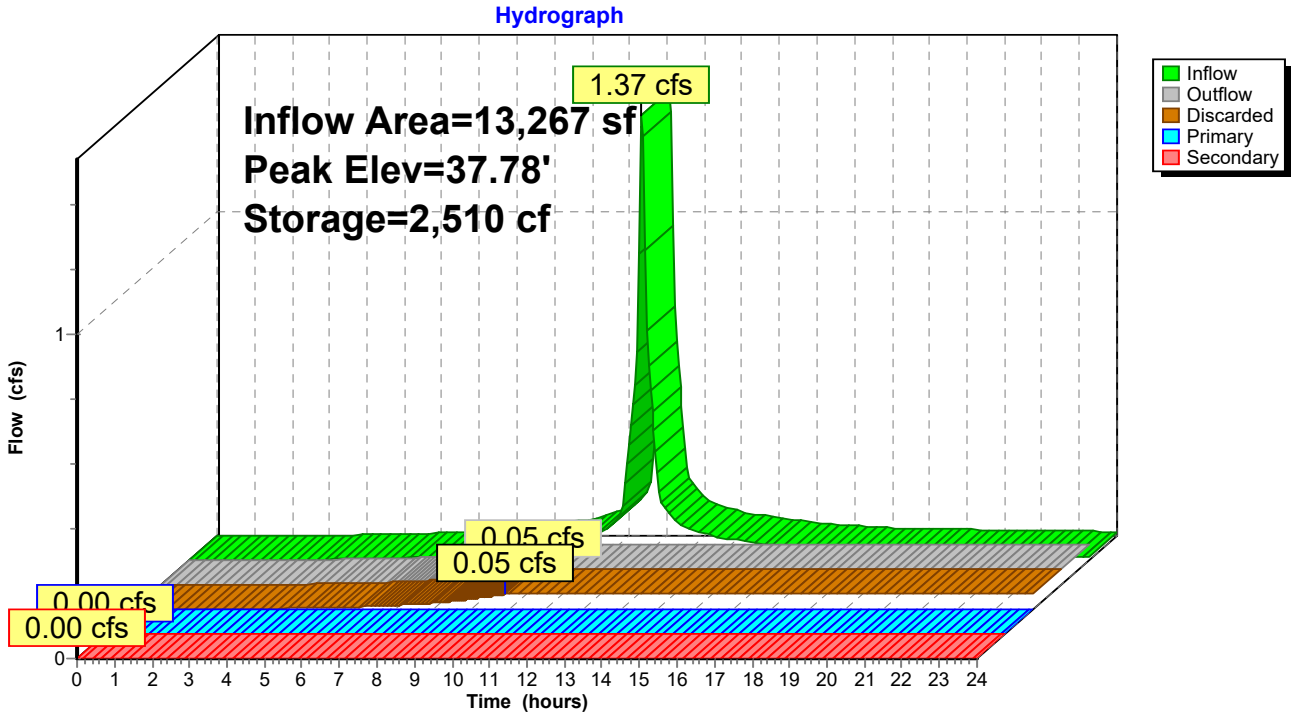
Device	Routing	Invert	Outlet Devices
#1	Discarded	35.70'	**1.020 in/hr Exfiltration over Surface area**
#2	Secondary	40.60'	**4.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	38.70'	**6.0" Round Culvert** L= 23.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 38.70' / 35.60' S= 0.1348 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf

Discarded OutFlow Max=0.05 cfs @ 9.90 hrs HW=35.75' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=35.70' (Free Discharge)
↑**3=Culvert** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=35.70' (Free Discharge)
↑**2=Orifice/Grate** (Controls 0.00 cfs)

Pond SSD2: SUBSURFACE DRAINAGE AREA #2



Stage-Discharge for Pond SSD2: SUBSURFACE DRAINAGE AREA #2

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
35.70	0.00	**0.00**	0.00	**0.00**
35.80	0.05	**0.05**	0.00	0.00
35.90	0.05	0.05	0.00	0.00
36.00	0.05	0.05	0.00	0.00
36.10	0.05	0.05	0.00	0.00
36.20	0.05	0.05	0.00	0.00
36.30	0.05	0.05	0.00	0.00
36.40	0.05	0.05	0.00	0.00
36.50	0.05	0.05	0.00	0.00
36.60	0.05	0.05	0.00	0.00
36.70	0.05	0.05	0.00	0.00
36.80	0.05	0.05	0.00	0.00
36.90	0.05	0.05	0.00	0.00
37.00	0.05	0.05	0.00	0.00
37.10	0.05	0.05	0.00	0.00
37.20	0.05	0.05	0.00	0.00
37.30	0.05	0.05	0.00	0.00
37.40	0.05	0.05	0.00	0.00
37.50	0.05	0.05	0.00	0.00
37.60	0.05	0.05	0.00	0.00
37.70	0.05	0.05	0.00	0.00
37.80	0.05	0.05	0.00	0.00
37.90	0.05	0.05	0.00	0.00
38.00	0.05	0.05	0.00	0.00
38.10	0.05	0.05	0.00	0.00
38.20	0.05	0.05	0.00	0.00
38.30	0.05	0.05	0.00	0.00
38.40	0.05	0.05	0.00	0.00
38.50	0.05	0.05	0.00	0.00
38.60	0.05	0.05	0.00	0.00
38.70	0.05	0.05	0.00	0.00
38.80	0.08	0.05	0.03	0.00
38.90	0.16	0.05	0.11	0.00
39.00	0.28	0.05	0.23	0.00
39.10	0.41	0.05	0.36	0.00
39.20	0.52	0.05	0.47	0.00
39.30	0.61	0.05	0.56	0.00
39.40	0.68	0.05	0.63	0.00
39.50	0.75	0.05	0.70	0.00
39.60	0.81	0.05	0.76	0.00
39.70	0.87	0.05	0.82	0.00
39.80	0.92	0.05	0.87	0.00
39.90	0.97	0.05	0.92	0.00
40.00	1.02	0.05	0.97	0.00
40.10	1.06	0.05	1.01	0.00
40.20	1.10	0.05	1.06	0.00
40.30	1.14	0.05	1.10	0.00
40.40	1.18	0.05	1.14	0.00
40.50	1.22	0.05	1.18	0.00
40.60	**1.26**	0.05	**1.21**	0.00

Stage-Area-Storage for Pond SSD2: SUBSURFACE DRAINAGE AREA #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
35.70	**1,960**	0
35.75	1,960	39
35.80	1,960	78
35.85	1,960	118
35.90	1,960	157
35.95	1,960	196
36.00	1,960	235
36.05	1,960	274
36.10	1,960	314
36.15	1,960	353
36.20	1,960	392
36.25	1,960	431
36.30	1,960	470
36.35	1,960	510
36.40	1,960	549
36.45	1,960	588
36.50	1,960	627
36.55	1,960	666
36.60	1,960	706
36.65	1,960	745
36.70	1,960	784
36.75	1,960	866
36.80	1,960	948
36.85	1,960	1,030
36.90	1,960	1,112
36.95	1,960	1,193
37.00	1,960	1,275
37.05	1,960	1,356
37.10	1,960	1,437
37.15	1,960	1,518
37.20	1,960	1,600
37.25	1,960	1,680
37.30	1,960	1,761
37.35	1,960	1,841
37.40	1,960	1,920
37.45	1,960	1,999
37.50	1,960	2,078
37.55	1,960	2,157
37.60	1,960	2,236
37.65	1,960	2,314
37.70	1,960	2,392
37.75	1,960	2,470
37.80	1,960	2,548
37.85	1,960	2,626
37.90	1,960	2,704
37.95	1,960	2,781
38.00	1,960	2,857
38.05	1,960	2,932
38.10	1,960	3,007
38.15	1,960	3,081
38.20	1,960	3,154
38.25	1,960	3,227
38.30	1,960	3,298
38.35	1,960	3,369
38.40	1,960	3,439
38.45	1,960	3,509
38.50	1,960	3,577
38.55	1,960	3,644
38.60	1,960	3,710
38.65	1,960	3,775
38.70	1,960	3,839
38.75	1,960	3,901
38.80	1,960	3,961
38.85	1,960	4,020
38.90	1,960	4,076
38.95	1,960	4,130
39.00	1,960	4,182
39.05	1,960	4,230
39.10	1,960	4,276
39.15	1,960	4,319
39.20	1,960	4,360
39.25	1,960	4,399
39.30	1,960	4,439
39.35	1,960	4,478
39.40	1,960	4,517
39.45	1,960	4,556
39.50	1,960	4,595
39.55	1,960	4,635
39.60	1,960	4,674
39.65	1,960	4,713
39.70	1,960	4,752
39.75	1,960	4,791
39.80	1,960	4,831
39.85	1,960	4,870
39.90	1,960	4,909
39.95	1,960	4,948
40.00	1,960	4,987
40.05	1,960	5,027
40.10	1,960	5,066
40.15	1,960	5,105
40.20	1,960	5,144
40.25	1,960	**5,177**
40.30	1,960	5,177
40.35	1,960	5,177
40.40	1,960	5,177
40.45	1,960	5,177
40.50	1,960	5,177
40.55	1,960	5,177
40.60	1,960	5,177

Summary for Pond SSD3: SUBSURFACE DRAINAGE AREA #3

Inflow Area = 20,604 sf, 71.75% Impervious, Inflow Depth > 3.95" for 10-Year event
Inflow = 1.95 cfs @ 12.09 hrs, Volume= 6,776 cf
Outflow = 1.59 cfs @ 12.15 hrs, Volume= 5,929 cf, Atten= 18%, Lag= 4.1 min
Discarded = 0.03 cfs @ 8.15 hrs, Volume= 1,831 cf
Primary = 1.57 cfs @ 12.15 hrs, Volume= 4,098 cf
Routed to Reach DP3 : DP3
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 20.20' @ 12.15 hrs Surf.Area= 1,203 sf Storage= 1,575 cf

Plug-Flow detention time= 93.2 min calculated for 5,929 cf (88% of inflow)
Center-of-Mass det. time= 36.4 min (819.2 - 782.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	18.00'	722 cf	**8.33'W x 81.00'L x 3.54'H Field A** 2,391 cf Overall - 585 cf Embedded = 1,806 cf x 40.0% Voids
#2A	18.50'	585 cf	**Cultec R-330XLHD** x 11 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
#3B	18.00'	362 cf	**12.50'W x 28.00'L x 3.54'H Field B** 1,240 cf Overall - 335 cf Embedded = 904 cf x 40.0% Voids
#4B	18.50'	335 cf	**Cultec R-330XLHD** x 6 Inside #3 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
#5C	18.00'	201 cf	**13.00'W x 13.67'L x 3.54'H Field C** 629 cf Overall - 127 cf Embedded = 503 cf x 40.0% Voids
#6C	18.50'	127 cf	**Cultec R-330XLHD** x 2 Inside #5 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		2,332 cf	Total Available Storage

Storage Group A created with Chamber Wizard
Storage Group B created with Chamber Wizard
Storage Group C created with Chamber Wizard

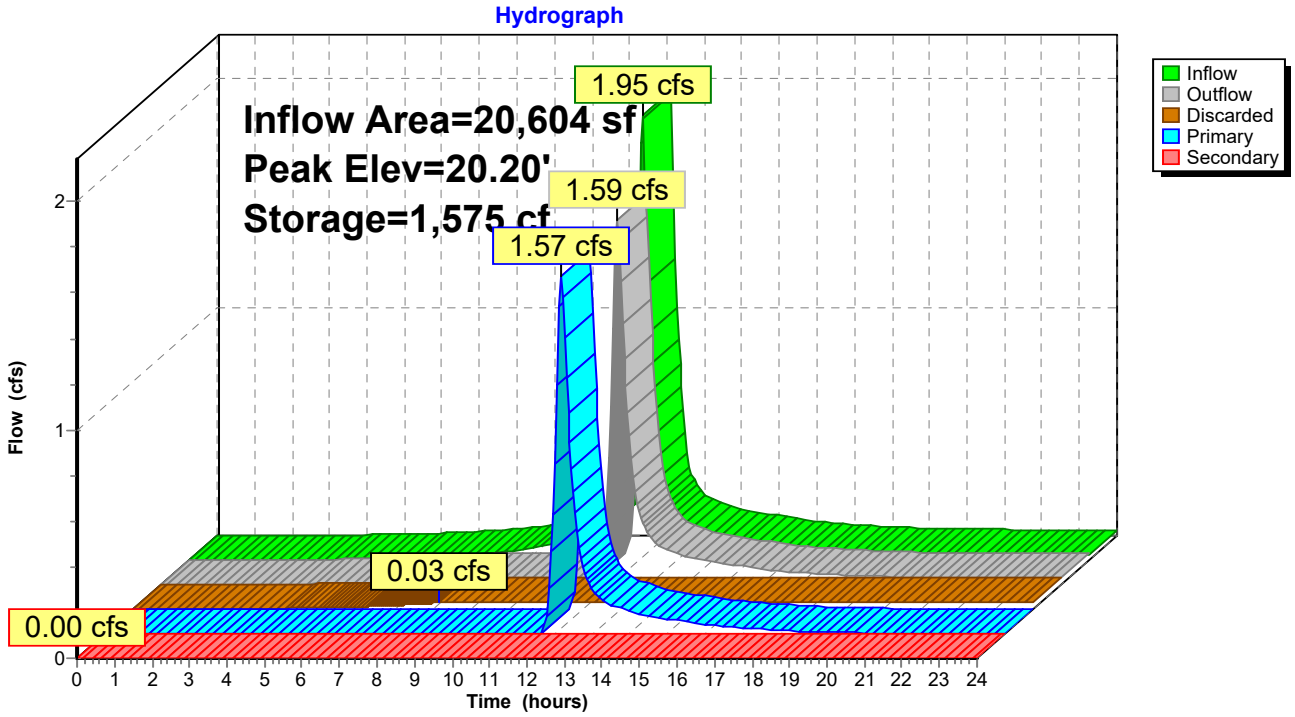
Device	Routing	Invert	Outlet Devices
#1	Discarded	18.00'	**1.020 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#2	Primary	19.30'	**10.0" Round Culvert** L= 14.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 19.30' / 19.20' S= 0.0071 '/' Cc= 0.900 n= 0.013, Flow Area= 0.55 sf
#3	Secondary	22.00'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.03 cfs @ 8.15 hrs HW=18.04' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=1.56 cfs @ 12.15 hrs HW=20.20' (Free Discharge)
└**2=Culvert** (Barrel Controls 1.56 cfs @ 3.29 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=18.00' (Free Discharge)
└**3=Orifice/Grate** (Controls 0.00 cfs)

Pond SSD3: SUBSURFACE DRAINAGE AREA #3



Stage-Discharge for Pond SSD3: SUBSURFACE DRAINAGE AREA #3

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
18.00	0.00	**0.00**	0.00	**0.00**
18.10	0.03	**0.03**	0.00	0.00
18.20	0.03	0.03	0.00	0.00
18.30	0.03	0.03	0.00	0.00
18.40	0.03	0.03	0.00	0.00
18.50	0.03	0.03	0.00	0.00
18.60	0.03	0.03	0.00	0.00
18.70	0.03	0.03	0.00	0.00
18.80	0.03	0.03	0.00	0.00
18.90	0.03	0.03	0.00	0.00
19.00	0.03	0.03	0.00	0.00
19.10	0.03	0.03	0.00	0.00
19.20	0.03	0.03	0.00	0.00
19.30	0.03	0.03	0.00	0.00
19.40	0.06	0.03	0.03	0.00
19.50	0.14	0.03	0.12	0.00
19.60	0.28	0.03	0.25	0.00
19.70	0.45	0.03	0.42	0.00
19.80	0.65	0.03	0.62	0.00
19.90	0.88	0.03	0.85	0.00
20.00	1.11	0.03	1.08	0.00
20.10	1.35	0.03	1.33	0.00
20.20	1.59	0.03	1.56	0.00
20.30	1.79	0.03	1.76	0.00
20.40	1.91	0.03	1.89	0.00
20.50	2.11	0.03	2.08	0.00
20.60	2.32	0.03	2.30	0.00
20.70	2.52	0.03	2.49	0.00
20.80	2.70	0.03	2.67	0.00
20.90	2.87	0.03	2.84	0.00
21.00	3.00	0.03	2.98	0.00
21.10	3.12	0.03	3.09	0.00
21.20	3.23	0.03	3.20	0.00
21.30	3.33	0.03	3.30	0.00
21.40	3.44	0.03	3.41	0.00
21.50	3.54	0.03	3.51	0.00
21.60	3.63	0.03	3.60	0.00
21.70	3.73	0.03	3.70	0.00
21.80	3.82	0.03	3.79	0.00
21.90	3.91	0.03	3.88	0.00
22.00	**4.00**	0.03	**3.97**	0.00

Stage-Area-Storage for Pond SSD3: SUBSURFACE DRAINAGE AREA #3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
18.00	**1,203**	0
18.05	1,203	24
18.10	1,203	48
18.15	1,203	72
18.20	1,203	96
18.25	1,203	120
18.30	1,203	144
18.35	1,203	168
18.40	1,203	192
18.45	1,203	216
18.50	1,203	241
18.55	1,203	281
18.60	1,203	322
18.65	1,203	363
18.70	1,203	403
18.75	1,203	444
18.80	1,203	484
18.85	1,203	525
18.90	1,203	565
18.95	1,203	605
19.00	1,203	646
19.05	1,203	686
19.10	1,203	726
19.15	1,203	766
19.20	1,203	806
19.25	1,203	845
19.30	1,203	885
19.35	1,203	924
19.40	1,203	963
19.45	1,203	1,003
19.50	1,203	1,042
19.55	1,203	1,081
19.60	1,203	1,120
19.65	1,203	1,159
19.70	1,203	1,198
19.75	1,203	1,237
19.80	1,203	1,275
19.85	1,203	1,314
19.90	1,203	1,351
19.95	1,203	1,389
20.00	1,203	1,426
20.05	1,203	1,463
20.10	1,203	1,500
20.15	1,203	1,536
20.20	1,203	1,572
20.25	1,203	1,608
20.30	1,203	1,643
20.35	1,203	1,678
20.40	1,203	1,713
20.45	1,203	1,747
20.50	1,203	1,780
20.55	1,203	1,813
20.60	1,203	1,846
20.65	1,203	1,877
20.70	1,203	1,908
20.75	1,203	1,938
20.80	1,203	1,967
20.85	1,203	1,994
20.90	1,203	2,021
20.95	1,203	2,047
21.00	1,203	2,071
21.05	1,203	2,095
21.10	1,203	2,119
21.15	1,203	2,143
21.20	1,203	2,168
21.25	1,203	2,192
21.30	1,203	2,216
21.35	1,203	2,240
21.40	1,203	2,264
21.45	1,203	2,288
21.50	1,203	2,312
21.55	1,203	**2,332**
21.60	1,203	2,332
21.65	1,203	2,332
21.70	1,203	2,332
21.75	1,203	2,332
21.80	1,203	2,332
21.85	1,203	2,332
21.90	1,203	2,332
21.95	1,203	2,332
22.00	1,203	2,332

Summary for Pond SSD4: SUBSURFACE DRAINAGE AREA #4

Inflow Area = 5,609 sf,100.00% Impervious, Inflow Depth > 4.71" for 10-Year event
Inflow = 0.63 cfs @ 12.07 hrs, Volume= 2,202 cf
Outflow = 0.28 cfs @ 12.25 hrs, Volume= 1,639 cf, Atten= 56%, Lag= 10.8 min
Discarded = 0.01 cfs @ 7.15 hrs, Volume= 816 cf
Primary = 0.06 cfs @ 12.25 hrs, Volume= 43 cf
Routed to Reach DP1 : DP1post
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP1 : DP1post
Tertiary = 0.21 cfs @ 12.25 hrs, Volume= 781 cf
Routed to Reach DP2 : DP2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 37.16' @ 12.25 hrs Surf.Area= 485 sf Storage= 844 cf

Plug-Flow detention time= 154.6 min calculated for 1,639 cf (74% of inflow)
Center-of-Mass det. time= 66.8 min (813.8 - 746.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	34.50'	475 cf	**11.17'W x 31.50'L x 4.63'H Field A** 1,627 cf Overall - 440 cf Embedded = 1,187 cf x 40.0% Voids
#2A	35.00'	440 cf	**Cultec R-330XLHD** x 8 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
#3B	34.50'	95 cf	**6.33'W x 10.50'L x 4.54'H Field B** 302 cf Overall - 63 cf Embedded = 239 cf x 40.0% Voids
#4B	35.00'	63 cf	**Cultec R-330XLHD** Inside #3 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
#5C	34.50'	98 cf	**6.33'W x 10.50'L x 4.63'H Field C** 308 cf Overall - 63 cf Embedded = 244 cf x 40.0% Voids
#6C	35.00'	63 cf	**Cultec R-330XLHD** Inside #5 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		1,234 cf	Total Available Storage

Storage Group A created with Chamber Wizard
Storage Group B created with Chamber Wizard
Storage Group C created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	34.50'	**1.020 in/hr Exfiltration over Surface area**
#2	Secondary	39.50'	**4.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	37.00'	**4.0" Round Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 37.00' / 34.80' S= 0.2200 '/' Cc= 0.900 n= 0.013, Flow Area= 0.09 sf

#4 Tertiary 36.50' **4.0" Round Culvert**
L= 60.0' CPP, end-section conforming to fill, Ke= 0.500
Inlet / Outlet Invert= 36.50' / 36.00' S= 0.0083 '/' Cc= 0.900
n= 0.013, Flow Area= 0.09 sf

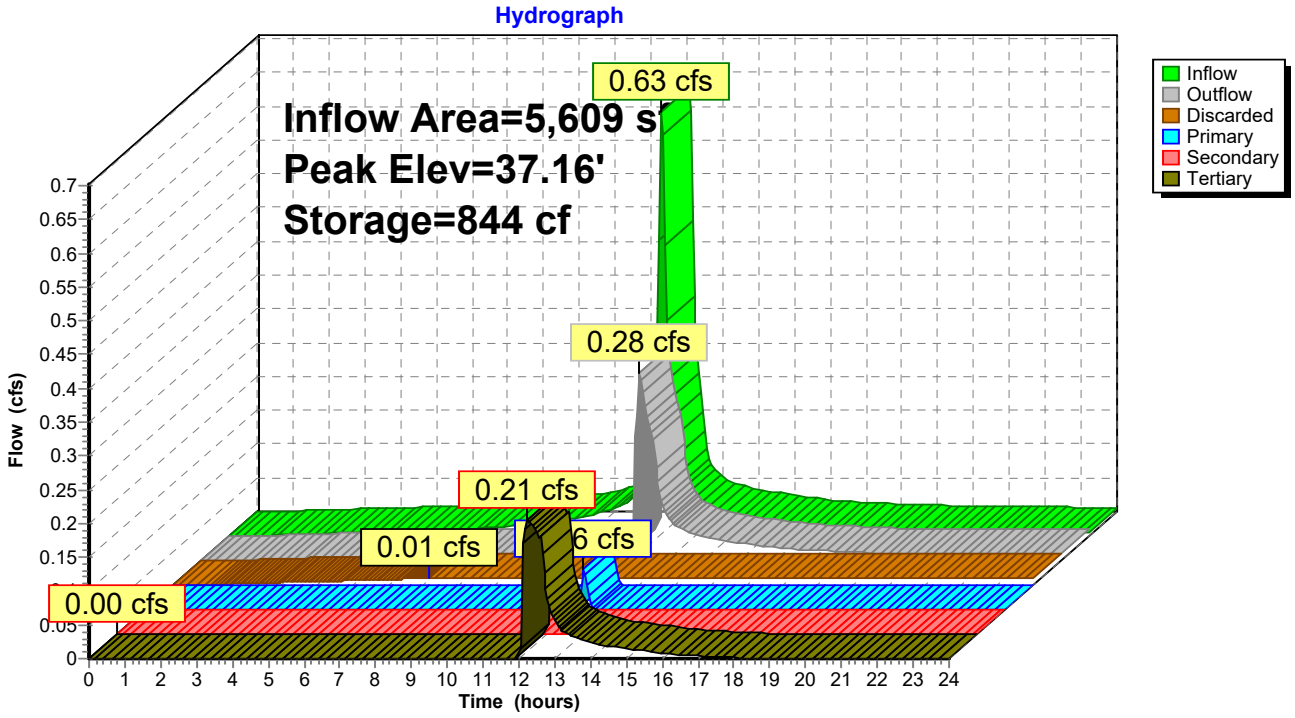
Discarded OutFlow Max=0.01 cfs @ 7.15 hrs HW=34.55' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.06 cfs @ 12.25 hrs HW=37.16' (Free Discharge)
└**3=Culvert** (Inlet Controls 0.06 cfs @ 1.38 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=34.50' (Free Discharge)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Tertiary OutFlow Max=0.21 cfs @ 12.25 hrs HW=37.16' (Free Discharge)
└**4=Culvert** (Barrel Controls 0.21 cfs @ 2.36 fps)

Pond SSD4: SUBSURFACE DRAINAGE AREA #4



Stage-Discharge for Pond SSD4: SUBSURFACE DRAINAGE AREA #4

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)	Tertiary (cfs)
34.50	0.00	**0.00**	0.00	**0.00**	0.00
34.60	0.01	**0.01**	0.00	0.00	0.00
34.70	0.01	0.01	0.00	0.00	0.00
34.80	0.01	0.01	0.00	0.00	0.00
34.90	0.01	0.01	0.00	0.00	0.00
35.00	0.01	0.01	0.00	0.00	0.00
35.10	0.01	0.01	0.00	0.00	0.00
35.20	0.01	0.01	0.00	0.00	0.00
35.30	0.01	0.01	0.00	0.00	0.00
35.40	0.01	0.01	0.00	0.00	0.00
35.50	0.01	0.01	0.00	0.00	0.00
35.60	0.01	0.01	0.00	0.00	0.00
35.70	0.01	0.01	0.00	0.00	0.00
35.80	0.01	0.01	0.00	0.00	0.00
35.90	0.01	0.01	0.00	0.00	0.00
36.00	0.01	0.01	0.00	0.00	0.00
36.10	0.01	0.01	0.00	0.00	0.00
36.20	0.01	0.01	0.00	0.00	0.00
36.30	0.01	0.01	0.00	0.00	0.00
36.40	0.01	0.01	0.00	0.00	0.00
36.50	0.01	0.01	0.00	0.00	0.00
36.60	0.03	0.01	0.00	0.00	0.02
36.70	0.08	0.01	0.00	0.00	0.07
36.80	0.15	0.01	0.00	0.00	0.13
36.90	0.19	0.01	0.00	0.00	0.18
37.00	0.20	0.01	0.00	0.00	0.18
37.10	0.23	0.01	0.02	0.00	0.20
37.20	0.30	0.01	0.08	0.00	0.21
37.30	0.39	0.01	0.15	0.00	0.22
37.40	0.45	0.01	0.20	0.00	0.23
37.50	0.50	0.01	0.24	0.00	0.24
37.60	0.54	0.01	0.28	0.00	0.25
37.70	0.58	0.01	0.31	0.00	0.26
37.80	0.62	0.01	0.33	0.00	0.27
37.90	0.65	0.01	0.36	0.00	0.28
38.00	0.69	0.01	0.38	0.00	0.29
38.10	0.72	0.01	0.41	0.00	0.30
38.20	0.75	0.01	0.43	0.00	0.31
38.30	0.77	0.01	0.45	0.00	0.32
38.40	0.80	0.01	0.47	0.00	0.32
38.50	0.83	0.01	0.49	0.00	0.33
38.60	0.85	0.01	0.50	0.00	0.34
38.70	0.88	0.01	0.52	0.00	0.35
38.80	0.90	0.01	0.54	0.00	0.35
38.90	0.93	0.01	0.55	0.00	0.36
39.00	0.95	0.01	0.57	0.00	0.37
39.10	0.97	0.01	0.58	0.00	0.38
39.20	0.99	0.01	0.60	0.00	0.38
39.30	1.01	0.01	0.61	0.00	0.39
39.40	1.03	0.01	0.63	0.00	0.39
39.50	**1.05**	0.01	**0.64**	0.00	**0.40**

Stage-Area-Storage for Pond SSD4: SUBSURFACE DRAINAGE AREA #4

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
34.50	**485**	0
34.55	485	10
34.60	485	19
34.65	485	29
34.70	485	39
34.75	485	48
34.80	485	58
34.85	485	68
34.90	485	78
34.95	485	87
35.00	485	97
35.05	485	116
35.10	485	134
35.15	485	153
35.20	485	172
35.25	485	190
35.30	485	209
35.35	485	227
35.40	485	246
35.45	485	264
35.50	485	283
35.55	485	301
35.60	485	320
35.65	485	338
35.70	485	356
35.75	485	374
35.80	485	392
35.85	485	410
35.90	485	428
35.95	485	446
36.00	485	464
36.05	485	482
36.10	485	500
36.15	485	518
36.20	485	535
36.25	485	553
36.30	485	571
36.35	485	588
36.40	485	605
36.45	485	622
36.50	485	639
36.55	485	656
36.60	485	672
36.65	485	688
36.70	485	705
36.75	485	721
36.80	485	736
36.85	485	752
36.90	485	767
36.95	485	782
37.00	485	797
37.05	485	812
37.10	485	826
37.15	485	840
37.20	485	853
37.25	485	866
37.30	485	878
37.35	485	890
37.40	485	901
37.45	485	911
37.50	485	921
37.55	485	931
37.60	485	941
37.65	485	951
37.70	485	960
37.75	485	970
37.80	485	980
37.85	485	989
37.90	485	999
37.95	485	1,009
38.00	485	1,018
38.05	485	1,028
38.10	485	1,038
38.15	485	1,048
38.20	485	1,057
38.25	485	1,067
38.30	485	1,077
38.35	485	1,086
38.40	485	1,096
38.45	485	1,106
38.50	485	1,115
38.55	485	1,125
38.60	485	1,135
38.65	485	1,144
38.70	485	1,154
38.75	485	1,164
38.80	485	1,174
38.85	485	1,183
38.90	485	1,193
38.95	485	1,203
39.00	485	1,212
39.05	485	1,222
39.10	485	**1,230**
39.15	485	**1,234**
39.20	485	1,234
39.25	485	1,234
39.30	485	1,234
39.35	485	1,234
39.40	485	1,234
39.45	485	1,234
39.50	485	1,234

Summary for Pond SSD5: SUBSURFACE DRAINAGE AREA #5 (STORAGE)

Inflow = 0.39 cfs @ 12.27 hrs, Volume= 759 cf
Outflow = 0.08 cfs @ 12.80 hrs, Volume= 759 cf, Atten= 80%, Lag= 31.5 min
Primary = 0.08 cfs @ 12.80 hrs, Volume= 759 cf
Routed to Reach DP3 : DP3
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 31.71' @ 12.80 hrs Surf.Area= 1,174 sf Storage= 438 cf

Plug-Flow detention time= 68.9 min calculated for 759 cf (100% of inflow)
Center-of-Mass det. time= 68.8 min (827.0 - 758.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	31.00'	1,011 cf	**30.50'W x 38.50'L x 3.54'H Field A** 4,159 cf Overall - 1,632 cf Embedded = 2,527 cf x 40.0% Voids
#2A	31.50'	1,632 cf	**Cultec R-330XLHD** x 30 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 6 rows
		2,643 cf	Total Available Storage

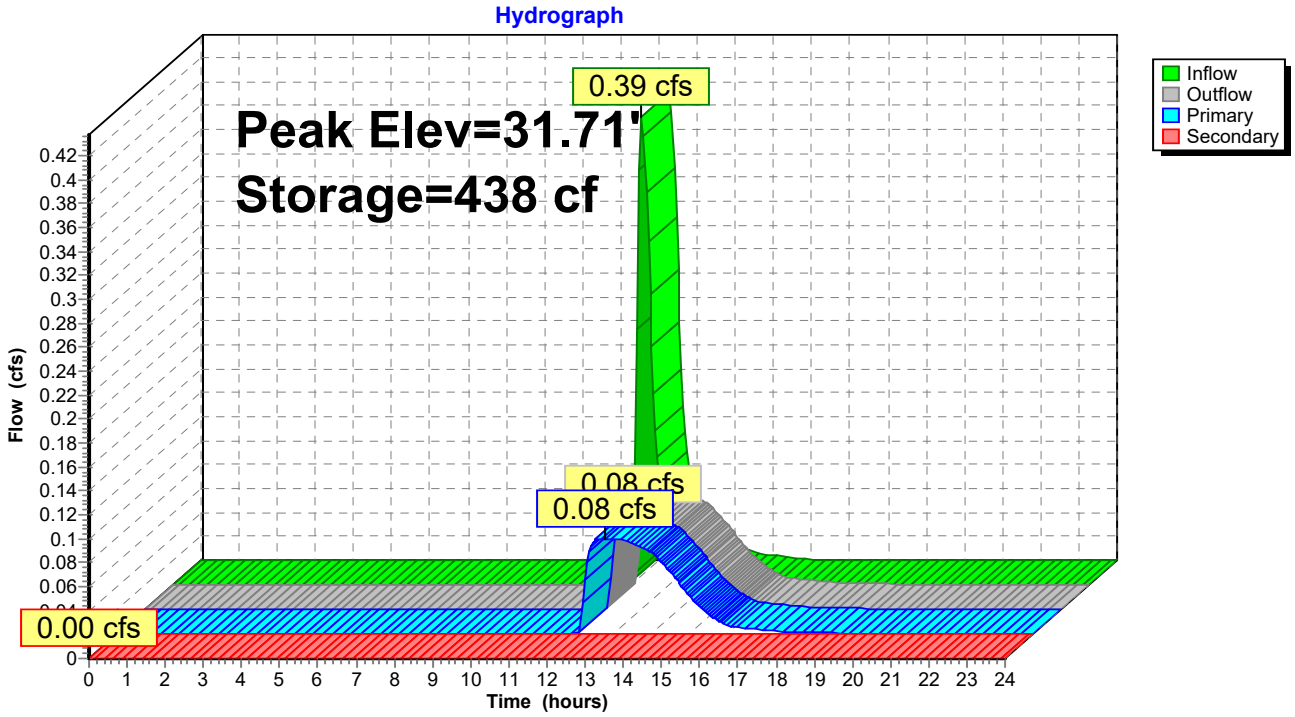
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	31.00'	**2.0" Round Culvert** L= 175.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 31.00' / 19.00' S= 0.0686 '/' Cc= 0.900 n= 0.013, Flow Area= 0.02 sf
#2	Secondary	37.00'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.08 cfs @ 12.80 hrs HW=31.71' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 0.08 cfs @ 3.63 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=31.00' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond SSD5: SUBSURFACE DRAINAGE AREA #5 (STORAGE)



Stage-Discharge for Pond SSD5: SUBSURFACE DRAINAGE AREA #5 (STORAGE)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
31.00	0.00	0.00	**0.00**
31.10	0.01	0.01	0.00
31.20	0.04	0.04	0.00
31.30	0.05	0.05	0.00
31.40	0.06	0.06	0.00
31.50	0.07	0.07	0.00
31.60	0.08	0.08	0.00
31.70	0.08	0.08	0.00
31.80	0.08	0.08	0.00
31.90	0.08	0.08	0.00
32.00	0.08	0.08	0.00
32.10	0.08	0.08	0.00
32.20	0.08	0.08	0.00
32.30	0.08	0.08	0.00
32.40	0.08	0.08	0.00
32.50	0.08	0.08	0.00
32.60	0.08	0.08	0.00
32.70	0.08	0.08	0.00
32.80	0.08	0.08	0.00
32.90	0.08	0.08	0.00
33.00	0.08	0.08	0.00
33.10	0.08	0.08	0.00
33.20	0.08	0.08	0.00
33.30	0.08	0.08	0.00
33.40	0.08	0.08	0.00
33.50	0.08	0.08	0.00
33.60	0.08	0.08	0.00
33.70	0.09	0.09	0.00
33.80	0.09	0.09	0.00
33.90	0.09	0.09	0.00
34.00	0.09	0.09	0.00
34.10	0.09	0.09	0.00
34.20	0.09	0.09	0.00
34.30	0.09	0.09	0.00
34.40	0.09	0.09	0.00
34.50	0.09	0.09	0.00
34.60	0.09	0.09	0.00
34.70	0.09	0.09	0.00
34.80	0.09	0.09	0.00
34.90	0.09	0.09	0.00
35.00	0.09	0.09	0.00
35.10	0.09	0.09	0.00
35.20	0.09	0.09	0.00
35.30	0.09	0.09	0.00
35.40	0.09	0.09	0.00
35.50	0.09	0.09	0.00
35.60	0.09	0.09	0.00
35.70	0.09	0.09	0.00
35.80	0.09	0.09	0.00
35.90	0.09	0.09	0.00
36.00	0.09	0.09	0.00
36.10	0.09	0.09	0.00
36.20	0.09	0.09	0.00
36.30	0.09	0.09	0.00
36.40	0.09	0.09	0.00
36.50	0.09	0.09	0.00
36.60	0.09	0.09	0.00
36.70	0.09	0.09	0.00
36.80	0.09	0.09	0.00
36.90	0.09	0.09	0.00
37.00	**0.09**	**0.09**	0.00

Stage-Area-Storage for Pond SSD5: SUBSURFACE DRAINAGE AREA #5 (STORAGE)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
31.00	0	33.65	2,184	36.30	2,643
31.05	23	33.70	2,218	36.35	2,643
31.10	47	33.75	2,250	36.40	2,643
31.15	70	33.80	2,281	36.45	2,643
31.20	94	33.85	2,310	36.50	2,643
31.25	117	33.90	2,338	36.55	2,643
31.30	141	33.95	2,364	36.60	2,643
31.35	164	34.00	2,388	36.65	2,643
31.40	188	34.05	2,412	36.70	2,643
31.45	211	34.10	2,435	36.75	2,643
31.50	235	34.15	2,459	36.80	2,643
31.55	284	34.20	2,482	36.85	2,643
31.60	334	34.25	2,506	36.90	2,643
31.65	383	34.30	2,529	36.95	2,643
31.70	432	34.35	2,553	37.00	2,643
31.75	482	34.40	2,576		
31.80	531	34.45	2,600		
31.85	580	34.50	2,623		
31.90	629	34.55	**2,643**		
31.95	677	34.60	2,643		
32.00	726	34.65	2,643		
32.05	775	34.70	2,643		
32.10	824	34.75	2,643		
32.15	872	34.80	2,643		
32.20	920	34.85	2,643		
32.25	967	34.90	2,643		
32.30	1,015	34.95	2,643		
32.35	1,062	35.00	2,643		
32.40	1,109	35.05	2,643		
32.45	1,157	35.10	2,643		
32.50	1,204	35.15	2,643		
32.55	1,251	35.20	2,643		
32.60	1,298	35.25	2,643		
32.65	1,345	35.30	2,643		
32.70	1,391	35.35	2,643		
32.75	1,438	35.40	2,643		
32.80	1,484	35.45	2,643		
32.85	1,529	35.50	2,643		
32.90	1,574	35.55	2,643		
32.95	1,619	35.60	2,643		
33.00	1,663	35.65	2,643		
33.05	1,706	35.70	2,643		
33.10	1,750	35.75	2,643		
33.15	1,792	35.80	2,643		
33.20	1,835	35.85	2,643		
33.25	1,876	35.90	2,643		
33.30	1,917	35.95	2,643		
33.35	1,958	36.00	2,643		
33.40	1,998	36.05	2,643		
33.45	2,037	36.10	2,643		
33.50	2,075	36.15	2,643		
33.55	2,112	36.20	2,643		
33.60	2,149	36.25	2,643		

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1: Post 1 Runoff Area=13,803 sf 0.00% Impervious Runoff Depth>3.14"
Flow Length=229' Tc=13.3 min CN=72 Runoff=0.92 cfs 3,613 cf

Subcatchment 2A: Post 2A Runoff Area=5,633 sf 67.30% Impervious Runoff Depth>5.03"
Tc=5.0 min CN=90 Runoff=0.73 cfs 2,360 cf

Subcatchment 2B: Post 2B Runoff Area=5,351 sf 75.91% Impervious Runoff Depth>5.25"
Tc=5.0 min CN=92 Runoff=0.71 cfs 2,343 cf

Subcatchment 3A: Post 3A Runoff Area=4,243 sf 86.57% Impervious Runoff Depth>5.60"
Tc=5.0 min CN=95 Runoff=0.58 cfs 1,979 cf

Subcatchment 3B: Post 3B Runoff Area=2,714 sf 96.35% Impervious Runoff Depth>5.83"
Tc=5.0 min CN=97 Runoff=0.38 cfs 1,319 cf

Subcatchment 4: Post 4 Runoff Area=5,122 sf 56.07% Impervious Runoff Depth>4.69"
Flow Length=131' Tc=8.6 min CN=87 Runoff=0.57 cfs 2,003 cf

Subcatchment 5: Post 5 Runoff Area=7,742 sf 59.11% Impervious Runoff Depth>4.80"
Flow Length=131' Tc=8.6 min CN=88 Runoff=0.87 cfs 3,099 cf

Subcatchment 6: Post 6 Runoff Area=9,340 sf 71.57% Impervious Runoff Depth>5.14"
Tc=5.0 min CN=91 Runoff=1.23 cfs 4,001 cf

Subcatchment 7: Post 7 Runoff Area=3,875 sf 0.00% Impervious Runoff Depth>3.24"
Flow Length=170' Tc=11.1 min CN=73 Runoff=0.28 cfs 1,046 cf

Subcatchment 8: Post 8 Runoff Area=1,030 sf 0.00% Impervious Runoff Depth>2.95"
Tc=5.0 min CN=70 Runoff=0.08 cfs 254 cf

Subcatchment 9: Post 9 Runoff Area=28,758 sf 3.57% Impervious Runoff Depth>3.44"
Tc=5.0 min CN=75 Runoff=2.67 cfs 8,249 cf

Subcatchment B1: BLDG #1 Runoff Area=3,522 sf 100.00% Impervious Runoff Depth>5.95"
Tc=5.0 min CN=98 Runoff=0.49 cfs 1,746 cf

Subcatchment B2: BLDG #2 Runoff Area=5,607 sf 100.00% Impervious Runoff Depth>5.95"
Tc=5.0 min CN=98 Runoff=0.79 cfs 2,780 cf

Subcatchment B3A: 1/2 BLDG #3 Runoff Area=2,283 sf 100.00% Impervious Runoff Depth>5.95"
Tc=5.0 min CN=98 Runoff=0.32 cfs 1,132 cf

Subcatchment B3B: 1/2 BLDG #3 Runoff Area=2,283 sf 100.00% Impervious Runoff Depth>5.95"
Tc=5.0 min CN=98 Runoff=0.32 cfs 1,132 cf

Subcatchment B4: BLDG #4 Runoff Area=5,609 sf 100.00% Impervious Runoff Depth>5.95"
Tc=5.0 min CN=98 Runoff=0.79 cfs 2,781 cf

Reach DP1: DP1post Inflow=1.17 cfs 3,871 cf
Outflow=1.17 cfs 3,871 cf

Reach DP2: DP2 Inflow=0.32 cfs 1,320 cf
Outflow=0.32 cfs 1,320 cf

Reach DP3: DP3 Inflow=5.14 cfs 18,701 cf
Outflow=5.14 cfs 18,701 cf

Reach DP4: DP4 Inflow=0.28 cfs 1,046 cf
Outflow=0.28 cfs 1,046 cf

Pond CB1: CB1 Peak Elev=34.38' Inflow=0.57 cfs 2,003 cf
Primary=0.57 cfs 2,003 cf Secondary=0.00 cfs 0 cf Outflow=0.57 cfs 2,003 cf

Pond CB10: CB10 Peak Elev=20.10' Inflow=0.87 cfs 3,099 cf
Primary=0.87 cfs 3,099 cf Secondary=0.00 cfs 0 cf Outflow=0.87 cfs 3,099 cf

Pond CB13: CB13 Peak Elev=20.58' Inflow=1.23 cfs 4,001 cf
Primary=1.23 cfs 4,001 cf Secondary=0.00 cfs 0 cf Outflow=1.23 cfs 4,001 cf

Pond CB4: CB4 Peak Elev=34.34' Inflow=0.58 cfs 1,979 cf
Primary=0.58 cfs 1,979 cf Secondary=0.00 cfs 0 cf Outflow=0.58 cfs 1,979 cf

Pond CB5: CB5 Peak Elev=34.35' Inflow=0.38 cfs 1,319 cf
Primary=0.38 cfs 1,319 cf Secondary=0.00 cfs 0 cf Outflow=0.38 cfs 1,319 cf

Pond CB6: CB6 Peak Elev=37.41' Inflow=0.73 cfs 2,360 cf
Primary=0.73 cfs 2,360 cf Secondary=0.00 cfs 0 cf Outflow=0.73 cfs 2,360 cf

Pond CB9: CB9 Peak Elev=37.41' Inflow=0.71 cfs 2,343 cf
Primary=0.71 cfs 2,343 cf Secondary=0.00 cfs 0 cf Outflow=0.71 cfs 2,343 cf

Pond DMH11: DMH11 Peak Elev=20.56' Inflow=2.04 cfs 7,100 cf
12.0" Round Culvert n=0.013 L=42.0' S=0.0024 '/' Outflow=2.04 cfs 7,100 cf

Pond DMH2: DMH2 Peak Elev=34.52' Inflow=1.48 cfs 5,301 cf
12.0" Round Culvert n=0.013 L=29.0' S=0.0034 '/' Outflow=1.48 cfs 5,301 cf

Pond DMH7: DMH7 Peak Elev=37.51' Inflow=1.44 cfs 4,703 cf
12.0" Round Culvert n=0.013 L=30.0' S=0.0033 '/' Outflow=1.44 cfs 4,703 cf

Pond SSD1: SUBSURFACE DRAINAGE AREA Peak Elev=35.92' Storage=3,136 cf Inflow=2.57 cfs 9,213 cf
0.04 cfs 2,760 cf Primary=0.77 cfs 2,907 cf Secondary=0.00 cfs 0 cf Tertiary=0.71 cfs 1,524 cf Outflow=1.53 cfs 7,192 cf

Pond SSD2: SUBSURFACE DRAINAGE AREA Peak Elev=38.48' Storage=3,544 cf Inflow=1.76 cfs 5,835 cf
Discarded=0.05 cfs 2,854 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.05 cfs 2,854 cf

Pond SSD3: SUBSURFACE DRAINAGE AREA Peak Elev=20.45' Storage=1,746 cf Inflow=2.52 cfs 8,846 cf
Discarded=0.03 cfs 1,930 cf Primary=1.96 cfs 6,021 cf Secondary=0.00 cfs 0 cf Outflow=1.99 cfs 7,950 cf

Pond SSD4: SUBSURFACE DRAINAGE AREA Peak Elev=37.58' Storage=936 cf Inflow=0.79 cfs 2,781 cf
ed=0.01 cfs 856 cf Primary=0.27 cfs 258 cf Secondary=0.00 cfs 0 cf Tertiary=0.25 cfs 1,067 cf Outflow=0.53 cfs 2,180 cf

Pond SSD5: SUBSURFACE DRAINAGE AREA Peak Elev=32.34' Storage=1,050 cf Inflow=0.71 cfs 1,524 cf
Primary=0.08 cfs 1,524 cf Secondary=0.00 cfs 0 cf Outflow=0.08 cfs 1,524 cf

Total Runoff Area = 106,915 sf Runoff Volume = 39,837 cf Average Runoff Depth = 4.47"
54.54% Pervious = 58,311 sf 45.46% Impervious = 48,604 sf

Summary for Subcatchment 1: Post 1

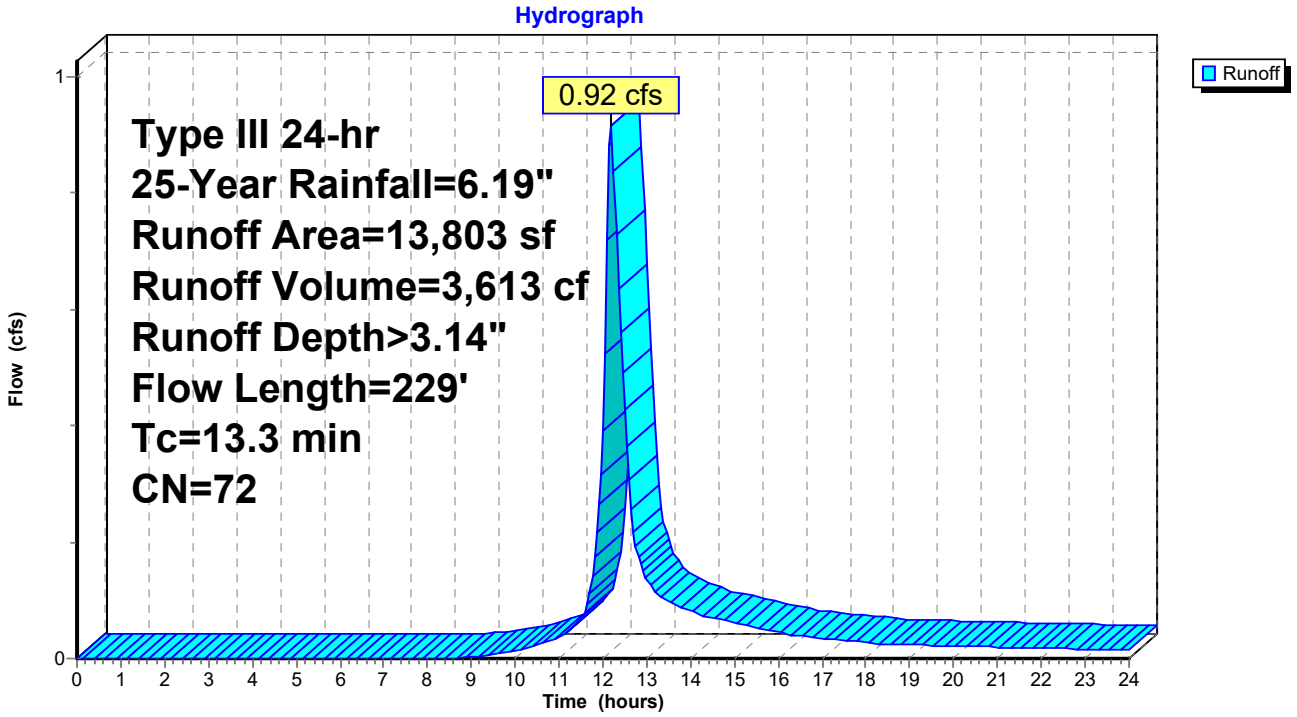
Runoff = 0.92 cfs @ 12.19 hrs, Volume= 3,613 cf, Depth> 3.14"
Routed to Reach DP1 : DP1post

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.19"

Area (sf)	CN	Description
5,871	74	>75% Grass cover, Good, HSG C
7,932	70	Woods, Good, HSG C
0	98	Paved parking, HSG C
0	98	Paved parking, HSG C
13,803	72	Weighted Average
13,803		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	50	0.0300	0.08		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.35"
1.1	67	0.0400	1.00		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.1	58	0.0300	0.87		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.9	54	0.0400	1.00		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
13.3	229	Total			

Subcatchment 1: Post 1



Summary for Subcatchment 2A: Post 2A

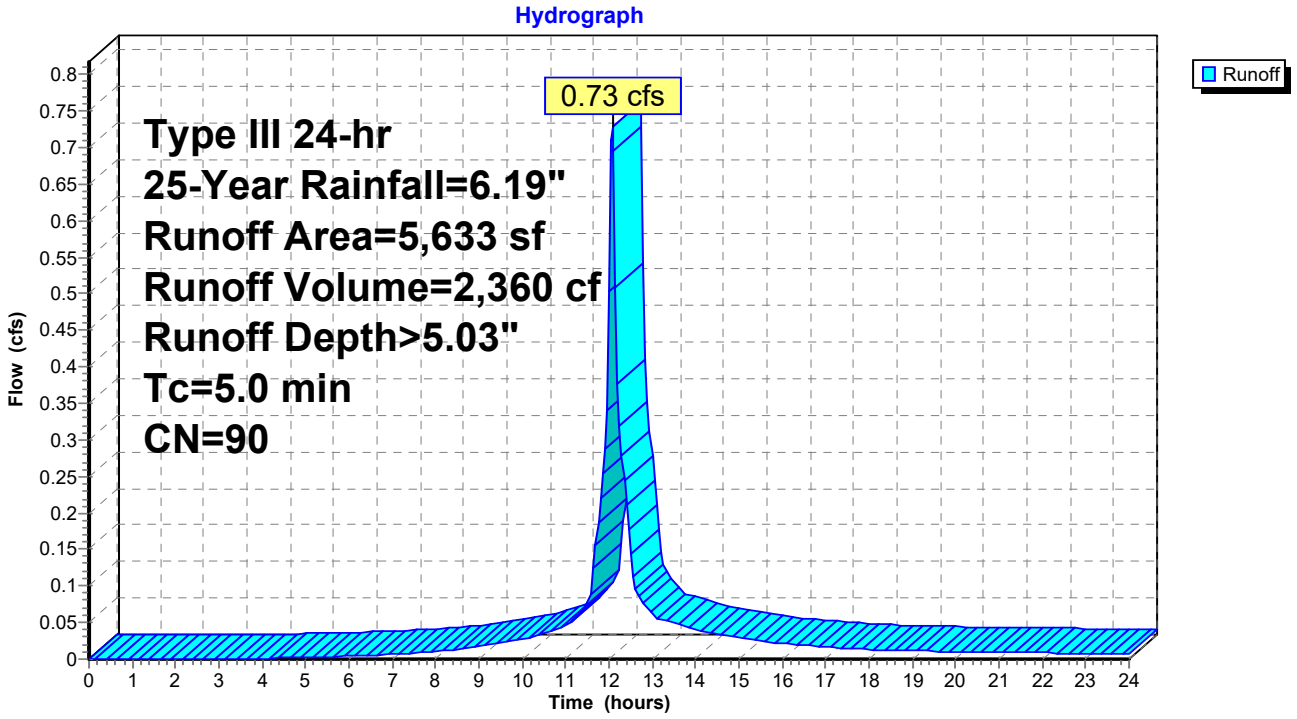
Runoff = 0.73 cfs @ 12.07 hrs, Volume= 2,360 cf, Depth> 5.03"
Routed to Pond CB6 : CB6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.19"

Area (sf)	CN	Description
1,714	74	>75% Grass cover, Good, HSG C
128	70	Woods, Good, HSG C
3,315	98	Paved parking, HSG C
476	98	Paved parking, HSG C
5,633	90	Weighted Average
1,842		32.70% Pervious Area
3,791		67.30% Impervious Area

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

Subcatchment 2A: Post 2A



Summary for Subcatchment 2B: Post 2B

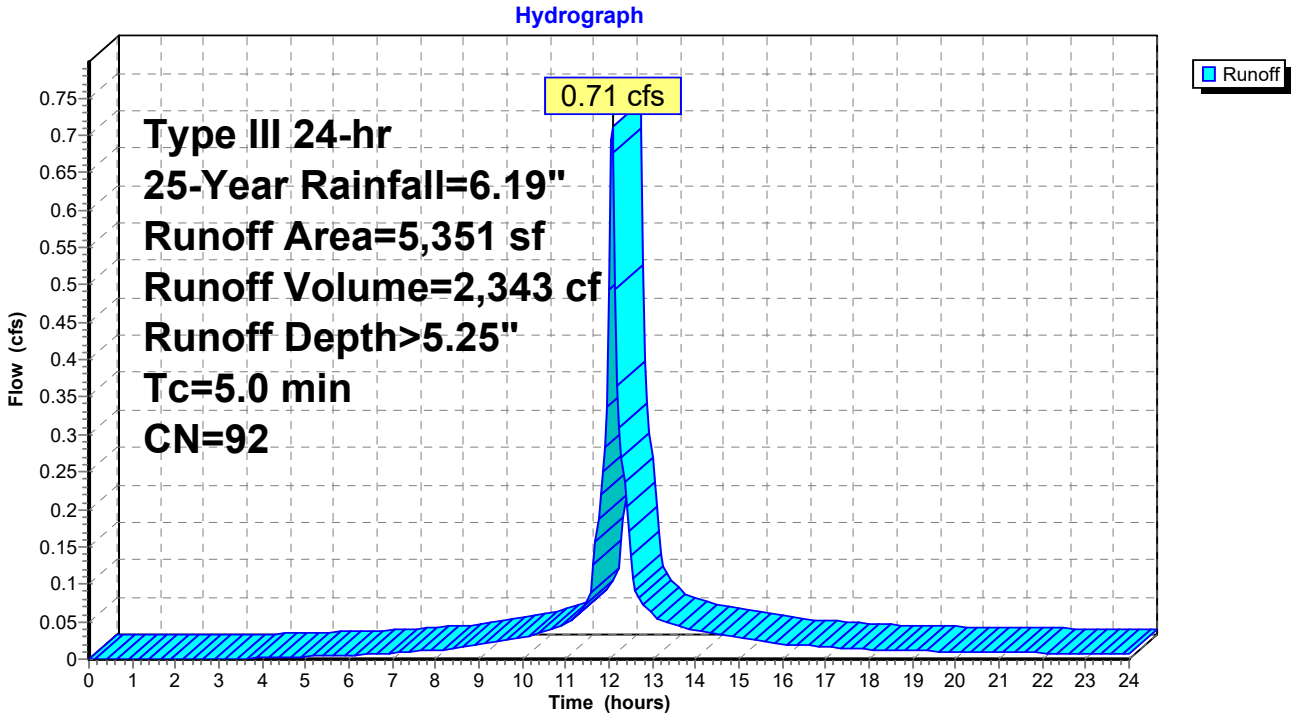
Runoff = 0.71 cfs @ 12.07 hrs, Volume= 2,343 cf, Depth> 5.25"
Routed to Pond CB9 : CB9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.19"

Area (sf)	CN	Description
1,174	74	>75% Grass cover, Good, HSG C
115	70	Woods, Good, HSG C
3,796	98	Paved parking, HSG C
266	98	Paved parking, HSG C
5,351	92	Weighted Average
1,289		24.09% Pervious Area
4,062		75.91% Impervious Area

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

Subcatchment 2B: Post 2B



Summary for Subcatchment 3A: Post 3A

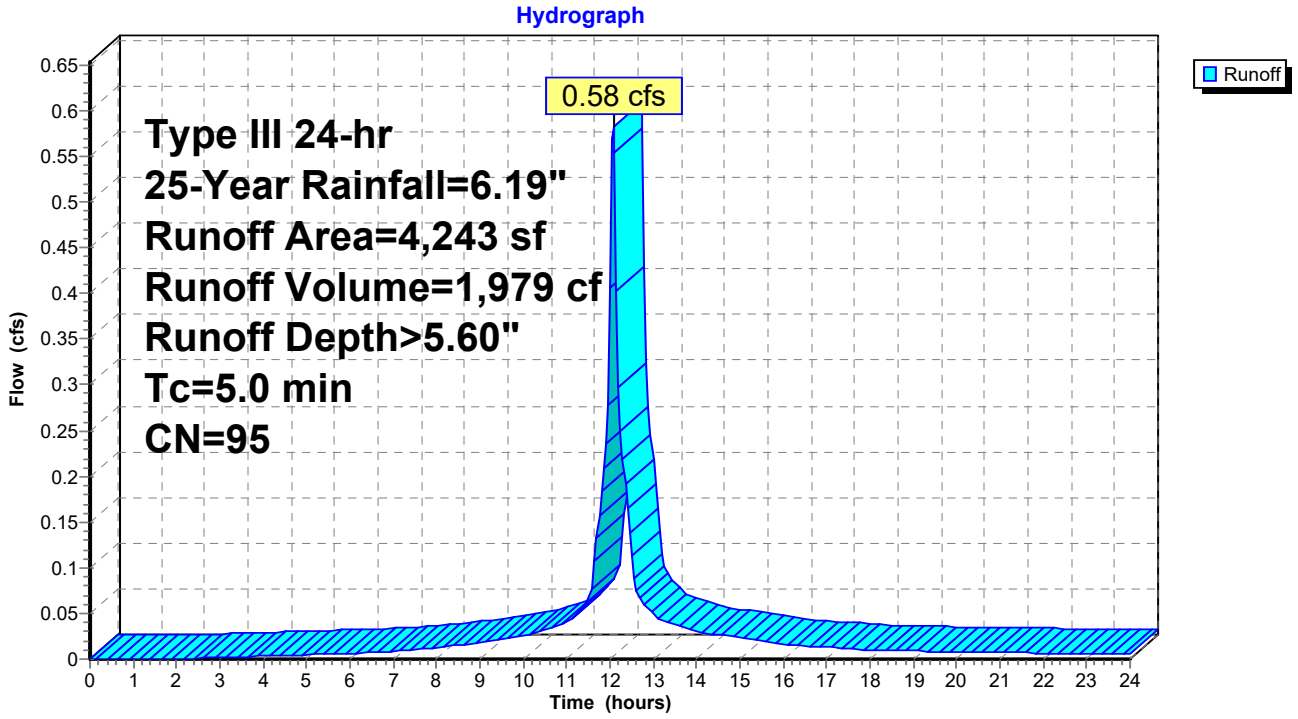
Runoff = 0.58 cfs @ 12.07 hrs, Volume= 1,979 cf, Depth> 5.60"
Routed to Pond CB4 : CB4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.19"

Area (sf)	CN	Description
570	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
3,241	98	Paved parking, HSG C
432	98	Paved parking, HSG C
4,243	95	Weighted Average
570		13.43% Pervious Area
3,673		86.57% Impervious Area

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

Subcatchment 3A: Post 3A



Summary for Subcatchment 3B: Post 3B

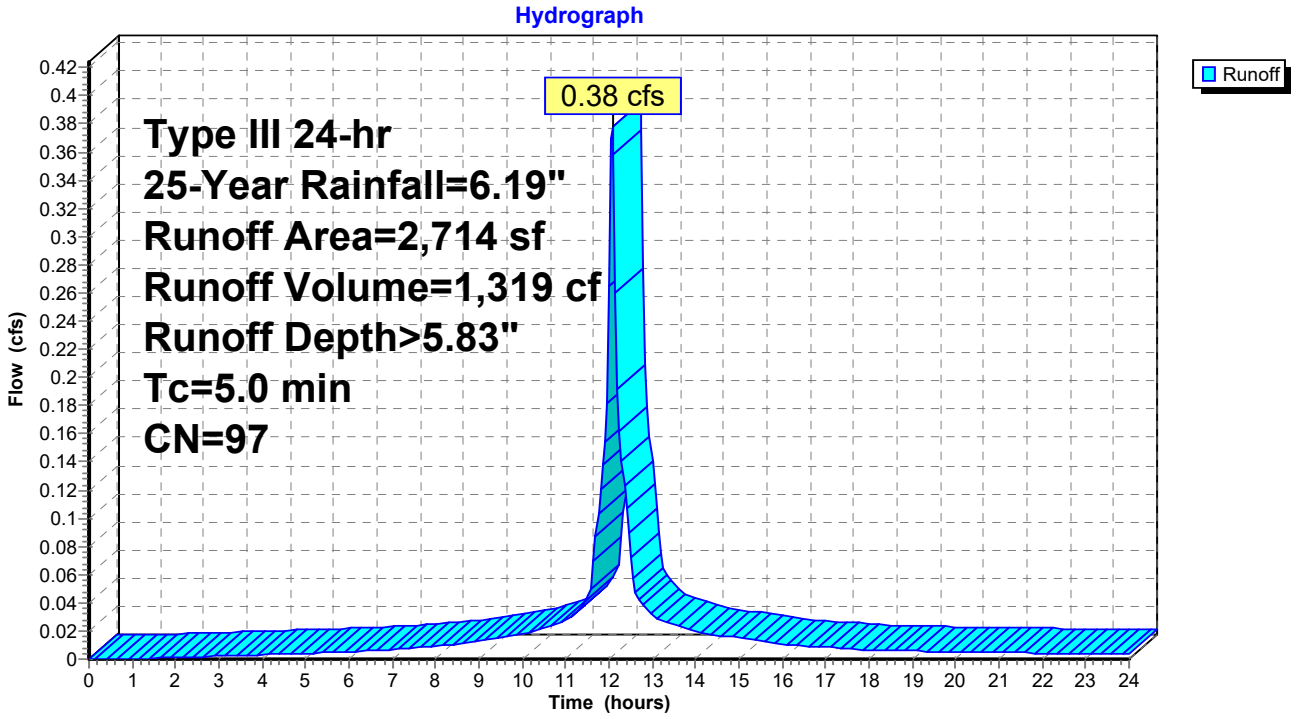
Runoff = 0.38 cfs @ 12.07 hrs, Volume= 1,319 cf, Depth> 5.83"
Routed to Pond CB5 : CB5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.19"

Area (sf)	CN	Description
99	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
2,615	98	Paved parking, HSG C
0	98	Paved parking, HSG C
2,714	97	Weighted Average
99		3.65% Pervious Area
2,615		96.35% Impervious Area

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

Subcatchment 3B: Post 3B



Summary for Subcatchment 4: Post 4

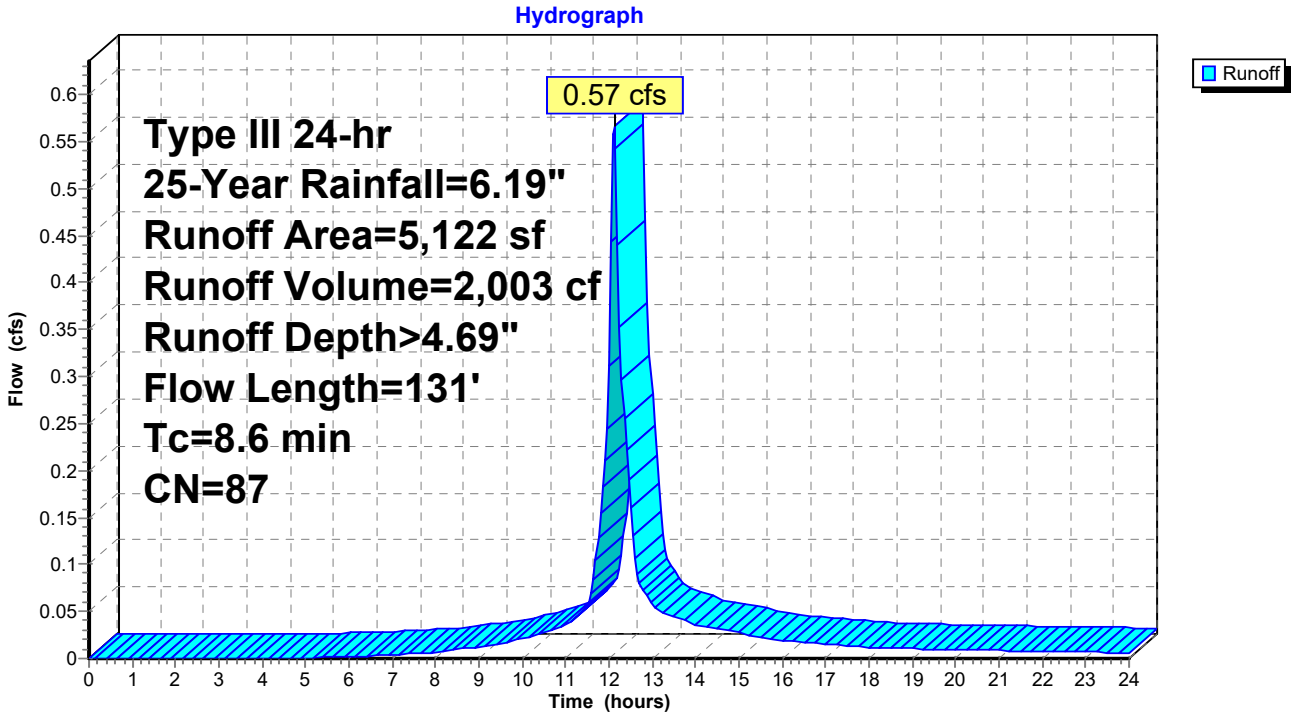
Runoff = 0.57 cfs @ 12.12 hrs, Volume= 2,003 cf, Depth> 4.69"
Routed to Pond CB1 : CB1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.19"

