

JUNE 22, 2023



A handwritten signature in blue ink, appearing to read "Steve Fox".

STEVE FOX E-70756  
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614-591-0284

6/5/23  
DATE

## STORM WATER MEMO FOR COAST WINE HOUSE

91 S. HIGH, DUBLIN, OH 43016

PRIME AE

8415 PULSAR PLACE | SUITE 300 | COLUMBUS, OH 43240

## **Project Narrative of Existing and Proposed Conditions**

### **Existing Conditions:**

The proposed project is located at 91 S High Street in Dublin, OH. The site has an existing building and asphalt parking. The parking lot was constructed from design plans from 1990. The lone catch basin in the parking lot west of the building detained storm water from the rears of 83, 87 and 91 S High St. There is no indication of what storm event that this detained to. The design detention depth is 0.59'. Events above this flood route south into Pinney Hill Lane and west into the City of Dublin storm sewer system. The as-built survey shows that the maximum ponding in the parking would be 0.51' before it flood routes south. The ponding limits were determined from field surveyed data from May of 2023. The attached Existing Conditions exhibit shows the current limits of ponding at an elevation of 828.47' as well as the current tributary area to this catch basin.

It is noted that there was an access/maintenance agreement in place for 83, 87 and 91 S High St. This has since been extinguished. There is no obligation for allowable cross access between these properties. The reason for the stripped turn around area south of the proposed ADA stall is to provide a turn around should a vehicle turn into this parking lot without a spot to pull in.

### **Proposed Conditions 91 S High Improvements:**

The improvements for 91 S High St include remodeling an existing building for a change of use to be a restaurant. Improvements outside of the building include restriping the existing parking lot for an ADA stall and a turn around lane. This will not change any asphalt. There is an existing ramp on the west side of the building that is not ADA compliant and encroaches on the north neighbor. This ramp will be removed and replaced with a new one that is longer to provide proper ADA access. This new ramp will change grade slightly, but does not change drainage patterns or impact the current ponding in the parking lot. The new ramp is not in the ponding area.

### **Proposed Conditions with 83 S High Improvements:**

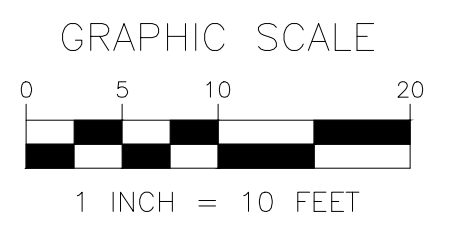
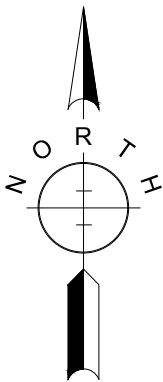
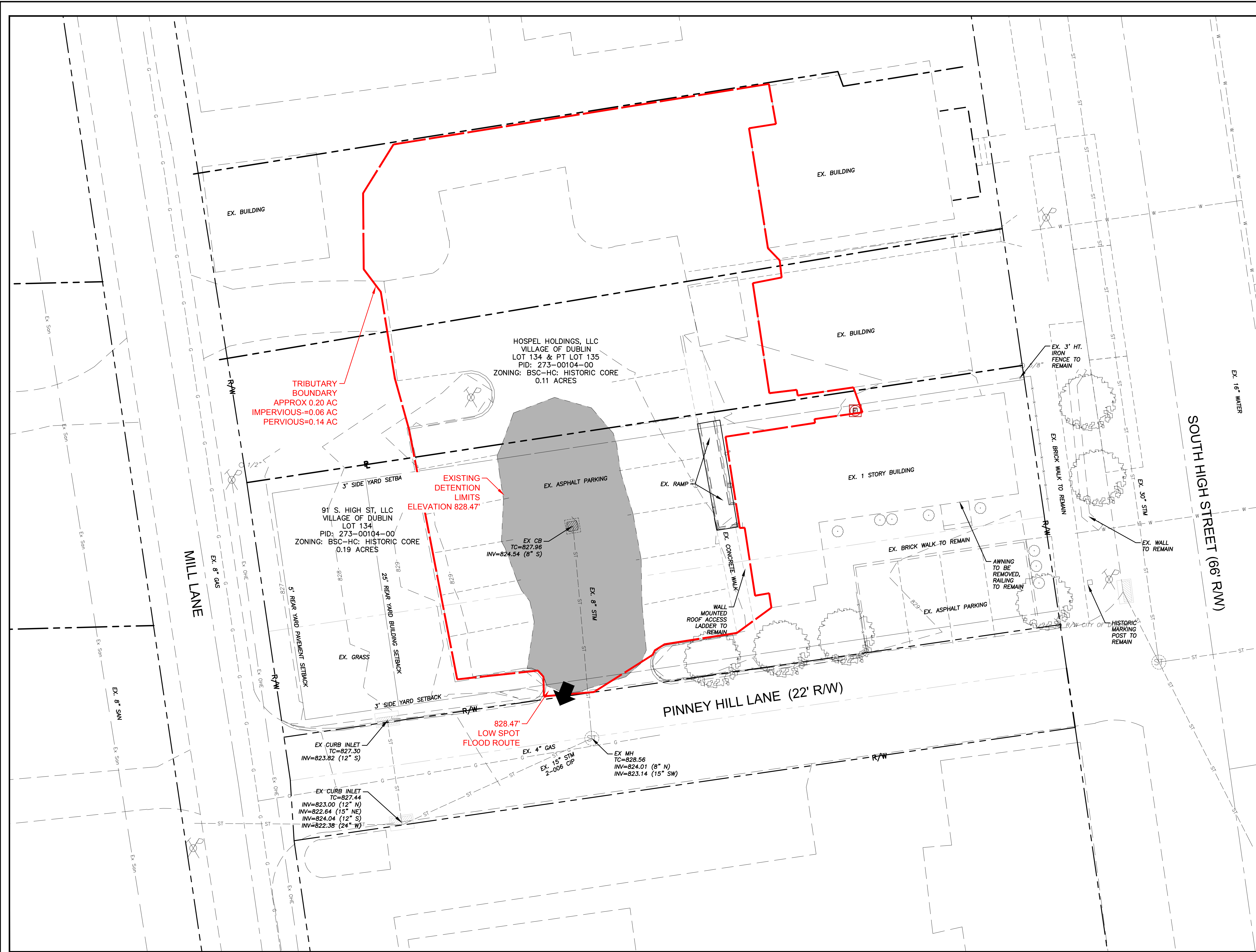
83 S High is currently in for building permits. The plan for this property is to add an addition on the rear of the existing building, revise the parking lot, cut off access to the south parcel and direct parking lot runoff to Mill Lane. Additionally, the downspouts from the addition is to tie into existing roof drains that drain to S. High St. Should their project be constructed, this would reduce the tributary area to the catch basin behind 91 S. High from 0.20 ac to 0.14 ac, thus providing more relief to this storm system. This would not affect the existing ponding on the 91 S. High street parking lot.

### **Proposed Conditions with 87 S High Improvements:**

The plan for this property is to add an addition on the rear of the existing building, revise the parking lot, cut off access to the south parcel and direct parking lot runoff to Mill Lane. Additionally, the downspouts from the addition is to tie into existing roof drains that drain to S. High St. Should their project be

constructed, this would reduce the tributary area to the catch basin behind 91 S. High from 0.20 ac to 0.08 ac, thus providing more relief to this storm system. This would not affect the existing ponding on the 91 S. High street parking lot. The existing catch basin ponding will still be 828.47'. The new addition will need to have a floor elevation above this to prevent water from ponding up against the new building.

P:\Projects\2023\EDH01E5-23387 Coast Wine Dublin\400-Tech\470-Reports\Storm Memo\Ex\_Conditions.dwg By: sfox on 06/29/2023 12:14 PM ~ for: PRIME AE



**PRIME**  
 8415 PULSAR PLACE | SUITE 300  
 COLUMBUS, OH 43240  
 P 614-839-0250 | F 614 839 0251

FRANKLIN COUNTY, OH  
**SITE ENGINEERING PLANS**  
 FOR  
**COAST WINE HOUSE**  
 91 S. HIGH STREET, DUBLIN, OH  
 PROJECT NUMBER 23-124  
**EXISTING CONDITIONS**

NO.	DATE	REVISIONS

DRAWN BY: JS  
 CHECKED BY: SF

SCALE: 1" = 10'

DATE: 05-31-2023

SHEET NO. 2/3

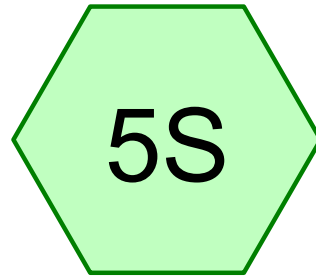
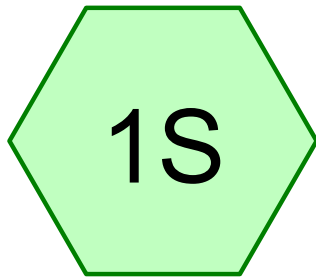


# **STORM SEWER COMPUTATION**



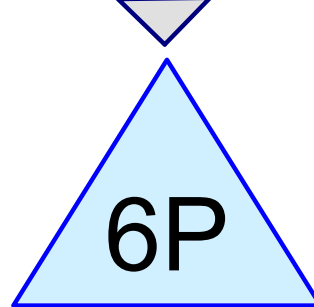
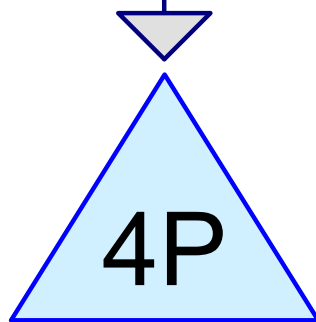
# **HYDROCAD REPORT**





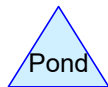
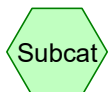
Existing

Prop87-91



Ex CB

Ex CB



**Summary for Subcatchment 1S: Existing**

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

Runoff = 0.47 cfs @ 11.96 hrs, Volume= 0.022 af, Depth= 1.34"

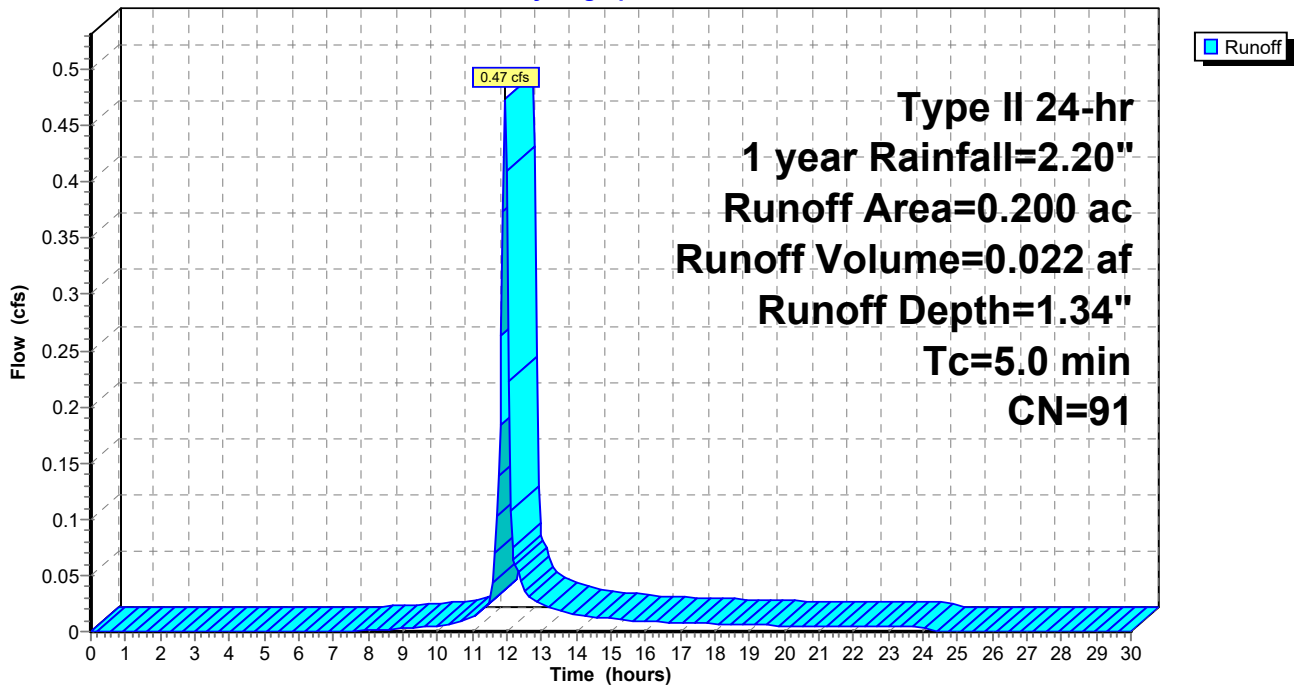
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1 year Rainfall=2.20"

Area (ac)	CN	Description
0.140	98	Paved parking, HSG D
0.060	74	>75% Grass cover, Good, HSG C
0.200	91	Weighted Average
0.060		30.00% Pervious Area
0.140		70.00% Impervious Area

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

**Subcatchment 1S: Existing**

Hydrograph



**91Shigh**

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Type II 24-hr 1 year Rainfall=2.20"

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**Hydrograph for Subcatchment 1S: Existing**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	2.20	1.34	0.00
0.50	0.01	0.00	0.00	26.50	2.20	1.34	0.00
1.00	0.02	0.00	0.00	27.00	2.20	1.34	0.00
1.50	0.04	0.00	0.00	27.50	2.20	1.34	0.00
2.00	0.05	0.00	0.00	28.00	2.20	1.34	0.00
2.50	0.06	0.00	0.00	28.50	2.20	1.34	0.00
3.00	0.08	0.00	0.00	29.00	2.20	1.34	0.00
3.50	0.09	0.00	0.00	29.50	2.20	1.34	0.00
4.00	0.11	0.00	0.00	30.00	2.20	1.34	0.00
4.50	0.12	0.00	0.00				
5.00	0.14	0.00	0.00				
5.50	0.16	0.00	0.00				
6.00	0.18	0.00	0.00				
6.50	0.20	0.00	0.00				
7.00	0.22	0.00	0.00				
7.50	0.24	0.00	0.00				
8.00	0.26	0.00	0.00				
8.50	0.29	0.01	0.00				
9.00	0.32	0.01	0.00				
9.50	0.36	0.02	0.00				
10.00	0.40	0.03	0.01				
10.50	0.45	0.05	0.01				
11.00	0.52	0.08	0.01				
11.50	0.62	0.13	<b>0.02</b>				
12.00	1.46	0.71	<b>0.41</b>				
12.50	1.62	0.84	0.04				
13.00	1.70	0.90	0.02				
13.50	1.76	0.95	0.02				
14.00	1.80	0.99	0.01				
14.50	1.84	1.03	0.01				
15.00	1.88	1.06	0.01				
15.50	1.91	1.08	0.01				
16.00	1.94	1.11	0.01				
16.50	1.96	1.13	0.01				
17.00	1.98	1.15	0.01				
17.50	2.01	1.17	0.01				
18.00	2.03	1.19	0.01				
18.50	2.05	1.20	0.01				
19.00	2.06	1.22	0.01				
19.50	2.08	1.23	0.01				
20.00	2.09	1.25	0.01				
20.50	2.11	1.26	0.01				
21.00	2.12	1.27	0.00				
21.50	2.14	1.28	0.00				
22.00	2.15	1.30	0.00				
22.50	2.16	1.31	0.00				
23.00	2.18	1.32	0.00				
23.50	2.19	1.33	0.00				
24.00	<b>2.20</b>	<b>1.34</b>	0.00				
24.50	2.20	1.34	0.00				
25.00	2.20	1.34	0.00				
25.50	2.20	1.34	0.00				

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Type II 24-hr 1 year Rainfall=2.20"

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**Summary for Subcatchment 5S: Prop87-91**

[49] Hint:  $T_c < 2dt$  may require smaller dt

Runoff = 0.23 cfs @ 11.95 hrs, Volume= 0.011 af, Depth= 1.67"

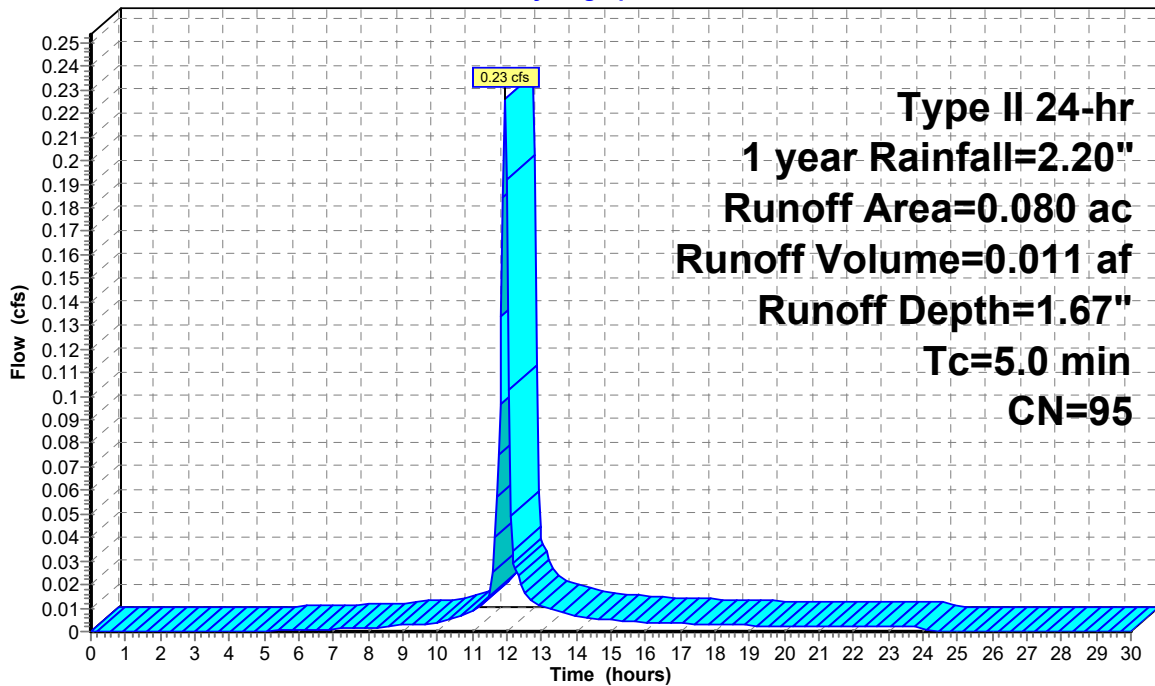
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 1 year Rainfall=2.20"

Area (ac)	CN	Description
0.070	98	Paved parking, HSG D
0.010	74	>75% Grass cover, Good, HSG C
0.080	95	Weighted Average
0.010		12.50% Pervious Area
0.070		87.50% Impervious Area

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

**Subcatchment 5S: Prop87-91**

Hydrograph



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Type II 24-hr 1 year Rainfall=2.20"

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**Hydrograph for Subcatchment 5S: Prop87-91**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	2.20	1.67	0.00
0.50	0.01	0.00	0.00	26.50	2.20	1.67	0.00
1.00	0.02	0.00	0.00	27.00	2.20	1.67	0.00
1.50	0.04	0.00	0.00	27.50	2.20	1.67	0.00
2.00	0.05	0.00	0.00	28.00	2.20	1.67	0.00
2.50	0.06	0.00	0.00	28.50	2.20	1.67	0.00
3.00	0.08	0.00	0.00	29.00	2.20	1.67	0.00
3.50	0.09	0.00	0.00	29.50	2.20	1.67	0.00
4.00	0.11	0.00	0.00	30.00	2.20	1.67	0.00
4.50	0.12	0.00	0.00				
5.00	0.14	0.00	0.00				
5.50	0.16	0.00	0.00				
6.00	0.18	0.01	0.00				
6.50	0.20	0.01	0.00				
7.00	0.22	0.02	0.00				
7.50	0.24	0.03	0.00				
8.00	0.26	0.04	0.00				
8.50	0.29	0.05	0.00				
9.00	0.32	0.06	0.00				
9.50	0.36	0.08	0.00				
10.00	0.40	0.10	0.00				
10.50	0.45	0.14	0.01				
11.00	0.52	0.18	0.01				
11.50	0.62	0.26	<b>0.01</b>				
12.00	1.46	0.97	<b>0.19</b>				
12.50	1.62	1.12	0.02				
13.00	1.70	1.20	0.01				
13.50	1.76	1.25	0.01				
14.00	1.80	1.30	0.01				
14.50	1.84	1.33	0.01				
15.00	1.88	1.37	0.01				
15.50	1.91	1.40	0.00				
16.00	1.94	1.42	0.00				
16.50	1.96	1.45	0.00				
17.00	1.98	1.47	0.00				
17.50	2.01	1.49	0.00				
18.00	2.03	1.51	0.00				
18.50	2.05	1.53	0.00				
19.00	2.06	1.54	0.00				
19.50	2.08	1.56	0.00				
20.00	2.09	1.57	0.00				
20.50	2.11	1.59	0.00				
21.00	2.12	1.60	0.00				
21.50	2.14	1.61	0.00				
22.00	2.15	1.63	0.00				
22.50	2.16	1.64	0.00				
23.00	2.18	1.65	0.00				
23.50	2.19	1.66	0.00				
24.00	<b>2.20</b>	<b>1.67</b>	0.00				
24.50	2.20	1.67	0.00				
25.00	2.20	1.67	0.00				
25.50	2.20	1.67	0.00				

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Type II 24-hr 1 year Rainfall=2.20"

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## Summary for Pond 4P: Ex CB

