

**SEWER ENGINEER'S REPORT
& SEWER EXTENSION REPORT**

ROY'S CARRIBBEAN RESTAURANT

CITY OF ALBANY
COUNTY OF ALBANY
STATE OF NEW YORK

**Applicants:
ROY E. VINCENT & JOSSETE VINCENT**

Prepared by:

**Hershberg&Hershberg Consulting Engineers
and Land Surveyors**

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April 27, 2021
Revised July 25, 2021

INTRODUCTION:

Hershberg & Hershberg, Consulting Engineers and Land Surveyors, were retained by Roy E. Vincent & Jossete Vincent (hereinafter the “Applicant”) as site engineer for the construction of an addition to 185 Henry Johnson Boulevard. This report is to review sewage generation for the consideration of the Department of Water & Water Supply and the City of Albany Planning Board.

DESCRIPTION OF EXISTING SITE:

PARCEL AREA

The existing parcel is Tax Map Parcels #65.65-1-11, #65.65-1-12, #65.65-1-13, #65.65-1-14 & Portion of #65.65-1-15 as shown photo below with a site area of 9,307 SF or 0.21 Acres.



Fig. No. 1 - Aerial Photo of Site

DESCRIPTION OF INTENDED SITE DEVELOPMENT AND USE

Applicant proposes to remodel of existing restaurant, add a new addition to enlarge restaurant, add banquet room and bar. Addition will have 4 apartments on second floor and will include driveways from Henry Johnson Boulevard and Third Street. The new building will have 4 new dwelling units being a mixture of 1 & 2 bedrooms. The total building will have 11 bedrooms in 6 units. The expansion to the restaurant will bring the total restaurant and banquet seats to 186± with 60± in the restaurant and 126± as a banquet hall. There will be 10± additional seats at the bar.

SEWAGE GENERATION

The existing site is currently developed. To establish the increased sewage generation, the *New York State Design Standards for Intermediate Sized Wastewater Treatment Systems (March 5, 2014)*¹ is used to compute the Average Daily Flow. Based upon 110 GPD per bed and other uses utilizing Method 1 Typical Per Unit Hydraulic Loading Rates the computation below has been developed.

Sewage Generation Calculations 185 Henry Johnson Boulevard

<u>Use</u>	<u>Unit</u>	<u>Value</u>	<u>Sewage Generation Per</u>	<u>Daily Sewage</u>
			<u>Unit per day(GPD) - See</u>	<u>Generation</u>
			<u>Note 1</u>	<u>(GPD)</u>
Apartments	Beds	11	110	1210
Ordinary Restaurant	Seats	60	35	2100
Bar	Seats	10	20	200
Banquet Hall	Seats	126	10	1260
TOTAL NEW ESTIMATED WATER USE				4770
Average New Water Use in GPD		4770		
Peak New Water Use in GPD		19080		
Average New Water Use in CFS		0.007		
Peak New Water Use in CFS		0.029		

Note 1: Flow based on Method 1 - Typical Per Unit Hydraulic Loading Rates - New York State Design Standards for Intermediate Sized Wastewater Treatment Systems (March 5, 2014)- Page B-20

Figure No. 2 – Sewage Generation Calculation

IMPACT ON SEWER SYSTEM

The existing sewer connection to a 12" VP sewer in Henry Johnson Boulevard will be maintained



Fig. No. 3 – Portion of Sewer Atlas Sheet 018

The existing 12" VP sewer on Henry Johnson Boulevard has a grade of 1.0% and a pipe capacity of 3.11 CFS. (see computation below)

PROJECT: 185 Henry Johnson Boulevard								
FILE NAME: 200140 Pipe Calc								
THE FOLLOWING, IS THE CALCULATION FOR PIPES FLOWING FULL AS STATED IN THE CHEZY-MANNING FORMULA, WHERE:								
Qp = PROJECTED DISCHARGE								
Q MAX = DISCHARGE FOR PIPE FLOWING FULL IN C.F.S.								
n = COEFFICIENT OF ROUGHNESS								
A = CROSS SECTIONAL AREA OF FLOW IN SQUARE FEET								
R = HYDRAULIC RADIUS IN FT.								
S = SLOPE IN FT./FT.								
Vm = VELOCITY OF PIPE FLOWING FULL IN FT./SEC.								
D = PIPE DIAMETER IN INCHES								
Vp = PROJECTED VELOCITY IN FT./SEC.								
LOCATION	Q MAX	n	A	R	S	Vm	D	Vp
Intersection to next MH North	3.11	0.015	0.785	0.250	0.0100	4.0	12	11.8

Fig. No. 4 – Pipe Capacity Calculation

The peak usage as computed above utilizes 0.93% of pipe capacity. The existing site is tributary to the Central Area Sewer District (see map below).



Fig. No. 5- Albany Sewer District Map

COMBINED SEWER OVERFLOW BEST MANAGEMENT PRACTICES

NYSDEC issued a City of Albany Combined Sewer Overflow SPDES Permit, DEC ID#s 4-0101-00012/00001 SPDES #s NY0025747 on November 30, 2018. It included fifteen Best Management Practices which are reviewed below:

1. CSO Operation/Maintenance/Inspection – Not Applicable to this project although maintenance and inspection of Storm Water Management System is covered by maintenance agreement.
2. Maximum Use of Collection System for Storage – Not Applicable
3. Industrial Pretreatment — There are industrial discharges and no toxic substances which will be discharged to the combined sewer.
4. Maximize Flow to POTW_-Not applicable.
5. Wet Weather Operating Plan -Not applicable
6. Prohibition of Dry Weather Overflow – Dry weather overflows from the combined sewer system (CSS) are prohibited. Sewer outfalls from the site are separated into storm and sanitary sewer laterals. Dry weather flow can be accommodated from the site as shown by observation of the Livingston Avenue CSO Smart Cover readings below.

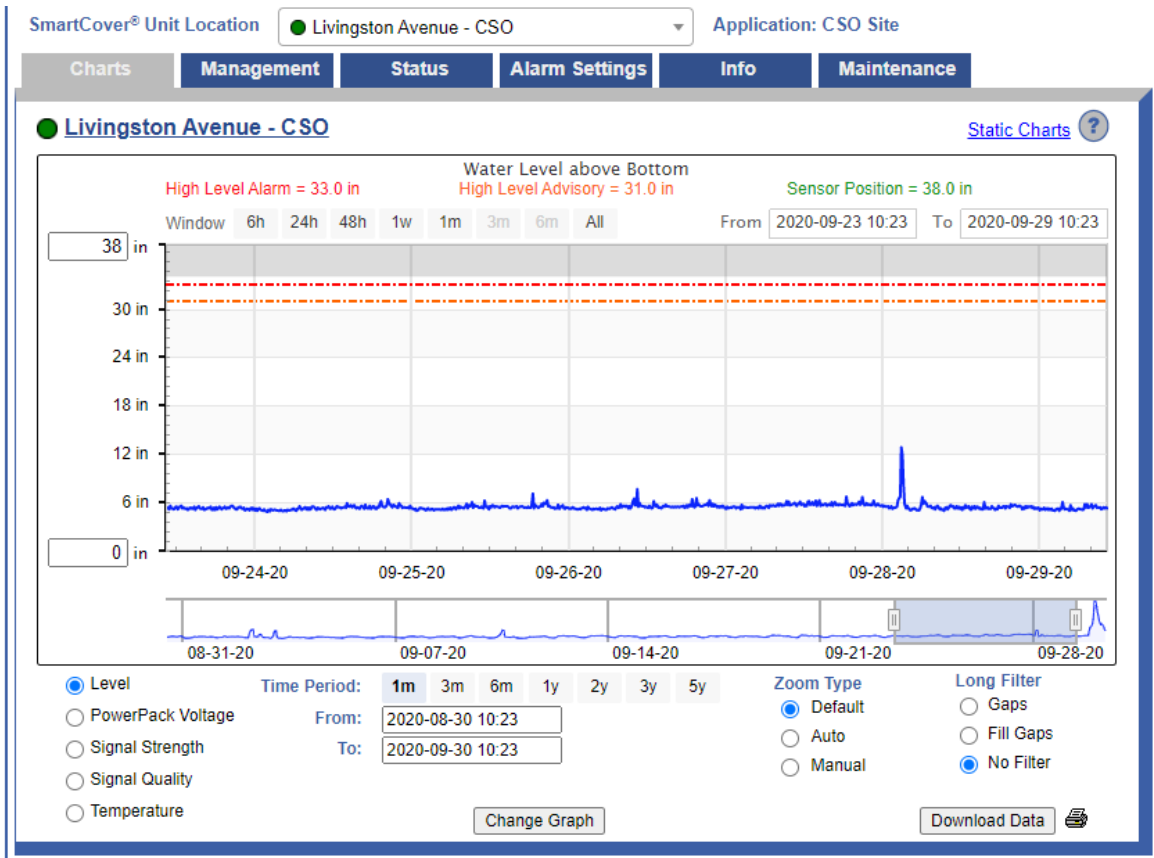


Fig. No. 6- SmartCover readings from Livingston Avenue CSO

7. Control of Floatable and Settleable Solids - The Applicant will provide a notice with leases that deposition of oil/grease or toilet litter is not allowed.
8. Combined Sewer System Replacement – Not applicable.
9. Sewer/Extension – Sewer/extension, when approved by the Department, should be accomplished using separate sewers. Sewer outfalls from the site are separated into storm and sanitary sewer laterals without interconnections. No new source of storm water shall be connected to any separate sanitary sewer in the collection system. The project reduces discharge at the 1 year storm from 0.37 CFS to 0.31 CFS, a reduction of 0.06 CFS which is 8.57 times the average sanitary flow. See HydroCAD attached as Appendix A. .
10. Sewage Backups - There have been no documented, recurrent instances of sewage backing up into house(s) or discharges of raw sewage onto the ground surface from surcharging manholes in this area. Since the combined flow to the combined sewer on Third Street is reduced for all storms from

the 1 year to the 100 year storm frequencies this project will not make potential surcharging/back-up problems worse.

11. Septage and Hauled Waste - Not Applicable.
12. Control of Run-off - The impacts of run-off from development and re-development in areas served by combined sewers shall be reduced by requiring compliance with the New York Standards for Erosion and Sediment Control and the quantity control requirements included in the New York State Stormwater Management Design Manual. The combined flow to the combined sewer on Third Street is reduced for all storms from the 1 year to the 100 year storm frequencies for this project through the use of a blue roof.
13. Public Notification - Not Applicable.
14. Characterization and Monitoring -Not Applicable
15. Annual report - Not Applicable.

CONCLUSION:

This project generates more than 2,500 GPD and is, therefore, subject to sewer extension provisions. It is the Engineer's opinion that this project can be served by the existing public sewage system with no negative impact on the existing sewage system and in compliance with SPDES Permit, DEC ID#s 4-0101-00012/00001 SPDES #s NY0025747 on November 30, 2018.



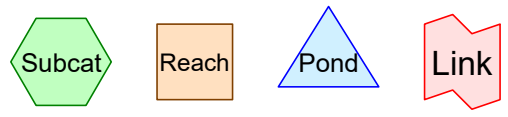
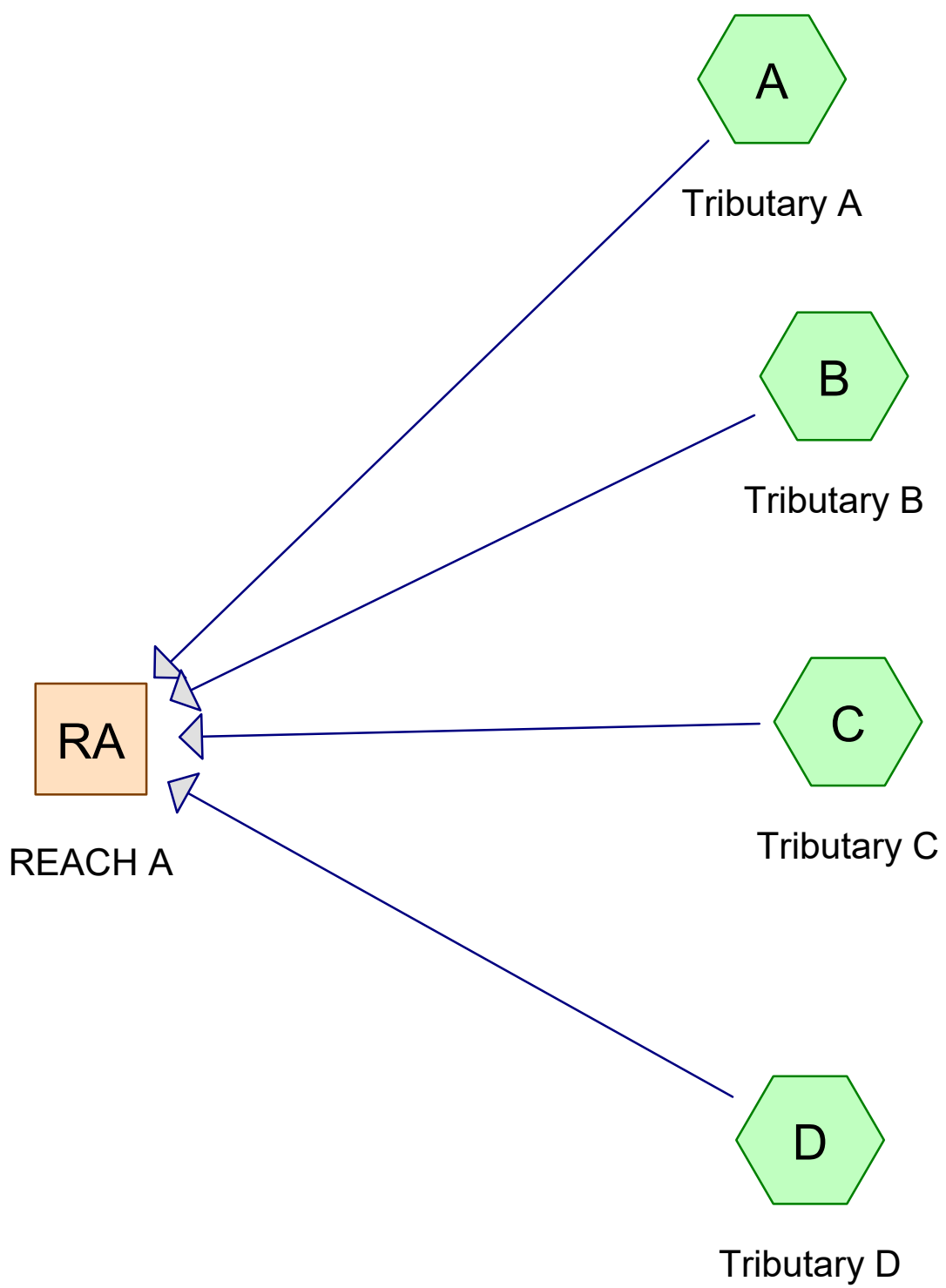
Prepared by:

A handwritten signature in black ink, appearing to read "D. Hershberg", written over a horizontal line.

HERSHBERG & HERSHBERG
Daniel R. Hershberg, P.E. & L.S.

