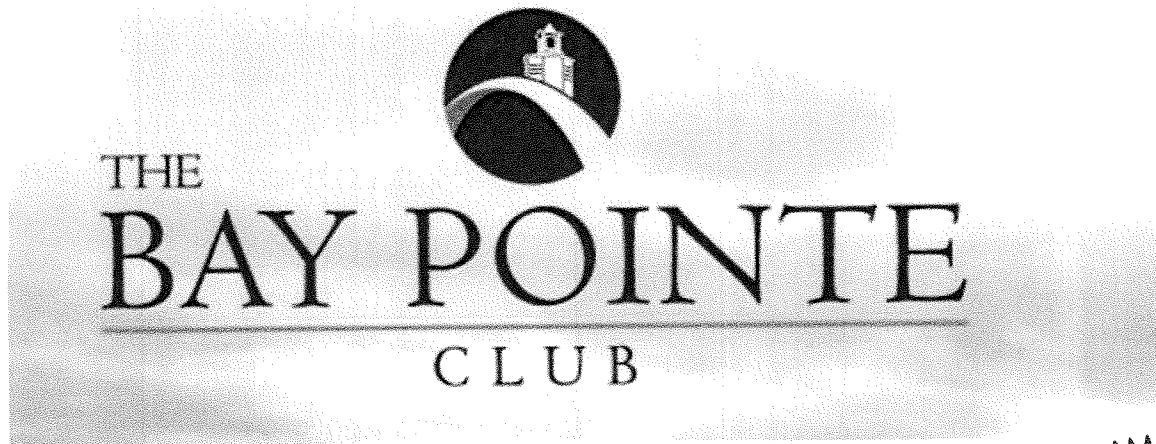




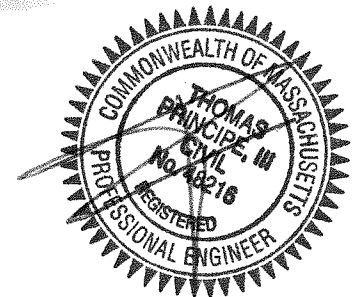
STORMWATER CALCULATIONS-CEDA

August 27, 2021
Revised December 29, 2021



Bay Pointe Club • Wareham • Massachusetts

Bay Pointe Mixed-Use Development Project



Prepared For:

Bay Pointe Club, LLC
501 Wampanoag Trail, Suite 400
E. Providence, RI 02915

Prepared By:

Principe Engineering, Inc.
27 Sakonnet Ridge Drive
Tiverton, Rhode Island



Storm Water Management-CEDA

The storm water management system selected is best suited to the site and provides the least disturbance of the site while recharging the aquifer. The system is sized to mitigate the effects of increased runoff typically resulting from development of a site. The storm water management system consists of the collection of overland runoff to an infiltration basin on site. The drainage system is designed to offset increased storm flows and provide water quality in accordance with the regulations of both state and local authorities. This drainage system is intended to mitigate increased runoff generated from new construction so the downstream wetlands, water bodies, and neighboring homes will not be impacted. The drainage system will completely control post development peak flows and provide for total suspended solids (TSS) removal at the maximum possible rate.

The Pre-Development watershed area (PRE) encompasses 11.28 acres, which includes portions of the existing development on the west side of Bay Pointe Drive.

Under Post Development Conditions, the site has been divided into seven sub-watershed areas containing a total of 11.07 acres, labeled “POST BASIN”, “POST EAST”, “POST CENTER”, “POST WEST”, “POST PARKING”, “POST BPD” and “POST UNC”.

The following table summarizes the results of the inflow analysis for the seven sub-watershed areas under post development conditions:

WATERSHED	2-YEAR STORM	10-YEAR STORM	25-YEAR STORM	100-YEAR STORM
POST BASIN	0.01 CFS	0.23 CFS	0.76 CFS	2.11 CFS
POST EAST	0.71 CFS	1.26 CFS	1.67 CFS	2.32 CFS
POST CENTER	0.76 CFS	1.30 CFS	1.68 CFS	2.29 CFS
POST WEST	2.90 CFS	5.34 CFS	7.16 CFS	10.07 CFS
POST PARK	1.27 CFS	3.01 CFS	4.41 CFS	6.78 CFS
POST BPD	1.30 CFS	2.96 CFS	4.29 CFS	6.53 CFS
POST UNC	-0- CFS	0.03 CFS	0.11 CFS	0.30 CFS

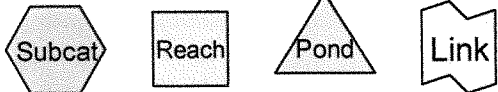
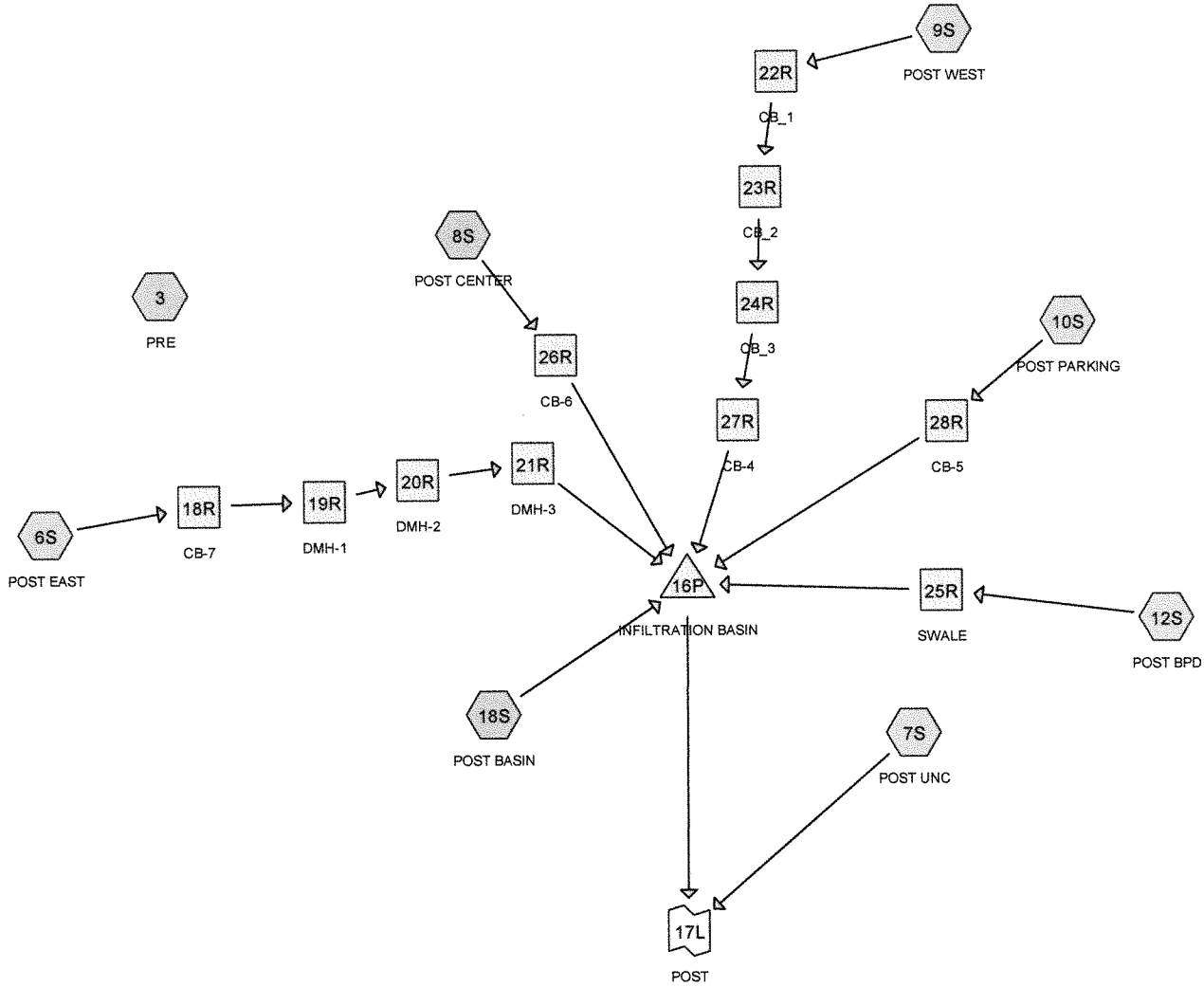
The following table compares the flows between pre-development conditions and post development conditions, after flows are routed through the infiltration basin:

WATERSHED	2-YEAR STORM	10-YEAR STORM	25-YEAR STORM	100-YEAR STORM
PRE	0.29 CFS	1.81 CFS	3.55 CFS	7.07 CFS
POST	-0- CFS	0.03 CFS	0.11 CFS	0.35 CFS
DIFFERENCE	-0.29 CFS	-1.78 CFS	-3.44 CFS	-6.72 CFS

The drainage collection system proposed takes full advantage of the natural slopes and contours of the site and utilize the existing course sandy subsoil parent material. It provides for both peak storm flow mitigation and sediment removal. By reducing post-development storm water flows, the primary goal of the proposed drainage system is achieved. Any potential impacts from the proposed development on the abutting properties have been mitigated.

HYDROCAD CALCULATIONS





Routing Diagram for Baypointe CEDA-REV
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Baypointe CEDA-REV

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
11.466	39	>75% Grass cover, Good, HSG A (3, 6S, 7S, 8S, 9S, 10S, 12S, 18S)
1.331	98	Existing Impervious, HSG A (10S, 12S)
0.088	98	Existing Roof, HSG A (18S)
0.029	98	Existing Roofs (3)
2.589	98	Roads/Driveways/SWalk (3)
0.089	98	Roofs, HSG A (7S)
3.276	98	Unconnected pavement, HSG A (6S, 8S, 9S, 10S, 12S, 18S)
3.604	30	Woods, Good, HSG A (3, 7S, 12S)
22.473	57	TOTAL AREA

Baypointe CEDA-REV

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
19.855	HSG A	3, 6S, 7S, 8S, 9S, 10S, 12S, 18S
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
2.618	Other	3
22.473		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
11.466	0.000	0.000	0.000	0.000	11.466	>75% Grass cover, Good	3, 6S, 7S, 8S, 9S, 10S, 12S, 18S
1.331	0.000	0.000	0.000	0.000	1.331	Existing Impervious	10S, 12S
0.088	0.000	0.000	0.000	0.000	0.088	Existing Roof	18S
0.000	0.000	0.000	0.000	0.029	0.029	Existing Roofs	3
0.000	0.000	0.000	0.000	2.589	2.589	Roads/Driveways/SWalk	3
0.089	0.000	0.000	0.000	0.000	0.089	Roofs	7S
3.276	0.000	0.000	0.000	0.000	3.276	Unconnected pavement	6S, 8S, 9S, 10S, 12S, 18S
3.604	0.000	0.000	0.000	0.000	3.604	Woods, Good	3, 7S, 12S
19.855	0.000	0.000	0.000	2.618	22.473	TOTAL AREA	

Baypointe CEDA-REV

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Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	9S	0.00	0.00	20.0	0.0400	0.011	12.0	0.0	0.0
2	9S	0.00	0.00	71.0	0.0400	0.011	12.0	0.0	0.0
3	9S	0.00	0.00	99.0	0.0400	0.011	12.0	0.0	0.0
4	18R	30.66	25.35	59.0	0.0900	0.011	18.0	0.0	0.0
5	19R	25.35	24.95	38.0	0.0105	0.011	18.0	0.0	0.0
6	20R	24.95	24.24	72.0	0.0099	0.011	18.0	0.0	0.0
7	21R	24.24	24.00	41.0	0.0059	0.011	18.0	0.0	0.0
8	22R	27.89	27.35	53.0	0.0102	0.011	18.0	0.0	0.0
9	23R	27.35	27.02	31.0	0.0106	0.011	18.0	0.0	0.0
10	24R	27.02	26.63	39.0	0.0100	0.011	18.0	0.0	0.0
11	26R	31.16	24.00	86.0	0.0833	0.011	18.0	0.0	0.0
12	27R	26.63	26.03	61.0	0.0098	0.011	24.0	0.0	0.0
13	28R	26.75	26.03	35.0	0.0206	0.011	24.0	0.0	0.0