Inflow Area = 0.200 ac, 70.00% Impervious, Inflow Depth = 1.34" for 1 year event  
 Inflow = 0.47 cfs @ 11.96 hrs, Volume= 0.022 af  
 Outflow = 0.47 cfs @ 11.96 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min  
 Primary = 0.47 cfs @ 11.96 hrs, Volume= 0.022 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Peak Elev= 824.94' @ 11.96 hrs Surf.Area= 4 sf Storage= 2 cf

Plug-Flow detention time= 0.2 min calculated for 0.022 af (100% of inflow)  
 Center-of-Mass det. time= 0.2 min ( 813.5 - 813.3 )

Volume	Invert	Avail.Storage	Storage Description
#1	824.54'	390 cf	<b>ExCB (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
824.54	4	0	0
827.96	4	14	14
828.47	1,471	376	390

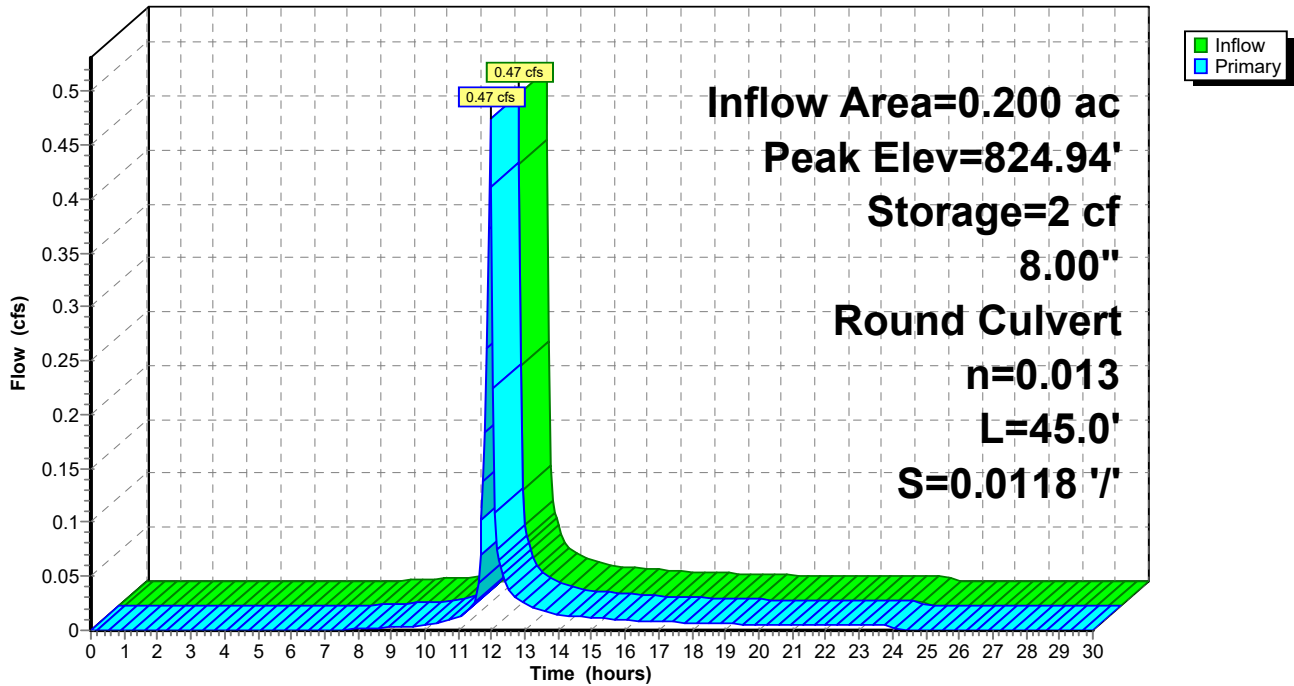
Device	Routing	Invert	Outlet Devices
#1	Primary	824.54'	<b>8.00" Round Culvert</b> L= 45.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 824.54' / 824.01' S= 0.0118 '/' Cc= 0.900 n= 0.013, Flow Area= 0.35 sf

**Primary OutFlow** Max=0.46 cfs @ 11.96 hrs HW=824.94' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.46 cfs @ 2.15 fps)

### Pond 4P: Ex CB

Hydrograph



**91Shigh**

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Type II 24-hr 1 year Rainfall=2.20"

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**Hydrograph for Pond 4P: Ex CB**

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	824.54	0.00
1.00	0.00	0	824.54	0.00
2.00	0.00	0	824.54	0.00
3.00	0.00	0	824.54	0.00
4.00	0.00	0	824.54	0.00
5.00	0.00	0	824.54	0.00
6.00	0.00	0	824.54	0.00
7.00	0.00	0	824.54	0.00
8.00	0.00	0	824.55	0.00
9.00	0.00	0	824.56	0.00
10.00	0.01	0	824.58	0.01
11.00	<b>0.01</b>	<b>0</b>	<b>824.60</b>	<b>0.01</b>
12.00	<b>0.41</b>	<b>1</b>	<b>824.91</b>	<b>0.41</b>
13.00	0.02	0	824.62	0.02
14.00	0.01	0	824.60	0.01
15.00	0.01	0	824.60	0.01
16.00	0.01	0	824.59	0.01
17.00	0.01	0	824.59	0.01
18.00	0.01	0	824.58	0.01
19.00	0.01	0	824.58	0.01
20.00	0.01	0	824.58	0.01
21.00	0.00	0	824.58	0.00
22.00	0.00	0	824.58	0.00
23.00	0.00	0	824.58	0.00
24.00	0.00	0	824.58	0.00
25.00	0.00	0	824.54	0.00
26.00	0.00	0	824.54	0.00
27.00	0.00	0	824.54	0.00
28.00	0.00	0	824.54	0.00
29.00	0.00	0	824.54	0.00
30.00	0.00	0	824.54	0.00



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Type II 24-hr 1 year Rainfall=2.20"

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**Summary for Pond 6P: Ex CB**

Inflow Area = 0.080 ac, 87.50% Impervious, Inflow Depth = 1.67" for 1 year event  
 Inflow = 0.23 cfs @ 11.95 hrs, Volume= 0.011 af  
 Outflow = 0.23 cfs @ 11.95 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min  
 Primary = 0.23 cfs @ 11.95 hrs, Volume= 0.011 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Peak Elev= 824.80' @ 11.95 hrs Surf.Area= 4 sf Storage= 1 cf

Plug-Flow detention time= 0.3 min calculated for 0.011 af (100% of inflow)  
 Center-of-Mass det. time= 0.3 min ( 789.4 - 789.1 )

Volume	Invert	Avail.Storage	Storage Description
#1	824.54'	353 cf	<b>ExCB_83-87-91 (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
824.54	4	0	0
827.96	4	14	14
828.47	1,328	340	353

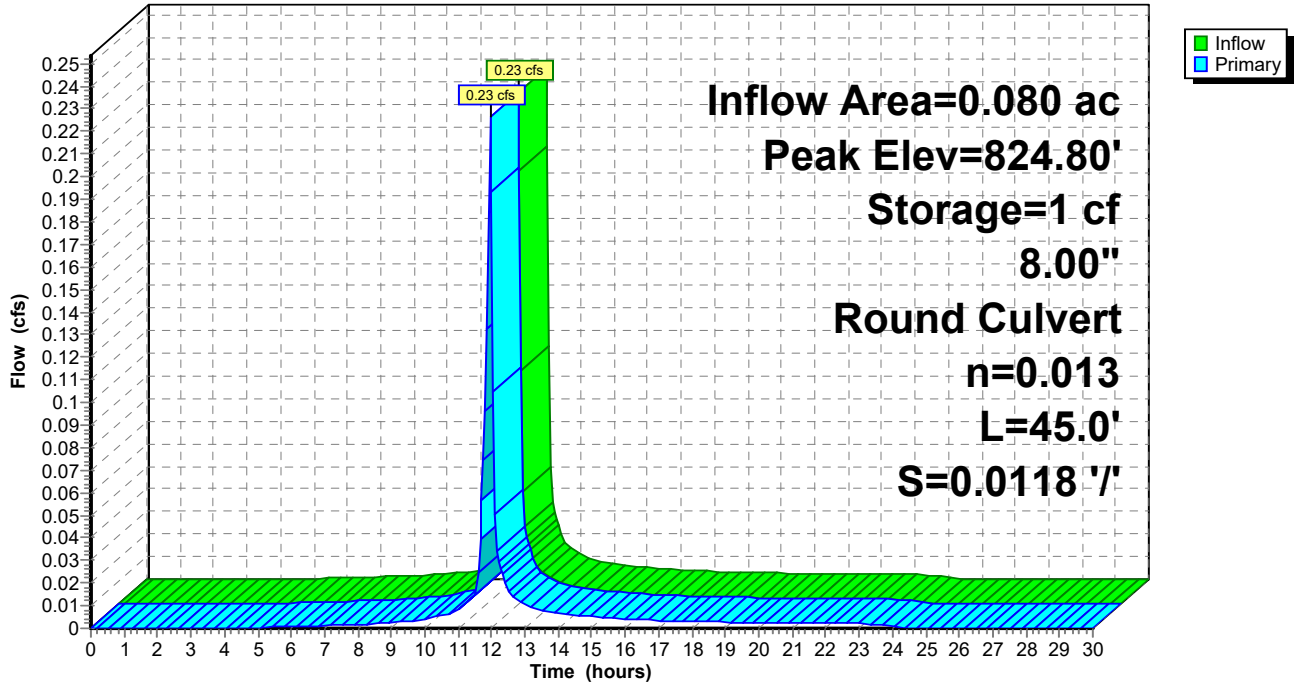
Device	Routing	Invert	Outlet Devices
#1	Primary	824.54'	<b>8.00" Round Culvert</b> L= 45.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 824.54' / 824.01' S= 0.0118 '/' Cc= 0.900 n= 0.013, Flow Area= 0.35 sf

**Primary OutFlow** Max=0.22 cfs @ 11.95 hrs HW=824.80' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.22 cfs @ 1.75 fps)

### Pond 6P: Ex CB

Hydrograph



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Type II 24-hr 1 year Rainfall=2.20"

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**Hydrograph for Pond 6P: Ex CB**

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	824.54	0.00
1.00	0.00	0	824.54	0.00
2.00	0.00	0	824.54	0.00
3.00	0.00	0	824.54	0.00
4.00	0.00	0	824.54	0.00
5.00	0.00	0	824.54	0.00
6.00	0.00	0	824.55	0.00
7.00	0.00	0	824.55	0.00
8.00	0.00	0	824.55	0.00
9.00	0.00	0	824.56	0.00
10.00	0.00	0	824.57	0.00
11.00	<b>0.01</b>	<b>0</b>	<b>824.59</b>	<b>0.01</b>
12.00	<b>0.19</b>	<b>1</b>	<b>824.78</b>	<b>0.19</b>
13.00	0.01	0	824.59	0.01
14.00	0.01	0	824.58	0.01
15.00	0.01	0	824.58	0.01
16.00	0.00	0	824.57	0.00
17.00	0.00	0	824.57	0.00
18.00	0.00	0	824.57	0.00
19.00	0.00	0	824.56	0.00
20.00	0.00	0	824.56	0.00
21.00	0.00	0	824.56	0.00
22.00	0.00	0	824.56	0.00
23.00	0.00	0	824.56	0.00
24.00	0.00	0	824.56	0.00
25.00	0.00	0	824.54	0.00
26.00	0.00	0	824.54	0.00
27.00	0.00	0	824.54	0.00
28.00	0.00	0	824.54	0.00
29.00	0.00	0	824.54	0.00
30.00	0.00	0	824.54	0.00

**Summary for Subcatchment 1S: Existing**

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

Runoff = 0.61 cfs @ 11.95 hrs, Volume= 0.029 af, Depth= 1.73"

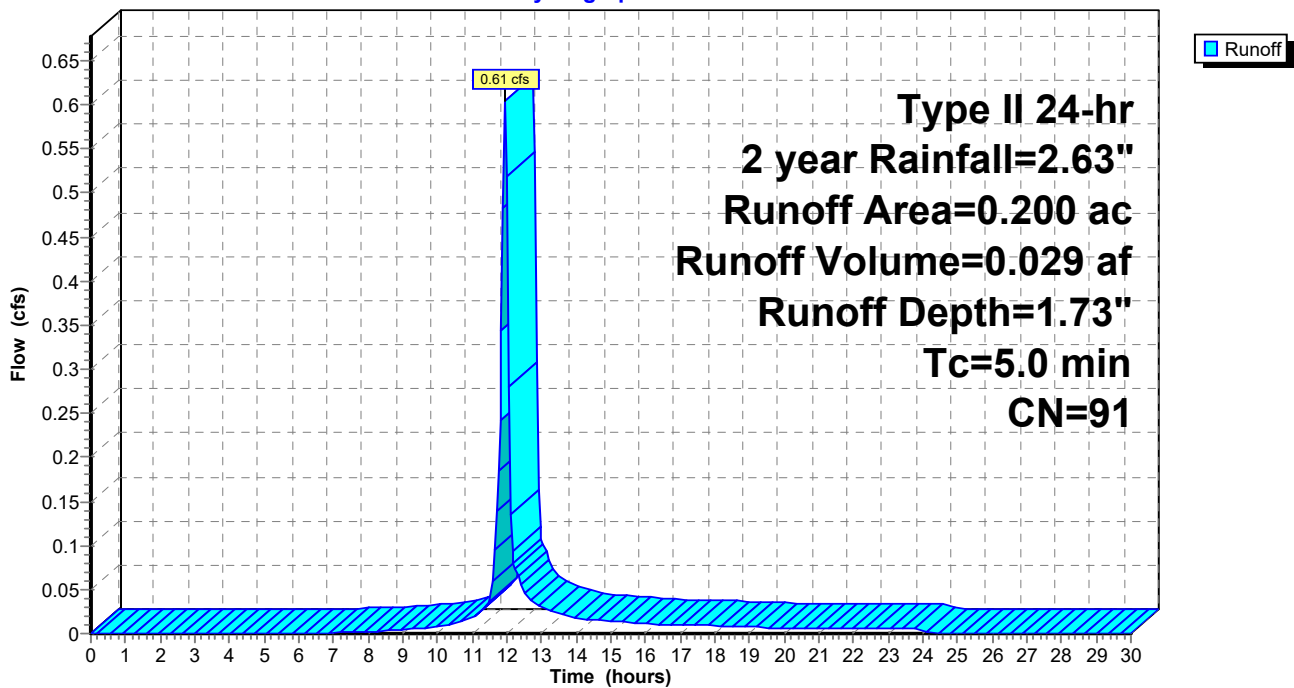
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 2 year Rainfall=2.63"

Area (ac)	CN	Description
0.140	98	Paved parking, HSG D
0.060	74	>75% Grass cover, Good, HSG C
0.200	91	Weighted Average
0.060		30.00% Pervious Area
0.140		70.00% Impervious Area

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

**Subcatchment 1S: Existing**

Hydrograph



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Type II 24-hr 2 year Rainfall=2.63"

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**Hydrograph for Subcatchment 1S: Existing**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	2.63	1.73	0.00
0.50	0.01	0.00	0.00	26.50	2.63	1.73	0.00
1.00	0.03	0.00	0.00	27.00	2.63	1.73	0.00
1.50	0.04	0.00	0.00	27.50	2.63	1.73	0.00
2.00	0.06	0.00	0.00	28.00	2.63	1.73	0.00
2.50	0.07	0.00	0.00	28.50	2.63	1.73	0.00
3.00	0.09	0.00	0.00	29.00	2.63	1.73	0.00
3.50	0.11	0.00	0.00	29.50	2.63	1.73	0.00
4.00	0.13	0.00	0.00	30.00	2.63	1.73	0.00
4.50	0.15	0.00	0.00				
5.00	0.17	0.00	0.00				
5.50	0.19	0.00	0.00				
6.00	0.21	0.00	0.00				
6.50	0.23	0.00	0.00				
7.00	0.26	0.00	0.00				
7.50	0.29	0.01	0.00				
8.00	0.32	0.01	0.00				
8.50	0.35	0.02	0.00				
9.00	0.39	0.03	0.00				
9.50	0.43	0.04	0.01				
10.00	0.48	0.06	0.01				
10.50	0.54	0.09	0.01				
11.00	0.62	0.13	0.02				
11.50	0.74	0.19	<b>0.03</b>				
12.00	1.74	0.94	<b>0.52</b>				
12.50	1.93	1.11	0.05				
13.00	2.03	1.19	0.03				
13.50	2.10	1.25	0.02				
14.00	2.16	1.30	0.02				
14.50	2.20	1.34	0.02				
15.00	2.24	1.38	0.01				
15.50	2.28	1.41	0.01				
16.00	2.31	1.44	0.01				
16.50	2.34	1.47	0.01				
17.00	2.37	1.49	0.01				
17.50	2.40	1.52	0.01				
18.00	2.42	1.54	0.01				
18.50	2.45	1.56	0.01				
19.00	2.47	1.58	0.01				
19.50	2.49	1.60	0.01				
20.00	2.50	1.61	0.01				
20.50	2.52	1.63	0.01				
21.00	2.54	1.64	0.01				
21.50	2.55	1.66	0.01				
22.00	2.57	1.67	0.01				
22.50	2.59	1.69	0.01				
23.00	2.60	1.70	0.01				
23.50	2.62	1.72	0.01				
24.00	<b>2.63</b>	<b>1.73</b>	0.01				
24.50	2.63	1.73	0.00				
25.00	2.63	1.73	0.00				
25.50	2.63	1.73	0.00				

**Summary for Subcatchment 5S: Prop87-91**

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

Runoff = 0.28 cfs @ 11.95 hrs, Volume= 0.014 af, Depth= 2.09"

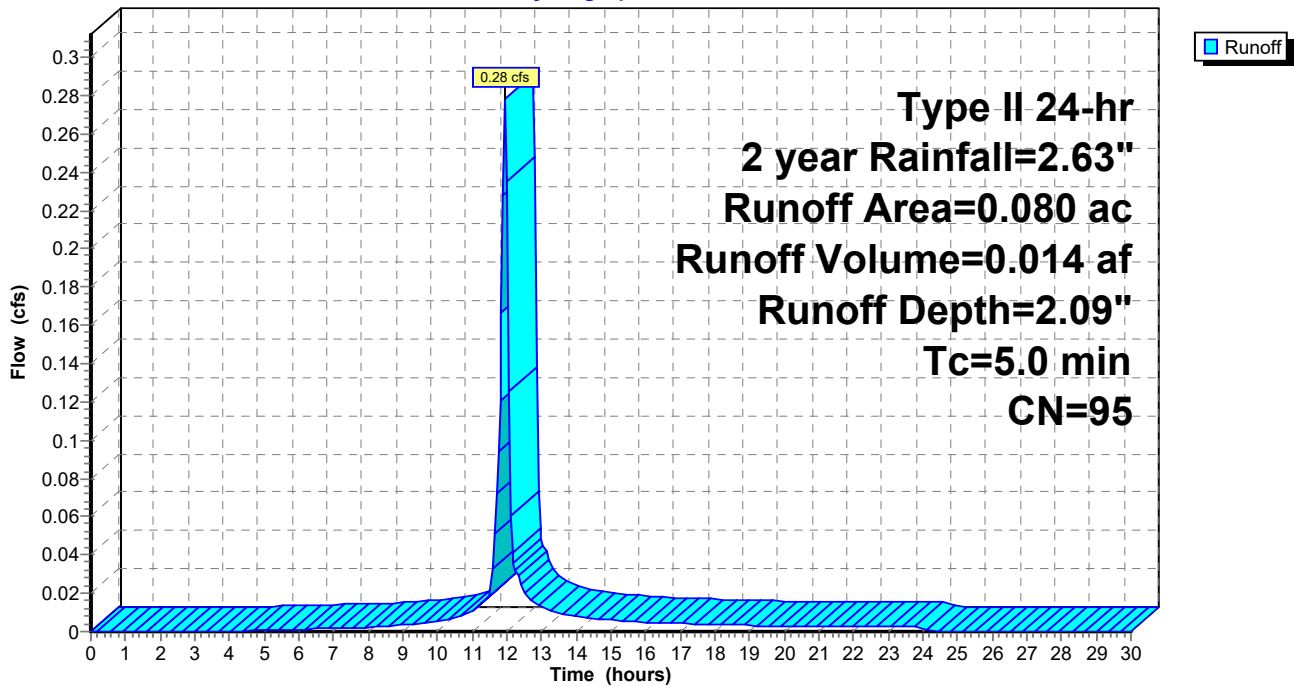
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 2 year Rainfall=2.63"

Area (ac)	CN	Description
0.070	98	Paved parking, HSG D
0.010	74	>75% Grass cover, Good, HSG C
0.080	95	Weighted Average
0.010		12.50% Pervious Area
0.070		87.50% Impervious Area

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

**Subcatchment 5S: Prop87-91**

Hydrograph



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Type II 24-hr 2 year Rainfall=2.63"

