



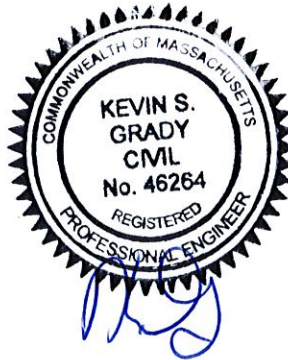
GRADY CONSULTING, L.L.C.

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:  
October 10, 2023**

June 19, 2023  
January 16, 2023

# Table of Contents

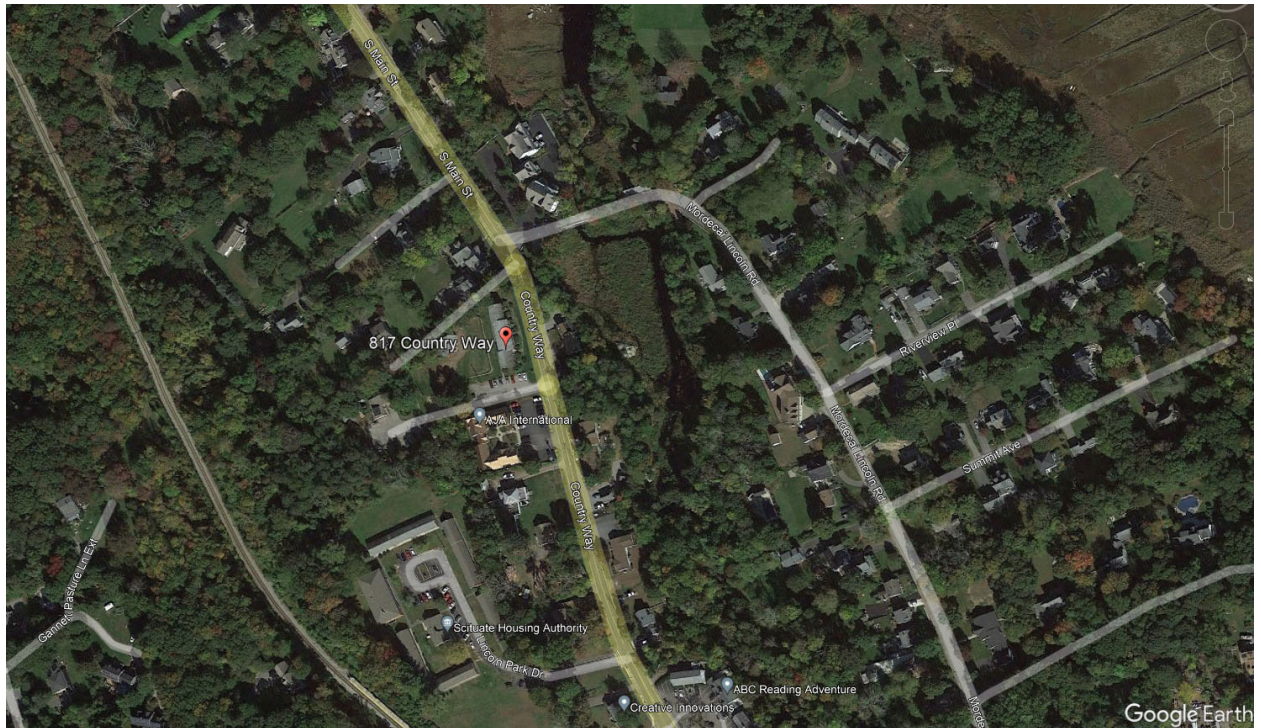
Table of Contents		2
Summary		3-4
Peak Flow Summary		5
Overall Site Analysis	Section I	
Peak Rate Analysis		
HydroCAD Report		6-509
	Section II	
Stormwater Management Standards		510-512
Mounding analysis		513-516
TSS Removal		517
Stormwater Compliance Checklist		518-525
Pre-Construction O&M		526-528
Post- Construction O&M		529-532
Deep Sump Catch Basin BMP		533-536
Subsurface Structures BMP		537-540
NRCS Soils Map		541-565
Site Plan, Erosion Control Plan & Catchment Plans		Attached

## 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 stormwater 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.

An update on the site plan has prompted the addition of a storage tank and the reconfiguration of previously proposed subsurface recharge structures.



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	6.25	4.18	3.17	1.38	0.68
DP4	0.34	0.20	0.14	0.06	0.04

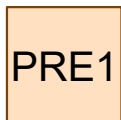
### DIFFERENCE

	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	1.91	0.96	0.49	0.49	0.60
DP4	2.34	1.54	1.14	0.64	0.46

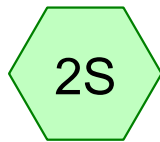
**Section I**  
**Overall Site Analysis**



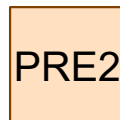
Pre 1



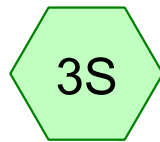
DP1pre



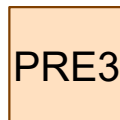
Pre 2



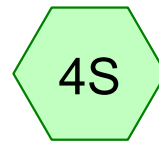
DP2pre



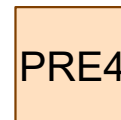
Pre 3



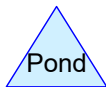
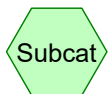
DP3pre



Pre 4



DP4pre



**Routing Diagram for 817 Country Way Pre**

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

## 817 Country Way Pre

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 2

### 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)
<b>106,985</b>	<b>78</b>	<b>TOTAL AREA</b>



# 817 Country Way Pre

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

## Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
106,985	HSG C	1S, 2S, 3S, 4S
0	HSG D	
0	Other	
<b>106,985</b>		<b>TOTAL AREA</b>

# 817 Country Way Pre

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

## Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Sub Num
0	0	43,800	0	0	43,800	>75% Grass cover, Good	
0	0	2,822	0	0	2,822	Gravel roads	
0	0	13,284	0	0	13,284	Paved parking	
0	0	8,204	0	0	8,204	Unconnected roofs	
0	0	38,875	0	0	38,875	Woods, Good	
<b>0</b>	<b>0</b>	<b>106,985</b>	<b>0</b>	<b>0</b>	<b>106,985</b>	<b>TOTAL AREA</b>	

# 817 Country Way Pre

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 5

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**

**817 Country Way Pre**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 6

**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

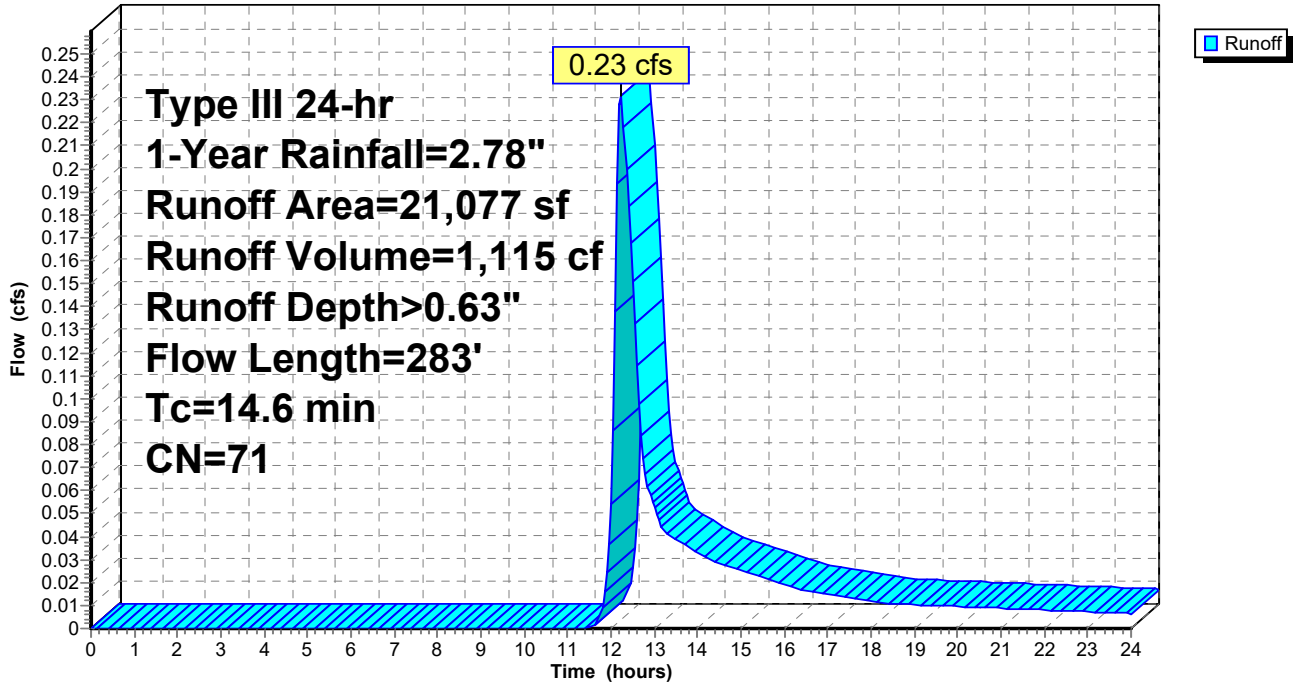
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 1-Year Rainfall=2.78"

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		<b>Sheet Flow, Grass</b> Grass: Bermuda n= 0.410 P2= 3.35"
0.1	14	0.0500	1.57		<b>Shallow Concentrated Flow, Grass</b> Short Grass Pasture Kv= 7.0 fps
1.7	73	0.0200	0.71		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
1.6	48	0.0100	0.50		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
1.9	98	0.0300	0.87		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
14.6	283	Total			

### Subcatchment 1S: Pre 1

Hydrograph



# 817 Country Way Pre

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 1-Year Rainfall=2.78"

Page 8

## 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"

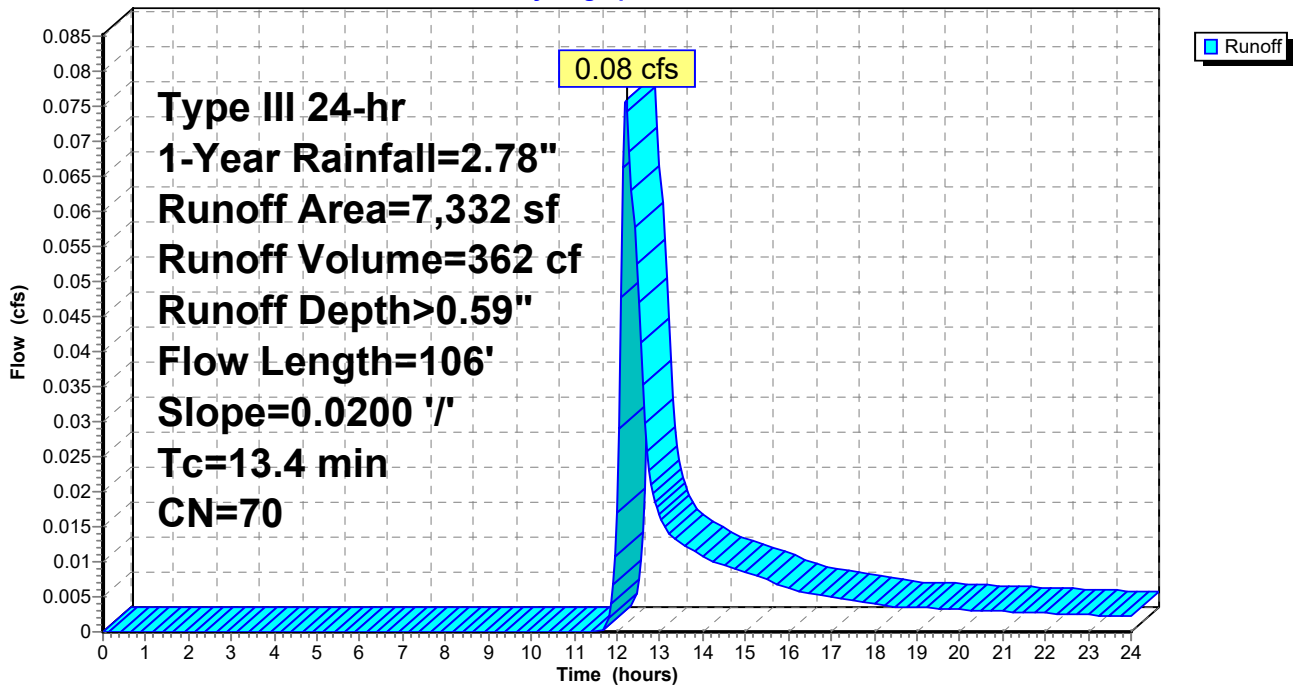
Area (sf)	CN	Description
7,332	70	Woods, Good, HSG C
7,332		100.00% Pervious Area

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

## Subcatchment 2S: Pre 2

Hydrograph



**817 Country Way Pre**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 9

**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

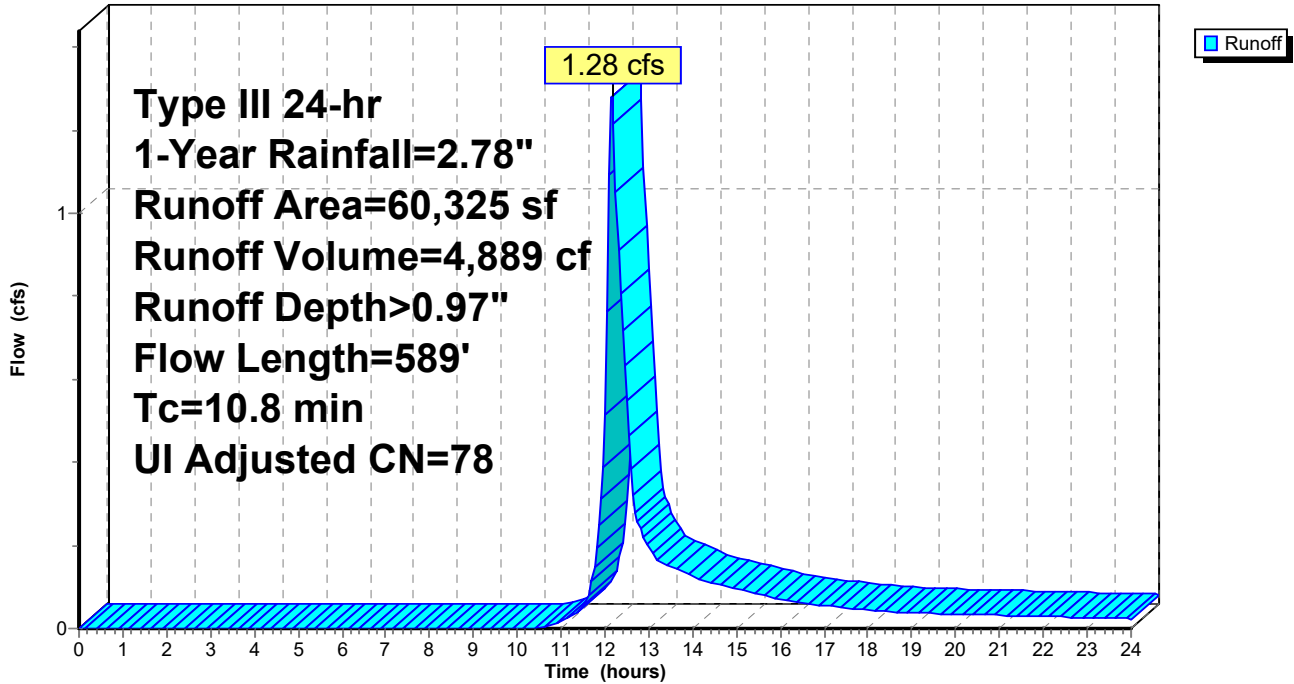
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 1-Year Rainfall=2.78"

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		<b>Sheet Flow, Woods</b> Woods: Light underbrush n= 0.400 P2= 3.35"
2.8	27	0.0800	0.16		<b>Sheet Flow, Grass</b> Grass: Dense n= 0.240 P2= 3.35"
0.9	56	0.0400	1.00		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
0.5	40	0.0400	1.40		<b>Shallow Concentrated Flow, Grass</b> Short Grass Pasture Kv= 7.0 fps
0.8	88	0.0700	1.85		<b>Shallow Concentrated Flow, Grass</b> Short Grass Pasture Kv= 7.0 fps
0.6	138	0.0400	4.06		<b>Shallow Concentrated Flow, Asphalt</b> Paved Kv= 20.3 fps
1.5	217	0.0140	2.40		<b>Shallow Concentrated Flow, Gutter</b> Paved Kv= 20.3 fps
10.8	589	Total			

Subcatchment 3S: Pre 3

Hydrograph





**817 Country Way Pre**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 11

**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"

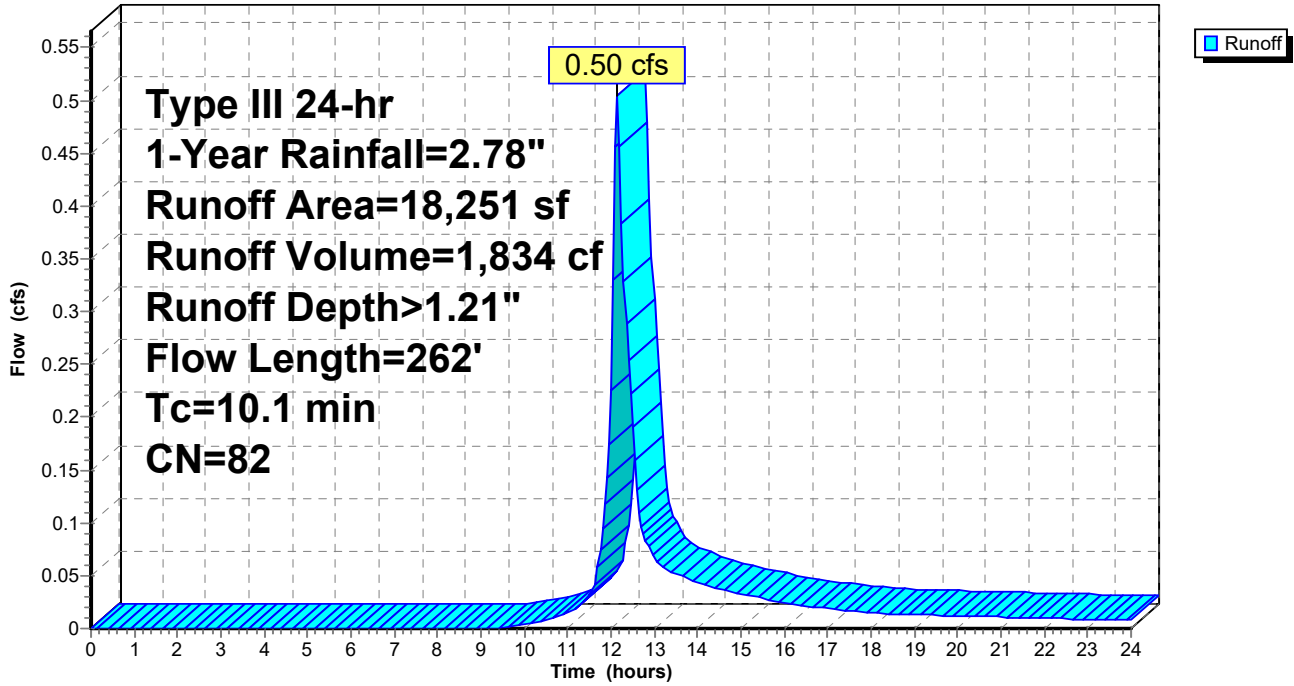
Area (sf)	CN	Description
1,411	89	Gravel roads, HSG C
1,010	98	Unconnected roofs, HSG C
6,825	74	>75% Grass cover, Good, HSG C
3,994	70	Woods, Good, HSG C
5,011	98	Paved parking, HSG C
18,251	82	Weighted Average
12,230		67.01% Pervious Area
6,021		32.99% Impervious Area
1,010		16.77% Unconnected

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

Subcatchment 4S: Pre 4

Hydrograph



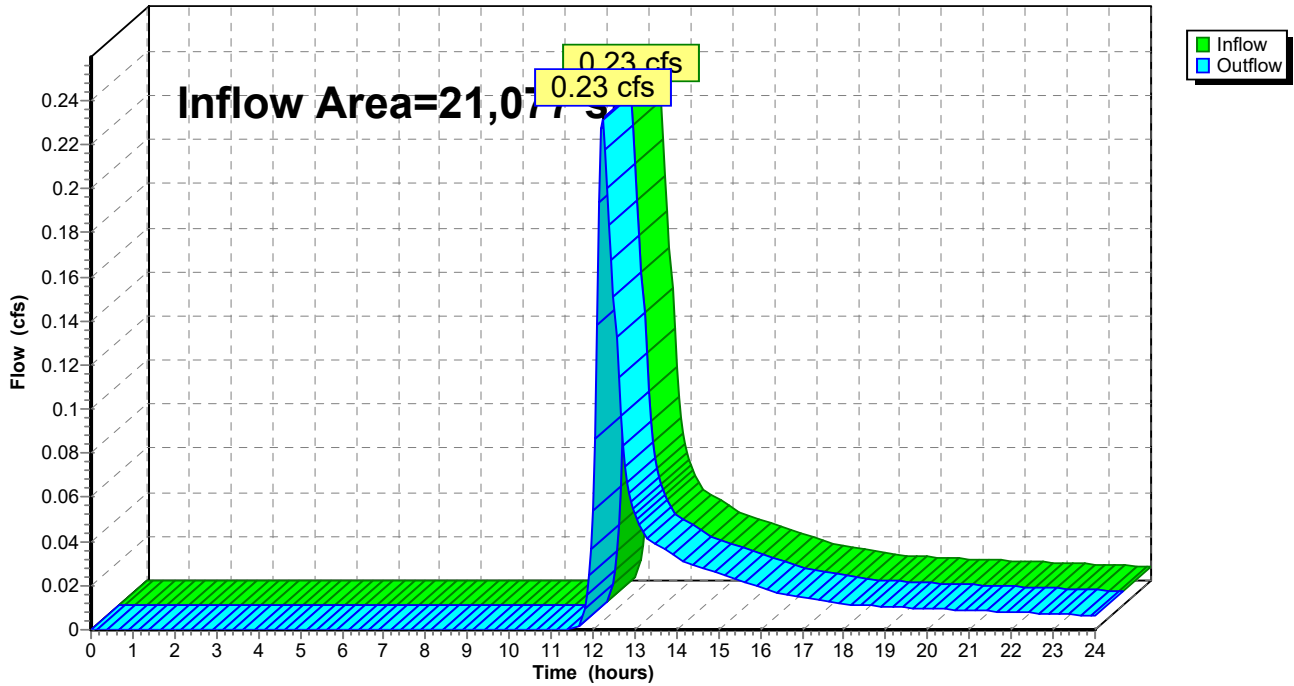
### Summary for Reach PRE1: DP1pre

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

Hydrograph



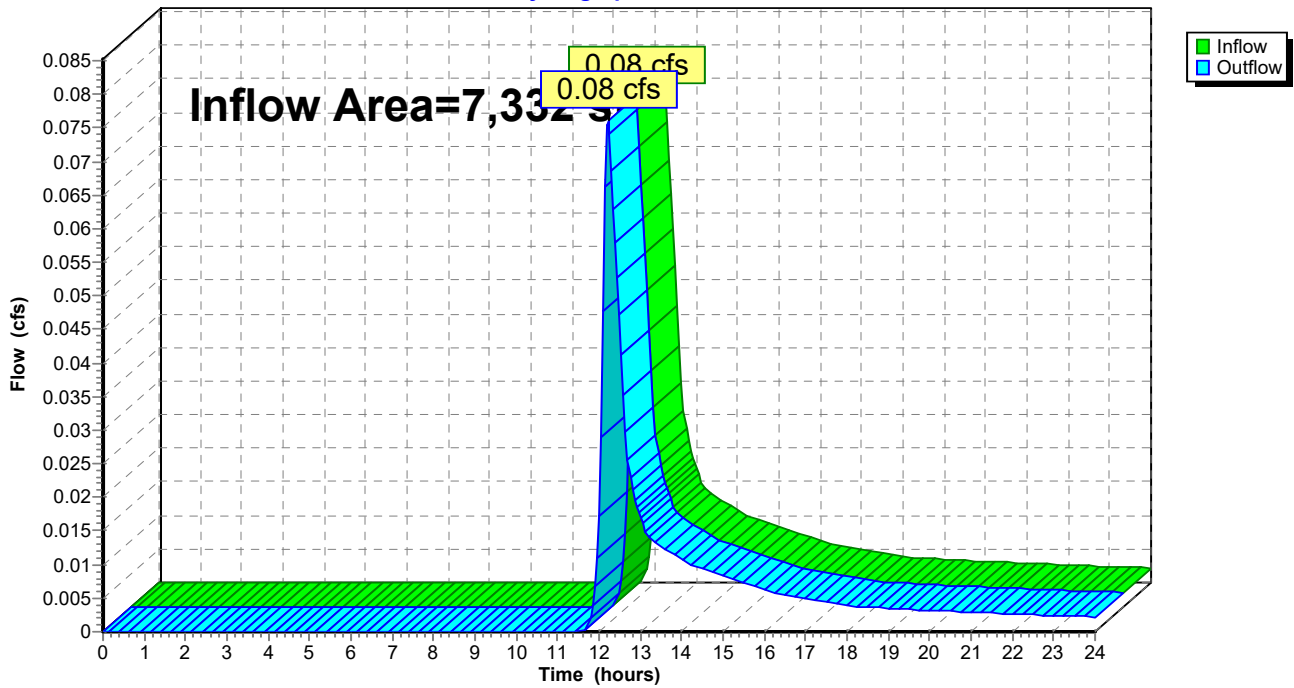
### Summary for Reach PRE2: DP2pre

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

Hydrograph

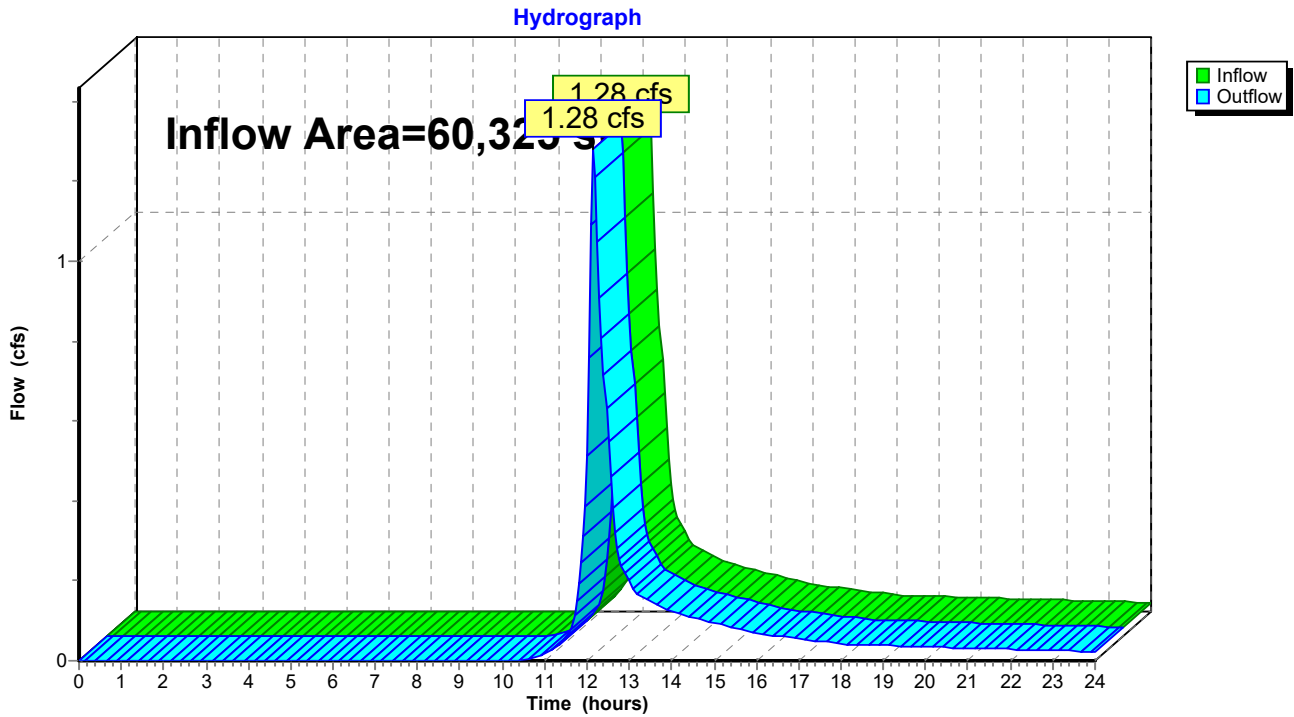


### Summary for Reach PRE3: DP3pre

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



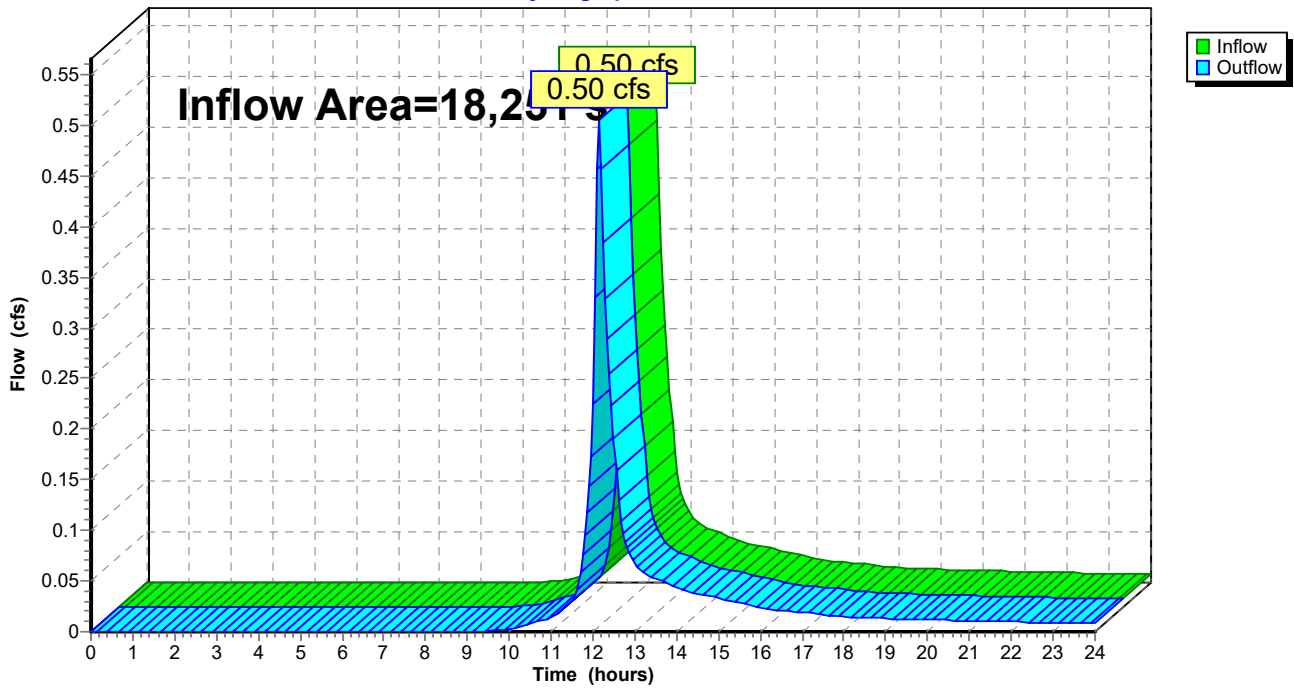
### Summary for Reach PRE4: DP4pre

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

Hydrograph



# 817 Country Way Pre

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 17

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

<b>Subcatchment 1S: Pre 1</b>	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
<b>Subcatchment 2S: Pre 2</b>	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
<b>Subcatchment 3S: Pre 3</b>	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
<b>Subcatchment 4S: Pre 4</b>	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
<b>Reach PRE1: DP1pre</b>	Inflow=0.38 cfs 1,697 cf Outflow=0.38 cfs 1,697 cf
<b>Reach PRE2: DP2pre</b>	Inflow=0.13 cfs 558 cf Outflow=0.13 cfs 558 cf
<b>Reach PRE3: DP3pre</b>	Inflow=1.87 cfs 6,944 cf Outflow=1.87 cfs 6,944 cf
<b>Reach PRE4: DP4pre</b>	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**

**817 Country Way Pre**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 18

**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"

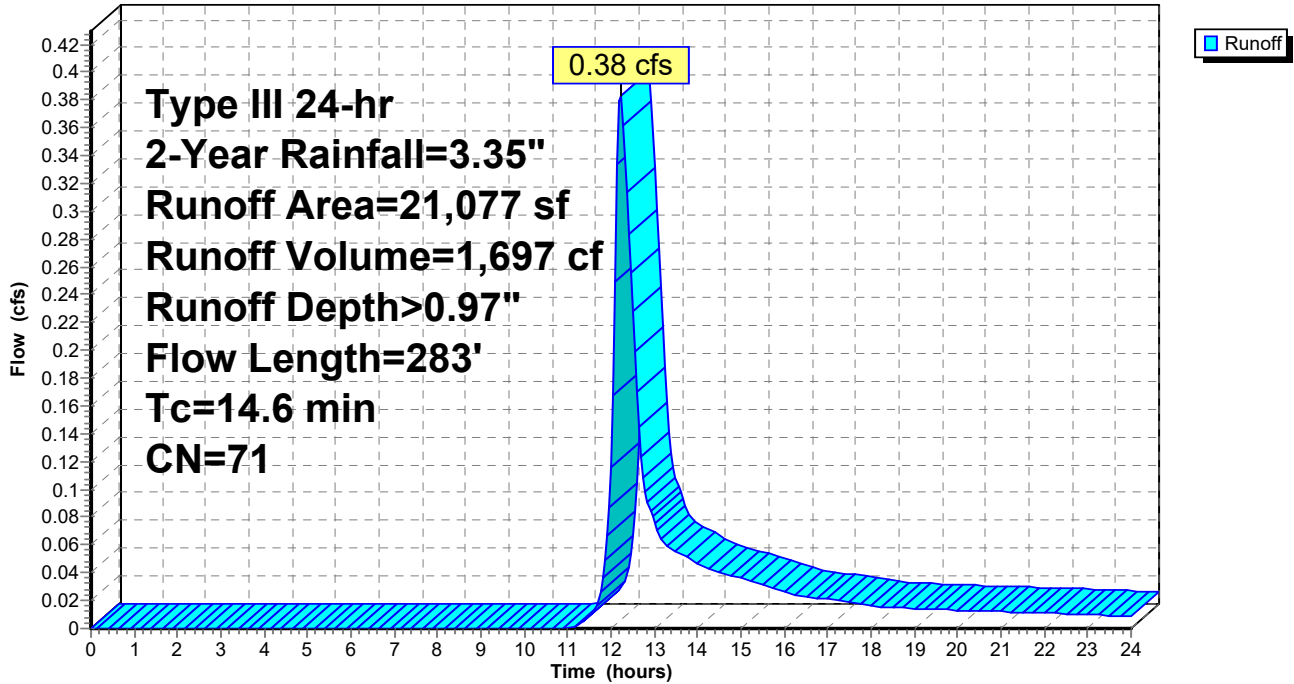
Area (sf)	CN	Description
298	98	Unconnected roofs, HSG C
1,495	74	>75% Grass cover, Good, HSG C
19,182	70	Woods, Good, HSG C
102	98	Paved parking, HSG C
21,077	71	Weighted Average
20,677		98.10% Pervious Area
400		1.90% Impervious Area
298		74.50% Unconnected

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



### Subcatchment 1S: Pre 1

Hydrograph



**817 Country Way Pre**

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 2-Year Rainfall=3.35"

**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"

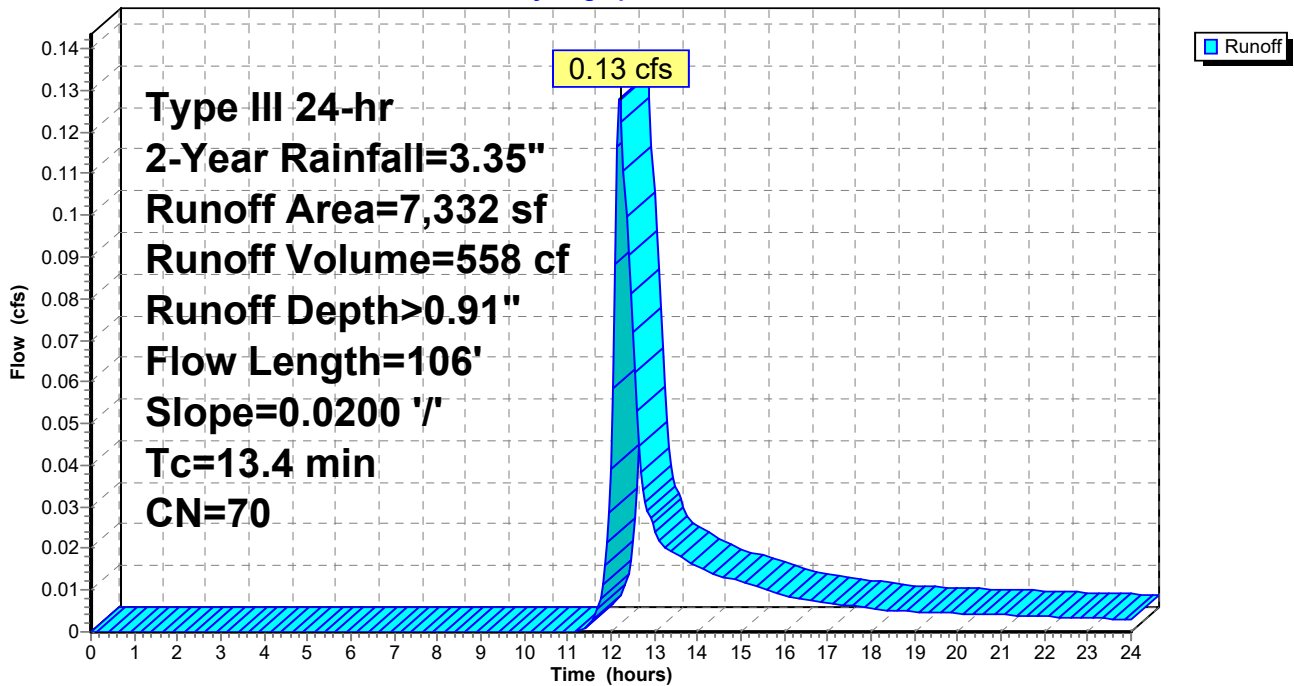
Area (sf)	CN	Description
7,332	70	Woods, Good, HSG C
7,332		100.00% Pervious Area

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

**Subcatchment 2S: Pre 2**

Hydrograph



**817 Country Way Pre**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 21

**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

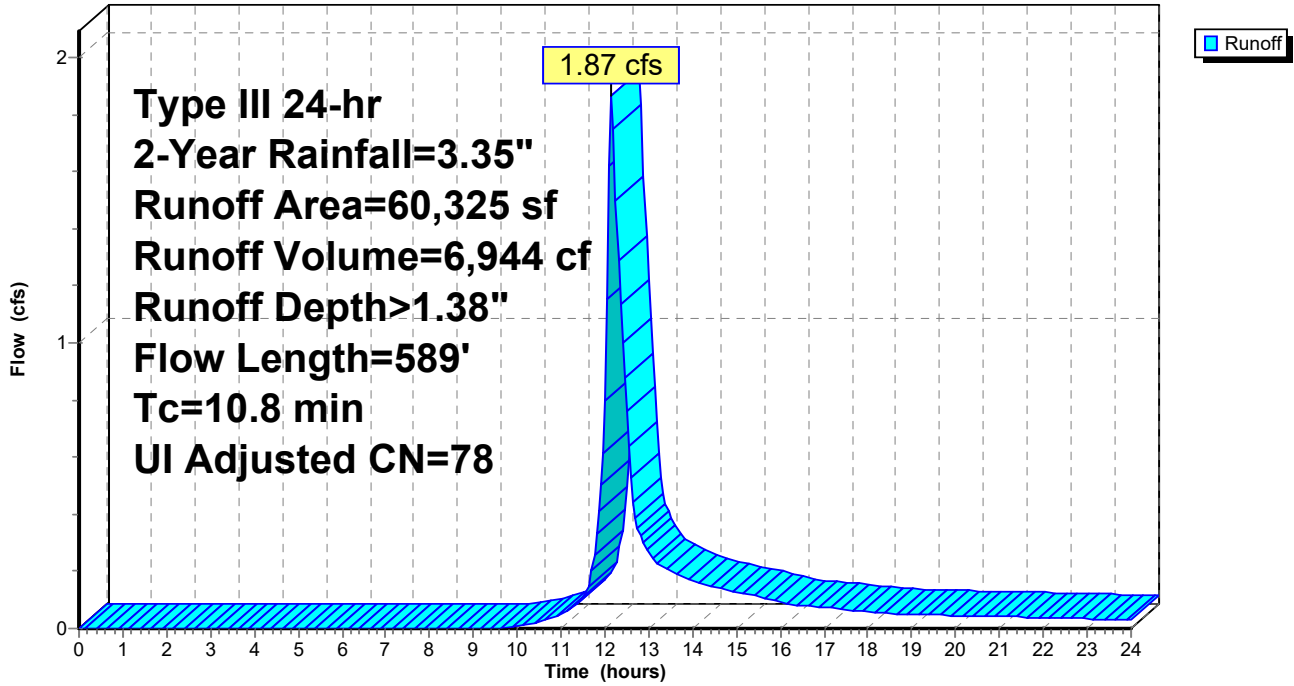
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2-Year Rainfall=3.35"

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		<b>Sheet Flow, Woods</b> Woods: Light underbrush n= 0.400 P2= 3.35"
2.8	27	0.0800	0.16		<b>Sheet Flow, Grass</b> Grass: Dense n= 0.240 P2= 3.35"
0.9	56	0.0400	1.00		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
0.5	40	0.0400	1.40		<b>Shallow Concentrated Flow, Grass</b> Short Grass Pasture Kv= 7.0 fps
0.8	88	0.0700	1.85		<b>Shallow Concentrated Flow, Grass</b> Short Grass Pasture Kv= 7.0 fps
0.6	138	0.0400	4.06		<b>Shallow Concentrated Flow, Asphalt</b> Paved Kv= 20.3 fps
1.5	217	0.0140	2.40		<b>Shallow Concentrated Flow, Gutter</b> Paved Kv= 20.3 fps
10.8	589	Total			

Subcatchment 3S: Pre 3

Hydrograph



**817 Country Way Pre**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 23

**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

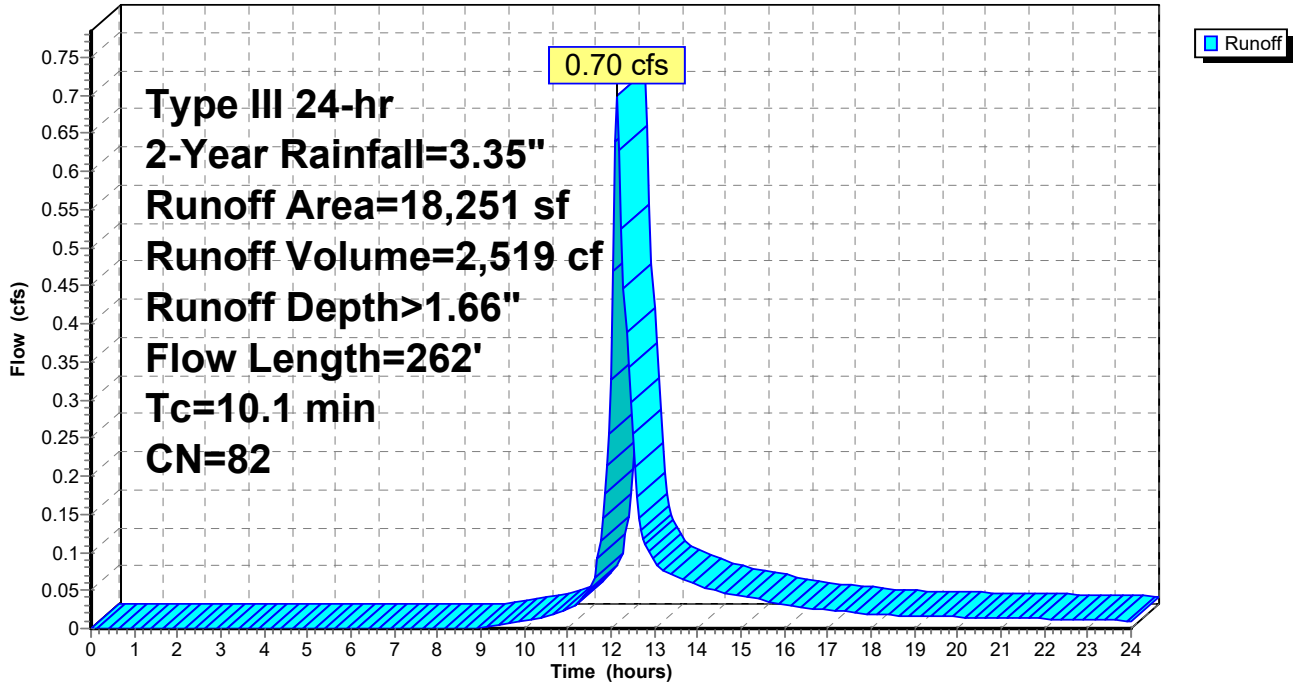
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2-Year Rainfall=3.35"

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		<b>Sheet Flow, Grass</b> Grass: Bermuda n= 0.410 P2= 3.35"
0.1	10	0.0400	3.22		<b>Shallow Concentrated Flow, Gravel</b> Unpaved Kv= 16.1 fps
0.4	88	0.0400	4.06		<b>Shallow Concentrated Flow, Asphalt</b> Paved Kv= 20.3 fps
0.5	42	0.0400	1.40		<b>Shallow Concentrated Flow, Grass</b> Short Grass Pasture Kv= 7.0 fps
0.7	42	0.0400	1.00		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
1.0	30	0.0100	0.50		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
10.1	262	Total			

Subcatchment 4S: Pre 4

Hydrograph



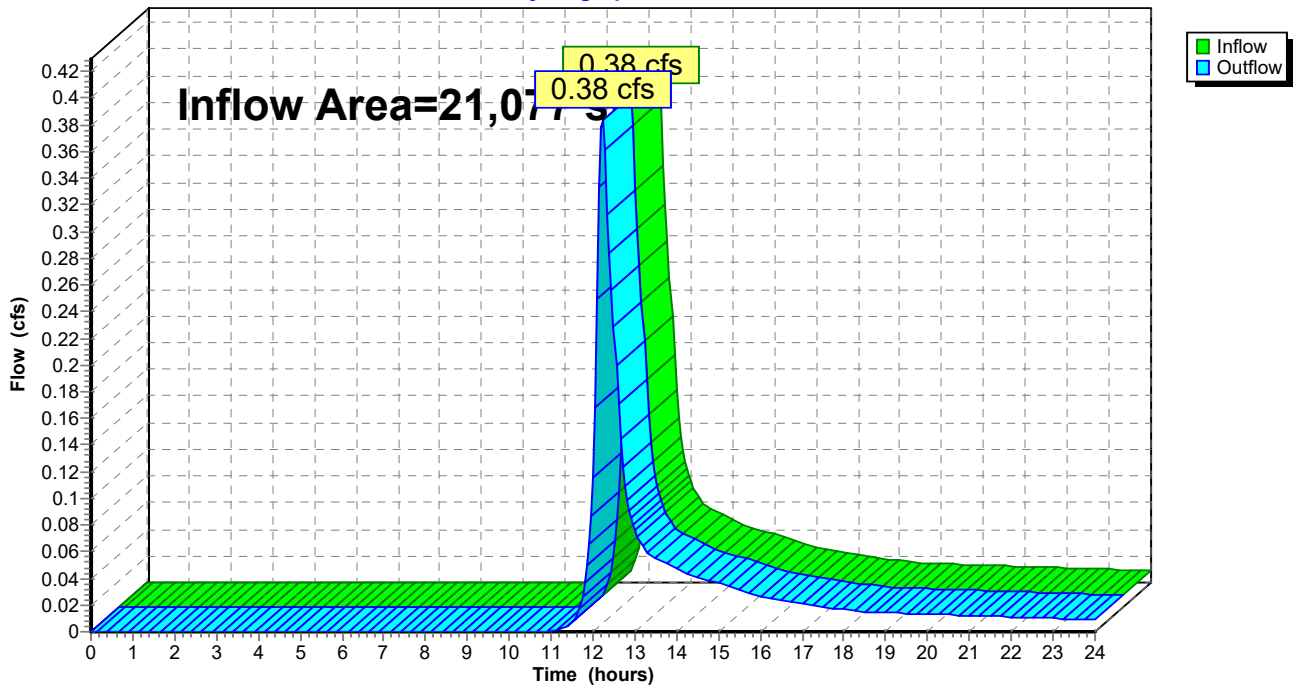
### Summary for Reach PRE1: DP1pre

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

Hydrograph



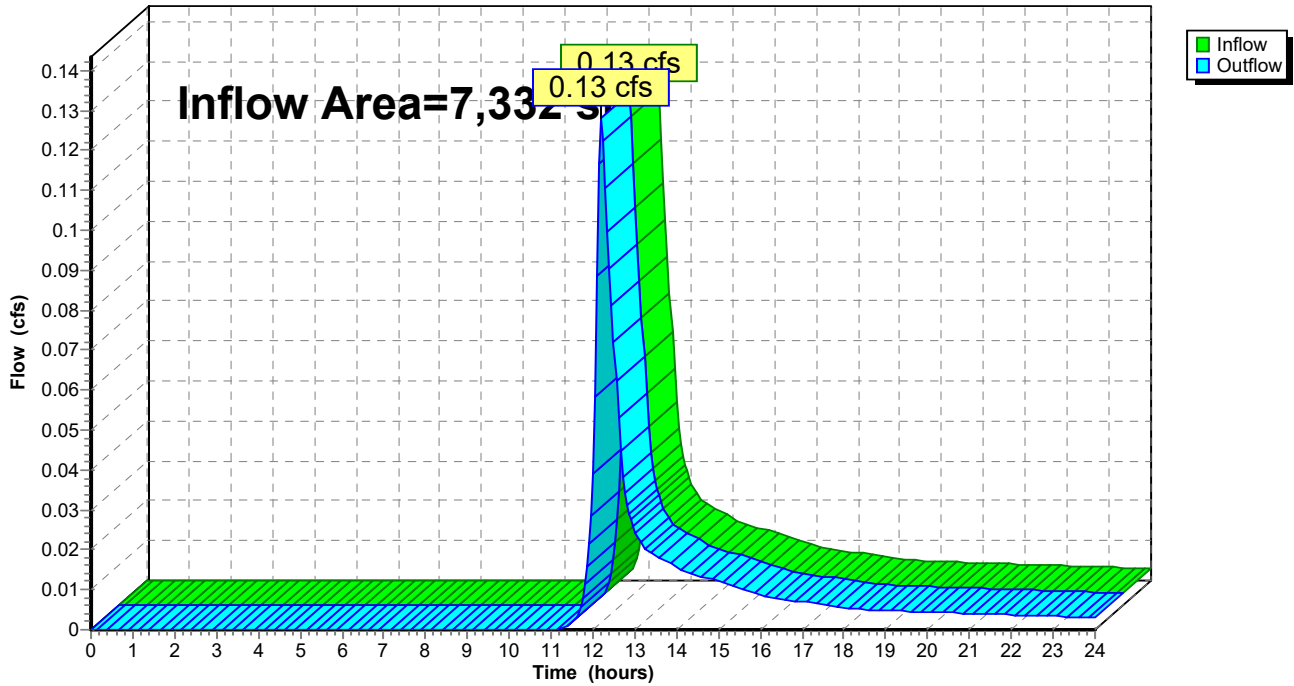
### Summary for Reach PRE2: DP2pre

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

Hydrograph



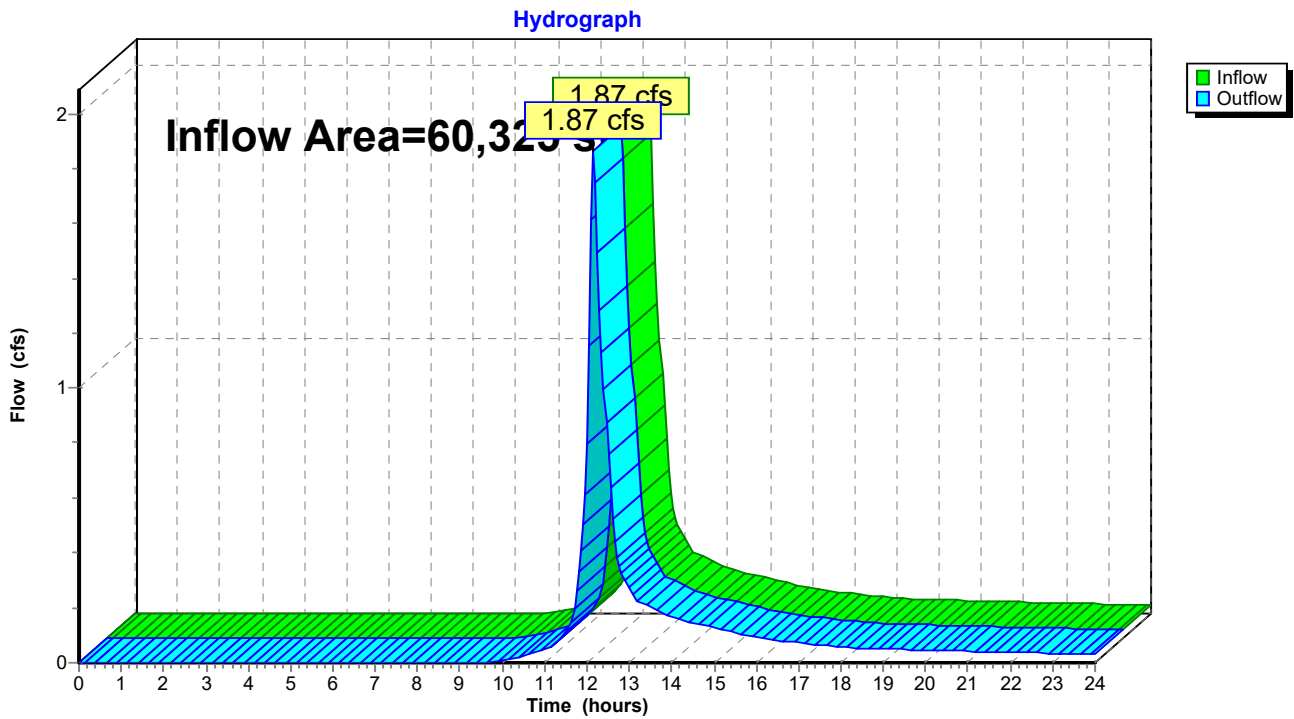


### Summary for Reach PRE3: DP3pre

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



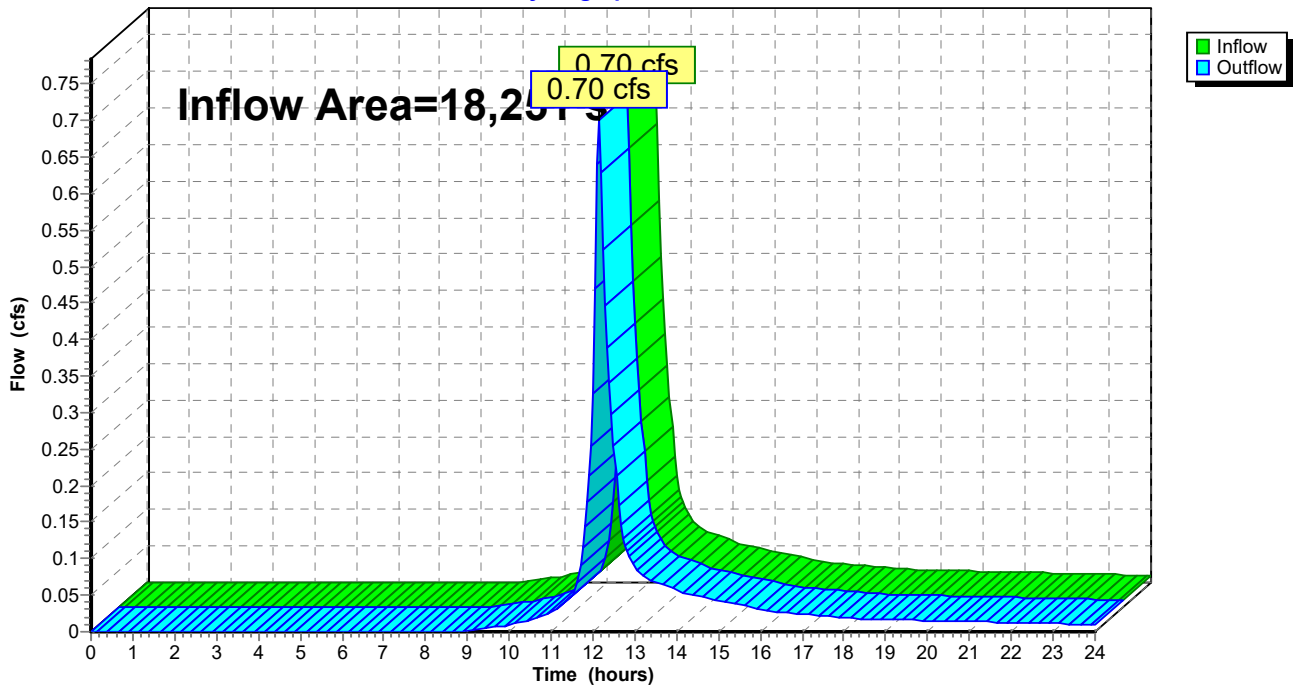
### Summary for Reach PRE4: DP4pre

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

Hydrograph



# 817 Country Way Pre

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 29

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**

**817 Country Way Pre**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 30

**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

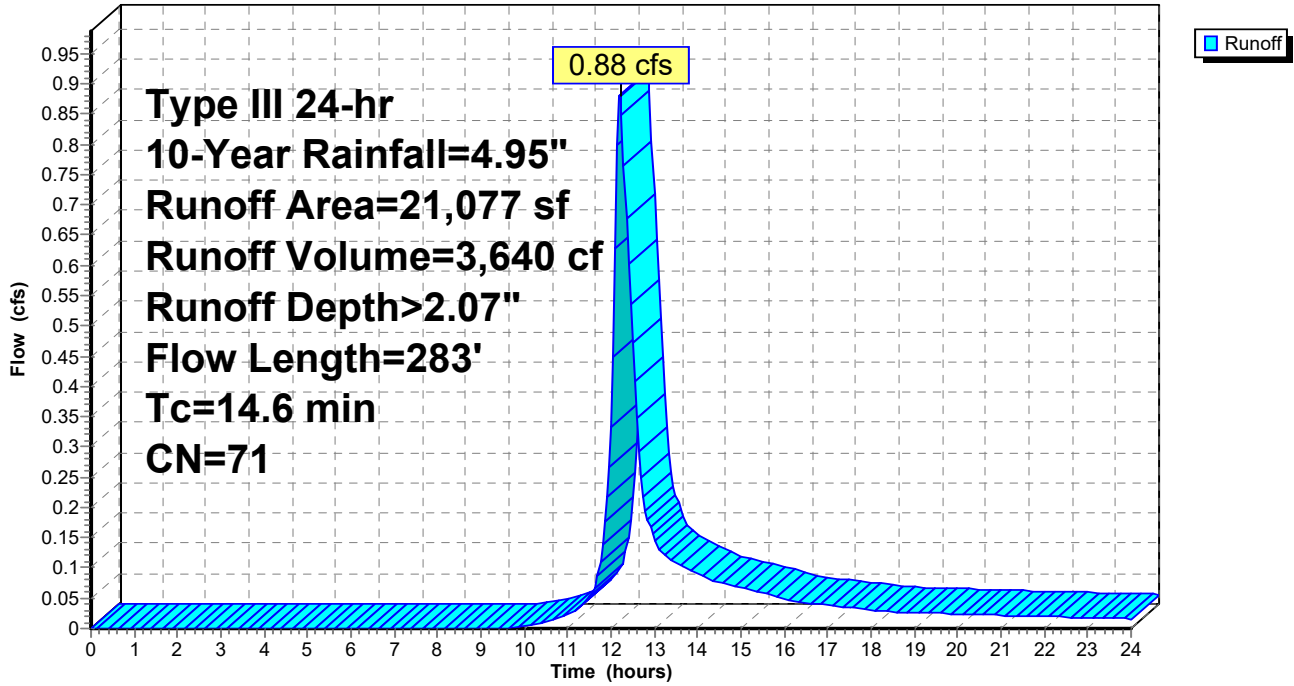
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-Year Rainfall=4.95"

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		<b>Sheet Flow, Grass</b> Grass: Bermuda n= 0.410 P2= 3.35"
0.1	14	0.0500	1.57		<b>Shallow Concentrated Flow, Grass</b> Short Grass Pasture Kv= 7.0 fps
1.7	73	0.0200	0.71		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
1.6	48	0.0100	0.50		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
1.9	98	0.0300	0.87		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
14.6	283	Total			

### Subcatchment 1S: Pre 1

Hydrograph



**817 Country Way Pre**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**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"

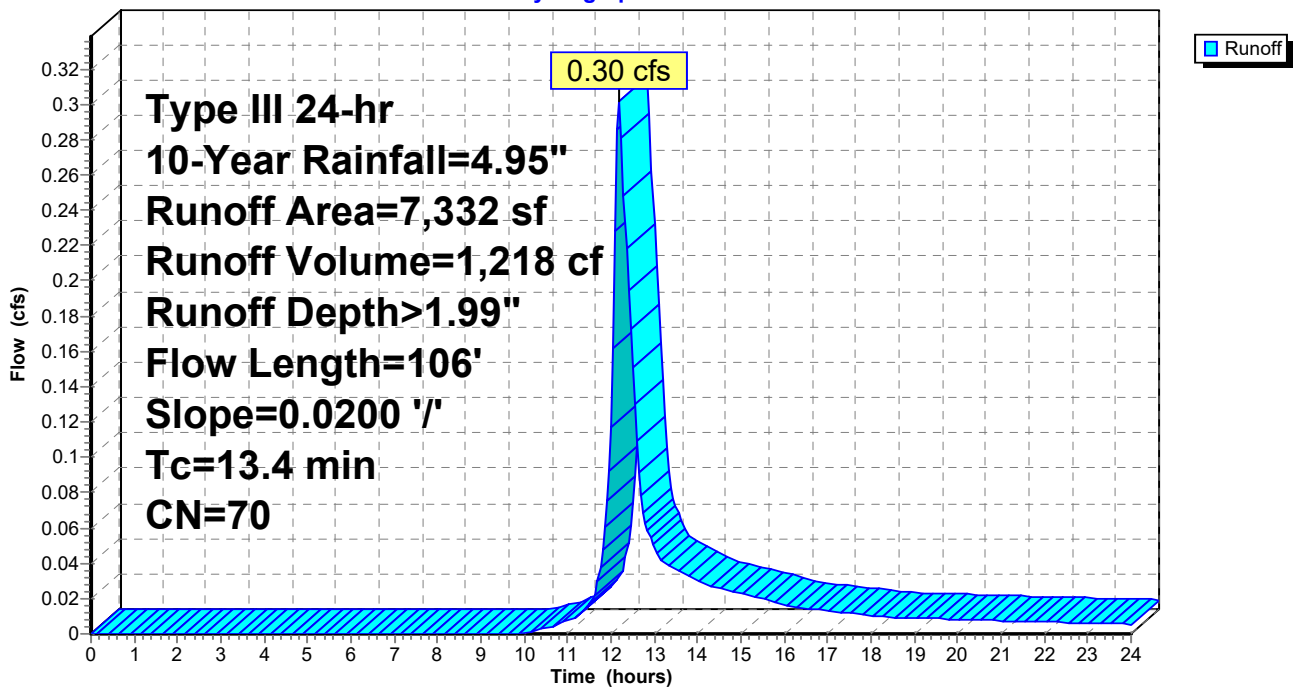
Area (sf)	CN	Description
7,332	70	Woods, Good, HSG C
7,332		100.00% Pervious Area

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

**Subcatchment 2S: Pre 2**

Hydrograph



**817 Country Way Pre**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 33

**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

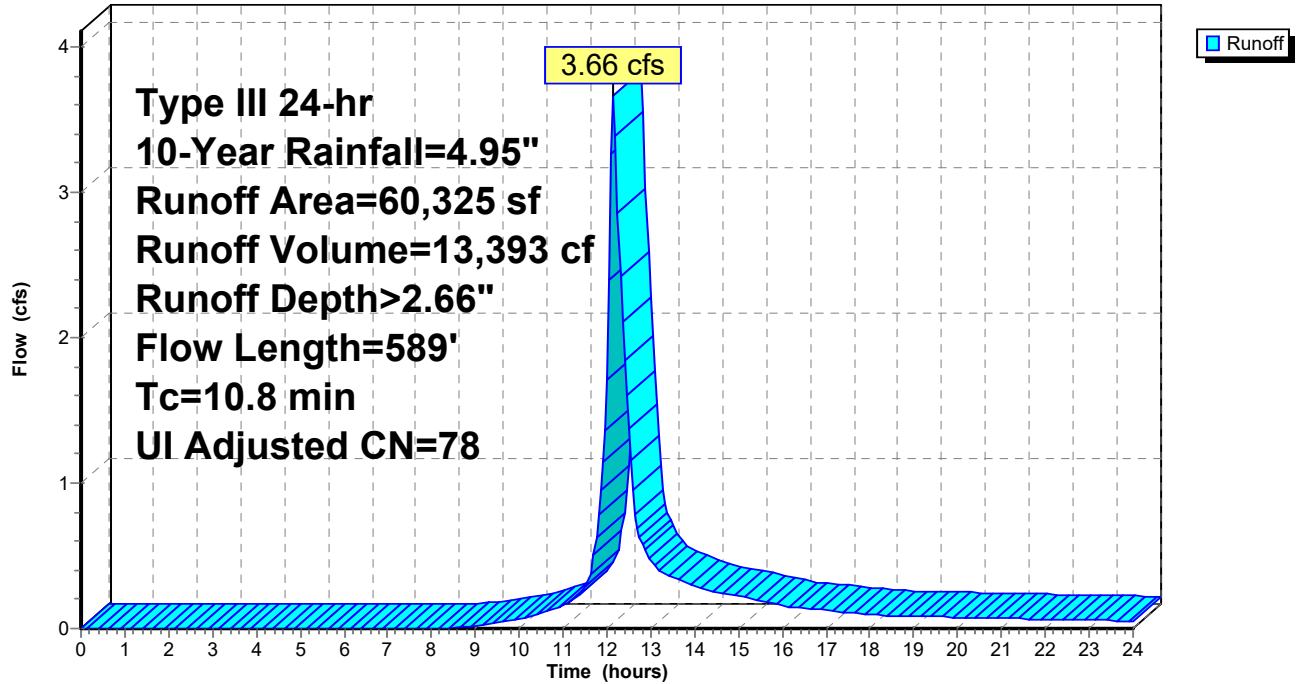
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10-Year Rainfall=4.95"

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		<b>Sheet Flow, Woods</b> Woods: Light underbrush n= 0.400 P2= 3.35"
2.8	27	0.0800	0.16		<b>Sheet Flow, Grass</b> Grass: Dense n= 0.240 P2= 3.35"
0.9	56	0.0400	1.00		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
0.5	40	0.0400	1.40		<b>Shallow Concentrated Flow, Grass</b> Short Grass Pasture Kv= 7.0 fps
0.8	88	0.0700	1.85		<b>Shallow Concentrated Flow, Grass</b> Short Grass Pasture Kv= 7.0 fps
0.6	138	0.0400	4.06		<b>Shallow Concentrated Flow, Asphalt</b> Paved Kv= 20.3 fps
1.5	217	0.0140	2.40		<b>Shallow Concentrated Flow, Gutter</b> Paved Kv= 20.3 fps
10.8	589	Total			

### Subcatchment 3S: Pre 3

Hydrograph





**817 Country Way Pre**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 35

**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

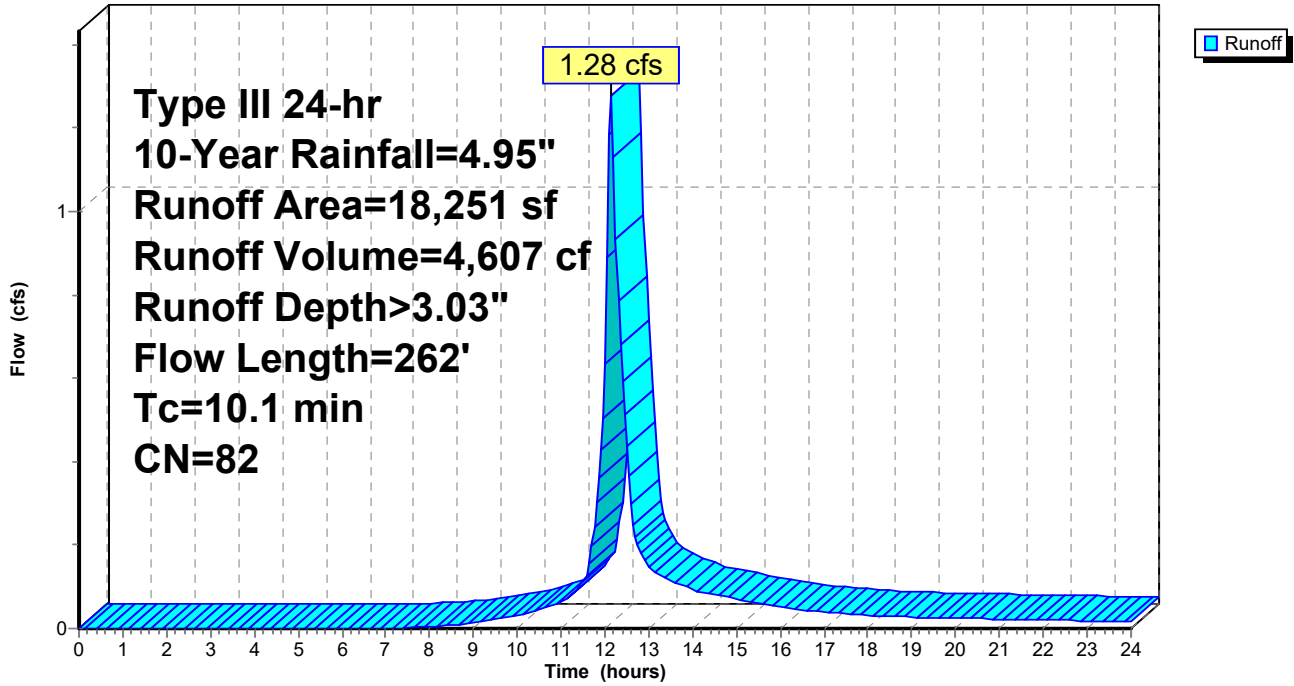
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-Year Rainfall=4.95"

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		<b>Sheet Flow, Grass</b> Grass: Bermuda n= 0.410 P2= 3.35"
0.1	10	0.0400	3.22		<b>Shallow Concentrated Flow, Gravel</b> Unpaved Kv= 16.1 fps
0.4	88	0.0400	4.06		<b>Shallow Concentrated Flow, Asphalt</b> Paved Kv= 20.3 fps
0.5	42	0.0400	1.40		<b>Shallow Concentrated Flow, Grass</b> Short Grass Pasture Kv= 7.0 fps
0.7	42	0.0400	1.00		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
1.0	30	0.0100	0.50		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
10.1	262	Total			

Subcatchment 4S: Pre 4

Hydrograph



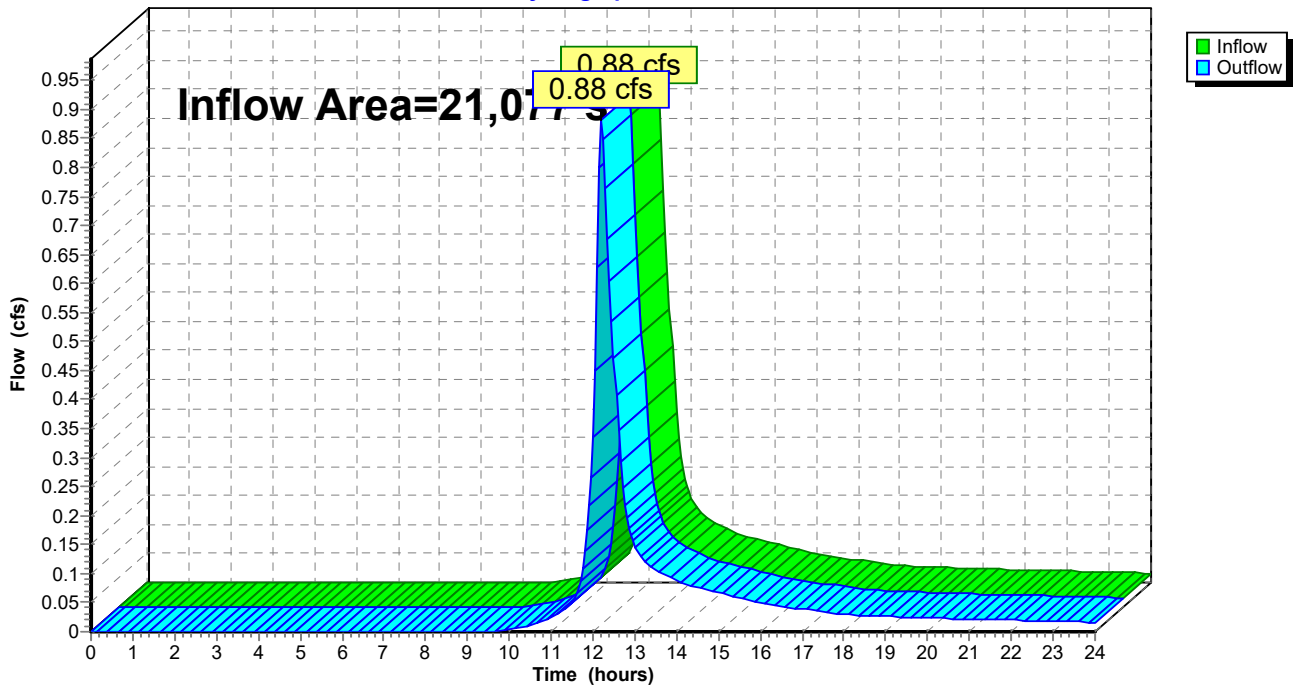
### Summary for Reach PRE1: DP1pre

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

Hydrograph



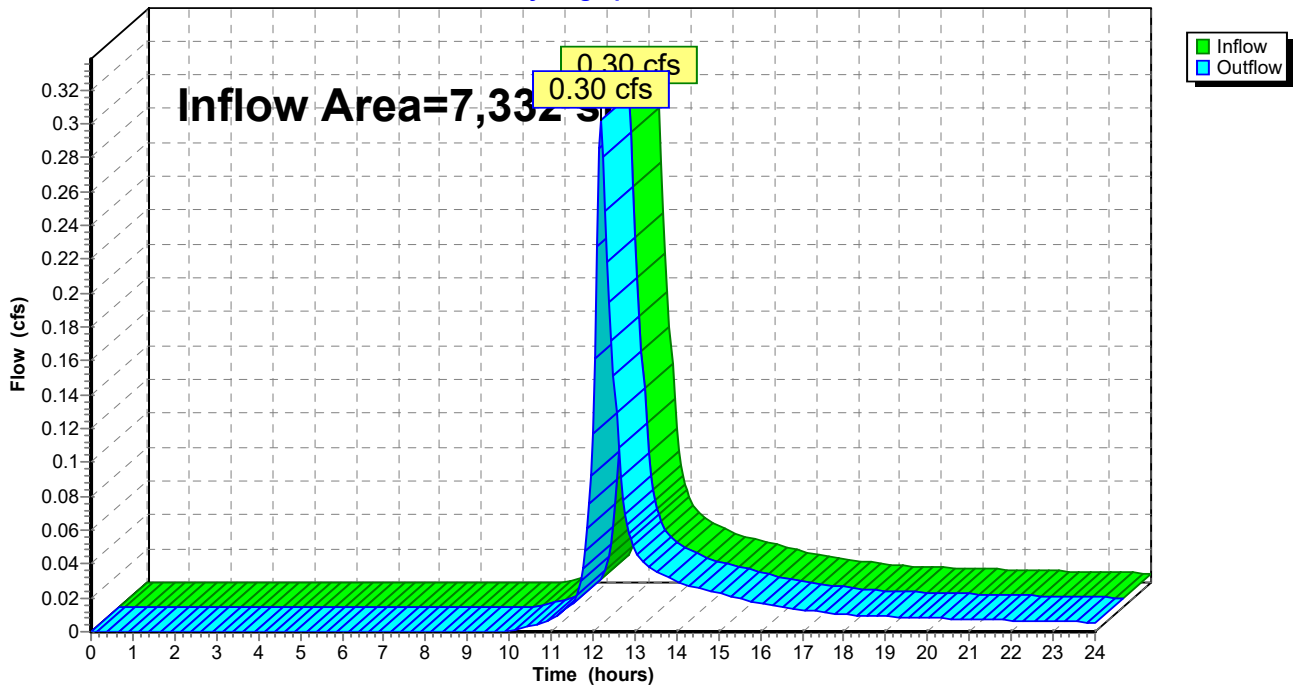
### Summary for Reach PRE2: DP2pre

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

Hydrograph

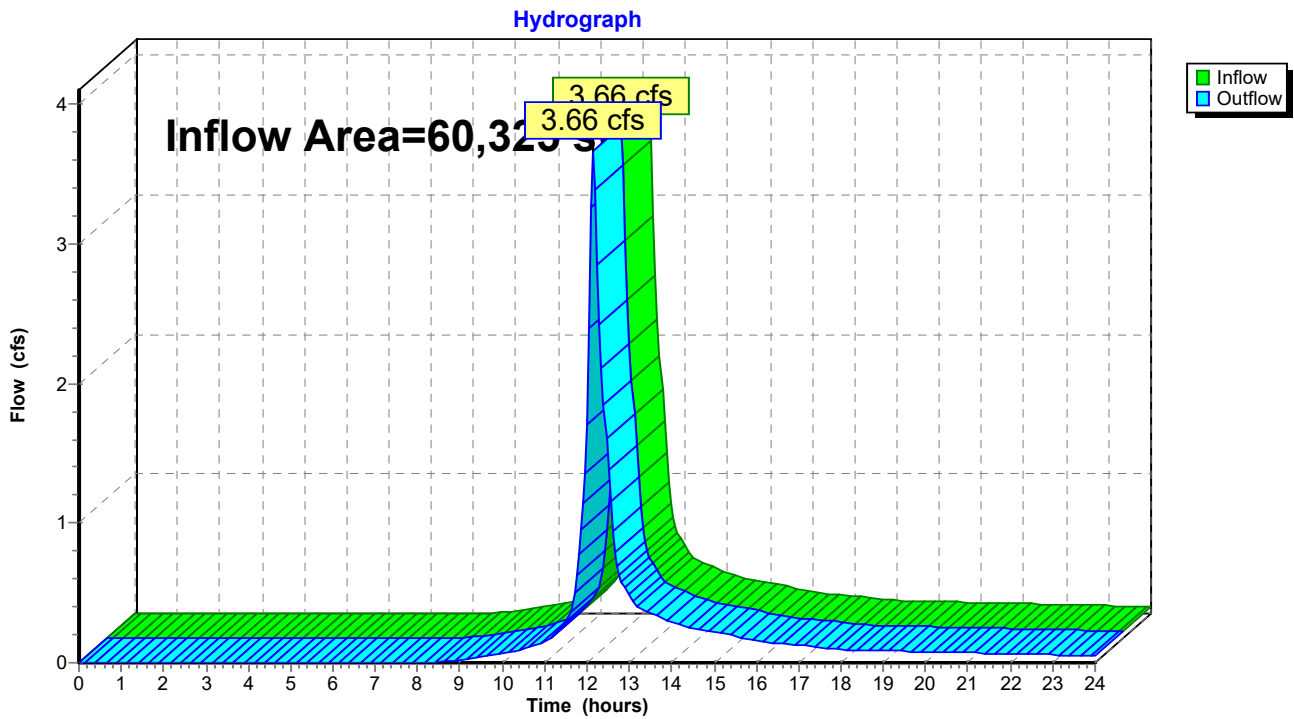


### Summary for Reach PRE3: DP3pre

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

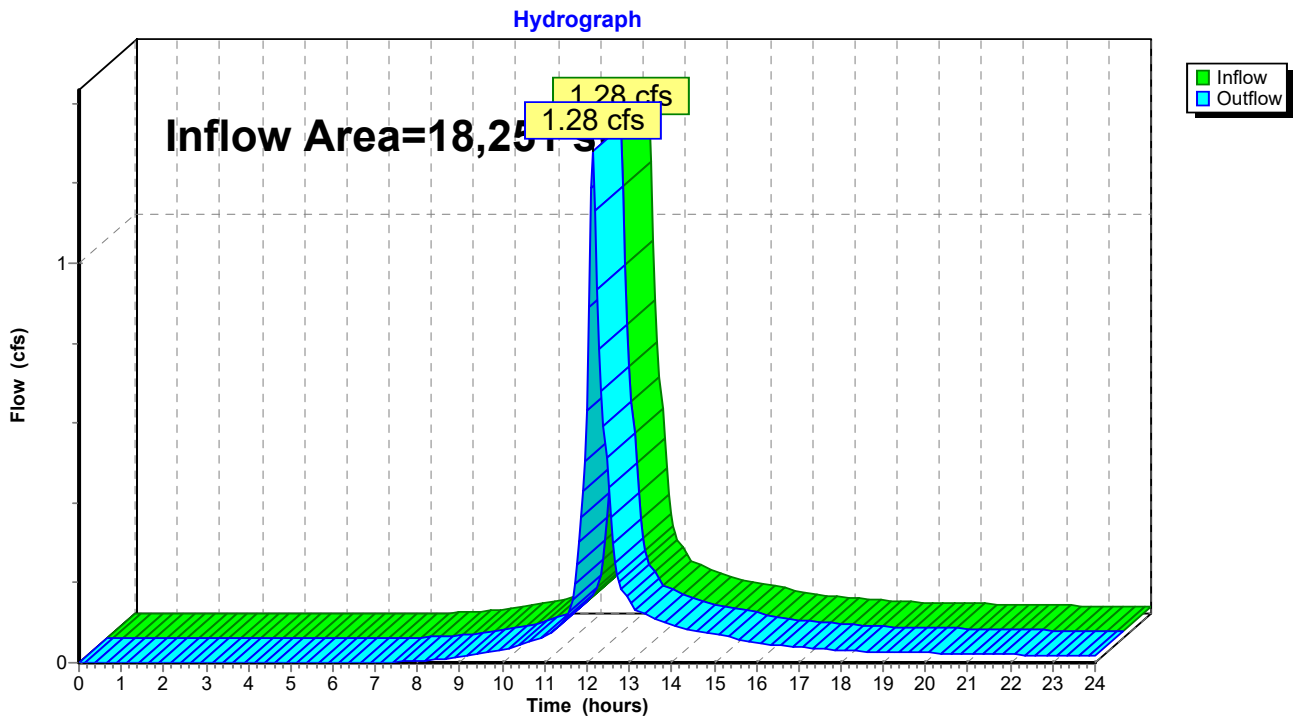


### Summary for Reach PRE4: DP4pre

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



# 817 Country Way Pre

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 41

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**

**817 Country Way Pre**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 42

**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"

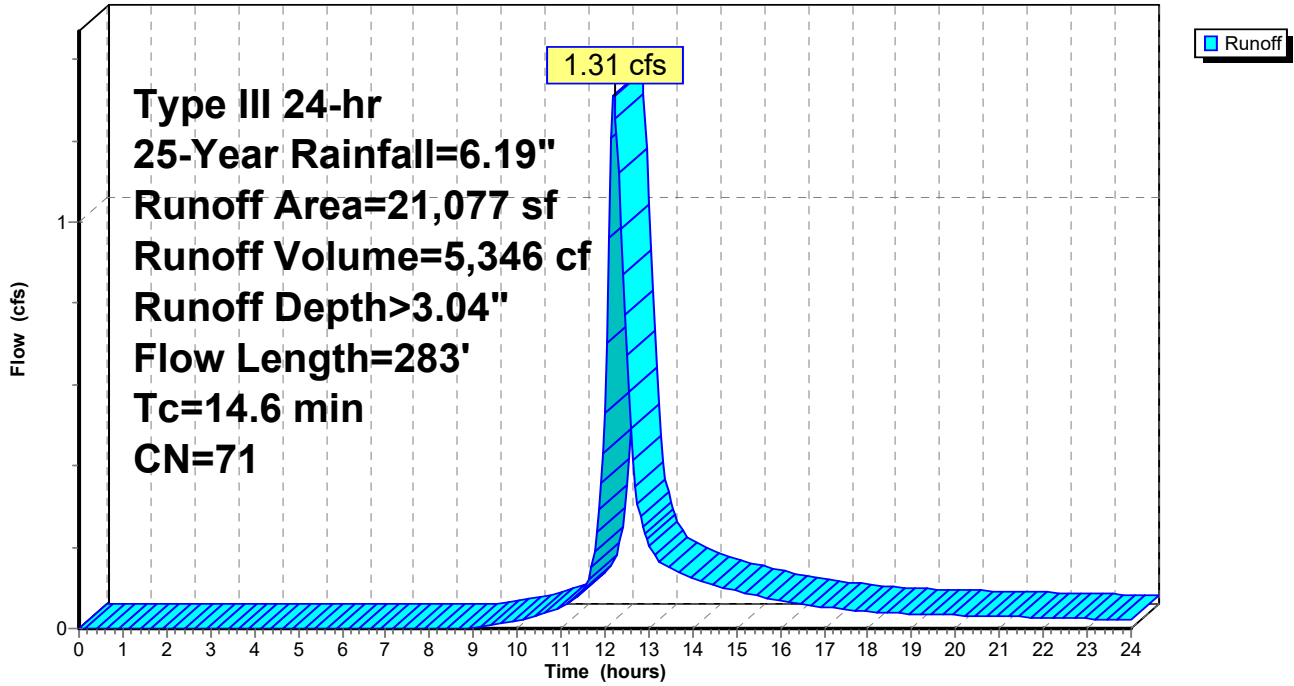
Area (sf)	CN	Description
298	98	Unconnected roofs, HSG C
1,495	74	>75% Grass cover, Good, HSG C
19,182	70	Woods, Good, HSG C
102	98	Paved parking, HSG C
21,077	71	Weighted Average
20,677		98.10% Pervious Area
400		1.90% Impervious Area
298		74.50% Unconnected

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



Subcatchment 1S: Pre 1

Hydrograph



**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"

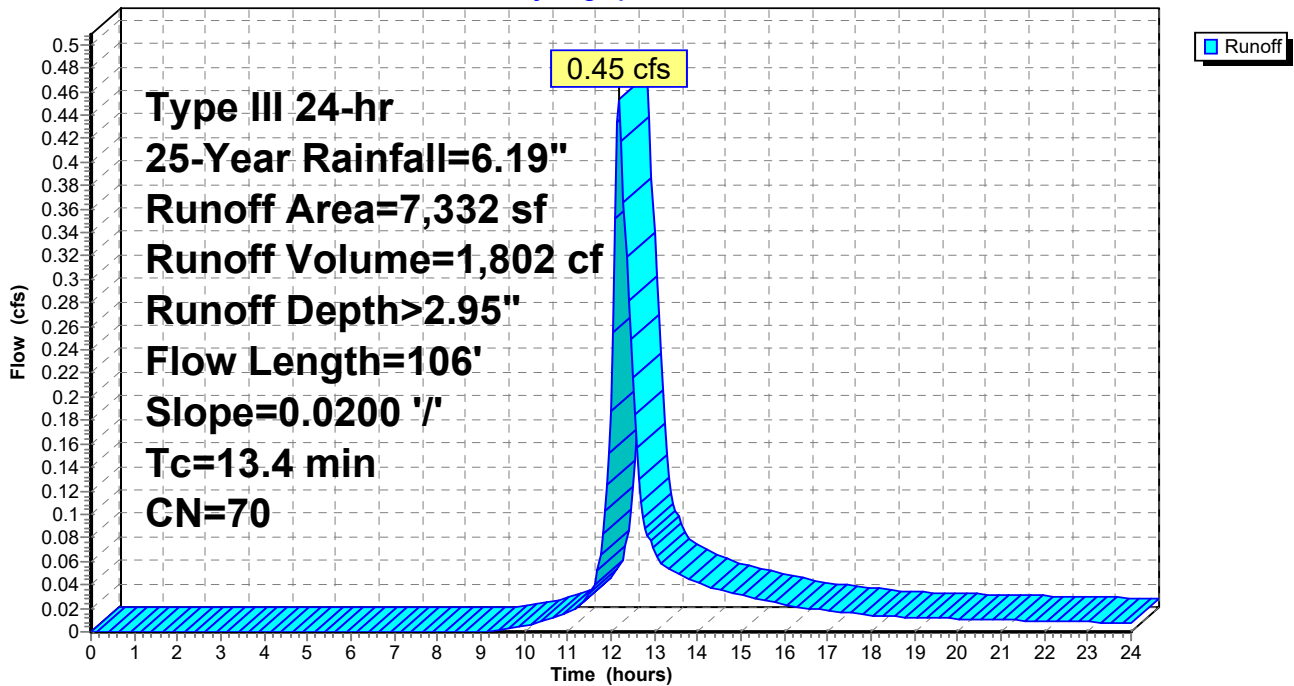
Area (sf)	CN	Description
7,332	70	Woods, Good, HSG C
7,332		100.00% Pervious Area

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

**Subcatchment 2S: Pre 2**

Hydrograph



**817 Country Way Pre**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 45

**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

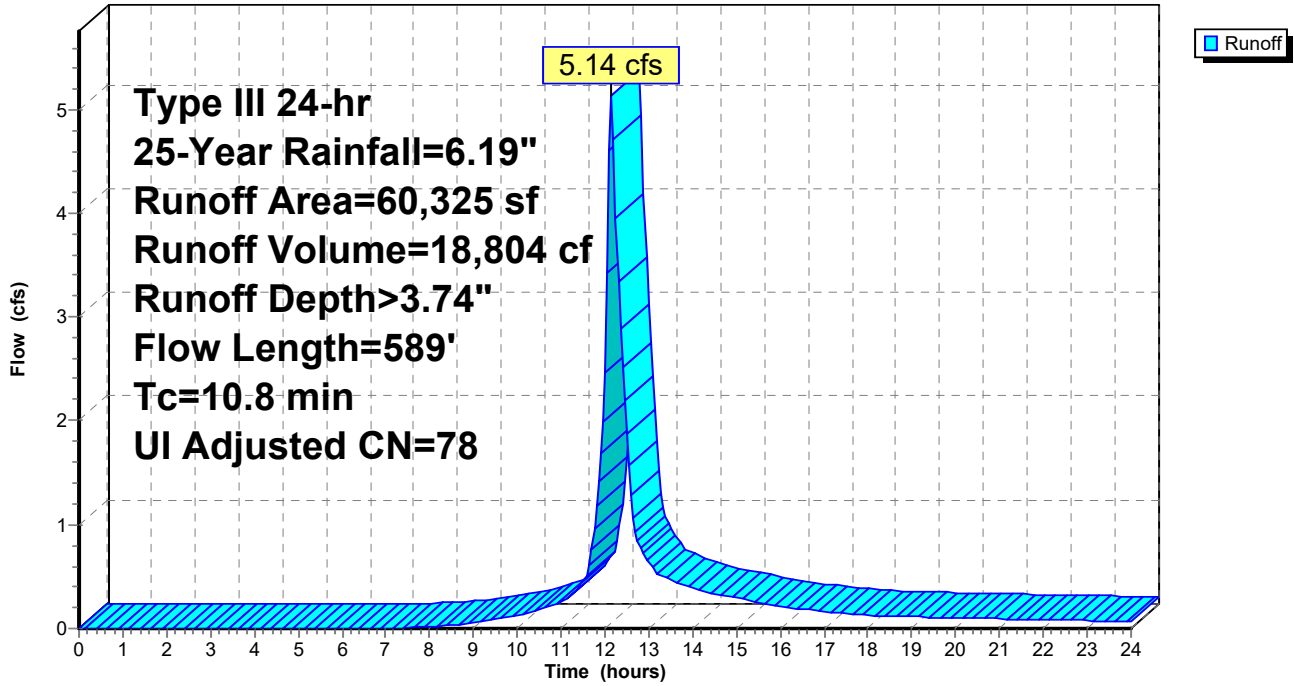
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 25-Year Rainfall=6.19"

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		<b>Sheet Flow, Woods</b> Woods: Light underbrush n= 0.400 P2= 3.35"
2.8	27	0.0800	0.16		<b>Sheet Flow, Grass</b> Grass: Dense n= 0.240 P2= 3.35"
0.9	56	0.0400	1.00		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
0.5	40	0.0400	1.40		<b>Shallow Concentrated Flow, Grass</b> Short Grass Pasture Kv= 7.0 fps
0.8	88	0.0700	1.85		<b>Shallow Concentrated Flow, Grass</b> Short Grass Pasture Kv= 7.0 fps
0.6	138	0.0400	4.06		<b>Shallow Concentrated Flow, Asphalt</b> Paved Kv= 20.3 fps
1.5	217	0.0140	2.40		<b>Shallow Concentrated Flow, Gutter</b> Paved Kv= 20.3 fps
10.8	589	Total			

### Subcatchment 3S: Pre 3

Hydrograph



**817 Country Way Pre**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 47

**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

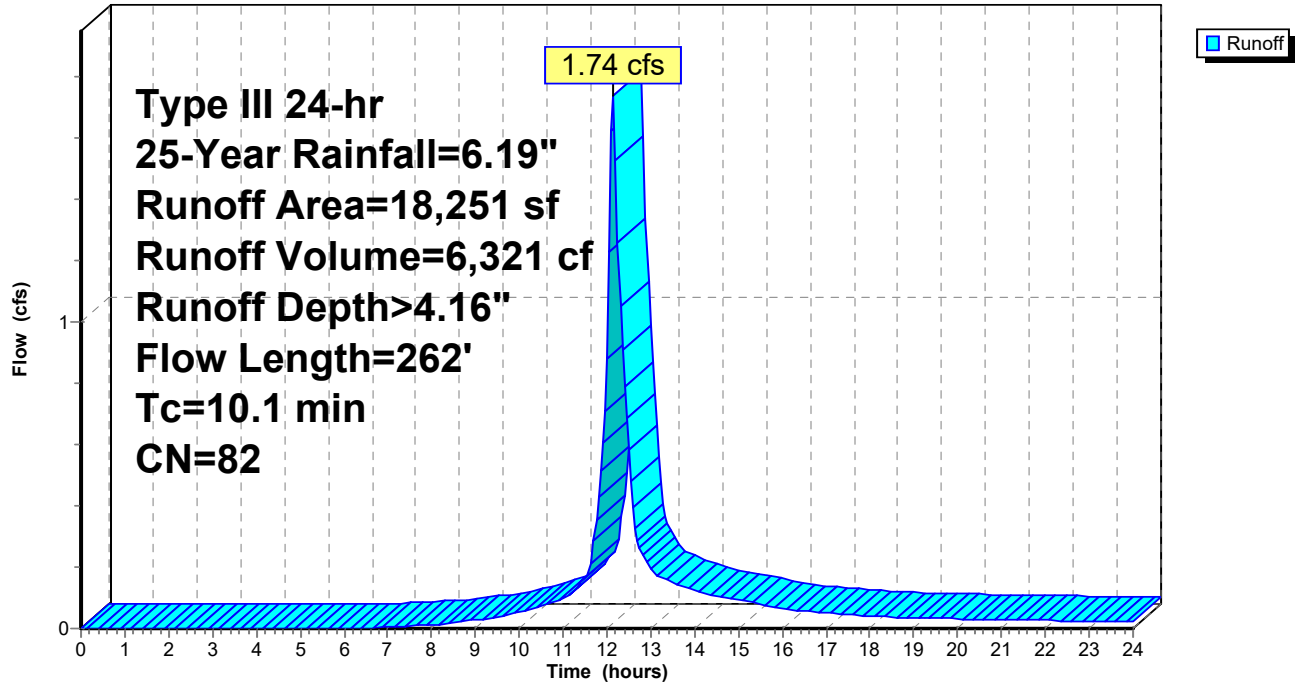
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 25-Year Rainfall=6.19"

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		<b>Sheet Flow, Grass</b> Grass: Bermuda n= 0.410 P2= 3.35"
0.1	10	0.0400	3.22		<b>Shallow Concentrated Flow, Gravel</b> Unpaved Kv= 16.1 fps
0.4	88	0.0400	4.06		<b>Shallow Concentrated Flow, Asphalt</b> Paved Kv= 20.3 fps
0.5	42	0.0400	1.40		<b>Shallow Concentrated Flow, Grass</b> Short Grass Pasture Kv= 7.0 fps
0.7	42	0.0400	1.00		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
1.0	30	0.0100	0.50		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
10.1	262	Total			

Subcatchment 4S: Pre 4

Hydrograph

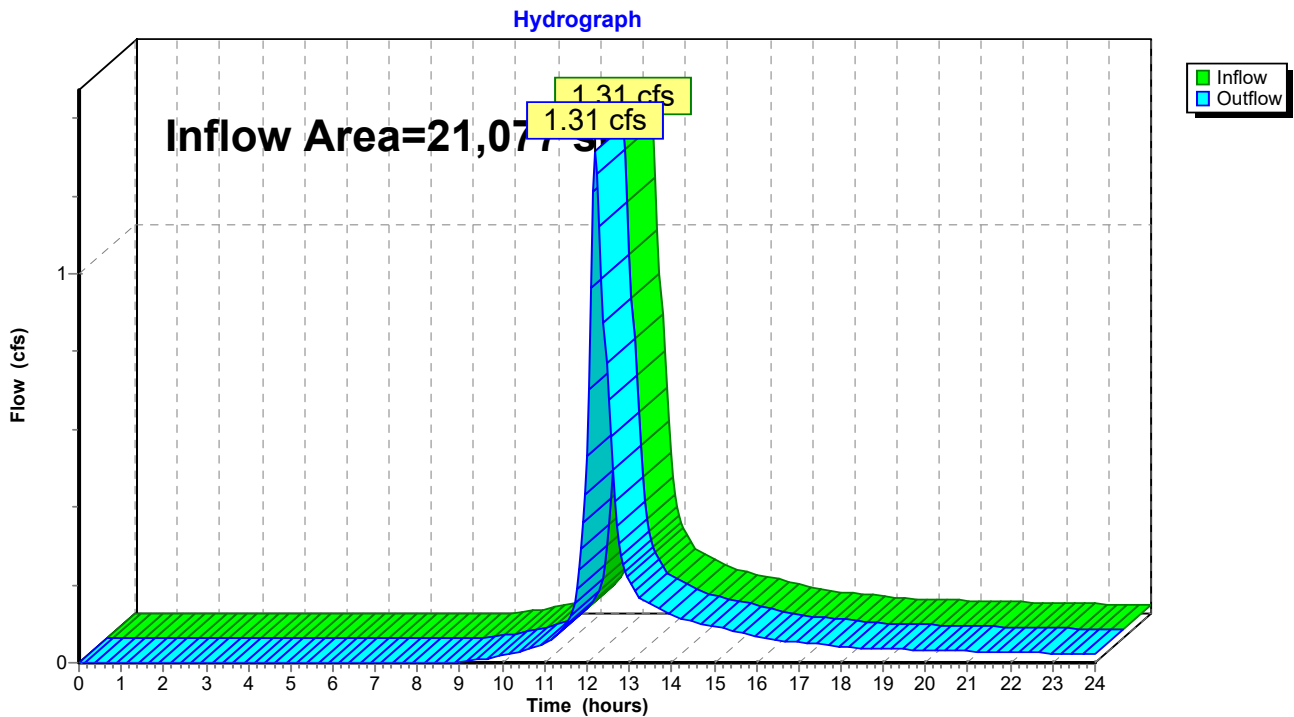


### Summary for Reach PRE1: DP1pre

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



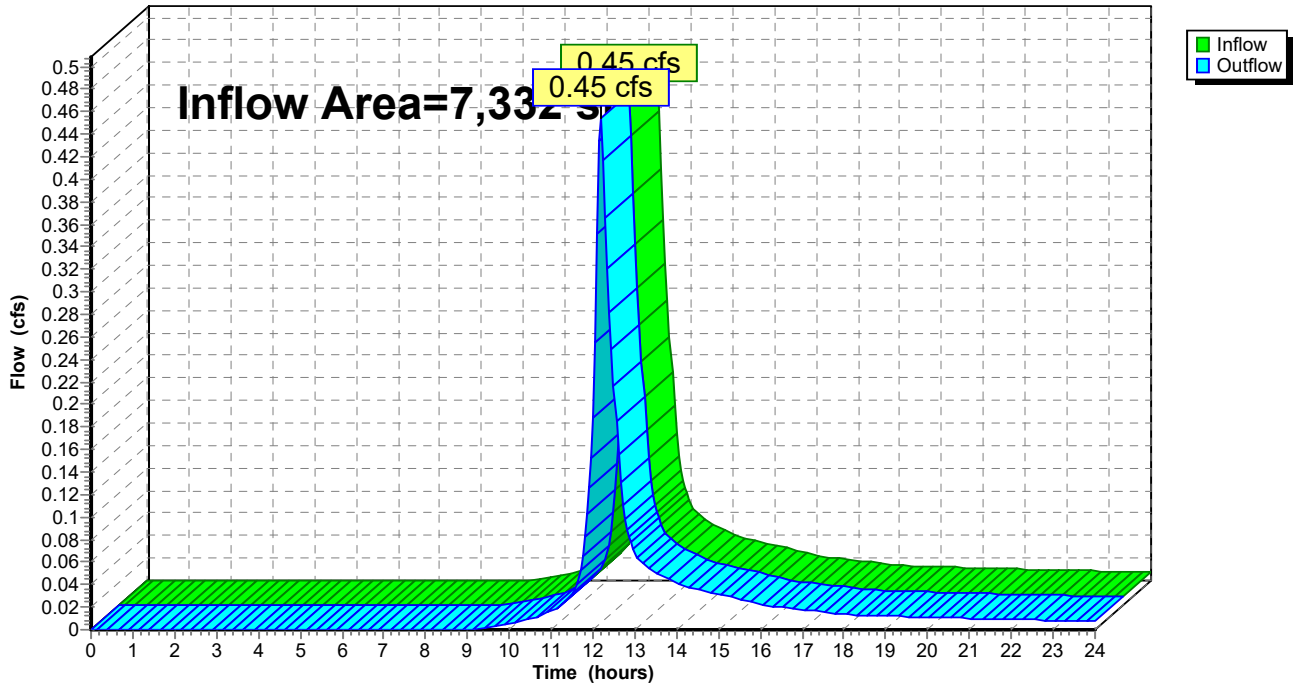
### Summary for Reach PRE2: DP2pre

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

Hydrograph



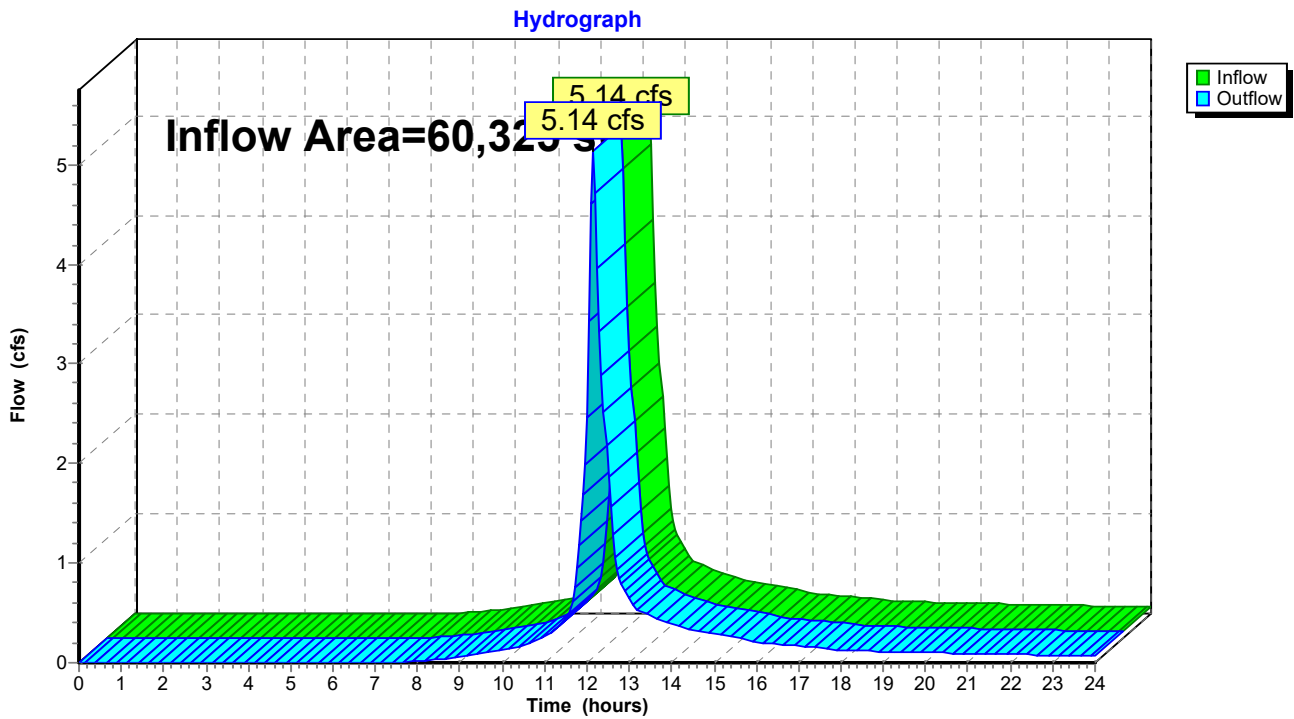


### Summary for Reach PRE3: DP3pre

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

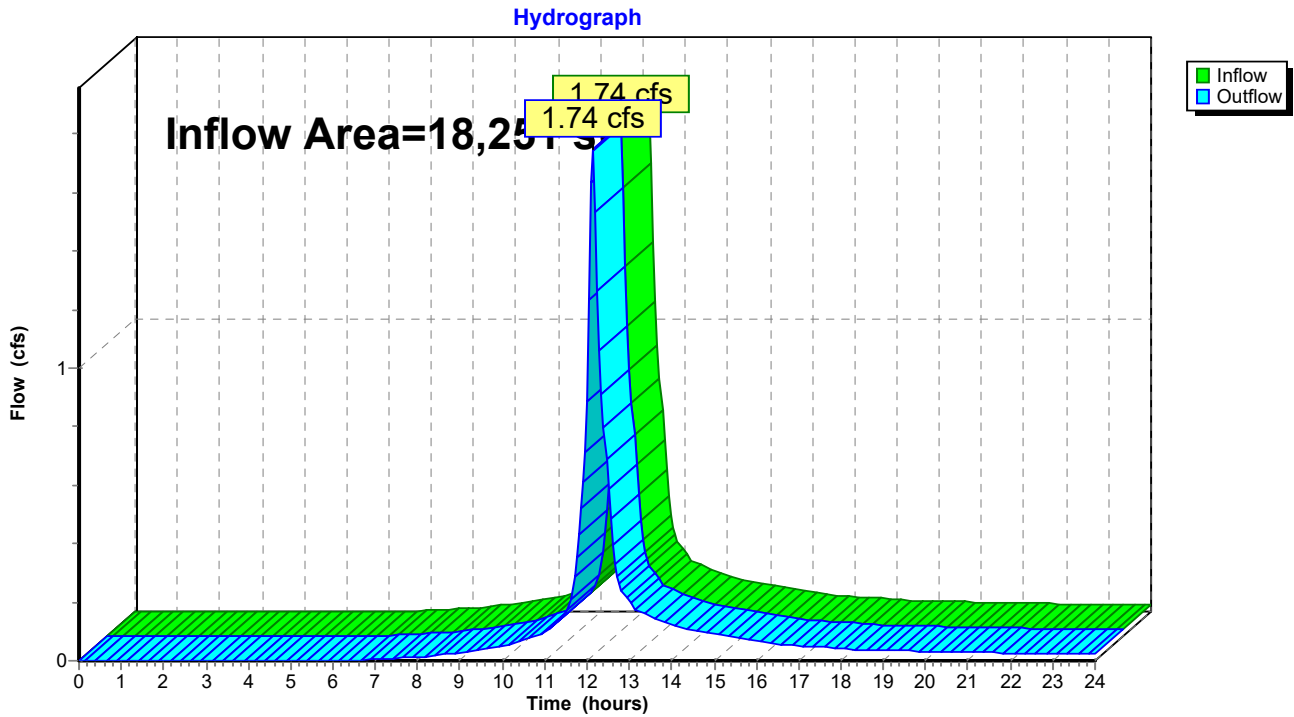


### Summary for Reach PRE4: DP4pre

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



# 817 Country Way Pre

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 53

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**

**817 Country Way Pre**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 54

**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

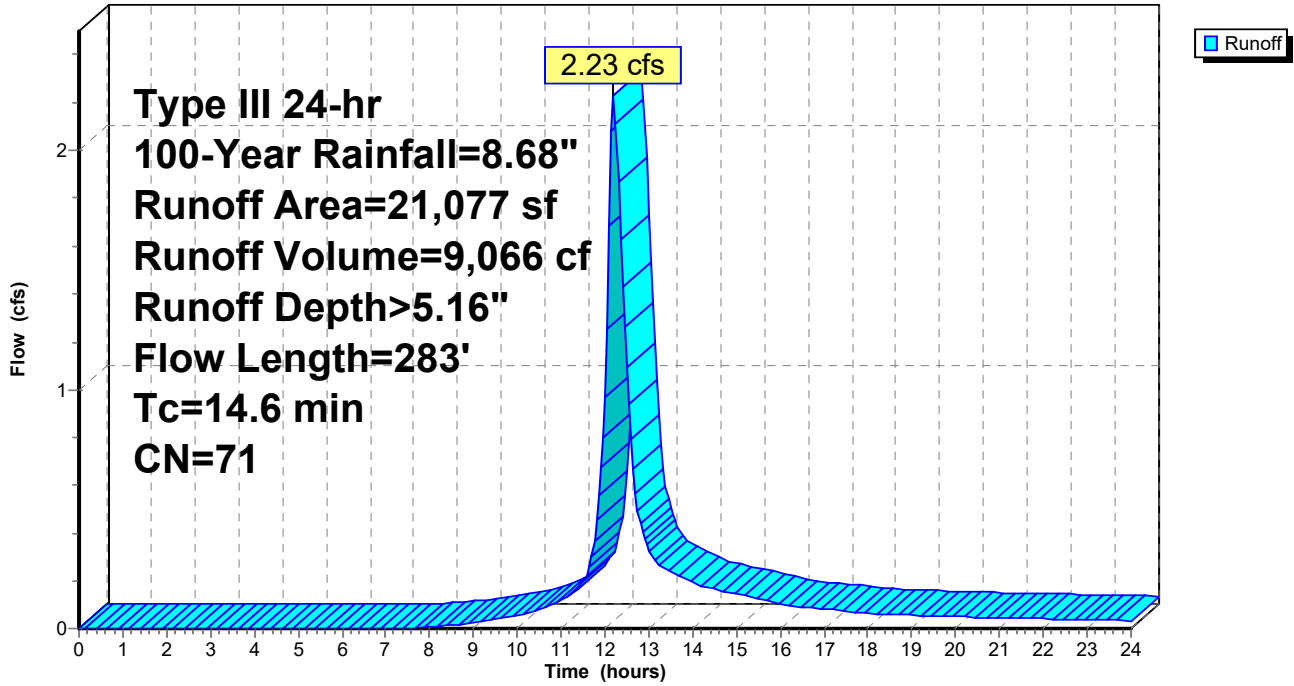
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 100-Year Rainfall=8.68"

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		<b>Sheet Flow, Grass</b> Grass: Bermuda n= 0.410 P2= 3.35"
0.1	14	0.0500	1.57		<b>Shallow Concentrated Flow, Grass</b> Short Grass Pasture Kv= 7.0 fps
1.7	73	0.0200	0.71		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
1.6	48	0.0100	0.50		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
1.9	98	0.0300	0.87		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
14.6	283	Total			

Subcatchment 1S: Pre 1

Hydrograph



# 817 Country Way Pre

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

## 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"

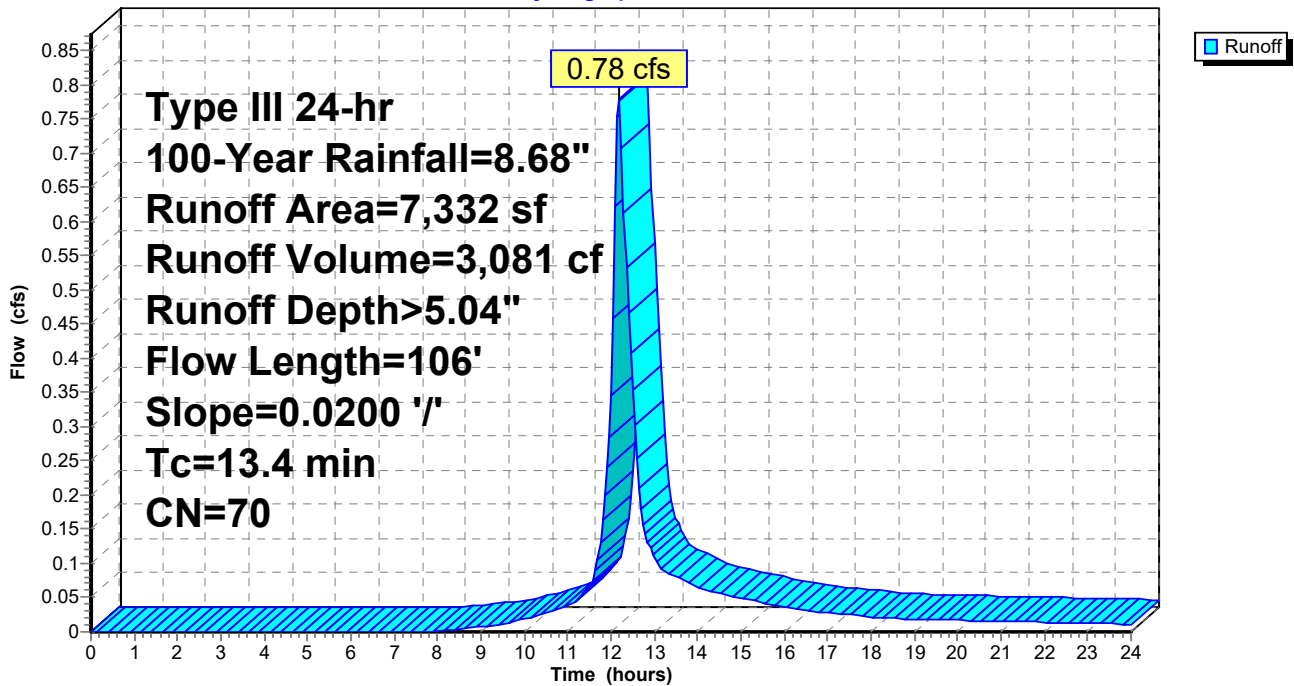
Area (sf)	CN	Description
7,332	70	Woods, Good, HSG C
7,332		100.00% Pervious Area

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

## Subcatchment 2S: Pre 2

Hydrograph



**817 Country Way Pre**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 57

**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

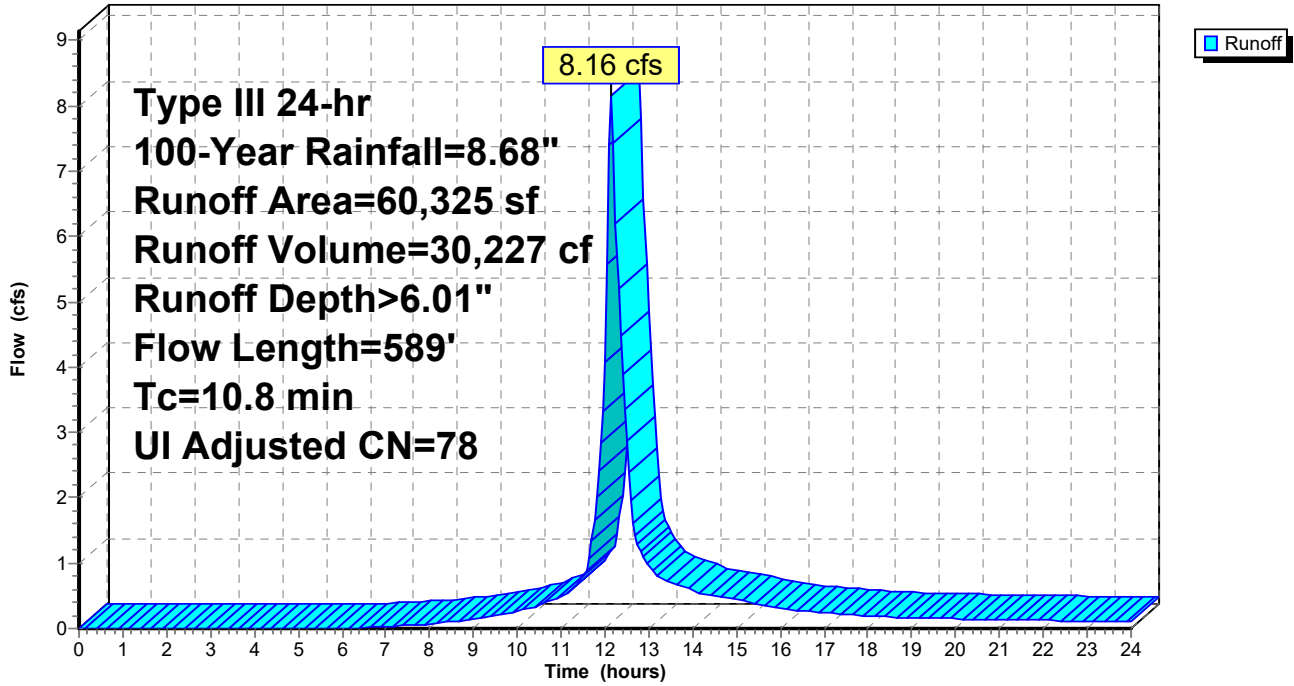
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 100-Year Rainfall=8.68"

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		<b>Sheet Flow, Woods</b> Woods: Light underbrush n= 0.400 P2= 3.35"
2.8	27	0.0800	0.16		<b>Sheet Flow, Grass</b> Grass: Dense n= 0.240 P2= 3.35"
0.9	56	0.0400	1.00		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
0.5	40	0.0400	1.40		<b>Shallow Concentrated Flow, Grass</b> Short Grass Pasture Kv= 7.0 fps
0.8	88	0.0700	1.85		<b>Shallow Concentrated Flow, Grass</b> Short Grass Pasture Kv= 7.0 fps
0.6	138	0.0400	4.06		<b>Shallow Concentrated Flow, Asphalt</b> Paved Kv= 20.3 fps
1.5	217	0.0140	2.40		<b>Shallow Concentrated Flow, Gutter</b> Paved Kv= 20.3 fps
10.8	589	Total			

Subcatchment 3S: Pre 3

Hydrograph





**817 Country Way Pre**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 59

**Summary for Subcatchment 4S: Pre 4**

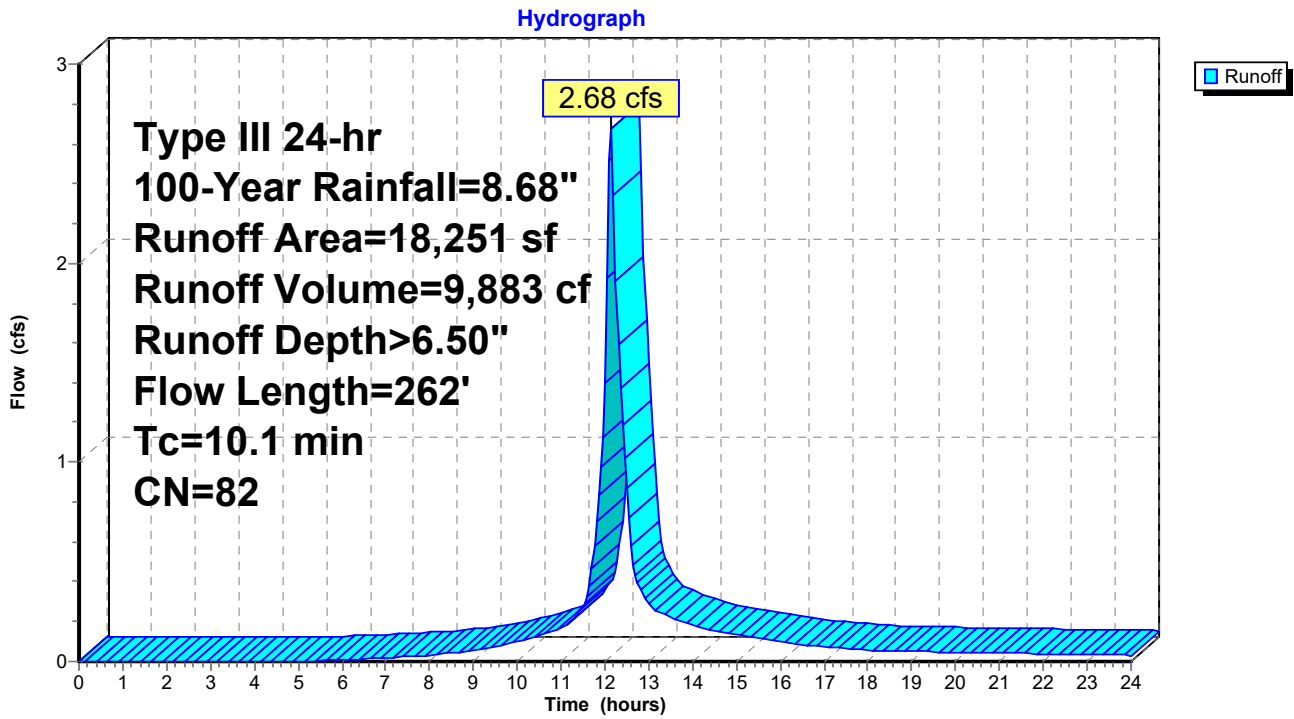
Runoff = 2.68 cfs @ 12.14 hrs, Volume= 9,883 cf, Depth> 6.50"  
 Routed to Reach PRE4 : DP4pre

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		<b>Sheet Flow, Grass</b> Grass: Bermuda n= 0.410 P2= 3.35"
0.1	10	0.0400	3.22		<b>Shallow Concentrated Flow, Gravel</b> Unpaved Kv= 16.1 fps
0.4	88	0.0400	4.06		<b>Shallow Concentrated Flow, Asphalt</b> Paved Kv= 20.3 fps
0.5	42	0.0400	1.40		<b>Shallow Concentrated Flow, Grass</b> Short Grass Pasture Kv= 7.0 fps
0.7	42	0.0400	1.00		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
1.0	30	0.0100	0.50		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
10.1	262	Total			

