Billerica Conservation Commission
365 Boston Road
Ground Floor - Room G02
Billerica, MA 01821

February 10, 2026

Re: O&M Addendum for ISMP for Notice of Intent with DEP File No. 109-1614.

As a supplement to the Notice of Intent filed for 2 (& 1) Federal Street on behalf of JLB Partners, Goddard Consulting LLC has designed a robust Invasive Species Management Plan (ISMP). Following feedback provided by the Billerica Conservation Commission members and staff, minor amendments were made to the Procedures section of the plan, and shall be included in the project's overall Operation and Maintenance (O&M) Plan.

Procedures:

Step 1: Stake Limits of Work

Stake out the limits of the ISMP Zone, property boundary lines and property corners, as appropriate.

Step 2: Install Erosion Control

Install erosion control along the upland edge of Cranberry Pond (within the extent of the ISMP Zone). Erosion control shall be installed in the form of staked mulch sock.

Step 3: Identify Invasive Trees, Shrubs, and Herbs

The wetland scientist shall identify and flag any invasive plant species that will be managed within the ISMP Zone, and or provide to labor staff the guidance and criterion for in-field identification via picture, diagram, etc.

Step 4: Invasive Species Management

Mechanical pulling will optimally occur in the first spring of the newly implemented ISMP, when soils are moist and full root masses can be pulled from the soil. If implantation of the ISMP cannot begin in the spring, mechanical cutting will occur in late summer and early fall. Cut stump (or stem) treatments will immediately follow mechanical cutting in the late summer or early fall to achieve the most effective results. The majority of invasive species will be removed from the ISMP area during the mechanical cutting and cut stem treatments. Cut stump herbicide application shall be used for invasive management by an applicator licensed in the state of Massachusetts.

Step 5: Planting

Precise citing of plants may be determined by the wetland scientist in the field prior to installation. All plantings shall be distributed randomly throughout the area but primarily in areas disturbed by invasive species removal methods. Trees will be spaced at 15-20' on center, shrubs spaced at 5-6' on center and herbaceous species 3' or less on center. All plantings will be removed from burlap sacks, wire cages and plastic containers prior to planting. Each plant will have it roots loosened prior to planting to encourage root growth away from the root ball.

Step 6: Seeding

The ISMP Zone will be seeded with New England Conservation/ Wildlife Mix or equivalent seed mix in areas where invasive species were removed/treated or where new plantings disturbed the surrounding soils. Seeding may need to be completed more than once to ensure good establishment of ground cover.

Step 7: Install Jute Netting for Erosion Control

Jute netting shall be installed in large areas with exposed soils. This will prevent sediment from eroding down slopes until the seed mix germinates and stabilizes the area. The jute netting should be made of compostable/naturally degrading jute material so that it will naturally degrade over a few years time.

Step 8: Continued Invasive Species Management

Due to the existing presence of invasive species and their viable seed banks, it is very possible that invasive species may reestablish after the initial removal and herbicide treatment. Twice a year, for three years, the ISMP area will be inspected for invasive species.

Step 9: Documentation Send-Off

Upon completion of the biannual inspections (Spring & Fall), the associated progress reports containing documentation of eradication of invasives, survival rates of installed plantings, and recommendations for future management shall be provided to the Town of Billerica's Conservation staff for record keeping. These reports shall be provided no later than June 30th (or nearest thereafter business day should this day be a weekend) and October 31st (or nearest thereafter business day should this day be a weekend), respectively. The final report shall confirm that the invasives have been satisfactorily eradicated, the plantings have the required survival rates (75%), stabilization has been achieved, and that the erosion control measures have been removed once site conditions would no longer require they be in place.

Conclusion

Please do not hesitate to reach out for additional information or clarification regarding this document, the ISM and planting plans, or other details related to the associated Notice of Intent submittal. We look forward to the successful enhancement of an invasive-laden area.

Goddard Consulting, LLC

Douglas Dillon
Wetlands Scientist

OPERATION AND MAINTENANCE PLAN SCHEDULE

Date: 11-03-2025
Rev: 02-16-2026

ALLEN & MAJOR ASSOCIATES, INC.

Project: Multi-family Residential
Project Address: 1 & 2 Federal Street Billerica MA

Responsible for O&M Plan: JLB Partners, LLC
Address: 2310 Washington Street Newton, MA 02462
Phone: (508) 212-2787

All information within table is derived from Massachusetts Stormwater Handbook: Volume 2, Chapter 2

BMP CATEGORY	BMP OR MAINTENANCE ACTIVITY	SCHEDULE/ FREQUENCY	NOTES	ESTIMATED ANNUAL MAINTENANCE COST	INSPECTION PERFORMED	
					DATE:	BY:
STRUCTURAL PRETREATMENT BMPs	DEEP SUMP CATCH BASIN	Four times per year (quarterly). (Performed on or around March 1, June 1,September 1, December 1)	Inspect and clean catch basin units whenever the depth of deposits is greater than or equal to one half the depth from the bottom of the invert of the lowest pipe in the basin.	$1,000		
	PROPRIETARY SEPARATORS	In accordance with manufacturers requirements, but no less than twice a year following installation and once a year thereafter. (Performed on or around June 1 and December 1)	Remove sediment and other trapped pollutants at frequency or level specified by manufacturer.	$2,000		
INFILTRATION BMPs	SUBSURFACE STRUCTURES	Inspect structure inlets at least twice a year. Remove debris that may clog the system as needed. (Performed on or around June 1 and December 1)	Because subsurface structures are installed underground, they are extremely difficult to maintain. Remove any debris that might clog the system.	$500		
BMP ACCESSORIES	OUTLET STRUCTURES	Periodic cleaning of Outlet Control Structures as needed.	Clear trash and debris as necessary.	$500		
OTHER MAINTENANCE ACTIVITY	MOSQUITO CONTROL	Inspect BMPs as needed to ensure the system's drainage time is less than the maximum 72 hour period.	Massachusetts stormwater handbook requires all stormwater practices that are designed to drain do so within 72 hours to reduce the number of mosquitos that mature to adults since the aquatic stage of a mosquito is 7-10 days.	$100		
	SNOW STORAGE	Clear and remove snow to approved storage locations as necessary to ensure systems are working properly and are protected from meltwater pollutants.	Carefully select snow disposal sites before winter. Avoid dumping removed snow over catch basins, or in detention ponds, sediment forebays, rivers, wetlands, and flood plains. It is also prohibited to dump snow in the bioretention basins or gravel swales.	$500		

Routing Diagram for 3490-03 - PostDev

Prepared by Allen & Major Associates, Inc, Printed 2/15/2026

HydroCAD® 10.20-8a s/n 02881 © 2025 HydroCAD Software Solutions LLC

Project Notes

Rainfall events imported from "Atlas-14-Rain.txt" for 6680 MA Middlesex South
Rainfall events imported from "Atlas-14-Rain.txt" for 6680 MA Middlesex South

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year	Type III 24-hr		Default	24.00	1	3.16	2
2	10-Year	Type III 24-hr		Default	24.00	1	4.77	2
3	100-Year	Type III 24-hr		Default	24.00	1	8.62	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.595	80	>75% Grass cover, Good, HSG D (18S, P-1, P-2, P-2.1, P-2.10, P-2.11, P-2.12, P-2.2, P-2.3, P-2.4, P-2.5, P-2.6, P-2.7, P-2.8, P-2.9, P-3, P-4, P-5, P-7, R-3, S-1, S-2)
5.540	98	Paved parking, HSG D (18S, P-1, P-2.1, P-2.10, P-2.11, P-2.12, P-2.2, P-2.3, P-2.4, P-2.5, P-2.6, P-2.7, P-2.8, P-2.9, P-3, P-4, P-5, P-7, R-3, S-1, S-2)
2.971	98	Roofs, HSG D (16S, 18S, P-2.8, P-2.9, P-3, P-4, P-7, R-1, R-2, R-3, R-4, R-5, R-6)
2.518	77	Woods, Good, HSG D (18S, P-1, P-2, P-2.10, P-3, P-7, S-1, S-2)
13.624	**91**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
13.624	HSG D	16S, 18S, P-1, P-2, P-2.1, P-2.10, P-2.11, P-2.12, P-2.2, P-2.3, P-2.4, P-2.5, P-2.6, P-2.7, P-2.8, P-2.9, P-3, P-4, P-5, P-7, R-1, R-2, R-3, R-4, R-5, R-6, S-1, S-2
0.000	Other	
13.624		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	2.595	0.000	2.595	>75% Grass cover, Good	18S, P-1, P-2, P-2.1, P-2.10, P-2.11, P-2.12, P-2.2, P-2.3, P-2.4, P-2.5, P-2.6, P-2.7, P-2.8, P-2.9, P-3, P-4, P-5, P-7, R-3, S-1, S-2
0.000	0.000	0.000	5.540	0.000	5.540	Paved parking	18S, P-1, P-2.1, P-2.10, P-2.11, P-2.12, P-2.2, P-2.3, P-2.4, P-2.5, P-2.6, P-2.7, P-2.8, P-2.9, P-3, P-4, P-5, P-7, R-3, S-1, S-2

Ground Covers (all nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	2.971	0.000	2.971	Roofs	16S, 18S, P-2.8, P-2.9, P-3, P-4, P-7, R-1, R-2, R-3, R-4, R-5, R-6
0.000	0.000	0.000	2.518	0.000	2.518	Woods, Good	18S, P-1, P-2, P-2.10, P-3, P-7, S-1, S-2
0.000	**0.000**	**0.000**	**13.624**	**0.000**	**13.624**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	1R-1	188.16	187.72	120.0	0.0037	0.013	0.0	18.0	0.0	
2	1R-2	187.70	187.29	116.0	0.0035	0.011	0.0	18.0	0.0	
3	1R-3	187.20	186.57	315.0	0.0020	0.011	0.0	24.0	0.0	
4	1R-4	186.50	186.18	160.0	0.0020	0.011	0.0	24.0	0.0	
5	1R-5	186.08	185.84	95.0	0.0025	0.011	0.0	24.0	0.0	
6	1R-6	185.70	185.58	50.0	0.0024	0.011	0.0	24.0	0.0	
7	2R-1	189.80	188.30	150.0	0.0100	0.011	0.0	12.0	0.0	
8	2R-2	188.10	187.35	75.0	0.0100	0.011	0.0	12.0	0.0	
9	2R-3	187.25	186.05	80.0	0.0150	0.011	0.0	12.0	0.0	
10	2R-4	186.80	185.90	150.0	0.0060	0.011	0.0	18.0	0.0	
11	2R-5	185.90	185.60	60.0	0.0050	0.011	0.0	18.0	0.0	
12	3R	188.35	187.66	64.0	0.0108	0.013	0.0	12.0	0.0	
13	4R	187.66	187.44	44.0	0.0050	0.013	0.0	15.0	0.0	
14	7R	186.94	186.40	154.0	0.0035	0.013	0.0	24.0	0.0	
15	8R	186.30	185.13	216.0	0.0054	0.013	0.0	24.0	0.0	
16	5P	188.62	188.58	7.0	0.0057	0.011	0.0	12.0	0.0	
17	8P	188.83	188.87	7.0	-0.0057	0.011	0.0	12.0	0.0	
18	9P	188.83	188.87	7.0	-0.0057	0.011	0.0	12.0	0.0	
19	17P	189.00	188.74	26.2	0.0099	0.011	0.0	12.0	0.0	
20	C8	191.00	190.04	48.0	0.0200	0.011	0.0	8.0	0.0	
21	C9	188.50	187.90	30.0	0.0200	0.011	0.0	8.0	0.0	

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment16S: Rear of Garage Runoff Area=3,234 sf 100.00% Impervious Runoff Depth=2.93"
Tc=6.0 min CN=98 Runoff=0.22 cfs 0.018 af

Subcatchment18S: Subcat P-6 Runoff Area=77,509 sf 59.46% Impervious Runoff Depth=2.22"
Flow Length=136' Tc=6.4 min CN=91 Runoff=4.42 cfs 0.329 af

SubcatchmentP-1: Subcat P-1 Runoff Area=51,815 sf 0.27% Impervious Runoff Depth=1.18"
Flow Length=640' Tc=41.9 min CN=77 Runoff=0.77 cfs 0.117 af

SubcatchmentP-2: Subcat P-2 Runoff Area=64,335 sf 0.00% Impervious Runoff Depth=1.18"
Flow Length=110' Tc=13.1 min CN=77 Runoff=1.56 cfs 0.146 af

SubcatchmentP-2.1: Subcat P-2.1 Runoff Area=2,636 sf 85.24% Impervious Runoff Depth=2.61"
Tc=6.0 min CN=95 Runoff=0.17 cfs 0.013 af

SubcatchmentP-2.10: Subcat P-2.10 Runoff Area=0.132 ac 89.76% Impervious Runoff Depth=2.71"
Tc=0.0 min CN=96 Runoff=0.45 cfs 0.030 af

SubcatchmentP-2.11: Subcat P-2.11 Runoff Area=9,060 sf 76.19% Impervious Runoff Depth=2.51"
Tc=6.0 min CN=94 Runoff=0.57 cfs 0.043 af

SubcatchmentP-2.12: Subcat P-2.12 Runoff Area=0.271 ac 53.80% Impervious Runoff Depth=2.13"
Tc=0.0 min CN=90 Runoff=0.77 cfs 0.048 af

SubcatchmentP-2.2: Subcat P-2.2 Runoff Area=14,052 sf 78.78% Impervious Runoff Depth=2.51"
Tc=6.0 min CN=94 Runoff=0.89 cfs 0.067 af

SubcatchmentP-2.3: Subcat P-2.3 Runoff Area=9,223 sf 74.06% Impervious Runoff Depth=2.41"
Tc=6.0 min CN=93 Runoff=0.57 cfs 0.042 af

SubcatchmentP-2.4: Subcat P-2.4 Runoff Area=7,571 sf 86.37% Impervious Runoff Depth=2.71"
Tc=6.0 min CN=96 Runoff=0.50 cfs 0.039 af

SubcatchmentP-2.5: Subcat P-2.5 Runoff Area=0.389 ac 69.88% Impervious Runoff Depth=2.41"
Tc=0.0 min CN=93 Runoff=1.22 cfs 0.078 af

SubcatchmentP-2.6: Subcat P-2.6 Runoff Area=10,714 sf 78.32% Impervious Runoff Depth=2.51"
Tc=6.0 min CN=94 Runoff=0.68 cfs 0.051 af

SubcatchmentP-2.7: Subcat P-2.7 Runoff Area=5,677 sf 76.94% Impervious Runoff Depth=2.51"
Tc=6.0 min CN=94 Runoff=0.36 cfs 0.027 af

SubcatchmentP-2.8: Subcat P-2.8 Runoff Area=13,094 sf 90.54% Impervious Runoff Depth=2.71"
Tc=6.0 min CN=96 Runoff=0.87 cfs 0.068 af

SubcatchmentP-2.9: Subcat P-2.9 Runoff Area=13,195 sf 92.27% Impervious Runoff Depth=2.82"
Tc=6.0 min CN=97 Runoff=0.89 cfs 0.071 af

Subcatchment P-3: Subcat P-3 Runoff Area=35,147 sf 89.05% Impervious Runoff Depth=2.71"
Tc=6.0 min CN=96 Runoff=2.33 cfs 0.182 af

Subcatchment P-4: Subcat P-4 Runoff Area=30,751 sf 86.54% Impervious Runoff Depth=2.71"
Tc=6.0 min CN=96 Runoff=2.04 cfs 0.159 af

Subcatchment P-5: Subcat P-5 Runoff Area=30,541 sf 83.59% Impervious Runoff Depth=2.61"
Tc=6.0 min CN=95 Runoff=1.98 cfs 0.152 af

Subcatchment P-7: Subcat P-7 Runoff Area=79,718 sf 73.47% Impervious Runoff Depth=2.41"
Flow Length=220' Slope=0.0100 '/' Tc=12.3 min CN=93 Runoff=4.07 cfs 0.367 af

Subcatchment R-1: Subcat R-1 Runoff Area=13,004 sf 100.00% Impervious Runoff Depth=2.93"
Tc=0.0 min CN=98 Runoff=1.05 cfs 0.073 af

Subcatchment R-2: Subcat R-2 Runoff Area=0.355 ac 100.00% Impervious Runoff Depth=2.93"
Tc=0.0 min CN=98 Runoff=1.24 cfs 0.087 af

Subcatchment R-3: Subcat R-3 Runoff Area=33,729 sf 74.84% Impervious Runoff Depth=2.41"
Tc=0.0 min CN=93 Runoff=2.43 cfs 0.155 af

Subcatchment R-4: Subcat R-4 Runoff Area=5,028 sf 100.00% Impervious Runoff Depth=2.93"
Tc=0.0 min CN=98 Runoff=0.41 cfs 0.028 af

Subcatchment R-5: Subcat R-5 Runoff Area=8,189 sf 100.00% Impervious Runoff Depth=2.93"
Tc=0.0 min CN=98 Runoff=0.66 cfs 0.046 af

Subcatchment R-6: Subcat R-6 Runoff Area=4,632 sf 100.00% Impervious Runoff Depth=2.93"
Tc=0.0 min CN=98 Runoff=0.37 cfs 0.026 af

Subcatchment S-1: Subcat S-1 Runoff Area=7,148 sf 80.13% Impervious Runoff Depth=2.51"
Tc=6.0 min CN=94 Runoff=0.45 cfs 0.034 af

Subcatchment S-2: Subcat S-2 Runoff Area=13,478 sf 61.16% Impervious Runoff Depth=2.22"
Tc=6.0 min CN=91 Runoff=0.78 cfs 0.057 af

Reach 1R-1: Ex. 18" RCP Avg. Flow Depth=0.63' Max Vel=3.32 fps Inflow=2.33 cfs 0.182 af
18.0" Round Pipe n=0.013 L=120.0' S=0.0037 '/' Capacity=6.36 cfs Outflow=2.28 cfs 0.182 af

Reach 1R-2: New 18" ADS Avg. Flow Depth=0.68' Max Vel=4.00 fps Inflow=3.14 cfs 0.262 af
18.0" Round Pipe n=0.011 L=116.0' S=0.0035 '/' Capacity=7.38 cfs Outflow=3.08 cfs 0.262 af

Reach 1R-3: new 24" Avg. Flow Depth=0.68' Max Vel=3.16 fps Inflow=3.08 cfs 0.262 af
24.0" Round Pipe n=0.011 L=315.0' S=0.0020 '/' Capacity=11.96 cfs Outflow=2.94 cfs 0.262 af

Reach 1R-4: new 24" Avg. Flow Depth=0.69' Max Vel=3.19 fps Inflow=3.11 cfs 0.306 af
24.0" Round Pipe n=0.011 L=160.0' S=0.0020 '/' Capacity=11.96 cfs Outflow=3.04 cfs 0.306 af

Reach 1R-5: new 24" Avg. Flow Depth=0.69' Max Vel=3.57 fps Inflow=3.43 cfs 0.350 af
24.0" Round Pipe n=0.011 L=95.0' S=0.0025 '/' Capacity=13.44 cfs Outflow=3.41 cfs 0.350 af

Reach 1R-6: New 24" ADS Avg. Flow Depth=0.73' Max Vel=3.57 fps Inflow=3.69 cfs 0.398 af
24.0" Round Pipe n=0.011 L=50.0' S=0.0024 '/' Capacity=13.10 cfs Outflow=3.69 cfs 0.398 af

Reach 2R-1: new 12" west Avg. Flow Depth=0.14' Max Vel=2.62 fps Inflow=0.17 cfs 0.013 af
12.0" Round Pipe n=0.011 L=150.0' S=0.0100 '/' Capacity=4.21 cfs Outflow=0.16 cfs 0.013 af

Reach 2R-2: new 12" Avg. Flow Depth=0.37' Max Vel=4.64 fps Inflow=1.25 cfs 0.106 af
12.0" Round Pipe n=0.011 L=75.0' S=0.0100 '/' Capacity=4.21 cfs Outflow=1.24 cfs 0.106 af

Reach 2R-3: new 12" Avg. Flow Depth=0.46' Max Vel=6.32 fps Inflow=2.22 cfs 0.195 af
12.0" Round Pipe n=0.011 L=80.0' S=0.0150 '/' Capacity=5.16 cfs Outflow=2.21 cfs 0.195 af

Reach 2R-4: new 18" Avg. Flow Depth=0.74' Max Vel=5.39 fps Inflow=4.79 cfs 0.389 af
18.0" Round Pipe n=0.011 L=150.0' S=0.0060 '/' Capacity=9.62 cfs Outflow=4.64 cfs 0.389 af

Reach 2R-5: new 18" Avg. Flow Depth=0.88' Max Vel=5.27 fps Inflow=5.78 cfs 0.476 af
18.0" Round Pipe n=0.011 L=60.0' S=0.0050 '/' Capacity=8.78 cfs Outflow=5.68 cfs 0.476 af

Reach 3R: Ex. 12" RCP Avg. Flow Depth=0.53' Max Vel=4.82 fps Inflow=2.04 cfs 0.159 af
12.0" Round Pipe n=0.013 L=64.0' S=0.0108 '/' Capacity=3.70 cfs Outflow=2.03 cfs 0.159 af

Reach 4R: Ex. 15" RCP Avg. Flow Depth=0.58' Max Vel=3.61 fps Inflow=2.03 cfs 0.159 af
15.0" Round Pipe n=0.013 L=44.0' S=0.0050 '/' Capacity=4.57 cfs Outflow=2.01 cfs 0.159 af

Reach 7R: Ex. 24" RCP Avg. Flow Depth=1.15' Max Vel=4.50 fps Inflow=8.40 cfs 0.641 af
24.0" Round Pipe n=0.013 L=154.0' S=0.0035 '/' Capacity=13.40 cfs Outflow=8.18 cfs 0.641 af

Reach 8R: Ex. 24" RCP Avg. Flow Depth=0.99' Max Vel=5.24 fps Inflow=8.18 cfs 0.641 af
24.0" Round Pipe n=0.013 L=216.0' S=0.0054 '/' Capacity=16.65 cfs Outflow=7.88 cfs 0.641 af

Pond 5P: East Rv Chambers #2 Peak Elev=188.74' Storage=2,954 cf Inflow=1.65 cfs 0.141 af
Discarded=0.07 cfs 0.134 af Primary=0.04 cfs 0.007 af Outflow=0.12 cfs 0.141 af

Pond 8P: East Rv Chambers #1 Peak Elev=187.61' Storage=433 cf Inflow=0.36 cfs 0.027 af
Discarded=0.04 cfs 0.027 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.027 af

Pond 9P: East Rv Chambers #3 Peak Elev=189.02' Storage=1,424 cf Inflow=0.89 cfs 0.071 af
Discarded=0.03 cfs 0.063 af Primary=0.08 cfs 0.008 af Outflow=0.11 cfs 0.071 af

Pond 15P: Garage Trench Peak Elev=193.40' Storage=329 cf Inflow=0.22 cfs 0.018 af
Discarded=0.01 cfs 0.018 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.018 af

Pond 17P: East Rv Chambers #4 Peak Elev=188.52' Storage=1,744 cf Inflow=1.22 cfs 0.078 af
Discarded=0.05 cfs 0.078 af Primary=0.00 cfs 0.000 af Outflow=0.05 cfs 0.078 af

Pond C8: Banked Parking chambers Peak Elev=189.66' Storage=970 cf Inflow=0.78 cfs 0.057 af
Discarded=0.07 cfs 0.057 af Primary=0.00 cfs 0.000 af Outflow=0.07 cfs 0.057 af

Pond C9: Banked Parking chambers Peak Elev=187.25' Storage=591 cf Inflow=0.45 cfs 0.034 af
Discarded=0.04 cfs 0.034 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.034 af

Link 1L: Ex. CB w/15" RCP to 3 Federal Inflow=4.07 cfs 0.367 af
Primary=4.07 cfs 0.367 af

Link 2L: Flow to BVW Inflow=16.95 cfs 1.660 af
Primary=16.95 cfs 1.660 af

Link 3L: Northeast area at 2 Federal Inflow=0.77 cfs 0.117 af
Primary=0.77 cfs 0.117 af

Link 14L: Outflow of Combined INF Systems Inflow=0.04 cfs 0.007 af
Primary=0.04 cfs 0.007 af

Total Runoff Area = 13.624 ac Runoff Volume = 2.557 af Average Runoff Depth = 2.25"
37.53% Pervious = 5.113 ac 62.47% Impervious = 8.511 ac

Summary for Subcatchment 16S: Rear of Garage

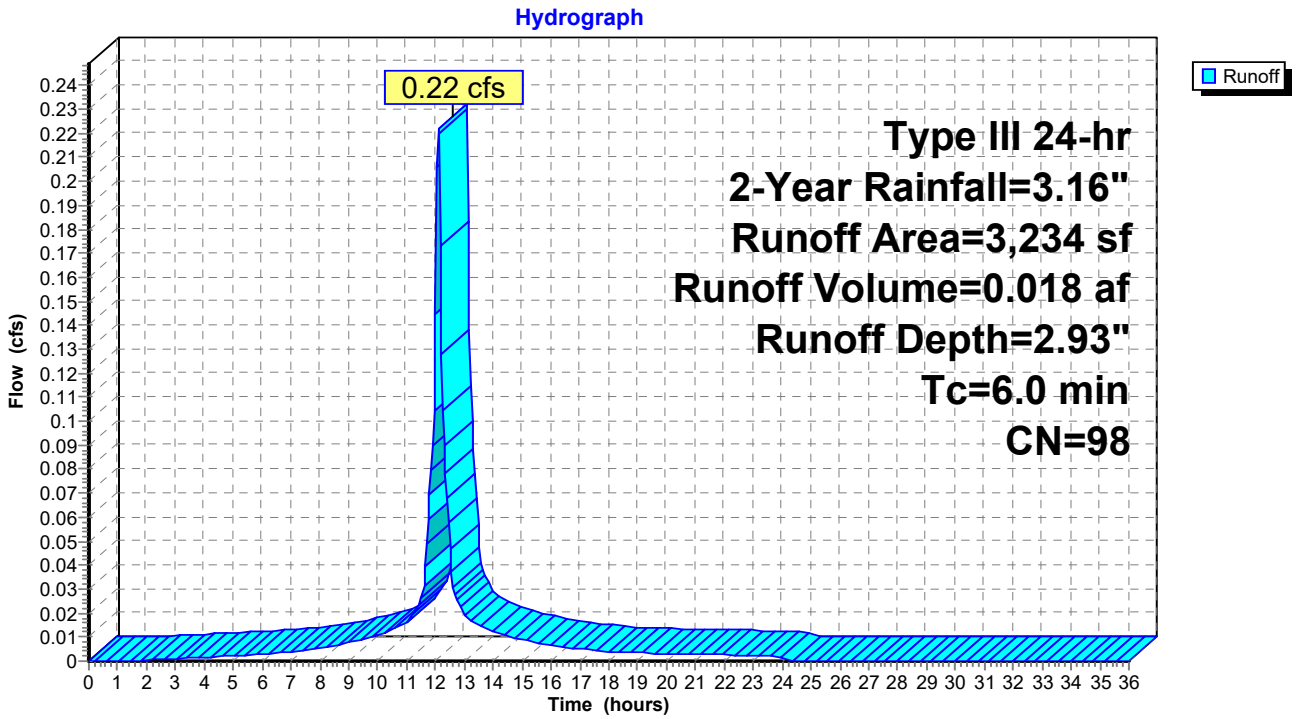
Runoff = 0.22 cfs @ 12.09 hrs, Volume= 0.018 af, Depth= 2.93"
Routed to Pond 15P : Garage Trench

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (sf)	CN	Description
3,234	98	Roofs, HSG D
3,234		100.00% Impervious Area

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

Subcatchment 16S: Rear of Garage



Summary for Subcatchment 18S: Subcat P-6

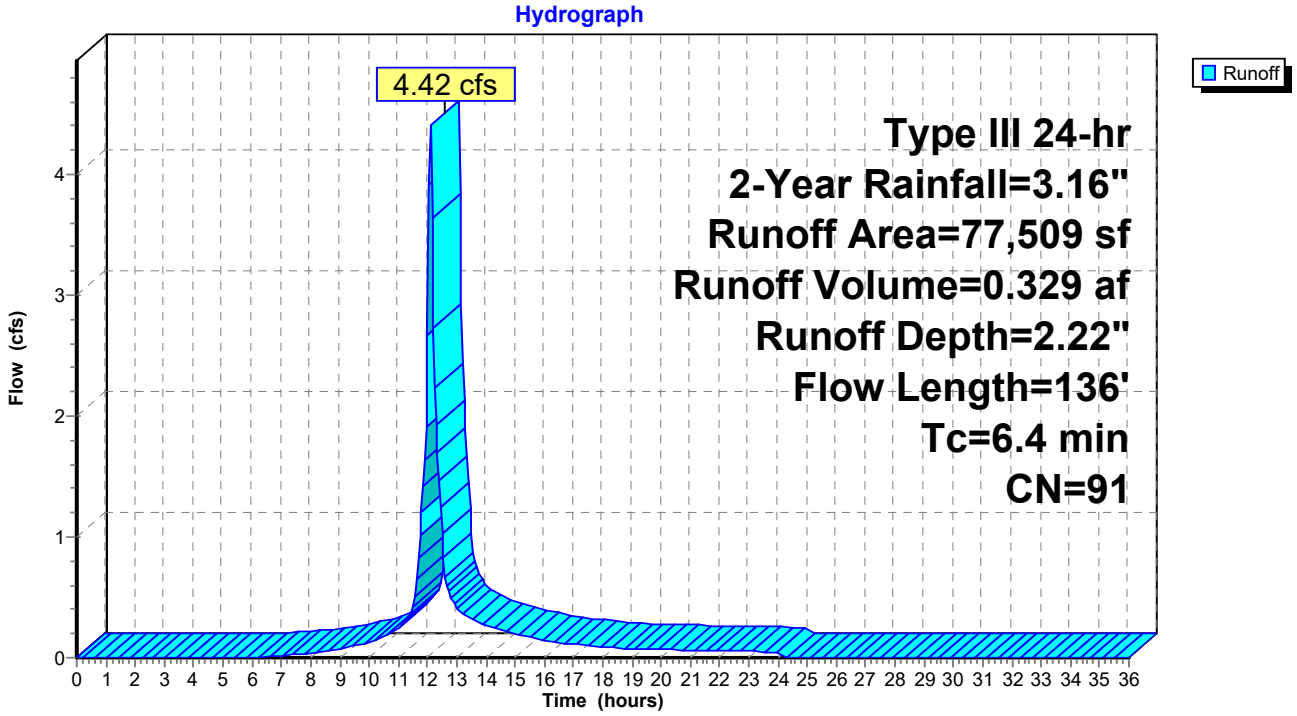
Runoff = 4.42 cfs @ 12.09 hrs, Volume= 0.329 af, Depth= 2.22"
Routed to Reach 7R : Ex. 24" RCP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (sf)	CN	Description
28,079	80	>75% Grass cover, Good, HSG D
26,495	98	Paved parking, HSG D
19,592	98	Roofs, HSG D
3,343	77	Woods, Good, HSG D
77,509	91	Weighted Average
31,422		40.54% Pervious Area
46,087		59.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	50	0.0200	0.15		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 3.21"
0.5	48	0.0100	1.61		**Shallow Concentrated Flow, BC** Unpaved Kv= 16.1 fps
0.3	38	0.0100	2.03		**Shallow Concentrated Flow, CD** Paved Kv= 20.3 fps
6.4	136	Total			

Subcatchment 18S: Subcat P-6



Summary for Subcatchment P-1: Subcat P-1

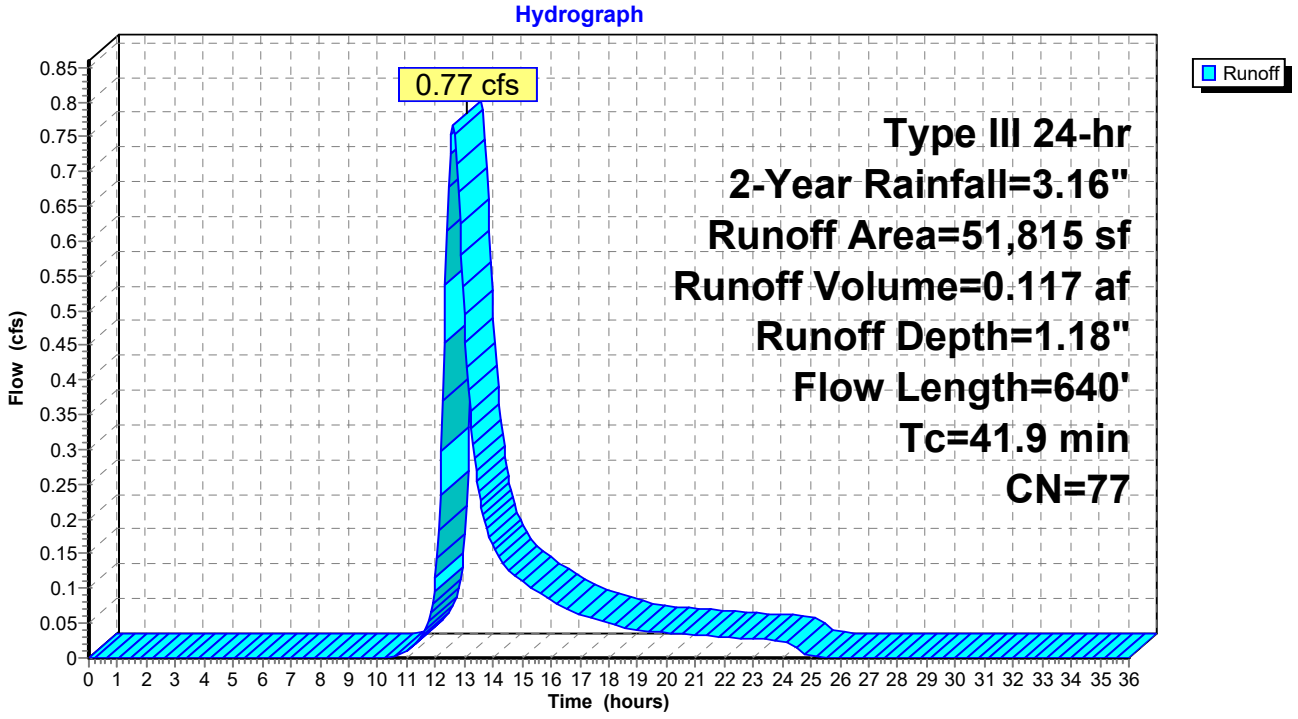
Runoff = 0.77 cfs @ 12.61 hrs, Volume= 0.117 af, Depth= 1.18"
Routed to Link 3L : Northeast area at 2 Federal

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (sf)	CN	Description
5,634	80	>75% Grass cover, Good, HSG D
139	98	Paved parking, HSG D
46,042	77	Woods, Good, HSG D
51,815	77	Weighted Average
51,676		99.73% Pervious Area
139		0.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	50	0.0060	0.04		**Sheet Flow, AB** Woods: Light underbrush n= 0.400 P2= 3.21"
22.0	590	0.0080	0.45		**Shallow Concentrated Flow, BC** Woodland Kv= 5.0 fps
41.9	640	Total			

Subcatchment P-1: Subcat P-1



Summary for Subcatchment P-2: Subcat P-2

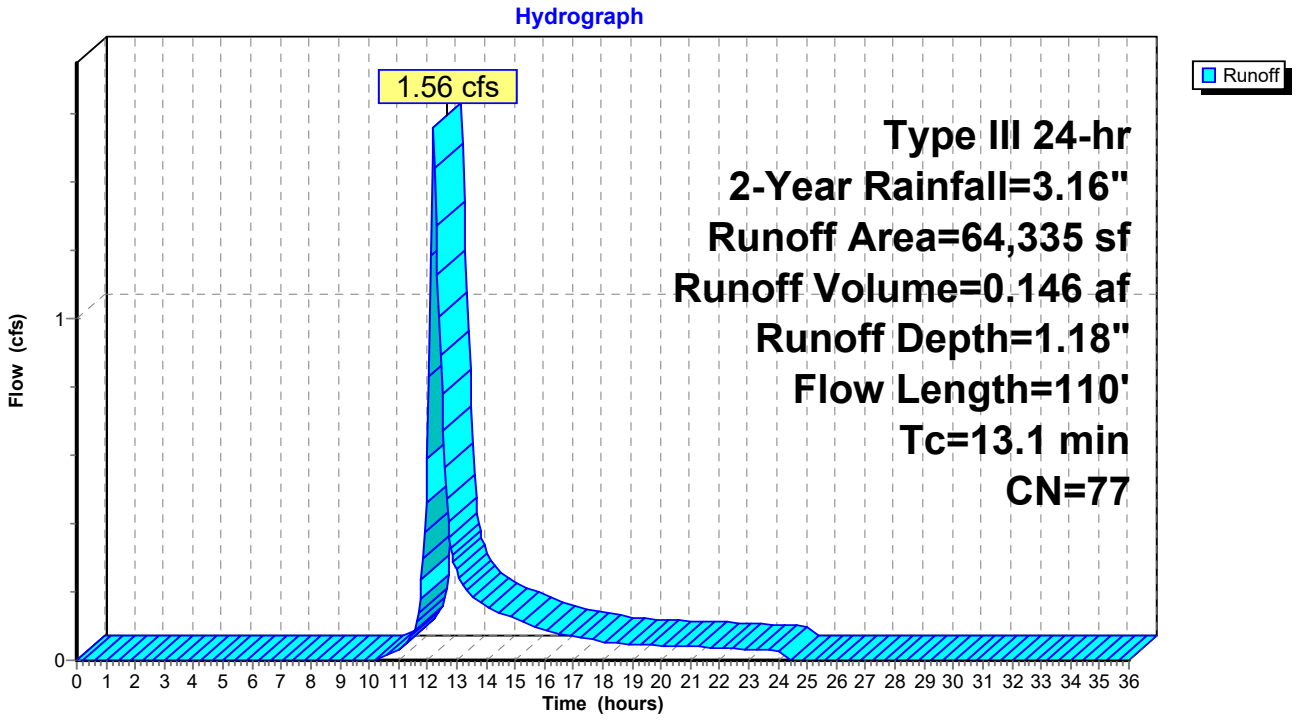
Runoff = 1.56 cfs @ 12.19 hrs, Volume= 0.146 af, Depth= 1.18"
Routed to Link 2L : Flow to BVW

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (sf)	CN	Description
8,544	80	>75% Grass cover, Good, HSG D
55,791	77	Woods, Good, HSG D
64,335	77	Weighted Average
64,335		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	50	0.0200	0.07		**Sheet Flow, AB** Woods: Light underbrush n= 0.400 P2= 3.21"
0.8	60	0.0700	1.32		**Shallow Concentrated Flow, BC** Woodland Kv= 5.0 fps
13.1	110	Total			

Subcatchment P-2: Subcat P-2



Summary for Subcatchment P-2.1: Subcat P-2.1

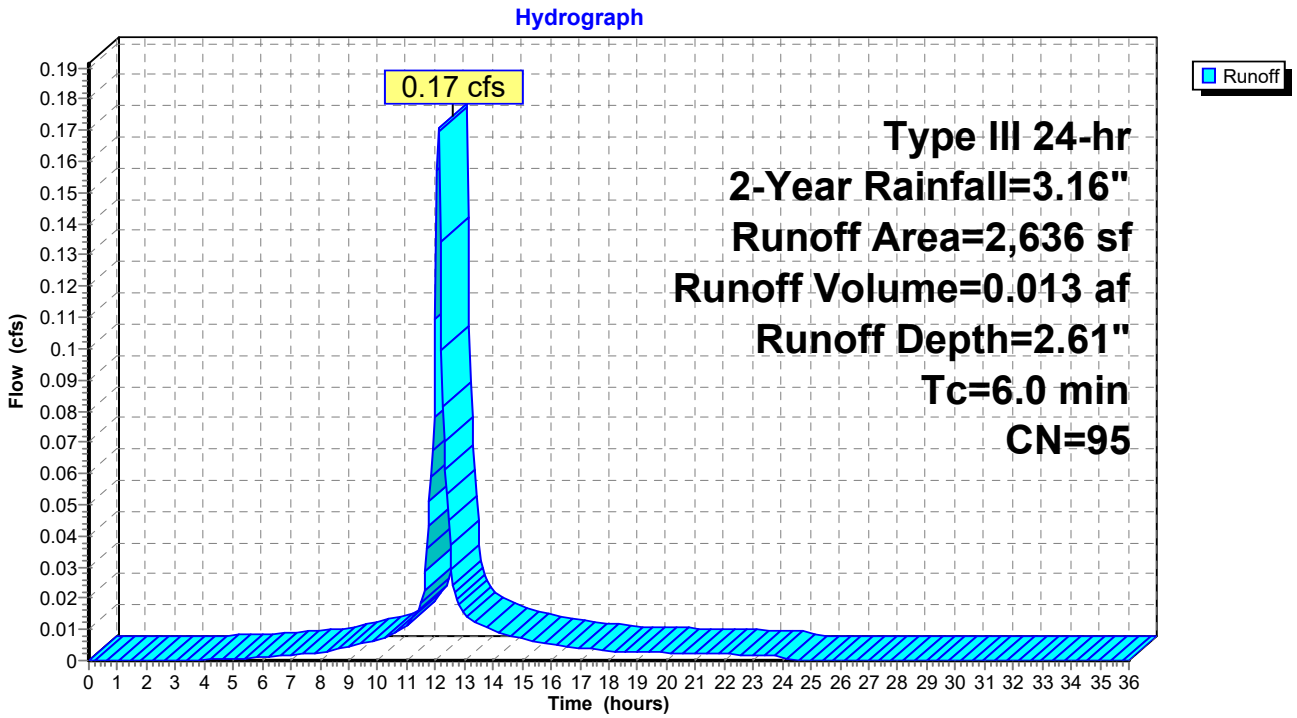
Runoff = 0.17 cfs @ 12.09 hrs, Volume= 0.013 af, Depth= 2.61"
Routed to Reach 2R-1 : new 12" west

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (sf)	CN	Description
389	80	>75% Grass cover, Good, HSG D
2,247	98	Paved parking, HSG D
2,636	95	Weighted Average
389		14.76% Pervious Area
2,247		85.24% Impervious Area

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

Subcatchment P-2.1: Subcat P-2.1



Summary for Subcatchment P-2.10: Subcat P-2.10

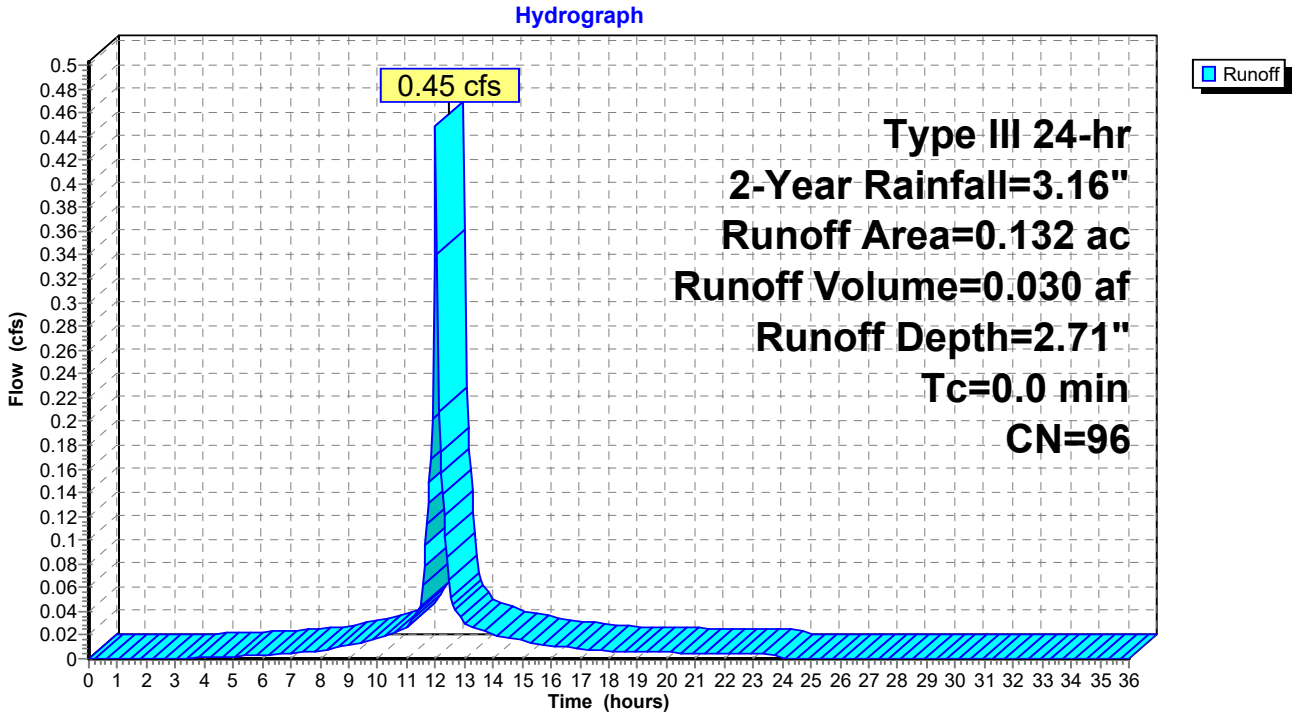
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.45 cfs @ 12.00 hrs, Volume= 0.030 af, Depth= 2.71"
Routed to Reach 1R-4 : new 24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (ac)	CN	Description
0.014	80	>75% Grass cover, Good, HSG D
0.119	98	Paved parking, HSG D
0.000	77	Woods, Good, HSG D
0.132	96	Weighted Average
0.014		10.24% Pervious Area
0.119		89.76% Impervious Area

Subcatchment P-2.10: Subcat P-2.10



Summary for Subcatchment P-2.11: Subcat P-2.11

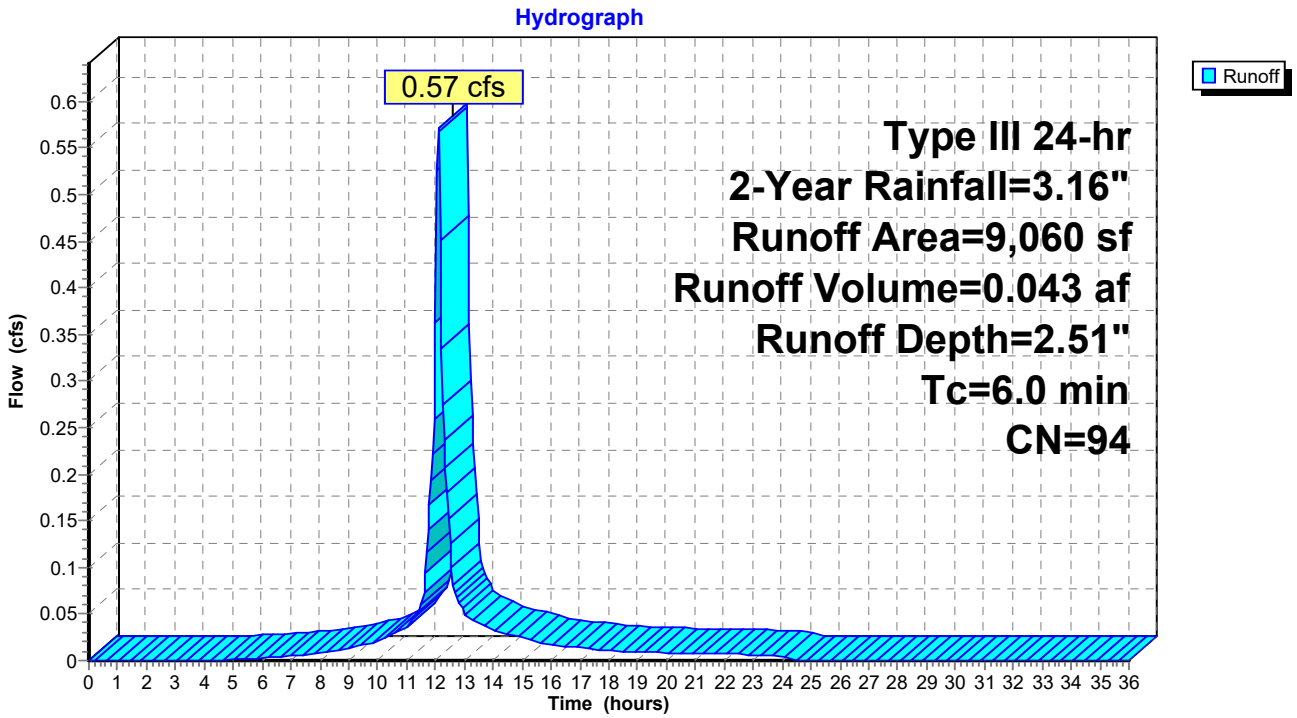
Runoff = 0.57 cfs @ 12.09 hrs, Volume= 0.043 af, Depth= 2.51"
Routed to Reach 1R-5 : new 24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (sf)	CN	Description
2,157	80	>75% Grass cover, Good, HSG D
6,902	98	Paved parking, HSG D
9,060	94	Weighted Average
2,157		23.81% Pervious Area
6,902		76.19% Impervious Area

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

Subcatchment P-2.11: Subcat P-2.11



Summary for Subcatchment P-2.12: Subcat P-2.12

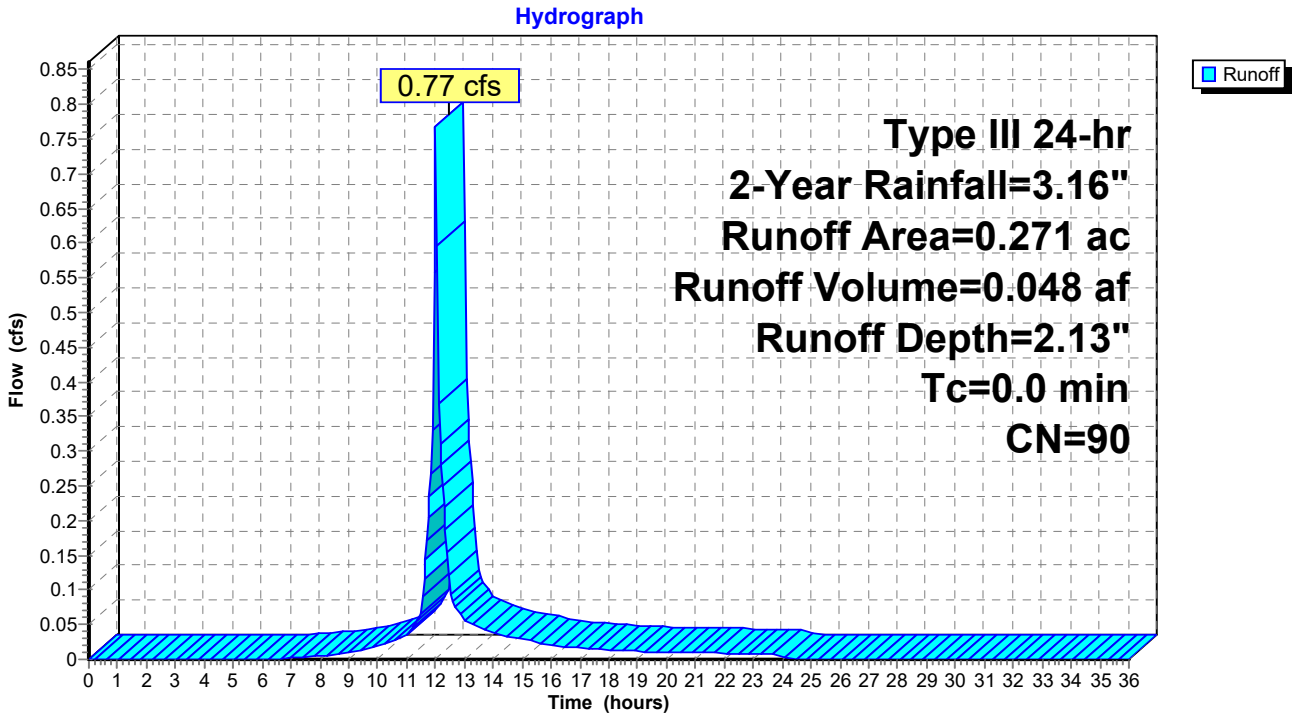
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.77 cfs @ 12.00 hrs, Volume= 0.048 af, Depth= 2.13"
Routed to Reach 1R-6 : New 24" ADS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (ac)	CN	Description
0.125	80	>75% Grass cover, Good, HSG D
0.146	98	Paved parking, HSG D
0.271	90	Weighted Average
0.125		46.20% Pervious Area
0.146		53.80% Impervious Area

Subcatchment P-2.12: Subcat P-2.12



Summary for Subcatchment P-2.2: Subcat P-2.2

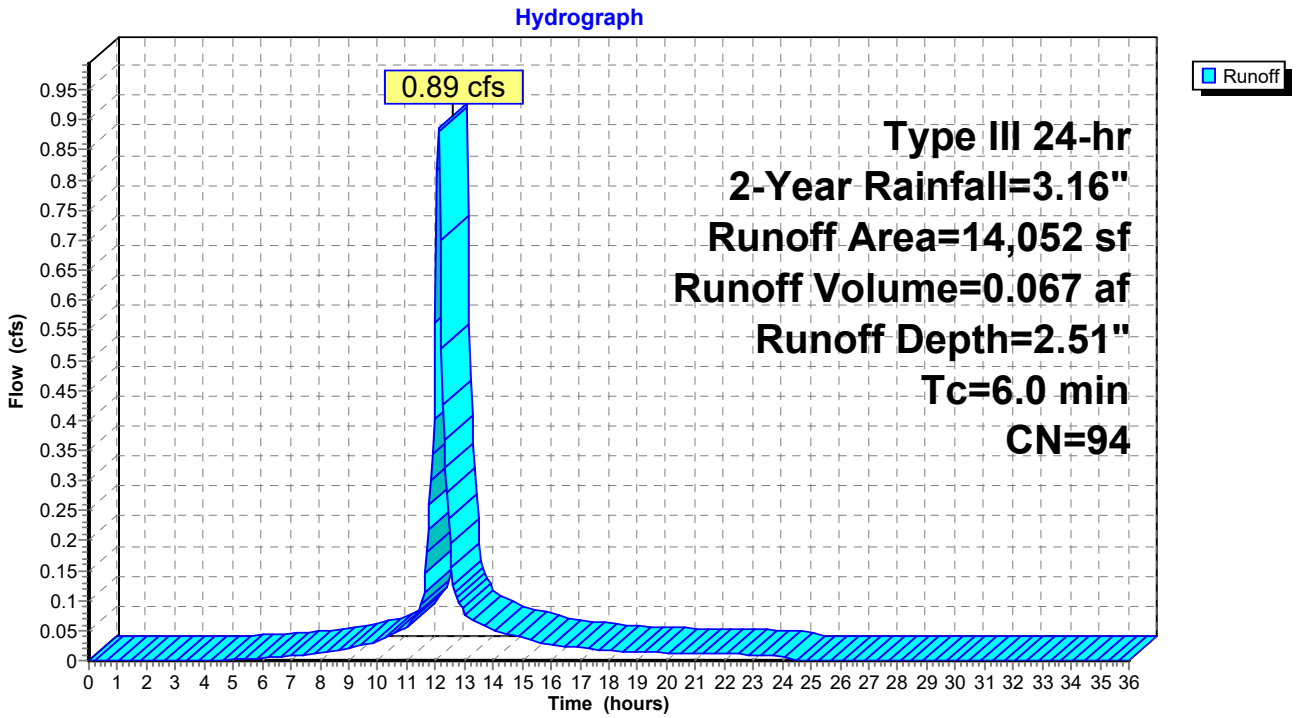
Runoff = 0.89 cfs @ 12.09 hrs, Volume= 0.067 af, Depth= 2.51"
Routed to Reach 2R-2 : new 12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (sf)	CN	Description
2,981	80	>75% Grass cover, Good, HSG D
11,071	98	Paved parking, HSG D
14,052	94	Weighted Average
2,981		21.22% Pervious Area
11,071		78.78% Impervious Area

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

Subcatchment P-2.2: Subcat P-2.2



Summary for Subcatchment P-2.3: Subcat P-2.3

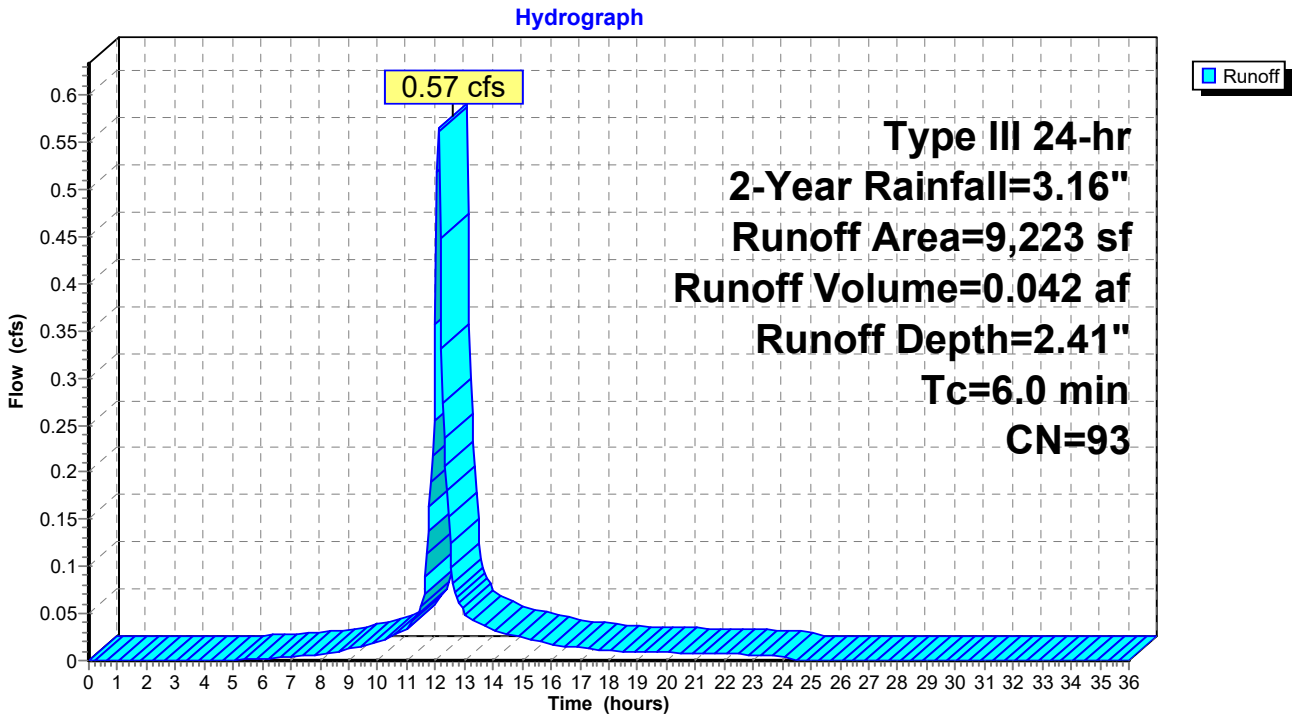
Runoff = 0.57 cfs @ 12.09 hrs, Volume= 0.042 af, Depth= 2.41"
Routed to Reach 2R-3 : new 12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (sf)	CN	Description
2,393	80	>75% Grass cover, Good, HSG D
6,830	98	Paved parking, HSG D
9,223	93	Weighted Average
2,393		25.94% Pervious Area
6,830		74.06% Impervious Area

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

Subcatchment P-2.3: Subcat P-2.3



Summary for Subcatchment P-2.4: Subcat P-2.4

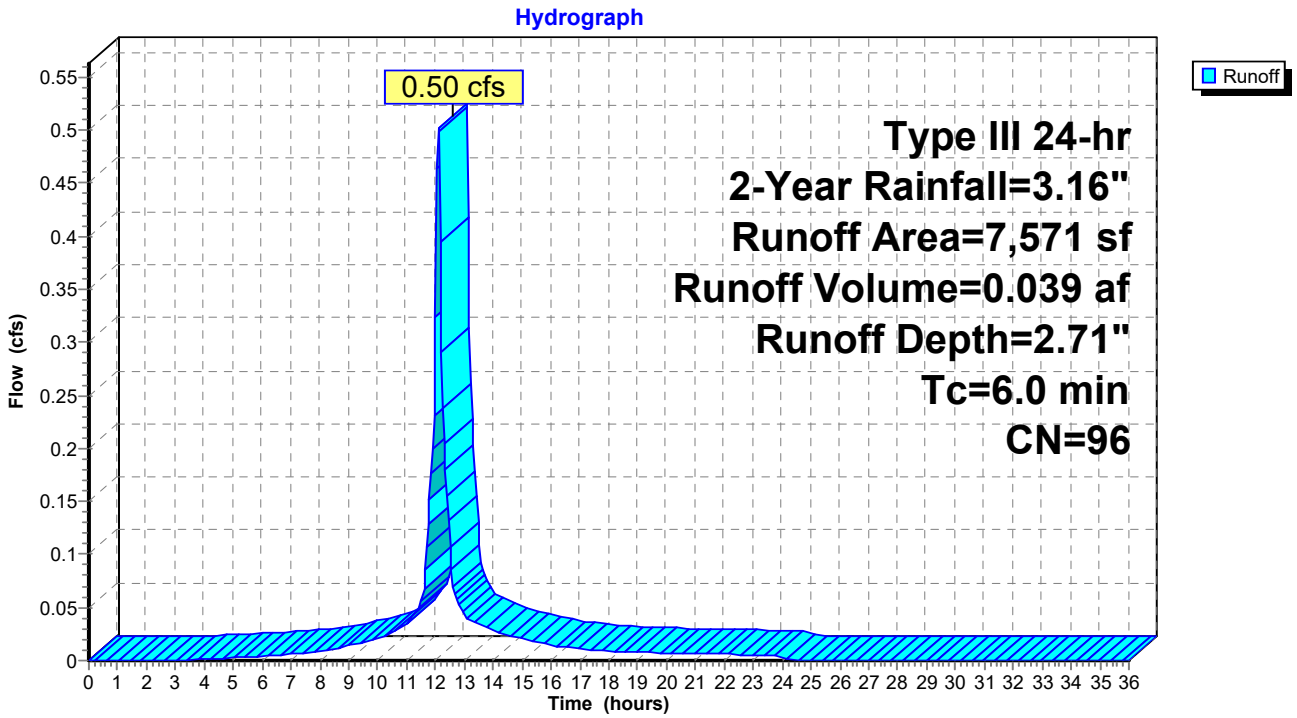
Runoff = 0.50 cfs @ 12.09 hrs, Volume= 0.039 af, Depth= 2.71"
Routed to Reach 2R-4 : new 18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (sf)	CN	Description
1,032	80	>75% Grass cover, Good, HSG D
6,539	98	Paved parking, HSG D
7,571	96	Weighted Average
1,032		13.63% Pervious Area
6,539		86.37% Impervious Area

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

Subcatchment P-2.4: Subcat P-2.4



Summary for Subcatchment P-2.5: Subcat P-2.5

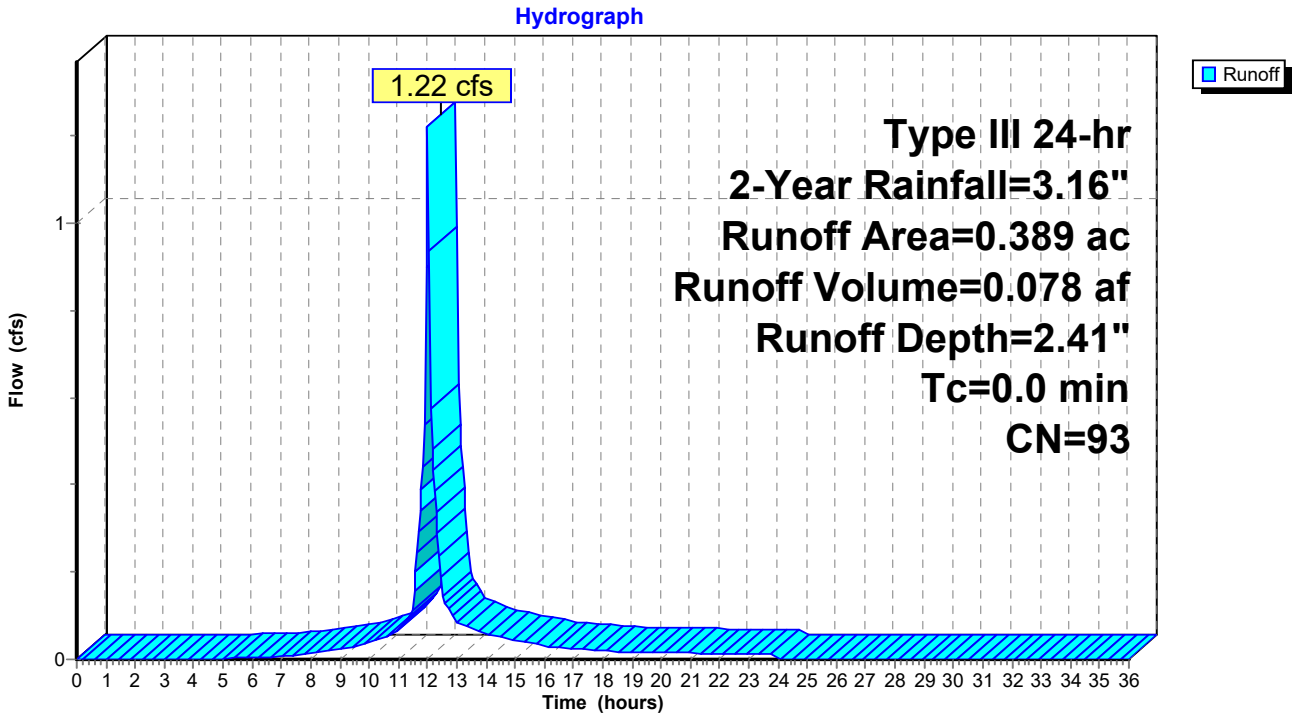
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 1.22 cfs @ 12.00 hrs, Volume= 0.078 af, Depth= 2.41"
Routed to Pond 17P : East Rv Chambers #4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (ac)	CN	Description
0.117	80	>75% Grass cover, Good, HSG D
0.272	98	Paved parking, HSG D
0.389	93	Weighted Average
0.117		30.12% Pervious Area
0.272		69.88% Impervious Area

Subcatchment P-2.5: Subcat P-2.5



Summary for Subcatchment P-2.6: Subcat P-2.6

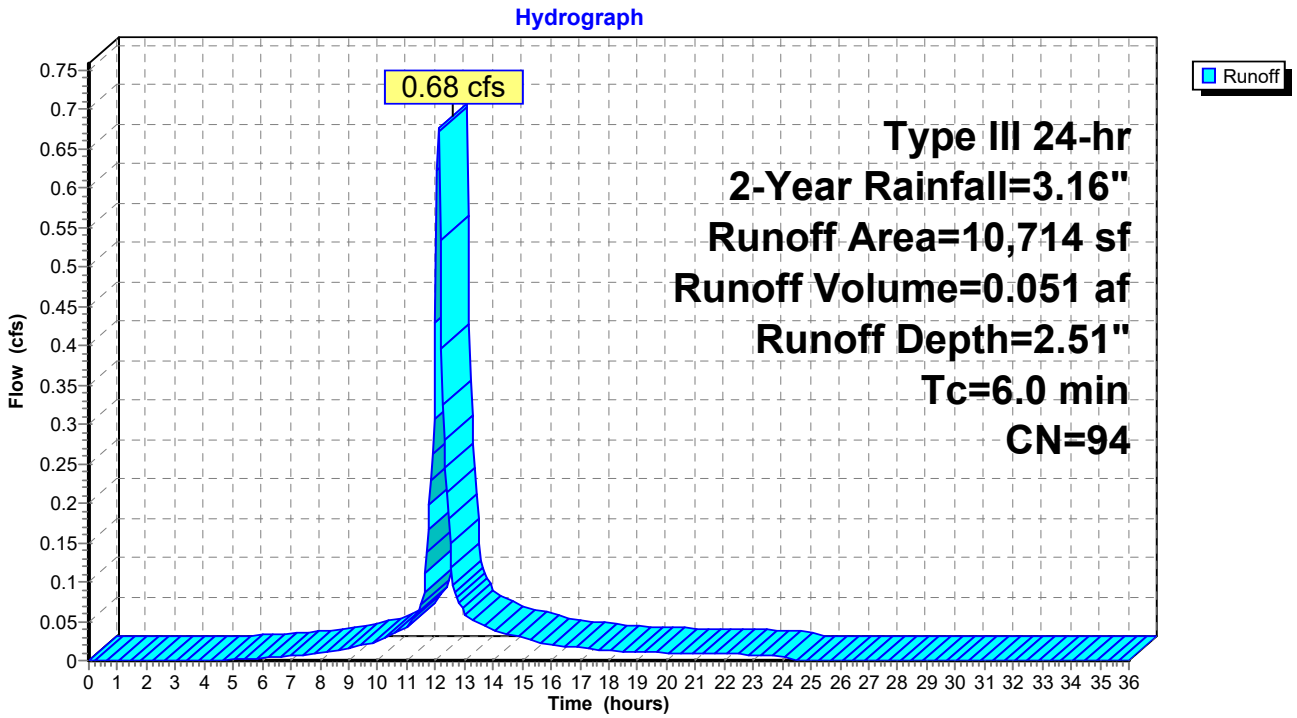
Runoff = 0.68 cfs @ 12.09 hrs, Volume= 0.051 af, Depth= 2.51"
Routed to Reach 1R-2 : New 18" ADS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (sf)	CN	Description
2,323	80	>75% Grass cover, Good, HSG D
8,391	98	Paved parking, HSG D
10,714	94	Weighted Average
2,323		21.68% Pervious Area
8,391		78.32% Impervious Area

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

Subcatchment P-2.6: Subcat P-2.6



Summary for Subcatchment P-2.7: Subcat P-2.7

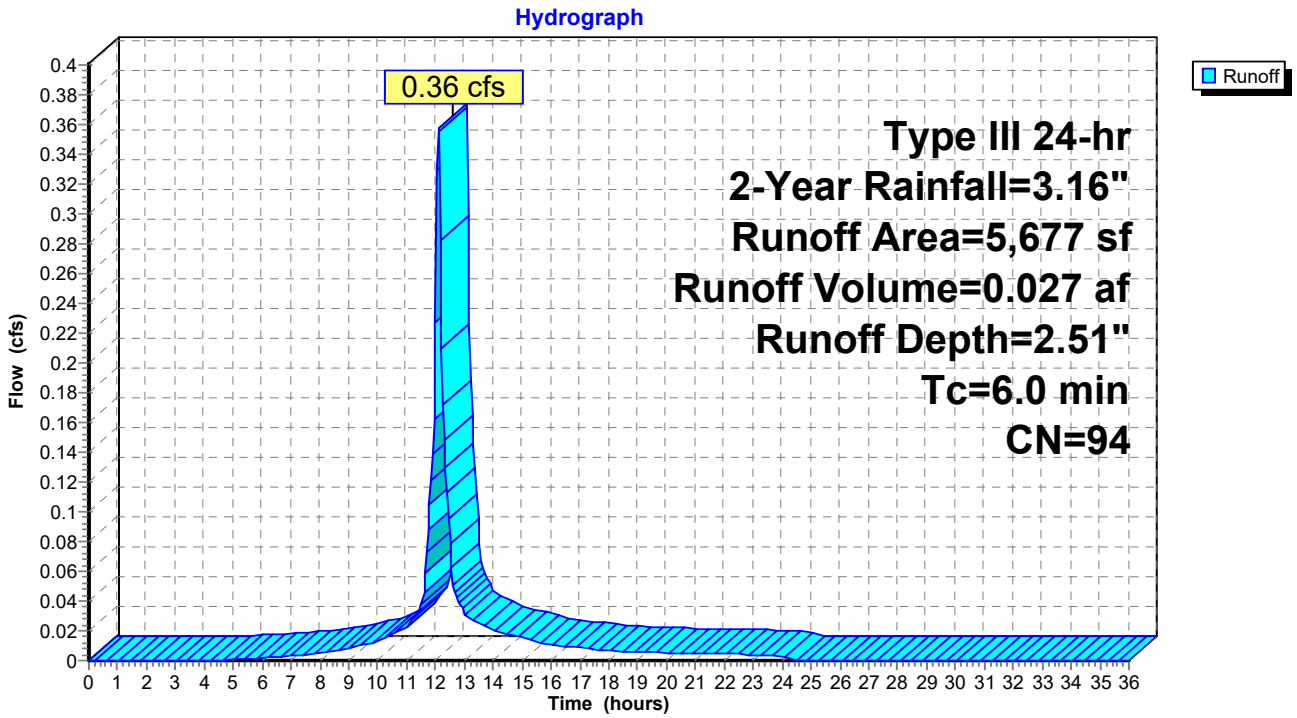
Runoff = 0.36 cfs @ 12.09 hrs, Volume= 0.027 af, Depth= 2.51"
Routed to Pond 8P : East Rv Chambers #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (sf)	CN	Description
1,309	80	>75% Grass cover, Good, HSG D
4,368	98	Paved parking, HSG D
5,677	94	Weighted Average
1,309		23.06% Pervious Area
4,368		76.94% Impervious Area

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

Subcatchment P-2.7: Subcat P-2.7



Summary for Subcatchment P-2.8: Subcat P-2.8

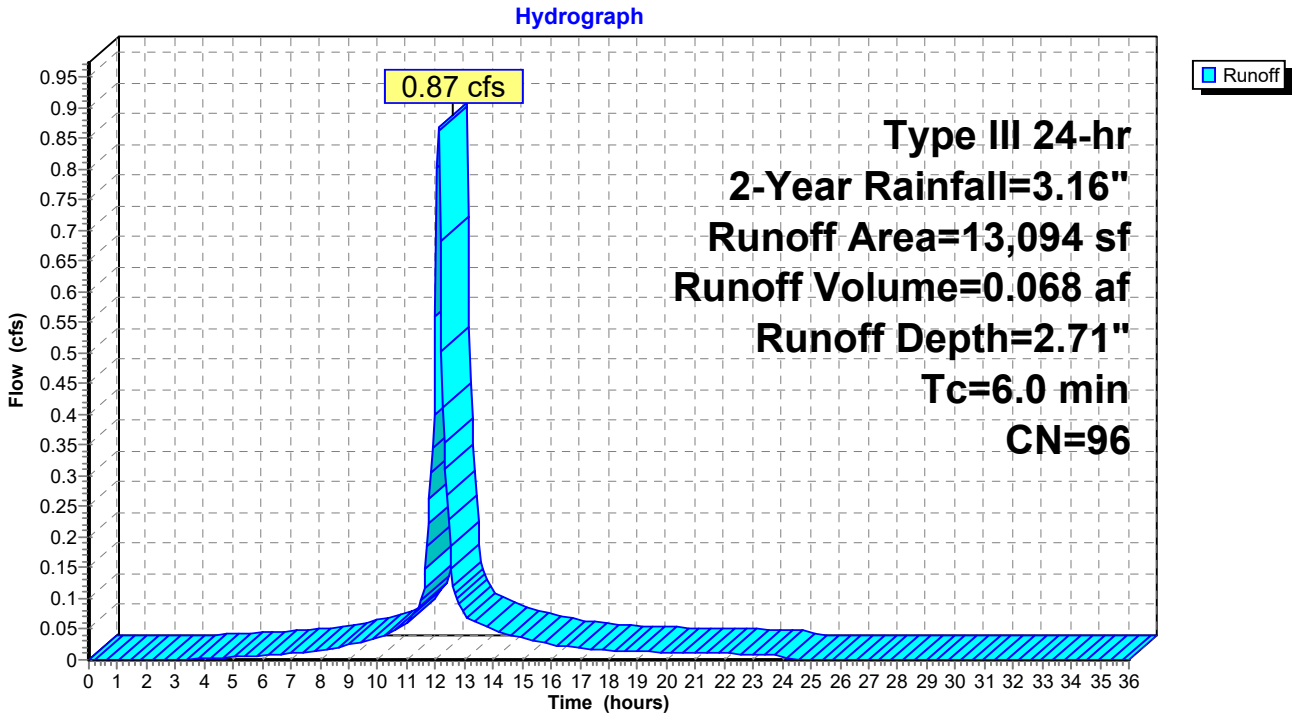
Runoff = 0.87 cfs @ 12.09 hrs, Volume= 0.068 af, Depth= 2.71"
Routed to Pond 5P : East Rv Chambers #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (sf)	CN	Description
1,239	80	>75% Grass cover, Good, HSG D
10,026	98	Paved parking, HSG D
1,828	98	Roofs, HSG D
13,094	96	Weighted Average
1,239		9.46% Pervious Area
11,854		90.54% Impervious Area

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

Subcatchment P-2.8: Subcat P-2.8



Summary for Subcatchment P-2.9: Subcat P-2.9

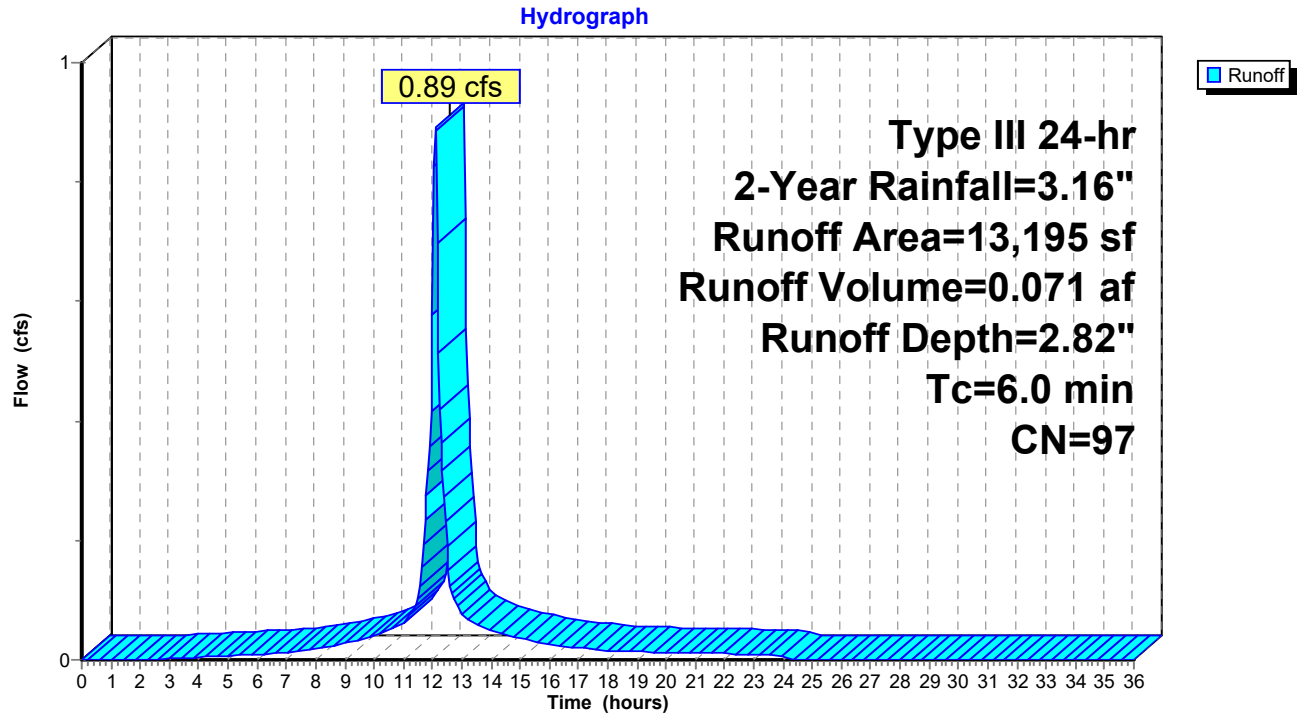
Runoff = 0.89 cfs @ 12.09 hrs, Volume= 0.071 af, Depth= 2.82"
Routed to Pond 9P : East Rv Chambers #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (sf)	CN	Description
1,020	80	>75% Grass cover, Good, HSG D
10,770	98	Paved parking, HSG D
1,406	98	Roofs, HSG D
13,195	97	Weighted Average
1,020		7.73% Pervious Area
12,176		92.27% Impervious Area

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

Subcatchment P-2.9: Subcat P-2.9



Summary for Subcatchment P-3: Subcat P-3

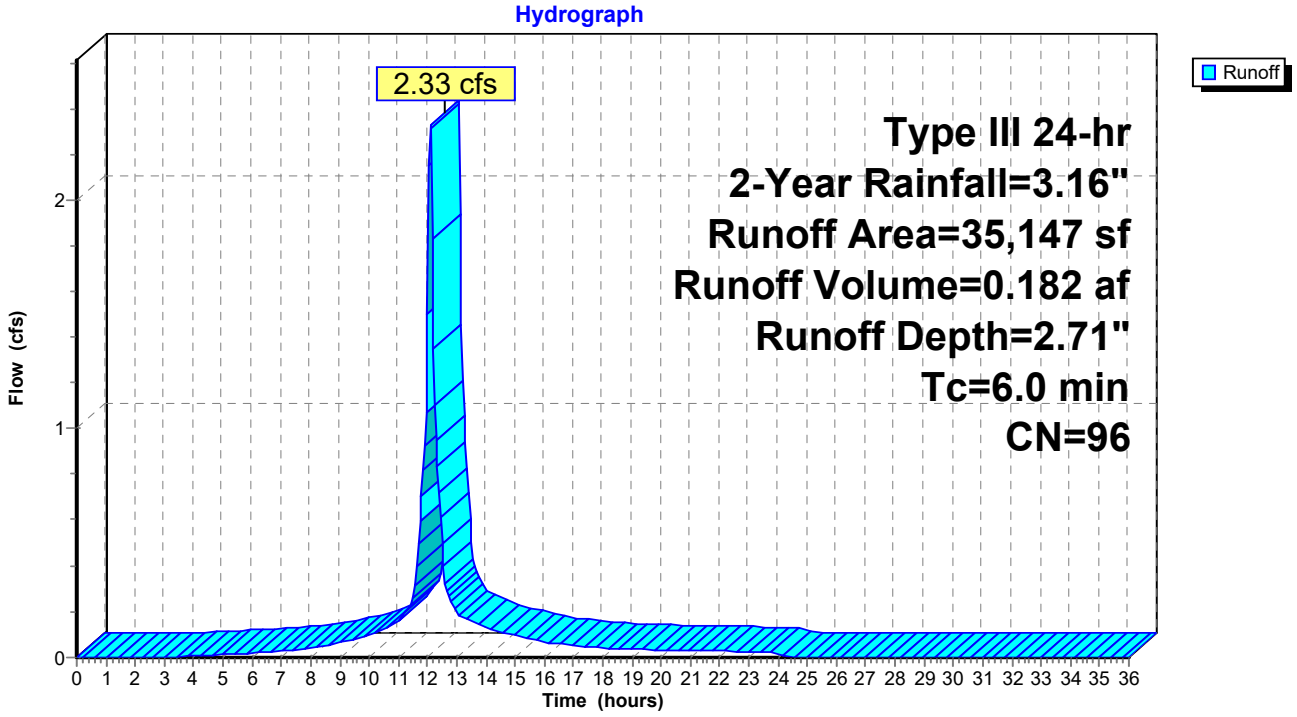
Runoff = 2.33 cfs @ 12.09 hrs, Volume= 0.182 af, Depth= 2.71"
Routed to Reach 1R-1 : Ex. 18" RCP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (sf)	CN	Description
1,404	80	>75% Grass cover, Good, HSG D
21,361	98	Paved parking, HSG D
9,936	98	Roofs, HSG D
2,445	77	Woods, Good, HSG D
35,147	96	Weighted Average
3,849		10.95% Pervious Area
31,297		89.05% Impervious Area

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

Subcatchment P-3: Subcat P-3



Summary for Subcatchment P-4: Subcat P-4

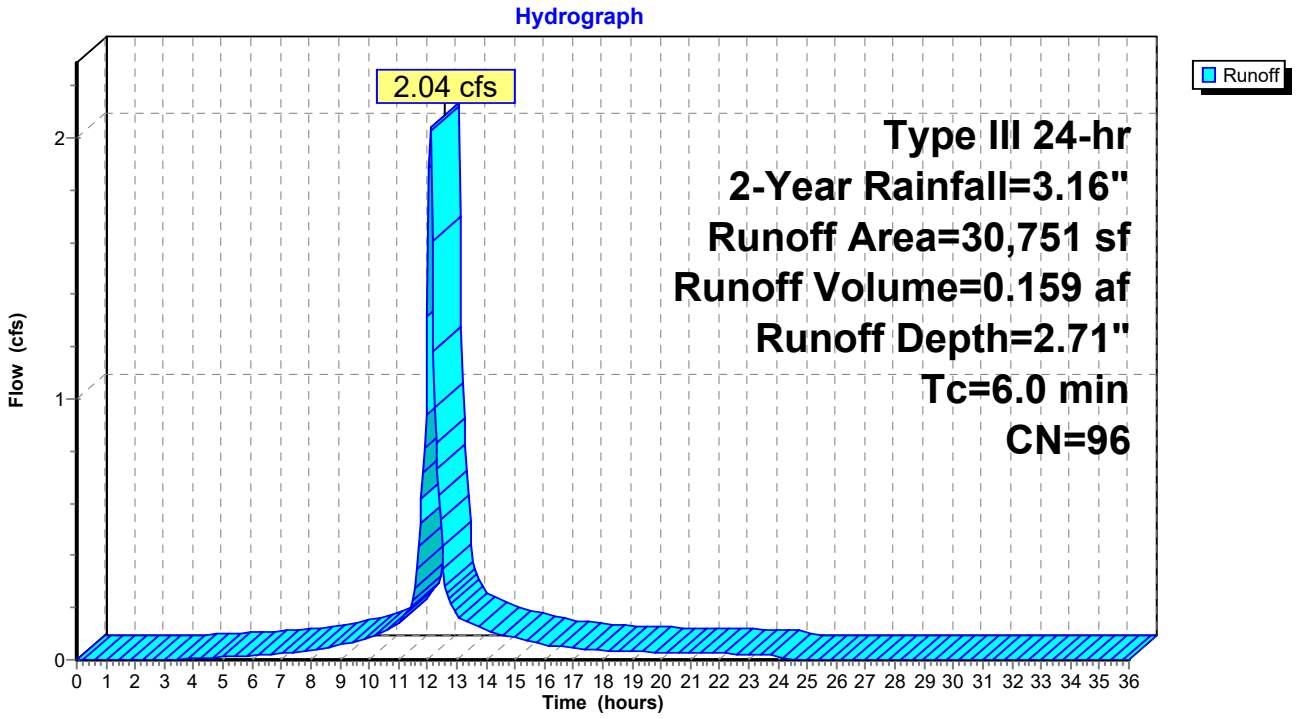
Runoff = 2.04 cfs @ 12.09 hrs, Volume= 0.159 af, Depth= 2.71"
Routed to Reach 3R : Ex. 12" RCP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (sf)	CN	Description
4,139	80	>75% Grass cover, Good, HSG D
16,618	98	Paved parking, HSG D
9,994	98	Roofs, HSG D
30,751	96	Weighted Average
4,139		13.46% Pervious Area
26,612		86.54% Impervious Area