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**Hydrograph for Subcatchment 5S: Prop87-91**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	2.63	2.09	0.00
0.50	0.01	0.00	0.00	26.50	2.63	2.09	0.00
1.00	0.03	0.00	0.00	27.00	2.63	2.09	0.00
1.50	0.04	0.00	0.00	27.50	2.63	2.09	0.00
2.00	0.06	0.00	0.00	28.00	2.63	2.09	0.00
2.50	0.07	0.00	0.00	28.50	2.63	2.09	0.00
3.00	0.09	0.00	0.00	29.00	2.63	2.09	0.00
3.50	0.11	0.00	0.00	29.50	2.63	2.09	0.00
4.00	0.13	0.00	0.00	30.00	2.63	2.09	0.00
4.50	0.15	0.00	0.00				
5.00	0.17	0.01	0.00				
5.50	0.19	0.01	0.00				
6.00	0.21	0.02	0.00				
6.50	0.23	0.03	0.00				
7.00	0.26	0.04	0.00				
7.50	0.29	0.05	0.00				
8.00	0.32	0.06	0.00				
8.50	0.35	0.08	0.00				
9.00	0.39	0.10	0.00				
9.50	0.43	0.12	0.00				
10.00	0.48	0.15	0.01				
10.50	0.54	0.19	0.01				
11.00	0.62	0.25	0.01				
11.50	0.74	0.35	<b>0.02</b>				
12.00	1.74	1.24	<b>0.23</b>				
12.50	1.93	1.42	0.02				
13.00	2.03	1.51	0.01				
13.50	2.10	1.58	0.01				
14.00	2.16	1.63	0.01				
14.50	2.20	1.68	0.01				
15.00	2.24	1.72	0.01				
15.50	2.28	1.75	0.01				
16.00	2.31	1.78	0.00				
16.50	2.34	1.81	0.00				
17.00	2.37	1.84	0.00				
17.50	2.40	1.86	0.00				
18.00	2.42	1.89	0.00				
18.50	2.45	1.91	0.00				
19.00	2.47	1.93	0.00				
19.50	2.49	1.95	0.00				
20.00	2.50	1.97	0.00				
20.50	2.52	1.98	0.00				
21.00	2.54	2.00	0.00				
21.50	2.55	2.02	0.00				
22.00	2.57	2.03	0.00				
22.50	2.59	2.05	0.00				
23.00	2.60	2.06	0.00				
23.50	2.62	2.08	0.00				
24.00	<b>2.63</b>	<b>2.09</b>	0.00				
24.50	2.63	2.09	0.00				
25.00	2.63	2.09	0.00				
25.50	2.63	2.09	0.00				

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Type II 24-hr 2 year Rainfall=2.63"

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**Summary for Pond 4P: Ex CB**

Inflow Area = 0.200 ac, 70.00% Impervious, Inflow Depth = 1.73" for 2 year event  
 Inflow = 0.61 cfs @ 11.95 hrs, Volume= 0.029 af  
 Outflow = 0.60 cfs @ 11.95 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min  
 Primary = 0.60 cfs @ 11.95 hrs, Volume= 0.029 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Peak Elev= 825.01' @ 11.95 hrs Surf.Area= 4 sf Storage= 2 cf

Plug-Flow detention time= 0.2 min calculated for 0.029 af (100% of inflow)  
 Center-of-Mass det. time= 0.2 min ( 806.2 - 806.0 )

Volume	Invert	Avail.Storage	Storage Description
#1	824.54'	390 cf	<b>ExCB (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
824.54	4	0	0
827.96	4	14	14
828.47	1,471	376	390

Device	Routing	Invert	Outlet Devices
#1	Primary	824.54'	<b>8.00" Round Culvert</b> L= 45.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 824.54' / 824.01' S= 0.0118 '/' Cc= 0.900 n= 0.013, Flow Area= 0.35 sf

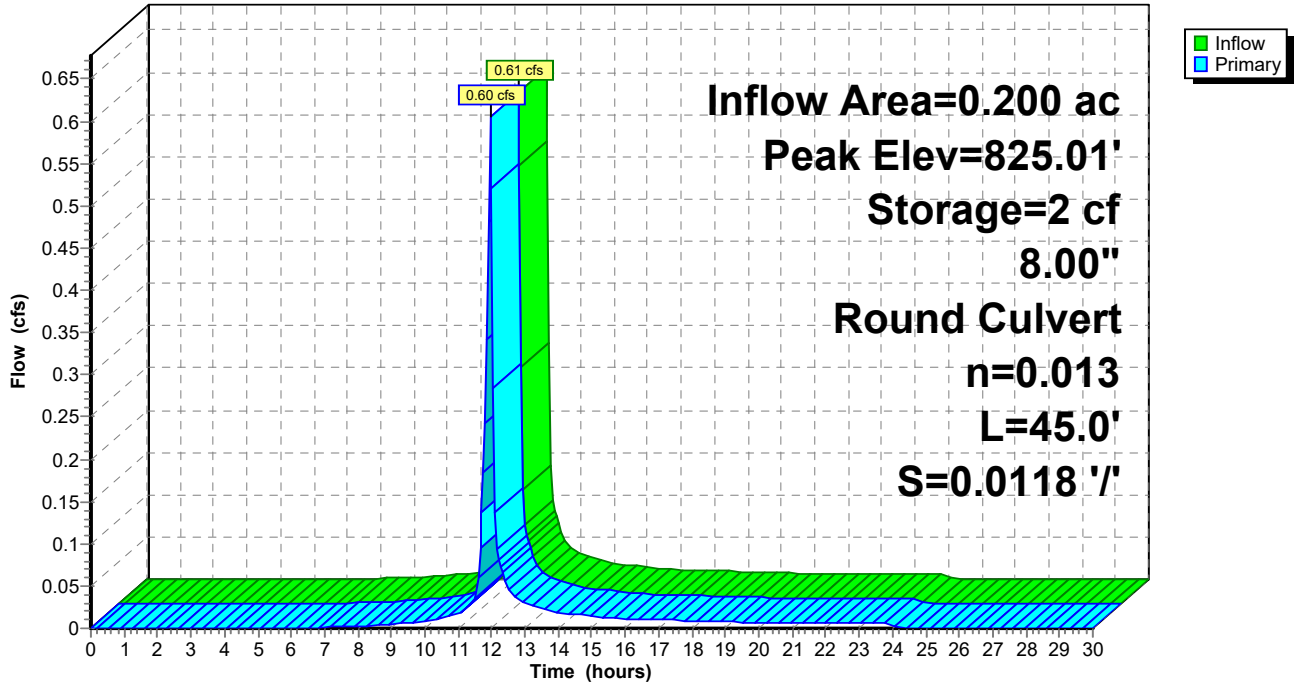
**Primary OutFlow** Max=0.60 cfs @ 11.95 hrs HW=825.00' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.60 cfs @ 2.31 fps)



**Pond 4P: Ex CB**

Hydrograph



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Type II 24-hr 2 year Rainfall=2.63"

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**Hydrograph for Pond 4P: Ex CB**

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	824.54	0.00
1.00	0.00	0	824.54	0.00
2.00	0.00	0	824.54	0.00
3.00	0.00	0	824.54	0.00
4.00	0.00	0	824.54	0.00
5.00	0.00	0	824.54	0.00
6.00	0.00	0	824.54	0.00
7.00	0.00	0	824.55	0.00
8.00	0.00	0	824.56	0.00
9.00	0.00	0	824.58	0.00
10.00	0.01	0	824.59	0.01
11.00	<b>0.02</b>	<b>0</b>	<b>824.61</b>	<b>0.02</b>
12.00	<b>0.52</b>	<b>2</b>	<b>824.96</b>	<b>0.52</b>
13.00	0.03	0	824.63	0.03
14.00	0.02	0	824.61	0.02
15.00	0.01	0	824.60	0.01
16.00	0.01	0	824.60	0.01
17.00	0.01	0	824.59	0.01
18.00	0.01	0	824.59	0.01
19.00	0.01	0	824.59	0.01
20.00	0.01	0	824.58	0.01
21.00	0.01	0	824.58	0.01
22.00	0.01	0	824.58	0.01
23.00	0.01	0	824.58	0.01
24.00	0.01	0	824.58	0.01
25.00	0.00	0	824.54	0.00
26.00	0.00	0	824.54	0.00
27.00	0.00	0	824.54	0.00
28.00	0.00	0	824.54	0.00
29.00	0.00	0	824.54	0.00
30.00	0.00	0	824.54	0.00

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Type II 24-hr 2 year Rainfall=2.63"

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**Summary for Pond 6P: Ex CB**

Inflow Area = 0.080 ac, 87.50% Impervious, Inflow Depth = 2.09" for 2 year event  
 Inflow = 0.28 cfs @ 11.95 hrs, Volume= 0.014 af  
 Outflow = 0.28 cfs @ 11.95 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min  
 Primary = 0.28 cfs @ 11.95 hrs, Volume= 0.014 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Peak Elev= 824.84' @ 11.95 hrs Surf.Area= 4 sf Storage= 1 cf

Plug-Flow detention time= 0.3 min calculated for 0.014 af (100% of inflow)  
 Center-of-Mass det. time= 0.3 min ( 783.3 - 783.0 )

Volume	Invert	Avail.Storage	Storage Description
#1	824.54'	353 cf	<b>ExCB_83-87-91 (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
824.54	4	0	0
827.96	4	14	14
828.47	1,328	340	353

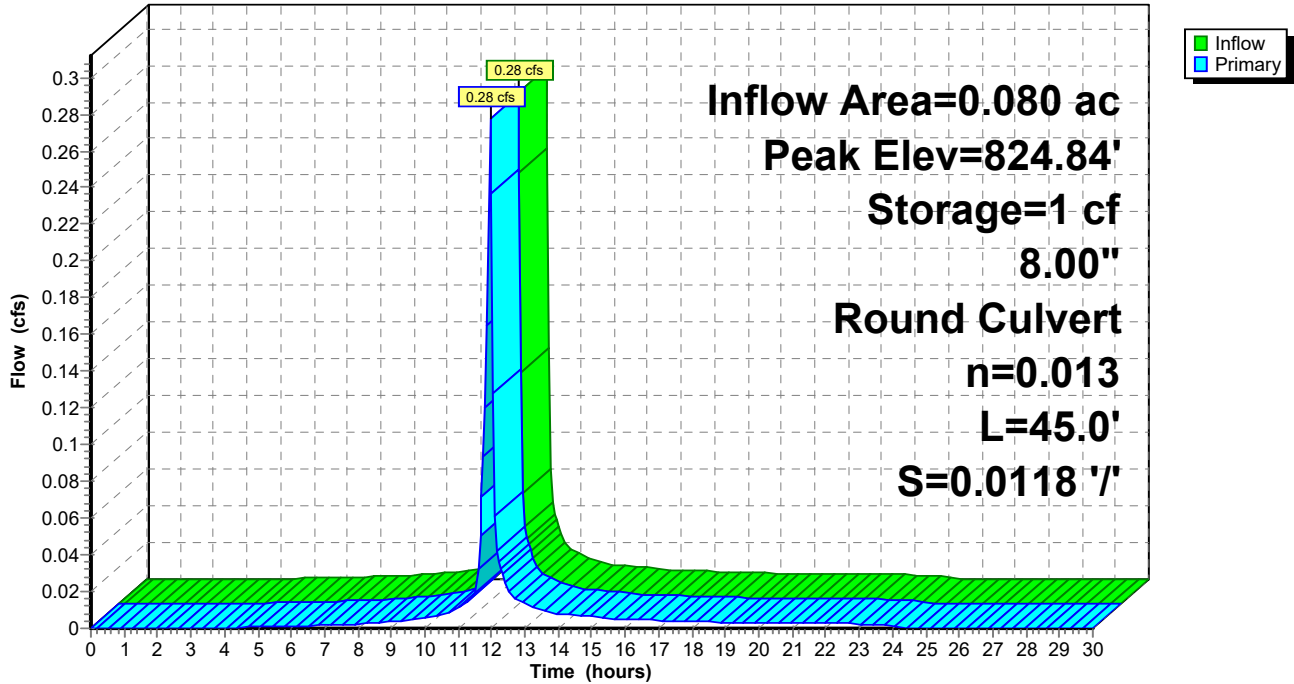
Device	Routing	Invert	Outlet Devices
#1	Primary	824.54'	<b>8.00" Round Culvert</b> L= 45.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 824.54' / 824.01' S= 0.0118 '/' Cc= 0.900 n= 0.013, Flow Area= 0.35 sf

**Primary OutFlow** Max=0.28 cfs @ 11.95 hrs HW=824.83' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.28 cfs @ 1.85 fps)

### Pond 6P: Ex CB

Hydrograph



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Type II 24-hr 2 year Rainfall=2.63"

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**Hydrograph for Pond 6P: Ex CB**

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	824.54	0.00
1.00	0.00	0	824.54	0.00
2.00	0.00	0	824.54	0.00
3.00	0.00	0	824.54	0.00
4.00	0.00	0	824.54	0.00
5.00	0.00	0	824.55	0.00
6.00	0.00	0	824.55	0.00
7.00	0.00	0	824.55	0.00
8.00	0.00	0	824.56	0.00
9.00	0.00	0	824.57	0.00
10.00	0.01	0	824.58	0.01
11.00	<b>0.01</b>	<b>0</b>	<b>824.59</b>	<b>0.01</b>
12.00	<b>0.23</b>	<b>1</b>	<b>824.81</b>	<b>0.24</b>
13.00	0.01	0	824.60	0.01
14.00	0.01	0	824.59	0.01
15.00	0.01	0	824.58	0.01
16.00	0.00	0	824.58	0.00
17.00	0.00	0	824.57	0.00
18.00	0.00	0	824.57	0.00
19.00	0.00	0	824.57	0.00
20.00	0.00	0	824.56	0.00
21.00	0.00	0	824.56	0.00
22.00	0.00	0	824.56	0.00
23.00	0.00	0	824.56	0.00
24.00	0.00	0	824.56	0.00
25.00	0.00	0	824.54	0.00
26.00	0.00	0	824.54	0.00
27.00	0.00	0	824.54	0.00
28.00	0.00	0	824.54	0.00
29.00	0.00	0	824.54	0.00
30.00	0.00	0	824.54	0.00

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Type II 24-hr 5 year Rainfall=3.24"

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**Summary for Subcatchment 1S: Existing**

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

Runoff = 0.79 cfs @ 11.95 hrs, Volume= 0.038 af, Depth= 2.30"

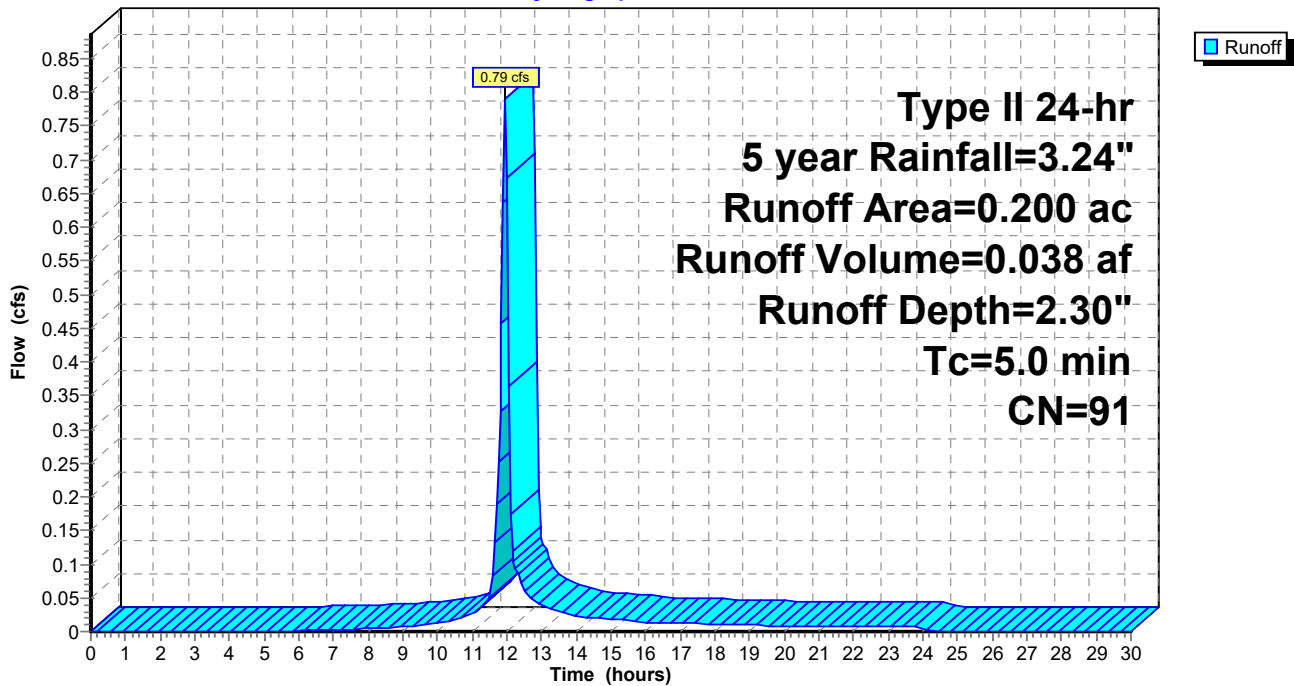
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
Type II 24-hr 5 year Rainfall=3.24"

Area (ac)	CN	Description
0.140	98	Paved parking, HSG D
0.060	74	>75% Grass cover, Good, HSG C
0.200	91	Weighted Average
0.060		30.00% Pervious Area
0.140		70.00% Impervious Area

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

**Subcatchment 1S: Existing**

Hydrograph



**Hydrograph for Subcatchment 1S: Existing**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	3.24	2.30	0.00
0.50	0.02	0.00	0.00	26.50	3.24	2.30	0.00
1.00	0.03	0.00	0.00	27.00	3.24	2.30	0.00
1.50	0.05	0.00	0.00	27.50	3.24	2.30	0.00
2.00	0.07	0.00	0.00	28.00	3.24	2.30	0.00
2.50	0.09	0.00	0.00	28.50	3.24	2.30	0.00
3.00	0.11	0.00	0.00	29.00	3.24	2.30	0.00
3.50	0.13	0.00	0.00	29.50	3.24	2.30	0.00
4.00	0.16	0.00	0.00	30.00	3.24	2.30	0.00
4.50	0.18	0.00	0.00				
5.00	0.20	0.00	0.00				
5.50	0.23	0.00	0.00				
6.00	0.26	0.00	0.00				
6.50	0.29	0.01	0.00				
7.00	0.32	0.01	0.00				
7.50	0.35	0.02	0.00				
8.00	0.39	0.03	0.00				
8.50	0.43	0.04	0.01				
9.00	0.48	0.06	0.01				
9.50	0.53	0.08	0.01				
10.00	0.59	0.11	0.01				
10.50	0.66	0.15	0.02				
11.00	0.76	0.20	0.03				
11.50	0.92	0.30	<b>0.05</b>				
12.00	2.15	1.29	<b>0.67</b>				
12.50	2.38	1.50	0.06				
13.00	2.50	1.61	0.04				
13.50	2.59	1.69	0.03				
14.00	2.66	1.75	0.02				
14.50	2.71	1.81	0.02				
15.00	2.77	1.85	0.02				
15.50	2.81	1.90	0.02				
16.00	2.85	1.93	0.01				
16.50	2.89	1.97	0.01				
17.00	2.92	2.00	0.01				
17.50	2.95	2.03	0.01				
18.00	2.98	2.06	0.01				
18.50	3.01	2.08	0.01				
19.00	3.04	2.11	0.01				
19.50	3.06	2.13	0.01				
20.00	3.08	2.15	0.01				
20.50	3.11	2.17	0.01				
21.00	3.13	2.19	0.01				
21.50	3.15	2.21	0.01				
22.00	3.17	2.23	0.01				
22.50	3.18	2.24	0.01				
23.00	3.20	2.26	0.01				
23.50	3.22	2.28	0.01				
24.00	<b>3.24</b>	<b>2.30</b>	0.01				
24.50	3.24	2.30	0.00				
25.00	3.24	2.30	0.00				
25.50	3.24	2.30	0.00				

**Summary for Subcatchment 5S: Prop87-91**

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

Runoff = 0.35 cfs @ 11.95 hrs, Volume= 0.018 af, Depth= 2.68"

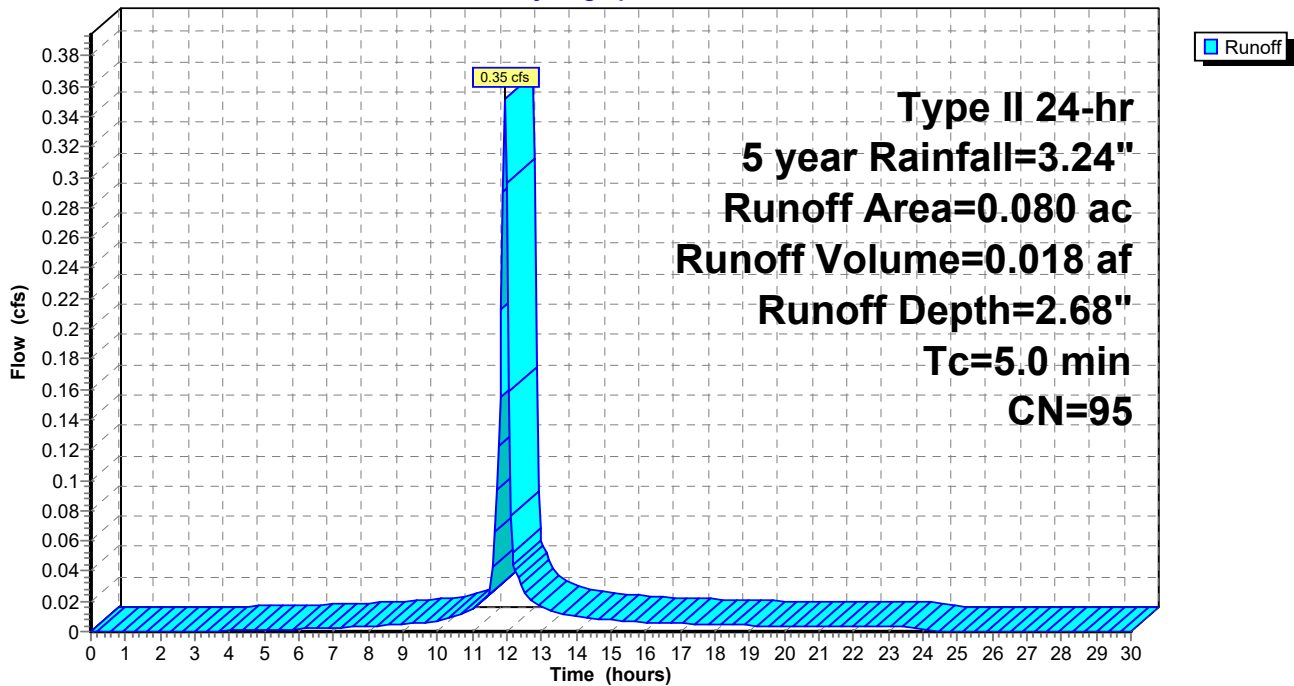
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 5 year Rainfall=3.24"

