Summary for Subcatchment P1-P: Proposed Drainage Area Pervious

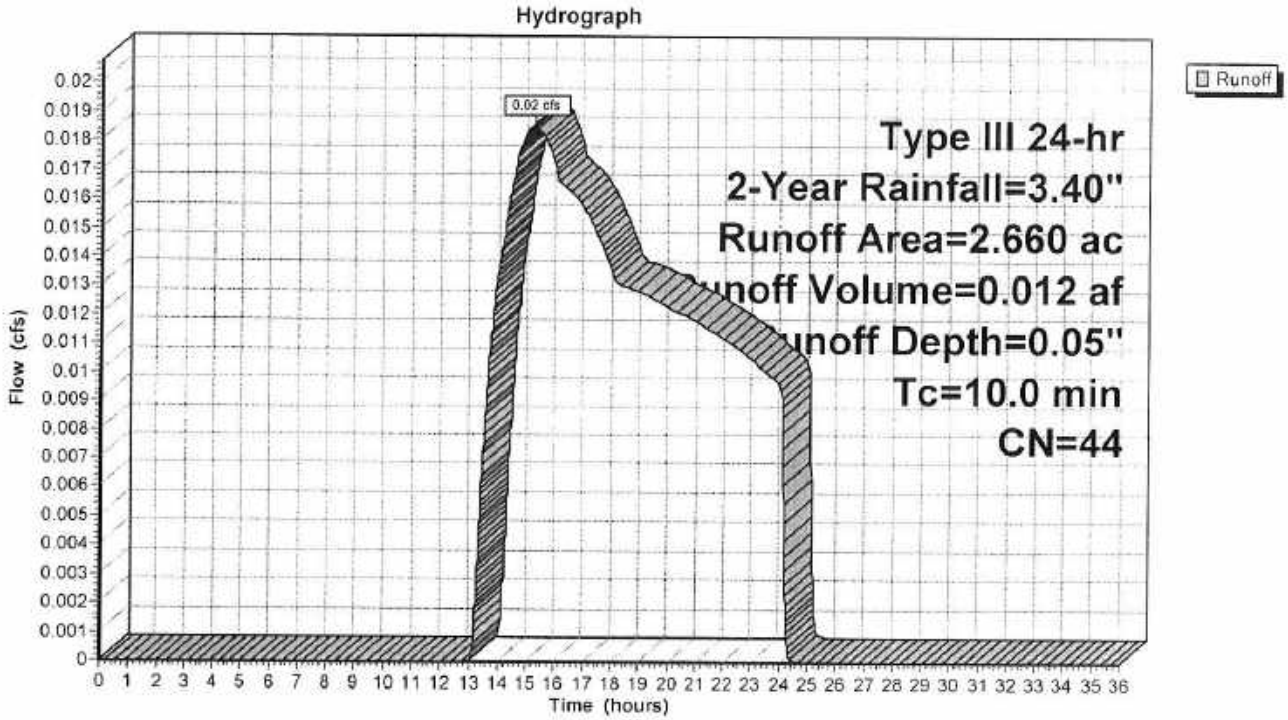
Runoff = 0.02 cfs @ 15.28 hrs, Volume= 0.012 af, Depth= 0.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.40"

	Area (ac)	CN	Description
*	2.660	44	
	2.660		100.00% Pervious Area

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

Subcatchment P1-P: Proposed Drainage Area Pervious



Hydrograph for Subcatchment P1-P: Proposed Drainage Area Pervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.02	0.00	0.00
1.00	0.03	0.00	0.00
1.50	0.05	0.00	0.00
2.00	0.07	0.00	0.00
2.50	0.09	0.00	0.00
3.00	0.10	0.00	0.00
3.50	0.12	0.00	0.00
4.00	0.15	0.00	0.00
4.50	0.17	0.00	0.00
5.00	0.19	0.00	0.00
5.50	0.22	0.00	0.00
6.00	0.24	0.00	0.00
6.50	0.27	0.00	0.00
7.00	0.31	0.00	0.00
7.50	0.35	0.00	0.00
8.00	0.39	0.00	0.00
8.50	0.44	0.00	0.00
9.00	0.50	0.00	0.00
9.50	0.56	0.00	0.00
10.00	0.64	0.00	0.00
10.50	0.74	0.00	0.00
11.00	0.85	0.00	0.00
11.50	1.01	0.00	0.00
12.00	1.70	0.00	0.00
12.50	2.39	0.00	0.00
13.00	2.55	0.00	0.00
13.50	2.66	0.00	0.01
14.00	2.76	0.00	0.01
14.50	2.84	0.01	0.02
15.00	2.90	0.01	**0.02**
15.50	2.96	0.01	**0.02**
16.00	3.01	0.02	0.02
16.50	3.05	0.02	0.02
17.00	3.09	0.02	0.02
17.50	3.13	0.03	0.01
18.00	3.16	0.03	0.01
18.50	3.18	0.03	0.01
19.00	3.21	0.03	0.01
19.50	3.23	0.04	0.01
20.00	3.25	0.04	0.01
20.50	3.28	0.04	0.01
21.00	3.30	0.04	0.01
21.50	3.32	0.04	0.01
22.00	3.33	0.05	0.01
22.50	3.35	0.05	0.01
23.00	3.37	0.05	0.01
23.50	3.39	0.05	0.01
24.00	**3.40**	**0.05**	0.01
24.50	3.40	0.05	0.00
25.00	3.40	0.05	0.00
25.50	3.40	0.05	0.00
26.00	3.40	0.05	0.00
26.50	3.40	0.05	0.00
27.00	3.40	0.05	0.00
27.50	3.40	0.05	0.00
28.00	3.40	0.05	0.00
28.50	3.40	0.05	0.00
29.00	3.40	0.05	0.00
29.50	3.40	0.05	0.00
30.00	3.40	0.05	0.00
30.50	3.40	0.05	0.00
31.00	3.40	0.05	0.00
31.50	3.40	0.05	0.00
32.00	3.40	0.05	0.00
32.50	3.40	0.05	0.00
33.00	3.40	0.05	0.00
33.50	3.40	0.05	0.00
34.00	3.40	0.05	0.00
34.50	3.40	0.05	0.00
35.00	3.40	0.05	0.00
35.50	3.40	0.05	0.00
36.00	3.40	0.05	0.00

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 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 P1-P: Proposed Drainage Runoff Area=2.660 ac 0.00% Impervious Runoff Depth=0.46"
Tc=10.0 min CN=44 Runoff=0.53 cfs 0.102 af

Total Runoff Area = 2.660 ac Runoff Volume = 0.102 af Average Runoff Depth = 0.46"
100.00% Pervious = 2.660 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment P1-P: Proposed Drainage Area Pervious

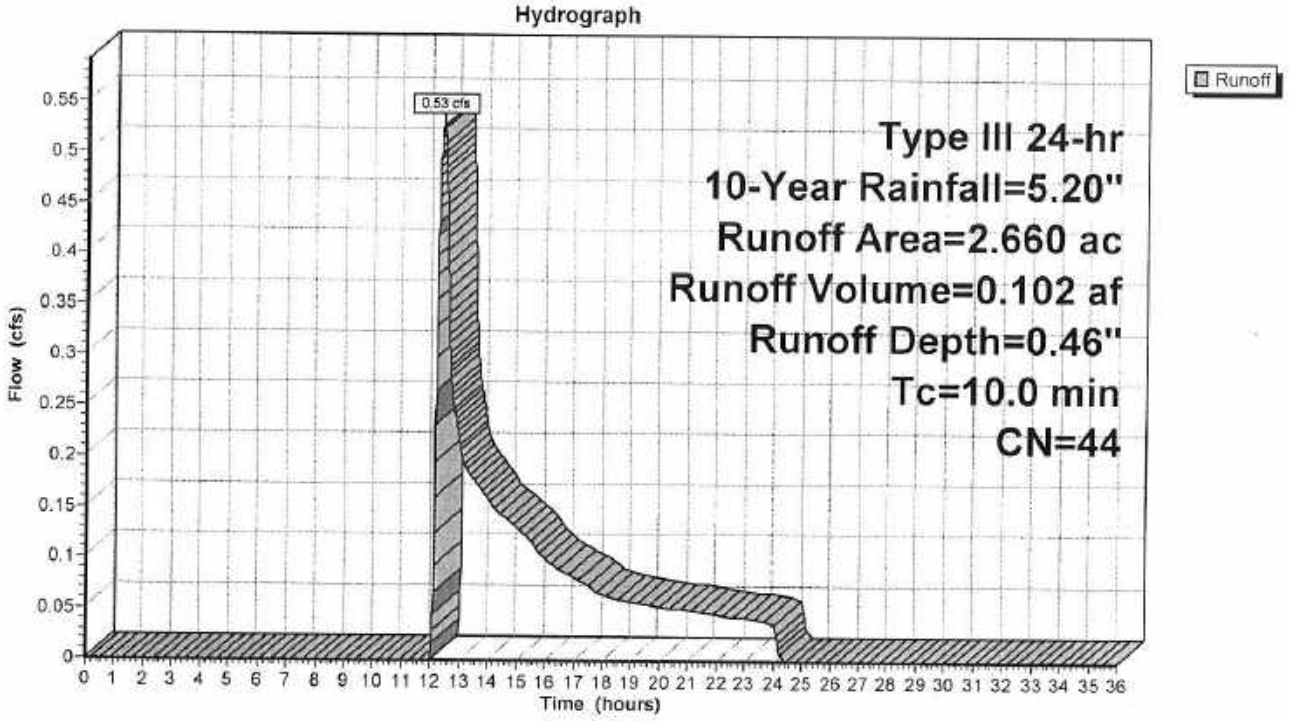
Runoff = 0.53 cfs @ 12.37 hrs, Volume= 0.102 af, Depth= 0.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.20"

	Area (ac)	CN	Description
*	2.660	44	
	2.660		100.00% Pervious Area

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

Subcatchment P1-P: Proposed Drainage Area Pervious



Hydrograph for Subcatchment P1-P: Proposed Drainage Area Pervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.03	0.00	0.00
1.00	0.05	0.00	0.00
1.50	0.08	0.00	0.00
2.00	0.10	0.00	0.00
2.50	0.13	0.00	0.00
3.00	0.16	0.00	0.00
3.50	0.19	0.00	0.00
4.00	0.22	0.00	0.00
4.50	0.26	0.00	0.00
5.00	0.30	0.00	0.00
5.50	0.33	0.00	0.00
6.00	0.37	0.00	0.00
6.50	0.42	0.00	0.00
7.00	0.47	0.00	0.00
7.50	0.53	0.00	0.00
8.00	0.59	0.00	0.00
8.50	0.67	0.00	0.00
9.00	0.76	0.00	0.00
9.50	0.86	0.00	0.00
10.00	0.98	0.00	0.00
10.50	1.13	0.00	0.00
11.00	1.30	0.00	0.00
11.50	1.55	0.00	0.00
12.00	2.60	0.00	**0.00**
12.50	3.65	0.09	**0.46**
13.00	3.90	0.13	0.21
13.50	4.07	0.16	0.18
14.00	4.22	0.19	0.16
14.50	4.34	0.22	0.14
15.00	4.44	0.25	0.13
15.50	4.53	0.27	0.12
16.00	4.61	0.29	0.10
16.50	4.67	0.30	0.09
17.00	4.73	0.32	0.08
17.50	4.78	0.33	0.07
18.00	4.83	0.35	0.07
18.50	4.87	0.36	0.06
19.00	4.90	0.37	0.06
19.50	4.94	0.38	0.06
20.00	4.98	0.39	0.05
20.50	5.01	0.40	0.05
21.00	5.04	0.41	0.05
21.50	5.07	0.42	0.05
22.00	5.10	0.43	0.05
22.50	5.13	0.44	0.04
23.00	5.15	0.44	0.04
23.50	5.18	0.45	0.04
24.00	**5.20**	**0.46**	0.04
24.50	5.20	0.46	0.00
25.00	5.20	0.46	0.00
25.50	5.20	0.46	0.00
26.00	5.20	0.46	0.00
26.50	5.20	0.46	0.00
27.00	5.20	0.46	0.00
27.50	5.20	0.46	0.00
28.00	5.20	0.46	0.00
28.50	5.20	0.46	0.00
29.00	5.20	0.46	0.00
29.50	5.20	0.46	0.00
30.00	5.20	0.46	0.00
30.50	5.20	0.46	0.00
31.00	5.20	0.46	0.00
31.50	5.20	0.46	0.00
32.00	5.20	0.46	0.00
32.50	5.20	0.46	0.00
33.00	5.20	0.46	0.00
33.50	5.20	0.46	0.00
34.00	5.20	0.46	0.00
34.50	5.20	0.46	0.00
35.00	5.20	0.46	0.00
35.50	5.20	0.46	0.00
36.00	5.20	0.46	0.00

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 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 P1-P: Proposed Drainage Runoff Area=2.660 ac 0.00% Impervious Runoff Depth=0.94"
Tc=10.0 min CN=44 Runoff=1.63 cfs 0.208 af

Total Runoff Area = 2.660 ac Runoff Volume = 0.208 af Average Runoff Depth = 0.94"
100.00% Pervious = 2.660 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment P1-P: Proposed Drainage Area Pervious

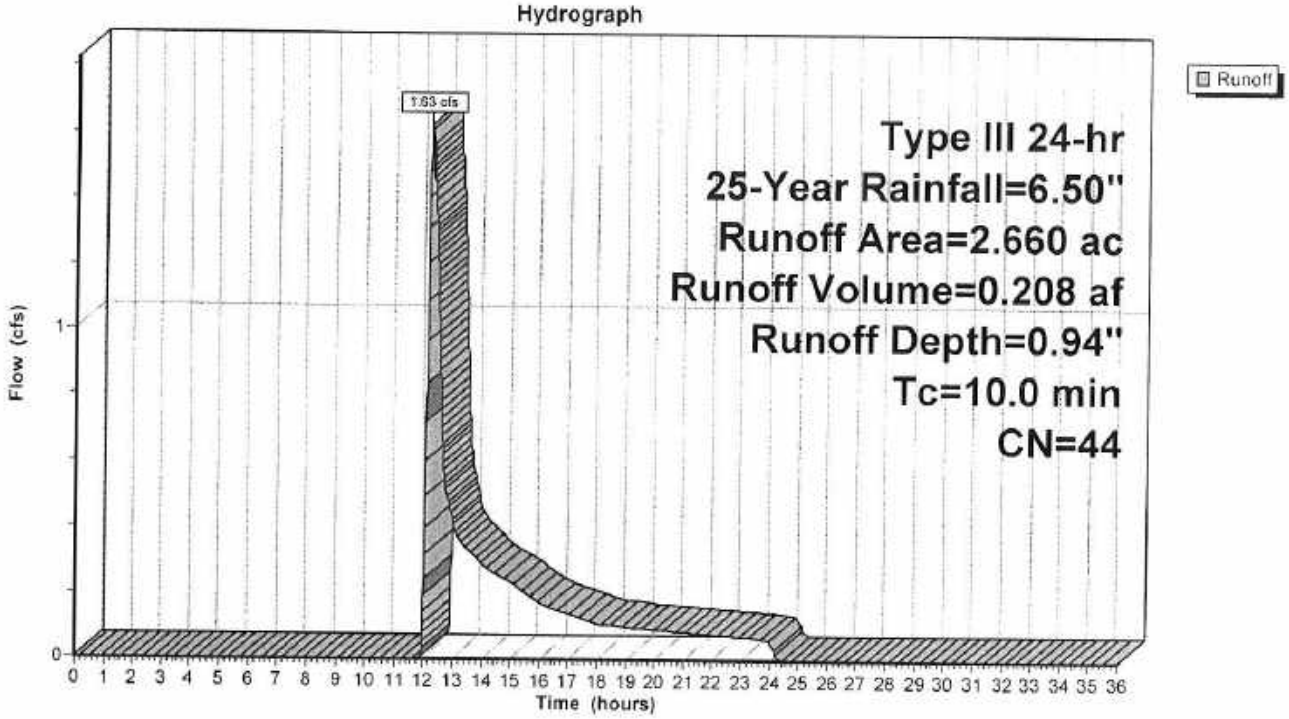
Runoff = 1.63 cfs @ 12.19 hrs, Volume= 0.208 af, Depth= 0.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.50"

	Area (ac)	CN	Description
*	2.660	44	
	2.660		100.00% Pervious Area

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

Subcatchment P1-P: Proposed Drainage Area Pervious



Hydrograph for Subcatchment P1-P: Proposed Drainage Area Pervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.03	0.00	0.00
1.00	0.07	0.00	0.00
1.50	0.10	0.00	0.00
2.00	0.13	0.00	0.00
2.50	0.16	0.00	0.00
3.00	0.20	0.00	0.00
3.50	0.24	0.00	0.00
4.00	0.28	0.00	0.00
4.50	0.32	0.00	0.00
5.00	0.37	0.00	0.00
5.50	0.42	0.00	0.00
6.00	0.47	0.00	0.00
6.50	0.52	0.00	0.00
7.00	0.59	0.00	0.00
7.50	0.66	0.00	0.00
8.00	0.74	0.00	0.00
8.50	0.83	0.00	0.00
9.00	0.95	0.00	0.00
9.50	1.08	0.00	0.00
10.00	1.23	0.00	0.00
10.50	1.41	0.00	0.00
11.00	1.63	0.00	0.00
11.50	1.94	0.00	0.00
12.00	3.25	0.04	**0.14**
12.50	4.56	0.28	**1.03**
13.00	4.87	0.36	0.42
13.50	5.09	0.42	0.34
14.00	5.27	0.48	0.29
14.50	5.42	0.53	0.26
15.00	5.55	0.57	0.23
15.50	5.67	0.61	0.21
16.00	5.76	0.65	0.17
16.50	5.84	0.68	0.16
17.00	5.91	0.70	0.14
17.50	5.98	0.73	0.13
18.00	6.03	0.75	0.11
18.50	6.08	0.77	0.10
19.00	6.13	0.79	0.10
19.50	6.18	0.81	0.10
20.00	6.22	0.82	0.09
20.50	6.26	0.84	0.09
21.00	6.30	0.86	0.08
21.50	6.34	0.87	0.08
22.00	6.37	0.89	0.08
22.50	6.41	0.90	0.07
23.00	6.44	0.91	0.07
23.50	6.47	0.93	0.07
24.00	**6.50**	**0.94**	0.06
24.50	6.50	0.94	0.00
25.00	6.50	0.94	0.00
25.50	6.50	0.94	0.00
26.00	6.50	0.94	0.00
26.50	6.50	0.94	0.00
27.00	6.50	0.94	0.00
27.50	6.50	0.94	0.00
28.00	6.50	0.94	0.00
28.50	6.50	0.94	0.00
29.00	6.50	0.94	0.00
29.50	6.50	0.94	0.00
30.00	6.50	0.94	0.00
30.50	6.50	0.94	0.00
31.00	6.50	0.94	0.00
31.50	6.50	0.94	0.00
32.00	6.50	0.94	0.00
32.50	6.50	0.94	0.00
33.00	6.50	0.94	0.00
33.50	6.50	0.94	0.00
34.00	6.50	0.94	0.00
34.50	6.50	0.94	0.00
35.00	6.50	0.94	0.00
35.50	6.50	0.94	0.00
36.00	6.50	0.94	0.00

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 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 P1-P: Proposed Drainage Runoff Area=2.660 ac 0.00% Impervious Runoff Depth=2.12"
Tc=10.0 min CN=44 Runoff=4.96 cfs 0.469 af

Total Runoff Area = 2.660 ac Runoff Volume = 0.469 af Average Runoff Depth = 2.12"
100.00% Pervious = 2.660 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment P1-P: Proposed Drainage Area Pervious

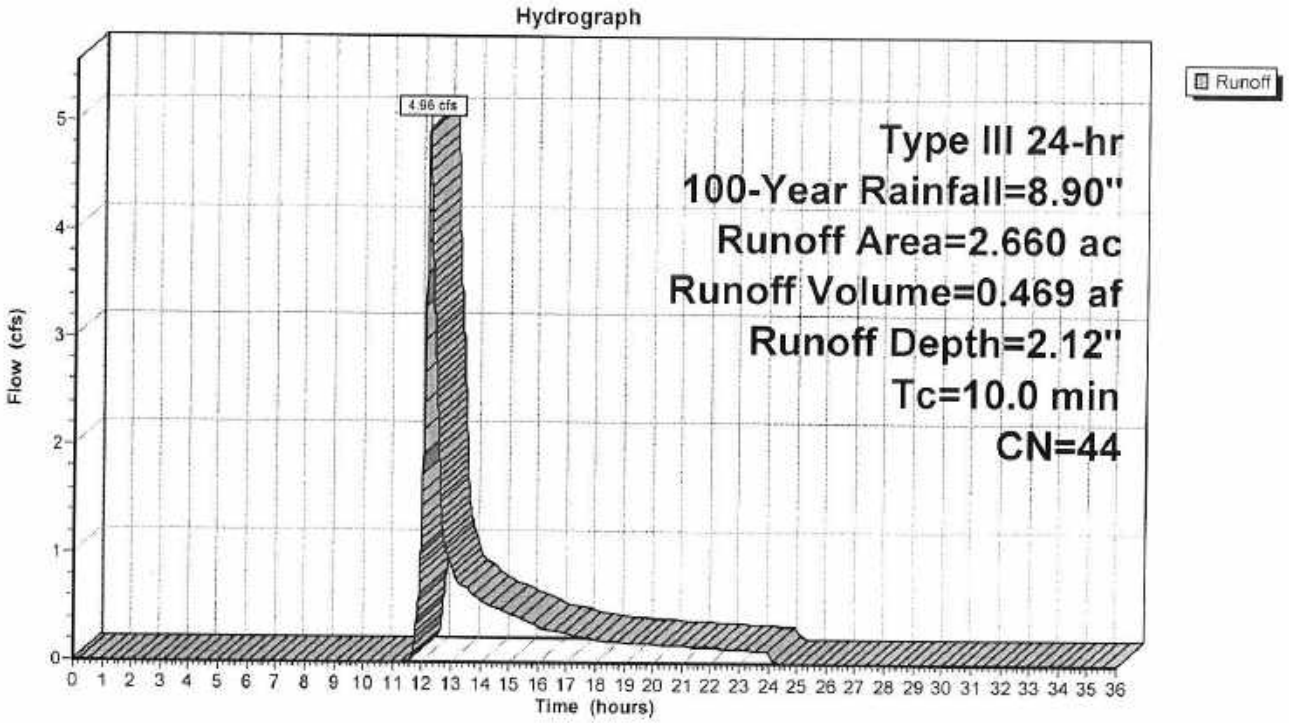
Runoff = 4.96 cfs @ 12.16 hrs, Volume= 0.469 af, Depth= 2.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.90"

	Area (ac)	CN	Description
*	2.660	44	
	2.660		100.00% Pervious Area

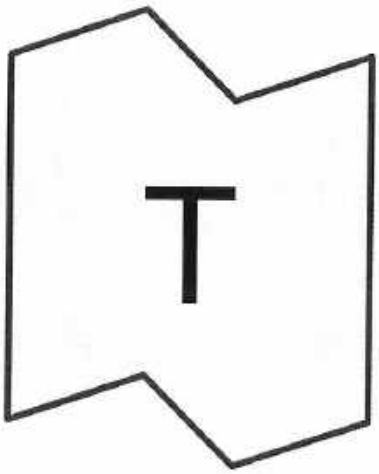
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment P1-P: Proposed Drainage Area Pervious

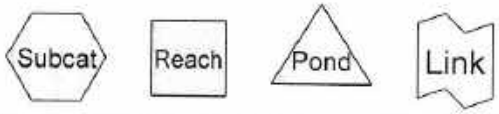


Hydrograph for Subcatchment P1-P: Proposed Drainage Area Pervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.04	0.00	0.00
1.00	0.09	0.00	0.00
1.50	0.13	0.00	0.00
2.00	0.18	0.00	0.00
2.50	0.22	0.00	0.00
3.00	0.27	0.00	0.00
3.50	0.33	0.00	0.00
4.00	0.38	0.00	0.00
4.50	0.44	0.00	0.00
5.00	0.51	0.00	0.00
5.50	0.57	0.00	0.00
6.00	0.64	0.00	0.00
6.50	0.72	0.00	0.00
7.00	0.81	0.00	0.00
7.50	0.90	0.00	0.00
8.00	1.01	0.00	0.00
8.50	1.14	0.00	0.00
9.00	1.30	0.00	0.00
9.50	1.48	0.00	0.00
10.00	1.68	0.00	0.00
10.50	1.93	0.00	0.00
11.00	2.23	0.00	0.00
11.50	2.65	0.00	0.00
12.00	4.45	0.25	**1.58**
12.50	6.25	0.83	**2.30**
13.00	6.67	1.01	0.88
13.50	6.97	1.14	0.69
14.00	7.22	1.25	0.58
14.50	7.42	1.35	0.51
15.00	7.60	1.44	0.45
15.50	7.76	1.51	0.40
16.00	7.89	1.58	0.33
16.50	8.00	1.63	0.29
17.00	8.09	1.68	0.27
17.50	8.18	1.73	0.24
18.00	8.26	1.77	0.21
18.50	8.33	1.81	0.19
19.00	8.39	1.84	0.19
19.50	8.46	1.88	0.18
20.00	8.52	1.91	0.17
20.50	8.57	1.94	0.16
21.00	8.63	1.97	0.16
21.50	8.68	1.99	0.15
22.00	8.73	2.02	0.14
22.50	8.78	2.05	0.14
23.00	8.82	2.07	0.13
23.50	8.86	2.09	0.12
24.00	**8.90**	**2.12**	0.11
24.50	8.90	2.12	0.00
25.00	8.90	2.12	0.00
25.50	8.90	2.12	0.00
26.00	8.90	2.12	0.00
26.50	8.90	2.12	0.00
27.00	8.90	2.12	0.00
27.50	8.90	2.12	0.00
28.00	8.90	2.12	0.00
28.50	8.90	2.12	0.00
29.00	8.90	2.12	0.00
29.50	8.90	2.12	0.00
30.00	8.90	2.12	0.00
30.50	8.90	2.12	0.00
31.00	8.90	2.12	0.00
31.50	8.90	2.12	0.00
32.00	8.90	2.12	0.00
32.50	8.90	2.12	0.00
33.00	8.90	2.12	0.00
33.50	8.90	2.12	0.00
34.00	8.90	2.12	0.00
34.50	8.90	2.12	0.00
35.00	8.90	2.12	0.00
35.50	8.90	2.12	0.00
36.00	8.90	2.12	0.00



Combined Hydrograph



Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.000	**0**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
0.000		**TOTAL AREA**

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Link T: Combined Hydrograph

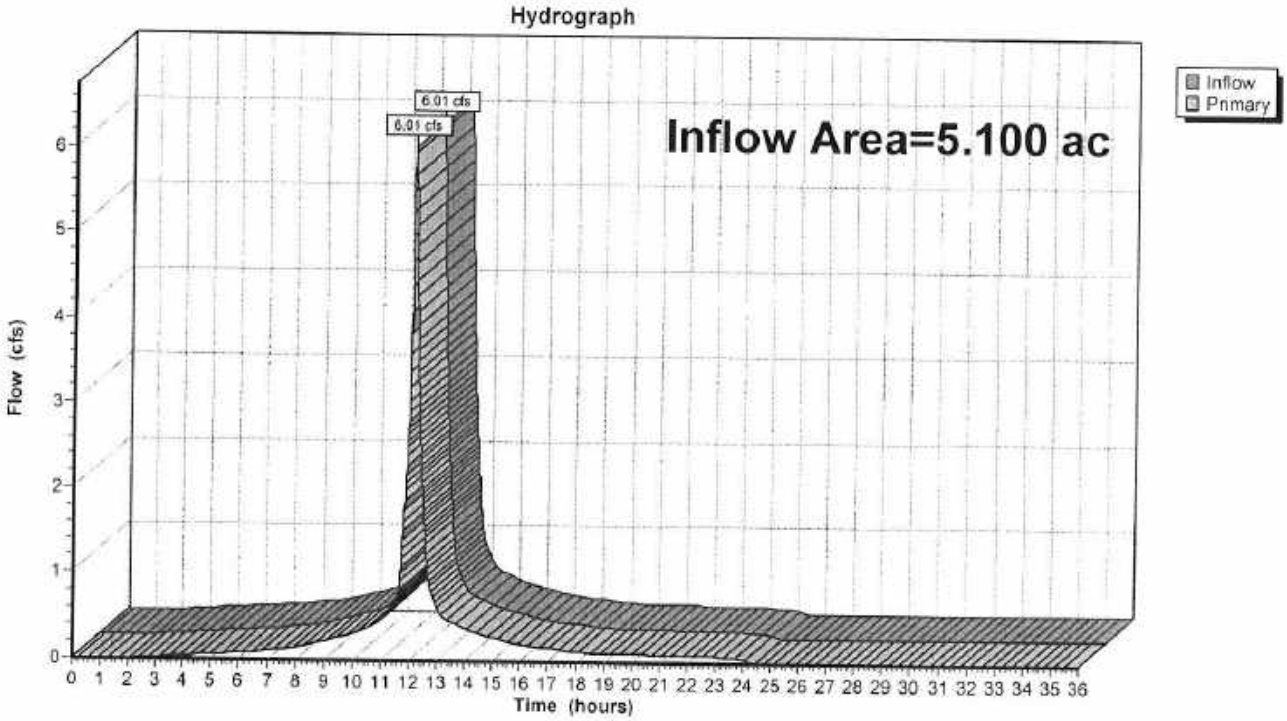
Inflow=6.01 cfs 0.545 af
Primary=6.01 cfs 0.545 af

Summary for Link T: Combined Hydrograph

Inflow Area =	5.100 ac, 47.84% Impervious, Inflow Depth = 1.28" for 1-Year event				
Inflow =	6.01 cfs @ 12.13 hrs, Volume=	0.545 af			
Primary =	6.01 cfs @ 12.13 hrs, Volume=	0.545 af, Atten= 0%, Lag= 0.0 min			

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link T: Combined Hydrograph



Hydrograph for Link T: Combined Hydrograph

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00
0.50	0.00	0.00	0.00
1.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00
2.00	0.01	0.00	0.01
2.50	0.02	0.00	0.02
3.00	0.03	0.00	0.03
3.50	0.03	0.00	0.03
4.00	0.04	0.00	0.04
4.50	0.05	0.00	0.05
5.00	0.06	0.00	0.06
5.50	0.07	0.00	0.07
6.00	0.08	0.00	0.08
6.50	0.09	0.00	0.09
7.00	0.11	0.00	0.11
7.50	0.13	0.00	0.13
8.00	0.15	0.00	0.15
8.50	0.18	0.00	0.18
9.00	0.22	0.00	0.22
9.50	0.26	0.00	0.26
10.00	0.31	0.00	0.31
10.50	0.38	0.00	0.38
11.00	0.47	0.00	0.47
11.50	0.72	0.00	0.72
12.00	**3.20**	0.00	**3.20**
12.50	**1.82**	0.00	**1.82**
13.00	0.62	0.00	0.62
13.50	0.46	0.00	0.46
14.00	0.37	0.00	0.37
14.50	0.32	0.00	0.32
15.00	0.28	0.00	0.28
15.50	0.24	0.00	0.24
16.00	0.20	0.00	0.20
16.50	0.17	0.00	0.17
17.00	0.16	0.00	0.16
17.50	0.14	0.00	0.14
18.00	0.12	0.00	0.12
18.50	0.11	0.00	0.11
19.00	0.11	0.00	0.11
19.50	0.10	0.00	0.10
20.00	0.10	0.00	0.10
20.50	0.09	0.00	0.09
21.00	0.09	0.00	0.09
21.50	0.09	0.00	0.09
22.00	0.08	0.00	0.08
22.50	0.08	0.00	0.08
23.00	0.07	0.00	0.07
23.50	0.07	0.00	0.07
24.00	0.07	0.00	0.07
24.50	0.00	0.00	0.00
25.00	0.00	0.00	0.00
25.50	0.00	0.00	0.00
26.00	0.00	0.00	0.00
26.50	0.00	0.00	0.00
27.00	0.00	0.00	0.00
27.50	0.00	0.00	0.00
28.00	0.00	0.00	0.00
28.50	0.00	0.00	0.00
29.00	0.00	0.00	0.00
29.50	0.00	0.00	0.00
30.00	0.00	0.00	0.00
30.50	0.00	0.00	0.00
31.00	0.00	0.00	0.00
31.50	0.00	0.00	0.00
32.00	0.00	0.00	0.00
32.50	0.00	0.00	0.00
33.00	0.00	0.00	0.00
33.50	0.00	0.00	0.00
34.00	0.00	0.00	0.00
34.50	0.00	0.00	0.00
35.00	0.00	0.00	0.00
35.50	0.00	0.00	0.00
36.00	0.00	0.00	0.00

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Link T: Combined Hydrograph

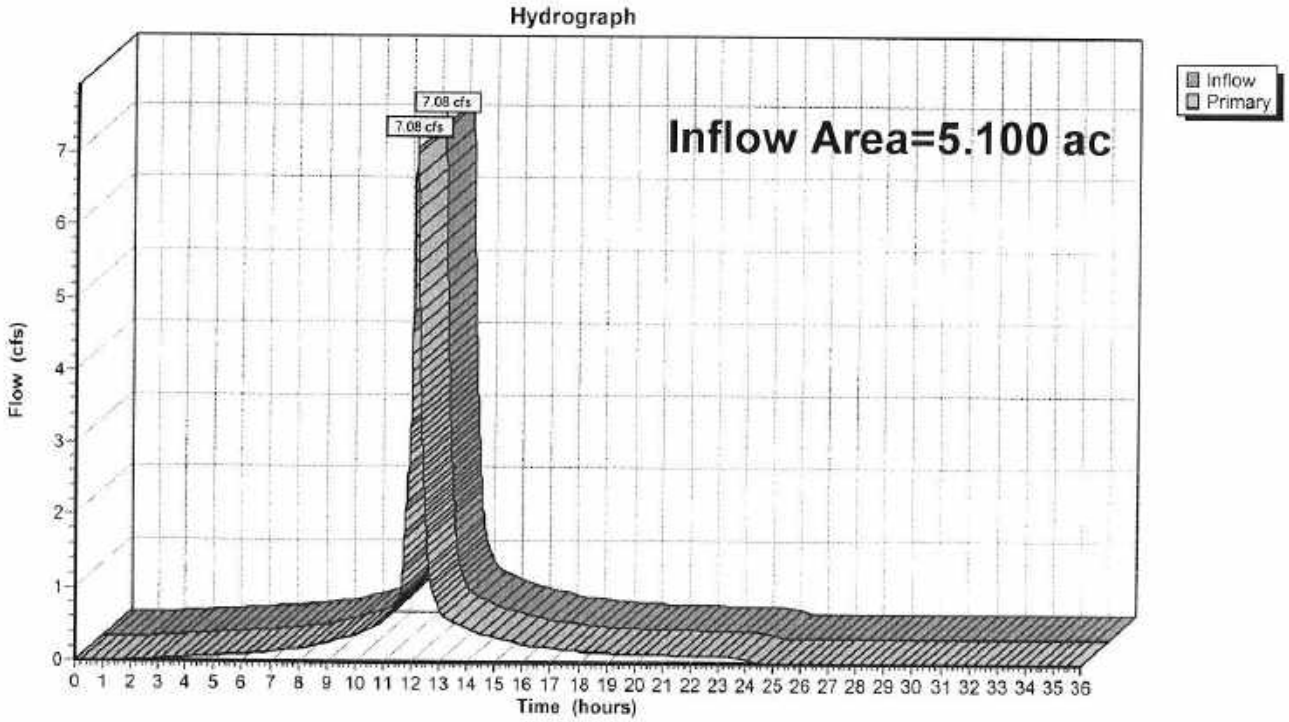
Inflow=7.08 cfs 0.656 af
Primary=7.08 cfs 0.656 af