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

Subcatchment P-4: Subcat P-4



Summary for Subcatchment P-5: Subcat P-5

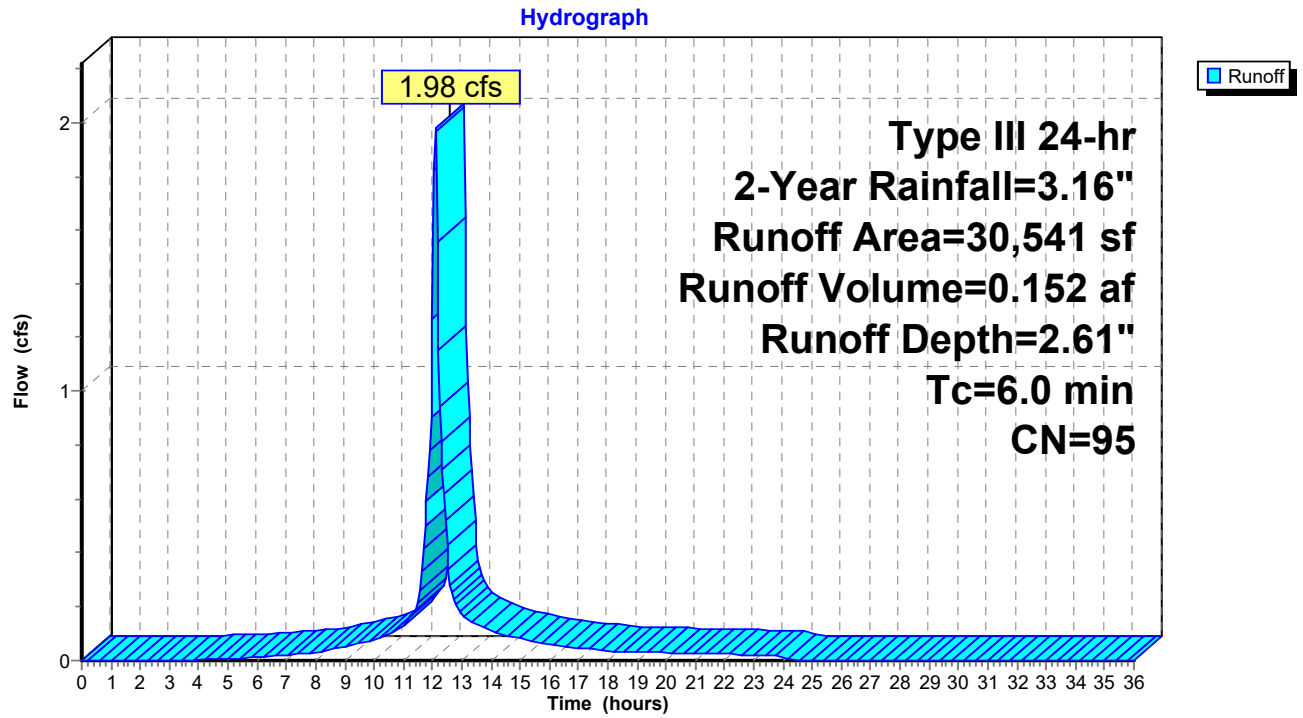
Runoff = 1.98 cfs @ 12.09 hrs, Volume= 0.152 af, Depth= 2.61"
Routed to Reach 7R : Ex. 24" RCP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (sf)	CN	Description
5,010	80	>75% Grass cover, Good, HSG D
25,531	98	Paved parking, HSG D
30,541	95	Weighted Average
5,010		16.41% Pervious Area
25,531		83.59% Impervious Area

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

Subcatchment P-5: Subcat P-5



Summary for Subcatchment P-7: Subcat P-7

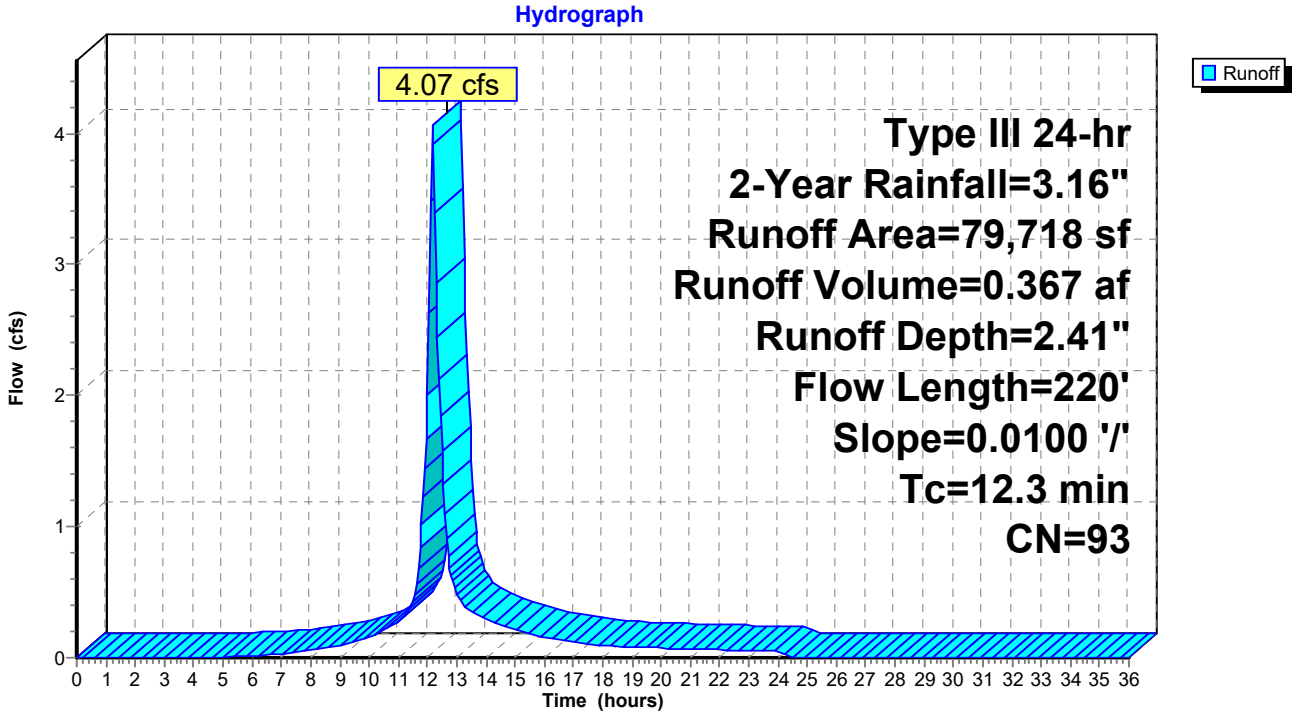
Runoff = 4.07 cfs @ 12.17 hrs, Volume= 0.367 af, Depth= 2.41"
Routed to Link 1L : Ex. CB w/15" RCP to 3 Federal

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (sf)	CN	Description
19,481	80	>75% Grass cover, Good, HSG D
41,091	98	Paved parking, HSG D
17,475	98	Roofs, HSG D
1,671	77	Woods, Good, HSG D
79,718	93	Weighted Average
21,152		26.53% Pervious Area
58,566		73.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0100	0.08		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 3.21"
0.7	70	0.0100	1.61		**Shallow Concentrated Flow, BC** Unpaved Kv= 16.1 fps
0.8	100	0.0100	2.03		**Shallow Concentrated Flow, CD** Paved Kv= 20.3 fps
12.3	220	Total			

Subcatchment P-7: Subcat P-7



Summary for Subcatchment R-1: Subcat R-1

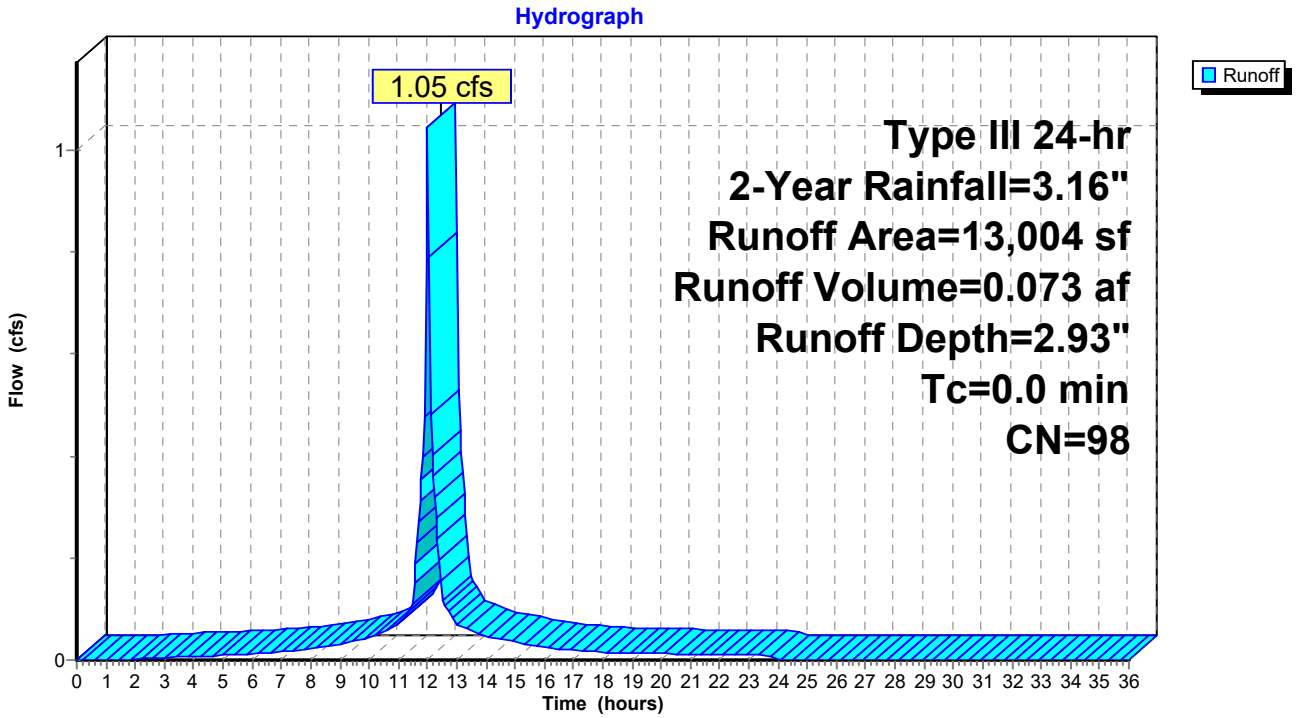
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 1.05 cfs @ 12.00 hrs, Volume= 0.073 af, Depth= 2.93"
Routed to Pond 5P : East Rv Chambers #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (sf)	CN	Description
13,004	98	Roofs, HSG D
13,004		100.00% Impervious Area

Subcatchment R-1: Subcat R-1



Summary for Subcatchment R-2: Subcat R-2

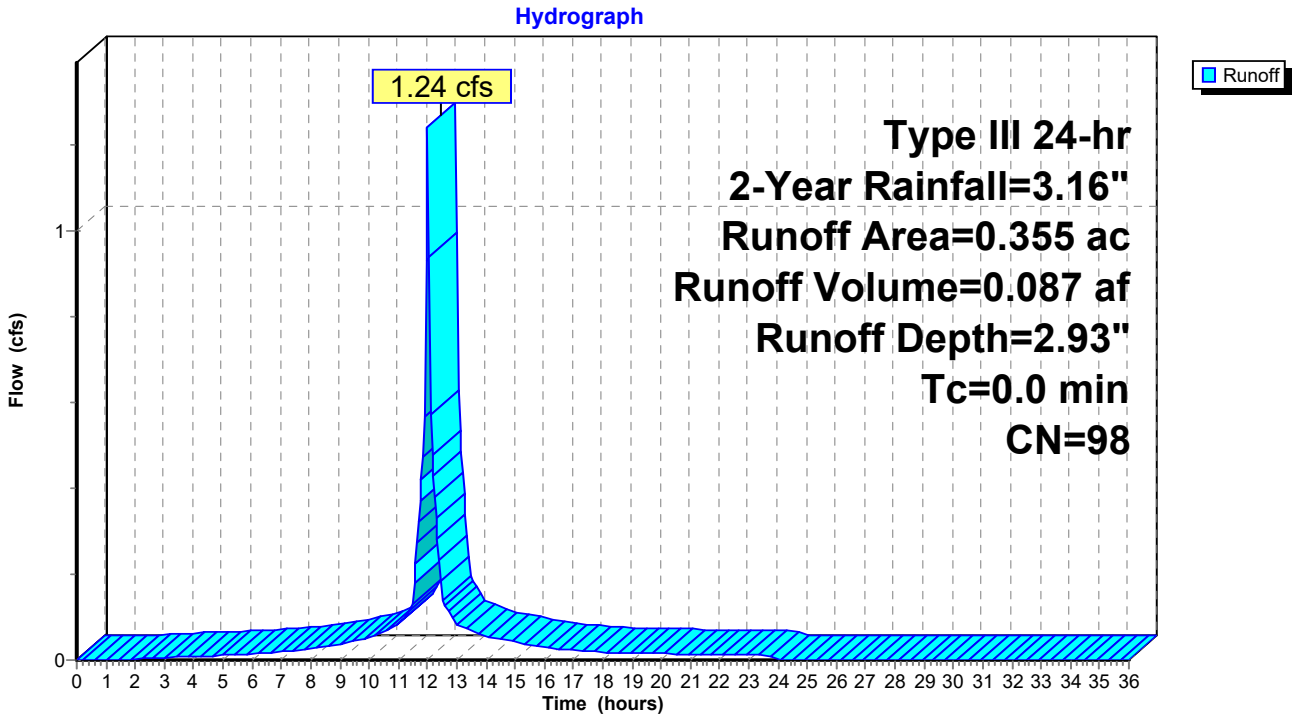
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 1.24 cfs @ 12.00 hrs, Volume= 0.087 af, Depth= 2.93"
Routed to Reach 2R-5 : new 18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (ac)	CN	Description
0.355	98	Roofs, HSG D
0.355		100.00% Impervious Area

Subcatchment R-2: Subcat R-2



Summary for Subcatchment R-3: Subcat R-3

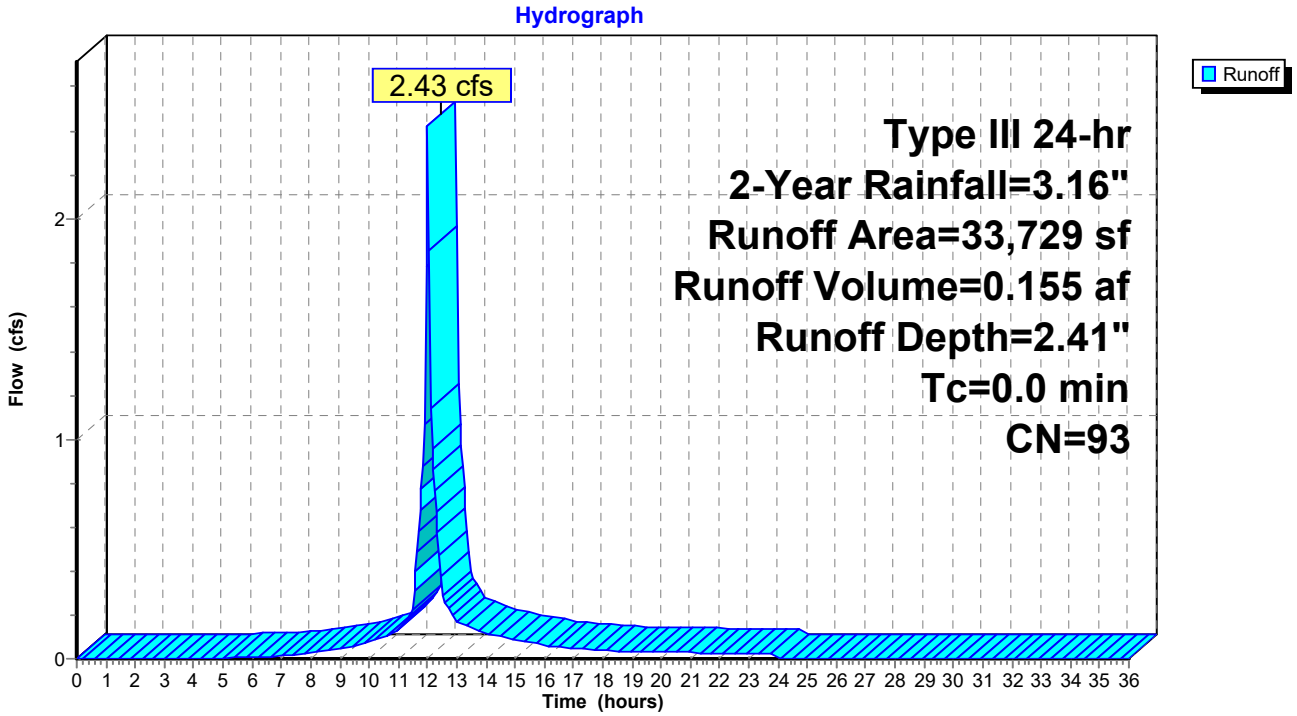
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 2.43 cfs @ 12.00 hrs, Volume= 0.155 af, Depth= 2.41"
Routed to Reach 2R-4 : new 18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (sf)	CN	Description
8,487	80	>75% Grass cover, Good, HSG D
5,583	98	Paved parking, HSG D
19,659	98	Roofs, HSG D
33,729	93	Weighted Average
8,487		25.16% Pervious Area
25,242		74.84% Impervious Area

Subcatchment R-3: Subcat R-3



Summary for Subcatchment R-4: Subcat R-4

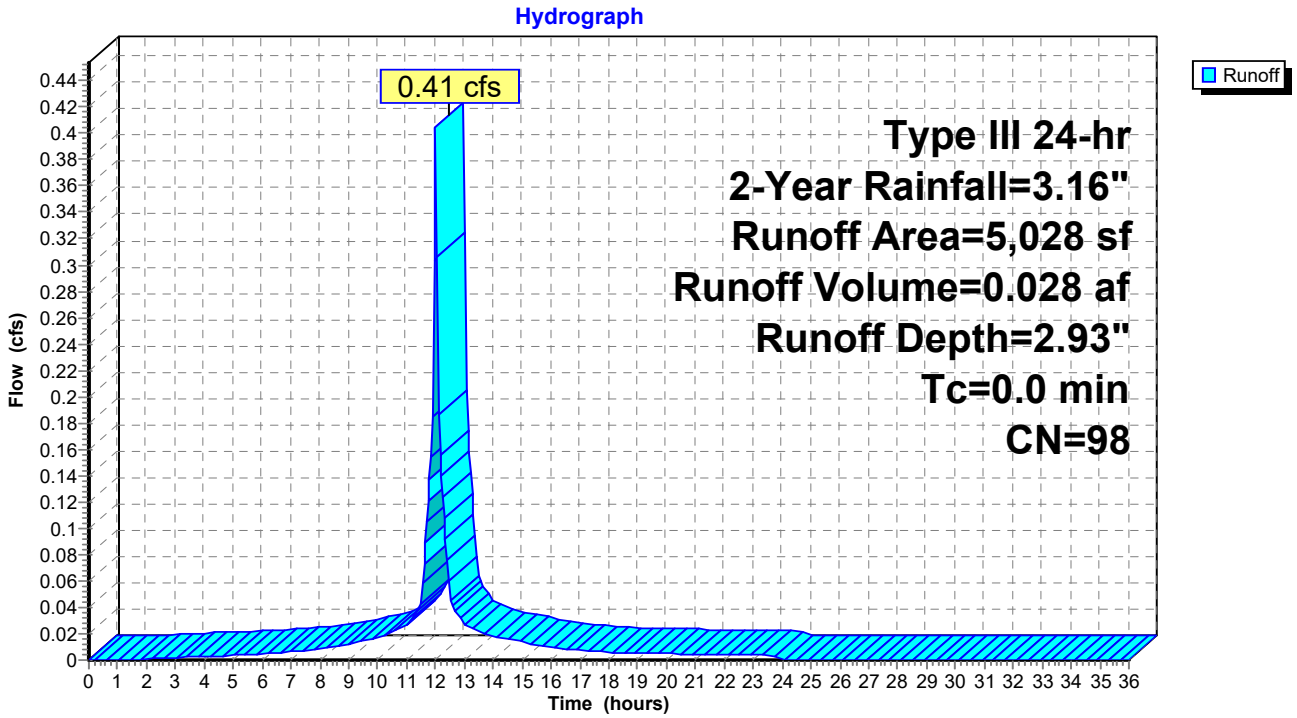
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.41 cfs @ 12.00 hrs, Volume= 0.028 af, Depth= 2.93"
Routed to Reach 1R-2 : New 18" ADS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (sf)	CN	Description
5,028	98	Roofs, HSG D
5,028		100.00% Impervious Area

Subcatchment R-4: Subcat R-4



Summary for Subcatchment R-5: Subcat R-5

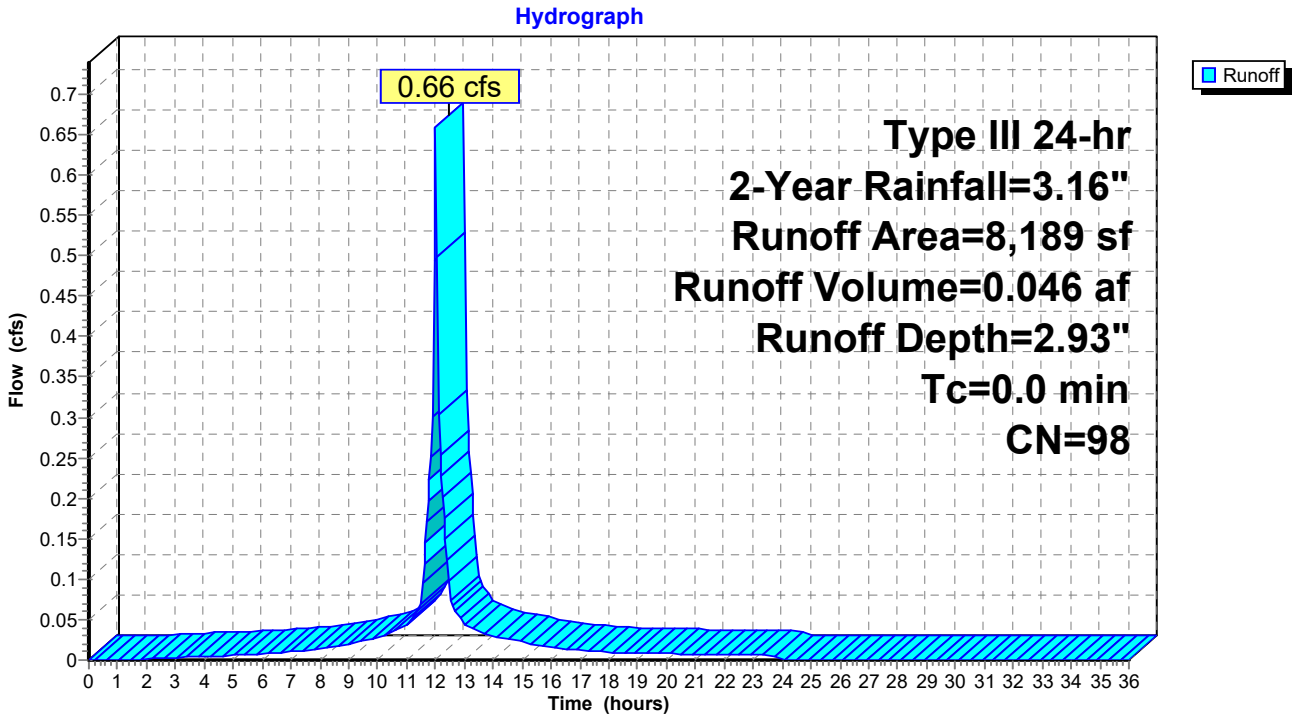
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.66 cfs @ 12.00 hrs, Volume= 0.046 af, Depth= 2.93"
Routed to Reach 2R-3 : new 12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (sf)	CN	Description
8,189	98	Roofs, HSG D
8,189		100.00% Impervious Area

Subcatchment R-5: Subcat R-5



Summary for Subcatchment R-6: Subcat R-6

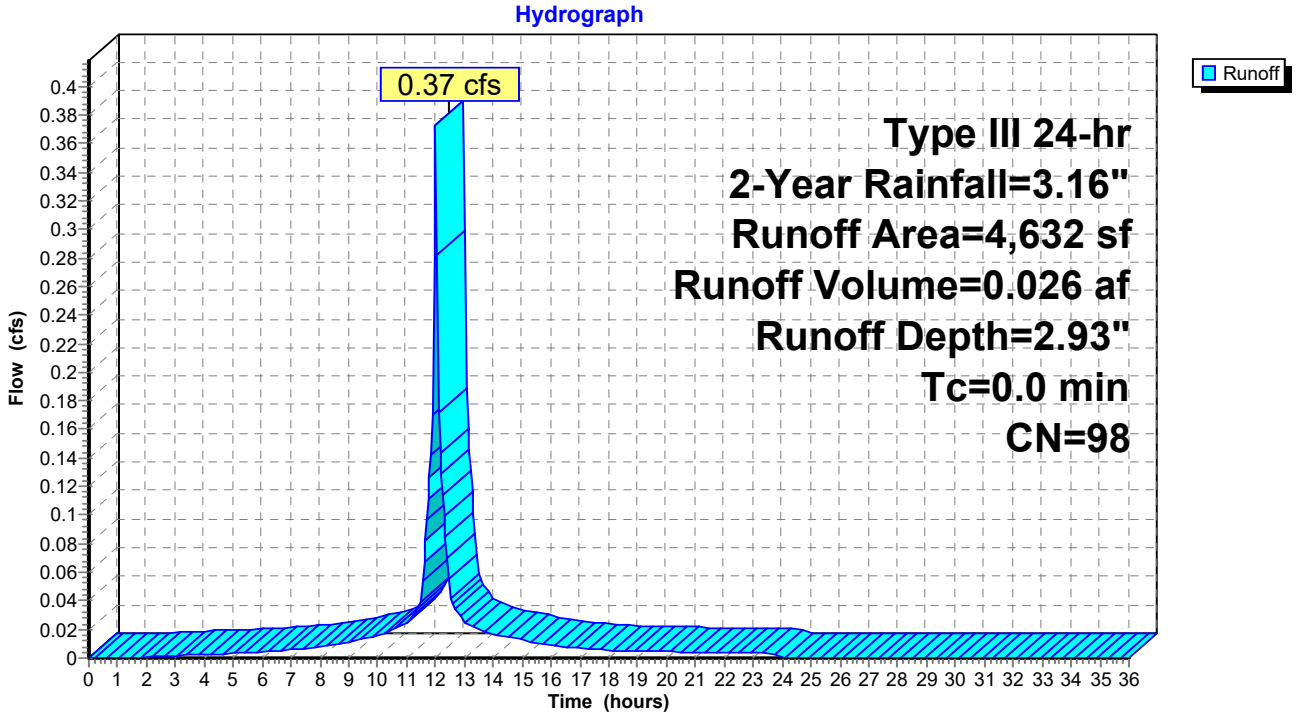
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.37 cfs @ 12.00 hrs, Volume= 0.026 af, Depth= 2.93"
Routed to Reach 2R-2 : new 12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (sf)	CN	Description
4,632	98	Roofs, HSG D
4,632		100.00% Impervious Area

Subcatchment R-6: Subcat R-6



Summary for Subcatchment S-1: Subcat S-1

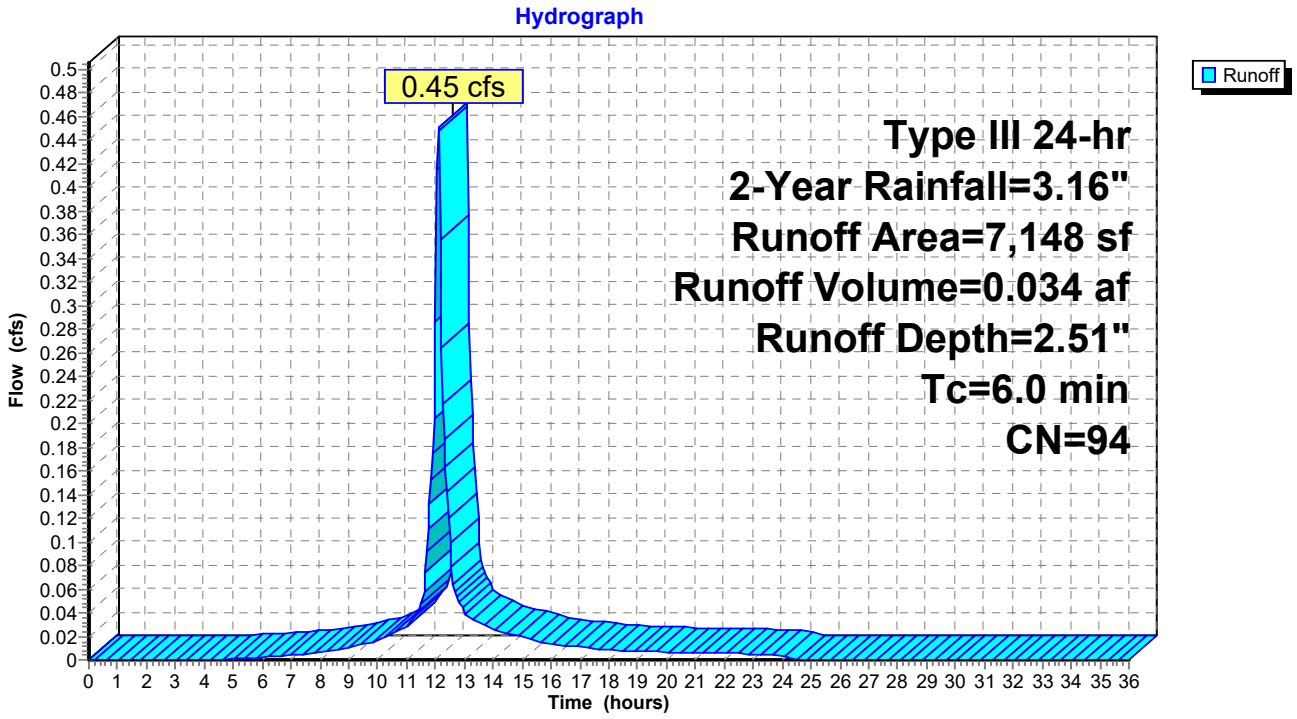
Runoff = 0.45 cfs @ 12.09 hrs, Volume= 0.034 af, Depth= 2.51"
Routed to Pond C9 : Banked Parking chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (sf)	CN	Description
1,304	80	>75% Grass cover, Good, HSG D
5,728	98	Paved parking, HSG D
117	77	Woods, Good, HSG D
7,148	94	Weighted Average
1,420		19.87% Pervious Area
5,728		80.13% Impervious Area

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

Subcatchment S-1: Subcat S-1



Summary for Subcatchment S-2: Subcat S-2

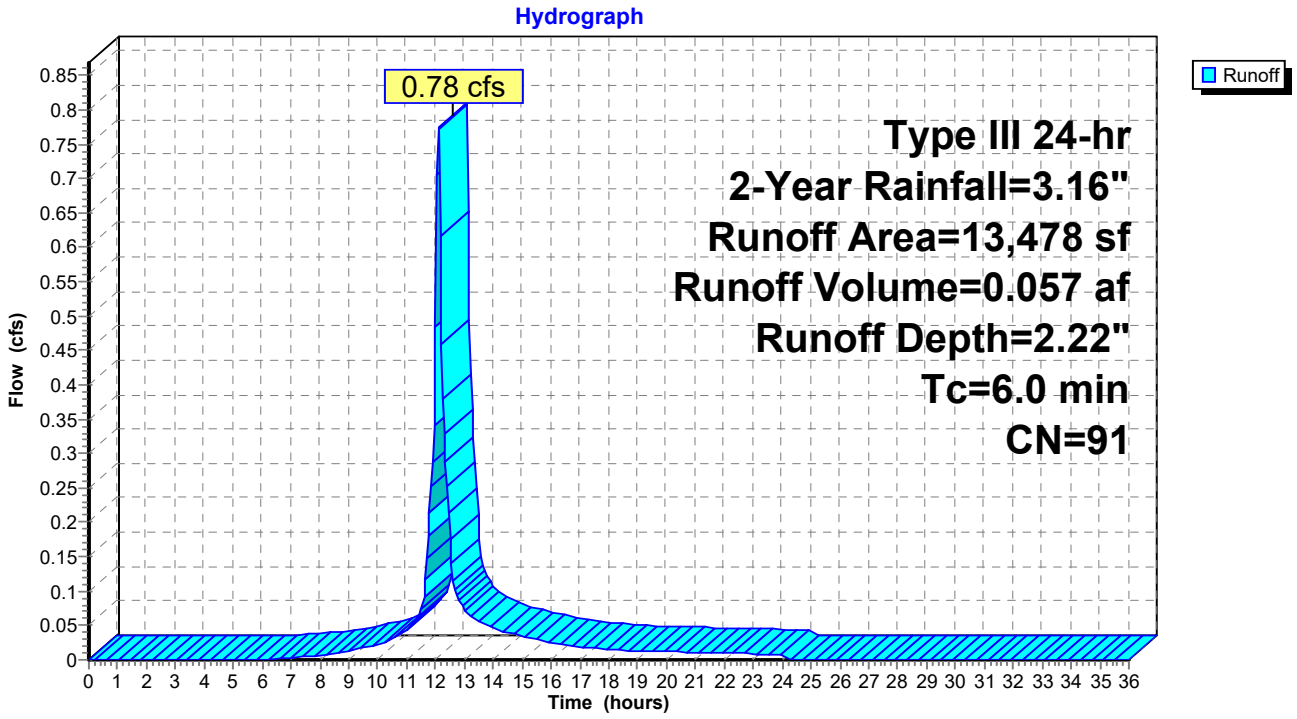
Runoff = 0.78 cfs @ 12.09 hrs, Volume= 0.057 af, Depth= 2.22"
Routed to Pond C8 : Banked Parking chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.16"

Area (sf)	CN	Description
4,975	80	>75% Grass cover, Good, HSG D
8,243	98	Paved parking, HSG D
259	77	Woods, Good, HSG D
13,478	91	Weighted Average
5,235		38.84% Pervious Area
8,243		61.16% Impervious Area

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

Subcatchment S-2: Subcat S-2



Summary for Reach 1R-1: Ex. 18" RCP

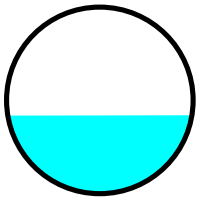
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 0.807 ac, 89.05% Impervious, Inflow Depth = 2.71" for 2-Year event
Inflow = 2.33 cfs @ 12.09 hrs, Volume= 0.182 af
Outflow = 2.28 cfs @ 12.10 hrs, Volume= 0.182 af, Atten= 2%, Lag= 1.0 min
Routed to Reach 1R-2 : New 18" ADS

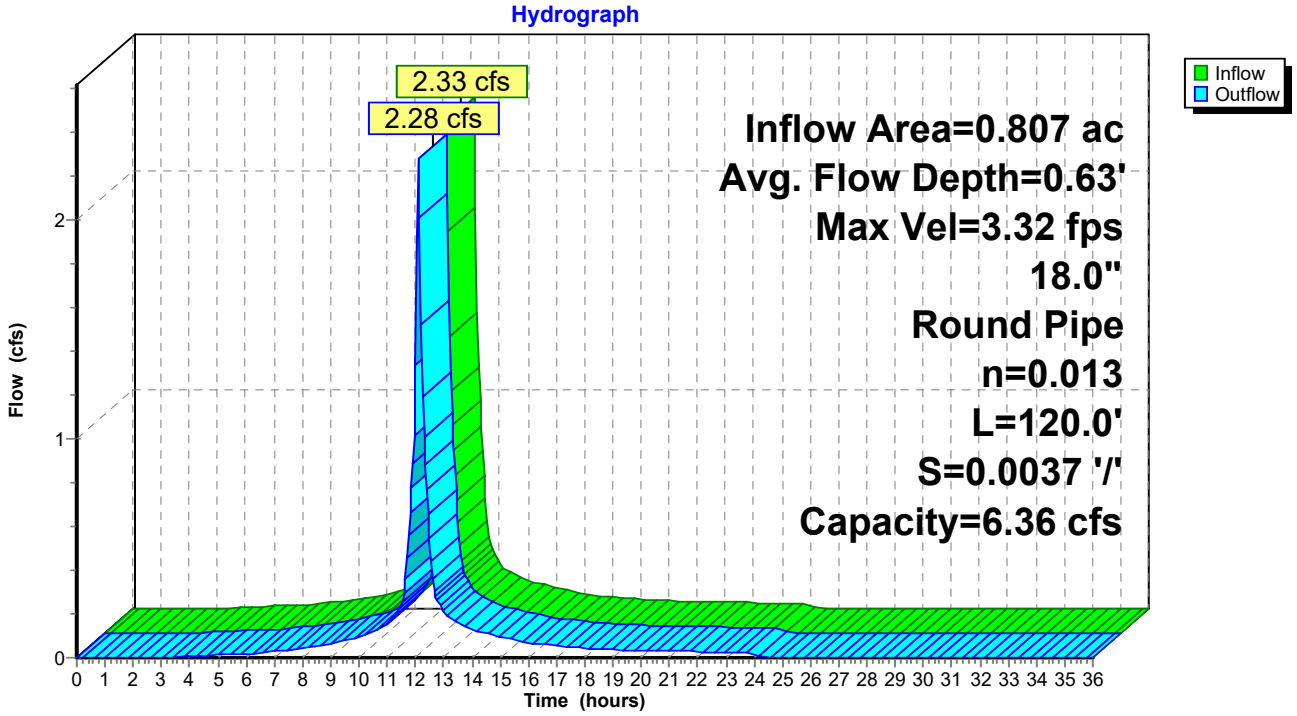
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.32 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 1.09 fps, Avg. Travel Time= 1.8 min

Peak Storage= 84 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.63' , Surface Width= 1.48'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 6.36 cfs

18.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 120.0' Slope= 0.0037 '/'
Inlet Invert= 188.16', Outlet Invert= 187.72'



Reach 1R-1: Ex. 18" RCP



Summary for Reach 1R-2: New 18" ADS

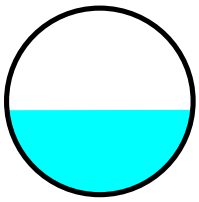
[52] Hint: Inlet/Outlet conditions not evaluated
[62] Hint: Exceeded Reach 1R-1 OUTLET depth by 0.05' @ 12.15 hrs

Inflow Area = 1.168 ac, 87.87% Impervious, Inflow Depth = 2.69" for 2-Year event
Inflow = 3.14 cfs @ 12.09 hrs, Volume= 0.262 af
Outflow = 3.08 cfs @ 12.11 hrs, Volume= 0.262 af, Atten= 2%, Lag= 0.7 min
Routed to Reach 1R-3 : new 24"

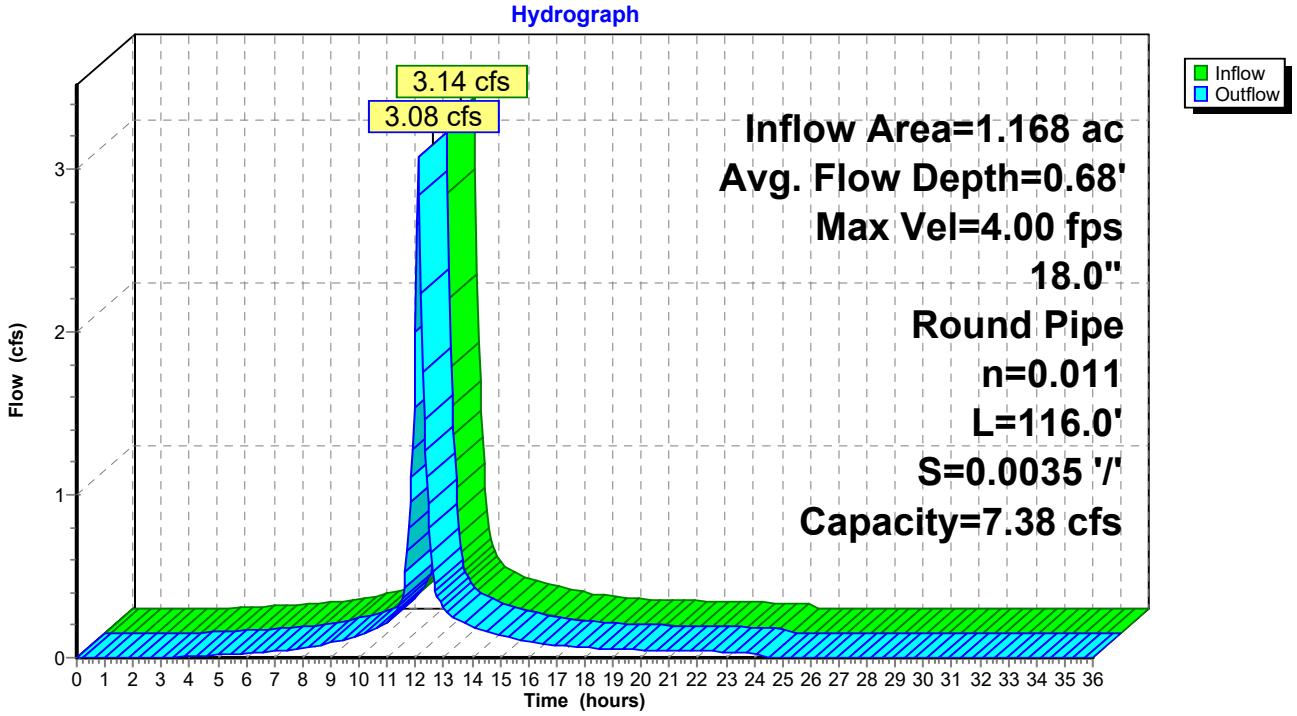
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.00 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.29 fps, Avg. Travel Time= 1.5 min

Peak Storage= 91 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.68' , Surface Width= 1.49'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 7.38 cfs

18.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 116.0' Slope= 0.0035 '/'
Inlet Invert= 187.70', Outlet Invert= 187.29'



Reach 1R-2: New 18" ADS



Summary for Reach 1R-3: new 24"

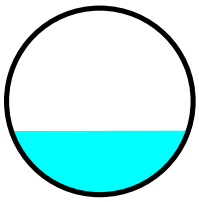
[52] Hint: Inlet/Outlet conditions not evaluated
[61] Hint: Exceeded Reach 1R-2 outlet invert by 0.59' @ 12.15 hrs

Inflow Area = 1.168 ac, 87.87% Impervious, Inflow Depth = 2.69" for 2-Year event
Inflow = 3.08 cfs @ 12.11 hrs, Volume= 0.262 af
Outflow = 2.94 cfs @ 12.16 hrs, Volume= 0.262 af, Atten= 5%, Lag= 3.0 min
Routed to Reach 1R-4 : new 24"

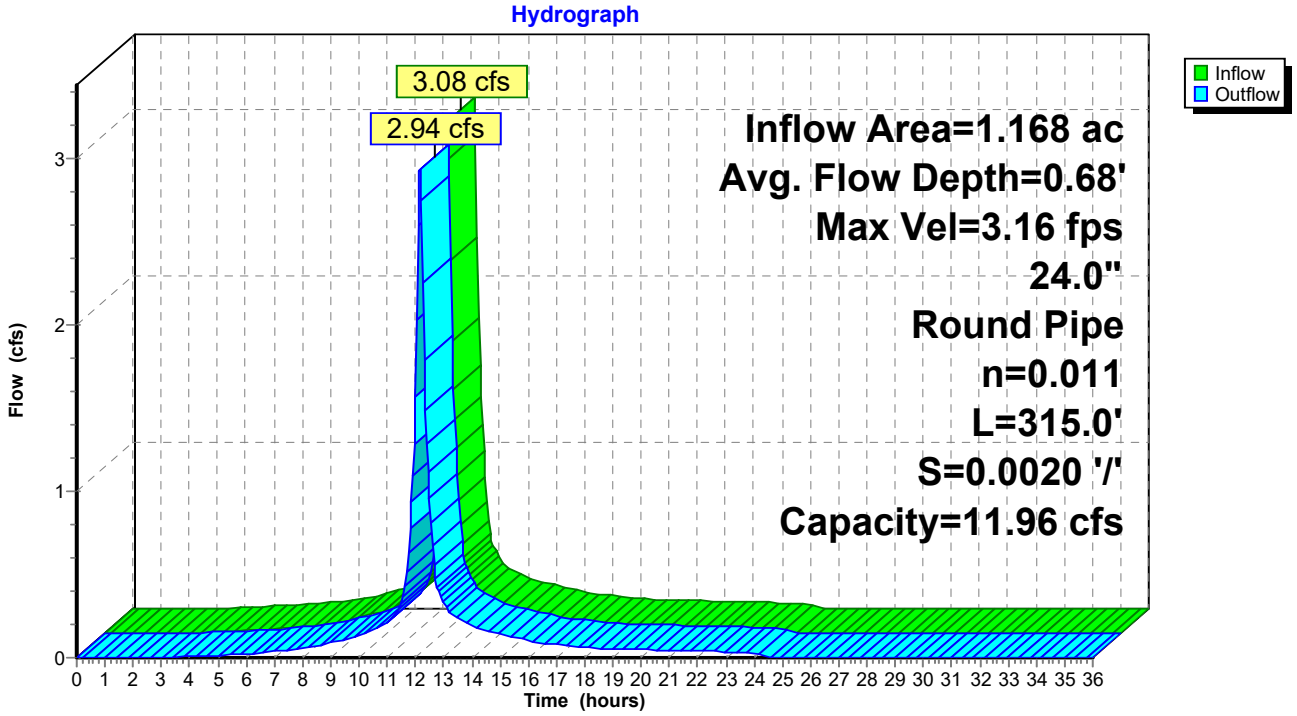
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.16 fps, Min. Travel Time= 1.7 min
Avg. Velocity = 1.00 fps, Avg. Travel Time= 5.2 min

Peak Storage= 299 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.68' , Surface Width= 1.90'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 11.96 cfs

24.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 315.0' Slope= 0.0020 '/'
Inlet Invert= 187.20', Outlet Invert= 186.57'



Reach 1R-3: new 24"



Summary for Reach 1R-4: new 24"

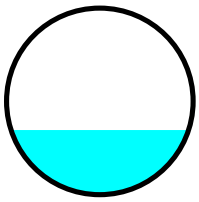
[52] Hint: Inlet/Outlet conditions not evaluated
[62] Hint: Exceeded Reach 1R-3 OUTLET depth by 0.01' @ 12.25 hrs

Inflow Area = 2.333 ac, 89.83% Impervious, Inflow Depth = 1.57" for 2-Year event
Inflow = 3.11 cfs @ 12.15 hrs, Volume= 0.306 af
Outflow = 3.04 cfs @ 12.18 hrs, Volume= 0.306 af, Atten= 2%, Lag= 1.5 min
Routed to Reach 1R-5 : new 24"

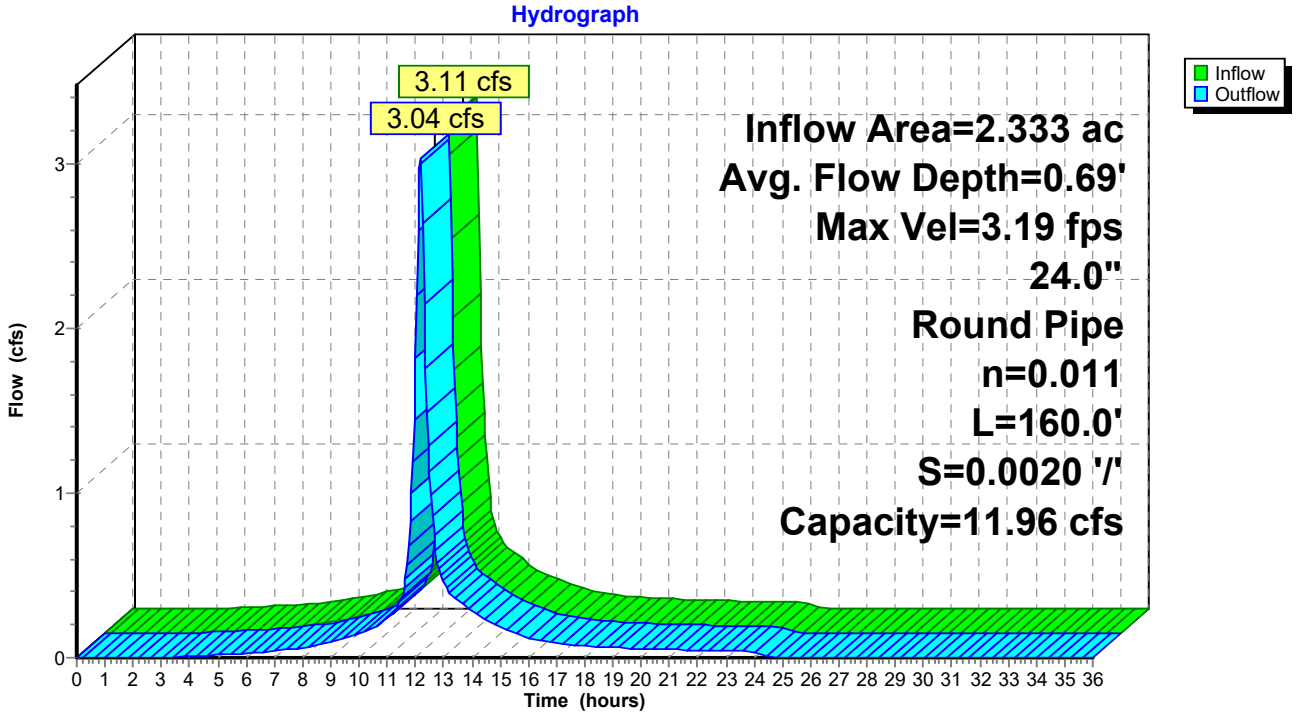
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.19 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 1.04 fps, Avg. Travel Time= 2.6 min

Peak Storage= 155 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.69' , Surface Width= 1.90'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 11.96 cfs

24.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 160.0' Slope= 0.0020 '/'
Inlet Invert= 186.50', Outlet Invert= 186.18'



Reach 1R-4: new 24"



Summary for Reach 1R-5: new 24"

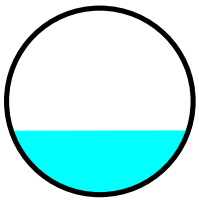
[52] Hint: Inlet/Outlet conditions not evaluated
[61] Hint: Exceeded Reach 1R-4 outlet invert by 0.59' @ 12.15 hrs

Inflow Area = 2.541 ac, 88.72% Impervious, Inflow Depth = 1.65" for 2-Year event
Inflow = 3.43 cfs @ 12.16 hrs, Volume= 0.350 af
Outflow = 3.41 cfs @ 12.18 hrs, Volume= 0.350 af, Atten= 1%, Lag= 0.8 min
Routed to Reach 1R-6 : New 24" ADS

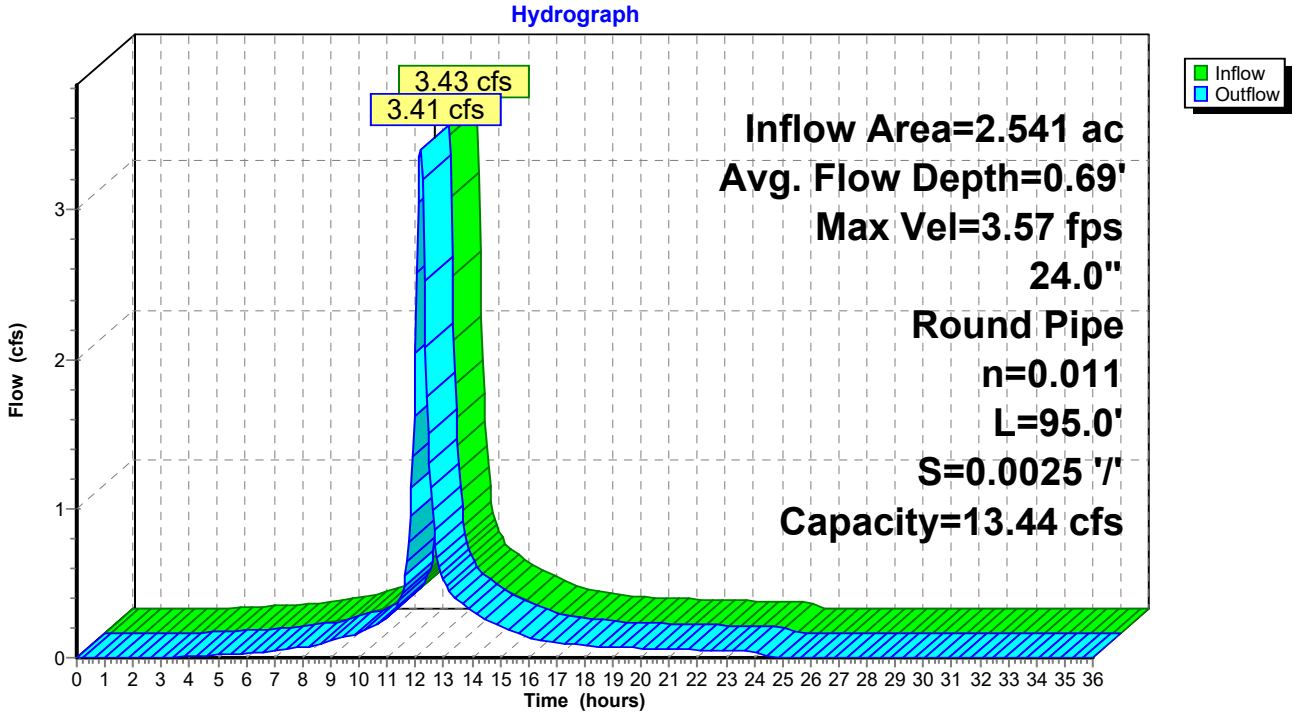
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.57 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.18 fps, Avg. Travel Time= 1.3 min

Peak Storage= 91 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.69' , Surface Width= 1.90'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 13.44 cfs

24.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 95.0' Slope= 0.0025 '/'
Inlet Invert= 186.08', Outlet Invert= 185.84'



Reach 1R-5: new 24"



Summary for Reach 1R-6: New 24" ADS

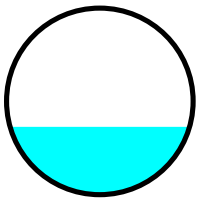
[52] Hint: Inlet/Outlet conditions not evaluated
[61] Hint: Exceeded Reach 1R-5 outlet invert by 0.58' @ 12.20 hrs

Inflow Area = 2.812 ac, 85.36% Impervious, Inflow Depth = 1.70" for 2-Year event
Inflow = 3.69 cfs @ 12.17 hrs, Volume= 0.398 af
Outflow = 3.69 cfs @ 12.18 hrs, Volume= 0.398 af, Atten= 0%, Lag= 0.4 min
Routed to Link 2L : Flow to BVW

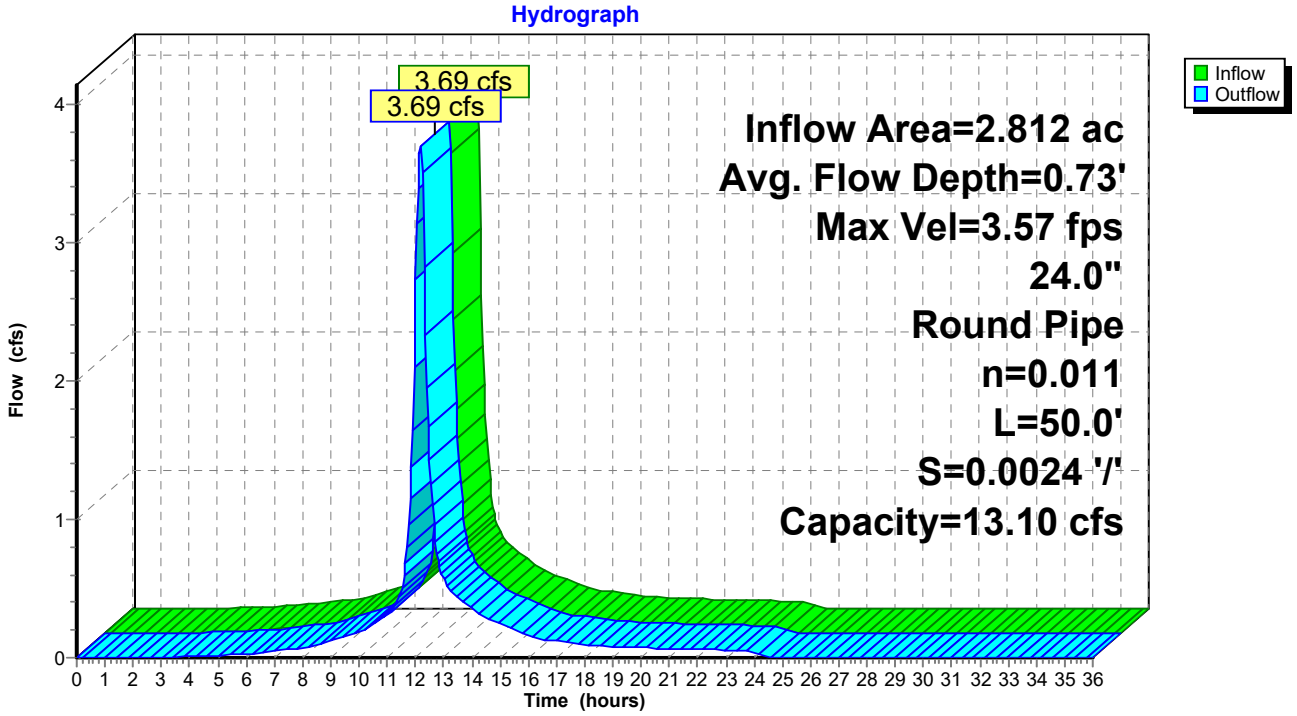
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.57 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.19 fps, Avg. Travel Time= 0.7 min

Peak Storage= 52 cf @ 12.18 hrs
Average Depth at Peak Storage= 0.73' , Surface Width= 1.92'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 13.10 cfs

24.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 50.0' Slope= 0.0024 '/'
Inlet Invert= 185.70', Outlet Invert= 185.58'



Reach 1R-6: New 24" ADS



Summary for Reach 2R-1: new 12" west

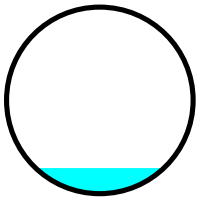
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 0.061 ac, 85.24% Impervious, Inflow Depth = 2.61" for 2-Year event
Inflow = 0.17 cfs @ 12.09 hrs, Volume= 0.013 af
Outflow = 0.16 cfs @ 12.11 hrs, Volume= 0.013 af, Atten= 4%, Lag= 1.6 min
Routed to Reach 2R-2 : new 12"

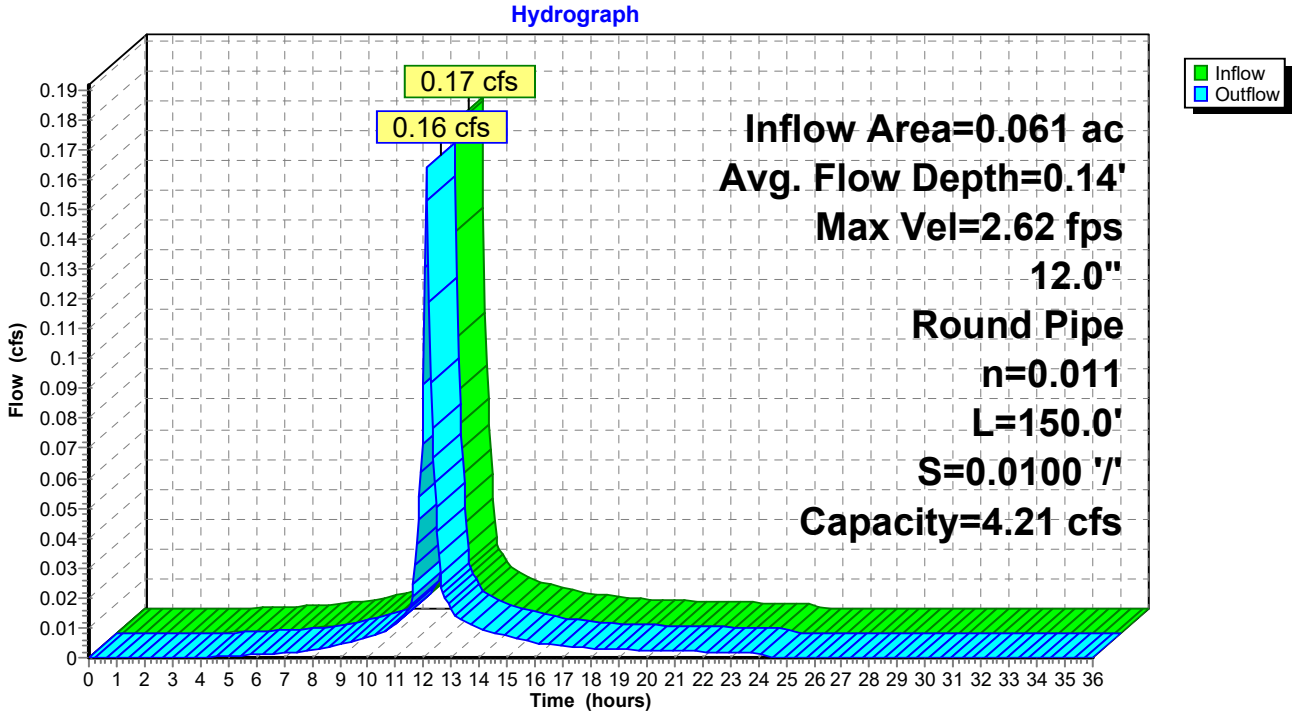
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.62 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 0.87 fps, Avg. Travel Time= 2.9 min

Peak Storage= 10 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.14' , Surface Width= 0.69'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.21 cfs

12.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 150.0' Slope= 0.0100 '/'
Inlet Invert= 189.80', Outlet Invert= 188.30'



Reach 2R-1: new 12" west



Summary for Reach 2R-2: new 12"

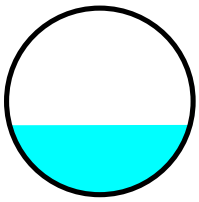
[52] Hint: Inlet/Outlet conditions not evaluated
[62] Hint: Exceeded Reach 2R-1 OUTLET depth by 0.04' @ 12.05 hrs

Inflow Area = 0.489 ac, 84.19% Impervious, Inflow Depth = 2.61" for 2-Year event
Inflow = 1.25 cfs @ 12.07 hrs, Volume= 0.106 af
Outflow = 1.24 cfs @ 12.08 hrs, Volume= 0.106 af, Atten= 1%, Lag= 0.5 min
Routed to Reach 2R-3 : new 12"

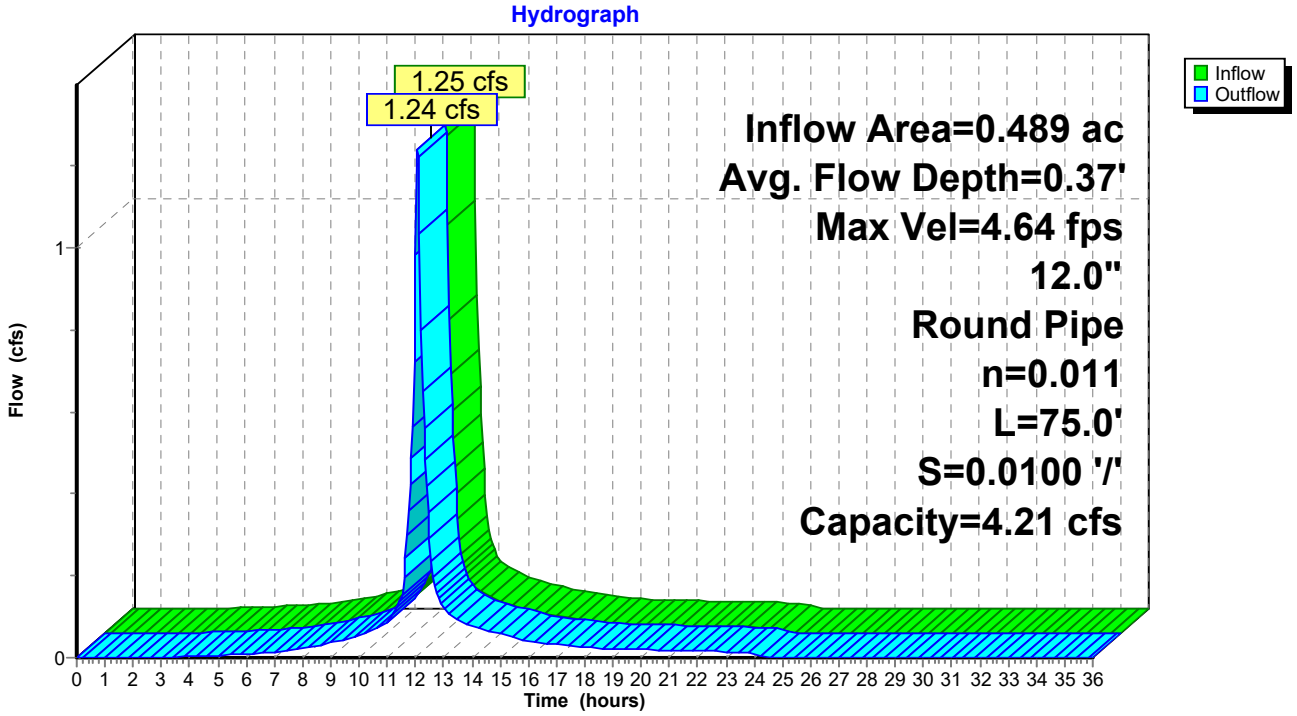
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.64 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.51 fps, Avg. Travel Time= 0.8 min

Peak Storage= 20 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.37' , Surface Width= 0.97'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.21 cfs

12.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 75.0' Slope= 0.0100 '/'
Inlet Invert= 188.10', Outlet Invert= 187.35'



Reach 2R-2: new 12"



Summary for Reach 2R-3: new 12"

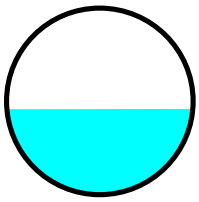
[52] Hint: Inlet/Outlet conditions not evaluated
[61] Hint: Exceeded Reach 2R-2 outlet invert by 0.36' @ 12.05 hrs

Inflow Area = 0.889 ac, 85.12% Impervious, Inflow Depth = 2.63" for 2-Year event
Inflow = 2.22 cfs @ 12.06 hrs, Volume= 0.195 af
Outflow = 2.21 cfs @ 12.06 hrs, Volume= 0.195 af, Atten= 0%, Lag= 0.3 min
Routed to Reach 2R-4 : new 18"

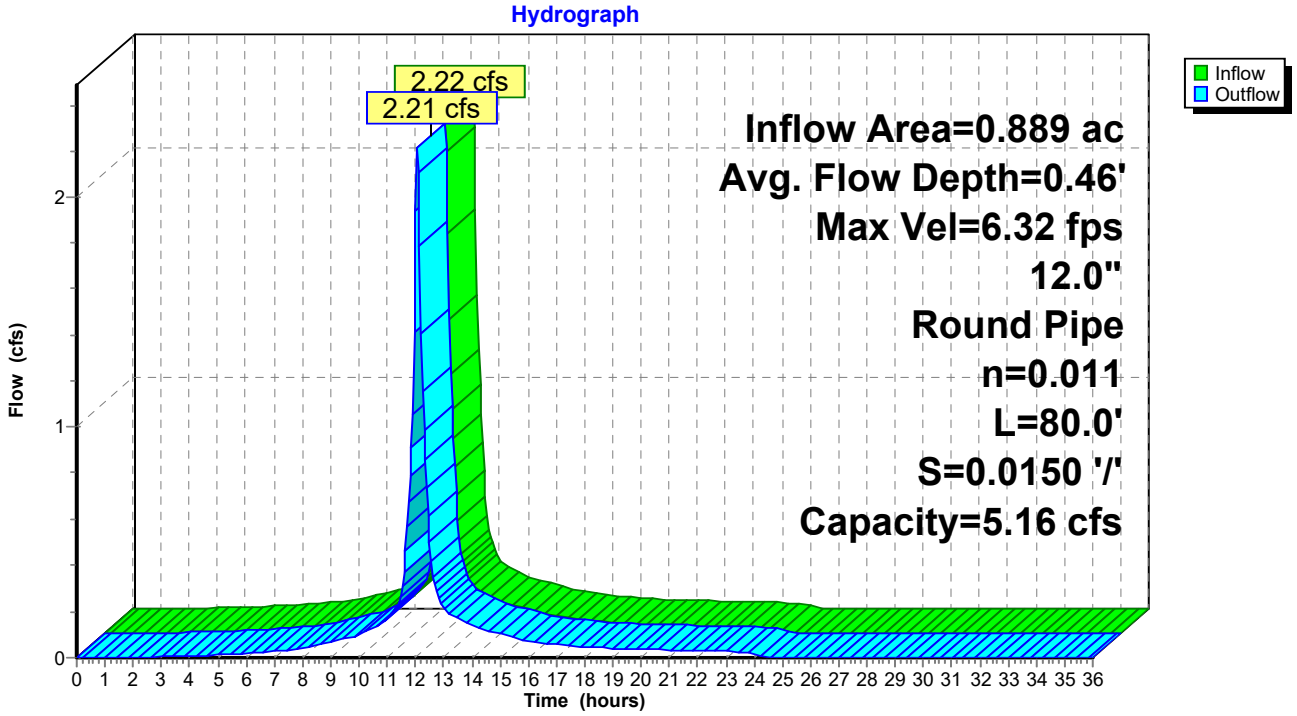
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.32 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.09 fps, Avg. Travel Time= 0.6 min

Peak Storage= 28 cf @ 12.06 hrs
Average Depth at Peak Storage= 0.46' , Surface Width= 1.00'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 5.16 cfs

12.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 80.0' Slope= 0.0150 '/'
Inlet Invert= 187.25', Outlet Invert= 186.05'



Reach 2R-3: new 12"



Summary for Reach 2R-4: new 18"

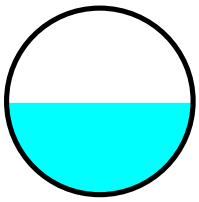
[52] Hint: Inlet/Outlet conditions not evaluated
[62] Hint: Exceeded Reach 2R-3 OUTLET depth by 1.05' @ 12.00 hrs

Inflow Area = 1.837 ac, 80.91% Impervious, Inflow Depth = 2.54" for 2-Year event
Inflow = 4.79 cfs @ 12.02 hrs, Volume= 0.389 af
Outflow = 4.64 cfs @ 12.04 hrs, Volume= 0.389 af, Atten= 3%, Lag= 1.2 min
Routed to Reach 2R-5 : new 18"

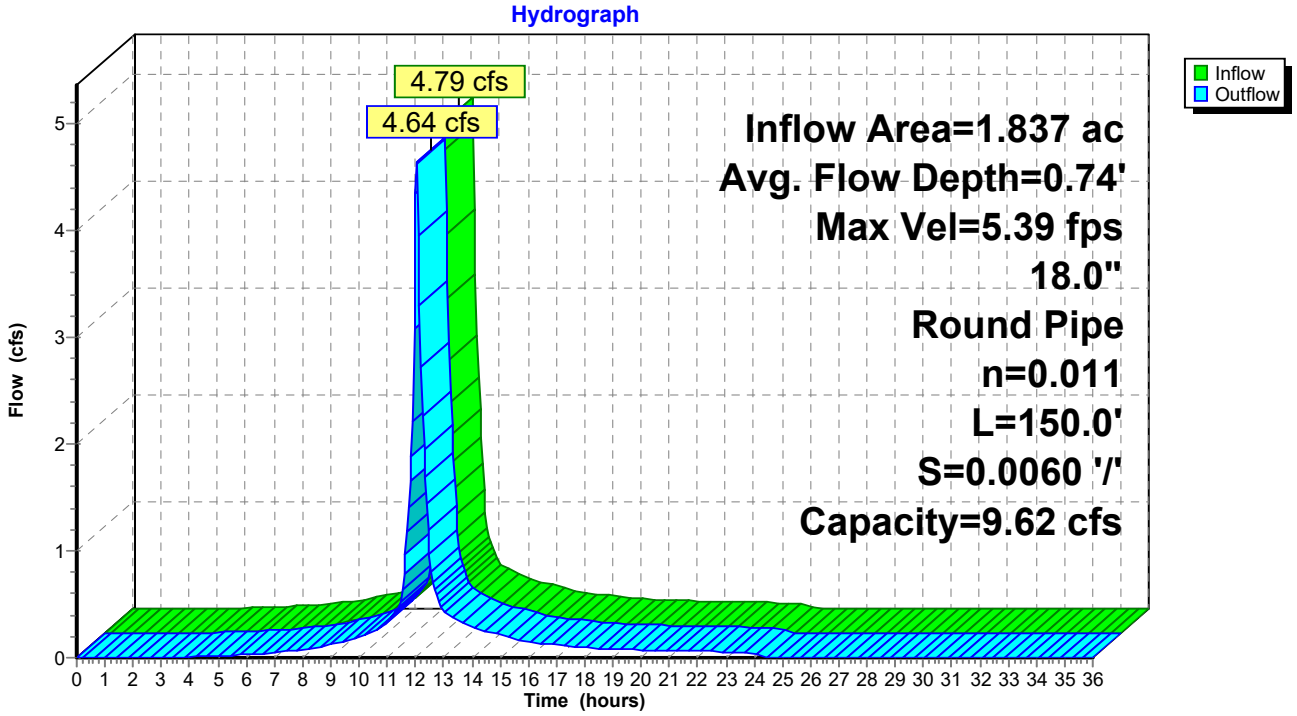
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.39 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.74 fps, Avg. Travel Time= 1.4 min

Peak Storage= 130 cf @ 12.03 hrs
Average Depth at Peak Storage= 0.74' , Surface Width= 1.50'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 9.62 cfs

18.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 150.0' Slope= 0.0060 '/'
Inlet Invert= 186.80', Outlet Invert= 185.90'



Reach 2R-4: new 18"



Summary for Reach 2R-5: new 18"

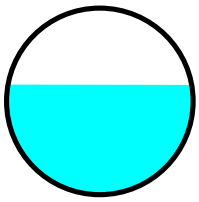
[52] Hint: Inlet/Outlet conditions not evaluated
[62] Hint: Exceeded Reach 2R-4 OUTLET depth by 0.14' @ 12.05 hrs

Inflow Area = 2.192 ac, 83.99% Impervious, Inflow Depth = 2.61" for 2-Year event
Inflow = 5.78 cfs @ 12.02 hrs, Volume= 0.476 af
Outflow = 5.68 cfs @ 12.03 hrs, Volume= 0.476 af, Atten= 2%, Lag= 0.5 min
Routed to Link 2L : Flow to BVW

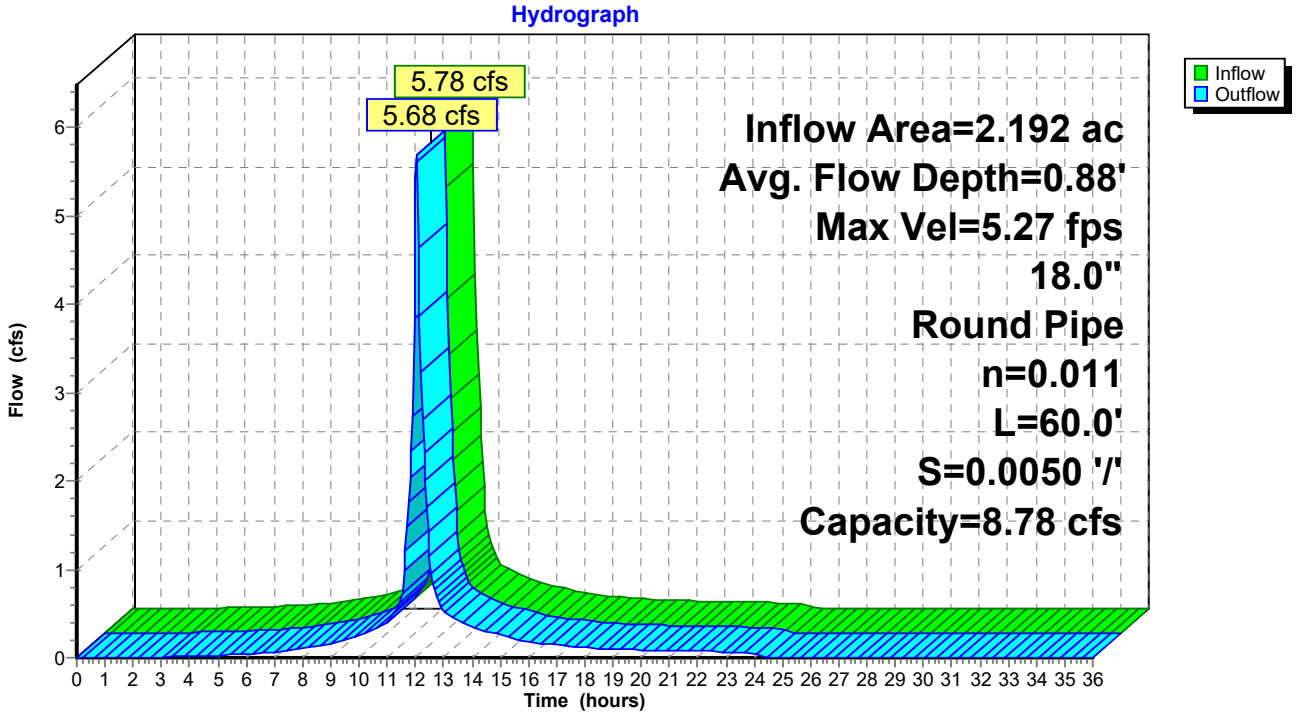
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.27 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.74 fps, Avg. Travel Time= 0.6 min

Peak Storage= 65 cf @ 12.03 hrs
Average Depth at Peak Storage= 0.88' , Surface Width= 1.48'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 8.78 cfs

18.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 60.0' Slope= 0.0050 '/'
Inlet Invert= 185.90', Outlet Invert= 185.60'



Reach 2R-5: new 18"



Summary for Reach 3R: Ex. 12" RCP

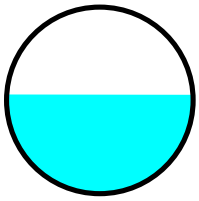
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 0.706 ac, 86.54% Impervious, Inflow Depth = 2.71" for 2-Year event
Inflow = 2.04 cfs @ 12.09 hrs, Volume= 0.159 af
Outflow = 2.03 cfs @ 12.09 hrs, Volume= 0.159 af, Atten= 1%, Lag= 0.4 min
Routed to Reach 4R : Ex. 15" RCP

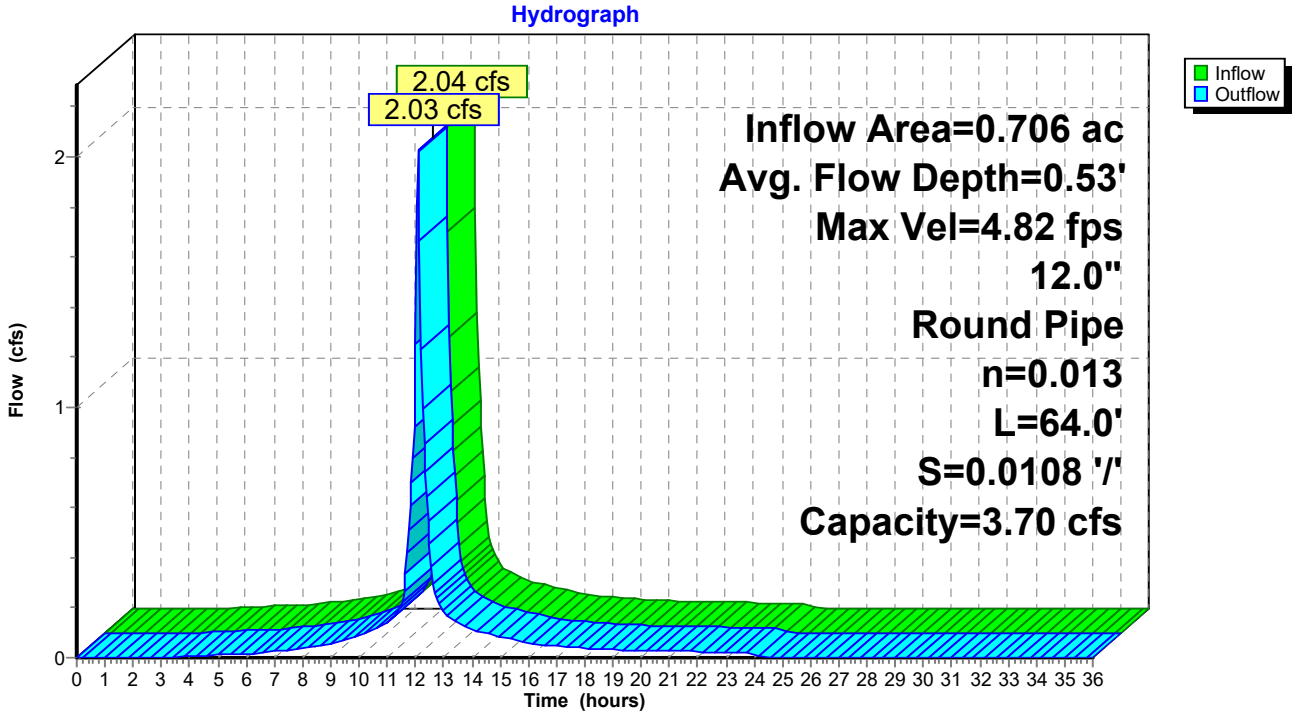
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.82 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.63 fps, Avg. Travel Time= 0.7 min

Peak Storage= 27 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.53' , Surface Width= 1.00'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.70 cfs

12.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 64.0' Slope= 0.0108 '/'
Inlet Invert= 188.35', Outlet Invert= 187.66'



Reach 3R: Ex. 12" RCP



Summary for Reach 4R: Ex. 15" RCP

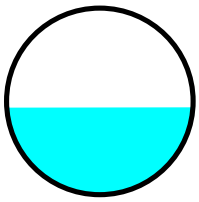
[52] Hint: Inlet/Outlet conditions not evaluated
[62] Hint: Exceeded Reach 3R OUTLET depth by 0.06' @ 12.15 hrs

Inflow Area = 0.706 ac, 86.54% Impervious, Inflow Depth = 2.71" for 2-Year event
Inflow = 2.03 cfs @ 12.09 hrs, Volume= 0.159 af
Outflow = 2.01 cfs @ 12.10 hrs, Volume= 0.159 af, Atten= 1%, Lag= 0.3 min
Routed to Reach 7R : Ex. 24" RCP

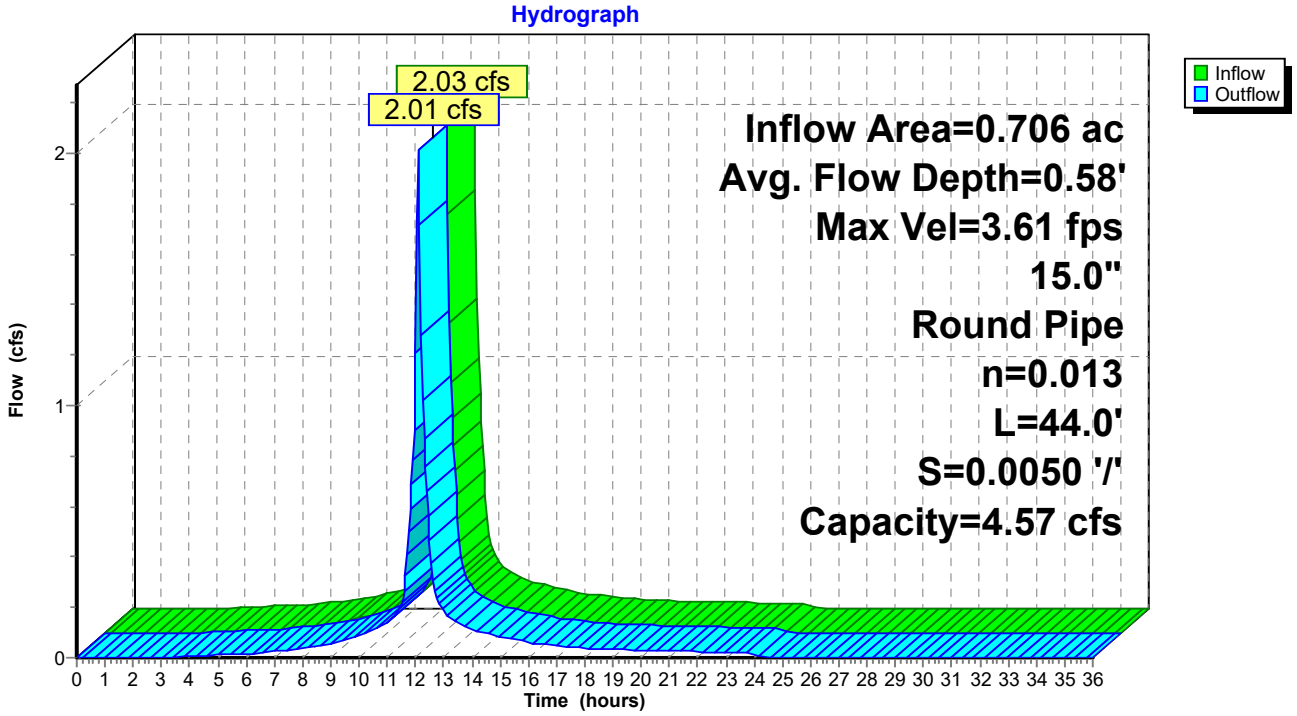
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.61 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.21 fps, Avg. Travel Time= 0.6 min

Peak Storage= 25 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.58' , Surface Width= 1.25'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 4.57 cfs

15.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 44.0' Slope= 0.0050 '/'
Inlet Invert= 187.66', Outlet Invert= 187.44'