DRH/dan/er202001400sewer.docx

APPENDIX A



Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.275	80	>75% Grass cover, Good, HSG D (A, B, C, D)
0.275	80	TOTAL AREA

Soil Listing (all nodes)

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

200140-PRE

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Page 4

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	0.275	0.000	0.275	>75% Grass cover, Good	A, B, C, D
0.000	0.000	0.000	0.275	0.000	0.275	TOTAL AREA	

Time span=0.00-30.00 hrs, dt=0.10 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment A: Tributary A

Runoff Area=5,849 sf 0.00% Impervious Runoff Depth=0.89"
Flow Length=127' Tc=5.8 min CN=80 Runoff=0.19 cfs 0.010 af

Subcatchment B: Tributary B

Runoff Area=5,360 sf 0.00% Impervious Runoff Depth=0.89"
Flow Length=82' Slope=0.0195 '/' Tc=9.0 min CN=80 Runoff=0.16 cfs 0.009 af

Subcatchment C: Tributary C

Runoff Area=547 sf 0.00% Impervious Runoff Depth=0.89"
Flow Length=35' Slope=0.0400 '/' Tc=0.4 min CN=80 Runoff=0.02 cfs 0.001 af

Subcatchment D: Tributary D

Runoff Area=224 sf 0.00% Impervious Runoff Depth=0.89"
Flow Length=19' Slope=0.0316 '/' Tc=2.3 min CN=80 Runoff=0.01 cfs 0.000 af

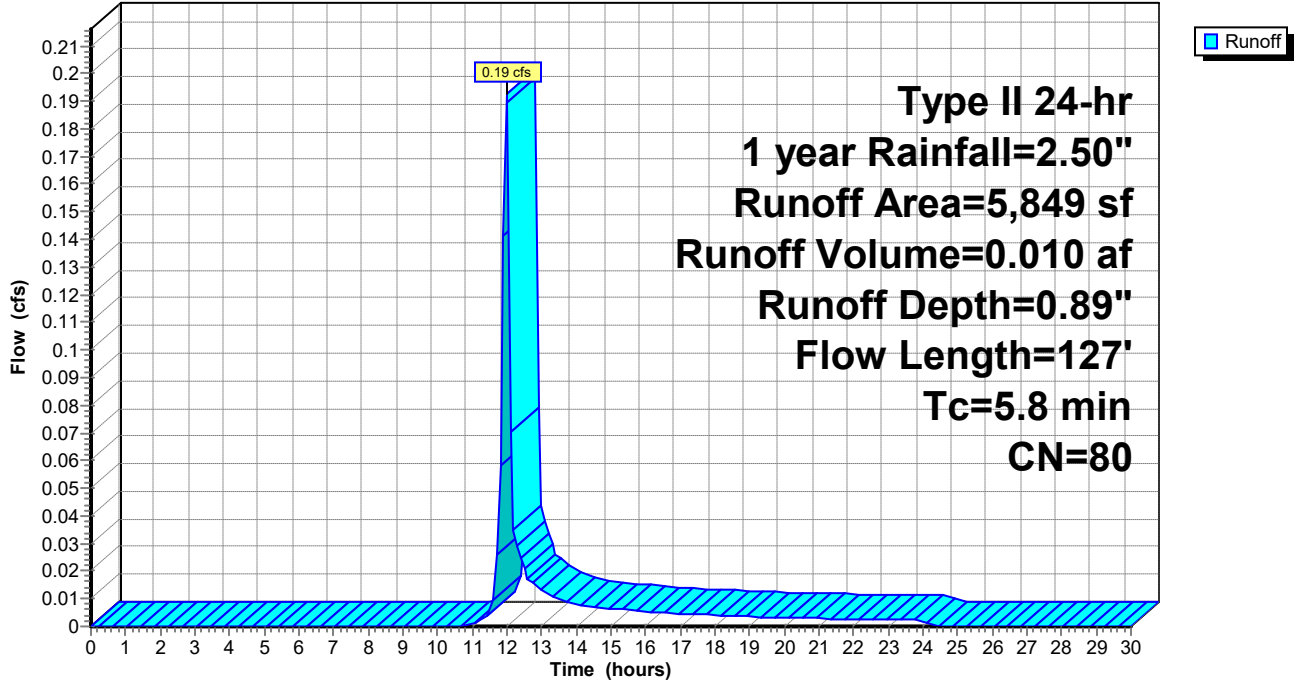
Reach RA: REACH A

Inflow=0.37 cfs 0.020 af
Outflow=0.37 cfs 0.020 af

Total Runoff Area = 0.275 ac Runoff Volume = 0.020 af Average Runoff Depth = 0.89"
100.00% Pervious = 0.275 ac 0.00% Impervious = 0.000 ac

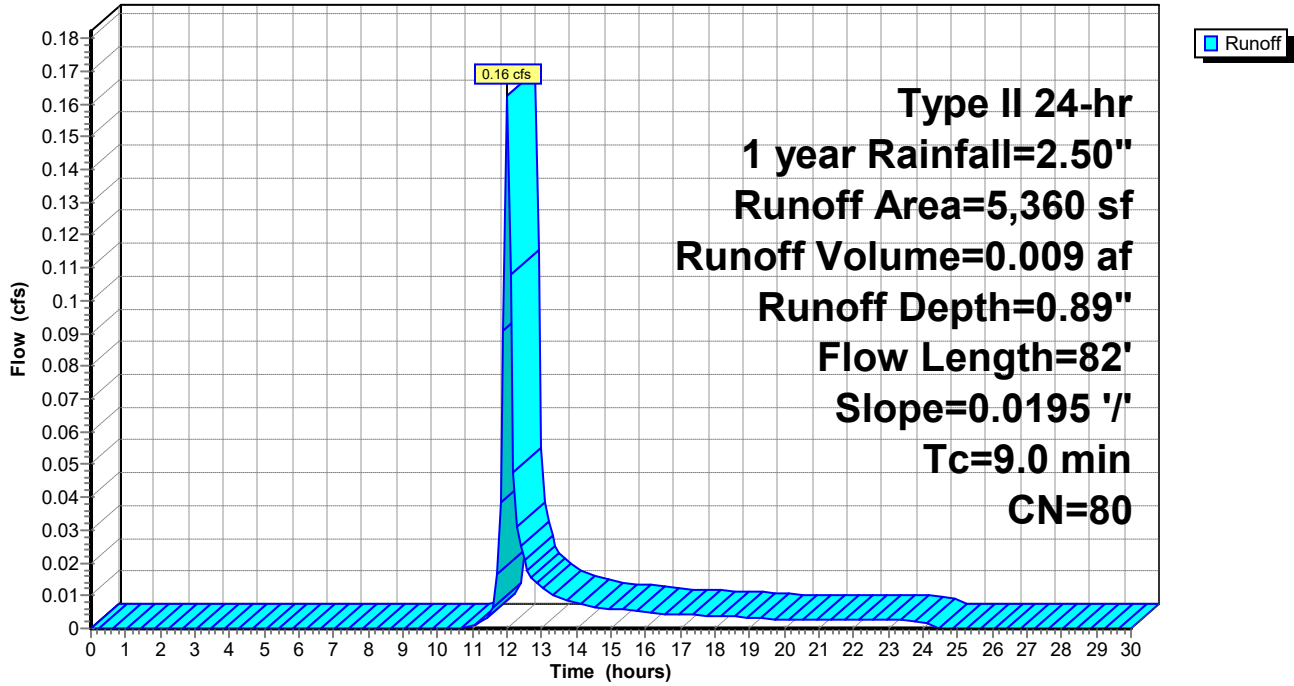
Subcatchment A: Tributary A

Hydrograph



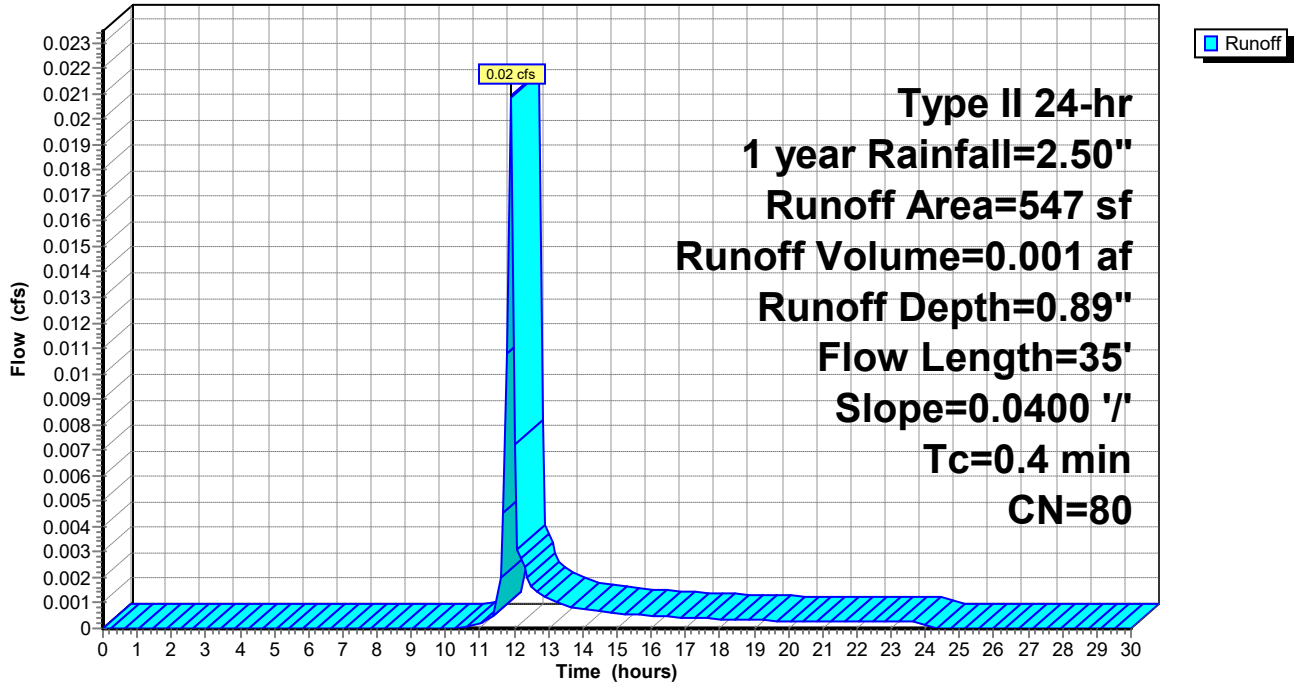
Subcatchment B: Tributary B

Hydrograph



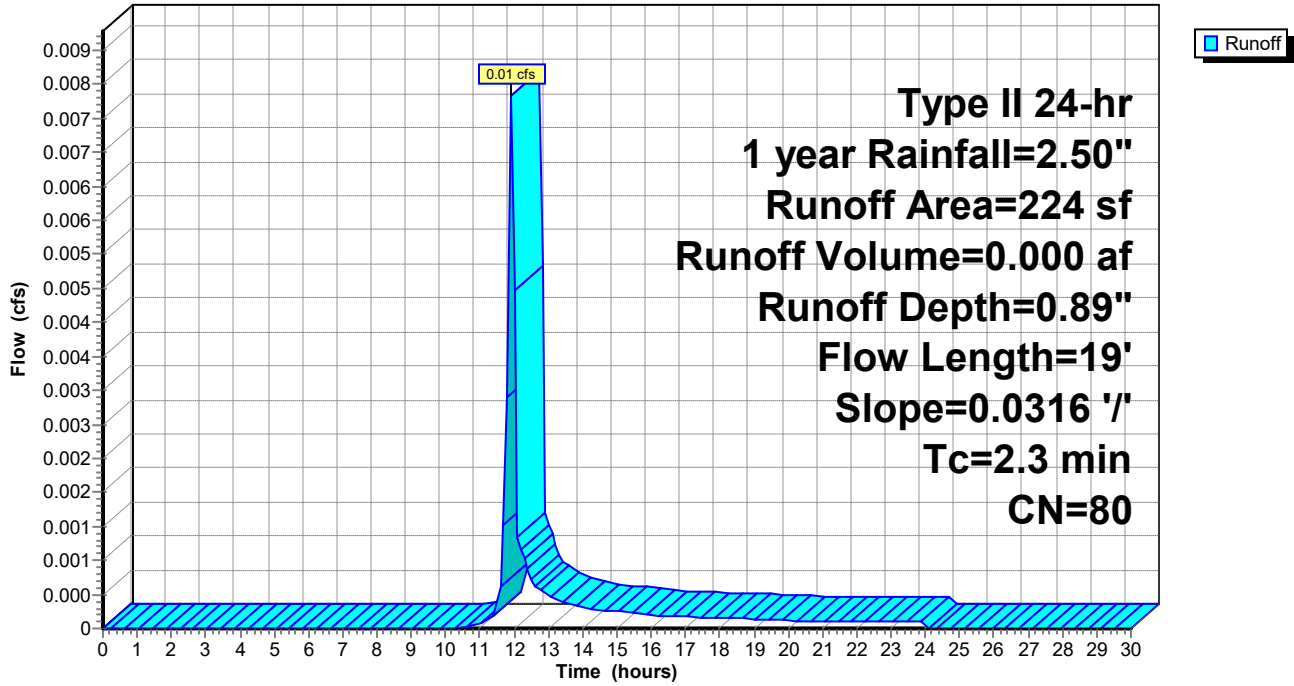
Subcatchment C: Tributary C

Hydrograph



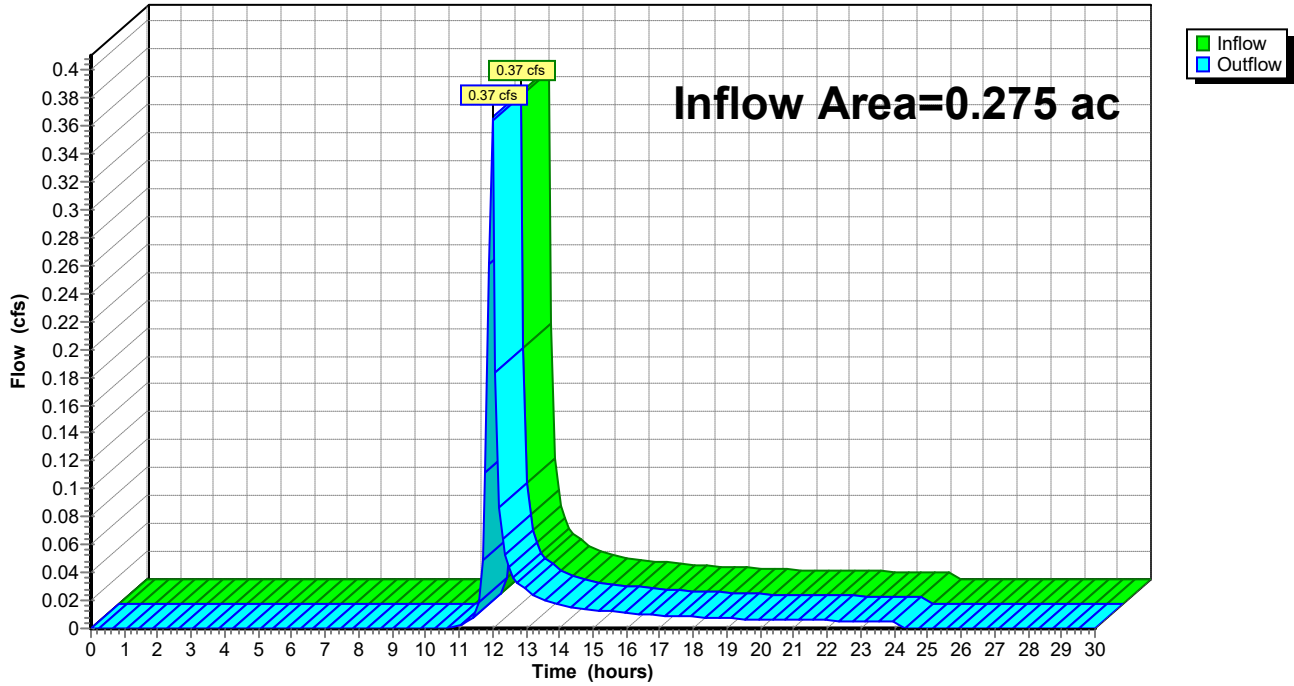
Subcatchment D: Tributary D

Hydrograph



Reach RA: REACH A

Hydrograph



Time span=0.00-30.00 hrs, dt=0.10 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment A: Tributary A

Runoff Area=5,849 sf 0.00% Impervious Runoff Depth=2.46"
Flow Length=127' Tc=5.8 min CN=80 Runoff=0.53 cfs 0.028 af

Subcatchment B: Tributary B

Runoff Area=5,360 sf 0.00% Impervious Runoff Depth=2.46"
Flow Length=82' Slope=0.0195 '/' Tc=9.0 min CN=80 Runoff=0.46 cfs 0.025 af

Subcatchment C: Tributary C

Runoff Area=547 sf 0.00% Impervious Runoff Depth=2.46"
Flow Length=35' Slope=0.0400 '/' Tc=0.4 min CN=80 Runoff=0.06 cfs 0.003 af

Subcatchment D: Tributary D

Runoff Area=224 sf 0.00% Impervious Runoff Depth=2.46"
Flow Length=19' Slope=0.0316 '/' Tc=2.3 min CN=80 Runoff=0.02 cfs 0.001 af