Subcatchment 4S: Pre 4

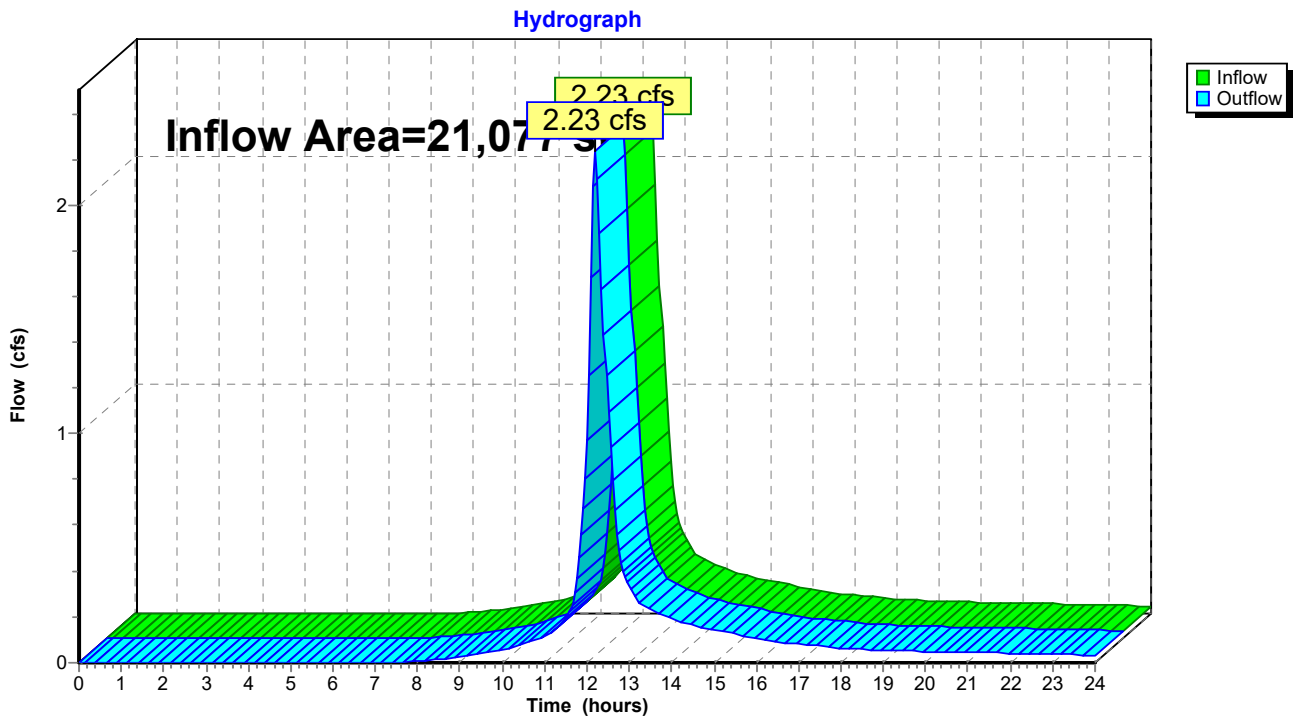


### Summary for Reach PRE1: DP1pre

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



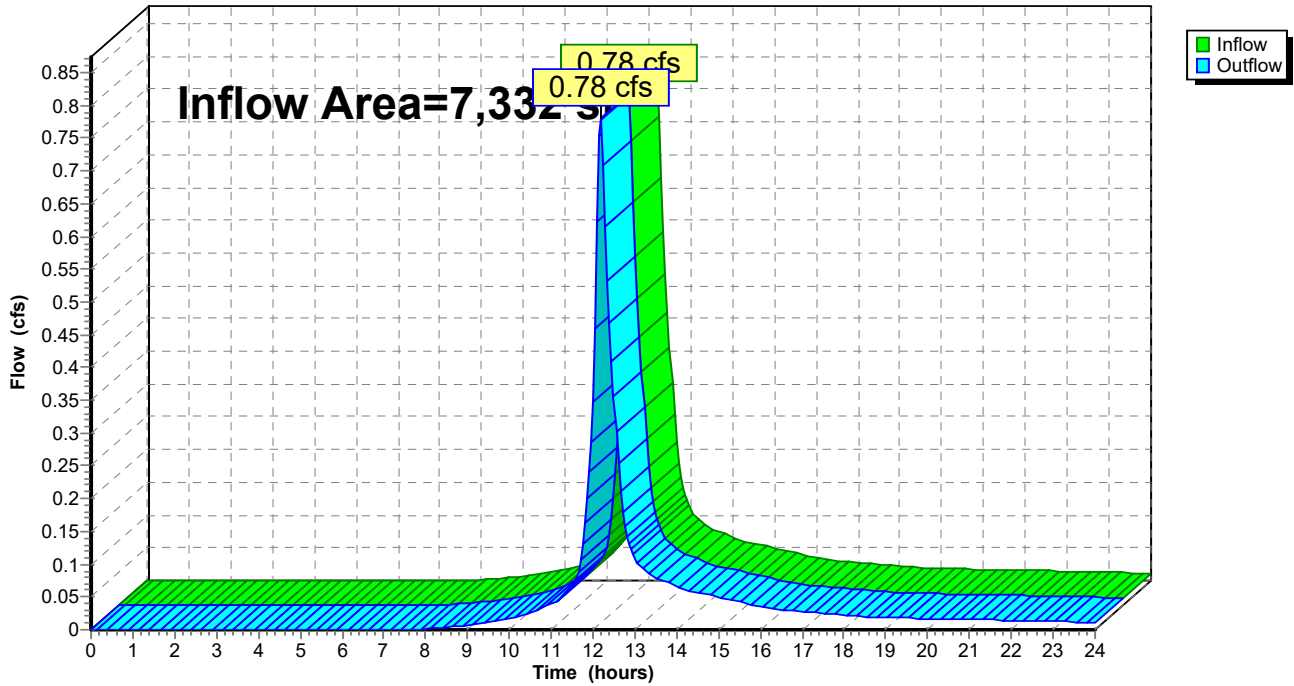
### Summary for Reach PRE2: DP2pre

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

Hydrograph



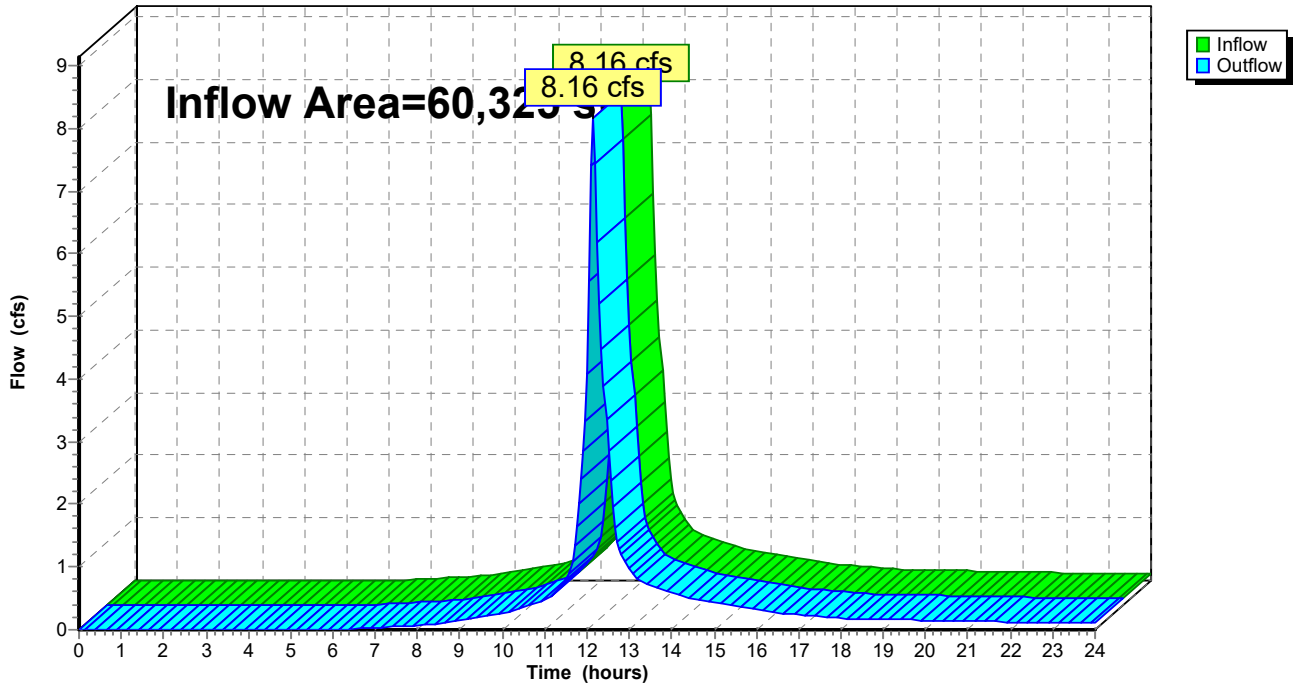
### Summary for Reach PRE3: DP3pre

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

Hydrograph

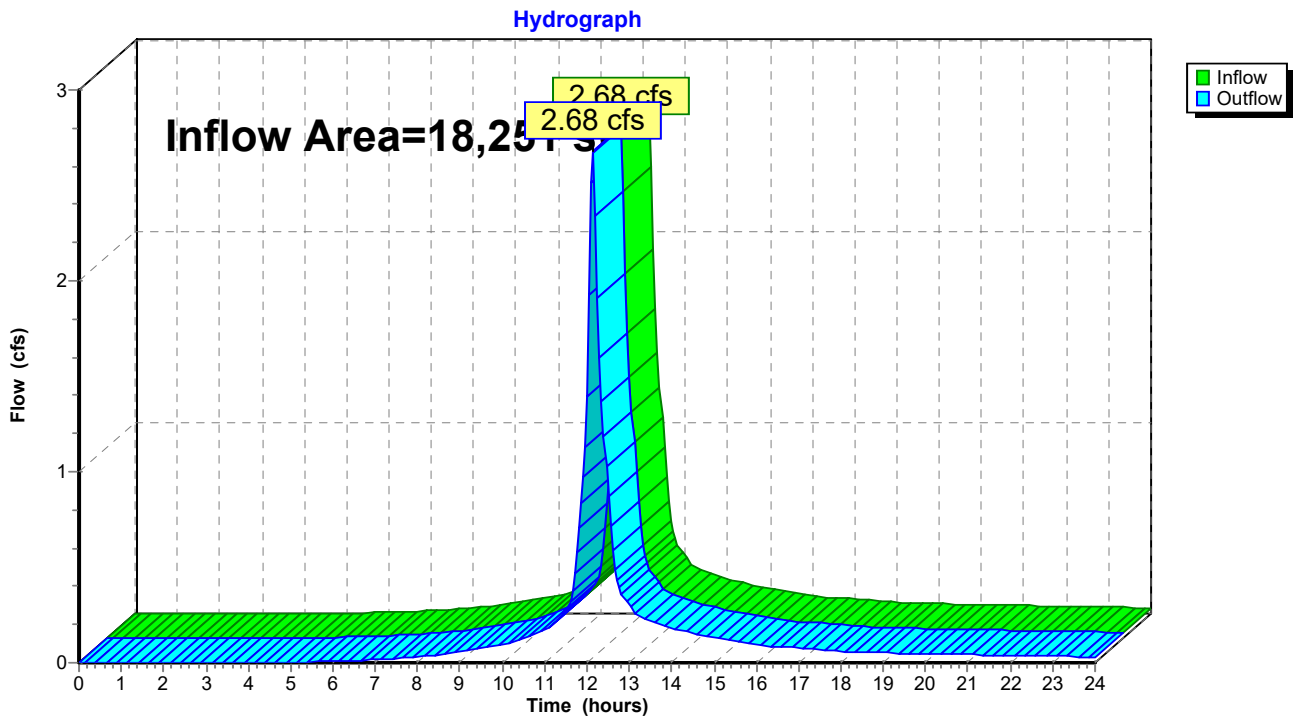


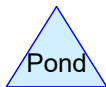
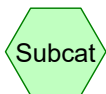
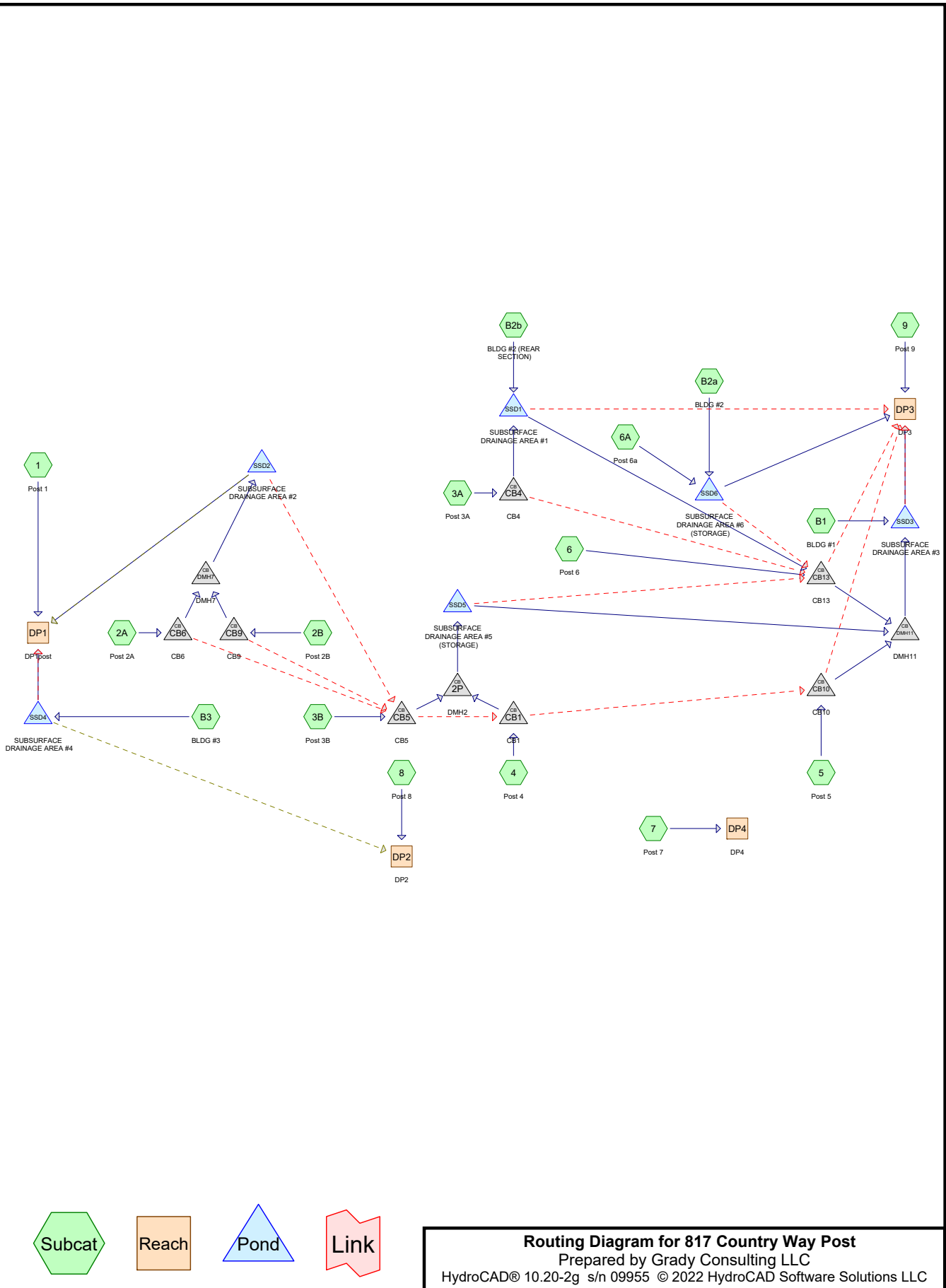
### Summary for Reach PRE4: DP4pre

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





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

## 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 2

### Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
44,416	74	>75% Grass cover, Good, HSG C (1, 2A, 2B, 3A, 3B, 4, 5, 6, 6A, 7, 9)
35,411	98	Paved parking, HSG C (2A, 2B, 3A, 3B, 4, 5, 6, 6A, 9)
15,744	98	Unconnected roofs, HSG C (5, B1, B2a, B2b, B3)
11,444	70	Woods, Good, HSG C (1, 7, 8, 9)
<b>107,015</b>	<b>85</b>	<b>TOTAL AREA</b>



# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 3

## Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
107,015	HSG C	1, 2A, 2B, 3A, 3B, 4, 5, 6, 6A, 7, 8, 9, B1, B2a, B2b, B3
0	HSG D	
0	Other	
<b>107,015</b>		<b>TOTAL AREA</b>

# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

## Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover
0	0	44,416	0	0	44,416	>75% Grass cover, Good
0	0	35,411	0	0	35,411	Paved parking
0	0	15,744	0	0	15,744	Unconnected roofs
0	0	11,444	0	0	11,444	Woods, Good
<b>0</b>	<b>0</b>	<b>107,015</b>	<b>0</b>	<b>0</b>	<b>107,015</b>	<b>TOTAL AREA</b>

Sub  
Num

# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 1-Year Rainfall=2.78"

Page 5

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

<b>Subcatchment 1: Post 1</b>	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
<b>Subcatchment 2A: Post 2A</b>	Runoff Area=2,000 sf 72.80% Impervious Runoff Depth>1.87" Tc=5.0 min CN=91 Runoff=0.10 cfs 311 cf
<b>Subcatchment 2B: Post 2B</b>	Runoff Area=1,641 sf 83.49% Impervious Runoff Depth>2.14" Tc=5.0 min CN=94 Runoff=0.09 cfs 292 cf
<b>Subcatchment 3A: Post 3A</b>	Runoff Area=9,095 sf 43.97% Impervious Runoff Depth>1.40" Tc=5.0 min CN=85 Runoff=0.34 cfs 1,064 cf
<b>Subcatchment 3B: Post 3B</b>	Runoff Area=8,082 sf 70.01% Impervious Runoff Depth>1.87" Tc=5.0 min CN=91 Runoff=0.40 cfs 1,257 cf
<b>Subcatchment 4: Post 4</b>	Runoff Area=7,248 sf 88.76% Impervious Runoff Depth>2.23" Flow Length=131' Tc=8.6 min CN=95 Runoff=0.38 cfs 1,348 cf
<b>Subcatchment 5: Post 5</b>	Runoff Area=7,525 sf 60.54% Impervious Runoff Depth>1.70" Flow Length=131' Tc=8.6 min CN=89 Runoff=0.31 cfs 1,066 cf
<b>Subcatchment 6: Post 6</b>	Runoff Area=12,344 sf 39.48% Impervious Runoff Depth>1.27" Tc=5.0 min CN=83 Runoff=0.42 cfs 1,307 cf
<b>Subcatchment 6A: Post 6a</b>	Runoff Area=6,242 sf 76.59% Impervious Runoff Depth>1.95" Tc=5.0 min CN=92 Runoff=0.32 cfs 1,016 cf
<b>Subcatchment 7: Post 7</b>	Runoff Area=2,790 sf 0.00% Impervious Runoff Depth>0.72" Flow Length=170' Tc=11.1 min CN=73 Runoff=0.04 cfs 168 cf
<b>Subcatchment 8: Post 8</b>	Runoff Area=1,030 sf 0.00% Impervious Runoff Depth>0.59" Tc=5.0 min CN=70 Runoff=0.01 cfs 51 cf
<b>Subcatchment 9: Post 9</b>	Runoff Area=21,294 sf 19.29% Impervious Runoff Depth>0.97" Tc=5.0 min CN=78 Runoff=0.54 cfs 1,729 cf
<b>Subcatchment B1: BLDG #1</b>	Runoff Area=3,522 sf 100.00% Impervious Runoff Depth>2.55" Tc=5.0 min CN=98 Runoff=0.22 cfs 748 cf
<b>Subcatchment B2a: BLDG #2</b>	Runoff Area=1,054 sf 100.00% Impervious Runoff Depth>2.55" Tc=5.0 min CN=98 Runoff=0.07 cfs 224 cf
<b>Subcatchment B2b: BLDG #2 (REAR)</b>	Runoff Area=3,736 sf 100.00% Impervious Runoff Depth>2.55" Tc=5.0 min CN=98 Runoff=0.23 cfs 793 cf
<b>Subcatchment B3: BLDG #3</b>	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

# 817 Country Way Post

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 6

<b>Reach DP1: DP1post</b>	Inflow=0.17 cfs 780 cf Outflow=0.17 cfs 780 cf
<b>Reach DP2: DP2</b>	Inflow=0.01 cfs 63 cf Outflow=0.01 cfs 63 cf
<b>Reach DP3: DP3</b>	Inflow=0.78 cfs 6,049 cf Outflow=0.78 cfs 6,049 cf
<b>Reach DP4: DP4</b>	Inflow=0.04 cfs 168 cf Outflow=0.04 cfs 168 cf
<b>Pond 2P: DMH2</b>	Peak Elev=37.26' Inflow=0.76 cfs 2,605 cf 12.0" Round Culvert n=0.013 L=30.0' S=0.0033 '/' Outflow=0.76 cfs 2,605 cf
<b>Pond CB1: CB1</b>	Peak Elev=34.28' Inflow=0.38 cfs 1,348 cf Primary=0.38 cfs 1,348 cf Secondary=0.00 cfs 0 cf Outflow=0.38 cfs 1,348 cf
<b>Pond CB10: CB10</b>	Peak Elev=19.85' Inflow=0.31 cfs 1,066 cf Primary=0.31 cfs 1,066 cf Secondary=0.00 cfs 0 cf Outflow=0.31 cfs 1,066 cf
<b>Pond CB13: CB13</b>	Peak Elev=20.27' Inflow=0.42 cfs 1,307 cf Primary=0.42 cfs 1,307 cf Secondary=0.00 cfs 0 cf Outflow=0.42 cfs 1,307 cf
<b>Pond CB4: CB4</b>	Peak Elev=34.22' Inflow=0.34 cfs 1,064 cf Primary=0.34 cfs 1,064 cf Secondary=0.00 cfs 0 cf Outflow=0.34 cfs 1,064 cf
<b>Pond CB5: CB5</b>	Peak Elev=34.37' Inflow=0.40 cfs 1,257 cf Primary=0.40 cfs 1,257 cf Secondary=0.00 cfs 0 cf Outflow=0.40 cfs 1,257 cf
<b>Pond CB6: CB6</b>	Peak Elev=37.08' Inflow=0.10 cfs 311 cf Primary=0.10 cfs 311 cf Secondary=0.00 cfs 0 cf Outflow=0.10 cfs 311 cf
<b>Pond CB9: CB9</b>	Peak Elev=37.07' Inflow=0.09 cfs 292 cf Primary=0.09 cfs 292 cf Secondary=0.00 cfs 0 cf Outflow=0.09 cfs 292 cf
<b>Pond DMH11: DMH11</b>	Peak Elev=20.10' Inflow=0.79 cfs 4,916 cf 12.0" Round Culvert n=0.013 L=42.0' S=0.0024 '/' Outflow=0.79 cfs 4,916 cf
<b>Pond DMH7: DMH7</b>	Peak Elev=36.97' Inflow=0.19 cfs 603 cf 12.0" Round Culvert n=0.013 L=30.0' S=0.0033 '/' Outflow=0.19 cfs 603 cf
<b>Pond SSD1: SUBSURFACE DRAINAGE AREA</b>	Peak Elev=34.30' Storage=611 cf Inflow=0.57 cfs 1,858 cf Discarded=0.07 cfs 1,855 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.07 cfs 1,855 cf
<b>Pond SSD2: SUBSURFACE DRAINAGE AREA #2</b>	Peak Elev=35.90' Storage=154 cf Inflow=0.19 cfs 603 cf Discarded=0.05 cfs 602 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.05 cfs 602 cf
<b>Pond SSD3: SUBSURFACE DRAINAGE AREA</b>	Peak Elev=19.77' Storage=1,254 cf Inflow=1.00 cfs 5,663 cf Discarded=0.03 cfs 1,615 cf Primary=0.49 cfs 3,113 cf Secondary=0.00 cfs 0 cf Outflow=0.52 cfs 4,728 cf
<b>Pond SSD4: SUBSURFACE DRAINAGE AREA</b>	Peak Elev=36.53' Storage=650 cf Inflow=0.35 cfs 1,191 cf Discarded=0.01 cfs 716 cf Primary=0.00 cfs 0 cf Tertiary=0.00 cfs 12 cf Outflow=0.01 cfs 728 cf

**817 Country Way Post**

*Type III 24-hr 1-Year Rainfall=2.78"*

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 7

**Pond SSD5: SUBSURFACE DRAINAGE AREA** Peak Elev=31.73' Storage=1,137 cf Inflow=0.76 cfs 2,605 cf  
Primary=0.09 cfs 2,543 cf Secondary=0.00 cfs 0 cf Outflow=0.09 cfs 2,543 cf

**Pond SSD6: SUBSURFACE DRAINAGE AREA** Peak Elev=21.95' Storage=575 cf Inflow=0.39 cfs 1,240 cf  
Primary=0.04 cfs 1,207 cf Secondary=0.00 cfs 0 cf Outflow=0.04 cfs 1,207 cf

**Total Runoff Area = 107,015 sf Runoff Volume = 13,345 cf Average Runoff Depth = 1.50"**  
**52.20% Pervious = 55,860 sf 47.80% Impervious = 51,155 sf**

**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 8

**Summary for Subcatchment 1: Post 1**

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

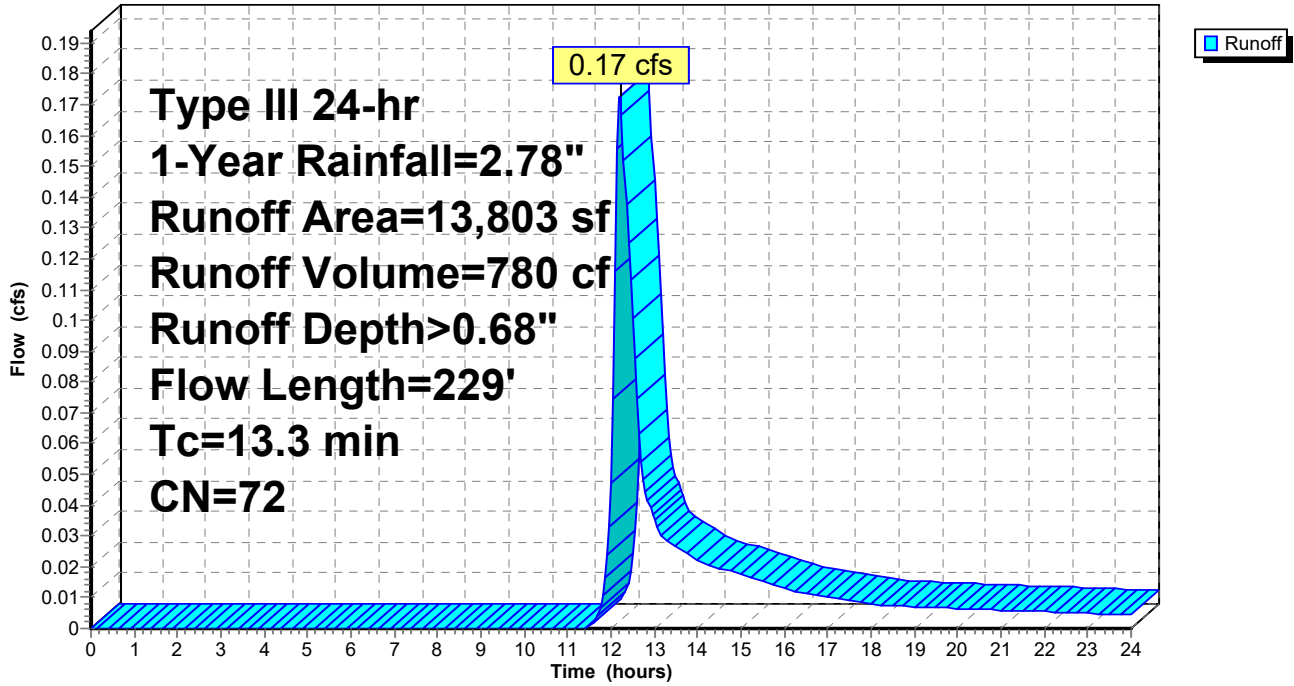
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 1-Year Rainfall=2.78"

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		<b>Sheet Flow, Woods</b> Woods: Light underbrush n= 0.400 P2= 3.35"
1.1	67	0.0400	1.00		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
1.1	58	0.0300	0.87		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
0.9	54	0.0400	1.00		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
13.3	229	Total			

### Subcatchment 1: Post 1

Hydrograph



# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 1-Year Rainfall=2.78"

Page 10

## Summary for Subcatchment 2A: Post 2A

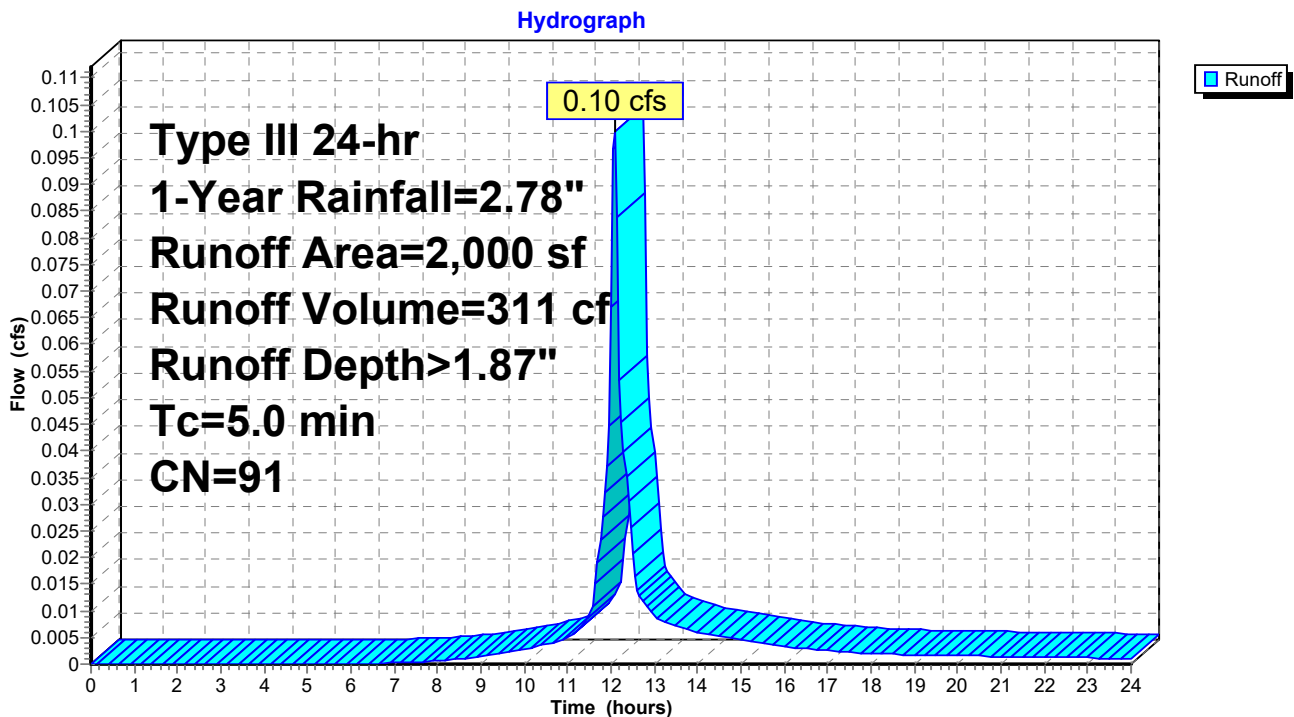
Runoff = 0.10 cfs @ 12.07 hrs, Volume= 311 cf, Depth> 1.87"  
Routed to Pond CB6 : CB6

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
544	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
1,388	98	Paved parking, HSG C
68	98	Paved parking, HSG C
2,000	91	Weighted Average
544		27.20% Pervious Area
1,456		72.80% Impervious Area

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

### Subcatchment 2A: Post 2A





# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 1-Year Rainfall=2.78"

Page 11

## Summary for Subcatchment 2B: Post 2B

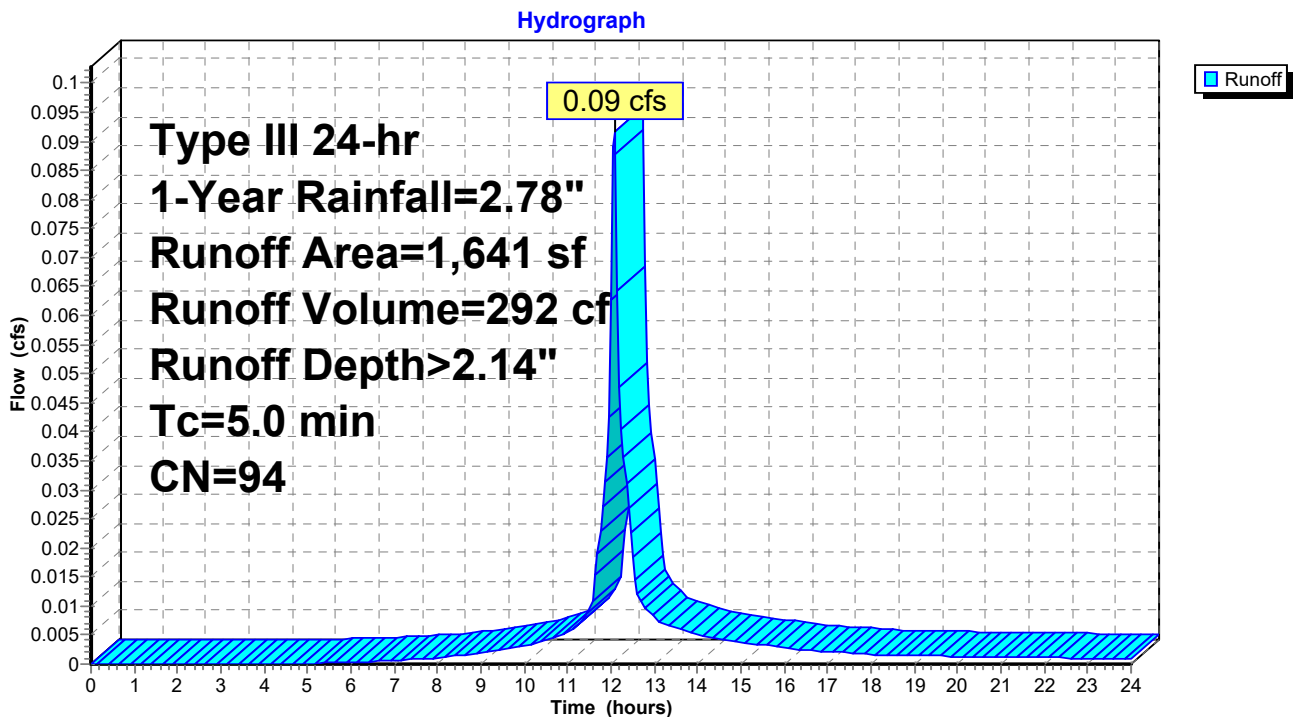
Runoff = 0.09 cfs @ 12.07 hrs, Volume= 292 cf, Depth> 2.14"  
Routed to Pond CB9 : CB9

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
271	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
1,370	98	Paved parking, HSG C
0	98	Paved parking, HSG C
1,641	94	Weighted Average
271		16.51% Pervious Area
1,370		83.49% Impervious Area

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

### Subcatchment 2B: Post 2B



# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 1-Year Rainfall=2.78"

Page 12

## Summary for Subcatchment 3A: Post 3A

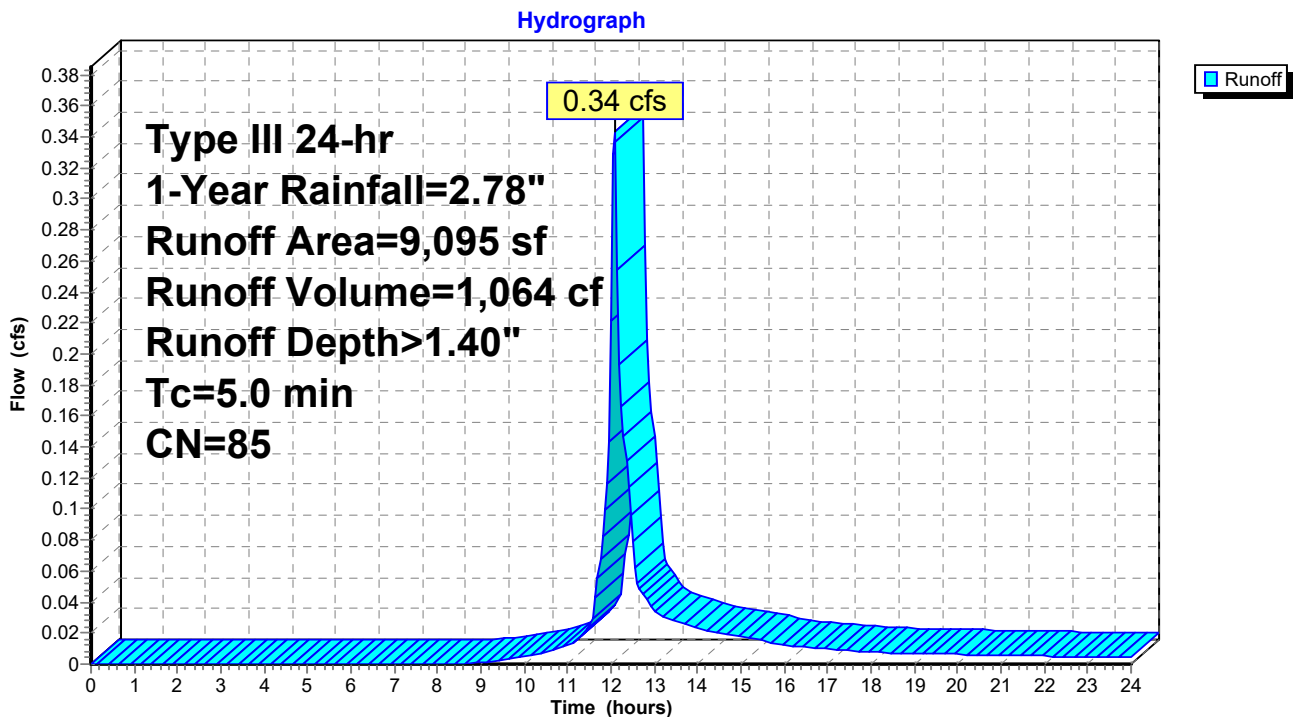
Runoff = 0.34 cfs @ 12.08 hrs, Volume= 1,064 cf, Depth> 1.40"  
Routed to Pond CB4 : CB4

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
5,096	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
3,233	98	Paved parking, HSG C
766	98	Paved parking, HSG C
9,095	85	Weighted Average
5,096		56.03% Pervious Area
3,999		43.97% Impervious Area

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

### Subcatchment 3A: Post 3A



**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**Summary for Subcatchment 3B: Post 3B**

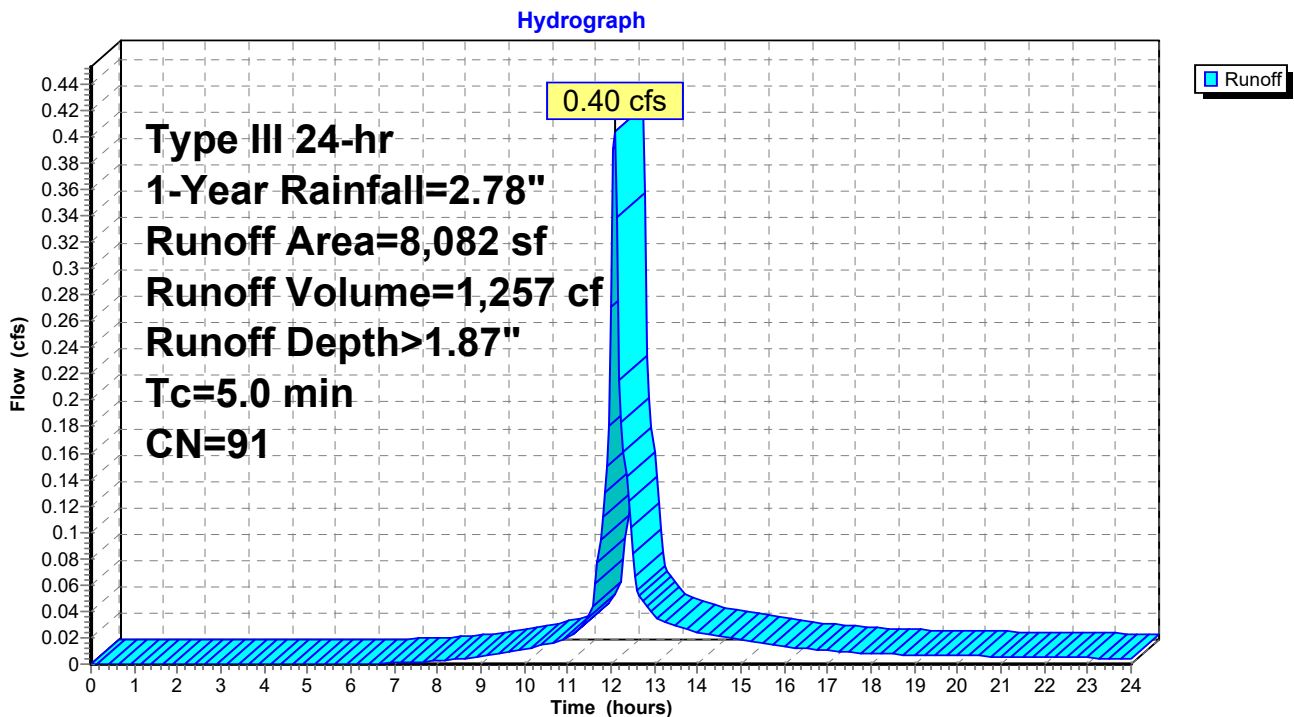
Runoff = 0.40 cfs @ 12.07 hrs, Volume= 1,257 cf, Depth> 1.87"  
 Routed to Pond CB5 : CB5

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
2,424	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
5,459	98	Paved parking, HSG C
199	98	Paved parking, HSG C
8,082	91	Weighted Average
2,424		29.99% Pervious Area
5,658		70.01% Impervious Area

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

**Subcatchment 3B: Post 3B**



**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 14

**Summary for Subcatchment 4: Post 4**

Runoff = 0.38 cfs @ 12.12 hrs, Volume= 1,348 cf, Depth> 2.23"  
 Routed to Pond CB1 : CB1

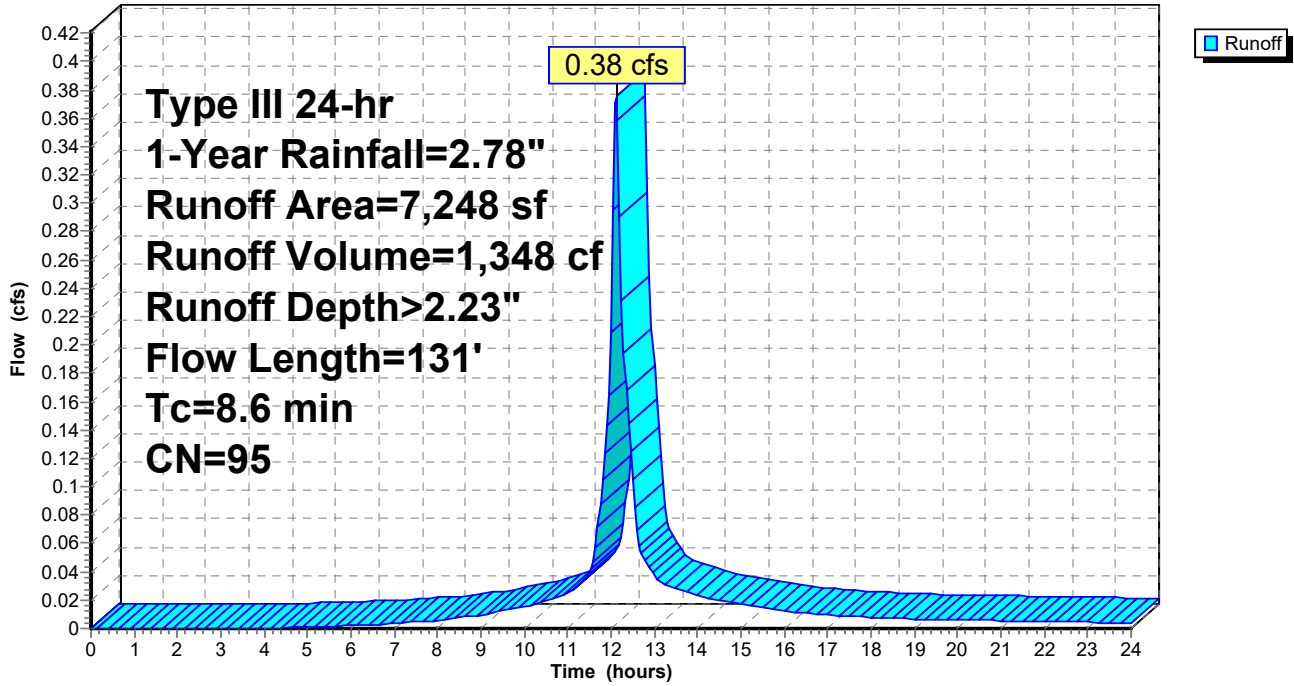
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 1-Year Rainfall=2.78"

Area (sf)	CN	Description
815	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
6,433	98	Paved parking, HSG C
0	98	Paved parking, HSG C
7,248	95	Weighted Average
815		11.24% Pervious Area
6,433		88.76% Impervious Area

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

Subcatchment 4: Post 4

Hydrograph



**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 16

**Summary for Subcatchment 5: Post 5**

Runoff = 0.31 cfs @ 12.12 hrs, Volume= 1,066 cf, Depth> 1.70"  
 Routed to Pond CB10 : CB10

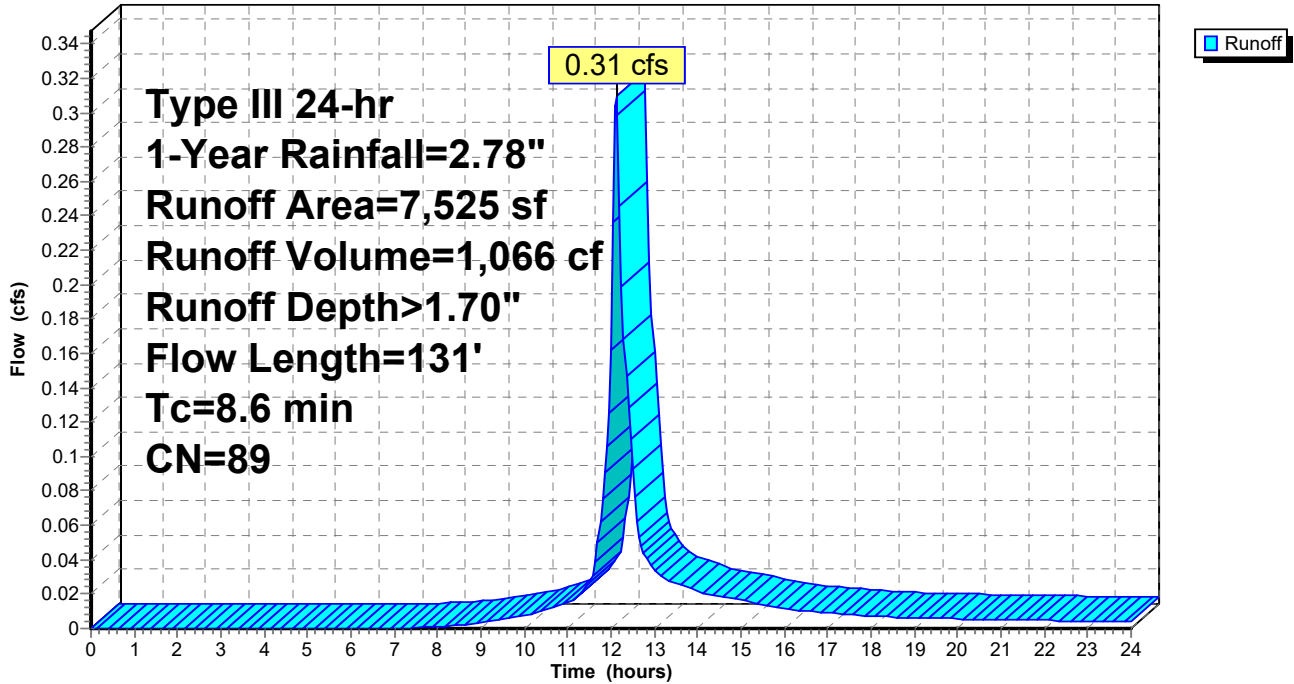
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 1-Year Rainfall=2.78"

Area (sf)	CN	Description
1,823	98	Unconnected roofs, HSG C
2,969	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
2,733	98	Paved parking, HSG C
0	98	Paved parking, HSG C
7,525	89	Weighted Average
2,969		39.46% Pervious Area
4,556		60.54% Impervious Area
1,823		40.01% Unconnected

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

### Subcatchment 5: Post 5

Hydrograph



# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 1-Year Rainfall=2.78"

## Summary for Subcatchment 6: Post 6

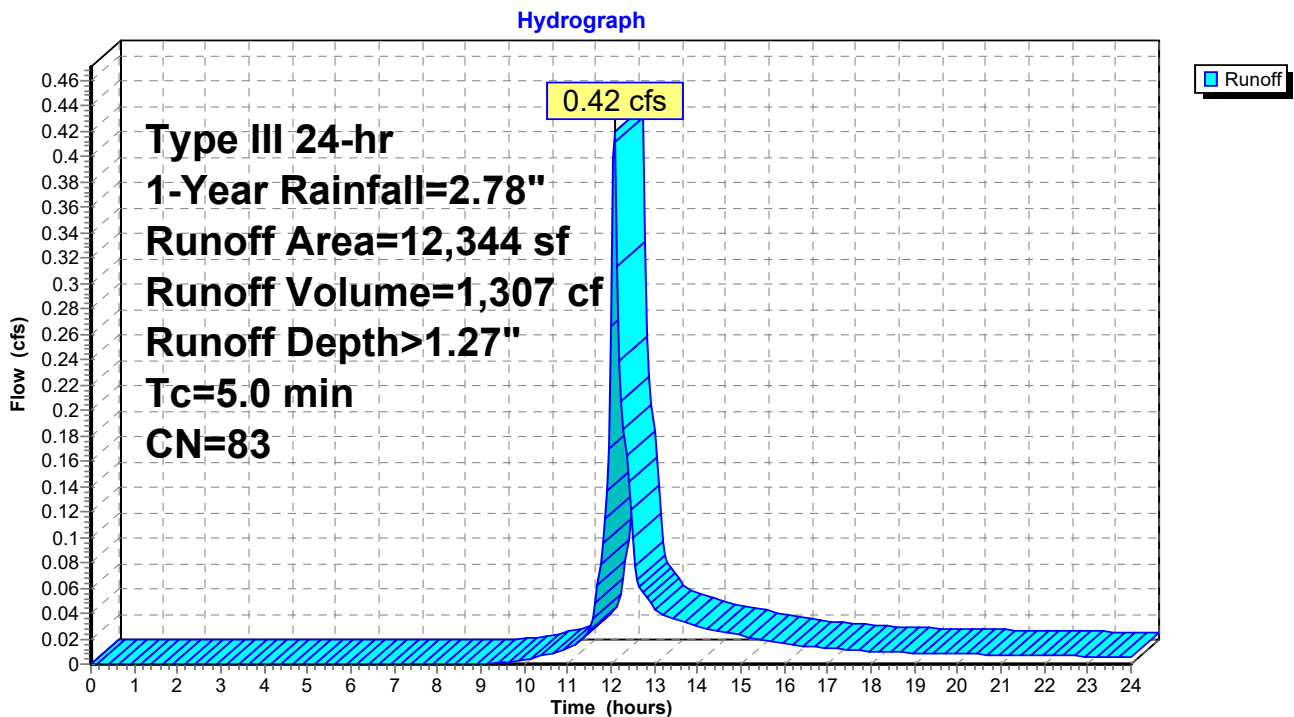
Runoff = 0.42 cfs @ 12.08 hrs, Volume= 1,307 cf, Depth> 1.27"  
Routed to Pond CB13 : CB13

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
7,471	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
3,458	98	Paved parking, HSG C
1,415	98	Paved parking, HSG C
12,344	83	Weighted Average
7,471		60.52% Pervious Area
4,873		39.48% Impervious Area

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

### Subcatchment 6: Post 6





# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 1-Year Rainfall=2.78"

Page 19

## Summary for Subcatchment 6A: Post 6a

Runoff = 0.32 cfs @ 12.07 hrs, Volume= 1,016 cf, Depth> 1.95"

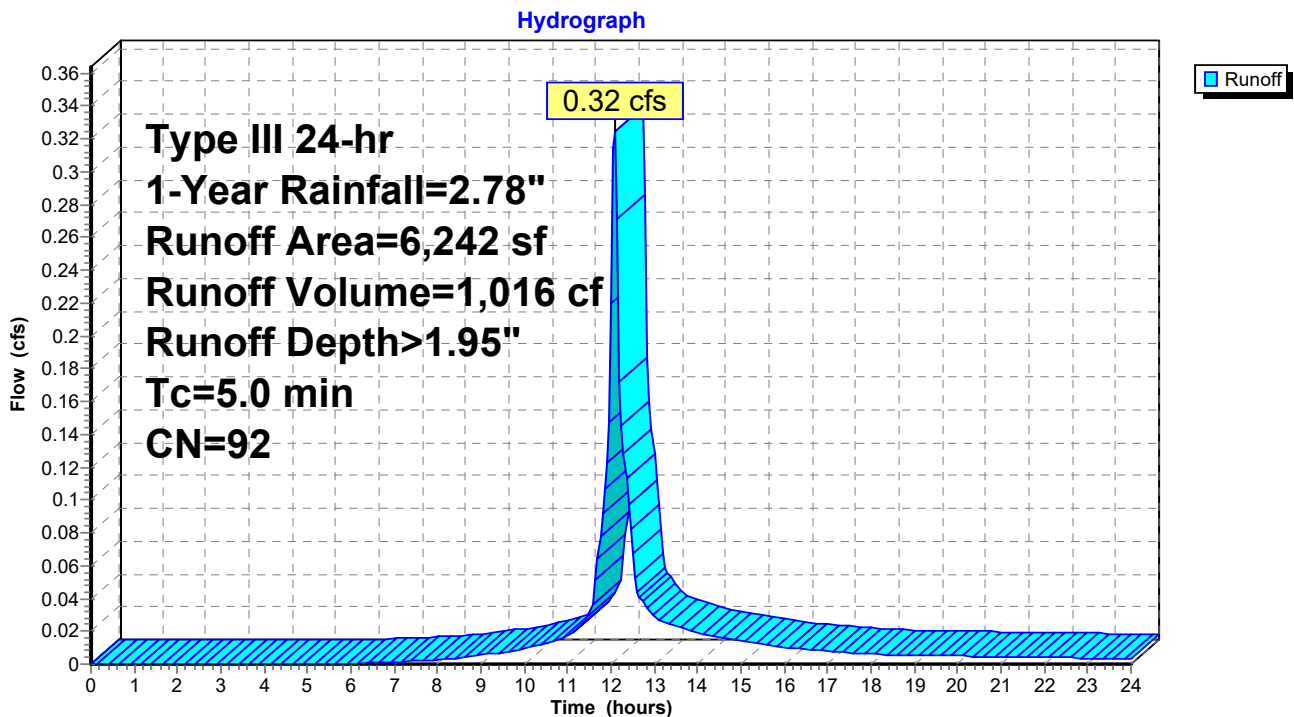
Routed to Pond SSD6 : SUBSURFACE DRAINAGE AREA #6 (STORAGE)

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
1,461	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
4,243	98	Paved parking, HSG C
538	98	Paved parking, HSG C
6,242	92	Weighted Average
1,461		23.41% Pervious Area
4,781		76.59% Impervious Area

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

### Subcatchment 6A: Post 6a



**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 20

**Summary for Subcatchment 7: Post 7**

Runoff = 0.04 cfs @ 12.17 hrs, Volume= 168 cf, Depth> 0.72"  
 Routed to Reach DP4 : DP4

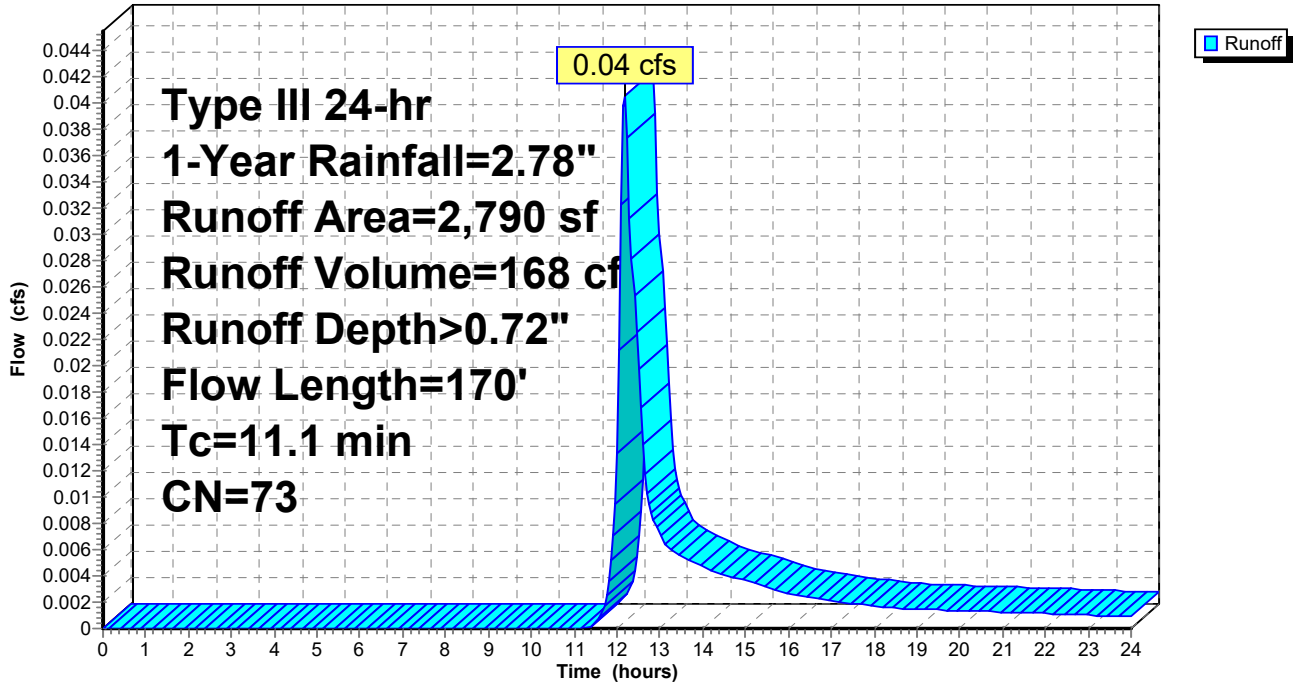
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 1-Year Rainfall=2.78"

Area (sf)	CN	Description
2,085	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
2,790	73	Weighted Average
2,790		100.00% Pervious Area

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

Subcatchment 7: Post 7

Hydrograph



# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 1-Year Rainfall=2.78"

Page 22

## Summary for Subcatchment 8: Post 8

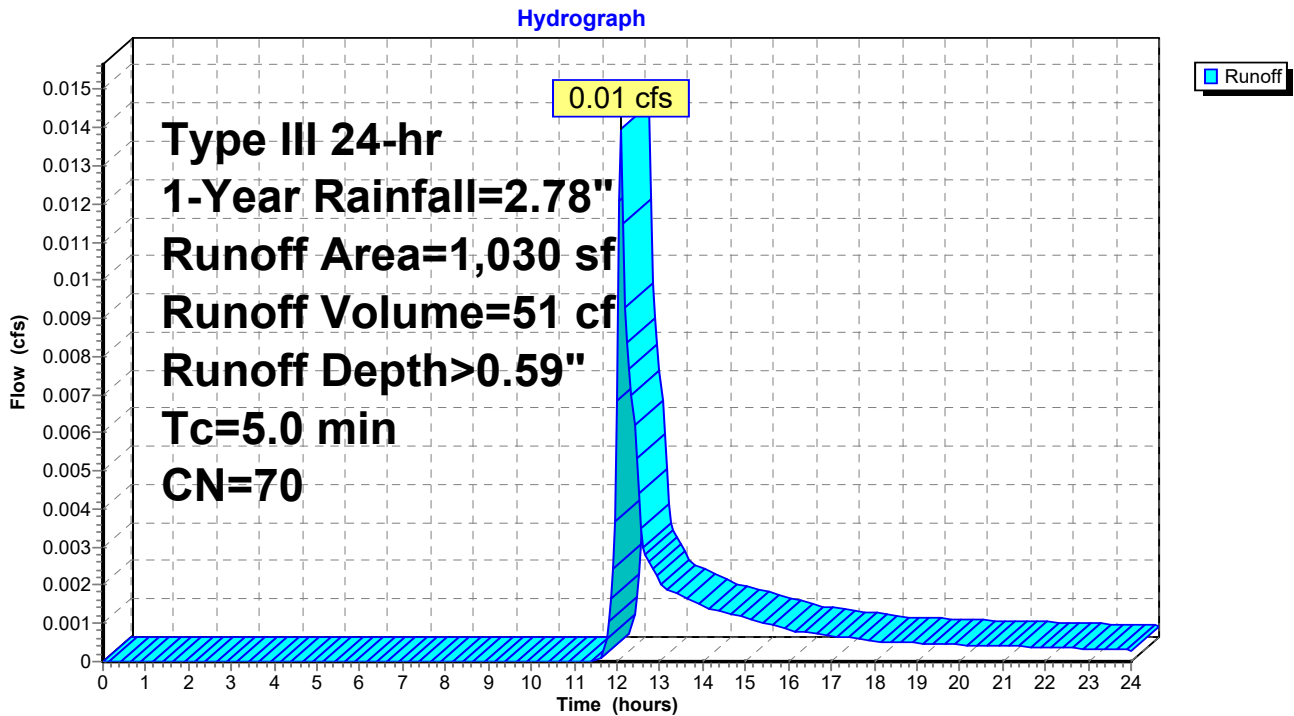
Runoff = 0.01 cfs @ 12.10 hrs, Volume= 51 cf, Depth> 0.59"  
Routed to Reach DP2 : DP2

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



**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**Summary for Subcatchment 9: Post 9**

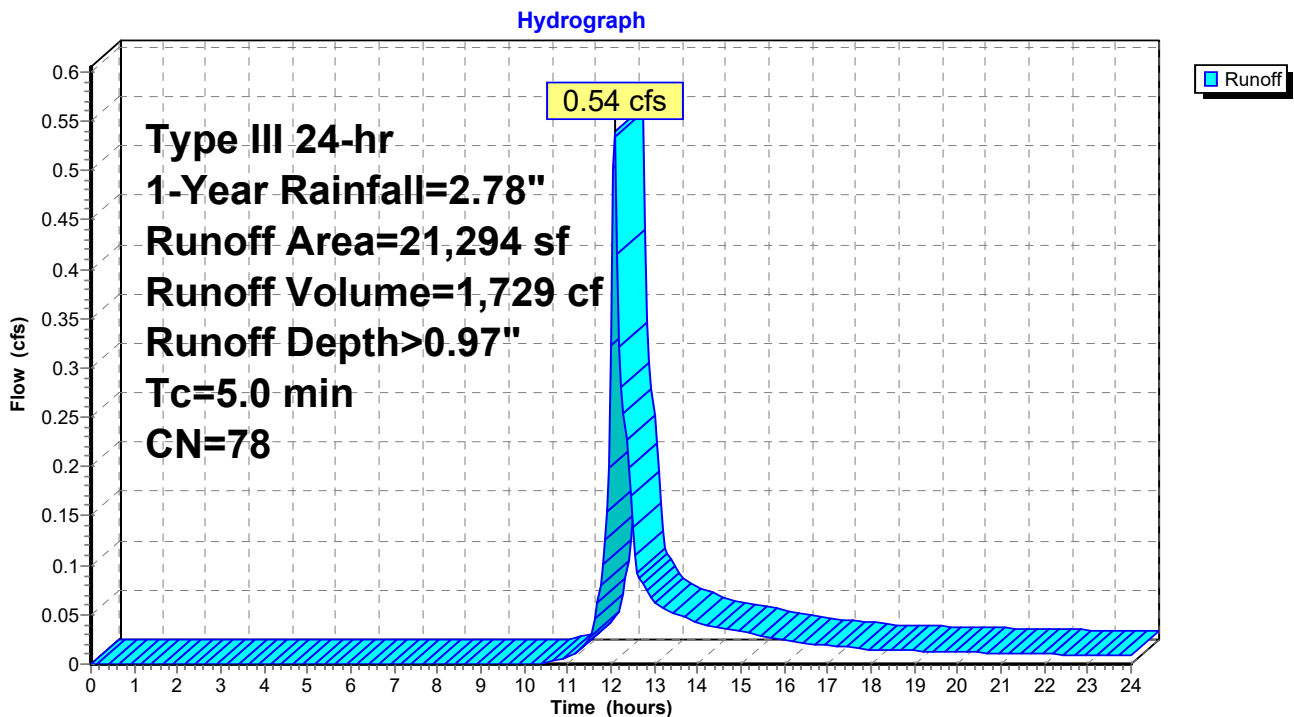
Runoff = 0.54 cfs @ 12.09 hrs, Volume= 1,729 cf, Depth> 0.97"  
 Routed to Reach DP3 : DP3

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
15,409	74	>75% Grass cover, Good, HSG C
1,777	70	Woods, Good, HSG C
1,470	98	Paved parking, HSG C
2,638	98	Paved parking, HSG C
21,294	78	Weighted Average
17,186		80.71% Pervious Area
4,108		19.29% Impervious Area

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

**Subcatchment 9: Post 9**



# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 1-Year Rainfall=2.78"

Page 24

## 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

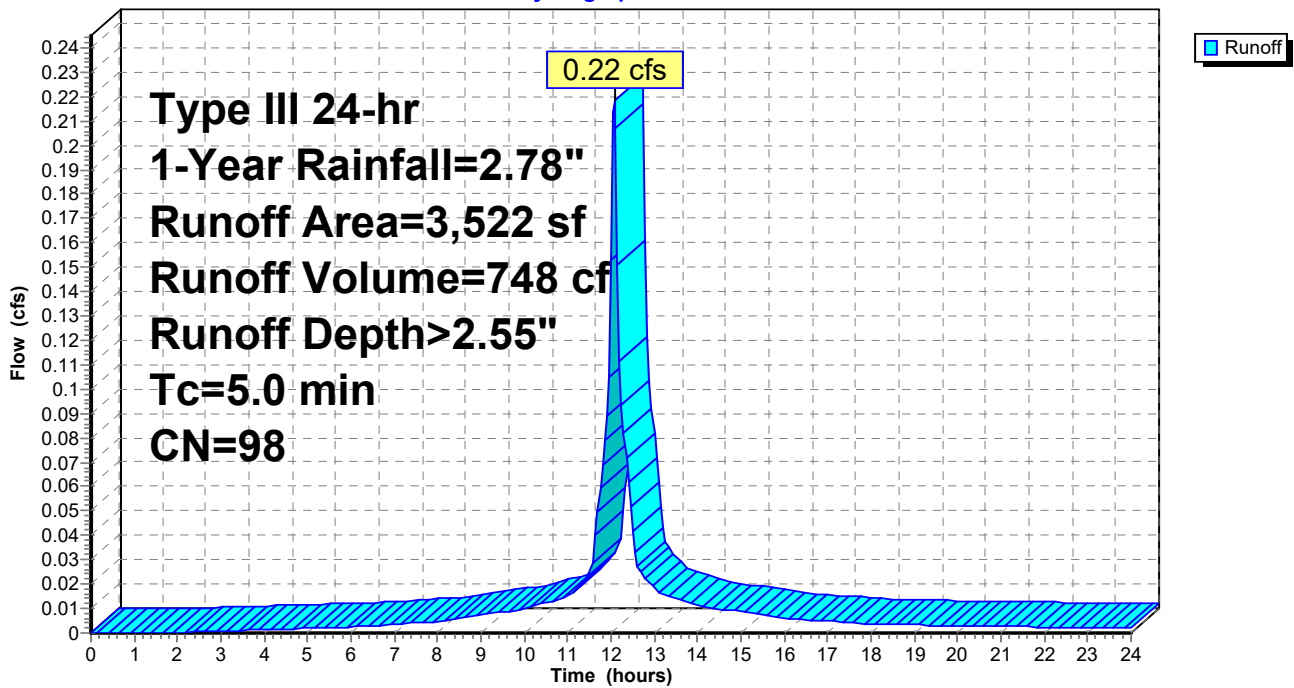
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 1-Year Rainfall=2.78"

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

Hydrograph



# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 1-Year Rainfall=2.78"

Page 25

## Summary for Subcatchment B2a: BLDG #2

Runoff = 0.07 cfs @ 12.07 hrs, Volume= 224 cf, Depth> 2.55"

Routed to Pond SSD6 : SUBSURFACE DRAINAGE AREA #6 (STORAGE)

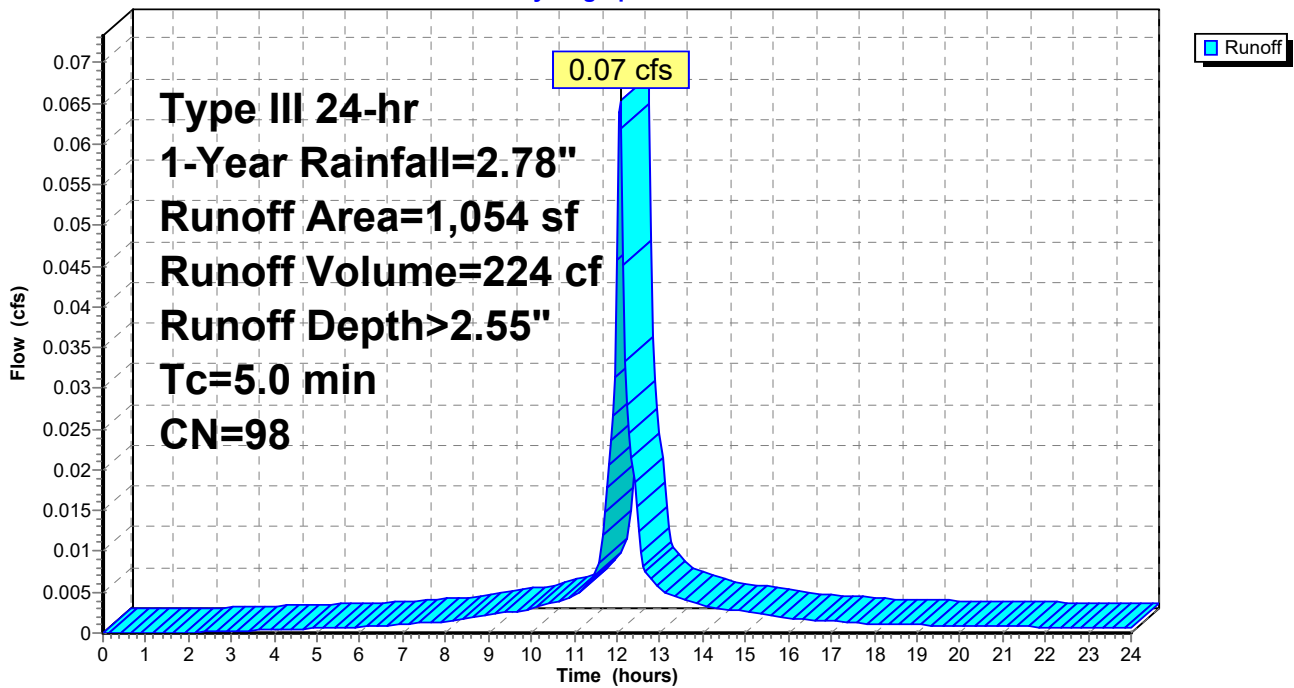
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 1-Year Rainfall=2.78"

Area (sf)	CN	Description
1,054	98	Unconnected roofs, HSG C
1,054		100.00% Impervious Area
1,054		100.00% Unconnected

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

## Subcatchment B2a: BLDG #2

Hydrograph



**Summary for Subcatchment B2b: BLDG #2 (REAR SECTION)**

Runoff = 0.23 cfs @ 12.07 hrs, Volume= 793 cf, Depth> 2.55"

Routed to Pond SSD1 : SUBSURFACE DRAINAGE AREA #1

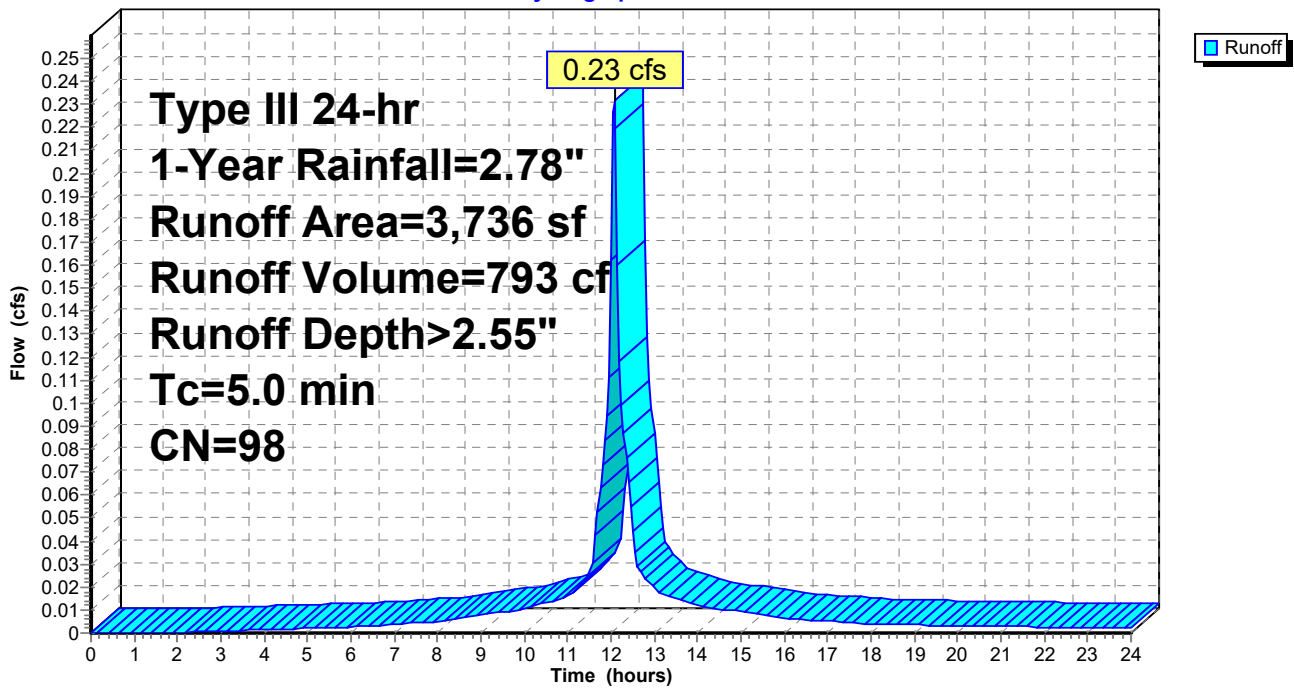
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 1-Year Rainfall=2.78"

Area (sf)	CN	Description
3,736	98	Unconnected roofs, HSG C
3,736		100.00% Impervious Area
3,736		100.00% Unconnected

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

**Subcatchment B2b: BLDG #2 (REAR SECTION)**

Hydrograph





# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 1-Year Rainfall=2.78"

Page 27

## Summary for Subcatchment B3: BLDG #3

Runoff = 0.35 cfs @ 12.07 hrs, Volume= 1,191 cf, Depth> 2.55"

Routed to Pond SSD4 : SUBSURFACE DRAINAGE AREA #4

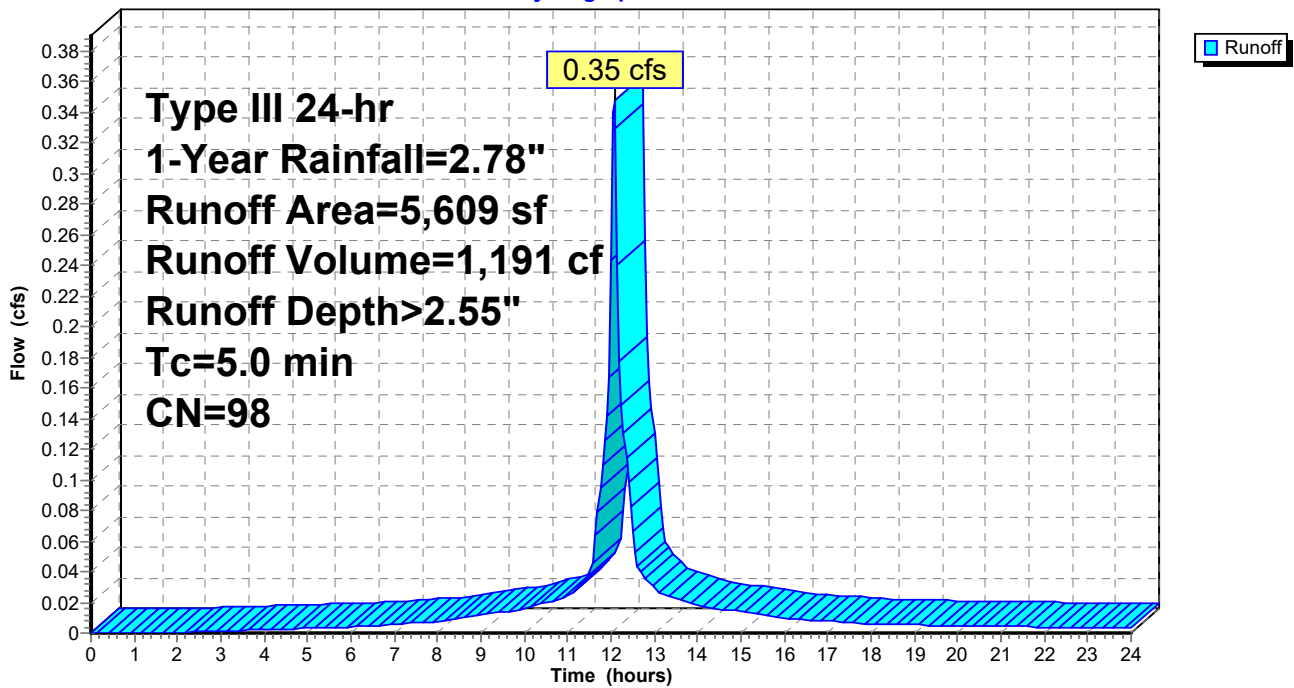
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 1-Year Rainfall=2.78"

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 B3: BLDG #3

Hydrograph



# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 1-Year Rainfall=2.78"

Page 28

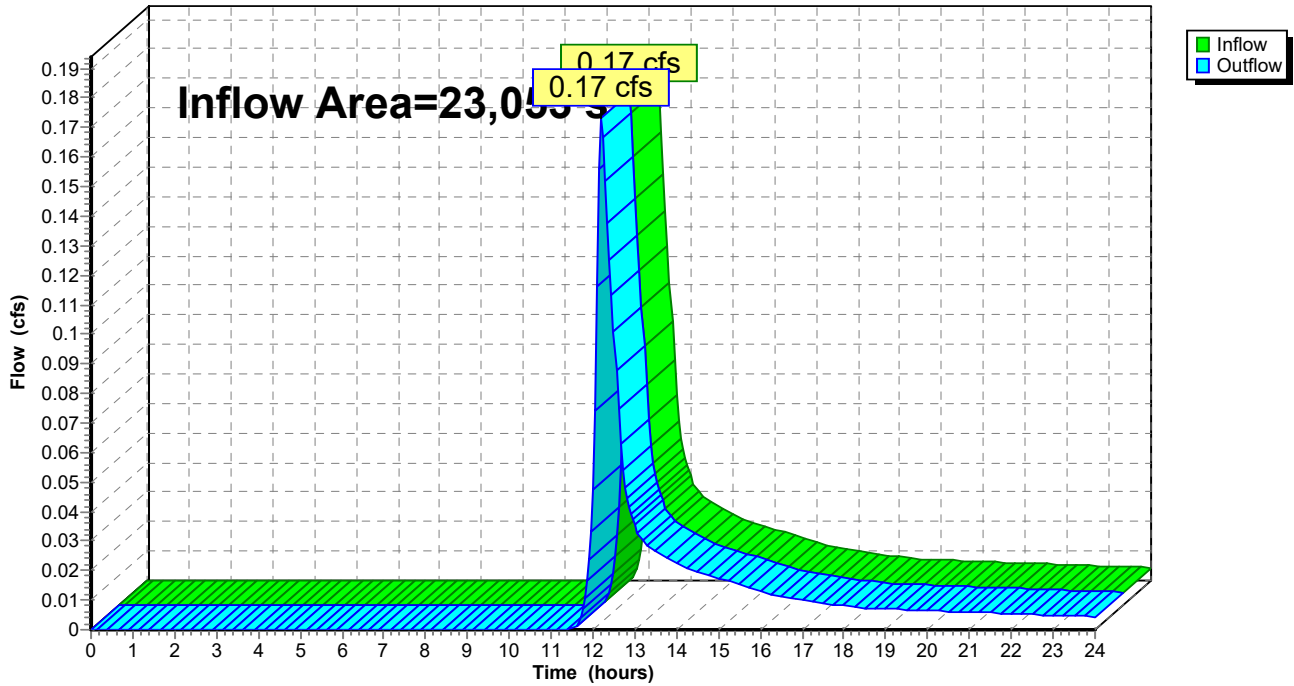
## Summary for Reach DP1: DP1post

Inflow Area = 23,053 sf, 36.59% Impervious, Inflow Depth > 0.41" 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

Hydrograph



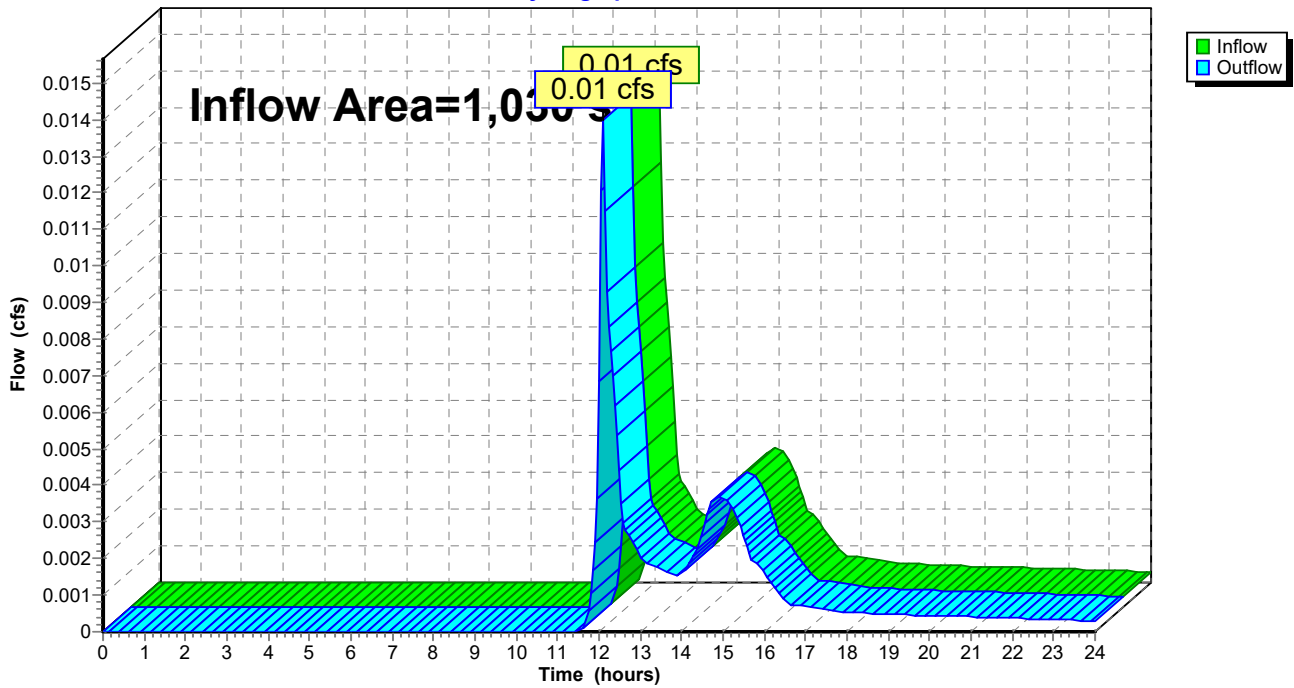
### Summary for Reach DP2: DP2

Inflow Area = 1,030 sf, 0.00% Impervious, Inflow Depth > 0.73" for 1-Year event  
Inflow = 0.01 cfs @ 12.10 hrs, Volume= 63 cf  
Outflow = 0.01 cfs @ 12.10 hrs, Volume= 63 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

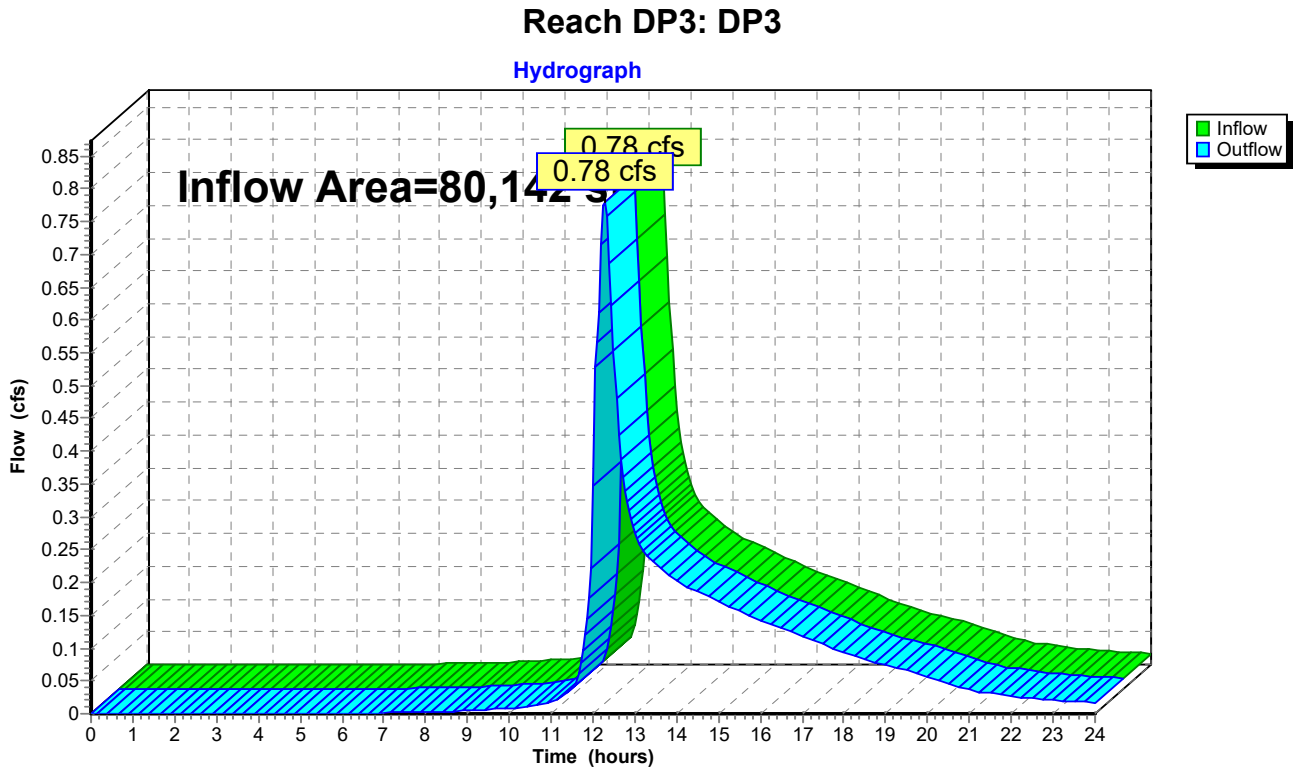
Hydrograph



### Summary for Reach DP3: DP3

Inflow Area = 80,142 sf, 53.31% Impervious, Inflow Depth > 0.91" for 1-Year event  
Inflow = 0.78 cfs @ 12.28 hrs, Volume= 6,049 cf  
Outflow = 0.78 cfs @ 12.28 hrs, Volume= 6,049 cf, Atten= 0%, Lag= 0.0 min

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



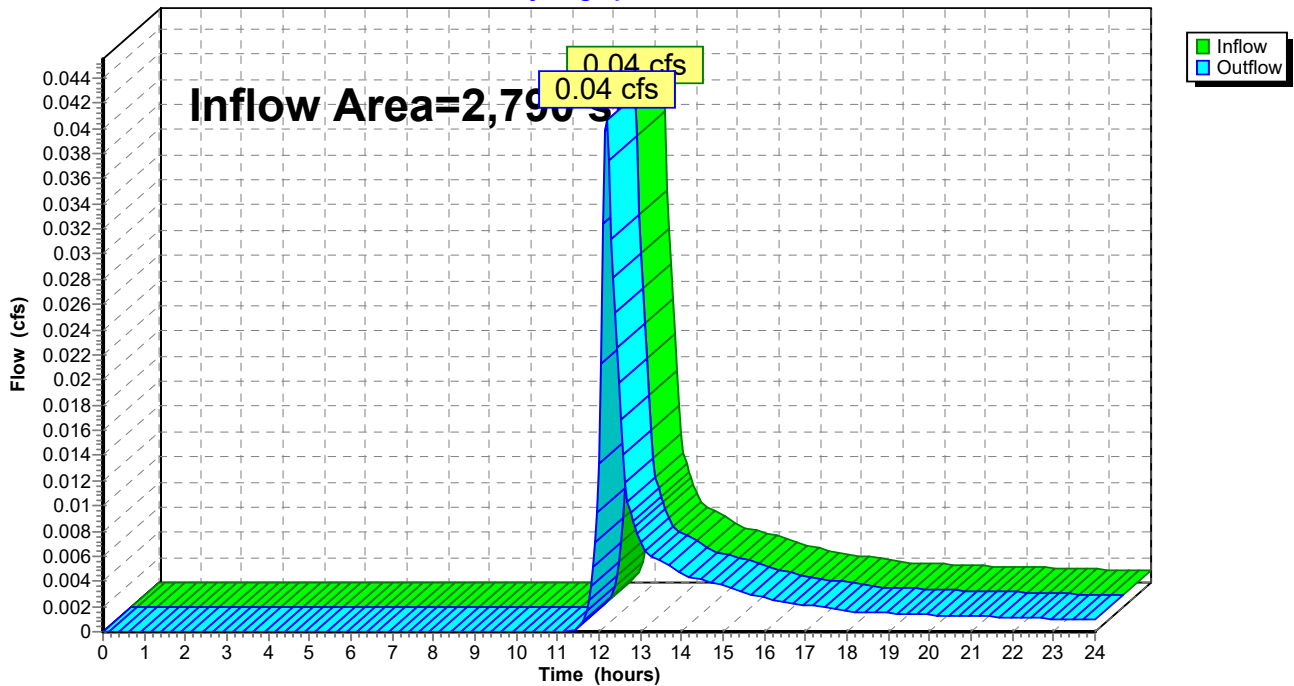
### Summary for Reach DP4: DP4

Inflow Area = 2,790 sf, 0.00% Impervious, Inflow Depth > 0.72" for 1-Year event  
Inflow = 0.04 cfs @ 12.17 hrs, Volume= 168 cf  
Outflow = 0.04 cfs @ 12.17 hrs, Volume= 168 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

Hydrograph



**Summary for Pond 2P: DMH2**

Inflow Area = 15,330 sf, 78.87% Impervious, Inflow Depth > 2.04" for 1-Year event  
 Inflow = 0.76 cfs @ 12.09 hrs, Volume= 2,605 cf  
 Outflow = 0.76 cfs @ 12.09 hrs, Volume= 2,605 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 0.76 cfs @ 12.09 hrs, Volume= 2,605 cf  
 Routed to Pond SSD5 : SUBSURFACE DRAINAGE AREA #5 (STORAGE)

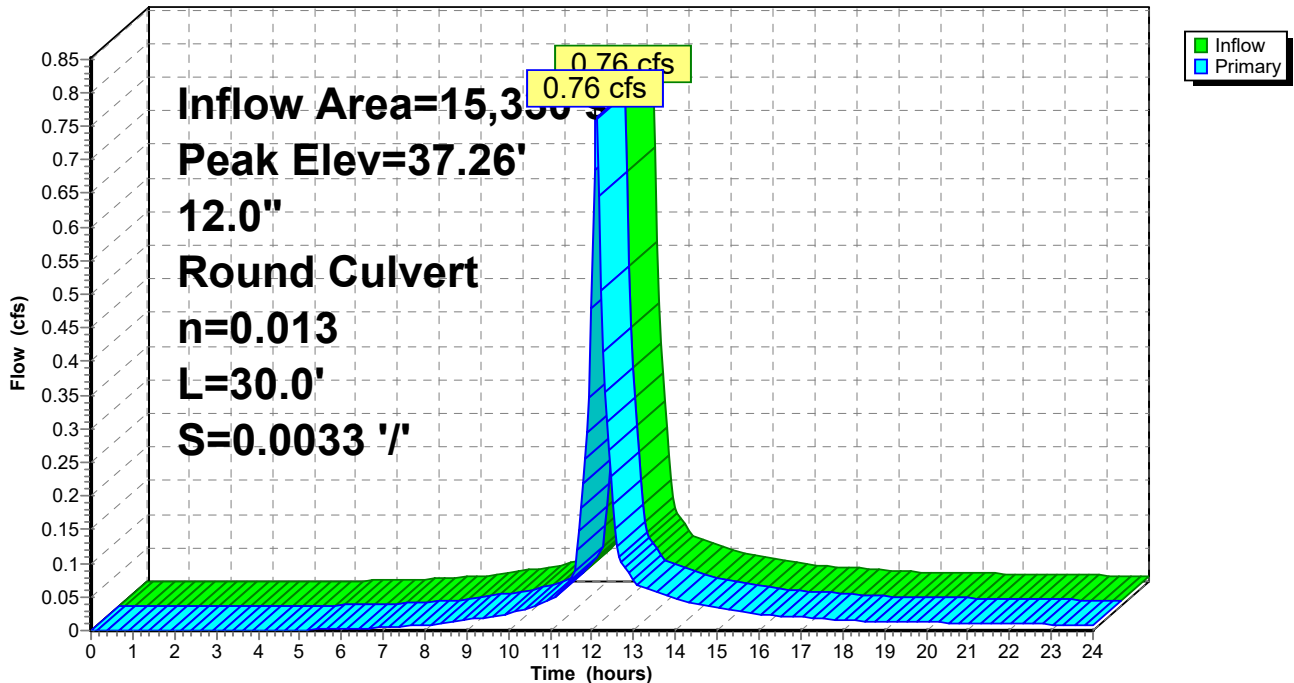
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 37.26' @ 12.09 hrs  
 Flood Elev= 39.67'

Device #	Routing	Invert	Outlet Devices
#1	Primary	36.70'	<b>12.0" Round Culvert</b> 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=0.75 cfs @ 12.09 hrs HW=37.26' (Free Discharge)  
 ←1=Culvert (Barrel Controls 0.75 cfs @ 2.43 fps)

**Pond 2P: DMH2**

Hydrograph



**Stage-Discharge for Pond 2P: DMH2**

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	<b>5.79</b>
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		

**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**Stage-Area-Storage for Pond 2P: DMH2**

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		



# 817 Country Way Post

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 35

## Summary for Pond CB1: CB1

Inflow Area = 7,248 sf, 88.76% Impervious, Inflow Depth > 2.23" for 1-Year event  
Inflow = 0.38 cfs @ 12.12 hrs, Volume= 1,348 cf  
Outflow = 0.38 cfs @ 12.12 hrs, Volume= 1,348 cf, Atten= 0%, Lag= 0.0 min  
Primary = 0.38 cfs @ 12.12 hrs, Volume= 1,348 cf  
Routed to Pond 2P : 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= 34.28' @ 12.12 hrs  
Flood Elev= 36.27'

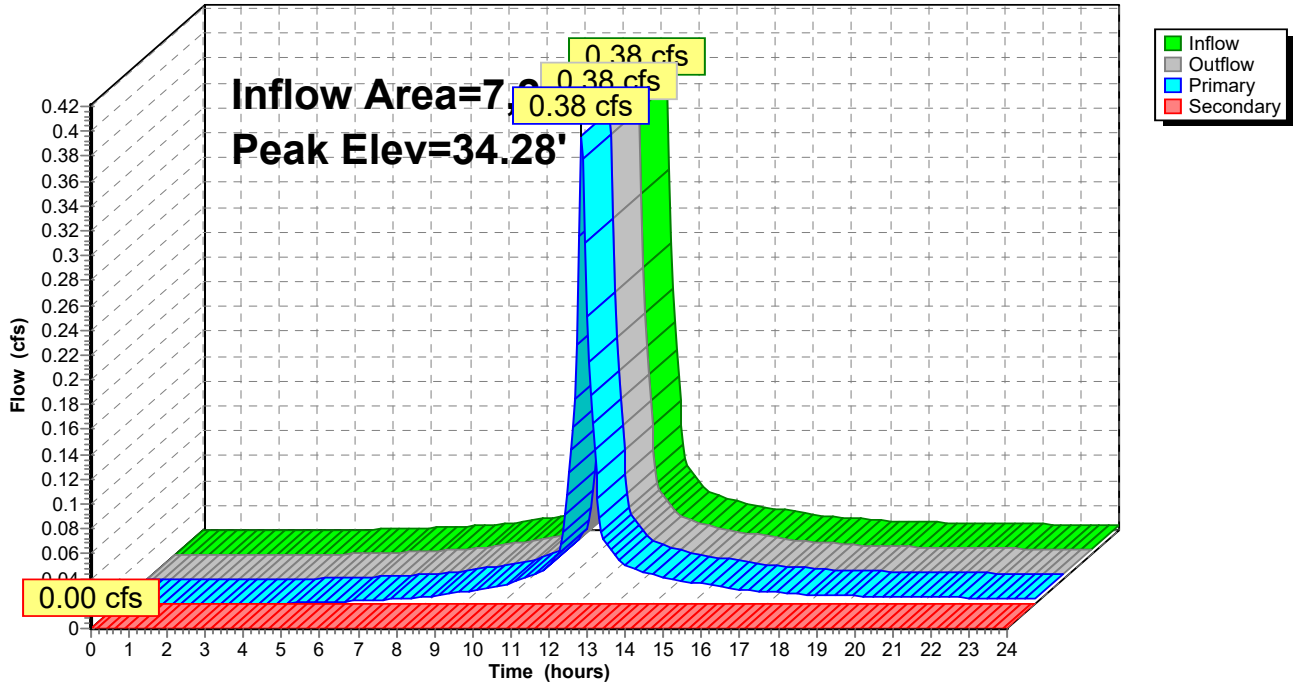
Device	Routing	Invert	Outlet Devices
#1	Primary	33.90'	<b>12.0" Round Culvert</b> L= 29.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 33.90' / 33.80' S= 0.0034 ' S= 0.0034 ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	36.50'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

**Primary OutFlow** Max=0.37 cfs @ 12.12 hrs HW=34.28' (Free Discharge)  
↑1=Culvert (Barrel Controls 0.37 cfs @ 2.00 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



**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 37

**Stage-Discharge for Pond CB1: CB1**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
33.90	0.00	0.00	<b>0.00</b>
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
36.30	4.97	4.97	0.00
36.35	5.05	5.05	0.00
36.40	5.13	5.13	0.00
36.45	5.21	5.21	0.00
36.50	<b>5.29</b>	<b>5.29</b>	0.00

**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**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	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		
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 = 7,525 sf, 60.54% Impervious, Inflow Depth > 1.70" for 1-Year event  
 Inflow = 0.31 cfs @ 12.12 hrs, Volume= 1,066 cf  
 Outflow = 0.31 cfs @ 12.12 hrs, Volume= 1,066 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 0.31 cfs @ 12.12 hrs, Volume= 1,066 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= 19.85' @ 12.12 hrs

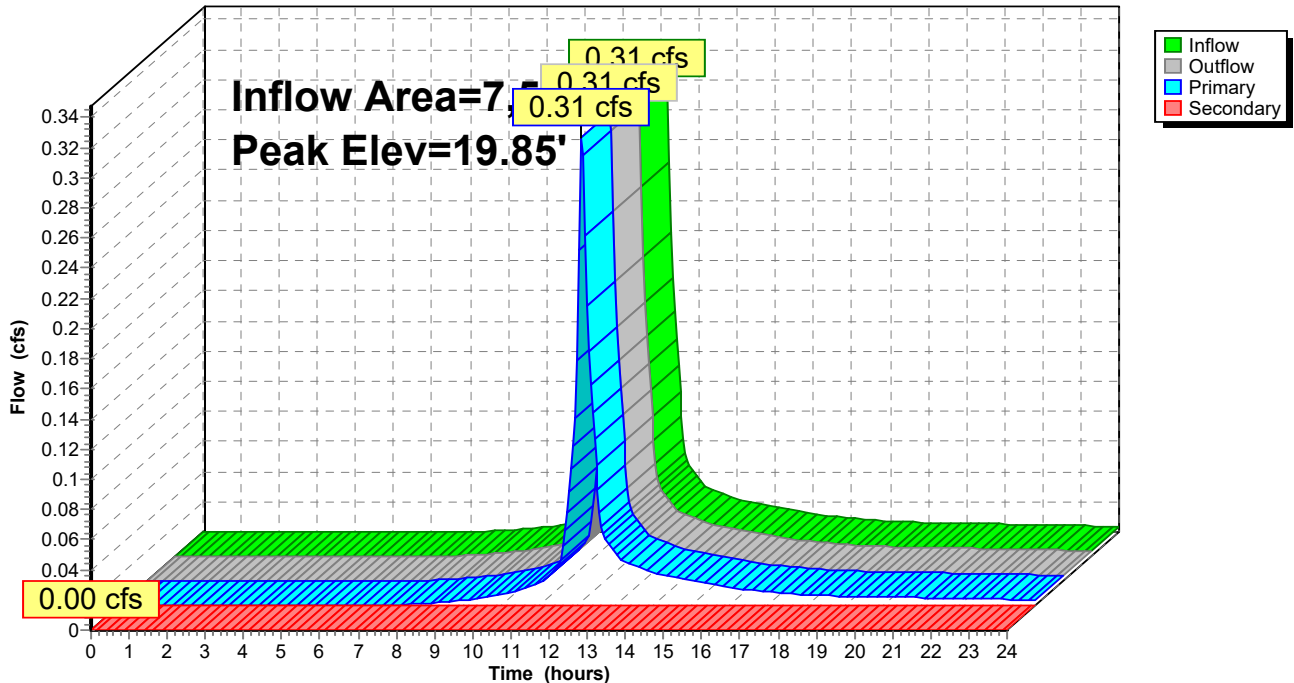
Device	Routing	Invert	Outlet Devices
#1	Primary	19.50'	<b>12.0" Round Culvert</b> L= 30.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 19.50' / 19.40' S= 0.0033 ' S= 0.0033 ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	22.00'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 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 @ 1.89 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**

Hydrograph



**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 40

**Stage-Discharge for Pond CB10: CB10**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
19.50	0.00	0.00	<b>0.00</b>
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	<b>5.10</b>	<b>5.10</b>	0.00

**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**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		

# 817 Country Way Post

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 42

## Summary for Pond CB13: CB13

Inflow Area = 25,175 sf, 50.08% Impervious, Inflow Depth > 0.62" for 1-Year event  
Inflow = 0.42 cfs @ 12.08 hrs, Volume= 1,307 cf  
Outflow = 0.42 cfs @ 12.08 hrs, Volume= 1,307 cf, Atten= 0%, Lag= 0.0 min  
Primary = 0.42 cfs @ 12.08 hrs, Volume= 1,307 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= 20.27' @ 12.08 hrs  
Flood Elev= 22.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	19.90'	<b>12.0" Round Culvert</b> 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'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

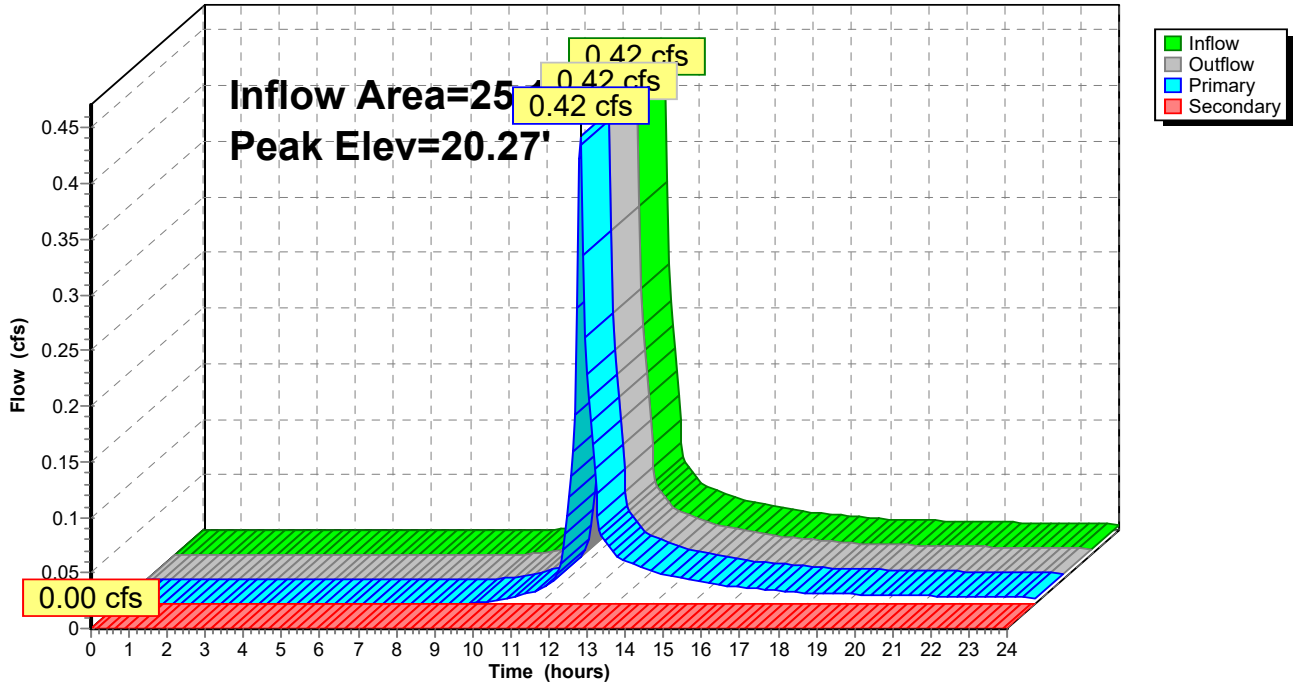
**Primary OutFlow** Max=0.41 cfs @ 12.08 hrs HW=20.26' (Free Discharge)  
↑1=Culvert (Barrel Controls 0.41 cfs @ 2.36 fps)

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



Pond CB13: CB13

Hydrograph



**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**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	<b>0.00</b>	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	<b>4.78</b>	<b>4.78</b>	0.00

**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 45

**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

# 817 Country Way Post

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 46

## Summary for Pond CB4: CB4

Inflow Area = 9,095 sf, 43.97% Impervious, Inflow Depth > 1.40" for 1-Year event  
Inflow = 0.34 cfs @ 12.08 hrs, Volume= 1,064 cf  
Outflow = 0.34 cfs @ 12.08 hrs, Volume= 1,064 cf, Atten= 0%, Lag= 0.0 min  
Primary = 0.34 cfs @ 12.08 hrs, Volume= 1,064 cf  
Routed to Pond SSD1 : SUBSURFACE DRAINAGE AREA #1  
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= 34.22' @ 12.08 hrs  
Flood Elev= 37.00'

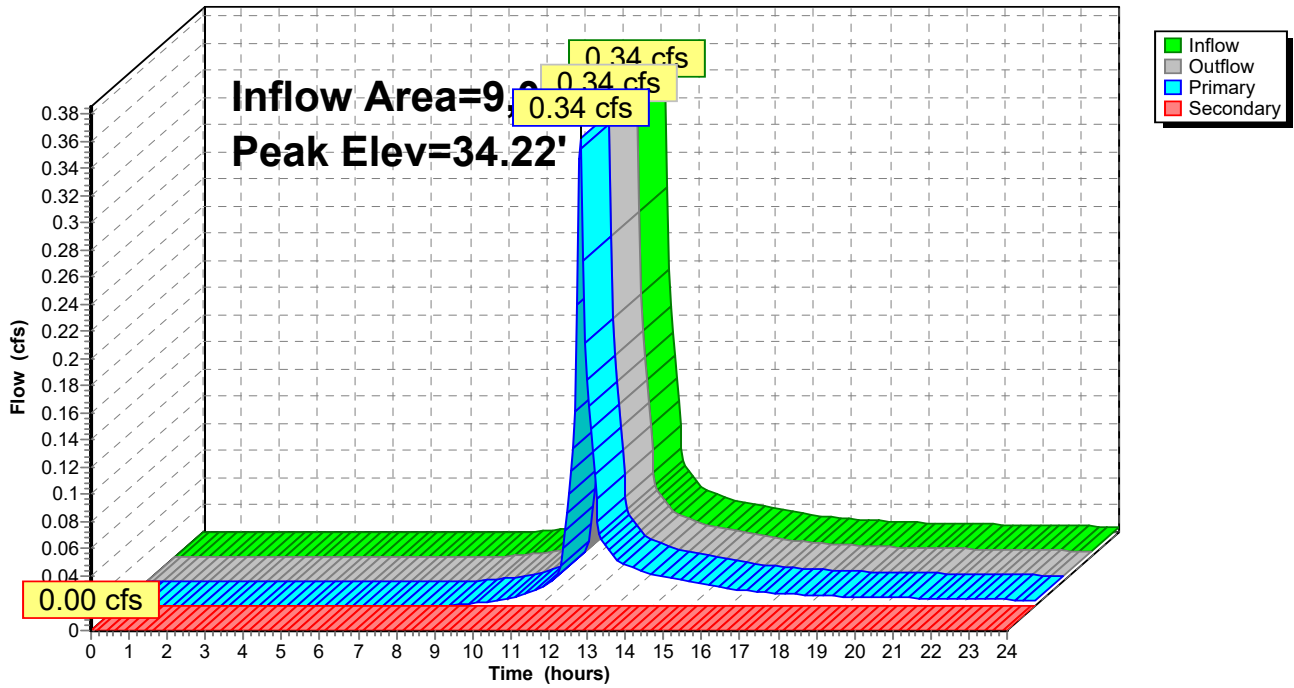
Device	Routing	Invert	Outlet Devices
#1	Primary	33.90'	<b>12.0" Round Culvert</b> L= 10.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 33.90' / 33.80' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	35.50'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

**Primary OutFlow** Max=0.33 cfs @ 12.08 hrs HW=34.22' (Free Discharge)  
↑1=Culvert (Barrel Controls 0.33 cfs @ 2.31 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



**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 48

**Stage-Discharge for Pond CB4: CB4**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
33.90	0.00	0.00	0.00	36.55	19.25	5.55	13.71
33.95	0.01	0.01	0.00	36.60	19.64	5.61	14.03
34.00	0.04	0.04	0.00	36.65	20.02	5.67	14.34
34.05	0.08	0.08	0.00	36.70	20.39	5.74	14.65
34.10	0.14	0.14	0.00	36.75	20.75	5.80	14.95
34.15	0.21	0.21	0.00	36.80	21.11	5.86	15.25
34.20	0.30	0.30	0.00	36.85	21.46	5.92	15.54
34.25	0.39	0.39	0.00	36.90	21.80	5.98	15.83
34.30	0.50	0.50	0.00	36.95	22.14	6.04	16.11
34.35	0.62	0.62	0.00	37.00	<b>22.48</b>	<b>6.10</b>	<b>16.38</b>
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	4.30	4.05	0.24				
35.60	4.83	4.14	0.69				
35.65	5.49	4.23	1.27				
35.70	6.26	4.31	1.95				
35.75	7.12	4.39	2.73				
35.80	8.06	4.47	3.58				
35.85	9.07	4.55	4.51				
35.90	10.15	4.63	5.52				
35.95	11.29	4.71	6.58				
36.00	12.49	4.78	7.71				
36.05	13.75	4.86	8.89				
36.10	15.06	4.93	10.13				
36.15	15.79	5.00	10.78				
36.20	16.26	5.07	11.19				
36.25	16.73	5.14	11.58				
36.30	17.18	5.21	11.96				
36.35	17.61	5.28	12.33				
36.40	18.04	5.35	12.69				
36.45	18.45	5.41	13.04				
36.50	18.86	5.48	13.37				

**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 49

**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		

# 817 Country Way Post

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 50

## Summary for Pond CB5: CB5

Inflow Area = 8,082 sf, 70.01% Impervious, Inflow Depth > 1.87" for 1-Year event  
Inflow = 0.40 cfs @ 12.07 hrs, Volume= 1,257 cf  
Outflow = 0.40 cfs @ 12.07 hrs, Volume= 1,257 cf, Atten= 0%, Lag= 0.0 min  
Primary = 0.40 cfs @ 12.07 hrs, Volume= 1,257 cf  
Routed to Pond 2P : DMH2  
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
Routed to Pond CB1 : CB1

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Peak Elev= 34.37' @ 12.07 hrs  
Flood Elev= 37.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	34.00'	<b>12.0" Round Culvert</b> L= 35.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 34.00' / 33.80' S= 0.0057 ' S= 0.0057 ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	38.20'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

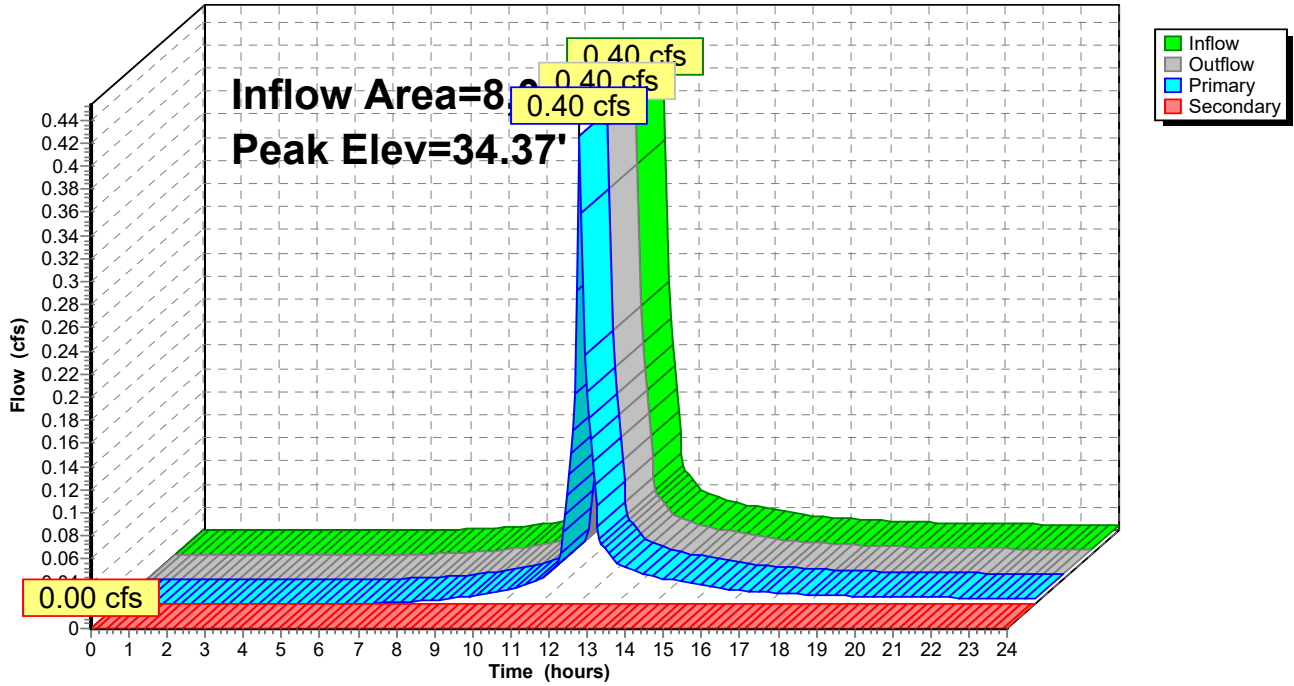
**Primary OutFlow** Max=0.39 cfs @ 12.07 hrs HW=34.36' (Free Discharge)  
↑1=Culvert (Barrel Controls 0.39 cfs @ 2.29 fps)

**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



**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**Stage-Discharge for Pond CB5: CB5**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
34.00	0.00	0.00	<b>0.00</b>	36.65	5.32	5.32	0.00
34.05	0.01	0.01	0.00	36.70	5.39	5.39	0.00
34.10	0.03	0.03	0.00	36.75	5.46	5.46	0.00
34.15	0.07	0.07	0.00	36.80	5.53	5.53	0.00
34.20	0.13	0.13	0.00	36.85	5.60	5.60	0.00
34.25	0.19	0.19	0.00	36.90	5.67	5.67	0.00
34.30	0.28	0.28	0.00	36.95	5.73	5.73	0.00
34.35	0.37	0.37	0.00	37.00	5.80	5.80	0.00
34.40	0.48	0.48	0.00	37.05	5.86	5.86	0.00
34.45	0.59	0.59	0.00	37.10	5.93	5.93	0.00
34.50	0.72	0.72	0.00	37.15	5.99	5.99	0.00
34.55	0.85	0.85	0.00	37.20	6.06	6.06	0.00
34.60	0.99	0.99	0.00	37.25	6.12	6.12	0.00
34.65	1.13	1.13	0.00	37.30	6.18	6.18	0.00
34.70	1.28	1.28	0.00	37.35	6.24	6.24	0.00
34.75	1.44	1.44	0.00	37.40	6.30	6.30	0.00
34.80	1.59	1.59	0.00	37.45	6.36	6.36	0.00
34.85	1.75	1.75	0.00	37.50	6.42	6.42	0.00
34.90	1.91	1.91	0.00	37.55	6.48	6.48	0.00
34.95	2.06	2.06	0.00	37.60	6.54	6.54	0.00
35.00	2.22	2.22	0.00	37.65	6.60	6.60	0.00
35.05	2.36	2.36	0.00	37.70	6.66	6.66	0.00
35.10	2.50	2.50	0.00	37.75	6.72	6.72	0.00
35.15	2.63	2.63	0.00	37.80	6.77	6.77	0.00
35.20	2.74	2.74	0.00	37.85	6.83	6.83	0.00
35.25	2.84	2.84	0.00	37.90	6.88	6.88	0.00
35.30	2.89	2.89	0.00	37.95	6.94	6.94	0.00
35.35	2.90	2.90	0.00	38.00	6.99	6.99	0.00
35.40	3.03	3.03	0.00	38.05	7.05	7.05	0.00
35.45	3.15	3.15	0.00	38.10	7.10	7.10	0.00
35.50	3.27	3.27	0.00	38.15	7.16	7.16	0.00
35.55	3.39	3.39	0.00	38.20	<b>7.21</b>	<b>7.21</b>	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				

**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 53

**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	37.55	0
34.95	0	37.60	0
35.00	0	37.65	0
35.05	0	37.70	0
35.10	0	37.75	0
35.15	0	37.80	0
35.20	0	37.85	0
35.25	0	37.90	0
35.30	0	37.95	0
35.35	0	38.00	0
35.40	0	38.05	0
35.45	0	38.10	0
35.50	0	38.15	0
35.55	0	38.20	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		

# 817 Country Way Post

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 54

## Summary for Pond CB6: CB6

Inflow Area = 2,000 sf, 72.80% Impervious, Inflow Depth > 1.87" for 1-Year event  
Inflow = 0.10 cfs @ 12.07 hrs, Volume= 311 cf  
Outflow = 0.10 cfs @ 12.07 hrs, Volume= 311 cf, Atten= 0%, Lag= 0.0 min  
Primary = 0.10 cfs @ 12.07 hrs, Volume= 311 cf  
Routed to Pond DMH7 : DMH7  
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
Routed to Pond CB5 : CB5

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Peak Elev= 37.08' @ 12.07 hrs  
Flood Elev= 39.42'

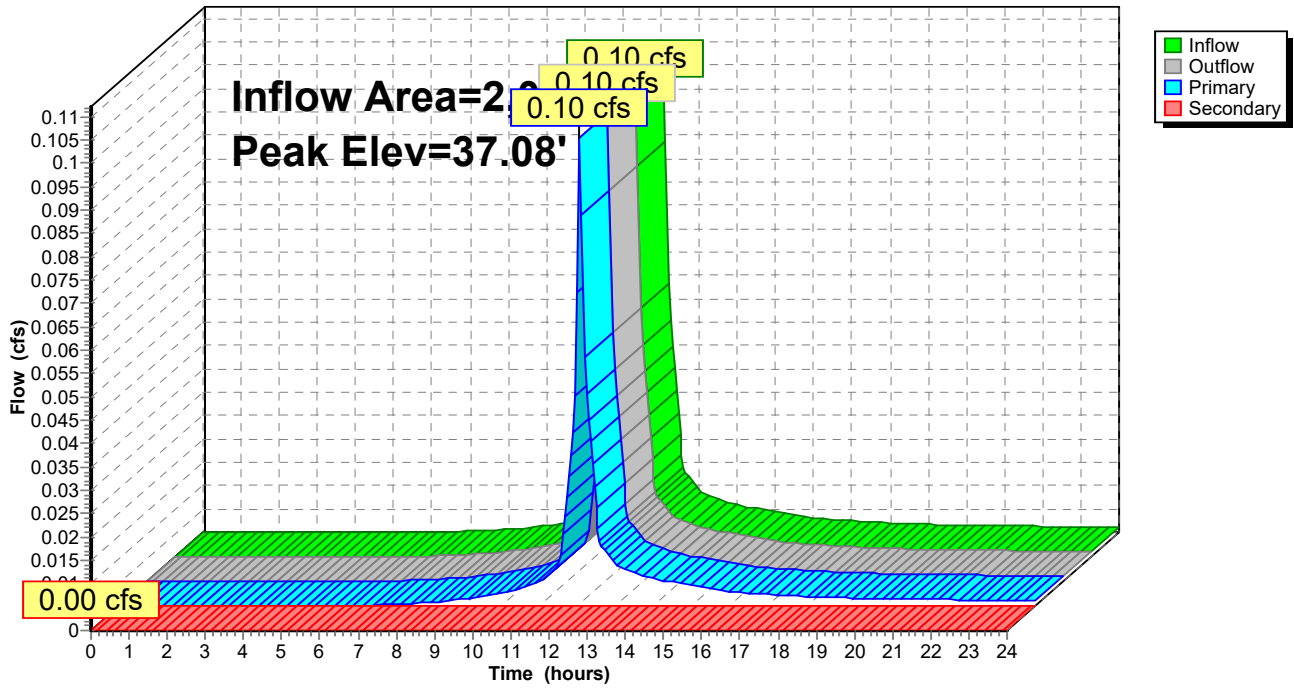
Device	Routing	Invert	Outlet Devices
#1	Primary	36.90'	<b>12.0" Round Culvert</b> L= 16.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 36.90' / 36.80' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	40.00'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 24.0" x 24.0" Grate (69% open area) Limited to weir flow at low heads

**Primary OutFlow** Max=0.10 cfs @ 12.07 hrs HW=37.07' (Free Discharge)  
↑1=Culvert (Barrel Controls 0.10 cfs @ 1.58 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



**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**Stage-Discharge for Pond CB6: CB6**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
36.90	0.00	0.00	<b>0.00</b>	39.55	5.55	5.55	0.00
36.95	0.01	0.01	0.00	39.60	5.61	5.61	0.00
37.00	0.03	0.03	0.00	39.65	5.67	5.67	0.00
37.05	0.07	0.07	0.00	39.70	5.74	5.74	0.00
37.10	0.12	0.12	0.00	39.75	5.80	5.80	0.00
37.15	0.19	0.19	0.00	39.80	5.86	5.86	0.00
37.20	0.27	0.27	0.00	39.85	5.92	5.92	0.00
37.25	0.36	0.36	0.00	39.90	5.98	5.98	0.00
37.30	0.47	0.47	0.00	39.95	6.04	6.04	0.00
37.35	0.58	0.58	0.00	40.00	<b>6.10</b>	<b>6.10</b>	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				
39.45	5.41	5.41	0.00				
39.50	5.48	5.48	0.00				

**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 57

**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	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	39.68	0
37.58	0	38.64	0	39.70	0
37.60	0	38.66	0	39.72	0
37.62	0	38.68	0	39.74	0
37.64	0	38.70	0	39.76	0
37.66	0	38.72	0	39.78	0
37.68	0	38.74	0	39.80	0
37.70	0	38.76	0	39.82	0
37.72	0	38.78	0	39.84	0
37.74	0	38.80	0	39.86	0
37.76	0	38.82	0	39.88	0
37.78	0	38.84	0	39.90	0
37.80	0	38.86	0	39.92	0
37.82	0	38.88	0	39.94	0
37.84	0	38.90	0	39.96	0
37.86	0	38.92	0	39.98	0
37.88	0	38.94	0	40.00	0
37.90	0	38.96	0		
37.92	0	38.98	0		
37.94	0	39.00	0		

# 817 Country Way Post

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 58

## Summary for Pond CB9: CB9

Inflow Area = 1,641 sf, 83.49% Impervious, Inflow Depth > 2.14" for 1-Year event  
Inflow = 0.09 cfs @ 12.07 hrs, Volume= 292 cf  
Outflow = 0.09 cfs @ 12.07 hrs, Volume= 292 cf, Atten= 0%, Lag= 0.0 min  
Primary = 0.09 cfs @ 12.07 hrs, Volume= 292 cf  
Routed to Pond DMH7 : DMH7  
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
Routed to Pond CB5 : CB5

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Peak Elev= 37.07' @ 12.07 hrs  
Flood Elev= 39.42'

Device	Routing	Invert	Outlet Devices
#1	Primary	36.90'	<b>12.0" Round Culvert</b> L= 16.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 36.90' / 36.80' S= 0.0063 ' S= 0.0063 ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	40.00'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

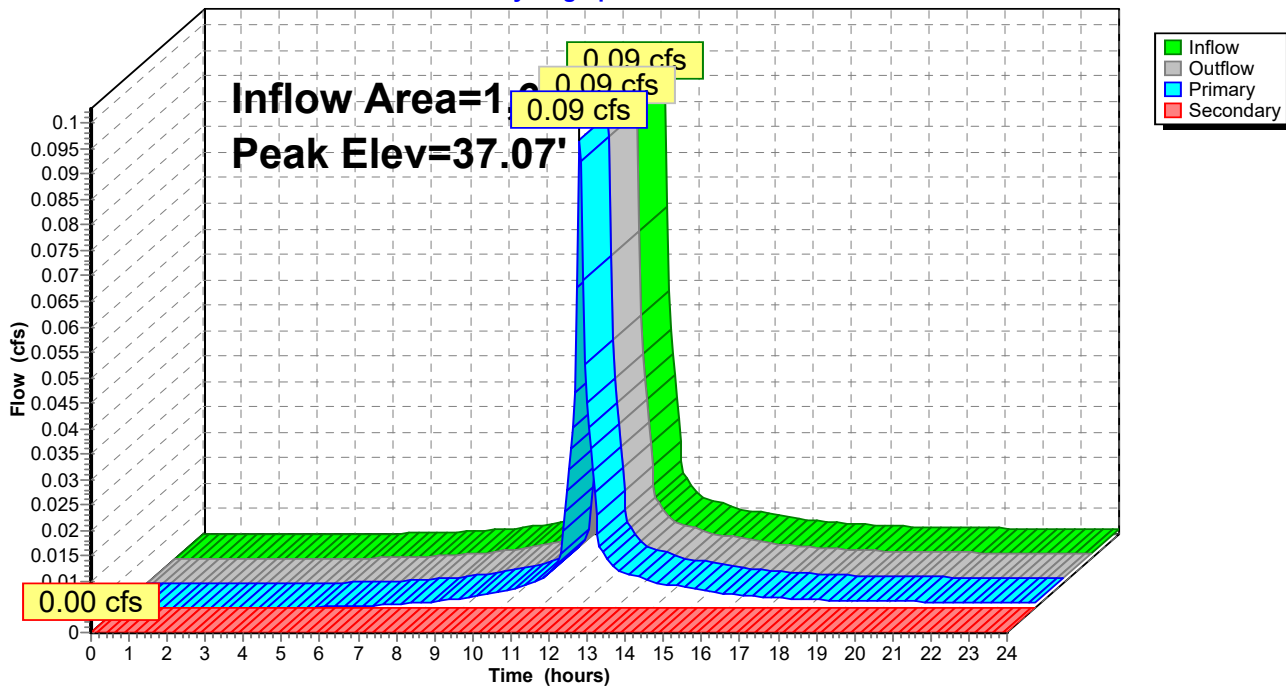
**Primary OutFlow** Max=0.09 cfs @ 12.07 hrs HW=37.07' (Free Discharge)  
↑1=Culvert (Barrel Controls 0.09 cfs @ 1.54 fps)

**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



**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**Stage-Discharge for Pond CB9: CB9**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
36.90	0.00	0.00	<b>0.00</b>	39.55	5.55	5.55	0.00
36.95	0.01	0.01	0.00	39.60	5.61	5.61	0.00
37.00	0.03	0.03	0.00	39.65	5.67	5.67	0.00
37.05	0.07	0.07	0.00	39.70	5.74	5.74	0.00
37.10	0.12	0.12	0.00	39.75	5.80	5.80	0.00
37.15	0.19	0.19	0.00	39.80	5.86	5.86	0.00
37.20	0.27	0.27	0.00	39.85	5.92	5.92	0.00
37.25	0.36	0.36	0.00	39.90	5.98	5.98	0.00
37.30	0.47	0.47	0.00	39.95	6.04	6.04	0.00
37.35	0.58	0.58	0.00	40.00	<b>6.10</b>	<b>6.10</b>	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				
39.45	5.41	5.41	0.00				
39.50	5.48	5.48	0.00				

**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**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	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	39.68	0
37.58	0	38.64	0	39.70	0
37.60	0	38.66	0	39.72	0
37.62	0	38.68	0	39.74	0
37.64	0	38.70	0	39.76	0
37.66	0	38.72	0	39.78	0
37.68	0	38.74	0	39.80	0
37.70	0	38.76	0	39.82	0
37.72	0	38.78	0	39.84	0
37.74	0	38.80	0	39.86	0
37.76	0	38.82	0	39.88	0
37.78	0	38.84	0	39.90	0
37.80	0	38.86	0	39.92	0
37.82	0	38.88	0	39.94	0
37.84	0	38.90	0	39.96	0
37.86	0	38.92	0	39.98	0
37.88	0	38.94	0	40.00	0
37.90	0	38.96	0		
37.92	0	38.98	0		
37.94	0	39.00	0		

# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 1-Year Rainfall=2.78"

Page 62

## Summary for Pond DMH11: DMH11

Inflow Area = 48,030 sf, 60.91% Impervious, Inflow Depth > 1.23" for 1-Year event  
 Inflow = 0.79 cfs @ 12.10 hrs, Volume= 4,916 cf  
 Outflow = 0.79 cfs @ 12.10 hrs, Volume= 4,916 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 0.79 cfs @ 12.10 hrs, Volume= 4,916 cf  
 Routed to Pond SSD3 : SUBSURFACE DRAINAGE AREA #3

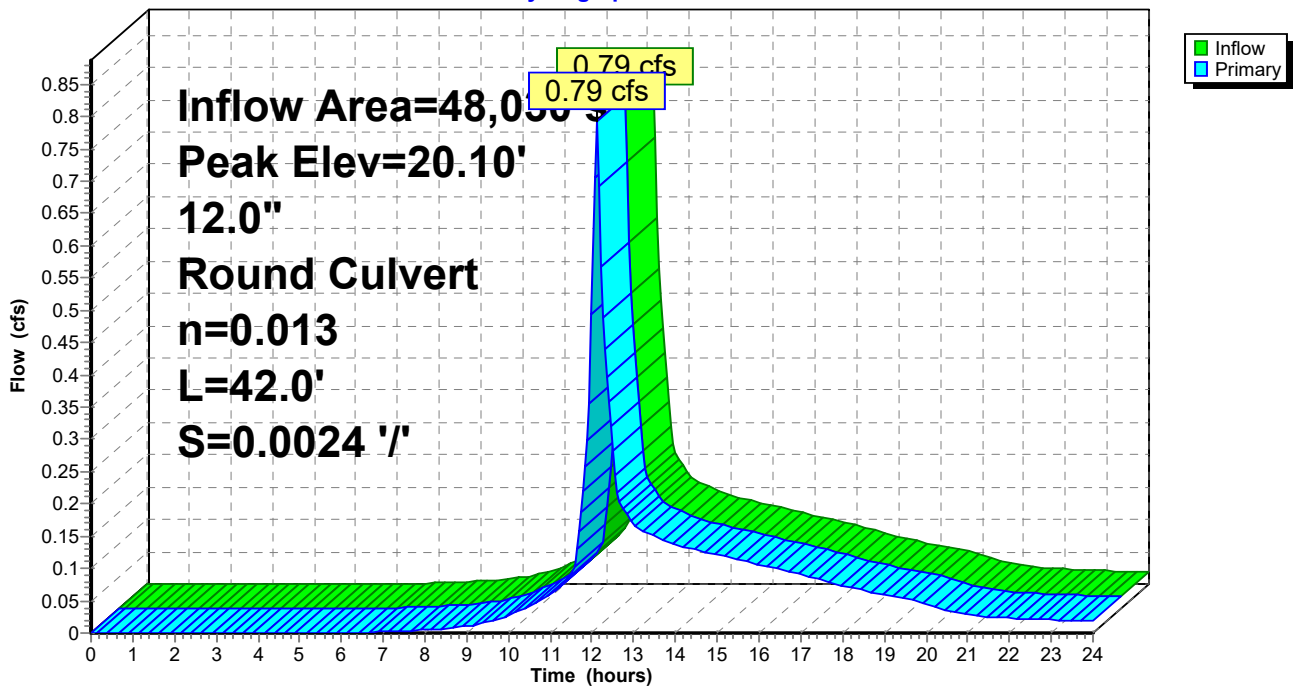
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 20.10' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	19.50'	<b>12.0" Round Culvert</b> 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=0.79 cfs @ 12.10 hrs HW=20.09' (Free Discharge)  
 ←1=Culvert (Barrel Controls 0.79 cfs @ 2.33 fps)