Area (ac)	CN	Description
0.070	98	Paved parking, HSG D
0.010	74	>75% Grass cover, Good, HSG C
0.080	95	Weighted Average
0.010		12.50% Pervious Area
0.070		87.50% Impervious Area

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

**Subcatchment 5S: Prop87-91**

Hydrograph





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Type II 24-hr 5 year Rainfall=3.24"

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**Hydrograph for Subcatchment 5S: Prop87-91**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	3.24	2.68	0.00
0.50	0.02	0.00	0.00	26.50	3.24	2.68	0.00
1.00	0.03	0.00	0.00	27.00	3.24	2.68	0.00
1.50	0.05	0.00	0.00	27.50	3.24	2.68	0.00
2.00	0.07	0.00	0.00	28.00	3.24	2.68	0.00
2.50	0.09	0.00	0.00	28.50	3.24	2.68	0.00
3.00	0.11	0.00	0.00	29.00	3.24	2.68	0.00
3.50	0.13	0.00	0.00	29.50	3.24	2.68	0.00
4.00	0.16	0.00	0.00	30.00	3.24	2.68	0.00
4.50	0.18	0.01	0.00				
5.00	0.20	0.02	0.00				
5.50	0.23	0.02	0.00				
6.00	0.26	0.03	0.00				
6.50	0.29	0.05	0.00				
7.00	0.32	0.06	0.00				
7.50	0.35	0.08	0.00				
8.00	0.39	0.10	0.00				
8.50	0.43	0.12	0.00				
9.00	0.48	0.15	0.01				
9.50	0.53	0.19	0.01				
10.00	0.59	0.23	0.01				
10.50	0.66	0.29	0.01				
11.00	0.76	0.36	0.01				
11.50	0.92	0.49	<b>0.02</b>				
12.00	2.15	1.62	<b>0.30</b>				
12.50	2.38	1.85	0.03				
13.00	2.50	1.96	0.02				
13.50	2.59	2.05	0.01				
14.00	2.66	2.12	0.01				
14.50	2.71	2.17	0.01				
15.00	2.77	2.22	0.01				
15.50	2.81	2.27	0.01				
16.00	2.85	2.30	0.01				
16.50	2.89	2.34	0.01				
17.00	2.92	2.37	0.01				
17.50	2.95	2.40	0.00				
18.00	2.98	2.43	0.00				
18.50	3.01	2.46	0.00				
19.00	3.04	2.49	0.00				
19.50	3.06	2.51	0.00				
20.00	3.08	2.53	0.00				
20.50	3.11	2.55	0.00				
21.00	3.13	2.57	0.00				
21.50	3.15	2.59	0.00				
22.00	3.17	2.61	0.00				
22.50	3.18	2.63	0.00				
23.00	3.20	2.65	0.00				
23.50	3.22	2.67	0.00				
24.00	<b>3.24</b>	<b>2.68</b>	0.00				
24.50	3.24	2.68	0.00				
25.00	3.24	2.68	0.00				
25.50	3.24	2.68	0.00				

**91Shigh**

Type II 24-hr 5 year Rainfall=3.24"

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**Summary for Pond 4P: Ex CB**

Inflow Area = 0.200 ac, 70.00% Impervious, Inflow Depth = 2.30" for 5 year event  
 Inflow = 0.79 cfs @ 11.95 hrs, Volume= 0.038 af  
 Outflow = 0.79 cfs @ 11.95 hrs, Volume= 0.038 af, Atten= 0%, Lag= 0.0 min  
 Primary = 0.79 cfs @ 11.95 hrs, Volume= 0.038 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Peak Elev= 825.10' @ 11.95 hrs Surf.Area= 4 sf Storage= 2 cf

Plug-Flow detention time= 0.2 min calculated for 0.038 af (100% of inflow)  
 Center-of-Mass det. time= 0.2 min ( 798.1 - 798.0 )

Volume	Invert	Avail.Storage	Storage Description
#1	824.54'	390 cf	<b>ExCB (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
824.54	4	0	0
827.96	4	14	14
828.47	1,471	376	390

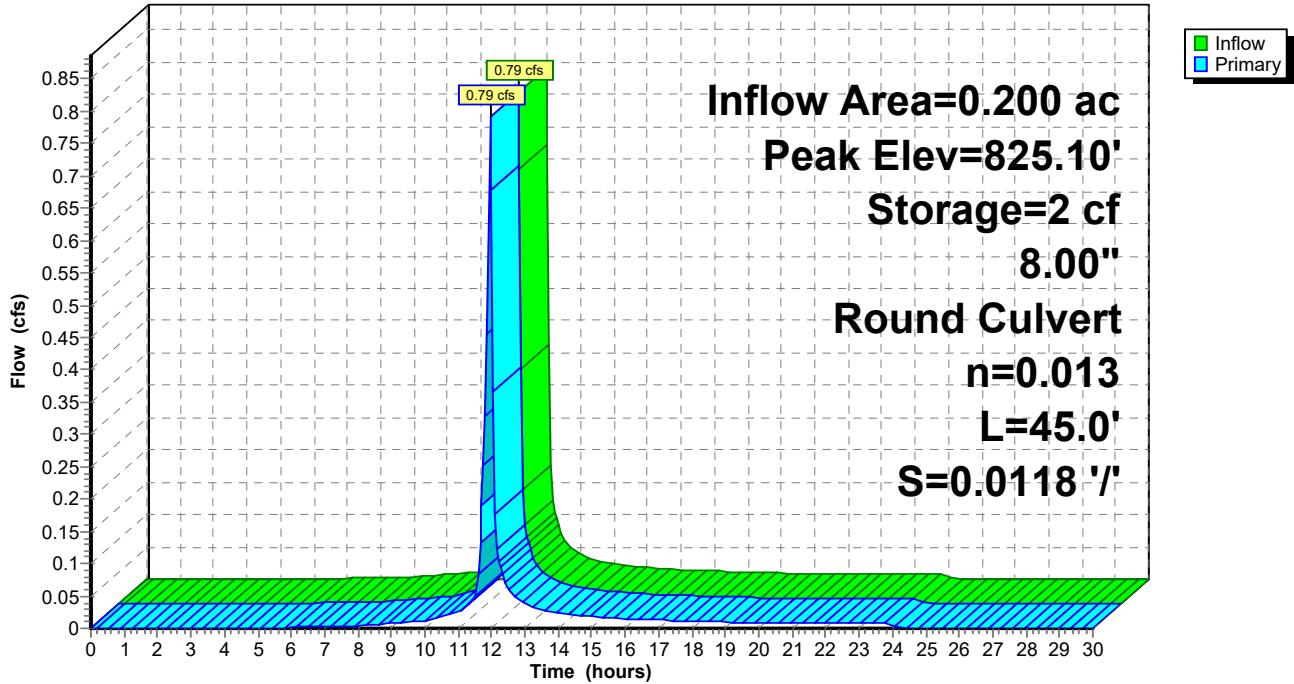
Device	Routing	Invert	Outlet Devices
#1	Primary	824.54'	<b>8.00" Round Culvert</b> L= 45.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 824.54' / 824.01' S= 0.0118 '/' Cc= 0.900 n= 0.013, Flow Area= 0.35 sf

**Primary OutFlow** Max=0.78 cfs @ 11.95 hrs HW=825.09' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.78 cfs @ 2.53 fps)

**Pond 4P: Ex CB**

Hydrograph



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Type II 24-hr 5 year Rainfall=3.24"

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**Hydrograph for Pond 4P: Ex CB**

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	824.54	0.00
1.00	0.00	0	824.54	0.00
2.00	0.00	0	824.54	0.00
3.00	0.00	0	824.54	0.00
4.00	0.00	0	824.54	0.00
5.00	0.00	0	824.54	0.00
6.00	0.00	0	824.55	0.00
7.00	0.00	0	824.56	0.00
8.00	0.00	0	824.57	0.00
9.00	0.01	0	824.59	0.01
10.00	0.01	0	824.60	0.01
11.00	<b>0.03</b>	<b>0</b>	<b>824.63</b>	<b>0.03</b>
12.00	<b>0.67</b>	<b>2</b>	<b>825.04</b>	<b>0.68</b>
13.00	0.04	0	824.65	0.04
14.00	0.02	0	824.62	0.02
15.00	0.02	0	824.61	0.02
16.00	0.01	0	824.60	0.01
17.00	0.01	0	824.60	0.01
18.00	0.01	0	824.59	0.01
19.00	0.01	0	824.59	0.01
20.00	0.01	0	824.59	0.01
21.00	0.01	0	824.59	0.01
22.00	0.01	0	824.59	0.01
23.00	0.01	0	824.58	0.01
24.00	0.01	0	824.58	0.01
25.00	0.00	0	824.54	0.00
26.00	0.00	0	824.54	0.00
27.00	0.00	0	824.54	0.00
28.00	0.00	0	824.54	0.00
29.00	0.00	0	824.54	0.00
30.00	0.00	0	824.54	0.00

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Type II 24-hr 5 year Rainfall=3.24"

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**Summary for Pond 6P: Ex CB**

Inflow Area = 0.080 ac, 87.50% Impervious, Inflow Depth = 2.68" for 5 year event  
 Inflow = 0.35 cfs @ 11.95 hrs, Volume= 0.018 af  
 Outflow = 0.35 cfs @ 11.95 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min  
 Primary = 0.35 cfs @ 11.95 hrs, Volume= 0.018 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Peak Elev= 824.88' @ 11.95 hrs Surf.Area= 4 sf Storage= 1 cf

Plug-Flow detention time= 0.3 min calculated for 0.018 af (100% of inflow)  
 Center-of-Mass det. time= 0.3 min ( 776.5 - 776.3 )

Volume	Invert	Avail.Storage	Storage Description
#1	824.54'	353 cf	<b>ExCB_83-87-91 (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
824.54	4	0	0
827.96	4	14	14
828.47	1,328	340	353

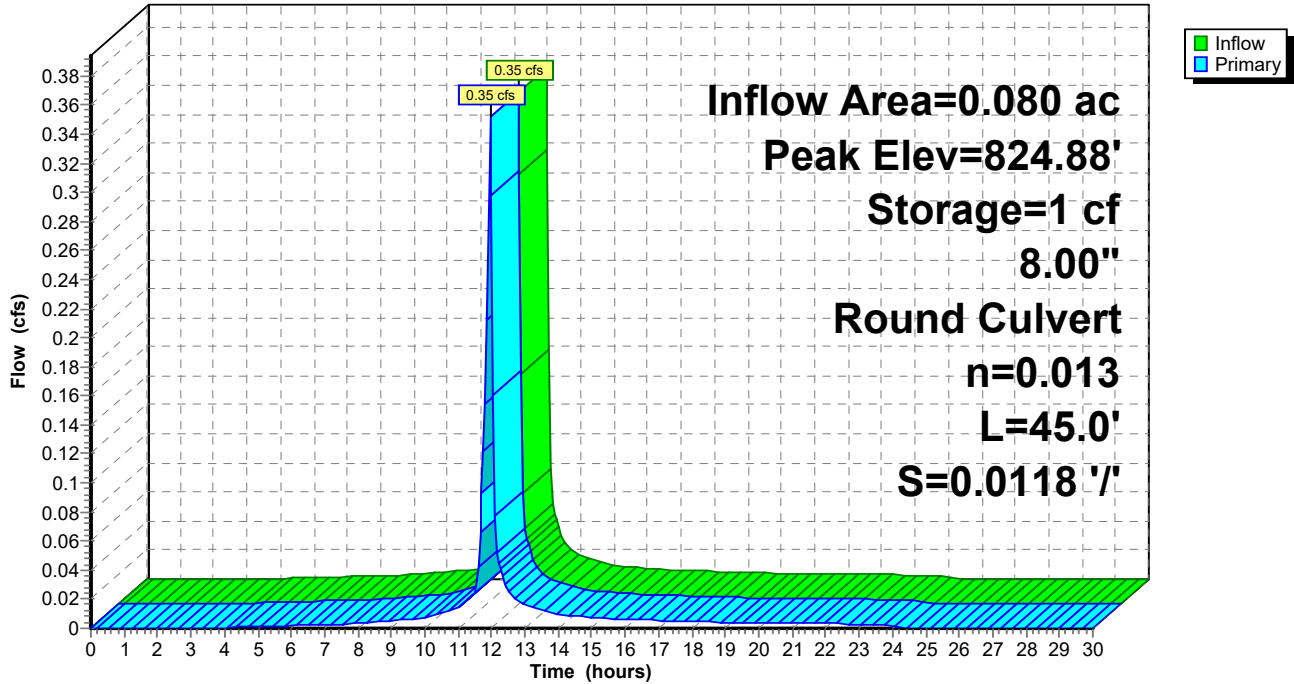
Device	Routing	Invert	Outlet Devices
#1	Primary	824.54'	<b>8.00" Round Culvert</b> L= 45.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 824.54' / 824.01' S= 0.0118 '/' Cc= 0.900 n= 0.013, Flow Area= 0.35 sf

**Primary OutFlow** Max=0.35 cfs @ 11.95 hrs HW=824.88' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.35 cfs @ 1.97 fps)

### Pond 6P: Ex CB

Hydrograph



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Type II 24-hr 5 year Rainfall=3.24"

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**Hydrograph for Pond 6P: Ex CB**

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	824.54	0.00
1.00	0.00	0	824.54	0.00
2.00	0.00	0	824.54	0.00
3.00	0.00	0	824.54	0.00
4.00	0.00	0	824.54	0.00
5.00	0.00	0	824.55	0.00
6.00	0.00	0	824.55	0.00
7.00	0.00	0	824.56	0.00
8.00	0.00	0	824.57	0.00
9.00	0.01	0	824.58	0.01
10.00	0.01	0	824.59	0.01
11.00	<b>0.01</b>	<b>0</b>	<b>824.60</b>	<b>0.01</b>
12.00	<b>0.30</b>	<b>1</b>	<b>824.85</b>	<b>0.30</b>
13.00	0.02	0	824.61	0.02
14.00	0.01	0	824.59	0.01
15.00	0.01	0	824.59	0.01
16.00	0.01	0	824.58	0.01
17.00	0.01	0	824.58	0.01
18.00	0.00	0	824.58	0.00
19.00	0.00	0	824.57	0.00
20.00	0.00	0	824.57	0.00
21.00	0.00	0	824.57	0.00
22.00	0.00	0	824.57	0.00
23.00	0.00	0	824.56	0.00
24.00	0.00	0	824.56	0.00
25.00	0.00	0	824.54	0.00
26.00	0.00	0	824.54	0.00
27.00	0.00	0	824.54	0.00
28.00	0.00	0	824.54	0.00
29.00	0.00	0	824.54	0.00
30.00	0.00	0	824.54	0.00

**Summary for Subcatchment 1S: Existing**

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

Runoff = 0.94 cfs @ 11.95 hrs, Volume= 0.046 af, Depth= 2.77"

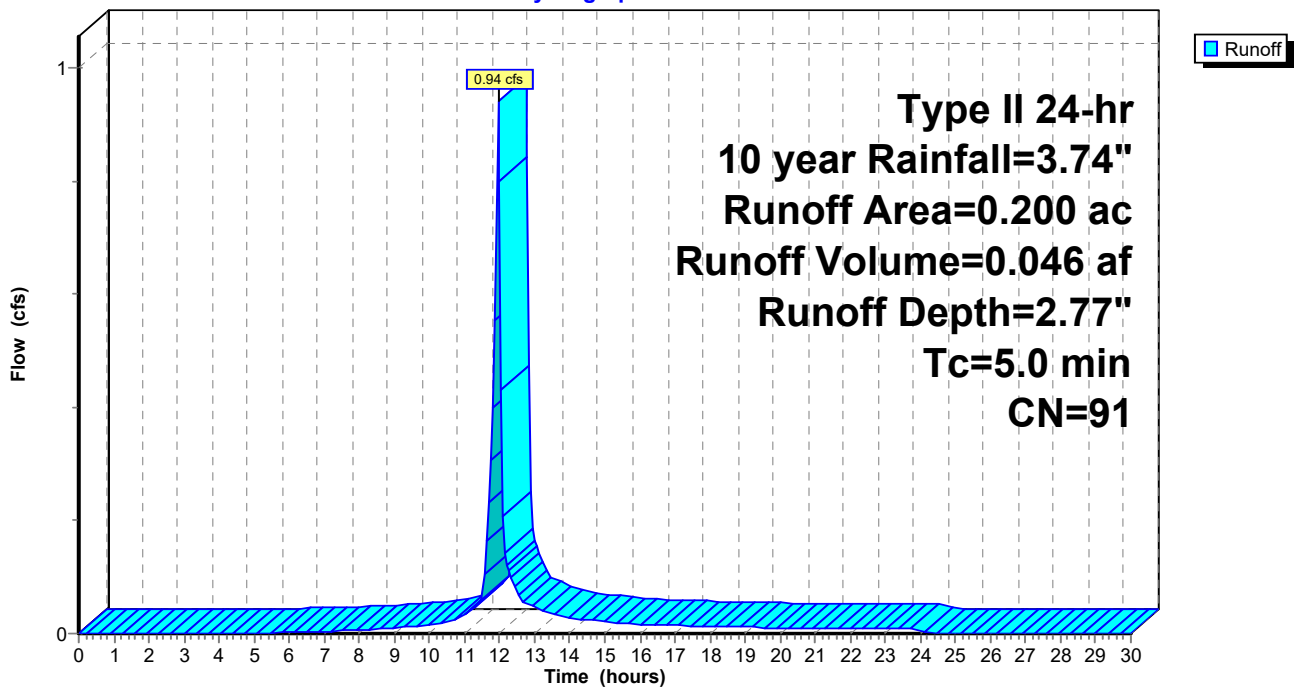
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10 year Rainfall=3.74"

Area (ac)	CN	Description
0.140	98	Paved parking, HSG D
0.060	74	>75% Grass cover, Good, HSG C
0.200	91	Weighted Average
0.060		30.00% Pervious Area
0.140		70.00% Impervious Area

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

**Subcatchment 1S: Existing**

Hydrograph





**Hydrograph for Subcatchment 1S: Existing**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	3.74	2.77	0.00
0.50	0.02	0.00	0.00	26.50	3.74	2.77	0.00
1.00	0.04	0.00	0.00	27.00	3.74	2.77	0.00
1.50	0.06	0.00	0.00	27.50	3.74	2.77	0.00
2.00	0.08	0.00	0.00	28.00	3.74	2.77	0.00
2.50	0.11	0.00	0.00	28.50	3.74	2.77	0.00
3.00	0.13	0.00	0.00	29.00	3.74	2.77	0.00
3.50	0.15	0.00	0.00	29.50	3.74	2.77	0.00
4.00	0.18	0.00	0.00	30.00	3.74	2.77	0.00
4.50	0.21	0.00	0.00				
5.00	0.24	0.00	0.00				
5.50	0.27	0.00	0.00				
6.00	0.30	0.01	0.00				
6.50	0.33	0.02	0.00				
7.00	0.37	0.03	0.00				
7.50	0.41	0.04	0.00				
8.00	0.45	0.05	0.01				
8.50	0.49	0.07	0.01				
9.00	0.55	0.09	0.01				
9.50	0.61	0.12	0.01				
10.00	0.68	0.16	0.02				
10.50	0.76	0.21	0.02				
11.00	0.88	0.28	0.03				
11.50	1.06	0.40	<b>0.06</b>				
12.00	2.48	1.59	<b>0.80</b>				
12.50	2.75	1.84	0.07				
13.00	2.89	1.97	0.05				
13.50	2.99	2.06	0.03				
14.00	3.07	2.13	0.03				
14.50	3.13	2.20	0.02				
15.00	3.19	2.25	0.02				
15.50	3.24	2.30	0.02				
16.00	3.29	2.34	0.02				
16.50	3.33	2.38	0.02				
17.00	3.37	2.42	0.01				
17.50	3.41	2.46	0.01				
18.00	3.44	2.49	0.01				
18.50	3.48	2.52	0.01				
19.00	3.51	2.55	0.01				
19.50	3.54	2.57	0.01				
20.00	3.56	2.60	0.01				
20.50	3.58	2.62	0.01				
21.00	3.61	2.64	0.01				
21.50	3.63	2.67	0.01				
22.00	3.65	2.69	0.01				
22.50	3.68	2.71	0.01				
23.00	3.70	2.73	0.01				
23.50	3.72	2.75	0.01				
24.00	<b>3.74</b>	<b>2.77</b>	0.01				
24.50	3.74	2.77	0.00				
25.00	3.74	2.77	0.00				
25.50	3.74	2.77	0.00				

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Type II 24-hr 10 year Rainfall=3.74"

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**Summary for Subcatchment 5S: Prop87-91**

[49] Hint:  $T_c < 2dt$  may require smaller dt

Runoff = 0.41 cfs @ 11.95 hrs, Volume= 0.021 af, Depth= 3.17"