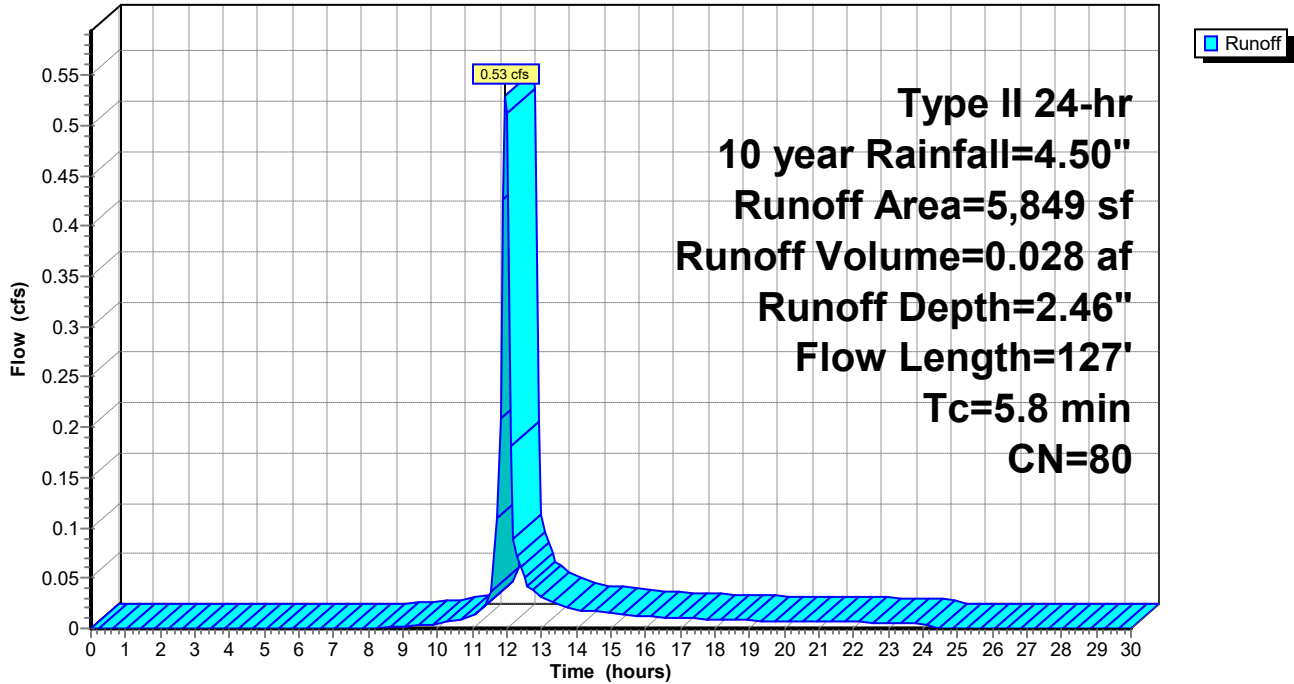
Reach RA: REACH A

Inflow=1.02 cfs 0.056 af
Outflow=1.02 cfs 0.056 af

Total Runoff Area = 0.275 ac Runoff Volume = 0.056 af Average Runoff Depth = 2.46"
100.00% Pervious = 0.275 ac 0.00% Impervious = 0.000 ac

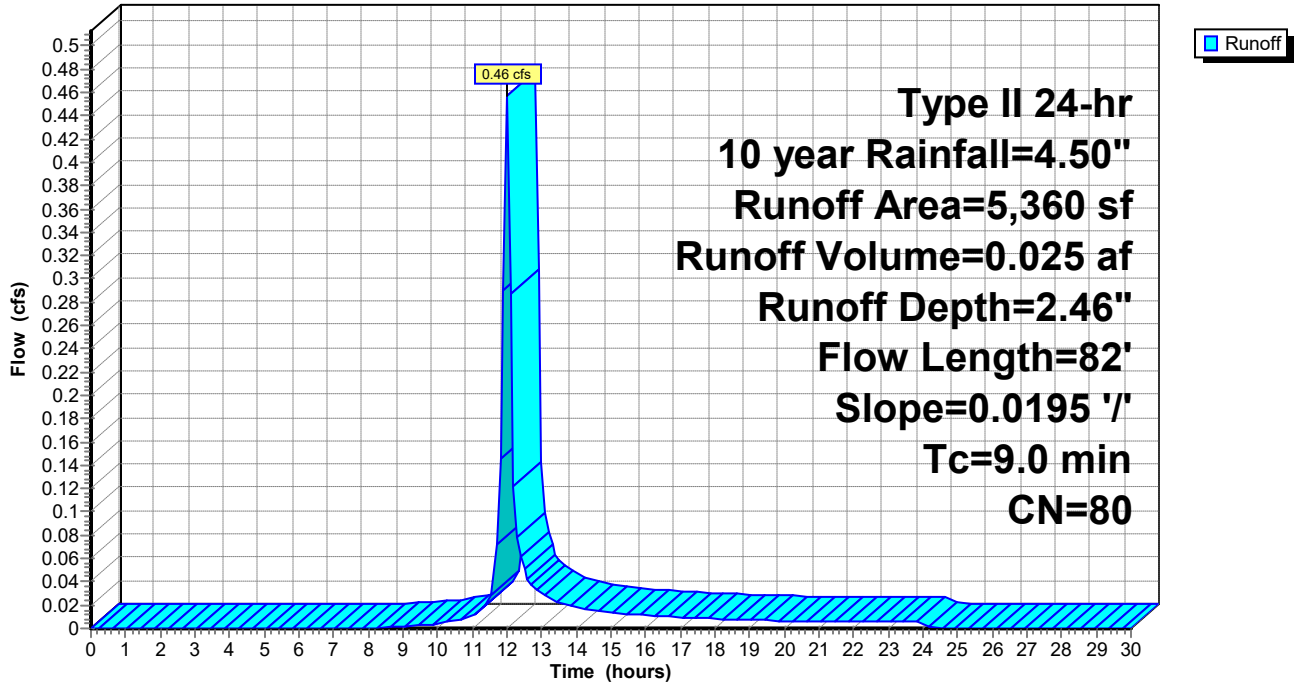
Subcatchment A: Tributary A

Hydrograph



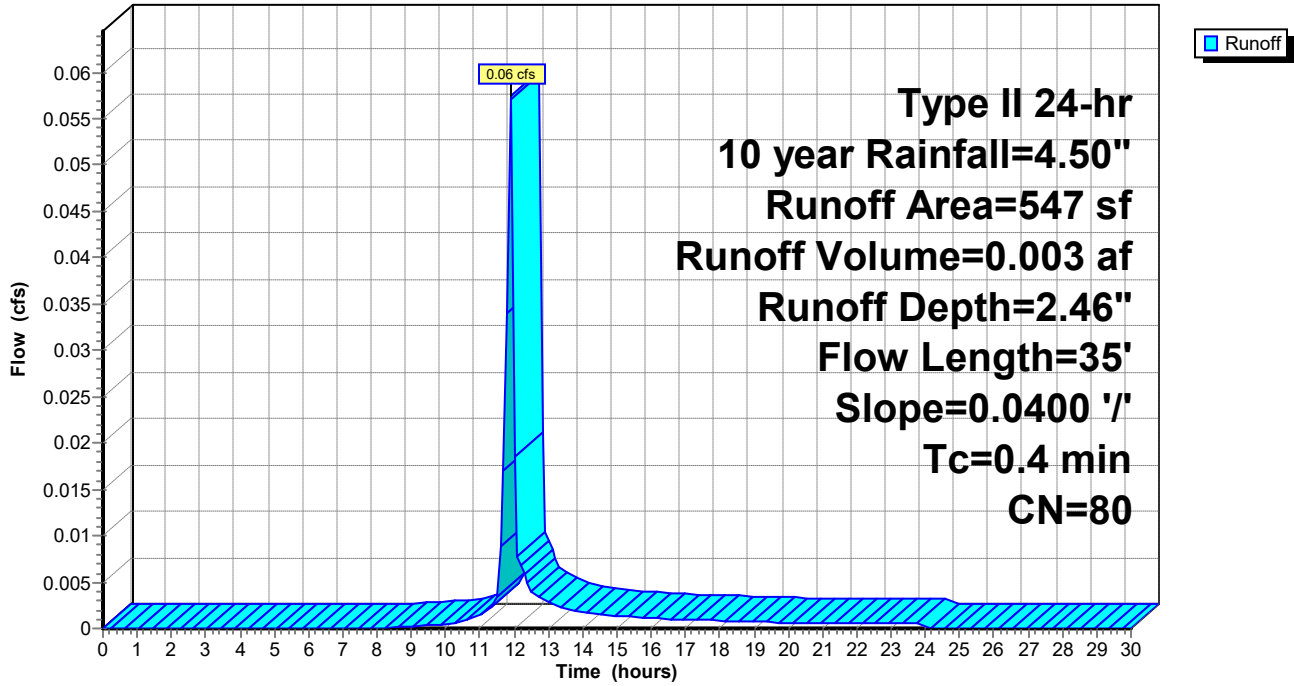
Subcatchment B: Tributary B

Hydrograph



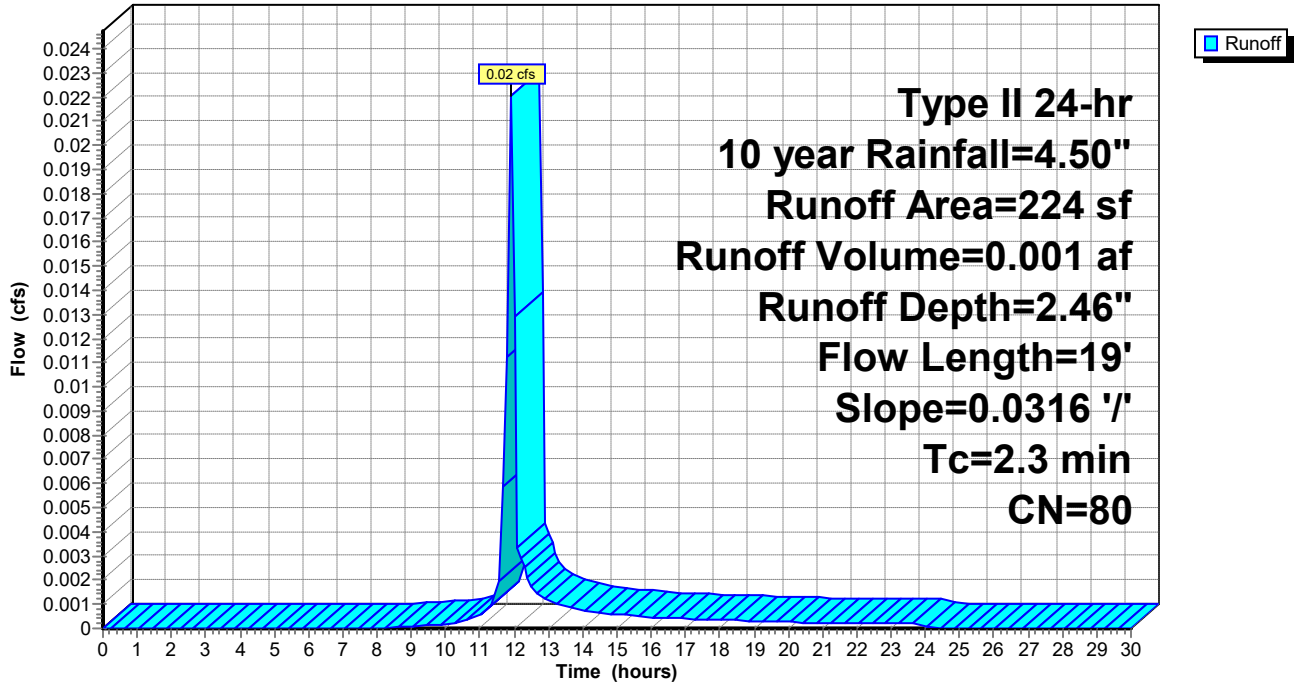
Subcatchment C: Tributary C

Hydrograph



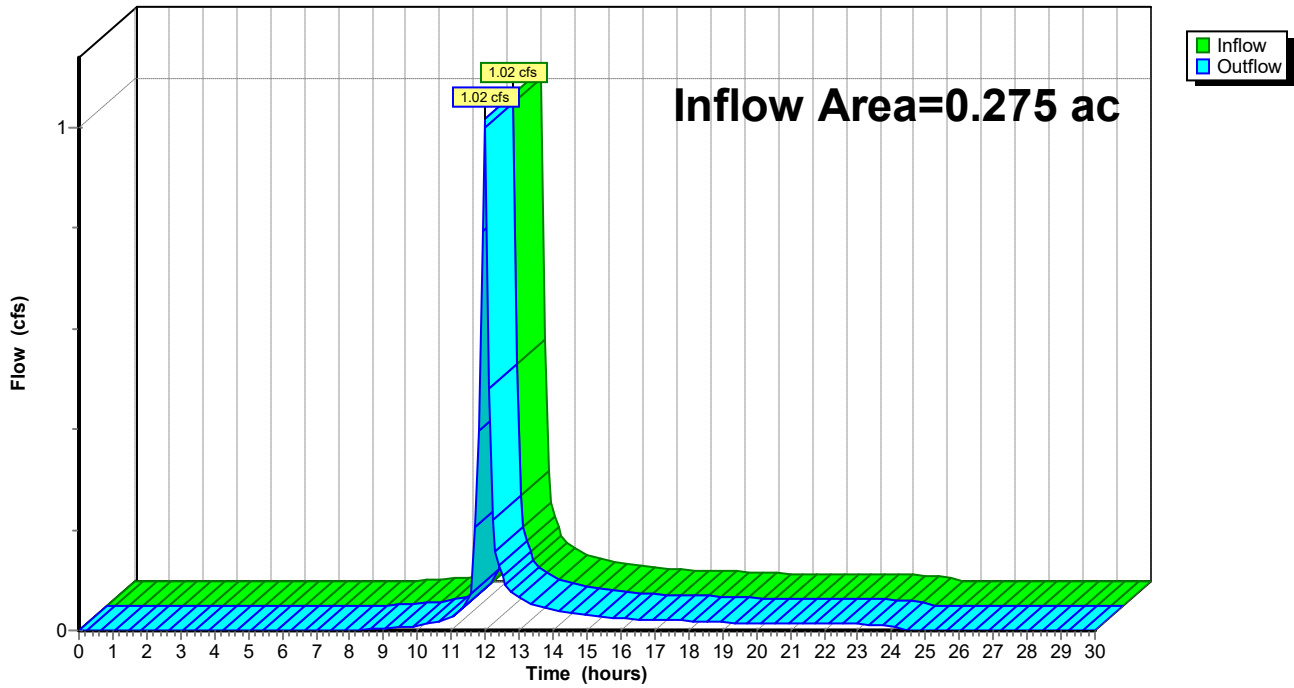
Subcatchment D: Tributary D

Hydrograph



Reach RA: REACH A

Hydrograph



Time span=0.00-30.00 hrs, dt=0.10 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment A: Tributary A

Runoff Area=5,849 sf 0.00% Impervious Runoff Depth=4.69"
Flow Length=127' Tc=5.8 min CN=80 Runoff=0.98 cfs 0.053 af

Subcatchment B: Tributary B

Runoff Area=5,360 sf 0.00% Impervious Runoff Depth=4.69"
Flow Length=82' Slope=0.0195 '/' Tc=9.0 min CN=80 Runoff=0.86 cfs 0.048 af

Subcatchment C: Tributary C

Runoff Area=547 sf 0.00% Impervious Runoff Depth=4.69"
Flow Length=35' Slope=0.0400 '/' Tc=0.4 min CN=80 Runoff=0.11 cfs 0.005 af