## Pond DMH11: DMH11

Hydrograph



**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 63

**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	<b>1.89</b>
19.98	0.53		
19.99	0.55		
20.00	0.57		
20.01	0.59		
20.02	0.61		

**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 64

**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 DMH7: DMH7**

Inflow Area = 3,641 sf, 77.62% Impervious, Inflow Depth > 1.99" for 1-Year event  
 Inflow = 0.19 cfs @ 12.07 hrs, Volume= 603 cf  
 Outflow = 0.19 cfs @ 12.07 hrs, Volume= 603 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 0.19 cfs @ 12.07 hrs, Volume= 603 cf  
 Routed to Pond SSD2 : SUBSURFACE DRAINAGE AREA #2

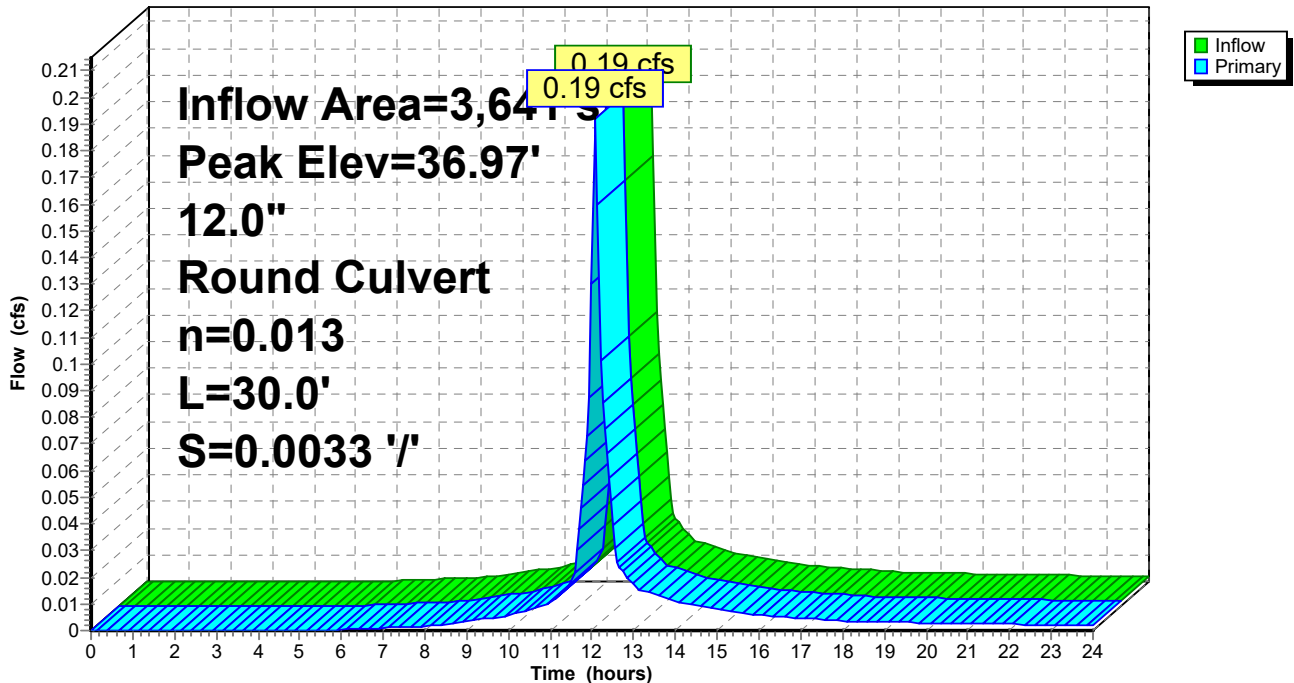
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 36.97' @ 12.07 hrs  
 Flood Elev= 39.67'

Device #	Routing	Invert	Outlet Devices
#1	Primary	36.70'	<b>12.0" Round Culvert</b> 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=0.18 cfs @ 12.07 hrs HW=36.97' (Free Discharge)  
 ↑1=Culvert (Barrel Controls 0.18 cfs @ 1.64 fps)

**Pond DMH7: DMH7**

Hydrograph



**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**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	<b>5.79</b>
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		



**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 67

**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		

# 817 Country Way Post

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 68

## Summary for Pond SSD1: SUBSURFACE DRAINAGE AREA #1

Inflow Area = 12,831 sf, 60.28% Impervious, Inflow Depth > 1.74" for 1-Year event  
 Inflow = 0.57 cfs @ 12.08 hrs, Volume= 1,858 cf  
 Outflow = 0.07 cfs @ 11.70 hrs, Volume= 1,855 cf, Atten= 88%, Lag= 0.0 min  
 Discarded = 0.07 cfs @ 11.70 hrs, Volume= 1,855 cf  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
 Routed to Pond CB13 : CB13  
 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= 34.30' @ 12.72 hrs Surf.Area= 2,994 sf Storage= 611 cf

Plug-Flow detention time= 63.3 min calculated for 1,855 cf (100% of inflow)  
 Center-of-Mass det. time= 62.5 min ( 862.6 - 800.0 )

Volume	Invert	Avail.Storage	Storage Description
#1A	33.80'	1,232 cf	<b>21.67'W x 92.50'L x 2.04'H Field A</b> 4,092 cf Overall - 1,011 cf Embedded = 3,081 cf x 40.0% Voids
#2A	34.30'	1,011 cf	<b>Cultec C-100HD x 72 Inside #1</b> Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.86 sf x 6 rows
#3B	33.80'	515 cf	<b>11.67'W x 70.00'L x 2.04'H Field B</b> 1,667 cf Overall - 380 cf Embedded = 1,288 cf x 40.0% Voids
#4B	34.30'	380 cf	<b>Cultec C-100HD x 27 Inside #3</b> Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.86 sf x 3 rows
#5C	33.80'	118 cf	<b>9.33'W x 18.50'L x 2.04'H Field C</b> 353 cf Overall - 58 cf Embedded = 295 cf x 40.0% Voids
#6C	34.30'	58 cf	<b>Cultec C-100HD x 4 Inside #5</b> Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.86 sf x 2 rows
		3,314 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	33.80'	<b>1.020 in/hr Exfiltration over Surface area</b> Phase-In= 0.01'
#2	Primary	35.50'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Secondary	35.00'	<b>2.0" Round Culvert</b> L= 267.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.00' / 19.00' S= 0.0599 '/ Cc= 0.900 n= 0.013, Flow Area= 0.02 sf

# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 1-Year Rainfall=2.78"

**Discarded OutFlow** Max=0.07 cfs @ 11.70 hrs HW=33.82' (Free Discharge)

↳ **1=Exfiltration** (Exfiltration Controls 0.07 cfs)

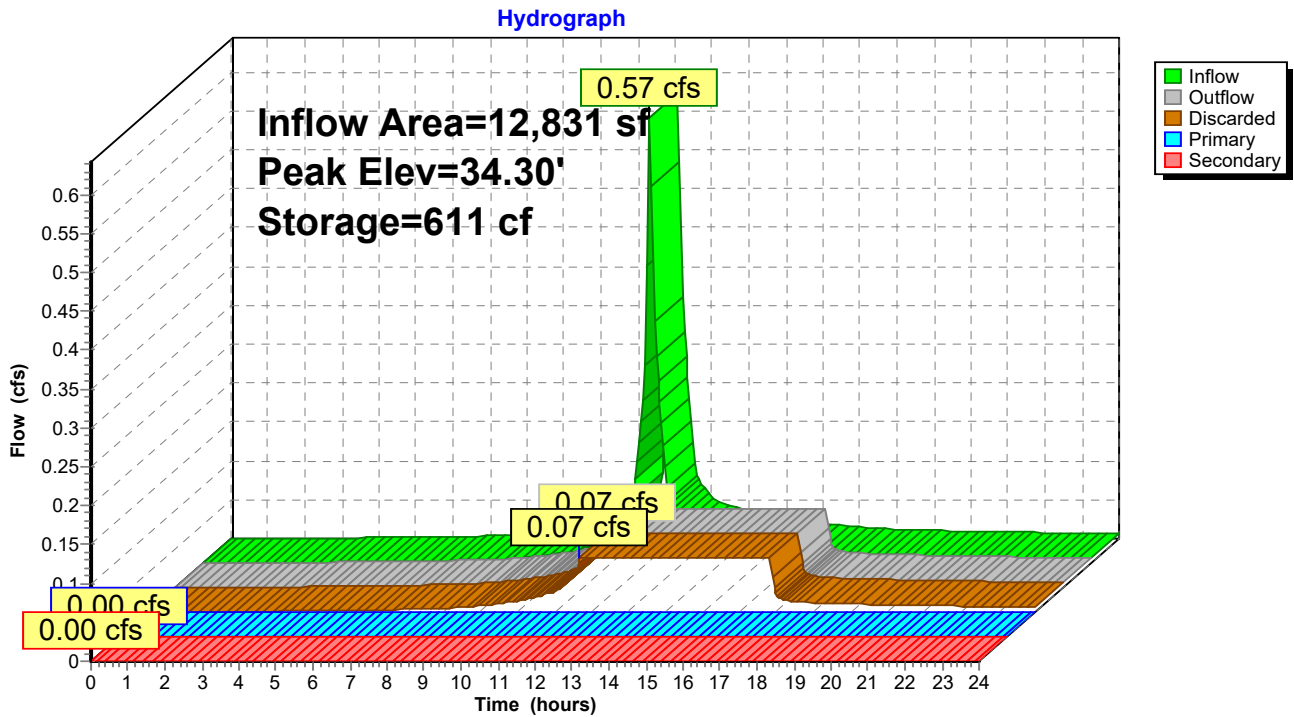
**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=33.80' (Free Discharge)

↳ **2=Orifice/Grate** ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=33.80' (Free Discharge)

↳ **3=Culvert** ( Controls 0.00 cfs)

## Pond SSD1: SUBSURFACE DRAINAGE AREA #1



**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 70

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

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
33.80	0.00	<b>0.00</b>	0.00	0.00
33.85	0.07	<b>0.07</b>	0.00	0.00
33.90	0.07	0.07	0.00	0.00
33.95	0.07	0.07	0.00	0.00
34.00	0.07	0.07	0.00	0.00
34.05	0.07	0.07	0.00	0.00
34.10	0.07	0.07	0.00	0.00
34.15	0.07	0.07	0.00	0.00
34.20	0.07	0.07	0.00	0.00
34.25	0.07	0.07	0.00	0.00
34.30	0.07	0.07	0.00	0.00
34.35	0.07	0.07	0.00	0.00
34.40	0.07	0.07	0.00	0.00
34.45	0.07	0.07	0.00	0.00
34.50	0.07	0.07	0.00	0.00
34.55	0.07	0.07	0.00	0.00
34.60	0.07	0.07	0.00	0.00
34.65	0.07	0.07	0.00	0.00
34.70	0.07	0.07	0.00	0.00
34.75	0.07	0.07	0.00	0.00
34.80	0.07	0.07	0.00	0.00
34.85	0.07	0.07	0.00	0.00
34.90	0.07	0.07	0.00	0.00
34.95	0.07	0.07	0.00	0.00
35.00	0.07	0.07	0.00	0.00
35.05	0.07	0.07	0.00	0.00
35.10	0.09	0.07	0.00	0.01
35.15	0.10	0.07	0.00	0.03
35.20	0.11	0.07	0.00	0.04
35.25	0.11	0.07	0.00	0.04
35.30	0.12	0.07	0.00	0.05
35.35	0.12	0.07	0.00	0.05
35.40	0.13	0.07	0.00	0.06
35.45	0.13	0.07	0.00	0.06
35.50	0.14	0.07	0.00	0.07
35.55	0.39	0.07	0.24	0.07
35.60	0.83	0.07	0.69	0.07
35.65	1.41	0.07	1.27	0.07
35.70	2.09	0.07	1.95	0.07
35.75	2.87	0.07	2.73	0.07
35.80	<b>3.73</b>	0.07	<b>3.58</b>	<b>0.07</b>

**817 Country Way Post**

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 1-Year Rainfall=2.78"

Page 71

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

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
33.80	<b>2,994</b>	0	34.86	2,994	1,891
33.82	2,994	24	34.88	2,994	1,933
33.84	2,994	48	34.90	2,994	1,976
33.86	2,994	72	34.92	2,994	2,018
33.88	2,994	96	34.94	2,994	2,059
33.90	2,994	120	34.96	2,994	2,100
33.92	2,994	144	34.98	2,994	2,141
33.94	2,994	168	35.00	2,994	2,181
33.96	2,994	192	35.02	2,994	2,220
33.98	2,994	216	35.04	2,994	2,259
34.00	2,994	239	35.06	2,994	2,296
34.02	2,994	263	35.08	2,994	2,333
34.04	2,994	287	35.10	2,994	2,369
34.06	2,994	311	35.12	2,994	2,404
34.08	2,994	335	35.14	2,994	2,438
34.10	2,994	359	35.16	2,994	2,471
34.12	2,994	383	35.18	2,994	2,502
34.14	2,994	407	35.20	2,994	2,532
34.16	2,994	431	35.22	2,994	2,561
34.18	2,994	455	35.24	2,994	2,589
34.20	2,994	479	35.26	2,994	2,615
34.22	2,994	503	35.28	2,994	2,641
34.24	2,994	527	35.30	2,994	2,665
34.26	2,994	551	35.32	2,994	2,689
34.28	2,994	575	35.34	2,994	2,713
34.30	2,994	599	35.36	2,994	2,737
34.32	2,994	647	35.38	2,994	2,761
34.34	2,994	696	35.40	2,994	2,785
34.36	2,994	744	35.42	2,994	2,809
34.38	2,994	792	35.44	2,994	2,833
34.40	2,994	840	35.46	2,994	2,857
34.42	2,994	887	35.48	2,994	2,881
34.44	2,994	935	35.50	2,994	2,905
34.46	2,994	982	35.52	2,994	2,928
34.48	2,994	1,028	35.54	2,994	2,952
34.50	2,994	1,075	35.56	2,994	2,976
34.52	2,994	1,122	35.58	2,994	3,000
34.54	2,994	1,168	35.60	2,994	3,024
34.56	2,994	1,215	35.62	2,994	3,048
34.58	2,994	1,262	35.64	2,994	3,072
34.60	2,994	1,308	35.66	2,994	3,096
34.62	2,994	1,354	35.68	2,994	3,120
34.64	2,994	1,400	35.70	2,994	3,144
34.66	2,994	1,446	35.72	2,994	3,168
34.68	2,994	1,492	35.74	2,994	3,192
34.70	2,994	1,537	35.76	2,994	3,216
34.72	2,994	1,582	35.78	2,994	3,240
34.74	2,994	1,627	35.80	2,994	3,264
34.76	2,994	1,672	35.82	2,994	3,288
34.78	2,994	1,716	35.84	2,994	<b>3,312</b>
34.80	2,994	1,760			
34.82	2,994	1,804			
34.84	2,994	1,847			

# 817 Country Way Post

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 72

## Summary for Pond SSD2: SUBSURFACE DRAINAGE AREA #2

Inflow Area = 3,641 sf, 77.62% Impervious, Inflow Depth > 1.99" for 1-Year event  
 Inflow = 0.19 cfs @ 12.07 hrs, Volume= 603 cf  
 Outflow = 0.05 cfs @ 11.95 hrs, Volume= 602 cf, Atten= 76%, Lag= 0.0 min  
 Discarded = 0.05 cfs @ 11.95 hrs, Volume= 602 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 Pond CB5 : CB5

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 35.90' @ 12.46 hrs Surf.Area= 1,960 sf Storage= 154 cf

Plug-Flow detention time= 25.5 min calculated for 600 cf (100% of inflow)  
 Center-of-Mass det. time= 23.8 min ( 822.6 - 798.8 )

Volume	Invert	Avail.Storage	Storage Description
#1B	35.70'	2,483 cf	<b>16.00'W x 122.50'L x 4.54'H Field B</b> 8,902 cf Overall - 2,694 cf Embedded = 6,208 cf x 40.0% Voids
#2B	36.70'	2,694 cf	<b>Cultec R-330XLHD x 51 Inside #1</b> 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

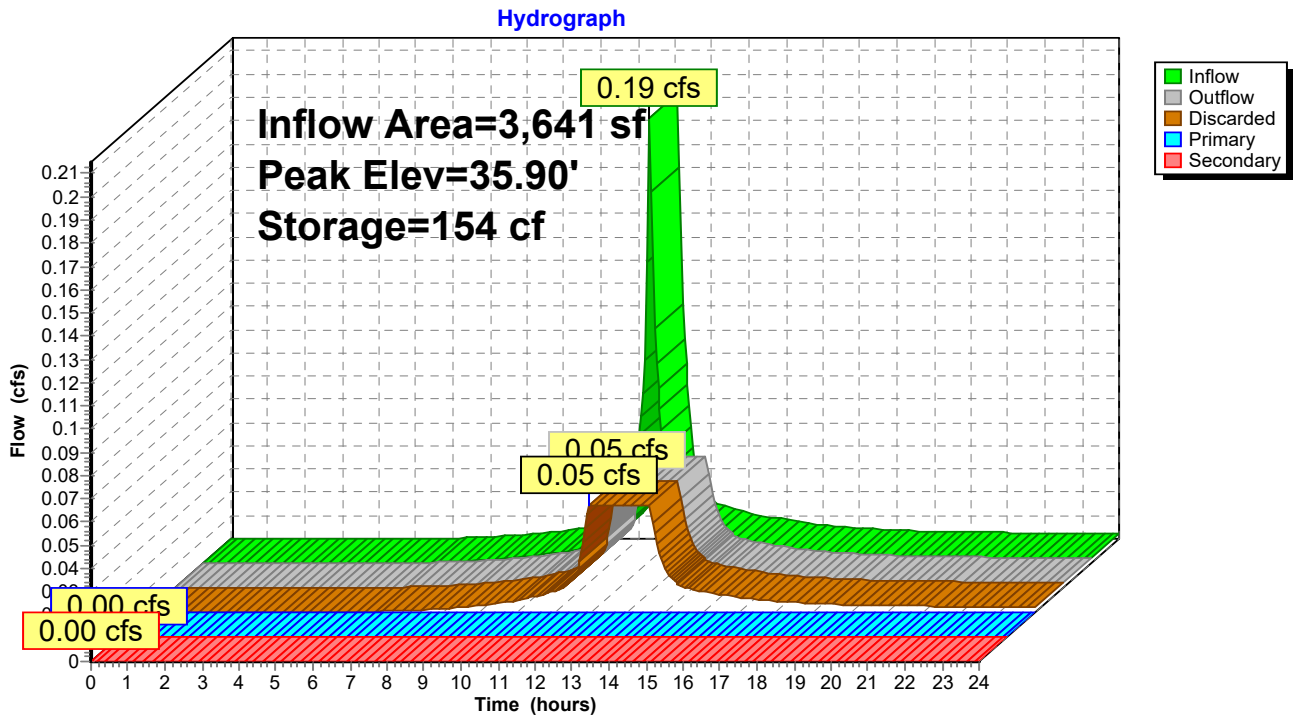
Device	Routing	Invert	Outlet Devices
#1	Discarded	35.70'	<b>1.020 in/hr Exfiltration over Surface area</b>
#2	Secondary	40.60'	<b>4.0" Horiz. Orifice/Grate C= 0.600</b> Limited to weir flow at low heads
#3	Primary	38.70'	<b>6.0" Round Culvert</b> L= 23.0' CPP, square edge headwall, Ke= 0.500 Inlet /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

**Discarded OutFlow** Max=0.05 cfs @ 11.95 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**



**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 74

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

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
35.70	0.00	<b>0.00</b>	0.00	<b>0.00</b>
35.80	0.05	<b>0.05</b>	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	<b>1.26</b>	0.05	<b>1.21</b>	0.00



**817 Country Way Post**

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 1-Year Rainfall=2.78"

Page 75

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

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

# 817 Country Way Post

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 76

## Summary for Pond SSD3: SUBSURFACE DRAINAGE AREA #3

Inflow Area = 51,552 sf, 63.58% Impervious, Inflow Depth > 1.32" for 1-Year event  
 Inflow = 1.00 cfs @ 12.09 hrs, Volume= 5,663 cf  
 Outflow = 0.52 cfs @ 12.31 hrs, Volume= 4,728 cf, Atten= 48%, Lag= 13.2 min  
 Discarded = 0.03 cfs @ 9.85 hrs, Volume= 1,615 cf  
 Primary = 0.49 cfs @ 12.31 hrs, Volume= 3,113 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= 19.77' @ 12.31 hrs Surf.Area= 1,203 sf Storage= 1,254 cf

Plug-Flow detention time= 116.9 min calculated for 4,719 cf (83% of inflow)  
 Center-of-Mass det. time= 50.0 min ( 911.4 - 861.4 )

Volume	Invert	Avail.Storage	Storage Description
#1A	18.00'	722 cf	<b>8.33'W x 81.00'L x 3.54'H Field A</b> 2,391 cf Overall - 585 cf Embedded = 1,806 cf x 40.0% Voids
#2A	18.50'	585 cf	<b>Cultec R-330XLHD x 11 Inside #1</b> 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	<b>12.50'W x 28.00'L x 3.54'H Field B</b> 1,240 cf Overall - 335 cf Embedded = 904 cf x 40.0% Voids
#4B	18.50'	335 cf	<b>Cultec R-330XLHD x 6 Inside #3</b> 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	<b>13.00'W x 13.67'L x 3.54'H Field C</b> 629 cf Overall - 127 cf Embedded = 503 cf x 40.0% Voids
#6C	18.50'	127 cf	<b>Cultec R-330XLHD x 2 Inside #5</b> 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'	<b>1.020 in/hr Exfiltration over Surface area</b> Phase-In= 0.01'
#2	Primary	19.40'	<b>10.0" Round Culvert</b> L= 14.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 19.40' / 18.40' S= 0.0714 '/ Cc= 0.900 n= 0.013, Flow Area= 0.55 sf
#3	Secondary	22.00'	<b>20.0" x 20.0" Horiz. Orifice/Grate X 2.00</b> C= 0.600 Limited to weir flow at low heads

# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 1-Year Rainfall=2.78"

Page 77

**Discarded OutFlow** Max=0.03 cfs @ 9.85 hrs HW=18.04' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.03 cfs)

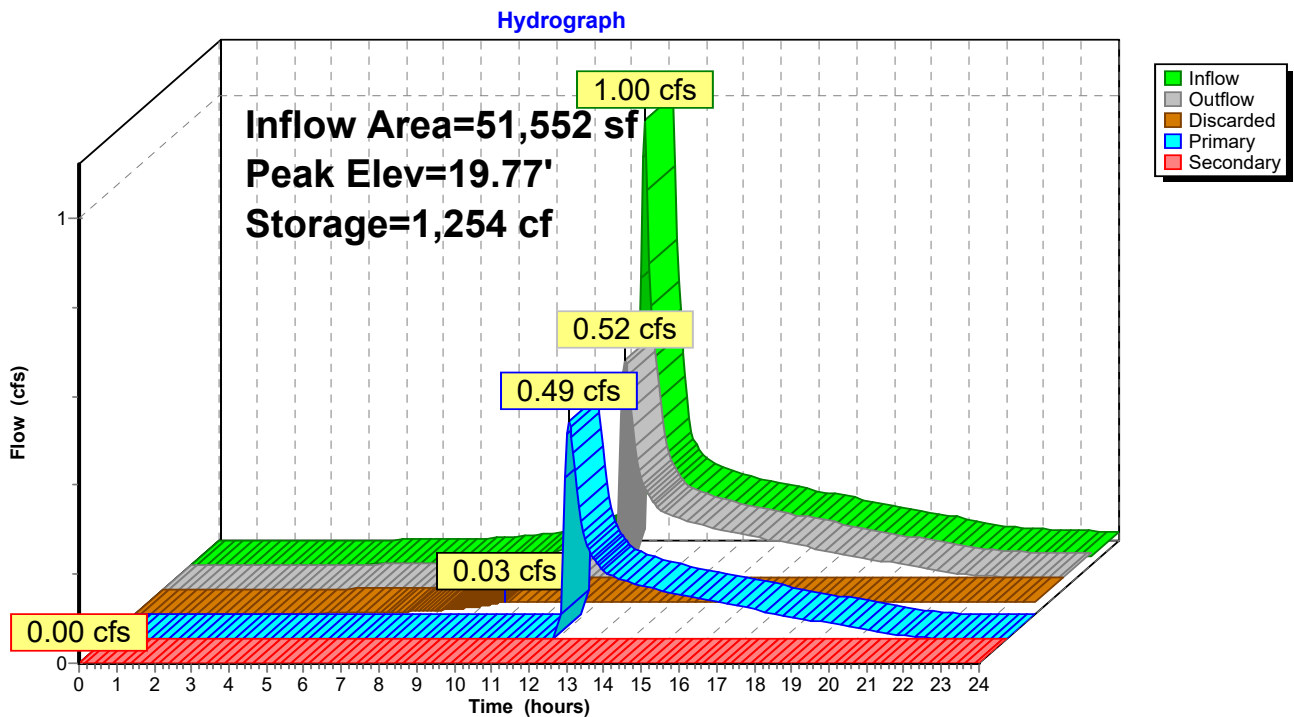
**Primary OutFlow** Max=0.49 cfs @ 12.31 hrs HW=19.77' (Free Discharge)

↑2=Culvert (Inlet Controls 0.49 cfs @ 2.07 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



**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 78

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

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
18.00	0.00	<b>0.00</b>	0.00	<b>0.00</b>
18.10	0.03	<b>0.03</b>	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	0.03	0.03	0.00	0.00
19.50	0.07	0.03	0.04	0.00
19.60	0.18	0.03	0.15	0.00
19.70	0.36	0.03	0.33	0.00
19.80	0.59	0.03	0.56	0.00
19.90	0.85	0.03	0.82	0.00
20.00	1.14	0.03	1.11	0.00
20.10	1.42	0.03	1.39	0.00
20.20	1.67	0.03	1.64	0.00
20.30	1.85	0.03	1.83	0.00
20.40	2.03	0.03	2.01	0.00
20.50	2.20	0.03	2.17	0.00
20.60	2.35	0.03	2.32	0.00
20.70	2.50	0.03	2.47	0.00
20.80	2.63	0.03	2.60	0.00
20.90	2.76	0.03	2.73	0.00
21.00	2.89	0.03	2.86	0.00
21.10	3.00	0.03	2.98	0.00
21.20	3.12	0.03	3.09	0.00
21.30	3.23	0.03	3.20	0.00
21.40	3.33	0.03	3.30	0.00
21.50	3.44	0.03	3.41	0.00
21.60	3.54	0.03	3.51	0.00
21.70	3.63	0.03	3.60	0.00
21.80	3.73	0.03	3.70	0.00
21.90	3.82	0.03	3.79	0.00
22.00	<b>3.91</b>	0.03	<b>3.88</b>	0.00

**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 79

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

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
18.00	<b>1,203</b>	0	20.65	1,203	1,877
18.05	1,203	24	20.70	1,203	1,908
18.10	1,203	48	20.75	1,203	1,938
18.15	1,203	72	20.80	1,203	1,967
18.20	1,203	96	20.85	1,203	1,994
18.25	1,203	120	20.90	1,203	2,021
18.30	1,203	144	20.95	1,203	2,047
18.35	1,203	168	21.00	1,203	2,071
18.40	1,203	192	21.05	1,203	2,095
18.45	1,203	216	21.10	1,203	2,119
18.50	1,203	241	21.15	1,203	2,143
18.55	1,203	281	21.20	1,203	2,168
18.60	1,203	322	21.25	1,203	2,192
18.65	1,203	363	21.30	1,203	2,216
18.70	1,203	403	21.35	1,203	2,240
18.75	1,203	444	21.40	1,203	2,264
18.80	1,203	484	21.45	1,203	2,288
18.85	1,203	525	21.50	1,203	2,312
18.90	1,203	565	21.55	1,203	<b>2,332</b>
18.95	1,203	605	21.60	1,203	2,332
19.00	1,203	646	21.65	1,203	2,332
19.05	1,203	686	21.70	1,203	2,332
19.10	1,203	726	21.75	1,203	2,332
19.15	1,203	766	21.80	1,203	2,332
19.20	1,203	806	21.85	1,203	2,332
19.25	1,203	845	21.90	1,203	2,332
19.30	1,203	885	21.95	1,203	2,332
19.35	1,203	924	22.00	1,203	2,332
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			

**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 80

**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 @ 14.95 hrs, Volume= 728 cf, Atten= 96%, Lag= 172.5 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  
 Tertiary = 0.00 cfs @ 14.95 hrs, Volume= 12 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' @ 14.95 hrs Surf.Area= 485 sf Storage= 650 cf

Plug-Flow detention time= 258.0 min calculated for 727 cf (61% of inflow)  
 Center-of-Mass det. time= 153.5 min ( 911.7 - 758.2 )

Volume	Invert	Avail.Storage	Storage Description
#1A	34.50'	487 cf	<b>11.17'W x 31.50'L x 4.71'H Field A</b> 1,656 cf Overall - 440 cf Embedded = 1,217 cf x 40.0% Voids
#2A	35.00'	440 cf	<b>Cultec R-330XLHD x 8 Inside #1</b> 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'	100 cf	<b>6.33'W x 10.50'L x 4.71'H Field B</b> 313 cf Overall - 63 cf Embedded = 250 cf x 40.0% Voids
#4B	35.00'	63 cf	<b>Cultec R-330XLHD Inside #3</b> 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'	100 cf	<b>6.33'W x 10.50'L x 4.71'H Field C</b> 313 cf Overall - 63 cf Embedded = 250 cf x 40.0% Voids
#6C	35.00'	63 cf	<b>Cultec R-330XLHD Inside #5</b> 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
		1,253 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'	<b>1.020 in/hr Exfiltration over Surface area</b>
#2	Primary	37.00'	<b>4.0" Round Culvert</b> 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
#3	Tertiary	36.50'	<b>4.0" Round Culvert</b> 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)

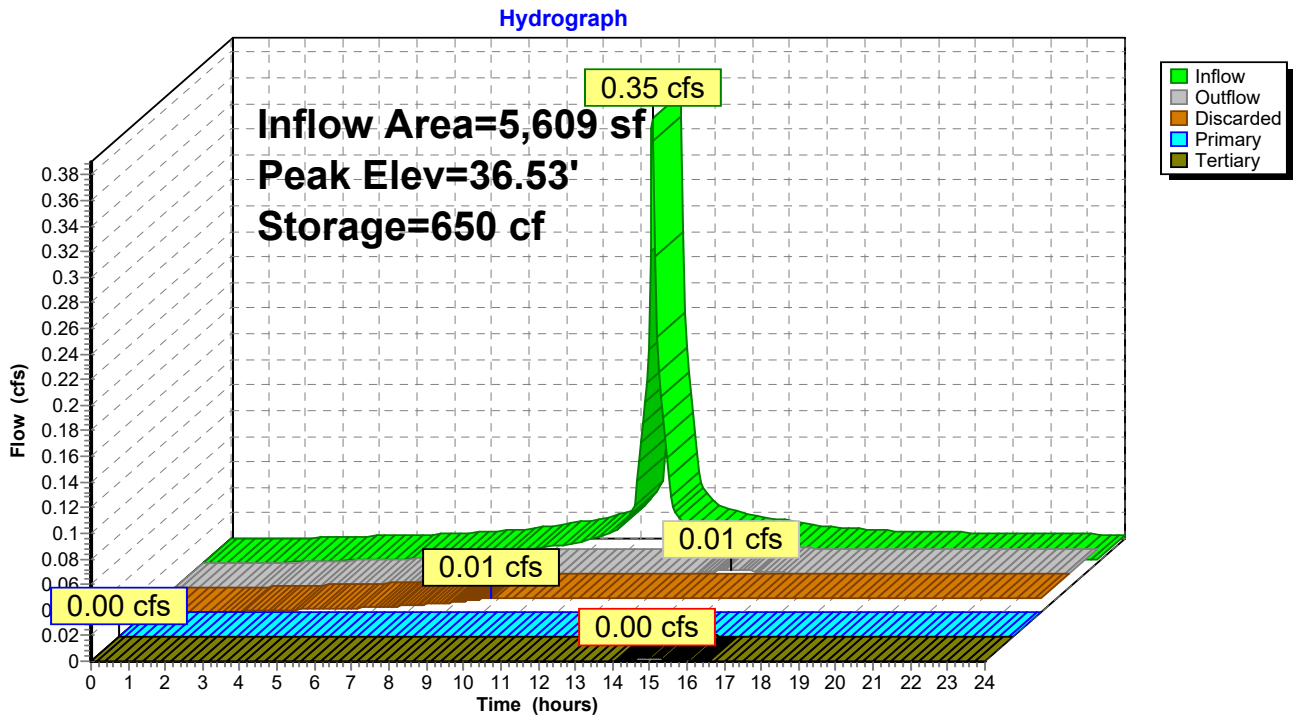
Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=34.50' (Free Discharge)

↳2=Culvert ( Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 14.95 hrs HW=36.53' (Free Discharge)

↳3=Culvert (Barrel Controls 0.00 cfs @ 0.66 fps)

**Pond SSD4: SUBSURFACE DRAINAGE AREA #4**



**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 82

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

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



**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 83

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

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
34.50	<b>485</b>	0	37.15	485	840
34.55	485	10	37.20	485	853
34.60	485	19	37.25	485	866
34.65	485	29	37.30	485	878
34.70	485	39	37.35	485	890
34.75	485	48	37.40	485	901
34.80	485	58	37.45	485	911
34.85	485	68	37.50	485	921
34.90	485	78	37.55	485	931
34.95	485	87	37.60	485	941
35.00	485	97	37.65	485	951
35.05	485	116	37.70	485	960
35.10	485	134	37.75	485	970
35.15	485	153	37.80	485	980
35.20	485	172	37.85	485	989
35.25	485	190	37.90	485	999
35.30	485	209	37.95	485	1,009
35.35	485	227	38.00	485	1,018
35.40	485	246	38.05	485	1,028
35.45	485	264	38.10	485	1,038
35.50	485	283	38.15	485	1,048
35.55	485	301	38.20	485	1,057
35.60	485	320	38.25	485	1,067
35.65	485	338	38.30	485	1,077
35.70	485	356	38.35	485	1,086
35.75	485	374	38.40	485	1,096
35.80	485	392	38.45	485	1,106
35.85	485	410	38.50	485	1,115
35.90	485	428	38.55	485	1,125
35.95	485	446	38.60	485	1,135
36.00	485	464	38.65	485	1,144
36.05	485	482	38.70	485	1,154
36.10	485	500	38.75	485	1,164
36.15	485	518	38.80	485	1,174
36.20	485	535	38.85	485	1,183
36.25	485	553	38.90	485	1,193
36.30	485	571	38.95	485	1,203
36.35	485	588	39.00	485	1,212
36.40	485	605	39.05	485	1,222
36.45	485	622	39.10	485	1,232
36.50	485	639	39.15	485	1,241
36.55	485	656	39.20	485	<b>1,251</b>
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			

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

Inflow Area = 15,330 sf, 78.87% Impervious, Inflow Depth > 2.04" for 1-Year event  
 Inflow = 0.76 cfs @ 12.09 hrs, Volume= 2,605 cf  
 Outflow = 0.09 cfs @ 12.82 hrs, Volume= 2,543 cf, Atten= 88%, Lag= 43.5 min  
 Primary = 0.09 cfs @ 12.82 hrs, Volume= 2,543 cf  
 Routed to Pond DMH11 : DMH11  
 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= 31.73' @ 12.82 hrs Surf.Area= 2,920 sf Storage= 1,137 cf

Plug-Flow detention time= 139.6 min calculated for 2,543 cf (98% of inflow)  
 Center-of-Mass det. time= 125.2 min ( 921.7 - 796.5 )

Volume	Invert	Avail.Storage	Storage Description
#1A	31.00'	2,550 cf	<b>26.67'W x 109.50'L x 3.54'H Field A</b> 10,342 cf Overall - 3,968 cf Embedded = 6,374 cf x 40.0% Voids
#2A	31.50'	3,968 cf	<b>Cultec R-330XLHD x 75 Inside #1</b> 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
		6,517 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	31.00'	<b>6.0" Round Culvert</b> L= 175.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 31.00' / 19.00' S= 0.0686 1/1' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf
#2	Secondary	36.50'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Device 1	19.25'	<b>2.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

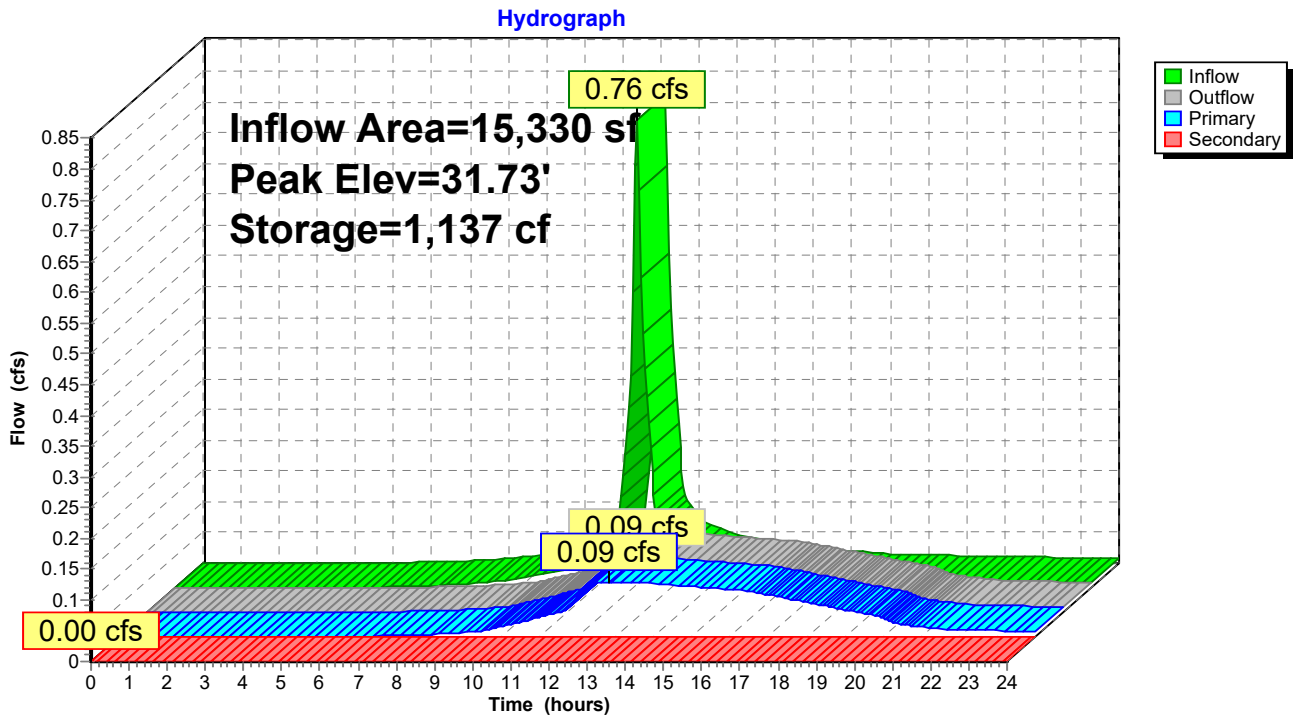
**Primary OutFlow** Max=0.09 cfs @ 12.82 hrs HW=31.73' (Free Discharge)

- ↑1=Culvert (Passes 0.09 cfs of 0.65 cfs potential flow)
- ↑3=Orifice/Grate (Orifice Controls 0.09 cfs @ 4.11 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)**



**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

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

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
31.00	0.00	0.00	<b>0.00</b>	36.30	0.24	0.24	0.00
31.10	0.03	0.03	0.00	36.40	0.24	0.24	0.00
31.20	0.05	0.05	0.00	36.50	<b>0.25</b>	<b>0.25</b>	0.00
31.30	0.06	0.06	0.00				
31.40	0.07	0.07	0.00				
31.50	0.07	0.07	0.00				
31.60	0.08	0.08	0.00				
31.70	0.09	0.09	0.00				
31.80	0.09	0.09	0.00				
31.90	0.10	0.10	0.00				
32.00	0.11	0.11	0.00				
32.10	0.11	0.11	0.00				
32.20	0.12	0.12	0.00				
32.30	0.12	0.12	0.00				
32.40	0.12	0.12	0.00				
32.50	0.13	0.13	0.00				
32.60	0.13	0.13	0.00				
32.70	0.14	0.14	0.00				
32.80	0.14	0.14	0.00				
32.90	0.14	0.14	0.00				
33.00	0.15	0.15	0.00				
33.10	0.15	0.15	0.00				
33.20	0.16	0.16	0.00				
33.30	0.16	0.16	0.00				
33.40	0.16	0.16	0.00				
33.50	0.17	0.17	0.00				
33.60	0.17	0.17	0.00				
33.70	0.17	0.17	0.00				
33.80	0.18	0.18	0.00				
33.90	0.18	0.18	0.00				
34.00	0.18	0.18	0.00				
34.10	0.18	0.18	0.00				
34.20	0.19	0.19	0.00				
34.30	0.19	0.19	0.00				
34.40	0.19	0.19	0.00				
34.50	0.20	0.20	0.00				
34.60	0.20	0.20	0.00				
34.70	0.20	0.20	0.00				
34.80	0.20	0.20	0.00				
34.90	0.21	0.21	0.00				
35.00	0.21	0.21	0.00				
35.10	0.21	0.21	0.00				
35.20	0.22	0.22	0.00				
35.30	0.22	0.22	0.00				
35.40	0.22	0.22	0.00				
35.50	0.22	0.22	0.00				
35.60	0.23	0.23	0.00				
35.70	0.23	0.23	0.00				
35.80	0.23	0.23	0.00				
35.90	0.23	0.23	0.00				
36.00	0.23	0.23	0.00				
36.10	0.24	0.24	0.00				
36.20	0.24	0.24	0.00				

**817 Country Way Post**

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 87

**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	5,379	36.30	6,517
31.05	58	33.70	5,463	36.35	6,517
31.10	117	33.75	5,543	36.40	6,517
31.15	175	33.80	5,619	36.45	6,517
31.20	234	33.85	5,691	36.50	6,517
31.25	292	33.90	5,759		
31.30	350	33.95	5,824		
31.35	409	34.00	5,885		
31.40	467	34.05	5,943		
31.45	526	34.10	6,001		
31.50	584	34.15	6,060		
31.55	706	34.20	6,118		
31.60	828	34.25	6,177		
31.65	949	34.30	6,235		
31.70	1,070	34.35	6,293		
31.75	1,190	34.40	6,352		
31.80	1,311	34.45	6,410		
31.85	1,431	34.50	6,469		
31.90	1,552	34.55	<b>6,517</b>		
31.95	1,672	34.60	6,517		
32.00	1,792	34.65	6,517		
32.05	1,912	34.70	6,517		
32.10	2,031	34.75	6,517		
32.15	2,149	34.80	6,517		
32.20	2,267	34.85	6,517		
32.25	2,384	34.90	6,517		
32.30	2,501	34.95	6,517		
32.35	2,618	35.00	6,517		
32.40	2,734	35.05	6,517		
32.45	2,850	35.10	6,517		
32.50	2,966	35.15	6,517		
32.55	3,082	35.20	6,517		
32.60	3,198	35.25	6,517		
32.65	3,313	35.30	6,517		
32.70	3,427	35.35	6,517		
32.75	3,542	35.40	6,517		
32.80	3,655	35.45	6,517		
32.85	3,766	35.50	6,517		
32.90	3,877	35.55	6,517		
32.95	3,986	35.60	6,517		
33.00	4,095	35.65	6,517		
33.05	4,202	35.70	6,517		
33.10	4,309	35.75	6,517		
33.15	4,414	35.80	6,517		
33.20	4,518	35.85	6,517		
33.25	4,620	35.90	6,517		
33.30	4,722	35.95	6,517		
33.35	4,821	36.00	6,517		
33.40	4,919	36.05	6,517		
33.45	5,015	36.10	6,517		
33.50	5,110	36.15	6,517		
33.55	5,202	36.20	6,517		
33.60	5,292	36.25	6,517		

# 817 Country Way Post

Type III 24-hr 1-Year Rainfall=2.78"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 88

## Summary for Pond SSD6: SUBSURFACE DRAINAGE AREA #6 (STORAGE)

Inflow Area = 7,296 sf, 79.98% Impervious, Inflow Depth > 2.04" for 1-Year event  
Inflow = 0.39 cfs @ 12.07 hrs, Volume= 1,240 cf  
Outflow = 0.04 cfs @ 12.94 hrs, Volume= 1,207 cf, Atten= 91%, Lag= 52.1 min  
Primary = 0.04 cfs @ 12.94 hrs, Volume= 1,207 cf  
Routed to Reach DP3 : DP3  
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= 21.95' @ 12.94 hrs Surf.Area= 295 sf Storage= 575 cf

Plug-Flow detention time= 183.6 min calculated for 1,207 cf (97% of inflow)  
Center-of-Mass det. time= 167.8 min ( 961.6 - 793.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	20.00'	2,360 cf	<b>10.00'W x 29.50'L x 8.00'H Prismatoid</b>

Device	Routing	Invert	Outlet Devices
#1	Secondary	29.10'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#2	Primary	20.00'	<b>4.0" Round Culvert</b> L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 20.00' / 19.00' S= 0.0100 1/' Cc= 0.900 n= 0.013, Flow Area= 0.09 sf
#3	Device 2	19.00'	<b>1.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Primary OutFlow** Max=0.04 cfs @ 12.94 hrs HW=21.95' (Free Discharge)

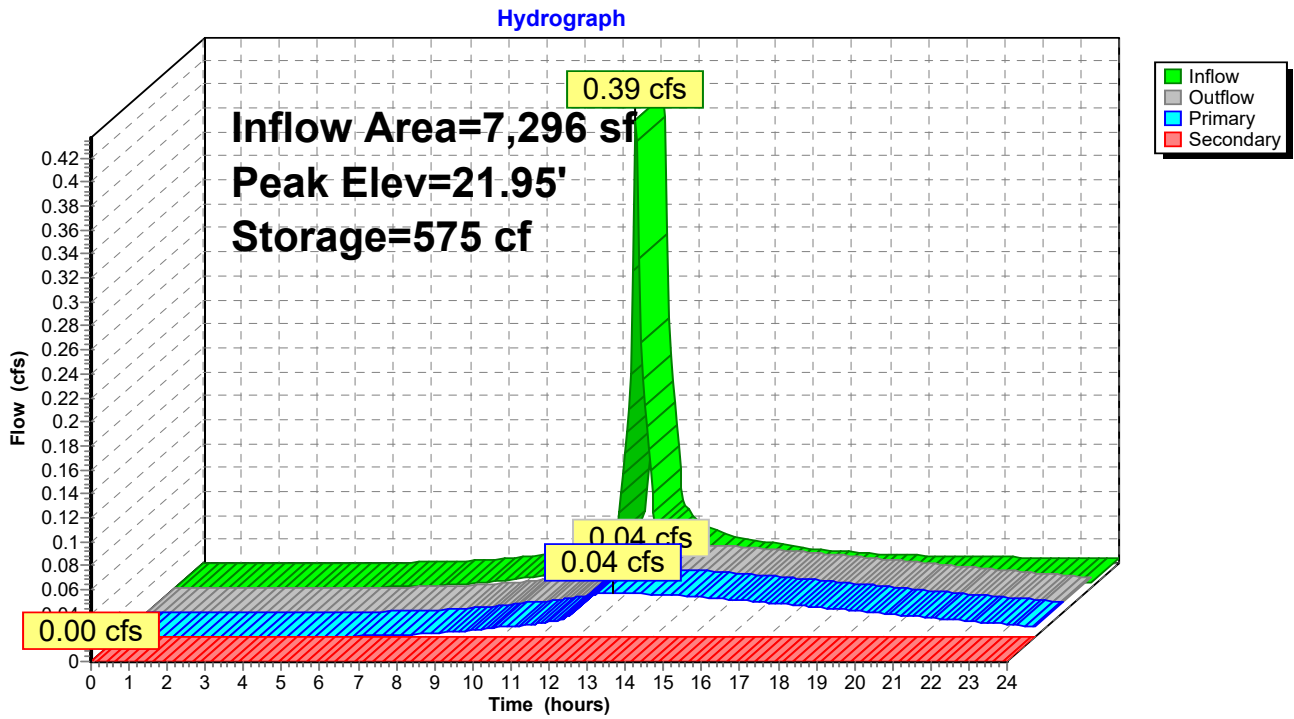
↑ **2=Culvert** (Passes 0.04 cfs of 0.29 cfs potential flow)

↑ **3=Orifice/Grate** (Orifice Controls 0.04 cfs @ 6.72 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=20.00' (Free Discharge)

↑ **1=Orifice/Grate** ( Controls 0.00 cfs)

**Pond SSD6: SUBSURFACE DRAINAGE AREA #6 (STORAGE)**



**817 Country Way Post**

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 1-Year Rainfall=2.78"

Page 90

**Stage-Discharge for Pond SSD6: SUBSURFACE DRAINAGE AREA #6 (STORAGE)**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
20.00	0.00	0.00	<b>0.00</b>	25.30	0.06	0.06	0.00
20.10	0.01	0.01	0.00	25.40	0.06	0.06	0.00
20.20	0.01	0.01	0.00	25.50	0.06	0.06	0.00
20.30	0.01	0.01	0.00	25.60	0.06	0.06	0.00
20.40	0.02	0.02	0.00	25.70	0.06	0.06	0.00
20.50	0.02	0.02	0.00	25.80	0.06	0.06	0.00
20.60	0.02	0.02	0.00	25.90	0.06	0.06	0.00
20.70	0.02	0.02	0.00	26.00	0.06	0.06	0.00
20.80	0.02	0.02	0.00	26.10	0.06	0.06	0.00
20.90	0.02	0.02	0.00	26.20	0.07	0.07	0.00
21.00	0.03	0.03	0.00	26.30	0.07	0.07	0.00
21.10	0.03	0.03	0.00	26.40	0.07	0.07	0.00
21.20	0.03	0.03	0.00	26.50	0.07	0.07	0.00
21.30	0.03	0.03	0.00	26.60	0.07	0.07	0.00
21.40	0.03	0.03	0.00	26.70	0.07	0.07	0.00
21.50	0.03	0.03	0.00	26.80	0.07	0.07	0.00
21.60	0.03	0.03	0.00	26.90	0.07	0.07	0.00
21.70	0.03	0.03	0.00	27.00	0.07	0.07	0.00
21.80	0.04	0.04	0.00	27.10	0.07	0.07	0.00
21.90	0.04	0.04	0.00	27.20	0.07	0.07	0.00
22.00	0.04	0.04	0.00	27.30	0.07	0.07	0.00
22.10	0.04	0.04	0.00	27.40	0.07	0.07	0.00
22.20	0.04	0.04	0.00	27.50	0.07	0.07	0.00
22.30	0.04	0.04	0.00	27.60	0.07	0.07	0.00
22.40	0.04	0.04	0.00	27.70	0.07	0.07	0.00
22.50	0.04	0.04	0.00	27.80	0.07	0.07	0.00
22.60	0.04	0.04	0.00	27.90	0.07	0.07	0.00
22.70	0.04	0.04	0.00	28.00	0.07	0.07	0.00
22.80	0.04	0.04	0.00	28.10	0.07	0.07	0.00
22.90	0.04	0.04	0.00	28.20	0.08	0.08	0.00
23.00	0.05	0.05	0.00	28.30	0.08	0.08	0.00
23.10	0.05	0.05	0.00	28.40	0.08	0.08	0.00
23.20	0.05	0.05	0.00	28.50	0.08	0.08	0.00
23.30	0.05	0.05	0.00	28.60	0.08	0.08	0.00
23.40	0.05	0.05	0.00	28.70	0.08	0.08	0.00
23.50	0.05	0.05	0.00	28.80	0.08	0.08	0.00
23.60	0.05	0.05	0.00	28.90	0.08	0.08	0.00
23.70	0.05	0.05	0.00	29.00	0.08	0.08	0.00
23.80	0.05	0.05	0.00	29.10	<b>0.08</b>	<b>0.08</b>	0.00
23.90	0.05	0.05	0.00				
24.00	0.05	0.05	0.00				
24.10	0.05	0.05	0.00				
24.20	0.05	0.05	0.00				
24.30	0.05	0.05	0.00				
24.40	0.06	0.06	0.00				
24.50	0.06	0.06	0.00				
24.60	0.06	0.06	0.00				
24.70	0.06	0.06	0.00				
24.80	0.06	0.06	0.00				
24.90	0.06	0.06	0.00				
25.00	0.06	0.06	0.00				
25.10	0.06	0.06	0.00				
25.20	0.06	0.06	0.00				



**817 Country Way Post**

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 1-Year Rainfall=2.78"

Page 91

**Stage-Area-Storage for Pond SSD6: SUBSURFACE DRAINAGE AREA #6 (STORAGE)**

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
20.00	0	25.30	1,564
20.10	30	25.40	1,593
20.20	59	25.50	1,623
20.30	89	25.60	1,652
20.40	118	25.70	1,681
20.50	148	25.80	1,711
20.60	177	25.90	1,740
20.70	206	26.00	1,770
20.80	236	26.10	1,800
20.90	265	26.20	1,829
21.00	295	26.30	1,859
21.10	325	26.40	1,888
21.20	354	26.50	1,918
21.30	384	26.60	1,947
21.40	413	26.70	1,976
21.50	443	26.80	2,006
21.60	472	26.90	2,035
21.70	501	27.00	2,065
21.80	531	27.10	2,095
21.90	560	27.20	2,124
22.00	590	27.30	2,154
22.10	620	27.40	2,183
22.20	649	27.50	2,213
22.30	679	27.60	2,242
22.40	708	27.70	2,272
22.50	738	27.80	2,301
22.60	767	27.90	2,330
22.70	796	28.00	<b>2,360</b>
22.80	826	28.10	2,360
22.90	855	28.20	2,360
23.00	885	28.30	2,360
23.10	915	28.40	2,360
23.20	944	28.50	2,360
23.30	974	28.60	2,360
23.40	1,003	28.70	2,360
23.50	1,033	28.80	2,360
23.60	1,062	28.90	2,360
23.70	1,091	29.00	2,360
23.80	1,121	29.10	2,360
23.90	1,150		
24.00	1,180		
24.10	1,210		
24.20	1,239		
24.30	1,269		
24.40	1,298		
24.50	1,328		
24.60	1,357		
24.70	1,386		
24.80	1,416		
24.90	1,445		
25.00	1,475		
25.10	1,505		
25.20	1,534		

# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 2-Year Rainfall=3.35"

Page 92

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

<b>Subcatchment 1: Post 1</b>	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
<b>Subcatchment 2A: Post 2A</b>	Runoff Area=2,000 sf 72.80% Impervious Runoff Depth>2.40" Tc=5.0 min CN=91 Runoff=0.13 cfs 400 cf
<b>Subcatchment 2B: Post 2B</b>	Runoff Area=1,641 sf 83.49% Impervious Runoff Depth>2.69" Tc=5.0 min CN=94 Runoff=0.11 cfs 368 cf
<b>Subcatchment 3A: Post 3A</b>	Runoff Area=9,095 sf 43.97% Impervious Runoff Depth>1.89" Tc=5.0 min CN=85 Runoff=0.46 cfs 1,429 cf
<b>Subcatchment 3B: Post 3B</b>	Runoff Area=8,082 sf 70.01% Impervious Runoff Depth>2.40" Tc=5.0 min CN=91 Runoff=0.52 cfs 1,615 cf
<b>Subcatchment 4: Post 4</b>	Runoff Area=7,248 sf 88.76% Impervious Runoff Depth>2.79" Flow Length=131' Tc=8.6 min CN=95 Runoff=0.46 cfs 1,684 cf
<b>Subcatchment 5: Post 5</b>	Runoff Area=7,525 sf 60.54% Impervious Runoff Depth>2.22" Flow Length=131' Tc=8.6 min CN=89 Runoff=0.40 cfs 1,390 cf
<b>Subcatchment 6: Post 6</b>	Runoff Area=12,344 sf 39.48% Impervious Runoff Depth>1.73" Tc=5.0 min CN=83 Runoff=0.58 cfs 1,782 cf
<b>Subcatchment 6A: Post 6a</b>	Runoff Area=6,242 sf 76.59% Impervious Runoff Depth>2.49" Tc=5.0 min CN=92 Runoff=0.41 cfs 1,296 cf
<b>Subcatchment 7: Post 7</b>	Runoff Area=2,790 sf 0.00% Impervious Runoff Depth>1.08" Flow Length=170' Tc=11.1 min CN=73 Runoff=0.06 cfs 250 cf
<b>Subcatchment 8: Post 8</b>	Runoff Area=1,030 sf 0.00% Impervious Runoff Depth>0.92" Tc=5.0 min CN=70 Runoff=0.02 cfs 79 cf
<b>Subcatchment 9: Post 9</b>	Runoff Area=21,294 sf 19.29% Impervious Runoff Depth>1.38" Tc=5.0 min CN=78 Runoff=0.78 cfs 2,455 cf
<b>Subcatchment B1: BLDG #1</b>	Runoff Area=3,522 sf 100.00% Impervious Runoff Depth>3.12" Tc=5.0 min CN=98 Runoff=0.26 cfs 914 cf
<b>Subcatchment B2a: BLDG #2</b>	Runoff Area=1,054 sf 100.00% Impervious Runoff Depth>3.12" Tc=5.0 min CN=98 Runoff=0.08 cfs 274 cf
<b>Subcatchment B2b: BLDG #2 (REAR)</b>	Runoff Area=3,736 sf 100.00% Impervious Runoff Depth>3.12" Tc=5.0 min CN=98 Runoff=0.28 cfs 970 cf
<b>Subcatchment B3: BLDG #3</b>	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

# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 2-Year Rainfall=3.35"

Page 93

<b>Reach DP1: DP1post</b>	Inflow=0.28 cfs 1,174 cf Outflow=0.28 cfs 1,174 cf
<b>Reach DP2: DP2</b>	Inflow=0.05 cfs 292 cf Outflow=0.05 cfs 292 cf
<b>Reach DP3: DP3</b>	Inflow=1.53 cfs 8,593 cf Outflow=1.53 cfs 8,593 cf
<b>Reach DP4: DP4</b>	Inflow=0.06 cfs 250 cf Outflow=0.06 cfs 250 cf
<b>Pond 2P: DMH2</b>	Peak Elev=37.33' Inflow=0.95 cfs 3,299 cf 12.0" Round Culvert n=0.013 L=30.0' S=0.0033 ' Outflow=0.95 cfs 3,299 cf
<b>Pond CB1: CB1</b>	Peak Elev=34.33' Inflow=0.46 cfs 1,684 cf Primary=0.46 cfs 1,684 cf Secondary=0.00 cfs 0 cf Outflow=0.46 cfs 1,684 cf
<b>Pond CB10: CB10</b>	Peak Elev=19.90' Inflow=0.40 cfs 1,390 cf Primary=0.40 cfs 1,390 cf Secondary=0.00 cfs 0 cf Outflow=0.40 cfs 1,390 cf
<b>Pond CB13: CB13</b>	Peak Elev=20.34' Inflow=0.58 cfs 1,782 cf Primary=0.58 cfs 1,782 cf Secondary=0.00 cfs 0 cf Outflow=0.58 cfs 1,782 cf
<b>Pond CB4: CB4</b>	Peak Elev=34.28' Inflow=0.46 cfs 1,429 cf Primary=0.46 cfs 1,429 cf Secondary=0.00 cfs 0 cf Outflow=0.46 cfs 1,429 cf
<b>Pond CB5: CB5</b>	Peak Elev=34.42' Inflow=0.52 cfs 1,615 cf Primary=0.52 cfs 1,615 cf Secondary=0.00 cfs 0 cf Outflow=0.52 cfs 1,615 cf
<b>Pond CB6: CB6</b>	Peak Elev=37.10' Inflow=0.13 cfs 400 cf Primary=0.13 cfs 400 cf Secondary=0.00 cfs 0 cf Outflow=0.13 cfs 400 cf
<b>Pond CB9: CB9</b>	Peak Elev=37.09' Inflow=0.11 cfs 368 cf Primary=0.11 cfs 368 cf Secondary=0.00 cfs 0 cf Outflow=0.11 cfs 368 cf
<b>Pond DMH11: DMH11</b>	Peak Elev=20.19' Inflow=1.04 cfs 6,402 cf 12.0" Round Culvert n=0.013 L=42.0' S=0.0024 ' Outflow=1.04 cfs 6,402 cf
<b>Pond DMH7: DMH7</b>	Peak Elev=37.01' Inflow=0.24 cfs 767 cf 12.0" Round Culvert n=0.013 L=30.0' S=0.0033 ' Outflow=0.24 cfs 767 cf
<b>Pond SSD1: SUBSURFACE DRAINAGE AREA</b>	Peak Elev=34.42' Storage=877 cf Inflow=0.74 cfs 2,399 cf Discarded=0.07 cfs 2,396 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.07 cfs 2,396 cf
<b>Pond SSD2: SUBSURFACE DRAINAGE AREA #2</b>	Peak Elev=35.98' Storage=220 cf Inflow=0.24 cfs 767 cf Discarded=0.05 cfs 765 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.05 cfs 765 cf
<b>Pond SSD3: SUBSURFACE DRAINAGE AREA</b>	Peak Elev=19.94' Storage=1,379 cf Inflow=1.30 cfs 7,316 cf Discarded=0.03 cfs 1,690 cf Primary=0.93 cfs 4,649 cf Secondary=0.00 cfs 0 cf Outflow=0.96 cfs 6,339 cf
<b>Pond SSD4: SUBSURFACE DRAINAGE AREA</b>	Peak Elev=36.66' Storage=692 cf Inflow=0.42 cfs 1,456 cf Discarded=0.01 cfs 747 cf Primary=0.00 cfs 0 cf Tertiary=0.05 cfs 214 cf Outflow=0.06 cfs 961 cf

**817 Country Way Post**

*Type III 24-hr 2-Year Rainfall=3.35"*

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 94

**Pond SSD5: SUBSURFACE DRAINAGE AREA** Peak Elev=31.88' Storage=1,494 cf Inflow=0.95 cfs 3,299 cf  
Primary=0.10 cfs 3,230 cf Secondary=0.00 cfs 0 cf Outflow=0.10 cfs 3,230 cf

**Pond SSD6: SUBSURFACE DRAINAGE AREA** Peak Elev=22.55' Storage=754 cf Inflow=0.49 cfs 1,570 cf  
Primary=0.04 cfs 1,490 cf Secondary=0.00 cfs 0 cf Outflow=0.04 cfs 1,490 cf

**Total Runoff Area = 107,015 sf Runoff Volume = 17,535 cf Average Runoff Depth = 1.97"**  
**52.20% Pervious = 55,860 sf 47.80% Impervious = 51,155 sf**

# 817 Country Way Post

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 95

## 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

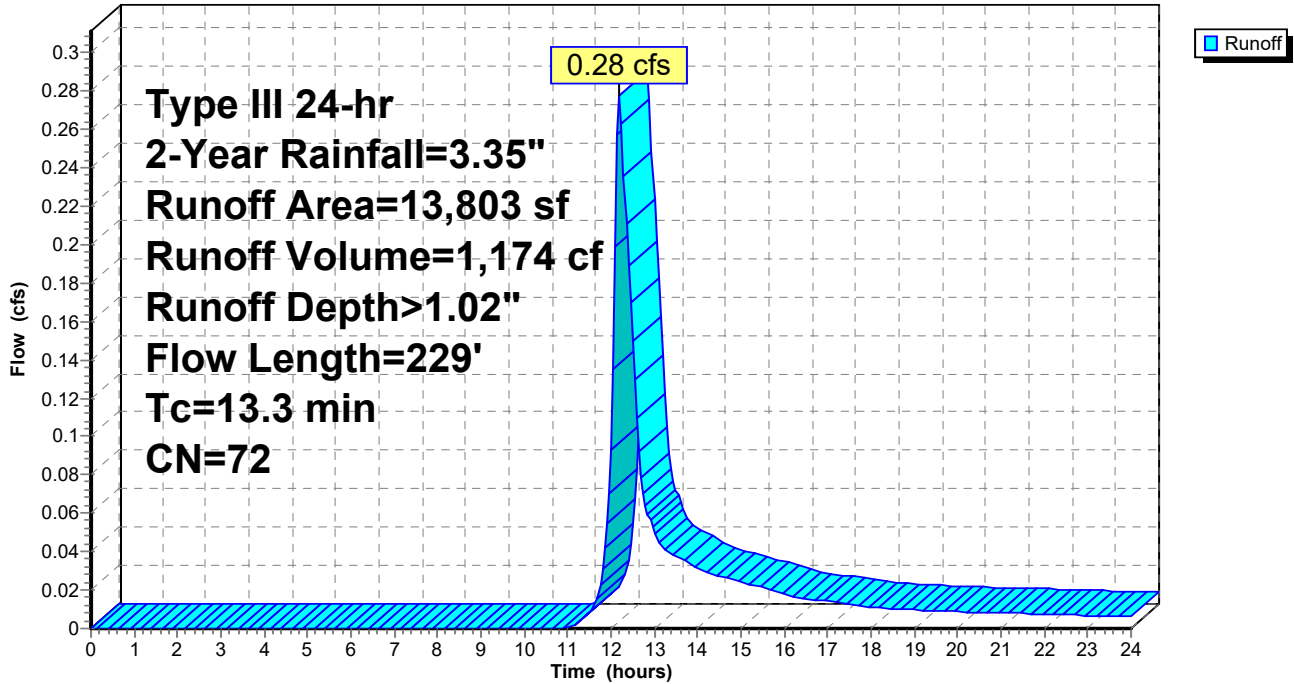
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 2-Year Rainfall=3.35"

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		<b>Sheet Flow, Woods</b> Woods: Light underbrush n= 0.400 P2= 3.35"
1.1	67	0.0400	1.00		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
1.1	58	0.0300	0.87		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
0.9	54	0.0400	1.00		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
13.3	229	Total			

### Subcatchment 1: Post 1

Hydrograph



# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 2-Year Rainfall=3.35"

Page 97

## Summary for Subcatchment 2A: Post 2A

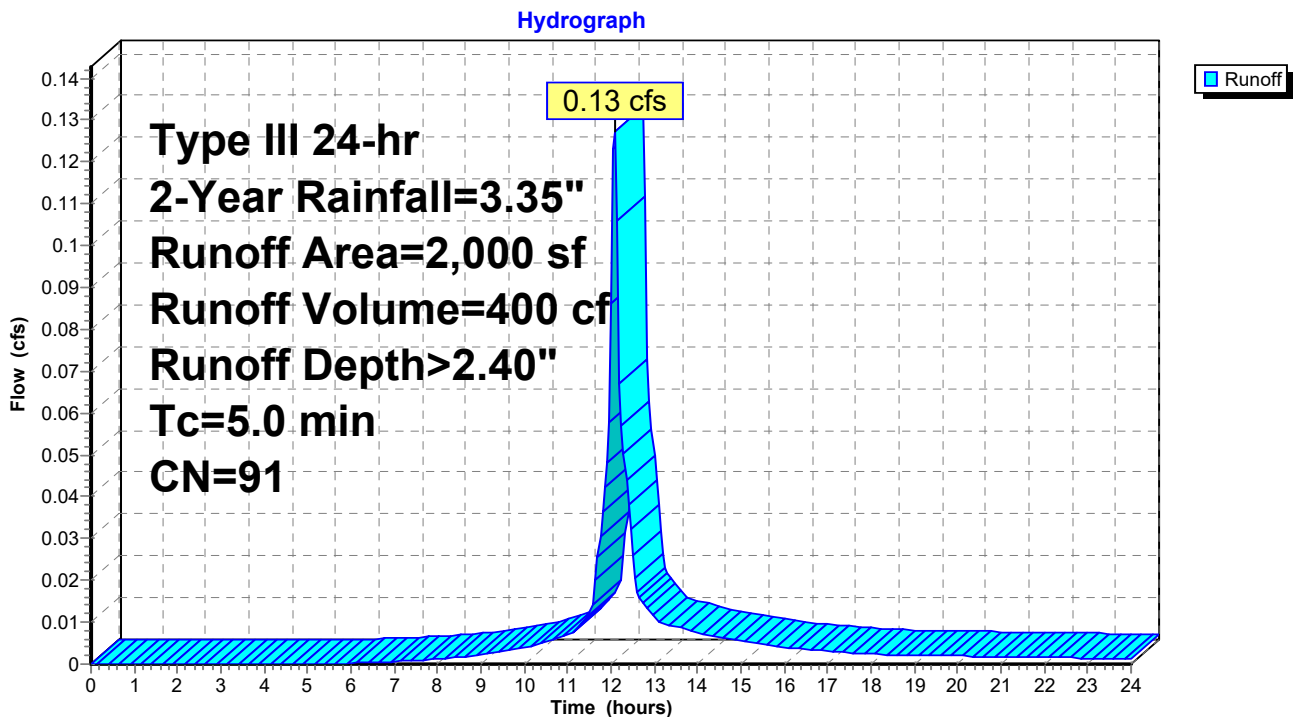
Runoff = 0.13 cfs @ 12.07 hrs, Volume= 400 cf, Depth> 2.40"  
Routed to Pond CB6 : CB6

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
544	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
1,388	98	Paved parking, HSG C
68	98	Paved parking, HSG C
2,000	91	Weighted Average
544		27.20% Pervious Area
1,456		72.80% Impervious Area

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

### Subcatchment 2A: Post 2A



# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 2-Year Rainfall=3.35"

Page 98

## Summary for Subcatchment 2B: Post 2B

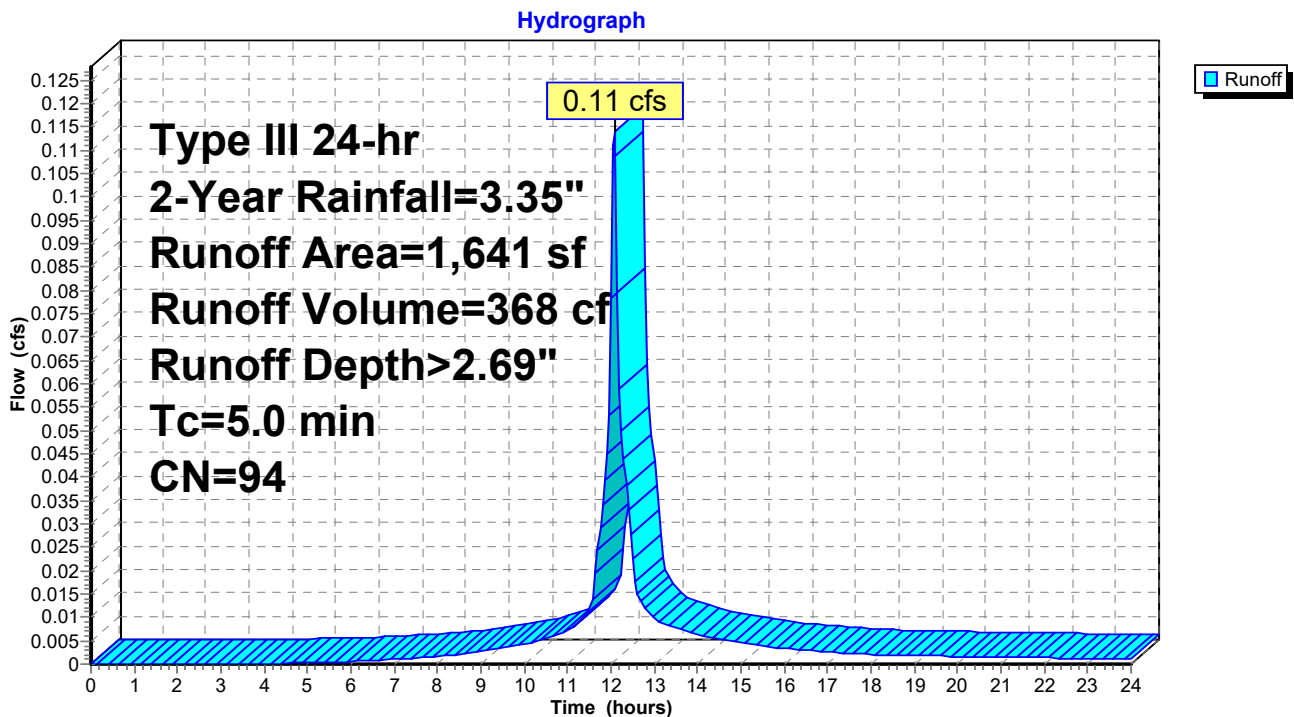
Runoff = 0.11 cfs @ 12.07 hrs, Volume= 368 cf, Depth> 2.69"  
Routed to Pond CB9 : CB9

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
271	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
1,370	98	Paved parking, HSG C
0	98	Paved parking, HSG C
1,641	94	Weighted Average
271		16.51% Pervious Area
1,370		83.49% Impervious Area

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

### Subcatchment 2B: Post 2B





**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**Summary for Subcatchment 3A: Post 3A**

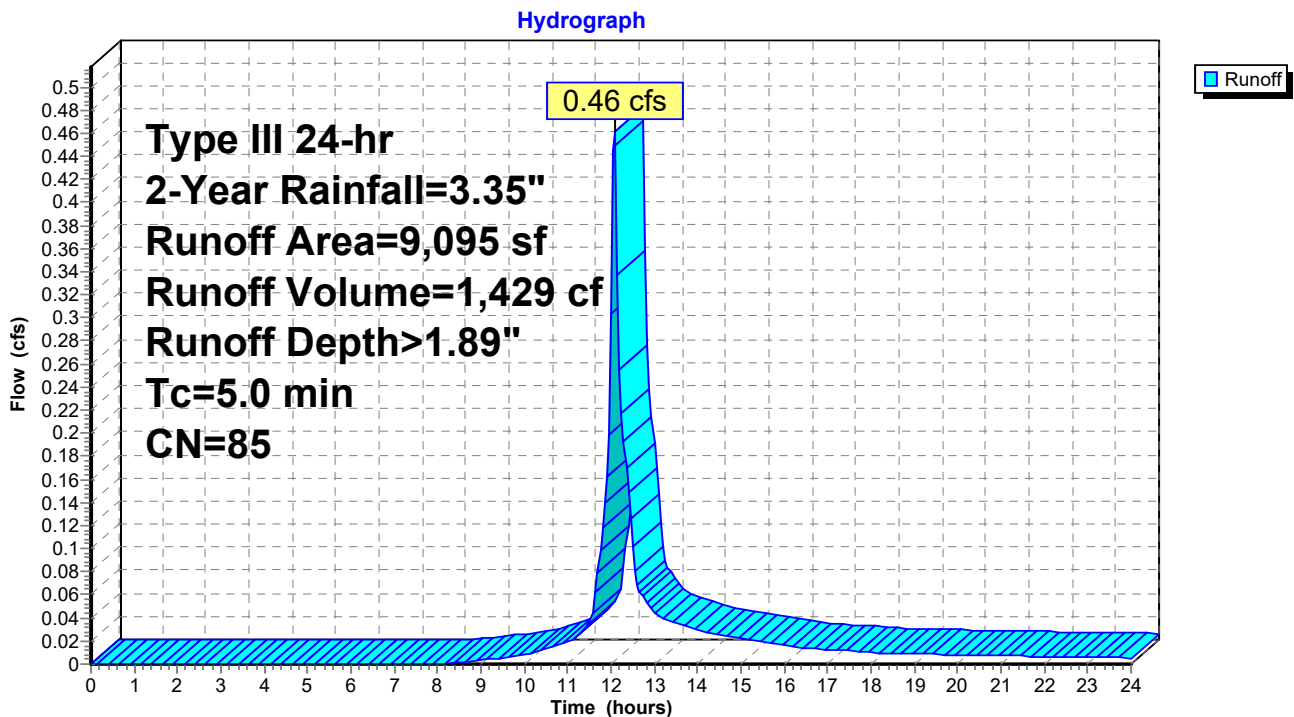
Runoff = 0.46 cfs @ 12.08 hrs, Volume= 1,429 cf, Depth> 1.89"  
 Routed to Pond CB4 : CB4

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
5,096	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
3,233	98	Paved parking, HSG C
766	98	Paved parking, HSG C
9,095	85	Weighted Average
5,096		56.03% Pervious Area
3,999		43.97% Impervious Area

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

**Subcatchment 3A: Post 3A**



# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 2-Year Rainfall=3.35"

Page 100

## Summary for Subcatchment 3B: Post 3B

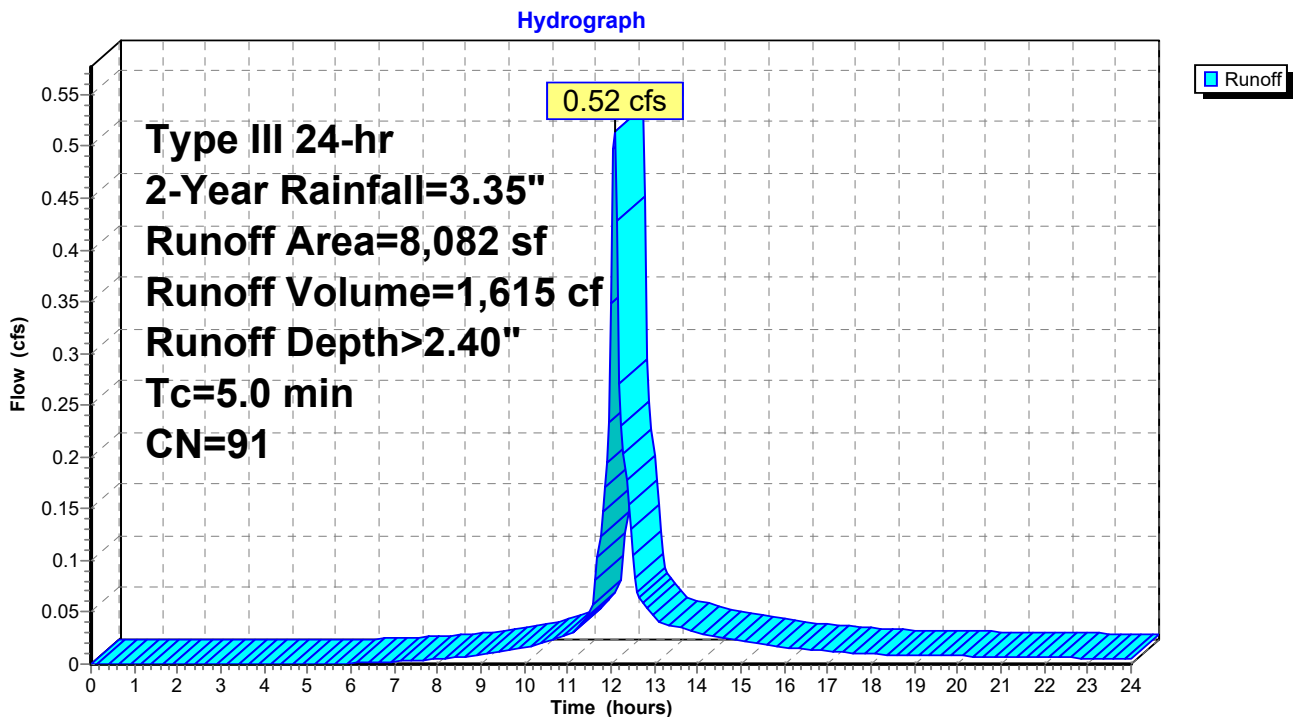
Runoff = 0.52 cfs @ 12.07 hrs, Volume= 1,615 cf, Depth> 2.40"  
Routed to Pond CB5 : CB5

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
2,424	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
5,459	98	Paved parking, HSG C
199	98	Paved parking, HSG C
8,082	91	Weighted Average
2,424		29.99% Pervious Area
5,658		70.01% Impervious Area

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

### Subcatchment 3B: Post 3B



# 817 Country Way Post

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 101

## Summary for Subcatchment 4: Post 4

Runoff = 0.46 cfs @ 12.12 hrs, Volume= 1,684 cf, Depth> 2.79"  
 Routed to Pond CB1 : CB1

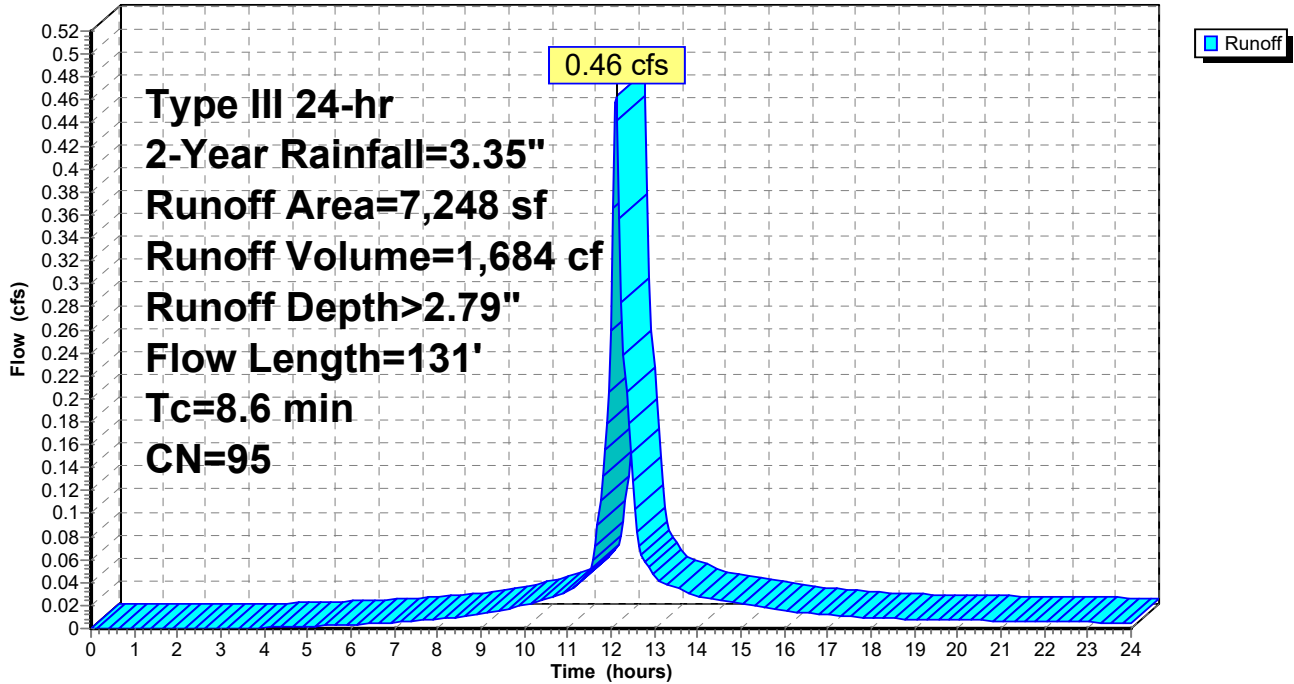
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2-Year Rainfall=3.35"

Area (sf)	CN	Description
815	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
6,433	98	Paved parking, HSG C
0	98	Paved parking, HSG C
7,248	95	Weighted Average
815		11.24% Pervious Area
6,433		88.76% Impervious Area

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

Subcatchment 4: Post 4

Hydrograph



**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 103

**Summary for Subcatchment 5: Post 5**

Runoff = 0.40 cfs @ 12.12 hrs, Volume= 1,390 cf, Depth> 2.22"  
 Routed to Pond CB10 : CB10

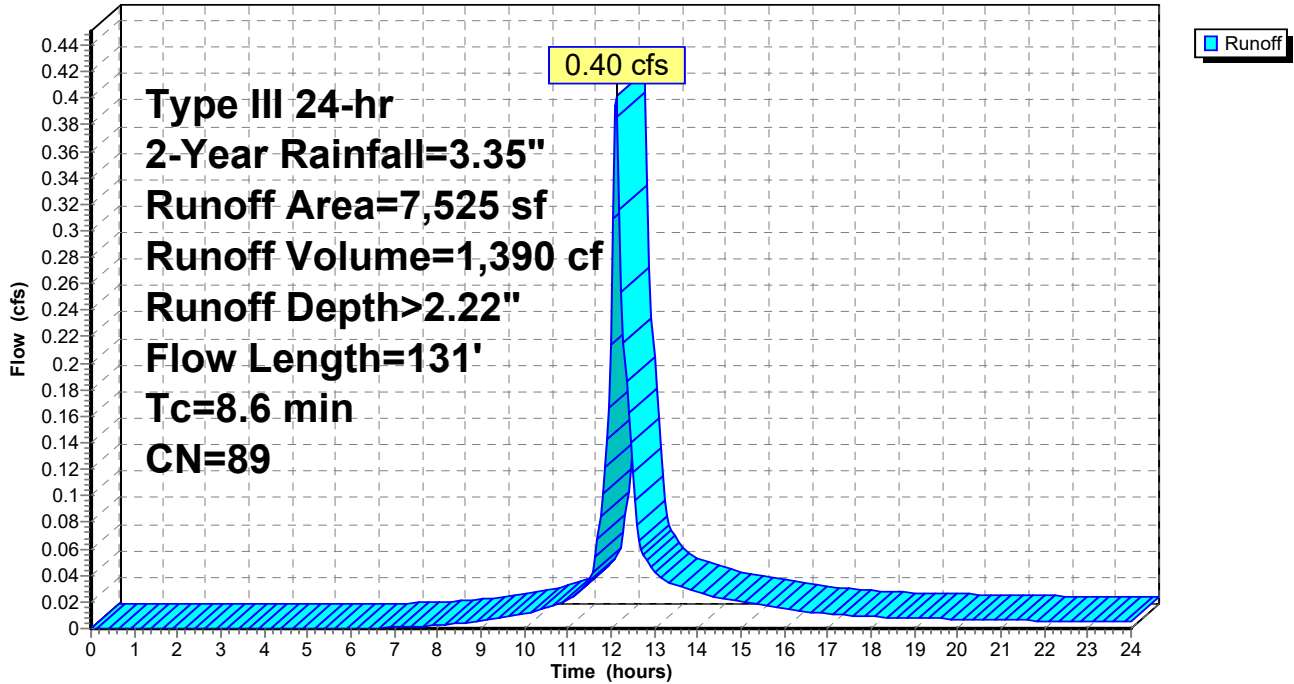
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2-Year Rainfall=3.35"

Area (sf)	CN	Description
1,823	98	Unconnected roofs, HSG C
2,969	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
2,733	98	Paved parking, HSG C
0	98	Paved parking, HSG C
7,525	89	Weighted Average
2,969		39.46% Pervious Area
4,556		60.54% Impervious Area
1,823		40.01% Unconnected

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

### Subcatchment 5: Post 5

Hydrograph



# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 2-Year Rainfall=3.35"

Page 105

## Summary for Subcatchment 6: Post 6

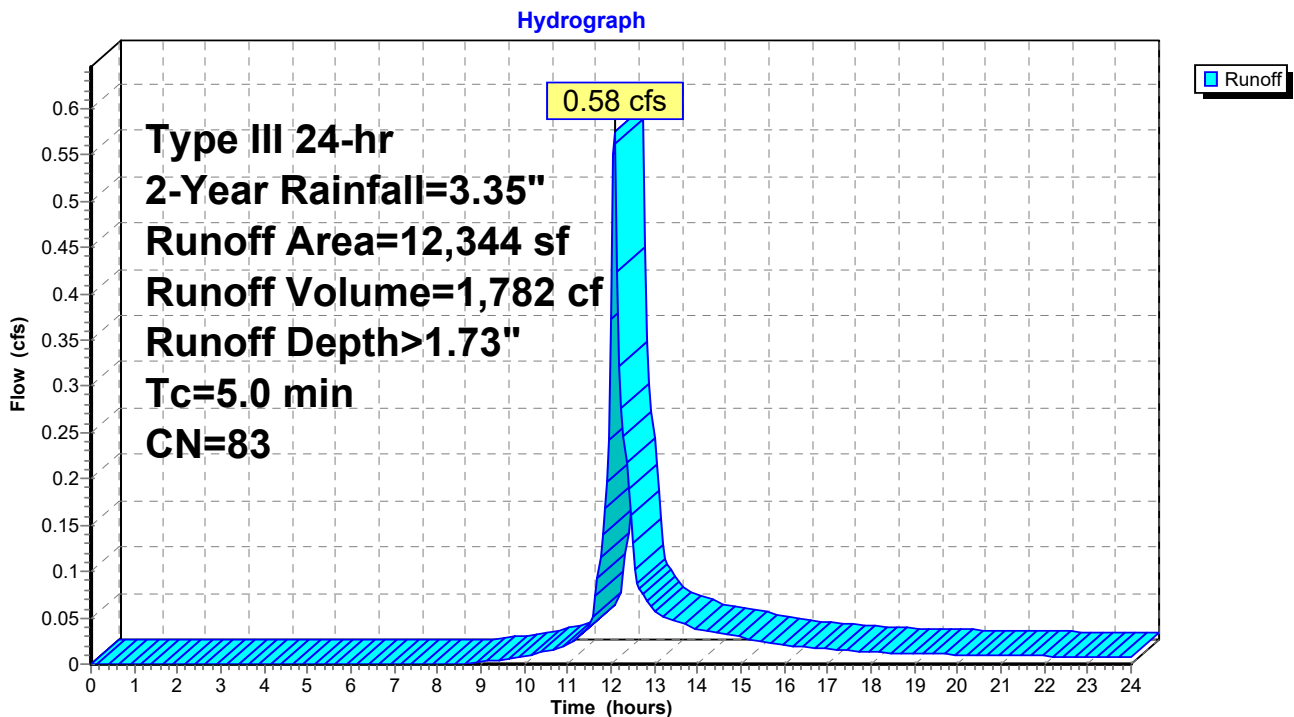
Runoff = 0.58 cfs @ 12.08 hrs, Volume= 1,782 cf, Depth> 1.73"  
Routed to Pond CB13 : CB13

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
7,471	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
3,458	98	Paved parking, HSG C
1,415	98	Paved parking, HSG C
12,344	83	Weighted Average
7,471		60.52% Pervious Area
4,873		39.48% Impervious Area

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

## Subcatchment 6: Post 6



# 817 Country Way Post

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 106

## Summary for Subcatchment 6A: Post 6a

Runoff = 0.41 cfs @ 12.07 hrs, Volume= 1,296 cf, Depth> 2.49"

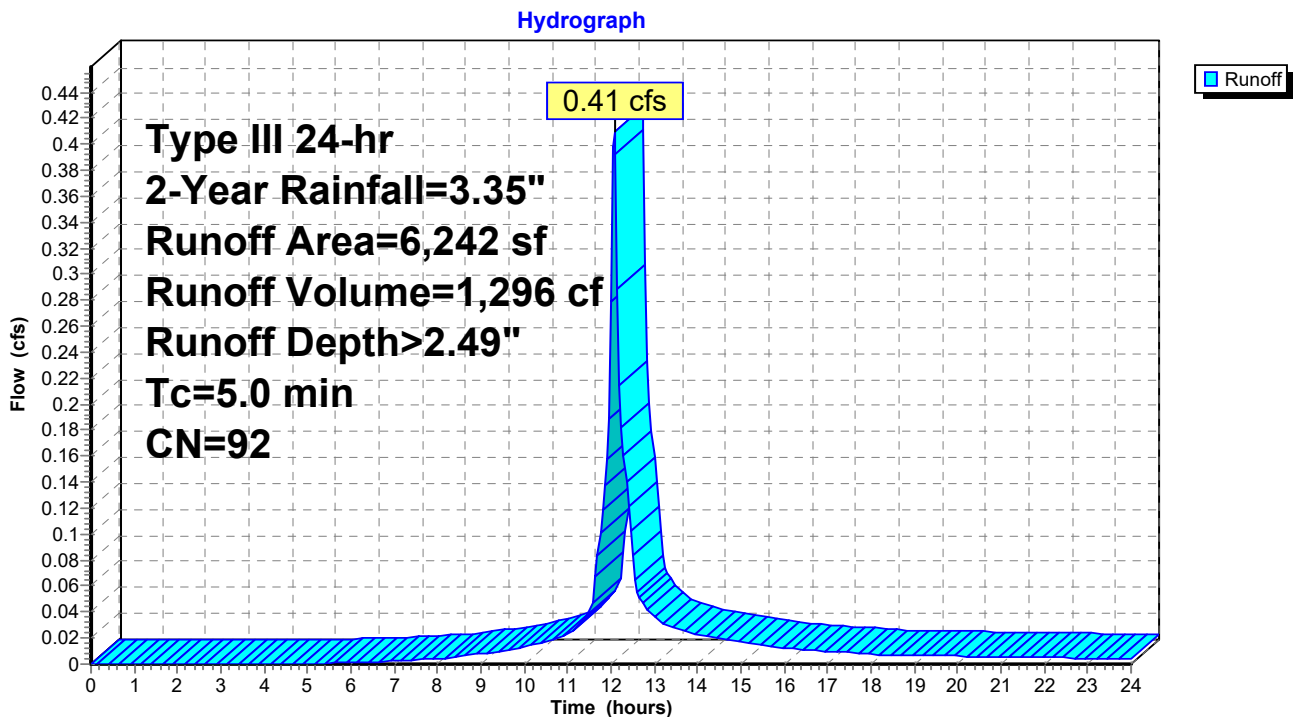
Routed to Pond SSD6 : SUBSURFACE DRAINAGE AREA #6 (STORAGE)

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
1,461	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
4,243	98	Paved parking, HSG C
538	98	Paved parking, HSG C
6,242	92	Weighted Average
1,461		23.41% Pervious Area
4,781		76.59% Impervious Area

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

### Subcatchment 6A: Post 6a





**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 107

**Summary for Subcatchment 7: Post 7**

Runoff = 0.06 cfs @ 12.17 hrs, Volume= 250 cf, Depth> 1.08"  
 Routed to Reach DP4 : DP4

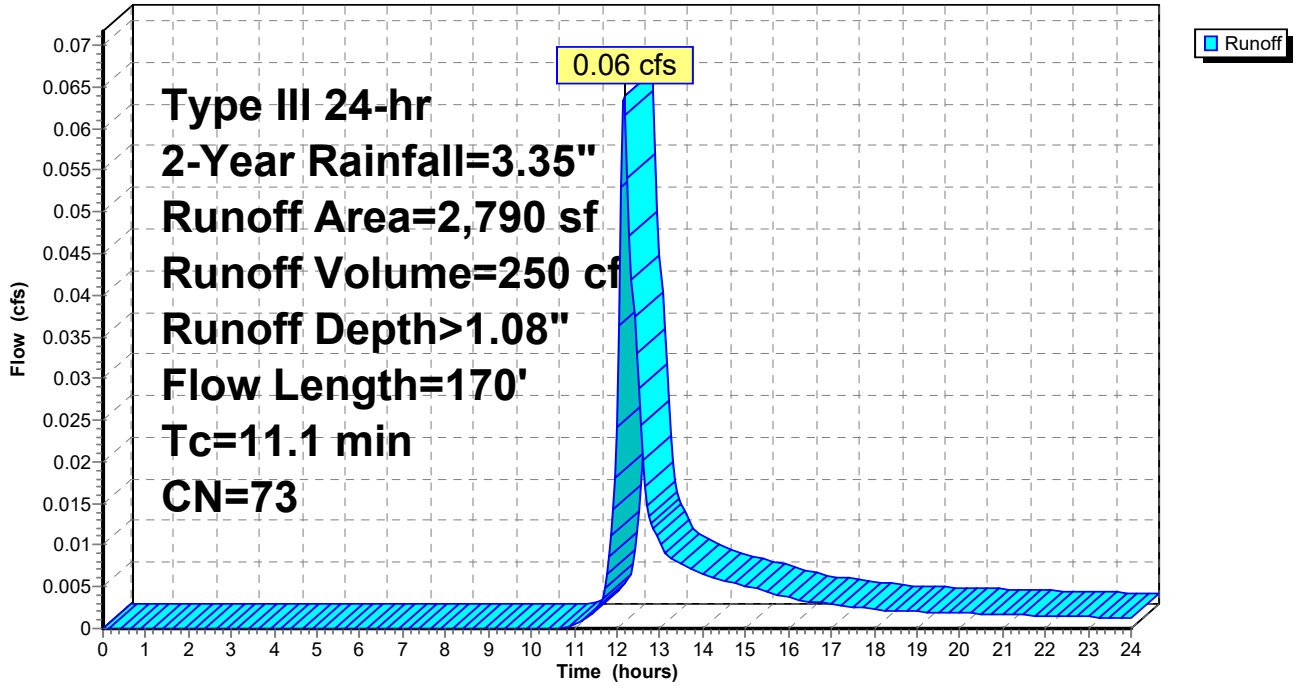
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2-Year Rainfall=3.35"

Area (sf)	CN	Description
2,085	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
2,790	73	Weighted Average
2,790		100.00% Pervious Area

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

### Subcatchment 7: Post 7

Hydrograph



# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 2-Year Rainfall=3.35"

Page 109

## Summary for Subcatchment 8: Post 8

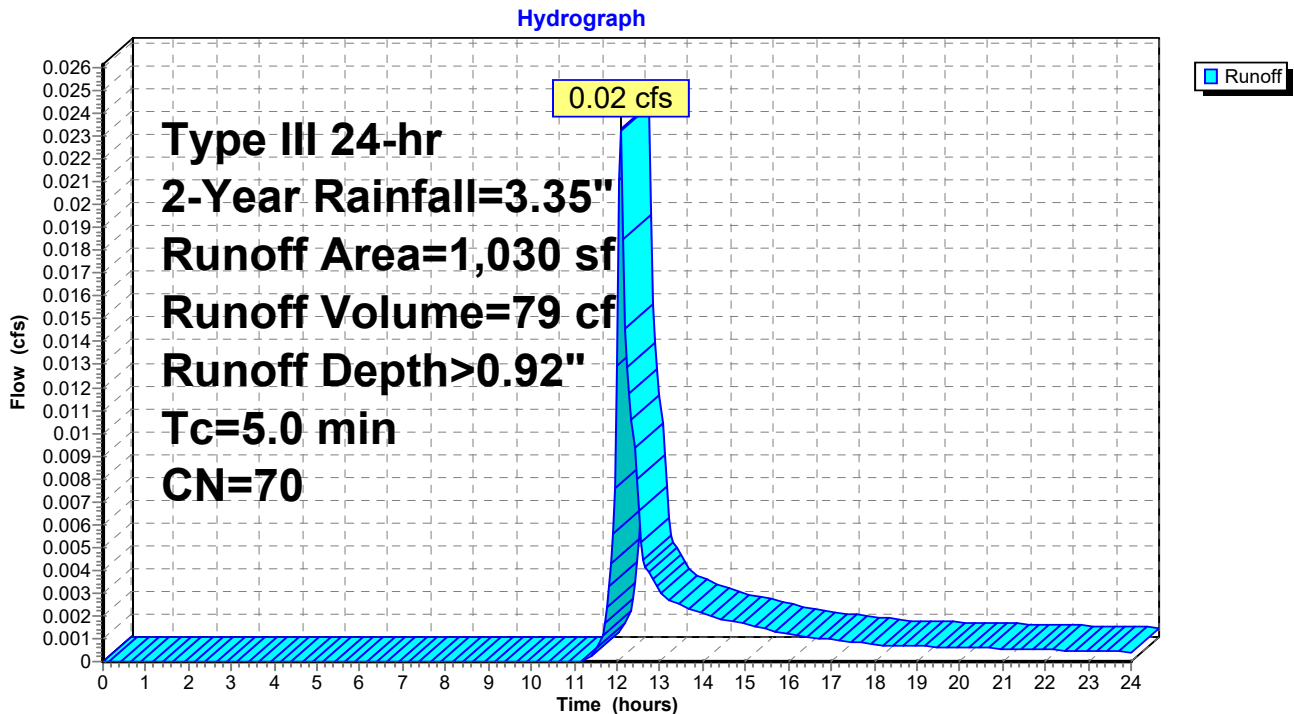
Runoff = 0.02 cfs @ 12.09 hrs, Volume= 79 cf, Depth> 0.92"  
Routed to Reach DP2 : DP2

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



# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 2-Year Rainfall=3.35"

Page 110

## Summary for Subcatchment 9: Post 9

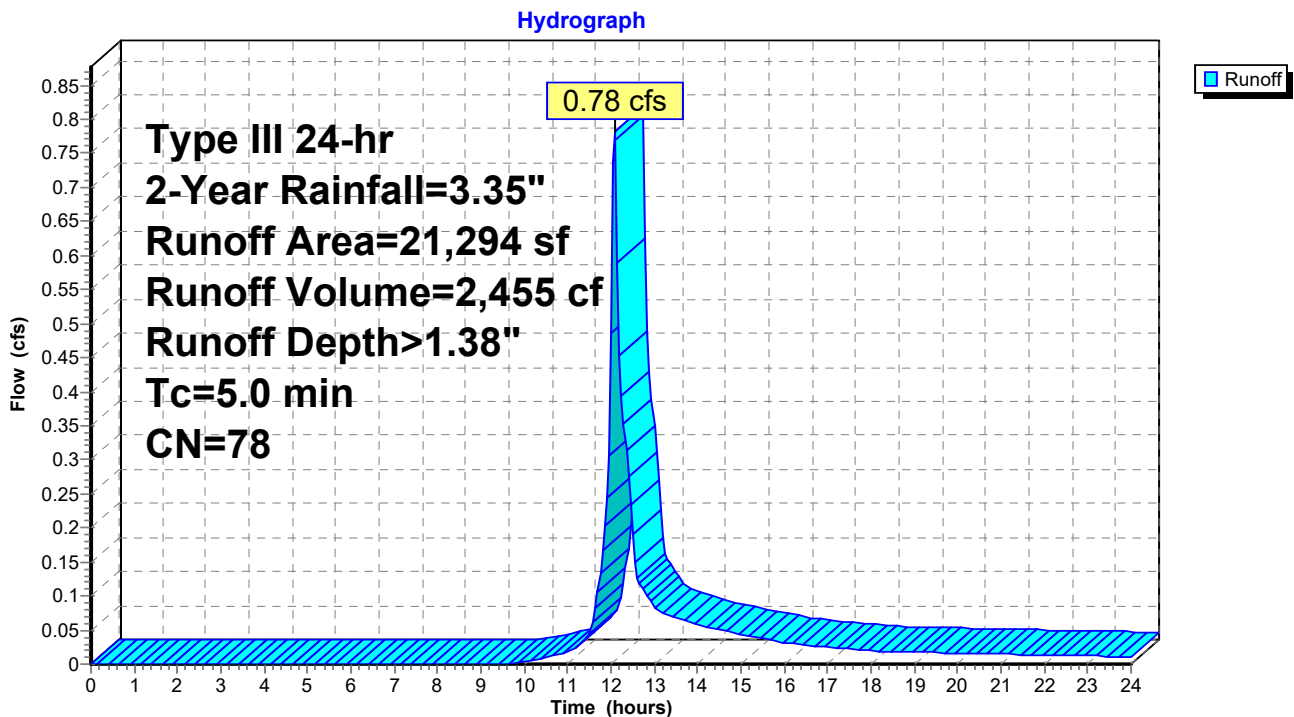
Runoff = 0.78 cfs @ 12.08 hrs, Volume= 2,455 cf, Depth> 1.38"  
Routed to Reach DP3 : DP3

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
15,409	74	>75% Grass cover, Good, HSG C
1,777	70	Woods, Good, HSG C
1,470	98	Paved parking, HSG C
2,638	98	Paved parking, HSG C
21,294	78	Weighted Average
17,186		80.71% Pervious Area
4,108		19.29% Impervious Area

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

## Subcatchment 9: Post 9



# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 2-Year Rainfall=3.35"

Page 111

## 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

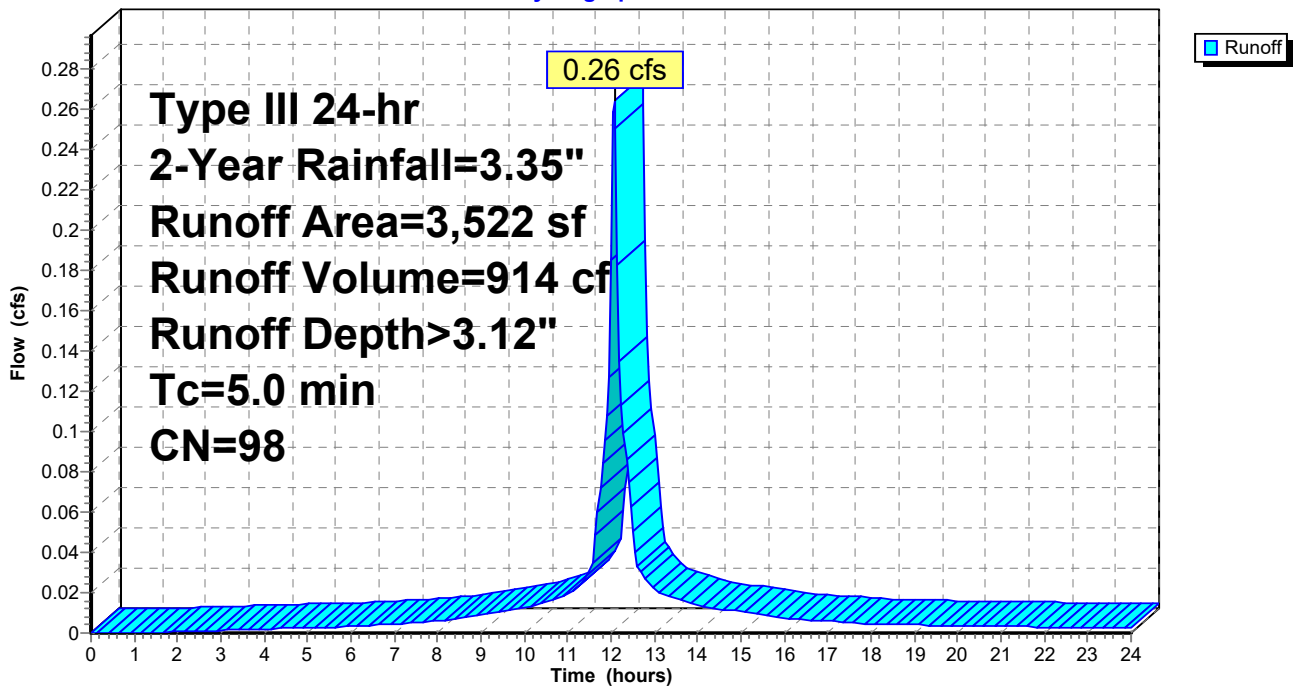
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 2-Year Rainfall=3.35"

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

Hydrograph



# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 2-Year Rainfall=3.35"

Page 112

## Summary for Subcatchment B2a: BLDG #2

Runoff = 0.08 cfs @ 12.07 hrs, Volume= 274 cf, Depth> 3.12"

Routed to Pond SSD6 : SUBSURFACE DRAINAGE AREA #6 (STORAGE)

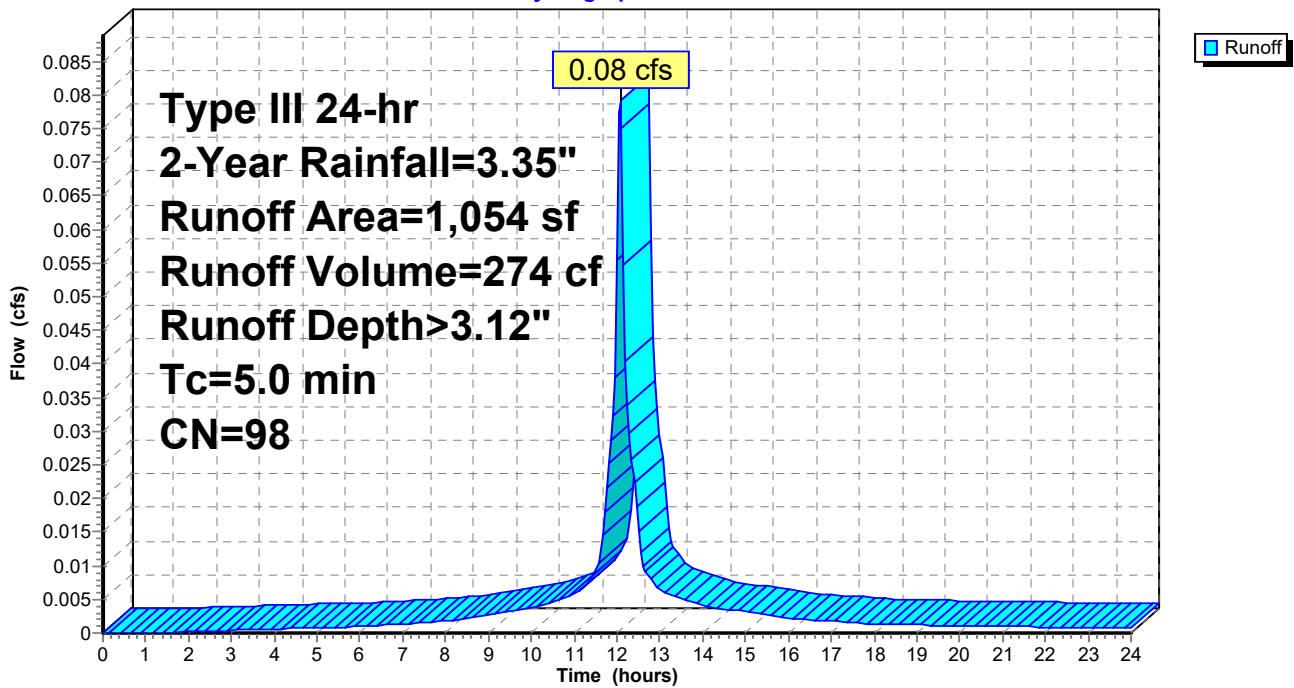
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 2-Year Rainfall=3.35"

Area (sf)	CN	Description
1,054	98	Unconnected roofs, HSG C
1,054		100.00% Impervious Area
1,054		100.00% Unconnected

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

## Subcatchment B2a: BLDG #2

Hydrograph



# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 2-Year Rainfall=3.35"

Page 113

## Summary for Subcatchment B2b: BLDG #2 (REAR SECTION)

Runoff = 0.28 cfs @ 12.07 hrs, Volume= 970 cf, Depth> 3.12"

Routed to Pond SSD1 : SUBSURFACE DRAINAGE AREA #1

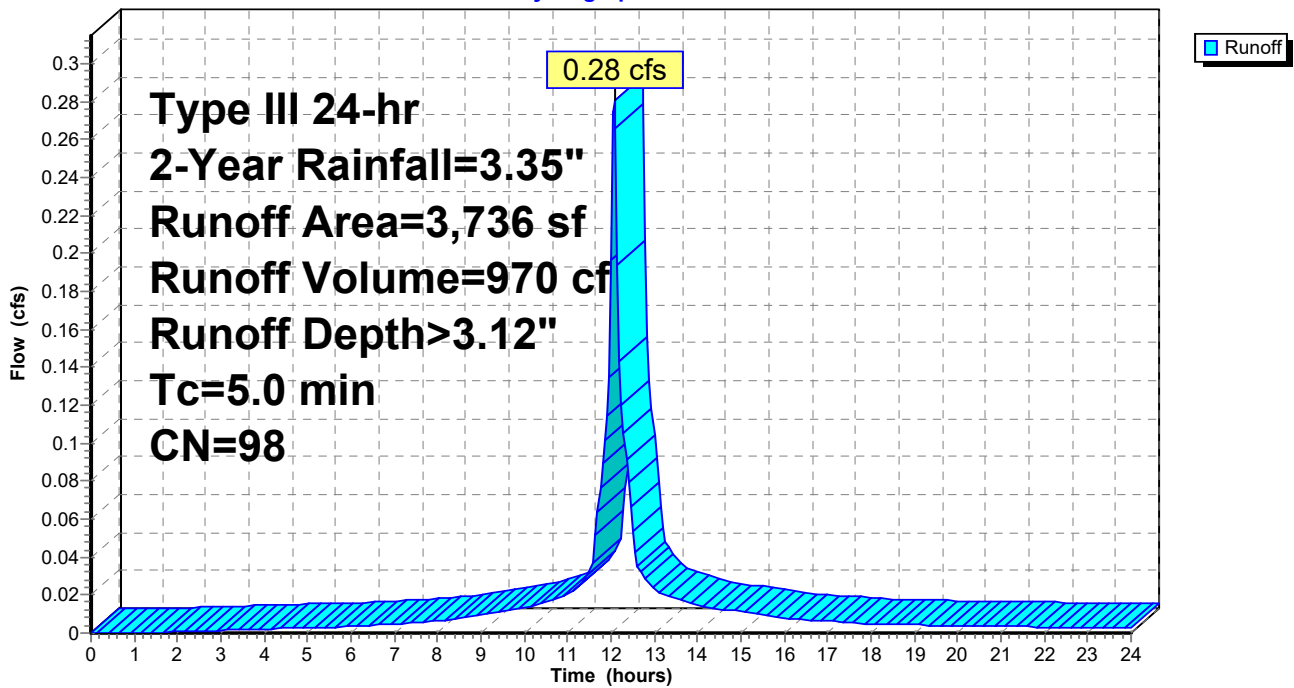
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 2-Year Rainfall=3.35"

Area (sf)	CN	Description
3,736	98	Unconnected roofs, HSG C
3,736		100.00% Impervious Area
3,736		100.00% Unconnected

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

## Subcatchment B2b: BLDG #2 (REAR SECTION)

Hydrograph



**Summary for Subcatchment B3: BLDG #3**

Runoff = 0.42 cfs @ 12.07 hrs, Volume= 1,456 cf, Depth> 3.12"

Routed to Pond SSD4 : SUBSURFACE DRAINAGE AREA #4

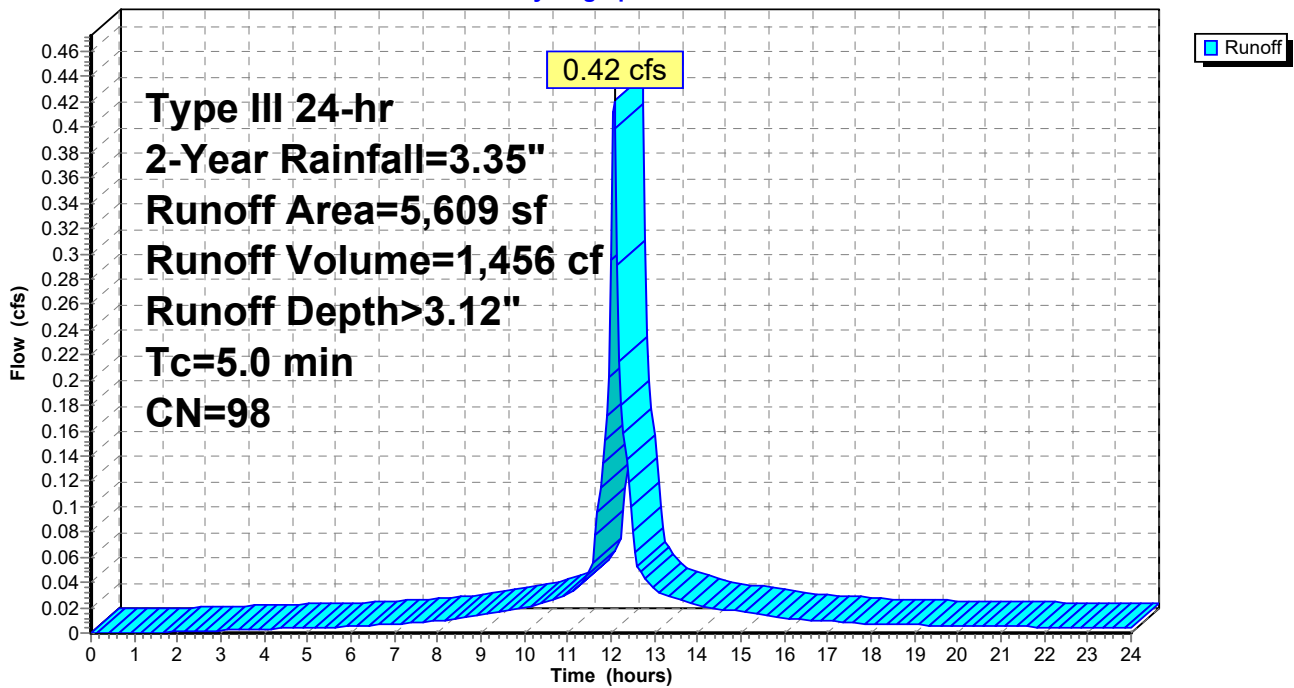
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2-Year Rainfall=3.35"

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 B3: BLDG #3**

Hydrograph





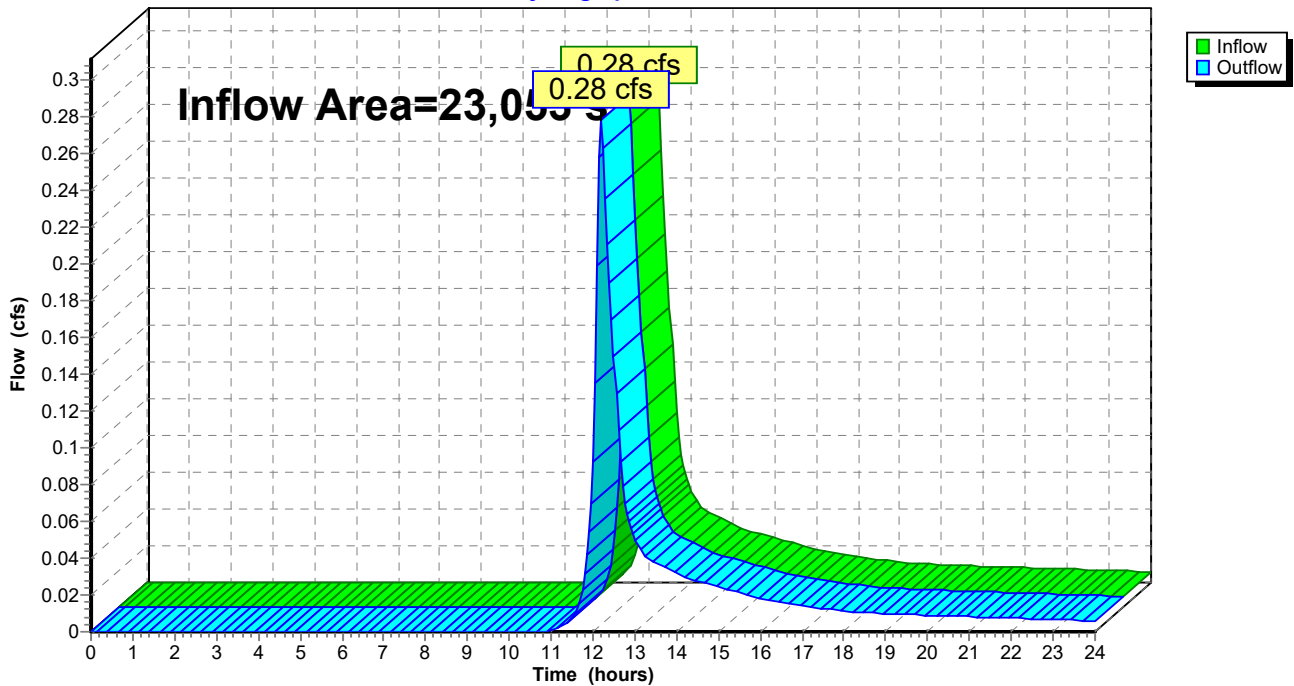
### Summary for Reach DP1: DP1post

Inflow Area = 23,053 sf, 36.59% Impervious, Inflow Depth > 0.61" 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

Hydrograph



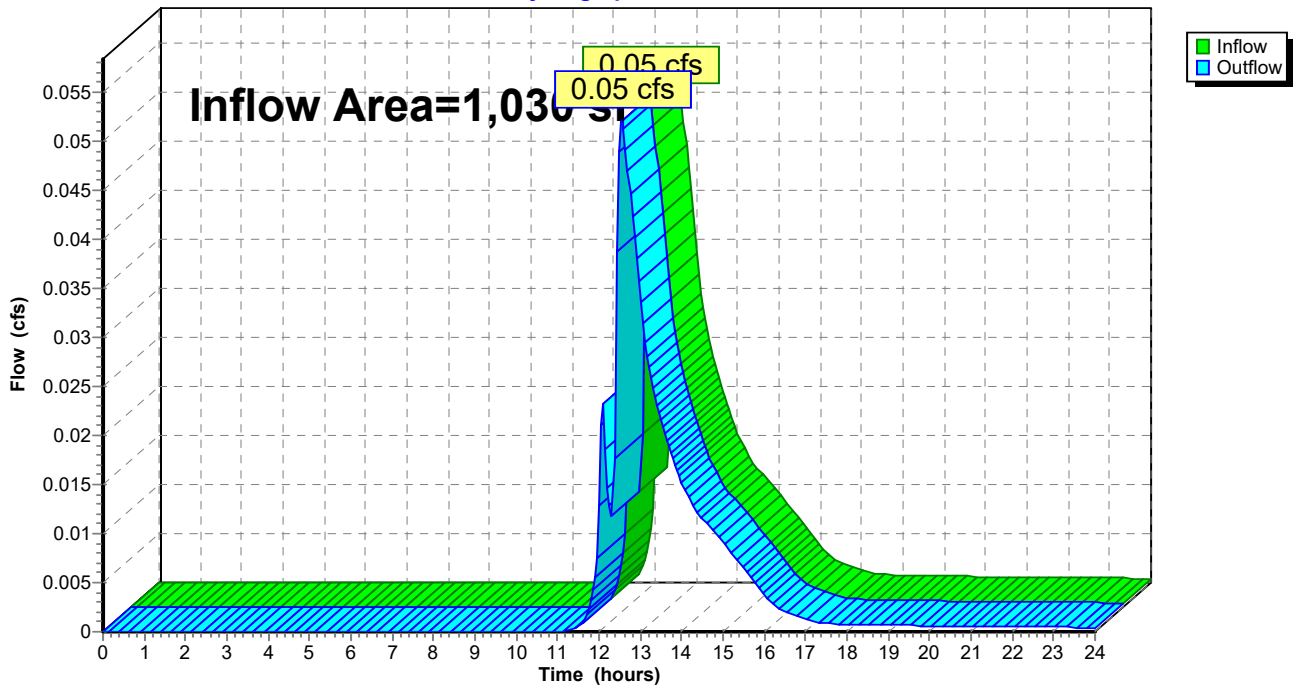
### Summary for Reach DP2: DP2

Inflow Area = 1,030 sf, 0.00% Impervious, Inflow Depth > 3.41" for 2-Year event  
Inflow = 0.05 cfs @ 12.56 hrs, Volume= 292 cf  
Outflow = 0.05 cfs @ 12.56 hrs, Volume= 292 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

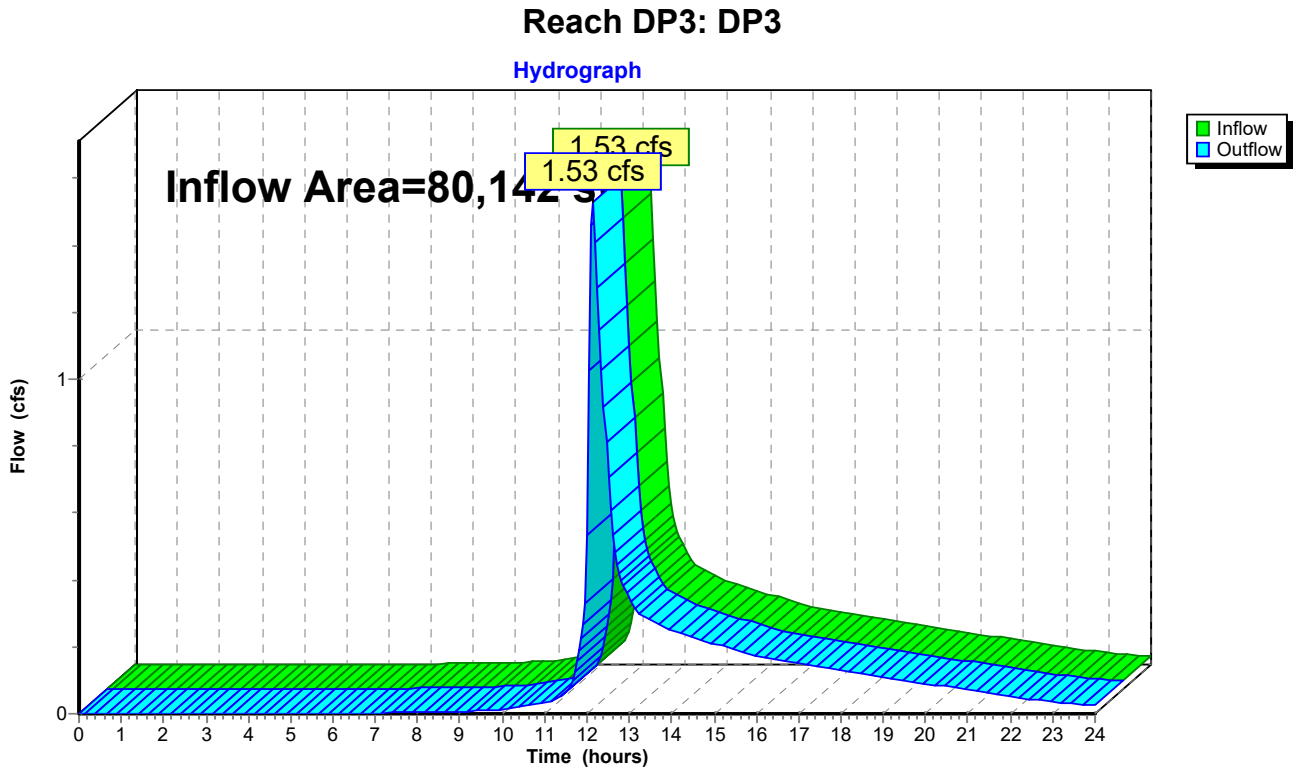
Hydrograph



### Summary for Reach DP3: DP3

Inflow Area = 80,142 sf, 53.31% Impervious, Inflow Depth > 1.29" for 2-Year event  
Inflow = 1.53 cfs @ 12.14 hrs, Volume= 8,593 cf  
Outflow = 1.53 cfs @ 12.14 hrs, Volume= 8,593 cf, Atten= 0%, Lag= 0.0 min