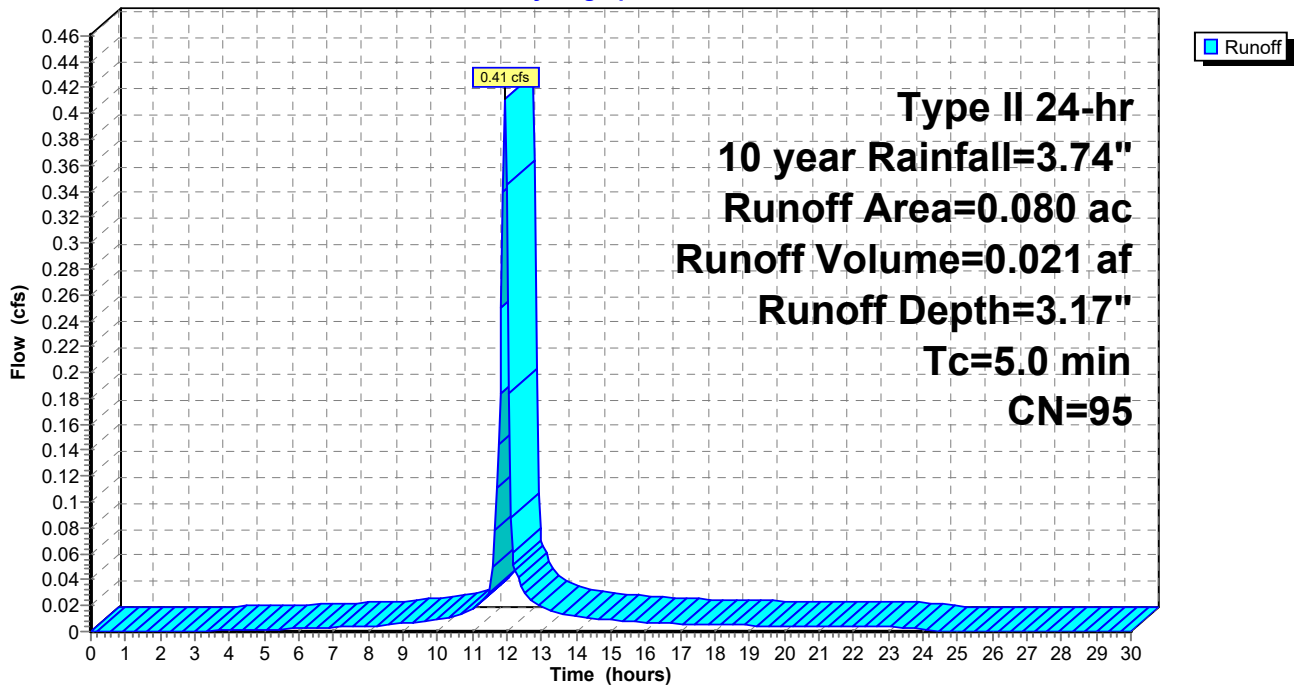
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10 year Rainfall=3.74"

Area (ac)	CN	Description
0.070	98	Paved parking, HSG D
0.010	74	>75% Grass cover, Good, HSG C
0.080	95	Weighted Average
0.010		12.50% Pervious Area
0.070		87.50% Impervious Area

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

**Subcatchment 5S: Prop87-91**

Hydrograph



**Hydrograph for Subcatchment 5S: Prop87-91**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	3.74	3.17	0.00
0.50	0.02	0.00	0.00	26.50	3.74	3.17	0.00
1.00	0.04	0.00	0.00	27.00	3.74	3.17	0.00
1.50	0.06	0.00	0.00	27.50	3.74	3.17	0.00
2.00	0.08	0.00	0.00	28.00	3.74	3.17	0.00
2.50	0.11	0.00	0.00	28.50	3.74	3.17	0.00
3.00	0.13	0.00	0.00	29.00	3.74	3.17	0.00
3.50	0.15	0.00	0.00	29.50	3.74	3.17	0.00
4.00	0.18	0.01	0.00	30.00	3.74	3.17	0.00
4.50	0.21	0.02	0.00				
5.00	0.24	0.03	0.00				
5.50	0.27	0.04	0.00				
6.00	0.30	0.05	0.00				
6.50	0.33	0.07	0.00				
7.00	0.37	0.09	0.00				
7.50	0.41	0.11	0.00				
8.00	0.45	0.14	0.00				
8.50	0.49	0.17	0.01				
9.00	0.55	0.20	0.01				
9.50	0.61	0.25	0.01				
10.00	0.68	0.30	0.01				
10.50	0.76	0.37	0.01				
11.00	0.88	0.46	0.02				
11.50	1.06	0.61	<b>0.03</b>				
12.00	2.48	1.94	<b>0.35</b>				
12.50	2.75	2.20	0.03				
13.00	2.89	2.34	0.02				
13.50	2.99	2.44	0.01				
14.00	3.07	2.51	0.01				
14.50	3.13	2.58	0.01				
15.00	3.19	2.64	0.01				
15.50	3.24	2.69	0.01				
16.00	3.29	2.73	0.01				
16.50	3.33	2.78	0.01				
17.00	3.37	2.81	0.01				
17.50	3.41	2.85	0.01				
18.00	3.44	2.88	0.01				
18.50	3.48	2.92	0.01				
19.00	3.51	2.95	0.00				
19.50	3.54	2.97	0.00				
20.00	3.56	3.00	0.00				
20.50	3.58	3.02	0.00				
21.00	3.61	3.05	0.00				
21.50	3.63	3.07	0.00				
22.00	3.65	3.09	0.00				
22.50	3.68	3.11	0.00				
23.00	3.70	3.13	0.00				
23.50	3.72	3.15	0.00				
24.00	<b>3.74</b>	<b>3.17</b>	0.00				
24.50	3.74	3.17	0.00				
25.00	3.74	3.17	0.00				
25.50	3.74	3.17	0.00				

**91Shigh**

Type II 24-hr 10 year Rainfall=3.74"

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**Summary for Pond 4P: Ex CB**

Inflow Area = 0.200 ac, 70.00% Impervious, Inflow Depth = 2.77" for 10 year event  
 Inflow = 0.94 cfs @ 11.95 hrs, Volume= 0.046 af  
 Outflow = 0.94 cfs @ 11.95 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.0 min  
 Primary = 0.94 cfs @ 11.95 hrs, Volume= 0.046 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Peak Elev= 825.18' @ 11.95 hrs Surf.Area= 4 sf Storage= 3 cf

Plug-Flow detention time= 0.2 min calculated for 0.046 af (100% of inflow)  
 Center-of-Mass det. time= 0.2 min ( 792.9 - 792.7 )

Volume	Invert	Avail.Storage	Storage Description
#1	824.54'	390 cf	<b>ExCB (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
824.54	4	0	0
827.96	4	14	14
828.47	1,471	376	390

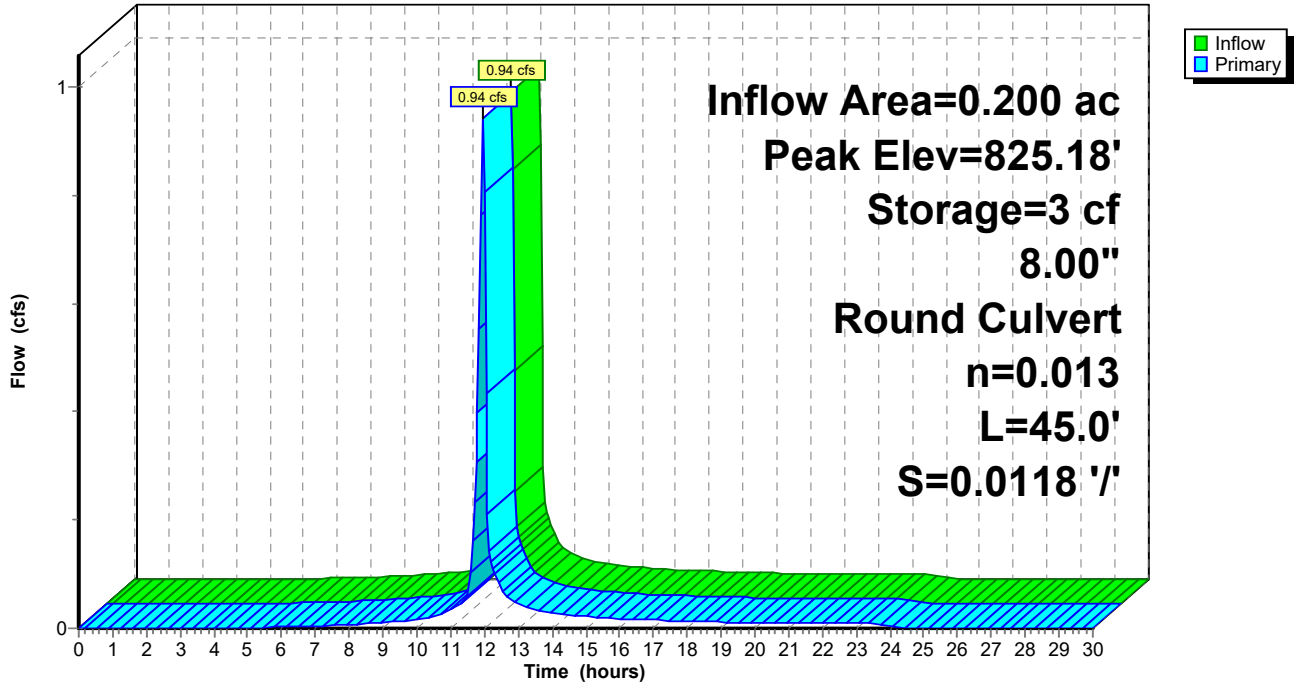
Device	Routing	Invert	Outlet Devices
#1	Primary	824.54'	<b>8.00" Round Culvert</b> L= 45.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 824.54' / 824.01' S= 0.0118 '/' Cc= 0.900 n= 0.013, Flow Area= 0.35 sf

**Primary OutFlow** Max=0.94 cfs @ 11.95 hrs HW=825.18' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.94 cfs @ 2.72 fps)

**Pond 4P: Ex CB**

Hydrograph



**91Shigh**

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Type II 24-hr 10 year Rainfall=3.74"

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**Hydrograph for Pond 4P: Ex CB**

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	824.54	0.00
1.00	0.00	0	824.54	0.00
2.00	0.00	0	824.54	0.00
3.00	0.00	0	824.54	0.00
4.00	0.00	0	824.54	0.00
5.00	0.00	0	824.55	0.00
6.00	0.00	0	824.56	0.00
7.00	0.00	0	824.57	0.00
8.00	0.01	0	824.58	0.01
9.00	0.01	0	824.59	0.01
10.00	0.02	0	824.61	0.02
11.00	<b>0.03</b>	<b>0</b>	<b>824.64</b>	<b>0.03</b>
12.00	<b>0.80</b>	<b>2</b>	<b>825.10</b>	<b>0.81</b>
13.00	0.05	0	824.66	0.05
14.00	0.03	0	824.63	0.03
15.00	0.02	0	824.62	0.02
16.00	0.02	0	824.61	0.02
17.00	0.01	0	824.60	0.01
18.00	0.01	0	824.60	0.01
19.00	0.01	0	824.60	0.01
20.00	0.01	0	824.59	0.01
21.00	0.01	0	824.59	0.01
22.00	0.01	0	824.59	0.01
23.00	0.01	0	824.59	0.01
24.00	0.01	0	824.59	0.01
25.00	0.00	0	824.54	0.00
26.00	0.00	0	824.54	0.00
27.00	0.00	0	824.54	0.00
28.00	0.00	0	824.54	0.00
29.00	0.00	0	824.54	0.00
30.00	0.00	0	824.54	0.00

**91Shigh**

Type II 24-hr 10 year Rainfall=3.74"

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**Summary for Pond 6P: Ex CB**

Inflow Area = 0.080 ac, 87.50% Impervious, Inflow Depth = 3.17" for 10 year event  
 Inflow = 0.41 cfs @ 11.95 hrs, Volume= 0.021 af  
 Outflow = 0.41 cfs @ 11.95 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min  
 Primary = 0.41 cfs @ 11.95 hrs, Volume= 0.021 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Peak Elev= 824.91' @ 11.95 hrs Surf.Area= 4 sf Storage= 1 cf

Plug-Flow detention time= 0.2 min calculated for 0.021 af (100% of inflow)  
 Center-of-Mass det. time= 0.2 min ( 772.1 - 771.9 )

Volume	Invert	Avail.Storage	Storage Description
#1	824.54'	353 cf	<b>ExCB_83-87-91 (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
824.54	4	0	0
827.96	4	14	14
828.47	1,328	340	353

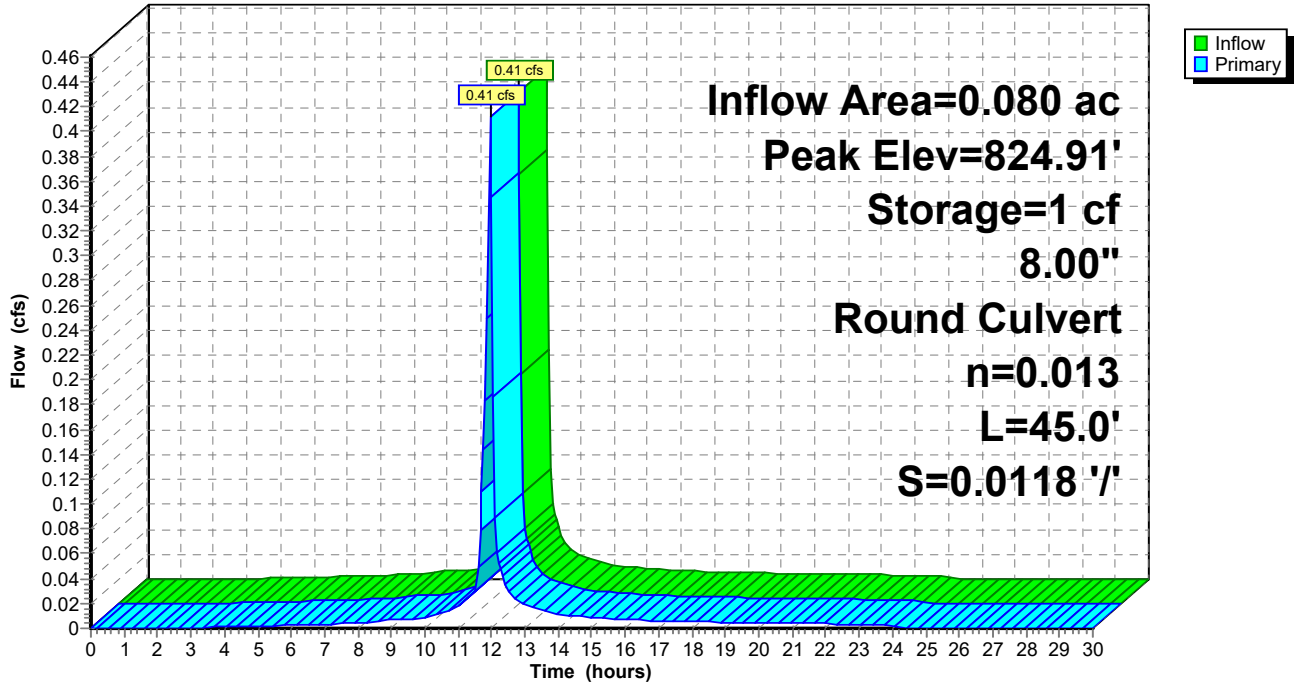
Device	Routing	Invert	Outlet Devices
#1	Primary	824.54'	<b>8.00" Round Culvert</b> L= 45.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 824.54' / 824.01' S= 0.0118 '/' Cc= 0.900 n= 0.013, Flow Area= 0.35 sf

**Primary OutFlow** Max=0.41 cfs @ 11.95 hrs HW=824.91' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.41 cfs @ 2.07 fps)

### Pond 6P: Ex CB

Hydrograph





**91Shigh**

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Type II 24-hr 10 year Rainfall=3.74"

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**Hydrograph for Pond 6P: Ex CB**

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	824.54	0.00
1.00	0.00	0	824.54	0.00
2.00	0.00	0	824.54	0.00
3.00	0.00	0	824.54	0.00
4.00	0.00	0	824.55	0.00
5.00	0.00	0	824.55	0.00
6.00	0.00	0	824.56	0.00
7.00	0.00	0	824.57	0.00
8.00	0.00	0	824.57	0.00
9.00	0.01	0	824.58	0.01
10.00	0.01	0	824.59	0.01
11.00	<b>0.02</b>	<b>0</b>	<b>824.61</b>	<b>0.02</b>
12.00	<b>0.35</b>	<b>1</b>	<b>824.88</b>	<b>0.35</b>
13.00	0.02	0	824.61	0.02
14.00	0.01	0	824.60	0.01
15.00	0.01	0	824.59	0.01
16.00	0.01	0	824.58	0.01
17.00	0.01	0	824.58	0.01
18.00	0.01	0	824.58	0.01
19.00	0.00	0	824.58	0.00
20.00	0.00	0	824.57	0.00
21.00	0.00	0	824.57	0.00
22.00	0.00	0	824.57	0.00
23.00	0.00	0	824.57	0.00
24.00	0.00	0	824.57	0.00
25.00	0.00	0	824.54	0.00
26.00	0.00	0	824.54	0.00
27.00	0.00	0	824.54	0.00
28.00	0.00	0	824.54	0.00
29.00	0.00	0	824.54	0.00
30.00	0.00	0	824.54	0.00

**Summary for Subcatchment 1S: Existing**

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

Runoff = 1.16 cfs @ 11.95 hrs, Volume= 0.057 af, Depth= 3.44"

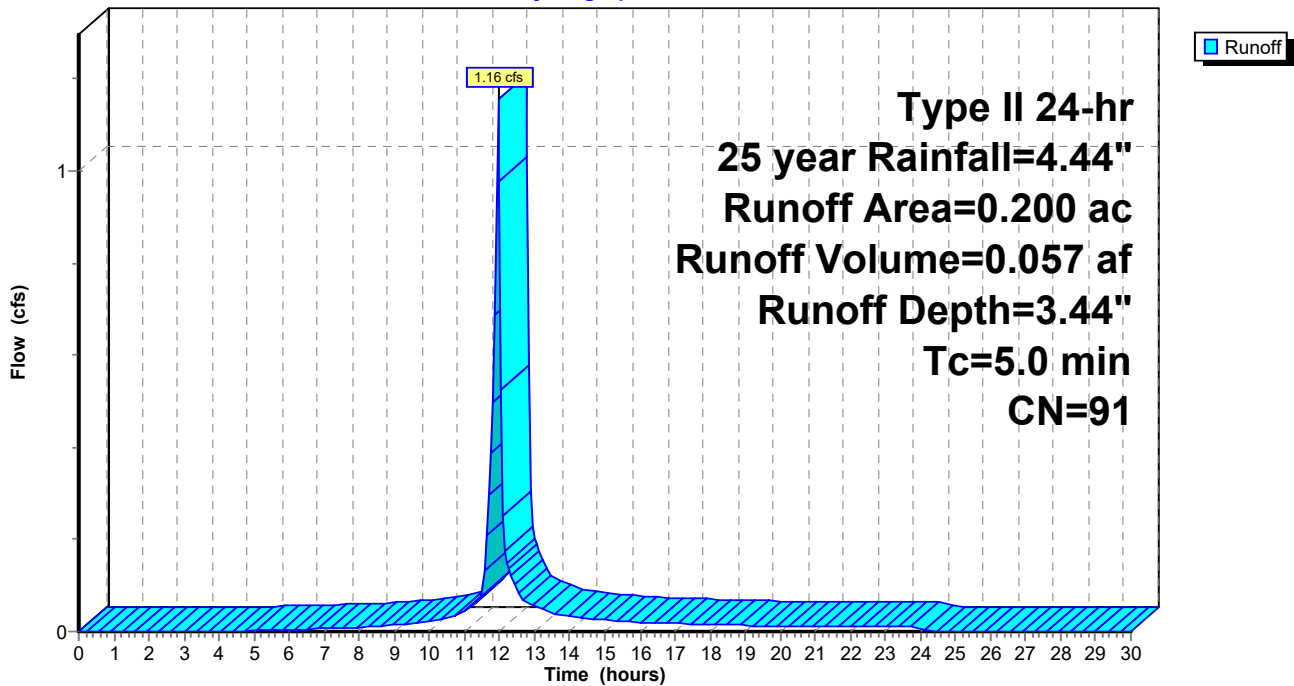
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25 year Rainfall=4.44"

Area (ac)	CN	Description
0.140	98	Paved parking, HSG D
0.060	74	>75% Grass cover, Good, HSG C
0.200	91	Weighted Average
0.060		30.00% Pervious Area
0.140		70.00% Impervious Area

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

**Subcatchment 1S: Existing**

Hydrograph



**Hydrograph for Subcatchment 1S: Existing**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	4.44	3.44	0.00
0.50	0.02	0.00	0.00	26.50	4.44	3.44	0.00
1.00	0.05	0.00	0.00	27.00	4.44	3.44	0.00
1.50	0.07	0.00	0.00	27.50	4.44	3.44	0.00
2.00	0.10	0.00	0.00	28.00	4.44	3.44	0.00
2.50	0.12	0.00	0.00	28.50	4.44	3.44	0.00
3.00	0.15	0.00	0.00	29.00	4.44	3.44	0.00
3.50	0.18	0.00	0.00	29.50	4.44	3.44	0.00
4.00	0.21	0.00	0.00	30.00	4.44	3.44	0.00
4.50	0.25	0.00	0.00				
5.00	0.28	0.01	0.00				
5.50	0.32	0.01	0.00				
6.00	0.36	0.02	0.00				
6.50	0.40	0.03	0.01				
7.00	0.44	0.05	0.01				
7.50	0.49	0.06	0.01				
8.00	0.53	0.08	0.01				
8.50	0.59	0.11	0.01				
9.00	0.65	0.14	0.01				
9.50	0.72	0.18	0.02				
10.00	0.80	0.23	0.02				
10.50	0.91	0.30	0.03				
11.00	1.04	0.39	0.04				
11.50	1.26	0.55	<b>0.08</b>				
12.00	2.94	2.02	<b>0.98</b>				
12.50	3.26	2.32	0.09				
13.00	3.43	2.47	0.05				
13.50	3.55	2.59	0.04				
14.00	3.64	2.67	0.03				
14.50	3.72	2.75	0.03				
15.00	3.79	2.82	0.03				
15.50	3.85	2.88	0.02				
16.00	3.91	2.93	0.02				
16.50	3.96	2.98	0.02				
17.00	4.00	3.02	0.02				
17.50	4.05	3.06	0.02				
18.00	4.09	3.10	0.02				
18.50	4.13	3.14	0.01				
19.00	4.16	3.17	0.01				
19.50	4.20	3.21	0.01				
20.00	4.23	3.23	0.01				
20.50	4.26	3.26	0.01				
21.00	4.28	3.29	0.01				
21.50	4.31	3.32	0.01				
22.00	4.34	3.34	0.01				
22.50	4.36	3.37	0.01				
23.00	4.39	3.39	0.01				
23.50	4.42	3.42	0.01				
24.00	<b>4.44</b>	<b>3.44</b>	0.01				
24.50	4.44	3.44	0.00				
25.00	4.44	3.44	0.00				
25.50	4.44	3.44	0.00				