Reach 4R: Ex. 15" RCP



Summary for Reach 7R: Ex. 24" RCP

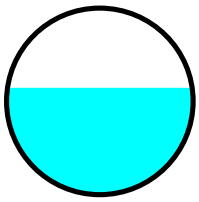
[52] Hint: Inlet/Outlet conditions not evaluated
[62] Hint: Exceeded Reach 4R OUTLET depth by 0.06' @ 12.10 hrs

Inflow Area = 3.186 ac, 70.77% Impervious, Inflow Depth = 2.41" for 2-Year event
Inflow = 8.40 cfs @ 12.09 hrs, Volume= 0.641 af
Outflow = 8.18 cfs @ 12.11 hrs, Volume= 0.641 af, Atten= 3%, Lag= 0.9 min
Routed to Reach 8R : Ex. 24" RCP

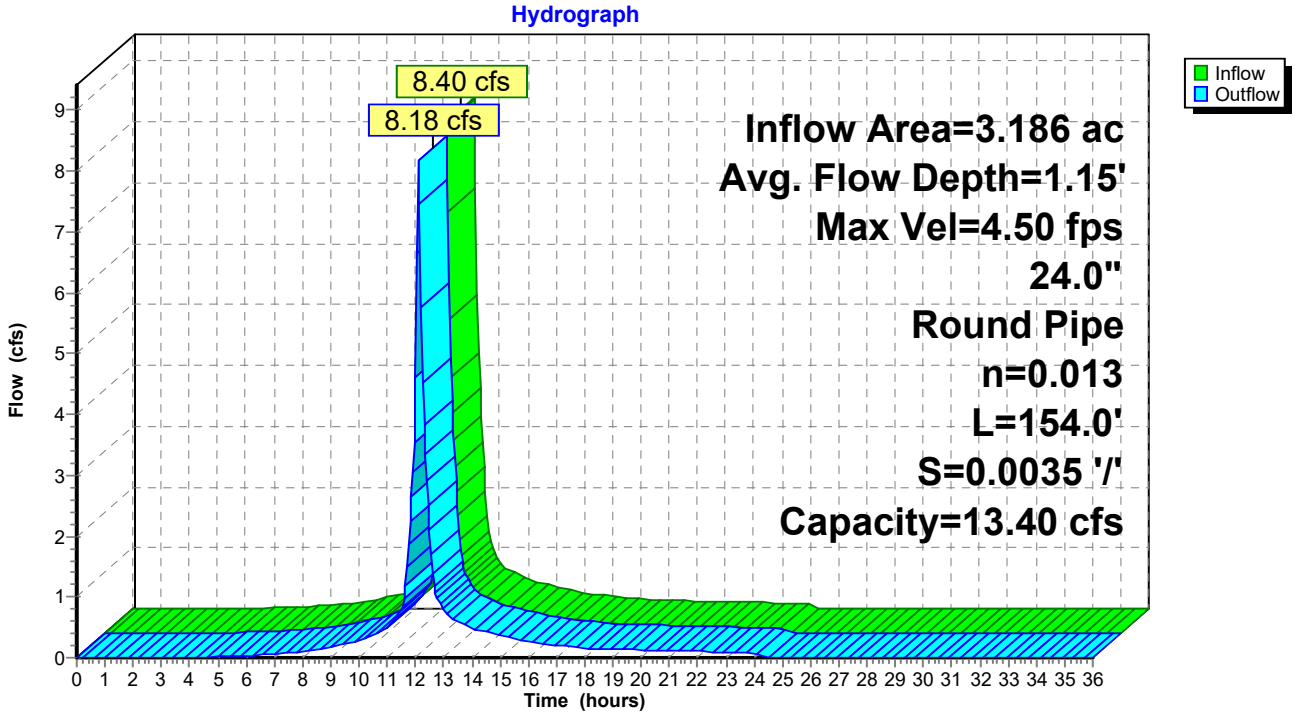
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.50 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 1.46 fps, Avg. Travel Time= 1.8 min

Peak Storage= 287 cf @ 12.10 hrs
Average Depth at Peak Storage= 1.15' , Surface Width= 1.98'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 13.40 cfs

24.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 154.0' Slope= 0.0035 '/'
Inlet Invert= 186.94', Outlet Invert= 186.40'



Reach 7R: Ex. 24" RCP



Summary for Reach 8R: Ex. 24" RCP

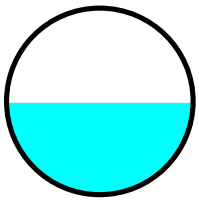
[52] Hint: Inlet/Outlet conditions not evaluated
[61] Hint: Exceeded Reach 7R outlet invert by 0.87' @ 12.10 hrs

Inflow Area = 3.186 ac, 70.77% Impervious, Inflow Depth = 2.41" for 2-Year event
Inflow = 8.18 cfs @ 12.11 hrs, Volume= 0.641 af
Outflow = 7.88 cfs @ 12.13 hrs, Volume= 0.641 af, Atten= 4%, Lag= 1.4 min
Routed to Link 2L : Flow to BVW

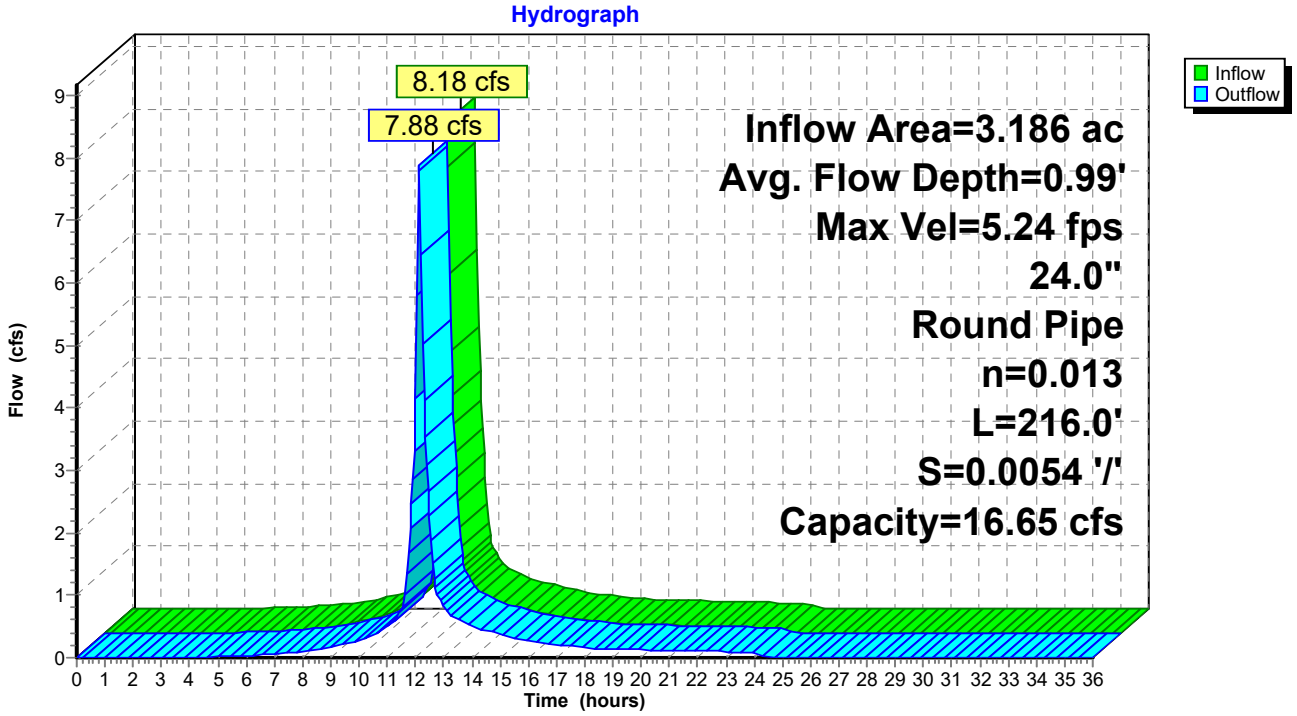
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.24 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 1.70 fps, Avg. Travel Time= 2.1 min

Peak Storage= 333 cf @ 12.12 hrs
Average Depth at Peak Storage= 0.99' , Surface Width= 2.00'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 16.65 cfs

24.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 216.0' Slope= 0.0054 '/'
Inlet Invert= 186.30', Outlet Invert= 185.13'



Reach 8R: Ex. 24" RCP



Summary for Pond 5P: East Rv Chambers #2

Inflow Area = 0.599 ac, 95.25% Impervious, Inflow Depth = 2.82" for 2-Year event
Inflow = 1.65 cfs @ 12.02 hrs, Volume= 0.141 af
Outflow = 0.12 cfs @ 13.51 hrs, Volume= 0.141 af, Atten= 93%, Lag= 89.4 min
Discarded = 0.07 cfs @ 9.85 hrs, Volume= 0.134 af
Primary = 0.04 cfs @ 13.51 hrs, Volume= 0.007 af
Routed to Link 14L : Outflow of Combined INF Systems

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 188.74' @ 13.51 hrs Surf.Area= 3,025 sf Storage= 2,954 cf

Plug-Flow detention time= 337.7 min calculated for 0.141 af (100% of inflow)
Center-of-Mass det. time= 337.8 min (1,100.1 - 762.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	187.00'	3,467 cf	**17.08'W x 177.08'L x 3.33'H Field A** 10,084 cf Overall - 1,415 cf Embedded = 8,668 cf x 40.0% Voids
#2A	187.50'	1,415 cf	**ADS_StormTech SC-310 +Cap** x 96 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 96 Chambers in 4 Rows
		4,883 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	187.00'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	188.62'	**12.0" Round RCP_Round 12"** L= 7.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 188.62' / 188.58' S= 0.0057 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.07 cfs @ 9.85 hrs HW=187.03' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

Primary OutFlow Max=0.04 cfs @ 13.51 hrs HW=188.74' (Free Discharge)
↑—**2=RCP_Round 12"** (Barrel Controls 0.04 cfs @ 1.23 fps)

Pond 5P: East Rv Chambers #2 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)
Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 3.0" Spacing = 37.0" C-C Row Spacing

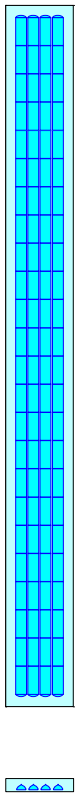
24 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 172.08' Row Length +30.0" End Stone x 2 = 177.08' Base Length
4 Rows x 34.0" Wide + 3.0" Spacing x 3 + 30.0" Side Stone x 2 = 17.08' Base Width
6.0" Stone Base + 16.0" Chamber Height + 18.0" Stone Cover = 3.33' Field Height

96 Chambers x 14.7 cf = 1,415.2 cf Chamber Storage

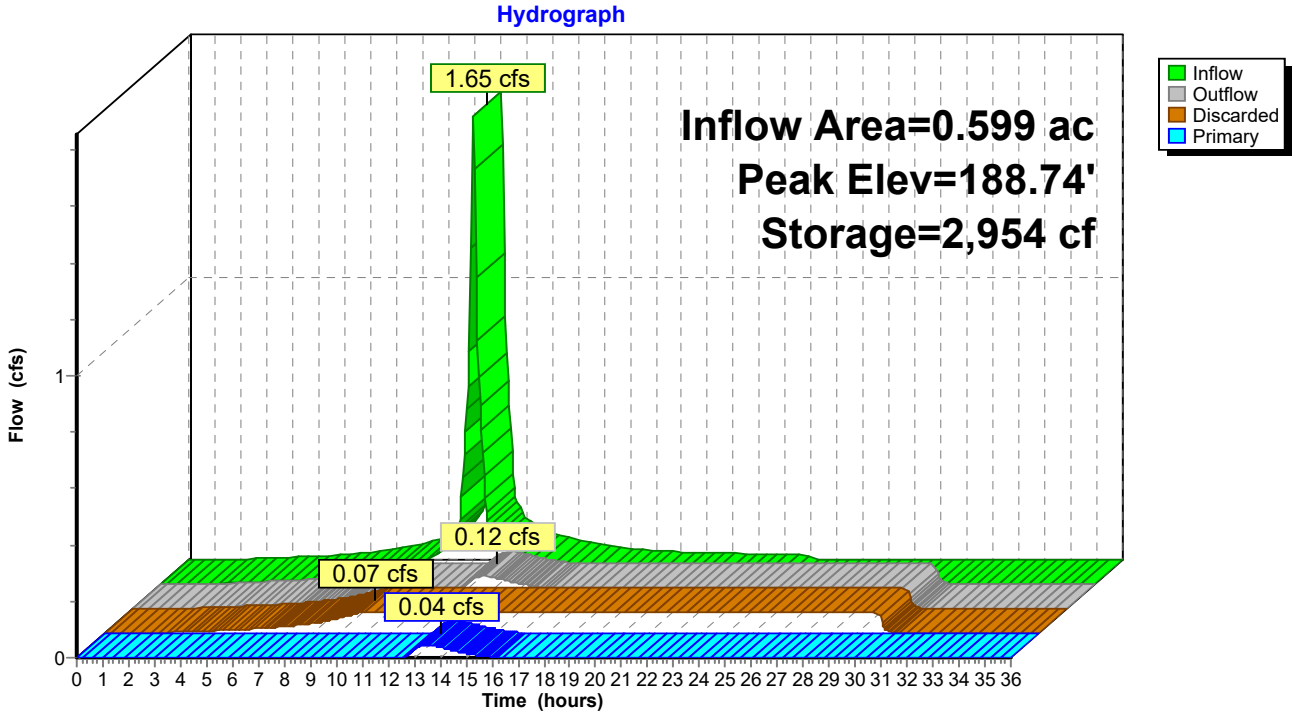
10,083.7 cf Field - 1,415.2 cf Chambers = 8,668.5 cf Stone x 40.0% Voids = 3,467.4 cf Stone Storage

Chamber Storage + Stone Storage = 4,882.6 cf = 0.112 af
Overall Storage Efficiency = 48.4%
Overall System Size = 177.08' x 17.08' x 3.33'

96 Chambers
373.5 cy Field
321.1 cy Stone



Pond 5P: East Rv Chambers #2



Summary for Pond 8P: East Rv Chambers #1

Inflow Area = 0.130 ac, 76.94% Impervious, Inflow Depth = 2.51" for 2-Year event
Inflow = 0.36 cfs @ 12.09 hrs, Volume= 0.027 af
Outflow = 0.04 cfs @ 11.65 hrs, Volume= 0.027 af, Atten= 90%, Lag= 0.0 min
Discarded = 0.04 cfs @ 11.65 hrs, Volume= 0.027 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 14L : Outflow of Combined INF Systems

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 187.61' @ 12.87 hrs Surf.Area= 1,566 sf Storage= 433 cf

Plug-Flow detention time= 89.4 min calculated for 0.027 af (100% of inflow)
Center-of-Mass det. time= 89.3 min (876.8 - 787.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	187.00'	1,804 cf	**17.08'W x 91.64'L x 3.33'H Field A** 5,218 cf Overall - 708 cf Embedded = 4,511 cf x 40.0% Voids
#2A	187.50'	708 cf	**ADS_StormTech SC-310 +Cap** x 48 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 48 Chambers in 4 Rows
		2,512 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	187.00'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	188.87'	**12.0" Round RCP_Round 12"** L= 7.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 188.83' / 188.87' S= -0.0057 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.04 cfs @ 11.65 hrs HW=187.04' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=187.00' (Free Discharge)
↑—**2=RCP_Round 12"** (Controls 0.00 cfs)

Pond 8P: East Rv Chambers #1 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)
Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 3.0" Spacing = 37.0" C-C Row Spacing

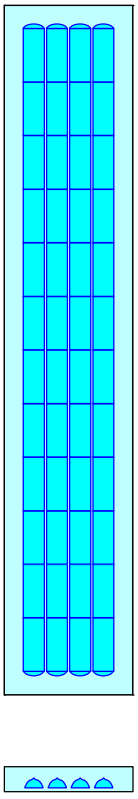
12 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 86.64' Row Length +30.0" End Stone x 2 = 91.64' Base Length
4 Rows x 34.0" Wide + 3.0" Spacing x 3 + 30.0" Side Stone x 2 = 17.08' Base Width
6.0" Stone Base + 16.0" Chamber Height + 18.0" Stone Cover = 3.33' Field Height

48 Chambers x 14.7 cf = 707.6 cf Chamber Storage

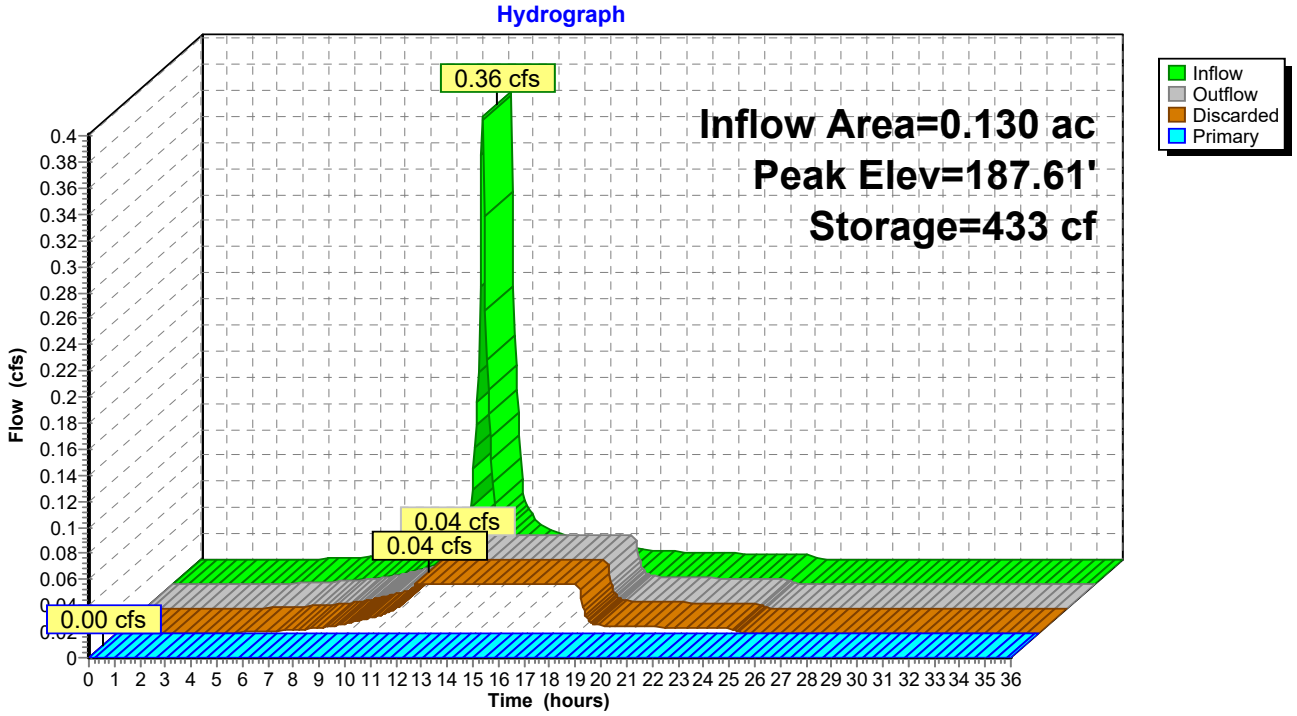
5,218.4 cf Field - 707.6 cf Chambers = 4,510.8 cf Stone x 40.0% Voids = 1,804.3 cf Stone Storage

Chamber Storage + Stone Storage = 2,511.9 cf = 0.058 af
Overall Storage Efficiency = 48.1%
Overall System Size = 91.64' x 17.08' x 3.33'

48 Chambers
193.3 cy Field
167.1 cy Stone



Pond 8P: East Rv Chambers #1



Summary for Pond 9P: East Rv Chambers #3

Inflow Area = 0.303 ac, 92.27% Impervious, Inflow Depth = 2.82" for 2-Year event
Inflow = 0.89 cfs @ 12.09 hrs, Volume= 0.071 af
Outflow = 0.11 cfs @ 12.67 hrs, Volume= 0.071 af, Atten= 88%, Lag= 34.8 min
Discarded = 0.03 cfs @ 9.45 hrs, Volume= 0.063 af
Primary = 0.08 cfs @ 12.67 hrs, Volume= 0.008 af
Routed to Reach 1R-4 : new 24"

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 189.02' @ 12.67 hrs Surf.Area= 1,322 sf Storage= 1,424 cf

Plug-Flow detention time= 349.6 min calculated for 0.071 af (100% of inflow)
Center-of-Mass det. time= 349.5 min (1,115.9 - 766.4)

Volume	Invert	Avail.Storage	Storage Description
#1B	187.00'	1,527 cf	**17.08'W x 77.40'L x 3.33'H Field B** 4,407 cf Overall - 590 cf Embedded = 3,818 cf x 40.0% Voids
#2B	187.50'	590 cf	**ADS_StormTech SC-310 +Cap** x 40 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 40 Chambers in 4 Rows
		2,117 cf	Total Available Storage

Storage Group B created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	187.00'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	188.87'	**12.0" Round RCP_Round 12"** L= 7.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 188.83' / 188.87' S= -0.0057 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.03 cfs @ 9.45 hrs HW=187.03' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.08 cfs @ 12.67 hrs HW=189.02' (Free Discharge)
↑—**2=RCP_Round 12"** (Barrel Controls 0.08 cfs @ 1.11 fps)

Pond 9P: East Rv Chambers #3 - Chamber Wizard Field B

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)
Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 3.0" Spacing = 37.0" C-C Row Spacing

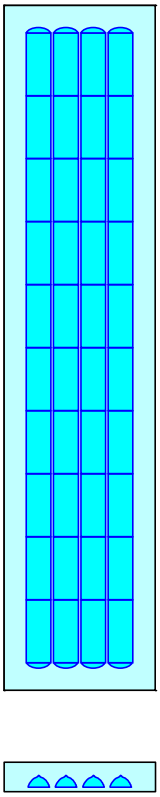
10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +30.0" End Stone x 2 = 77.40' Base Length
4 Rows x 34.0" Wide + 3.0" Spacing x 3 + 30.0" Side Stone x 2 = 17.08' Base Width
6.0" Stone Base + 16.0" Chamber Height + 18.0" Stone Cover = 3.33' Field Height

40 Chambers x 14.7 cf = 589.7 cf Chamber Storage

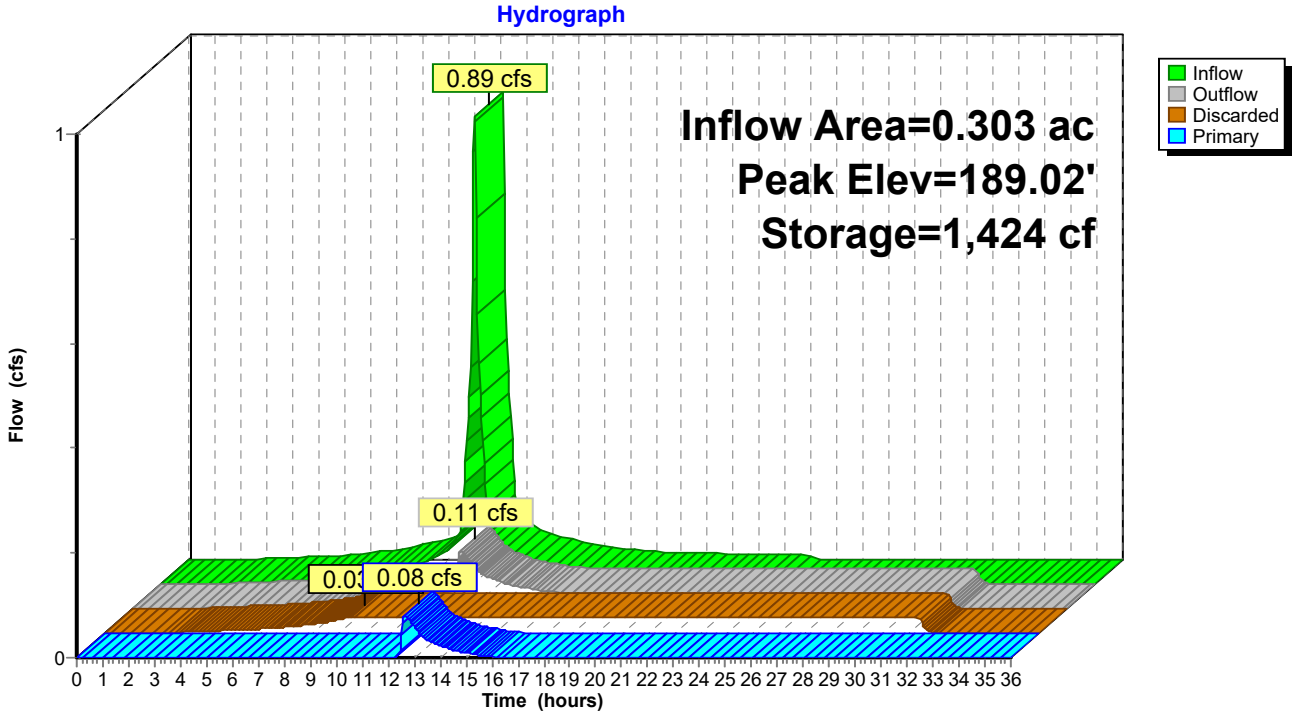
4,407.5 cf Field - 589.7 cf Chambers = 3,817.8 cf Stone x 40.0% Voids = 1,527.1 cf Stone Storage

Chamber Storage + Stone Storage = 2,116.8 cf = 0.049 af
Overall Storage Efficiency = 48.0%
Overall System Size = 77.40' x 17.08' x 3.33'

40 Chambers
163.2 cy Field
141.4 cy Stone



Pond 9P: East Rv Chambers #3



Summary for Pond 15P: Garage Trench

[92] Warning: Device #2 is above defined storage

Inflow Area = 0.074 ac,100.00% Impervious, Inflow Depth = 2.93" for 2-Year event
Inflow = 0.22 cfs @ 12.09 hrs, Volume= 0.018 af
Outflow = 0.01 cfs @ 10.75 hrs, Volume= 0.018 af, Atten= 94%, Lag= 0.0 min
Discarded = 0.01 cfs @ 10.75 hrs, Volume= 0.018 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 3L : Northeast area at 2 Federal

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 193.40' @ 13.67 hrs Surf.Area= 588 sf Storage= 329 cf

Plug-Flow detention time= 188.4 min calculated for 0.018 af (100% of inflow)
Center-of-Mass det. time= 188.3 min (945.0 - 756.7)

Volume	Invert	Avail.Storage	Storage Description
#1	192.00'	470 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 1,176 cf Overall x 40.0% Voids

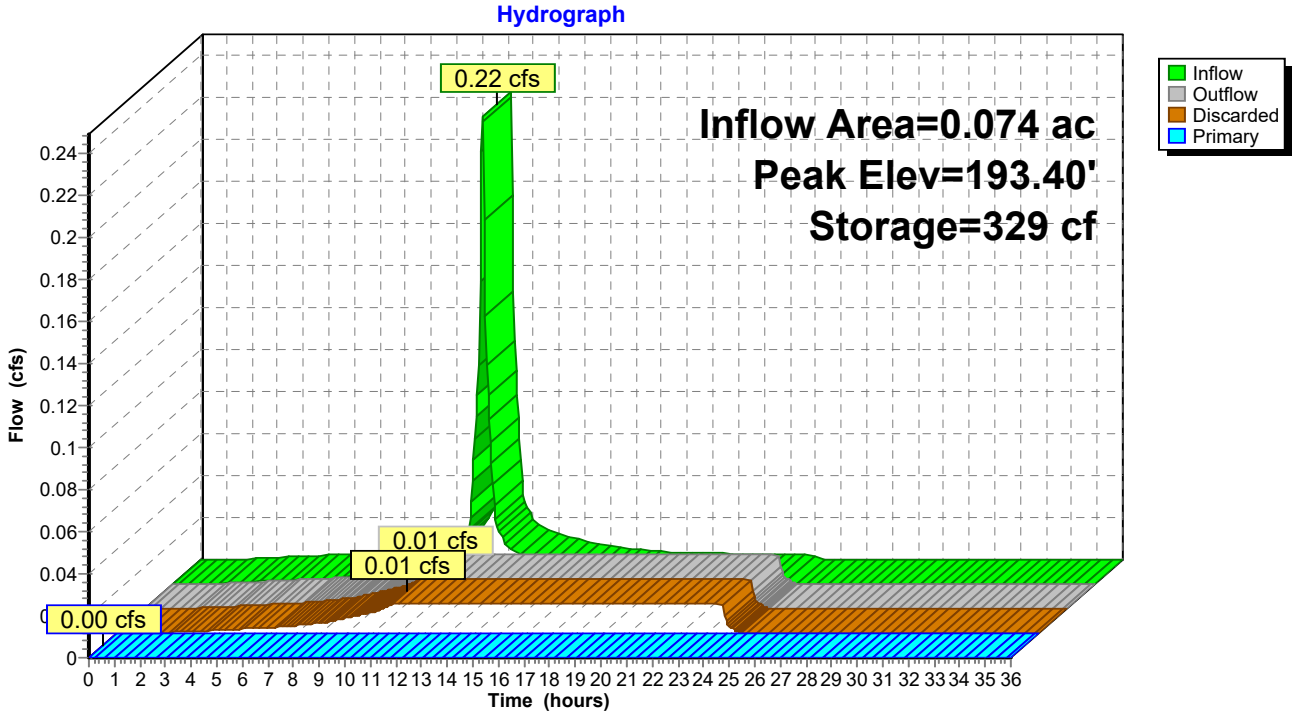
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
192.00	588	0	0
193.00	588	588	588
194.00	588	588	1,176

Device	Routing	Invert	Outlet Devices
#1	Discarded	192.00'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	194.00'	**2.0' long x 1.0' 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 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=0.01 cfs @ 10.75 hrs HW=192.02' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=192.00' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 15P: Garage Trench



Summary for Pond 17P: East Rv Chambers #4

Inflow Area = 0.389 ac, 69.88% Impervious, Inflow Depth = 2.41" for 2-Year event
Inflow = 1.22 cfs @ 12.00 hrs, Volume= 0.078 af
Outflow = 0.05 cfs @ 10.55 hrs, Volume= 0.078 af, Atten= 96%, Lag= 0.0 min
Discarded = 0.05 cfs @ 10.55 hrs, Volume= 0.078 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 2L : Flow to BVW

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 188.52' @ 14.83 hrs Surf.Area= 1,965 sf Storage= 1,744 cf

Plug-Flow detention time= 347.3 min calculated for 0.078 af (100% of inflow)
Center-of-Mass det. time= 347.3 min (1,134.8 - 787.5)

Volume	Invert	Avail.Storage	Storage Description
#1B	187.00'	2,231 cf	**23.25'W x 84.52'L x 3.33'H Field B** 6,550 cf Overall - 973 cf Embedded = 5,577 cf x 40.0% Voids
#2B	187.50'	973 cf	**ADS_StormTech SC-310 +Cap** x 66 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 66 Chambers in 6 Rows
		3,204 cf	Total Available Storage

Storage Group B created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	187.00'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	189.00'	**12.0" Round Culvert** L= 26.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 189.00' / 188.74' S= 0.0099 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.05 cfs @ 10.55 hrs HW=187.03' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=187.00' (Free Discharge)
↑—**2=Culvert** (Controls 0.00 cfs)

Pond 17P: East Rv Chambers #4 - Chamber Wizard Field B

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)
Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 3.0" Spacing = 37.0" C-C Row Spacing

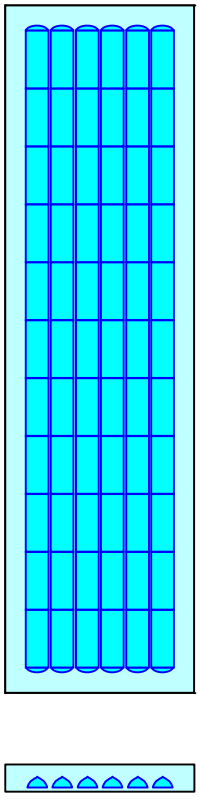
11 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 79.52' Row Length +30.0" End Stone x 2 = 84.52' Base Length
6 Rows x 34.0" Wide + 3.0" Spacing x 5 + 30.0" Side Stone x 2 = 23.25' Base Width
6.0" Stone Base + 16.0" Chamber Height + 18.0" Stone Cover = 3.33' Field Height

66 Chambers x 14.7 cf = 973.0 cf Chamber Storage

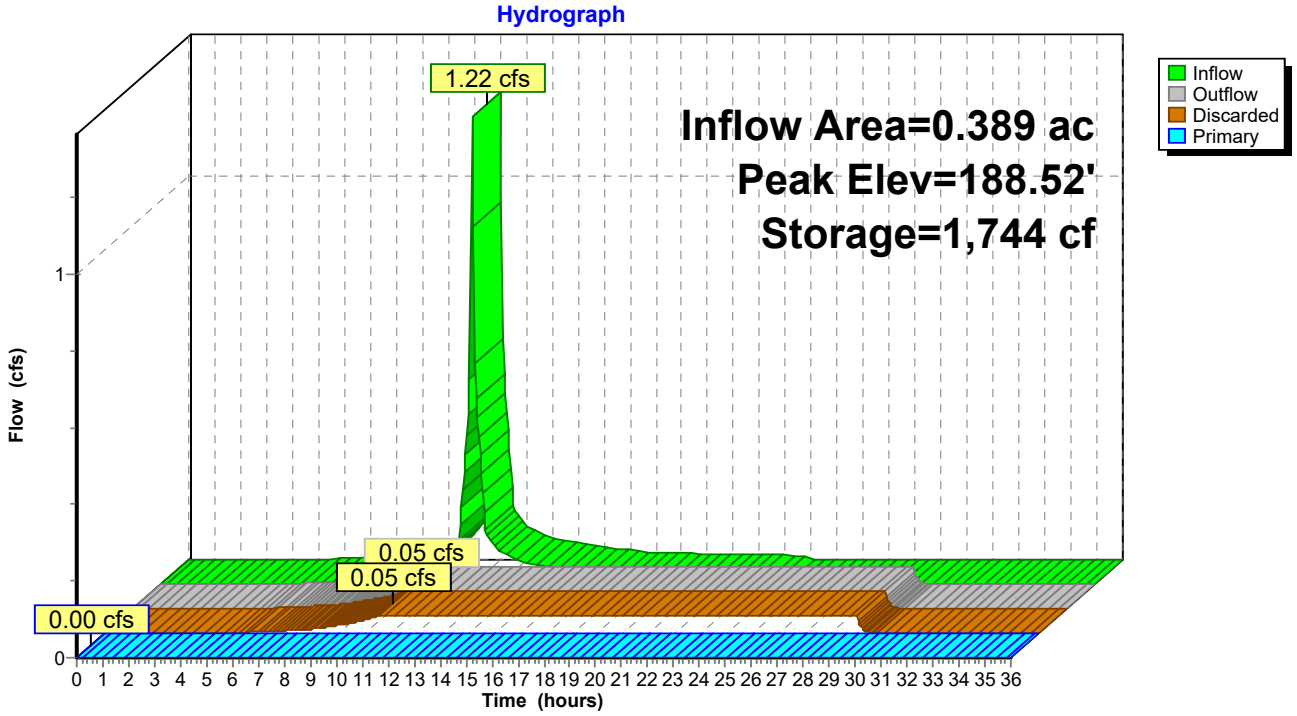
6,550.3 cf Field - 973.0 cf Chambers = 5,577.3 cf Stone x 40.0% Voids = 2,230.9 cf Stone Storage

Chamber Storage + Stone Storage = 3,203.9 cf = 0.074 af
Overall Storage Efficiency = 48.9%
Overall System Size = 84.52' x 23.25' x 3.33'

66 Chambers
242.6 cy Field
206.6 cy Stone



Pond 17P: East Rv Chambers #4



Summary for Pond C8: Banked Parking chambers

Inflow Area = 0.309 ac, 61.16% Impervious, Inflow Depth = 2.22" for 2-Year event
Inflow = 0.78 cfs @ 12.09 hrs, Volume= 0.057 af
Outflow = 0.07 cfs @ 11.60 hrs, Volume= 0.057 af, Atten= 91%, Lag= 0.0 min
Discarded = 0.07 cfs @ 11.60 hrs, Volume= 0.057 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 2L : Flow to BVW

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 189.66' @ 13.03 hrs Surf.Area= 2,978 sf Storage= 970 cf

Plug-Flow detention time= 113.0 min calculated for 0.057 af (100% of inflow)
Center-of-Mass det. time= 112.8 min (915.8 - 802.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	189.00'	2,143 cf	**32.50'W x 91.64'L x 2.33'H Field A** 6,949 cf Overall - 1,592 cf Embedded = 5,357 cf x 40.0% Voids
#2A	189.50'	1,592 cf	**ADS_StormTech SC-310 +Cap** x 108 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 108 Chambers in 9 Rows
		3,735 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	189.00'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	191.00'	**8.0" Round Culvert X 2.00** L= 48.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 191.00' / 190.04' S= 0.0200 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.35 sf

Discarded OutFlow Max=0.07 cfs @ 11.60 hrs HW=189.03' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=189.00' (Free Discharge)
↑—**2=Culvert** (Controls 0.00 cfs)

Pond C8: Banked Parking chambers - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)
Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 3.0" Spacing = 37.0" C-C Row Spacing

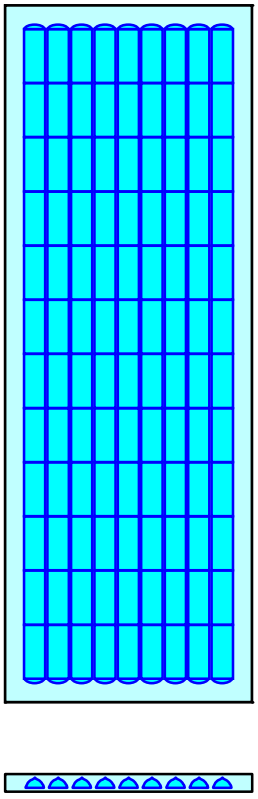
12 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 86.64' Row Length +30.0" End Stone x 2 = 91.64' Base Length
9 Rows x 34.0" Wide + 3.0" Spacing x 8 + 30.0" Side Stone x 2 = 32.50' Base Width
6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

108 Chambers x 14.7 cf = 1,592.1 cf Chamber Storage

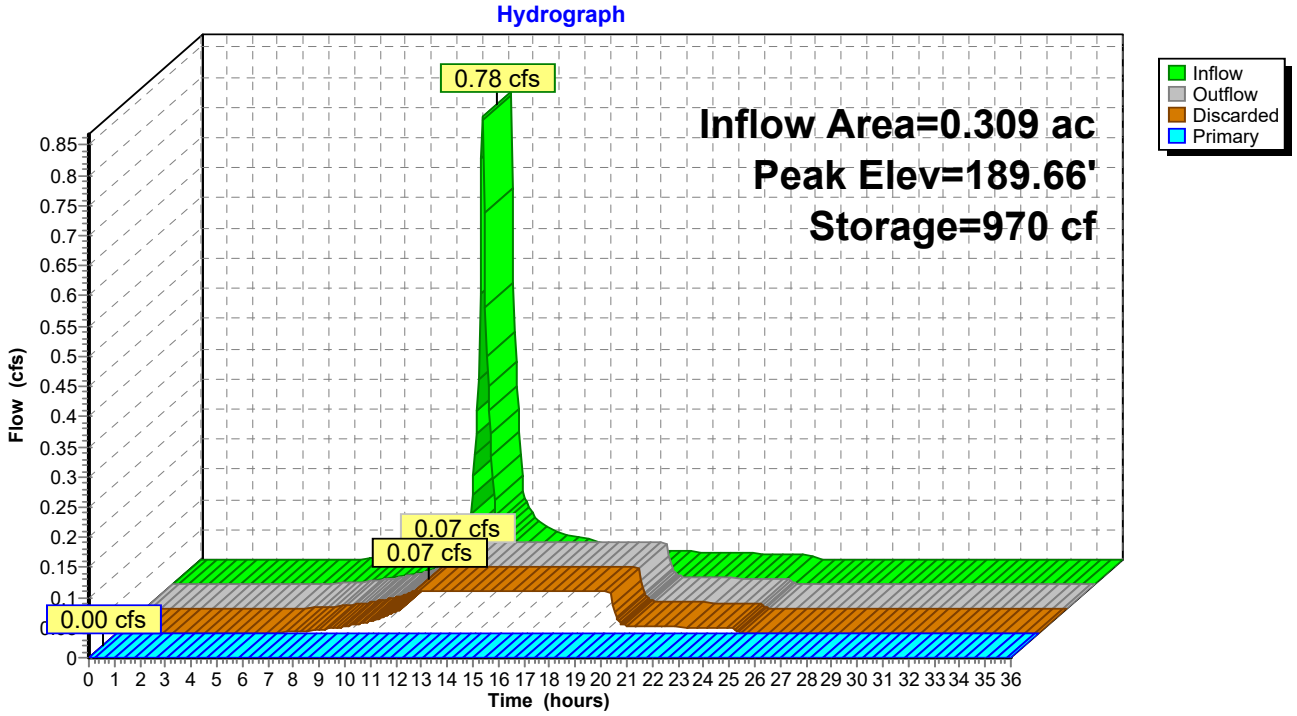
6,949.4 cf Field - 1,592.1 cf Chambers = 5,357.2 cf Stone x 40.0% Voids = 2,142.9 cf Stone Storage

Chamber Storage + Stone Storage = 3,735.0 cf = 0.086 af
Overall Storage Efficiency = 53.7%
Overall System Size = 91.64' x 32.50' x 2.33'

108 Chambers
257.4 cy Field
198.4 cy Stone



Pond C8: Banked Parking chambers



Summary for Pond C9: Banked Parking chambers

Inflow Area = 0.164 ac, 80.13% Impervious, Inflow Depth = 2.51" for 2-Year event
Inflow = 0.45 cfs @ 12.09 hrs, Volume= 0.034 af
Outflow = 0.04 cfs @ 11.45 hrs, Volume= 0.034 af, Atten= 92%, Lag= 0.0 min
Discarded = 0.04 cfs @ 11.45 hrs, Volume= 0.034 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 2L : Flow to BVW

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 187.25' @ 13.10 hrs Surf.Area= 1,561 sf Storage= 591 cf

Plug-Flow detention time= 129.6 min calculated for 0.034 af (100% of inflow)
Center-of-Mass det. time= 129.4 min (917.0 - 787.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	186.50'	1,162 cf	**20.17'W x 77.40'L x 2.33'H Field A** 3,642 cf Overall - 737 cf Embedded = 2,905 cf x 40.0% Voids
#2A	187.00'	737 cf	**ADS_StormTech SC-310 +Cap** x 50 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 50 Chambers in 5 Rows
		1,899 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	186.50'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	188.50'	**8.0" Round Culvert X 2.00** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 188.50' / 187.90' S= 0.0200 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.35 sf

Discarded OutFlow Max=0.04 cfs @ 11.45 hrs HW=186.53' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=186.50' (Free Discharge)
↑—**2=Culvert** (Controls 0.00 cfs)

Pond C9: Banked Parking chambers - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)
Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 3.0" Spacing = 37.0" C-C Row Spacing

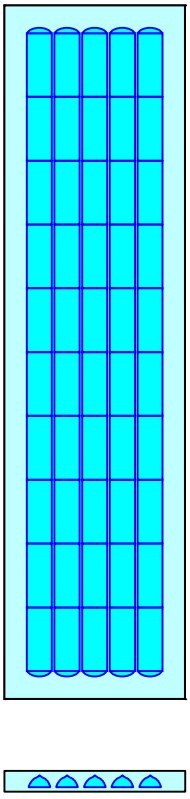
10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +30.0" End Stone x 2 = 77.40' Base Length
5 Rows x 34.0" Wide + 3.0" Spacing x 4 + 30.0" Side Stone x 2 = 20.17' Base Width
6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

50 Chambers x 14.7 cf = 737.1 cf Chamber Storage

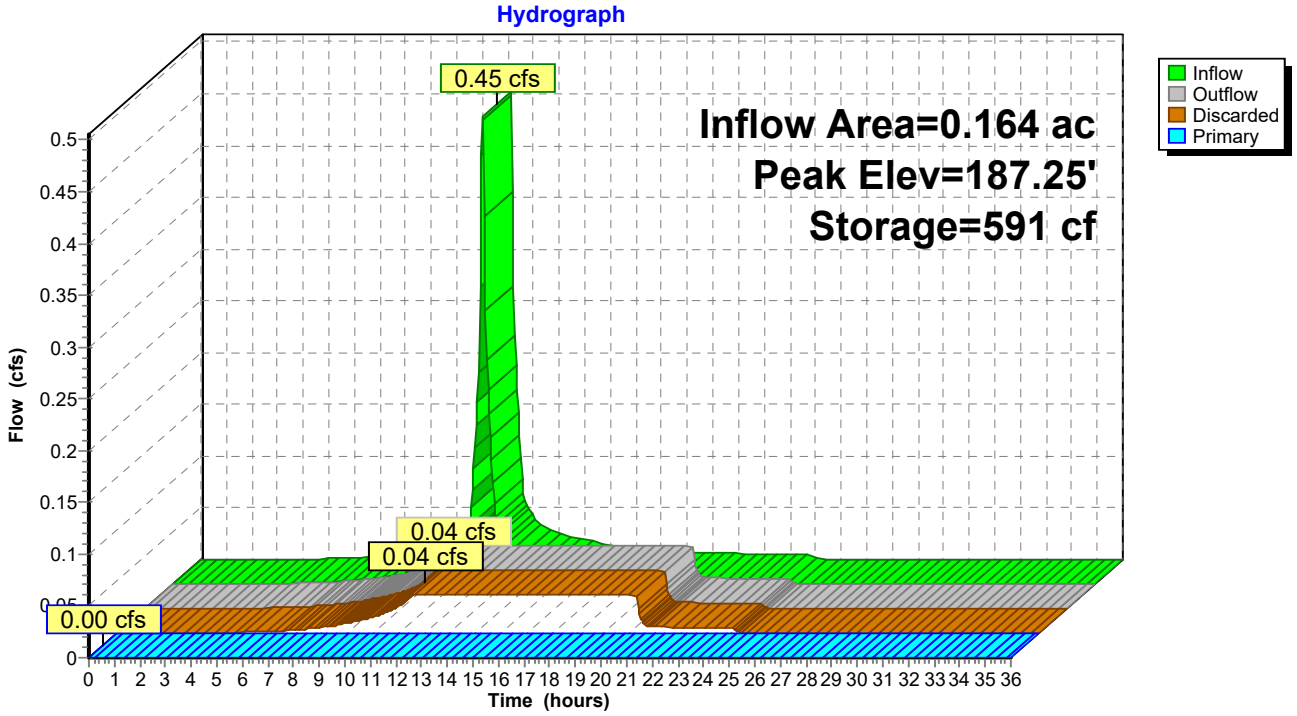
3,642.1 cf Field - 737.1 cf Chambers = 2,905.0 cf Stone x 40.0% Voids = 1,162.0 cf Stone Storage

Chamber Storage + Stone Storage = 1,899.1 cf = 0.044 af
Overall Storage Efficiency = 52.1%
Overall System Size = 77.40' x 20.17' x 2.33'

50 Chambers
134.9 cy Field
107.6 cy Stone



Pond C9: Banked Parking chambers

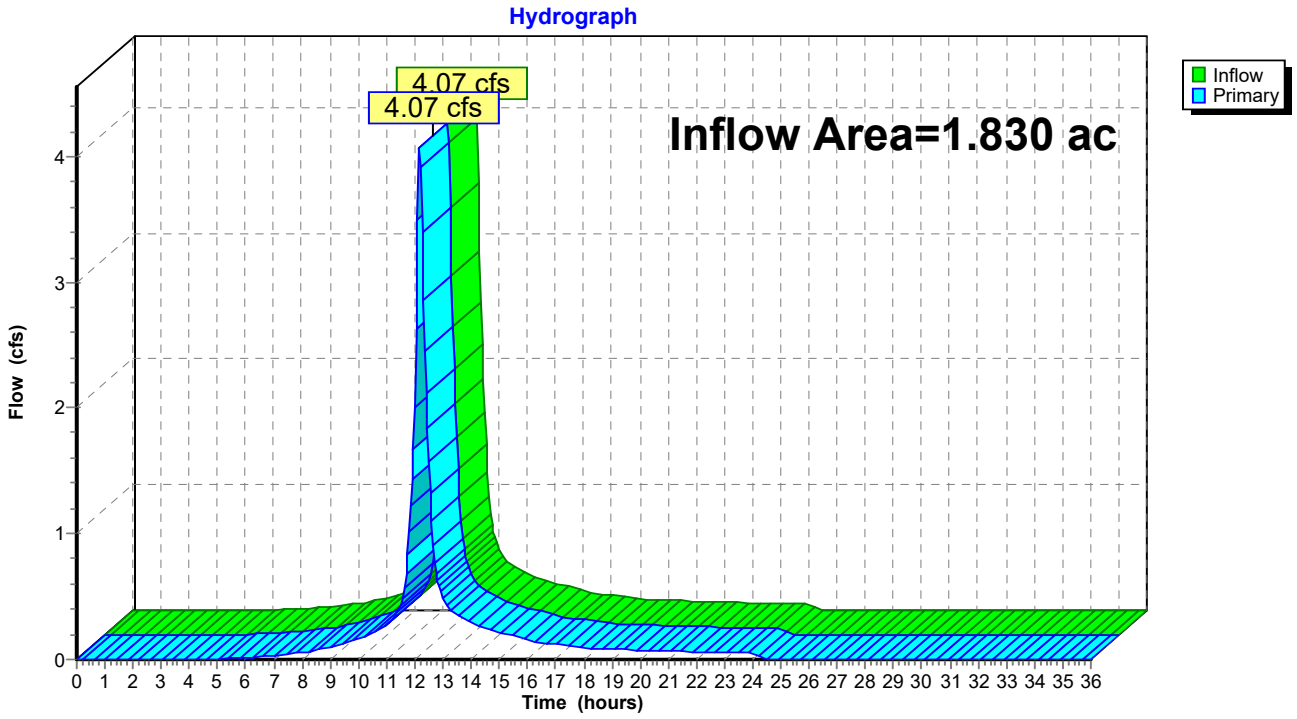


Summary for Link 1L: Ex. CB w/15" RCP to 3 Federal

Inflow Area = 1.830 ac, 73.47% Impervious, Inflow Depth = 2.41" for 2-Year event
Inflow = 4.07 cfs @ 12.17 hrs, Volume= 0.367 af
Primary = 4.07 cfs @ 12.17 hrs, Volume= 0.367 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link 1L: Ex. CB w/15" RCP to 3 Federal

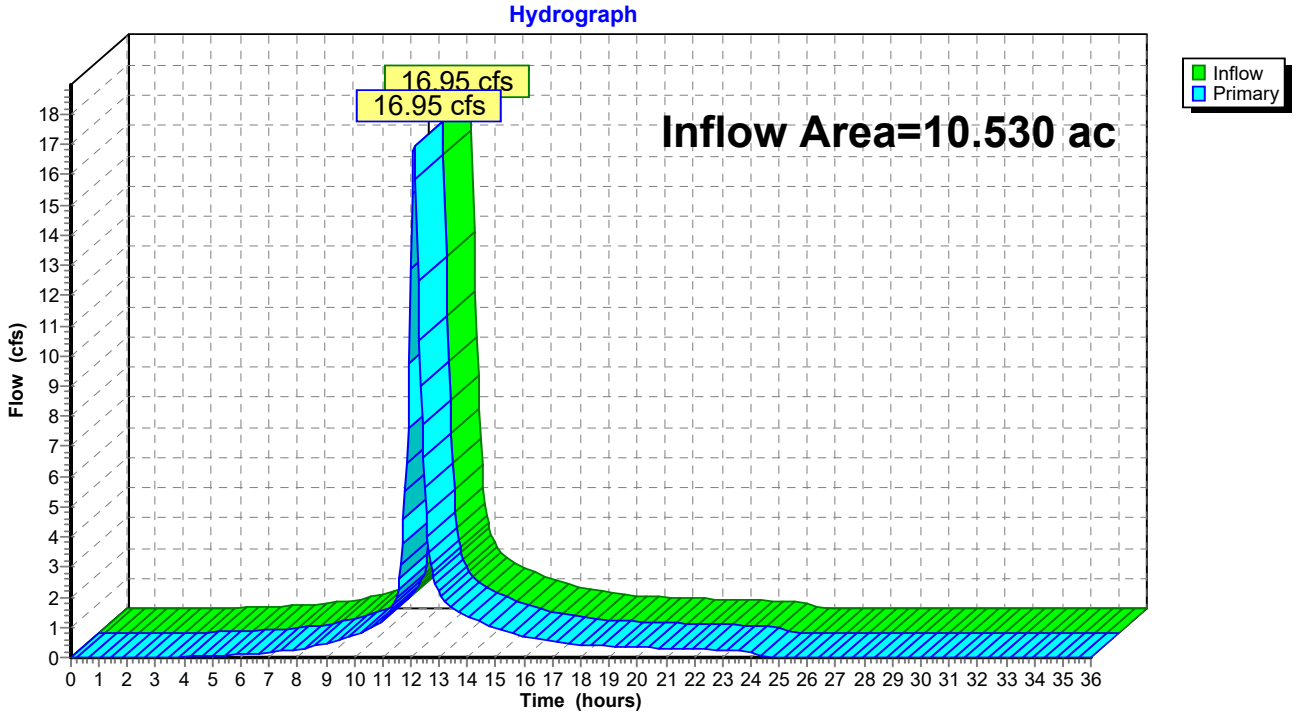


Summary for Link 2L: Flow to BVW

Inflow Area = 10.530 ac, 67.32% Impervious, Inflow Depth = 1.89" for 2-Year event
Inflow = 16.95 cfs @ 12.12 hrs, Volume= 1.660 af
Primary = 16.95 cfs @ 12.12 hrs, Volume= 1.660 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link 2L: Flow to BVW

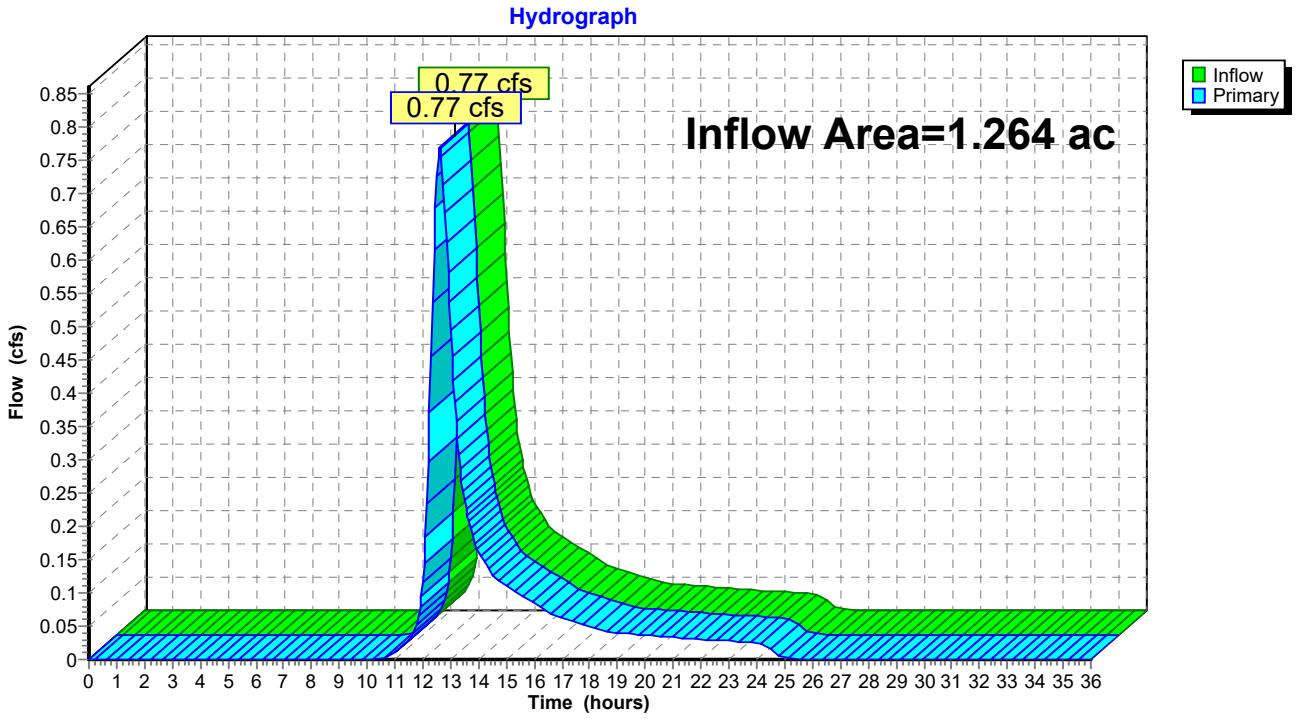


Summary for Link 3L: Northeast area at 2 Federal

Inflow Area = 1.264 ac, 6.13% Impervious, Inflow Depth = 1.11" for 2-Year event
Inflow = 0.77 cfs @ 12.61 hrs, Volume= 0.117 af
Primary = 0.77 cfs @ 12.61 hrs, Volume= 0.117 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link 3L: Northeast area at 2 Federal

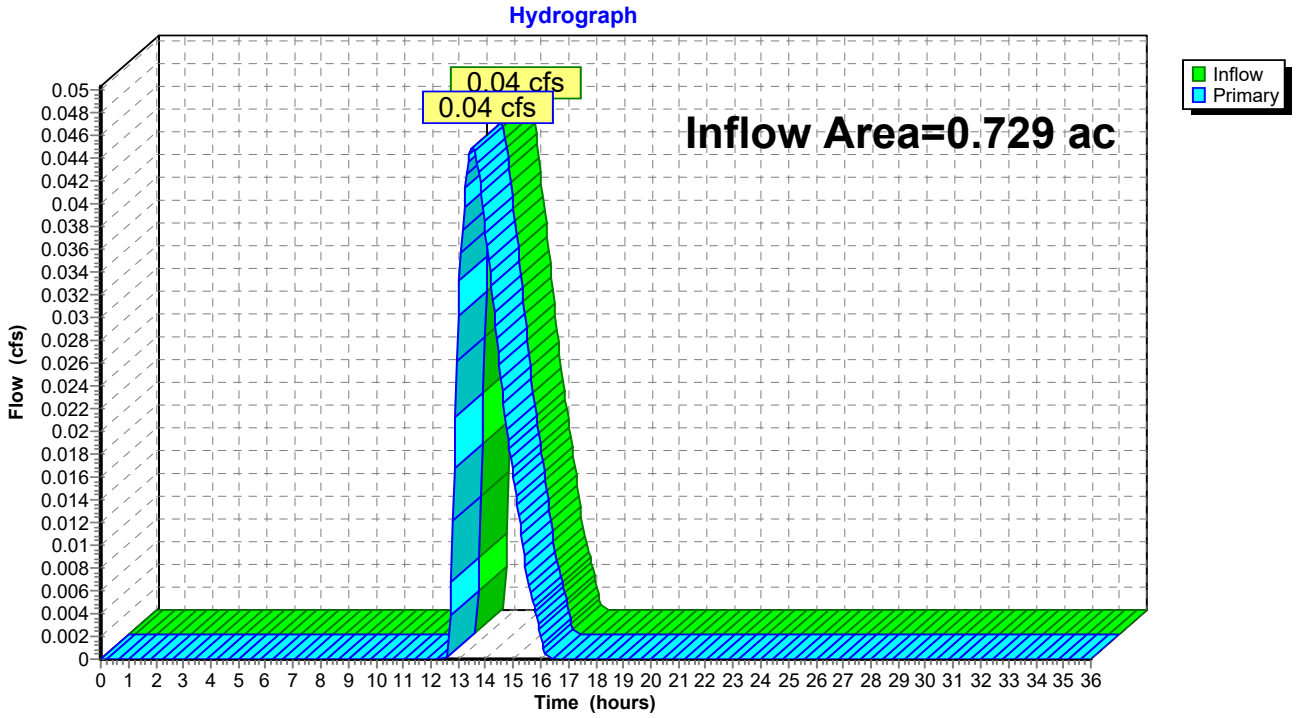


Summary for Link 14L: Outflow of Combined INF Systems

Inflow Area = 0.729 ac, 91.98% Impervious, Inflow Depth = 0.11" for 2-Year event
Inflow = 0.04 cfs @ 13.51 hrs, Volume= 0.007 af
Primary = 0.04 cfs @ 13.51 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 1R-4 : new 24"

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link 14L: Outflow of Combined INF Systems



Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment16S: Rear of Garage Runoff Area=3,234 sf 100.00% Impervious Runoff Depth=4.53"
Tc=6.0 min CN=98 Runoff=0.34 cfs 0.028 af

Subcatchment18S: Subcat P-6 Runoff Area=77,509 sf 59.46% Impervious Runoff Depth=3.76"
Flow Length=136' Tc=6.4 min CN=91 Runoff=7.29 cfs 0.557 af

SubcatchmentP-1: Subcat P-1 Runoff Area=51,815 sf 0.27% Impervious Runoff Depth=2.43"
Flow Length=640' Tc=41.9 min CN=77 Runoff=1.62 cfs 0.241 af

SubcatchmentP-2: Subcat P-2 Runoff Area=64,335 sf 0.00% Impervious Runoff Depth=2.43"
Flow Length=110' Tc=13.1 min CN=77 Runoff=3.31 cfs 0.299 af

SubcatchmentP-2.1: Subcat P-2.1 Runoff Area=2,636 sf 85.24% Impervious Runoff Depth=4.19"
Tc=6.0 min CN=95 Runoff=0.27 cfs 0.021 af

SubcatchmentP-2.10: Subcat P-2.10 Runoff Area=0.132 ac 89.76% Impervious Runoff Depth=4.30"
Tc=0.0 min CN=96 Runoff=0.69 cfs 0.048 af

SubcatchmentP-2.11: Subcat P-2.11 Runoff Area=9,060 sf 76.19% Impervious Runoff Depth=4.08"
Tc=6.0 min CN=94 Runoff=0.91 cfs 0.071 af

SubcatchmentP-2.12: Subcat P-2.12 Runoff Area=0.271 ac 53.80% Impervious Runoff Depth=3.65"
Tc=0.0 min CN=90 Runoff=1.29 cfs 0.082 af

SubcatchmentP-2.2: Subcat P-2.2 Runoff Area=14,052 sf 78.78% Impervious Runoff Depth=4.08"
Tc=6.0 min CN=94 Runoff=1.41 cfs 0.110 af

SubcatchmentP-2.3: Subcat P-2.3 Runoff Area=9,223 sf 74.06% Impervious Runoff Depth=3.97"
Tc=6.0 min CN=93 Runoff=0.91 cfs 0.070 af

SubcatchmentP-2.4: Subcat P-2.4 Runoff Area=7,571 sf 86.37% Impervious Runoff Depth=4.30"
Tc=6.0 min CN=96 Runoff=0.78 cfs 0.062 af

SubcatchmentP-2.5: Subcat P-2.5 Runoff Area=0.389 ac 69.88% Impervious Runoff Depth=3.97"
Tc=0.0 min CN=93 Runoff=1.96 cfs 0.129 af

SubcatchmentP-2.6: Subcat P-2.6 Runoff Area=10,714 sf 78.32% Impervious Runoff Depth=4.08"
Tc=6.0 min CN=94 Runoff=1.07 cfs 0.084 af

SubcatchmentP-2.7: Subcat P-2.7 Runoff Area=5,677 sf 76.94% Impervious Runoff Depth=4.08"
Tc=6.0 min CN=94 Runoff=0.57 cfs 0.044 af

SubcatchmentP-2.8: Subcat P-2.8 Runoff Area=13,094 sf 90.54% Impervious Runoff Depth=4.30"
Tc=6.0 min CN=96 Runoff=1.35 cfs 0.108 af

SubcatchmentP-2.9: Subcat P-2.9 Runoff Area=13,195 sf 92.27% Impervious Runoff Depth=4.42"
Tc=6.0 min CN=97 Runoff=1.37 cfs 0.112 af

Subcatchment P-3: Subcat P-3 Runoff Area=35,147 sf 89.05% Impervious Runoff Depth=4.30"
Tc=6.0 min CN=96 Runoff=3.61 cfs 0.289 af

Subcatchment P-4: Subcat P-4 Runoff Area=30,751 sf 86.54% Impervious Runoff Depth=4.30"
Tc=6.0 min CN=96 Runoff=3.16 cfs 0.253 af

Subcatchment P-5: Subcat P-5 Runoff Area=30,541 sf 83.59% Impervious Runoff Depth=4.19"
Tc=6.0 min CN=95 Runoff=3.10 cfs 0.245 af

Subcatchment P-7: Subcat P-7 Runoff Area=79,718 sf 73.47% Impervious Runoff Depth=3.97"
Flow Length=220' Slope=0.0100 '/' Tc=12.3 min CN=93 Runoff=6.54 cfs 0.606 af

Subcatchment R-1: Subcat R-1 Runoff Area=13,004 sf 100.00% Impervious Runoff Depth=4.53"
Tc=0.0 min CN=98 Runoff=1.59 cfs 0.113 af

Subcatchment R-2: Subcat R-2 Runoff Area=0.355 ac 100.00% Impervious Runoff Depth=4.53"
Tc=0.0 min CN=98 Runoff=1.89 cfs 0.134 af

Subcatchment R-3: Subcat R-3 Runoff Area=33,729 sf 74.84% Impervious Runoff Depth=3.97"
Tc=0.0 min CN=93 Runoff=3.89 cfs 0.256 af

Subcatchment R-4: Subcat R-4 Runoff Area=5,028 sf 100.00% Impervious Runoff Depth=4.53"
Tc=0.0 min CN=98 Runoff=0.62 cfs 0.044 af

Subcatchment R-5: Subcat R-5 Runoff Area=8,189 sf 100.00% Impervious Runoff Depth=4.53"
Tc=0.0 min CN=98 Runoff=1.00 cfs 0.071 af

Subcatchment R-6: Subcat R-6 Runoff Area=4,632 sf 100.00% Impervious Runoff Depth=4.53"
Tc=0.0 min CN=98 Runoff=0.57 cfs 0.040 af

Subcatchment S-1: Subcat S-1 Runoff Area=7,148 sf 80.13% Impervious Runoff Depth=4.08"
Tc=6.0 min CN=94 Runoff=0.72 cfs 0.056 af

Subcatchment S-2: Subcat S-2 Runoff Area=13,478 sf 61.16% Impervious Runoff Depth=3.76"
Tc=6.0 min CN=91 Runoff=1.28 cfs 0.097 af

Reach 1R-1: Ex. 18" RCP Avg. Flow Depth=0.81' Max Vel=3.71 fps Inflow=3.61 cfs 0.289 af
18.0" Round Pipe n=0.013 L=120.0' S=0.0037 '/' Capacity=6.36 cfs Outflow=3.54 cfs 0.289 af

Reach 1R-2: New 18" ADS Avg. Flow Depth=0.89' Max Vel=4.46 fps Inflow=4.89 cfs 0.417 af
18.0" Round Pipe n=0.011 L=116.0' S=0.0035 '/' Capacity=7.38 cfs Outflow=4.81 cfs 0.417 af

Reach 1R-3: new 24" Avg. Flow Depth=0.87' Max Vel=3.56 fps Inflow=4.81 cfs 0.417 af
24.0" Round Pipe n=0.011 L=315.0' S=0.0020 '/' Capacity=11.96 cfs Outflow=4.60 cfs 0.417 af

Reach 1R-4: new 24" Avg. Flow Depth=1.04' Max Vel=3.85 fps Inflow=6.41 cfs 0.570 af
24.0" Round Pipe n=0.011 L=160.0' S=0.0020 '/' Capacity=11.96 cfs Outflow=6.26 cfs 0.570 af

Reach 1R-5: new 24" Avg. Flow Depth=1.01' Max Vel=4.29 fps Inflow=6.81 cfs 0.641 af
24.0" Round Pipe n=0.011 L=95.0' S=0.0025 '/' Capacity=13.44 cfs Outflow=6.76 cfs 0.641 af

Reach 1R-6: New 24" ADS Avg. Flow Depth=1.06' Max Vel=4.27 fps Inflow=7.22 cfs 0.724 af
24.0" Round Pipe n=0.011 L=50.0' S=0.0024 '/' Capacity=13.10 cfs Outflow=7.20 cfs 0.724 af

Reach 2R-1: new 12" west Avg. Flow Depth=0.17' Max Vel=3.00 fps Inflow=0.27 cfs 0.021 af
12.0" Round Pipe n=0.011 L=150.0' S=0.0100 '/' Capacity=4.21 cfs Outflow=0.26 cfs 0.021 af

Reach 2R-2: new 12" Avg. Flow Depth=0.48' Max Vel=5.24 fps Inflow=1.97 cfs 0.171 af
12.0" Round Pipe n=0.011 L=75.0' S=0.0100 '/' Capacity=4.21 cfs Outflow=1.95 cfs 0.171 af

Reach 2R-3: new 12" Avg. Flow Depth=0.60' Max Vel=7.05 fps Inflow=3.50 cfs 0.312 af
12.0" Round Pipe n=0.011 L=80.0' S=0.0150 '/' Capacity=5.16 cfs Outflow=3.48 cfs 0.312 af

Reach 2R-4: new 18" Avg. Flow Depth=0.99' Max Vel=5.99 fps Inflow=7.60 cfs 0.631 af
18.0" Round Pipe n=0.011 L=150.0' S=0.0060 '/' Capacity=9.62 cfs Outflow=7.36 cfs 0.631 af

Reach 2R-5: new 18" Avg. Flow Depth=1.26' Max Vel=5.66 fps Inflow=9.13 cfs 0.765 af
18.0" Round Pipe n=0.011 L=60.0' S=0.0050 '/' Capacity=8.78 cfs Outflow=8.96 cfs 0.765 af

Reach 3R: Ex. 12" RCP Avg. Flow Depth=0.71' Max Vel=5.29 fps Inflow=3.16 cfs 0.253 af
12.0" Round Pipe n=0.013 L=64.0' S=0.0108 '/' Capacity=3.70 cfs Outflow=3.14 cfs 0.253 af

Reach 4R: Ex. 15" RCP Avg. Flow Depth=0.76' Max Vel=4.01 fps Inflow=3.14 cfs 0.253 af
15.0" Round Pipe n=0.013 L=44.0' S=0.0050 '/' Capacity=4.57 cfs Outflow=3.12 cfs 0.253 af

Reach 7R: Ex. 24" RCP Avg. Flow Depth=1.65' Max Vel=4.86 fps Inflow=13.50 cfs 1.056 af
24.0" Round Pipe n=0.013 L=154.0' S=0.0035 '/' Capacity=13.40 cfs Outflow=13.14 cfs 1.056 af

Reach 8R: Ex. 24" RCP Avg. Flow Depth=1.33' Max Vel=5.85 fps Inflow=13.14 cfs 1.056 af
24.0" Round Pipe n=0.013 L=216.0' S=0.0054 '/' Capacity=16.65 cfs Outflow=12.71 cfs 1.056 af

Pond 5P: East Rv Chambers #2 Peak Elev=189.29' Storage=3,618 cf Inflow=2.54 cfs 0.221 af
Discarded=0.07 cfs 0.154 af Primary=1.00 cfs 0.067 af Outflow=1.07 cfs 0.221 af

Pond 8P: East Rv Chambers #1 Peak Elev=187.97' Storage=824 cf Inflow=0.57 cfs 0.044 af
Discarded=0.04 cfs 0.044 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.044 af

Pond 9P: East Rv Chambers #3 Peak Elev=189.47' Storage=1,658 cf Inflow=1.37 cfs 0.112 af
Discarded=0.03 cfs 0.072 af Primary=0.82 cfs 0.039 af Outflow=0.85 cfs 0.112 af

Pond 15P: Garage Trench Peak Elev=194.08' Storage=470 cf Inflow=0.34 cfs 0.028 af
Discarded=0.01 cfs 0.025 af Primary=0.13 cfs 0.003 af Outflow=0.15 cfs 0.028 af

Pond 17P: East Rv Chambers #4 Peak Elev=189.36' Storage=2,435 cf Inflow=1.96 cfs 0.129 af
Discarded=0.05 cfs 0.101 af Primary=0.40 cfs 0.028 af Outflow=0.45 cfs 0.129 af

Pond C8: Banked Parking chambers Peak Elev=190.12' Storage=1,965 cf Inflow=1.28 cfs 0.097 af
Discarded=0.07 cfs 0.097 af Primary=0.00 cfs 0.000 af Outflow=0.07 cfs 0.097 af

Pond C9: Banked Parking chambers Peak Elev=187.77' Storage=1,140 cf Inflow=0.72 cfs 0.056 af
Discarded=0.04 cfs 0.056 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.056 af

Link 1L: Ex. CB w/15" RCP to 3 Federal Inflow=6.54 cfs 0.606 af
Primary=6.54 cfs 0.606 af

Link 2L: Flow to BVW Inflow=28.61 cfs 2.871 af
Primary=28.61 cfs 2.871 af

Link 3L: Northeast area at 2 Federal Inflow=1.70 cfs 0.244 af
Primary=1.70 cfs 0.244 af

Link 14L: Outflow of Combined INF Systems Inflow=1.00 cfs 0.067 af
Primary=1.00 cfs 0.067 af

Total Runoff Area = 13.624 ac Runoff Volume = 4.270 af Average Runoff Depth = 3.76"
37.53% Pervious = 5.113 ac 62.47% Impervious = 8.511 ac

Summary for Subcatchment 16S: Rear of Garage

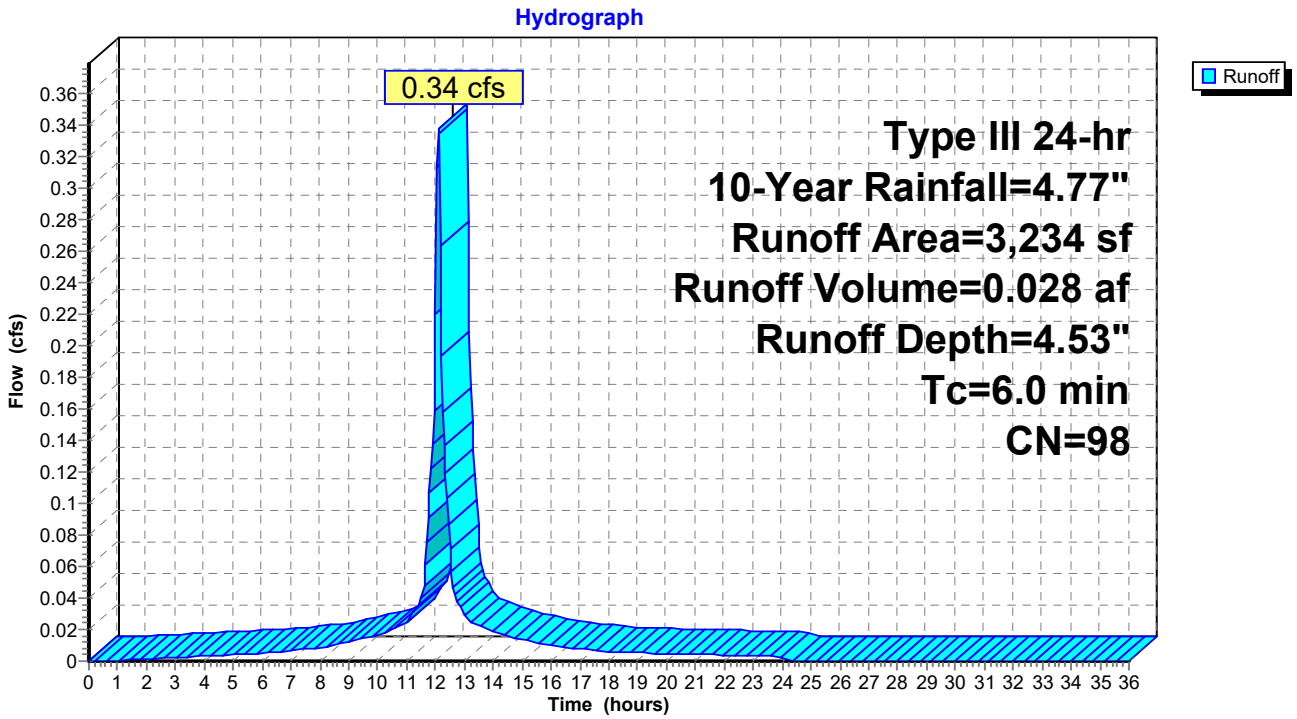
Runoff = 0.34 cfs @ 12.09 hrs, Volume= 0.028 af, Depth= 4.53"
Routed to Pond 15P : Garage Trench

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (sf)	CN	Description
3,234	98	Roofs, HSG D
3,234		100.00% Impervious Area

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

Subcatchment 16S: Rear of Garage



Summary for Subcatchment 18S: Subcat P-6

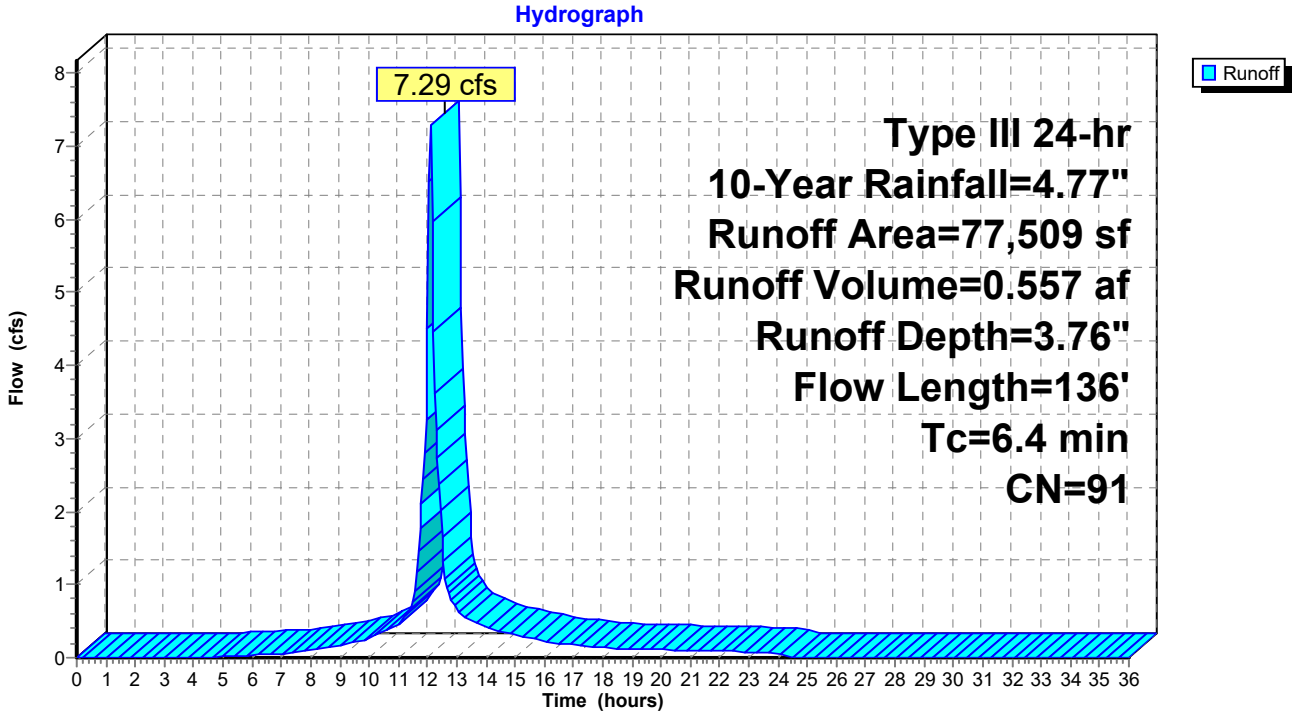
Runoff = 7.29 cfs @ 12.09 hrs, Volume= 0.557 af, Depth= 3.76"
Routed to Reach 7R : Ex. 24" RCP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (sf)	CN	Description
28,079	80	>75% Grass cover, Good, HSG D
26,495	98	Paved parking, HSG D
19,592	98	Roofs, HSG D
3,343	77	Woods, Good, HSG D
77,509	91	Weighted Average
31,422		40.54% Pervious Area
46,087		59.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	50	0.0200	0.15		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 3.21"
0.5	48	0.0100	1.61		**Shallow Concentrated Flow, BC** Unpaved Kv= 16.1 fps
0.3	38	0.0100	2.03		**Shallow Concentrated Flow, CD** Paved Kv= 20.3 fps
6.4	136	Total			

Subcatchment 18S: Subcat P-6



Summary for Subcatchment P-1: Subcat P-1

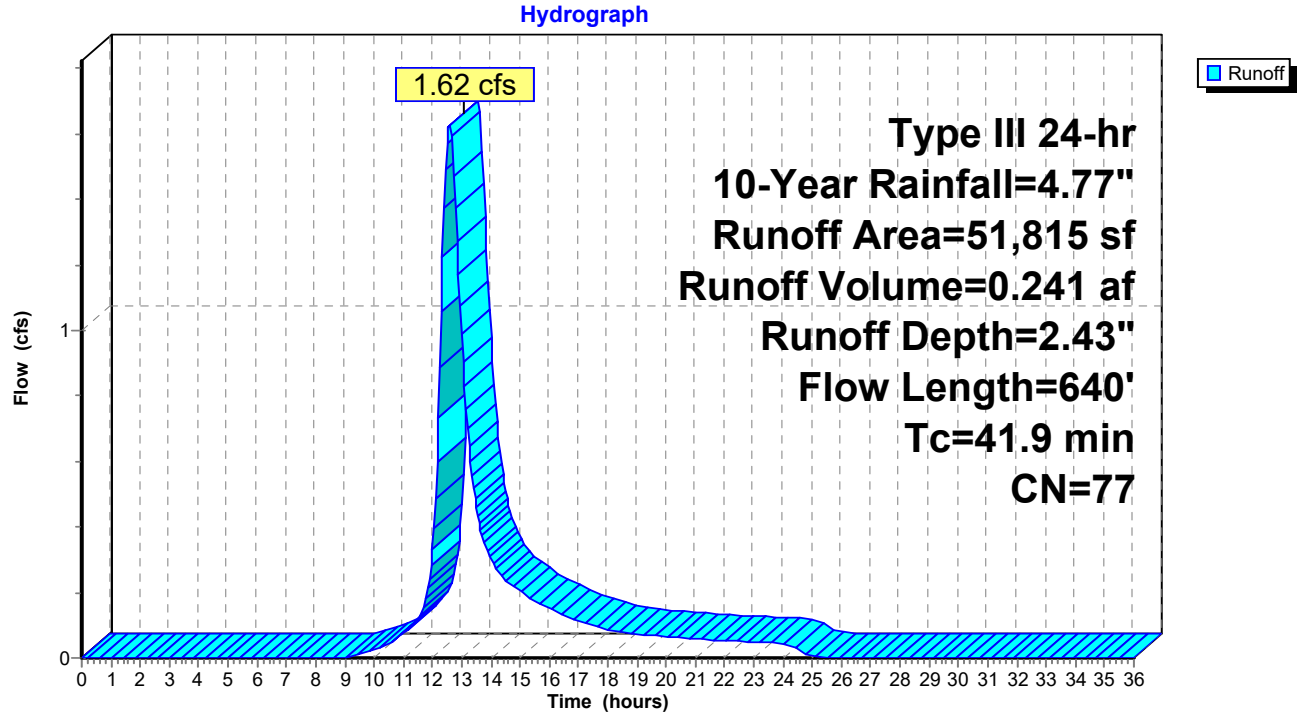
Runoff = 1.62 cfs @ 12.59 hrs, Volume= 0.241 af, Depth= 2.43"
Routed to Link 3L : Northeast area at 2 Federal

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (sf)	CN	Description
5,634	80	>75% Grass cover, Good, HSG D
139	98	Paved parking, HSG D
46,042	77	Woods, Good, HSG D
51,815	77	Weighted Average
51,676		99.73% Pervious Area
139		0.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	50	0.0060	0.04		**Sheet Flow, AB** Woods: Light underbrush n= 0.400 P2= 3.21"
22.0	590	0.0080	0.45		**Shallow Concentrated Flow, BC** Woodland Kv= 5.0 fps
41.9	640	Total			

Subcatchment P-1: Subcat P-1



Summary for Subcatchment P-2: Subcat P-2

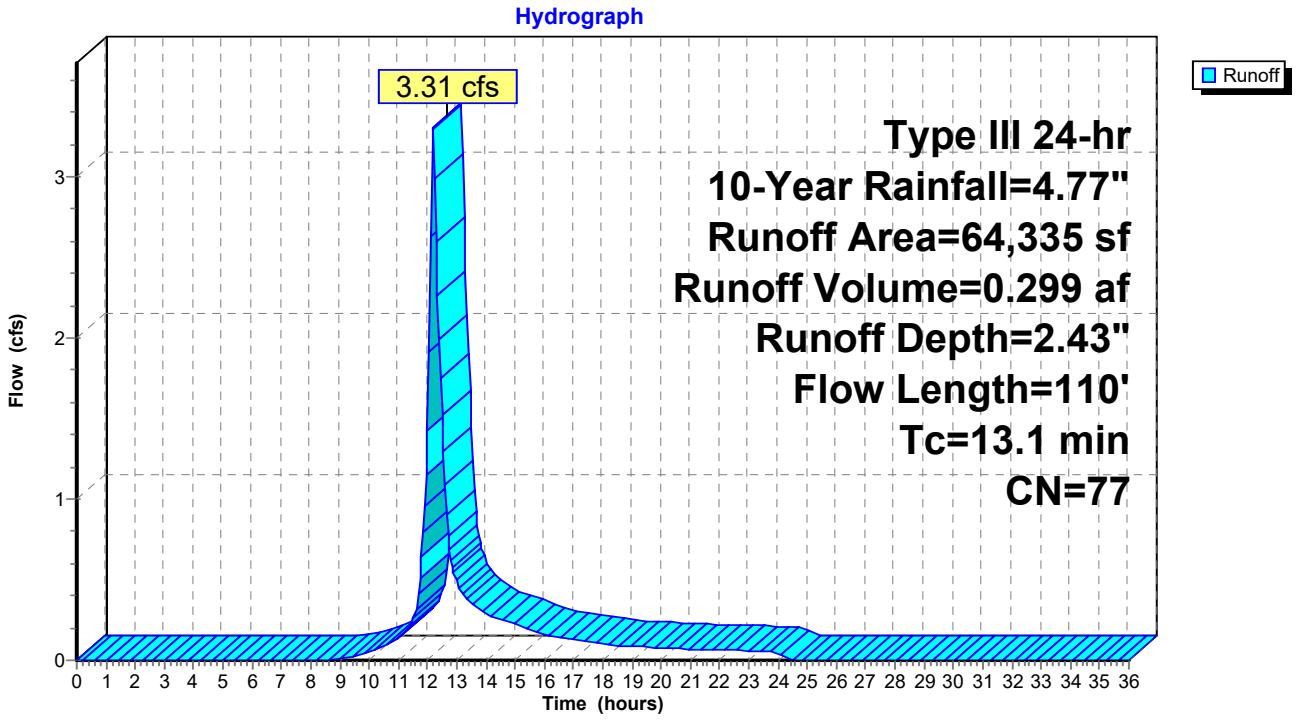
Runoff = 3.31 cfs @ 12.19 hrs, Volume= 0.299 af, Depth= 2.43"
Routed to Link 2L : Flow to BVW