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



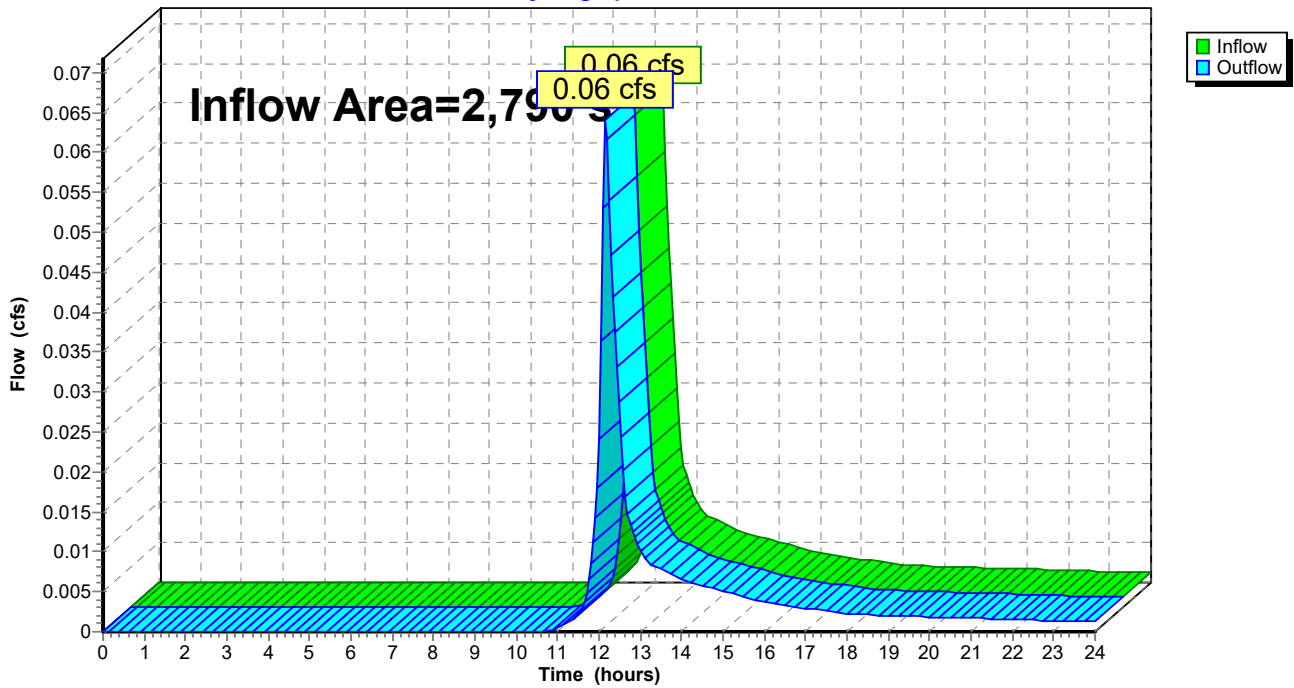
### Summary for Reach DP4: DP4

Inflow Area = 2,790 sf, 0.00% Impervious, Inflow Depth > 1.08" for 2-Year event  
Inflow = 0.06 cfs @ 12.17 hrs, Volume= 250 cf  
Outflow = 0.06 cfs @ 12.17 hrs, Volume= 250 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

Hydrograph



**Summary for Pond 2P: DMH2**

Inflow Area = 15,330 sf, 78.87% Impervious, Inflow Depth > 2.58" for 2-Year event  
 Inflow = 0.95 cfs @ 12.09 hrs, Volume= 3,299 cf  
 Outflow = 0.95 cfs @ 12.09 hrs, Volume= 3,299 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 0.95 cfs @ 12.09 hrs, Volume= 3,299 cf  
 Routed to Pond SSD5 : SUBSURFACE DRAINAGE AREA #5 (STORAGE)

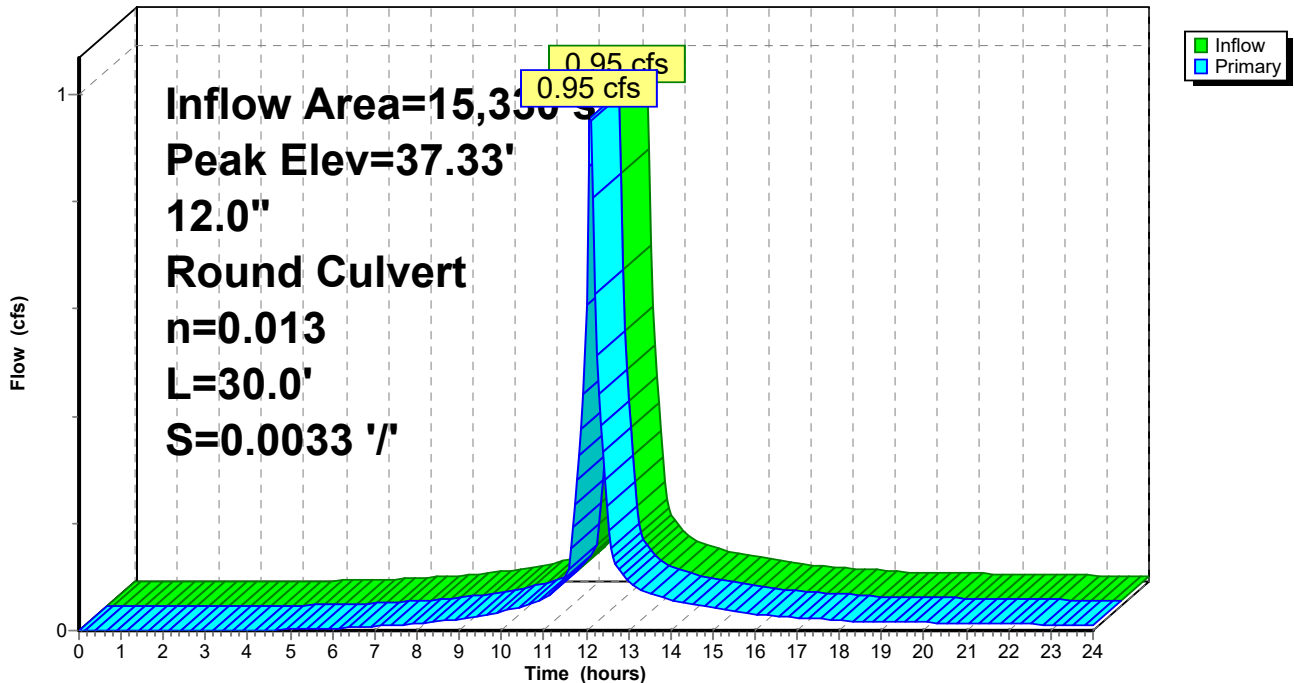
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 37.33' @ 12.09 hrs  
 Flood Elev= 39.67'

Device #	Routing	Invert	Outlet Devices
#1	Primary	36.70'	<b>12.0" Round Culvert</b> 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=0.94 cfs @ 12.09 hrs HW=37.33' (Free Discharge)  
 ←1=Culvert (Barrel Controls 0.94 cfs @ 2.58 fps)

**Pond 2P: DMH2**

Hydrograph



**Stage-Discharge for Pond 2P: DMH2**

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	<b>5.79</b>
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		

**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 121

**Stage-Area-Storage for Pond 2P: DMH2**

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		

# 817 Country Way Post

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 122

## Summary for Pond CB1: CB1

Inflow Area = 7,248 sf, 88.76% Impervious, Inflow Depth > 2.79" for 2-Year event  
Inflow = 0.46 cfs @ 12.12 hrs, Volume= 1,684 cf  
Outflow = 0.46 cfs @ 12.12 hrs, Volume= 1,684 cf, Atten= 0%, Lag= 0.0 min  
Primary = 0.46 cfs @ 12.12 hrs, Volume= 1,684 cf  
Routed to Pond 2P : 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= 34.33' @ 12.12 hrs  
Flood Elev= 36.27'

Device	Routing	Invert	Outlet Devices
#1	Primary	33.90'	<b>12.0" Round Culvert</b> L= 29.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 33.90' / 33.80' S= 0.0034 ' S= 0.0034 ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	36.50'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

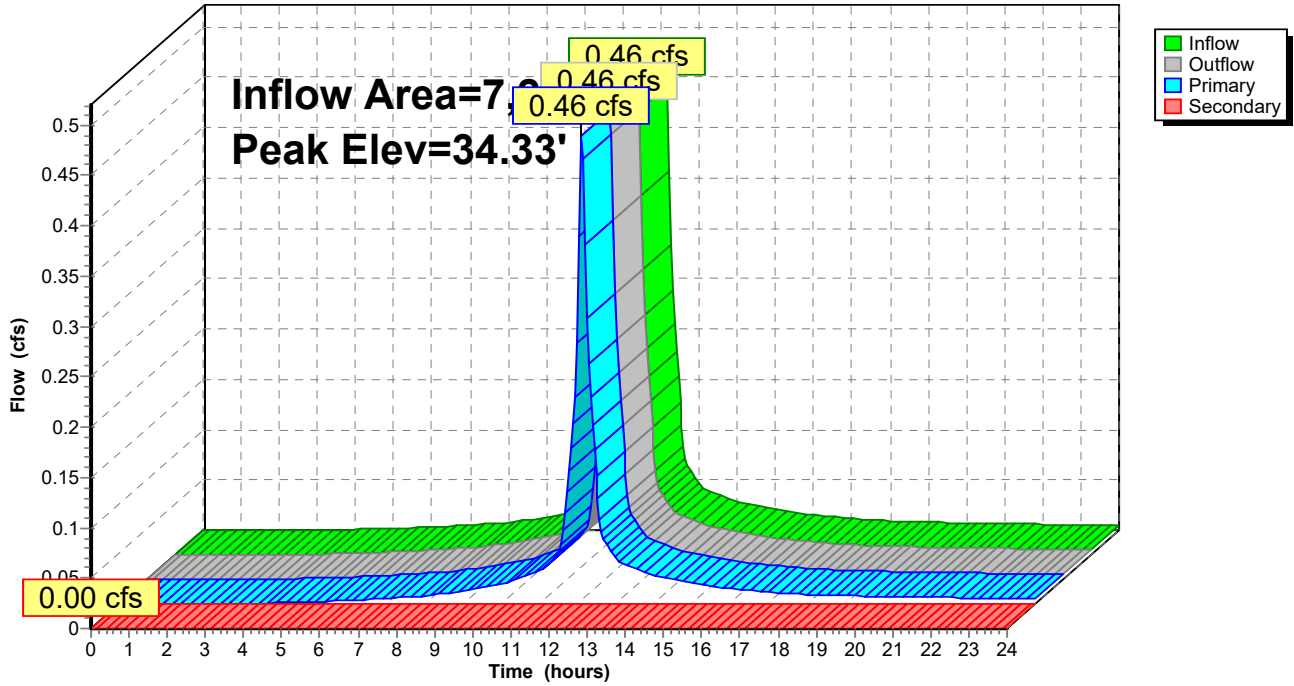
**Primary OutFlow** Max=0.45 cfs @ 12.12 hrs HW=34.32' (Free Discharge)  
↑1=Culvert (Barrel Controls 0.45 cfs @ 2.12 fps)

**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



**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 124

**Stage-Discharge for Pond CB1: CB1**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
33.90	0.00	0.00	<b>0.00</b>
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
36.30	4.97	4.97	0.00
36.35	5.05	5.05	0.00
36.40	5.13	5.13	0.00
36.45	5.21	5.21	0.00
36.50	<b>5.29</b>	<b>5.29</b>	0.00

**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 125

**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	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		
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 = 7,525 sf, 60.54% Impervious, Inflow Depth > 2.22" for 2-Year event  
 Inflow = 0.40 cfs @ 12.12 hrs, Volume= 1,390 cf  
 Outflow = 0.40 cfs @ 12.12 hrs, Volume= 1,390 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 0.40 cfs @ 12.12 hrs, Volume= 1,390 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

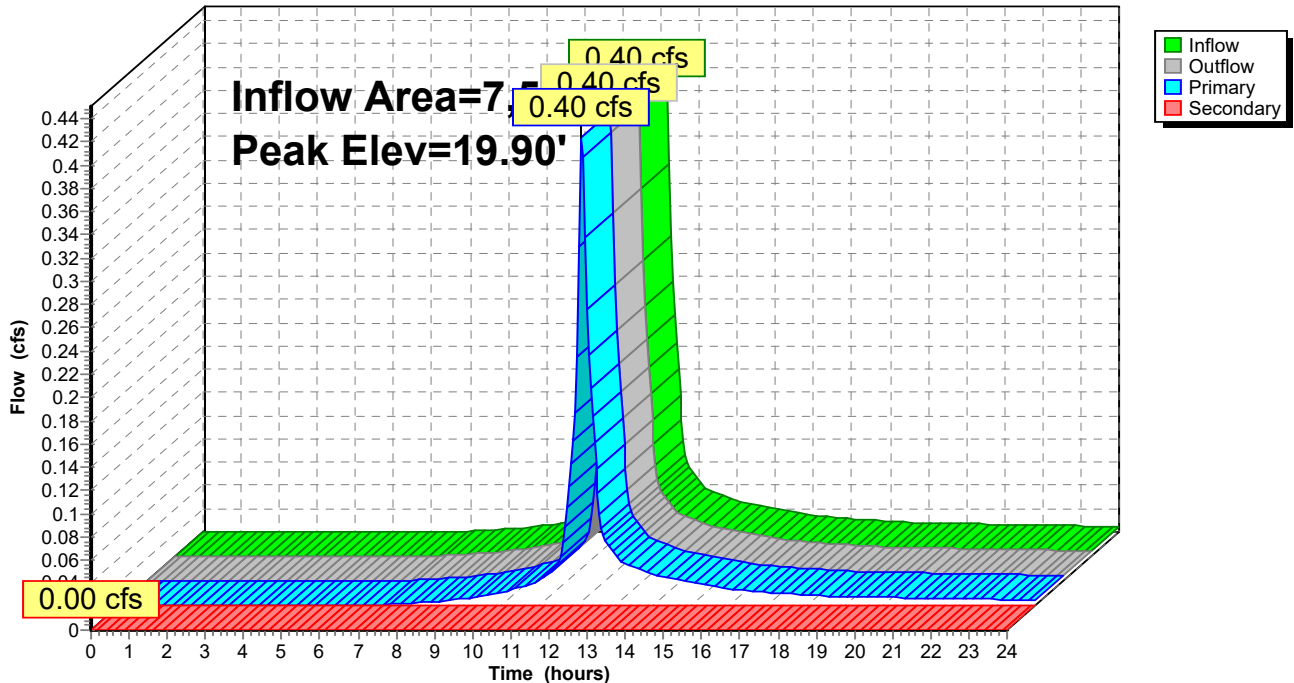
Device	Routing	Invert	Outlet Devices
#1	Primary	19.50'	<b>12.0" Round Culvert</b> L= 30.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 19.50' / 19.40' S= 0.0033 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	22.00'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0" x 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 @ 2.03 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**

Hydrograph



**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 127

**Stage-Discharge for Pond CB10: CB10**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
19.50	0.00	0.00	<b>0.00</b>
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	<b>5.10</b>	<b>5.10</b>	0.00

**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 128

**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		

# 817 Country Way Post

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 129

## Summary for Pond CB13: CB13

Inflow Area = 25,175 sf, 50.08% Impervious, Inflow Depth > 0.85" for 2-Year event  
Inflow = 0.58 cfs @ 12.08 hrs, Volume= 1,782 cf  
Outflow = 0.58 cfs @ 12.08 hrs, Volume= 1,782 cf, Atten= 0%, Lag= 0.0 min  
Primary = 0.58 cfs @ 12.08 hrs, Volume= 1,782 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= 20.34' @ 12.08 hrs  
Flood Elev= 22.00'

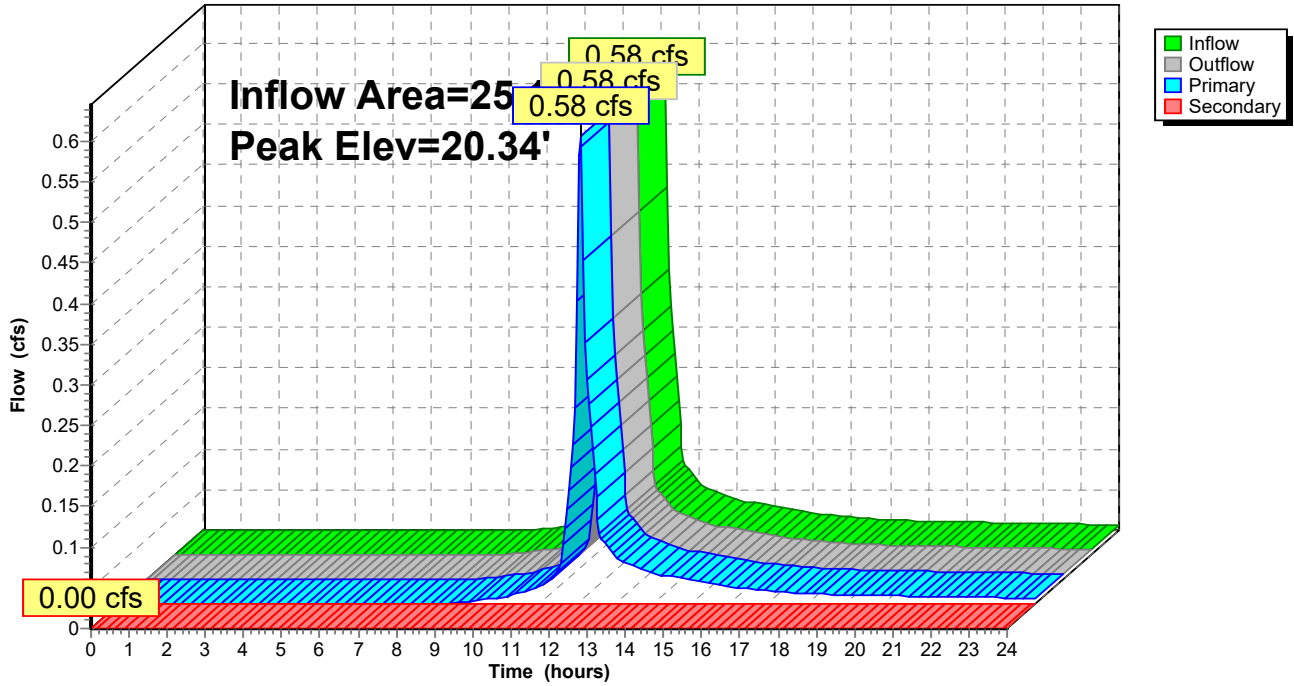
Device	Routing	Invert	Outlet Devices
#1	Primary	19.90'	<b>12.0" Round Culvert</b> L= 12.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 19.90' / 19.80' S= 0.0083 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	22.00'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0"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

**Primary OutFlow** Max=0.56 cfs @ 12.08 hrs HW=20.33' (Free Discharge)  
↑1=Culvert (Barrel Controls 0.56 cfs @ 2.54 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

Hydrograph





**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 131

**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	<b>0.00</b>	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	<b>4.78</b>	<b>4.78</b>	0.00

**817 Country Way Post**

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 2-Year Rainfall=3.35"

Page 132

**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

# 817 Country Way Post

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 133

## Summary for Pond CB4: CB4

Inflow Area = 9,095 sf, 43.97% Impervious, Inflow Depth > 1.89" for 2-Year event  
Inflow = 0.46 cfs @ 12.08 hrs, Volume= 1,429 cf  
Outflow = 0.46 cfs @ 12.08 hrs, Volume= 1,429 cf, Atten= 0%, Lag= 0.0 min  
Primary = 0.46 cfs @ 12.08 hrs, Volume= 1,429 cf  
Routed to Pond SSD1 : SUBSURFACE DRAINAGE AREA #1  
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' @ 12.08 hrs  
Flood Elev= 37.00'

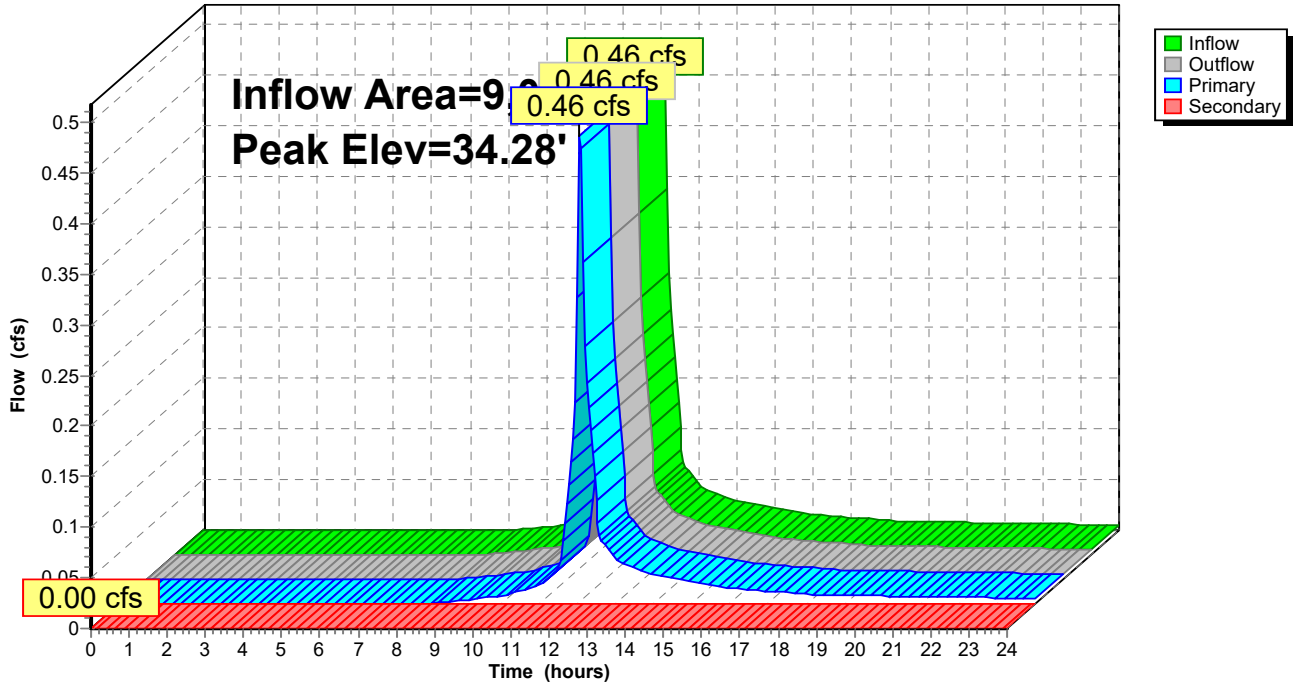
Device	Routing	Invert	Outlet Devices
#1	Primary	33.90'	<b>12.0" Round Culvert</b> L= 10.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 33.90' / 33.80' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	35.50'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

**Primary OutFlow** Max=0.45 cfs @ 12.08 hrs HW=34.28' (Free Discharge)  
↑1=Culvert (Barrel Controls 0.45 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



**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**Stage-Discharge for Pond CB4: CB4**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
33.90	0.00	0.00	0.00	36.55	19.25	5.55	13.71
33.95	0.01	0.01	0.00	36.60	19.64	5.61	14.03
34.00	0.04	0.04	0.00	36.65	20.02	5.67	14.34
34.05	0.08	0.08	0.00	36.70	20.39	5.74	14.65
34.10	0.14	0.14	0.00	36.75	20.75	5.80	14.95
34.15	0.21	0.21	0.00	36.80	21.11	5.86	15.25
34.20	0.30	0.30	0.00	36.85	21.46	5.92	15.54
34.25	0.39	0.39	0.00	36.90	21.80	5.98	15.83
34.30	0.50	0.50	0.00	36.95	22.14	6.04	16.11
34.35	0.62	0.62	0.00	37.00	<b>22.48</b>	<b>6.10</b>	<b>16.38</b>
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	4.30	4.05	0.24				
35.60	4.83	4.14	0.69				
35.65	5.49	4.23	1.27				
35.70	6.26	4.31	1.95				
35.75	7.12	4.39	2.73				
35.80	8.06	4.47	3.58				
35.85	9.07	4.55	4.51				
35.90	10.15	4.63	5.52				
35.95	11.29	4.71	6.58				
36.00	12.49	4.78	7.71				
36.05	13.75	4.86	8.89				
36.10	15.06	4.93	10.13				
36.15	15.79	5.00	10.78				
36.20	16.26	5.07	11.19				
36.25	16.73	5.14	11.58				
36.30	17.18	5.21	11.96				
36.35	17.61	5.28	12.33				
36.40	18.04	5.35	12.69				
36.45	18.45	5.41	13.04				
36.50	18.86	5.48	13.37				

**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 136

**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		

# 817 Country Way Post

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 137

## Summary for Pond CB5: CB5

Inflow Area = 8,082 sf, 70.01% Impervious, Inflow Depth > 2.40" for 2-Year event  
Inflow = 0.52 cfs @ 12.07 hrs, Volume= 1,615 cf  
Outflow = 0.52 cfs @ 12.07 hrs, Volume= 1,615 cf, Atten= 0%, Lag= 0.0 min  
Primary = 0.52 cfs @ 12.07 hrs, Volume= 1,615 cf  
Routed to Pond 2P : DMH2  
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
Routed to Pond CB1 : CB1

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'

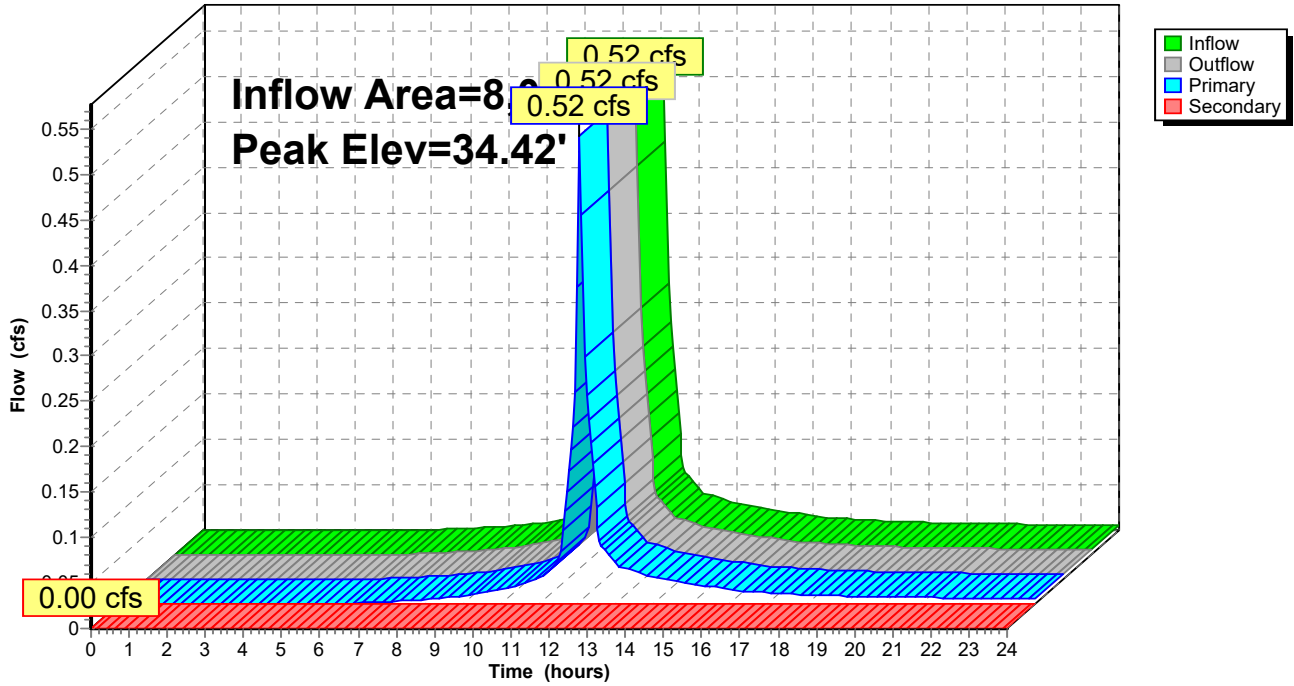
Device	Routing	Invert	Outlet Devices
#1	Primary	34.00'	<b>12.0" Round Culvert</b> L= 35.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 34.00' / 33.80' S= 0.0057 ' S= 0.0057 ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	38.20'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

**Primary OutFlow** Max=0.50 cfs @ 12.07 hrs HW=34.41' (Free Discharge)  
↑1=Culvert (Barrel Controls 0.50 cfs @ 2.43 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





**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 139

**Stage-Discharge for Pond CB5: CB5**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
34.00	0.00	0.00	<b>0.00</b>	36.65	5.32	5.32	0.00
34.05	0.01	0.01	0.00	36.70	5.39	5.39	0.00
34.10	0.03	0.03	0.00	36.75	5.46	5.46	0.00
34.15	0.07	0.07	0.00	36.80	5.53	5.53	0.00
34.20	0.13	0.13	0.00	36.85	5.60	5.60	0.00
34.25	0.19	0.19	0.00	36.90	5.67	5.67	0.00
34.30	0.28	0.28	0.00	36.95	5.73	5.73	0.00
34.35	0.37	0.37	0.00	37.00	5.80	5.80	0.00
34.40	0.48	0.48	0.00	37.05	5.86	5.86	0.00
34.45	0.59	0.59	0.00	37.10	5.93	5.93	0.00
34.50	0.72	0.72	0.00	37.15	5.99	5.99	0.00
34.55	0.85	0.85	0.00	37.20	6.06	6.06	0.00
34.60	0.99	0.99	0.00	37.25	6.12	6.12	0.00
34.65	1.13	1.13	0.00	37.30	6.18	6.18	0.00
34.70	1.28	1.28	0.00	37.35	6.24	6.24	0.00
34.75	1.44	1.44	0.00	37.40	6.30	6.30	0.00
34.80	1.59	1.59	0.00	37.45	6.36	6.36	0.00
34.85	1.75	1.75	0.00	37.50	6.42	6.42	0.00
34.90	1.91	1.91	0.00	37.55	6.48	6.48	0.00
34.95	2.06	2.06	0.00	37.60	6.54	6.54	0.00
35.00	2.22	2.22	0.00	37.65	6.60	6.60	0.00
35.05	2.36	2.36	0.00	37.70	6.66	6.66	0.00
35.10	2.50	2.50	0.00	37.75	6.72	6.72	0.00
35.15	2.63	2.63	0.00	37.80	6.77	6.77	0.00
35.20	2.74	2.74	0.00	37.85	6.83	6.83	0.00
35.25	2.84	2.84	0.00	37.90	6.88	6.88	0.00
35.30	2.89	2.89	0.00	37.95	6.94	6.94	0.00
35.35	2.90	2.90	0.00	38.00	6.99	6.99	0.00
35.40	3.03	3.03	0.00	38.05	7.05	7.05	0.00
35.45	3.15	3.15	0.00	38.10	7.10	7.10	0.00
35.50	3.27	3.27	0.00	38.15	7.16	7.16	0.00
35.55	3.39	3.39	0.00	38.20	<b>7.21</b>	<b>7.21</b>	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				

**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 140

**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	37.55	0
34.95	0	37.60	0
35.00	0	37.65	0
35.05	0	37.70	0
35.10	0	37.75	0
35.15	0	37.80	0
35.20	0	37.85	0
35.25	0	37.90	0
35.30	0	37.95	0
35.35	0	38.00	0
35.40	0	38.05	0
35.45	0	38.10	0
35.50	0	38.15	0
35.55	0	38.20	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		

# 817 Country Way Post

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 141

## Summary for Pond CB6: CB6

Inflow Area = 2,000 sf, 72.80% Impervious, Inflow Depth > 2.40" for 2-Year event  
Inflow = 0.13 cfs @ 12.07 hrs, Volume= 400 cf  
Outflow = 0.13 cfs @ 12.07 hrs, Volume= 400 cf, Atten= 0%, Lag= 0.0 min  
Primary = 0.13 cfs @ 12.07 hrs, Volume= 400 cf  
Routed to Pond DMH7 : DMH7  
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
Routed to Pond CB5 : CB5

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Peak Elev= 37.10' @ 12.07 hrs  
Flood Elev= 39.42'

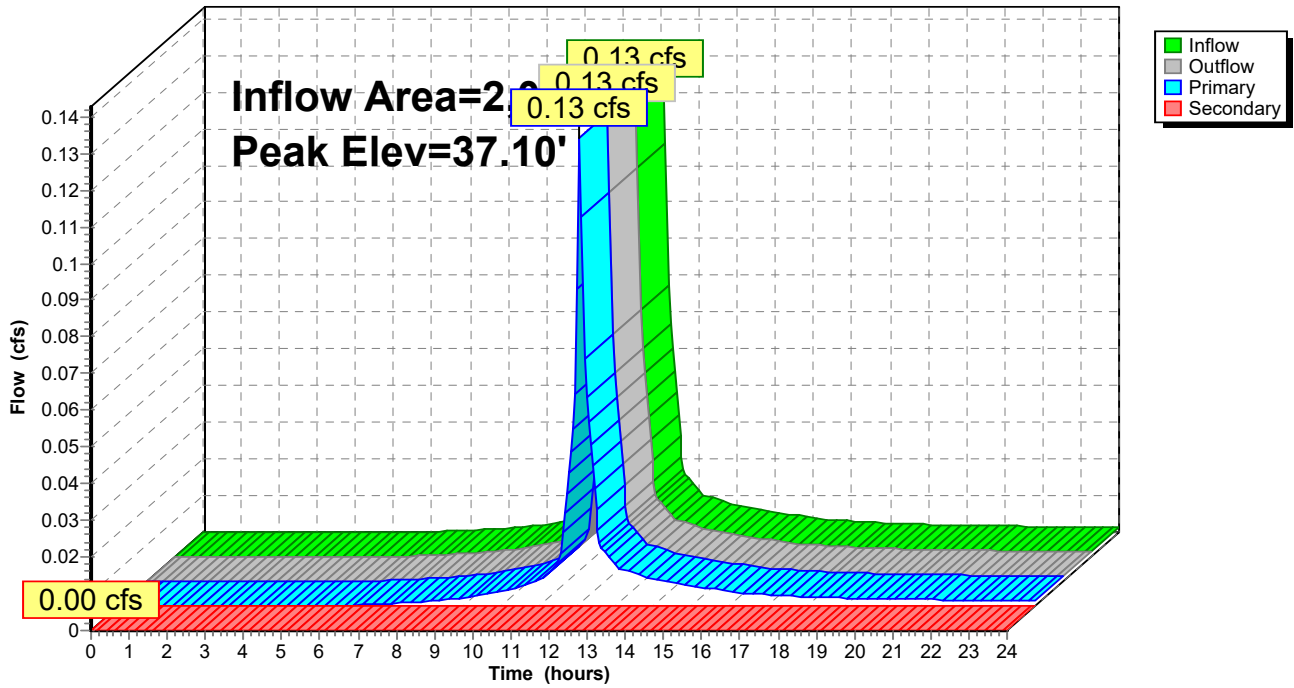
Device	Routing	Invert	Outlet Devices
#1	Primary	36.90'	<b>12.0" Round Culvert</b> L= 16.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 36.90' / 36.80' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	40.00'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 24.0" x 24.0" Grate (69% open area) Limited to weir flow at low heads

**Primary OutFlow** Max=0.12 cfs @ 12.07 hrs HW=37.10' (Free Discharge)  
↑1=Culvert (Barrel Controls 0.12 cfs @ 1.68 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



**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**Stage-Discharge for Pond CB6: CB6**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
36.90	0.00	0.00	<b>0.00</b>	39.55	5.55	5.55	0.00
36.95	0.01	0.01	0.00	39.60	5.61	5.61	0.00
37.00	0.03	0.03	0.00	39.65	5.67	5.67	0.00
37.05	0.07	0.07	0.00	39.70	5.74	5.74	0.00
37.10	0.12	0.12	0.00	39.75	5.80	5.80	0.00
37.15	0.19	0.19	0.00	39.80	5.86	5.86	0.00
37.20	0.27	0.27	0.00	39.85	5.92	5.92	0.00
37.25	0.36	0.36	0.00	39.90	5.98	5.98	0.00
37.30	0.47	0.47	0.00	39.95	6.04	6.04	0.00
37.35	0.58	0.58	0.00	40.00	<b>6.10</b>	<b>6.10</b>	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				
39.45	5.41	5.41	0.00				
39.50	5.48	5.48	0.00				

**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 144

**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	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	39.68	0
37.58	0	38.64	0	39.70	0
37.60	0	38.66	0	39.72	0
37.62	0	38.68	0	39.74	0
37.64	0	38.70	0	39.76	0
37.66	0	38.72	0	39.78	0
37.68	0	38.74	0	39.80	0
37.70	0	38.76	0	39.82	0
37.72	0	38.78	0	39.84	0
37.74	0	38.80	0	39.86	0
37.76	0	38.82	0	39.88	0
37.78	0	38.84	0	39.90	0
37.80	0	38.86	0	39.92	0
37.82	0	38.88	0	39.94	0
37.84	0	38.90	0	39.96	0
37.86	0	38.92	0	39.98	0
37.88	0	38.94	0	40.00	0
37.90	0	38.96	0		
37.92	0	38.98	0		
37.94	0	39.00	0		

# 817 Country Way Post

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 145

## Summary for Pond CB9: CB9

Inflow Area = 1,641 sf, 83.49% Impervious, Inflow Depth > 2.69" for 2-Year event  
Inflow = 0.11 cfs @ 12.07 hrs, Volume= 368 cf  
Outflow = 0.11 cfs @ 12.07 hrs, Volume= 368 cf, Atten= 0%, Lag= 0.0 min  
Primary = 0.11 cfs @ 12.07 hrs, Volume= 368 cf  
Routed to Pond DMH7 : DMH7  
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
Routed to Pond CB5 : CB5

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Peak Elev= 37.09' @ 12.07 hrs  
Flood Elev= 39.42'

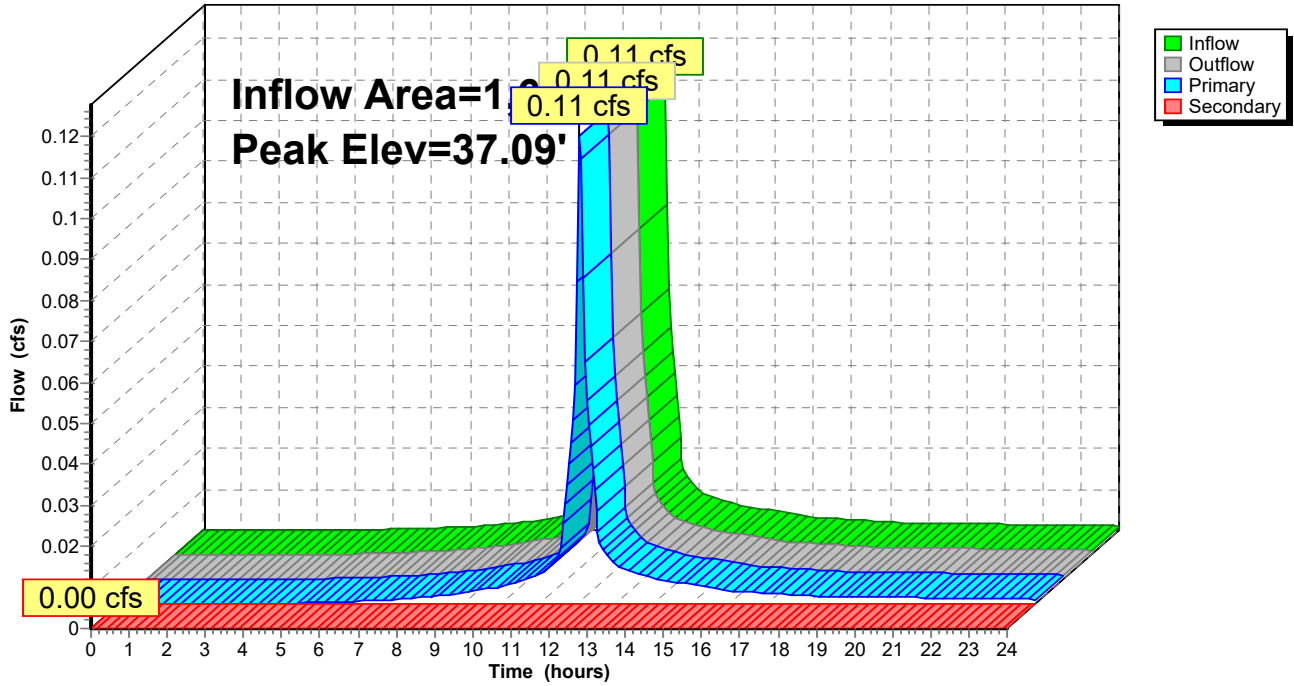
Device	Routing	Invert	Outlet Devices
#1	Primary	36.90'	<b>12.0" Round Culvert</b> L= 16.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 36.90' / 36.80' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	40.00'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

**Primary OutFlow** Max=0.11 cfs @ 12.07 hrs HW=37.09' (Free Discharge)  
↑1=Culvert (Barrel Controls 0.11 cfs @ 1.63 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





**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 147

**Stage-Discharge for Pond CB9: CB9**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
36.90	0.00	0.00	<b>0.00</b>	39.55	5.55	5.55	0.00
36.95	0.01	0.01	0.00	39.60	5.61	5.61	0.00
37.00	0.03	0.03	0.00	39.65	5.67	5.67	0.00
37.05	0.07	0.07	0.00	39.70	5.74	5.74	0.00
37.10	0.12	0.12	0.00	39.75	5.80	5.80	0.00
37.15	0.19	0.19	0.00	39.80	5.86	5.86	0.00
37.20	0.27	0.27	0.00	39.85	5.92	5.92	0.00
37.25	0.36	0.36	0.00	39.90	5.98	5.98	0.00
37.30	0.47	0.47	0.00	39.95	6.04	6.04	0.00
37.35	0.58	0.58	0.00	40.00	<b>6.10</b>	<b>6.10</b>	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				
39.45	5.41	5.41	0.00				
39.50	5.48	5.48	0.00				

**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 148

**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	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	39.68	0
37.58	0	38.64	0	39.70	0
37.60	0	38.66	0	39.72	0
37.62	0	38.68	0	39.74	0
37.64	0	38.70	0	39.76	0
37.66	0	38.72	0	39.78	0
37.68	0	38.74	0	39.80	0
37.70	0	38.76	0	39.82	0
37.72	0	38.78	0	39.84	0
37.74	0	38.80	0	39.86	0
37.76	0	38.82	0	39.88	0
37.78	0	38.84	0	39.90	0
37.80	0	38.86	0	39.92	0
37.82	0	38.88	0	39.94	0
37.84	0	38.90	0	39.96	0
37.86	0	38.92	0	39.98	0
37.88	0	38.94	0	40.00	0
37.90	0	38.96	0		
37.92	0	38.98	0		
37.94	0	39.00	0		

# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 2-Year Rainfall=3.35"

Page 149

## Summary for Pond DMH11: DMH11

Inflow Area = 48,030 sf, 60.91% Impervious, Inflow Depth > 1.60" for 2-Year event  
Inflow = 1.04 cfs @ 12.10 hrs, Volume= 6,402 cf  
Outflow = 1.04 cfs @ 12.10 hrs, Volume= 6,402 cf, Atten= 0%, Lag= 0.0 min  
Primary = 1.04 cfs @ 12.10 hrs, Volume= 6,402 cf  
Routed to Pond SSD3 : SUBSURFACE DRAINAGE AREA #3

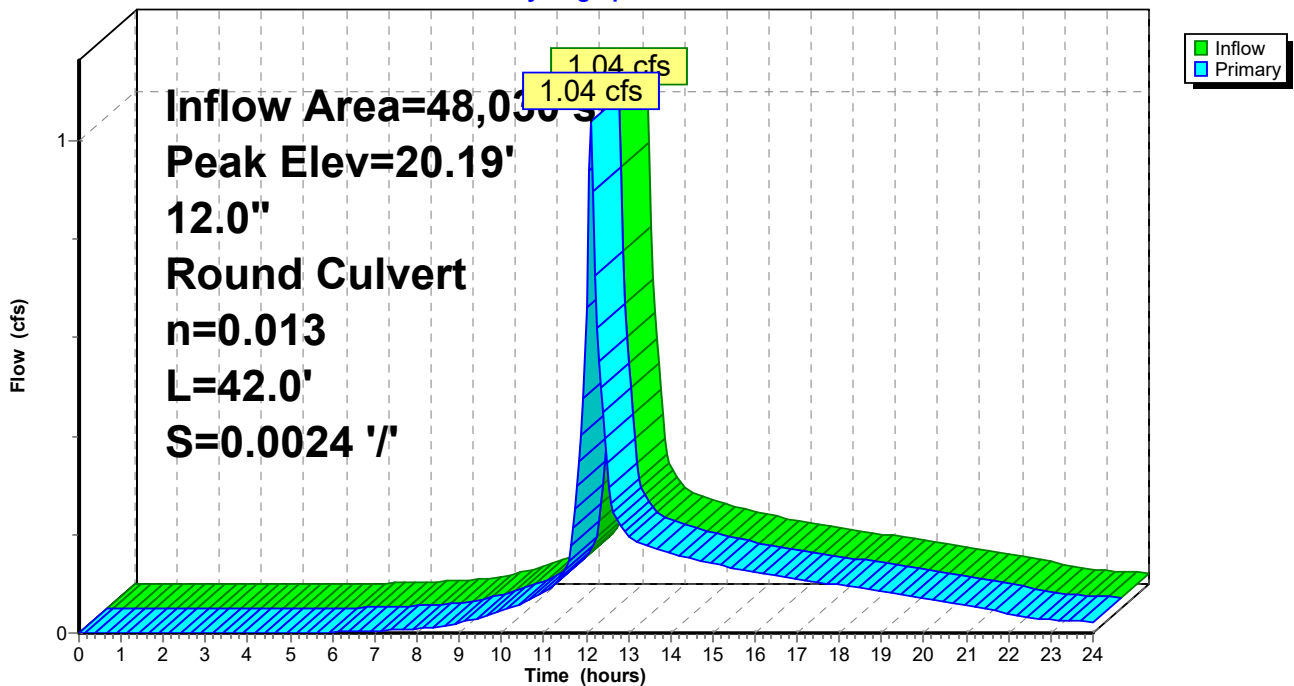
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Peak Elev= 20.19' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	19.50'	<b>12.0" Round Culvert</b> 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=1.03 cfs @ 12.10 hrs HW=20.19' (Free Discharge)  
↑**1=Culvert** (Barrel Controls 1.03 cfs @ 2.51 fps)

## Pond DMH11: DMH11

Hydrograph



**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 150

**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	<b>1.89</b>
19.98	0.53		
19.99	0.55		
20.00	0.57		
20.01	0.59		
20.02	0.61		

**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 151

**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 DMH7: DMH7**

Inflow Area = 3,641 sf, 77.62% Impervious, Inflow Depth > 2.53" for 2-Year event  
 Inflow = 0.24 cfs @ 12.07 hrs, Volume= 767 cf  
 Outflow = 0.24 cfs @ 12.07 hrs, Volume= 767 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 0.24 cfs @ 12.07 hrs, Volume= 767 cf  
 Routed to Pond SSD2 : SUBSURFACE DRAINAGE AREA #2

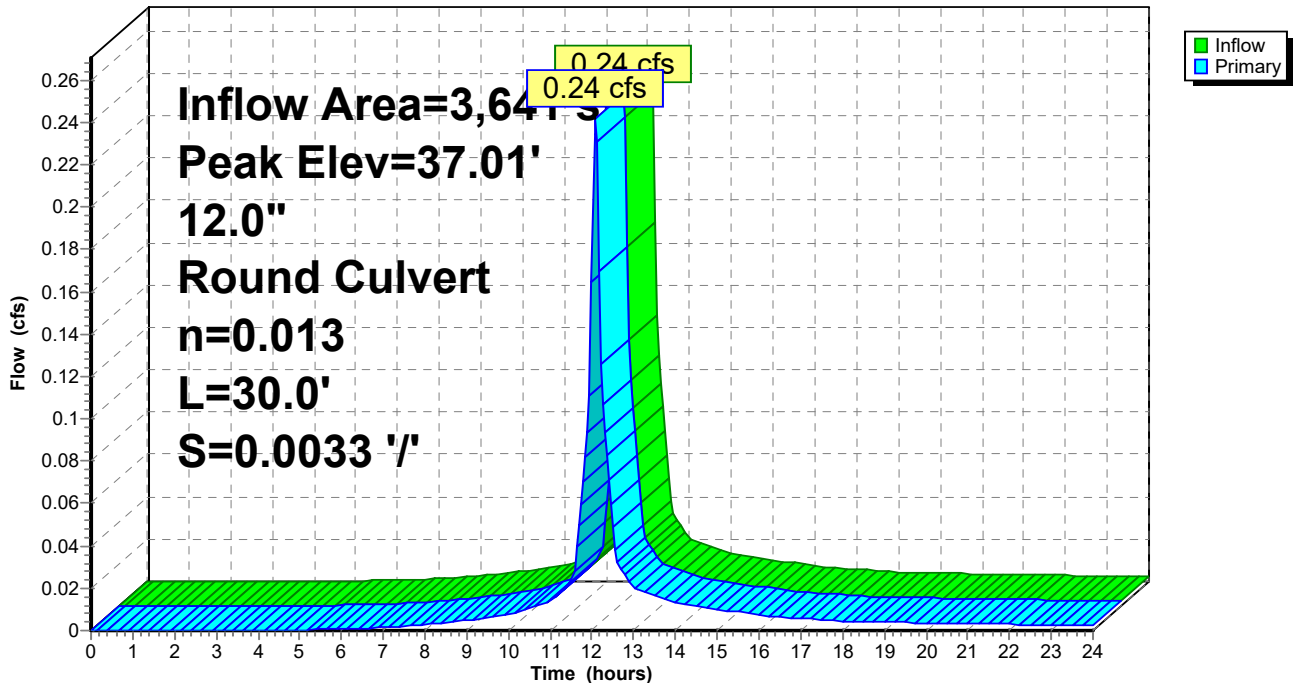
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 37.01' @ 12.07 hrs  
 Flood Elev= 39.67'

Device #	Routing	Invert	Outlet Devices
#1	Primary	36.70'	<b>12.0" Round Culvert</b> 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=0.23 cfs @ 12.07 hrs HW=37.00' (Free Discharge)  
 ←1=Culvert (Barrel Controls 0.23 cfs @ 1.75 fps)

**Pond DMH7: DMH7**

Hydrograph



**817 Country Way Post**

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 2-Year Rainfall=3.35"

Page 153

**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	<b>5.79</b>
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		

**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 154

**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		



# 817 Country Way Post

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 155

## Summary for Pond SSD1: SUBSURFACE DRAINAGE AREA #1

Inflow Area = 12,831 sf, 60.28% Impervious, Inflow Depth > 2.24" for 2-Year event  
 Inflow = 0.74 cfs @ 12.07 hrs, Volume= 2,399 cf  
 Outflow = 0.07 cfs @ 11.60 hrs, Volume= 2,396 cf, Atten= 91%, Lag= 0.0 min  
 Discarded = 0.07 cfs @ 11.60 hrs, Volume= 2,396 cf  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
 Routed to Pond CB13 : CB13  
 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= 34.42' @ 12.97 hrs Surf.Area= 2,994 sf Storage= 877 cf

Plug-Flow detention time= 97.8 min calculated for 2,391 cf (100% of inflow)  
 Center-of-Mass det. time= 96.9 min ( 891.9 - 795.0 )

Volume	Invert	Avail.Storage	Storage Description
#1A	33.80'	1,232 cf	<b>21.67'W x 92.50'L x 2.04'H Field A</b> 4,092 cf Overall - 1,011 cf Embedded = 3,081 cf x 40.0% Voids
#2A	34.30'	1,011 cf	<b>Cultec C-100HD</b> x 72 Inside #1 Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.86 sf x 6 rows
#3B	33.80'	515 cf	<b>11.67'W x 70.00'L x 2.04'H Field B</b> 1,667 cf Overall - 380 cf Embedded = 1,288 cf x 40.0% Voids
#4B	34.30'	380 cf	<b>Cultec C-100HD</b> x 27 Inside #3 Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.86 sf x 3 rows
#5C	33.80'	118 cf	<b>9.33'W x 18.50'L x 2.04'H Field C</b> 353 cf Overall - 58 cf Embedded = 295 cf x 40.0% Voids
#6C	34.30'	58 cf	<b>Cultec C-100HD</b> x 4 Inside #5 Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.86 sf x 2 rows
		3,314 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	33.80'	<b>1.020 in/hr Exfiltration over Surface area</b> Phase-In= 0.01'
#2	Primary	35.50'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Secondary	35.00'	<b>2.0" Round Culvert</b> L= 267.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.00' / 19.00' S= 0.0599 '/ Cc= 0.900 n= 0.013, Flow Area= 0.02 sf

# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 2-Year Rainfall=3.35"

Page 156

**Discarded OutFlow** Max=0.07 cfs @ 11.60 hrs HW=33.82' (Free Discharge)

↳ **1=Exfiltration** (Exfiltration Controls 0.07 cfs)

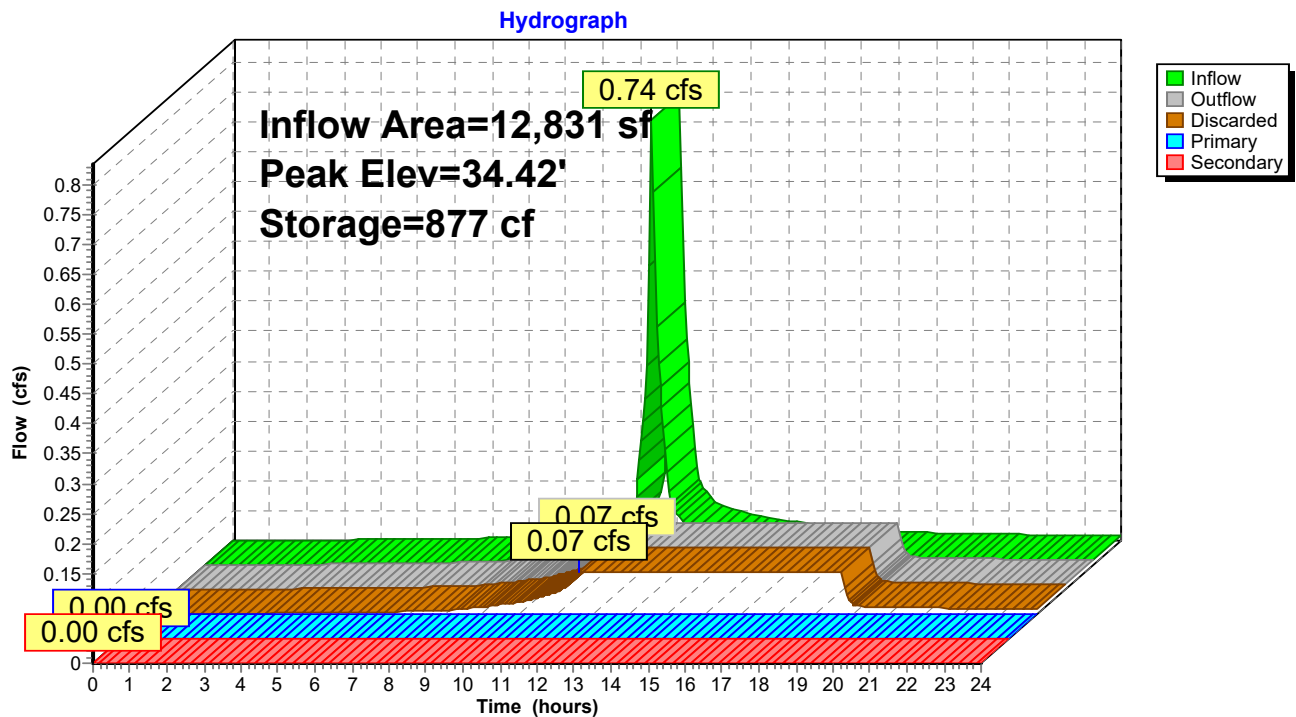
**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=33.80' (Free Discharge)

↳ **2=Orifice/Grate** ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=33.80' (Free Discharge)

↳ **3=Culvert** ( Controls 0.00 cfs)

## Pond SSD1: SUBSURFACE DRAINAGE AREA #1



**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 157

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

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
33.80	0.00	<b>0.00</b>	0.00	0.00
33.85	0.07	<b>0.07</b>	0.00	0.00
33.90	0.07	0.07	0.00	0.00
33.95	0.07	0.07	0.00	0.00
34.00	0.07	0.07	0.00	0.00
34.05	0.07	0.07	0.00	0.00
34.10	0.07	0.07	0.00	0.00
34.15	0.07	0.07	0.00	0.00
34.20	0.07	0.07	0.00	0.00
34.25	0.07	0.07	0.00	0.00
34.30	0.07	0.07	0.00	0.00
34.35	0.07	0.07	0.00	0.00
34.40	0.07	0.07	0.00	0.00
34.45	0.07	0.07	0.00	0.00
34.50	0.07	0.07	0.00	0.00
34.55	0.07	0.07	0.00	0.00
34.60	0.07	0.07	0.00	0.00
34.65	0.07	0.07	0.00	0.00
34.70	0.07	0.07	0.00	0.00
34.75	0.07	0.07	0.00	0.00
34.80	0.07	0.07	0.00	0.00
34.85	0.07	0.07	0.00	0.00
34.90	0.07	0.07	0.00	0.00
34.95	0.07	0.07	0.00	0.00
35.00	0.07	0.07	0.00	0.00
35.05	0.07	0.07	0.00	0.00
35.10	0.09	0.07	0.00	0.01
35.15	0.10	0.07	0.00	0.03
35.20	0.11	0.07	0.00	0.04
35.25	0.11	0.07	0.00	0.04
35.30	0.12	0.07	0.00	0.05
35.35	0.12	0.07	0.00	0.05
35.40	0.13	0.07	0.00	0.06
35.45	0.13	0.07	0.00	0.06
35.50	0.14	0.07	0.00	0.07
35.55	0.39	0.07	0.24	0.07
35.60	0.83	0.07	0.69	0.07
35.65	1.41	0.07	1.27	0.07
35.70	2.09	0.07	1.95	0.07
35.75	2.87	0.07	2.73	0.07
35.80	<b>3.73</b>	0.07	<b>3.58</b>	<b>0.07</b>

**817 Country Way Post**

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 2-Year Rainfall=3.35"

Page 158

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

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
33.80	<b>2,994</b>	0	34.86	2,994	1,891
33.82	2,994	24	34.88	2,994	1,933
33.84	2,994	48	34.90	2,994	1,976
33.86	2,994	72	34.92	2,994	2,018
33.88	2,994	96	34.94	2,994	2,059
33.90	2,994	120	34.96	2,994	2,100
33.92	2,994	144	34.98	2,994	2,141
33.94	2,994	168	35.00	2,994	2,181
33.96	2,994	192	35.02	2,994	2,220
33.98	2,994	216	35.04	2,994	2,259
34.00	2,994	239	35.06	2,994	2,296
34.02	2,994	263	35.08	2,994	2,333
34.04	2,994	287	35.10	2,994	2,369
34.06	2,994	311	35.12	2,994	2,404
34.08	2,994	335	35.14	2,994	2,438
34.10	2,994	359	35.16	2,994	2,471
34.12	2,994	383	35.18	2,994	2,502
34.14	2,994	407	35.20	2,994	2,532
34.16	2,994	431	35.22	2,994	2,561
34.18	2,994	455	35.24	2,994	2,589
34.20	2,994	479	35.26	2,994	2,615
34.22	2,994	503	35.28	2,994	2,641
34.24	2,994	527	35.30	2,994	2,665
34.26	2,994	551	35.32	2,994	2,689
34.28	2,994	575	35.34	2,994	2,713
34.30	2,994	599	35.36	2,994	2,737
34.32	2,994	647	35.38	2,994	2,761
34.34	2,994	696	35.40	2,994	2,785
34.36	2,994	744	35.42	2,994	2,809
34.38	2,994	792	35.44	2,994	2,833
34.40	2,994	840	35.46	2,994	2,857
34.42	2,994	887	35.48	2,994	2,881
34.44	2,994	935	35.50	2,994	2,905
34.46	2,994	982	35.52	2,994	2,928
34.48	2,994	1,028	35.54	2,994	2,952
34.50	2,994	1,075	35.56	2,994	2,976
34.52	2,994	1,122	35.58	2,994	3,000
34.54	2,994	1,168	35.60	2,994	3,024
34.56	2,994	1,215	35.62	2,994	3,048
34.58	2,994	1,262	35.64	2,994	3,072
34.60	2,994	1,308	35.66	2,994	3,096
34.62	2,994	1,354	35.68	2,994	3,120
34.64	2,994	1,400	35.70	2,994	3,144
34.66	2,994	1,446	35.72	2,994	3,168
34.68	2,994	1,492	35.74	2,994	3,192
34.70	2,994	1,537	35.76	2,994	3,216
34.72	2,994	1,582	35.78	2,994	3,240
34.74	2,994	1,627	35.80	2,994	3,264
34.76	2,994	1,672	35.82	2,994	3,288
34.78	2,994	1,716	35.84	2,994	<b>3,312</b>
34.80	2,994	1,760			
34.82	2,994	1,804			
34.84	2,994	1,847			

# 817 Country Way Post

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 159

## Summary for Pond SSD2: SUBSURFACE DRAINAGE AREA #2

Inflow Area = 3,641 sf, 77.62% Impervious, Inflow Depth > 2.53" for 2-Year event  
 Inflow = 0.24 cfs @ 12.07 hrs, Volume= 767 cf  
 Outflow = 0.05 cfs @ 11.85 hrs, Volume= 765 cf, Atten= 81%, Lag= 0.0 min  
 Discarded = 0.05 cfs @ 11.85 hrs, Volume= 765 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 Pond CB5 : CB5

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 35.98' @ 12.51 hrs Surf.Area= 1,960 sf Storage= 220 cf

Plug-Flow detention time= 34.4 min calculated for 764 cf (100% of inflow)  
 Center-of-Mass det. time= 32.7 min ( 824.9 - 792.2 )

Volume	Invert	Avail.Storage	Storage Description
#1B	35.70'	2,483 cf	<b>16.00'W x 122.50'L x 4.54'H Field B</b> 8,902 cf Overall - 2,694 cf Embedded = 6,208 cf x 40.0% Voids
#2B	36.70'	2,694 cf	<b>Cultec R-330XLHD x 51 Inside #1</b> 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'	<b>1.020 in/hr Exfiltration over Surface area</b>
#2	Secondary	40.60'	<b>4.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Primary	38.70'	<b>6.0" Round Culvert</b> L= 23.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 38.70' / 35.60' S= 0.1348 1/1' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf

**Discarded OutFlow** Max=0.05 cfs @ 11.85 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)

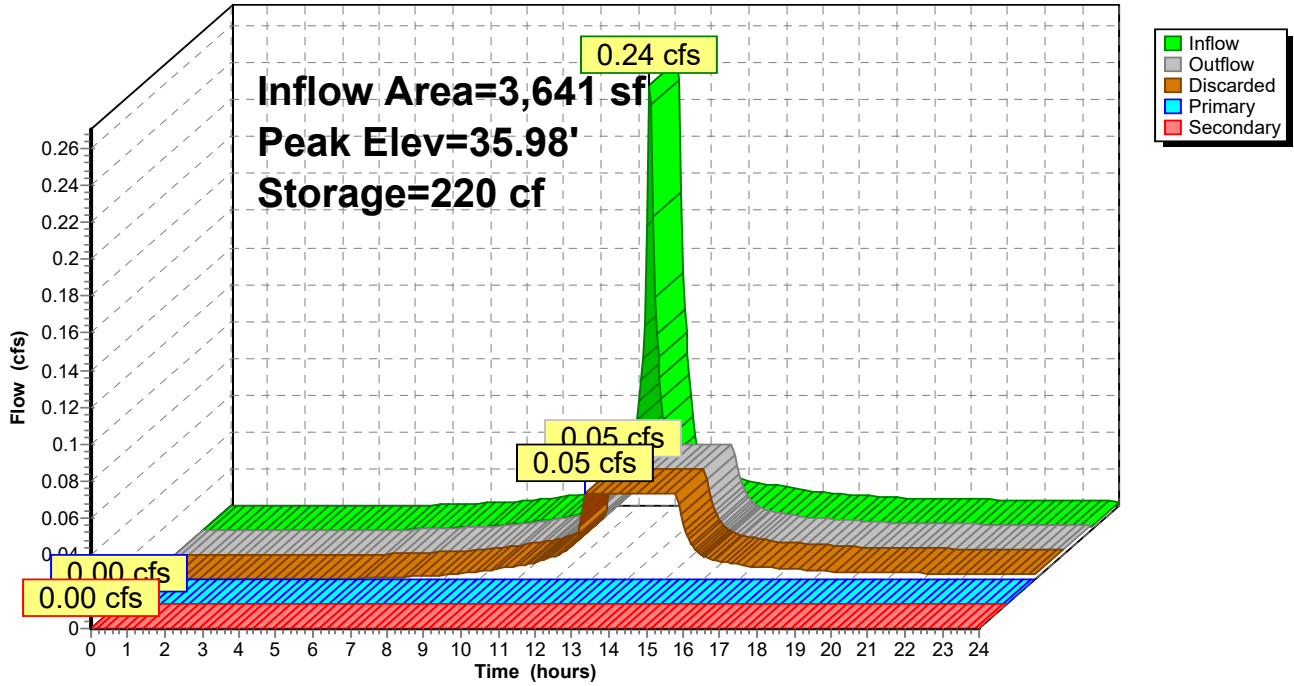
↑**3=Culvert** ( Controls 0.00 cfs)

**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

Hydrograph



**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 161

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

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
35.70	0.00	<b>0.00</b>	0.00	<b>0.00</b>
35.80	0.05	<b>0.05</b>	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	<b>1.26</b>	0.05	<b>1.21</b>	0.00

**817 Country Way Post**

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 2-Year Rainfall=3.35"

Page 162

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

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



**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 163

**Summary for Pond SSD3: SUBSURFACE DRAINAGE AREA #3**

Inflow Area = 51,552 sf, 63.58% Impervious, Inflow Depth > 1.70" for 2-Year event  
 Inflow = 1.30 cfs @ 12.09 hrs, Volume= 7,316 cf  
 Outflow = 0.96 cfs @ 12.18 hrs, Volume= 6,339 cf, Atten= 26%, Lag= 5.7 min  
 Discarded = 0.03 cfs @ 9.15 hrs, Volume= 1,690 cf  
 Primary = 0.93 cfs @ 12.18 hrs, Volume= 4,649 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= 19.94' @ 12.18 hrs Surf.Area= 1,203 sf Storage= 1,379 cf

Plug-Flow detention time= 99.7 min calculated for 6,326 cf (86% of inflow)  
 Center-of-Mass det. time= 40.5 min ( 906.8 - 866.3 )

Volume	Invert	Avail.Storage	Storage Description
#1A	18.00'	722 cf	<b>8.33'W x 81.00'L x 3.54'H Field A</b> 2,391 cf Overall - 585 cf Embedded = 1,806 cf x 40.0% Voids
#2A	18.50'	585 cf	<b>Cultec R-330XLHD x 11 Inside #1</b> 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	<b>12.50'W x 28.00'L x 3.54'H Field B</b> 1,240 cf Overall - 335 cf Embedded = 904 cf x 40.0% Voids
#4B	18.50'	335 cf	<b>Cultec R-330XLHD x 6 Inside #3</b> 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	<b>13.00'W x 13.67'L x 3.54'H Field C</b> 629 cf Overall - 127 cf Embedded = 503 cf x 40.0% Voids
#6C	18.50'	127 cf	<b>Cultec R-330XLHD x 2 Inside #5</b> 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'	<b>1.020 in/hr Exfiltration over Surface area</b> Phase-In= 0.01'
#2	Primary	19.40'	<b>10.0" Round Culvert</b> L= 14.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 19.40' / 18.40' S= 0.0714 '/' Cc= 0.900 n= 0.013, Flow Area= 0.55 sf
#3	Secondary	22.00'	<b>20.0" x 20.0" Horiz. Orifice/Grate X 2.00</b> C= 0.600 Limited to weir flow at low heads

# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 2-Year Rainfall=3.35"

**Discarded OutFlow** Max=0.03 cfs @ 9.15 hrs HW=18.04' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.03 cfs)

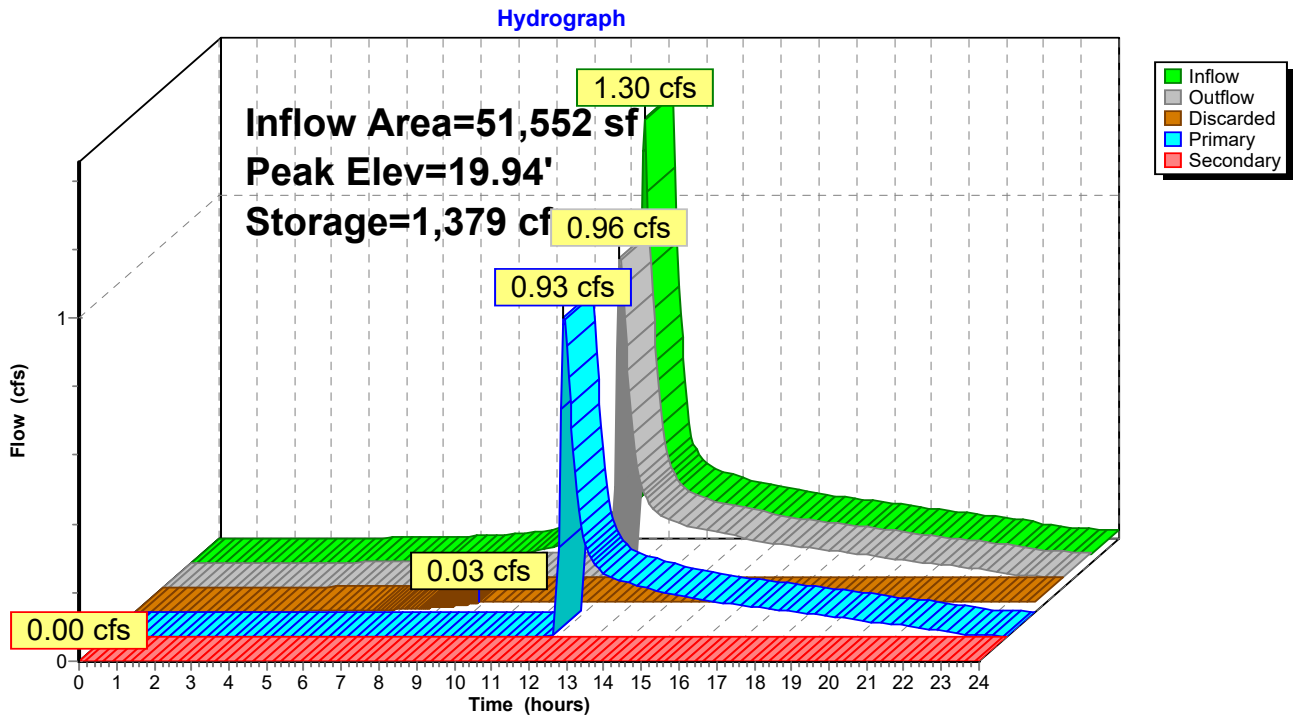
**Primary OutFlow** Max=0.92 cfs @ 12.18 hrs HW=19.93' (Free Discharge)

↑2=Culvert (Inlet Controls 0.92 cfs @ 2.49 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



**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 165

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

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
18.00	0.00	<b>0.00</b>	0.00	<b>0.00</b>
18.10	0.03	<b>0.03</b>	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	0.03	0.03	0.00	0.00
19.50	0.07	0.03	0.04	0.00
19.60	0.18	0.03	0.15	0.00
19.70	0.36	0.03	0.33	0.00
19.80	0.59	0.03	0.56	0.00
19.90	0.85	0.03	0.82	0.00
20.00	1.14	0.03	1.11	0.00
20.10	1.42	0.03	1.39	0.00
20.20	1.67	0.03	1.64	0.00
20.30	1.85	0.03	1.83	0.00
20.40	2.03	0.03	2.01	0.00
20.50	2.20	0.03	2.17	0.00
20.60	2.35	0.03	2.32	0.00
20.70	2.50	0.03	2.47	0.00
20.80	2.63	0.03	2.60	0.00
20.90	2.76	0.03	2.73	0.00
21.00	2.89	0.03	2.86	0.00
21.10	3.00	0.03	2.98	0.00
21.20	3.12	0.03	3.09	0.00
21.30	3.23	0.03	3.20	0.00
21.40	3.33	0.03	3.30	0.00
21.50	3.44	0.03	3.41	0.00
21.60	3.54	0.03	3.51	0.00
21.70	3.63	0.03	3.60	0.00
21.80	3.73	0.03	3.70	0.00
21.90	3.82	0.03	3.79	0.00
22.00	<b>3.91</b>	0.03	<b>3.88</b>	0.00

**817 Country Way Post**

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 2-Year Rainfall=3.35"

Page 166

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

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
18.00	<b>1,203</b>	0	20.65	1,203	1,877
18.05	1,203	24	20.70	1,203	1,908
18.10	1,203	48	20.75	1,203	1,938
18.15	1,203	72	20.80	1,203	1,967
18.20	1,203	96	20.85	1,203	1,994
18.25	1,203	120	20.90	1,203	2,021
18.30	1,203	144	20.95	1,203	2,047
18.35	1,203	168	21.00	1,203	2,071
18.40	1,203	192	21.05	1,203	2,095
18.45	1,203	216	21.10	1,203	2,119
18.50	1,203	241	21.15	1,203	2,143
18.55	1,203	281	21.20	1,203	2,168
18.60	1,203	322	21.25	1,203	2,192
18.65	1,203	363	21.30	1,203	2,216
18.70	1,203	403	21.35	1,203	2,240
18.75	1,203	444	21.40	1,203	2,264
18.80	1,203	484	21.45	1,203	2,288
18.85	1,203	525	21.50	1,203	2,312
18.90	1,203	565	21.55	1,203	<b>2,332</b>
18.95	1,203	605	21.60	1,203	2,332
19.00	1,203	646	21.65	1,203	2,332
19.05	1,203	686	21.70	1,203	2,332
19.10	1,203	726	21.75	1,203	2,332
19.15	1,203	766	21.80	1,203	2,332
19.20	1,203	806	21.85	1,203	2,332
19.25	1,203	845	21.90	1,203	2,332
19.30	1,203	885	21.95	1,203	2,332
19.35	1,203	924	22.00	1,203	2,332
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			

# 817 Country Way Post

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 167

## 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= 961 cf, Atten= 86%, Lag= 30.3 min  
 Discarded = 0.01 cfs @ 8.65 hrs, Volume= 747 cf  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
 Routed to Reach DP1 : DP1post  
 Tertiary = 0.05 cfs @ 12.57 hrs, Volume= 214 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= 216.8 min calculated for 959 cf (66% of inflow)  
 Center-of-Mass det. time= 118.3 min ( 872.5 - 754.2 )

Volume	Invert	Avail.Storage	Storage Description
#1A	34.50'	487 cf	<b>11.17'W x 31.50'L x 4.71'H Field A</b> 1,656 cf Overall - 440 cf Embedded = 1,217 cf x 40.0% Voids
#2A	35.00'	440 cf	<b>Cultec R-330XLHD x 8 Inside #1</b> 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'	100 cf	<b>6.33'W x 10.50'L x 4.71'H Field B</b> 313 cf Overall - 63 cf Embedded = 250 cf x 40.0% Voids
#4B	35.00'	63 cf	<b>Cultec R-330XLHD Inside #3</b> 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'	100 cf	<b>6.33'W x 10.50'L x 4.71'H Field C</b> 313 cf Overall - 63 cf Embedded = 250 cf x 40.0% Voids
#6C	35.00'	63 cf	<b>Cultec R-330XLHD Inside #5</b> 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
		1,253 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'	<b>1.020 in/hr Exfiltration over Surface area</b>
#2	Primary	37.00'	<b>4.0" Round Culvert</b> 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
#3	Tertiary	36.50'	<b>4.0" Round Culvert</b> 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

# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 2-Year Rainfall=3.35"

**Discarded OutFlow** Max=0.01 cfs @ 8.65 hrs HW=34.55' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.01 cfs)

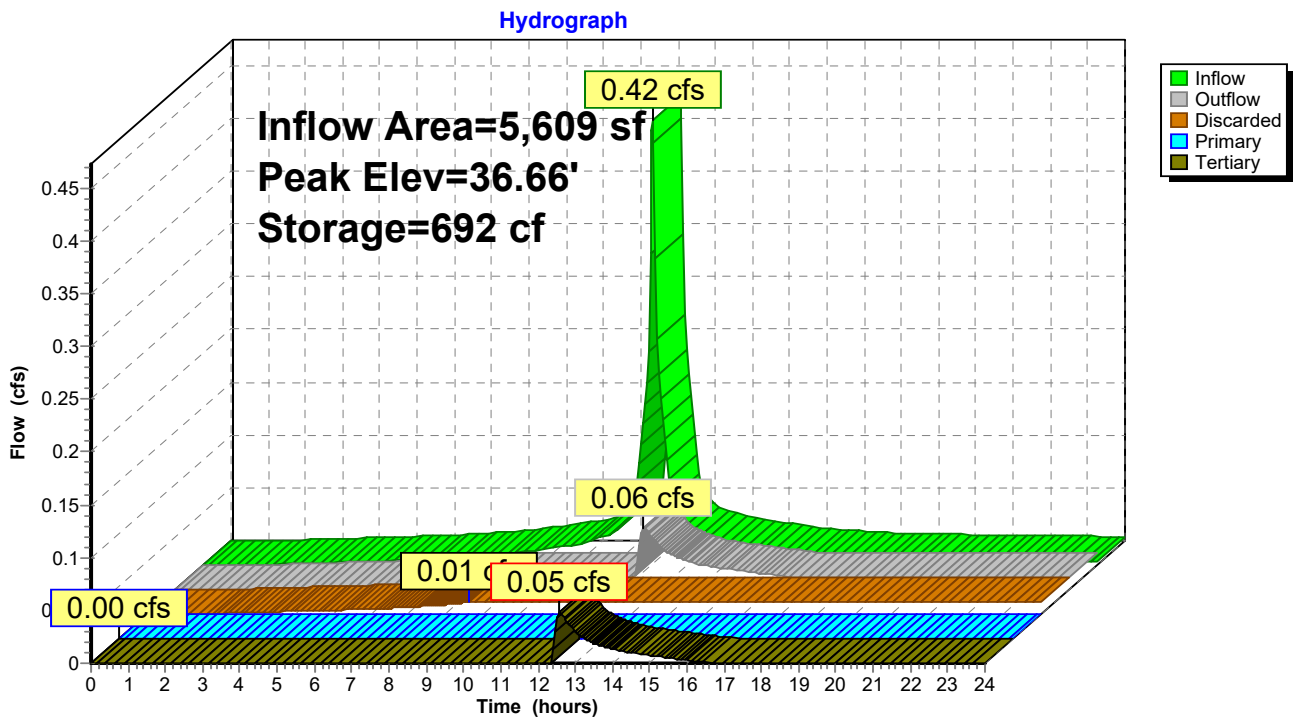
**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=34.50' (Free Discharge)

↑2=Culvert ( Controls 0.00 cfs)

**Tertiary OutFlow** Max=0.05 cfs @ 12.57 hrs HW=36.66' (Free Discharge)

↑3=Culvert ( Barrel Controls 0.05 cfs @ 1.65 fps)

## Pond SSD4: SUBSURFACE DRAINAGE AREA #4



**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 169

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

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

**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 170

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

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
34.50	485	0	37.15	485	840
34.55	485	10	37.20	485	853
34.60	485	19	37.25	485	866
34.65	485	29	37.30	485	878
34.70	485	39	37.35	485	890
34.75	485	48	37.40	485	901
34.80	485	58	37.45	485	911
34.85	485	68	37.50	485	921
34.90	485	78	37.55	485	931
34.95	485	87	37.60	485	941
35.00	485	97	37.65	485	951
35.05	485	116	37.70	485	960
35.10	485	134	37.75	485	970
35.15	485	153	37.80	485	980
35.20	485	172	37.85	485	989
35.25	485	190	37.90	485	999
35.30	485	209	37.95	485	1,009
35.35	485	227	38.00	485	1,018
35.40	485	246	38.05	485	1,028
35.45	485	264	38.10	485	1,038
35.50	485	283	38.15	485	1,048
35.55	485	301	38.20	485	1,057
35.60	485	320	38.25	485	1,067
35.65	485	338	38.30	485	1,077
35.70	485	356	38.35	485	1,086
35.75	485	374	38.40	485	1,096
35.80	485	392	38.45	485	1,106
35.85	485	410	38.50	485	1,115
35.90	485	428	38.55	485	1,125
35.95	485	446	38.60	485	1,135
36.00	485	464	38.65	485	1,144
36.05	485	482	38.70	485	1,154
36.10	485	500	38.75	485	1,164
36.15	485	518	38.80	485	1,174
36.20	485	535	38.85	485	1,183
36.25	485	553	38.90	485	1,193
36.30	485	571	38.95	485	1,203
36.35	485	588	39.00	485	1,212
36.40	485	605	39.05	485	1,222
36.45	485	622	39.10	485	1,232
36.50	485	639	39.15	485	1,241
36.55	485	656	39.20	485	1,251
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			



**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 171

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

Inflow Area = 15,330 sf, 78.87% Impervious, Inflow Depth > 2.58" for 2-Year event  
 Inflow = 0.95 cfs @ 12.09 hrs, Volume= 3,299 cf  
 Outflow = 0.10 cfs @ 12.94 hrs, Volume= 3,230 cf, Atten= 90%, Lag= 50.6 min  
 Primary = 0.10 cfs @ 12.94 hrs, Volume= 3,230 cf  
 Routed to Pond DMH11 : DMH11  
 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= 31.88' @ 12.94 hrs Surf.Area= 2,920 sf Storage= 1,494 cf

Plug-Flow detention time= 164.9 min calculated for 3,224 cf (98% of inflow)  
 Center-of-Mass det. time= 152.1 min ( 942.3 - 790.2 )

Volume	Invert	Avail.Storage	Storage Description
#1A	31.00'	2,550 cf	<b>26.67'W x 109.50'L x 3.54'H Field A</b> 10,342 cf Overall - 3,968 cf Embedded = 6,374 cf x 40.0% Voids
#2A	31.50'	3,968 cf	<b>Cultec R-330XLHD x 75 Inside #1</b> 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
		6,517 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	31.00'	<b>6.0" Round Culvert</b> 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= 0.20 sf
#2	Secondary	36.50'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Device 1	19.25'	<b>2.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

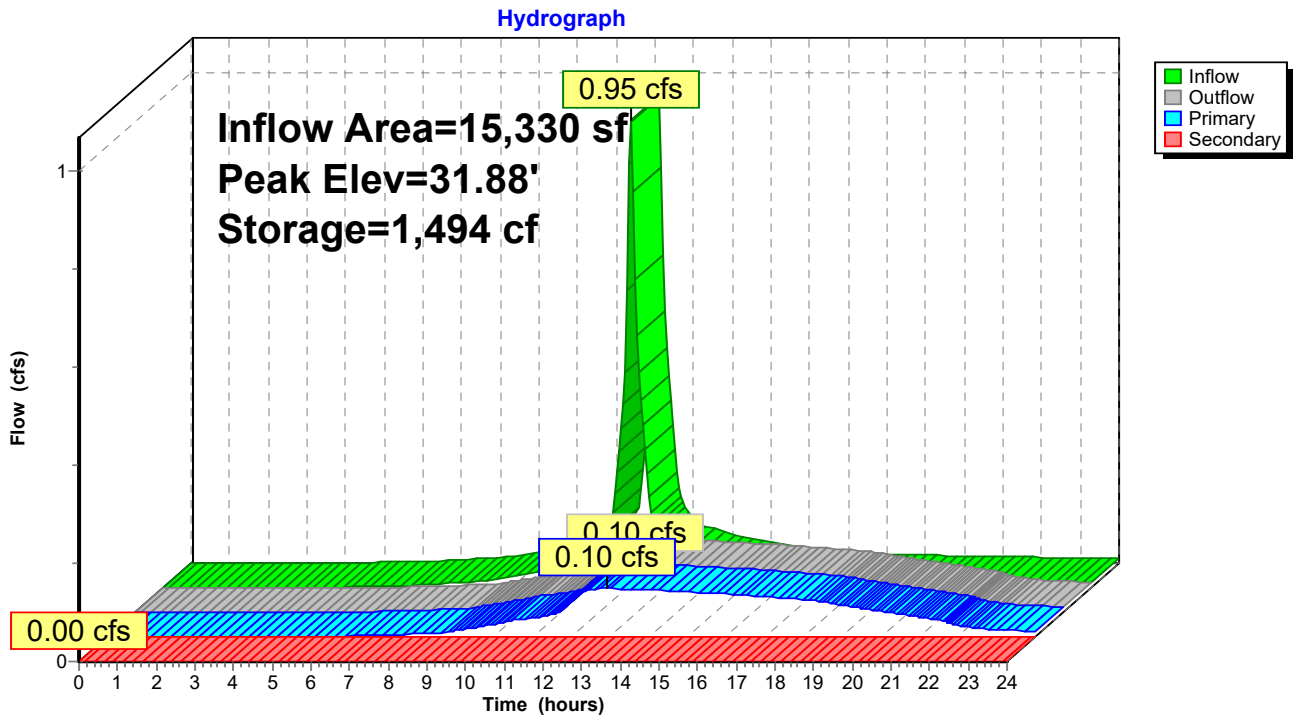
**Primary OutFlow** Max=0.10 cfs @ 12.94 hrs HW=31.88' (Free Discharge)

- ↑1=Culvert (Passes 0.10 cfs of 0.75 cfs potential flow)
- ↑3=Orifice/Grate (Orifice Controls 0.10 cfs @ 4.51 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)**



**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

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

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
31.00	0.00	0.00	<b>0.00</b>	36.30	0.24	0.24	0.00
31.10	0.03	0.03	0.00	36.40	0.24	0.24	0.00
31.20	0.05	0.05	0.00	36.50	<b>0.25</b>	<b>0.25</b>	0.00
31.30	0.06	0.06	0.00				
31.40	0.07	0.07	0.00				
31.50	0.07	0.07	0.00				
31.60	0.08	0.08	0.00				
31.70	0.09	0.09	0.00				
31.80	0.09	0.09	0.00				
31.90	0.10	0.10	0.00				
32.00	0.11	0.11	0.00				
32.10	0.11	0.11	0.00				
32.20	0.12	0.12	0.00				
32.30	0.12	0.12	0.00				
32.40	0.12	0.12	0.00				
32.50	0.13	0.13	0.00				
32.60	0.13	0.13	0.00				
32.70	0.14	0.14	0.00				
32.80	0.14	0.14	0.00				
32.90	0.14	0.14	0.00				
33.00	0.15	0.15	0.00				
33.10	0.15	0.15	0.00				
33.20	0.16	0.16	0.00				
33.30	0.16	0.16	0.00				
33.40	0.16	0.16	0.00				
33.50	0.17	0.17	0.00				
33.60	0.17	0.17	0.00				
33.70	0.17	0.17	0.00				
33.80	0.18	0.18	0.00				
33.90	0.18	0.18	0.00				
34.00	0.18	0.18	0.00				
34.10	0.18	0.18	0.00				
34.20	0.19	0.19	0.00				
34.30	0.19	0.19	0.00				
34.40	0.19	0.19	0.00				
34.50	0.20	0.20	0.00				
34.60	0.20	0.20	0.00				
34.70	0.20	0.20	0.00				
34.80	0.20	0.20	0.00				
34.90	0.21	0.21	0.00				
35.00	0.21	0.21	0.00				
35.10	0.21	0.21	0.00				
35.20	0.22	0.22	0.00				
35.30	0.22	0.22	0.00				
35.40	0.22	0.22	0.00				
35.50	0.22	0.22	0.00				
35.60	0.23	0.23	0.00				
35.70	0.23	0.23	0.00				
35.80	0.23	0.23	0.00				
35.90	0.23	0.23	0.00				
36.00	0.23	0.23	0.00				
36.10	0.24	0.24	0.00				
36.20	0.24	0.24	0.00				

**817 Country Way Post**

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 2-Year Rainfall=3.35"

Page 174

**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	5,379	36.30	6,517
31.05	58	33.70	5,463	36.35	6,517
31.10	117	33.75	5,543	36.40	6,517
31.15	175	33.80	5,619	36.45	6,517
31.20	234	33.85	5,691	36.50	6,517
31.25	292	33.90	5,759		
31.30	350	33.95	5,824		
31.35	409	34.00	5,885		
31.40	467	34.05	5,943		
31.45	526	34.10	6,001		
31.50	584	34.15	6,060		
31.55	706	34.20	6,118		
31.60	828	34.25	6,177		
31.65	949	34.30	6,235		
31.70	1,070	34.35	6,293		
31.75	1,190	34.40	6,352		
31.80	1,311	34.45	6,410		
31.85	1,431	34.50	6,469		
31.90	1,552	34.55	<b>6,517</b>		
31.95	1,672	34.60	6,517		
32.00	1,792	34.65	6,517		
32.05	1,912	34.70	6,517		
32.10	2,031	34.75	6,517		
32.15	2,149	34.80	6,517		
32.20	2,267	34.85	6,517		
32.25	2,384	34.90	6,517		
32.30	2,501	34.95	6,517		
32.35	2,618	35.00	6,517		
32.40	2,734	35.05	6,517		
32.45	2,850	35.10	6,517		
32.50	2,966	35.15	6,517		
32.55	3,082	35.20	6,517		
32.60	3,198	35.25	6,517		
32.65	3,313	35.30	6,517		
32.70	3,427	35.35	6,517		
32.75	3,542	35.40	6,517		
32.80	3,655	35.45	6,517		
32.85	3,766	35.50	6,517		
32.90	3,877	35.55	6,517		
32.95	3,986	35.60	6,517		
33.00	4,095	35.65	6,517		
33.05	4,202	35.70	6,517		
33.10	4,309	35.75	6,517		
33.15	4,414	35.80	6,517		
33.20	4,518	35.85	6,517		
33.25	4,620	35.90	6,517		
33.30	4,722	35.95	6,517		
33.35	4,821	36.00	6,517		
33.40	4,919	36.05	6,517		
33.45	5,015	36.10	6,517		
33.50	5,110	36.15	6,517		
33.55	5,202	36.20	6,517		
33.60	5,292	36.25	6,517		

# 817 Country Way Post

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 175

## Summary for Pond SSD6: SUBSURFACE DRAINAGE AREA #6 (STORAGE)

Inflow Area = 7,296 sf, 79.98% Impervious, Inflow Depth > 2.58" for 2-Year event  
Inflow = 0.49 cfs @ 12.07 hrs, Volume= 1,570 cf  
Outflow = 0.04 cfs @ 13.01 hrs, Volume= 1,490 cf, Atten= 91%, Lag= 56.2 min  
Primary = 0.04 cfs @ 13.01 hrs, Volume= 1,490 cf  
Routed to Reach DP3 : DP3  
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= 22.55' @ 13.01 hrs Surf.Area= 295 sf Storage= 754 cf

Plug-Flow detention time= 210.5 min calculated for 1,490 cf (95% of inflow)  
Center-of-Mass det. time= 182.1 min ( 969.8 - 787.7 )

Volume	Invert	Avail.Storage	Storage Description
#1	20.00'	2,360 cf	<b>10.00'W x 29.50'L x 8.00'H Prismatoid</b>

Device	Routing	Invert	Outlet Devices
#1	Secondary	29.10'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#2	Primary	20.00'	<b>4.0" Round Culvert</b> L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 20.00' / 19.00' S= 0.0100 1/' Cc= 0.900 n= 0.013, Flow Area= 0.09 sf
#3	Device 2	19.00'	<b>1.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Primary OutFlow** Max=0.04 cfs @ 13.01 hrs HW=22.55' (Free Discharge)

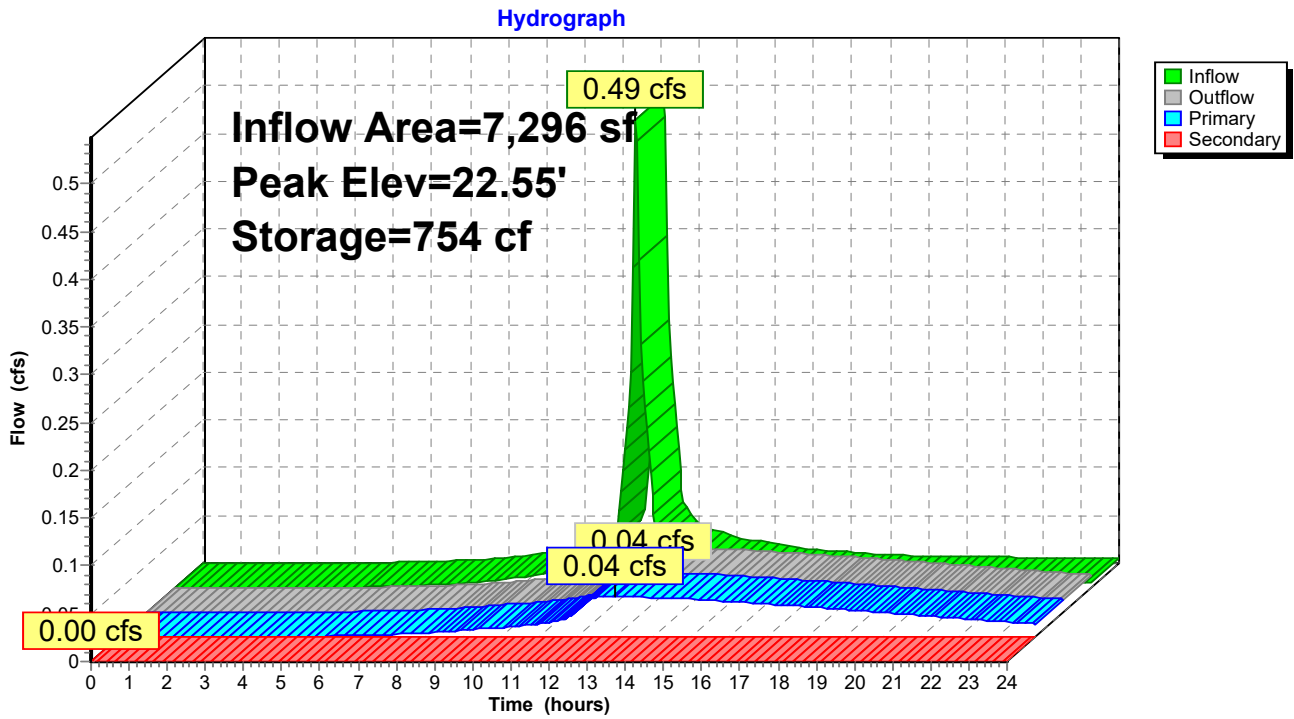
↑**2=Culvert** (Passes 0.04 cfs of 0.32 cfs potential flow)

↑**3=Orifice/Grate** (Orifice Controls 0.04 cfs @ 7.70 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=20.00' (Free Discharge)

↑**1=Orifice/Grate** ( Controls 0.00 cfs)

### Pond SSD6: SUBSURFACE DRAINAGE AREA #6 (STORAGE)



**817 Country Way Post**

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 2-Year Rainfall=3.35"

Page 177

**Stage-Discharge for Pond SSD6: SUBSURFACE DRAINAGE AREA #6 (STORAGE)**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
20.00	0.00	0.00	<b>0.00</b>	25.30	0.06	0.06	0.00
20.10	0.01	0.01	0.00	25.40	0.06	0.06	0.00
20.20	0.01	0.01	0.00	25.50	0.06	0.06	0.00
20.30	0.01	0.01	0.00	25.60	0.06	0.06	0.00
20.40	0.02	0.02	0.00	25.70	0.06	0.06	0.00
20.50	0.02	0.02	0.00	25.80	0.06	0.06	0.00
20.60	0.02	0.02	0.00	25.90	0.06	0.06	0.00
20.70	0.02	0.02	0.00	26.00	0.06	0.06	0.00
20.80	0.02	0.02	0.00	26.10	0.06	0.06	0.00
20.90	0.02	0.02	0.00	26.20	0.07	0.07	0.00
21.00	0.03	0.03	0.00	26.30	0.07	0.07	0.00
21.10	0.03	0.03	0.00	26.40	0.07	0.07	0.00
21.20	0.03	0.03	0.00	26.50	0.07	0.07	0.00
21.30	0.03	0.03	0.00	26.60	0.07	0.07	0.00
21.40	0.03	0.03	0.00	26.70	0.07	0.07	0.00
21.50	0.03	0.03	0.00	26.80	0.07	0.07	0.00
21.60	0.03	0.03	0.00	26.90	0.07	0.07	0.00
21.70	0.03	0.03	0.00	27.00	0.07	0.07	0.00
21.80	0.04	0.04	0.00	27.10	0.07	0.07	0.00
21.90	0.04	0.04	0.00	27.20	0.07	0.07	0.00
22.00	0.04	0.04	0.00	27.30	0.07	0.07	0.00
22.10	0.04	0.04	0.00	27.40	0.07	0.07	0.00
22.20	0.04	0.04	0.00	27.50	0.07	0.07	0.00
22.30	0.04	0.04	0.00	27.60	0.07	0.07	0.00
22.40	0.04	0.04	0.00	27.70	0.07	0.07	0.00
22.50	0.04	0.04	0.00	27.80	0.07	0.07	0.00
22.60	0.04	0.04	0.00	27.90	0.07	0.07	0.00
22.70	0.04	0.04	0.00	28.00	0.07	0.07	0.00
22.80	0.04	0.04	0.00	28.10	0.07	0.07	0.00
22.90	0.04	0.04	0.00	28.20	0.08	0.08	0.00
23.00	0.05	0.05	0.00	28.30	0.08	0.08	0.00
23.10	0.05	0.05	0.00	28.40	0.08	0.08	0.00
23.20	0.05	0.05	0.00	28.50	0.08	0.08	0.00
23.30	0.05	0.05	0.00	28.60	0.08	0.08	0.00
23.40	0.05	0.05	0.00	28.70	0.08	0.08	0.00
23.50	0.05	0.05	0.00	28.80	0.08	0.08	0.00
23.60	0.05	0.05	0.00	28.90	0.08	0.08	0.00
23.70	0.05	0.05	0.00	29.00	0.08	0.08	0.00
23.80	0.05	0.05	0.00	29.10	<b>0.08</b>	<b>0.08</b>	0.00
23.90	0.05	0.05	0.00				
24.00	0.05	0.05	0.00				
24.10	0.05	0.05	0.00				
24.20	0.05	0.05	0.00				
24.30	0.05	0.05	0.00				
24.40	0.06	0.06	0.00				
24.50	0.06	0.06	0.00				
24.60	0.06	0.06	0.00				
24.70	0.06	0.06	0.00				
24.80	0.06	0.06	0.00				
24.90	0.06	0.06	0.00				
25.00	0.06	0.06	0.00				
25.10	0.06	0.06	0.00				
25.20	0.06	0.06	0.00				

**817 Country Way Post**

Type III 24-hr 2-Year Rainfall=3.35"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 178

**Stage-Area-Storage for Pond SSD6: SUBSURFACE DRAINAGE AREA #6 (STORAGE)**

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
20.00	0	25.30	1,564
20.10	30	25.40	1,593
20.20	59	25.50	1,623
20.30	89	25.60	1,652
20.40	118	25.70	1,681
20.50	148	25.80	1,711
20.60	177	25.90	1,740
20.70	206	26.00	1,770
20.80	236	26.10	1,800
20.90	265	26.20	1,829
21.00	295	26.30	1,859
21.10	325	26.40	1,888
21.20	354	26.50	1,918
21.30	384	26.60	1,947
21.40	413	26.70	1,976
21.50	443	26.80	2,006
21.60	472	26.90	2,035
21.70	501	27.00	2,065
21.80	531	27.10	2,095
21.90	560	27.20	2,124
22.00	590	27.30	2,154
22.10	620	27.40	2,183
22.20	649	27.50	2,213
22.30	679	27.60	2,242
22.40	708	27.70	2,272
22.50	738	27.80	2,301
22.60	767	27.90	2,330
22.70	796	28.00	<b>2,360</b>
22.80	826	28.10	2,360
22.90	855	28.20	2,360
23.00	885	28.30	2,360
23.10	915	28.40	2,360
23.20	944	28.50	2,360
23.30	974	28.60	2,360
23.40	1,003	28.70	2,360
23.50	1,033	28.80	2,360
23.60	1,062	28.90	2,360
23.70	1,091	29.00	2,360
23.80	1,121	29.10	2,360
23.90	1,150		
24.00	1,180		
24.10	1,210		
24.20	1,239		
24.30	1,269		
24.40	1,298		
24.50	1,328		
24.60	1,357		
24.70	1,386		
24.80	1,416		
24.90	1,445		
25.00	1,475		
25.10	1,505		
25.20	1,534		



# 817 Country Way Post

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 179

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

<b>Subcatchment 1: Post 1</b>	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
<b>Subcatchment 2A: Post 2A</b>	Runoff Area=2,000 sf 72.80% Impervious Runoff Depth>3.93" Tc=5.0 min CN=91 Runoff=0.20 cfs 655 cf
<b>Subcatchment 2B: Post 2B</b>	Runoff Area=1,641 sf 83.49% Impervious Runoff Depth>4.26" Tc=5.0 min CN=94 Runoff=0.18 cfs 582 cf
<b>Subcatchment 3A: Post 3A</b>	Runoff Area=9,095 sf 43.97% Impervious Runoff Depth>3.32" Tc=5.0 min CN=85 Runoff=0.81 cfs 2,516 cf
<b>Subcatchment 3B: Post 3B</b>	Runoff Area=8,082 sf 70.01% Impervious Runoff Depth>3.93" Tc=5.0 min CN=91 Runoff=0.82 cfs 2,648 cf
<b>Subcatchment 4: Post 4</b>	Runoff Area=7,248 sf 88.76% Impervious Runoff Depth>4.37" Flow Length=131' Tc=8.6 min CN=95 Runoff=0.71 cfs 2,637 cf
<b>Subcatchment 5: Post 5</b>	Runoff Area=7,525 sf 60.54% Impervious Runoff Depth>3.72" Flow Length=131' Tc=8.6 min CN=89 Runoff=0.66 cfs 2,333 cf
<b>Subcatchment 6: Post 6</b>	Runoff Area=12,344 sf 39.48% Impervious Runoff Depth>3.13" Tc=5.0 min CN=83 Runoff=1.03 cfs 3,217 cf
<b>Subcatchment 6A: Post 6a</b>	Runoff Area=6,242 sf 76.59% Impervious Runoff Depth>4.04" Tc=5.0 min CN=92 Runoff=0.65 cfs 2,101 cf
<b>Subcatchment 7: Post 7</b>	Runoff Area=2,790 sf 0.00% Impervious Runoff Depth>2.24" Flow Length=170' Tc=11.1 min CN=73 Runoff=0.14 cfs 520 cf
<b>Subcatchment 8: Post 8</b>	Runoff Area=1,030 sf 0.00% Impervious Runoff Depth>2.00" Tc=5.0 min CN=70 Runoff=0.05 cfs 171 cf
<b>Subcatchment 9: Post 9</b>	Runoff Area=21,294 sf 19.29% Impervious Runoff Depth>2.67" Tc=5.0 min CN=78 Runoff=1.53 cfs 4,733 cf
<b>Subcatchment B1: BLDG #1</b>	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
<b>Subcatchment B2a: BLDG #2</b>	Runoff Area=1,054 sf 100.00% Impervious Runoff Depth>4.71" Tc=5.0 min CN=98 Runoff=0.12 cfs 414 cf
<b>Subcatchment B2b: BLDG #2 (REAR)</b>	Runoff Area=3,736 sf 100.00% Impervious Runoff Depth>4.71" Tc=5.0 min CN=98 Runoff=0.42 cfs 1,467 cf
<b>Subcatchment B3: BLDG #3</b>	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

# 817 Country Way Post

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 180

<b>Reach DP1: DP1post</b>	Inflow=0.67 cfs 2,520 cf Outflow=0.67 cfs 2,520 cf
<b>Reach DP2: DP2</b>	Inflow=0.24 cfs 950 cf Outflow=0.24 cfs 950 cf
<b>Reach DP3: DP3</b>	Inflow=3.20 cfs 15,919 cf Outflow=3.20 cfs 15,919 cf
<b>Reach DP4: DP4</b>	Inflow=0.14 cfs 520 cf Outflow=0.14 cfs 520 cf
<b>Pond 2P: DMH2</b>	Peak Elev=37.52' Inflow=1.49 cfs 5,285 cf 12.0" Round Culvert n=0.013 L=30.0' S=0.0033 '/' Outflow=1.49 cfs 5,285 cf
<b>Pond CB1: CB1</b>	Peak Elev=34.44' Inflow=0.71 cfs 2,637 cf Primary=0.71 cfs 2,637 cf Secondary=0.00 cfs 0 cf Outflow=0.71 cfs 2,637 cf
<b>Pond CB10: CB10</b>	Peak Elev=20.02' Inflow=0.66 cfs 2,333 cf Primary=0.66 cfs 2,333 cf Secondary=0.00 cfs 0 cf Outflow=0.66 cfs 2,333 cf
<b>Pond CB13: CB13</b>	Peak Elev=20.51' Inflow=1.03 cfs 3,217 cf Primary=1.03 cfs 3,217 cf Secondary=0.00 cfs 0 cf Outflow=1.03 cfs 3,217 cf
<b>Pond CB4: CB4</b>	Peak Elev=34.43' Inflow=0.81 cfs 2,516 cf Primary=0.81 cfs 2,516 cf Secondary=0.00 cfs 0 cf Outflow=0.81 cfs 2,516 cf
<b>Pond CB5: CB5</b>	Peak Elev=34.54' Inflow=0.82 cfs 2,648 cf Primary=0.82 cfs 2,648 cf Secondary=0.00 cfs 0 cf Outflow=0.82 cfs 2,648 cf
<b>Pond CB6: CB6</b>	Peak Elev=37.16' Inflow=0.20 cfs 655 cf Primary=0.20 cfs 655 cf Secondary=0.00 cfs 0 cf Outflow=0.20 cfs 655 cf
<b>Pond CB9: CB9</b>	Peak Elev=37.14' Inflow=0.18 cfs 582 cf Primary=0.18 cfs 582 cf Secondary=0.00 cfs 0 cf Outflow=0.18 cfs 582 cf
<b>Pond DMH11: DMH11</b>	Peak Elev=20.45' Inflow=1.76 cfs 10,514 cf 12.0" Round Culvert n=0.013 L=42.0' S=0.0024 '/' Outflow=1.76 cfs 10,514 cf
<b>Pond DMH7: DMH7</b>	Peak Elev=37.09' Inflow=0.38 cfs 1,237 cf 12.0" Round Culvert n=0.013 L=30.0' S=0.0033 '/' Outflow=0.38 cfs 1,237 cf
<b>Pond SSD1: SUBSURFACE DRAINAGE AREA</b>	Peak Elev=34.80' Storage=1,769 cf Inflow=1.23 cfs 3,983 cf Discarded=0.07 cfs 3,813 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.07 cfs 3,813 cf
<b>Pond SSD2: SUBSURFACE DRAINAGE AREA</b>	Peak Elev=36.24' Storage=423 cf Inflow=0.38 cfs 1,237 cf Discarded=0.05 cfs 1,234 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.05 cfs 1,234 cf
<b>Pond SSD3: SUBSURFACE DRAINAGE</b>	Peak Elev=20.26' Storage=1,618 cf Inflow=2.14 cfs 11,897 cf Discarded=0.03 cfs 1,859 cf Primary=1.76 cfs 8,986 cf Secondary=0.00 cfs 0 cf Outflow=1.79 cfs 10,844 cf
<b>Pond SSD4: SUBSURFACE DRAINAGE AREA</b>	Peak Elev=37.16' Storage=843 cf Inflow=0.63 cfs 2,202 cf Discarded=0.01 cfs 816 cf Primary=0.06 cfs 43 cf Tertiary=0.21 cfs 779 cf Outflow=0.28 cfs 1,637 cf

## 817 Country Way Post

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 181

**Pond SSD5: SUBSURFACE DRAINAGE AREA** Peak Elev=32.33' Storage=2,571 cf Inflow=1.49 cfs 5,285 cf  
Primary=0.12 cfs 4,965 cf Secondary=0.00 cfs 0 cf Outflow=0.12 cfs 4,965 cf

**Pond SSD6: SUBSURFACE DRAINAGE AREA** Peak Elev=24.36' Storage=1,287 cf Inflow=0.77 cfs 2,514 cf  
Primary=0.05 cfs 2,200 cf Secondary=0.00 cfs 0 cf Outflow=0.05 cfs 2,200 cf

**Total Runoff Area = 107,015 sf Runoff Volume = 30,055 cf Average Runoff Depth = 3.37"**  
**52.20% Pervious = 55,860 sf 47.80% Impervious = 51,155 sf**

**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 182

**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

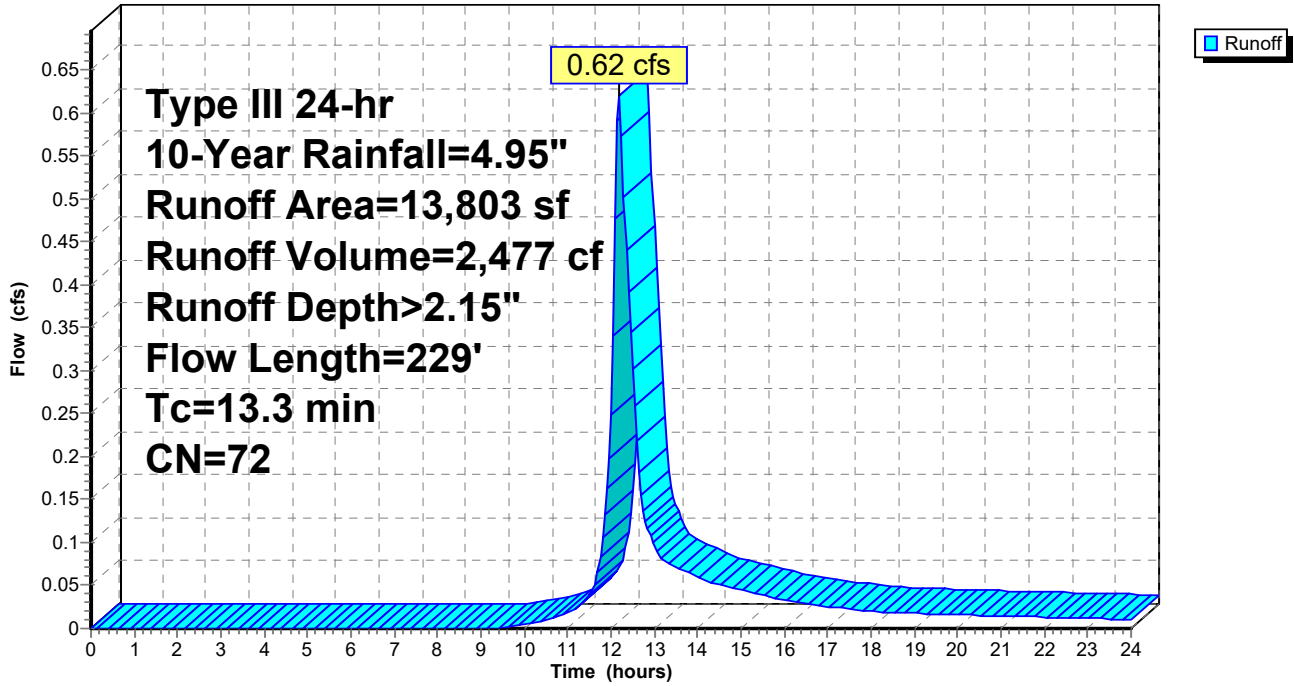
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-Year Rainfall=4.95"

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		<b>Sheet Flow, Woods</b> Woods: Light underbrush n= 0.400 P2= 3.35"
1.1	67	0.0400	1.00		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
1.1	58	0.0300	0.87		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
0.9	54	0.0400	1.00		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
13.3	229	Total			

### Subcatchment 1: Post 1

Hydrograph



**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**Summary for Subcatchment 2A: Post 2A**

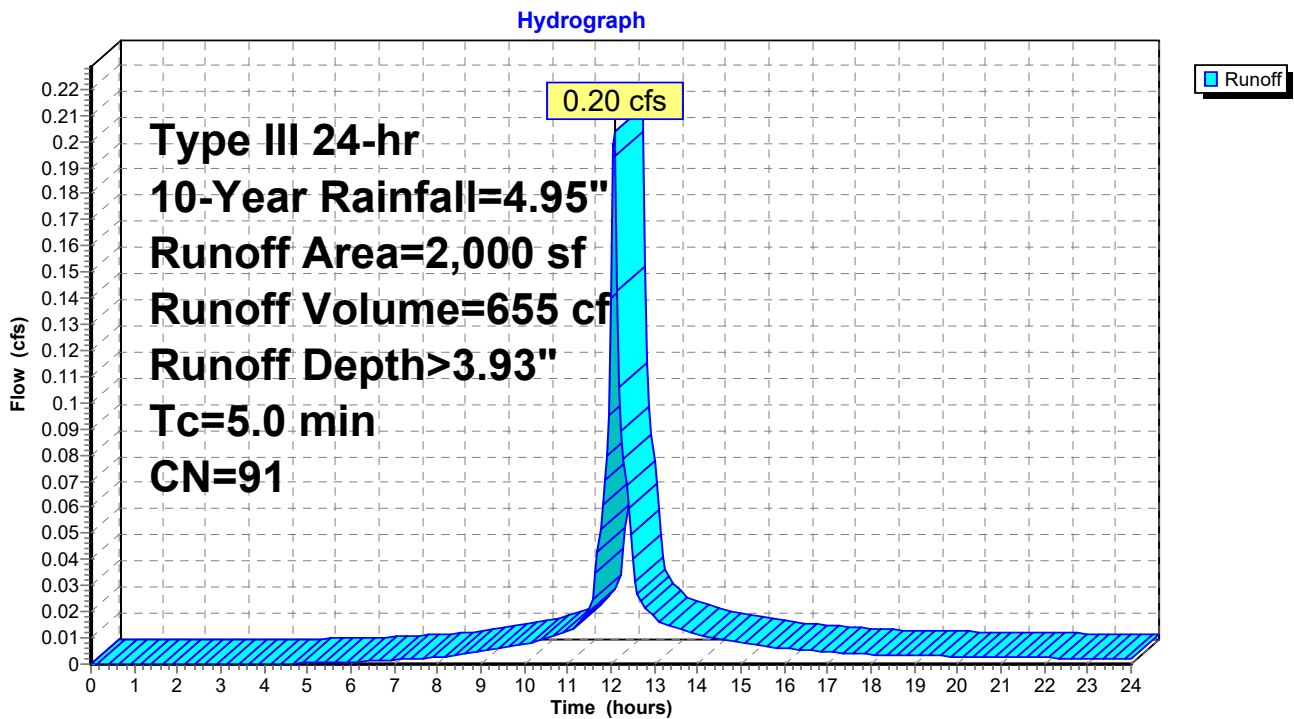
Runoff = 0.20 cfs @ 12.07 hrs, Volume= 655 cf, Depth> 3.93"  
 Routed to Pond CB6 : CB6

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
544	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
1,388	98	Paved parking, HSG C
68	98	Paved parking, HSG C
2,000	91	Weighted Average
544		27.20% Pervious Area
1,456		72.80% Impervious Area

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

**Subcatchment 2A: Post 2A**



# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 10-Year Rainfall=4.95"

Page 185

## Summary for Subcatchment 2B: Post 2B

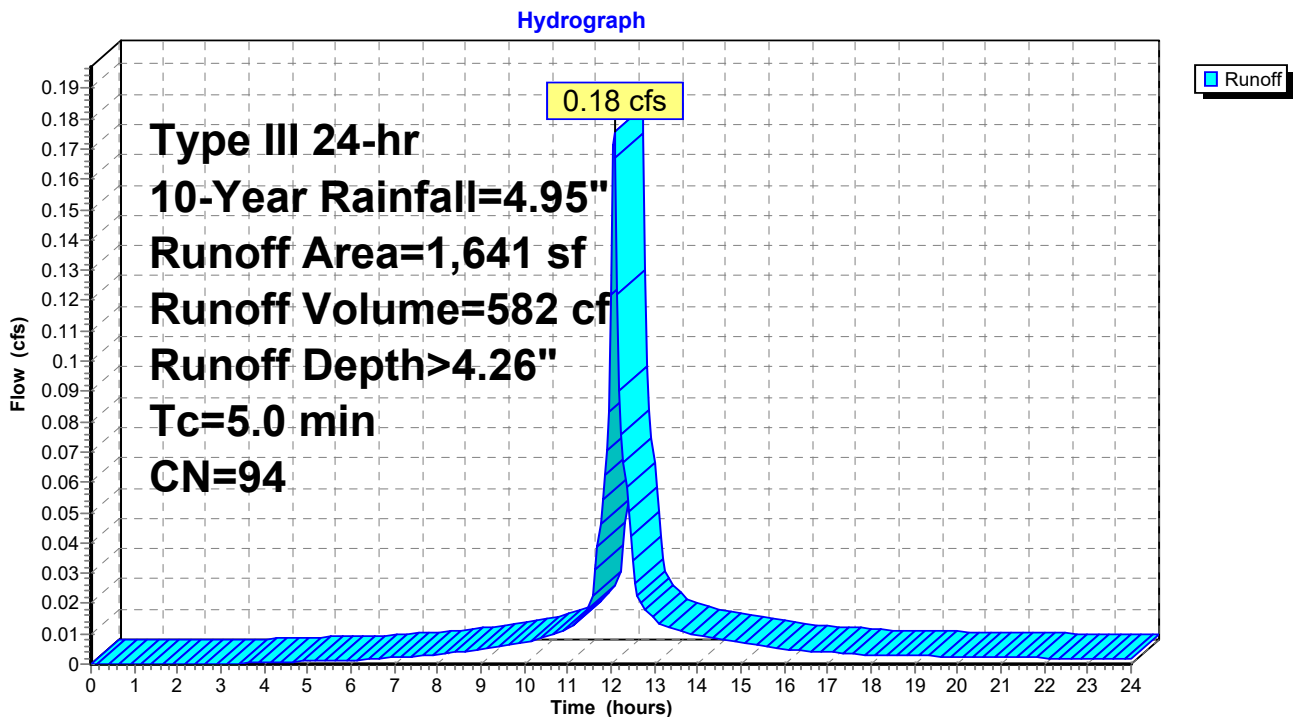
Runoff = 0.18 cfs @ 12.07 hrs, Volume= 582 cf, Depth> 4.26"  
Routed to Pond CB9 : CB9

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
271	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
1,370	98	Paved parking, HSG C
0	98	Paved parking, HSG C
1,641	94	Weighted Average
271		16.51% Pervious Area
1,370		83.49% 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**

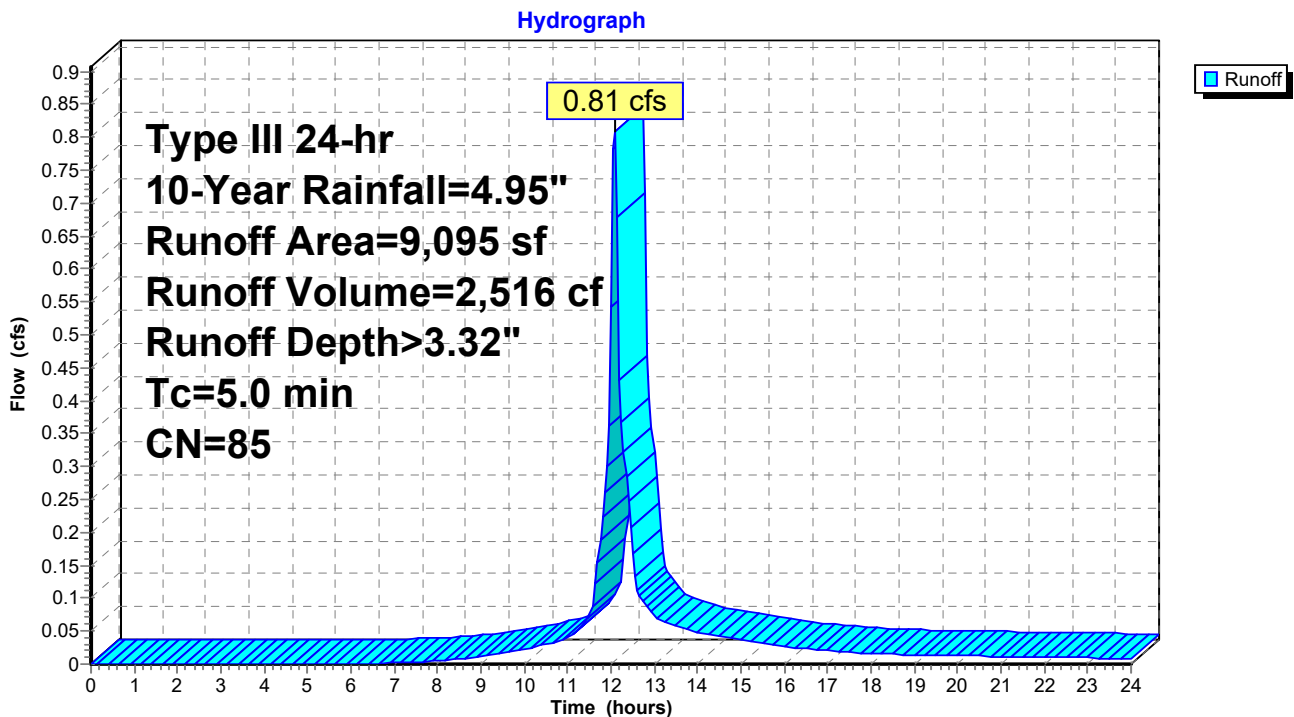
Runoff = 0.81 cfs @ 12.07 hrs, Volume= 2,516 cf, Depth> 3.32"  
 Routed to Pond CB4 : CB4

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
5,096	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
3,233	98	Paved parking, HSG C
766	98	Paved parking, HSG C
9,095	85	Weighted Average
5,096		56.03% Pervious Area
3,999		43.97% 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**

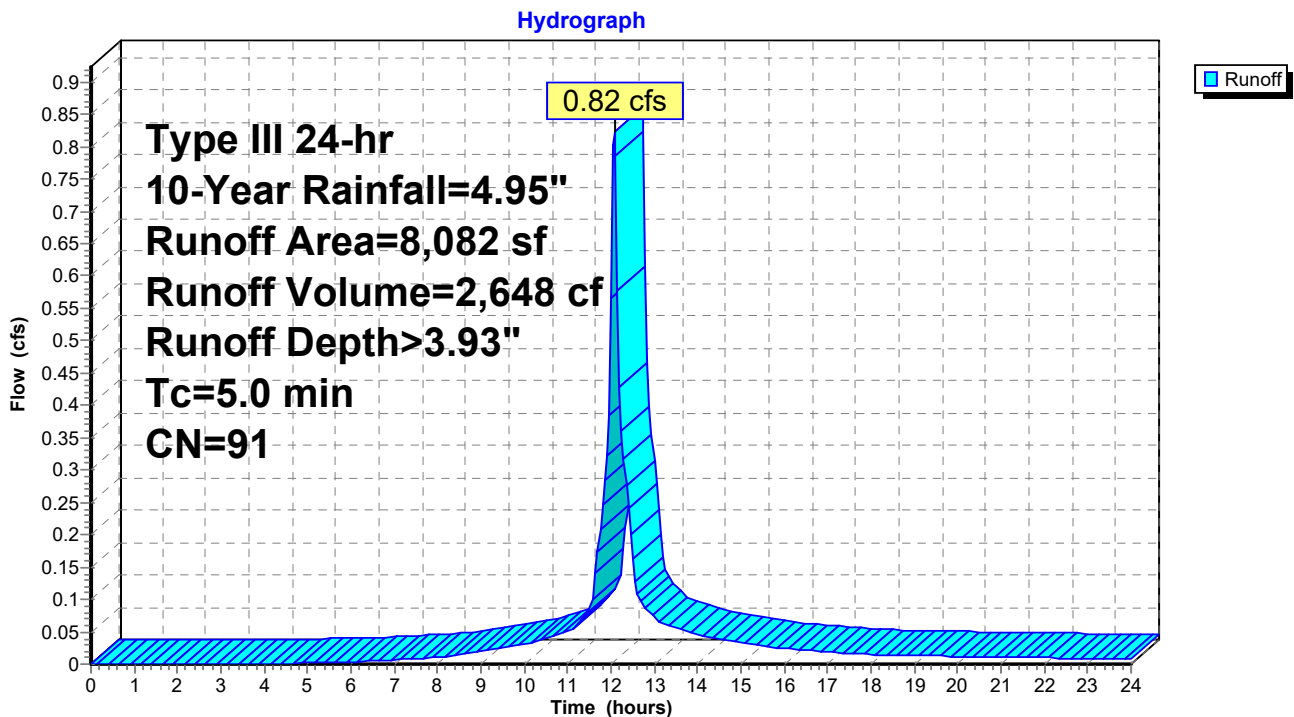
Runoff = 0.82 cfs @ 12.07 hrs, Volume= 2,648 cf, Depth> 3.93"  
 Routed to Pond CB5 : CB5

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
2,424	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
5,459	98	Paved parking, HSG C
199	98	Paved parking, HSG C
8,082	91	Weighted Average
2,424		29.99% Pervious Area
5,658		70.01% Impervious Area

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

**Subcatchment 3B: Post 3B**



# 817 Country Way Post

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 188

## Summary for Subcatchment 4: Post 4

Runoff = 0.71 cfs @ 12.12 hrs, Volume= 2,637 cf, Depth> 4.37"  
Routed to Pond CB1 : CB1

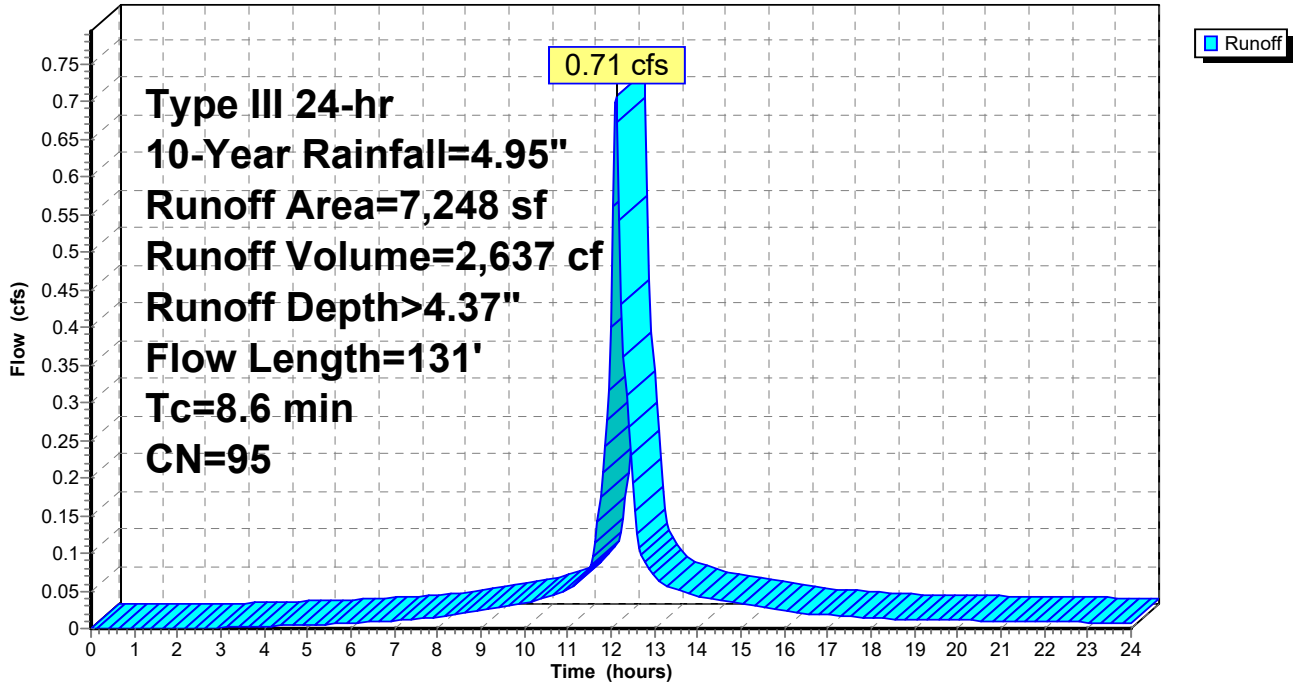
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10-Year Rainfall=4.95"

Area (sf)	CN	Description
815	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
6,433	98	Paved parking, HSG C
0	98	Paved parking, HSG C
7,248	95	Weighted Average
815		11.24% Pervious Area
6,433		88.76% Impervious Area

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

### Subcatchment 4: Post 4

Hydrograph



**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 190

**Summary for Subcatchment 5: Post 5**

Runoff = 0.66 cfs @ 12.12 hrs, Volume= 2,333 cf, Depth> 3.72"  
 Routed to Pond CB10 : CB10