**Summary for Subcatchment 5S: Prop87-91**

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

Runoff = 0.50 cfs @ 11.95 hrs, Volume= 0.026 af, Depth= 3.87"

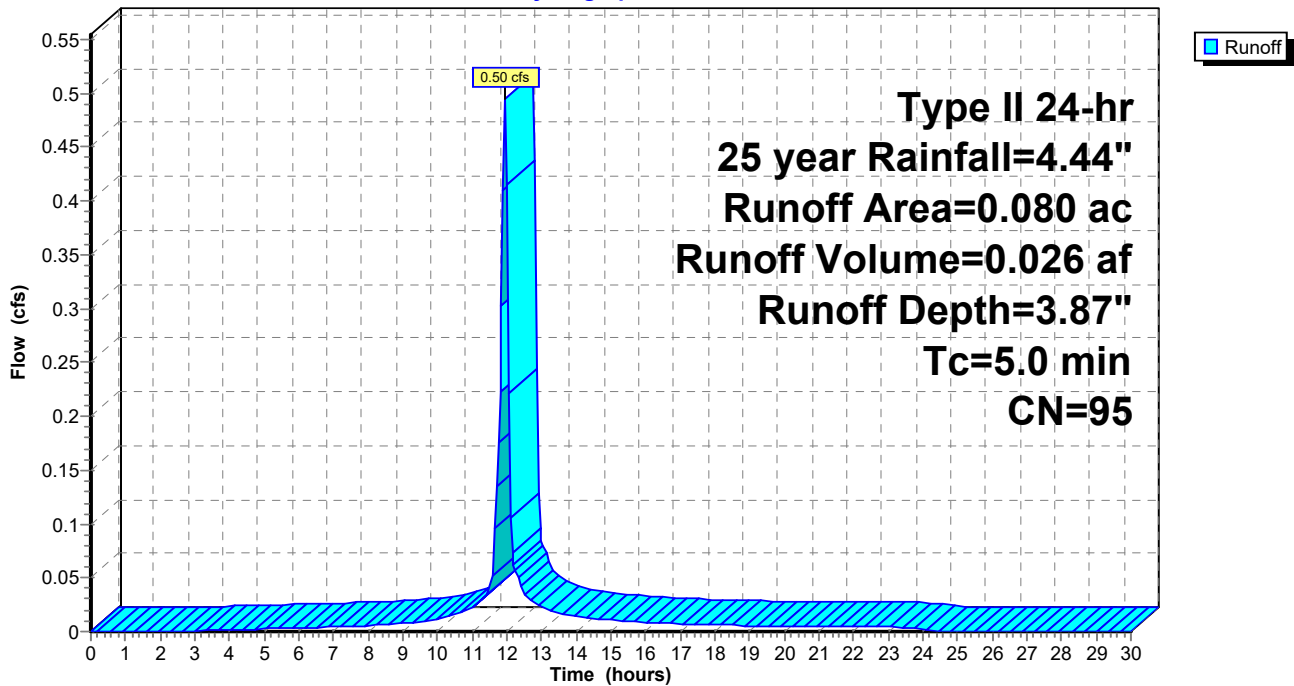
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 25 year Rainfall=4.44"

Area (ac)	CN	Description
0.070	98	Paved parking, HSG D
0.010	74	>75% Grass cover, Good, HSG C
0.080	95	Weighted Average
0.010		12.50% Pervious Area
0.070		87.50% Impervious Area

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

**Subcatchment 5S: Prop87-91**

Hydrograph



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Type II 24-hr 25 year Rainfall=4.44"

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**Hydrograph for Subcatchment 5S: Prop87-91**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	4.44	3.87	0.00
0.50	0.02	0.00	0.00	26.50	4.44	3.87	0.00
1.00	0.05	0.00	0.00	27.00	4.44	3.87	0.00
1.50	0.07	0.00	0.00	27.50	4.44	3.87	0.00
2.00	0.10	0.00	0.00	28.00	4.44	3.87	0.00
2.50	0.12	0.00	0.00	28.50	4.44	3.87	0.00
3.00	0.15	0.00	0.00	29.00	4.44	3.87	0.00
3.50	0.18	0.01	0.00	29.50	4.44	3.87	0.00
4.00	0.21	0.02	0.00	30.00	4.44	3.87	0.00
4.50	0.25	0.03	0.00				
5.00	0.28	0.04	0.00				
5.50	0.32	0.06	0.00				
6.00	0.36	0.08	0.00				
6.50	0.40	0.10	0.00				
7.00	0.44	0.13	0.00				
7.50	0.49	0.16	0.00				
8.00	0.53	0.19	0.01				
8.50	0.59	0.23	0.01				
9.00	0.65	0.28	0.01				
9.50	0.72	0.33	0.01				
10.00	0.80	0.40	0.01				
10.50	0.91	0.48	0.02				
11.00	1.04	0.60	0.02				
11.50	1.26	0.79	<b>0.04</b>				
12.00	2.94	2.39	<b>0.41</b>				
12.50	3.26	2.71	0.04				
13.00	3.43	2.87	0.02				
13.50	3.55	2.99	0.02				
14.00	3.64	3.08	0.01				
14.50	3.72	3.15	0.01				
15.00	3.79	3.22	0.01				
15.50	3.85	3.29	0.01				
16.00	3.91	3.34	0.01				
16.50	3.96	3.39	0.01				
17.00	4.00	3.43	0.01				
17.50	4.05	3.48	0.01				
18.00	4.09	3.52	0.01				
18.50	4.13	3.56	0.01				
19.00	4.16	3.59	0.01				
19.50	4.20	3.63	0.01				
20.00	4.23	3.65	0.00				
20.50	4.26	3.68	0.00				
21.00	4.28	3.71	0.00				
21.50	4.31	3.74	0.00				
22.00	4.34	3.76	0.00				
22.50	4.36	3.79	0.00				
23.00	4.39	3.82	0.00				
23.50	4.42	3.84	0.00				
24.00	<b>4.44</b>	<b>3.87</b>	0.00				
24.50	4.44	3.87	0.00				
25.00	4.44	3.87	0.00				
25.50	4.44	3.87	0.00				

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Type II 24-hr 25 year Rainfall=4.44"

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**Summary for Pond 4P: Ex CB**

Inflow Area = 0.200 ac, 70.00% Impervious, Inflow Depth = 3.44" for 25 year event  
 Inflow = 1.16 cfs @ 11.95 hrs, Volume= 0.057 af  
 Outflow = 1.15 cfs @ 11.95 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.1 min  
 Primary = 1.15 cfs @ 11.95 hrs, Volume= 0.057 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Peak Elev= 825.34' @ 11.95 hrs Surf.Area= 4 sf Storage= 3 cf

Plug-Flow detention time= 0.1 min calculated for 0.057 af (100% of inflow)  
 Center-of-Mass det. time= 0.2 min ( 786.8 - 786.6 )

Volume	Invert	Avail.Storage	Storage Description
#1	824.54'	390 cf	<b>ExCB (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
824.54	4	0	0
827.96	4	14	14
828.47	1,471	376	390

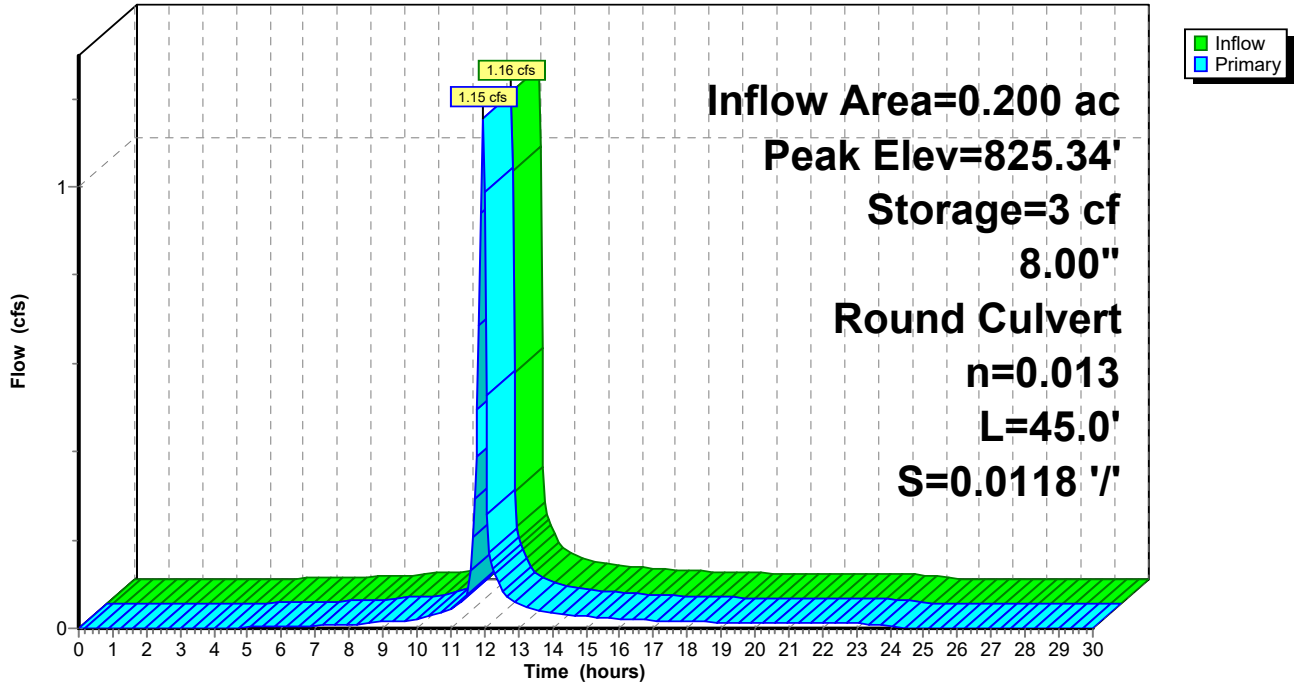
Device	Routing	Invert	Outlet Devices
#1	Primary	824.54'	<b>8.00" Round Culvert</b> L= 45.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 824.54' / 824.01' S= 0.0118 '/' Cc= 0.900 n= 0.013, Flow Area= 0.35 sf

**Primary OutFlow** Max=1.14 cfs @ 11.95 hrs HW=825.34' (Free Discharge)

↑**1=Culvert** (Inlet Controls 1.14 cfs @ 3.28 fps)

**Pond 4P: Ex CB**

Hydrograph



**91Shigh**

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Type II 24-hr 25 year Rainfall=4.44"

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**Hydrograph for Pond 4P: Ex CB**

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	824.54	0.00
1.00	0.00	0	824.54	0.00
2.00	0.00	0	824.54	0.00
3.00	0.00	0	824.54	0.00
4.00	0.00	0	824.54	0.00
5.00	0.00	0	824.56	0.00
6.00	0.00	0	824.57	0.00
7.00	0.01	0	824.58	0.01
8.00	0.01	0	824.59	0.01
9.00	0.01	0	824.60	0.01
10.00	0.02	0	824.62	0.02
11.00	<b>0.04</b>	<b>0</b>	<b>824.65</b>	<b>0.04</b>
12.00	<b>0.98</b>	<b>3</b>	<b>825.22</b>	<b>0.99</b>
13.00	0.05	1	824.67	0.06
14.00	0.03	0	824.64	0.03
15.00	0.03	0	824.63	0.03
16.00	0.02	0	824.62	0.02
17.00	0.02	0	824.61	0.02
18.00	0.02	0	824.61	0.02
19.00	0.01	0	824.60	0.01
20.00	0.01	0	824.60	0.01
21.00	0.01	0	824.59	0.01
22.00	0.01	0	824.59	0.01
23.00	0.01	0	824.59	0.01
24.00	0.01	0	824.59	0.01
25.00	0.00	0	824.54	0.00
26.00	0.00	0	824.54	0.00
27.00	0.00	0	824.54	0.00
28.00	0.00	0	824.54	0.00
29.00	0.00	0	824.54	0.00
30.00	0.00	0	824.54	0.00



**91Shigh**

Type II 24-hr 25 year Rainfall=4.44"

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**Summary for Pond 6P: Ex CB**

Inflow Area = 0.080 ac, 87.50% Impervious, Inflow Depth = 3.87" for 25 year event  
 Inflow = 0.50 cfs @ 11.95 hrs, Volume= 0.026 af  
 Outflow = 0.49 cfs @ 11.95 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.0 min  
 Primary = 0.49 cfs @ 11.95 hrs, Volume= 0.026 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Peak Elev= 824.95' @ 11.95 hrs Surf.Area= 4 sf Storage= 2 cf

Plug-Flow detention time= 0.2 min calculated for 0.026 af (100% of inflow)  
 Center-of-Mass det. time= 0.2 min ( 767.2 - 766.9 )

Volume	Invert	Avail.Storage	Storage Description
#1	824.54'	353 cf	<b>ExCB_83-87-91 (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
824.54	4	0	0
827.96	4	14	14
828.47	1,328	340	353

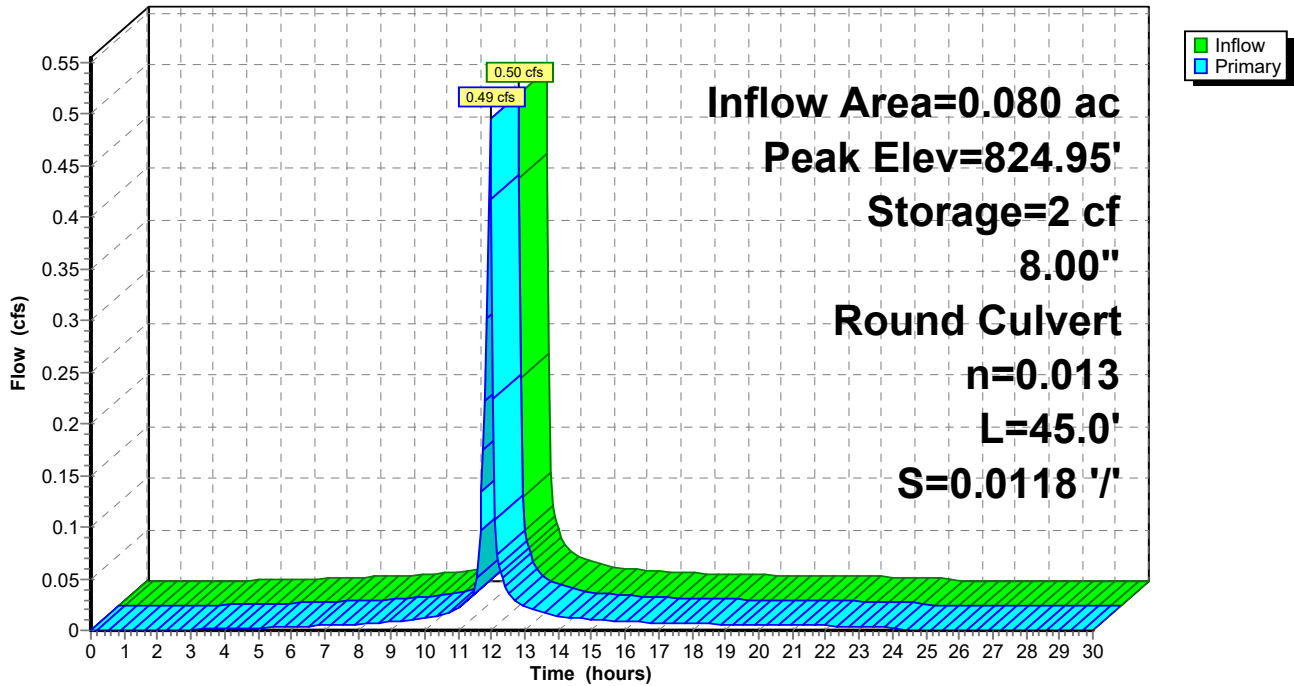
Device	Routing	Invert	Outlet Devices
#1	Primary	824.54'	<b>8.00" Round Culvert</b> L= 45.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 824.54' / 824.01' S= 0.0118 '/' Cc= 0.900 n= 0.013, Flow Area= 0.35 sf

**Primary OutFlow** Max=0.49 cfs @ 11.95 hrs HW=824.95' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.49 cfs @ 2.18 fps)

### Pond 6P: Ex CB

Hydrograph



**91Shigh**

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Type II 24-hr 25 year Rainfall=4.44"

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**Hydrograph for Pond 6P: Ex CB**

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	824.54	0.00
1.00	0.00	0	824.54	0.00
2.00	0.00	0	824.54	0.00
3.00	0.00	0	824.55	0.00
4.00	0.00	0	824.55	0.00
5.00	0.00	0	824.56	0.00
6.00	0.00	0	824.57	0.00
7.00	0.00	0	824.58	0.00
8.00	0.01	0	824.58	0.01
9.00	0.01	0	824.59	0.01
10.00	0.01	0	824.60	0.01
11.00	<b>0.02</b>	<b>0</b>	<b>824.62</b>	<b>0.02</b>
12.00	<b>0.41</b>	<b>1</b>	<b>824.91</b>	<b>0.42</b>
13.00	0.02	0	824.62	0.02
14.00	0.01	0	824.60	0.01
15.00	0.01	0	824.59	0.01
16.00	0.01	0	824.59	0.01
17.00	0.01	0	824.59	0.01
18.00	0.01	0	824.58	0.01
19.00	0.01	0	824.58	0.01
20.00	0.00	0	824.58	0.00
21.00	0.00	0	824.58	0.00
22.00	0.00	0	824.57	0.00
23.00	0.00	0	824.57	0.00
24.00	0.00	0	824.57	0.00
25.00	0.00	0	824.54	0.00
26.00	0.00	0	824.54	0.00
27.00	0.00	0	824.54	0.00
28.00	0.00	0	824.54	0.00
29.00	0.00	0	824.54	0.00
30.00	0.00	0	824.54	0.00

**Summary for Subcatchment 1S: Existing**

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

Runoff = 1.33 cfs @ 11.95 hrs, Volume= 0.067 af, Depth= 4.00"

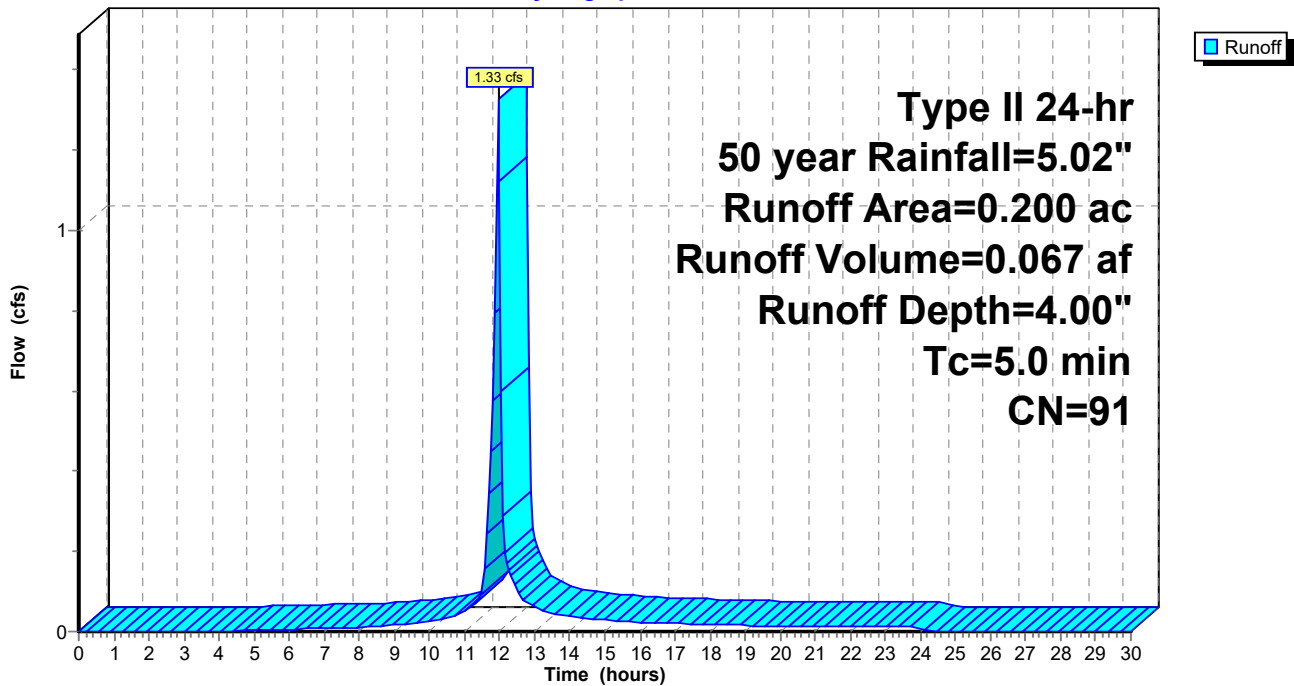
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 50 year Rainfall=5.02"

Area (ac)	CN	Description
0.140	98	Paved parking, HSG D
0.060	74	>75% Grass cover, Good, HSG C
0.200	91	Weighted Average
0.060		30.00% Pervious Area
0.140		70.00% Impervious Area