Subcatchment D: Tributary D

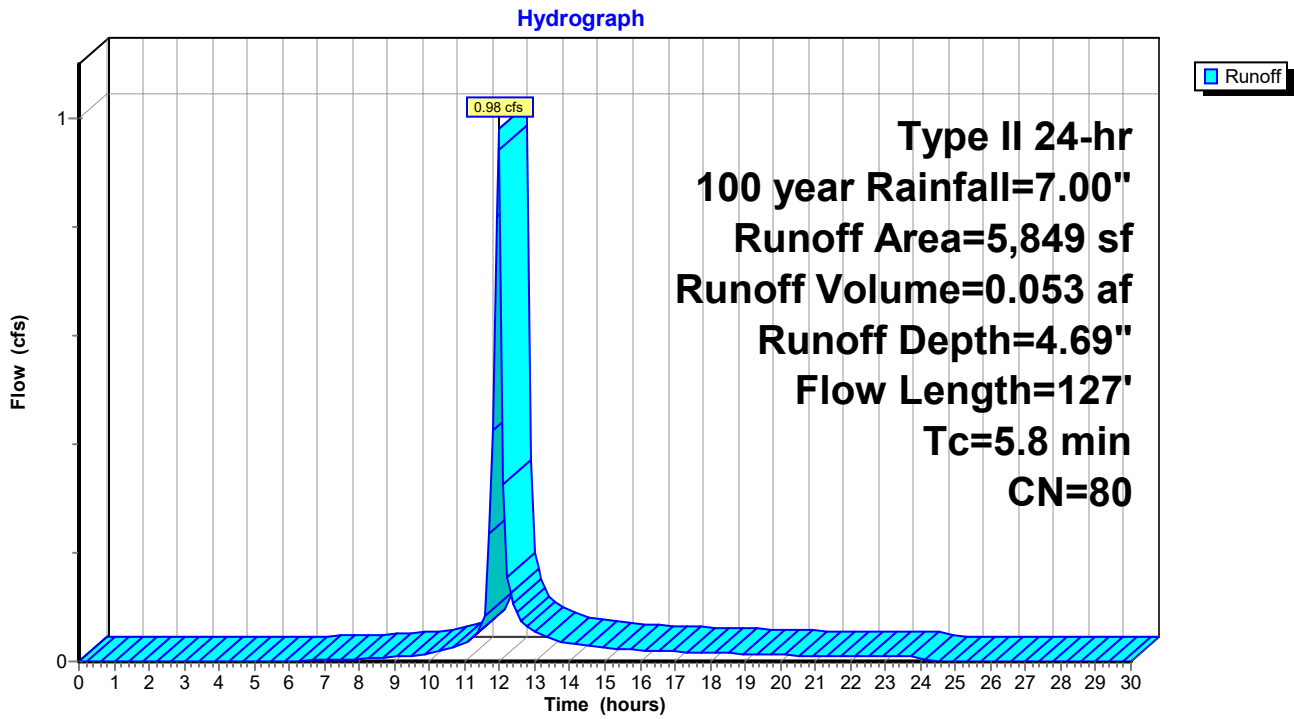
Runoff Area=224 sf 0.00% Impervious Runoff Depth=4.69"
Flow Length=19' Slope=0.0316 '/' Tc=2.3 min CN=80 Runoff=0.04 cfs 0.002 af

Reach RA: REACH A

Inflow=1.90 cfs 0.108 af
Outflow=1.90 cfs 0.108 af

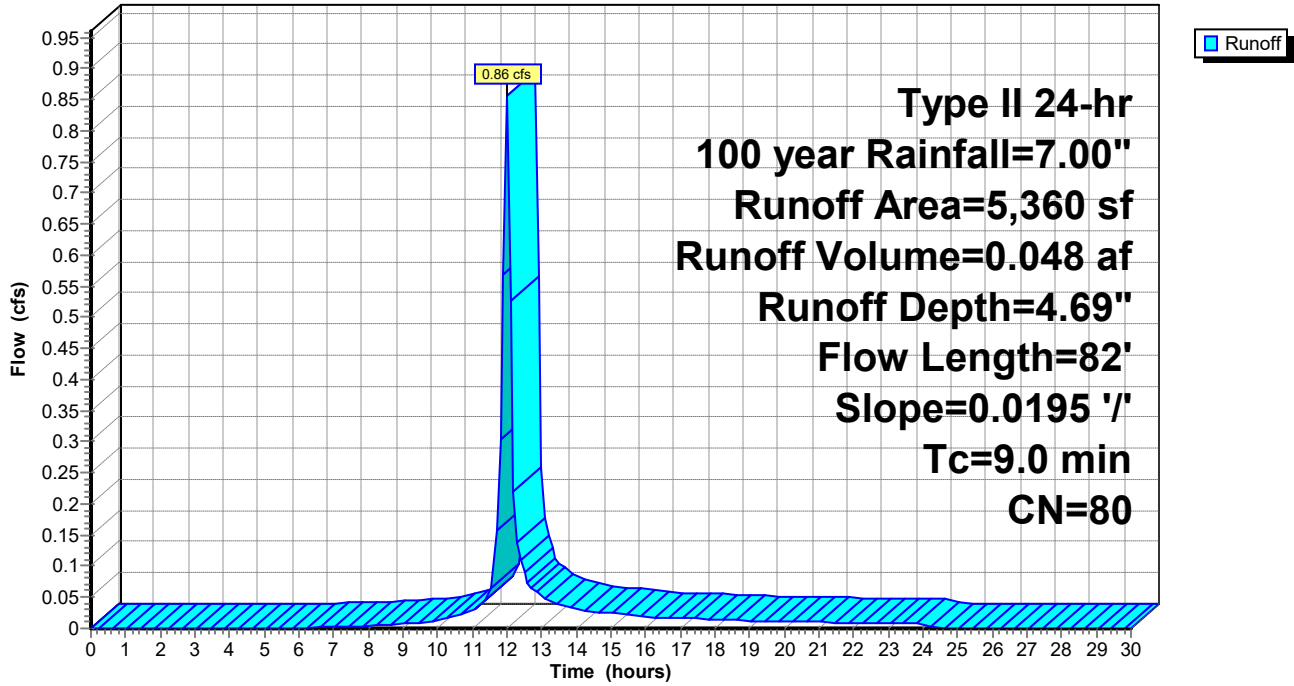
Total Runoff Area = 0.275 ac Runoff Volume = 0.108 af Average Runoff Depth = 4.69"
100.00% Pervious = 0.275 ac 0.00% Impervious = 0.000 ac

Subcatchment A: Tributary A



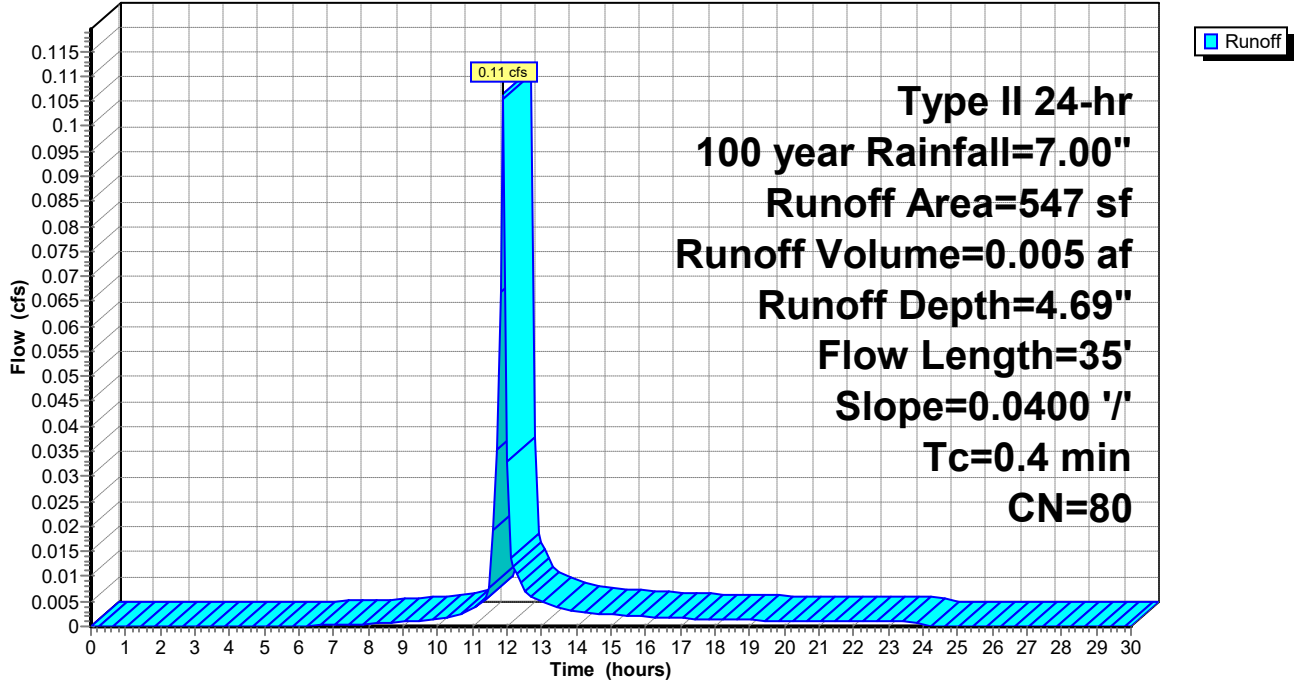
Subcatchment B: Tributary B

Hydrograph



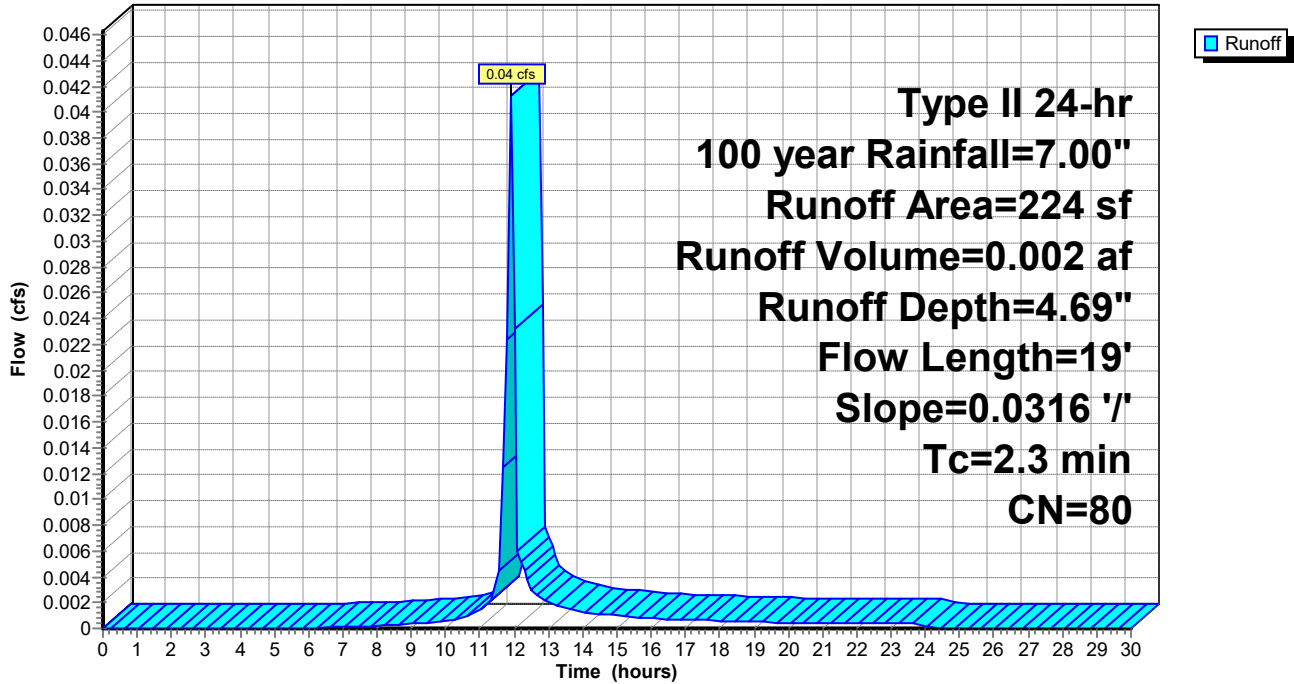
Subcatchment C: Tributary C

Hydrograph



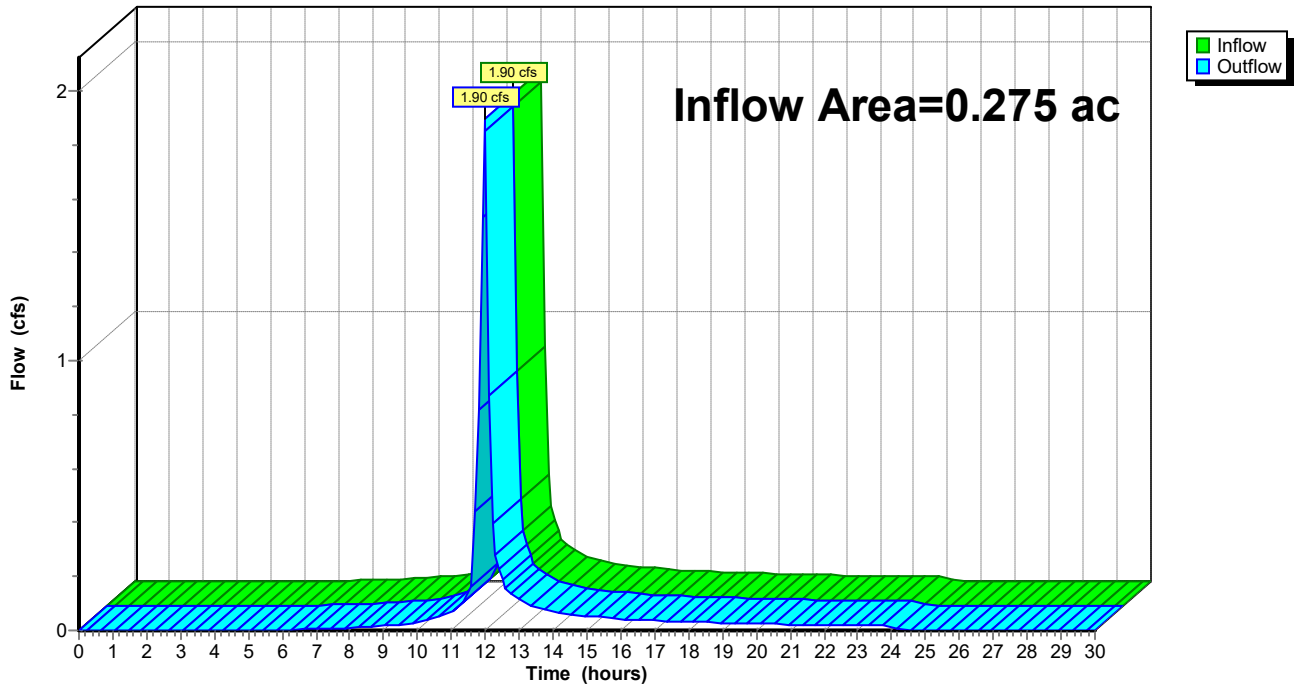
Subcatchment D: Tributary D

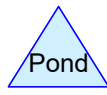
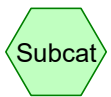
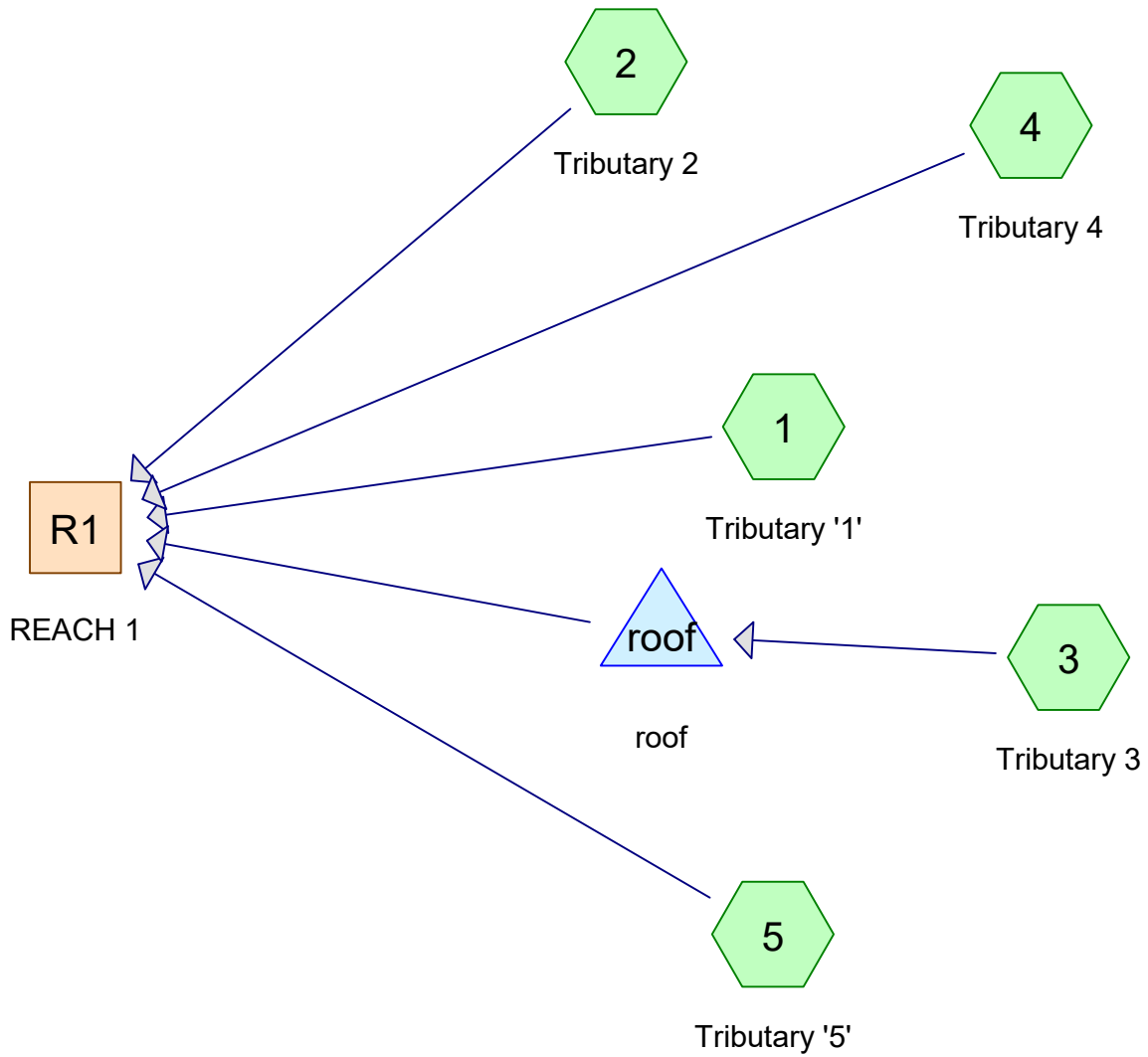
Hydrograph