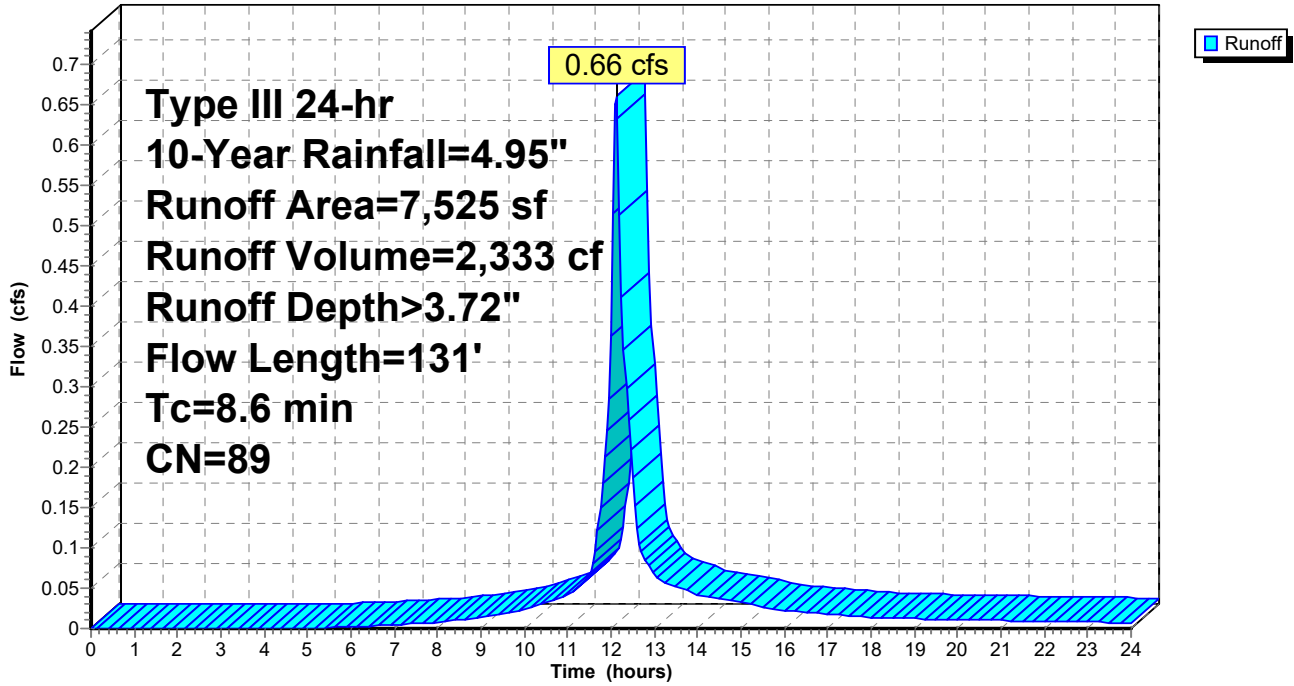
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-Year Rainfall=4.95"

Area (sf)	CN	Description
1,823	98	Unconnected roofs, HSG C
2,969	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
2,733	98	Paved parking, HSG C
0	98	Paved parking, HSG C
7,525	89	Weighted Average
2,969		39.46% Pervious Area
4,556		60.54% Impervious Area
1,823		40.01% Unconnected

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

### Subcatchment 5: Post 5

Hydrograph



# 817 Country Way Post

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

## Summary for Subcatchment 6: Post 6

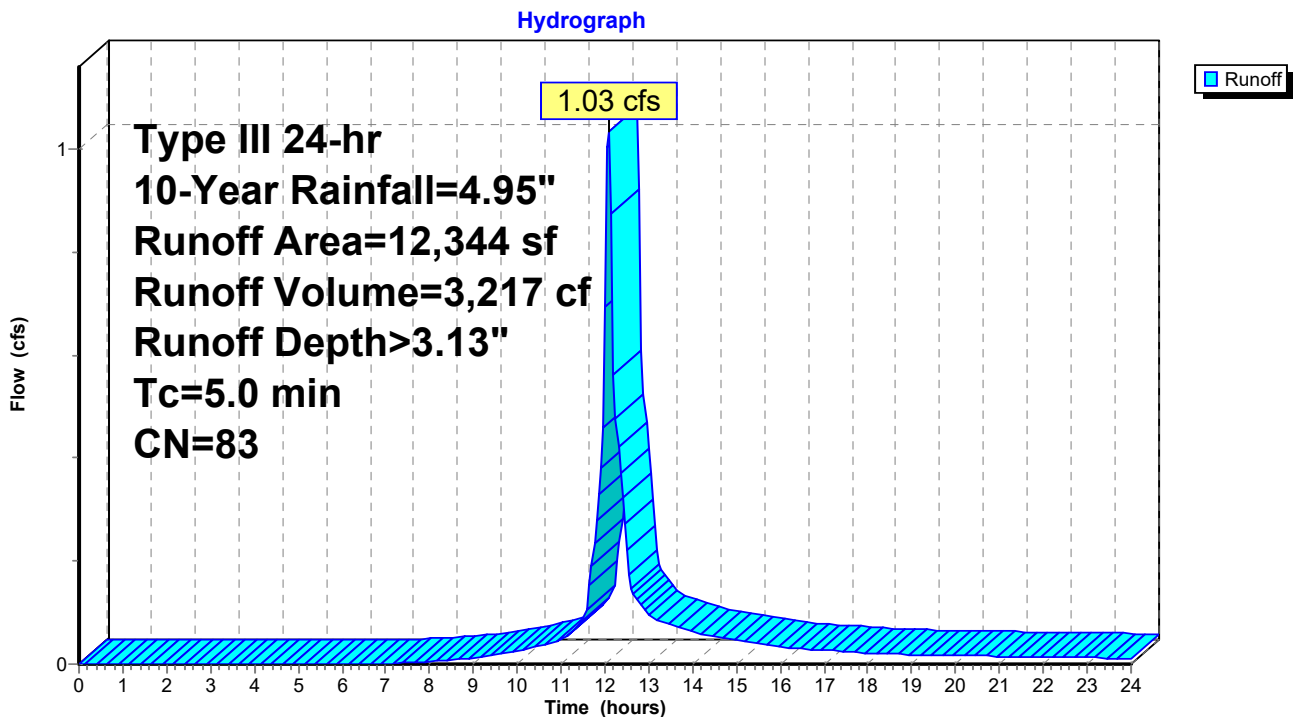
Runoff = 1.03 cfs @ 12.08 hrs, Volume= 3,217 cf, Depth> 3.13"  
Routed to Pond CB13 : CB13

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
7,471	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
3,458	98	Paved parking, HSG C
1,415	98	Paved parking, HSG C
12,344	83	Weighted Average
7,471		60.52% Pervious Area
4,873		39.48% Impervious Area

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

### Subcatchment 6: Post 6



# 817 Country Way Post

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 193

## Summary for Subcatchment 6A: Post 6a

Runoff = 0.65 cfs @ 12.07 hrs, Volume= 2,101 cf, Depth> 4.04"

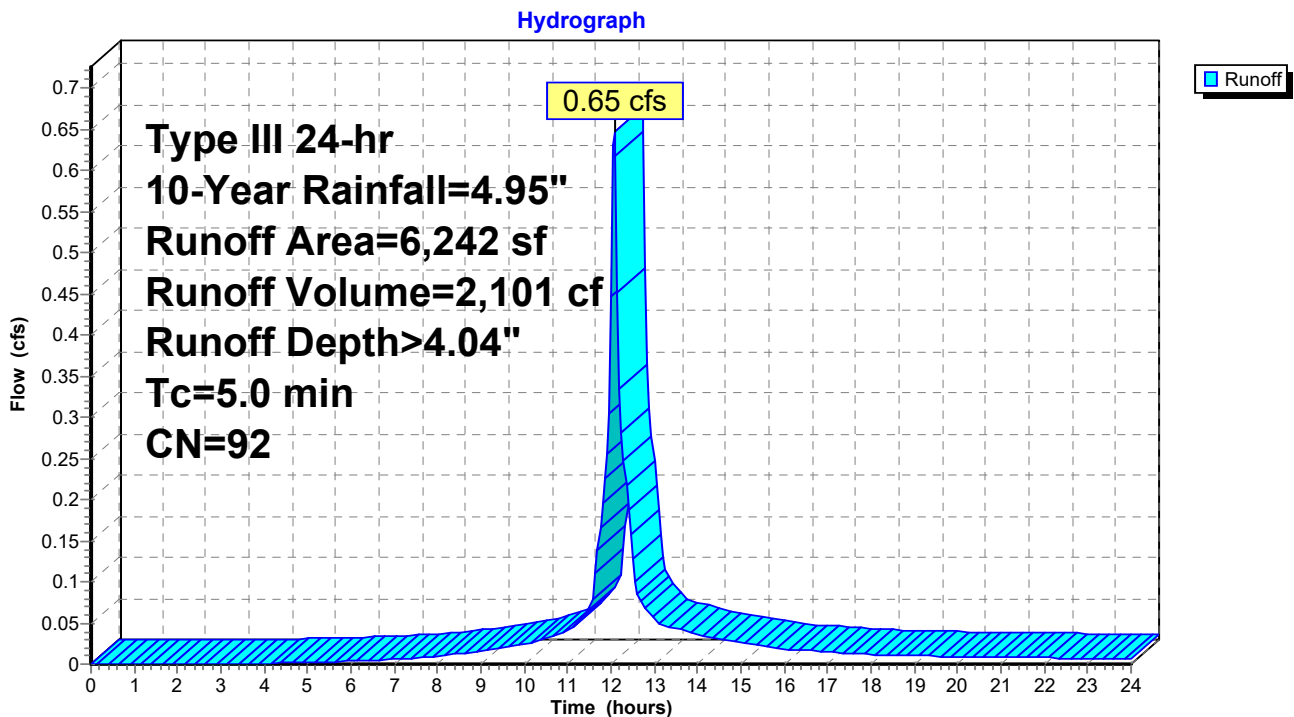
Routed to Pond SSD6 : SUBSURFACE DRAINAGE AREA #6 (STORAGE)

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
1,461	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
4,243	98	Paved parking, HSG C
538	98	Paved parking, HSG C
6,242	92	Weighted Average
1,461		23.41% Pervious Area
4,781		76.59% Impervious Area

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

### Subcatchment 6A: Post 6a



# 817 Country Way Post

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 194

## Summary for Subcatchment 7: Post 7

Runoff = 0.14 cfs @ 12.16 hrs, Volume= 520 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"

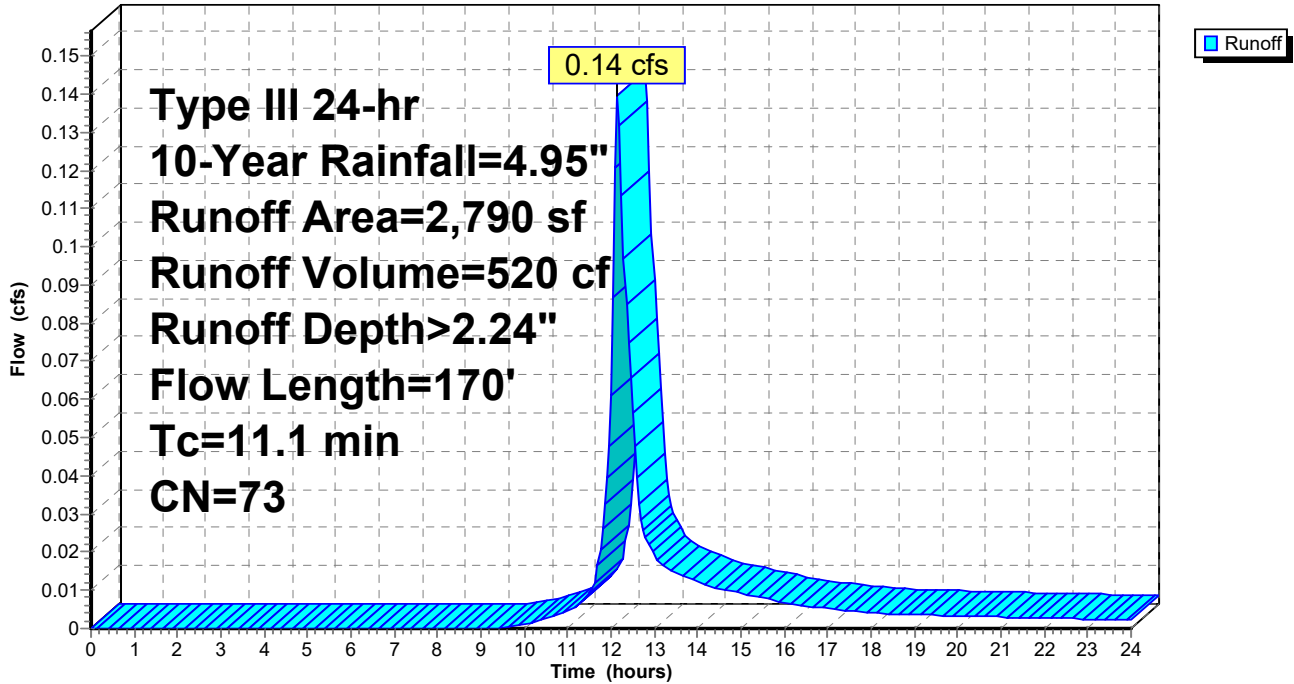
Area (sf)	CN	Description
2,085	74	>75% Grass cover, Good, HSG C
705	70	Woods, Good, HSG C
0	98	Paved parking, HSG C
0	98	Paved parking, HSG C
2,790	73	Weighted Average
2,790		100.00% Pervious Area

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



### Subcatchment 7: Post 7

Hydrograph



**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**Summary for Subcatchment 8: Post 8**

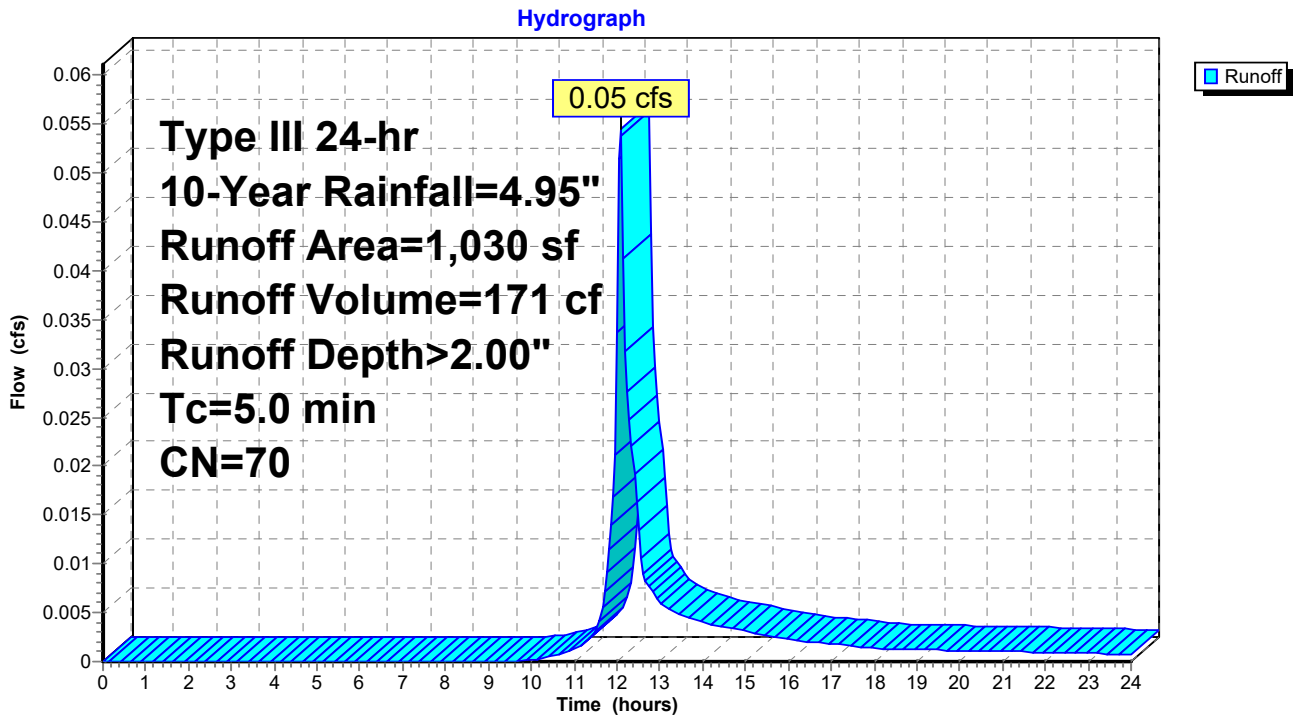
Runoff = 0.05 cfs @ 12.08 hrs, Volume= 171 cf, Depth> 2.00"  
 Routed to Reach DP2 : DP2

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**



# 817 Country Way Post

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 197

## Summary for Subcatchment 9: Post 9

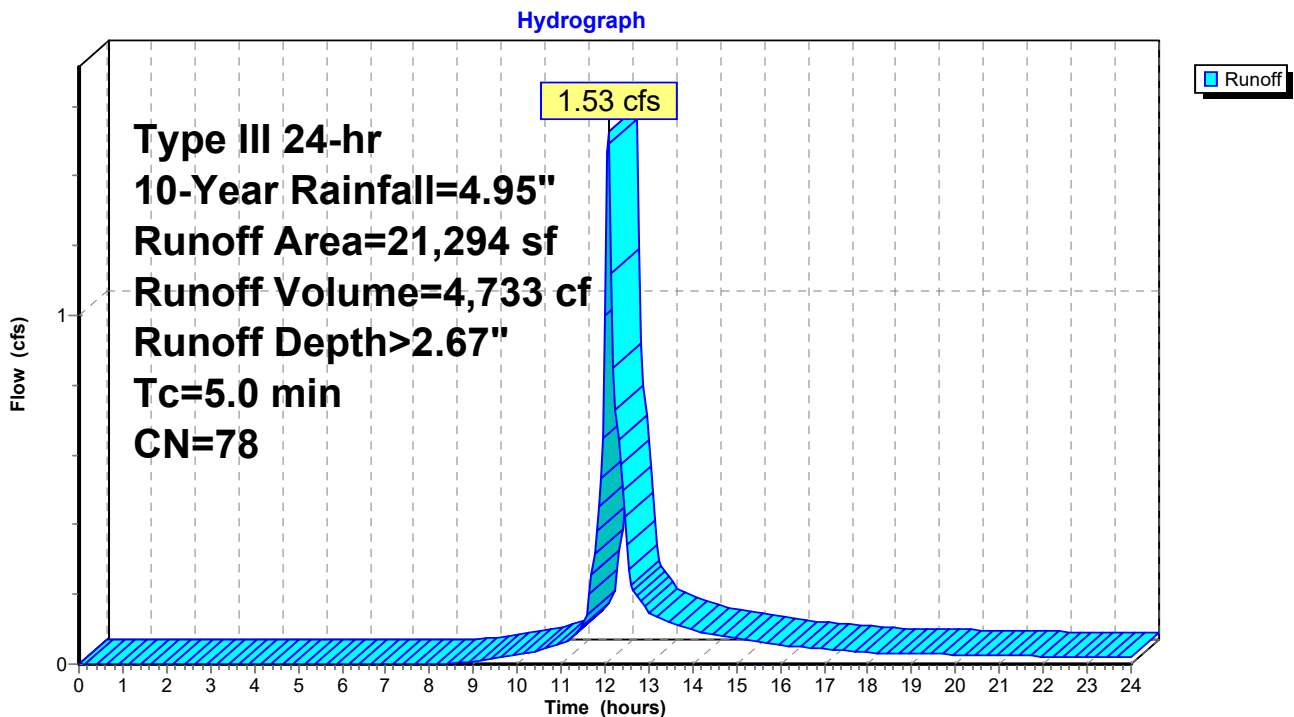
Runoff = 1.53 cfs @ 12.08 hrs, Volume= 4,733 cf, Depth> 2.67"  
Routed to Reach DP3 : DP3

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
15,409	74	>75% Grass cover, Good, HSG C
1,777	70	Woods, Good, HSG C
1,470	98	Paved parking, HSG C
2,638	98	Paved parking, HSG C
21,294	78	Weighted Average
17,186		80.71% Pervious Area
4,108		19.29% 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

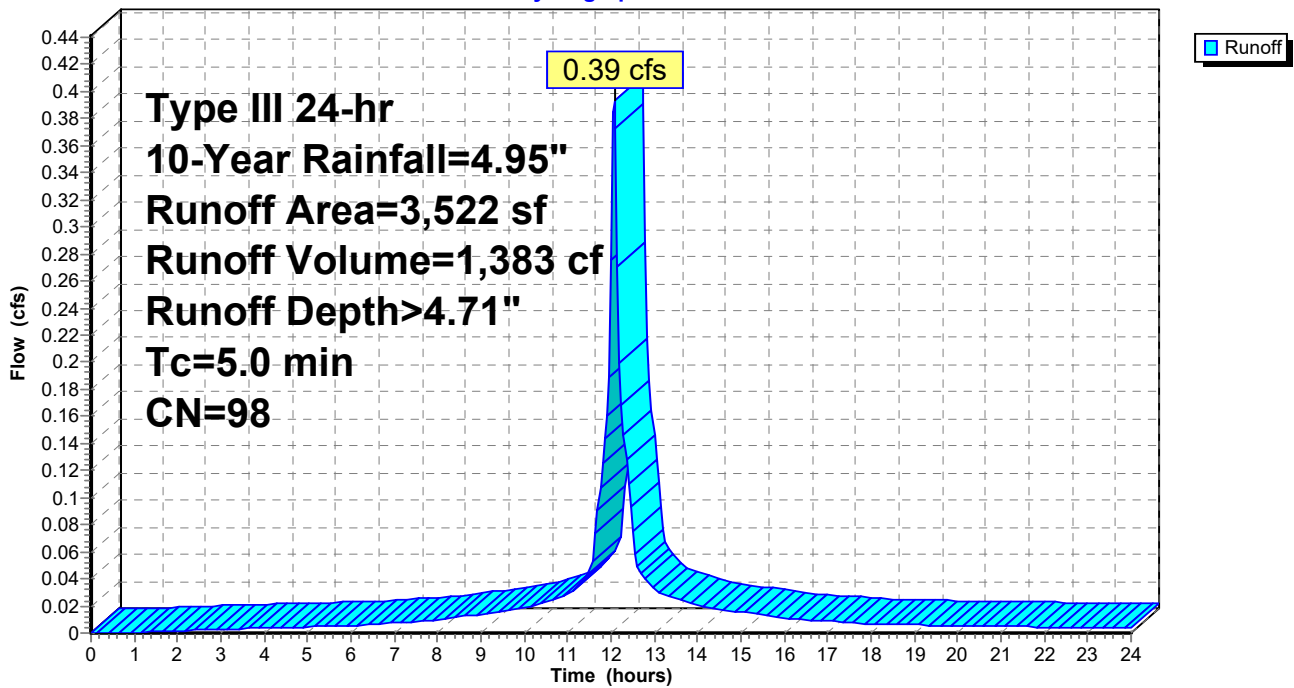
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-Year Rainfall=4.95"

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**

Hydrograph



**Summary for Subcatchment B2a: BLDG #2**

Runoff = 0.12 cfs @ 12.07 hrs, Volume= 414 cf, Depth> 4.71"

Routed to Pond SSD6 : SUBSURFACE DRAINAGE AREA #6 (STORAGE)

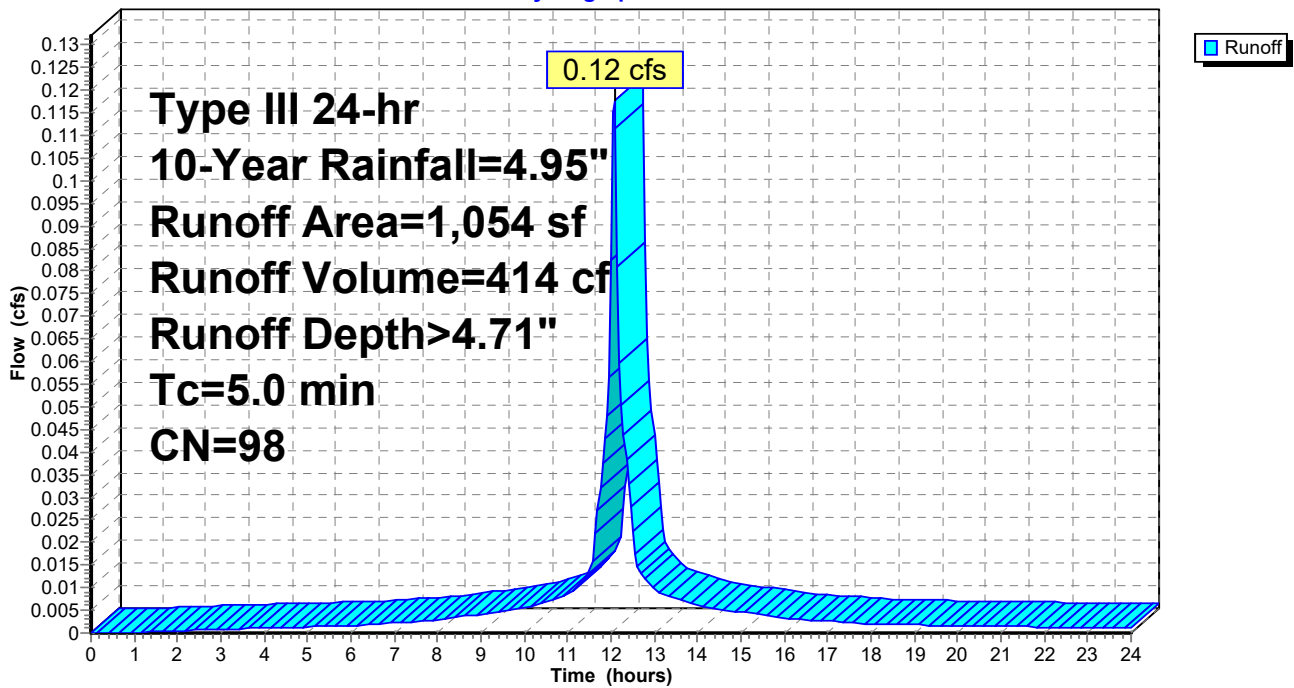
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-Year Rainfall=4.95"

Area (sf)	CN	Description
1,054	98	Unconnected roofs, HSG C
1,054		100.00% Impervious Area
1,054		100.00% Unconnected

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

**Subcatchment B2a: BLDG #2**

Hydrograph



**Summary for Subcatchment B2b: BLDG #2 (REAR SECTION)**

Runoff = 0.42 cfs @ 12.07 hrs, Volume= 1,467 cf, Depth> 4.71"

Routed to Pond SSD1 : SUBSURFACE DRAINAGE AREA #1

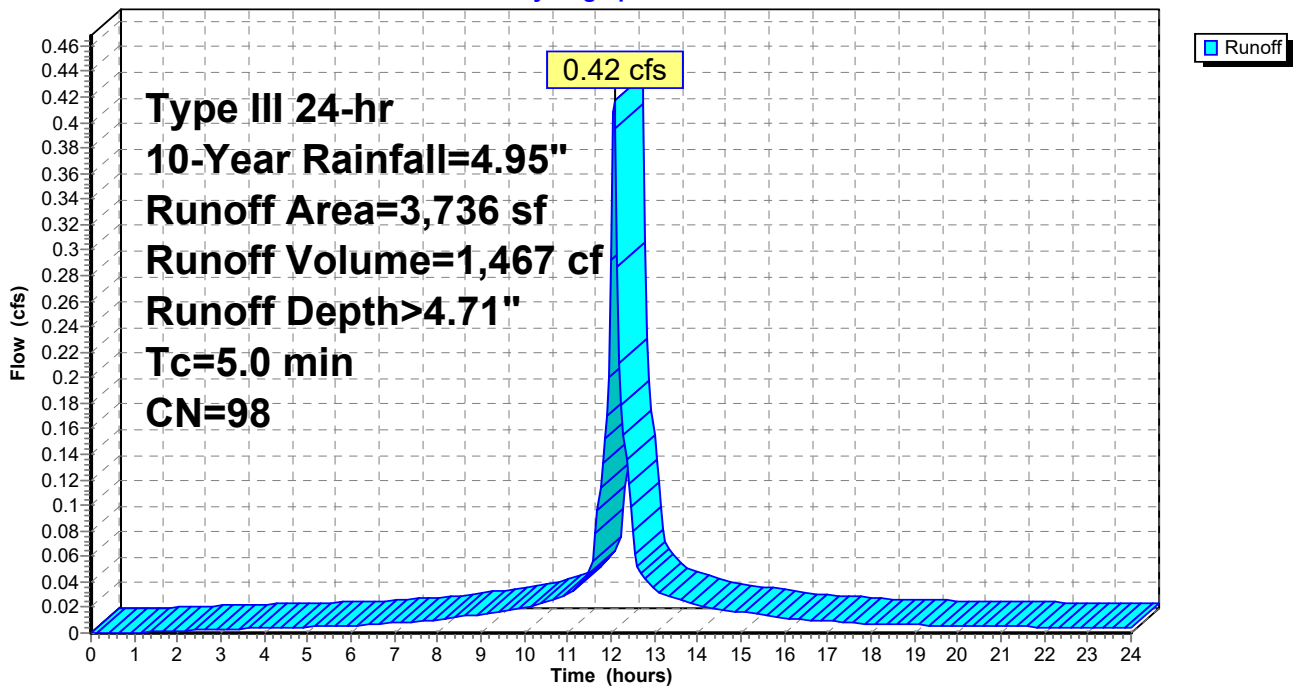
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-Year Rainfall=4.95"

Area (sf)	CN	Description
3,736	98	Unconnected roofs, HSG C
3,736		100.00% Impervious Area
3,736		100.00% Unconnected

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

**Subcatchment B2b: BLDG #2 (REAR SECTION)**

Hydrograph



**Summary for Subcatchment B3: BLDG #3**

Runoff = 0.63 cfs @ 12.07 hrs, Volume= 2,202 cf, Depth> 4.71"

Routed to Pond SSD4 : SUBSURFACE DRAINAGE AREA #4

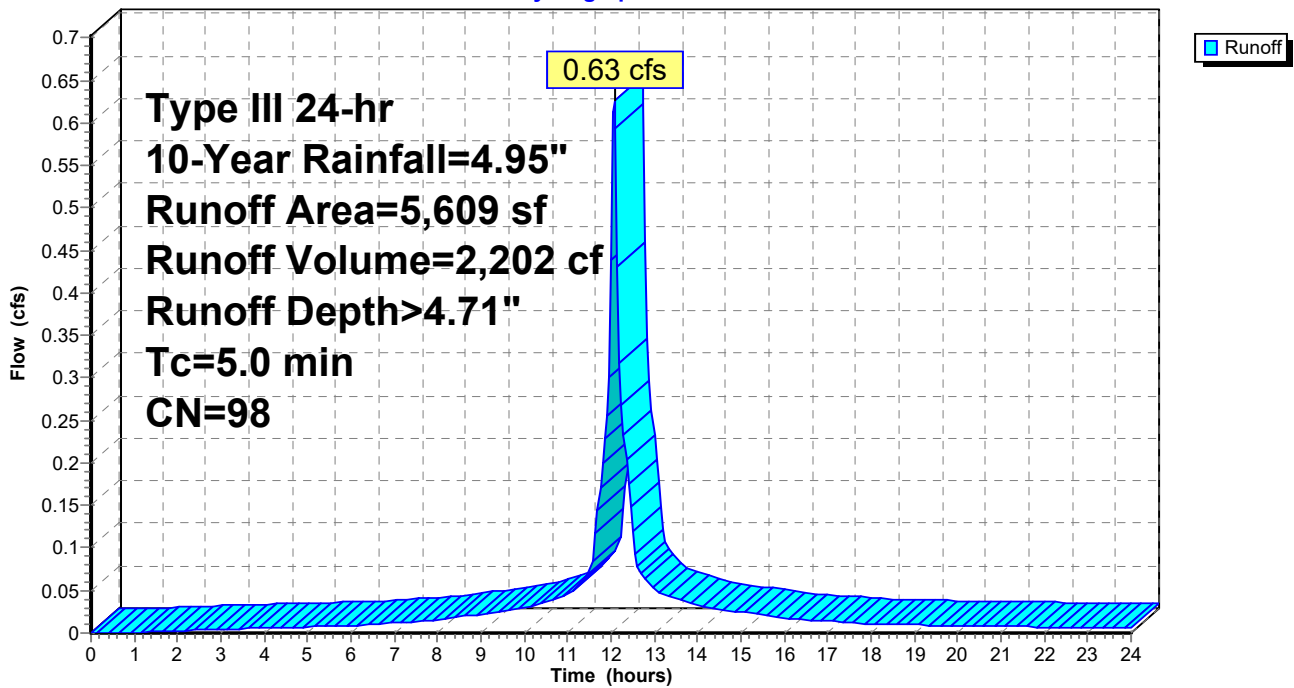
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-Year Rainfall=4.95"

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 B3: BLDG #3**

Hydrograph



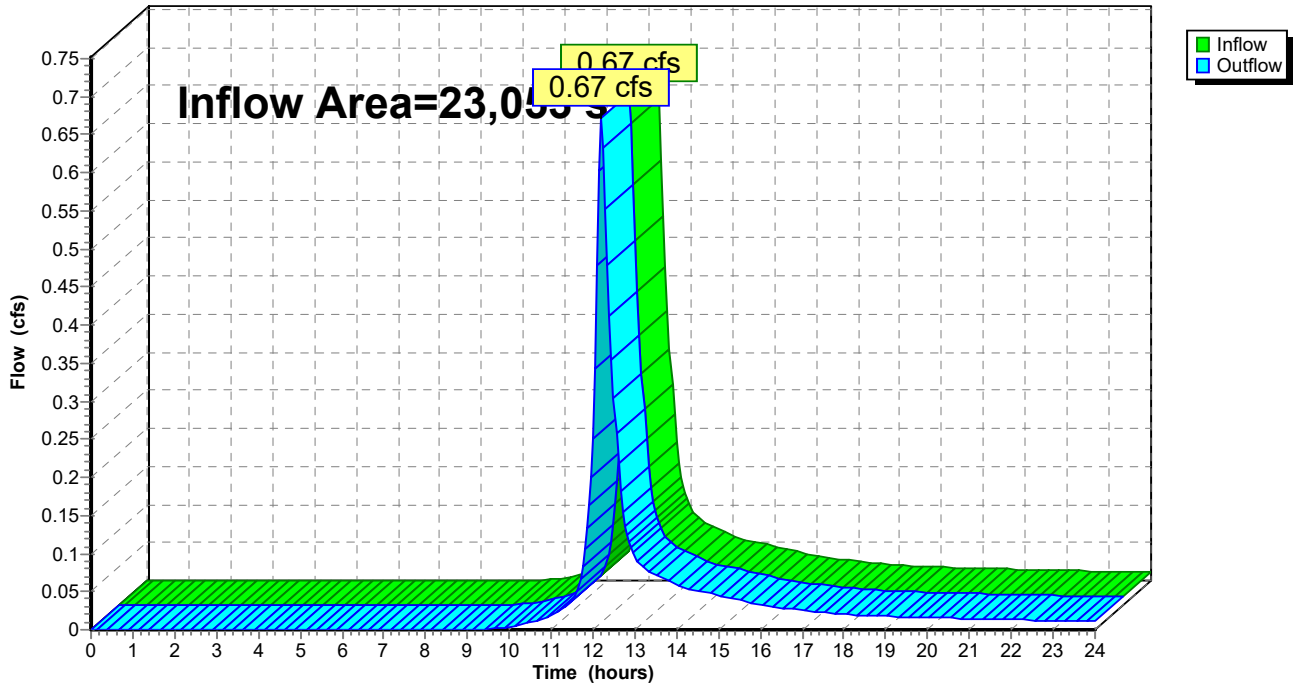
### Summary for Reach DP1: DP1post

Inflow Area = 23,053 sf, 36.59% Impervious, Inflow Depth > 1.31" 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

Hydrograph

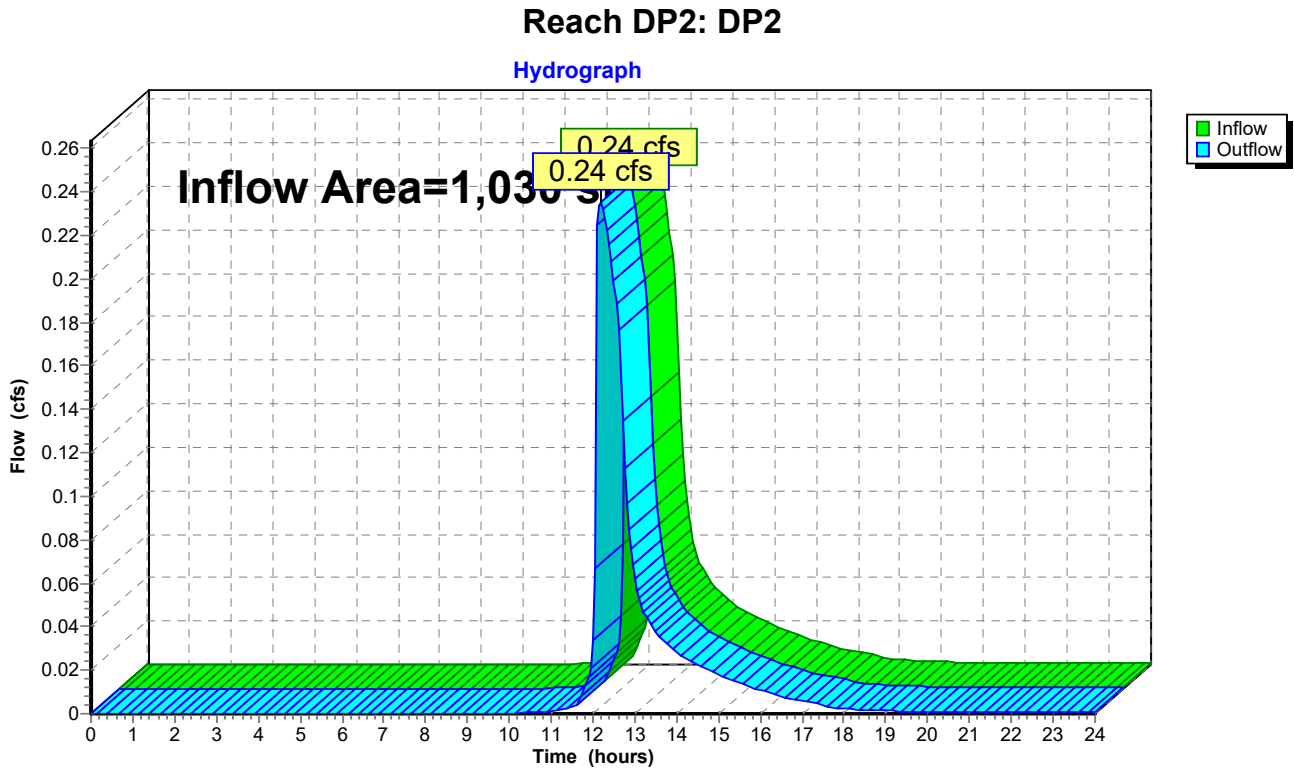




### Summary for Reach DP2: DP2

Inflow Area = 1,030 sf, 0.00% Impervious, Inflow Depth > 11.07" for 10-Year event  
Inflow = 0.24 cfs @ 12.20 hrs, Volume= 950 cf  
Outflow = 0.24 cfs @ 12.20 hrs, Volume= 950 cf, Atten= 0%, Lag= 0.0 min

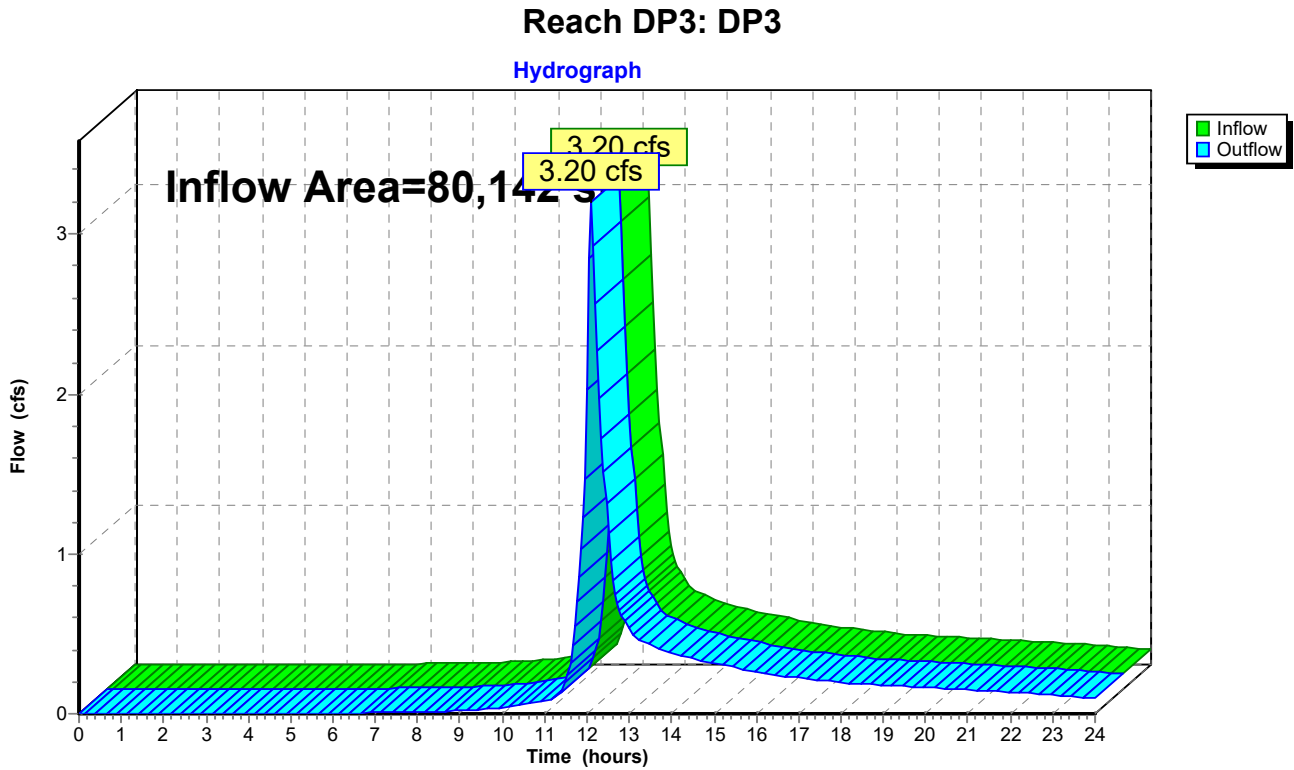
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs



### Summary for Reach DP3: DP3

Inflow Area = 80,142 sf, 53.31% Impervious, Inflow Depth > 2.38" for 10-Year event  
Inflow = 3.20 cfs @ 12.10 hrs, Volume= 15,919 cf  
Outflow = 3.20 cfs @ 12.10 hrs, Volume= 15,919 cf, Atten= 0%, Lag= 0.0 min

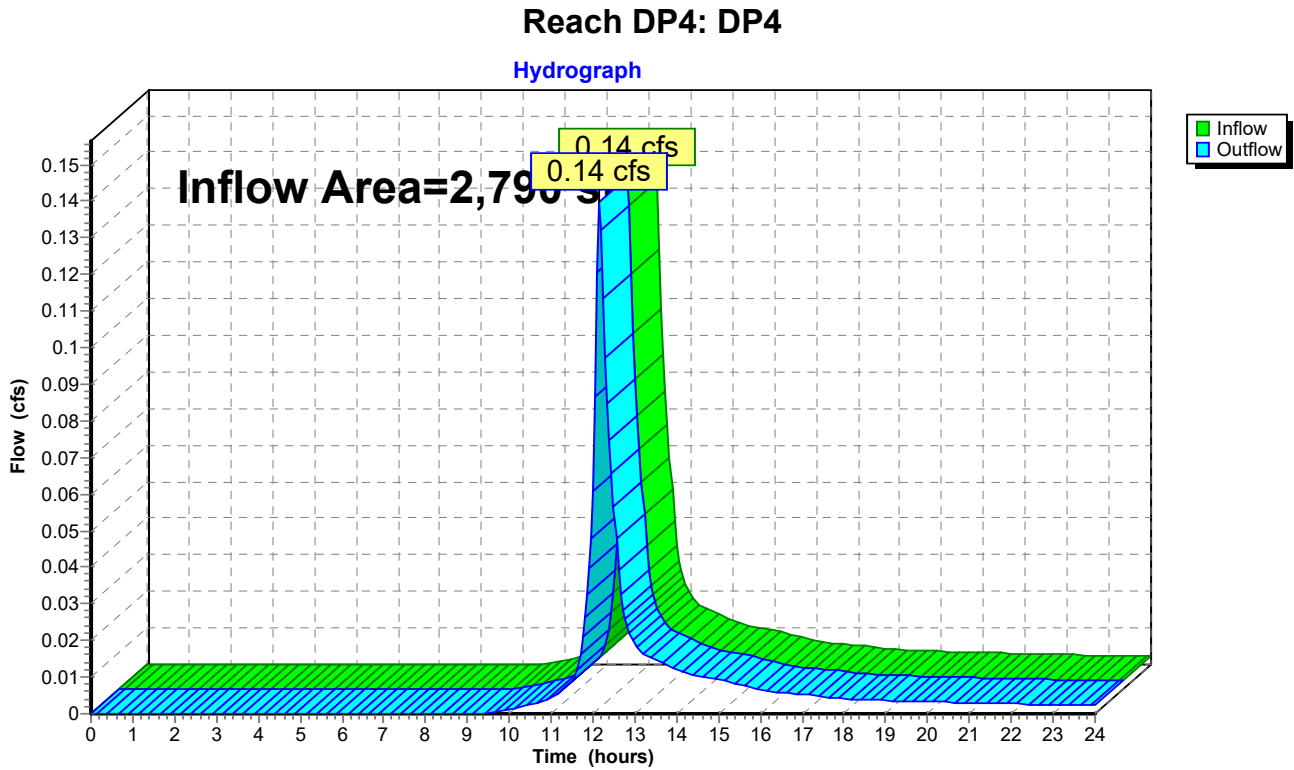
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs



### Summary for Reach DP4: DP4

Inflow Area = 2,790 sf, 0.00% Impervious, Inflow Depth > 2.24" for 10-Year event  
Inflow = 0.14 cfs @ 12.16 hrs, Volume= 520 cf  
Outflow = 0.14 cfs @ 12.16 hrs, Volume= 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



**Summary for Pond 2P: DMH2**

Inflow Area = 15,330 sf, 78.87% Impervious, Inflow Depth > 4.14" for 10-Year event  
 Inflow = 1.49 cfs @ 12.09 hrs, Volume= 5,285 cf  
 Outflow = 1.49 cfs @ 12.09 hrs, Volume= 5,285 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 1.49 cfs @ 12.09 hrs, Volume= 5,285 cf  
 Routed to Pond SSD5 : SUBSURFACE DRAINAGE AREA #5 (STORAGE)

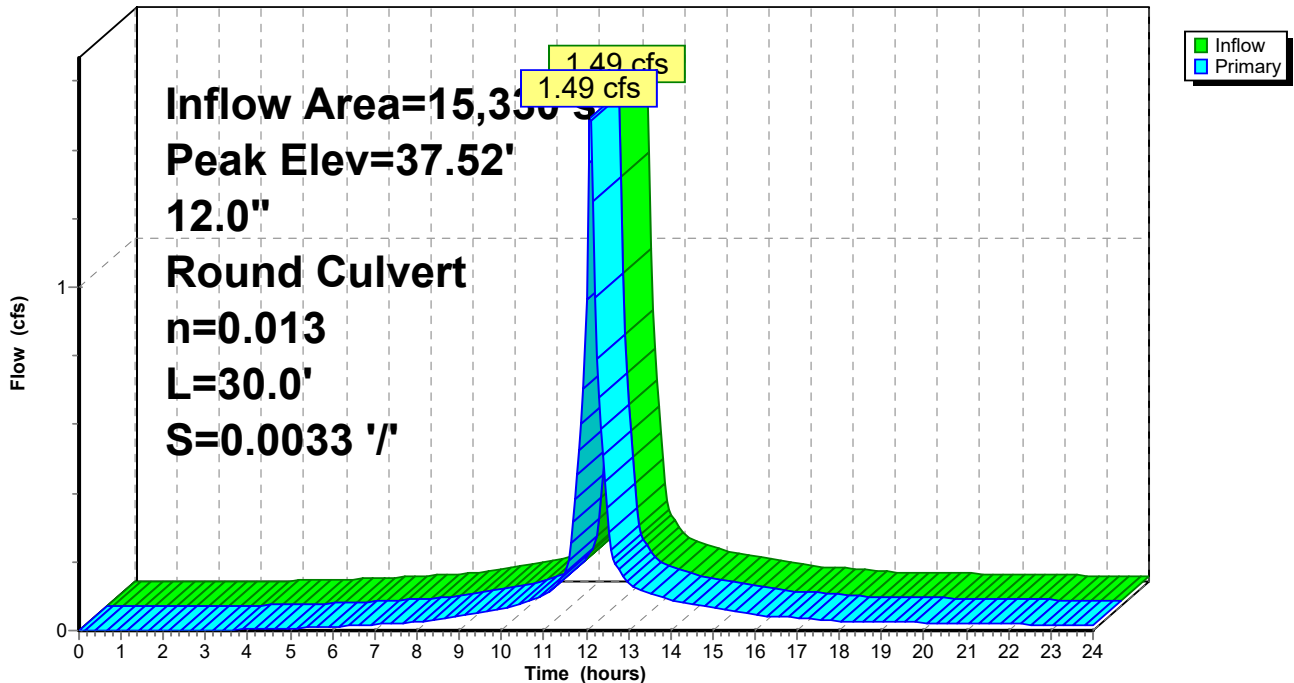
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 37.52' @ 12.09 hrs  
 Flood Elev= 39.67'

Device #	Routing	Invert	Outlet Devices
#1	Primary	36.70'	<b>12.0" Round Culvert</b> 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=1.47 cfs @ 12.09 hrs HW=37.52' (Free Discharge)  
 ←1=Culvert (Barrel Controls 1.47 cfs @ 2.91 fps)

**Pond 2P: DMH2**

Hydrograph



**Stage-Discharge for Pond 2P: DMH2**

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	<b>5.79</b>
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		

**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 208

**Stage-Area-Storage for Pond 2P: DMH2**

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		

# 817 Country Way Post

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 209

## Summary for Pond CB1: CB1

Inflow Area = 7,248 sf, 88.76% Impervious, Inflow Depth > 4.37" for 10-Year event  
Inflow = 0.71 cfs @ 12.12 hrs, Volume= 2,637 cf  
Outflow = 0.71 cfs @ 12.12 hrs, Volume= 2,637 cf, Atten= 0%, Lag= 0.0 min  
Primary = 0.71 cfs @ 12.12 hrs, Volume= 2,637 cf  
Routed to Pond 2P : 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= 34.44' @ 12.12 hrs  
Flood Elev= 36.27'

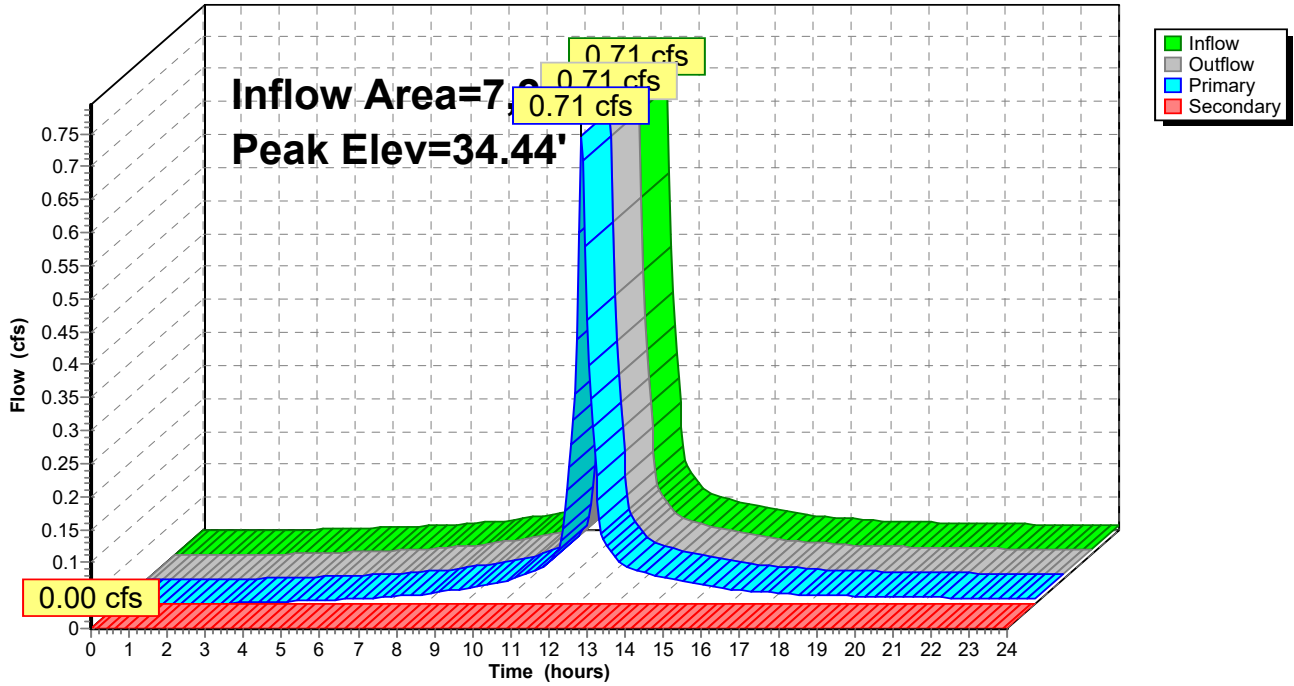
Device	Routing	Invert	Outlet Devices
#1	Primary	33.90'	<b>12.0" Round Culvert</b> L= 29.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 33.90' / 33.80' S= 0.0034 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	36.50'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

**Primary OutFlow** Max=0.69 cfs @ 12.12 hrs HW=34.43' (Free Discharge)  
↑1=Culvert (Barrel Controls 0.69 cfs @ 2.38 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





**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 211

**Stage-Discharge for Pond CB1: CB1**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
33.90	0.00	0.00	<b>0.00</b>
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
36.30	4.97	4.97	0.00
36.35	5.05	5.05	0.00
36.40	5.13	5.13	0.00
36.45	5.21	5.21	0.00
36.50	<b>5.29</b>	<b>5.29</b>	0.00

**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**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	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		
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		

# 817 Country Way Post

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 213

## Summary for Pond CB10: CB10

Inflow Area = 7,525 sf, 60.54% Impervious, Inflow Depth > 3.72" for 10-Year event  
 Inflow = 0.66 cfs @ 12.12 hrs, Volume= 2,333 cf  
 Outflow = 0.66 cfs @ 12.12 hrs, Volume= 2,333 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 0.66 cfs @ 12.12 hrs, Volume= 2,333 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

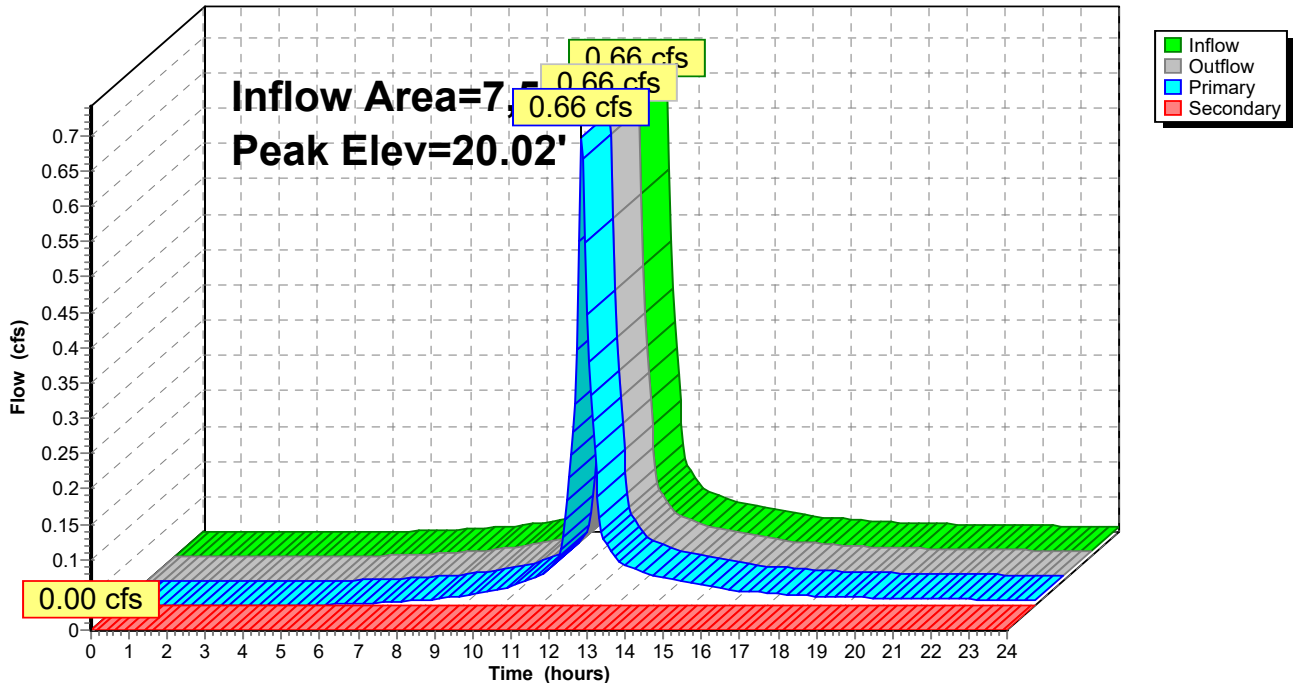
Device	Routing	Invert	Outlet Devices
#1	Primary	19.50'	<b>12.0" Round Culvert</b> L= 30.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 19.50' / 19.40' S= 0.0033 ' / ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	22.00'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0"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

**Primary OutFlow** Max=0.64 cfs @ 12.12 hrs HW=20.01' (Free Discharge)  
 ↳1=Culvert (Barrel Controls 0.64 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

Hydrograph



**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 214

**Stage-Discharge for Pond CB10: CB10**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
19.50	0.00	0.00	<b>0.00</b>
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	<b>5.10</b>	<b>5.10</b>	0.00

**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 215

**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		

# 817 Country Way Post

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 216

## Summary for Pond CB13: CB13

Inflow Area = 25,175 sf, 50.08% Impervious, Inflow Depth > 1.53" for 10-Year event  
 Inflow = 1.03 cfs @ 12.08 hrs, Volume= 3,217 cf  
 Outflow = 1.03 cfs @ 12.08 hrs, Volume= 3,217 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 1.03 cfs @ 12.08 hrs, Volume= 3,217 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= 20.51' @ 12.08 hrs  
 Flood Elev= 22.00'

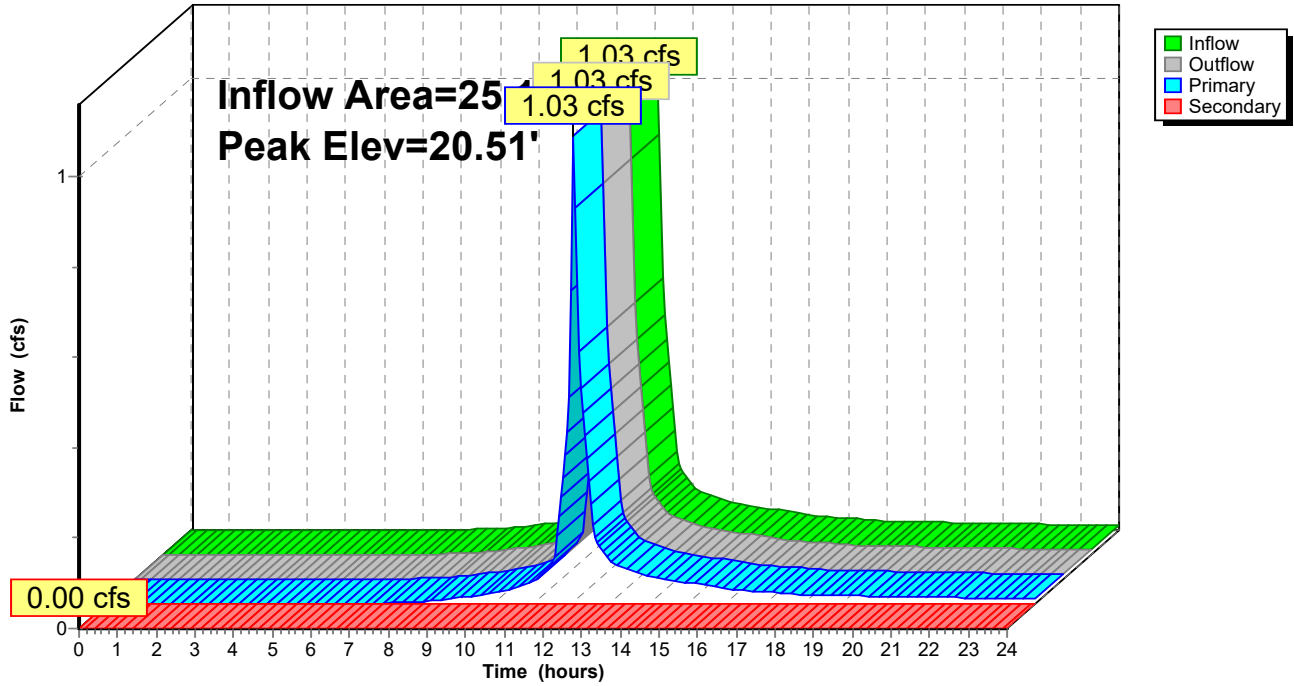
Device	Routing	Invert	Outlet Devices
#1	Primary	19.90'	<b>12.0" Round Culvert</b> L= 12.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 19.90' / 19.80' S= 0.0083 ' S= 0.0083 ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	22.00'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600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

**Primary OutFlow** Max=1.00 cfs @ 12.08 hrs HW=20.50' (Free Discharge)  
 ↑1=Culvert (Barrel Controls 1.00 cfs @ 2.91 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

Hydrograph



**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 218

**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	<b>0.00</b>	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	<b>4.78</b>	<b>4.78</b>	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

# 817 Country Way Post

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 220

## Summary for Pond CB4: CB4

Inflow Area = 9,095 sf, 43.97% Impervious, Inflow Depth > 3.32" for 10-Year event  
Inflow = 0.81 cfs @ 12.07 hrs, Volume= 2,516 cf  
Outflow = 0.81 cfs @ 12.07 hrs, Volume= 2,516 cf, Atten= 0%, Lag= 0.0 min  
Primary = 0.81 cfs @ 12.07 hrs, Volume= 2,516 cf  
Routed to Pond SSD1 : SUBSURFACE DRAINAGE AREA #1  
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'

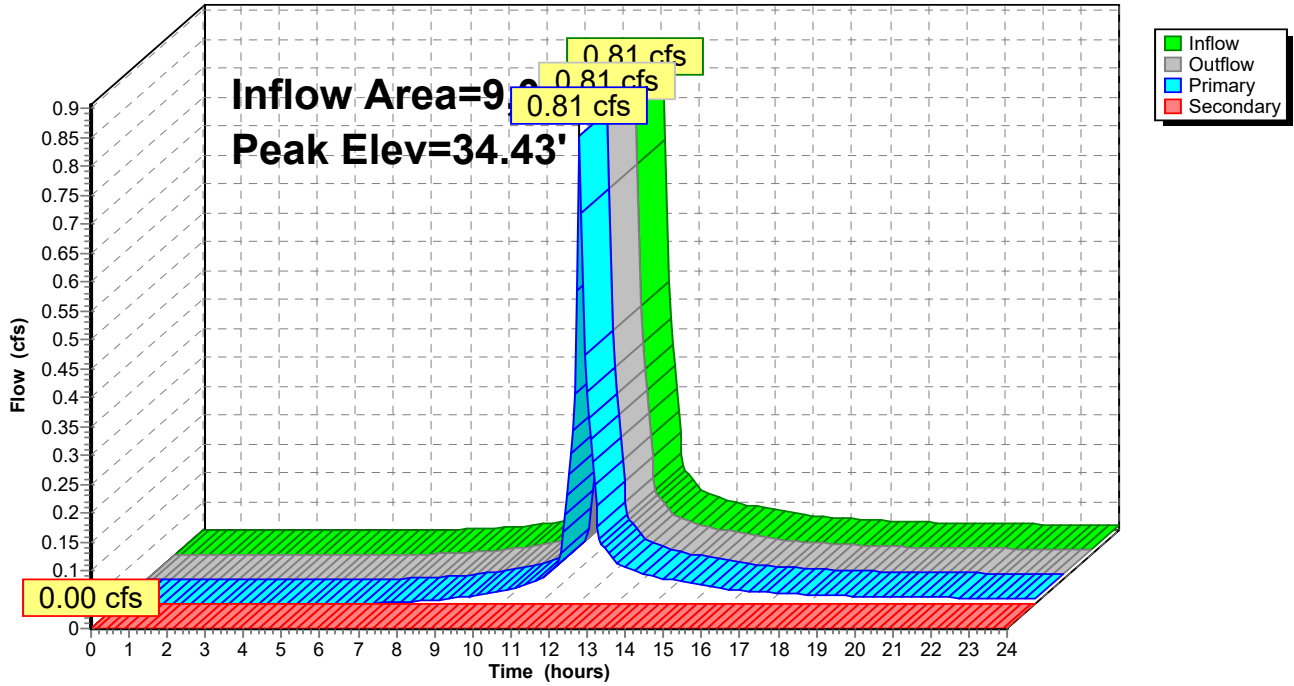
Device	Routing	Invert	Outlet Devices
#1	Primary	33.90'	<b>12.0" Round Culvert</b> L= 10.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 33.90' / 33.80' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	35.50'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

**Primary OutFlow** Max=0.78 cfs @ 12.07 hrs HW=34.41' (Free Discharge)  
↑1=Culvert (Barrel Controls 0.78 cfs @ 2.78 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



**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 222

**Stage-Discharge for Pond CB4: CB4**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
33.90	0.00	0.00	0.00	36.55	19.25	5.55	13.71
33.95	0.01	0.01	0.00	36.60	19.64	5.61	14.03
34.00	0.04	0.04	0.00	36.65	20.02	5.67	14.34
34.05	0.08	0.08	0.00	36.70	20.39	5.74	14.65
34.10	0.14	0.14	0.00	36.75	20.75	5.80	14.95
34.15	0.21	0.21	0.00	36.80	21.11	5.86	15.25
34.20	0.30	0.30	0.00	36.85	21.46	5.92	15.54
34.25	0.39	0.39	0.00	36.90	21.80	5.98	15.83
34.30	0.50	0.50	0.00	36.95	22.14	6.04	16.11
34.35	0.62	0.62	0.00	37.00	<b>22.48</b>	<b>6.10</b>	<b>16.38</b>
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	4.30	4.05	0.24				
35.60	4.83	4.14	0.69				
35.65	5.49	4.23	1.27				
35.70	6.26	4.31	1.95				
35.75	7.12	4.39	2.73				
35.80	8.06	4.47	3.58				
35.85	9.07	4.55	4.51				
35.90	10.15	4.63	5.52				
35.95	11.29	4.71	6.58				
36.00	12.49	4.78	7.71				
36.05	13.75	4.86	8.89				
36.10	15.06	4.93	10.13				
36.15	15.79	5.00	10.78				
36.20	16.26	5.07	11.19				
36.25	16.73	5.14	11.58				
36.30	17.18	5.21	11.96				
36.35	17.61	5.28	12.33				
36.40	18.04	5.35	12.69				
36.45	18.45	5.41	13.04				
36.50	18.86	5.48	13.37				

**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 223

**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		

# 817 Country Way Post

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 224

## Summary for Pond CB5: CB5

Inflow Area = 8,082 sf, 70.01% Impervious, Inflow Depth > 3.93" for 10-Year event  
Inflow = 0.82 cfs @ 12.07 hrs, Volume= 2,648 cf  
Outflow = 0.82 cfs @ 12.07 hrs, Volume= 2,648 cf, Atten= 0%, Lag= 0.0 min  
Primary = 0.82 cfs @ 12.07 hrs, Volume= 2,648 cf  
Routed to Pond 2P : DMH2  
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
Routed to Pond CB1 : CB1

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Peak Elev= 34.54' @ 12.07 hrs  
Flood Elev= 37.50'

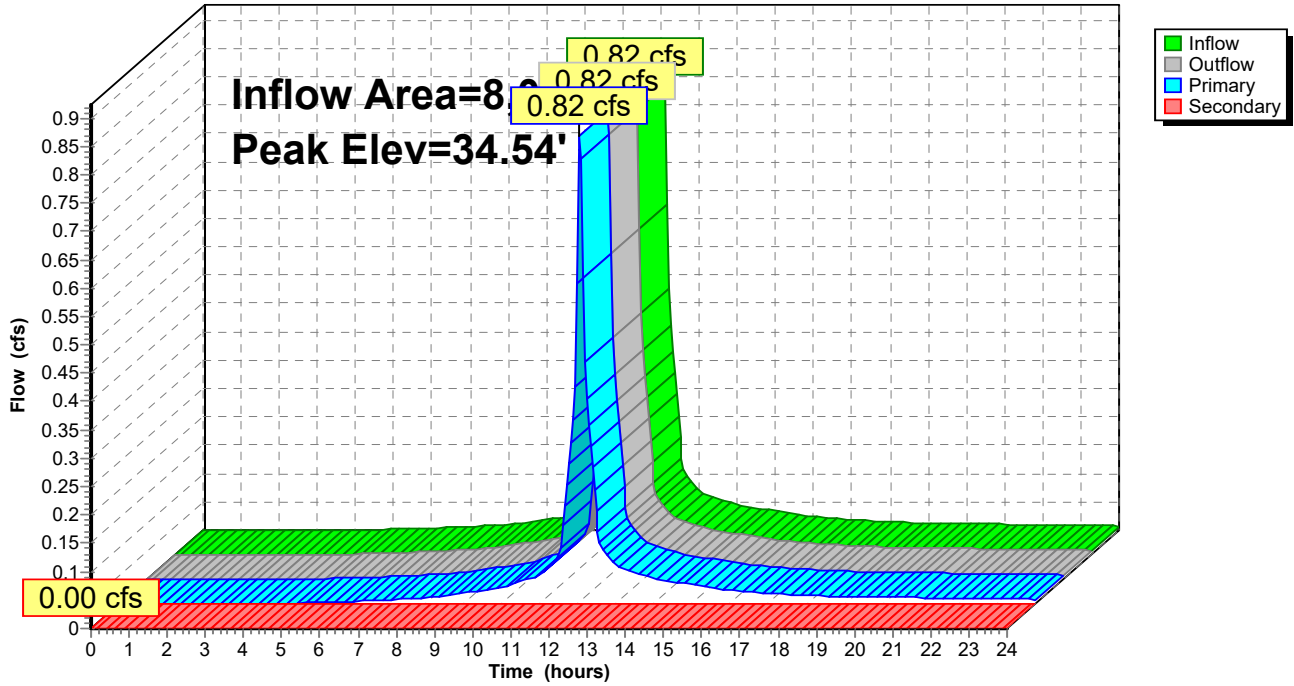
Device	Routing	Invert	Outlet Devices
#1	Primary	34.00'	<b>12.0" Round Culvert</b> L= 35.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 34.00' / 33.80' S= 0.0057 ' S= 0.0057 ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	38.20'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

**Primary OutFlow** Max=0.79 cfs @ 12.07 hrs HW=34.53' (Free Discharge)  
↑1=Culvert (Barrel Controls 0.79 cfs @ 2.73 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



**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 226

**Stage-Discharge for Pond CB5: CB5**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
34.00	0.00	0.00	<b>0.00</b>	36.65	5.32	5.32	0.00
34.05	0.01	0.01	0.00	36.70	5.39	5.39	0.00
34.10	0.03	0.03	0.00	36.75	5.46	5.46	0.00
34.15	0.07	0.07	0.00	36.80	5.53	5.53	0.00
34.20	0.13	0.13	0.00	36.85	5.60	5.60	0.00
34.25	0.19	0.19	0.00	36.90	5.67	5.67	0.00
34.30	0.28	0.28	0.00	36.95	5.73	5.73	0.00
34.35	0.37	0.37	0.00	37.00	5.80	5.80	0.00
34.40	0.48	0.48	0.00	37.05	5.86	5.86	0.00
34.45	0.59	0.59	0.00	37.10	5.93	5.93	0.00
34.50	0.72	0.72	0.00	37.15	5.99	5.99	0.00
34.55	0.85	0.85	0.00	37.20	6.06	6.06	0.00
34.60	0.99	0.99	0.00	37.25	6.12	6.12	0.00
34.65	1.13	1.13	0.00	37.30	6.18	6.18	0.00
34.70	1.28	1.28	0.00	37.35	6.24	6.24	0.00
34.75	1.44	1.44	0.00	37.40	6.30	6.30	0.00
34.80	1.59	1.59	0.00	37.45	6.36	6.36	0.00
34.85	1.75	1.75	0.00	37.50	6.42	6.42	0.00
34.90	1.91	1.91	0.00	37.55	6.48	6.48	0.00
34.95	2.06	2.06	0.00	37.60	6.54	6.54	0.00
35.00	2.22	2.22	0.00	37.65	6.60	6.60	0.00
35.05	2.36	2.36	0.00	37.70	6.66	6.66	0.00
35.10	2.50	2.50	0.00	37.75	6.72	6.72	0.00
35.15	2.63	2.63	0.00	37.80	6.77	6.77	0.00
35.20	2.74	2.74	0.00	37.85	6.83	6.83	0.00
35.25	2.84	2.84	0.00	37.90	6.88	6.88	0.00
35.30	2.89	2.89	0.00	37.95	6.94	6.94	0.00
35.35	2.90	2.90	0.00	38.00	6.99	6.99	0.00
35.40	3.03	3.03	0.00	38.05	7.05	7.05	0.00
35.45	3.15	3.15	0.00	38.10	7.10	7.10	0.00
35.50	3.27	3.27	0.00	38.15	7.16	7.16	0.00
35.55	3.39	3.39	0.00	38.20	<b>7.21</b>	<b>7.21</b>	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				



**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 227

**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	37.55	0
34.95	0	37.60	0
35.00	0	37.65	0
35.05	0	37.70	0
35.10	0	37.75	0
35.15	0	37.80	0
35.20	0	37.85	0
35.25	0	37.90	0
35.30	0	37.95	0
35.35	0	38.00	0
35.40	0	38.05	0
35.45	0	38.10	0
35.50	0	38.15	0
35.55	0	38.20	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		

# 817 Country Way Post

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 228

## Summary for Pond CB6: CB6

Inflow Area = 2,000 sf, 72.80% Impervious, Inflow Depth > 3.93" for 10-Year event  
Inflow = 0.20 cfs @ 12.07 hrs, Volume= 655 cf  
Outflow = 0.20 cfs @ 12.07 hrs, Volume= 655 cf, Atten= 0%, Lag= 0.0 min  
Primary = 0.20 cfs @ 12.07 hrs, Volume= 655 cf  
Routed to Pond DMH7 : DMH7  
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
Routed to Pond CB5 : CB5

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Peak Elev= 37.16' @ 12.07 hrs  
Flood Elev= 39.42'

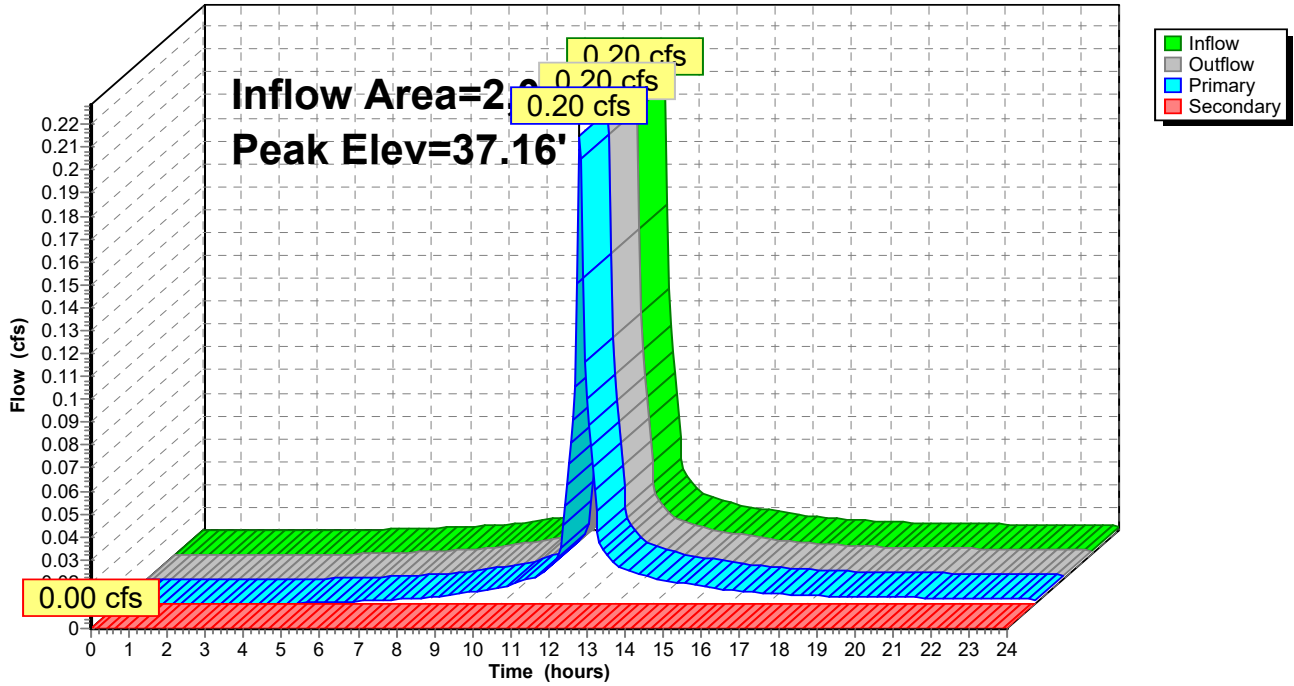
Device	Routing	Invert	Outlet Devices
#1	Primary	36.90'	<b>12.0" Round Culvert</b> L= 16.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 36.90' / 36.80' S= 0.0063 ' S= 0.0063 ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	40.00'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 24.0" x 24.0" Grate (69% open area) Limited to weir flow at low heads

**Primary OutFlow** Max=0.20 cfs @ 12.07 hrs HW=37.15' (Free Discharge)  
↑1=Culvert (Barrel Controls 0.20 cfs @ 1.90 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



**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 230

**Stage-Discharge for Pond CB6: CB6**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
36.90	0.00	0.00	<b>0.00</b>	39.55	5.55	5.55	0.00
36.95	0.01	0.01	0.00	39.60	5.61	5.61	0.00
37.00	0.03	0.03	0.00	39.65	5.67	5.67	0.00
37.05	0.07	0.07	0.00	39.70	5.74	5.74	0.00
37.10	0.12	0.12	0.00	39.75	5.80	5.80	0.00
37.15	0.19	0.19	0.00	39.80	5.86	5.86	0.00
37.20	0.27	0.27	0.00	39.85	5.92	5.92	0.00
37.25	0.36	0.36	0.00	39.90	5.98	5.98	0.00
37.30	0.47	0.47	0.00	39.95	6.04	6.04	0.00
37.35	0.58	0.58	0.00	40.00	<b>6.10</b>	<b>6.10</b>	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				
39.45	5.41	5.41	0.00				
39.50	5.48	5.48	0.00				

**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**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	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	39.68	0
37.58	0	38.64	0	39.70	0
37.60	0	38.66	0	39.72	0
37.62	0	38.68	0	39.74	0
37.64	0	38.70	0	39.76	0
37.66	0	38.72	0	39.78	0
37.68	0	38.74	0	39.80	0
37.70	0	38.76	0	39.82	0
37.72	0	38.78	0	39.84	0
37.74	0	38.80	0	39.86	0
37.76	0	38.82	0	39.88	0
37.78	0	38.84	0	39.90	0
37.80	0	38.86	0	39.92	0
37.82	0	38.88	0	39.94	0
37.84	0	38.90	0	39.96	0
37.86	0	38.92	0	39.98	0
37.88	0	38.94	0	40.00	0
37.90	0	38.96	0		
37.92	0	38.98	0		
37.94	0	39.00	0		

**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 232

**Summary for Pond CB9: CB9**

Inflow Area = 1,641 sf, 83.49% Impervious, Inflow Depth > 4.26" for 10-Year event  
 Inflow = 0.18 cfs @ 12.07 hrs, Volume= 582 cf  
 Outflow = 0.18 cfs @ 12.07 hrs, Volume= 582 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 0.18 cfs @ 12.07 hrs, Volume= 582 cf  
     Routed to Pond DMH7 : DMH7  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
     Routed to Pond CB5 : CB5

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 37.14' @ 12.07 hrs  
 Flood Elev= 39.42'

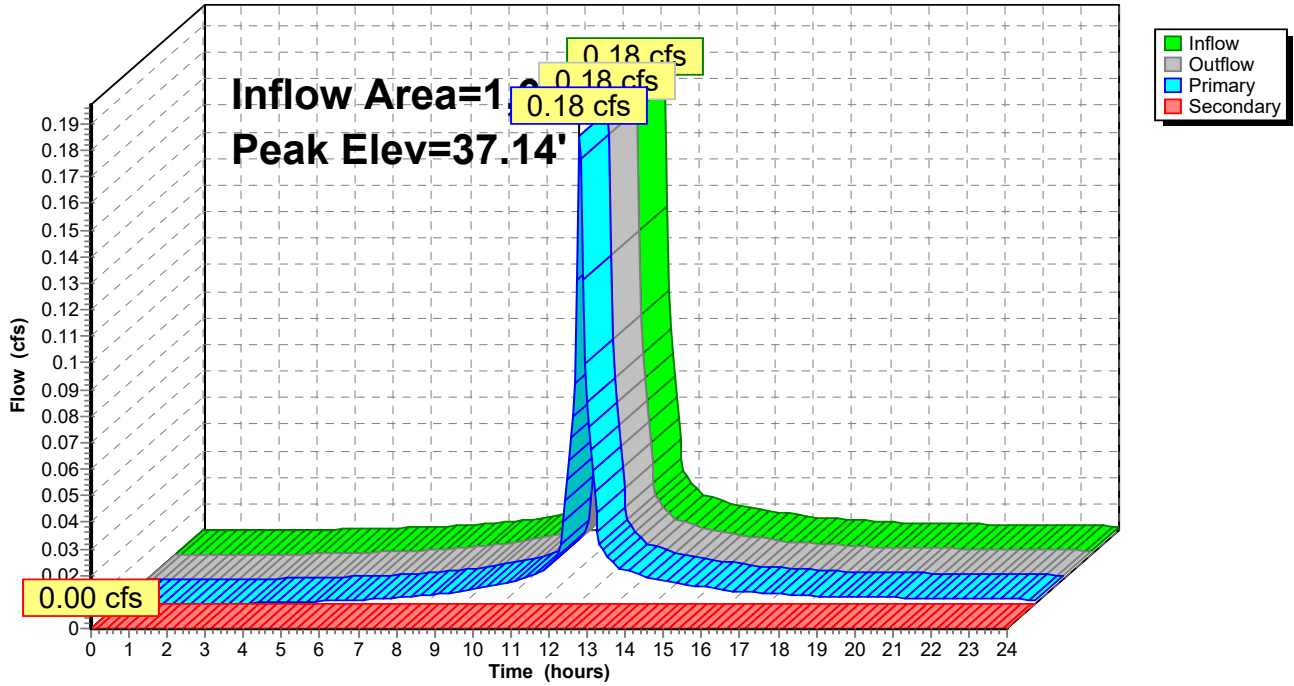
Device	Routing	Invert	Outlet Devices
#1	Primary	36.90'	<b>12.0" Round Culvert</b> L= 16.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 36.90' / 36.80' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	40.00'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

**Primary OutFlow** Max=0.17 cfs @ 12.07 hrs HW=37.13' (Free Discharge)  
 ↑1=Culvert (Barrel Controls 0.17 cfs @ 1.83 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



**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 234

**Stage-Discharge for Pond CB9: CB9**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
36.90	0.00	0.00	<b>0.00</b>	39.55	5.55	5.55	0.00
36.95	0.01	0.01	0.00	39.60	5.61	5.61	0.00
37.00	0.03	0.03	0.00	39.65	5.67	5.67	0.00
37.05	0.07	0.07	0.00	39.70	5.74	5.74	0.00
37.10	0.12	0.12	0.00	39.75	5.80	5.80	0.00
37.15	0.19	0.19	0.00	39.80	5.86	5.86	0.00
37.20	0.27	0.27	0.00	39.85	5.92	5.92	0.00
37.25	0.36	0.36	0.00	39.90	5.98	5.98	0.00
37.30	0.47	0.47	0.00	39.95	6.04	6.04	0.00
37.35	0.58	0.58	0.00	40.00	<b>6.10</b>	<b>6.10</b>	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				
39.45	5.41	5.41	0.00				
39.50	5.48	5.48	0.00				



**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**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	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	39.68	0
37.58	0	38.64	0	39.70	0
37.60	0	38.66	0	39.72	0
37.62	0	38.68	0	39.74	0
37.64	0	38.70	0	39.76	0
37.66	0	38.72	0	39.78	0
37.68	0	38.74	0	39.80	0
37.70	0	38.76	0	39.82	0
37.72	0	38.78	0	39.84	0
37.74	0	38.80	0	39.86	0
37.76	0	38.82	0	39.88	0
37.78	0	38.84	0	39.90	0
37.80	0	38.86	0	39.92	0
37.82	0	38.88	0	39.94	0
37.84	0	38.90	0	39.96	0
37.86	0	38.92	0	39.98	0
37.88	0	38.94	0	40.00	0
37.90	0	38.96	0		
37.92	0	38.98	0		
37.94	0	39.00	0		

# 817 Country Way Post

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 236

## Summary for Pond DMH11: DMH11

Inflow Area = 48,030 sf, 60.91% Impervious, Inflow Depth > 2.63" for 10-Year event  
Inflow = 1.76 cfs @ 12.09 hrs, Volume= 10,514 cf  
Outflow = 1.76 cfs @ 12.09 hrs, Volume= 10,514 cf, Atten= 0%, Lag= 0.0 min  
Primary = 1.76 cfs @ 12.09 hrs, Volume= 10,514 cf  
Routed to Pond SSD3 : SUBSURFACE DRAINAGE AREA #3

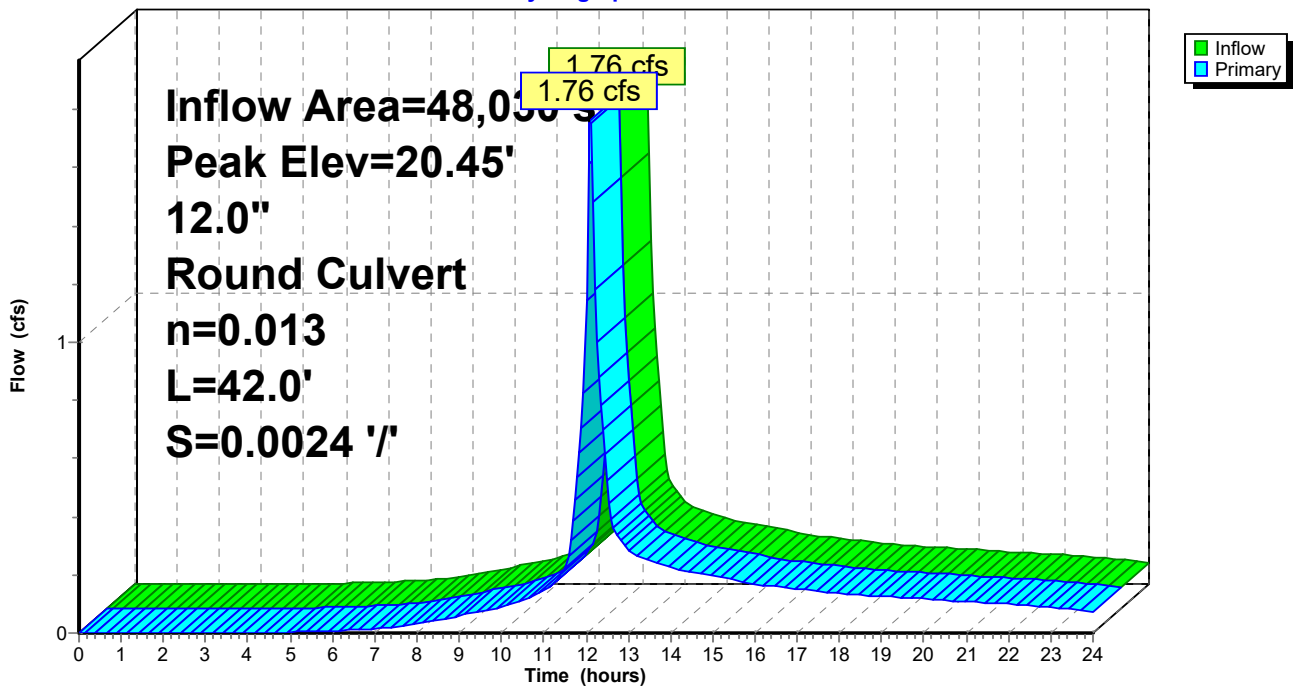
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Peak Elev= 20.45' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	19.50'	<b>12.0" Round Culvert</b> 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=1.73 cfs @ 12.09 hrs HW=20.44' (Free Discharge)  
↑1=Culvert (Barrel Controls 1.73 cfs @ 2.91 fps)

## Pond DMH11: DMH11

Hydrograph



**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 237

**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	<b>1.89</b>
19.98	0.53		
19.99	0.55		
20.00	0.57		
20.01	0.59		
20.02	0.61		

**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 238

**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 DMH7: DMH7**

Inflow Area = 3,641 sf, 77.62% Impervious, Inflow Depth > 4.08" for 10-Year event  
 Inflow = 0.38 cfs @ 12.07 hrs, Volume= 1,237 cf  
 Outflow = 0.38 cfs @ 12.07 hrs, Volume= 1,237 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 0.38 cfs @ 12.07 hrs, Volume= 1,237 cf  
 Routed to Pond SSD2 : SUBSURFACE DRAINAGE AREA #2

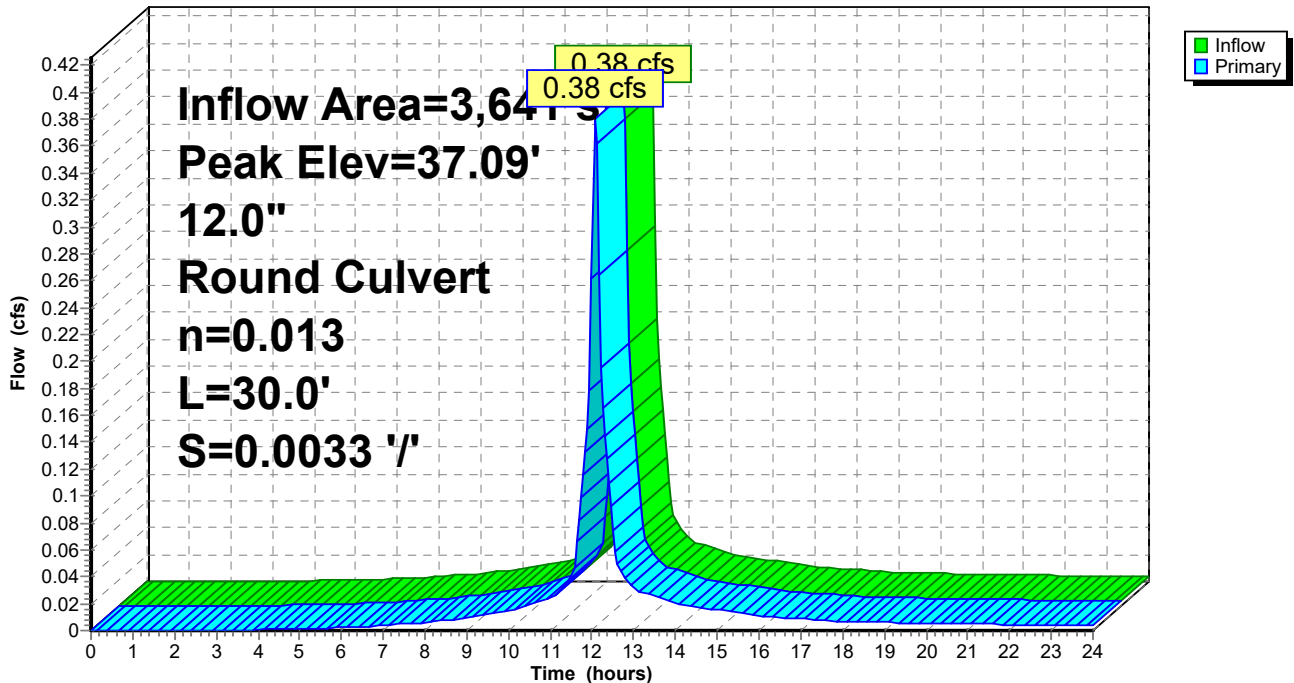
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 37.09' @ 12.07 hrs  
 Flood Elev= 39.67'

Device	Routing	Invert	Outlet Devices
#1	Primary	36.70'	<b>12.0" Round Culvert</b> 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=0.37 cfs @ 12.07 hrs HW=37.08' (Free Discharge)  
 ↑**1=Culvert** (Barrel Controls 0.37 cfs @ 1.99 fps)

**Pond DMH7: DMH7**

Hydrograph



**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 240

**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	<b>5.79</b>
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		

**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 241

**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		

**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 242

**Summary for Pond SSD1: SUBSURFACE DRAINAGE AREA #1**

Inflow Area = 12,831 sf, 60.28% Impervious, Inflow Depth > 3.72" for 10-Year event  
 Inflow = 1.23 cfs @ 12.07 hrs, Volume= 3,983 cf  
 Outflow = 0.07 cfs @ 11.10 hrs, Volume= 3,813 cf, Atten= 94%, Lag= 0.0 min  
 Discarded = 0.07 cfs @ 11.10 hrs, Volume= 3,813 cf  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
 Routed to Pond CB13 : CB13  
 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= 34.80' @ 13.95 hrs Surf.Area= 2,994 sf Storage= 1,769 cf

Plug-Flow detention time= 222.8 min calculated for 3,813 cf (96% of inflow)  
 Center-of-Mass det. time= 198.2 min ( 982.8 - 784.6 )

Volume	Invert	Avail.Storage	Storage Description
#1A	33.80'	1,232 cf	<b>21.67'W x 92.50'L x 2.04'H Field A</b> 4,092 cf Overall - 1,011 cf Embedded = 3,081 cf x 40.0% Voids
#2A	34.30'	1,011 cf	<b>Cultec C-100HD</b> x 72 Inside #1 Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.86 sf x 6 rows
#3B	33.80'	515 cf	<b>11.67'W x 70.00'L x 2.04'H Field B</b> 1,667 cf Overall - 380 cf Embedded = 1,288 cf x 40.0% Voids
#4B	34.30'	380 cf	<b>Cultec C-100HD</b> x 27 Inside #3 Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.86 sf x 3 rows
#5C	33.80'	118 cf	<b>9.33'W x 18.50'L x 2.04'H Field C</b> 353 cf Overall - 58 cf Embedded = 295 cf x 40.0% Voids
#6C	34.30'	58 cf	<b>Cultec C-100HD</b> x 4 Inside #5 Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.86 sf x 2 rows
		3,314 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	33.80'	<b>1.020 in/hr Exfiltration over Surface area</b> Phase-In= 0.01'
#2	Primary	35.50'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Secondary	35.00'	<b>2.0" Round Culvert</b> L= 267.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.00' / 19.00' S= 0.0599 '/ Cc= 0.900 n= 0.013, Flow Area= 0.02 sf



Discarded OutFlow Max=0.07 cfs @ 11.10 hrs HW=33.82' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.07 cfs)

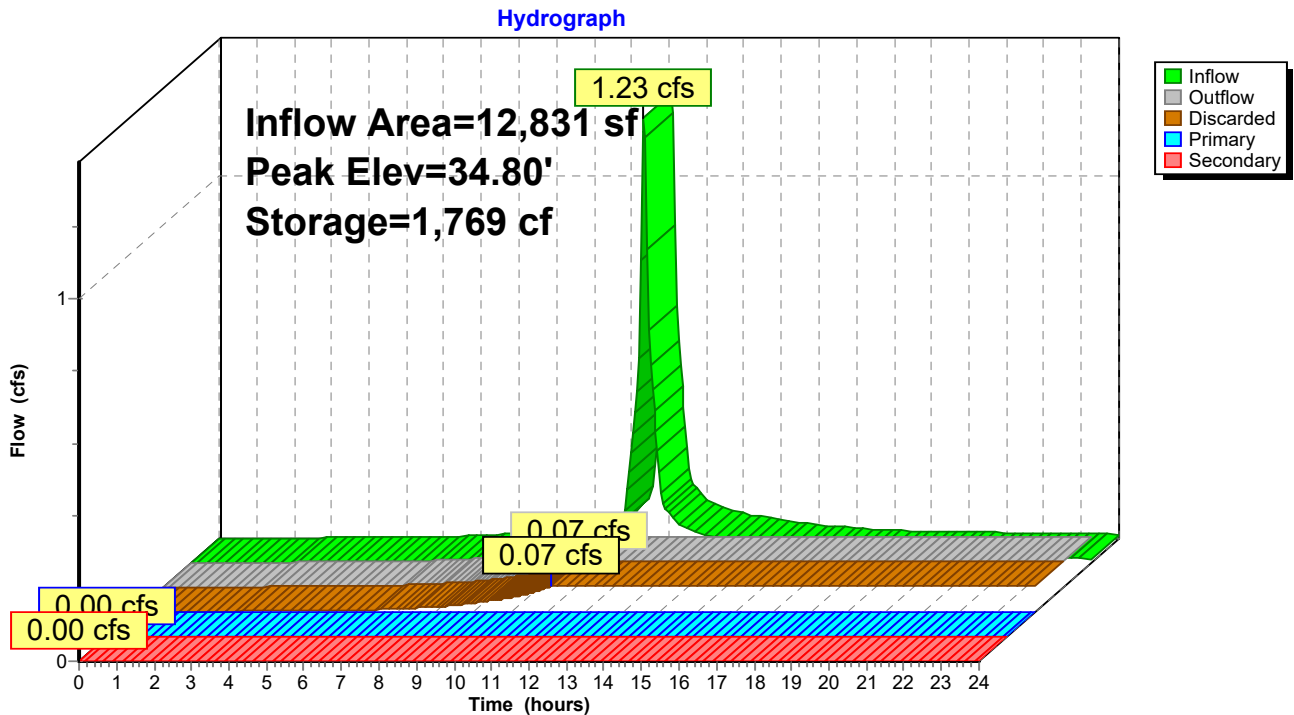
Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=33.80' (Free Discharge)

↑2=Orifice/Grate ( Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=33.80' (Free Discharge)

↑3=Culvert ( Controls 0.00 cfs)

**Pond SSD1: SUBSURFACE DRAINAGE AREA #1**



**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 244

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

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
33.80	0.00	<b>0.00</b>	0.00	0.00
33.85	0.07	<b>0.07</b>	0.00	0.00
33.90	0.07	0.07	0.00	0.00
33.95	0.07	0.07	0.00	0.00
34.00	0.07	0.07	0.00	0.00
34.05	0.07	0.07	0.00	0.00
34.10	0.07	0.07	0.00	0.00
34.15	0.07	0.07	0.00	0.00
34.20	0.07	0.07	0.00	0.00
34.25	0.07	0.07	0.00	0.00
34.30	0.07	0.07	0.00	0.00
34.35	0.07	0.07	0.00	0.00
34.40	0.07	0.07	0.00	0.00
34.45	0.07	0.07	0.00	0.00
34.50	0.07	0.07	0.00	0.00
34.55	0.07	0.07	0.00	0.00
34.60	0.07	0.07	0.00	0.00
34.65	0.07	0.07	0.00	0.00
34.70	0.07	0.07	0.00	0.00
34.75	0.07	0.07	0.00	0.00
34.80	0.07	0.07	0.00	0.00
34.85	0.07	0.07	0.00	0.00
34.90	0.07	0.07	0.00	0.00
34.95	0.07	0.07	0.00	0.00
35.00	0.07	0.07	0.00	0.00
35.05	0.07	0.07	0.00	0.00
35.10	0.09	0.07	0.00	0.01
35.15	0.10	0.07	0.00	0.03
35.20	0.11	0.07	0.00	0.04
35.25	0.11	0.07	0.00	0.04
35.30	0.12	0.07	0.00	0.05
35.35	0.12	0.07	0.00	0.05
35.40	0.13	0.07	0.00	0.06
35.45	0.13	0.07	0.00	0.06
35.50	0.14	0.07	0.00	0.07
35.55	0.39	0.07	0.24	0.07
35.60	0.83	0.07	0.69	0.07
35.65	1.41	0.07	1.27	0.07
35.70	2.09	0.07	1.95	0.07
35.75	2.87	0.07	2.73	0.07
35.80	<b>3.73</b>	0.07	<b>3.58</b>	<b>0.07</b>

**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 245

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

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
33.80	<b>2,994</b>	0	34.86	2,994	1,891
33.82	2,994	24	34.88	2,994	1,933
33.84	2,994	48	34.90	2,994	1,976
33.86	2,994	72	34.92	2,994	2,018
33.88	2,994	96	34.94	2,994	2,059
33.90	2,994	120	34.96	2,994	2,100
33.92	2,994	144	34.98	2,994	2,141
33.94	2,994	168	35.00	2,994	2,181
33.96	2,994	192	35.02	2,994	2,220
33.98	2,994	216	35.04	2,994	2,259
34.00	2,994	239	35.06	2,994	2,296
34.02	2,994	263	35.08	2,994	2,333
34.04	2,994	287	35.10	2,994	2,369
34.06	2,994	311	35.12	2,994	2,404
34.08	2,994	335	35.14	2,994	2,438
34.10	2,994	359	35.16	2,994	2,471
34.12	2,994	383	35.18	2,994	2,502
34.14	2,994	407	35.20	2,994	2,532
34.16	2,994	431	35.22	2,994	2,561
34.18	2,994	455	35.24	2,994	2,589
34.20	2,994	479	35.26	2,994	2,615
34.22	2,994	503	35.28	2,994	2,641
34.24	2,994	527	35.30	2,994	2,665
34.26	2,994	551	35.32	2,994	2,689
34.28	2,994	575	35.34	2,994	2,713
34.30	2,994	599	35.36	2,994	2,737
34.32	2,994	647	35.38	2,994	2,761
34.34	2,994	696	35.40	2,994	2,785
34.36	2,994	744	35.42	2,994	2,809
34.38	2,994	792	35.44	2,994	2,833
34.40	2,994	840	35.46	2,994	2,857
34.42	2,994	887	35.48	2,994	2,881
34.44	2,994	935	35.50	2,994	2,905
34.46	2,994	982	35.52	2,994	2,928
34.48	2,994	1,028	35.54	2,994	2,952
34.50	2,994	1,075	35.56	2,994	2,976
34.52	2,994	1,122	35.58	2,994	3,000
34.54	2,994	1,168	35.60	2,994	3,024
34.56	2,994	1,215	35.62	2,994	3,048
34.58	2,994	1,262	35.64	2,994	3,072
34.60	2,994	1,308	35.66	2,994	3,096
34.62	2,994	1,354	35.68	2,994	3,120
34.64	2,994	1,400	35.70	2,994	3,144
34.66	2,994	1,446	35.72	2,994	3,168
34.68	2,994	1,492	35.74	2,994	3,192
34.70	2,994	1,537	35.76	2,994	3,216
34.72	2,994	1,582	35.78	2,994	3,240
34.74	2,994	1,627	35.80	2,994	3,264
34.76	2,994	1,672	35.82	2,994	3,288
34.78	2,994	1,716	35.84	2,994	<b>3,312</b>
34.80	2,994	1,760			
34.82	2,994	1,804			
34.84	2,994	1,847			

# 817 Country Way Post

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 246

## Summary for Pond SSD2: SUBSURFACE DRAINAGE AREA #2

Inflow Area = 3,641 sf, 77.62% Impervious, Inflow Depth > 4.08" for 10-Year event  
 Inflow = 0.38 cfs @ 12.07 hrs, Volume= 1,237 cf  
 Outflow = 0.05 cfs @ 11.70 hrs, Volume= 1,234 cf, Atten= 88%, Lag= 0.0 min  
 Discarded = 0.05 cfs @ 11.70 hrs, Volume= 1,234 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 Pond CB5 : CB5

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 36.24' @ 12.64 hrs Surf.Area= 1,960 sf Storage= 423 cf

Plug-Flow detention time= 67.4 min calculated for 1,234 cf (100% of inflow)  
 Center-of-Mass det. time= 65.9 min ( 845.4 - 779.6 )

Volume	Invert	Avail.Storage	Storage Description
#1B	35.70'	2,483 cf	<b>16.00'W x 122.50'L x 4.54'H Field B</b> 8,902 cf Overall - 2,694 cf Embedded = 6,208 cf x 40.0% Voids
#2B	36.70'	2,694 cf	<b>Cultec R-330XLHD x 51 Inside #1</b> 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'	<b>1.020 in/hr Exfiltration over Surface area</b>
#2	Secondary	40.60'	<b>4.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Primary	38.70'	<b>6.0" Round Culvert</b> L= 23.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 38.70' / 35.60' S= 0.1348 1/1' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf

**Discarded OutFlow** Max=0.05 cfs @ 11.70 hrs HW=35.75' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

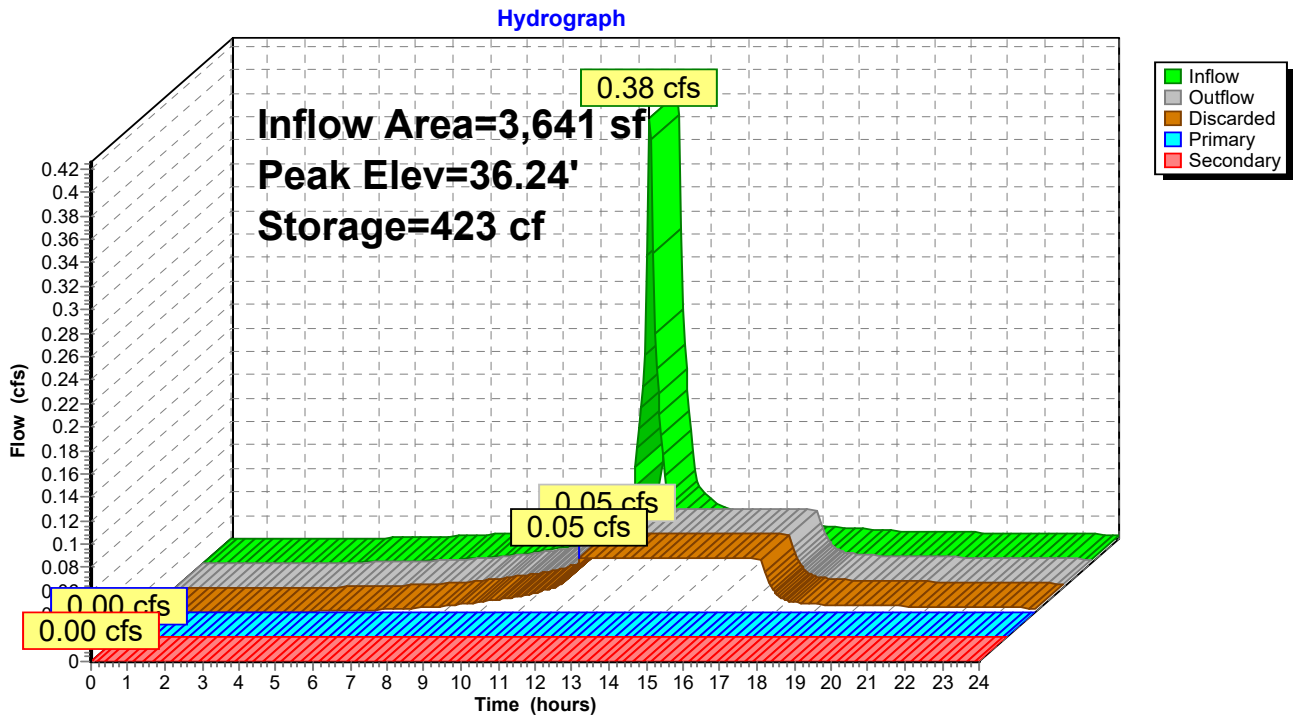
**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=35.70' (Free Discharge)

↑**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



**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 248

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

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
35.70	0.00	<b>0.00</b>	0.00	<b>0.00</b>
35.80	0.05	<b>0.05</b>	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	<b>1.26</b>	0.05	<b>1.21</b>	0.00

**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 249

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

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

# 817 Country Way Post

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 250

## Summary for Pond SSD3: SUBSURFACE DRAINAGE AREA #3

Inflow Area = 51,552 sf, 63.58% Impervious, Inflow Depth > 2.77" for 10-Year event  
 Inflow = 2.14 cfs @ 12.09 hrs, Volume= 11,897 cf  
 Outflow = 1.79 cfs @ 12.15 hrs, Volume= 10,844 cf, Atten= 17%, Lag= 3.8 min  
 Discarded = 0.03 cfs @ 7.60 hrs, Volume= 1,859 cf  
 Primary = 1.76 cfs @ 12.15 hrs, Volume= 8,986 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= 20.26' @ 12.15 hrs Surf.Area= 1,203 sf Storage= 1,618 cf

Plug-Flow detention time= 76.1 min calculated for 10,844 cf (91% of inflow)  
 Center-of-Mass det. time= 30.0 min ( 900.6 - 870.6 )

Volume	Invert	Avail.Storage	Storage Description
#1A	18.00'	722 cf	<b>8.33'W x 81.00'L x 3.54'H Field A</b> 2,391 cf Overall - 585 cf Embedded = 1,806 cf x 40.0% Voids
#2A	18.50'	585 cf	<b>Cultec R-330XLHD x 11 Inside #1</b> 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	<b>12.50'W x 28.00'L x 3.54'H Field B</b> 1,240 cf Overall - 335 cf Embedded = 904 cf x 40.0% Voids
#4B	18.50'	335 cf	<b>Cultec R-330XLHD x 6 Inside #3</b> 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	<b>13.00'W x 13.67'L x 3.54'H Field C</b> 629 cf Overall - 127 cf Embedded = 503 cf x 40.0% Voids
#6C	18.50'	127 cf	<b>Cultec R-330XLHD x 2 Inside #5</b> 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'	<b>1.020 in/hr Exfiltration over Surface area</b> Phase-In= 0.01'
#2	Primary	19.40'	<b>10.0" Round Culvert</b> L= 14.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 19.40' / 18.40' S= 0.0714 '/ Cc= 0.900 n= 0.013, Flow Area= 0.55 sf
#3	Secondary	22.00'	<b>20.0" x 20.0" Horiz. Orifice/Grate X 2.00</b> C= 0.600 Limited to weir flow at low heads



Discarded OutFlow Max=0.03 cfs @ 7.60 hrs HW=18.04' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.03 cfs)

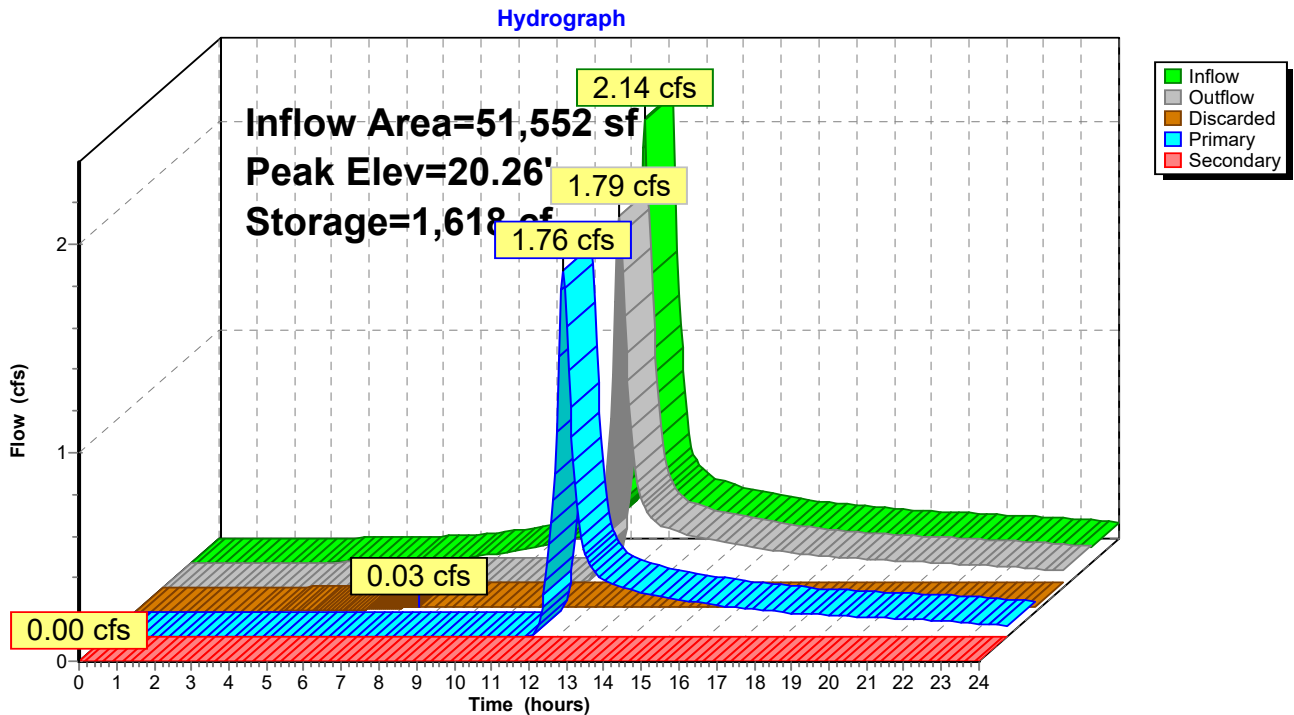
Primary OutFlow Max=1.75 cfs @ 12.15 hrs HW=20.26' (Free Discharge)

↑2=Culvert (Inlet Controls 1.75 cfs @ 3.22 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**



**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 252

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

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
18.00	0.00	<b>0.00</b>	0.00	<b>0.00</b>
18.10	0.03	<b>0.03</b>	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	0.03	0.03	0.00	0.00
19.50	0.07	0.03	0.04	0.00
19.60	0.18	0.03	0.15	0.00
19.70	0.36	0.03	0.33	0.00
19.80	0.59	0.03	0.56	0.00
19.90	0.85	0.03	0.82	0.00
20.00	1.14	0.03	1.11	0.00
20.10	1.42	0.03	1.39	0.00
20.20	1.67	0.03	1.64	0.00
20.30	1.85	0.03	1.83	0.00
20.40	2.03	0.03	2.01	0.00
20.50	2.20	0.03	2.17	0.00
20.60	2.35	0.03	2.32	0.00
20.70	2.50	0.03	2.47	0.00
20.80	2.63	0.03	2.60	0.00
20.90	2.76	0.03	2.73	0.00
21.00	2.89	0.03	2.86	0.00
21.10	3.00	0.03	2.98	0.00
21.20	3.12	0.03	3.09	0.00
21.30	3.23	0.03	3.20	0.00
21.40	3.33	0.03	3.30	0.00
21.50	3.44	0.03	3.41	0.00
21.60	3.54	0.03	3.51	0.00
21.70	3.63	0.03	3.60	0.00
21.80	3.73	0.03	3.70	0.00
21.90	3.82	0.03	3.79	0.00
22.00	<b>3.91</b>	0.03	<b>3.88</b>	0.00

**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 253

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

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
18.00	<b>1,203</b>	0	20.65	1,203	1,877
18.05	1,203	24	20.70	1,203	1,908
18.10	1,203	48	20.75	1,203	1,938
18.15	1,203	72	20.80	1,203	1,967
18.20	1,203	96	20.85	1,203	1,994
18.25	1,203	120	20.90	1,203	2,021
18.30	1,203	144	20.95	1,203	2,047
18.35	1,203	168	21.00	1,203	2,071
18.40	1,203	192	21.05	1,203	2,095
18.45	1,203	216	21.10	1,203	2,119
18.50	1,203	241	21.15	1,203	2,143
18.55	1,203	281	21.20	1,203	2,168
18.60	1,203	322	21.25	1,203	2,192
18.65	1,203	363	21.30	1,203	2,216
18.70	1,203	403	21.35	1,203	2,240
18.75	1,203	444	21.40	1,203	2,264
18.80	1,203	484	21.45	1,203	2,288
18.85	1,203	525	21.50	1,203	2,312
18.90	1,203	565	21.55	1,203	<b>2,332</b>
18.95	1,203	605	21.60	1,203	2,332
19.00	1,203	646	21.65	1,203	2,332
19.05	1,203	686	21.70	1,203	2,332
19.10	1,203	726	21.75	1,203	2,332
19.15	1,203	766	21.80	1,203	2,332
19.20	1,203	806	21.85	1,203	2,332
19.25	1,203	845	21.90	1,203	2,332
19.30	1,203	885	21.95	1,203	2,332
19.35	1,203	924	22.00	1,203	2,332
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			

**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 254

**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= 1,637 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  
 Tertiary = 0.21 cfs @ 12.25 hrs, Volume= 779 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= 843 cf

Plug-Flow detention time= 153.2 min calculated for 1,634 cf (74% of inflow)  
 Center-of-Mass det. time= 66.4 min ( 813.3 - 746.9 )

Volume	Invert	Avail.Storage	Storage Description
#1A	34.50'	487 cf	<b>11.17'W x 31.50'L x 4.71'H Field A</b> 1,656 cf Overall - 440 cf Embedded = 1,217 cf x 40.0% Voids
#2A	35.00'	440 cf	<b>Cultec R-330XLHD x 8 Inside #1</b> 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'	100 cf	<b>6.33'W x 10.50'L x 4.71'H Field B</b> 313 cf Overall - 63 cf Embedded = 250 cf x 40.0% Voids
#4B	35.00'	63 cf	<b>Cultec R-330XLHD Inside #3</b> 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'	100 cf	<b>6.33'W x 10.50'L x 4.71'H Field C</b> 313 cf Overall - 63 cf Embedded = 250 cf x 40.0% Voids
#6C	35.00'	63 cf	<b>Cultec R-330XLHD Inside #5</b> 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
		1,253 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'	<b>1.020 in/hr Exfiltration over Surface area</b>
#2	Primary	37.00'	<b>4.0" Round Culvert</b> 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
#3	Tertiary	36.50'	<b>4.0" Round Culvert</b> 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)

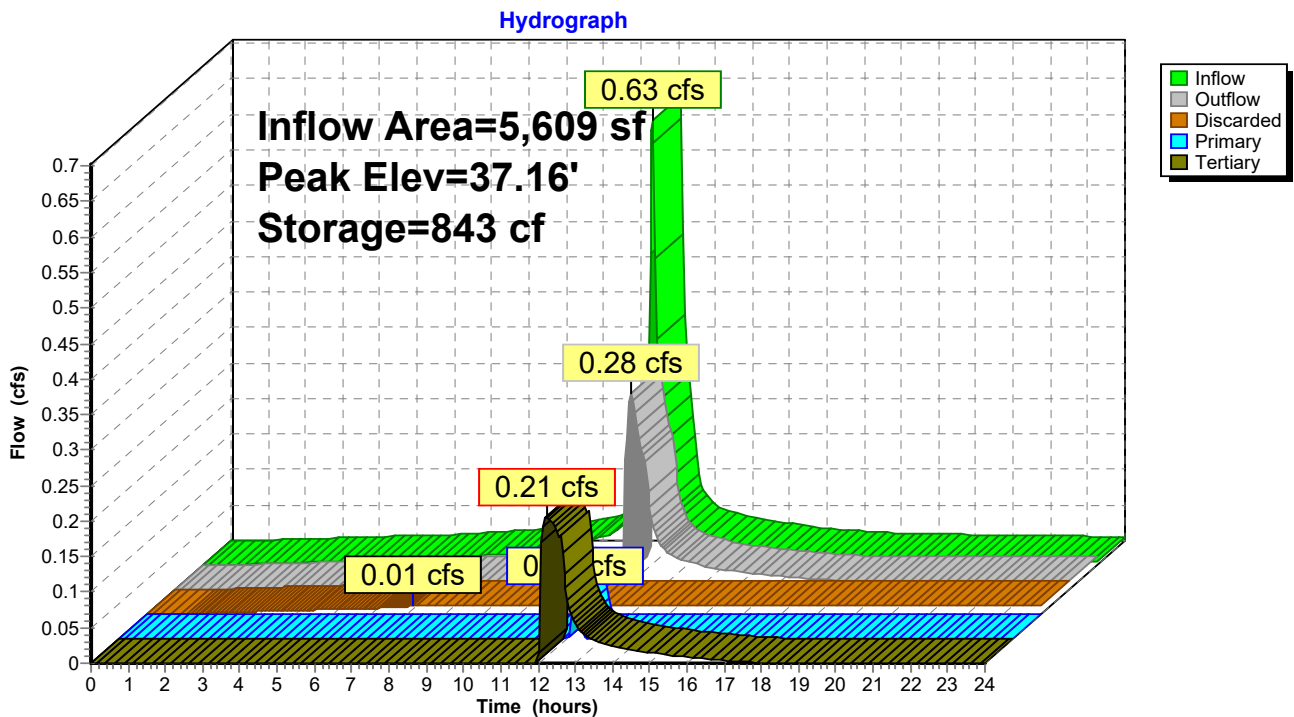
Primary OutFlow Max=0.06 cfs @ 12.25 hrs HW=37.16' (Free Discharge)

↑2=Culvert (Inlet Controls 0.06 cfs @ 1.38 fps)

Tertiary OutFlow Max=0.21 cfs @ 12.25 hrs HW=37.16' (Free Discharge)

↑3=Culvert (Barrel Controls 0.21 cfs @ 2.35 fps)

**Pond SSD4: SUBSURFACE DRAINAGE AREA #4**



**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 256

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

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

**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 257

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

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
34.50	485	0	37.15	485	840
34.55	485	10	37.20	485	853
34.60	485	19	37.25	485	866
34.65	485	29	37.30	485	878
34.70	485	39	37.35	485	890
34.75	485	48	37.40	485	901
34.80	485	58	37.45	485	911
34.85	485	68	37.50	485	921
34.90	485	78	37.55	485	931
34.95	485	87	37.60	485	941
35.00	485	97	37.65	485	951
35.05	485	116	37.70	485	960
35.10	485	134	37.75	485	970
35.15	485	153	37.80	485	980
35.20	485	172	37.85	485	989
35.25	485	190	37.90	485	999
35.30	485	209	37.95	485	1,009
35.35	485	227	38.00	485	1,018
35.40	485	246	38.05	485	1,028
35.45	485	264	38.10	485	1,038
35.50	485	283	38.15	485	1,048
35.55	485	301	38.20	485	1,057
35.60	485	320	38.25	485	1,067
35.65	485	338	38.30	485	1,077
35.70	485	356	38.35	485	1,086
35.75	485	374	38.40	485	1,096
35.80	485	392	38.45	485	1,106
35.85	485	410	38.50	485	1,115
35.90	485	428	38.55	485	1,125
35.95	485	446	38.60	485	1,135
36.00	485	464	38.65	485	1,144
36.05	485	482	38.70	485	1,154
36.10	485	500	38.75	485	1,164
36.15	485	518	38.80	485	1,174
36.20	485	535	38.85	485	1,183
36.25	485	553	38.90	485	1,193
36.30	485	571	38.95	485	1,203
36.35	485	588	39.00	485	1,212
36.40	485	605	39.05	485	1,222
36.45	485	622	39.10	485	1,232
36.50	485	639	39.15	485	1,241
36.55	485	656	39.20	485	1,251
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			

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

Inflow Area = 15,330 sf, 78.87% Impervious, Inflow Depth > 4.14" for 10-Year event  
 Inflow = 1.49 cfs @ 12.09 hrs, Volume= 5,285 cf  
 Outflow = 0.12 cfs @ 13.19 hrs, Volume= 4,965 cf, Atten= 92%, Lag= 65.9 min  
 Primary = 0.12 cfs @ 13.19 hrs, Volume= 4,965 cf  
 Routed to Pond DMH11 : DMH11  
 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= 32.33' @ 13.19 hrs Surf.Area= 2,920 sf Storage= 2,571 cf

Plug-Flow detention time= 232.6 min calculated for 4,965 cf (94% of inflow)  
 Center-of-Mass det. time= 199.6 min ( 977.6 - 778.1 )

Volume	Invert	Avail.Storage	Storage Description
#1A	31.00'	2,550 cf	<b>26.67'W x 109.50'L x 3.54'H Field A</b> 10,342 cf Overall - 3,968 cf Embedded = 6,374 cf x 40.0% Voids
#2A	31.50'	3,968 cf	<b>Cultec R-330XLHD x 75 Inside #1</b> 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
		6,517 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	31.00'	<b>6.0" Round Culvert</b> L= 175.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 31.00' / 19.00' S= 0.0686 1/1 Cc= 0.900 n= 0.013, Flow Area= 0.20 sf
#2	Secondary	36.50'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Device 1	19.25'	<b>2.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Primary OutFlow** Max=0.12 cfs @ 13.19 hrs HW=32.33' (Free Discharge)

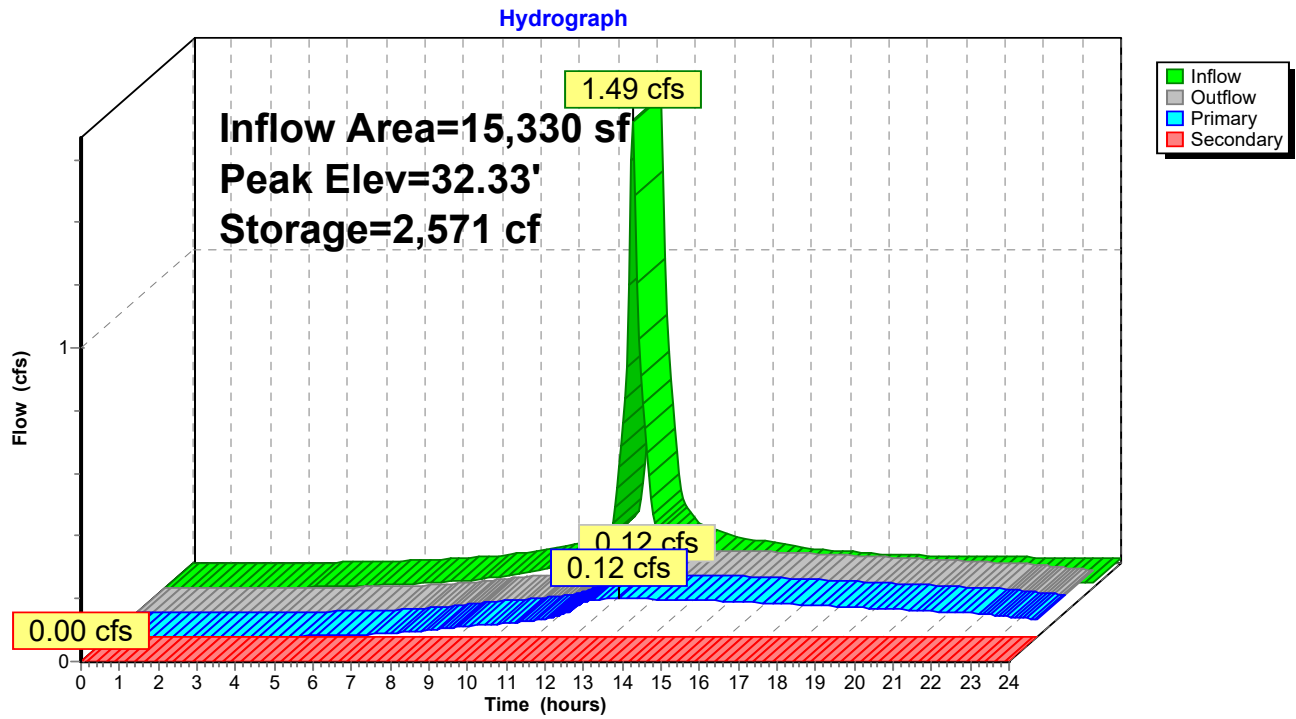
- ↑1=Culvert (Passes 0.12 cfs of 0.98 cfs potential flow)
- ↑3=Orifice/Grate (Orifice Controls 0.12 cfs @ 5.55 fps)