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (sf)	CN	Description
8,544	80	>75% Grass cover, Good, HSG D
55,791	77	Woods, Good, HSG D
64,335	77	Weighted Average
64,335		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	50	0.0200	0.07		**Sheet Flow, AB** Woods: Light underbrush n= 0.400 P2= 3.21"
0.8	60	0.0700	1.32		**Shallow Concentrated Flow, BC** Woodland Kv= 5.0 fps
13.1	110	Total			

Subcatchment P-2: Subcat P-2



Summary for Subcatchment P-2.1: Subcat P-2.1

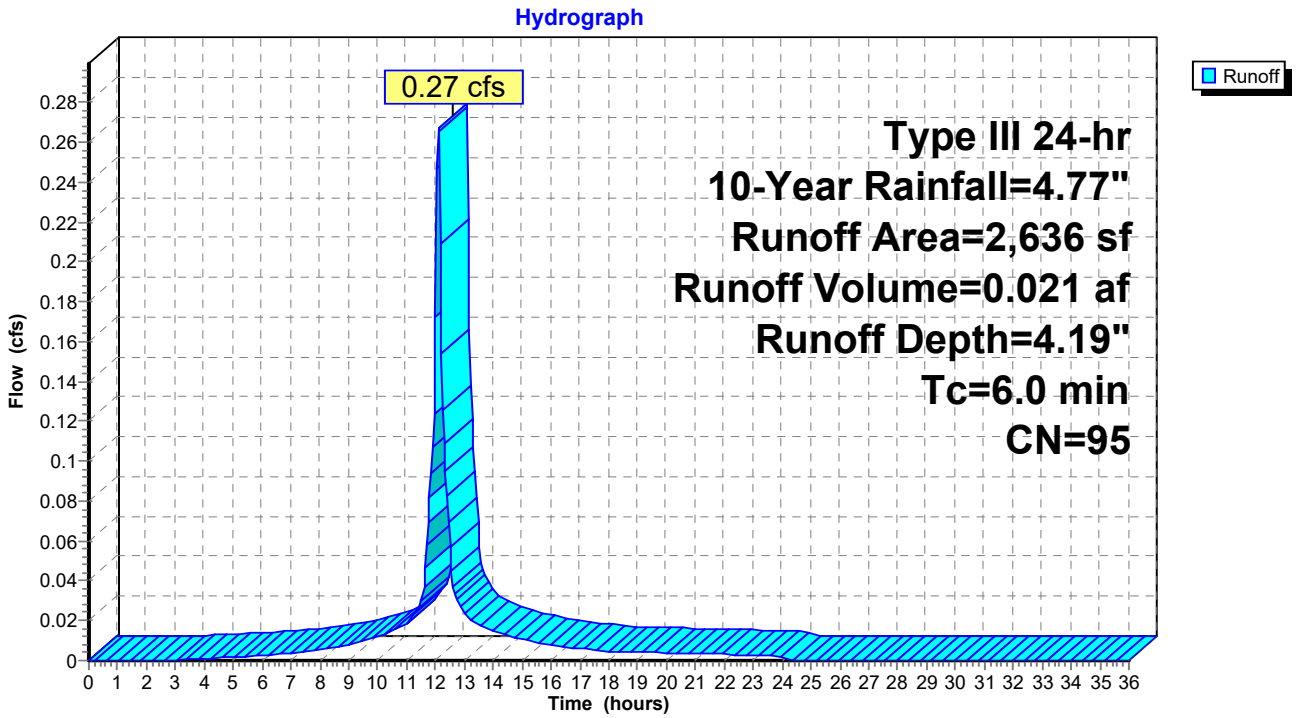
Runoff = 0.27 cfs @ 12.09 hrs, Volume= 0.021 af, Depth= 4.19"
Routed to Reach 2R-1 : new 12" west

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (sf)	CN	Description
389	80	>75% Grass cover, Good, HSG D
2,247	98	Paved parking, HSG D
2,636	95	Weighted Average
389		14.76% Pervious Area
2,247		85.24% Impervious Area

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

Subcatchment P-2.1: Subcat P-2.1



Summary for Subcatchment P-2.10: Subcat P-2.10

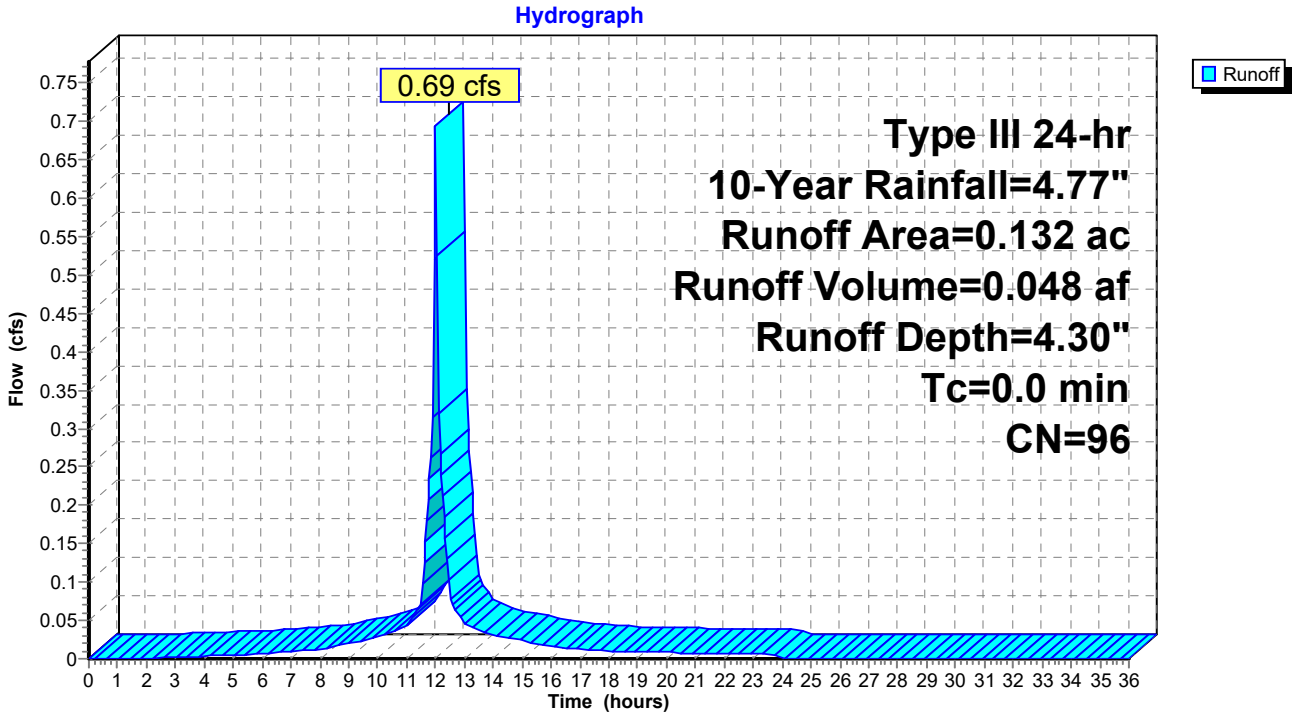
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.69 cfs @ 12.00 hrs, Volume= 0.048 af, Depth= 4.30"
Routed to Reach 1R-4 : new 24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (ac)	CN	Description
0.014	80	>75% Grass cover, Good, HSG D
0.119	98	Paved parking, HSG D
0.000	77	Woods, Good, HSG D
0.132	96	Weighted Average
0.014		10.24% Pervious Area
0.119		89.76% Impervious Area

Subcatchment P-2.10: Subcat P-2.10



Summary for Subcatchment P-2.11: Subcat P-2.11

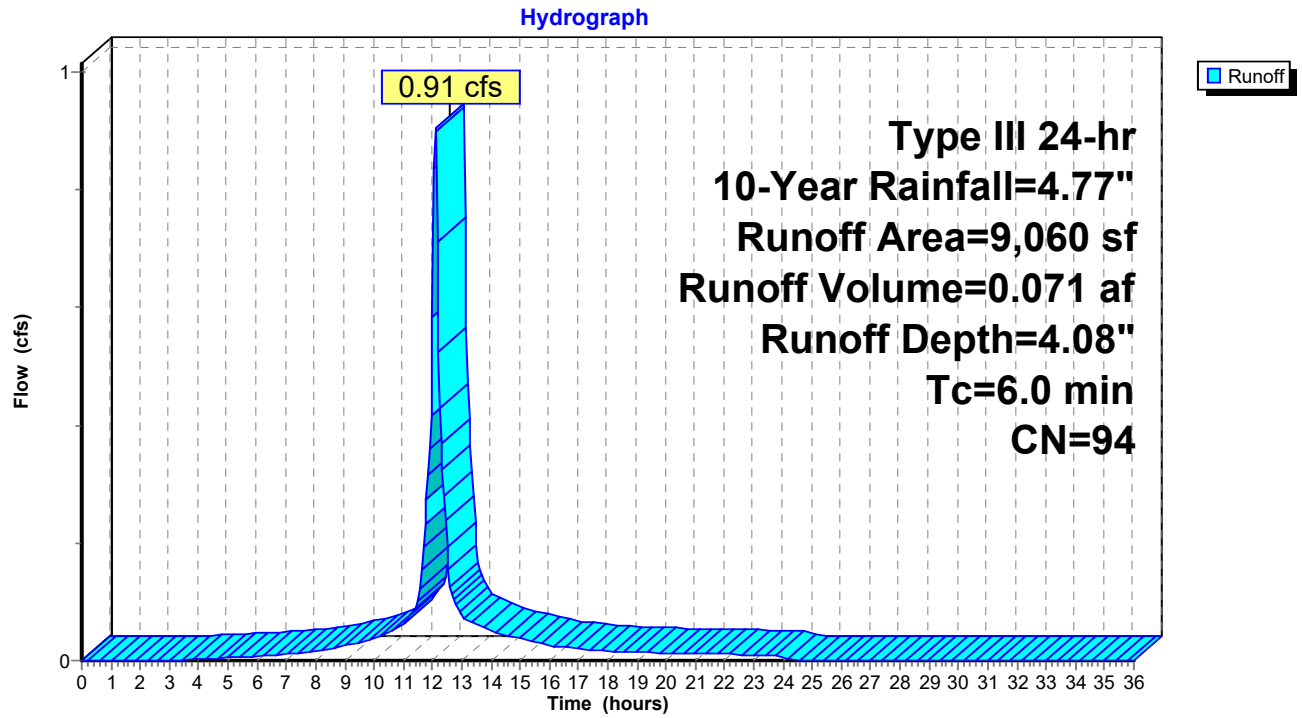
Runoff = 0.91 cfs @ 12.09 hrs, Volume= 0.071 af, Depth= 4.08"
Routed to Reach 1R-5 : new 24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (sf)	CN	Description
2,157	80	>75% Grass cover, Good, HSG D
6,902	98	Paved parking, HSG D
9,060	94	Weighted Average
2,157		23.81% Pervious Area
6,902		76.19% Impervious Area

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

Subcatchment P-2.11: Subcat P-2.11



Summary for Subcatchment P-2.12: Subcat P-2.12

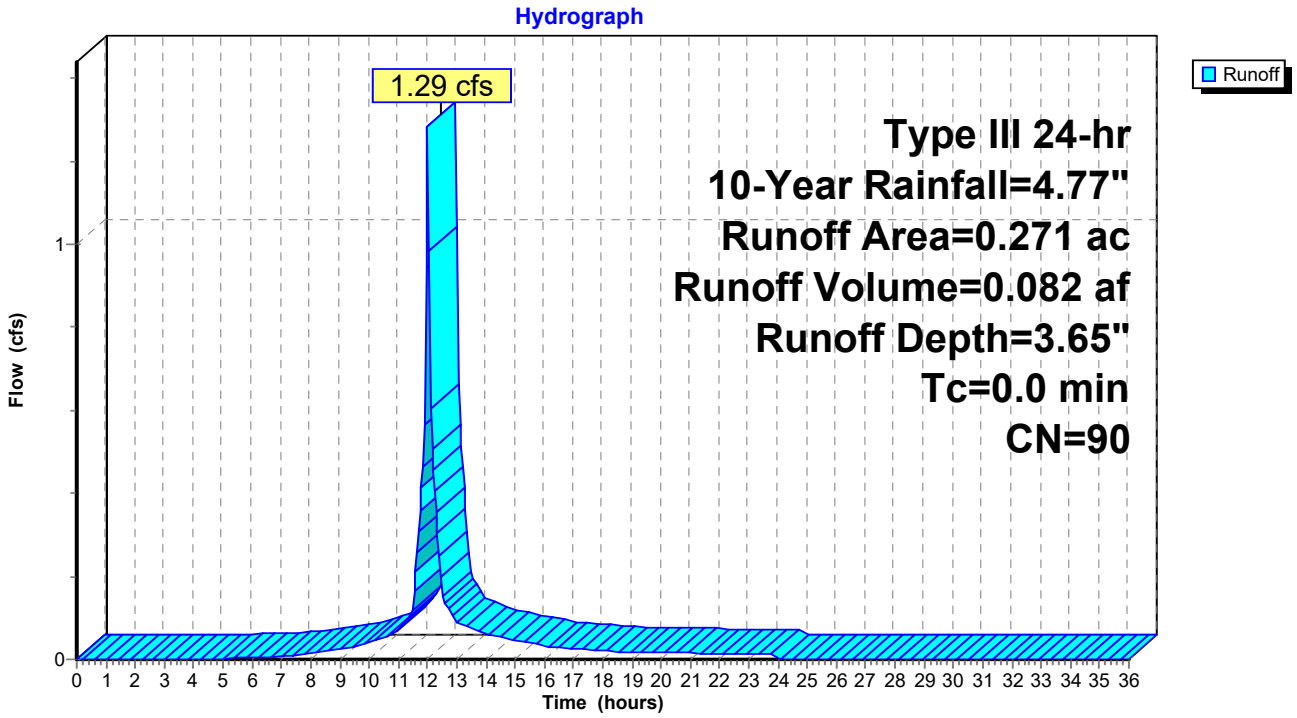
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 1.29 cfs @ 12.00 hrs, Volume= 0.082 af, Depth= 3.65"
Routed to Reach 1R-6 : New 24" ADS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (ac)	CN	Description
0.125	80	>75% Grass cover, Good, HSG D
0.146	98	Paved parking, HSG D
0.271	90	Weighted Average
0.125		46.20% Pervious Area
0.146		53.80% Impervious Area

Subcatchment P-2.12: Subcat P-2.12



Summary for Subcatchment P-2.2: Subcat P-2.2

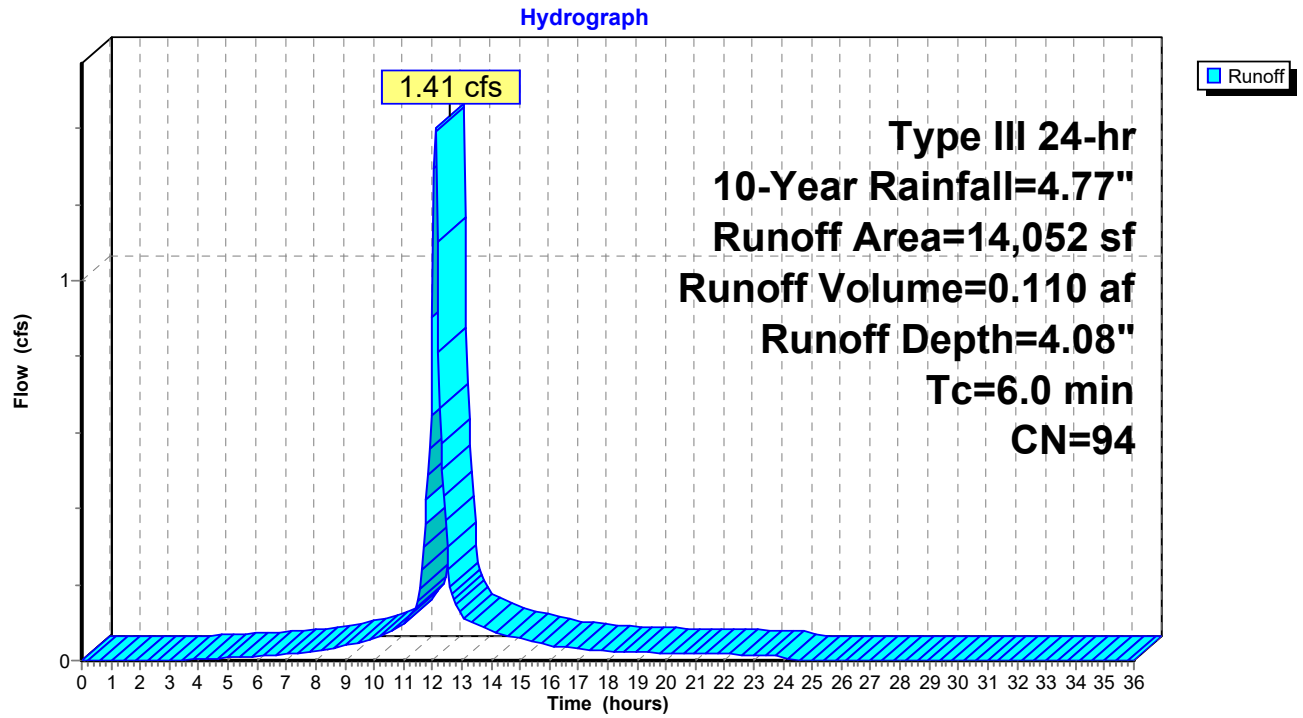
Runoff = 1.41 cfs @ 12.09 hrs, Volume= 0.110 af, Depth= 4.08"
Routed to Reach 2R-2 : new 12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (sf)	CN	Description
2,981	80	>75% Grass cover, Good, HSG D
11,071	98	Paved parking, HSG D
14,052	94	Weighted Average
2,981		21.22% Pervious Area
11,071		78.78% Impervious Area

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

Subcatchment P-2.2: Subcat P-2.2



Summary for Subcatchment P-2.3: Subcat P-2.3

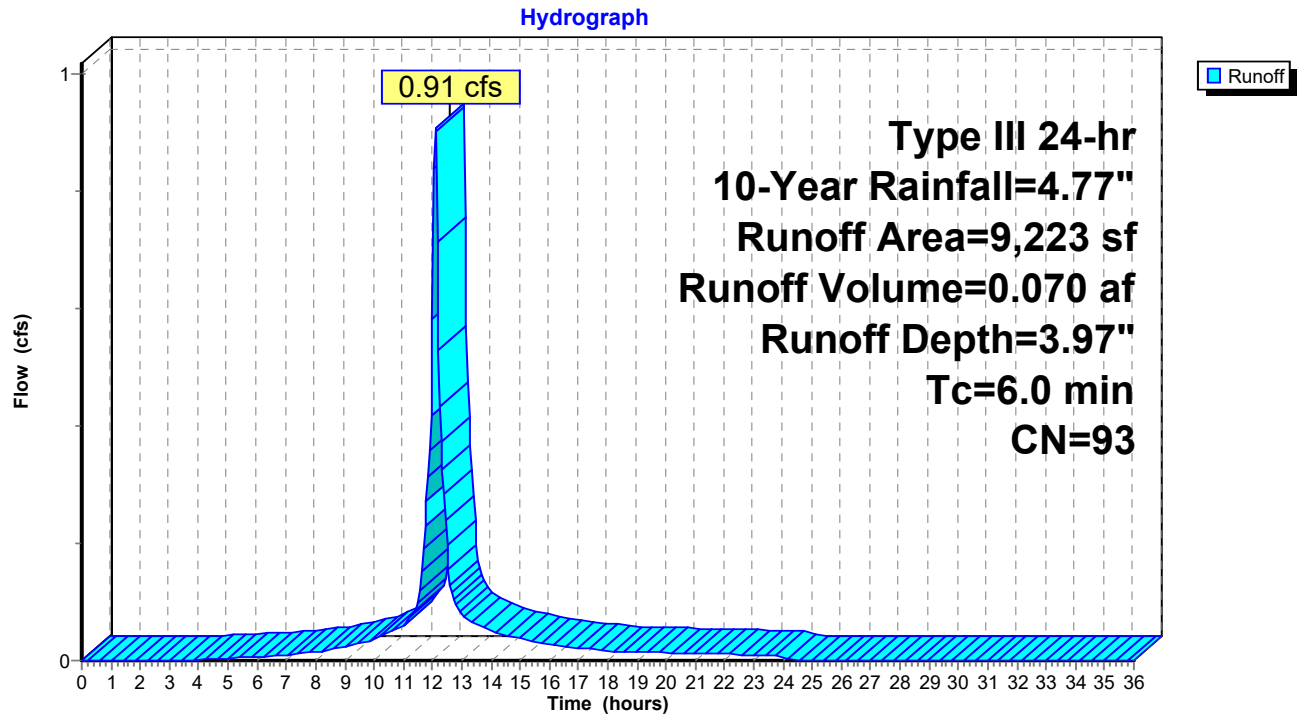
Runoff = 0.91 cfs @ 12.09 hrs, Volume= 0.070 af, Depth= 3.97"
Routed to Reach 2R-3 : new 12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (sf)	CN	Description
2,393	80	>75% Grass cover, Good, HSG D
6,830	98	Paved parking, HSG D
9,223	93	Weighted Average
2,393		25.94% Pervious Area
6,830		74.06% Impervious Area

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

Subcatchment P-2.3: Subcat P-2.3



Summary for Subcatchment P-2.4: Subcat P-2.4

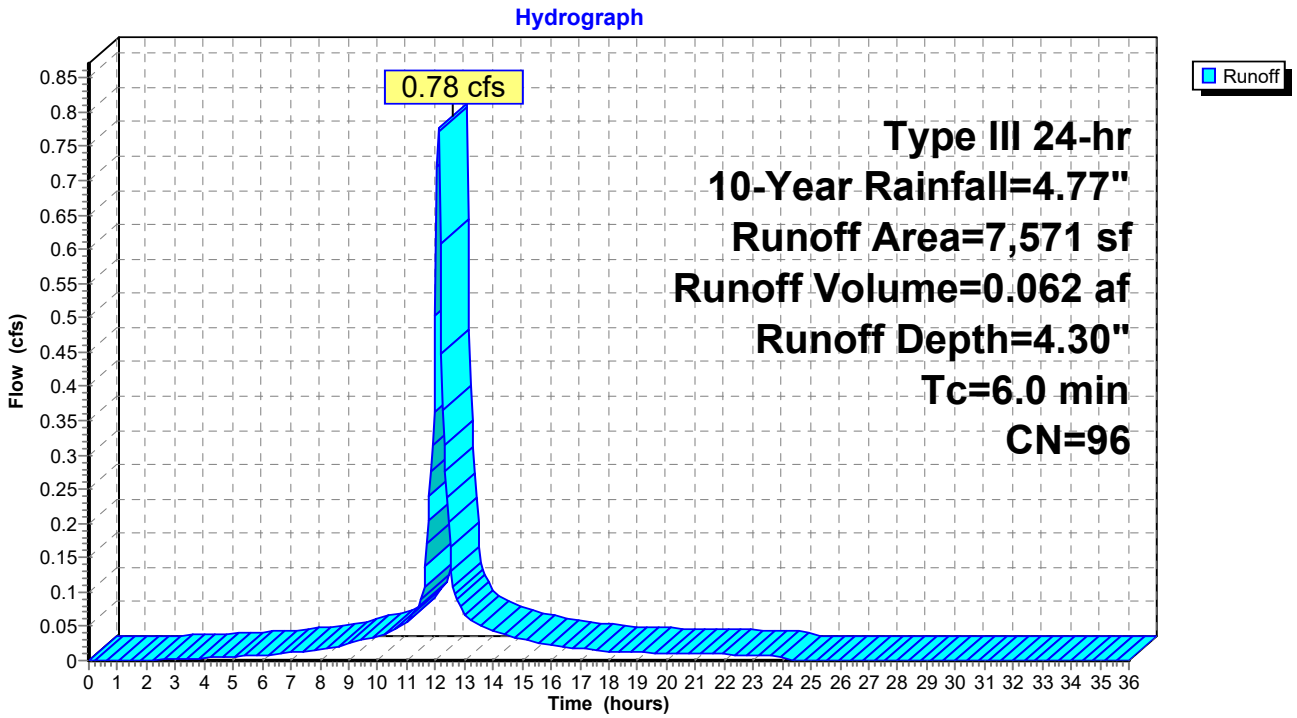
Runoff = 0.78 cfs @ 12.09 hrs, Volume= 0.062 af, Depth= 4.30"
Routed to Reach 2R-4 : new 18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (sf)	CN	Description
1,032	80	>75% Grass cover, Good, HSG D
6,539	98	Paved parking, HSG D
7,571	96	Weighted Average
1,032		13.63% Pervious Area
6,539		86.37% Impervious Area

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

Subcatchment P-2.4: Subcat P-2.4



Summary for Subcatchment P-2.5: Subcat P-2.5

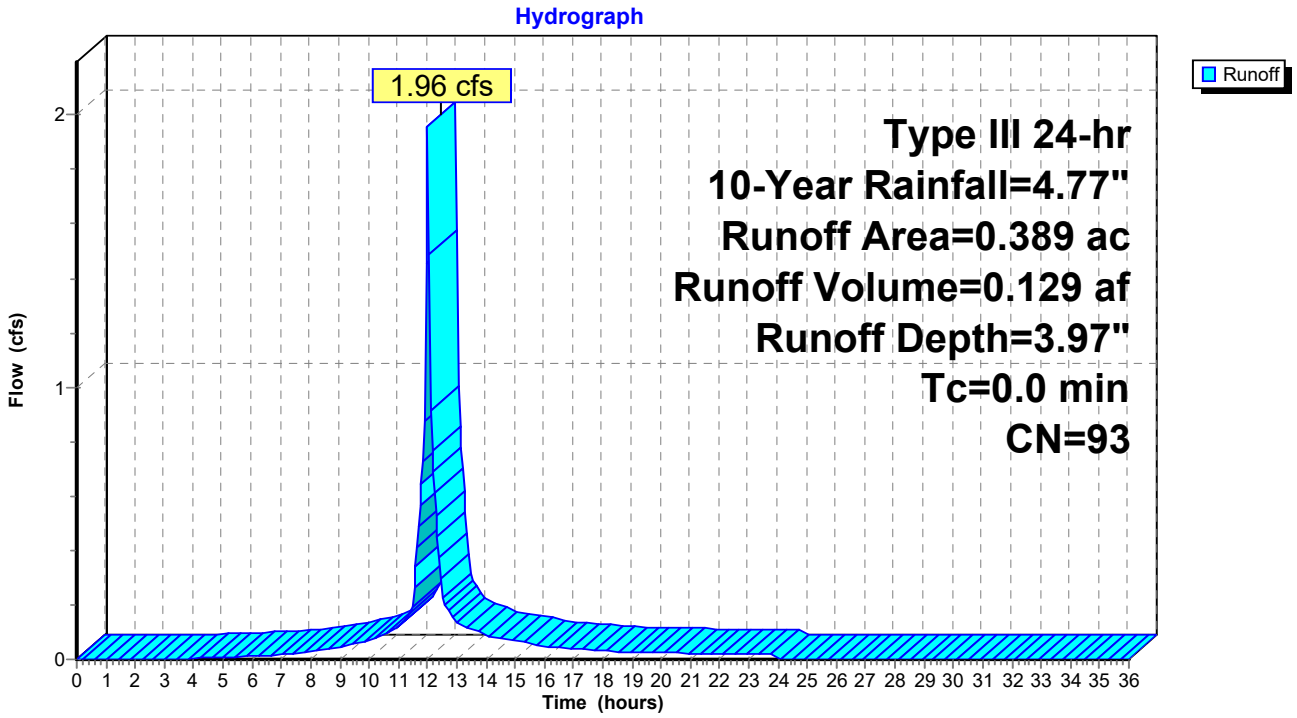
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 1.96 cfs @ 12.00 hrs, Volume= 0.129 af, Depth= 3.97"
Routed to Pond 17P : East Rv Chambers #4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (ac)	CN	Description
0.117	80	>75% Grass cover, Good, HSG D
0.272	98	Paved parking, HSG D
0.389	93	Weighted Average
0.117		30.12% Pervious Area
0.272		69.88% Impervious Area

Subcatchment P-2.5: Subcat P-2.5



Summary for Subcatchment P-2.6: Subcat P-2.6

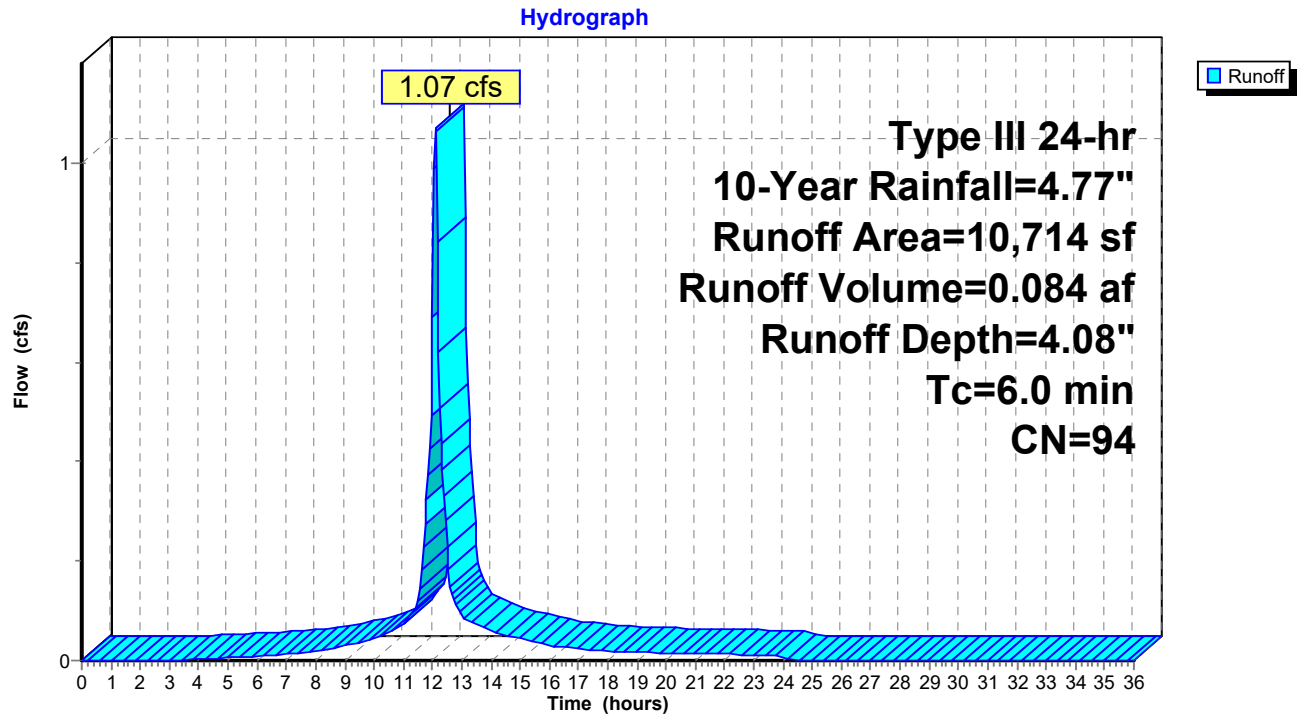
Runoff = 1.07 cfs @ 12.09 hrs, Volume= 0.084 af, Depth= 4.08"
Routed to Reach 1R-2 : New 18" ADS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (sf)	CN	Description
2,323	80	>75% Grass cover, Good, HSG D
8,391	98	Paved parking, HSG D
10,714	94	Weighted Average
2,323		21.68% Pervious Area
8,391		78.32% Impervious Area

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

Subcatchment P-2.6: Subcat P-2.6



Summary for Subcatchment P-2.7: Subcat P-2.7

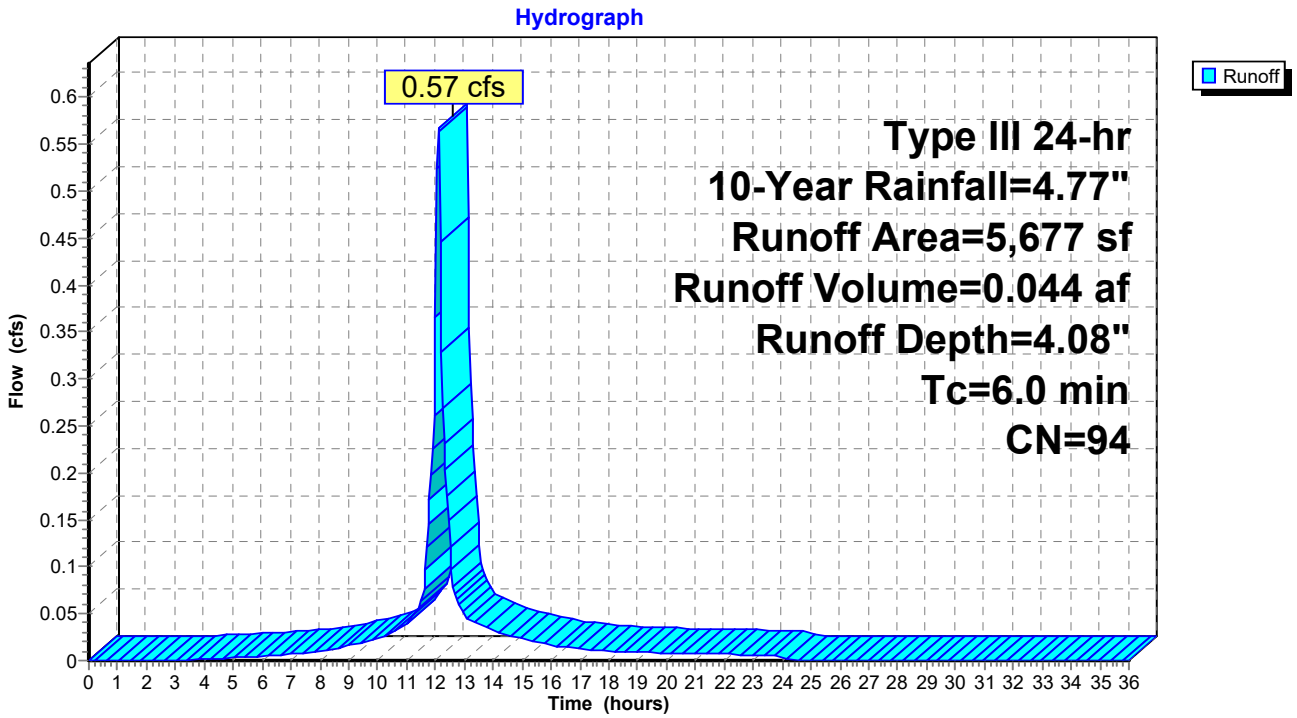
Runoff = 0.57 cfs @ 12.09 hrs, Volume= 0.044 af, Depth= 4.08"
Routed to Pond 8P : East Rv Chambers #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (sf)	CN	Description
1,309	80	>75% Grass cover, Good, HSG D
4,368	98	Paved parking, HSG D
5,677	94	Weighted Average
1,309		23.06% Pervious Area
4,368		76.94% Impervious Area

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

Subcatchment P-2.7: Subcat P-2.7



Summary for Subcatchment P-2.8: Subcat P-2.8

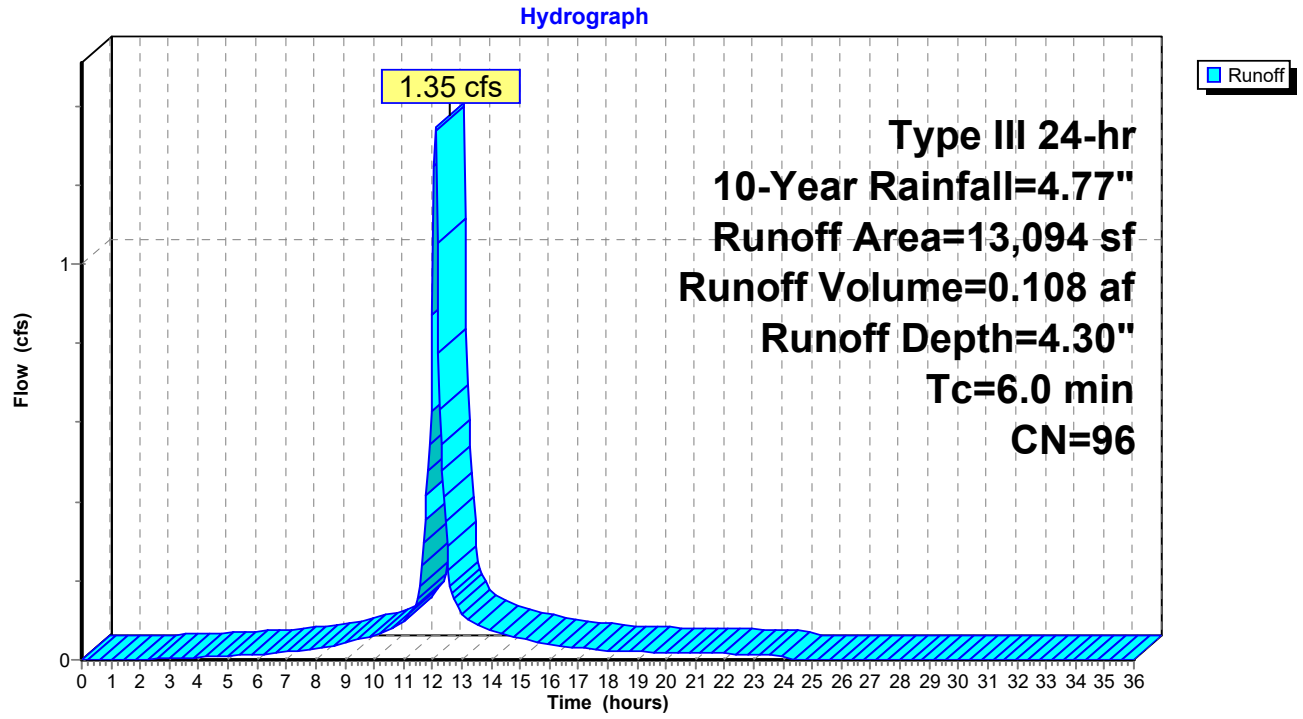
Runoff = 1.35 cfs @ 12.09 hrs, Volume= 0.108 af, Depth= 4.30"
Routed to Pond 5P : East Rv Chambers #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (sf)	CN	Description
1,239	80	>75% Grass cover, Good, HSG D
10,026	98	Paved parking, HSG D
1,828	98	Roofs, HSG D
13,094	96	Weighted Average
1,239		9.46% Pervious Area
11,854		90.54% Impervious Area

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

Subcatchment P-2.8: Subcat P-2.8



Summary for Subcatchment P-2.9: Subcat P-2.9

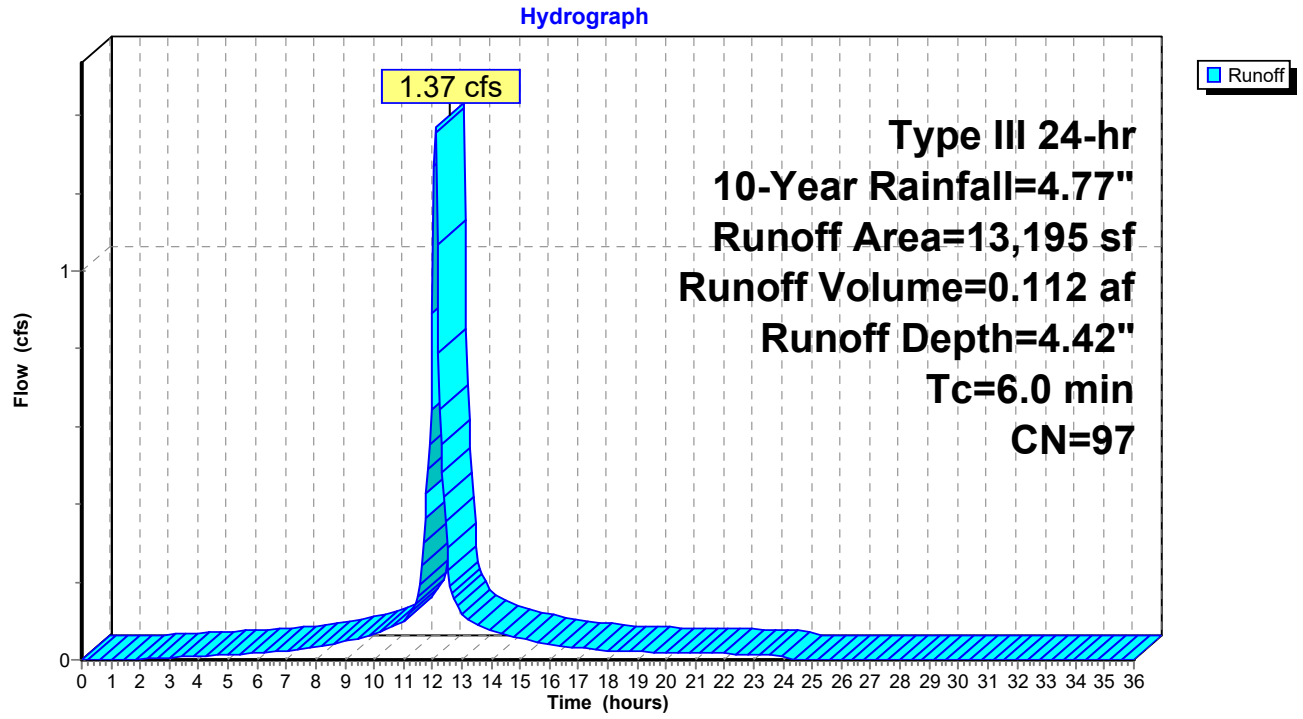
Runoff = 1.37 cfs @ 12.09 hrs, Volume= 0.112 af, Depth= 4.42"
Routed to Pond 9P : East Rv Chambers #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (sf)	CN	Description
1,020	80	>75% Grass cover, Good, HSG D
10,770	98	Paved parking, HSG D
1,406	98	Roofs, HSG D
13,195	97	Weighted Average
1,020		7.73% Pervious Area
12,176		92.27% Impervious Area

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

Subcatchment P-2.9: Subcat P-2.9



Summary for Subcatchment P-3: Subcat P-3

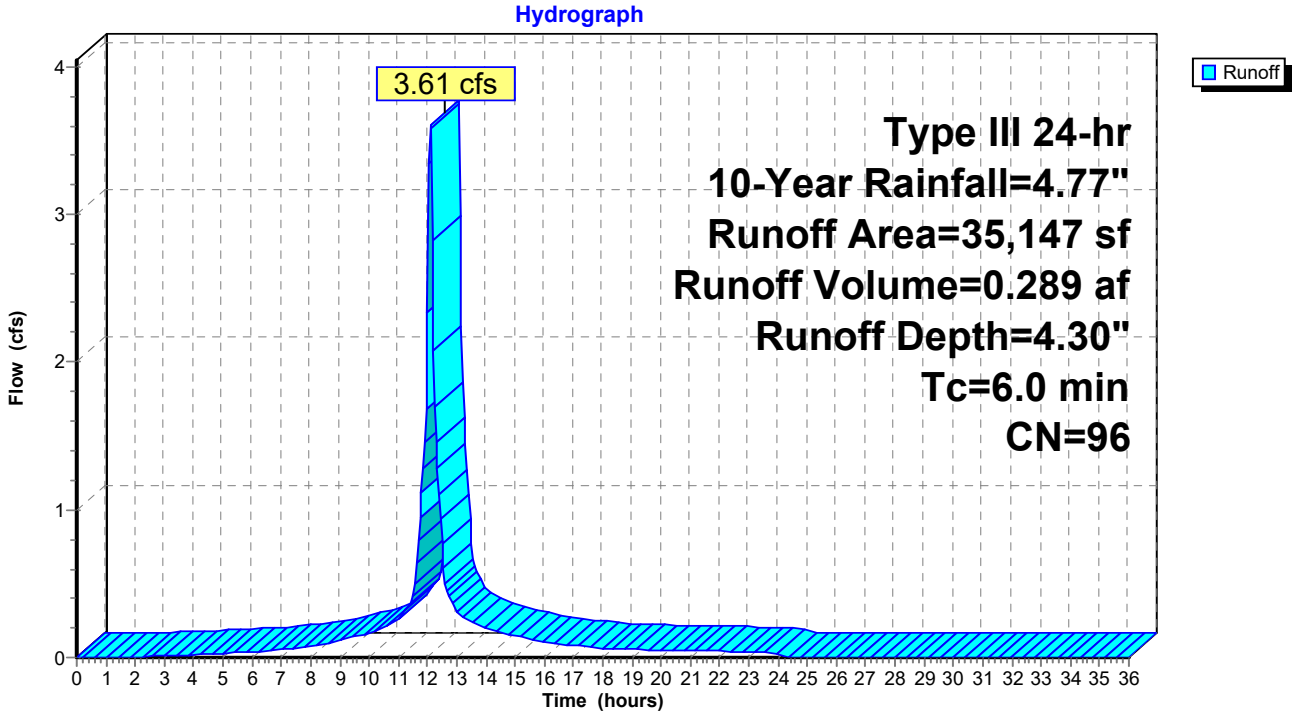
Runoff = 3.61 cfs @ 12.09 hrs, Volume= 0.289 af, Depth= 4.30"
Routed to Reach 1R-1 : Ex. 18" RCP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (sf)	CN	Description
1,404	80	>75% Grass cover, Good, HSG D
21,361	98	Paved parking, HSG D
9,936	98	Roofs, HSG D
2,445	77	Woods, Good, HSG D
35,147	96	Weighted Average
3,849		10.95% Pervious Area
31,297		89.05% Impervious Area

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

Subcatchment P-3: Subcat P-3



Summary for Subcatchment P-4: Subcat P-4

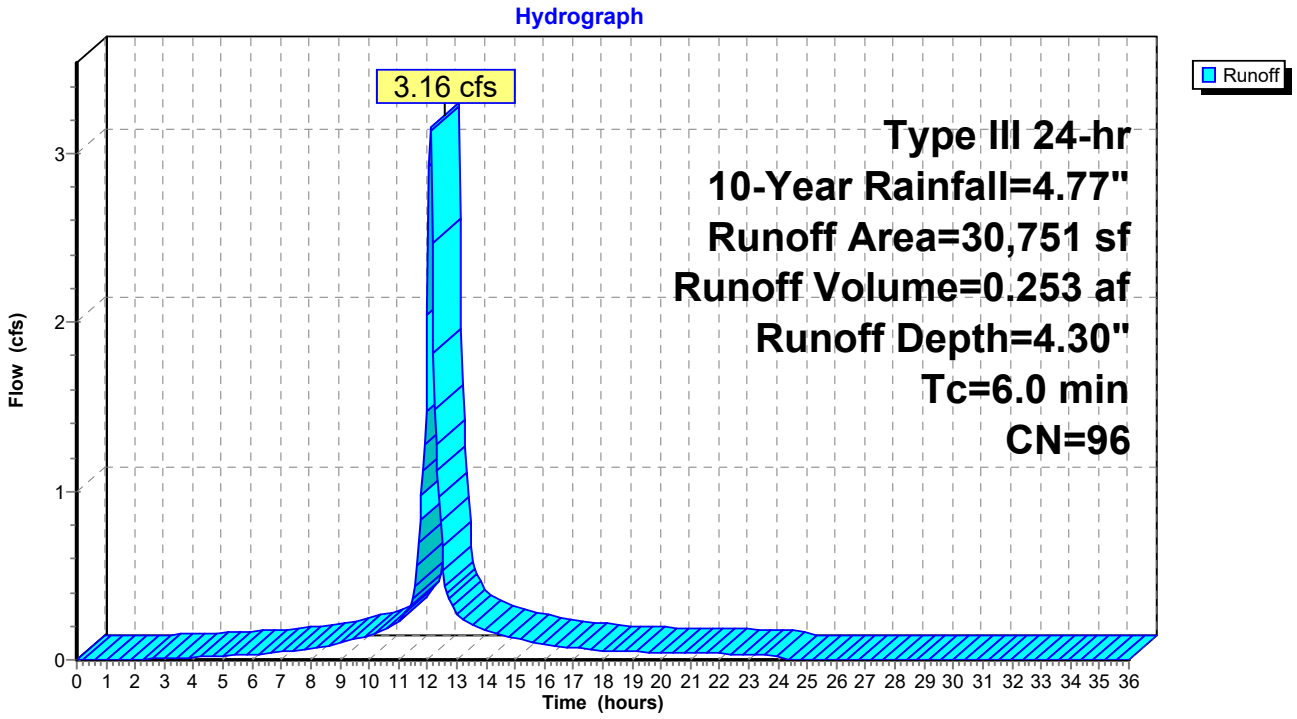
Runoff = 3.16 cfs @ 12.09 hrs, Volume= 0.253 af, Depth= 4.30"
Routed to Reach 3R : Ex. 12" RCP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (sf)	CN	Description
4,139	80	>75% Grass cover, Good, HSG D
16,618	98	Paved parking, HSG D
9,994	98	Roofs, HSG D
30,751	96	Weighted Average
4,139		13.46% Pervious Area
26,612		86.54% Impervious Area

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

Subcatchment P-4: Subcat P-4



Summary for Subcatchment P-5: Subcat P-5

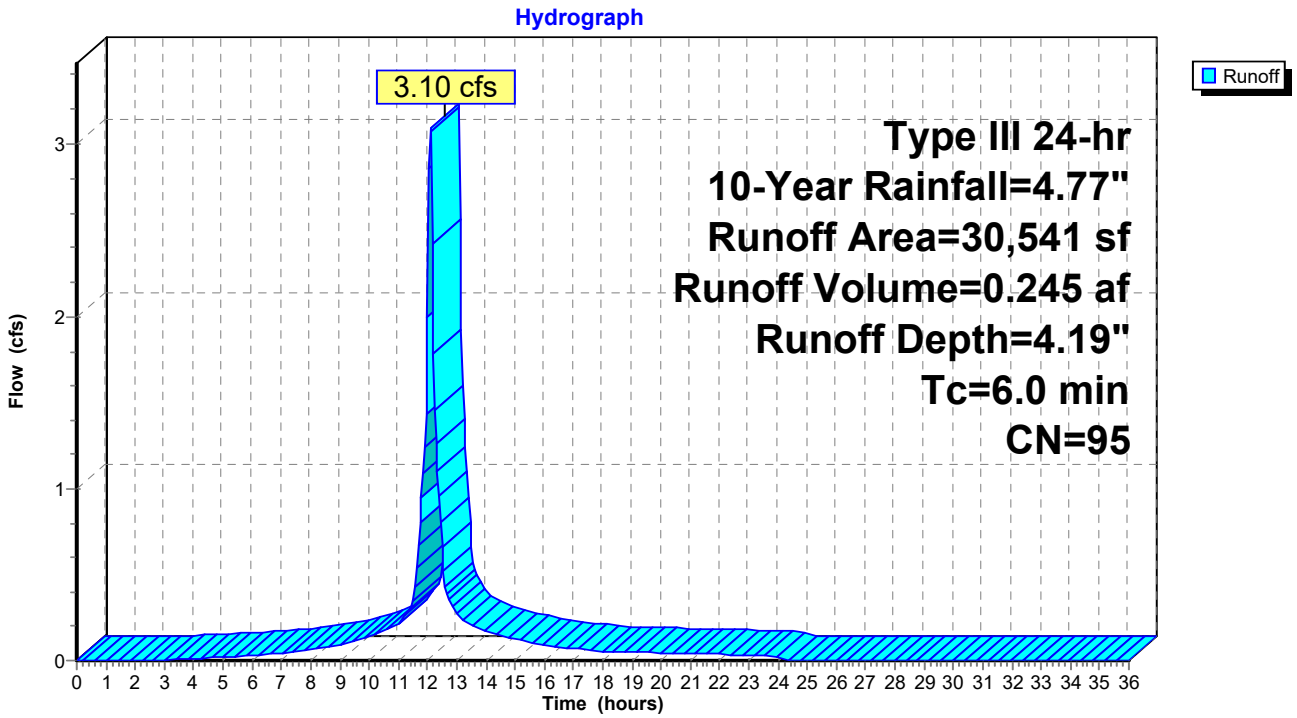
Runoff = 3.10 cfs @ 12.09 hrs, Volume= 0.245 af, Depth= 4.19"
Routed to Reach 7R : Ex. 24" RCP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (sf)	CN	Description
5,010	80	>75% Grass cover, Good, HSG D
25,531	98	Paved parking, HSG D
30,541	95	Weighted Average
5,010		16.41% Pervious Area
25,531		83.59% Impervious Area

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

Subcatchment P-5: Subcat P-5



Summary for Subcatchment P-7: Subcat P-7

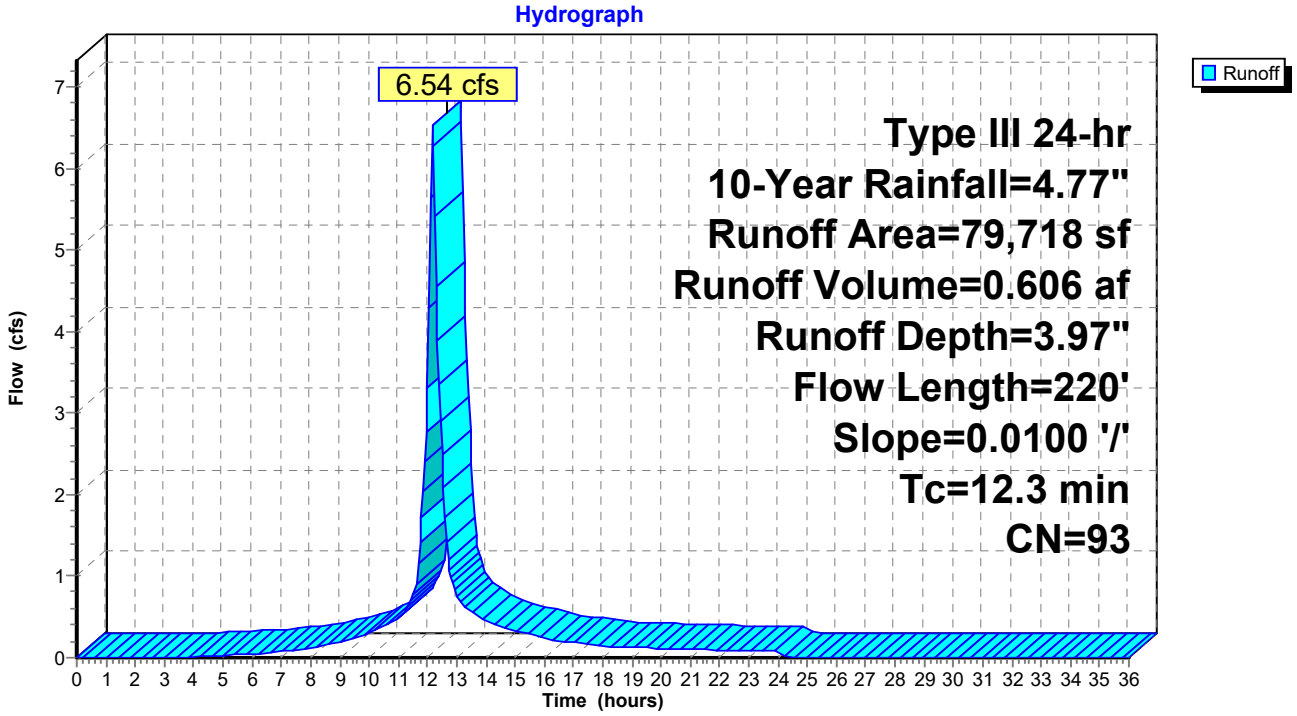
Runoff = 6.54 cfs @ 12.16 hrs, Volume= 0.606 af, Depth= 3.97"
Routed to Link 1L : Ex. CB w/15" RCP to 3 Federal

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (sf)	CN	Description
19,481	80	>75% Grass cover, Good, HSG D
41,091	98	Paved parking, HSG D
17,475	98	Roofs, HSG D
1,671	77	Woods, Good, HSG D
79,718	93	Weighted Average
21,152		26.53% Pervious Area
58,566		73.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0100	0.08		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 3.21"
0.7	70	0.0100	1.61		**Shallow Concentrated Flow, BC** Unpaved Kv= 16.1 fps
0.8	100	0.0100	2.03		**Shallow Concentrated Flow, CD** Paved Kv= 20.3 fps
12.3	220	Total			

Subcatchment P-7: Subcat P-7



Summary for Subcatchment R-1: Subcat R-1

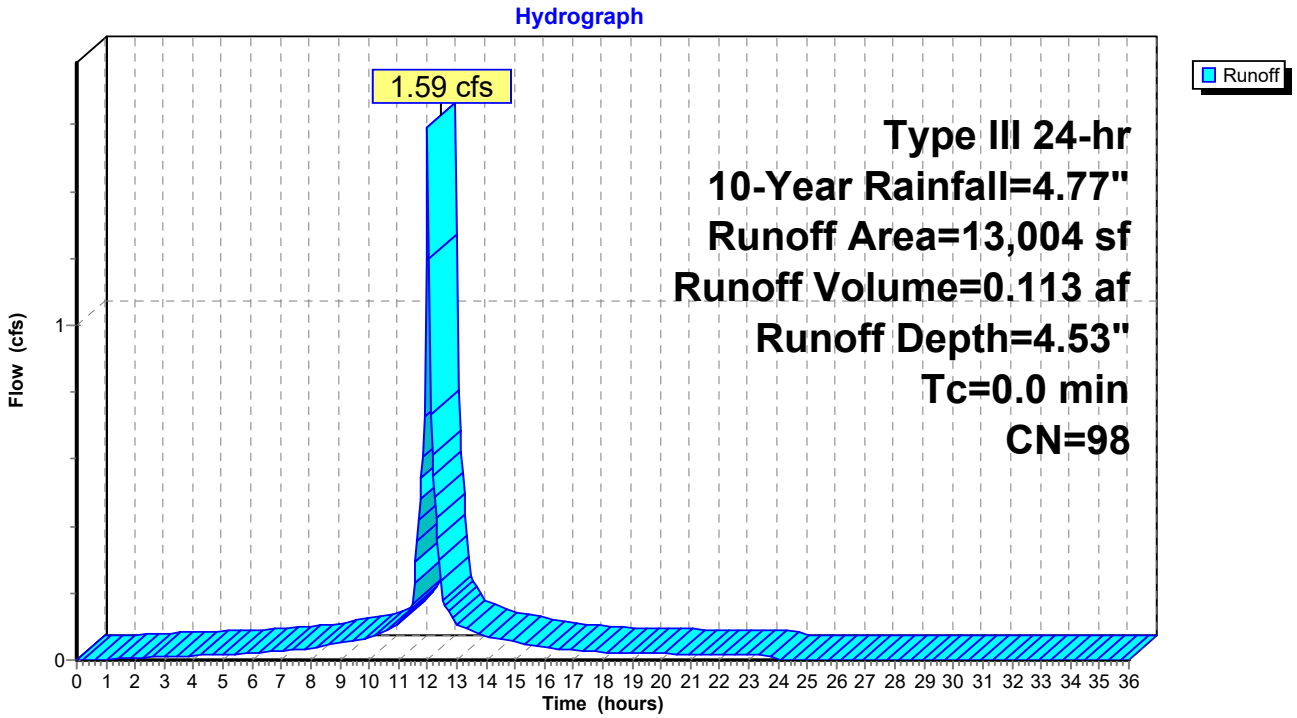
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 1.59 cfs @ 12.00 hrs, Volume= 0.113 af, Depth= 4.53"
Routed to Pond 5P : East Rv Chambers #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (sf)	CN	Description
13,004	98	Roofs, HSG D
13,004		100.00% Impervious Area

Subcatchment R-1: Subcat R-1



Summary for Subcatchment R-2: Subcat R-2

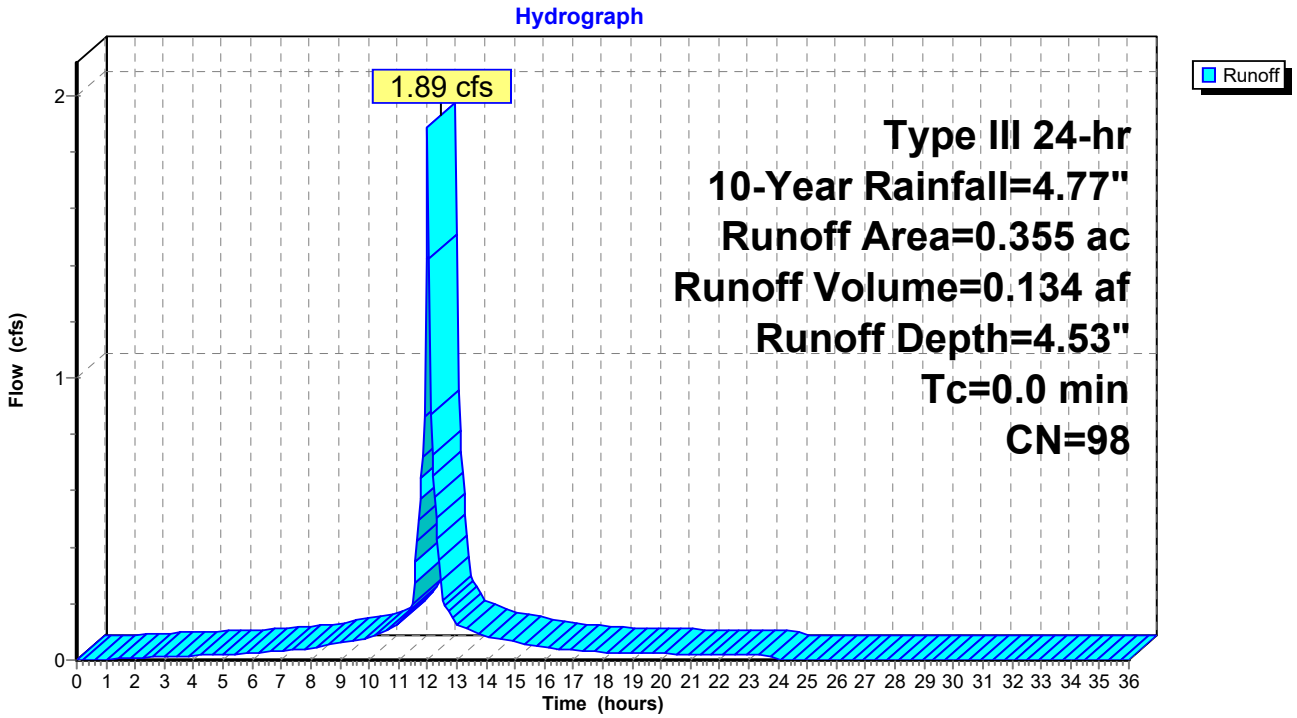
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 1.89 cfs @ 12.00 hrs, Volume= 0.134 af, Depth= 4.53"
Routed to Reach 2R-5 : new 18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (ac)	CN	Description
0.355	98	Roofs, HSG D
0.355		100.00% Impervious Area

Subcatchment R-2: Subcat R-2



Summary for Subcatchment R-3: Subcat R-3

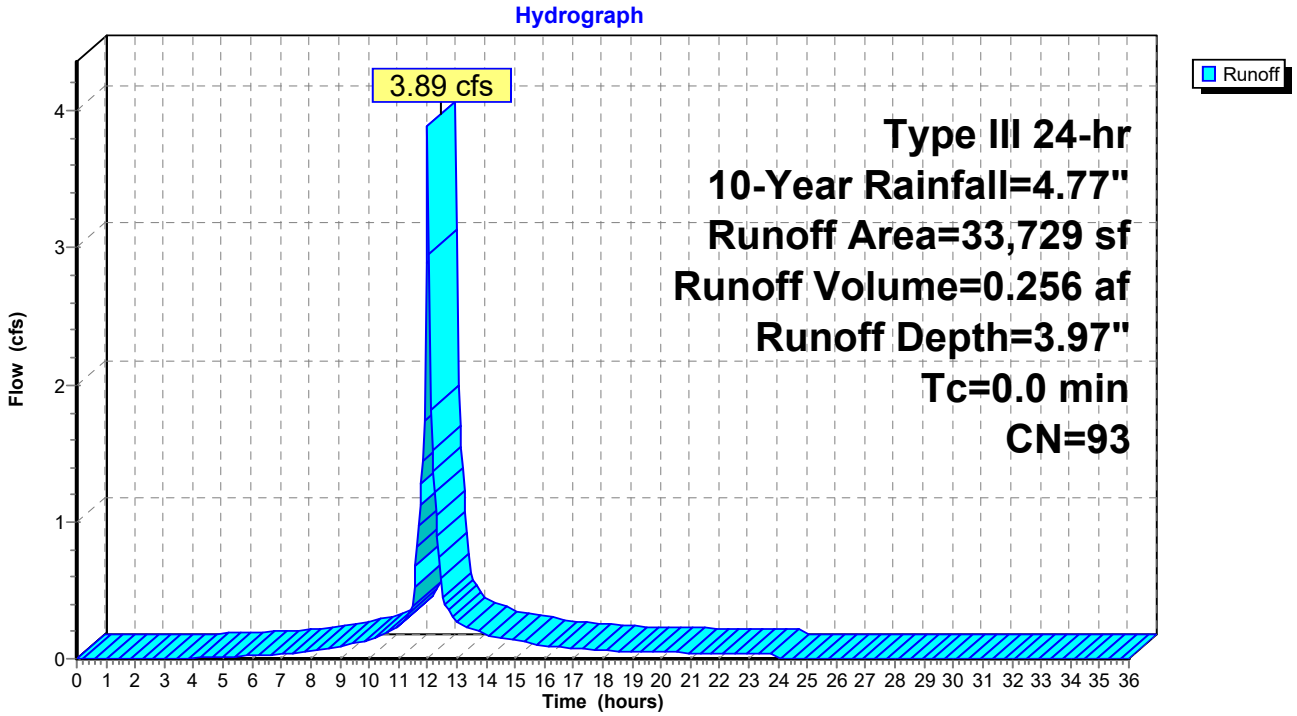
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 3.89 cfs @ 12.00 hrs, Volume= 0.256 af, Depth= 3.97"
Routed to Reach 2R-4 : new 18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (sf)	CN	Description
8,487	80	>75% Grass cover, Good, HSG D
5,583	98	Paved parking, HSG D
19,659	98	Roofs, HSG D
33,729	93	Weighted Average
8,487		25.16% Pervious Area
25,242		74.84% Impervious Area

Subcatchment R-3: Subcat R-3



Summary for Subcatchment R-4: Subcat R-4

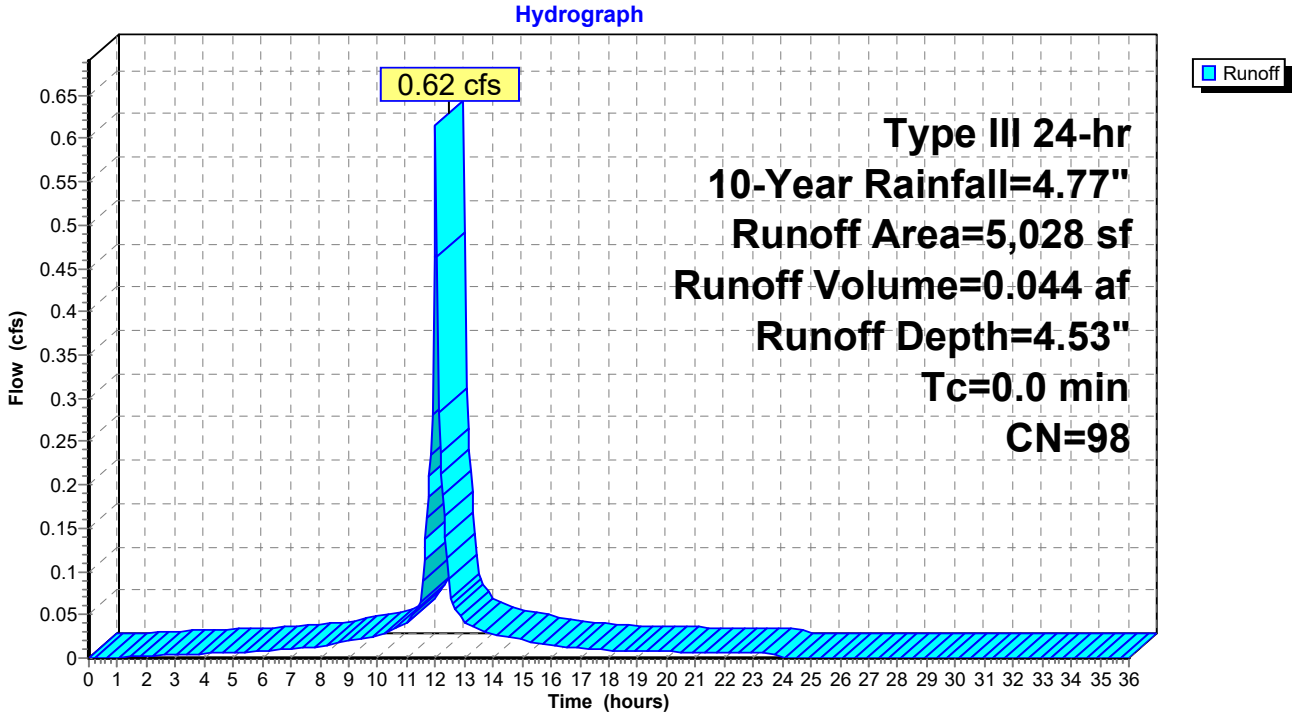
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.62 cfs @ 12.00 hrs, Volume= 0.044 af, Depth= 4.53"
Routed to Reach 1R-2 : New 18" ADS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (sf)	CN	Description
5,028	98	Roofs, HSG D
5,028		100.00% Impervious Area

Subcatchment R-4: Subcat R-4



Summary for Subcatchment R-5: Subcat R-5

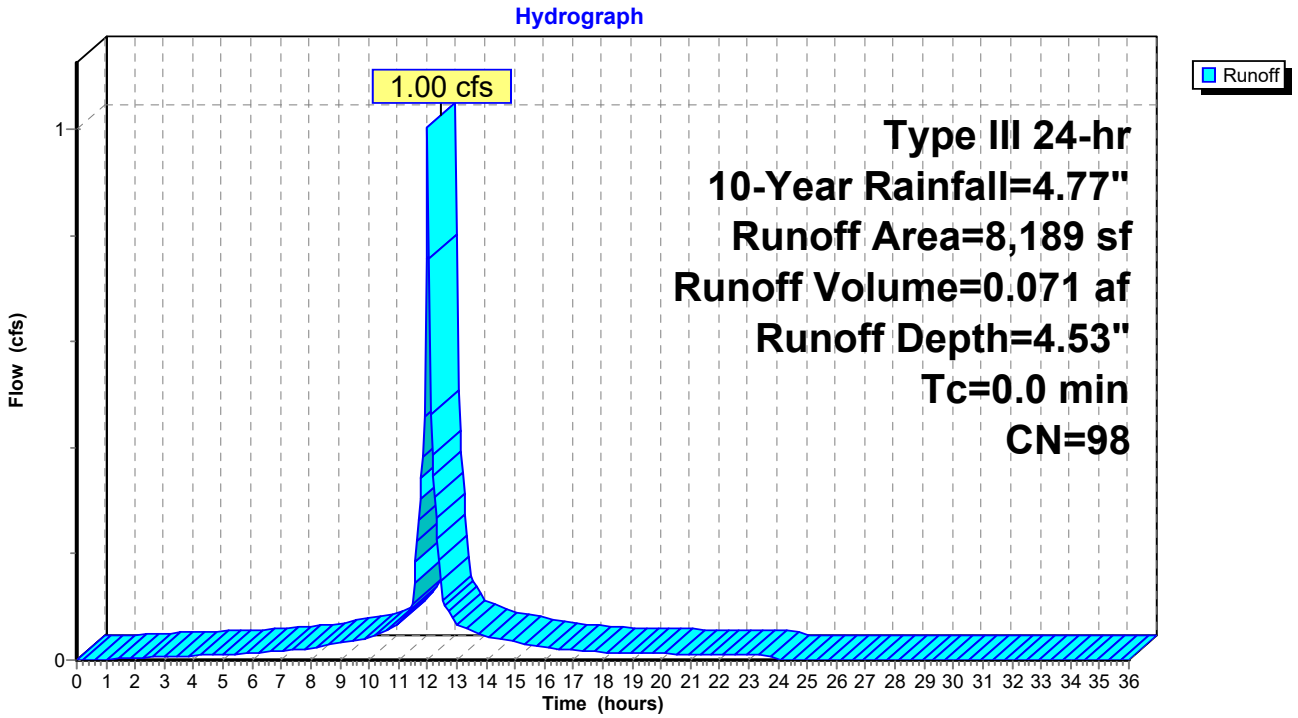
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 1.00 cfs @ 12.00 hrs, Volume= 0.071 af, Depth= 4.53"
Routed to Reach 2R-3 : new 12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (sf)	CN	Description
8,189	98	Roofs, HSG D
8,189		100.00% Impervious Area

Subcatchment R-5: Subcat R-5



Summary for Subcatchment R-6: Subcat R-6

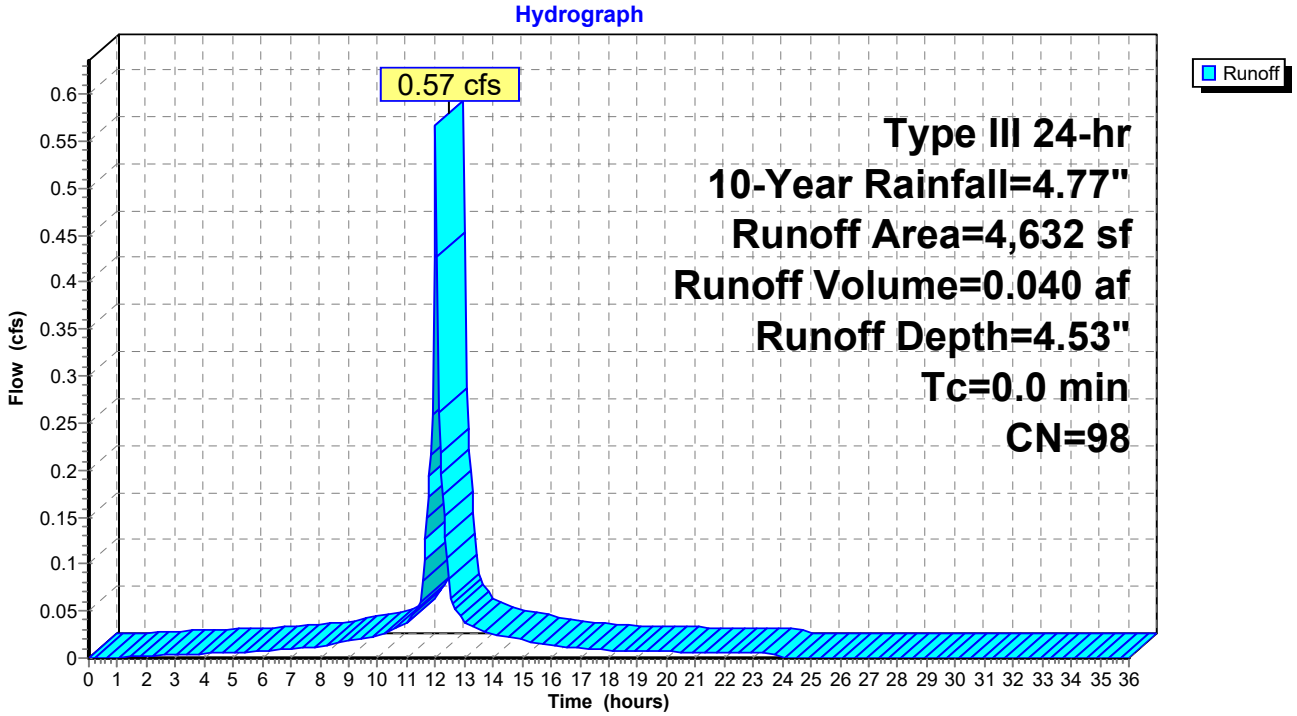
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.57 cfs @ 12.00 hrs, Volume= 0.040 af, Depth= 4.53"
Routed to Reach 2R-2 : new 12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (sf)	CN	Description
4,632	98	Roofs, HSG D
4,632		100.00% Impervious Area

Subcatchment R-6: Subcat R-6



Summary for Subcatchment S-1: Subcat S-1

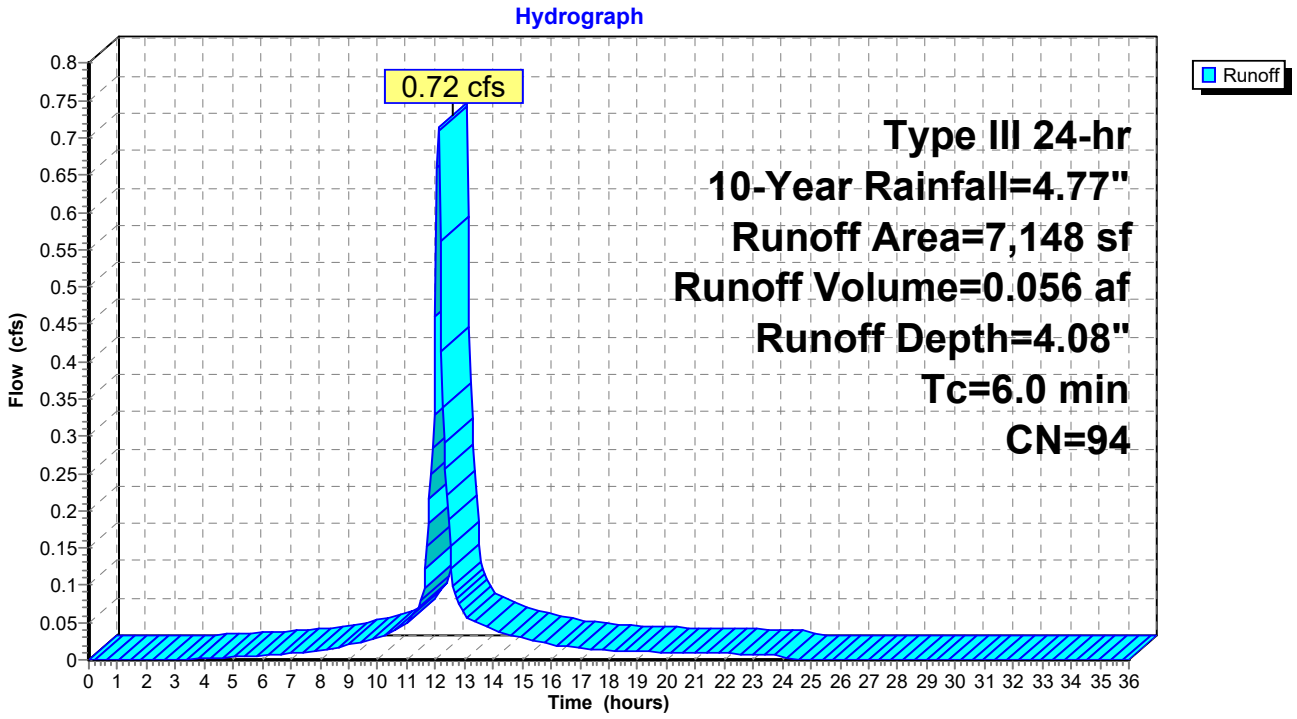
Runoff = 0.72 cfs @ 12.09 hrs, Volume= 0.056 af, Depth= 4.08"
Routed to Pond C9 : Banked Parking chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (sf)	CN	Description
1,304	80	>75% Grass cover, Good, HSG D
5,728	98	Paved parking, HSG D
117	77	Woods, Good, HSG D
7,148	94	Weighted Average
1,420		19.87% Pervious Area
5,728		80.13% Impervious Area

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

Subcatchment S-1: Subcat S-1



Summary for Subcatchment S-2: Subcat S-2

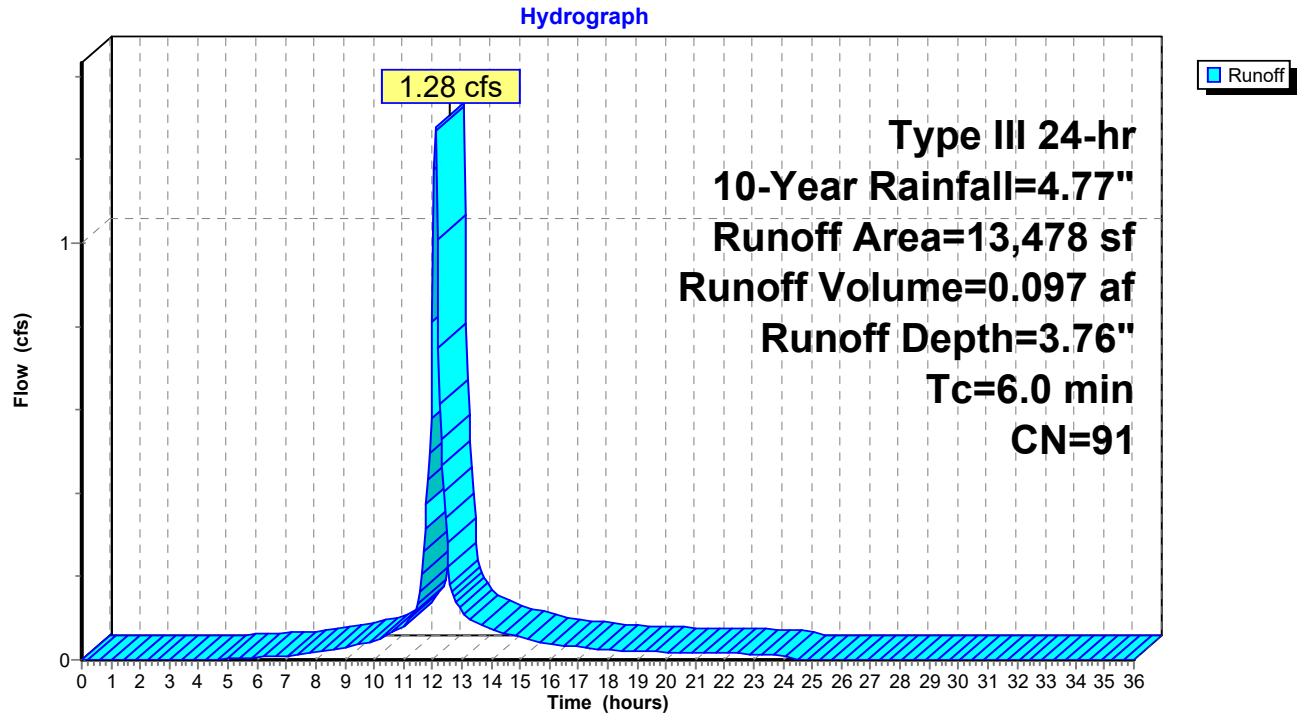
Runoff = 1.28 cfs @ 12.09 hrs, Volume= 0.097 af, Depth= 3.76"
Routed to Pond C8 : Banked Parking chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.77"

Area (sf)	CN	Description
4,975	80	>75% Grass cover, Good, HSG D
8,243	98	Paved parking, HSG D
259	77	Woods, Good, HSG D
13,478	91	Weighted Average
5,235		38.84% Pervious Area
8,243		61.16% Impervious Area

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

Subcatchment S-2: Subcat S-2



Summary for Reach 1R-1: Ex. 18" RCP

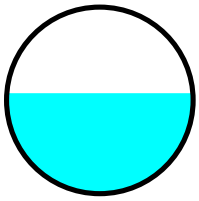
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 0.807 ac, 89.05% Impervious, Inflow Depth = 4.30" for 10-Year event
Inflow = 3.61 cfs @ 12.09 hrs, Volume= 0.289 af
Outflow = 3.54 cfs @ 12.10 hrs, Volume= 0.289 af, Atten= 2%, Lag= 0.9 min
Routed to Reach 1R-2 : New 18" ADS

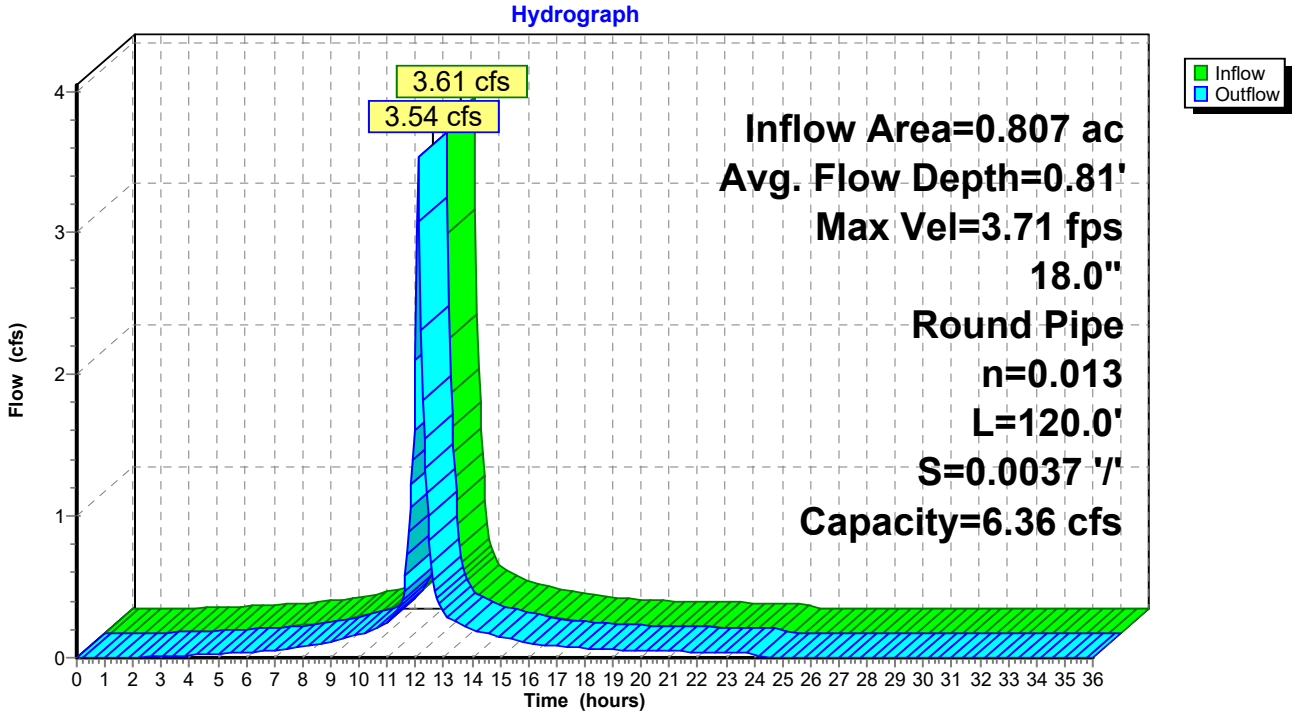
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.71 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.25 fps, Avg. Travel Time= 1.6 min