Time span=0.00-30.00 hrs, dt=0.02 hrs, 1501 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 3: PRE	Runoff Area=490,939 sf 23.23% Impervious Runoff Depth=0.17" Flow Length=1,217' Tc=65.6 min CN=50 Runoff=0.29 cfs 0.161 af
Subcatchment 6S: POST EAST	Runoff Area=23,034 sf 65.04% Impervious Runoff Depth=1.36" Flow Length=301' Tc=10.5 min CN=77 Runoff=0.71 cfs 0.060 af
Subcatchment 7S: POST UNC	Runoff Area=36,964 sf 10.53% Impervious Runoff Depth=0.03" Flow Length=278' Slope=0.0700 '/ Tc=50.5 min CN=42 Runoff=0.00 cfs 0.002 af
Subcatchment 8S: POST CENTER	Runoff Area=18,063 sf 70.19% Impervious Runoff Depth=1.56" Flow Length=230' Tc=5.6 min CN=80 Runoff=0.76 cfs 0.054 af
Subcatchment 9S: POST WEST	Runoff Area=80,580 sf 60.66% Impervious Runoff Depth=1.23" Flow Length=541' Tc=2.8 min CN=75 Runoff=2.90 cfs 0.190 af
Subcatchment 10S: POST PARKING	Runoff Area=124,799 sf 44.09% Impervious Runoff Depth=0.70" Flow Length=575' Tc=21.1 min CN=65 Runoff=1.27 cfs 0.167 af
Subcatchment 12S: POST BPD	Runoff Area=133,456 sf 47.29% Impervious Runoff Depth=0.75" Flow Length=786' Tc=29.2 min CN=66 Runoff=1.30 cfs 0.191 af
Subcatchment 18S: POST BASIN	Runoff Area=71,068 sf 13.85% Impervious Runoff Depth=0.07" Tc=0.0 min UI Adjusted CN=45 Runoff=0.01 cfs 0.009 af
Reach 18R: CB-7	Avg. Flow Depth=0.14' Max Vel=8.22 fps Inflow=0.71 cfs 0.060 af 18.0" Round Pipe n=0.011 L=59.0' S=0.0900 '/ Capacity=37.24 cfs Outflow=0.70 cfs 0.060 af
Reach 19R: DMH-1	Avg. Flow Depth=0.24' Max Vel=3.87 fps Inflow=0.70 cfs 0.060 af 18.0" Round Pipe n=0.011 L=38.0' S=0.0105 '/ Capacity=12.74 cfs Outflow=0.70 cfs 0.060 af
Reach 20R: DMH-2	Avg. Flow Depth=0.24' Max Vel=3.78 fps Inflow=0.70 cfs 0.060 af 18.0" Round Pipe n=0.011 L=72.0' S=0.0099 '/ Capacity=12.33 cfs Outflow=0.70 cfs 0.060 af
Reach 21R: DMH-3	Avg. Flow Depth=0.28' Max Vel=3.14 fps Inflow=0.70 cfs 0.060 af 18.0" Round Pipe n=0.011 L=41.0' S=0.0059 '/ Capacity=9.50 cfs Outflow=0.70 cfs 0.060 af
Reach 22R: CB_1	Avg. Flow Depth=0.49' Max Vel=5.74 fps Inflow=2.90 cfs 0.190 af 18.0" Round Pipe n=0.011 L=53.0' S=0.0102 '/ Capacity=12.53 cfs Outflow=2.87 cfs 0.190 af
Reach 23R: CB_2	Avg. Flow Depth=0.48' Max Vel=5.84 fps Inflow=2.87 cfs 0.190 af 18.0" Round Pipe n=0.011 L=31.0' S=0.0106 '/ Capacity=12.81 cfs Outflow=2.86 cfs 0.190 af
Reach 24R: CB_3	Avg. Flow Depth=0.49' Max Vel=5.71 fps Inflow=2.86 cfs 0.190 af 18.0" Round Pipe n=0.011 L=39.0' S=0.0100 '/ Capacity=12.41 cfs Outflow=2.85 cfs 0.190 af
Reach 25R: SWALE	Avg. Flow Depth=0.17' Max Vel=2.57 fps Inflow=1.30 cfs 0.191 af n=0.022 L=145.0' S=0.0276 '/ Capacity=14.28 cfs Outflow=1.30 cfs 0.191 af

Baypointe CEDA-REV

Type III 24-hr 2-Year Rainfall=3.40"

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Reach 26R: CB-6 Avg. Flow Depth=0.15' Max Vel=8.17 fps Inflow=0.76 cfs 0.054 af
18.0" Round Pipe n=0.011 L=86.0' S=0.0833 '/ Capacity=35.82 cfs Outflow=0.76 cfs 0.054 af

Reach 27R: CB-4 Avg. Flow Depth=0.44' Max Vel=5.51 fps Inflow=2.85 cfs 0.190 af
24.0" Round Pipe n=0.011 L=61.0' S=0.0098 '/ Capacity=26.52 cfs Outflow=2.84 cfs 0.190 af

Reach 28R: CB-5 Avg. Flow Depth=0.25' Max Vel=5.62 fps Inflow=1.27 cfs 0.167 af
24.0" Round Pipe n=0.011 L=35.0' S=0.0206 '/ Capacity=38.35 cfs Outflow=1.27 cfs 0.167 af

Pond 16P: INFILTRATION BASIN Peak Elev=22.08' Storage=1,443 cf Inflow=4.45 cfs 0.671 af
Discarded=3.45 cfs 0.671 af Primary=0.00 cfs 0.000 af Outflow=3.45 cfs 0.671 af

Link 17L: POST Inflow=0.00 cfs 0.002 af
Primary=0.00 cfs 0.002 af

Total Runoff Area = 22.473 ac Runoff Volume = 0.834 af Average Runoff Depth = 0.45"
67.06% Pervious = 15.070 ac 32.94% Impervious = 7.403 ac

Summary for Subcatchment 3: PRE

Runoff = 0.29 cfs @ 13.64 hrs, Volume= 0.161 af, Depth= 0.17"

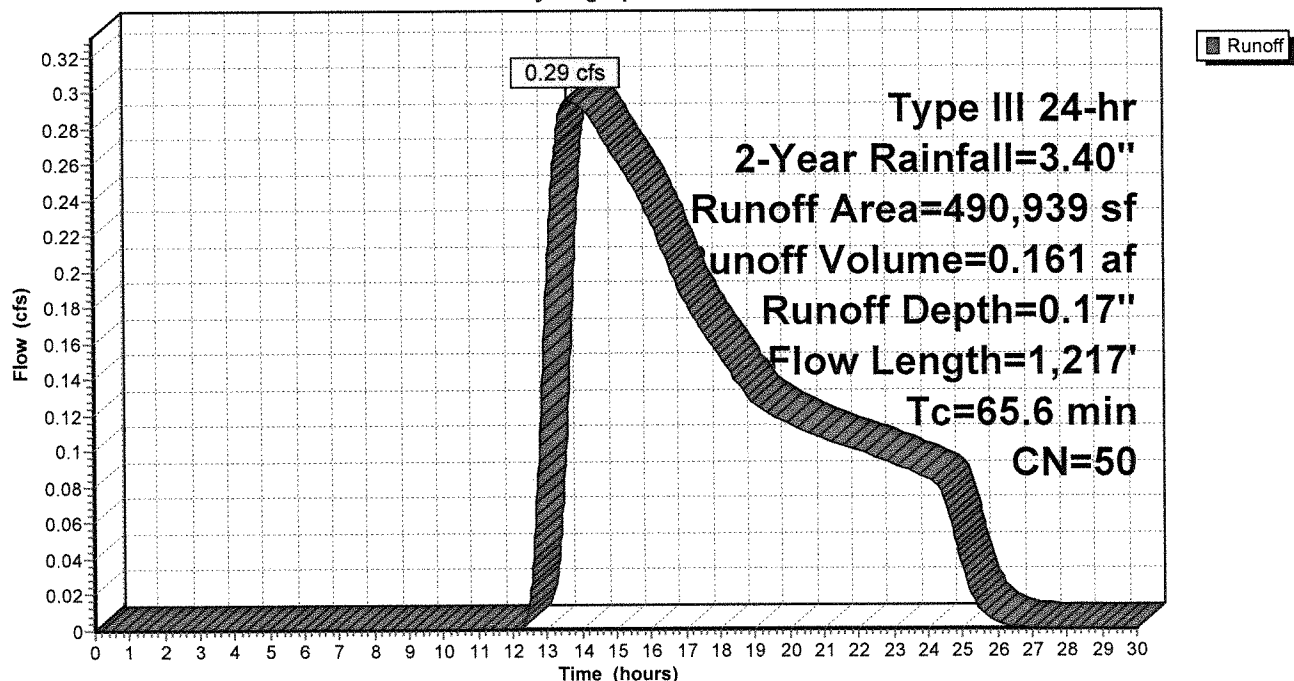
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-Year Rainfall=3.40"

Area (sf)	CN	Description
130,944	30	Woods, Good, HSG A
245,959	39	>75% Grass cover, Good, HSG A
* 112,792	98	Roads/Driveways/SWalk
* 1,244	98	Existing Roofs
490,939	50	Weighted Average
376,903	36	76.77% Pervious Area
114,036	98	23.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
56.0	267	0.0500	0.08		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.30"
4.3	224	0.0300	0.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
5.3	726	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
65.6	1,217	Total			

Subcatchment 3: PRE

Hydrograph



Summary for Subcatchment 6S: POST EAST

Runoff = 0.71 cfs @ 12.15 hrs, Volume= 0.060 af, Depth= 1.36"

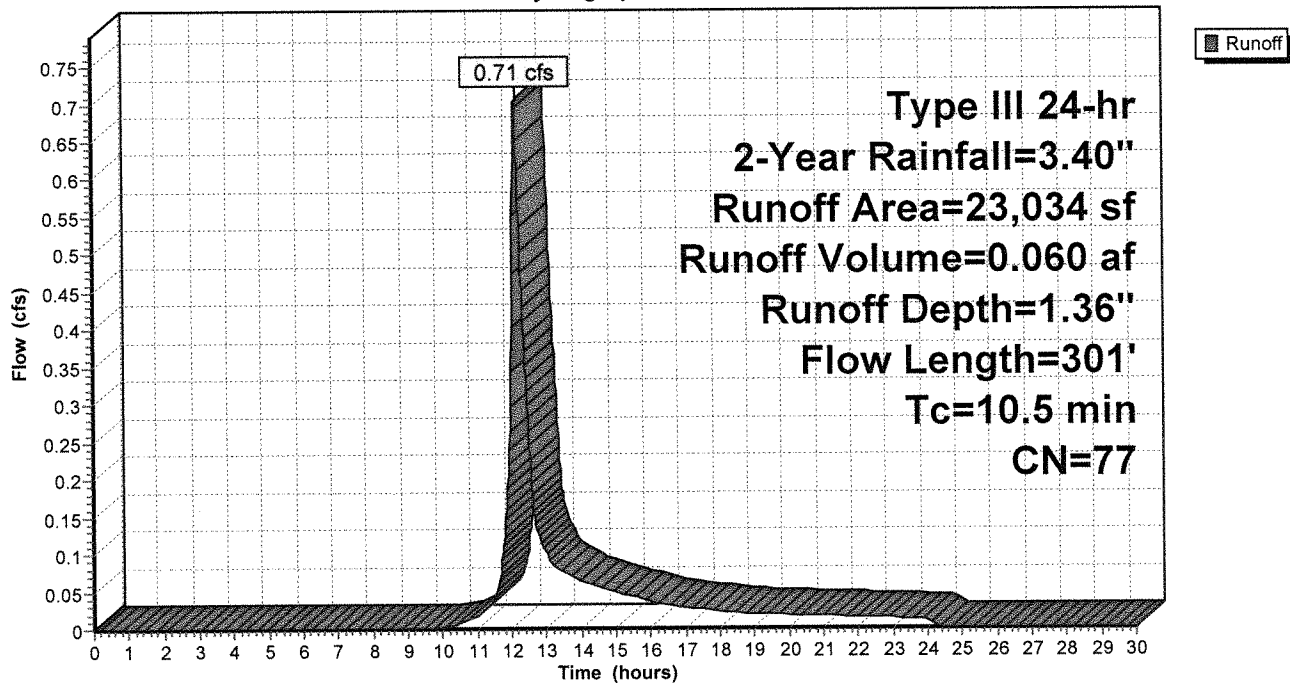
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Type III 24-hr 2-Year Rainfall=3.40"

Area (sf)	CN	Description
14,982	98	Unconnected pavement, HSG A
8,052	39	>75% Grass cover, Good, HSG A
23,034	77	Weighted Average
8,052	39	34.96% Pervious Area
14,982	98	65.04% Impervious Area
14,982		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	119	0.0700	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
0.7	182	0.0500	4.54		Shallow Concentrated Flow, Paved Kv= 20.3 fps
10.5	301	Total			

Subcatchment 6S: POST EAST

Hydrograph



Summary for Subcatchment 8S: POST CENTER

Runoff = 0.76 cfs @ 12.09 hrs, Volume= 0.054 af, Depth= 1.56"

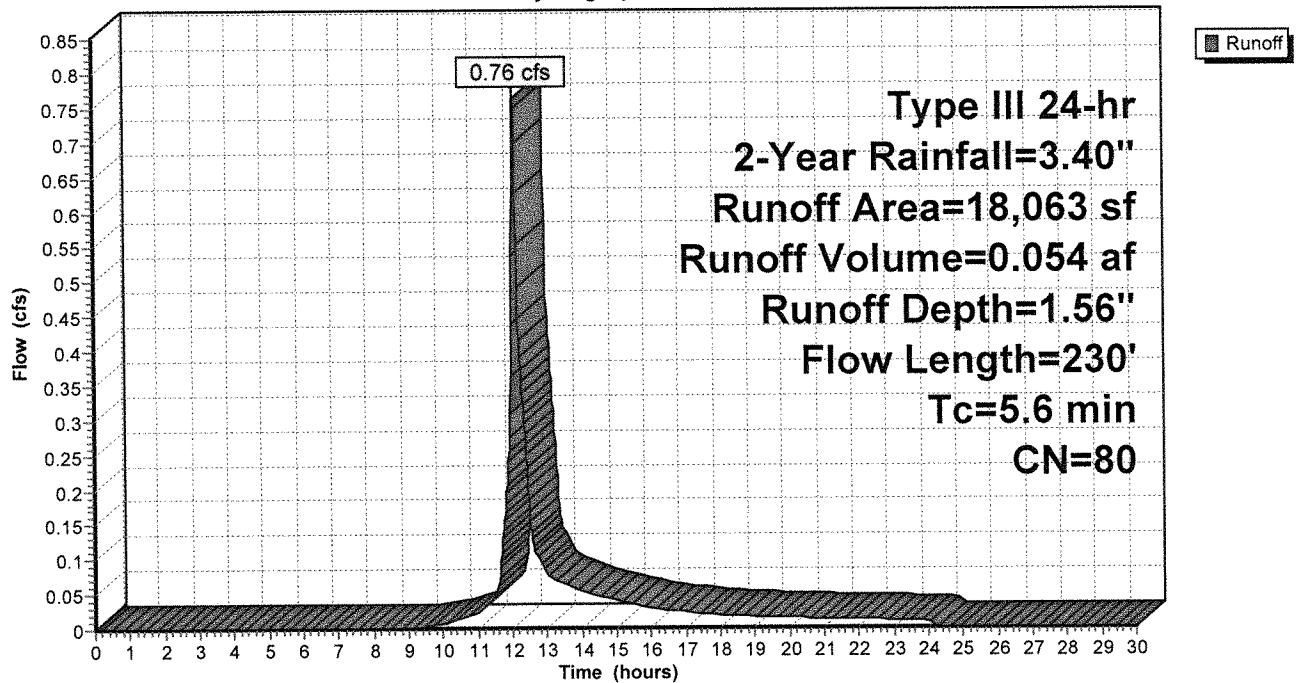
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Type III 24-hr 2-Year Rainfall=3.40"