**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)



**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 260

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

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
31.00	0.00	0.00	<b>0.00</b>	36.30	0.24	0.24	0.00
31.10	0.03	0.03	0.00	36.40	0.24	0.24	0.00
31.20	0.05	0.05	0.00	36.50	<b>0.25</b>	<b>0.25</b>	0.00
31.30	0.06	0.06	0.00				
31.40	0.07	0.07	0.00				
31.50	0.07	0.07	0.00				
31.60	0.08	0.08	0.00				
31.70	0.09	0.09	0.00				
31.80	0.09	0.09	0.00				
31.90	0.10	0.10	0.00				
32.00	0.11	0.11	0.00				
32.10	0.11	0.11	0.00				
32.20	0.12	0.12	0.00				
32.30	0.12	0.12	0.00				
32.40	0.12	0.12	0.00				
32.50	0.13	0.13	0.00				
32.60	0.13	0.13	0.00				
32.70	0.14	0.14	0.00				
32.80	0.14	0.14	0.00				
32.90	0.14	0.14	0.00				
33.00	0.15	0.15	0.00				
33.10	0.15	0.15	0.00				
33.20	0.16	0.16	0.00				
33.30	0.16	0.16	0.00				
33.40	0.16	0.16	0.00				
33.50	0.17	0.17	0.00				
33.60	0.17	0.17	0.00				
33.70	0.17	0.17	0.00				
33.80	0.18	0.18	0.00				
33.90	0.18	0.18	0.00				
34.00	0.18	0.18	0.00				
34.10	0.18	0.18	0.00				
34.20	0.19	0.19	0.00				
34.30	0.19	0.19	0.00				
34.40	0.19	0.19	0.00				
34.50	0.20	0.20	0.00				
34.60	0.20	0.20	0.00				
34.70	0.20	0.20	0.00				
34.80	0.20	0.20	0.00				
34.90	0.21	0.21	0.00				
35.00	0.21	0.21	0.00				
35.10	0.21	0.21	0.00				
35.20	0.22	0.22	0.00				
35.30	0.22	0.22	0.00				
35.40	0.22	0.22	0.00				
35.50	0.22	0.22	0.00				
35.60	0.23	0.23	0.00				
35.70	0.23	0.23	0.00				
35.80	0.23	0.23	0.00				
35.90	0.23	0.23	0.00				
36.00	0.23	0.23	0.00				
36.10	0.24	0.24	0.00				
36.20	0.24	0.24	0.00				

# 817 Country Way Post

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 261

## 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	5,379	36.30	6,517
31.05	58	33.70	5,463	36.35	6,517
31.10	117	33.75	5,543	36.40	6,517
31.15	175	33.80	5,619	36.45	6,517
31.20	234	33.85	5,691	36.50	6,517
31.25	292	33.90	5,759		
31.30	350	33.95	5,824		
31.35	409	34.00	5,885		
31.40	467	34.05	5,943		
31.45	526	34.10	6,001		
31.50	584	34.15	6,060		
31.55	706	34.20	6,118		
31.60	828	34.25	6,177		
31.65	949	34.30	6,235		
31.70	1,070	34.35	6,293		
31.75	1,190	34.40	6,352		
31.80	1,311	34.45	6,410		
31.85	1,431	34.50	6,469		
31.90	1,552	34.55	<b>6,517</b>		
31.95	1,672	34.60	6,517		
32.00	1,792	34.65	6,517		
32.05	1,912	34.70	6,517		
32.10	2,031	34.75	6,517		
32.15	2,149	34.80	6,517		
32.20	2,267	34.85	6,517		
32.25	2,384	34.90	6,517		
32.30	2,501	34.95	6,517		
32.35	2,618	35.00	6,517		
32.40	2,734	35.05	6,517		
32.45	2,850	35.10	6,517		
32.50	2,966	35.15	6,517		
32.55	3,082	35.20	6,517		
32.60	3,198	35.25	6,517		
32.65	3,313	35.30	6,517		
32.70	3,427	35.35	6,517		
32.75	3,542	35.40	6,517		
32.80	3,655	35.45	6,517		
32.85	3,766	35.50	6,517		
32.90	3,877	35.55	6,517		
32.95	3,986	35.60	6,517		
33.00	4,095	35.65	6,517		
33.05	4,202	35.70	6,517		
33.10	4,309	35.75	6,517		
33.15	4,414	35.80	6,517		
33.20	4,518	35.85	6,517		
33.25	4,620	35.90	6,517		
33.30	4,722	35.95	6,517		
33.35	4,821	36.00	6,517		
33.40	4,919	36.05	6,517		
33.45	5,015	36.10	6,517		
33.50	5,110	36.15	6,517		
33.55	5,202	36.20	6,517		
33.60	5,292	36.25	6,517		

**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 262

**Summary for Pond SSD6: SUBSURFACE DRAINAGE AREA #6 (STORAGE)**

Inflow Area = 7,296 sf, 79.98% Impervious, Inflow Depth > 4.14" for 10-Year event  
 Inflow = 0.77 cfs @ 12.07 hrs, Volume= 2,514 cf  
 Outflow = 0.05 cfs @ 13.29 hrs, Volume= 2,200 cf, Atten= 93%, Lag= 73.3 min  
 Primary = 0.05 cfs @ 13.29 hrs, Volume= 2,200 cf  
     Routed to Reach DP3 : DP3  
 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= 24.36' @ 13.29 hrs Surf.Area= 295 sf Storage= 1,287 cf

Plug-Flow detention time= 259.2 min calculated for 2,200 cf (87% of inflow)  
 Center-of-Mass det. time= 202.3 min ( 978.3 - 776.0 )

Volume	Invert	Avail.Storage	Storage Description
#1	20.00'	2,360 cf	<b>10.00'W x 29.50'L x 8.00'H Prismatic</b>

Device	Routing	Invert	Outlet Devices
#1	Secondary	29.10'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#2	Primary	20.00'	<b>4.0" Round Culvert</b> L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 20.00' / 19.00' S= 0.0100 1/1' Cc= 0.900 n= 0.013, Flow Area= 0.09 sf
#3	Device 2	19.00'	<b>1.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Primary OutFlow** Max=0.05 cfs @ 13.29 hrs HW=24.36' (Free Discharge)

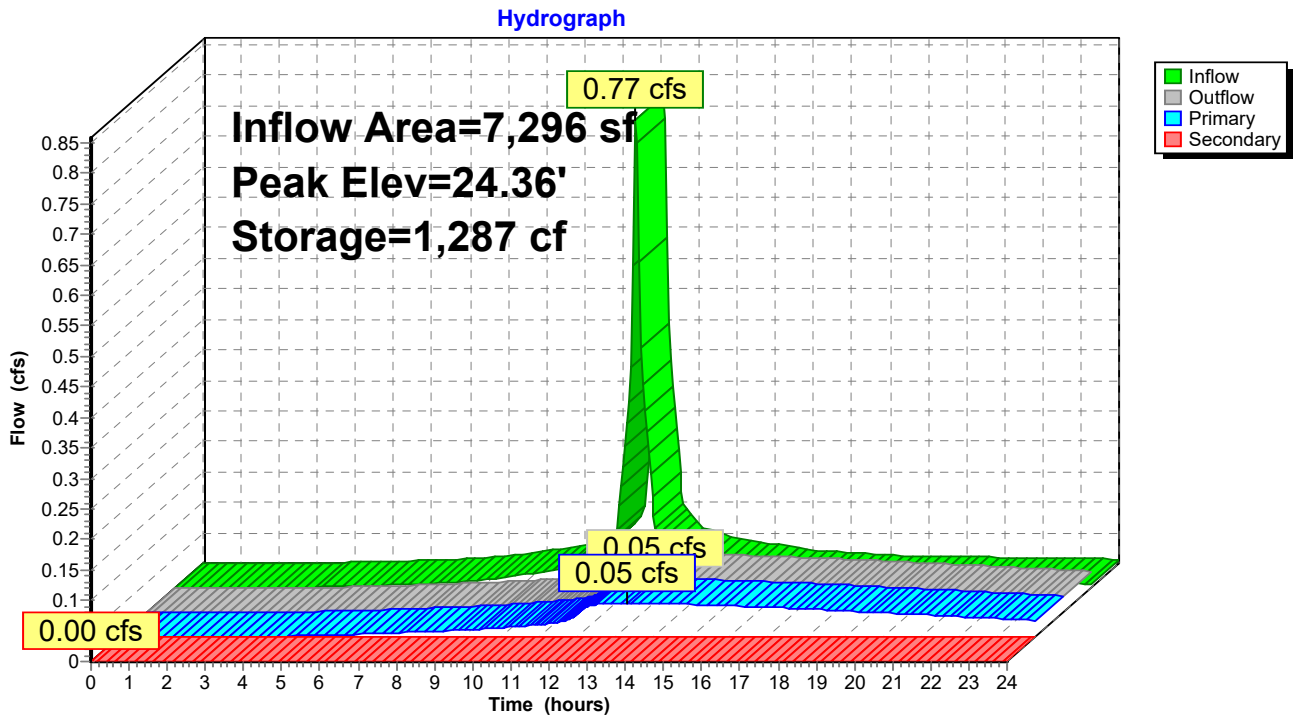
↑**2=Culvert** (Passes 0.05 cfs of 0.40 cfs potential flow)

↑**3=Orifice/Grate** (Orifice Controls 0.05 cfs @ 10.06 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=20.00' (Free Discharge)

↑**1=Orifice/Grate** ( Controls 0.00 cfs)

**Pond SSD6: SUBSURFACE DRAINAGE AREA #6 (STORAGE)**



**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 264

**Stage-Discharge for Pond SSD6: SUBSURFACE DRAINAGE AREA #6 (STORAGE)**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
20.00	0.00	0.00	<b>0.00</b>	25.30	0.06	0.06	0.00
20.10	0.01	0.01	0.00	25.40	0.06	0.06	0.00
20.20	0.01	0.01	0.00	25.50	0.06	0.06	0.00
20.30	0.01	0.01	0.00	25.60	0.06	0.06	0.00
20.40	0.02	0.02	0.00	25.70	0.06	0.06	0.00
20.50	0.02	0.02	0.00	25.80	0.06	0.06	0.00
20.60	0.02	0.02	0.00	25.90	0.06	0.06	0.00
20.70	0.02	0.02	0.00	26.00	0.06	0.06	0.00
20.80	0.02	0.02	0.00	26.10	0.06	0.06	0.00
20.90	0.02	0.02	0.00	26.20	0.07	0.07	0.00
21.00	0.03	0.03	0.00	26.30	0.07	0.07	0.00
21.10	0.03	0.03	0.00	26.40	0.07	0.07	0.00
21.20	0.03	0.03	0.00	26.50	0.07	0.07	0.00
21.30	0.03	0.03	0.00	26.60	0.07	0.07	0.00
21.40	0.03	0.03	0.00	26.70	0.07	0.07	0.00
21.50	0.03	0.03	0.00	26.80	0.07	0.07	0.00
21.60	0.03	0.03	0.00	26.90	0.07	0.07	0.00
21.70	0.03	0.03	0.00	27.00	0.07	0.07	0.00
21.80	0.04	0.04	0.00	27.10	0.07	0.07	0.00
21.90	0.04	0.04	0.00	27.20	0.07	0.07	0.00
22.00	0.04	0.04	0.00	27.30	0.07	0.07	0.00
22.10	0.04	0.04	0.00	27.40	0.07	0.07	0.00
22.20	0.04	0.04	0.00	27.50	0.07	0.07	0.00
22.30	0.04	0.04	0.00	27.60	0.07	0.07	0.00
22.40	0.04	0.04	0.00	27.70	0.07	0.07	0.00
22.50	0.04	0.04	0.00	27.80	0.07	0.07	0.00
22.60	0.04	0.04	0.00	27.90	0.07	0.07	0.00
22.70	0.04	0.04	0.00	28.00	0.07	0.07	0.00
22.80	0.04	0.04	0.00	28.10	0.07	0.07	0.00
22.90	0.04	0.04	0.00	28.20	0.08	0.08	0.00
23.00	0.05	0.05	0.00	28.30	0.08	0.08	0.00
23.10	0.05	0.05	0.00	28.40	0.08	0.08	0.00
23.20	0.05	0.05	0.00	28.50	0.08	0.08	0.00
23.30	0.05	0.05	0.00	28.60	0.08	0.08	0.00
23.40	0.05	0.05	0.00	28.70	0.08	0.08	0.00
23.50	0.05	0.05	0.00	28.80	0.08	0.08	0.00
23.60	0.05	0.05	0.00	28.90	0.08	0.08	0.00
23.70	0.05	0.05	0.00	29.00	0.08	0.08	0.00
23.80	0.05	0.05	0.00	29.10	<b>0.08</b>	<b>0.08</b>	0.00
23.90	0.05	0.05	0.00				
24.00	0.05	0.05	0.00				
24.10	0.05	0.05	0.00				
24.20	0.05	0.05	0.00				
24.30	0.05	0.05	0.00				
24.40	0.06	0.06	0.00				
24.50	0.06	0.06	0.00				
24.60	0.06	0.06	0.00				
24.70	0.06	0.06	0.00				
24.80	0.06	0.06	0.00				
24.90	0.06	0.06	0.00				
25.00	0.06	0.06	0.00				
25.10	0.06	0.06	0.00				
25.20	0.06	0.06	0.00				

**817 Country Way Post**

Type III 24-hr 10-Year Rainfall=4.95"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 265

**Stage-Area-Storage for Pond SSD6: SUBSURFACE DRAINAGE AREA #6 (STORAGE)**

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
20.00	0	25.30	1,564
20.10	30	25.40	1,593
20.20	59	25.50	1,623
20.30	89	25.60	1,652
20.40	118	25.70	1,681
20.50	148	25.80	1,711
20.60	177	25.90	1,740
20.70	206	26.00	1,770
20.80	236	26.10	1,800
20.90	265	26.20	1,829
21.00	295	26.30	1,859
21.10	325	26.40	1,888
21.20	354	26.50	1,918
21.30	384	26.60	1,947
21.40	413	26.70	1,976
21.50	443	26.80	2,006
21.60	472	26.90	2,035
21.70	501	27.00	2,065
21.80	531	27.10	2,095
21.90	560	27.20	2,124
22.00	590	27.30	2,154
22.10	620	27.40	2,183
22.20	649	27.50	2,213
22.30	679	27.60	2,242
22.40	708	27.70	2,272
22.50	738	27.80	2,301
22.60	767	27.90	2,330
22.70	796	28.00	<b>2,360</b>
22.80	826	28.10	2,360
22.90	855	28.20	2,360
23.00	885	28.30	2,360
23.10	915	28.40	2,360
23.20	944	28.50	2,360
23.30	974	28.60	2,360
23.40	1,003	28.70	2,360
23.50	1,033	28.80	2,360
23.60	1,062	28.90	2,360
23.70	1,091	29.00	2,360
23.80	1,121	29.10	2,360
23.90	1,150		
24.00	1,180		
24.10	1,210		
24.20	1,239		
24.30	1,269		
24.40	1,298		
24.50	1,328		
24.60	1,357		
24.70	1,386		
24.80	1,416		
24.90	1,445		
25.00	1,475		
25.10	1,505		
25.20	1,534		

**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 266

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

<b>Subcatchment 1: Post 1</b>	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
<b>Subcatchment 2A: Post 2A</b>	Runoff Area=2,000 sf 72.80% Impervious Runoff Depth>5.14" Tc=5.0 min CN=91 Runoff=0.26 cfs 857 cf
<b>Subcatchment 2B: Post 2B</b>	Runoff Area=1,641 sf 83.49% Impervious Runoff Depth>5.48" Tc=5.0 min CN=94 Runoff=0.22 cfs 750 cf
<b>Subcatchment 3A: Post 3A</b>	Runoff Area=9,095 sf 43.97% Impervious Runoff Depth>4.48" Tc=5.0 min CN=85 Runoff=1.08 cfs 3,395 cf
<b>Subcatchment 3B: Post 3B</b>	Runoff Area=8,082 sf 70.01% Impervious Runoff Depth>5.14" Tc=5.0 min CN=91 Runoff=1.06 cfs 3,462 cf
<b>Subcatchment 4: Post 4</b>	Runoff Area=7,248 sf 88.76% Impervious Runoff Depth>5.59" Flow Length=131' Tc=8.6 min CN=95 Runoff=0.90 cfs 3,379 cf
<b>Subcatchment 5: Post 5</b>	Runoff Area=7,525 sf 60.54% Impervious Runoff Depth>4.91" Flow Length=131' Tc=8.6 min CN=89 Runoff=0.86 cfs 3,082 cf
<b>Subcatchment 6: Post 6</b>	Runoff Area=12,344 sf 39.48% Impervious Runoff Depth>4.27" Tc=5.0 min CN=83 Runoff=1.41 cfs 4,388 cf
<b>Subcatchment 6A: Post 6a</b>	Runoff Area=6,242 sf 76.59% Impervious Runoff Depth>5.25" Tc=5.0 min CN=92 Runoff=0.83 cfs 2,733 cf
<b>Subcatchment 7: Post 7</b>	Runoff Area=2,790 sf 0.00% Impervious Runoff Depth>3.24" Flow Length=170' Tc=11.1 min CN=73 Runoff=0.20 cfs 753 cf
<b>Subcatchment 8: Post 8</b>	Runoff Area=1,030 sf 0.00% Impervious Runoff Depth>2.95" Tc=5.0 min CN=70 Runoff=0.08 cfs 254 cf
<b>Subcatchment 9: Post 9</b>	Runoff Area=21,294 sf 19.29% Impervious Runoff Depth>3.74" Tc=5.0 min CN=78 Runoff=2.14 cfs 6,645 cf
<b>Subcatchment B1: BLDG #1</b>	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
<b>Subcatchment B2a: BLDG #2</b>	Runoff Area=1,054 sf 100.00% Impervious Runoff Depth>5.95" Tc=5.0 min CN=98 Runoff=0.15 cfs 523 cf
<b>Subcatchment B2b: BLDG #2 (REAR)</b>	Runoff Area=3,736 sf 100.00% Impervious Runoff Depth>5.95" Tc=5.0 min CN=98 Runoff=0.52 cfs 1,852 cf
<b>Subcatchment B3: BLDG #3</b>	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



**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 267

<b>Reach DP1: DP1post</b>	Inflow=1.17 cfs 3,871 cf Outflow=1.17 cfs 3,871 cf
<b>Reach DP2: DP2</b>	Inflow=0.32 cfs 1,318 cf Outflow=0.32 cfs 1,318 cf
<b>Reach DP3: DP3</b>	Inflow=4.22 cfs 21,731 cf Outflow=4.22 cfs 21,731 cf
<b>Reach DP4: DP4</b>	Inflow=0.20 cfs 753 cf Outflow=0.20 cfs 753 cf
<b>Pond 2P: DMH2</b>	Peak Elev=37.66' Inflow=1.90 cfs 6,841 cf 12.0" Round Culvert n=0.013 L=30.0' S=0.0033 '/' Outflow=1.90 cfs 6,841 cf
<b>Pond CB1: CB1</b>	Peak Elev=34.51' Inflow=0.90 cfs 3,379 cf Primary=0.90 cfs 3,379 cf Secondary=0.00 cfs 0 cf Outflow=0.90 cfs 3,379 cf
<b>Pond CB10: CB10</b>	Peak Elev=20.10' Inflow=0.86 cfs 3,082 cf Primary=0.86 cfs 3,082 cf Secondary=0.00 cfs 0 cf Outflow=0.86 cfs 3,082 cf
<b>Pond CB13: CB13</b>	Peak Elev=20.64' Inflow=1.41 cfs 4,388 cf Primary=1.41 cfs 4,388 cf Secondary=0.00 cfs 0 cf Outflow=1.41 cfs 4,388 cf
<b>Pond CB4: CB4</b>	Peak Elev=34.52' Inflow=1.08 cfs 3,395 cf Primary=1.08 cfs 3,395 cf Secondary=0.00 cfs 0 cf Outflow=1.08 cfs 3,395 cf
<b>Pond CB5: CB5</b>	Peak Elev=34.63' Inflow=1.06 cfs 3,462 cf Primary=1.06 cfs 3,462 cf Secondary=0.00 cfs 0 cf Outflow=1.06 cfs 3,462 cf
<b>Pond CB6: CB6</b>	Peak Elev=37.19' Inflow=0.26 cfs 857 cf Primary=0.26 cfs 857 cf Secondary=0.00 cfs 0 cf Outflow=0.26 cfs 857 cf
<b>Pond CB9: CB9</b>	Peak Elev=37.17' Inflow=0.22 cfs 750 cf Primary=0.22 cfs 750 cf Secondary=0.00 cfs 0 cf Outflow=0.22 cfs 750 cf
<b>Pond DMH11: DMH11</b>	Peak Elev=20.67' Inflow=2.32 cfs 13,437 cf 12.0" Round Culvert n=0.013 L=42.0' S=0.0024 '/' Outflow=2.32 cfs 13,437 cf
<b>Pond DMH7: DMH7</b>	Peak Elev=37.14' Inflow=0.49 cfs 1,606 cf 12.0" Round Culvert n=0.013 L=30.0' S=0.0033 '/' Outflow=0.49 cfs 1,606 cf
<b>Pond SSD1: SUBSURFACE DRAINAGE AREA</b>	Peak Elev=35.15' Storage=2,459 cf Inflow=1.60 cfs 5,247 cf Discarded=0.07 cfs 4,013 cf Primary=0.00 cfs 0 cf Secondary=0.03 cfs 251 cf Outflow=0.10 cfs 4,264 cf
<b>Pond SSD2: SUBSURFACE DRAINAGE AREA</b>	Peak Elev=36.46' Storage=595 cf Inflow=0.49 cfs 1,606 cf Discarded=0.05 cfs 1,603 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.05 cfs 1,603 cf
<b>Pond SSD3: SUBSURFACE DRAINAGE</b>	Peak Elev=20.54' Storage=1,807 cf Inflow=2.80 cfs 15,183 cf Discarded=0.03 cfs 1,957 cf Primary=2.23 cfs 12,149 cf Secondary=0.00 cfs 0 cf Outflow=2.26 cfs 14,106 cf
<b>Pond SSD4: SUBSURFACE DRAINAGE AREA</b>	Peak Elev=37.57' Storage=936 cf Inflow=0.79 cfs 2,781 cf Discarded=0.01 cfs 856 cf Primary=0.27 cfs 257 cf Tertiary=0.25 cfs 1,064 cf Outflow=0.53 cfs 2,178 cf

**817 Country Way Post**

*Type III 24-hr 25-Year Rainfall=6.19"*

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 268

---

**Pond SSD5: SUBSURFACE DRAINAGE AREA** Peak Elev=32.71' Storage=3,462 cf Inflow=1.90 cfs 6,841 cf  
Primary=0.14 cfs 5,968 cf Secondary=0.00 cfs 0 cf Outflow=0.14 cfs 5,968 cf

**Pond SSD6: SUBSURFACE DRAINAGE AREA** Peak Elev=25.85' Storage=1,725 cf Inflow=0.98 cfs 3,255 cf  
Primary=0.06 cfs 2,685 cf Secondary=0.00 cfs 0 cf Outflow=0.06 cfs 2,685 cf

**Total Runoff Area = 107,015 sf Runoff Volume = 40,211 cf Average Runoff Depth = 4.51"**  
**52.20% Pervious = 55,860 sf 47.80% Impervious = 51,155 sf**

**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 269

**Summary for Subcatchment 1: Post 1**

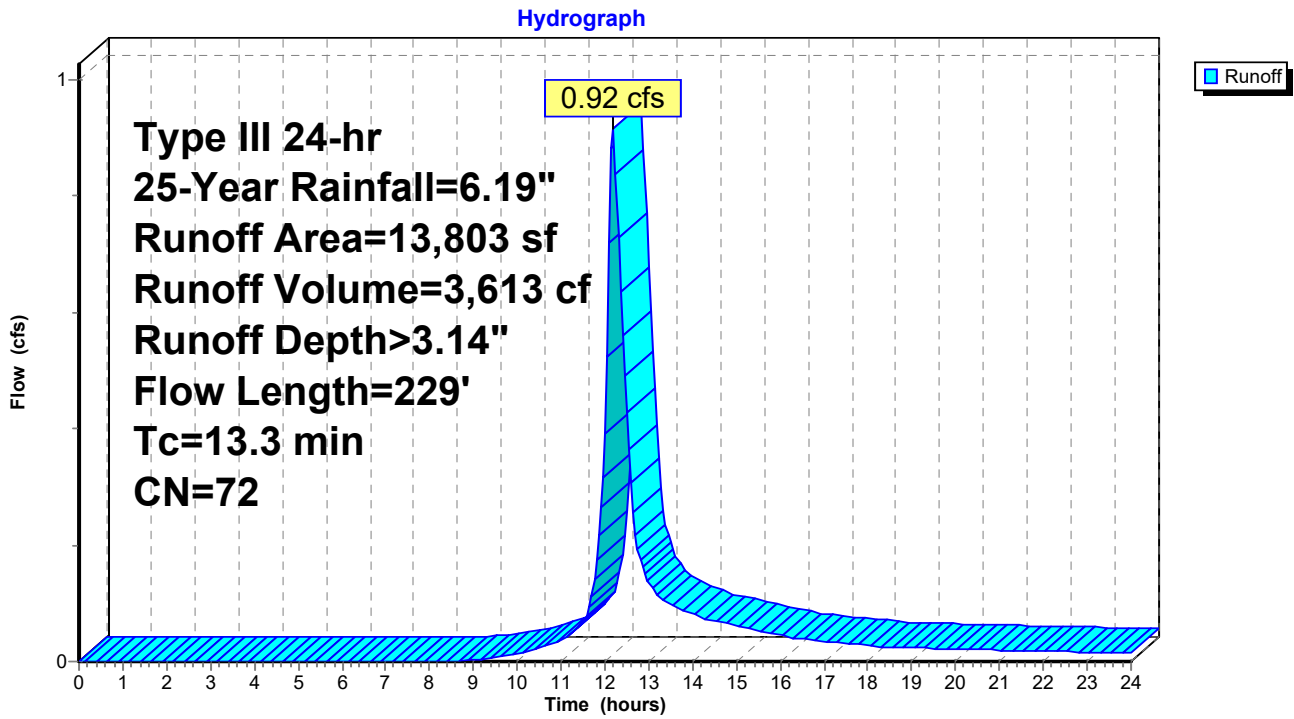
Runoff = 0.92 cfs @ 12.19 hrs, Volume= 3,613 cf, Depth> 3.14"  
 Routed to Reach DP1 : DP1post

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		<b>Sheet Flow, Woods</b> Woods: Light underbrush n= 0.400 P2= 3.35"
1.1	67	0.0400	1.00		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
1.1	58	0.0300	0.87		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
0.9	54	0.0400	1.00		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
13.3	229	Total			

### Subcatchment 1: Post 1



**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**Summary for Subcatchment 2A: Post 2A**

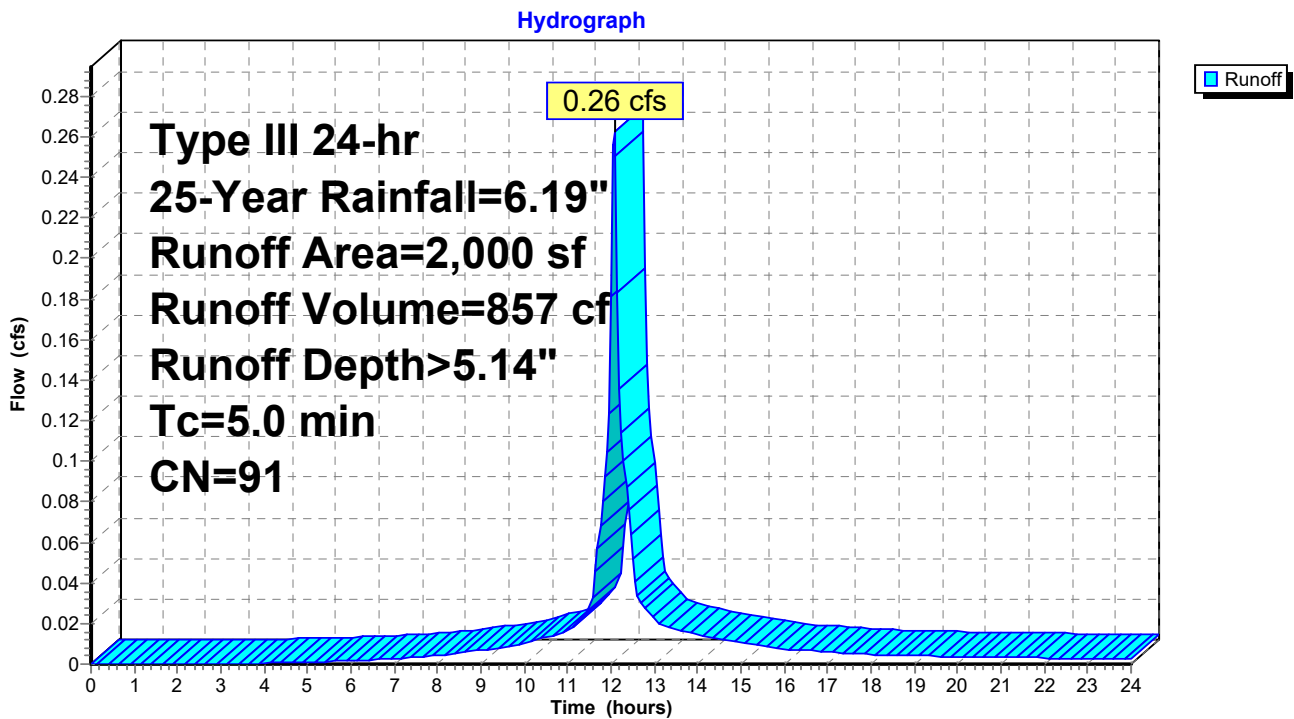
Runoff = 0.26 cfs @ 12.07 hrs, Volume= 857 cf, Depth> 5.14"  
 Routed to Pond CB6 : CB6

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
544	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
1,388	98	Paved parking, HSG C
68	98	Paved parking, HSG C
2,000	91	Weighted Average
544		27.20% Pervious Area
1,456		72.80% Impervious Area

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

**Subcatchment 2A: Post 2A**



# 817 Country Way Post

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 272

## Summary for Subcatchment 2B: Post 2B

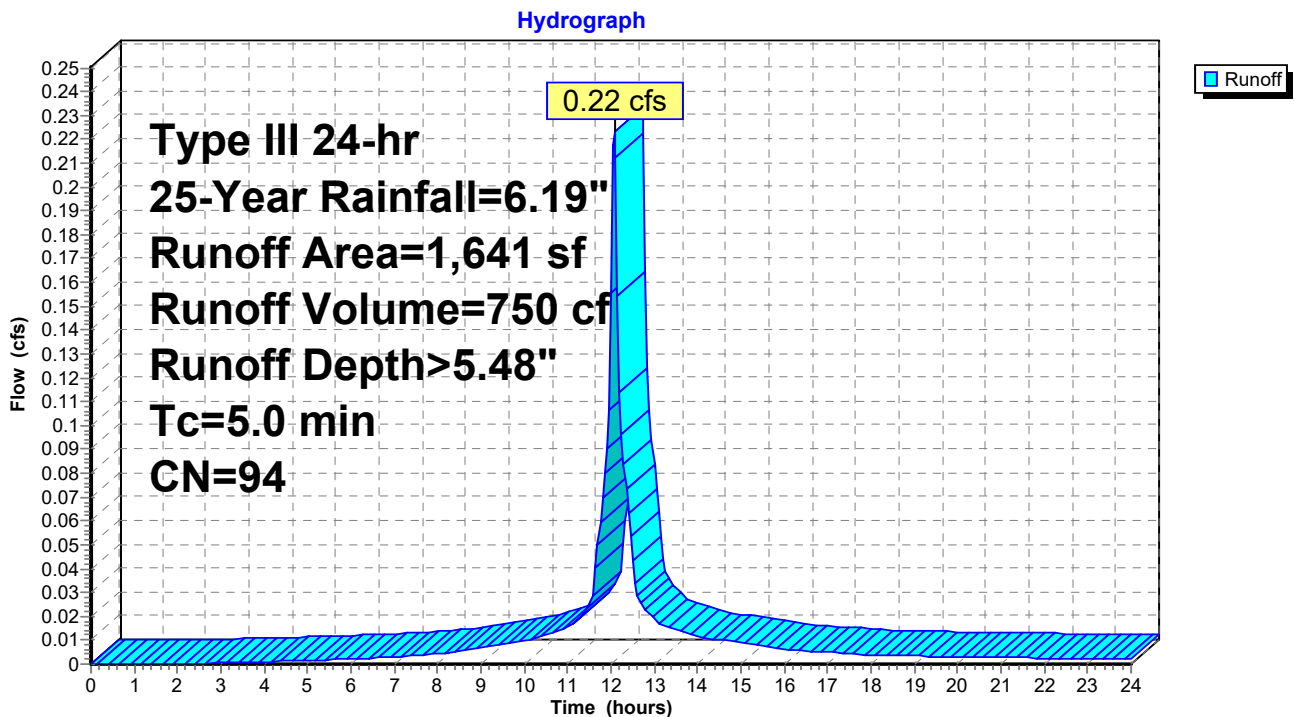
Runoff = 0.22 cfs @ 12.07 hrs, Volume= 750 cf, Depth> 5.48"  
Routed to Pond CB9 : CB9

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
271	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
1,370	98	Paved parking, HSG C
0	98	Paved parking, HSG C
1,641	94	Weighted Average
271		16.51% Pervious Area
1,370		83.49% Impervious Area

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

### Subcatchment 2B: Post 2B



# 817 Country Way Post

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 273

## Summary for Subcatchment 3A: Post 3A

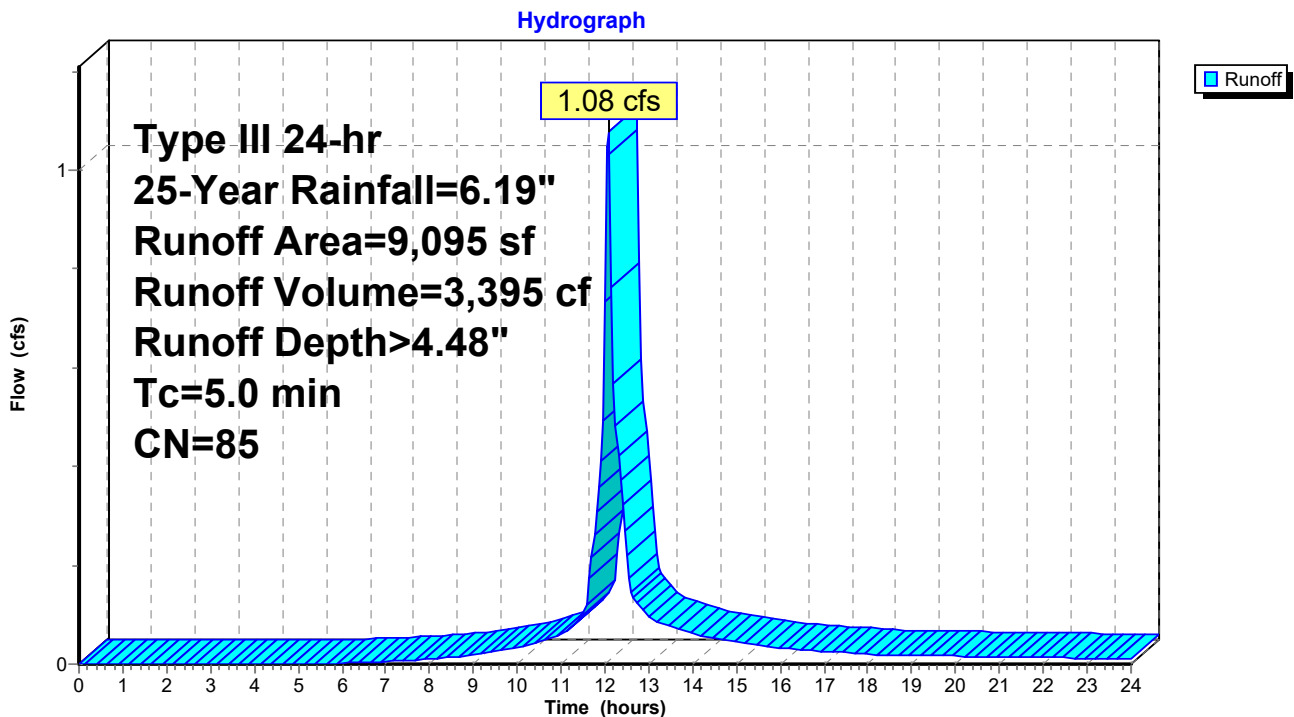
Runoff = 1.08 cfs @ 12.07 hrs, Volume= 3,395 cf, Depth> 4.48"  
Routed to Pond CB4 : CB4

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
5,096	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
3,233	98	Paved parking, HSG C
766	98	Paved parking, HSG C
9,095	85	Weighted Average
5,096		56.03% Pervious Area
3,999		43.97% Impervious Area

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

### Subcatchment 3A: Post 3A



# 817 Country Way Post

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 274

## Summary for Subcatchment 3B: Post 3B

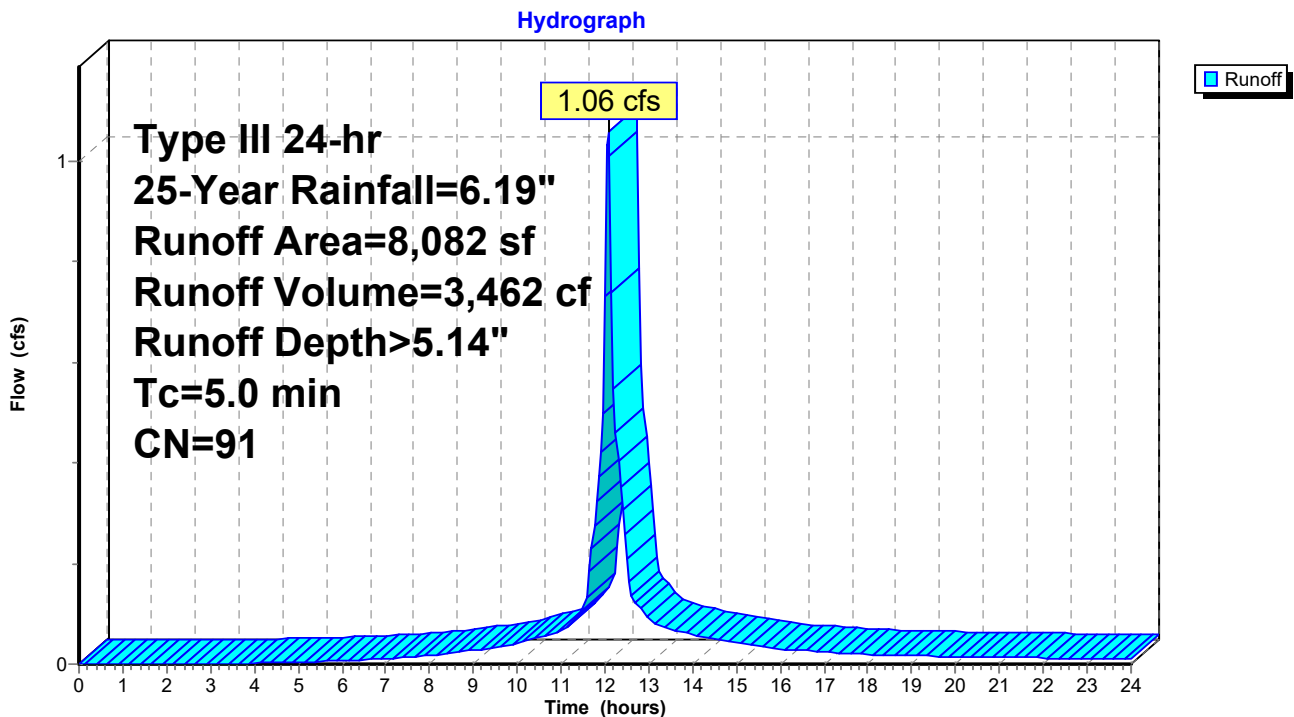
Runoff = 1.06 cfs @ 12.07 hrs, Volume= 3,462 cf, Depth> 5.14"  
Routed to Pond CB5 : CB5

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
2,424	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
5,459	98	Paved parking, HSG C
199	98	Paved parking, HSG C
8,082	91	Weighted Average
2,424		29.99% Pervious Area
5,658		70.01% Impervious Area

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

### Subcatchment 3B: Post 3B





**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 275

**Summary for Subcatchment 4: Post 4**

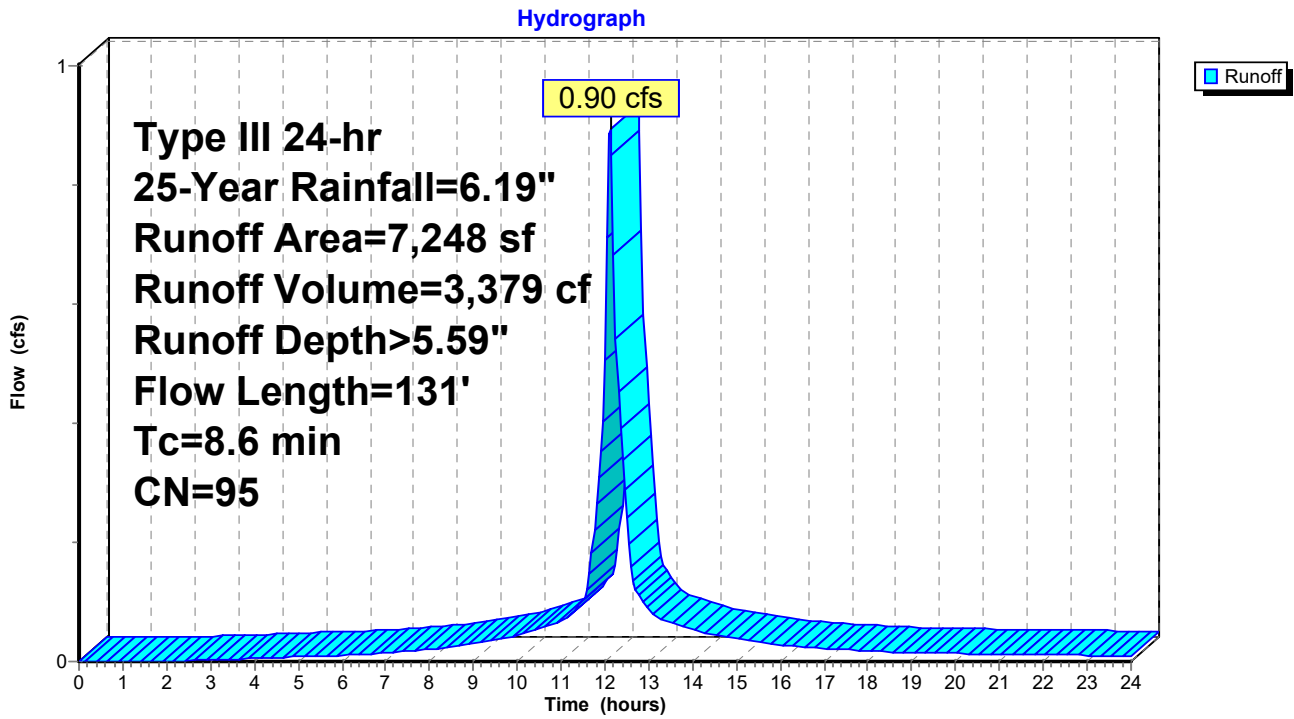
Runoff = 0.90 cfs @ 12.12 hrs, Volume= 3,379 cf, Depth> 5.59"  
 Routed to Pond CB1 : CB1

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
815	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
6,433	98	Paved parking, HSG C
0	98	Paved parking, HSG C
7,248	95	Weighted Average
815		11.24% Pervious Area
6,433		88.76% Impervious Area

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

Subcatchment 4: Post 4



**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 277

**Summary for Subcatchment 5: Post 5**

Runoff = 0.86 cfs @ 12.12 hrs, Volume= 3,082 cf, Depth> 4.91"  
 Routed to Pond CB10 : CB10

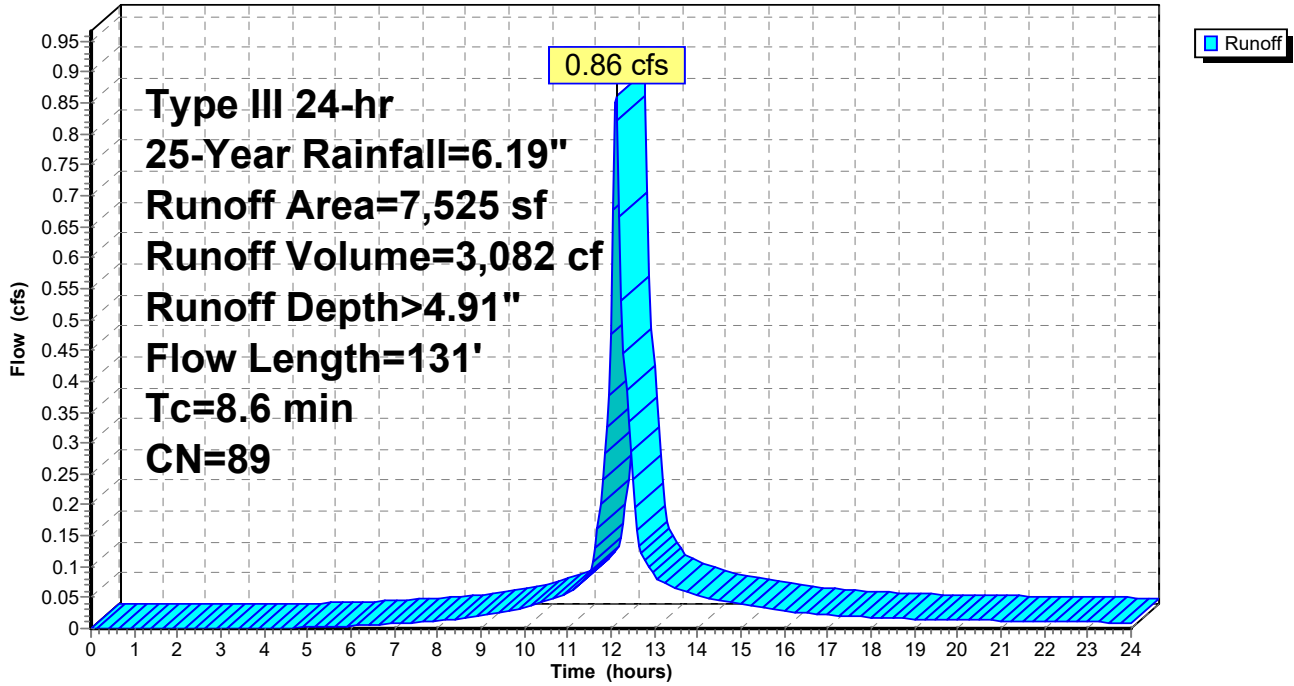
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 25-Year Rainfall=6.19"

Area (sf)	CN	Description
1,823	98	Unconnected roofs, HSG C
2,969	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
2,733	98	Paved parking, HSG C
0	98	Paved parking, HSG C
7,525	89	Weighted Average
2,969		39.46% Pervious Area
4,556		60.54% Impervious Area
1,823		40.01% Unconnected

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

### Subcatchment 5: Post 5

Hydrograph



# 817 Country Way Post

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 279

## Summary for Subcatchment 6: Post 6

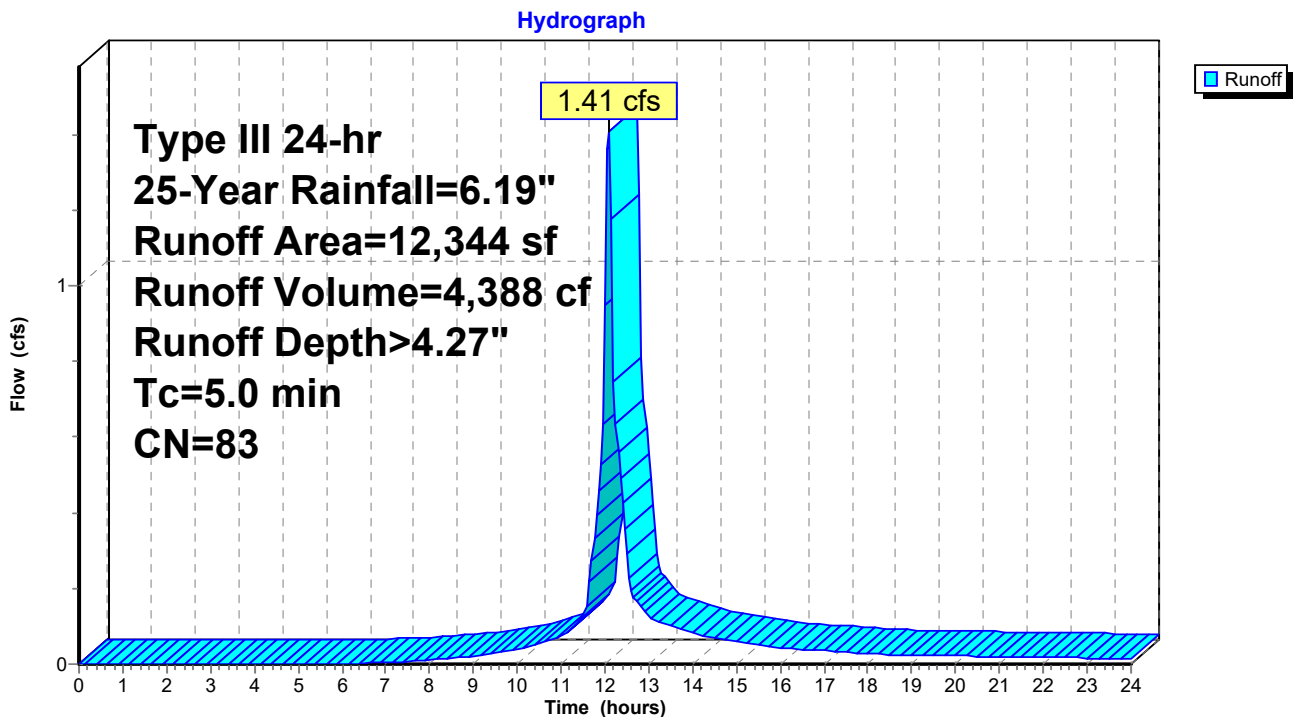
Runoff = 1.41 cfs @ 12.07 hrs, Volume= 4,388 cf, Depth> 4.27"  
Routed to Pond CB13 : CB13

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
7,471	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
3,458	98	Paved parking, HSG C
1,415	98	Paved parking, HSG C
12,344	83	Weighted Average
7,471		60.52% Pervious Area
4,873		39.48% Impervious Area

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

## Subcatchment 6: Post 6



**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**Summary for Subcatchment 6A: Post 6a**

Runoff = 0.83 cfs @ 12.07 hrs, Volume= 2,733 cf, Depth> 5.25"

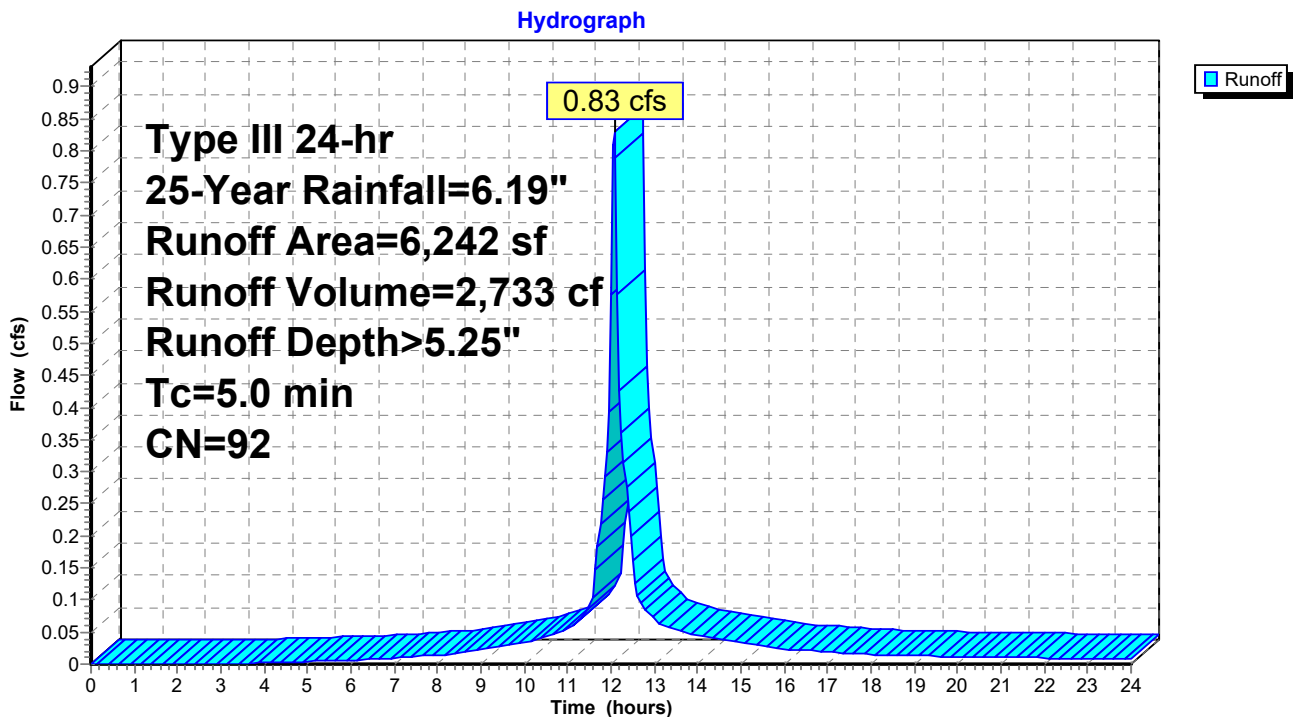
Routed to Pond SSD6 : SUBSURFACE DRAINAGE AREA #6 (STORAGE)

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
1,461	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
4,243	98	Paved parking, HSG C
538	98	Paved parking, HSG C
6,242	92	Weighted Average
1,461		23.41% Pervious Area
4,781		76.59% Impervious Area

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

**Subcatchment 6A: Post 6a**



**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 281

**Summary for Subcatchment 7: Post 7**

Runoff = 0.20 cfs @ 12.16 hrs, Volume= 753 cf, Depth> 3.24"  
 Routed to Reach DP4 : DP4

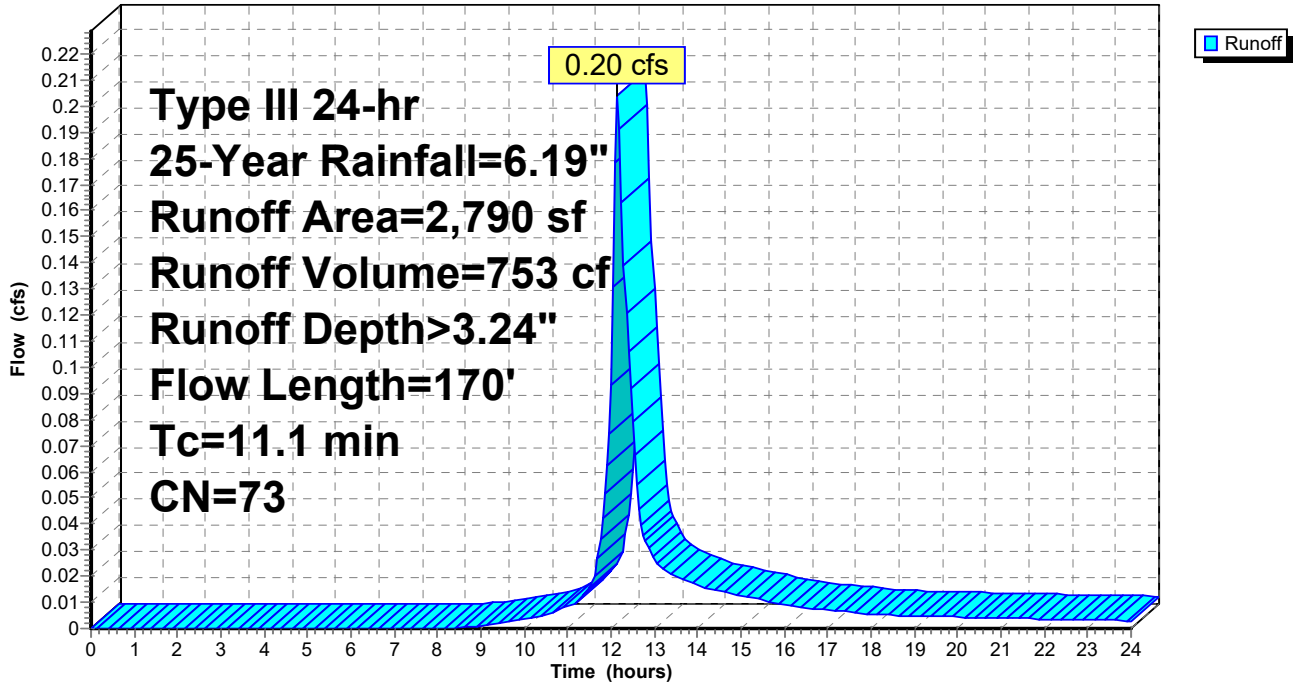
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 25-Year Rainfall=6.19"

Area (sf)	CN	Description
2,085	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
2,790	73	Weighted Average
2,790		100.00% Pervious Area

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

### Subcatchment 7: Post 7

Hydrograph





# 817 Country Way Post

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 283

## Summary for Subcatchment 8: Post 8

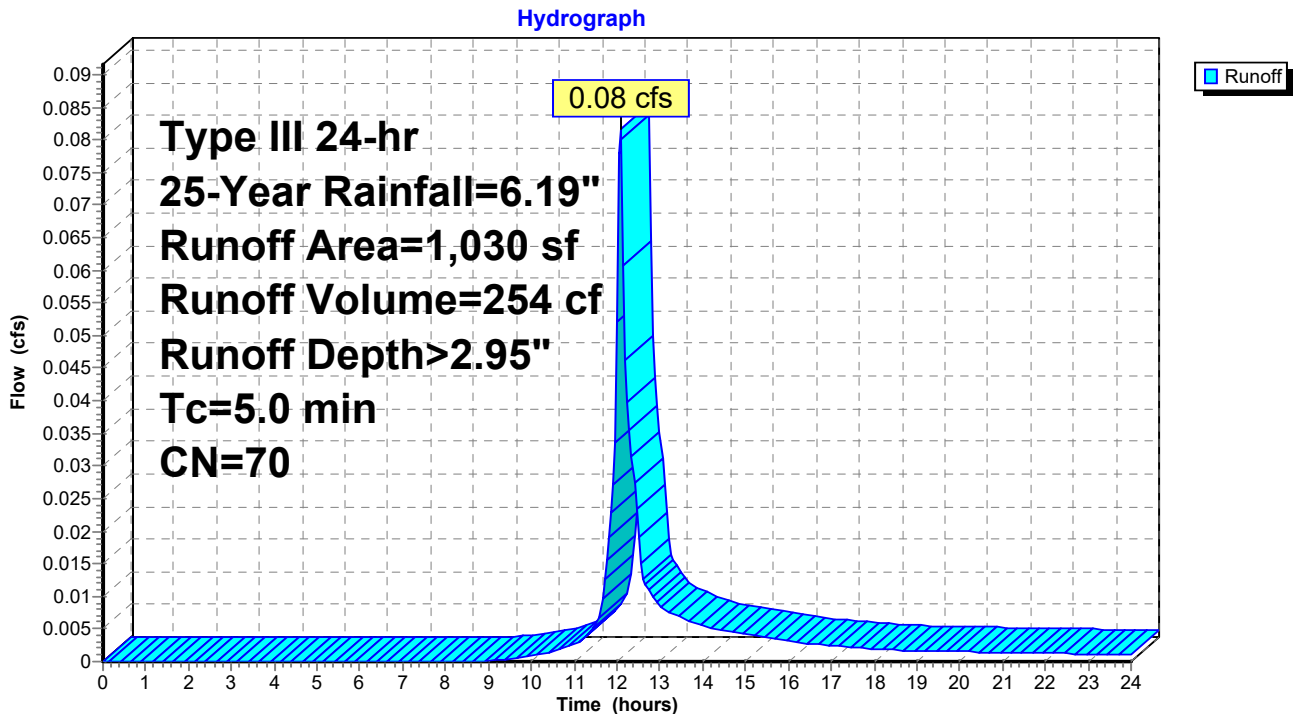
Runoff = 0.08 cfs @ 12.08 hrs, Volume= 254 cf, Depth> 2.95"  
Routed to Reach DP2 : DP2

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



**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**Summary for Subcatchment 9: Post 9**

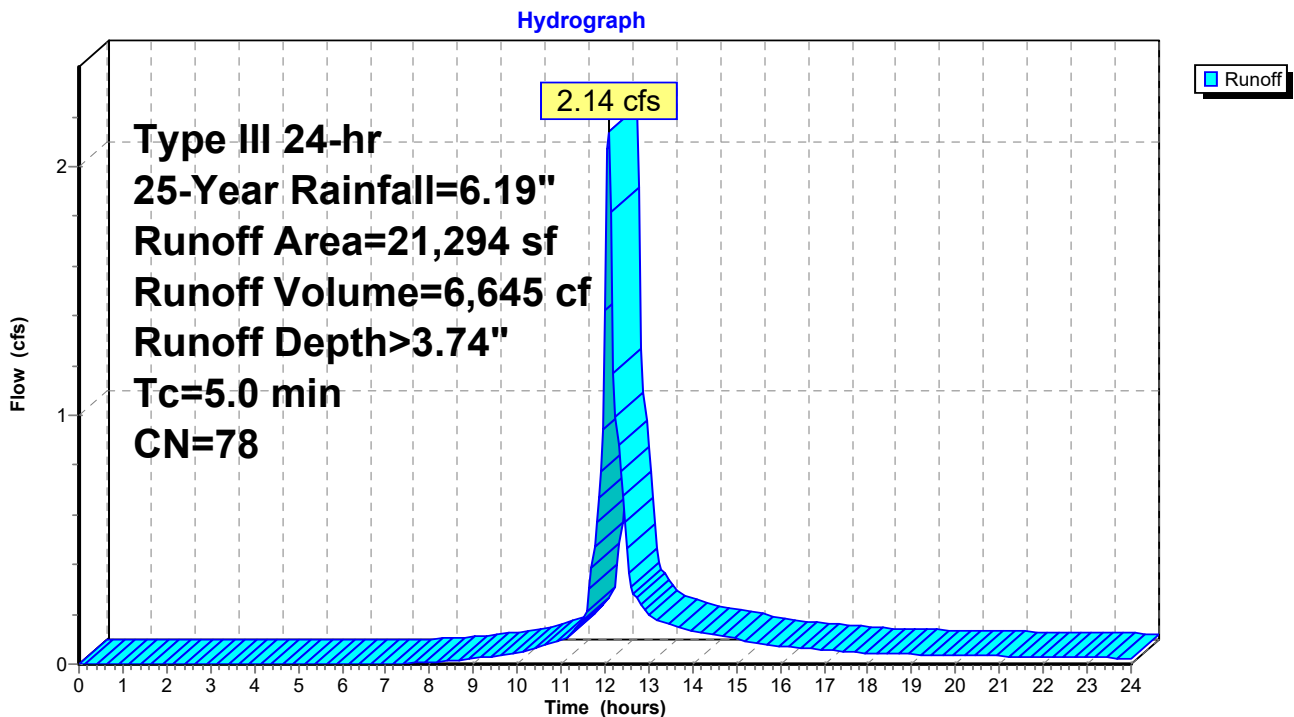
Runoff = 2.14 cfs @ 12.08 hrs, Volume= 6,645 cf, Depth> 3.74"  
 Routed to Reach DP3 : DP3

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
15,409	74	>75% Grass cover, Good, HSG C
1,777	70	Woods, Good, HSG C
1,470	98	Paved parking, HSG C
2,638	98	Paved parking, HSG C
21,294	78	Weighted Average
17,186		80.71% Pervious Area
4,108		19.29% 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

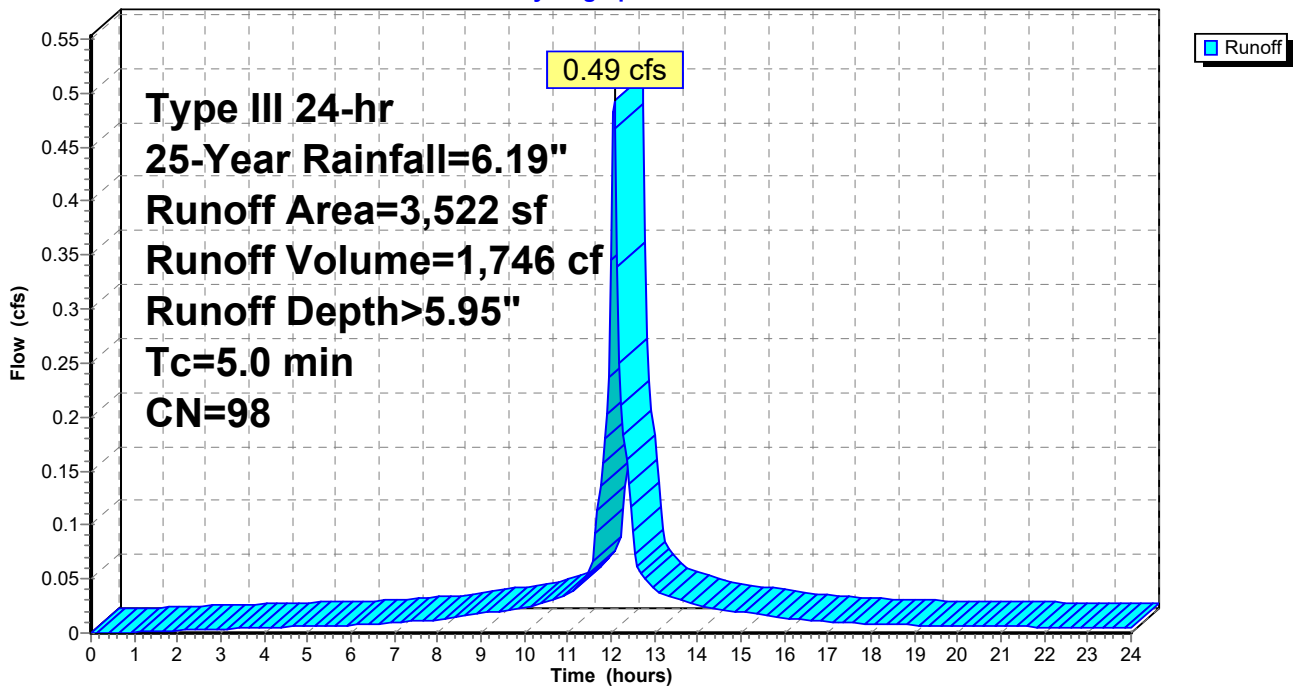
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 25-Year Rainfall=6.19"

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**

Hydrograph



**Summary for Subcatchment B2a: BLDG #2**

Runoff = 0.15 cfs @ 12.07 hrs, Volume= 523 cf, Depth> 5.95"

Routed to Pond SSD6 : SUBSURFACE DRAINAGE AREA #6 (STORAGE)

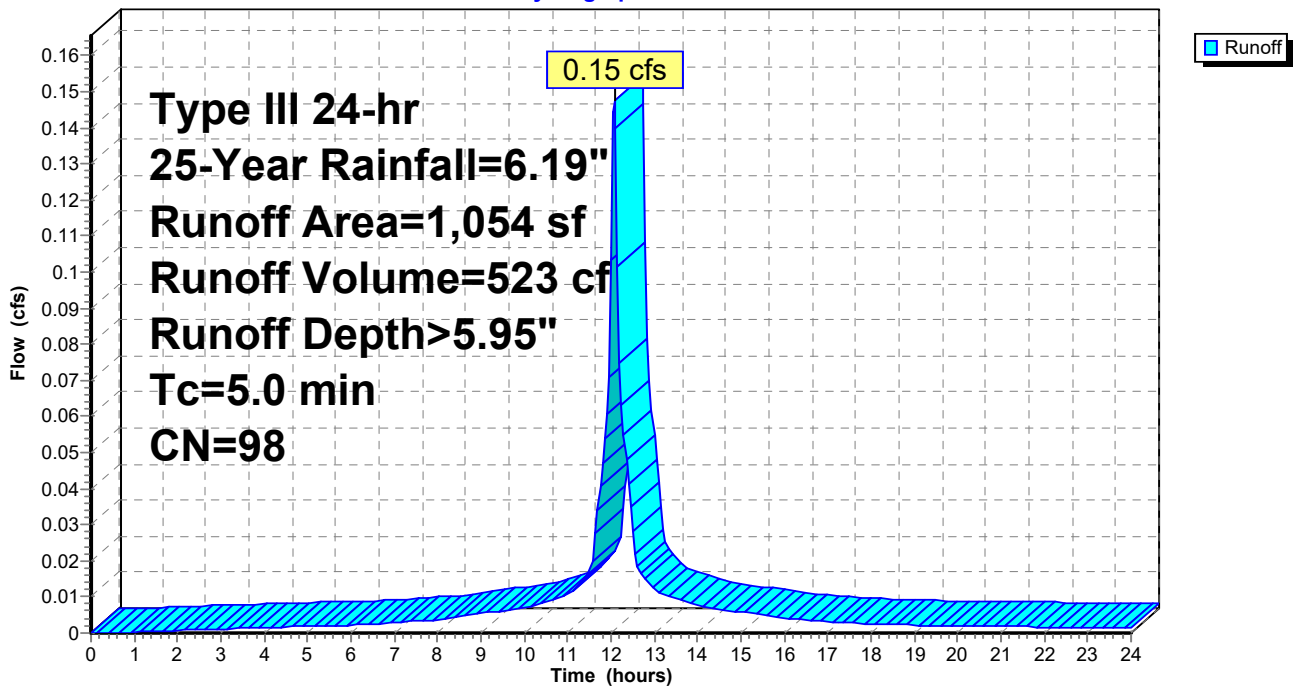
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 25-Year Rainfall=6.19"

Area (sf)	CN	Description
1,054	98	Unconnected roofs, HSG C
1,054		100.00% Impervious Area
1,054		100.00% Unconnected

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

**Subcatchment B2a: BLDG #2**

Hydrograph



# 817 Country Way Post

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 287

## Summary for Subcatchment B2b: BLDG #2 (REAR SECTION)

Runoff = 0.52 cfs @ 12.07 hrs, Volume= 1,852 cf, Depth> 5.95"

Routed to Pond SSD1 : SUBSURFACE DRAINAGE AREA #1

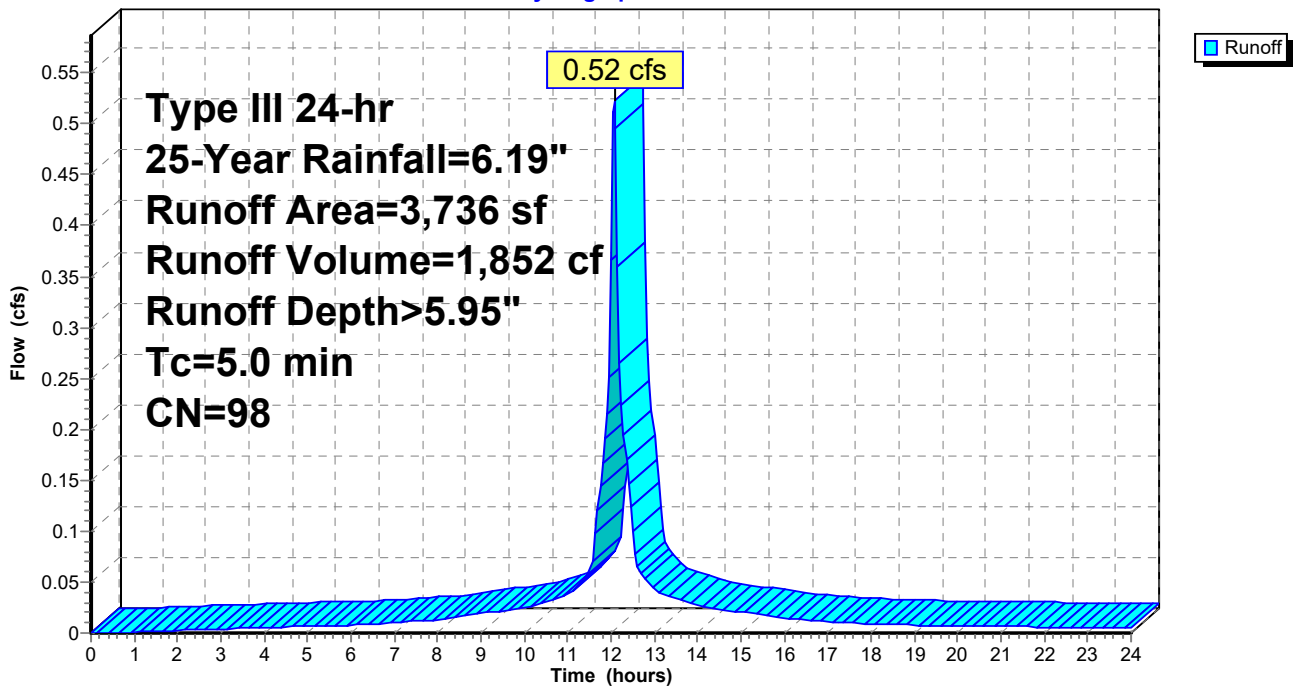
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 25-Year Rainfall=6.19"

Area (sf)	CN	Description
3,736	98	Unconnected roofs, HSG C
3,736		100.00% Impervious Area
3,736		100.00% Unconnected

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

## Subcatchment B2b: BLDG #2 (REAR SECTION)

Hydrograph



**Summary for Subcatchment B3: BLDG #3**

Runoff = 0.79 cfs @ 12.07 hrs, Volume= 2,781 cf, Depth> 5.95"

Routed to Pond SSD4 : SUBSURFACE DRAINAGE AREA #4

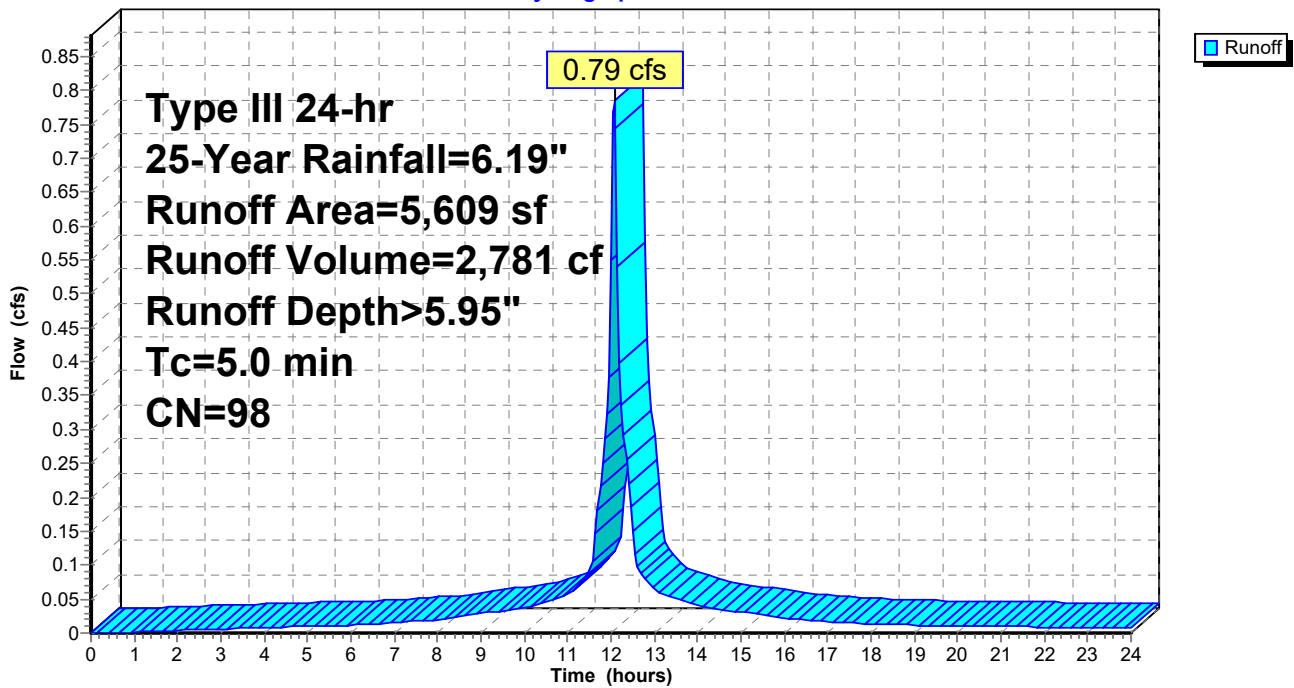
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 25-Year Rainfall=6.19"

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 B3: BLDG #3**

Hydrograph

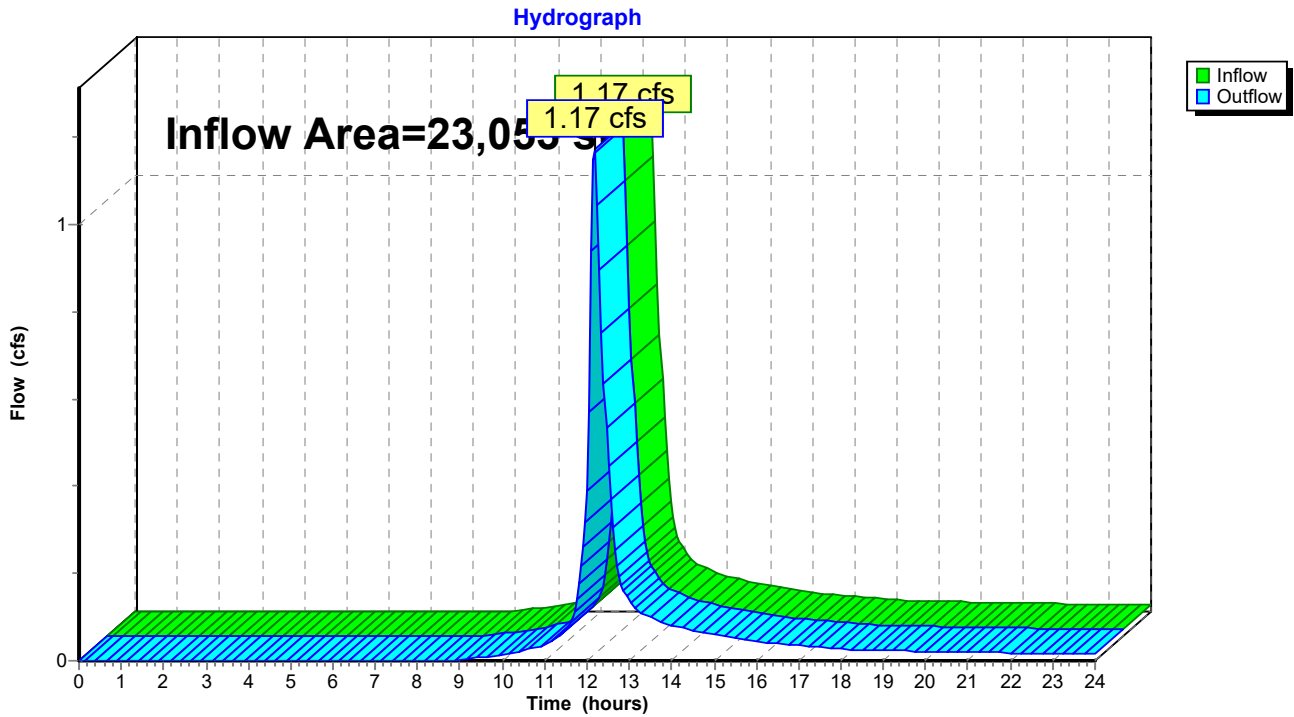


### Summary for Reach DP1: DP1post

Inflow Area = 23,053 sf, 36.59% Impervious, Inflow Depth > 2.01" 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

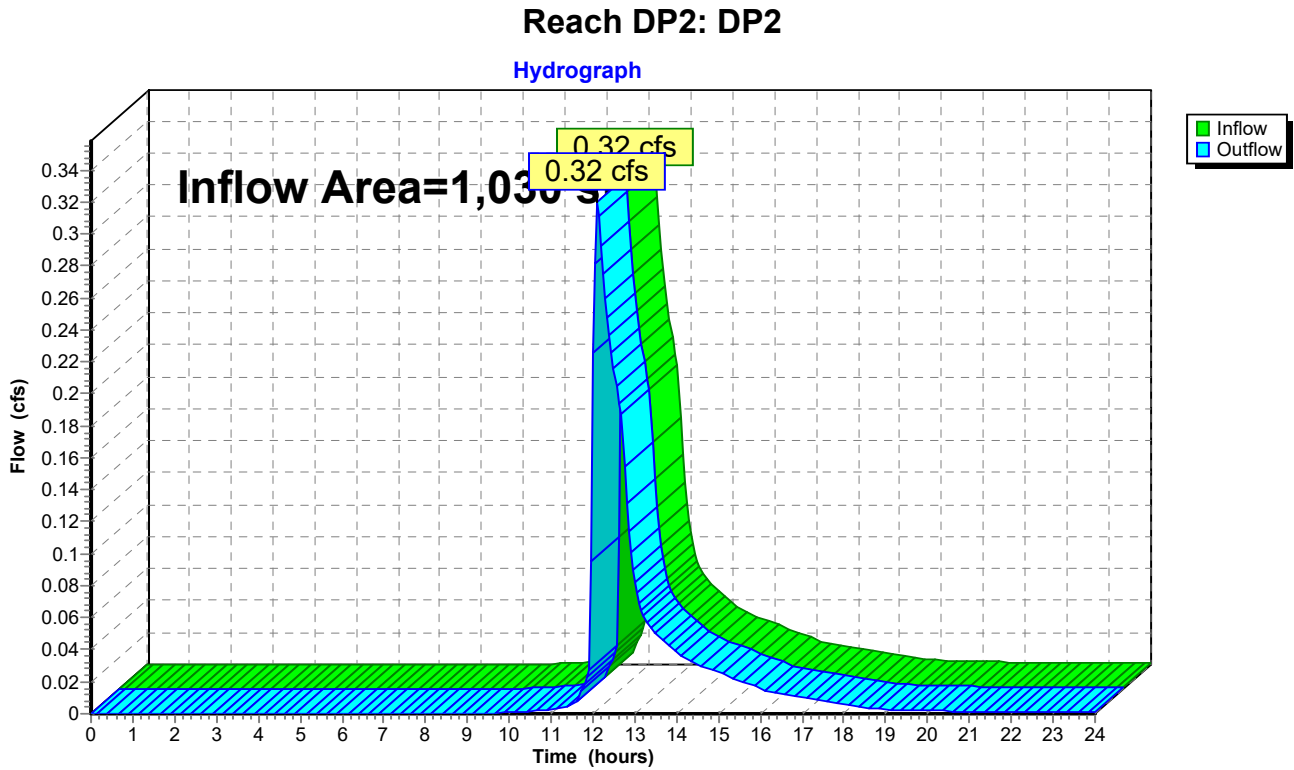
### Reach DP1: DP1post



### Summary for Reach DP2: DP2

Inflow Area = 1,030 sf, 0.00% Impervious, Inflow Depth > 15.36" for 25-Year event  
Inflow = 0.32 cfs @ 12.12 hrs, Volume= 1,318 cf  
Outflow = 0.32 cfs @ 12.12 hrs, Volume= 1,318 cf, Atten= 0%, Lag= 0.0 min

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





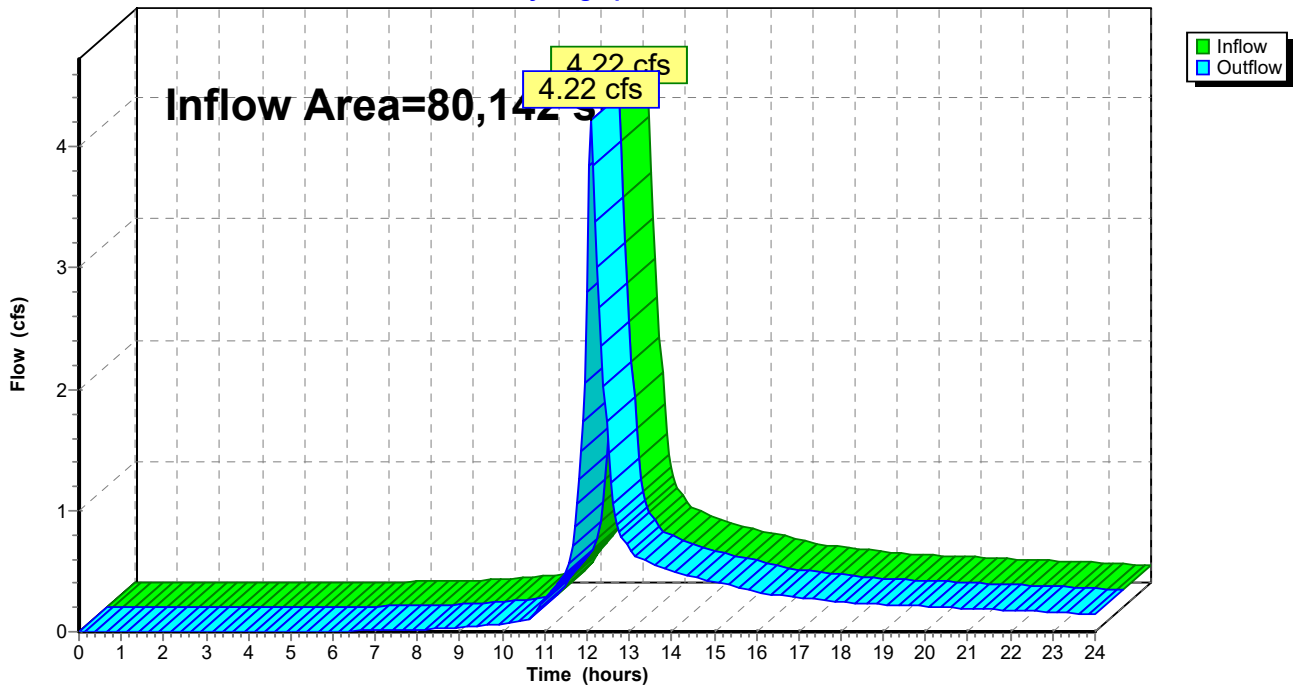
### Summary for Reach DP3: DP3

Inflow Area = 80,142 sf, 53.31% Impervious, Inflow Depth > 3.25" for 25-Year event  
Inflow = 4.22 cfs @ 12.10 hrs, Volume= 21,731 cf  
Outflow = 4.22 cfs @ 12.10 hrs, Volume= 21,731 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

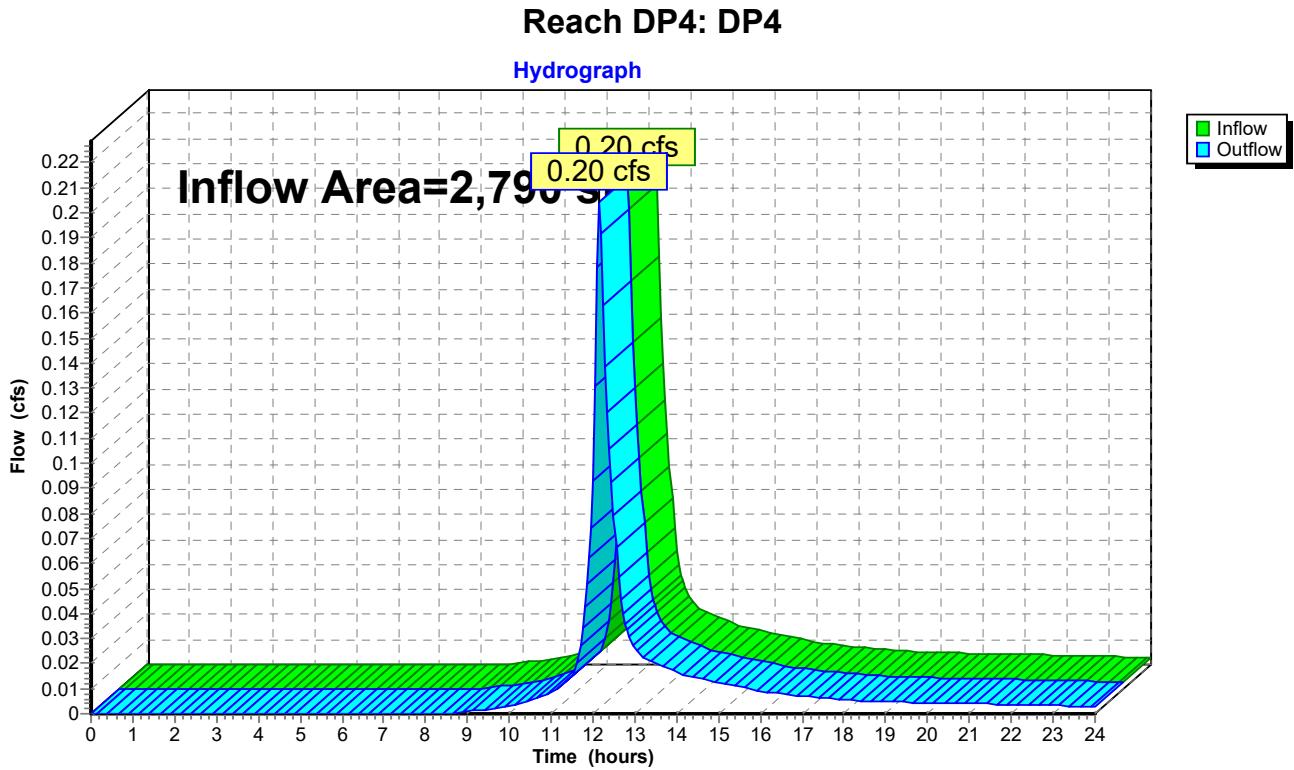
Hydrograph



### Summary for Reach DP4: DP4

Inflow Area = 2,790 sf, 0.00% Impervious, Inflow Depth > 3.24" for 25-Year event  
Inflow = 0.20 cfs @ 12.16 hrs, Volume= 753 cf  
Outflow = 0.20 cfs @ 12.16 hrs, Volume= 753 cf, Atten= 0%, Lag= 0.0 min

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



**Summary for Pond 2P: DMH2**

Inflow Area = 15,330 sf, 78.87% Impervious, Inflow Depth > 5.36" for 25-Year event  
 Inflow = 1.90 cfs @ 12.09 hrs, Volume= 6,841 cf  
 Outflow = 1.90 cfs @ 12.09 hrs, Volume= 6,841 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 1.90 cfs @ 12.09 hrs, Volume= 6,841 cf  
 Routed to Pond SSD5 : SUBSURFACE DRAINAGE AREA #5 (STORAGE)

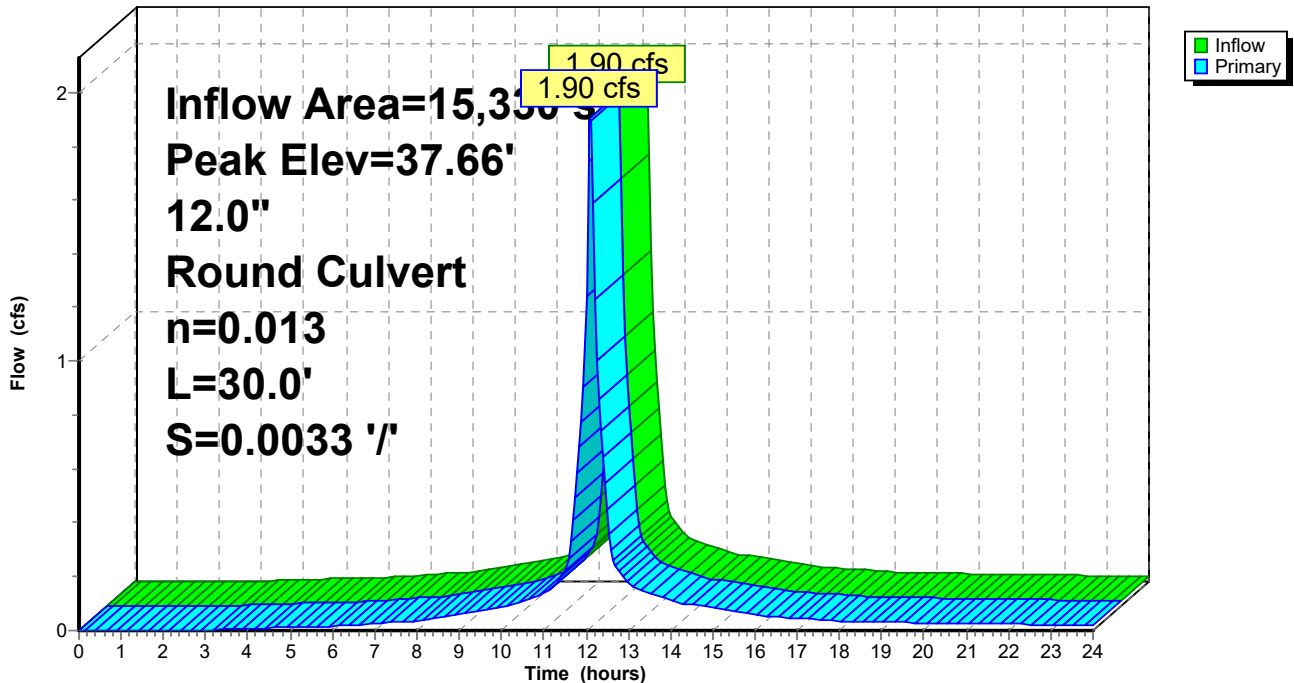
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 37.66' @ 12.09 hrs  
 Flood Elev= 39.67'

Device #	Routing	Invert	Outlet Devices
#1	Primary	36.70'	<b>12.0" Round Culvert</b> 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=1.87 cfs @ 12.09 hrs HW=37.65' (Free Discharge)  
 ←1=Culvert (Barrel Controls 1.87 cfs @ 3.11 fps)

**Pond 2P: DMH2**

Hydrograph



**Stage-Discharge for Pond 2P: DMH2**

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	<b>5.79</b>
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		

**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 295

**Stage-Area-Storage for Pond 2P: DMH2**

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		

# 817 Country Way Post

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 296

## Summary for Pond CB1: CB1

Inflow Area = 7,248 sf, 88.76% Impervious, Inflow Depth > 5.59" for 25-Year event  
Inflow = 0.90 cfs @ 12.12 hrs, Volume= 3,379 cf  
Outflow = 0.90 cfs @ 12.12 hrs, Volume= 3,379 cf, Atten= 0%, Lag= 0.0 min  
Primary = 0.90 cfs @ 12.12 hrs, Volume= 3,379 cf  
Routed to Pond 2P : 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= 34.51' @ 12.12 hrs  
Flood Elev= 36.27'

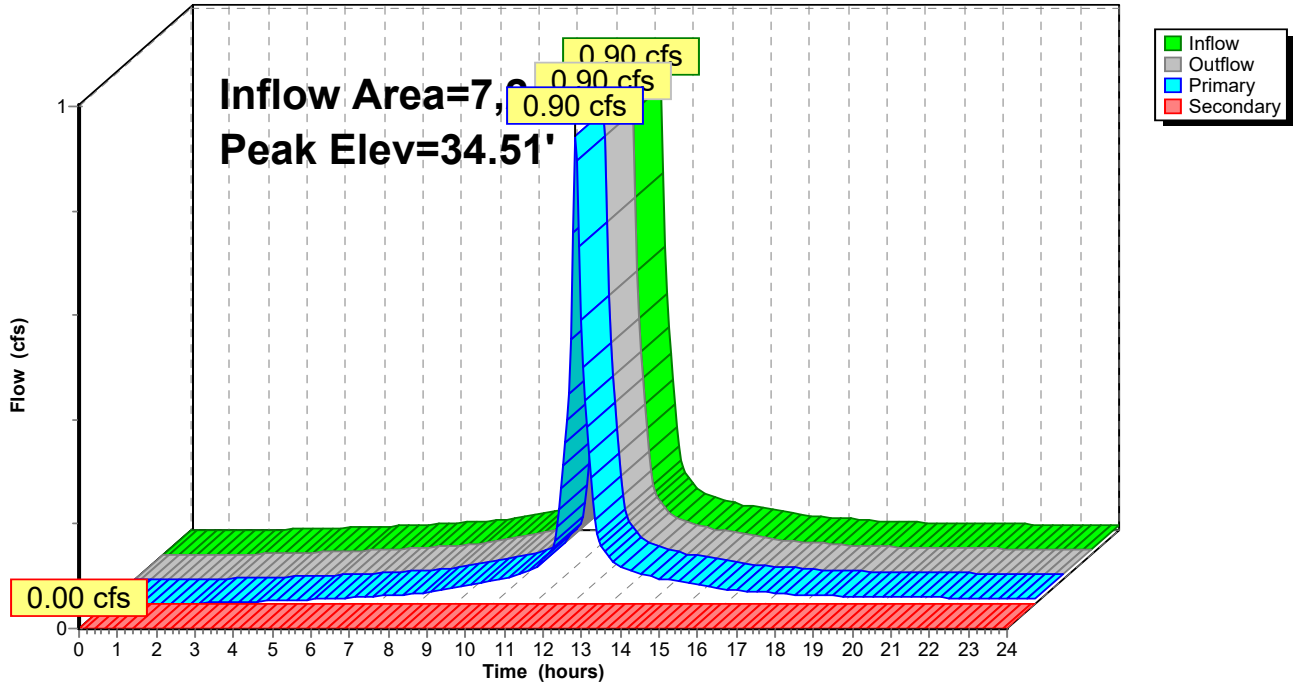
Device	Routing	Invert	Outlet Devices
#1	Primary	33.90'	<b>12.0" Round Culvert</b> L= 29.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 33.90' / 33.80' S= 0.0034 ' S= 0.0034 ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	36.50'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

**Primary OutFlow** Max=0.87 cfs @ 12.12 hrs HW=34.50' (Free Discharge)  
↑1=Culvert (Barrel Controls 0.87 cfs @ 2.54 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



**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 298

**Stage-Discharge for Pond CB1: CB1**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
33.90	0.00	0.00	<b>0.00</b>
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
36.30	4.97	4.97	0.00
36.35	5.05	5.05	0.00
36.40	5.13	5.13	0.00
36.45	5.21	5.21	0.00
36.50	<b>5.29</b>	<b>5.29</b>	0.00



**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 299

**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	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		
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 = 7,525 sf, 60.54% Impervious, Inflow Depth > 4.91" for 25-Year event  
 Inflow = 0.86 cfs @ 12.12 hrs, Volume= 3,082 cf  
 Outflow = 0.86 cfs @ 12.12 hrs, Volume= 3,082 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 0.86 cfs @ 12.12 hrs, Volume= 3,082 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

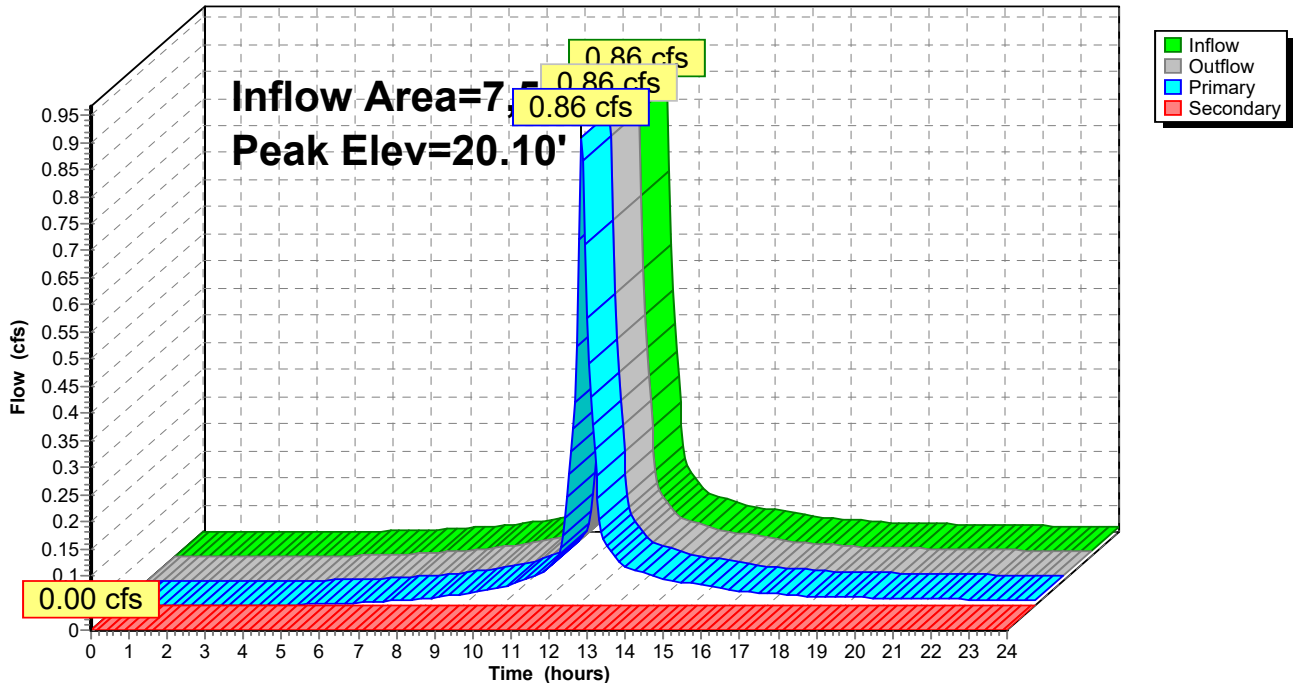
Device	Routing	Invert	Outlet Devices
#1	Primary	19.50'	<b>12.0" Round Culvert</b> L= 30.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 19.50' / 19.40' S= 0.0033 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	22.00'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0" x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

**Primary OutFlow** Max=0.84 cfs @ 12.12 hrs HW=20.09' (Free Discharge)  
 ↳1=Culvert (Barrel Controls 0.84 cfs @ 2.50 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**

Hydrograph



**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 301

**Stage-Discharge for Pond CB10: CB10**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
19.50	0.00	0.00	<b>0.00</b>
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	<b>5.10</b>	<b>5.10</b>	0.00

**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 302

**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		

# 817 Country Way Post

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 303

## Summary for Pond CB13: CB13

Inflow Area = 25,175 sf, 50.08% Impervious, Inflow Depth > 2.09" for 25-Year event  
 Inflow = 1.41 cfs @ 12.07 hrs, Volume= 4,388 cf  
 Outflow = 1.41 cfs @ 12.07 hrs, Volume= 4,388 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 1.41 cfs @ 12.07 hrs, Volume= 4,388 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= 20.64' @ 12.07 hrs  
 Flood Elev= 22.00'

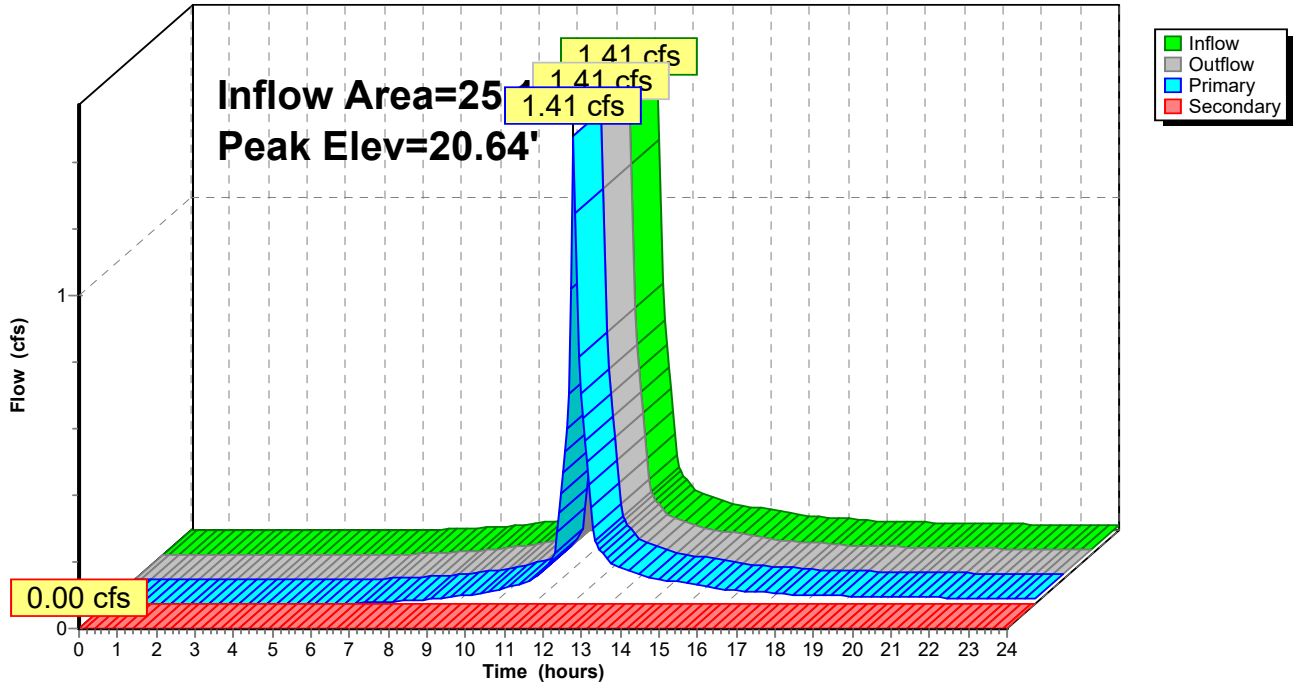
Device	Routing	Invert	Outlet Devices
#1	Primary	19.90'	<b>12.0" Round Culvert</b> L= 12.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 19.90' / 19.80' S= 0.0083 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	22.00'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0"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

**Primary OutFlow** Max=1.35 cfs @ 12.07 hrs HW=20.62' (Free Discharge)  
 ↑1=Culvert (Barrel Controls 1.35 cfs @ 3.12 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**

Hydrograph



**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 305

**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	<b>0.00</b>	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	<b>4.78</b>	<b>4.78</b>	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



# 817 Country Way Post

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 307

## Summary for Pond CB4: CB4

Inflow Area = 9,095 sf, 43.97% Impervious, Inflow Depth > 4.48" for 25-Year event  
Inflow = 1.08 cfs @ 12.07 hrs, Volume= 3,395 cf  
Outflow = 1.08 cfs @ 12.07 hrs, Volume= 3,395 cf, Atten= 0%, Lag= 0.0 min  
Primary = 1.08 cfs @ 12.07 hrs, Volume= 3,395 cf  
Routed to Pond SSD1 : SUBSURFACE DRAINAGE AREA #1  
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= 34.52' @ 12.07 hrs  
Flood Elev= 37.00'

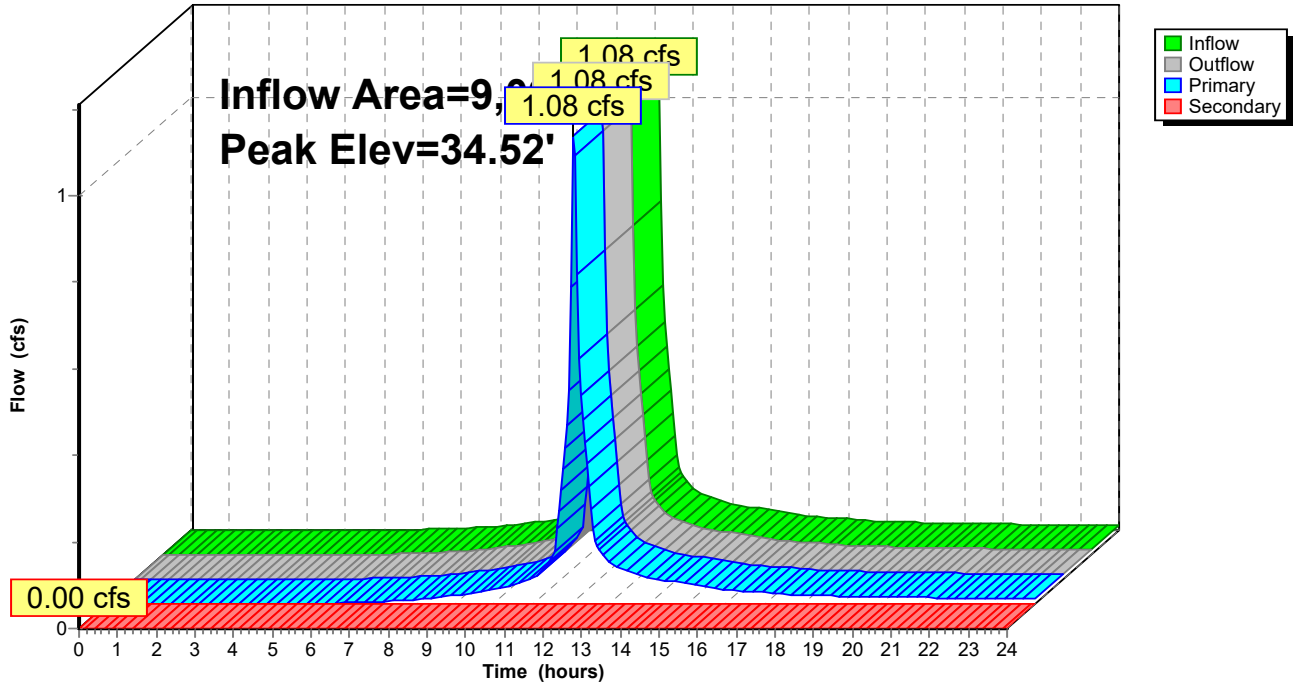
Device	Routing	Invert	Outlet Devices
#1	Primary	33.90'	<b>12.0" Round Culvert</b> L= 10.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 33.90' / 33.80' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	35.50'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

**Primary OutFlow** Max=1.04 cfs @ 12.07 hrs HW=34.51' (Free Discharge)  
↑1=Culvert (Barrel Controls 1.04 cfs @ 2.97 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



**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 309

**Stage-Discharge for Pond CB4: CB4**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
33.90	0.00	0.00	0.00	36.55	19.25	5.55	13.71
33.95	0.01	0.01	0.00	36.60	19.64	5.61	14.03
34.00	0.04	0.04	0.00	36.65	20.02	5.67	14.34
34.05	0.08	0.08	0.00	36.70	20.39	5.74	14.65
34.10	0.14	0.14	0.00	36.75	20.75	5.80	14.95
34.15	0.21	0.21	0.00	36.80	21.11	5.86	15.25
34.20	0.30	0.30	0.00	36.85	21.46	5.92	15.54
34.25	0.39	0.39	0.00	36.90	21.80	5.98	15.83
34.30	0.50	0.50	0.00	36.95	22.14	6.04	16.11
34.35	0.62	0.62	0.00	37.00	<b>22.48</b>	<b>6.10</b>	<b>16.38</b>
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	4.30	4.05	0.24				
35.60	4.83	4.14	0.69				
35.65	5.49	4.23	1.27				
35.70	6.26	4.31	1.95				
35.75	7.12	4.39	2.73				
35.80	8.06	4.47	3.58				
35.85	9.07	4.55	4.51				
35.90	10.15	4.63	5.52				
35.95	11.29	4.71	6.58				
36.00	12.49	4.78	7.71				
36.05	13.75	4.86	8.89				
36.10	15.06	4.93	10.13				
36.15	15.79	5.00	10.78				
36.20	16.26	5.07	11.19				
36.25	16.73	5.14	11.58				
36.30	17.18	5.21	11.96				
36.35	17.61	5.28	12.33				
36.40	18.04	5.35	12.69				
36.45	18.45	5.41	13.04				
36.50	18.86	5.48	13.37				

**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		

# 817 Country Way Post

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 311

## Summary for Pond CB5: CB5

Inflow Area = 8,082 sf, 70.01% Impervious, Inflow Depth > 5.14" for 25-Year event  
 Inflow = 1.06 cfs @ 12.07 hrs, Volume= 3,462 cf  
 Outflow = 1.06 cfs @ 12.07 hrs, Volume= 3,462 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 1.06 cfs @ 12.07 hrs, Volume= 3,462 cf  
     Routed to Pond 2P : DMH2  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
     Routed to Pond CB1 : CB1

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 34.63' @ 12.07 hrs  
 Flood Elev= 37.50'

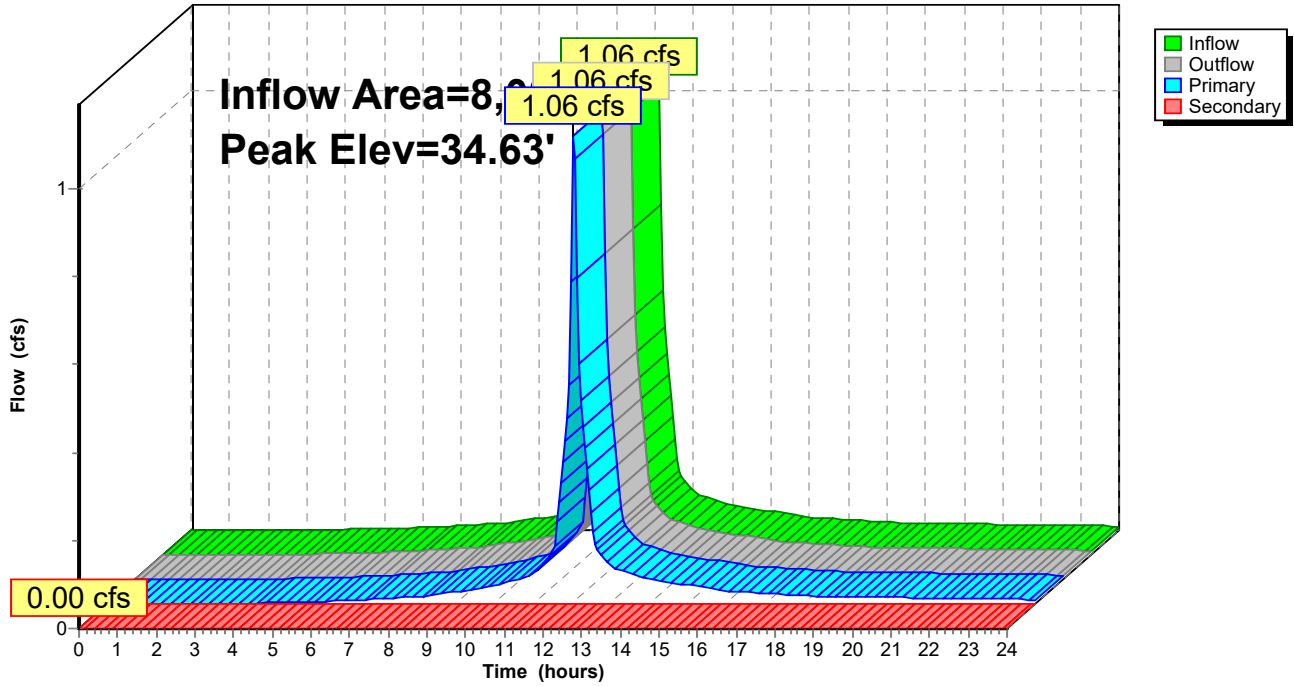
Device	Routing	Invert	Outlet Devices
#1	Primary	34.00'	<b>12.0" Round Culvert</b> L= 35.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 34.00' / 33.80' S= 0.0057 ' S= 0.0057 ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	38.20'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

**Primary OutFlow** Max=1.02 cfs @ 12.07 hrs HW=34.61' (Free Discharge)  
 ↑1=Culvert (Barrel Controls 1.02 cfs @ 2.91 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



**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 313

**Stage-Discharge for Pond CB5: CB5**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
34.00	0.00	0.00	<b>0.00</b>	36.65	5.32	5.32	0.00
34.05	0.01	0.01	0.00	36.70	5.39	5.39	0.00
34.10	0.03	0.03	0.00	36.75	5.46	5.46	0.00
34.15	0.07	0.07	0.00	36.80	5.53	5.53	0.00
34.20	0.13	0.13	0.00	36.85	5.60	5.60	0.00
34.25	0.19	0.19	0.00	36.90	5.67	5.67	0.00
34.30	0.28	0.28	0.00	36.95	5.73	5.73	0.00
34.35	0.37	0.37	0.00	37.00	5.80	5.80	0.00
34.40	0.48	0.48	0.00	37.05	5.86	5.86	0.00
34.45	0.59	0.59	0.00	37.10	5.93	5.93	0.00
34.50	0.72	0.72	0.00	37.15	5.99	5.99	0.00
34.55	0.85	0.85	0.00	37.20	6.06	6.06	0.00
34.60	0.99	0.99	0.00	37.25	6.12	6.12	0.00
34.65	1.13	1.13	0.00	37.30	6.18	6.18	0.00
34.70	1.28	1.28	0.00	37.35	6.24	6.24	0.00
34.75	1.44	1.44	0.00	37.40	6.30	6.30	0.00
34.80	1.59	1.59	0.00	37.45	6.36	6.36	0.00
34.85	1.75	1.75	0.00	37.50	6.42	6.42	0.00
34.90	1.91	1.91	0.00	37.55	6.48	6.48	0.00
34.95	2.06	2.06	0.00	37.60	6.54	6.54	0.00
35.00	2.22	2.22	0.00	37.65	6.60	6.60	0.00
35.05	2.36	2.36	0.00	37.70	6.66	6.66	0.00
35.10	2.50	2.50	0.00	37.75	6.72	6.72	0.00
35.15	2.63	2.63	0.00	37.80	6.77	6.77	0.00
35.20	2.74	2.74	0.00	37.85	6.83	6.83	0.00
35.25	2.84	2.84	0.00	37.90	6.88	6.88	0.00
35.30	2.89	2.89	0.00	37.95	6.94	6.94	0.00
35.35	2.90	2.90	0.00	38.00	6.99	6.99	0.00
35.40	3.03	3.03	0.00	38.05	7.05	7.05	0.00
35.45	3.15	3.15	0.00	38.10	7.10	7.10	0.00
35.50	3.27	3.27	0.00	38.15	7.16	7.16	0.00
35.55	3.39	3.39	0.00	38.20	<b>7.21</b>	<b>7.21</b>	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				

**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	37.55	0
34.95	0	37.60	0
35.00	0	37.65	0
35.05	0	37.70	0
35.10	0	37.75	0
35.15	0	37.80	0
35.20	0	37.85	0
35.25	0	37.90	0
35.30	0	37.95	0
35.35	0	38.00	0
35.40	0	38.05	0
35.45	0	38.10	0
35.50	0	38.15	0
35.55	0	38.20	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		



**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 315

**Summary for Pond CB6: CB6**

Inflow Area = 2,000 sf, 72.80% Impervious, Inflow Depth > 5.14" for 25-Year event  
 Inflow = 0.26 cfs @ 12.07 hrs, Volume= 857 cf  
 Outflow = 0.26 cfs @ 12.07 hrs, Volume= 857 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 0.26 cfs @ 12.07 hrs, Volume= 857 cf  
     Routed to Pond DMH7 : DMH7  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
     Routed to Pond CB5 : CB5

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 37.19' @ 12.07 hrs  
 Flood Elev= 39.42'

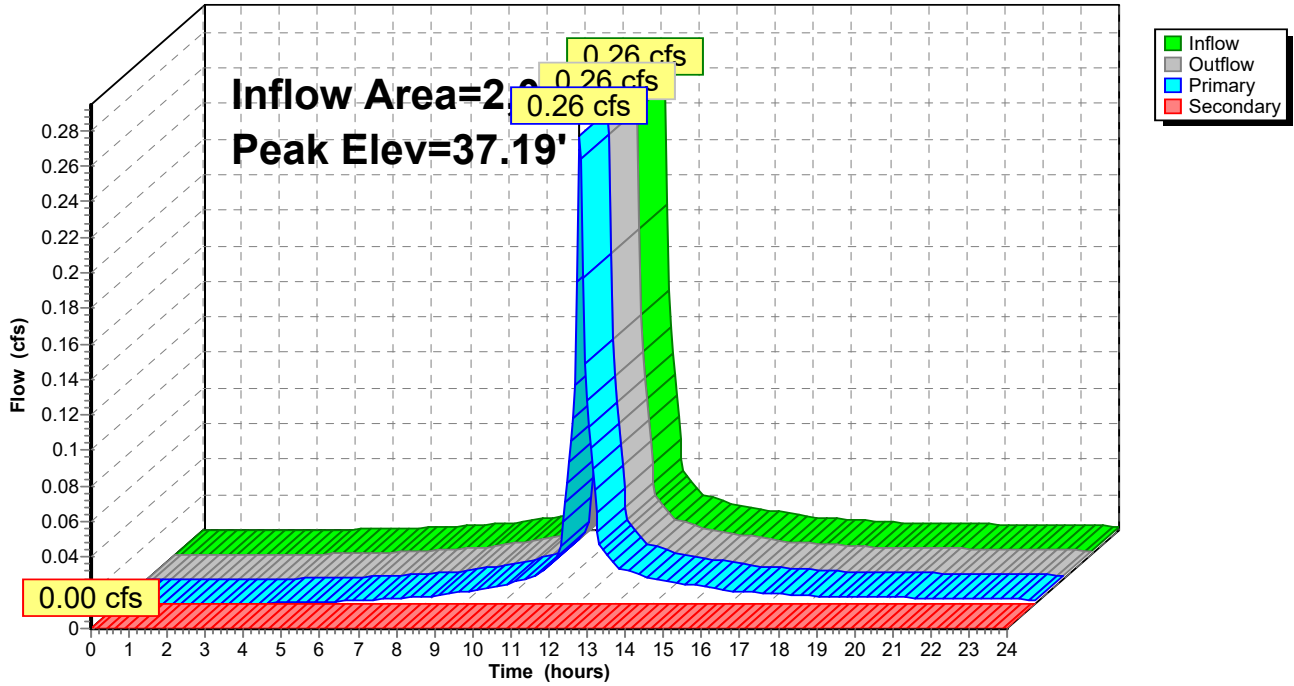
Device	Routing	Invert	Outlet Devices
#1	Primary	36.90'	<b>12.0" Round Culvert</b> L= 16.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 36.90' / 36.80' S= 0.0063 ' S= 0.0063 ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	40.00'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 24.0" x 24.0" Grate (69% open area) Limited to weir flow at low heads

**Primary OutFlow** Max=0.25 cfs @ 12.07 hrs HW=37.19' (Free Discharge)  
 ↑1=Culvert (Barrel Controls 0.25 cfs @ 2.02 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



**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 317

**Stage-Discharge for Pond CB6: CB6**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
36.90	0.00	0.00	<b>0.00</b>	39.55	5.55	5.55	0.00
36.95	0.01	0.01	0.00	39.60	5.61	5.61	0.00
37.00	0.03	0.03	0.00	39.65	5.67	5.67	0.00
37.05	0.07	0.07	0.00	39.70	5.74	5.74	0.00
37.10	0.12	0.12	0.00	39.75	5.80	5.80	0.00
37.15	0.19	0.19	0.00	39.80	5.86	5.86	0.00
37.20	0.27	0.27	0.00	39.85	5.92	5.92	0.00
37.25	0.36	0.36	0.00	39.90	5.98	5.98	0.00
37.30	0.47	0.47	0.00	39.95	6.04	6.04	0.00
37.35	0.58	0.58	0.00	40.00	<b>6.10</b>	<b>6.10</b>	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				
39.45	5.41	5.41	0.00				
39.50	5.48	5.48	0.00				

**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**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	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	39.68	0
37.58	0	38.64	0	39.70	0
37.60	0	38.66	0	39.72	0
37.62	0	38.68	0	39.74	0
37.64	0	38.70	0	39.76	0
37.66	0	38.72	0	39.78	0
37.68	0	38.74	0	39.80	0
37.70	0	38.76	0	39.82	0
37.72	0	38.78	0	39.84	0
37.74	0	38.80	0	39.86	0
37.76	0	38.82	0	39.88	0
37.78	0	38.84	0	39.90	0
37.80	0	38.86	0	39.92	0
37.82	0	38.88	0	39.94	0
37.84	0	38.90	0	39.96	0
37.86	0	38.92	0	39.98	0
37.88	0	38.94	0	40.00	0
37.90	0	38.96	0		
37.92	0	38.98	0		
37.94	0	39.00	0		

# 817 Country Way Post

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 319

## Summary for Pond CB9: CB9

Inflow Area = 1,641 sf, 83.49% Impervious, Inflow Depth > 5.48" for 25-Year event  
 Inflow = 0.22 cfs @ 12.07 hrs, Volume= 750 cf  
 Outflow = 0.22 cfs @ 12.07 hrs, Volume= 750 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 0.22 cfs @ 12.07 hrs, Volume= 750 cf  
     Routed to Pond DMH7 : DMH7  
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
     Routed to Pond CB5 : CB5

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= 39.42'

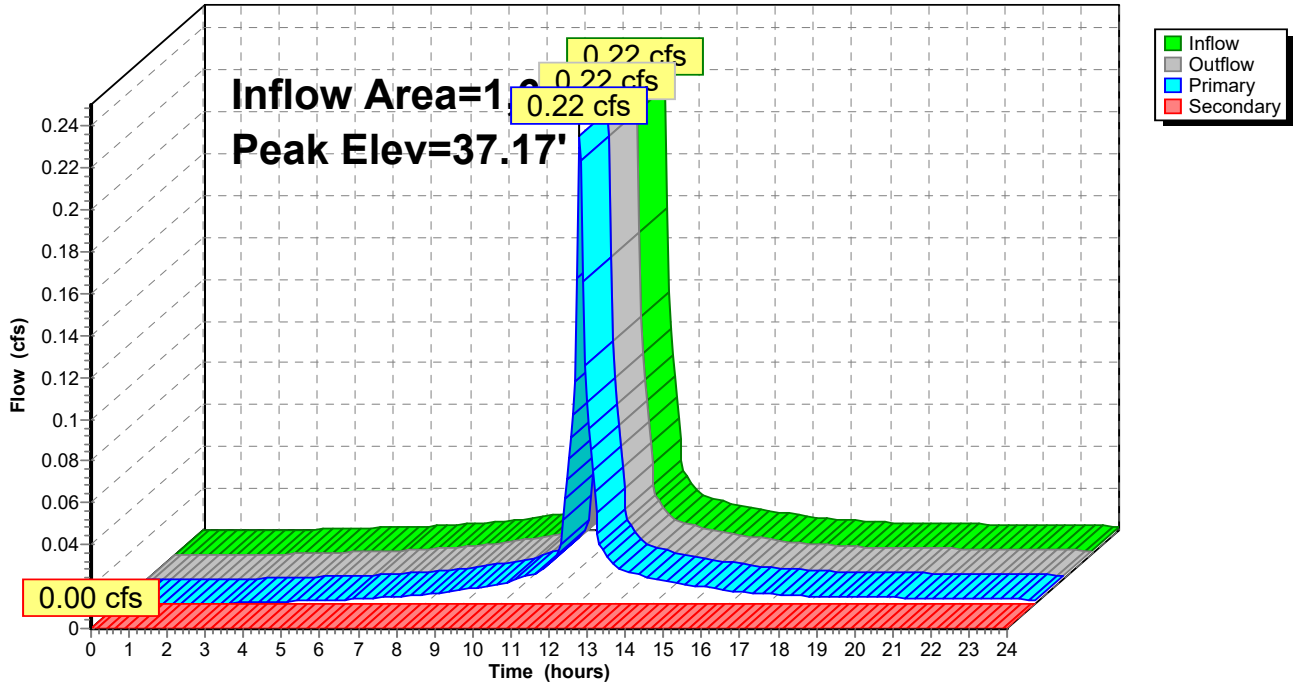
Device	Routing	Invert	Outlet Devices
#1	Primary	36.90'	<b>12.0" Round Culvert</b> L= 16.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 36.90' / 36.80' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	40.00'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

**Primary OutFlow** Max=0.21 cfs @ 12.07 hrs HW=37.16' (Free Discharge)  
 ↑1=Culvert (Barrel Controls 0.21 cfs @ 1.94 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



**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 321

**Stage-Discharge for Pond CB9: CB9**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
36.90	0.00	0.00	<b>0.00</b>	39.55	5.55	5.55	0.00
36.95	0.01	0.01	0.00	39.60	5.61	5.61	0.00
37.00	0.03	0.03	0.00	39.65	5.67	5.67	0.00
37.05	0.07	0.07	0.00	39.70	5.74	5.74	0.00
37.10	0.12	0.12	0.00	39.75	5.80	5.80	0.00
37.15	0.19	0.19	0.00	39.80	5.86	5.86	0.00
37.20	0.27	0.27	0.00	39.85	5.92	5.92	0.00
37.25	0.36	0.36	0.00	39.90	5.98	5.98	0.00
37.30	0.47	0.47	0.00	39.95	6.04	6.04	0.00
37.35	0.58	0.58	0.00	40.00	<b>6.10</b>	<b>6.10</b>	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				
39.45	5.41	5.41	0.00				
39.50	5.48	5.48	0.00				