Area (sf)	CN	Description
2,250	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
2,872	98	Paved parking, HSG C
0	98	Paved parking, HSG C
5,122	87	Weighted Average
2,250		43.93% Pervious Area
2,872		56.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0200	0.10		**Sheet Flow, GRASS** Grass: Dense n= 0.240 P2= 3.35"
0.5	39	0.0300	1.21		**Shallow Concentrated Flow, GRASS** Short Grass Pasture Kv= 7.0 fps
0.0	13	0.0800	5.74		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
0.1	29	0.0300	3.52		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
8.6	131	Total			

Subcatchment 4: Post 4



Summary for Subcatchment 5: Post 5

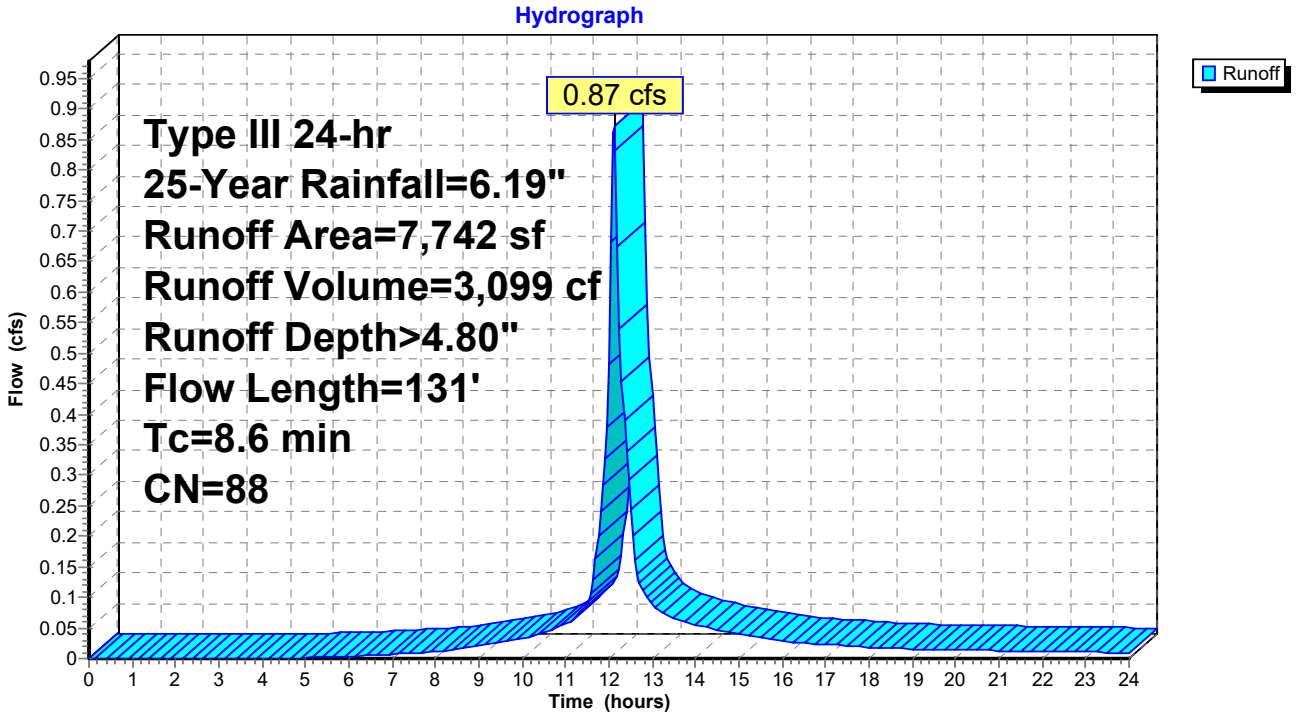
Runoff = 0.87 cfs @ 12.12 hrs, Volume= 3,099 cf, Depth> 4.80"
Routed to Pond CB10 : CB10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.19"

Area (sf)	CN	Description
1,823	98	Unconnected roofs, HSG C
3,166	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
2,753	98	Paved parking, HSG C
0	98	Paved parking, HSG C
7,742	88	Weighted Average
3,166		40.89% Pervious Area
4,576		59.11% Impervious Area
1,823		39.84% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0200	0.10		**Sheet Flow, GRASS** Grass: Dense n= 0.240 P2= 3.35"
0.5	39	0.0300	1.21		**Shallow Concentrated Flow, GRASS** Short Grass Pasture Kv= 7.0 fps
0.0	13	0.0800	5.74		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
0.1	29	0.0300	3.52		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
8.6	131	Total			

Subcatchment 5: Post 5



Summary for Subcatchment 6: Post 6

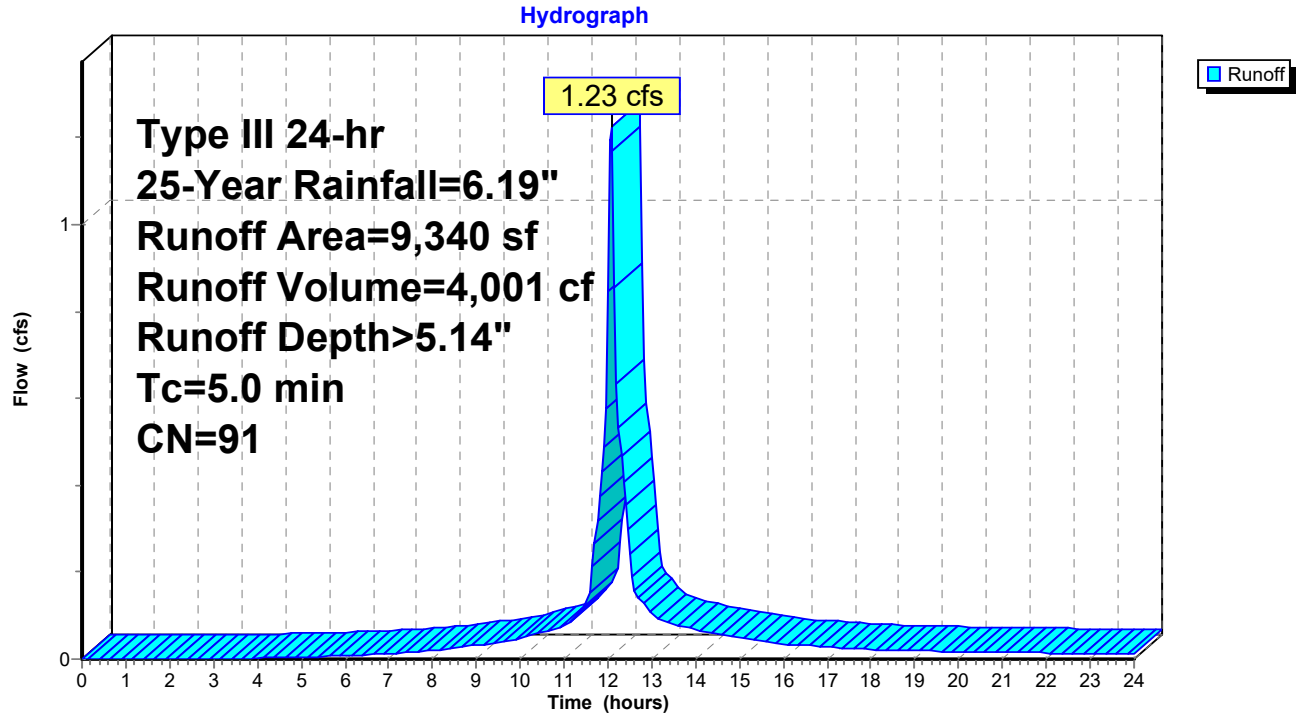
Runoff = 1.23 cfs @ 12.07 hrs, Volume= 4,001 cf, Depth> 5.14"
Routed to Pond CB13 : CB13

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.19"

Area (sf)	CN	Description
2,655	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
5,754	98	Paved parking, HSG C
931	98	Paved parking, HSG C
9,340	91	Weighted Average
2,655		28.43% Pervious Area
6,685		71.57% Impervious Area

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

Subcatchment 6: Post 6



Summary for Subcatchment 7: Post 7

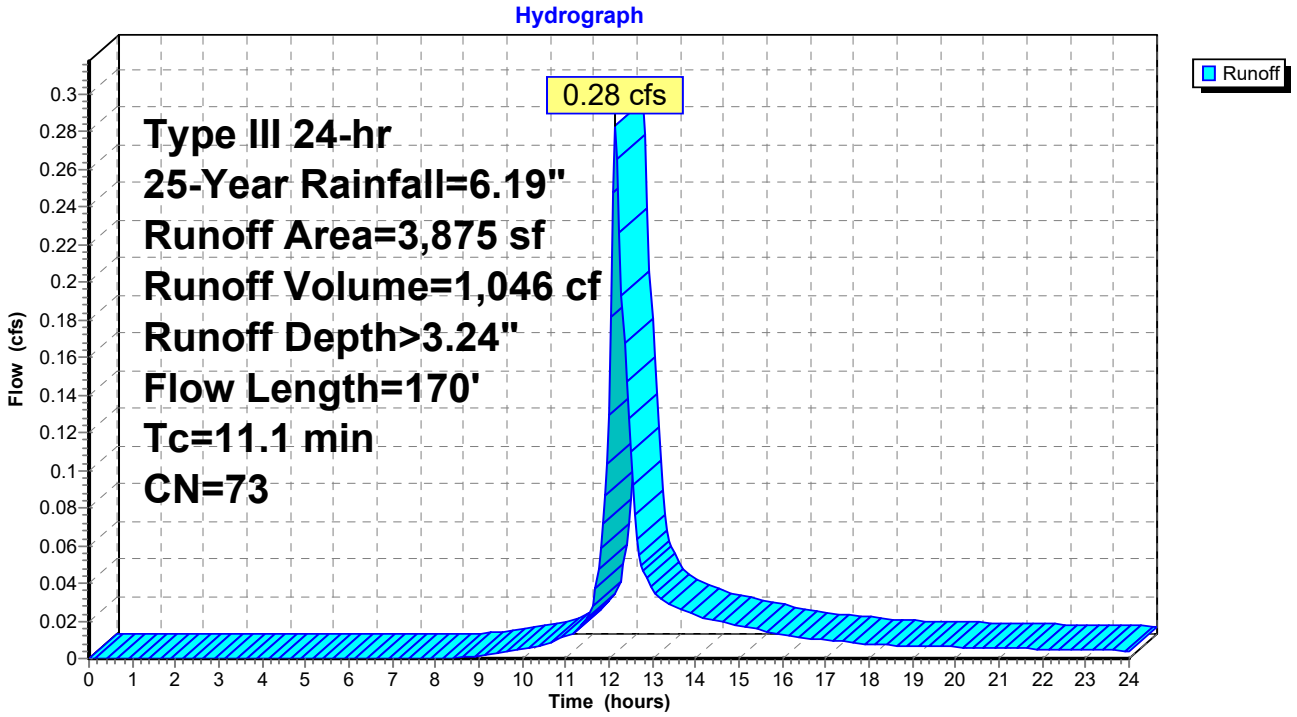
Runoff = 0.28 cfs @ 12.16 hrs, Volume= 1,046 cf, Depth> 3.24"
Routed to Reach DP4 : DP4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.19"

Area (sf)	CN	Description
3,170	74	>75% Grass cover, Good, HSG C
705	70	Woods, Good, HSG C
0	98	Paved parking, HSG C
0	98	Paved parking, HSG C
3,875	73	Weighted Average
3,875		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	50	0.0400	0.09		**Sheet Flow, WOODS** Woods: Light underbrush n= 0.400 P2= 3.35"
0.7	55	0.0400	1.40		**Shallow Concentrated Flow, WOODS** Short Grass Pasture Kv= 7.0 fps
1.2	53	0.0200	0.71		**Shallow Concentrated Flow, WOODS** Woodland Kv= 5.0 fps
0.1	12	0.0700	1.85		**Shallow Concentrated Flow, GRASS** Short Grass Pasture Kv= 7.0 fps
11.1	170	Total			

Subcatchment 7: Post 7



Summary for Subcatchment 8: Post 8

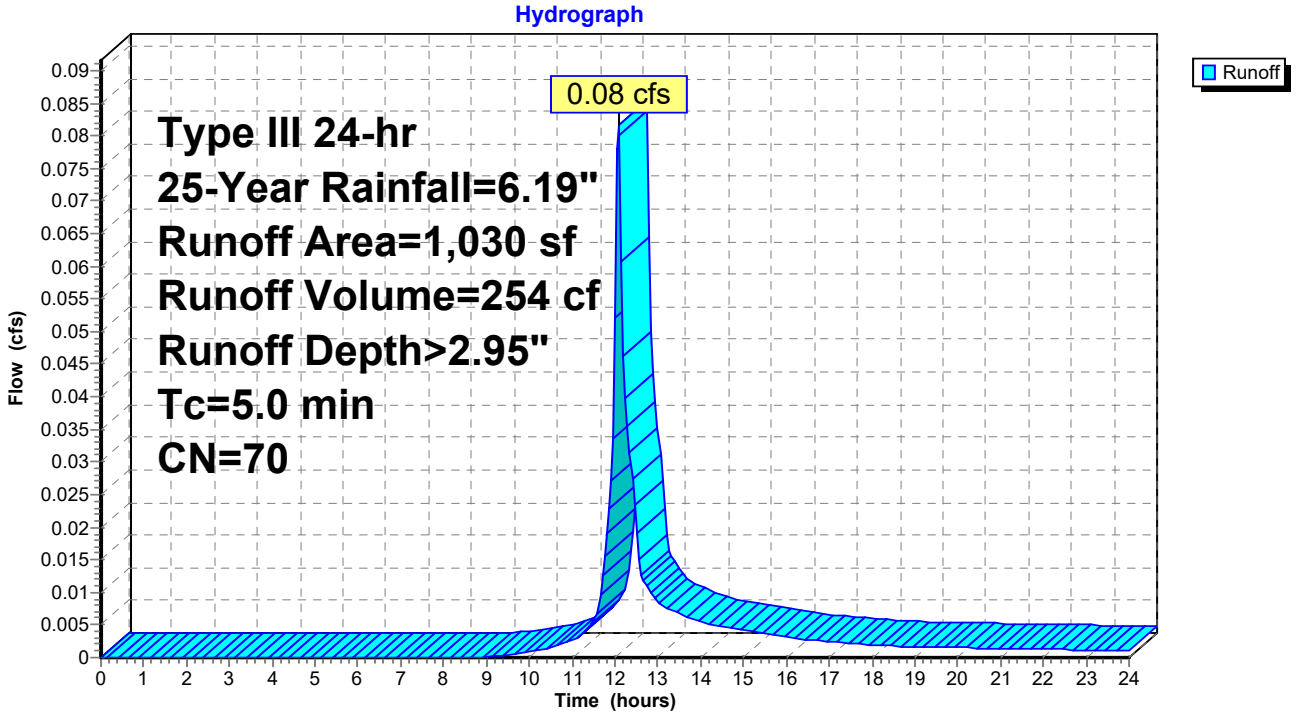
Runoff = 0.08 cfs @ 12.08 hrs, Volume= 254 cf, Depth> 2.95"
Routed to Reach DP2 : DP2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.19"

Area (sf)	CN	Description
0	74	>75% Grass cover, Good, HSG C
1,030	70	Woods, Good, HSG C
0	98	Paved parking, HSG C
0	98	Paved parking, HSG C
1,030	70	Weighted Average
1,030		100.00% Pervious Area

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

Subcatchment 8: Post 8



Summary for Subcatchment 9: Post 9

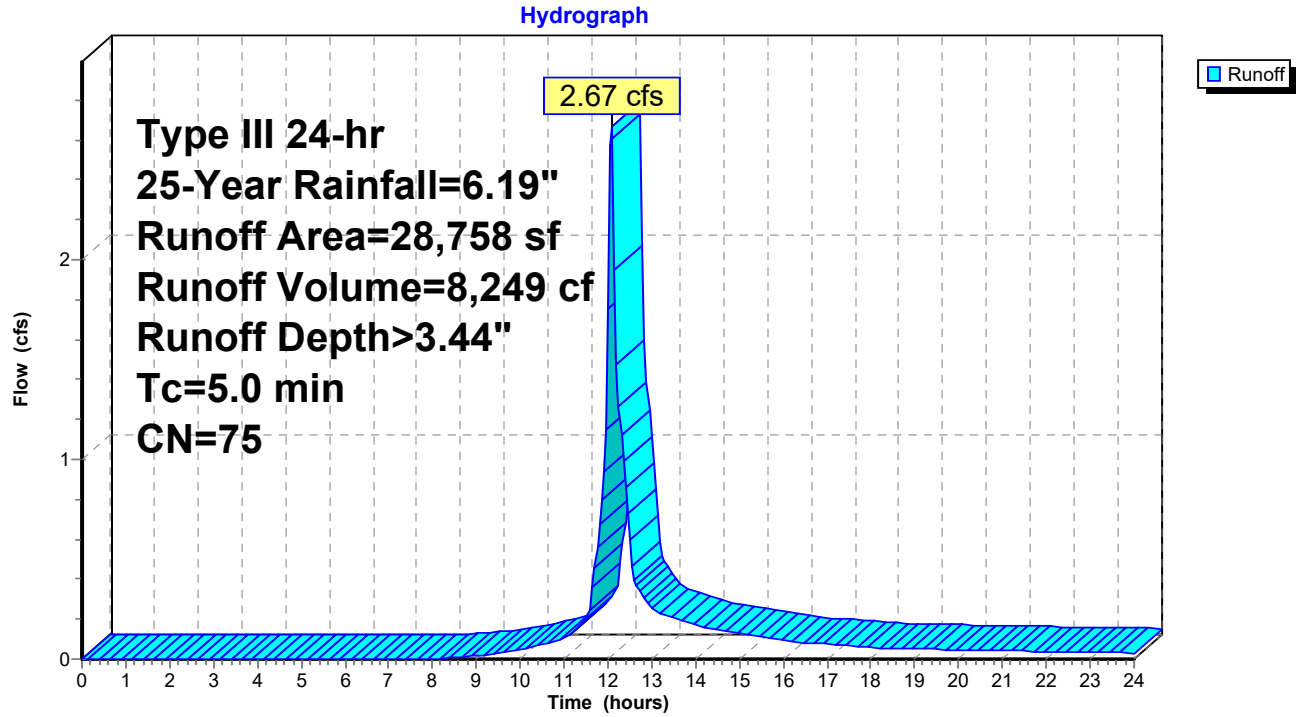
Runoff = 2.67 cfs @ 12.08 hrs, Volume= 8,249 cf, Depth> 3.44"
Routed to Reach DP3 : DP3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.19"

Area (sf)	CN	Description
25,955	74	>75% Grass cover, Good, HSG C
1,777	70	Woods, Good, HSG C
0	98	Paved parking, HSG C
1,026	98	Paved parking, HSG C
28,758	75	Weighted Average
27,732		96.43% Pervious Area
1,026		3.57% Impervious Area

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

Subcatchment 9: Post 9



Summary for Subcatchment B1: BLDG #1

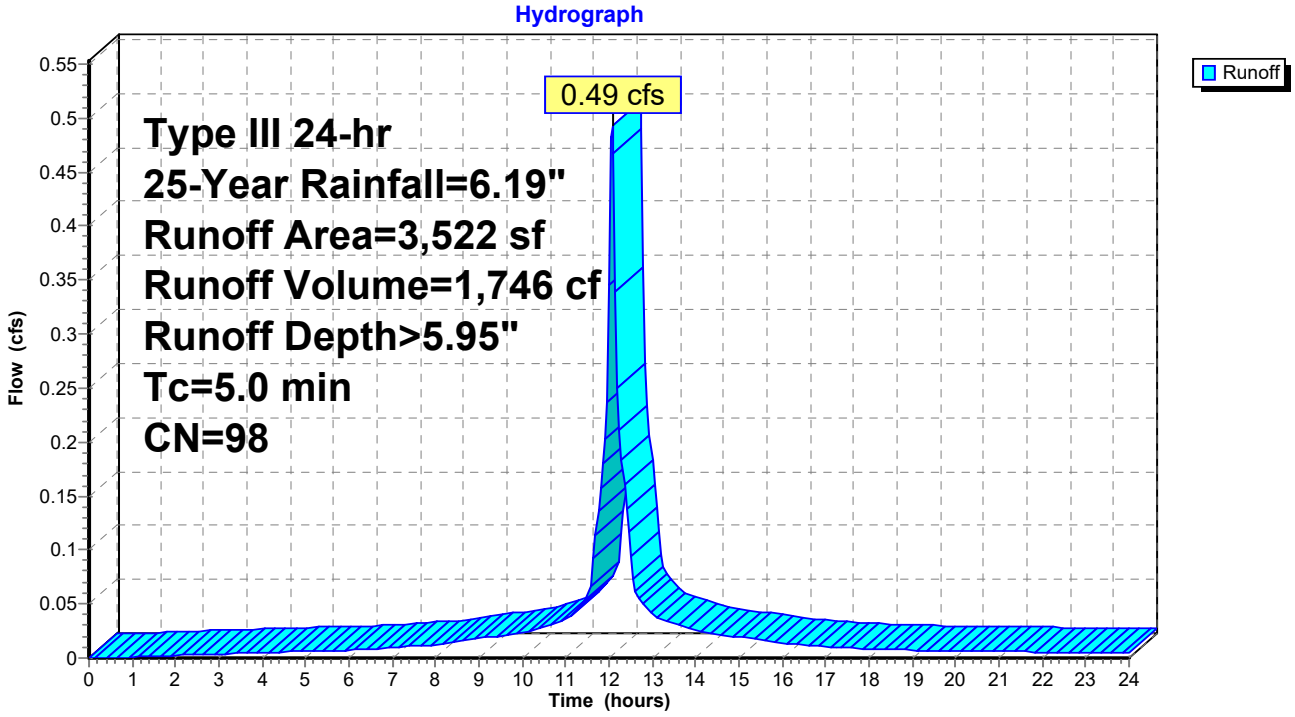
Runoff = 0.49 cfs @ 12.07 hrs, Volume= 1,746 cf, Depth> 5.95"
Routed to Pond SSD3 : SUBSURFACE DRAINAGE AREA #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.19"

Area (sf)	CN	Description
3,522	98	Unconnected roofs, HSG C
3,522		100.00% Impervious Area
3,522		100.00% Unconnected

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

Subcatchment B1: BLDG #1



Summary for Subcatchment B2: BLDG #2

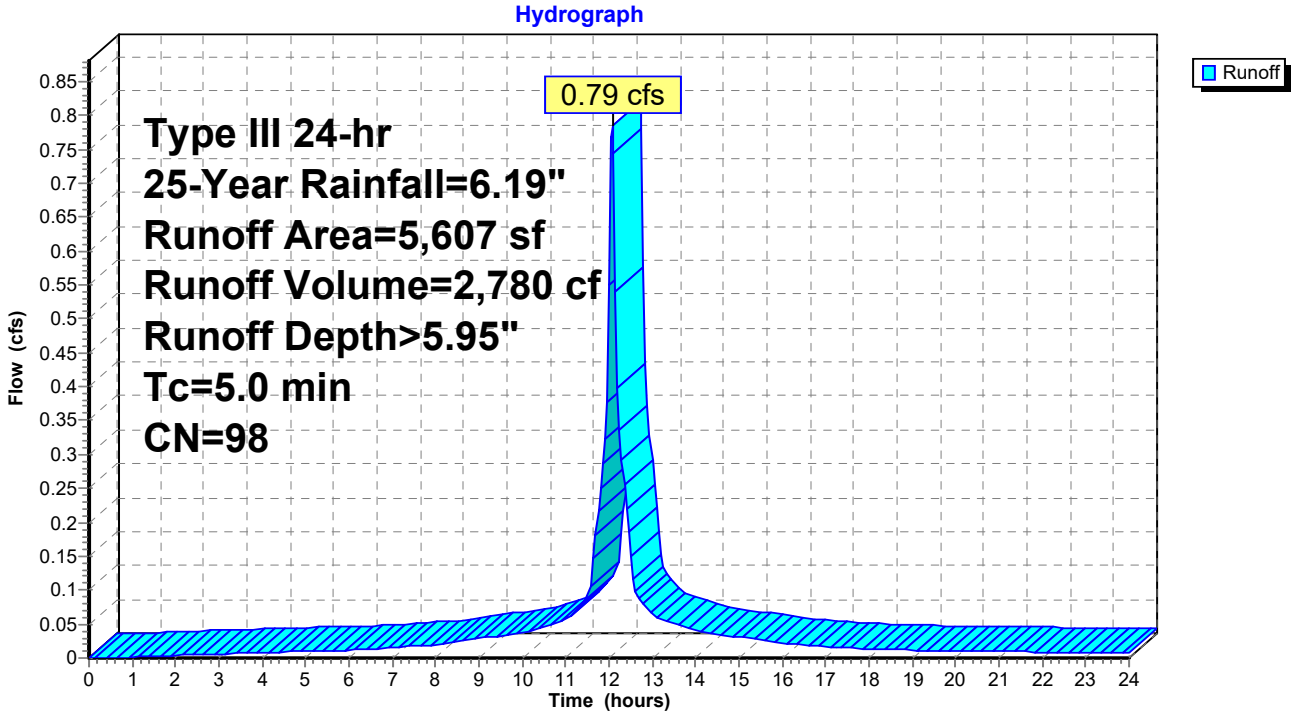
Runoff = 0.79 cfs @ 12.07 hrs, Volume= 2,780 cf, Depth> 5.95"
Routed to Pond SSD1 : SUBSURFACE DRAINAGE AREA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.19"

Area (sf)	CN	Description
5,607	98	Unconnected roofs, HSG C
5,607		100.00% Impervious Area
5,607		100.00% Unconnected

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

Subcatchment B2: BLDG #2



Summary for Subcatchment B3A: 1/2 BLDG #3

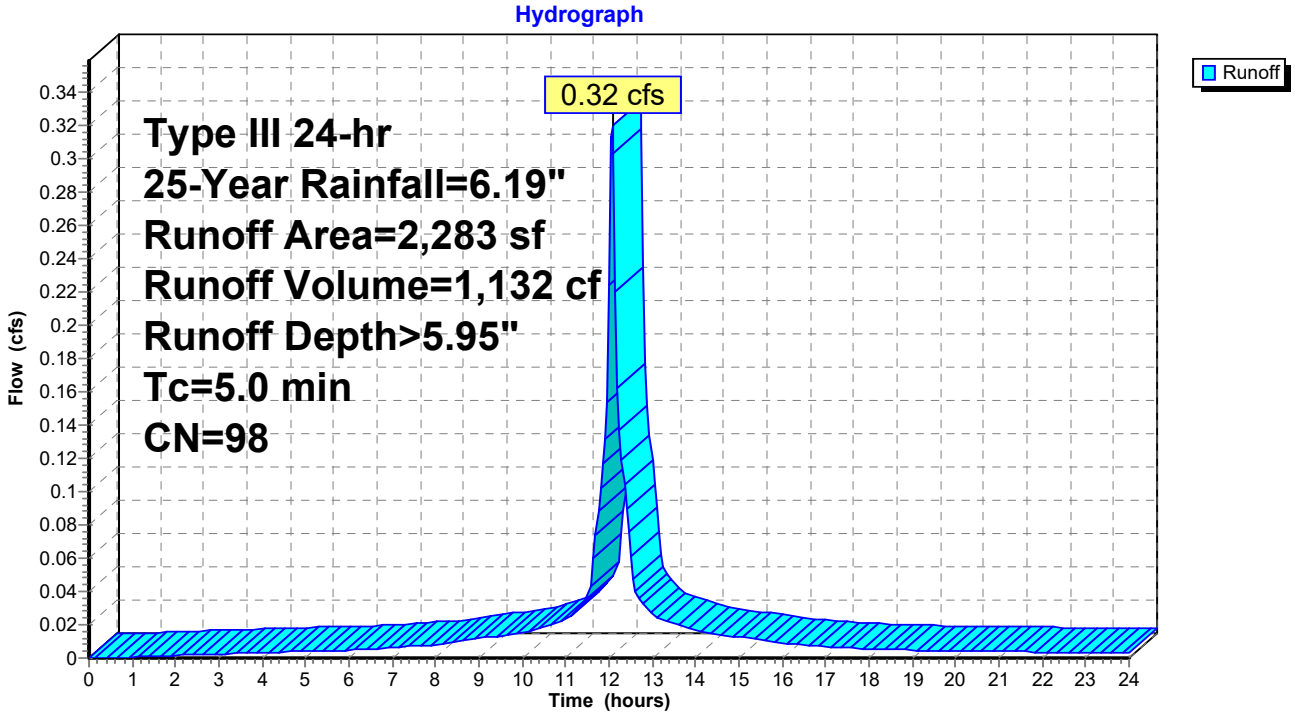
Runoff = 0.32 cfs @ 12.07 hrs, Volume= 1,132 cf, Depth> 5.95"
Routed to Pond SSD2 : SUBSURFACE DRAINAGE AREA #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.19"

Area (sf)	CN	Description
2,283	98	Unconnected roofs, HSG C
2,283		100.00% Impervious Area
2,283		100.00% Unconnected

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

Subcatchment B3A: 1/2 BLDG #3



Summary for Subcatchment B3B: 1/2 BLDG #3

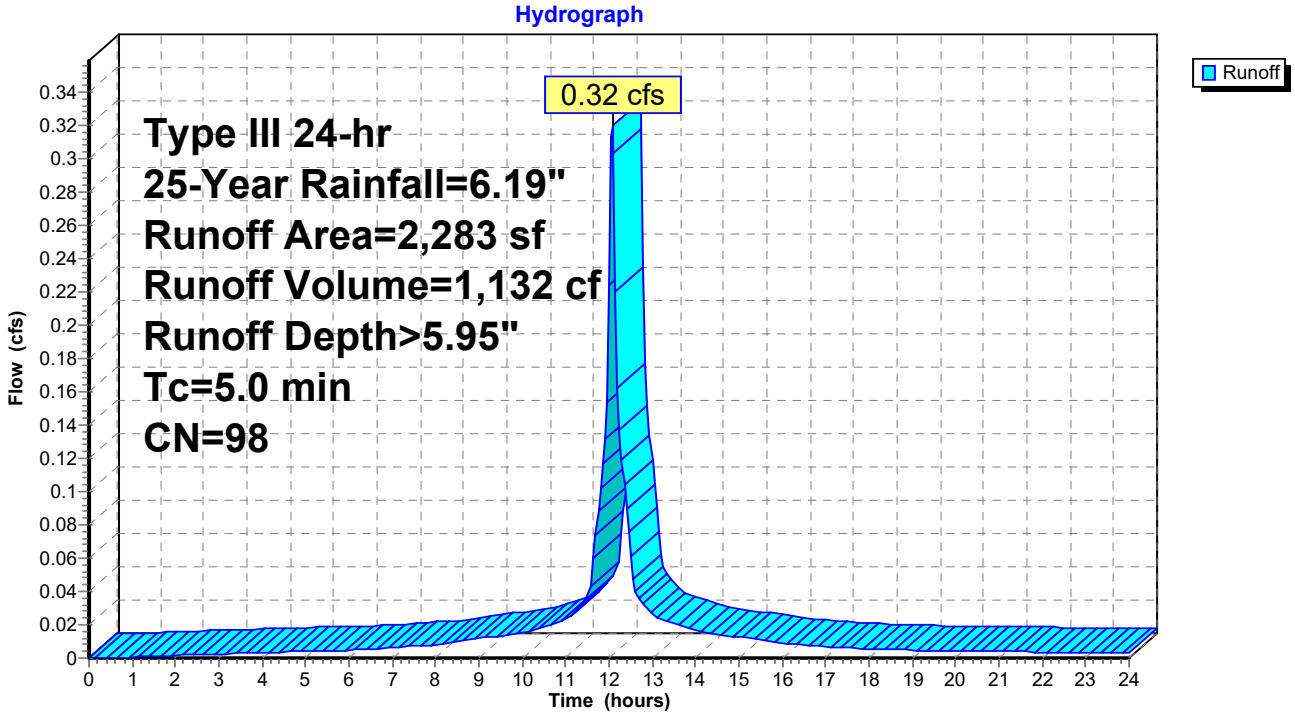
Runoff = 0.32 cfs @ 12.07 hrs, Volume= 1,132 cf, Depth> 5.95"
Routed to Pond SSD1 : SUBSURFACE DRAINAGE AREA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.19"

Area (sf)	CN	Description
2,283	98	Unconnected roofs, HSG C
2,283		100.00% Impervious Area
2,283		100.00% Unconnected

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

Subcatchment B3B: 1/2 BLDG #3



Summary for Subcatchment B4: BLDG #4

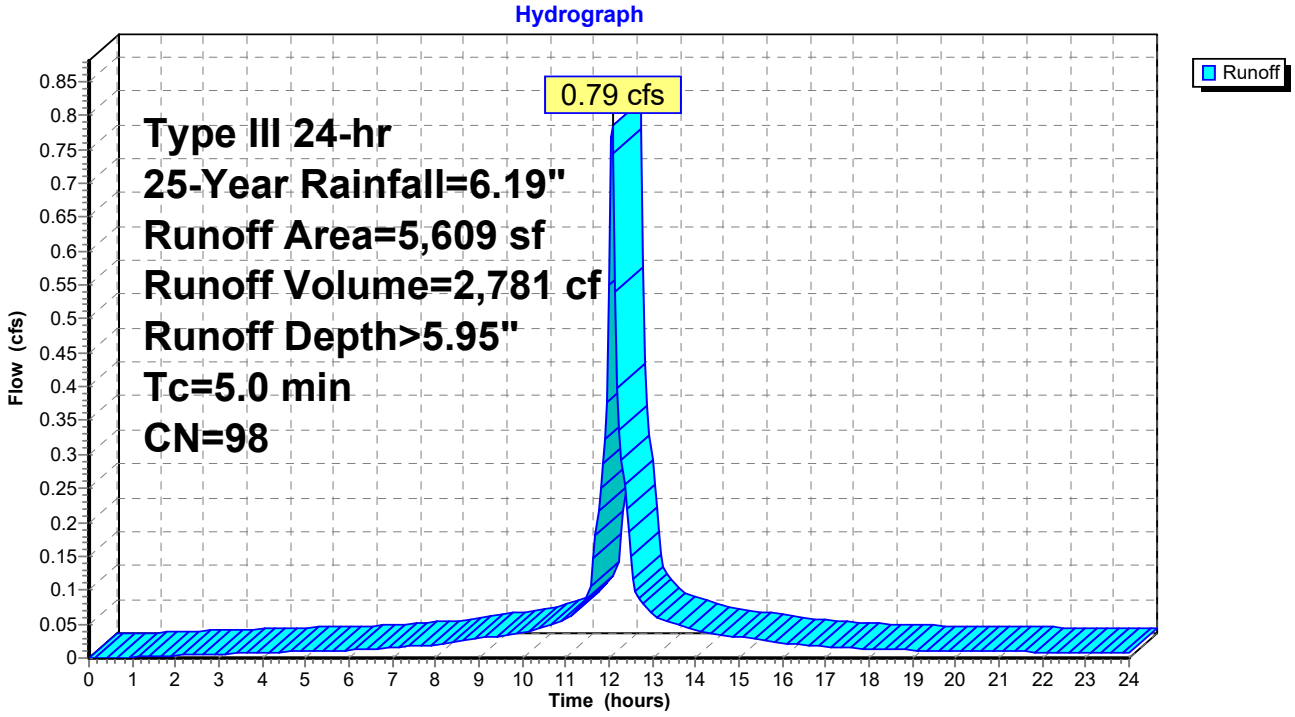
Runoff = 0.79 cfs @ 12.07 hrs, Volume= 2,781 cf, Depth> 5.95"
Routed to Pond SSD4 : SUBSURFACE DRAINAGE AREA #4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.19"

Area (sf)	CN	Description
5,609	98	Unconnected roofs, HSG C
5,609		100.00% Impervious Area
5,609		100.00% Unconnected

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

Subcatchment B4: BLDG #4

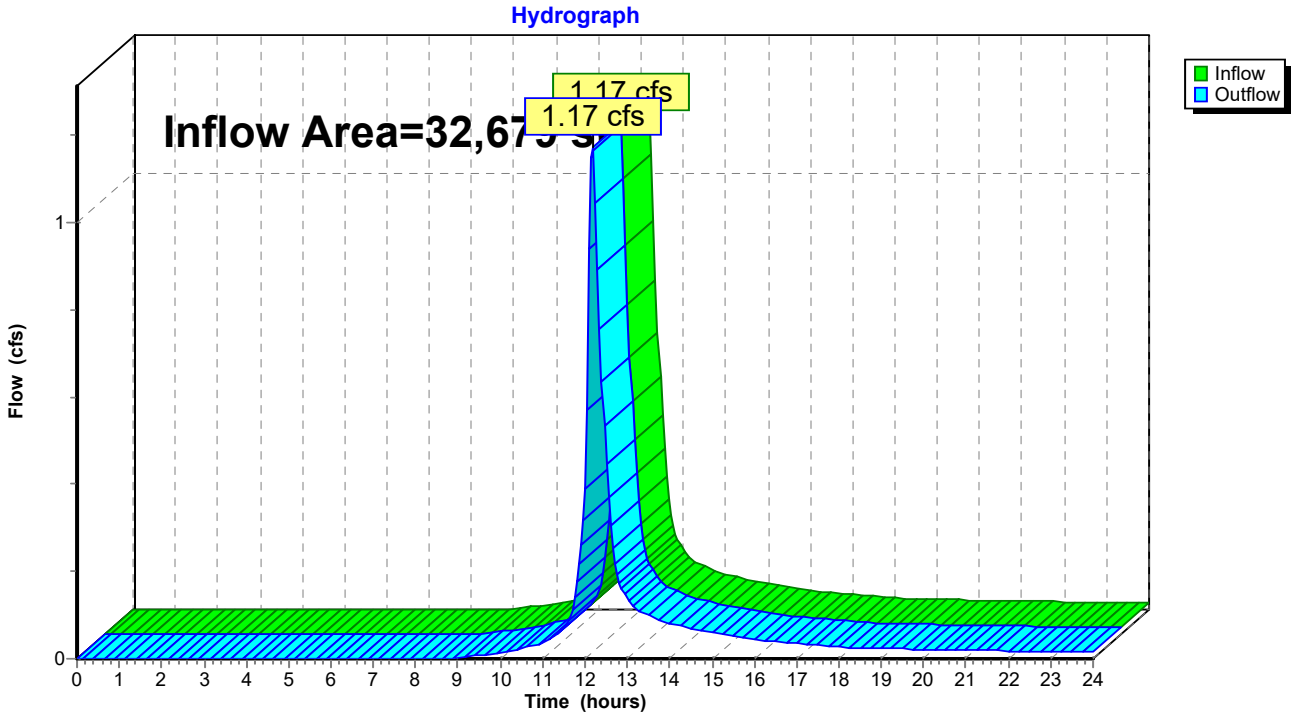


Summary for Reach DP1: DP1post

Inflow Area = 32,679 sf, 48.18% Impervious, Inflow Depth > 1.42" for 25-Year event
Inflow = 1.17 cfs @ 12.18 hrs, Volume= 3,871 cf
Outflow = 1.17 cfs @ 12.18 hrs, Volume= 3,871 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP1: DP1post

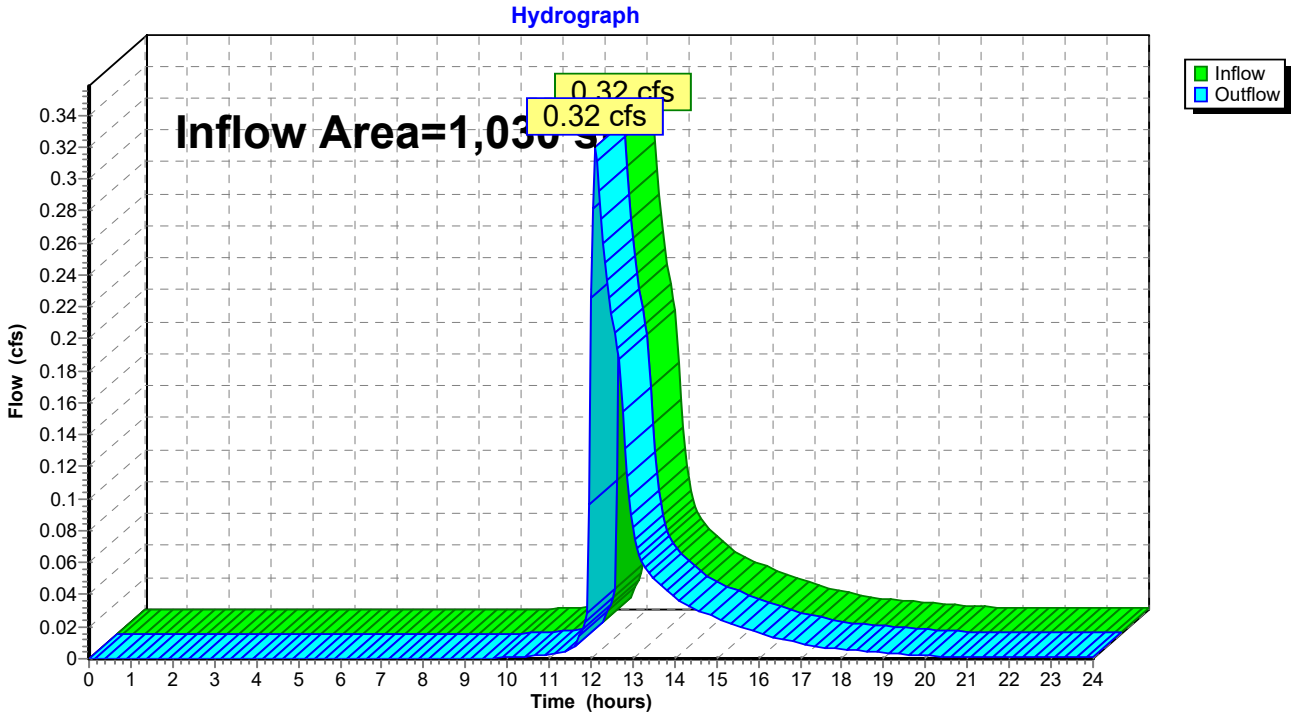


Summary for Reach DP2: DP2

Inflow Area = 1,030 sf, 0.00% Impervious, Inflow Depth > 15.38" for 25-Year event
Inflow = 0.32 cfs @ 12.12 hrs, Volume= 1,320 cf
Outflow = 0.32 cfs @ 12.12 hrs, Volume= 1,320 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP2: DP2

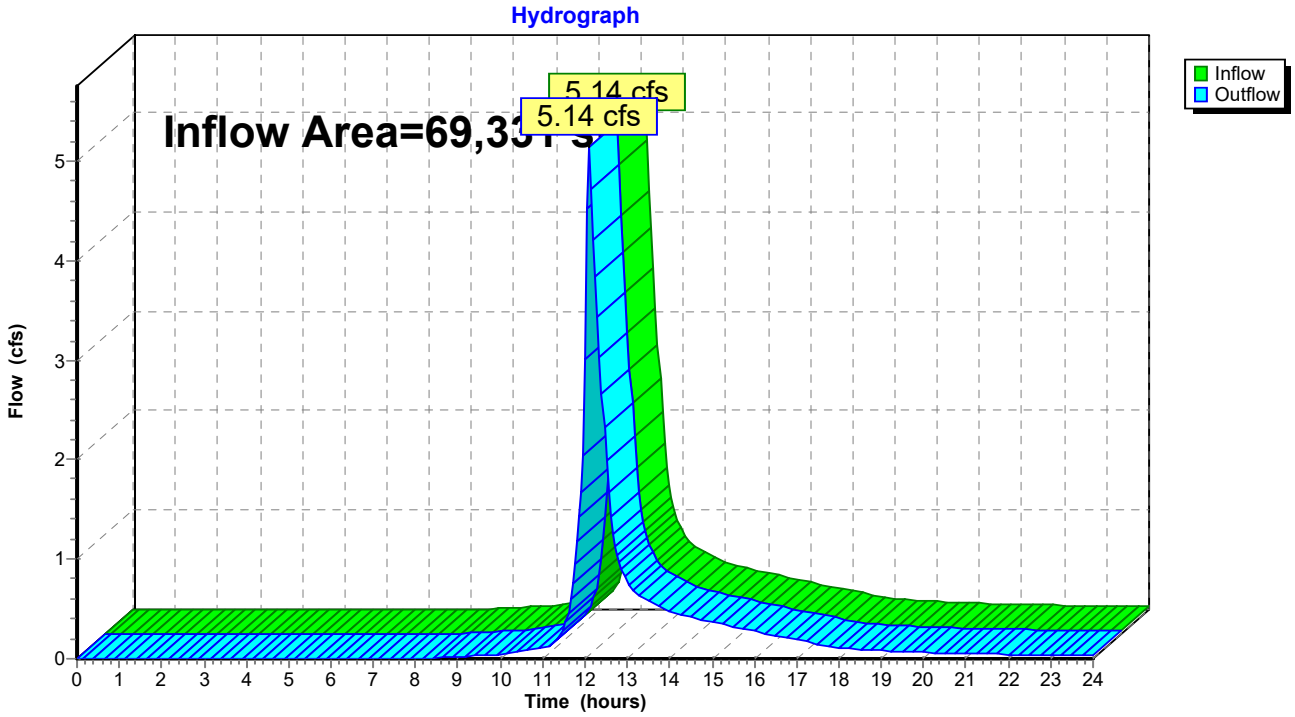


Summary for Reach DP3: DP3

Inflow Area = 69,331 sf, 47.39% Impervious, Inflow Depth > 3.24" for 25-Year event
Inflow = 5.14 cfs @ 12.10 hrs, Volume= 18,701 cf
Outflow = 5.14 cfs @ 12.10 hrs, Volume= 18,701 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP3: DP3

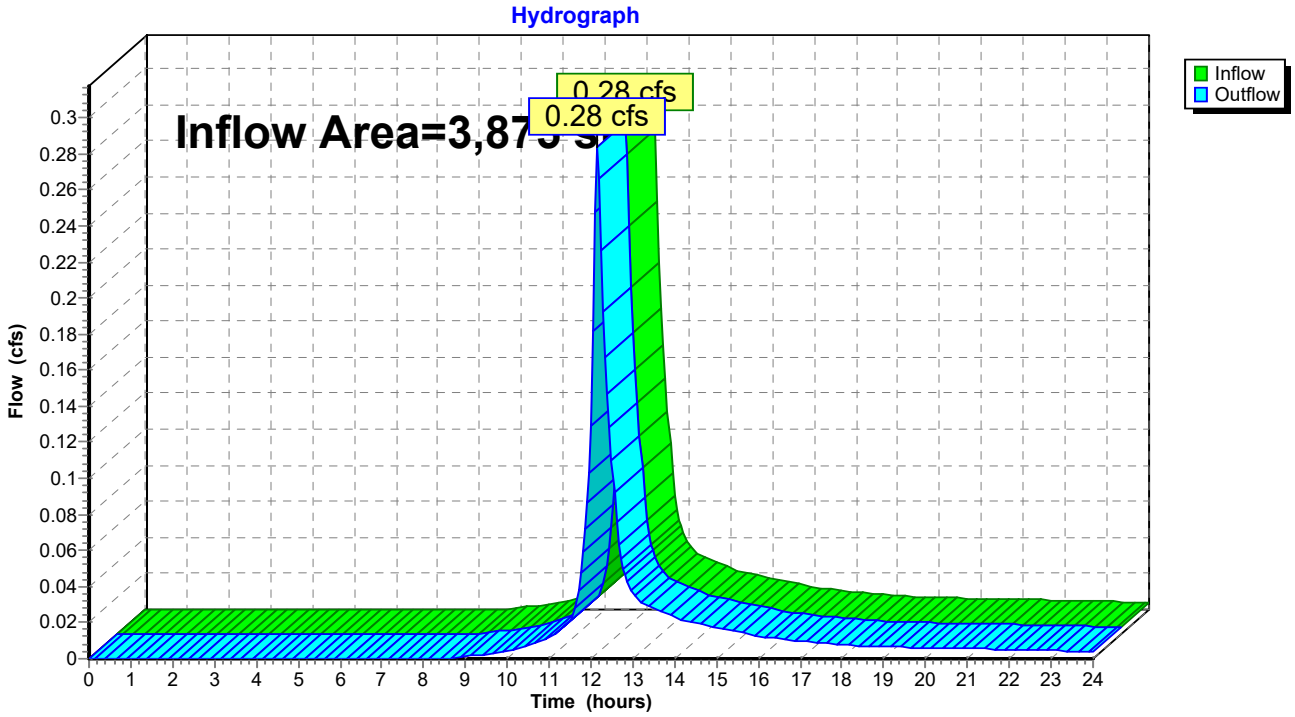


Summary for Reach DP4: DP4

Inflow Area = 3,875 sf, 0.00% Impervious, Inflow Depth > 3.24" for 25-Year event
Inflow = 0.28 cfs @ 12.16 hrs, Volume= 1,046 cf
Outflow = 0.28 cfs @ 12.16 hrs, Volume= 1,046 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP4: DP4



Summary for Pond CB1: CB1

Inflow Area = 5,122 sf, 56.07% Impervious, Inflow Depth > 4.69" for 25-Year event
Inflow = 0.57 cfs @ 12.12 hrs, Volume= 2,003 cf
Outflow = 0.57 cfs @ 12.12 hrs, Volume= 2,003 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.57 cfs @ 12.12 hrs, Volume= 2,003 cf
Routed to Pond DMH2 : DMH2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond CB10 : CB10

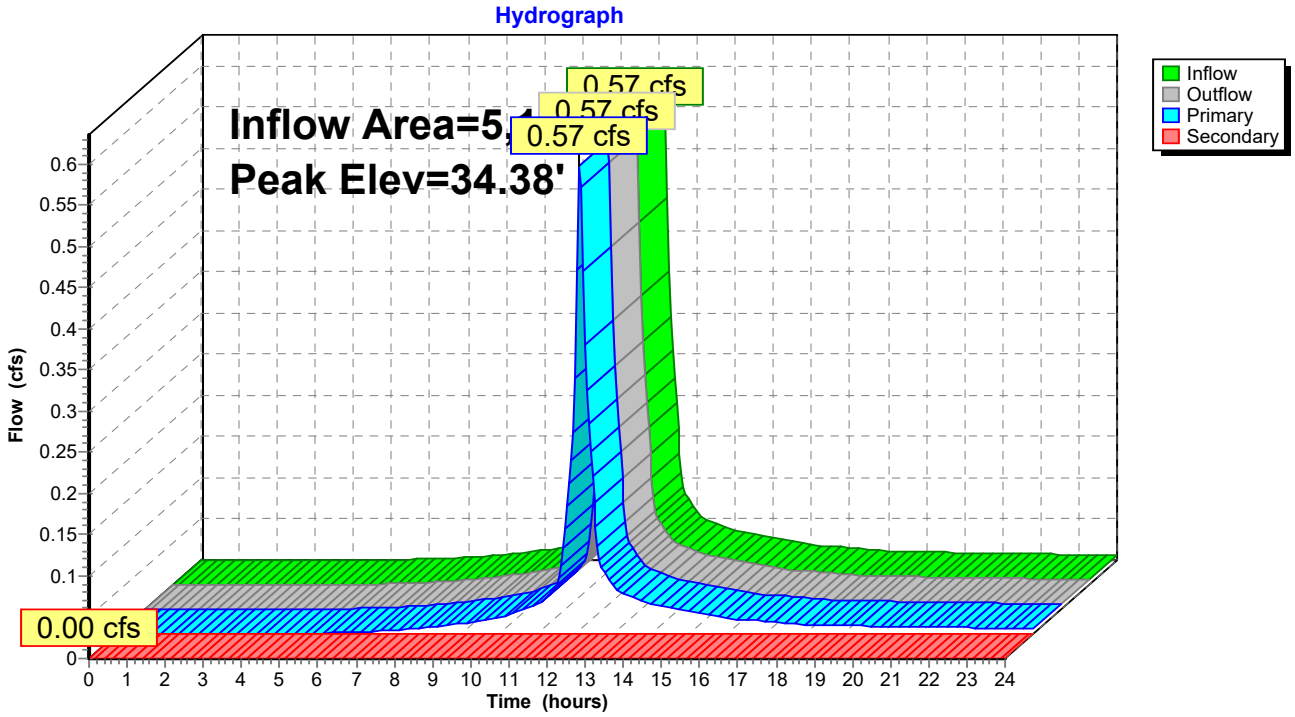
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 34.38' @ 12.12 hrs
Flood Elev= 36.27'

Device	Routing	Invert	Outlet Devices
#1	Primary	33.90'	**12.0" Round Culvert** L= 29.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 33.90' / 33.80' S= 0.0034 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	36.27'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.55 cfs @ 12.12 hrs HW=34.37' (Free Discharge)
1=Culvert (Barrel Controls 0.55 cfs @ 2.24 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=33.90' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB1: CB1


Hydrograph
Inflow Area=5,
Peak Elev=34.38'
0.57 cfs
0.57 cfs
0.57 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
0.55
0.6
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Stage-Discharge for Pond CB1: CB1

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
33.90	0.00	0.00	**0.00**
33.95	0.01	0.01	0.00
34.00	0.02	0.02	0.00
34.05	0.06	0.06	0.00
34.10	0.10	0.10	0.00
34.15	0.16	0.16	0.00
34.20	0.23	0.23	0.00
34.25	0.32	0.32	0.00
34.30	0.41	0.41	0.00
34.35	0.51	0.51	0.00
34.40	0.62	0.62	0.00
34.45	0.74	0.74	0.00
34.50	0.87	0.87	0.00
34.55	1.00	1.00	0.00
34.60	1.14	1.14	0.00
34.65	1.28	1.28	0.00
34.70	1.43	1.43	0.00
34.75	1.58	1.58	0.00
34.80	1.72	1.72	0.00
34.85	1.87	1.87	0.00
34.90	2.02	2.02	0.00
34.95	2.16	2.16	0.00
35.00	2.30	2.30	0.00
35.05	2.42	2.42	0.00
35.10	2.54	2.54	0.00
35.15	2.63	2.63	0.00
35.20	2.69	2.69	0.00
35.25	2.72	2.72	0.00
35.30	2.87	2.87	0.00
35.35	3.01	3.01	0.00
35.40	3.14	3.14	0.00
35.45	3.27	3.27	0.00
35.50	3.40	3.40	0.00
35.55	3.52	3.52	0.00
35.60	3.63	3.63	0.00
35.65	3.74	3.74	0.00
35.70	3.85	3.85	0.00
35.75	3.96	3.96	0.00
35.80	4.06	4.06	0.00
35.85	4.16	4.16	0.00
35.90	4.26	4.26	0.00
35.95	4.35	4.35	0.00
36.00	4.45	4.45	0.00
36.05	4.54	4.54	0.00
36.10	4.63	4.63	0.00
36.15	4.72	4.72	0.00
36.20	4.80	4.80	0.00
36.25	**4.89**	**4.89**	0.00

Stage-Area-Storage for Pond CB1: CB1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
33.90	**0**	34.96	0	36.02	0
33.92	0	34.98	0	36.04	0
33.94	0	35.00	0	36.06	0
33.96	0	35.02	0	36.08	0
33.98	0	35.04	0	36.10	0
34.00	0	35.06	0	36.12	0
34.02	0	35.08	0	36.14	0
34.04	0	35.10	0	36.16	0
34.06	0	35.12	0	36.18	0
34.08	0	35.14	0	36.20	0
34.10	0	35.16	0	36.22	0
34.12	0	35.18	0	36.24	0
34.14	0	35.20	0	36.26	0
34.16	0	35.22	0		
34.18	0	35.24	0		
34.20	0	35.26	0		
34.22	0	35.28	0		
34.24	0	35.30	0		
34.26	0	35.32	0		
34.28	0	35.34	0		
34.30	0	35.36	0		
34.32	0	35.38	0		
34.34	0	35.40	0		
34.36	0	35.42	0		
34.38	0	35.44	0		
34.40	0	35.46	0		
34.42	0	35.48	0		
34.44	0	35.50	0		
34.46	0	35.52	0		
34.48	0	35.54	0		
34.50	0	35.56	0		
34.52	0	35.58	0		
34.54	0	35.60	0		
34.56	0	35.62	0		
34.58	0	35.64	0		
34.60	0	35.66	0		
34.62	0	35.68	0		
34.64	0	35.70	0		
34.66	0	35.72	0		
34.68	0	35.74	0		
34.70	0	35.76	0		
34.72	0	35.78	0		
34.74	0	35.80	0		
34.76	0	35.82	0		
34.78	0	35.84	0		
34.80	0	35.86	0		
34.82	0	35.88	0		
34.84	0	35.90	0		
34.86	0	35.92	0		
34.88	0	35.94	0		
34.90	0	35.96	0		
34.92	0	35.98	0		
34.94	0	36.00	0		

Summary for Pond CB10: CB10

Inflow Area = 7,742 sf, 59.11% Impervious, Inflow Depth > 4.80" for 25-Year event
Inflow = 0.87 cfs @ 12.12 hrs, Volume= 3,099 cf
Outflow = 0.87 cfs @ 12.12 hrs, Volume= 3,099 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.87 cfs @ 12.12 hrs, Volume= 3,099 cf
Routed to Pond DMH11 : DMH11
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3

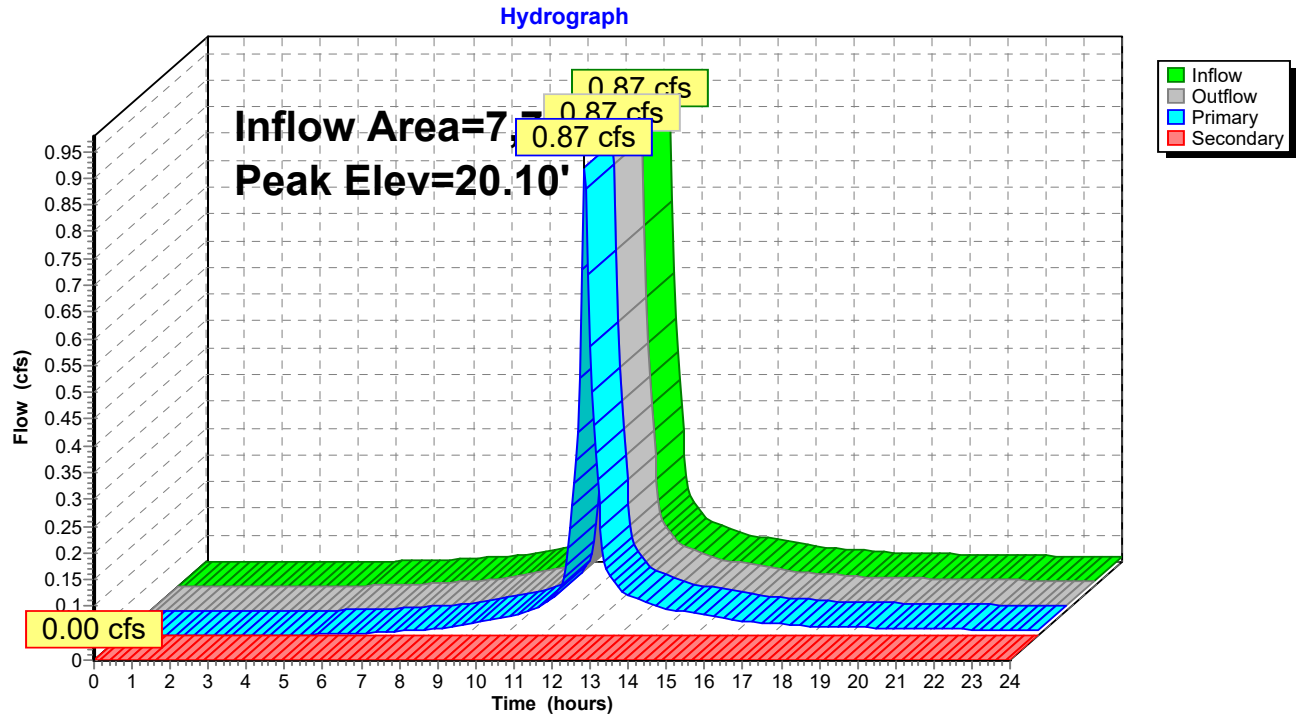
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 20.10' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	19.50'	**12.0" Round Culvert** L= 30.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 19.50' / 19.40' S= 0.0033 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	22.00'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.85 cfs @ 12.12 hrs HW=20.09' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.85 cfs @ 2.51 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=19.50' (Free Discharge)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Pond CB10: CB10



Stage-Discharge for Pond CB10: CB10

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
19.50	0.00	0.00	**0.00**
19.55	0.01	0.01	0.00
19.60	0.02	0.02	0.00
19.65	0.06	0.06	0.00
19.70	0.10	0.10	0.00
19.75	0.16	0.16	0.00
19.80	0.23	0.23	0.00
19.85	0.31	0.31	0.00
19.90	0.41	0.41	0.00
19.95	0.51	0.51	0.00
20.00	0.62	0.62	0.00
20.05	0.74	0.74	0.00
20.10	0.86	0.86	0.00
20.15	1.00	1.00	0.00
20.20	1.13	1.13	0.00
20.25	1.28	1.28	0.00
20.30	1.42	1.42	0.00
20.35	1.57	1.57	0.00
20.40	1.72	1.72	0.00
20.45	1.86	1.86	0.00
20.50	2.01	2.01	0.00
20.55	2.15	2.15	0.00
20.60	2.28	2.28	0.00
20.65	2.41	2.41	0.00
20.70	2.52	2.52	0.00
20.75	2.62	2.62	0.00
20.80	2.68	2.68	0.00
20.85	2.71	2.71	0.00
20.90	2.85	2.85	0.00
20.95	2.99	2.99	0.00
21.00	3.12	3.12	0.00
21.05	3.25	3.25	0.00
21.10	3.37	3.37	0.00
21.15	3.49	3.49	0.00
21.20	3.61	3.61	0.00
21.25	3.72	3.72	0.00
21.30	3.83	3.83	0.00
21.35	3.93	3.93	0.00
21.40	4.03	4.03	0.00
21.45	4.13	4.13	0.00
21.50	4.23	4.23	0.00
21.55	4.33	4.33	0.00
21.60	4.42	4.42	0.00
21.65	4.51	4.51	0.00
21.70	4.60	4.60	0.00
21.75	4.69	4.69	0.00
21.80	4.77	4.77	0.00
21.85	4.86	4.86	0.00
21.90	4.94	4.94	0.00
21.95	5.02	5.02	0.00
22.00	**5.10**	**5.10**	0.00

Stage-Area-Storage for Pond CB10: CB10

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
19.50	**0**	20.56	0	21.62	0
19.52	0	20.58	0	21.64	0
19.54	0	20.60	0	21.66	0
19.56	0	20.62	0	21.68	0
19.58	0	20.64	0	21.70	0
19.60	0	20.66	0	21.72	0
19.62	0	20.68	0	21.74	0
19.64	0	20.70	0	21.76	0
19.66	0	20.72	0	21.78	0
19.68	0	20.74	0	21.80	0
19.70	0	20.76	0	21.82	0
19.72	0	20.78	0	21.84	0
19.74	0	20.80	0	21.86	0
19.76	0	20.82	0	21.88	0
19.78	0	20.84	0	21.90	0
19.80	0	20.86	0	21.92	0
19.82	0	20.88	0	21.94	0
19.84	0	20.90	0	21.96	0
19.86	0	20.92	0	21.98	0
19.88	0	20.94	0	22.00	0
19.90	0	20.96	0		
19.92	0	20.98	0		
19.94	0	21.00	0		
19.96	0	21.02	0		
19.98	0	21.04	0		
20.00	0	21.06	0		
20.02	0	21.08	0		
20.04	0	21.10	0		
20.06	0	21.12	0		
20.08	0	21.14	0		
20.10	0	21.16	0		
20.12	0	21.18	0		
20.14	0	21.20	0		
20.16	0	21.22	0		
20.18	0	21.24	0		
20.20	0	21.26	0		
20.22	0	21.28	0		
20.24	0	21.30	0		
20.26	0	21.32	0		
20.28	0	21.34	0		
20.30	0	21.36	0		
20.32	0	21.38	0		
20.34	0	21.40	0		
20.36	0	21.42	0		
20.38	0	21.44	0		
20.40	0	21.46	0		
20.42	0	21.48	0		
20.44	0	21.50	0		
20.46	0	21.52	0		
20.48	0	21.54	0		
20.50	0	21.56	0		
20.52	0	21.58	0		
20.54	0	21.60	0		

Summary for Pond CB13: CB13

Inflow Area = 9,340 sf, 71.57% Impervious, Inflow Depth > 5.14" for 25-Year event
Inflow = 1.23 cfs @ 12.07 hrs, Volume= 4,001 cf
Outflow = 1.23 cfs @ 12.07 hrs, Volume= 4,001 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.23 cfs @ 12.07 hrs, Volume= 4,001 cf
Routed to Pond DMH11 : DMH11
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3