Peak Storage= 117 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.81' , Surface Width= 1.50'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 6.36 cfs

18.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 120.0' Slope= 0.0037 '/'
Inlet Invert= 188.16', Outlet Invert= 187.72'



Reach 1R-1: Ex. 18" RCP



Summary for Reach 1R-2: New 18" ADS

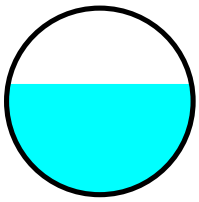
[52] Hint: Inlet/Outlet conditions not evaluated
[62] Hint: Exceeded Reach 1R-1 OUTLET depth by 0.08' @ 12.15 hrs

Inflow Area = 1.168 ac, 87.87% Impervious, Inflow Depth = 4.28" for 10-Year event
Inflow = 4.89 cfs @ 12.09 hrs, Volume= 0.417 af
Outflow = 4.81 cfs @ 12.10 hrs, Volume= 0.417 af, Atten= 2%, Lag= 0.7 min
Routed to Reach 1R-3 : new 24"

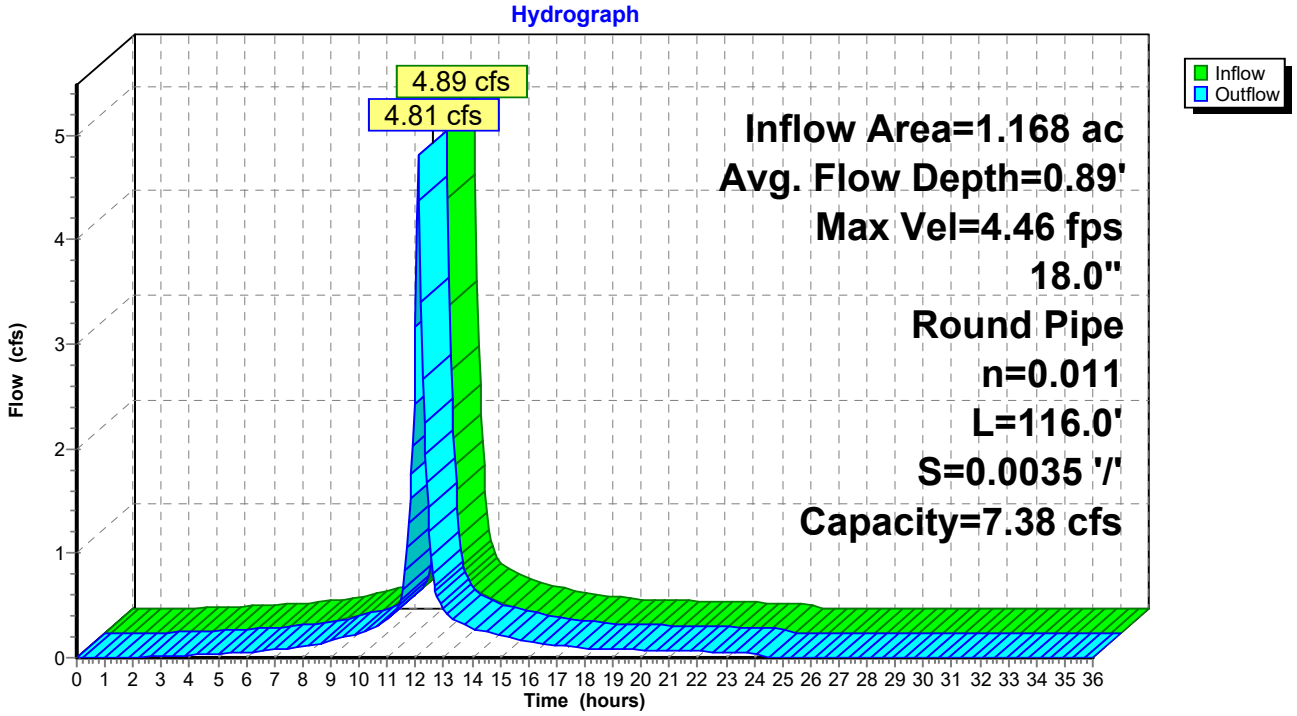
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.46 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.49 fps, Avg. Travel Time= 1.3 min

Peak Storage= 127 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.89' , Surface Width= 1.47'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 7.38 cfs

18.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 116.0' Slope= 0.0035 '/'
Inlet Invert= 187.70', Outlet Invert= 187.29'



Reach 1R-2: New 18" ADS



Summary for Reach 1R-3: new 24"

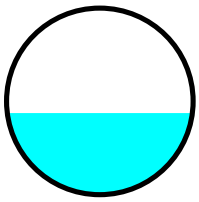
[52] Hint: Inlet/Outlet conditions not evaluated
[61] Hint: Exceeded Reach 1R-2 outlet invert by 0.77' @ 12.10 hrs

Inflow Area = 1.168 ac, 87.87% Impervious, Inflow Depth = 4.28" for 10-Year event
Inflow = 4.81 cfs @ 12.10 hrs, Volume= 0.417 af
Outflow = 4.60 cfs @ 12.15 hrs, Volume= 0.417 af, Atten= 4%, Lag= 2.7 min
Routed to Reach 1R-4 : new 24"

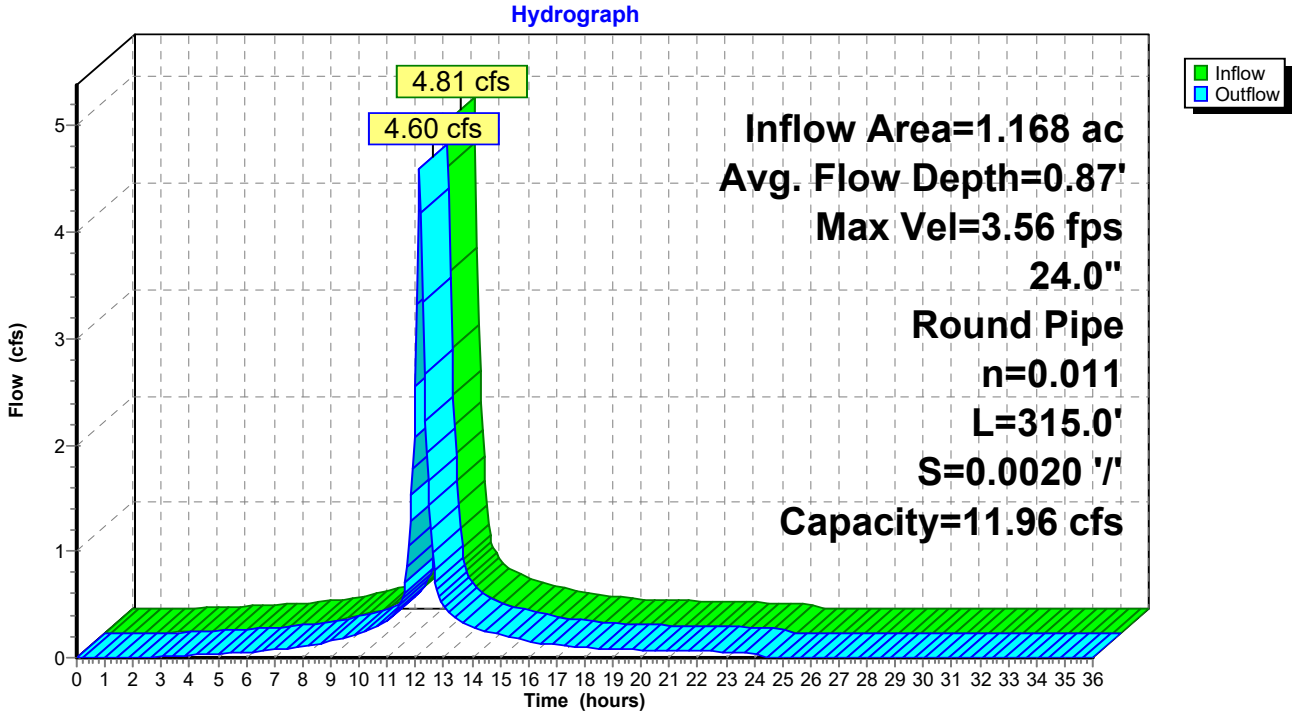
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.56 fps, Min. Travel Time= 1.5 min
Avg. Velocity = 1.15 fps, Avg. Travel Time= 4.6 min

Peak Storage= 414 cf @ 12.12 hrs
Average Depth at Peak Storage= 0.87' , Surface Width= 1.98'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 11.96 cfs

24.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 315.0' Slope= 0.0020 '/'
Inlet Invert= 187.20', Outlet Invert= 186.57'



Reach 1R-3: new 24"



Summary for Reach 1R-4: new 24"

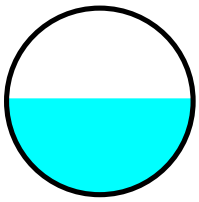
[52] Hint: Inlet/Outlet conditions not evaluated
[62] Hint: Exceeded Reach 1R-3 OUTLET depth by 0.20' @ 12.25 hrs

Inflow Area = 2.333 ac, 89.83% Impervious, Inflow Depth = 2.93" for 10-Year event
Inflow = 6.41 cfs @ 12.17 hrs, Volume= 0.570 af
Outflow = 6.26 cfs @ 12.20 hrs, Volume= 0.570 af, Atten= 2%, Lag= 1.5 min
Routed to Reach 1R-5 : new 24"

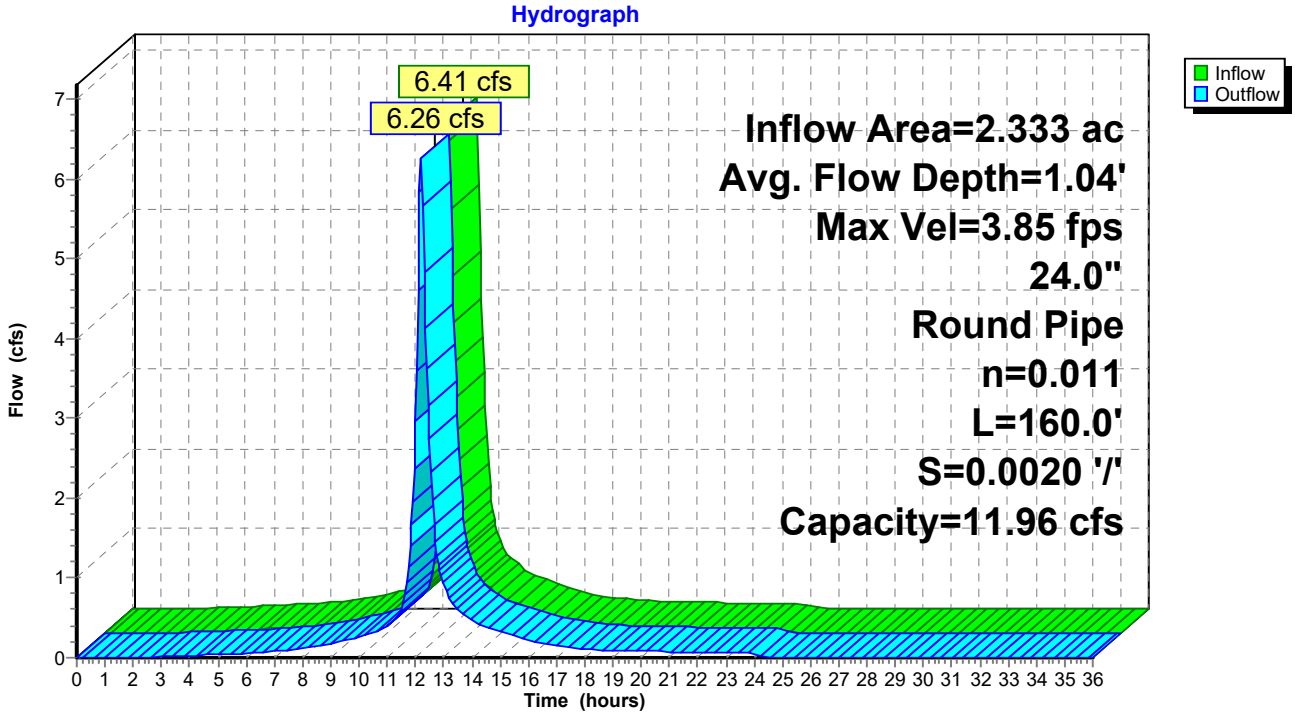
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.85 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 1.22 fps, Avg. Travel Time= 2.2 min

Peak Storage= 263 cf @ 12.18 hrs
Average Depth at Peak Storage= 1.04' , Surface Width= 2.00'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 11.96 cfs

24.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 160.0' Slope= 0.0020 '/'
Inlet Invert= 186.50', Outlet Invert= 186.18'



Reach 1R-4: new 24"



Summary for Reach 1R-5: new 24"

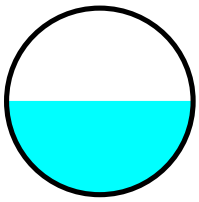
[52] Hint: Inlet/Outlet conditions not evaluated
[61] Hint: Exceeded Reach 1R-4 outlet invert by 0.91' @ 12.20 hrs

Inflow Area = 2.541 ac, 88.72% Impervious, Inflow Depth = 3.03" for 10-Year event
Inflow = 6.81 cfs @ 12.19 hrs, Volume= 0.641 af
Outflow = 6.76 cfs @ 12.20 hrs, Volume= 0.641 af, Atten= 1%, Lag= 0.7 min
Routed to Reach 1R-6 : New 24" ADS

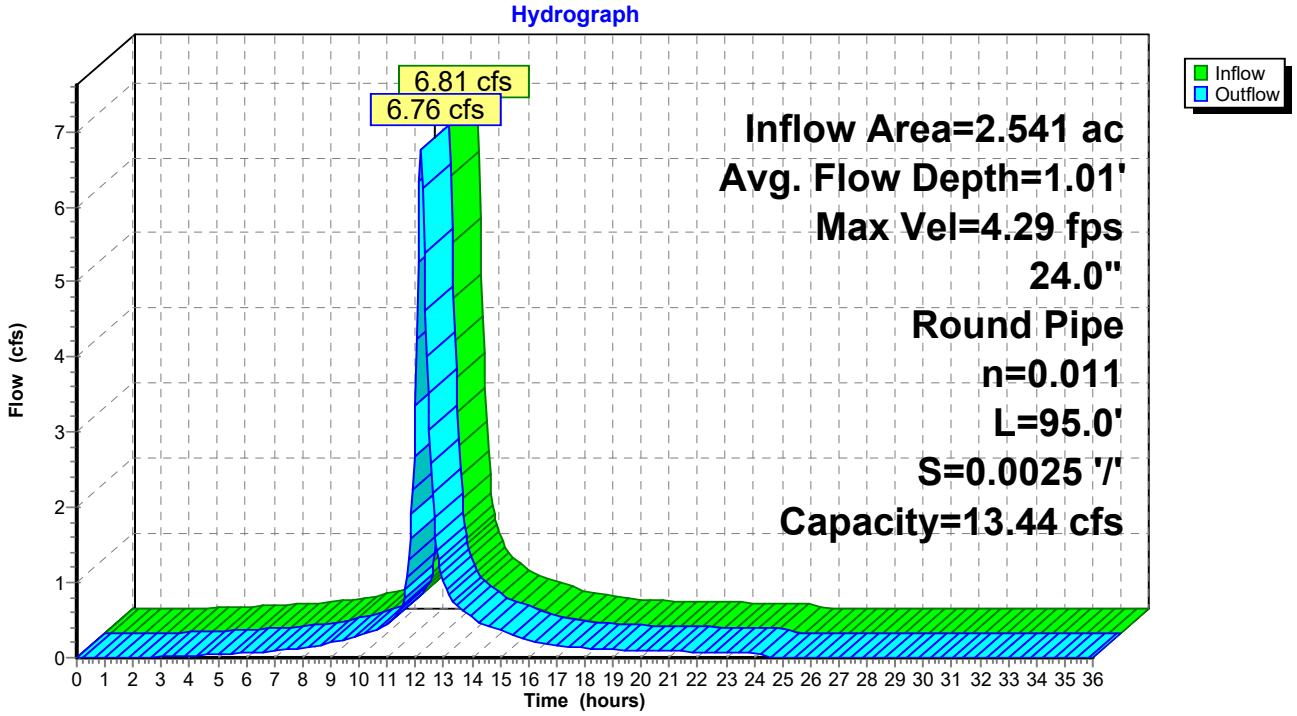
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.29 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.38 fps, Avg. Travel Time= 1.2 min

Peak Storage= 151 cf @ 12.19 hrs
Average Depth at Peak Storage= 1.01' , Surface Width= 2.00'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 13.44 cfs

24.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 95.0' Slope= 0.0025 '/'
Inlet Invert= 186.08', Outlet Invert= 185.84'



Reach 1R-5: new 24"



Summary for Reach 1R-6: New 24" ADS

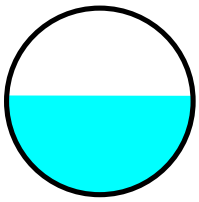
[52] Hint: Inlet/Outlet conditions not evaluated
[61] Hint: Exceeded Reach 1R-5 outlet invert by 0.92' @ 12.20 hrs

Inflow Area = 2.812 ac, 85.36% Impervious, Inflow Depth = 3.09" for 10-Year event
Inflow = 7.22 cfs @ 12.20 hrs, Volume= 0.724 af
Outflow = 7.20 cfs @ 12.20 hrs, Volume= 0.724 af, Atten= 0%, Lag= 0.3 min
Routed to Link 2L : Flow to BVW

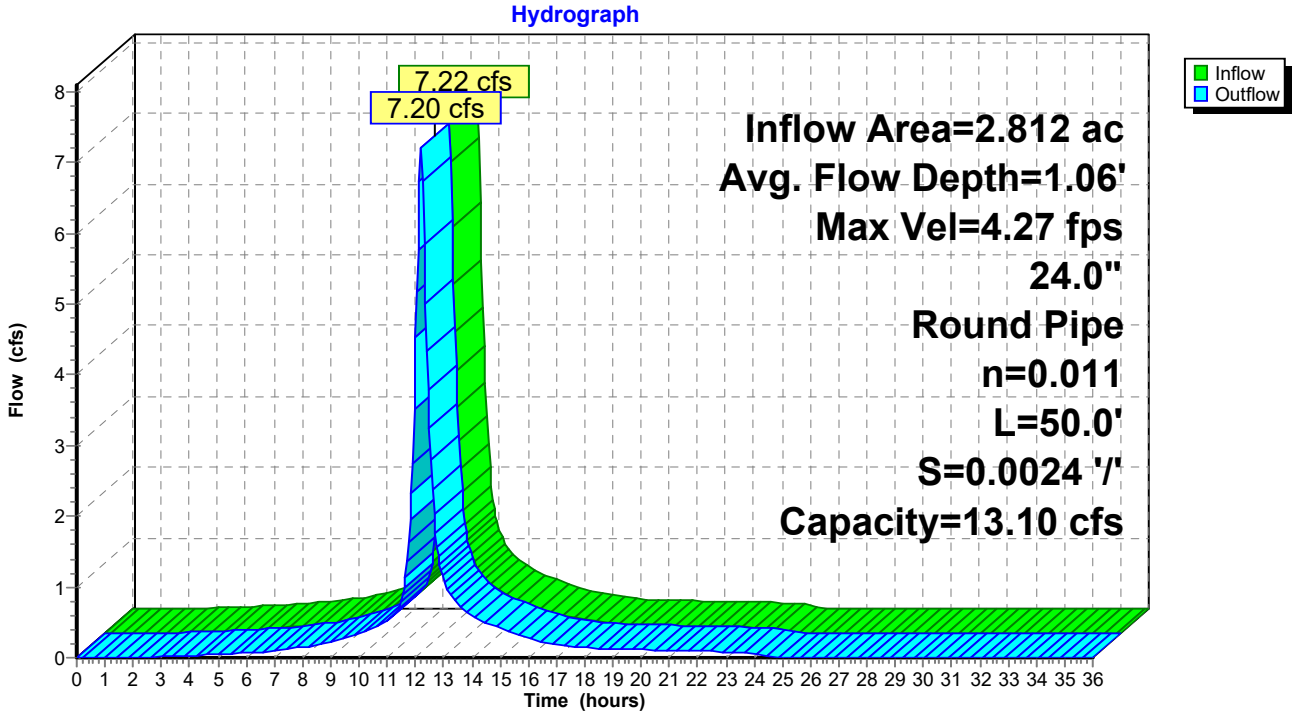
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.27 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.40 fps, Avg. Travel Time= 0.6 min

Peak Storage= 85 cf @ 12.20 hrs
Average Depth at Peak Storage= 1.06' , Surface Width= 2.00'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 13.10 cfs

24.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 50.0' Slope= 0.0024 '/'
Inlet Invert= 185.70', Outlet Invert= 185.58'



Reach 1R-6: New 24" ADS



Summary for Reach 2R-1: new 12" west

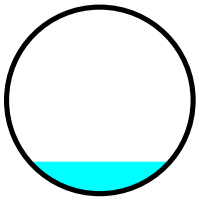
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 0.061 ac, 85.24% Impervious, Inflow Depth = 4.19" for 10-Year event
Inflow = 0.27 cfs @ 12.09 hrs, Volume= 0.021 af
Outflow = 0.26 cfs @ 12.11 hrs, Volume= 0.021 af, Atten= 3%, Lag= 1.4 min
Routed to Reach 2R-2 : new 12"

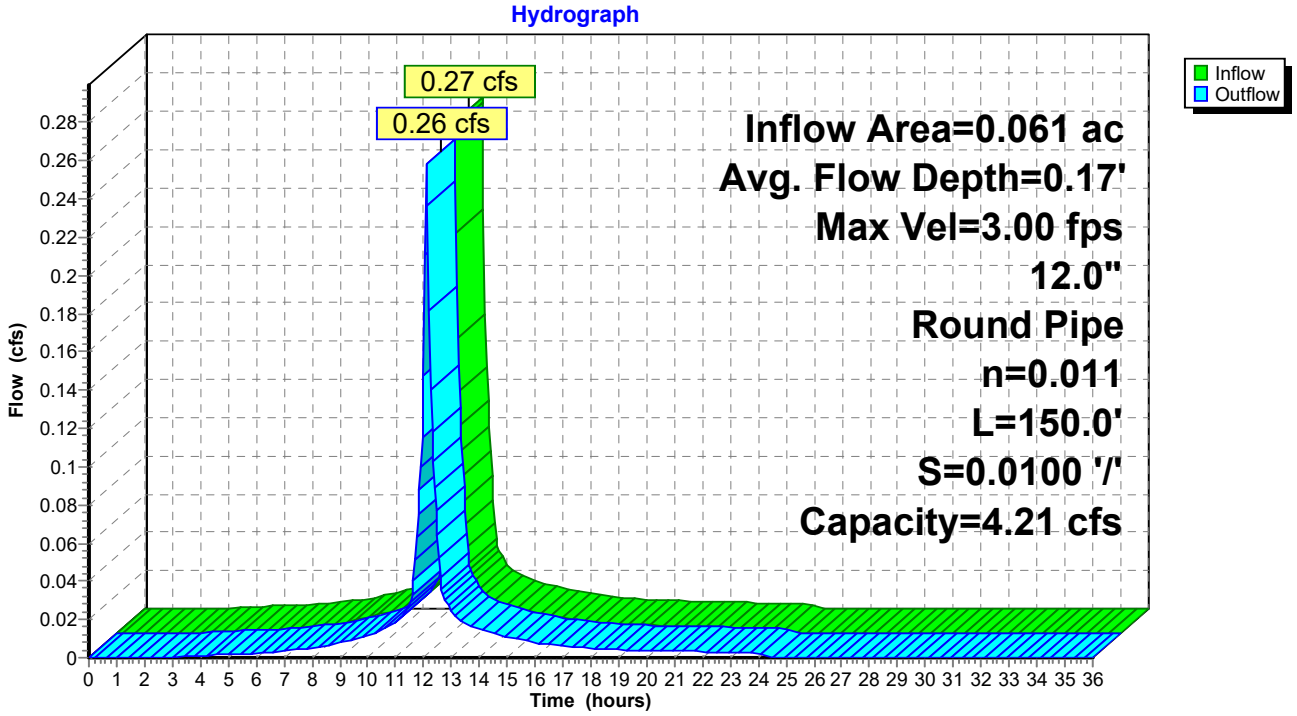
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.00 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 0.98 fps, Avg. Travel Time= 2.5 min

Peak Storage= 13 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.17' , Surface Width= 0.75'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.21 cfs

12.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 150.0' Slope= 0.0100 '/'
Inlet Invert= 189.80', Outlet Invert= 188.30'



Reach 2R-1: new 12" west



Summary for Reach 2R-2: new 12"

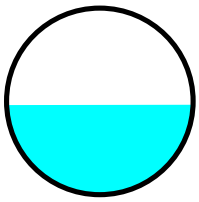
[52] Hint: Inlet/Outlet conditions not evaluated
[62] Hint: Exceeded Reach 2R-1 OUTLET depth by 0.12' @ 12.05 hrs

Inflow Area = 0.489 ac, 84.19% Impervious, Inflow Depth = 4.19" for 10-Year event
Inflow = 1.97 cfs @ 12.07 hrs, Volume= 0.171 af
Outflow = 1.95 cfs @ 12.08 hrs, Volume= 0.171 af, Atten= 1%, Lag= 0.4 min
Routed to Reach 2R-3 : new 12"

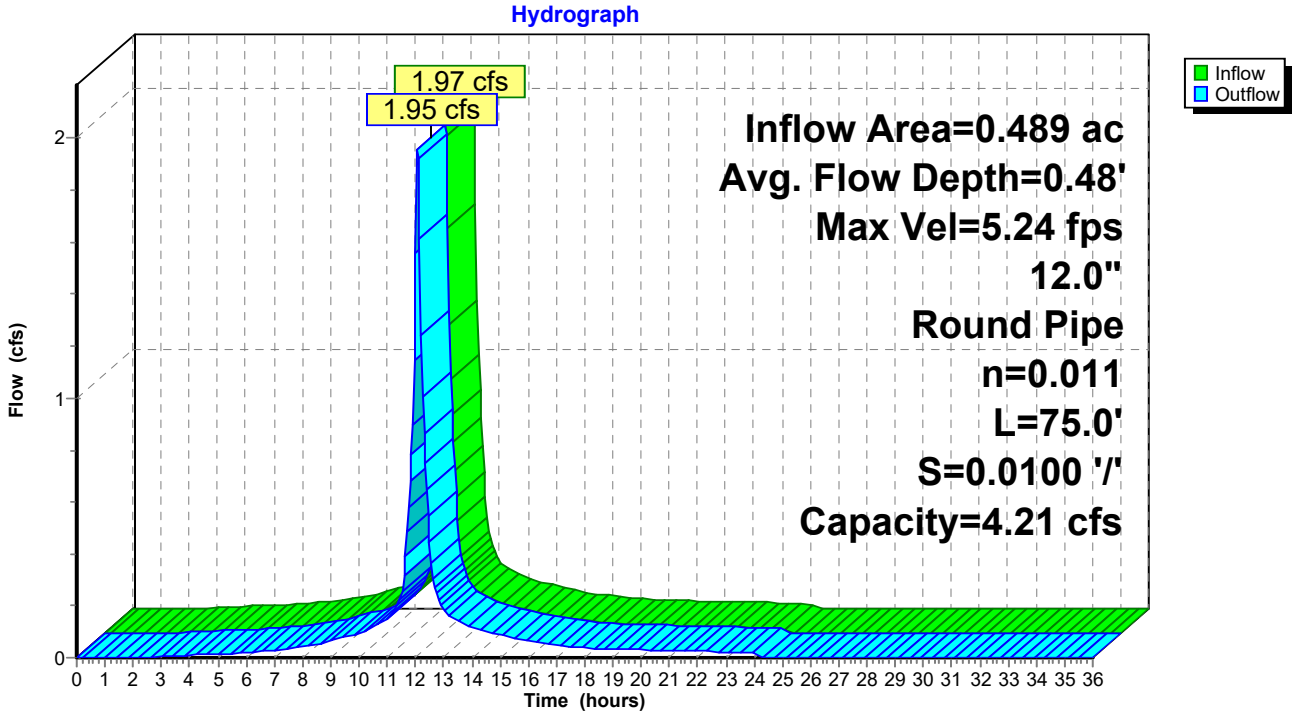
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.24 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.75 fps, Avg. Travel Time= 0.7 min

Peak Storage= 28 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.48' , Surface Width= 1.00'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.21 cfs

12.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 75.0' Slope= 0.0100 '/'
Inlet Invert= 188.10', Outlet Invert= 187.35'



Reach 2R-2: new 12"



Summary for Reach 2R-3: new 12"

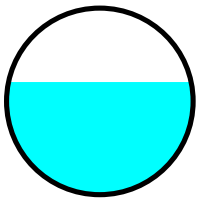
[52] Hint: Inlet/Outlet conditions not evaluated
[62] Hint: Exceeded Reach 2R-2 OUTLET depth by 0.03' @ 12.00 hrs

Inflow Area = 0.889 ac, 85.12% Impervious, Inflow Depth = 4.21" for 10-Year event
Inflow = 3.50 cfs @ 12.06 hrs, Volume= 0.312 af
Outflow = 3.48 cfs @ 12.06 hrs, Volume= 0.312 af, Atten= 0%, Lag= 0.3 min
Routed to Reach 2R-4 : new 18"

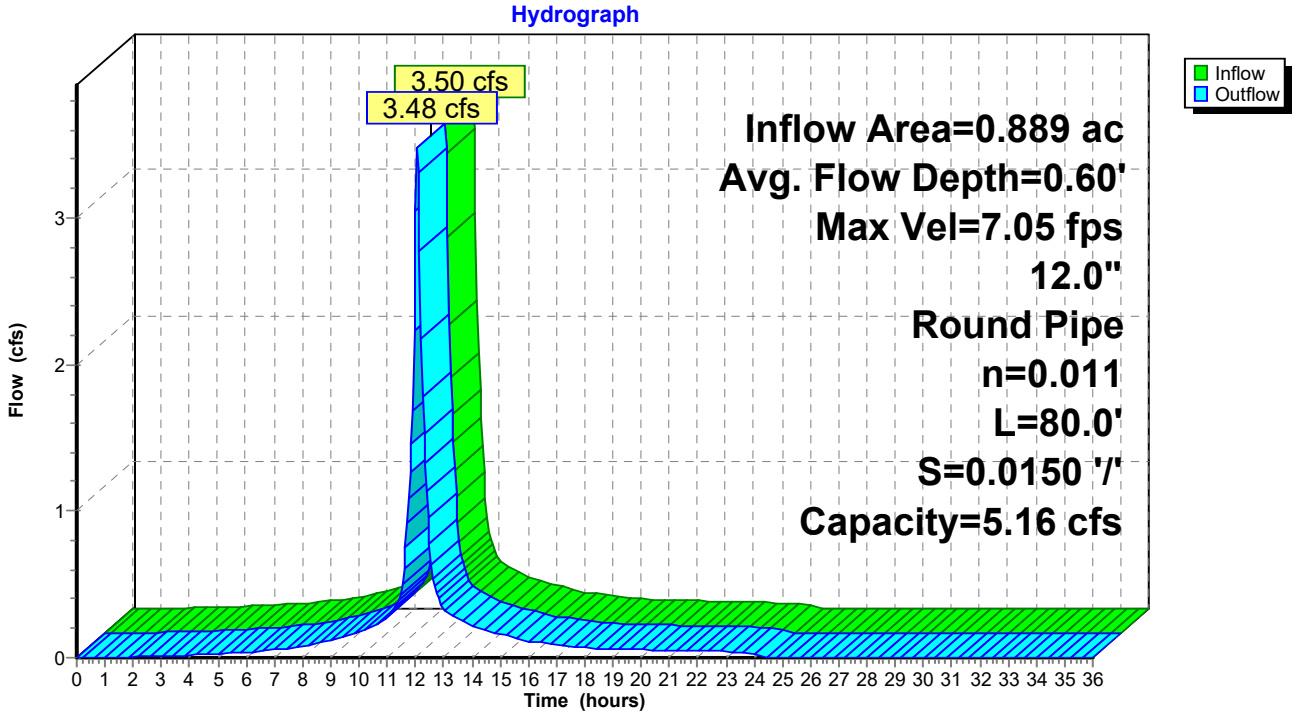
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 7.05 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.41 fps, Avg. Travel Time= 0.6 min

Peak Storage= 40 cf @ 12.06 hrs
Average Depth at Peak Storage= 0.60' , Surface Width= 0.98'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 5.16 cfs

12.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 80.0' Slope= 0.0150 '/'
Inlet Invert= 187.25', Outlet Invert= 186.05'



Reach 2R-3: new 12"



Summary for Reach 2R-4: new 18"

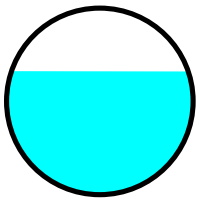
[52] Hint: Inlet/Outlet conditions not evaluated
[62] Hint: Exceeded Reach 2R-3 OUTLET depth by 1.17' @ 12.00 hrs

Inflow Area = 1.837 ac, 80.91% Impervious, Inflow Depth = 4.12" for 10-Year event
Inflow = 7.60 cfs @ 12.02 hrs, Volume= 0.631 af
Outflow = 7.36 cfs @ 12.04 hrs, Volume= 0.631 af, Atten= 3%, Lag= 1.1 min
Routed to Reach 2R-5 : new 18"

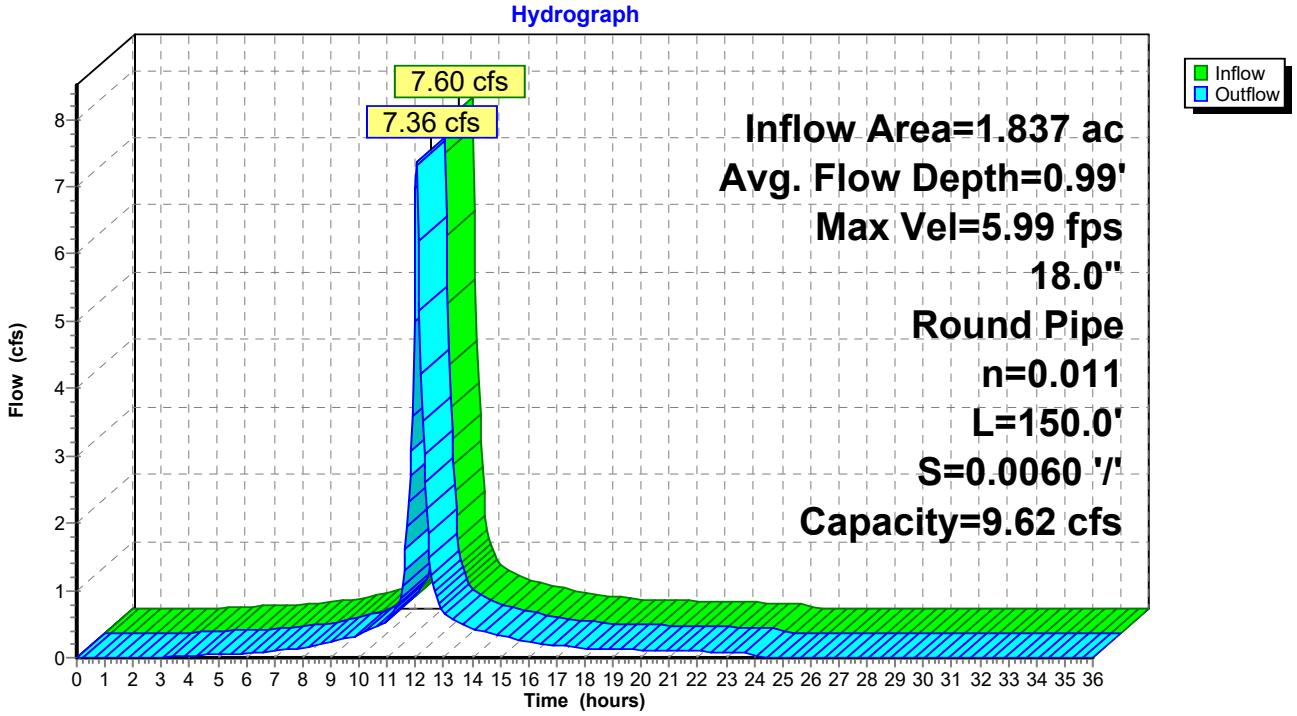
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.99 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 2.02 fps, Avg. Travel Time= 1.2 min

Peak Storage= 186 cf @ 12.03 hrs
Average Depth at Peak Storage= 0.99' , Surface Width= 1.42'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 9.62 cfs

18.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 150.0' Slope= 0.0060 '/'
Inlet Invert= 186.80', Outlet Invert= 185.90'



Reach 2R-4: new 18"



Summary for Reach 2R-5: new 18"

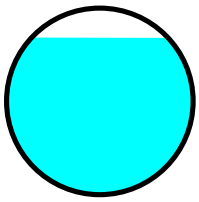
[52] Hint: Inlet/Outlet conditions not evaluated
[55] Hint: Peak inflow is 104% of Manning's capacity
[62] Hint: Exceeded Reach 2R-4 OUTLET depth by 0.26' @ 12.05 hrs

Inflow Area = 2.192 ac, 83.99% Impervious, Inflow Depth = 4.19" for 10-Year event
Inflow = 9.13 cfs @ 12.02 hrs, Volume= 0.765 af
Outflow = 8.96 cfs @ 12.03 hrs, Volume= 0.765 af, Atten= 2%, Lag= 0.5 min
Routed to Link 2L : Flow to BVW

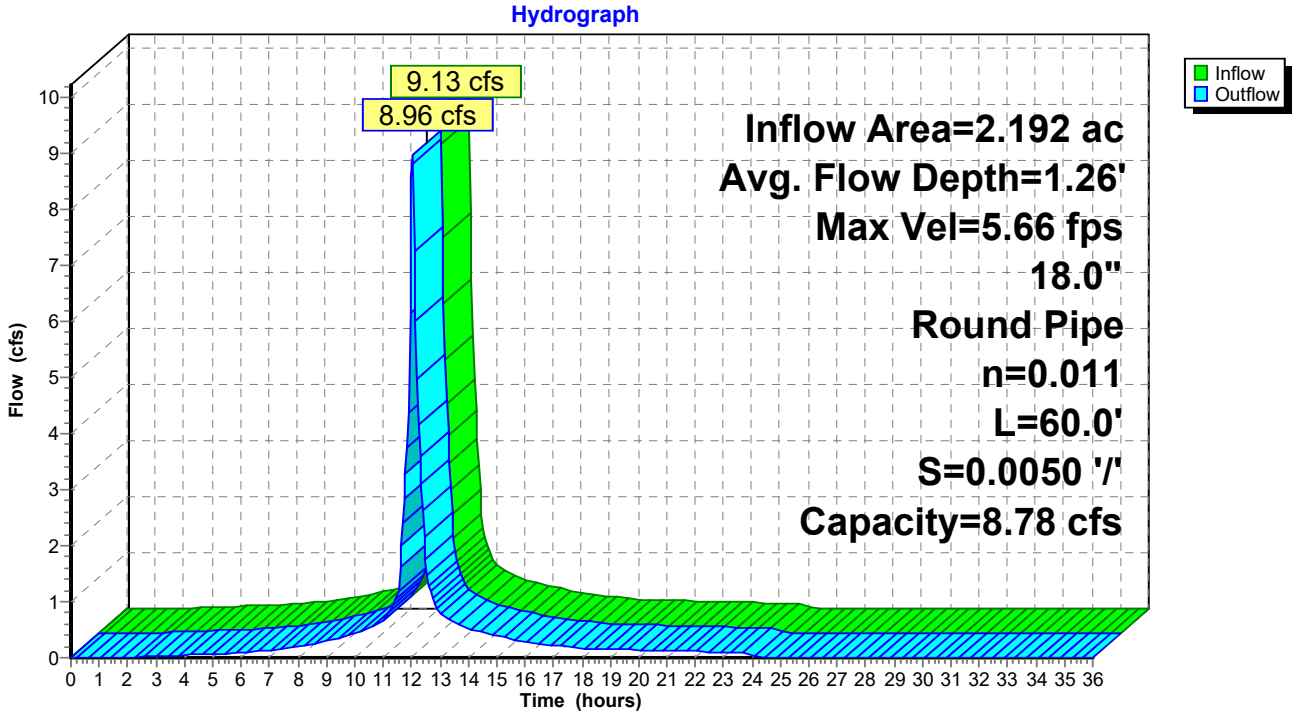
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.66 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.01 fps, Avg. Travel Time= 0.5 min

Peak Storage= 95 cf @ 12.03 hrs
Average Depth at Peak Storage= 1.26' , Surface Width= 1.10'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 8.78 cfs

18.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 60.0' Slope= 0.0050 '/'
Inlet Invert= 185.90', Outlet Invert= 185.60'



Reach 2R-5: new 18"



Summary for Reach 3R: Ex. 12" RCP

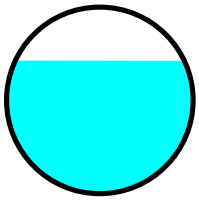
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 0.706 ac, 86.54% Impervious, Inflow Depth = 4.30" for 10-Year event
Inflow = 3.16 cfs @ 12.09 hrs, Volume= 0.253 af
Outflow = 3.14 cfs @ 12.09 hrs, Volume= 0.253 af, Atten= 1%, Lag= 0.4 min
Routed to Reach 4R : Ex. 15" RCP

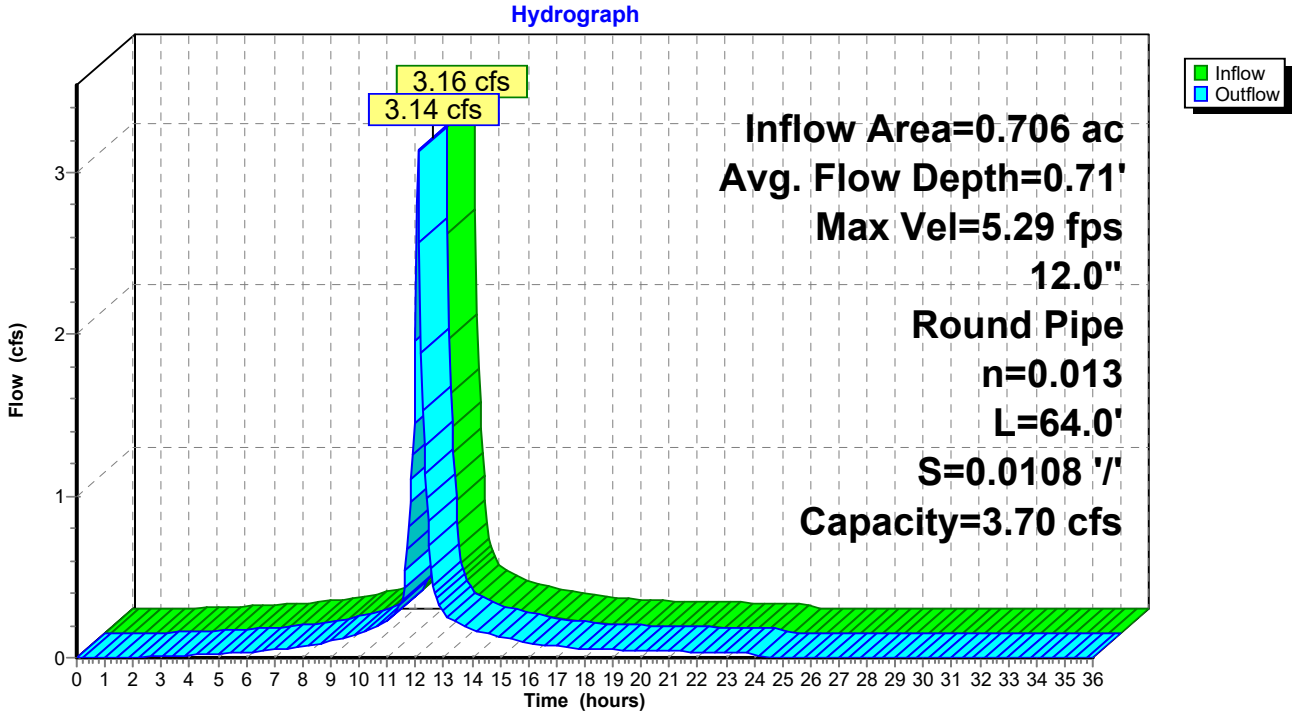
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.29 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.85 fps, Avg. Travel Time= 0.6 min

Peak Storage= 38 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.71' , Surface Width= 0.91'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.70 cfs

12.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 64.0' Slope= 0.0108 '/'
Inlet Invert= 188.35', Outlet Invert= 187.66'



Reach 3R: Ex. 12" RCP



Summary for Reach 4R: Ex. 15" RCP

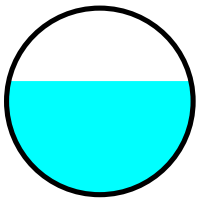
[52] Hint: Inlet/Outlet conditions not evaluated
[62] Hint: Exceeded Reach 3R OUTLET depth by 0.07' @ 12.15 hrs

Inflow Area = 0.706 ac, 86.54% Impervious, Inflow Depth = 4.30" for 10-Year event
Inflow = 3.14 cfs @ 12.09 hrs, Volume= 0.253 af
Outflow = 3.12 cfs @ 12.10 hrs, Volume= 0.253 af, Atten= 1%, Lag= 0.3 min
Routed to Reach 7R : Ex. 24" RCP

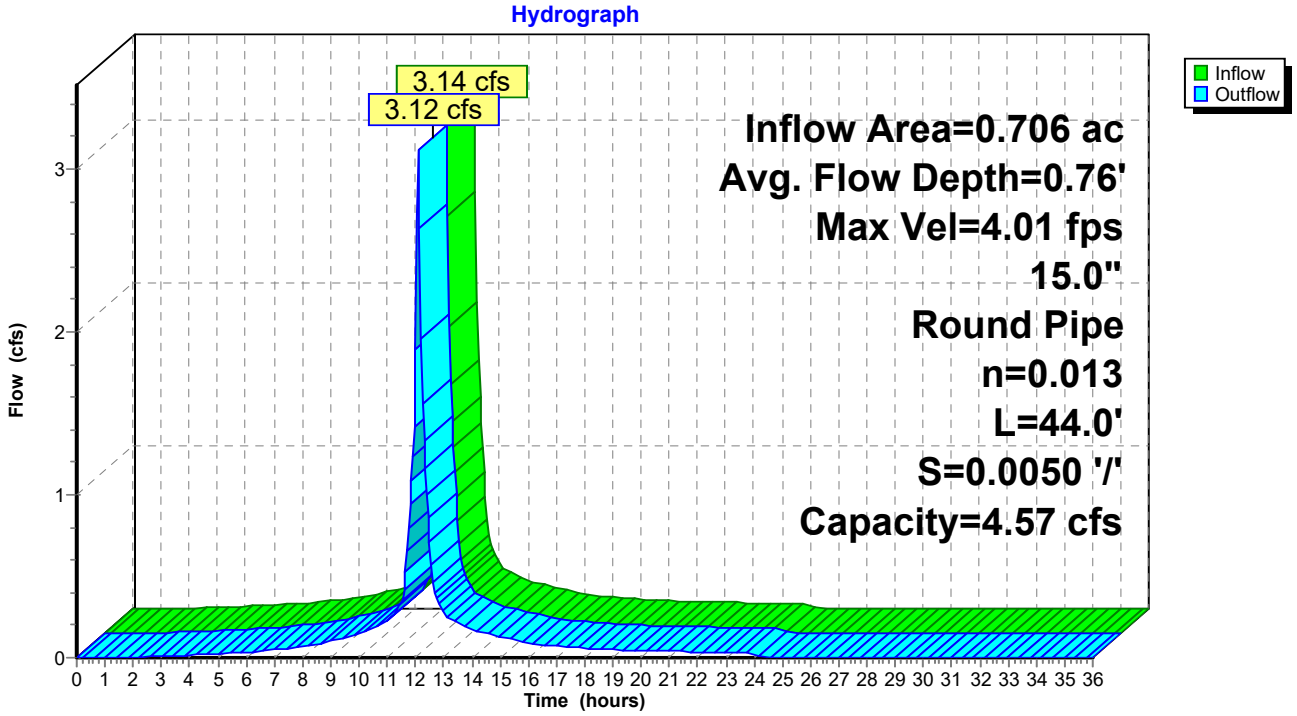
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.01 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.37 fps, Avg. Travel Time= 0.5 min

Peak Storage= 34 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.76' , Surface Width= 1.22'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 4.57 cfs

15.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 44.0' Slope= 0.0050 '/'
Inlet Invert= 187.66', Outlet Invert= 187.44'



Reach 4R: Ex. 15" RCP



Summary for Reach 7R: Ex. 24" RCP

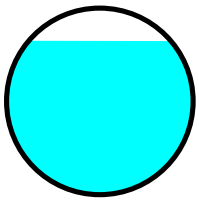
[52] Hint: Inlet/Outlet conditions not evaluated
[55] Hint: Peak inflow is 101% of Manning's capacity
[63] Warning: Exceeded Reach 4R INLET depth by 0.16' @ 12.10 hrs

Inflow Area = 3.186 ac, 70.77% Impervious, Inflow Depth = 3.98" for 10-Year event
Inflow = 13.50 cfs @ 12.09 hrs, Volume= 1.056 af
Outflow = 13.14 cfs @ 12.11 hrs, Volume= 1.056 af, Atten= 3%, Lag= 0.9 min
Routed to Reach 8R : Ex. 24" RCP

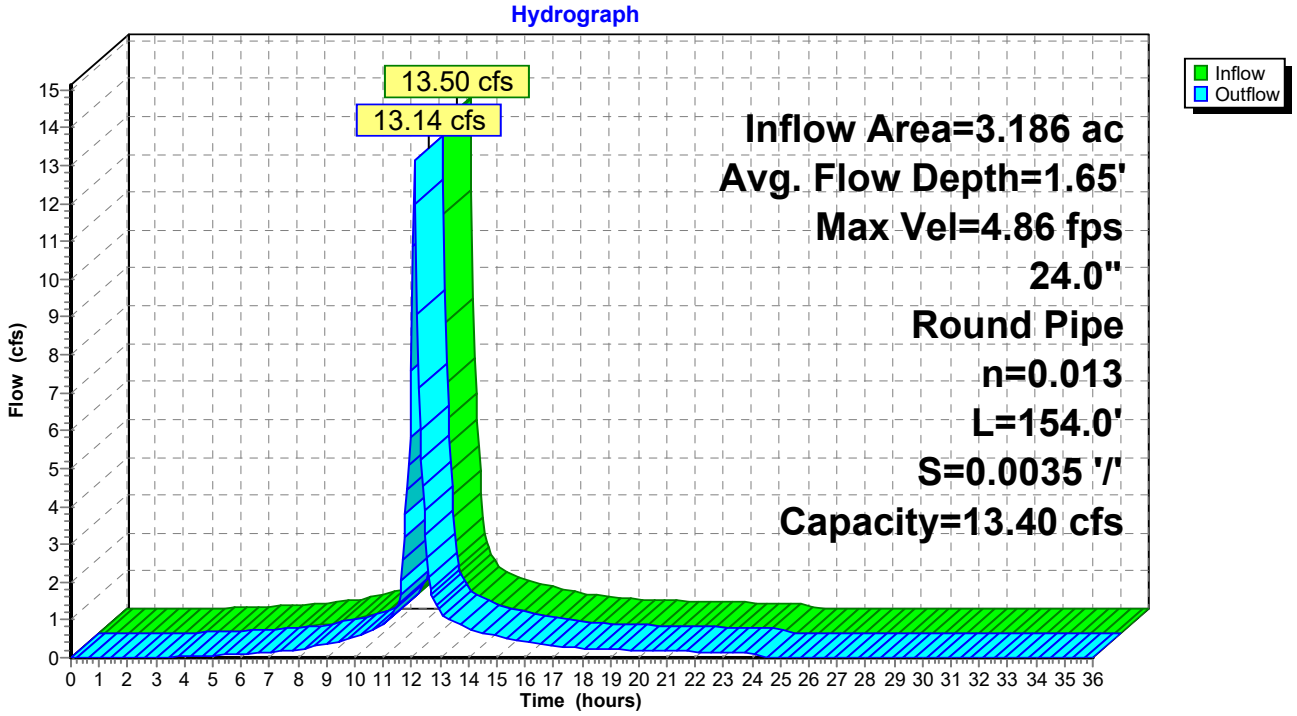
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.86 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.69 fps, Avg. Travel Time= 1.5 min

Peak Storage= 426 cf @ 12.10 hrs
Average Depth at Peak Storage= 1.65' , Surface Width= 1.53'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 13.40 cfs

24.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 154.0' Slope= 0.0035 '/'
Inlet Invert= 186.94', Outlet Invert= 186.40'



Reach 7R: Ex. 24" RCP



Summary for Reach 8R: Ex. 24" RCP

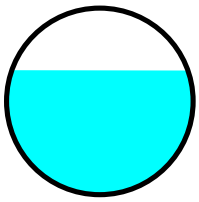
[52] Hint: Inlet/Outlet conditions not evaluated
[61] Hint: Exceeded Reach 7R outlet invert by 1.22' @ 12.10 hrs

Inflow Area = 3.186 ac, 70.77% Impervious, Inflow Depth = 3.98" for 10-Year event
Inflow = 13.14 cfs @ 12.11 hrs, Volume= 1.056 af
Outflow = 12.71 cfs @ 12.13 hrs, Volume= 1.056 af, Atten= 3%, Lag= 1.2 min
Routed to Link 2L : Flow to BVW

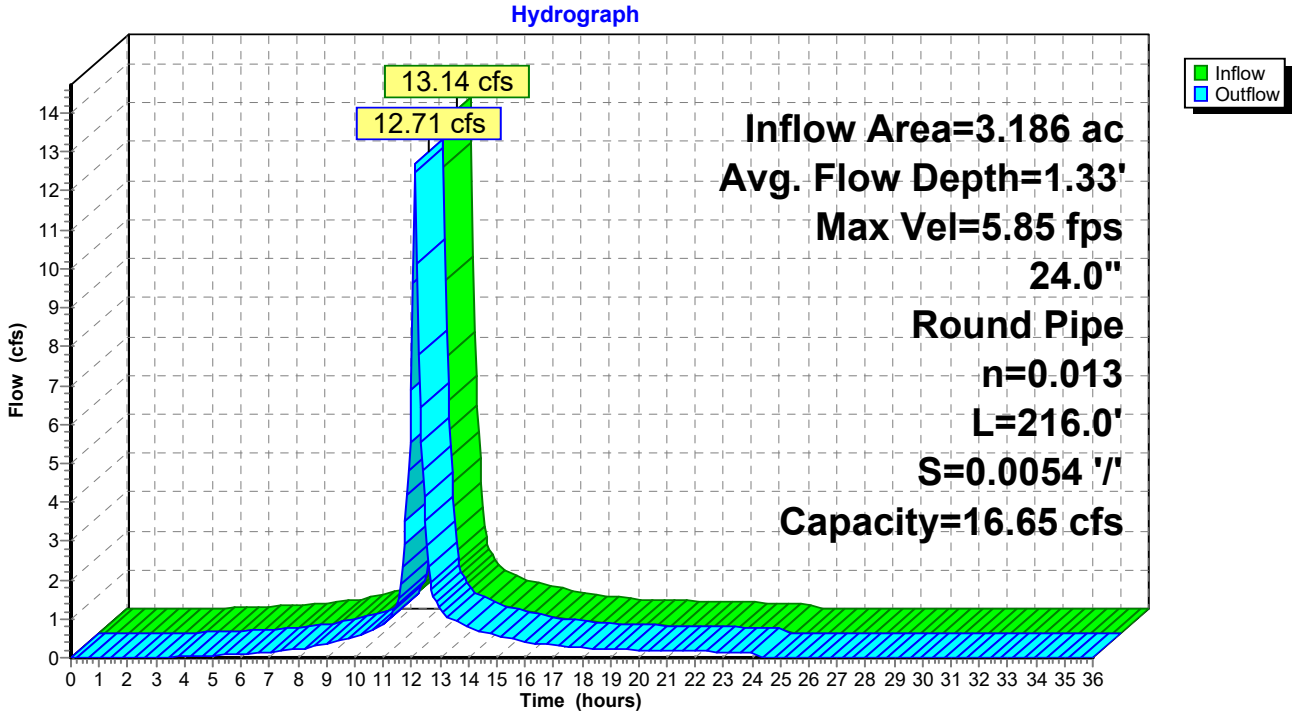
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.85 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 1.95 fps, Avg. Travel Time= 1.8 min

Peak Storage= 480 cf @ 12.12 hrs
Average Depth at Peak Storage= 1.33' , Surface Width= 1.89'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 16.65 cfs

24.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 216.0' Slope= 0.0054 '/'
Inlet Invert= 186.30', Outlet Invert= 185.13'



Reach 8R: Ex. 24" RCP



Summary for Pond 5P: East Rv Chambers #2

Inflow Area = 0.599 ac, 95.25% Impervious, Inflow Depth = 4.42" for 10-Year event
Inflow = 2.54 cfs @ 12.02 hrs, Volume= 0.221 af
Outflow = 1.07 cfs @ 12.27 hrs, Volume= 0.221 af, Atten= 58%, Lag= 14.8 min
Discarded = 0.07 cfs @ 8.45 hrs, Volume= 0.154 af
Primary = 1.00 cfs @ 12.27 hrs, Volume= 0.067 af
Routed to Link 14L : Outflow of Combined INF Systems

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 189.29' @ 12.27 hrs Surf.Area= 3,025 sf Storage= 3,618 cf

Plug-Flow detention time= 261.2 min calculated for 0.220 af (100% of inflow)
Center-of-Mass det. time= 261.5 min (1,014.7 - 753.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	187.00'	3,467 cf	**17.08'W x 177.08'L x 3.33'H Field A** 10,084 cf Overall - 1,415 cf Embedded = 8,668 cf x 40.0% Voids
#2A	187.50'	1,415 cf	**ADS_StormTech SC-310 +Cap** x 96 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 96 Chambers in 4 Rows
		4,883 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	187.00'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	188.62'	**12.0" Round RCP_Round 12"** L= 7.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 188.62' / 188.58' S= 0.0057 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.07 cfs @ 8.45 hrs HW=187.03' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

Primary OutFlow Max=0.99 cfs @ 12.27 hrs HW=189.28' (Free Discharge)
↑—**2=RCP_Round 12"** (Barrel Controls 0.99 cfs @ 2.54 fps)

Pond 5P: East Rv Chambers #2 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)
Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 3.0" Spacing = 37.0" C-C Row Spacing

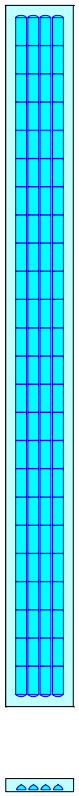
24 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 172.08' Row Length +30.0" End Stone x 2 = 177.08' Base Length
4 Rows x 34.0" Wide + 3.0" Spacing x 3 + 30.0" Side Stone x 2 = 17.08' Base Width
6.0" Stone Base + 16.0" Chamber Height + 18.0" Stone Cover = 3.33' Field Height

96 Chambers x 14.7 cf = 1,415.2 cf Chamber Storage

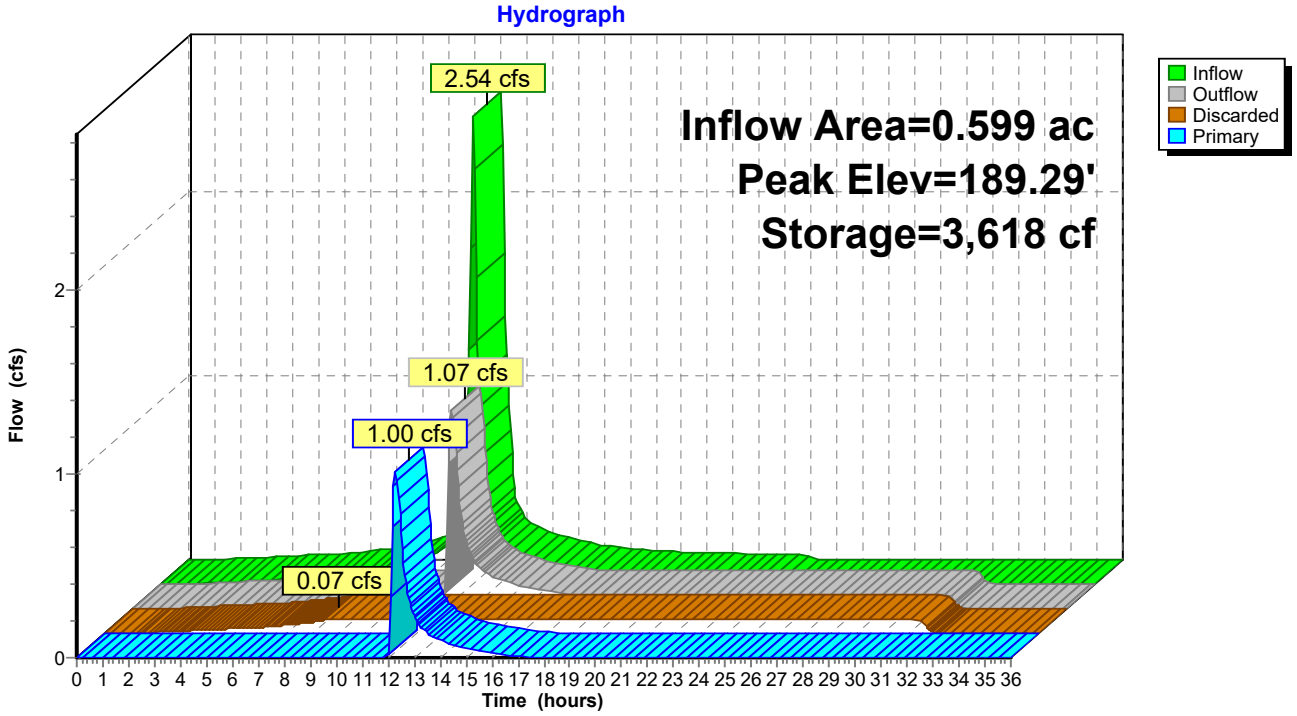
10,083.7 cf Field - 1,415.2 cf Chambers = 8,668.5 cf Stone x 40.0% Voids = 3,467.4 cf Stone Storage

Chamber Storage + Stone Storage = 4,882.6 cf = 0.112 af
Overall Storage Efficiency = 48.4%
Overall System Size = 177.08' x 17.08' x 3.33'

96 Chambers
373.5 cy Field
321.1 cy Stone



Pond 5P: East Rv Chambers #2



Summary for Pond 8P: East Rv Chambers #1

Inflow Area = 0.130 ac, 76.94% Impervious, Inflow Depth = 4.08" for 10-Year event
Inflow = 0.57 cfs @ 12.09 hrs, Volume= 0.044 af
Outflow = 0.04 cfs @ 11.10 hrs, Volume= 0.044 af, Atten= 93%, Lag= 0.0 min
Discarded = 0.04 cfs @ 11.10 hrs, Volume= 0.044 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 14L : Outflow of Combined INF Systems

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 187.97' @ 13.62 hrs Surf.Area= 1,566 sf Storage= 824 cf

Plug-Flow detention time= 185.6 min calculated for 0.044 af (100% of inflow)
Center-of-Mass det. time= 185.4 min (960.2 - 774.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	187.00'	1,804 cf	**17.08'W x 91.64'L x 3.33'H Field A** 5,218 cf Overall - 708 cf Embedded = 4,511 cf x 40.0% Voids
#2A	187.50'	708 cf	**ADS_StormTech SC-310 +Cap** x 48 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 48 Chambers in 4 Rows
		2,512 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	187.00'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	188.87'	**12.0" Round RCP_Round 12"** L= 7.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 188.83' / 188.87' S= -0.0057 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.04 cfs @ 11.10 hrs HW=187.03' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=187.00' (Free Discharge)
↑—**2=RCP_Round 12"** (Controls 0.00 cfs)

Pond 8P: East Rv Chambers #1 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)
Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 3.0" Spacing = 37.0" C-C Row Spacing

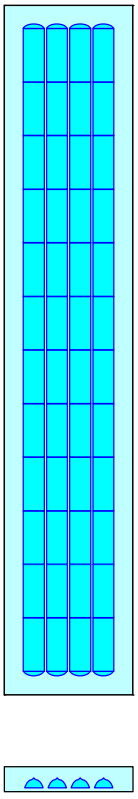
12 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 86.64' Row Length +30.0" End Stone x 2 = 91.64' Base Length
4 Rows x 34.0" Wide + 3.0" Spacing x 3 + 30.0" Side Stone x 2 = 17.08' Base Width
6.0" Stone Base + 16.0" Chamber Height + 18.0" Stone Cover = 3.33' Field Height

48 Chambers x 14.7 cf = 707.6 cf Chamber Storage

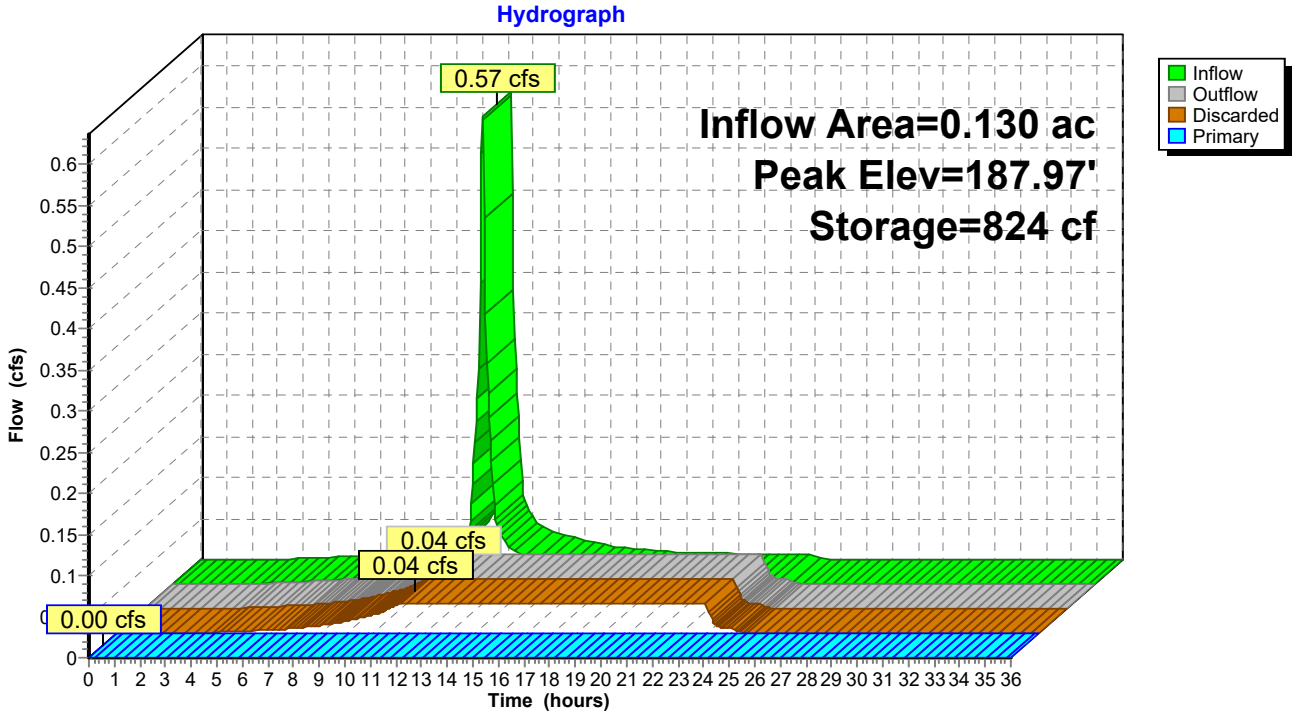
5,218.4 cf Field - 707.6 cf Chambers = 4,510.8 cf Stone x 40.0% Voids = 1,804.3 cf Stone Storage

Chamber Storage + Stone Storage = 2,511.9 cf = 0.058 af
Overall Storage Efficiency = 48.1%
Overall System Size = 91.64' x 17.08' x 3.33'

48 Chambers
193.3 cy Field
167.1 cy Stone



Pond 8P: East Rv Chambers #1



Summary for Pond 9P: East Rv Chambers #3

Inflow Area = 0.303 ac, 92.27% Impervious, Inflow Depth = 4.42" for 10-Year event
Inflow = 1.37 cfs @ 12.09 hrs, Volume= 0.112 af
Outflow = 0.85 cfs @ 12.20 hrs, Volume= 0.112 af, Atten= 38%, Lag= 6.9 min
Discarded = 0.03 cfs @ 8.15 hrs, Volume= 0.072 af
Primary = 0.82 cfs @ 12.20 hrs, Volume= 0.039 af
Routed to Reach 1R-4 : new 24"

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 189.47' @ 12.20 hrs Surf.Area= 1,322 sf Storage= 1,658 cf

Plug-Flow detention time= 265.3 min calculated for 0.111 af (100% of inflow)
Center-of-Mass det. time= 265.7 min (1,022.5 - 756.7)

Volume	Invert	Avail.Storage	Storage Description
#1B	187.00'	1,527 cf	**17.08'W x 77.40'L x 3.33'H Field B** 4,407 cf Overall - 590 cf Embedded = 3,818 cf x 40.0% Voids
#2B	187.50'	590 cf	**ADS_StormTech SC-310 +Cap** x 40 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 40 Chambers in 4 Rows
		2,117 cf	Total Available Storage

Storage Group B created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	187.00'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	188.87'	**12.0" Round RCP_Round 12"** L= 7.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 188.83' / 188.87' S= -0.0057 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.03 cfs @ 8.15 hrs HW=187.03' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.82 cfs @ 12.20 hrs HW=189.46' (Free Discharge)
↑—**2=RCP_Round 12"** (Barrel Controls 0.82 cfs @ 2.22 fps)

Pond 9P: East Rv Chambers #3 - Chamber Wizard Field B

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)
Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 3.0" Spacing = 37.0" C-C Row Spacing

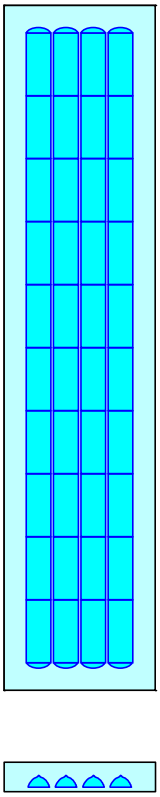
10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +30.0" End Stone x 2 = 77.40' Base Length
4 Rows x 34.0" Wide + 3.0" Spacing x 3 + 30.0" Side Stone x 2 = 17.08' Base Width
6.0" Stone Base + 16.0" Chamber Height + 18.0" Stone Cover = 3.33' Field Height

40 Chambers x 14.7 cf = 589.7 cf Chamber Storage

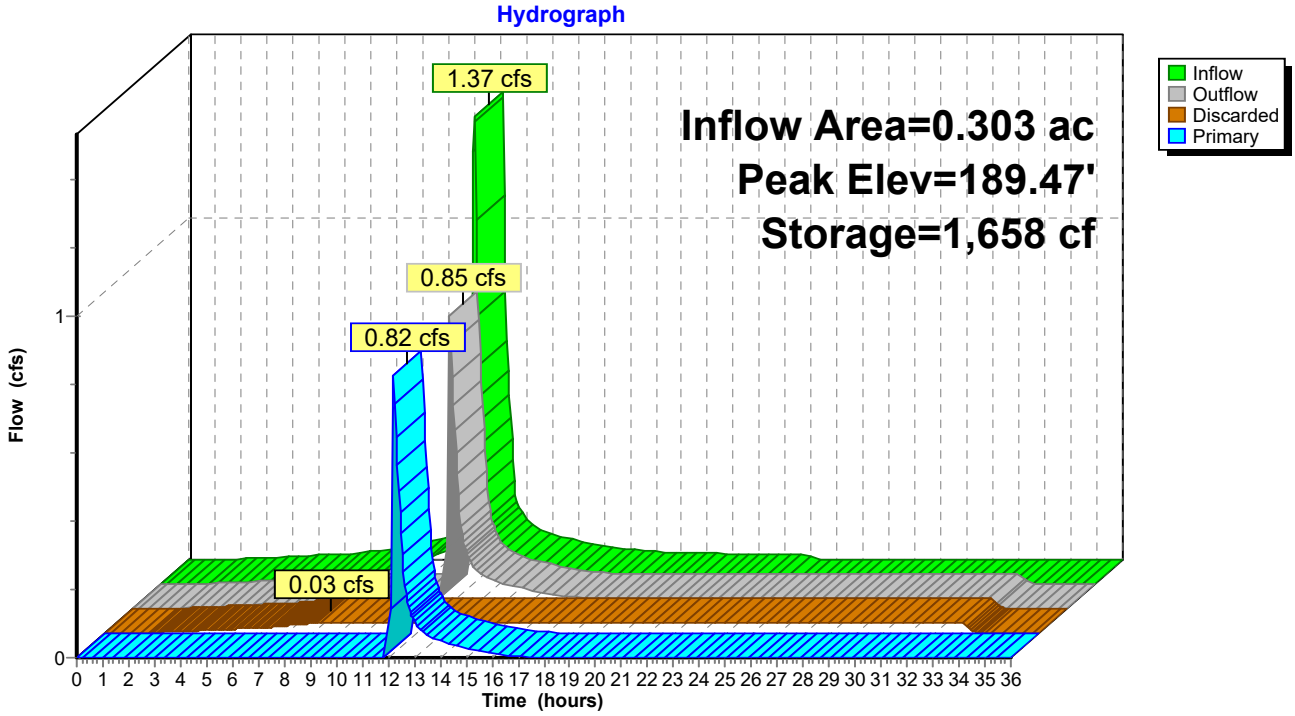
4,407.5 cf Field - 589.7 cf Chambers = 3,817.8 cf Stone x 40.0% Voids = 1,527.1 cf Stone Storage

Chamber Storage + Stone Storage = 2,116.8 cf = 0.049 af
Overall Storage Efficiency = 48.0%
Overall System Size = 77.40' x 17.08' x 3.33'

40 Chambers
163.2 cy Field
141.4 cy Stone



Pond 9P: East Rv Chambers #3



Summary for Pond 15P: Garage Trench

[92] Warning: Device #2 is above defined storage
[93] Warning: Storage range exceeded by 0.08'
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=22)

Inflow Area = 0.074 ac,100.00% Impervious, Inflow Depth = 4.53" for 10-Year event
Inflow = 0.34 cfs @ 12.09 hrs, Volume= 0.028 af
Outflow = 0.15 cfs @ 12.40 hrs, Volume= 0.028 af, Atten= 57%, Lag= 18.5 min
Discarded = 0.01 cfs @ 9.50 hrs, Volume= 0.025 af
Primary = 0.13 cfs @ 12.40 hrs, Volume= 0.003 af
Routed to Link 3L : Northeast area at 2 Federal

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 194.08' @ 12.39 hrs Surf.Area= 588 sf Storage= 470 cf

Plug-Flow detention time= 255.6 min calculated for 0.028 af (100% of inflow)
Center-of-Mass det. time= 255.5 min (1,004.3 - 748.8)

Volume	Invert	Avail.Storage	Storage Description
#1	192.00'	470 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 1,176 cf Overall x 40.0% Voids

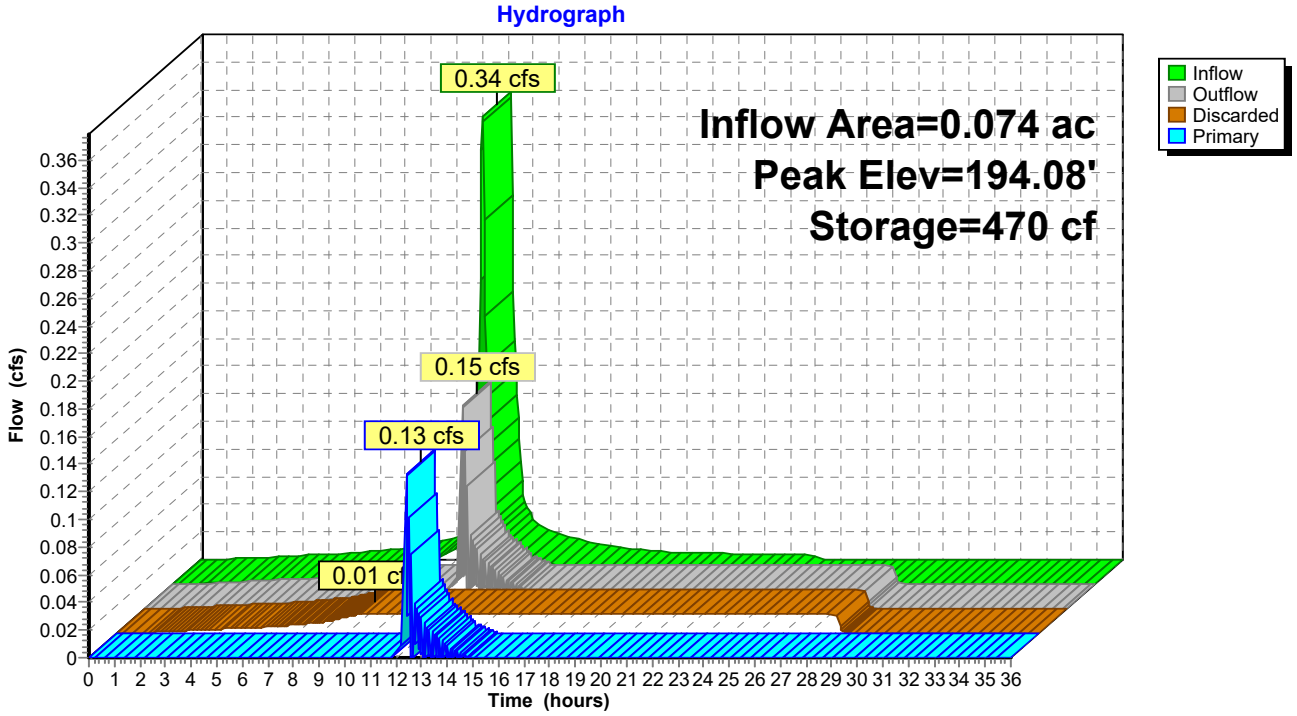
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
192.00	588	0	0
193.00	588	588	588
194.00	588	588	1,176

Device	Routing	Invert	Outlet Devices
#1	Discarded	192.00'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	194.00'	**2.0' long x 1.0' 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 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=0.01 cfs @ 9.50 hrs HW=192.02' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.12 cfs @ 12.40 hrs HW=194.08' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.12 cfs @ 0.77 fps)

Pond 15P: Garage Trench



Summary for Pond 17P: East Rv Chambers #4

Inflow Area = 0.389 ac, 69.88% Impervious, Inflow Depth = 3.97" for 10-Year event
Inflow = 1.96 cfs @ 12.00 hrs, Volume= 0.129 af
Outflow = 0.45 cfs @ 12.36 hrs, Volume= 0.129 af, Atten= 77%, Lag= 21.5 min
Discarded = 0.05 cfs @ 9.15 hrs, Volume= 0.101 af
Primary = 0.40 cfs @ 12.36 hrs, Volume= 0.028 af
Routed to Link 2L : Flow to BVW

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 189.36' @ 12.36 hrs Surf.Area= 1,965 sf Storage= 2,435 cf

Plug-Flow detention time= 352.8 min calculated for 0.129 af (100% of inflow)
Center-of-Mass det. time= 352.8 min (1,126.9 - 774.1)

Volume	Invert	Avail.Storage	Storage Description
#1B	187.00'	2,231 cf	**23.25'W x 84.52'L x 3.33'H Field B** 6,550 cf Overall - 973 cf Embedded = 5,577 cf x 40.0% Voids
#2B	187.50'	973 cf	**ADS_StormTech SC-310 +Cap** x 66 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 66 Chambers in 6 Rows
		3,204 cf	Total Available Storage

Storage Group B created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	187.00'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	189.00'	**12.0" Round Culvert** L= 26.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 189.00' / 188.74' S= 0.0099 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.05 cfs @ 9.15 hrs HW=187.03' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.40 cfs @ 12.36 hrs HW=189.35' (Free Discharge)
↑—**2=Culvert** (Inlet Controls 0.40 cfs @ 1.60 fps)

Pond 17P: East Rv Chambers #4 - Chamber Wizard Field B

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)
Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 3.0" Spacing = 37.0" C-C Row Spacing

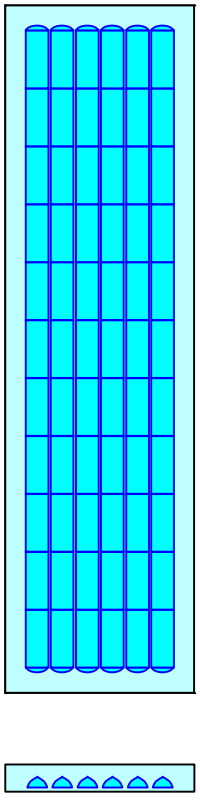
11 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 79.52' Row Length +30.0" End Stone x 2 = 84.52' Base Length
6 Rows x 34.0" Wide + 3.0" Spacing x 5 + 30.0" Side Stone x 2 = 23.25' Base Width
6.0" Stone Base + 16.0" Chamber Height + 18.0" Stone Cover = 3.33' Field Height

66 Chambers x 14.7 cf = 973.0 cf Chamber Storage

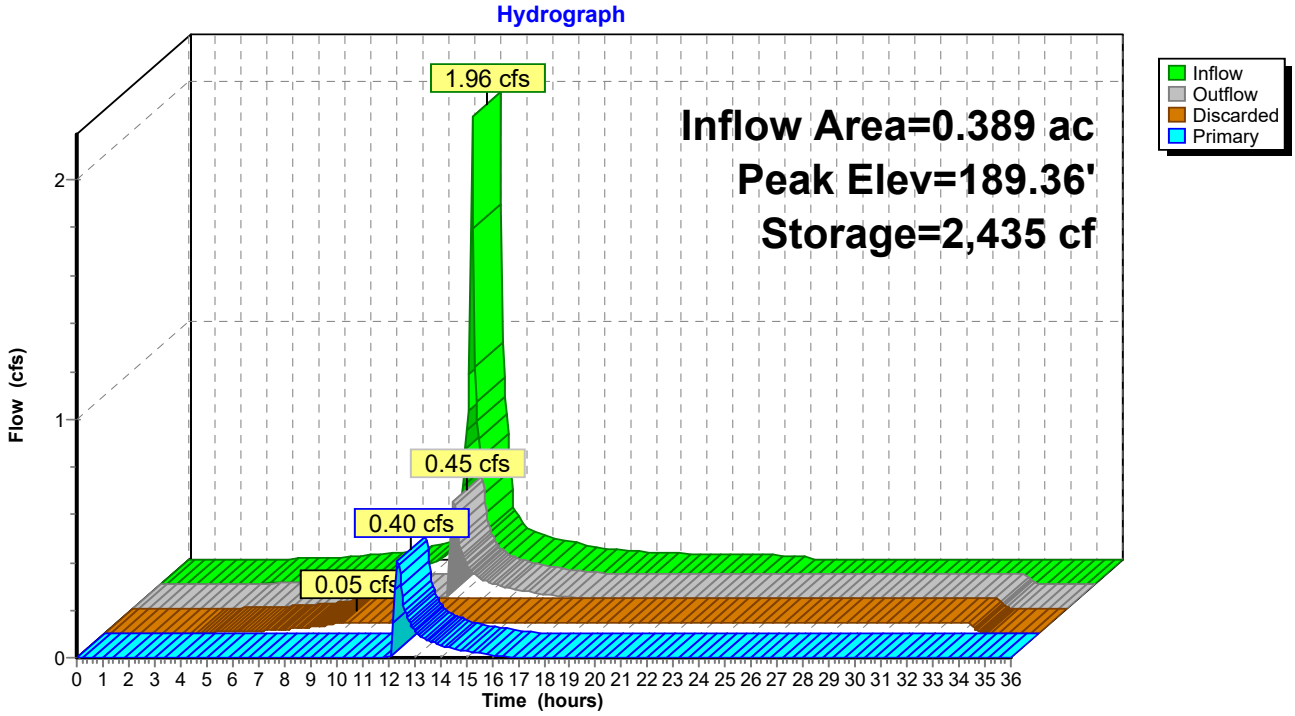
6,550.3 cf Field - 973.0 cf Chambers = 5,577.3 cf Stone x 40.0% Voids = 2,230.9 cf Stone Storage

Chamber Storage + Stone Storage = 3,203.9 cf = 0.074 af
Overall Storage Efficiency = 48.9%
Overall System Size = 84.52' x 23.25' x 3.33'

66 Chambers
242.6 cy Field
206.6 cy Stone



Pond 17P: East Rv Chambers #4



Summary for Pond C8: Banked Parking chambers

Inflow Area = 0.309 ac, 61.16% Impervious, Inflow Depth = 3.76" for 10-Year event
Inflow = 1.28 cfs @ 12.09 hrs, Volume= 0.097 af
Outflow = 0.07 cfs @ 10.90 hrs, Volume= 0.097 af, Atten= 95%, Lag= 0.0 min
Discarded = 0.07 cfs @ 10.90 hrs, Volume= 0.097 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 2L : Flow to BVW

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 190.12' @ 14.08 hrs Surf.Area= 2,978 sf Storage= 1,965 cf

Plug-Flow detention time= 248.8 min calculated for 0.097 af (100% of inflow)
Center-of-Mass det. time= 248.7 min (1,037.1 - 788.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	189.00'	2,143 cf	**32.50'W x 91.64'L x 2.33'H Field A** 6,949 cf Overall - 1,592 cf Embedded = 5,357 cf x 40.0% Voids
#2A	189.50'	1,592 cf	**ADS_StormTech SC-310 +Cap** x 108 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 108 Chambers in 9 Rows
		3,735 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	189.00'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	191.00'	**8.0" Round Culvert X 2.00** L= 48.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 191.00' / 190.04' S= 0.0200 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.35 sf