**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 322

**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	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	39.68	0
37.58	0	38.64	0	39.70	0
37.60	0	38.66	0	39.72	0
37.62	0	38.68	0	39.74	0
37.64	0	38.70	0	39.76	0
37.66	0	38.72	0	39.78	0
37.68	0	38.74	0	39.80	0
37.70	0	38.76	0	39.82	0
37.72	0	38.78	0	39.84	0
37.74	0	38.80	0	39.86	0
37.76	0	38.82	0	39.88	0
37.78	0	38.84	0	39.90	0
37.80	0	38.86	0	39.92	0
37.82	0	38.88	0	39.94	0
37.84	0	38.90	0	39.96	0
37.86	0	38.92	0	39.98	0
37.88	0	38.94	0	40.00	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 = 48,030 sf, 60.91% Impervious, Inflow Depth > 3.36" for 25-Year event  
 Inflow = 2.32 cfs @ 12.09 hrs, Volume= 13,437 cf  
 Outflow = 2.32 cfs @ 12.09 hrs, Volume= 13,437 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 2.32 cfs @ 12.09 hrs, Volume= 13,437 cf  
 Routed to Pond SSD3 : SUBSURFACE DRAINAGE AREA #3

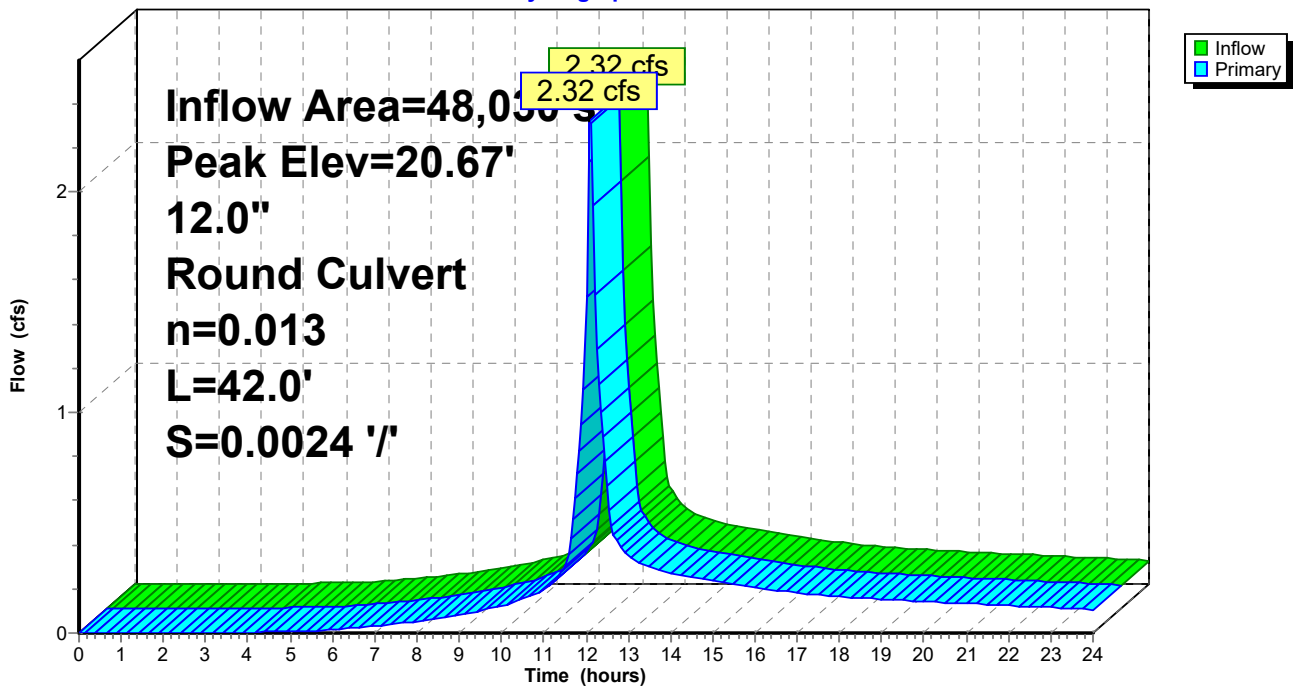
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 20.67' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	19.50'	<b>12.0" Round Culvert</b> 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=2.28 cfs @ 12.09 hrs HW=20.66' (Free Discharge)  
 ←1=Culvert (Barrel Controls 2.28 cfs @ 3.15 fps)

**Pond DMH11: DMH11**

Hydrograph



**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 324

**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	<b>2.33</b>
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		

**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 325

**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		
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 DMH7: DMH7**

Inflow Area = 3,641 sf, 77.62% Impervious, Inflow Depth > 5.29" for 25-Year event  
 Inflow = 0.49 cfs @ 12.07 hrs, Volume= 1,606 cf  
 Outflow = 0.49 cfs @ 12.07 hrs, Volume= 1,606 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 0.49 cfs @ 12.07 hrs, Volume= 1,606 cf  
 Routed to Pond SSD2 : SUBSURFACE DRAINAGE AREA #2

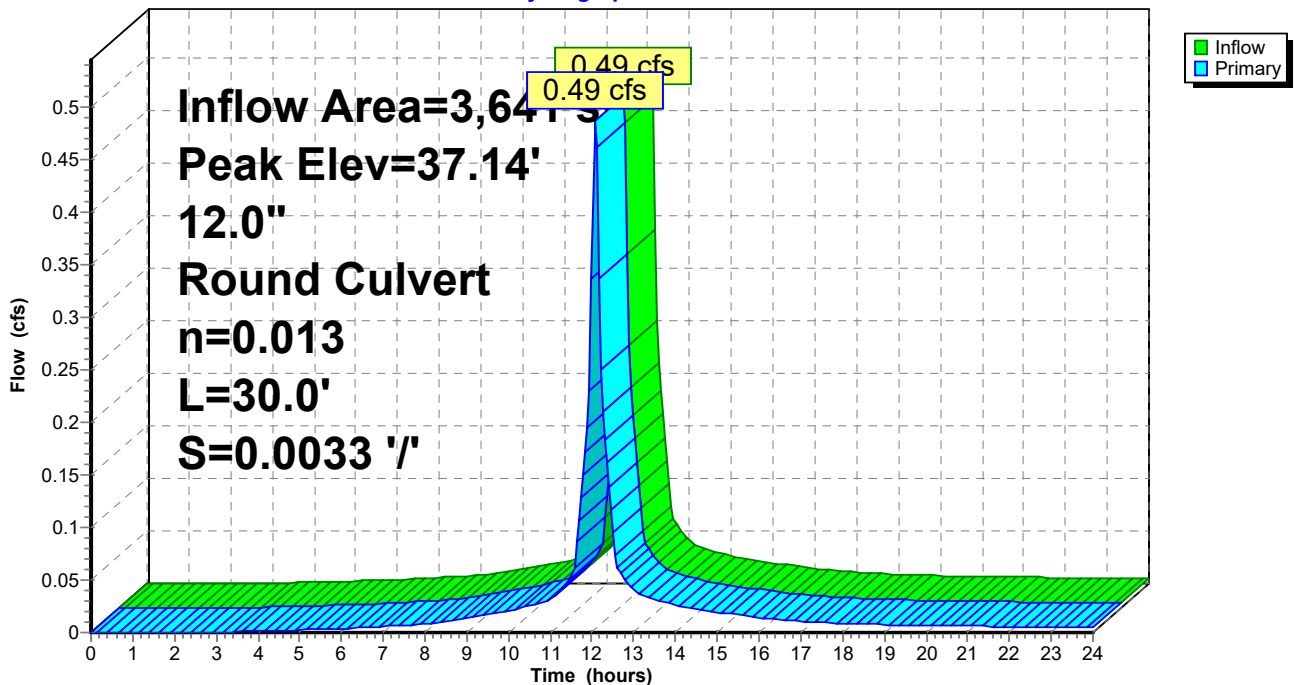
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 37.14' @ 12.07 hrs  
 Flood Elev= 39.67'

Device #	Routing	Invert	Outlet Devices
#1	Primary	36.70'	<b>12.0" Round Culvert</b> 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=0.47 cfs @ 12.07 hrs HW=37.13' (Free Discharge)  
 ←1=Culvert (Barrel Controls 0.47 cfs @ 2.13 fps)

**Pond DMH7: DMH7**

Hydrograph



**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 327

**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	<b>5.79</b>
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		

**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 328

**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		

# 817 Country Way Post

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 329

## Summary for Pond SSD1: SUBSURFACE DRAINAGE AREA #1

Inflow Area = 12,831 sf, 60.28% Impervious, Inflow Depth > 4.91" for 25-Year event  
 Inflow = 1.60 cfs @ 12.07 hrs, Volume= 5,247 cf  
 Outflow = 0.10 cfs @ 13.76 hrs, Volume= 4,264 cf, Atten= 94%, Lag= 101.1 min  
 Discarded = 0.07 cfs @ 10.50 hrs, Volume= 4,013 cf  
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
 Routed to Pond CB13 : CB13  
 Secondary = 0.03 cfs @ 13.76 hrs, Volume= 251 cf  
 Routed to Reach DP3 : DP3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 35.15' @ 13.76 hrs Surf.Area= 2,994 sf Storage= 2,459 cf

Plug-Flow detention time= 246.9 min calculated for 4,256 cf (81% of inflow)  
 Center-of-Mass det. time= 173.9 min ( 952.8 - 778.9 )

Volume	Invert	Avail.Storage	Storage Description
#1A	33.80'	1,232 cf	<b>21.67'W x 92.50'L x 2.04'H Field A</b> 4,092 cf Overall - 1,011 cf Embedded = 3,081 cf x 40.0% Voids
#2A	34.30'	1,011 cf	<b>Cultec C-100HD</b> x 72 Inside #1 Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.86 sf x 6 rows
#3B	33.80'	515 cf	<b>11.67'W x 70.00'L x 2.04'H Field B</b> 1,667 cf Overall - 380 cf Embedded = 1,288 cf x 40.0% Voids
#4B	34.30'	380 cf	<b>Cultec C-100HD</b> x 27 Inside #3 Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.86 sf x 3 rows
#5C	33.80'	118 cf	<b>9.33'W x 18.50'L x 2.04'H Field C</b> 353 cf Overall - 58 cf Embedded = 295 cf x 40.0% Voids
#6C	34.30'	58 cf	<b>Cultec C-100HD</b> x 4 Inside #5 Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.86 sf x 2 rows
		3,314 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	33.80'	<b>1.020 in/hr Exfiltration over Surface area</b> Phase-In= 0.01'
#2	Primary	35.50'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Secondary	35.00'	<b>2.0" Round Culvert</b> L= 267.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.00' / 19.00' S= 0.0599 '/ Cc= 0.900 n= 0.013, Flow Area= 0.02 sf

# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 25-Year Rainfall=6.19"

Page 330

**Discarded OutFlow** Max=0.07 cfs @ 10.50 hrs HW=33.82' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.07 cfs)

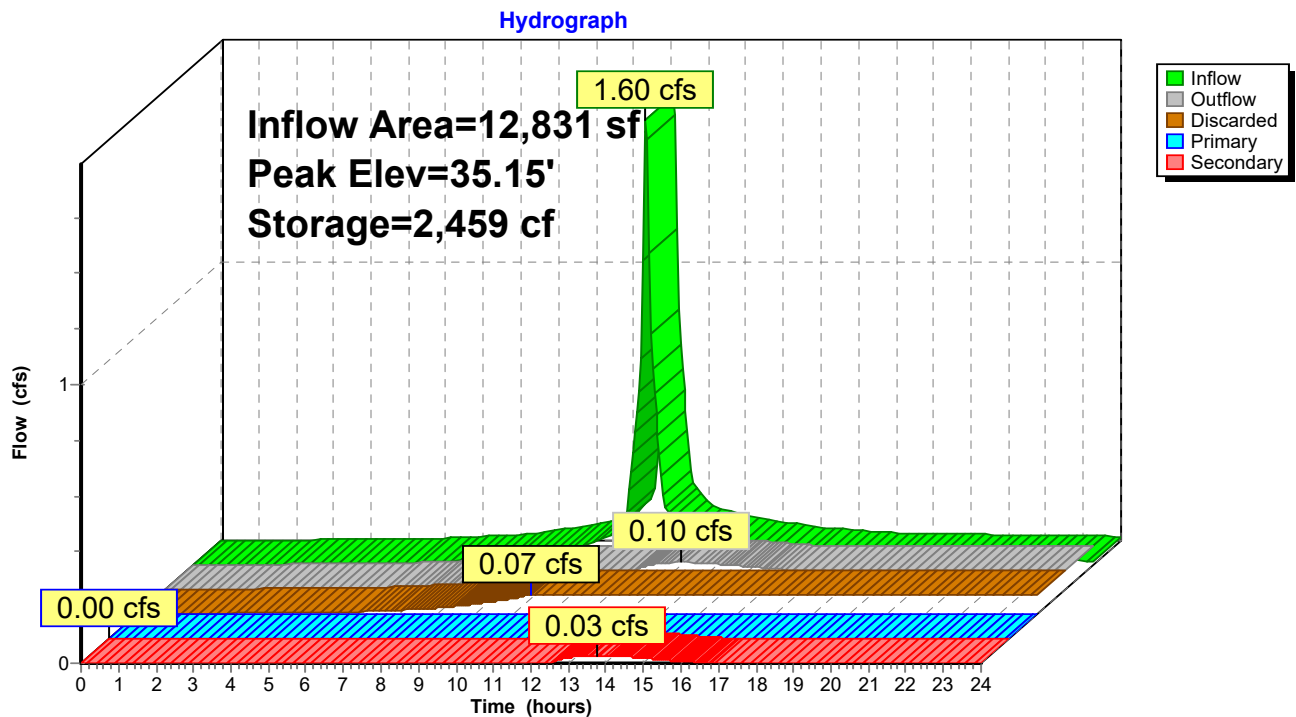
**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=33.80' (Free Discharge)

↑2=Orifice/Grate ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.03 cfs @ 13.76 hrs HW=35.15' (Free Discharge)

↑3=Culvert (Inlet Controls 0.03 cfs @ 1.33 fps)

## Pond SSD1: SUBSURFACE DRAINAGE AREA #1





**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 331

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

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
33.80	0.00	<b>0.00</b>	0.00	0.00
33.85	0.07	<b>0.07</b>	0.00	0.00
33.90	0.07	0.07	0.00	0.00
33.95	0.07	0.07	0.00	0.00
34.00	0.07	0.07	0.00	0.00
34.05	0.07	0.07	0.00	0.00
34.10	0.07	0.07	0.00	0.00
34.15	0.07	0.07	0.00	0.00
34.20	0.07	0.07	0.00	0.00
34.25	0.07	0.07	0.00	0.00
34.30	0.07	0.07	0.00	0.00
34.35	0.07	0.07	0.00	0.00
34.40	0.07	0.07	0.00	0.00
34.45	0.07	0.07	0.00	0.00
34.50	0.07	0.07	0.00	0.00
34.55	0.07	0.07	0.00	0.00
34.60	0.07	0.07	0.00	0.00
34.65	0.07	0.07	0.00	0.00
34.70	0.07	0.07	0.00	0.00
34.75	0.07	0.07	0.00	0.00
34.80	0.07	0.07	0.00	0.00
34.85	0.07	0.07	0.00	0.00
34.90	0.07	0.07	0.00	0.00
34.95	0.07	0.07	0.00	0.00
35.00	0.07	0.07	0.00	0.00
35.05	0.07	0.07	0.00	0.00
35.10	0.09	0.07	0.00	0.01
35.15	0.10	0.07	0.00	0.03
35.20	0.11	0.07	0.00	0.04
35.25	0.11	0.07	0.00	0.04
35.30	0.12	0.07	0.00	0.05
35.35	0.12	0.07	0.00	0.05
35.40	0.13	0.07	0.00	0.06
35.45	0.13	0.07	0.00	0.06
35.50	0.14	0.07	0.00	0.07
35.55	0.39	0.07	0.24	0.07
35.60	0.83	0.07	0.69	0.07
35.65	1.41	0.07	1.27	0.07
35.70	2.09	0.07	1.95	0.07
35.75	2.87	0.07	2.73	0.07
35.80	<b>3.73</b>	0.07	<b>3.58</b>	<b>0.07</b>

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

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
33.80	<b>2,994</b>	0	34.86	2,994	1,891
33.82	2,994	24	34.88	2,994	1,933
33.84	2,994	48	34.90	2,994	1,976
33.86	2,994	72	34.92	2,994	2,018
33.88	2,994	96	34.94	2,994	2,059
33.90	2,994	120	34.96	2,994	2,100
33.92	2,994	144	34.98	2,994	2,141
33.94	2,994	168	35.00	2,994	2,181
33.96	2,994	192	35.02	2,994	2,220
33.98	2,994	216	35.04	2,994	2,259
34.00	2,994	239	35.06	2,994	2,296
34.02	2,994	263	35.08	2,994	2,333
34.04	2,994	287	35.10	2,994	2,369
34.06	2,994	311	35.12	2,994	2,404
34.08	2,994	335	35.14	2,994	2,438
34.10	2,994	359	35.16	2,994	2,471
34.12	2,994	383	35.18	2,994	2,502
34.14	2,994	407	35.20	2,994	2,532
34.16	2,994	431	35.22	2,994	2,561
34.18	2,994	455	35.24	2,994	2,589
34.20	2,994	479	35.26	2,994	2,615
34.22	2,994	503	35.28	2,994	2,641
34.24	2,994	527	35.30	2,994	2,665
34.26	2,994	551	35.32	2,994	2,689
34.28	2,994	575	35.34	2,994	2,713
34.30	2,994	599	35.36	2,994	2,737
34.32	2,994	647	35.38	2,994	2,761
34.34	2,994	696	35.40	2,994	2,785
34.36	2,994	744	35.42	2,994	2,809
34.38	2,994	792	35.44	2,994	2,833
34.40	2,994	840	35.46	2,994	2,857
34.42	2,994	887	35.48	2,994	2,881
34.44	2,994	935	35.50	2,994	2,905
34.46	2,994	982	35.52	2,994	2,928
34.48	2,994	1,028	35.54	2,994	2,952
34.50	2,994	1,075	35.56	2,994	2,976
34.52	2,994	1,122	35.58	2,994	3,000
34.54	2,994	1,168	35.60	2,994	3,024
34.56	2,994	1,215	35.62	2,994	3,048
34.58	2,994	1,262	35.64	2,994	3,072
34.60	2,994	1,308	35.66	2,994	3,096
34.62	2,994	1,354	35.68	2,994	3,120
34.64	2,994	1,400	35.70	2,994	3,144
34.66	2,994	1,446	35.72	2,994	3,168
34.68	2,994	1,492	35.74	2,994	3,192
34.70	2,994	1,537	35.76	2,994	3,216
34.72	2,994	1,582	35.78	2,994	3,240
34.74	2,994	1,627	35.80	2,994	3,264
34.76	2,994	1,672	35.82	2,994	3,288
34.78	2,994	1,716	35.84	2,994	<b>3,312</b>
34.80	2,994	1,760			
34.82	2,994	1,804			
34.84	2,994	1,847			

**Summary for Pond SSD2: SUBSURFACE DRAINAGE AREA #2**

Inflow Area = 3,641 sf, 77.62% Impervious, Inflow Depth > 5.29" for 25-Year event  
 Inflow = 0.49 cfs @ 12.07 hrs, Volume= 1,606 cf  
 Outflow = 0.05 cfs @ 11.60 hrs, Volume= 1,603 cf, Atten= 90%, Lag= 0.0 min  
 Discarded = 0.05 cfs @ 11.60 hrs, Volume= 1,603 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 Pond CB5 : CB5

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 36.46' @ 12.88 hrs Surf.Area= 1,960 sf Storage= 595 cf

Plug-Flow detention time= 98.4 min calculated for 1,603 cf (100% of inflow)  
 Center-of-Mass det. time= 96.9 min ( 869.9 - 773.0 )

Volume	Invert	Avail.Storage	Storage Description
#1B	35.70'	2,483 cf	<b>16.00'W x 122.50'L x 4.54'H Field B</b> 8,902 cf Overall - 2,694 cf Embedded = 6,208 cf x 40.0% Voids
#2B	36.70'	2,694 cf	<b>Cultec R-330XLHD x 51 Inside #1</b> 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

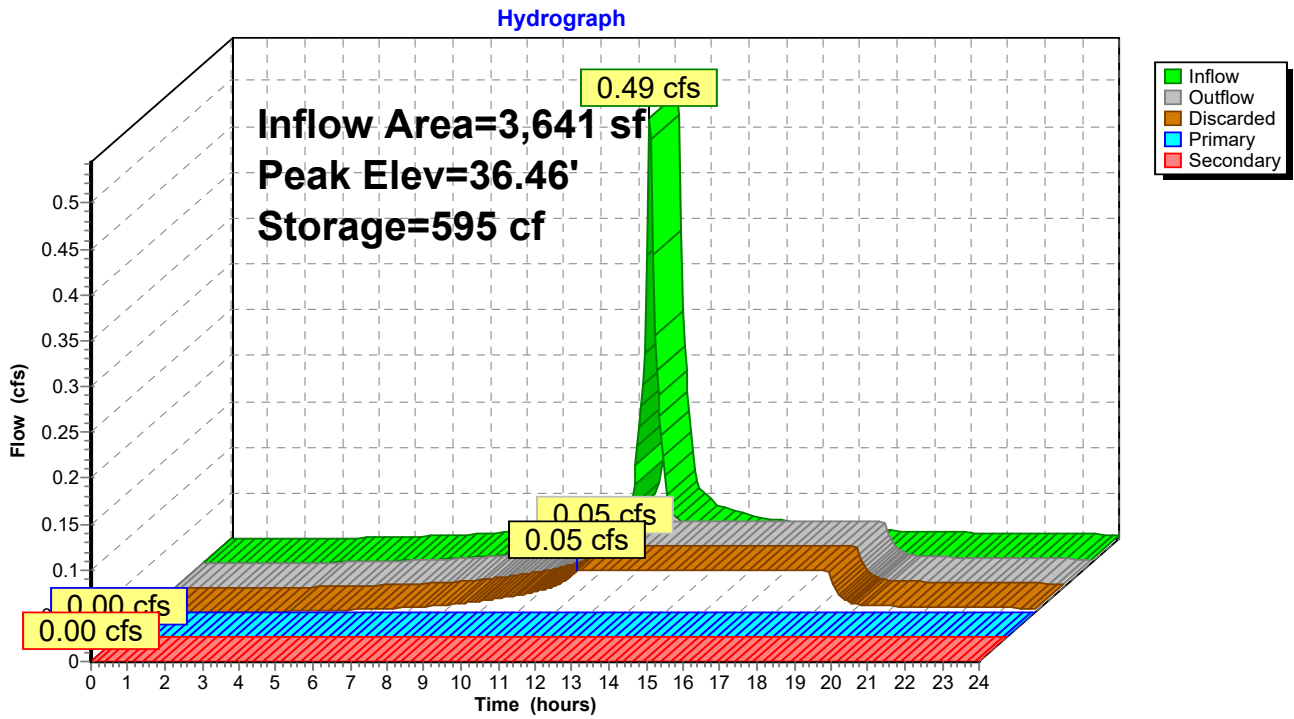
Device	Routing	Invert	Outlet Devices
#1	Discarded	35.70'	<b>1.020 in/hr Exfiltration over Surface area</b>
#2	Secondary	40.60'	<b>4.0" Horiz. Orifice/Grate C= 0.600</b> Limited to weir flow at low heads
#3	Primary	38.70'	<b>6.0" Round Culvert</b> L= 23.0' CPP, square edge headwall, Ke= 0.500 Inlet /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

**Discarded OutFlow** Max=0.05 cfs @ 11.60 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



**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 335

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

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
35.70	0.00	<b>0.00</b>	0.00	<b>0.00</b>
35.80	0.05	<b>0.05</b>	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	<b>1.26</b>	0.05	<b>1.21</b>	0.00

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

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

**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 337

**Summary for Pond SSD3: SUBSURFACE DRAINAGE AREA #3**

Inflow Area = 51,552 sf, 63.58% Impervious, Inflow Depth > 3.53" for 25-Year event  
 Inflow = 2.80 cfs @ 12.09 hrs, Volume= 15,183 cf  
 Outflow = 2.26 cfs @ 12.16 hrs, Volume= 14,106 cf, Atten= 19%, Lag= 4.2 min  
 Discarded = 0.03 cfs @ 6.60 hrs, Volume= 1,957 cf  
 Primary = 2.23 cfs @ 12.16 hrs, Volume= 12,149 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= 20.54' @ 12.16 hrs Surf.Area= 1,203 sf Storage= 1,807 cf

Plug-Flow detention time= 65.2 min calculated for 14,106 cf (93% of inflow)  
 Center-of-Mass det. time= 26.8 min ( 888.7 - 861.9 )

Volume	Invert	Avail.Storage	Storage Description
#1A	18.00'	722 cf	<b>8.33'W x 81.00'L x 3.54'H Field A</b> 2,391 cf Overall - 585 cf Embedded = 1,806 cf x 40.0% Voids
#2A	18.50'	585 cf	<b>Cultec R-330XLHD x 11 Inside #1</b> 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	<b>12.50'W x 28.00'L x 3.54'H Field B</b> 1,240 cf Overall - 335 cf Embedded = 904 cf x 40.0% Voids
#4B	18.50'	335 cf	<b>Cultec R-330XLHD x 6 Inside #3</b> 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	<b>13.00'W x 13.67'L x 3.54'H Field C</b> 629 cf Overall - 127 cf Embedded = 503 cf x 40.0% Voids
#6C	18.50'	127 cf	<b>Cultec R-330XLHD x 2 Inside #5</b> 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'	<b>1.020 in/hr Exfiltration over Surface area</b> Phase-In= 0.01'
#2	Primary	19.40'	<b>10.0" Round Culvert</b> L= 14.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 19.40' / 18.40' S= 0.0714 '/ Cc= 0.900 n= 0.013, Flow Area= 0.55 sf
#3	Secondary	22.00'	<b>20.0" x 20.0" Horiz. Orifice/Grate X 2.00</b> C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.03 cfs @ 6.60 hrs HW=18.04' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.03 cfs)

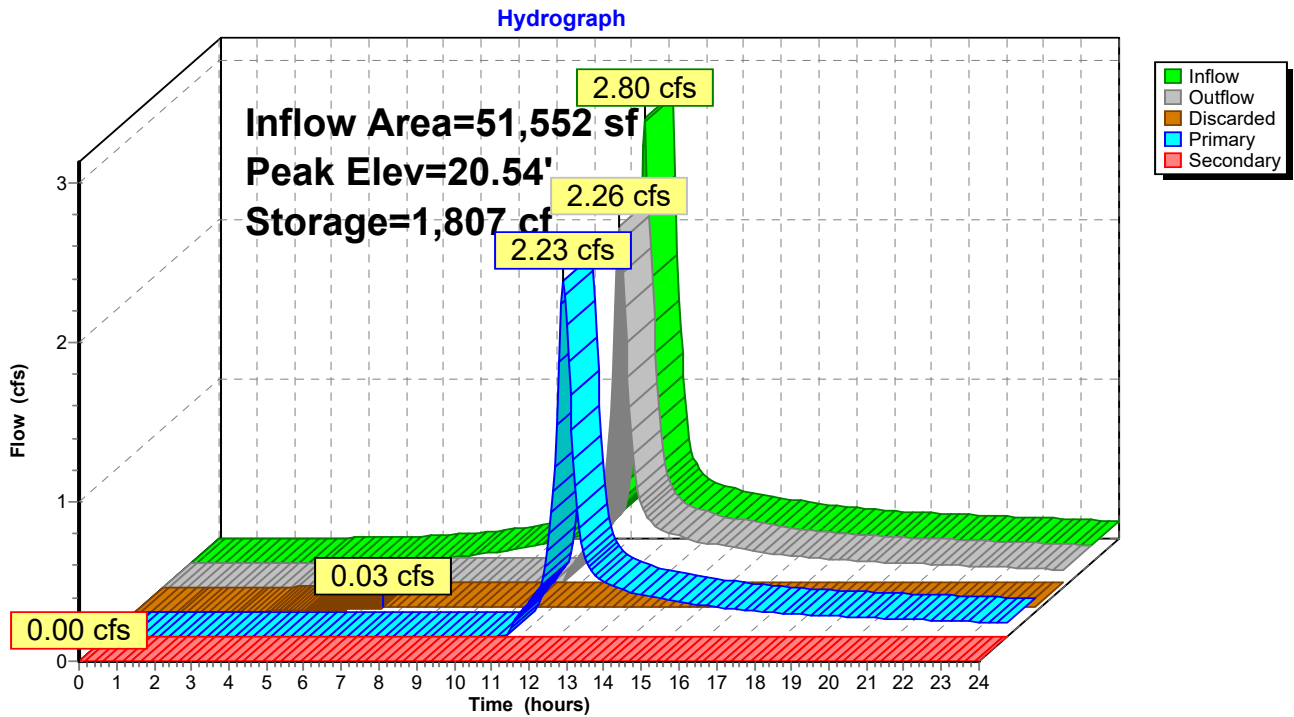
Primary OutFlow Max=2.22 cfs @ 12.16 hrs HW=20.53' (Free Discharge)

↑2=Culvert (Inlet Controls 2.22 cfs @ 4.07 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**





**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 339

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

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
18.00	0.00	<b>0.00</b>	0.00	<b>0.00</b>
18.10	0.03	<b>0.03</b>	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	0.03	0.03	0.00	0.00
19.50	0.07	0.03	0.04	0.00
19.60	0.18	0.03	0.15	0.00
19.70	0.36	0.03	0.33	0.00
19.80	0.59	0.03	0.56	0.00
19.90	0.85	0.03	0.82	0.00
20.00	1.14	0.03	1.11	0.00
20.10	1.42	0.03	1.39	0.00
20.20	1.67	0.03	1.64	0.00
20.30	1.85	0.03	1.83	0.00
20.40	2.03	0.03	2.01	0.00
20.50	2.20	0.03	2.17	0.00
20.60	2.35	0.03	2.32	0.00
20.70	2.50	0.03	2.47	0.00
20.80	2.63	0.03	2.60	0.00
20.90	2.76	0.03	2.73	0.00
21.00	2.89	0.03	2.86	0.00
21.10	3.00	0.03	2.98	0.00
21.20	3.12	0.03	3.09	0.00
21.30	3.23	0.03	3.20	0.00
21.40	3.33	0.03	3.30	0.00
21.50	3.44	0.03	3.41	0.00
21.60	3.54	0.03	3.51	0.00
21.70	3.63	0.03	3.60	0.00
21.80	3.73	0.03	3.70	0.00
21.90	3.82	0.03	3.79	0.00
22.00	<b>3.91</b>	0.03	<b>3.88</b>	0.00

**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 340

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

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
18.00	<b>1,203</b>	0	20.65	1,203	1,877
18.05	1,203	24	20.70	1,203	1,908
18.10	1,203	48	20.75	1,203	1,938
18.15	1,203	72	20.80	1,203	1,967
18.20	1,203	96	20.85	1,203	1,994
18.25	1,203	120	20.90	1,203	2,021
18.30	1,203	144	20.95	1,203	2,047
18.35	1,203	168	21.00	1,203	2,071
18.40	1,203	192	21.05	1,203	2,095
18.45	1,203	216	21.10	1,203	2,119
18.50	1,203	241	21.15	1,203	2,143
18.55	1,203	281	21.20	1,203	2,168
18.60	1,203	322	21.25	1,203	2,192
18.65	1,203	363	21.30	1,203	2,216
18.70	1,203	403	21.35	1,203	2,240
18.75	1,203	444	21.40	1,203	2,264
18.80	1,203	484	21.45	1,203	2,288
18.85	1,203	525	21.50	1,203	2,312
18.90	1,203	565	21.55	1,203	<b>2,332</b>
18.95	1,203	605	21.60	1,203	2,332
19.00	1,203	646	21.65	1,203	2,332
19.05	1,203	686	21.70	1,203	2,332
19.10	1,203	726	21.75	1,203	2,332
19.15	1,203	766	21.80	1,203	2,332
19.20	1,203	806	21.85	1,203	2,332
19.25	1,203	845	21.90	1,203	2,332
19.30	1,203	885	21.95	1,203	2,332
19.35	1,203	924	22.00	1,203	2,332
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			

**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= 2,178 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= 257 cf  
 Routed to Reach DP1 : DP1post  
 Tertiary = 0.25 cfs @ 12.16 hrs, Volume= 1,064 cf  
 Routed to Reach DP2 : DP2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 37.57' @ 12.16 hrs Surf.Area= 485 sf Storage= 936 cf

Plug-Flow detention time= 132.0 min calculated for 2,178 cf (78% of inflow)  
 Center-of-Mass det. time= 51.2 min ( 794.6 - 743.4 )

Volume	Invert	Avail.Storage	Storage Description
#1A	34.50'	487 cf	<b>11.17'W x 31.50'L x 4.71'H Field A</b> 1,656 cf Overall - 440 cf Embedded = 1,217 cf x 40.0% Voids
#2A	35.00'	440 cf	<b>Cultec R-330XLHD x 8 Inside #1</b> 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'	100 cf	<b>6.33'W x 10.50'L x 4.71'H Field B</b> 313 cf Overall - 63 cf Embedded = 250 cf x 40.0% Voids
#4B	35.00'	63 cf	<b>Cultec R-330XLHD Inside #3</b> 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'	100 cf	<b>6.33'W x 10.50'L x 4.71'H Field C</b> 313 cf Overall - 63 cf Embedded = 250 cf x 40.0% Voids
#6C	35.00'	63 cf	<b>Cultec R-330XLHD Inside #5</b> 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
		1,253 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'	<b>1.020 in/hr Exfiltration over Surface area</b>
#2	Primary	37.00'	<b>4.0" Round Culvert</b> 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
#3	Tertiary	36.50'	<b>4.0" Round Culvert</b> 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)

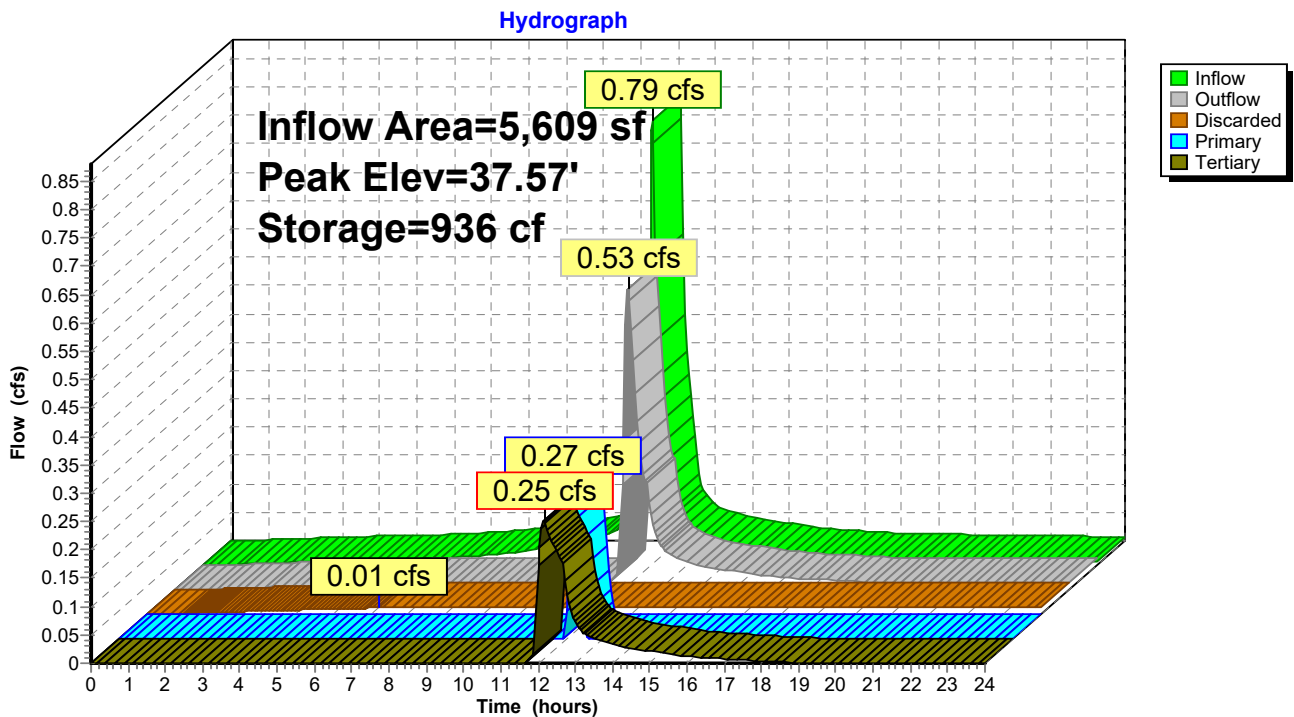
Primary OutFlow Max=0.26 cfs @ 12.16 hrs HW=37.56' (Free Discharge)

↑2=Culvert (Inlet Controls 0.26 cfs @ 3.01 fps)

Tertiary OutFlow Max=0.25 cfs @ 12.16 hrs HW=37.56' (Free Discharge)

↑3=Culvert (Barrel Controls 0.25 cfs @ 2.86 fps)

### Pond SSD4: SUBSURFACE DRAINAGE AREA #4



**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 343

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

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

**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 344

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

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
34.50	485	0	37.15	485	840
34.55	485	10	37.20	485	853
34.60	485	19	37.25	485	866
34.65	485	29	37.30	485	878
34.70	485	39	37.35	485	890
34.75	485	48	37.40	485	901
34.80	485	58	37.45	485	911
34.85	485	68	37.50	485	921
34.90	485	78	37.55	485	931
34.95	485	87	37.60	485	941
35.00	485	97	37.65	485	951
35.05	485	116	37.70	485	960
35.10	485	134	37.75	485	970
35.15	485	153	37.80	485	980
35.20	485	172	37.85	485	989
35.25	485	190	37.90	485	999
35.30	485	209	37.95	485	1,009
35.35	485	227	38.00	485	1,018
35.40	485	246	38.05	485	1,028
35.45	485	264	38.10	485	1,038
35.50	485	283	38.15	485	1,048
35.55	485	301	38.20	485	1,057
35.60	485	320	38.25	485	1,067
35.65	485	338	38.30	485	1,077
35.70	485	356	38.35	485	1,086
35.75	485	374	38.40	485	1,096
35.80	485	392	38.45	485	1,106
35.85	485	410	38.50	485	1,115
35.90	485	428	38.55	485	1,125
35.95	485	446	38.60	485	1,135
36.00	485	464	38.65	485	1,144
36.05	485	482	38.70	485	1,154
36.10	485	500	38.75	485	1,164
36.15	485	518	38.80	485	1,174
36.20	485	535	38.85	485	1,183
36.25	485	553	38.90	485	1,193
36.30	485	571	38.95	485	1,203
36.35	485	588	39.00	485	1,212
36.40	485	605	39.05	485	1,222
36.45	485	622	39.10	485	1,232
36.50	485	639	39.15	485	1,241
36.55	485	656	39.20	485	1,251
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			

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

Inflow Area = 15,330 sf, 78.87% Impervious, Inflow Depth > 5.36" for 25-Year event  
 Inflow = 1.90 cfs @ 12.09 hrs, Volume= 6,841 cf  
 Outflow = 0.14 cfs @ 13.48 hrs, Volume= 5,968 cf, Atten= 93%, Lag= 83.3 min  
 Primary = 0.14 cfs @ 13.48 hrs, Volume= 5,968 cf  
 Routed to Pond DMH11 : DMH11  
 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= 32.71' @ 13.48 hrs Surf.Area= 2,920 sf Storage= 3,462 cf

Plug-Flow detention time= 262.3 min calculated for 5,955 cf (87% of inflow)  
 Center-of-Mass det. time= 205.3 min ( 977.1 - 771.8 )

Volume	Invert	Avail.Storage	Storage Description
#1A	31.00'	2,550 cf	<b>26.67'W x 109.50'L x 3.54'H Field A</b> 10,342 cf Overall - 3,968 cf Embedded = 6,374 cf x 40.0% Voids
#2A	31.50'	3,968 cf	<b>Cultec R-330XLHD x 75 Inside #1</b> 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
		6,517 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	31.00'	<b>6.0" Round Culvert</b> L= 175.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 31.00' / 19.00' S= 0.0686 1/1' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf
#2	Secondary	36.50'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Device 1	19.25'	<b>2.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

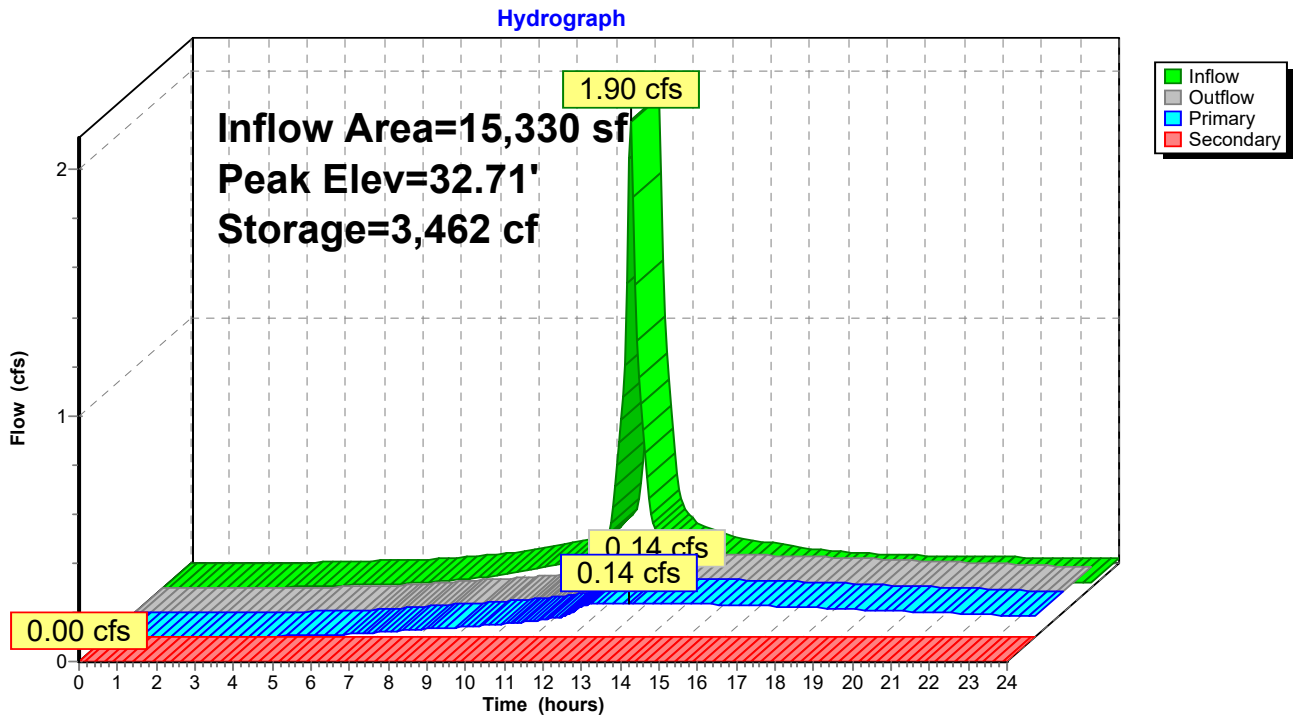
**Primary OutFlow** Max=0.14 cfs @ 13.48 hrs HW=32.71' (Free Discharge)

- ↑1=Culvert (Passes 0.14 cfs of 1.14 cfs potential flow)
- ↑3=Orifice/Grate (Orifice Controls 0.14 cfs @ 6.31 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)**





**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 347

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

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
31.00	0.00	0.00	<b>0.00</b>	36.30	0.24	0.24	0.00
31.10	0.03	0.03	0.00	36.40	0.24	0.24	0.00
31.20	0.05	0.05	0.00	36.50	<b>0.25</b>	<b>0.25</b>	0.00
31.30	0.06	0.06	0.00				
31.40	0.07	0.07	0.00				
31.50	0.07	0.07	0.00				
31.60	0.08	0.08	0.00				
31.70	0.09	0.09	0.00				
31.80	0.09	0.09	0.00				
31.90	0.10	0.10	0.00				
32.00	0.11	0.11	0.00				
32.10	0.11	0.11	0.00				
32.20	0.12	0.12	0.00				
32.30	0.12	0.12	0.00				
32.40	0.12	0.12	0.00				
32.50	0.13	0.13	0.00				
32.60	0.13	0.13	0.00				
32.70	0.14	0.14	0.00				
32.80	0.14	0.14	0.00				
32.90	0.14	0.14	0.00				
33.00	0.15	0.15	0.00				
33.10	0.15	0.15	0.00				
33.20	0.16	0.16	0.00				
33.30	0.16	0.16	0.00				
33.40	0.16	0.16	0.00				
33.50	0.17	0.17	0.00				
33.60	0.17	0.17	0.00				
33.70	0.17	0.17	0.00				
33.80	0.18	0.18	0.00				
33.90	0.18	0.18	0.00				
34.00	0.18	0.18	0.00				
34.10	0.18	0.18	0.00				
34.20	0.19	0.19	0.00				
34.30	0.19	0.19	0.00				
34.40	0.19	0.19	0.00				
34.50	0.20	0.20	0.00				
34.60	0.20	0.20	0.00				
34.70	0.20	0.20	0.00				
34.80	0.20	0.20	0.00				
34.90	0.21	0.21	0.00				
35.00	0.21	0.21	0.00				
35.10	0.21	0.21	0.00				
35.20	0.22	0.22	0.00				
35.30	0.22	0.22	0.00				
35.40	0.22	0.22	0.00				
35.50	0.22	0.22	0.00				
35.60	0.23	0.23	0.00				
35.70	0.23	0.23	0.00				
35.80	0.23	0.23	0.00				
35.90	0.23	0.23	0.00				
36.00	0.23	0.23	0.00				
36.10	0.24	0.24	0.00				
36.20	0.24	0.24	0.00				

**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 348

**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	5,379	36.30	6,517
31.05	58	33.70	5,463	36.35	6,517
31.10	117	33.75	5,543	36.40	6,517
31.15	175	33.80	5,619	36.45	6,517
31.20	234	33.85	5,691	36.50	6,517
31.25	292	33.90	5,759		
31.30	350	33.95	5,824		
31.35	409	34.00	5,885		
31.40	467	34.05	5,943		
31.45	526	34.10	6,001		
31.50	584	34.15	6,060		
31.55	706	34.20	6,118		
31.60	828	34.25	6,177		
31.65	949	34.30	6,235		
31.70	1,070	34.35	6,293		
31.75	1,190	34.40	6,352		
31.80	1,311	34.45	6,410		
31.85	1,431	34.50	6,469		
31.90	1,552	34.55	<b>6,517</b>		
31.95	1,672	34.60	6,517		
32.00	1,792	34.65	6,517		
32.05	1,912	34.70	6,517		
32.10	2,031	34.75	6,517		
32.15	2,149	34.80	6,517		
32.20	2,267	34.85	6,517		
32.25	2,384	34.90	6,517		
32.30	2,501	34.95	6,517		
32.35	2,618	35.00	6,517		
32.40	2,734	35.05	6,517		
32.45	2,850	35.10	6,517		
32.50	2,966	35.15	6,517		
32.55	3,082	35.20	6,517		
32.60	3,198	35.25	6,517		
32.65	3,313	35.30	6,517		
32.70	3,427	35.35	6,517		
32.75	3,542	35.40	6,517		
32.80	3,655	35.45	6,517		
32.85	3,766	35.50	6,517		
32.90	3,877	35.55	6,517		
32.95	3,986	35.60	6,517		
33.00	4,095	35.65	6,517		
33.05	4,202	35.70	6,517		
33.10	4,309	35.75	6,517		
33.15	4,414	35.80	6,517		
33.20	4,518	35.85	6,517		
33.25	4,620	35.90	6,517		
33.30	4,722	35.95	6,517		
33.35	4,821	36.00	6,517		
33.40	4,919	36.05	6,517		
33.45	5,015	36.10	6,517		
33.50	5,110	36.15	6,517		
33.55	5,202	36.20	6,517		
33.60	5,292	36.25	6,517		

# 817 Country Way Post

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 349

## Summary for Pond SSD6: SUBSURFACE DRAINAGE AREA #6 (STORAGE)

Inflow Area = 7,296 sf, 79.98% Impervious, Inflow Depth > 5.35" for 25-Year event  
 Inflow = 0.98 cfs @ 12.07 hrs, Volume= 3,255 cf  
 Outflow = 0.06 cfs @ 13.53 hrs, Volume= 2,685 cf, Atten= 94%, Lag= 87.7 min  
 Primary = 0.06 cfs @ 13.53 hrs, Volume= 2,685 cf  
     Routed to Reach DP3 : DP3  
 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= 25.85' @ 13.53 hrs Surf.Area= 295 sf Storage= 1,725 cf

Plug-Flow detention time= 279.2 min calculated for 2,679 cf (82% of inflow)  
 Center-of-Mass det. time= 209.7 min ( 979.6 - 769.9 )

Volume	Invert	Avail.Storage	Storage Description
#1	20.00'	2,360 cf	<b>10.00'W x 29.50'L x 8.00'H Prismatic</b>

Device	Routing	Invert	Outlet Devices
#1	Secondary	29.10'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#2	Primary	20.00'	<b>4.0" Round Culvert</b> L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 20.00' / 19.00' S= 0.0100 1/1' Cc= 0.900 n= 0.013, Flow Area= 0.09 sf
#3	Device 2	19.00'	<b>1.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Primary OutFlow** Max=0.06 cfs @ 13.53 hrs HW=25.85' (Free Discharge)

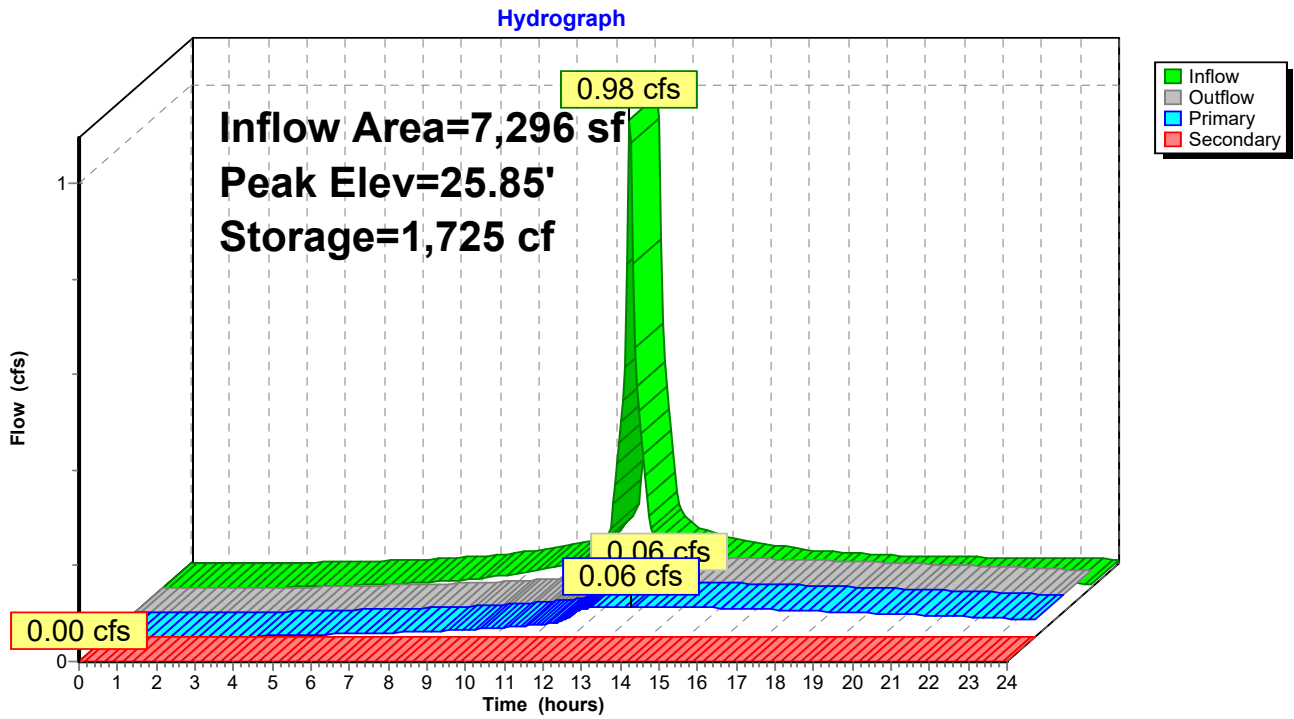
↑ **2=Culvert** (Passes 0.06 cfs of 0.46 cfs potential flow)

↑ **3=Orifice/Grate** (Orifice Controls 0.06 cfs @ 11.64 fps)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=20.00' (Free Discharge)

↑ **1=Orifice/Grate** ( Controls 0.00 cfs)

**Pond SSD6: SUBSURFACE DRAINAGE AREA #6 (STORAGE)**



**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 351

**Stage-Discharge for Pond SSD6: SUBSURFACE DRAINAGE AREA #6 (STORAGE)**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
20.00	0.00	0.00	<b>0.00</b>	25.30	0.06	0.06	0.00
20.10	0.01	0.01	0.00	25.40	0.06	0.06	0.00
20.20	0.01	0.01	0.00	25.50	0.06	0.06	0.00
20.30	0.01	0.01	0.00	25.60	0.06	0.06	0.00
20.40	0.02	0.02	0.00	25.70	0.06	0.06	0.00
20.50	0.02	0.02	0.00	25.80	0.06	0.06	0.00
20.60	0.02	0.02	0.00	25.90	0.06	0.06	0.00
20.70	0.02	0.02	0.00	26.00	0.06	0.06	0.00
20.80	0.02	0.02	0.00	26.10	0.06	0.06	0.00
20.90	0.02	0.02	0.00	26.20	0.07	0.07	0.00
21.00	0.03	0.03	0.00	26.30	0.07	0.07	0.00
21.10	0.03	0.03	0.00	26.40	0.07	0.07	0.00
21.20	0.03	0.03	0.00	26.50	0.07	0.07	0.00
21.30	0.03	0.03	0.00	26.60	0.07	0.07	0.00
21.40	0.03	0.03	0.00	26.70	0.07	0.07	0.00
21.50	0.03	0.03	0.00	26.80	0.07	0.07	0.00
21.60	0.03	0.03	0.00	26.90	0.07	0.07	0.00
21.70	0.03	0.03	0.00	27.00	0.07	0.07	0.00
21.80	0.04	0.04	0.00	27.10	0.07	0.07	0.00
21.90	0.04	0.04	0.00	27.20	0.07	0.07	0.00
22.00	0.04	0.04	0.00	27.30	0.07	0.07	0.00
22.10	0.04	0.04	0.00	27.40	0.07	0.07	0.00
22.20	0.04	0.04	0.00	27.50	0.07	0.07	0.00
22.30	0.04	0.04	0.00	27.60	0.07	0.07	0.00
22.40	0.04	0.04	0.00	27.70	0.07	0.07	0.00
22.50	0.04	0.04	0.00	27.80	0.07	0.07	0.00
22.60	0.04	0.04	0.00	27.90	0.07	0.07	0.00
22.70	0.04	0.04	0.00	28.00	0.07	0.07	0.00
22.80	0.04	0.04	0.00	28.10	0.07	0.07	0.00
22.90	0.04	0.04	0.00	28.20	0.08	0.08	0.00
23.00	0.05	0.05	0.00	28.30	0.08	0.08	0.00
23.10	0.05	0.05	0.00	28.40	0.08	0.08	0.00
23.20	0.05	0.05	0.00	28.50	0.08	0.08	0.00
23.30	0.05	0.05	0.00	28.60	0.08	0.08	0.00
23.40	0.05	0.05	0.00	28.70	0.08	0.08	0.00
23.50	0.05	0.05	0.00	28.80	0.08	0.08	0.00
23.60	0.05	0.05	0.00	28.90	0.08	0.08	0.00
23.70	0.05	0.05	0.00	29.00	0.08	0.08	0.00
23.80	0.05	0.05	0.00	29.10	<b>0.08</b>	<b>0.08</b>	0.00
23.90	0.05	0.05	0.00				
24.00	0.05	0.05	0.00				
24.10	0.05	0.05	0.00				
24.20	0.05	0.05	0.00				
24.30	0.05	0.05	0.00				
24.40	0.06	0.06	0.00				
24.50	0.06	0.06	0.00				
24.60	0.06	0.06	0.00				
24.70	0.06	0.06	0.00				
24.80	0.06	0.06	0.00				
24.90	0.06	0.06	0.00				
25.00	0.06	0.06	0.00				
25.10	0.06	0.06	0.00				
25.20	0.06	0.06	0.00				

**817 Country Way Post**

Type III 24-hr 25-Year Rainfall=6.19"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 352

**Stage-Area-Storage for Pond SSD6: SUBSURFACE DRAINAGE AREA #6 (STORAGE)**

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
20.00	0	25.30	1,564
20.10	30	25.40	1,593
20.20	59	25.50	1,623
20.30	89	25.60	1,652
20.40	118	25.70	1,681
20.50	148	25.80	1,711
20.60	177	25.90	1,740
20.70	206	26.00	1,770
20.80	236	26.10	1,800
20.90	265	26.20	1,829
21.00	295	26.30	1,859
21.10	325	26.40	1,888
21.20	354	26.50	1,918
21.30	384	26.60	1,947
21.40	413	26.70	1,976
21.50	443	26.80	2,006
21.60	472	26.90	2,035
21.70	501	27.00	2,065
21.80	531	27.10	2,095
21.90	560	27.20	2,124
22.00	590	27.30	2,154
22.10	620	27.40	2,183
22.20	649	27.50	2,213
22.30	679	27.60	2,242
22.40	708	27.70	2,272
22.50	738	27.80	2,301
22.60	767	27.90	2,330
22.70	796	28.00	<b>2,360</b>
22.80	826	28.10	2,360
22.90	855	28.20	2,360
23.00	885	28.30	2,360
23.10	915	28.40	2,360
23.20	944	28.50	2,360
23.30	974	28.60	2,360
23.40	1,003	28.70	2,360
23.50	1,033	28.80	2,360
23.60	1,062	28.90	2,360
23.70	1,091	29.00	2,360
23.80	1,121	29.10	2,360
23.90	1,150		
24.00	1,180		
24.10	1,210		
24.20	1,239		
24.30	1,269		
24.40	1,298		
24.50	1,328		
24.60	1,357		
24.70	1,386		
24.80	1,416		
24.90	1,445		
25.00	1,475		
25.10	1,505		
25.20	1,534		

# 817 Country Way Post

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 353

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

<b>Subcatchment 1: Post 1</b>	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
<b>Subcatchment 2A: Post 2A</b>	Runoff Area=2,000 sf 72.80% Impervious Runoff Depth>7.59" Tc=5.0 min CN=91 Runoff=0.38 cfs 1,265 cf
<b>Subcatchment 2B: Post 2B</b>	Runoff Area=1,641 sf 83.49% Impervious Runoff Depth>7.95" Tc=5.0 min CN=94 Runoff=0.32 cfs 1,088 cf
<b>Subcatchment 3A: Post 3A</b>	Runoff Area=9,095 sf 43.97% Impervious Runoff Depth>6.87" Tc=5.0 min CN=85 Runoff=1.62 cfs 5,205 cf
<b>Subcatchment 3B: Post 3B</b>	Runoff Area=8,082 sf 70.01% Impervious Runoff Depth>7.59" Tc=5.0 min CN=91 Runoff=1.53 cfs 5,114 cf
<b>Subcatchment 4: Post 4</b>	Runoff Area=7,248 sf 88.76% Impervious Runoff Depth>8.07" Flow Length=131' Tc=8.6 min CN=95 Runoff=1.27 cfs 4,875 cf
<b>Subcatchment 5: Post 5</b>	Runoff Area=7,525 sf 60.54% Impervious Runoff Depth>7.35" Flow Length=131' Tc=8.6 min CN=89 Runoff=1.26 cfs 4,607 cf
<b>Subcatchment 6: Post 6</b>	Runoff Area=12,344 sf 39.48% Impervious Runoff Depth>6.62" Tc=5.0 min CN=83 Runoff=2.15 cfs 6,815 cf
<b>Subcatchment 6A: Post 6a</b>	Runoff Area=6,242 sf 76.59% Impervious Runoff Depth>7.71" Tc=5.0 min CN=92 Runoff=1.19 cfs 4,012 cf
<b>Subcatchment 7: Post 7</b>	Runoff Area=2,790 sf 0.00% Impervious Runoff Depth>5.41" Flow Length=170' Tc=11.1 min CN=73 Runoff=0.34 cfs 1,257 cf
<b>Subcatchment 8: Post 8</b>	Runoff Area=1,030 sf 0.00% Impervious Runoff Depth>5.05" Tc=5.0 min CN=70 Runoff=0.14 cfs 434 cf
<b>Subcatchment 9: Post 9</b>	Runoff Area=21,294 sf 19.29% Impervious Runoff Depth>6.02" Tc=5.0 min CN=78 Runoff=3.42 cfs 10,681 cf
<b>Subcatchment B1: BLDG #1</b>	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
<b>Subcatchment B2a: BLDG #2</b>	Runoff Area=1,054 sf 100.00% Impervious Runoff Depth>8.44" Tc=5.0 min CN=98 Runoff=0.21 cfs 741 cf
<b>Subcatchment B2b: BLDG #2 (REAR)</b>	Runoff Area=3,736 sf 100.00% Impervious Runoff Depth>8.44" Tc=5.0 min CN=98 Runoff=0.74 cfs 2,626 cf
<b>Subcatchment B3: BLDG #3</b>	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

# 817 Country Way Post

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 354

<b>Reach DP1: DP1post</b>	Inflow=1.98 cfs 6,741 cf Outflow=1.98 cfs 6,741 cf
<b>Reach DP2: DP2</b>	Inflow=0.44 cfs 2,166 cf Outflow=0.44 cfs 2,166 cf
<b>Reach DP3: DP3</b>	Inflow=6.29 cfs 34,886 cf Outflow=6.29 cfs 34,886 cf
<b>Reach DP4: DP4</b>	Inflow=0.34 cfs 1,257 cf Outflow=0.34 cfs 1,257 cf
<b>Pond 2P: DMH2</b>	Peak Elev=38.05' Inflow=2.72 cfs 9,988 cf 12.0" Round Culvert n=0.013 L=30.0' S=0.0033 '/' Outflow=2.72 cfs 9,988 cf
<b>Pond CB1: CB1</b>	Peak Elev=34.65' Inflow=1.27 cfs 4,875 cf Primary=1.27 cfs 4,875 cf Secondary=0.00 cfs 0 cf Outflow=1.27 cfs 4,875 cf
<b>Pond CB10: CB10</b>	Peak Elev=20.25' Inflow=1.26 cfs 4,607 cf Primary=1.26 cfs 4,607 cf Secondary=0.00 cfs 0 cf Outflow=1.26 cfs 4,607 cf
<b>Pond CB13: CB13</b>	Peak Elev=20.87' Inflow=2.15 cfs 8,041 cf Primary=2.15 cfs 8,041 cf Secondary=0.00 cfs 0 cf Outflow=2.15 cfs 8,041 cf
<b>Pond CB4: CB4</b>	Peak Elev=34.70' Inflow=1.62 cfs 5,205 cf Primary=1.62 cfs 5,205 cf Secondary=0.00 cfs 0 cf Outflow=1.62 cfs 5,205 cf
<b>Pond CB5: CB5</b>	Peak Elev=34.78' Inflow=1.53 cfs 5,114 cf Primary=1.53 cfs 5,114 cf Secondary=0.00 cfs 0 cf Outflow=1.53 cfs 5,114 cf
<b>Pond CB6: CB6</b>	Peak Elev=37.26' Inflow=0.38 cfs 1,265 cf Primary=0.38 cfs 1,265 cf Secondary=0.00 cfs 0 cf Outflow=0.38 cfs 1,265 cf
<b>Pond CB9: CB9</b>	Peak Elev=37.23' Inflow=0.32 cfs 1,088 cf Primary=0.32 cfs 1,088 cf Secondary=0.00 cfs 0 cf Outflow=0.32 cfs 1,088 cf
<b>Pond DMH11: DMH11</b>	Peak Elev=21.24' Inflow=3.44 cfs 20,408 cf 12.0" Round Culvert n=0.013 L=42.0' S=0.0024 '/' Outflow=3.44 cfs 20,408 cf
<b>Pond DMH7: DMH7</b>	Peak Elev=37.23' Inflow=0.70 cfs 2,353 cf 12.0" Round Culvert n=0.013 L=30.0' S=0.0033 '/' Outflow=0.70 cfs 2,353 cf
<b>Pond SSD1: SUBSURFACE DRAINAGE AREA</b>	Peak Elev=35.61' Storage=3,034 cf Inflow=2.36 cfs 7,831 cf Discarded=0.07 cfs 4,341 cf Primary=0.77 cfs 934 cf Secondary=0.07 cfs 1,118 cf Outflow=0.91 cfs 6,393 cf
<b>Pond SSD2: SUBSURFACE DRAINAGE AREA</b>	Peak Elev=36.82' Storage=979 cf Inflow=0.70 cfs 2,353 cf Discarded=0.05 cfs 2,348 cf Primary=0.00 cfs 0 cf Secondary=0.00 cfs 0 cf Outflow=0.05 cfs 2,348 cf
<b>Pond SSD3: SUBSURFACE DRAINAGE</b>	Peak Elev=21.31' Storage=2,219 cf Inflow=4.12 cfs 22,884 cf Discarded=0.03 cfs 2,096 cf Primary=3.21 cfs 19,683 cf Secondary=0.00 cfs 0 cf Outflow=3.23 cfs 21,778 cf
<b>Pond SSD4: SUBSURFACE DRAINAGE AREA</b>	Peak Elev=38.30' Storage=1,077 cf Inflow=1.10 cfs 3,943 cf Discarded=0.01 cfs 908 cf Primary=0.45 cfs 663 cf Tertiary=0.32 cfs 1,732 cf Outflow=0.78 cfs 3,304 cf



**817 Country Way Post**

*Type III 24-hr 100-Year Rainfall=8.68"*

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 355

---

**Pond SSD5: SUBSURFACE DRAINAGE AREA** Peak Elev=33.63' Storage=5,349 cf Inflow=2.72 cfs 9,988 cf  
Primary=0.17 cfs 7,759 cf Secondary=0.00 cfs 0 cf Outflow=0.17 cfs 7,759 cf

**Pond SSD6: SUBSURFACE DRAINAGE AREA** Peak Elev=29.18' Storage=2,360 cf Inflow=1.40 cfs 4,753 cf  
Primary=0.08 cfs 3,404 cf Secondary=0.55 cfs 292 cf Outflow=0.63 cfs 3,696 cf

**Total Runoff Area = 107,015 sf Runoff Volume = 61,217 cf Average Runoff Depth = 6.86"**  
**52.20% Pervious = 55,860 sf 47.80% Impervious = 51,155 sf**

**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 356

**Summary for Subcatchment 1: Post 1**

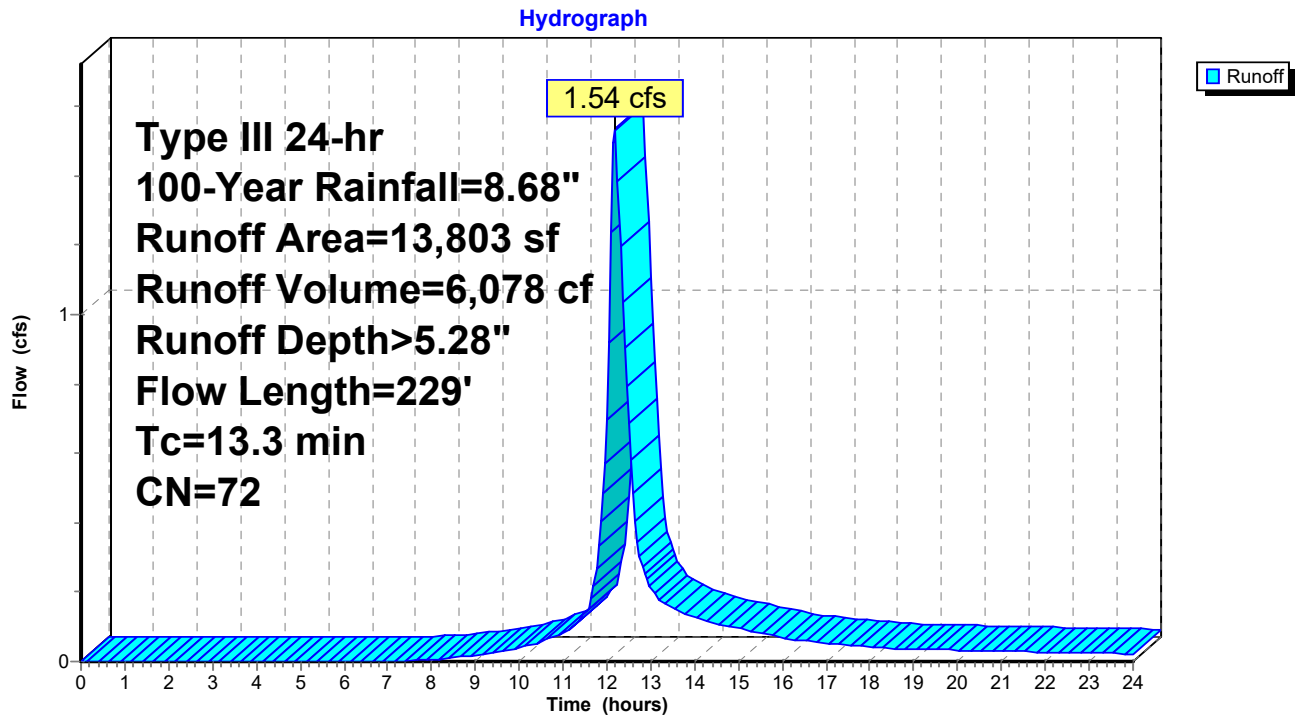
Runoff = 1.54 cfs @ 12.19 hrs, Volume= 6,078 cf, Depth> 5.28"  
 Routed to Reach DP1 : DP1post

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		<b>Sheet Flow, Woods</b> Woods: Light underbrush n= 0.400 P2= 3.35"
1.1	67	0.0400	1.00		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
1.1	58	0.0300	0.87		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
0.9	54	0.0400	1.00		<b>Shallow Concentrated Flow, Woods</b> Woodland Kv= 5.0 fps
13.3	229	Total			

### Subcatchment 1: Post 1



**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**Summary for Subcatchment 2A: Post 2A**

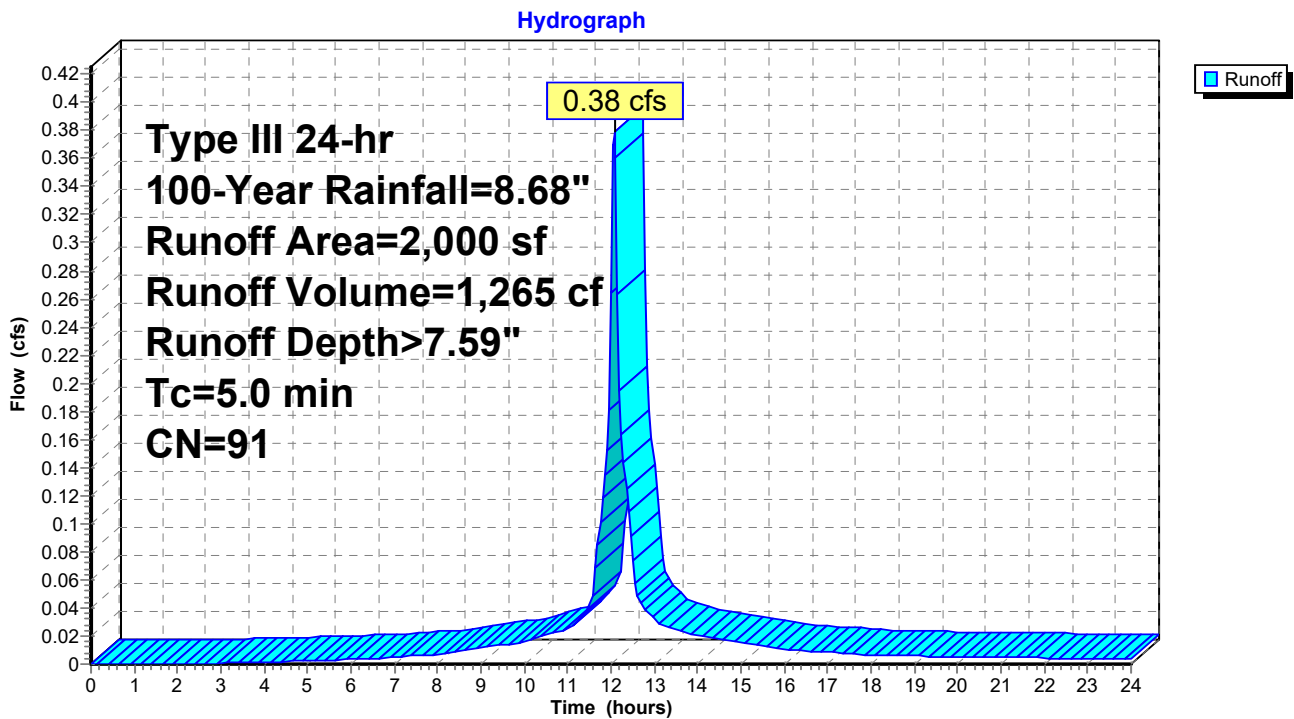
Runoff = 0.38 cfs @ 12.07 hrs, Volume= 1,265 cf, Depth> 7.59"  
 Routed to Pond CB6 : CB6

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
544	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
1,388	98	Paved parking, HSG C
68	98	Paved parking, HSG C
2,000	91	Weighted Average
544		27.20% Pervious Area
1,456		72.80% Impervious Area

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

**Subcatchment 2A: Post 2A**



**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**Summary for Subcatchment 2B: Post 2B**

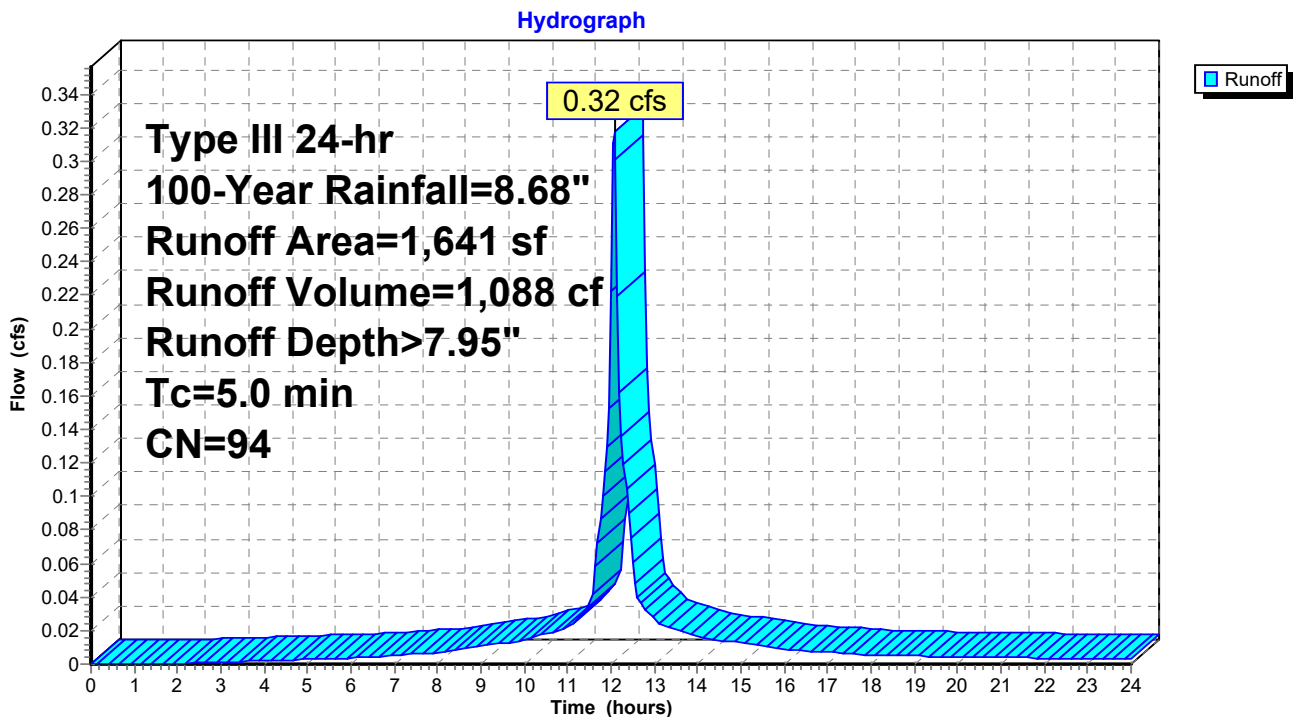
Runoff = 0.32 cfs @ 12.07 hrs, Volume= 1,088 cf, Depth> 7.95"  
 Routed to Pond CB9 : CB9

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 100-Year Rainfall=8.68"

Area (sf)	CN	Description
271	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
1,370	98	Paved parking, HSG C
0	98	Paved parking, HSG C
1,641	94	Weighted Average
271		16.51% Pervious Area
1,370		83.49% Impervious Area

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

**Subcatchment 2B: Post 2B**



**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**Summary for Subcatchment 3A: Post 3A**

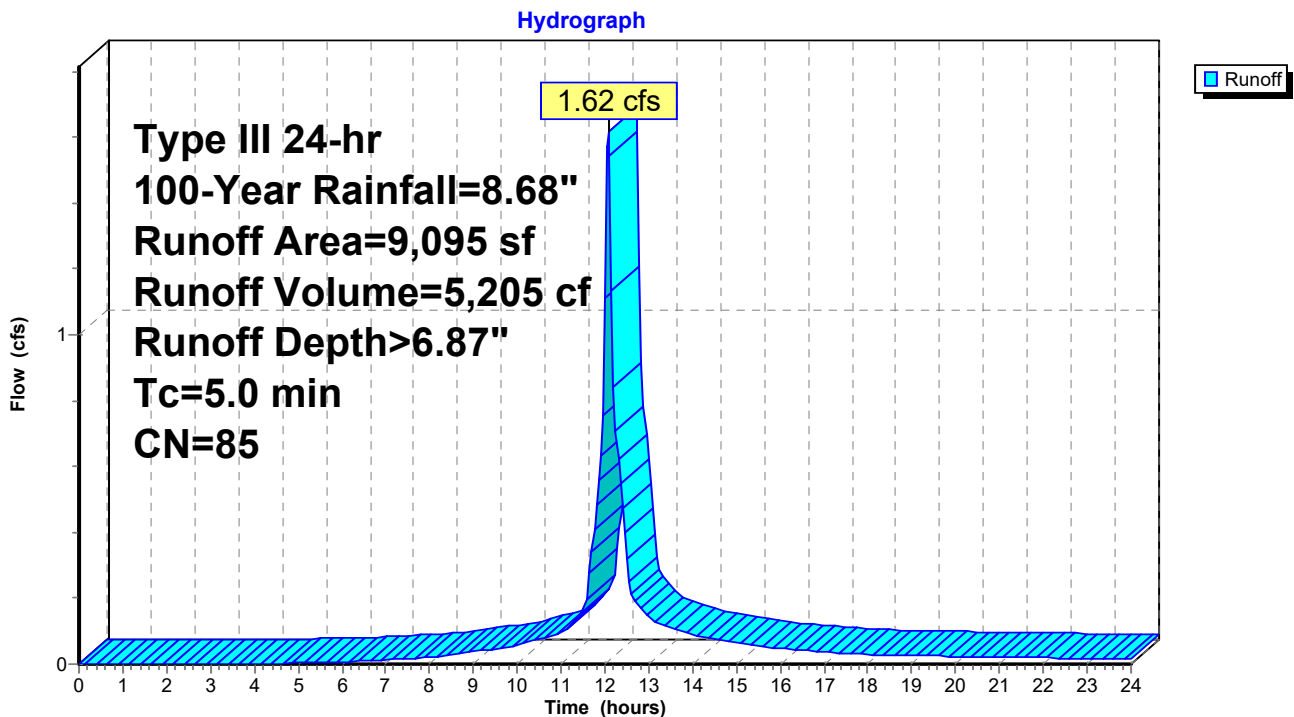
Runoff = 1.62 cfs @ 12.07 hrs, Volume= 5,205 cf, Depth> 6.87"  
 Routed to Pond CB4 : CB4

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
5,096	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
3,233	98	Paved parking, HSG C
766	98	Paved parking, HSG C
9,095	85	Weighted Average
5,096		56.03% Pervious Area
3,999		43.97% Impervious Area

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

**Subcatchment 3A: Post 3A**



# 817 Country Way Post

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 361

## Summary for Subcatchment 3B: Post 3B

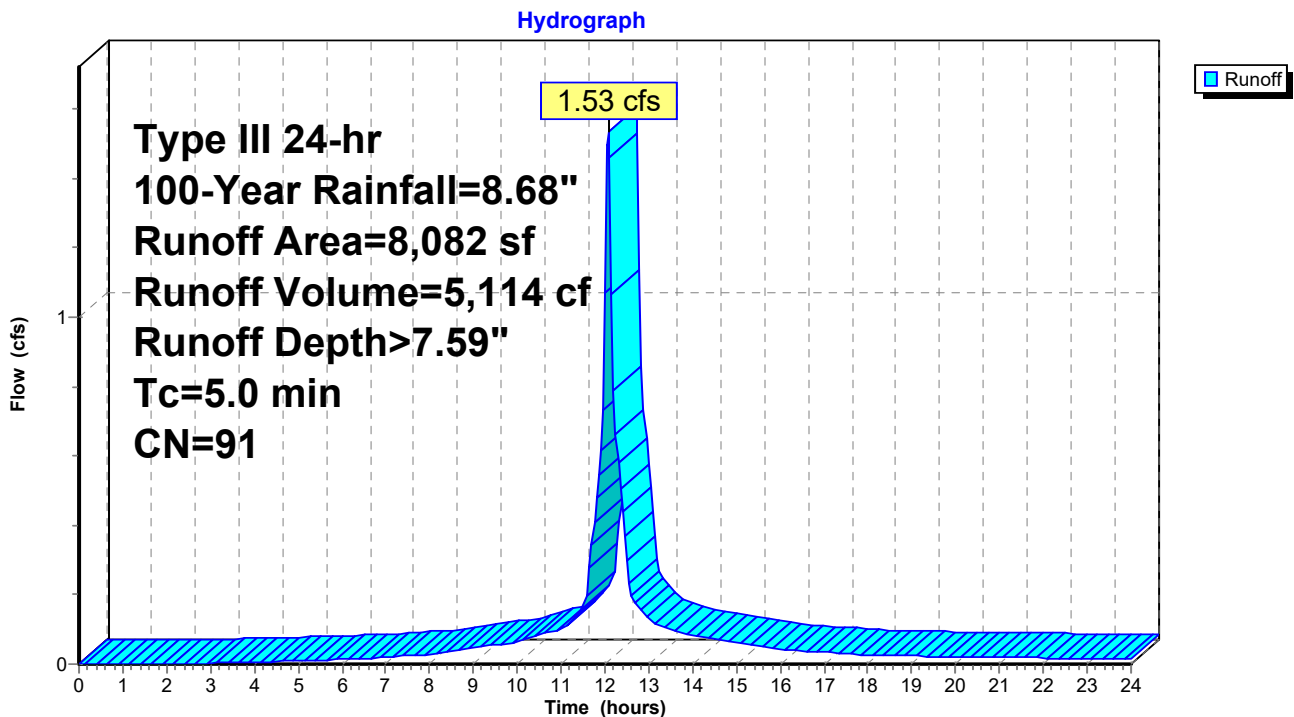
Runoff = 1.53 cfs @ 12.07 hrs, Volume= 5,114 cf, Depth> 7.59"  
Routed to Pond CB5 : CB5

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
2,424	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
5,459	98	Paved parking, HSG C
199	98	Paved parking, HSG C
8,082	91	Weighted Average
2,424		29.99% Pervious Area
5,658		70.01% Impervious Area

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

### Subcatchment 3B: Post 3B



# 817 Country Way Post

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 362

## Summary for Subcatchment 4: Post 4

Runoff = 1.27 cfs @ 12.12 hrs, Volume= 4,875 cf, Depth> 8.07"  
 Routed to Pond CB1 : CB1

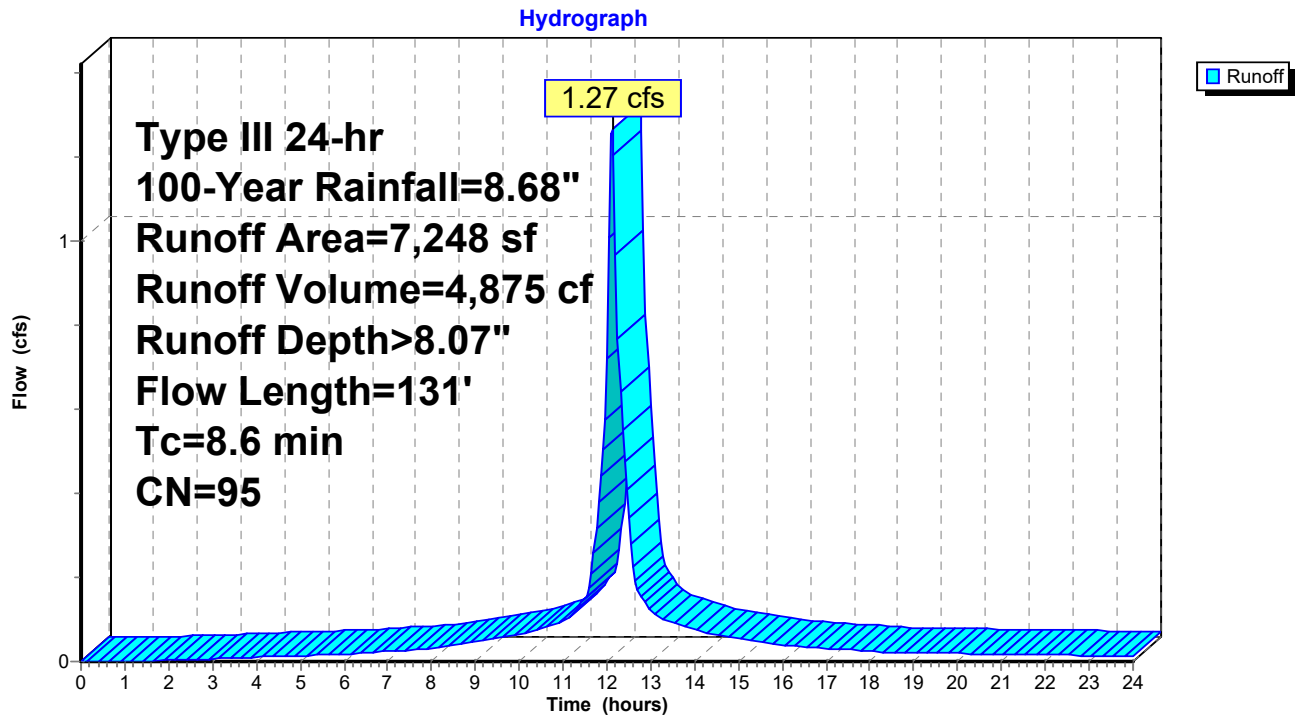
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 100-Year Rainfall=8.68"

Area (sf)	CN	Description
815	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
6,433	98	Paved parking, HSG C
0	98	Paved parking, HSG C
7,248	95	Weighted Average
815		11.24% Pervious Area
6,433		88.76% Impervious Area

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



Subcatchment 4: Post 4



**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 364

**Summary for Subcatchment 5: Post 5**

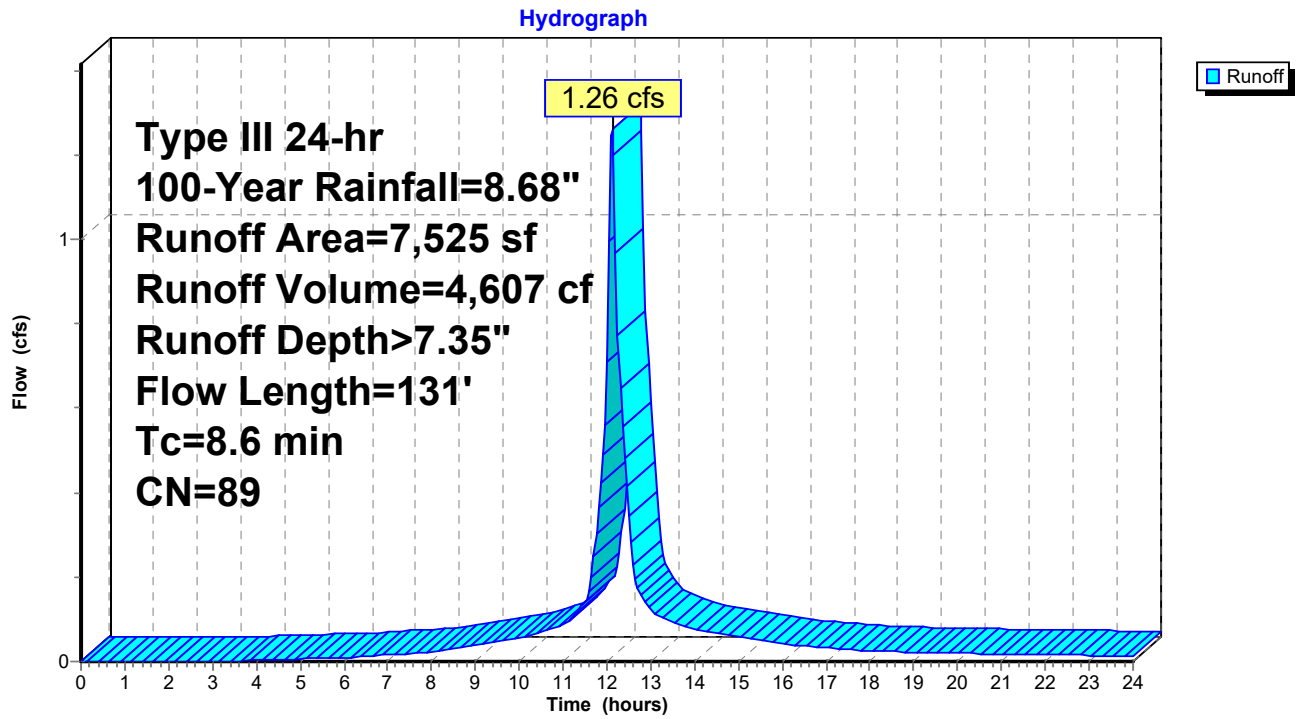
Runoff = 1.26 cfs @ 12.12 hrs, Volume= 4,607 cf, Depth> 7.35"  
 Routed to Pond CB10 : CB10

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
2,969	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
2,733	98	Paved parking, HSG C
0	98	Paved parking, HSG C
7,525	89	Weighted Average
2,969		39.46% Pervious Area
4,556		60.54% Impervious Area
1,823		40.01% Unconnected

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

Subcatchment 5: Post 5



**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**Summary for Subcatchment 6: Post 6**

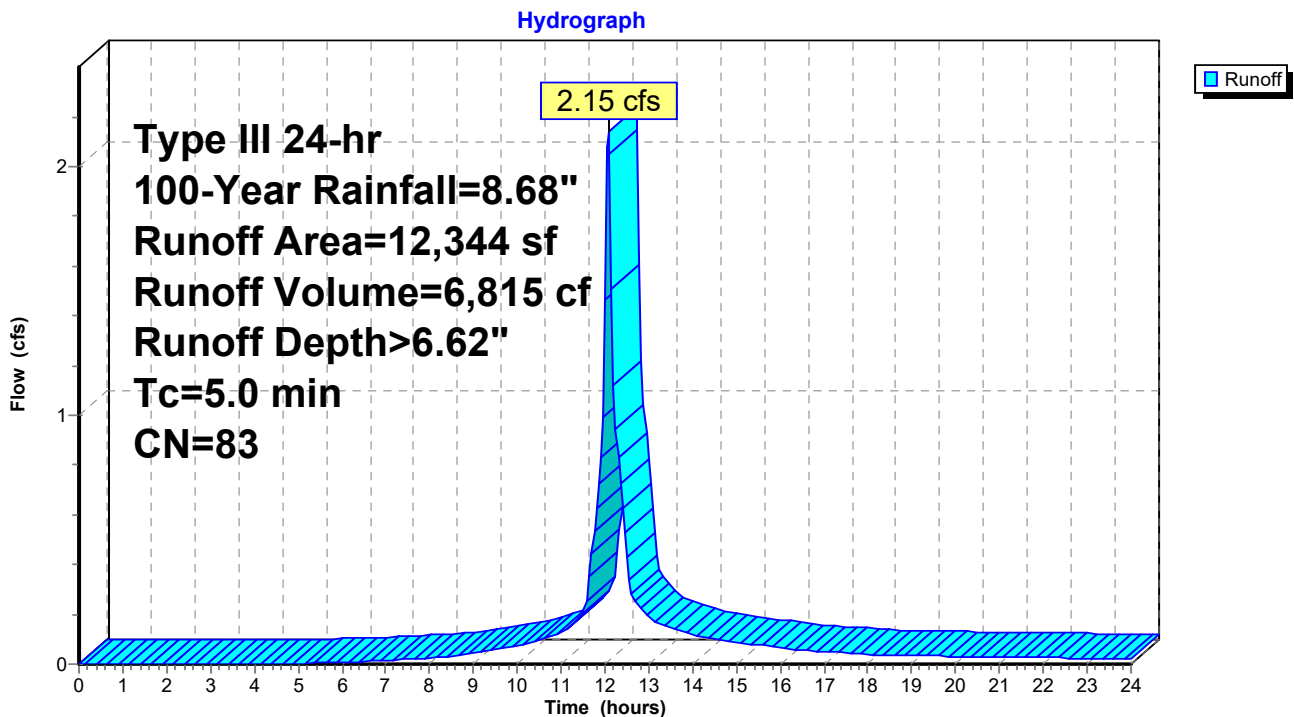
Runoff = 2.15 cfs @ 12.07 hrs, Volume= 6,815 cf, Depth> 6.62"  
 Routed to Pond CB13 : CB13

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
7,471	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
3,458	98	Paved parking, HSG C
1,415	98	Paved parking, HSG C
12,344	83	Weighted Average
7,471		60.52% Pervious Area
4,873		39.48% Impervious Area

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

**Subcatchment 6: Post 6**



**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**Summary for Subcatchment 6A: Post 6a**

Runoff = 1.19 cfs @ 12.07 hrs, Volume= 4,012 cf, Depth> 7.71"

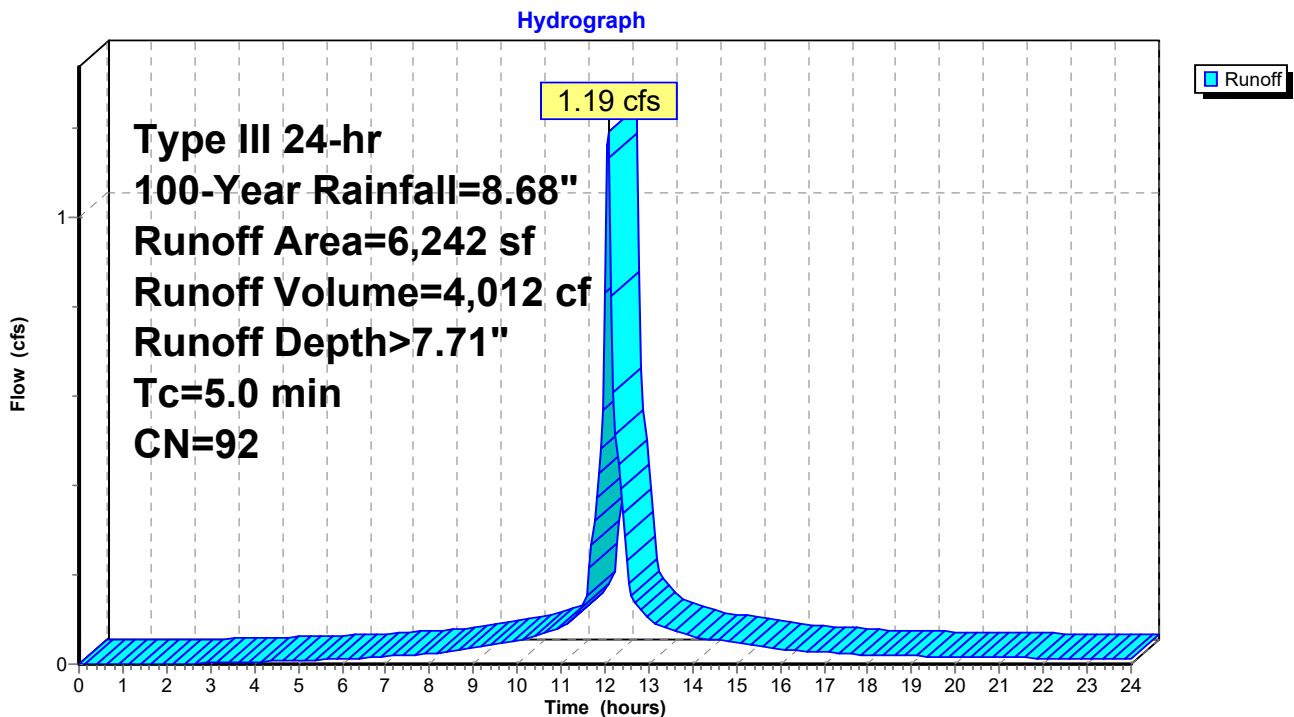
Routed to Pond SSD6 : SUBSURFACE DRAINAGE AREA #6 (STORAGE)

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
1,461	74	>75% Grass cover, Good, HSG C
0	70	Woods, Good, HSG C
4,243	98	Paved parking, HSG C
538	98	Paved parking, HSG C
6,242	92	Weighted Average
1,461		23.41% Pervious Area
4,781		76.59% Impervious Area

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

**Subcatchment 6A: Post 6a**



**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 368

**Summary for Subcatchment 7: Post 7**

Runoff = 0.34 cfs @ 12.16 hrs, Volume= 1,257 cf, Depth> 5.41"  
 Routed to Reach DP4 : DP4

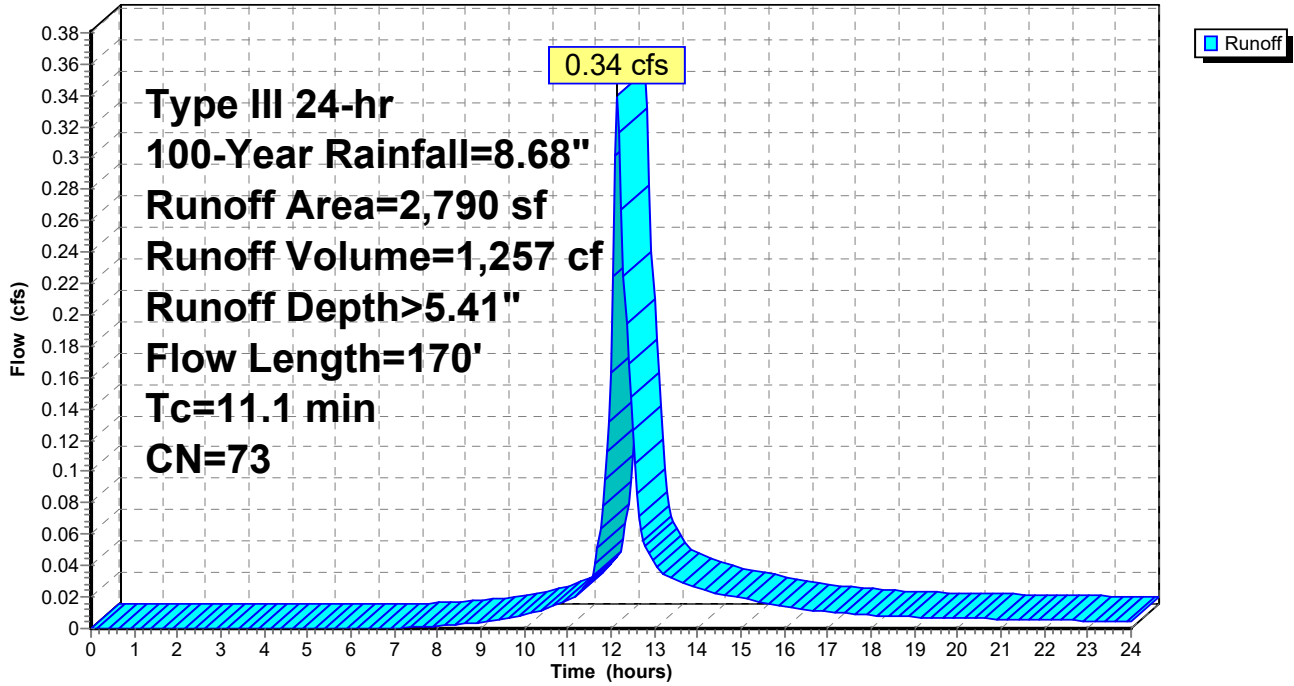
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 100-Year Rainfall=8.68"

Area (sf)	CN	Description
2,085	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
2,790	73	Weighted Average
2,790		100.00% Pervious Area

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

### Subcatchment 7: Post 7

Hydrograph



**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**Summary for Subcatchment 8: Post 8**

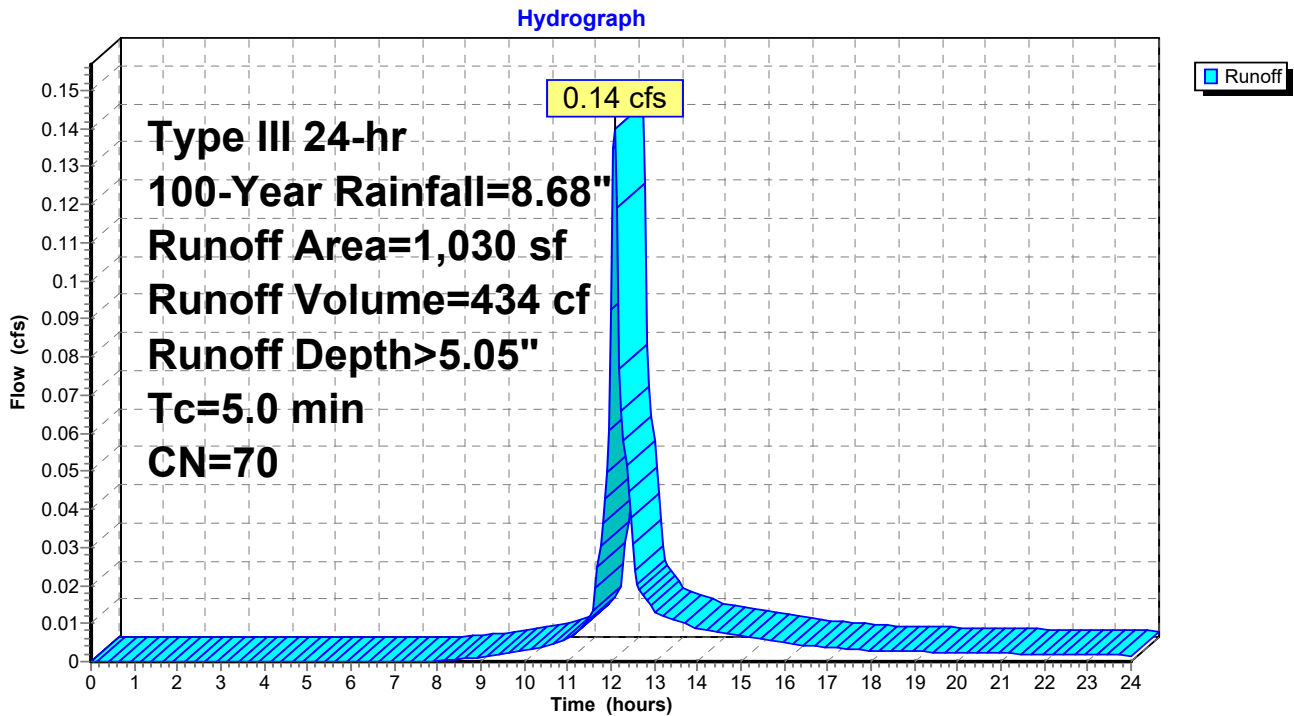
Runoff = 0.14 cfs @ 12.08 hrs, Volume= 434 cf, Depth> 5.05"  
 Routed to Reach DP2 : DP2

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**





# 817 Country Way Post

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

## Summary for Subcatchment 9: Post 9

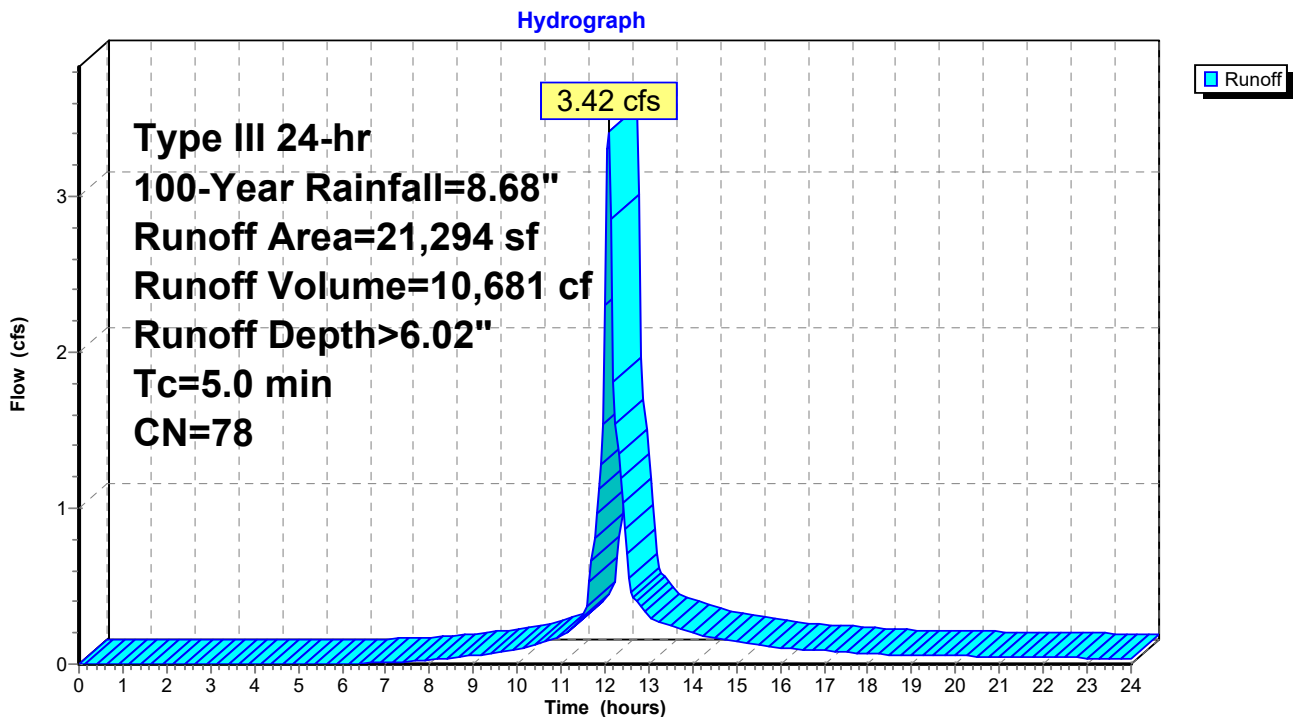
Runoff = 3.42 cfs @ 12.07 hrs, Volume= 10,681 cf, Depth> 6.02"  
 Routed to Reach DP3 : DP3

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
15,409	74	>75% Grass cover, Good, HSG C
1,777	70	Woods, Good, HSG C
1,470	98	Paved parking, HSG C
2,638	98	Paved parking, HSG C
21,294	78	Weighted Average
17,186		80.71% Pervious Area
4,108		19.29% Impervious Area

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

### Subcatchment 9: Post 9



# 817 Country Way Post

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 372

## 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

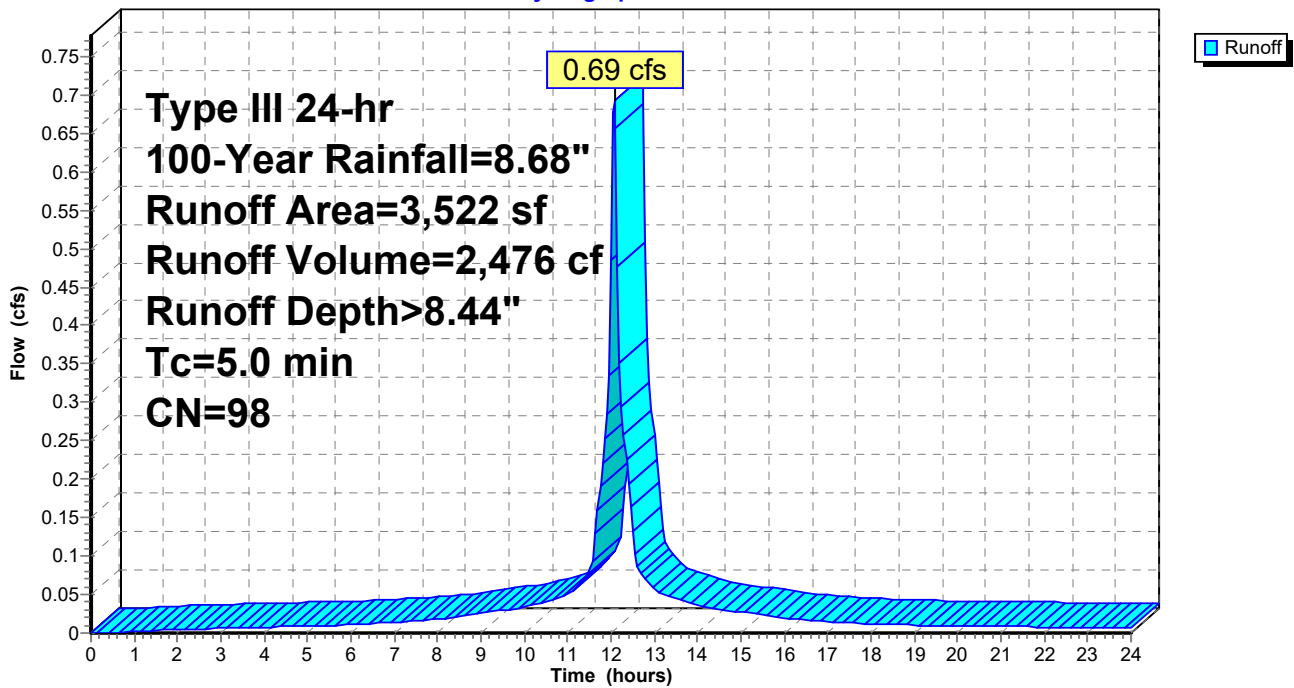
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 100-Year Rainfall=8.68"

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

Hydrograph



# 817 Country Way Post

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 373

## Summary for Subcatchment B2a: BLDG #2

Runoff = 0.21 cfs @ 12.07 hrs, Volume= 741 cf, Depth> 8.44"

Routed to Pond SSD6 : SUBSURFACE DRAINAGE AREA #6 (STORAGE)

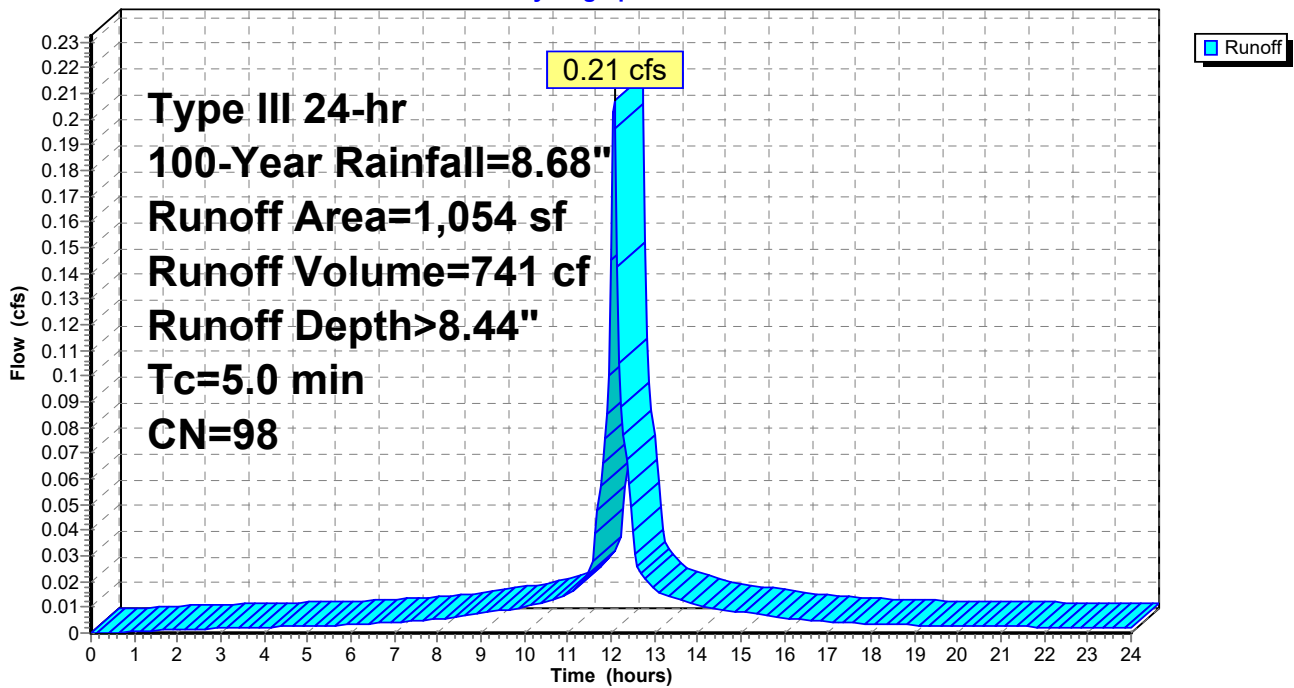
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 100-Year Rainfall=8.68"

Area (sf)	CN	Description
1,054	98	Unconnected roofs, HSG C
1,054		100.00% Impervious Area
1,054		100.00% Unconnected

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

## Subcatchment B2a: BLDG #2

Hydrograph



# 817 Country Way Post

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 374

## Summary for Subcatchment B2b: BLDG #2 (REAR SECTION)

Runoff = 0.74 cfs @ 12.07 hrs, Volume= 2,626 cf, Depth> 8.44"

Routed to Pond SSD1 : SUBSURFACE DRAINAGE AREA #1

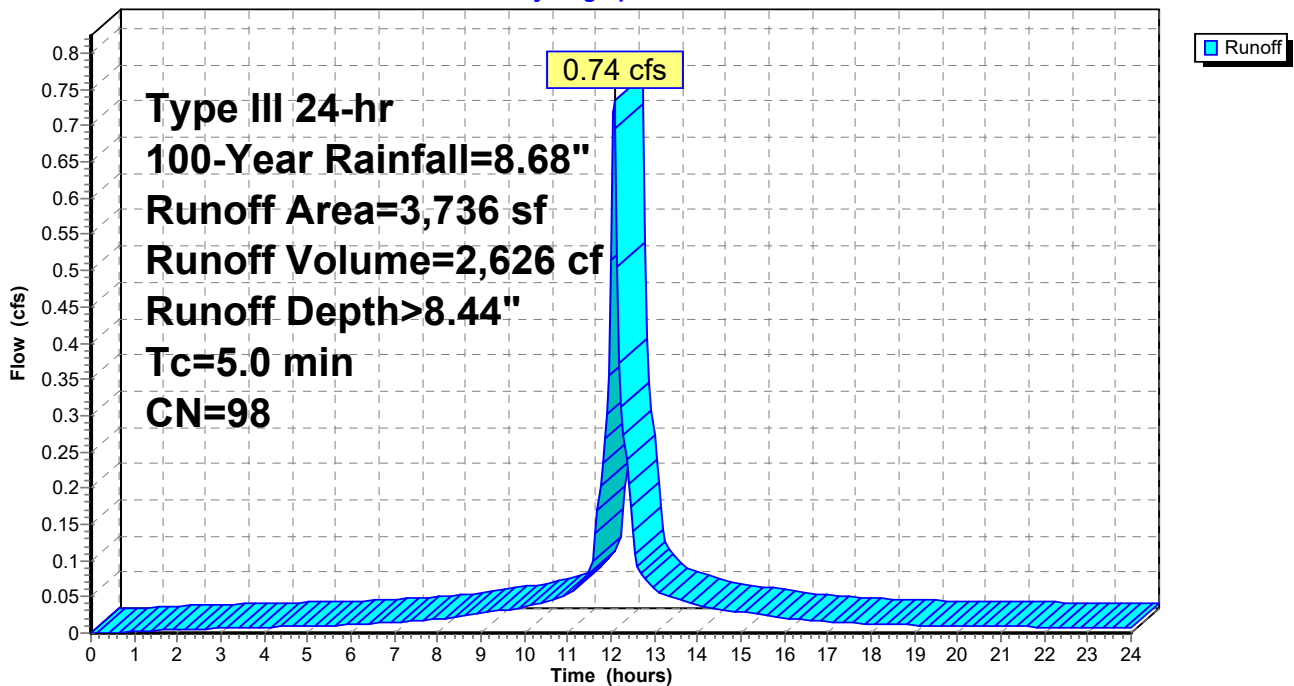
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type III 24-hr 100-Year Rainfall=8.68"

Area (sf)	CN	Description
3,736	98	Unconnected roofs, HSG C
3,736		100.00% Impervious Area
3,736		100.00% Unconnected

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

## Subcatchment B2b: BLDG #2 (REAR SECTION)

Hydrograph



# 817 Country Way Post

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 375

## Summary for Subcatchment B3: BLDG #3

Runoff = 1.10 cfs @ 12.07 hrs, Volume= 3,943 cf, Depth> 8.44"

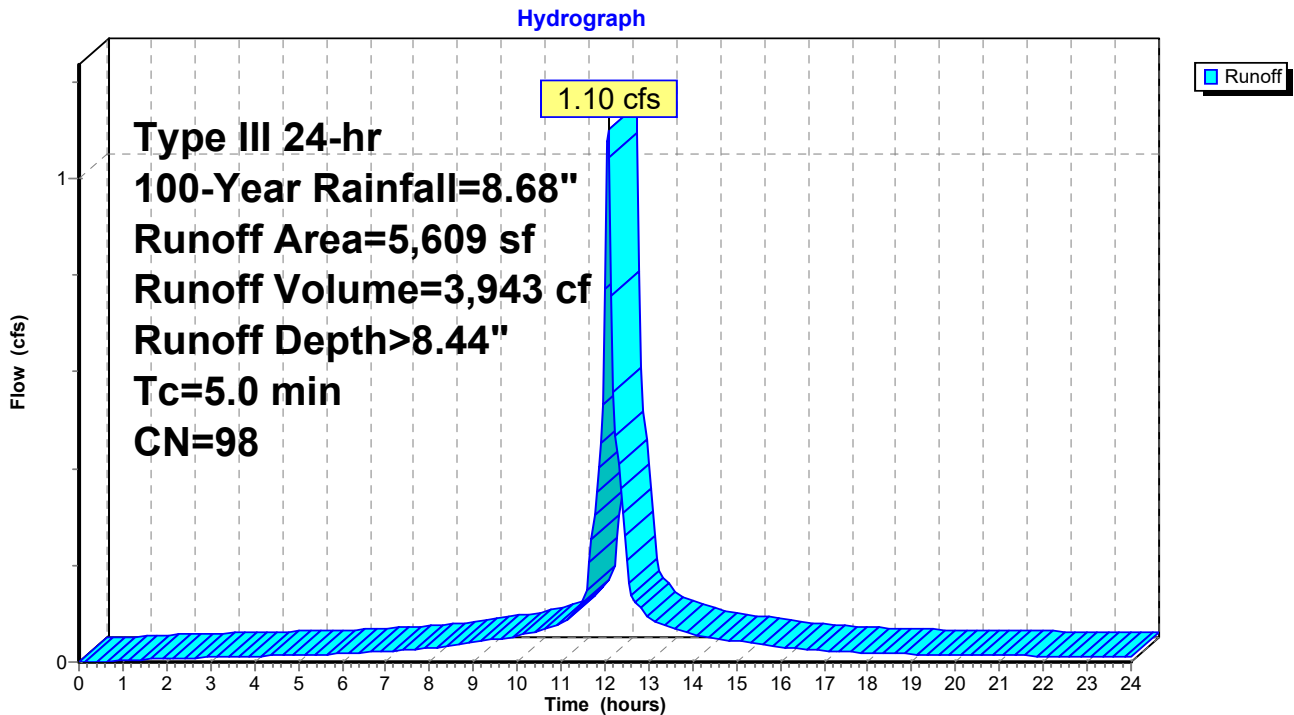
Routed to Pond SSD4 : SUBSURFACE DRAINAGE AREA #4

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 B3: BLDG #3

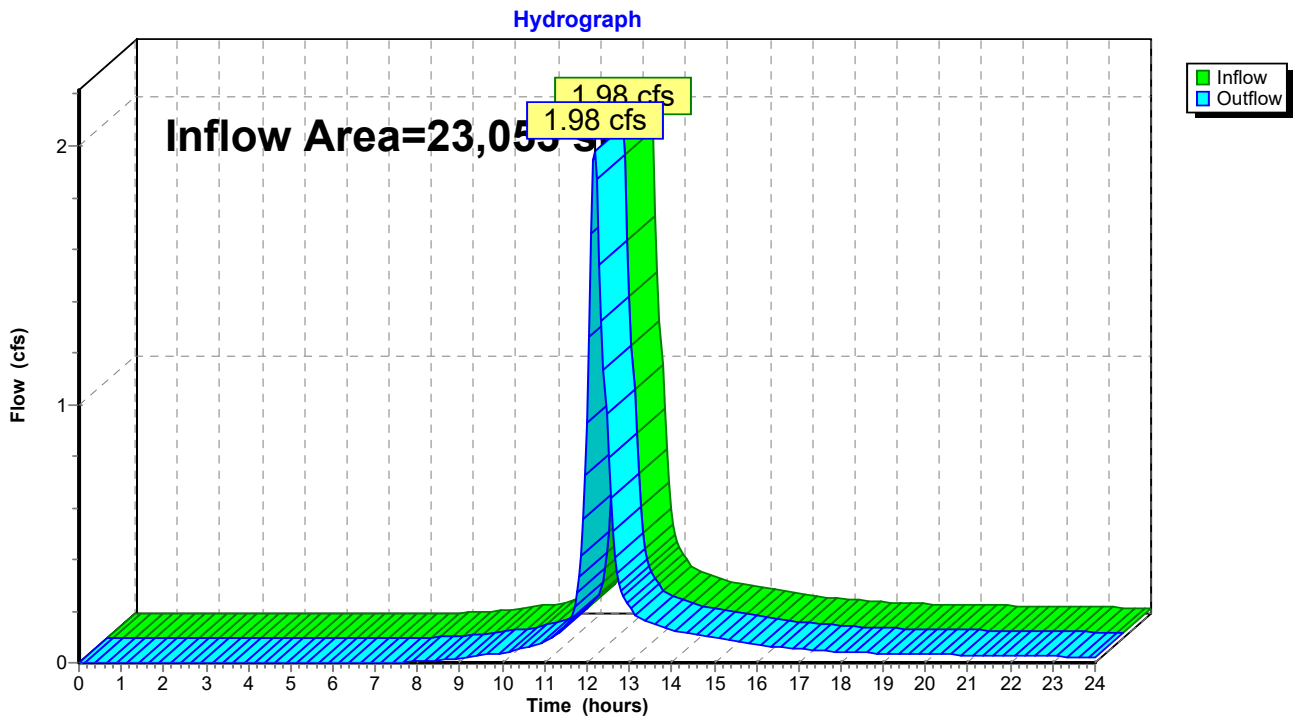


### Summary for Reach DP1: DP1post

Inflow Area = 23,053 sf, 36.59% Impervious, Inflow Depth > 3.51" for 100-Year event  
Inflow = 1.98 cfs @ 12.18 hrs, Volume= 6,741 cf  
Outflow = 1.98 cfs @ 12.18 hrs, Volume= 6,741 cf, Atten= 0%, Lag= 0.0 min

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

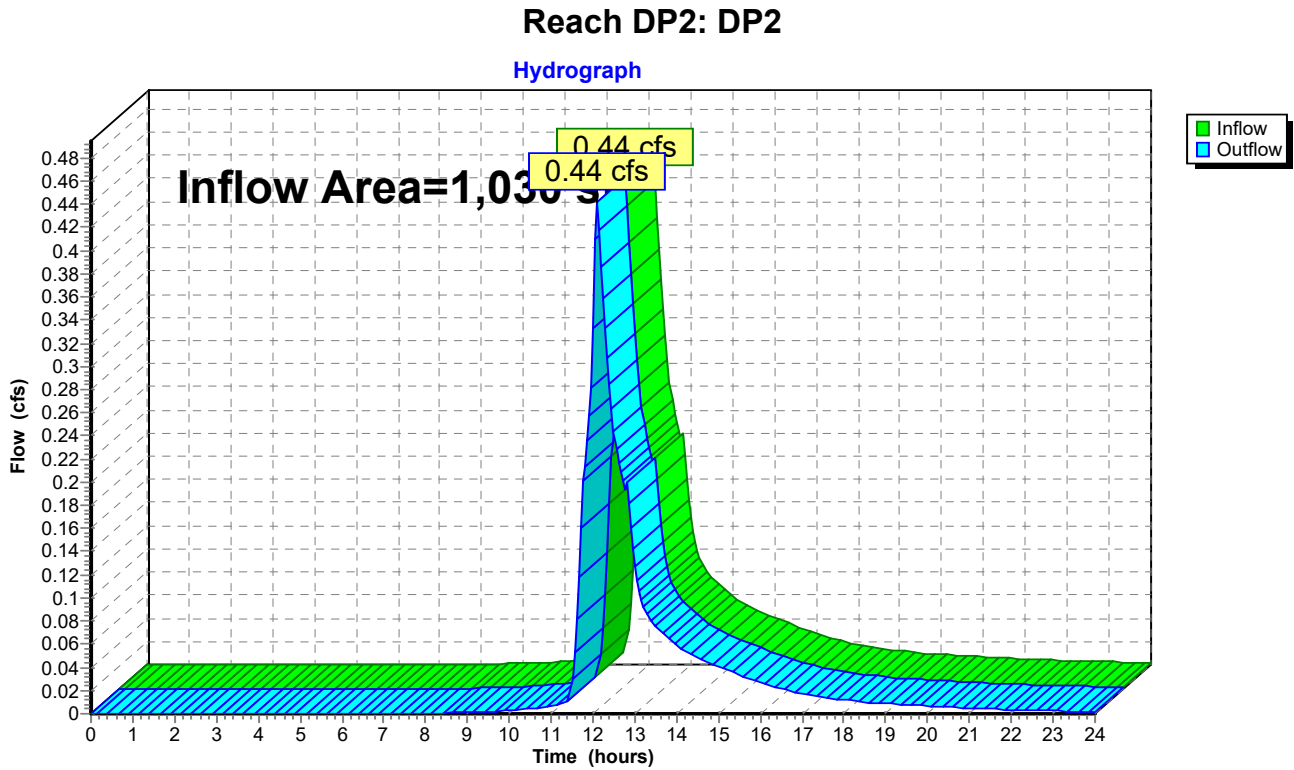
### Reach DP1: DP1post



### Summary for Reach DP2: DP2

Inflow Area = 1,030 sf, 0.00% Impervious, Inflow Depth > 25.23" for 100-Year event  
Inflow = 0.44 cfs @ 12.10 hrs, Volume= 2,166 cf  
Outflow = 0.44 cfs @ 12.10 hrs, Volume= 2,166 cf, Atten= 0%, Lag= 0.0 min