Summary for Link T: Combined Hydrograph

Inflow Area =	5.100 ac, 47.84% Impervious, Inflow Depth = 1.54" for 2-Year event			
Inflow =	7.08 cfs @ 12.13 hrs, Volume=	0.656 af		
Primary =	7.08 cfs @ 12.13 hrs, Volume=	0.656 af, Atten= 0%, Lag= 0.0 min		

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link T: Combined Hydrograph



Hydrograph for Link T: Combined Hydrograph

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00
0.50	0.00	0.00	0.00
1.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00
2.00	0.02	0.00	0.02
2.50	0.03	0.00	0.03
3.00	0.04	0.00	0.04
3.50	0.05	0.00	0.05
4.00	0.06	0.00	0.06
4.50	0.07	0.00	0.07
5.00	0.08	0.00	0.08
5.50	0.09	0.00	0.09
6.00	0.10	0.00	0.10
6.50	0.11	0.00	0.11
7.00	0.14	0.00	0.14
7.50	0.16	0.00	0.16
8.00	0.18	0.00	0.18
8.50	0.22	0.00	0.22
9.00	0.27	0.00	0.27
9.50	0.32	0.00	0.32
10.00	0.37	0.00	0.37
10.50	0.45	0.00	0.45
11.00	0.55	0.00	0.55
11.50	0.85	0.00	0.85
12.00	**3.78**	0.00	**3.78**
12.50	**2.14**	0.00	**2.14**
13.00	0.73	0.00	0.73
13.50	0.55	0.00	0.55
14.00	0.45	0.00	0.45
14.50	0.39	0.00	0.39
15.00	0.35	0.00	0.35
15.50	0.30	0.00	0.30
16.00	0.25	0.00	0.25
16.50	0.22	0.00	0.22
17.00	0.20	0.00	0.20
17.50	0.18	0.00	0.18
18.00	0.15	0.00	0.15
18.50	0.14	0.00	0.14
19.00	0.14	0.00	0.14
19.50	0.13	0.00	0.13
20.00	0.12	0.00	0.12
20.50	0.12	0.00	0.12
21.00	0.11	0.00	0.11
21.50	0.11	0.00	0.11
22.00	0.10	0.00	0.10
22.50	0.10	0.00	0.10
23.00	0.09	0.00	0.09
23.50	0.09	0.00	0.09
24.00	0.08	0.00	0.08
24.50	0.00	0.00	0.00
25.00	0.00	0.00	0.00
25.50	0.00	0.00	0.00
26.00	0.00	0.00	0.00
26.50	0.00	0.00	0.00
27.00	0.00	0.00	0.00
27.50	0.00	0.00	0.00
28.00	0.00	0.00	0.00
28.50	0.00	0.00	0.00
29.00	0.00	0.00	0.00
29.50	0.00	0.00	0.00
30.00	0.00	0.00	0.00
30.50	0.00	0.00	0.00
31.00	0.00	0.00	0.00
31.50	0.00	0.00	0.00
32.00	0.00	0.00	0.00
32.50	0.00	0.00	0.00
33.00	0.00	0.00	0.00
33.50	0.00	0.00	0.00
34.00	0.00	0.00	0.00
34.50	0.00	0.00	0.00
35.00	0.00	0.00	0.00
35.50	0.00	0.00	0.00
36.00	0.00	0.00	0.00

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Link T: Combined Hydrograph

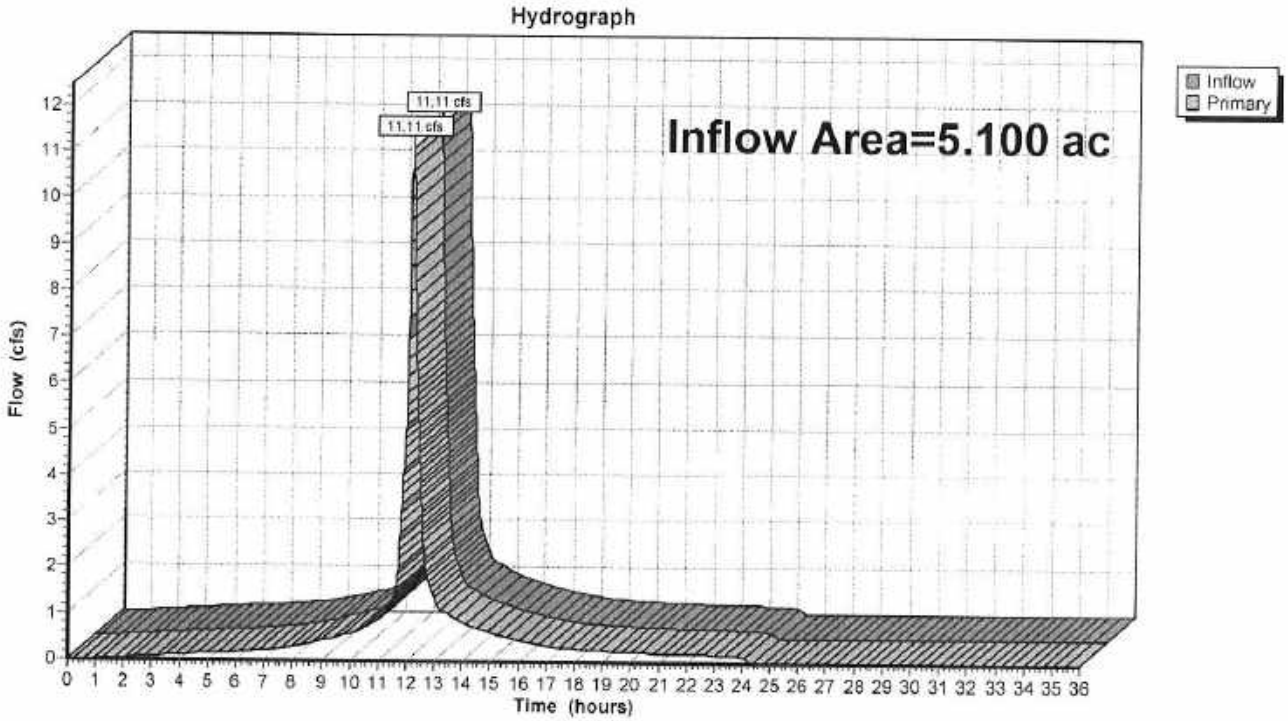
Inflow=11.11 cfs 1.111 af
Primary=11.11 cfs 1.111 af

Summary for Link T: Combined Hydrograph

Inflow Area = 5.100 ac, 47.84% Impervious, Inflow Depth = 2.61" for 10-Year event
Inflow = 11.11 cfs @ 12.14 hrs, Volume= 1.111 af
Primary = 11.11 cfs @ 12.14 hrs, Volume= 1.111 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link T: Combined Hydrograph



Hydrograph for Link T: Combined Hydrograph

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00
0.50	0.00	0.00	0.00
1.00	0.00	0.00	0.00
1.50	0.03	0.00	0.03
2.00	0.05	0.00	0.05
2.50	0.07	0.00	0.07
3.00	0.08	0.00	0.08
3.50	0.10	0.00	0.10
4.00	0.12	0.00	0.12
4.50	0.13	0.00	0.13
5.00	0.14	0.00	0.14
5.50	0.16	0.00	0.16
6.00	0.17	0.00	0.17
6.50	0.20	0.00	0.20
7.00	0.23	0.00	0.23
7.50	0.26	0.00	0.26
8.00	0.30	0.00	0.30
8.50	0.36	0.00	0.36
9.00	0.43	0.00	0.43
9.50	0.51	0.00	0.51
10.00	0.58	0.00	0.58
10.50	0.71	0.00	0.71
11.00	0.87	0.00	0.87
11.50	1.32	0.00	1.32
12.00	**5.84**	0.00	**5.84**
12.50	**3.75**	0.00	**3.75**
13.00	1.33	0.00	1.33
13.50	1.00	0.00	1.00
14.00	0.83	0.00	0.83
14.50	0.72	0.00	0.72
15.00	0.63	0.00	0.63
15.50	0.54	0.00	0.54
16.00	0.45	0.00	0.45
16.50	0.40	0.00	0.40
17.00	0.36	0.00	0.36
17.50	0.32	0.00	0.32
18.00	0.28	0.00	0.28
18.50	0.26	0.00	0.26
19.00	0.25	0.00	0.25
19.50	0.24	0.00	0.24
20.00	0.22	0.00	0.22
20.50	0.21	0.00	0.21
21.00	0.20	0.00	0.20
21.50	0.20	0.00	0.20
22.00	0.19	0.00	0.19
22.50	0.18	0.00	0.18
23.00	0.17	0.00	0.17
23.50	0.16	0.00	0.16
24.00	0.15	0.00	0.15
24.50	0.00	0.00	0.00
25.00	0.00	0.00	0.00
25.50	0.00	0.00	0.00
26.00	0.00	0.00	0.00
26.50	0.00	0.00	0.00
27.00	0.00	0.00	0.00
27.50	0.00	0.00	0.00
28.00	0.00	0.00	0.00
28.50	0.00	0.00	0.00
29.00	0.00	0.00	0.00
29.50	0.00	0.00	0.00
30.00	0.00	0.00	0.00
30.50	0.00	0.00	0.00
31.00	0.00	0.00	0.00
31.50	0.00	0.00	0.00
32.00	0.00	0.00	0.00
32.50	0.00	0.00	0.00
33.00	0.00	0.00	0.00
33.50	0.00	0.00	0.00
34.00	0.00	0.00	0.00
34.50	0.00	0.00	0.00
35.00	0.00	0.00	0.00
35.50	0.00	0.00	0.00
36.00	0.00	0.00	0.00

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Link T: Combined Hydrograph

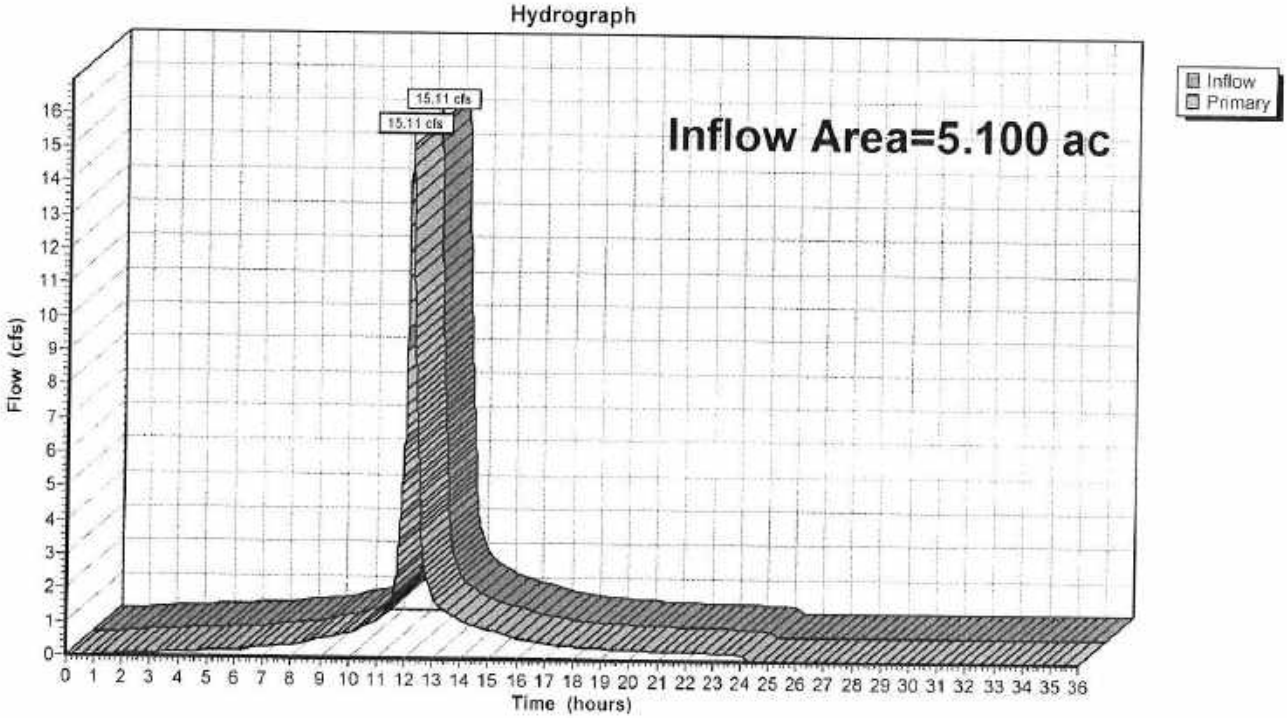
Inflow=15.11 cfs 1.481 af
Primary=15.11 cfs 1.481 af

Summary for Link T: Combined Hydrograph

Inflow Area = 5.100 ac, 47.84% Impervious, Inflow Depth = 3.48" for 25-Year event
Inflow = 15.11 cfs @ 12.14 hrs, Volume= 1.481 af
Primary = 15.11 cfs @ 12.14 hrs, Volume= 1.481 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link T: Combined Hydrograph



Hydrograph for Link T: Combined Hydrograph

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00
0.50	0.00	0.00	0.00
1.00	0.02	0.00	0.02
1.50	0.05	0.00	0.05
2.00	0.08	0.00	0.08
2.50	0.10	0.00	0.10
3.00	0.12	0.00	0.12
3.50	0.14	0.00	0.14
4.00	0.16	0.00	0.16
4.50	0.18	0.00	0.18
5.00	0.19	0.00	0.19
5.50	0.21	0.00	0.21
6.00	0.22	0.00	0.22
6.50	0.26	0.00	0.26
7.00	0.30	0.00	0.30
7.50	0.34	0.00	0.34
8.00	0.38	0.00	0.38
8.50	0.46	0.00	0.46
9.00	0.55	0.00	0.55
9.50	0.64	0.00	0.64
10.00	0.74	0.00	0.74
10.50	0.90	0.00	0.90
11.00	1.09	0.00	1.09
11.50	1.66	0.00	1.66
12.00	**7.46**	0.00	**7.46**
12.50	**5.14**	0.00	**5.14**
13.00	1.81	0.00	1.81
13.50	1.37	0.00	1.37
14.00	1.13	0.00	1.13
14.50	0.98	0.00	0.98
15.00	0.86	0.00	0.86
15.50	0.74	0.00	0.74
16.00	0.62	0.00	0.62
16.50	0.54	0.00	0.54
17.00	0.49	0.00	0.49
17.50	0.44	0.00	0.44
18.00	0.38	0.00	0.38
18.50	0.35	0.00	0.35
19.00	0.34	0.00	0.34
19.50	0.32	0.00	0.32
20.00	0.30	0.00	0.30
20.50	0.29	0.00	0.29
21.00	0.28	0.00	0.28
21.50	0.26	0.00	0.26
22.00	0.25	0.00	0.25
22.50	0.24	0.00	0.24
23.00	0.23	0.00	0.23
23.50	0.21	0.00	0.21
24.00	0.20	0.00	0.20
24.50	0.00	0.00	0.00
25.00	0.00	0.00	0.00
25.50	0.00	0.00	0.00
26.00	0.00	0.00	0.00
26.50	0.00	0.00	0.00
27.00	0.00	0.00	0.00
27.50	0.00	0.00	0.00
28.00	0.00	0.00	0.00
28.50	0.00	0.00	0.00
29.00	0.00	0.00	0.00
29.50	0.00	0.00	0.00
30.00	0.00	0.00	0.00
30.50	0.00	0.00	0.00
31.00	0.00	0.00	0.00
31.50	0.00	0.00	0.00
32.00	0.00	0.00	0.00
32.50	0.00	0.00	0.00
33.00	0.00	0.00	0.00
33.50	0.00	0.00	0.00
34.00	0.00	0.00	0.00
34.50	0.00	0.00	0.00
35.00	0.00	0.00	0.00
35.50	0.00	0.00	0.00
36.00	0.00	0.00	0.00

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Link T: Combined Hydrograph

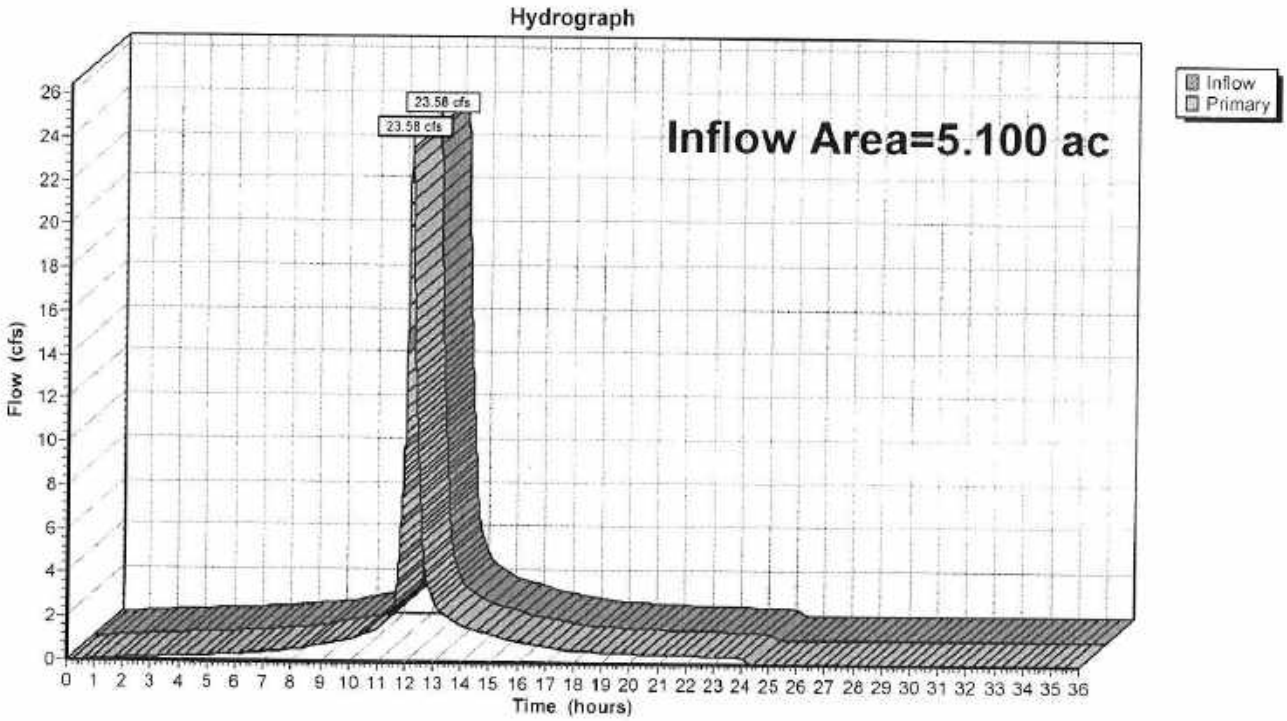
Inflow=23.58 cfs 2.230 af
Primary=23.58 cfs 2.230 af

Summary for Link T: Combined Hydrograph

Inflow Area = 5.100 ac, 47.84% Impervious, Inflow Depth = 5.25" for 100-Year event
Inflow = 23.58 cfs @ 12.14 hrs, Volume= 2.230 af
Primary = 23.58 cfs @ 12.14 hrs, Volume= 2.230 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link T: Combined Hydrograph



Hydrograph for Link T: Combined Hydrograph

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00
0.50	0.00	0.00	0.00
1.00	0.06	0.00	0.06
1.50	0.10	0.00	0.10
2.00	0.13	0.00	0.13
2.50	0.16	0.00	0.16
3.00	0.19	0.00	0.19
3.50	0.21	0.00	0.21
4.00	0.24	0.00	0.24
4.50	0.26	0.00	0.26
5.00	0.28	0.00	0.28
5.50	0.30	0.00	0.30
6.00	0.32	0.00	0.32
6.50	0.37	0.00	0.37
7.00	0.42	0.00	0.42
7.50	0.48	0.00	0.48
8.00	0.53	0.00	0.53
8.50	0.64	0.00	0.64
9.00	0.77	0.00	0.77
9.50	0.89	0.00	0.89
10.00	1.02	0.00	1.02
10.50	1.24	0.00	1.24
11.00	1.50	0.00	1.50
11.50	2.28	0.00	2.28
12.00	**11.63**	0.00	**11.63**
12.50	**7.94**	0.00	**7.94**
13.00	2.79	0.00	2.79
13.50	2.10	0.00	2.10
14.00	1.73	0.00	1.73
14.50	1.50	0.00	1.50
15.00	1.31	0.00	1.31
15.50	1.13	0.00	1.13
16.00	0.94	0.00	0.94
16.50	0.83	0.00	0.83
17.00	0.74	0.00	0.74
17.50	0.66	0.00	0.66
18.00	0.58	0.00	0.58
18.50	0.53	0.00	0.53
19.00	0.51	0.00	0.51
19.50	0.48	0.00	0.48
20.00	0.46	0.00	0.46
20.50	0.44	0.00	0.44
21.00	0.42	0.00	0.42
21.50	0.40	0.00	0.40
22.00	0.38	0.00	0.38
22.50	0.36	0.00	0.36
23.00	0.34	0.00	0.34
23.50	0.32	0.00	0.32
24.00	0.30	0.00	0.30
24.50	0.00	0.00	0.00
25.00	0.00	0.00	0.00
25.50	0.00	0.00	0.00
26.00	0.00	0.00	0.00
26.50	0.00	0.00	0.00
27.00	0.00	0.00	0.00
27.50	0.00	0.00	0.00
28.00	0.00	0.00	0.00
28.50	0.00	0.00	0.00
29.00	0.00	0.00	0.00
29.50	0.00	0.00	0.00
30.00	0.00	0.00	0.00
30.50	0.00	0.00	0.00
31.00	0.00	0.00	0.00
31.50	0.00	0.00	0.00
32.00	0.00	0.00	0.00
32.50	0.00	0.00	0.00
33.00	0.00	0.00	0.00
33.50	0.00	0.00	0.00
34.00	0.00	0.00	0.00
34.50	0.00	0.00	0.00
35.00	0.00	0.00	0.00
35.50	0.00	0.00	0.00
36.00	0.00	0.00	0.00

Two River Engineering

265 Route 34
P.O. Box 155
Colts Neck, NJ 07722

Tel: 732.866.0111
Fax: 732.866.4348

Worksheet 2: Runoff curve number and runoff

Project	By	Date
COLTS NECK COMMUNITY CHURCH	AJG	19-Feb-20
Location	**Checked**	**Date**
TOWNSHIP OF COLTS NECK, MONMOUTH COUNTY	AJG	19-Feb-20

Check one: ☐ Present ☒ Developed — P-2, PROPOSED CONDITIONS (PERVIOUS)

1. Runoff curve number

Soil name and hydrologic group (appendix A)	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN[1] Table 2-2	CN[1] Figure 2-3	CN[1] Figure 2-4	Area X acres / mi² / %	Product of CN x Area
CtE2 'B'	GRASS	61			0.34	20.74
ToA 'A'	GRASS	39			3.95	154.05
				Totals ➡	4.29	174.79

1. Use only one CN source per line

CN (weighted) = tot.prod. / tot. area = 174.79 / 4.29 = 40.7 ; **Use CN ➡ 41**

2. Runoff

		Storm #1	Storm #2	Storm #3
Frequency.....	yr	2	10	100
Rainfall, P (24-hour).....	in	3.4	5.3	7.5
Runoff, Q.....	in			

Use P and CN with table 2-1, figure 2-1, or equation 2-3 abd 2-4

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Worksheet 3: Time of Concentration (T_c) or travel time (T_t)

Project	By	Date
COLTS NECK COMMUNITY CHURCH	AJG	19-Feb-20
Location	**Checked**	**Date**
COLTS NECK, MONMOUTH COUNTY, NEW JERSEY	AJG	19-Feb-20

Check one: [X] Present [X] Developed — P-2, PROPOSED CONDITIONS (PERVIOUS)

Check one: [X] T_c [ ] T_t through subarea

Notes: Space for as many as two segments per flow type can be used for each worksheet. Include a map, schematic or description of flow segments.

Sheet Flow (Applicable to T_c only)

		Segment ID			
1. Surface description (table 3-1)		AB			
2. Manning's roughness coefficient, n (table 3-1)		GRASS			
3. Flow length, L (total L ≤ 300 ft.)	ft	0.240			
4. Two-year 24-hour rainfall, p_2	in	150			
5. Land slope, s	ft/ft	3.4			
6. $T_t = \frac{0.007\,(nL)^{0.8}}{P_2^{0.5}\,s^{0.4}}$ Compute T_t	hr	0.025			
		0.29	+	=	0.29

Shallow Concentrated Flow

		Segment ID			
7. Surface description (paved or unpaved)		BC			
8. Flow Length, L	ft	UNPAVED			
9. Watercourse slope, s	ft/ft	545			
10. Average velocity, V (figure 3-1)	ft/s	0.035			
11. $T_t = \frac{L}{3600\,V}$ Compute T_t	hr	3.0			
		0.05	+	=	0.05

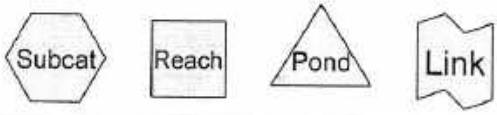
Channel Flow

		Segment ID			
12. Cross sectional flow area, a	ft^2				
13. Wetted perimeter, P_w	ft				
14. Hydraulic radius, $r=a/P_w$ Compute r	ft				
15. Channel slope, s	ft/ft				
16. Manning's roughness coefficient, n					
17. $V = \frac{1.49 r^{2/3} \sqrt{s}}{n}$ Compute V	ft/s				
18. Flow length, L	ft				
19. $T_t = \frac{L}{3600\,V}$ Compute T_t	hr		+	=	0.00

20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) ..... hr 0.342

min 20.5

Proposed Drainage Area Pervious



Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
4.290	41	Impervious (P2)
4.290	**41**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
4.290	Other	P2
4.290		**TOTAL AREA**

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 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 P2: Proposed Drainage Area Runoff Area=4.290 ac 0.00% Impervious Runoff Depth=0.00"
Tc=20.5 min CN=41 Runoff=0.00 cfs 0.000 af

Total Runoff Area = 4.290 ac Runoff Volume = 0.000 af Average Runoff Depth = 0.00"
100.00% Pervious = 4.290 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment P2: Proposed Drainage Area Pervious

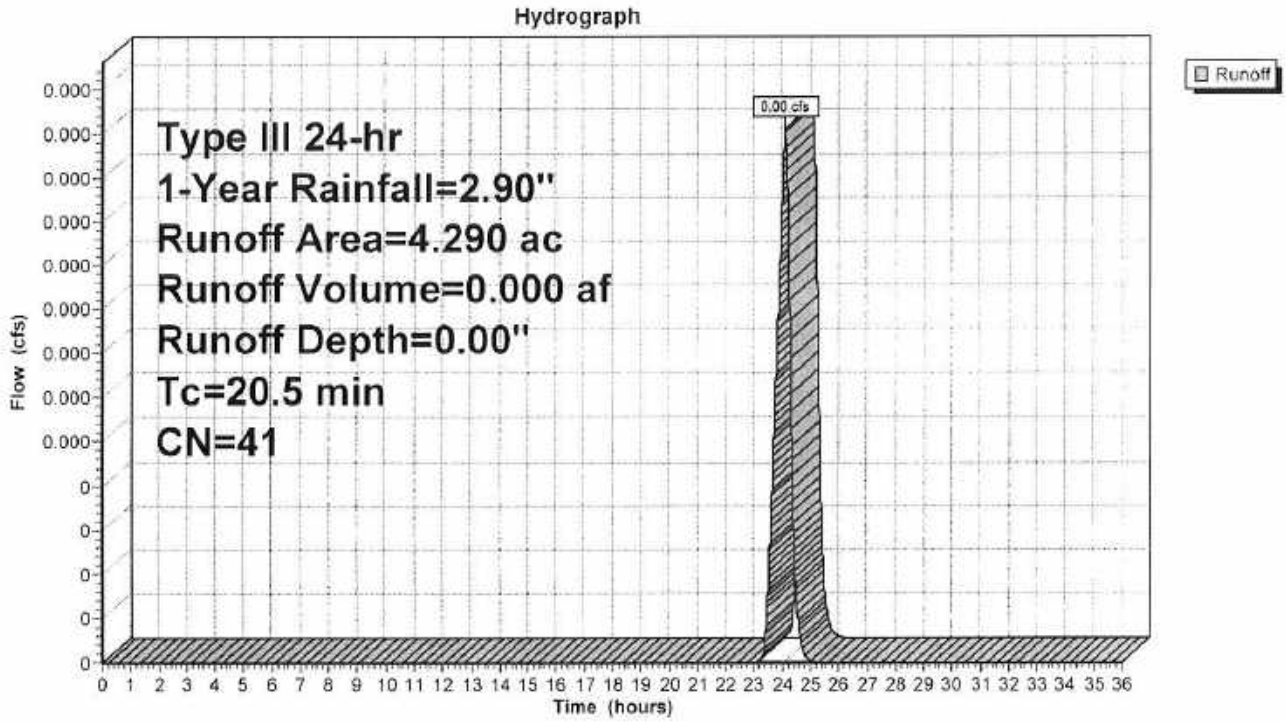
Runoff = 0.00 cfs @ 24.12 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-Year Rainfall=2.90"

	Area (ac)	CN	Description
*	4.290	41	Impervious
	4.290		100.00% Pervious Area

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

Subcatchment P2: Proposed Drainage Area Pervious



Hydrograph for Subcatchment P2: Proposed Drainage Area Pervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.01	0.00	0.00
1.00	0.03	0.00	0.00
1.50	0.04	0.00	0.00
2.00	0.06	0.00	0.00
2.50	0.07	0.00	0.00
3.00	0.09	0.00	0.00
3.50	0.11	0.00	0.00
4.00	0.12	0.00	0.00
4.50	0.14	0.00	0.00
5.00	0.16	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	0.00	0.00
8.00	0.33	0.00	0.00
8.50	0.37	0.00	0.00
9.00	0.42	0.00	0.00
9.50	0.48	0.00	0.00
10.00	0.55	0.00	0.00
10.50	0.63	0.00	0.00
11.00	0.73	0.00	0.00
11.50	0.86	0.00	0.00
12.00	1.45	0.00	0.00
12.50	2.04	0.00	0.00
13.00	2.18	0.00	0.00
13.50	2.27	0.00	0.00
14.00	2.35	0.00	0.00
14.50	2.42	0.00	0.00
15.00	2.48	0.00	0.00
15.50	2.53	0.00	0.00
16.00	2.57	0.00	0.00
16.50	2.61	0.00	0.00
17.00	2.64	0.00	0.00
17.50	2.67	0.00	0.00
18.00	2.69	0.00	0.00
18.50	2.71	0.00	0.00
19.00	2.74	0.00	0.00
19.50	2.76	0.00	0.00
20.00	2.78	0.00	0.00
20.50	2.79	0.00	0.00
21.00	2.81	0.00	0.00
21.50	2.83	0.00	0.00
22.00	2.84	0.00	0.00
22.50	2.86	0.00	0.00
23.00	2.87	0.00	0.00
23.50	2.89	0.00	0.00
24.00	**2.90**	**0.00**	**0.00**
24.50	2.90	0.00	**0.00**
25.00	2.90	0.00	0.00
25.50	2.90	0.00	0.00
26.00	2.90	0.00	0.00
26.50	2.90	0.00	0.00
27.00	2.90	0.00	0.00
27.50	2.90	0.00	0.00
28.00	2.90	0.00	0.00
28.50	2.90	0.00	0.00
29.00	2.90	0.00	0.00
29.50	2.90	0.00	0.00
30.00	2.90	0.00	0.00
30.50	2.90	0.00	0.00
31.00	2.90	0.00	0.00
31.50	2.90	0.00	0.00
32.00	2.90	0.00	0.00
32.50	2.90	0.00	0.00
33.00	2.90	0.00	0.00
33.50	2.90	0.00	0.00
34.00	2.90	0.00	0.00
34.50	2.90	0.00	0.00
35.00	2.90	0.00	0.00
35.50	2.90	0.00	0.00
36.00	2.90	0.00	0.00

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 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 P2: Proposed Drainage Area Runoff Area=4.290 ac 0.00% Impervious Runoff Depth=0.02"
Tc=20.5 min CN=41 Runoff=0.01 cfs 0.007 af

Total Runoff Area = 4.290 ac Runoff Volume = 0.007 af Average Runoff Depth = 0.02"
100.00% Pervious = 4.290 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment P2: Proposed Drainage Area Pervious

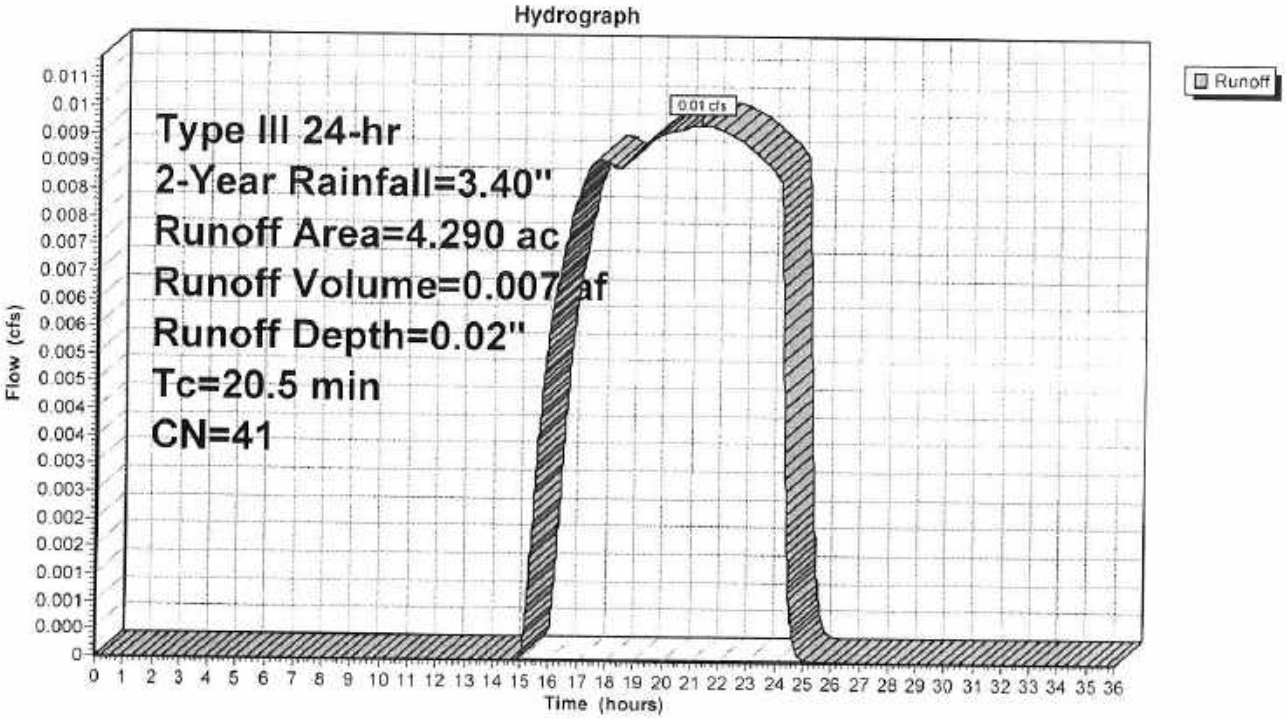
Runoff = 0.01 cfs @ 21.25 hrs, Volume= 0.007 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.40"

	Area (ac)	CN	Description
*	4.290	41	Impervious
	4.290		100.00% Pervious Area

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

Subcatchment P2: Proposed Drainage Area Pervious



Hydrograph for Subcatchment P2: Proposed Drainage Area Pervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.02	0.00	0.00
1.00	0.03	0.00	0.00
1.50	0.05	0.00	0.00
2.00	0.07	0.00	0.00
2.50	0.09	0.00	0.00
3.00	0.10	0.00	0.00
3.50	0.12	0.00	0.00
4.00	0.15	0.00	0.00
4.50	0.17	0.00	0.00
5.00	0.19	0.00	0.00
5.50	0.22	0.00	0.00
6.00	0.24	0.00	0.00
6.50	0.27	0.00	0.00
7.00	0.31	0.00	0.00
7.50	0.35	0.00	0.00
8.00	0.39	0.00	0.00
8.50	0.44	0.00	0.00
9.00	0.50	0.00	0.00
9.50	0.56	0.00	0.00
10.00	0.64	0.00	0.00
10.50	0.74	0.00	0.00
11.00	0.85	0.00	0.00
11.50	1.01	0.00	0.00
12.00	1.70	0.00	0.00
12.50	2.39	0.00	0.00
13.00	2.55	0.00	0.00
13.50	2.66	0.00	0.00
14.00	2.76	0.00	0.00
14.50	2.84	0.00	0.00
15.00	2.90	0.00	0.00
15.50	2.96	0.00	0.00
16.00	3.01	0.00	0.01
16.50	3.05	0.00	0.01
17.00	3.09	0.00	0.01
17.50	3.13	0.00	0.01
18.00	3.16	0.01	0.01
18.50	3.18	0.01	0.01
19.00	3.21	0.01	0.01
19.50	3.23	0.01	0.01
20.00	3.25	0.01	0.01
20.50	3.28	0.01	0.01
21.00	3.30	0.01	**0.01**
21.50	3.32	0.01	**0.01**
22.00	3.33	0.01	0.01
22.50	3.35	0.02	0.01
23.00	3.37	0.02	0.01
23.50	3.39	0.02	0.01
24.00	**3.40**	**0.02**	0.01
24.50	3.40	0.02	0.00
25.00	3.40	0.02	0.00
25.50	3.40	0.02	0.00
26.00	3.40	0.02	0.00
26.50	3.40	0.02	0.00
27.00	3.40	0.02	0.00
27.50	3.40	0.02	0.00
28.00	3.40	0.02	0.00
28.50	3.40	0.02	0.00
29.00	3.40	0.02	0.00
29.50	3.40	0.02	0.00
30.00	3.40	0.02	0.00
30.50	3.40	0.02	0.00
31.00	3.40	0.02	0.00
31.50	3.40	0.02	0.00
32.00	3.40	0.02	0.00
32.50	3.40	0.02	0.00
33.00	3.40	0.02	0.00
33.50	3.40	0.02	0.00
34.00	3.40	0.02	0.00
34.50	3.40	0.02	0.00
35.00	3.40	0.02	0.00
35.50	3.40	0.02	0.00
36.00	3.40	0.02	0.00

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 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 P2: Proposed Drainage Area Runoff Area=4.290 ac 0.00% Impervious Runoff Depth=0.32"
Tc=20.5 min CN=41 Runoff=0.38 cfs 0.115 af

Total Runoff Area = 4.290 ac Runoff Volume = 0.115 af Average Runoff Depth = 0.32"
100.00% Pervious = 4.290 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment P2: Proposed Drainage Area Pervious

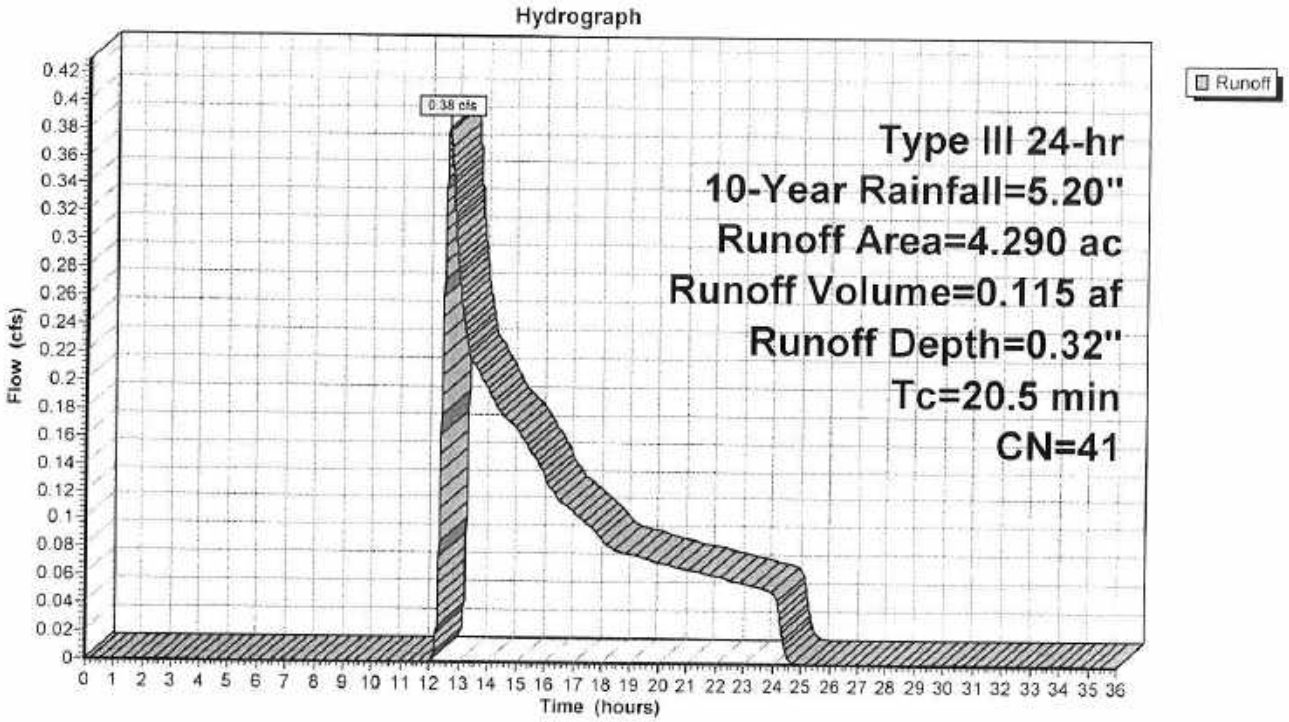
Runoff = 0.38 cfs @ 12.60 hrs, Volume= 0.115 af, Depth= 0.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.20"

	Area (ac)	CN	Description
*	4.290	41	Impervious
	4.290		100.00% Pervious Area

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

Subcatchment P2: Proposed Drainage Area Pervious



Hydrograph for Subcatchment P2: Proposed Drainage Area Pervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.03	0.00	0.00
1.00	0.05	0.00	0.00
1.50	0.08	0.00	0.00
2.00	0.10	0.00	0.00
2.50	0.13	0.00	0.00
3.00	0.16	0.00	0.00
3.50	0.19	0.00	0.00
4.00	0.22	0.00	0.00
4.50	0.26	0.00	0.00
5.00	0.30	0.00	0.00
5.50	0.33	0.00	0.00
6.00	0.37	0.00	0.00
6.50	0.42	0.00	0.00
7.00	0.47	0.00	0.00
7.50	0.53	0.00	0.00
8.00	0.59	0.00	0.00
8.50	0.67	0.00	0.00
9.00	0.76	0.00	0.00
9.50	0.86	0.00	0.00
10.00	0.98	0.00	0.00
10.50	1.13	0.00	0.00
11.00	1.30	0.00	0.00
11.50	1.55	0.00	0.00
12.00	2.60	0.00	0.00
12.50	3.65	0.04	**0.35**
13.00	3.90	0.07	**0.26**
13.50	4.07	0.09	0.21
14.00	4.22	0.11	0.20
14.50	4.34	0.13	0.18
15.00	4.44	0.15	0.17
15.50	4.53	0.17	0.15
16.00	4.61	0.19	0.13
16.50	4.67	0.20	0.12
17.00	4.73	0.21	0.11
17.50	4.78	0.22	0.10
18.00	4.83	0.23	0.09
18.50	4.87	0.24	0.08
19.00	4.90	0.25	0.08
19.50	4.94	0.26	0.07
20.00	4.98	0.27	0.07
20.50	5.01	0.27	0.07
21.00	5.04	0.28	0.07
21.50	5.07	0.29	0.06
22.00	5.10	0.30	0.06
22.50	5.13	0.30	0.06
23.00	5.15	0.31	0.06
23.50	5.18	0.32	0.05
24.00	**5.20**	**0.32**	0.05
24.50	5.20	0.32	0.01
25.00	5.20	0.32	0.00
25.50	5.20	0.32	0.00
26.00	5.20	0.32	0.00
26.50	5.20	0.32	0.00
27.00	5.20	0.32	0.00
27.50	5.20	0.32	0.00
28.00	5.20	0.32	0.00
28.50	5.20	0.32	0.00
29.00	5.20	0.32	0.00
29.50	5.20	0.32	0.00
30.00	5.20	0.32	0.00
30.50	5.20	0.32	0.00
31.00	5.20	0.32	0.00
31.50	5.20	0.32	0.00
32.00	5.20	0.32	0.00
32.50	5.20	0.32	0.00
33.00	5.20	0.32	0.00
33.50	5.20	0.32	0.00
34.00	5.20	0.32	0.00
34.50	5.20	0.32	0.00
35.00	5.20	0.32	0.00
35.50	5.20	0.32	0.00
36.00	5.20	0.32	0.00

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 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 P2: Proposed Drainage Area Runoff Area=4.290 ac 0.00% Impervious Runoff Depth=0.73"
Tc=20.5 min CN=41 Runoff=1.40 cfs 0.260 af

Total Runoff Area = 4.290 ac Runoff Volume = 0.260 af Average Runoff Depth = 0.73"
100.00% Pervious = 4.290 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment P2: Proposed Drainage Area Pervious

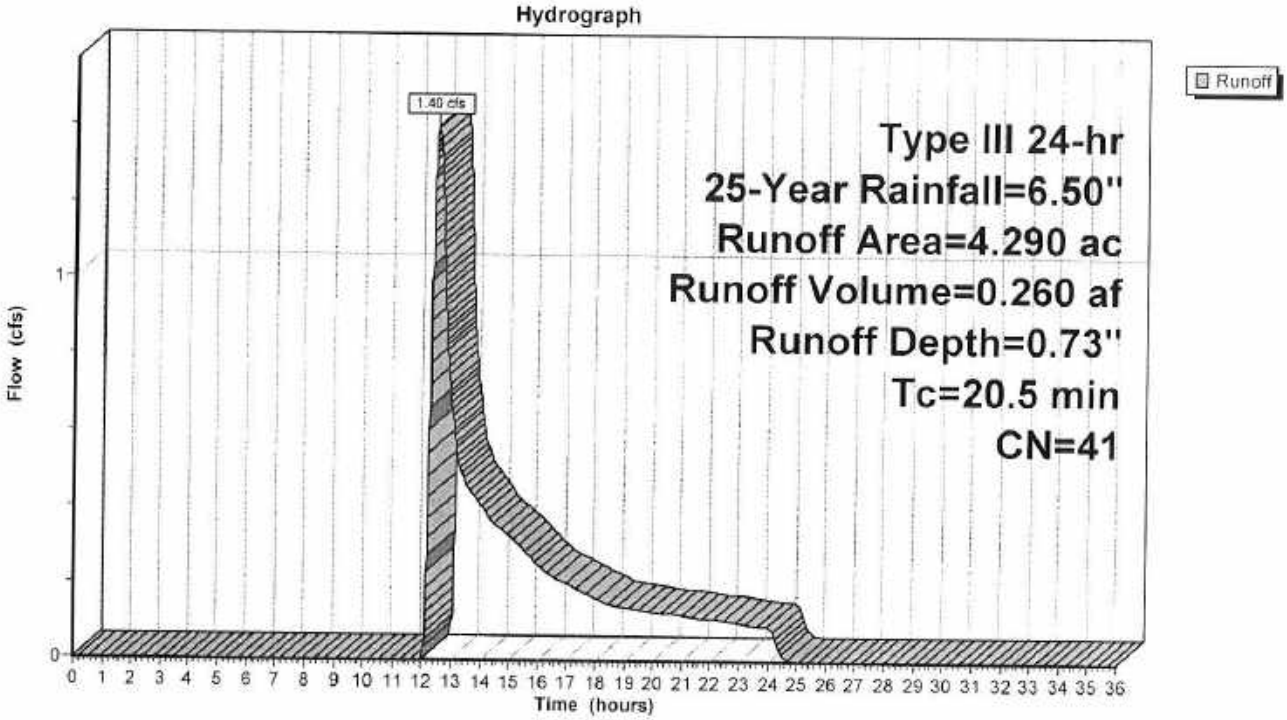
Runoff = 1.40 cfs @ 12.46 hrs, Volume= 0.260 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.50"

	Area (ac)	CN	Description
*	4.290	41	Impervious
	4.290		100.00% Pervious Area

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

Subcatchment P2: Proposed Drainage Area Pervious



Hydrograph for Subcatchment P2: Proposed Drainage Area Pervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.03	0.00	0.00
1.00	0.07	0.00	0.00
1.50	0.10	0.00	0.00
2.00	0.13	0.00	0.00
2.50	0.16	0.00	0.00
3.00	0.20	0.00	0.00
3.50	0.24	0.00	0.00
4.00	0.28	0.00	0.00
4.50	0.32	0.00	0.00
5.00	0.37	0.00	0.00
5.50	0.42	0.00	0.00
6.00	0.47	0.00	0.00
6.50	0.52	0.00	0.00
7.00	0.59	0.00	0.00
7.50	0.66	0.00	0.00
8.00	0.74	0.00	0.00
8.50	0.83	0.00	0.00
9.00	0.95	0.00	0.00
9.50	1.08	0.00	0.00
10.00	1.23	0.00	0.00
10.50	1.41	0.00	0.00
11.00	1.63	0.00	0.00
11.50	1.94	0.00	0.00
12.00	3.25	0.01	**0.00**
12.50	4.56	0.18	**1.39**
13.00	4.87	0.24	0.65
13.50	5.09	0.30	0.46
14.00	5.27	0.34	0.41
14.50	5.42	0.38	0.36
15.00	5.55	0.42	0.33
15.50	5.67	0.45	0.29
16.00	5.76	0.48	0.25
16.50	5.84	0.51	0.22
17.00	5.91	0.53	0.20
17.50	5.98	0.55	0.18
18.00	6.03	0.57	0.16
18.50	6.08	0.58	0.15
19.00	6.13	0.60	0.14
19.50	6.18	0.62	0.13
20.00	6.22	0.63	0.13
20.50	6.26	0.64	0.12
21.00	6.30	0.66	0.12
21.50	6.34	0.67	0.11
22.00	6.37	0.68	0.11
22.50	6.41	0.70	0.10
23.00	6.44	0.71	0.10
23.50	6.47	0.72	0.09
24.00	**6.50**	**0.73**	0.09
24.50	6.50	0.73	0.01
25.00	6.50	0.73	0.00
25.50	6.50	0.73	0.00
26.00	6.50	0.73	0.00
26.50	6.50	0.73	0.00
27.00	6.50	0.73	0.00
27.50	6.50	0.73	0.00
28.00	6.50	0.73	0.00
28.50	6.50	0.73	0.00
29.00	6.50	0.73	0.00
29.50	6.50	0.73	0.00
30.00	6.50	0.73	0.00
30.50	6.50	0.73	0.00
31.00	6.50	0.73	0.00
31.50	6.50	0.73	0.00
32.00	6.50	0.73	0.00
32.50	6.50	0.73	0.00
33.00	6.50	0.73	0.00
33.50	6.50	0.73	0.00
34.00	6.50	0.73	0.00
34.50	6.50	0.73	0.00
35.00	6.50	0.73	0.00
35.50	6.50	0.73	0.00
36.00	6.50	0.73	0.00

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 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 P2: Proposed Drainage Area Runoff Area=4.290 ac 0.00% Impervious Runoff Depth=1.78"
Tc=20.5 min CN=41 Runoff=4.79 cfs 0.635 af

Total Runoff Area = 4.290 ac Runoff Volume = 0.635 af Average Runoff Depth = 1.78"
100.00% Pervious = 4.290 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment P2: Proposed Drainage Area Pervious

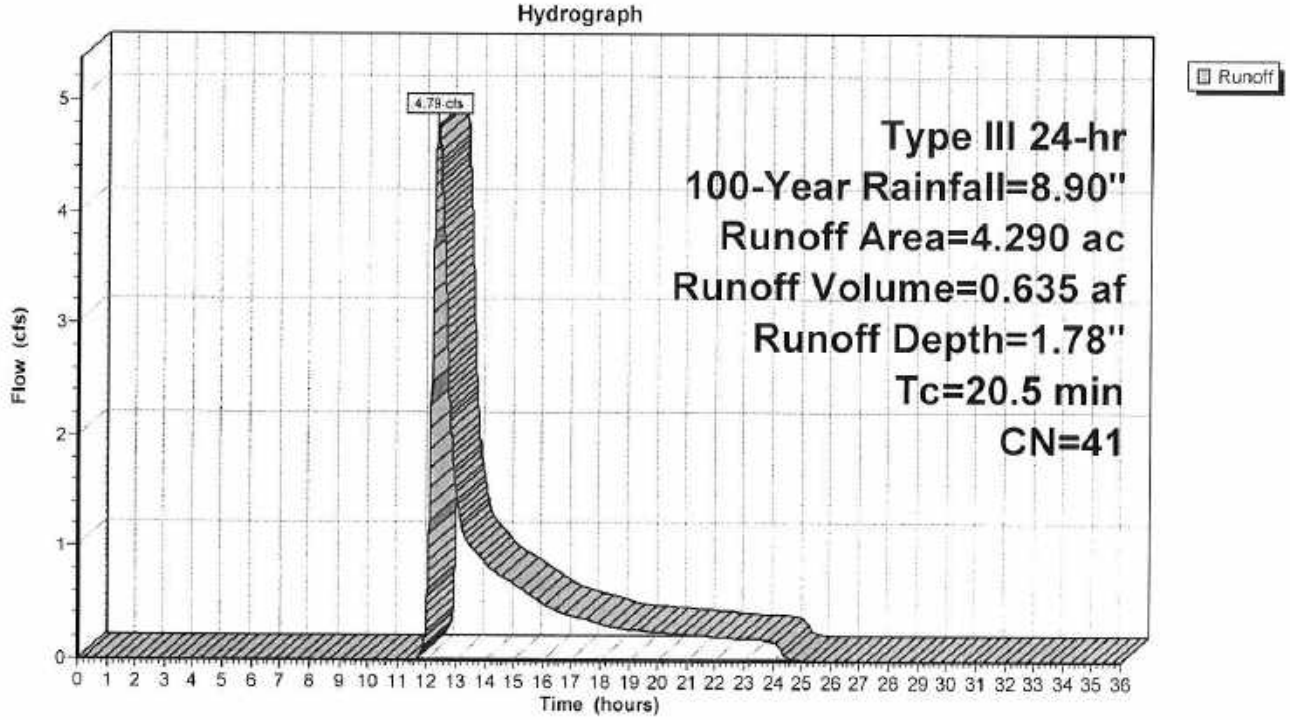
Runoff = 4.79 cfs @ 12.35 hrs, Volume= 0.635 af, Depth= 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.90"

	Area (ac)	CN	Description
*	4.290	41	Impervious
	4.290		100.00% Pervious Area

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

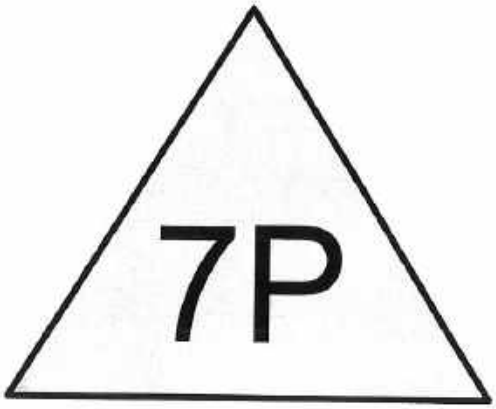
Subcatchment P2: Proposed Drainage Area Pervious



Hydrograph for Subcatchment P2: Proposed Drainage Area Pervious

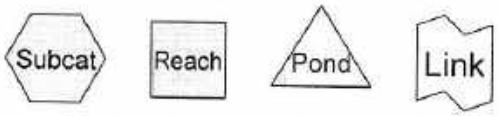
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.04	0.00	0.00
1.00	0.09	0.00	0.00
1.50	0.13	0.00	0.00
2.00	0.18	0.00	0.00
2.50	0.22	0.00	0.00
3.00	0.27	0.00	0.00
3.50	0.33	0.00	0.00
4.00	0.38	0.00	0.00
4.50	0.44	0.00	0.00
5.00	0.51	0.00	0.00
5.50	0.57	0.00	0.00
6.00	0.64	0.00	0.00
6.50	0.72	0.00	0.00
7.00	0.81	0.00	0.00
7.50	0.90	0.00	0.00
8.00	1.01	0.00	0.00
8.50	1.14	0.00	0.00
9.00	1.30	0.00	0.00
9.50	1.48	0.00	0.00
10.00	1.68	0.00	0.00
10.50	1.93	0.00	0.00
11.00	2.23	0.00	0.00
11.50	2.65	0.00	0.00
12.00	4.45	0.15	**0.49**
12.50	6.25	0.64	**4.17**
13.00	6.67	0.79	1.53
13.50	6.97	0.91	1.02
14.00	7.22	1.01	0.87
14.50	7.42	1.09	0.75
15.00	7.60	1.17	0.68
15.50	7.76	1.24	0.59
16.00	7.89	1.29	0.51
16.50	8.00	1.34	0.44
17.00	8.09	1.39	0.40
17.50	8.18	1.43	0.36
18.00	8.26	1.46	0.32
18.50	8.33	1.50	0.29
19.00	8.39	1.53	0.27
19.50	8.46	1.56	0.26
20.00	8.52	1.59	0.25
20.50	8.57	1.62	0.24
21.00	8.63	1.64	0.23
21.50	8.68	1.67	0.22
22.00	8.73	1.69	0.21
22.50	8.78	1.71	0.20
23.00	8.82	1.74	0.19
23.50	8.86	1.76	0.18
24.00	**8.90**	**1.78**	0.17
24.50	8.90	1.78	0.02
25.00	8.90	1.78	0.00
25.50	8.90	1.78	0.00
26.00	8.90	1.78	0.00
26.50	8.90	1.78	0.00
27.00	8.90	1.78	0.00
27.50	8.90	1.78	0.00
28.00	8.90	1.78	0.00
28.50	8.90	1.78	0.00
29.00	8.90	1.78	0.00
29.50	8.90	1.78	0.00
30.00	8.90	1.78	0.00
30.50	8.90	1.78	0.00
31.00	8.90	1.78	0.00
31.50	8.90	1.78	0.00
32.00	8.90	1.78	0.00
32.50	8.90	1.78	0.00
33.00	8.90	1.78	0.00
33.50	8.90	1.78	0.00
34.00	8.90	1.78	0.00
34.50	8.90	1.78	0.00
35.00	8.90	1.78	0.00
35.50	8.90	1.78	0.00
36.00	8.90	1.78	0.00

Appendix 3A
Detention Basin Routing Calculations (No Infiltration)



Detention Basin

(NO INFILTRATION)



Routing Diagram for CN Community Church Proposed DA 1 NO INFILTRATION- COUNTY
Prepared by {enter your company name here}, Printed 4/9/2020
HydroCAD® 10.00-24 s/n 08511 © 2018 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.000	**0**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
0.000		**TOTAL AREA**

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Pond 7P: Detention Basin Peak Elev=67.93' Storage=0.546 af Inflow=6.01 cfs 0.546 af
Outflow=0.00 cfs 0.000 af

Summary for Pond 7P: Detention Basin

Inflow Area =	4.880 ac, 50.00% Impervious, Inflow Depth = 1.34" for 1-Year event				
Inflow =	6.01 cfs @	12.13 hrs, Volume=	0.546 af		
Outflow =	0.00 cfs @	0.00 hrs, Volume=	0.000 af,	Atten= 100%,	Lag= 0.0 min
Primary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af		

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Peak Elev= 67.93' @ 24.57 hrs Surf.Area= 0.417 ac Storage= 0.546 af

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

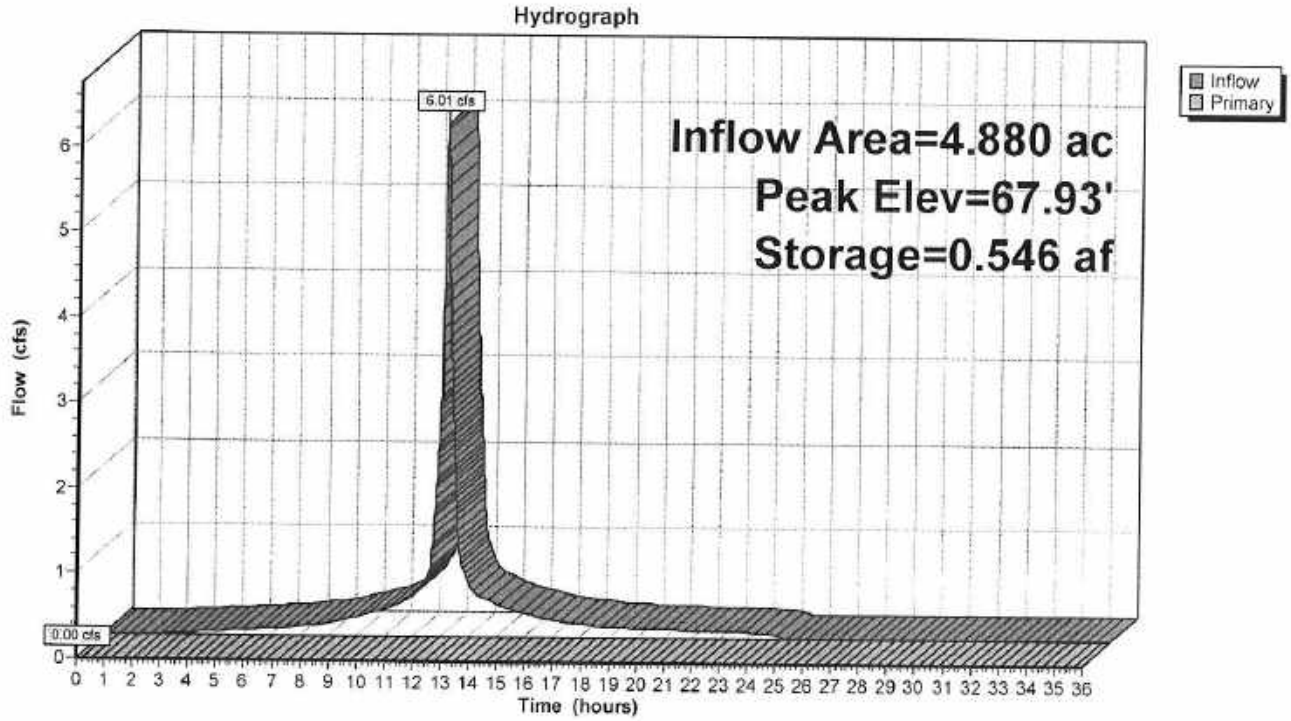
Volume	Invert	Avail.Storage	Storage Description
#1	66.50'	2.030 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
66.50	0.350	0.000	0.000
67.00	0.370	0.180	0.180
68.00	0.420	0.395	0.575
69.00	0.460	0.440	1.015
70.00	0.510	0.485	1.500
71.00	0.550	0.530	2.030

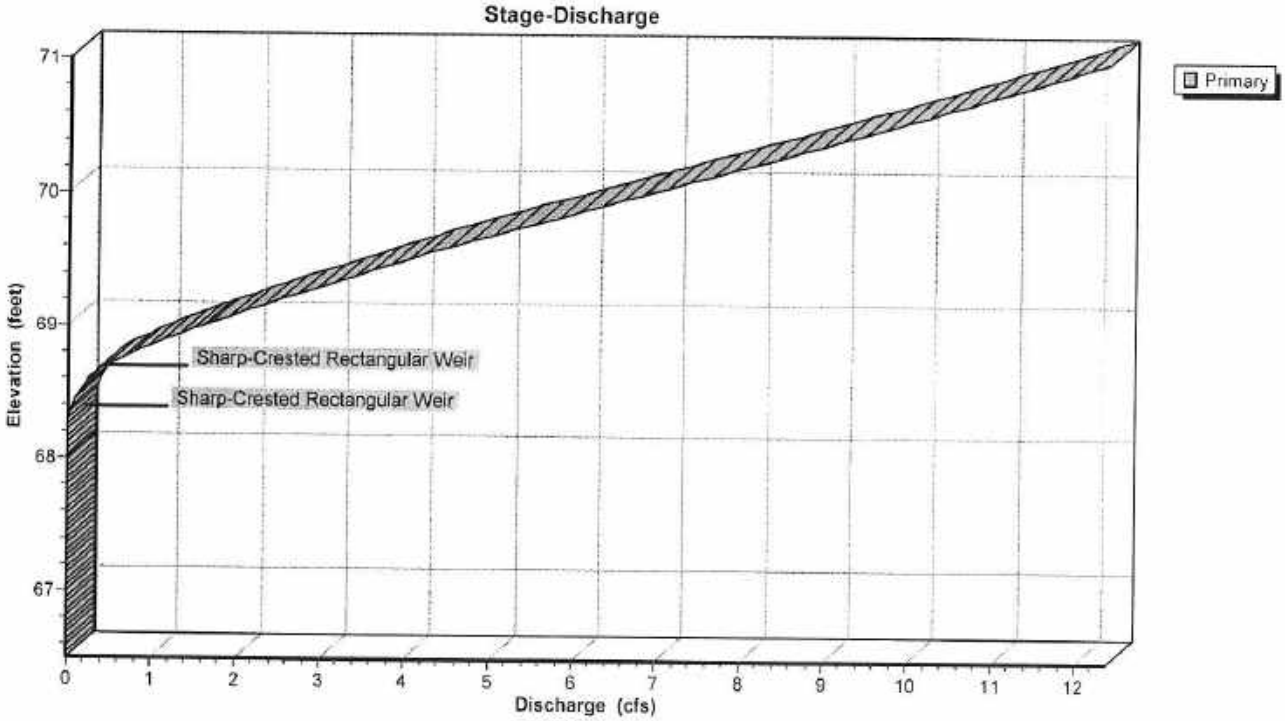
Device	Routing	Invert	Outlet Devices
#1	Primary	68.30'	**0.5' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	68.60'	**1.2' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=66.50' (Free Discharge)
└─**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└─**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

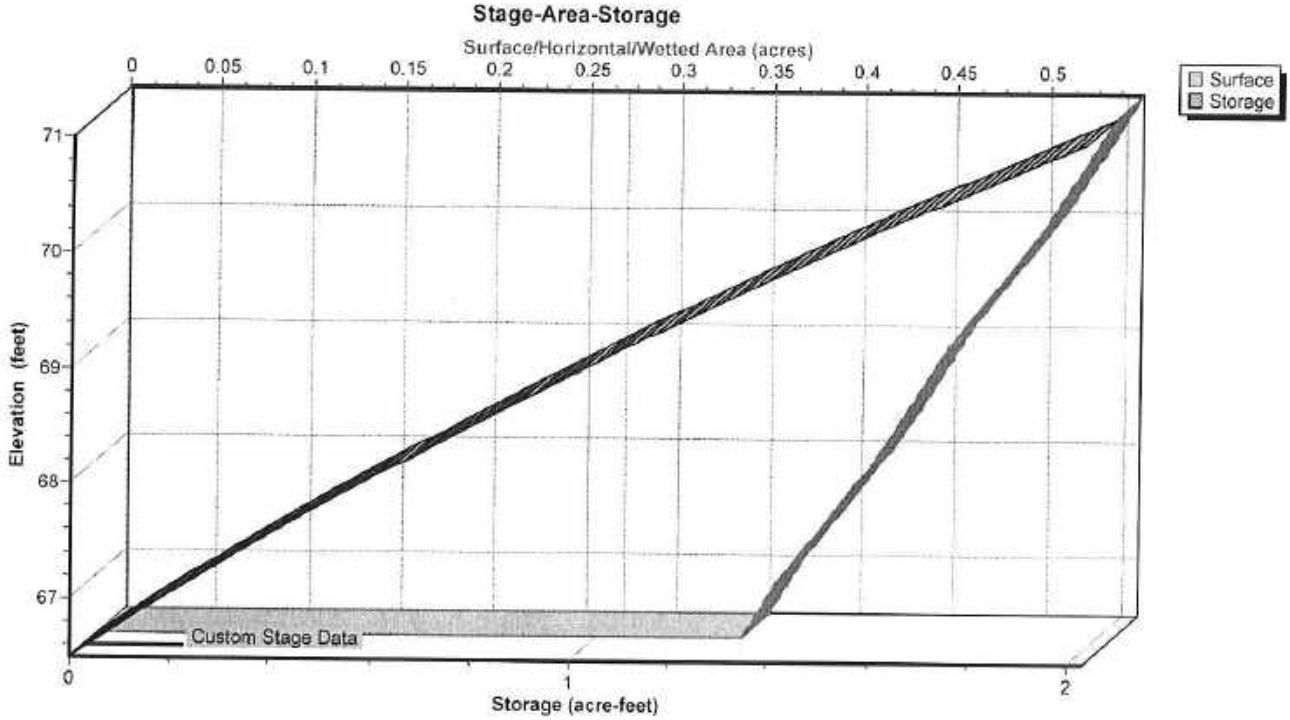
Pond 7P: Detention Basin



Pond 7P: Detention Basin



Pond 7P: Detention Basin



Hydrograph for Pond 7P: Detention Basin

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.000	66.50	**0.00**
1.00	0.00	0.000	66.50	0.00
2.00	0.01	0.000	66.50	0.00
3.00	0.03	0.002	66.50	0.00
4.00	0.04	0.004	66.51	0.00
5.00	0.06	0.009	66.52	0.00
6.00	0.08	0.014	66.54	0.00
7.00	0.11	0.022	66.56	0.00
8.00	0.15	0.033	66.59	0.00
9.00	0.22	0.048	66.64	0.00
10.00	0.31	0.070	66.70	0.00
11.00	0.47	0.101	66.78	0.00
12.00	**3.20**	0.189	67.03	0.00
13.00	**0.62**	0.389	67.54	0.00
14.00	0.37	0.427	67.64	0.00
15.00	0.28	0.454	67.71	0.00
16.00	0.20	0.474	67.75	0.00
17.00	0.16	0.488	67.79	0.00
18.00	0.12	0.500	67.82	0.00
19.00	0.11	0.509	67.84	0.00
20.00	0.10	0.518	67.86	0.00
21.00	0.09	0.526	67.88	0.00
22.00	0.08	0.533	67.90	0.00
23.00	0.07	0.539	67.91	0.00
24.00	0.07	**0.545**	**67.93**	0.00
25.00	0.00	**0.546**	**67.93**	0.00
26.00	0.00	0.546	67.93	0.00
27.00	0.00	0.546	67.93	0.00
28.00	0.00	0.546	67.93	0.00
29.00	0.00	0.546	67.93	0.00
30.00	0.00	0.546	67.93	0.00
31.00	0.00	0.546	67.93	0.00
32.00	0.00	0.546	67.93	0.00
33.00	0.00	0.546	67.93	0.00
34.00	0.00	0.546	67.93	0.00
35.00	0.00	0.546	67.93	0.00
36.00	0.00	0.546	67.93	0.00

Stage-Discharge for Pond 7P: Detention Basin

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
66.50	0.00	69.10	2.07
66.55	0.00	69.15	2.30
66.60	0.00	69.20	2.53
66.65	0.00	69.25	2.77
66.70	0.00	69.30	3.01
66.75	0.00	69.35	3.25
66.80	0.00	69.40	3.49
66.85	0.00	69.45	3.73
66.90	0.00	69.50	3.97
66.95	0.00	69.55	4.20
67.00	0.00	69.60	4.48
67.05	0.00	69.65	4.77
67.10	0.00	69.70	5.05
67.15	0.00	69.75	5.34
67.20	0.00	69.80	5.63
67.25	0.00	69.85	5.92
67.30	0.00	69.90	6.21
67.35	0.00	69.95	6.50
67.40	0.00	70.00	6.80
67.45	0.00	70.05	7.09
67.50	0.00	70.10	7.38
67.55	0.00	70.15	7.67
67.60	0.00	70.20	7.96
67.65	0.00	70.25	8.26
67.70	0.00	70.30	8.55
67.75	0.00	70.35	8.83
67.80	0.00	70.40	9.12
67.85	0.00	70.45	9.41
67.90	0.00	70.50	9.69
67.95	0.00	70.55	9.97
68.00	0.00	70.60	10.25
68.05	0.00	70.65	10.53
68.10	0.00	70.70	10.80
68.15	0.00	70.75	11.07
68.20	0.00	70.80	11.34
68.25	0.00	70.85	11.61
68.30	0.00	70.90	11.87
68.35	0.02	70.95	12.13
68.40	0.05	71.00	**12.38**
68.45	0.09		
68.50	0.13		
68.55	0.18		
68.60	0.24		
68.65	0.33		
68.70	0.47		
68.75	0.63		
68.80	0.80		
68.85	0.99		
68.90	1.19		
68.95	1.40		
69.00	1.62		
69.05	1.84		

Stage-Area-Storage for Pond 7P: Detention Basin

Elevation (feet)	Surface (acres)	Storage (acre-feet)
66.50	0.350	0.000
66.55	0.352	0.018
66.60	0.354	0.035
66.65	0.356	0.053
66.70	0.358	0.071
66.75	0.360	0.089
66.80	0.362	0.107
66.85	0.364	0.125
66.90	0.366	0.143
66.95	0.368	0.162
67.00	0.370	0.180
67.05	0.372	0.199
67.10	0.375	0.217
67.15	0.378	0.236
67.20	0.380	0.255
67.25	0.383	0.274
67.30	0.385	0.293
67.35	0.387	0.313
67.40	0.390	0.332
67.45	0.393	0.352
67.50	0.395	0.371
67.55	0.397	0.391
67.60	0.400	0.411
67.65	0.403	0.431
67.70	0.405	0.451
67.75	0.408	0.472
67.80	0.410	0.492
67.85	0.412	0.513
67.90	0.415	0.533
67.95	0.418	0.554
68.00	0.420	0.575
68.05	0.422	0.596
68.10	0.424	0.617
68.15	0.426	0.638
68.20	0.428	0.660
68.25	0.430	0.681
68.30	0.432	0.703
68.35	0.434	0.724
68.40	0.436	0.746
68.45	0.438	0.768
68.50	0.440	0.790
68.55	0.442	0.812
68.60	0.444	0.834
68.65	0.446	0.856
68.70	0.448	0.879
68.75	0.450	0.901
68.80	0.452	0.924
68.85	0.454	0.946
68.90	0.456	0.969
68.95	0.458	0.992
69.00	0.460	1.015
69.05	0.462	1.038
69.10	0.465	1.061
69.15	0.468	1.085
69.20	0.470	1.108
69.25	0.472	1.132
69.30	0.475	1.155
69.35	0.477	1.179
69.40	0.480	1.203
69.45	0.483	1.227
69.50	0.485	1.251
69.55	0.487	1.276
69.60	0.490	1.300
69.65	0.493	1.325
69.70	0.495	1.349
69.75	0.497	1.374
69.80	0.500	1.399
69.85	0.502	1.424
69.90	0.505	1.449
69.95	0.508	1.475
70.00	0.510	1.500
70.05	0.512	1.526
70.10	0.514	1.551
70.15	0.516	1.577
70.20	0.518	1.603
70.25	0.520	1.629
70.30	0.522	1.655
70.35	0.524	1.681
70.40	0.526	1.707
70.45	0.528	1.734
70.50	0.530	1.760
70.55	0.532	1.787
70.60	0.534	1.813
70.65	0.536	1.840
70.70	0.538	1.867
70.75	0.540	1.894
70.80	0.542	1.921
70.85	0.544	1.948
70.90	0.546	1.975
70.95	0.548	2.003
71.00	**0.550**	**2.030**

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Pond 7P: Detention Basin Peak Elev=68.20' Storage=0.658 af Inflow=7.08 cfs 0.658 af
Outflow=0.00 cfs 0.000 af

Summary for Pond 7P: Detention Basin

Inflow Area =	4.880 ac,	50.00% Impervious,	Inflow Depth =	1.62"	for 2-Year event
Inflow =	7.08 cfs @	12.13 hrs,	Volume=	0.658 af	
Outflow =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af,	Atten= 100%, Lag= 0.0 min
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Peak Elev= 68.20' @ 24.57 hrs Surf.Area= 0.428 ac Storage= 0.658 af

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

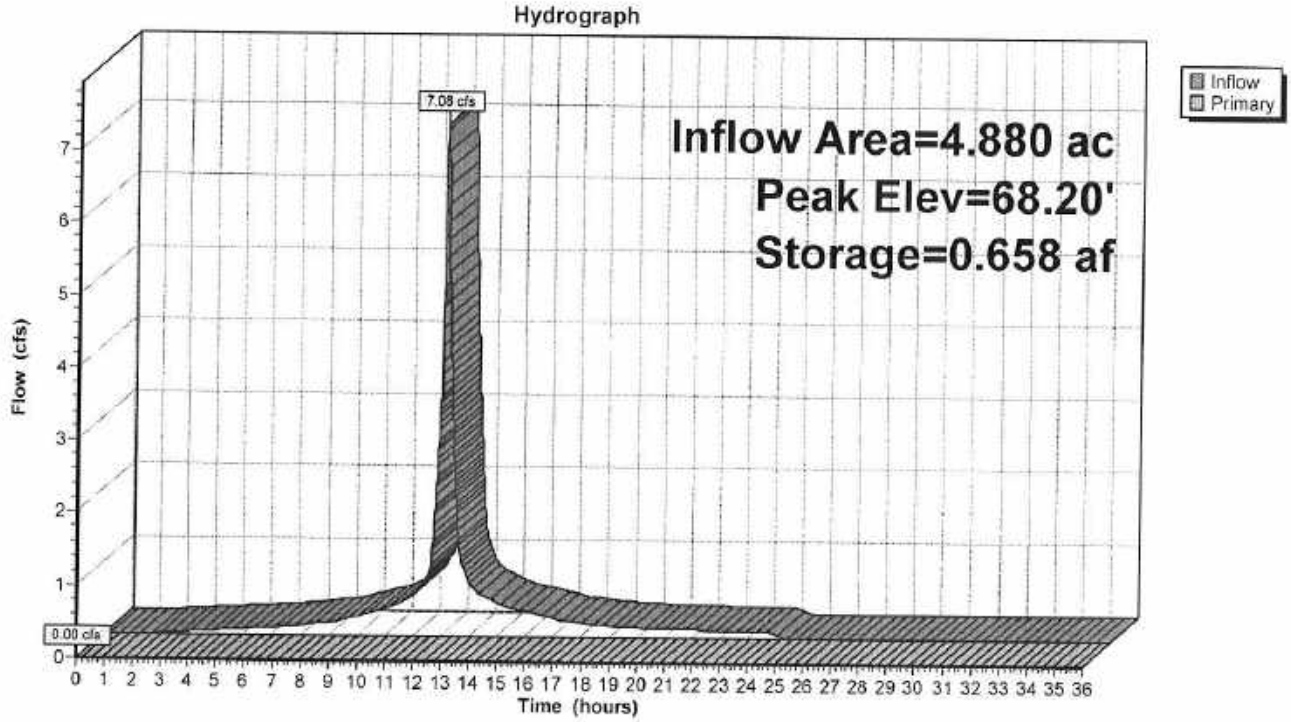
Volume	Invert	Avail.Storage	Storage Description
#1	66.50'	2.030 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
66.50	0.350	0.000	0.000
67.00	0.370	0.180	0.180
68.00	0.420	0.395	0.575
69.00	0.460	0.440	1.015
70.00	0.510	0.485	1.500
71.00	0.550	0.530	2.030

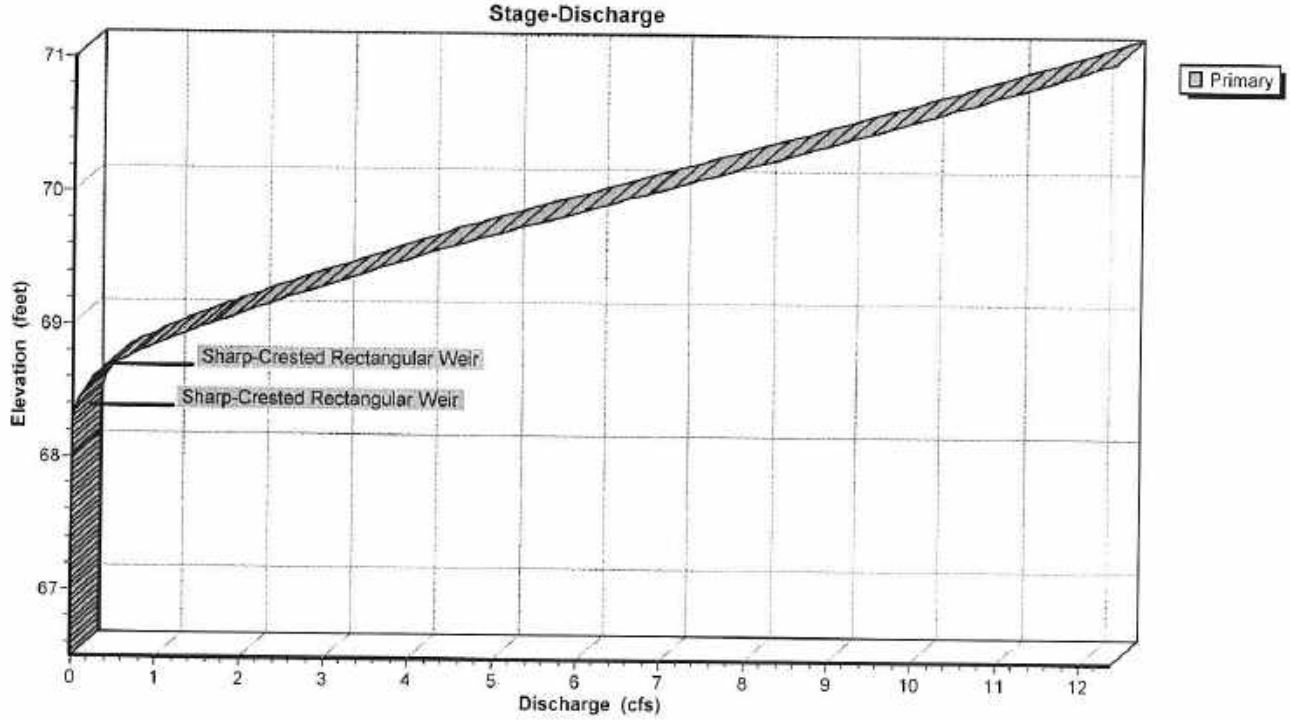
Device	Routing	Invert	Outlet Devices
#1	Primary	68.30'	**0.5' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	68.60'	**1.2' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=66.50' (Free Discharge)
└─**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└─**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

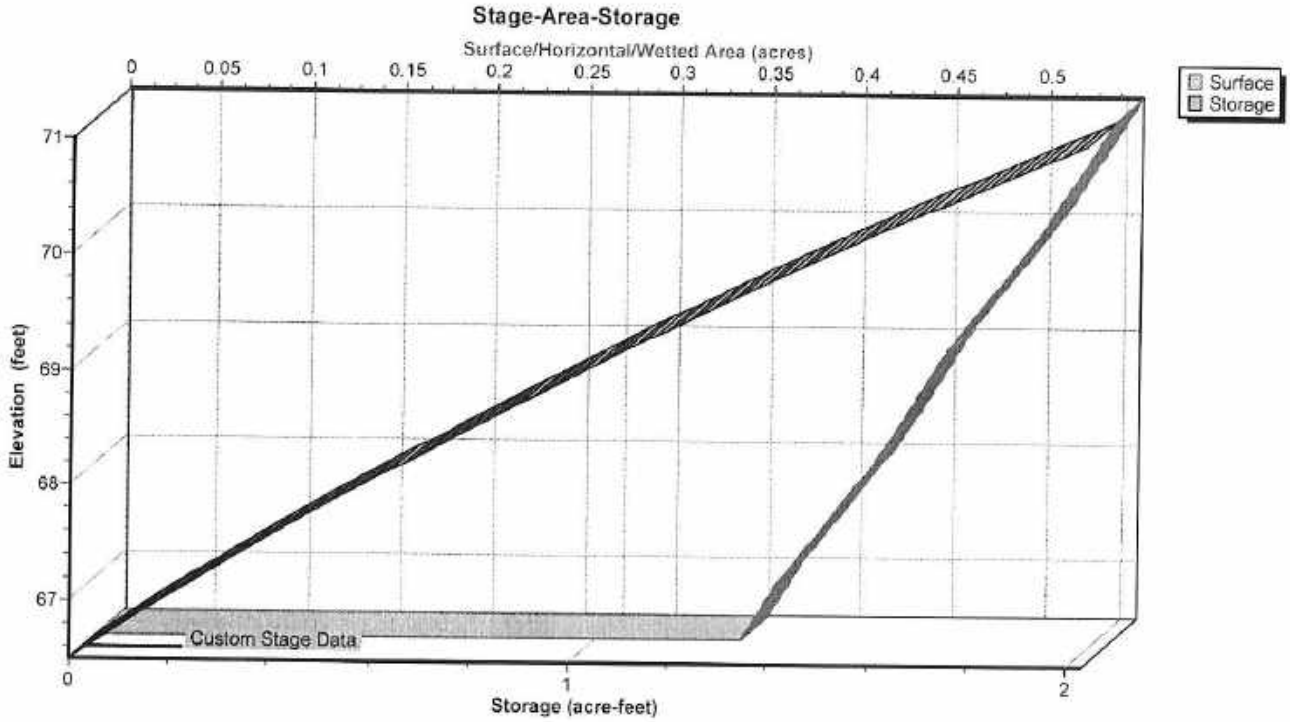
Pond 7P: Detention Basin



Pond 7P: Detention Basin



Pond 7P: Detention Basin



Hydrograph for Pond 7P: Detention Basin

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.000	66.50	**0.00**
1.00	0.00	0.000	66.50	0.00
2.00	0.02	0.000	66.50	0.00
3.00	0.04	0.003	66.51	0.00
4.00	0.06	0.007	66.52	0.00
5.00	0.08	0.012	66.53	0.00
6.00	0.10	0.019	66.56	0.00
7.00	0.14	0.029	66.58	0.00
8.00	0.18	0.042	66.62	0.00
9.00	0.27	0.060	66.67	0.00
10.00	0.37	0.087	66.74	0.00
11.00	0.55	0.124	66.85	0.00
12.00	**3.78**	0.229	67.13	0.00
13.00	**0.73**	0.463	67.73	0.00
14.00	0.46	0.510	67.84	0.00
15.00	0.35	0.543	67.92	0.00
16.00	0.25	0.567	67.98	0.00
17.00	0.20	0.586	68.03	0.00
18.00	0.15	0.600	68.06	0.00
19.00	0.14	0.612	68.09	0.00
20.00	0.12	0.623	68.11	0.00
21.00	0.11	0.633	68.14	0.00
22.00	0.10	0.642	68.16	0.00
23.00	0.09	0.650	68.18	0.00
24.00	0.08	**0.657**	**68.19**	0.00
25.00	0.00	**0.658**	**68.20**	0.00
26.00	0.00	0.658	68.20	0.00
27.00	0.00	0.658	68.20	0.00
28.00	0.00	0.658	68.20	0.00
29.00	0.00	0.658	68.20	0.00
30.00	0.00	0.658	68.20	0.00
31.00	0.00	0.658	68.20	0.00
32.00	0.00	0.658	68.20	0.00
33.00	0.00	0.658	68.20	0.00
34.00	0.00	0.658	68.20	0.00
35.00	0.00	0.658	68.20	0.00
36.00	0.00	0.658	68.20	0.00

Stage-Discharge for Pond 7P: Detention Basin

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
66.50	0.00	69.10	2.07
66.55	0.00	69.15	2.30
66.60	0.00	69.20	2.53
66.65	0.00	69.25	2.77
66.70	0.00	69.30	3.01
66.75	0.00	69.35	3.25
66.80	0.00	69.40	3.49
66.85	0.00	69.45	3.73
66.90	0.00	69.50	3.97
66.95	0.00	69.55	4.20
67.00	0.00	69.60	4.48
67.05	0.00	69.65	4.77
67.10	0.00	69.70	5.05
67.15	0.00	69.75	5.34
67.20	0.00	69.80	5.63
67.25	0.00	69.85	5.92
67.30	0.00	69.90	6.21
67.35	0.00	69.95	6.50
67.40	0.00	70.00	6.80
67.45	0.00	70.05	7.09
67.50	0.00	70.10	7.38
67.55	0.00	70.15	7.67
67.60	0.00	70.20	7.96
67.65	0.00	70.25	8.26
67.70	0.00	70.30	8.55
67.75	0.00	70.35	8.83
67.80	0.00	70.40	9.12
67.85	0.00	70.45	9.41
67.90	0.00	70.50	9.69
67.95	0.00	70.55	9.97
68.00	0.00	70.60	10.25
68.05	0.00	70.65	10.53
68.10	0.00	70.70	10.80
68.15	0.00	70.75	11.07
68.20	0.00	70.80	11.34
68.25	0.00	70.85	11.61
68.30	0.00	70.90	11.87
68.35	0.02	70.95	12.13
68.40	0.05	71.00	**12.38**
68.45	0.09		
68.50	0.13		
68.55	0.18		
68.60	0.24		
68.65	0.33		
68.70	0.47		
68.75	0.63		
68.80	0.80		
68.85	0.99		
68.90	1.19		
68.95	1.40		
69.00	1.62		
69.05	1.84		

Stage-Area-Storage for Pond 7P: Detention Basin

Elevation (feet)	Surface (acres)	Storage (acre-feet)
66.50	0.350	0.000
66.55	0.352	0.018
66.60	0.354	0.035
66.65	0.356	0.053
66.70	0.358	0.071
66.75	0.360	0.089
66.80	0.362	0.107
66.85	0.364	0.125
66.90	0.366	0.143
66.95	0.368	0.162
67.00	0.370	0.180
67.05	0.372	0.199
67.10	0.375	0.217
67.15	0.378	0.236
67.20	0.380	0.255
67.25	0.383	0.274
67.30	0.385	0.293
67.35	0.387	0.313
67.40	0.390	0.332
67.45	0.393	0.352
67.50	0.395	0.371
67.55	0.397	0.391
67.60	0.400	0.411
67.65	0.403	0.431
67.70	0.405	0.451
67.75	0.408	0.472
67.80	0.410	0.492
67.85	0.412	0.513
67.90	0.415	0.533
67.95	0.418	0.554
68.00	0.420	0.575
68.05	0.422	0.596
68.10	0.424	0.617
68.15	0.426	0.638
68.20	0.428	0.660
68.25	0.430	0.681
68.30	0.432	0.703
68.35	0.434	0.724
68.40	0.436	0.746
68.45	0.438	0.768
68.50	0.440	0.790
68.55	0.442	0.812
68.60	0.444	0.834
68.65	0.446	0.856
68.70	0.448	0.879
68.75	0.450	0.901
68.80	0.452	0.924
68.85	0.454	0.946
68.90	0.456	0.969
68.95	0.458	0.992
69.00	0.460	1.015
69.05	0.462	1.038
69.10	0.465	1.061
69.15	0.468	1.085
69.20	0.470	1.108
69.25	0.472	1.132
69.30	0.475	1.155
69.35	0.477	1.179
69.40	0.480	1.203
69.45	0.483	1.227
69.50	0.485	1.251
69.55	0.487	1.276
69.60	0.490	1.300
69.65	0.493	1.325
69.70	0.495	1.349
69.75	0.497	1.374
69.80	0.500	1.399
69.85	0.502	1.424
69.90	0.505	1.449
69.95	0.508	1.475
70.00	0.510	1.500
70.05	0.512	1.526
70.10	0.514	1.551
70.15	0.516	1.577
70.20	0.518	1.603
70.25	0.520	1.629
70.30	0.522	1.655
70.35	0.524	1.681
70.40	0.526	1.707
70.45	0.528	1.734
70.50	0.530	1.760
70.55	0.532	1.787
70.60	0.534	1.813
70.65	0.536	1.840
70.70	0.538	1.867
70.75	0.540	1.894
70.80	0.542	1.921
70.85	0.544	1.948
70.90	0.546	1.975
70.95	0.548	2.003
71.00	**0.550**	**2.030**

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Pond 7P: Detention Basin Peak Elev=68.69' Storage=0.875 af Inflow=11.22 cfs 1.112 af
Outflow=0.44 cfs 0.376 af

Summary for Pond 7P: Detention Basin

Inflow Area =	4.880 ac, 50.00% Impervious, Inflow Depth = 2.73" for 10-Year event				
Inflow =	11.22 cfs @	12.14 hrs, Volume=	1.112 af		
Outflow =	0.44 cfs @	16.05 hrs, Volume=	0.376 af, Atten= 96%, Lag= 234.5 min		
Primary =	0.44 cfs @	16.05 hrs, Volume=	0.376 af		

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Peak Elev= 68.69' @ 16.05 hrs Surf.Area= 0.448 ac Storage= 0.875 af

Plug-Flow detention time= 656.4 min calculated for 0.376 af (34% of inflow)
Center-of-Mass det. time= 472.7 min (1,241.6 - 768.9)

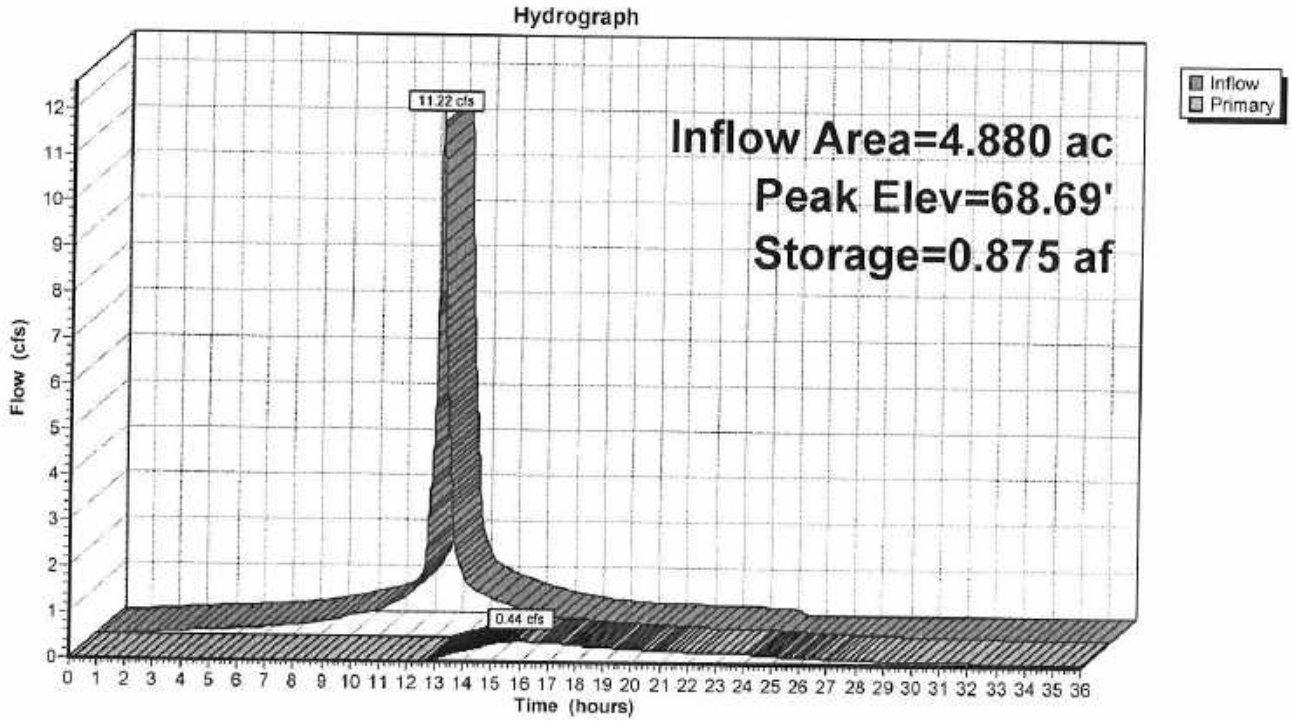
Volume	Invert	Avail.Storage	Storage Description
#1	66.50'	2.030 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
66.50	0.350	0.000	0.000
67.00	0.370	0.180	0.180
68.00	0.420	0.395	0.575
69.00	0.460	0.440	1.015
70.00	0.510	0.485	1.500
71.00	0.550	0.530	2.030

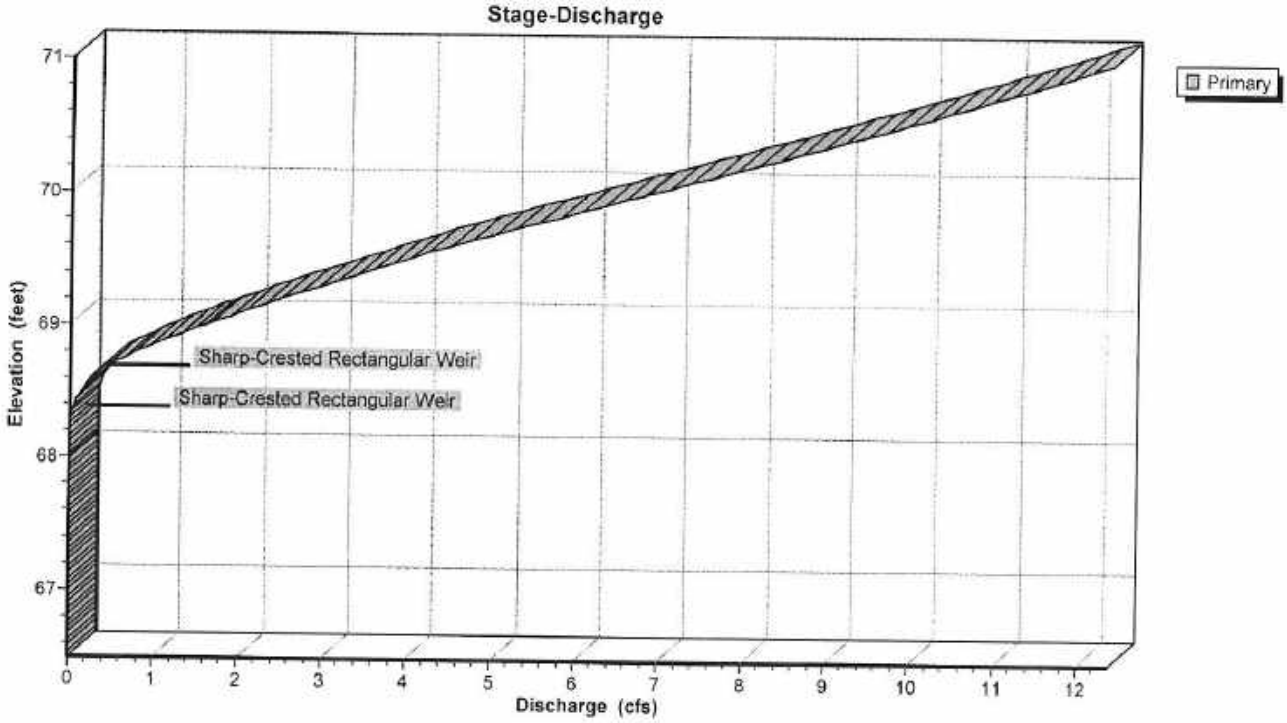
Device	Routing	Invert	Outlet Devices
#1	Primary	68.30'	**0.5' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	68.60'	**1.2' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=0.44 cfs @ 16.05 hrs HW=68.69' (Free Discharge)
└─**1=Sharp-Crested Rectangular Weir** (Weir Controls 0.34 cfs @ 2.04 fps)
└─**2=Sharp-Crested Rectangular Weir** (Weir Controls 0.11 cfs @ 0.98 fps)

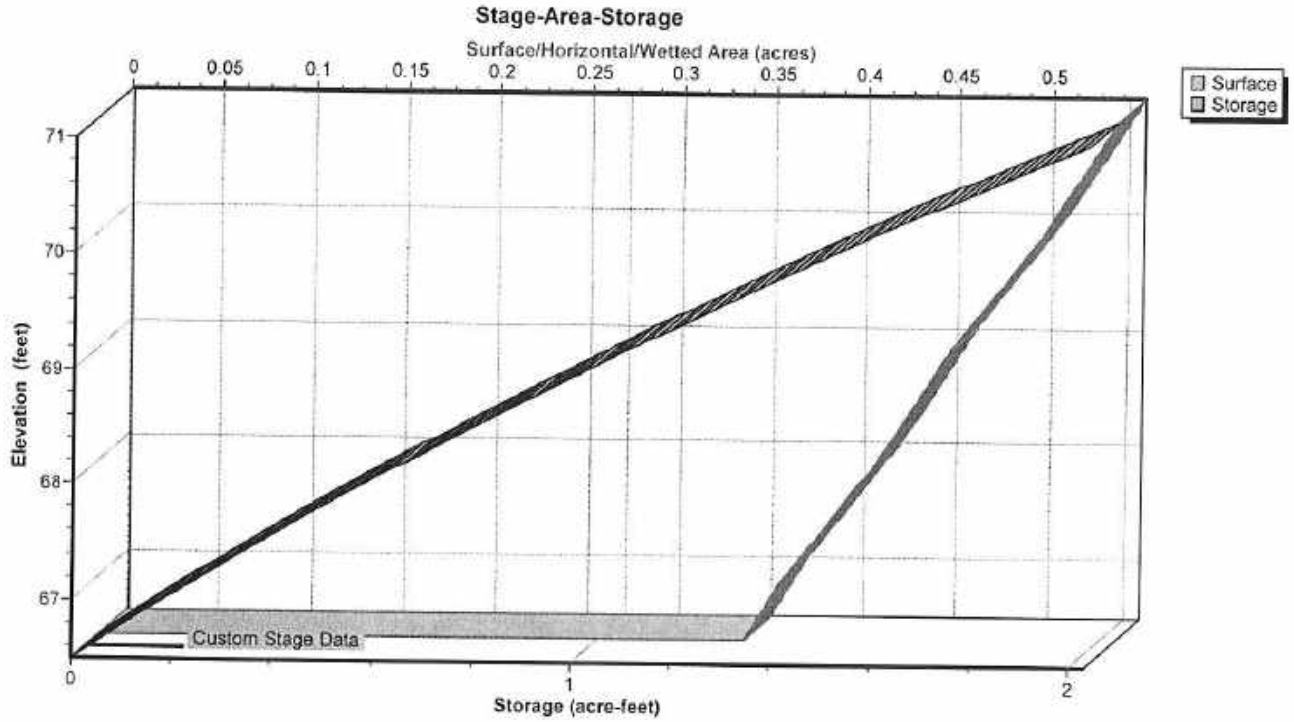
Pond 7P: Detention Basin



Pond 7P: Detention Basin



Pond 7P: Detention Basin



Hydrograph for Pond 7P: Detention Basin

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.000	66.50	0.00
1.00	0.00	0.000	66.50	0.00
2.00	0.05	0.002	66.51	0.00
3.00	0.08	0.008	66.52	0.00
4.00	0.12	0.016	66.55	0.00
5.00	0.14	0.027	66.58	0.00
6.00	0.17	0.040	66.61	0.00
7.00	0.23	0.056	66.66	0.00
8.00	0.30	0.078	66.72	0.00
9.00	0.43	0.108	66.80	0.00
10.00	0.58	0.150	66.92	0.00
11.00	0.87	0.209	67.08	0.00
12.00	**5.84**	0.371	67.50	0.00
13.00	**1.33**	0.760	68.43	0.07
14.00	0.83	0.831	68.59	0.23
15.00	0.63	0.865	68.67	0.38
16.00	0.45	**0.875**	**68.69**	**0.44**
17.00	0.36	**0.871**	**68.68**	**0.42**
18.00	0.28	0.864	68.67	0.38
19.00	0.25	0.856	68.65	0.34
20.00	0.22	0.849	68.63	0.30
21.00	0.20	0.843	68.62	0.27
22.00	0.18	0.838	68.61	0.25
23.00	0.17	0.832	68.60	0.23
24.00	0.15	0.827	68.58	0.22
25.00	0.00	0.812	68.55	0.18
26.00	0.00	0.798	68.52	0.15
27.00	0.00	0.787	68.49	0.13
28.00	0.00	0.777	68.47	0.11
29.00	0.00	0.769	68.45	0.09
30.00	0.00	0.762	68.44	0.08
31.00	0.00	0.756	68.42	0.07
32.00	0.00	0.751	68.41	0.06
33.00	0.00	0.746	68.40	0.05
34.00	0.00	0.742	68.39	0.04
35.00	0.00	0.739	68.38	0.04
36.00	0.00	0.736	68.38	0.03

Stage-Discharge for Pond 7P: Detention Basin

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
66.50	0.00	69.10	2.07
66.55	0.00	69.15	2.30
66.60	0.00	69.20	2.53
66.65	0.00	69.25	2.77
66.70	0.00	69.30	3.01
66.75	0.00	69.35	3.25
66.80	0.00	69.40	3.49
66.85	0.00	69.45	3.73
66.90	0.00	69.50	3.97
66.95	0.00	69.55	4.20
67.00	0.00	69.60	4.48
67.05	0.00	69.65	4.77
67.10	0.00	69.70	5.05
67.15	0.00	69.75	5.34
67.20	0.00	69.80	5.63
67.25	0.00	69.85	5.92
67.30	0.00	69.90	6.21
67.35	0.00	69.95	6.50
67.40	0.00	70.00	6.80
67.45	0.00	70.05	7.09
67.50	0.00	70.10	7.38
67.55	0.00	70.15	7.67
67.60	0.00	70.20	7.96
67.65	0.00	70.25	8.26
67.70	0.00	70.30	8.55
67.75	0.00	70.35	8.83
67.80	0.00	70.40	9.12
67.85	0.00	70.45	9.41
67.90	0.00	70.50	9.69
67.95	0.00	70.55	9.97
68.00	0.00	70.60	10.25
68.05	0.00	70.65	10.53
68.10	0.00	70.70	10.80
68.15	0.00	70.75	11.07
68.20	0.00	70.80	11.34
68.25	0.00	70.85	11.61
68.30	0.00	70.90	11.87
68.35	0.02	70.95	12.13
68.40	0.05	71.00	**12.38**
68.45	0.09		
68.50	0.13		
68.55	0.18		
68.60	0.24		
68.65	0.33		
68.70	0.47		
68.75	0.63		
68.80	0.80		
68.85	0.99		
68.90	1.19		
68.95	1.40		
69.00	1.62		
69.05	1.84		

Stage-Area-Storage for Pond 7P: Detention Basin

Elevation (feet)	Surface (acres)	Storage (acre-feet)
66.50	0.350	0.000
66.55	0.352	0.018
66.60	0.354	0.035
66.65	0.356	0.053
66.70	0.358	0.071
66.75	0.360	0.089
66.80	0.362	0.107
66.85	0.364	0.125
66.90	0.366	0.143
66.95	0.368	0.162
67.00	0.370	0.180
67.05	0.372	0.199
67.10	0.375	0.217
67.15	0.378	0.236
67.20	0.380	0.255
67.25	0.383	0.274
67.30	0.385	0.293
67.35	0.387	0.313
67.40	0.390	0.332
67.45	0.393	0.352
67.50	0.395	0.371
67.55	0.397	0.391
67.60	0.400	0.411
67.65	0.403	0.431
67.70	0.405	0.451
67.75	0.408	0.472
67.80	0.410	0.492
67.85	0.412	0.513
67.90	0.415	0.533
67.95	0.418	0.554
68.00	0.420	0.575
68.05	0.422	0.596
68.10	0.424	0.617
68.15	0.426	0.638
68.20	0.428	0.660
68.25	0.430	0.681
68.30	0.432	0.703
68.35	0.434	0.724
68.40	0.436	0.746
68.45	0.438	0.768
68.50	0.440	0.790
68.55	0.442	0.812
68.60	0.444	0.834
68.65	0.446	0.856
68.70	0.448	0.879
68.75	0.450	0.901
68.80	0.452	0.924
68.85	0.454	0.946
68.90	0.456	0.969
68.95	0.458	0.992
69.00	0.460	1.015
69.05	0.462	1.038
69.10	0.465	1.061
69.15	0.468	1.085
69.20	0.470	1.108
69.25	0.472	1.132
69.30	0.475	1.155
69.35	0.477	1.179
69.40	0.480	1.203
69.45	0.483	1.227
69.50	0.485	1.251
69.55	0.487	1.276
69.60	0.490	1.300
69.65	0.493	1.325
69.70	0.495	1.349
69.75	0.497	1.374
69.80	0.500	1.399
69.85	0.502	1.424
69.90	0.505	1.449
69.95	0.508	1.475
70.00	0.510	1.500
70.05	0.512	1.526
70.10	0.514	1.551
70.15	0.516	1.577
70.20	0.518	1.603
70.25	0.520	1.629
70.30	0.522	1.655
70.35	0.524	1.681
70.40	0.526	1.707
70.45	0.528	1.734
70.50	0.530	1.760
70.55	0.532	1.787
70.60	0.534	1.813
70.65	0.536	1.840
70.70	0.538	1.867
70.75	0.540	1.894
70.80	0.542	1.921
70.85	0.544	1.948
70.90	0.546	1.975
70.95	0.548	2.003
71.00	**0.550**	**2.030**

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Pond 7P: Detention Basin Peak Elev=68.91' Storage=0.976 af Inflow=15.23 cfs 1.479 af
Outflow=1.25 cfs 0.740 af

Summary for Pond 7P: Detention Basin

Inflow Area =	4.880 ac, 50.00% Impervious, Inflow Depth = 3.64" for 25-Year event				
Inflow =	15.23 cfs @ 12.14 hrs, Volume=	1.479 af			
Outflow =	1.25 cfs @ 13.74 hrs, Volume=	0.740 af, Atten= 92%, Lag= 96.1 min			
Primary =	1.25 cfs @ 13.74 hrs, Volume=	0.740 af			

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Peak Elev= 68.91' @ 13.74 hrs Surf.Area= 0.457 ac Storage= 0.976 af

Plug-Flow detention time= 466.4 min calculated for 0.740 af (50% of inflow)
Center-of-Mass det. time= 327.8 min (1,098.2 - 770.4)

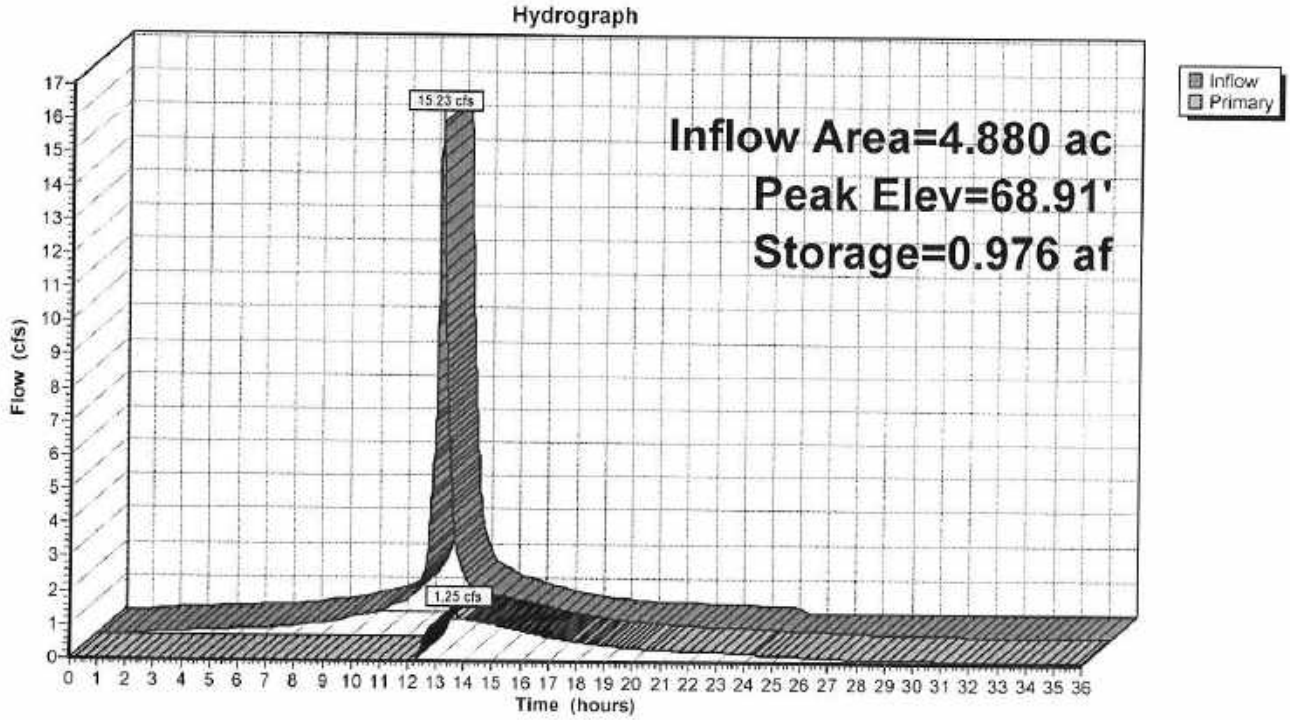
Volume	Invert	Avail.Storage	Storage Description
#1	66.50'	2.030 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
66.50	0.350	0.000	0.000
67.00	0.370	0.180	0.180
68.00	0.420	0.395	0.575
69.00	0.460	0.440	1.015
70.00	0.510	0.485	1.500
71.00	0.550	0.530	2.030

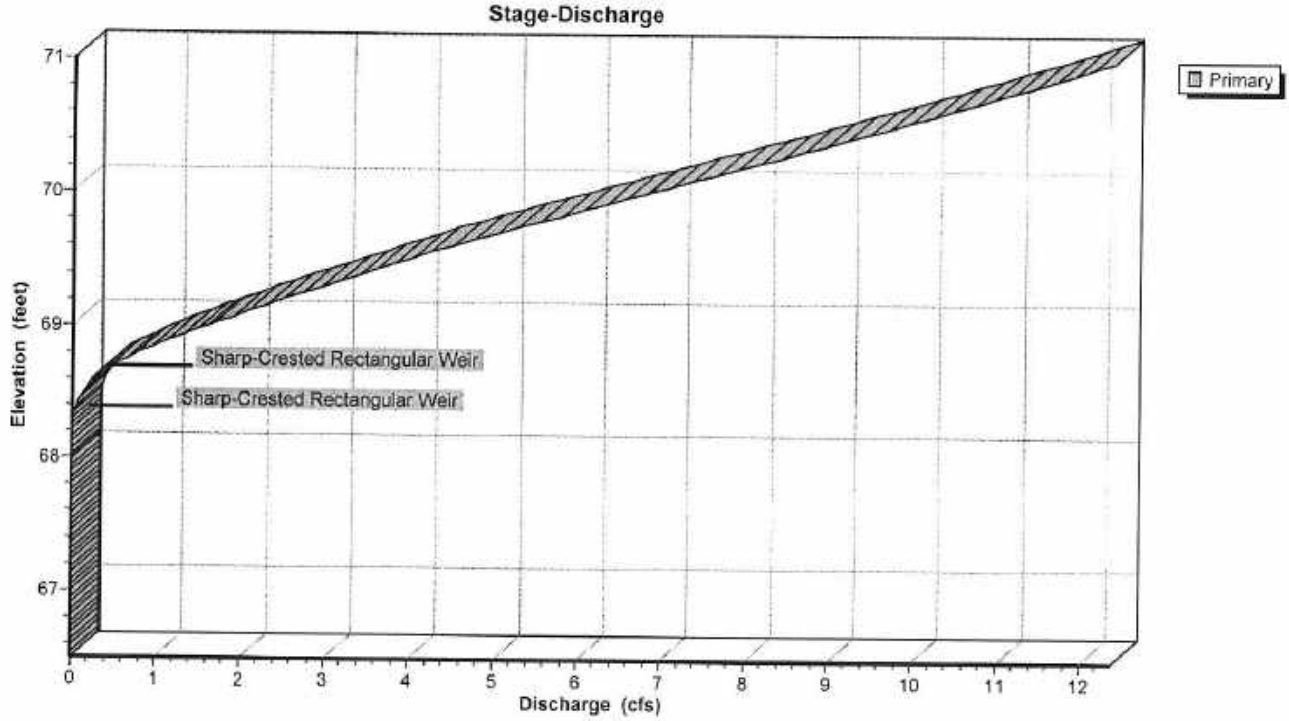
Device	Routing	Invert	Outlet Devices
#1	Primary	68.30'	**0.5' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	68.60'	**1.2' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=1.25 cfs @ 13.74 hrs HW=68.91' (Free Discharge)
└─**1=Sharp-Crested Rectangular Weir** (Weir Controls 0.59 cfs @ 2.56 fps)
└─**2=Sharp-Crested Rectangular Weir** (Weir Controls 0.66 cfs @ 1.83 fps)

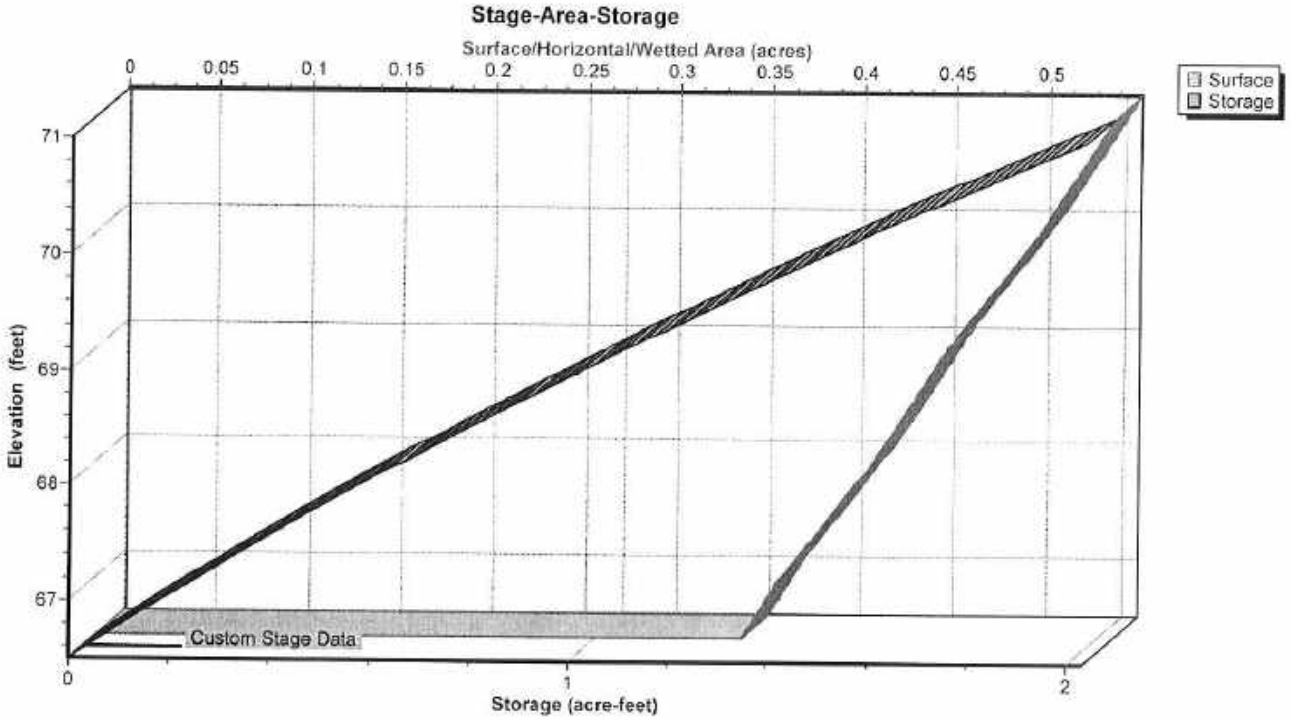
Pond 7P: Detention Basin



Pond 7P: Detention Basin



Pond 7P: Detention Basin



Hydrograph for Pond 7P: Detention Basin

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.000	66.50	0.00
1.00	0.02	0.000	66.50	0.00
2.00	0.08	0.005	66.51	0.00
3.00	0.12	0.013	66.54	0.00
4.00	0.16	0.024	66.57	0.00
5.00	0.19	0.039	66.61	0.00
6.00	0.22	0.056	66.66	0.00
7.00	0.30	0.077	66.72	0.00
8.00	0.38	0.105	66.80	0.00
9.00	0.55	0.143	66.90	0.00
10.00	0.74	0.197	67.04	0.00
11.00	1.09	0.271	67.24	0.00
12.00	**7.54**	0.476	67.76	0.00
13.00	**1.80**	**0.961**	**68.88**	**1.12**
14.00	1.12	**0.974**	**68.91**	**1.24**
15.00	0.85	0.958	68.88	1.09
16.00	0.61	0.936	68.83	0.90
17.00	0.48	0.914	68.78	0.72
18.00	0.38	0.895	68.74	0.59
19.00	0.33	0.880	68.70	0.48
20.00	0.30	0.870	68.68	0.41
21.00	0.27	0.861	68.66	0.36
22.00	0.25	0.855	68.65	0.33
23.00	0.22	0.848	68.63	0.30
24.00	0.20	0.842	68.62	0.27
25.00	0.00	0.825	68.58	0.21
26.00	0.00	0.809	68.54	0.18
27.00	0.00	0.796	68.51	0.15
28.00	0.00	0.785	68.49	0.12
29.00	0.00	0.775	68.47	0.10
30.00	0.00	0.767	68.45	0.09
31.00	0.00	0.761	68.43	0.08
32.00	0.00	0.755	68.42	0.07
33.00	0.00	0.750	68.41	0.06
34.00	0.00	0.745	68.40	0.05
35.00	0.00	0.742	68.39	0.04
36.00	0.00	0.738	68.38	0.04

Stage-Discharge for Pond 7P: Detention Basin

Elevation (feet)	Primary (cfs)
66.50	0.00
66.55	0.00
66.60	0.00
66.65	0.00
66.70	0.00
66.75	0.00
66.80	0.00
66.85	0.00
66.90	0.00
66.95	0.00
67.00	0.00
67.05	0.00
67.10	0.00
67.15	0.00
67.20	0.00
67.25	0.00
67.30	0.00
67.35	0.00
67.40	0.00
67.45	0.00
67.50	0.00
67.55	0.00
67.60	0.00
67.65	0.00
67.70	0.00
67.75	0.00
67.80	0.00
67.85	0.00
67.90	0.00
67.95	0.00
68.00	0.00
68.05	0.00
68.10	0.00
68.15	0.00
68.20	0.00
68.25	0.00
68.30	0.00
68.35	0.02
68.40	0.05
68.45	0.09
68.50	0.13
68.55	0.18
68.60	0.24
68.65	0.33
68.70	0.47
68.75	0.63
68.80	0.80
68.85	0.99
68.90	1.19
68.95	1.40
69.00	1.62
69.05	1.84
69.10	2.07
69.15	2.30
69.20	2.53
69.25	2.77
69.30	3.01
69.35	3.25
69.40	3.49
69.45	3.73
69.50	3.97
69.55	4.20
69.60	4.48
69.65	4.77
69.70	5.05
69.75	5.34
69.80	5.63
69.85	5.92
69.90	6.21
69.95	6.50
70.00	6.80
70.05	7.09
70.10	7.38
70.15	7.67
70.20	7.96
70.25	8.26
70.30	8.55
70.35	8.83
70.40	9.12
70.45	9.41
70.50	9.69
70.55	9.97
70.60	10.25
70.65	10.53
70.70	10.80
70.75	11.07
70.80	11.34
70.85	11.61
70.90	11.87
70.95	12.13
71.00	**12.38**

Stage-Area-Storage for Pond 7P: Detention Basin

Elevation (feet)	Surface (acres)	Storage (acre-feet)
66.50	0.350	0.000
66.55	0.352	0.018
66.60	0.354	0.035
66.65	0.356	0.053
66.70	0.358	0.071
66.75	0.360	0.089
66.80	0.362	0.107
66.85	0.364	0.125
66.90	0.366	0.143
66.95	0.368	0.162
67.00	0.370	0.180
67.05	0.372	0.199
67.10	0.375	0.217
67.15	0.378	0.236
67.20	0.380	0.255
67.25	0.383	0.274
67.30	0.385	0.293
67.35	0.387	0.313
67.40	0.390	0.332
67.45	0.393	0.352
67.50	0.395	0.371
67.55	0.397	0.391
67.60	0.400	0.411
67.65	0.403	0.431
67.70	0.405	0.451
67.75	0.408	0.472
67.80	0.410	0.492
67.85	0.412	0.513
67.90	0.415	0.533
67.95	0.418	0.554
68.00	0.420	0.575
68.05	0.422	0.596
68.10	0.424	0.617
68.15	0.426	0.638
68.20	0.428	0.660
68.25	0.430	0.681
68.30	0.432	0.703
68.35	0.434	0.724
68.40	0.436	0.746
68.45	0.438	0.768
68.50	0.440	0.790
68.55	0.442	0.812
68.60	0.444	0.834
68.65	0.446	0.856
68.70	0.448	0.879
68.75	0.450	0.901
68.80	0.452	0.924
68.85	0.454	0.946
68.90	0.456	0.969
68.95	0.458	0.992
69.00	0.460	1.015
69.05	0.462	1.038
69.10	0.465	1.061
69.15	0.468	1.085
69.20	0.470	1.108
69.25	0.472	1.132
69.30	0.475	1.155
69.35	0.477	1.179
69.40	0.480	1.203
69.45	0.483	1.227
69.50	0.485	1.251
69.55	0.487	1.276
69.60	0.490	1.300
69.65	0.493	1.325
69.70	0.495	1.349
69.75	0.497	1.374
69.80	0.500	1.399
69.85	0.502	1.424
69.90	0.505	1.449
69.95	0.508	1.475
70.00	0.510	1.500
70.05	0.512	1.526
70.10	0.514	1.551
70.15	0.516	1.577
70.20	0.518	1.603
70.25	0.520	1.629
70.30	0.522	1.655
70.35	0.524	1.681
70.40	0.526	1.707
70.45	0.528	1.734
70.50	0.530	1.760
70.55	0.532	1.787
70.60	0.534	1.813
70.65	0.536	1.840
70.70	0.538	1.867
70.75	0.540	1.894
70.80	0.542	1.921
70.85	0.544	1.948
70.90	0.546	1.975
70.95	0.548	2.003
71.00	**0.550**	**2.030**

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Pond 7P: Detention Basin Peak Elev=69.54' Storage=1.269 af Inflow=23.53 cfs 2.214 af
Outflow=4.14 cfs 1.473 af

Summary for Pond 7P: Detention Basin

Inflow Area =	4.880 ac, 50.00% Impervious, Inflow Depth = 5.45" for 100-Year event				
Inflow =	23.53 cfs @ 12.14 hrs, Volume=	2.214 af			
Outflow =	4.14 cfs @ 12.67 hrs, Volume=	1.473 af, Atten= 82%, Lag= 32.2 min			
Primary =	4.14 cfs @ 12.67 hrs, Volume=	1.473 af			

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Peak Elev= 69.54' @ 12.67 hrs Surf.Area= 0.487 ac Storage= 1.269 af

Plug-Flow detention time= 339.3 min calculated for 1.473 af (67% of inflow)
Center-of-Mass det. time= 229.9 min (1,001.7 - 771.9)

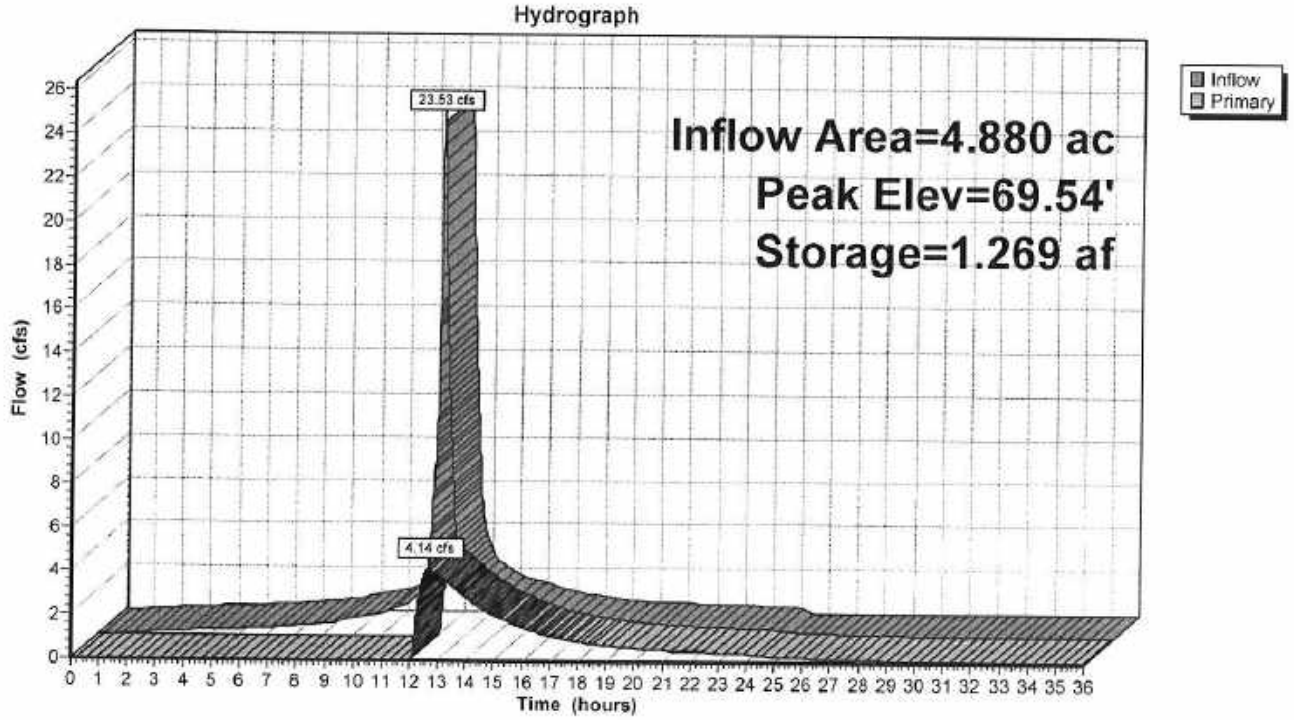
Volume	Invert	Avail.Storage	Storage Description
#1	66.50'	2.030 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
66.50	0.350	0.000	0.000
67.00	0.370	0.180	0.180
68.00	0.420	0.395	0.575
69.00	0.460	0.440	1.015
70.00	0.510	0.485	1.500
71.00	0.550	0.530	2.030

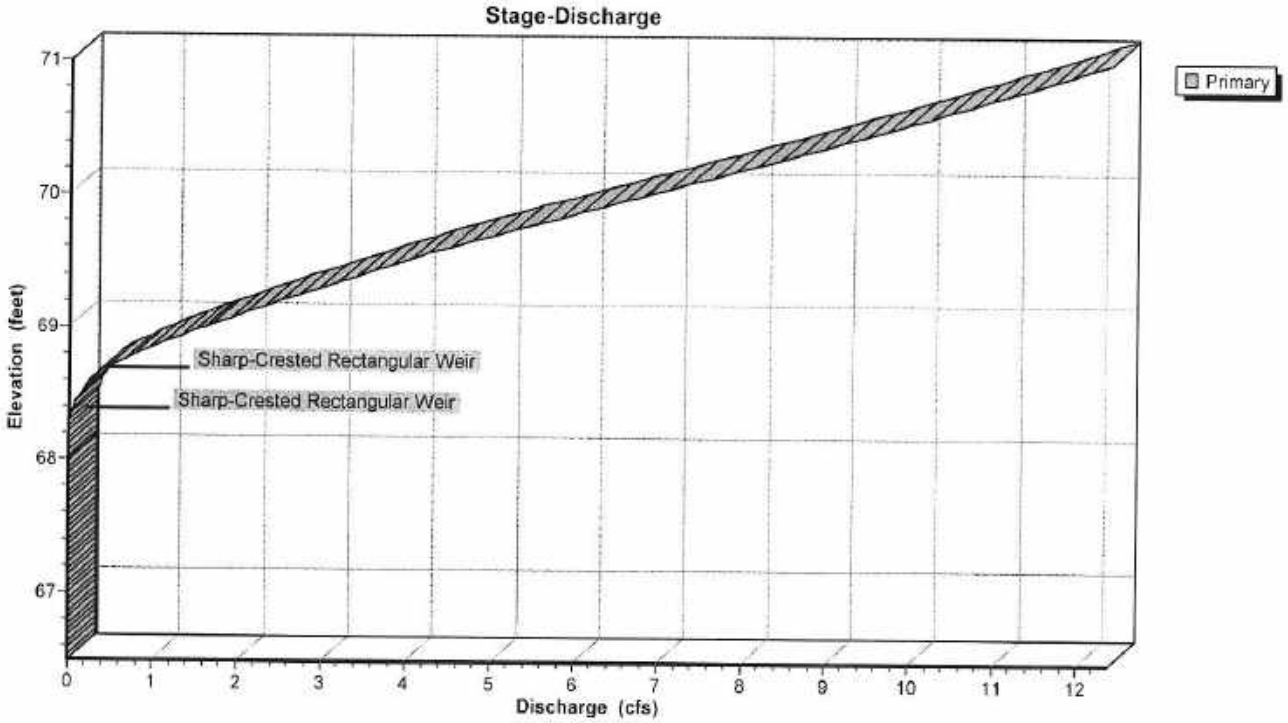
Device	Routing	Invert	Outlet Devices
#1	Primary	68.30'	**0.5' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	68.60'	**1.2' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=4.14 cfs @ 12.67 hrs HW=69.54' (Free Discharge)
└─**1=Sharp-Crested Rectangular Weir** (Weir Controls 1.14 cfs @ 3.64 fps)
└─**2=Sharp-Crested Rectangular Weir** (Weir Controls 3.00 cfs @ 3.16 fps)

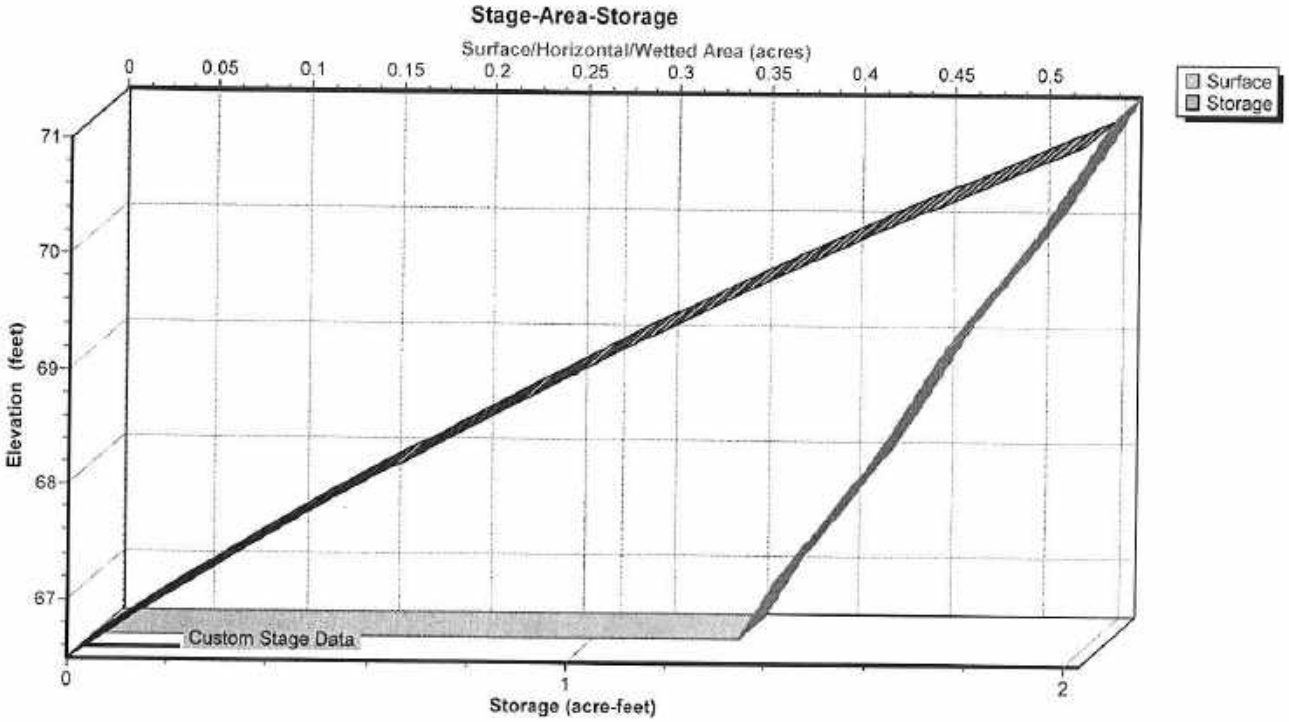
Pond 7P: Detention Basin



Pond 7P: Detention Basin



Pond 7P: Detention Basin



Hydrograph for Pond 7P: Detention Basin

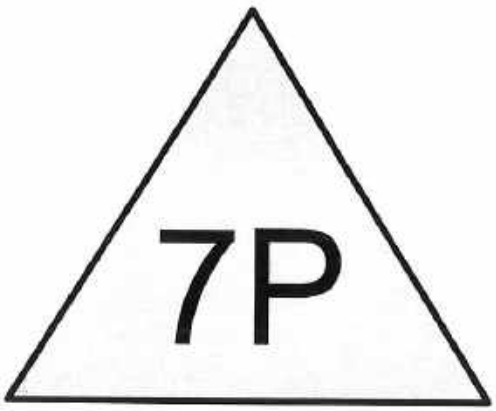
Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.000	66.50	0.00
1.00	0.06	0.001	66.50	0.00
2.00	0.13	0.009	66.53	0.00
3.00	0.19	0.023	66.56	0.00
4.00	0.24	0.040	66.61	0.00
5.00	0.28	0.062	66.68	0.00
6.00	0.32	0.087	66.74	0.00
7.00	0.42	0.117	66.83	0.00
8.00	0.53	0.157	66.94	0.00
9.00	0.77	0.210	67.08	0.00
10.00	1.02	0.284	67.27	0.00
11.00	1.50	0.387	67.54	0.00
12.00	**11.68**	**0.685**	**68.26**	**0.00**
13.00	**2.75**	**1.248**	**69.49**	**3.94**
14.00	1.70	1.141	69.27	2.87
15.00	1.29	1.062	69.10	2.07
16.00	0.92	1.006	68.98	1.53
17.00	0.73	0.964	68.89	1.14
18.00	0.57	0.934	68.82	0.89
19.00	0.50	0.912	68.77	0.71
20.00	0.45	0.897	68.74	0.60
21.00	0.41	0.887	68.72	0.52
22.00	0.37	0.878	68.70	0.47
23.00	0.34	0.871	68.68	0.42
24.00	0.30	0.864	68.67	0.38
25.00	0.00	0.841	68.62	0.26
26.00	0.00	0.822	68.57	0.21
27.00	0.00	0.807	68.54	0.17
28.00	0.00	0.794	68.51	0.14
29.00	0.00	0.783	68.48	0.12
30.00	0.00	0.774	68.46	0.10
31.00	0.00	0.766	68.45	0.09
32.00	0.00	0.759	68.43	0.07
33.00	0.00	0.754	68.42	0.06
34.00	0.00	0.749	68.41	0.05
35.00	0.00	0.745	68.40	0.05
36.00	0.00	0.741	68.39	0.04

Stage-Discharge for Pond 7P: Detention Basin

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
66.50	0.00	69.10	2.07
66.55	0.00	69.15	2.30
66.60	0.00	69.20	2.53
66.65	0.00	69.25	2.77
66.70	0.00	69.30	3.01
66.75	0.00	69.35	3.25
66.80	0.00	69.40	3.49
66.85	0.00	69.45	3.73
66.90	0.00	69.50	3.97
66.95	0.00	69.55	4.20
67.00	0.00	69.60	4.48
67.05	0.00	69.65	4.77
67.10	0.00	69.70	5.05
67.15	0.00	69.75	5.34
67.20	0.00	69.80	5.63
67.25	0.00	69.85	5.92
67.30	0.00	69.90	6.21
67.35	0.00	69.95	6.50
67.40	0.00	70.00	6.80
67.45	0.00	70.05	7.09
67.50	0.00	70.10	7.38
67.55	0.00	70.15	7.67
67.60	0.00	70.20	7.96
67.65	0.00	70.25	8.26
67.70	0.00	70.30	8.55
67.75	0.00	70.35	8.83
67.80	0.00	70.40	9.12
67.85	0.00	70.45	9.41
67.90	0.00	70.50	9.69
67.95	0.00	70.55	9.97
68.00	0.00	70.60	10.25
68.05	0.00	70.65	10.53
68.10	0.00	70.70	10.80
68.15	0.00	70.75	11.07
68.20	0.00	70.80	11.34
68.25	0.00	70.85	11.61
68.30	0.00	70.90	11.87
68.35	0.02	70.95	12.13
68.40	0.05	71.00	**12.38**
68.45	0.09		
68.50	0.13		
68.55	0.18		
68.60	0.24		
68.65	0.33		
68.70	0.47		
68.75	0.63		
68.80	0.80		
68.85	0.99		
68.90	1.19		
68.95	1.40		
69.00	1.62		
69.05	1.84		

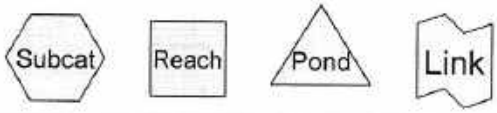
Stage-Area-Storage for Pond 7P: Detention Basin

Elevation (feet)	Surface (acres)	Storage (acre-feet)
66.50	0.350	0.000
66.55	0.352	0.018
66.60	0.354	0.035
66.65	0.356	0.053
66.70	0.358	0.071
66.75	0.360	0.089
66.80	0.362	0.107
66.85	0.364	0.125
66.90	0.366	0.143
66.95	0.368	0.162
67.00	0.370	0.180
67.05	0.372	0.199
67.10	0.375	0.217
67.15	0.378	0.236
67.20	0.380	0.255
67.25	0.383	0.274
67.30	0.385	0.293
67.35	0.387	0.313
67.40	0.390	0.332
67.45	0.393	0.352
67.50	0.395	0.371
67.55	0.397	0.391
67.60	0.400	0.411
67.65	0.403	0.431
67.70	0.405	0.451
67.75	0.408	0.472
67.80	0.410	0.492
67.85	0.412	0.513
67.90	0.415	0.533
67.95	0.418	0.554
68.00	0.420	0.575
68.05	0.422	0.596
68.10	0.424	0.617
68.15	0.426	0.638
68.20	0.428	0.660
68.25	0.430	0.681
68.30	0.432	0.703
68.35	0.434	0.724
68.40	0.436	0.746
68.45	0.438	0.768
68.50	0.440	0.790
68.55	0.442	0.812
68.60	0.444	0.834
68.65	0.446	0.856
68.70	0.448	0.879
68.75	0.450	0.901
68.80	0.452	0.924
68.85	0.454	0.946
68.90	0.456	0.969
68.95	0.458	0.992
69.00	0.460	1.015
69.05	0.462	1.038
69.10	0.465	1.061
69.15	0.468	1.085
69.20	0.470	1.108
69.25	0.472	1.132
69.30	0.475	1.155
69.35	0.477	1.179
69.40	0.480	1.203
69.45	0.483	1.227
69.50	0.485	1.251
69.55	0.487	1.276
69.60	0.490	1.300
69.65	0.493	1.325
69.70	0.495	1.349
69.75	0.497	1.374
69.80	0.500	1.399
69.85	0.502	1.424
69.90	0.505	1.449
69.95	0.508	1.475
70.00	0.510	1.500
70.05	0.512	1.526
70.10	0.514	1.551
70.15	0.516	1.577
70.20	0.518	1.603
70.25	0.520	1.629
70.30	0.522	1.655
70.35	0.524	1.681
70.40	0.526	1.707
70.45	0.528	1.734
70.50	0.530	1.760
70.55	0.532	1.787
70.60	0.534	1.813
70.65	0.536	1.840
70.70	0.538	1.867
70.75	0.540	1.894
70.80	0.542	1.921
70.85	0.544	1.948
70.90	0.546	1.975
70.95	0.548	2.003
71.00	**0.550**	**2.030**



Detention Basin

(WITH INFILTRATION)



Routing Diagram for CN Community Church Proposed DA 1 with INFILTRATION- COUNTY
Prepared by {enter your company name here}, Printed 4/9/2020
HydroCAD® 10.00-24 s/n 08511 © 2018 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.000	**0**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
0.000		**TOTAL AREA**

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Pond 7P: Detention Basin Peak Elev=66.65' Storage=0.053 af Inflow=6.01 cfs 0.545 af
Discarded=3.23 cfs 0.545 af Primary=0.00 cfs 0.000 af Outflow=3.23 cfs 0.545 af

Summary for Pond 7P: Detention Basin

Inflow Area =	5.100 ac, 47.84% Impervious, Inflow Depth = 1.28" for 1-Year event				
Inflow =	6.01 cfs @	12.13 hrs,	Volume=	0.545 af	
Outflow =	3.23 cfs @	12.32 hrs,	Volume=	0.545 af,	Atten= 46%, Lag= 10.9 min
Discarded =	3.23 cfs @	12.32 hrs,	Volume=	0.545 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Peak Elev= 66.65' @ 12.32 hrs Surf.Area= 0.356 ac Storage= 0.053 af

Plug-Flow detention time= 5.2 min calculated for 0.545 af (100% of inflow)
Center-of-Mass det. time= 5.2 min (769.3 - 764.1)

Volume	Invert	Avail.Storage	Storage Description
#1	66.50'	2.030 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

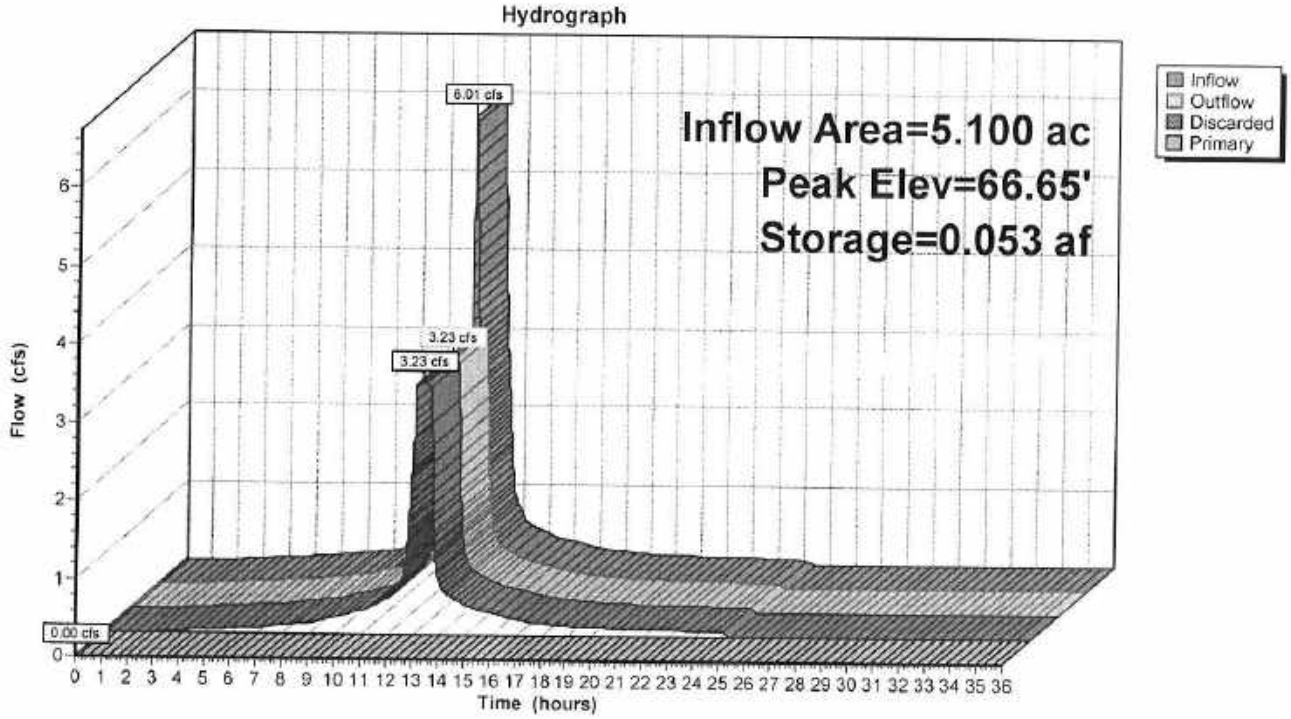
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
66.50	0.350	0.000	0.000
67.00	0.370	0.180	0.180
68.00	0.420	0.395	0.575
69.00	0.460	0.440	1.015
70.00	0.510	0.485	1.500
71.00	0.550	0.530	2.030

Device	Routing	Invert	Outlet Devices
#1	Discarded	66.50'	**9.000 in/hr Exfiltration over Surface area**
#2	Primary	68.30'	**0.5' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Primary	68.60'	**1.2' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

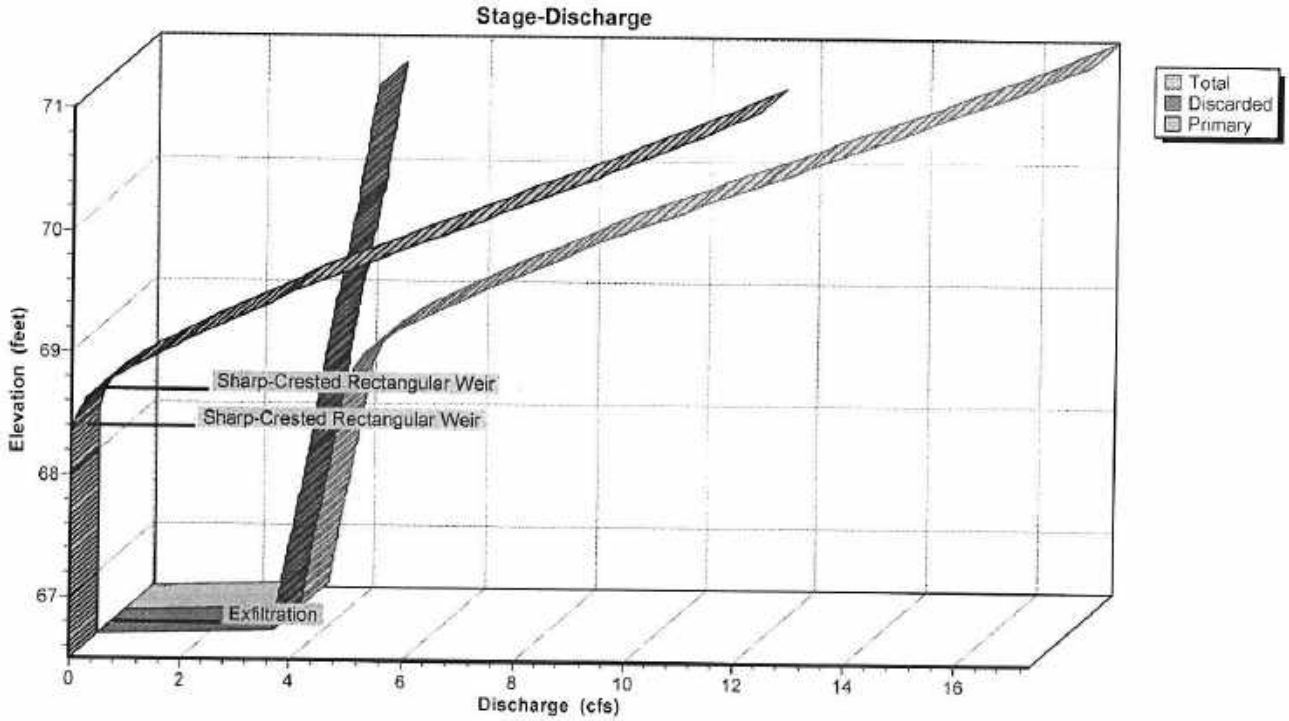
Discarded OutFlow Max=3.23 cfs @ 12.32 hrs HW=66.65' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 3.23 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=66.50' (Free Discharge)
├**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

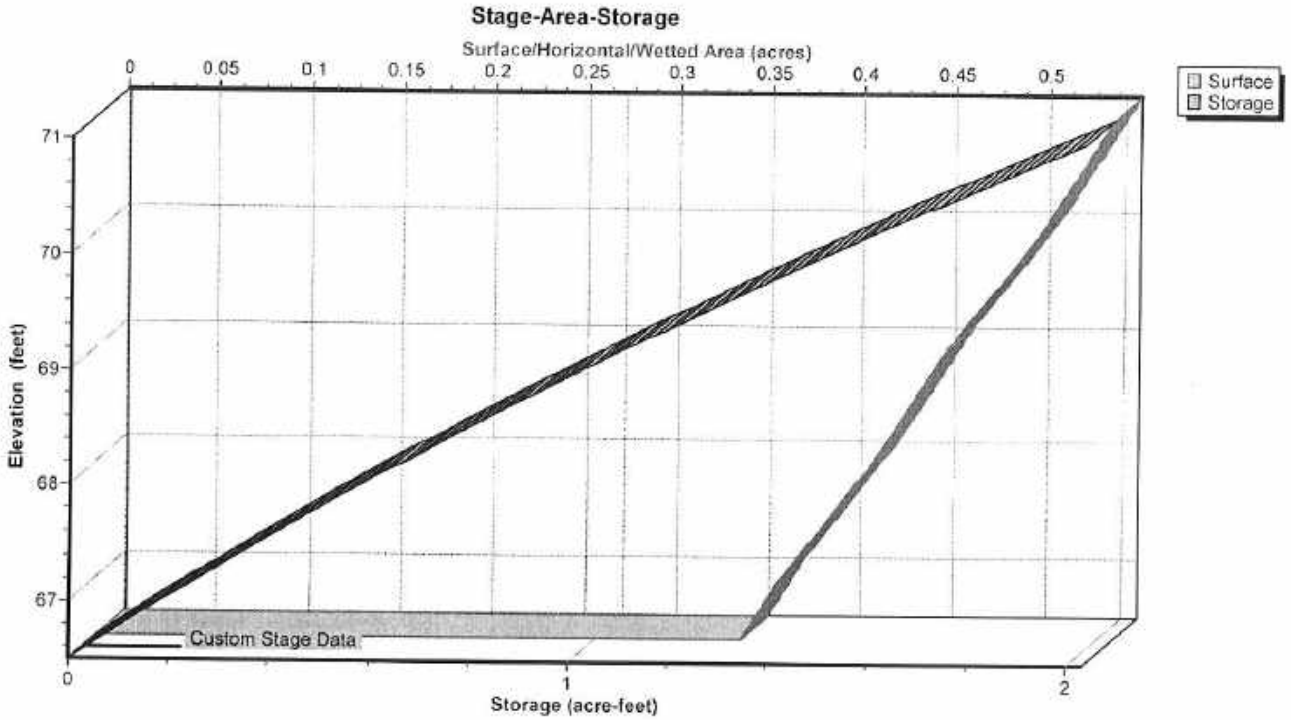
Pond 7P: Detention Basin



Pond 7P: Detention Basin



Pond 7P: Detention Basin



Hydrograph for Pond 7P: Detention Basin

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0.000	66.50	0.00	0.00	**0.00**
1.00	0.00	0.000	66.50	0.00	0.00	0.00
2.00	0.01	0.000	66.50	0.01	0.01	0.00
3.00	0.03	0.000	66.50	0.02	0.02	0.00
4.00	0.04	0.000	66.50	0.04	0.04	0.00
5.00	0.06	0.000	66.50	0.06	0.06	0.00
6.00	0.08	0.000	66.50	0.08	0.08	0.00
7.00	0.11	0.001	66.50	0.11	0.11	0.00
8.00	0.15	0.001	66.50	0.15	0.15	0.00
9.00	0.22	0.001	66.50	0.22	0.22	0.00
10.00	0.31	0.001	66.50	0.30	0.30	0.00
11.00	0.47	0.002	66.51	0.46	0.46	0.00
12.00	**3.20**	**0.013**	**66.54**	**2.64**	**2.64**	0.00
13.00	**0.62**	**0.003**	**66.51**	**0.67**	**0.67**	0.00
14.00	0.37	0.002	66.51	0.38	0.38	0.00
15.00	0.28	0.001	66.50	0.28	0.28	0.00
16.00	0.20	0.001	66.50	0.20	0.20	0.00
17.00	0.16	0.001	66.50	0.16	0.16	0.00
18.00	0.12	0.001	66.50	0.12	0.12	0.00
19.00	0.11	0.001	66.50	0.11	0.11	0.00
20.00	0.10	0.000	66.50	0.10	0.10	0.00
21.00	0.09	0.000	66.50	0.09	0.09	0.00
22.00	0.08	0.000	66.50	0.08	0.08	0.00
23.00	0.07	0.000	66.50	0.07	0.07	0.00
24.00	0.07	0.000	66.50	0.07	0.07	0.00
25.00	0.00	0.000	66.50	0.00	0.00	0.00
26.00	0.00	0.000	66.50	0.00	0.00	0.00
27.00	0.00	0.000	66.50	0.00	0.00	0.00
28.00	0.00	0.000	66.50	0.00	0.00	0.00
29.00	0.00	0.000	66.50	0.00	0.00	0.00
30.00	0.00	0.000	66.50	0.00	0.00	0.00
31.00	0.00	0.000	66.50	0.00	0.00	0.00
32.00	0.00	0.000	66.50	0.00	0.00	0.00
33.00	0.00	0.000	66.50	0.00	0.00	0.00
34.00	0.00	0.000	66.50	0.00	0.00	0.00
35.00	0.00	0.000	66.50	0.00	0.00	0.00
36.00	0.00	0.000	66.50	0.00	0.00	0.00

Stage-Discharge for Pond 7P: Detention Basin

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
66.50	0.00	0.00	0.00
66.55	3.19	3.19	0.00
66.60	3.21	3.21	0.00
66.65	3.23	3.23	0.00
66.70	3.25	3.25	0.00
66.75	3.27	3.27	0.00
66.80	3.29	3.29	0.00
66.85	3.30	3.30	0.00
66.90	3.32	3.32	0.00
66.95	3.34	3.34	0.00
67.00	3.36	3.36	0.00
67.05	3.38	3.38	0.00
67.10	3.40	3.40	0.00
67.15	3.43	3.43	0.00
67.20	3.45	3.45	0.00
67.25	3.47	3.47	0.00
67.30	3.49	3.49	0.00
67.35	3.52	3.52	0.00
67.40	3.54	3.54	0.00
67.45	3.56	3.56	0.00
67.50	3.58	3.58	0.00
67.55	3.61	3.61	0.00
67.60	3.63	3.63	0.00
67.65	3.65	3.65	0.00
67.70	3.68	3.68	0.00
67.75	3.70	3.70	0.00
67.80	3.72	3.72	0.00
67.85	3.74	3.74	0.00
67.90	3.77	3.77	0.00
67.95	3.79	3.79	0.00
68.00	3.81	3.81	0.00
68.05	3.83	3.83	0.00
68.10	3.85	3.85	0.00
68.15	3.87	3.87	0.00
68.20	3.88	3.88	0.00
68.25	3.90	3.90	0.00
68.30	3.92	3.92	0.00
68.35	3.96	3.94	0.02
68.40	4.01	3.96	0.05
68.45	4.06	3.97	0.09
68.50	4.13	3.99	0.13
68.55	4.20	4.01	0.18
68.60	4.27	4.03	0.24
68.65	4.38	4.05	0.33
68.70	4.54	4.07	0.47
68.75	4.71	4.08	0.63
68.80	4.90	4.10	0.80
68.85	5.11	4.12	0.99
68.90	5.33	4.14	1.19
68.95	5.56	4.16	1.40
69.00	5.79	4.17	1.62
69.05	6.04	4.20	1.84
69.10	6.29	4.22	2.07
69.15	6.54	4.24	2.30
69.20	6.80	4.27	2.53
69.25	7.06	4.29	2.77
69.30	7.32	4.31	3.01
69.35	7.58	4.33	3.25
69.40	7.85	4.36	3.49
69.45	8.11	4.38	3.73
69.50	8.37	4.40	3.97
69.55	8.62	4.42	4.20
69.60	8.93	4.45	4.48
69.65	9.23	4.47	4.77
69.70	9.54	4.49	5.05
69.75	9.85	4.51	5.34
69.80	10.17	4.54	5.63
69.85	10.48	4.56	5.92
69.90	10.79	4.58	6.21
69.95	11.11	4.61	6.50
70.00	11.42	4.63	6.80
70.05	11.73	4.65	7.09
70.10	12.05	4.66	7.38
70.15	12.36	4.68	7.67
70.20	12.67	4.70	7.96
70.25	12.97	4.72	8.26
70.30	13.28	4.74	8.55
70.35	13.59	4.76	8.83
70.40	13.89	4.77	9.12
70.45	14.20	4.79	9.41
70.50	14.50	4.81	9.69
70.55	14.80	4.83	9.97
70.60	15.10	4.85	10.25
70.65	15.39	4.86	10.53
70.70	15.68	4.88	10.80
70.75	15.97	4.90	11.07
70.80	16.26	4.92	11.34
70.85	16.54	4.94	11.61
70.90	16.82	4.95	11.87
70.95	17.10	4.97	12.13
71.00	**17.37**	**4.99**	**12.38**

Stage-Area-Storage for Pond 7P: Detention Basin

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
66.50	0.350	0.000	69.10	0.465	1.061
66.55	0.352	0.018	69.15	0.468	1.085
66.60	0.354	0.035	69.20	0.470	1.108
66.65	0.356	0.053	69.25	0.472	1.132
66.70	0.358	0.071	69.30	0.475	1.155
66.75	0.360	0.089	69.35	0.477	1.179
66.80	0.362	0.107	69.40	0.480	1.203
66.85	0.364	0.125	69.45	0.483	1.227
66.90	0.366	0.143	69.50	0.485	1.251
66.95	0.368	0.162	69.55	0.487	1.276
67.00	0.370	0.180	69.60	0.490	1.300
67.05	0.372	0.199	69.65	0.493	1.325
67.10	0.375	0.217	69.70	0.495	1.349
67.15	0.378	0.236	69.75	0.497	1.374
67.20	0.380	0.255	69.80	0.500	1.399
67.25	0.383	0.274	69.85	0.502	1.424
67.30	0.385	0.293	69.90	0.505	1.449
67.35	0.387	0.313	69.95	0.508	1.475
67.40	0.390	0.332	70.00	0.510	1.500
67.45	0.393	0.352	70.05	0.512	1.526
67.50	0.395	0.371	70.10	0.514	1.551
67.55	0.397	0.391	70.15	0.516	1.577
67.60	0.400	0.411	70.20	0.518	1.603
67.65	0.403	0.431	70.25	0.520	1.629
67.70	0.405	0.451	70.30	0.522	1.655
67.75	0.408	0.472	70.35	0.524	1.681
67.80	0.410	0.492	70.40	0.526	1.707
67.85	0.412	0.513	70.45	0.528	1.734
67.90	0.415	0.533	70.50	0.530	1.760
67.95	0.418	0.554	70.55	0.532	1.787
68.00	0.420	0.575	70.60	0.534	1.813
68.05	0.422	0.596	70.65	0.536	1.840
68.10	0.424	0.617	70.70	0.538	1.867
68.15	0.426	0.638	70.75	0.540	1.894
68.20	0.428	0.660	70.80	0.542	1.921
68.25	0.430	0.681	70.85	0.544	1.948
68.30	0.432	0.703	70.90	0.546	1.975
68.35	0.434	0.724	70.95	0.548	2.003
68.40	0.436	0.746	71.00	**0.550**	**2.030**
68.45	0.438	0.768			
68.50	0.440	0.790			
68.55	0.442	0.812			
68.60	0.444	0.834			
68.65	0.446	0.856			
68.70	0.448	0.879			
68.75	0.450	0.901			
68.80	0.452	0.924			
68.85	0.454	0.946			
68.90	0.456	0.969			
68.95	0.458	0.992			
69.00	0.460	1.015			
69.05	0.462	1.038			

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Pond 7P: Detention Basin Peak Elev=66.72' Storage=0.077 af Inflow=7.08 cfs 0.656 af
Discarded=3.25 cfs 0.656 af Primary=0.00 cfs 0.000 af Outflow=3.25 cfs 0.656 af

Summary for Pond 7P: Detention Basin

Inflow Area =	5.100 ac, 47.84% Impervious, Inflow Depth = 1.54" for 2-Year event				
Inflow =	7.08 cfs @	12.13 hrs,	Volume=	0.656 af	
Outflow =	3.25 cfs @	12.37 hrs,	Volume=	0.656 af,	Atten= 54%, Lag= 14.0 min
Discarded =	3.25 cfs @	12.37 hrs,	Volume=	0.656 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Peak Elev= 66.72' @ 12.37 hrs Surf.Area= 0.359 ac Storage= 0.077 af

Plug-Flow detention time= 6.4 min calculated for 0.656 af (100% of inflow)
Center-of-Mass det. time= 6.4 min (771.4 - 765.0)

Volume	Invert	Avail.Storage	Storage Description
#1	66.50'	2.030 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

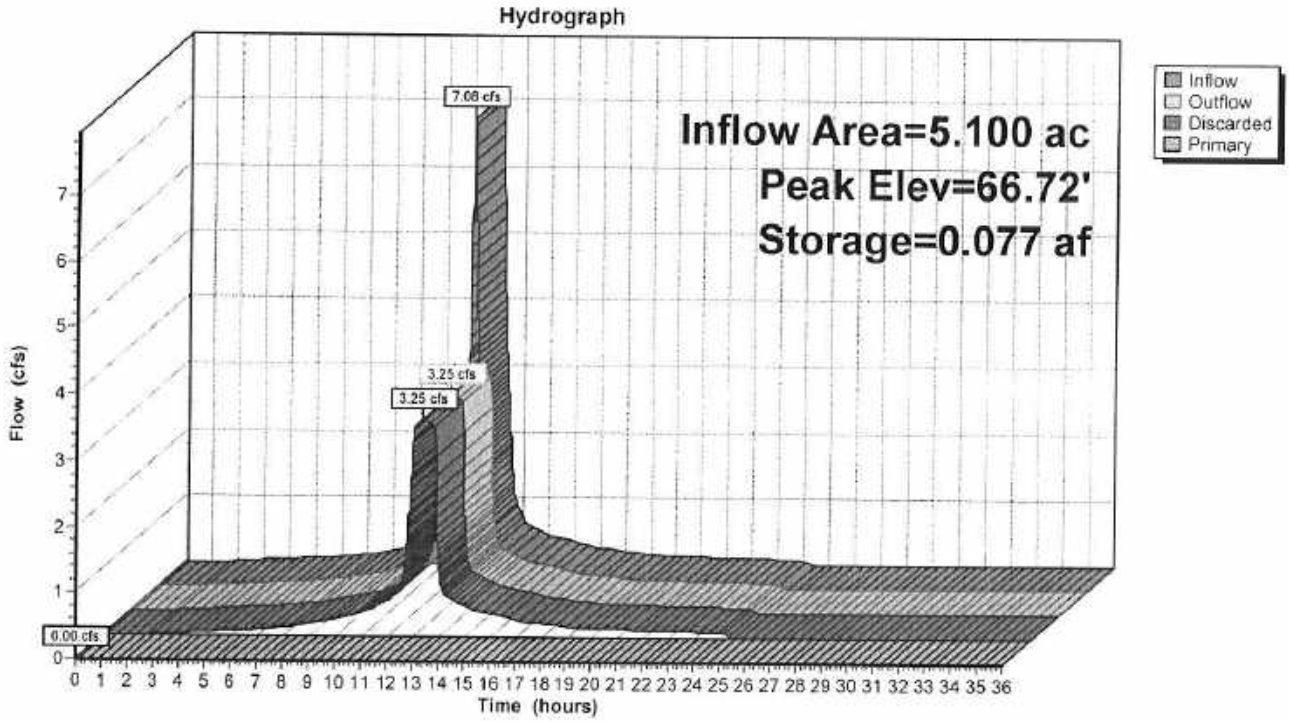
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
66.50	0.350	0.000	0.000
67.00	0.370	0.180	0.180
68.00	0.420	0.395	0.575
69.00	0.460	0.440	1.015
70.00	0.510	0.485	1.500
71.00	0.550	0.530	2.030

Device	Routing	Invert	Outlet Devices
#1	Discarded	66.50'	**9.000 in/hr Exfiltration over Surface area**
#2	Primary	68.30'	**0.5' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Primary	68.60'	**1.2' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

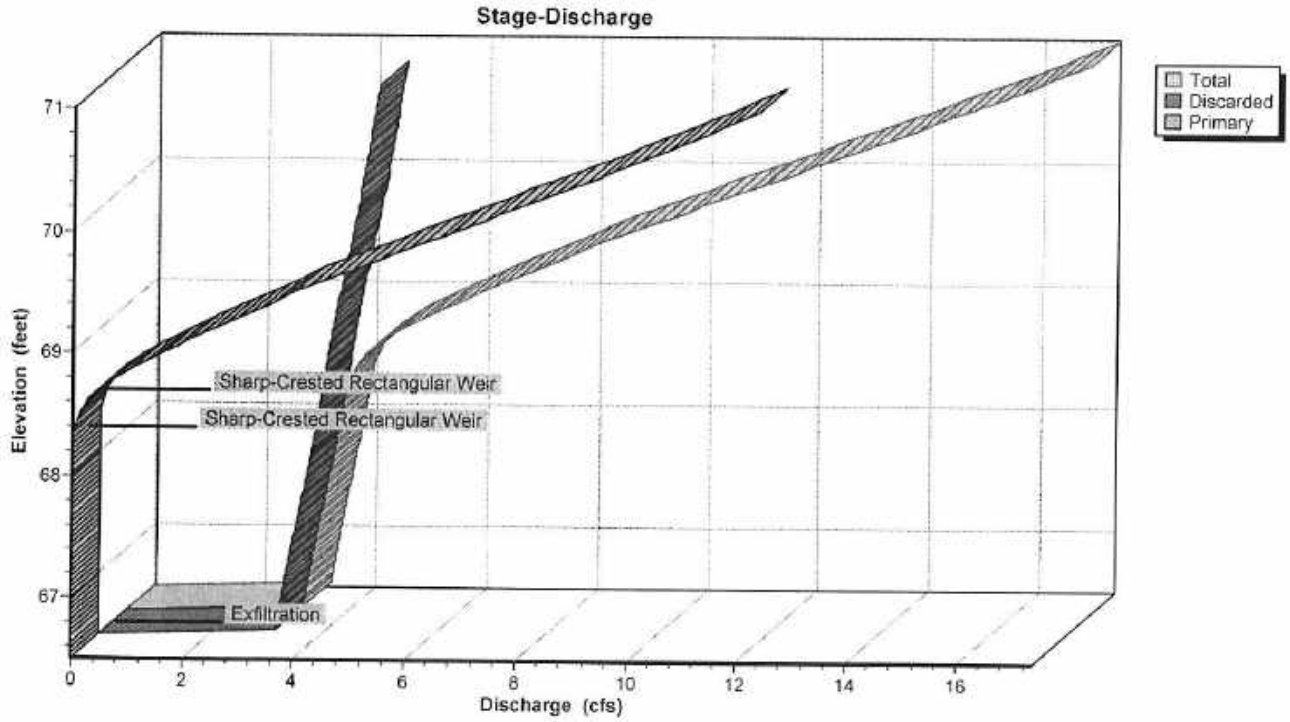
Discarded OutFlow Max=3.25 cfs @ 12.37 hrs HW=66.72' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 3.25 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=66.50' (Free Discharge)
├**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

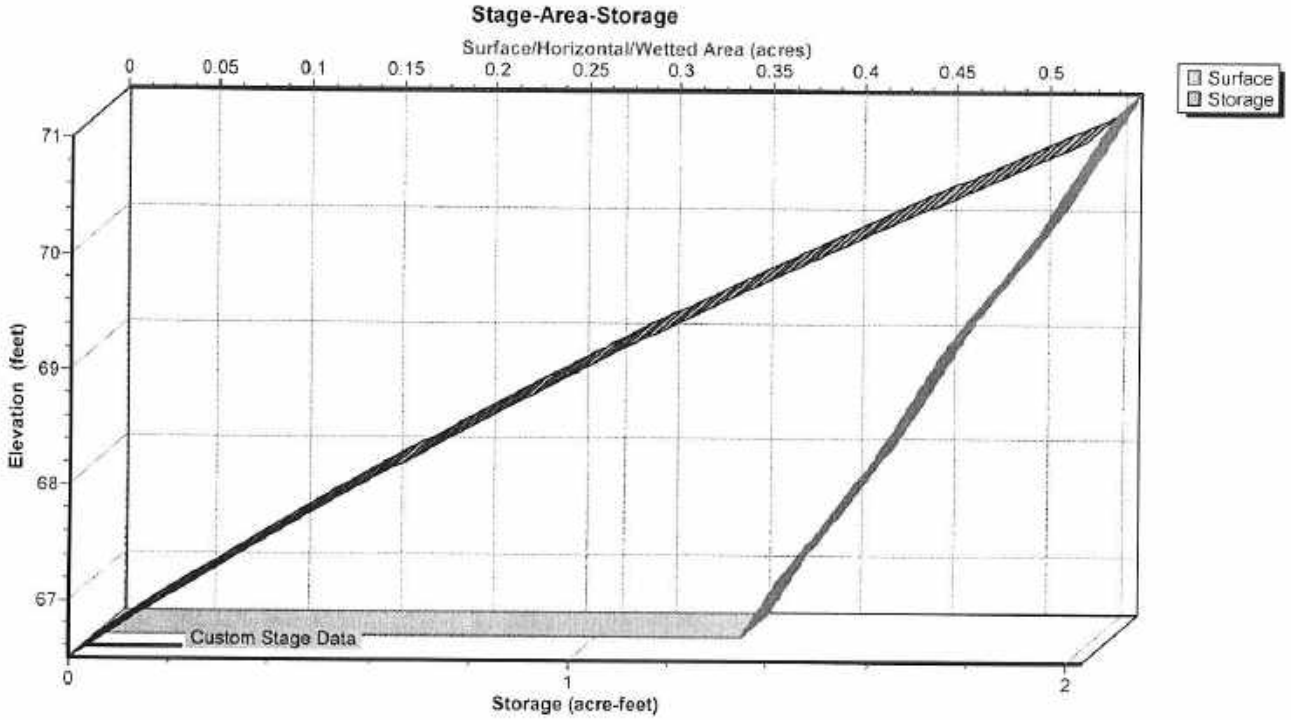
Pond 7P: Detention Basin



Pond 7P: Detention Basin



Pond 7P: Detention Basin



Hydrograph for Pond 7P: Detention Basin

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0.000	66.50	0.00	0.00	**0.00**
1.00	0.00	0.000	66.50	0.00	0.00	0.00
2.00	0.02	0.000	66.50	0.01	0.01	0.00
3.00	0.04	0.000	66.50	0.04	0.04	0.00
4.00	0.06	0.000	66.50	0.06	0.06	0.00
5.00	0.08	0.000	66.50	0.08	0.08	0.00
6.00	0.10	0.000	66.50	0.10	0.10	0.00
7.00	0.14	0.001	66.50	0.13	0.13	0.00
8.00	0.18	0.001	66.50	0.18	0.18	0.00
9.00	0.27	0.001	66.50	0.26	0.26	0.00
10.00	0.37	0.002	66.51	0.36	0.36	0.00
11.00	0.55	0.003	66.51	0.54	0.54	0.00
12.00	**3.78**	**0.015**	**66.54**	**3.12**	**3.12**	0.00
13.00	**0.73**	**0.005**	**66.51**	**0.92**	**0.92**	0.00
14.00	0.45	0.002	66.51	0.46	0.46	0.00
15.00	0.35	0.002	66.50	0.35	0.35	0.00
16.00	0.25	0.001	66.50	0.25	0.25	0.00
17.00	0.20	0.001	66.50	0.20	0.20	0.00
18.00	0.15	0.001	66.50	0.16	0.16	0.00
19.00	0.14	0.001	66.50	0.14	0.14	0.00
20.00	0.12	0.001	66.50	0.12	0.12	0.00
21.00	0.11	0.001	66.50	0.11	0.11	0.00
22.00	0.10	0.001	66.50	0.10	0.10	0.00
23.00	0.09	0.000	66.50	0.09	0.09	0.00
24.00	0.08	0.000	66.50	0.08	0.08	0.00
25.00	0.00	0.000	66.50	0.00	0.00	0.00
26.00	0.00	0.000	66.50	0.00	0.00	0.00
27.00	0.00	0.000	66.50	0.00	0.00	0.00
28.00	0.00	0.000	66.50	0.00	0.00	0.00
29.00	0.00	0.000	66.50	0.00	0.00	0.00
30.00	0.00	0.000	66.50	0.00	0.00	0.00
31.00	0.00	0.000	66.50	0.00	0.00	0.00
32.00	0.00	0.000	66.50	0.00	0.00	0.00
33.00	0.00	0.000	66.50	0.00	0.00	0.00
34.00	0.00	0.000	66.50	0.00	0.00	0.00
35.00	0.00	0.000	66.50	0.00	0.00	0.00
36.00	0.00	0.000	66.50	0.00	0.00	0.00

Stage-Discharge for Pond 7P: Detention Basin

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
66.50	0.00	0.00	0.00
66.55	3.19	3.19	0.00
66.60	3.21	3.21	0.00
66.65	3.23	3.23	0.00
66.70	3.25	3.25	0.00
66.75	3.27	3.27	0.00
66.80	3.29	3.29	0.00
66.85	3.30	3.30	0.00
66.90	3.32	3.32	0.00
66.95	3.34	3.34	0.00
67.00	3.36	3.36	0.00
67.05	3.38	3.38	0.00
67.10	3.40	3.40	0.00
67.15	3.43	3.43	0.00
67.20	3.45	3.45	0.00
67.25	3.47	3.47	0.00
67.30	3.49	3.49	0.00
67.35	3.52	3.52	0.00
67.40	3.54	3.54	0.00
67.45	3.56	3.56	0.00
67.50	3.58	3.58	0.00
67.55	3.61	3.61	0.00
67.60	3.63	3.63	0.00
67.65	3.65	3.65	0.00
67.70	3.68	3.68	0.00
67.75	3.70	3.70	0.00
67.80	3.72	3.72	0.00
67.85	3.74	3.74	0.00
67.90	3.77	3.77	0.00
67.95	3.79	3.79	0.00
68.00	3.81	3.81	0.00
68.05	3.83	3.83	0.00
68.10	3.85	3.85	0.00
68.15	3.87	3.87	0.00
68.20	3.88	3.88	0.00
68.25	3.90	3.90	0.00
68.30	3.92	3.92	0.00
68.35	3.96	3.94	0.02
68.40	4.01	3.96	0.05
68.45	4.06	3.97	0.09
68.50	4.13	3.99	0.13
68.55	4.20	4.01	0.18
68.60	4.27	4.03	0.24
68.65	4.38	4.05	0.33
68.70	4.54	4.07	0.47
68.75	4.71	4.08	0.63
68.80	4.90	4.10	0.80
68.85	5.11	4.12	0.99
68.90	5.33	4.14	1.19
68.95	5.56	4.16	1.40
69.00	5.79	4.17	1.62
69.05	6.04	4.20	1.84
69.10	6.29	4.22	2.07
69.15	6.54	4.24	2.30
69.20	6.80	4.27	2.53
69.25	7.06	4.29	2.77
69.30	7.32	4.31	3.01
69.35	7.58	4.33	3.25
69.40	7.85	4.36	3.49
69.45	8.11	4.38	3.73
69.50	8.37	4.40	3.97
69.55	8.62	4.42	4.20
69.60	8.93	4.45	4.48
69.65	9.23	4.47	4.77
69.70	9.54	4.49	5.05
69.75	9.85	4.51	5.34
69.80	10.17	4.54	5.63
69.85	10.48	4.56	5.92
69.90	10.79	4.58	6.21
69.95	11.11	4.61	6.50
70.00	11.42	4.63	6.80
70.05	11.73	4.65	7.09
70.10	12.05	4.66	7.38
70.15	12.36	4.68	7.67
70.20	12.67	4.70	7.96
70.25	12.97	4.72	8.26
70.30	13.28	4.74	8.55
70.35	13.59	4.76	8.83
70.40	13.89	4.77	9.12
70.45	14.20	4.79	9.41
70.50	14.50	4.81	9.69
70.55	14.80	4.83	9.97
70.60	15.10	4.85	10.25
70.65	15.39	4.86	10.53
70.70	15.68	4.88	10.80
70.75	15.97	4.90	11.07
70.80	16.26	4.92	11.34
70.85	16.54	4.94	11.61
70.90	16.82	4.95	11.87
70.95	17.10	4.97	12.13
71.00	**17.37**	**4.99**	**12.38**

Stage-Area-Storage for Pond 7P: Detention Basin

Elevation (feet)	Surface (acres)	Storage (acre-feet)
66.50	0.350	0.000
66.55	0.352	0.018
66.60	0.354	0.035
66.65	0.356	0.053
66.70	0.358	0.071
66.75	0.360	0.089
66.80	0.362	0.107
66.85	0.364	0.125
66.90	0.366	0.143
66.95	0.368	0.162
67.00	0.370	0.180
67.05	0.372	0.199
67.10	0.375	0.217
67.15	0.378	0.236
67.20	0.380	0.255
67.25	0.383	0.274
67.30	0.385	0.293
67.35	0.387	0.313
67.40	0.390	0.332
67.45	0.393	0.352
67.50	0.395	0.371
67.55	0.397	0.391
67.60	0.400	0.411
67.65	0.403	0.431
67.70	0.405	0.451
67.75	0.408	0.472
67.80	0.410	0.492
67.85	0.412	0.513
67.90	0.415	0.533
67.95	0.418	0.554
68.00	0.420	0.575
68.05	0.422	0.596
68.10	0.424	0.617
68.15	0.426	0.638
68.20	0.428	0.660
68.25	0.430	0.681
68.30	0.432	0.703
68.35	0.434	0.724
68.40	0.436	0.746
68.45	0.438	0.768
68.50	0.440	0.790
68.55	0.442	0.812
68.60	0.444	0.834
68.65	0.446	0.856
68.70	0.448	0.879
68.75	0.450	0.901
68.80	0.452	0.924
68.85	0.454	0.946
68.90	0.456	0.969
68.95	0.458	0.992
69.00	0.460	1.015
69.05	0.462	1.038
69.10	0.465	1.061
69.15	0.468	1.085
69.20	0.470	1.108
69.25	0.472	1.132
69.30	0.475	1.155
69.35	0.477	1.179
69.40	0.480	1.203
69.45	0.483	1.227
69.50	0.485	1.251
69.55	0.487	1.276
69.60	0.490	1.300
69.65	0.493	1.325
69.70	0.495	1.349
69.75	0.497	1.374
69.80	0.500	1.399
69.85	0.502	1.424
69.90	0.505	1.449
69.95	0.508	1.475
70.00	0.510	1.500
70.05	0.512	1.526
70.10	0.514	1.551
70.15	0.516	1.577
70.20	0.518	1.603
70.25	0.520	1.629
70.30	0.522	1.655
70.35	0.524	1.681
70.40	0.526	1.707
70.45	0.528	1.734
70.50	0.530	1.760
70.55	0.532	1.787
70.60	0.534	1.813
70.65	0.536	1.840
70.70	0.538	1.867
70.75	0.540	1.894
70.80	0.542	1.921
70.85	0.544	1.948
70.90	0.546	1.975
70.95	0.548	2.003
71.00	**0.550**	**2.030**

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Pond 7P: Detention Basin Peak Elev=67.06' Storage=0.201 af Inflow=11.11 cfs 1.111 af
Discarded=3.38 cfs 1.111 af Primary=0.00 cfs 0.000 af Outflow=3.38 cfs 1.111 af

Summary for Pond 7P: Detention Basin

Inflow Area =	5.100 ac, 47.84% Impervious, Inflow Depth = 2.61" for 10-Year event				
Inflow =	11.11 cfs @	12.14 hrs, Volume=	1.111 af		
Outflow =	3.38 cfs @	12.53 hrs, Volume=	1.111 af, Atten= 70%, Lag= 23.5 min		
Discarded =	3.38 cfs @	12.53 hrs, Volume=	1.111 af		
Primary =	0.00 cfs @	0.00 hrs, Volume=	0.000 af		

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Peak Elev= 67.06' @ 12.53 hrs Surf.Area= 0.373 ac Storage= 0.201 af

Plug-Flow detention time= 13.8 min calculated for 1.110 af (100% of inflow)
Center-of-Mass det. time= 13.8 min (783.1 - 769.3)

Volume	Invert	Avail.Storage	Storage Description
#1	66.50'	2.030 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

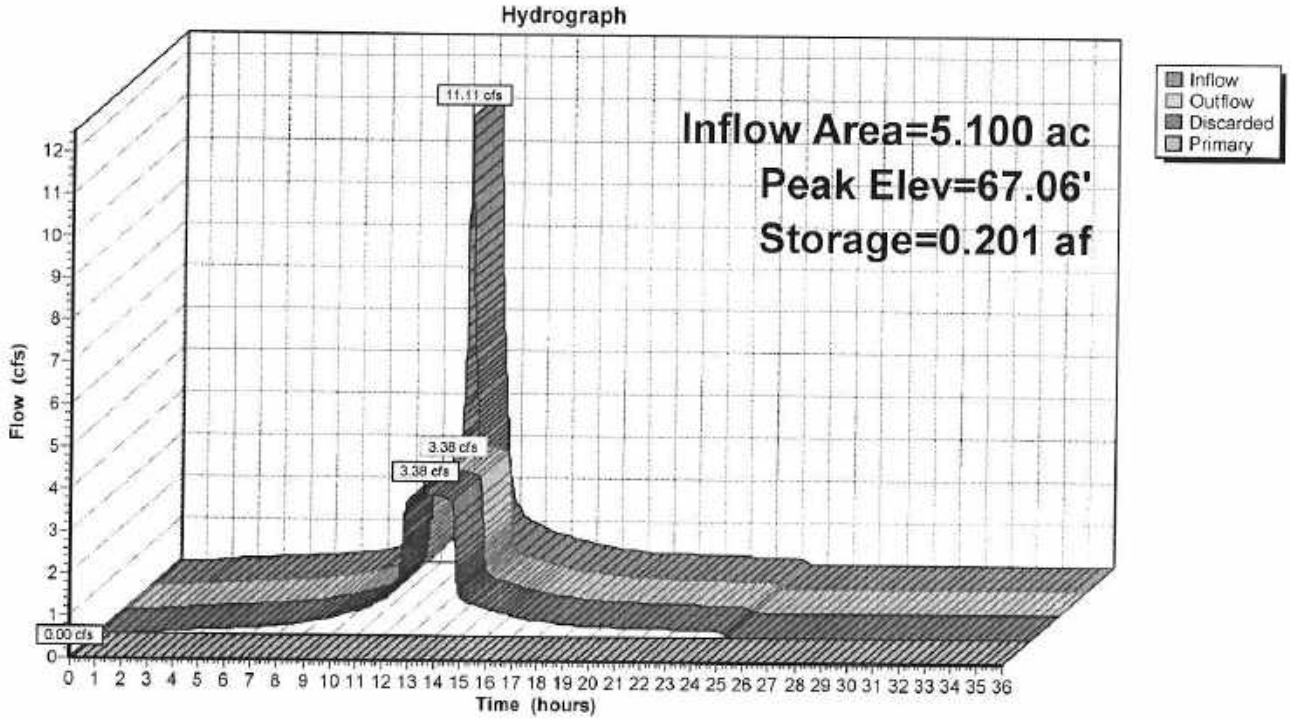
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
66.50	0.350	0.000	0.000
67.00	0.370	0.180	0.180
68.00	0.420	0.395	0.575
69.00	0.460	0.440	1.015
70.00	0.510	0.485	1.500
71.00	0.550	0.530	2.030

Device	Routing	Invert	Outlet Devices
#1	Discarded	66.50'	**9.000 in/hr Exfiltration over Surface area**
#2	Primary	68.30'	**0.5' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Primary	68.60'	**1.2' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

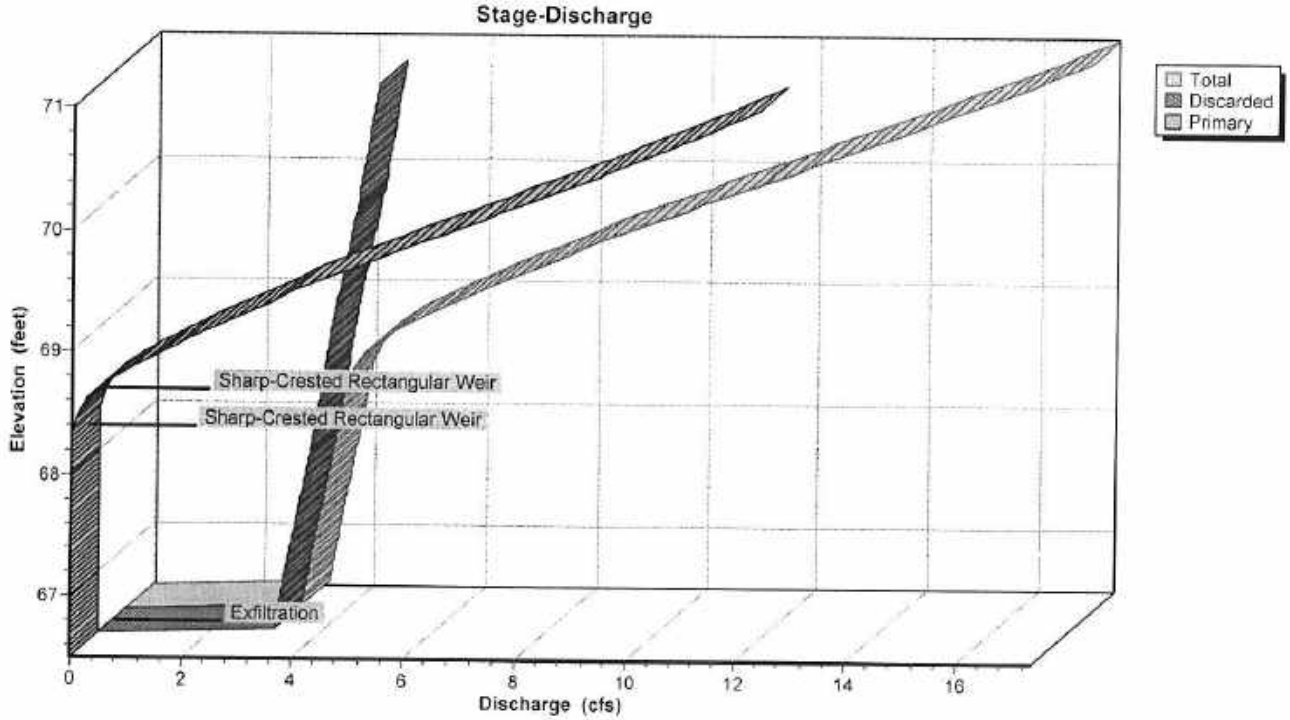
Discarded OutFlow Max=3.38 cfs @ 12.53 hrs HW=67.06' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 3.38 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=66.50' (Free Discharge)
├**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

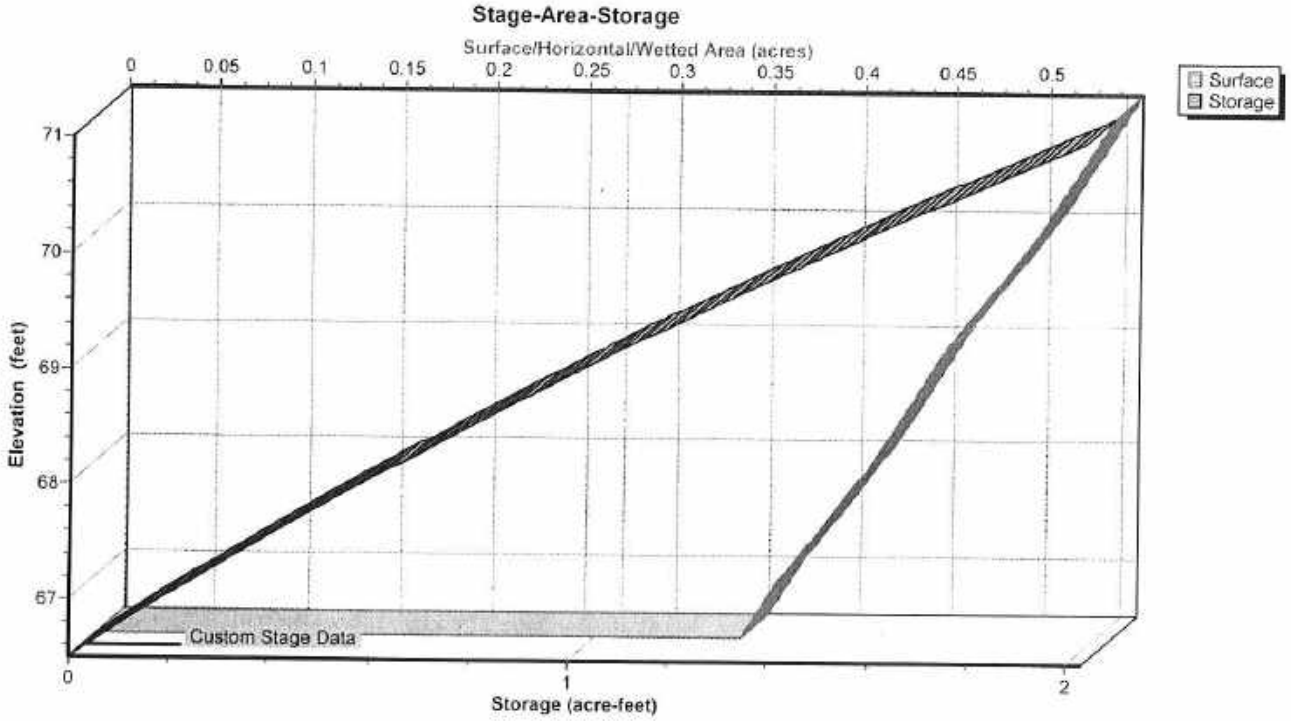
Pond 7P: Detention Basin



Pond 7P: Detention Basin



Pond 7P: Detention Basin



Hydrograph for Pond 7P: Detention Basin

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0.000	66.50	0.00	0.00	**0.00**
1.00	0.00	0.000	66.50	0.00	0.00	0.00
2.00	0.05	0.000	66.50	0.05	0.05	0.00
3.00	0.08	0.000	66.50	0.08	0.08	0.00
4.00	0.12	0.001	66.50	0.11	0.11	0.00
5.00	0.14	0.001	66.50	0.14	0.14	0.00
6.00	0.17	0.001	66.50	0.17	0.17	0.00
7.00	0.23	0.001	66.50	0.23	0.23	0.00
8.00	0.30	0.001	66.50	0.29	0.29	0.00
9.00	0.43	0.002	66.51	0.42	0.42	0.00
10.00	0.58	0.003	66.51	0.57	0.57	0.00
11.00	0.87	0.004	66.51	0.85	0.85	0.00
12.00	**5.84**	**0.033**	**66.59**	**3.21**	**3.21**	0.00
13.00	**1.33**	**0.144**	**66.90**	**3.32**	**3.32**	0.00
14.00	0.83	0.004	66.51	0.87	0.87	0.00
15.00	0.63	0.003	66.51	0.64	0.64	0.00
16.00	0.45	0.002	66.51	0.47	0.47	0.00
17.00	0.36	0.002	66.51	0.36	0.36	0.00
18.00	0.28	0.001	66.50	0.28	0.28	0.00
19.00	0.25	0.001	66.50	0.25	0.25	0.00
20.00	0.22	0.001	66.50	0.22	0.22	0.00
21.00	0.20	0.001	66.50	0.21	0.21	0.00
22.00	0.19	0.001	66.50	0.19	0.19	0.00
23.00	0.17	0.001	66.50	0.17	0.17	0.00
24.00	0.15	0.001	66.50	0.15	0.15	0.00
25.00	0.00	0.000	66.50	0.00	0.00	0.00
26.00	0.00	0.000	66.50	0.00	0.00	0.00
27.00	0.00	0.000	66.50	0.00	0.00	0.00
28.00	0.00	0.000	66.50	0.00	0.00	0.00
29.00	0.00	0.000	66.50	0.00	0.00	0.00
30.00	0.00	0.000	66.50	0.00	0.00	0.00
31.00	0.00	0.000	66.50	0.00	0.00	0.00
32.00	0.00	0.000	66.50	0.00	0.00	0.00
33.00	0.00	0.000	66.50	0.00	0.00	0.00
34.00	0.00	0.000	66.50	0.00	0.00	0.00
35.00	0.00	0.000	66.50	0.00	0.00	0.00
36.00	0.00	0.000	66.50	0.00	0.00	0.00

Stage-Discharge for Pond 7P: Detention Basin

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
66.50	0.00	0.00	0.00
66.55	3.19	3.19	0.00
66.60	3.21	3.21	0.00
66.65	3.23	3.23	0.00
66.70	3.25	3.25	0.00
66.75	3.27	3.27	0.00
66.80	3.29	3.29	0.00
66.85	3.30	3.30	0.00
66.90	3.32	3.32	0.00
66.95	3.34	3.34	0.00
67.00	3.36	3.36	0.00
67.05	3.38	3.38	0.00
67.10	3.40	3.40	0.00
67.15	3.43	3.43	0.00
67.20	3.45	3.45	0.00
67.25	3.47	3.47	0.00
67.30	3.49	3.49	0.00
67.35	3.52	3.52	0.00
67.40	3.54	3.54	0.00
67.45	3.56	3.56	0.00
67.50	3.58	3.58	0.00
67.55	3.61	3.61	0.00
67.60	3.63	3.63	0.00
67.65	3.65	3.65	0.00
67.70	3.68	3.68	0.00
67.75	3.70	3.70	0.00
67.80	3.72	3.72	0.00
67.85	3.74	3.74	0.00
67.90	3.77	3.77	0.00
67.95	3.79	3.79	0.00
68.00	3.81	3.81	0.00
68.05	3.83	3.83	0.00
68.10	3.85	3.85	0.00
68.15	3.87	3.87	0.00
68.20	3.88	3.88	0.00
68.25	3.90	3.90	0.00
68.30	3.92	3.92	0.00
68.35	3.96	3.94	0.02
68.40	4.01	3.96	0.05
68.45	4.06	3.97	0.09
68.50	4.13	3.99	0.13
68.55	4.20	4.01	0.18
68.60	4.27	4.03	0.24
68.65	4.38	4.05	0.33
68.70	4.54	4.07	0.47
68.75	4.71	4.08	0.63
68.80	4.90	4.10	0.80
68.85	5.11	4.12	0.99
68.90	5.33	4.14	1.19
68.95	5.56	4.16	1.40
69.00	5.79	4.17	1.62
69.05	6.04	4.20	1.84
69.10	6.29	4.22	2.07
69.15	6.54	4.24	2.30
69.20	6.80	4.27	2.53
69.25	7.06	4.29	2.77
69.30	7.32	4.31	3.01
69.35	7.58	4.33	3.25
69.40	7.85	4.36	3.49
69.45	8.11	4.38	3.73
69.50	8.37	4.40	3.97
69.55	8.62	4.42	4.20
69.60	8.93	4.45	4.48
69.65	9.23	4.47	4.77
69.70	9.54	4.49	5.05
69.75	9.85	4.51	5.34
69.80	10.17	4.54	5.63
69.85	10.48	4.56	5.92
69.90	10.79	4.58	6.21
69.95	11.11	4.61	6.50
70.00	11.42	4.63	6.80
70.05	11.73	4.65	7.09
70.10	12.05	4.66	7.38
70.15	12.36	4.68	7.67
70.20	12.67	4.70	7.96
70.25	12.97	4.72	8.26
70.30	13.28	4.74	8.55
70.35	13.59	4.76	8.83
70.40	13.89	4.77	9.12
70.45	14.20	4.79	9.41
70.50	14.50	4.81	9.69
70.55	14.80	4.83	9.97
70.60	15.10	4.85	10.25
70.65	15.39	4.86	10.53
70.70	15.68	4.88	10.80
70.75	15.97	4.90	11.07
70.80	16.26	4.92	11.34
70.85	16.54	4.94	11.61
70.90	16.82	4.95	11.87
70.95	17.10	4.97	12.13
71.00	**17.37**	**4.99**	**12.38**

Stage-Area-Storage for Pond 7P: Detention Basin

Elevation (feet)	Surface (acres)	Storage (acre-feet)
66.50	0.350	0.000
66.55	0.352	0.018
66.60	0.354	0.035
66.65	0.356	0.053
66.70	0.358	0.071
66.75	0.360	0.089
66.80	0.362	0.107
66.85	0.364	0.125
66.90	0.366	0.143
66.95	0.368	0.162
67.00	0.370	0.180
67.05	0.372	0.199
67.10	0.375	0.217
67.15	0.378	0.236
67.20	0.380	0.255
67.25	0.383	0.274
67.30	0.385	0.293
67.35	0.387	0.313
67.40	0.390	0.332
67.45	0.393	0.352
67.50	0.395	0.371
67.55	0.397	0.391
67.60	0.400	0.411
67.65	0.403	0.431
67.70	0.405	0.451
67.75	0.408	0.472
67.80	0.410	0.492
67.85	0.412	0.513
67.90	0.415	0.533
67.95	0.418	0.554
68.00	0.420	0.575
68.05	0.422	0.596
68.10	0.424	0.617
68.15	0.426	0.638
68.20	0.428	0.660
68.25	0.430	0.681
68.30	0.432	0.703
68.35	0.434	0.724
68.40	0.436	0.746
68.45	0.438	0.768
68.50	0.440	0.790
68.55	0.442	0.812
68.60	0.444	0.834
68.65	0.446	0.856
68.70	0.448	0.879
68.75	0.450	0.901
68.80	0.452	0.924
68.85	0.454	0.946
68.90	0.456	0.969
68.95	0.458	0.992
69.00	0.460	1.015
69.05	0.462	1.038
69.10	0.465	1.061
69.15	0.468	1.085
69.20	0.470	1.108
69.25	0.472	1.132
69.30	0.475	1.155
69.35	0.477	1.179
69.40	0.480	1.203
69.45	0.483	1.227
69.50	0.485	1.251
69.55	0.487	1.276
69.60	0.490	1.300
69.65	0.493	1.325
69.70	0.495	1.349
69.75	0.497	1.374
69.80	0.500	1.399
69.85	0.502	1.424
69.90	0.505	1.449
69.95	0.508	1.475
70.00	0.510	1.500
70.05	0.512	1.526
70.10	0.514	1.551
70.15	0.516	1.577
70.20	0.518	1.603
70.25	0.520	1.629
70.30	0.522	1.655
70.35	0.524	1.681
70.40	0.526	1.707
70.45	0.528	1.734
70.50	0.530	1.760
70.55	0.532	1.787
70.60	0.534	1.813
70.65	0.536	1.840
70.70	0.538	1.867
70.75	0.540	1.894
70.80	0.542	1.921
70.85	0.544	1.948
70.90	0.546	1.975
70.95	0.548	2.003
71.00	**0.550**	**2.030**

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Pond 7P: Detention Basin Peak Elev=67.40' Storage=0.331 af Inflow=15.11 cfs 1.481 af
Discarded=3.54 cfs 1.481 af Primary=0.00 cfs 0.000 af Outflow=3.54 cfs 1.481 af

Summary for Pond 7P: Detention Basin

Inflow Area =	5.100 ac, 47.84% Impervious, Inflow Depth = 3.48" for 25-Year event				
Inflow =	15.11 cfs @	12.14 hrs,	Volume=	1.481 af	
Outflow =	3.54 cfs @	12.60 hrs,	Volume=	1.481 af,	Atten= 77%, Lag= 27.4 min
Discarded =	3.54 cfs @	12.60 hrs,	Volume=	1.481 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Peak Elev= 67.40' @ 12.60 hrs Surf.Area= 0.390 ac Storage= 0.331 af

Plug-Flow detention time= 23.1 min calculated for 1.481 af (100% of inflow)
Center-of-Mass det. time= 23.1 min (794.4 - 771.3)

Volume	Invert	Avail.Storage	Storage Description
#1	66.50'	2.030 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

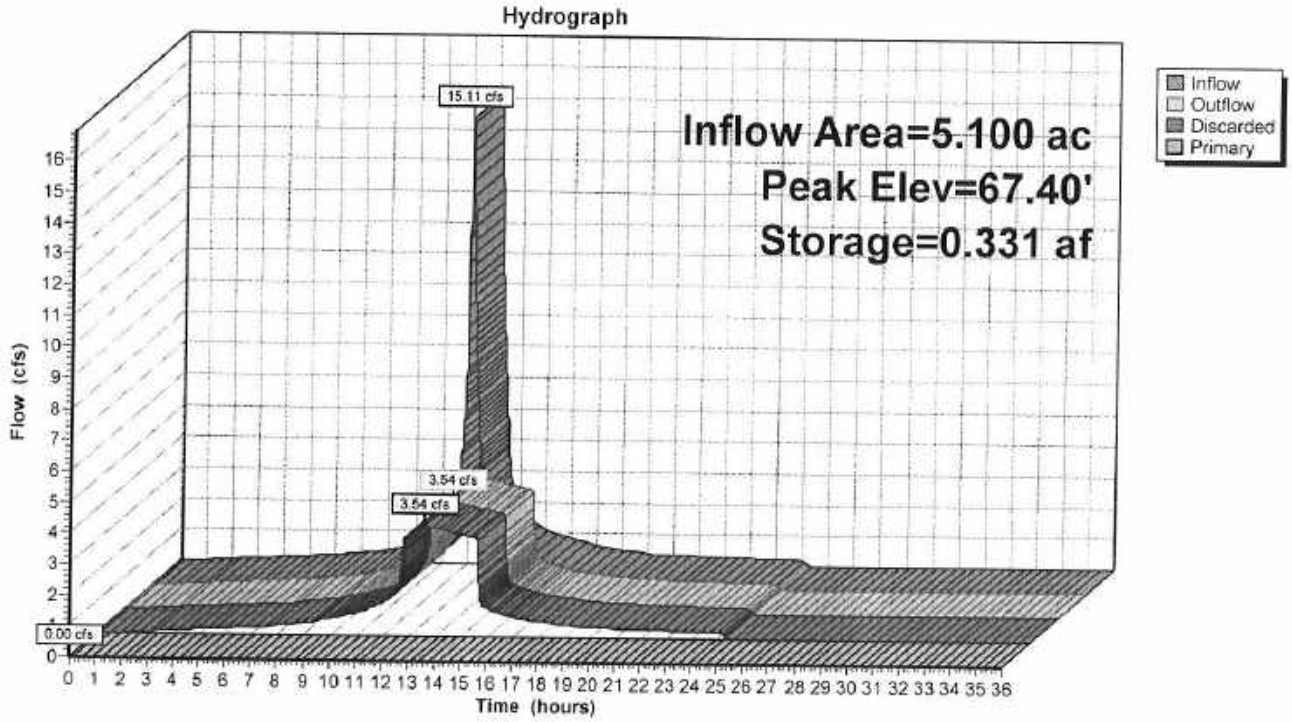
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
66.50	0.350	0.000	0.000
67.00	0.370	0.180	0.180
68.00	0.420	0.395	0.575
69.00	0.460	0.440	1.015
70.00	0.510	0.485	1.500
71.00	0.550	0.530	2.030

Device	Routing	Invert	Outlet Devices
#1	Discarded	66.50'	**9.000 in/hr Exfiltration over Surface area**
#2	Primary	68.30'	**0.5' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Primary	68.60'	**1.2' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

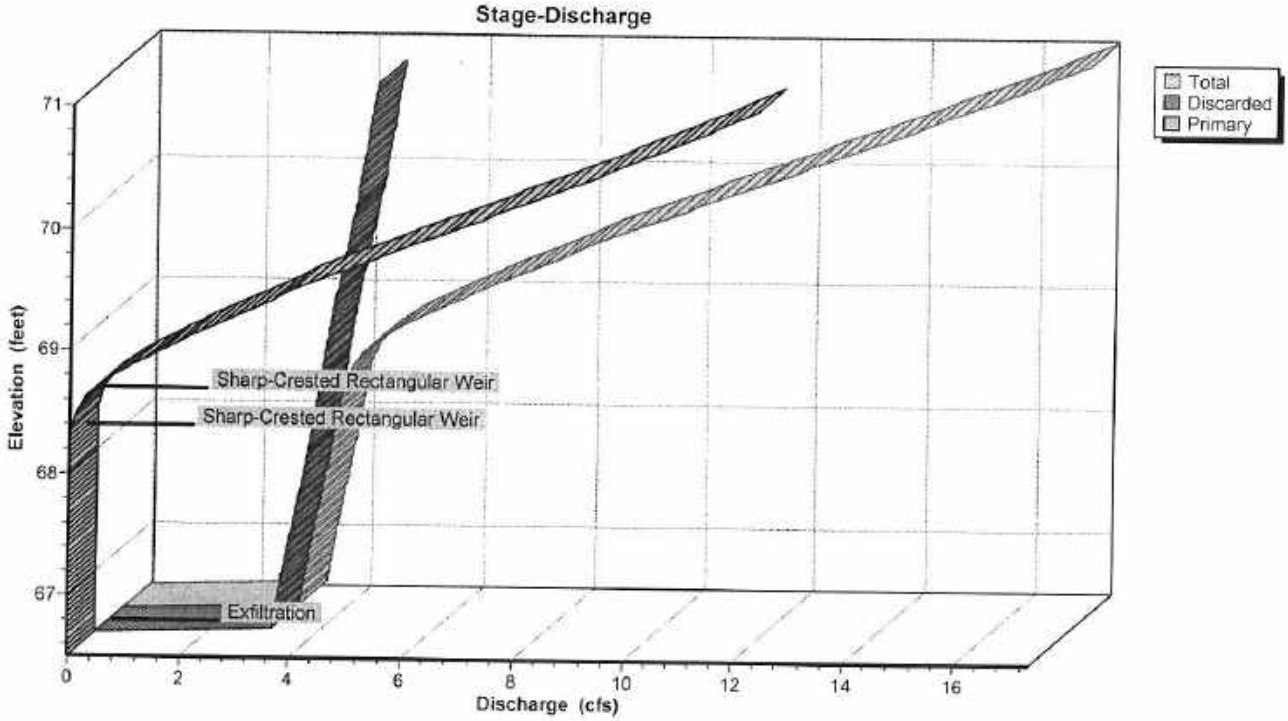
Discarded OutFlow Max=3.54 cfs @ 12.60 hrs HW=67.40' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 3.54 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=66.50' (Free Discharge)
├**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

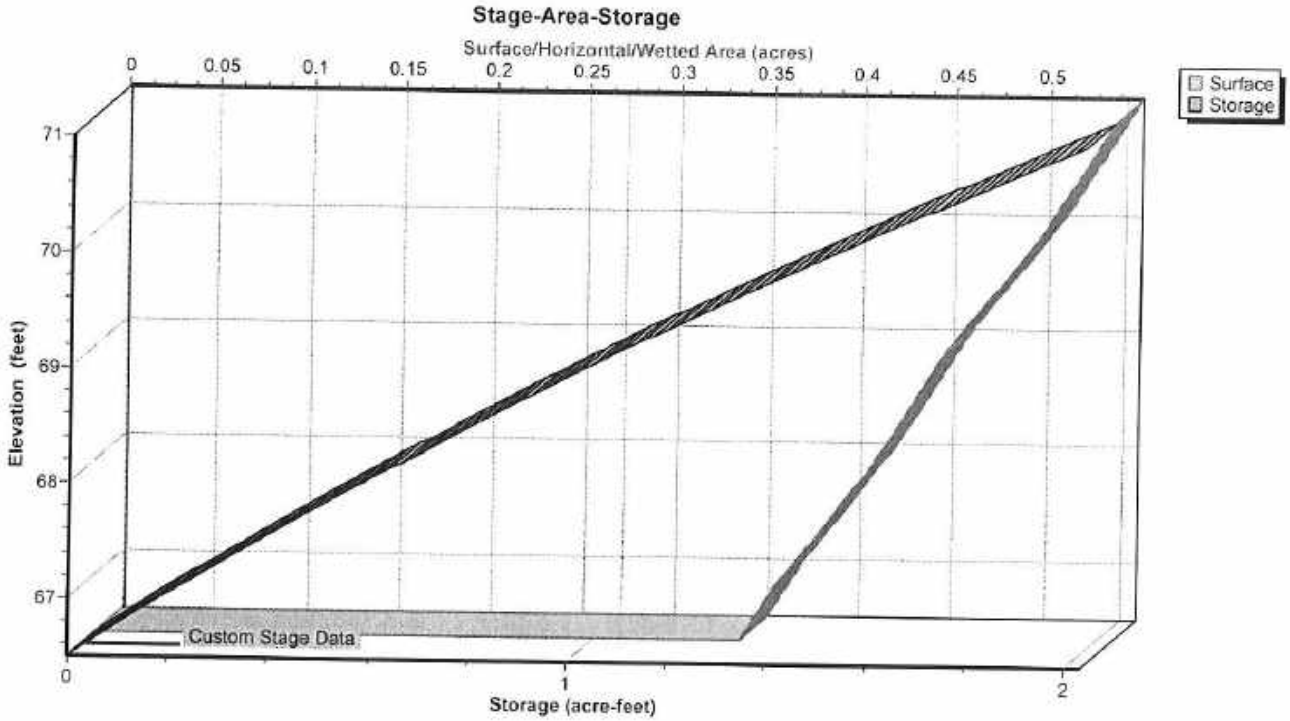
Pond 7P: Detention Basin



Pond 7P: Detention Basin



Pond 7P: Detention Basin



Hydrograph for Pond 7P: Detention Basin

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0.000	66.50	0.00	0.00	**0.00**
1.00	0.02	0.000	66.50	0.02	0.02	0.00
2.00	0.08	0.000	66.50	0.07	0.07	0.00
3.00	0.12	0.001	66.50	0.12	0.12	0.00
4.00	0.16	0.001	66.50	0.16	0.16	0.00
5.00	0.19	0.001	66.50	0.19	0.19	0.00
6.00	0.22	0.001	66.50	0.22	0.22	0.00
7.00	0.30	0.001	66.50	0.29	0.29	0.00
8.00	0.38	0.002	66.51	0.38	0.38	0.00
9.00	0.55	0.003	66.51	0.54	0.54	0.00
10.00	0.74	0.004	66.51	0.73	0.73	0.00
11.00	1.09	0.005	66.52	1.07	1.07	0.00
12.00	**7.46**	**0.052**	**66.65**	**3.23**	**3.23**	0.00
13.00	**1.81**	**0.292**	**67.30**	**3.49**	**3.49**	0.00
14.00	1.13	0.126	66.85	3.30	3.30	0.00
15.00	0.86	0.004	66.51	0.88	0.88	0.00
16.00	0.62	0.003	66.51	0.63	0.63	0.00
17.00	0.49	0.002	66.51	0.50	0.50	0.00
18.00	0.38	0.002	66.51	0.39	0.39	0.00
19.00	0.34	0.002	66.50	0.34	0.34	0.00
20.00	0.30	0.002	66.50	0.30	0.30	0.00
21.00	0.28	0.001	66.50	0.28	0.28	0.00
22.00	0.25	0.001	66.50	0.25	0.25	0.00
23.00	0.23	0.001	66.50	0.23	0.23	0.00
24.00	0.20	0.001	66.50	0.20	0.20	0.00
25.00	0.00	0.000	66.50	0.00	0.00	0.00
26.00	0.00	0.000	66.50	0.00	0.00	0.00
27.00	0.00	0.000	66.50	0.00	0.00	0.00
28.00	0.00	0.000	66.50	0.00	0.00	0.00
29.00	0.00	0.000	66.50	0.00	0.00	0.00
30.00	0.00	0.000	66.50	0.00	0.00	0.00
31.00	0.00	0.000	66.50	0.00	0.00	0.00
32.00	0.00	0.000	66.50	0.00	0.00	0.00
33.00	0.00	0.000	66.50	0.00	0.00	0.00
34.00	0.00	0.000	66.50	0.00	0.00	0.00
35.00	0.00	0.000	66.50	0.00	0.00	0.00
36.00	0.00	0.000	66.50	0.00	0.00	0.00

Stage-Discharge for Pond 7P: Detention Basin

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
66.50	0.00	0.00	0.00
66.55	3.19	3.19	0.00
66.60	3.21	3.21	0.00
66.65	3.23	3.23	0.00
66.70	3.25	3.25	0.00
66.75	3.27	3.27	0.00
66.80	3.29	3.29	0.00
66.85	3.30	3.30	0.00
66.90	3.32	3.32	0.00
66.95	3.34	3.34	0.00
67.00	3.36	3.36	0.00
67.05	3.38	3.38	0.00
67.10	3.40	3.40	0.00
67.15	3.43	3.43	0.00
67.20	3.45	3.45	0.00
67.25	3.47	3.47	0.00
67.30	3.49	3.49	0.00
67.35	3.52	3.52	0.00
67.40	3.54	3.54	0.00
67.45	3.56	3.56	0.00
67.50	3.58	3.58	0.00
67.55	3.61	3.61	0.00
67.60	3.63	3.63	0.00
67.65	3.65	3.65	0.00
67.70	3.68	3.68	0.00
67.75	3.70	3.70	0.00
67.80	3.72	3.72	0.00
67.85	3.74	3.74	0.00
67.90	3.77	3.77	0.00
67.95	3.79	3.79	0.00
68.00	3.81	3.81	0.00
68.05	3.83	3.83	0.00
68.10	3.85	3.85	0.00
68.15	3.87	3.87	0.00
68.20	3.88	3.88	0.00
68.25	3.90	3.90	0.00
68.30	3.92	3.92	0.00
68.35	3.96	3.94	0.02
68.40	4.01	3.96	0.05
68.45	4.06	3.97	0.09
68.50	4.13	3.99	0.13
68.55	4.20	4.01	0.18
68.60	4.27	4.03	0.24
68.65	4.38	4.05	0.33
68.70	4.54	4.07	0.47
68.75	4.71	4.08	0.63
68.80	4.90	4.10	0.80
68.85	5.11	4.12	0.99
68.90	5.33	4.14	1.19
68.95	5.56	4.16	1.40
69.00	5.79	4.17	1.62
69.05	6.04	4.20	1.84
69.10	6.29	4.22	2.07
69.15	6.54	4.24	2.30
69.20	6.80	4.27	2.53
69.25	7.06	4.29	2.77
69.30	7.32	4.31	3.01
69.35	7.58	4.33	3.25
69.40	7.85	4.36	3.49
69.45	8.11	4.38	3.73
69.50	8.37	4.40	3.97
69.55	8.62	4.42	4.20
69.60	8.93	4.45	4.48
69.65	9.23	4.47	4.77
69.70	9.54	4.49	5.05
69.75	9.85	4.51	5.34
69.80	10.17	4.54	5.63
69.85	10.48	4.56	5.92
69.90	10.79	4.58	6.21
69.95	11.11	4.61	6.50
70.00	11.42	4.63	6.80
70.05	11.73	4.65	7.09
70.10	12.05	4.66	7.38
70.15	12.36	4.68	7.67
70.20	12.67	4.70	7.96
70.25	12.97	4.72	8.26
70.30	13.28	4.74	8.55
70.35	13.59	4.76	8.83
70.40	13.89	4.77	9.12
70.45	14.20	4.79	9.41
70.50	14.50	4.81	9.69
70.55	14.80	4.83	9.97
70.60	15.10	4.85	10.25
70.65	15.39	4.86	10.53
70.70	15.68	4.88	10.80
70.75	15.97	4.90	11.07
70.80	16.26	4.92	11.34
70.85	16.54	4.94	11.61
70.90	16.82	4.95	11.87
70.95	17.10	4.97	12.13
71.00	**17.37**	**4.99**	**12.38**

Stage-Area-Storage for Pond 7P: Detention Basin

Elevation (feet)	Surface (acres)	Storage (acre-feet)
66.50	0.350	0.000
66.55	0.352	0.018
66.60	0.354	0.035
66.65	0.356	0.053
66.70	0.358	0.071
66.75	0.360	0.089
66.80	0.362	0.107
66.85	0.364	0.125
66.90	0.366	0.143
66.95	0.368	0.162
67.00	0.370	0.180
67.05	0.372	0.199
67.10	0.375	0.217
67.15	0.378	0.236
67.20	0.380	0.255
67.25	0.383	0.274
67.30	0.385	0.293
67.35	0.387	0.313
67.40	0.390	0.332
67.45	0.393	0.352
67.50	0.395	0.371
67.55	0.397	0.391
67.60	0.400	0.411
67.65	0.403	0.431
67.70	0.405	0.451
67.75	0.408	0.472
67.80	0.410	0.492
67.85	0.412	0.513
67.90	0.415	0.533
67.95	0.418	0.554
68.00	0.420	0.575
68.05	0.422	0.596
68.10	0.424	0.617
68.15	0.426	0.638
68.20	0.428	0.660
68.25	0.430	0.681
68.30	0.432	0.703
68.35	0.434	0.724
68.40	0.436	0.746
68.45	0.438	0.768
68.50	0.440	0.790
68.55	0.442	0.812
68.60	0.444	0.834
68.65	0.446	0.856
68.70	0.448	0.879
68.75	0.450	0.901
68.80	0.452	0.924
68.85	0.454	0.946
68.90	0.456	0.969
68.95	0.458	0.992
69.00	0.460	1.015
69.05	0.462	1.038
69.10	0.465	1.061
69.15	0.468	1.085
69.20	0.470	1.108
69.25	0.472	1.132
69.30	0.475	1.155
69.35	0.477	1.179
69.40	0.480	1.203
69.45	0.483	1.227
69.50	0.485	1.251
69.55	0.487	1.276
69.60	0.490	1.300
69.65	0.493	1.325
69.70	0.495	1.349
69.75	0.497	1.374
69.80	0.500	1.399
69.85	0.502	1.424
69.90	0.505	1.449
69.95	0.508	1.475
70.00	0.510	1.500
70.05	0.512	1.526
70.10	0.514	1.551
70.15	0.516	1.577
70.20	0.518	1.603
70.25	0.520	1.629
70.30	0.522	1.655
70.35	0.524	1.681
70.40	0.526	1.707
70.45	0.528	1.734
70.50	0.530	1.760
70.55	0.532	1.787
70.60	0.534	1.813
70.65	0.536	1.840
70.70	0.538	1.867
70.75	0.540	1.894
70.80	0.542	1.921
70.85	0.544	1.948
70.90	0.546	1.975
70.95	0.548	2.003
71.00	**0.550**	**2.030**

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Pond 7P: Detention Basin Peak Elev=68.14' Storage=0.633 af Inflow=23.58 cfs 2.230 af
Discarded=3.86 cfs 2.230 af Primary=0.00 cfs 0.000 af Outflow=3.86 cfs 2.230 af

Summary for Pond 7P: Detention Basin

Inflow Area =	5.100 ac,	47.84% Impervious,	Inflow Depth =	5.25"	for 100-Year event
Inflow =	23.58 cfs @	12.14 hrs,	Volume=	2.230 af	
Outflow =	3.86 cfs @	12.71 hrs,	Volume=	2.230 af,	Atten= 84%, Lag= 34.5 min
Discarded =	3.86 cfs @	12.71 hrs,	Volume=	2.230 af	
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Peak Elev= 68.14' @ 12.71 hrs Surf.Area= 0.425 ac Storage= 0.633 af

Plug-Flow detention time= 47.8 min calculated for 2.229 af (100% of inflow)
Center-of-Mass det. time= 47.8 min (821.1 - 773.3)

Volume	Invert	Avail.Storage	Storage Description
#1	66.50'	2.030 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

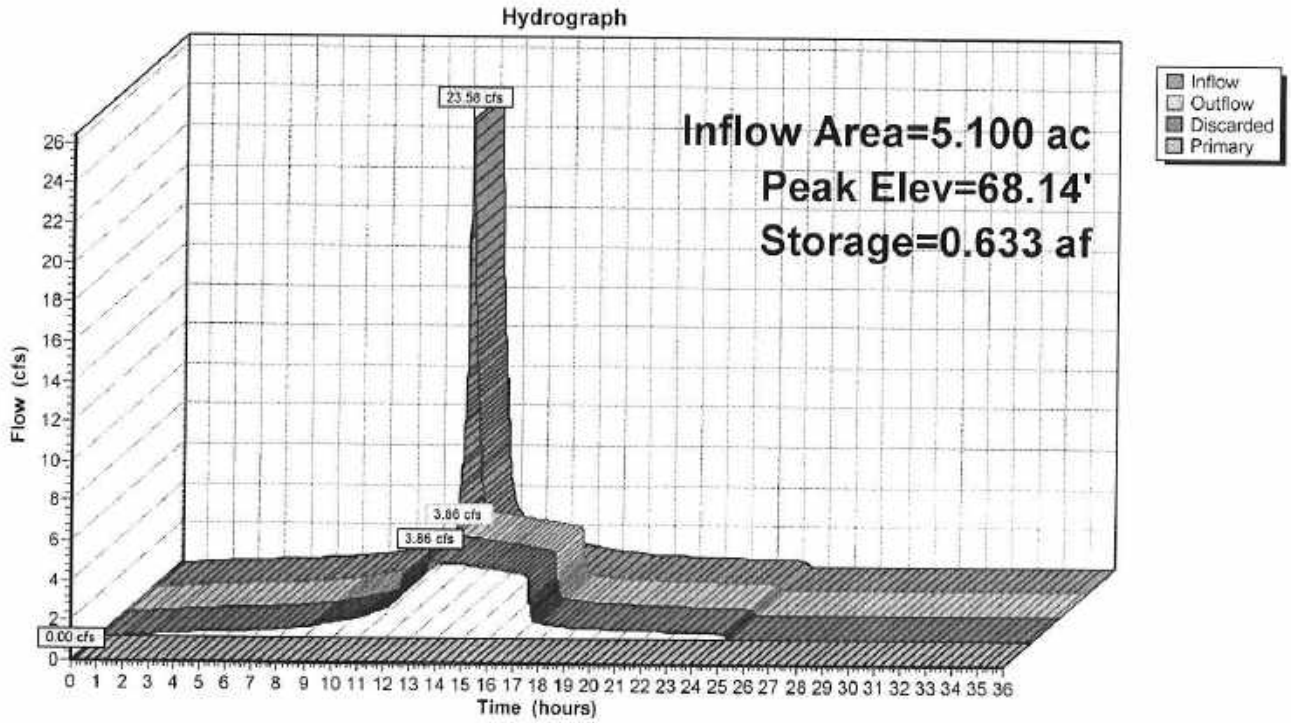
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
66.50	0.350	0.000	0.000
67.00	0.370	0.180	0.180
68.00	0.420	0.395	0.575
69.00	0.460	0.440	1.015
70.00	0.510	0.485	1.500
71.00	0.550	0.530	2.030

Device	Routing	Invert	Outlet Devices
#1	Discarded	66.50'	**9.000 in/hr Exfiltration over Surface area**
#2	Primary	68.30'	**0.5' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Primary	68.60'	**1.2' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

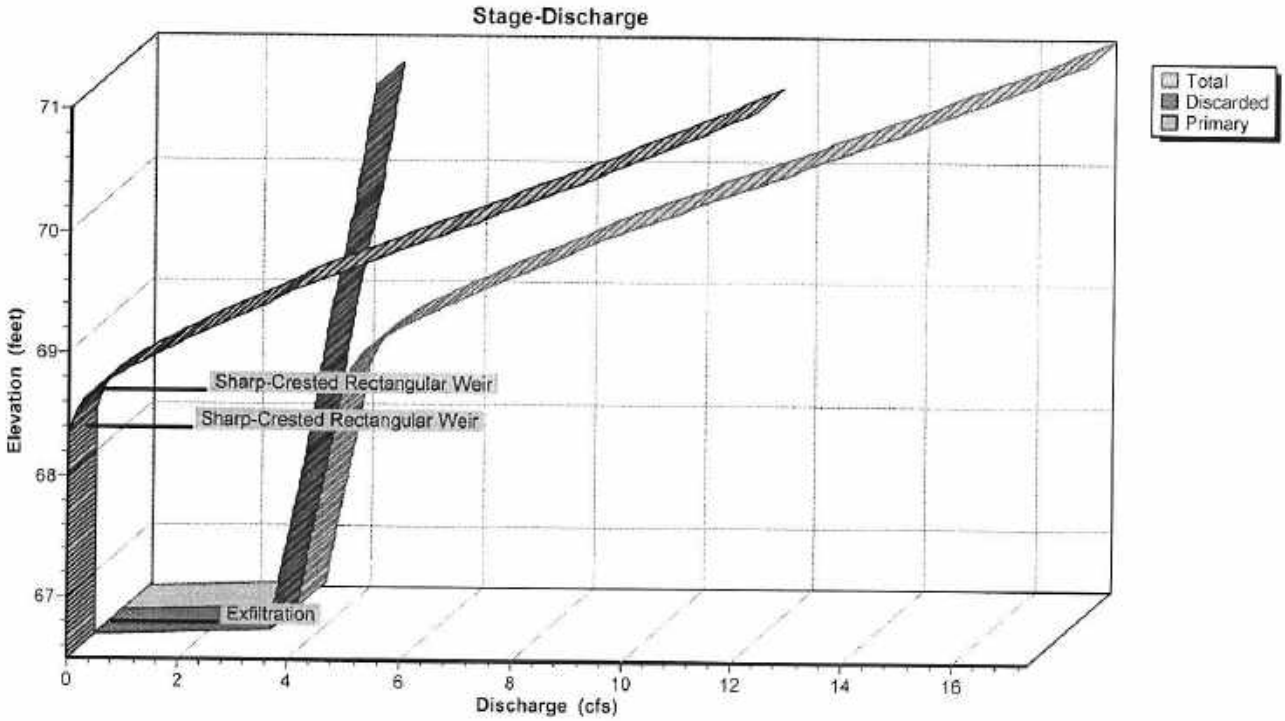
Discarded OutFlow Max=3.86 cfs @ 12.71 hrs HW=68.14' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 3.86 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=66.50' (Free Discharge)
├**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

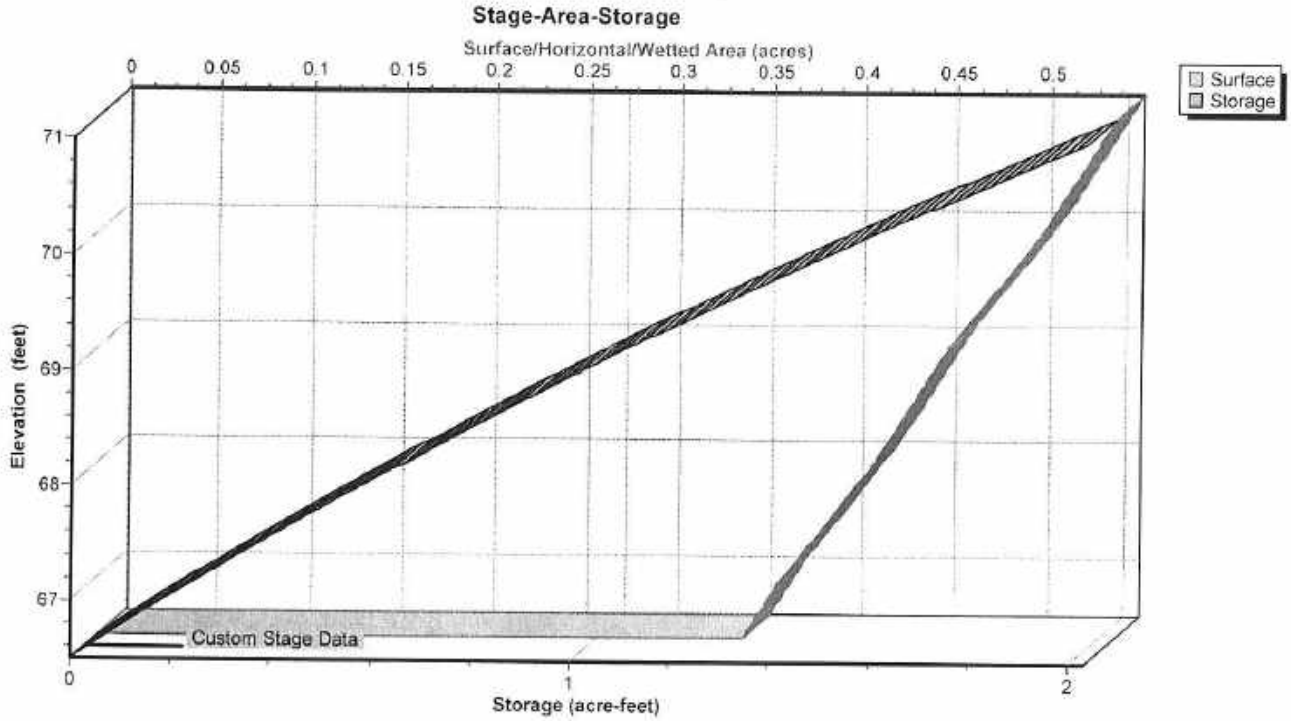
Pond 7P: Detention Basin



Pond 7P: Detention Basin



Pond 7P: Detention Basin



Hydrograph for Pond 7P: Detention Basin

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0.000	66.50	0.00	0.00	**0.00**
1.00	0.06	0.000	66.50	0.05	0.05	0.00
2.00	0.13	0.001	66.50	0.13	0.13	0.00
3.00	0.19	0.001	66.50	0.19	0.19	0.00
4.00	0.24	0.001	66.50	0.24	0.24	0.00
5.00	0.28	0.001	66.50	0.28	0.28	0.00
6.00	0.32	0.002	66.50	0.32	0.32	0.00
7.00	0.42	0.002	66.51	0.42	0.42	0.00
8.00	0.53	0.003	66.51	0.53	0.53	0.00
9.00	0.77	0.004	66.51	0.75	0.75	0.00
10.00	1.02	0.005	66.51	1.01	1.01	0.00
11.00	1.50	0.007	66.52	1.47	1.47	0.00
12.00	**11.63**	**0.111**	**66.81**	**3.29**	**3.29**	0.00
13.00	**2.79**	**0.619**	**68.10**	**3.85**	**3.85**	0.00
14.00	1.73	0.482	67.77	3.71	3.71	0.00
15.00	1.31	0.307	67.34	3.51	3.51	0.00
16.00	0.94	0.119	66.83	3.30	3.30	0.00
17.00	0.74	0.004	66.51	0.75	0.75	0.00
18.00	0.58	0.003	66.51	0.59	0.59	0.00
19.00	0.51	0.003	66.51	0.51	0.51	0.00
20.00	0.46	0.002	66.51	0.46	0.46	0.00
21.00	0.42	0.002	66.51	0.42	0.42	0.00
22.00	0.38	0.002	66.51	0.38	0.38	0.00
23.00	0.34	0.002	66.50	0.35	0.35	0.00
24.00	0.30	0.002	66.50	0.31	0.31	0.00
25.00	0.00	0.000	66.50	0.00	0.00	0.00
26.00	0.00	0.000	66.50	0.00	0.00	0.00
27.00	0.00	0.000	66.50	0.00	0.00	0.00
28.00	0.00	0.000	66.50	0.00	0.00	0.00
29.00	0.00	0.000	66.50	0.00	0.00	0.00
30.00	0.00	0.000	66.50	0.00	0.00	0.00
31.00	0.00	0.000	66.50	0.00	0.00	0.00
32.00	0.00	0.000	66.50	0.00	0.00	0.00
33.00	0.00	0.000	66.50	0.00	0.00	0.00
34.00	0.00	0.000	66.50	0.00	0.00	0.00
35.00	0.00	0.000	66.50	0.00	0.00	0.00
36.00	0.00	0.000	66.50	0.00	0.00	0.00

Stage-Discharge for Pond 7P: Detention Basin

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
66.50	0.00	0.00	0.00
66.55	3.19	3.19	0.00
66.60	3.21	3.21	0.00
66.65	3.23	3.23	0.00
66.70	3.25	3.25	0.00
66.75	3.27	3.27	0.00
66.80	3.29	3.29	0.00
66.85	3.30	3.30	0.00
66.90	3.32	3.32	0.00
66.95	3.34	3.34	0.00
67.00	3.36	3.36	0.00
67.05	3.38	3.38	0.00
67.10	3.40	3.40	0.00
67.15	3.43	3.43	0.00
67.20	3.45	3.45	0.00
67.25	3.47	3.47	0.00
67.30	3.49	3.49	0.00
67.35	3.52	3.52	0.00
67.40	3.54	3.54	0.00
67.45	3.56	3.56	0.00
67.50	3.58	3.58	0.00
67.55	3.61	3.61	0.00
67.60	3.63	3.63	0.00
67.65	3.65	3.65	0.00
67.70	3.68	3.68	0.00
67.75	3.70	3.70	0.00
67.80	3.72	3.72	0.00
67.85	3.74	3.74	0.00
67.90	3.77	3.77	0.00
67.95	3.79	3.79	0.00
68.00	3.81	3.81	0.00
68.05	3.83	3.83	0.00
68.10	3.85	3.85	0.00
68.15	3.87	3.87	0.00
68.20	3.88	3.88	0.00
68.25	3.90	3.90	0.00
68.30	3.92	3.92	0.00
68.35	3.96	3.94	0.02
68.40	4.01	3.96	0.05
68.45	4.06	3.97	0.09
68.50	4.13	3.99	0.13
68.55	4.20	4.01	0.18
68.60	4.27	4.03	0.24
68.65	4.38	4.05	0.33
68.70	4.54	4.07	0.47
68.75	4.71	4.08	0.63
68.80	4.90	4.10	0.80
68.85	5.11	4.12	0.99
68.90	5.33	4.14	1.19
68.95	5.56	4.16	1.40
69.00	5.79	4.17	1.62
69.05	6.04	4.20	1.84
69.10	6.29	4.22	2.07
69.15	6.54	4.24	2.30
69.20	6.80	4.27	2.53
69.25	7.06	4.29	2.77
69.30	7.32	4.31	3.01
69.35	7.58	4.33	3.25
69.40	7.85	4.36	3.49
69.45	8.11	4.38	3.73
69.50	8.37	4.40	3.97
69.55	8.62	4.42	4.20
69.60	8.93	4.45	4.48
69.65	9.23	4.47	4.77
69.70	9.54	4.49	5.05
69.75	9.85	4.51	5.34
69.80	10.17	4.54	5.63
69.85	10.48	4.56	5.92
69.90	10.79	4.58	6.21
69.95	11.11	4.61	6.50
70.00	11.42	4.63	6.80
70.05	11.73	4.65	7.09
70.10	12.05	4.66	7.38
70.15	12.36	4.68	7.67
70.20	12.67	4.70	7.96
70.25	12.97	4.72	8.26
70.30	13.28	4.74	8.55
70.35	13.59	4.76	8.83
70.40	13.89	4.77	9.12
70.45	14.20	4.79	9.41
70.50	14.50	4.81	9.69
70.55	14.80	4.83	9.97
70.60	15.10	4.85	10.25
70.65	15.39	4.86	10.53
70.70	15.68	4.88	10.80
70.75	15.97	4.90	11.07
70.80	16.26	4.92	11.34
70.85	16.54	4.94	11.61
70.90	16.82	4.95	11.87
70.95	17.10	4.97	12.13
71.00	**17.37**	**4.99**	**12.38**

Stage-Area-Storage for Pond 7P: Detention Basin

Elevation (feet)	Surface (acres)	Storage (acre-feet)
66.50	0.350	0.000
66.55	0.352	0.018
66.60	0.354	0.035
66.65	0.356	0.053
66.70	0.358	0.071
66.75	0.360	0.089
66.80	0.362	0.107
66.85	0.364	0.125
66.90	0.366	0.143
66.95	0.368	0.162
67.00	0.370	0.180
67.05	0.372	0.199
67.10	0.375	0.217
67.15	0.378	0.236
67.20	0.380	0.255
67.25	0.383	0.274
67.30	0.385	0.293
67.35	0.387	0.313
67.40	0.390	0.332
67.45	0.393	0.352
67.50	0.395	0.371
67.55	0.397	0.391
67.60	0.400	0.411
67.65	0.403	0.431
67.70	0.405	0.451
67.75	0.408	0.472
67.80	0.410	0.492
67.85	0.412	0.513
67.90	0.415	0.533
67.95	0.418	0.554
68.00	0.420	0.575
68.05	0.422	0.596
68.10	0.424	0.617
68.15	0.426	0.638
68.20	0.428	0.660
68.25	0.430	0.681
68.30	0.432	0.703
68.35	0.434	0.724
68.40	0.436	0.746
68.45	0.438	0.768
68.50	0.440	0.790
68.55	0.442	0.812
68.60	0.444	0.834
68.65	0.446	0.856
68.70	0.448	0.879
68.75	0.450	0.901
68.80	0.452	0.924
68.85	0.454	0.946
68.90	0.456	0.969
68.95	0.458	0.992
69.00	0.460	1.015
69.05	0.462	1.038
69.10	0.465	1.061
69.15	0.468	1.085
69.20	0.470	1.108
69.25	0.472	1.132
69.30	0.475	1.155
69.35	0.477	1.179
69.40	0.480	1.203
69.45	0.483	1.227
69.50	0.485	1.251
69.55	0.487	1.276
69.60	0.490	1.300
69.65	0.493	1.325
69.70	0.495	1.349
69.75	0.497	1.374
69.80	0.500	1.399
69.85	0.502	1.424
69.90	0.505	1.449
69.95	0.508	1.475
70.00	0.510	1.500
70.05	0.512	1.526
70.10	0.514	1.551
70.15	0.516	1.577
70.20	0.518	1.603
70.25	0.520	1.629
70.30	0.522	1.655
70.35	0.524	1.681
70.40	0.526	1.707
70.45	0.528	1.734
70.50	0.530	1.760
70.55	0.532	1.787
70.60	0.534	1.813
70.65	0.536	1.840
70.70	0.538	1.867
70.75	0.540	1.894
70.80	0.542	1.921
70.85	0.544	1.948
70.90	0.546	1.975
70.95	0.548	2.003
71.00	**0.550**	**2.030**

Appendix 4
Storm Sewer Pipe Calculations
Conduit Outlet Protection Calculations
Emergency Spillway Calculations

STORM SEWER TABULATION

SHEET 1 OF 3

PROJECT NO.: 18130
LOCATION: BLOCK 33, LOT 21, COLTS NECK
COMPUTED BY: ASG DATE: 4-6-20
CHECKED BY: DATE:

DESIGN STORM FREQUENCY: 25 YEAR
INTENSITY CURVE: NJDEP

LOCATION: STRUCTURE NO.[1] UPSTREAM	DOWNSTREAM	RUNOFF DATA: AREA (Ac)	WEIGHTED RUNOFF COEFFICIENT[3] $\bar{C}$	A x $\bar{C}$	TOTAL (ΣA x $\bar{C}$)	TIME OF CONCENTRATION: OVERLAND THROUGH AREA (T_A) (MIN)	THROUGH PIPE (T_P) (MIN)	ACCUMULATED T_C (MIN.)	RAINFALL INTENSITY (IN/HR)	PEAK RUNOFF Q (CFS)	SEWER DESIGN DATA (PIPE MATERIAL[2] RCP, MANNINGS 'n' 0.013): DIAMETER (INCHES)	LENGTH (FT)	SLOPE (%)	CAPACITY AT FULL FLOW (CFS)	VELOCITY AT FULL FLOW V_F (FPS)	VELOCITY ACTUAL V_A (FPS)	SEWER INVERT (IN)	SEWER INVERT (OUT)	TG
(1)	(2)	(3)	(4)	(5)=(3)x(4)	(6)=Σ(5)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	
22	21	0.04	0.99	0.04	0.04	10	0.2	10	6.8	0.27	15	25	1.0	6.5	5.3	2.5	—	80.00	83.00
21	19	0.22	0.39	0.09	0.13	10	0.4	10.2	6.8	0.88	15	112	2.57	10.4	8.5	5.0	79.75	79.75	83.00
20	19	0.16	0.68	0.11	0.11	10	0.1	10	6.8	0.75	15	13	1.0	6.5	5.3	3.4	—	77.00	80.00
19	18	0.12	0.77	0.09	0.33	10	0.2	10.6	6.8	2.24	15	84	2.23	9.7	7.9	6.4	76.87	76.87	80.00
18	16	0.16	0.74	0.12	0.45	10	0.2	10.8	6.8	3.1	15	50	1.00	6.5	5.3	5.2	75.00	75.00	78.00
17	16	0.11	0.74	0.08	0.08	10	0.2	10	6.8	0.54	15	50	3.00	11.2	9.1	4.9	—	76.00	79.00
16	15	0.09	0.75	0.07	0.60	10	0.1	11	6.8	4.1	15	24	2.08	9.3	7.6	7.4	74.50	74.50	78.00
15	14	0.48	0.71	0.34	0.94	10	0.3	11.1	6.8	6.4	15	122	1.20	7.1	5.8	6.6	74.00	74.00	77.00
14	13	0.21	.99	0.21	1.15	10	0.3	11.4	6.7	7.7	18	114	1.00	10.5	5.9	6.4	72.54	72.29	77.50
13	12	0.19	.99	.19	1.34	10	0.3	11.7	6.5	8.7	18	102	1.0	10.5	5.9	6.6	71.15	71.15	75.50
12	9	0.07	.99	.07	1.41	10	0.2	12.0	6.2	8.7	18	90	1.0	10.5	5.9	6.6	70.13	70.13	74.60

NOTES 1 – SEE CONSTRUCTION PLANS FOR PROFILE INFORMATION.
2 – PIPE CLASS SHALL BE AS SHOWN ON THE CONSTRUCTION PLANS.
3 – SEE APPENDIX FOR CHARTS AND NOMOGRAPHS USED HEREIN

SHEET 2 OF 3

PROJECT NO.: 18130
LOCATION: BLOCK 33, LOT 21, COLTS NECK
COMPUTED BY: AJG DATE: 4-6-20
CHECKED BY: DATE:

DESIGN STORM FREQUENCY: 25 YEAR
INTENSITY CURVE: NJDEP

LOCATION: STRUCTURE NO.[1] UPSTREAM	DOWNSTREAM	RUNOFF DATA: AREA (Ac)	WEIGHTED RUNOFF COEFFICIENT[3] C	A x C	TOTAL (ΣA x C)	TIME OF CONCENTRATION: OVERLAND THROUGH AREA (TA) (MIN)	THROUGH PIPE (TP) (MIN)	ACCUMULATED Σ (MIN.)	RAINFALL INTENSITY (IN/HR)	PEAK RUNOFF Q (CFS)	SEWER DESIGN DATA (PIPE MATERIAL[2] RCP, MANNINGS 'n' 0.013): DIAMETER (INCHES)	LENGTH (FT)	SLOPE (%)	CAPACITY AT FULL FLOW (CFS)	VELOCITY AT FULL FLOW Vf (FPS)	VELOCITY ACTUAL Va (FPS)	SEWER INVERT (IN)	SEWER INVERT (OUT)	TG
(1)	(2)	(3)	(4)	(5)=(3)x(4)	(6)=Σ(5)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	
11	10	0.18	.25	.05	.05	10	0.1	10	6.8	0.34	15	65	0.5	4.6	3.7	2.1	—	68.23	71.00
10	9	0.12	.99	.12	.17	10	0.5	10.1	6.8	1.16	15	84	0.5	4.6	3.7	3.1	67.90	67.90	70.90
9	6	0.16	.99	.16	1.74	10	0.2	12.2	6.2	10.5	18	82	1.38	12.3	7.0	7.7	67.48	67.23	71.00
7	6	0.16	.80	.13	.13	10	—	10	6.8	0.88	15	12	7.1	17.2	14.1	8.1	—	67.00	70.00
8	6	0.15	.99	.15	.15	10	—	10	6.8	1.0	15	101	3.3	11.8	9.6	5.7	—	69.50	72.50
6	HW 5	0.31	.69	.21	2.02	10	—	17.4	6.2	12.5	18	20	2.0	14.8	8.4	9.4	66.15 65.90	65.90	70.00
HW 5																	65.50		

NOTES 1 – SEE CONSTRUCTION PLANS FOR PROFILE INFORMATION.
2 – PIPE CLASS SHALL BE AS SHOWN ON THE CONSTRUCTION PLANS.
3 – SEE APPENDIX FOR CHARTS AND NOMOGRAPHS USED HEREIN

SHEET 3 OF 3

PROJECT NO: 18130
LOCATION: Block 33, Lot 21, Colts Neck
COMPUTED BY: ASG DATE: 4-6-20
CHECKED BY: DATE:

DESIGN STORM FREQUENCY: 25 YEAR
INTENSITY CURVE: NJDOT

LOCATION: STRUCTURE NO.[1] UPSTREAM	DOWNSTREAM	RUNOFF DATA: AREA (Ac)	WEIGHTED RUNOFF COEFFICIENT C	A x C	TOTAL (ΣA x C)	TIME OF CONCENTRATION: OVERLAND THROUGH AREA (T_A) (MIN)	THROUGH PIPE (T_P) (MIN)	ACCUMULATED T_c (MIN.)	RAINFALL INTENSITY I (IN/HR)	PEAK RUNOFF Q (CFS)	SEWER DESIGN DATA: PIPE MATERIAL[2] RCP MANNINGS 'n' 0.013: DIAMETER (INCHES)	LENGTH (FT)	SLOPE (%)	CAPACITY AT FULL FLOW (CFS)	VELOCITY AT FULL FLOW V_F (FPS)	VELOCITY ACTUAL V_A (FPS)	SEWER INVERT (IN)	SEWER INVERT (OUT)	
(1)	(2)	(3)	(4)	(5)=(3)x(4)	(6)=Σ(5)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	
																			TG
27	26	0.47	.25	0.12	0.12	10	0.3	10	6.8	0.82	15	70	2.86	10.9	8.9	4.2	—	79.50	82.50
26	25	0.21	.85	0.18	0.30	10	0.3	10.3	6.8	2.0	15	110	3.18	11.5	9.4	7.1	77.50	77.50	80.50
25	24	0.49	.93	0.46	0.76	10	0.3	10.6	6.8	5.2	15	134	1.49	7.9	6.4	6.8	74.00	74.00	77.00
24	HW23	0.15	.99	0.15	0.91	10	—	10.9	6.8	6.2	15	83	6.63	16.7	13.6	12.5	72.00	70.00	76.50
HW23																	65.50		
OS 4	MH3								*	2.36	15	70	5.00	14.5	11.8	9.2	65.50	65.50	RIM —
MH3	MH2								*	2.36	15	35	10.00	20.5	16.7	10.9	62.00	55.50	65.0
MH2	HW1								*	2.36	15	40	10.00	20.5	16.7	10.9	52.00	47.00	55.0
																	43.00	43.00	

NOTES 1 – SEE CONSTRUCTION PLANS FOR PROFILE INFORMATION.
2 – PIPE CLASS SHALL BE AS SHOWN ON THE CONSTRUCTION PLANS.
3 – SEE APPENDIX FOR CHARTS AND NOMOGRAPHS USED HEREIN

* 100 YEAR ROUTED OUTFLOW