Reach RA: REACH A

Hydrograph





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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.008	80	>75% Grass cover, Good, HSG D (1, 2, 5)
0.004	98	CONC (5)
0.187	98	Paved parking, HSG A (1, 2, 3)
0.015	98	Unconnected roofs, HSG A (4)
0.213	97	TOTAL AREA

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.201	HSG A	1, 2, 3, 4
0.000	HSG B	
0.000	HSG C	
0.008	HSG D	1, 2, 5
0.004	Other	5
0.213		TOTAL AREA

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Page 4

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	0.008	0.000	0.008	>75% Grass cover, Good	1, 2, 5
0.000	0.000	0.000	0.000	0.004	0.004	CONC	5
0.187	0.000	0.000	0.000	0.000	0.187	Paved parking	1, 2, 3
0.015	0.000	0.000	0.000	0.000	0.015	Unconnected roofs	4
0.201	0.000	0.000	0.008	0.004	0.213	TOTAL AREA	

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Type II 24-hr 1 year Rainfall=2.50"

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Page 5

Time span=0.00-30.00 hrs, dt=0.10 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1: Tributary '1' Runoff Area=1,204 sf 78.41% Impervious Runoff Depth=1.87"
Flow Length=78' Tc=1.3 min CN=94 Runoff=0.09 cfs 0.004 af

Subcatchment 2: Tributary 2 Runoff Area=1,877 sf 97.55% Impervious Runoff Depth=2.27"
Flow Length=127' Tc=1.5 min CN=98 Runoff=0.16 cfs 0.008 af

Subcatchment 3: Tributary 3 Runoff Area=5,356 sf 100.00% Impervious Runoff Depth=2.27"
Flow Length=1' Slope=0.0500 '/' Tc=0.0 min CN=98 Runoff=0.45 cfs 0.023 af

Subcatchment 4: Tributary 4 Runoff Area=634 sf 100.00% Impervious Runoff Depth=2.27"
Flow Length=20' Slope=0.0459 '/' Tc=2.1 min CN=98 Runoff=0.05 cfs 0.003 af

Subcatchment 5: Tributary '5' Runoff Area=227 sf 74.01% Impervious Runoff Depth=1.78"
Flow Length=22' Slope=0.0354 '/' Tc=0.3 min CN=93 Runoff=0.02 cfs 0.001 af

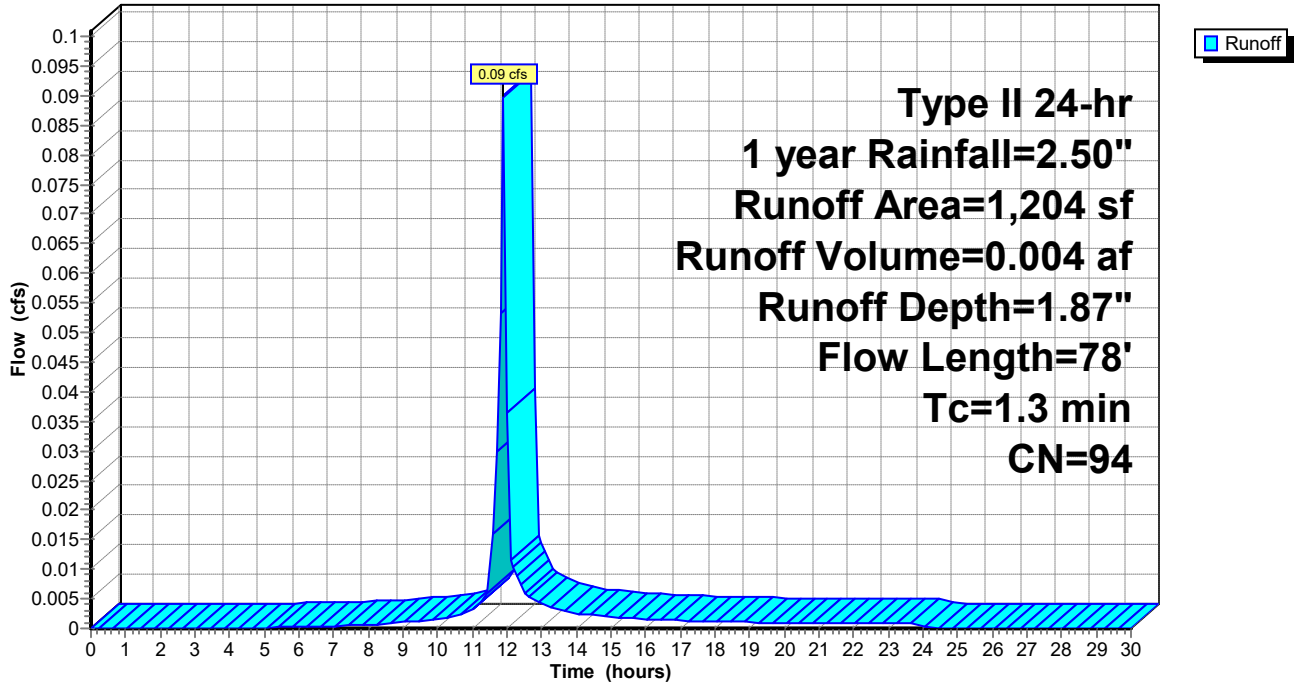
Reach R1: REACH 1 Inflow=0.31 cfs 0.016 af
Outflow=0.31 cfs 0.016 af

Pond roof: roof Peak Elev=0.18' Storage=1,014 cf Inflow=0.45 cfs 0.023 af
Outflow=0.00 cfs 0.000 af

Total Runoff Area = 0.213 ac Runoff Volume = 0.039 af Average Runoff Depth = 2.21"
3.93% Pervious = 0.008 ac 96.07% Impervious = 0.205 ac

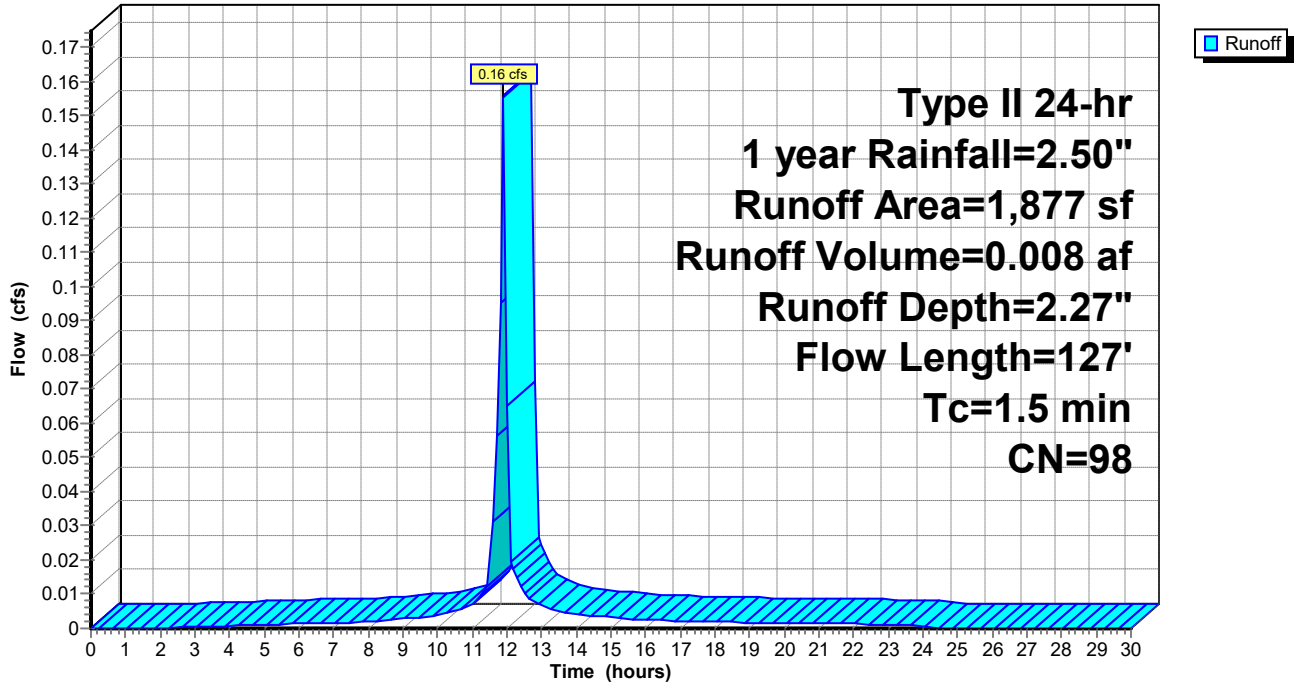
Subcatchment 1: Tributary '1'