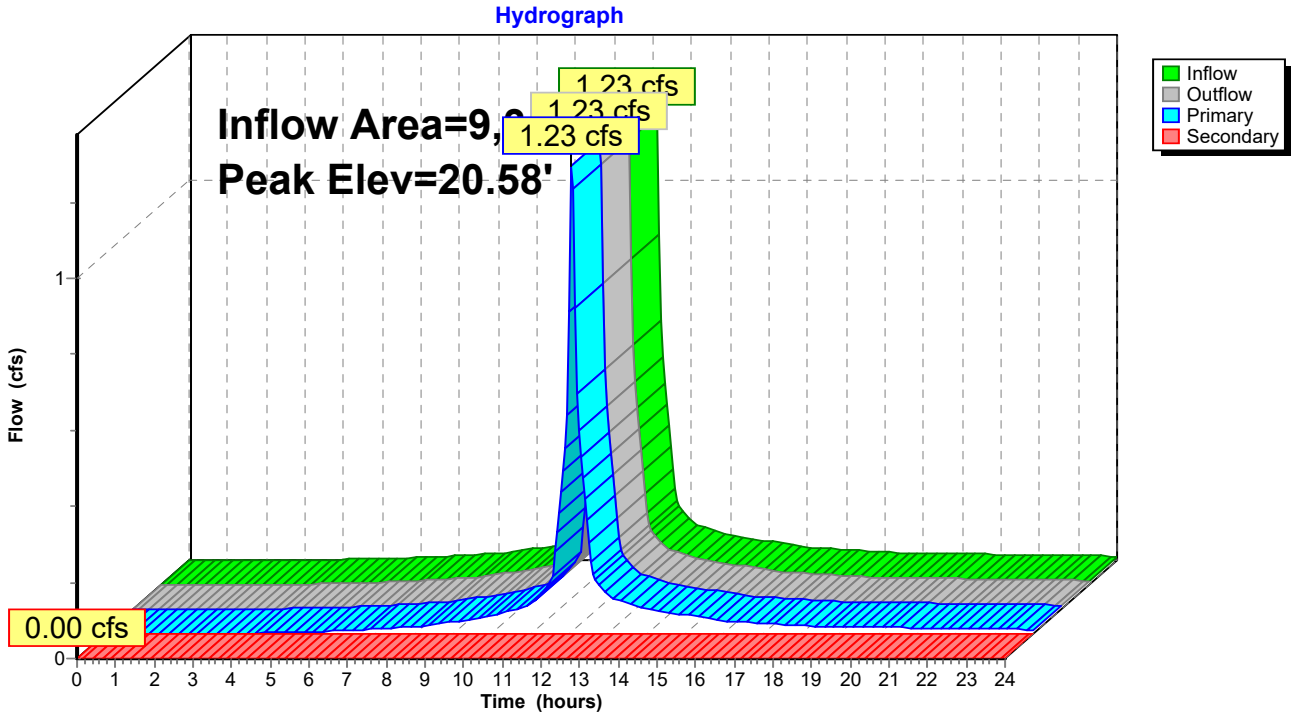
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 20.58' @ 12.07 hrs
Flood Elev= 22.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	19.90'	**12.0" Round Culvert** L= 12.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 19.90' / 19.80' S= 0.0083 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	22.00'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=1.18 cfs @ 12.07 hrs HW=20.56' (Free Discharge)
1=Culvert (Barrel Controls 1.18 cfs @ 3.02 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=19.90' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB13: CB13



Stage-Discharge for Pond CB13: CB13

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
19.90	0.00	0.00	**0.00**	20.96	2.43	2.43	0.00
19.92	0.00	0.00	0.00	20.98	2.49	2.49	0.00
19.94	0.01	0.01	0.00	21.00	2.55	2.55	0.00
19.96	0.01	0.01	0.00	21.02	2.60	2.60	0.00
19.98	0.02	0.02	0.00	21.04	2.66	2.66	0.00
20.00	0.03	0.03	0.00	21.06	2.71	2.71	0.00
20.02	0.05	0.05	0.00	21.08	2.77	2.77	0.00
20.04	0.07	0.07	0.00	21.10	2.82	2.82	0.00
20.06	0.09	0.09	0.00	21.12	2.87	2.87	0.00
20.08	0.11	0.11	0.00	21.14	2.91	2.91	0.00
20.10	0.13	0.13	0.00	21.16	2.95	2.95	0.00
20.12	0.16	0.16	0.00	21.18	2.99	2.99	0.00
20.14	0.19	0.19	0.00	21.20	3.02	3.02	0.00
20.16	0.22	0.22	0.00	21.22	3.04	3.04	0.00
20.18	0.25	0.25	0.00	21.24	3.05	3.05	0.00
20.20	0.29	0.29	0.00	21.26	3.12	3.12	0.00
20.22	0.33	0.33	0.00	21.28	3.19	3.19	0.00
20.24	0.36	0.36	0.00	21.30	3.25	3.25	0.00
20.26	0.40	0.40	0.00	21.32	3.32	3.32	0.00
20.28	0.44	0.44	0.00	21.34	3.38	3.38	0.00
20.30	0.49	0.49	0.00	21.36	3.44	3.44	0.00
20.32	0.53	0.53	0.00	21.38	3.50	3.50	0.00
20.34	0.58	0.58	0.00	21.40	3.56	3.56	0.00
20.36	0.63	0.63	0.00	21.42	3.62	3.62	0.00
20.38	0.68	0.68	0.00	21.44	3.68	3.68	0.00
20.40	0.73	0.73	0.00	21.46	3.74	3.74	0.00
20.42	0.78	0.78	0.00	21.48	3.79	3.79	0.00
20.44	0.83	0.83	0.00	21.50	3.85	3.85	0.00
20.46	0.88	0.88	0.00	21.52	3.90	3.90	0.00
20.48	0.94	0.94	0.00	21.54	3.96	3.96	0.00
20.50	0.99	0.99	0.00	21.56	4.01	4.01	0.00
20.52	1.05	1.05	0.00	21.58	4.06	4.06	0.00
20.54	1.11	1.11	0.00	21.60	4.12	4.12	0.00
20.56	1.17	1.17	0.00	21.62	4.17	4.17	0.00
20.58	1.23	1.23	0.00	21.64	4.21	4.21	0.00
20.60	1.29	1.29	0.00	21.66	4.24	4.24	0.00
20.62	1.35	1.35	0.00	21.68	4.28	4.28	0.00
20.64	1.41	1.41	0.00	21.70	4.31	4.31	0.00
20.66	1.47	1.47	0.00	21.72	4.34	4.34	0.00
20.68	1.54	1.54	0.00	21.74	4.38	4.38	0.00
20.70	1.60	1.60	0.00	21.76	4.41	4.41	0.00
20.72	1.66	1.66	0.00	21.78	4.44	4.44	0.00
20.74	1.73	1.73	0.00	21.80	4.47	4.47	0.00
20.76	1.79	1.79	0.00	21.82	4.51	4.51	0.00
20.78	1.86	1.86	0.00	21.84	4.54	4.54	0.00
20.80	1.92	1.92	0.00	21.86	4.57	4.57	0.00
20.82	1.98	1.98	0.00	21.88	4.60	4.60	0.00
20.84	2.05	2.05	0.00	21.90	4.63	4.63	0.00
20.86	2.11	2.11	0.00	21.92	4.66	4.66	0.00
20.88	2.18	2.18	0.00	21.94	4.69	4.69	0.00
20.90	2.24	2.24	0.00	21.96	4.72	4.72	0.00
20.92	2.30	2.30	0.00	21.98	4.75	4.75	0.00
20.94	2.36	2.36	0.00	22.00	**4.78**	**4.78**	0.00

Stage-Area-Storage for Pond CB13: CB13

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
19.90	**0**	20.96	0
19.92	0	20.98	0
19.94	0	21.00	0
19.96	0	21.02	0
19.98	0	21.04	0
20.00	0	21.06	0
20.02	0	21.08	0
20.04	0	21.10	0
20.06	0	21.12	0
20.08	0	21.14	0
20.10	0	21.16	0
20.12	0	21.18	0
20.14	0	21.20	0
20.16	0	21.22	0
20.18	0	21.24	0
20.20	0	21.26	0
20.22	0	21.28	0
20.24	0	21.30	0
20.26	0	21.32	0
20.28	0	21.34	0
20.30	0	21.36	0
20.32	0	21.38	0
20.34	0	21.40	0
20.36	0	21.42	0
20.38	0	21.44	0
20.40	0	21.46	0
20.42	0	21.48	0
20.44	0	21.50	0
20.46	0	21.52	0
20.48	0	21.54	0
20.50	0	21.56	0
20.52	0	21.58	0
20.54	0	21.60	0
20.56	0	21.62	0
20.58	0	21.64	0
20.60	0	21.66	0
20.62	0	21.68	0
20.64	0	21.70	0
20.66	0	21.72	0
20.68	0	21.74	0
20.70	0	21.76	0
20.72	0	21.78	0
20.74	0	21.80	0
20.76	0	21.82	0
20.78	0	21.84	0
20.80	0	21.86	0
20.82	0	21.88	0
20.84	0	21.90	0
20.86	0	21.92	0
20.88	0	21.94	0
20.90	0	21.96	0
20.92	0	21.98	0
20.94	0	22.00	0

Summary for Pond CB4: CB4

Inflow Area = 4,243 sf, 86.57% Impervious, Inflow Depth > 5.60" for 25-Year event
Inflow = 0.58 cfs @ 12.07 hrs, Volume= 1,979 cf
Outflow = 0.58 cfs @ 12.07 hrs, Volume= 1,979 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.58 cfs @ 12.07 hrs, Volume= 1,979 cf
Routed to Pond DMH2 : DMH2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond CB13 : CB13

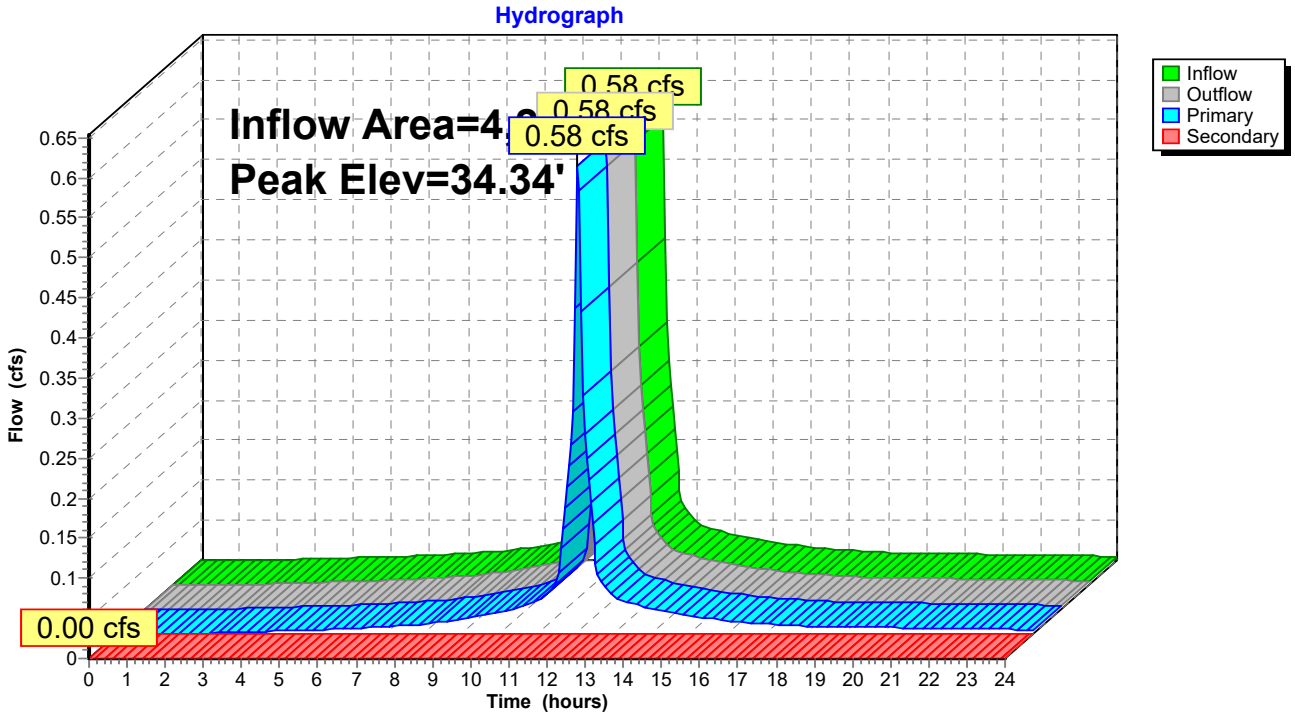
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 34.34' @ 12.07 hrs
Flood Elev= 37.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	33.90'	**12.0" Round Culvert** L= 10.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 33.90' / 33.80' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	37.00'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.56 cfs @ 12.07 hrs HW=34.33' (Free Discharge)
1=Culvert (Barrel Controls 0.56 cfs @ 2.59 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=33.90' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB4: CB4


Hydrograph
Inflow Area=4.
Peak Elev=34.34'
0.58 cfs
0.58 cfs
0.58 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
0 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55 0.6 0.65
Time (hours)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Stage-Discharge for Pond CB4: CB4

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
33.90	0.00	0.00	**0.00**
33.95	0.01	0.01	0.00
34.00	0.04	0.04	0.00
34.05	0.08	0.08	0.00
34.10	0.14	0.14	0.00
34.15	0.21	0.21	0.00
34.20	0.30	0.30	0.00
34.25	0.39	0.39	0.00
34.30	0.50	0.50	0.00
34.35	0.62	0.62	0.00
34.40	0.74	0.74	0.00
34.45	0.87	0.87	0.00
34.50	1.01	1.01	0.00
34.55	1.16	1.16	0.00
34.60	1.31	1.31	0.00
34.65	1.47	1.47	0.00
34.70	1.62	1.62	0.00
34.75	1.79	1.79	0.00
34.80	1.95	1.95	0.00
34.85	2.11	2.11	0.00
34.90	2.27	2.27	0.00
34.95	2.43	2.43	0.00
35.00	2.58	2.58	0.00
35.05	2.72	2.72	0.00
35.10	2.86	2.86	0.00
35.15	2.97	2.97	0.00
35.20	3.06	3.06	0.00
35.25	3.14	3.14	0.00
35.30	3.31	3.31	0.00
35.35	3.47	3.47	0.00
35.40	3.62	3.62	0.00
35.45	3.77	3.77	0.00
35.50	3.92	3.92	0.00
35.55	4.05	4.05	0.00
35.60	4.14	4.14	0.00
35.65	4.23	4.23	0.00
35.70	4.31	4.31	0.00
35.75	4.39	4.39	0.00
35.80	4.47	4.47	0.00
35.85	4.55	4.55	0.00
35.90	4.63	4.63	0.00
35.95	4.71	4.71	0.00
36.00	4.78	4.78	0.00
36.05	4.86	4.86	0.00
36.10	4.93	4.93	0.00
36.15	5.00	5.00	0.00
36.20	5.07	5.07	0.00
36.25	5.14	5.14	0.00
36.30	5.21	5.21	0.00
36.35	5.28	5.28	0.00
36.40	5.35	5.35	0.00
36.45	5.41	5.41	0.00
36.50	5.48	5.48	0.00
36.55	5.55	5.55	0.00
36.60	5.61	5.61	0.00
36.65	5.67	5.67	0.00
36.70	5.74	5.74	0.00
36.75	5.80	5.80	0.00
36.80	5.86	5.86	0.00
36.85	5.92	5.92	0.00
36.90	5.98	5.98	0.00
36.95	6.04	6.04	0.00
37.00	**6.10**	**6.10**	0.00

Stage-Area-Storage for Pond CB4: CB4

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
33.90	**0**	34.96	0	36.02	0
33.92	0	34.98	0	36.04	0
33.94	0	35.00	0	36.06	0
33.96	0	35.02	0	36.08	0
33.98	0	35.04	0	36.10	0
34.00	0	35.06	0	36.12	0
34.02	0	35.08	0	36.14	0
34.04	0	35.10	0	36.16	0
34.06	0	35.12	0	36.18	0
34.08	0	35.14	0	36.20	0
34.10	0	35.16	0	36.22	0
34.12	0	35.18	0	36.24	0
34.14	0	35.20	0	36.26	0
34.16	0	35.22	0	36.28	0
34.18	0	35.24	0	36.30	0
34.20	0	35.26	0	36.32	0
34.22	0	35.28	0	36.34	0
34.24	0	35.30	0	36.36	0
34.26	0	35.32	0	36.38	0
34.28	0	35.34	0	36.40	0
34.30	0	35.36	0	36.42	0
34.32	0	35.38	0	36.44	0
34.34	0	35.40	0	36.46	0
34.36	0	35.42	0	36.48	0
34.38	0	35.44	0	36.50	0
34.40	0	35.46	0	36.52	0
34.42	0	35.48	0	36.54	0
34.44	0	35.50	0	36.56	0
34.46	0	35.52	0	36.58	0
34.48	0	35.54	0	36.60	0
34.50	0	35.56	0	36.62	0
34.52	0	35.58	0	36.64	0
34.54	0	35.60	0	36.66	0
34.56	0	35.62	0	36.68	0
34.58	0	35.64	0	36.70	0
34.60	0	35.66	0	36.72	0
34.62	0	35.68	0	36.74	0
34.64	0	35.70	0	36.76	0
34.66	0	35.72	0	36.78	0
34.68	0	35.74	0	36.80	0
34.70	0	35.76	0	36.82	0
34.72	0	35.78	0	36.84	0
34.74	0	35.80	0	36.86	0
34.76	0	35.82	0	36.88	0
34.78	0	35.84	0	36.90	0
34.80	0	35.86	0	36.92	0
34.82	0	35.88	0	36.94	0
34.84	0	35.90	0	36.96	0
34.86	0	35.92	0	36.98	0
34.88	0	35.94	0	37.00	0
34.90	0	35.96	0		
34.92	0	35.98	0		
34.94	0	36.00	0		

Summary for Pond CB5: CB5

Inflow Area = 2,714 sf, 96.35% Impervious, Inflow Depth > 5.83" for 25-Year event
Inflow = 0.38 cfs @ 12.07 hrs, Volume= 1,319 cf
Outflow = 0.38 cfs @ 12.07 hrs, Volume= 1,319 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.38 cfs @ 12.07 hrs, Volume= 1,319 cf
Routed to Pond DMH2 : DMH2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond CB10 : CB10

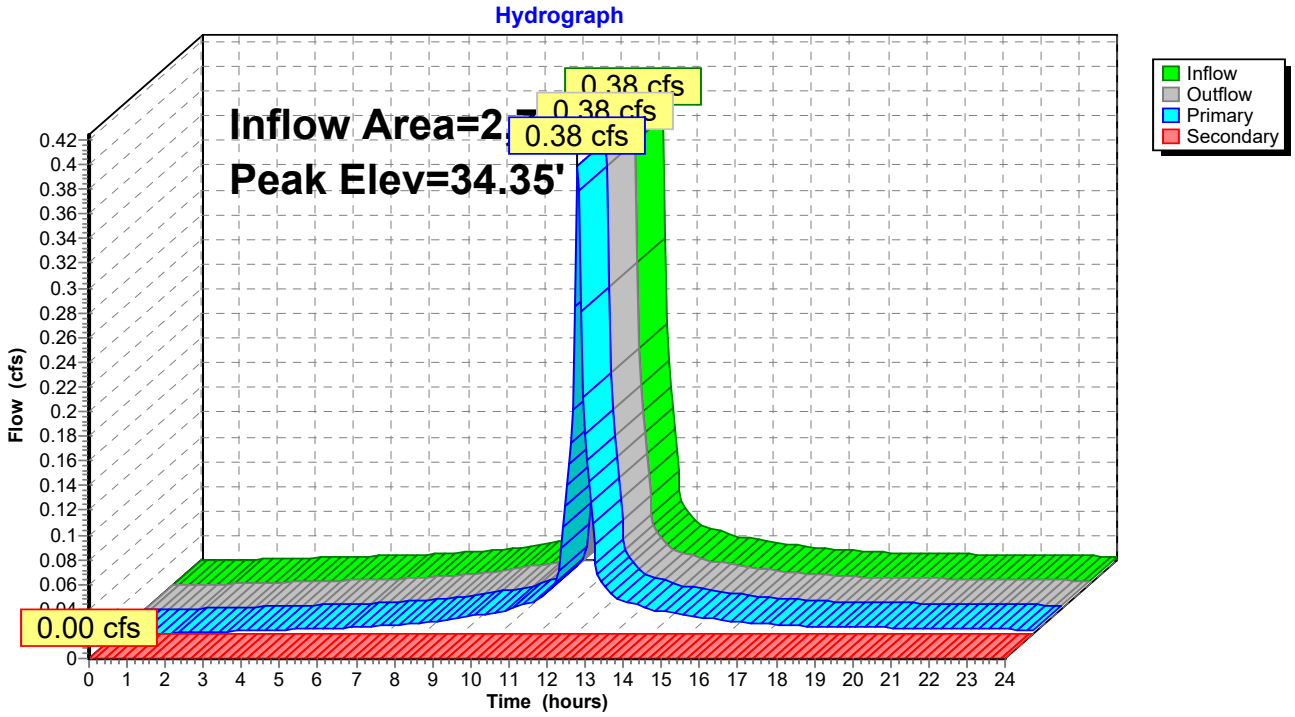
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 34.35' @ 12.07 hrs
Flood Elev= 37.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	34.00'	**12.0" Round Culvert** L= 35.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 34.00' / 33.80' S= 0.0057 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	37.50'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.36 cfs @ 12.07 hrs HW=34.35' (Free Discharge)
1=Culvert (Barrel Controls 0.36 cfs @ 2.25 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=34.00' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB5: CB5


Hydrograph
Inflow Area=2.
Peak Elev=34.35'
0.38 cfs
0.38 cfs
0.38 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
0 0.02 0.04 0.06 0.08 0.1 0.12 0.14 0.16 0.18 0.2 0.22 0.24 0.26 0.28 0.3 0.32 0.34 0.36 0.38 0.4 0.42

Stage-Discharge for Pond CB5: CB5

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
34.00	0.00	0.00	**0.00**
34.05	0.01	0.01	0.00
34.10	0.03	0.03	0.00
34.15	0.07	0.07	0.00
34.20	0.13	0.13	0.00
34.25	0.19	0.19	0.00
34.30	0.28	0.28	0.00
34.35	0.37	0.37	0.00
34.40	0.48	0.48	0.00
34.45	0.59	0.59	0.00
34.50	0.72	0.72	0.00
34.55	0.85	0.85	0.00
34.60	0.99	0.99	0.00
34.65	1.13	1.13	0.00
34.70	1.28	1.28	0.00
34.75	1.44	1.44	0.00
34.80	1.59	1.59	0.00
34.85	1.75	1.75	0.00
34.90	1.91	1.91	0.00
34.95	2.06	2.06	0.00
35.00	2.22	2.22	0.00
35.05	2.36	2.36	0.00
35.10	2.50	2.50	0.00
35.15	2.63	2.63	0.00
35.20	2.74	2.74	0.00
35.25	2.84	2.84	0.00
35.30	2.89	2.89	0.00
35.35	2.90	2.90	0.00
35.40	3.03	3.03	0.00
35.45	3.15	3.15	0.00
35.50	3.27	3.27	0.00
35.55	3.39	3.39	0.00
35.60	3.50	3.50	0.00
35.65	3.60	3.60	0.00
35.70	3.71	3.71	0.00
35.75	3.81	3.81	0.00
35.80	3.91	3.91	0.00
35.85	4.01	4.01	0.00
35.90	4.10	4.10	0.00
35.95	4.19	4.19	0.00
36.00	4.28	4.28	0.00
36.05	4.37	4.37	0.00
36.10	4.46	4.46	0.00
36.15	4.54	4.54	0.00
36.20	4.63	4.63	0.00
36.25	4.71	4.71	0.00
36.30	4.79	4.79	0.00
36.35	4.87	4.87	0.00
36.40	4.95	4.95	0.00
36.45	5.02	5.02	0.00
36.50	5.10	5.10	0.00
36.55	5.17	5.17	0.00
36.60	5.25	5.25	0.00
36.65	5.32	5.32	0.00
36.70	5.39	5.39	0.00
36.75	5.46	5.46	0.00
36.80	5.53	5.53	0.00
36.85	5.60	5.60	0.00
36.90	5.67	5.67	0.00
36.95	5.73	5.73	0.00
37.00	5.80	5.80	0.00
37.05	5.86	5.86	0.00
37.10	5.93	5.93	0.00
37.15	5.99	5.99	0.00
37.20	6.06	6.06	0.00
37.25	6.12	6.12	0.00
37.30	6.18	6.18	0.00
37.35	6.24	6.24	0.00
37.40	6.30	6.30	0.00
37.45	6.36	6.36	0.00
37.50	**6.42**	**6.42**	0.00

Stage-Area-Storage for Pond CB5: CB5

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
34.00	**0**	36.65	0
34.05	0	36.70	0
34.10	0	36.75	0
34.15	0	36.80	0
34.20	0	36.85	0
34.25	0	36.90	0
34.30	0	36.95	0
34.35	0	37.00	0
34.40	0	37.05	0
34.45	0	37.10	0
34.50	0	37.15	0
34.55	0	37.20	0
34.60	0	37.25	0
34.65	0	37.30	0
34.70	0	37.35	0
34.75	0	37.40	0
34.80	0	37.45	0
34.85	0	37.50	0
34.90	0		
34.95	0		
35.00	0		
35.05	0		
35.10	0		
35.15	0		
35.20	0		
35.25	0		
35.30	0		
35.35	0		
35.40	0		
35.45	0		
35.50	0		
35.55	0		
35.60	0		
35.65	0		
35.70	0		
35.75	0		
35.80	0		
35.85	0		
35.90	0		
35.95	0		
36.00	0		
36.05	0		
36.10	0		
36.15	0		
36.20	0		
36.25	0		
36.30	0		
36.35	0		
36.40	0		
36.45	0		
36.50	0		
36.55	0		
36.60	0		

Summary for Pond CB6: CB6

Inflow Area = 5,633 sf, 67.30% Impervious, Inflow Depth > 5.03" for 25-Year event
Inflow = 0.73 cfs @ 12.07 hrs, Volume= 2,360 cf
Outflow = 0.73 cfs @ 12.07 hrs, Volume= 2,360 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.73 cfs @ 12.07 hrs, Volume= 2,360 cf
Routed to Pond DMH7 : DMH7
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond CB4 : CB4

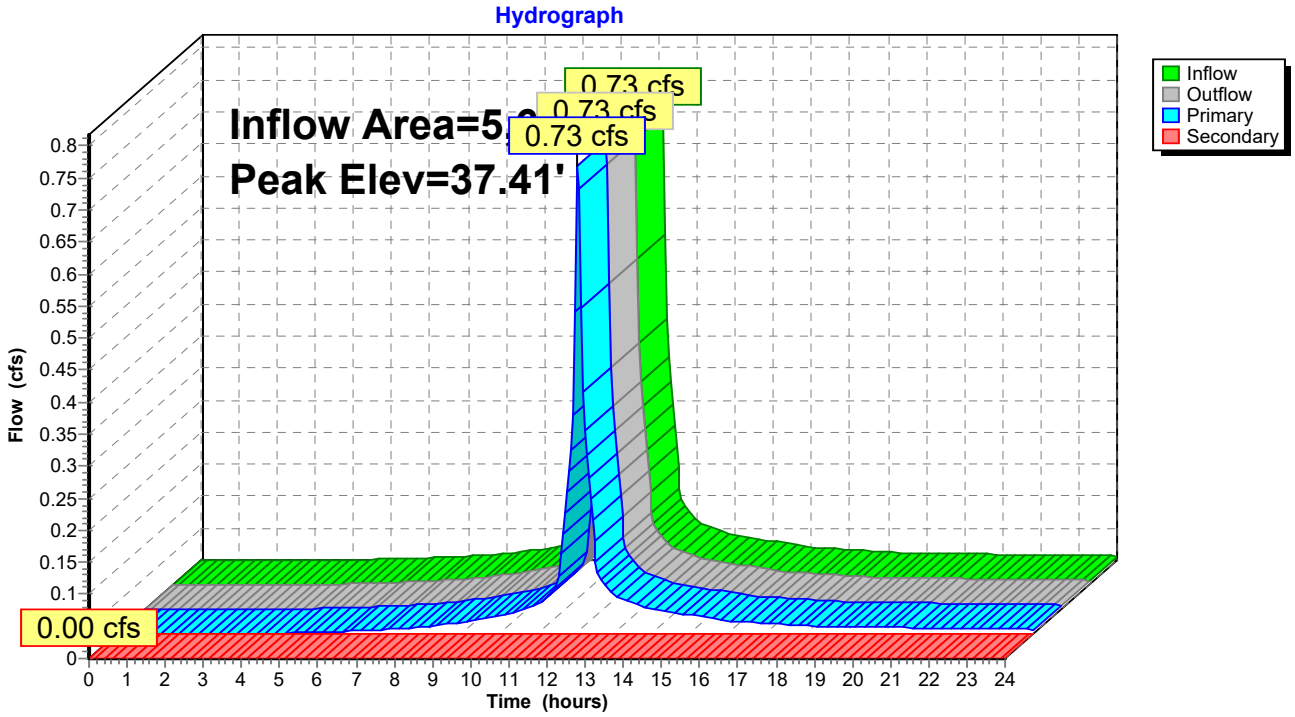
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 37.41' @ 12.07 hrs
Flood Elev= 39.42'

Device	Routing	Invert	Outlet Devices
#1	Primary	36.90'	**12.0" Round Culvert** L= 16.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 36.90' / 36.80' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	39.42'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 24.0" x 24.0" Grate (69% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.70 cfs @ 12.07 hrs HW=37.40' (Free Discharge)
1=Culvert (Barrel Controls 0.70 cfs @ 2.60 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=36.90' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB6: CB6


Hydrograph
Inflow Area=5.
Peak Elev=37.41'
0.73 cfs
0.73 cfs
0.73 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.75 0.8
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Stage-Discharge for Pond CB6: CB6

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
36.90	0.00	0.00	**0.00**
36.95	0.01	0.01	0.00
37.00	0.03	0.03	0.00
37.05	0.07	0.07	0.00
37.10	0.12	0.12	0.00
37.15	0.19	0.19	0.00
37.20	0.27	0.27	0.00
37.25	0.36	0.36	0.00
37.30	0.47	0.47	0.00
37.35	0.58	0.58	0.00
37.40	0.70	0.70	0.00
37.45	0.83	0.83	0.00
37.50	0.96	0.96	0.00
37.55	1.10	1.10	0.00
37.60	1.25	1.25	0.00
37.65	1.40	1.40	0.00
37.70	1.55	1.55	0.00
37.75	1.71	1.71	0.00
37.80	1.87	1.87	0.00
37.85	2.03	2.03	0.00
37.90	2.18	2.18	0.00
37.95	2.33	2.33	0.00
38.00	2.48	2.48	0.00
38.05	2.62	2.62	0.00
38.10	2.74	2.74	0.00
38.15	2.85	2.85	0.00
38.20	2.93	2.93	0.00
38.25	2.99	2.99	0.00
38.30	3.15	3.15	0.00
38.35	3.30	3.30	0.00
38.40	3.45	3.45	0.00
38.45	3.59	3.59	0.00
38.50	3.73	3.73	0.00
38.55	3.86	3.86	0.00
38.60	3.98	3.98	0.00
38.65	4.11	4.11	0.00
38.70	4.23	4.23	0.00
38.75	4.34	4.34	0.00
38.80	4.45	4.45	0.00
38.85	4.55	4.55	0.00
38.90	4.63	4.63	0.00
38.95	4.71	4.71	0.00
39.00	4.78	4.78	0.00
39.05	4.86	4.86	0.00
39.10	4.93	4.93	0.00
39.15	5.00	5.00	0.00
39.20	5.07	5.07	0.00
39.25	5.14	5.14	0.00
39.30	5.21	5.21	0.00
39.35	5.28	5.28	0.00
39.40	**5.35**	**5.35**	0.00

Stage-Area-Storage for Pond CB6: CB6

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
36.90	**0**	37.96	0	39.02	0
36.92	0	37.98	0	39.04	0
36.94	0	38.00	0	39.06	0
36.96	0	38.02	0	39.08	0
36.98	0	38.04	0	39.10	0
37.00	0	38.06	0	39.12	0
37.02	0	38.08	0	39.14	0
37.04	0	38.10	0	39.16	0
37.06	0	38.12	0	39.18	0
37.08	0	38.14	0	39.20	0
37.10	0	38.16	0	39.22	0
37.12	0	38.18	0	39.24	0
37.14	0	38.20	0	39.26	0
37.16	0	38.22	0	39.28	0
37.18	0	38.24	0	39.30	0
37.20	0	38.26	0	39.32	0
37.22	0	38.28	0	39.34	0
37.24	0	38.30	0	39.36	0
37.26	0	38.32	0	39.38	0
37.28	0	38.34	0	39.40	0
37.30	0	38.36	0	39.42	0
37.32	0	38.38	0		
37.34	0	38.40	0		
37.36	0	38.42	0		
37.38	0	38.44	0		
37.40	0	38.46	0		
37.42	0	38.48	0		
37.44	0	38.50	0		
37.46	0	38.52	0		
37.48	0	38.54	0		
37.50	0	38.56	0		
37.52	0	38.58	0		
37.54	0	38.60	0		
37.56	0	38.62	0		
37.58	0	38.64	0		
37.60	0	38.66	0		
37.62	0	38.68	0		
37.64	0	38.70	0		
37.66	0	38.72	0		
37.68	0	38.74	0		
37.70	0	38.76	0		
37.72	0	38.78	0		
37.74	0	38.80	0		
37.76	0	38.82	0		
37.78	0	38.84	0		
37.80	0	38.86	0		
37.82	0	38.88	0		
37.84	0	38.90	0		
37.86	0	38.92	0		
37.88	0	38.94	0		
37.90	0	38.96	0		
37.92	0	38.98	0		
37.94	0	39.00	0		

Summary for Pond CB9: CB9

Inflow Area = 5,351 sf, 75.91% Impervious, Inflow Depth > 5.25" for 25-Year event
Inflow = 0.71 cfs @ 12.07 hrs, Volume= 2,343 cf
Outflow = 0.71 cfs @ 12.07 hrs, Volume= 2,343 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.71 cfs @ 12.07 hrs, Volume= 2,343 cf
Routed to Pond DMH7 : DMH7
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond CB4 : CB4

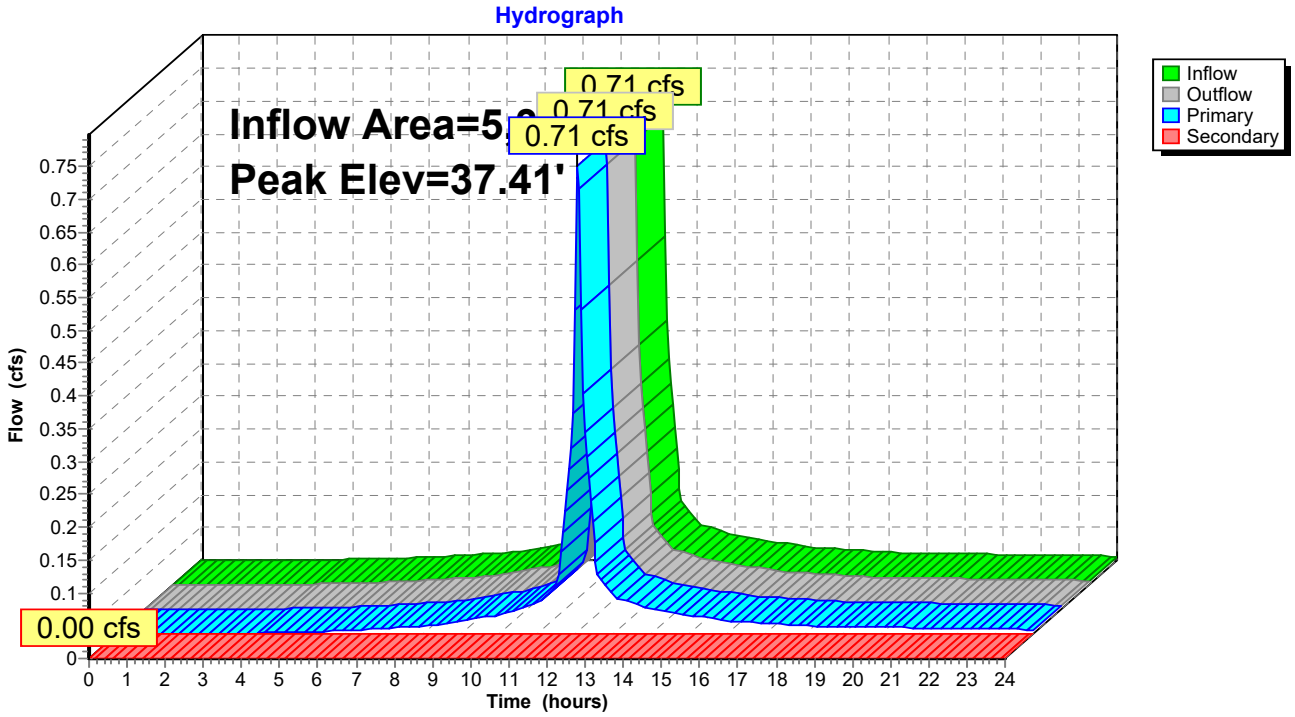
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 37.41' @ 12.07 hrs
Flood Elev= 39.42'

Device	Routing	Invert	Outlet Devices
#1	Primary	36.90'	**12.0" Round Culvert** L= 16.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 36.90' / 36.80' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	39.42'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.69 cfs @ 12.07 hrs HW=37.40' (Free Discharge)
1=Culvert (Barrel Controls 0.69 cfs @ 2.58 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=36.90' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB9: CB9


Hydrograph
Inflow Area=5.
Peak Elev=37.41'
0.71 cfs
0.71 cfs
0.71 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55 0.6 0.65 0.7 0.75
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Stage-Discharge for Pond CB9: CB9

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
36.90	0.00	0.00	**0.00**
36.95	0.01	0.01	0.00
37.00	0.03	0.03	0.00
37.05	0.07	0.07	0.00
37.10	0.12	0.12	0.00
37.15	0.19	0.19	0.00
37.20	0.27	0.27	0.00
37.25	0.36	0.36	0.00
37.30	0.47	0.47	0.00
37.35	0.58	0.58	0.00
37.40	0.70	0.70	0.00
37.45	0.83	0.83	0.00
37.50	0.96	0.96	0.00
37.55	1.10	1.10	0.00
37.60	1.25	1.25	0.00
37.65	1.40	1.40	0.00
37.70	1.55	1.55	0.00
37.75	1.71	1.71	0.00
37.80	1.87	1.87	0.00
37.85	2.03	2.03	0.00
37.90	2.18	2.18	0.00
37.95	2.33	2.33	0.00
38.00	2.48	2.48	0.00
38.05	2.62	2.62	0.00
38.10	2.74	2.74	0.00
38.15	2.85	2.85	0.00
38.20	2.93	2.93	0.00
38.25	2.99	2.99	0.00
38.30	3.15	3.15	0.00
38.35	3.30	3.30	0.00
38.40	3.45	3.45	0.00
38.45	3.59	3.59	0.00
38.50	3.73	3.73	0.00
38.55	3.86	3.86	0.00
38.60	3.98	3.98	0.00
38.65	4.11	4.11	0.00
38.70	4.23	4.23	0.00
38.75	4.34	4.34	0.00
38.80	4.45	4.45	0.00
38.85	4.55	4.55	0.00
38.90	4.63	4.63	0.00
38.95	4.71	4.71	0.00
39.00	4.78	4.78	0.00
39.05	4.86	4.86	0.00
39.10	4.93	4.93	0.00
39.15	5.00	5.00	0.00
39.20	5.07	5.07	0.00
39.25	5.14	5.14	0.00
39.30	5.21	5.21	0.00
39.35	5.28	5.28	0.00
39.40	**5.35**	**5.35**	0.00

Stage-Area-Storage for Pond CB9: CB9

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
36.90	**0**	37.96	0	39.02	0
36.92	0	37.98	0	39.04	0
36.94	0	38.00	0	39.06	0
36.96	0	38.02	0	39.08	0
36.98	0	38.04	0	39.10	0
37.00	0	38.06	0	39.12	0
37.02	0	38.08	0	39.14	0
37.04	0	38.10	0	39.16	0
37.06	0	38.12	0	39.18	0
37.08	0	38.14	0	39.20	0
37.10	0	38.16	0	39.22	0
37.12	0	38.18	0	39.24	0
37.14	0	38.20	0	39.26	0
37.16	0	38.22	0	39.28	0
37.18	0	38.24	0	39.30	0
37.20	0	38.26	0	39.32	0
37.22	0	38.28	0	39.34	0
37.24	0	38.30	0	39.36	0
37.26	0	38.32	0	39.38	0
37.28	0	38.34	0	39.40	0
37.30	0	38.36	0	39.42	0
37.32	0	38.38	0		
37.34	0	38.40	0		
37.36	0	38.42	0		
37.38	0	38.44	0		
37.40	0	38.46	0		
37.42	0	38.48	0		
37.44	0	38.50	0		
37.46	0	38.52	0		
37.48	0	38.54	0		
37.50	0	38.56	0		
37.52	0	38.58	0		
37.54	0	38.60	0		
37.56	0	38.62	0		
37.58	0	38.64	0		
37.60	0	38.66	0		
37.62	0	38.68	0		
37.64	0	38.70	0		
37.66	0	38.72	0		
37.68	0	38.74	0		
37.70	0	38.76	0		
37.72	0	38.78	0		
37.74	0	38.80	0		
37.76	0	38.82	0		
37.78	0	38.84	0		
37.80	0	38.86	0		
37.82	0	38.88	0		
37.84	0	38.90	0		
37.86	0	38.92	0		
37.88	0	38.94	0		
37.90	0	38.96	0		
37.92	0	38.98	0		
37.94	0	39.00	0		

Summary for Pond DMH11: DMH11

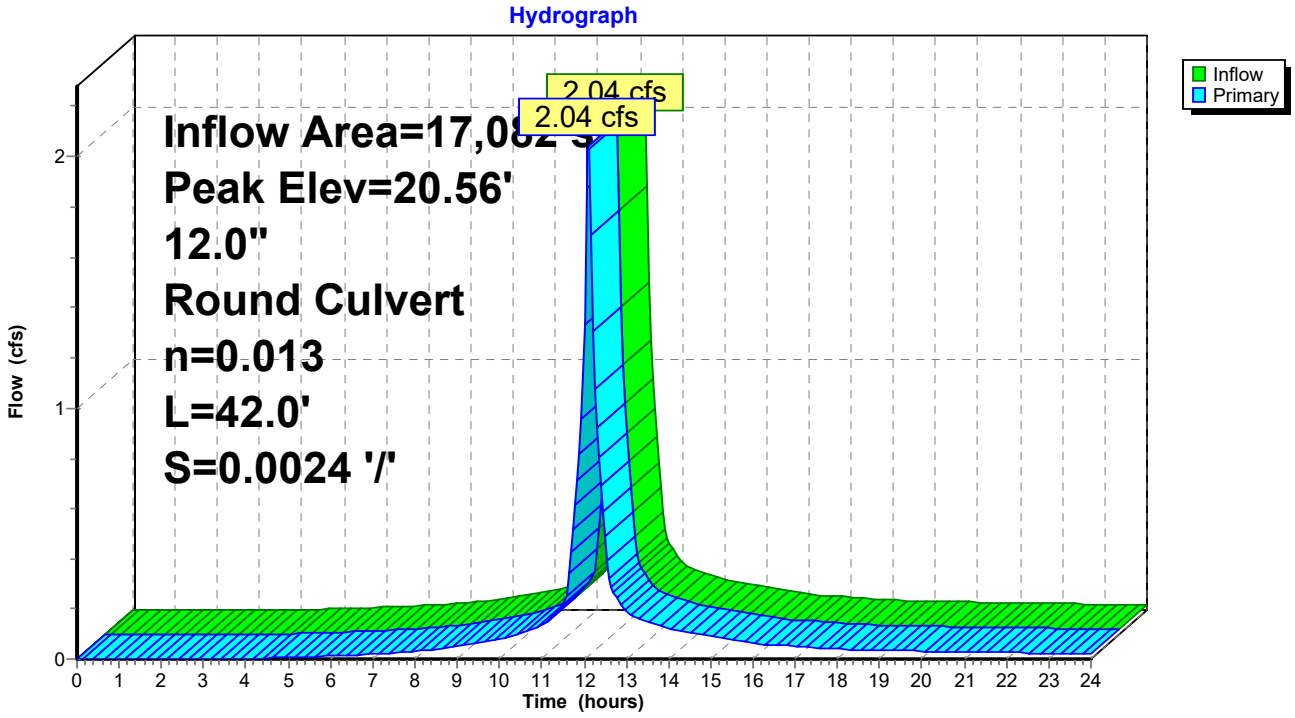
Inflow Area = 17,082 sf, 65.92% Impervious, Inflow Depth > 4.99" for 25-Year event
Inflow = 2.04 cfs @ 12.09 hrs, Volume= 7,100 cf
Outflow = 2.04 cfs @ 12.09 hrs, Volume= 7,100 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.04 cfs @ 12.09 hrs, Volume= 7,100 cf
Routed to Pond SSD3 : SUBSURFACE DRAINAGE AREA #3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 20.56' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	19.50'	**12.0" Round Culvert** L= 42.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 19.50' / 19.40' S= 0.0024 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=2.00 cfs @ 12.09 hrs HW=20.54' (Free Discharge)
1=Culvert (Barrel Controls 2.00 cfs @ 3.04 fps)

Pond DMH11: DMH11



Stage-Discharge for Pond DMH11: DMH11

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
19.50	0.00	20.03	0.64	20.56	**2.05**
19.51	0.00	20.04	0.66		
19.52	0.00	20.05	0.68		
19.53	0.00	20.06	0.71		
19.54	0.00	20.07	0.73		
19.55	0.00	20.08	0.75		
19.56	0.01	20.09	0.78		
19.57	0.01	20.10	0.80		
19.58	0.01	20.11	0.83		
19.59	0.02	20.12	0.85		
19.60	0.02	20.13	0.88		
19.61	0.03	20.14	0.90		
19.62	0.03	20.15	0.93		
19.63	0.04	20.16	0.95		
19.64	0.04	20.17	0.98		
19.65	0.05	20.18	1.00		
19.66	0.06	20.19	1.03		
19.67	0.06	20.20	1.06		
19.68	0.07	20.21	1.08		
19.69	0.08	20.22	1.11		
19.70	0.09	20.23	1.14		
19.71	0.10	20.24	1.16		
19.72	0.11	20.25	1.19		
19.73	0.12	20.26	1.22		
19.74	0.13	20.27	1.25		
19.75	0.14	20.28	1.27		
19.76	0.16	20.29	1.30		
19.77	0.17	20.30	1.33		
19.78	0.18	20.31	1.36		
19.79	0.19	20.32	1.39		
19.80	0.21	20.33	1.41		
19.81	0.22	20.34	1.44		
19.82	0.24	20.35	1.47		
19.83	0.25	20.36	1.50		
19.84	0.27	20.37	1.53		
19.85	0.28	20.38	1.55		
19.86	0.30	20.39	1.58		
19.87	0.32	20.40	1.61		
19.88	0.33	20.41	1.64		
19.89	0.35	20.42	1.67		
19.90	0.37	20.43	1.69		
19.91	0.39	20.44	1.72		
19.92	0.41	20.45	1.75		
19.93	0.43	20.46	1.78		
19.94	0.45	20.47	1.81		
19.95	0.47	20.48	1.83		
19.96	0.49	20.49	1.86		
19.97	0.51	20.50	1.89		
19.98	0.53	20.51	1.91		
19.99	0.55	20.52	1.94		
20.00	0.57	20.53	1.97		
20.01	0.59	20.54	1.99		
20.02	0.61	20.55	2.02		

Stage-Area-Storage for Pond DMH11: DMH11

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
19.50	**0**	20.03	0	20.56	0
19.51	0	20.04	0		
19.52	0	20.05	0		
19.53	0	20.06	0		
19.54	0	20.07	0		
19.55	0	20.08	0		
19.56	0	20.09	0		
19.57	0	20.10	0		
19.58	0	20.11	0		
19.59	0	20.12	0		
19.60	0	20.13	0		
19.61	0	20.14	0		
19.62	0	20.15	0		
19.63	0	20.16	0		
19.64	0	20.17	0		
19.65	0	20.18	0		
19.66	0	20.19	0		
19.67	0	20.20	0		
19.68	0	20.21	0		
19.69	0	20.22	0		
19.70	0	20.23	0		
19.71	0	20.24	0		
19.72	0	20.25	0		
19.73	0	20.26	0		
19.74	0	20.27	0		
19.75	0	20.28	0		
19.76	0	20.29	0		
19.77	0	20.30	0		
19.78	0	20.31	0		
19.79	0	20.32	0		
19.80	0	20.33	0		
19.81	0	20.34	0		
19.82	0	20.35	0		
19.83	0	20.36	0		
19.84	0	20.37	0		
19.85	0	20.38	0		
19.86	0	20.39	0		
19.87	0	20.40	0		
19.88	0	20.41	0		
19.89	0	20.42	0		
19.90	0	20.43	0		
19.91	0	20.44	0		
19.92	0	20.45	0		
19.93	0	20.46	0		
19.94	0	20.47	0		
19.95	0	20.48	0		
19.96	0	20.49	0		
19.97	0	20.50	0		
19.98	0	20.51	0		
19.99	0	20.52	0		
20.00	0	20.53	0		
20.01	0	20.54	0		
20.02	0	20.55	0		

Summary for Pond DMH2: DMH2

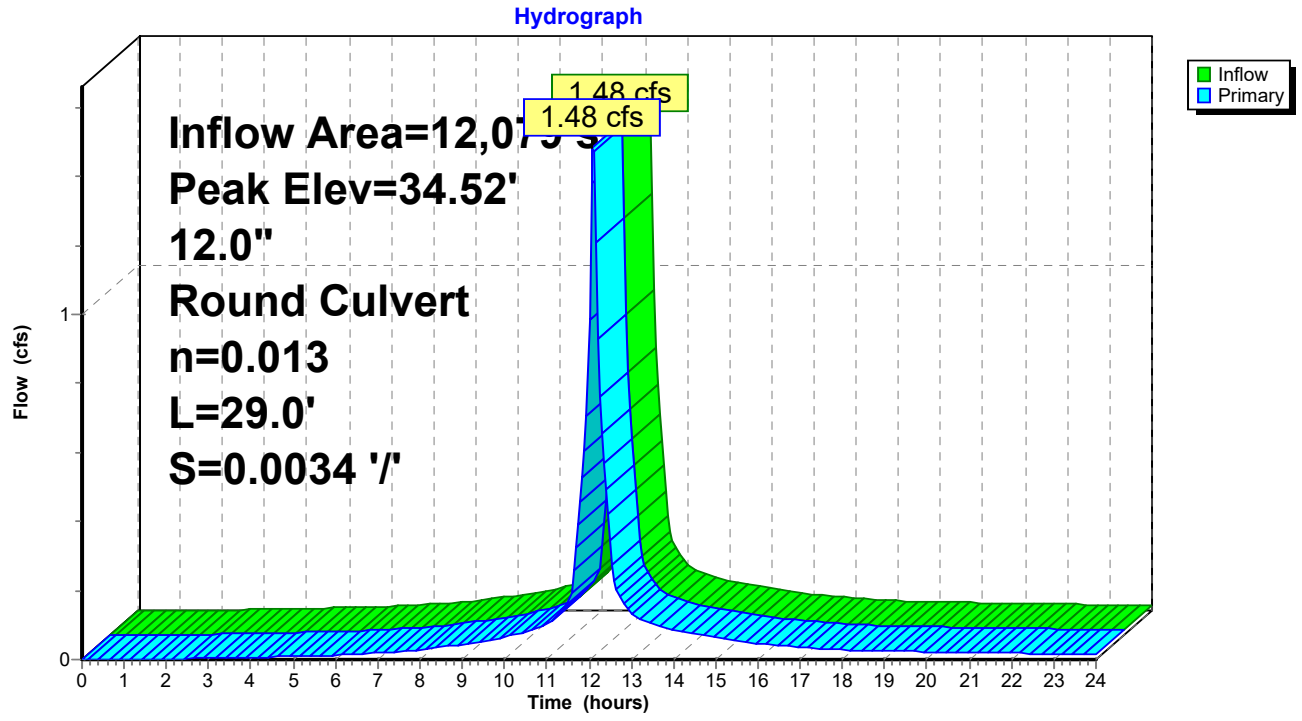
Inflow Area = 12,079 sf, 75.83% Impervious, Inflow Depth > 5.27" for 25-Year event
Inflow = 1.48 cfs @ 12.09 hrs, Volume= 5,301 cf
Outflow = 1.48 cfs @ 12.09 hrs, Volume= 5,301 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.48 cfs @ 12.09 hrs, Volume= 5,301 cf
Routed to Pond SSD1 : SUBSURFACE DRAINAGE AREA #1

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 34.52' @ 12.09 hrs
Flood Elev= 36.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	33.70'	**12.0" Round Culvert** L= 29.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 33.70' / 33.60' S= 0.0034 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.45 cfs @ 12.09 hrs HW=34.51' (Free Discharge)
1=Culvert (Barrel Controls 1.45 cfs @ 2.91 fps)

Pond DMH2: DMH2



Stage-Discharge for Pond DMH2: DMH2

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
33.70	0.00	34.76	2.19	35.82	4.48
33.72	0.00	34.78	2.24	35.84	4.52
33.74	0.00	34.80	2.30	35.86	4.56
33.76	0.01	34.82	2.35	35.88	4.59
33.78	0.02	34.84	2.40	35.90	4.63
33.80	0.02	34.86	2.45	35.92	4.66
33.82	0.04	34.88	2.49	35.94	4.70
33.84	0.05	34.90	2.54	35.96	4.73
33.86	0.07	34.92	2.58	35.98	4.77
33.88	0.08	34.94	2.61	36.00	4.80
33.90	0.10	34.96	2.65	36.02	4.84
33.92	0.13	34.98	2.67	36.04	4.87
33.94	0.15	35.00	2.69	36.06	4.91
33.96	0.18	35.02	2.70	36.08	4.94
33.98	0.20	35.04	2.69	36.10	4.97
34.00	0.23	35.06	2.75	36.12	5.00
34.02	0.27	35.08	2.81	36.14	5.04
34.04	0.30	35.10	2.87	36.16	5.07
34.06	0.33	35.12	2.93	36.18	5.10
34.08	0.37	35.14	2.98	36.20	5.13
34.10	0.41	35.16	3.04	36.22	5.17
34.12	0.45	35.18	3.09	36.24	5.20
34.14	0.49	35.20	3.14	36.26	5.23
34.16	0.53	35.22	3.20	36.28	5.26
34.18	0.58	35.24	3.25	36.30	5.29
34.20	0.62	35.26	3.30	36.32	5.32
34.22	0.67	35.28	3.35	36.34	5.35
34.24	0.72	35.30	3.40	36.36	5.39
34.26	0.77	35.32	3.44	36.38	5.42
34.28	0.82	35.34	3.49	36.40	5.45
34.30	0.87	35.36	3.54	36.42	5.48
34.32	0.92	35.38	3.59	36.44	5.51
34.34	0.98	35.40	3.63	36.46	5.54
34.36	1.03	35.42	3.68	36.48	5.57
34.38	1.08	35.44	3.72	36.50	5.60
34.40	1.14	35.46	3.76	36.52	5.63
34.42	1.20	35.48	3.81	36.54	5.65
34.44	1.25	35.50	3.85	36.56	5.68
34.46	1.31	35.52	3.89	36.58	5.71
34.48	1.37	35.54	3.94	36.60	5.74
34.50	1.43	35.56	3.98	36.62	5.77
34.52	1.49	35.58	4.02	36.64	5.80
34.54	1.55	35.60	4.06	36.66	5.83
34.56	1.61	35.62	4.10	36.68	5.85
34.58	1.67	35.64	4.14	36.70	5.88
34.60	1.72	35.66	4.18	36.72	5.91
34.62	1.78	35.68	4.22	36.74	**5.94**
34.64	1.84	35.70	4.26		
34.66	1.90	35.72	4.30		
34.68	1.96	35.74	4.33		
34.70	2.02	35.76	4.37		
34.72	2.08	35.78	4.41		
34.74	2.13	35.80	4.45		

Stage-Area-Storage for Pond DMH2: DMH2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
33.70	**0**	34.76	0	35.82	0
33.72	0	34.78	0	35.84	0
33.74	0	34.80	0	35.86	0
33.76	0	34.82	0	35.88	0
33.78	0	34.84	0	35.90	0
33.80	0	34.86	0	35.92	0
33.82	0	34.88	0	35.94	0
33.84	0	34.90	0	35.96	0
33.86	0	34.92	0	35.98	0
33.88	0	34.94	0	36.00	0
33.90	0	34.96	0	36.02	0
33.92	0	34.98	0	36.04	0
33.94	0	35.00	0	36.06	0
33.96	0	35.02	0	36.08	0
33.98	0	35.04	0	36.10	0
34.00	0	35.06	0	36.12	0
34.02	0	35.08	0	36.14	0
34.04	0	35.10	0	36.16	0
34.06	0	35.12	0	36.18	0
34.08	0	35.14	0	36.20	0
34.10	0	35.16	0	36.22	0
34.12	0	35.18	0	36.24	0
34.14	0	35.20	0	36.26	0
34.16	0	35.22	0	36.28	0
34.18	0	35.24	0	36.30	0
34.20	0	35.26	0	36.32	0
34.22	0	35.28	0	36.34	0
34.24	0	35.30	0	36.36	0
34.26	0	35.32	0	36.38	0
34.28	0	35.34	0	36.40	0
34.30	0	35.36	0	36.42	0
34.32	0	35.38	0	36.44	0
34.34	0	35.40	0	36.46	0
34.36	0	35.42	0	36.48	0
34.38	0	35.44	0	36.50	0
34.40	0	35.46	0	36.52	0
34.42	0	35.48	0	36.54	0
34.44	0	35.50	0	36.56	0
34.46	0	35.52	0	36.58	0
34.48	0	35.54	0	36.60	0
34.50	0	35.56	0	36.62	0
34.52	0	35.58	0	36.64	0
34.54	0	35.60	0	36.66	0
34.56	0	35.62	0	36.68	0
34.58	0	35.64	0	36.70	0
34.60	0	35.66	0	36.72	0
34.62	0	35.68	0	36.74	0
34.64	0	35.70	0		
34.66	0	35.72	0		
34.68	0	35.74	0		
34.70	0	35.76	0		
34.72	0	35.78	0		
34.74	0	35.80	0		

Summary for Pond DMH7: DMH7

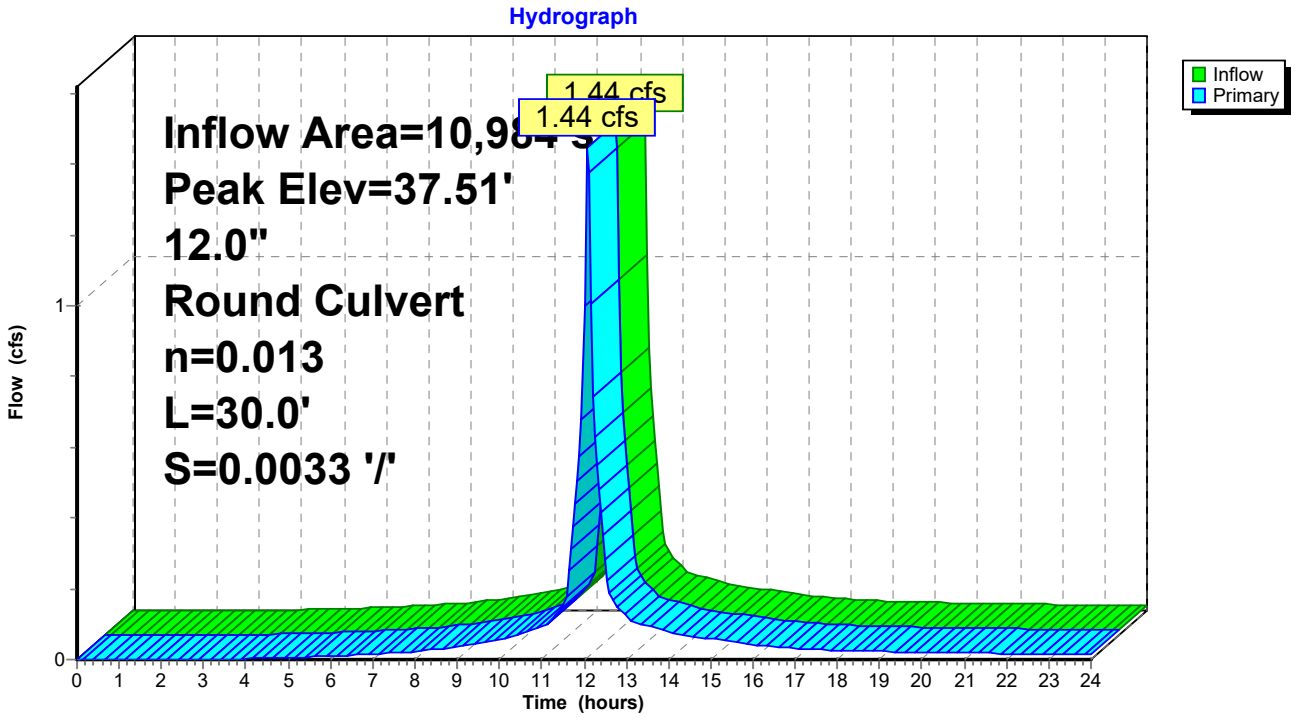
Inflow Area = 10,984 sf, 71.49% Impervious, Inflow Depth > 5.14" for 25-Year event
Inflow = 1.44 cfs @ 12.07 hrs, Volume= 4,703 cf
Outflow = 1.44 cfs @ 12.07 hrs, Volume= 4,703 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.44 cfs @ 12.07 hrs, Volume= 4,703 cf
Routed to Pond SSD2 : SUBSURFACE DRAINAGE AREA #2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 37.51' @ 12.07 hrs
Flood Elev= 39.67'

Device	Routing	Invert	Outlet Devices
#1	Primary	36.70'	**12.0" Round Culvert** L= 30.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 36.70' / 36.60' S= 0.0033 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.39 cfs @ 12.07 hrs HW=37.49' (Free Discharge)
1=Culvert (Barrel Controls 1.39 cfs @ 2.87 fps)

Pond DMH7: DMH7



Stage-Discharge for Pond DMH7: DMH7

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
36.70	0.00	37.76	2.18	38.82	4.45
36.72	0.00	37.78	2.23	38.84	4.49
36.74	0.00	37.80	2.28	38.86	4.53
36.76	0.01	37.82	2.33	38.88	4.56
36.78	0.01	37.84	2.38	38.90	4.60
36.80	0.02	37.86	2.43	38.92	4.63
36.82	0.04	37.88	2.48	38.94	4.67
36.84	0.05	37.90	2.52	38.96	4.70
36.86	0.06	37.92	2.56	38.98	4.74
36.88	0.08	37.94	2.60	39.00	4.77
36.90	0.10	37.96	2.63	39.02	4.81
36.92	0.12	37.98	2.66	39.04	4.84
36.94	0.15	38.00	2.68	39.06	4.87
36.96	0.17	38.02	2.68	39.08	4.91
36.98	0.20	38.04	2.68	39.10	4.94
37.00	0.23	38.06	2.74	39.12	4.97
37.02	0.26	38.08	2.79	39.14	5.01
37.04	0.30	38.10	2.85	39.16	5.04
37.06	0.33	38.12	2.91	39.18	5.07
37.08	0.37	38.14	2.96	39.20	5.10
37.10	0.41	38.16	3.02	39.22	5.13
37.12	0.45	38.18	3.07	39.24	5.17
37.14	0.49	38.20	3.12	39.26	5.20
37.16	0.53	38.22	3.18	39.28	5.23
37.18	0.57	38.24	3.23	39.30	5.26
37.20	0.62	38.26	3.28	39.32	5.29
37.22	0.67	38.28	3.33	39.34	5.32
37.24	0.71	38.30	3.37	39.36	5.35
37.26	0.76	38.32	3.42	39.38	5.38
37.28	0.81	38.34	3.47	39.40	5.41
37.30	0.86	38.36	3.52	39.42	5.44
37.32	0.92	38.38	3.56	39.44	5.47
37.34	0.97	38.40	3.61	39.46	5.50
37.36	1.02	38.42	3.65	39.48	5.53
37.38	1.08	38.44	3.70	39.50	5.56
37.40	1.13	38.46	3.74	39.52	5.59
37.42	1.19	38.48	3.78	39.54	5.62
37.44	1.25	38.50	3.83	39.56	5.65
37.46	1.30	38.52	3.87	39.58	5.68
37.48	1.36	38.54	3.91	39.60	5.70
37.50	1.42	38.56	3.95	39.62	5.73
37.52	1.48	38.58	3.99	39.64	5.76
37.54	1.54	38.60	4.03	39.66	**5.79**
37.56	1.60	38.62	4.07		
37.58	1.66	38.64	4.11		
37.60	1.72	38.66	4.15		
37.62	1.77	38.68	4.19		
37.64	1.83	38.70	4.23		
37.66	1.89	38.72	4.27		
37.68	1.95	38.74	4.31		
37.70	2.01	38.76	4.34		
37.72	2.06	38.78	4.38		
37.74	2.12	38.80	4.42		

Stage-Area-Storage for Pond DMH7: DMH7

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
36.70	**0**	37.76	0	38.82	0
36.72	0	37.78	0	38.84	0
36.74	0	37.80	0	38.86	0
36.76	0	37.82	0	38.88	0
36.78	0	37.84	0	38.90	0
36.80	0	37.86	0	38.92	0
36.82	0	37.88	0	38.94	0
36.84	0	37.90	0	38.96	0
36.86	0	37.92	0	38.98	0
36.88	0	37.94	0	39.00	0
36.90	0	37.96	0	39.02	0
36.92	0	37.98	0	39.04	0
36.94	0	38.00	0	39.06	0
36.96	0	38.02	0	39.08	0
36.98	0	38.04	0	39.10	0
37.00	0	38.06	0	39.12	0
37.02	0	38.08	0	39.14	0
37.04	0	38.10	0	39.16	0
37.06	0	38.12	0	39.18	0
37.08	0	38.14	0	39.20	0
37.10	0	38.16	0	39.22	0
37.12	0	38.18	0	39.24	0
37.14	0	38.20	0	39.26	0
37.16	0	38.22	0	39.28	0
37.18	0	38.24	0	39.30	0
37.20	0	38.26	0	39.32	0
37.22	0	38.28	0	39.34	0
37.24	0	38.30	0	39.36	0
37.26	0	38.32	0	39.38	0
37.28	0	38.34	0	39.40	0
37.30	0	38.36	0	39.42	0
37.32	0	38.38	0	39.44	0
37.34	0	38.40	0	39.46	0
37.36	0	38.42	0	39.48	0
37.38	0	38.44	0	39.50	0
37.40	0	38.46	0	39.52	0
37.42	0	38.48	0	39.54	0
37.44	0	38.50	0	39.56	0
37.46	0	38.52	0	39.58	0
37.48	0	38.54	0	39.60	0
37.50	0	38.56	0	39.62	0
37.52	0	38.58	0	39.64	0
37.54	0	38.60	0	39.66	0
37.56	0	38.62	0		
37.58	0	38.64	0		
37.60	0	38.66	0		
37.62	0	38.68	0		
37.64	0	38.70	0		
37.66	0	38.72	0		
37.68	0	38.74	0		
37.70	0	38.76	0		
37.72	0	38.78	0		
37.74	0	38.80	0		

Summary for Pond SSD1: SUBSURFACE DRAINAGE AREA #1

Inflow Area = 19,969 sf, 85.38% Impervious, Inflow Depth > 5.54" for 25-Year event
Inflow = 2.57 cfs @ 12.08 hrs, Volume= 9,213 cf
Outflow = 1.53 cfs @ 12.21 hrs, Volume= 7,192 cf, Atten= 41%, Lag= 7.6 min
Discarded = 0.04 cfs @ 7.05 hrs, Volume= 2,760 cf
Primary = 0.77 cfs @ 12.21 hrs, Volume= 2,907 cf
Routed to Reach DP3 : DP3
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3
Tertiary = 0.71 cfs @ 12.21 hrs, Volume= 1,524 cf
Routed to Pond SSD5 : SUBSURFACE DRAINAGE AREA #5 (STORAGE)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 35.92' @ 12.21 hrs Surf.Area= 1,654 sf Storage= 3,136 cf

Plug-Flow detention time= 133.1 min calculated for 7,192 cf (78% of inflow)
Center-of-Mass det. time= 52.6 min (812.2 - 759.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	33.16'	1,246 cf	**25.67'W x 52.50'L x 3.71'H Field A** 4,997 cf Overall - 1,881 cf Embedded = 3,116 cf x 40.0% Voids
#2A	33.66'	1,881 cf	**Cultec R-330XLHD** x 35 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 5 rows
#3B	33.16'	197 cf	**11.17'W x 17.50'L x 3.71'H Field B** 725 cf Overall - 231 cf Embedded = 494 cf x 40.0% Voids
#4B	33.66'	231 cf	**Cultec R-330XLHD** x 4 Inside #3 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
#5C	33.16'	118 cf	**6.33'W x 17.50'L x 3.71'H Field C** 411 cf Overall - 115 cf Embedded = 296 cf x 40.0% Voids
#6C	33.66'	115 cf	**Cultec R-330XLHD** x 2 Inside #5 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		3,790 cf	Total Available Storage

Storage Group A created with Chamber Wizard
Storage Group B created with Chamber Wizard
Storage Group C created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	33.16'	**1.020 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#2	Primary	35.00'	**6.0" Round Culvert** L= 150.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.00' / 28.00' S= 0.0467 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf
#3	Secondary	37.20'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

#4 Tertiary 35.10' **6.0" Round Culvert**
L= 30.0' CPP, square edge headwall, Ke= 0.500
Inlet / Outlet Invert= 35.10' / 34.00' S= 0.0367 '/' Cc= 0.900
n= 0.013, Flow Area= 0.20 sf

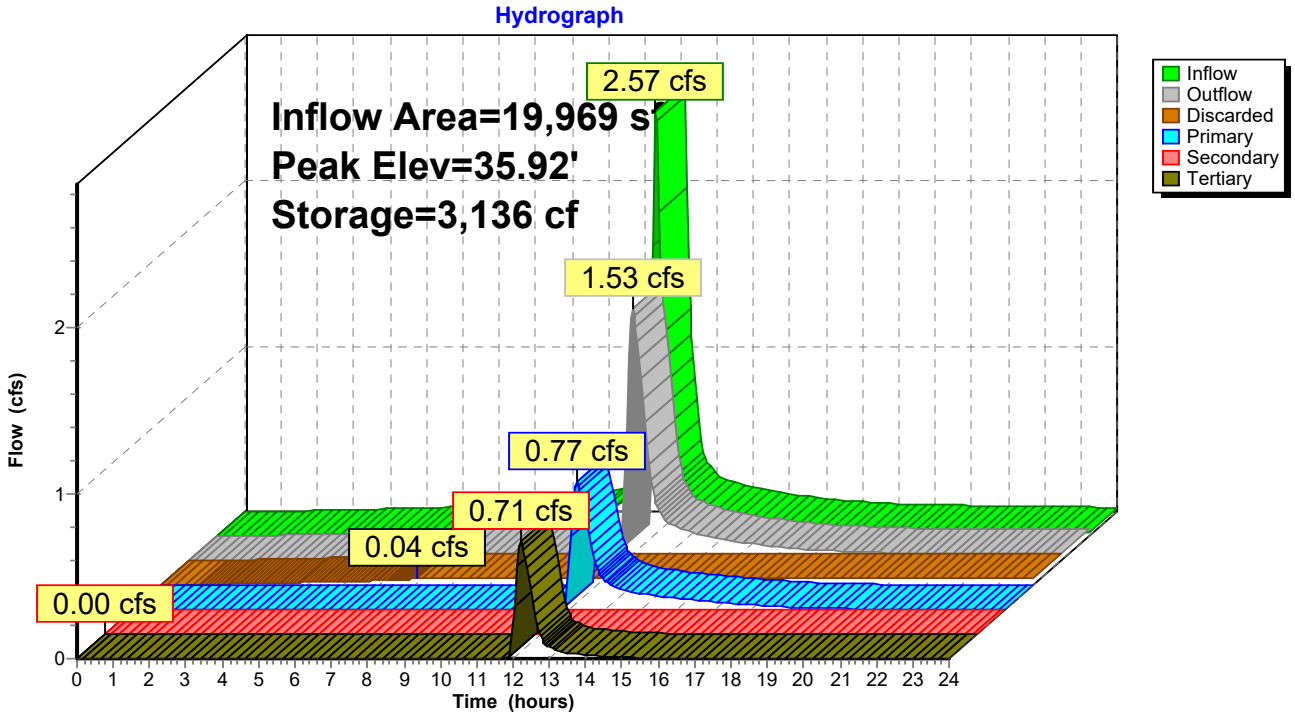
Discarded OutFlow Max=0.04 cfs @ 7.05 hrs HW=33.20' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.77 cfs @ 12.21 hrs HW=35.91' (Free Discharge)
└**2=Culvert** (Inlet Controls 0.77 cfs @ 3.93 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=33.16' (Free Discharge)
└**3=Orifice/Grate** (Controls 0.00 cfs)

Tertiary OutFlow Max=0.71 cfs @ 12.21 hrs HW=35.91' (Free Discharge)
└**4=Culvert** (Inlet Controls 0.71 cfs @ 3.62 fps)

Pond SSD1: SUBSURFACE DRAINAGE AREA #1



Stage-Discharge for Pond SSD1: SUBSURFACE DRAINAGE AREA #1

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)	Tertiary (cfs)
33.16	0.00	**0.00**	0.00	**0.00**	0.00
33.26	0.04	**0.04**	0.00	0.00	0.00
33.36	0.04	0.04	0.00	0.00	0.00
33.46	0.04	0.04	0.00	0.00	0.00
33.56	0.04	0.04	0.00	0.00	0.00
33.66	0.04	0.04	0.00	0.00	0.00
33.76	0.04	0.04	0.00	0.00	0.00
33.86	0.04	0.04	0.00	0.00	0.00
33.96	0.04	0.04	0.00	0.00	0.00
34.06	0.04	0.04	0.00	0.00	0.00
34.16	0.04	0.04	0.00	0.00	0.00
34.26	0.04	0.04	0.00	0.00	0.00
34.36	0.04	0.04	0.00	0.00	0.00
34.46	0.04	0.04	0.00	0.00	0.00
34.56	0.04	0.04	0.00	0.00	0.00
34.66	0.04	0.04	0.00	0.00	0.00
34.76	0.04	0.04	0.00	0.00	0.00
34.86	0.04	0.04	0.00	0.00	0.00
34.96	0.04	0.04	0.00	0.00	0.00
35.06	0.05	0.04	0.01	0.00	0.00
35.16	0.12	0.04	0.07	0.00	0.01
35.26	0.29	0.04	0.18	0.00	0.07
35.36	0.53	0.04	0.31	0.00	0.18
35.46	0.78	0.04	0.44	0.00	0.31
35.56	1.00	0.04	0.53	0.00	0.44
35.66	1.17	0.04	0.61	0.00	0.53
35.76	1.32	0.04	0.68	0.00	0.61
35.86	1.45	0.04	0.74	0.00	0.68
35.96	1.57	0.04	0.80	0.00	0.74
36.06	1.69	0.04	0.85	0.00	0.80
36.16	1.79	0.04	0.90	0.00	0.85
36.26	1.89	0.04	0.95	0.00	0.90
36.36	1.99	0.04	1.00	0.00	0.95
36.46	2.08	0.04	1.04	0.00	1.00
36.56	2.16	0.04	1.08	0.00	1.04
36.66	2.24	0.04	1.12	0.00	1.08
36.76	2.32	0.04	1.16	0.00	1.12
36.86	2.40	0.04	1.20	0.00	1.16
36.96	2.47	0.04	1.24	0.00	1.20
37.06	2.54	0.04	1.26	0.00	1.24
37.16	**2.58**	0.04	**1.27**	0.00	**1.27**

Stage-Area-Storage for Pond SSD1: SUBSURFACE DRAINAGE AREA #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
33.16	**1,654**	0
33.21	1,654	33
33.26	1,654	66
33.31	1,654	99
33.36	1,654	132
33.41	1,654	165
33.46	1,654	198
33.51	1,654	232
33.56	1,654	265
33.61	1,654	298
33.66	1,654	331
33.71	1,654	399
33.76	1,654	468
33.81	1,654	536
33.86	1,654	605
33.91	1,654	673
33.96	1,654	741
34.01	1,654	808
34.06	1,654	876
34.11	1,654	944
34.16	1,654	1,012
34.21	1,654	1,079
34.26	1,654	1,147
34.31	1,654	1,213
34.36	1,654	1,280
34.41	1,654	1,346
34.46	1,654	1,412
34.51	1,654	1,477
34.56	1,654	1,543
34.61	1,654	1,609
34.66	1,654	1,674
34.71	1,654	1,739
34.76	1,654	1,804
34.81	1,654	1,869
34.86	1,654	1,934
34.91	1,654	1,999
34.96	1,654	2,062
35.01	1,654	2,125
35.06	1,654	2,188
35.11	1,654	2,249
35.16	1,654	2,311
35.21	1,654	2,371
35.26	1,654	2,431
35.31	1,654	2,491
35.36	1,654	2,549
35.41	1,654	2,607
35.46	1,654	2,664
35.51	1,654	2,720
35.56	1,654	2,776
35.61	1,654	2,830
35.66	1,654	2,883
35.71	1,654	2,935
35.76	1,654	2,986
35.81	1,654	3,035
35.86	1,654	3,083
35.91	1,654	3,128
35.96	1,654	3,171
36.01	1,654	3,212
36.06	1,654	3,250
36.11	1,654	3,287
36.16	1,654	3,321
36.21	1,654	3,354
36.26	1,654	3,387
36.31	1,654	3,420
36.36	1,654	3,454
36.41	1,654	3,487
36.46	1,654	3,520
36.51	1,654	3,553
36.56	1,654	3,586
36.61	1,654	3,619
36.66	1,654	3,652
36.71	1,654	3,685
36.76	1,654	3,718
36.81	1,654	3,751
36.86	1,654	**3,784**
36.91	1,654	**3,790**
36.96	1,654	3,790
37.01	1,654	3,790
37.06	1,654	3,790
37.11	1,654	3,790
37.16	1,654	3,790

Summary for Pond SSD2: SUBSURFACE DRAINAGE AREA #2

Inflow Area = 13,267 sf, 76.40% Impervious, Inflow Depth > 5.28" for 25-Year event
Inflow = 1.76 cfs @ 12.07 hrs, Volume= 5,835 cf
Outflow = 0.05 cfs @ 9.10 hrs, Volume= 2,854 cf, Atten= 97%, Lag= 0.0 min
Discarded = 0.05 cfs @ 9.10 hrs, Volume= 2,854 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP1 : DP1post
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP1 : DP1post

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 38.48' @ 16.30 hrs Surf.Area= 1,960 sf Storage= 3,544 cf

Plug-Flow detention time= 268.3 min calculated for 2,848 cf (49% of inflow)
Center-of-Mass det. time= 149.0 min (920.9 - 771.9)

Volume	Invert	Avail.Storage	Storage Description
#1B	35.70'	2,483 cf	**16.00'W x 122.50'L x 4.54'H Field B** 8,902 cf Overall - 2,694 cf Embedded = 6,208 cf x 40.0% Voids
#2B	36.70'	2,694 cf	**Cultec R-330XLHD** x 51 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 3 rows
		5,177 cf	Total Available Storage

Storage Group B created with Chamber Wizard

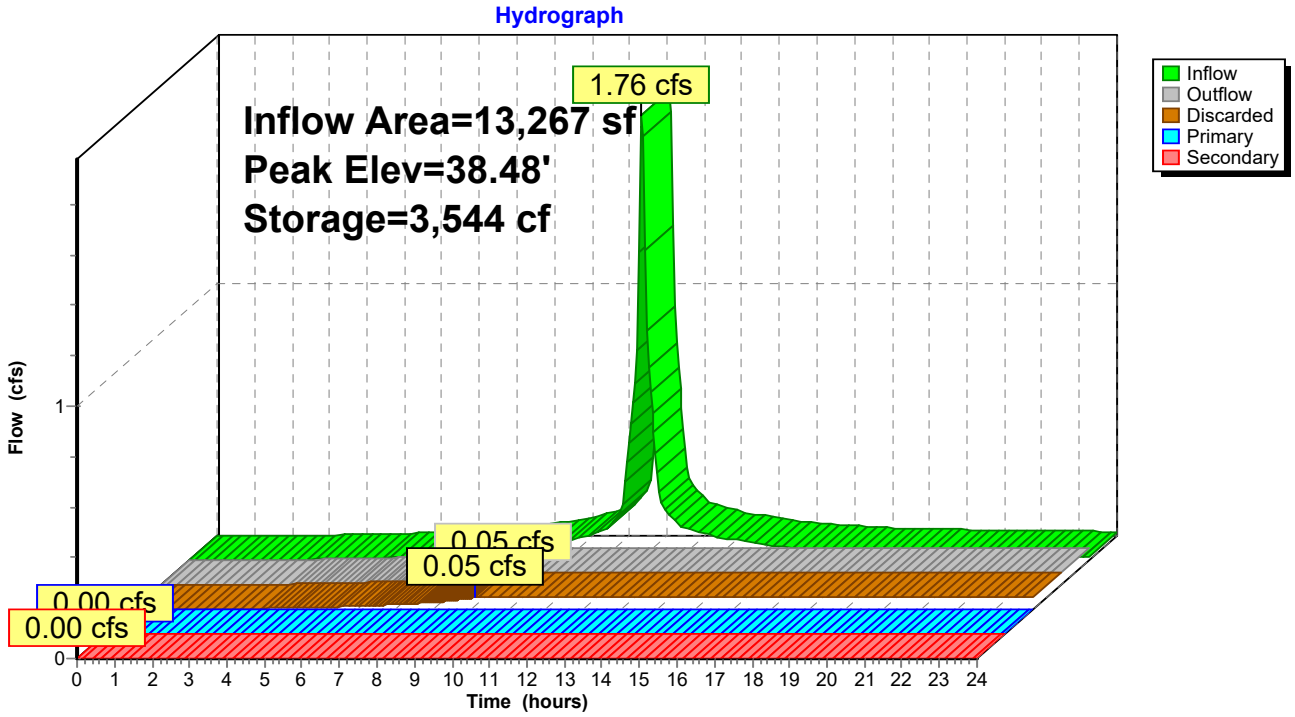
Device	Routing	Invert	Outlet Devices
#1	Discarded	35.70'	**1.020 in/hr Exfiltration over Surface area**
#2	Secondary	40.60'	**4.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	38.70'	**6.0" Round Culvert** L= 23.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 38.70' / 35.60' S= 0.1348 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf

Discarded OutFlow Max=0.05 cfs @ 9.10 hrs HW=35.75' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=35.70' (Free Discharge)
↑**3=Culvert** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=35.70' (Free Discharge)
↑**2=Orifice/Grate** (Controls 0.00 cfs)

Pond SSD2: SUBSURFACE DRAINAGE AREA #2



Stage-Discharge for Pond SSD2: SUBSURFACE DRAINAGE AREA #2

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
35.70	0.00	**0.00**	0.00	**0.00**
35.80	0.05	**0.05**	0.00	0.00
35.90	0.05	0.05	0.00	0.00
36.00	0.05	0.05	0.00	0.00
36.10	0.05	0.05	0.00	0.00
36.20	0.05	0.05	0.00	0.00
36.30	0.05	0.05	0.00	0.00
36.40	0.05	0.05	0.00	0.00
36.50	0.05	0.05	0.00	0.00
36.60	0.05	0.05	0.00	0.00
36.70	0.05	0.05	0.00	0.00
36.80	0.05	0.05	0.00	0.00
36.90	0.05	0.05	0.00	0.00
37.00	0.05	0.05	0.00	0.00
37.10	0.05	0.05	0.00	0.00
37.20	0.05	0.05	0.00	0.00
37.30	0.05	0.05	0.00	0.00
37.40	0.05	0.05	0.00	0.00
37.50	0.05	0.05	0.00	0.00
37.60	0.05	0.05	0.00	0.00
37.70	0.05	0.05	0.00	0.00
37.80	0.05	0.05	0.00	0.00
37.90	0.05	0.05	0.00	0.00
38.00	0.05	0.05	0.00	0.00
38.10	0.05	0.05	0.00	0.00
38.20	0.05	0.05	0.00	0.00
38.30	0.05	0.05	0.00	0.00
38.40	0.05	0.05	0.00	0.00
38.50	0.05	0.05	0.00	0.00
38.60	0.05	0.05	0.00	0.00
38.70	0.05	0.05	0.00	0.00
38.80	0.08	0.05	0.03	0.00
38.90	0.16	0.05	0.11	0.00
39.00	0.28	0.05	0.23	0.00
39.10	0.41	0.05	0.36	0.00
39.20	0.52	0.05	0.47	0.00
39.30	0.61	0.05	0.56	0.00
39.40	0.68	0.05	0.63	0.00
39.50	0.75	0.05	0.70	0.00
39.60	0.81	0.05	0.76	0.00
39.70	0.87	0.05	0.82	0.00
39.80	0.92	0.05	0.87	0.00
39.90	0.97	0.05	0.92	0.00
40.00	1.02	0.05	0.97	0.00
40.10	1.06	0.05	1.01	0.00
40.20	1.10	0.05	1.06	0.00
40.30	1.14	0.05	1.10	0.00
40.40	1.18	0.05	1.14	0.00
40.50	1.22	0.05	1.18	0.00
40.60	**1.26**	0.05	**1.21**	0.00

Stage-Area-Storage for Pond SSD2: SUBSURFACE DRAINAGE AREA #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
35.70	**1,960**	0
35.75	1,960	39
35.80	1,960	78
35.85	1,960	118
35.90	1,960	157
35.95	1,960	196
36.00	1,960	235
36.05	1,960	274
36.10	1,960	314
36.15	1,960	353
36.20	1,960	392
36.25	1,960	431
36.30	1,960	470
36.35	1,960	510
36.40	1,960	549
36.45	1,960	588
36.50	1,960	627
36.55	1,960	666
36.60	1,960	706
36.65	1,960	745
36.70	1,960	784
36.75	1,960	866
36.80	1,960	948
36.85	1,960	1,030
36.90	1,960	1,112
36.95	1,960	1,193
37.00	1,960	1,275
37.05	1,960	1,356
37.10	1,960	1,437
37.15	1,960	1,518
37.20	1,960	1,600
37.25	1,960	1,680
37.30	1,960	1,761
37.35	1,960	1,841
37.40	1,960	1,920
37.45	1,960	1,999
37.50	1,960	2,078
37.55	1,960	2,157
37.60	1,960	2,236
37.65	1,960	2,314
37.70	1,960	2,392
37.75	1,960	2,470
37.80	1,960	2,548
37.85	1,960	2,626
37.90	1,960	2,704
37.95	1,960	2,781
38.00	1,960	2,857
38.05	1,960	2,932
38.10	1,960	3,007
38.15	1,960	3,081
38.20	1,960	3,154
38.25	1,960	3,227
38.30	1,960	3,298
38.35	1,960	3,369
38.40	1,960	3,439
38.45	1,960	3,509
38.50	1,960	3,577
38.55	1,960	3,644
38.60	1,960	3,710
38.65	1,960	3,775
38.70	1,960	3,839
38.75	1,960	3,901
38.80	1,960	3,961
38.85	1,960	4,020
38.90	1,960	4,076
38.95	1,960	4,130
39.00	1,960	4,182
39.05	1,960	4,230
39.10	1,960	4,276
39.15	1,960	4,319
39.20	1,960	4,360
39.25	1,960	4,399
39.30	1,960	4,439
39.35	1,960	4,478
39.40	1,960	4,517
39.45	1,960	4,556
39.50	1,960	4,595
39.55	1,960	4,635
39.60	1,960	4,674
39.65	1,960	4,713
39.70	1,960	4,752
39.75	1,960	4,791
39.80	1,960	4,831
39.85	1,960	4,870
39.90	1,960	4,909
39.95	1,960	4,948
40.00	1,960	4,987
40.05	1,960	5,027
40.10	1,960	5,066
40.15	1,960	5,105
40.20	1,960	5,144
40.25	1,960	**5,177**
40.30	1,960	5,177
40.35	1,960	5,177
40.40	1,960	5,177
40.45	1,960	5,177
40.50	1,960	5,177
40.55	1,960	5,177
40.60	1,960	5,177

Summary for Pond SSD3: SUBSURFACE DRAINAGE AREA #3

Inflow Area = 20,604 sf, 71.75% Impervious, Inflow Depth > 5.15" for 25-Year event
Inflow = 2.52 cfs @ 12.09 hrs, Volume= 8,846 cf
Outflow = 1.99 cfs @ 12.15 hrs, Volume= 7,950 cf, Atten= 21%, Lag= 4.1 min
Discarded = 0.03 cfs @ 7.15 hrs, Volume= 1,930 cf
Primary = 1.96 cfs @ 12.15 hrs, Volume= 6,021 cf
Routed to Reach DP3 : DP3
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 20.45' @ 12.16 hrs Surf.Area= 1,203 sf Storage= 1,746 cf

Plug-Flow detention time= 79.8 min calculated for 7,950 cf (90% of inflow)
Center-of-Mass det. time= 30.5 min (807.0 - 776.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	18.00'	722 cf	**8.33'W x 81.00'L x 3.54'H Field A** 2,391 cf Overall - 585 cf Embedded = 1,806 cf x 40.0% Voids
#2A	18.50'	585 cf	**Cultec R-330XLHD** x 11 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
#3B	18.00'	362 cf	**12.50'W x 28.00'L x 3.54'H Field B** 1,240 cf Overall - 335 cf Embedded = 904 cf x 40.0% Voids
#4B	18.50'	335 cf	**Cultec R-330XLHD** x 6 Inside #3 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
#5C	18.00'	201 cf	**13.00'W x 13.67'L x 3.54'H Field C** 629 cf Overall - 127 cf Embedded = 503 cf x 40.0% Voids
#6C	18.50'	127 cf	**Cultec R-330XLHD** x 2 Inside #5 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		2,332 cf	Total Available Storage

Storage Group A created with Chamber Wizard
Storage Group B created with Chamber Wizard
Storage Group C created with Chamber Wizard

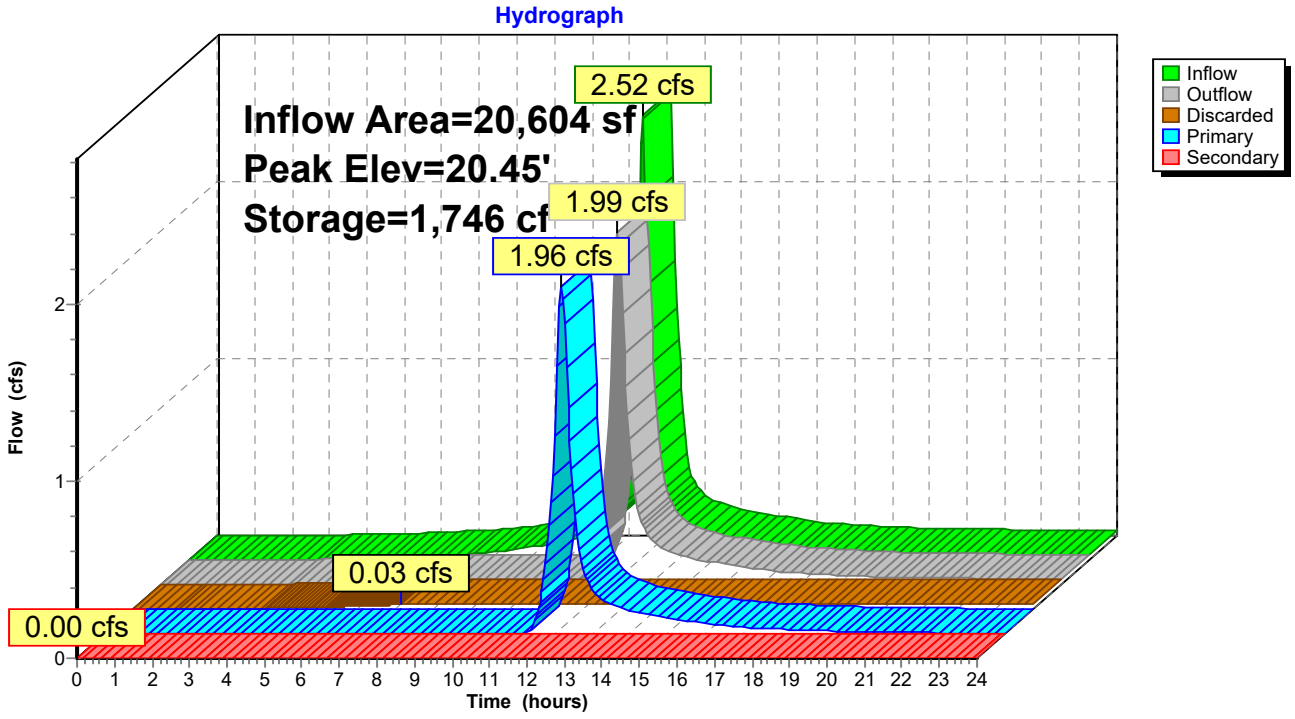
Device	Routing	Invert	Outlet Devices
#1	Discarded	18.00'	**1.020 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#2	Primary	19.30'	**10.0" Round Culvert** L= 14.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 19.30' / 19.20' S= 0.0071 '/' Cc= 0.900 n= 0.013, Flow Area= 0.55 sf
#3	Secondary	22.00'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.03 cfs @ 7.15 hrs HW=18.04' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=1.95 cfs @ 12.15 hrs HW=20.44' (Free Discharge)
└**2=Culvert** (Barrel Controls 1.95 cfs @ 3.58 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=18.00' (Free Discharge)
└**3=Orifice/Grate** (Controls 0.00 cfs)

Pond SSD3: SUBSURFACE DRAINAGE AREA #3



Stage-Discharge for Pond SSD3: SUBSURFACE DRAINAGE AREA #3

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
18.00	0.00	**0.00**	0.00	**0.00**
18.10	0.03	**0.03**	0.00	0.00
18.20	0.03	0.03	0.00	0.00
18.30	0.03	0.03	0.00	0.00
18.40	0.03	0.03	0.00	0.00
18.50	0.03	0.03	0.00	0.00
18.60	0.03	0.03	0.00	0.00
18.70	0.03	0.03	0.00	0.00
18.80	0.03	0.03	0.00	0.00
18.90	0.03	0.03	0.00	0.00
19.00	0.03	0.03	0.00	0.00
19.10	0.03	0.03	0.00	0.00
19.20	0.03	0.03	0.00	0.00
19.30	0.03	0.03	0.00	0.00
19.40	0.06	0.03	0.03	0.00
19.50	0.14	0.03	0.12	0.00
19.60	0.28	0.03	0.25	0.00
19.70	0.45	0.03	0.42	0.00
19.80	0.65	0.03	0.62	0.00
19.90	0.88	0.03	0.85	0.00
20.00	1.11	0.03	1.08	0.00
20.10	1.35	0.03	1.33	0.00
20.20	1.59	0.03	1.56	0.00
20.30	1.79	0.03	1.76	0.00
20.40	1.91	0.03	1.89	0.00
20.50	2.11	0.03	2.08	0.00
20.60	2.32	0.03	2.30	0.00
20.70	2.52	0.03	2.49	0.00
20.80	2.70	0.03	2.67	0.00
20.90	2.87	0.03	2.84	0.00
21.00	3.00	0.03	2.98	0.00
21.10	3.12	0.03	3.09	0.00
21.20	3.23	0.03	3.20	0.00
21.30	3.33	0.03	3.30	0.00
21.40	3.44	0.03	3.41	0.00
21.50	3.54	0.03	3.51	0.00
21.60	3.63	0.03	3.60	0.00
21.70	3.73	0.03	3.70	0.00
21.80	3.82	0.03	3.79	0.00
21.90	3.91	0.03	3.88	0.00
22.00	**4.00**	0.03	**3.97**	0.00

Stage-Area-Storage for Pond SSD3: SUBSURFACE DRAINAGE AREA #3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
18.00	**1,203**	0
18.05	1,203	24
18.10	1,203	48
18.15	1,203	72
18.20	1,203	96
18.25	1,203	120
18.30	1,203	144
18.35	1,203	168
18.40	1,203	192
18.45	1,203	216
18.50	1,203	241
18.55	1,203	281
18.60	1,203	322
18.65	1,203	363
18.70	1,203	403
18.75	1,203	444
18.80	1,203	484
18.85	1,203	525
18.90	1,203	565
18.95	1,203	605
19.00	1,203	646
19.05	1,203	686
19.10	1,203	726
19.15	1,203	766
19.20	1,203	806
19.25	1,203	845
19.30	1,203	885
19.35	1,203	924
19.40	1,203	963
19.45	1,203	1,003
19.50	1,203	1,042
19.55	1,203	1,081
19.60	1,203	1,120
19.65	1,203	1,159
19.70	1,203	1,198
19.75	1,203	1,237
19.80	1,203	1,275
19.85	1,203	1,314
19.90	1,203	1,351
19.95	1,203	1,389
20.00	1,203	1,426
20.05	1,203	1,463
20.10	1,203	1,500
20.15	1,203	1,536
20.20	1,203	1,572
20.25	1,203	1,608
20.30	1,203	1,643
20.35	1,203	1,678
20.40	1,203	1,713
20.45	1,203	1,747
20.50	1,203	1,780
20.55	1,203	1,813
20.60	1,203	1,846
20.65	1,203	1,877
20.70	1,203	1,908
20.75	1,203	1,938
20.80	1,203	1,967
20.85	1,203	1,994
20.90	1,203	2,021
20.95	1,203	2,047
21.00	1,203	2,071
21.05	1,203	2,095
21.10	1,203	2,119
21.15	1,203	2,143
21.20	1,203	2,168
21.25	1,203	2,192
21.30	1,203	2,216
21.35	1,203	2,240
21.40	1,203	2,264
21.45	1,203	2,288
21.50	1,203	2,312
21.55	1,203	**2,332**
21.60	1,203	2,332
21.65	1,203	2,332
21.70	1,203	2,332
21.75	1,203	2,332
21.80	1,203	2,332
21.85	1,203	2,332
21.90	1,203	2,332
21.95	1,203	2,332
22.00	1,203	2,332

Summary for Pond SSD4: SUBSURFACE DRAINAGE AREA #4

Inflow Area = 5,609 sf,100.00% Impervious, Inflow Depth > 5.95" for 25-Year event
Inflow = 0.79 cfs @ 12.07 hrs, Volume= 2,781 cf
Outflow = 0.53 cfs @ 12.16 hrs, Volume= 2,180 cf, Atten= 32%, Lag= 5.5 min
Discarded = 0.01 cfs @ 6.25 hrs, Volume= 856 cf
Primary = 0.27 cfs @ 12.16 hrs, Volume= 258 cf
Routed to Reach DP1 : DP1post
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP1 : DP1post
Tertiary = 0.25 cfs @ 12.16 hrs, Volume= 1,067 cf
Routed to Reach DP2 : DP2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 37.58' @ 12.16 hrs Surf.Area= 485 sf Storage= 936 cf

Plug-Flow detention time= 132.3 min calculated for 2,180 cf (78% of inflow)
Center-of-Mass det. time= 51.6 min (795.1 - 743.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	34.50'	475 cf	**11.17'W x 31.50'L x 4.63'H Field A** 1,627 cf Overall - 440 cf Embedded = 1,187 cf x 40.0% Voids
#2A	35.00'	440 cf	**Cultec R-330XLHD** x 8 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
#3B	34.50'	95 cf	**6.33'W x 10.50'L x 4.54'H Field B** 302 cf Overall - 63 cf Embedded = 239 cf x 40.0% Voids
#4B	35.00'	63 cf	**Cultec R-330XLHD** Inside #3 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
#5C	34.50'	98 cf	**6.33'W x 10.50'L x 4.63'H Field C** 308 cf Overall - 63 cf Embedded = 244 cf x 40.0% Voids
#6C	35.00'	63 cf	**Cultec R-330XLHD** Inside #5 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		1,234 cf	Total Available Storage

Storage Group A created with Chamber Wizard
Storage Group B created with Chamber Wizard
Storage Group C created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	34.50'	**1.020 in/hr Exfiltration over Surface area**
#2	Secondary	39.50'	**4.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	37.00'	**4.0" Round Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 37.00' / 34.80' S= 0.2200 '/' Cc= 0.900 n= 0.013, Flow Area= 0.09 sf

#4 Tertiary 36.50' **4.0" Round Culvert**
L= 60.0' CPP, end-section conforming to fill, Ke= 0.500
Inlet / Outlet Invert= 36.50' / 36.00' S= 0.0083 '/' Cc= 0.900
n= 0.013, Flow Area= 0.09 sf

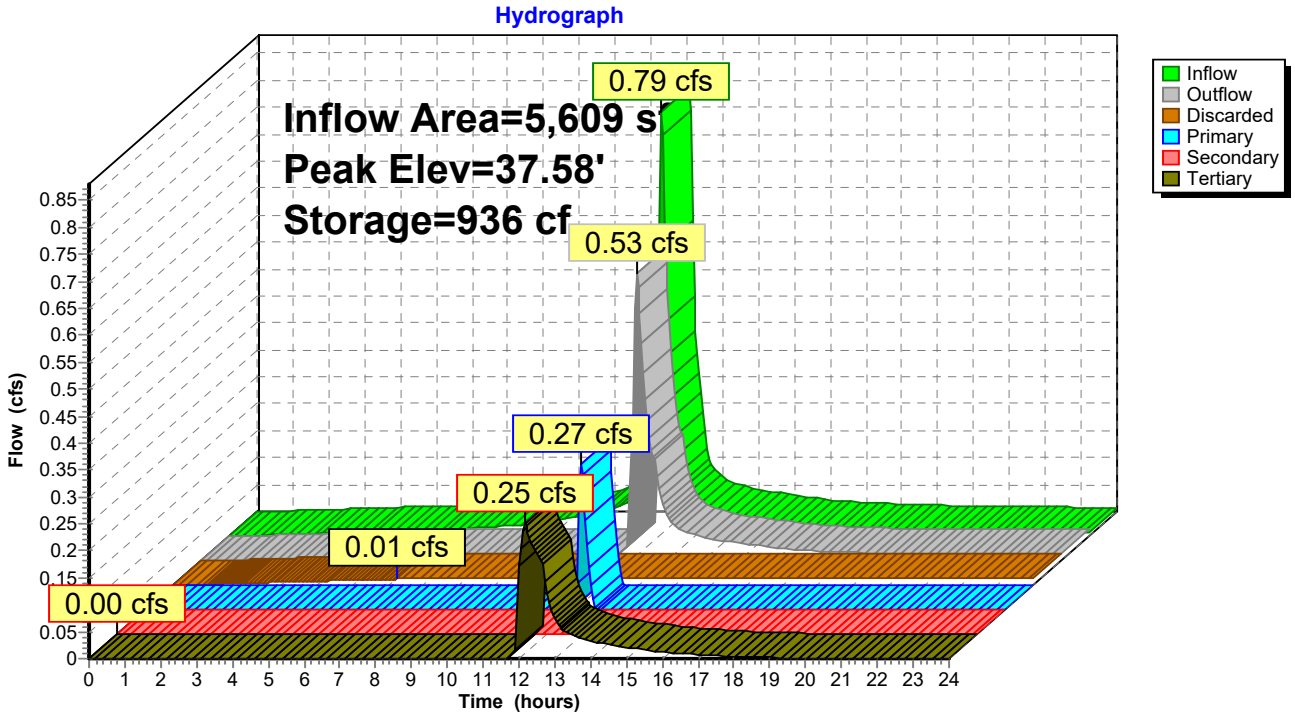
Discarded OutFlow Max=0.01 cfs @ 6.25 hrs HW=34.55' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.26 cfs @ 12.16 hrs HW=37.56' (Free Discharge)
└**3=Culvert** (Inlet Controls 0.26 cfs @ 3.01 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=34.50' (Free Discharge)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Tertiary OutFlow Max=0.25 cfs @ 12.16 hrs HW=37.56' (Free Discharge)
└**4=Culvert** (Barrel Controls 0.25 cfs @ 2.86 fps)

Pond SSD4: SUBSURFACE DRAINAGE AREA #4



Stage-Discharge for Pond SSD4: SUBSURFACE DRAINAGE AREA #4

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)	Tertiary (cfs)
34.50	0.00	**0.00**	0.00	**0.00**	0.00
34.60	0.01	**0.01**	0.00	0.00	0.00
34.70	0.01	0.01	0.00	0.00	0.00
34.80	0.01	0.01	0.00	0.00	0.00
34.90	0.01	0.01	0.00	0.00	0.00
35.00	0.01	0.01	0.00	0.00	0.00
35.10	0.01	0.01	0.00	0.00	0.00
35.20	0.01	0.01	0.00	0.00	0.00
35.30	0.01	0.01	0.00	0.00	0.00
35.40	0.01	0.01	0.00	0.00	0.00
35.50	0.01	0.01	0.00	0.00	0.00
35.60	0.01	0.01	0.00	0.00	0.00
35.70	0.01	0.01	0.00	0.00	0.00
35.80	0.01	0.01	0.00	0.00	0.00
35.90	0.01	0.01	0.00	0.00	0.00
36.00	0.01	0.01	0.00	0.00	0.00
36.10	0.01	0.01	0.00	0.00	0.00
36.20	0.01	0.01	0.00	0.00	0.00
36.30	0.01	0.01	0.00	0.00	0.00
36.40	0.01	0.01	0.00	0.00	0.00
36.50	0.01	0.01	0.00	0.00	0.00
36.60	0.03	0.01	0.00	0.00	0.02
36.70	0.08	0.01	0.00	0.00	0.07
36.80	0.15	0.01	0.00	0.00	0.13
36.90	0.19	0.01	0.00	0.00	0.18
37.00	0.20	0.01	0.00	0.00	0.18
37.10	0.23	0.01	0.02	0.00	0.20
37.20	0.30	0.01	0.08	0.00	0.21
37.30	0.39	0.01	0.15	0.00	0.22
37.40	0.45	0.01	0.20	0.00	0.23
37.50	0.50	0.01	0.24	0.00	0.24
37.60	0.54	0.01	0.28	0.00	0.25
37.70	0.58	0.01	0.31	0.00	0.26
37.80	0.62	0.01	0.33	0.00	0.27
37.90	0.65	0.01	0.36	0.00	0.28
38.00	0.69	0.01	0.38	0.00	0.29
38.10	0.72	0.01	0.41	0.00	0.30
38.20	0.75	0.01	0.43	0.00	0.31
38.30	0.77	0.01	0.45	0.00	0.32
38.40	0.80	0.01	0.47	0.00	0.32
38.50	0.83	0.01	0.49	0.00	0.33
38.60	0.85	0.01	0.50	0.00	0.34
38.70	0.88	0.01	0.52	0.00	0.35
38.80	0.90	0.01	0.54	0.00	0.35
38.90	0.93	0.01	0.55	0.00	0.36
39.00	0.95	0.01	0.57	0.00	0.37
39.10	0.97	0.01	0.58	0.00	0.38
39.20	0.99	0.01	0.60	0.00	0.38
39.30	1.01	0.01	0.61	0.00	0.39
39.40	1.03	0.01	0.63	0.00	0.39
39.50	**1.05**	0.01	**0.64**	0.00	**0.40**

Stage-Area-Storage for Pond SSD4: SUBSURFACE DRAINAGE AREA #4

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
34.50	**485**	0
34.55	485	10
34.60	485	19
34.65	485	29
34.70	485	39
34.75	485	48
34.80	485	58
34.85	485	68
34.90	485	78
34.95	485	87
35.00	485	97
35.05	485	116
35.10	485	134
35.15	485	153
35.20	485	172
35.25	485	190
35.30	485	209
35.35	485	227
35.40	485	246
35.45	485	264
35.50	485	283
35.55	485	301
35.60	485	320
35.65	485	338
35.70	485	356
35.75	485	374
35.80	485	392
35.85	485	410
35.90	485	428
35.95	485	446
36.00	485	464
36.05	485	482
36.10	485	500
36.15	485	518
36.20	485	535
36.25	485	553
36.30	485	571
36.35	485	588
36.40	485	605
36.45	485	622
36.50	485	639
36.55	485	656
36.60	485	672
36.65	485	688
36.70	485	705
36.75	485	721
36.80	485	736
36.85	485	752
36.90	485	767
36.95	485	782
37.00	485	797
37.05	485	812
37.10	485	826
37.15	485	840
37.20	485	853
37.25	485	866
37.30	485	878
37.35	485	890
37.40	485	901
37.45	485	911
37.50	485	921
37.55	485	931
37.60	485	941
37.65	485	951
37.70	485	960
37.75	485	970
37.80	485	980
37.85	485	989
37.90	485	999
37.95	485	1,009
38.00	485	1,018
38.05	485	1,028
38.10	485	1,038
38.15	485	1,048
38.20	485	1,057
38.25	485	1,067
38.30	485	1,077
38.35	485	1,086
38.40	485	1,096
38.45	485	1,106
38.50	485	1,115
38.55	485	1,125
38.60	485	1,135
38.65	485	1,144
38.70	485	1,154
38.75	485	1,164
38.80	485	1,174
38.85	485	1,183
38.90	485	1,193
38.95	485	1,203
39.00	485	1,212
39.05	485	1,222
39.10	485	**1,230**
39.15	485	**1,234**
39.20	485	1,234
39.25	485	1,234
39.30	485	1,234
39.35	485	1,234
39.40	485	1,234
39.45	485	1,234
39.50	485	1,234

Summary for Pond SSD5: SUBSURFACE DRAINAGE AREA #5 (STORAGE)

Inflow = 0.71 cfs @ 12.21 hrs, Volume= 1,524 cf
Outflow = 0.08 cfs @ 12.94 hrs, Volume= 1,524 cf, Atten= 89%, Lag= 44.1 min
Primary = 0.08 cfs @ 12.94 hrs, Volume= 1,524 cf
Routed to Reach DP3 : DP3
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 32.34' @ 12.94 hrs Surf.Area= 1,174 sf Storage= 1,050 cf

Plug-Flow detention time= 134.2 min calculated for 1,520 cf (100% of inflow)
Center-of-Mass det. time= 134.5 min (889.3 - 754.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	31.00'	1,011 cf	**30.50'W x 38.50'L x 3.54'H Field A** 4,159 cf Overall - 1,632 cf Embedded = 2,527 cf x 40.0% Voids
#2A	31.50'	1,632 cf	**Cultec R-330XLHD** x 30 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 6 rows
		2,643 cf	Total Available Storage

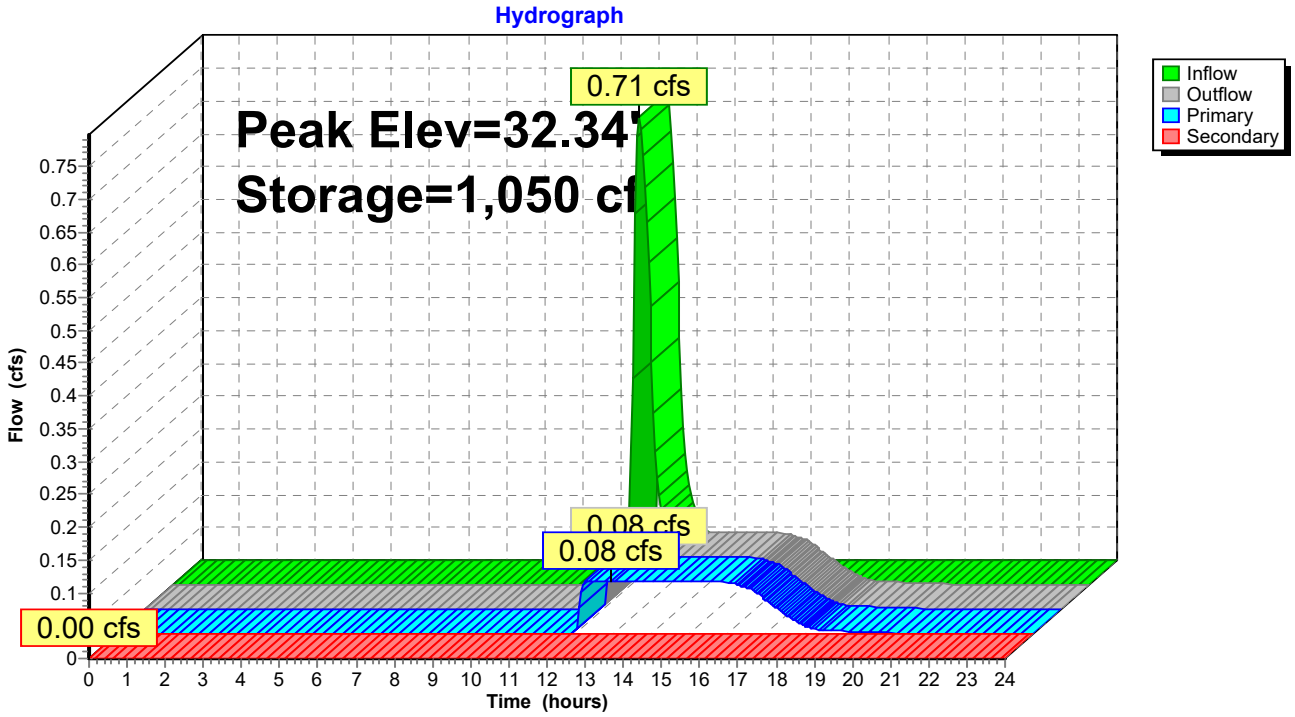
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	31.00'	**2.0" Round Culvert** L= 175.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 31.00' / 19.00' S= 0.0686 '/' Cc= 0.900 n= 0.013, Flow Area= 0.02 sf
#2	Secondary	37.00'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.08 cfs @ 12.94 hrs HW=32.34' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 0.08 cfs @ 3.72 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=31.00' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond SSD5: SUBSURFACE DRAINAGE AREA #5 (STORAGE)



Stage-Discharge for Pond SSD5: SUBSURFACE DRAINAGE AREA #5 (STORAGE)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
31.00	0.00	0.00	**0.00**
31.10	0.01	0.01	0.00
31.20	0.04	0.04	0.00
31.30	0.05	0.05	0.00
31.40	0.06	0.06	0.00
31.50	0.07	0.07	0.00
31.60	0.08	0.08	0.00
31.70	0.08	0.08	0.00
31.80	0.08	0.08	0.00
31.90	0.08	0.08	0.00
32.00	0.08	0.08	0.00
32.10	0.08	0.08	0.00
32.20	0.08	0.08	0.00
32.30	0.08	0.08	0.00
32.40	0.08	0.08	0.00
32.50	0.08	0.08	0.00
32.60	0.08	0.08	0.00
32.70	0.08	0.08	0.00
32.80	0.08	0.08	0.00
32.90	0.08	0.08	0.00
33.00	0.08	0.08	0.00
33.10	0.08	0.08	0.00
33.20	0.08	0.08	0.00
33.30	0.08	0.08	0.00
33.40	0.08	0.08	0.00
33.50	0.08	0.08	0.00
33.60	0.08	0.08	0.00
33.70	0.09	0.09	0.00
33.80	0.09	0.09	0.00
33.90	0.09	0.09	0.00
34.00	0.09	0.09	0.00
34.10	0.09	0.09	0.00
34.20	0.09	0.09	0.00
34.30	0.09	0.09	0.00
34.40	0.09	0.09	0.00
34.50	0.09	0.09	0.00
34.60	0.09	0.09	0.00
34.70	0.09	0.09	0.00
34.80	0.09	0.09	0.00
34.90	0.09	0.09	0.00
35.00	0.09	0.09	0.00
35.10	0.09	0.09	0.00
35.20	0.09	0.09	0.00
35.30	0.09	0.09	0.00
35.40	0.09	0.09	0.00
35.50	0.09	0.09	0.00
35.60	0.09	0.09	0.00
35.70	0.09	0.09	0.00
35.80	0.09	0.09	0.00
35.90	0.09	0.09	0.00
36.00	0.09	0.09	0.00
36.10	0.09	0.09	0.00
36.20	0.09	0.09	0.00
36.30	0.09	0.09	0.00
36.40	0.09	0.09	0.00
36.50	0.09	0.09	0.00
36.60	0.09	0.09	0.00
36.70	0.09	0.09	0.00
36.80	0.09	0.09	0.00
36.90	0.09	0.09	0.00
37.00	**0.09**	**0.09**	0.00

Stage-Area-Storage for Pond SSD5: SUBSURFACE DRAINAGE AREA #5 (STORAGE)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
31.00	0	33.65	2,184	36.30	2,643
31.05	23	33.70	2,218	36.35	2,643
31.10	47	33.75	2,250	36.40	2,643
31.15	70	33.80	2,281	36.45	2,643
31.20	94	33.85	2,310	36.50	2,643
31.25	117	33.90	2,338	36.55	2,643
31.30	141	33.95	2,364	36.60	2,643
31.35	164	34.00	2,388	36.65	2,643
31.40	188	34.05	2,412	36.70	2,643
31.45	211	34.10	2,435	36.75	2,643
31.50	235	34.15	2,459	36.80	2,643
31.55	284	34.20	2,482	36.85	2,643
31.60	334	34.25	2,506	36.90	2,643
31.65	383	34.30	2,529	36.95	2,643
31.70	432	34.35	2,553	37.00	2,643
31.75	482	34.40	2,576		
31.80	531	34.45	2,600		
31.85	580	34.50	2,623		
31.90	629	34.55	**2,643**		
31.95	677	34.60	2,643		
32.00	726	34.65	2,643		
32.05	775	34.70	2,643		
32.10	824	34.75	2,643		
32.15	872	34.80	2,643		
32.20	920	34.85	2,643		
32.25	967	34.90	2,643		
32.30	1,015	34.95	2,643		
32.35	1,062	35.00	2,643		
32.40	1,109	35.05	2,643		
32.45	1,157	35.10	2,643		
32.50	1,204	35.15	2,643		
32.55	1,251	35.20	2,643		
32.60	1,298	35.25	2,643		
32.65	1,345	35.30	2,643		
32.70	1,391	35.35	2,643		
32.75	1,438	35.40	2,643		
32.80	1,484	35.45	2,643		
32.85	1,529	35.50	2,643		
32.90	1,574	35.55	2,643		
32.95	1,619	35.60	2,643		
33.00	1,663	35.65	2,643		
33.05	1,706	35.70	2,643		
33.10	1,750	35.75	2,643		
33.15	1,792	35.80	2,643		
33.20	1,835	35.85	2,643		
33.25	1,876	35.90	2,643		
33.30	1,917	35.95	2,643		
33.35	1,958	36.00	2,643		
33.40	1,998	36.05	2,643		
33.45	2,037	36.10	2,643		
33.50	2,075	36.15	2,643		
33.55	2,112	36.20	2,643		
33.60	2,149	36.25	2,643		

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1: Post 1 Runoff Area=13,803 sf 0.00% Impervious Runoff Depth>5.28"
Flow Length=229' Tc=13.3 min CN=72 Runoff=1.54 cfs 6,078 cf

Subcatchment 2A: Post 2A Runoff Area=5,633 sf 67.30% Impervious Runoff Depth>7.47"
Tc=5.0 min CN=90 Runoff=1.06 cfs 3,507 cf

Subcatchment 2B: Post 2B Runoff Area=5,351 sf 75.91% Impervious Runoff Depth>7.71"
Tc=5.0 min CN=92 Runoff=1.02 cfs 3,439 cf

Subcatchment 3A: Post 3A Runoff Area=4,243 sf 86.57% Impervious Runoff Depth>8.07"
Tc=5.0 min CN=95 Runoff=0.83 cfs 2,855 cf

Subcatchment 3B: Post 3B Runoff Area=2,714 sf 96.35% Impervious Runoff Depth>8.32"
Tc=5.0 min CN=97 Runoff=0.53 cfs 1,881 cf

Subcatchment 4: Post 4 Runoff Area=5,122 sf 56.07% Impervious Runoff Depth>7.11"
Flow Length=131' Tc=8.6 min CN=87 Runoff=0.84 cfs 3,033 cf

Subcatchment 5: Post 5 Runoff Area=7,742 sf 59.11% Impervious Runoff Depth>7.23"
Flow Length=131' Tc=8.6 min CN=88 Runoff=1.29 cfs 4,662 cf

Subcatchment 6: Post 6 Runoff Area=9,340 sf 71.57% Impervious Runoff Depth>7.59"
Tc=5.0 min CN=91 Runoff=1.77 cfs 5,910 cf

Subcatchment 7: Post 7 Runoff Area=3,875 sf 0.00% Impervious Runoff Depth>5.41"
Flow Length=170' Tc=11.1 min CN=73 Runoff=0.47 cfs 1,746 cf

Subcatchment 8: Post 8 Runoff Area=1,030 sf 0.00% Impervious Runoff Depth>5.05"
Tc=5.0 min CN=70 Runoff=0.14 cfs 434 cf

Subcatchment 9: Post 9 Runoff Area=28,758 sf 3.57% Impervious Runoff Depth>5.66"
Tc=5.0 min CN=75 Runoff=4.37 cfs 13,554 cf

Subcatchment B1: BLDG #1 Runoff Area=3,522 sf 100.00% Impervious Runoff Depth>8.44"
Tc=5.0 min CN=98 Runoff=0.69 cfs 2,476 cf

Subcatchment B2: BLDG #2 Runoff Area=5,607 sf 100.00% Impervious Runoff Depth>8.44"
Tc=5.0 min CN=98 Runoff=1.10 cfs 3,942 cf

Subcatchment B3A: 1/2 BLDG #3 Runoff Area=2,283 sf 100.00% Impervious Runoff Depth>8.44"
Tc=5.0 min CN=98 Runoff=0.45 cfs 1,605 cf

Subcatchment B3B: 1/2 BLDG #3 Runoff Area=2,283 sf 100.00% Impervious Runoff Depth>8.44"
Tc=5.0 min CN=98 Runoff=0.45 cfs 1,605 cf

Subcatchment B4: BLDG #4 Runoff Area=5,609 sf 100.00% Impervious Runoff Depth>8.44"
Tc=5.0 min CN=98 Runoff=1.10 cfs 3,943 cf

Reach DP1: DP1post Inflow=1.98 cfs 8,637 cf
Outflow=1.98 cfs 8,637 cf

Reach DP2: DP2 Inflow=0.44 cfs 2,169 cf
Outflow=0.44 cfs 2,169 cf

Reach DP3: DP3 Inflow=8.08 cfs 31,788 cf
Outflow=8.08 cfs 31,788 cf

Reach DP4: DP4 Inflow=0.47 cfs 1,746 cf
Outflow=0.47 cfs 1,746 cf

Pond CB1: CB1 Peak Elev=34.49' Inflow=0.84 cfs 3,033 cf
Primary=0.84 cfs 3,033 cf Secondary=0.00 cfs 0 cf Outflow=0.84 cfs 3,033 cf

Pond CB10: CB10 Peak Elev=20.25' Inflow=1.29 cfs 4,662 cf
Primary=1.29 cfs 4,662 cf Secondary=0.00 cfs 0 cf Outflow=1.29 cfs 4,662 cf

Pond CB13: CB13 Peak Elev=20.75' Inflow=1.77 cfs 5,910 cf
Primary=1.77 cfs 5,910 cf Secondary=0.00 cfs 0 cf Outflow=1.77 cfs 5,910 cf

Pond CB4: CB4 Peak Elev=34.43' Inflow=0.83 cfs 2,855 cf
Primary=0.83 cfs 2,855 cf Secondary=0.00 cfs 0 cf Outflow=0.83 cfs 2,855 cf

Pond CB5: CB5 Peak Elev=34.42' Inflow=0.53 cfs 1,881 cf
Primary=0.53 cfs 1,881 cf Secondary=0.00 cfs 0 cf Outflow=0.53 cfs 1,881 cf

Pond CB6: CB6 Peak Elev=37.54' Inflow=1.06 cfs 3,507 cf
Primary=1.06 cfs 3,507 cf Secondary=0.00 cfs 0 cf Outflow=1.06 cfs 3,507 cf

Pond CB9: CB9 Peak Elev=37.52' Inflow=1.02 cfs 3,439 cf
Primary=1.02 cfs 3,439 cf Secondary=0.00 cfs 0 cf Outflow=1.02 cfs 3,439 cf

Pond DMH11: DMH11 Peak Elev=21.03' Inflow=2.96 cfs 10,572 cf
12.0" Round Culvert n=0.013 L=42.0' S=0.0024 '/' Outflow=2.96 cfs 10,572 cf

Pond DMH2: DMH2 Peak Elev=34.74' Inflow=2.13 cfs 7,769 cf
12.0" Round Culvert n=0.013 L=29.0' S=0.0034 '/' Outflow=2.13 cfs 7,769 cf

Pond DMH7: DMH7 Peak Elev=37.73' Inflow=2.08 cfs 6,947 cf
12.0" Round Culvert n=0.013 L=30.0' S=0.0033 '/' Outflow=2.08 cfs 6,947 cf

Pond SSD1: SUBSURFACE DRAINAGE Peak Elev=36.84' Storage=3,770 cf Inflow=3.66 cfs 13,315 cf
04 cfs 2,965 cf Primary=1.19 cfs 5,092 cf Secondary=0.00 cfs 0 cf Tertiary=1.15 cfs 3,122 cf Outflow=2.38 cfs 11,179 cf

Pond SSD2: SUBSURFACE DRAINAGE AREA Peak Elev=39.11' Storage=4,284 cf Inflow=2.53 cfs 8,552 cf
Discarded=0.05 cfs 3,089 cf Primary=0.37 cfs 1,895 cf Secondary=0.00 cfs 0 cf Outflow=0.42 cfs 4,984 cf

Pond SSD3: SUBSURFACE DRAINAGE Peak Elev=20.97' Storage=2,056 cf Inflow=3.64 cfs 13,048 cf
Discarded=0.03 cfs 2,080 cf Primary=2.94 cfs 10,039 cf Secondary=0.00 cfs 0 cf Outflow=2.97 cfs 12,118 cf

Pond SSD4: SUBSURFACE DRAINAGE AREA Peak Elev=38.30' Storage=1,077 cf Inflow=1.10 cfs 3,943 cf
ed=0.01 cfs 908 cf Primary=0.45 cfs 664 cf Secondary=0.00 cfs 0 cf Tertiary=0.32 cfs 1,735 cf Outflow=0.78 cfs 3,307 cf

Pond SSD5: SUBSURFACE DRAINAGE AREA Peak Elev=33.90' Storage=2,335 cf Inflow=1.15 cfs 3,122 cf
Primary=0.09 cfs 3,103 cf Secondary=0.00 cfs 0 cf Outflow=0.09 cfs 3,103 cf

Total Runoff Area = 106,915 sf Runoff Volume = 60,669 cf Average Runoff Depth = 6.81"
54.54% Pervious = 58,311 sf 45.46% Impervious = 48,604 sf

Summary for Subcatchment 1: Post 1

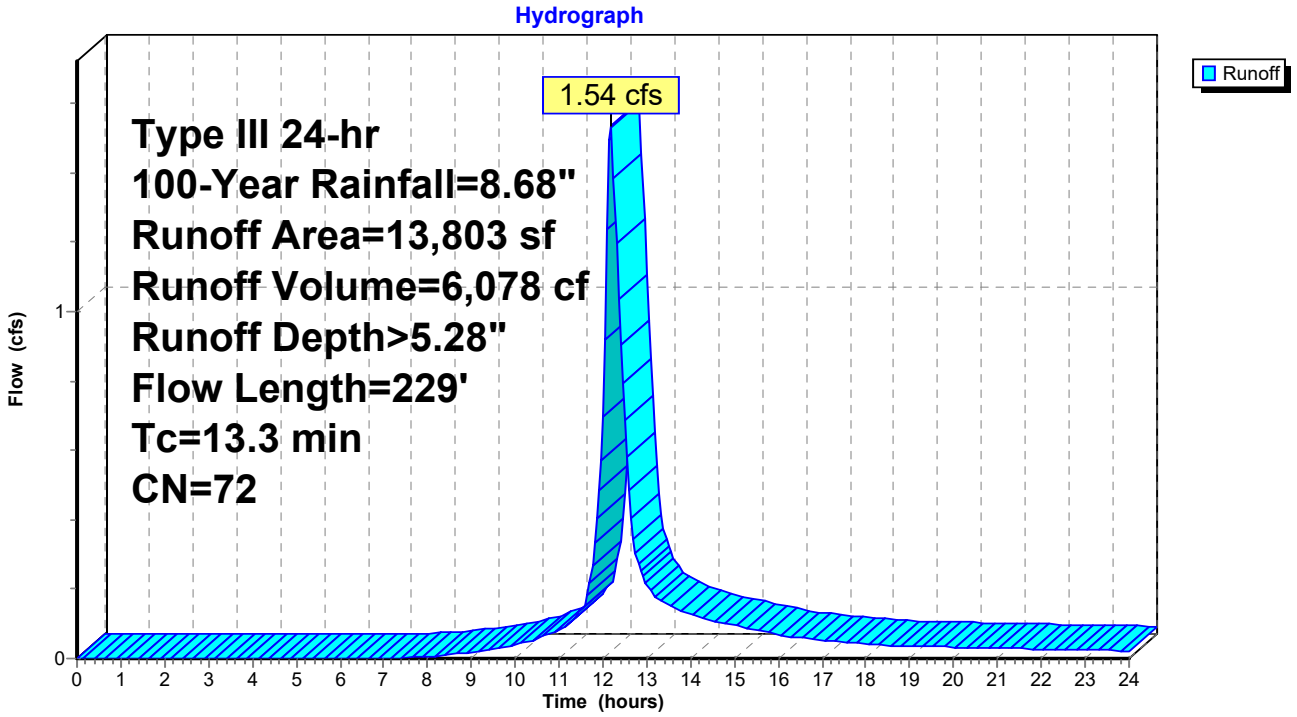
Runoff = 1.54 cfs @ 12.19 hrs, Volume= 6,078 cf, Depth> 5.28"
Routed to Reach DP1 : DP1post

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.68"

Area (sf)	CN	Description
5,871	74	>75% Grass cover, Good, HSG C
7,932	70	Woods, Good, HSG C
0	98	Paved parking, HSG C
0	98	Paved parking, HSG C
13,803	72	Weighted Average
13,803		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	50	0.0300	0.08		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.35"
1.1	67	0.0400	1.00		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
1.1	58	0.0300	0.87		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.9	54	0.0400	1.00		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
13.3	229	Total			

Subcatchment 1: Post 1



Summary for Subcatchment 2A: Post 2A

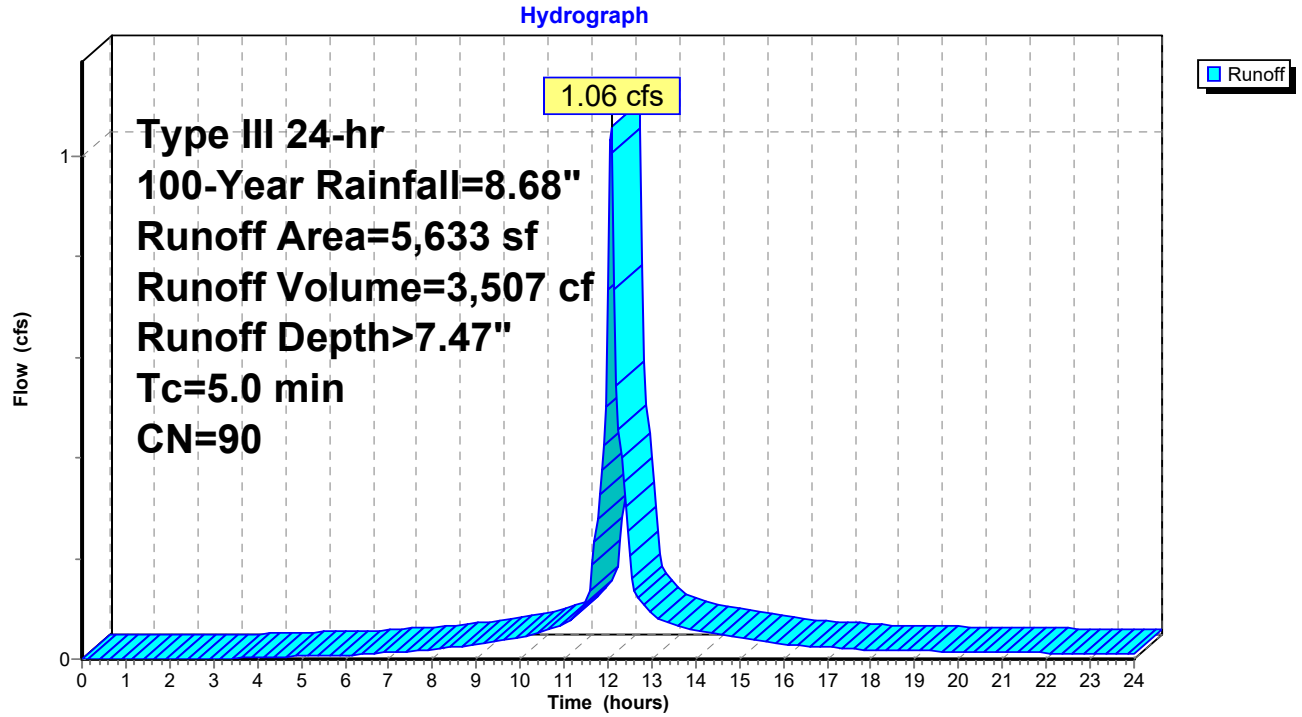
Runoff = 1.06 cfs @ 12.07 hrs, Volume= 3,507 cf, Depth> 7.47"
Routed to Pond CB6 : CB6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.68"

Area (sf)	CN	Description
1,714	74	>75% Grass cover, Good, HSG C
128	70	Woods, Good, HSG C
3,315	98	Paved parking, HSG C
476	98	Paved parking, HSG C
5,633	90	Weighted Average
1,842		32.70% Pervious Area
3,791		67.30% Impervious Area

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

Subcatchment 2A: Post 2A



Summary for Subcatchment 2B: Post 2B

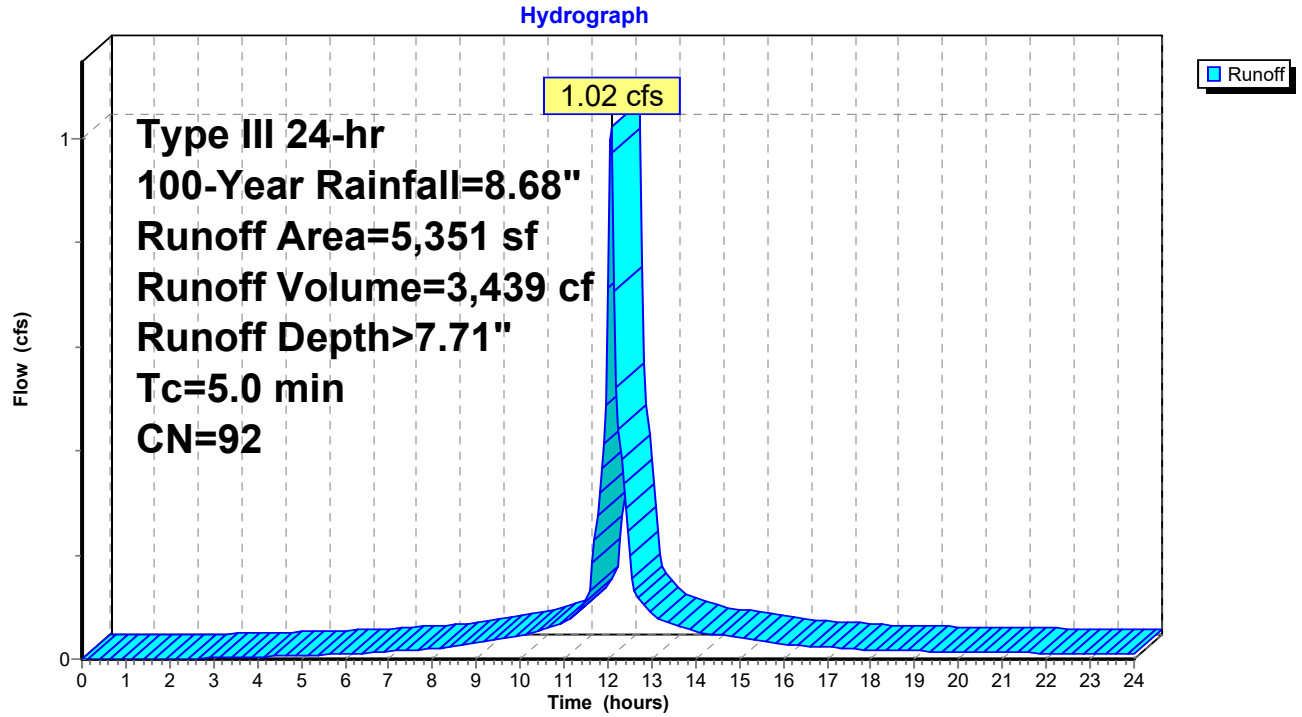
Runoff = 1.02 cfs @ 12.07 hrs, Volume= 3,439 cf, Depth> 7.71"
Routed to Pond CB9 : CB9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.68"

Area (sf)	CN	Description
1,174	74	>75% Grass cover, Good, HSG C
115	70	Woods, Good, HSG C
3,796	98	Paved parking, HSG C
266	98	Paved parking, HSG C
5,351	92	Weighted Average
1,289		24.09% Pervious Area
4,062		75.91% Impervious Area

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

Subcatchment 2B: Post 2B



Summary for Subcatchment 3A: Post 3A

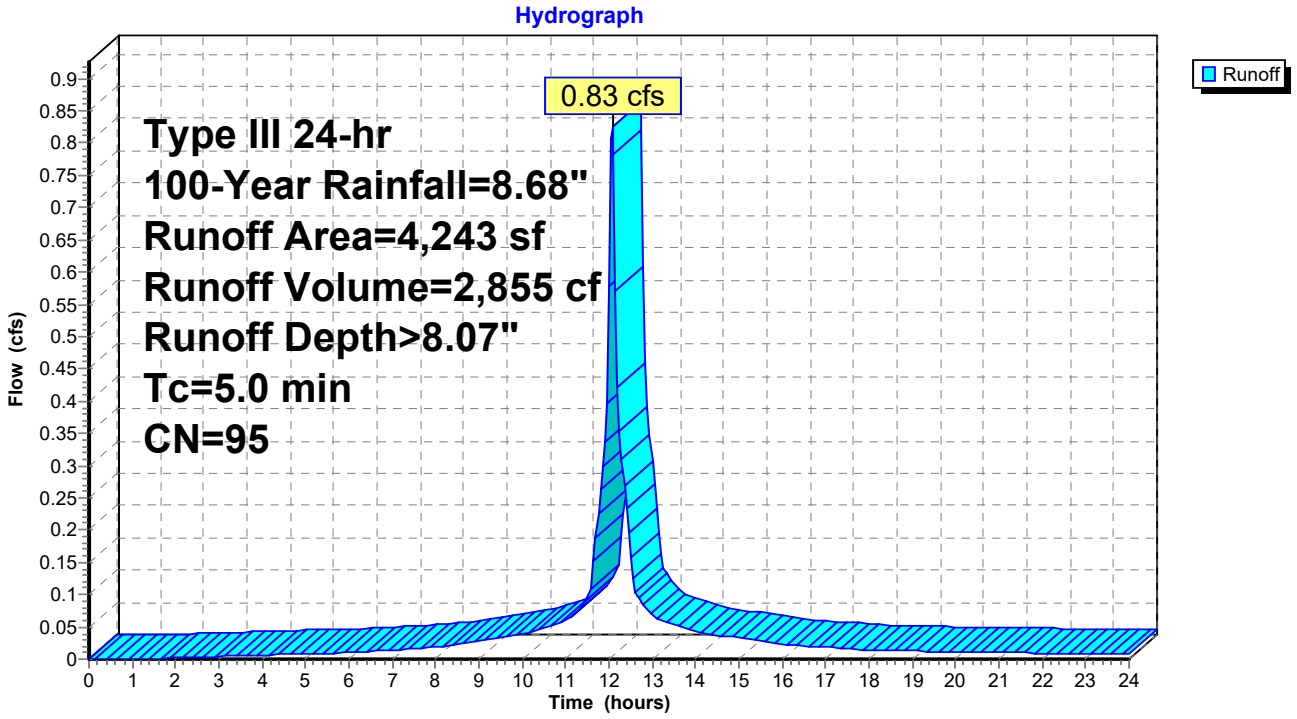
Runoff = 0.83 cfs @ 12.07 hrs, Volume= 2,855 cf, Depth> 8.07"
Routed to Pond CB4 : CB4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.68"

Area (sf)	CN	Description
570	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
3,241	98	Paved parking, HSG C
432	98	Paved parking, HSG C
4,243	95	Weighted Average
570		13.43% Pervious Area
3,673		86.57% Impervious Area

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

Subcatchment 3A: Post 3A



Summary for Subcatchment 3B: Post 3B

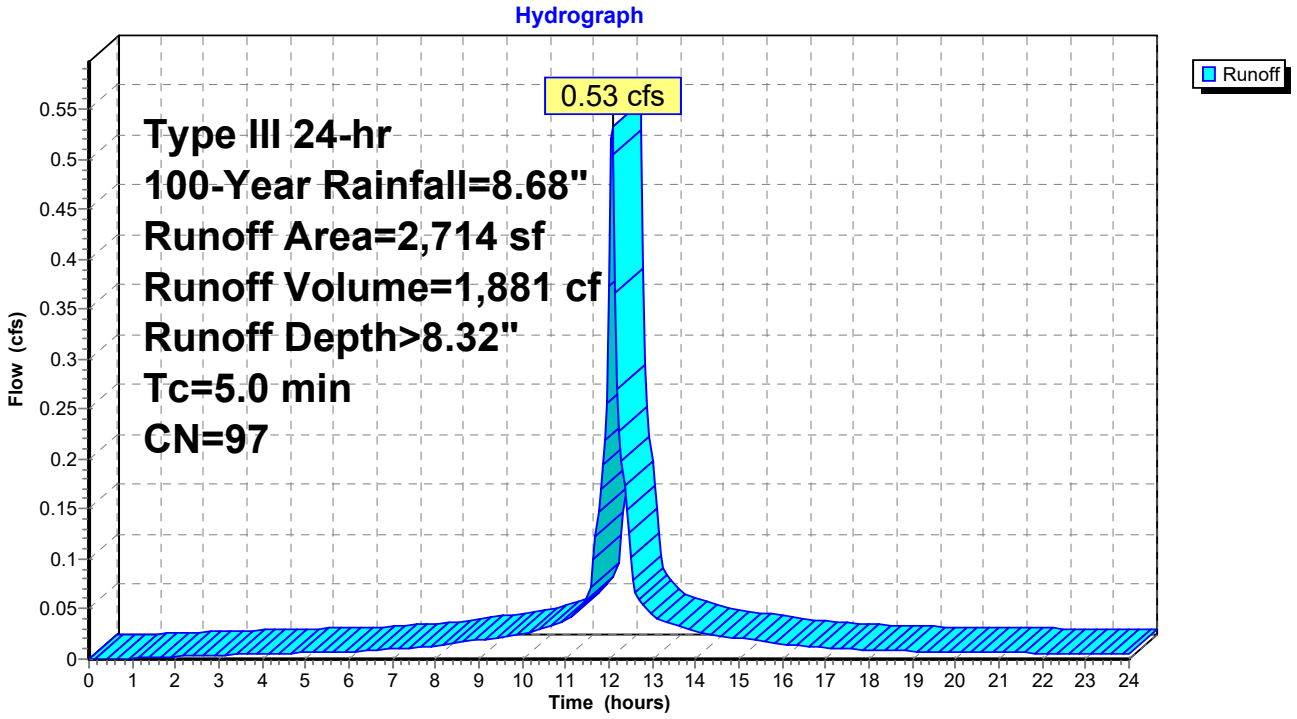
Runoff = 0.53 cfs @ 12.07 hrs, Volume= 1,881 cf, Depth> 8.32"
Routed to Pond CB5 : CB5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.68"

Area (sf)	CN	Description
99	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
2,615	98	Paved parking, HSG C
0	98	Paved parking, HSG C
2,714	97	Weighted Average
99		3.65% Pervious Area
2,615		96.35% Impervious Area

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

Subcatchment 3B: Post 3B



Summary for Subcatchment 4: Post 4

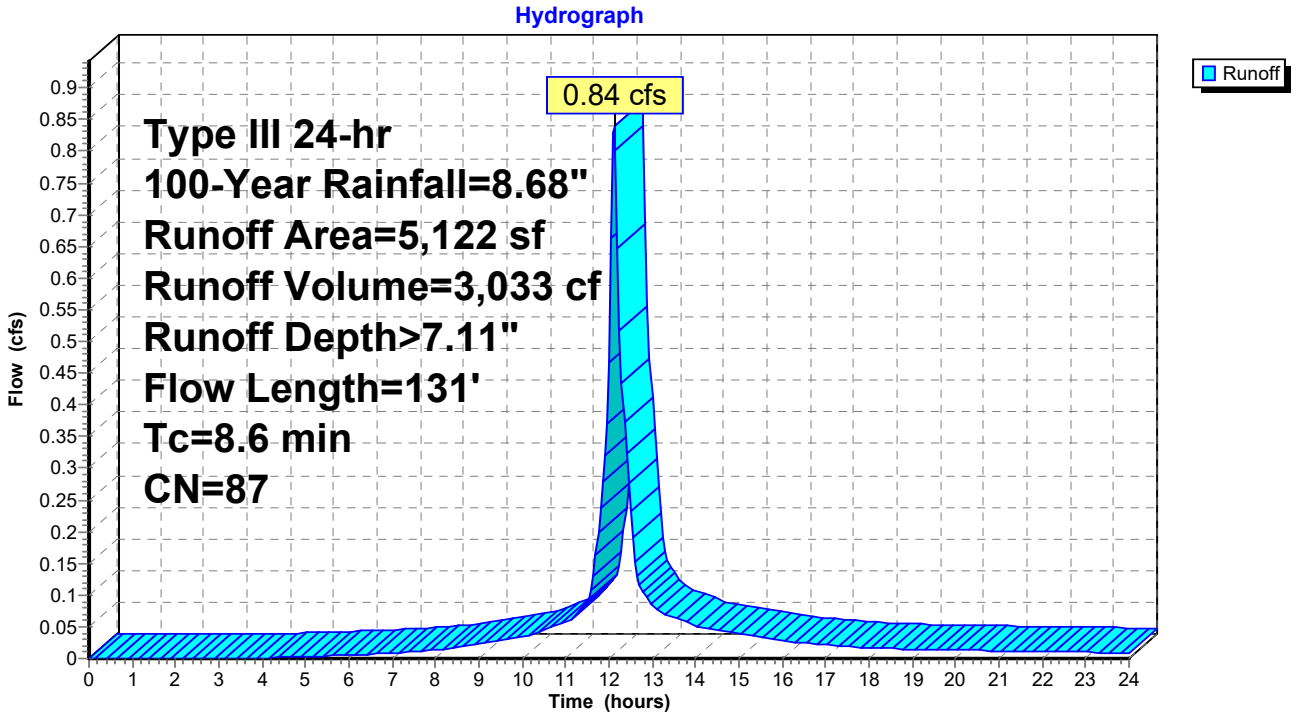
Runoff = 0.84 cfs @ 12.12 hrs, Volume= 3,033 cf, Depth> 7.11"
Routed to Pond CB1 : CB1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.68"

Area (sf)	CN	Description
2,250	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
2,872	98	Paved parking, HSG C
0	98	Paved parking, HSG C
5,122	87	Weighted Average
2,250		43.93% Pervious Area
2,872		56.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0200	0.10		**Sheet Flow, GRASS** Grass: Dense n= 0.240 P2= 3.35"
0.5	39	0.0300	1.21		**Shallow Concentrated Flow, GRASS** Short Grass Pasture Kv= 7.0 fps
0.0	13	0.0800	5.74		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
0.1	29	0.0300	3.52		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
8.6	131	Total			

Subcatchment 4: Post 4



Summary for Subcatchment 5: Post 5

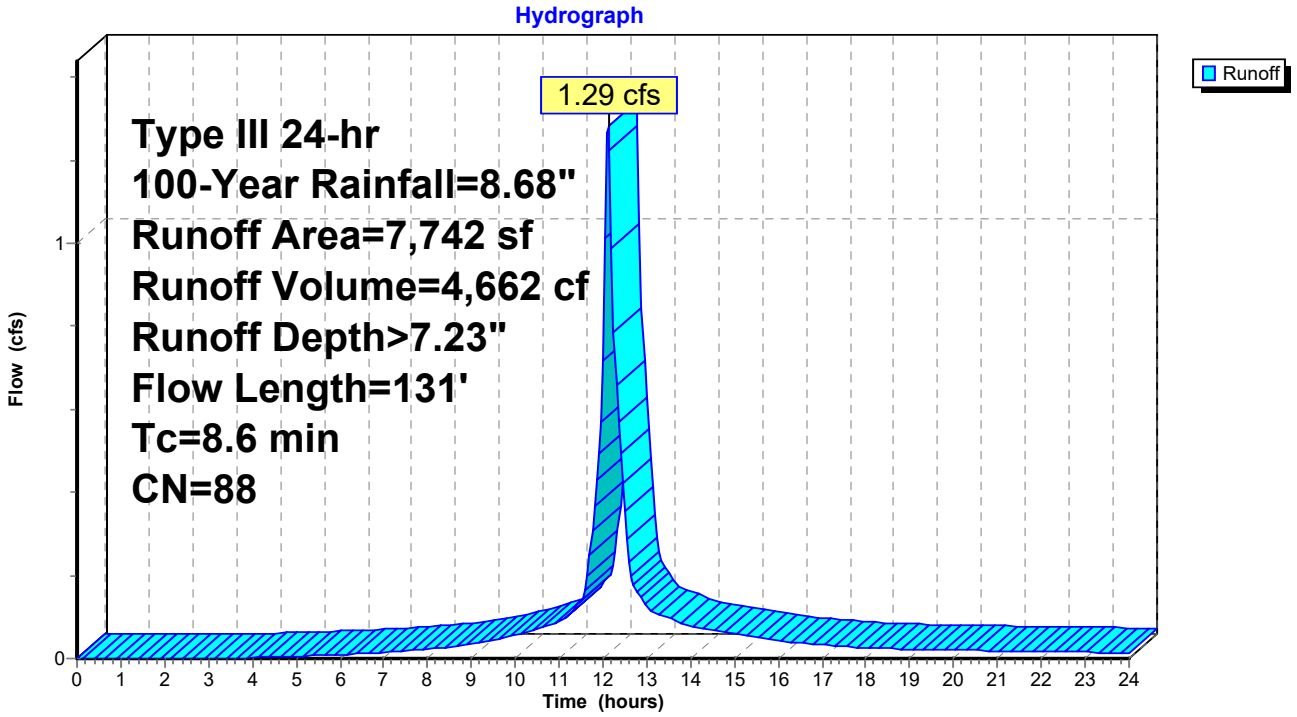
Runoff = 1.29 cfs @ 12.12 hrs, Volume= 4,662 cf, Depth> 7.23"
Routed to Pond CB10 : CB10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.68"

Area (sf)	CN	Description
1,823	98	Unconnected roofs, HSG C
3,166	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
2,753	98	Paved parking, HSG C
0	98	Paved parking, HSG C
7,742	88	Weighted Average
3,166		40.89% Pervious Area
4,576		59.11% Impervious Area
1,823		39.84% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0200	0.10		**Sheet Flow, GRASS** Grass: Dense n= 0.240 P2= 3.35"
0.5	39	0.0300	1.21		**Shallow Concentrated Flow, GRASS** Short Grass Pasture Kv= 7.0 fps
0.0	13	0.0800	5.74		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
0.1	29	0.0300	3.52		**Shallow Concentrated Flow, PAVEMENT** Paved Kv= 20.3 fps
8.6	131	Total			

Subcatchment 5: Post 5



Summary for Subcatchment 6: Post 6

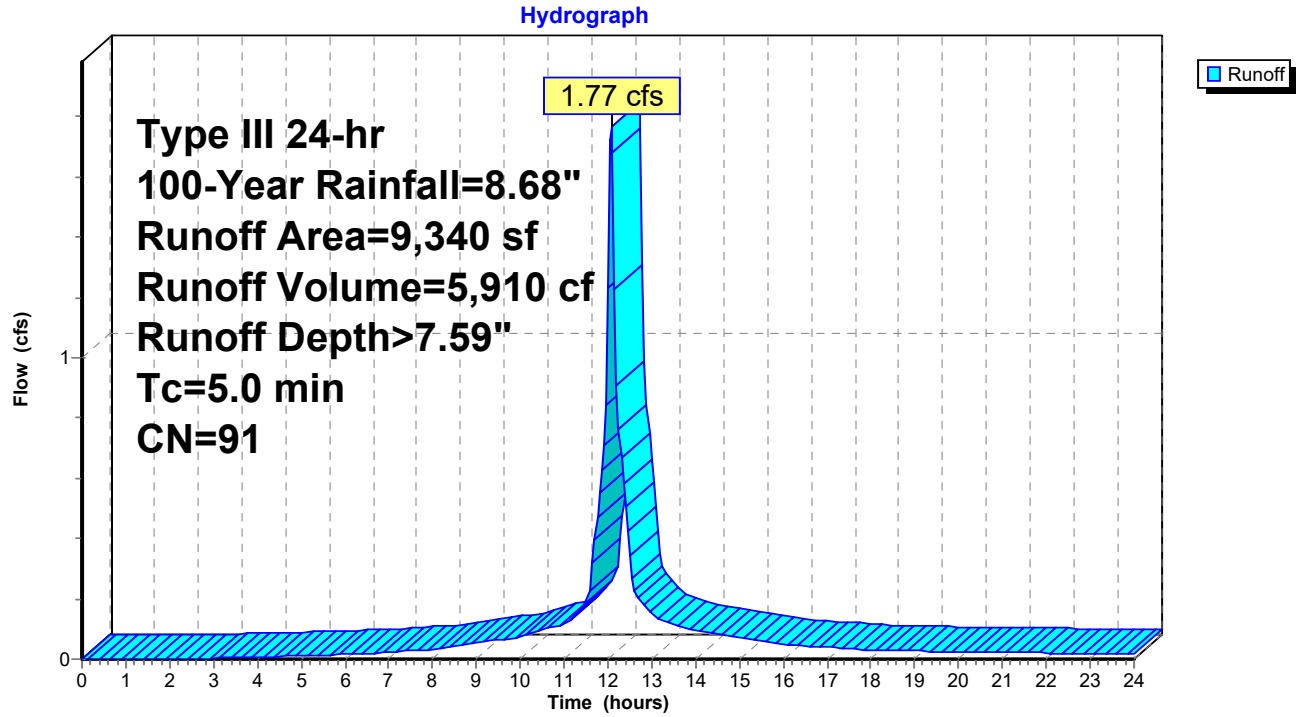
Runoff = 1.77 cfs @ 12.07 hrs, Volume= 5,910 cf, Depth> 7.59"
Routed to Pond CB13 : CB13

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.68"

Area (sf)	CN	Description
2,655	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
5,754	98	Paved parking, HSG C
931	98	Paved parking, HSG C
9,340	91	Weighted Average
2,655		28.43% Pervious Area
6,685		71.57% Impervious Area

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

Subcatchment 6: Post 6



Summary for Subcatchment 7: Post 7

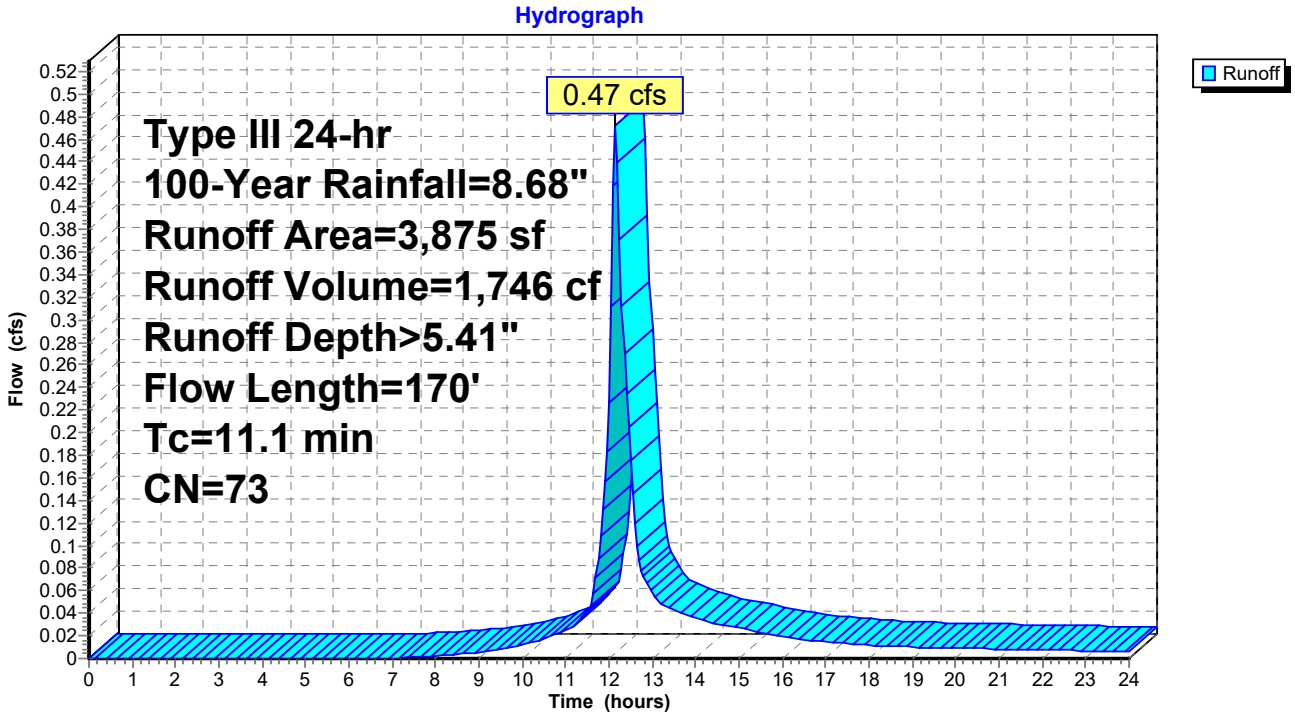
Runoff = 0.47 cfs @ 12.16 hrs, Volume= 1,746 cf, Depth> 5.41"
Routed to Reach DP4 : DP4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.68"

Area (sf)	CN	Description
3,170	74	>75% Grass cover, Good, HSG C
705	70	Woods, Good, HSG C
0	98	Paved parking, HSG C
0	98	Paved parking, HSG C
3,875	73	Weighted Average
3,875		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	50	0.0400	0.09		**Sheet Flow, WOODS** Woods: Light underbrush n= 0.400 P2= 3.35"
0.7	55	0.0400	1.40		**Shallow Concentrated Flow, WOODS** Short Grass Pasture Kv= 7.0 fps
1.2	53	0.0200	0.71		**Shallow Concentrated Flow, WOODS** Woodland Kv= 5.0 fps
0.1	12	0.0700	1.85		**Shallow Concentrated Flow, GRASS** Short Grass Pasture Kv= 7.0 fps
11.1	170	Total			

Subcatchment 7: Post 7



Summary for Subcatchment 8: Post 8

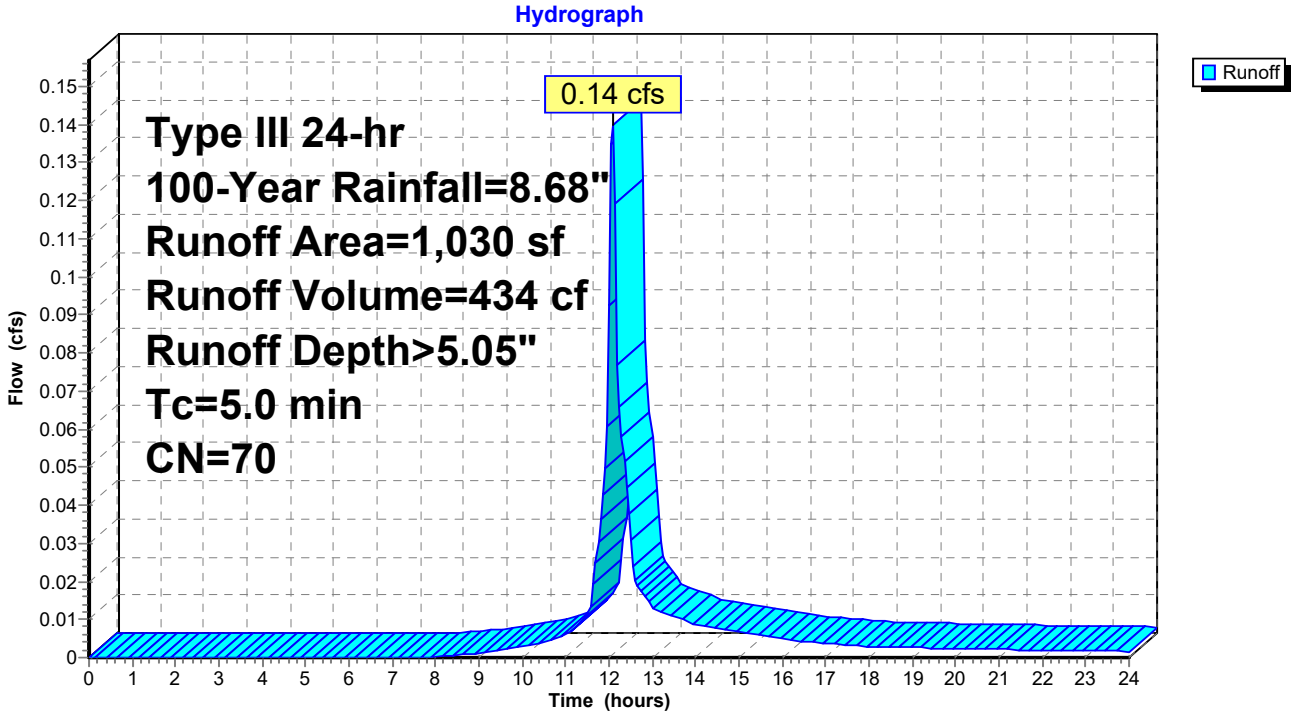
Runoff = 0.14 cfs @ 12.08 hrs, Volume= 434 cf, Depth> 5.05"
Routed to Reach DP2 : DP2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.68"

Area (sf)	CN	Description
0	74	>75% Grass cover, Good, HSG C
1,030	70	Woods, Good, HSG C
0	98	Paved parking, HSG C
0	98	Paved parking, HSG C
1,030	70	Weighted Average
1,030		100.00% Pervious Area

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

Subcatchment 8: Post 8



Summary for Subcatchment 9: Post 9

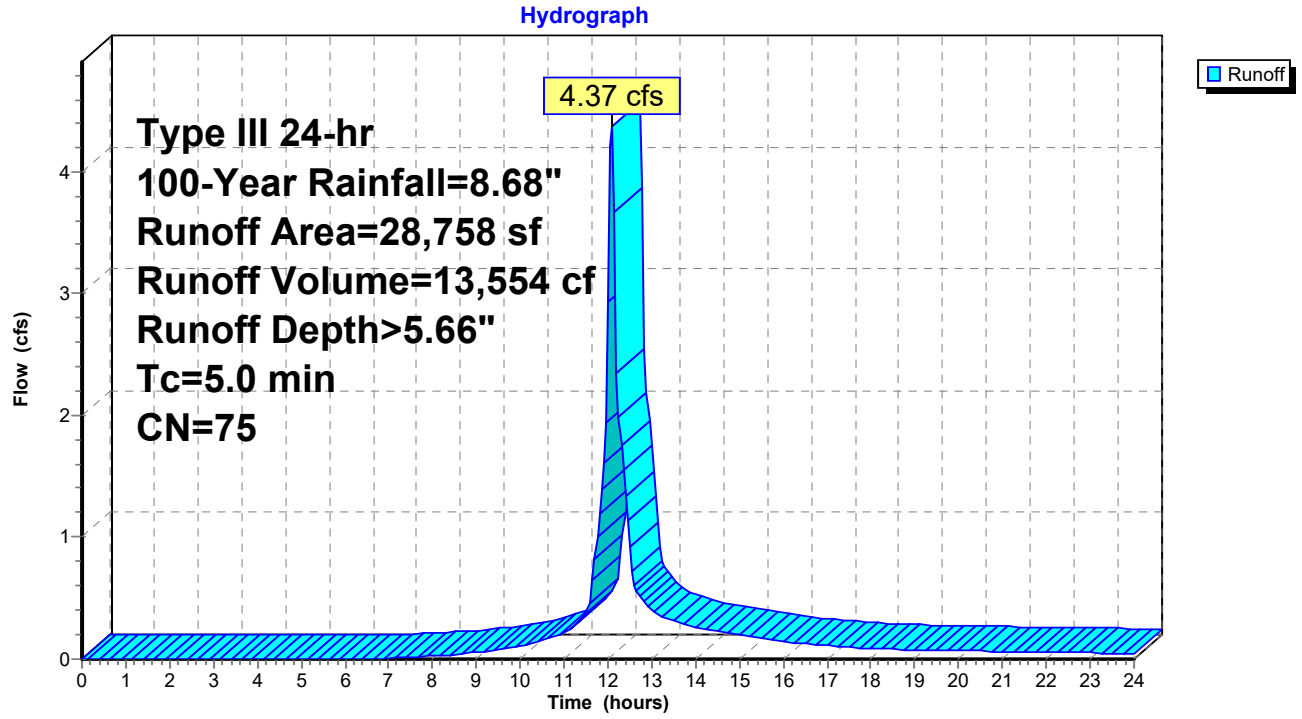
Runoff = 4.37 cfs @ 12.07 hrs, Volume= 13,554 cf, Depth> 5.66"
Routed to Reach DP3 : DP3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.68"

Area (sf)	CN	Description
25,955	74	>75% Grass cover, Good, HSG C
1,777	70	Woods, Good, HSG C
0	98	Paved parking, HSG C
1,026	98	Paved parking, HSG C
28,758	75	Weighted Average
27,732		96.43% Pervious Area
1,026		3.57% Impervious Area

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

Subcatchment 9: Post 9



Summary for Subcatchment B1: BLDG #1

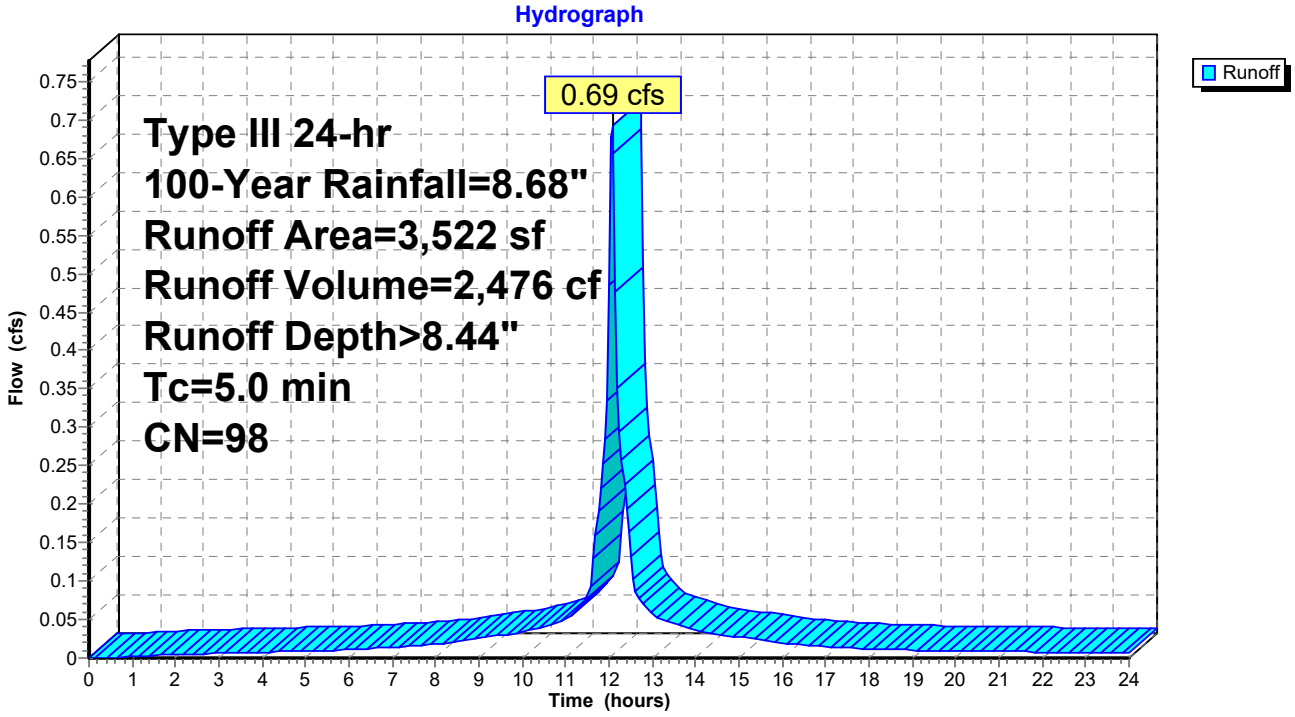
Runoff = 0.69 cfs @ 12.07 hrs, Volume= 2,476 cf, Depth> 8.44"
Routed to Pond SSD3 : SUBSURFACE DRAINAGE AREA #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.68"

Area (sf)	CN	Description
3,522	98	Unconnected roofs, HSG C
3,522		100.00% Impervious Area
3,522		100.00% Unconnected

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

Subcatchment B1: BLDG #1



Summary for Subcatchment B2: BLDG #2

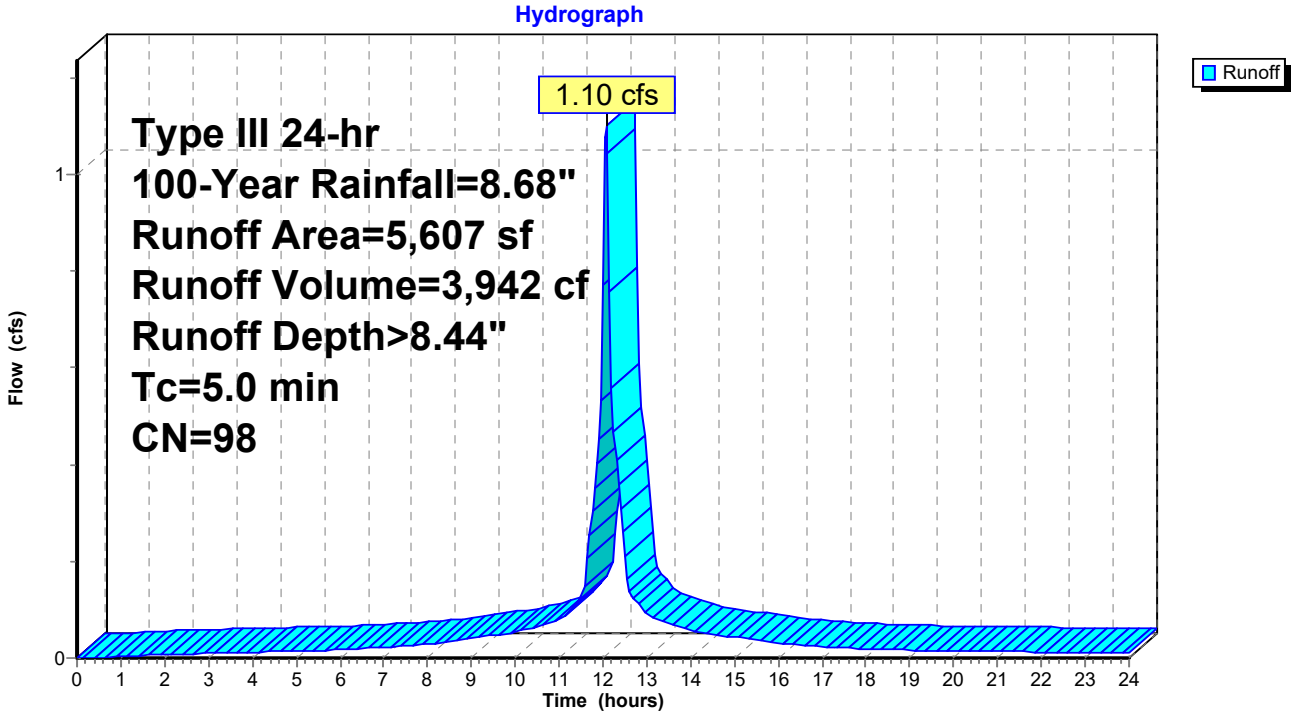
Runoff = 1.10 cfs @ 12.07 hrs, Volume= 3,942 cf, Depth> 8.44"
Routed to Pond SSD1 : SUBSURFACE DRAINAGE AREA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.68"

Area (sf)	CN	Description
5,607	98	Unconnected roofs, HSG C
5,607		100.00% Impervious Area
5,607		100.00% Unconnected

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

Subcatchment B2: BLDG #2



Summary for Subcatchment B3A: 1/2 BLDG #3

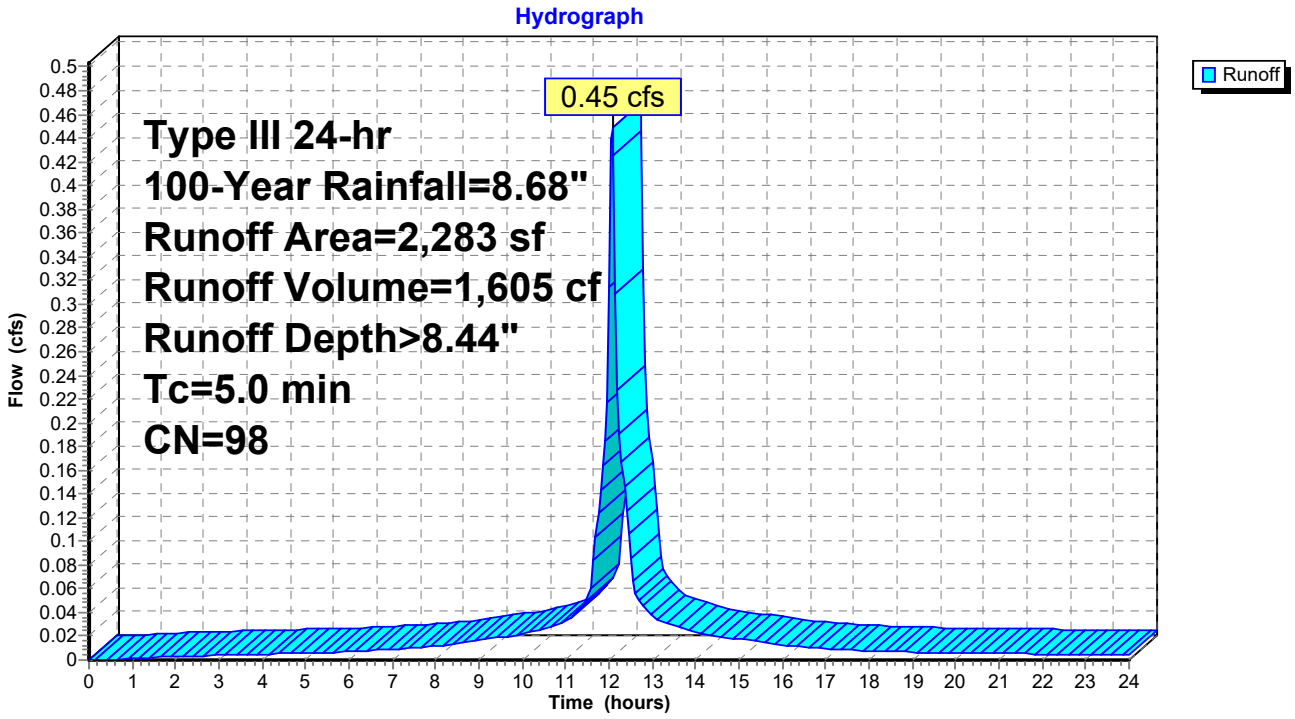
Runoff = 0.45 cfs @ 12.07 hrs, Volume= 1,605 cf, Depth> 8.44"
Routed to Pond SSD2 : SUBSURFACE DRAINAGE AREA #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.68"

Area (sf)	CN	Description
2,283	98	Unconnected roofs, HSG C
2,283		100.00% Impervious Area
2,283		100.00% Unconnected

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

Subcatchment B3A: 1/2 BLDG #3



Summary for Subcatchment B3B: 1/2 BLDG #3

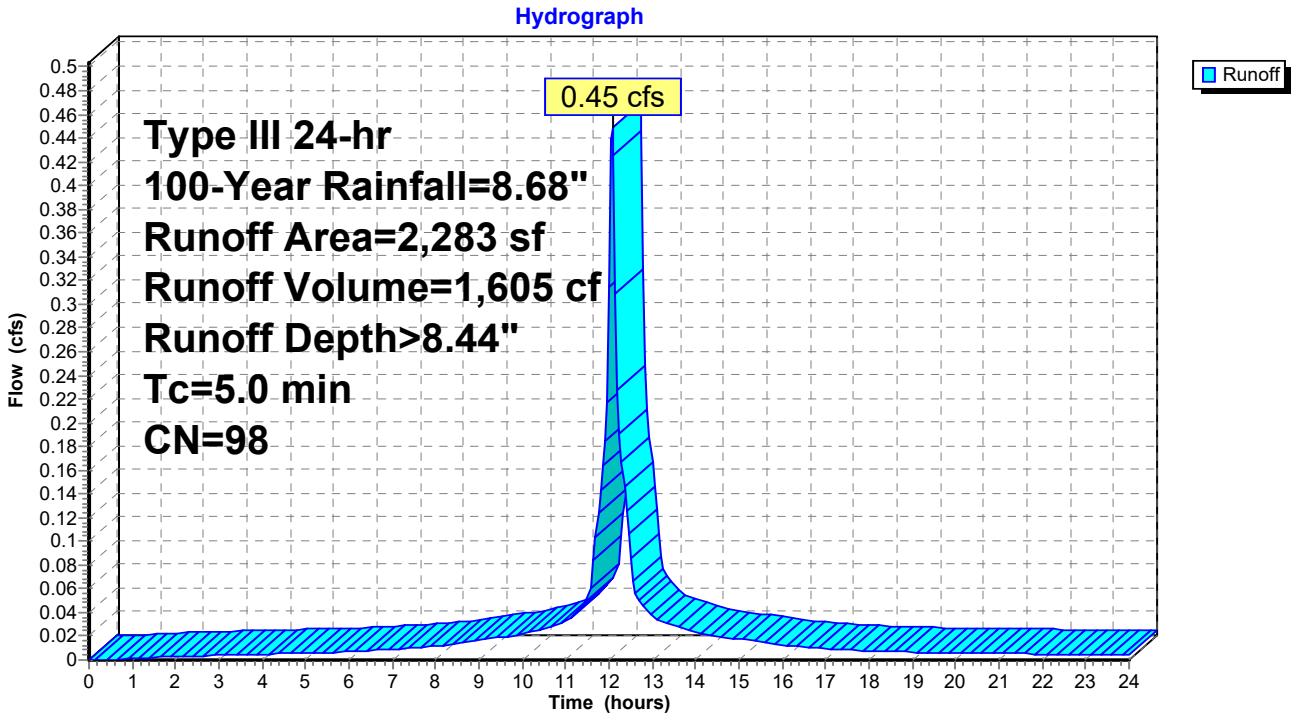
Runoff = 0.45 cfs @ 12.07 hrs, Volume= 1,605 cf, Depth> 8.44"
Routed to Pond SSD1 : SUBSURFACE DRAINAGE AREA #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.68"

Area (sf)	CN	Description
2,283	98	Unconnected roofs, HSG C
2,283		100.00% Impervious Area
2,283		100.00% Unconnected

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

Subcatchment B3B: 1/2 BLDG #3



Summary for Subcatchment B4: BLDG #4

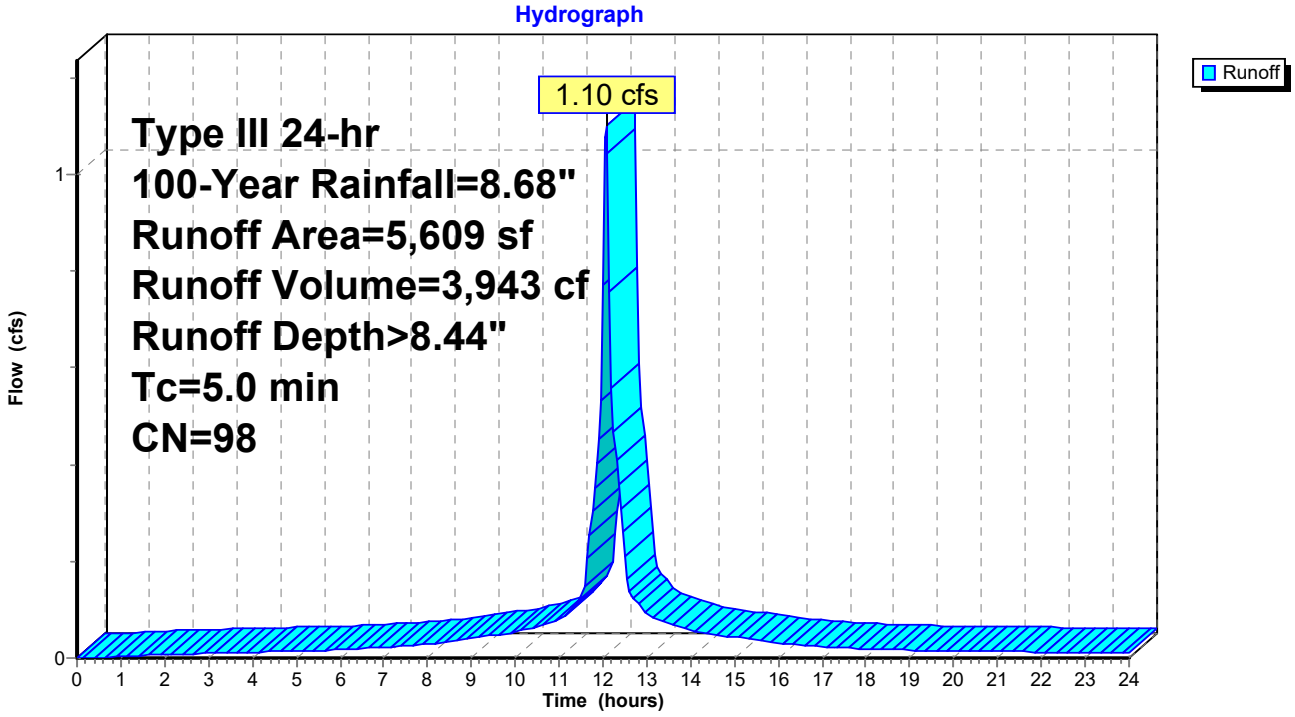
Runoff = 1.10 cfs @ 12.07 hrs, Volume= 3,943 cf, Depth> 8.44"
Routed to Pond SSD4 : SUBSURFACE DRAINAGE AREA #4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.68"

Area (sf)	CN	Description
5,609	98	Unconnected roofs, HSG C
5,609		100.00% Impervious Area
5,609		100.00% Unconnected

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

Subcatchment B4: BLDG #4

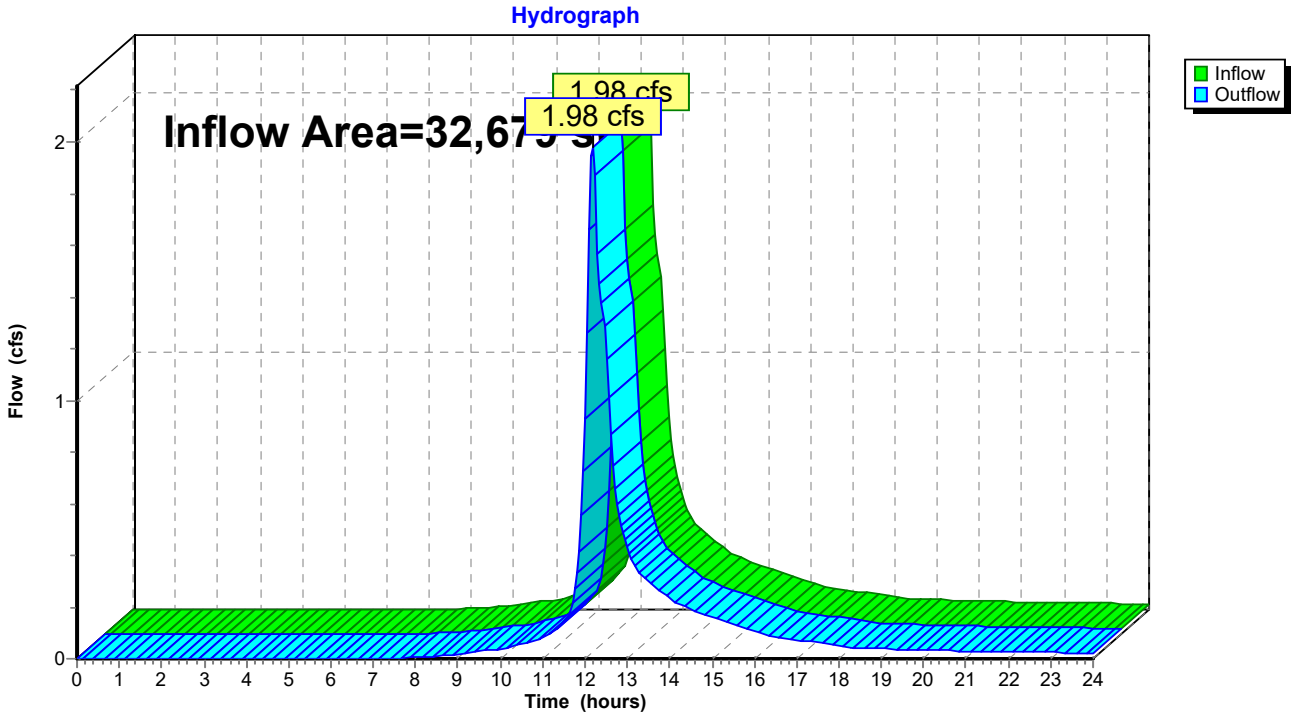


Summary for Reach DP1: DP1post

Inflow Area = 32,679 sf, 48.18% Impervious, Inflow Depth > 3.17" for 100-Year event
Inflow = 1.98 cfs @ 12.18 hrs, Volume= 8,637 cf
Outflow = 1.98 cfs @ 12.18 hrs, Volume= 8,637 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP1: DP1post

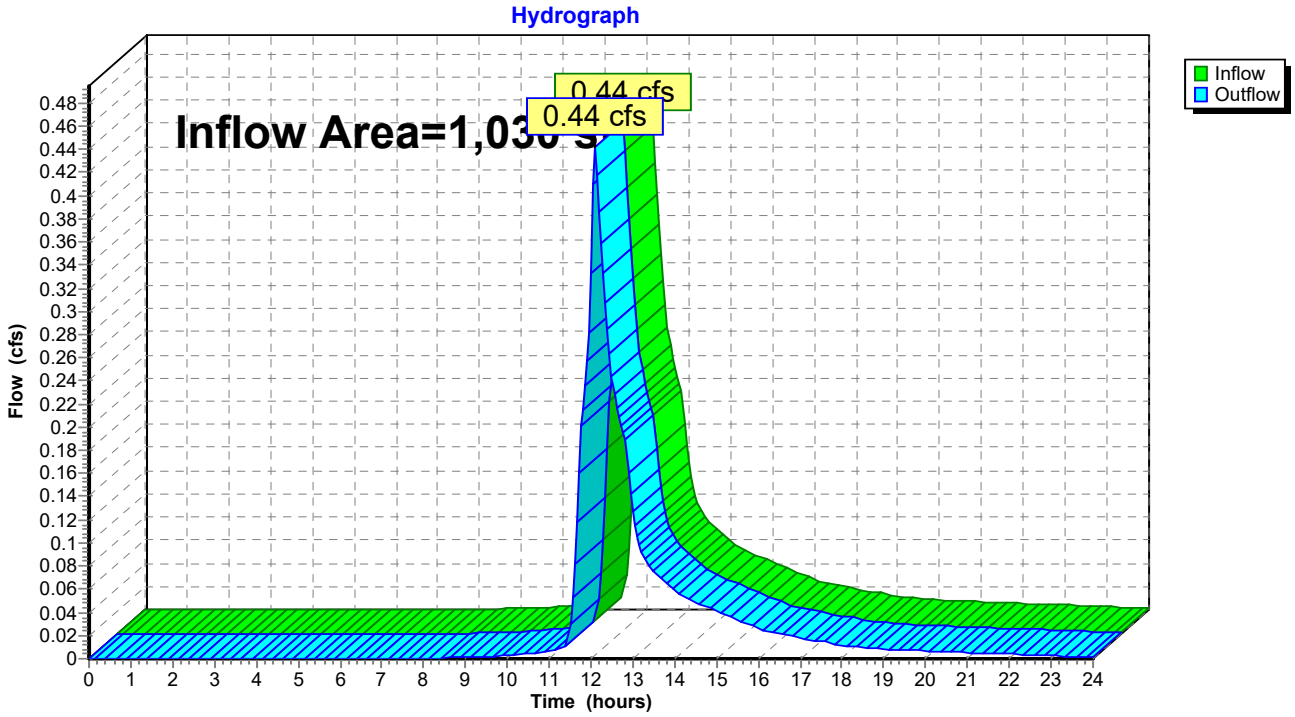


Summary for Reach DP2: DP2

Inflow Area = 1,030 sf, 0.00% Impervious, Inflow Depth > 25.27" for 100-Year event
Inflow = 0.44 cfs @ 12.10 hrs, Volume= 2,169 cf
Outflow = 0.44 cfs @ 12.10 hrs, Volume= 2,169 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP2: DP2

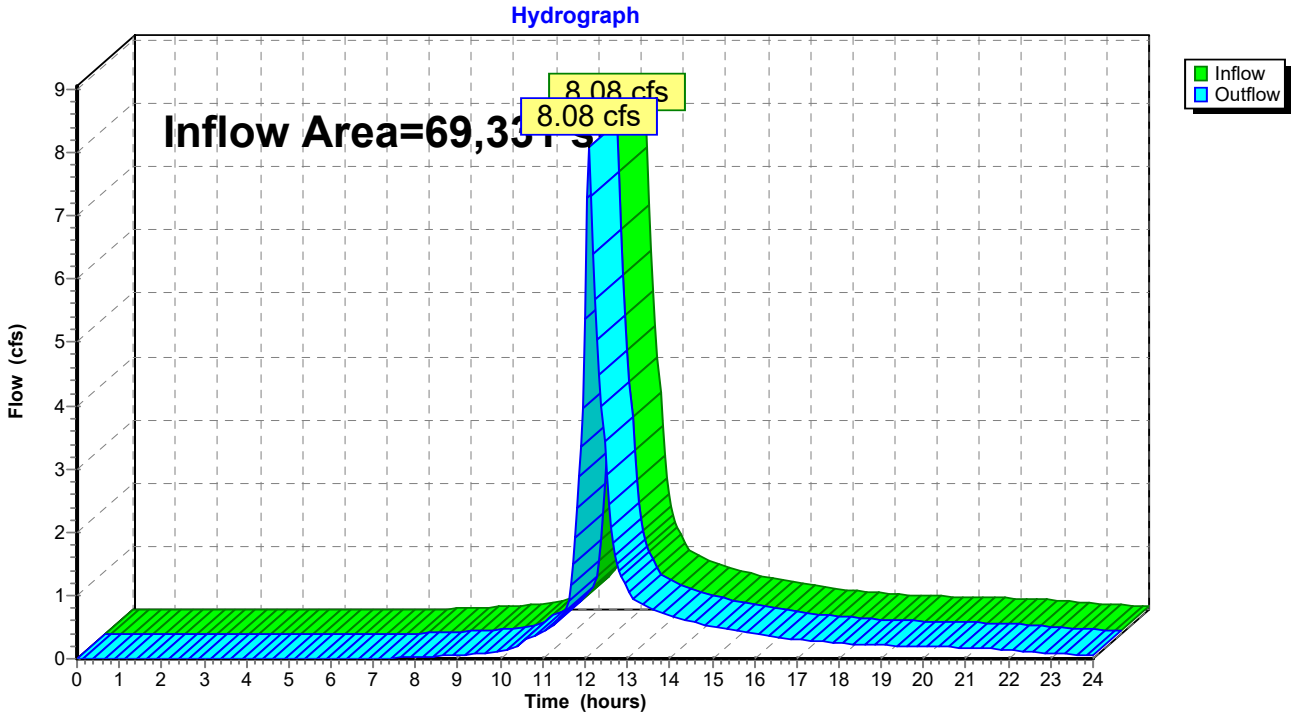


Summary for Reach DP3: DP3

Inflow Area = 69,331 sf, 47.39% Impervious, Inflow Depth > 5.50" for 100-Year event
Inflow = 8.08 cfs @ 12.10 hrs, Volume= 31,788 cf
Outflow = 8.08 cfs @ 12.10 hrs, Volume= 31,788 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP3: DP3

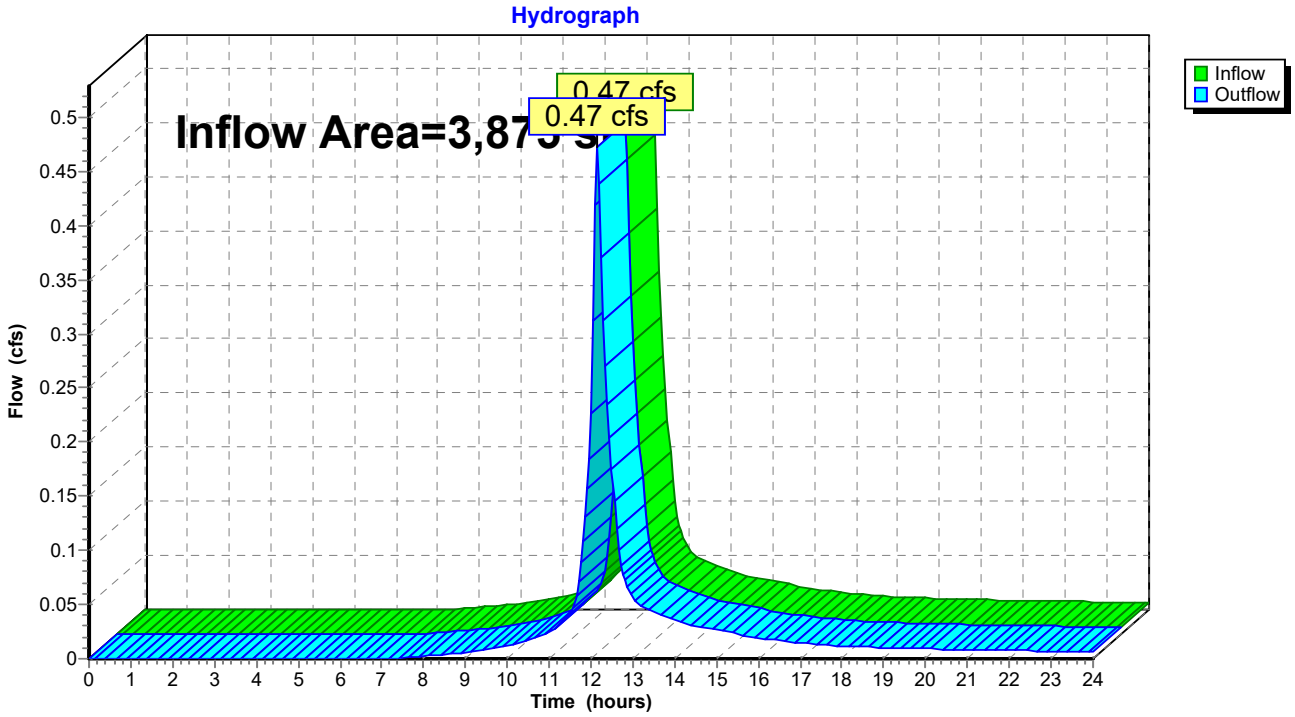


Summary for Reach DP4: DP4

Inflow Area = 3,875 sf, 0.00% Impervious, Inflow Depth > 5.41" for 100-Year event
Inflow = 0.47 cfs @ 12.16 hrs, Volume= 1,746 cf
Outflow = 0.47 cfs @ 12.16 hrs, Volume= 1,746 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach DP4: DP4



Summary for Pond CB1: CB1

Inflow Area = 5,122 sf, 56.07% Impervious, Inflow Depth > 7.11" for 100-Year event
Inflow = 0.84 cfs @ 12.12 hrs, Volume= 3,033 cf
Outflow = 0.84 cfs @ 12.12 hrs, Volume= 3,033 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.84 cfs @ 12.12 hrs, Volume= 3,033 cf
Routed to Pond DMH2 : DMH2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond CB10 : CB10

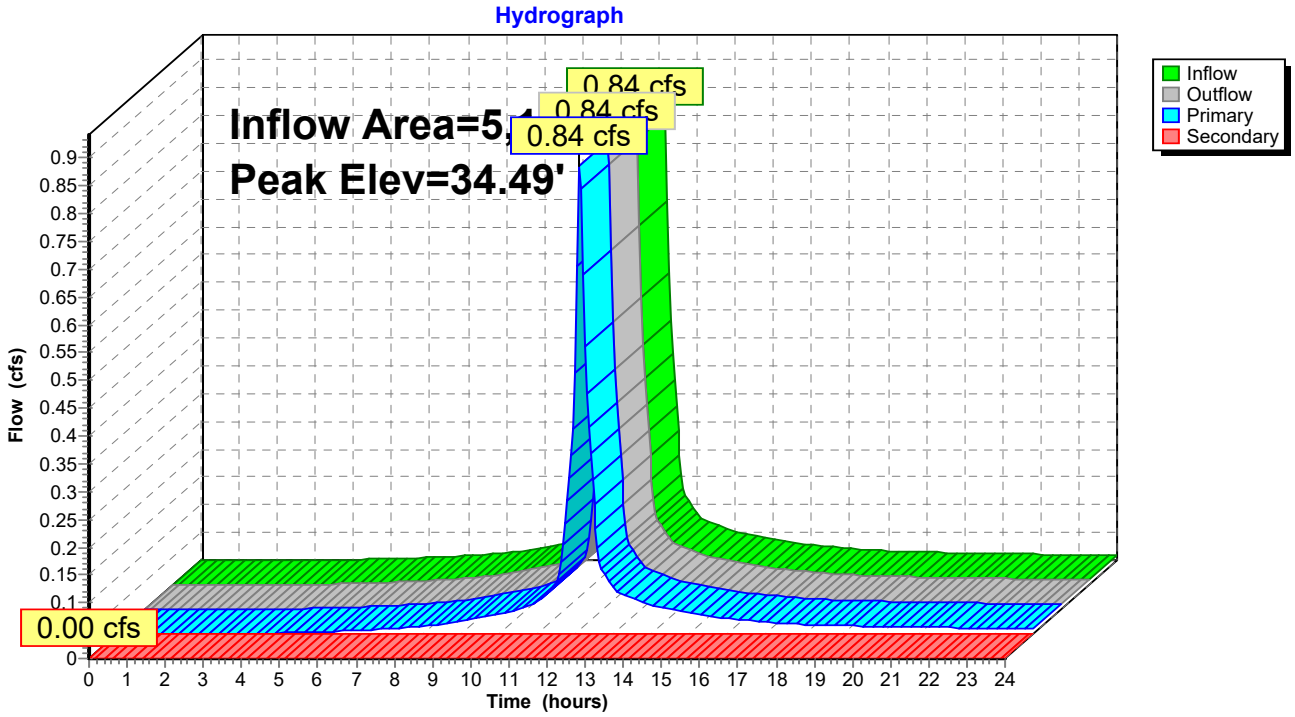
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 34.49' @ 12.12 hrs
Flood Elev= 36.27'

Device	Routing	Invert	Outlet Devices
#1	Primary	33.90'	**12.0" Round Culvert** L= 29.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 33.90' / 33.80' S= 0.0034 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	36.27'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.82 cfs @ 12.12 hrs HW=34.48' (Free Discharge)
1=Culvert (Barrel Controls 0.82 cfs @ 2.50 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=33.90' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB1: CB1


Hydrograph
Inflow Area=5,
Peak Elev=34.49'
0.84 cfs
0.84 cfs
0.84 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)

Stage-Discharge for Pond CB1: CB1

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
33.90	0.00	0.00	**0.00**
33.95	0.01	0.01	0.00
34.00	0.02	0.02	0.00
34.05	0.06	0.06	0.00
34.10	0.10	0.10	0.00
34.15	0.16	0.16	0.00
34.20	0.23	0.23	0.00
34.25	0.32	0.32	0.00
34.30	0.41	0.41	0.00
34.35	0.51	0.51	0.00
34.40	0.62	0.62	0.00
34.45	0.74	0.74	0.00
34.50	0.87	0.87	0.00
34.55	1.00	1.00	0.00
34.60	1.14	1.14	0.00
34.65	1.28	1.28	0.00
34.70	1.43	1.43	0.00
34.75	1.58	1.58	0.00
34.80	1.72	1.72	0.00
34.85	1.87	1.87	0.00
34.90	2.02	2.02	0.00
34.95	2.16	2.16	0.00
35.00	2.30	2.30	0.00
35.05	2.42	2.42	0.00
35.10	2.54	2.54	0.00
35.15	2.63	2.63	0.00
35.20	2.69	2.69	0.00
35.25	2.72	2.72	0.00
35.30	2.87	2.87	0.00
35.35	3.01	3.01	0.00
35.40	3.14	3.14	0.00
35.45	3.27	3.27	0.00
35.50	3.40	3.40	0.00
35.55	3.52	3.52	0.00
35.60	3.63	3.63	0.00
35.65	3.74	3.74	0.00
35.70	3.85	3.85	0.00
35.75	3.96	3.96	0.00
35.80	4.06	4.06	0.00
35.85	4.16	4.16	0.00
35.90	4.26	4.26	0.00
35.95	4.35	4.35	0.00
36.00	4.45	4.45	0.00
36.05	4.54	4.54	0.00
36.10	4.63	4.63	0.00
36.15	4.72	4.72	0.00
36.20	4.80	4.80	0.00
36.25	**4.89**	**4.89**	0.00

Stage-Area-Storage for Pond CB1: CB1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
33.90	**0**	34.96	0	36.02	0
33.92	0	34.98	0	36.04	0
33.94	0	35.00	0	36.06	0
33.96	0	35.02	0	36.08	0
33.98	0	35.04	0	36.10	0
34.00	0	35.06	0	36.12	0
34.02	0	35.08	0	36.14	0
34.04	0	35.10	0	36.16	0
34.06	0	35.12	0	36.18	0
34.08	0	35.14	0	36.20	0
34.10	0	35.16	0	36.22	0
34.12	0	35.18	0	36.24	0
34.14	0	35.20	0	36.26	0
34.16	0	35.22	0		
34.18	0	35.24	0		
34.20	0	35.26	0		
34.22	0	35.28	0		
34.24	0	35.30	0		
34.26	0	35.32	0		
34.28	0	35.34	0		
34.30	0	35.36	0		
34.32	0	35.38	0		
34.34	0	35.40	0		
34.36	0	35.42	0		
34.38	0	35.44	0		
34.40	0	35.46	0		
34.42	0	35.48	0		
34.44	0	35.50	0		
34.46	0	35.52	0		
34.48	0	35.54	0		
34.50	0	35.56	0		
34.52	0	35.58	0		
34.54	0	35.60	0		
34.56	0	35.62	0		
34.58	0	35.64	0		
34.60	0	35.66	0		
34.62	0	35.68	0		
34.64	0	35.70	0		
34.66	0	35.72	0		
34.68	0	35.74	0		
34.70	0	35.76	0		
34.72	0	35.78	0		
34.74	0	35.80	0		
34.76	0	35.82	0		
34.78	0	35.84	0		
34.80	0	35.86	0		
34.82	0	35.88	0		
34.84	0	35.90	0		
34.86	0	35.92	0		
34.88	0	35.94	0		
34.90	0	35.96	0		
34.92	0	35.98	0		
34.94	0	36.00	0		

Summary for Pond CB10: CB10

Inflow Area = 7,742 sf, 59.11% Impervious, Inflow Depth > 7.23" for 100-Year event
Inflow = 1.29 cfs @ 12.12 hrs, Volume= 4,662 cf
Outflow = 1.29 cfs @ 12.12 hrs, Volume= 4,662 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.29 cfs @ 12.12 hrs, Volume= 4,662 cf
Routed to Pond DMH11 : DMH11
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3

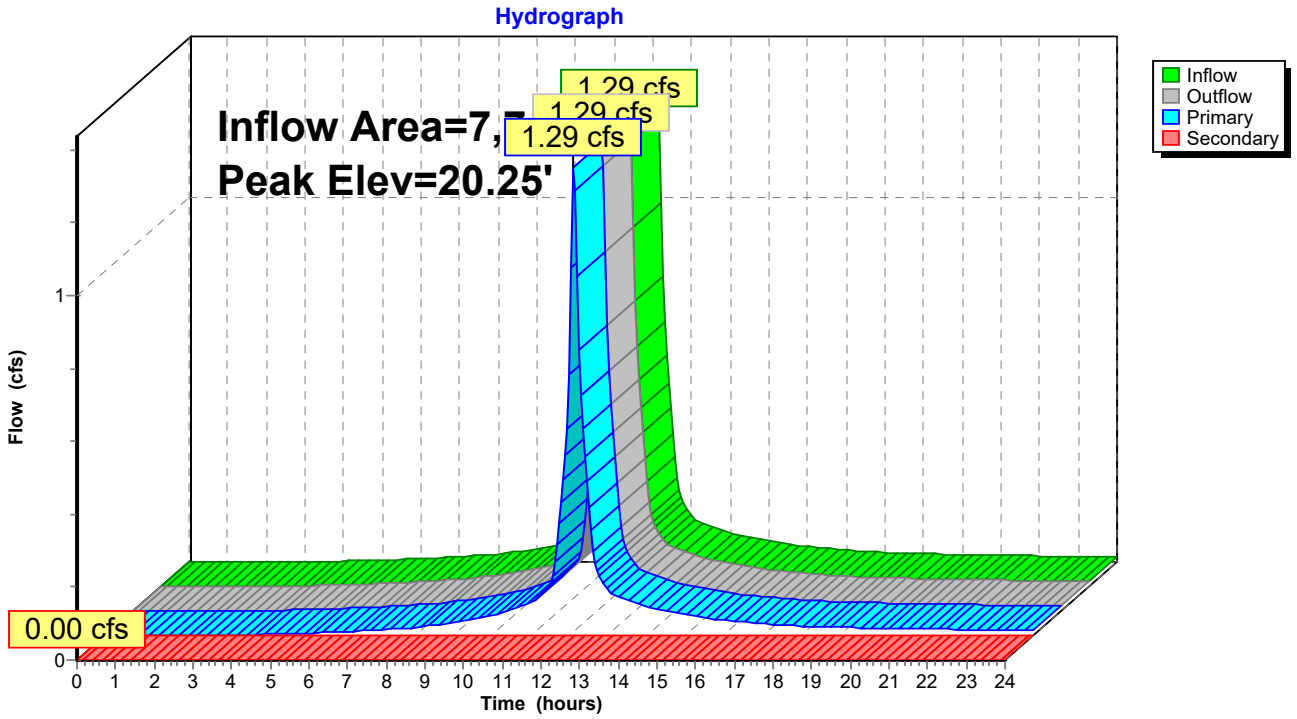
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 20.25' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	19.50'	**12.0" Round Culvert** L= 30.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 19.50' / 19.40' S= 0.0033 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	22.00'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=1.25 cfs @ 12.12 hrs HW=20.24' (Free Discharge)
└**1=Culvert** (Barrel Controls 1.25 cfs @ 2.79 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=19.50' (Free Discharge)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Pond CB10: CB10



Stage-Discharge for Pond CB10: CB10

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
19.50	0.00	0.00	**0.00**
19.55	0.01	0.01	0.00
19.60	0.02	0.02	0.00
19.65	0.06	0.06	0.00
19.70	0.10	0.10	0.00
19.75	0.16	0.16	0.00
19.80	0.23	0.23	0.00
19.85	0.31	0.31	0.00
19.90	0.41	0.41	0.00
19.95	0.51	0.51	0.00
20.00	0.62	0.62	0.00
20.05	0.74	0.74	0.00
20.10	0.86	0.86	0.00
20.15	1.00	1.00	0.00
20.20	1.13	1.13	0.00
20.25	1.28	1.28	0.00
20.30	1.42	1.42	0.00
20.35	1.57	1.57	0.00
20.40	1.72	1.72	0.00
20.45	1.86	1.86	0.00
20.50	2.01	2.01	0.00
20.55	2.15	2.15	0.00
20.60	2.28	2.28	0.00
20.65	2.41	2.41	0.00
20.70	2.52	2.52	0.00
20.75	2.62	2.62	0.00
20.80	2.68	2.68	0.00
20.85	2.71	2.71	0.00
20.90	2.85	2.85	0.00
20.95	2.99	2.99	0.00
21.00	3.12	3.12	0.00
21.05	3.25	3.25	0.00
21.10	3.37	3.37	0.00
21.15	3.49	3.49	0.00
21.20	3.61	3.61	0.00
21.25	3.72	3.72	0.00
21.30	3.83	3.83	0.00
21.35	3.93	3.93	0.00
21.40	4.03	4.03	0.00
21.45	4.13	4.13	0.00
21.50	4.23	4.23	0.00
21.55	4.33	4.33	0.00
21.60	4.42	4.42	0.00
21.65	4.51	4.51	0.00
21.70	4.60	4.60	0.00
21.75	4.69	4.69	0.00
21.80	4.77	4.77	0.00
21.85	4.86	4.86	0.00
21.90	4.94	4.94	0.00
21.95	5.02	5.02	0.00
22.00	**5.10**	**5.10**	0.00

Stage-Area-Storage for Pond CB10: CB10

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
19.50	**0**	20.56	0	21.62	0
19.52	0	20.58	0	21.64	0
19.54	0	20.60	0	21.66	0
19.56	0	20.62	0	21.68	0
19.58	0	20.64	0	21.70	0
19.60	0	20.66	0	21.72	0
19.62	0	20.68	0	21.74	0
19.64	0	20.70	0	21.76	0
19.66	0	20.72	0	21.78	0
19.68	0	20.74	0	21.80	0
19.70	0	20.76	0	21.82	0
19.72	0	20.78	0	21.84	0
19.74	0	20.80	0	21.86	0
19.76	0	20.82	0	21.88	0
19.78	0	20.84	0	21.90	0
19.80	0	20.86	0	21.92	0
19.82	0	20.88	0	21.94	0
19.84	0	20.90	0	21.96	0
19.86	0	20.92	0	21.98	0
19.88	0	20.94	0	22.00	0
19.90	0	20.96	0		
19.92	0	20.98	0		
19.94	0	21.00	0		
19.96	0	21.02	0		
19.98	0	21.04	0		
20.00	0	21.06	0		
20.02	0	21.08	0		
20.04	0	21.10	0		
20.06	0	21.12	0		
20.08	0	21.14	0		
20.10	0	21.16	0		
20.12	0	21.18	0		
20.14	0	21.20	0		
20.16	0	21.22	0		
20.18	0	21.24	0		
20.20	0	21.26	0		
20.22	0	21.28	0		
20.24	0	21.30	0		
20.26	0	21.32	0		
20.28	0	21.34	0		
20.30	0	21.36	0		
20.32	0	21.38	0		
20.34	0	21.40	0		
20.36	0	21.42	0		
20.38	0	21.44	0		
20.40	0	21.46	0		
20.42	0	21.48	0		
20.44	0	21.50	0		
20.46	0	21.52	0		
20.48	0	21.54	0		
20.50	0	21.56	0		
20.52	0	21.58	0		
20.54	0	21.60	0		

Summary for Pond CB13: CB13

Inflow Area = 9,340 sf, 71.57% Impervious, Inflow Depth > 7.59" for 100-Year event
Inflow = 1.77 cfs @ 12.07 hrs, Volume= 5,910 cf
Outflow = 1.77 cfs @ 12.07 hrs, Volume= 5,910 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.77 cfs @ 12.07 hrs, Volume= 5,910 cf
Routed to Pond DMH11 : DMH11
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3

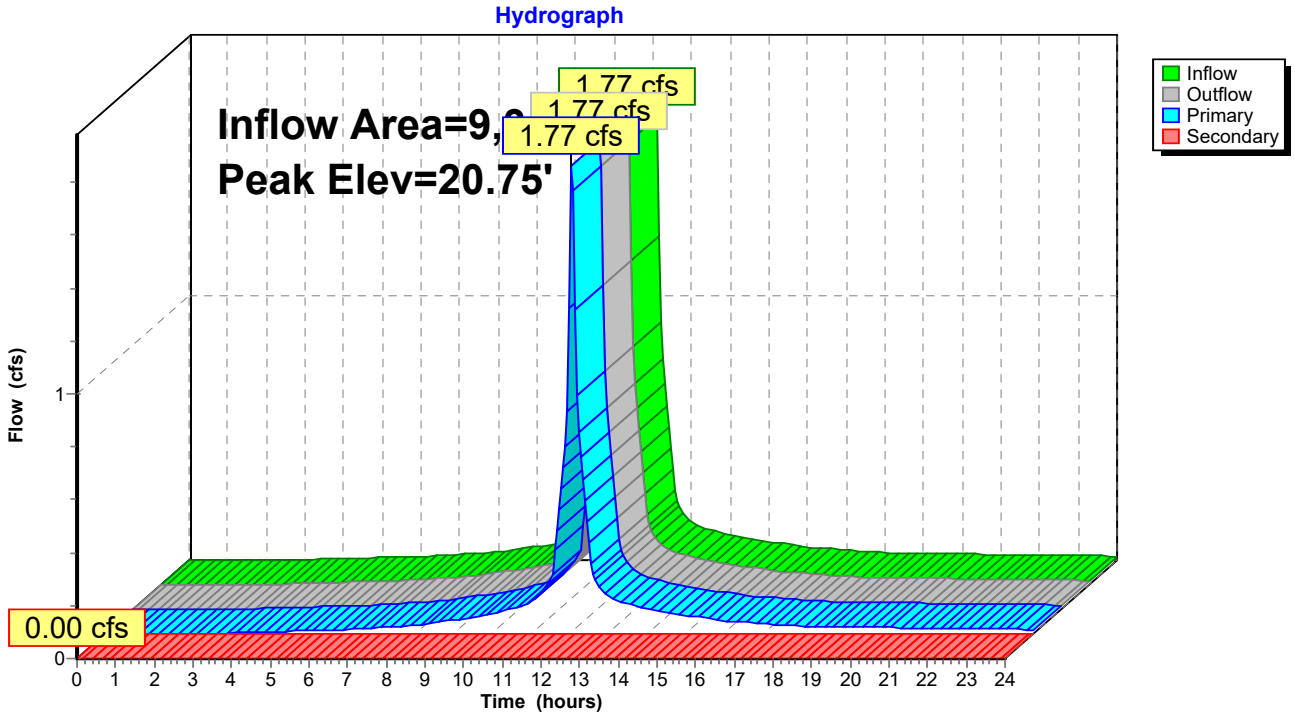
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 20.75' @ 12.07 hrs
Flood Elev= 22.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	19.90'	**12.0" Round Culvert** L= 12.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 19.90' / 19.80' S= 0.0083 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	22.00'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=1.71 cfs @ 12.07 hrs HW=20.73' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 1.71 cfs @ 3.30 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=19.90' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond CB13: CB13



Stage-Discharge for Pond CB13: CB13

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
19.90	0.00	0.00	**0.00**	20.96	2.43	2.43	0.00
19.92	0.00	0.00	0.00	20.98	2.49	2.49	0.00
19.94	0.01	0.01	0.00	21.00	2.55	2.55	0.00
19.96	0.01	0.01	0.00	21.02	2.60	2.60	0.00
19.98	0.02	0.02	0.00	21.04	2.66	2.66	0.00
20.00	0.03	0.03	0.00	21.06	2.71	2.71	0.00
20.02	0.05	0.05	0.00	21.08	2.77	2.77	0.00
20.04	0.07	0.07	0.00	21.10	2.82	2.82	0.00
20.06	0.09	0.09	0.00	21.12	2.87	2.87	0.00
20.08	0.11	0.11	0.00	21.14	2.91	2.91	0.00
20.10	0.13	0.13	0.00	21.16	2.95	2.95	0.00
20.12	0.16	0.16	0.00	21.18	2.99	2.99	0.00
20.14	0.19	0.19	0.00	21.20	3.02	3.02	0.00
20.16	0.22	0.22	0.00	21.22	3.04	3.04	0.00
20.18	0.25	0.25	0.00	21.24	3.05	3.05	0.00
20.20	0.29	0.29	0.00	21.26	3.12	3.12	0.00
20.22	0.33	0.33	0.00	21.28	3.19	3.19	0.00
20.24	0.36	0.36	0.00	21.30	3.25	3.25	0.00
20.26	0.40	0.40	0.00	21.32	3.32	3.32	0.00
20.28	0.44	0.44	0.00	21.34	3.38	3.38	0.00
20.30	0.49	0.49	0.00	21.36	3.44	3.44	0.00
20.32	0.53	0.53	0.00	21.38	3.50	3.50	0.00
20.34	0.58	0.58	0.00	21.40	3.56	3.56	0.00
20.36	0.63	0.63	0.00	21.42	3.62	3.62	0.00
20.38	0.68	0.68	0.00	21.44	3.68	3.68	0.00
20.40	0.73	0.73	0.00	21.46	3.74	3.74	0.00
20.42	0.78	0.78	0.00	21.48	3.79	3.79	0.00
20.44	0.83	0.83	0.00	21.50	3.85	3.85	0.00
20.46	0.88	0.88	0.00	21.52	3.90	3.90	0.00
20.48	0.94	0.94	0.00	21.54	3.96	3.96	0.00
20.50	0.99	0.99	0.00	21.56	4.01	4.01	0.00
20.52	1.05	1.05	0.00	21.58	4.06	4.06	0.00
20.54	1.11	1.11	0.00	21.60	4.12	4.12	0.00
20.56	1.17	1.17	0.00	21.62	4.17	4.17	0.00
20.58	1.23	1.23	0.00	21.64	4.21	4.21	0.00
20.60	1.29	1.29	0.00	21.66	4.24	4.24	0.00
20.62	1.35	1.35	0.00	21.68	4.28	4.28	0.00
20.64	1.41	1.41	0.00	21.70	4.31	4.31	0.00
20.66	1.47	1.47	0.00	21.72	4.34	4.34	0.00
20.68	1.54	1.54	0.00	21.74	4.38	4.38	0.00
20.70	1.60	1.60	0.00	21.76	4.41	4.41	0.00
20.72	1.66	1.66	0.00	21.78	4.44	4.44	0.00
20.74	1.73	1.73	0.00	21.80	4.47	4.47	0.00
20.76	1.79	1.79	0.00	21.82	4.51	4.51	0.00
20.78	1.86	1.86	0.00	21.84	4.54	4.54	0.00
20.80	1.92	1.92	0.00	21.86	4.57	4.57	0.00
20.82	1.98	1.98	0.00	21.88	4.60	4.60	0.00
20.84	2.05	2.05	0.00	21.90	4.63	4.63	0.00
20.86	2.11	2.11	0.00	21.92	4.66	4.66	0.00
20.88	2.18	2.18	0.00	21.94	4.69	4.69	0.00
20.90	2.24	2.24	0.00	21.96	4.72	4.72	0.00
20.92	2.30	2.30	0.00	21.98	4.75	4.75	0.00
20.94	2.36	2.36	0.00	22.00	**4.78**	**4.78**	0.00

Stage-Area-Storage for Pond CB13: CB13

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
19.90	**0**	20.96	0
19.92	0	20.98	0
19.94	0	21.00	0
19.96	0	21.02	0
19.98	0	21.04	0
20.00	0	21.06	0
20.02	0	21.08	0
20.04	0	21.10	0
20.06	0	21.12	0
20.08	0	21.14	0
20.10	0	21.16	0
20.12	0	21.18	0
20.14	0	21.20	0
20.16	0	21.22	0
20.18	0	21.24	0
20.20	0	21.26	0
20.22	0	21.28	0
20.24	0	21.30	0
20.26	0	21.32	0
20.28	0	21.34	0
20.30	0	21.36	0
20.32	0	21.38	0
20.34	0	21.40	0
20.36	0	21.42	0
20.38	0	21.44	0
20.40	0	21.46	0
20.42	0	21.48	0
20.44	0	21.50	0
20.46	0	21.52	0
20.48	0	21.54	0
20.50	0	21.56	0
20.52	0	21.58	0
20.54	0	21.60	0
20.56	0	21.62	0
20.58	0	21.64	0
20.60	0	21.66	0
20.62	0	21.68	0
20.64	0	21.70	0
20.66	0	21.72	0
20.68	0	21.74	0
20.70	0	21.76	0
20.72	0	21.78	0
20.74	0	21.80	0
20.76	0	21.82	0
20.78	0	21.84	0
20.80	0	21.86	0
20.82	0	21.88	0
20.84	0	21.90	0
20.86	0	21.92	0
20.88	0	21.94	0
20.90	0	21.96	0
20.92	0	21.98	0
20.94	0	22.00	0

Summary for Pond CB4: CB4

Inflow Area = 4,243 sf, 86.57% Impervious, Inflow Depth > 8.07" for 100-Year event
Inflow = 0.83 cfs @ 12.07 hrs, Volume= 2,855 cf
Outflow = 0.83 cfs @ 12.07 hrs, Volume= 2,855 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.83 cfs @ 12.07 hrs, Volume= 2,855 cf
Routed to Pond DMH2 : DMH2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond CB13 : CB13

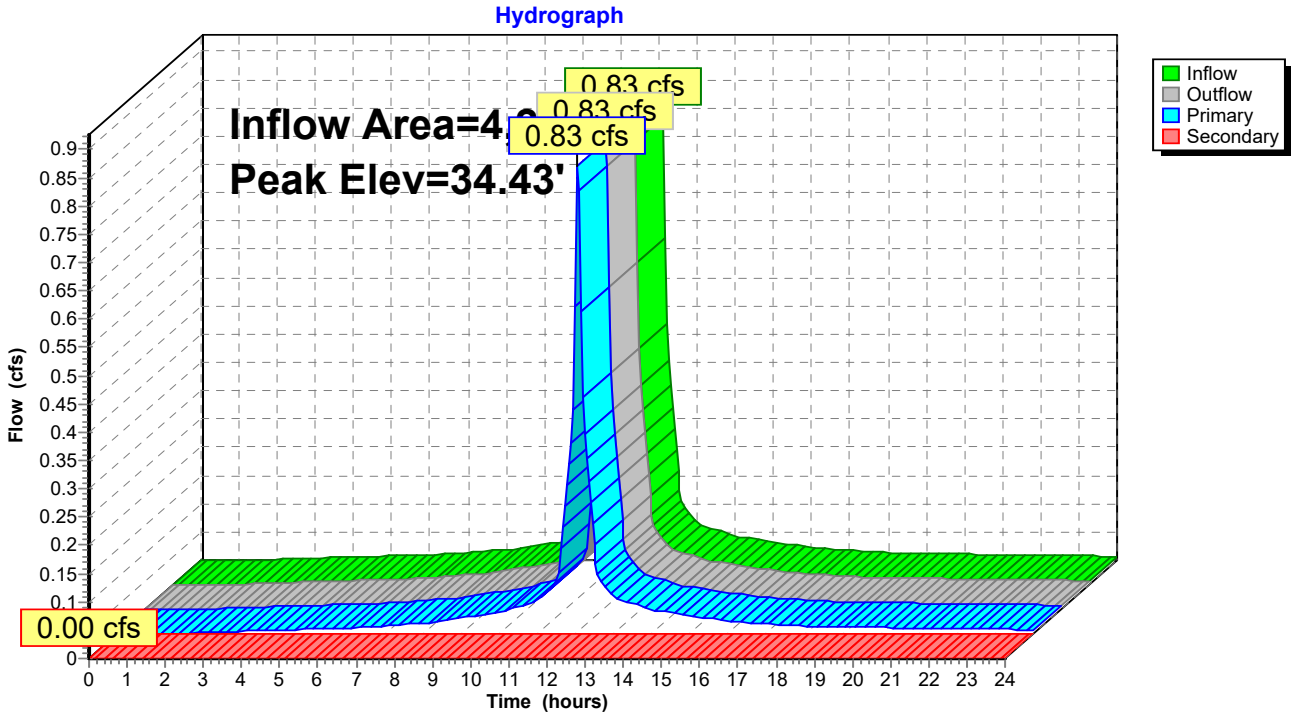
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 34.43' @ 12.07 hrs
Flood Elev= 37.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	33.90'	**12.0" Round Culvert** L= 10.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 33.90' / 33.80' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	37.00'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.80 cfs @ 12.07 hrs HW=34.42' (Free Discharge)
1=Culvert (Barrel Controls 0.80 cfs @ 2.80 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=33.90' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB4: CB4


Hydrograph
Inflow Area=4.
Peak Elev=34.43'
0.83 cfs
0.83 cfs
0.83 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
0 0.05 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55 0.6 0.65 0.7 0.75 0.8 0.85 0.9

Stage-Discharge for Pond CB4: CB4

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
33.90	0.00	0.00	**0.00**
33.95	0.01	0.01	0.00
34.00	0.04	0.04	0.00
34.05	0.08	0.08	0.00
34.10	0.14	0.14	0.00
34.15	0.21	0.21	0.00
34.20	0.30	0.30	0.00
34.25	0.39	0.39	0.00
34.30	0.50	0.50	0.00
34.35	0.62	0.62	0.00
34.40	0.74	0.74	0.00
34.45	0.87	0.87	0.00
34.50	1.01	1.01	0.00
34.55	1.16	1.16	0.00
34.60	1.31	1.31	0.00
34.65	1.47	1.47	0.00
34.70	1.62	1.62	0.00
34.75	1.79	1.79	0.00
34.80	1.95	1.95	0.00
34.85	2.11	2.11	0.00
34.90	2.27	2.27	0.00
34.95	2.43	2.43	0.00
35.00	2.58	2.58	0.00
35.05	2.72	2.72	0.00
35.10	2.86	2.86	0.00
35.15	2.97	2.97	0.00
35.20	3.06	3.06	0.00
35.25	3.14	3.14	0.00
35.30	3.31	3.31	0.00
35.35	3.47	3.47	0.00
35.40	3.62	3.62	0.00
35.45	3.77	3.77	0.00
35.50	3.92	3.92	0.00
35.55	4.05	4.05	0.00
35.60	4.14	4.14	0.00
35.65	4.23	4.23	0.00
35.70	4.31	4.31	0.00
35.75	4.39	4.39	0.00
35.80	4.47	4.47	0.00
35.85	4.55	4.55	0.00
35.90	4.63	4.63	0.00
35.95	4.71	4.71	0.00
36.00	4.78	4.78	0.00
36.05	4.86	4.86	0.00
36.10	4.93	4.93	0.00
36.15	5.00	5.00	0.00
36.20	5.07	5.07	0.00
36.25	5.14	5.14	0.00
36.30	5.21	5.21	0.00
36.35	5.28	5.28	0.00
36.40	5.35	5.35	0.00
36.45	5.41	5.41	0.00
36.50	5.48	5.48	0.00
36.55	5.55	5.55	0.00
36.60	5.61	5.61	0.00
36.65	5.67	5.67	0.00
36.70	5.74	5.74	0.00
36.75	5.80	5.80	0.00
36.80	5.86	5.86	0.00
36.85	5.92	5.92	0.00
36.90	5.98	5.98	0.00
36.95	6.04	6.04	0.00
37.00	**6.10**	**6.10**	0.00

Stage-Area-Storage for Pond CB4: CB4

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
33.90	**0**	34.96	0	36.02	0
33.92	0	34.98	0	36.04	0
33.94	0	35.00	0	36.06	0
33.96	0	35.02	0	36.08	0
33.98	0	35.04	0	36.10	0
34.00	0	35.06	0	36.12	0
34.02	0	35.08	0	36.14	0
34.04	0	35.10	0	36.16	0
34.06	0	35.12	0	36.18	0
34.08	0	35.14	0	36.20	0
34.10	0	35.16	0	36.22	0
34.12	0	35.18	0	36.24	0
34.14	0	35.20	0	36.26	0
34.16	0	35.22	0	36.28	0
34.18	0	35.24	0	36.30	0
34.20	0	35.26	0	36.32	0
34.22	0	35.28	0	36.34	0
34.24	0	35.30	0	36.36	0
34.26	0	35.32	0	36.38	0
34.28	0	35.34	0	36.40	0
34.30	0	35.36	0	36.42	0
34.32	0	35.38	0	36.44	0
34.34	0	35.40	0	36.46	0
34.36	0	35.42	0	36.48	0
34.38	0	35.44	0	36.50	0
34.40	0	35.46	0	36.52	0
34.42	0	35.48	0	36.54	0
34.44	0	35.50	0	36.56	0
34.46	0	35.52	0	36.58	0
34.48	0	35.54	0	36.60	0
34.50	0	35.56	0	36.62	0
34.52	0	35.58	0	36.64	0
34.54	0	35.60	0	36.66	0
34.56	0	35.62	0	36.68	0
34.58	0	35.64	0	36.70	0
34.60	0	35.66	0	36.72	0
34.62	0	35.68	0	36.74	0
34.64	0	35.70	0	36.76	0
34.66	0	35.72	0	36.78	0
34.68	0	35.74	0	36.80	0
34.70	0	35.76	0	36.82	0
34.72	0	35.78	0	36.84	0
34.74	0	35.80	0	36.86	0
34.76	0	35.82	0	36.88	0
34.78	0	35.84	0	36.90	0
34.80	0	35.86	0	36.92	0
34.82	0	35.88	0	36.94	0
34.84	0	35.90	0	36.96	0
34.86	0	35.92	0	36.98	0
34.88	0	35.94	0	37.00	0
34.90	0	35.96	0		
34.92	0	35.98	0		
34.94	0	36.00	0		

Summary for Pond CB5: CB5

Inflow Area = 2,714 sf, 96.35% Impervious, Inflow Depth > 8.32" for 100-Year event
Inflow = 0.53 cfs @ 12.07 hrs, Volume= 1,881 cf
Outflow = 0.53 cfs @ 12.07 hrs, Volume= 1,881 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.53 cfs @ 12.07 hrs, Volume= 1,881 cf
Routed to Pond DMH2 : DMH2
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond CB10 : CB10

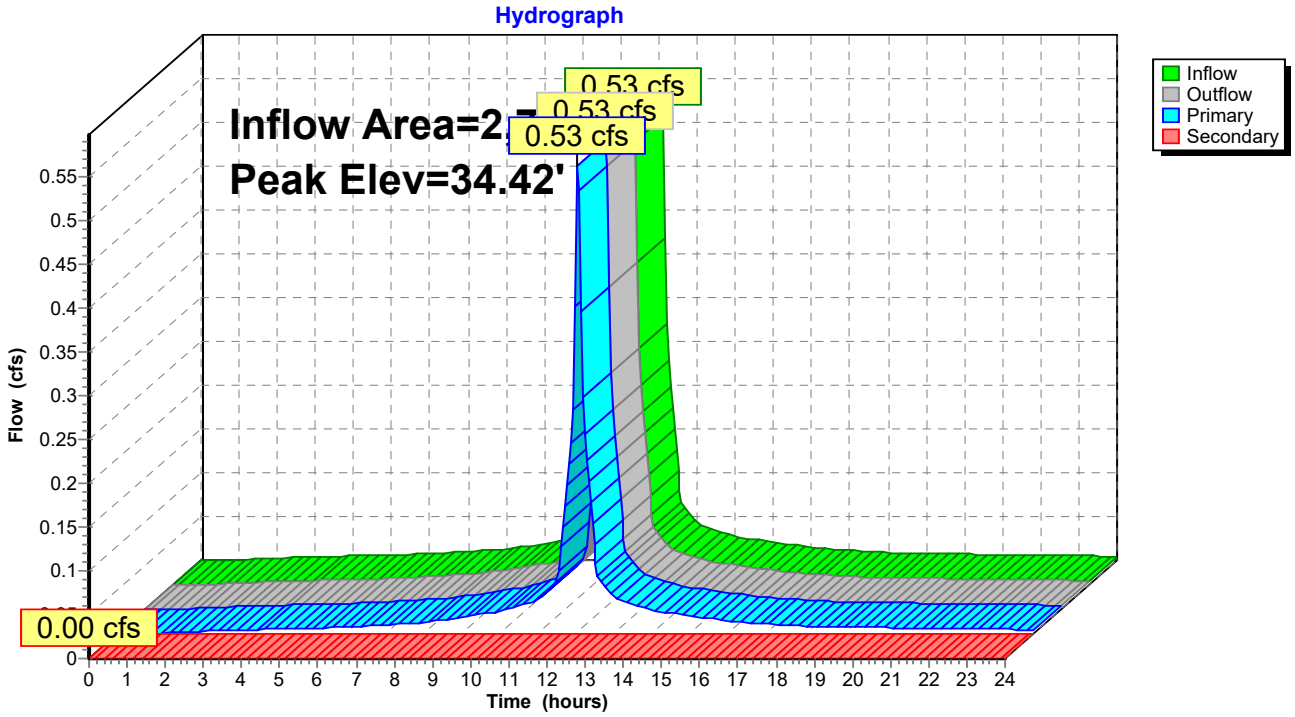
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 34.42' @ 12.07 hrs
Flood Elev= 37.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	34.00'	**12.0" Round Culvert** L= 35.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 34.00' / 33.80' S= 0.0057 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	37.50'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.51 cfs @ 12.07 hrs HW=34.42' (Free Discharge)
1=Culvert (Barrel Controls 0.51 cfs @ 2.45 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=34.00' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB5: CB5


Hydrograph
Inflow Area=2.
Peak Elev=34.42'
0.53 cfs
0.53 cfs
0.53 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
0
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
0.55
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Time (hours)

Stage-Discharge for Pond CB5: CB5

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
34.00	0.00	0.00	**0.00**
34.05	0.01	0.01	0.00
34.10	0.03	0.03	0.00
34.15	0.07	0.07	0.00
34.20	0.13	0.13	0.00
34.25	0.19	0.19	0.00
34.30	0.28	0.28	0.00
34.35	0.37	0.37	0.00
34.40	0.48	0.48	0.00
34.45	0.59	0.59	0.00
34.50	0.72	0.72	0.00
34.55	0.85	0.85	0.00
34.60	0.99	0.99	0.00
34.65	1.13	1.13	0.00
34.70	1.28	1.28	0.00
34.75	1.44	1.44	0.00
34.80	1.59	1.59	0.00
34.85	1.75	1.75	0.00
34.90	1.91	1.91	0.00
34.95	2.06	2.06	0.00
35.00	2.22	2.22	0.00
35.05	2.36	2.36	0.00
35.10	2.50	2.50	0.00
35.15	2.63	2.63	0.00
35.20	2.74	2.74	0.00
35.25	2.84	2.84	0.00
35.30	2.89	2.89	0.00
35.35	2.90	2.90	0.00
35.40	3.03	3.03	0.00
35.45	3.15	3.15	0.00
35.50	3.27	3.27	0.00
35.55	3.39	3.39	0.00
35.60	3.50	3.50	0.00
35.65	3.60	3.60	0.00
35.70	3.71	3.71	0.00
35.75	3.81	3.81	0.00
35.80	3.91	3.91	0.00
35.85	4.01	4.01	0.00
35.90	4.10	4.10	0.00
35.95	4.19	4.19	0.00
36.00	4.28	4.28	0.00
36.05	4.37	4.37	0.00
36.10	4.46	4.46	0.00
36.15	4.54	4.54	0.00
36.20	4.63	4.63	0.00
36.25	4.71	4.71	0.00
36.30	4.79	4.79	0.00
36.35	4.87	4.87	0.00
36.40	4.95	4.95	0.00
36.45	5.02	5.02	0.00
36.50	5.10	5.10	0.00
36.55	5.17	5.17	0.00
36.60	5.25	5.25	0.00
36.65	5.32	5.32	0.00
36.70	5.39	5.39	0.00
36.75	5.46	5.46	0.00
36.80	5.53	5.53	0.00
36.85	5.60	5.60	0.00
36.90	5.67	5.67	0.00
36.95	5.73	5.73	0.00
37.00	5.80	5.80	0.00
37.05	5.86	5.86	0.00
37.10	5.93	5.93	0.00
37.15	5.99	5.99	0.00
37.20	6.06	6.06	0.00
37.25	6.12	6.12	0.00
37.30	6.18	6.18	0.00
37.35	6.24	6.24	0.00
37.40	6.30	6.30	0.00
37.45	6.36	6.36	0.00
37.50	**6.42**	**6.42**	0.00

Stage-Area-Storage for Pond CB5: CB5

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
34.00	**0**	36.65	0
34.05	0	36.70	0
34.10	0	36.75	0
34.15	0	36.80	0
34.20	0	36.85	0
34.25	0	36.90	0
34.30	0	36.95	0
34.35	0	37.00	0
34.40	0	37.05	0
34.45	0	37.10	0
34.50	0	37.15	0
34.55	0	37.20	0
34.60	0	37.25	0
34.65	0	37.30	0
34.70	0	37.35	0
34.75	0	37.40	0
34.80	0	37.45	0
34.85	0	37.50	0
34.90	0		
34.95	0		
35.00	0		
35.05	0		
35.10	0		
35.15	0		
35.20	0		
35.25	0		
35.30	0		
35.35	0		
35.40	0		
35.45	0		
35.50	0		
35.55	0		
35.60	0		
35.65	0		
35.70	0		
35.75	0		
35.80	0		
35.85	0		
35.90	0		
35.95	0		
36.00	0		
36.05	0		
36.10	0		
36.15	0		
36.20	0		
36.25	0		
36.30	0		
36.35	0		
36.40	0		
36.45	0		
36.50	0		
36.55	0		
36.60	0		

Summary for Pond CB6: CB6

Inflow Area = 5,633 sf, 67.30% Impervious, Inflow Depth > 7.47" for 100-Year event
Inflow = 1.06 cfs @ 12.07 hrs, Volume= 3,507 cf
Outflow = 1.06 cfs @ 12.07 hrs, Volume= 3,507 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.06 cfs @ 12.07 hrs, Volume= 3,507 cf
Routed to Pond DMH7 : DMH7
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond CB4 : CB4

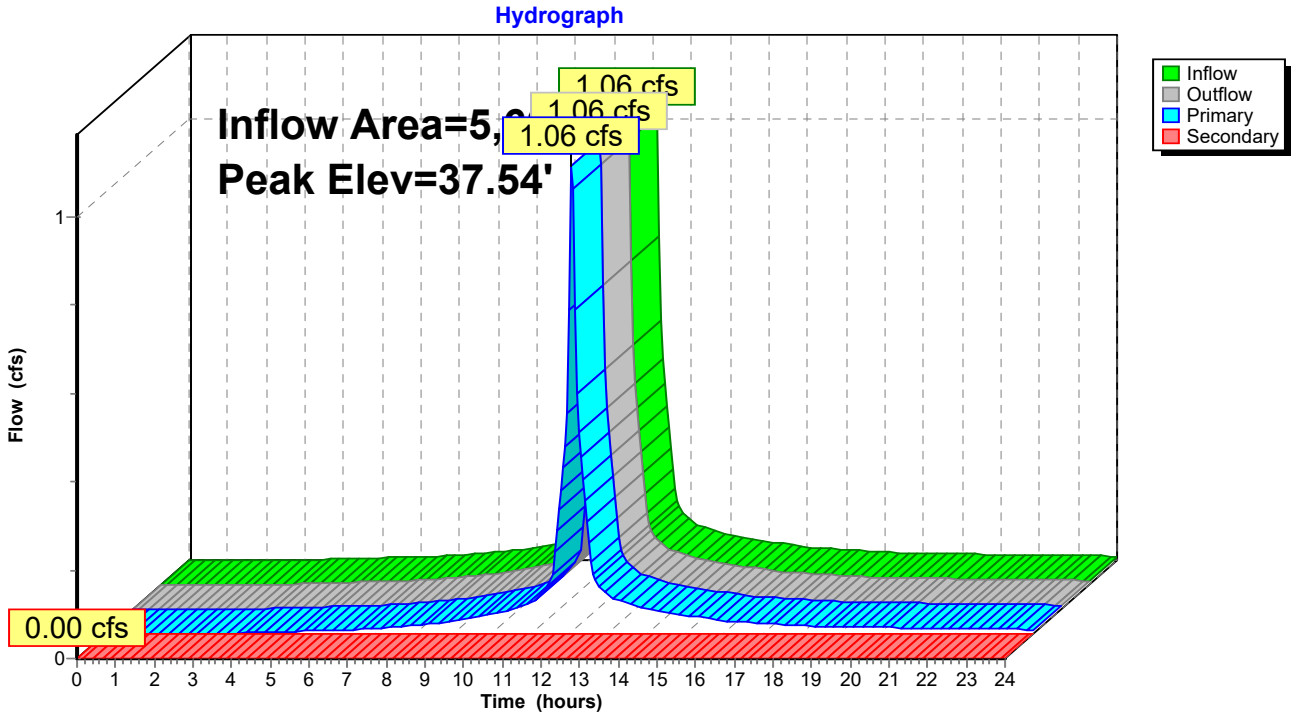
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 37.54' @ 12.07 hrs
Flood Elev= 39.42'

Device	Routing	Invert	Outlet Devices
#1	Primary	36.90'	**12.0" Round Culvert** L= 16.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 36.90' / 36.80' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	39.42'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 24.0" x 24.0" Grate (69% open area) Limited to weir flow at low heads

Primary OutFlow Max=1.02 cfs @ 12.07 hrs HW=37.52' (Free Discharge)
1=Culvert (Barrel Controls 1.02 cfs @ 2.84 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=36.90' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB6: CB6


Hydrograph
Inflow Area=5,
Peak Elev=37.54'
1.06 cfs
1.06 cfs
1.06 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0
1
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Stage-Discharge for Pond CB6: CB6

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
36.90	0.00	0.00	**0.00**
36.95	0.01	0.01	0.00
37.00	0.03	0.03	0.00
37.05	0.07	0.07	0.00
37.10	0.12	0.12	0.00
37.15	0.19	0.19	0.00
37.20	0.27	0.27	0.00
37.25	0.36	0.36	0.00
37.30	0.47	0.47	0.00
37.35	0.58	0.58	0.00
37.40	0.70	0.70	0.00
37.45	0.83	0.83	0.00
37.50	0.96	0.96	0.00
37.55	1.10	1.10	0.00
37.60	1.25	1.25	0.00
37.65	1.40	1.40	0.00
37.70	1.55	1.55	0.00
37.75	1.71	1.71	0.00
37.80	1.87	1.87	0.00
37.85	2.03	2.03	0.00
37.90	2.18	2.18	0.00
37.95	2.33	2.33	0.00
38.00	2.48	2.48	0.00
38.05	2.62	2.62	0.00
38.10	2.74	2.74	0.00
38.15	2.85	2.85	0.00
38.20	2.93	2.93	0.00
38.25	2.99	2.99	0.00
38.30	3.15	3.15	0.00
38.35	3.30	3.30	0.00
38.40	3.45	3.45	0.00
38.45	3.59	3.59	0.00
38.50	3.73	3.73	0.00
38.55	3.86	3.86	0.00
38.60	3.98	3.98	0.00
38.65	4.11	4.11	0.00
38.70	4.23	4.23	0.00
38.75	4.34	4.34	0.00
38.80	4.45	4.45	0.00
38.85	4.55	4.55	0.00
38.90	4.63	4.63	0.00
38.95	4.71	4.71	0.00
39.00	4.78	4.78	0.00
39.05	4.86	4.86	0.00
39.10	4.93	4.93	0.00
39.15	5.00	5.00	0.00
39.20	5.07	5.07	0.00
39.25	5.14	5.14	0.00
39.30	5.21	5.21	0.00
39.35	5.28	5.28	0.00
39.40	**5.35**	**5.35**	0.00

Stage-Area-Storage for Pond CB6: CB6

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
36.90	**0**	37.96	0	39.02	0
36.92	0	37.98	0	39.04	0
36.94	0	38.00	0	39.06	0
36.96	0	38.02	0	39.08	0
36.98	0	38.04	0	39.10	0
37.00	0	38.06	0	39.12	0
37.02	0	38.08	0	39.14	0
37.04	0	38.10	0	39.16	0
37.06	0	38.12	0	39.18	0
37.08	0	38.14	0	39.20	0
37.10	0	38.16	0	39.22	0
37.12	0	38.18	0	39.24	0
37.14	0	38.20	0	39.26	0
37.16	0	38.22	0	39.28	0
37.18	0	38.24	0	39.30	0
37.20	0	38.26	0	39.32	0
37.22	0	38.28	0	39.34	0
37.24	0	38.30	0	39.36	0
37.26	0	38.32	0	39.38	0
37.28	0	38.34	0	39.40	0
37.30	0	38.36	0	39.42	0
37.32	0	38.38	0		
37.34	0	38.40	0		
37.36	0	38.42	0		
37.38	0	38.44	0		
37.40	0	38.46	0		
37.42	0	38.48	0		
37.44	0	38.50	0		
37.46	0	38.52	0		
37.48	0	38.54	0		
37.50	0	38.56	0		
37.52	0	38.58	0		
37.54	0	38.60	0		
37.56	0	38.62	0		
37.58	0	38.64	0		
37.60	0	38.66	0		
37.62	0	38.68	0		
37.64	0	38.70	0		
37.66	0	38.72	0		
37.68	0	38.74	0		
37.70	0	38.76	0		
37.72	0	38.78	0		
37.74	0	38.80	0		
37.76	0	38.82	0		
37.78	0	38.84	0		
37.80	0	38.86	0		
37.82	0	38.88	0		
37.84	0	38.90	0		
37.86	0	38.92	0		
37.88	0	38.94	0		
37.90	0	38.96	0		
37.92	0	38.98	0		
37.94	0	39.00	0		

Summary for Pond CB9: CB9

Inflow Area = 5,351 sf, 75.91% Impervious, Inflow Depth > 7.71" for 100-Year event
Inflow = 1.02 cfs @ 12.07 hrs, Volume= 3,439 cf
Outflow = 1.02 cfs @ 12.07 hrs, Volume= 3,439 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.02 cfs @ 12.07 hrs, Volume= 3,439 cf
Routed to Pond DMH7 : DMH7
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond CB4 : CB4

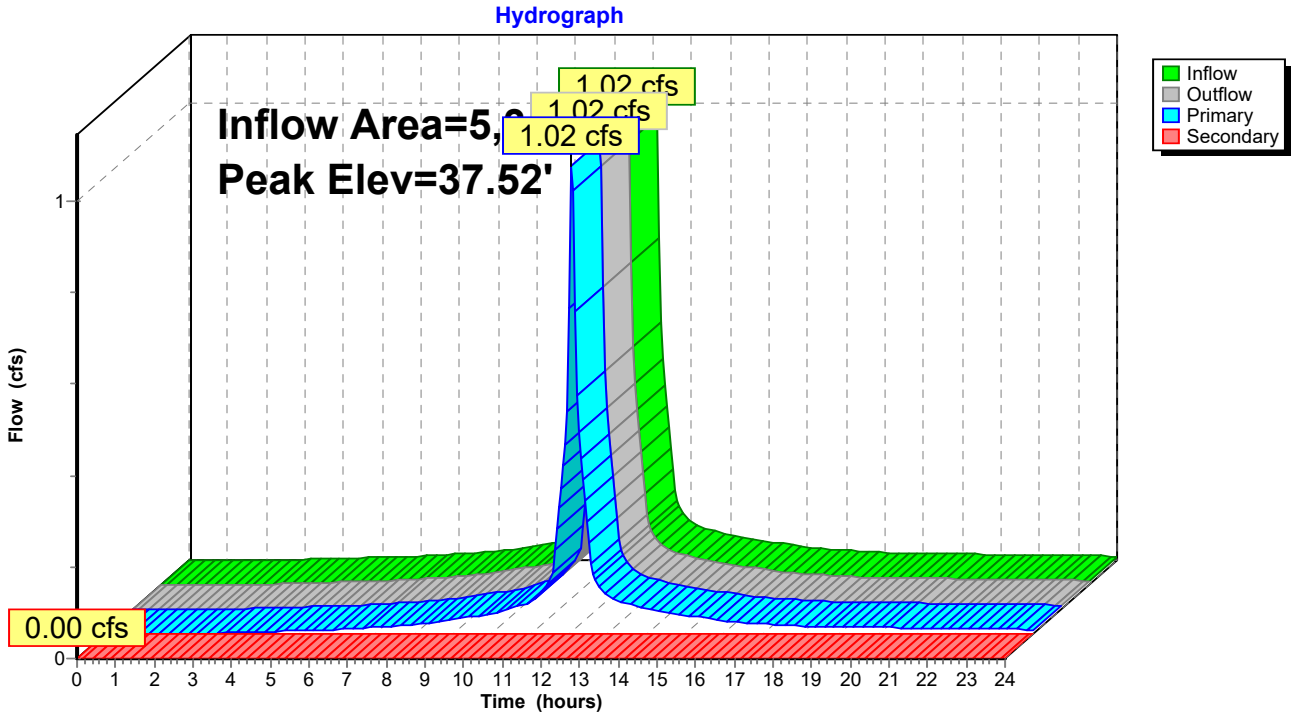
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 37.52' @ 12.07 hrs
Flood Elev= 39.42'

Device	Routing	Invert	Outlet Devices
#1	Primary	36.90'	**12.0" Round Culvert** L= 16.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 36.90' / 36.80' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	39.42'	**20.0" x 20.0" Horiz. Orifice/Grate** C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.99 cfs @ 12.07 hrs HW=37.51' (Free Discharge)
1=Culvert (Barrel Controls 0.99 cfs @ 2.82 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=36.90' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond CB9: CB9


Hydrograph
Inflow Area=5,
Peak Elev=37.52'
1.02 cfs
1.02 cfs
1.02 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0
1
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Stage-Discharge for Pond CB9: CB9

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
36.90	0.00	0.00	**0.00**
36.95	0.01	0.01	0.00
37.00	0.03	0.03	0.00
37.05	0.07	0.07	0.00
37.10	0.12	0.12	0.00
37.15	0.19	0.19	0.00
37.20	0.27	0.27	0.00
37.25	0.36	0.36	0.00
37.30	0.47	0.47	0.00
37.35	0.58	0.58	0.00
37.40	0.70	0.70	0.00
37.45	0.83	0.83	0.00
37.50	0.96	0.96	0.00
37.55	1.10	1.10	0.00
37.60	1.25	1.25	0.00
37.65	1.40	1.40	0.00
37.70	1.55	1.55	0.00
37.75	1.71	1.71	0.00
37.80	1.87	1.87	0.00
37.85	2.03	2.03	0.00
37.90	2.18	2.18	0.00
37.95	2.33	2.33	0.00
38.00	2.48	2.48	0.00
38.05	2.62	2.62	0.00
38.10	2.74	2.74	0.00
38.15	2.85	2.85	0.00
38.20	2.93	2.93	0.00
38.25	2.99	2.99	0.00
38.30	3.15	3.15	0.00
38.35	3.30	3.30	0.00
38.40	3.45	3.45	0.00
38.45	3.59	3.59	0.00
38.50	3.73	3.73	0.00
38.55	3.86	3.86	0.00
38.60	3.98	3.98	0.00
38.65	4.11	4.11	0.00
38.70	4.23	4.23	0.00
38.75	4.34	4.34	0.00
38.80	4.45	4.45	0.00
38.85	4.55	4.55	0.00
38.90	4.63	4.63	0.00
38.95	4.71	4.71	0.00
39.00	4.78	4.78	0.00
39.05	4.86	4.86	0.00
39.10	4.93	4.93	0.00
39.15	5.00	5.00	0.00
39.20	5.07	5.07	0.00
39.25	5.14	5.14	0.00
39.30	5.21	5.21	0.00
39.35	5.28	5.28	0.00
39.40	**5.35**	**5.35**	0.00

Stage-Area-Storage for Pond CB9: CB9

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
36.90	**0**	37.96	0	39.02	0
36.92	0	37.98	0	39.04	0
36.94	0	38.00	0	39.06	0
36.96	0	38.02	0	39.08	0
36.98	0	38.04	0	39.10	0
37.00	0	38.06	0	39.12	0
37.02	0	38.08	0	39.14	0
37.04	0	38.10	0	39.16	0
37.06	0	38.12	0	39.18	0
37.08	0	38.14	0	39.20	0
37.10	0	38.16	0	39.22	0
37.12	0	38.18	0	39.24	0
37.14	0	38.20	0	39.26	0
37.16	0	38.22	0	39.28	0
37.18	0	38.24	0	39.30	0
37.20	0	38.26	0	39.32	0
37.22	0	38.28	0	39.34	0
37.24	0	38.30	0	39.36	0
37.26	0	38.32	0	39.38	0
37.28	0	38.34	0	39.40	0
37.30	0	38.36	0	39.42	0
37.32	0	38.38	0		
37.34	0	38.40	0		
37.36	0	38.42	0		
37.38	0	38.44	0		
37.40	0	38.46	0		
37.42	0	38.48	0		
37.44	0	38.50	0		
37.46	0	38.52	0		
37.48	0	38.54	0		
37.50	0	38.56	0		
37.52	0	38.58	0		
37.54	0	38.60	0		
37.56	0	38.62	0		
37.58	0	38.64	0		
37.60	0	38.66	0		
37.62	0	38.68	0		
37.64	0	38.70	0		
37.66	0	38.72	0		
37.68	0	38.74	0		
37.70	0	38.76	0		
37.72	0	38.78	0		
37.74	0	38.80	0		
37.76	0	38.82	0		
37.78	0	38.84	0		
37.80	0	38.86	0		
37.82	0	38.88	0		
37.84	0	38.90	0		
37.86	0	38.92	0		
37.88	0	38.94	0		
37.90	0	38.96	0		
37.92	0	38.98	0		
37.94	0	39.00	0		

Summary for Pond DMH11: DMH11

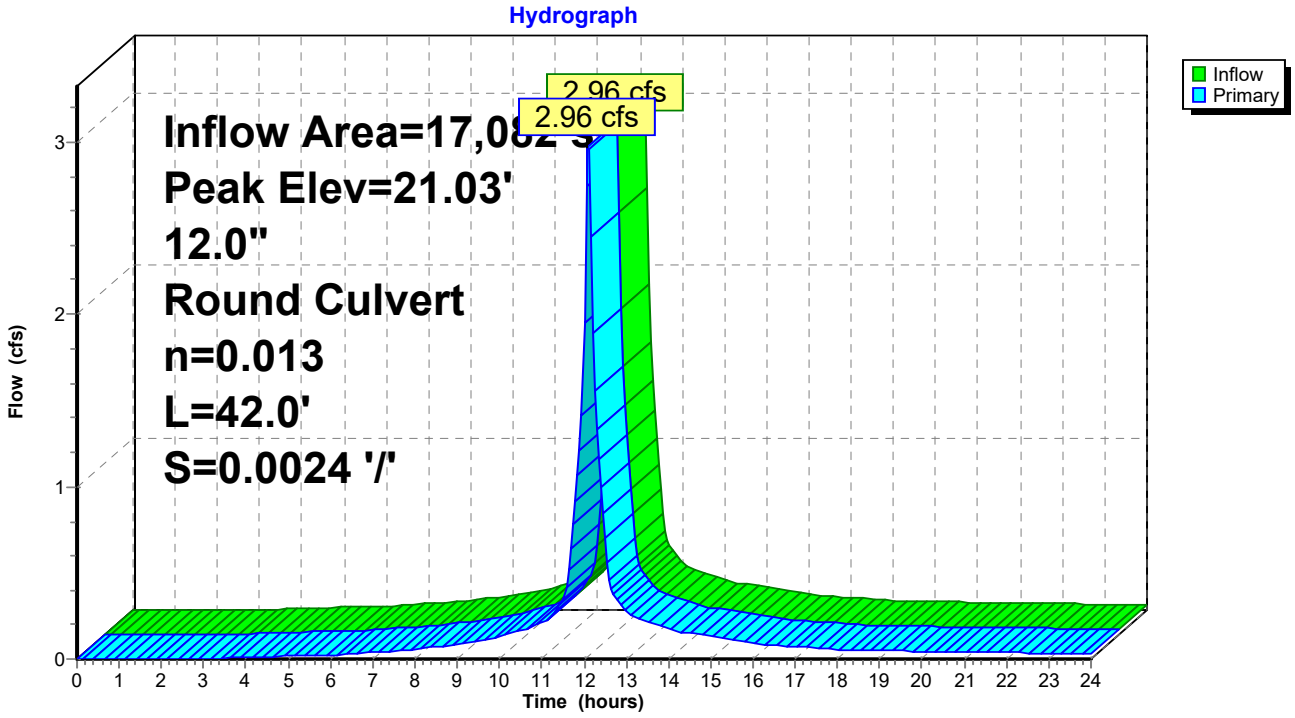
Inflow Area = 17,082 sf, 65.92% Impervious, Inflow Depth > 7.43" for 100-Year event
Inflow = 2.96 cfs @ 12.09 hrs, Volume= 10,572 cf
Outflow = 2.96 cfs @ 12.09 hrs, Volume= 10,572 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.96 cfs @ 12.09 hrs, Volume= 10,572 cf
Routed to Pond SSD3 : SUBSURFACE DRAINAGE AREA #3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 21.03' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	19.50'	**12.0" Round Culvert** L= 42.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 19.50' / 19.40' S= 0.0024 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=2.91 cfs @ 12.09 hrs HW=21.00' (Free Discharge)
1=Culvert (Barrel Controls 2.91 cfs @ 3.70 fps)

Pond DMH11: DMH11



Stage-Discharge for Pond DMH11: DMH11

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
19.50	0.00	20.03	0.64	20.56	2.05
19.51	0.00	20.04	0.66	20.57	2.07
19.52	0.00	20.05	0.68	20.58	2.10
19.53	0.00	20.06	0.71	20.59	2.12
19.54	0.00	20.07	0.73	20.60	2.15
19.55	0.00	20.08	0.75	20.61	2.17
19.56	0.01	20.09	0.78	20.62	2.20
19.57	0.01	20.10	0.80	20.63	2.22
19.58	0.01	20.11	0.83	20.64	2.24
19.59	0.02	20.12	0.85	20.65	2.27
19.60	0.02	20.13	0.88	20.66	2.29
19.61	0.03	20.14	0.90	20.67	2.31
19.62	0.03	20.15	0.93	20.68	2.33
19.63	0.04	20.16	0.95	20.69	2.35
19.64	0.04	20.17	0.98	20.70	2.37
19.65	0.05	20.18	1.00	20.71	2.39
19.66	0.06	20.19	1.03	20.72	2.41
19.67	0.06	20.20	1.06	20.73	2.42
19.68	0.07	20.21	1.08	20.74	2.44
19.69	0.08	20.22	1.11	20.75	2.45
19.70	0.09	20.23	1.14	20.76	2.47
19.71	0.10	20.24	1.16	20.77	2.48
19.72	0.11	20.25	1.19	20.78	2.49
19.73	0.12	20.26	1.22	20.79	2.50
19.74	0.13	20.27	1.25	20.80	2.51
19.75	0.14	20.28	1.27	20.81	2.51
19.76	0.16	20.29	1.30	20.82	2.51
19.77	0.17	20.30	1.33	20.83	2.49
19.78	0.18	20.31	1.36	20.84	2.49
19.79	0.19	20.32	1.39	20.85	2.52
19.80	0.21	20.33	1.41	20.86	2.55
19.81	0.22	20.34	1.44	20.87	2.57
19.82	0.24	20.35	1.47	20.88	2.60
19.83	0.25	20.36	1.50	20.89	2.63
19.84	0.27	20.37	1.53	20.90	2.65
19.85	0.28	20.38	1.55	20.91	2.68
19.86	0.30	20.39	1.58	20.92	2.71
19.87	0.32	20.40	1.61	20.93	2.73
19.88	0.33	20.41	1.64	20.94	2.76
19.89	0.35	20.42	1.67	20.95	2.78
19.90	0.37	20.43	1.69	20.96	2.81
19.91	0.39	20.44	1.72	20.97	2.83
19.92	0.41	20.45	1.75	20.98	2.86
19.93	0.43	20.46	1.78	20.99	2.88
19.94	0.45	20.47	1.81	21.00	2.91
19.95	0.47	20.48	1.83	21.01	2.93
19.96	0.49	20.49	1.86	21.02	**2.96**
19.97	0.51	20.50	1.89		
19.98	0.53	20.51	1.91		
19.99	0.55	20.52	1.94		
20.00	0.57	20.53	1.97		
20.01	0.59	20.54	1.99		
20.02	0.61	20.55	2.02		

Stage-Area-Storage for Pond DMH11: DMH11

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
19.50	**0**	20.03	0	20.56	0
19.51	0	20.04	0	20.57	0
19.52	0	20.05	0	20.58	0
19.53	0	20.06	0	20.59	0
19.54	0	20.07	0	20.60	0
19.55	0	20.08	0	20.61	0
19.56	0	20.09	0	20.62	0
19.57	0	20.10	0	20.63	0
19.58	0	20.11	0	20.64	0
19.59	0	20.12	0	20.65	0
19.60	0	20.13	0	20.66	0
19.61	0	20.14	0	20.67	0
19.62	0	20.15	0	20.68	0
19.63	0	20.16	0	20.69	0
19.64	0	20.17	0	20.70	0
19.65	0	20.18	0	20.71	0
19.66	0	20.19	0	20.72	0
19.67	0	20.20	0	20.73	0
19.68	0	20.21	0	20.74	0
19.69	0	20.22	0	20.75	0
19.70	0	20.23	0	20.76	0
19.71	0	20.24	0	20.77	0
19.72	0	20.25	0	20.78	0
19.73	0	20.26	0	20.79	0
19.74	0	20.27	0	20.80	0
19.75	0	20.28	0	20.81	0
19.76	0	20.29	0	20.82	0
19.77	0	20.30	0	20.83	0
19.78	0	20.31	0	20.84	0
19.79	0	20.32	0	20.85	0
19.80	0	20.33	0	20.86	0
19.81	0	20.34	0	20.87	0
19.82	0	20.35	0	20.88	0
19.83	0	20.36	0	20.89	0
19.84	0	20.37	0	20.90	0
19.85	0	20.38	0	20.91	0
19.86	0	20.39	0	20.92	0
19.87	0	20.40	0	20.93	0
19.88	0	20.41	0	20.94	0
19.89	0	20.42	0	20.95	0
19.90	0	20.43	0	20.96	0
19.91	0	20.44	0	20.97	0
19.92	0	20.45	0	20.98	0
19.93	0	20.46	0	20.99	0
19.94	0	20.47	0	21.00	0
19.95	0	20.48	0	21.01	0
19.96	0	20.49	0	21.02	0
19.97	0	20.50	0		
19.98	0	20.51	0		
19.99	0	20.52	0		
20.00	0	20.53	0		
20.01	0	20.54	0		
20.02	0	20.55	0		

Summary for Pond DMH2: DMH2

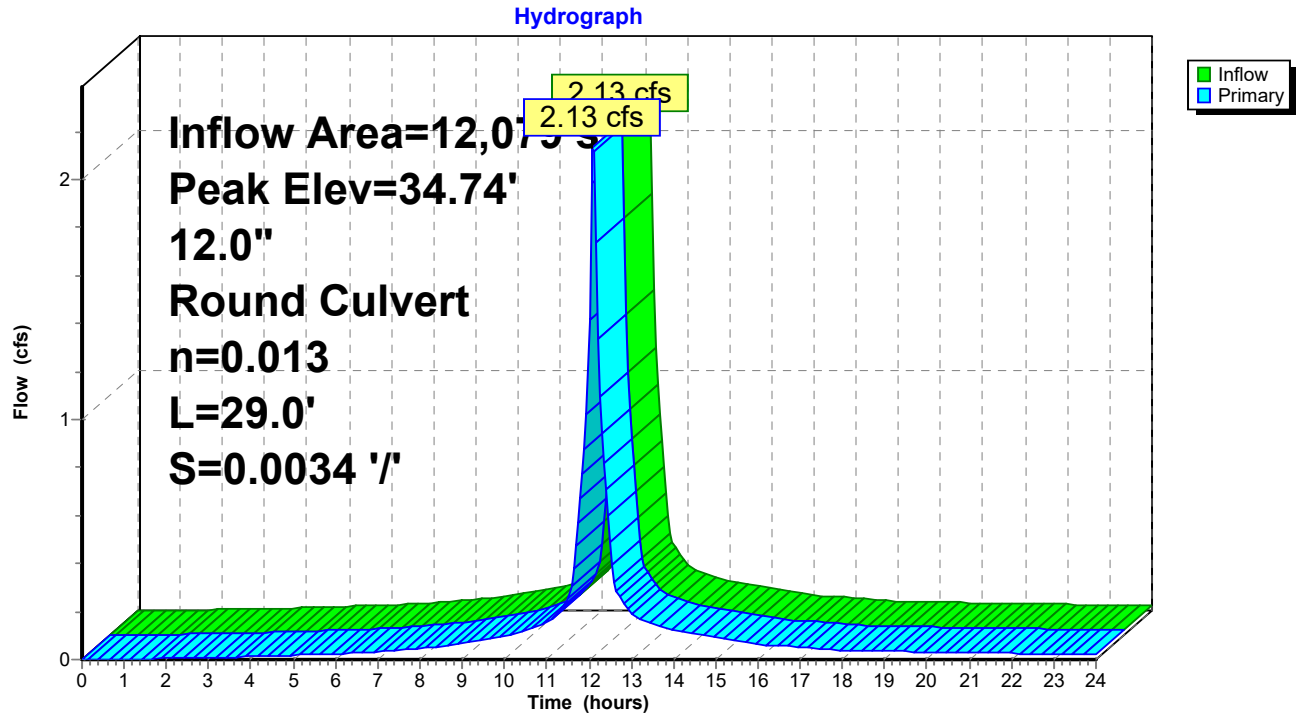
Inflow Area = 12,079 sf, 75.83% Impervious, Inflow Depth > 7.72" for 100-Year event
Inflow = 2.13 cfs @ 12.09 hrs, Volume= 7,769 cf
Outflow = 2.13 cfs @ 12.09 hrs, Volume= 7,769 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.13 cfs @ 12.09 hrs, Volume= 7,769 cf
Routed to Pond SSD1 : SUBSURFACE DRAINAGE AREA #1

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 34.74' @ 12.09 hrs
Flood Elev= 36.75'

Device	Routing	Invert	Outlet Devices
#1	Primary	33.70'	**12.0" Round Culvert** L= 29.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 33.70' / 33.60' S= 0.0034 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=2.09 cfs @ 12.09 hrs HW=34.72' (Free Discharge)
1=Culvert (Barrel Controls 2.09 cfs @ 3.22 fps)

Pond DMH2: DMH2



Stage-Discharge for Pond DMH2: DMH2

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
33.70	0.00	34.76	2.19	35.82	4.48
33.72	0.00	34.78	2.24	35.84	4.52
33.74	0.00	34.80	2.30	35.86	4.56
33.76	0.01	34.82	2.35	35.88	4.59
33.78	0.02	34.84	2.40	35.90	4.63
33.80	0.02	34.86	2.45	35.92	4.66
33.82	0.04	34.88	2.49	35.94	4.70
33.84	0.05	34.90	2.54	35.96	4.73
33.86	0.07	34.92	2.58	35.98	4.77
33.88	0.08	34.94	2.61	36.00	4.80
33.90	0.10	34.96	2.65	36.02	4.84
33.92	0.13	34.98	2.67	36.04	4.87
33.94	0.15	35.00	2.69	36.06	4.91
33.96	0.18	35.02	2.70	36.08	4.94
33.98	0.20	35.04	2.69	36.10	4.97
34.00	0.23	35.06	2.75	36.12	5.00
34.02	0.27	35.08	2.81	36.14	5.04
34.04	0.30	35.10	2.87	36.16	5.07
34.06	0.33	35.12	2.93	36.18	5.10
34.08	0.37	35.14	2.98	36.20	5.13
34.10	0.41	35.16	3.04	36.22	5.17
34.12	0.45	35.18	3.09	36.24	5.20
34.14	0.49	35.20	3.14	36.26	5.23
34.16	0.53	35.22	3.20	36.28	5.26
34.18	0.58	35.24	3.25	36.30	5.29
34.20	0.62	35.26	3.30	36.32	5.32
34.22	0.67	35.28	3.35	36.34	5.35
34.24	0.72	35.30	3.40	36.36	5.39
34.26	0.77	35.32	3.44	36.38	5.42
34.28	0.82	35.34	3.49	36.40	5.45
34.30	0.87	35.36	3.54	36.42	5.48
34.32	0.92	35.38	3.59	36.44	5.51
34.34	0.98	35.40	3.63	36.46	5.54
34.36	1.03	35.42	3.68	36.48	5.57
34.38	1.08	35.44	3.72	36.50	5.60
34.40	1.14	35.46	3.76	36.52	5.63
34.42	1.20	35.48	3.81	36.54	5.65
34.44	1.25	35.50	3.85	36.56	5.68
34.46	1.31	35.52	3.89	36.58	5.71
34.48	1.37	35.54	3.94	36.60	5.74
34.50	1.43	35.56	3.98	36.62	5.77
34.52	1.49	35.58	4.02	36.64	5.80
34.54	1.55	35.60	4.06	36.66	5.83
34.56	1.61	35.62	4.10	36.68	5.85
34.58	1.67	35.64	4.14	36.70	5.88
34.60	1.72	35.66	4.18	36.72	5.91
34.62	1.78	35.68	4.22	36.74	**5.94**
34.64	1.84	35.70	4.26		
34.66	1.90	35.72	4.30		
34.68	1.96	35.74	4.33		
34.70	2.02	35.76	4.37		
34.72	2.08	35.78	4.41		
34.74	2.13	35.80	4.45		

Stage-Area-Storage for Pond DMH2: DMH2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
33.70	**0**	34.76	0	35.82	0
33.72	0	34.78	0	35.84	0
33.74	0	34.80	0	35.86	0
33.76	0	34.82	0	35.88	0
33.78	0	34.84	0	35.90	0
33.80	0	34.86	0	35.92	0
33.82	0	34.88	0	35.94	0
33.84	0	34.90	0	35.96	0
33.86	0	34.92	0	35.98	0
33.88	0	34.94	0	36.00	0
33.90	0	34.96	0	36.02	0
33.92	0	34.98	0	36.04	0
33.94	0	35.00	0	36.06	0
33.96	0	35.02	0	36.08	0
33.98	0	35.04	0	36.10	0
34.00	0	35.06	0	36.12	0
34.02	0	35.08	0	36.14	0
34.04	0	35.10	0	36.16	0
34.06	0	35.12	0	36.18	0
34.08	0	35.14	0	36.20	0
34.10	0	35.16	0	36.22	0
34.12	0	35.18	0	36.24	0
34.14	0	35.20	0	36.26	0
34.16	0	35.22	0	36.28	0
34.18	0	35.24	0	36.30	0
34.20	0	35.26	0	36.32	0
34.22	0	35.28	0	36.34	0
34.24	0	35.30	0	36.36	0
34.26	0	35.32	0	36.38	0
34.28	0	35.34	0	36.40	0
34.30	0	35.36	0	36.42	0
34.32	0	35.38	0	36.44	0
34.34	0	35.40	0	36.46	0
34.36	0	35.42	0	36.48	0
34.38	0	35.44	0	36.50	0
34.40	0	35.46	0	36.52	0
34.42	0	35.48	0	36.54	0
34.44	0	35.50	0	36.56	0
34.46	0	35.52	0	36.58	0
34.48	0	35.54	0	36.60	0
34.50	0	35.56	0	36.62	0
34.52	0	35.58	0	36.64	0
34.54	0	35.60	0	36.66	0
34.56	0	35.62	0	36.68	0
34.58	0	35.64	0	36.70	0
34.60	0	35.66	0	36.72	0
34.62	0	35.68	0	36.74	0
34.64	0	35.70	0		
34.66	0	35.72	0		
34.68	0	35.74	0		
34.70	0	35.76	0		
34.72	0	35.78	0		
34.74	0	35.80	0		

Summary for Pond DMH7: DMH7

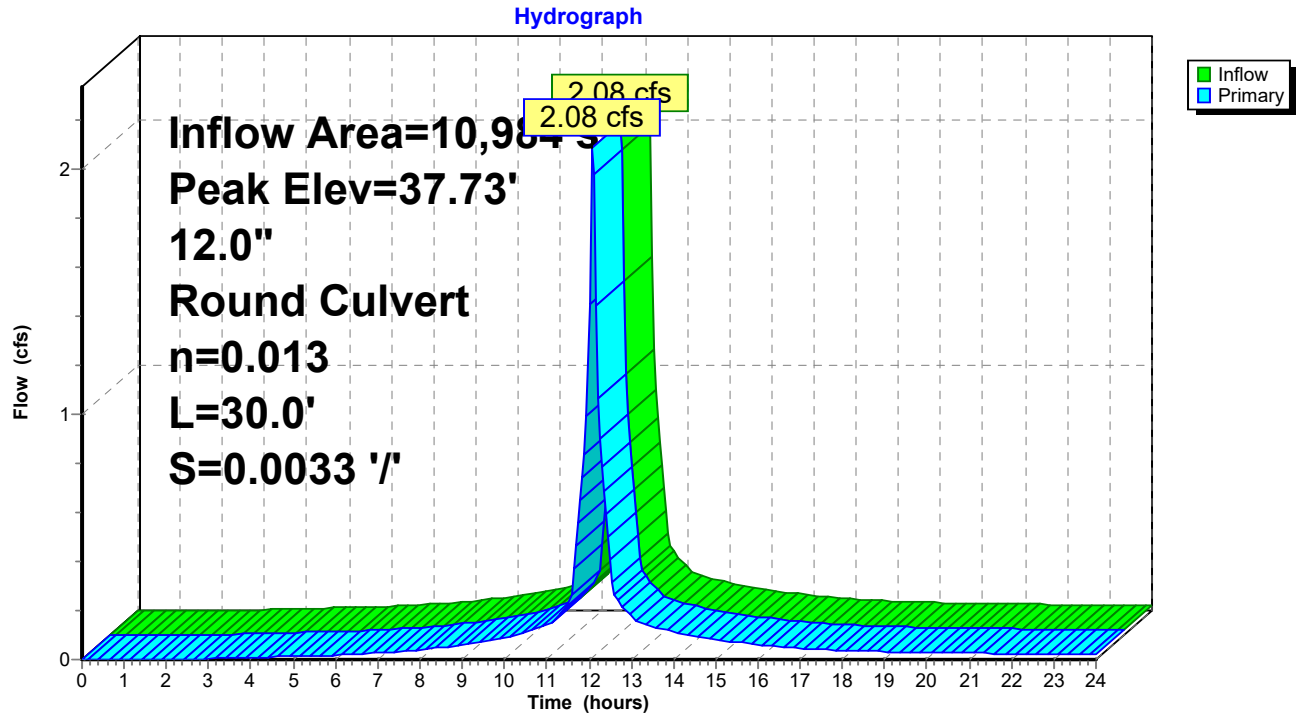
Inflow Area = 10,984 sf, 71.49% Impervious, Inflow Depth > 7.59" for 100-Year event
Inflow = 2.08 cfs @ 12.07 hrs, Volume= 6,947 cf
Outflow = 2.08 cfs @ 12.07 hrs, Volume= 6,947 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.08 cfs @ 12.07 hrs, Volume= 6,947 cf
Routed to Pond SSD2 : SUBSURFACE DRAINAGE AREA #2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 37.73' @ 12.07 hrs
Flood Elev= 39.67'

Device	Routing	Invert	Outlet Devices
#1	Primary	36.70'	**12.0" Round Culvert** L= 30.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 36.70' / 36.60' S= 0.0033 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=2.01 cfs @ 12.07 hrs HW=37.70' (Free Discharge)
1=Culvert (Barrel Controls 2.01 cfs @ 3.18 fps)

Pond DMH7: DMH7



Stage-Discharge for Pond DMH7: DMH7

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
36.70	0.00	37.76	2.18	38.82	4.45
36.72	0.00	37.78	2.23	38.84	4.49
36.74	0.00	37.80	2.28	38.86	4.53
36.76	0.01	37.82	2.33	38.88	4.56
36.78	0.01	37.84	2.38	38.90	4.60
36.80	0.02	37.86	2.43	38.92	4.63
36.82	0.04	37.88	2.48	38.94	4.67
36.84	0.05	37.90	2.52	38.96	4.70
36.86	0.06	37.92	2.56	38.98	4.74
36.88	0.08	37.94	2.60	39.00	4.77
36.90	0.10	37.96	2.63	39.02	4.81
36.92	0.12	37.98	2.66	39.04	4.84
36.94	0.15	38.00	2.68	39.06	4.87
36.96	0.17	38.02	2.68	39.08	4.91
36.98	0.20	38.04	2.68	39.10	4.94
37.00	0.23	38.06	2.74	39.12	4.97
37.02	0.26	38.08	2.79	39.14	5.01
37.04	0.30	38.10	2.85	39.16	5.04
37.06	0.33	38.12	2.91	39.18	5.07
37.08	0.37	38.14	2.96	39.20	5.10
37.10	0.41	38.16	3.02	39.22	5.13
37.12	0.45	38.18	3.07	39.24	5.17
37.14	0.49	38.20	3.12	39.26	5.20
37.16	0.53	38.22	3.18	39.28	5.23
37.18	0.57	38.24	3.23	39.30	5.26
37.20	0.62	38.26	3.28	39.32	5.29
37.22	0.67	38.28	3.33	39.34	5.32
37.24	0.71	38.30	3.37	39.36	5.35
37.26	0.76	38.32	3.42	39.38	5.38
37.28	0.81	38.34	3.47	39.40	5.41
37.30	0.86	38.36	3.52	39.42	5.44
37.32	0.92	38.38	3.56	39.44	5.47
37.34	0.97	38.40	3.61	39.46	5.50
37.36	1.02	38.42	3.65	39.48	5.53
37.38	1.08	38.44	3.70	39.50	5.56
37.40	1.13	38.46	3.74	39.52	5.59
37.42	1.19	38.48	3.78	39.54	5.62
37.44	1.25	38.50	3.83	39.56	5.65
37.46	1.30	38.52	3.87	39.58	5.68
37.48	1.36	38.54	3.91	39.60	5.70
37.50	1.42	38.56	3.95	39.62	5.73
37.52	1.48	38.58	3.99	39.64	5.76
37.54	1.54	38.60	4.03	39.66	**5.79**
37.56	1.60	38.62	4.07		
37.58	1.66	38.64	4.11		
37.60	1.72	38.66	4.15		
37.62	1.77	38.68	4.19		
37.64	1.83	38.70	4.23		
37.66	1.89	38.72	4.27		
37.68	1.95	38.74	4.31		
37.70	2.01	38.76	4.34		
37.72	2.06	38.78	4.38		
37.74	2.12	38.80	4.42		

Stage-Area-Storage for Pond DMH7: DMH7

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
36.70	**0**	37.76	0	38.82	0
36.72	0	37.78	0	38.84	0
36.74	0	37.80	0	38.86	0
36.76	0	37.82	0	38.88	0
36.78	0	37.84	0	38.90	0
36.80	0	37.86	0	38.92	0
36.82	0	37.88	0	38.94	0
36.84	0	37.90	0	38.96	0
36.86	0	37.92	0	38.98	0
36.88	0	37.94	0	39.00	0
36.90	0	37.96	0	39.02	0
36.92	0	37.98	0	39.04	0
36.94	0	38.00	0	39.06	0
36.96	0	38.02	0	39.08	0
36.98	0	38.04	0	39.10	0
37.00	0	38.06	0	39.12	0
37.02	0	38.08	0	39.14	0
37.04	0	38.10	0	39.16	0
37.06	0	38.12	0	39.18	0
37.08	0	38.14	0	39.20	0
37.10	0	38.16	0	39.22	0
37.12	0	38.18	0	39.24	0
37.14	0	38.20	0	39.26	0
37.16	0	38.22	0	39.28	0
37.18	0	38.24	0	39.30	0
37.20	0	38.26	0	39.32	0
37.22	0	38.28	0	39.34	0
37.24	0	38.30	0	39.36	0
37.26	0	38.32	0	39.38	0
37.28	0	38.34	0	39.40	0
37.30	0	38.36	0	39.42	0
37.32	0	38.38	0	39.44	0
37.34	0	38.40	0	39.46	0
37.36	0	38.42	0	39.48	0
37.38	0	38.44	0	39.50	0
37.40	0	38.46	0	39.52	0
37.42	0	38.48	0	39.54	0
37.44	0	38.50	0	39.56	0
37.46	0	38.52	0	39.58	0
37.48	0	38.54	0	39.60	0
37.50	0	38.56	0	39.62	0
37.52	0	38.58	0	39.64	0
37.54	0	38.60	0	39.66	0
37.56	0	38.62	0		
37.58	0	38.64	0		
37.60	0	38.66	0		
37.62	0	38.68	0		
37.64	0	38.70	0		
37.66	0	38.72	0		
37.68	0	38.74	0		
37.70	0	38.76	0		
37.72	0	38.78	0		
37.74	0	38.80	0		

Summary for Pond SSD1: SUBSURFACE DRAINAGE AREA #1

Inflow Area = 19,969 sf, 85.38% Impervious, Inflow Depth > 8.00" for 100-Year event
Inflow = 3.66 cfs @ 12.08 hrs, Volume= 13,315 cf
Outflow = 2.38 cfs @ 12.18 hrs, Volume= 11,179 cf, Atten= 35%, Lag= 6.3 min
Discarded = 0.04 cfs @ 5.35 hrs, Volume= 2,965 cf
Primary = 1.19 cfs @ 12.18 hrs, Volume= 5,092 cf
Routed to Reach DP3 : DP3
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3
Tertiary = 1.15 cfs @ 12.18 hrs, Volume= 3,122 cf
Routed to Pond SSD5 : SUBSURFACE DRAINAGE AREA #5 (STORAGE)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 36.84' @ 12.18 hrs Surf.Area= 1,654 sf Storage= 3,770 cf

Plug-Flow detention time= 109.4 min calculated for 11,156 cf (84% of inflow)
Center-of-Mass det. time= 42.7 min (796.0 - 753.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	33.16'	1,246 cf	**25.67'W x 52.50'L x 3.71'H Field A** 4,997 cf Overall - 1,881 cf Embedded = 3,116 cf x 40.0% Voids
#2A	33.66'	1,881 cf	**Cultec R-330XLHD** x 35 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 5 rows
#3B	33.16'	197 cf	**11.17'W x 17.50'L x 3.71'H Field B** 725 cf Overall - 231 cf Embedded = 494 cf x 40.0% Voids
#4B	33.66'	231 cf	**Cultec R-330XLHD** x 4 Inside #3 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
#5C	33.16'	118 cf	**6.33'W x 17.50'L x 3.71'H Field C** 411 cf Overall - 115 cf Embedded = 296 cf x 40.0% Voids
#6C	33.66'	115 cf	**Cultec R-330XLHD** x 2 Inside #5 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		3,790 cf	Total Available Storage

Storage Group A created with Chamber Wizard
Storage Group B created with Chamber Wizard
Storage Group C created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	33.16'	**1.020 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#2	Primary	35.00'	**6.0" Round Culvert** L= 150.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.00' / 28.00' S= 0.0467 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf
#3	Secondary	37.20'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

#4 Tertiary 35.10' **6.0" Round Culvert**
L= 30.0' CPP, square edge headwall, Ke= 0.500
Inlet / Outlet Invert= 35.10' / 34.00' S= 0.0367 '/' Cc= 0.900
n= 0.013, Flow Area= 0.20 sf

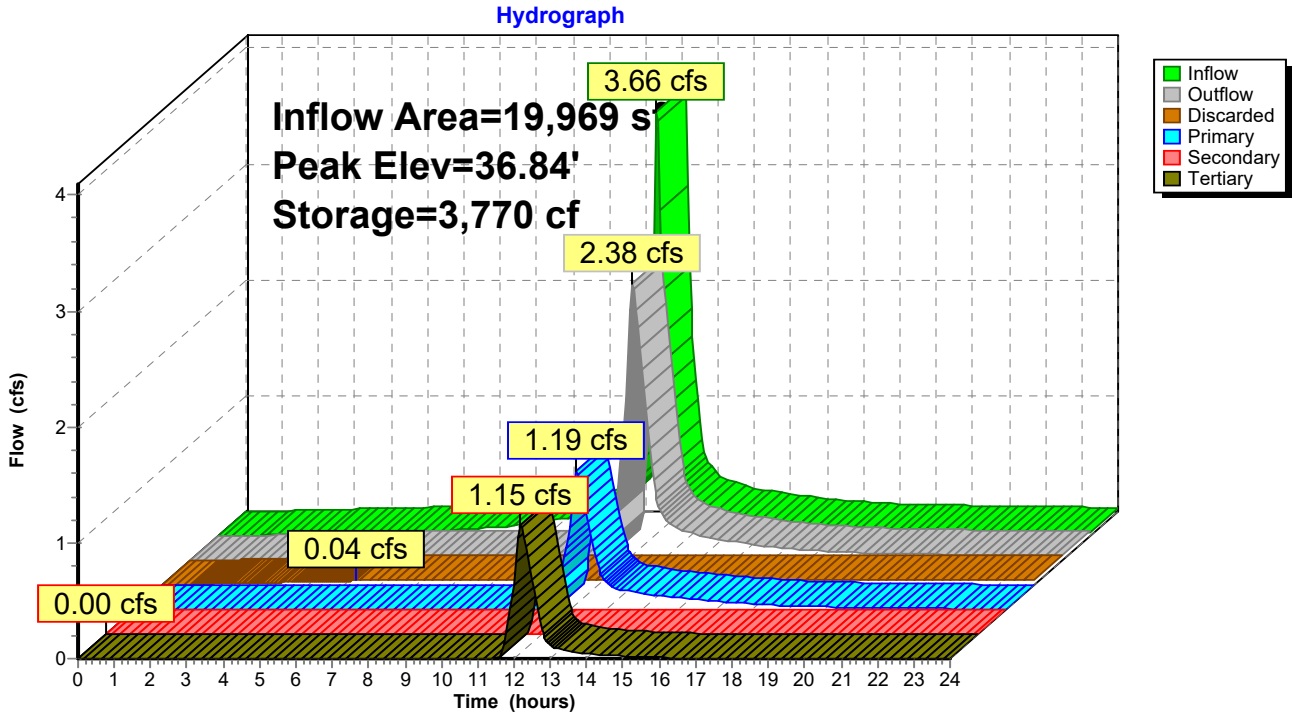
Discarded OutFlow Max=0.04 cfs @ 5.35 hrs HW=33.20' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=1.19 cfs @ 12.18 hrs HW=36.82' (Free Discharge)
└**2=Culvert** (Inlet Controls 1.19 cfs @ 6.04 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=33.16' (Free Discharge)
└**3=Orifice/Grate** (Controls 0.00 cfs)

Tertiary OutFlow Max=1.15 cfs @ 12.18 hrs HW=36.82' (Free Discharge)
└**4=Culvert** (Inlet Controls 1.15 cfs @ 5.85 fps)

Pond SSD1: SUBSURFACE DRAINAGE AREA #1



Stage-Discharge for Pond SSD1: SUBSURFACE DRAINAGE AREA #1

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)	Tertiary (cfs)
33.16	0.00	**0.00**	0.00	**0.00**	0.00
33.26	0.04	**0.04**	0.00	0.00	0.00
33.36	0.04	0.04	0.00	0.00	0.00
33.46	0.04	0.04	0.00	0.00	0.00
33.56	0.04	0.04	0.00	0.00	0.00
33.66	0.04	0.04	0.00	0.00	0.00
33.76	0.04	0.04	0.00	0.00	0.00
33.86	0.04	0.04	0.00	0.00	0.00
33.96	0.04	0.04	0.00	0.00	0.00
34.06	0.04	0.04	0.00	0.00	0.00
34.16	0.04	0.04	0.00	0.00	0.00
34.26	0.04	0.04	0.00	0.00	0.00
34.36	0.04	0.04	0.00	0.00	0.00
34.46	0.04	0.04	0.00	0.00	0.00
34.56	0.04	0.04	0.00	0.00	0.00
34.66	0.04	0.04	0.00	0.00	0.00
34.76	0.04	0.04	0.00	0.00	0.00
34.86	0.04	0.04	0.00	0.00	0.00
34.96	0.04	0.04	0.00	0.00	0.00
35.06	0.05	0.04	0.01	0.00	0.00
35.16	0.12	0.04	0.07	0.00	0.01
35.26	0.29	0.04	0.18	0.00	0.07
35.36	0.53	0.04	0.31	0.00	0.18
35.46	0.78	0.04	0.44	0.00	0.31
35.56	1.00	0.04	0.53	0.00	0.44
35.66	1.17	0.04	0.61	0.00	0.53
35.76	1.32	0.04	0.68	0.00	0.61
35.86	1.45	0.04	0.74	0.00	0.68
35.96	1.57	0.04	0.80	0.00	0.74
36.06	1.69	0.04	0.85	0.00	0.80
36.16	1.79	0.04	0.90	0.00	0.85
36.26	1.89	0.04	0.95	0.00	0.90
36.36	1.99	0.04	1.00	0.00	0.95
36.46	2.08	0.04	1.04	0.00	1.00
36.56	2.16	0.04	1.08	0.00	1.04
36.66	2.24	0.04	1.12	0.00	1.08
36.76	2.32	0.04	1.16	0.00	1.12
36.86	2.40	0.04	1.20	0.00	1.16
36.96	2.47	0.04	1.24	0.00	1.20
37.06	2.54	0.04	1.26	0.00	1.24
37.16	**2.58**	0.04	**1.27**	0.00	**1.27**

Stage-Area-Storage for Pond SSD1: SUBSURFACE DRAINAGE AREA #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
33.16	**1,654**	0
33.21	1,654	33
33.26	1,654	66
33.31	1,654	99
33.36	1,654	132
33.41	1,654	165
33.46	1,654	198
33.51	1,654	232
33.56	1,654	265
33.61	1,654	298
33.66	1,654	331
33.71	1,654	399
33.76	1,654	468
33.81	1,654	536
33.86	1,654	605
33.91	1,654	673
33.96	1,654	741
34.01	1,654	808
34.06	1,654	876
34.11	1,654	944
34.16	1,654	1,012
34.21	1,654	1,079
34.26	1,654	1,147
34.31	1,654	1,213
34.36	1,654	1,280
34.41	1,654	1,346
34.46	1,654	1,412
34.51	1,654	1,477
34.56	1,654	1,543
34.61	1,654	1,609
34.66	1,654	1,674
34.71	1,654	1,739
34.76	1,654	1,804
34.81	1,654	1,869
34.86	1,654	1,934
34.91	1,654	1,999
34.96	1,654	2,062
35.01	1,654	2,125
35.06	1,654	2,188
35.11	1,654	2,249
35.16	1,654	2,311
35.21	1,654	2,371
35.26	1,654	2,431
35.31	1,654	2,491
35.36	1,654	2,549
35.41	1,654	2,607
35.46	1,654	2,664
35.51	1,654	2,720
35.56	1,654	2,776
35.61	1,654	2,830
35.66	1,654	2,883
35.71	1,654	2,935
35.76	1,654	2,986
35.81	1,654	3,035
35.86	1,654	3,083
35.91	1,654	3,128
35.96	1,654	3,171
36.01	1,654	3,212
36.06	1,654	3,250
36.11	1,654	3,287
36.16	1,654	3,321
36.21	1,654	3,354
36.26	1,654	3,387
36.31	1,654	3,420
36.36	1,654	3,454
36.41	1,654	3,487
36.46	1,654	3,520
36.51	1,654	3,553
36.56	1,654	3,586
36.61	1,654	3,619
36.66	1,654	3,652
36.71	1,654	3,685
36.76	1,654	3,718
36.81	1,654	3,751
36.86	1,654	**3,784**
36.91	1,654	**3,790**
36.96	1,654	3,790
37.01	1,654	3,790
37.06	1,654	3,790
37.11	1,654	3,790
37.16	1,654	3,790

Summary for Pond SSD2: SUBSURFACE DRAINAGE AREA #2

Inflow Area = 13,267 sf, 76.40% Impervious, Inflow Depth > 7.74" for 100-Year event
Inflow = 2.53 cfs @ 12.07 hrs, Volume= 8,552 cf
Outflow = 0.42 cfs @ 12.54 hrs, Volume= 4,984 cf, Atten= 83%, Lag= 28.0 min
Discarded = 0.05 cfs @ 8.00 hrs, Volume= 3,089 cf
Primary = 0.37 cfs @ 12.54 hrs, Volume= 1,895 cf
Routed to Reach DP1 : DP1post
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP1 : DP1post

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 39.11' @ 12.54 hrs Surf.Area= 1,960 sf Storage= 4,284 cf

Plug-Flow detention time= 204.8 min calculated for 4,974 cf (58% of inflow)
Center-of-Mass det. time= 97.1 min (860.5 - 763.4)

Volume	Invert	Avail.Storage	Storage Description
#1B	35.70'	2,483 cf	**16.00'W x 122.50'L x 4.54'H Field B** 8,902 cf Overall - 2,694 cf Embedded = 6,208 cf x 40.0% Voids
#2B	36.70'	2,694 cf	**Cultec R-330XLHD** x 51 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 3 rows
		5,177 cf	Total Available Storage

Storage Group B created with Chamber Wizard

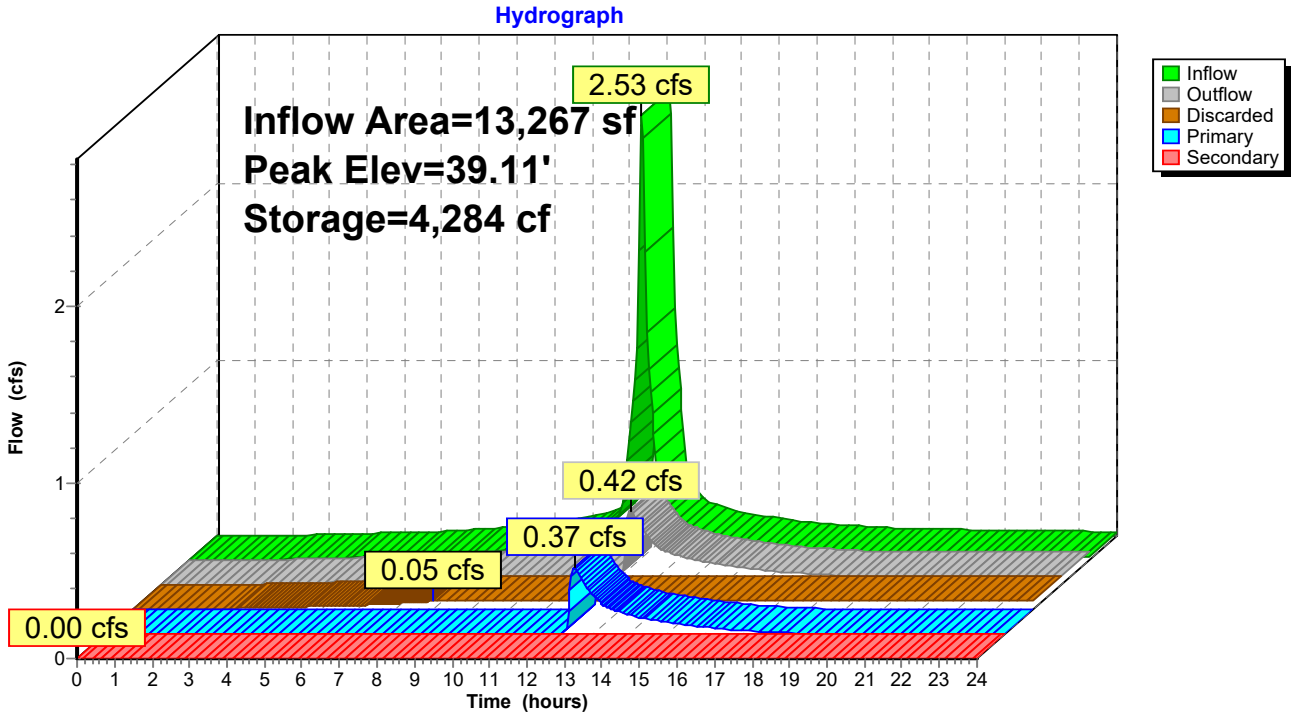
Device	Routing	Invert	Outlet Devices
#1	Discarded	35.70'	**1.020 in/hr Exfiltration over Surface area**
#2	Secondary	40.60'	**4.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	38.70'	**6.0" Round Culvert** L= 23.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 38.70' / 35.60' S= 0.1348 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf

Discarded OutFlow Max=0.05 cfs @ 8.00 hrs HW=35.75' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.37 cfs @ 12.54 hrs HW=39.11' (Free Discharge)
↑**3=Culvert** (Inlet Controls 0.37 cfs @ 2.17 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=35.70' (Free Discharge)
↑**2=Orifice/Grate** (Controls 0.00 cfs)

Pond SSD2: SUBSURFACE DRAINAGE AREA #2



Stage-Discharge for Pond SSD2: SUBSURFACE DRAINAGE AREA #2

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
35.70	0.00	**0.00**	0.00	**0.00**
35.80	0.05	**0.05**	0.00	0.00
35.90	0.05	0.05	0.00	0.00
36.00	0.05	0.05	0.00	0.00
36.10	0.05	0.05	0.00	0.00
36.20	0.05	0.05	0.00	0.00
36.30	0.05	0.05	0.00	0.00
36.40	0.05	0.05	0.00	0.00
36.50	0.05	0.05	0.00	0.00
36.60	0.05	0.05	0.00	0.00
36.70	0.05	0.05	0.00	0.00
36.80	0.05	0.05	0.00	0.00
36.90	0.05	0.05	0.00	0.00
37.00	0.05	0.05	0.00	0.00
37.10	0.05	0.05	0.00	0.00
37.20	0.05	0.05	0.00	0.00
37.30	0.05	0.05	0.00	0.00
37.40	0.05	0.05	0.00	0.00
37.50	0.05	0.05	0.00	0.00
37.60	0.05	0.05	0.00	0.00
37.70	0.05	0.05	0.00	0.00
37.80	0.05	0.05	0.00	0.00
37.90	0.05	0.05	0.00	0.00
38.00	0.05	0.05	0.00	0.00
38.10	0.05	0.05	0.00	0.00
38.20	0.05	0.05	0.00	0.00
38.30	0.05	0.05	0.00	0.00
38.40	0.05	0.05	0.00	0.00
38.50	0.05	0.05	0.00	0.00
38.60	0.05	0.05	0.00	0.00
38.70	0.05	0.05	0.00	0.00
38.80	0.08	0.05	0.03	0.00
38.90	0.16	0.05	0.11	0.00
39.00	0.28	0.05	0.23	0.00
39.10	0.41	0.05	0.36	0.00
39.20	0.52	0.05	0.47	0.00
39.30	0.61	0.05	0.56	0.00
39.40	0.68	0.05	0.63	0.00
39.50	0.75	0.05	0.70	0.00
39.60	0.81	0.05	0.76	0.00
39.70	0.87	0.05	0.82	0.00
39.80	0.92	0.05	0.87	0.00
39.90	0.97	0.05	0.92	0.00
40.00	1.02	0.05	0.97	0.00
40.10	1.06	0.05	1.01	0.00
40.20	1.10	0.05	1.06	0.00
40.30	1.14	0.05	1.10	0.00
40.40	1.18	0.05	1.14	0.00
40.50	1.22	0.05	1.18	0.00
40.60	**1.26**	0.05	**1.21**	0.00

Stage-Area-Storage for Pond SSD2: SUBSURFACE DRAINAGE AREA #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
35.70	**1,960**	0
35.75	1,960	39
35.80	1,960	78
35.85	1,960	118
35.90	1,960	157
35.95	1,960	196
36.00	1,960	235
36.05	1,960	274
36.10	1,960	314
36.15	1,960	353
36.20	1,960	392
36.25	1,960	431
36.30	1,960	470
36.35	1,960	510
36.40	1,960	549
36.45	1,960	588
36.50	1,960	627
36.55	1,960	666
36.60	1,960	706
36.65	1,960	745
36.70	1,960	784
36.75	1,960	866
36.80	1,960	948
36.85	1,960	1,030
36.90	1,960	1,112
36.95	1,960	1,193
37.00	1,960	1,275
37.05	1,960	1,356
37.10	1,960	1,437
37.15	1,960	1,518
37.20	1,960	1,600
37.25	1,960	1,680
37.30	1,960	1,761
37.35	1,960	1,841
37.40	1,960	1,920
37.45	1,960	1,999
37.50	1,960	2,078
37.55	1,960	2,157
37.60	1,960	2,236
37.65	1,960	2,314
37.70	1,960	2,392
37.75	1,960	2,470
37.80	1,960	2,548
37.85	1,960	2,626
37.90	1,960	2,704
37.95	1,960	2,781
38.00	1,960	2,857
38.05	1,960	2,932
38.10	1,960	3,007
38.15	1,960	3,081
38.20	1,960	3,154
38.25	1,960	3,227
38.30	1,960	3,298
38.35	1,960	3,369
38.40	1,960	3,439
38.45	1,960	3,509
38.50	1,960	3,577
38.55	1,960	3,644
38.60	1,960	3,710
38.65	1,960	3,775
38.70	1,960	3,839
38.75	1,960	3,901
38.80	1,960	3,961
38.85	1,960	4,020
38.90	1,960	4,076
38.95	1,960	4,130
39.00	1,960	4,182
39.05	1,960	4,230
39.10	1,960	4,276
39.15	1,960	4,319
39.20	1,960	4,360
39.25	1,960	4,399
39.30	1,960	4,439
39.35	1,960	4,478
39.40	1,960	4,517
39.45	1,960	4,556
39.50	1,960	4,595
39.55	1,960	4,635
39.60	1,960	4,674
39.65	1,960	4,713
39.70	1,960	4,752
39.75	1,960	4,791
39.80	1,960	4,831
39.85	1,960	4,870
39.90	1,960	4,909
39.95	1,960	4,948
40.00	1,960	4,987
40.05	1,960	5,027
40.10	1,960	5,066
40.15	1,960	5,105
40.20	1,960	5,144
40.25	1,960	**5,177**
40.30	1,960	5,177
40.35	1,960	5,177
40.40	1,960	5,177
40.45	1,960	5,177
40.50	1,960	5,177
40.55	1,960	5,177
40.60	1,960	5,177

Summary for Pond SSD3: SUBSURFACE DRAINAGE AREA #3

Inflow Area = 20,604 sf, 71.75% Impervious, Inflow Depth > 7.60" for 100-Year event
Inflow = 3.64 cfs @ 12.09 hrs, Volume= 13,048 cf
Outflow = 2.97 cfs @ 12.15 hrs, Volume= 12,118 cf, Atten= 18%, Lag= 4.1 min
Discarded = 0.03 cfs @ 5.55 hrs, Volume= 2,080 cf
Primary = 2.94 cfs @ 12.15 hrs, Volume= 10,039 cf
Routed to Reach DP3 : DP3
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 20.97' @ 12.15 hrs Surf.Area= 1,203 sf Storage= 2,056 cf

Plug-Flow detention time= 64.4 min calculated for 12,093 cf (93% of inflow)
Center-of-Mass det. time= 26.8 min (794.6 - 767.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	18.00'	722 cf	**8.33'W x 81.00'L x 3.54'H Field A** 2,391 cf Overall - 585 cf Embedded = 1,806 cf x 40.0% Voids
#2A	18.50'	585 cf	**Cultec R-330XLHD** x 11 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
#3B	18.00'	362 cf	**12.50'W x 28.00'L x 3.54'H Field B** 1,240 cf Overall - 335 cf Embedded = 904 cf x 40.0% Voids
#4B	18.50'	335 cf	**Cultec R-330XLHD** x 6 Inside #3 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
#5C	18.00'	201 cf	**13.00'W x 13.67'L x 3.54'H Field C** 629 cf Overall - 127 cf Embedded = 503 cf x 40.0% Voids
#6C	18.50'	127 cf	**Cultec R-330XLHD** x 2 Inside #5 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		2,332 cf	Total Available Storage

Storage Group A created with Chamber Wizard
Storage Group B created with Chamber Wizard
Storage Group C created with Chamber Wizard

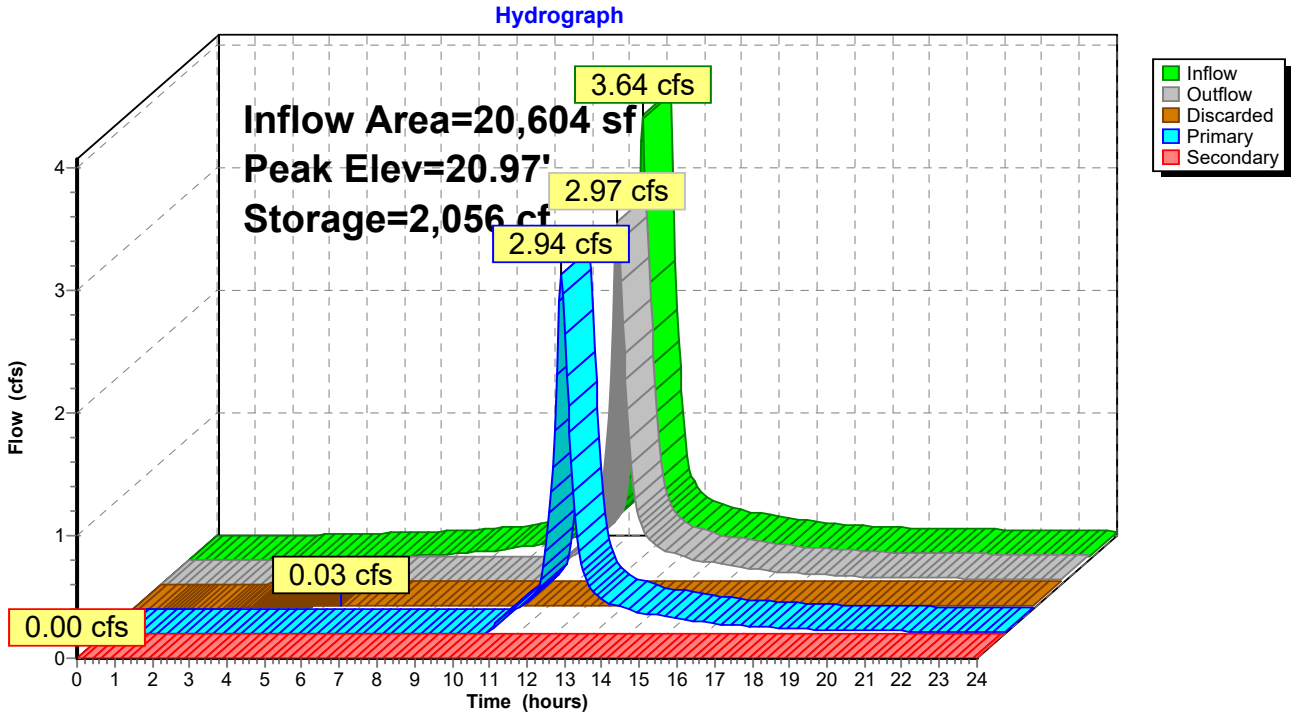
Device	Routing	Invert	Outlet Devices
#1	Discarded	18.00'	**1.020 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#2	Primary	19.30'	**10.0" Round Culvert** L= 14.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 19.30' / 19.20' S= 0.0071 '/' Cc= 0.900 n= 0.013, Flow Area= 0.55 sf
#3	Secondary	22.00'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.03 cfs @ 5.55 hrs HW=18.04' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=2.93 cfs @ 12.15 hrs HW=20.96' (Free Discharge)
└**2=Culvert** (Inlet Controls 2.93 cfs @ 5.37 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=18.00' (Free Discharge)
└**3=Orifice/Grate** (Controls 0.00 cfs)

Pond SSD3: SUBSURFACE DRAINAGE AREA #3



Stage-Discharge for Pond SSD3: SUBSURFACE DRAINAGE AREA #3

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
18.00	0.00	**0.00**	0.00	**0.00**
18.10	0.03	**0.03**	0.00	0.00
18.20	0.03	0.03	0.00	0.00
18.30	0.03	0.03	0.00	0.00
18.40	0.03	0.03	0.00	0.00
18.50	0.03	0.03	0.00	0.00
18.60	0.03	0.03	0.00	0.00
18.70	0.03	0.03	0.00	0.00
18.80	0.03	0.03	0.00	0.00
18.90	0.03	0.03	0.00	0.00
19.00	0.03	0.03	0.00	0.00
19.10	0.03	0.03	0.00	0.00
19.20	0.03	0.03	0.00	0.00
19.30	0.03	0.03	0.00	0.00
19.40	0.06	0.03	0.03	0.00
19.50	0.14	0.03	0.12	0.00
19.60	0.28	0.03	0.25	0.00
19.70	0.45	0.03	0.42	0.00
19.80	0.65	0.03	0.62	0.00
19.90	0.88	0.03	0.85	0.00
20.00	1.11	0.03	1.08	0.00
20.10	1.35	0.03	1.33	0.00
20.20	1.59	0.03	1.56	0.00
20.30	1.79	0.03	1.76	0.00
20.40	1.91	0.03	1.89	0.00
20.50	2.11	0.03	2.08	0.00
20.60	2.32	0.03	2.30	0.00
20.70	2.52	0.03	2.49	0.00
20.80	2.70	0.03	2.67	0.00
20.90	2.87	0.03	2.84	0.00
21.00	3.00	0.03	2.98	0.00
21.10	3.12	0.03	3.09	0.00
21.20	3.23	0.03	3.20	0.00
21.30	3.33	0.03	3.30	0.00
21.40	3.44	0.03	3.41	0.00
21.50	3.54	0.03	3.51	0.00
21.60	3.63	0.03	3.60	0.00
21.70	3.73	0.03	3.70	0.00
21.80	3.82	0.03	3.79	0.00
21.90	3.91	0.03	3.88	0.00
22.00	**4.00**	0.03	**3.97**	0.00

Stage-Area-Storage for Pond SSD3: SUBSURFACE DRAINAGE AREA #3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
18.00	**1,203**	0
18.05	1,203	24
18.10	1,203	48
18.15	1,203	72
18.20	1,203	96
18.25	1,203	120
18.30	1,203	144
18.35	1,203	168
18.40	1,203	192
18.45	1,203	216
18.50	1,203	241
18.55	1,203	281
18.60	1,203	322
18.65	1,203	363
18.70	1,203	403
18.75	1,203	444
18.80	1,203	484
18.85	1,203	525
18.90	1,203	565
18.95	1,203	605
19.00	1,203	646
19.05	1,203	686
19.10	1,203	726
19.15	1,203	766
19.20	1,203	806
19.25	1,203	845
19.30	1,203	885
19.35	1,203	924
19.40	1,203	963
19.45	1,203	1,003
19.50	1,203	1,042
19.55	1,203	1,081
19.60	1,203	1,120
19.65	1,203	1,159
19.70	1,203	1,198
19.75	1,203	1,237
19.80	1,203	1,275
19.85	1,203	1,314
19.90	1,203	1,351
19.95	1,203	1,389
20.00	1,203	1,426
20.05	1,203	1,463
20.10	1,203	1,500
20.15	1,203	1,536
20.20	1,203	1,572
20.25	1,203	1,608
20.30	1,203	1,643
20.35	1,203	1,678
20.40	1,203	1,713
20.45	1,203	1,747
20.50	1,203	1,780
20.55	1,203	1,813
20.60	1,203	1,846
20.65	1,203	1,877
20.70	1,203	1,908
20.75	1,203	1,938
20.80	1,203	1,967
20.85	1,203	1,994
20.90	1,203	2,021
20.95	1,203	2,047
21.00	1,203	2,071
21.05	1,203	2,095
21.10	1,203	2,119
21.15	1,203	2,143
21.20	1,203	2,168
21.25	1,203	2,192
21.30	1,203	2,216
21.35	1,203	2,240
21.40	1,203	2,264
21.45	1,203	2,288
21.50	1,203	2,312
21.55	1,203	**2,332**
21.60	1,203	2,332
21.65	1,203	2,332
21.70	1,203	2,332
21.75	1,203	2,332
21.80	1,203	2,332
21.85	1,203	2,332
21.90	1,203	2,332
21.95	1,203	2,332
22.00	1,203	2,332

Summary for Pond SSD4: SUBSURFACE DRAINAGE AREA #4

Inflow Area = 5,609 sf,100.00% Impervious, Inflow Depth > 8.44" for 100-Year event
Inflow = 1.10 cfs @ 12.07 hrs, Volume= 3,943 cf
Outflow = 0.78 cfs @ 12.15 hrs, Volume= 3,307 cf, Atten= 30%, Lag= 5.0 min
Discarded = 0.01 cfs @ 3.90 hrs, Volume= 908 cf
Primary = 0.45 cfs @ 12.15 hrs, Volume= 664 cf
Routed to Reach DP1 : DP1post
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP1 : DP1post
Tertiary = 0.32 cfs @ 12.15 hrs, Volume= 1,735 cf
Routed to Reach DP2 : DP2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 38.30' @ 12.15 hrs Surf.Area= 485 sf Storage= 1,077 cf

Plug-Flow detention time= 112.5 min calculated for 3,307 cf (84% of inflow)
Center-of-Mass det. time= 43.9 min (782.9 - 739.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	34.50'	475 cf	**11.17'W x 31.50'L x 4.63'H Field A** 1,627 cf Overall - 440 cf Embedded = 1,187 cf x 40.0% Voids
#2A	35.00'	440 cf	**Cultec R-330XLHD** x 8 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
#3B	34.50'	95 cf	**6.33'W x 10.50'L x 4.54'H Field B** 302 cf Overall - 63 cf Embedded = 239 cf x 40.0% Voids
#4B	35.00'	63 cf	**Cultec R-330XLHD** Inside #3 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
#5C	34.50'	98 cf	**6.33'W x 10.50'L x 4.63'H Field C** 308 cf Overall - 63 cf Embedded = 244 cf x 40.0% Voids
#6C	35.00'	63 cf	**Cultec R-330XLHD** Inside #5 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
		1,234 cf	Total Available Storage

Storage Group A created with Chamber Wizard
Storage Group B created with Chamber Wizard
Storage Group C created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	34.50'	**1.020 in/hr Exfiltration over Surface area**
#2	Secondary	39.50'	**4.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	37.00'	**4.0" Round Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 37.00' / 34.80' S= 0.2200 '/' Cc= 0.900 n= 0.013, Flow Area= 0.09 sf

#4	Tertiary	36.50'	**4.0" Round Culvert** L= 60.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 36.50' / 36.00' S= 0.0083 '/' Cc= 0.900 n= 0.013, Flow Area= 0.09 sf

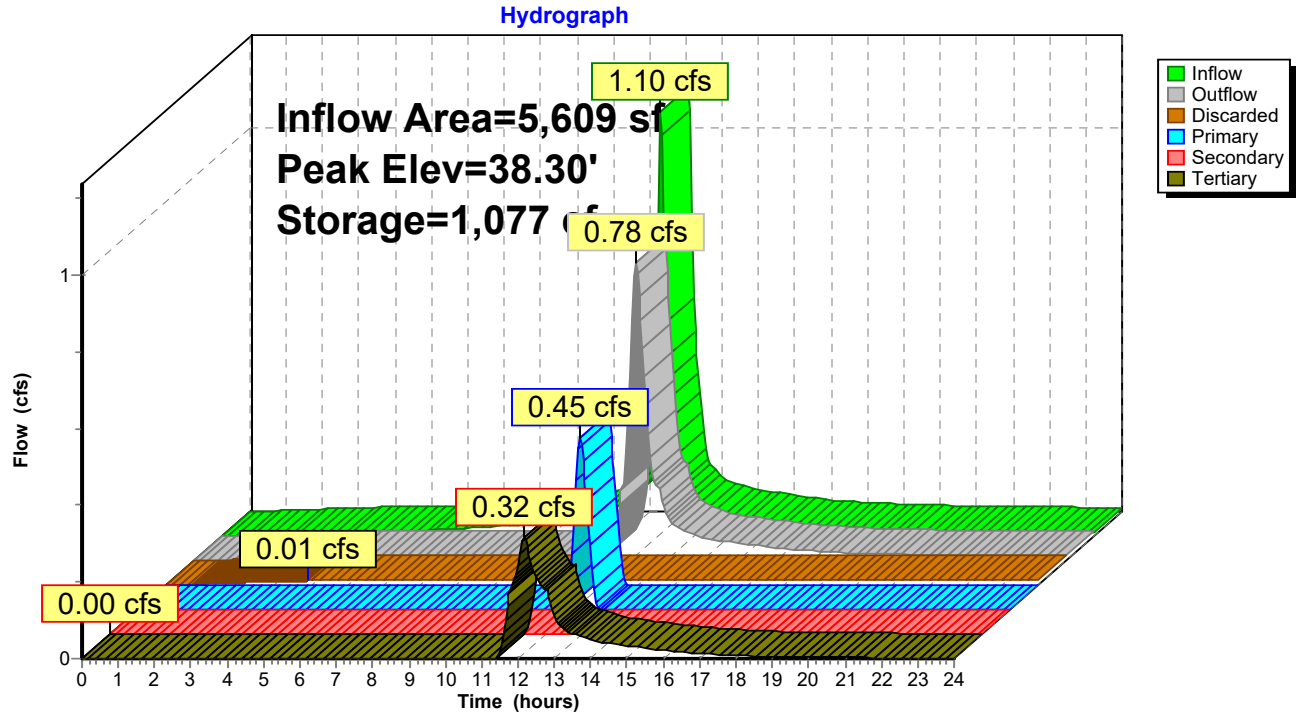
Discarded OutFlow Max=0.01 cfs @ 3.90 hrs HW=34.55' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.45 cfs @ 12.15 hrs HW=38.30' (Free Discharge)
└**3=Culvert** (Inlet Controls 0.45 cfs @ 5.12 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=34.50' (Free Discharge)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Tertiary OutFlow Max=0.32 cfs @ 12.15 hrs HW=38.30' (Free Discharge)
└**4=Culvert** (Barrel Controls 0.32 cfs @ 3.62 fps)

Pond SSD4: SUBSURFACE DRAINAGE AREA #4



Stage-Discharge for Pond SSD4: SUBSURFACE DRAINAGE AREA #4

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)	Tertiary (cfs)
34.50	0.00	**0.00**	0.00	**0.00**	0.00
34.60	0.01	**0.01**	0.00	0.00	0.00
34.70	0.01	0.01	0.00	0.00	0.00
34.80	0.01	0.01	0.00	0.00	0.00
34.90	0.01	0.01	0.00	0.00	0.00
35.00	0.01	0.01	0.00	0.00	0.00
35.10	0.01	0.01	0.00	0.00	0.00
35.20	0.01	0.01	0.00	0.00	0.00
35.30	0.01	0.01	0.00	0.00	0.00
35.40	0.01	0.01	0.00	0.00	0.00
35.50	0.01	0.01	0.00	0.00	0.00
35.60	0.01	0.01	0.00	0.00	0.00
35.70	0.01	0.01	0.00	0.00	0.00
35.80	0.01	0.01	0.00	0.00	0.00
35.90	0.01	0.01	0.00	0.00	0.00
36.00	0.01	0.01	0.00	0.00	0.00
36.10	0.01	0.01	0.00	0.00	0.00
36.20	0.01	0.01	0.00	0.00	0.00
36.30	0.01	0.01	0.00	0.00	0.00
36.40	0.01	0.01	0.00	0.00	0.00
36.50	0.01	0.01	0.00	0.00	0.00
36.60	0.03	0.01	0.00	0.00	0.02
36.70	0.08	0.01	0.00	0.00	0.07
36.80	0.15	0.01	0.00	0.00	0.13
36.90	0.19	0.01	0.00	0.00	0.18
37.00	0.20	0.01	0.00	0.00	0.18
37.10	0.23	0.01	0.02	0.00	0.20
37.20	0.30	0.01	0.08	0.00	0.21
37.30	0.39	0.01	0.15	0.00	0.22
37.40	0.45	0.01	0.20	0.00	0.23
37.50	0.50	0.01	0.24	0.00	0.24
37.60	0.54	0.01	0.28	0.00	0.25
37.70	0.58	0.01	0.31	0.00	0.26
37.80	0.62	0.01	0.33	0.00	0.27
37.90	0.65	0.01	0.36	0.00	0.28
38.00	0.69	0.01	0.38	0.00	0.29
38.10	0.72	0.01	0.41	0.00	0.30
38.20	0.75	0.01	0.43	0.00	0.31
38.30	0.77	0.01	0.45	0.00	0.32
38.40	0.80	0.01	0.47	0.00	0.32
38.50	0.83	0.01	0.49	0.00	0.33
38.60	0.85	0.01	0.50	0.00	0.34
38.70	0.88	0.01	0.52	0.00	0.35
38.80	0.90	0.01	0.54	0.00	0.35
38.90	0.93	0.01	0.55	0.00	0.36
39.00	0.95	0.01	0.57	0.00	0.37
39.10	0.97	0.01	0.58	0.00	0.38
39.20	0.99	0.01	0.60	0.00	0.38
39.30	1.01	0.01	0.61	0.00	0.39
39.40	1.03	0.01	0.63	0.00	0.39
39.50	**1.05**	0.01	**0.64**	0.00	**0.40**

Stage-Area-Storage for Pond SSD4: SUBSURFACE DRAINAGE AREA #4

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
34.50	**485**	0
34.55	485	10
34.60	485	19
34.65	485	29
34.70	485	39
34.75	485	48
34.80	485	58
34.85	485	68
34.90	485	78
34.95	485	87
35.00	485	97
35.05	485	116
35.10	485	134
35.15	485	153
35.20	485	172
35.25	485	190
35.30	485	209
35.35	485	227
35.40	485	246
35.45	485	264
35.50	485	283
35.55	485	301
35.60	485	320
35.65	485	338
35.70	485	356
35.75	485	374
35.80	485	392
35.85	485	410
35.90	485	428
35.95	485	446
36.00	485	464
36.05	485	482
36.10	485	500
36.15	485	518
36.20	485	535
36.25	485	553
36.30	485	571
36.35	485	588
36.40	485	605
36.45	485	622
36.50	485	639
36.55	485	656
36.60	485	672
36.65	485	688
36.70	485	705
36.75	485	721
36.80	485	736
36.85	485	752
36.90	485	767
36.95	485	782
37.00	485	797
37.05	485	812
37.10	485	826
37.15	485	840
37.20	485	853
37.25	485	866
37.30	485	878
37.35	485	890
37.40	485	901
37.45	485	911
37.50	485	921
37.55	485	931
37.60	485	941
37.65	485	951
37.70	485	960
37.75	485	970
37.80	485	980
37.85	485	989
37.90	485	999
37.95	485	1,009
38.00	485	1,018
38.05	485	1,028
38.10	485	1,038
38.15	485	1,048
38.20	485	1,057
38.25	485	1,067
38.30	485	1,077
38.35	485	1,086
38.40	485	1,096
38.45	485	1,106
38.50	485	1,115
38.55	485	1,125
38.60	485	1,135
38.65	485	1,144
38.70	485	1,154
38.75	485	1,164
38.80	485	1,174
38.85	485	1,183
38.90	485	1,193
38.95	485	1,203
39.00	485	1,212
39.05	485	1,222
39.10	485	**1,230**
39.15	485	**1,234**
39.20	485	1,234
39.25	485	1,234
39.30	485	1,234
39.35	485	1,234
39.40	485	1,234
39.45	485	1,234
39.50	485	1,234

Summary for Pond SSD5: SUBSURFACE DRAINAGE AREA #5 (STORAGE)

Inflow = 1.15 cfs @ 12.18 hrs, Volume= 3,122 cf
Outflow = 0.09 cfs @ 13.20 hrs, Volume= 3,103 cf, Atten= 93%, Lag= 61.2 min
Primary = 0.09 cfs @ 13.20 hrs, Volume= 3,103 cf
Routed to Reach DP3 : DP3
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach DP3 : DP3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 33.90' @ 13.20 hrs Surf.Area= 1,174 sf Storage= 2,335 cf

Plug-Flow detention time= 271.2 min calculated for 3,103 cf (99% of inflow)
Center-of-Mass det. time= 269.6 min (1,023.6 - 753.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	31.00'	1,011 cf	**30.50'W x 38.50'L x 3.54'H Field A** 4,159 cf Overall - 1,632 cf Embedded = 2,527 cf x 40.0% Voids
#2A	31.50'	1,632 cf	**Cultec R-330XLHD** x 30 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 6 rows
		2,643 cf	Total Available Storage

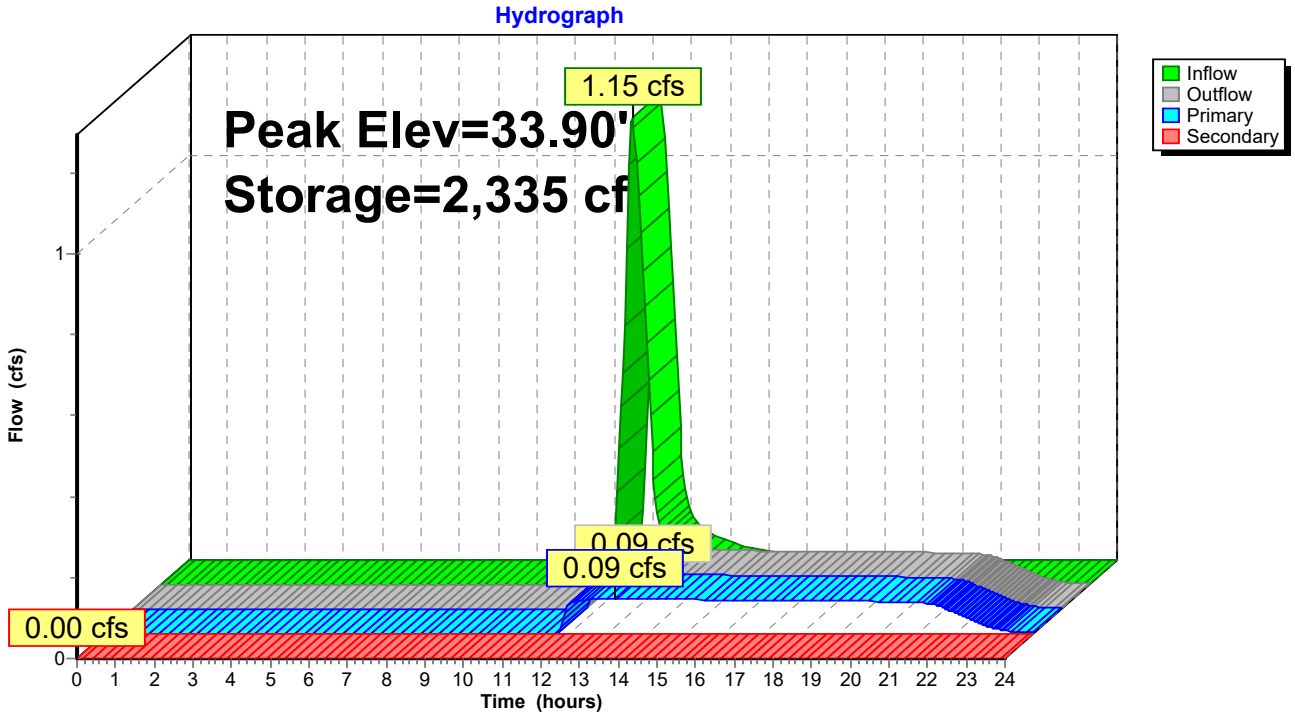
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	31.00'	**2.0" Round Culvert** L= 175.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 31.00' / 19.00' S= 0.0686 '/' Cc= 0.900 n= 0.013, Flow Area= 0.02 sf
#2	Secondary	37.00'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.09 cfs @ 13.20 hrs HW=33.90' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 0.09 cfs @ 3.93 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=31.00' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond SSD5: SUBSURFACE DRAINAGE AREA #5 (STORAGE)



Stage-Discharge for Pond SSD5: SUBSURFACE DRAINAGE AREA #5 (STORAGE)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
31.00	0.00	0.00	**0.00**
31.10	0.01	0.01	0.00
31.20	0.04	0.04	0.00
31.30	0.05	0.05	0.00
31.40	0.06	0.06	0.00
31.50	0.07	0.07	0.00
31.60	0.08	0.08	0.00
31.70	0.08	0.08	0.00
31.80	0.08	0.08	0.00
31.90	0.08	0.08	0.00
32.00	0.08	0.08	0.00
32.10	0.08	0.08	0.00
32.20	0.08	0.08	0.00
32.30	0.08	0.08	0.00
32.40	0.08	0.08	0.00
32.50	0.08	0.08	0.00
32.60	0.08	0.08	0.00
32.70	0.08	0.08	0.00
32.80	0.08	0.08	0.00
32.90	0.08	0.08	0.00
33.00	0.08	0.08	0.00
33.10	0.08	0.08	0.00
33.20	0.08	0.08	0.00
33.30	0.08	0.08	0.00
33.40	0.08	0.08	0.00
33.50	0.08	0.08	0.00
33.60	0.08	0.08	0.00
33.70	0.09	0.09	0.00
33.80	0.09	0.09	0.00
33.90	0.09	0.09	0.00
34.00	0.09	0.09	0.00
34.10	0.09	0.09	0.00
34.20	0.09	0.09	0.00
34.30	0.09	0.09	0.00
34.40	0.09	0.09	0.00
34.50	0.09	0.09	0.00
34.60	0.09	0.09	0.00
34.70	0.09	0.09	0.00
34.80	0.09	0.09	0.00
34.90	0.09	0.09	0.00
35.00	0.09	0.09	0.00
35.10	0.09	0.09	0.00
35.20	0.09	0.09	0.00
35.30	0.09	0.09	0.00
35.40	0.09	0.09	0.00
35.50	0.09	0.09	0.00
35.60	0.09	0.09	0.00
35.70	0.09	0.09	0.00
35.80	0.09	0.09	0.00
35.90	0.09	0.09	0.00
36.00	0.09	0.09	0.00
36.10	0.09	0.09	0.00
36.20	0.09	0.09	0.00
36.30	0.09	0.09	0.00
36.40	0.09	0.09	0.00
36.50	0.09	0.09	0.00
36.60	0.09	0.09	0.00
36.70	0.09	0.09	0.00
36.80	0.09	0.09	0.00
36.90	0.09	0.09	0.00
37.00	**0.09**	**0.09**	0.00

Stage-Area-Storage for Pond SSD5: SUBSURFACE DRAINAGE AREA #5 (STORAGE)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
31.00	0	33.65	2,184	36.30	2,643
31.05	23	33.70	2,218	36.35	2,643
31.10	47	33.75	2,250	36.40	2,643
31.15	70	33.80	2,281	36.45	2,643
31.20	94	33.85	2,310	36.50	2,643
31.25	117	33.90	2,338	36.55	2,643
31.30	141	33.95	2,364	36.60	2,643
31.35	164	34.00	2,388	36.65	2,643
31.40	188	34.05	2,412	36.70	2,643
31.45	211	34.10	2,435	36.75	2,643
31.50	235	34.15	2,459	36.80	2,643
31.55	284	34.20	2,482	36.85	2,643
31.60	334	34.25	2,506	36.90	2,643
31.65	383	34.30	2,529	36.95	2,643
31.70	432	34.35	2,553	37.00	2,643
31.75	482	34.40	2,576		
31.80	531	34.45	2,600		
31.85	580	34.50	2,623		
31.90	629	34.55	**2,643**		
31.95	677	34.60	2,643		
32.00	726	34.65	2,643		
32.05	775	34.70	2,643		
32.10	824	34.75	2,643		
32.15	872	34.80	2,643		
32.20	920	34.85	2,643		
32.25	967	34.90	2,643		
32.30	1,015	34.95	2,643		
32.35	1,062	35.00	2,643		
32.40	1,109	35.05	2,643		
32.45	1,157	35.10	2,643		
32.50	1,204	35.15	2,643		
32.55	1,251	35.20	2,643		
32.60	1,298	35.25	2,643		
32.65	1,345	35.30	2,643		
32.70	1,391	35.35	2,643		
32.75	1,438	35.40	2,643		
32.80	1,484	35.45	2,643		
32.85	1,529	35.50	2,643		
32.90	1,574	35.55	2,643		
32.95	1,619	35.60	2,643		
33.00	1,663	35.65	2,643		
33.05	1,706	35.70	2,643		
33.10	1,750	35.75	2,643		
33.15	1,792	35.80	2,643		
33.20	1,835	35.85	2,643		
33.25	1,876	35.90	2,643		
33.30	1,917	35.95	2,643		
33.35	1,958	36.00	2,643		
33.40	1,998	36.05	2,643		
33.45	2,037	36.10	2,643		
33.50	2,075	36.15	2,643		
33.55	2,112	36.20	2,643		
33.60	2,149	36.25	2,643		

Section II
Stormwater Management

♦ STANDARD #1 No New Stormwater Conveyances

The proposed development proposes no new stormwater conveyances that discharge untreated stormwater off-site or cause down gradient erosion.