Area (sf)	CN	Description
12,678	98	Unconnected pavement, HSG A
5,385	39	>75% Grass cover, Good, HSG A
18,063	80	Weighted Average
5,385	39	29.81% Pervious Area
12,678	98	70.19% Impervious Area
12,678		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	38	0.0500	0.14		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
1.1	192	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
5.6	230	Total			

Subcatchment 8S: POST CENTER

Hydrograph



Summary for Subcatchment 9S: POST WEST

Runoff = 2.90 cfs @ 12.05 hrs, Volume= 0.190 af, Depth= 1.23"

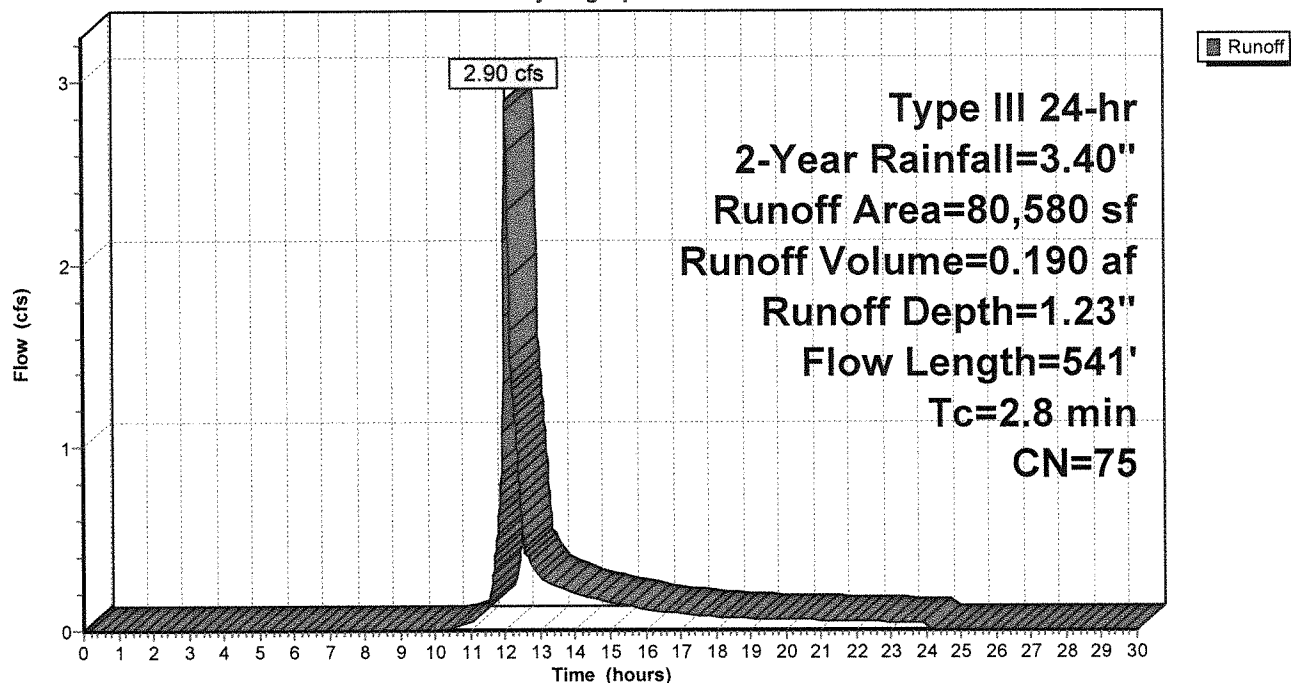
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Type III 24-hr 2-Year Rainfall=3.40"

Area (sf)	CN	Description
48,877	98	Unconnected pavement, HSG A
31,703	39	>75% Grass cover, Good, HSG A
80,580	75	Weighted Average
31,703	39	39.34% Pervious Area
48,877	98	60.66% Impervious Area
48,877		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	85	0.0200	1.35		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.30"
1.5	266	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.0	20	0.0400	10.72	8.42	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean
0.1	71	0.0400	10.72	8.42	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean
0.2	99	0.0400	10.72	8.42	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.011 Concrete pipe, straight & clean
2.8	541	Total			

Subcatchment 9S: POST WEST

Hydrograph



Summary for Subcatchment 10S: POST PARKING

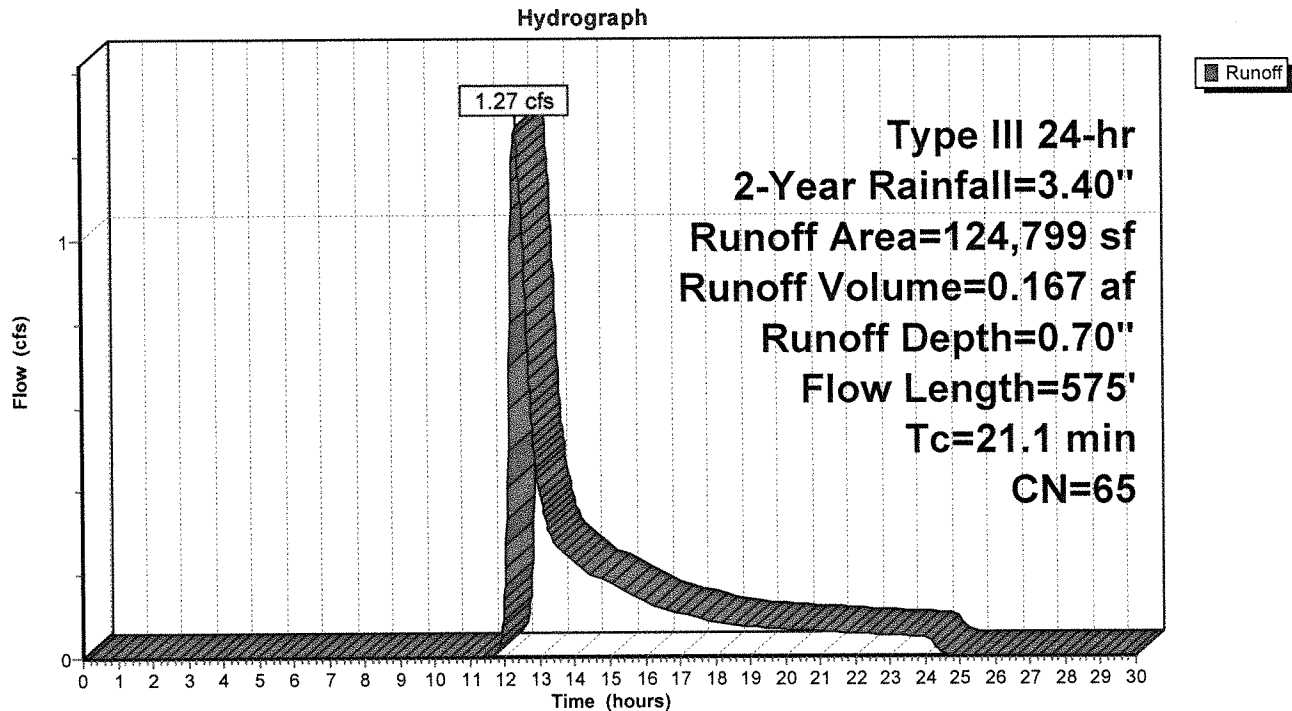
Runoff = 1.27 cfs @ 12.35 hrs, Volume= 0.167 af, Depth= 0.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Type III 24-hr 2-Year Rainfall=3.40"

Area (sf)	CN	Description
* 14,043	98	Existing Impervious, HSG A
69,769	39	>75% Grass cover, Good, HSG A
40,987	98	Unconnected pavement, HSG A
124,799	65	Weighted Average
69,769	39	55.91% Pervious Area
55,030	98	44.09% Impervious Area
40,987		74.48% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.4	212	0.0400	0.18		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
1.7	363	0.0300	3.52		Shallow Concentrated Flow, Paved Kv= 20.3 fps
21.1	575	Total			

Subcatchment 10S: POST PARKING



Summary for Subcatchment 12S: POST BPD

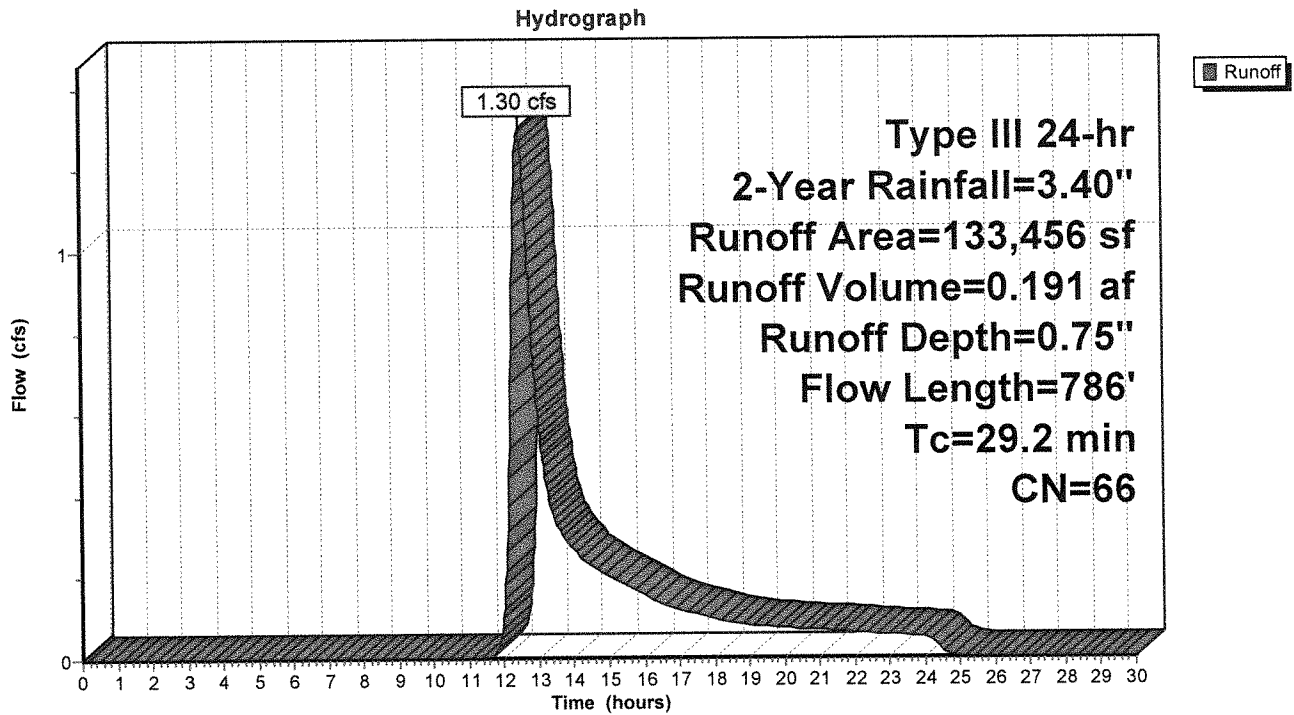
Runoff = 1.30 cfs @ 12.48 hrs, Volume= 0.191 af, Depth= 0.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Type III 24-hr 2-Year Rainfall=3.40"

Area (sf)	CN	Description
* 43,950	98	Existing Impervious, HSG A
58,592	39	>75% Grass cover, Good, HSG A
11,751	30	Woods, Good, HSG A
19,163	98	Unconnected pavement, HSG A
133,456	66	Weighted Average
70,343	37	52.71% Pervious Area
63,113	98	47.29% Impervious Area
19,163		30.36% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.9	225	0.0200	0.14		Sheet Flow, Grass: Dense n= 0.240 P2= 3.30"
1.4	303	0.0300	3.52		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.5	113	0.0500	3.60		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.4	145	0.0300	5.59	14.90	Parabolic Channel, W=8.00' D=0.50' Area=2.7 sf Perim=8.1' n= 0.022 Earth, clean & straight
29.2	786	Total			

Subcatchment 12S: POST BPD



Summary for Subcatchment 18S: POST BASIN

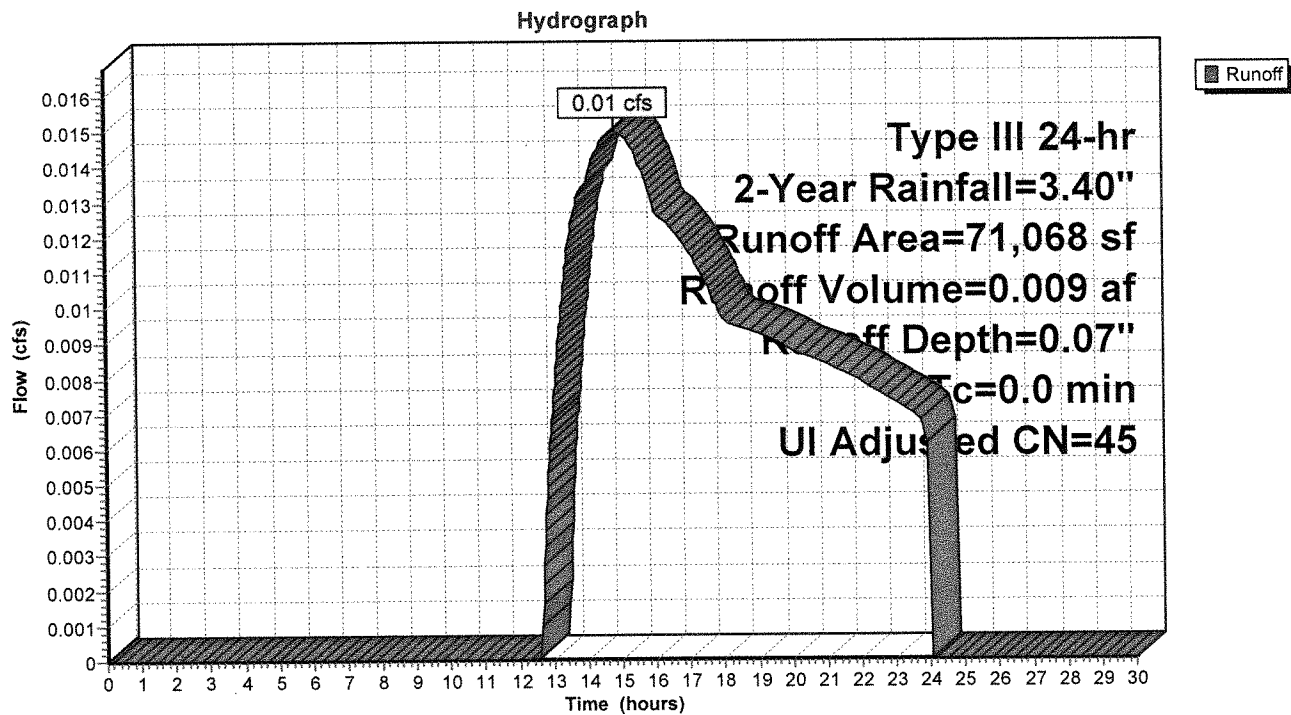
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.01 cfs @ 14.83 hrs, Volume= 0.009 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Type III 24-hr 2-Year Rainfall=3.40"

Area (sf)	CN	Adj	Description
* 3,821	98		Existing Roof, HSG A
6,024	98		Unconnected pavement, HSG A
61,223	39		>75% Grass cover, Good, HSG A
71,068	47	45	Weighted Average, UI Adjusted
61,223	39	39	86.15% Pervious Area
9,845	98	98	13.85% Impervious Area
6,024			61.19% Unconnected

Subcatchment 18S: POST BASIN



Summary for Reach 18R: CB-7

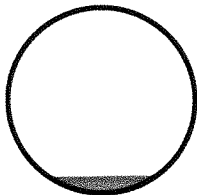
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 0.529 ac, 65.04% Impervious, Inflow Depth = 1.36" for 2-Year event
 Inflow = 0.71 cfs @ 12.15 hrs, Volume= 0.060 af
 Outflow = 0.70 cfs @ 12.16 hrs, Volume= 0.060 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 8.22 fps, Min. Travel Time= 0.1 min
 Avg. Velocity= 3.24 fps, Avg. Travel Time= 0.3 min

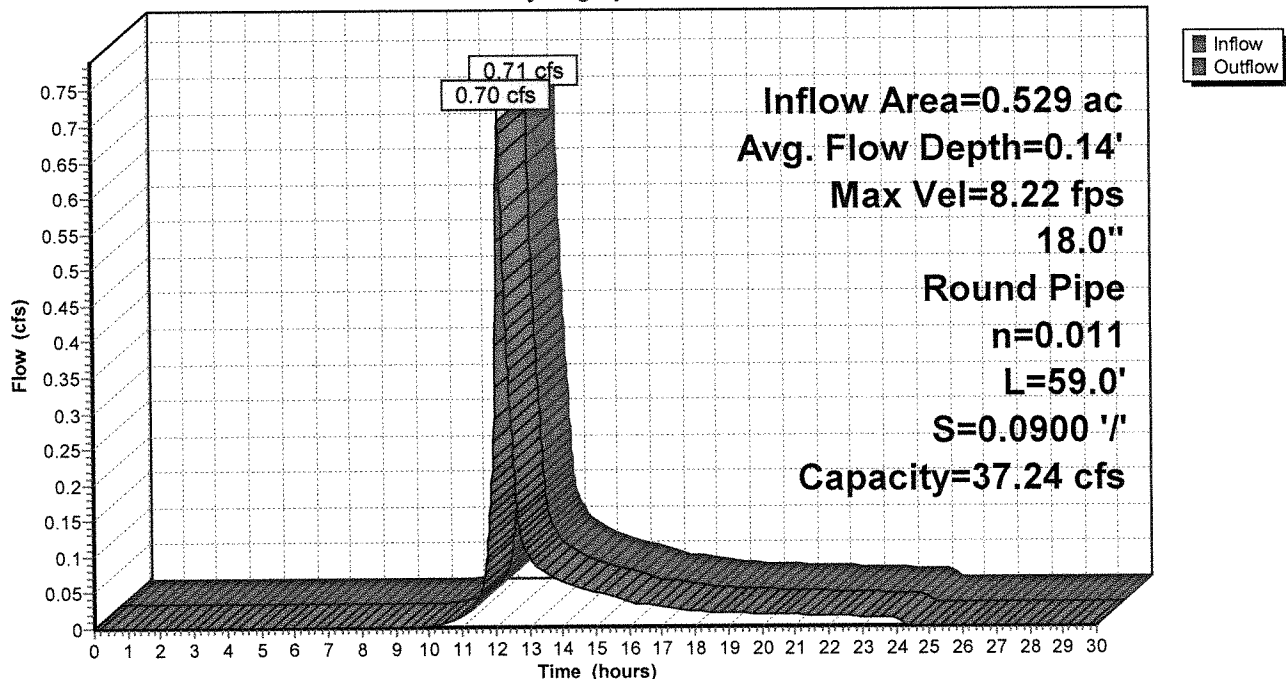
Peak Storage= 5 cf @ 12.15 hrs
 Average Depth at Peak Storage= 0.14'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 37.24 cfs

18.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 59.0' Slope= 0.0900 '/'
 Inlet Invert= 30.66', Outlet Invert= 25.35'



Reach 18R: CB-7

Hydrograph



Summary for Reach 19R: DMH-1

[52] Hint: Inlet/Outlet conditions not evaluated

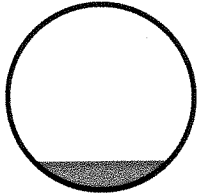
[62] Hint: Exceeded Reach 18R OUTLET depth by 0.10' @ 12.16 hrs

Inflow Area =	0.529 ac, 65.04% Impervious,	Inflow Depth =	1.36"	for 2-Year event
Inflow =	0.70 cfs @ 12.16 hrs,	Volume=	0.060 af	
Outflow =	0.70 cfs @ 12.16 hrs,	Volume=	0.060 af,	Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 3.87 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 1.50 fps, Avg. Travel Time= 0.4 min

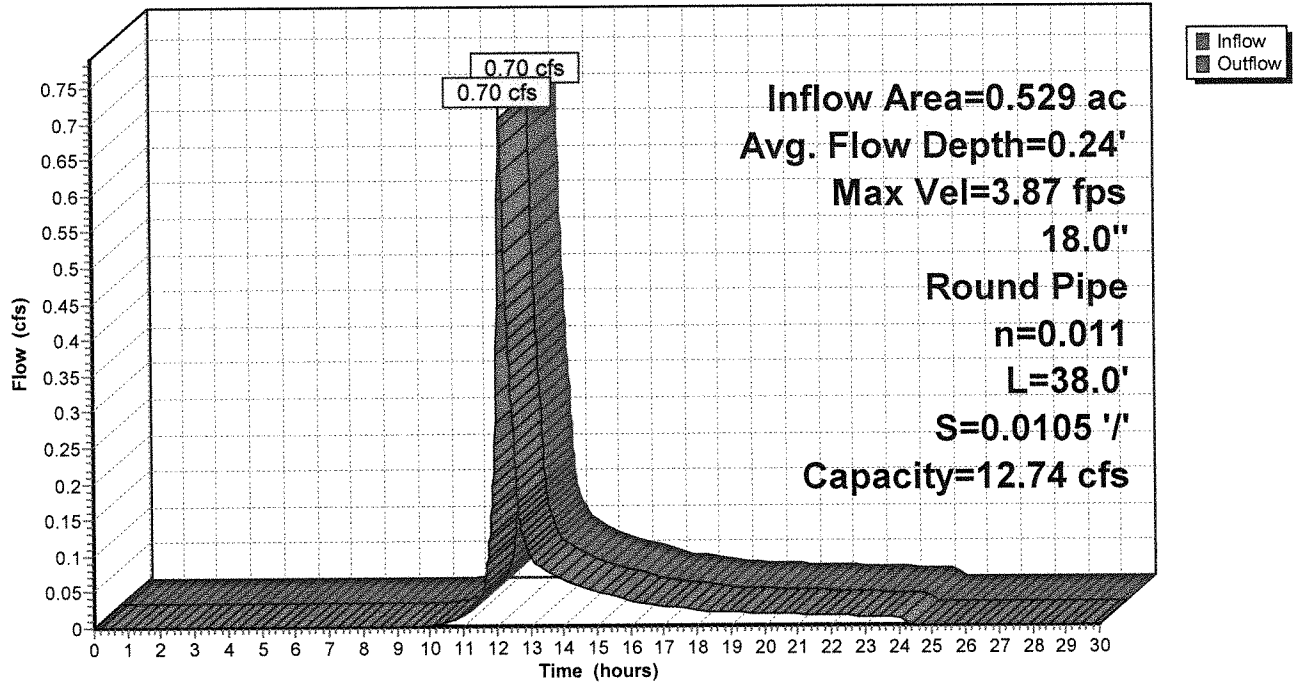
Peak Storage= 7 cf @ 12.16 hrs
 Average Depth at Peak Storage= 0.24'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 12.74 cfs

18.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 38.0' Slope= 0.0105 '/'
 Inlet Invert= 25.35', Outlet Invert= 24.95'



Reach 19R: DMH-1

Hydrograph



Summary for Reach 20R: DMH-2

[52] Hint: Inlet/Outlet conditions not evaluated

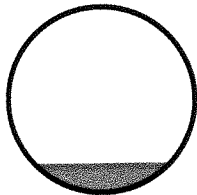
[62] Hint: Exceeded Reach 19R OUTLET depth by 0.01' @ 12.24 hrs

Inflow Area =	0.529 ac, 65.04% Impervious, Inflow Depth = 1.36"	for 2-Year event
Inflow =	0.70 cfs @ 12.16 hrs, Volume=	0.060 af
Outflow =	0.70 cfs @ 12.17 hrs, Volume=	0.060 af, Atten= 0%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 3.78 fps, Min. Travel Time= 0.3 min
 Avg. Velocity = 1.47 fps, Avg. Travel Time= 0.8 min

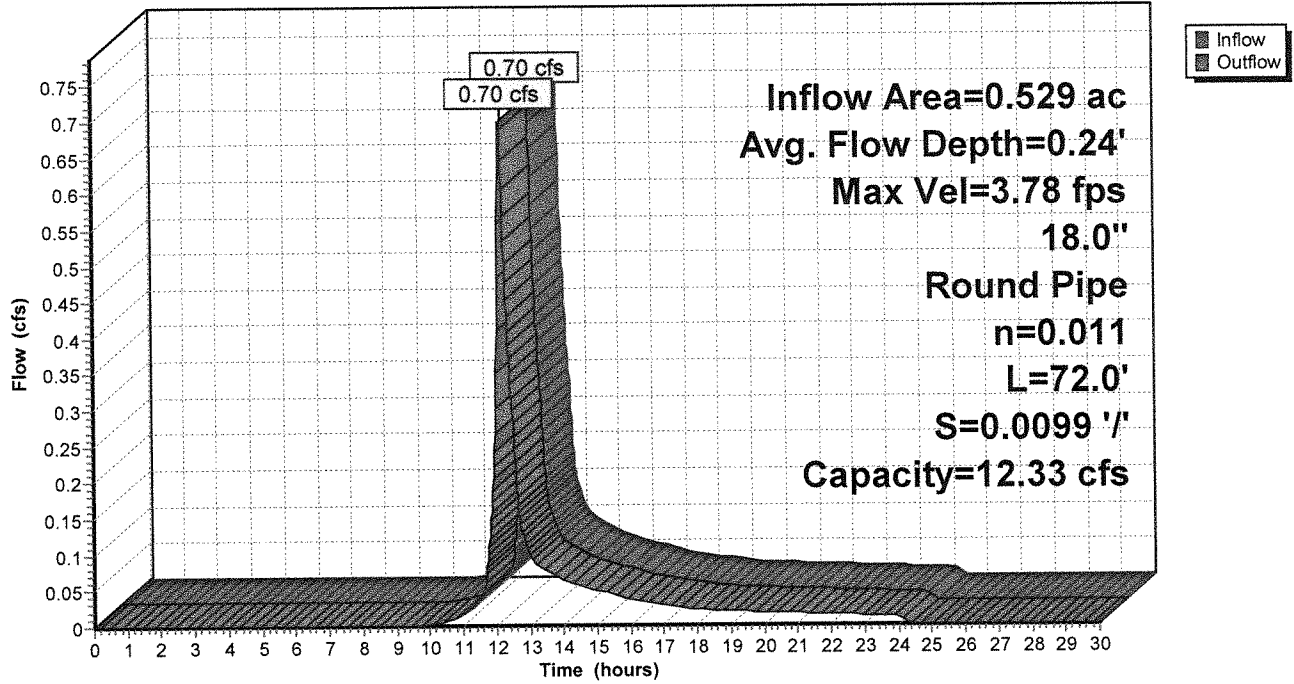
Peak Storage= 13 cf @ 12.16 hrs
 Average Depth at Peak Storage= 0.24'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 12.33 cfs

18.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 72.0' Slope= 0.0099 '/'
 Inlet Invert= 24.95', Outlet Invert= 24.24'



Reach 20R: DMH-2

Hydrograph



Summary for Reach 21R: DMH-3

[52] Hint: Inlet/Outlet conditions not evaluated

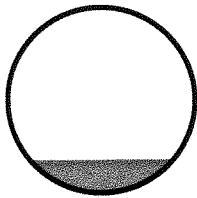
[62] Hint: Exceeded Reach 20R OUTLET depth by 0.03' @ 12.22 hrs

Inflow Area =	0.529 ac, 65.04% Impervious, Inflow Depth = 1.36"	for 2-Year event
Inflow =	0.70 cfs @ 12.17 hrs, Volume=	0.060 af
Outflow =	0.70 cfs @ 12.18 hrs, Volume=	0.060 af, Atten= 0%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 3.14 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 1.22 fps, Avg. Travel Time= 0.6 min

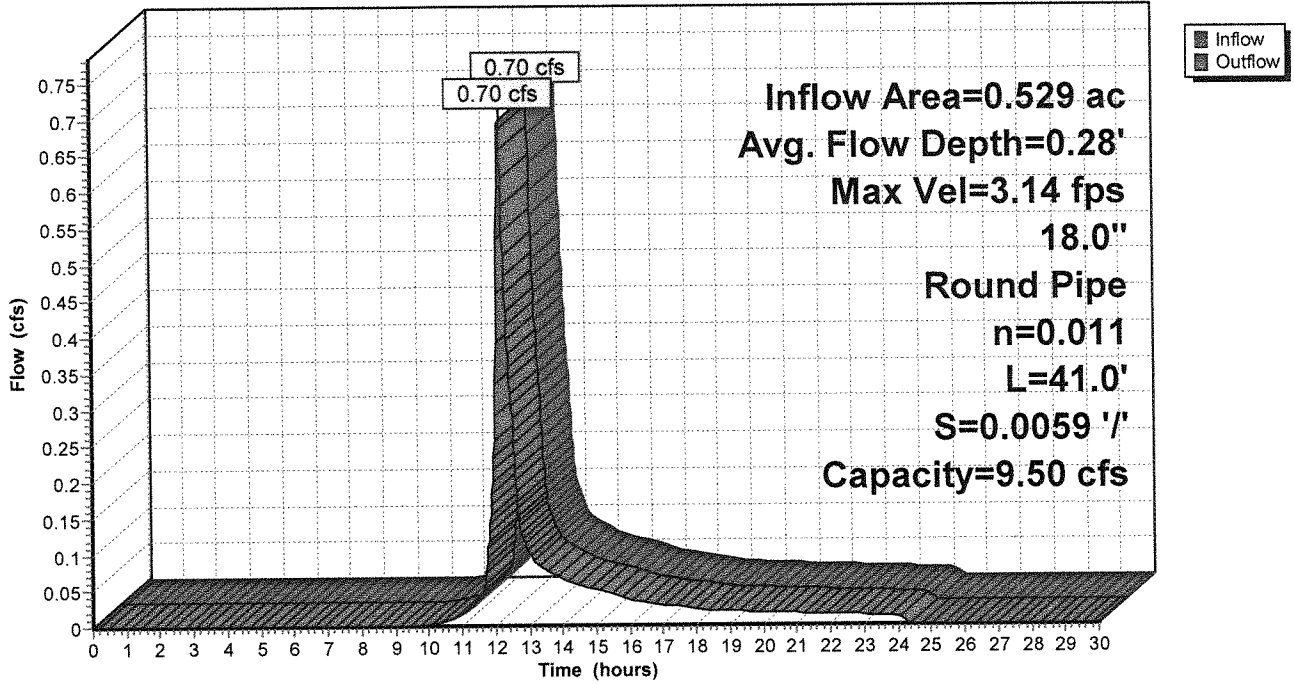
Peak Storage= 9 cf @ 12.17 hrs
 Average Depth at Peak Storage= 0.28'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 9.50 cfs

18.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 41.0' Slope= 0.0059 '/'
 Inlet Invert= 24.24', Outlet Invert= 24.00'



Reach 21R: DMH-3

Hydrograph



Summary for Reach 22R: CB_1

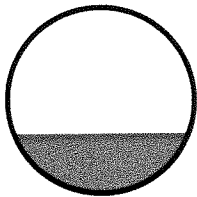
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 1.850 ac, 60.66% Impervious, Inflow Depth = 1.23" for 2-Year event
 Inflow = 2.90 cfs @ 12.05 hrs, Volume= 0.190 af
 Outflow = 2.87 cfs @ 12.05 hrs, Volume= 0.190 af, Atten= 1%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 5.74 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 2.14 fps, Avg. Travel Time= 0.4 min

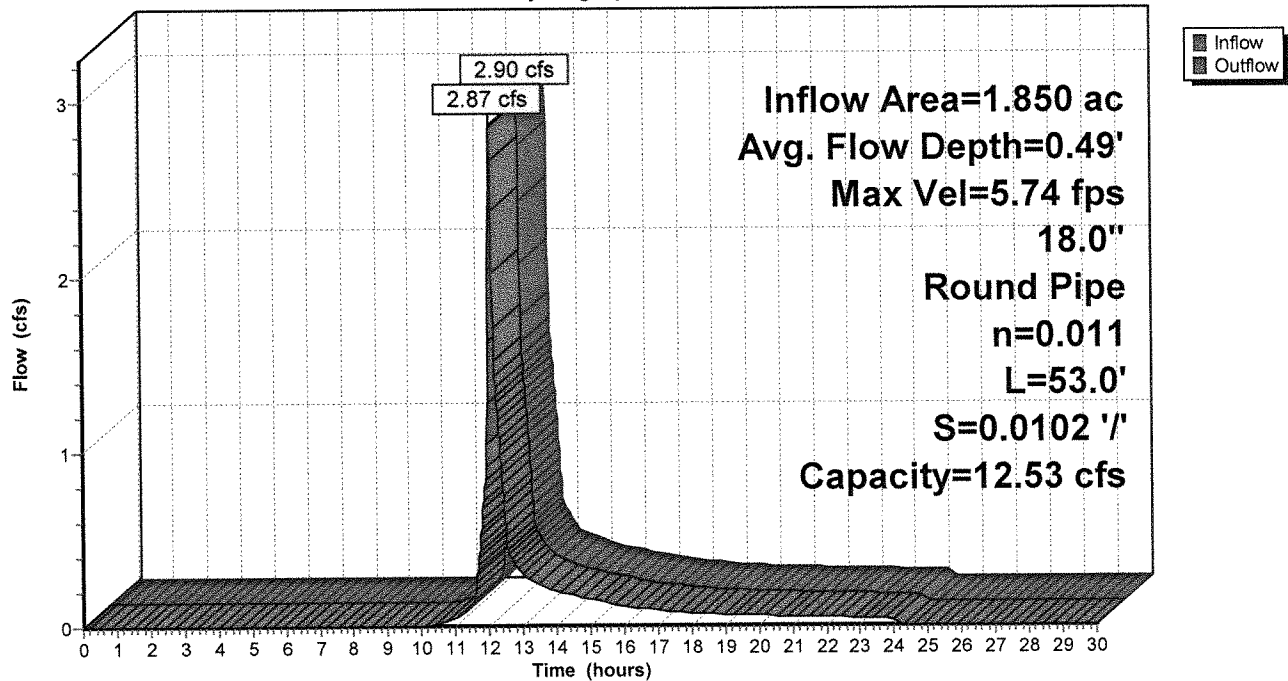
Peak Storage= 27 cf @ 12.05 hrs
 Average Depth at Peak Storage= 0.49'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 12.53 cfs

18.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 53.0' Slope= 0.0102 '/'
 Inlet Invert= 27.89', Outlet Invert= 27.35'



Reach 22R: CB_1

Hydrograph



Summary for Reach 23R: CB_2

[52] Hint: Inlet/Outlet conditions not evaluated

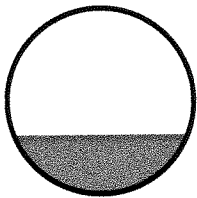
[62] Hint: Exceeded Reach 22R OUTLET depth by 0.01' @ 24.08 hrs

Inflow Area = 1.850 ac, 60.66% Impervious, Inflow Depth = 1.23" for 2-Year event
 Inflow = 2.87 cfs @ 12.05 hrs, Volume= 0.190 af
 Outflow = 2.86 cfs @ 12.06 hrs, Volume= 0.190 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 5.84 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 2.17 fps, Avg. Travel Time= 0.2 min

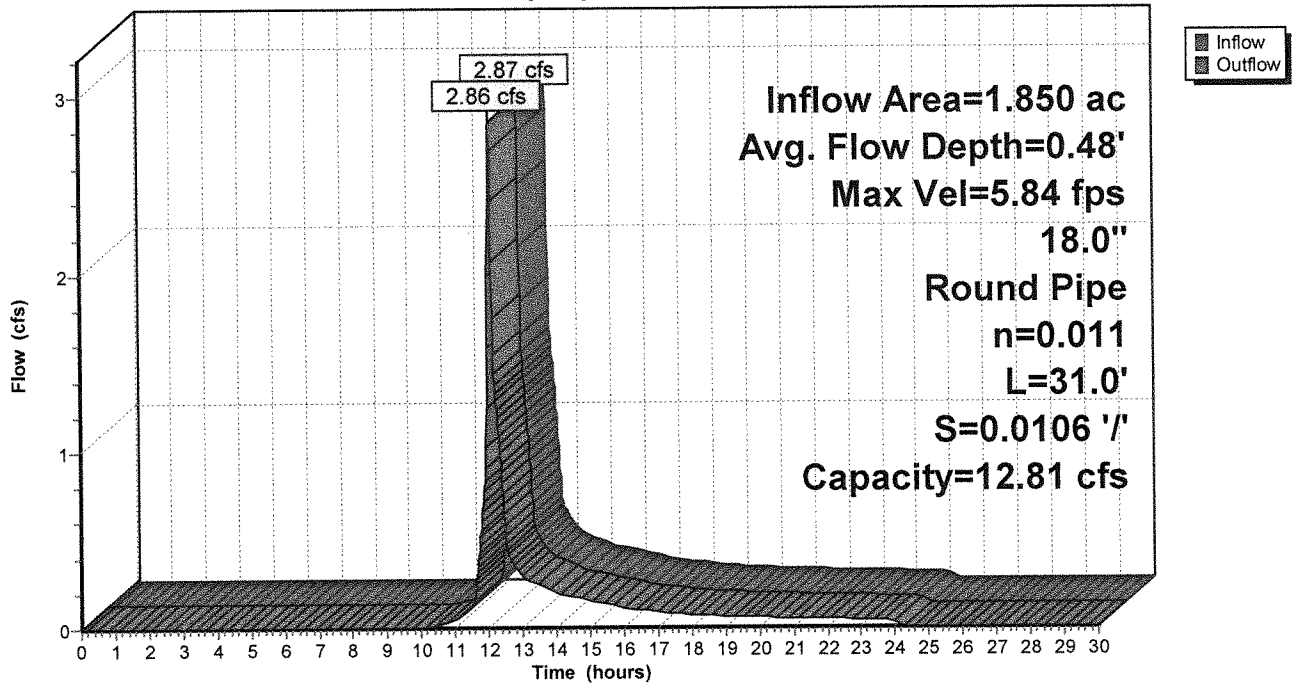
Peak Storage= 15 cf @ 12.05 hrs
 Average Depth at Peak Storage= 0.48'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 12.81 cfs

18.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 31.0' Slope= 0.0106 '/'
 Inlet Invert= 27.35', Outlet Invert= 27.02'



Reach 23R: CB_2

Hydrograph



Summary for Reach 24R: CB_3

[52] Hint: Inlet/Outlet conditions not evaluated

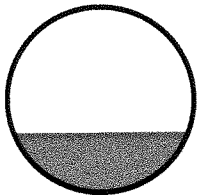
[62] Hint: Exceeded Reach 23R OUTLET depth by 0.01' @ 12.12 hrs

Inflow Area =	1.850 ac, 60.66% Impervious, Inflow Depth = 1.23"	for 2-Year event
Inflow =	2.86 cfs @ 12.06 hrs, Volume=	0.190 af
Outflow =	2.85 cfs @ 12.06 hrs, Volume=	0.190 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 5.71 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 2.12 fps, Avg. Travel Time= 0.3 min

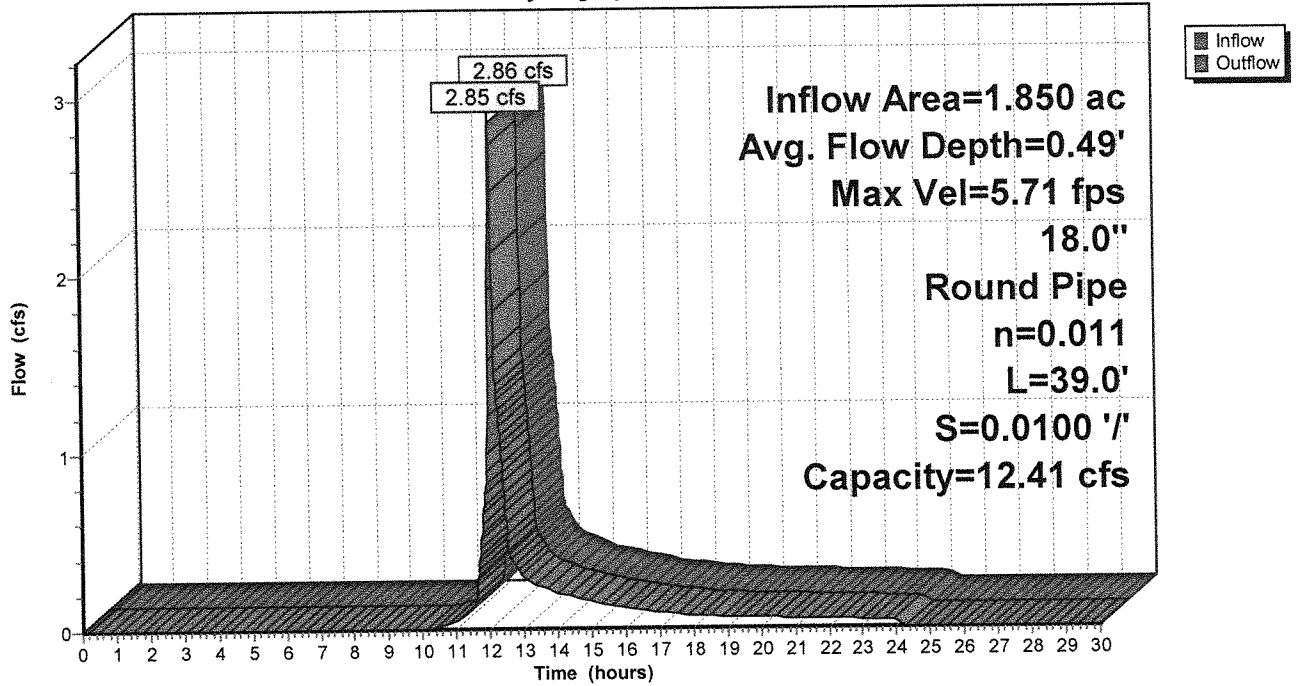
Peak Storage= 20 cf @ 12.06 hrs
 Average Depth at Peak Storage= 0.49'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 12.41 cfs

18.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 39.0' Slope= 0.0100 '/'
 Inlet Invert= 27.02', Outlet Invert= 26.63'



Reach 24R: CB_3

Hydrograph



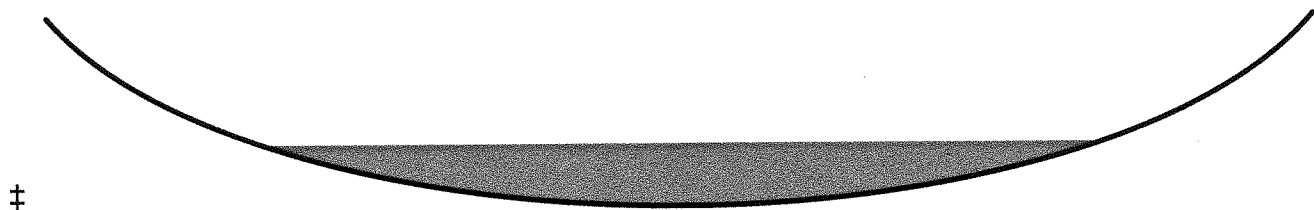
Summary for Reach 25R: SWALE

Inflow Area = 3.064 ac, 47.29% Impervious, Inflow Depth = 0.75" for 2-Year event
 Inflow = 1.30 cfs @ 12.48 hrs, Volume= 0.191 af
 Outflow = 1.30 cfs @ 12.51 hrs, Volume= 0.191 af, Atten= 0%, Lag= 1.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 2.57 fps, Min. Travel Time= 0.9 min
 Avg. Velocity = 1.17 fps, Avg. Travel Time= 2.1 min

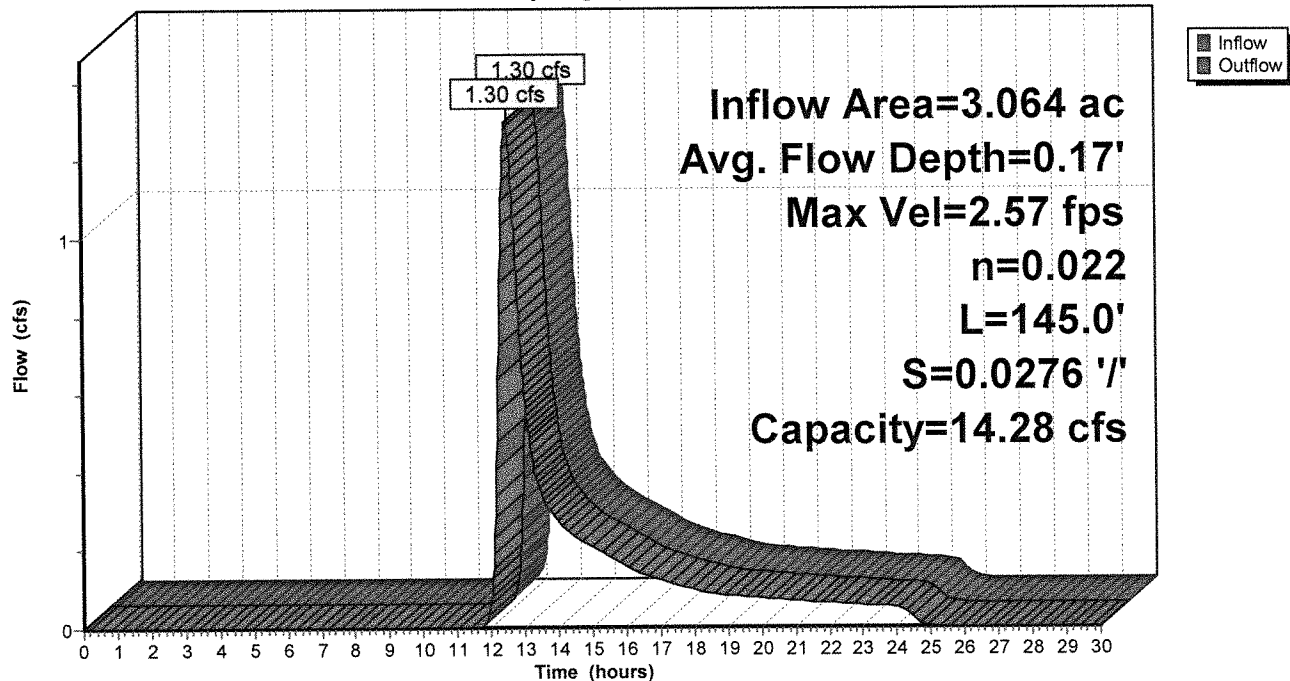
Peak Storage= 73 cf @ 12.49 hrs
 Average Depth at Peak Storage= 0.17'
 Bank-Full Depth= 0.50' Flow Area= 2.7 sf, Capacity= 14.28 cfs

8.00' x 0.50' deep Parabolic Channel, n= 0.022 Earth, clean & straight
 Length= 145.0' Slope= 0.0276 '/'
 Inlet Invert= 34.00', Outlet Invert= 30.00'



Reach 25R: SWALE

Hydrograph



Summary for Reach 26R: CB-6

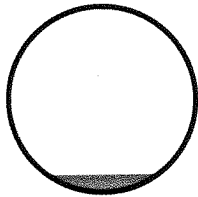
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 0.415 ac, 70.19% Impervious, Inflow Depth = 1.56" for 2-Year event
 Inflow = 0.76 cfs @ 12.09 hrs, Volume= 0.054 af
 Outflow = 0.76 cfs @ 12.09 hrs, Volume= 0.054 af, Atten= 1%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 8.17 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 3.01 fps, Avg. Travel Time= 0.5 min

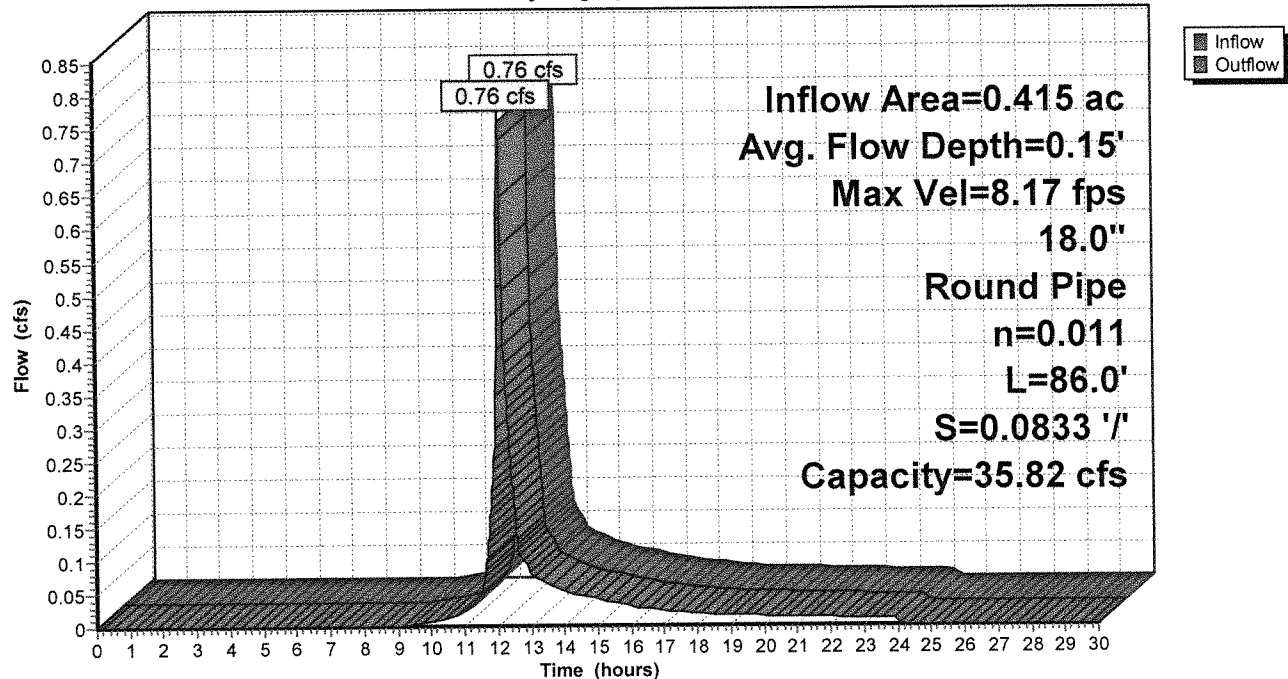
Peak Storage= 8 cf @ 12.09 hrs
 Average Depth at Peak Storage= 0.15'
 Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 35.82 cfs

18.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 86.0' Slope= 0.0833 '/'
 Inlet Invert= 31.16', Outlet Invert= 24.00'



Reach 26R: CB-6

Hydrograph



Summary for Reach 27R: CB-4

[52] Hint: Inlet/Outlet conditions not evaluated

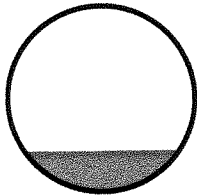
[61] Hint: Exceeded Reach 24R outlet invert by 0.44' @ 12.06 hrs

Inflow Area =	1.850 ac, 60.66% Impervious, Inflow Depth = 1.23"	for 2-Year event
Inflow =	2.85 cfs @ 12.06 hrs, Volume=	0.190 af
Outflow =	2.84 cfs @ 12.07 hrs, Volume=	0.190 af, Atten= 1%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 5.51 fps, Min. Travel Time= 0.2 min
 Avg. Velocity = 2.03 fps, Avg. Travel Time= 0.5 min

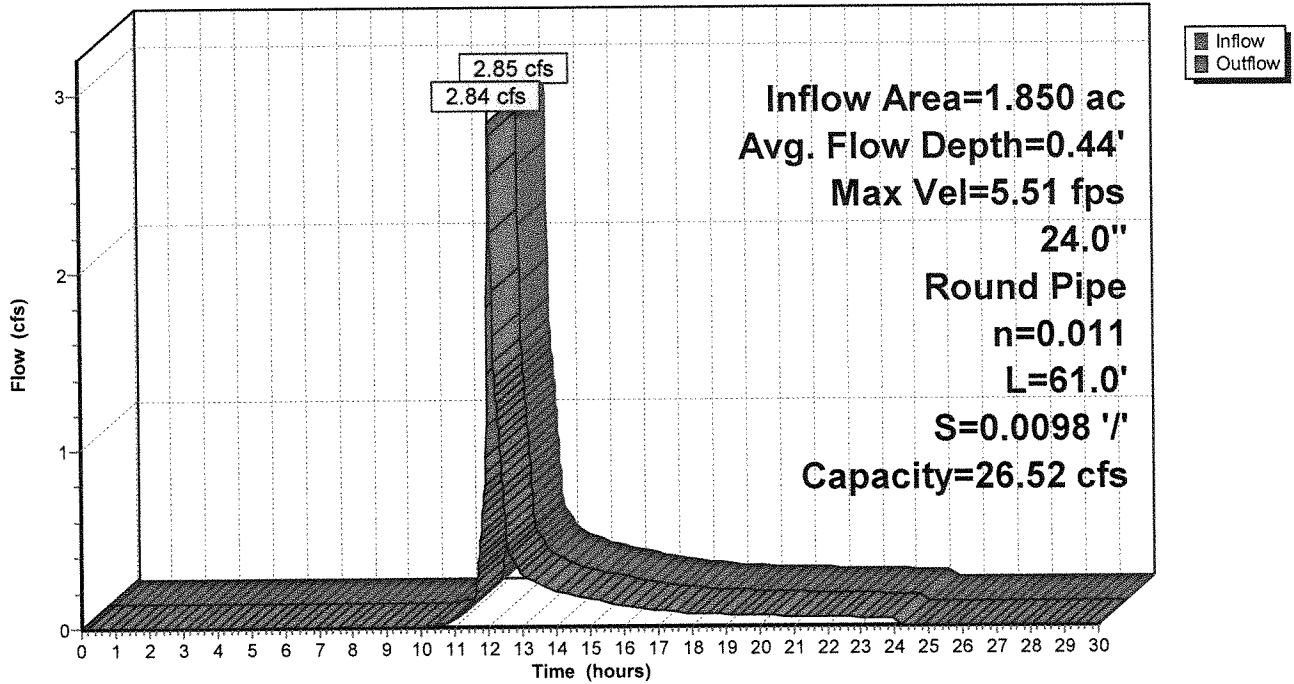
Peak Storage= 32 cf @ 12.06 hrs
 Average Depth at Peak Storage= 0.44'
 Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 26.52 cfs

24.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 61.0' Slope= 0.0098 '/'
 Inlet Invert= 26.63', Outlet Invert= 26.03'



Reach 27R: CB-4

Hydrograph



Summary for Reach 28R: CB-5

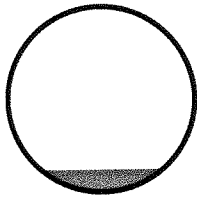
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 2.865 ac, 44.09% Impervious, Inflow Depth = 0.70" for 2-Year event
 Inflow = 1.27 cfs @ 12.35 hrs, Volume= 0.167 af
 Outflow = 1.27 cfs @ 12.36 hrs, Volume= 0.167 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Max. Velocity= 5.62 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 2.65 fps, Avg. Travel Time= 0.2 min

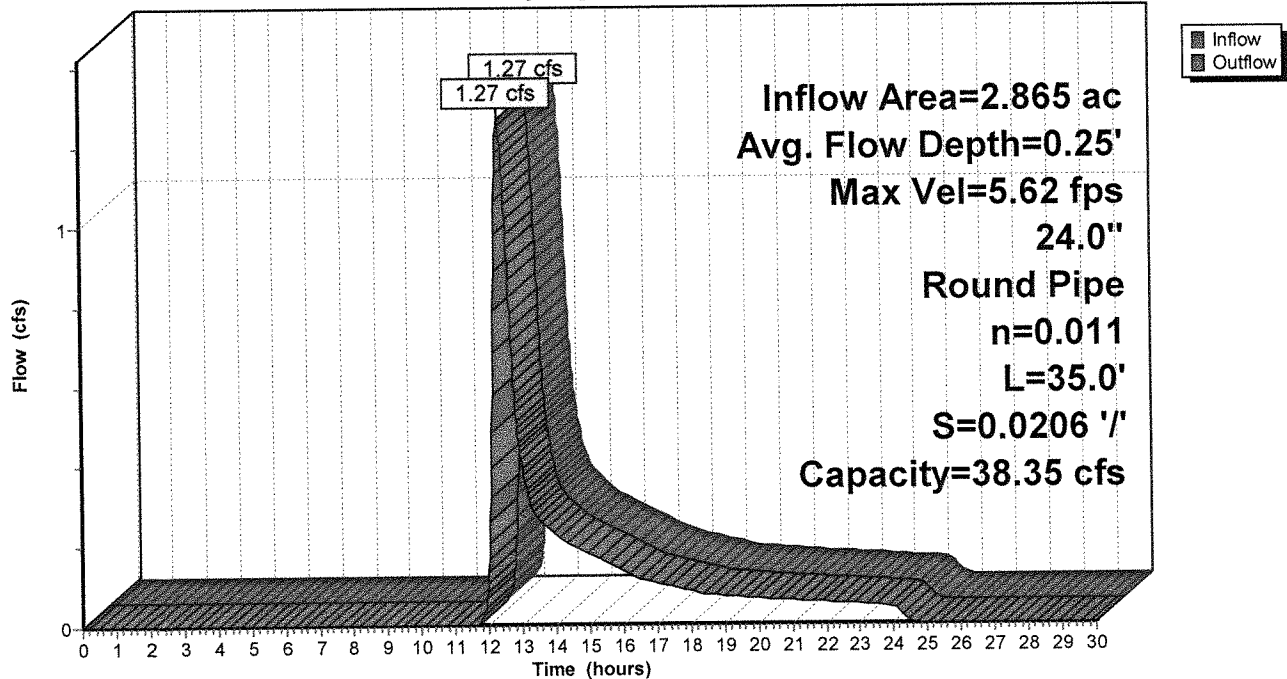
Peak Storage= 8 cf @ 12.36 hrs
 Average Depth at Peak Storage= 0.25'
 Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 38.35 cfs

24.0" Round Pipe
 n= 0.011 Concrete pipe, straight & clean
 Length= 35.0' Slope= 0.0206 '/'
 Inlet Invert= 26.75', Outlet Invert= 26.03'



Reach 28R: CB-5

Hydrograph



Summary for Pond 16P: INFILTRATION BASIN

Inflow Area = 10.354 ac, 45.35% Impervious, Inflow Depth = 0.78" for 2-Year event
 Inflow = 4.45 cfs @ 12.09 hrs, Volume= 0.671 af
 Outflow = 3.45 cfs @ 12.51 hrs, Volume= 0.671 af, Atten= 23%, Lag= 25.6 min
 Discarded = 3.45 cfs @ 12.51 hrs, Volume= 0.671 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Peak Elev= 22.08' @ 12.51 hrs Surf.Area= 18,030 sf Storage= 1,443 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 3.5 min (887.6 - 884.2)

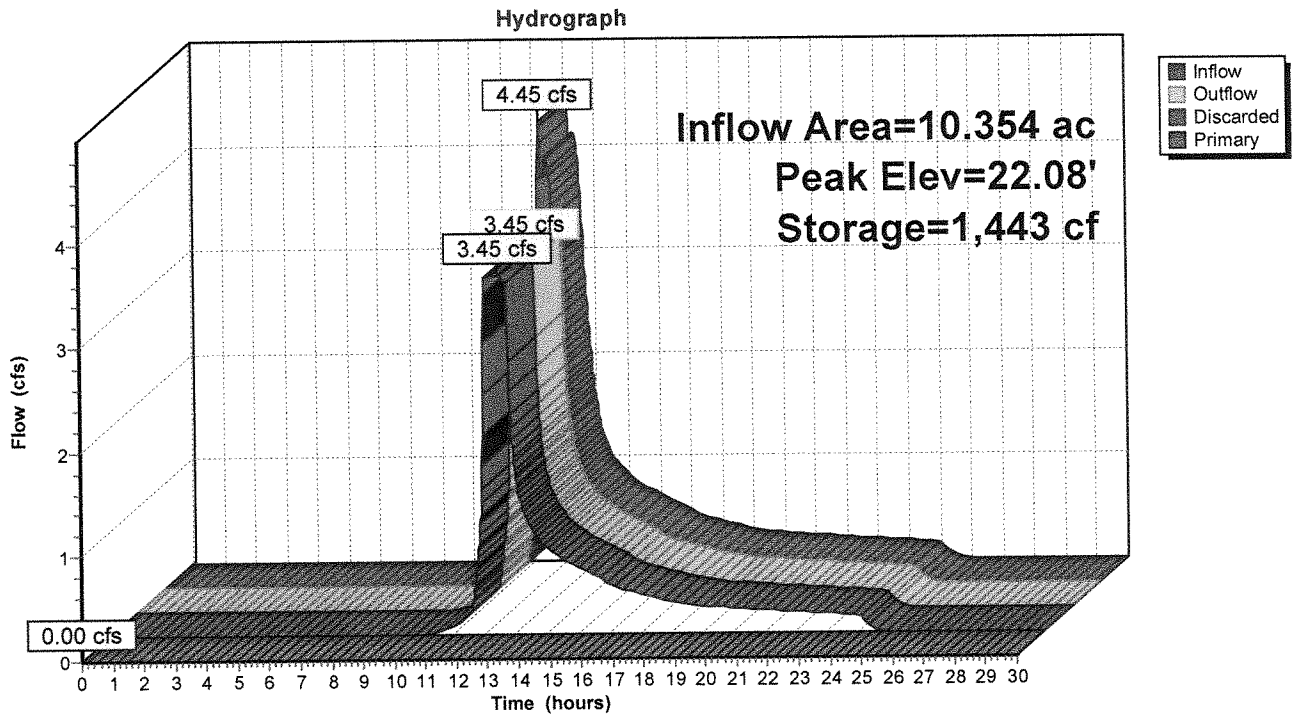
Volume	Invert	Avail.Storage	Storage Description
#1	22.00'	64,154 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.00	17,858	0	0
23.00	20,003	18,931	18,931
24.00	22,205	21,104	40,035
25.00	26,033	24,119	64,154

Device	Routing	Invert	Outlet Devices
#1	Discarded	22.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	24.00'	10.0' long x 6.0' breadth Broad-Crested Rectangular Weir
Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00			
2.50 3.00 3.50 4.00 4.50 5.00 5.50			
Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65			
2.66 2.66 2.67 2.69 2.72 2.76 2.83			

Discarded OutFlow Max=3.45 cfs @ 12.51 hrs HW=22.08' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 3.45 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=22.00' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 16P: INFILTRATION BASIN



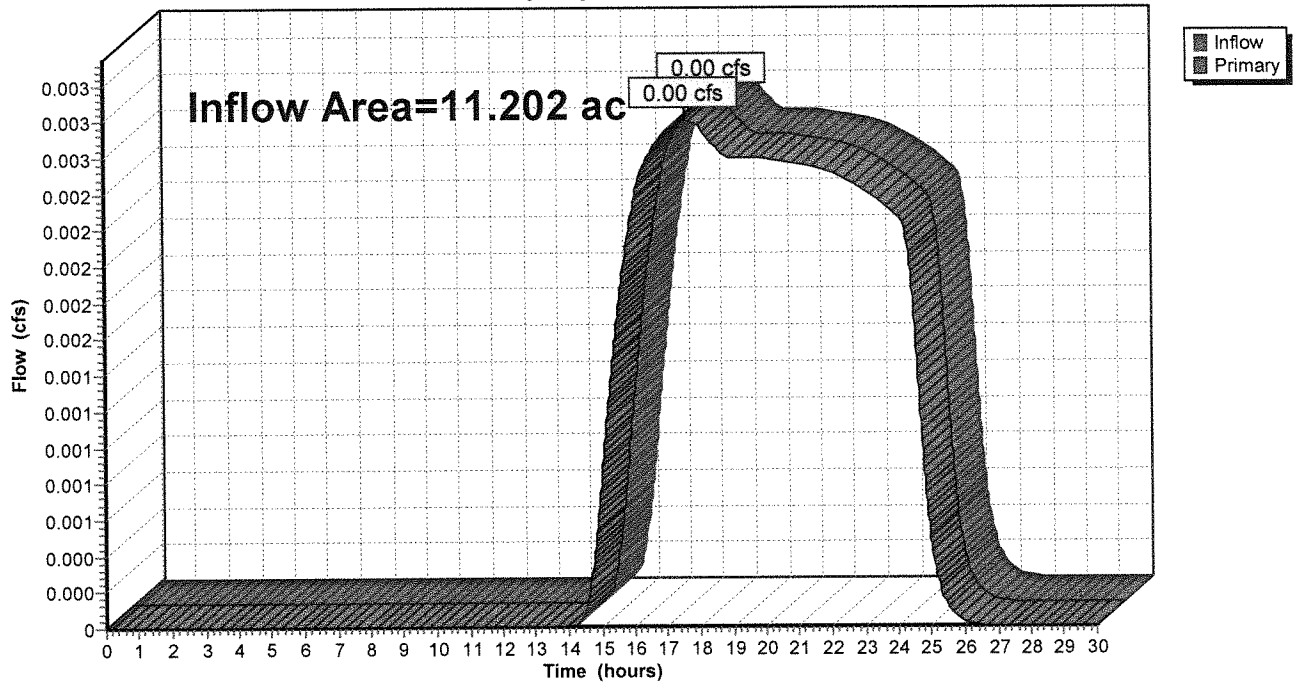
Summary for Link 17L: POST

Inflow Area = 11.202 ac, 42.71% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 17.56 hrs, Volume= 0.002 af
Primary = 0.00 cfs @ 17.56 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs

Link 17L: POST

Hydrograph



Time span=0.00-30.00 hrs, dt=0.02 hrs, 1501 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 3: PRE	Runoff Area=490,939 sf 23.23% Impervious Runoff Depth=0.57" Flow Length=1,217' Tc=65.6 min CN=50 Runoff=1.81 cfs 0.539 af
Subcatchment 6S: POST EAST	Runoff Area=23,034 sf 65.04% Impervious Runoff Depth=2.37" Flow Length=301' Tc=10.5 min CN=77 Runoff=1.26 cfs 0.105 af
Subcatchment 7S: POST UNC	Runoff Area=36,964 sf 10.53% Impervious Runoff Depth=0.24" Flow Length=278' Slope=0.0700 '/ Tc=50.5 min CN=42 Runoff=0.03 cfs 0.017 af
Subcatchment 8S: POST CENTER	Runoff Area=18,063 sf 70.19% Impervious Runoff Depth=2.63" Flow Length=230' Tc=5.6 min CN=80 Runoff=1.30 cfs 0.091 af
Subcatchment 9S: POST WEST	Runoff Area=80,580 sf 60.66% Impervious Runoff Depth=2.21" Flow Length=541' Tc=2.8 min CN=75 Runoff=5.34 cfs 0.340 af
Subcatchment 10S: POST PARKING	Runoff Area=124,799 sf 44.09% Impervious Runoff Depth=1.46" Flow Length=575' Tc=21.1 min CN=65 Runoff=3.01 cfs 0.348 af
Subcatchment 12S: POST BPD	Runoff Area=133,456 sf 47.29% Impervious Runoff Depth=1.53" Flow Length=786' Tc=29.2 min CN=66 Runoff=2.96 cfs 0.390 af
Subcatchment 18S: POST BASIN	Runoff Area=71,068 sf 13.85% Impervious Runoff Depth=0.35" Tc=0.0 min UI Adjusted CN=45 Runoff=0.23 cfs 0.048 af
Reach 18R: CB-7	Avg. Flow Depth=0.19' Max Vel=9.77 fps Inflow=1.26 cfs 0.105 af 18.0" Round Pipe n=0.011 L=59.0' S=0.0900 '/ Capacity=37.24 cfs Outflow=1.26 cfs 0.105 af
Reach 19R: DMH-1	Avg. Flow Depth=0.32' Max Vel=4.59 fps Inflow=1.26 cfs 0.105 af 18.0" Round Pipe n=0.011 L=38.0' S=0.0105 '/ Capacity=12.74 cfs Outflow=1.26 cfs 0.105 af
Reach 20R: DMH-2	Avg. Flow Depth=0.32' Max Vel=4.49 fps Inflow=1.26 cfs 0.105 af 18.0" Round Pipe n=0.011 L=72.0' S=0.0099 '/ Capacity=12.33 cfs Outflow=1.25 cfs 0.105 af
Reach 21R: DMH-3	Avg. Flow Depth=0.37' Max Vel=3.72 fps Inflow=1.25 cfs 0.105 af 18.0" Round Pipe n=0.011 L=41.0' S=0.0059 '/ Capacity=9.50 cfs Outflow=1.25 cfs 0.105 af
Reach 22R: CB_1	Avg. Flow Depth=0.68' Max Vel=6.80 fps Inflow=5.34 cfs 0.340 af 18.0" Round Pipe n=0.011 L=53.0' S=0.0102 '/ Capacity=12.53 cfs Outflow=5.31 cfs 0.340 af
Reach 23R: CB_2	Avg. Flow Depth=0.67' Max Vel=6.89 fps Inflow=5.31 cfs 0.340 af 18.0" Round Pipe n=0.011 L=31.0' S=0.0106 '/ Capacity=12.81 cfs Outflow=5.28 cfs 0.340 af
Reach 24R: CB_3	Avg. Flow Depth=0.68' Max Vel=6.73 fps Inflow=5.28 cfs 0.340 af 18.0" Round Pipe n=0.011 L=39.0' S=0.0100 '/ Capacity=12.41 cfs Outflow=5.26 cfs 0.340 af
Reach 25R: SWALE	Avg. Flow Depth=0.24' Max Vel=3.31 fps Inflow=2.96 cfs 0.390 af n=0.022 L=145.0' S=0.0276 '/ Capacity=14.28 cfs Outflow=2.96 cfs 0.390 af

Baypointe CEDA-REV

Type III 24-hr 10-Year Rainfall=4.70"

Prepared by {enter your company name here}

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Reach 26R: CB-6 Avg. Flow Depth=0.20' Max Vel=9.59 fps Inflow=1.30 cfs 0.091 af
18.0" Round Pipe n=0.011 L=86.0' S=0.0833 '/ Capacity=35.82 cfs Outflow=1.29 cfs 0.091 af

Reach 27R: CB-4 Avg. Flow Depth=0.60' Max Vel=6.58 fps Inflow=5.26 cfs 0.340 af
24.0" Round Pipe n=0.011 L=61.0' S=0.0098 '/ Capacity=26.52 cfs Outflow=5.24 cfs 0.340 af

Reach 28R: CB-5 Avg. Flow Depth=0.38' Max Vel=7.27 fps Inflow=3.01 cfs 0.348 af
24.0" Round Pipe n=0.011 L=35.0' S=0.0206 '/ Capacity=38.35 cfs Outflow=3.01 cfs 0.348 af

Pond 16P: INFILTRATION BASIN Peak Elev=22.64' Storage=11,800 cf Inflow=9.31 cfs 1.321 af
Discarded=3.68 cfs 1.321 af Primary=0.00 cfs 0.000 af Outflow=3.68 cfs 1.321 af

Link 17L: POST Inflow=0.03 cfs 0.017 af
Primary=0.03 cfs 0.017 af

Total Runoff Area = 22.473 ac Runoff Volume = 1.877 af Average Runoff Depth = 1.00"
67.06% Pervious = 15.070 ac 32.94% Impervious = 7.403 ac

Time span=0.00-30.00 hrs, dt=0.02 hrs, 1501 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 3: PRE	Runoff Area=490,939 sf 23.23% Impervious Runoff Depth=0.95" Flow Length=1,217' Tc=65.6 min CN=50 Runoff=3.55 cfs 0.895 af
Subcatchment 6S: POST EAST	Runoff Area=23,034 sf 65.04% Impervious Runoff Depth=3.13" Flow Length=301' Tc=10.5 min CN=77 Runoff=1.67 cfs 0.138 af
Subcatchment 7S: POST UNC	Runoff Area=36,964 sf 10.53% Impervious Runoff Depth=0.48" Flow Length=278' Slope=0.0700 '/' Tc=50.5 min CN=42 Runoff=0.11 cfs 0.034 af
Subcatchment 8S: POST CENTER	Runoff Area=18,063 sf 70.19% Impervious Runoff Depth=3.42" Flow Length=230' Tc=5.6 min CN=80 Runoff=1.68 cfs 0.118 af
Subcatchment 9S: POST WEST	Runoff Area=80,580 sf 60.66% Impervious Runoff Depth=2.94" Flow Length=541' Tc=2.8 min CN=75 Runoff=7.16 cfs 0.454 af
Subcatchment 10S: POST PARKING	Runoff Area=124,799 sf 44.09% Impervious Runoff Depth=2.06" Flow Length=575' Tc=21.1 min CN=65 Runoff=4.41 cfs 0.493 af
Subcatchment 12S: POST BPD	Runoff Area=133,456 sf 47.29% Impervious Runoff Depth=2.15" Flow Length=786' Tc=29.2 min CN=66 Runoff=4.29 cfs 0.548 af
Subcatchment 18S: POST BASIN	Runoff Area=71,068 sf 13.85% Impervious Runoff Depth=0.65" Tc=0.0 min UI Adjusted CN=45 Runoff=0.76 cfs 0.088 af
Reach 18R: CB-7	Avg. Flow Depth=0.22' Max Vel=10.63 fps Inflow=1.67 cfs 0.138 af 18.0" Round Pipe n=0.011 L=59.0' S=0.0900 '/' Capacity=37.24 cfs Outflow=1.67 cfs 0.138 af
Reach 19R: DMH-1	Avg. Flow Depth=0.37' Max Vel=4.98 fps Inflow=1.67 cfs 0.138 af 18.0" Round Pipe n=0.011 L=38.0' S=0.0105 '/' Capacity=12.74 cfs Outflow=1.66 cfs 0.138 af
Reach 20R: DMH-2	Avg. Flow Depth=0.37' Max Vel=4.87 fps Inflow=1.66 cfs 0.138 af 18.0" Round Pipe n=0.011 L=72.0' S=0.0099 '/' Capacity=12.33 cfs Outflow=1.66 cfs 0.138 af
Reach 21R: DMH-3	Avg. Flow Depth=0.42' Max Vel=4.04 fps Inflow=1.66 cfs 0.138 af 18.0" Round Pipe n=0.011 L=41.0' S=0.0059 '/' Capacity=9.50 cfs Outflow=1.65 cfs 0.138 af
Reach 22R: CB_1	Avg. Flow Depth=0.81' Max Vel=7.32 fps Inflow=7.16 cfs 0.454 af 18.0" Round Pipe n=0.011 L=53.0' S=0.0102 '/' Capacity=12.53 cfs Outflow=7.11 cfs 0.454 af
Reach 23R: CB_2	Avg. Flow Depth=0.80' Max Vel=7.42 fps Inflow=7.11 cfs 0.454 af 18.0" Round Pipe n=0.011 L=31.0' S=0.0106 '/' Capacity=12.81 cfs Outflow=7.07 cfs 0.454 af
Reach 24R: CB_3	Avg. Flow Depth=0.81' Max Vel=7.24 fps Inflow=7.07 cfs 0.454 af 18.0" Round Pipe n=0.011 L=39.0' S=0.0100 '/' Capacity=12.41 cfs Outflow=7.05 cfs 0.454 af
Reach 25R: SWALE	Avg. Flow Depth=0.29' Max Vel=3.71 fps Inflow=4.29 cfs 0.548 af n=0.022 L=145.0' S=0.0276 '/' Capacity=14.28 cfs Outflow=4.28 cfs 0.548 af

Baypointe CEDA-REV

Type III 24-hr 25-Year Rainfall=5.60"

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Reach 26R: CB-6 Avg. Flow Depth=0.22' Max Vel=10.37 fps Inflow=1.68 cfs 0.118 af
18.0" Round Pipe n=0.011 L=86.0' S=0.0833 '/ Capacity=35.82 cfs Outflow=1.68 cfs 0.118 af

Reach 27R: CB-4 Avg. Flow Depth=0.70' Max Vel=7.14 fps Inflow=7.05 cfs 0.454 af
24.0" Round Pipe n=0.011 L=61.0' S=0.0098 '/ Capacity=26.52 cfs Outflow=7.02 cfs 0.454 af

Reach 28R: CB-5 Avg. Flow Depth=0.46' Max Vel=8.13 fps Inflow=4.41 cfs 0.493 af
24.0" Round Pipe n=0.011 L=35.0' S=0.0206 '/ Capacity=38.35 cfs Outflow=4.40 cfs 0.493 af

Pond 16P: INFILTRATION BASIN Peak Elev=23.15' Storage=21,870 cf Inflow=13.37 cfs 1.840 af
Discarded=3.89 cfs 1.840 af Primary=0.00 cfs 0.000 af Outflow=3.89 cfs 1.840 af

Link 17L: POST Inflow=0.11 cfs 0.034 af
Primary=0.11 cfs 0.034 af

Total Runoff Area = 22.473 ac Runoff Volume = 2.769 af Average Runoff Depth = 1.48"
67.06% Pervious = 15.070 ac 32.94% Impervious = 7.403 ac

Time span=0.00-30.00 hrs, dt=0.02 hrs, 1501 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 3: PRE	Runoff Area=490,939 sf 23.23% Impervious Runoff Depth=1.67" Flow Length=1,217' Tc=65.6 min CN=50 Runoff=7.07 cfs 1.565 af
Subcatchment 6S: POST EAST	Runoff Area=23,034 sf 65.04% Impervious Runoff Depth=4.37" Flow Length=301' Tc=10.5 min CN=77 Runoff=2.32 cfs 0.192 af
Subcatchment 7S: POST UNC	Runoff Area=36,964 sf 10.53% Impervious Runoff Depth=1.00" Flow Length=278' Slope=0.0700 '/ Tc=50.5 min CN=42 Runoff=0.30 cfs 0.070 af
Subcatchment 8S: POST CENTER	Runoff Area=18,063 sf 70.19% Impervious Runoff Depth=4.69" Flow Length=230' Tc=5.6 min CN=80 Runoff=2.29 cfs 0.162 af
Subcatchment 9S: POST WEST	Runoff Area=80,580 sf 60.66% Impervious Runoff Depth=4.15" Flow Length=541' Tc=2.8 min CN=75 Runoff=10.07 cfs 0.640 af
Subcatchment 10S: POST PARKING	Runoff Area=124,799 sf 44.09% Impervious Runoff Depth=3.10" Flow Length=575' Tc=21.1 min CN=65 Runoff=6.78 cfs 0.741 af
Subcatchment 12S: POST BPD	Runoff Area=133,456 sf 47.29% Impervious Runoff Depth=3.20" Flow Length=786' Tc=29.2 min CN=66 Runoff=6.53 cfs 0.818 af
Subcatchment 18S: POST BASIN	Runoff Area=71,068 sf 13.85% Impervious Runoff Depth=1.24" Tc=0.0 min UI Adjusted CN=45 Runoff=2.11 cfs 0.168 af
Reach 18R: CB-7	Avg. Flow Depth=0.25' Max Vel=11.72 fps Inflow=2.32 cfs 0.192 af 18.0" Round Pipe n=0.011 L=59.0' S=0.0900 '/ Capacity=37.24 cfs Outflow=2.32 cfs 0.192 af
Reach 19R: DMH-1	Avg. Flow Depth=0.43' Max Vel=5.47 fps Inflow=2.32 cfs 0.192 af 18.0" Round Pipe n=0.011 L=38.0' S=0.0105 '/ Capacity=12.74 cfs Outflow=2.31 cfs 0.192 af
Reach 20R: DMH-2	Avg. Flow Depth=0.44' Max Vel=5.35 fps Inflow=2.31 cfs 0.192 af 18.0" Round Pipe n=0.011 L=72.0' S=0.0099 '/ Capacity=12.33 cfs Outflow=2.31 cfs 0.192 af
Reach 21R: DMH-3	Avg. Flow Depth=0.50' Max Vel=4.43 fps Inflow=2.31 cfs 0.192 af 18.0" Round Pipe n=0.011 L=41.0' S=0.0059 '/ Capacity=9.50 cfs Outflow=2.30 cfs 0.192 af
Reach 22R: CB_1	Avg. Flow Depth=1.02' Max Vel=7.88 fps Inflow=10.07 cfs 0.640 af 18.0" Round Pipe n=0.011 L=53.0' S=0.0102 '/ Capacity=12.53 cfs Outflow=10.02 cfs 0.640 af
Reach 23R: CB_2	Avg. Flow Depth=1.00' Max Vel=8.01 fps Inflow=10.02 cfs 0.640 af 18.0" Round Pipe n=0.011 L=31.0' S=0.0106 '/ Capacity=12.81 cfs Outflow=9.99 cfs 0.640 af
Reach 24R: CB_3	Avg. Flow Depth=1.02' Max Vel=7.80 fps Inflow=9.99 cfs 0.640 af 18.0" Round Pipe n=0.011 L=39.0' S=0.0100 '/ Capacity=12.41 cfs Outflow=9.93 cfs 0.640 af
Reach 25R: SWALE	Avg. Flow Depth=0.35' Max Vel=4.21 fps Inflow=6.53 cfs 0.818 af n=0.022 L=145.0' S=0.0276 '/ Capacity=14.28 cfs Outflow=6.52 cfs 0.818 af

Baypointe CEDA-REV

Type III 24-hr 100-Year Rainfall=7.00"

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Reach 26R: CB-6 Avg. Flow Depth=0.26' Max Vel=11.36 fps Inflow=2.29 cfs 0.162 af
18.0" Round Pipe n=0.011 L=86.0' S=0.0833 '/ Capacity=35.82 cfs Outflow=2.28 cfs 0.162 af

Reach 27R: CB-4 Avg. Flow Depth=0.85' Max Vel=7.83 fps Inflow=9.93 cfs 0.640 af
24.0" Round Pipe n=0.011 L=61.0' S=0.0098 '/ Capacity=26.52 cfs Outflow=9.89 cfs 0.640 af

Reach 28R: CB-5 Avg. Flow Depth=0.57' Max Vel=9.20 fps Inflow=6.78 cfs 0.741 af
24.0" Round Pipe n=0.011 L=35.0' S=0.0206 '/ Capacity=38.35 cfs Outflow=6.78 cfs 0.741 af

Pond 16P: INFILTRATION BASIN Peak Elev=24.03' Storage=40,595 cf Inflow=20.26 cfs 2.721 af
Discarded=4.27 cfs 2.718 af Primary=0.11 cfs 0.003 af Outflow=4.38 cfs 2.721 af

Link 17L: POST Inflow=0.35 cfs 0.073 af
Primary=0.35 cfs 0.073 af

Total Runoff Area = 22.473 ac Runoff Volume = 4.357 af Average Runoff Depth = 2.33"
67.06% Pervious = 15.070 ac 32.94% Impervious = 7.403 ac

Summary for Pond 16P: INFILTRATION BASIN

Inflow Area = 10.354 ac, 13.71% Impervious, Inflow Depth = 0.16" for WQV event
 Inflow = 0.96 cfs @ 12.37 hrs, Volume= 0.138 af
 Outflow = 0.95 cfs @ 12.42 hrs, Volume= 0.138 af, Atten= 1%, Lag= 2.7 min
 Discarded = 0.95 cfs @ 12.42 hrs, Volume= 0.138 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.02 hrs
 Peak Elev= 22.01' @ 12.42 hrs Surf.Area= 17,876 sf Storage= 148 cf

Plug-Flow detention time= 2.6 min calculated for 0.138 af (100% of inflow)
 Center-of-Mass det. time= 2.6 min (829.2 - 826.6)

Volume	Invert	Avail.Storage	Storage Description
#1	22.00'	64,154 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.00	17,858	0	0
23.00	20,003	18,931	18,931
24.00	22,205	21,104	40,035
25.00	26,033	24,119	64,154

Device	Routing	Invert	Outlet Devices
#1	Discarded	22.00'	8.270 in/hr Exfiltration over Surface area
#2	Primary	24.00'	10.0' long x 6.0' breadth Broad-Crested Rectangular Weir
Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00			
2.50 3.00 3.50 4.00 4.50 5.00 5.50			
Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65			
2.66 2.66 2.67 2.69 2.72 2.76 2.83			

Discarded OutFlow Max=3.42 cfs @ 12.42 hrs HW=22.01' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 3.42 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=22.00' (Free Discharge)

↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

WATERSHED MAP