Hydrograph



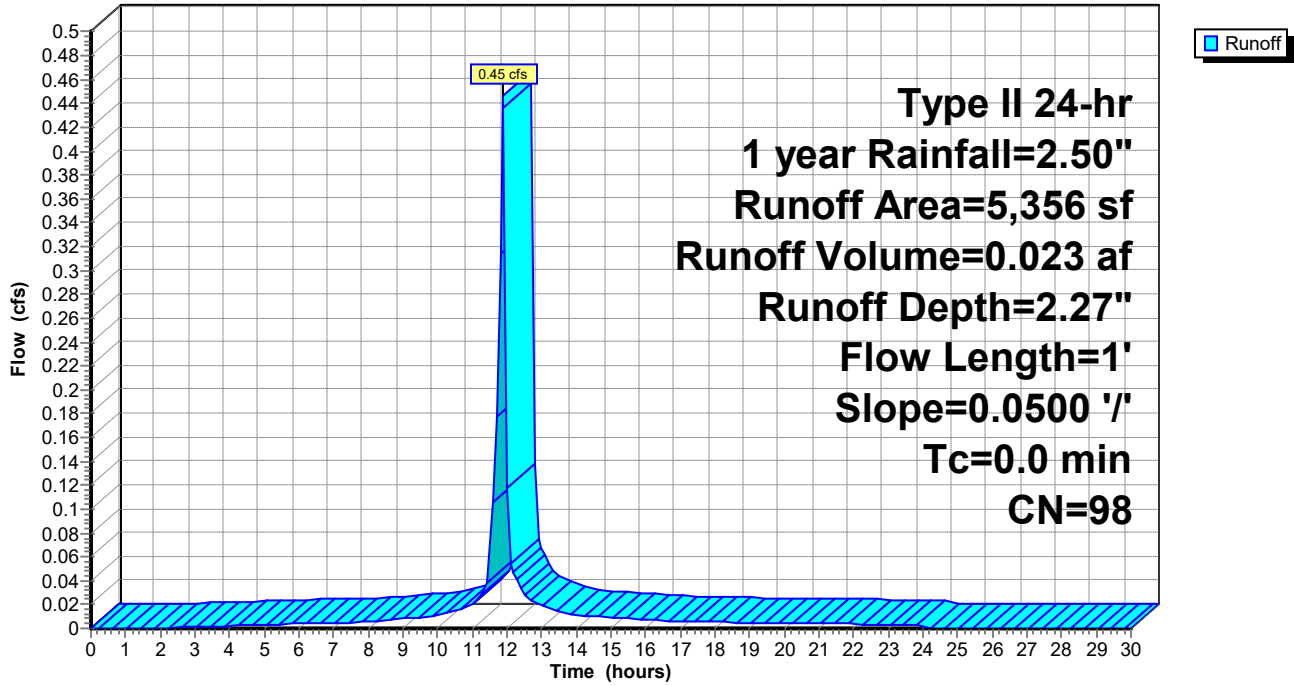
Subcatchment 2: Tributary 2

Hydrograph



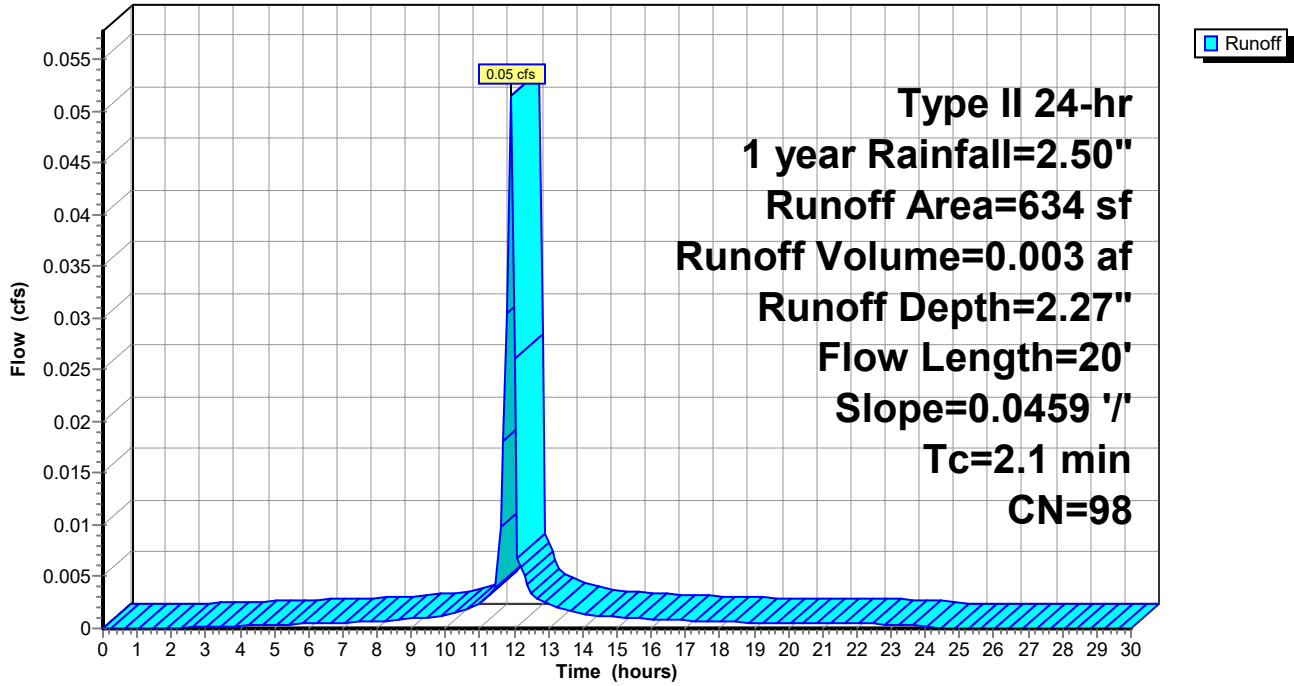
Subcatchment 3: Tributary 3

Hydrograph



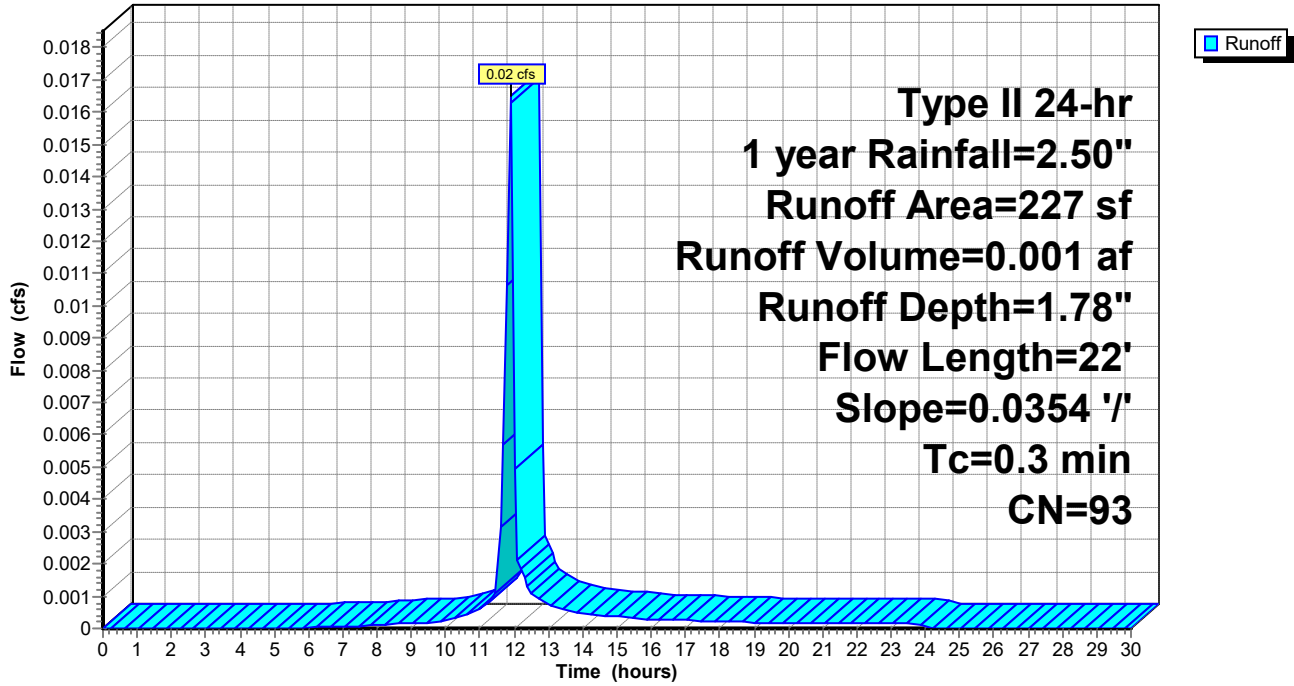
Subcatchment 4: Tributary 4

Hydrograph



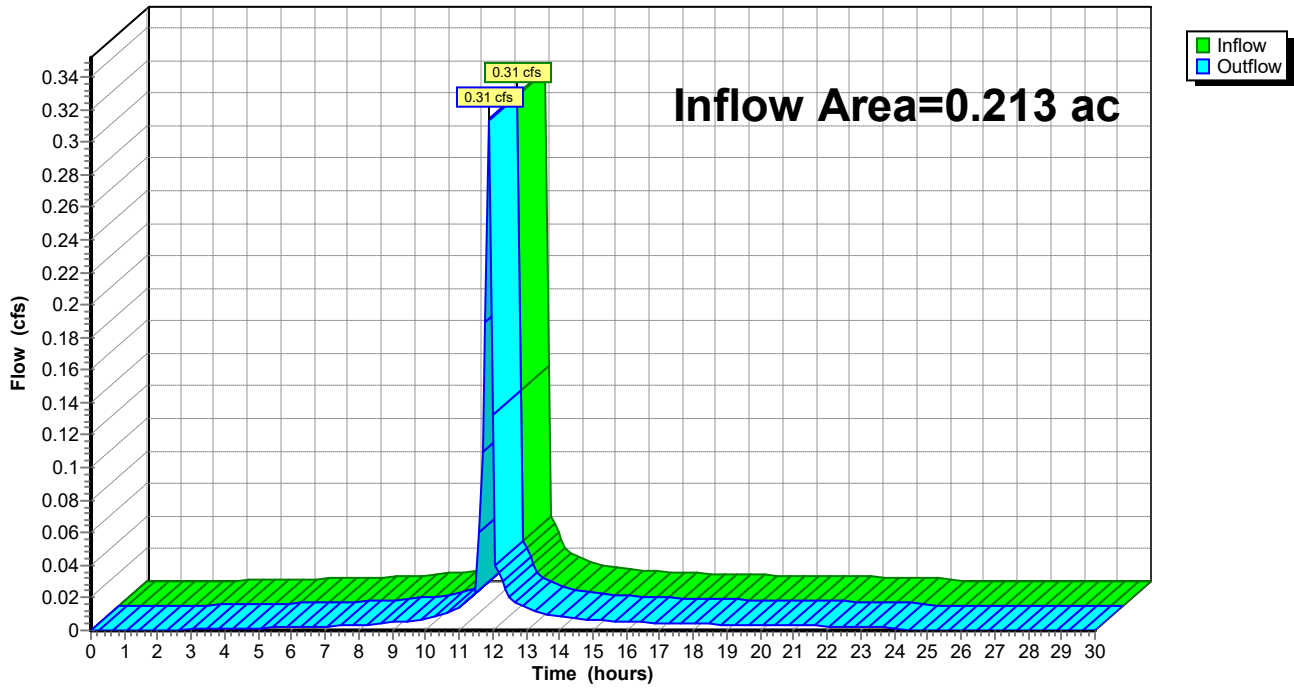
Subcatchment 5: Tributary '5'

Hydrograph



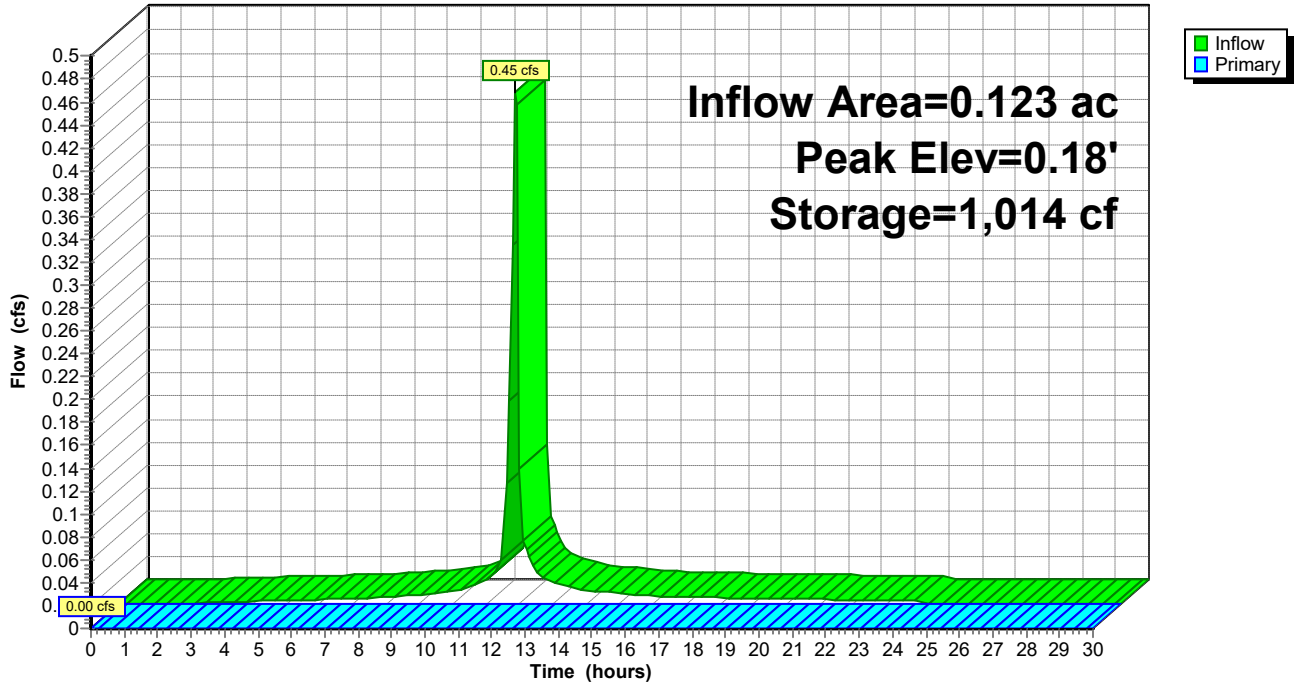
Reach R1: REACH 1

Hydrograph



Pond roof: roof

Hydrograph



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Type II 24-hr 10 year Rainfall=4.50"

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Page 13

Time span=0.00-30.00 hrs, dt=0.10 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1: Tributary '1' Runoff Area=1,204 sf 78.41% Impervious Runoff Depth=3.82"
Flow Length=78' Tc=1.3 min CN=94 Runoff=0.18 cfs 0.009 af

Subcatchment 2: Tributary 2 Runoff Area=1,877 sf 97.55% Impervious Runoff Depth=4.26"
Flow Length=127' Tc=1.5 min CN=98 Runoff=0.28 cfs 0.015 af

Subcatchment 3: Tributary 3 Runoff Area=5,356 sf 100.00% Impervious Runoff Depth=4.26"
Flow Length=1' Slope=0.0500 '/' Tc=0.0 min CN=98 Runoff=0.81 cfs 0.044 af

Subcatchment 4: Tributary 4 Runoff Area=634 sf 100.00% Impervious Runoff Depth=4.26"
Flow Length=20' Slope=0.0459 '/' Tc=2.1 min CN=98 Runoff=0.09 cfs 0.005 af

Subcatchment 5: Tributary '5' Runoff Area=227 sf 74.01% Impervious Runoff Depth=3.71"
Flow Length=22' Slope=0.0354 '/' Tc=0.3 min CN=93 Runoff=0.03 cfs 0.002 af

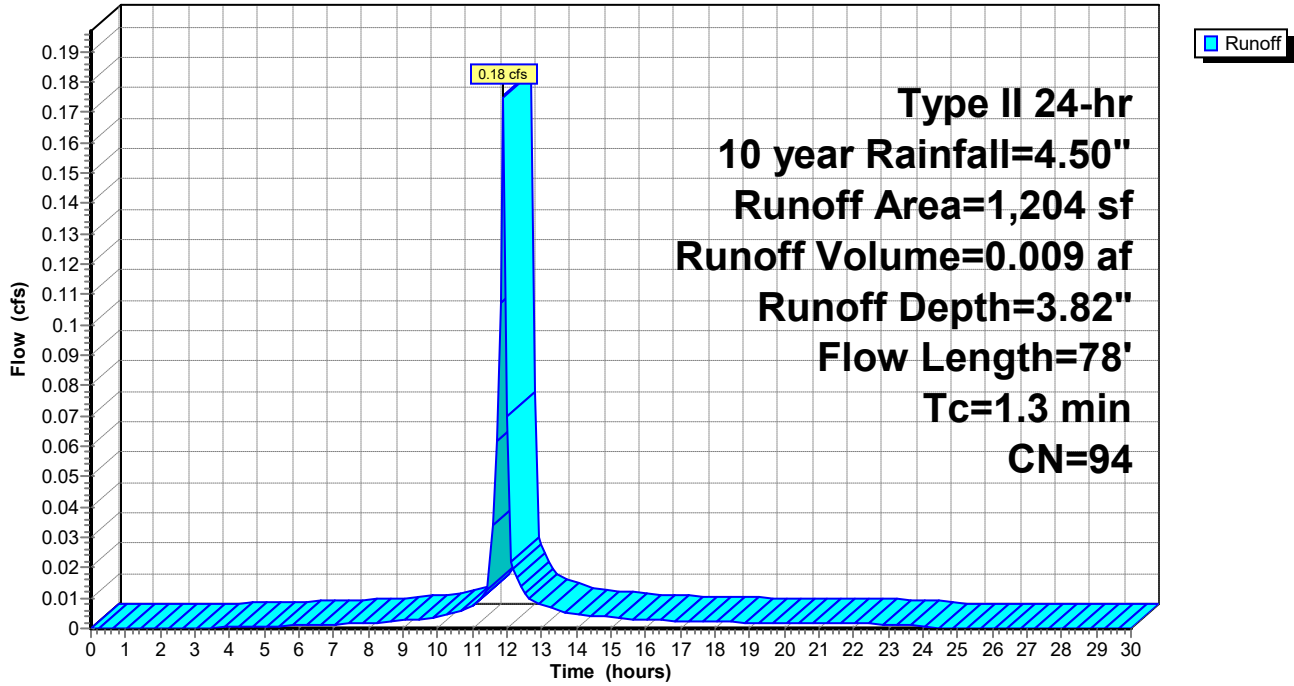
Reach R1: REACH 1 Inflow=0.59 cfs 0.033 af
Outflow=0.59 cfs 0.033 af

Pond roof: roof Peak Elev=0.33' Storage=1,863 cf Inflow=0.81 cfs 0.044 af
Outflow=0.00 cfs 0.002 af

Total Runoff Area = 0.213 ac Runoff Volume = 0.075 af Average Runoff Depth = 4.19"
3.93% Pervious = 0.008 ac 96.07% Impervious = 0.205 ac

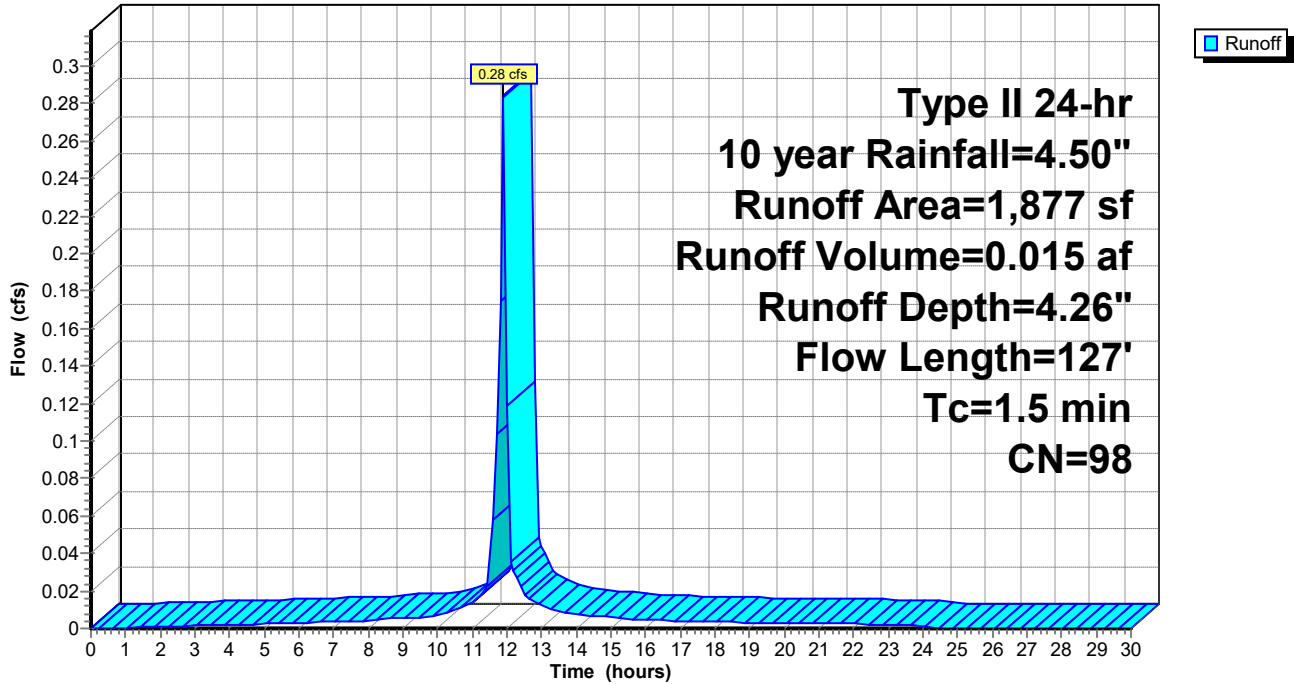
Subcatchment 1: Tributary '1'

Hydrograph



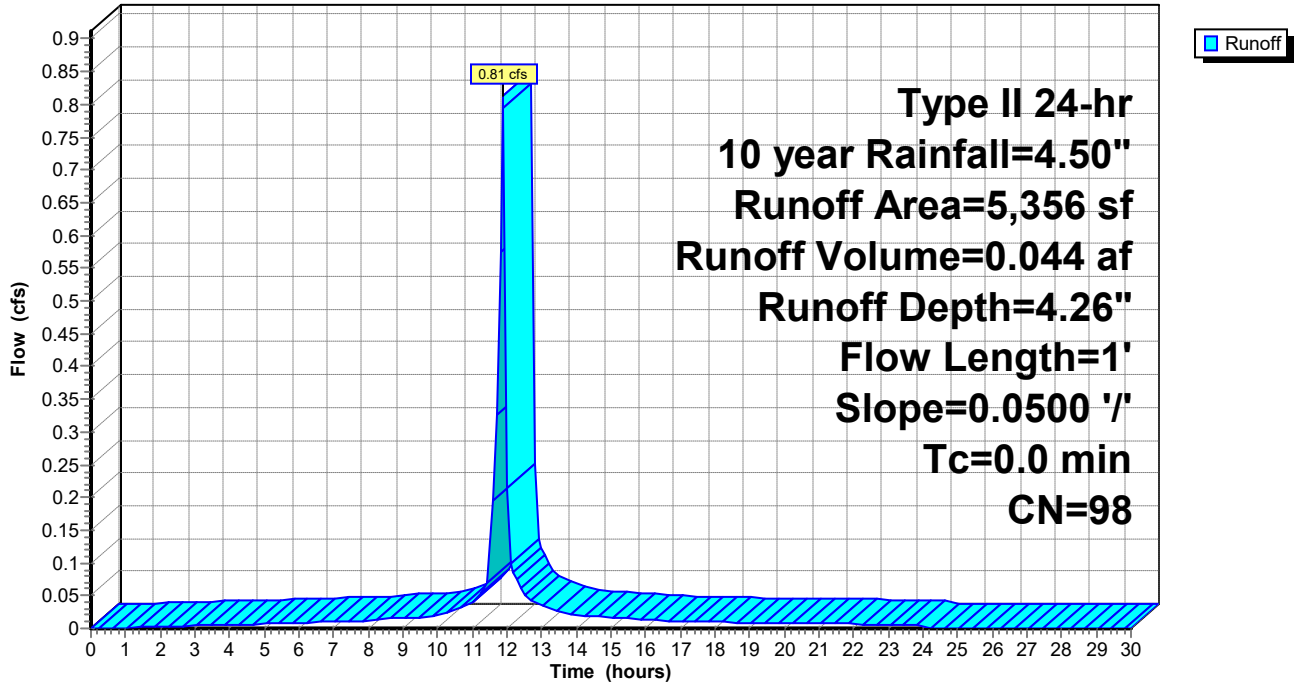
Subcatchment 2: Tributary 2

Hydrograph



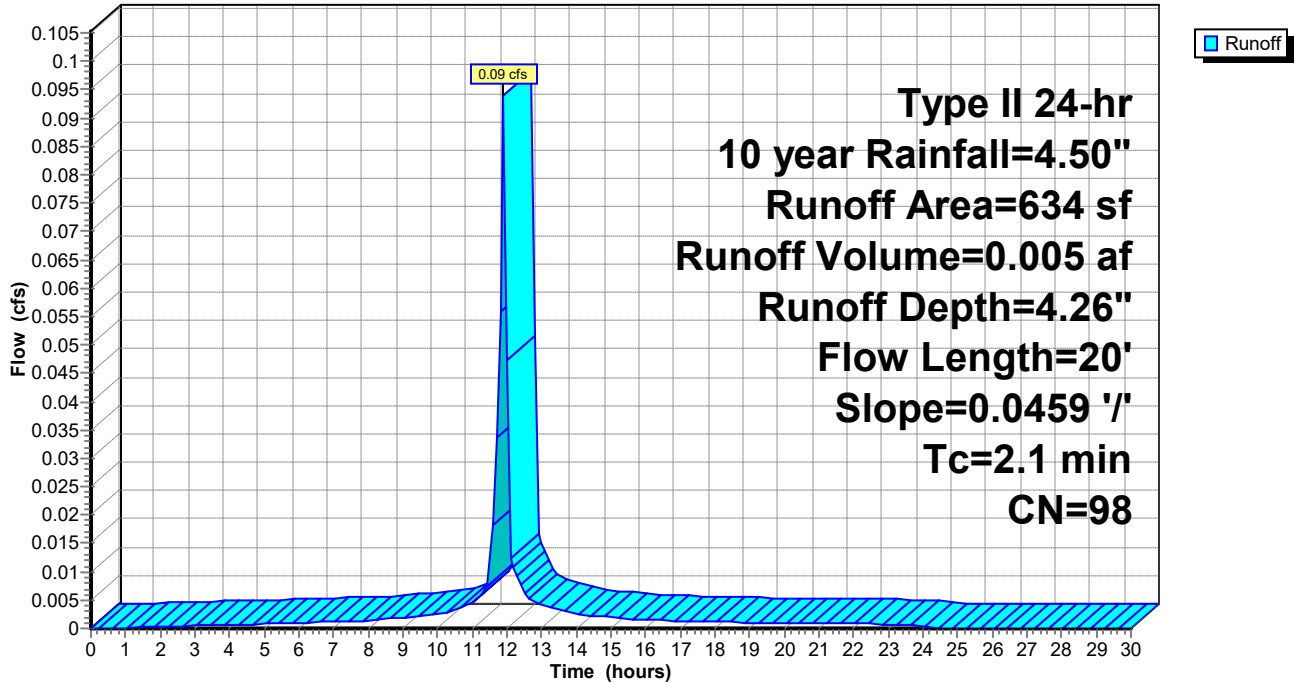
Subcatchment 3: Tributary 3

Hydrograph



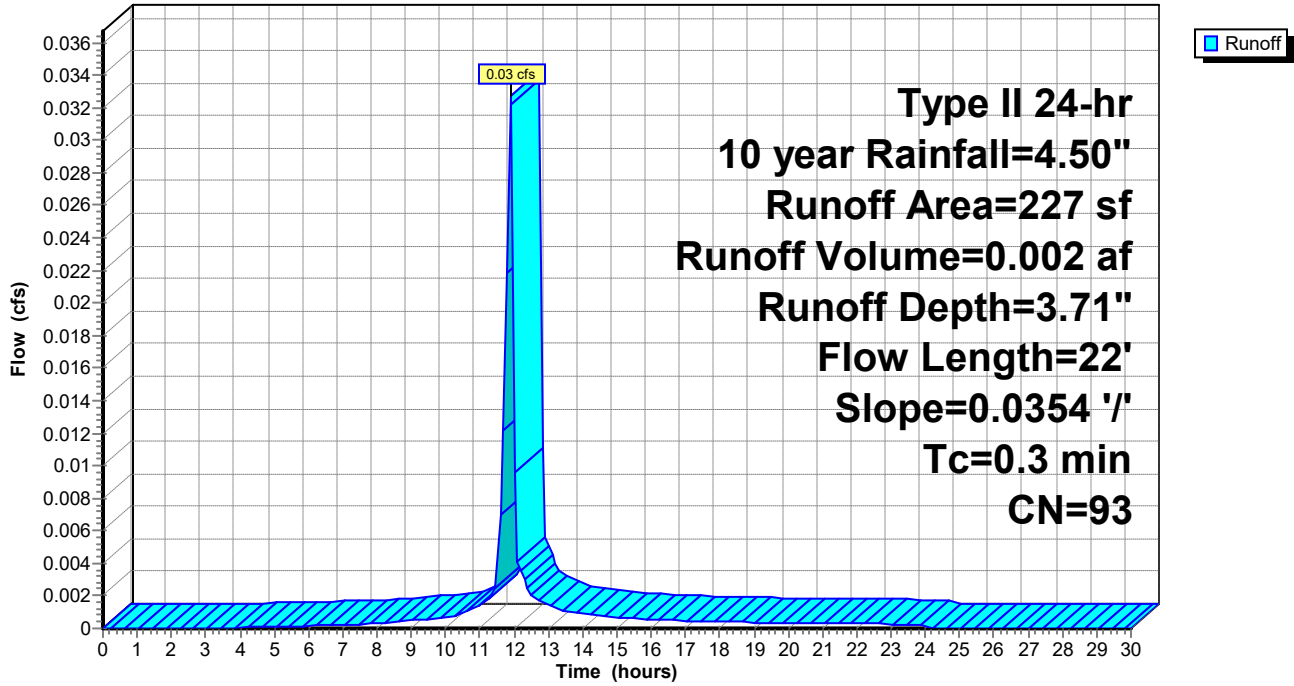
Subcatchment 4: Tributary 4

Hydrograph



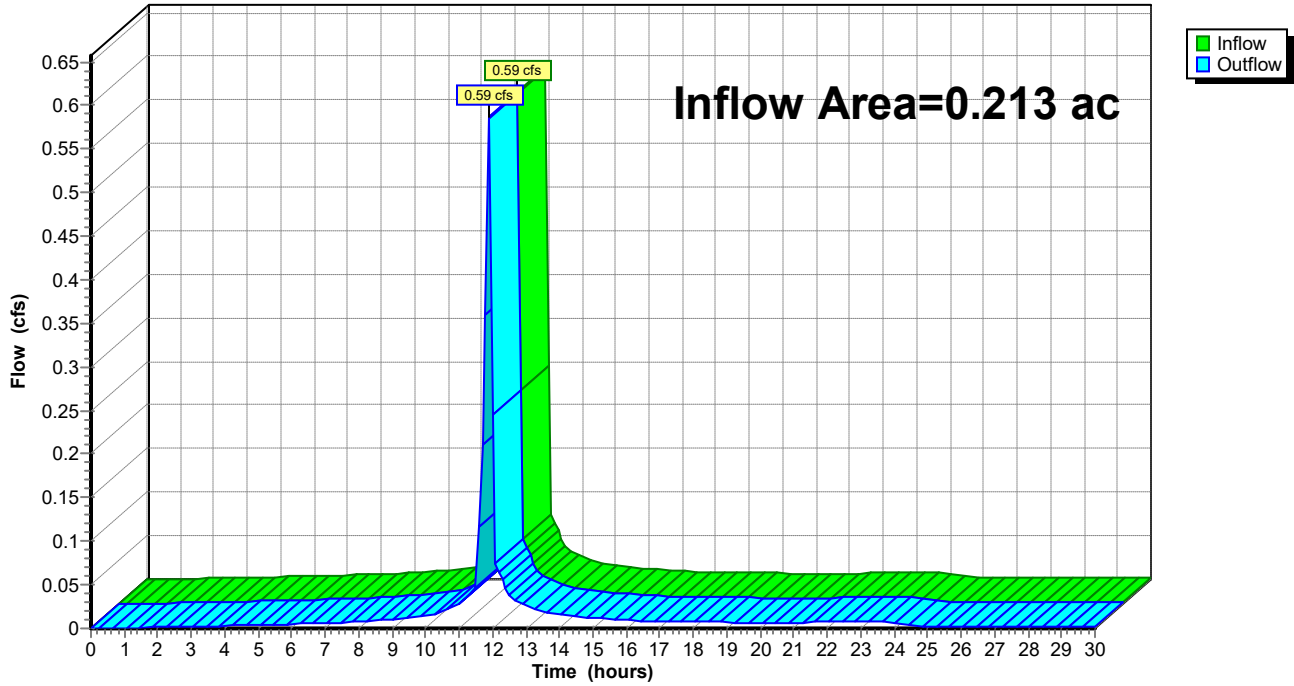
Subcatchment 5: Tributary '5'

Hydrograph



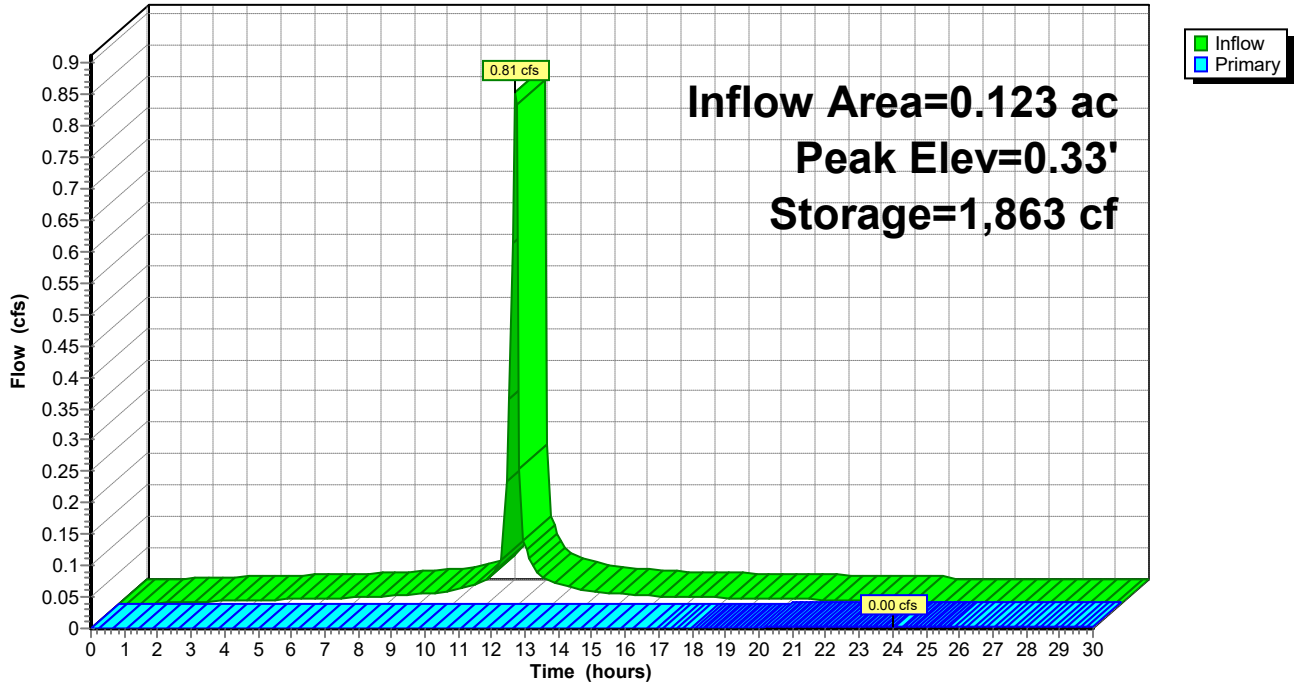
Reach R1: REACH 1

Hydrograph



Pond roof: roof

Hydrograph



Time span=0.00-30.00 hrs, dt=0.10 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1: Tributary '1' Runoff Area=1,204 sf 78.41% Impervious Runoff Depth=6.29"
Flow Length=78' Tc=1.3 min CN=94 Runoff=0.28 cfs 0.014 af

Subcatchment 2: Tributary 2 Runoff Area=1,877 sf 97.55% Impervious Runoff Depth=6.76"
Flow Length=127' Tc=1.5 min CN=98 Runoff=0.44 cfs 0.024 af

Subcatchment 3: Tributary 3 Runoff Area=5,356 sf 100.00% Impervious Runoff Depth=6.76"
Flow Length=1' Slope=0.0500 '/' Tc=0.0 min CN=98 Runoff=1.27 cfs 0.069 af

Subcatchment 4: Tributary 4 Runoff Area=634 sf 100.00% Impervious Runoff Depth=6.76"
Flow Length=20' Slope=0.0459 '/' Tc=2.1 min CN=98 Runoff=0.15 cfs 0.008 af

Subcatchment 5: Tributary '5' Runoff Area=227 sf 74.01% Impervious Runoff Depth=6.17"
Flow Length=22' Slope=0.0354 '/' Tc=0.3 min CN=93 Runoff=0.05 cfs 0.003 af

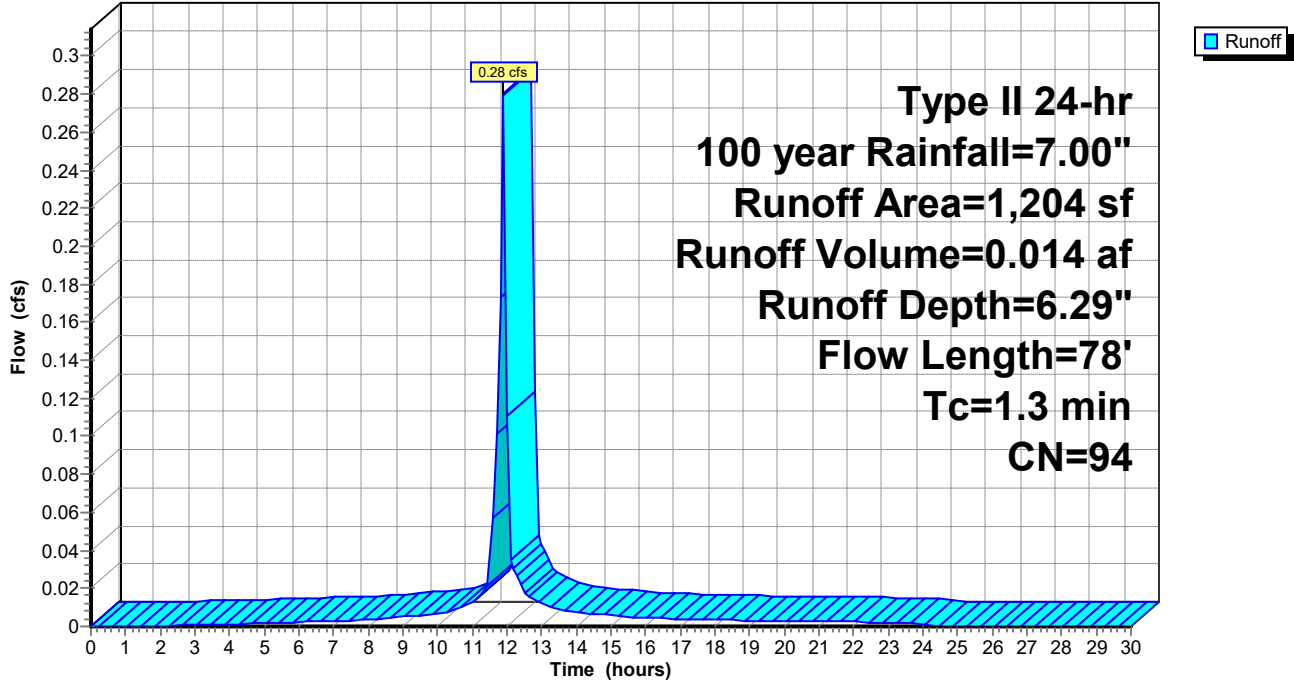
Reach R1: REACH 1 Inflow=0.92 cfs 0.076 af
Outflow=0.92 cfs 0.076 af

Pond roof: roof Peak Elev=0.40' Storage=2,257 cf Inflow=1.27 cfs 0.069 af
Outflow=0.03 cfs 0.026 af

Total Runoff Area = 0.213 ac Runoff Volume = 0.119 af Average Runoff Depth = 6.69"
3.93% Pervious = 0.008 ac 96.07% Impervious = 0.205 ac

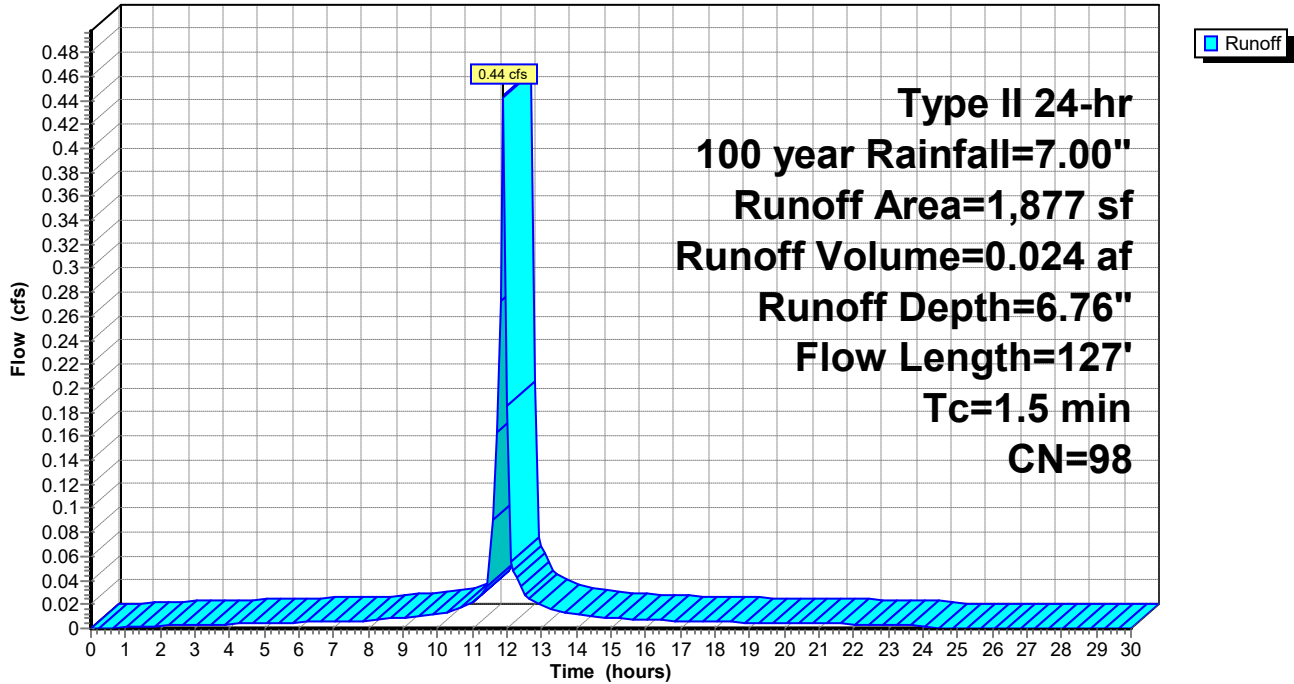
Subcatchment 1: Tributary '1'

Hydrograph



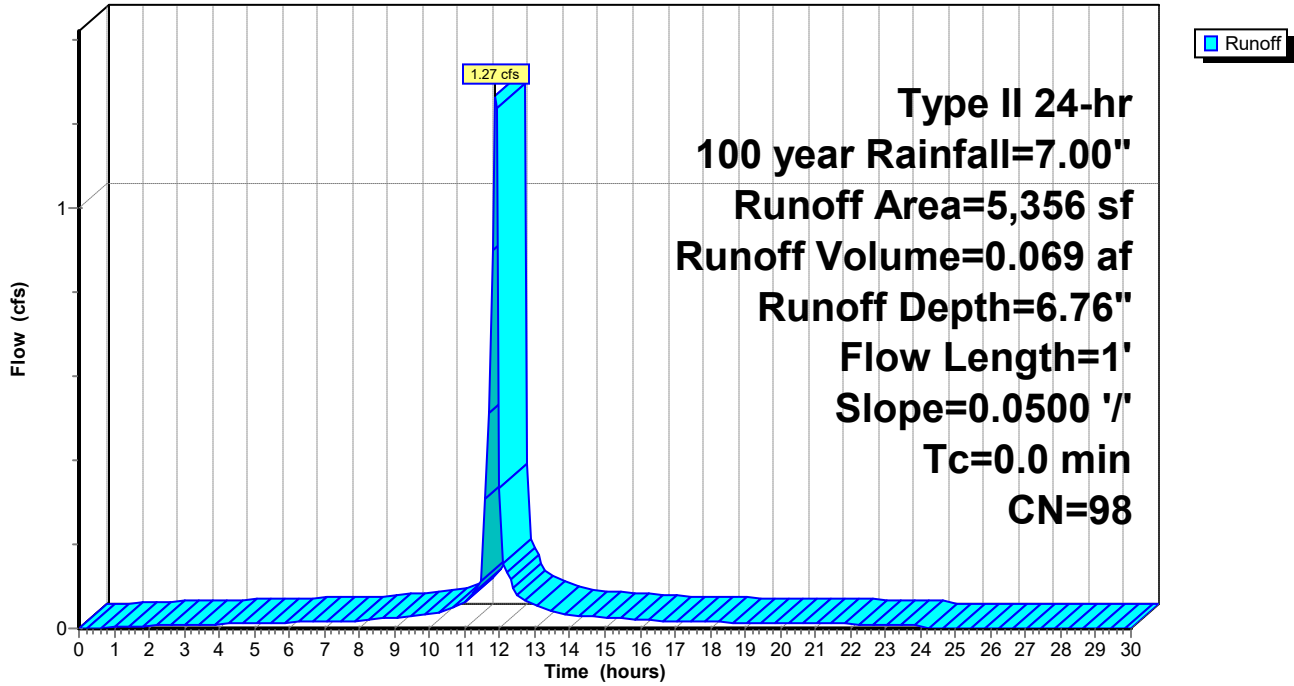
Subcatchment 2: Tributary 2

Hydrograph



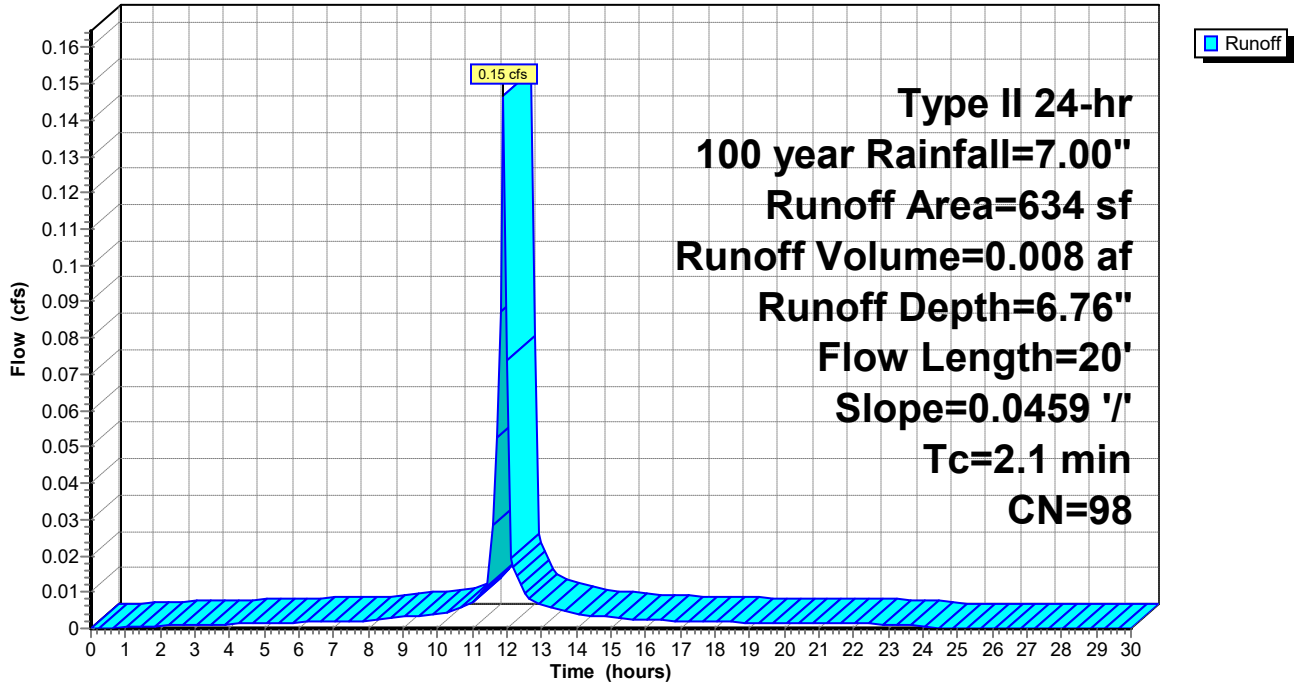
Subcatchment 3: Tributary 3

Hydrograph



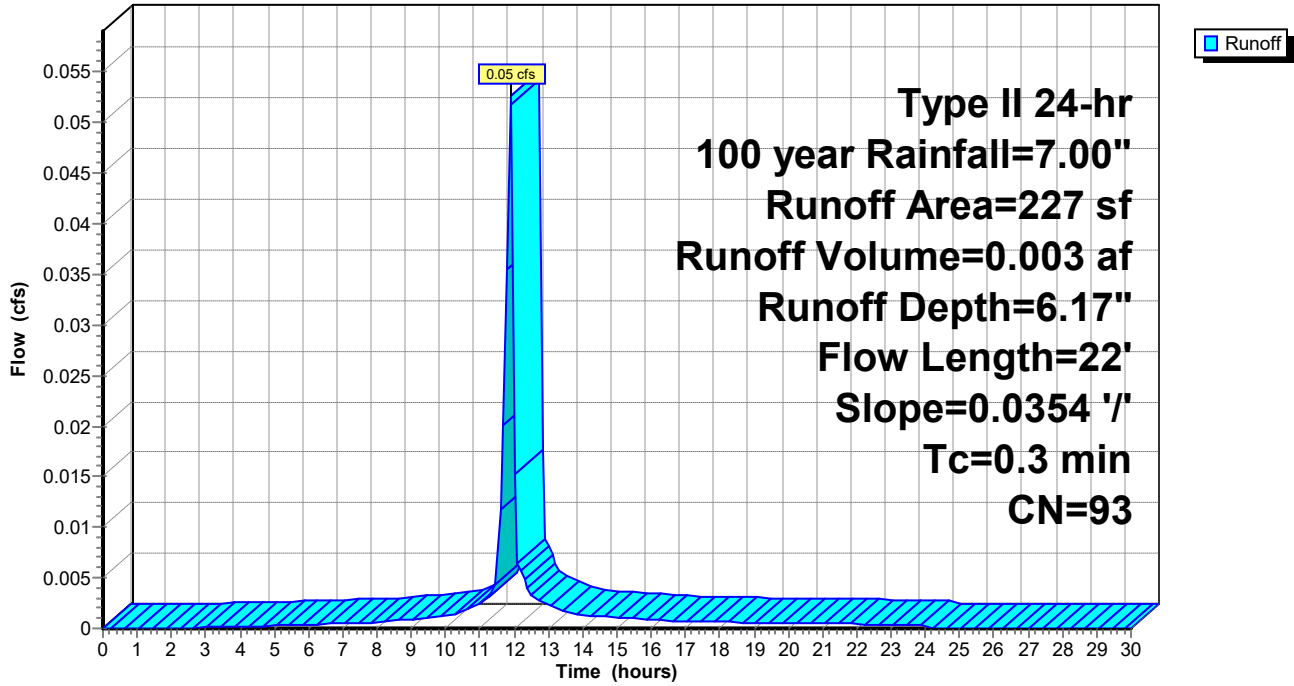
Subcatchment 4: Tributary 4

Hydrograph



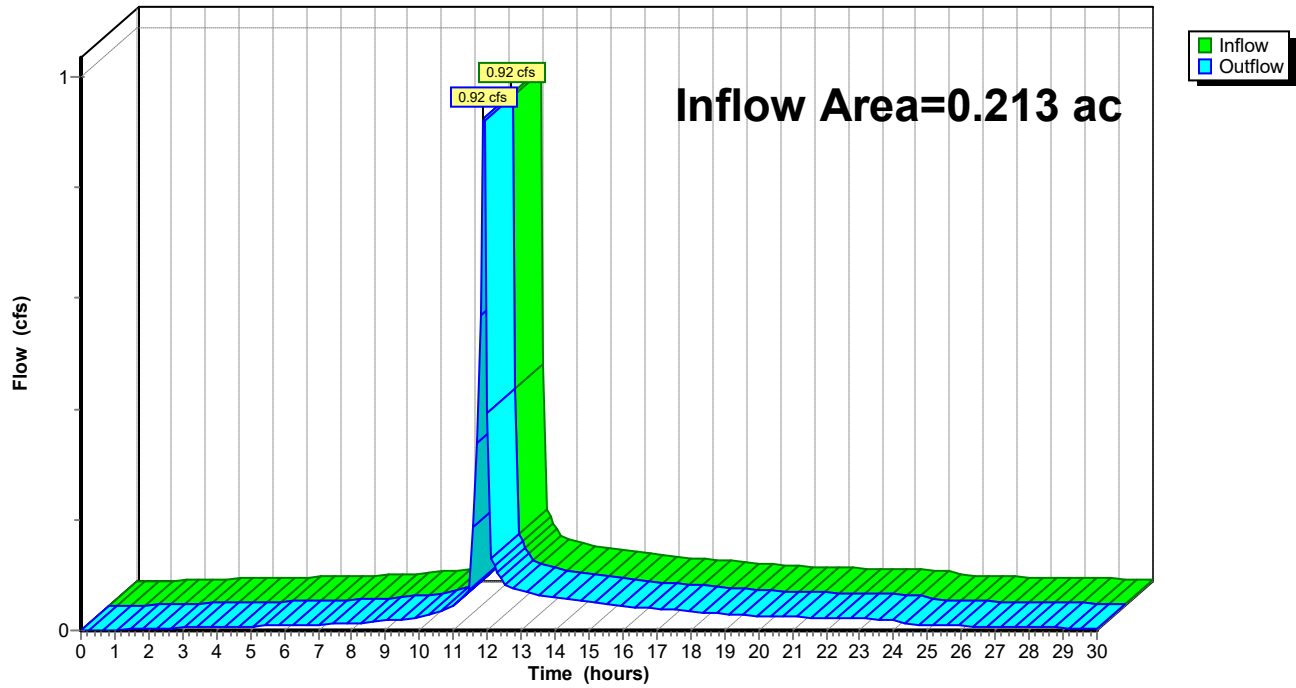
Subcatchment 5: Tributary '5'

Hydrograph



Reach R1: REACH 1

Hydrograph



Pond roof: roof

Hydrograph