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

**Subcatchment 1S: Existing**

Hydrograph



**Hydrograph for Subcatchment 1S: Existing**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	5.02	4.00	0.00
0.50	0.03	0.00	0.00	26.50	5.02	4.00	0.00
1.00	0.05	0.00	0.00	27.00	5.02	4.00	0.00
1.50	0.08	0.00	0.00	27.50	5.02	4.00	0.00
2.00	0.11	0.00	0.00	28.00	5.02	4.00	0.00
2.50	0.14	0.00	0.00	28.50	5.02	4.00	0.00
3.00	0.17	0.00	0.00	29.00	5.02	4.00	0.00
3.50	0.21	0.00	0.00	29.50	5.02	4.00	0.00
4.00	0.24	0.00	0.00	30.00	5.02	4.00	0.00
4.50	0.28	0.01	0.00				
5.00	0.32	0.01	0.00				
5.50	0.36	0.02	0.00				
6.00	0.40	0.03	0.01				
6.50	0.45	0.05	0.01				
7.00	0.50	0.07	0.01				
7.50	0.55	0.09	0.01				
8.00	0.60	0.12	0.01				
8.50	0.66	0.15	0.01				
9.00	0.74	0.19	0.02				
9.50	0.82	0.24	0.02				
10.00	0.91	0.30	0.03				
10.50	1.02	0.38	0.04				
11.00	1.18	0.49	0.05				
11.50	1.42	0.68	<b>0.09</b>				
12.00	3.33	2.38	<b>1.12</b>				
12.50	3.69	2.72	0.10				
13.00	3.88	2.90	0.06				
13.50	4.01	3.03	0.05				
14.00	4.12	3.13	0.04				
14.50	4.20	3.21	0.03				
15.00	4.28	3.29	0.03				
15.50	4.36	3.36	0.03				
16.00	4.42	3.42	0.02				
16.50	4.47	3.47	0.02				
17.00	4.53	3.52	0.02				
17.50	4.58	3.57	0.02				
18.00	4.62	3.62	0.02				
18.50	4.67	3.66	0.02				
19.00	4.71	3.70	0.02				
19.50	4.74	3.73	0.01				
20.00	4.78	3.77	0.01				
20.50	4.81	3.80	0.01				
21.00	4.84	3.83	0.01				
21.50	4.87	3.86	0.01				
22.00	4.90	3.89	0.01				
22.50	4.93	3.92	0.01				
23.00	4.96	3.95	0.01				
23.50	4.99	3.97	0.01				
24.00	<b>5.02</b>	<b>4.00</b>	0.01				
24.50	5.02	4.00	0.00				
25.00	5.02	4.00	0.00				
25.50	5.02	4.00	0.00				

**Summary for Subcatchment 5S: Prop87-91**

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

Runoff = 0.56 cfs @ 11.95 hrs, Volume= 0.030 af, Depth= 4.44"

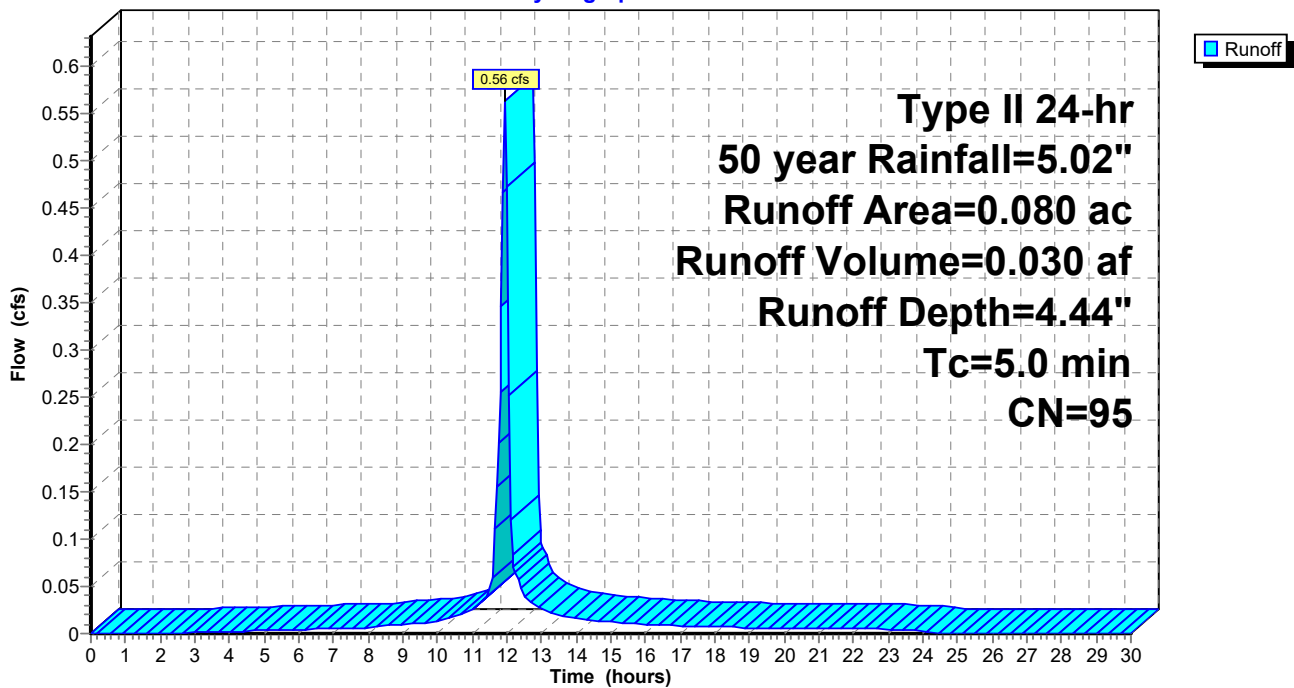
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 50 year Rainfall=5.02"

Area (ac)	CN	Description
0.070	98	Paved parking, HSG D
0.010	74	>75% Grass cover, Good, HSG C
0.080	95	Weighted Average
0.010		12.50% Pervious Area
0.070		87.50% Impervious Area

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

**Subcatchment 5S: Prop87-91**

Hydrograph



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Type II 24-hr 50 year Rainfall=5.02"

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**Hydrograph for Subcatchment 5S: Prop87-91**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	5.02	4.44	0.00
0.50	0.03	0.00	0.00	26.50	5.02	4.44	0.00
1.00	0.05	0.00	0.00	27.00	5.02	4.44	0.00
1.50	0.08	0.00	0.00	27.50	5.02	4.44	0.00
2.00	0.11	0.00	0.00	28.00	5.02	4.44	0.00
2.50	0.14	0.00	0.00	28.50	5.02	4.44	0.00
3.00	0.17	0.01	0.00	29.00	5.02	4.44	0.00
3.50	0.21	0.02	0.00	29.50	5.02	4.44	0.00
4.00	0.24	0.03	0.00	30.00	5.02	4.44	0.00
4.50	0.28	0.04	0.00				
5.00	0.32	0.06	0.00				
5.50	0.36	0.08	0.00				
6.00	0.40	0.11	0.00				
6.50	0.45	0.14	0.00				
7.00	0.50	0.17	0.01				
7.50	0.55	0.20	0.01				
8.00	0.60	0.24	0.01				
8.50	0.66	0.29	0.01				
9.00	0.74	0.35	0.01				
9.50	0.82	0.41	0.01				
10.00	0.91	0.49	0.01				
10.50	1.02	0.58	0.02				
11.00	1.18	0.72	0.02				
11.50	1.42	0.94	<b>0.04</b>				
12.00	3.33	2.77	<b>0.47</b>				
12.50	3.69	3.13	0.04				
13.00	3.88	3.31	0.03				
13.50	4.01	3.44	0.02				
14.00	4.12	3.55	0.02				
14.50	4.20	3.63	0.01				
15.00	4.28	3.71	0.01				
15.50	4.36	3.78	0.01				
16.00	4.42	3.84	0.01				
16.50	4.47	3.90	0.01				
17.00	4.53	3.95	0.01				
17.50	4.58	4.00	0.01				
18.00	4.62	4.05	0.01				
18.50	4.67	4.09	0.01				
19.00	4.71	4.13	0.01				
19.50	4.74	4.17	0.01				
20.00	4.78	4.20	0.01				
20.50	4.81	4.23	0.01				
21.00	4.84	4.26	0.01				
21.50	4.87	4.29	0.00				
22.00	4.90	4.32	0.00				
22.50	4.93	4.35	0.00				
23.00	4.96	4.38	0.00				
23.50	4.99	4.41	0.00				
24.00	<b>5.02</b>	<b>4.44</b>	0.00				
24.50	5.02	4.44	0.00				
25.00	5.02	4.44	0.00				
25.50	5.02	4.44	0.00				

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Type II 24-hr 50 year Rainfall=5.02"

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**Summary for Pond 4P: Ex CB**

Inflow Area = 0.200 ac, 70.00% Impervious, Inflow Depth = 4.00" for 50 year event  
 Inflow = 1.33 cfs @ 11.95 hrs, Volume= 0.067 af  
 Outflow = 1.33 cfs @ 11.95 hrs, Volume= 0.067 af, Atten= 0%, Lag= 0.1 min  
 Primary = 1.33 cfs @ 11.95 hrs, Volume= 0.067 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Peak Elev= 825.56' @ 11.95 hrs Surf.Area= 4 sf Storage= 4 cf

Plug-Flow detention time= 0.1 min calculated for 0.067 af (100% of inflow)  
 Center-of-Mass det. time= 0.1 min ( 782.6 - 782.5 )

Volume	Invert	Avail.Storage	Storage Description
#1	824.54'	390 cf	<b>ExCB (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
824.54	4	0	0
827.96	4	14	14
828.47	1,471	376	390

Device	Routing	Invert	Outlet Devices
#1	Primary	824.54'	<b>8.00" Round Culvert</b> L= 45.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 824.54' / 824.01' S= 0.0118 '/' Cc= 0.900 n= 0.013, Flow Area= 0.35 sf

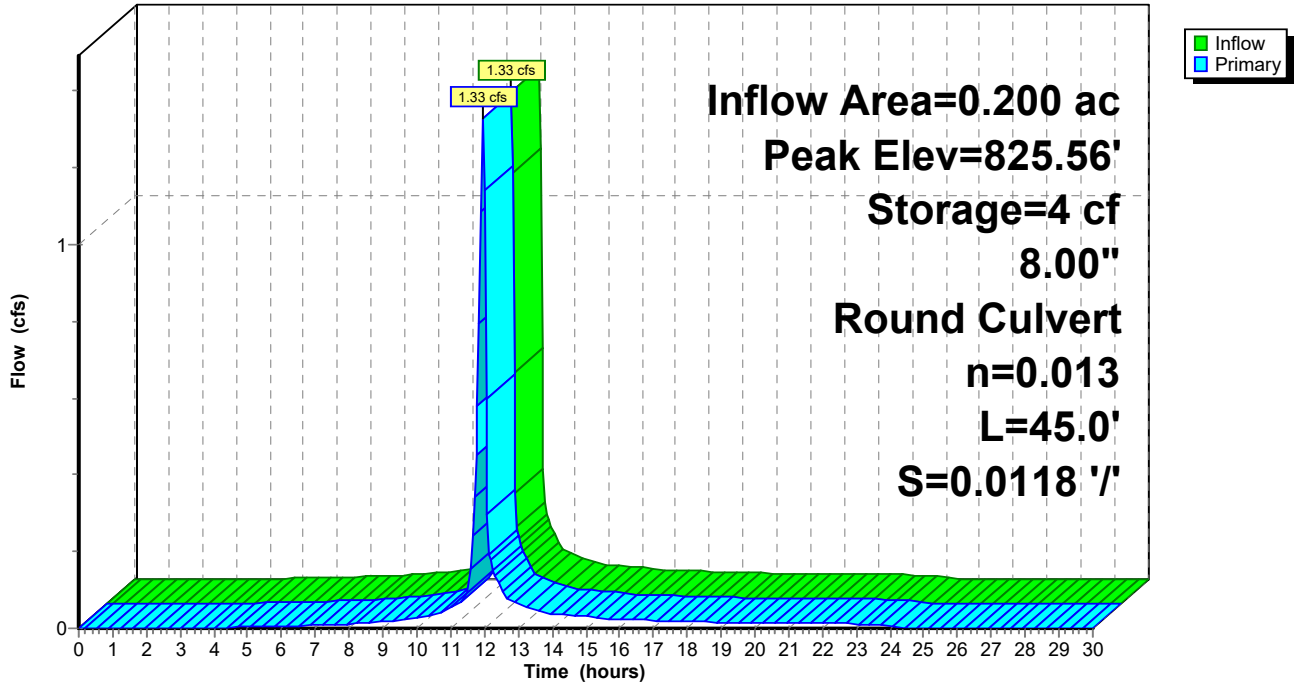
**Primary OutFlow** Max=1.32 cfs @ 11.95 hrs HW=825.54' (Free Discharge)

↑**1=Culvert** (Barrel Controls 1.32 cfs @ 3.77 fps)



Pond 4P: Ex CB

Hydrograph



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*Type II 24-hr 50 year Rainfall=5.02"*

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**Hydrograph for Pond 4P: Ex CB**

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	824.54	0.00
1.00	0.00	0	824.54	0.00
2.00	0.00	0	824.54	0.00
3.00	0.00	0	824.54	0.00
4.00	0.00	0	824.55	0.00
5.00	0.00	0	824.57	0.00
6.00	0.01	0	824.58	0.01
7.00	0.01	0	824.59	0.01
8.00	0.01	0	824.59	0.01
9.00	0.02	0	824.61	0.02
10.00	0.03	0	824.63	0.03
11.00	<b>0.05</b>	<b>0</b>	<b>824.66</b>	<b>0.05</b>
12.00	<b>1.12</b>	<b>3</b>	<b>825.33</b>	<b>1.14</b>
13.00	0.06	1	824.68	0.06
14.00	0.04	0	824.64	0.04
15.00	0.03	0	824.63	0.03
16.00	0.02	0	824.62	0.02
17.00	0.02	0	824.62	0.02
18.00	0.02	0	824.61	0.02
19.00	0.02	0	824.61	0.02
20.00	0.01	0	824.60	0.01
21.00	0.01	0	824.60	0.01
22.00	0.01	0	824.60	0.01
23.00	0.01	0	824.60	0.01
24.00	0.01	0	824.59	0.01
25.00	0.00	0	824.54	0.00
26.00	0.00	0	824.54	0.00
27.00	0.00	0	824.54	0.00
28.00	0.00	0	824.54	0.00
29.00	0.00	0	824.54	0.00
30.00	0.00	0	824.54	0.00

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Type II 24-hr 50 year Rainfall=5.02"

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**Summary for Pond 6P: Ex CB**

Inflow Area = 0.080 ac, 87.50% Impervious, Inflow Depth = 4.44" for 50 year event  
 Inflow = 0.56 cfs @ 11.95 hrs, Volume= 0.030 af  
 Outflow = 0.56 cfs @ 11.95 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min  
 Primary = 0.56 cfs @ 11.95 hrs, Volume= 0.030 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Peak Elev= 824.99' @ 11.95 hrs Surf.Area= 4 sf Storage= 2 cf

Plug-Flow detention time= 0.2 min calculated for 0.030 af (100% of inflow)  
 Center-of-Mass det. time= 0.2 min ( 763.8 - 763.6 )

Volume	Invert	Avail.Storage	Storage Description
#1	824.54'	353 cf	<b>ExCB_83-87-91 (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
824.54	4	0	0
827.96	4	14	14
828.47	1,328	340	353

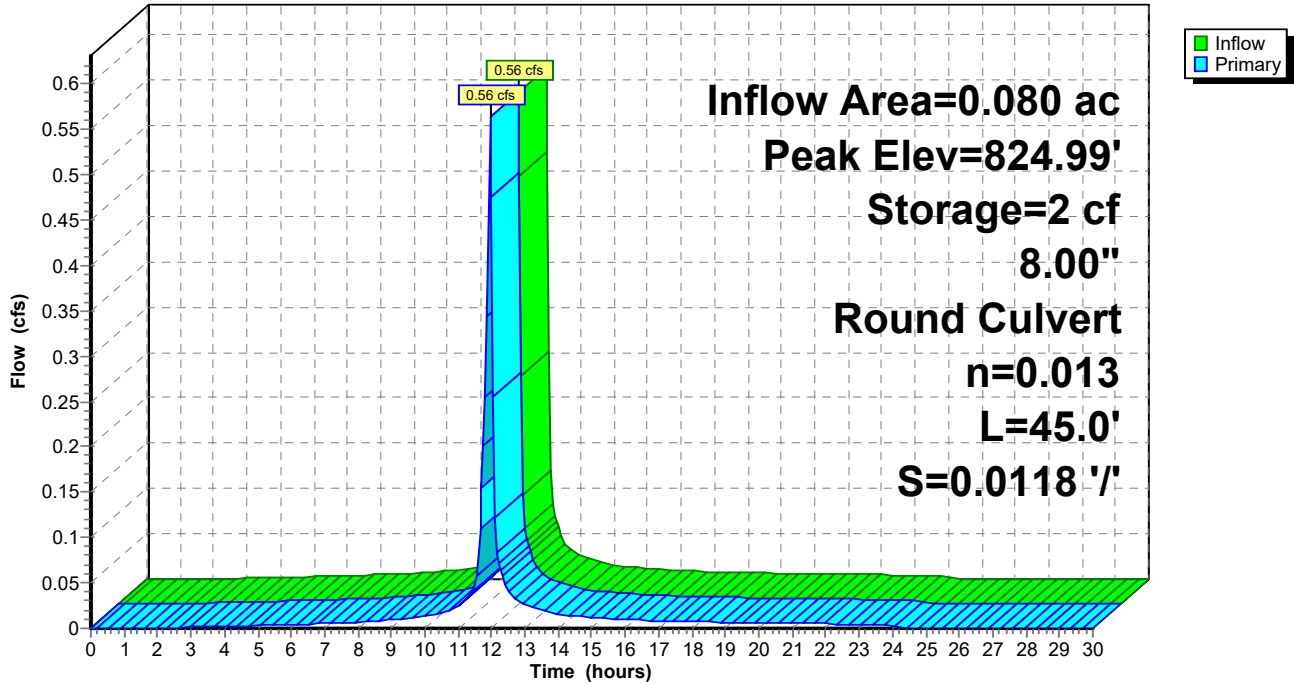
Device	Routing	Invert	Outlet Devices
#1	Primary	824.54'	<b>8.00" Round Culvert</b> L= 45.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 824.54' / 824.01' S= 0.0118 '/' Cc= 0.900 n= 0.013, Flow Area= 0.35 sf

**Primary OutFlow** Max=0.56 cfs @ 11.95 hrs HW=824.98' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 0.56 cfs @ 2.27 fps)

### Pond 6P: Ex CB

Hydrograph



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Type II 24-hr 50 year Rainfall=5.02"

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**Hydrograph for Pond 6P: Ex CB**

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	824.54	0.00
1.00	0.00	0	824.54	0.00
2.00	0.00	0	824.54	0.00
3.00	0.00	0	824.55	0.00
4.00	0.00	0	824.56	0.00
5.00	0.00	0	824.57	0.00
6.00	0.00	0	824.57	0.00
7.00	0.01	0	824.58	0.01
8.00	0.01	0	824.58	0.01
9.00	0.01	0	824.59	0.01
10.00	0.01	0	824.60	0.01
11.00	<b>0.02</b>	<b>0</b>	<b>824.62</b>	<b>0.02</b>
12.00	<b>0.47</b>	<b>2</b>	<b>824.94</b>	<b>0.47</b>
13.00	0.03	0	824.63	0.03
14.00	0.02	0	824.61	0.02
15.00	0.01	0	824.60	0.01
16.00	0.01	0	824.59	0.01
17.00	0.01	0	824.59	0.01
18.00	0.01	0	824.59	0.01
19.00	0.01	0	824.58	0.01
20.00	0.01	0	824.58	0.01
21.00	0.01	0	824.58	0.01
22.00	0.00	0	824.58	0.00
23.00	0.00	0	824.58	0.00
24.00	0.00	0	824.58	0.00
25.00	0.00	0	824.54	0.00
26.00	0.00	0	824.54	0.00
27.00	0.00	0	824.54	0.00
28.00	0.00	0	824.54	0.00
29.00	0.00	0	824.54	0.00
30.00	0.00	0	824.54	0.00

**Summary for Subcatchment 1S: Existing**

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

Runoff = 1.52 cfs @ 11.95 hrs, Volume= 0.077 af, Depth= 4.60"

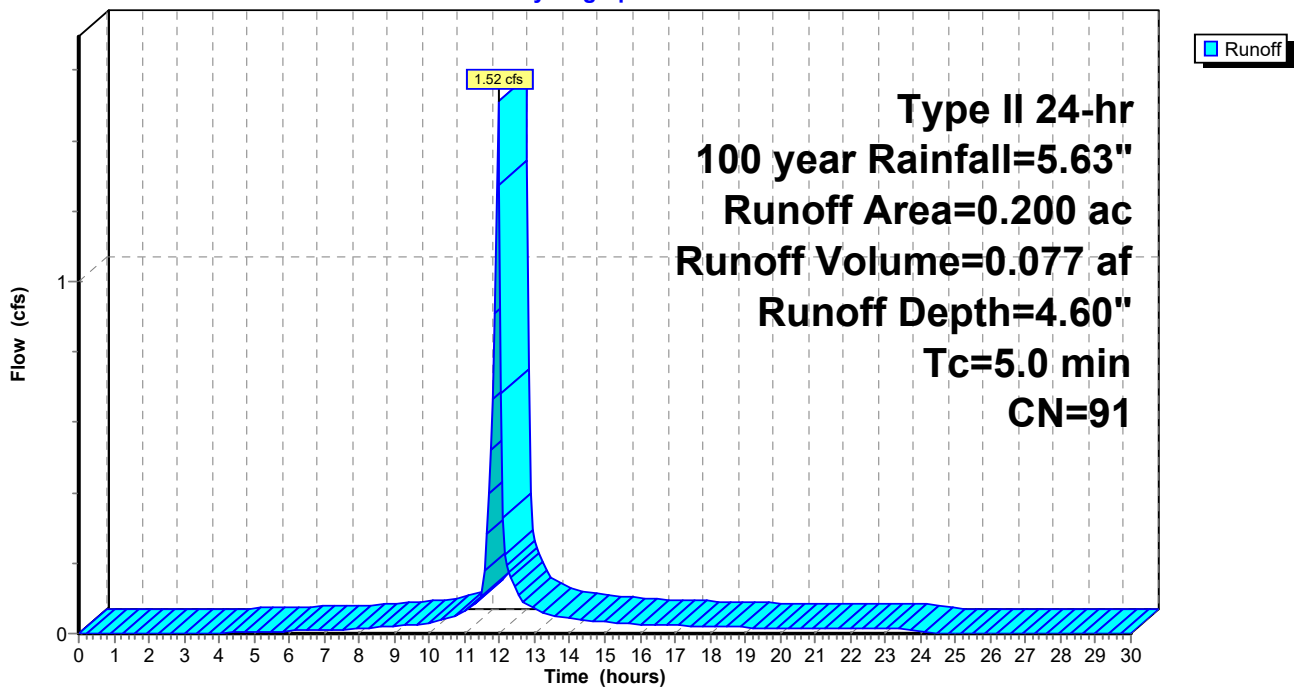
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100 year Rainfall=5.63"