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



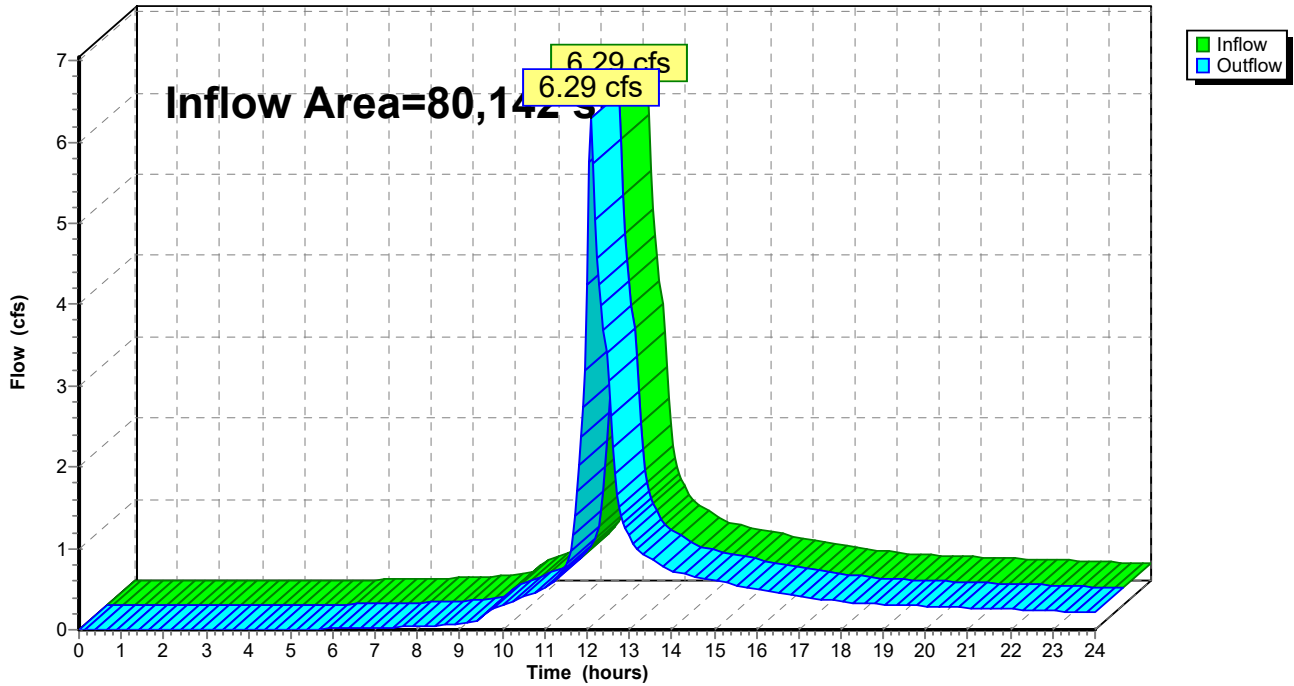
Summary for Reach DP3: DP3

Inflow Area = 80,142 sf, 53.31% Impervious, Inflow Depth > 5.22" for 100-Year event  
Inflow = 6.29 cfs @ 12.10 hrs, Volume= 34,886 cf  
Outflow = 6.29 cfs @ 12.10 hrs, Volume= 34,886 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

Hydrograph

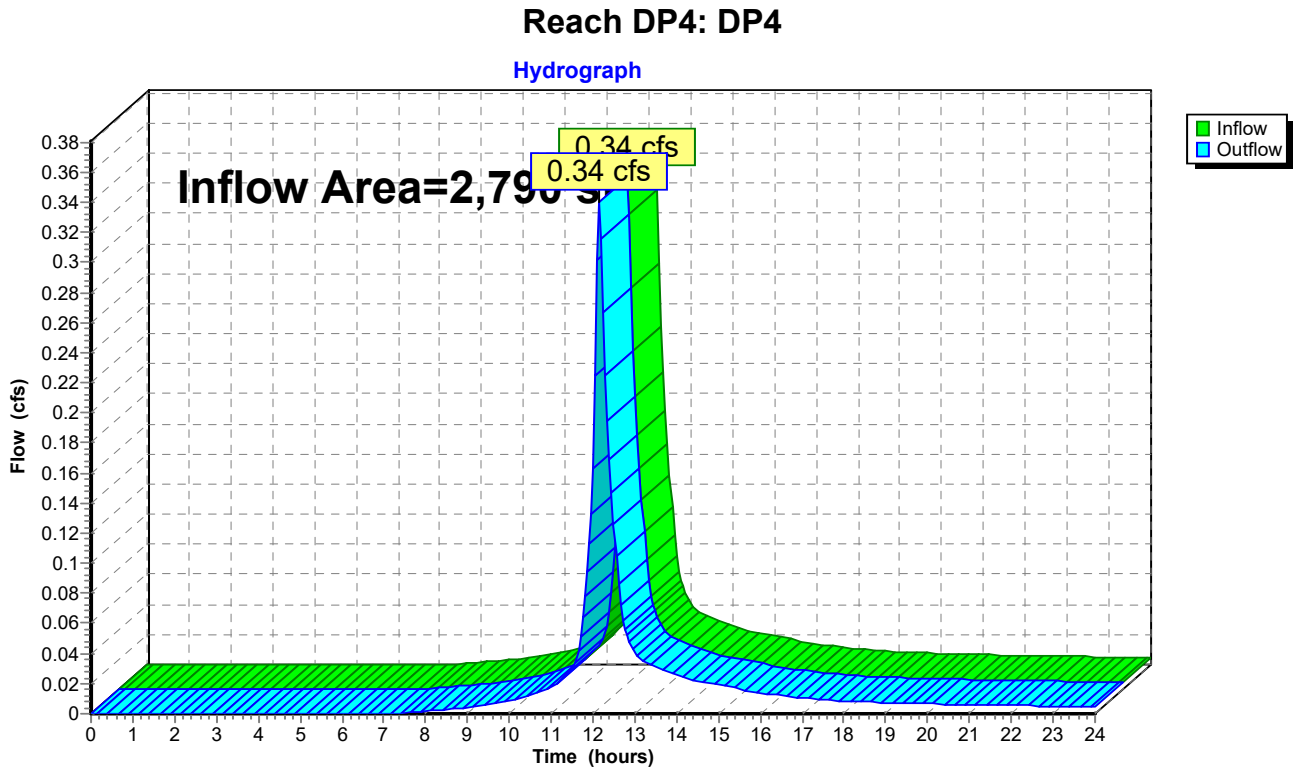




### Summary for Reach DP4: DP4

Inflow Area = 2,790 sf, 0.00% Impervious, Inflow Depth > 5.41" for 100-Year event  
Inflow = 0.34 cfs @ 12.16 hrs, Volume= 1,257 cf  
Outflow = 0.34 cfs @ 12.16 hrs, Volume= 1,257 cf, Atten= 0%, Lag= 0.0 min

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



# 817 Country Way Post

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 380

## Summary for Pond 2P: DMH2

Inflow Area = 15,330 sf, 78.87% Impervious, Inflow Depth > 7.82" for 100-Year event  
Inflow = 2.72 cfs @ 12.09 hrs, Volume= 9,988 cf  
Outflow = 2.72 cfs @ 12.09 hrs, Volume= 9,988 cf, Atten= 0%, Lag= 0.0 min  
Primary = 2.72 cfs @ 12.09 hrs, Volume= 9,988 cf  
Routed to Pond SSD5 : SUBSURFACE DRAINAGE AREA #5 (STORAGE)

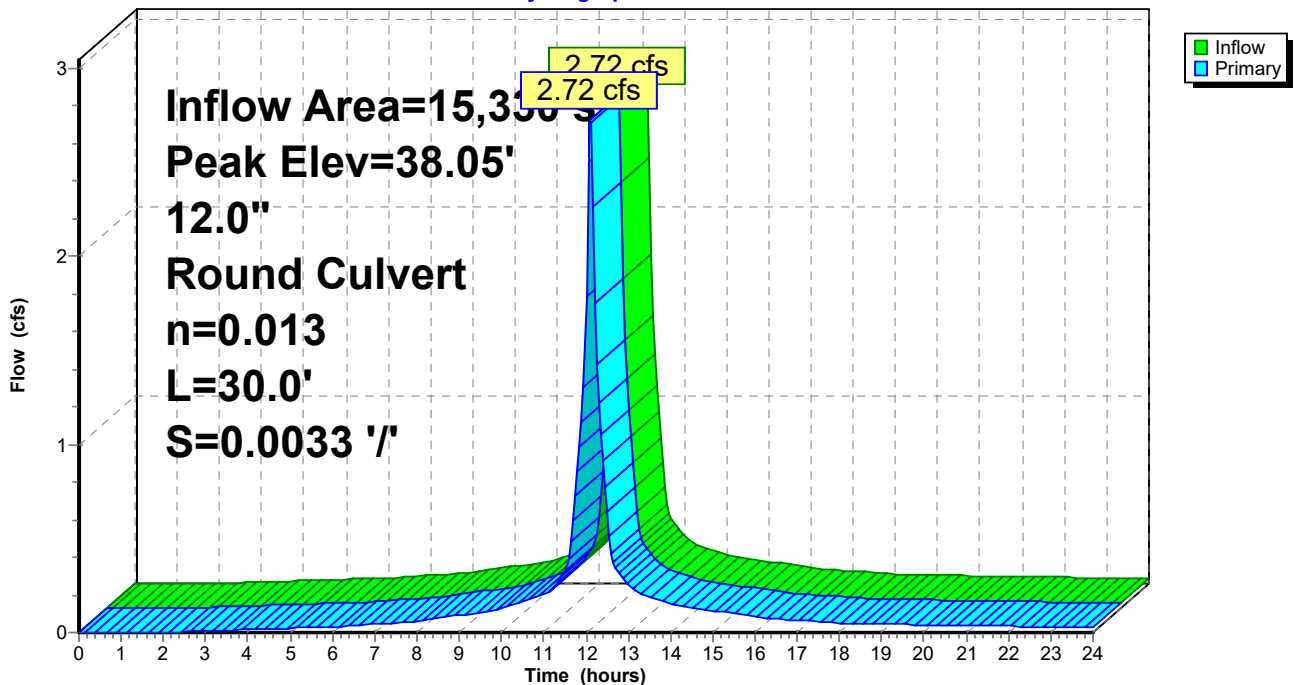
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Peak Elev= 38.05' @ 12.09 hrs  
Flood Elev= 39.67'

Device	Routing	Invert	Outlet Devices
#1	Primary	36.70'	<b>12.0" Round Culvert</b> 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=2.68 cfs @ 12.09 hrs HW=38.02' (Free Discharge)  
↑**1=Culvert** (Barrel Controls 2.68 cfs @ 3.42 fps)

## Pond 2P: DMH2

Hydrograph



**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 381

**Stage-Discharge for Pond 2P: DMH2**

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	<b>5.79</b>
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		

**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 382

**Stage-Area-Storage for Pond 2P: DMH2**

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		

# 817 Country Way Post

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 383

## Summary for Pond CB1: CB1

Inflow Area = 7,248 sf, 88.76% Impervious, Inflow Depth > 8.07" for 100-Year event  
Inflow = 1.27 cfs @ 12.12 hrs, Volume= 4,875 cf  
Outflow = 1.27 cfs @ 12.12 hrs, Volume= 4,875 cf, Atten= 0%, Lag= 0.0 min  
Primary = 1.27 cfs @ 12.12 hrs, Volume= 4,875 cf  
Routed to Pond 2P : 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= 34.65' @ 12.12 hrs  
Flood Elev= 36.27'

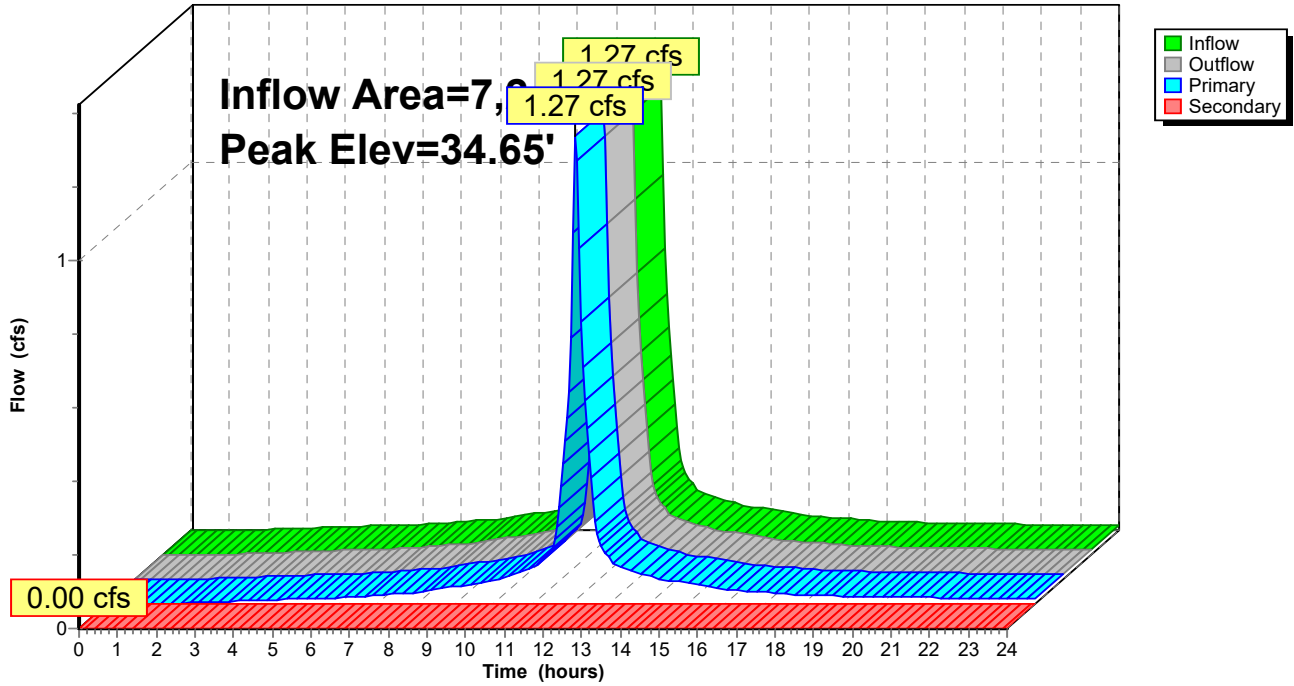
Device	Routing	Invert	Outlet Devices
#1	Primary	33.90'	<b>12.0" Round Culvert</b> L= 29.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 33.90' / 33.80' S= 0.0034 ' S= 0.0034 ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	36.50'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

**Primary OutFlow** Max=1.24 cfs @ 12.12 hrs HW=34.63' (Free Discharge)  
↑1=Culvert (Barrel Controls 1.24 cfs @ 2.79 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



**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 385

**Stage-Discharge for Pond CB1: CB1**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
33.90	0.00	0.00	<b>0.00</b>
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
36.30	4.97	4.97	0.00
36.35	5.05	5.05	0.00
36.40	5.13	5.13	0.00
36.45	5.21	5.21	0.00
36.50	<b>5.29</b>	<b>5.29</b>	0.00

**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 386

**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	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		
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		



# 817 Country Way Post

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 387

## Summary for Pond CB10: CB10

Inflow Area = 7,525 sf, 60.54% Impervious, Inflow Depth > 7.35" for 100-Year event  
 Inflow = 1.26 cfs @ 12.12 hrs, Volume= 4,607 cf  
 Outflow = 1.26 cfs @ 12.12 hrs, Volume= 4,607 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 1.26 cfs @ 12.12 hrs, Volume= 4,607 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

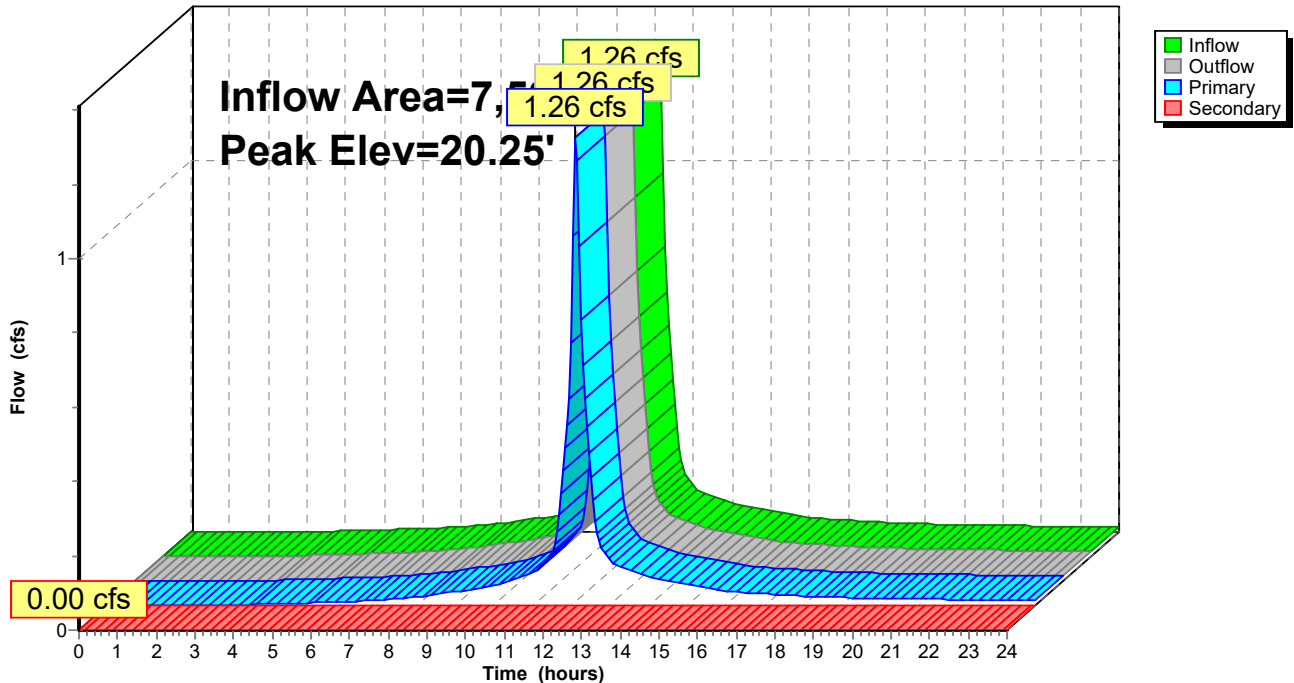
Device	Routing	Invert	Outlet Devices
#1	Primary	19.50'	<b>12.0" Round Culvert</b> L= 30.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 19.50' / 19.40' S= 0.0033 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	22.00'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0"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

**Primary OutFlow** Max=1.23 cfs @ 12.12 hrs HW=20.23' (Free Discharge)  
 ↑1=Culvert (Barrel Controls 1.23 cfs @ 2.77 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

Hydrograph



**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 388

**Stage-Discharge for Pond CB10: CB10**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
19.50	0.00	0.00	<b>0.00</b>
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	<b>5.10</b>	<b>5.10</b>	0.00

**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 389

**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		

# 817 Country Way Post

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 390

## Summary for Pond CB13: CB13

Inflow Area = 25,175 sf, 50.08% Impervious, Inflow Depth > 3.83" for 100-Year event  
Inflow = 2.15 cfs @ 12.07 hrs, Volume= 8,041 cf  
Outflow = 2.15 cfs @ 12.07 hrs, Volume= 8,041 cf, Atten= 0%, Lag= 0.0 min  
Primary = 2.15 cfs @ 12.07 hrs, Volume= 8,041 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= 20.87' @ 12.07 hrs  
Flood Elev= 22.00'

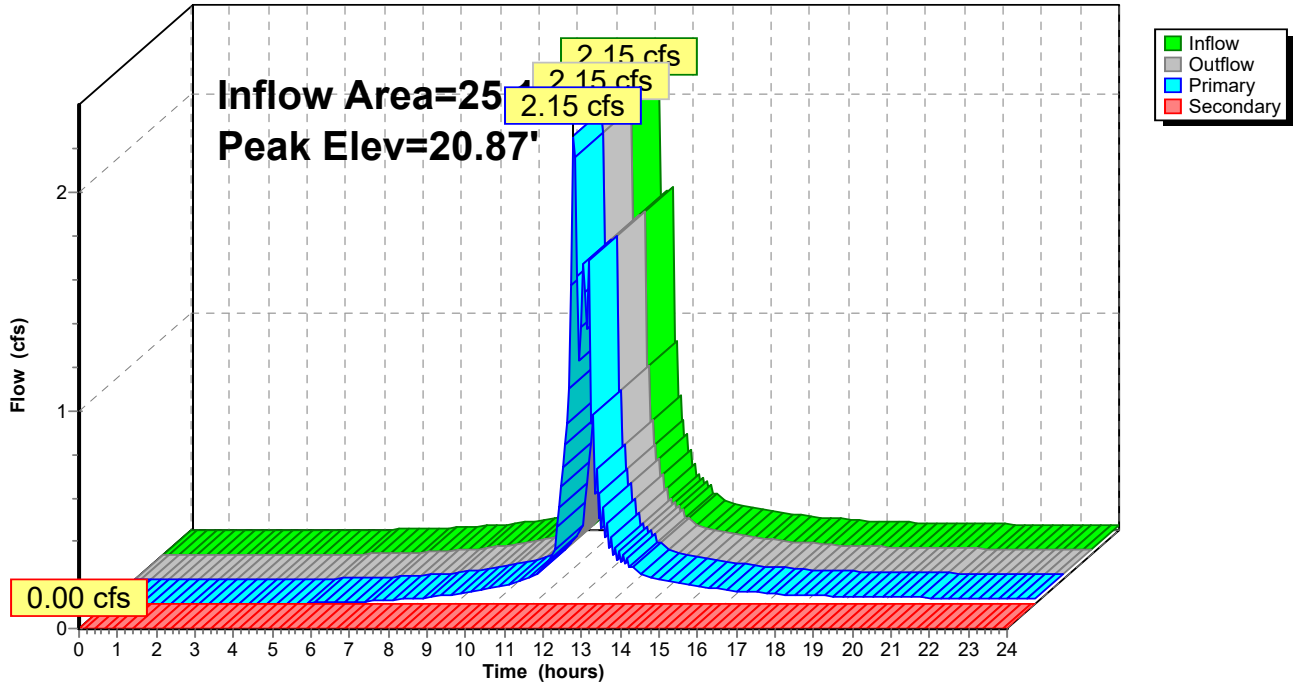
Device	Routing	Invert	Outlet Devices
#1	Primary	19.90'	<b>12.0" Round Culvert</b> L= 12.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 19.90' / 19.80' S= 0.0083 ' / ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	22.00'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0"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

**Primary OutFlow** Max=2.07 cfs @ 12.07 hrs HW=20.85' (Free Discharge)  
↑1=Culvert (Barrel Controls 2.07 cfs @ 3.47 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

Hydrograph



**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 392

**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	<b>0.00</b>	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	<b>4.78</b>	<b>4.78</b>	0.00

**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 393

**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

# 817 Country Way Post

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 394

## Summary for Pond CB4: CB4

Inflow Area = 9,095 sf, 43.97% Impervious, Inflow Depth > 6.87" for 100-Year event  
Inflow = 1.62 cfs @ 12.07 hrs, Volume= 5,205 cf  
Outflow = 1.62 cfs @ 12.07 hrs, Volume= 5,205 cf, Atten= 0%, Lag= 0.0 min  
Primary = 1.62 cfs @ 12.07 hrs, Volume= 5,205 cf  
Routed to Pond SSD1 : SUBSURFACE DRAINAGE AREA #1  
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= 34.70' @ 12.07 hrs  
Flood Elev= 37.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	33.90'	<b>12.0" Round Culvert</b> 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	35.50'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

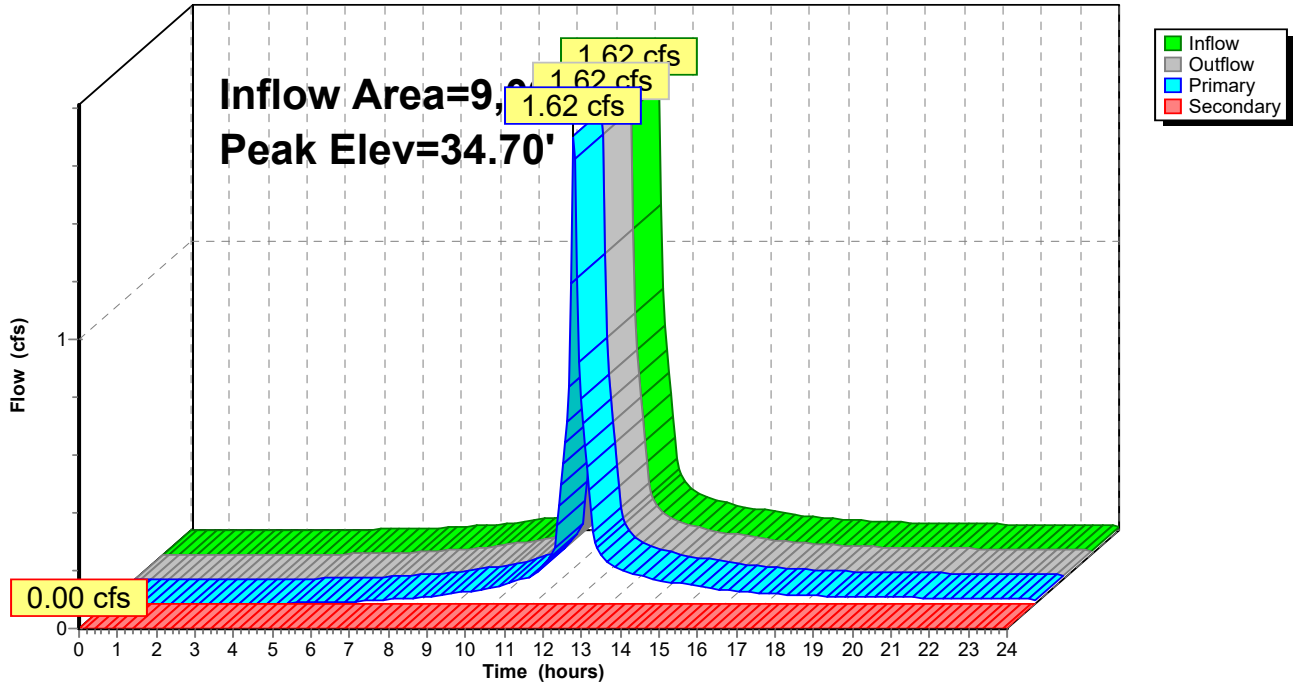
**Primary OutFlow** Max=1.56 cfs @ 12.07 hrs HW=34.68' (Free Discharge)  
↑1=Culvert (Barrel Controls 1.56 cfs @ 3.27 fps)

**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



**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 396

**Stage-Discharge for Pond CB4: CB4**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
33.90	0.00	0.00	0.00	36.55	19.25	5.55	13.71
33.95	0.01	0.01	0.00	36.60	19.64	5.61	14.03
34.00	0.04	0.04	0.00	36.65	20.02	5.67	14.34
34.05	0.08	0.08	0.00	36.70	20.39	5.74	14.65
34.10	0.14	0.14	0.00	36.75	20.75	5.80	14.95
34.15	0.21	0.21	0.00	36.80	21.11	5.86	15.25
34.20	0.30	0.30	0.00	36.85	21.46	5.92	15.54
34.25	0.39	0.39	0.00	36.90	21.80	5.98	15.83
34.30	0.50	0.50	0.00	36.95	22.14	6.04	16.11
34.35	0.62	0.62	0.00	37.00	<b>22.48</b>	<b>6.10</b>	<b>16.38</b>
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	4.30	4.05	0.24				
35.60	4.83	4.14	0.69				
35.65	5.49	4.23	1.27				
35.70	6.26	4.31	1.95				
35.75	7.12	4.39	2.73				
35.80	8.06	4.47	3.58				
35.85	9.07	4.55	4.51				
35.90	10.15	4.63	5.52				
35.95	11.29	4.71	6.58				
36.00	12.49	4.78	7.71				
36.05	13.75	4.86	8.89				
36.10	15.06	4.93	10.13				
36.15	15.79	5.00	10.78				
36.20	16.26	5.07	11.19				
36.25	16.73	5.14	11.58				
36.30	17.18	5.21	11.96				
36.35	17.61	5.28	12.33				
36.40	18.04	5.35	12.69				
36.45	18.45	5.41	13.04				
36.50	18.86	5.48	13.37				

**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 397

**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		

# 817 Country Way Post

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 398

## Summary for Pond CB5: CB5

Inflow Area = 8,082 sf, 70.01% Impervious, Inflow Depth > 7.59" for 100-Year event  
Inflow = 1.53 cfs @ 12.07 hrs, Volume= 5,114 cf  
Outflow = 1.53 cfs @ 12.07 hrs, Volume= 5,114 cf, Atten= 0%, Lag= 0.0 min  
Primary = 1.53 cfs @ 12.07 hrs, Volume= 5,114 cf  
Routed to Pond 2P : DMH2  
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
Routed to Pond CB1 : CB1

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Peak Elev= 34.78' @ 12.07 hrs  
Flood Elev= 37.50'

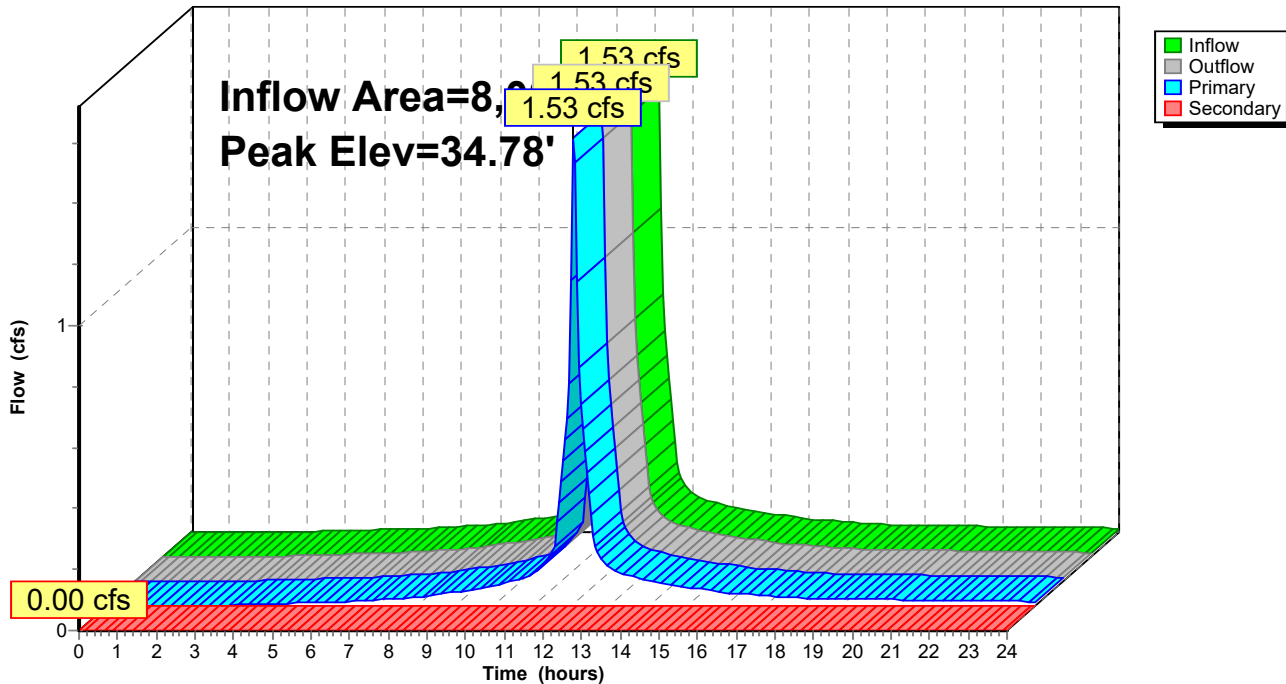
Device	Routing	Invert	Outlet Devices
#1	Primary	34.00'	<b>12.0" Round Culvert</b> L= 35.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 34.00' / 33.80' S= 0.0057 ' S= 0.0057 ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	38.20'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

**Primary OutFlow** Max=1.48 cfs @ 12.07 hrs HW=34.76' (Free Discharge)  
↑1=Culvert (Barrel Controls 1.48 cfs @ 3.18 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



**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 400

**Stage-Discharge for Pond CB5: CB5**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
34.00	0.00	0.00	<b>0.00</b>	36.65	5.32	5.32	0.00
34.05	0.01	0.01	0.00	36.70	5.39	5.39	0.00
34.10	0.03	0.03	0.00	36.75	5.46	5.46	0.00
34.15	0.07	0.07	0.00	36.80	5.53	5.53	0.00
34.20	0.13	0.13	0.00	36.85	5.60	5.60	0.00
34.25	0.19	0.19	0.00	36.90	5.67	5.67	0.00
34.30	0.28	0.28	0.00	36.95	5.73	5.73	0.00
34.35	0.37	0.37	0.00	37.00	5.80	5.80	0.00
34.40	0.48	0.48	0.00	37.05	5.86	5.86	0.00
34.45	0.59	0.59	0.00	37.10	5.93	5.93	0.00
34.50	0.72	0.72	0.00	37.15	5.99	5.99	0.00
34.55	0.85	0.85	0.00	37.20	6.06	6.06	0.00
34.60	0.99	0.99	0.00	37.25	6.12	6.12	0.00
34.65	1.13	1.13	0.00	37.30	6.18	6.18	0.00
34.70	1.28	1.28	0.00	37.35	6.24	6.24	0.00
34.75	1.44	1.44	0.00	37.40	6.30	6.30	0.00
34.80	1.59	1.59	0.00	37.45	6.36	6.36	0.00
34.85	1.75	1.75	0.00	37.50	6.42	6.42	0.00
34.90	1.91	1.91	0.00	37.55	6.48	6.48	0.00
34.95	2.06	2.06	0.00	37.60	6.54	6.54	0.00
35.00	2.22	2.22	0.00	37.65	6.60	6.60	0.00
35.05	2.36	2.36	0.00	37.70	6.66	6.66	0.00
35.10	2.50	2.50	0.00	37.75	6.72	6.72	0.00
35.15	2.63	2.63	0.00	37.80	6.77	6.77	0.00
35.20	2.74	2.74	0.00	37.85	6.83	6.83	0.00
35.25	2.84	2.84	0.00	37.90	6.88	6.88	0.00
35.30	2.89	2.89	0.00	37.95	6.94	6.94	0.00
35.35	2.90	2.90	0.00	38.00	6.99	6.99	0.00
35.40	3.03	3.03	0.00	38.05	7.05	7.05	0.00
35.45	3.15	3.15	0.00	38.10	7.10	7.10	0.00
35.50	3.27	3.27	0.00	38.15	7.16	7.16	0.00
35.55	3.39	3.39	0.00	38.20	<b>7.21</b>	<b>7.21</b>	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				

**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 401

**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	37.55	0
34.95	0	37.60	0
35.00	0	37.65	0
35.05	0	37.70	0
35.10	0	37.75	0
35.15	0	37.80	0
35.20	0	37.85	0
35.25	0	37.90	0
35.30	0	37.95	0
35.35	0	38.00	0
35.40	0	38.05	0
35.45	0	38.10	0
35.50	0	38.15	0
35.55	0	38.20	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		

# 817 Country Way Post

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 402

## Summary for Pond CB6: CB6

Inflow Area = 2,000 sf, 72.80% Impervious, Inflow Depth > 7.59" for 100-Year event  
Inflow = 0.38 cfs @ 12.07 hrs, Volume= 1,265 cf  
Outflow = 0.38 cfs @ 12.07 hrs, Volume= 1,265 cf, Atten= 0%, Lag= 0.0 min  
Primary = 0.38 cfs @ 12.07 hrs, Volume= 1,265 cf  
Routed to Pond DMH7 : DMH7  
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
Routed to Pond CB5 : CB5

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Peak Elev= 37.26' @ 12.07 hrs  
Flood Elev= 39.42'

Device	Routing	Invert	Outlet Devices
#1	Primary	36.90'	<b>12.0" Round Culvert</b> 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	40.00'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 24.0" x 24.0" Grate (69% open area) Limited to weir flow at low heads

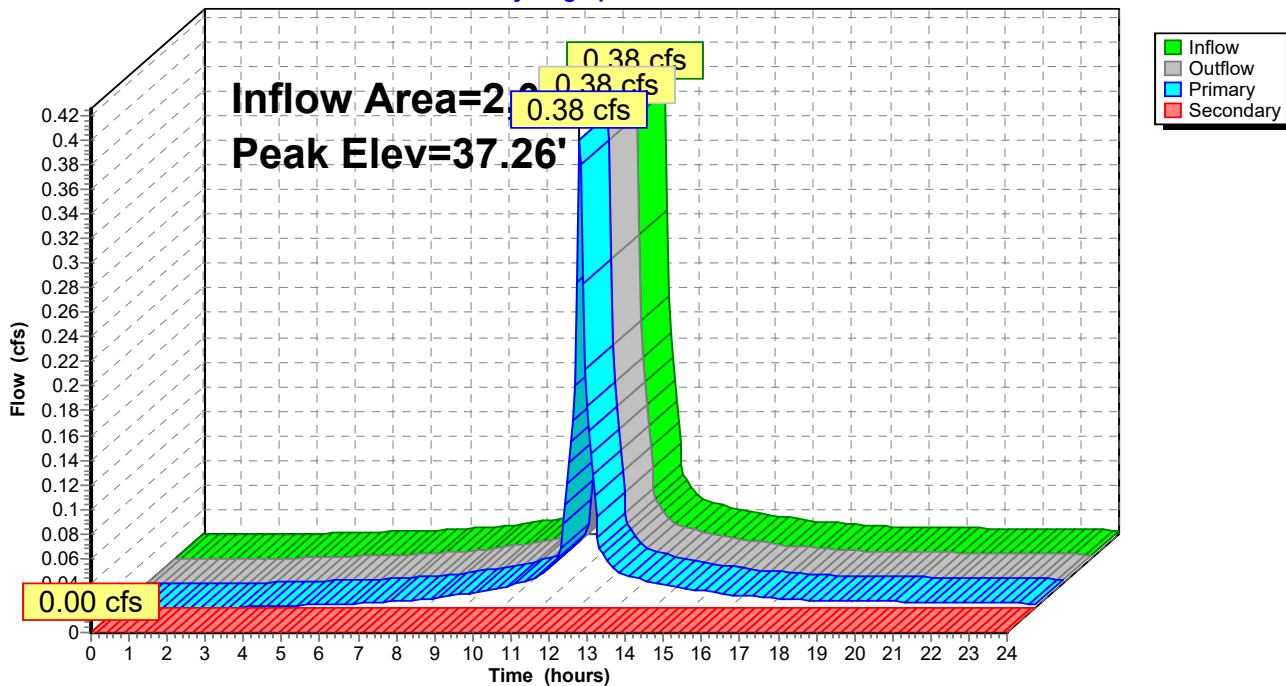
**Primary OutFlow** Max=0.37 cfs @ 12.07 hrs HW=37.25' (Free Discharge)  
↑1=Culvert (Barrel Controls 0.37 cfs @ 2.21 fps)

**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



**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 404

**Stage-Discharge for Pond CB6: CB6**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
36.90	0.00	0.00	<b>0.00</b>	39.55	5.55	5.55	0.00
36.95	0.01	0.01	0.00	39.60	5.61	5.61	0.00
37.00	0.03	0.03	0.00	39.65	5.67	5.67	0.00
37.05	0.07	0.07	0.00	39.70	5.74	5.74	0.00
37.10	0.12	0.12	0.00	39.75	5.80	5.80	0.00
37.15	0.19	0.19	0.00	39.80	5.86	5.86	0.00
37.20	0.27	0.27	0.00	39.85	5.92	5.92	0.00
37.25	0.36	0.36	0.00	39.90	5.98	5.98	0.00
37.30	0.47	0.47	0.00	39.95	6.04	6.04	0.00
37.35	0.58	0.58	0.00	40.00	<b>6.10</b>	<b>6.10</b>	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				
39.45	5.41	5.41	0.00				
39.50	5.48	5.48	0.00				

**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 405

**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	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	39.68	0
37.58	0	38.64	0	39.70	0
37.60	0	38.66	0	39.72	0
37.62	0	38.68	0	39.74	0
37.64	0	38.70	0	39.76	0
37.66	0	38.72	0	39.78	0
37.68	0	38.74	0	39.80	0
37.70	0	38.76	0	39.82	0
37.72	0	38.78	0	39.84	0
37.74	0	38.80	0	39.86	0
37.76	0	38.82	0	39.88	0
37.78	0	38.84	0	39.90	0
37.80	0	38.86	0	39.92	0
37.82	0	38.88	0	39.94	0
37.84	0	38.90	0	39.96	0
37.86	0	38.92	0	39.98	0
37.88	0	38.94	0	40.00	0
37.90	0	38.96	0		
37.92	0	38.98	0		
37.94	0	39.00	0		

# 817 Country Way Post

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 406

## Summary for Pond CB9: CB9

Inflow Area = 1,641 sf, 83.49% Impervious, Inflow Depth > 7.95" for 100-Year event  
Inflow = 0.32 cfs @ 12.07 hrs, Volume= 1,088 cf  
Outflow = 0.32 cfs @ 12.07 hrs, Volume= 1,088 cf, Atten= 0%, Lag= 0.0 min  
Primary = 0.32 cfs @ 12.07 hrs, Volume= 1,088 cf  
Routed to Pond DMH7 : DMH7  
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf  
Routed to Pond CB5 : CB5

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= 39.42'

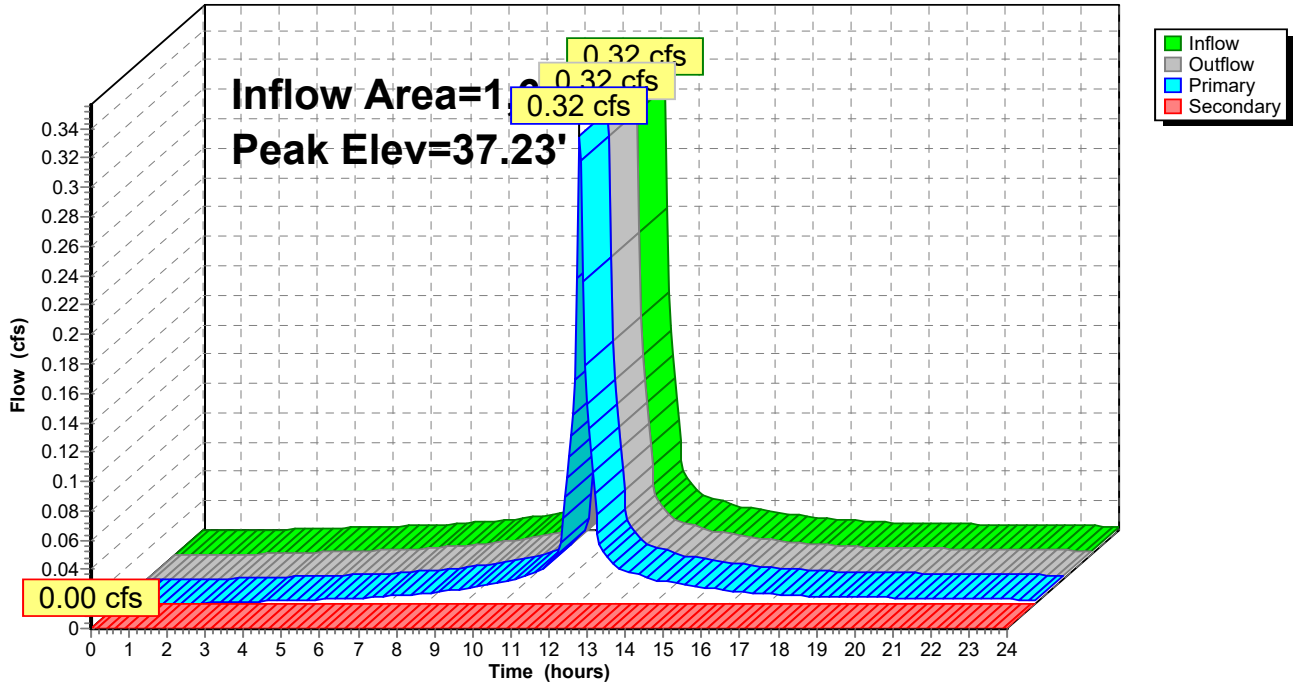
Device	Routing	Invert	Outlet Devices
#1	Primary	36.90'	<b>12.0" Round Culvert</b> L= 16.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 36.90' / 36.80' S= 0.0063 ' / ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	40.00'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 in 22.0" x 22.0" Grate (83% open area) Limited to weir flow at low heads

**Primary OutFlow** Max=0.31 cfs @ 12.07 hrs HW=37.22' (Free Discharge)  
↑1=Culvert (Barrel Controls 0.31 cfs @ 2.12 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



**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

**Stage-Discharge for Pond CB9: CB9**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
36.90	0.00	0.00	<b>0.00</b>	39.55	5.55	5.55	0.00
36.95	0.01	0.01	0.00	39.60	5.61	5.61	0.00
37.00	0.03	0.03	0.00	39.65	5.67	5.67	0.00
37.05	0.07	0.07	0.00	39.70	5.74	5.74	0.00
37.10	0.12	0.12	0.00	39.75	5.80	5.80	0.00
37.15	0.19	0.19	0.00	39.80	5.86	5.86	0.00
37.20	0.27	0.27	0.00	39.85	5.92	5.92	0.00
37.25	0.36	0.36	0.00	39.90	5.98	5.98	0.00
37.30	0.47	0.47	0.00	39.95	6.04	6.04	0.00
37.35	0.58	0.58	0.00	40.00	<b>6.10</b>	<b>6.10</b>	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				
39.45	5.41	5.41	0.00				
39.50	5.48	5.48	0.00				

**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 409

**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	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	39.68	0
37.58	0	38.64	0	39.70	0
37.60	0	38.66	0	39.72	0
37.62	0	38.68	0	39.74	0
37.64	0	38.70	0	39.76	0
37.66	0	38.72	0	39.78	0
37.68	0	38.74	0	39.80	0
37.70	0	38.76	0	39.82	0
37.72	0	38.78	0	39.84	0
37.74	0	38.80	0	39.86	0
37.76	0	38.82	0	39.88	0
37.78	0	38.84	0	39.90	0
37.80	0	38.86	0	39.92	0
37.82	0	38.88	0	39.94	0
37.84	0	38.90	0	39.96	0
37.86	0	38.92	0	39.98	0
37.88	0	38.94	0	40.00	0
37.90	0	38.96	0		
37.92	0	38.98	0		
37.94	0	39.00	0		

# 817 Country Way Post

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 410

## Summary for Pond DMH11: DMH11

Inflow Area = 48,030 sf, 60.91% Impervious, Inflow Depth > 5.10" for 100-Year event  
Inflow = 3.44 cfs @ 12.09 hrs, Volume= 20,408 cf  
Outflow = 3.44 cfs @ 12.09 hrs, Volume= 20,408 cf, Atten= 0%, Lag= 0.0 min  
Primary = 3.44 cfs @ 12.09 hrs, Volume= 20,408 cf  
Routed to Pond SSD3 : SUBSURFACE DRAINAGE AREA #3

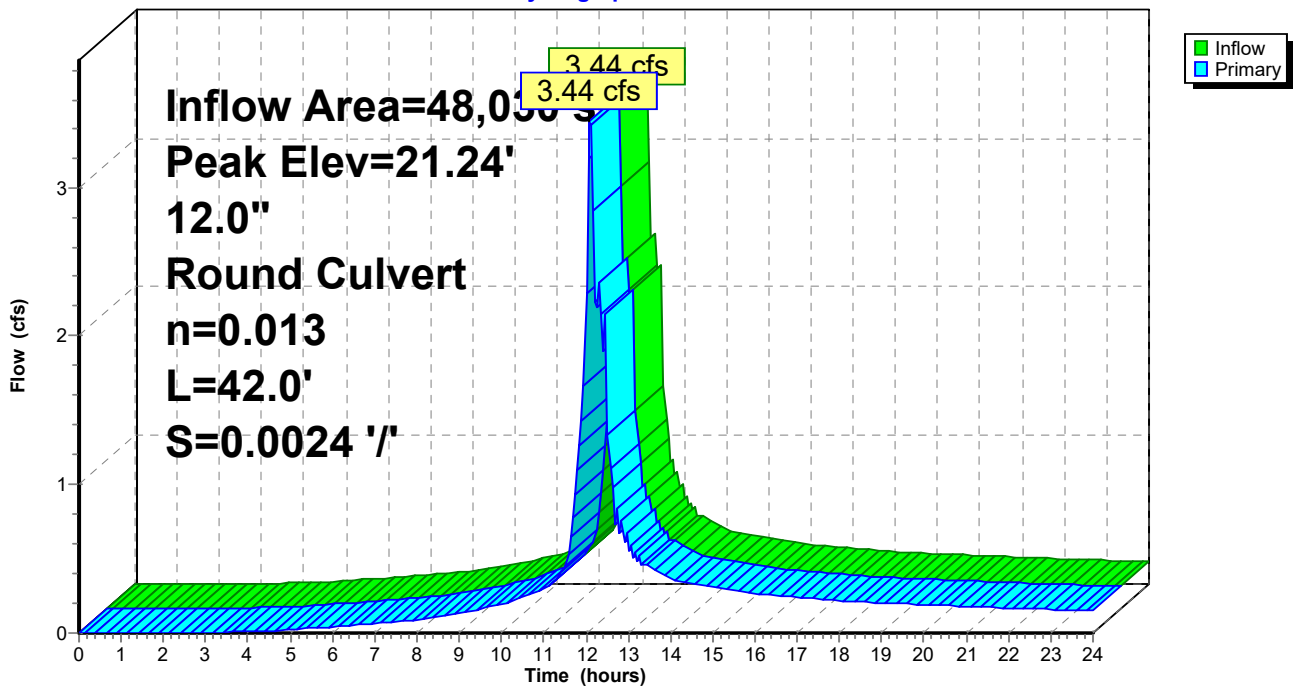
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Peak Elev= 21.24' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	19.50'	<b>12.0" Round Culvert</b> 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=3.38 cfs @ 12.09 hrs HW=21.21' (Free Discharge)  
↑**1=Culvert** (Barrel Controls 3.38 cfs @ 4.30 fps)

## Pond DMH11: DMH11

Hydrograph





**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 411

**Stage-Discharge for Pond DMH11: DMH11**

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
19.50	0.00	20.03	0.64	20.56	2.05	21.09	3.12
19.51	0.00	20.04	0.66	20.57	2.07	21.10	3.14
19.52	0.00	20.05	0.68	20.58	2.10	21.11	3.16
19.53	0.00	20.06	0.71	20.59	2.12	21.12	3.19
19.54	0.00	20.07	0.73	20.60	2.15	21.13	3.21
19.55	0.00	20.08	0.75	20.61	2.17	21.14	3.23
19.56	0.01	20.09	0.78	20.62	2.20	21.15	3.25
19.57	0.01	20.10	0.80	20.63	2.22	21.16	3.27
19.58	0.01	20.11	0.83	20.64	2.24	21.17	3.29
19.59	0.02	20.12	0.85	20.65	2.27	21.18	3.32
19.60	0.02	20.13	0.88	20.66	2.29	21.19	3.34
19.61	0.03	20.14	0.90	20.67	2.31	21.20	3.36
19.62	0.03	20.15	0.93	20.68	2.33	21.21	3.38
19.63	0.04	20.16	0.95	20.69	2.35	21.22	3.40
19.64	0.04	20.17	0.98	20.70	2.37	21.23	3.42
19.65	0.05	20.18	1.00	20.71	2.39	21.24	<b>3.44</b>
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	21.03	2.98		
19.98	0.53	20.51	1.91	21.04	3.00		
19.99	0.55	20.52	1.94	21.05	3.03		
20.00	0.57	20.53	1.97	21.06	3.05		
20.01	0.59	20.54	1.99	21.07	3.07		
20.02	0.61	20.55	2.02	21.08	3.10		

**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 412

**Stage-Area-Storage for Pond DMH11: DMH11**

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
19.50	0	20.56	0
19.52	0	20.58	0
19.54	0	20.60	0
19.56	0	20.62	0
19.58	0	20.64	0
19.60	0	20.66	0
19.62	0	20.68	0
19.64	0	20.70	0
19.66	0	20.72	0
19.68	0	20.74	0
19.70	0	20.76	0
19.72	0	20.78	0
19.74	0	20.80	0
19.76	0	20.82	0
19.78	0	20.84	0
19.80	0	20.86	0
19.82	0	20.88	0
19.84	0	20.90	0
19.86	0	20.92	0
19.88	0	20.94	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		
20.22	0		
20.24	0		
20.26	0		
20.28	0		
20.30	0		
20.32	0		
20.34	0		
20.36	0		
20.38	0		
20.40	0		
20.42	0		
20.44	0		
20.46	0		
20.48	0		
20.50	0		
20.52	0		
20.54	0		

**Summary for Pond DMH7: DMH7**

Inflow Area = 3,641 sf, 77.62% Impervious, Inflow Depth > 7.76" for 100-Year event  
 Inflow = 0.70 cfs @ 12.07 hrs, Volume= 2,353 cf  
 Outflow = 0.70 cfs @ 12.07 hrs, Volume= 2,353 cf, Atten= 0%, Lag= 0.0 min  
 Primary = 0.70 cfs @ 12.07 hrs, Volume= 2,353 cf  
 Routed to Pond SSD2 : SUBSURFACE DRAINAGE AREA #2

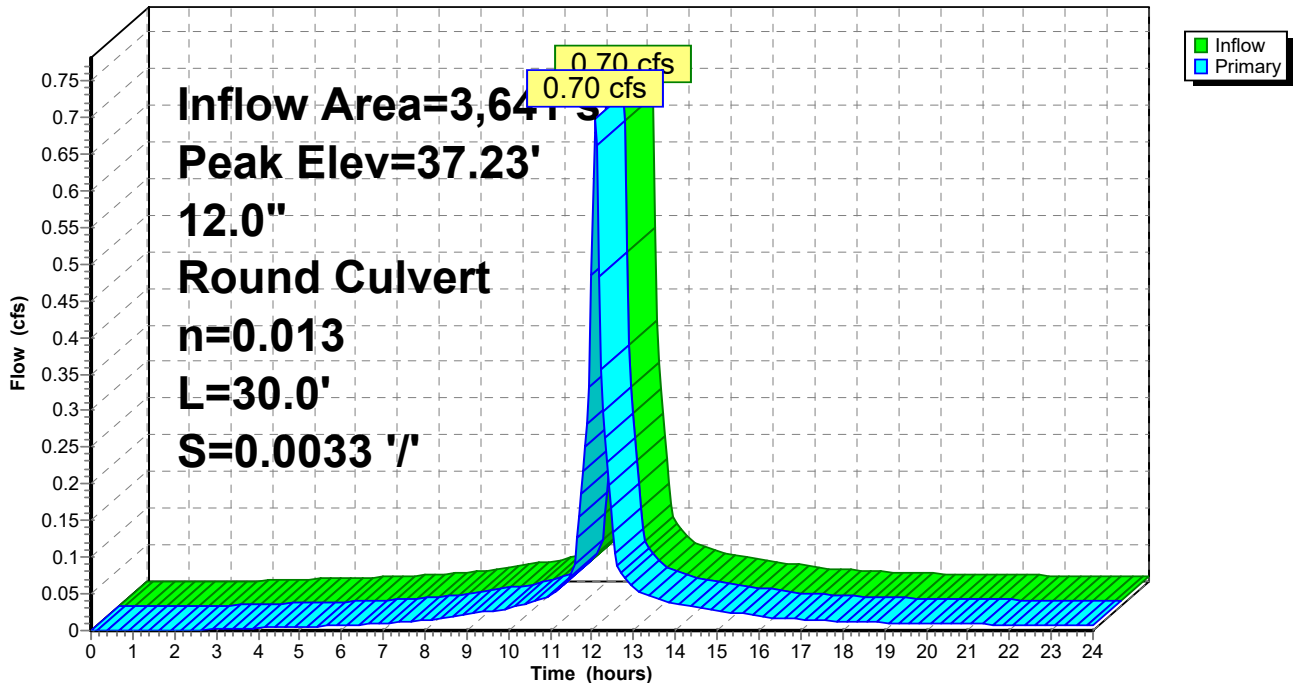
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 37.23' @ 12.07 hrs  
 Flood Elev= 39.67'

Device #	Routing	Invert	Outlet Devices
#1	Primary	36.70'	<b>12.0" Round Culvert</b> 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**

Hydrograph



**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 414

**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	<b>5.79</b>
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		

**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 415

**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		

# 817 Country Way Post

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 416

## Summary for Pond SSD1: SUBSURFACE DRAINAGE AREA #1

Inflow Area = 12,831 sf, 60.28% Impervious, Inflow Depth > 7.32" for 100-Year event  
 Inflow = 2.36 cfs @ 12.07 hrs, Volume= 7,831 cf  
 Outflow = 0.91 cfs @ 12.32 hrs, Volume= 6,393 cf, Atten= 61%, Lag= 15.0 min  
 Discarded = 0.07 cfs @ 9.35 hrs, Volume= 4,341 cf  
 Primary = 0.77 cfs @ 12.32 hrs, Volume= 934 cf  
 Routed to Pond CB13 : CB13  
 Secondary = 0.07 cfs @ 12.30 hrs, Volume= 1,118 cf  
 Routed to Reach DP3 : DP3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 35.61' @ 12.32 hrs Surf.Area= 2,994 sf Storage= 3,034 cf

Plug-Flow detention time= 189.1 min calculated for 6,379 cf (81% of inflow)  
 Center-of-Mass det. time= 117.3 min ( 887.8 - 770.5 )

Volume	Invert	Avail.Storage	Storage Description
#1A	33.80'	1,232 cf	<b>21.67'W x 92.50'L x 2.04'H Field A</b> 4,092 cf Overall - 1,011 cf Embedded = 3,081 cf x 40.0% Voids
#2A	34.30'	1,011 cf	<b>Cultec C-100HD</b> x 72 Inside #1 Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.86 sf x 6 rows
#3B	33.80'	515 cf	<b>11.67'W x 70.00'L x 2.04'H Field B</b> 1,667 cf Overall - 380 cf Embedded = 1,288 cf x 40.0% Voids
#4B	34.30'	380 cf	<b>Cultec C-100HD</b> x 27 Inside #3 Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.86 sf x 3 rows
#5C	33.80'	118 cf	<b>9.33'W x 18.50'L x 2.04'H Field C</b> 353 cf Overall - 58 cf Embedded = 295 cf x 40.0% Voids
#6C	34.30'	58 cf	<b>Cultec C-100HD</b> x 4 Inside #5 Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.86 sf x 2 rows
		3,314 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	33.80'	<b>1.020 in/hr Exfiltration over Surface area</b> Phase-In= 0.01'
#2	Primary	35.50'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Secondary	35.00'	<b>2.0" Round Culvert</b> L= 267.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 35.00' / 19.00' S= 0.0599 '/ Cc= 0.900 n= 0.013, Flow Area= 0.02 sf

# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 100-Year Rainfall=8.68"

Page 417

**Discarded OutFlow** Max=0.07 cfs @ 9.35 hrs HW=33.82' (Free Discharge)

↳ **1=Exfiltration** (Exfiltration Controls 0.07 cfs)

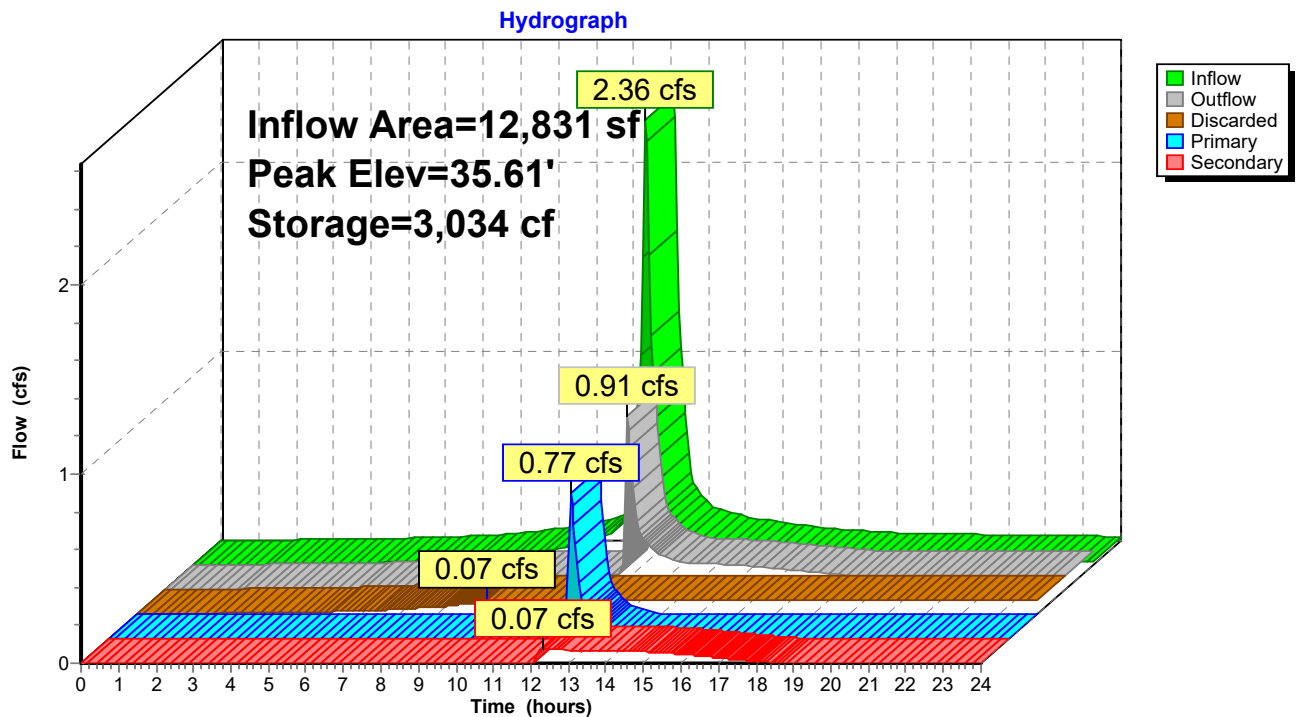
**Primary OutFlow** Max=0.71 cfs @ 12.32 hrs HW=35.60' (Free Discharge)

↳ **2=Orifice/Grate** (Weir Controls 0.71 cfs @ 1.05 fps)

**Secondary OutFlow** Max=0.07 cfs @ 12.30 hrs HW=35.60' (Free Discharge)

↳ **3=Culvert** (Barrel Controls 0.07 cfs @ 3.38 fps)

## Pond SSD1: SUBSURFACE DRAINAGE AREA #1



**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 418

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

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
33.80	0.00	<b>0.00</b>	0.00	0.00
33.85	0.07	<b>0.07</b>	0.00	0.00
33.90	0.07	0.07	0.00	0.00
33.95	0.07	0.07	0.00	0.00
34.00	0.07	0.07	0.00	0.00
34.05	0.07	0.07	0.00	0.00
34.10	0.07	0.07	0.00	0.00
34.15	0.07	0.07	0.00	0.00
34.20	0.07	0.07	0.00	0.00
34.25	0.07	0.07	0.00	0.00
34.30	0.07	0.07	0.00	0.00
34.35	0.07	0.07	0.00	0.00
34.40	0.07	0.07	0.00	0.00
34.45	0.07	0.07	0.00	0.00
34.50	0.07	0.07	0.00	0.00
34.55	0.07	0.07	0.00	0.00
34.60	0.07	0.07	0.00	0.00
34.65	0.07	0.07	0.00	0.00
34.70	0.07	0.07	0.00	0.00
34.75	0.07	0.07	0.00	0.00
34.80	0.07	0.07	0.00	0.00
34.85	0.07	0.07	0.00	0.00
34.90	0.07	0.07	0.00	0.00
34.95	0.07	0.07	0.00	0.00
35.00	0.07	0.07	0.00	0.00
35.05	0.07	0.07	0.00	0.00
35.10	0.09	0.07	0.00	0.01
35.15	0.10	0.07	0.00	0.03
35.20	0.11	0.07	0.00	0.04
35.25	0.11	0.07	0.00	0.04
35.30	0.12	0.07	0.00	0.05
35.35	0.12	0.07	0.00	0.05
35.40	0.13	0.07	0.00	0.06
35.45	0.13	0.07	0.00	0.06
35.50	0.14	0.07	0.00	0.07
35.55	0.39	0.07	0.24	0.07
35.60	0.83	0.07	0.69	0.07
35.65	1.41	0.07	1.27	0.07
35.70	2.09	0.07	1.95	0.07
35.75	2.87	0.07	2.73	0.07
35.80	<b>3.73</b>	0.07	<b>3.58</b>	<b>0.07</b>



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

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
33.80	2,994	0	34.86	2,994	1,891
33.82	2,994	24	34.88	2,994	1,933
33.84	2,994	48	34.90	2,994	1,976
33.86	2,994	72	34.92	2,994	2,018
33.88	2,994	96	34.94	2,994	2,059
33.90	2,994	120	34.96	2,994	2,100
33.92	2,994	144	34.98	2,994	2,141
33.94	2,994	168	35.00	2,994	2,181
33.96	2,994	192	35.02	2,994	2,220
33.98	2,994	216	35.04	2,994	2,259
34.00	2,994	239	35.06	2,994	2,296
34.02	2,994	263	35.08	2,994	2,333
34.04	2,994	287	35.10	2,994	2,369
34.06	2,994	311	35.12	2,994	2,404
34.08	2,994	335	35.14	2,994	2,438
34.10	2,994	359	35.16	2,994	2,471
34.12	2,994	383	35.18	2,994	2,502
34.14	2,994	407	35.20	2,994	2,532
34.16	2,994	431	35.22	2,994	2,561
34.18	2,994	455	35.24	2,994	2,589
34.20	2,994	479	35.26	2,994	2,615
34.22	2,994	503	35.28	2,994	2,641
34.24	2,994	527	35.30	2,994	2,665
34.26	2,994	551	35.32	2,994	2,689
34.28	2,994	575	35.34	2,994	2,713
34.30	2,994	599	35.36	2,994	2,737
34.32	2,994	647	35.38	2,994	2,761
34.34	2,994	696	35.40	2,994	2,785
34.36	2,994	744	35.42	2,994	2,809
34.38	2,994	792	35.44	2,994	2,833
34.40	2,994	840	35.46	2,994	2,857
34.42	2,994	887	35.48	2,994	2,881
34.44	2,994	935	35.50	2,994	2,905
34.46	2,994	982	35.52	2,994	2,928
34.48	2,994	1,028	35.54	2,994	2,952
34.50	2,994	1,075	35.56	2,994	2,976
34.52	2,994	1,122	35.58	2,994	3,000
34.54	2,994	1,168	35.60	2,994	3,024
34.56	2,994	1,215	35.62	2,994	3,048
34.58	2,994	1,262	35.64	2,994	3,072
34.60	2,994	1,308	35.66	2,994	3,096
34.62	2,994	1,354	35.68	2,994	3,120
34.64	2,994	1,400	35.70	2,994	3,144
34.66	2,994	1,446	35.72	2,994	3,168
34.68	2,994	1,492	35.74	2,994	3,192
34.70	2,994	1,537	35.76	2,994	3,216
34.72	2,994	1,582	35.78	2,994	3,240
34.74	2,994	1,627	35.80	2,994	3,264
34.76	2,994	1,672	35.82	2,994	3,288
34.78	2,994	1,716	35.84	2,994	3,312
34.80	2,994	1,760			
34.82	2,994	1,804			
34.84	2,994	1,847			

**Summary for Pond SSD2: SUBSURFACE DRAINAGE AREA #2**

Inflow Area = 3,641 sf, 77.62% Impervious, Inflow Depth > 7.76" for 100-Year event  
 Inflow = 0.70 cfs @ 12.07 hrs, Volume= 2,353 cf  
 Outflow = 0.05 cfs @ 11.15 hrs, Volume= 2,348 cf, Atten= 93%, Lag= 0.0 min  
 Discarded = 0.05 cfs @ 11.15 hrs, Volume= 2,348 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 Pond CB5 : CB5

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 36.82' @ 13.45 hrs Surf.Area= 1,960 sf Storage= 979 cf

Plug-Flow detention time= 172.4 min calculated for 2,348 cf (100% of inflow)  
 Center-of-Mass det. time= 170.9 min ( 935.0 - 764.1 )

Volume	Invert	Avail.Storage	Storage Description
#1B	35.70'	2,483 cf	<b>16.00'W x 122.50'L x 4.54'H Field B</b> 8,902 cf Overall - 2,694 cf Embedded = 6,208 cf x 40.0% Voids
#2B	36.70'	2,694 cf	<b>Cultec R-330XLHD x 51 Inside #1</b> 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

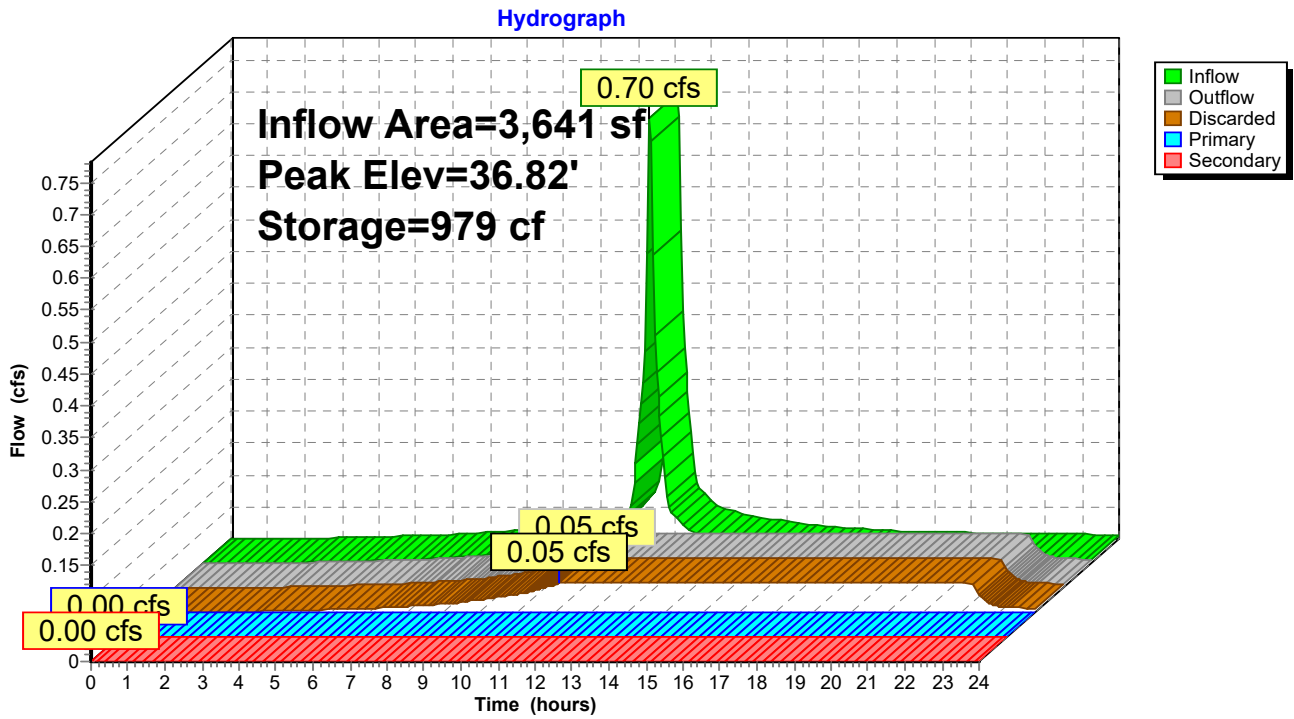
Device	Routing	Invert	Outlet Devices
#1	Discarded	35.70'	<b>1.020 in/hr Exfiltration over Surface area</b>
#2	Secondary	40.60'	<b>4.0" Horiz. Orifice/Grate C= 0.600</b> Limited to weir flow at low heads
#3	Primary	38.70'	<b>6.0" Round Culvert</b> L= 23.0' CPP, square edge headwall, Ke= 0.500 Inlet /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

**Discarded OutFlow** Max=0.05 cfs @ 11.15 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



**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 422

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

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
35.70	0.00	<b>0.00</b>	0.00	<b>0.00</b>
35.80	0.05	<b>0.05</b>	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	<b>1.26</b>	0.05	<b>1.21</b>	0.00

**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 423

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

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

# 817 Country Way Post

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 424

## Summary for Pond SSD3: SUBSURFACE DRAINAGE AREA #3

Inflow Area = 51,552 sf, 63.58% Impervious, Inflow Depth > 5.33" for 100-Year event  
 Inflow = 4.12 cfs @ 12.09 hrs, Volume= 22,884 cf  
 Outflow = 3.23 cfs @ 12.16 hrs, Volume= 21,778 cf, Atten= 21%, Lag= 4.6 min  
 Discarded = 0.03 cfs @ 5.00 hrs, Volume= 2,096 cf  
 Primary = 3.21 cfs @ 12.16 hrs, Volume= 19,683 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= 21.31' @ 12.16 hrs Surf.Area= 1,203 sf Storage= 2,219 cf

Plug-Flow detention time= 49.3 min calculated for 21,733 cf (95% of inflow)  
 Center-of-Mass det. time= 22.0 min ( 864.0 - 842.1 )

Volume	Invert	Avail.Storage	Storage Description
#1A	18.00'	722 cf	<b>8.33'W x 81.00'L x 3.54'H Field A</b> 2,391 cf Overall - 585 cf Embedded = 1,806 cf x 40.0% Voids
#2A	18.50'	585 cf	<b>Cultec R-330XLHD x 11 Inside #1</b> 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	<b>12.50'W x 28.00'L x 3.54'H Field B</b> 1,240 cf Overall - 335 cf Embedded = 904 cf x 40.0% Voids
#4B	18.50'	335 cf	<b>Cultec R-330XLHD x 6 Inside #3</b> 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	<b>13.00'W x 13.67'L x 3.54'H Field C</b> 629 cf Overall - 127 cf Embedded = 503 cf x 40.0% Voids
#6C	18.50'	127 cf	<b>Cultec R-330XLHD x 2 Inside #5</b> 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'	<b>1.020 in/hr Exfiltration over Surface area</b> Phase-In= 0.01'
#2	Primary	19.40'	<b>10.0" Round Culvert</b> L= 14.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 19.40' / 18.40' S= 0.0714 '/ Cc= 0.900 n= 0.013, Flow Area= 0.55 sf
#3	Secondary	22.00'	<b>20.0" x 20.0" Horiz. Orifice/Grate X 2.00</b> C= 0.600 Limited to weir flow at low heads

# 817 Country Way Post

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Type III 24-hr 100-Year Rainfall=8.68"

Page 425

**Discarded OutFlow** Max=0.03 cfs @ 5.00 hrs HW=18.04' (Free Discharge)

↳ **1=Exfiltration** (Exfiltration Controls 0.03 cfs)

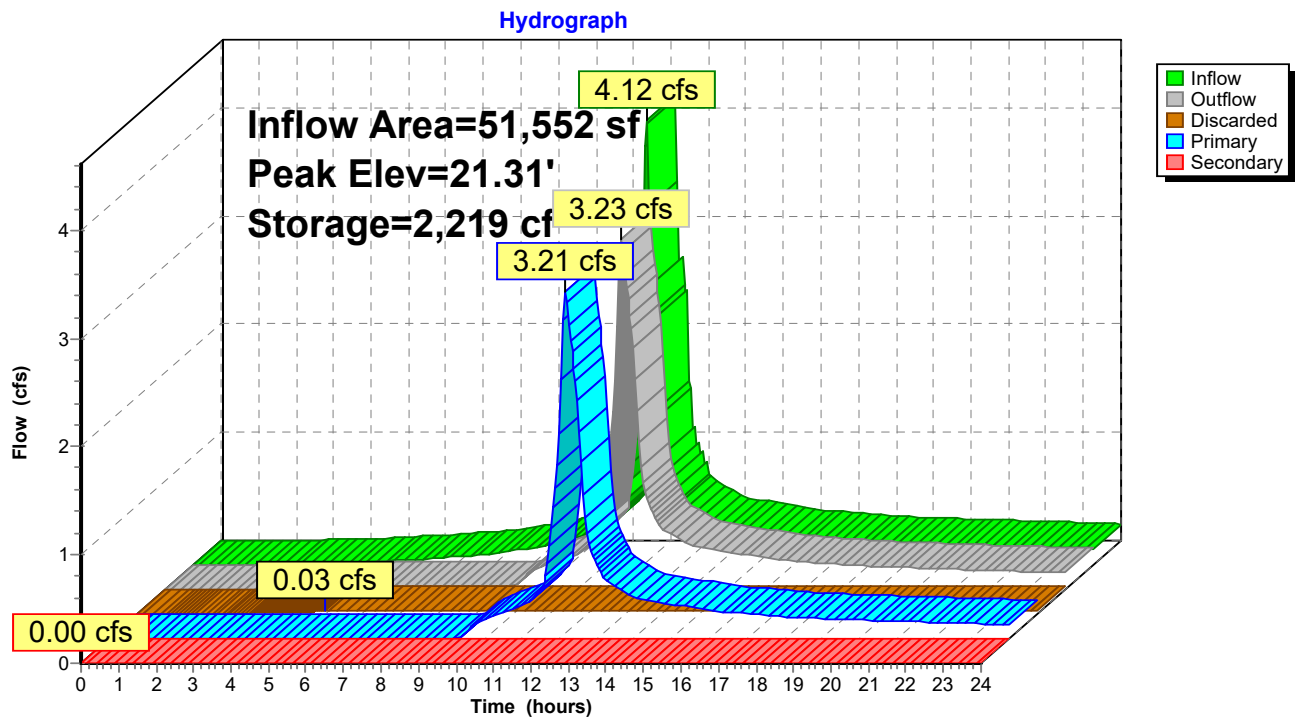
**Primary OutFlow** Max=3.18 cfs @ 12.16 hrs HW=21.28' (Free Discharge)

↳ **2=Culvert** (Inlet Controls 3.18 cfs @ 5.82 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



**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 426

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

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Secondary (cfs)
18.00	0.00	<b>0.00</b>	0.00	<b>0.00</b>
18.10	0.03	<b>0.03</b>	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	0.03	0.03	0.00	0.00
19.50	0.07	0.03	0.04	0.00
19.60	0.18	0.03	0.15	0.00
19.70	0.36	0.03	0.33	0.00
19.80	0.59	0.03	0.56	0.00
19.90	0.85	0.03	0.82	0.00
20.00	1.14	0.03	1.11	0.00
20.10	1.42	0.03	1.39	0.00
20.20	1.67	0.03	1.64	0.00
20.30	1.85	0.03	1.83	0.00
20.40	2.03	0.03	2.01	0.00
20.50	2.20	0.03	2.17	0.00
20.60	2.35	0.03	2.32	0.00
20.70	2.50	0.03	2.47	0.00
20.80	2.63	0.03	2.60	0.00
20.90	2.76	0.03	2.73	0.00
21.00	2.89	0.03	2.86	0.00
21.10	3.00	0.03	2.98	0.00
21.20	3.12	0.03	3.09	0.00
21.30	3.23	0.03	3.20	0.00
21.40	3.33	0.03	3.30	0.00
21.50	3.44	0.03	3.41	0.00
21.60	3.54	0.03	3.51	0.00
21.70	3.63	0.03	3.60	0.00
21.80	3.73	0.03	3.70	0.00
21.90	3.82	0.03	3.79	0.00
22.00	<b>3.91</b>	0.03	<b>3.88</b>	0.00



**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 427

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

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
18.00	<b>1,203</b>	0	20.65	1,203	1,877
18.05	1,203	24	20.70	1,203	1,908
18.10	1,203	48	20.75	1,203	1,938
18.15	1,203	72	20.80	1,203	1,967
18.20	1,203	96	20.85	1,203	1,994
18.25	1,203	120	20.90	1,203	2,021
18.30	1,203	144	20.95	1,203	2,047
18.35	1,203	168	21.00	1,203	2,071
18.40	1,203	192	21.05	1,203	2,095
18.45	1,203	216	21.10	1,203	2,119
18.50	1,203	241	21.15	1,203	2,143
18.55	1,203	281	21.20	1,203	2,168
18.60	1,203	322	21.25	1,203	2,192
18.65	1,203	363	21.30	1,203	2,216
18.70	1,203	403	21.35	1,203	2,240
18.75	1,203	444	21.40	1,203	2,264
18.80	1,203	484	21.45	1,203	2,288
18.85	1,203	525	21.50	1,203	2,312
18.90	1,203	565	21.55	1,203	<b>2,332</b>
18.95	1,203	605	21.60	1,203	2,332
19.00	1,203	646	21.65	1,203	2,332
19.05	1,203	686	21.70	1,203	2,332
19.10	1,203	726	21.75	1,203	2,332
19.15	1,203	766	21.80	1,203	2,332
19.20	1,203	806	21.85	1,203	2,332
19.25	1,203	845	21.90	1,203	2,332
19.30	1,203	885	21.95	1,203	2,332
19.35	1,203	924	22.00	1,203	2,332
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			

**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 428

**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= 3,304 cf, Atten= 30%, Lag= 5.0 min  
 Discarded = 0.01 cfs @ 3.85 hrs, Volume= 908 cf  
 Primary = 0.45 cfs @ 12.15 hrs, Volume= 663 cf  
 Routed to Reach DP1 : DP1post  
 Tertiary = 0.32 cfs @ 12.15 hrs, Volume= 1,732 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= 111.3 min calculated for 3,297 cf (84% of inflow)  
 Center-of-Mass det. time= 43.4 min ( 782.3 - 739.0 )

Volume	Invert	Avail.Storage	Storage Description
#1A	34.50'	487 cf	<b>11.17'W x 31.50'L x 4.71'H Field A</b> 1,656 cf Overall - 440 cf Embedded = 1,217 cf x 40.0% Voids
#2A	35.00'	440 cf	<b>Cultec R-330XLHD x 8 Inside #1</b> 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'	100 cf	<b>6.33'W x 10.50'L x 4.71'H Field B</b> 313 cf Overall - 63 cf Embedded = 250 cf x 40.0% Voids
#4B	35.00'	63 cf	<b>Cultec R-330XLHD Inside #3</b> 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'	100 cf	<b>6.33'W x 10.50'L x 4.71'H Field C</b> 313 cf Overall - 63 cf Embedded = 250 cf x 40.0% Voids
#6C	35.00'	63 cf	<b>Cultec R-330XLHD Inside #5</b> 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
		1,253 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'	<b>1.020 in/hr Exfiltration over Surface area</b>
#2	Primary	37.00'	<b>4.0" Round Culvert</b> 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
#3	Tertiary	36.50'	<b>4.0" Round Culvert</b> 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 @ 3.85 hrs HW=34.55' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.01 cfs)

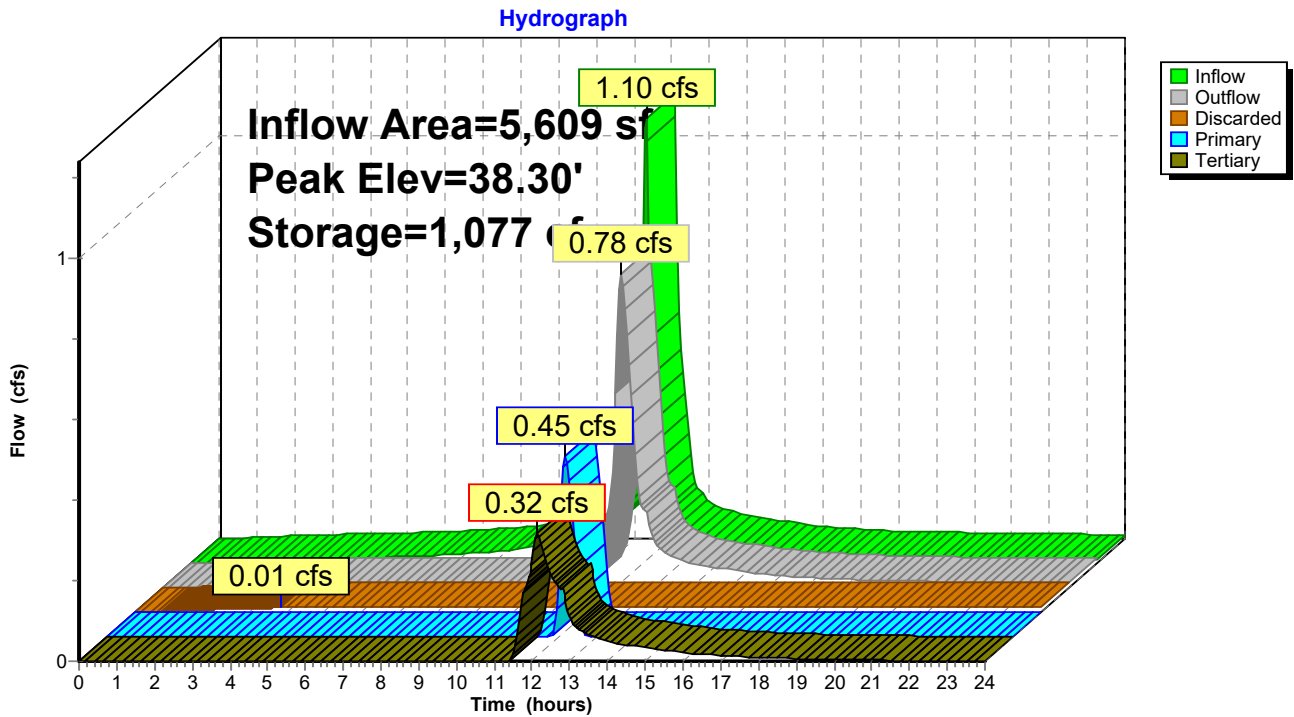
Primary OutFlow Max=0.45 cfs @ 12.15 hrs HW=38.30' (Free Discharge)

↑2=Culvert (Inlet Controls 0.45 cfs @ 5.12 fps)

Tertiary OutFlow Max=0.32 cfs @ 12.15 hrs HW=38.30' (Free Discharge)

↑3=Culvert (Barrel Controls 0.32 cfs @ 3.62 fps)

**Pond SSD4: SUBSURFACE DRAINAGE AREA #4**



**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 430

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

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

**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 431

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

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
34.50	485	0	37.15	485	840
34.55	485	10	37.20	485	853
34.60	485	19	37.25	485	866
34.65	485	29	37.30	485	878
34.70	485	39	37.35	485	890
34.75	485	48	37.40	485	901
34.80	485	58	37.45	485	911
34.85	485	68	37.50	485	921
34.90	485	78	37.55	485	931
34.95	485	87	37.60	485	941
35.00	485	97	37.65	485	951
35.05	485	116	37.70	485	960
35.10	485	134	37.75	485	970
35.15	485	153	37.80	485	980
35.20	485	172	37.85	485	989
35.25	485	190	37.90	485	999
35.30	485	209	37.95	485	1,009
35.35	485	227	38.00	485	1,018
35.40	485	246	38.05	485	1,028
35.45	485	264	38.10	485	1,038
35.50	485	283	38.15	485	1,048
35.55	485	301	38.20	485	1,057
35.60	485	320	38.25	485	1,067
35.65	485	338	38.30	485	1,077
35.70	485	356	38.35	485	1,086
35.75	485	374	38.40	485	1,096
35.80	485	392	38.45	485	1,106
35.85	485	410	38.50	485	1,115
35.90	485	428	38.55	485	1,125
35.95	485	446	38.60	485	1,135
36.00	485	464	38.65	485	1,144
36.05	485	482	38.70	485	1,154
36.10	485	500	38.75	485	1,164
36.15	485	518	38.80	485	1,174
36.20	485	535	38.85	485	1,183
36.25	485	553	38.90	485	1,193
36.30	485	571	38.95	485	1,203
36.35	485	588	39.00	485	1,212
36.40	485	605	39.05	485	1,222
36.45	485	622	39.10	485	1,232
36.50	485	639	39.15	485	1,241
36.55	485	656	39.20	485	1,251
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			

# 817 Country Way Post

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 432

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

Inflow Area = 15,330 sf, 78.87% Impervious, Inflow Depth > 7.82" for 100-Year event  
 Inflow = 2.72 cfs @ 12.09 hrs, Volume= 9,988 cf  
 Outflow = 0.17 cfs @ 13.81 hrs, Volume= 7,759 cf, Atten= 94%, Lag= 103.4 min  
 Primary = 0.17 cfs @ 13.81 hrs, Volume= 7,759 cf  
 Routed to Pond DMH11 : DMH11  
 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= 33.63' @ 13.81 hrs Surf.Area= 2,920 sf Storage= 5,349 cf

Plug-Flow detention time= 287.2 min calculated for 7,743 cf (78% of inflow)  
 Center-of-Mass det. time= 207.6 min ( 970.9 - 763.2 )

Volume	Invert	Avail.Storage	Storage Description
#1A	31.00'	2,550 cf	<b>26.67'W x 109.50'L x 3.54'H Field A</b> 10,342 cf Overall - 3,968 cf Embedded = 6,374 cf x 40.0% Voids
#2A	31.50'	3,968 cf	<b>Cultec R-330XLHD x 75 Inside #1</b> 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
		6,517 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	31.00'	<b>6.0" Round Culvert</b> L= 175.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 31.00' / 19.00' S= 0.0686 1/1' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf
#2	Secondary	36.50'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Device 1	19.25'	<b>2.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Primary OutFlow** Max=0.17 cfs @ 13.81 hrs HW=33.63' (Free Discharge)

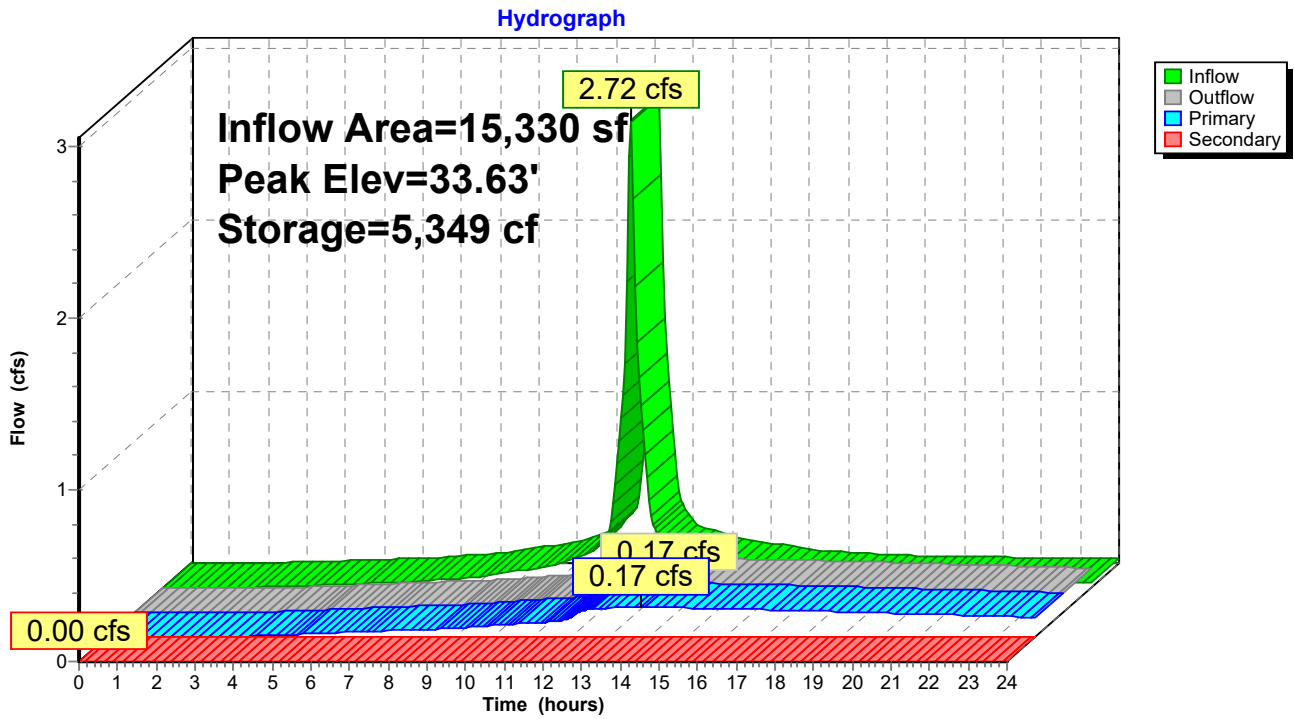
↑1=Culvert (Passes 0.17 cfs of 1.46 cfs potential flow)

↑3=Orifice/Grate (Orifice Controls 0.17 cfs @ 7.81 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)**



**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 434

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

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
31.00	0.00	0.00	<b>0.00</b>	36.30	0.24	0.24	0.00
31.10	0.03	0.03	0.00	36.40	0.24	0.24	0.00
31.20	0.05	0.05	0.00	36.50	<b>0.25</b>	<b>0.25</b>	0.00
31.30	0.06	0.06	0.00				
31.40	0.07	0.07	0.00				
31.50	0.07	0.07	0.00				
31.60	0.08	0.08	0.00				
31.70	0.09	0.09	0.00				
31.80	0.09	0.09	0.00				
31.90	0.10	0.10	0.00				
32.00	0.11	0.11	0.00				
32.10	0.11	0.11	0.00				
32.20	0.12	0.12	0.00				
32.30	0.12	0.12	0.00				
32.40	0.12	0.12	0.00				
32.50	0.13	0.13	0.00				
32.60	0.13	0.13	0.00				
32.70	0.14	0.14	0.00				
32.80	0.14	0.14	0.00				
32.90	0.14	0.14	0.00				
33.00	0.15	0.15	0.00				
33.10	0.15	0.15	0.00				
33.20	0.16	0.16	0.00				
33.30	0.16	0.16	0.00				
33.40	0.16	0.16	0.00				
33.50	0.17	0.17	0.00				
33.60	0.17	0.17	0.00				
33.70	0.17	0.17	0.00				
33.80	0.18	0.18	0.00				
33.90	0.18	0.18	0.00				
34.00	0.18	0.18	0.00				
34.10	0.18	0.18	0.00				
34.20	0.19	0.19	0.00				
34.30	0.19	0.19	0.00				
34.40	0.19	0.19	0.00				
34.50	0.20	0.20	0.00				
34.60	0.20	0.20	0.00				
34.70	0.20	0.20	0.00				
34.80	0.20	0.20	0.00				
34.90	0.21	0.21	0.00				
35.00	0.21	0.21	0.00				
35.10	0.21	0.21	0.00				
35.20	0.22	0.22	0.00				
35.30	0.22	0.22	0.00				
35.40	0.22	0.22	0.00				
35.50	0.22	0.22	0.00				
35.60	0.23	0.23	0.00				
35.70	0.23	0.23	0.00				
35.80	0.23	0.23	0.00				
35.90	0.23	0.23	0.00				
36.00	0.23	0.23	0.00				
36.10	0.24	0.24	0.00				
36.20	0.24	0.24	0.00				



**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 435

**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	5,379	36.30	6,517
31.05	58	33.70	5,463	36.35	6,517
31.10	117	33.75	5,543	36.40	6,517
31.15	175	33.80	5,619	36.45	6,517
31.20	234	33.85	5,691	36.50	6,517
31.25	292	33.90	5,759		
31.30	350	33.95	5,824		
31.35	409	34.00	5,885		
31.40	467	34.05	5,943		
31.45	526	34.10	6,001		
31.50	584	34.15	6,060		
31.55	706	34.20	6,118		
31.60	828	34.25	6,177		
31.65	949	34.30	6,235		
31.70	1,070	34.35	6,293		
31.75	1,190	34.40	6,352		
31.80	1,311	34.45	6,410		
31.85	1,431	34.50	6,469		
31.90	1,552	34.55	<b>6,517</b>		
31.95	1,672	34.60	6,517		
32.00	1,792	34.65	6,517		
32.05	1,912	34.70	6,517		
32.10	2,031	34.75	6,517		
32.15	2,149	34.80	6,517		
32.20	2,267	34.85	6,517		
32.25	2,384	34.90	6,517		
32.30	2,501	34.95	6,517		
32.35	2,618	35.00	6,517		
32.40	2,734	35.05	6,517		
32.45	2,850	35.10	6,517		
32.50	2,966	35.15	6,517		
32.55	3,082	35.20	6,517		
32.60	3,198	35.25	6,517		
32.65	3,313	35.30	6,517		
32.70	3,427	35.35	6,517		
32.75	3,542	35.40	6,517		
32.80	3,655	35.45	6,517		
32.85	3,766	35.50	6,517		
32.90	3,877	35.55	6,517		
32.95	3,986	35.60	6,517		
33.00	4,095	35.65	6,517		
33.05	4,202	35.70	6,517		
33.10	4,309	35.75	6,517		
33.15	4,414	35.80	6,517		
33.20	4,518	35.85	6,517		
33.25	4,620	35.90	6,517		
33.30	4,722	35.95	6,517		
33.35	4,821	36.00	6,517		
33.40	4,919	36.05	6,517		
33.45	5,015	36.10	6,517		
33.50	5,110	36.15	6,517		
33.55	5,202	36.20	6,517		
33.60	5,292	36.25	6,517		

# 817 Country Way Post

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 436

## Summary for Pond SSD6: SUBSURFACE DRAINAGE AREA #6 (STORAGE)

Inflow Area = 7,296 sf, 79.98% Impervious, Inflow Depth > 7.82" for 100-Year event  
 Inflow = 1.40 cfs @ 12.07 hrs, Volume= 4,753 cf  
 Outflow = 0.63 cfs @ 12.45 hrs, Volume= 3,696 cf, Atten= 55%, Lag= 22.7 min  
 Primary = 0.08 cfs @ 12.45 hrs, Volume= 3,404 cf  
     Routed to Reach DP3 : DP3  
 Secondary = 0.55 cfs @ 12.45 hrs, Volume= 292 cf  
     Routed to Pond CB13 : CB13

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 29.18' @ 12.45 hrs Surf.Area= 295 sf Storage= 2,360 cf

Plug-Flow detention time= 274.9 min calculated for 3,696 cf (78% of inflow)  
 Center-of-Mass det. time= 194.6 min ( 956.1 - 761.5 )

Volume	Invert	Avail.Storage	Storage Description
#1	20.00'	2,360 cf	<b>10.00'W x 29.50'L x 8.00'H Prismatoid</b>

Device	Routing	Invert	Outlet Devices
#1	Secondary	29.10'	<b>20.0" x 20.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#2	Primary	20.00'	<b>4.0" Round Culvert</b> L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 20.00' / 19.00' S= 0.0100 1/' Cc= 0.900 n= 0.013, Flow Area= 0.09 sf
#3	Device 2	19.00'	<b>1.0" Vert. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Primary OutFlow** Max=0.08 cfs @ 12.45 hrs HW=29.18' (Free Discharge)

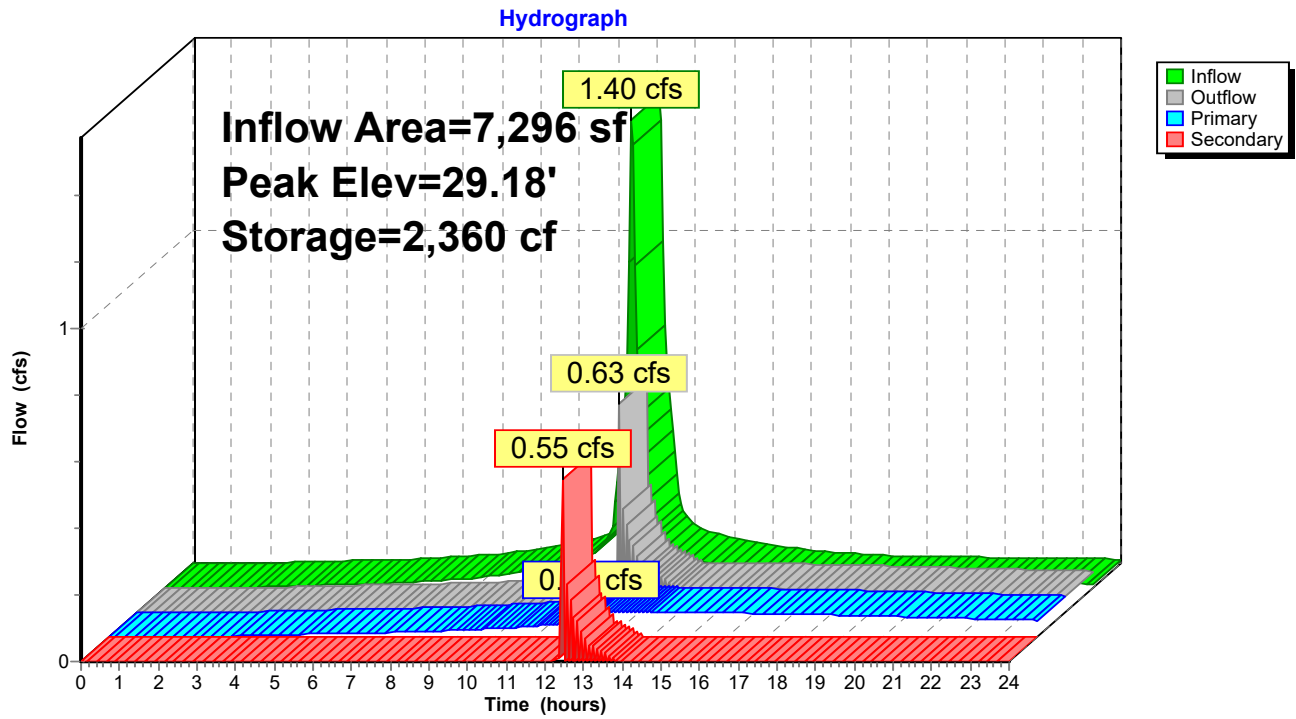
↑**2=Culvert** (Passes 0.08 cfs of 0.57 cfs potential flow)

↑**3=Orifice/Grate** (Orifice Controls 0.08 cfs @ 14.59 fps)

**Secondary OutFlow** Max=0.51 cfs @ 12.45 hrs HW=29.18' (Free Discharge)

↑**1=Orifice/Grate** (Weir Controls 0.51 cfs @ 0.94 fps)

**Pond SSD6: SUBSURFACE DRAINAGE AREA #6 (STORAGE)**



**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 438

**Stage-Discharge for Pond SSD6: SUBSURFACE DRAINAGE AREA #6 (STORAGE)**

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
20.00	0.00	0.00	0.00	25.30	0.06	0.06	0.00
20.10	0.01	0.01	0.00	25.40	0.06	0.06	0.00
20.20	0.01	0.01	0.00	25.50	0.06	0.06	0.00
20.30	0.01	0.01	0.00	25.60	0.06	0.06	0.00
20.40	0.02	0.02	0.00	25.70	0.06	0.06	0.00
20.50	0.02	0.02	0.00	25.80	0.06	0.06	0.00
20.60	0.02	0.02	0.00	25.90	0.06	0.06	0.00
20.70	0.02	0.02	0.00	26.00	0.06	0.06	0.00
20.80	0.02	0.02	0.00	26.10	0.06	0.06	0.00
20.90	0.02	0.02	0.00	26.20	0.07	0.07	0.00
21.00	0.03	0.03	0.00	26.30	0.07	0.07	0.00
21.10	0.03	0.03	0.00	26.40	0.07	0.07	0.00
21.20	0.03	0.03	0.00	26.50	0.07	0.07	0.00
21.30	0.03	0.03	0.00	26.60	0.07	0.07	0.00
21.40	0.03	0.03	0.00	26.70	0.07	0.07	0.00
21.50	0.03	0.03	0.00	26.80	0.07	0.07	0.00
21.60	0.03	0.03	0.00	26.90	0.07	0.07	0.00
21.70	0.03	0.03	0.00	27.00	0.07	0.07	0.00
21.80	0.04	0.04	0.00	27.10	0.07	0.07	0.00
21.90	0.04	0.04	0.00	27.20	0.07	0.07	0.00
22.00	0.04	0.04	0.00	27.30	0.07	0.07	0.00
22.10	0.04	0.04	0.00	27.40	0.07	0.07	0.00
22.20	0.04	0.04	0.00	27.50	0.07	0.07	0.00
22.30	0.04	0.04	0.00	27.60	0.07	0.07	0.00
22.40	0.04	0.04	0.00	27.70	0.07	0.07	0.00
22.50	0.04	0.04	0.00	27.80	0.07	0.07	0.00
22.60	0.04	0.04	0.00	27.90	0.07	0.07	0.00
22.70	0.04	0.04	0.00	28.00	0.07	0.07	0.00
22.80	0.04	0.04	0.00	28.10	0.07	0.07	0.00
22.90	0.04	0.04	0.00	28.20	0.08	0.08	0.00
23.00	0.05	0.05	0.00	28.30	0.08	0.08	0.00
23.10	0.05	0.05	0.00	28.40	0.08	0.08	0.00
23.20	0.05	0.05	0.00	28.50	0.08	0.08	0.00
23.30	0.05	0.05	0.00	28.60	0.08	0.08	0.00
23.40	0.05	0.05	0.00	28.70	0.08	0.08	0.00
23.50	0.05	0.05	0.00	28.80	0.08	0.08	0.00
23.60	0.05	0.05	0.00	28.90	0.08	0.08	0.00
23.70	0.05	0.05	0.00	29.00	0.08	0.08	0.00
23.80	0.05	0.05	0.00	29.10	<b>0.08</b>	<b>0.08</b>	<b>0.00</b>
23.90	0.05	0.05	0.00				
24.00	0.05	0.05	0.00				
24.10	0.05	0.05	0.00				
24.20	0.05	0.05	0.00				
24.30	0.05	0.05	0.00				
24.40	0.06	0.06	0.00				
24.50	0.06	0.06	0.00				
24.60	0.06	0.06	0.00				
24.70	0.06	0.06	0.00				
24.80	0.06	0.06	0.00				
24.90	0.06	0.06	0.00				
25.00	0.06	0.06	0.00				
25.10	0.06	0.06	0.00				
25.20	0.06	0.06	0.00				

**817 Country Way Post**

Type III 24-hr 100-Year Rainfall=8.68"

Prepared by Grady Consulting LLC

HydroCAD® 10.20-2g s/n 09955 © 2022 HydroCAD Software Solutions LLC

Page 439

**Stage-Area-Storage for Pond SSD6: SUBSURFACE DRAINAGE AREA #6 (STORAGE)**

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
20.00	0	25.30	1,564
20.10	30	25.40	1,593
20.20	59	25.50	1,623
20.30	89	25.60	1,652
20.40	118	25.70	1,681
20.50	148	25.80	1,711
20.60	177	25.90	1,740
20.70	206	26.00	1,770
20.80	236	26.10	1,800
20.90	265	26.20	1,829
21.00	295	26.30	1,859
21.10	325	26.40	1,888
21.20	354	26.50	1,918
21.30	384	26.60	1,947
21.40	413	26.70	1,976
21.50	443	26.80	2,006
21.60	472	26.90	2,035
21.70	501	27.00	2,065
21.80	531	27.10	2,095
21.90	560	27.20	2,124
22.00	590	27.30	2,154
22.10	620	27.40	2,183
22.20	649	27.50	2,213
22.30	679	27.60	2,242
22.40	708	27.70	2,272
22.50	738	27.80	2,301
22.60	767	27.90	2,330
22.70	796	28.00	<b>2,360</b>
22.80	826	28.10	2,360
22.90	855	28.20	2,360
23.00	885	28.30	2,360
23.10	915	28.40	2,360
23.20	944	28.50	2,360
23.30	974	28.60	2,360
23.40	1,003	28.70	2,360
23.50	1,033	28.80	2,360
23.60	1,062	28.90	2,360
23.70	1,091	29.00	2,360
23.80	1,121	29.10	2,360
23.90	1,150		
24.00	1,180		
24.10	1,210		
24.20	1,239		
24.30	1,269		
24.40	1,298		
24.50	1,328		
24.60	1,357		
24.70	1,386		
24.80	1,416		
24.90	1,445		
25.00	1,475		
25.10	1,505		
25.20	1,534		

## 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 = 35,411 SF

Roofs = 13,921 SF

Soil group = C

1" \* 49,332 SF \* 0.25 \* 1' / 12" = 1,028 CF

Proposed infiltration

Subsurface Drainage System #1 = 2,181 CF

Subsurface Drainage System #2 = 3,839 CF

Subsurface Drainage System #3 = 963 CF

Subsurface Drainage System #4 = 639 CF

**TOTAL PROPOSED INFILTRATION = 7,622 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 = 2,181 CF stored below outlet

$$Time = \frac{2,181\ CF}{(1.02''/hr)(1'/12'')(2,994\ SF)} = 8.6\ \text{hours} < 72\ \text{hours}$$

Subsurface Drainage System #2 = 3,839 CF stored below outlet

$$Time = \frac{3,839\ CF}{(1.02''/hr)(1'/12'')(1,960\ SF)} = 23.0\ \text{hours} < 72\ \text{hours}$$

Subsurface Drainage System #3 = 963 CF stored below outlet

$$Time = \frac{963\ CF}{(1.02''/hr)(1'/12'')(1,203\ SF)} = 9.4\ \text{hours} < 72\ \text{hours}$$

Subsurface Drainage System #4 = 639 CF stored below outlet

$$Time = \frac{639\ CF}{(1.02''/hr)(1'/12'')(485\ SF)} = 15.5\ \text{hours} < 72\ \text{hours}$$

◆ **STANDARD #4 WATER QUALITY**

Total non-roof impervious areas:

Pavement = 35,411 SF

$0.5'' * 35,411 \text{ SF } 1' / 12'' = 1,475 \text{ CF}$

Proposed water quality volume

Subsurface Drainage System #1 = 2,181 CF

Subsurface Drainage System #2 = 3,839 CF

Subsurface Drainage System #3 = 963 CF

Subsurface Drainage System #4 = 639 CF

**TOTAL PROPOSED WATER QUALITY VOLUME = 7,622 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



## 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.

Cells highlighted in yellow are values that can be changed by the user. Cells highlighted in red are output values based on user-specified inputs. **The user MUST click the blue "Re-Calculate Now" button each time ANY of the user-specified inputs are changed** otherwise necessary iterations to converge on the correct solution will not be done and values shown will be incorrect. Use consistent units for all input values (for example, feet and days)

### Input Values

1.0200	R
0.210	Sy
6.56	K
46.250	x
10.830	y
0.358	t
20.000	hi(0)

use consistent units (e.g. feet & days or inches & hours)

Recharge (infiltration) rate (feet/day)  
 Specific yield, Sy (dimensionless, between 0 and 1)  
 Horizontal hydraulic conductivity, Kh (feet/day)\*  
 1/2 length of basin (x direction, in feet)  
 1/2 width of basin (y direction, in feet)  
 duration of infiltration period (days)  
 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).

21.013	h(max)
1.013	Δh(max)

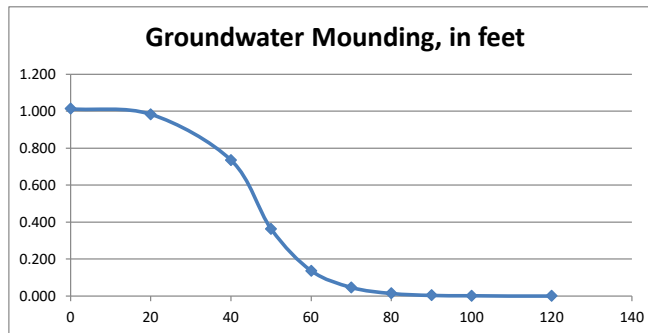
maximum thickness of saturated zone (beneath center of basin at end of infiltration period)  
 maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet      Distance from center of basin in x direction, in feet

1.013	0
0.983	20
0.735	40
0.363	50
0.137	60
0.047	70
0.014	80
0.004	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.

Cells highlighted in yellow are values that can be changed by the user. Cells highlighted in red are output values based on user-specified inputs. **The user MUST click the blue "Re-Calculate Now" button each time ANY of the user-specified inputs are changed** otherwise necessary iterations to converge on the correct solution will not be done and values shown will be incorrect. Use consistent units for all input values (for example, feet and days)

### Input Values

1.0200	R
0.210	Sy
6.56	K
61.250	x
8.000	y
0.958	t
20.000	hi(0)

use consistent units (e.g. feet & days or inches & hours)

Recharge (infiltration) rate (feet/day)  
 Specific yield, Sy (dimensionless, between 0 and 1)  
 Horizontal hydraulic conductivity, Kh (feet/day)\*  
 1/2 length of basin (x direction, in feet)  
 1/2 width of basin (y direction, in feet)  
 duration of infiltration period (days)  
 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)
1.438	Δh(max)

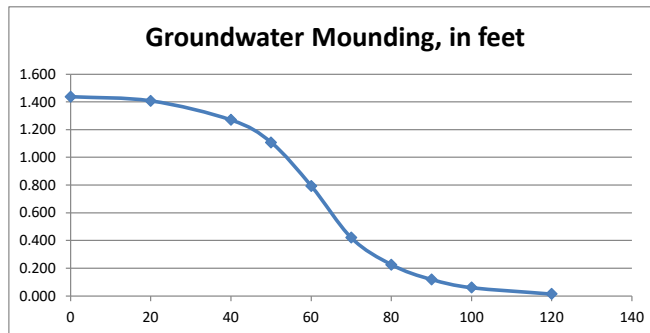
maximum thickness of saturated zone (beneath center of basin at end of infiltration period)  
 maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet      Distance from center of basin in x direction, in feet

1.438	0
1.408	20
1.271	40
1.108	50
0.794	60
0.421	70
0.226	80
0.119	90
0.061	100
0.015	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 #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.

Cells highlighted in yellow are values that can be changed by the user. Cells highlighted in red are output values based on user-specified inputs. **The user MUST click the blue "Re-Calculate Now" button each time ANY of the user-specified inputs are changed** otherwise necessary iterations to converge on the correct solution will not be done and values shown will be incorrect. Use consistent units for all input values (for example, feet and days)

**Input Values**

1.0200	R
0.210	Sy
6.56	K
40.500	x
4.170	y
0.392	t
20.000	hi(0)

use consistent units (e.g. feet & days or inches & hours)

Recharge (infiltration) rate (feet/day)  
 Specific yield, Sy (dimensionless, between 0 and 1)  
 Horizontal hydraulic conductivity, Kh (feet/day)\*  
 1/2 length of basin (x direction, in feet)  
 1/2 width of basin (y direction, in feet)  
 duration of infiltration period (days)  
 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).

20.499	h(max)
0.499	Δh(max)

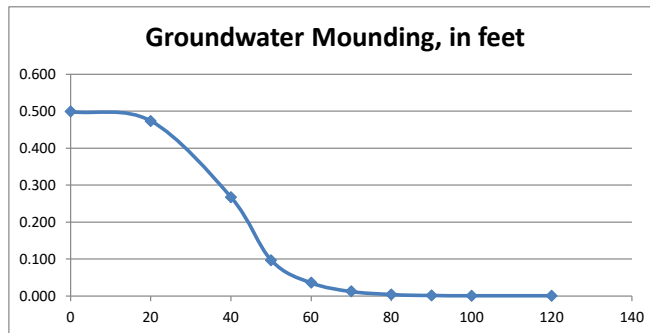
maximum thickness of saturated zone (beneath center of basin at end of infiltration period)  
 maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet      Distance from center of basin in x direction, in feet

0.499	0
0.473	20
0.267	40
0.097	50
0.036	60
0.012	70
0.004	80
0.002	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 #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.

Cells highlighted in yellow are values that can be changed by the user. Cells highlighted in red are output values based on user-specified inputs. **The user MUST click the blue "Re-Calculate Now" button each time ANY of the user-specified inputs are changed** otherwise necessary iterations to converge on the correct solution will not be done and values shown will be incorrect. Use consistent units for all input values (for example, feet and days)

### Input Values

1.0200	R
0.210	Sy
6.56	K
16.000	x
6.000	y
0.640	t
20.000	hi(0)

use consistent units (e.g. feet & days or inches & hours)

**Recharge (infiltration) rate (feet/day)**  
**Specific yield, Sy (dimensionless, between 0 and 1)**  
**Horizontal hydraulic conductivity, Kh (feet/day)\***  
**1/2 length of basin (x direction, in feet)**  
**1/2 width of basin (y direction, in feet)**  
**duration of infiltration period (days)**  
**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).

20.651	h(max)
0.651	Δh(max)

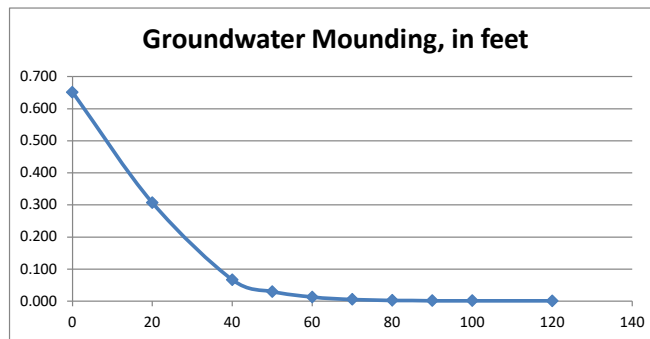
**maximum thickness of saturated zone (beneath center of basin at end of infiltration period)**  
**maximum groundwater mounding (beneath center of basin at end of infiltration period)**

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**



### 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.

**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:

	B	C	D	E	F
	BMP <sup>1</sup>	TSS Removal Rate <sup>1</sup>	Starting TSS Load*	Amount Removed (C*D)	Remaining Load (D-E)
<b>TSS Removal Calculation Worksheet</b>	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 =**

**Separate Form Needs to be Completed for Each Outlet or BMP Train**

Project:   
 Prepared By:   
 Date:

\*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



# 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.<sup>1</sup> 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<sup>2</sup>
- 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.

<sup>1</sup> 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.

<sup>2</sup> 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.



# 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.

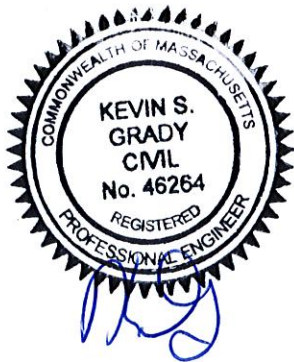
A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

---

### 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



Kevin Grady 2023-10-10

\_\_\_\_\_  
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<sup>1</sup>
- 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.

---

<sup>1</sup> 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
<b>Silt socks &amp; swales and silt traps</b>	After every major storm event							
<b>Dewatering Operations</b>	Daily-during actual dewatering							
<b>Temporary Construction Entrance</b>	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
<b>Deep Sump Catch Basins</b>	Twice per year							
<b>Subsurface structures</b>	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:

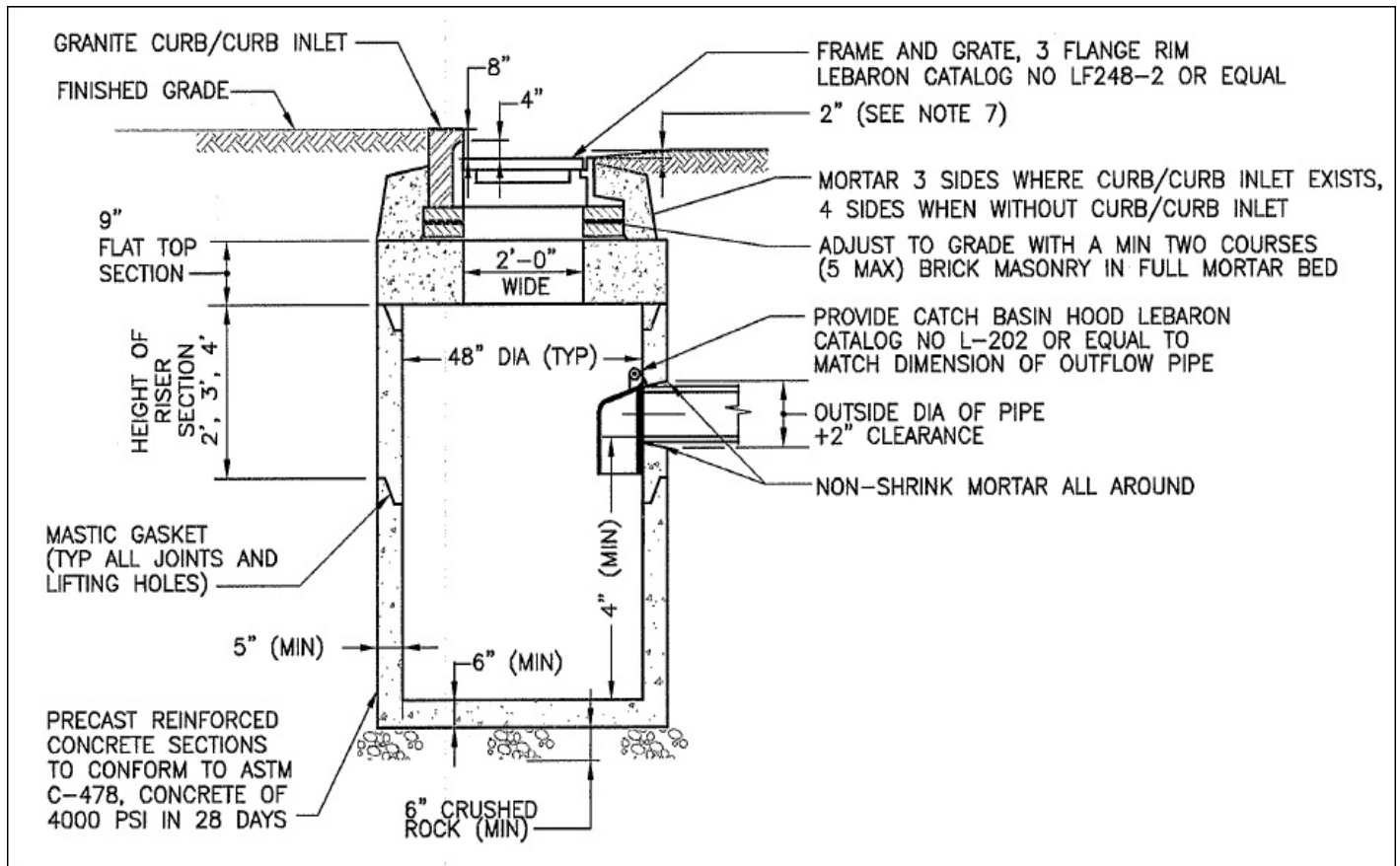
- Located underground, so limited lot size is not a deterrent.
- Compatible with subsurface storm drain systems.
- Can be used for retrofitting small urban lots where larger BMPs are not feasible.
- Provide pretreatment of runoff before it is delivered to other BMPs.
- Easily accessed for maintenance.
- 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  $\frac{1}{4}$  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](http://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
<b>2 - Peak Flow</b>	N/A
<b>3 - Recharge</b>	Provides groundwater recharge
<b>4 - TSS Removal</b>	80%
<b>5 - Higher Pollutant Loading</b>	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.
<b>6 - Discharges near or to Critical Areas</b>	Highly recommended
<b>7 - Redevelopment</b>	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 |

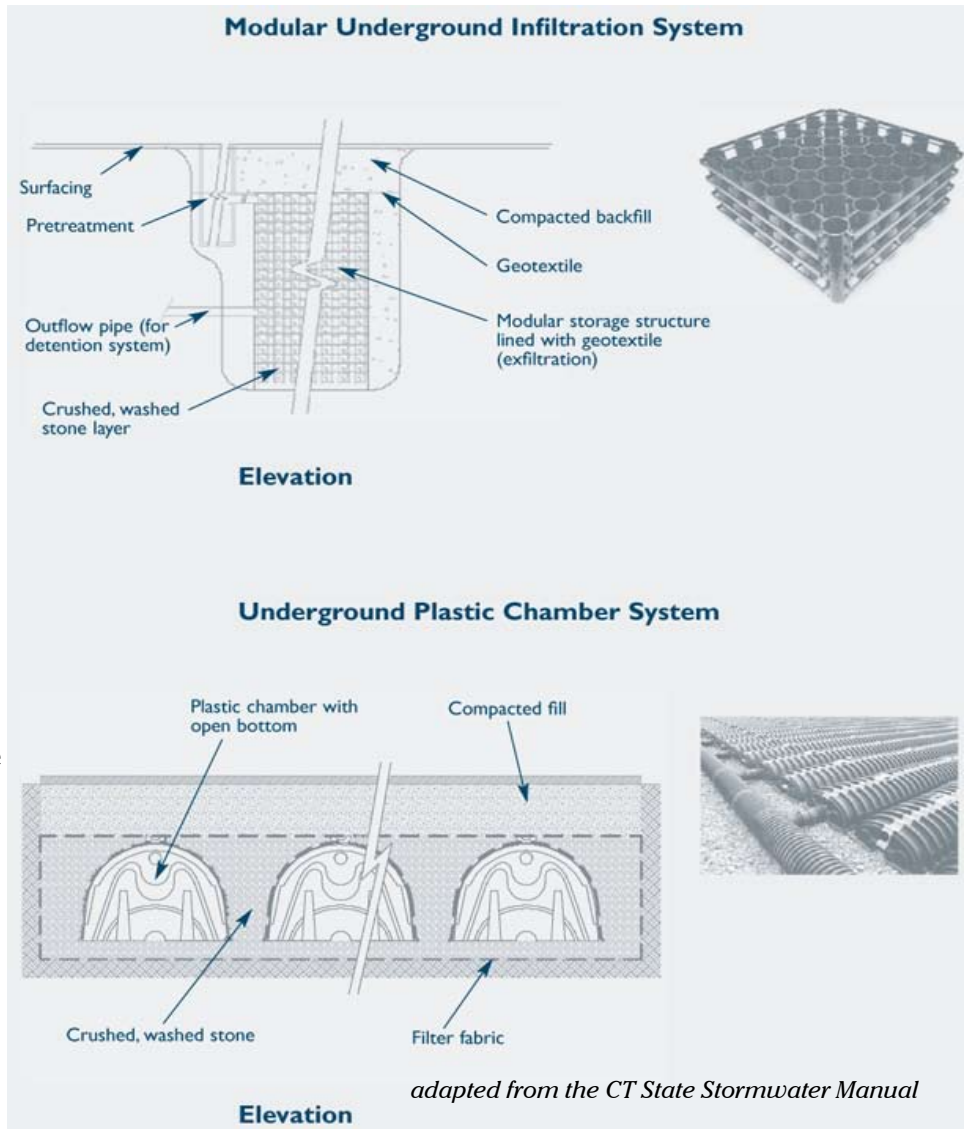
# Subsurface Structures

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.

**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.



*adapted from the CT State Stormwater Manual*

**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 dewater 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.

*Adapted from:  
Connecticut Department of Environmental Conservation.  
Connecticut Stormwater Quality Manual. 2004.  
MassHighway. Storm Water Handbook for Highways and  
Bridges. May 2004.*

## **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.



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



# 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](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.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

# Contents

---

<b>Preface</b> .....	2
<b>How Soil Surveys Are Made</b> .....	5
<b>Soil Map</b> .....	8
Soil Map.....	9
Legend.....	10
Map Unit Legend.....	12
Map Unit Descriptions.....	12
Norfolk and Suffolk Counties, Massachusetts.....	15
307B—Paxton fine sandy loam, 0 to 8 percent slopes, extremely stony....	15
315B—Scituate fine sandy loam, 3 to 8 percent slopes.....	16
Plymouth County, Massachusetts.....	18
1—Water.....	18
49A—Norwell mucky fine sandy loam, 0 to 3 percent slopes, extremely stony.....	18
315B—Scituate gravelly sandy loam, 3 to 8 percent slopes.....	20
316B—Scituate gravelly sandy loam, 3 to 8 percent slopes, very stony.....	22
<b>References</b> .....	24



# 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

## Custom Soil Resource Report

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

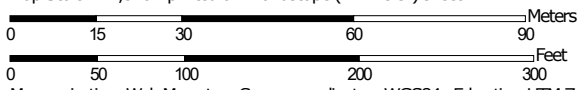
---

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.



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%
<b>Subtotals for Soil Survey Area</b>		<b>1.0</b>	<b>12.5%</b>
<b>Totals for Area of Interest</b>		<b>8.2</b>	<b>100.0%</b>

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%
<b>Subtotals for Soil Survey Area</b>		<b>7.1</b>	<b>87.5%</b>
<b>Totals for Area of Interest</b>		<b>8.2</b>	<b>100.0%</b>

## 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.

## Custom Soil Resource Report

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):* Foothlope

*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

## Custom Soil Resource Report

*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

## Custom Soil Resource Report

*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



## Custom Soil Resource Report

*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

## Custom Soil Resource Report

*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

## Custom Soil Resource Report

*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](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](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](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](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>

## Custom Soil Resource Report

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](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](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](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf)