Summary for Subcatchment 2G: 2G

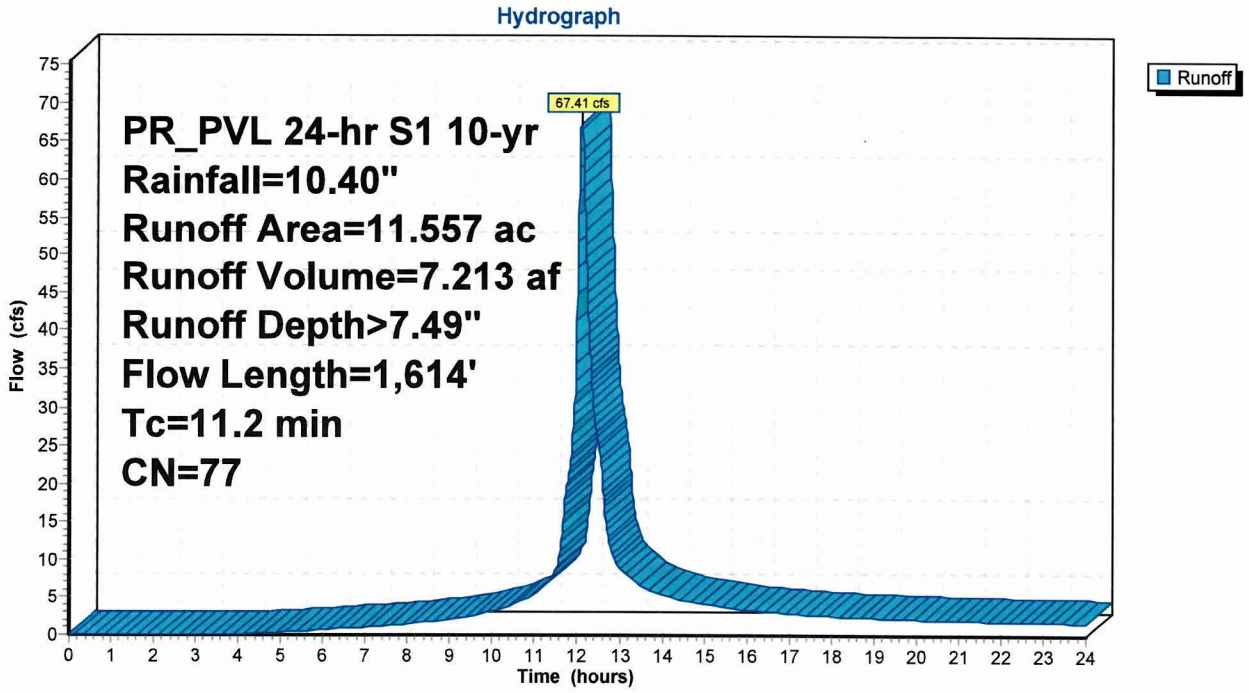
Runoff = 67.41 cfs @ 12.10 hrs, Volume= 7.213 af, Depth> 7.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
PR_PVL 24-hr S1 10-yr Rainfall=10.40"

Area (ac)	CN	Description
0.324	98	Paved parking, HSG B
0.000	96	Gravel surface, HSG B
2.349	55	Woods, Good, HSG B
1.767	66	Woods, Poor, HSG B
7.117	86	Fallow, bare soil, HSG B
11.557	77	Weighted Average
11.233	76	97.20% Pervious Area
0.324	98	2.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	100	0.0200	0.55		**Sheet Flow, Initial sheet** Fallow n= 0.050 P2= 5.68"
7.3	1,021	0.1100	2.32		**Shallow Concentrated Flow, Overland** Kv= 7.0 fps
0.8	493	0.0280	10.43	250.22	**Channel Flow, Earth channel** Area= 24.0 sf Perim= 13.5' r= 1.78' n= 0.035 Earth, dense weeds
11.2	1,614	Total			

Subcatchment 2G: 2G



Summary for Subcatchment 2H: 2H

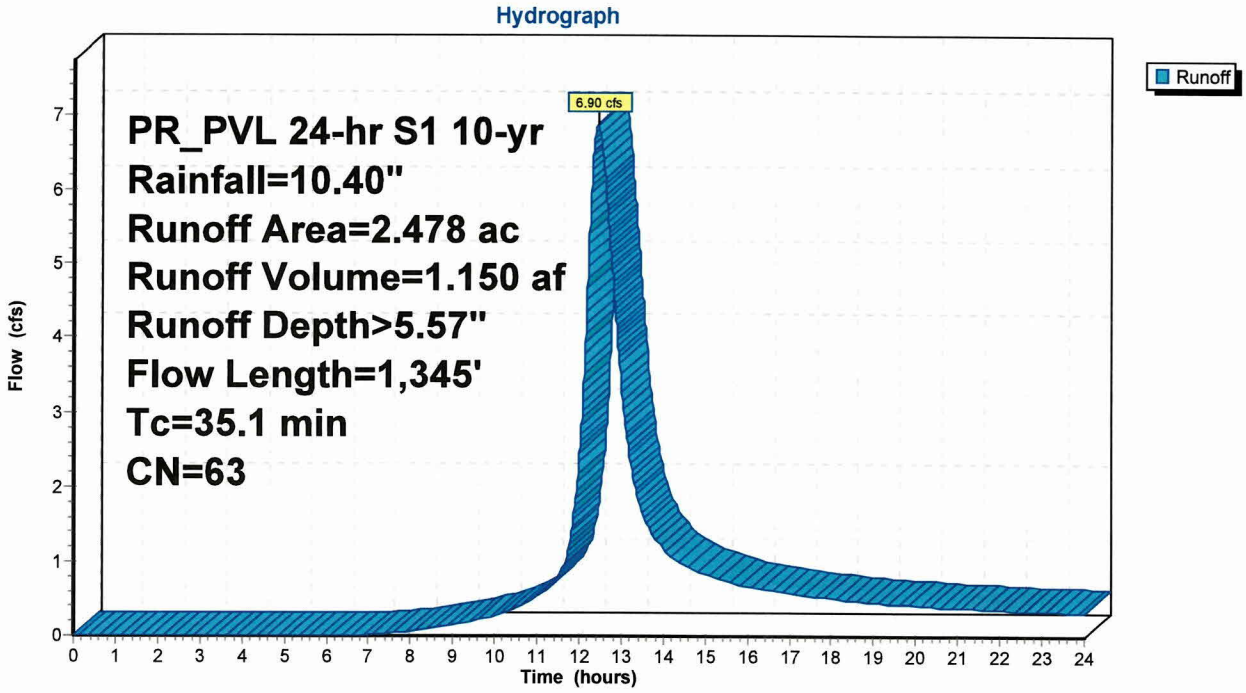
Runoff = 6.90 cfs @ 12.44 hrs, Volume= 1.150 af, Depth> 5.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
PR_PVL 24-hr S1 10-yr Rainfall=10.40"

Area (ac)	CN	Description
0.115	98	Paved parking, HSG D
0.000	96	Gravel surface, HSG B
1.879	55	Woods, Good, HSG B
0.000	66	Woods, Poor, HSG B
0.241	94	Fallow, bare soil, HSG D
0.243	77	Woods, Good, HSG D
2.478	63	Weighted Average
2.363	61	95.36% Pervious Area
0.115	98	4.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.3	100	0.0450	0.08		**Sheet Flow, Initial sheet** Woods: Dense underbrush n= 0.800 P2= 5.68"
13.3	815	0.0420	1.02		**Shallow Concentrated Flow, Overland** Woodland Kv= 5.0 fps
1.4	129	0.0900	1.50		**Shallow Concentrated Flow, Overland** Woodland Kv= 5.0 fps
0.1	301	0.0730	34.66	831.82	**Channel Flow, Concrete Channel** Area= 24.0 sf Perim= 13.5' r= 1.78' n= 0.017 Concrete, unfinished
35.1	1,345	Total			

Subcatchment 2H: 2H



Summary for Subcatchment 2l: 2l

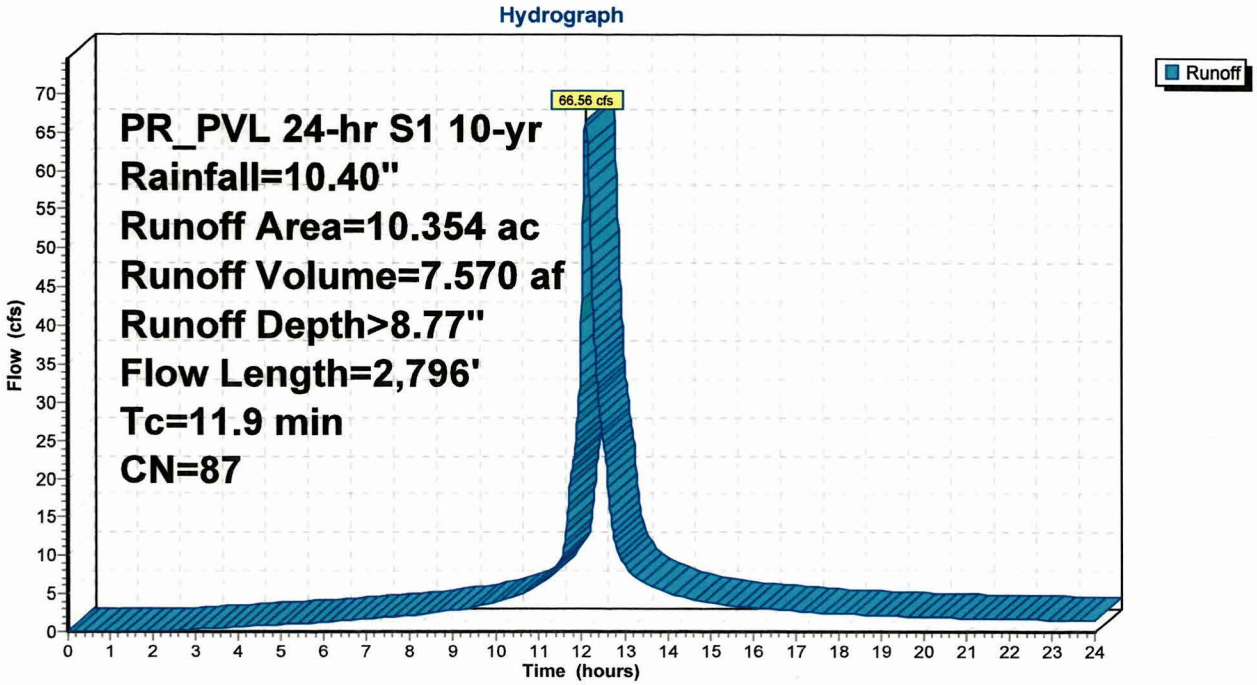
Runoff = 66.56 cfs @ 12.11 hrs, Volume= 7.570 af, Depth> 8.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
PR_PVL 24-hr S1 10-yr Rainfall=10.40"

Area (ac)	CN	Description
0.000	98	Paved parking, HSG B
0.700	96	Gravel surface, HSG B
0.000	55	Woods, Good, HSG B
0.000	66	Woods, Poor, HSG B
9.654	86	Fallow, bare soil, HSG B
10.354	87	Weighted Average
10.354	87	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	100	0.0100	0.41		**Sheet Flow, Initial sheet** Fallow n= 0.050 P2= 5.68"
6.5	550	0.0200	1.41		**Shallow Concentrated Flow, Overland** Nearly Bare & Untilled Kv= 10.0 fps
1.4	2,146	0.0400	25.66	615.74	**Channel Flow, Concrete Channel** Area= 24.0 sf Perim= 13.5' r= 1.78' n= 0.017 Concrete, unfinished
11.9	2,796	Total			

Subcatchment 2l: 2l



Summary for Subcatchment 2J: 2J

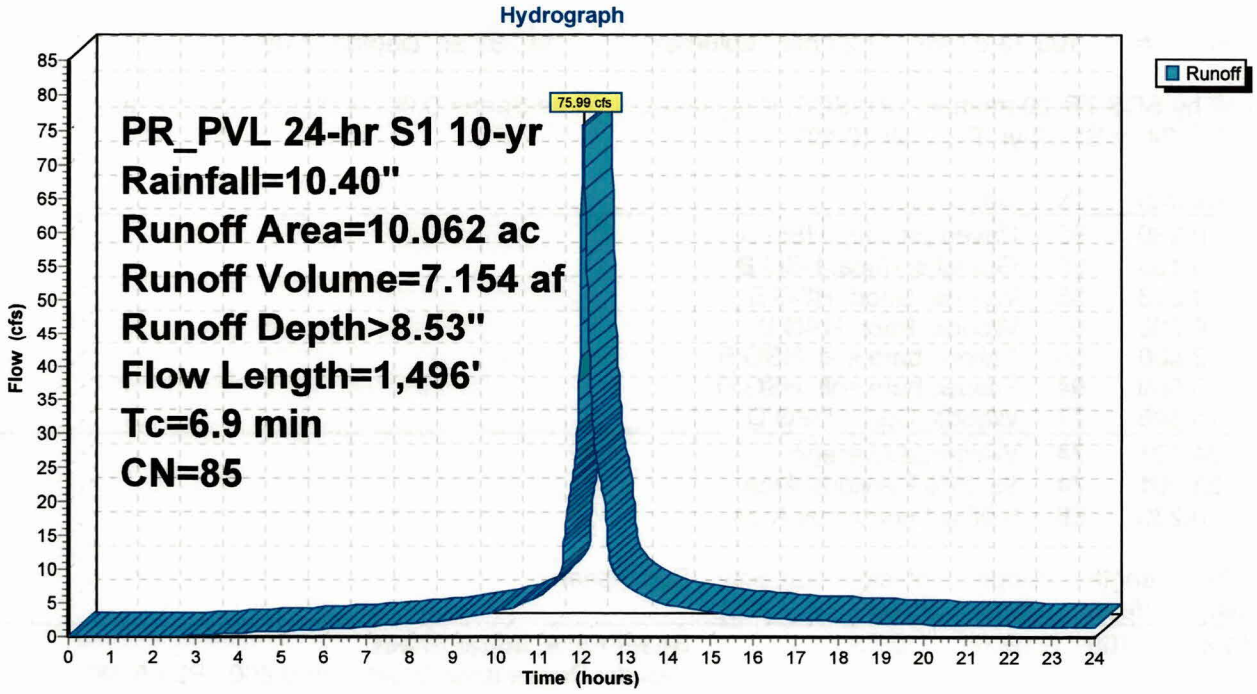
Runoff = 75.99 cfs @ 12.05 hrs, Volume= 7.154 af, Depth> 8.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
PR_PVL 24-hr S1 10-yr Rainfall=10.40"

Area (ac)	CN	Description
0.435	98	Paved parking, HSG B
0.786	96	Gravel surface, HSG B
0.000	55	Woods, Good, HSG B
1.340	66	Woods, Poor, HSG B
7.501	86	Fallow, bare soil, HSG B
10.062	85	Weighted Average
9.627	84	95.68% Pervious Area
0.435	98	4.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.1400	1.19		**Sheet Flow, Initial Sheet Flow** Fallow n= 0.050 P2= 5.68"
5.0	1,126	0.2180	3.74		**Shallow Concentrated Flow, Overland** Kv= 8.0 fps
0.5	270	0.0037	8.74	340.93	**Channel Flow, Geomembrane Line Channel** Area= 39.0 sf Perim= 18.5' r= 2.11' n= 0.017 Concrete, unfinished
6.9	1,496	Total			

Subcatchment 2J: 2J



Summary for Subcatchment 2K: 2K

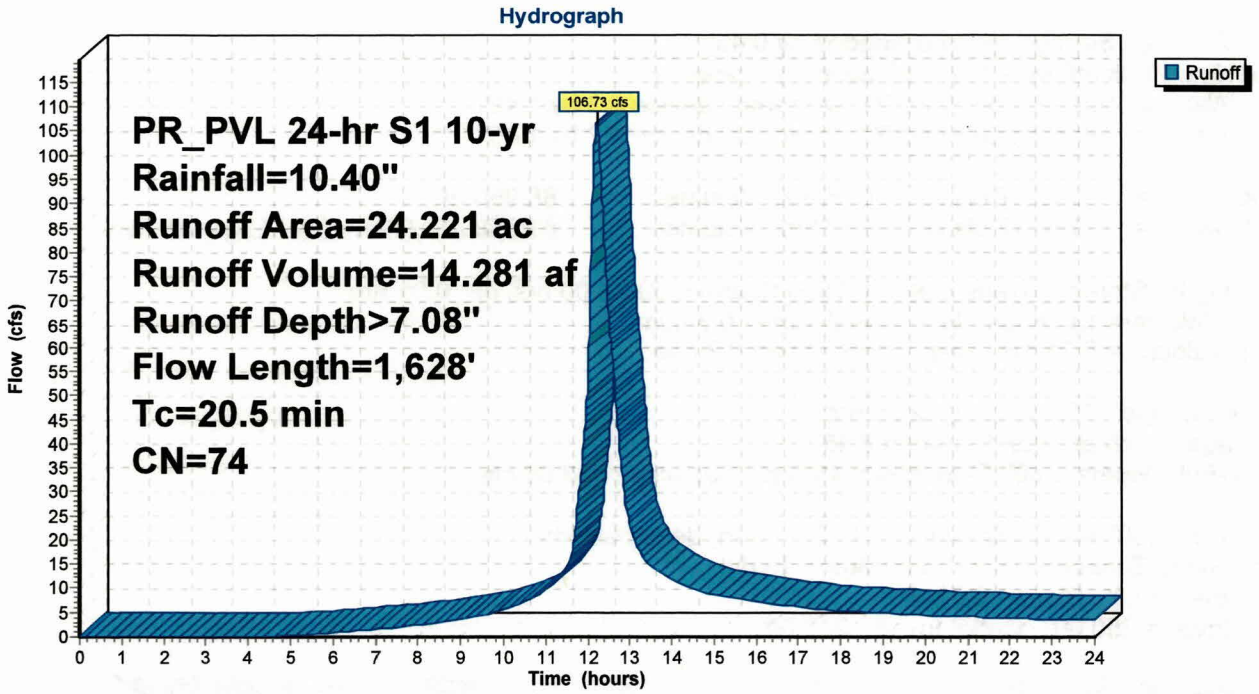
Runoff = 106.73 cfs @ 12.23 hrs, Volume= 14.281 af, Depth> 7.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
PR_PVL 24-hr S1 10-yr Rainfall=10.40"

Area (ac)	CN	Description
0.230	98	Paved parking, HSG B
0.193	96	Gravel surface, HSG B
4.913	55	Woods, Good, HSG B
0.000	66	Woods, Poor, HSG B
2.800	86	Fallow, bare soil, HSG B
0.689	94	Fallow, bare soil, HSG D
15.396	77	Woods, Good, HSG D
24.221	74	Weighted Average
23.991	74	99.05% Pervious Area
0.230	98	0.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.4	100	0.1900	0.15		**Sheet Flow, Initial Sheet** Woods: Dense underbrush n= 0.800 P2= 5.68"
4.7	878	0.3860	3.11		**Shallow Concentrated Flow, Overland** Woodland Kv= 5.0 fps
2.7	264	0.1100	1.66		**Shallow Concentrated Flow, Overland** Woodland Kv= 5.0 fps
1.7	386	0.0026	3.71	278.00	**Channel Flow, Rip-Rap Channel** Area= 75.0 sf Perim= 27.4' r= 2.74' n= 0.040 Earth, cobble bottom, clean sides
20.5	1,628	Total			

Subcatchment 2K: 2K



Summary for Reach O1: Emergency Spillway

[91] Warning: Storage range exceeded by 0.45'
[55] Hint: Peak inflow is 127% of Manning's capacity
[79] Warning: Submerged Pond P1 Secondary device # 3 by 1.45'
[79] Warning: Submerged Pond P2 Secondary device # 2 by 1.45'

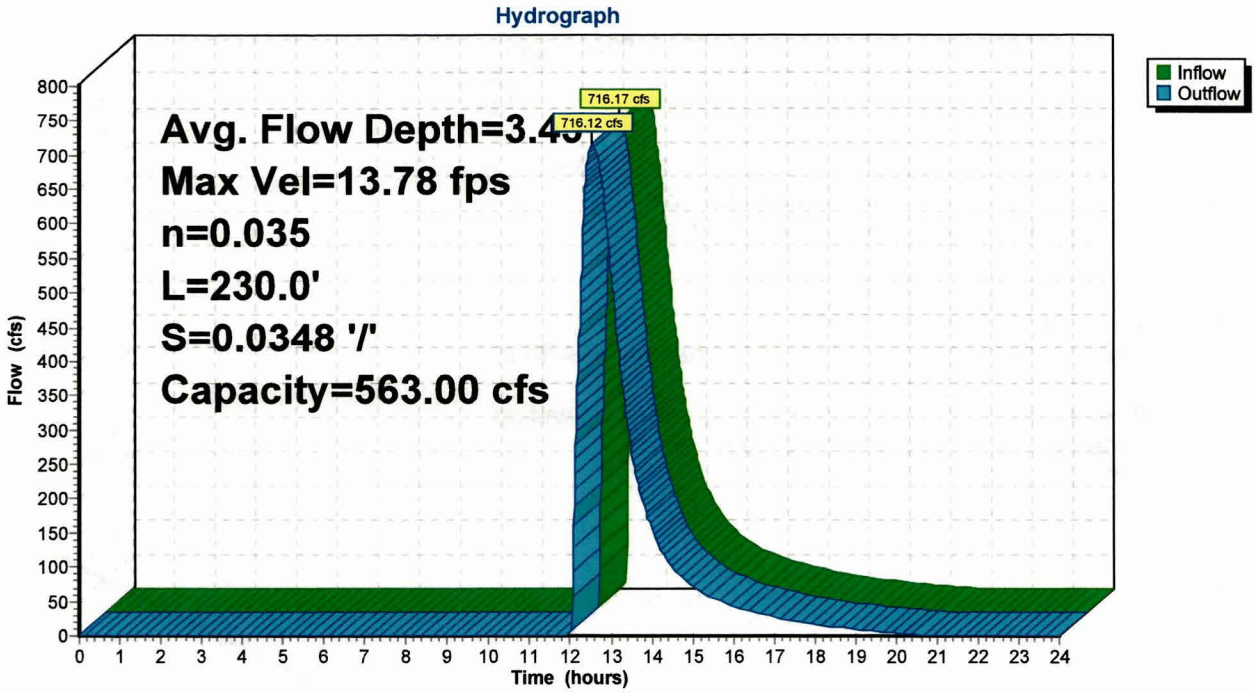
Inflow	=	716.17 cfs @	12.56 hrs,	Volume=	88.950 af
Outflow	=	716.12 cfs @	12.57 hrs,	Volume=	88.950 af, Atten= 0%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 13.78 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 5.74 fps, Avg. Travel Time= 0.7 min

Peak Storage= 11,950 cf @ 12.56 hrs
Average Depth at Peak Storage= 3.45'
Bank-Full Depth= 3.00' Flow Area= 43.5 sf, Capacity= 563.00 cfs

10.00' x 3.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 1.5 '/' Top Width= 19.00'
Length= 230.0' Slope= 0.0348 '/'
Inlet Invert= 250.00', Outlet Invert= 242.00'

Reach O1: Emergency Spillway



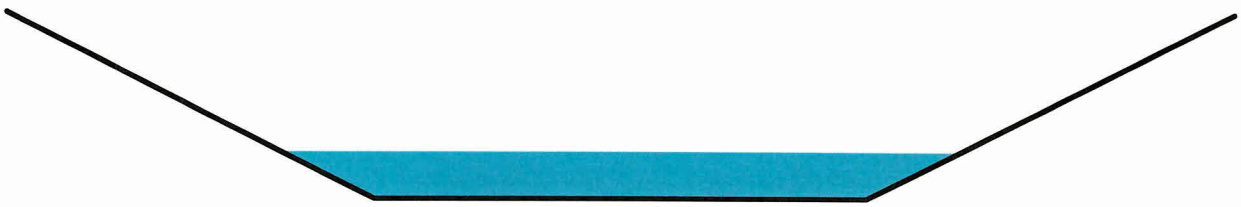
Summary for Reach R1: Earthen Channel

Inflow Area = 10.062 ac, 4.32% Impervious, Inflow Depth > 8.53" for 10-yr event
Inflow = 75.99 cfs @ 12.05 hrs, Volume= 7.154 af
Outflow = 75.09 cfs @ 12.07 hrs, Volume= 7.144 af, Atten= 1%, Lag= 1.6 min

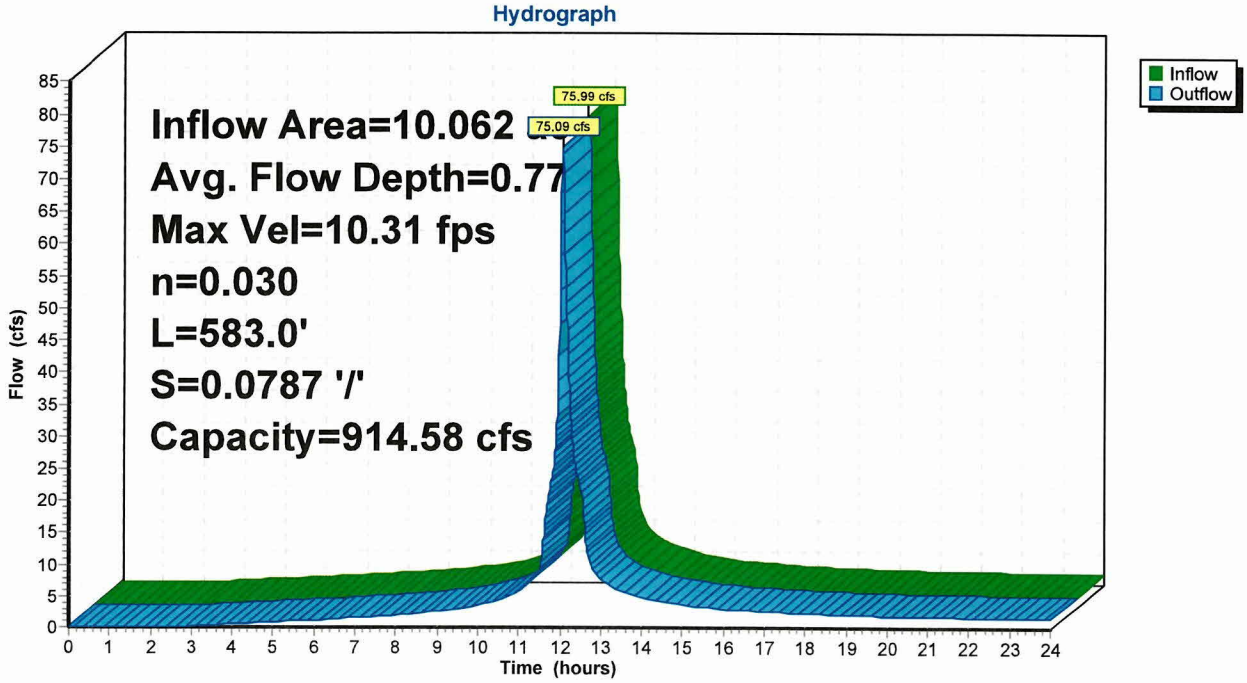
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 10.31 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 3.07 fps, Avg. Travel Time= 3.2 min

Peak Storage= 4,254 cf @ 12.06 hrs
Average Depth at Peak Storage= 0.77'
Bank-Full Depth= 3.00' Flow Area= 42.0 sf, Capacity= 914.58 cfs

8.00' x 3.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 2.0 '/' Top Width= 20.00'
Length= 583.0' Slope= 0.0787 '/'
Inlet Invert= 480.00', Outlet Invert= 434.10'



Reach R1: Earthen Channel



Summary for Reach R10: Earth channel

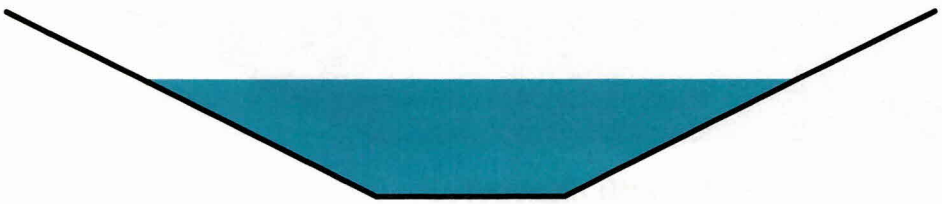
[62] Hint: Exceeded Reach R9 OUTLET depth by 0.99' @ 12.33 hrs

Inflow Area = 101.328 ac, 2.22% Impervious, Inflow Depth > 7.72" for 10-yr event
Inflow = 480.40 cfs @ 12.23 hrs, Volume= 65.155 af
Outflow = 474.08 cfs @ 12.30 hrs, Volume= 64.993 af, Atten= 1%, Lag= 3.9 min

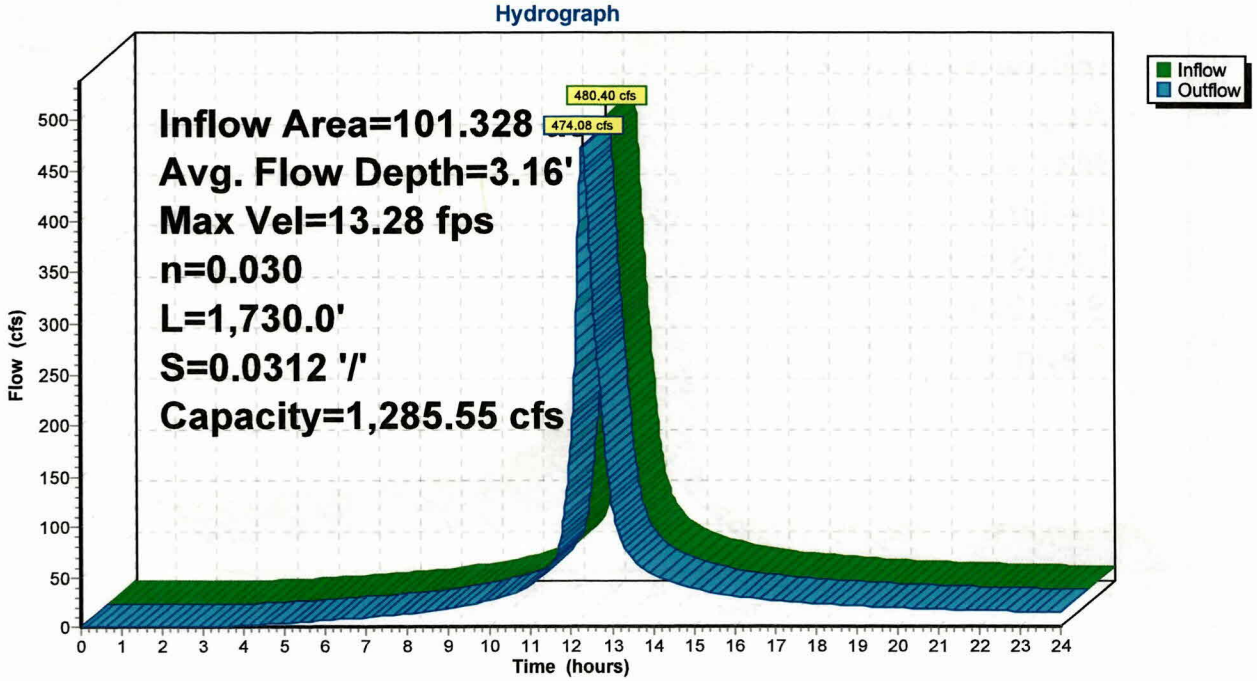
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 13.28 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 5.42 fps, Avg. Travel Time= 5.3 min

Peak Storage= 61,802 cf @ 12.26 hrs
Average Depth at Peak Storage= 3.16'
Bank-Full Depth= 5.00' Flow Area= 75.0 sf, Capacity= 1,285.55 cfs

5.00' x 5.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 2.0 '/' Top Width= 25.00'
Length= 1,730.0' Slope= 0.0312 '/'
Inlet Invert= 314.00', Outlet Invert= 260.00'



Reach R10: Earth channel



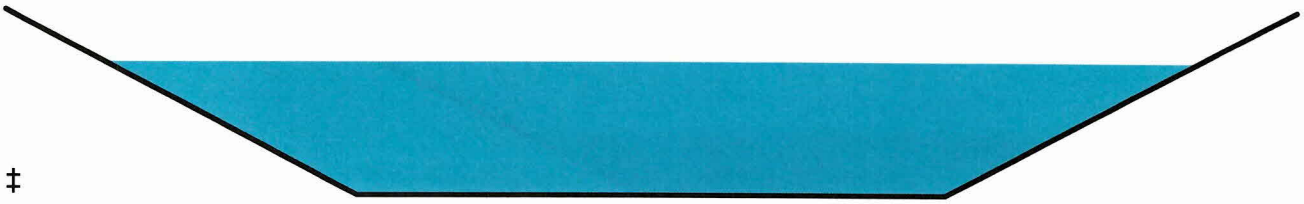
Summary for Reach R11: Earth channel

Inflow Area = 185.310 ac, 0.00% Impervious, Inflow Depth > 5.27" for 10-yr event
Inflow = 422.58 cfs @ 12.64 hrs, Volume= 81.386 af
Outflow = 421.45 cfs @ 12.69 hrs, Volume= 81.193 af, Atten= 0%, Lag= 2.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 13.64 fps, Min. Travel Time= 1.6 min
Avg. Velocity = 6.15 fps, Avg. Travel Time= 3.7 min

Peak Storage= 41,713 cf @ 12.66 hrs
Average Depth at Peak Storage= 2.16'
Bank-Full Depth= 3.00' Flow Area= 48.0 sf, Capacity= 781.41 cfs

10.00' x 3.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 2.0 '/' Top Width= 22.00'
Length= 1,350.0' Slope= 0.0415 '/'
Inlet Invert= 330.00', Outlet Invert= 274.00'



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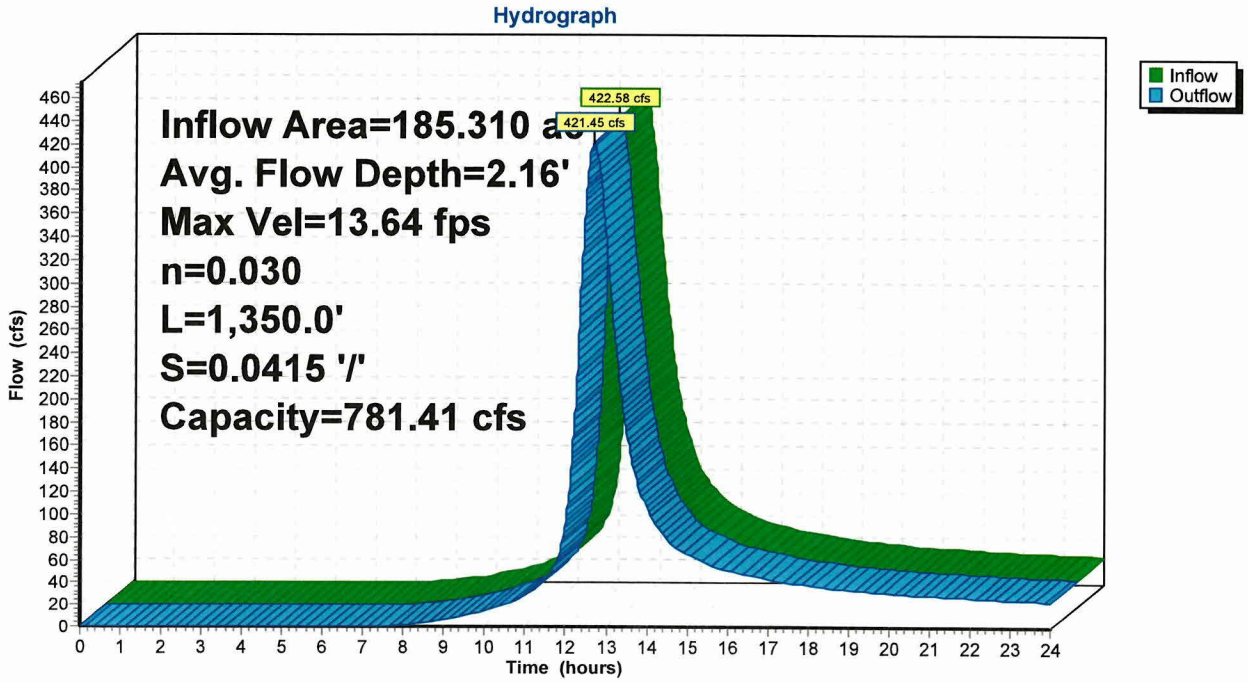
Reach R11: Earth channel



Summary for Reach R12: Earthen Channel

[79] Warning: Submerged Pond C7 Primary device # 1 INLET by 0.76'

Inflow Area = 185.310 ac, 0.00% Impervious, Inflow Depth > 5.26" for 10-yr event
Inflow = 421.45 cfs @ 12.69 hrs, Volume= 81.193 af
Outflow = 421.39 cfs @ 12.70 hrs, Volume= 81.147 af, Atten= 0%, Lag= 0.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 9.86 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 4.55 fps, Avg. Travel Time= 0.9 min

Peak Storage= 10,258 cf @ 12.69 hrs
Average Depth at Peak Storage= 2.76'
Bank-Full Depth= 3.00' Flow Area= 48.0 sf, Capacity= 495.31 cfs

10.00' x 3.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 2.0 '/' Top Width= 22.00'
Length= 240.0' Slope= 0.0167 '/'
Inlet Invert= 272.00', Outlet Invert= 268.00'

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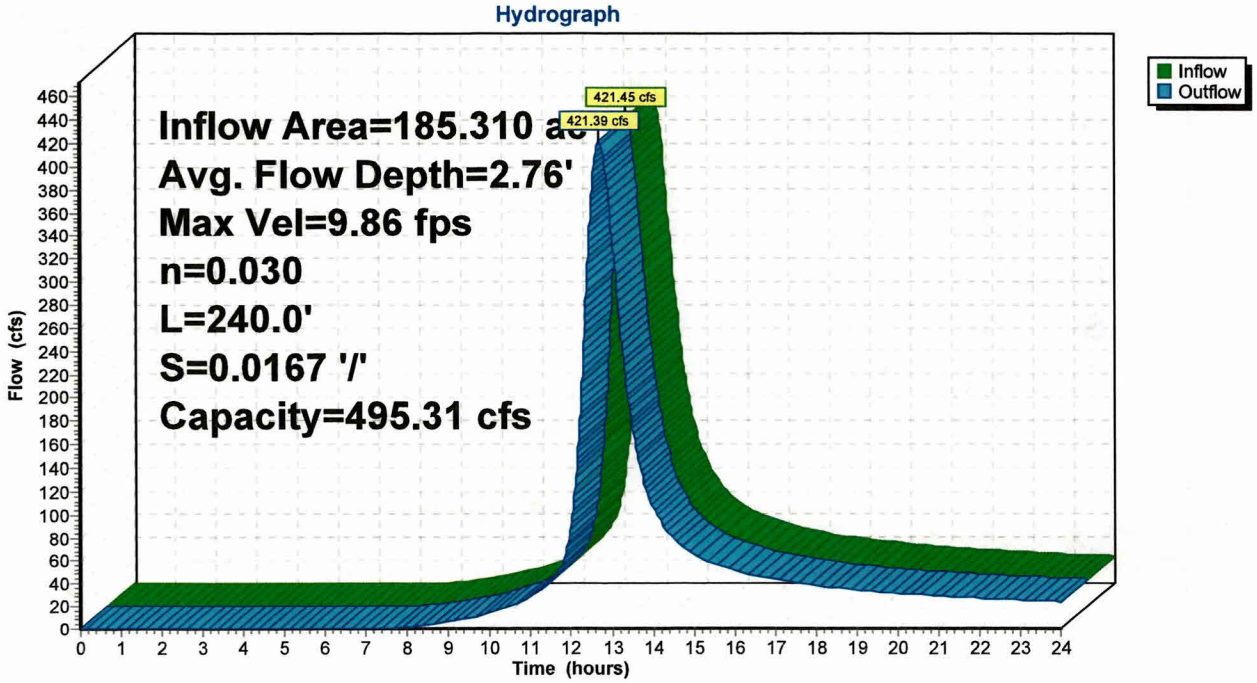
Reach R12: Earthen Channel



Summary for Reach R13: Earth Bypass Channel

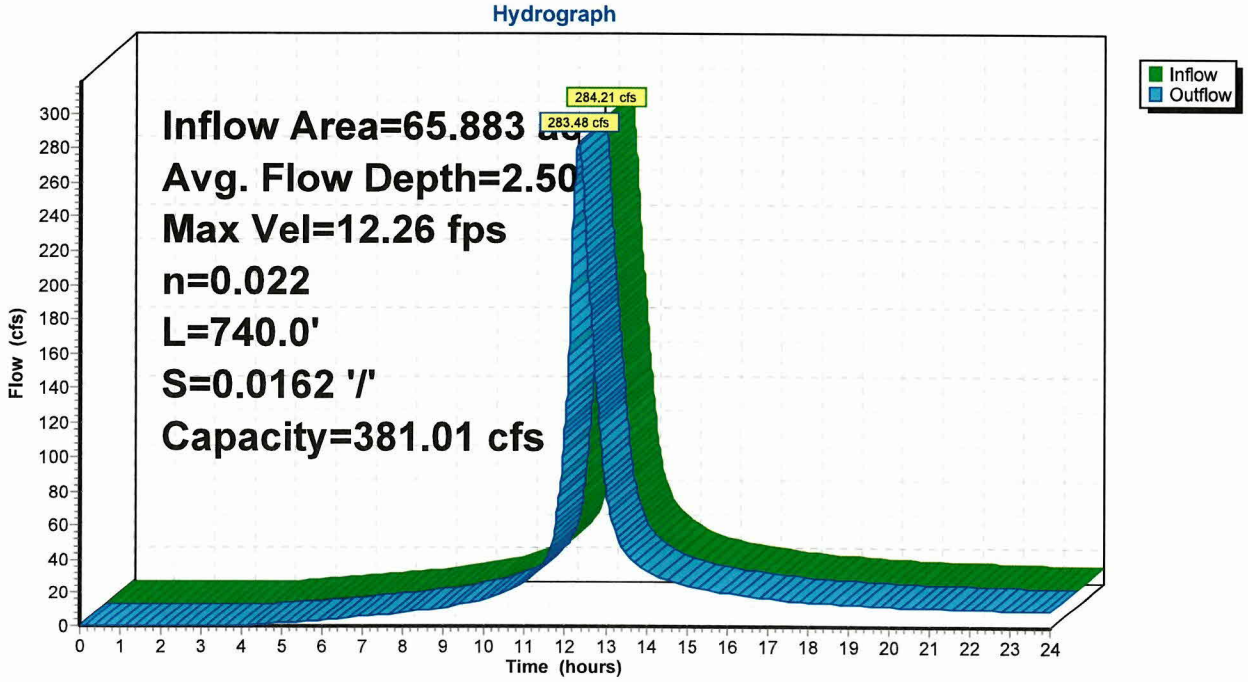
Inflow Area = 65.883 ac, 0.00% Impervious, Inflow Depth > 7.59" for 10-yr event
Inflow = 284.21 cfs @ 12.30 hrs, Volume= 41.672 af
Outflow = 283.48 cfs @ 12.32 hrs, Volume= 41.616 af, Atten= 0%, Lag= 1.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 12.26 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 4.53 fps, Avg. Travel Time= 2.7 min

Peak Storage= 17,115 cf @ 12.31 hrs
Average Depth at Peak Storage= 2.50'
Bank-Full Depth= 3.00' Flow Area= 28.5 sf, Capacity= 381.01 cfs

8.00' x 3.00' deep channel, n= 0.022 Earth, clean & straight
Side Slope Z-value= 0.5 '/' Top Width= 11.00'
Length= 740.0' Slope= 0.0162 '/'
Inlet Invert= 270.00', Outlet Invert= 258.00'

Reach R13: Earth Bypass Channel



Summary for Reach R2: Geomembrane Channel

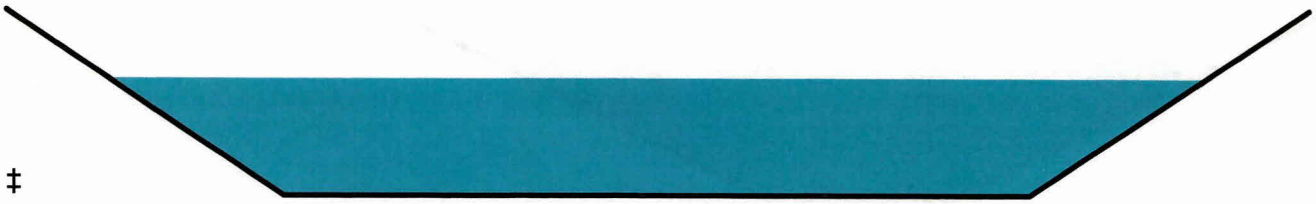
[62] Hint: Exceeded Reach R1 OUTLET depth by 0.23' @ 12.11 hrs

Inflow Area = 10.062 ac, 4.32% Impervious, Inflow Depth > 8.52" for 10-yr event
Inflow = 75.09 cfs @ 12.07 hrs, Volume= 7.144 af
Outflow = 74.35 cfs @ 12.10 hrs, Volume= 7.135 af, Atten= 1%, Lag= 1.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 7.94 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 2.39 fps, Avg. Travel Time= 2.7 min

Peak Storage= 3,676 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.95'
Bank-Full Depth= 1.50' Flow Area= 16.5 sf, Capacity= 169.00 cfs

8.00' x 1.50' deep channel, n= 0.013 Corrugated PE, smooth interior
Side Slope Z-value= 2.0 '/' Top Width= 14.00'
Length= 392.0' Slope= 0.0069 '/'
Inlet Invert= 434.10', Outlet Invert= 431.40'



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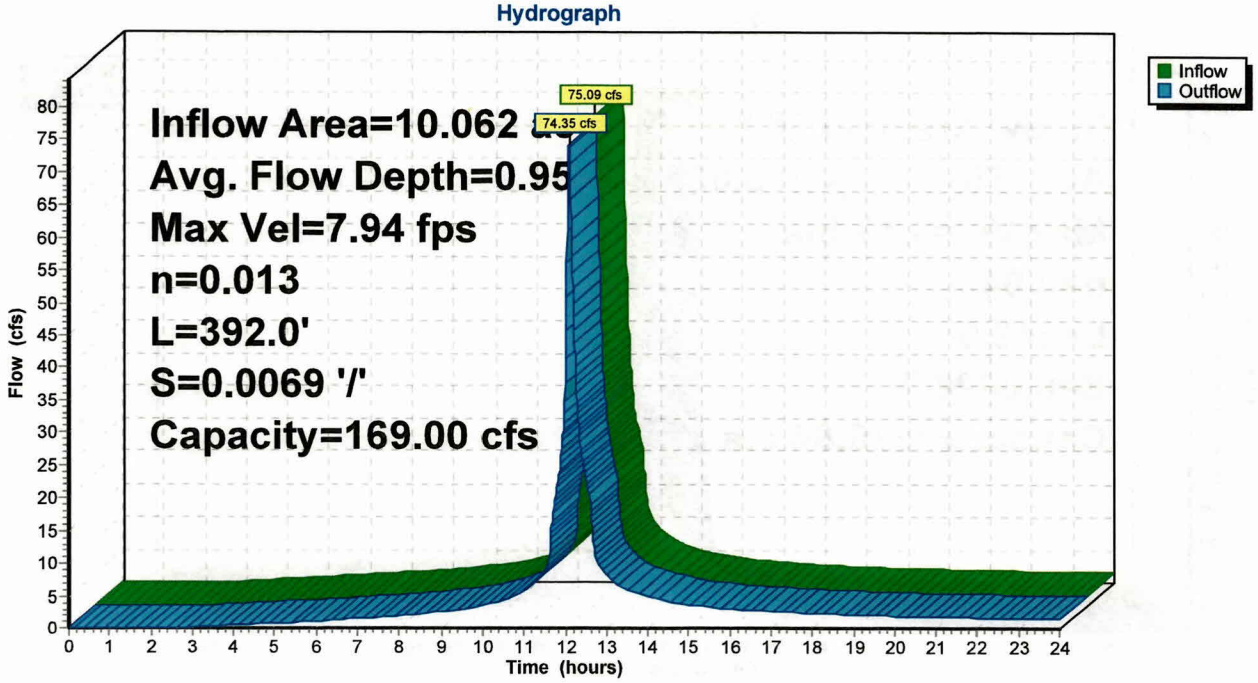
Reach R2: Geomembrane Channel



Summary for Reach R3: Rip-Rap Channel

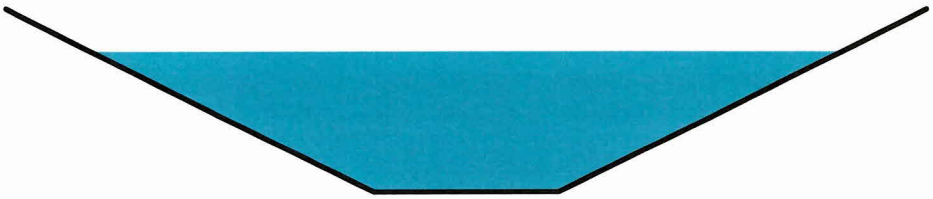
[81] Warning: Exceeded Pond C1 by 1.77' @ 12.31 hrs

Inflow Area = 34.283 ac, 1.94% Impervious, Inflow Depth > 7.50" for 10-yr event
Inflow = 158.53 cfs @ 12.14 hrs, Volume= 21.416 af
Outflow = 156.18 cfs @ 12.22 hrs, Volume= 21.360 af, Atten= 1%, Lag= 5.2 min

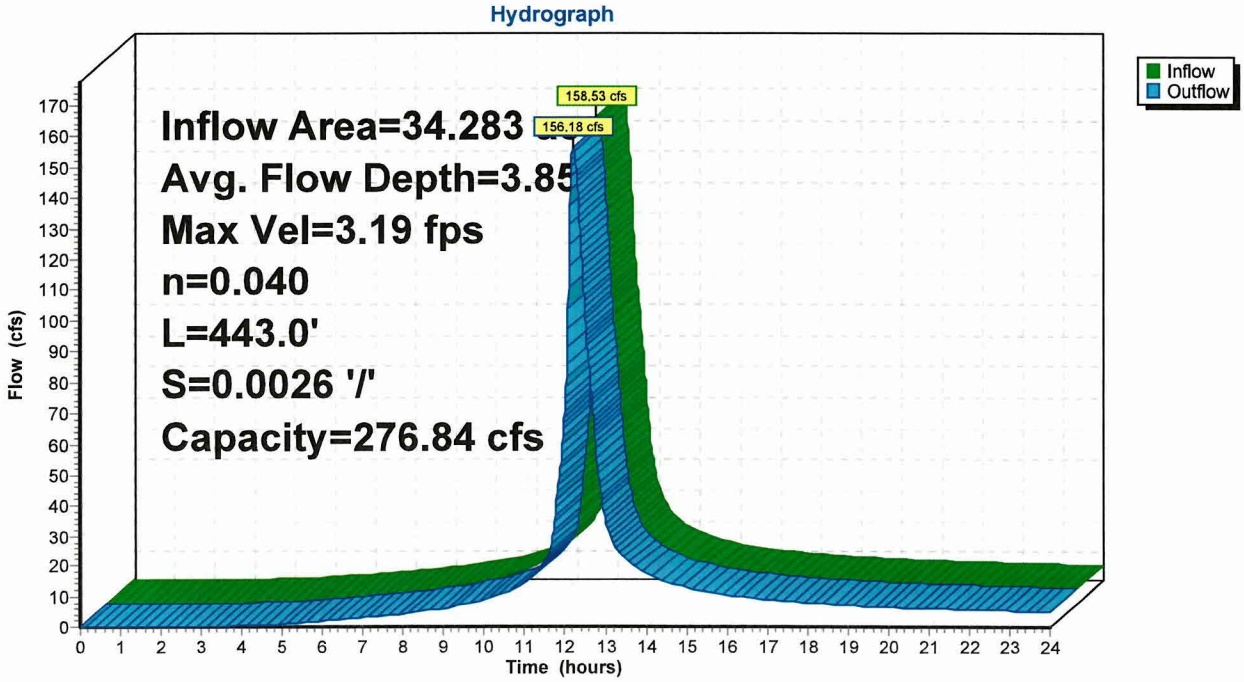
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.19 fps, Min. Travel Time= 2.3 min
Avg. Velocity = 1.33 fps, Avg. Travel Time= 5.6 min

Peak Storage= 21,691 cf @ 12.18 hrs
Average Depth at Peak Storage= 3.85'
Bank-Full Depth= 5.00' Flow Area= 75.0 sf, Capacity= 276.84 cfs

5.00' x 5.00' deep channel, n= 0.040 Earth, cobble bottom, clean sides
Side Slope Z-value= 2.0 '/' Top Width= 25.00'
Length= 443.0' Slope= 0.0026 '/'
Inlet Invert= 431.14', Outlet Invert= 430.00'



Reach R3: Rip-Rap Channel



Summary for Reach R4: Concrete Channel

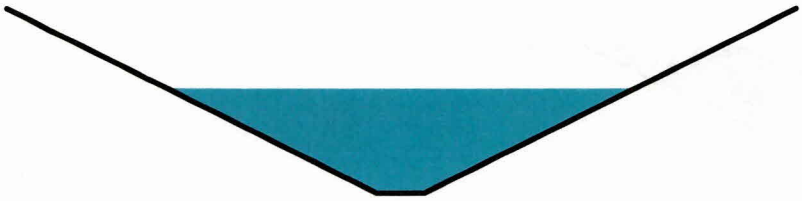
[61] Hint: Exceeded Reach R3 outlet invert by 2.26' @ 12.22 hrs

Inflow Area = 54.594 ac, 2.36% Impervious, Inflow Depth > 7.52" for 10-yr event
Inflow = 255.09 cfs @ 12.21 hrs, Volume= 34.231 af
Outflow = 254.71 cfs @ 12.24 hrs, Volume= 34.205 af, Atten= 0%, Lag= 1.3 min

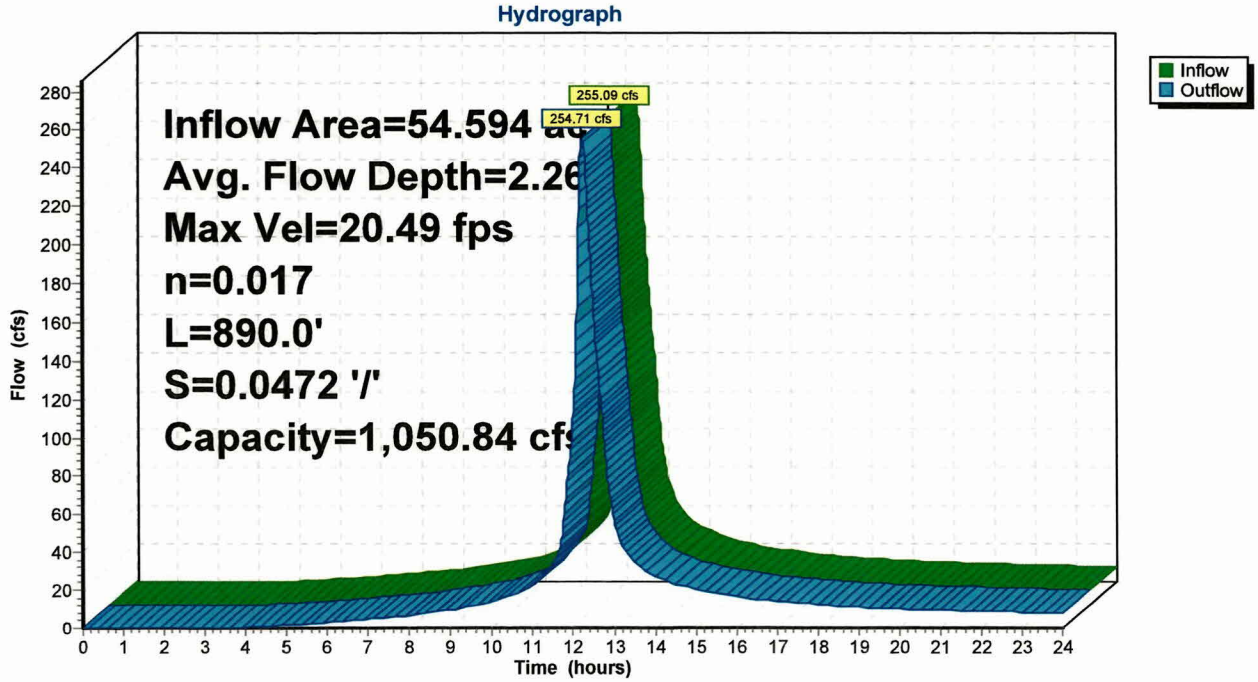
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 20.49 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 9.13 fps, Avg. Travel Time= 1.6 min

Peak Storage= 11,064 cf @ 12.22 hrs
Average Depth at Peak Storage= 2.26'
Bank-Full Depth= 4.00' Flow Area= 36.0 sf, Capacity= 1,050.84 cfs

1.00' x 4.00' deep channel, n= 0.017 Concrete, unfinished
Side Slope Z-value= 2.0 '/' Top Width= 17.00'
Length= 890.0' Slope= 0.0472 '/'
Inlet Invert= 430.00', Outlet Invert= 388.00'



Reach R4: Concrete Channel



Summary for Reach R5: Concrete Channel

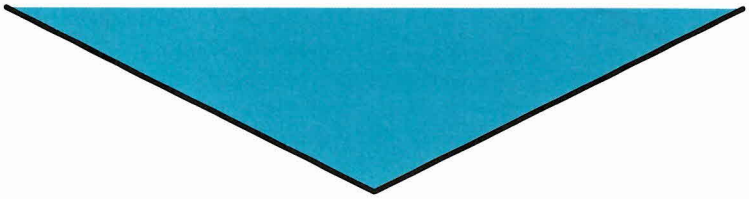
[91] Warning: Storage range exceeded by 0.75'
[55] Hint: Peak inflow is 318% of Manning's capacity

Inflow Area = 10.354 ac, 0.00% Impervious, Inflow Depth > 8.77" for 10-yr event
Inflow = 66.56 cfs @ 12.11 hrs, Volume= 7.570 af
Outflow = 62.53 cfs @ 12.21 hrs, Volume= 7.549 af, Atten= 6%, Lag= 5.7 min

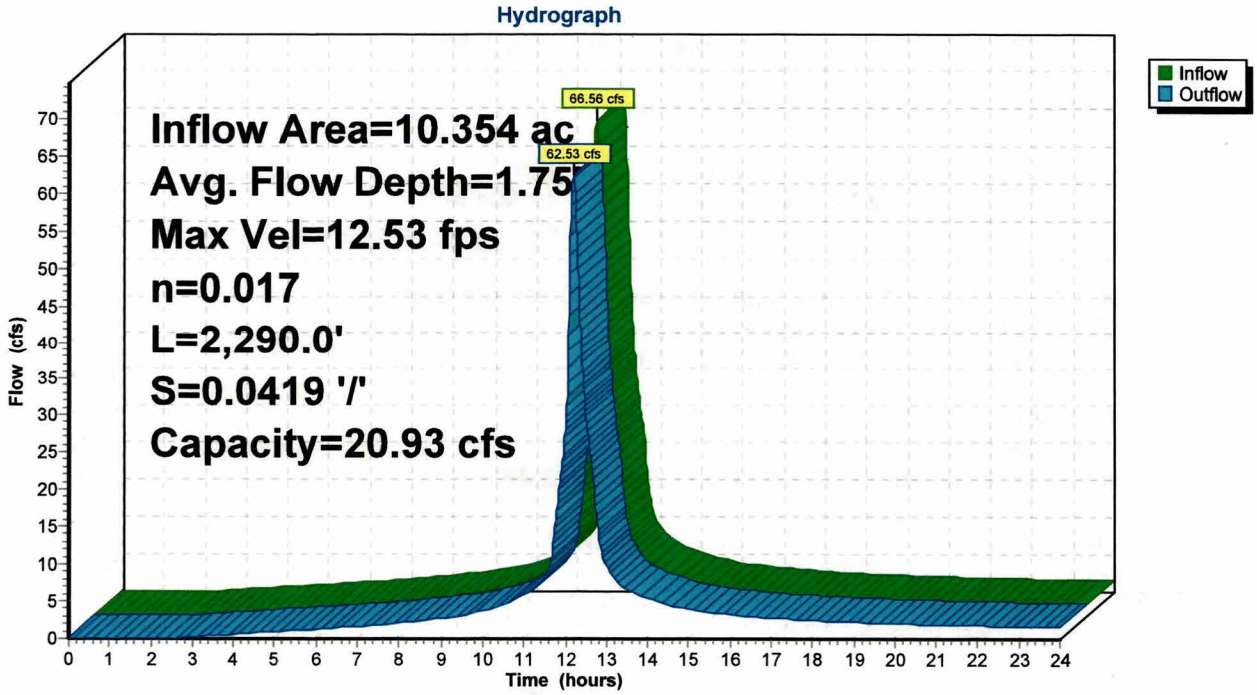
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 12.53 fps, Min. Travel Time= 3.0 min
Avg. Velocity = 6.17 fps, Avg. Travel Time= 6.2 min

Peak Storage= 11,431 cf @ 12.16 hrs
Average Depth at Peak Storage= 1.75'
Bank-Full Depth= 1.00' Flow Area= 2.0 sf, Capacity= 20.93 cfs

0.00' x 1.00' deep channel, n= 0.017 Concrete, unfinished
Side Slope Z-value= 2.0 '/' Top Width= 4.00'
Length= 2,290.0' Slope= 0.0419 '/'
Inlet Invert= 468.00', Outlet Invert= 372.00'



Reach R5: Concrete Channel



Summary for Reach R6: Concrete Channel

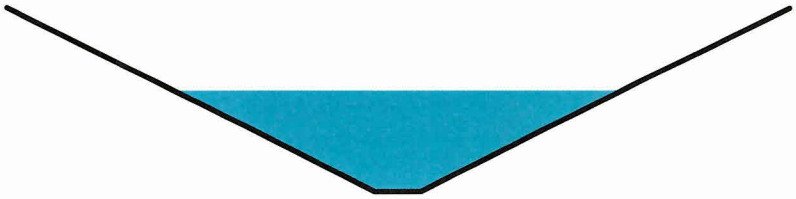
[79] Warning: Submerged Pond C2 Primary device # 1 INLET by 1.68'
[81] Warning: Exceeded Pond C3 by 25.50' @ 0.00 hrs
[81] Warning: Exceeded Pond C3 by 25.50' @ 0.00 hrs

Inflow Area = 67.426 ac, 2.08% Impervious, Inflow Depth > 7.64" for 10-yr event
Inflow = 321.36 cfs @ 12.23 hrs, Volume= 42.904 af
Outflow = 321.21 cfs @ 12.24 hrs, Volume= 42.894 af, Atten= 0%, Lag= 0.4 min

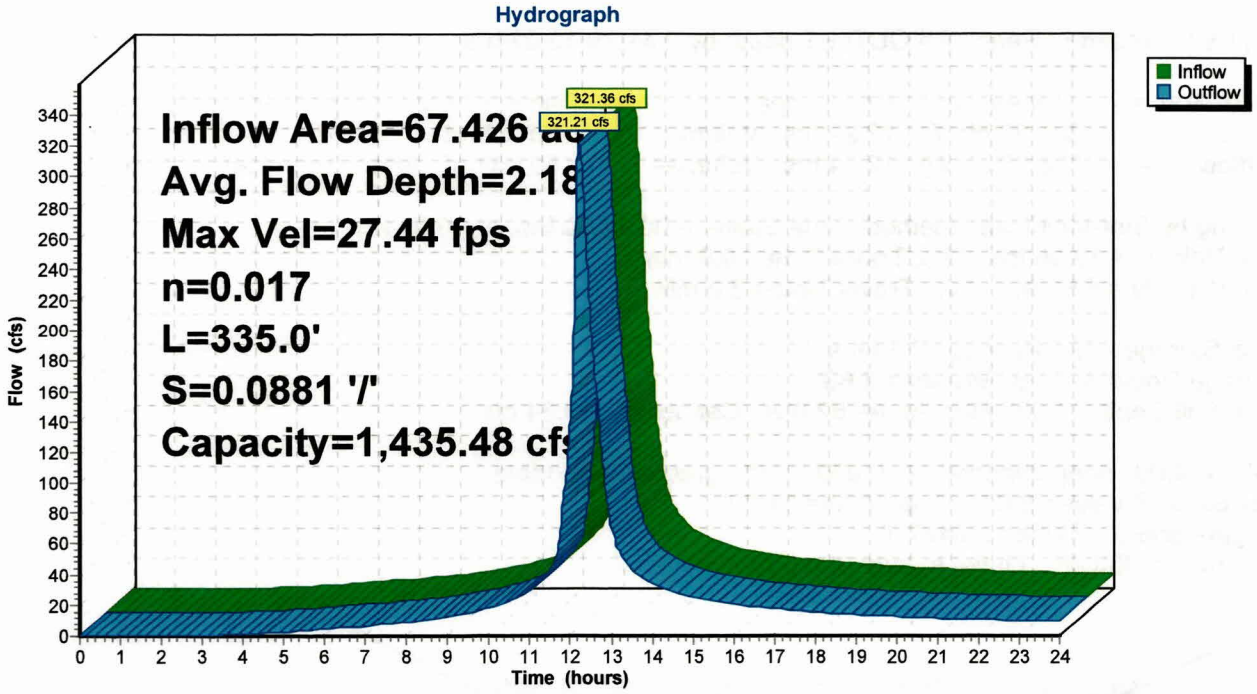
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 27.44 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 12.13 fps, Avg. Travel Time= 0.5 min

Peak Storage= 3,922 cf @ 12.23 hrs
Average Depth at Peak Storage= 2.18'
Bank-Full Depth= 4.00' Flow Area= 36.0 sf, Capacity= 1,435.48 cfs

1.00' x 4.00' deep channel, n= 0.017 Concrete, unfinished
Side Slope Z-value= 2.0 '/' Top Width= 17.00'
Length= 335.0' Slope= 0.0881 '/'
Inlet Invert= 387.50', Outlet Invert= 358.00'



Reach R6: Concrete Channel



Summary for Reach R7: Earth Channel

[62] Hint: Exceeded Reach R6 OUTLET depth by 0.41' @ 12.22 hrs

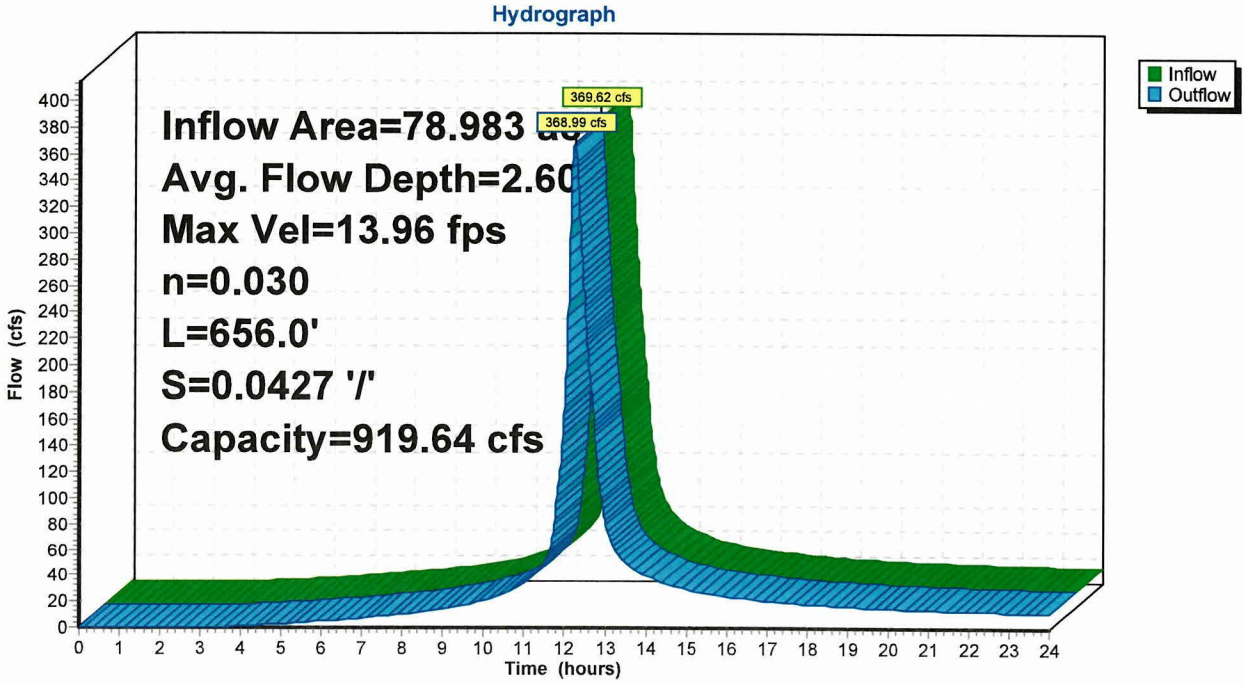
Inflow Area = 78.983 ac, 2.18% Impervious, Inflow Depth > 7.61" for 10-yr event
Inflow = 369.62 cfs @ 12.22 hrs, Volume= 50.108 af
Outflow = 368.99 cfs @ 12.24 hrs, Volume= 50.061 af, Atten= 0%, Lag= 1.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 13.96 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 5.52 fps, Avg. Travel Time= 2.0 min

Peak Storage= 17,349 cf @ 12.23 hrs
Average Depth at Peak Storage= 2.60'
Bank-Full Depth= 4.00' Flow Area= 52.0 sf, Capacity= 919.64 cfs

5.00' x 4.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 2.0 '/' Top Width= 21.00'
Length= 656.0' Slope= 0.0427 '/'
Inlet Invert= 358.00', Outlet Invert= 330.00'

Reach R7: Earth Channel



Summary for Reach R8: Rip-Rap Downchute

Inflow Area = 0.857 ac, 0.00% Impervious, Inflow Depth > 7.88" for 10-yr event
Inflow = 5.15 cfs @ 12.11 hrs, Volume= 0.563 af
Outflow = 5.14 cfs @ 12.11 hrs, Volume= 0.563 af, Atten= 0%, Lag= 0.4 min

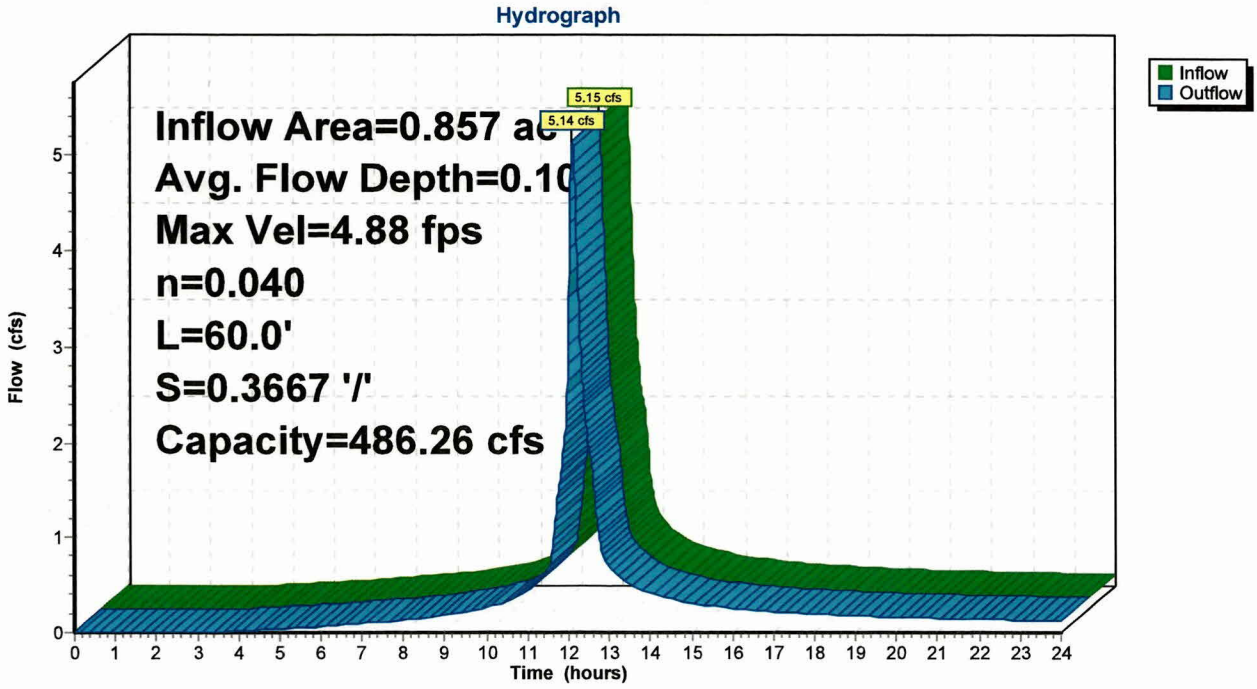
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.88 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.60 fps, Avg. Travel Time= 0.6 min

Peak Storage= 63 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.10'
Bank-Full Depth= 1.50' Flow Area= 19.5 sf, Capacity= 486.26 cfs

10.00' x 1.50' deep channel, n= 0.040 Earth, cobble bottom, clean sides
Side Slope Z-value= 2.0 '/' Top Width= 16.00'
Length= 60.0' Slope= 0.3667 '/'
Inlet Invert= 340.00', Outlet Invert= 318.00'

‡

Reach R8: Rip-Rap Downchute



Summary for Reach R9: Earth Channel

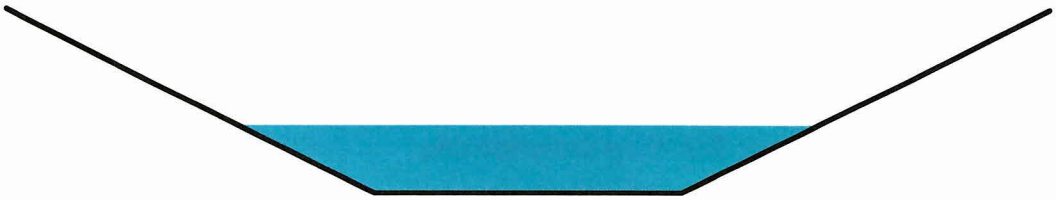
[62] Hint: Exceeded Reach R8 OUTLET depth by 11.14' @ 12.23 hrs
[79] Warning: Submerged Pond C4 Primary device # 1 OUTLET by 2.23'

Inflow Area = 101.328 ac, 2.22% Impervious, Inflow Depth > 7.72" for 10-yr event
Inflow = 480.71 cfs @ 12.22 hrs, Volume= 65.180 af
Outflow = 480.40 cfs @ 12.23 hrs, Volume= 65.155 af, Atten= 0%, Lag= 0.5 min

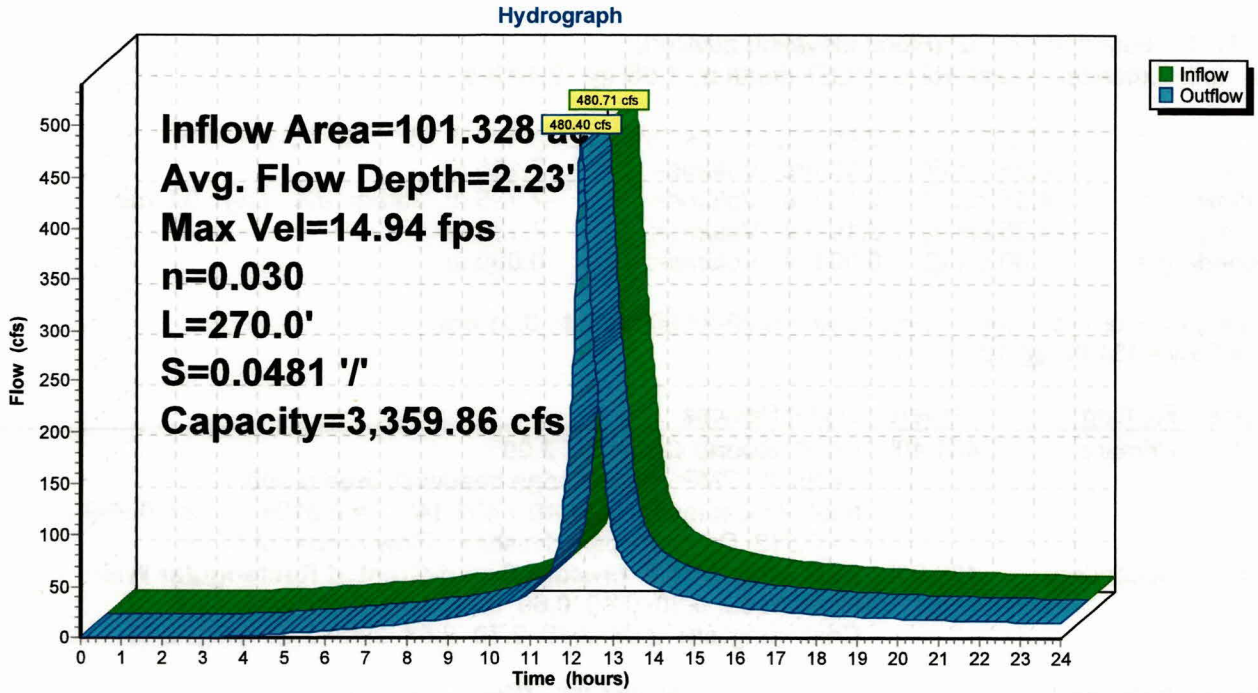
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 14.94 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 5.38 fps, Avg. Travel Time= 0.8 min

Peak Storage= 8,684 cf @ 12.23 hrs
Average Depth at Peak Storage= 2.23'
Bank-Full Depth= 6.00' Flow Area= 132.0 sf, Capacity= 3,359.86 cfs

10.00' x 6.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 2.0 '/' Top Width= 34.00'
Length= 270.0' Slope= 0.0481 '/'
Inlet Invert= 327.00', Outlet Invert= 314.00'



Reach R9: Earth Channel



Summary for Pond C1: (2) 48" RCP

[57] Hint: Peaked at 434.02' (Flood elevation advised)
[62] Hint: Exceeded Reach R2 OUTLET depth by 1.68' @ 12.10 hrs

Inflow Area =	10.062 ac,	4.32% Impervious,	Inflow Depth >	8.51"	for 10-yr event
Inflow =	74.35 cfs @	12.10 hrs,	Volume=	7.135 af	
Outflow =	74.35 cfs @	12.10 hrs,	Volume=	7.135 af,	Atten= 0%, Lag= 0.0 min
Primary =	74.35 cfs @	12.10 hrs,	Volume=	7.135 af	
Secondary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

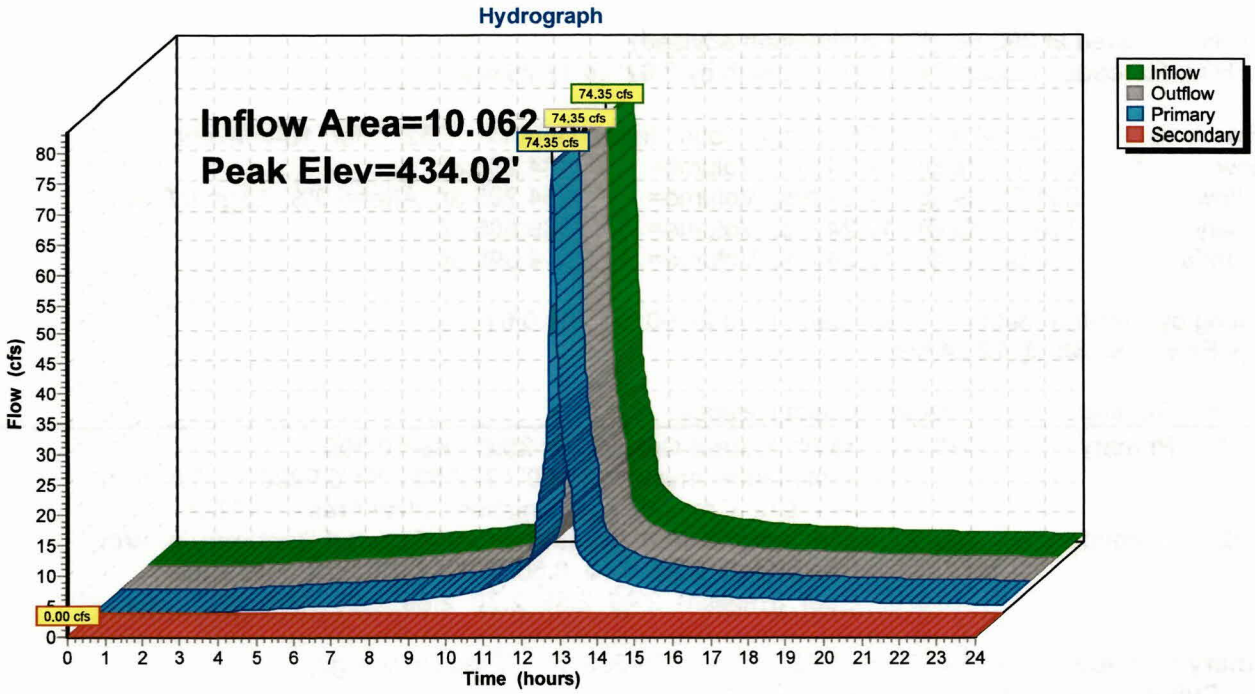
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 434.02' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	431.40'	**48.0" Round Culvert X 2.00** L= 25.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 431.40' / 431.14' S= 0.0104 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 12.57 sf
#2	Secondary	436.00'	**25.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=74.21 cfs @ 12.10 hrs HW=434.02' (Free Discharge)
└**1=Culvert** (Barrel Controls 74.21 cfs @ 6.05 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=431.40' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond C1: (2) 48" RCP



Summary for Pond C2: 48" RCP

[57] Hint: Peaked at 393.88' (Flood elevation advised)
[62] Hint: Exceeded Reach R4 OUTLET depth by 3.62' @ 12.25 hrs

Inflow Area =	54.594 ac,	2.36% Impervious,	Inflow Depth >	7.52"	for 10-yr event
Inflow =	254.71 cfs @	12.24 hrs,	Volume=	34.205 af	
Outflow =	254.71 cfs @	12.24 hrs,	Volume=	34.205 af,	Atten= 0%, Lag= 0.0 min
Primary =	119.11 cfs @	12.24 hrs,	Volume=	29.506 af	
Secondary =	135.60 cfs @	12.24 hrs,	Volume=	4.699 af	

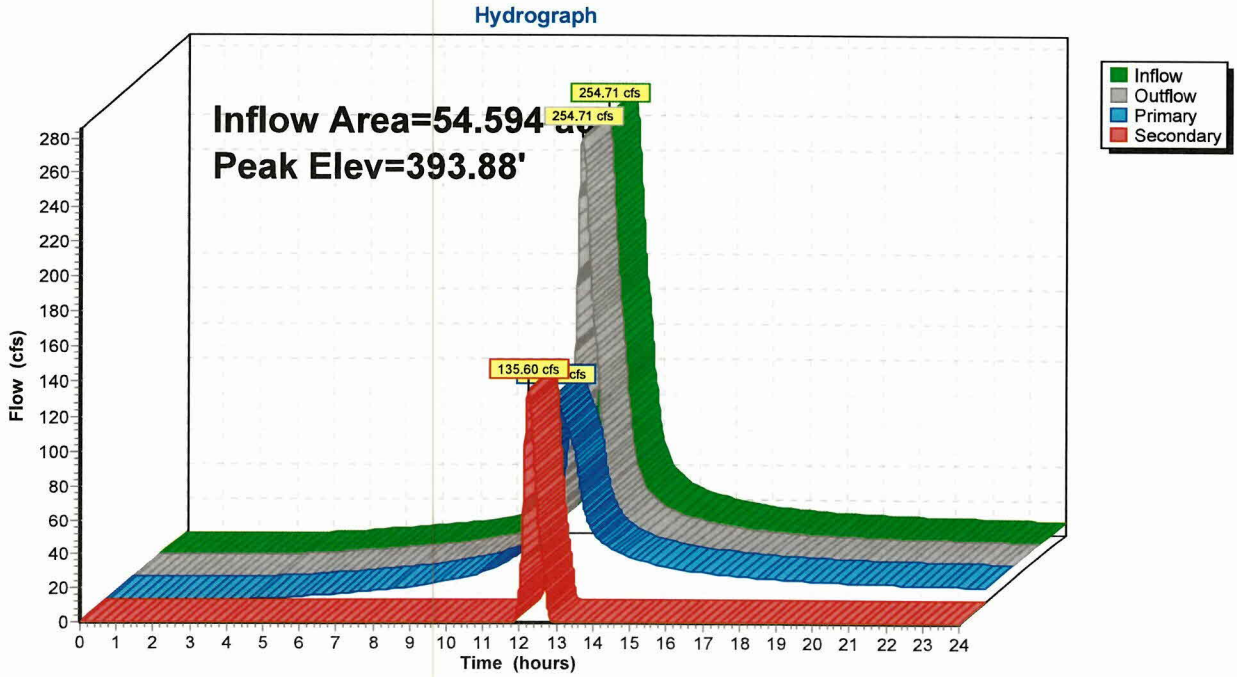
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 393.88' @ 12.24 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	388.00'	**48.0" Round Culvert** L= 25.0' Ke= 0.500 Inlet / Outlet Invert= 388.00' / 387.50' S= 0.0200 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 12.57 sf
#2	Secondary	392.00'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=119.10 cfs @ 12.24 hrs HW=393.87' (Free Discharge)
└**1=Culvert** (Inlet Controls 119.10 cfs @ 9.48 fps)

Secondary OutFlow Max=135.54 cfs @ 12.24 hrs HW=393.87' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 135.54 cfs @ 3.61 fps)

Pond C2: 48" RCP



Summary for Pond C3: 48" RCP

[57] Hint: Peaked at 373.11' (Flood elevation advised)
[61] Hint: Exceeded Reach R5 outlet invert by 1.11' @ 12.21 hrs

Inflow Area =	10.354 ac,	0.00% Impervious,	Inflow Depth >	8.75"	for 10-yr event
Inflow =	62.53 cfs @	12.21 hrs,	Volume=	7.549 af	
Outflow =	62.53 cfs @	12.21 hrs,	Volume=	7.549 af,	Atten= 0%, Lag= 0.0 min
Primary =	60.43 cfs @	12.21 hrs,	Volume=	7.529 af	
Secondary =	2.10 cfs @	12.21 hrs,	Volume=	0.020 af	

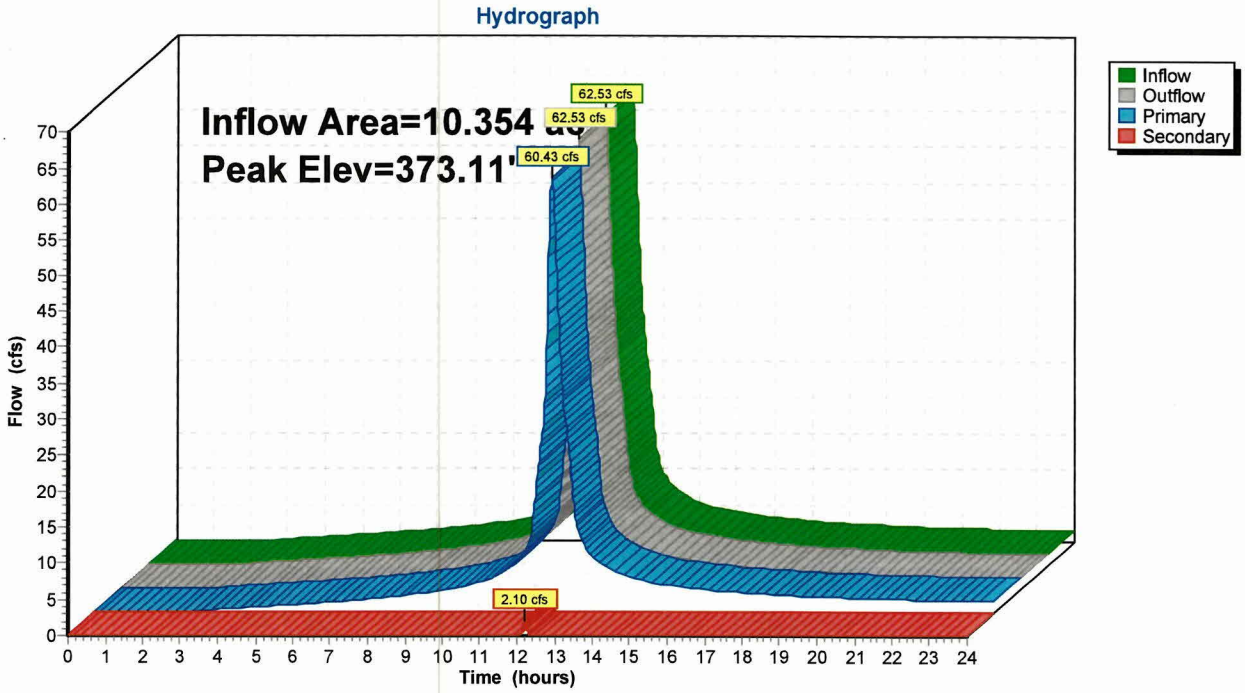
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 373.11' @ 12.21 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	362.00'	**48.0" Round Culvert** L= 100.0' Ke= 0.500 Inlet / Outlet Invert= 362.00' / 361.10' S= 0.0090 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 12.57 sf
#2	Device 1	372.00'	**60.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Secondary	373.00'	**20.0' long x 15.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=60.40 cfs @ 12.21 hrs HW=373.11' (Free Discharge)
└─**1=Culvert** (Passes 60.40 cfs of 182.67 cfs potential flow)
  └─**2=Orifice/Grate** (Weir Controls 60.40 cfs @ 3.45 fps)

Secondary OutFlow Max=2.07 cfs @ 12.21 hrs HW=373.11' (Free Discharge)
└─**3=Broad-Crested Rectangular Weir** (Weir Controls 2.07 cfs @ 0.91 fps)

Pond C3: 48" RCP



Summary for Pond C4: (2) 48" RCP

[57] Hint: Peaked at 338.95' (Flood elevation advised)
[62] Hint: Exceeded Reach R7 OUTLET depth by 6.36' @ 12.25 hrs

Inflow Area =	78.983 ac,	2.18% Impervious,	Inflow Depth >	7.61"	for 10-yr event
Inflow =	368.99 cfs @	12.24 hrs,	Volume=	50.061 af	
Outflow =	368.99 cfs @	12.24 hrs,	Volume=	50.061 af,	Atten= 0%, Lag= 0.0 min
Primary =	319.09 cfs @	12.24 hrs,	Volume=	49.412 af	
Secondary =	49.90 cfs @	12.24 hrs,	Volume=	0.650 af	

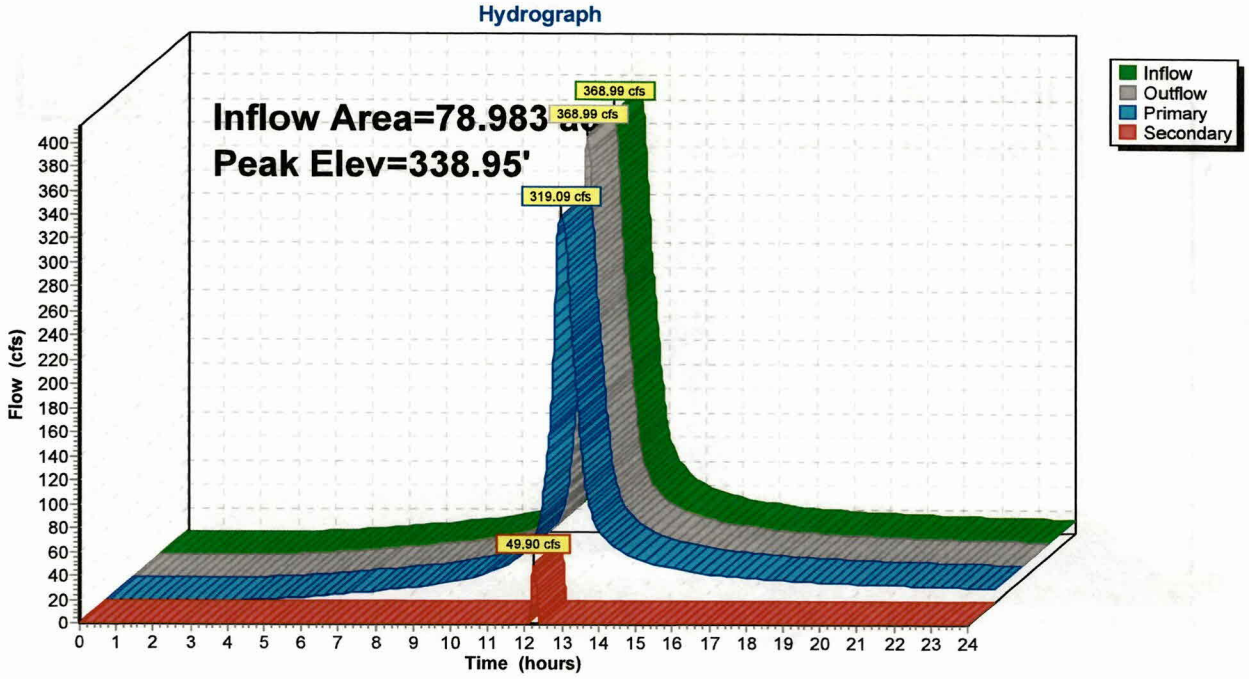
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 338.95' @ 12.24 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	330.00'	**48.0" Round Culvert X 2.00** L= 150.0' Ke= 0.500 Inlet / Outlet Invert= 330.00' / 327.00' S= 0.0200 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 12.57 sf
#2	Secondary	338.00'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=319.06 cfs @ 12.24 hrs HW=338.95' (Free Discharge)
└**1=Culvert** (Inlet Controls 319.06 cfs @ 12.69 fps)

Secondary OutFlow Max=49.79 cfs @ 12.24 hrs HW=338.95' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 49.79 cfs @ 2.62 fps)

Pond C4: (2) 48" RCP



Summary for Pond C5: 30" HDPE

[57] Hint: Peaked at 350.90' (Flood elevation advised)

Inflow Area =	0.857 ac,	0.00% Impervious,	Inflow Depth >	7.88"	for 10-yr event
Inflow =	5.15 cfs @	12.11 hrs,	Volume=	0.563 af	
Outflow =	5.15 cfs @	12.11 hrs,	Volume=	0.563 af,	Atten= 0%, Lag= 0.0 min
Primary =	5.15 cfs @	12.11 hrs,	Volume=	0.563 af	
Secondary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

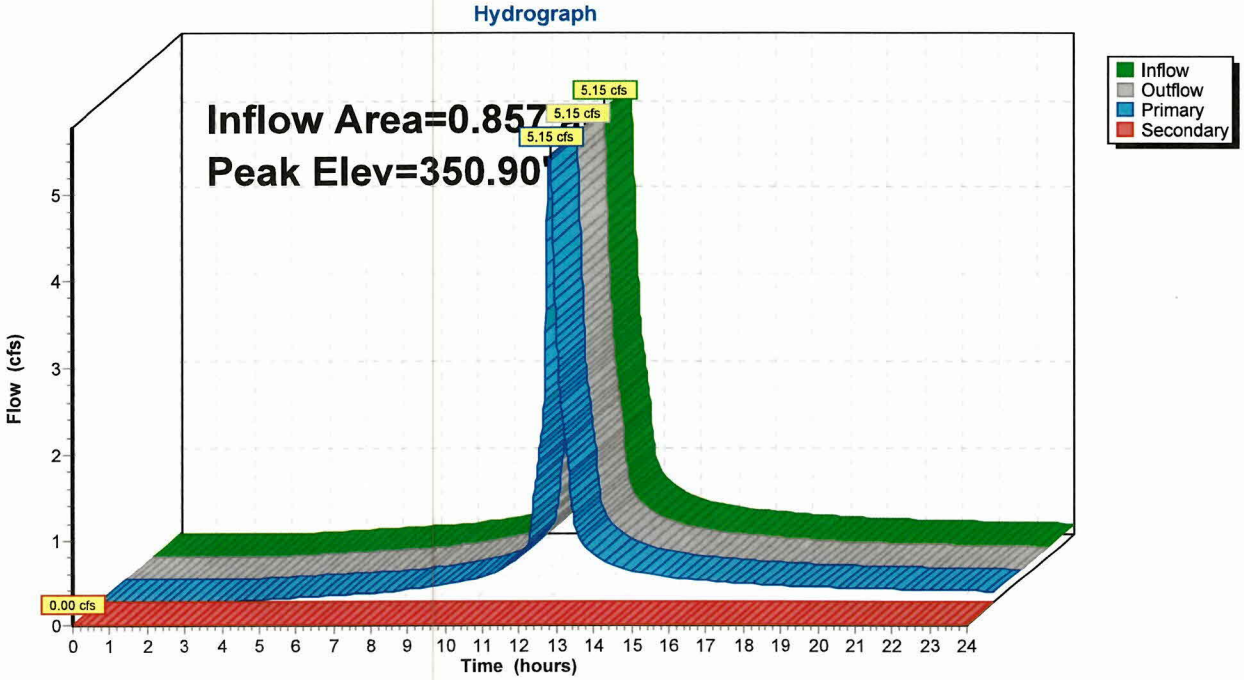
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 350.90' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	350.00'	**30.0" Round Culvert** L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 350.00' / 346.00' S= 0.0800 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf
#2	Secondary	353.00'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=5.14 cfs @ 12.11 hrs HW=350.90' (Free Discharge)
└**1=Culvert** (Inlet Controls 5.14 cfs @ 3.23 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=350.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Pond C5: 30" HDPE



Summary for Pond C6: 36" CMP

[57] Hint: Peaked at 273.71' (Flood elevation advised)
[62] Hint: Exceeded Reach R12 OUTLET depth by 3.19' @ 14.77 hrs

Inflow Area =	185.310 ac,	0.00% Impervious,	Inflow Depth >	5.25"	for 10-yr event
Inflow =	421.39 cfs @	12.70 hrs,	Volume=	81.147 af	
Outflow =	421.39 cfs @	12.70 hrs,	Volume=	81.147 af,	Atten= 0%, Lag= 0.0 min
Primary =	67.00 cfs @	12.70 hrs,	Volume=	47.601 af	
Secondary =	354.39 cfs @	12.70 hrs,	Volume=	33.546 af	

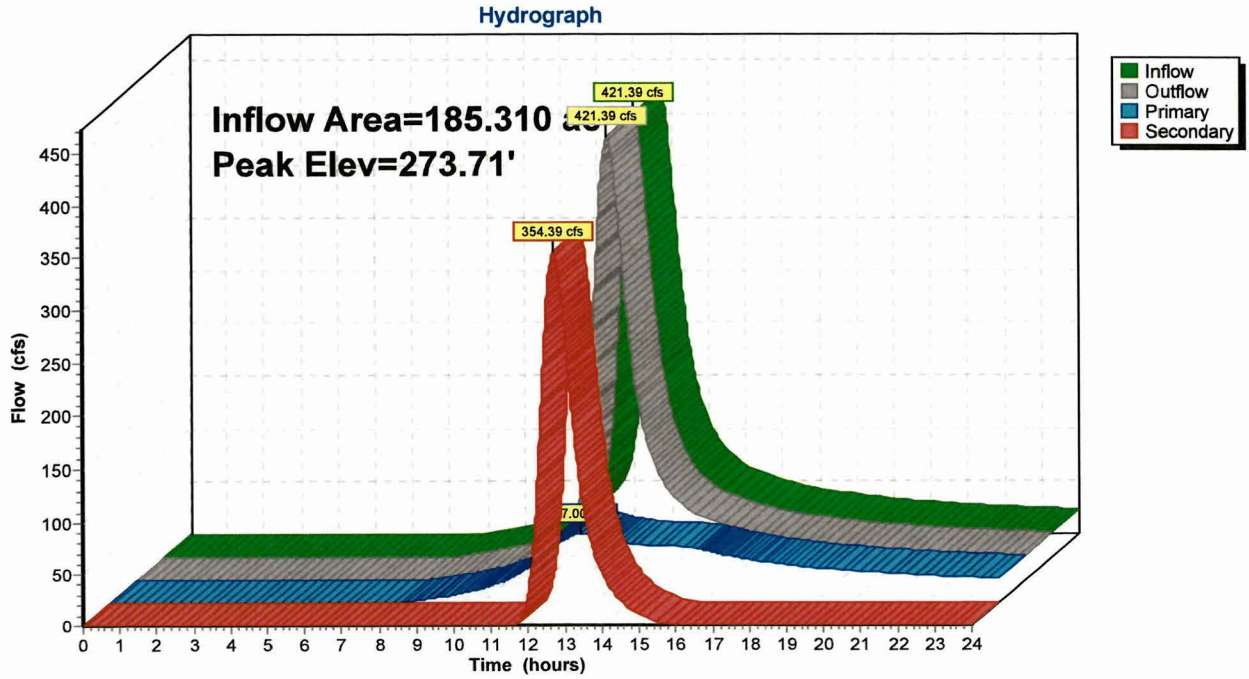
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 273.71' @ 12.70 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	268.00'	**36.0" Round Culvert** L= 70.0' Ke= 0.500 Inlet / Outlet Invert= 268.00' / 266.00' S= 0.0286 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 7.07 sf
#2	Secondary	272.00'	**60.0' long x 40.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=67.00 cfs @ 12.70 hrs HW=273.71' (Free Discharge)
└**1=Culvert** (Barrel Controls 67.00 cfs @ 9.48 fps)

Secondary OutFlow Max=354.35 cfs @ 12.70 hrs HW=273.71' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 354.35 cfs @ 3.44 fps)

Pond C6: 36" CMP



Summary for Pond C7: 24"x32" CMP

[57] Hint: Peaked at 280.34' (Flood elevation advised)
[62] Hint: Exceeded Reach R11 OUTLET depth by 4.19' @ 12.78 hrs

Inflow Area =	185.310 ac,	0.00% Impervious,	Inflow Depth >	5.26"	for 10-yr event
Inflow =	421.45 cfs @	12.69 hrs,	Volume=	81.193 af	
Outflow =	421.45 cfs @	12.69 hrs,	Volume=	81.193 af,	Atten= 0%, Lag= 0.0 min
Primary =	44.94 cfs @	12.69 hrs,	Volume=	39.228 af	
Secondary =	376.51 cfs @	12.69 hrs,	Volume=	41.965 af	

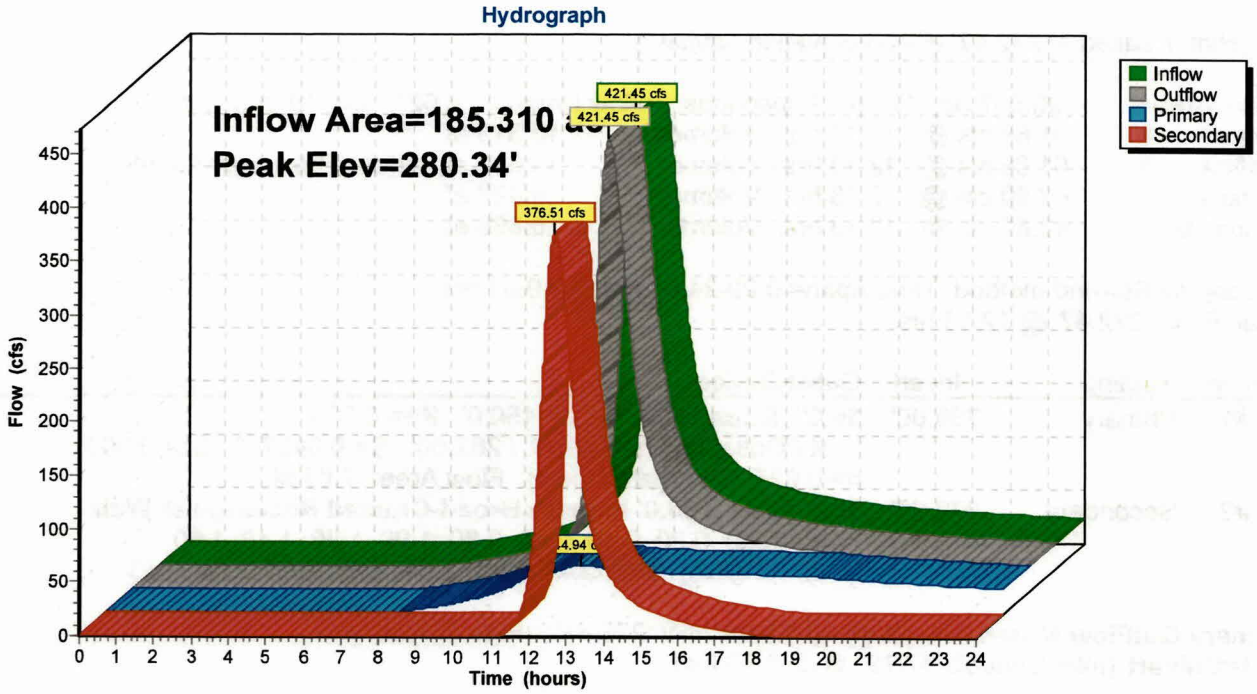
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 280.34' @ 12.69 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	274.00'	**34.0" W x 22.0" H, R=24.9" Elliptical RCP_Elliptical 34x22** L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 274.00' / 272.00' S= 0.0400 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 4.12 sf
#2	Secondary	278.00'	**40.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=44.94 cfs @ 12.69 hrs HW=280.34' (Free Discharge)
└─**1=RCP_Elliptical 34x22** (Barrel Controls 44.94 cfs @ 10.91 fps)

Secondary OutFlow Max=376.50 cfs @ 12.69 hrs HW=280.34' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 376.50 cfs @ 4.02 fps)

Pond C7: 24"x32" CMP



Summary for Pond C8: 36" CMP

[57] Hint: Peaked at 272.47' (Flood elevation advised)

Inflow Area =	20.557 ac,	17.50% Impervious,	Inflow Depth >	6.02"	for 10-yr event
Inflow =	91.68 cfs @	12.13 hrs,	Volume=	10.313 af	
Outflow =	91.68 cfs @	12.13 hrs,	Volume=	10.313 af,	Atten= 0%, Lag= 0.0 min
Primary =	47.80 cfs @	12.13 hrs,	Volume=	9.427 af	
Secondary =	43.87 cfs @	12.13 hrs,	Volume=	0.886 af	

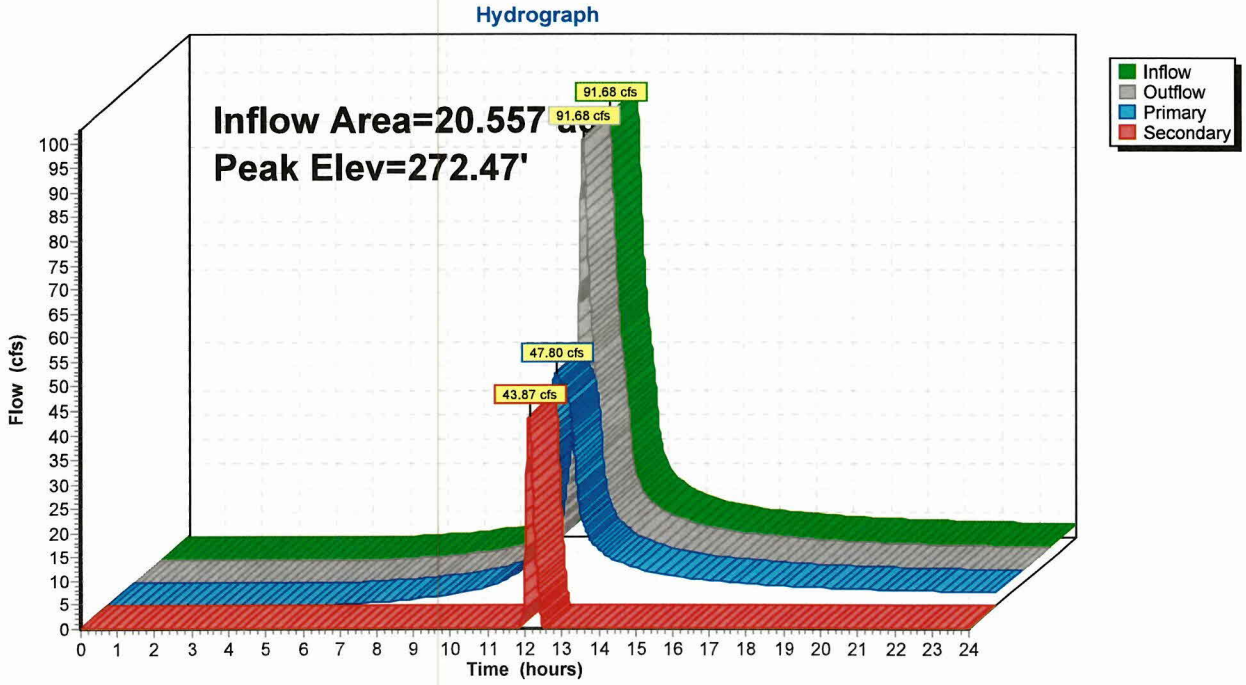
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 272.47' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	269.00'	**36.0" Round Culvert** L= 150.0' Ke= 0.500 Inlet / Outlet Invert= 269.00' / 262.00' S= 0.0467 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 7.07 sf
#2	Secondary	272.00'	**50.0' long x 50.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=47.79 cfs @ 12.13 hrs HW=272.47' (Free Discharge)
└**1=Culvert** (Inlet Controls 47.79 cfs @ 6.76 fps)

Secondary OutFlow Max=43.77 cfs @ 12.13 hrs HW=272.47' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 43.77 cfs @ 1.85 fps)

Pond C8: 36" CMP



Summary for Pond P1: Outfall Pond

[81] Warning: Exceeded Pond P2 by 1.26' @ 19.98 hrs

Inflow Area =	318.110 ac,	2.07% Impervious,	Inflow Depth >	5.70"	for 10-yr event
Inflow =	653.04 cfs @	12.54 hrs,	Volume=	150.995 af	
Outflow =	652.61 cfs @	12.56 hrs,	Volume=	142.792 af,	Atten= 0%, Lag= 1.4 min
Primary =	55.85 cfs @	12.56 hrs,	Volume=	62.322 af	
Secondary =	596.77 cfs @	12.56 hrs,	Volume=	80.471 af	

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 253.62' @ 12.56 hrs Surf.Area= 0.000 ac Storage= 11.296 af

Plug-Flow detention time= 50.2 min calculated for 142.792 af (95% of inflow)
Center-of-Mass det. time= 21.9 min (903.5 - 881.7)

Volume	Invert	Avail.Storage	Storage Description
#1	236.00'	16.166 af	**Custom Stage Data**Listed below

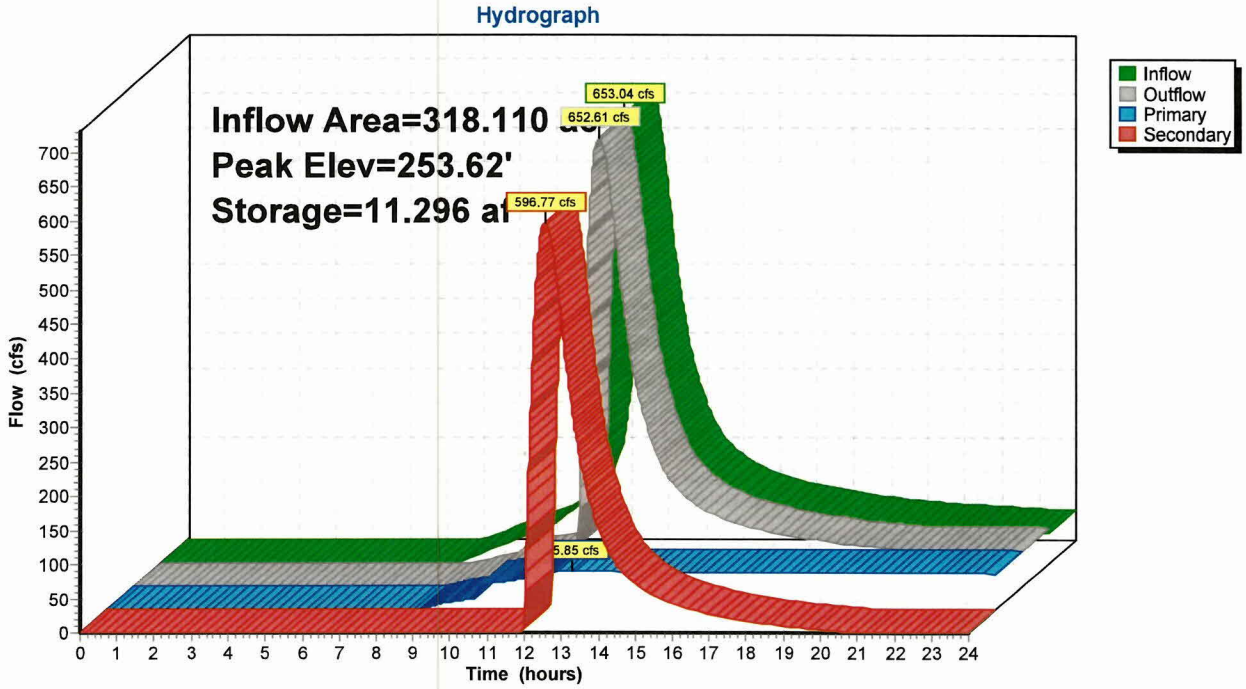
Elevation (feet)	Cum.Store (acre-feet)
236.00	0.000
238.00	0.754
240.00	1.601
242.00	2.547
244.00	3.641
246.00	4.912
248.00	6.340
250.00	7.937
252.00	9.713
254.00	11.665
256.00	13.800
258.00	16.166

Device	Routing	Invert	Outlet Devices
#1	Primary	233.35'	**16.0" Round Culvert X 2.00** L= 150.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 233.35' / 223.04' S= 0.0687 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.40 sf
#2	Device 1	241.00'	**60.0" Horiz. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#3	Secondary	252.00'	**100.0' long x 2.0' 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 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#4	Device 1	236.00'	**4.0" Vert. Orifice/Grate X 6.00** C= 0.600
#5	Device 1	236.50'	**4.0" Vert. Orifice/Grate X 6.00** C= 0.600
#6	Device 1	237.00'	**4.0" Vert. Orifice/Grate X 6.00** C= 0.600

Primary OutFlow Max=55.85 cfs @ 12.56 hrs HW=253.62' (Free Discharge)
└─**1=Culvert** (Barrel Controls 55.85 cfs @ 20.00 fps)
  ├─**2=Orifice/Grate** (Passes < 671.75 cfs potential flow)
  ├─**4=Orifice/Grate** (Passes < 10.53 cfs potential flow)
  ├─**5=Orifice/Grate** (Passes < 10.38 cfs potential flow)
  └─**6=Orifice/Grate** (Passes < 10.23 cfs potential flow)

Secondary OutFlow Max=596.48 cfs @ 12.56 hrs HW=253.62' (Free Discharge)
└─**3=Broad-Crested Rectangular Weir** (Weir Controls 596.48 cfs @ 3.68 fps)

Pond P1: Outfall Pond



Summary for Pond P2: Sedimentation Pond

Inflow Area = 318.110 ac, 2.07% Impervious, Inflow Depth > 6.18" for 10-yr event
Inflow = 809.84 cfs @ 12.35 hrs, Volume= 163.737 af
Outflow = 772.57 cfs @ 12.54 hrs, Volume= 159.474 af, Atten= 5%, Lag= 11.5 min
Primary = 653.04 cfs @ 12.54 hrs, Volume= 150.995 af
Secondary = 119.52 cfs @ 12.54 hrs, Volume= 8.479 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 254.08' @ 12.54 hrs Surf.Area= 0.000 ac Storage= 13.788 af

Plug-Flow detention time= 33.7 min calculated for 159.474 af (97% of inflow)
Center-of-Mass det. time= 19.1 min (875.3 - 856.2)

Volume	Invert	Avail.Storage	Storage Description
#1	248.00'	26.940 af	**Custom Stage Data**Listed below

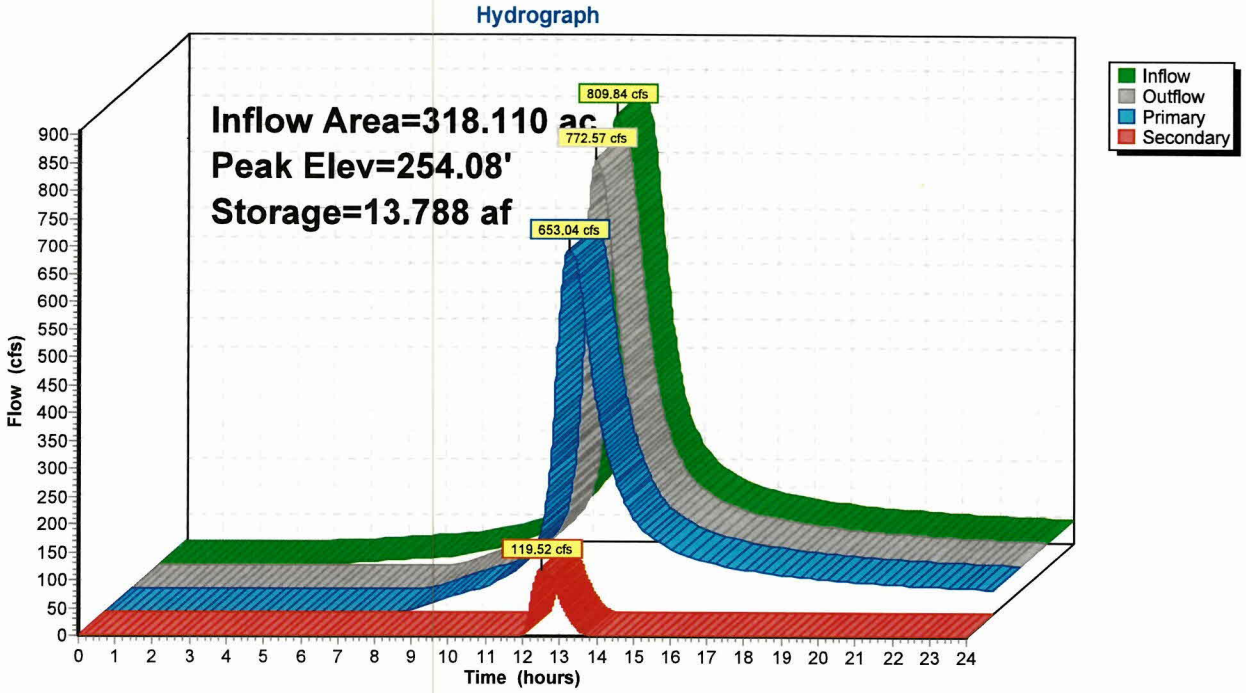
Elevation (feet)	Cum.Store (acre-feet)
248.00	0.000
250.00	2.617
252.00	7.621
254.00	13.526
256.00	19.971
258.00	26.940

Device	Routing	Invert	Outlet Devices
#1	Primary	250.00'	**30.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Secondary	252.00'	**15.0' long x 5.0' 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) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=653.01 cfs @ 12.54 hrs HW=254.08' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 653.01 cfs @ 5.33 fps)

Secondary OutFlow Max=119.50 cfs @ 12.54 hrs HW=254.08' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 119.50 cfs @ 3.83 fps)

Pond P2: Sedimentation Pond

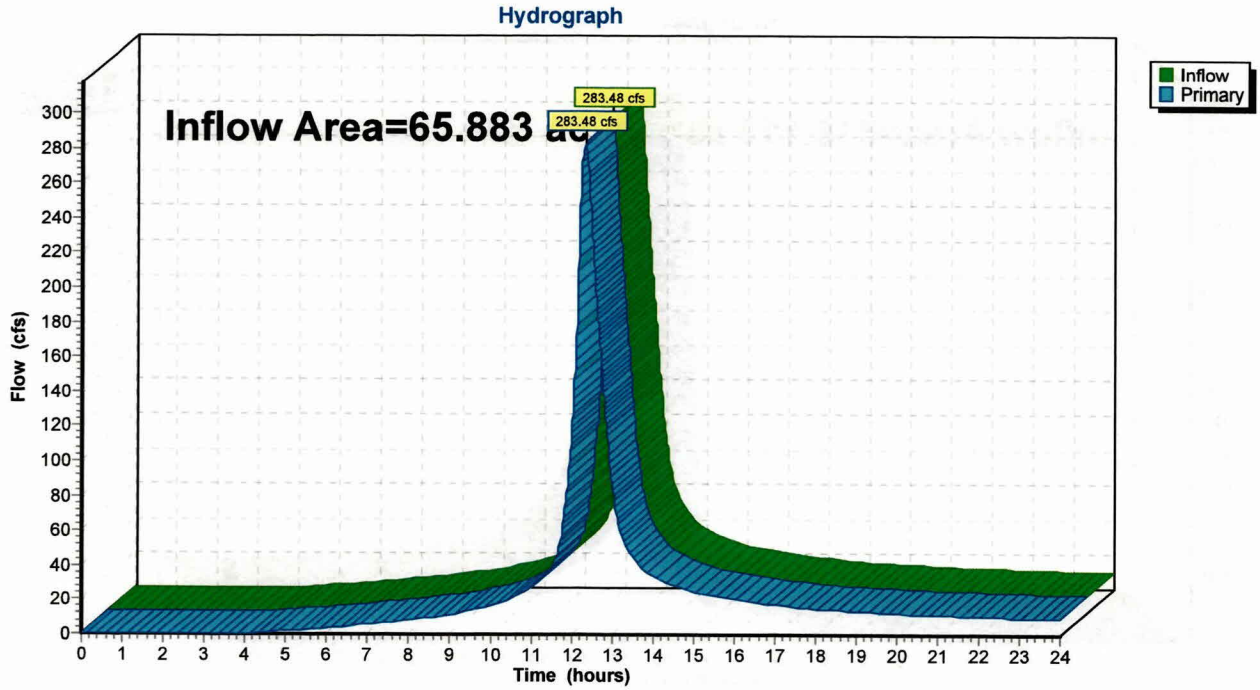


Summary for Link 1: Offsite Discharge

Inflow Area = 65.883 ac, 0.00% Impervious, Inflow Depth > 7.58" for 10-yr event
Inflow = 283.48 cfs @ 12.32 hrs, Volume= 41.616 af
Primary = 283.48 cfs @ 12.32 hrs, Volume= 41.616 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 1: Offsite Discharge

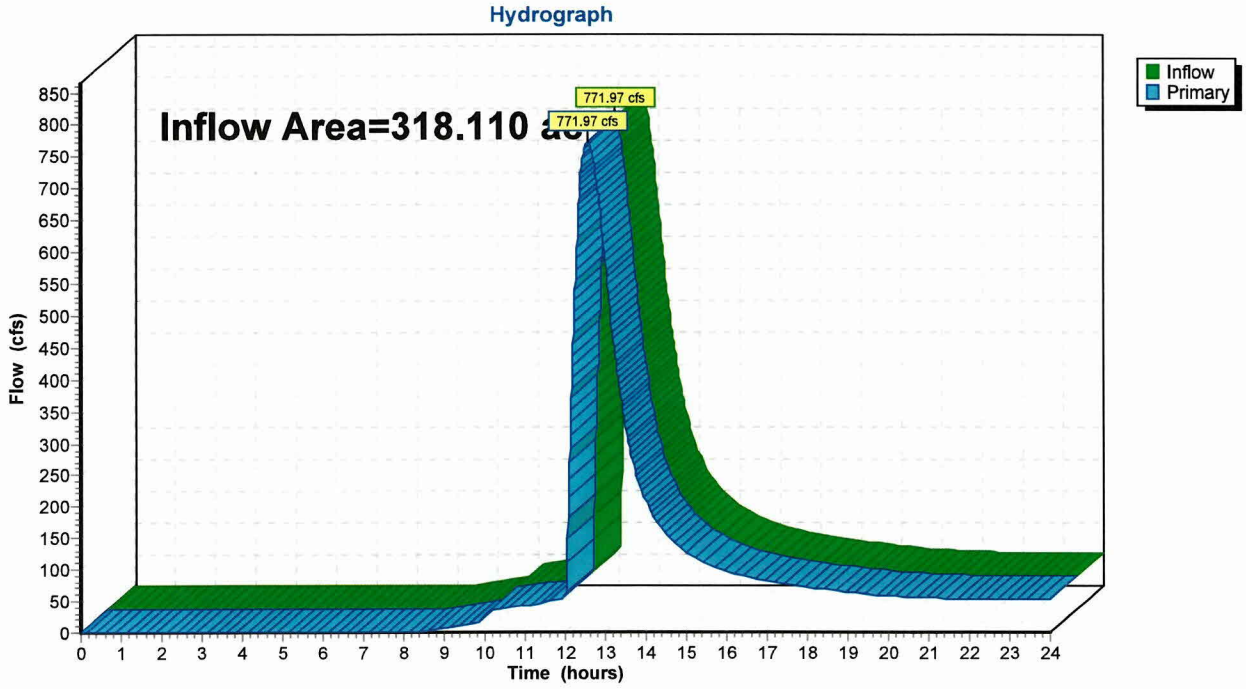


Summary for Link 2: Offsite Discharge

Inflow Area = 318.110 ac, 2.07% Impervious, Inflow Depth > 5.71" for 10-yr event
Inflow = 771.97 cfs @ 12.57 hrs, Volume= 151.272 af
Primary = 771.97 cfs @ 12.57 hrs, Volume= 151.272 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 2: Offsite Discharge



Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1A: 1A Runoff Area=65.883 ac 0.00% Impervious Runoff Depth>11.02"
Flow Length=3,924' Tc=25.1 min CN=78 Runoff=343.36 cfs 60.498 af

Subcatchment2A: 2A Runoff Area=10.915 ac 6.83% Impervious Runoff Depth>11.49"
Flow Length=1,341' Tc=11.6 min CN=81 Runoff=78.67 cfs 10.454 af

Subcatchment2B: 2B Runoff Area=20.557 ac 17.50% Impervious Runoff Depth>9.24"
Flow Length=1,340' Tc=13.3 min CN=66 Runoff=118.51 cfs 15.830 af

Subcatchment2C: 2C Runoff Area=20.311 ac 3.06% Impervious Runoff Depth>11.04"
Flow Length=1,818' Tc=18.6 min CN=78 Runoff=119.52 cfs 18.689 af

Subcatchment2D: 2G Runoff Area=21.488 ac 2.45% Impervious Runoff Depth>11.62"
Flow Length=2,515' Tc=15.4 min CN=82 Runoff=140.61 cfs 20.806 af

Subcatchment2E: 2E Runoff Area=0.857 ac 0.00% Impervious Runoff Depth>11.35"
Flow Length=386' Tc=11.5 min CN=80 Runoff=6.15 cfs 0.811 af

Subcatchment2F: 2F Runoff Area=185.310 ac 0.00% Impervious Runoff Depth>8.31"
Flow Length=4,928' Tc=48.4 min CN=61 Runoff=568.99 cfs 128.366 af

Subcatchment2G: 2G Runoff Area=11.557 ac 2.80% Impervious Runoff Depth>10.92"
Flow Length=1,614' Tc=11.2 min CN=77 Runoff=81.66 cfs 10.520 af

Subcatchment2H: 2H Runoff Area=2.478 ac 4.64% Impervious Runoff Depth>8.68"
Flow Length=1,345' Tc=35.1 min CN=63 Runoff=9.14 cfs 1.793 af

Subcatchment2I: 2I Runoff Area=10.354 ac 0.00% Impervious Runoff Depth>12.31"
Flow Length=2,796' Tc=11.9 min CN=87 Runoff=77.33 cfs 10.624 af

Subcatchment2J: 2J Runoff Area=10.062 ac 4.32% Impervious Runoff Depth>12.06"
Flow Length=1,496' Tc=6.9 min CN=85 Runoff=88.86 cfs 10.114 af

Subcatchment2K: 2K Runoff Area=24.221 ac 0.95% Impervious Runoff Depth>10.45"
Flow Length=1,628' Tc=20.5 min CN=74 Runoff=131.53 cfs 21.091 af

Reach O1: Emergency Spillway Avg. Flow Depth=4.10' Max Vel=14.62 fps Inflow=942.22 cfs 161.348 af
n=0.035 L=230.0' S=0.0348 '/' Capacity=563.00 cfs Outflow=942.16 cfs 161.320 af

Reach R1: Earthen Channel Avg. Flow Depth=0.84' Max Vel=10.85 fps Inflow=88.86 cfs 10.114 af
n=0.030 L=583.0' S=0.0787 '/' Capacity=914.58 cfs Outflow=87.87 cfs 10.100 af

Reach R10: Earth channel Avg. Flow Depth=3.45' Max Vel=13.93 fps Inflow=578.52 cfs 94.161 af
n=0.030 L=1,730.0' S=0.0312 '/' Capacity=1,285.55 cfs Outflow=571.48 cfs 93.933 af

Reach R11: Earth channel Avg. Flow Depth=2.53' Max Vel=14.87 fps Inflow=568.99 cfs 128.366 af
n=0.030 L=1,350.0' S=0.0415 '/' Capacity=781.41 cfs Outflow=567.86 cfs 128.092 af

Reach R12: Earthen Channel Avg. Flow Depth=3.23' Max Vel=10.70 fps Inflow=567.86 cfs 128.092 af
n=0.030 L=240.0' S=0.0167 '/' Capacity=495.31 cfs Outflow=567.71 cfs 128.025 af

Reach R13: Earth Bypass Channel Avg. Flow Depth=2.81' Max Vel=12.96 fps Inflow=343.36 cfs 60.498 af
n=0.022 L=740.0' S=0.0162 '/' Capacity=381.01 cfs Outflow=342.60 cfs 60.421 af

Reach R2: Geomembrane Channel Avg. Flow Depth=1.04' Max Vel=8.35 fps Inflow=87.87 cfs 10.100 af
n=0.013 L=392.0' S=0.0069 '/' Capacity=169.00 cfs Outflow=87.10 cfs 10.089 af

Reach R3: Rip-Rap Channel Avg. Flow Depth=4.21' Max Vel=3.35 fps Inflow=191.56 cfs 31.180 af
n=0.040 L=443.0' S=0.0026 '/' Capacity=276.84 cfs Outflow=189.10 cfs 31.100 af

Reach R4: Concrete Channel Avg. Flow Depth=2.44' Max Vel=21.49 fps Inflow=308.53 cfs 49.789 af
n=0.017 L=890.0' S=0.0472 '/' Capacity=1,050.84 cfs Outflow=308.15 cfs 49.751 af

Reach R5: Concrete Channel Avg. Flow Depth=1.93' Max Vel=12.70 fps Inflow=77.33 cfs 10.624 af
n=0.017 L=2,290.0' S=0.0419 '/' Capacity=20.93 cfs Outflow=72.68 cfs 10.594 af

Reach R6: Concrete Channel Avg. Flow Depth=2.36' Max Vel=28.74 fps Inflow=386.85 cfs 62.138 af
n=0.017 L=335.0' S=0.0881 '/' Capacity=1,435.48 cfs Outflow=386.70 cfs 62.125 af

Reach R7: Earth Channel Avg. Flow Depth=2.84' Max Vel=14.66 fps Inflow=445.79 cfs 72.644 af
n=0.030 L=656.0' S=0.0427 '/' Capacity=919.64 cfs Outflow=445.04 cfs 72.579 af

Reach R8: Rip-Rap Downchute Avg. Flow Depth=0.11' Max Vel=5.23 fps Inflow=6.15 cfs 0.811 af
n=0.040 L=60.0' S=0.3667 '/' Capacity=486.26 cfs Outflow=6.14 cfs 0.810 af

Reach R9: Earth Channel Avg. Flow Depth=2.46' Max Vel=15.77 fps Inflow=578.87 cfs 94.196 af
n=0.030 L=270.0' S=0.0481 '/' Capacity=3,359.86 cfs Outflow=578.52 cfs 94.161 af

Pond C1: (2) 48" RCP Peak Elev=434.28' Inflow=87.10 cfs 10.089 af
Primary=87.10 cfs 10.089 af Secondary=0.00 cfs 0.000 af Outflow=87.10 cfs 10.089 af

Pond C2: 48" RCP Peak Elev=394.29' Inflow=308.15 cfs 49.751 af
Primary=125.31 cfs 42.679 af Secondary=182.84 cfs 7.072 af Outflow=308.15 cfs 49.751 af

Pond C3: 48" RCP Peak Elev=373.20' Inflow=72.68 cfs 10.594 af
Primary=67.73 cfs 10.534 af Secondary=4.95 cfs 0.059 af Outflow=72.68 cfs 10.594 af

Pond C4: (2) 48" RCP Peak Elev=339.64' Inflow=445.04 cfs 72.579 af
Primary=334.42 cfs 70.535 af Secondary=110.62 cfs 2.044 af Outflow=445.04 cfs 72.579 af

Pond C5: 30" HDPE Peak Elev=350.99' Inflow=6.15 cfs 0.811 af
Primary=6.15 cfs 0.811 af Secondary=0.00 cfs 0.000 af Outflow=6.15 cfs 0.811 af

Pond C6: 36" CMP Peak Elev=274.15' Inflow=567.71 cfs 128.025 af
Primary=70.03 cfs 67.430 af Secondary=497.68 cfs 60.596 af Outflow=567.71 cfs 128.025 af

Pond C7: 24"x32" CMP Peak Elev=280.91' Inflow=567.86 cfs 128.092 af
Primary=46.86 cfs 49.588 af Secondary=521.00 cfs 78.503 af Outflow=567.86 cfs 128.092 af

Pond C8: 36" CMP Peak Elev=272.64' Inflow=118.51 cfs 15.830 af
Primary=49.78 cfs 14.134 af Secondary=68.73 cfs 1.695 af Outflow=118.51 cfs 15.830 af

Pond P1: Outfall Pond Peak Elev=253.92' Storage=11.585 af Inflow=817.65 cfs 228.348 af
Primary=56.13 cfs 72.141 af Secondary=760.94 cfs 146.357 af Outflow=817.06 cfs 218.499 af

Pond P2: SedimentationPond Peak Elev=254.74' Storage=15.914 af Inflow=1,040.31 cfs 248.241 af
Primary=817.65 cfs 228.348 af Secondary=181.45 cfs 14.990 af Outflow=999.10 cfs 243.339 af

Link 1: Offsite Discharge Inflow=342.60 cfs 60.421 af
Primary=342.60 cfs 60.421 af

Link 2: Offsite Discharge Inflow=998.29 cfs 233.462 af
Primary=998.29 cfs 233.462 af

Total Runoff Area = 383.993 ac Runoff Volume = 309.595 af Average Runoff Depth = 9.68"
98.28% Pervious = 377.397 ac 1.72% Impervious = 6.596 ac

Summary for Subcatchment 1A: 1A

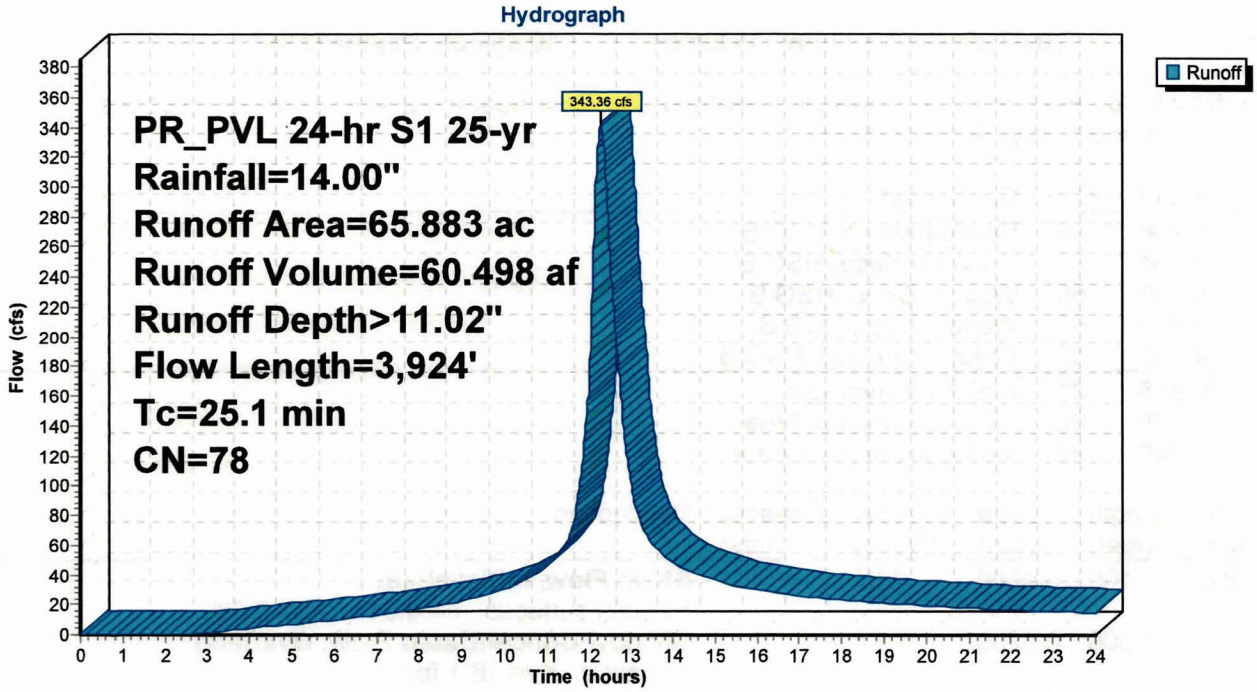
Runoff = 343.36 cfs @ 12.30 hrs, Volume= 60.498 af, Depth>11.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
PR_PVL 24-hr S1 25-yr Rainfall=14.00"

Area (ac)	CN	Description
0.000	98	Paved parking, HSG B
3.107	96	Gravel surface, HSG B
6.322	55	Woods, Good, HSG B
15.602	66	Woods, Poor, HSG B
34.942	86	Fallow, bare soil, HSG B
5.910	77	Woods, Good, HSG D
65.883	78	Weighted Average
65.883	78	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	100	0.2000	0.64		**Sheet Flow, Initial Sheet Flow** Range n= 0.130 P2= 5.68"
7.4	1,757	0.1560	3.95		**Shallow Concentrated Flow, Overland shallow concentrated flov** Nearly Bare & Untilled Kv= 10.0 fps
14.1	1,572	0.0700	1.85		**Shallow Concentrated Flow, Overland shallow concentrate ov** Kv= 7.0 fps
1.0	495	0.0182	8.55	188.11	**Channel Flow, Earthen by-pass channel** Area= 22.0 sf Perim= 15.2' r= 1.45' n= 0.030 Earth, grassed & winding
25.1	3,924	Total			

Subcatchment 1A: 1A



Summary for Subcatchment 2A: 2A

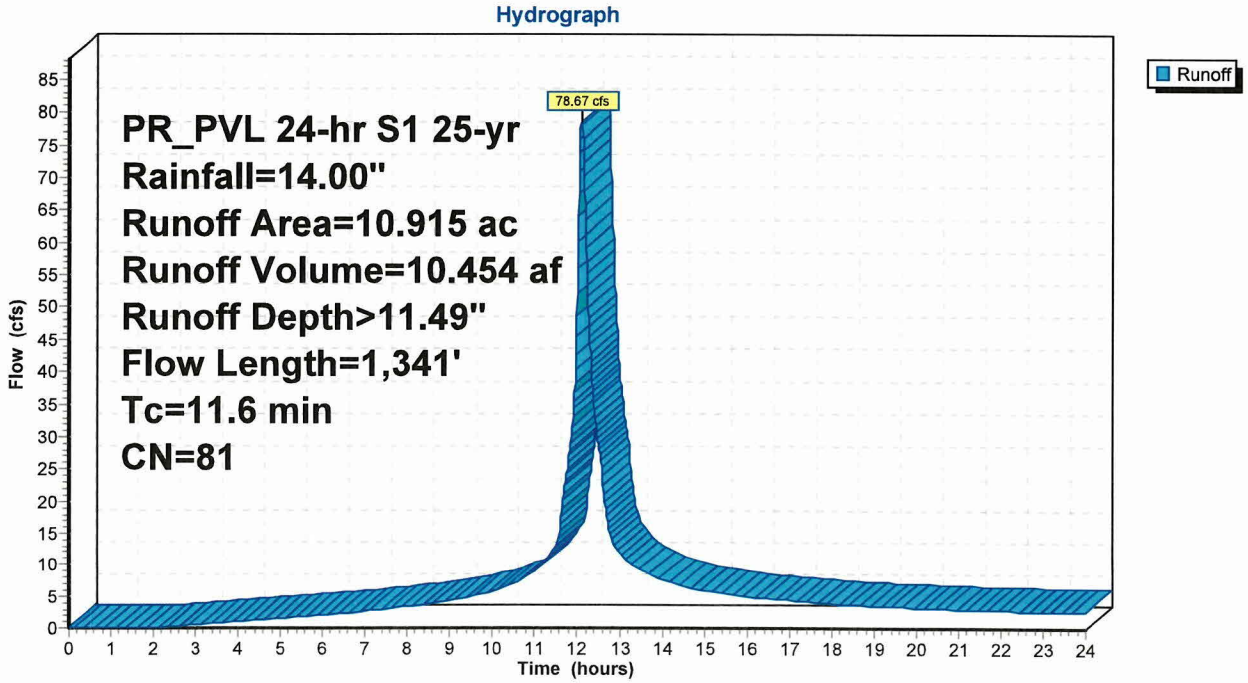
Runoff = 78.67 cfs @ 12.11 hrs, Volume= 10.454 af, Depth>11.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
PR_PVL 24-hr S1 25-yr Rainfall=14.00"

Area (ac)	CN	Description
0.746	98	Paved parking, HSG B
1.564	96	Gravel surface, HSG B
0.000	55	Woods, Good, HSG B
3.873	66	Woods, Poor, HSG B
4.732	86	Fallow, bare soil, HSG B
10.915	81	Weighted Average
10.169	80	93.17% Pervious Area
0.746	98	6.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	100	0.0600	2.84		**Sheet Flow, Initial sheet** Smooth surfaces n= 0.011 P2= 5.68"
6.1	1,006	0.0290	2.74		**Shallow Concentrated Flow, Overland** Unpaved Kv= 16.1 fps
4.9	235	0.0260	0.81		**Shallow Concentrated Flow, Overland** Woodland Kv= 5.0 fps
11.6	1,341	Total			

Subcatchment 2A: 2A



Summary for Subcatchment 2B: 2B

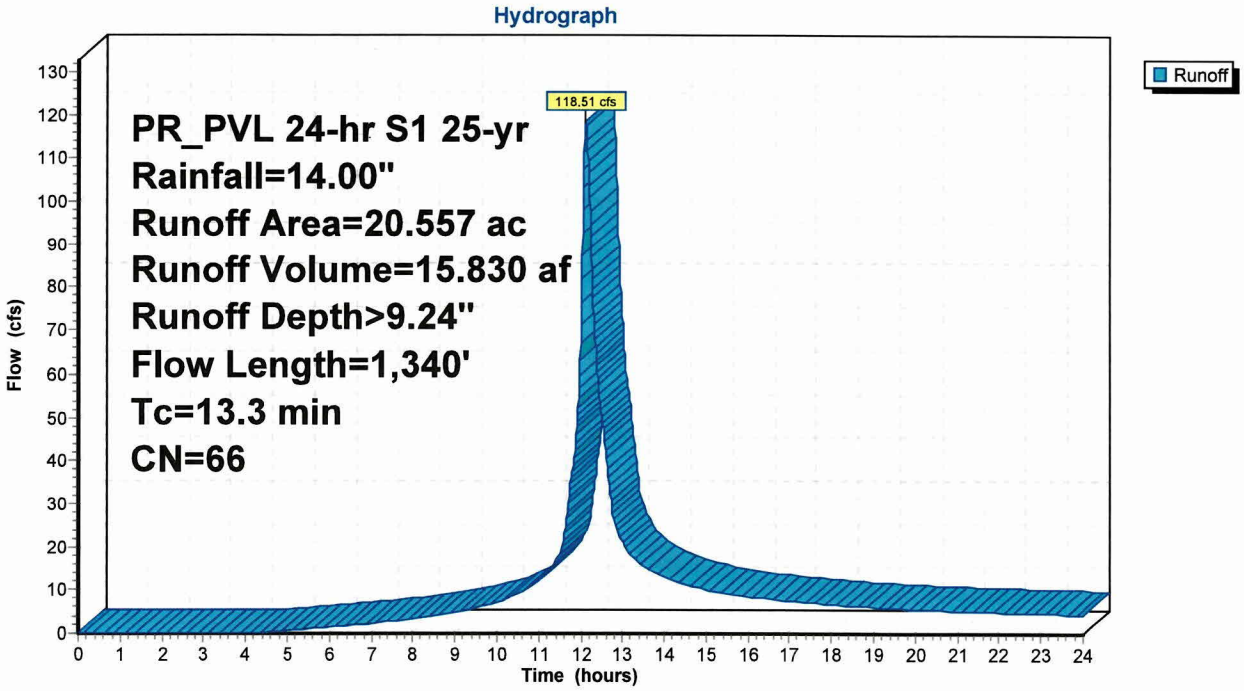
Runoff = 118.51 cfs @ 12.13 hrs, Volume= 15.830 af, Depth> 9.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
PR_PVL 24-hr S1 25-yr Rainfall=14.00"

Area (ac)	CN	Description
3.598	98	Paved parking, HSG B
0.000	96	Gravel surface, HSG B
14.799	55	Woods, Good, HSG B
0.000	66	Woods, Poor, HSG B
2.160	86	Fallow, bare soil, HSG B
20.557	66	Weighted Average
16.959	59	82.50% Pervious Area
3.598	98	17.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	100	0.2500	0.16		**Sheet Flow, Initial sheet** Woods: Dense underbrush n= 0.800 P2= 5.68"
1.0	211	0.5000	3.54		**Shallow Concentrated Flow, Overland** Woodland Kv= 5.0 fps
2.1	1,029	0.0870	8.04	192.97	**Channel Flow, Earth channel** Area= 24.0 sf Perim= 13.5' r= 1.78' n= 0.080 Earth, long dense weeds
13.3	1,340	Total			

Subcatchment 2B: 2B



Summary for Subcatchment 2C: 2C

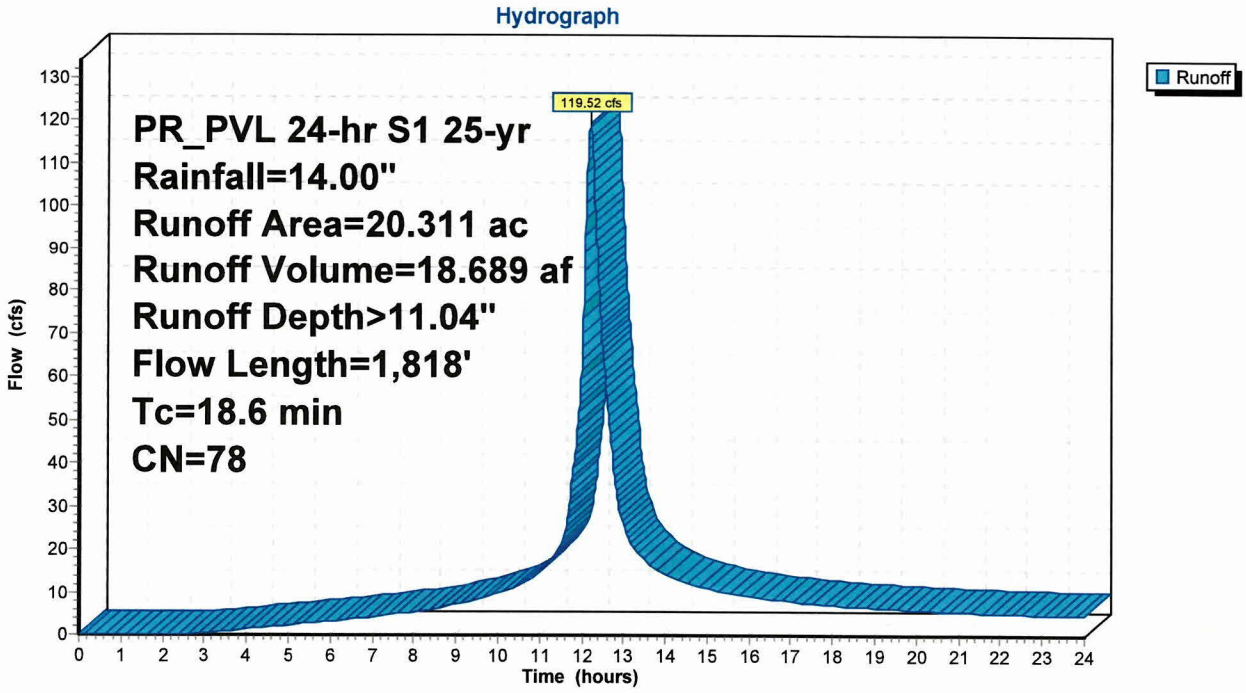
Runoff = 119.52 cfs @ 12.21 hrs, Volume= 18.689 af, Depth>11.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
PR_PVL 24-hr S1 25-yr Rainfall=14.00"

Area (ac)	CN	Description
0.621	98	Paved parking, HSG D
0.000	96	Gravel surface, HSG D
18.887	77	Woods, Good, HSG D
0.000	83	Woods, Poor, HSG D
0.803	94	Fallow, bare soil, HSG D
20.311	78	Weighted Average
19.690	78	96.94% Pervious Area
0.621	98	3.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	100	0.2800	0.17		**Sheet Flow, Initial Sheet** Woods: Dense underbrush n= 0.800 P2= 5.68"
8.7	1,546	0.3500	2.96		**Shallow Concentrated Flow, Overland** Woodland Kv= 5.0 fps
0.1	172	0.1300	48.43	1,743.43	**Channel Flow, Concrete Channel** Area= 36.0 sf Perim= 18.9' r= 1.90' n= 0.017 Concrete, unfinished
18.6	1,818	Total			

Subcatchment 2C: 2C



Summary for Subcatchment 2D: 2G

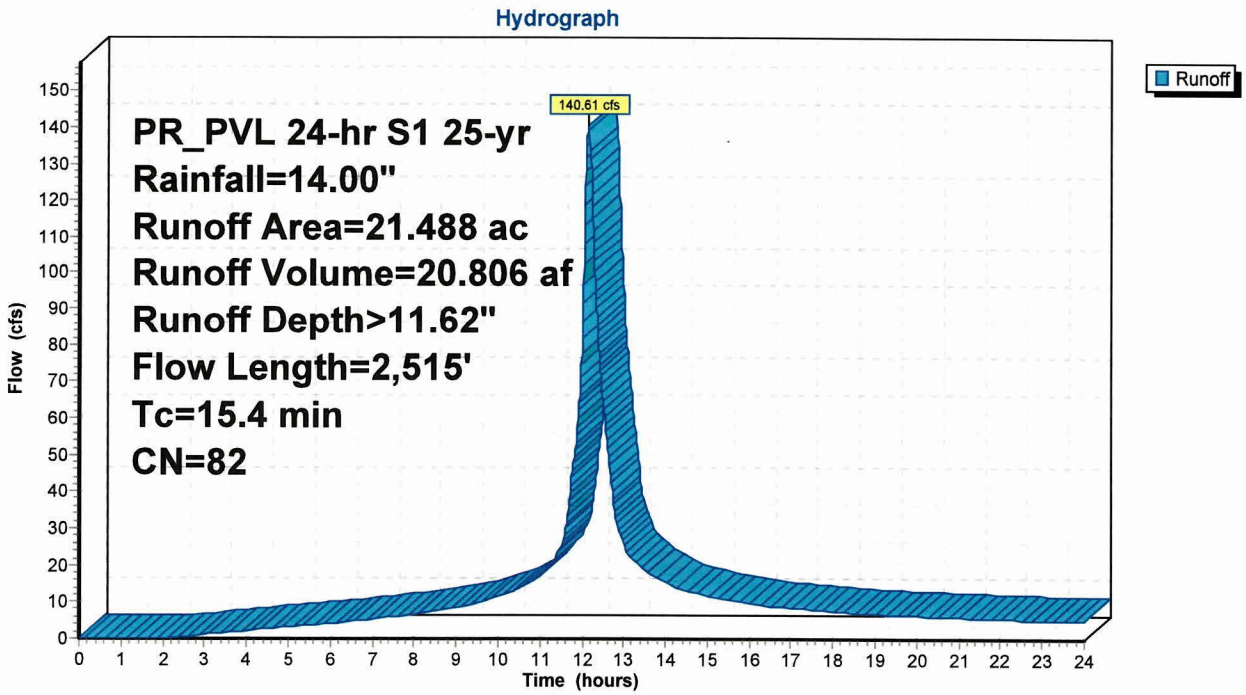
Runoff = 140.61 cfs @ 12.16 hrs, Volume= 20.806 af, Depth>11.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
PR_PVL 24-hr S1 25-yr Rainfall=14.00"

Area (ac)	CN	Description
0.527	98	Paved parking, HSG B
2.696	96	Gravel surface, HSG B
0.000	55	Woods, Good, HSG B
6.297	66	Woods, Poor, HSG B
11.968	86	Fallow, bare soil, HSG B
21.488	82	Weighted Average
20.961	81	97.55% Pervious Area
0.527	98	2.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	100	0.0500	0.79		**Sheet Flow, Initial sheet** Fallow n= 0.050 P2= 5.68"
12.2	1,619	0.1000	2.21		**Shallow Concentrated Flow, Overland** Kv= 7.0 fps
1.1	796	0.0380	12.15	291.50	**Channel Flow, Earth channel** Area= 24.0 sf Perim= 13.5' r= 1.78' n= 0.035 Earth, dense weeds
15.4	2,515	Total			

Subcatchment 2D: 2G



Summary for Subcatchment 2E: 2E

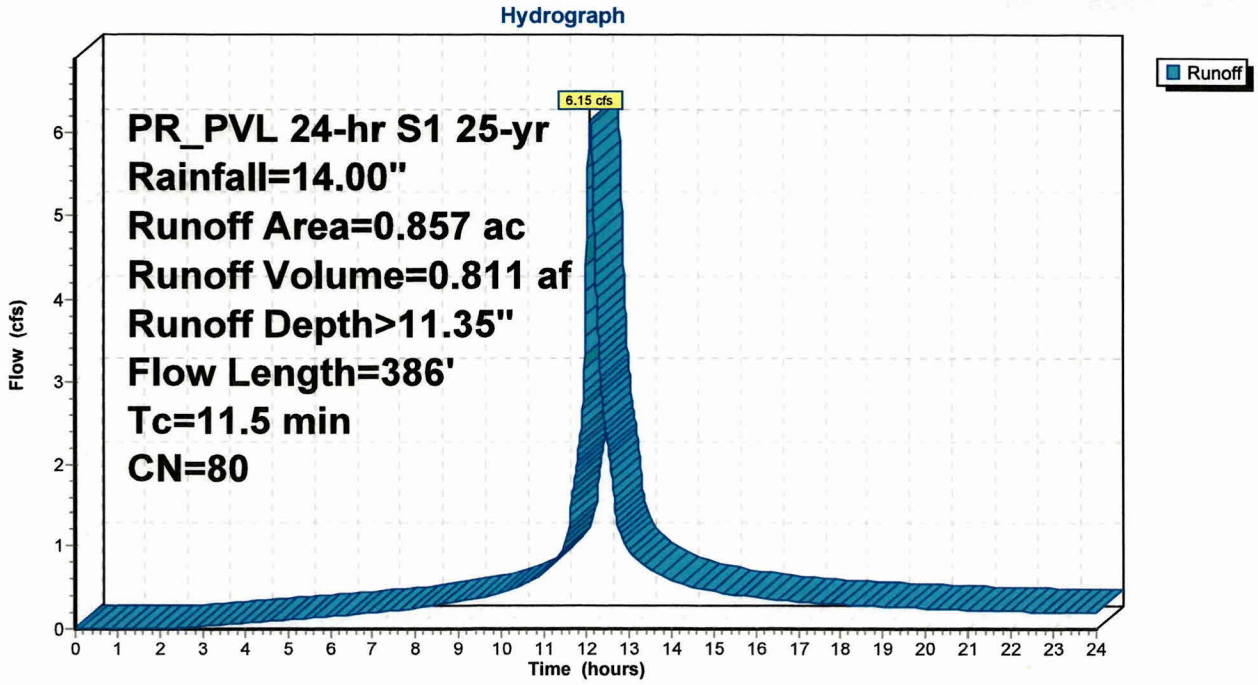
Runoff = 6.15 cfs @ 12.11 hrs, Volume= 0.811 af, Depth>11.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
PR_PVL 24-hr S1 25-yr Rainfall=14.00"

Area (ac)	CN	Description
0.000	98	Paved parking, HSG B
0.069	96	Gravel surface, HSG B
0.000	55	Woods, Good, HSG B
0.293	66	Woods, Poor, HSG B
0.495	86	Fallow, bare soil, HSG B
0.857	80	Weighted Average
0.857	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	100	0.0700	0.17		**Sheet Flow, Initial sheet** Woods: Light underbrush n= 0.400 P2= 5.68"
1.7	236	0.2200	2.35		**Shallow Concentrated Flow, Overland** Woodland Kv= 5.0 fps
0.0	50	0.1200	18.81	92.36	**Pipe Channel, 30" HDPE** 30.0" Round Area= 4.9 sf Perim= 7.9' r= 0.63' n= 0.020 Corrugated PE, corrugated interior
11.5	386	Total			

Subcatchment 2E: 2E



Summary for Subcatchment 2F: 2F

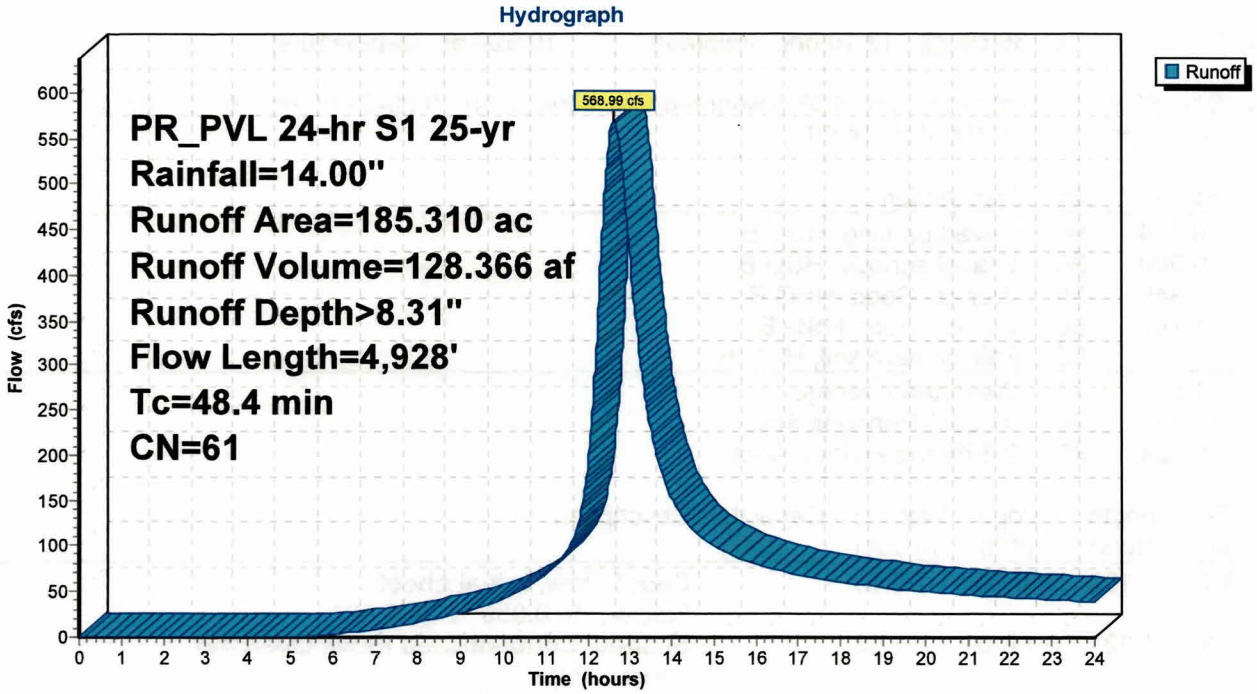
Runoff = 568.99 cfs @ 12.64 hrs, Volume= 128.366 af, Depth> 8.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
PR_PVL 24-hr S1 25-yr Rainfall=14.00"

Area (ac)	CN	Description
0.000	98	Paved parking, HSG B
0.000	96	Gravel surface, HSG B
132.102	55	Woods, Good, HSG B
0.000	66	Woods, Poor, HSG B
0.000	86	Fallow, bare soil, HSG B
53.208	77	Woods, Good, HSG D
185.310	61	Weighted Average
185.310	61	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.1500	0.13		**Sheet Flow, Initial sheet** Woods: Dense underbrush n= 0.800 P2= 5.68"
22.9	2,664	0.1500	1.94		**Shallow Concentrated Flow, Overland** Woodland Kv= 5.0 fps
11.0	723	0.0480	1.10		**Shallow Concentrated Flow, Overland** Woodland Kv= 5.0 fps
2.0	1,441	0.0380	12.15	291.50	**Channel Flow, Earth channel** Area= 24.0 sf Perim= 13.5' r= 1.78' n= 0.035 Earth, dense weeds
48.4	4,928	Total			

Subcatchment 2F: 2F



Summary for Subcatchment 2G: 2G

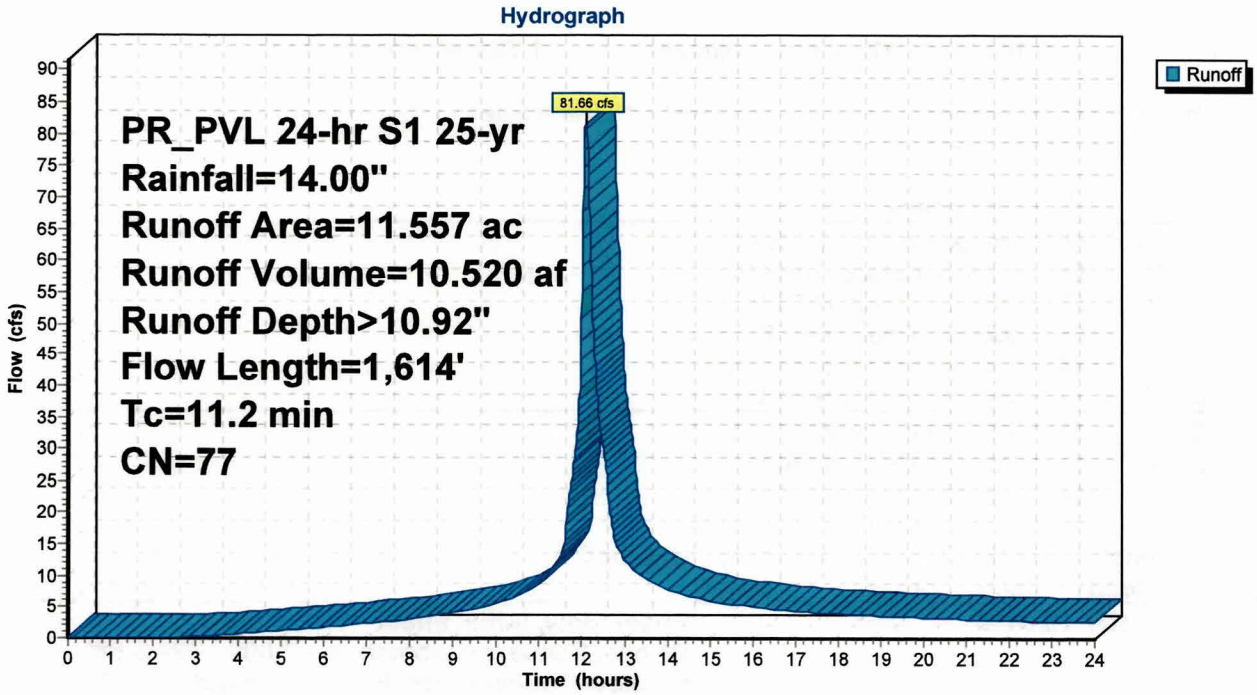
Runoff = 81.66 cfs @ 12.10 hrs, Volume= 10.520 af, Depth>10.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
PR_PVL 24-hr S1 25-yr Rainfall=14.00"

Area (ac)	CN	Description
0.324	98	Paved parking, HSG B
0.000	96	Gravel surface, HSG B
2.349	55	Woods, Good, HSG B
1.767	66	Woods, Poor, HSG B
7.117	86	Fallow, bare soil, HSG B
11.557	77	Weighted Average
11.233	76	97.20% Pervious Area
0.324	98	2.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	100	0.0200	0.55		**Sheet Flow, Initial sheet** Fallow n= 0.050 P2= 5.68"
7.3	1,021	0.1100	2.32		**Shallow Concentrated Flow, Overland** Kv= 7.0 fps
0.8	493	0.0280	10.43	250.22	**Channel Flow, Earth channel** Area= 24.0 sf Perim= 13.5' r= 1.78' n= 0.035 Earth, dense weeds
11.2	1,614	Total			

Subcatchment 2G: 2G



Summary for Subcatchment 2H: 2H

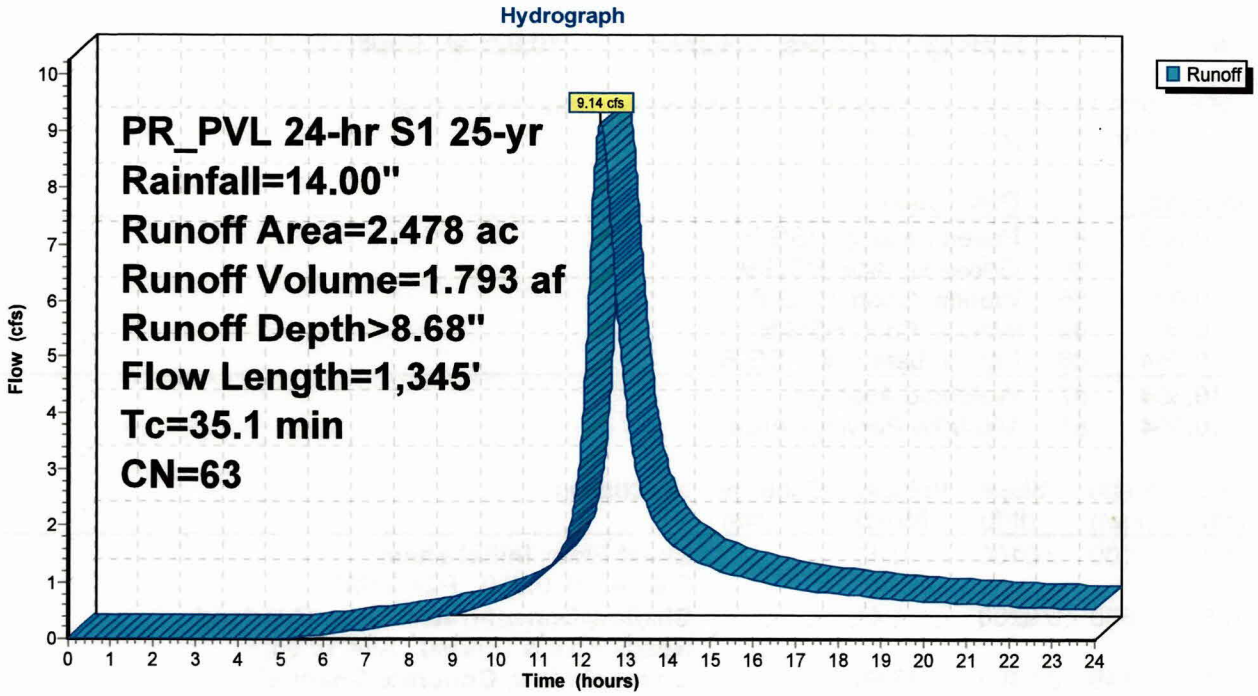
Runoff = 9.14 cfs @ 12.44 hrs, Volume= 1.793 af, Depth> 8.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
PR_PVL 24-hr S1 25-yr Rainfall=14.00"

Area (ac)	CN	Description
0.115	98	Paved parking, HSG D
0.000	96	Gravel surface, HSG B
1.879	55	Woods, Good, HSG B
0.000	66	Woods, Poor, HSG B
0.241	94	Fallow, bare soil, HSG D
0.243	77	Woods, Good, HSG D
2.478	63	Weighted Average
2.363	61	95.36% Pervious Area
0.115	98	4.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.3	100	0.0450	0.08		**Sheet Flow, Initial sheet** Woods: Dense underbrush n= 0.800 P2= 5.68"
13.3	815	0.0420	1.02		**Shallow Concentrated Flow, Overland** Woodland Kv= 5.0 fps
1.4	129	0.0900	1.50		**Shallow Concentrated Flow, Overland** Woodland Kv= 5.0 fps
0.1	301	0.0730	34.66	831.82	**Channel Flow, Concrete Channel** Area= 24.0 sf Perim= 13.5' r= 1.78' n= 0.017 Concrete, unfinished
35.1	1,345	Total			

Subcatchment 2H: 2H



Summary for Subcatchment 2l: 2l

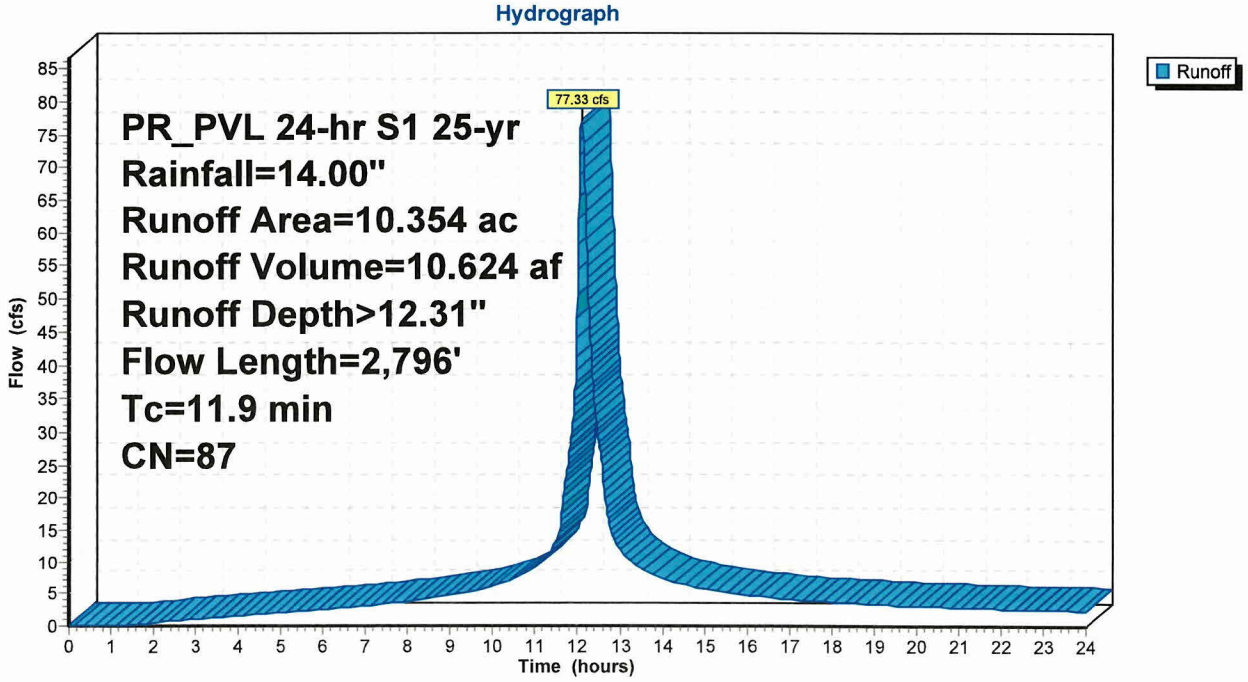
Runoff = 77.33 cfs @ 12.11 hrs, Volume= 10.624 af, Depth>12.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
PR_PVL 24-hr S1 25-yr Rainfall=14.00"

Area (ac)	CN	Description
0.000	98	Paved parking, HSG B
0.700	96	Gravel surface, HSG B
0.000	55	Woods, Good, HSG B
0.000	66	Woods, Poor, HSG B
9.654	86	Fallow, bare soil, HSG B
10.354	87	Weighted Average
10.354	87	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	100	0.0100	0.41		**Sheet Flow, Initial sheet** Fallow n= 0.050 P2= 5.68"
6.5	550	0.0200	1.41		**Shallow Concentrated Flow, Overland** Nearly Bare & Untilled Kv= 10.0 fps
1.4	2,146	0.0400	25.66	615.74	**Channel Flow, Concrete Channel** Area= 24.0 sf Perim= 13.5' r= 1.78' n= 0.017 Concrete, unfinished
11.9	2,796	Total			

Subcatchment 2l: 2l



Summary for Subcatchment 2J: 2J

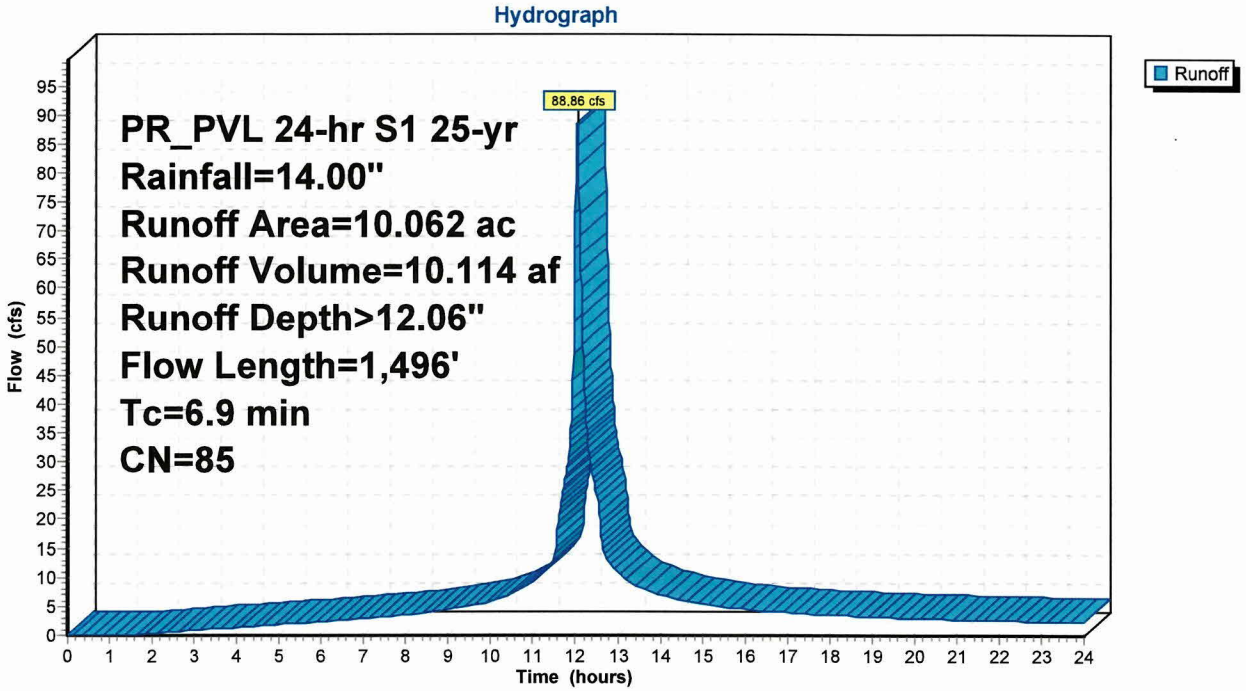
Runoff = 88.86 cfs @ 12.05 hrs, Volume= 10.114 af, Depth>12.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
PR_PVL 24-hr S1 25-yr Rainfall=14.00"

Area (ac)	CN	Description
0.435	98	Paved parking, HSG B
0.786	96	Gravel surface, HSG B
0.000	55	Woods, Good, HSG B
1.340	66	Woods, Poor, HSG B
7.501	86	Fallow, bare soil, HSG B
10.062	85	Weighted Average
9.627	84	95.68% Pervious Area
0.435	98	4.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.1400	1.19		**Sheet Flow, Initial Sheet Flow** Fallow n= 0.050 P2= 5.68"
5.0	1,126	0.2180	3.74		**Shallow Concentrated Flow, Overland** Kv= 8.0 fps
0.5	270	0.0037	8.74	340.93	**Channel Flow, Geomembrane Line Channel** Area= 39.0 sf Perim= 18.5' r= 2.11' n= 0.017 Concrete, unfinished
6.9	1,496	Total			

Subcatchment 2J: 2J



Summary for Subcatchment 2K: 2K

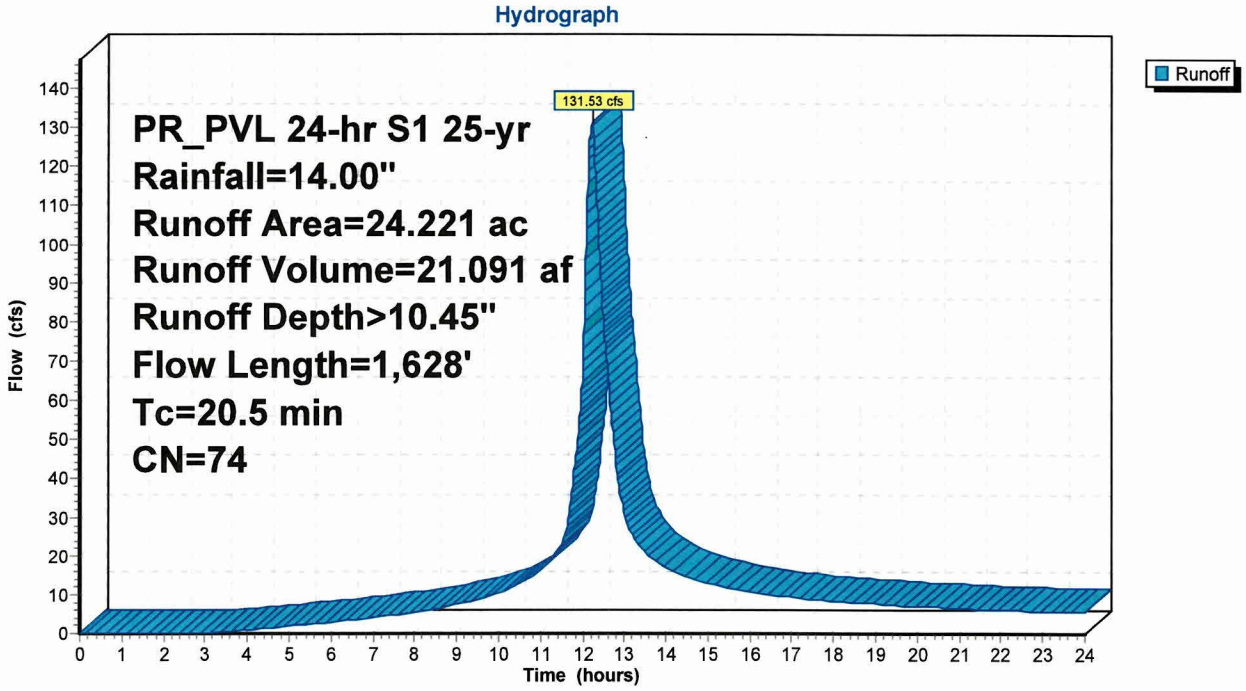
Runoff = 131.53 cfs @ 12.23 hrs, Volume= 21.091 af, Depth>10.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
PR_PVL 24-hr S1 25-yr Rainfall=14.00"

Area (ac)	CN	Description
0.230	98	Paved parking, HSG B
0.193	96	Gravel surface, HSG B
4.913	55	Woods, Good, HSG B
0.000	66	Woods, Poor, HSG B
2.800	86	Fallow, bare soil, HSG B
0.689	94	Fallow, bare soil, HSG D
15.396	77	Woods, Good, HSG D
24.221	74	Weighted Average
23.991	74	99.05% Pervious Area
0.230	98	0.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.4	100	0.1900	0.15		**Sheet Flow, Initial Sheet** Woods: Dense underbrush n= 0.800 P2= 5.68"
4.7	878	0.3860	3.11		**Shallow Concentrated Flow, Overland** Woodland Kv= 5.0 fps
2.7	264	0.1100	1.66		**Shallow Concentrated Flow, Overland** Woodland Kv= 5.0 fps
1.7	386	0.0026	3.71	278.00	**Channel Flow, Rip-Rap Channel** Area= 75.0 sf Perim= 27.4' r= 2.74' n= 0.040 Earth, cobble bottom, clean sides
20.5	1,628	Total			

Subcatchment 2K: 2K



Summary for Reach O1: Emergency Spillway

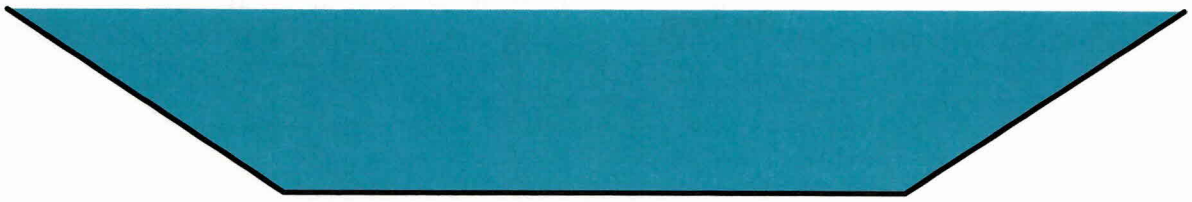
[91] Warning: Storage range exceeded by 1.10'
[55] Hint: Peak inflow is 167% of Manning's capacity
[81] Warning: Exceeded Pond P1 by 0.19' @ 12.54 hrs
[79] Warning: Submerged Pond P2 Secondary device # 2 by 2.10'

Inflow	=	942.22 cfs @	12.54 hrs,	Volume=	161.348 af
Outflow	=	942.16 cfs @	12.54 hrs,	Volume=	161.320 af, Atten= 0%, Lag= 0.5 min

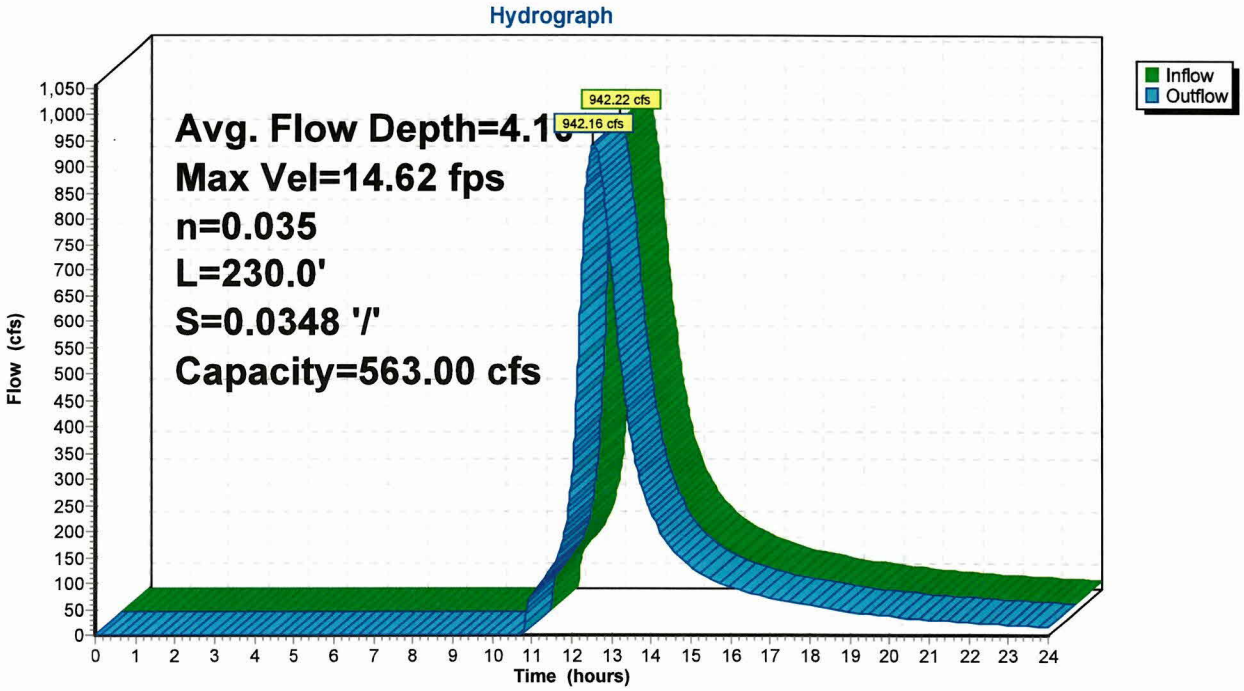
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 14.62 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 7.25 fps, Avg. Travel Time= 0.5 min

Peak Storage= 14,822 cf @ 12.54 hrs
Average Depth at Peak Storage= 4.10'
Bank-Full Depth= 3.00' Flow Area= 43.5 sf, Capacity= 563.00 cfs

10.00' x 3.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 1.5 '/' Top Width= 19.00'
Length= 230.0' Slope= 0.0348 '/'
Inlet Invert= 250.00', Outlet Invert= 242.00'



Reach O1: Emergency Spillway



Summary for Reach R1: Earthen Channel

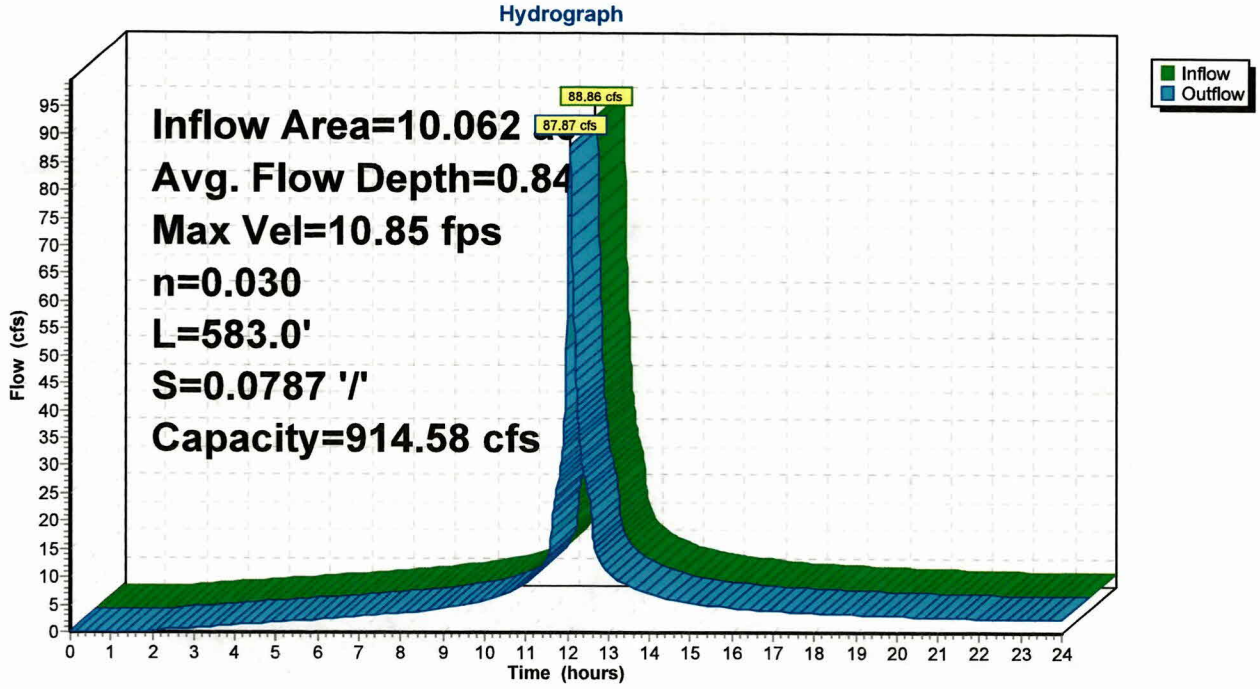
Inflow Area = 10.062 ac, 4.32% Impervious, Inflow Depth > 12.06" for 25-yr event
Inflow = 88.86 cfs @ 12.05 hrs, Volume= 10.114 af
Outflow = 87.87 cfs @ 12.07 hrs, Volume= 10.100 af, Atten= 1%, Lag= 1.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 10.85 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 3.56 fps, Avg. Travel Time= 2.7 min

Peak Storage= 4,729 cf @ 12.06 hrs
Average Depth at Peak Storage= 0.84'
Bank-Full Depth= 3.00' Flow Area= 42.0 sf, Capacity= 914.58 cfs

8.00' x 3.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 2.0 '/' Top Width= 20.00'
Length= 583.0' Slope= 0.0787 '/'
Inlet Invert= 480.00', Outlet Invert= 434.10'

Reach R1: Earthen Channel



Summary for Reach R10: Earth channel

[62] Hint: Exceeded Reach R9 OUTLET depth by 1.05' @ 12.33 hrs

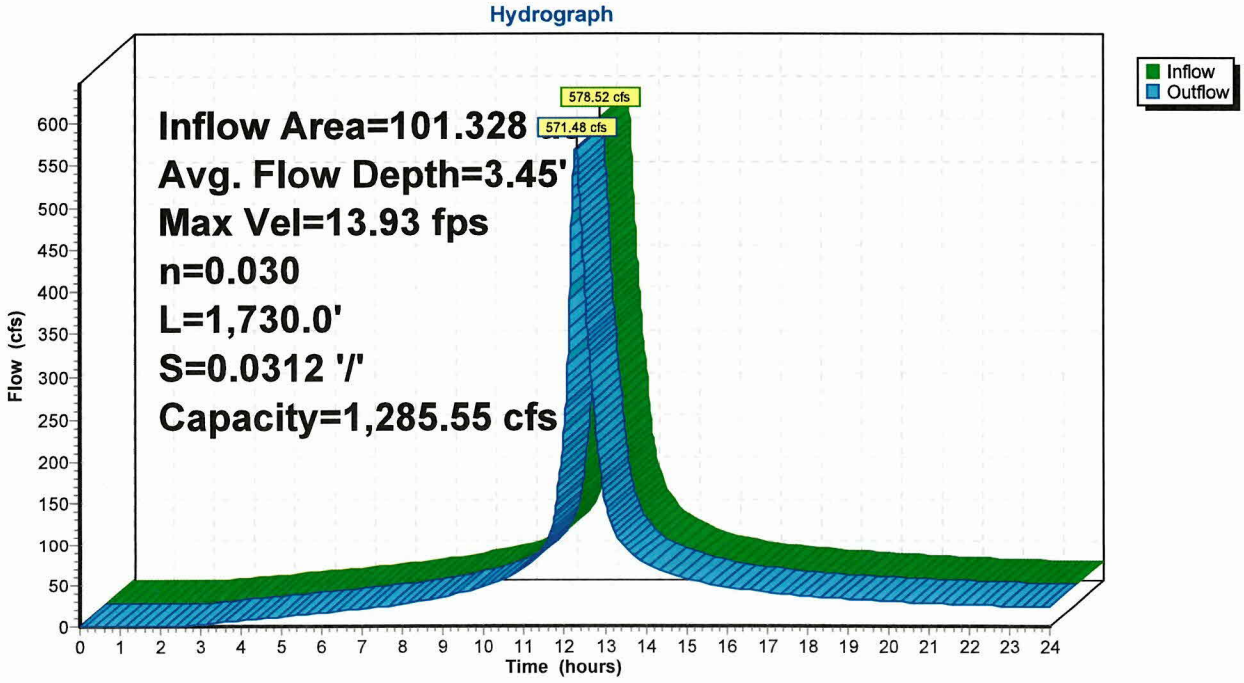
Inflow Area = 101.328 ac, 2.22% Impervious, Inflow Depth > 11.15" for 25-yr event
Inflow = 578.52 cfs @ 12.23 hrs, Volume= 94.161 af
Outflow = 571.48 cfs @ 12.29 hrs, Volume= 93.933 af, Atten= 1%, Lag= 3.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 13.93 fps, Min. Travel Time= 2.1 min
Avg. Velocity = 6.25 fps, Avg. Travel Time= 4.6 min

Peak Storage= 70,983 cf @ 12.25 hrs
Average Depth at Peak Storage= 3.45'
Bank-Full Depth= 5.00' Flow Area= 75.0 sf, Capacity= 1,285.55 cfs

5.00' x 5.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 2.0 '/' Top Width= 25.00'
Length= 1,730.0' Slope= 0.0312 '/'
Inlet Invert= 314.00', Outlet Invert= 260.00'

Reach R10: Earth channel



Summary for Reach R11: Earth channel

Inflow Area = 185.310 ac, 0.00% Impervious, Inflow Depth > 8.31" for 25-yr event
Inflow = 568.99 cfs @ 12.64 hrs, Volume= 128.366 af
Outflow = 567.86 cfs @ 12.67 hrs, Volume= 128.092 af, Atten= 0%, Lag= 2.2 min

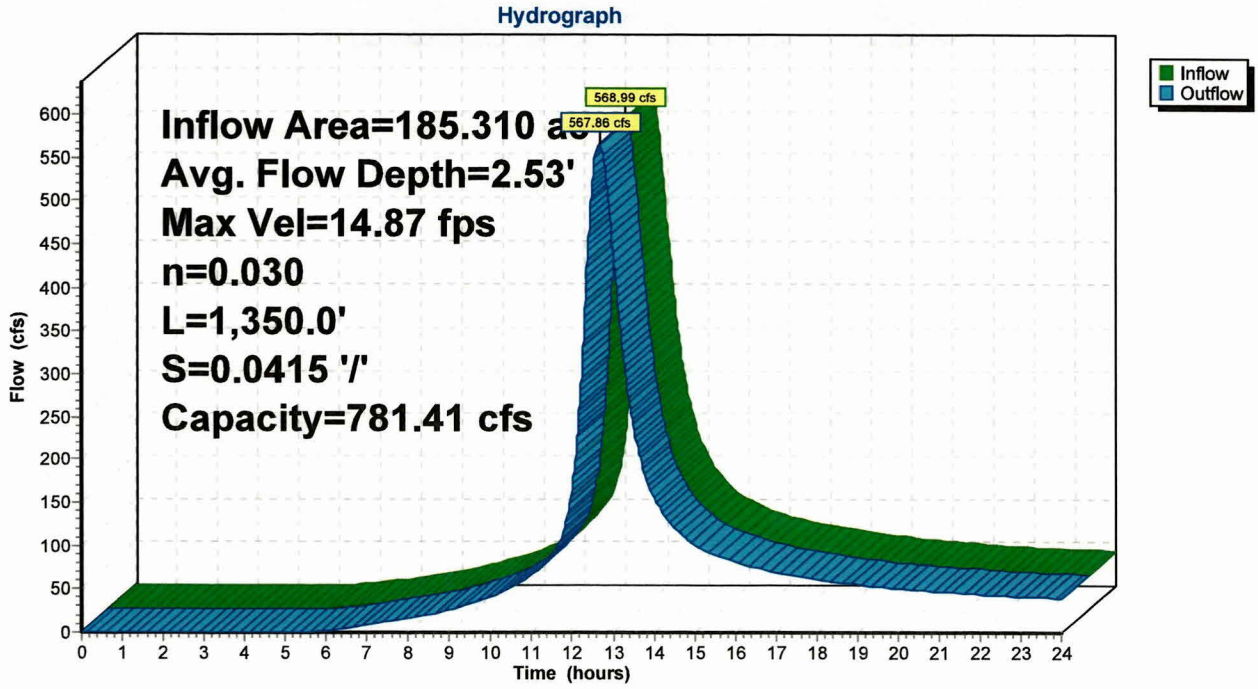
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 14.87 fps, Min. Travel Time= 1.5 min
Avg. Velocity = 7.04 fps, Avg. Travel Time= 3.2 min

Peak Storage= 51,552 cf @ 12.65 hrs
Average Depth at Peak Storage= 2.53'
Bank-Full Depth= 3.00' Flow Area= 48.0 sf, Capacity= 781.41 cfs

10.00' x 3.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 2.0 '/' Top Width= 22.00'
Length= 1,350.0' Slope= 0.0415 '/'
Inlet Invert= 330.00', Outlet Invert= 274.00'

‡

Reach R11: Earth channel



Summary for Reach R12: Earthen Channel

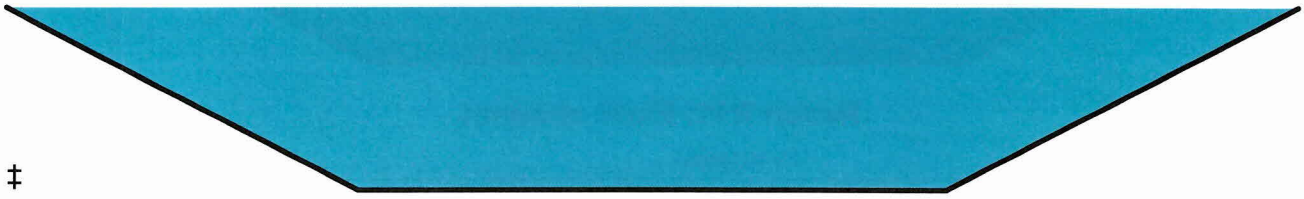
[91] Warning: Storage range exceeded by 0.23'
[55] Hint: Peak inflow is 115% of Manning's capacity
[79] Warning: Submerged Pond C7 Primary device # 1 INLET by 1.23'

Inflow Area = 185.310 ac, 0.00% Impervious, Inflow Depth > 8.29" for 25-yr event
Inflow = 567.86 cfs @ 12.67 hrs, Volume= 128.092 af
Outflow = 567.71 cfs @ 12.68 hrs, Volume= 128.025 af, Atten= 0%, Lag= 0.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 10.70 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 5.19 fps, Avg. Travel Time= 0.8 min

Peak Storage= 12,737 cf @ 12.68 hrs
Average Depth at Peak Storage= 3.23'
Bank-Full Depth= 3.00' Flow Area= 48.0 sf, Capacity= 495.31 cfs

10.00' x 3.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 2.0 '/' Top Width= 22.00'
Length= 240.0' Slope= 0.0167 '/'
Inlet Invert= 272.00', Outlet Invert= 268.00'



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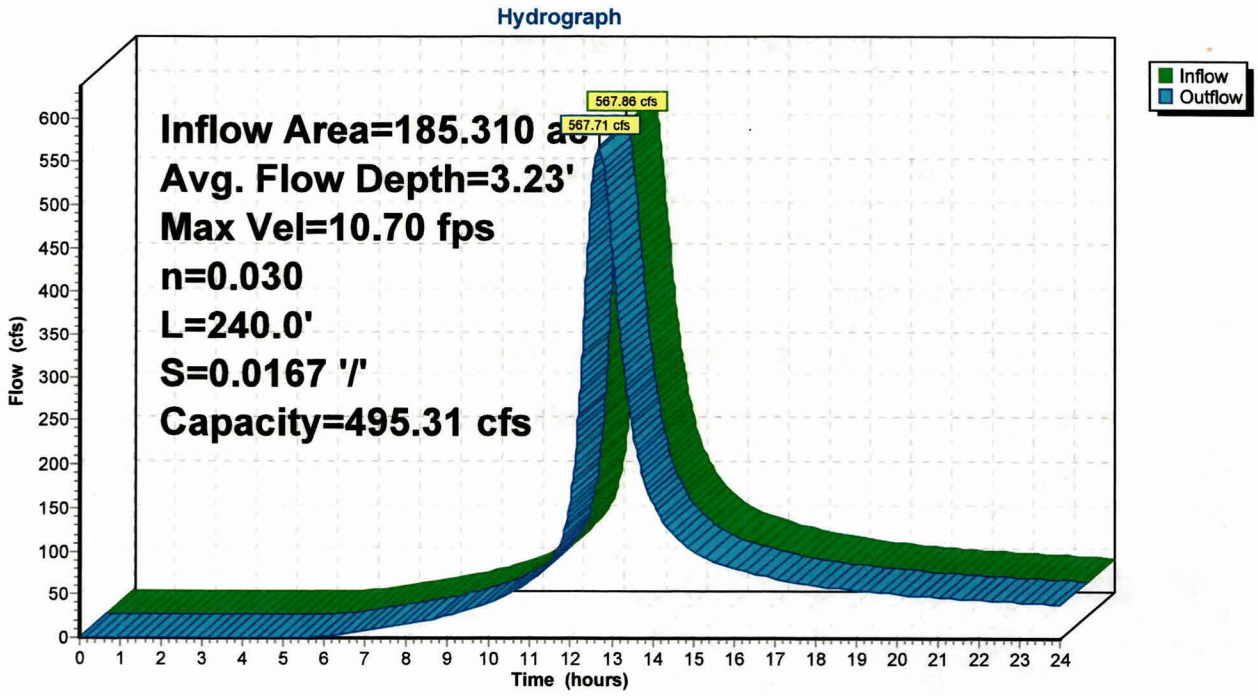
Reach R12: Earthen Channel



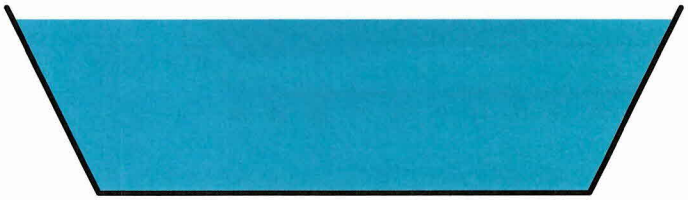
Summary for Reach R13: Earth Bypass Channel

Inflow Area = 65.883 ac, 0.00% Impervious, Inflow Depth > 11.02" for 25-yr event
Inflow = 343.36 cfs @ 12.30 hrs, Volume= 60.498 af
Outflow = 342.60 cfs @ 12.32 hrs, Volume= 60.421 af, Atten= 0%, Lag= 1.4 min

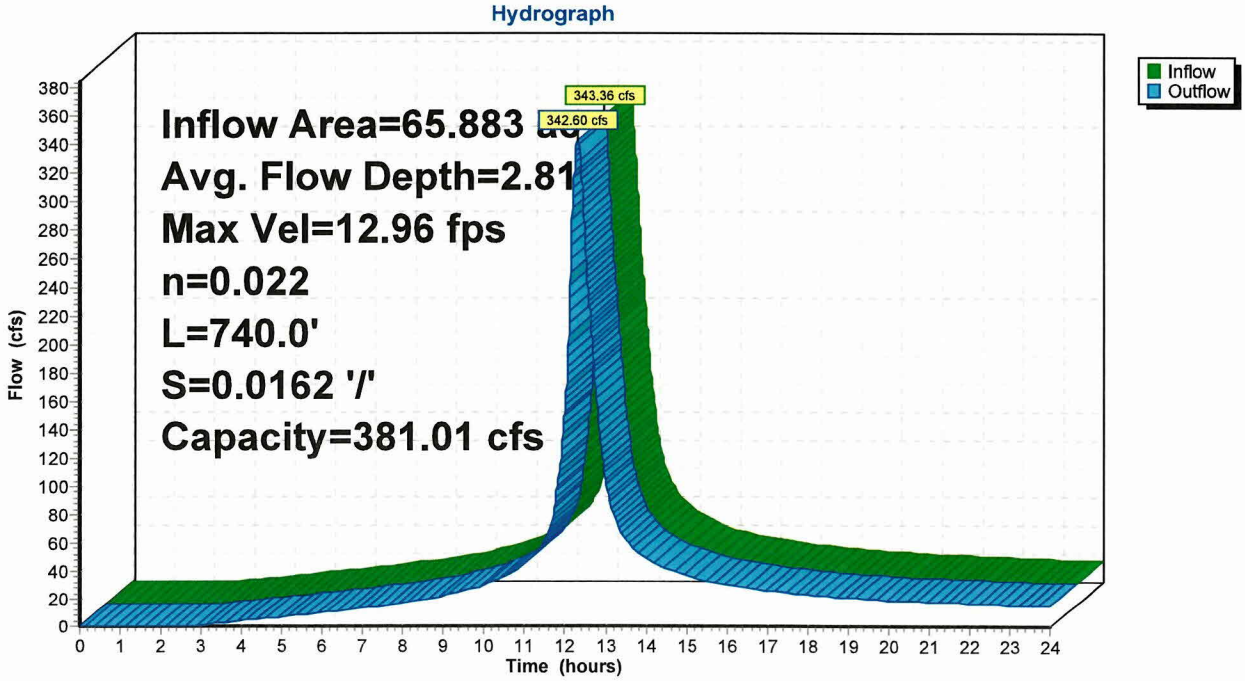
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 12.96 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 5.27 fps, Avg. Travel Time= 2.3 min

Peak Storage= 19,561 cf @ 12.30 hrs
Average Depth at Peak Storage= 2.81'
Bank-Full Depth= 3.00' Flow Area= 28.5 sf, Capacity= 381.01 cfs

8.00' x 3.00' deep channel, n= 0.022 Earth, clean & straight
Side Slope Z-value= 0.5 '/' Top Width= 11.00'
Length= 740.0' Slope= 0.0162 '/'
Inlet Invert= 270.00', Outlet Invert= 258.00'



Reach R13: Earth Bypass Channel



Summary for Reach R2: Geomembrane Channel

[62] Hint: Exceeded Reach R1 OUTLET depth by 0.25' @ 12.11 hrs

Inflow Area = 10.062 ac, 4.32% Impervious, Inflow Depth > 12.05" for 25-yr event
Inflow = 87.87 cfs @ 12.07 hrs, Volume= 10.100 af
Outflow = 87.10 cfs @ 12.09 hrs, Volume= 10.089 af, Atten= 1%, Lag= 1.3 min

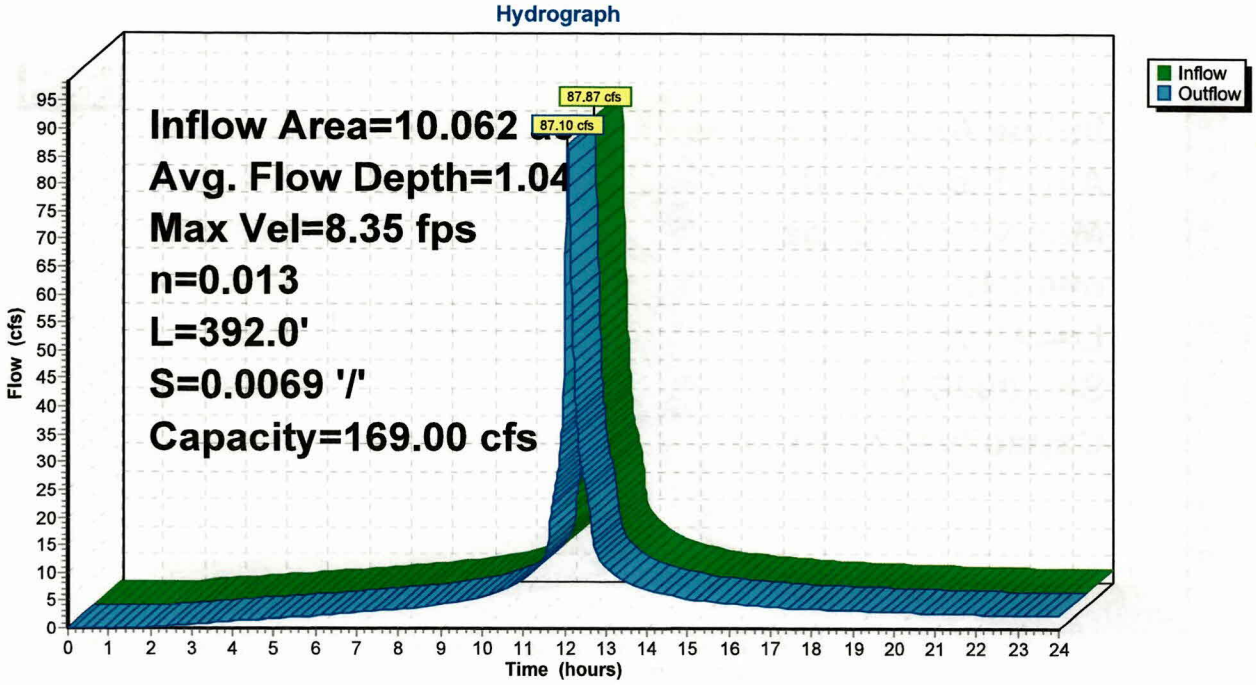
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 8.35 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 2.79 fps, Avg. Travel Time= 2.3 min

Peak Storage= 4,094 cf @ 12.08 hrs
Average Depth at Peak Storage= 1.04'
Bank-Full Depth= 1.50' Flow Area= 16.5 sf, Capacity= 169.00 cfs

8.00' x 1.50' deep channel, n= 0.013 Corrugated PE, smooth interior
Side Slope Z-value= 2.0 '/' Top Width= 14.00'
Length= 392.0' Slope= 0.0069 '/'
Inlet Invert= 434.10', Outlet Invert= 431.40'

‡

Reach R2: Geomembrane Channel



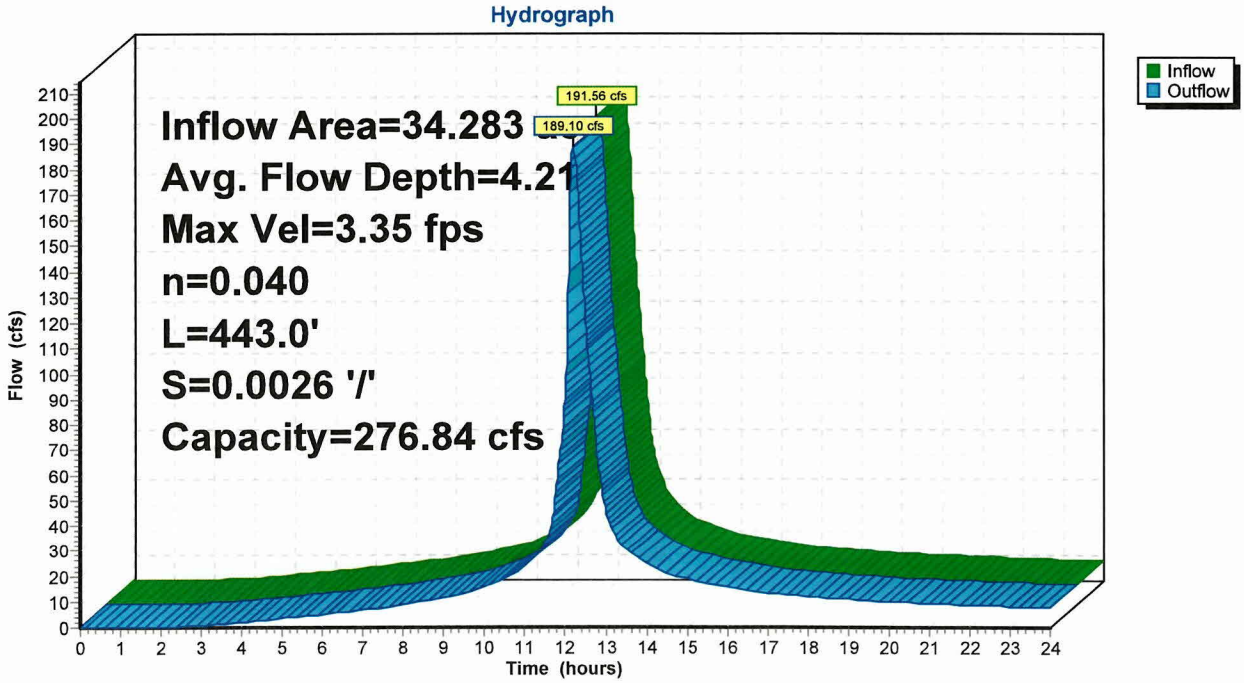
Summary for Reach R3: Rip-Rap Channel

[81] Warning: Exceeded Pond C1 by 1.96' @ 12.30 hrs

Inflow Area = 34.283 ac, 1.94% Impervious, Inflow Depth > 10.91" for 25-yr event
Inflow = 191.56 cfs @ 12.14 hrs, Volume= 31.180 af
Outflow = 189.10 cfs @ 12.22 hrs, Volume= 31.100 af, Atten= 1%, Lag= 4.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.35 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 1.53 fps, Avg. Travel Time= 4.8 min

Peak Storage= 25,010 cf @ 12.18 hrs
Average Depth at Peak Storage= 4.21'
Bank-Full Depth= 5.00' Flow Area= 75.0 sf, Capacity= 276.84 cfs

5.00' x 5.00' deep channel, n= 0.040 Earth, cobble bottom, clean sides
Side Slope Z-value= 2.0 '/' Top Width= 25.00'
Length= 443.0' Slope= 0.0026 '/'
Inlet Invert= 431.14', Outlet Invert= 430.00'

Reach R3: Rip-Rap Channel