Area (ac)	CN	Description
0.140	98	Paved parking, HSG D
0.060	74	>75% Grass cover, Good, HSG C
0.200	91	Weighted Average
0.060		30.00% Pervious Area
0.140		70.00% Impervious Area

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

**Subcatchment 1S: Existing**

Hydrograph



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Type II 24-hr 100 year Rainfall=5.63"

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**Hydrograph for Subcatchment 1S: Existing**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	5.63	4.60	0.00
0.50	0.03	0.00	0.00	26.50	5.63	4.60	0.00
1.00	0.06	0.00	0.00	27.00	5.63	4.60	0.00
1.50	0.09	0.00	0.00	27.50	5.63	4.60	0.00
2.00	0.12	0.00	0.00	28.00	5.63	4.60	0.00
2.50	0.16	0.00	0.00	28.50	5.63	4.60	0.00
3.00	0.19	0.00	0.00	29.00	5.63	4.60	0.00
3.50	0.23	0.00	0.00	29.50	5.63	4.60	0.00
4.00	0.27	0.00	0.00	30.00	5.63	4.60	0.00
4.50	0.31	0.01	0.00				
5.00	0.35	0.02	0.00				
5.50	0.40	0.03	0.01				
6.00	0.45	0.05	0.01				
6.50	0.50	0.07	0.01				
7.00	0.56	0.10	0.01				
7.50	0.62	0.12	0.01				
8.00	0.68	0.16	0.01				
8.50	0.74	0.19	0.02				
9.00	0.83	0.25	0.02				
9.50	0.92	0.30	0.02				
10.00	1.02	0.37	0.03				
10.50	1.15	0.47	0.04				
11.00	1.32	0.60	0.06				
11.50	1.59	0.82	<b>0.10</b>				
12.00	3.73	2.76	<b>1.28</b>				
12.50	4.14	3.15	0.11				
13.00	4.35	3.35	0.07				
13.50	4.50	3.50	0.05				
14.00	4.62	3.61	0.04				
14.50	4.72	3.71	0.04				
15.00	4.81	3.79	0.03				
15.50	4.88	3.87	0.03				
16.00	4.95	3.94	0.03				
16.50	5.02	4.00	0.02				
17.00	5.08	4.06	0.02				
17.50	5.13	4.11	0.02				
18.00	5.19	4.16	0.02				
18.50	5.23	4.21	0.02				
19.00	5.28	4.25	0.02				
19.50	5.32	4.29	0.02				
20.00	5.36	4.33	0.01				
20.50	5.40	4.37	0.01				
21.00	5.43	4.40	0.01				
21.50	5.47	4.44	0.01				
22.00	5.50	4.47	0.01				
22.50	5.53	4.50	0.01				
23.00	5.57	4.53	0.01				
23.50	5.60	4.56	0.01				
24.00	<b>5.63</b>	<b>4.60</b>	0.01				
24.50	5.63	4.60	0.00				
25.00	5.63	4.60	0.00				
25.50	5.63	4.60	0.00				

**Summary for Subcatchment 5S: Prop87-91**

[49] Hint:  $T_c < 2dt$  may require smaller dt

Runoff = 0.64 cfs @ 11.95 hrs, Volume= 0.034 af, Depth= 5.04"

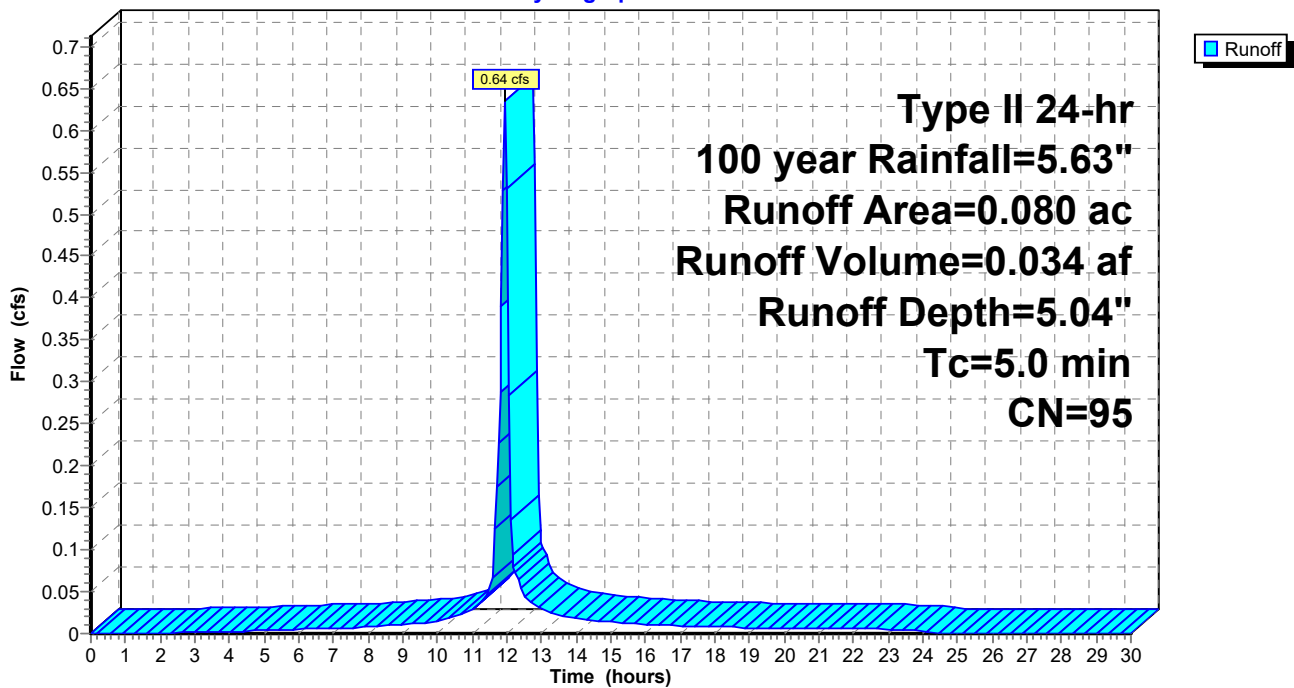
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 100 year Rainfall=5.63"

Area (ac)	CN	Description
0.070	98	Paved parking, HSG D
0.010	74	>75% Grass cover, Good, HSG C
0.080	95	Weighted Average
0.010		12.50% Pervious Area
0.070		87.50% Impervious Area

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

**Subcatchment 5S: Prop87-91**

Hydrograph





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Type II 24-hr 100 year Rainfall=5.63"

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**Hydrograph for Subcatchment 5S: Prop87-91**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	5.63	5.04	0.00
0.50	0.03	0.00	0.00	26.50	5.63	5.04	0.00
1.00	0.06	0.00	0.00	27.00	5.63	5.04	0.00
1.50	0.09	0.00	0.00	27.50	5.63	5.04	0.00
2.00	0.12	0.00	0.00	28.00	5.63	5.04	0.00
2.50	0.16	0.00	0.00	28.50	5.63	5.04	0.00
3.00	0.19	0.01	0.00	29.00	5.63	5.04	0.00
3.50	0.23	0.02	0.00	29.50	5.63	5.04	0.00
4.00	0.27	0.04	0.00	30.00	5.63	5.04	0.00
4.50	0.31	0.06	0.00				
5.00	0.35	0.08	0.00				
5.50	0.40	0.11	0.00				
6.00	0.45	0.14	0.01				
6.50	0.50	0.17	0.01				
7.00	0.56	0.21	0.01				
7.50	0.62	0.25	0.01				
8.00	0.68	0.30	0.01				
8.50	0.74	0.35	0.01				
9.00	0.83	0.42	0.01				
9.50	0.92	0.49	0.01				
10.00	1.02	0.58	0.02				
10.50	1.15	0.69	0.02				
11.00	1.32	0.85	0.03				
11.50	1.59	1.10	<b>0.05</b>				
12.00	3.73	3.17	<b>0.53</b>				
12.50	4.14	3.57	0.05				
13.00	4.35	3.77	0.03				
13.50	4.50	3.92	0.02				
14.00	4.62	4.04	0.02				
14.50	4.72	4.14	0.02				
15.00	4.81	4.23	0.01				
15.50	4.88	4.31	0.01				
16.00	4.95	4.37	0.01				
16.50	5.02	4.44	0.01				
17.00	5.08	4.50	0.01				
17.50	5.13	4.55	0.01				
18.00	5.19	4.60	0.01				
18.50	5.23	4.65	0.01				
19.00	5.28	4.70	0.01				
19.50	5.32	4.74	0.01				
20.00	5.36	4.78	0.01				
20.50	5.40	4.81	0.01				
21.00	5.43	4.85	0.01				
21.50	5.47	4.88	0.01				
22.00	5.50	4.92	0.01				
22.50	5.53	4.95	0.01				
23.00	5.57	4.98	0.01				
23.50	5.60	5.01	0.01				
24.00	<b>5.63</b>	<b>5.04</b>	0.00				
24.50	5.63	5.04	0.00				
25.00	5.63	5.04	0.00				
25.50	5.63	5.04	0.00				

**91Shigh**

Type II 24-hr 100 year Rainfall=5.63"

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**Summary for Pond 4P: Ex CB**

Inflow Area = 0.200 ac, 70.00% Impervious, Inflow Depth = 4.60" for 100 year event  
 Inflow = 1.52 cfs @ 11.95 hrs, Volume= 0.077 af  
 Outflow = 1.51 cfs @ 11.95 hrs, Volume= 0.077 af, Atten= 0%, Lag= 0.1 min  
 Primary = 1.51 cfs @ 11.95 hrs, Volume= 0.077 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Peak Elev= 825.82' @ 11.95 hrs Surf.Area= 4 sf Storage= 5 cf

Plug-Flow detention time= 0.1 min calculated for 0.076 af (100% of inflow)  
 Center-of-Mass det. time= 0.1 min ( 778.9 - 778.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	824.54'	390 cf	<b>ExCB (Prismatic)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
824.54	4	0	0
827.96	4	14	14
828.47	1,471	376	390

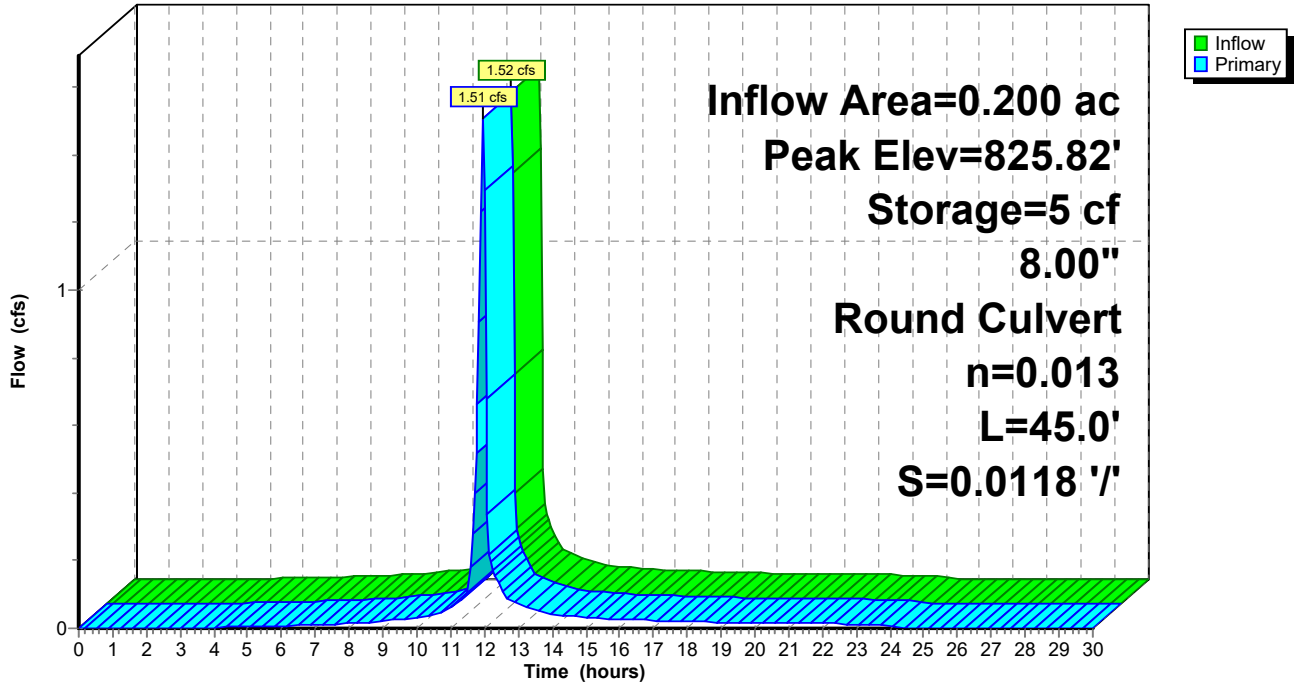
Device	Routing	Invert	Outlet Devices
#1	Primary	824.54'	<b>8.00" Round Culvert</b> L= 45.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 824.54' / 824.01' S= 0.0118 '/' Cc= 0.900 n= 0.013, Flow Area= 0.35 sf

**Primary OutFlow** Max=1.50 cfs @ 11.95 hrs HW=825.80' (Free Discharge)

↑**1=Culvert** (Barrel Controls 1.50 cfs @ 4.28 fps)

**Pond 4P: Ex CB**

Hydrograph



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Type II 24-hr 100 year Rainfall=5.63"

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**Hydrograph for Pond 4P: Ex CB**

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	824.54	0.00
1.00	0.00	0	824.54	0.00
2.00	0.00	0	824.54	0.00
3.00	0.00	0	824.54	0.00
4.00	0.00	0	824.56	0.00
5.00	0.00	0	824.58	0.00
6.00	0.01	0	824.59	0.01
7.00	0.01	0	824.59	0.01
8.00	0.01	0	824.60	0.01
9.00	0.02	0	824.62	0.02
10.00	0.03	0	824.63	0.03
11.00	<b>0.06</b>	<b>1</b>	<b>824.67</b>	<b>0.06</b>
12.00	<b>1.28</b>	<b>4</b>	<b>825.52</b>	<b>1.30</b>
13.00	0.07	1	824.68	0.07
14.00	0.04	0	824.65	0.04
15.00	0.03	0	824.64	0.03
16.00	0.03	0	824.63	0.03
17.00	0.02	0	824.62	0.02
18.00	0.02	0	824.62	0.02
19.00	0.02	0	824.61	0.02
20.00	0.01	0	824.60	0.01
21.00	0.01	0	824.60	0.01
22.00	0.01	0	824.60	0.01
23.00	0.01	0	824.60	0.01
24.00	0.01	0	824.60	0.01
25.00	0.00	0	824.54	0.00
26.00	0.00	0	824.54	0.00
27.00	0.00	0	824.54	0.00
28.00	0.00	0	824.54	0.00
29.00	0.00	0	824.54	0.00
30.00	0.00	0	824.54	0.00

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Type II 24-hr 100 year Rainfall=5.63"

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**Summary for Pond 6P: Ex CB**

Inflow Area = 0.080 ac, 87.50% Impervious, Inflow Depth = 5.04" for 100 year event  
 Inflow = 0.64 cfs @ 11.95 hrs, Volume= 0.034 af  
 Outflow = 0.63 cfs @ 11.95 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min  
 Primary = 0.63 cfs @ 11.95 hrs, Volume= 0.034 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs  
 Peak Elev= 825.02' @ 11.95 hrs Surf.Area= 4 sf Storage= 2 cf

Plug-Flow detention time= 0.2 min calculated for 0.034 af (100% of inflow)  
 Center-of-Mass det. time= 0.2 min ( 760.8 - 760.6 )

Volume	Invert	Avail.Storage	Storage Description
#1	824.54'	353 cf	<b>ExCB_83-87-91 (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
824.54	4	0	0
827.96	4	14	14
828.47	1,328	340	353

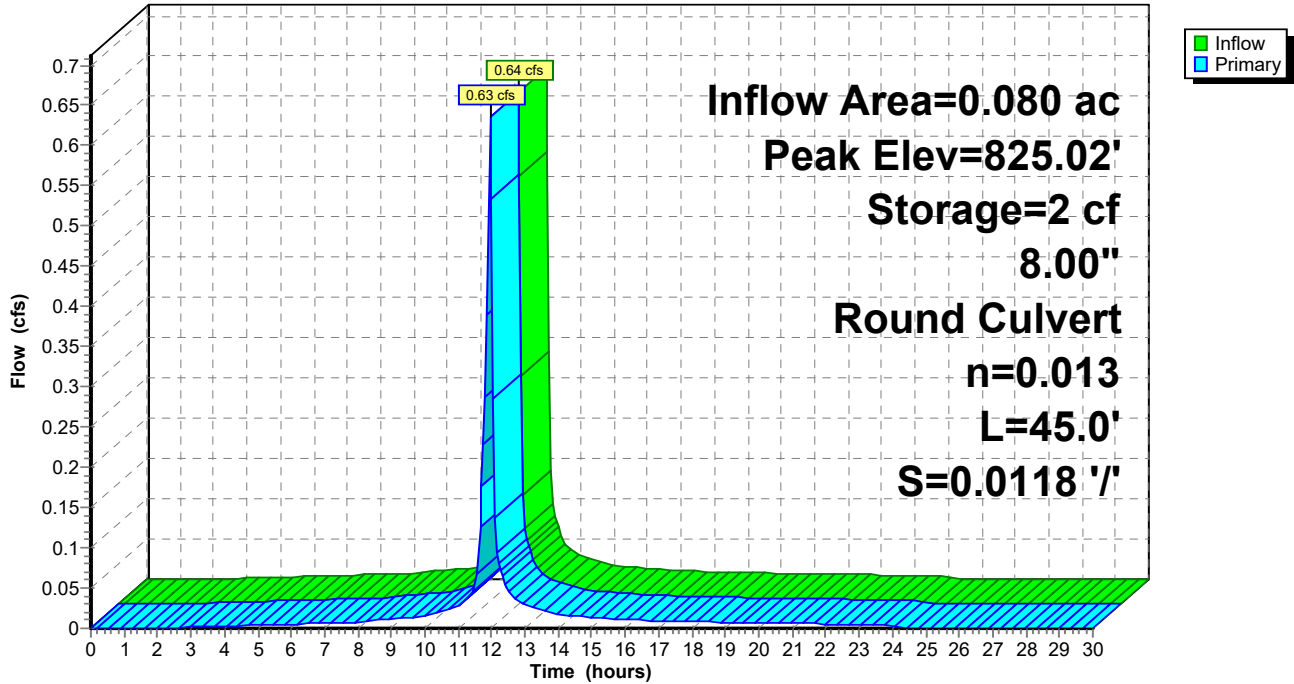
Device	Routing	Invert	Outlet Devices
#1	Primary	824.54'	<b>8.00" Round Culvert</b> L= 45.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 824.54' / 824.01' S= 0.0118 '/' Cc= 0.900 n= 0.013, Flow Area= 0.35 sf

**Primary OutFlow** Max=0.63 cfs @ 11.95 hrs HW=825.02' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.63 cfs @ 2.36 fps)

**Pond 6P: Ex CB**

Hydrograph



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Type II 24-hr 100 year Rainfall=5.63"

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**Hydrograph for Pond 6P: Ex CB**

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	824.54	0.00
1.00	0.00	0	824.54	0.00
2.00	0.00	0	824.54	0.00
3.00	0.00	0	824.55	0.00
4.00	0.00	0	824.56	0.00
5.00	0.00	0	824.57	0.00
6.00	0.01	0	824.58	0.01
7.00	0.01	0	824.58	0.01
8.00	0.01	0	824.59	0.01
9.00	0.01	0	824.60	0.01
10.00	0.02	0	824.61	0.02
11.00	<b>0.03</b>	<b>0</b>	<b>824.63</b>	<b>0.03</b>
12.00	<b>0.53</b>	<b>2</b>	<b>824.97</b>	<b>0.53</b>
13.00	0.03	0	824.63	0.03
14.00	0.02	0	824.61	0.02
15.00	0.01	0	824.60	0.01
16.00	0.01	0	824.59	0.01
17.00	0.01	0	824.59	0.01
18.00	0.01	0	824.59	0.01
19.00	0.01	0	824.58	0.01
20.00	0.01	0	824.58	0.01
21.00	0.01	0	824.58	0.01
22.00	0.01	0	824.58	0.01
23.00	0.01	0	824.58	0.01
24.00	0.00	0	824.58	0.00
25.00	0.00	0	824.54	0.00
26.00	0.00	0	824.54	0.00
27.00	0.00	0	824.54	0.00
28.00	0.00	0	824.54	0.00
29.00	0.00	0	824.54	0.00
30.00	0.00	0	824.54	0.00