Discarded OutFlow Max=0.07 cfs @ 10.90 hrs HW=189.03' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=189.00' (Free Discharge)
↑—**2=Culvert** (Controls 0.00 cfs)

Pond C8: Banked Parking chambers - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)
Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 3.0" Spacing = 37.0" C-C Row Spacing

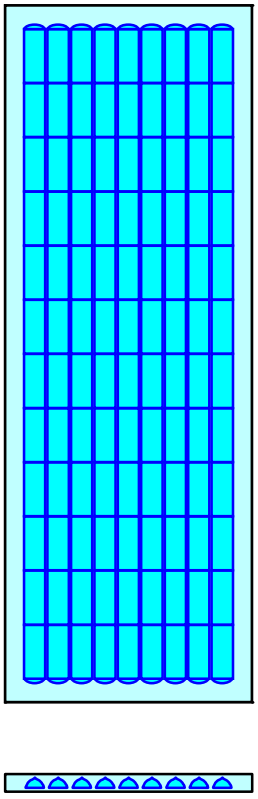
12 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 86.64' Row Length +30.0" End Stone x 2 = 91.64' Base Length
9 Rows x 34.0" Wide + 3.0" Spacing x 8 + 30.0" Side Stone x 2 = 32.50' Base Width
6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

108 Chambers x 14.7 cf = 1,592.1 cf Chamber Storage

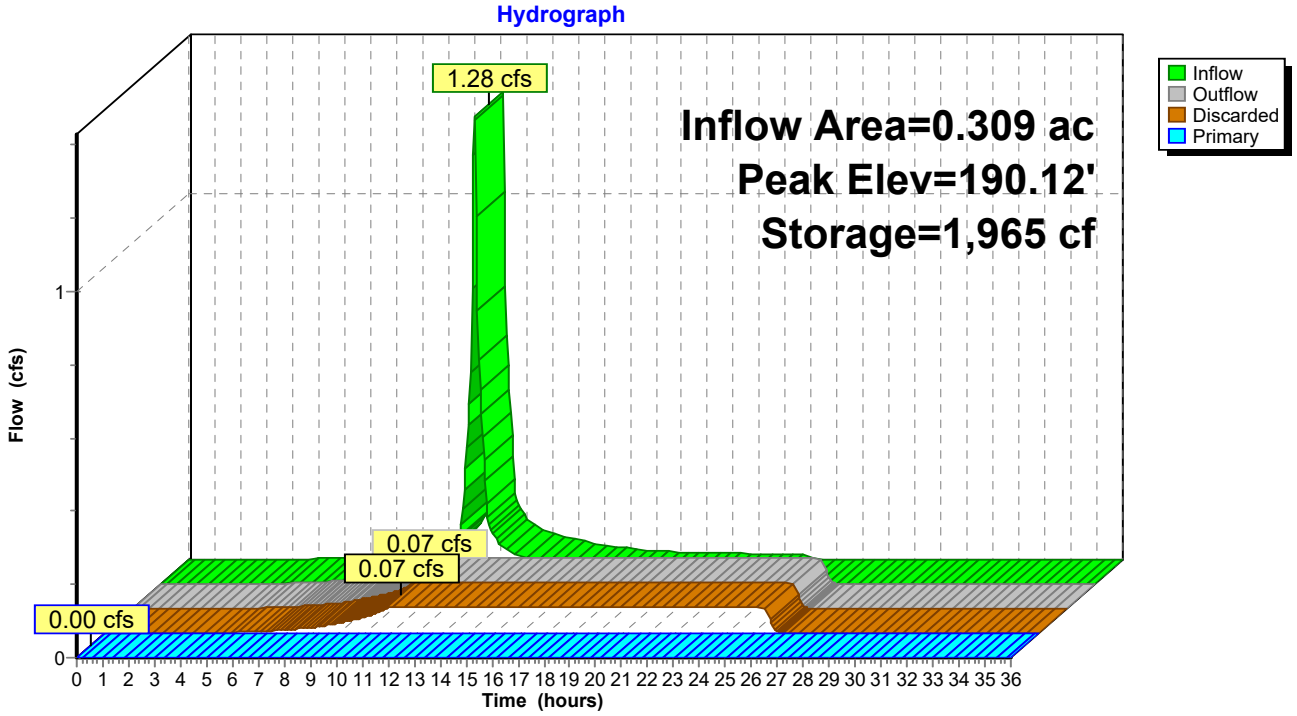
6,949.4 cf Field - 1,592.1 cf Chambers = 5,357.2 cf Stone x 40.0% Voids = 2,142.9 cf Stone Storage

Chamber Storage + Stone Storage = 3,735.0 cf = 0.086 af
Overall Storage Efficiency = 53.7%
Overall System Size = 91.64' x 32.50' x 2.33'

108 Chambers
257.4 cy Field
198.4 cy Stone



Pond C8: Banked Parking chambers



Summary for Pond C9: Banked Parking chambers

Inflow Area = 0.164 ac, 80.13% Impervious, Inflow Depth = 4.08" for 10-Year event
Inflow = 0.72 cfs @ 12.09 hrs, Volume= 0.056 af
Outflow = 0.04 cfs @ 10.60 hrs, Volume= 0.056 af, Atten= 95%, Lag= 0.0 min
Discarded = 0.04 cfs @ 10.60 hrs, Volume= 0.056 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 2L : Flow to BVW

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 187.77' @ 14.21 hrs Surf.Area= 1,561 sf Storage= 1,140 cf

Plug-Flow detention time= 269.0 min calculated for 0.056 af (100% of inflow)
Center-of-Mass det. time= 268.9 min (1,043.7 - 774.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	186.50'	1,162 cf	**20.17'W x 77.40'L x 2.33'H Field A** 3,642 cf Overall - 737 cf Embedded = 2,905 cf x 40.0% Voids
#2A	187.00'	737 cf	**ADS_StormTech SC-310 +Cap** x 50 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 50 Chambers in 5 Rows
		1,899 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	186.50'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	188.50'	**8.0" Round Culvert X 2.00** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 188.50' / 187.90' S= 0.0200 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.35 sf

Discarded OutFlow Max=0.04 cfs @ 10.60 hrs HW=186.53' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=186.50' (Free Discharge)
↑—**2=Culvert** (Controls 0.00 cfs)

Pond C9: Banked Parking chambers - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)
Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 3.0" Spacing = 37.0" C-C Row Spacing

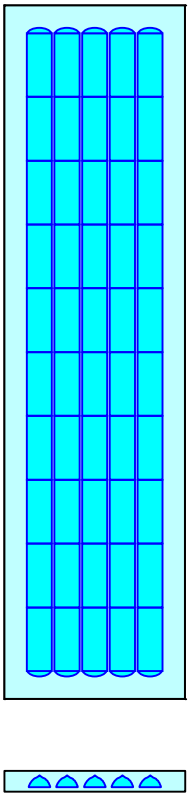
10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +30.0" End Stone x 2 = 77.40' Base Length
5 Rows x 34.0" Wide + 3.0" Spacing x 4 + 30.0" Side Stone x 2 = 20.17' Base Width
6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

50 Chambers x 14.7 cf = 737.1 cf Chamber Storage

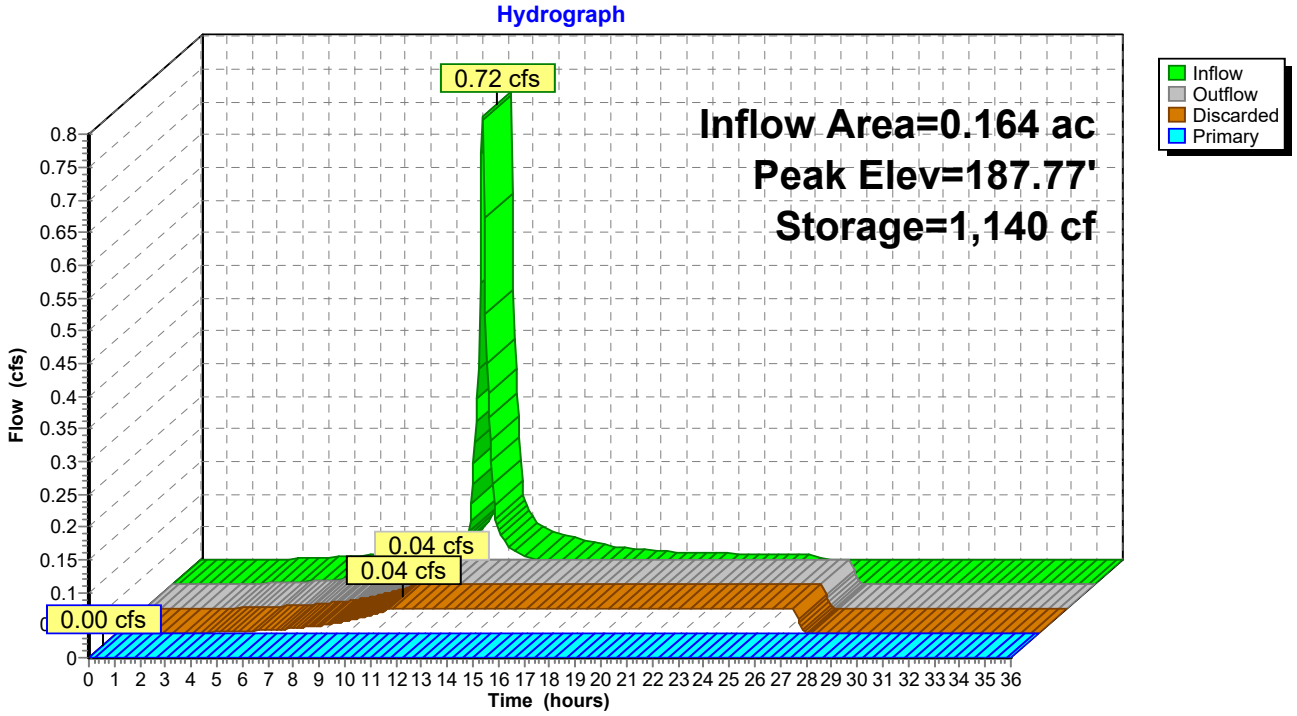
3,642.1 cf Field - 737.1 cf Chambers = 2,905.0 cf Stone x 40.0% Voids = 1,162.0 cf Stone Storage

Chamber Storage + Stone Storage = 1,899.1 cf = 0.044 af
Overall Storage Efficiency = 52.1%
Overall System Size = 77.40' x 20.17' x 2.33'

50 Chambers
134.9 cy Field
107.6 cy Stone



Pond C9: Banked Parking chambers

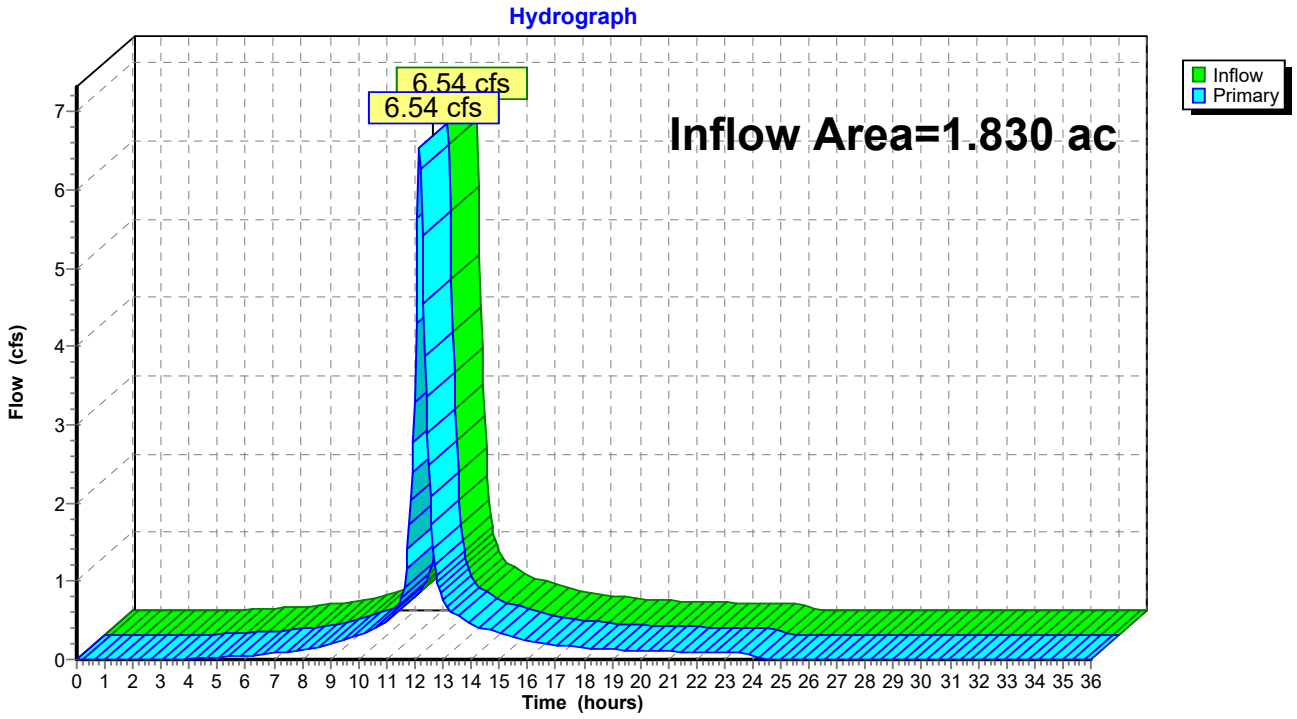


Summary for Link 1L: Ex. CB w/15" RCP to 3 Federal

Inflow Area = 1.830 ac, 73.47% Impervious, Inflow Depth = 3.97" for 10-Year event
Inflow = 6.54 cfs @ 12.16 hrs, Volume= 0.606 af
Primary = 6.54 cfs @ 12.16 hrs, Volume= 0.606 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link 1L: Ex. CB w/15" RCP to 3 Federal

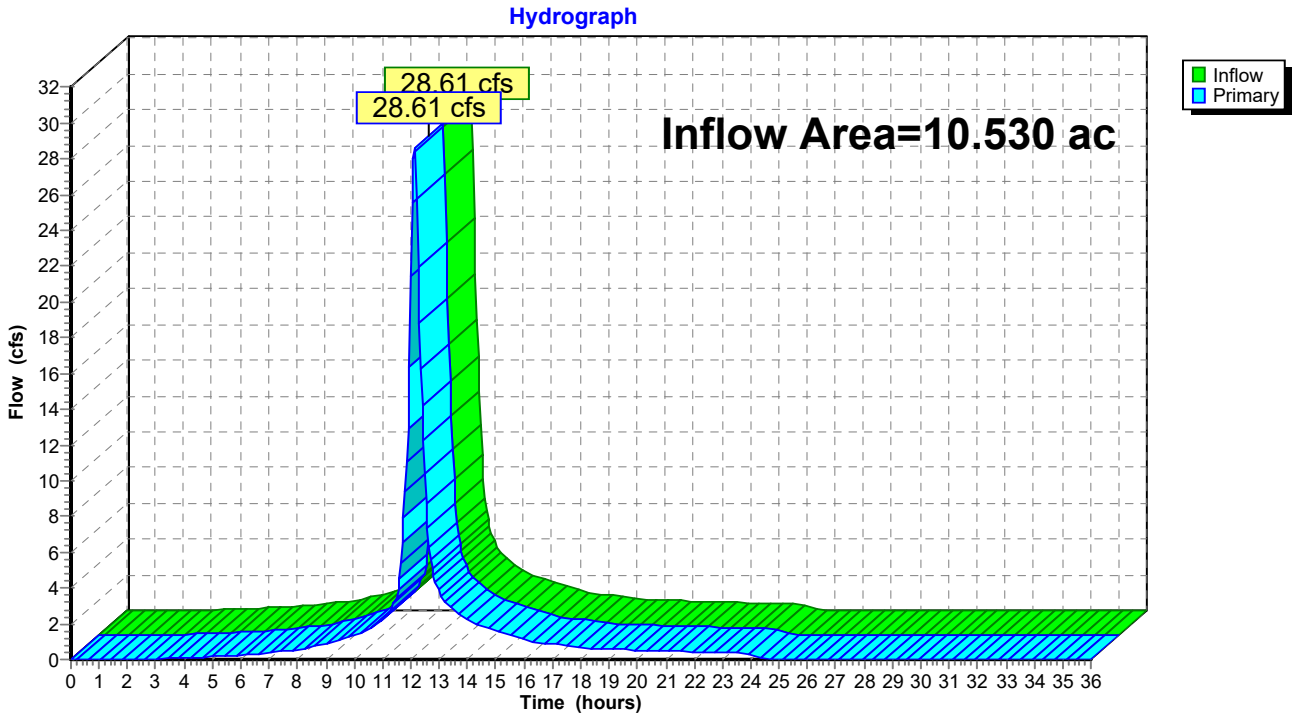


Summary for Link 2L: Flow to BVW

Inflow Area = 10.530 ac, 67.32% Impervious, Inflow Depth = 3.27" for 10-Year event
Inflow = 28.61 cfs @ 12.13 hrs, Volume= 2.871 af
Primary = 28.61 cfs @ 12.13 hrs, Volume= 2.871 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link 2L: Flow to BVW

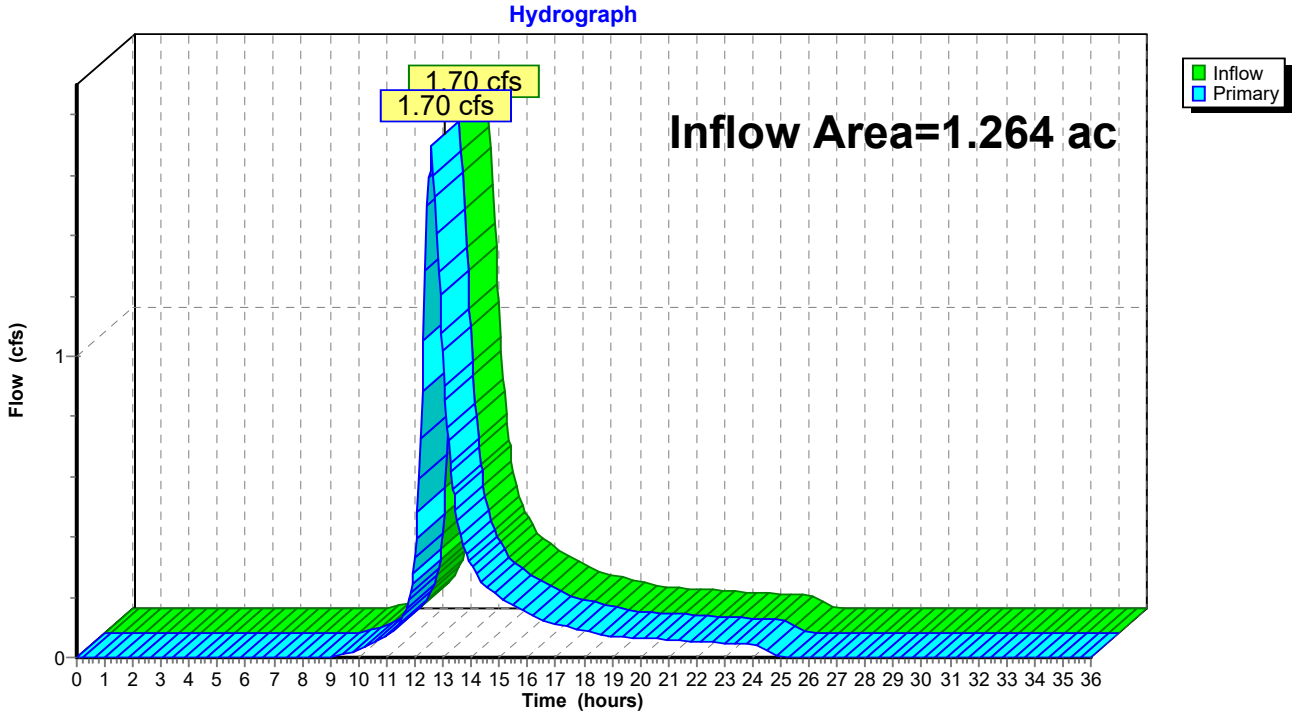


Summary for Link 3L: Northeast area at 2 Federal

Inflow Area = 1.264 ac, 6.13% Impervious, Inflow Depth = 2.32" for 10-Year event
Inflow = 1.70 cfs @ 12.60 hrs, Volume= 0.244 af
Primary = 1.70 cfs @ 12.60 hrs, Volume= 0.244 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link 3L: Northeast area at 2 Federal

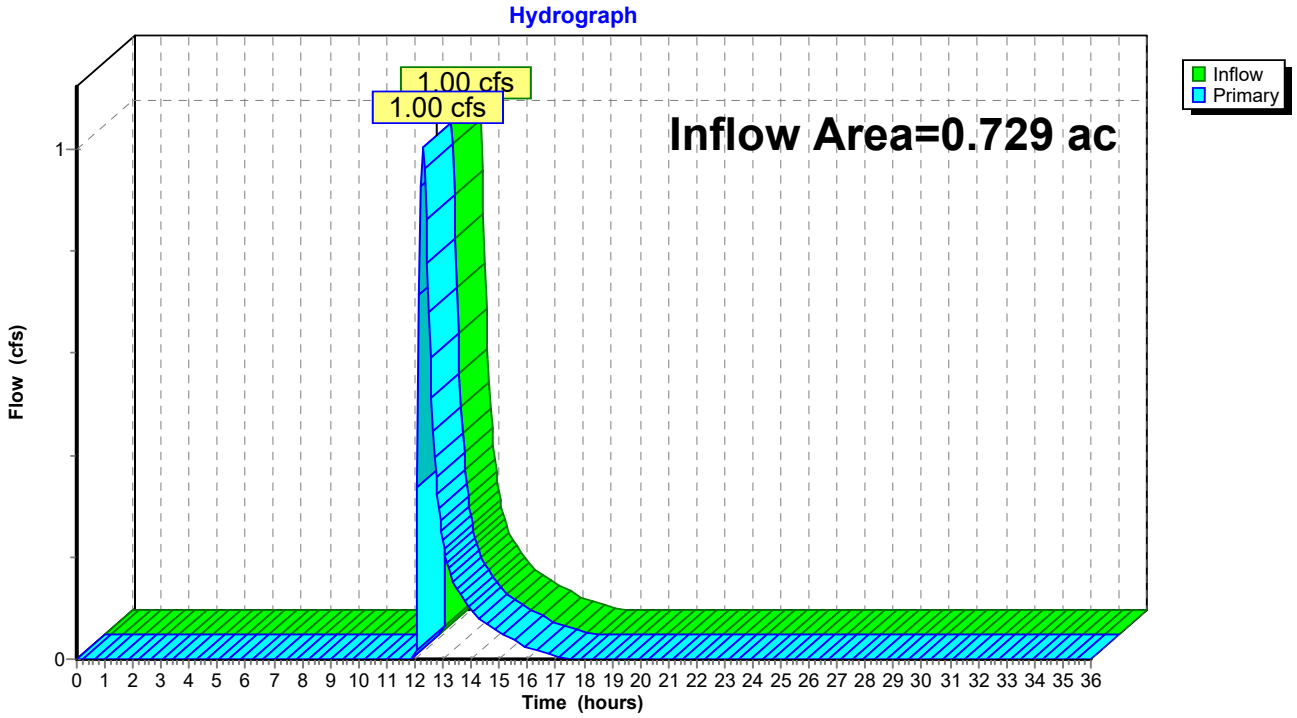


Summary for Link 14L: Outflow of Combined INF Systems

Inflow Area = 0.729 ac, 91.98% Impervious, Inflow Depth = 1.10" for 10-Year event
Inflow = 1.00 cfs @ 12.27 hrs, Volume= 0.067 af
Primary = 1.00 cfs @ 12.27 hrs, Volume= 0.067 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 1R-4 : new 24"

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link 14L: Outflow of Combined INF Systems



Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment16S: Rear of Garage Runoff Area=3,234 sf 100.00% Impervious Runoff Depth=8.38"
Tc=6.0 min CN=98 Runoff=0.61 cfs 0.052 af

Subcatchment18S: Subcat P-6 Runoff Area=77,509 sf 59.46% Impervious Runoff Depth=7.54"
Flow Length=136' Tc=6.4 min CN=91 Runoff=14.06 cfs 1.118 af

SubcatchmentP-1: Subcat P-1 Runoff Area=51,815 sf 0.27% Impervious Runoff Depth=5.85"
Flow Length=640' Tc=41.9 min CN=77 Runoff=3.89 cfs 0.579 af

SubcatchmentP-2: Subcat P-2 Runoff Area=64,335 sf 0.00% Impervious Runoff Depth=5.85"
Flow Length=110' Tc=13.1 min CN=77 Runoff=7.91 cfs 0.720 af

SubcatchmentP-2.1: Subcat P-2.1 Runoff Area=2,636 sf 85.24% Impervious Runoff Depth=8.02"
Tc=6.0 min CN=95 Runoff=0.50 cfs 0.040 af

SubcatchmentP-2.10: Subcat P-2.10 Runoff Area=0.132 ac 89.76% Impervious Runoff Depth=8.14"
Tc=0.0 min CN=96 Runoff=1.28 cfs 0.090 af

SubcatchmentP-2.11: Subcat P-2.11 Runoff Area=9,060 sf 76.19% Impervious Runoff Depth=7.90"
Tc=6.0 min CN=94 Runoff=1.69 cfs 0.137 af

SubcatchmentP-2.12: Subcat P-2.12 Runoff Area=0.271 ac 53.80% Impervious Runoff Depth=7.42"
Tc=0.0 min CN=90 Runoff=2.51 cfs 0.167 af

SubcatchmentP-2.2: Subcat P-2.2 Runoff Area=14,052 sf 78.78% Impervious Runoff Depth=7.90"
Tc=6.0 min CN=94 Runoff=2.62 cfs 0.212 af

SubcatchmentP-2.3: Subcat P-2.3 Runoff Area=9,223 sf 74.06% Impervious Runoff Depth=7.78"
Tc=6.0 min CN=93 Runoff=1.71 cfs 0.137 af

SubcatchmentP-2.4: Subcat P-2.4 Runoff Area=7,571 sf 86.37% Impervious Runoff Depth=8.14"
Tc=6.0 min CN=96 Runoff=1.43 cfs 0.118 af

SubcatchmentP-2.5: Subcat P-2.5 Runoff Area=0.389 ac 69.88% Impervious Runoff Depth=7.78"
Tc=0.0 min CN=93 Runoff=3.69 cfs 0.252 af

SubcatchmentP-2.6: Subcat P-2.6 Runoff Area=10,714 sf 78.32% Impervious Runoff Depth=7.90"
Tc=6.0 min CN=94 Runoff=2.00 cfs 0.162 af

SubcatchmentP-2.7: Subcat P-2.7 Runoff Area=5,677 sf 76.94% Impervious Runoff Depth=7.90"
Tc=6.0 min CN=94 Runoff=1.06 cfs 0.086 af

SubcatchmentP-2.8: Subcat P-2.8 Runoff Area=13,094 sf 90.54% Impervious Runoff Depth=8.14"
Tc=6.0 min CN=96 Runoff=2.47 cfs 0.204 af

SubcatchmentP-2.9: Subcat P-2.9 Runoff Area=13,195 sf 92.27% Impervious Runoff Depth=8.26"
Tc=6.0 min CN=97 Runoff=2.50 cfs 0.209 af

Subcatchment P-3: Subcat P-3 Runoff Area=35,147 sf 89.05% Impervious Runoff Depth=8.14"
Tc=6.0 min CN=96 Runoff=6.63 cfs 0.547 af

Subcatchment P-4: Subcat P-4 Runoff Area=30,751 sf 86.54% Impervious Runoff Depth=8.14"
Tc=6.0 min CN=96 Runoff=5.80 cfs 0.479 af

Subcatchment P-5: Subcat P-5 Runoff Area=30,541 sf 83.59% Impervious Runoff Depth=8.02"
Tc=6.0 min CN=95 Runoff=5.74 cfs 0.469 af

Subcatchment P-7: Subcat P-7 Runoff Area=79,718 sf 73.47% Impervious Runoff Depth=7.78"
Flow Length=220' Slope=0.0100 '/' Tc=12.3 min CN=93 Runoff=12.35 cfs 1.186 af

Subcatchment R-1: Subcat R-1 Runoff Area=13,004 sf 100.00% Impervious Runoff Depth=8.38"
Tc=0.0 min CN=98 Runoff=2.89 cfs 0.208 af

Subcatchment R-2: Subcat R-2 Runoff Area=0.355 ac 100.00% Impervious Runoff Depth=8.38"
Tc=0.0 min CN=98 Runoff=3.44 cfs 0.248 af

Subcatchment R-3: Subcat R-3 Runoff Area=33,729 sf 74.84% Impervious Runoff Depth=7.78"
Tc=0.0 min CN=93 Runoff=7.34 cfs 0.502 af

Subcatchment R-4: Subcat R-4 Runoff Area=5,028 sf 100.00% Impervious Runoff Depth=8.38"
Tc=0.0 min CN=98 Runoff=1.12 cfs 0.081 af

Subcatchment R-5: Subcat R-5 Runoff Area=8,189 sf 100.00% Impervious Runoff Depth=8.38"
Tc=0.0 min CN=98 Runoff=1.82 cfs 0.131 af

Subcatchment R-6: Subcat R-6 Runoff Area=4,632 sf 100.00% Impervious Runoff Depth=8.38"
Tc=0.0 min CN=98 Runoff=1.03 cfs 0.074 af

Subcatchment S-1: Subcat S-1 Runoff Area=7,148 sf 80.13% Impervious Runoff Depth=7.90"
Tc=6.0 min CN=94 Runoff=1.34 cfs 0.108 af

Subcatchment S-2: Subcat S-2 Runoff Area=13,478 sf 61.16% Impervious Runoff Depth=7.54"
Tc=6.0 min CN=91 Runoff=2.47 cfs 0.194 af

Reach 1R-1: Ex. 18" RCP Avg. Flow Depth=1.29' Max Vel=4.09 fps Inflow=6.63 cfs 0.547 af
18.0" Round Pipe n=0.013 L=120.0' S=0.0037 '/' Capacity=6.36 cfs Outflow=6.48 cfs 0.547 af

Reach 1R-2: New 18" ADS Avg. Flow Depth=1.50' Max Vel=4.67 fps Inflow=9.00 cfs 0.790 af
18.0" Round Pipe n=0.011 L=116.0' S=0.0035 '/' Capacity=7.38 cfs Outflow=7.38 cfs 0.790 af

Reach 1R-3: new 24" Avg. Flow Depth=1.14' Max Vel=4.01 fps Inflow=7.38 cfs 0.790 af
24.0" Round Pipe n=0.011 L=315.0' S=0.0020 '/' Capacity=11.96 cfs Outflow=7.42 cfs 0.790 af

Reach 1R-4: new 24" Avg. Flow Depth=2.00' Max Vel=4.33 fps Inflow=13.24 cfs 1.242 af
24.0" Round Pipe n=0.011 L=160.0' S=0.0020 '/' Capacity=11.96 cfs Outflow=12.54 cfs 1.242 af

Reach 1R-5: new 24" Avg. Flow Depth=1.74' Max Vel=4.87 fps Inflow=14.17 cfs 1.379 af
24.0" Round Pipe n=0.011 L=95.0' S=0.0025 '/' Capacity=13.44 cfs Outflow=14.00 cfs 1.379 af

Reach 1R-6: New 24" ADS Avg. Flow Depth=2.00' Max Vel=4.73 fps Inflow=15.03 cfs 1.546 af
24.0" Round Pipe n=0.011 L=50.0' S=0.0024 '/' Capacity=13.10 cfs Outflow=13.91 cfs 1.546 af

Reach 2R-1: new 12" west Avg. Flow Depth=0.23' Max Vel=3.59 fps Inflow=0.50 cfs 0.040 af
12.0" Round Pipe n=0.011 L=150.0' S=0.0100 '/' Capacity=4.21 cfs Outflow=0.48 cfs 0.040 af

Reach 2R-2: new 12" Avg. Flow Depth=0.72' Max Vel=6.02 fps Inflow=3.66 cfs 0.327 af
12.0" Round Pipe n=0.011 L=75.0' S=0.0100 '/' Capacity=4.21 cfs Outflow=3.64 cfs 0.327 af

Reach 2R-3: new 12" Avg. Flow Depth=1.00' Max Vel=7.47 fps Inflow=6.51 cfs 0.596 af
12.0" Round Pipe n=0.011 L=80.0' S=0.0150 '/' Capacity=5.16 cfs Outflow=5.16 cfs 0.596 af

Reach 2R-4: new 18" Avg. Flow Depth=1.50' Max Vel=6.20 fps Inflow=13.45 cfs 1.215 af
18.0" Round Pipe n=0.011 L=150.0' S=0.0060 '/' Capacity=9.62 cfs Outflow=9.64 cfs 1.215 af

Reach 2R-5: new 18" Avg. Flow Depth=1.50' Max Vel=5.65 fps Inflow=13.08 cfs 1.463 af
18.0" Round Pipe n=0.011 L=60.0' S=0.0050 '/' Capacity=8.78 cfs Outflow=8.78 cfs 1.463 af

Reach 3R: Ex. 12" RCP Avg. Flow Depth=1.00' Max Vel=5.37 fps Inflow=5.80 cfs 0.479 af
12.0" Round Pipe n=0.013 L=64.0' S=0.0108 '/' Capacity=3.70 cfs Outflow=4.06 cfs 0.479 af

Reach 4R: Ex. 15" RCP Avg. Flow Depth=0.91' Max Vel=4.18 fps Inflow=4.06 cfs 0.479 af
15.0" Round Pipe n=0.013 L=44.0' S=0.0050 '/' Capacity=4.57 cfs Outflow=4.01 cfs 0.479 af

Reach 7R: Ex. 24" RCP Avg. Flow Depth=2.00' Max Vel=4.80 fps Inflow=23.45 cfs 2.065 af
24.0" Round Pipe n=0.013 L=154.0' S=0.0035 '/' Capacity=13.40 cfs Outflow=13.40 cfs 2.065 af

Reach 8R: Ex. 24" RCP Avg. Flow Depth=1.36' Max Vel=5.90 fps Inflow=13.40 cfs 2.065 af
24.0" Round Pipe n=0.013 L=216.0' S=0.0054 '/' Capacity=16.65 cfs Outflow=13.40 cfs 2.065 af

Pond 5P: East Rv Chambers #2 Peak Elev=190.27' Storage=4,811 cf Inflow=4.63 cfs 0.412 af
Discarded=0.07 cfs 0.184 af Primary=3.21 cfs 0.229 af Outflow=3.28 cfs 0.412 af

Pond 8P: East Rv Chambers #1 Peak Elev=189.04' Storage=1,704 cf Inflow=1.06 cfs 0.086 af
Discarded=0.04 cfs 0.076 af Primary=0.10 cfs 0.010 af Outflow=0.13 cfs 0.086 af

Pond 9P: East Rv Chambers #3 Peak Elev=189.98' Storage=1,929 cf Inflow=2.50 cfs 0.209 af
Discarded=0.03 cfs 0.085 af Primary=2.17 cfs 0.124 af Outflow=2.21 cfs 0.208 af

Pond 15P: Garage Trench Peak Elev=194.29' Storage=470 cf Inflow=0.61 cfs 0.052 af
Discarded=0.01 cfs 0.031 af Primary=0.85 cfs 0.021 af Outflow=0.86 cfs 0.052 af

Pond 17P: East Rv Chambers #4 Peak Elev=190.25' Storage=3,142 cf Inflow=3.69 cfs 0.252 af
Discarded=0.05 cfs 0.120 af Primary=2.59 cfs 0.132 af Outflow=2.64 cfs 0.252 af

Pond C8: Banked Parking chambers Peak Elev=191.33' Storage=3,729 cf Inflow=2.47 cfs 0.194 af
Discarded=0.07 cfs 0.156 af Primary=0.53 cfs 0.038 af Outflow=0.60 cfs 0.194 af

Pond C9: Banked Parking chambers Peak Elev=188.80' Storage=1,879 cf Inflow=1.34 cfs 0.108 af
Discarded=0.04 cfs 0.083 af Primary=0.45 cfs 0.025 af Outflow=0.49 cfs 0.108 af

Link 1L: Ex. CB w/15" RCP to 3 Federal Inflow=12.35 cfs 1.186 af
Primary=12.35 cfs 1.186 af

Link 2L: Flow to BVW Inflow=45.19 cfs 5.989 af
Primary=45.19 cfs 5.989 af

Link 3L: Northeast area at 2 Federal Inflow=4.08 cfs 0.601 af
Primary=4.08 cfs 0.601 af

Link 14L: Outflow of Combined INF Systems Inflow=3.21 cfs 0.238 af
Primary=3.21 cfs 0.238 af

Total Runoff Area = 13.624 ac Runoff Volume = 8.510 af Average Runoff Depth = 7.50"
37.53% Pervious = 5.113 ac 62.47% Impervious = 8.511 ac

Summary for Subcatchment 16S: Rear of Garage

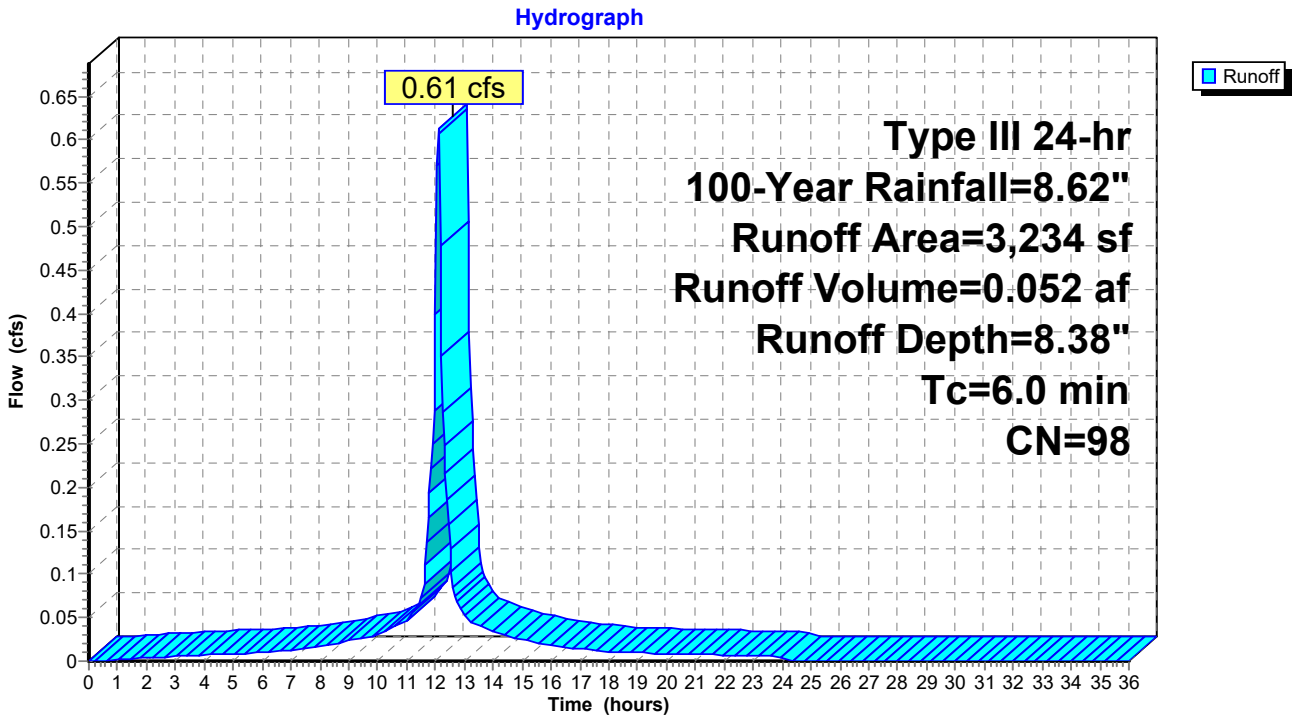
Runoff = 0.61 cfs @ 12.09 hrs, Volume= 0.052 af, Depth= 8.38"
Routed to Pond 15P : Garage Trench

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (sf)	CN	Description
3,234	98	Roofs, HSG D
3,234		100.00% Impervious Area

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

Subcatchment 16S: Rear of Garage



Summary for Subcatchment 18S: Subcat P-6

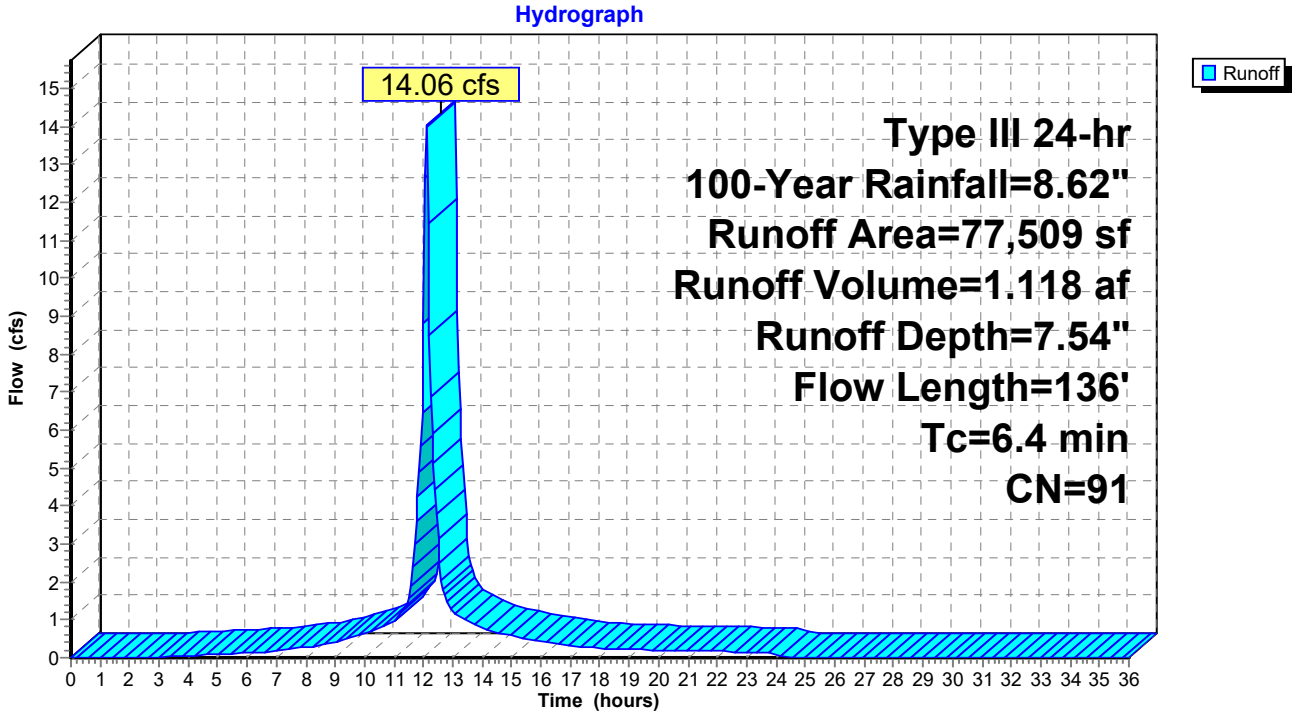
Runoff = 14.06 cfs @ 12.09 hrs, Volume= 1.118 af, Depth= 7.54"
Routed to Reach 7R : Ex. 24" RCP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (sf)	CN	Description
28,079	80	>75% Grass cover, Good, HSG D
26,495	98	Paved parking, HSG D
19,592	98	Roofs, HSG D
3,343	77	Woods, Good, HSG D
77,509	91	Weighted Average
31,422		40.54% Pervious Area
46,087		59.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	50	0.0200	0.15		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 3.21"
0.5	48	0.0100	1.61		**Shallow Concentrated Flow, BC** Unpaved Kv= 16.1 fps
0.3	38	0.0100	2.03		**Shallow Concentrated Flow, CD** Paved Kv= 20.3 fps
6.4	136	Total			

Subcatchment 18S: Subcat P-6



Summary for Subcatchment P-1: Subcat P-1

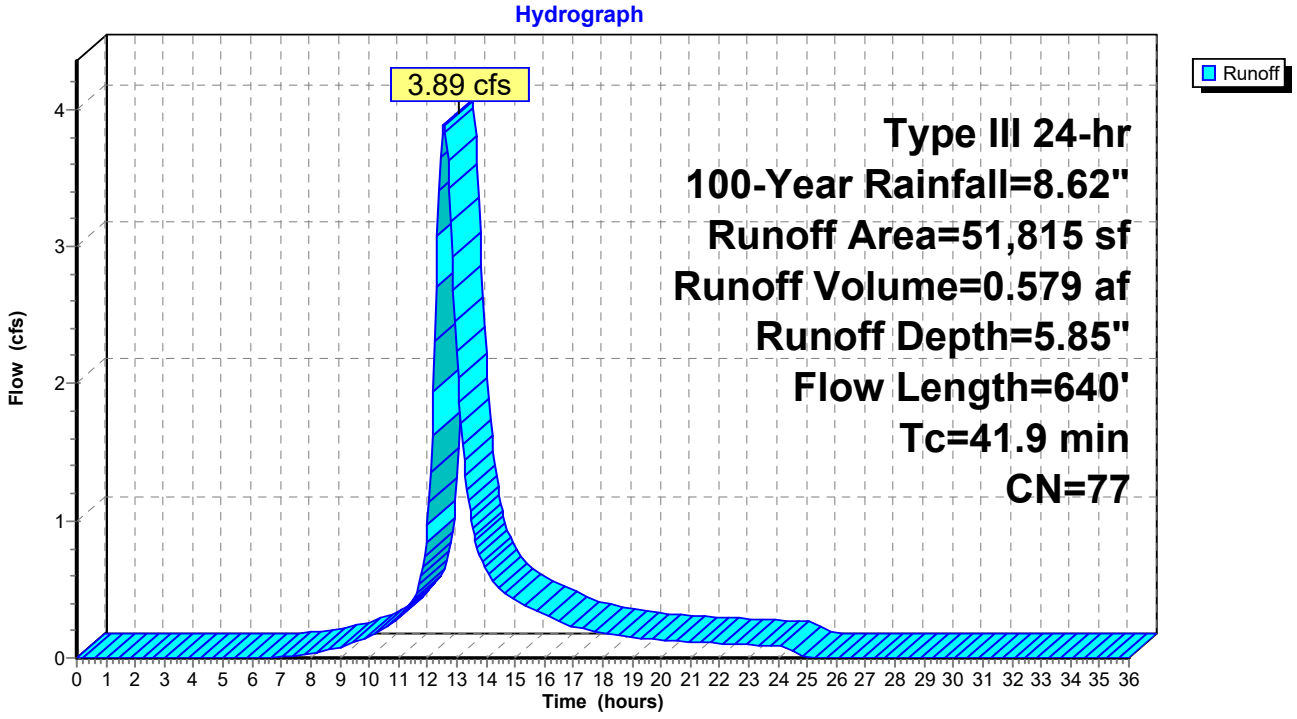
Runoff = 3.89 cfs @ 12.57 hrs, Volume= 0.579 af, Depth= 5.85"
Routed to Link 3L : Northeast area at 2 Federal

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (sf)	CN	Description
5,634	80	>75% Grass cover, Good, HSG D
139	98	Paved parking, HSG D
46,042	77	Woods, Good, HSG D
51,815	77	Weighted Average
51,676		99.73% Pervious Area
139		0.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.9	50	0.0060	0.04		**Sheet Flow, AB** Woods: Light underbrush n= 0.400 P2= 3.21"
22.0	590	0.0080	0.45		**Shallow Concentrated Flow, BC** Woodland Kv= 5.0 fps
41.9	640	Total			

Subcatchment P-1: Subcat P-1



Summary for Subcatchment P-2: Subcat P-2

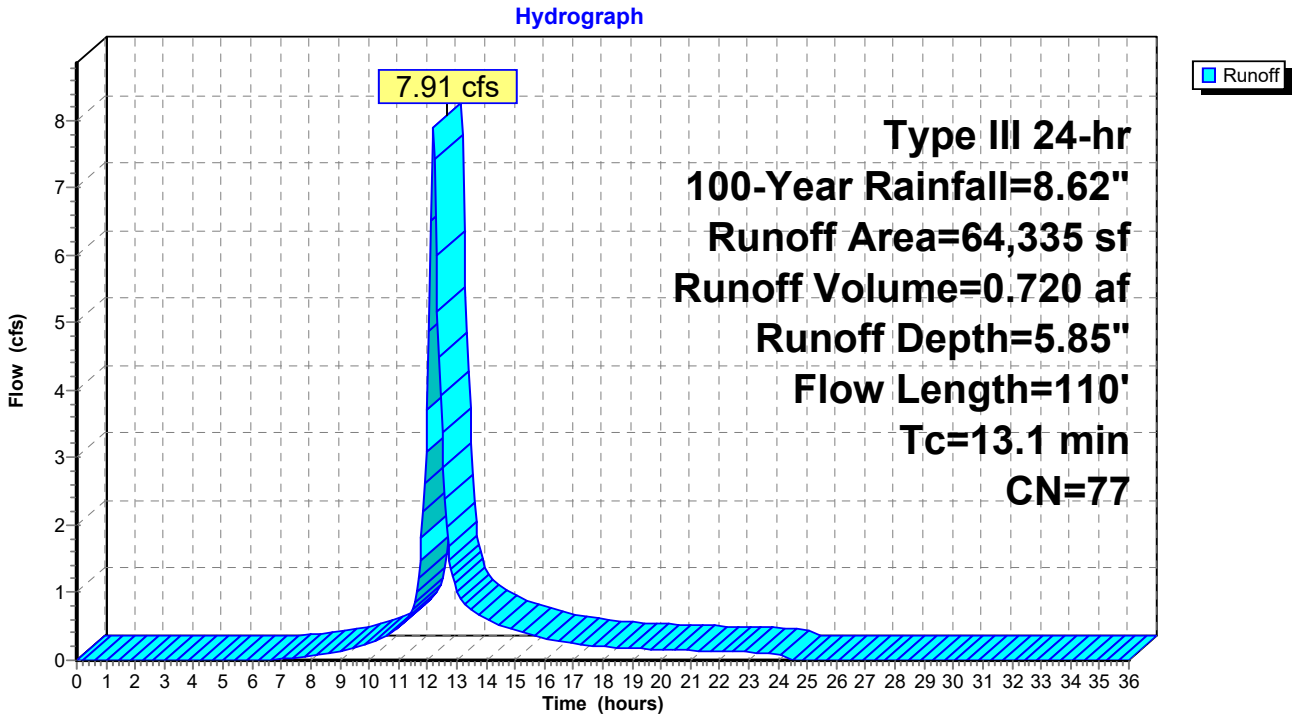
Runoff = 7.91 cfs @ 12.18 hrs, Volume= 0.720 af, Depth= 5.85"
Routed to Link 2L : Flow to BVW

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (sf)	CN	Description
8,544	80	>75% Grass cover, Good, HSG D
55,791	77	Woods, Good, HSG D
64,335	77	Weighted Average
64,335		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	50	0.0200	0.07		**Sheet Flow, AB** Woods: Light underbrush n= 0.400 P2= 3.21"
0.8	60	0.0700	1.32		**Shallow Concentrated Flow, BC** Woodland Kv= 5.0 fps
13.1	110	Total			

Subcatchment P-2: Subcat P-2



Summary for Subcatchment P-2.1: Subcat P-2.1

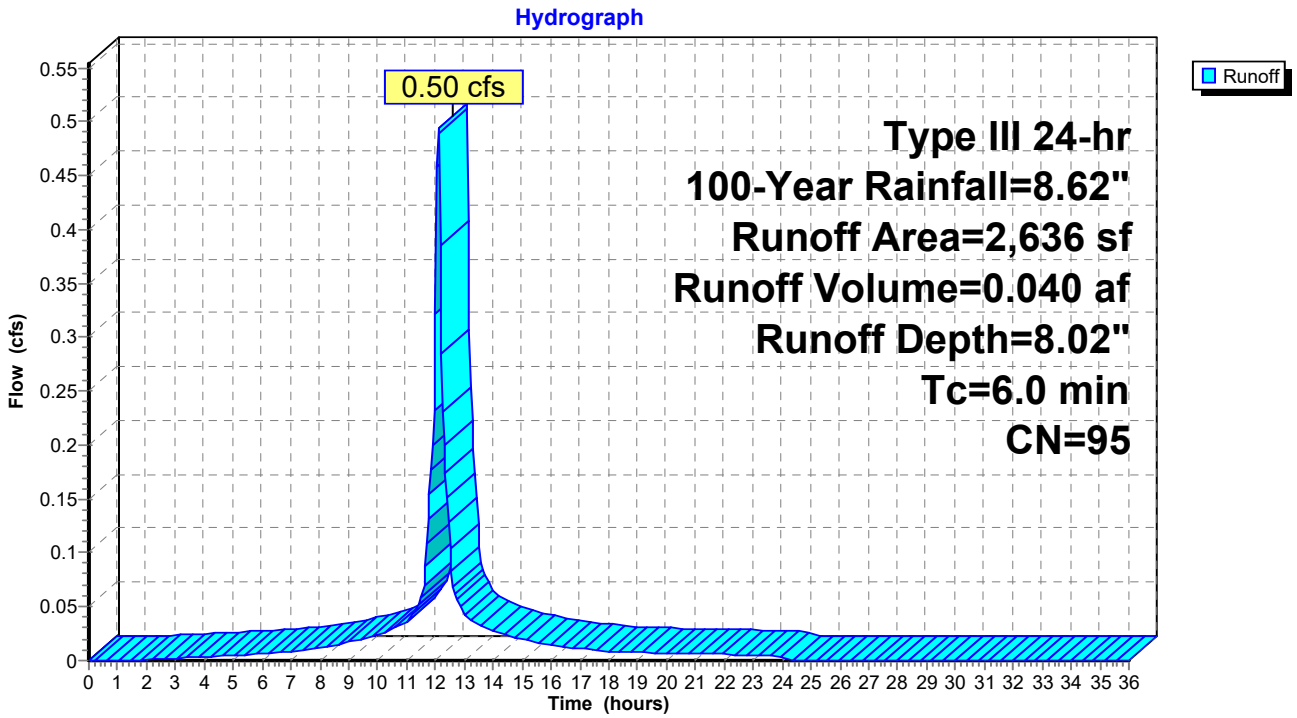
Runoff = 0.50 cfs @ 12.09 hrs, Volume= 0.040 af, Depth= 8.02"
Routed to Reach 2R-1 : new 12" west

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (sf)	CN	Description
389	80	>75% Grass cover, Good, HSG D
2,247	98	Paved parking, HSG D
2,636	95	Weighted Average
389		14.76% Pervious Area
2,247		85.24% Impervious Area

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

Subcatchment P-2.1: Subcat P-2.1



Summary for Subcatchment P-2.10: Subcat P-2.10

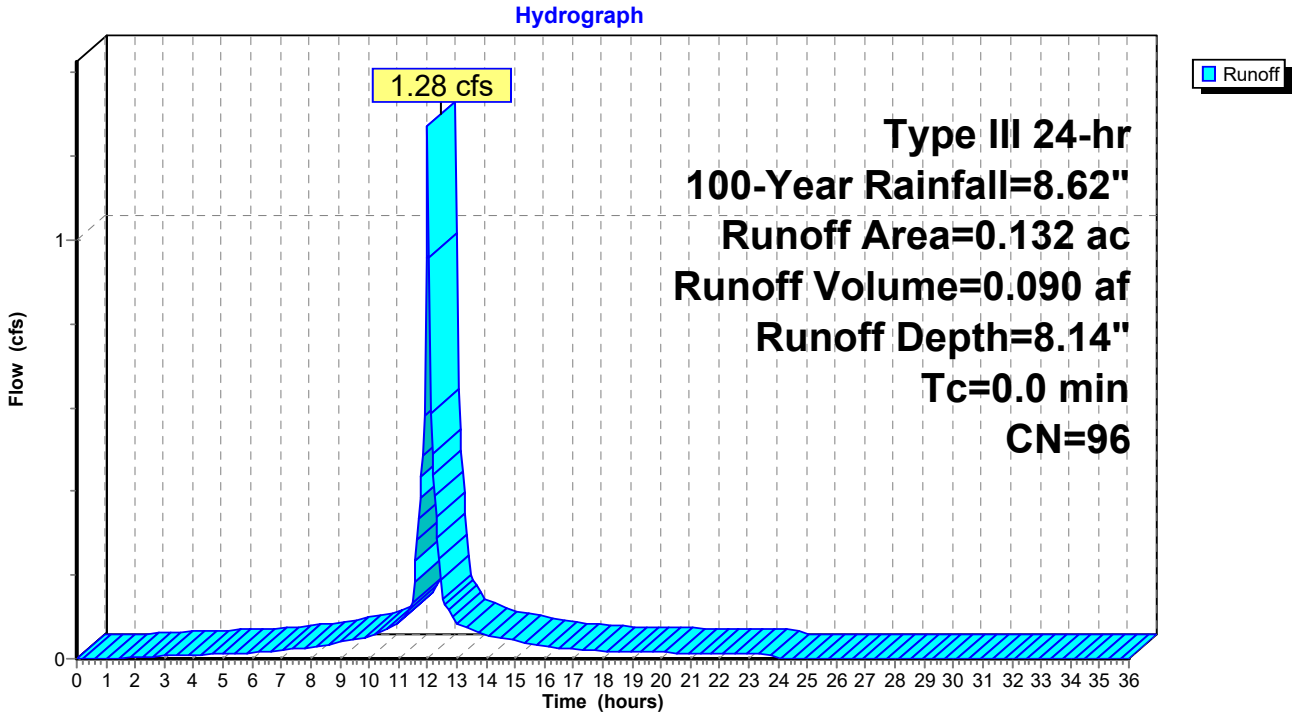
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 1.28 cfs @ 12.00 hrs, Volume= 0.090 af, Depth= 8.14"
Routed to Reach 1R-4 : new 24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (ac)	CN	Description
0.014	80	>75% Grass cover, Good, HSG D
0.119	98	Paved parking, HSG D
0.000	77	Woods, Good, HSG D
0.132	96	Weighted Average
0.014		10.24% Pervious Area
0.119		89.76% Impervious Area

Subcatchment P-2.10: Subcat P-2.10



Summary for Subcatchment P-2.11: Subcat P-2.11

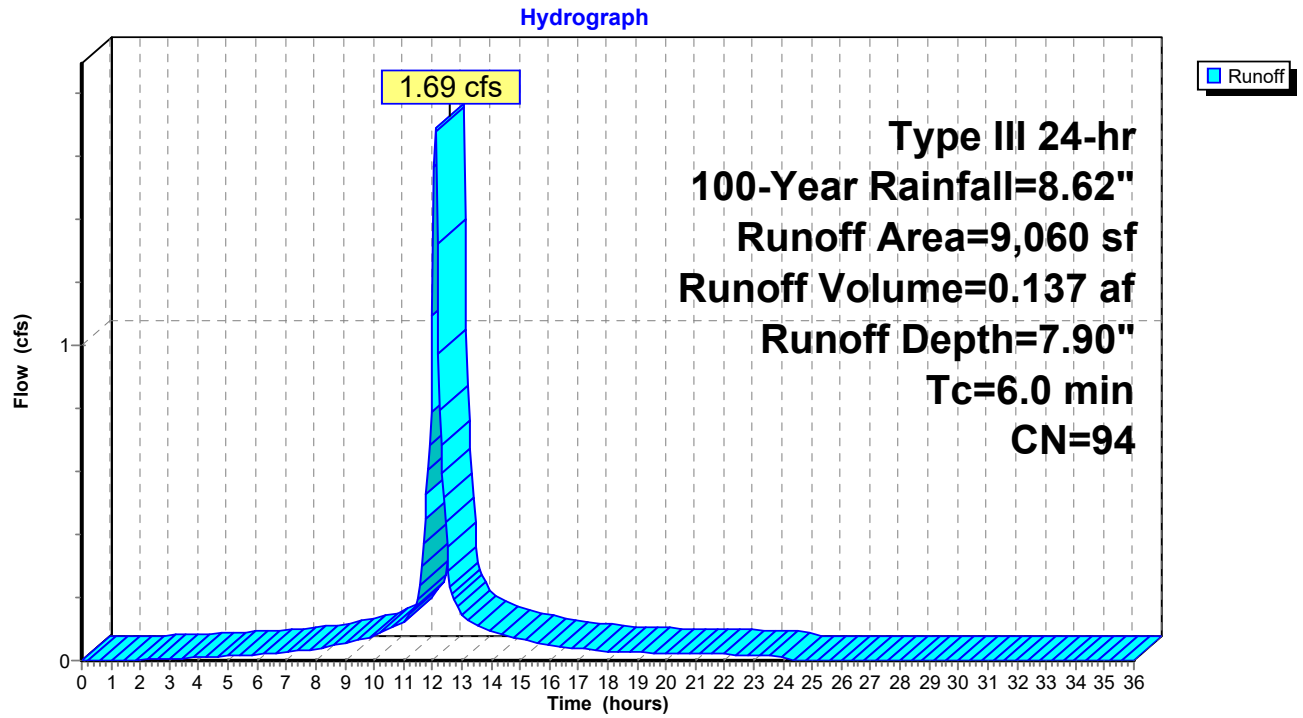
Runoff = 1.69 cfs @ 12.09 hrs, Volume= 0.137 af, Depth= 7.90"
Routed to Reach 1R-5 : new 24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (sf)	CN	Description
2,157	80	>75% Grass cover, Good, HSG D
6,902	98	Paved parking, HSG D
9,060	94	Weighted Average
2,157		23.81% Pervious Area
6,902		76.19% Impervious Area

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

Subcatchment P-2.11: Subcat P-2.11



Summary for Subcatchment P-2.12: Subcat P-2.12

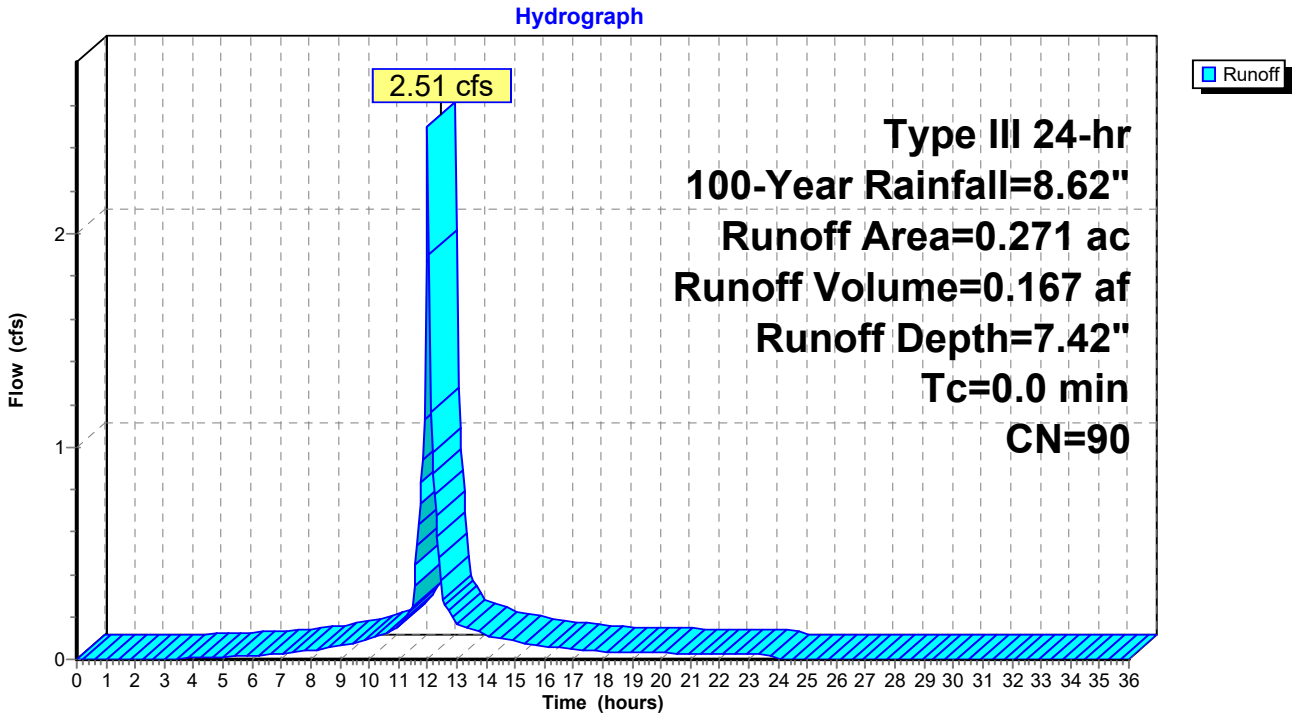
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 2.51 cfs @ 12.00 hrs, Volume= 0.167 af, Depth= 7.42"
Routed to Reach 1R-6 : New 24" ADS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (ac)	CN	Description
0.125	80	>75% Grass cover, Good, HSG D
0.146	98	Paved parking, HSG D
0.271	90	Weighted Average
0.125		46.20% Pervious Area
0.146		53.80% Impervious Area

Subcatchment P-2.12: Subcat P-2.12



Summary for Subcatchment P-2.2: Subcat P-2.2

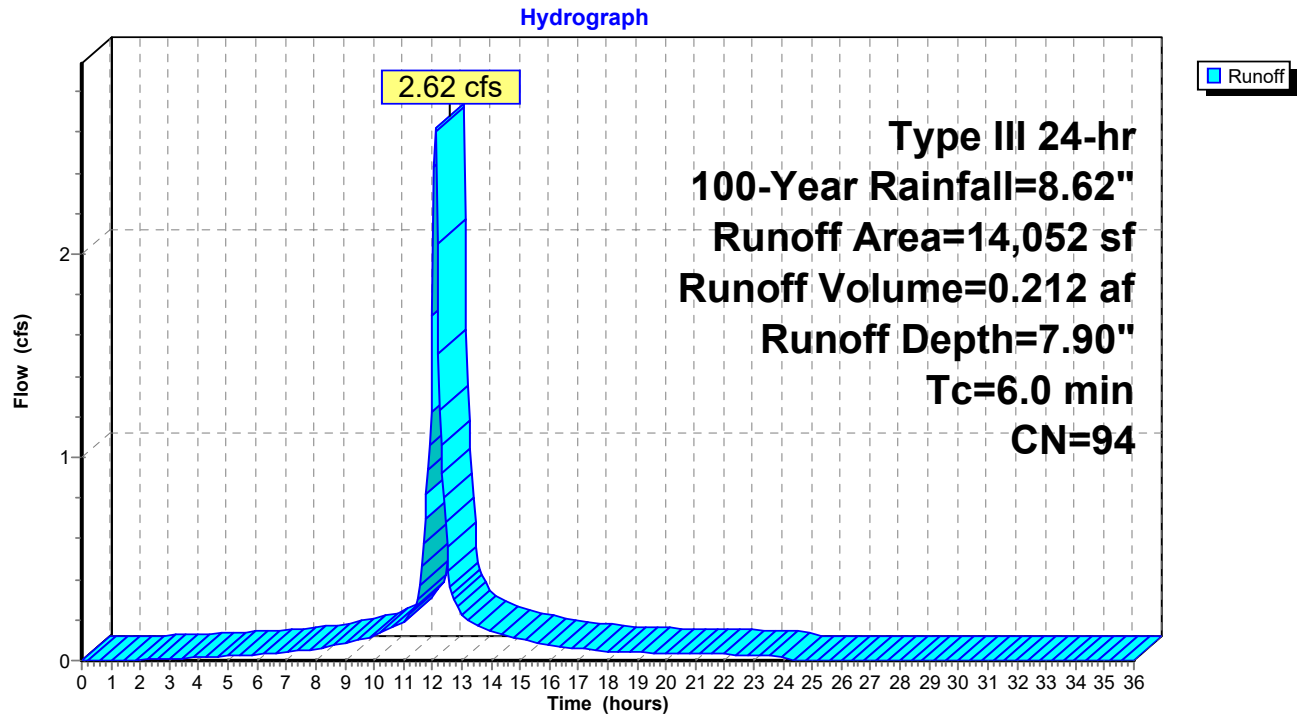
Runoff = 2.62 cfs @ 12.09 hrs, Volume= 0.212 af, Depth= 7.90"
Routed to Reach 2R-2 : new 12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (sf)	CN	Description
2,981	80	>75% Grass cover, Good, HSG D
11,071	98	Paved parking, HSG D
14,052	94	Weighted Average
2,981		21.22% Pervious Area
11,071		78.78% Impervious Area

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

Subcatchment P-2.2: Subcat P-2.2



Summary for Subcatchment P-2.3: Subcat P-2.3

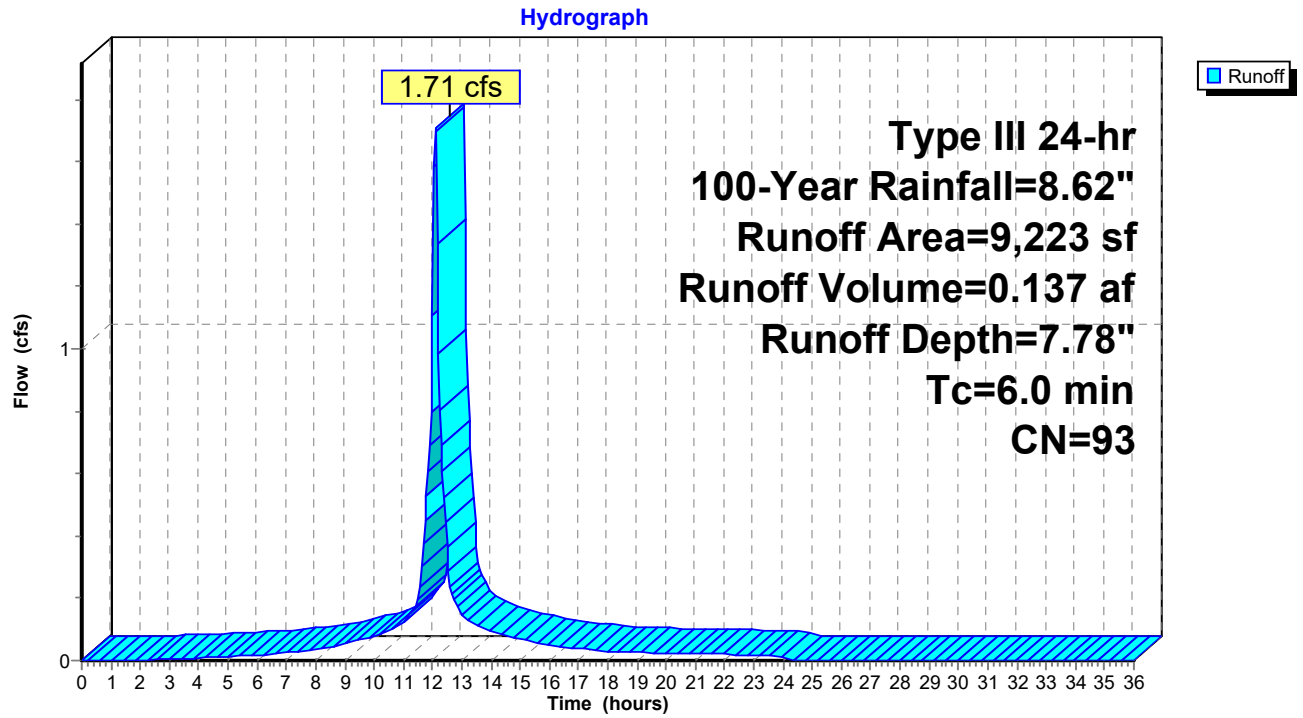
Runoff = 1.71 cfs @ 12.09 hrs, Volume= 0.137 af, Depth= 7.78"
Routed to Reach 2R-3 : new 12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (sf)	CN	Description
2,393	80	>75% Grass cover, Good, HSG D
6,830	98	Paved parking, HSG D
9,223	93	Weighted Average
2,393		25.94% Pervious Area
6,830		74.06% Impervious Area

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

Subcatchment P-2.3: Subcat P-2.3



Summary for Subcatchment P-2.4: Subcat P-2.4

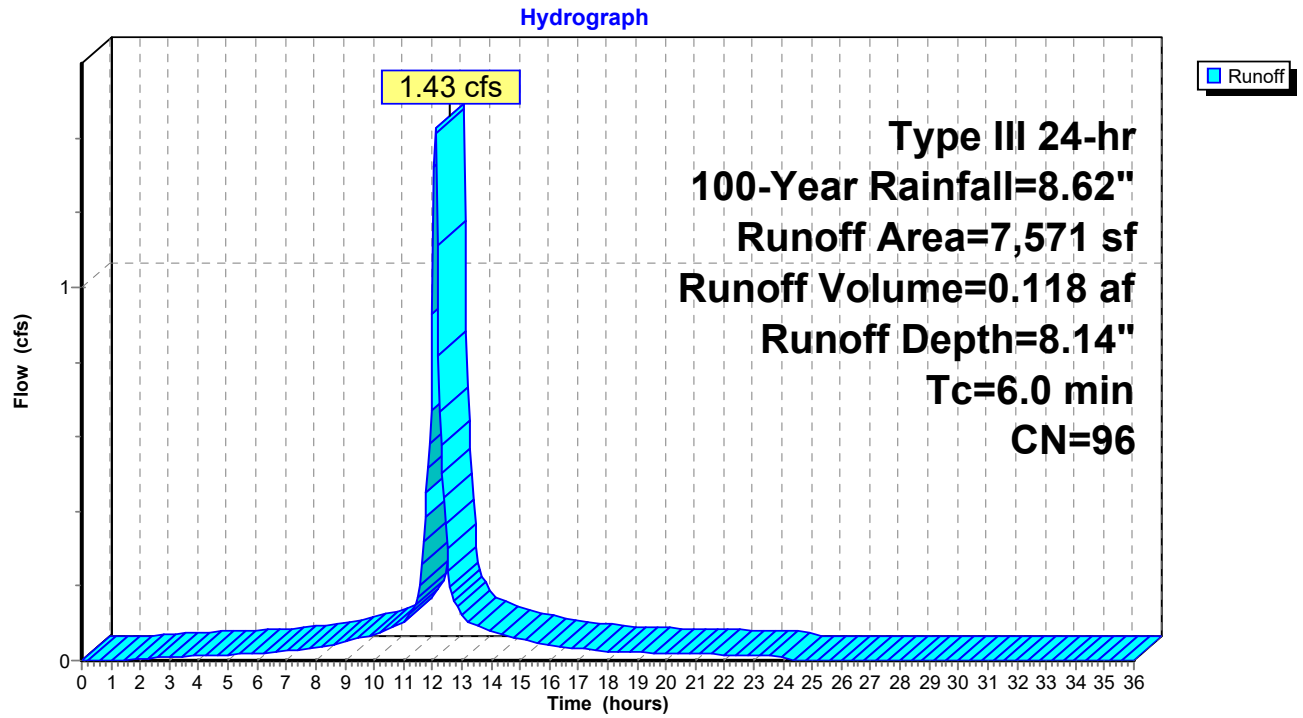
Runoff = 1.43 cfs @ 12.09 hrs, Volume= 0.118 af, Depth= 8.14"
Routed to Reach 2R-4 : new 18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (sf)	CN	Description
1,032	80	>75% Grass cover, Good, HSG D
6,539	98	Paved parking, HSG D
7,571	96	Weighted Average
1,032		13.63% Pervious Area
6,539		86.37% Impervious Area

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

Subcatchment P-2.4: Subcat P-2.4



Summary for Subcatchment P-2.5: Subcat P-2.5

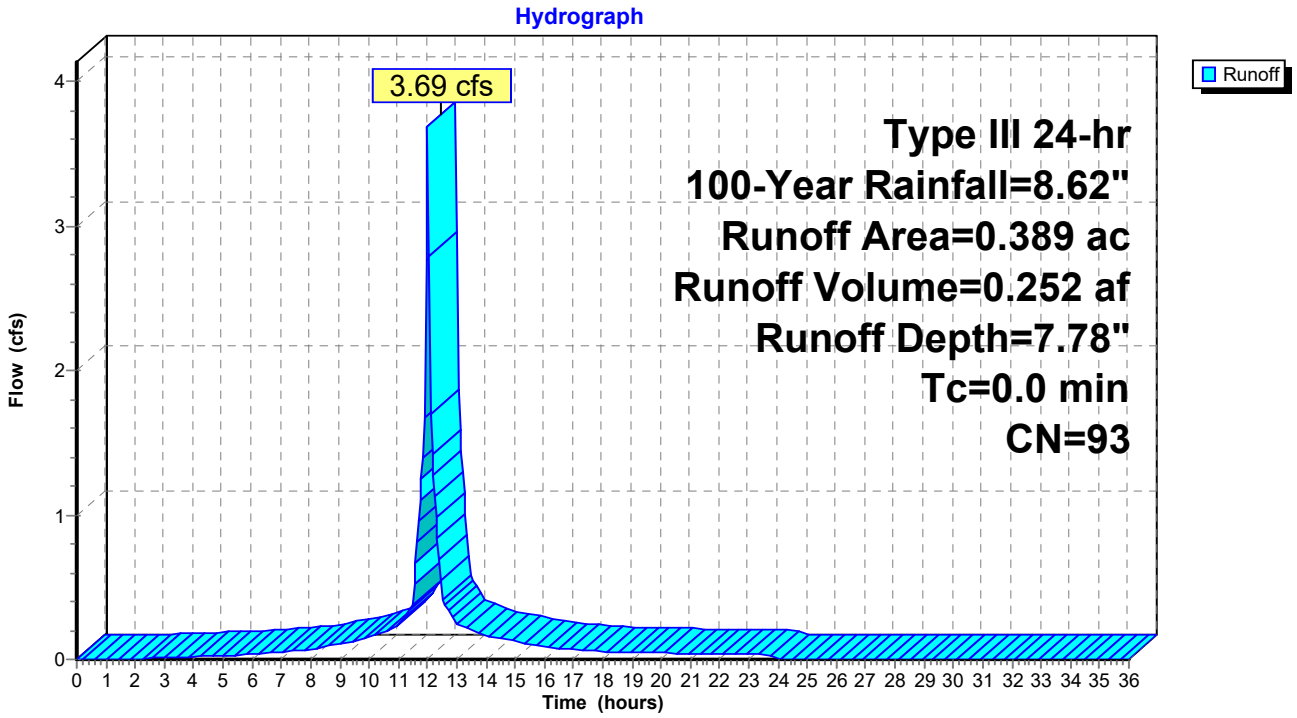
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 3.69 cfs @ 12.00 hrs, Volume= 0.252 af, Depth= 7.78"
Routed to Pond 17P : East Rv Chambers #4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (ac)	CN	Description
0.117	80	>75% Grass cover, Good, HSG D
0.272	98	Paved parking, HSG D
0.389	93	Weighted Average
0.117		30.12% Pervious Area
0.272		69.88% Impervious Area

Subcatchment P-2.5: Subcat P-2.5



Summary for Subcatchment P-2.6: Subcat P-2.6

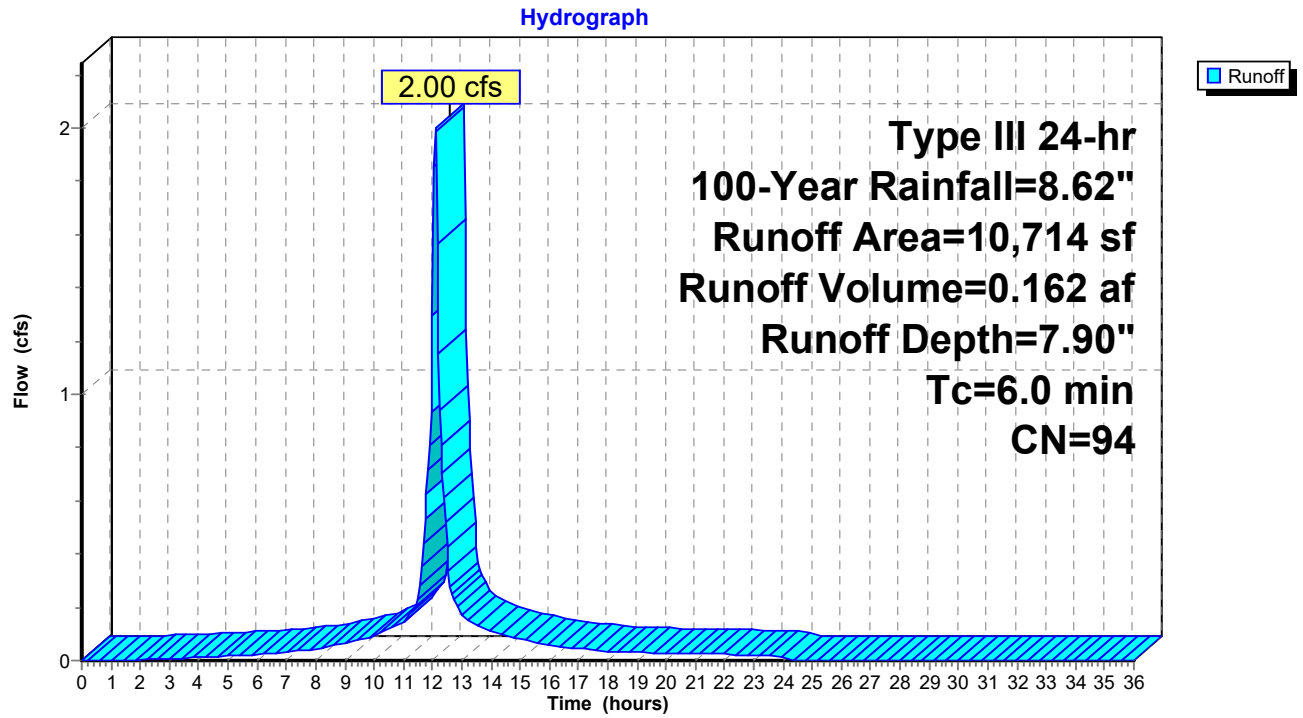
Runoff = 2.00 cfs @ 12.09 hrs, Volume= 0.162 af, Depth= 7.90"
Routed to Reach 1R-2 : New 18" ADS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (sf)	CN	Description
2,323	80	>75% Grass cover, Good, HSG D
8,391	98	Paved parking, HSG D
10,714	94	Weighted Average
2,323		21.68% Pervious Area
8,391		78.32% Impervious Area

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

Subcatchment P-2.6: Subcat P-2.6



Summary for Subcatchment P-2.7: Subcat P-2.7

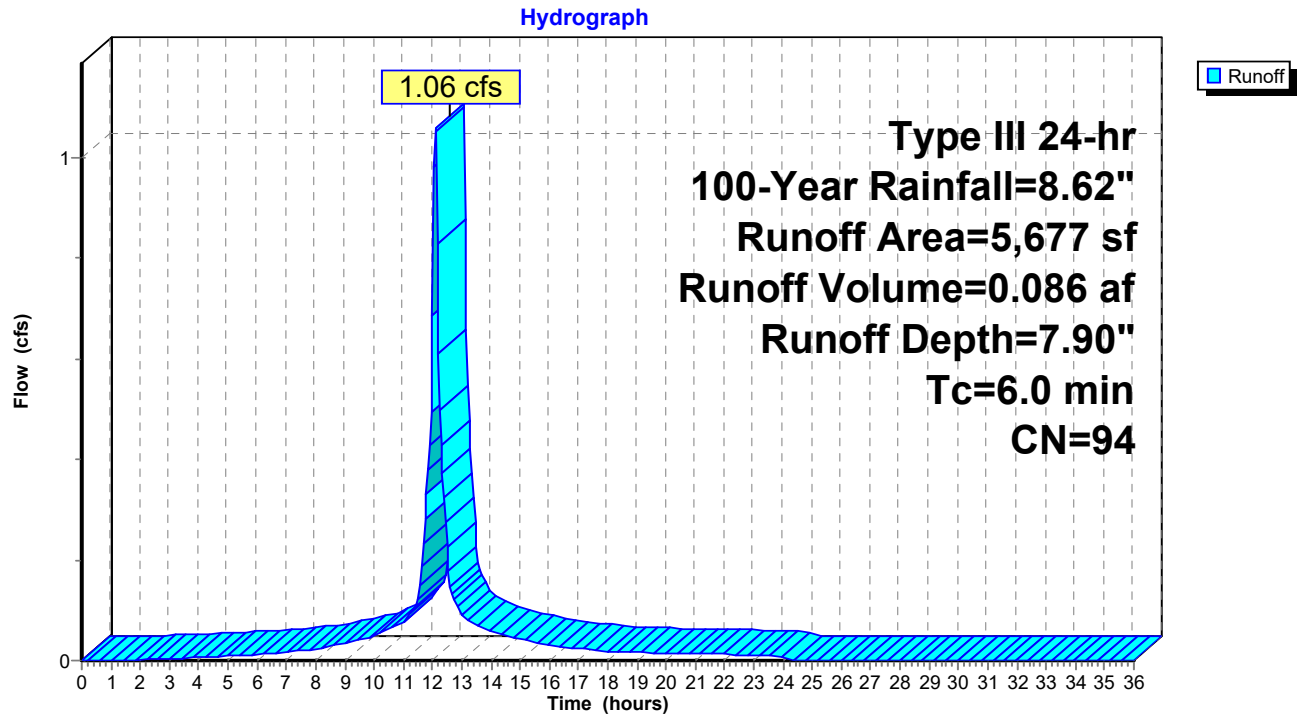
Runoff = 1.06 cfs @ 12.09 hrs, Volume= 0.086 af, Depth= 7.90"
Routed to Pond 8P : East Rv Chambers #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (sf)	CN	Description
1,309	80	>75% Grass cover, Good, HSG D
4,368	98	Paved parking, HSG D
5,677	94	Weighted Average
1,309		23.06% Pervious Area
4,368		76.94% Impervious Area

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

Subcatchment P-2.7: Subcat P-2.7



Summary for Subcatchment P-2.8: Subcat P-2.8

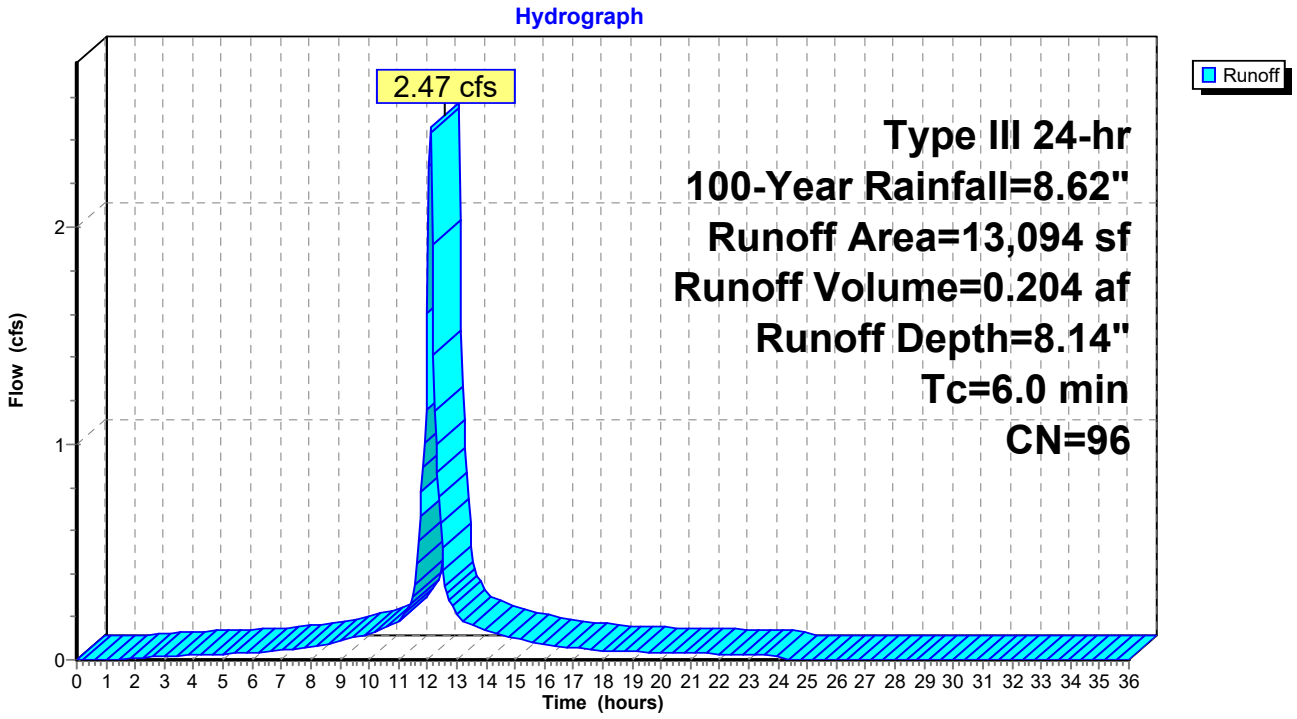
Runoff = 2.47 cfs @ 12.09 hrs, Volume= 0.204 af, Depth= 8.14"
Routed to Pond 5P : East Rv Chambers #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (sf)	CN	Description
1,239	80	>75% Grass cover, Good, HSG D
10,026	98	Paved parking, HSG D
1,828	98	Roofs, HSG D
13,094	96	Weighted Average
1,239		9.46% Pervious Area
11,854		90.54% Impervious Area

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

Subcatchment P-2.8: Subcat P-2.8



Summary for Subcatchment P-2.9: Subcat P-2.9

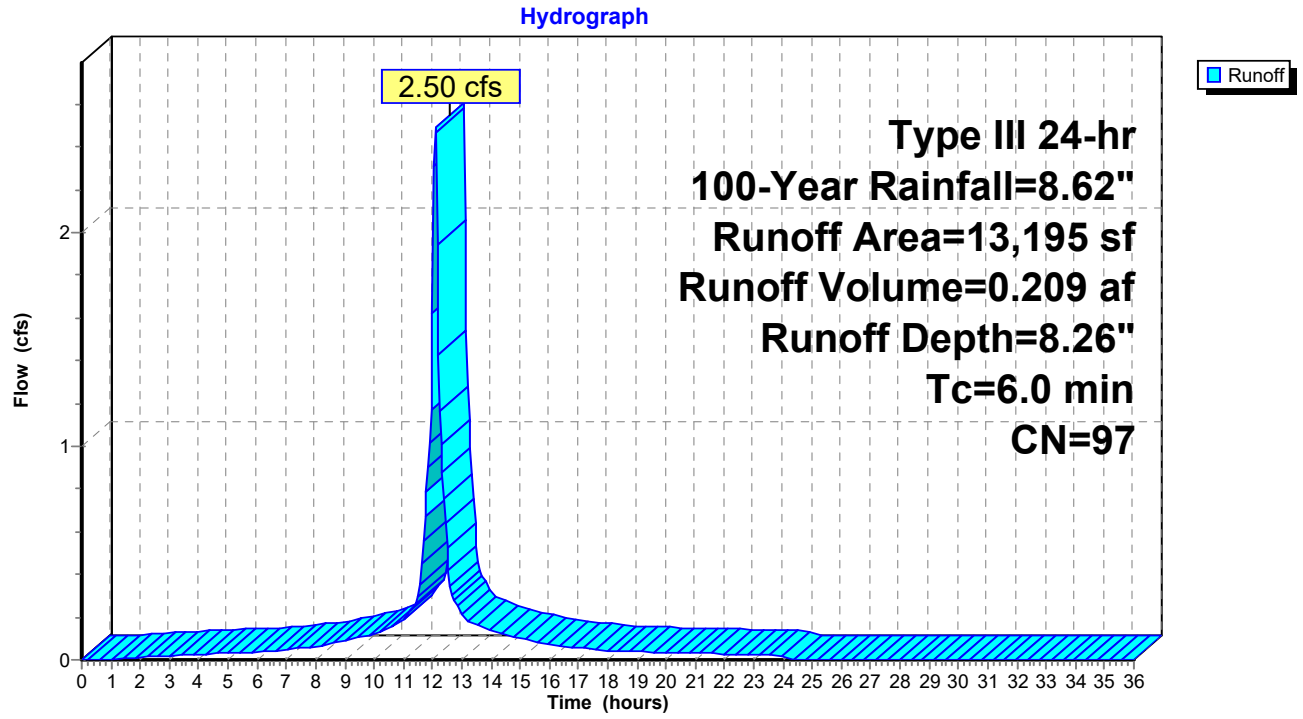
Runoff = 2.50 cfs @ 12.09 hrs, Volume= 0.209 af, Depth= 8.26"
Routed to Pond 9P : East Rv Chambers #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (sf)	CN	Description
1,020	80	>75% Grass cover, Good, HSG D
10,770	98	Paved parking, HSG D
1,406	98	Roofs, HSG D
13,195	97	Weighted Average
1,020		7.73% Pervious Area
12,176		92.27% Impervious Area

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

Subcatchment P-2.9: Subcat P-2.9



Summary for Subcatchment P-3: Subcat P-3

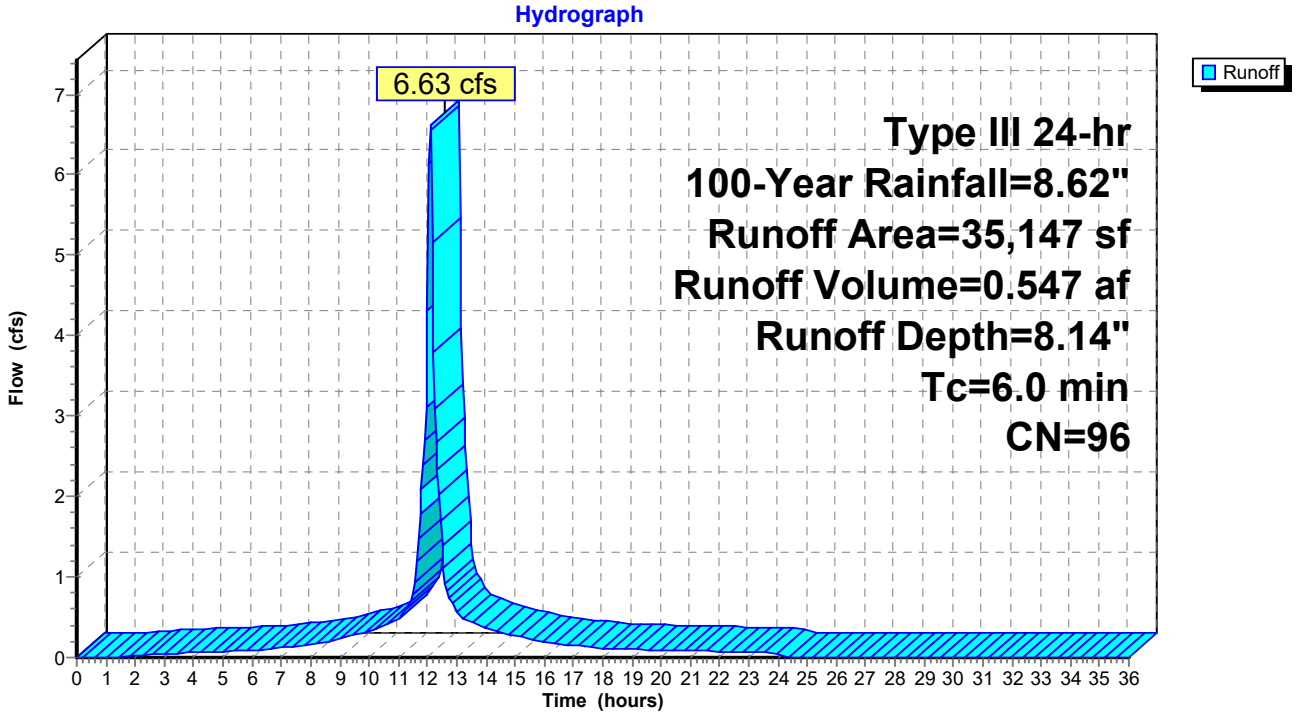
Runoff = 6.63 cfs @ 12.09 hrs, Volume= 0.547 af, Depth= 8.14"
Routed to Reach 1R-1 : Ex. 18" RCP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (sf)	CN	Description
1,404	80	>75% Grass cover, Good, HSG D
21,361	98	Paved parking, HSG D
9,936	98	Roofs, HSG D
2,445	77	Woods, Good, HSG D
35,147	96	Weighted Average
3,849		10.95% Pervious Area
31,297		89.05% Impervious Area

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

Subcatchment P-3: Subcat P-3



Summary for Subcatchment P-4: Subcat P-4

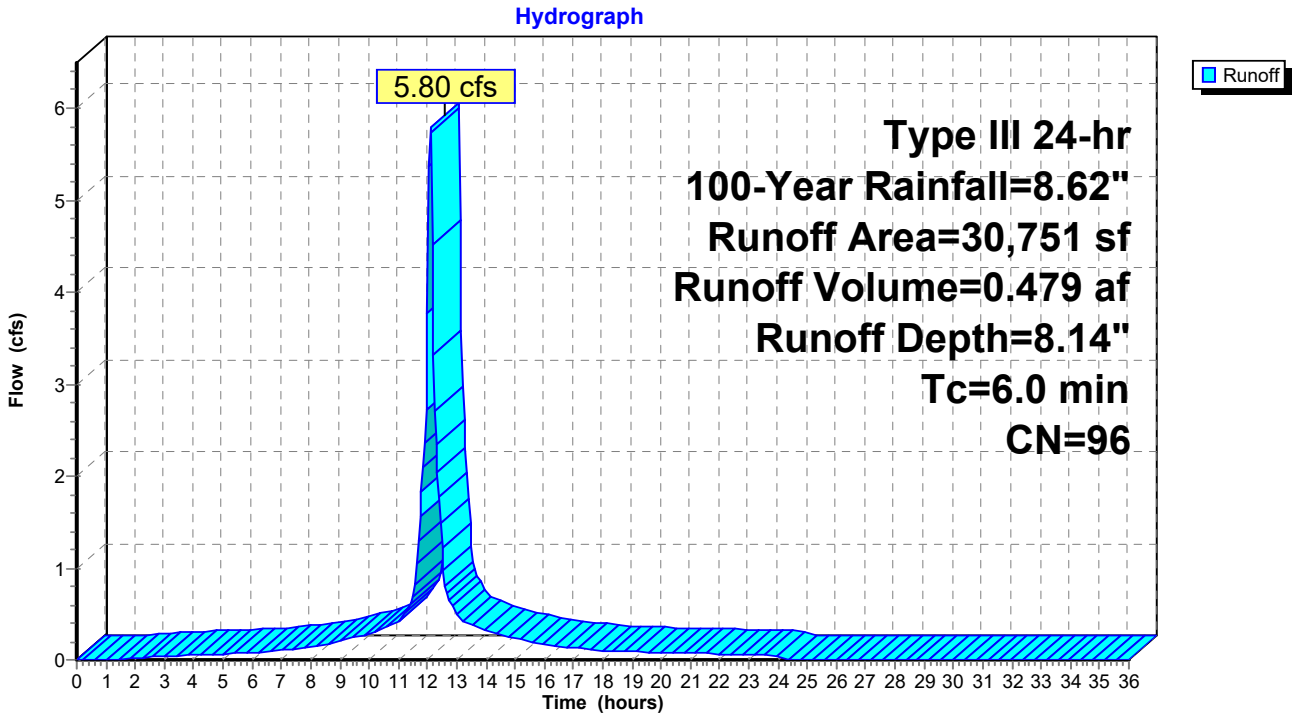
Runoff = 5.80 cfs @ 12.09 hrs, Volume= 0.479 af, Depth= 8.14"
Routed to Reach 3R : Ex. 12" RCP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (sf)	CN	Description
4,139	80	>75% Grass cover, Good, HSG D
16,618	98	Paved parking, HSG D
9,994	98	Roofs, HSG D
30,751	96	Weighted Average
4,139		13.46% Pervious Area
26,612		86.54% Impervious Area

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

Subcatchment P-4: Subcat P-4



Summary for Subcatchment P-5: Subcat P-5

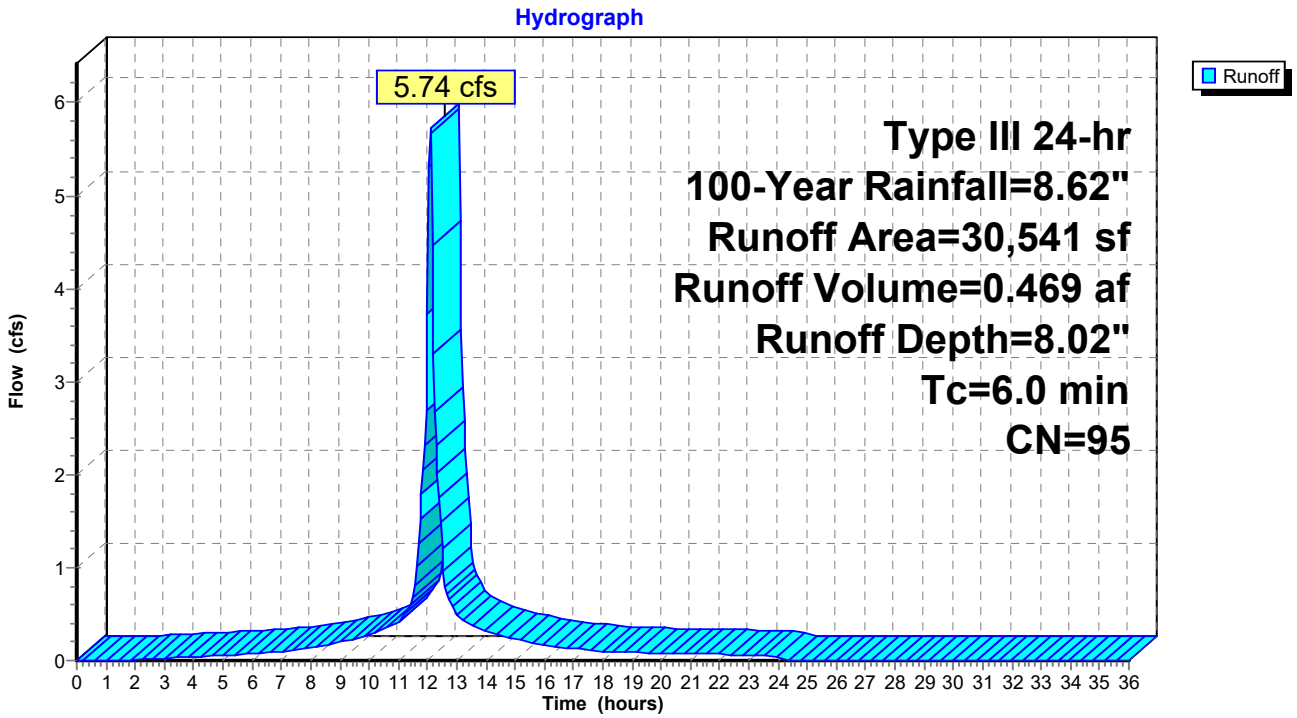
Runoff = 5.74 cfs @ 12.09 hrs, Volume= 0.469 af, Depth= 8.02"
Routed to Reach 7R : Ex. 24" RCP

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (sf)	CN	Description
5,010	80	>75% Grass cover, Good, HSG D
25,531	98	Paved parking, HSG D
30,541	95	Weighted Average
5,010		16.41% Pervious Area
25,531		83.59% Impervious Area

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

Subcatchment P-5: Subcat P-5



Summary for Subcatchment P-7: Subcat P-7

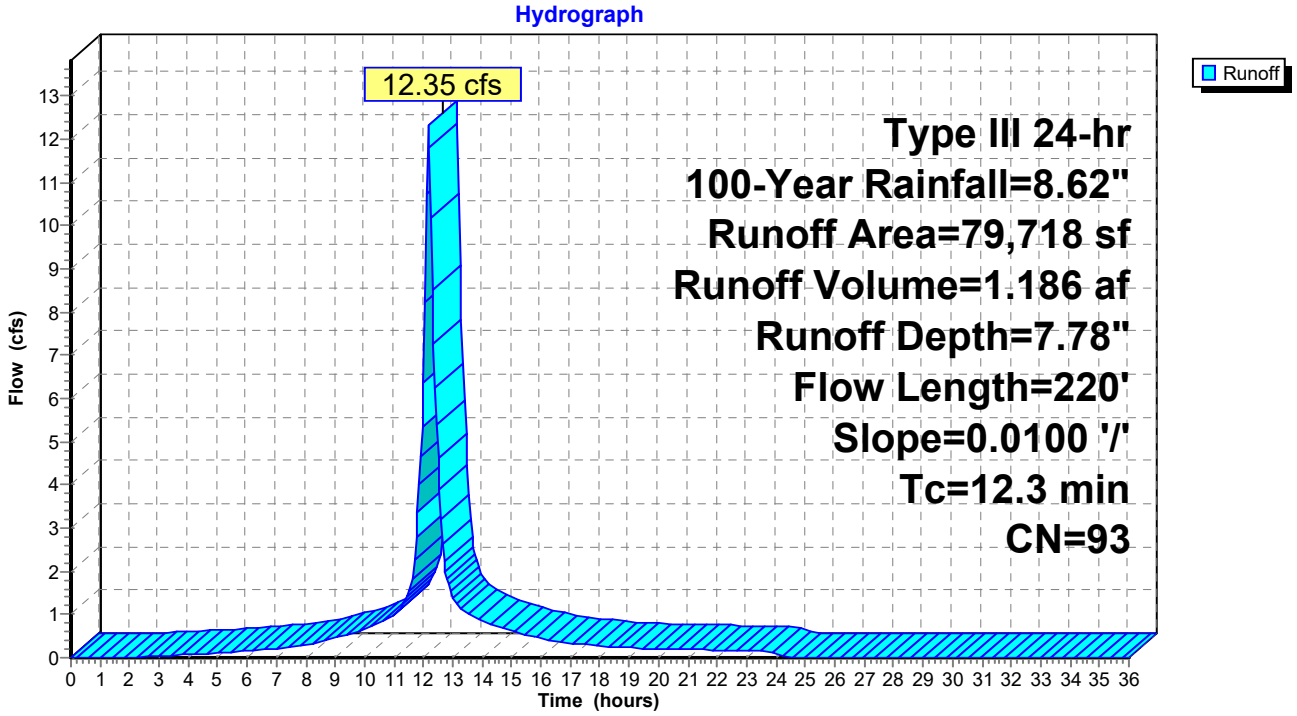
Runoff = 12.35 cfs @ 12.16 hrs, Volume= 1.186 af, Depth= 7.78"
Routed to Link 1L : Ex. CB w/15" RCP to 3 Federal

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (sf)	CN	Description
19,481	80	>75% Grass cover, Good, HSG D
41,091	98	Paved parking, HSG D
17,475	98	Roofs, HSG D
1,671	77	Woods, Good, HSG D
79,718	93	Weighted Average
21,152		26.53% Pervious Area
58,566		73.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0100	0.08		**Sheet Flow, AB** Grass: Dense n= 0.240 P2= 3.21"
0.7	70	0.0100	1.61		**Shallow Concentrated Flow, BC** Unpaved Kv= 16.1 fps
0.8	100	0.0100	2.03		**Shallow Concentrated Flow, CD** Paved Kv= 20.3 fps
12.3	220	Total			

Subcatchment P-7: Subcat P-7



Summary for Subcatchment R-1: Subcat R-1

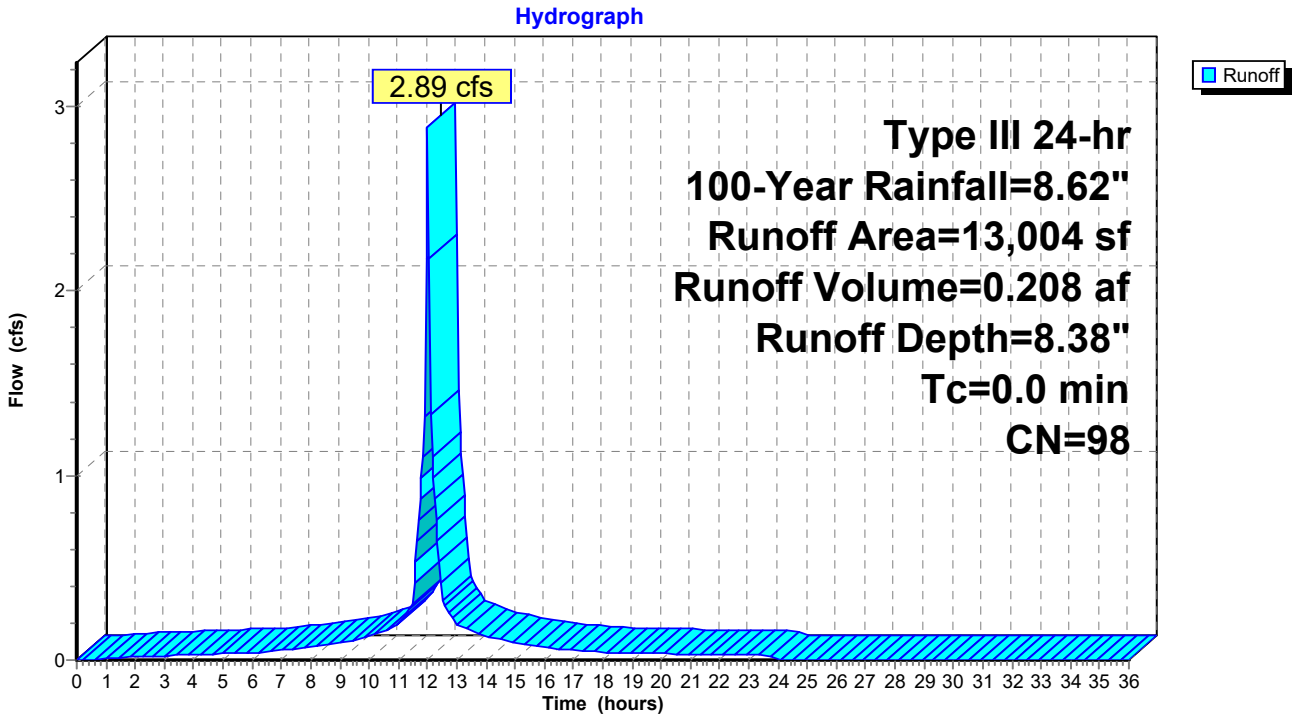
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 2.89 cfs @ 12.00 hrs, Volume= 0.208 af, Depth= 8.38"
Routed to Pond 5P : East Rv Chambers #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (sf)	CN	Description
13,004	98	Roofs, HSG D
13,004		100.00% Impervious Area

Subcatchment R-1: Subcat R-1



Summary for Subcatchment R-2: Subcat R-2

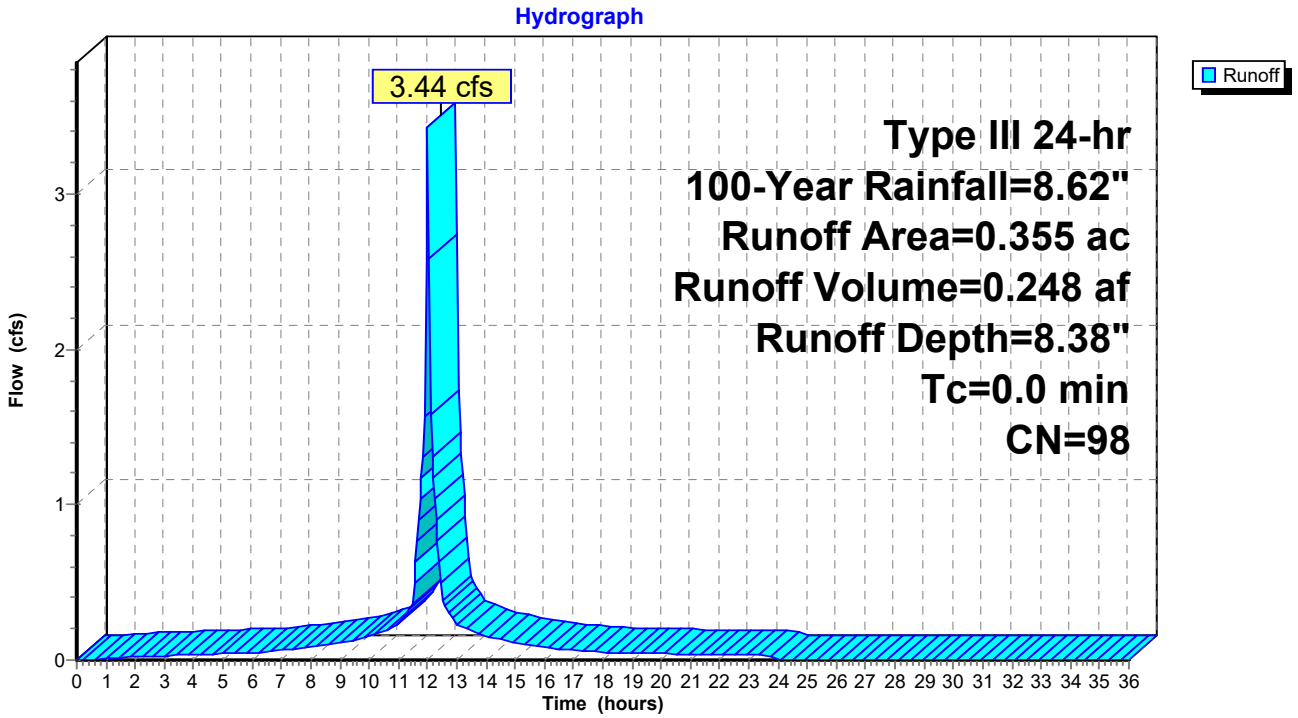
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 3.44 cfs @ 12.00 hrs, Volume= 0.248 af, Depth= 8.38"
Routed to Reach 2R-5 : new 18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (ac)	CN	Description
0.355	98	Roofs, HSG D
0.355		100.00% Impervious Area

Subcatchment R-2: Subcat R-2



Summary for Subcatchment R-3: Subcat R-3

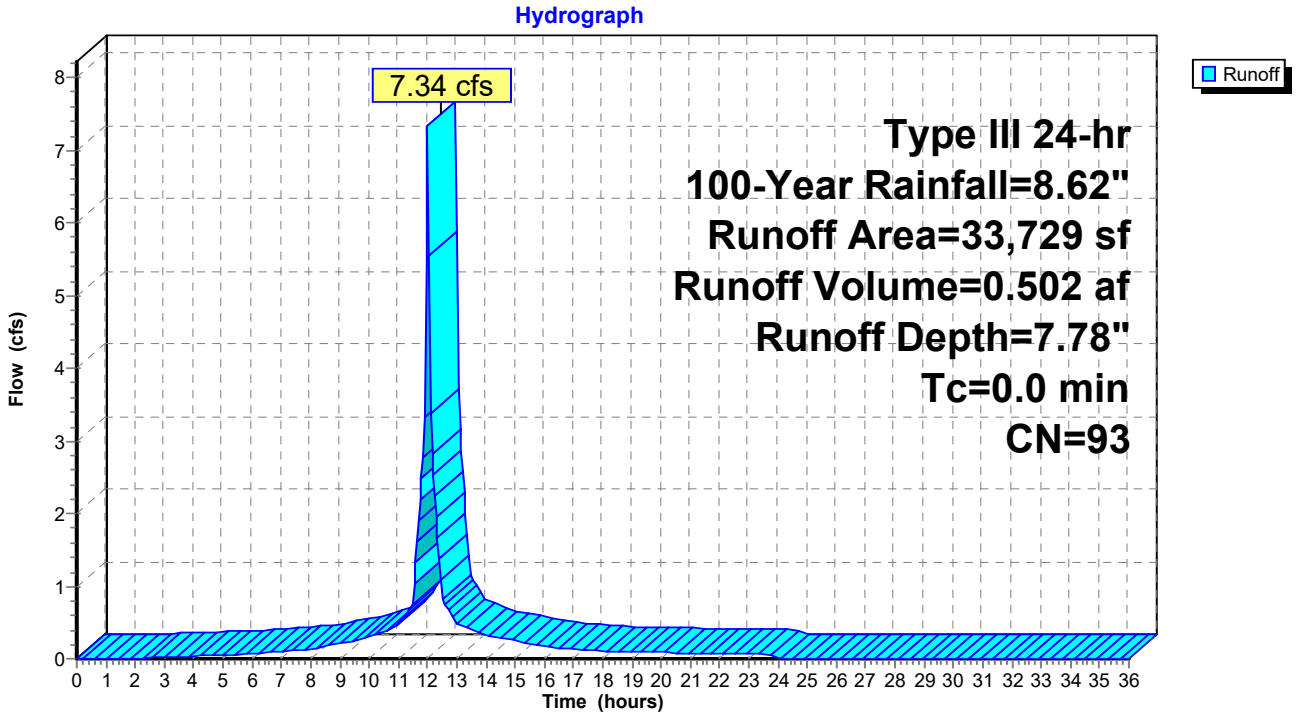
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 7.34 cfs @ 12.00 hrs, Volume= 0.502 af, Depth= 7.78"
Routed to Reach 2R-4 : new 18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (sf)	CN	Description
8,487	80	>75% Grass cover, Good, HSG D
5,583	98	Paved parking, HSG D
19,659	98	Roofs, HSG D
33,729	93	Weighted Average
8,487		25.16% Pervious Area
25,242		74.84% Impervious Area

Subcatchment R-3: Subcat R-3



Summary for Subcatchment R-4: Subcat R-4

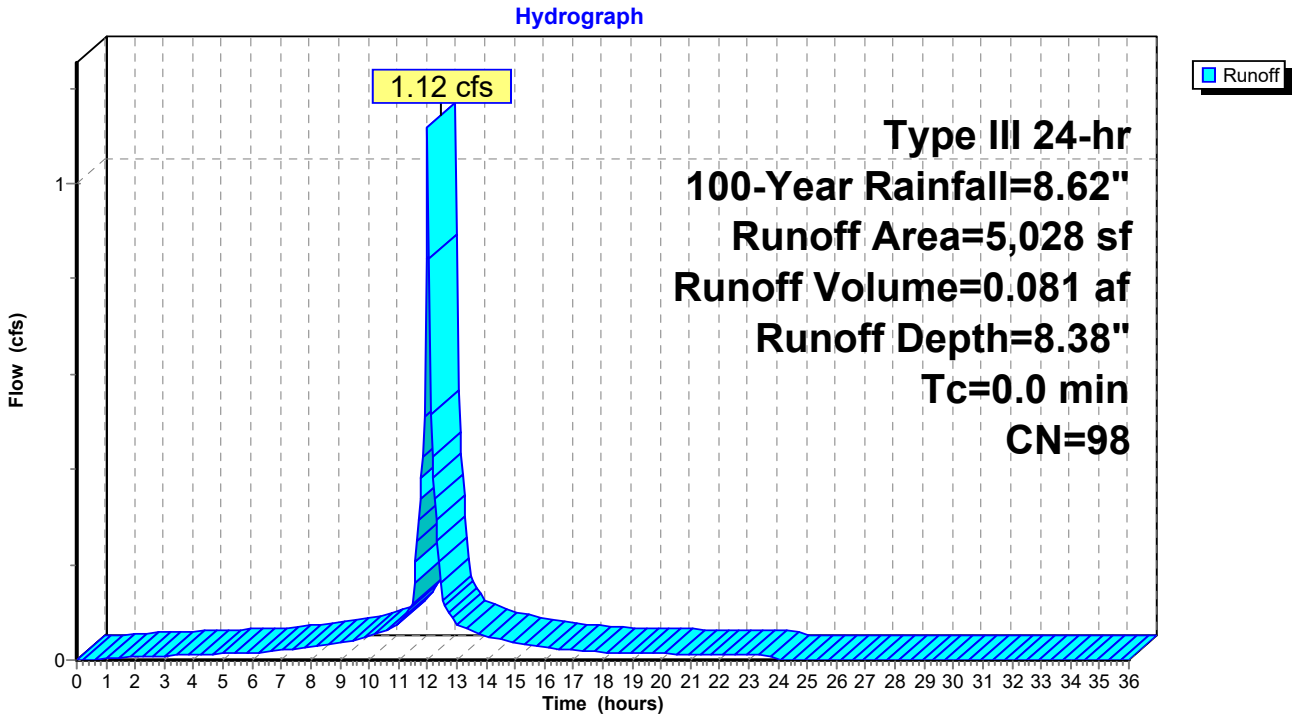
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 1.12 cfs @ 12.00 hrs, Volume= 0.081 af, Depth= 8.38"
Routed to Reach 1R-2 : New 18" ADS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (sf)	CN	Description
5,028	98	Roofs, HSG D
5,028		100.00% Impervious Area

Subcatchment R-4: Subcat R-4



Summary for Subcatchment R-5: Subcat R-5

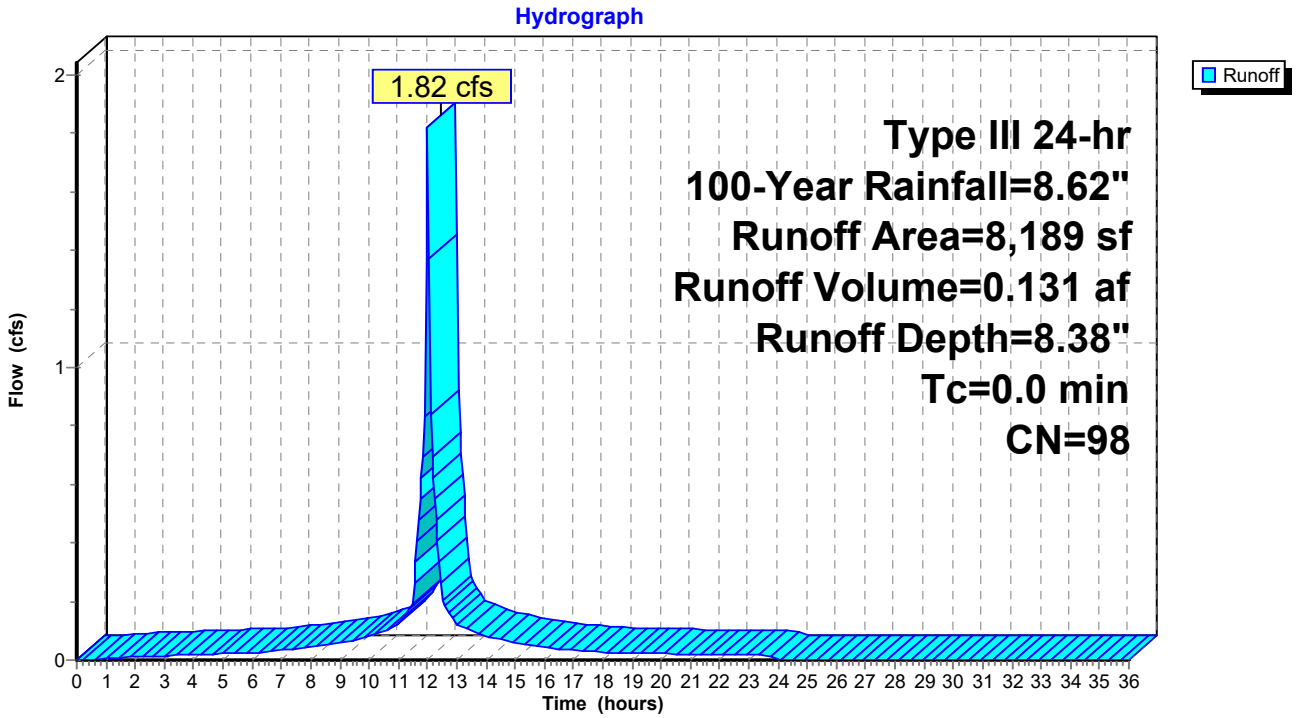
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 1.82 cfs @ 12.00 hrs, Volume= 0.131 af, Depth= 8.38"
Routed to Reach 2R-3 : new 12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (sf)	CN	Description
8,189	98	Roofs, HSG D
8,189		100.00% Impervious Area

Subcatchment R-5: Subcat R-5



Summary for Subcatchment R-6: Subcat R-6

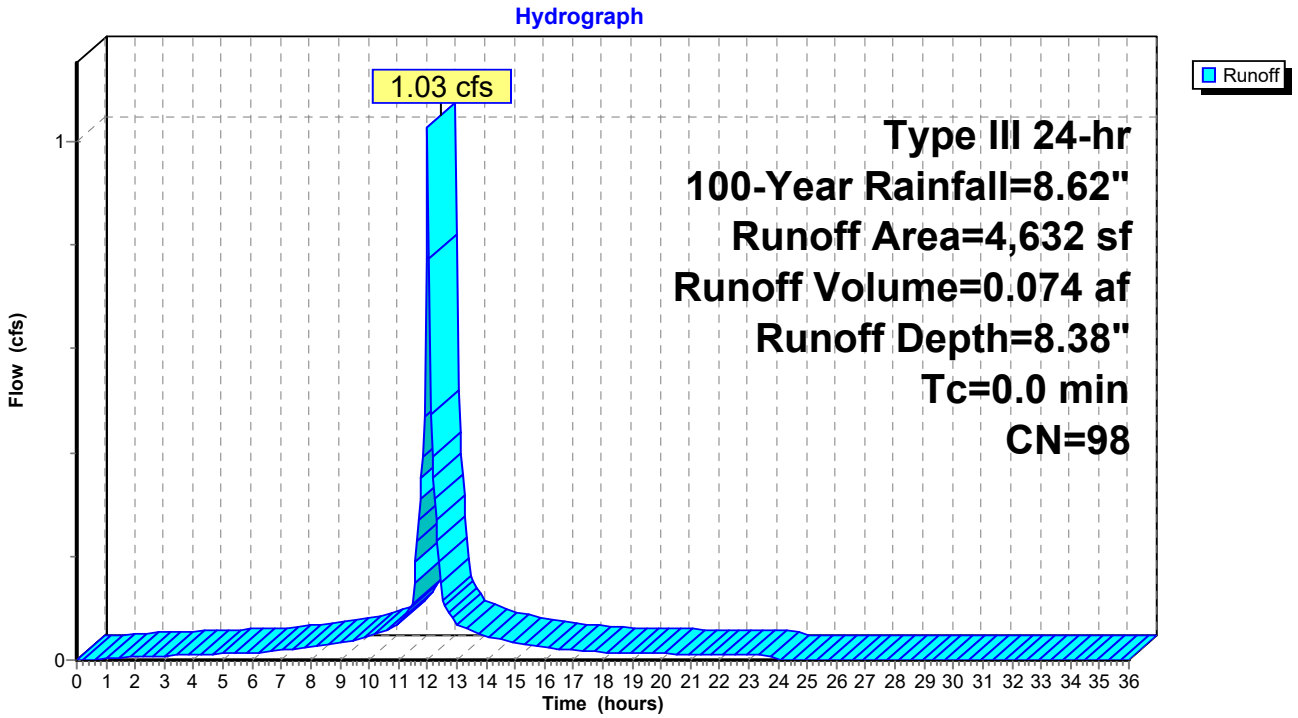
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 1.03 cfs @ 12.00 hrs, Volume= 0.074 af, Depth= 8.38"
Routed to Reach 2R-2 : new 12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (sf)	CN	Description
4,632	98	Roofs, HSG D
4,632		100.00% Impervious Area

Subcatchment R-6: Subcat R-6



Summary for Subcatchment S-1: Subcat S-1

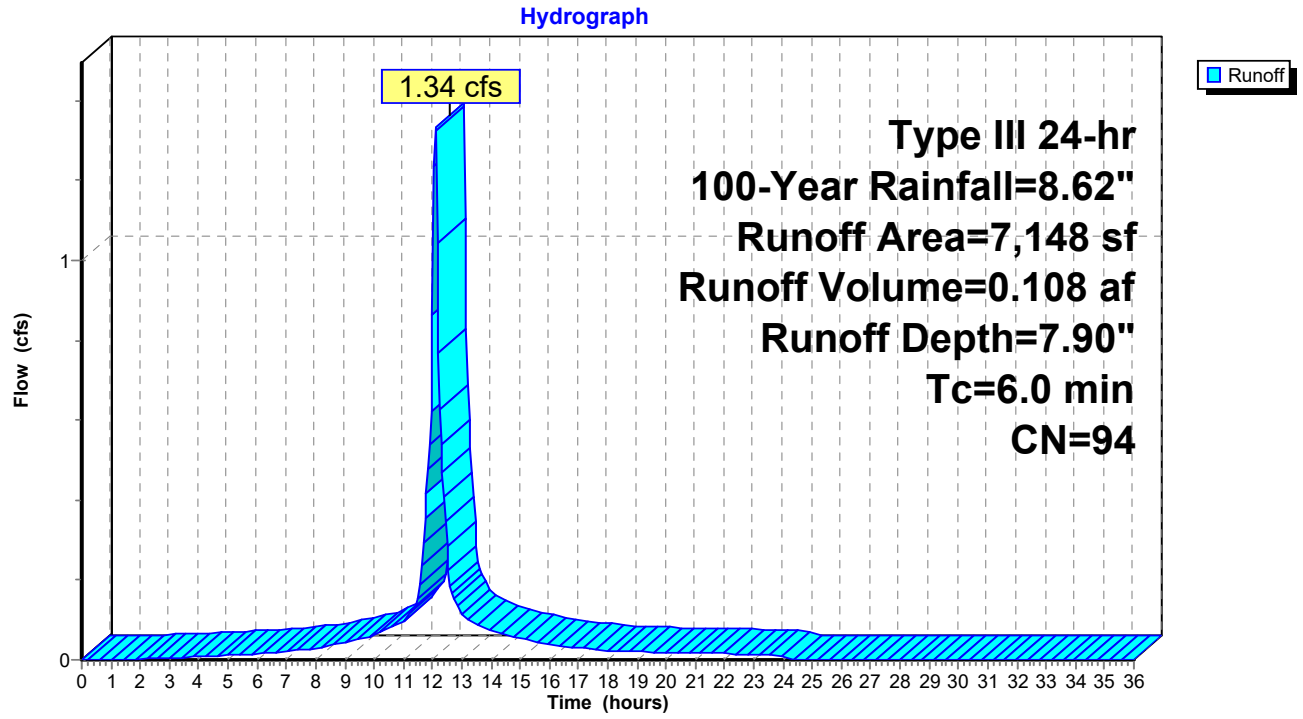
Runoff = 1.34 cfs @ 12.09 hrs, Volume= 0.108 af, Depth= 7.90"
Routed to Pond C9 : Banked Parking chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (sf)	CN	Description
1,304	80	>75% Grass cover, Good, HSG D
5,728	98	Paved parking, HSG D
117	77	Woods, Good, HSG D
7,148	94	Weighted Average
1,420		19.87% Pervious Area
5,728		80.13% Impervious Area

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

Subcatchment S-1: Subcat S-1



Summary for Subcatchment S-2: Subcat S-2

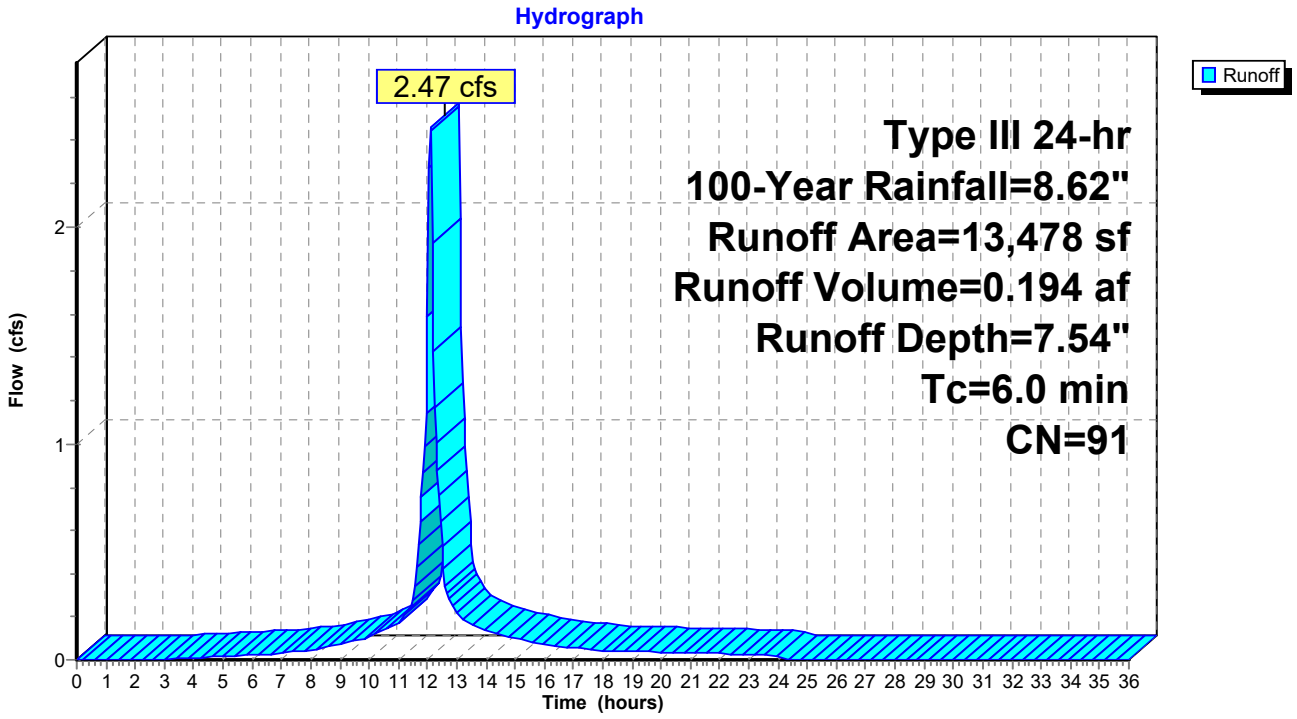
Runoff = 2.47 cfs @ 12.09 hrs, Volume= 0.194 af, Depth= 7.54"
Routed to Pond C8 : Banked Parking chambers

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (sf)	CN	Description
4,975	80	>75% Grass cover, Good, HSG D
8,243	98	Paved parking, HSG D
259	77	Woods, Good, HSG D
13,478	91	Weighted Average
5,235		38.84% Pervious Area
8,243		61.16% Impervious Area

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

Subcatchment S-2: Subcat S-2



Summary for Reach 1R-1: Ex. 18" RCP

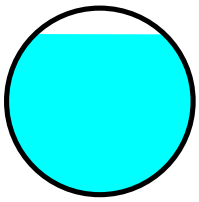
[52] Hint: Inlet/Outlet conditions not evaluated
[55] Hint: Peak inflow is 104% of Manning's capacity

Inflow Area = 0.807 ac, 89.05% Impervious, Inflow Depth = 8.14" for 100-Year event
Inflow = 6.63 cfs @ 12.09 hrs, Volume= 0.547 af
Outflow = 6.48 cfs @ 12.10 hrs, Volume= 0.547 af, Atten= 2%, Lag= 0.9 min
Routed to Reach 1R-2 : New 18" ADS

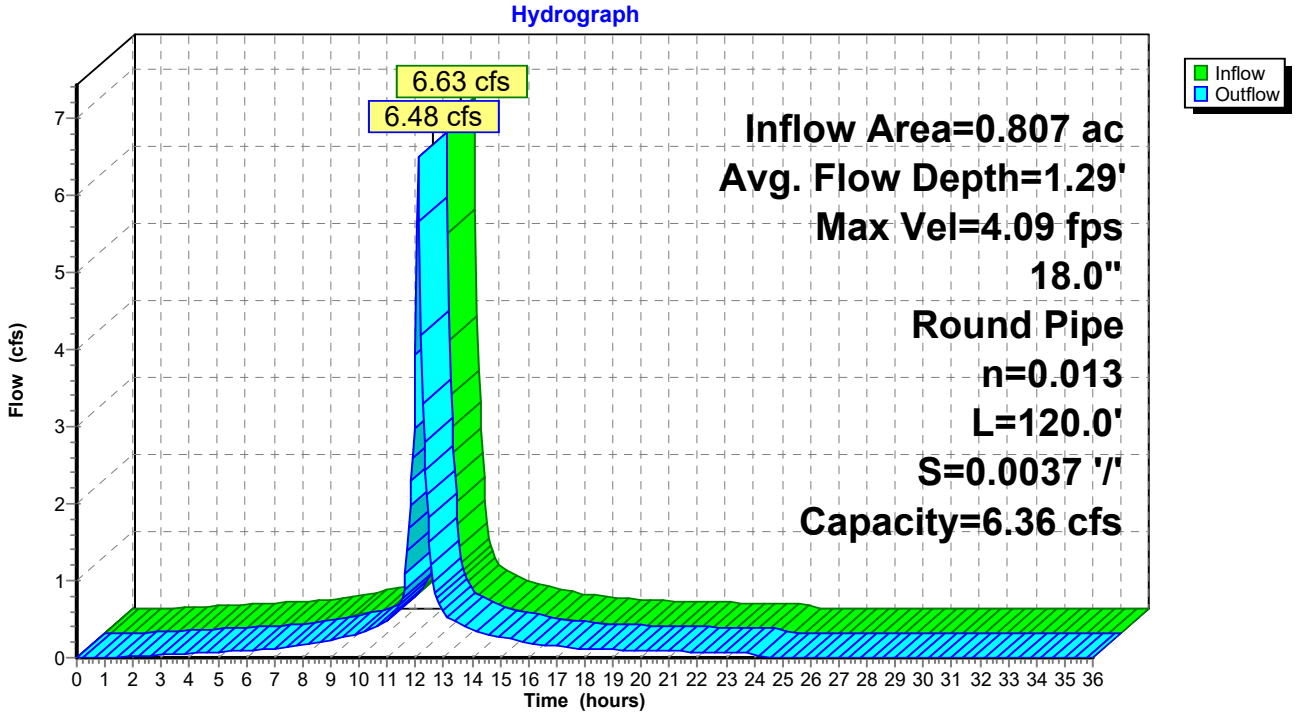
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.09 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.50 fps, Avg. Travel Time= 1.3 min

Peak Storage= 194 cf @ 12.10 hrs
Average Depth at Peak Storage= 1.29' , Surface Width= 1.04'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 6.36 cfs

18.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 120.0' Slope= 0.0037 '/'
Inlet Invert= 188.16', Outlet Invert= 187.72'



Reach 1R-1: Ex. 18" RCP



Summary for Reach 1R-2: New 18" ADS

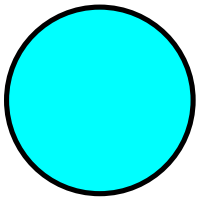
[52] Hint: Inlet/Outlet conditions not evaluated
[55] Hint: Peak inflow is 122% of Manning's capacity
[76] Warning: Detained 0.010 af (Pond w/culvert advised)
[63] Warning: Exceeded Reach 1R-1 INLET depth by 0.19' @ 12.20 hrs

Inflow Area = 1.168 ac, 87.87% Impervious, Inflow Depth = 8.11" for 100-Year event
Inflow = 9.00 cfs @ 12.09 hrs, Volume= 0.790 af
Outflow = 7.38 cfs @ 12.10 hrs, Volume= 0.790 af, Atten= 18%, Lag= 0.5 min
Routed to Reach 1R-3 : new 24"

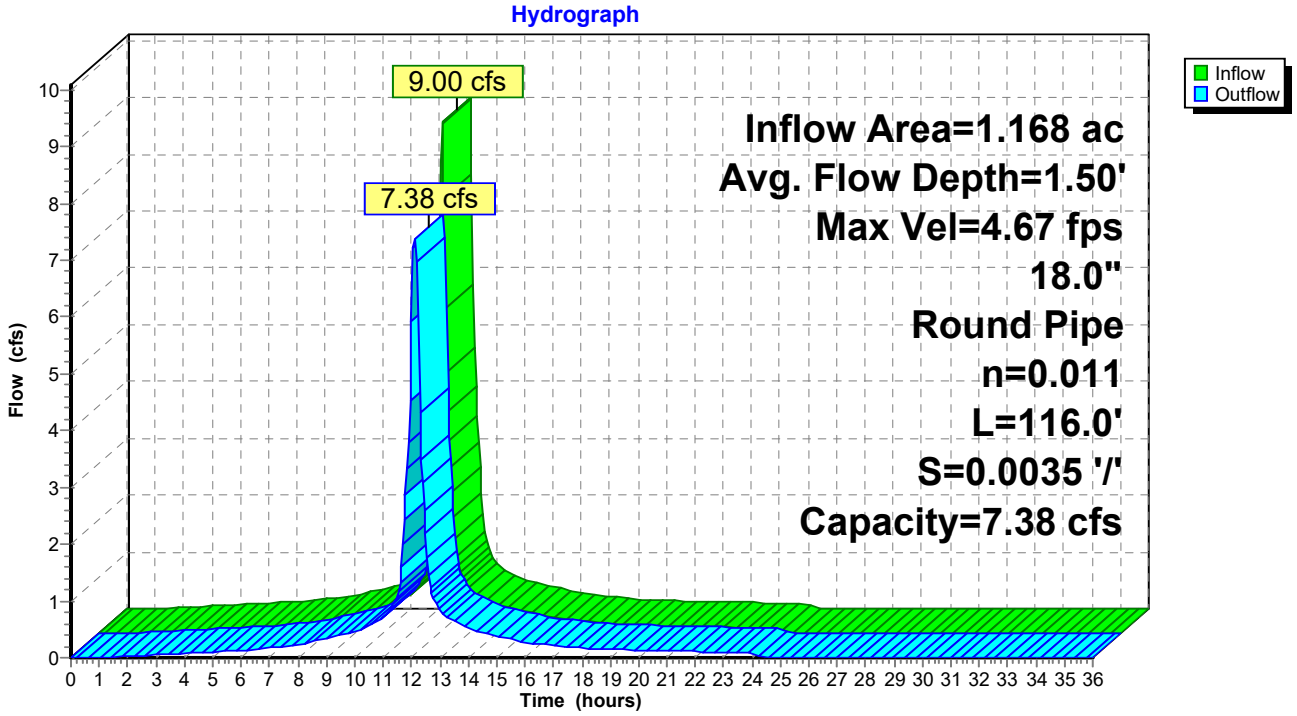
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.67 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.81 fps, Avg. Travel Time= 1.1 min

Peak Storage= 205 cf @ 12.05 hrs
Average Depth at Peak Storage= 1.50'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 7.38 cfs

18.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 116.0' Slope= 0.0035 '/'
Inlet Invert= 187.70', Outlet Invert= 187.29'



Reach 1R-2: New 18" ADS



Summary for Reach 1R-3: new 24"

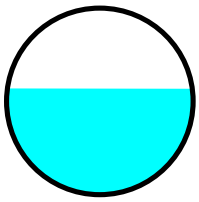
[52] Hint: Inlet/Outlet conditions not evaluated
[88] Warning: Qout>Qin may require smaller dt or Finer Routing
[62] Hint: Exceeded Reach 1R-2 OUTLET depth by 0.01' @ 12.30 hrs

Inflow Area = 1.168 ac, 87.87% Impervious, Inflow Depth = 8.11" for 100-Year event
Inflow = 7.38 cfs @ 12.10 hrs, Volume= 0.790 af
Outflow = 7.42 cfs @ 12.17 hrs, Volume= 0.790 af, Atten= 0%, Lag= 4.4 min
Routed to Reach 1R-4 : new 24"

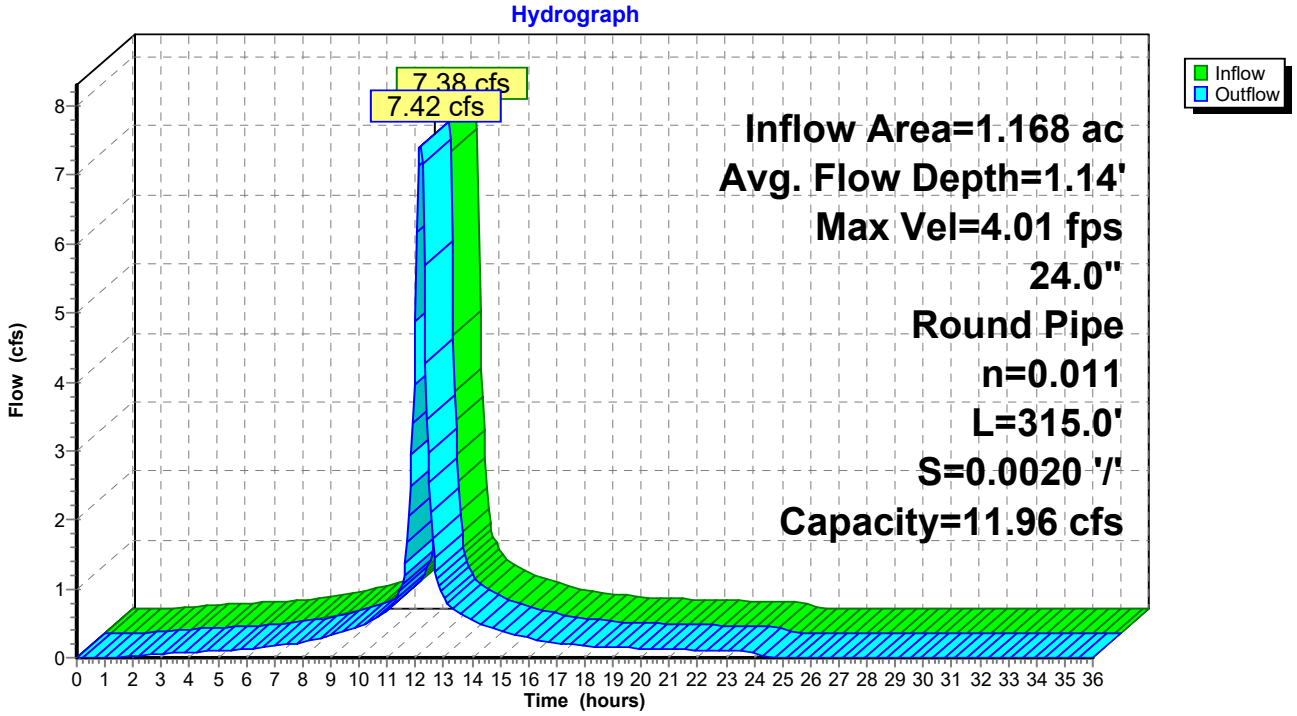
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.01 fps, Min. Travel Time= 1.3 min
Avg. Velocity = 1.40 fps, Avg. Travel Time= 3.7 min

Peak Storage= 581 cf @ 12.10 hrs
Average Depth at Peak Storage= 1.14' , Surface Width= 1.98'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 11.96 cfs

24.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 315.0' Slope= 0.0020 '/'
Inlet Invert= 187.20', Outlet Invert= 186.57'



Reach 1R-3: new 24"



Summary for Reach 1R-4: new 24"

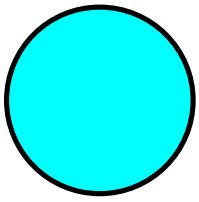
[52] Hint: Inlet/Outlet conditions not evaluated
[55] Hint: Peak inflow is 111% of Manning's capacity
[76] Warning: Detained 0.009 af (Pond w/culvert advised)
[63] Warning: Exceeded Reach 1R-3 INLET depth by 0.24' @ 12.25 hrs

Inflow Area = 2.333 ac, 89.83% Impervious, Inflow Depth = 6.39" for 100-Year event
Inflow = 13.24 cfs @ 12.14 hrs, Volume= 1.242 af
Outflow = 12.54 cfs @ 12.12 hrs, Volume= 1.242 af, Atten= 5%, Lag= 0.0 min
Routed to Reach 1R-5 : new 24"

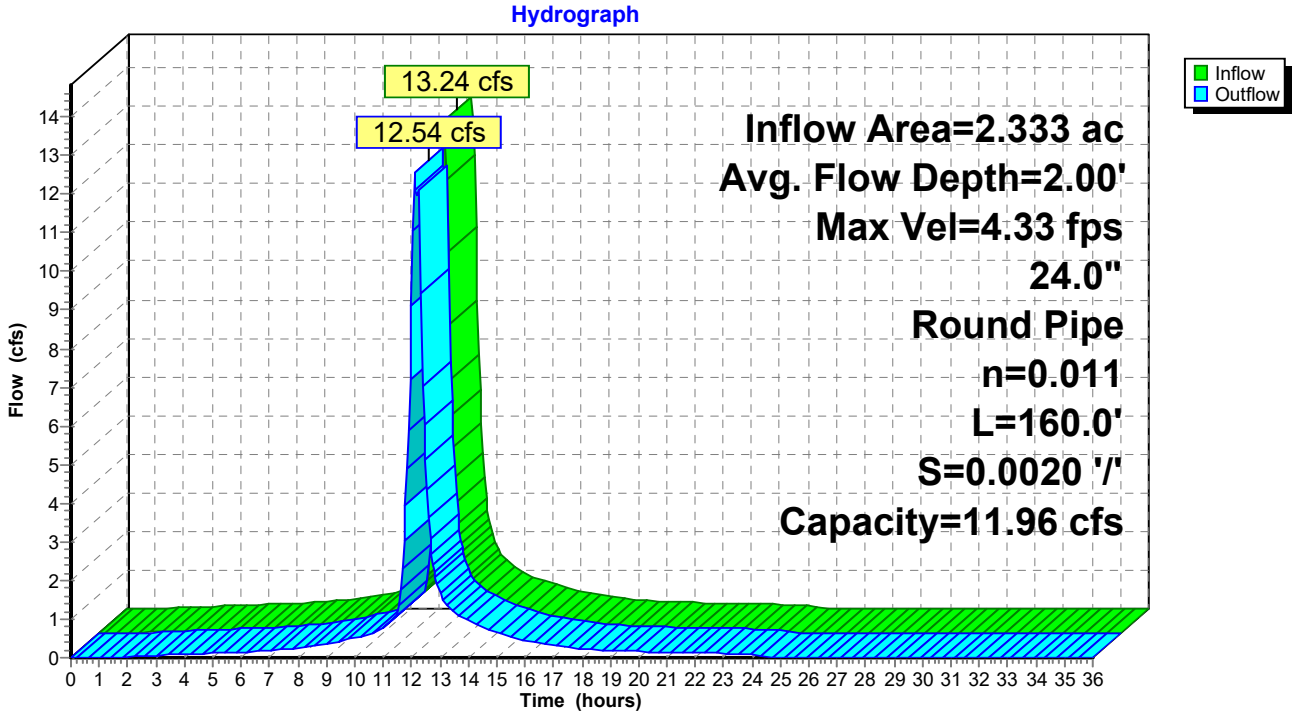
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.33 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 1.51 fps, Avg. Travel Time= 1.8 min

Peak Storage= 503 cf @ 12.15 hrs
Average Depth at Peak Storage= 2.00'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 11.96 cfs

24.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 160.0' Slope= 0.0020 '/'
Inlet Invert= 186.50', Outlet Invert= 186.18'



Reach 1R-4: new 24"



Summary for Reach 1R-5: new 24"

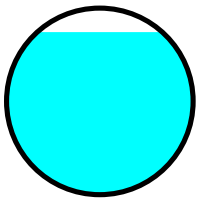
[52] Hint: Inlet/Outlet conditions not evaluated
[55] Hint: Peak inflow is 105% of Manning's capacity
[61] Hint: Exceeded Reach 1R-4 outlet invert by 1.63' @ 12.10 hrs

Inflow Area = 2.541 ac, 88.72% Impervious, Inflow Depth = 6.51" for 100-Year event
Inflow = 14.17 cfs @ 12.11 hrs, Volume= 1.379 af
Outflow = 14.00 cfs @ 12.12 hrs, Volume= 1.379 af, Atten= 1%, Lag= 0.7 min
Routed to Reach 1R-6 : New 24" ADS

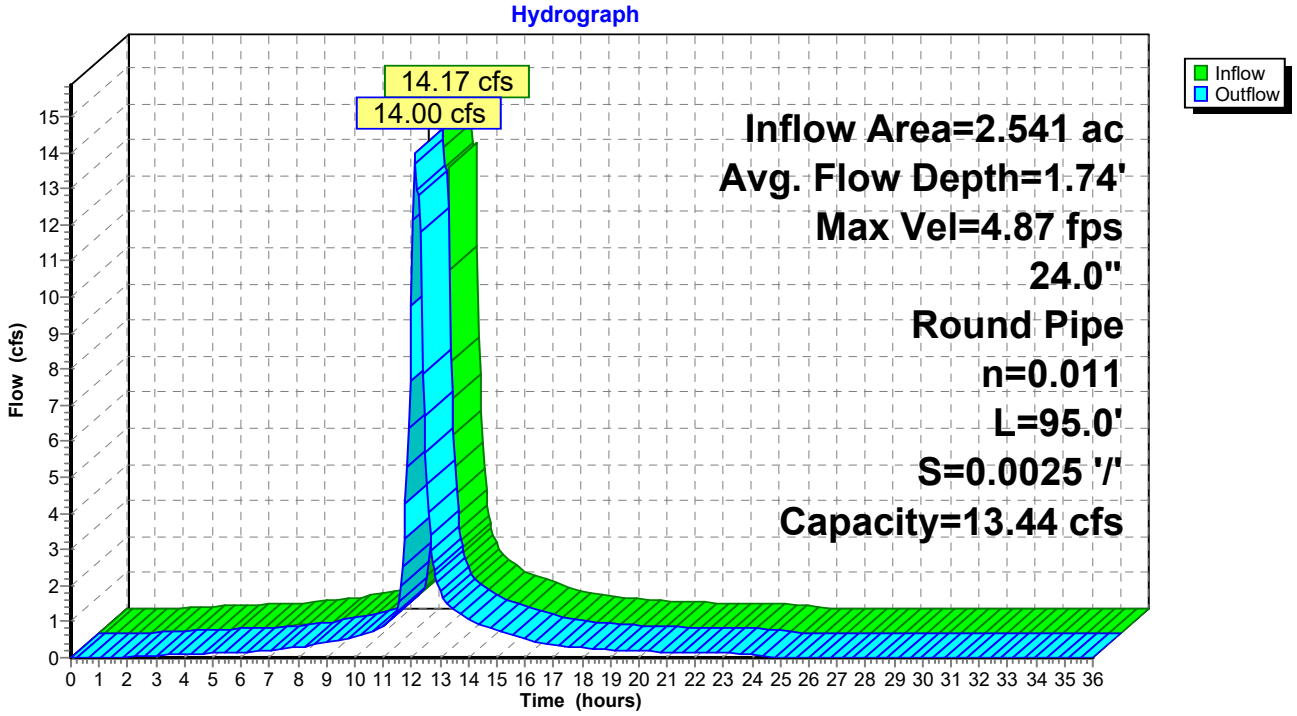
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.87 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.71 fps, Avg. Travel Time= 0.9 min

Peak Storage= 276 cf @ 12.11 hrs
Average Depth at Peak Storage= 1.74' , Surface Width= 1.35'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 13.44 cfs

24.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 95.0' Slope= 0.0025 '/'
Inlet Invert= 186.08', Outlet Invert= 185.84'



Reach 1R-5: new 24"



Summary for Reach 1R-6: New 24" ADS

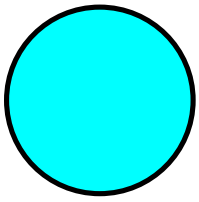
[52] Hint: Inlet/Outlet conditions not evaluated
[55] Hint: Peak inflow is 115% of Manning's capacity
[76] Warning: Detained 0.021 af (Pond w/culvert advised)
[63] Warning: Exceeded Reach 1R-5 INLET depth by 0.29' @ 12.35 hrs

Inflow Area = 2.812 ac, 85.36% Impervious, Inflow Depth = 6.60" for 100-Year event
Inflow = 15.03 cfs @ 12.11 hrs, Volume= 1.546 af
Outflow = 13.91 cfs @ 12.06 hrs, Volume= 1.546 af, Atten= 7%, Lag= 0.0 min
Routed to Link 2L : Flow to BVW

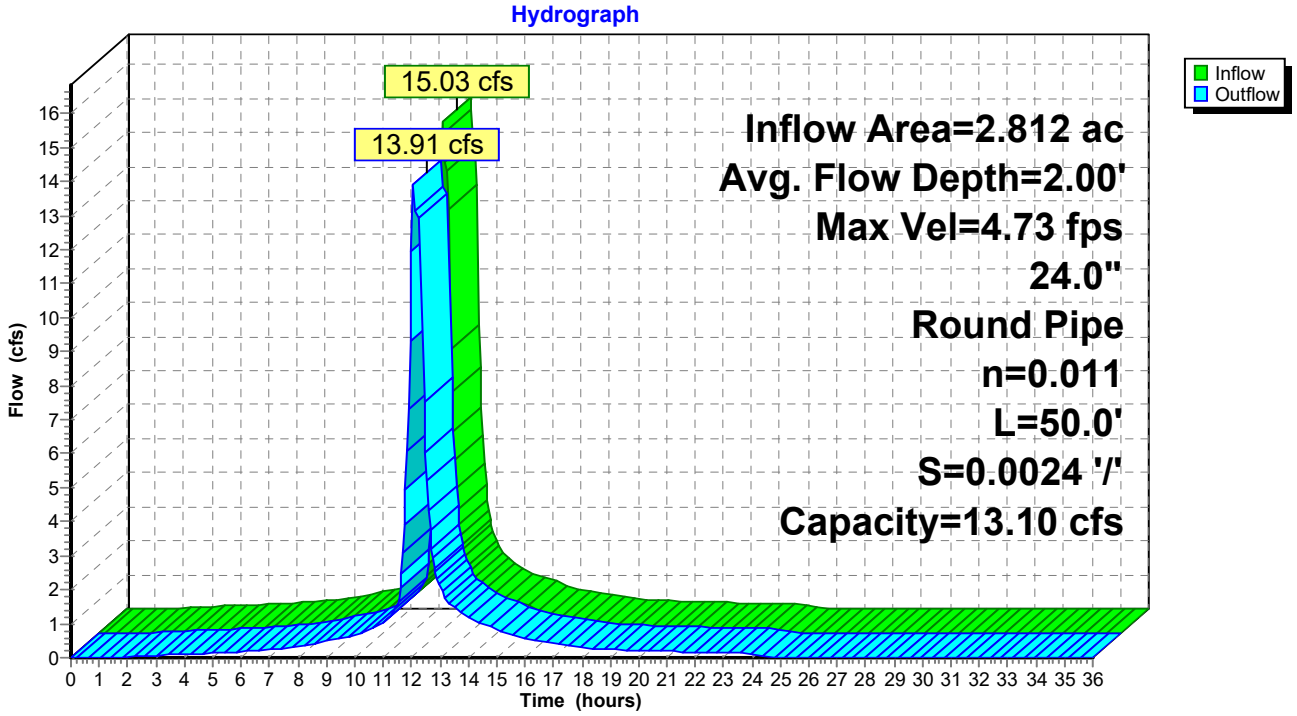
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.73 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.72 fps, Avg. Travel Time= 0.5 min

Peak Storage= 157 cf @ 12.10 hrs
Average Depth at Peak Storage= 2.00'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 13.10 cfs

24.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 50.0' Slope= 0.0024 '/'
Inlet Invert= 185.70', Outlet Invert= 185.58'



Reach 1R-6: New 24" ADS



Summary for Reach 2R-1: new 12" west

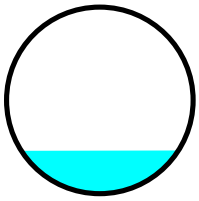
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 0.061 ac, 85.24% Impervious, Inflow Depth = 8.02" for 100-Year event
Inflow = 0.50 cfs @ 12.09 hrs, Volume= 0.040 af
Outflow = 0.48 cfs @ 12.11 hrs, Volume= 0.040 af, Atten= 3%, Lag= 1.1 min
Routed to Reach 2R-2 : new 12"

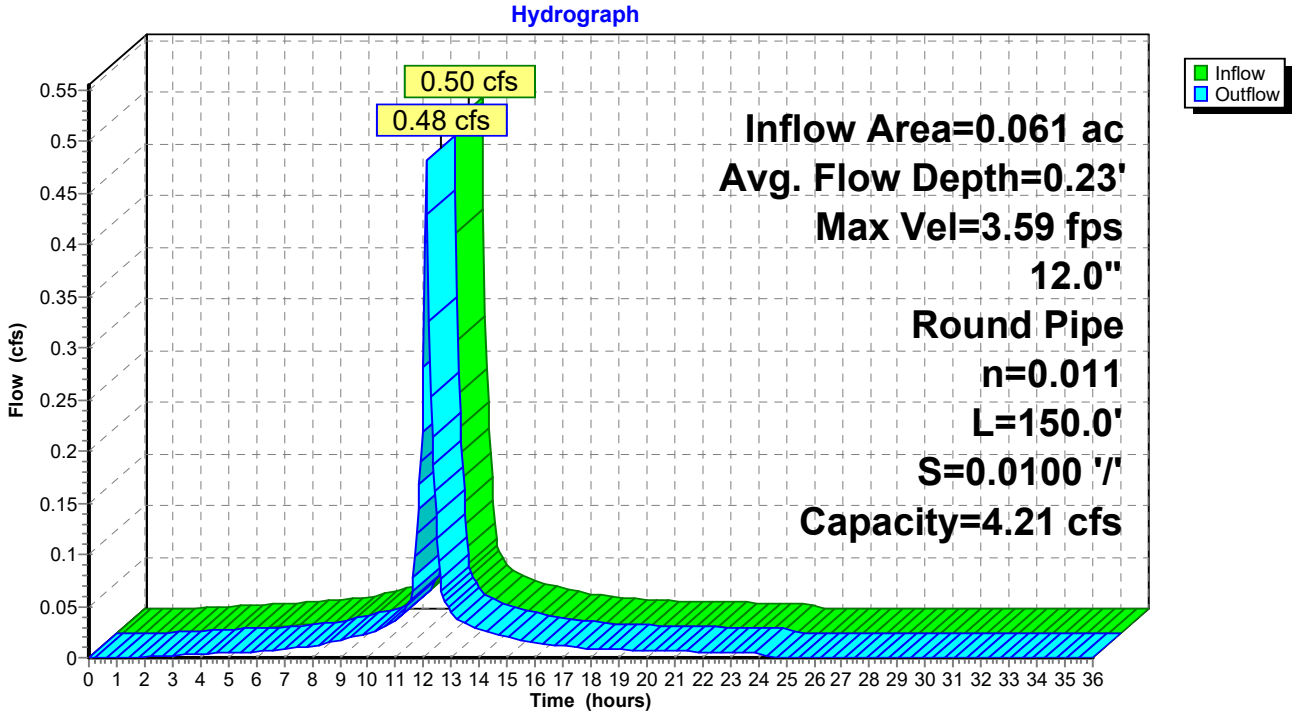
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.59 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 1.18 fps, Avg. Travel Time= 2.1 min

Peak Storage= 21 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.23' , Surface Width= 0.84'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.21 cfs

12.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 150.0' Slope= 0.0100 '/'
Inlet Invert= 189.80', Outlet Invert= 188.30'



Reach 2R-1: new 12" west



Summary for Reach 2R-2: new 12"

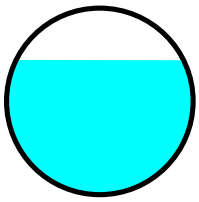
[52] Hint: Inlet/Outlet conditions not evaluated
[62] Hint: Exceeded Reach 2R-1 OUTLET depth by 0.29' @ 12.05 hrs

Inflow Area = 0.489 ac, 84.19% Impervious, Inflow Depth = 8.02" for 100-Year event
Inflow = 3.66 cfs @ 12.07 hrs, Volume= 0.327 af
Outflow = 3.64 cfs @ 12.08 hrs, Volume= 0.327 af, Atten= 1%, Lag= 0.4 min
Routed to Reach 2R-3 : new 12"

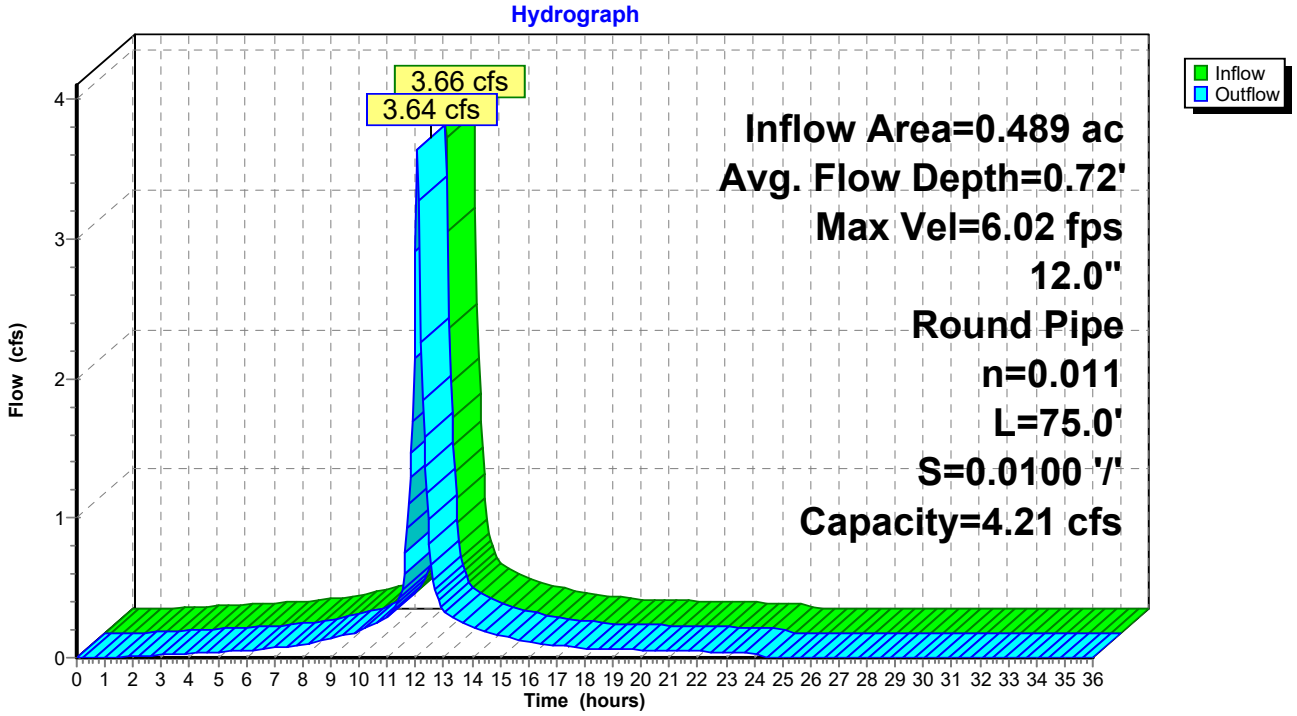
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.02 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.13 fps, Avg. Travel Time= 0.6 min

Peak Storage= 45 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.72' , Surface Width= 0.90'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 4.21 cfs

12.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 75.0' Slope= 0.0100 '/'
Inlet Invert= 188.10', Outlet Invert= 187.35'



Reach 2R-2: new 12"



Summary for Reach 2R-3: new 12"

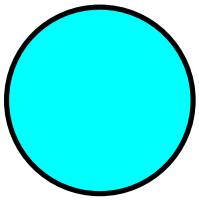
[52] Hint: Inlet/Outlet conditions not evaluated
[55] Hint: Peak inflow is 126% of Manning's capacity
[76] Warning: Detained 0.012 af (Pond w/culvert advised)
[62] Hint: Exceeded Reach 2R-2 OUTLET depth by 0.38' @ 12.20 hrs

Inflow Area = 0.889 ac, 85.12% Impervious, Inflow Depth = 8.04" for 100-Year event
Inflow = 6.51 cfs @ 12.06 hrs, Volume= 0.596 af
Outflow = 5.16 cfs @ 12.05 hrs, Volume= 0.596 af, Atten= 21%, Lag= 0.0 min
Routed to Reach 2R-4 : new 18"

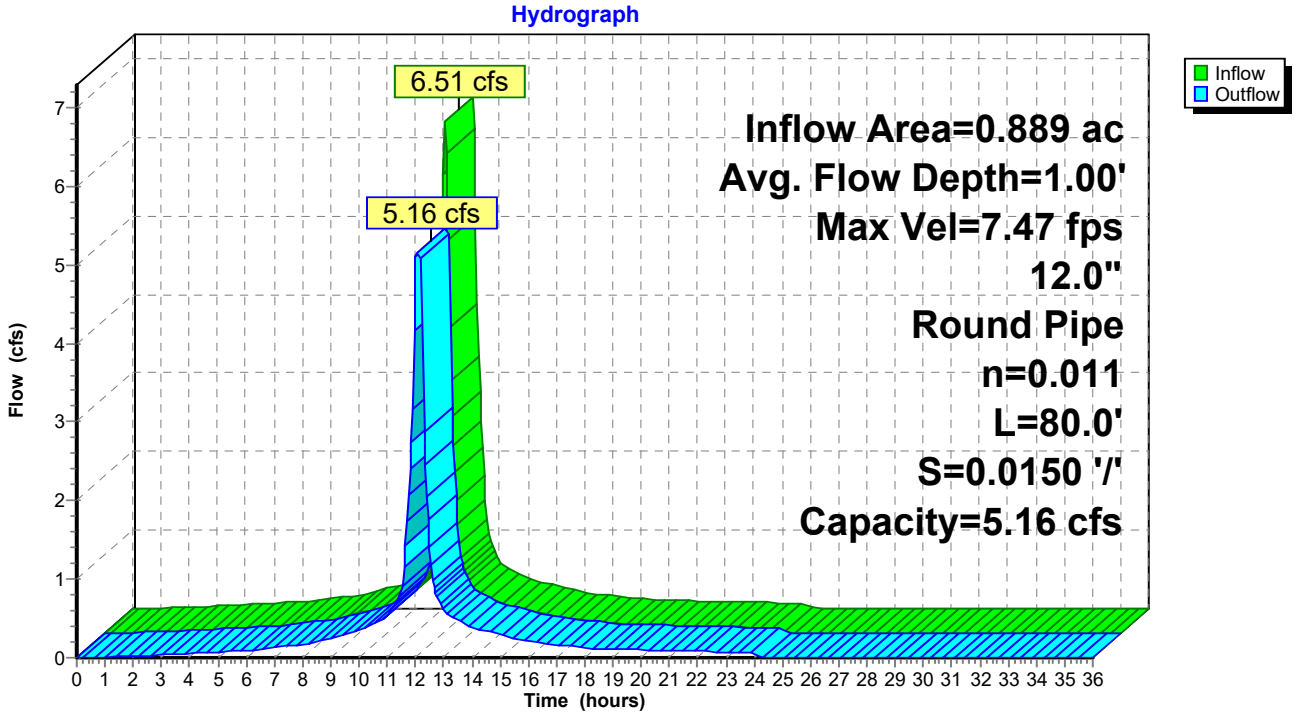
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 7.47 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.94 fps, Avg. Travel Time= 0.5 min

Peak Storage= 63 cf @ 12.00 hrs
Average Depth at Peak Storage= 1.00'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 5.16 cfs

12.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 80.0' Slope= 0.0150 '/'
Inlet Invert= 187.25', Outlet Invert= 186.05'



Reach 2R-3: new 12"



Summary for Reach 2R-4: new 18"

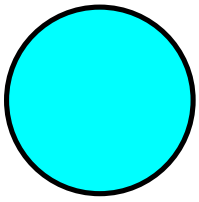
[52] Hint: Inlet/Outlet conditions not evaluated
[55] Hint: Peak inflow is 140% of Manning's capacity
[76] Warning: Detained 0.028 af (Pond w/culvert advised)
[63] Warning: Exceeded Reach 2R-3 INLET depth by 0.28' @ 12.25 hrs

Inflow Area = 1.837 ac, 80.91% Impervious, Inflow Depth = 7.94" for 100-Year event
Inflow = 13.45 cfs @ 12.01 hrs, Volume= 1.215 af
Outflow = 9.64 cfs @ 12.00 hrs, Volume= 1.215 af, Atten= 28%, Lag= 0.0 min
Routed to Reach 2R-5 : new 18"

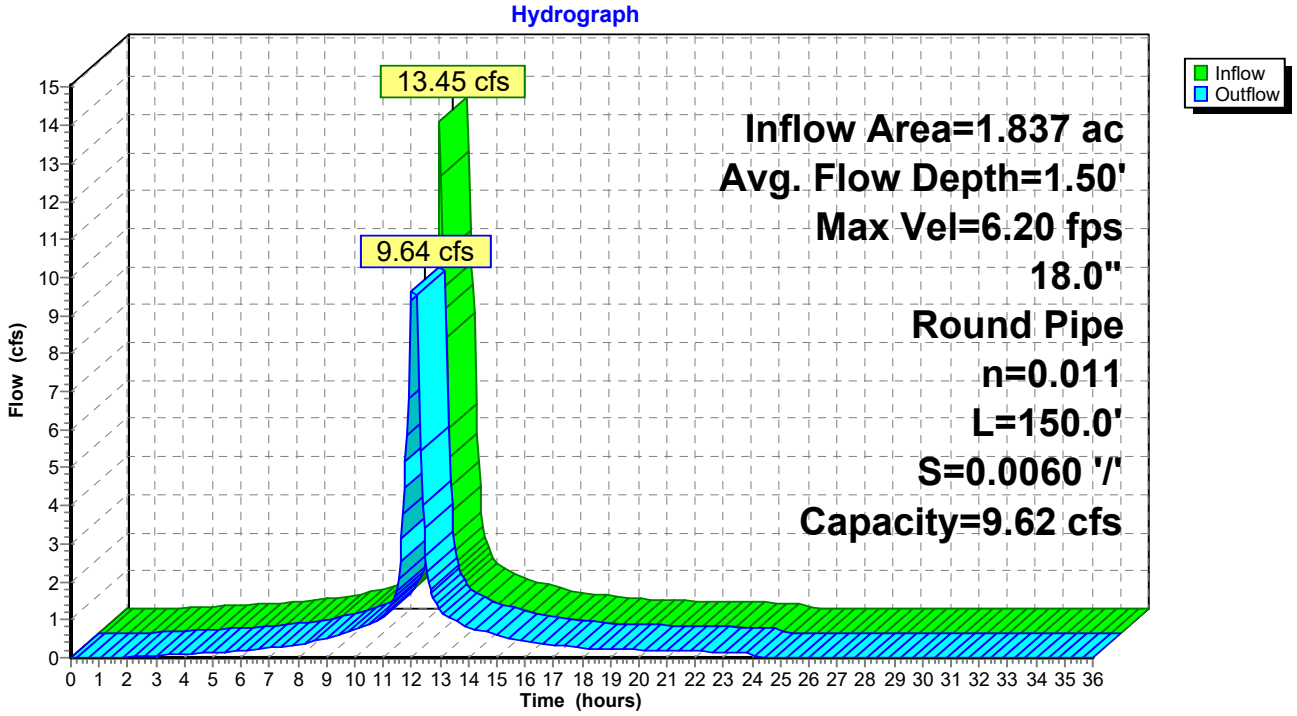
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.20 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 2.46 fps, Avg. Travel Time= 1.0 min

Peak Storage= 265 cf @ 12.00 hrs
Average Depth at Peak Storage= 1.50'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 9.62 cfs

18.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 150.0' Slope= 0.0060 '/'
Inlet Invert= 186.80', Outlet Invert= 185.90'



Reach 2R-4: new 18"



Summary for Reach 2R-5: new 18"

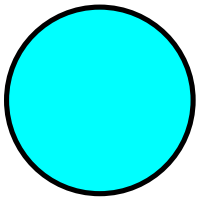
[52] Hint: Inlet/Outlet conditions not evaluated
[55] Hint: Peak inflow is 149% of Manning's capacity
[76] Warning: Detained 0.086 af (Pond w/culvert advised)
[63] Warning: Exceeded Reach 2R-4 INLET depth by 0.07' @ 12.50 hrs

Inflow Area = 2.192 ac, 83.99% Impervious, Inflow Depth = 8.01" for 100-Year event
Inflow = 13.08 cfs @ 12.00 hrs, Volume= 1.463 af
Outflow = 8.78 cfs @ 12.00 hrs, Volume= 1.463 af, Atten= 33%, Lag= 0.0 min
Routed to Link 2L : Flow to BVW

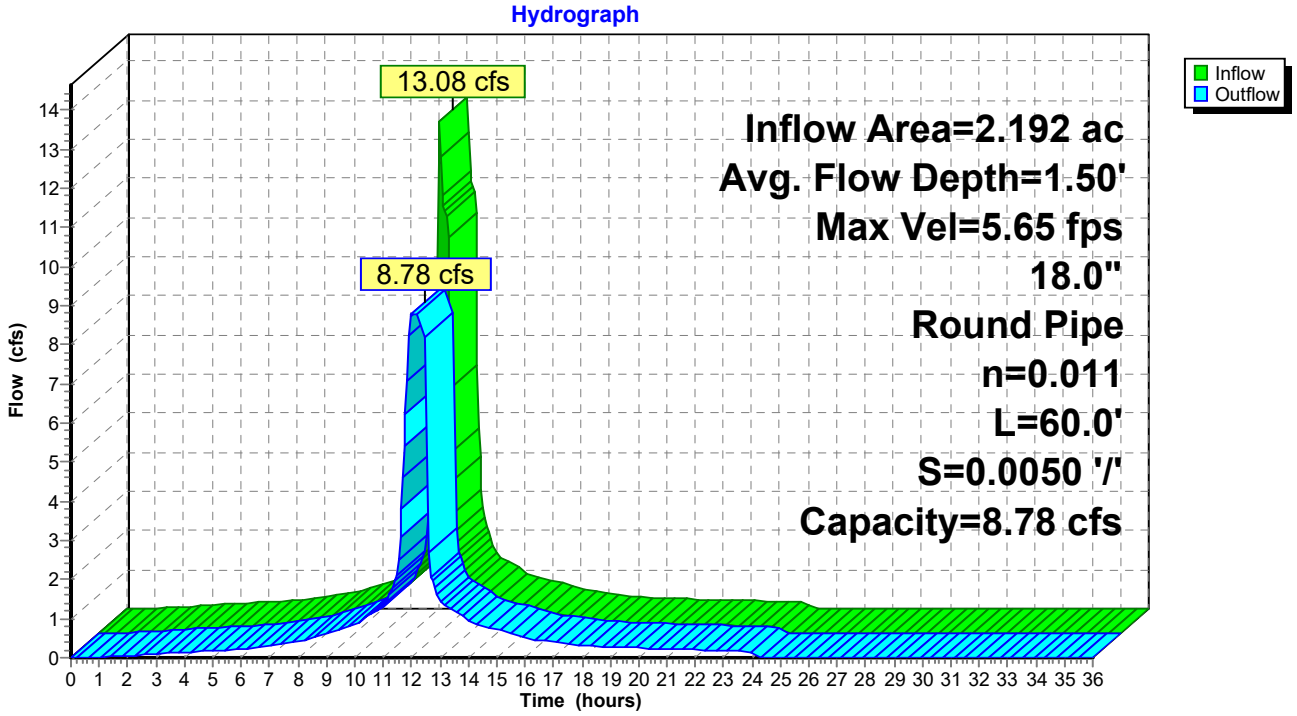
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.65 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.44 fps, Avg. Travel Time= 0.4 min

Peak Storage= 106 cf @ 11.95 hrs
Average Depth at Peak Storage= 1.50'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 8.78 cfs

18.0" Round Pipe
n= 0.011 PVC, smooth interior
Length= 60.0' Slope= 0.0050 '/'
Inlet Invert= 185.90', Outlet Invert= 185.60'



Reach 2R-5: new 18"



Summary for Reach 3R: Ex. 12" RCP

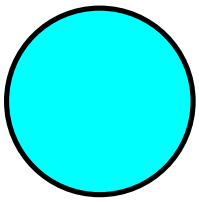
[52] Hint: Inlet/Outlet conditions not evaluated
[55] Hint: Peak inflow is 157% of Manning's capacity
[76] Warning: Detained 0.019 af (Pond w/culvert advised)

Inflow Area = 0.706 ac, 86.54% Impervious, Inflow Depth = 8.14" for 100-Year event
Inflow = 5.80 cfs @ 12.09 hrs, Volume= 0.479 af
Outflow = 4.06 cfs @ 12.33 hrs, Volume= 0.479 af, Atten= 30%, Lag= 14.6 min
Routed to Reach 4R : Ex. 15" RCP

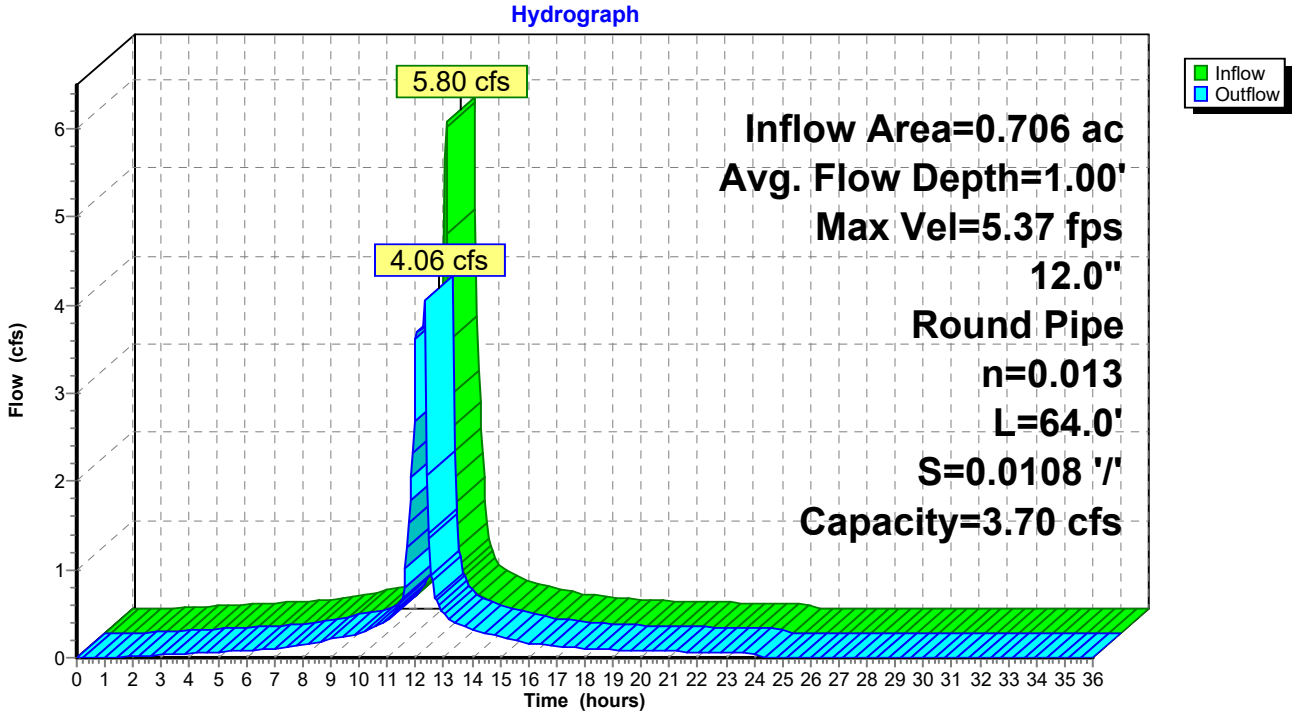
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.37 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.22 fps, Avg. Travel Time= 0.5 min

Peak Storage= 50 cf @ 12.05 hrs
Average Depth at Peak Storage= 1.00'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.70 cfs

12.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 64.0' Slope= 0.0108 '/'
Inlet Invert= 188.35', Outlet Invert= 187.66'



Reach 3R: Ex. 12" RCP



Summary for Reach 4R: Ex. 15" RCP

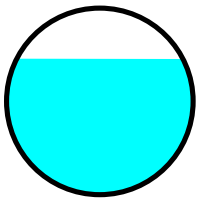
[52] Hint: Inlet/Outlet conditions not evaluated
[62] Hint: Exceeded Reach 3R OUTLET depth by 0.10' @ 12.40 hrs

Inflow Area = 0.706 ac, 86.54% Impervious, Inflow Depth = 8.14" for 100-Year event
Inflow = 4.06 cfs @ 12.33 hrs, Volume= 0.479 af
Outflow = 4.01 cfs @ 12.33 hrs, Volume= 0.479 af, Atten= 1%, Lag= 0.0 min
Routed to Reach 7R : Ex. 24" RCP

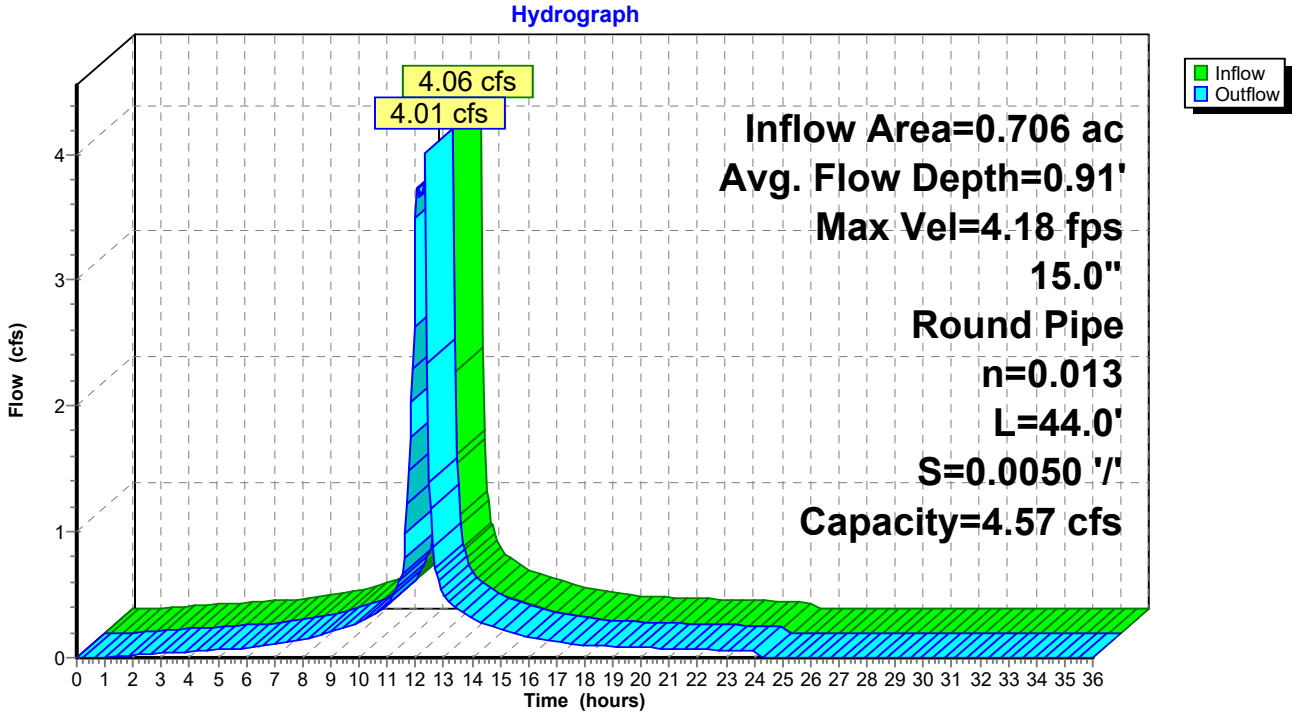
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.18 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.66 fps, Avg. Travel Time= 0.4 min

Peak Storage= 42 cf @ 12.33 hrs
Average Depth at Peak Storage= 0.91' , Surface Width= 1.11'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 4.57 cfs

15.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 44.0' Slope= 0.0050 '/'
Inlet Invert= 187.66', Outlet Invert= 187.44'



Reach 4R: Ex. 15" RCP



Summary for Reach 7R: Ex. 24" RCP

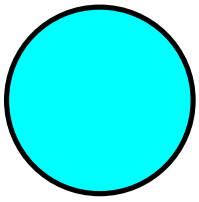
[52] Hint: Inlet/Outlet conditions not evaluated
[55] Hint: Peak inflow is 175% of Manning's capacity
[76] Warning: Detained 0.120 af (Pond w/culvert advised)
[63] Warning: Exceeded Reach 4R INLET depth by 0.82' @ 12.45 hrs

Inflow Area = 3.186 ac, 70.77% Impervious, Inflow Depth = 7.78" for 100-Year event
Inflow = 23.45 cfs @ 12.09 hrs, Volume= 2.065 af
Outflow = 13.40 cfs @ 12.05 hrs, Volume= 2.065 af, Atten= 43%, Lag= 0.0 min
Routed to Reach 8R : Ex. 24" RCP

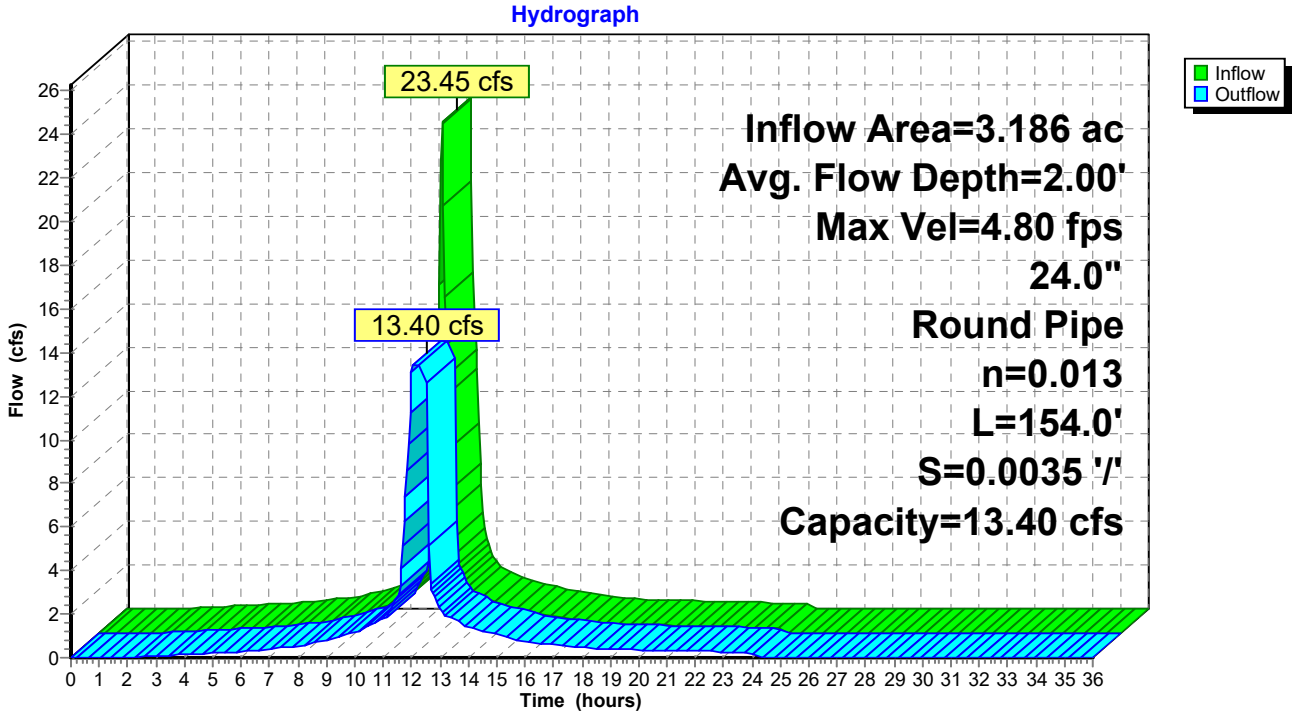
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.80 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 2.04 fps, Avg. Travel Time= 1.3 min

Peak Storage= 484 cf @ 12.00 hrs
Average Depth at Peak Storage= 2.00'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 13.40 cfs

24.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 154.0' Slope= 0.0035 '/'
Inlet Invert= 186.94', Outlet Invert= 186.40'



Reach 7R: Ex. 24" RCP



Summary for Reach 8R: Ex. 24" RCP

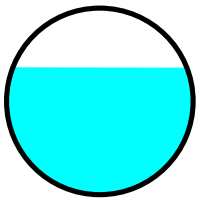
[52] Hint: Inlet/Outlet conditions not evaluated
[88] Warning: Qout>Qin may require smaller dt or Finer Routing
[62] Hint: Exceeded Reach 7R OUTLET depth by 0.05' @ 12.60 hrs

Inflow Area = 3.186 ac, 70.77% Impervious, Inflow Depth = 7.78" for 100-Year event
Inflow = 13.40 cfs @ 12.05 hrs, Volume= 2.065 af
Outflow = 13.40 cfs @ 12.16 hrs, Volume= 2.065 af, Atten= 0%, Lag= 6.5 min
Routed to Link 2L : Flow to BVW

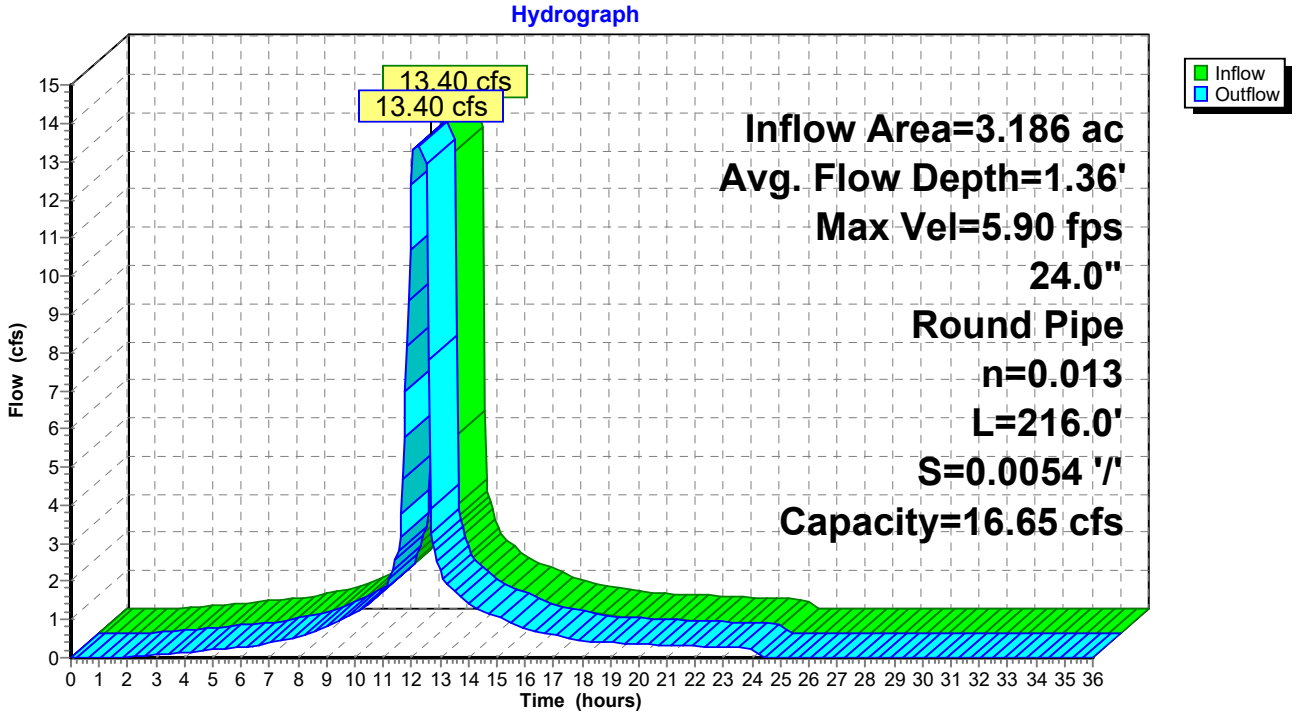
Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.90 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 2.39 fps, Avg. Travel Time= 1.5 min

Peak Storage= 493 cf @ 12.05 hrs
Average Depth at Peak Storage= 1.36' , Surface Width= 1.86'
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 16.65 cfs

24.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 216.0' Slope= 0.0054 '/'
Inlet Invert= 186.30', Outlet Invert= 185.13'



Reach 8R: Ex. 24" RCP



Summary for Pond 5P: East Rv Chambers #2

Inflow Area = 0.599 ac, 95.25% Impervious, Inflow Depth = 8.26" for 100-Year event
Inflow = 4.63 cfs @ 12.02 hrs, Volume= 0.412 af
Outflow = 3.28 cfs @ 12.14 hrs, Volume= 0.412 af, Atten= 29%, Lag= 6.7 min
Discarded = 0.07 cfs @ 6.10 hrs, Volume= 0.184 af
Primary = 3.21 cfs @ 12.14 hrs, Volume= 0.229 af
Routed to Link 14L : Outflow of Combined INF Systems

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 190.27' @ 12.14 hrs Surf.Area= 3,025 sf Storage= 4,811 cf

Plug-Flow detention time= 184.0 min calculated for 0.412 af (100% of inflow)
Center-of-Mass det. time= 183.9 min (926.7 - 742.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	187.00'	3,467 cf	**17.08'W x 177.08'L x 3.33'H Field A** 10,084 cf Overall - 1,415 cf Embedded = 8,668 cf x 40.0% Voids
#2A	187.50'	1,415 cf	**ADS_StormTech SC-310 +Cap** x 96 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 96 Chambers in 4 Rows
		4,883 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	187.00'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	188.62'	**12.0" Round RCP_Round 12"** L= 7.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 188.62' / 188.58' S= 0.0057 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.07 cfs @ 6.10 hrs HW=187.03' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

Primary OutFlow Max=3.19 cfs @ 12.14 hrs HW=190.26' (Free Discharge)
↑—**2=RCP_Round 12"** (Inlet Controls 3.19 cfs @ 4.07 fps)

Pond 5P: East Rv Chambers #2 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)
Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 3.0" Spacing = 37.0" C-C Row Spacing

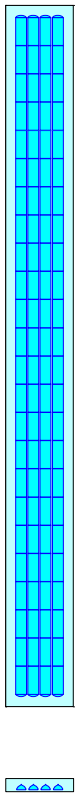
24 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 172.08' Row Length +30.0" End Stone x 2 = 177.08' Base Length
4 Rows x 34.0" Wide + 3.0" Spacing x 3 + 30.0" Side Stone x 2 = 17.08' Base Width
6.0" Stone Base + 16.0" Chamber Height + 18.0" Stone Cover = 3.33' Field Height

96 Chambers x 14.7 cf = 1,415.2 cf Chamber Storage

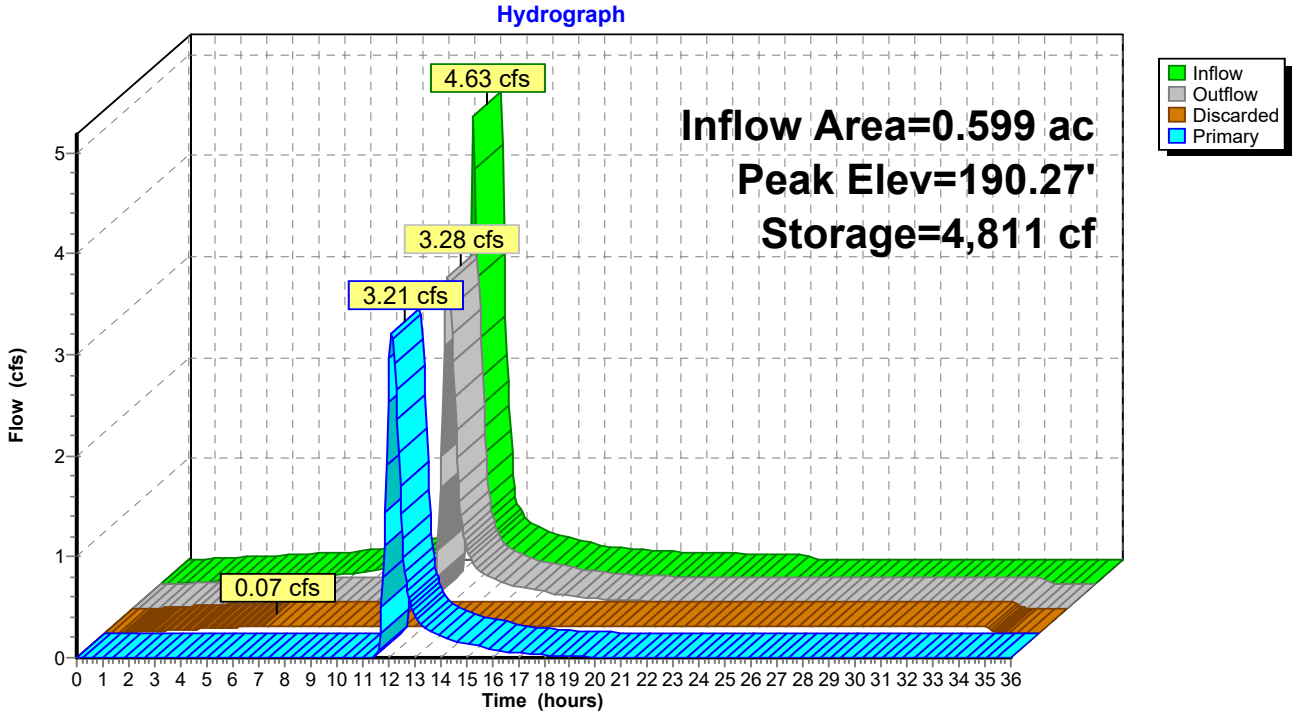
10,083.7 cf Field - 1,415.2 cf Chambers = 8,668.5 cf Stone x 40.0% Voids = 3,467.4 cf Stone Storage

Chamber Storage + Stone Storage = 4,882.6 cf = 0.112 af
Overall Storage Efficiency = 48.4%
Overall System Size = 177.08' x 17.08' x 3.33'

96 Chambers
373.5 cy Field
321.1 cy Stone



Pond 5P: East Rv Chambers #2



Summary for Pond 8P: East Rv Chambers #1

Inflow Area = 0.130 ac, 76.94% Impervious, Inflow Depth = 7.90" for 100-Year event
Inflow = 1.06 cfs @ 12.09 hrs, Volume= 0.086 af
Outflow = 0.13 cfs @ 12.65 hrs, Volume= 0.086 af, Atten= 87%, Lag= 33.9 min
Discarded = 0.04 cfs @ 9.30 hrs, Volume= 0.076 af
Primary = 0.10 cfs @ 12.65 hrs, Volume= 0.010 af
Routed to Link 14L : Outflow of Combined INF Systems

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 189.04' @ 12.65 hrs Surf.Area= 1,566 sf Storage= 1,704 cf

Plug-Flow detention time= 346.0 min calculated for 0.086 af (100% of inflow)
Center-of-Mass det. time= 345.9 min (1,105.5 - 759.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	187.00'	1,804 cf	**17.08'W x 91.64'L x 3.33'H Field A** 5,218 cf Overall - 708 cf Embedded = 4,511 cf x 40.0% Voids
#2A	187.50'	708 cf	**ADS_StormTech SC-310 +Cap** x 48 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 48 Chambers in 4 Rows
		2,512 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	187.00'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	188.87'	**12.0" Round RCP_Round 12"** L= 7.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 188.83' / 188.87' S= -0.0057 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.04 cfs @ 9.30 hrs HW=187.03' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.10 cfs @ 12.65 hrs HW=189.04' (Free Discharge)
↑—**2=RCP_Round 12"** (Barrel Controls 0.10 cfs @ 1.18 fps)

Pond 8P: East Rv Chambers #1 - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)
Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 3.0" Spacing = 37.0" C-C Row Spacing

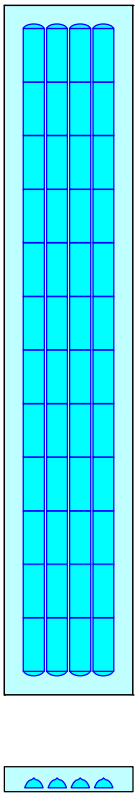
12 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 86.64' Row Length +30.0" End Stone x 2 = 91.64' Base Length
4 Rows x 34.0" Wide + 3.0" Spacing x 3 + 30.0" Side Stone x 2 = 17.08' Base Width
6.0" Stone Base + 16.0" Chamber Height + 18.0" Stone Cover = 3.33' Field Height

48 Chambers x 14.7 cf = 707.6 cf Chamber Storage

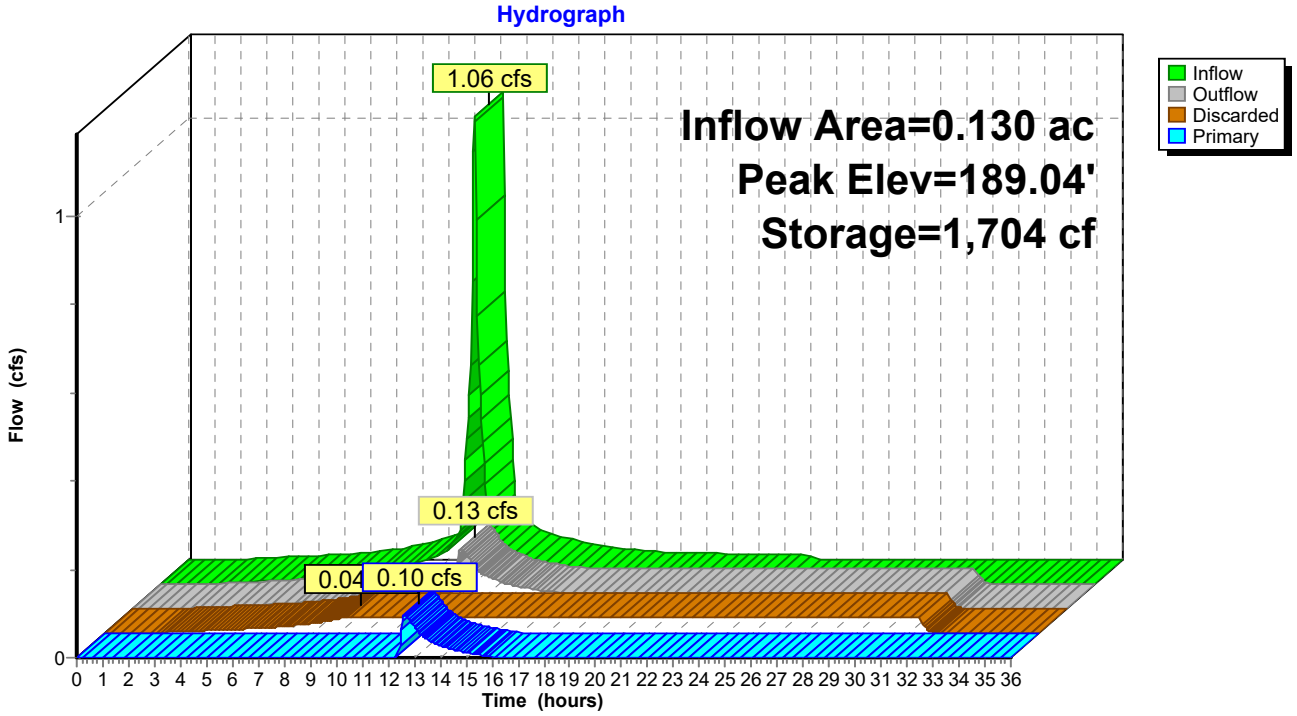
5,218.4 cf Field - 707.6 cf Chambers = 4,510.8 cf Stone x 40.0% Voids = 1,804.3 cf Stone Storage

Chamber Storage + Stone Storage = 2,511.9 cf = 0.058 af
Overall Storage Efficiency = 48.1%
Overall System Size = 91.64' x 17.08' x 3.33'

48 Chambers
193.3 cy Field
167.1 cy Stone



Pond 8P: East Rv Chambers #1



Summary for Pond 9P: East Rv Chambers #3

Inflow Area = 0.303 ac, 92.27% Impervious, Inflow Depth = 8.26" for 100-Year event
Inflow = 2.50 cfs @ 12.09 hrs, Volume= 0.209 af
Outflow = 2.21 cfs @ 12.13 hrs, Volume= 0.208 af, Atten= 12%, Lag= 2.7 min
Discarded = 0.03 cfs @ 5.25 hrs, Volume= 0.085 af
Primary = 2.17 cfs @ 12.13 hrs, Volume= 0.124 af
Routed to Reach 1R-4 : new 24"

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 189.98' @ 12.13 hrs Surf.Area= 1,322 sf Storage= 1,929 cf

Plug-Flow detention time= 181.9 min calculated for 0.208 af (100% of inflow)
Center-of-Mass det. time= 181.9 min (927.8 - 746.0)

Volume	Invert	Avail.Storage	Storage Description
#1B	187.00'	1,527 cf	**17.08'W x 77.40'L x 3.33'H Field B** 4,407 cf Overall - 590 cf Embedded = 3,818 cf x 40.0% Voids
#2B	187.50'	590 cf	**ADS_StormTech SC-310 +Cap** x 40 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 40 Chambers in 4 Rows
		2,117 cf	Total Available Storage

Storage Group B created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	187.00'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	188.87'	**12.0" Round RCP_Round 12"** L= 7.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 188.83' / 188.87' S= -0.0057 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.03 cfs @ 5.25 hrs HW=187.03' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=2.13 cfs @ 12.13 hrs HW=189.96' (Free Discharge)
↑—**2=RCP_Round 12"** (Barrel Controls 2.13 cfs @ 3.00 fps)

Pond 9P: East Rv Chambers #3 - Chamber Wizard Field B

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)
Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 3.0" Spacing = 37.0" C-C Row Spacing

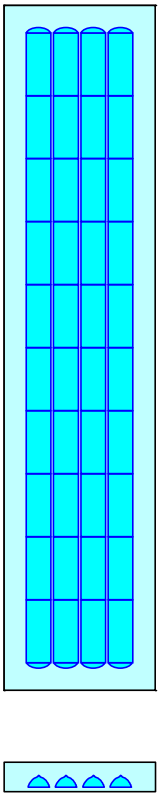
10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +30.0" End Stone x 2 = 77.40' Base Length
4 Rows x 34.0" Wide + 3.0" Spacing x 3 + 30.0" Side Stone x 2 = 17.08' Base Width
6.0" Stone Base + 16.0" Chamber Height + 18.0" Stone Cover = 3.33' Field Height

40 Chambers x 14.7 cf = 589.7 cf Chamber Storage

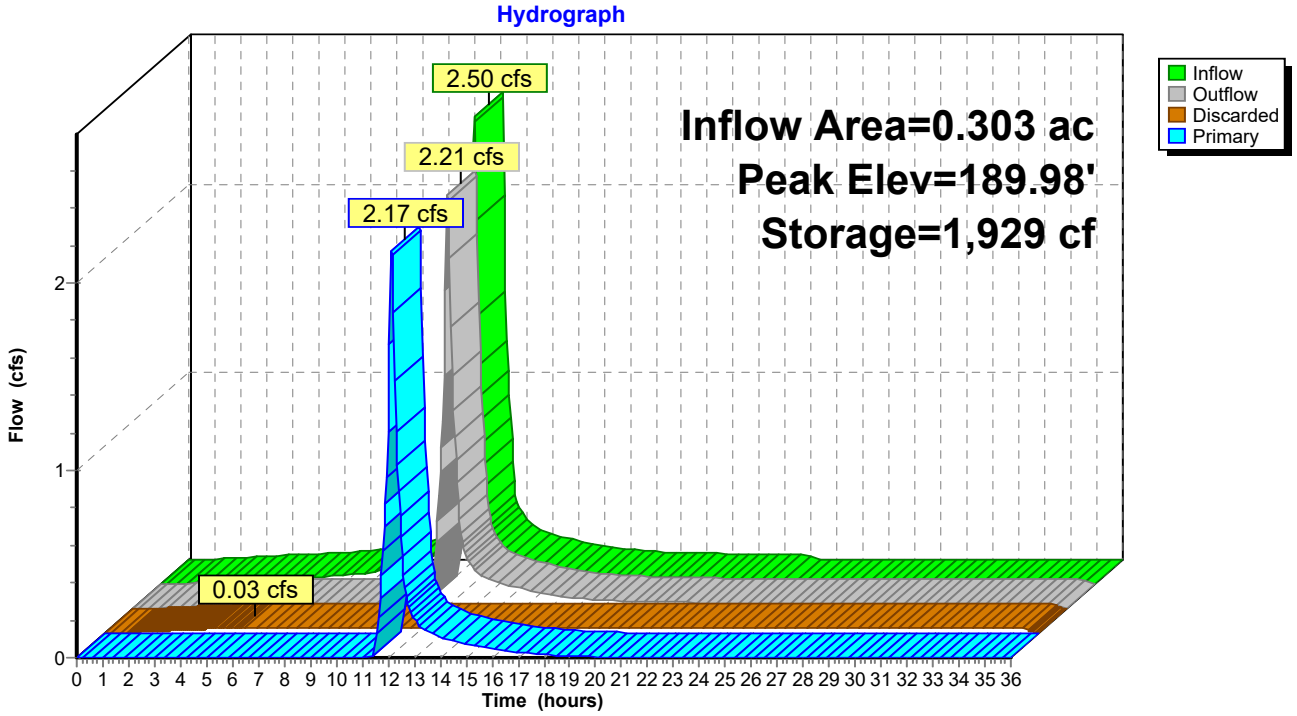
4,407.5 cf Field - 589.7 cf Chambers = 3,817.8 cf Stone x 40.0% Voids = 1,527.1 cf Stone Storage

Chamber Storage + Stone Storage = 2,116.8 cf = 0.049 af
Overall Storage Efficiency = 48.0%
Overall System Size = 77.40' x 17.08' x 3.33'

40 Chambers
163.2 cy Field
141.4 cy Stone



Pond 9P: East Rv Chambers #3



Summary for Pond 15P: Garage Trench

[92] Warning: Device #2 is above defined storage
[93] Warning: Storage range exceeded by 0.29'
[88] Warning: Qout>Qin may require smaller dt or Finer Routing
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=40)

Inflow Area = 0.074 ac,100.00% Impervious, Inflow Depth = 8.38" for 100-Year event
Inflow = 0.61 cfs @ 12.09 hrs, Volume= 0.052 af
Outflow = 0.86 cfs @ 12.10 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.7 min
Discarded = 0.01 cfs @ 7.50 hrs, Volume= 0.031 af
Primary = 0.85 cfs @ 12.10 hrs, Volume= 0.021 af
Routed to Link 3L : Northeast area at 2 Federal

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 194.29' @ 12.10 hrs Surf.Area= 588 sf Storage= 470 cf

Plug-Flow detention time= 181.5 min calculated for 0.052 af (100% of inflow)
Center-of-Mass det. time= 181.9 min (922.2 - 740.3)

Volume	Invert	Avail.Storage	Storage Description
#1	192.00'	470 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 1,176 cf Overall x 40.0% Voids

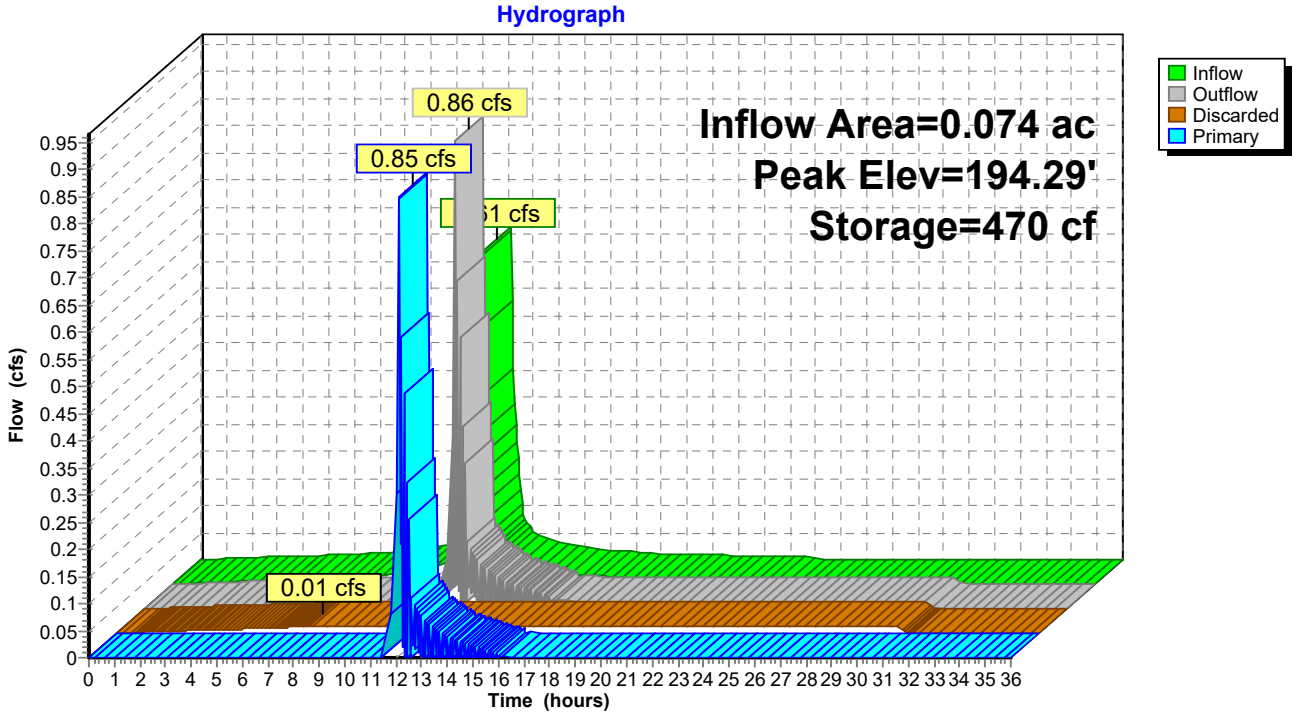
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
192.00	588	0	0
193.00	588	588	588
194.00	588	588	1,176

Device	Routing	Invert	Outlet Devices
#1	Discarded	192.00'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	194.00'	**2.0' long x 1.0' 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 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=0.01 cfs @ 7.50 hrs HW=192.02' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.82 cfs @ 12.10 hrs HW=194.28' (Free Discharge)
↑**2=Broad-Crested Rectangular Weir** (Weir Controls 0.82 cfs @ 1.44 fps)

Pond 15P: Garage Trench



Summary for Pond 17P: East Rv Chambers #4

Inflow Area = 0.389 ac, 69.88% Impervious, Inflow Depth = 7.78" for 100-Year event
Inflow = 3.69 cfs @ 12.00 hrs, Volume= 0.252 af
Outflow = 2.64 cfs @ 12.06 hrs, Volume= 0.252 af, Atten= 28%, Lag= 3.6 min
Discarded = 0.05 cfs @ 6.95 hrs, Volume= 0.120 af
Primary = 2.59 cfs @ 12.06 hrs, Volume= 0.132 af
Routed to Link 2L : Flow to BVW

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 190.25' @ 12.06 hrs Surf.Area= 1,965 sf Storage= 3,142 cf

Plug-Flow detention time= 228.5 min calculated for 0.252 af (100% of inflow)
Center-of-Mass det. time= 227.6 min (985.6 - 757.9)

Volume	Invert	Avail.Storage	Storage Description
#1B	187.00'	2,231 cf	**23.25'W x 84.52'L x 3.33'H Field B** 6,550 cf Overall - 973 cf Embedded = 5,577 cf x 40.0% Voids
#2B	187.50'	973 cf	**ADS_StormTech SC-310 +Cap** x 66 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 66 Chambers in 6 Rows
		3,204 cf	Total Available Storage

Storage Group B created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	187.00'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	189.00'	**12.0" Round Culvert** L= 26.2' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 189.00' / 188.74' S= 0.0099 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.79 sf

Discarded OutFlow Max=0.05 cfs @ 6.95 hrs HW=187.03' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=2.56 cfs @ 12.06 hrs HW=190.23' (Free Discharge)
↑—**2=Culvert** (Inlet Controls 2.56 cfs @ 3.26 fps)

Pond 17P: East Rv Chambers #4 - Chamber Wizard Field B

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)
Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 3.0" Spacing = 37.0" C-C Row Spacing

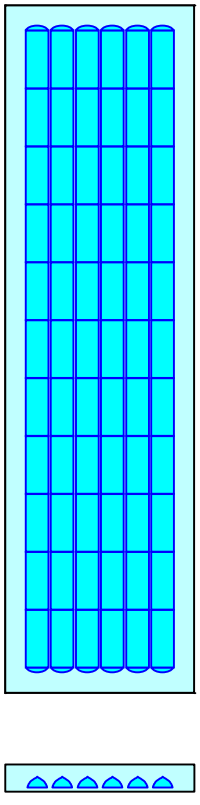
11 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 79.52' Row Length +30.0" End Stone x 2 = 84.52' Base Length
6 Rows x 34.0" Wide + 3.0" Spacing x 5 + 30.0" Side Stone x 2 = 23.25' Base Width
6.0" Stone Base + 16.0" Chamber Height + 18.0" Stone Cover = 3.33' Field Height

66 Chambers x 14.7 cf = 973.0 cf Chamber Storage

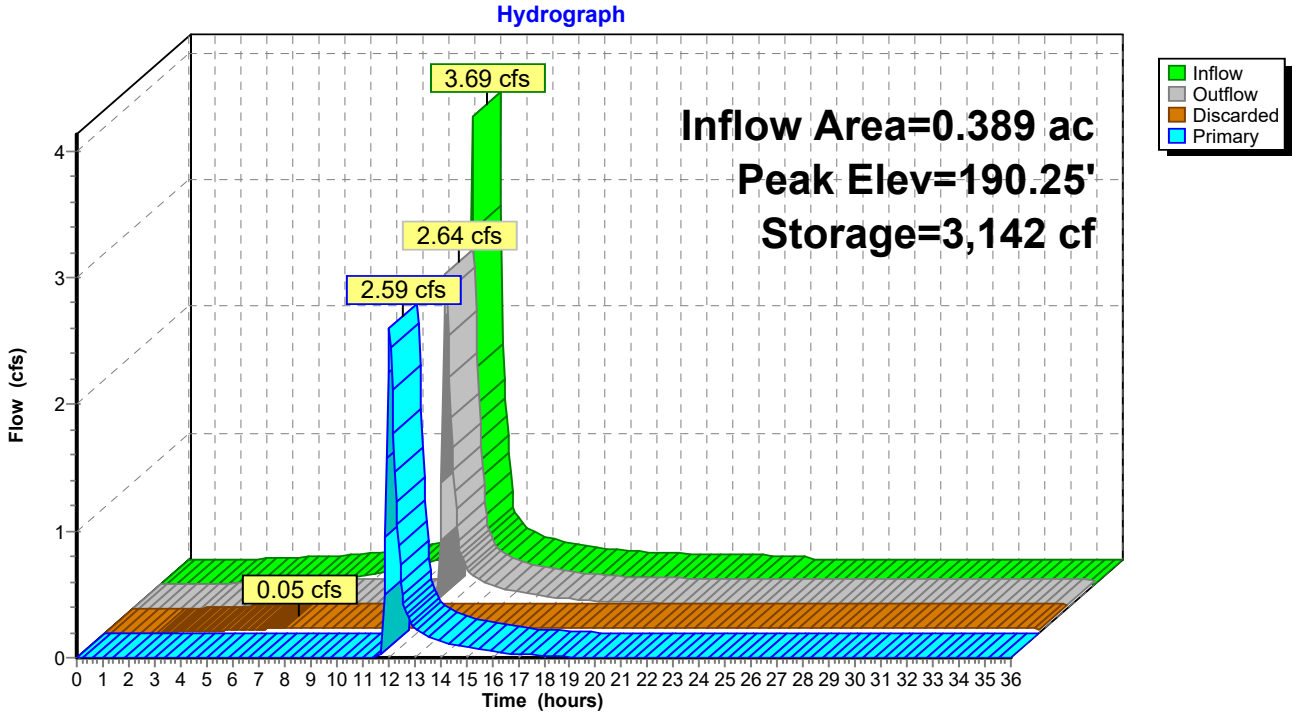
6,550.3 cf Field - 973.0 cf Chambers = 5,577.3 cf Stone x 40.0% Voids = 2,230.9 cf Stone Storage

Chamber Storage + Stone Storage = 3,203.9 cf = 0.074 af
Overall Storage Efficiency = 48.9%
Overall System Size = 84.52' x 23.25' x 3.33'

66 Chambers
242.6 cy Field
206.6 cy Stone



Pond 17P: East Rv Chambers #4



Summary for Pond C8: Banked Parking chambers

Inflow Area = 0.309 ac, 61.16% Impervious, Inflow Depth = 7.54" for 100-Year event
Inflow = 2.47 cfs @ 12.09 hrs, Volume= 0.194 af
Outflow = 0.60 cfs @ 12.47 hrs, Volume= 0.194 af, Atten= 76%, Lag= 23.2 min
Discarded = 0.07 cfs @ 9.00 hrs, Volume= 0.156 af
Primary = 0.53 cfs @ 12.47 hrs, Volume= 0.038 af
Routed to Link 2L : Flow to BVW

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 191.33' @ 12.47 hrs Surf.Area= 2,978 sf Storage= 3,729 cf

Plug-Flow detention time= 360.3 min calculated for 0.194 af (100% of inflow)
Center-of-Mass det. time= 360.7 min (1,131.2 - 770.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	189.00'	2,143 cf	**32.50'W x 91.64'L x 2.33'H Field A** 6,949 cf Overall - 1,592 cf Embedded = 5,357 cf x 40.0% Voids
#2A	189.50'	1,592 cf	**ADS_StormTech SC-310 +Cap** x 108 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 108 Chambers in 9 Rows
		3,735 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	189.00'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	191.00'	**8.0" Round Culvert X 2.00** L= 48.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 191.00' / 190.04' S= 0.0200 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.35 sf

Discarded OutFlow Max=0.07 cfs @ 9.00 hrs HW=189.03' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

Primary OutFlow Max=0.52 cfs @ 12.47 hrs HW=191.33' (Free Discharge)
↑—**2=Culvert** (Inlet Controls 0.52 cfs @ 1.53 fps)

Pond C8: Banked Parking chambers - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)
Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 3.0" Spacing = 37.0" C-C Row Spacing

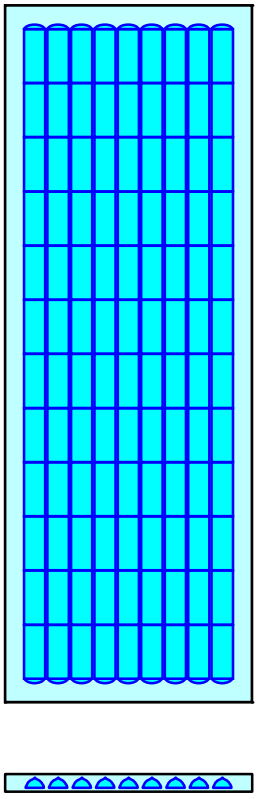
12 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 86.64' Row Length +30.0" End Stone x 2 = 91.64' Base Length
9 Rows x 34.0" Wide + 3.0" Spacing x 8 + 30.0" Side Stone x 2 = 32.50' Base Width
6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

108 Chambers x 14.7 cf = 1,592.1 cf Chamber Storage

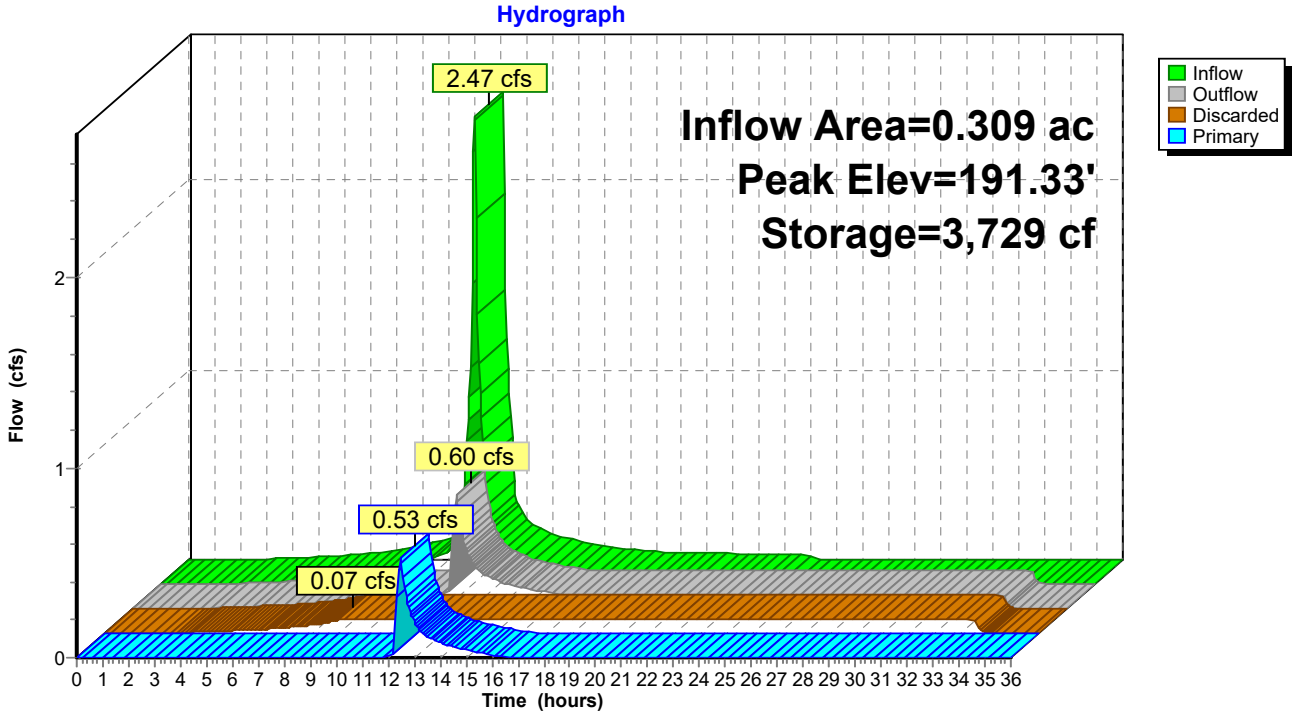
6,949.4 cf Field - 1,592.1 cf Chambers = 5,357.2 cf Stone x 40.0% Voids = 2,142.9 cf Stone Storage

Chamber Storage + Stone Storage = 3,735.0 cf = 0.086 af
Overall Storage Efficiency = 53.7%
Overall System Size = 91.64' x 32.50' x 2.33'

108 Chambers
257.4 cy Field
198.4 cy Stone



Pond C8: Banked Parking chambers



Summary for Pond C9: Banked Parking chambers

Inflow Area = 0.164 ac, 80.13% Impervious, Inflow Depth = 7.90" for 100-Year event
Inflow = 1.34 cfs @ 12.09 hrs, Volume= 0.108 af
Outflow = 0.49 cfs @ 12.35 hrs, Volume= 0.108 af, Atten= 63%, Lag= 15.5 min
Discarded = 0.04 cfs @ 8.65 hrs, Volume= 0.083 af
Primary = 0.45 cfs @ 12.35 hrs, Volume= 0.025 af
Routed to Link 2L : Flow to BVW

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 188.80' @ 12.35 hrs Surf.Area= 1,561 sf Storage= 1,879 cf

Plug-Flow detention time= 325.7 min calculated for 0.108 af (100% of inflow)
Center-of-Mass det. time= 325.6 min (1,085.3 - 759.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	186.50'	1,162 cf	**20.17'W x 77.40'L x 2.33'H Field A** 3,642 cf Overall - 737 cf Embedded = 2,905 cf x 40.0% Voids
#2A	187.00'	737 cf	**ADS_StormTech SC-310 +Cap** x 50 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 50 Chambers in 5 Rows
		1,899 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	186.50'	**1.020 in/hr Exfiltration over Surface area**
#2	Primary	188.50'	**8.0" Round Culvert X 2.00** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 188.50' / 187.90' S= 0.0200 '/' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.35 sf

Discarded OutFlow Max=0.04 cfs @ 8.65 hrs HW=186.53' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.45 cfs @ 12.35 hrs HW=188.80' (Free Discharge)
↑—**2=Culvert** (Inlet Controls 0.45 cfs @ 1.47 fps)

Pond C9: Banked Parking chambers - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-310 +Cap (ADS StormTech®SC-310 with cap length)
Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf
Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap

34.0" Wide + 3.0" Spacing = 37.0" C-C Row Spacing

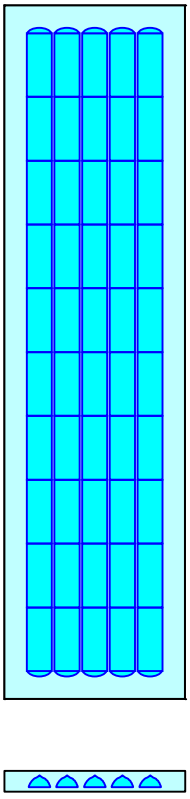
10 Chambers/Row x 7.12' Long +0.60' Cap Length x 2 = 72.40' Row Length +30.0" End Stone x 2 = 77.40' Base Length
5 Rows x 34.0" Wide + 3.0" Spacing x 4 + 30.0" Side Stone x 2 = 20.17' Base Width
6.0" Stone Base + 16.0" Chamber Height + 6.0" Stone Cover = 2.33' Field Height

50 Chambers x 14.7 cf = 737.1 cf Chamber Storage

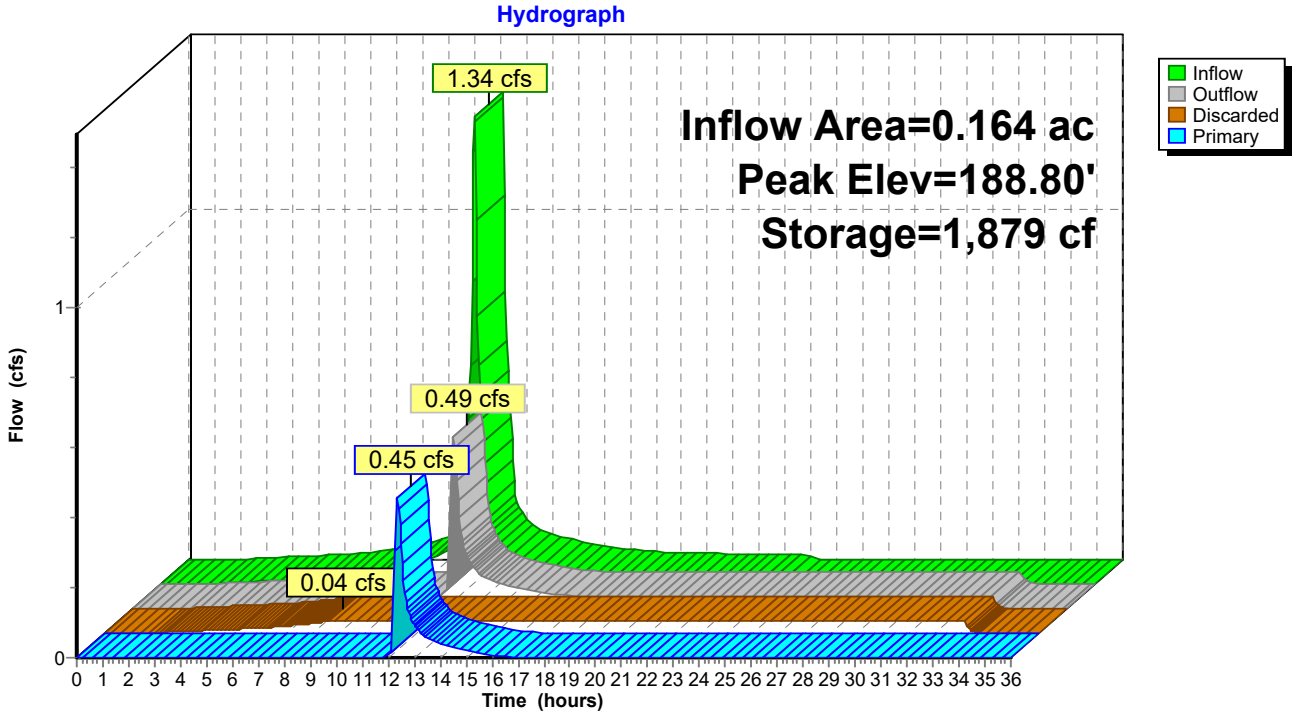
3,642.1 cf Field - 737.1 cf Chambers = 2,905.0 cf Stone x 40.0% Voids = 1,162.0 cf Stone Storage

Chamber Storage + Stone Storage = 1,899.1 cf = 0.044 af
Overall Storage Efficiency = 52.1%
Overall System Size = 77.40' x 20.17' x 2.33'

50 Chambers
134.9 cy Field
107.6 cy Stone



Pond C9: Banked Parking chambers

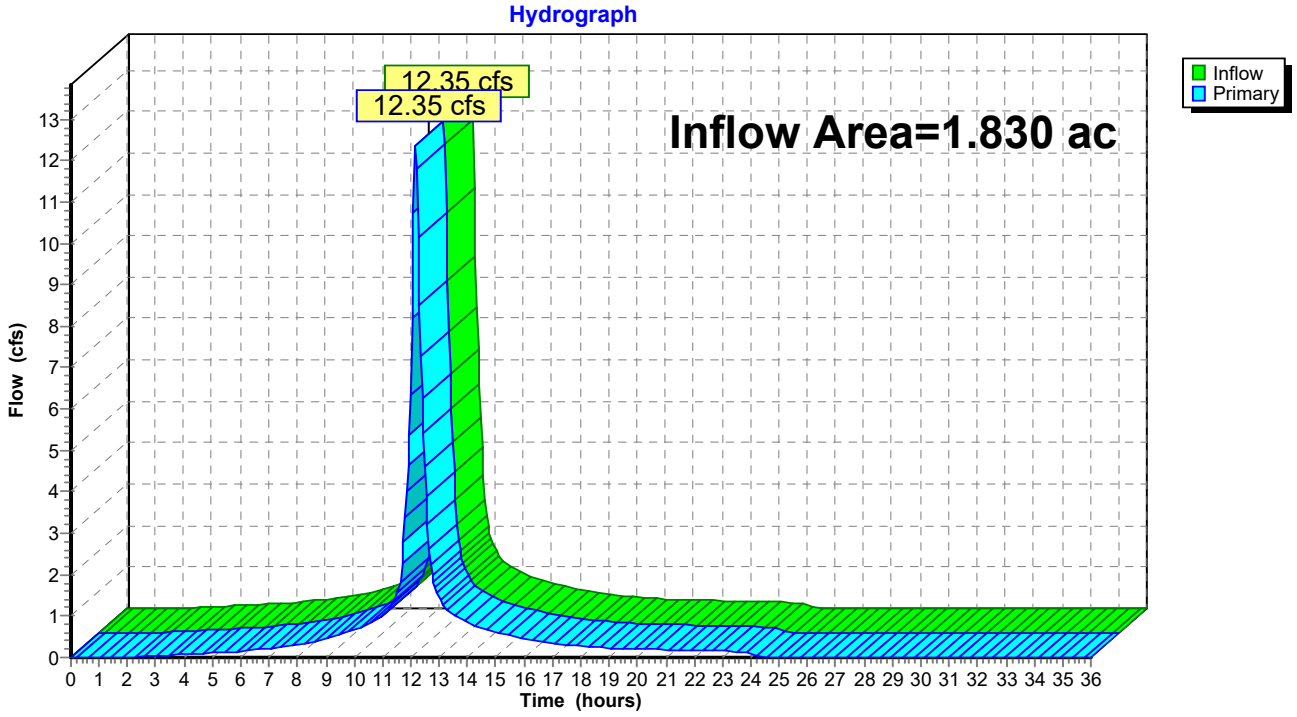


Summary for Link 1L: Ex. CB w/15" RCP to 3 Federal

Inflow Area = 1.830 ac, 73.47% Impervious, Inflow Depth = 7.78" for 100-Year event
Inflow = 12.35 cfs @ 12.16 hrs, Volume= 1.186 af
Primary = 12.35 cfs @ 12.16 hrs, Volume= 1.186 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link 1L: Ex. CB w/15" RCP to 3 Federal

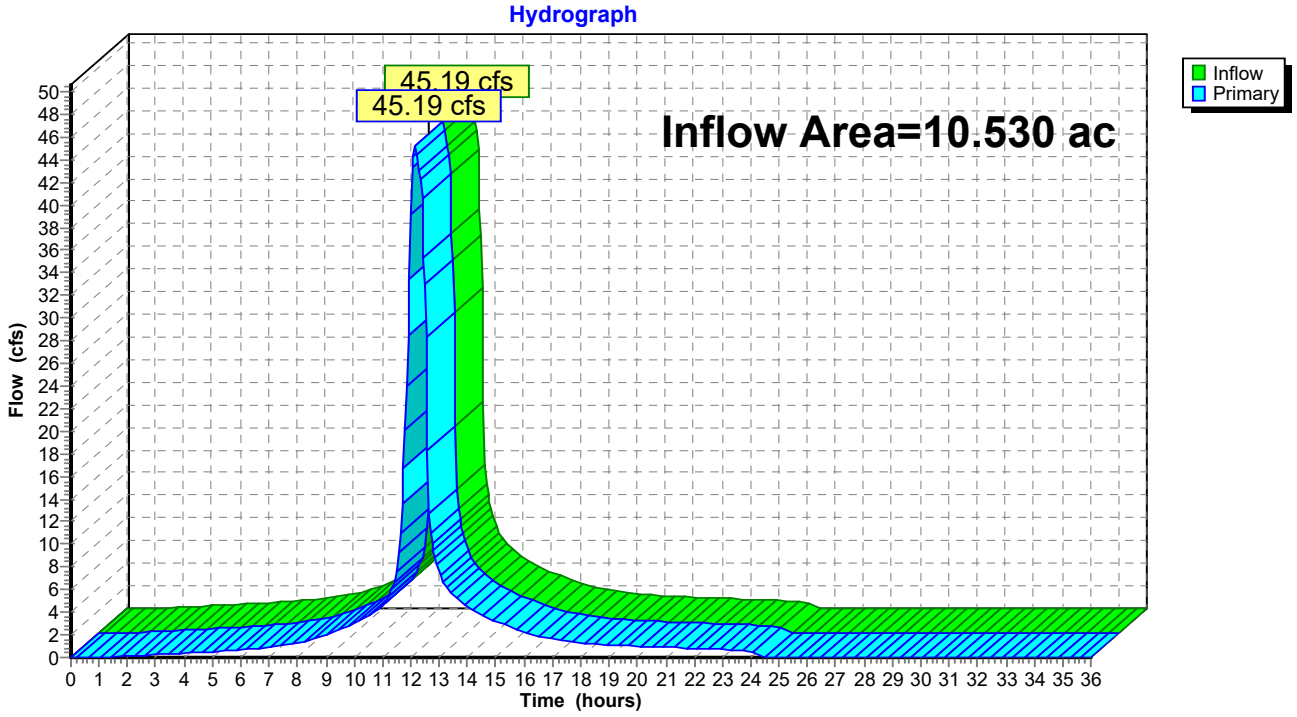


Summary for Link 2L: Flow to BVW

Inflow Area = 10.530 ac, 67.32% Impervious, Inflow Depth = 6.82" for 100-Year event
Inflow = 45.19 cfs @ 12.17 hrs, Volume= 5.989 af
Primary = 45.19 cfs @ 12.17 hrs, Volume= 5.989 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link 2L: Flow to BVW

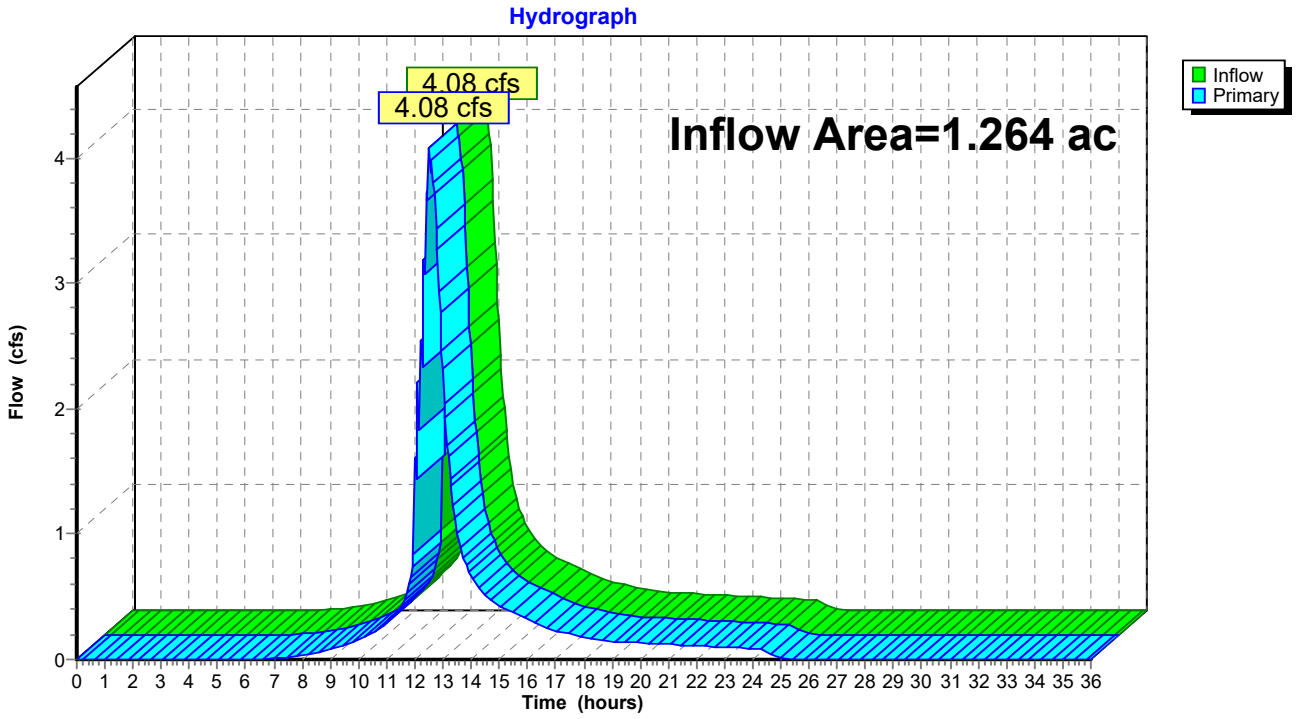


Summary for Link 3L: Northeast area at 2 Federal

Inflow Area = 1.264 ac, 6.13% Impervious, Inflow Depth = 5.70" for 100-Year event
Inflow = 4.08 cfs @ 12.51 hrs, Volume= 0.601 af
Primary = 4.08 cfs @ 12.51 hrs, Volume= 0.601 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link 3L: Northeast area at 2 Federal

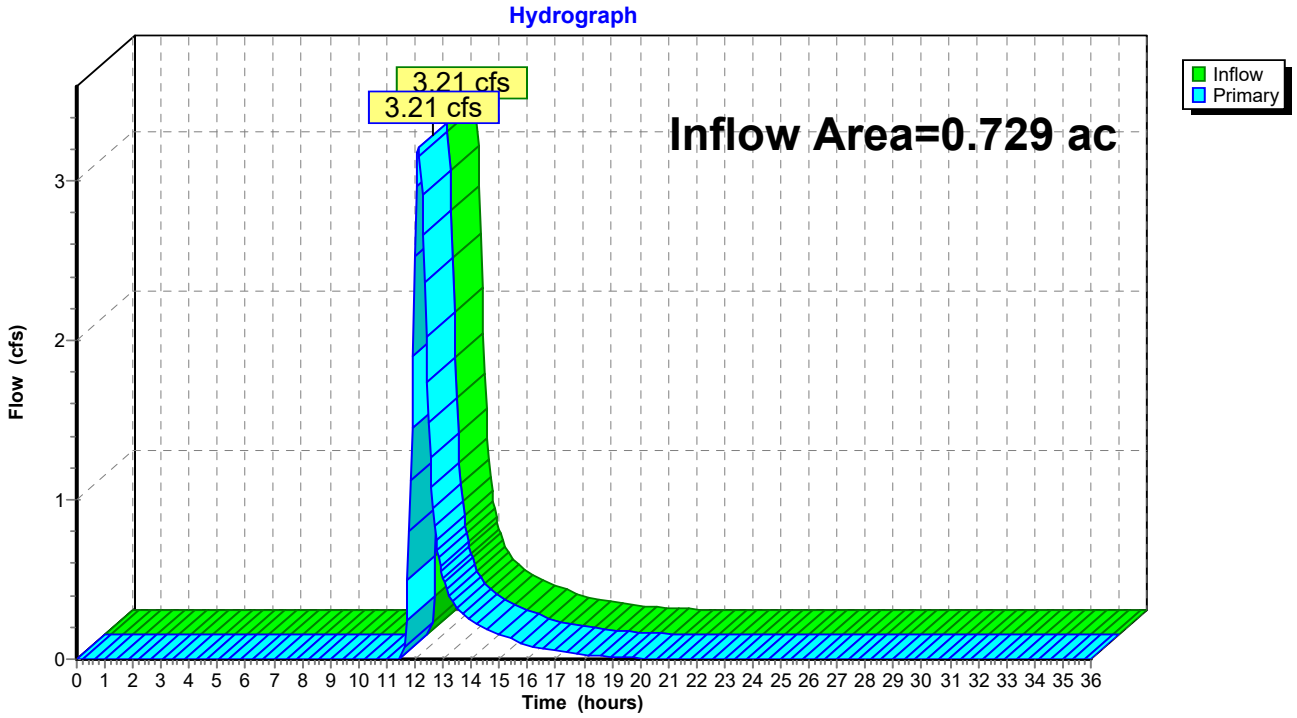


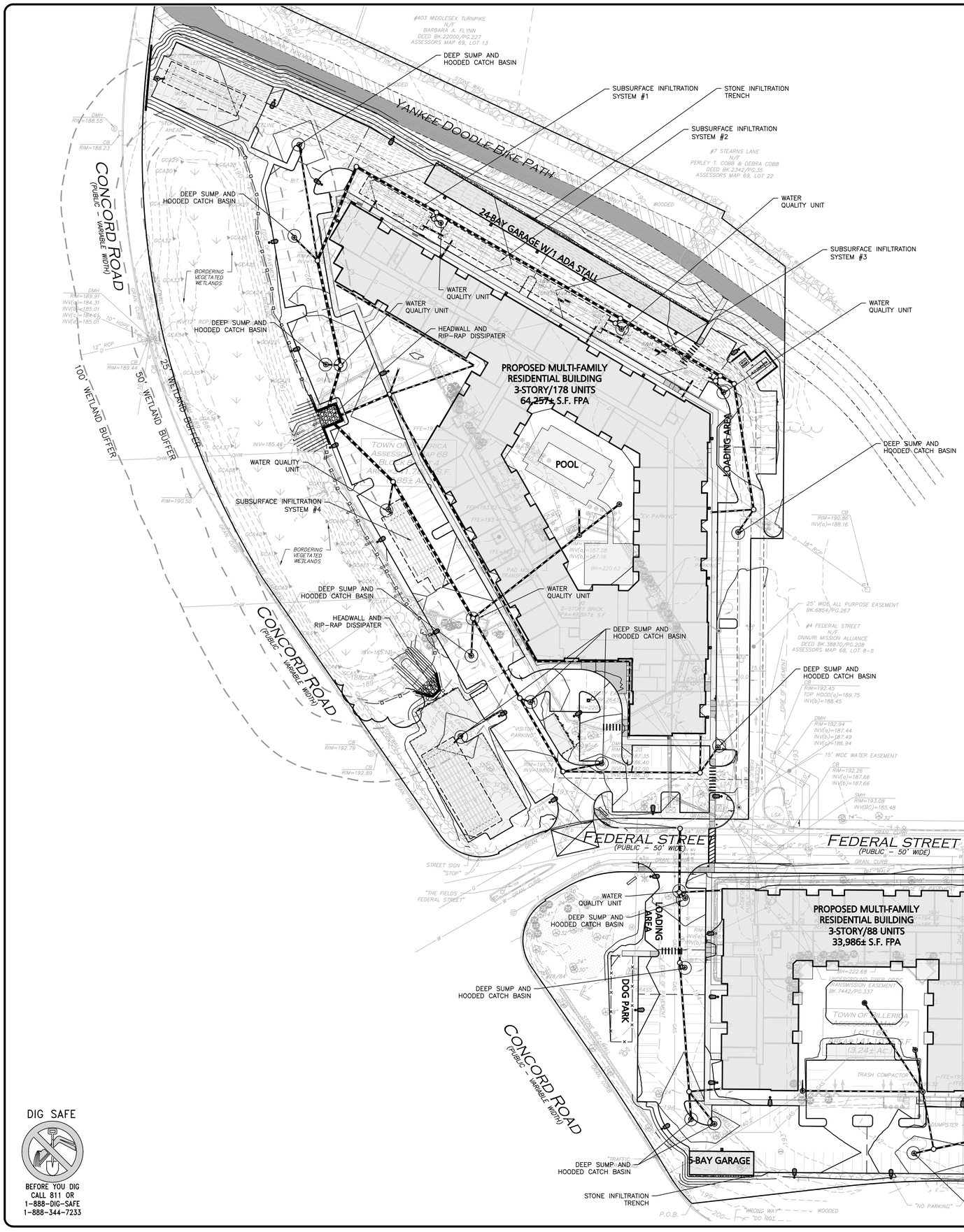
Summary for Link 14L: Outflow of Combined INF Systems

Inflow Area = 0.729 ac, 91.98% Impervious, Inflow Depth = 3.92" for 100-Year event
Inflow = 3.21 cfs @ 12.14 hrs, Volume= 0.238 af
Primary = 3.21 cfs @ 12.14 hrs, Volume= 0.238 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 1R-4 : new 24"

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link 14L: Outflow of Combined INF Systems





LEGEND

- DRAIN MANHOLE (DMH)
- CATCH BASIN (CB)
- CATCH BASIN – DOUBLE GRATE
- OUTLET CONTROL (OCS)
- DIVERSION WEIR
- WATER QUALITY UNIT (WQU)
- AREA DRAIN (AD)
- FLARED END SECTION (FES)
- DRAIN LINE
- RIPRAP OUTFALL
- HEADWALL
- 5' CONTOUR
- 1' CONTOUR
- SPOT GRADE ×4365.00
- INFILTRATION SYSTEM
- INFILTRATION PIPE
- DETENTION PIPE
- UNDERDRAIN UD
- FLOW DIRECTION

ISSUED FOR REVIEW
DECEMBER 11, 2025 -
REV. 3 - FEBRUARY 16, 2026

COMMONWEALTH OF MASSACHUSETTS
PHILIP L. CORDEIRO
CIVIL
NO. 47581
REGISTERED PROFESSIONAL ENGINEER

Digitally signed by Philip Cordeiro
Date: 2026.02.18 12:27:56-05'00'

PROFESSIONAL ENGINEER FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
3	02-16-2026	PER REVIEW COMMENTS
2	02-09-2026	PER REVIEW COMMENTS
1	01-21-2026	PER REVIEW COMMENTS

APPLICANT\OWNER:
JLB REALTY, LLC
2310 WASHINGTON STREET
NEWTON, MA 02462

PROJECT:
JLB BILLERICA
1 & 2 FEDERAL STREET
BILLERICA, MA

PROJECT NO.	3490-03	DATE:	11-03-2025
SCALE:	1" = 40'	DWG. NAME:	C3490-03
DESIGNED BY:	SF/JAP	CHECKED BY:	PLC

PREPARED BY:
ALLEN & MAJOR ASSOCIATES, INC.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
10 MAIN STREET
LAKEVILLE, MA 02347
TEL: (508) 923-1010
FAX: (508) 923-6309
WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

DRAWING TITLE:
OPERATION AND MAINTENANCE LOCUS PLAN

SHEET No.
O&M

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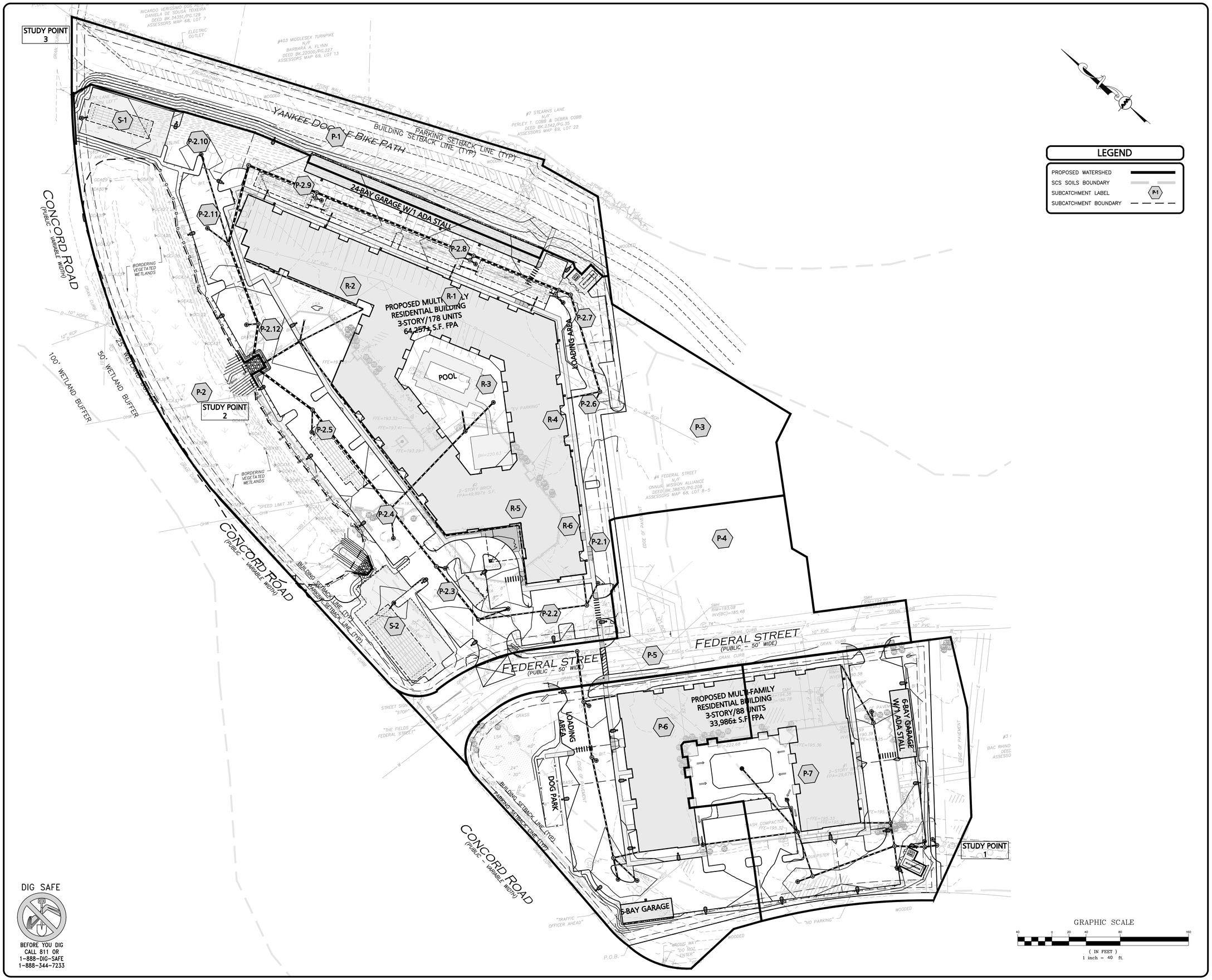
BEFORE YOU DIG CALL 811 OR 1-888-DIG-SAFE 1-888-344-7233

M:\PROJECTS\3490-03\CIVIL\DRAWINGS\CURRENT\C-3490-03_GRADING & DRAINAGE.DWG



LEGEND

PROPOSED WATERSHED	
SCS SOILS BOUNDARY	
SUBCATCHMENT LABEL	P-1
SUBCATCHMENT BOUNDARY	

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

DIG SAFE

BEFORE YOU DIG
CALL 811 OR
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1-888-344-7233

M:\PROJECTS\3490-03\CIVIL\DRAWINGS\CURRENT\C-3490-03_WATERSHED-PROPOSED.DWG

ISSUED FOR REVIEW
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COMMONWEALTH OF MASSACHUSETTS
PHILIP L CORDEIRO
CIVIL
NO. 47029
REGISTERED PROFESSIONAL ENGINEER

Digitally signed by Philip Cordeiro
Date: 2026.02.18 12:44:24-05'00'

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

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