♦ STANDARD #2 Post Development Peak Discharge

The overall site analysis demonstrates that the stormwater management system has been designed so that the post-development peak discharge rates do not exceed the pre-development discharge rate for the 1 yr, 2yr, 10 yr, 25yr & 100 yr 24 hr storm events.

♦ STANDARD #3 RECHARGE TO GROUNDWATER

Total impervious areas:

Pavement & Sidewalk =27,477 SF
Roofs = 21,127 SF
Soil group = C

1" * 48,604 SF * 0.25 *1' / 12" = 1,013 CF

Proposed infiltration

Subsurface Drainage System #1 = 2,113 CF
Subsurface Drainage System #2 = 3,839 CF
Subsurface Drainage System #3 = 885 CF
Subsurface Drainage System #4 = 797 CF

TOTAL PROPOSED INFILTRATION = 7,634 CF

Drawdown Within 72 Hours

$$Time_{drawdown} = \frac{Rv}{(K)(Bottom\ Area)}$$

Where:
Rv = Storage Volume (required recharge volume)
K = Saturated Hydraulic Conductivity For "Static" and "Simple Dynamic" Methods, use Rawls Rate (see Table 2.3.3). For "Dynamic Field" Method, use 50% of the in-situ saturated hydraulic conductivity.
Bottom Area = Bottom Area of Recharge Structure

Subsurface Drainage System #1 = 2,113 CF stored below outlet

Time = $\frac{2{,}113\ CF}{(1.02"/hr)(1'/12")(1{,}654\ SF)}$ = **15.0 hours < 72 hours**

Subsurface Drainage System #2 = 3,839 CF stored below outlet

Time = $\frac{3{,}839\ CF}{(1.02"/hr)(1'/12")(1{,}960\ SF)}$ = **23.0 hours < 72 hours**

Subsurface Drainage System #3 = 885 CF stored below outlet

Time = $\frac{885\ CF}{(1.02"/hr)(1'/12")(1{,}203\ SF)}$ = **8.7 hours < 72 hours**

Subsurface Drainage System #4 = 797 CF stored below outlet

Time = $\frac{797\ CF}{(1.02"/hr)(1'/12")(485\ SF)}$ = **1.6 hours < 72 hours**

♦ STANDARD #4 WATER QUALITY

Total non-roof impervious areas:

Pavement = 27,477 SF

0.5" * 27,477 SF 1' / 12" = 1,145 CF

Proposed water quality volume

Subsurface Drainage System #1 = 2,113 CF
Subsurface Drainage System #2 = 3,839 CF
Subsurface Drainage System #3 = 885 CF
Subsurface Drainage System #4 = 797 CF

TOTAL PROPOSED WATER QUALITY VOLUME = 7,634 CF

♦ STANDARD #5 Land Uses With Higher Potential Pollutant Loads

This site will not produce a higher potential pollutant load.

♦ STANDARD #6 Critical Areas

The site is not located within a Zone I or Zone II Area.

♦ STANDARD #7 Redevelopment

The project is not a redevelopment.

♦ STANDARD #8 Erosion & Sediment Control Plan

Erosion and sediment controls are detailed within the erosion control plan.

♦ STANDARD #9 Operation & Maintenance Plan

See O&M plan attached hereto.

♦ STANDARD #10 Illicit Discharge Statement

"All illicit discharges to the stormwater management system are prohibited."

This statement is intended to meet Standard #10 of the Stormwater Management requirements

Illicit discharges to the stormwater management system are discharges that are not entirely comprised of stormwater.

Except for the potential for deliberate criminal act of discharge by an unauthorized entity for which the property owner has no control, there are to be no illicit discharges into the stormwater system.

_____

Applicant\Owner

Mounding

System	Bottom El	Groundwater el	Separation (FT)	
SDA #1	33.16	31.16	2.00	(mounding required)
SDA #2	35.70	33.63	2.07	(mounding required)
SDA #3	18.00	16.00	2.00	(mounding required)
SDA #4	34.50	32.50	2.00	(mounding required)

Recharge Rate (Rr) = (volume retained below low outlet)/ (bottom area)

SDA #1 = 2,113 / 1,808 = 1.17
SDA #2 = 3,839 / 1,960 = 1.96
SDA #3 = 885 / 1,203 = 0.74
SDA #4 = 639 / 484 = 1.32

Subsurface Drianage System #1 using the Hantush Method, 1,808 s.f. bottom area, volume = 2,113 cf, recharge infiltration rate of 6.56 ft/day and an initial saturated thickness of 20 feet, we calculated a groundwater mounding of 0.65 feet. Groundwater separation = 2 ft mounding will not breakout above the land or interfere with infiltration

Subsurface Drianage System #2 using the Hantush Method, 1,960 s.f. bottom area, volume = 3,839 cf, recharge infiltration rate of 6.56 ft/day and an initial saturated thickness of 20 feet, we calculated a groundwater mounding of 1.44 feet. Groundwater separation = 2 ft mounding will not breakout above the land or interfere with infiltration

Subsurface Drianage System #3 using the Hantush Method, 1,203 s.f. bottom area, volume = 885 cf, recharge infiltration rate of 6.56 ft/day and an initial saturated thickness of 20 feet, we calculated a groundwater mounding of 0.52 feet. Groundwater separation = 2 ft mounding will not breakout above the land or interfere with infiltration

Subsurface Drianage System #4 using the Hantush Method, 484 s.f. bottom area, volume = 639 cf, recharge infiltration rate of 6.56 ft/day and an initial saturated thickness of 20 feet, we calculated a groundwater mounding of 0.65 feet. Groundwater separation = 2 ft mounding will not breakout above the land or interfere with infiltration

SDA #1 Mounding Calculation

This spreadsheet will calculate the height of a groundwater mound beneath a stormwater infiltration basin. More information can be found in the U.S. Geological Survey Scientific Investigations Report 2010-5102 "Simulation of groundwater mounding beneath hypothetical stormwater infiltration basins".

The user must specify infiltration rate (R), specific yield (Sy), horizontal hydraulic conductivity (Kh), basin dimensions (x, y), duration of infiltration period (t), and the initial thickness of the saturated zone (hi(0), height of the water table if the bottom of the aquifer is the datum). For a square basin the half width equals the half length (x = y). For a rectangular basin, if the user wants the water-table changes perpendicular to the long side, specify x as the short dimension and y as the long dimension. Conversely, if the user wants the values perpendicular to the short side, specify y as the short dimension, x as the long dimension. All distances are from the center of the basin. Users can change the distances from the center of the basin at which water-table aquifer thickness are calculated.
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use consistent units (e.g. feet & days **or** inches & hours)

Conversion Table

inch/hour	feet/day
0.67	1.33
2.00	4.00

hours	days
36	1.50

In the report accompanying this spreadsheet (USGS SIR 2010-5102), vertical soil permeability (ft/d) is assumed to be one-tenth horizontal hydraulic conductivity (ft/d).

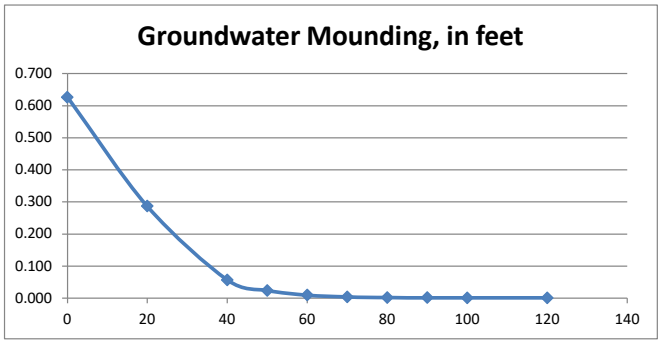
Input Values

1.0200	***R***	**Recharge (infiltration) rate (feet/day)**
0.210	**Sy**	**Specific yield, Sy (dimensionless, between 0 and 1)**
6.56	**K**	**Horizontal hydraulic conductivity, Kh (feet/day)***
16.000	**x**	**1/2 length of basin (x direction, in feet)**
6.000	**y**	**1/2 width of basin (y direction, in feet)**
0.571	**t**	**duration of infiltration period (days)**
20.000	**hi(0)**	**initial thickness of saturated zone (feet)**

20.627	**h(max)**	**maximum thickness of saturated zone (beneath center of basin at end of infiltration period)**
0.627	**Δh(max)**	**maximum groundwater mounding (beneath center of basin at end of infiltration period)**

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.627	0
0.287	20
0.057	40
0.024	50
0.010	60
0.004	70
0.002	80
0.001	90
0.001	100
0.001	120

Re-Calculate Now



Disclaimer

This spreadsheet solving the Hantush (1967) equation for ground-water mounding beneath an infiltration basin is made available to the general public as a convenience for those wishing to replicate values documented in the USGS Scientific Investigations Report 2010-5102 "Groundwater mounding beneath hypothetical stormwater infiltration basins" or to calculate values based on user-specified site conditions. Any changes made to the spreadsheet (other than values identified as user-specified) after transmission from the USGS could have unintended, undesirable consequences. These consequences could include, but may not be limited to: erroneous output, numerical instabilities, and violations of underlying assumptions that are inherent in results presented in the accompanying USGS published report. The USGS assumes no responsibility for the consequences of any changes made to the spreadsheet. If changes are made to the spreadsheet, the user is responsible for documenting the changes and justifying the results and conclusions.

SDA #2 Mounding Calculation

This spreadsheet will calculate the height of a groundwater mound beneath a stormwater infiltration basin. More information can be found in the U.S. Geological Survey Scientific Investigations Report 2010-5102 "Simulation of groundwater mounding beneath hypothetical stormwater infiltration basins".

The user must specify infiltration rate (R), specific yield (Sy), horizontal hydraulic conductivity (Kh), basin dimensions (x, y), duration of infiltration period (t), and the initial thickness of the saturated zone (hi(0), height of the water table if the bottom of the aquifer is the datum). For a square basin the half width equals the half length (x = y). For a rectangular basin, if the user wants the water-table changes perpendicular to the long side, specify x as the short dimension and y as the long dimension. Conversely, if the user wants the values perpendicular to the short side, specify y as the short dimension, x as the long dimension. All distances are from the center of the basin. Users can change the distances from the center of the basin at which water-table aquifer thickness are calculated.
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use consistent units (e.g. feet & days **or** inches & hours)

Input Values		
1.0200	R	Recharge (infiltration) rate (feet/day)
0.210	Sy	Specific yield, Sy (dimensionless, between 0 and 1)
6.56	K	Horizontal hydraulic conductivity, Kh (feet/day)*
61.000	x	1/2 length of basin (x direction, in feet)
8.000	y	1/2 width of basin (y direction, in feet)
0.958	t	duration of infiltration period (days)
20.000	hi(0)	initial thickness of saturated zone (feet)

Conversion Table

inch/hour	feet/day
0.67	1.33
2.00	4.00

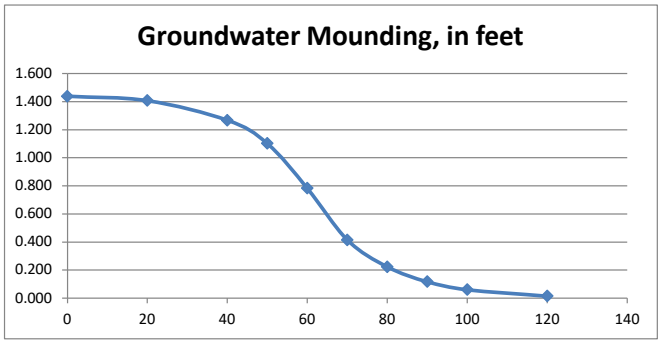
hours	days
36	1.50

In the report accompanying this spreadsheet (USGS SIR 2010-5102), vertical soil permeability (ft/d) is assumed to be one-tenth horizontal hydraulic conductivity (ft/d).

21.438	h(max)	maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.438	Δh(max)	maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.438	0
1.407	20
1.268	40
1.103	50
0.783	60
0.415	70
0.223	80
0.118	90
0.060	100
0.015	120

Re-Calculate Now



Disclaimer

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SDA #3 Mounding Calculation

This spreadsheet will calculate the height of a groundwater mound beneath a stormwater infiltration basin. More information can be found in the U.S. Geological Survey Scientific Investigations Report 2010-5102 "Simulation of groundwater mounding beneath hypothetical stormwater infiltration basins".

The user must specify infiltration rate (R), specific yield (Sy), horizontal hydraulic conductivity (Kh), basin dimensions (x, y), duration of infiltration period (t), and the initial thickness of the saturated zone (hi(0), height of the water table if the bottom of the aquifer is the datum). For a square basin the half width equals the half length (x = y). For a rectangular basin, if the user wants the water-table changes perpendicular to the long side, specify x as the short dimension and y as the long dimension. Conversely, if the user wants the values perpendicular to the short side, specify y as the short dimension, x as the long dimension. All distances are from the center of the basin. Users can change the distances from the center of the basin at which water-table aquifer thickness are calculated.
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use consistent units (e.g. feet & days **or** inches & hours)

Conversion Table

inch/hour	feet/day
0.67	1.33
2.00	4.00

hours	days
36	1.50

In the report accompanying this spreadsheet (USGS SIR 2010-5102), vertical soil permeability (ft/d) is assumed to be one-tenth horizontal hydraulic conductivity (ft/d).

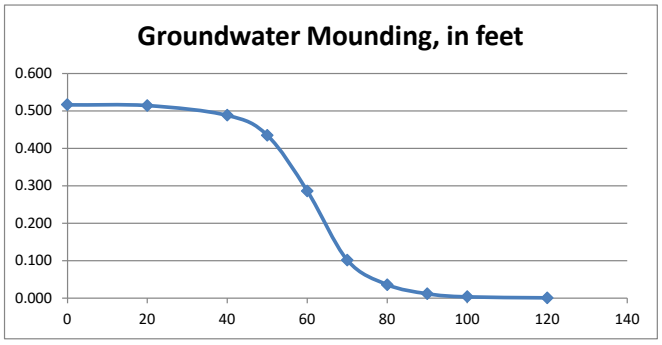
Input Values

1.0200	***R***	**Recharge (infiltration) rate (feet/day)**
0.210	**Sy**	**Specific yield, Sy (dimensionless, between 0 and 1)**
6.56	**K**	**Horizontal hydraulic conductivity, Kh (feet/day)***
61.000	**x**	**1/2 length of basin (x direction, in feet)**
4.500	**y**	**1/2 width of basin (y direction, in feet)**
0.363	**t**	**duration of infiltration period (days)**
20.000	**hi(0)**	**initial thickness of saturated zone (feet)**

20.517	**h(max)**	**maximum thickness of saturated zone (beneath center of basin at end of infiltration period)**
0.517	**Δh(max)**	**maximum groundwater mounding (beneath center of basin at end of infiltration period)**

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.517	0
0.514	20
0.488	40
0.435	50
0.286	60
0.102	70
0.036	80
0.012	90
0.004	100
0.001	120

Re-Calculate Now



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SDA #4 Mounding Calculation

This spreadsheet will calculate the height of a groundwater mound beneath a stormwater infiltration basin. More information can be found in the U.S. Geological Survey Scientific Investigations Report 2010-5102 "Simulation of groundwater mounding beneath hypothetical stormwater infiltration basins".

The user must specify infiltration rate (R), specific yield (Sy), horizontal hydraulic conductivity (Kh), basin dimensions (x, y), duration of infiltration period (t), and the initial thickness of the saturated zone (hi(0), height of the water table if the bottom of the aquifer is the datum). For a square basin the half width equals the half length (x = y). For a rectangular basin, if the user wants the water-table changes perpendicular to the long side, specify x as the short dimension and y as the long dimension. Conversely, if the user wants the values perpendicular to the short side, specify y as the short dimension, x as the long dimension. All distances are from the center of the basin. Users can change the distances from the center of the basin at which water-table aquifer thickness are calculated.
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use consistent units (e.g. feet & days **or** inches & hours)

Conversion Table

inch/hour	feet/day
0.67	1.33
2.00	4.00

hours	days
36	1.50

In the report accompanying this spreadsheet (USGS SIR 2010-5102), vertical soil permeability (ft/d) is assumed to be one-tenth horizontal hydraulic conductivity (ft/d).

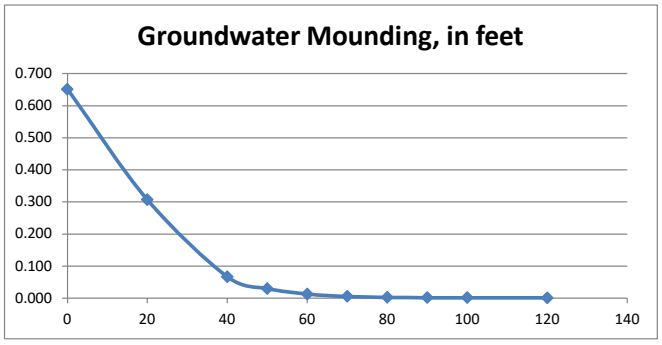
Input Values

1.0200	***R***	**Recharge (infiltration) rate (feet/day)**
0.210	**Sy**	**Specific yield, Sy (dimensionless, between 0 and 1)**
6.56	**K**	**Horizontal hydraulic conductivity, Kh (feet/day)***
16.000	**x**	**1/2 length of basin (x direction, in feet)**
6.000	**y**	**1/2 width of basin (y direction, in feet)**
0.640	**t**	**duration of infiltration period (days)**
20.000	**hi(0)**	**initial thickness of saturated zone (feet)**

20.651	**h(max)**	**maximum thickness of saturated zone (beneath center of basin at end of infiltration period)**
0.651	**Δh(max)**	**maximum groundwater mounding (beneath center of basin at end of infiltration period)**

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.651	0
0.307	20
0.067	40
0.030	50
0.013	60
0.005	70
0.003	80
0.001	90
0.001	100
0.001	120

Re-Calculate Now



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

Version 1, Automated: Mar. 4, 2008

Location: 817 Country Way, Scituate

TSS Removal Calculation Worksheet

B BMP[1]	C TSS Removal Rate[1]	D Starting TSS Load*	E Amount Removed (C*D)	F Remaining Load (D-E)
Deep Sump and Hooded Catch Basin	**0.25**	**1.00**	**0.25**	**0.75**
Subsurface Infiltration Structure	**0.80**	**0.75**	**0.60**	**0.15**
	0.00	**0.15**	**0.00**	**0.15**
	0.00	**0.15**	**0.00**	**0.15**
	0.00	**0.15**	**0.00**	**0.15**

Total TSS Removal = **85%**

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

Project: 20-475
Prepared By: GAP
Date: 1/16/2023

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

Non-automated TSS Calculation Sheet must be used if Proprietary BMP Proposed

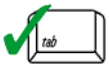
1. From MassDEP Stormwater Handbook Vol. 1

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the Massachusetts Stormwater Handbook. The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.[1] This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8[2]
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

[1] The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

[2] For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

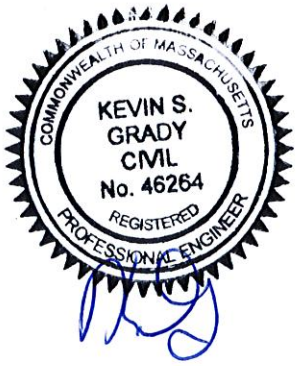
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



2023-06-19

Signature and Date

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

☒ New development

☐ Redevelopment

☐ Mix of New Development and Redevelopment

Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

☒ No disturbance to any Wetland Resource Areas

☐ Site Design Practices (e.g. clustered development, reduced frontage setbacks)

☐ Reduced Impervious Area (Redevelopment Only)

☐ Minimizing disturbance to existing trees and shrubs

☐ LID Site Design Credit Requested:

- ☐ Credit 1
- ☐ Credit 2
- ☐ Credit 3

☐ Use of “country drainage” versus curb and gutter conveyance and pipe

☐ Bioretention Cells (includes Rain Gardens)

☐ Constructed Stormwater Wetlands (includes Gravel Wetlands designs)

☐ Treebox Filter

☐ Water Quality Swale

☐ Grass Channel

☐ Green Roof

☐ Other (describe): _____

Standard 1: No New Untreated Discharges

☒ No new untreated discharges

☒ Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth

☒ Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.

Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

☐ Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.

☐ Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.

☒ Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

☐ Soil Analysis provided.

☒ Required Recharge Volume calculation provided.

☐ Required Recharge volume reduced through use of the LID site Design Credits.

☒ Sizing the infiltration, BMPs is based on the following method: Check the method used.

☒ Static ☐ Simple Dynamic ☐ Dynamic Field[1]

☐ Runoff from all impervious areas at the site discharging to the infiltration BMP.

☐ Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.

☒ Recharge BMPs have been sized to infiltrate the Required Recharge Volume.

☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:

- ☐ Site is comprised solely of C and D soils and/or bedrock at the land surface
- ☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
- ☐ Solid Waste Landfill pursuant to 310 CMR 19.000
- ☐ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.

☒ Calculations showing that the infiltration BMPs will drain in 72 hours are provided.

☐ Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

[1] 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.

Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

☐ The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.

☒ Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
- Provisions for storing materials and waste products inside or under cover;
- Vehicle washing controls;
- Requirements for routine inspections and maintenance of stormwater BMPs;
- Spill prevention and response plans;
- Provisions for maintenance of lawns, gardens, and other landscaped areas;
- Requirements for storage and use of fertilizers, herbicides, and pesticides;
- Pet waste management provisions;
- Provisions for operation and management of septic systems;
- Provisions for solid waste management;
- Snow disposal and plowing plans relative to Wetland Resource Areas;
- Winter Road Salt and/or Sand Use and Storage restrictions;
- Street sweeping schedules;
- Provisions for prevention of illicit discharges to the stormwater management system;
- Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
- Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
- List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.

☐ A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.

☐ Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:

- ☐ is within the Zone II or Interim Wellhead Protection Area
- ☐ is near or to other critical areas
- ☐ is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
- ☐ involves runoff from land uses with higher potential pollutant loads.

☐ The Required Water Quality Volume is reduced through use of the LID site Design Credits.

☒ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.

Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

☒ The BMP is sized (and calculations provided) based on:

- ☒ The ½" or 1" Water Quality Volume or
- ☐ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.

☒ The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.

☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

☐ The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.

☐ The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted ***prior to*** the discharge of stormwater to the post-construction stormwater BMPs.

☒ The NPDES Multi-Sector General Permit does ***not*** cover the land use.

☐ LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.

☐ All exposure has been eliminated.

☐ All exposure has ***not*** been eliminated and all BMPs selected are on MassDEP LUHPPL list.

☐ The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

☐ The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.

☐ Critical areas and BMPs are identified in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

☐ The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:

- ☐ Limited Project
- ☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
- ☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
- ☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
- ☐ Bike Path and/or Foot Path
- ☐ Redevelopment Project
- ☐ Redevelopment portion of mix of new and redevelopment.

☐ Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.

☐ The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
- Construction Period Operation and Maintenance Plan;
- Names of Persons or Entity Responsible for Plan Compliance;
- Construction Period Pollution Prevention Measures;
- Erosion and Sedimentation Control Plan Drawings;
- Detail drawings and specifications for erosion control BMPs, including sizing calculations;
- Vegetation Planning;
- Site Development Plan;
- Construction Sequencing Plan;
- Sequencing of Erosion and Sedimentation Controls;
- Operation and Maintenance of Erosion and Sedimentation Controls;
- Inspection Schedule;
- Maintenance Schedule;
- Inspection and Maintenance Log Form.

☒ A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

☐ The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has ***not*** been included in the Stormwater Report but will be submitted ***before*** land disturbance begins.

☒ The project is ***not*** covered by a NPDES Construction General Permit.

☐ The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.

☐ The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

☒ The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:

- ☒ Name of the stormwater management system owners;
- ☒ Party responsible for operation and maintenance;
- ☒ Schedule for implementation of routine and non-routine maintenance tasks;
- ☒ Plan showing the location of all stormwater BMPs maintenance access areas;
- ☒ Description and delineation of public safety features;
- ☒ Estimated operation and maintenance budget; and
- ☒ Operation and Maintenance Log Form.

☐ The responsible party is ***not*** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:

- ☐ A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
- ☐ A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

☐ The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;

☒ An Illicit Discharge Compliance Statement is attached;

☐ NO Illicit Discharge Compliance Statement is attached but will be submitted ***prior to*** the discharge of any stormwater to post-construction BMPs.

OPERATION AND MAINTENANCE PLAN

PROPOSED SITE WORK – DURING CONSTRUCTION

Assessors Lot 12-2-38-F
817 Country Way
Scituate, Massachusetts

Owner:

Option C Properties, LLC
PO Box 263
Weymouth, MA 02190

Party Responsible for Operation and Maintenance:

Option C Properties, LLC
PO Box 263
Weymouth, MA 02190

Source of Funding:

Operation and Maintenance of this stormwater management system will be the responsibility of the property owner to include its successor and/or assigns, as the same may appear on record with the appropriate register of deeds.

During Construction:

Construction activities shall follow the Construction Sequence shown on the approved plans. During periods of active construction the stormwater management system shall be inspected on a weekly basis and within 24 hours of a storm event of greater than ½". Maintenance tasks shall be performed monthly or after significant rainfall events of 1" of rain or greater. During construction, silt-laden runoff shall be prevented from entering the drainage system and off-site properties. Temporary swales shall be constructed as needed during construction to direct runoff to sediment traps. Infiltration systems and subsurface storage systems shall not be placed in service until after the installation of base course pavement and vegetative stabilization of the areas contributing to the systems.

During dewatering operations, all water pumped from the dewatering shall be directed to a "dirt bag" pumped sediment removal system (or approved equal) as manufactured by ACF Environmental. Water from construction dewatering activities should not be directed into any of the existing or proposed stormwater management facilities system unless it is fully treated prior to discharge. The unit shall be placed on a crushed stone blanket. Disposal of such "dirt bag" shall occur when the device is full and can no longer effectively filter sediment or allow water to pass at a reasonable flow rate. Disposal of this unit shall be the responsibility of the contractor and shall be as directed by the owner in accordance with applicable local, state, and federal guidelines and regulations.

Stabilized construction entrances shall be placed at the entrances and shall consist of 1½“ to 2” stone and be constructed as shown on the approved plans.

All erosion and sedimentation control measures shall be in place prior to the commencement of any site work or earthwork operations, and shall be maintained during construction, and shall remain in place until all site work is complete and ground cover is established.

Heavy equipment shall not be used on basin bottoms.

All exposed soils not to be paved shall be stabilized as soon as practical. Seed mixes shall only be applied during appropriate periods as recommended by the seed supplier, typically May 1 to October 15. Any exposed soils that cannot be stabilized by vegetation during these dates shall be stabilized with hay bales, hay mulch, check dams, jute netting or other acceptable means.

Once each structure is in place, it should be maintained in accordance with the procedures described in the post-construction Operations and Maintenance Plan.

During dry periods where dust is created by construction activities the following control measures should be implemented.

- Sprinkling – The contractor may sprinkle the ground along haul roads and traffic areas until moist.
- Vegetative cover – Areas that are not expected to be disturbed regularly may be stabilized with vegetative cover.
- Mulch – Mulching can be used as a quick and effective means of dust control in recently disturbed areas.
- Spray on chemical soil treatments may be utilized. Application rates shall conform to manufacturers recommendations.

Illicit Discharges

Illicit discharges to the stormwater management system are discharges that are not entirely comprised of stormwater. Illicit discharges are prohibited from the stormwater management system and the stormwater management system shall be inspected for illicit discharges annually.

The following is a list of discharges that are allowed under the EPA Construction General Permit (CGP) provided that appropriate stormwater controls are designed, installed, and maintained:
a. Stormwater discharges, including stormwater runoff, snowmelt runoff, and surface runoff and drainage, associated with construction activity under 40 CFR §122.26(b)(14) or § 122.26(b)(15)(i);
b. Stormwater discharges designated by EPA as needing a permit under 40 CFR § 122.26(a)(1)(v) or §122.26(b)(15)(ii);
c. Stormwater discharges from construction support activities *(e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas)* provided:
i. The support activity is directly related to the construction site required to have permit coverage for stormwater discharges;
ii. The support activity is not a commercial operation, nor does it serve multiple unrelated construction projects;
iii. The support activity does not continue to operate beyond the completion of the construction activity at the project it supports; and
iv. Stormwater controls are implemented in accordance with Part 2 of the CGP and, if applicable, Part 3 of the CGP, for discharges from the support activity areas.

The following non-stormwater discharges from your construction activity, provided that, with the exception of water used to control dust and to irrigate areas to be

vegetatively stabilized, these discharges are not routed to areas of exposed soil on your site and you comply with any applicable requirements for these discharges in Part 2 of the CGP:

i. Discharges from emergency fire-fighting activities;

ii. Fire hydrant flushings;

iii. Landscape irrigation;

iv. Water used to wash vehicles and equipment, provided that there is no discharge of soaps, solvents, or detergents used for such purposes;

v. Water used to control dust;

vi. Potable water including uncontaminated water line flushings;

vii. Routine external building washdown that does not use detergents;

viii. Pavement wash waters provided spills or leaks of toxic or hazardous materials have not occurred (unless all spill material has been removed) and where detergents are not used. You are prohibited from directing pavement wash waters directly into any surface water, storm drain inlet, or stormwater conveyance, unless the conveyance is connected to a sediment basin, sediment trap, or similarly effective control;

ix. Uncontaminated air conditioning or compressor condensate;

x. Uncontaminated, non-turbid discharges of ground water or spring water;

xi. Foundation or footing drains where flows are not contaminated with process materials such as solvents or contaminated ground water; and

xii. Construction dewatering water that has been treated by an appropriate control under Part 2.1.3.4 of the CGP; and

e. Discharges of stormwater listed above in Parts a, b, and c, or authorized nonstormwater discharges in Part d above, commingled with a discharge authorized by a different NPDES permit and/or a discharge that does not require NPDES permit authorization.

For additional information, refer to Performance, Standards and Guidelines for Stormwater Management in Massachusetts, published by the Department of Environmental Protection.

STORMWATER MANAGEMENT
BEST MANAGEMENT PRACTICES
INSPECTION SCHEDULE AND EVALUATION CHECKLIST – CONSTRUCTION PHASE

PROJECT LOCATION: 817 Country Way, Scituate Latest Revision: January 16, 2023

Stormwater Control Manager: _____ **Stamp**

Best Management Practice	Inspection Frequency (1)	Date Inspected	Inspector	Minimum Maintenance and Key Items to Check	Cleaning/ Repair Needed yes/no List items	Date of Cleaning/Repair	Performed By	Water Level in Detention System
Silt socks & swales and silt traps	After every major storm event							
Dewatering Operations	Daily- during actual dewatering							
Temporary Construction Entrance	Daily or as needed.							

(1) Refer to the Massachusetts Stormwater Management, Volume Two: Stormwater Technical Handbook for recommendations regarding frequency for inspection and maintenance of specific BMPs.

Limited or no use of sodium chloride salts, fertilizers or pesticides recommended. Slow release fertilizer recommended.
Other notes:(Include deviations from: Con Com Order of Conditions, PB Approval, Construction Sequence and Approved Plan)

OPERATION AND MAINTENANCE PLAN
PROPOSED DRAINAGE SYSTEM – POST CONSTRUCTION
Assessors Lot 12-2-38-F
817 Country Way
Scituate, Massachusetts

Owner:

Option C Properties, LLC
PO Box 263
Weymouth, MA 02190

Party Responsible for Operation and Maintenance:

After construction is complete the owner will be the party responsible for operation and maintenance of the drainage system. When the property is conveyed, the new owner will be the party responsible for operation and maintenance.

Source of Funding:

Operation and Maintenance of this stormwater management system will be the responsibility of the owner. The estimated annual budget for the operation and maintenance of the stormwater system is $1,000.

Schedule for Inspection and Maintenance:

Deep Sump Catch Basins

Deep sump catch basins shall become part of the roadway system and shall be inspected after every major storm event during construction and cleaned when sediment exceeds 18" depth. After construction when all slopes have been stabilized, basins shall be cleaned a minimum of twice per year. Disposal of the accumulated sediment shall be in accordance with applicable local, state, and federal guidelines and regulations.

Subsurface Drainage Systems Maintenance Schedule

Inspect Inlets and access manholes twice per year
Remove any debris that might clog the system

After construction, the systems should be inspected for standing water 1-2 days after any significant rainfall exceeding 1" of rainfall in 24 hours or major storm event. If the system is continuing to hold standing water after 2 days the owner should have it inspected and repaired. The systems should also be inspected to verify whether infiltration function has been lost. If infiltration capacity has become degraded, it should be restored under the direction of a qualified professional.

The subsurface systems should be inspected twice per year and at least once per year by a drainage system professional to ensure that the system is operating as intended. The owner shall implement and pay for the inspector's recommendations.

Lawn Fertilization

Lawn fertilizer shall be slow release and limited to 3 lbs per 1000 s.f. per year.

Stormwater Contamination Prevention

Exterior storage of hazardous materials including deicing chemicals, fertilizers, herbicides, pesticides, and other hazardous materials is prohibited. All materials are to be stored inside of the buildings no exterior storage of materials is allowed. No fueling of equipment is allowed on the premises and is prohibited.

Individual storage unit users shall be notified of the prohibition of illicit discharges to the stormwater management system.

Snow Removal and De-icing

Snow removal will be the responsibility of the Owner. Snow will be plowed from Parking areas and driveways and shoveled or removed with a snow blower from walkways. If additional stockpiling area is needed, excess snow will be removed from the site with proper off-site disposal. Snow shall be stockpiled in areas where melting will be directed through the drainage systems and not directly to the wetlands. Stockpiling within any rain garden and infiltration areas is prohibited.

Inspections

Yearly inspections of the stormwater management system shall be performed and an Inspection Schedule and Evaluation Checklist shall be maintained by the Owner and made available to regulatory officials if requested. Copies of the receipts for cleaning of the systems shall also be maintained.

The Owner shall be responsible to secure the services of a Licensed Engineer on an on-going basis. The inspector shall review the project with respect to the following:

- Proper installation and performance of the Stormwater Management System.
- Review of the controls to determine any damaged or ineffective controls.
- Corrective actions.

The Engineer shall prepare, stamp and submit, to the Owner, a report documenting the findings and should request the required maintenance or repair for the pollution prevention controls when the inspector finds that it is necessary for the control to be effective (see attached Inspection Schedule and Evaluation Checklist). The inspector shall notify the Owner to make the changes.

The owner and/or their employees responsible for the O&M of the stormwater management system shall be trained annually. Records of trained individuals shall be kept and submitted to the town with the check list. The records shall indicate the latest training date.

The attached inspection form shall be retained and kept available for a minimum of three years.

For additional information, refer to Performance, Standards and Guidelines for Stormwater Management in Massachusetts, published by the Department of Environmental Protection

Definition of Major Storm Event

For the purposes of this operation and maintenance plan a major storm event should be defined as a rainfall of such intensity or duration that causes observable movement of sediment on the roadway or site. It is the intent of this plan to prevent this sediment from entering the drainage

system. Prior to stabilization of the site this may occur more frequently with less intense storms. As the site is stabilized with ground cover the movement of sediment will only occur during more severe storms.

Illicit Discharges

> Illicit discharges to the stormwater management system are discharges that are not entirely comprised of stormwater. Illicit discharges are prohibited from the stormwater management system and the stormwater management system shall be inspected for illicit discharges annually.

This Standard prohibits illicit discharges to stormwater management systems. The stormwater management system is the system for conveying, treating, and infiltrating stormwater on-site, including stormwater best management practices and any pipes intended to transport stormwater to the groundwater, a surface water, or municipal separate storm sewer system. Illicit discharges to the stormwater management system are discharges that are not entirely comprised of stormwater. Notwithstanding the foregoing, an illicit discharge does not include discharges from the following activities or facilities: firefighting, water line flushing, landscape irrigation, uncontaminated groundwater, potable water sources, foundation drains, air conditioning condensation, footing drains, individual resident car washing, flows from riparian habitats and wetlands, dechlorinated water from swimming pools, water used for street washing and water used to clean residential buildings without detergents.

For additional information, refer to Performance Standards and Guidelines for Stormwater Management in Massachusetts, published by the Department of Environmental Protection.

STORMWATER MANAGEMENT
BEST MANAGEMENT PRACTICES

INSPECTION SCHEDULE AND EVALUATION CHECKLIST – POST CONSTRUCTION PHASE

PROJECT LOCATION: 817 Country Way, Scituate.
Latest Revision: January 16, 2023

Best Management Practice	Inspection Frequency (1)	Date Inspected	Inspector	Minimum Maintenance and Key Items to Check	Cleaning/ Repair Needed yes/no List items	Date of Cleaning/ Repair	Performed By	Water Level in Drainage System
Deep Sump Catch Basins	Twice per year							
Subsurface structures	Twice a year							

(1) Refer to the Massachusetts Stormwater Management, Volume Two: Stormwater Technical Handbook for recommendations regarding frequency for inspection and maintenance of specific BMPs.
(2) records shall be kept for a minimum of three years.

Limited or no use of sodium chloride salts, fertilizers or pesticides recommended. Slow release fertilizer recommended.
Other notes:(Include deviations from: Con Com Order of Conditions, PB Approval, Construction Sequence and Approved Plan)

Stormwater Control Manager: _____ **Stamp**

Deep Sump Catch Basin

Description: Deep sump catch basins, also known as oil and grease or hooded catch basins, are underground retention systems designed to remove trash, debris, and coarse sediment from stormwater runoff, and serve as temporary spill containment devices for floatables such as oils and greases.

Ability to meet specific standards

Standard	Description
2 - Peak Flow	Provides no peak flow attenuation
3 - Recharge	Provides no groundwater recharge
4 - TSS Removal	25% TSS removal credit when used for pretreatment. Because of their limited effectiveness and storage capacity, deep sump catch basins receive credit for removing TSS only if they are used for pretreatment and designed as off-line systems.
5 - Higher Pollutant Loading	Recommended as pretreatment BMP. Although provides some spill control capability, a deep sump catch basin may not be used in place of an oil grit separator or sand filter for land uses that have the potential to generate runoff with high concentrations of oil and grease such as: high-intensity-use parking lots, gas stations, fleet storage areas, vehicle and/or equipment maintenance and service areas.
6 - Discharges near or to Critical Areas	May be used as pretreatment BMP. not an adequate spill control device for discharges near or to critical areas.
7 - Redevelopment	Highly suitable.

Advantages/Benefits:

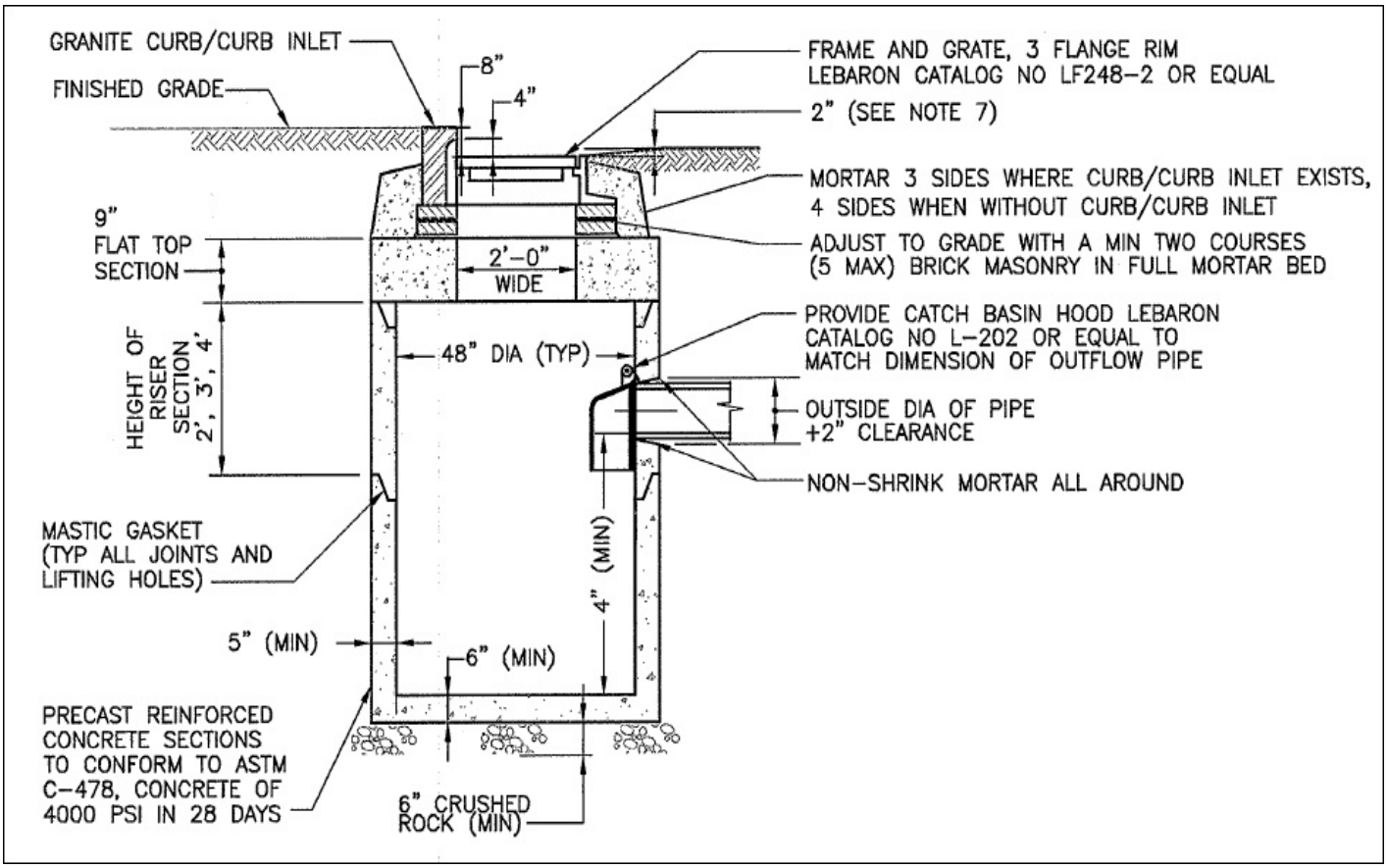
- Located underground, so limited lot size is not a deterrent.
- Compatible with subsurface storm drain systems.
- Can be used for retrofitting small urban lots where larger BMPs are not feasible.
- Provide pretreatment of runoff before it is delivered to other BMPs.
- Easily accessed for maintenance.
- Longevity is high with proper maintenance.

Disadvantages/Limitations:

- Limited pollutant removal.
- Expensive to install and maintain, resulting in high cost per unit area treated.
- No ability to control volume of stormwater
- Frequent maintenance is essential
- Requires proper disposal of trapped sediment and oil and grease
- Entrapment hazard for amphibians and other small animals

Pollutant Removal Efficiencies

- Total Suspended Solids (TSS) - 25% (for regulatory purposes)
- Nutrients (Nitrogen, phosphorus) - Insufficient data
- Metals (copper, lead, zinc, cadmium) - Insufficient data
- Pathogens (coliform, e coli) - Insufficient data



adapted from the University of New Hampshire

Maintenance

Activity	Frequency
Inspect units	Four times per year
Clean units	Four times per year or whenever the depth of deposits is greater than or equal to one half the depth from the bottom of the invert of the lowest pipe in the basin.

Special Features

All deep sump catch basins must include hoods. For MassHighway projects, consult the Stormwater Handbook for Highways and Bridges for hood requirements.

LID Alternative

Reduce Impervious Surface
Disconnect rooftop and non-rooftop runoff
Vegetated Filter Strip

Deep Sump Catch Basin

Suitable Applications

- Pretreatment
- Residential subdivisions
- Office
- Retail

Design Considerations

- The contributing drainage area to any deep sump catch basin should not exceed ¼ acre of impervious cover.
- Design and construct deep sump catch basins as off-line systems.
- Size the drainage area so that the flow rate does not exceed the capacity of the inlet grate.
- Divert excess flows to another BMP intended to meet the water quantity requirements (peak rate attenuation) or to a storm drain system. An off-line design enhances pollutant removal efficiency, because it prevents the resuspension of sediments in large storms.

Make the sump depth (distance from the bottom of the outlet pipe to the bottom of the basin) at least four feet times the diameter of the outlet pipe and more if the contributing drainage area has a high sediment load. The minimum sump depth is 4 feet. Double catch basins, those with 2 inlet grates, may require deeper sumps. Install the invert of the outlet pipe at least 4 feet from the bottom of the catch basin grate.

The inlet grate serves to prevent larger debris from entering the sump. To be effective, the grate must have a separation between the grates of one square inch or less. The inlet openings must not allow flows greater than 3 cfs to enter the deep sump catch basin. If the inlet grate is designed with a curb cut, the grate must reach the back of the curb cut to prevent bypassing. The inlet grate must be constructed of a durable material and fit tightly into the frame so it won't be dislodged by automobile traffic. The inlet grate must not be welded to the frame so that sediments may be easily removed. To facilitate maintenance, the inlet grate must be placed along the road shoulder or curb line rather than a traffic lane.

Note that within parking garages, the State Plumbing Code regulates inlet grates and other stormwater management controls. Inlet grates inside parking garages are currently required to have much smaller openings than those described herein.

To receive the 25% removal credit, hoods must be used in deep sump catch basins. Hoods also help contain oil spills. MassHighway may install catch basins without hoods provided they are designed, constructed, operated, and maintained in accordance with the Mass Highway Stormwater Handbook.

Install the weep hole above the outlet pipe. Never install the weep hole in the bottom of the catch basin barrel.

Site Constraints

A proponent may not be able to install a deep sump catch basin because of:

- Depth to bedrock;
- High groundwater;
- Presence of utilities; or
- Other site conditions that limit depth of excavation because of stability.

Maintenance

Regular maintenance is essential. Deep sump catch basins remain effective at removing pollutants only if they are cleaned out frequently. One study found that once 50% of the sump volume is filled, the catch basin is not able to retain additional sediments.

Inspect or clean deep sump basins at least four times per year and at the end of the foliage and snow-removal seasons. Sediments must also be removed four times per year or whenever the depth of deposits is greater than or equal to one half the depth from the bottom of the invert of the lowest pipe in the basin. If handling runoff from land uses with higher potential pollutant loads or discharging runoff near or to a critical area, more frequent cleaning may be necessary.

Clamshell buckets are typically used to remove sediment in Massachusetts. However, vacuum trucks are preferable, because they remove more trapped sediment and supernatant than clamshells. Vacuuming is also a speedier process and is less likely to snap the cast iron hood within the deep sump catch basin.

Always consider the safety of the staff cleaning deep sump catch basins. Cleaning a deep sump catch basin within a road with active traffic or even within a parking lot is dangerous, and a police detail may be necessary to safeguard workers.

Although catch basin debris often contains concentrations of oil and hazardous materials such as petroleum hydrocarbons and metals, MassDEP classifies them as solid waste. Unless there is evidence that they have been contaminated by a spill or other means, MassDEP does not routinely require catch basin cleanings to be tested before disposal. Contaminated catch basin cleanings must be evaluated in accordance with the Hazardous Waste Regulations, 310 CMR 30.000, and handled as hazardous waste.

In the absence of evidence of contamination, catch basin cleanings may be taken to a landfill or other facility permitted by MassDEP to accept solid waste, without any prior approval by MassDEP. However, some landfills require catch basin cleanings to be tested before they are accepted.

With prior MassDEP approval, catch basin cleanings may be used as grading and shaping materials at landfills undergoing closure (see Revised Guidelines for Determining Closure Activities at Inactive Unlined Landfill Sites) or as daily cover at active landfills. MassDEP also encourages the beneficial reuse of catch basin cleanings whenever possible. A Beneficial Reuse Determination is required for such use.

MassDEP regulations prohibit landfills from accepting materials that contain free-draining liquids. One way to remove liquids is to use a hydraulic lift truck during cleaning operations so that the material can be decanted at the site. After loading material from several catch basins into a truck, elevate the truck so that any free-draining liquid can flow back into the structure. If there is no free water in the truck, the material may be deemed to be sufficiently dry. Otherwise the catch basin cleanings must undergo a Paint Filter Liquids Test. Go to www. Mass.gov/dep/recycle/laws/cafacts.doc for information on all of the MassDEP requirements pertaining to the disposal of catch basin cleanings.

Subsurface Structures

Description: Subsurface structures are underground systems that capture runoff, and gradually infiltrate it into the groundwater through rock and gravel. There are a number of underground infiltration systems that can be installed to enhance groundwater recharge. The most common types include pre-cast concrete or plastic pits, chambers (manufactured pipes), perforated pipes, and galleys.

Ability to meet specific standards

Standard	Description
2 - Peak Flow	N/A
3 - Recharge	Provides groundwater recharge
4 - TSS Removal	80%
5 - Higher Pollutant Loading	May be used if 44% of TSS is removed with a pretreatment BMP prior to infiltration. Land uses with the potential to generate runoff with high concentrations of oil and grease require an oil grit separator or equivalent prior to discharge to the infiltration structure. Infiltration must be done in accordance with 314 CMR 5.00.
6 - Discharges near or to Critical Areas	Highly recommended
7 - Redevelopment	Suitable with pretreatment

Advantages/Benefits:

- Provides groundwater recharge
- Reduces downstream flooding
- Preserves the natural water balance of the site
- Can remove other pollutants besides TSS
- Can be installed on properties with limited space
- Useful in stormwater retrofit applications

Disadvantages/Limitations:

- Limited data on field performance
- Susceptible to clogging by sediment
- Potential for mosquito breeding due to standing water if system fails

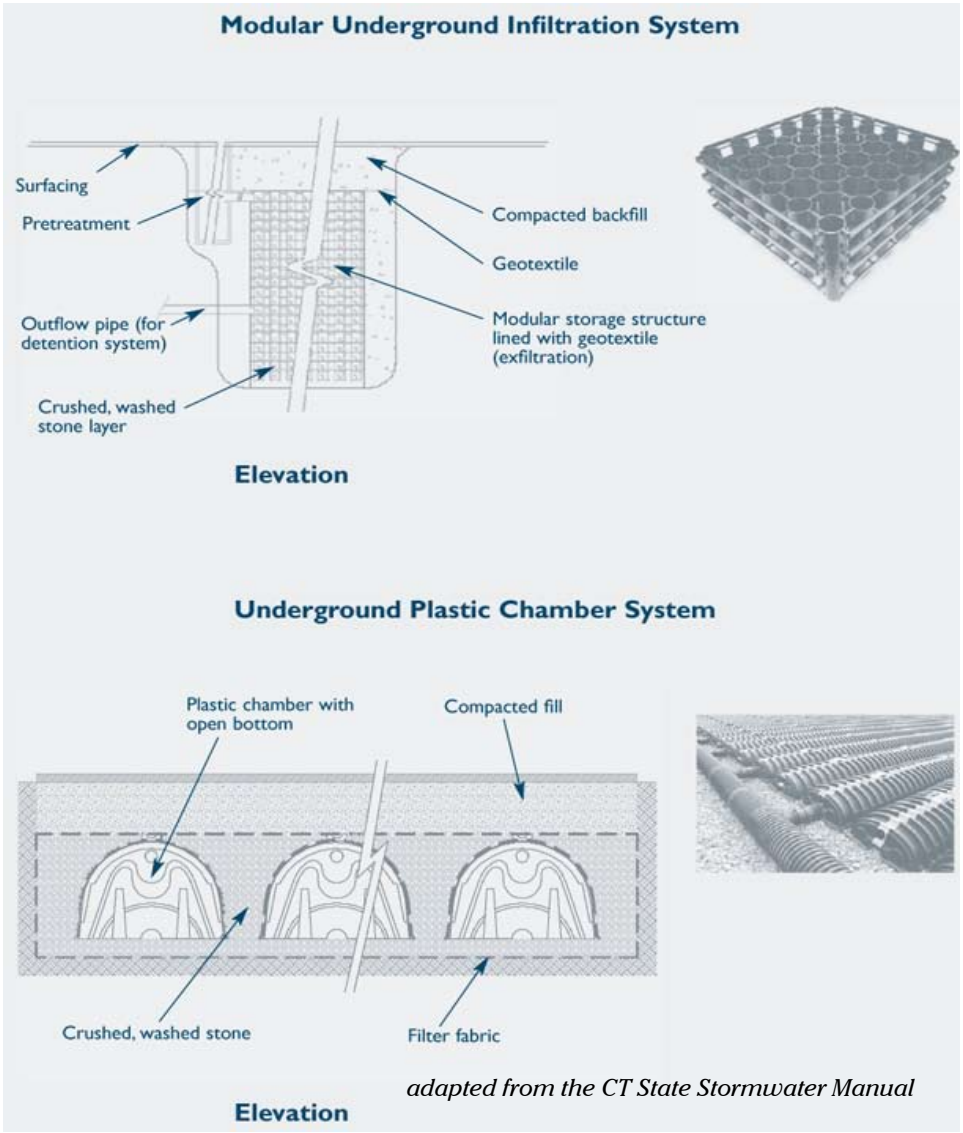
Pollutant Removal Efficiencies

• Total Suspended Solids (TSS)	80%
• Nutrients (Nitrogen, phosphorus)	Insufficient data
• Metals (copper, lead, zinc, cadmium)	Insufficient data
• Pathogens (coliform, e coli)	Insufficient data

Subsurface Structures

There are different types of subsurface structures:

Infiltration Pit: A pre-cast concrete or plastic barrel with uniform perforations. The bottom of the pit should be closed with the lowest row of perforations at least 6 inches above the bottom, to serve as a sump. Infiltration pits typically include an observation well. The pits may be placed linearly, so that as the infiltrative surfaces in the first pit clog, the overflow moves to the second pit for exfiltration. Place an outlet near the top of the infiltration pit to accommodate emergency overflows. MassDEP provides recharge credit for storage below the emergency outflow invert. To make an infiltration pit, excavate the pit, wrap fabric around the barrel, place stone in the bottom of the pit, place the barrel in the pit, and then backfill stone around the barrel. Take a boring or dig an observation trench at the site of each proposed pit.



adapted from the CT State Stormwater Manual

Chambers: These are typically manufactured pipes containing open bottoms and sometimes perforations. The chambers are placed atop a stone bed. Take the same number of borings or observation pits as for infiltration trenches. Do not confuse these systems with underground detention systems (UDS) that use similar chambers. UDS are designed to attenuate peak rates of runoff--not to recharge groundwater.

Perforated Pipes: In this system, pipes containing perforations are placed in a leaching bed, similar to a Title 5 soil absorption system (SAS). The pipes dose the leaching bed. Take the same number of borings or observation pits as for infiltration trenches. Perforated pipes by themselves do not constitute a stormwater recharge system and receive no credit pursuant to Stormwater Standard No. 3. Do not confuse recharge systems that use perforated pipes with perforated pipes installed to lower the water table or divert groundwater flows.

Galleys: Similar to infiltration pits. Some designs consist of concrete perforated rectangular vaults. Others are modular systems usually placed under parking lots. When the galley design consists of a single rectangular perforated vault, conduct one boring or observation trench per galley. When the galleys consist of interlocking modular units, take the same number of borings or observation pits as for infiltration trenches. Do not confuse these galleys with vaults storing water for purposes of underground detention, which do not contain perforations.

Applicability

Subsurface structures are constructed to store stormwater temporarily and let it percolate into the underlying soil. These structures are used for small drainage areas (typically less than 2 acres). They are feasible only where the soil is adequately permeable and the maximum water table and/or bedrock

elevation is sufficiently low. They can be used to control the quantity as well as quality of stormwater runoff, if properly designed and constructed. The structures serve as storage chambers for captured stormwater, while the soil matrix provides treatment.

Without adequate pretreatment, subsurface structures are not suitable for stormwater runoff from land uses or activities with the potential for high sediment or pollutant loads. Structural pretreatment BMPs for these systems include, but are not limited to, deep sump catch basins, proprietary separators, and oil/grit separators. They are suitable alternatives to traditional infiltration trenches and basins for space-limited sites. These systems can be installed beneath parking lots and other developed areas provided the systems can be accessed for routine maintenance.

Subsurface systems are highly prone to clogging. Pretreatment is always required unless the runoff is strictly from residential rooftops.

Effectiveness

Performance of subsurface systems varies by manufacturer and system design. Although there are limited field performance data, pollutant removal efficiency is expected to be similar to those of infiltration trenches and basins (i.e., up to 80% of TSS removal). MassDEP awards a TSS removal credit of 80% for systems designed in accordance with the specifications in this handbook.

Planning Considerations

Subsurface structures are excellent groundwater recharge alternatives where space is limited. Because infiltration systems discharge runoff to groundwater, they are inappropriate for use in areas with potentially higher pollutant loads (such as gas stations), unless adequate pretreatment is provided. In that event, oil grit separators, sand filters or equivalent BMPs must be used to remove sediment, floatables and grease prior to discharge to the subsurface structure.

Design

Unlike infiltration basins, widely accepted design standards and procedures for designing subsurface structures are not available. Generally, a subsurface structure is designed to store a "capture volume" of runoff for a specified period of "storage time." The definition of capture volume differs depending on the purpose of the subsurface structure and the stormwater management program being used. Subsurface structures should infiltrate good quality runoff only. Pretreatment prior to infiltration is essential.
The composition, configuration and layout of subsurface structures varies considerably depending on the manufacturer. Follow the design criteria specified by vendors or system manufacturers. Install subsurface structures in areas that are easily accessible for routine and non-routine maintenance.

As with infiltration trenches and basins, install subsurface structures only in soils having suitable infiltration capacities as determined through field testing. Determine the infiltrative capacity of the underlying native soil through the soil evaluation set forth in Volume 3. Never use a standard septic system percolation test to determine soil permeability because this test tends to greatly overestimate the infiltration capacity of soils.

Subsurface structures are typically designed to function off-line. Place a flow bypass structure upgradient of the infiltration structure to convey high flows around the structure during large storms.

Design the subsurface structure so that it drains within 72 hours after the storm event and completely dewaters between storms. Use a minimum draining time of 6 hours to ensure adequate pollutant removal. Design all ports to be mosquito-proof, i.e., to inhibit or reduce the number of mosquitoes able to breed within the BMP.

The minimum acceptable field infiltration rate is 0.17 inches per hour. Subsurface structures must be sized in accordance with the procedures set forth in Volume 3. Manufactured structures must also be sized in accordance with the manufacturers' specifications. Design the system to totally exfiltrate within 72 hours.

Design the subsurface structure for live and dead loads appropriate for their location. Provide measures to dissipate inlet flow velocities and prevent channeling of the stone media. Generally, design the system so that inflow velocities are less than 2 feet per second (fps).
All of these devices must have an appropriate number of observation wells, to monitor the water surface elevation within the well, and to serve as a sampling port.

Each of these different types of structures, with the exception of perforated pipes in leaching fields similar to Title 5 systems, must have entry ports to allow worker access for maintenance, in accordance with OSHA requirements.

Construction

Stabilize the site prior to installing the subsurface structure. Do not allow runoff from any disturbed areas on the site to flow to the structure. Rope off the area where the subsurface structures are to be placed. Accomplish any required excavation with equipment placed just outside of this area. If the size of the area intended for exfiltration is too large to accommodate this approach, use trucks with low-pressure tires to minimize compaction. Do not allow any other vehicles within the area to be excavated. Keep the area above and immediately surrounding the subsurface structure roped off to all construction vehicles until the final top surface is installed (either paving or landscaping). This prevents additional compaction. When installing the final top surface, work from the edges to minimize compaction of the underlying soils.

Before installing the top surface, implement erosion and sediment controls to prevent sheet flow or wind blown sediment from entering the leach field. This includes, but is not limited to, minimizing land disturbances at any one time, placing stockpiles away from the area intended for infiltration, stabilizing any stockpiles through use of vegetation or tarps, and placing sediment fences around the perimeter of the infiltration field.

Provide an access port, man-way, and observation well to enable inspection of water levels within the system. Make the observation well pipe visible at grade (i.e., not buried).

Maintenance

Because subsurface structures are installed underground, they are extremely difficult to maintain. Inspect inlets at least twice a year. Remove any debris that might clog the system. Include mosquito controls in the Operation and Maintenance Plan.

Adapted from:
Connecticut Department of Environmental Conservation. Connecticut Stormwater Quality Manual. 2004.
MassHighway. Storm Water Handbook for Highways and Bridges. May 2004.

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

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

Custom Soil Resource Report for Norfolk and Suffolk Counties, Massachusetts, and Plymouth County, Massachusetts

January 16, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

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

Custom Soil Resource Report
Soil Map

Map Scale: 1:1,320 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

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

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at scales ranging from 1:12,000 to 1:25,000.

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

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

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

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

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

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

Soil Survey Area: Norfolk and Suffolk Counties, Massachusetts
Survey Area Data: Version 18, Sep 9, 2022

Soil Survey Area: Plymouth County, Massachusetts
Survey Area Data: Version 15, Sep 9, 2022

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

MAP LEGEND

MAP INFORMATION

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

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

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
307B	Paxton fine sandy loam, 0 to 8 percent slopes, extremely stony	0.1	1.4%
315B	Scituate fine sandy loam, 3 to 8 percent slopes	0.9	11.0%
Subtotals for Soil Survey Area		**1.0**	**12.5%**
Totals for Area of Interest		**8.2**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1	Water	1.8	22.1%
49A	Norwell mucky fine sandy loam, 0 to 3 percent slopes, extremely stony	0.3	3.5%
315B	Scituate gravelly sandy loam, 3 to 8 percent slopes	4.9	60.4%
316B	Scituate gravelly sandy loam, 3 to 8 percent slopes, very stony	0.1	1.6%
Subtotals for Soil Survey Area		**7.1**	**87.5%**
Totals for Area of Interest		**8.2**	**100.0%**

Map Unit Descriptions

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

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

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties

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

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

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

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

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

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

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

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

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

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

Norfolk and Suffolk Counties, Massachusetts

307B—Paxton fine sandy loam, 0 to 8 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2w675
Elevation: 0 to 1,580 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Paxton, extremely stony, and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Paxton, Extremely Stony

Setting

Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 10 inches: fine sandy loam
Bw1 - 10 to 17 inches: fine sandy loam
Bw2 - 17 to 28 inches: fine sandy loam
Cd - 28 to 67 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Woodbridge, extremely stony
Percent of map unit: 10 percent
Landform: Hills, drumlins, ground moraines
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Charlton, extremely stony
Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Ridgebury, extremely stony
Percent of map unit: 4 percent
Landform: Drumlins, drainageways, depressions, ground moraines, hills
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Whitman, extremely stony
Percent of map unit: 1 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

315B—Scituate fine sandy loam, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: vky0
Elevation: 20 to 360 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Scituate and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scituate

Setting

Landform: Drumlins
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Friable coarse-loamy eolian deposits over dense sandy lodgment till derived from granite and gneiss

Typical profile

H1 - 0 to 4 inches: fine sandy loam
H2 - 4 to 24 inches: sandy loam
H3 - 24 to 60 inches: loamy sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 18 to 34 inches to densic material
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Minor Components

Woodbridge

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

Ridgebury

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Montauk

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

Plymouth County, Massachusetts

1—Water

Map Unit Setting

National map unit symbol: bd0b
Elevation: 0 to 330 feet
Mean annual precipitation: 41 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Water: 98 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Minor Components

Swansea

Percent of map unit: 1 percent
Landform: Depressions, marshes, swamps, bogs, kettles
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Freetown

Percent of map unit: 1 percent
Landform: Depressions, swamps, kettles, marshes, bogs
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

49A—Norwell mucky fine sandy loam, 0 to 3 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: bd1w
Elevation: 10 to 400 feet
Mean annual precipitation: 41 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Norwell, extremely stony, and similar soils: 80 percent

Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Norwell, Extremely Stony

Setting

Landform: Depressions, drainageways
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Sandy supraglacial meltout till over coarse-loamy lodgment till

Typical profile

Oe - 0 to 4 inches: moderately decomposed plant material
A - 4 to 8 inches: mucky fine sandy loam
Bg1 - 8 to 14 inches: gravelly sandy loam
Bg2 - 14 to 19 inches: loamy fine sand
Cdg - 19 to 29 inches: gravelly coarse sandy loam
Cd - 29 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 12 to 20 inches to densic material
Drainage class: Poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water supply, 0 to 60 inches: Very low (about 2.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: F144AY041MA - Very Wet Till Depressions
Hydric soil rating: Yes

Minor Components

Scituate, very stony

Percent of map unit: 5 percent
Landform: Drumlins, ridges
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Brockton, extremely stony

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope

Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Mattapoisett, extremely stony

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Ridgebury, extremely stony

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

315B—Scituate gravelly sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: bczt
Elevation: 10 to 400 feet
Mean annual precipitation: 41 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Scituate and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scituate

Setting

Landform: Drumlins, ridges
Landform position (two-dimensional): Shoulder, footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Coarse-loamy eolian deposits over sandy lodgment till

Typical profile

Ap - 0 to 11 inches: gravelly sandy loam
Bw1 - 11 to 15 inches: gravelly sandy loam
Bw2 - 15 to 20 inches: sandy loam

BC1 - 20 to 25 inches: gravelly sandy loam
BC2 - 25 to 35 inches: sandy loam
Cd1 - 35 to 46 inches: loamy coarse sand
Cd2 - 46 to 60 inches: loamy coarse sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 20 to 35 inches to densic material
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 15 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Minor Components

Montauk

Percent of map unit: 5 percent
Landform: Till plains, ground moraines, drumlins
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Birchwood

Percent of map unit: 5 percent
Landform: Till plains, ground moraines, drumlins
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Woodbridge

Percent of map unit: 5 percent
Landform: Till plains, hills, drumlins
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Norwell

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

316B—Scituate gravelly sandy loam, 3 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: bczw
Elevation: 10 to 400 feet
Mean annual precipitation: 41 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Scituate, very stony, and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scituate, Very Stony

Setting

Landform: Drumlins, ridges
Landform position (two-dimensional): Shoulder, footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Coarse-loamy eolian deposits over sandy lodgment till

Typical profile

Ap - 0 to 11 inches: gravelly sandy loam
Bw1 - 11 to 15 inches: gravelly sandy loam
Bw2 - 15 to 20 inches: sandy loam
BC1 - 20 to 25 inches: gravelly sandy loam
BC2 - 25 to 35 inches: sandy loam
Cd1 - 35 to 46 inches: loamy coarse sand
Cd2 - 46 to 60 inches: loamy coarse sand

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.5 percent
Depth to restrictive feature: 20 to 35 inches to densic material
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 15 to 20 inches
Frequency of flooding: None
Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C/D
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Minor Components

Birchwood, very stony

Percent of map unit: 5 percent
Landform: Till plains, ground moraines, drumlins
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Woodbridge, very stony

Percent of map unit: 5 percent
Landform: Till plains, hills, drumlins
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Norwell, extremely stony

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Montauk, very stony

Percent of map unit: 5 percent
Landform: Ground moraines, drumlins, till plains
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf