

**Area Listing (all nodes)**

Area (acres)	CN	Description (subcatchment-numbers)
1.187	39	>75% Grass cover, Good, HSG A (P1, P2, P3, P4, P5)
0.030	87	Dirt roads, HSG C (P1)
0.072	96	Gravel surface, HSG A (P1, P2, P3)
0.162	96	Gravel surface, HSG C (E1, E4, P4)
1.532	49	Pasture/grassland/range, Fair, HSG A (E4, P4)
1.368	79	Pasture/grassland/range, Fair, HSG C (E1, E4, P1, P4)
0.938	98	Paved parking, HSG A (E1, P1, P2, P3, P4, P5)
5.662	36	Woods, Fair, HSG A (E1, E2, E3, E4, E5, P1, P2, P3, P4, P5)
0.473	73	Woods, Fair, HSG C (E1, E4, P1, P4)
<b>11.424</b>	<b>51</b>	<b>TOTAL AREA</b>

**Summary for Subcatchment E1: EXISTING DRAINAGE TO CULVERT**

Runoff = 0.55 cfs @ 12.23 hrs, Volume= 0.066 af, Depth= 0.46"

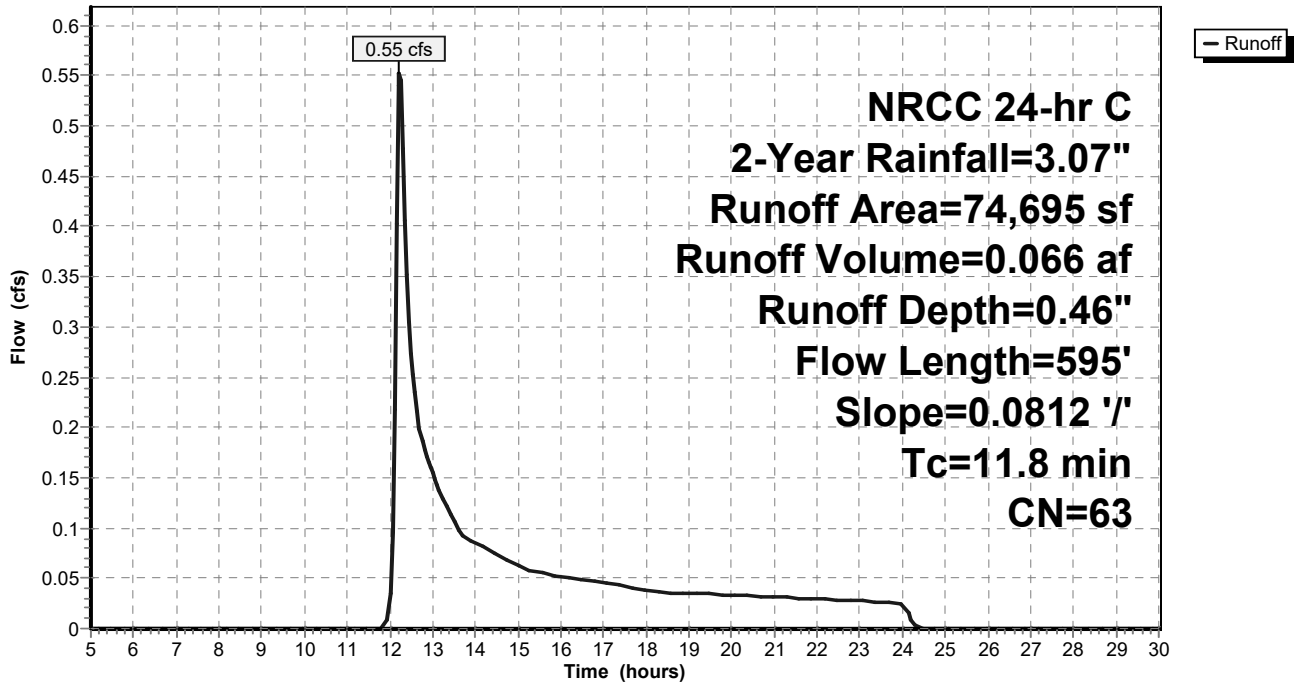
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C 2-Year Rainfall=3.07"

Area (sf)	CN	Description
15,000	98	Paved parking, HSG A
5,044	73	Woods, Fair, HSG C
14,161	36	Woods, Fair, HSG A
15,989	79	Pasture/grassland/range, Fair, HSG C
20,115	36	Woods, Fair, HSG A
3,100	73	Woods, Fair, HSG C
1,286	96	Gravel surface, HSG C
74,695	63	Weighted Average
59,695		79.92% Pervious Area
15,000		20.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	595	0.0812	0.84		Lag/CN Method, Contour Length= 6,066' Interval= 1'

**Subcatchment E1: EXISTING DRAINAGE TO CULVERT**

Hydrograph



**Summary for Subcatchment E2: SOUTH DRAINAGE**

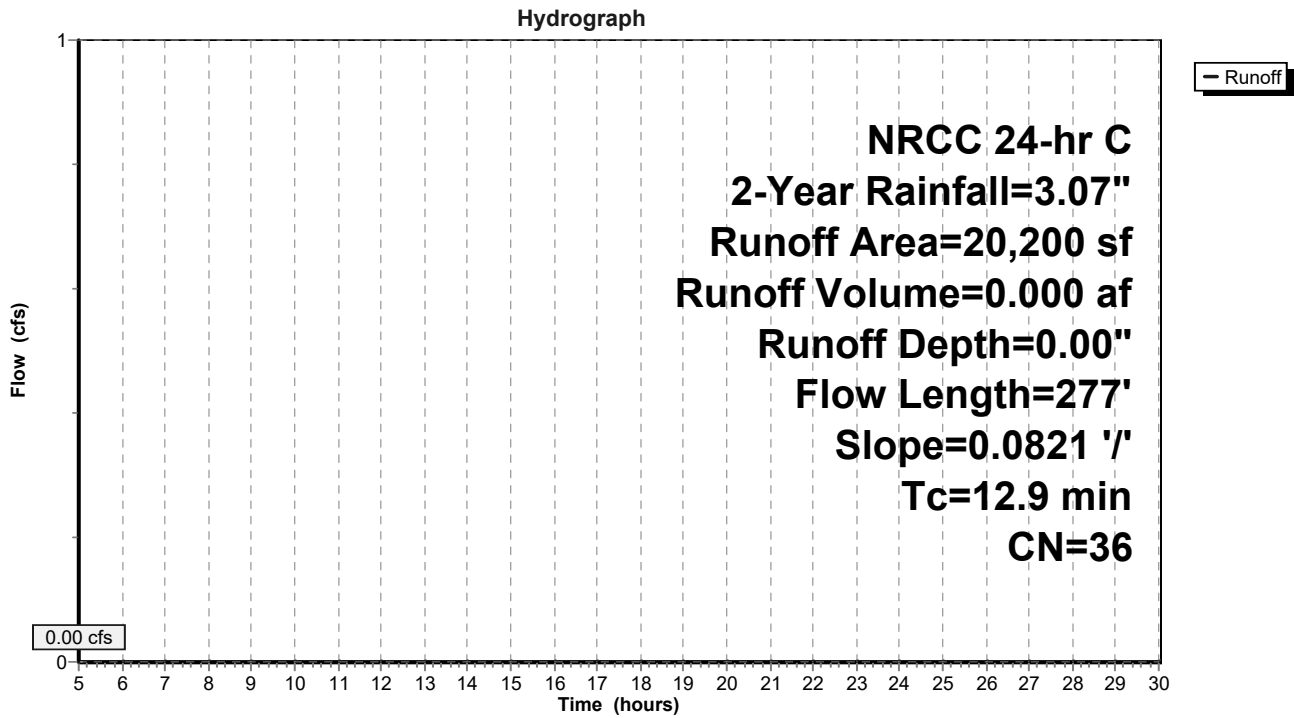
Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
 NRCC 24-hr C 2-Year Rainfall=3.07"

Area (sf)	CN	Description
20,200	36	Woods, Fair, HSG A
20,200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	277	0.0821	0.36		<b>Lag/CN Method,</b> Contour Length= 1,659' Interval= 1'

**Subcatchment E2: SOUTH DRAINAGE**



**Summary for Subcatchment E3: MIDDLE DRAINAGE**

Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

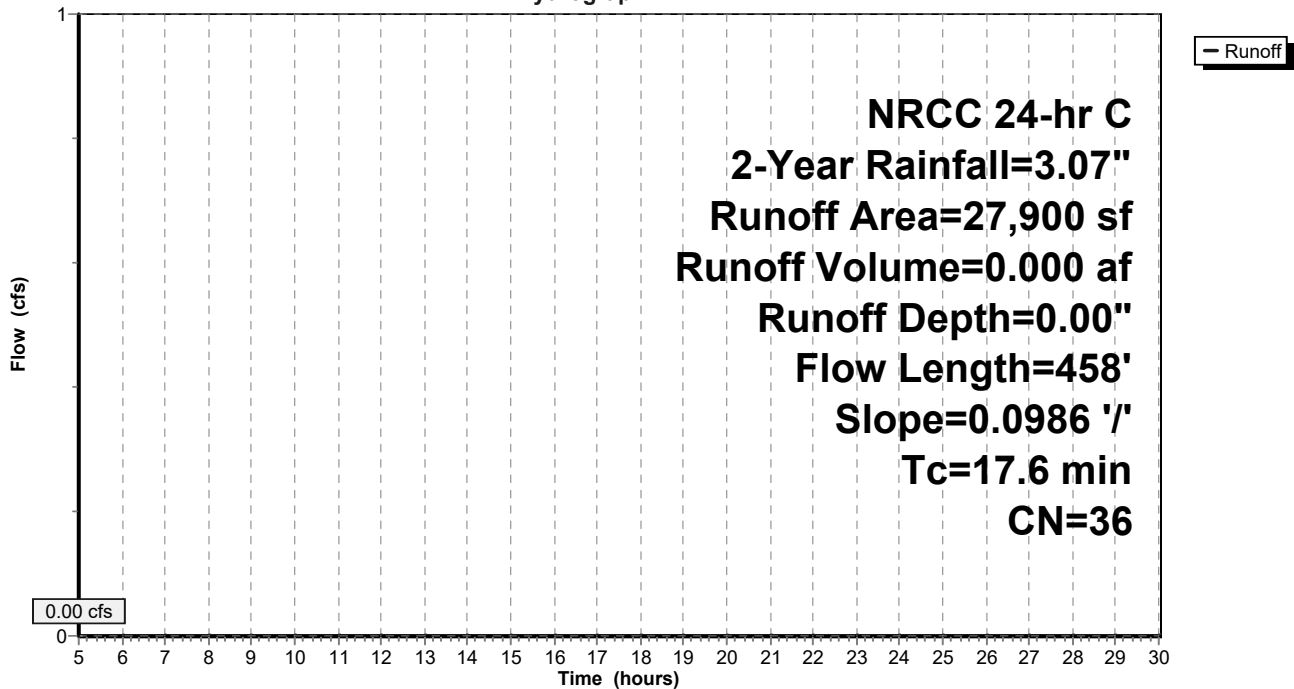
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C 2-Year Rainfall=3.07"

Area (sf)	CN	Description
27,900	36	Woods, Fair, HSG A
27,900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.6	458	0.0986	0.43		<b>Lag/CN Method,</b> Contour Length= 2,750' Interval= 1'

**Subcatchment E3: MIDDLE DRAINAGE**

Hydrograph



### Summary for Subcatchment E4: NORTH DRAINAGE

Runoff = 0.02 cfs @ 13.55 hrs, Volume= 0.017 af, Depth= 0.09"

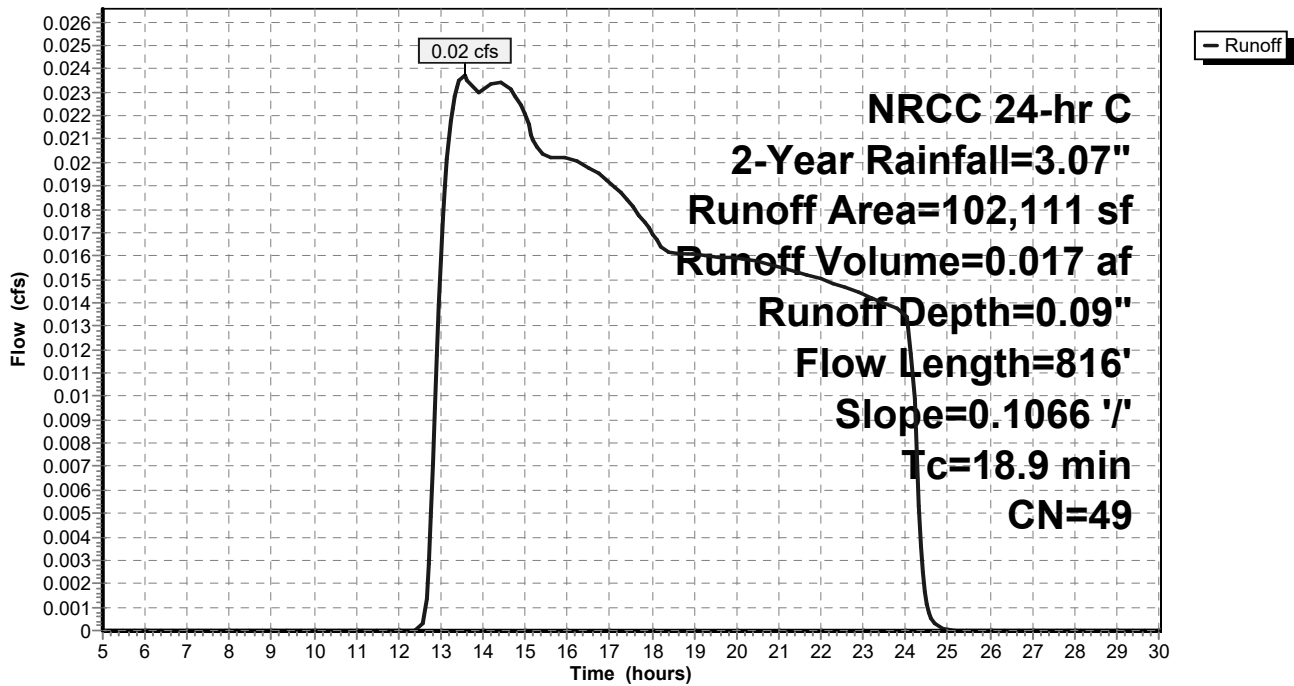
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C 2-Year Rainfall=3.07"

Area (sf)	CN	Description
36,438	36	Woods, Fair, HSG A
13,818	79	Pasture/grassland/range, Fair, HSG C
33,361	49	Pasture/grassland/range, Fair, HSG A
2,890	96	Gravel surface, HSG C
13,445	36	Woods, Fair, HSG A
2,159	73	Woods, Fair, HSG C
102,111	49	Weighted Average
102,111		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.9	816	0.1066	0.72		Lag/CN Method, I Contour Length= 10,890' Interval= 1'

### Subcatchment E4: NORTH DRAINAGE

Hydrograph



**Summary for Subcatchment E5: S REMAINDER DRAINAGE**

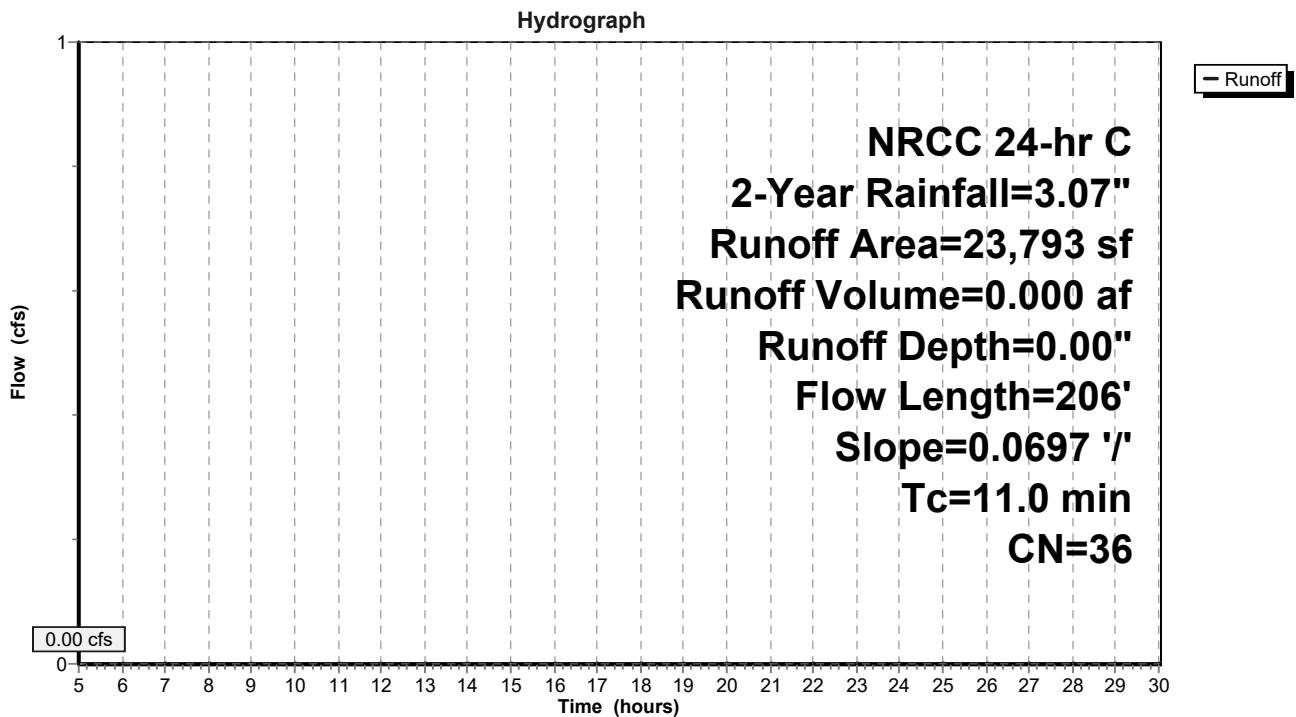
Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C 2-Year Rainfall=3.07"

Area (sf)	CN	Description
23,793	36	Woods, Fair, HSG A
23,793		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	206	0.0697	0.31		<b>Lag/CN Method,</b> Contour Length= 1,659' Interval= 1'

**Subcatchment E5: S REMAINDER DRAINAGE**



**Summary for Subcatchment P1: PROPOSED DRAINAGE TO CULVERT**

Runoff = 0.55 cfs @ 12.23 hrs, Volume= 0.066 af, Depth= 0.46"

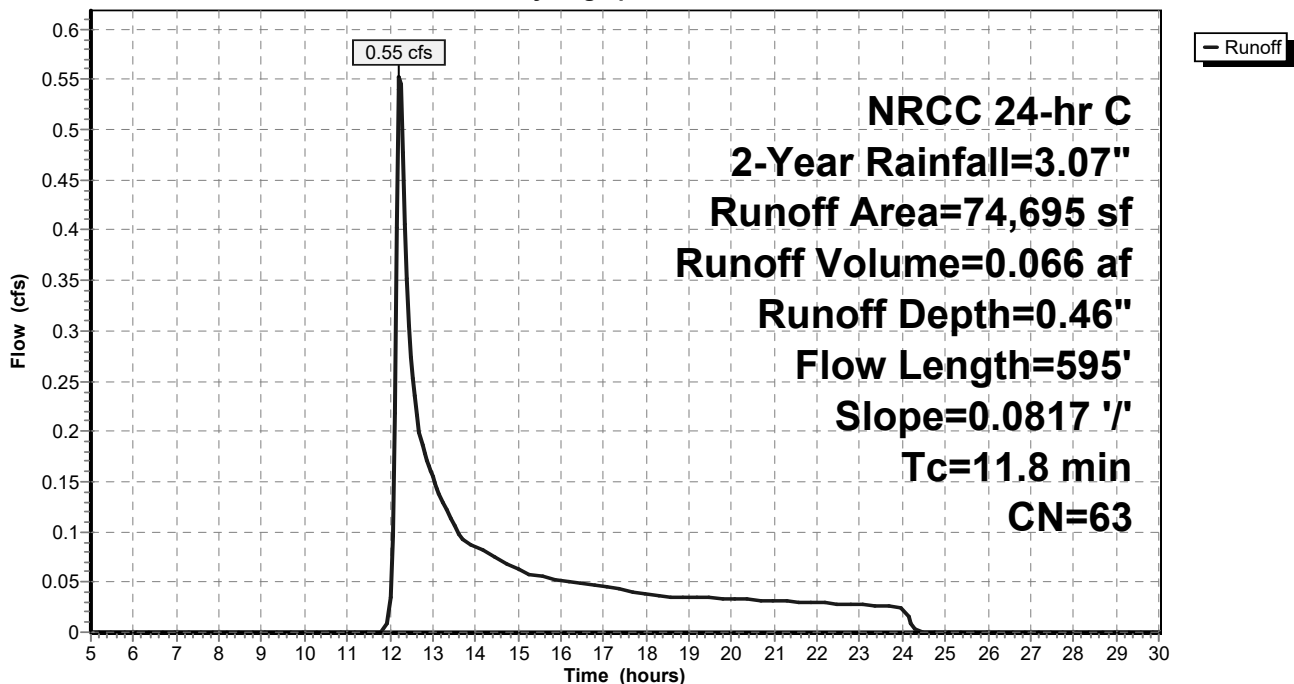
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C 2-Year Rainfall=3.07"

Area (sf)	CN	Description
15,000	98	Paved parking, HSG A
5,044	73	Woods, Fair, HSG C
11,221	36	Woods, Fair, HSG A
15,989	79	Pasture/grassland/range, Fair, HSG C
18,389	36	Woods, Fair, HSG A
3,100	73	Woods, Fair, HSG C
1,286	87	Dirt roads, HSG C
948	96	Gravel surface, HSG A
3,718	39	>75% Grass cover, Good, HSG A
74,695	63	Weighted Average
59,695		79.92% Pervious Area
15,000		20.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	595	0.0817	0.84		Lag/CN Method, Contour Length= 6,100' Interval= 1'

**Subcatchment P1: PROPOSED DRAINAGE TO CULVERT**

Hydrograph





**Summary for Subcatchment P2: PR PKG AND CONCRETE PAD**

Runoff = 0.11 cfs @ 12.17 hrs, Volume= 0.014 af, Depth= 0.33"

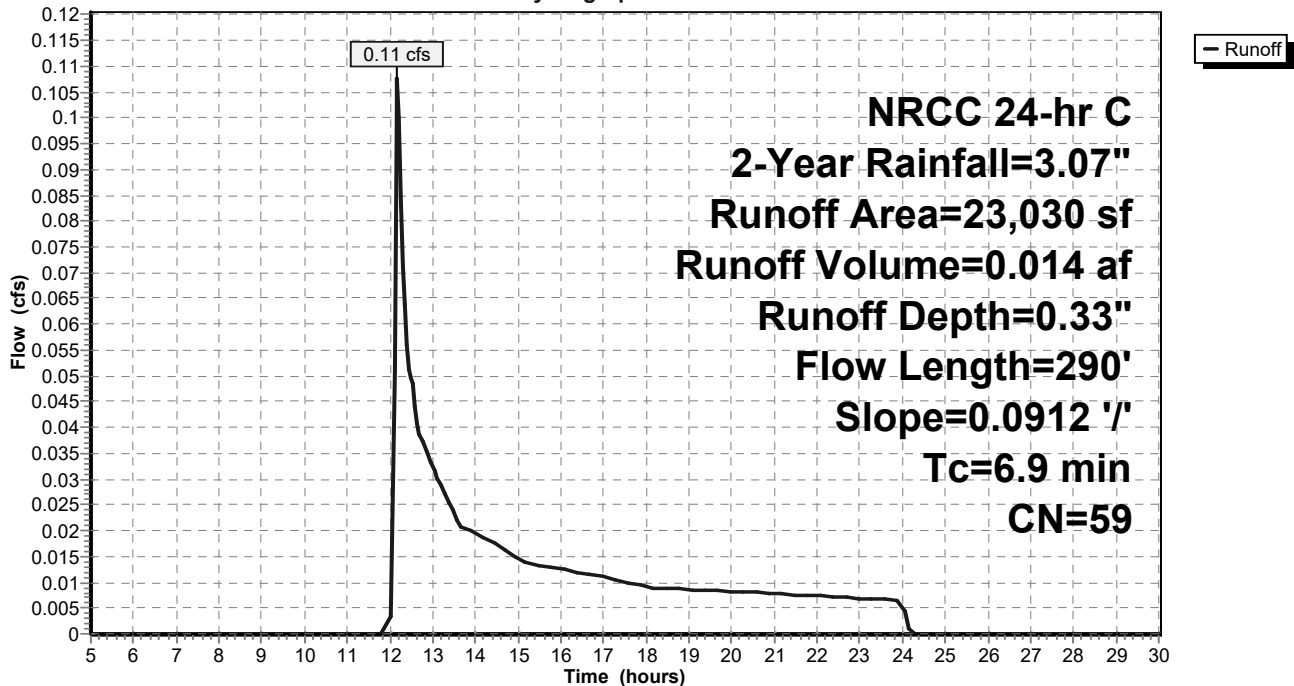
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C 2-Year Rainfall=3.07"

Area (sf)	CN	Description
5,310	36	Woods, Fair, HSG A
9,440	39	>75% Grass cover, Good, HSG A
900	96	Gravel surface, HSG A
7,380	98	Paved parking, HSG A
23,030	59	Weighted Average
15,650		67.95% Pervious Area
7,380		32.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	290	0.0912	0.70		Lag/CN Method, Contour Length= 2,100' Interval= 1'

**Subcatchment P2: PR PKG AND CONCRETE PAD**

Hydrograph



**Summary for Subcatchment P3: PR NORTH DOG LOOP**

Runoff = 0.00 cfs @ 16.89 hrs, Volume= 0.002 af, Depth= 0.04"

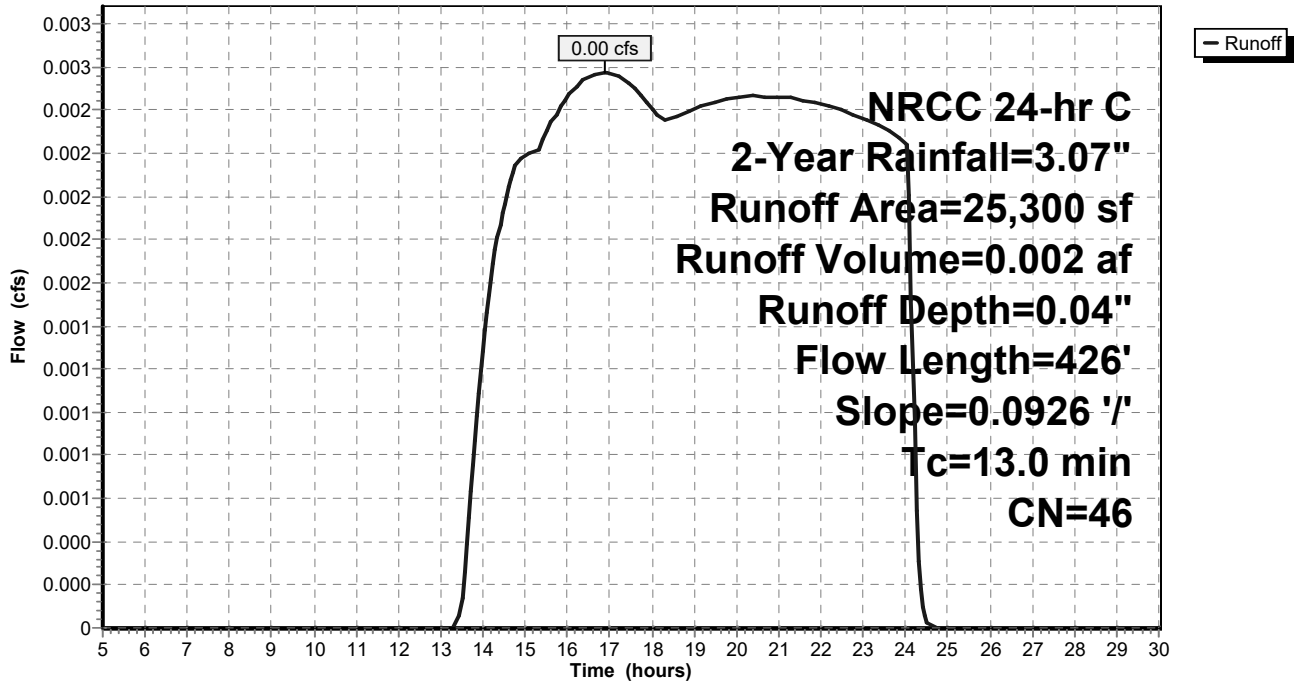
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C 2-Year Rainfall=3.07"

Area (sf)	CN	Description
2,015	98	Paved parking, HSG A
* 1,305	96	Gravel surface, HSG A
13,680	39	>75% Grass cover, Good, HSG A
2,748	36	Woods, Fair, HSG A
4,342	39	>75% Grass cover, Good, HSG A
1,210	39	>75% Grass cover, Good, HSG A
25,300	46	Weighted Average
23,285		92.04% Pervious Area
2,015		7.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	426	0.0926	0.54		Lag/CN Method, Contour Length= 2,342' Interval= 1'

**Subcatchment P3: PR NORTH DOG LOOP**

Hydrograph



### Summary for Subcatchment P4: PR NORTH DRAINAGE AREA

Runoff = 0.02 cfs @ 13.55 hrs, Volume= 0.017 af, Depth= 0.09"

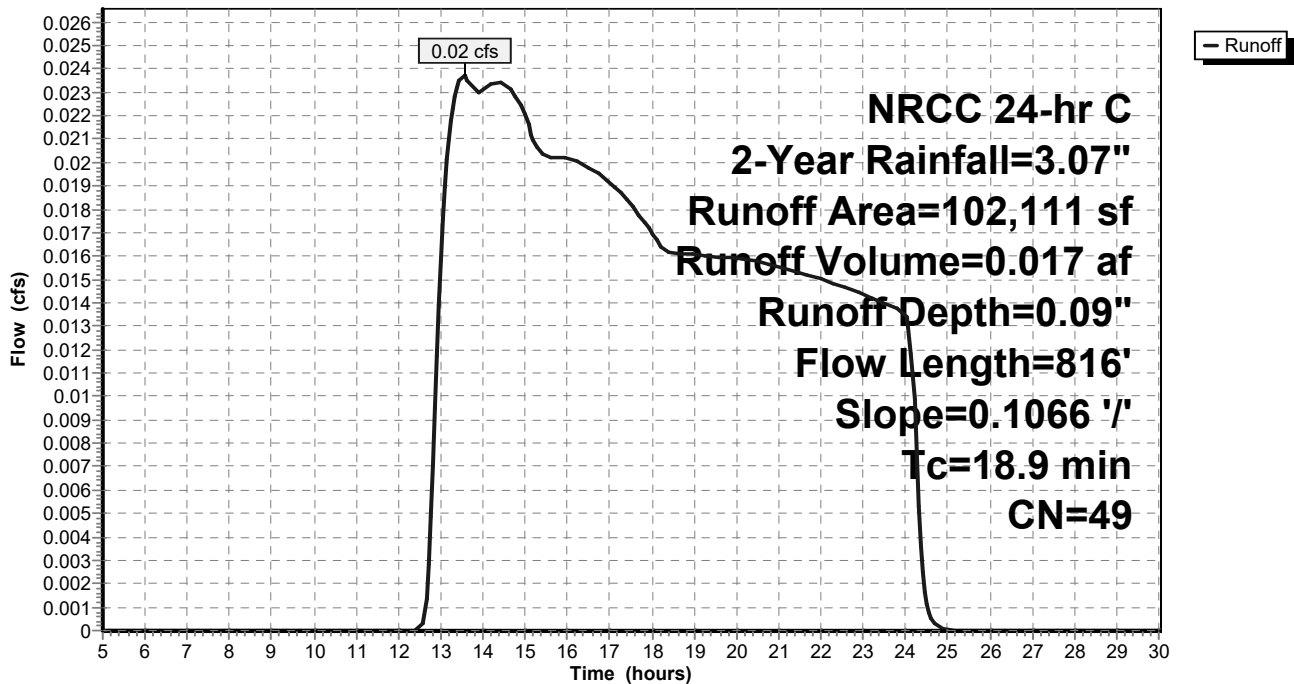
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C 2-Year Rainfall=3.07"

Area (sf)	CN	Description
35,242	36	Woods, Fair, HSG A
13,817	39	>75% Grass cover, Good, HSG A
826	98	Paved parking, HSG A
13,815	79	Pasture/grassland/range, Fair, HSG C
2,891	96	Gravel surface, HSG C
33,361	49	Pasture/grassland/range, Fair, HSG A
2,159	73	Woods, Fair, HSG C
102,111	49	Weighted Average
101,285		99.19% Pervious Area
826		0.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.9	816	0.1066	0.72		Lag/CN Method, Contour Length= 10,890' Interval= 1'

### Subcatchment P4: PR NORTH DRAINAGE AREA

Hydrograph



### Summary for Subcatchment P5: PR SOUTH DRAINAGE

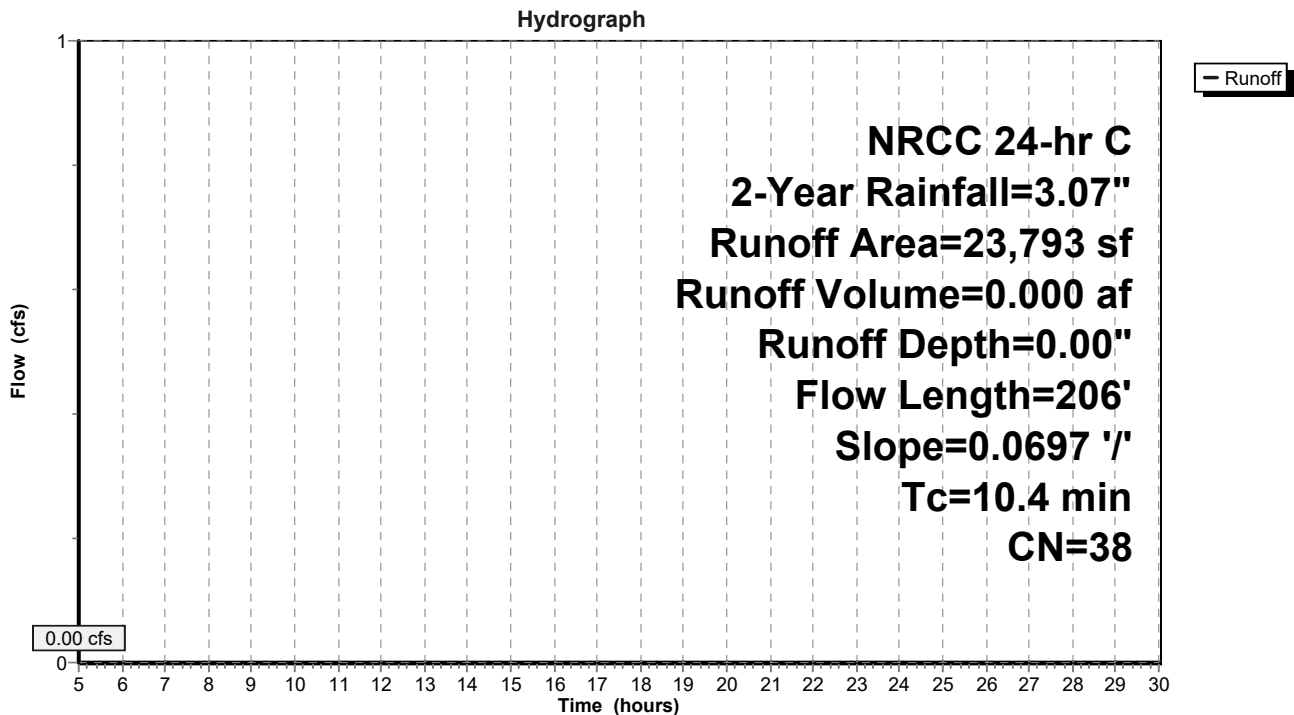
Runoff = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
 NRCC 24-hr C 2-Year Rainfall=3.07"

Area (sf)	CN	Description
17,687	36	Woods, Fair, HSG A
625	98	Paved parking, HSG A
5,481	39	>75% Grass cover, Good, HSG A
23,793	38	Weighted Average
23,168		97.37% Pervious Area
625		2.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.4	206	0.0697	0.33		Lag/CN Method, Contour Length= 1,659' Interval= 1'

### Subcatchment P5: PR SOUTH DRAINAGE



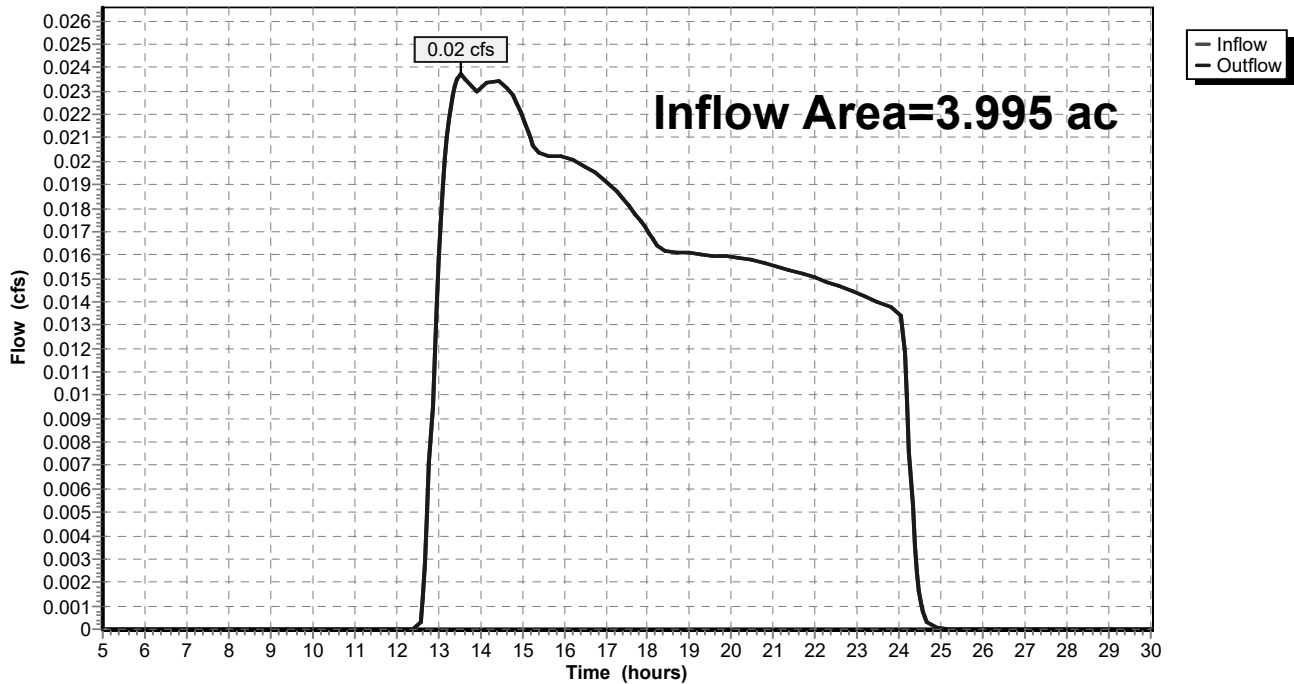
### Summary for Reach E: SITE TOTAL - EXISTING

Inflow Area = 3.995 ac, 0.00% Impervious, Inflow Depth = 0.05" for 2-Year event  
Inflow = 0.02 cfs @ 13.55 hrs, Volume= 0.017 af  
Outflow = 0.02 cfs @ 13.55 hrs, Volume= 0.017 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

### Reach E: SITE TOTAL - EXISTING

Hydrograph

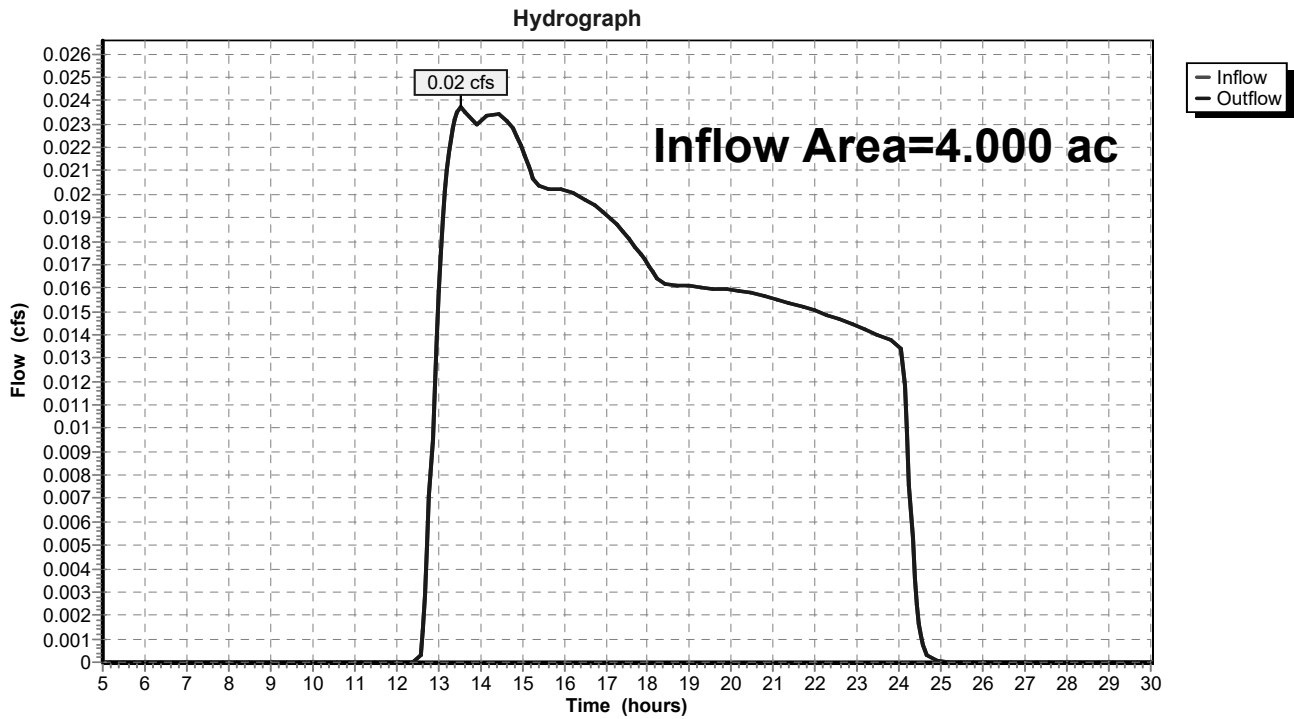


### Summary for Reach P: SITE TOTAL - PROPOSED

Inflow Area = 4.000 ac, 6.22% Impervious, Inflow Depth = 0.05" for 2-Year event  
Inflow = 0.02 cfs @ 13.55 hrs, Volume= 0.017 af  
Outflow = 0.02 cfs @ 13.55 hrs, Volume= 0.017 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

### Reach P: SITE TOTAL - PROPOSED



**Summary for Pond RG1: rain garden -pkg lot**

Inflow Area = 0.529 ac, 32.05% Impervious, Inflow Depth = 0.33" for 2-Year event  
 Inflow = 0.11 cfs @ 12.17 hrs, Volume= 0.014 af  
 Outflow = 0.02 cfs @ 14.50 hrs, Volume= 0.014 af, Atten= 84%, Lag= 139.4 min  
 Discarded = 0.02 cfs @ 14.50 hrs, Volume= 0.014 af  
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs / 2  
 Peak Elev= 211.22' @ 14.50 hrs Surf.Area= 497 sf Storage= 165 cf

Plug-Flow detention time= 112.4 min calculated for 0.014 af (100% of inflow)  
 Center-of-Mass det. time= 112.3 min ( 1,065.1 - 952.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	211.00'	1,525 cf	<b>Custom Stage Data (Prismatic)</b> Listed below
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
211.00	294	0	0
212.00	1,237	766	766
212.50	1,800	759	1,525

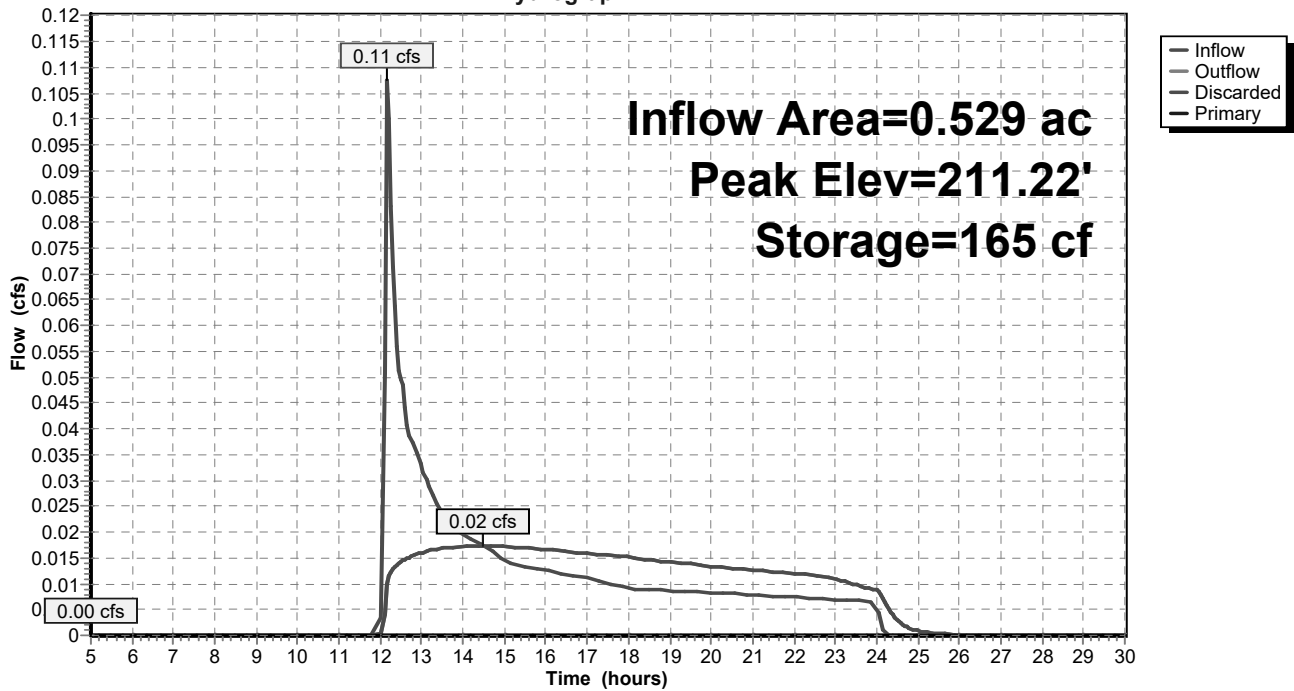
Device	Routing	Invert	Outlet Devices
#1	Discarded	211.00'	<b>1.500 in/hr Exfiltration over Surface area</b> Phase-In= 0.02'
#2	Primary	211.65'	<b>12.0" Vert. Orifice/Grate</b> C= 0.600

**Discarded OutFlow** Max=0.02 cfs @ 14.50 hrs HW=211.22' (Free Discharge)  
 ↑1=**Exfiltration** (Exfiltration Controls 0.02 cfs)

**Primary OutFlow** Max=0.00 cfs @ 5.00 hrs HW=211.00' (Free Discharge)  
 ↑2=**Orifice/Grate** ( Controls 0.00 cfs)

### Pond RG1: rain garden -pkg lot

Hydrograph





**Summary for Pond RG2: rain garden - north**

Inflow Area = 0.581 ac, 7.96% Impervious, Inflow Depth = 0.04" for 2-Year event  
 Inflow = 0.00 cfs @ 16.89 hrs, Volume= 0.002 af  
 Outflow = 0.00 cfs @ 17.01 hrs, Volume= 0.002 af, Atten= 0%, Lag= 7.4 min  
 Discarded = 0.00 cfs @ 17.01 hrs, Volume= 0.002 af  
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs / 2  
 Peak Elev= 210.01' @ 17.01 hrs Surf.Area= 239 sf Storage= 1 cf

Plug-Flow detention time= 9.5 min calculated for 0.002 af (100% of inflow)  
 Center-of-Mass det. time= 9.5 min ( 1,155.4 - 1,145.9 )

Volume	Invert	Avail.Storage	Storage Description
#1	210.00'	805 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
210.00	237	0	0
211.00	616	427	427
211.50	897	378	805

Device	Routing	Invert	Outlet Devices
#1	Primary	210.75'	<b>12.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#2	Discarded	210.00'	<b>1.500 in/hr Exfiltration over Surface area</b> Phase-In= 0.02'

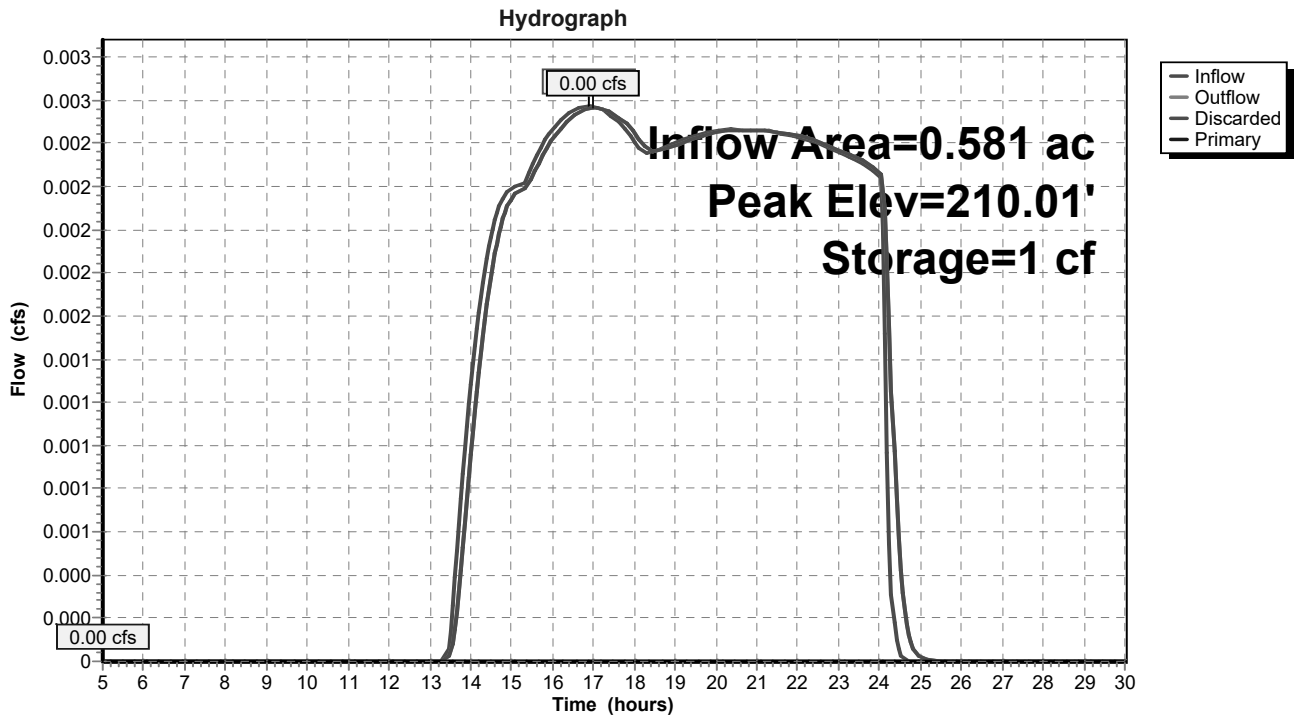
**Discarded OutFlow** Max=0.00 cfs @ 17.01 hrs HW=210.01' (Free Discharge)

↑**2=Exfiltration** (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=0.00 cfs @ 5.00 hrs HW=210.00' (Free Discharge)

↑**1=Orifice/Grate** ( Controls 0.00 cfs)

### Pond RG2: rain garden - north



**Summary for Pond STO: cultec system**

Inflow Area = 1.110 ac, 19.44% Impervious, Inflow Depth = 0.00" for 2-Year event  
 Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af  
 Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min  
 Discarded = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af  
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs / 2  
 Peak Elev= 204.50' @ 5.00 hrs Surf.Area= 1,159 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1A	204.50'	819 cf	<b>24.50'W x 47.31'L x 2.71'H Field A</b> 3,139 cf Overall - 1,091 cf Embedded = 2,048 cf x 40.0% Voids
#2A	205.00'	1,091 cf	<b>Cultec R-180</b> x 49 Inside #1 Effective Size= 33.6"W x 20.0"H => 3.44 sf x 6.33'L = 21.8 cf Overall Size= 36.0"W x 20.5"H x 7.33'L with 1.00' Overlap Row Length Adjustment= +1.00' x 3.44 sf x 7 rows
#3	205.00'	72 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc)
		1,982 cf	Total Available Storage

Storage Group A created with Chamber Wizard

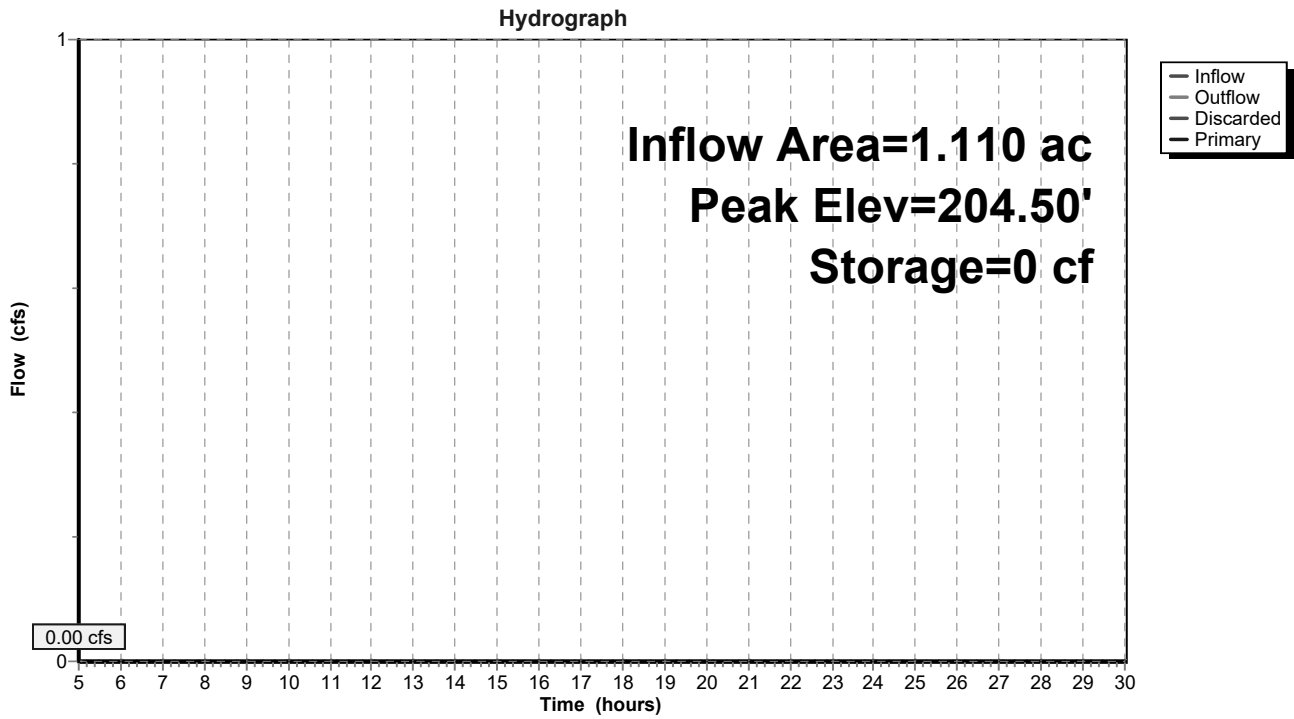
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
205.00	13	0	0	13
210.50	13	72	72	83

Device	Routing	Invert	Outlet Devices
#1	Primary	204.50'	<b>12.0" Round Culvert</b> L= 65.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 204.50' / 201.00' S= 0.0538 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Discarded	204.50'	<b>1.500 in/hr Exfiltration over Surface area</b> Phase-In= 0.02'
#3	Device 1	205.50'	<b>4.0" Vert. Orifice/Grate</b> C= 0.600
#4	Device 1	206.50'	<b>12.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.00 cfs @ 5.00 hrs HW=204.50' (Free Discharge)  
 ↳ **2=Exfiltration** ( Controls 0.00 cfs)

**Primary OutFlow** Max=0.00 cfs @ 5.00 hrs HW=204.50' (Free Discharge)  
 ↳ **1=Culvert** ( Controls 0.00 cfs)  
 ↳ ↳ **3=Orifice/Grate** ( Controls 0.00 cfs)  
 ↳ ↳ **4=Orifice/Grate** ( Controls 0.00 cfs)

### Pond STO: cultec system



**Summary for Subcatchment E1: EXISTING DRAINAGE TO CULVERT**

Runoff = 1.87 cfs @ 12.21 hrs, Volume= 0.169 af, Depth= 1.18"

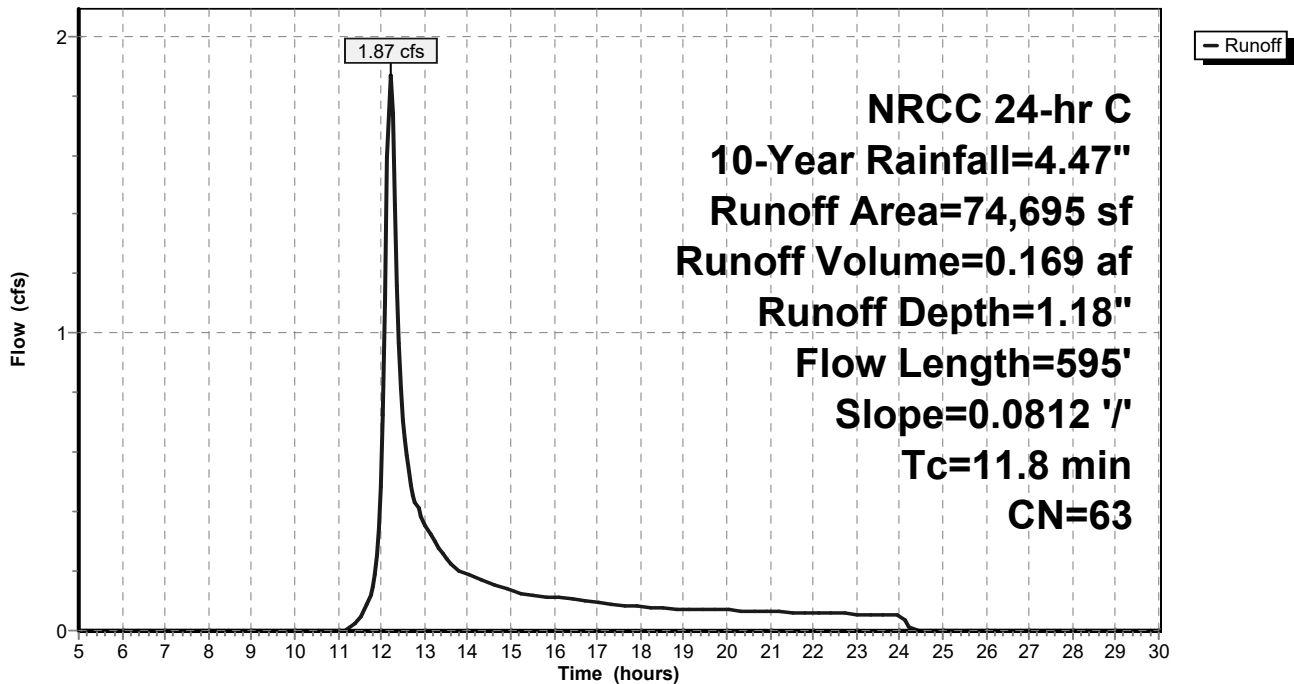
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
 NRCC 24-hr C 10-Year Rainfall=4.47"

Area (sf)	CN	Description
15,000	98	Paved parking, HSG A
5,044	73	Woods, Fair, HSG C
14,161	36	Woods, Fair, HSG A
15,989	79	Pasture/grassland/range, Fair, HSG C
20,115	36	Woods, Fair, HSG A
3,100	73	Woods, Fair, HSG C
1,286	96	Gravel surface, HSG C
74,695	63	Weighted Average
59,695		79.92% Pervious Area
15,000		20.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	595	0.0812	0.84		<b>Lag/CN Method,</b> Contour Length= 6,066' Interval= 1'

**Subcatchment E1: EXISTING DRAINAGE TO CULVERT**

Hydrograph



Summary for Subcatchment E2: SOUTH DRAINAGE

Runoff = 0.00 cfs @ 21.22 hrs, Volume= 0.002 af, Depth= 0.04"

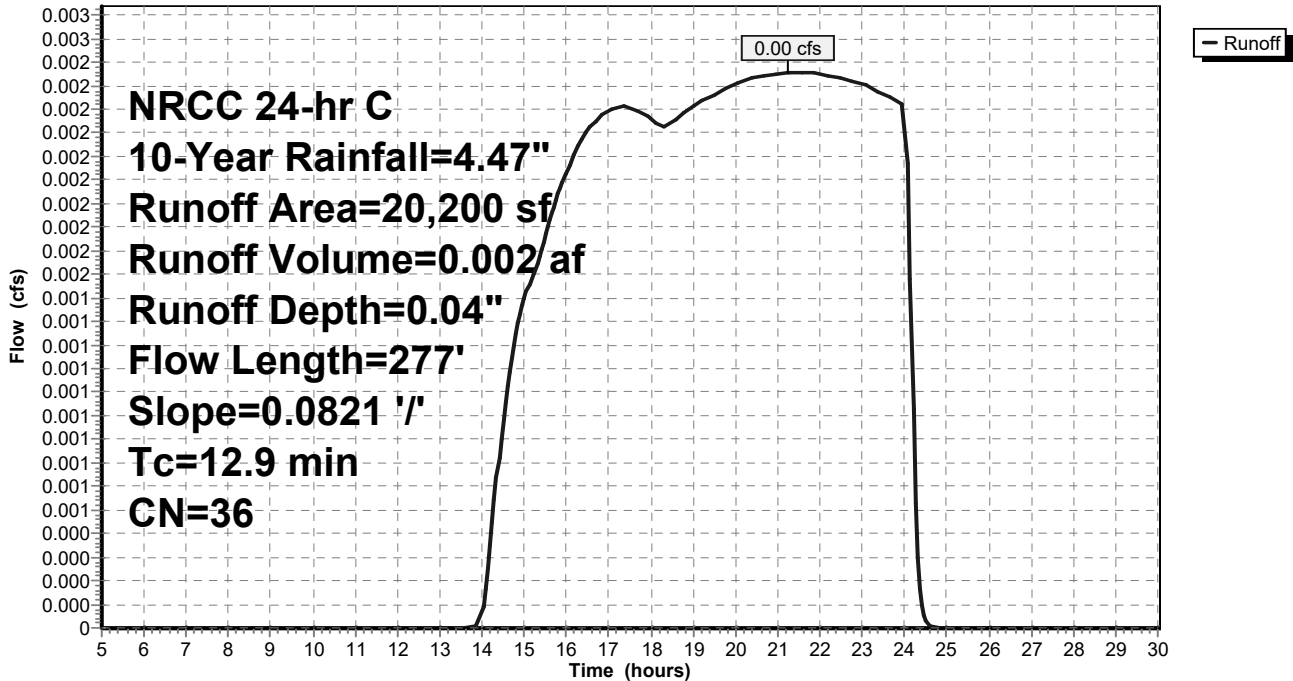
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
NRCC 24-hr C 10-Year Rainfall=4.47"

Table with 3 columns: Area (sf), CN, Description. Row 1: 20,200, 36, Woods, Fair, HSG A. Row 2: 20,200, 100.00% Pervious Area.

Table with 7 columns: Tc (min), Length (feet), Slope (ft/ft), Velocity (ft/sec), Capacity (cfs), Description. Row 1: 12.9, 277, 0.0821, 0.36, Lag/CN Method, Contour Length= 1,659' Interval= 1'.

Subcatchment E2: SOUTH DRAINAGE

Hydrograph



**Summary for Subcatchment E3: MIDDLE DRAINAGE**

Runoff = 0.00 cfs @ 21.27 hrs, Volume= 0.002 af, Depth= 0.04"

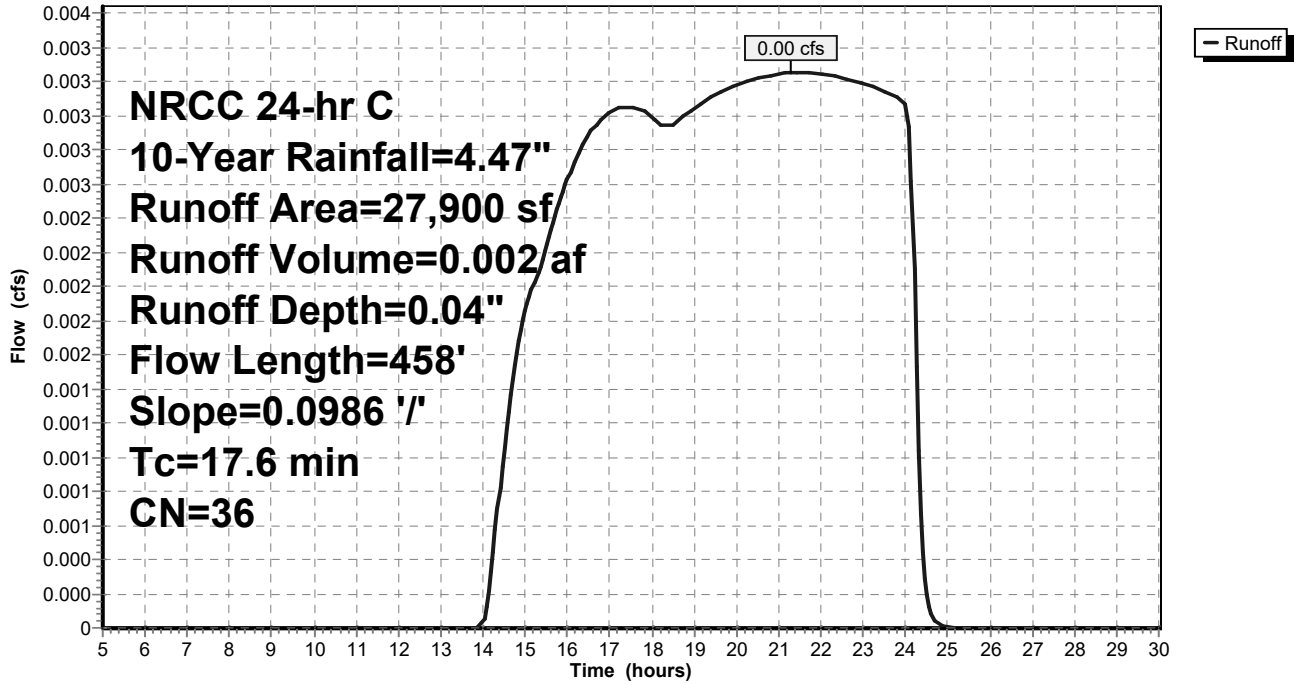
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C 10-Year Rainfall=4.47"

Area (sf)	CN	Description
27,900	36	Woods, Fair, HSG A
27,900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.6	458	0.0986	0.43		<b>Lag/CN Method,</b> Contour Length= 2,750' Interval= 1'

**Subcatchment E3: MIDDLE DRAINAGE**

Hydrograph



### Summary for Subcatchment E4: NORTH DRAINAGE

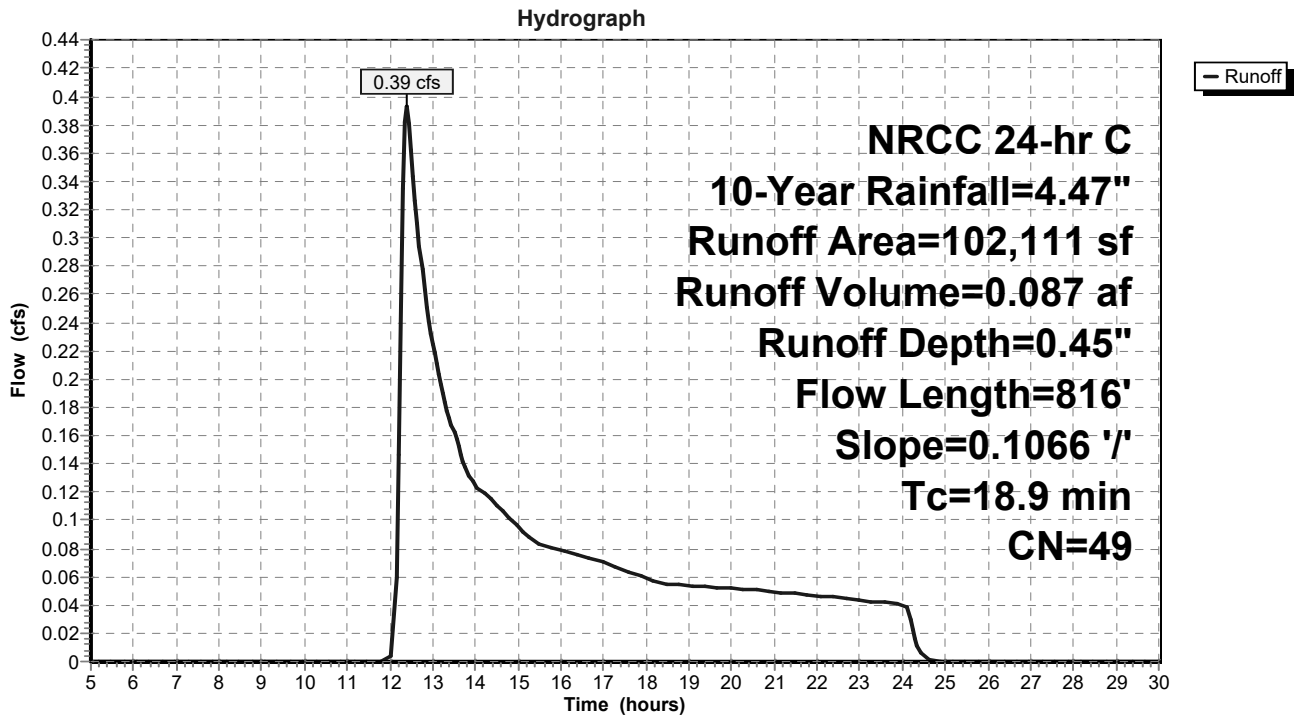
Runoff = 0.39 cfs @ 12.40 hrs, Volume= 0.087 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C 10-Year Rainfall=4.47"

Area (sf)	CN	Description
36,438	36	Woods, Fair, HSG A
13,818	79	Pasture/grassland/range, Fair, HSG C
33,361	49	Pasture/grassland/range, Fair, HSG A
2,890	96	Gravel surface, HSG C
13,445	36	Woods, Fair, HSG A
2,159	73	Woods, Fair, HSG C
102,111	49	Weighted Average
102,111		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.9	816	0.1066	0.72		Lag/CN Method, I Contour Length= 10,890' Interval= 1'

### Subcatchment E4: NORTH DRAINAGE





### Summary for Subcatchment E5: S REMAINDER DRAINAGE

Runoff = 0.00 cfs @ 21.20 hrs, Volume= 0.002 af, Depth= 0.04"

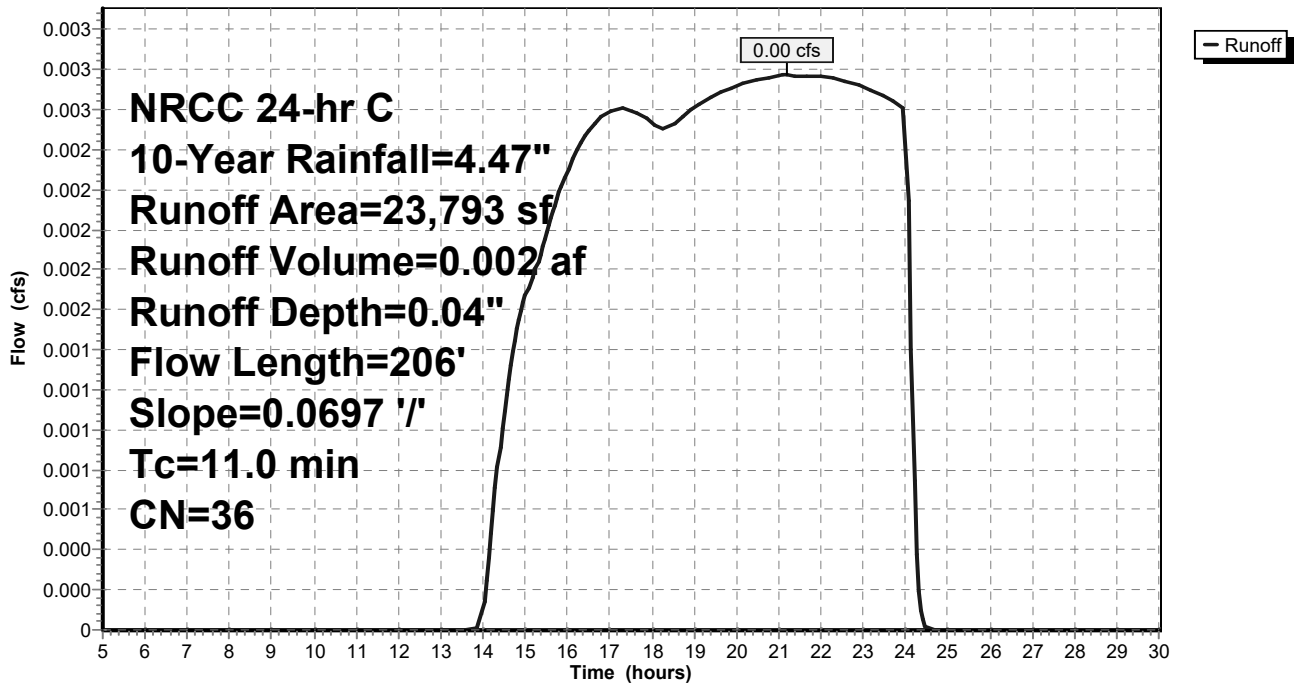
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
 NRCC 24-hr C 10-Year Rainfall=4.47"

Area (sf)	CN	Description
23,793	36	Woods, Fair, HSG A
23,793		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	206	0.0697	0.31		<b>Lag/CN Method,</b> Contour Length= 1,659' Interval= 1'

### Subcatchment E5: S REMAINDER DRAINAGE

Hydrograph



**Summary for Subcatchment P1: PROPOSED DRAINAGE TO CULVERT**

Runoff = 1.87 cfs @ 12.21 hrs, Volume= 0.169 af, Depth= 1.18"

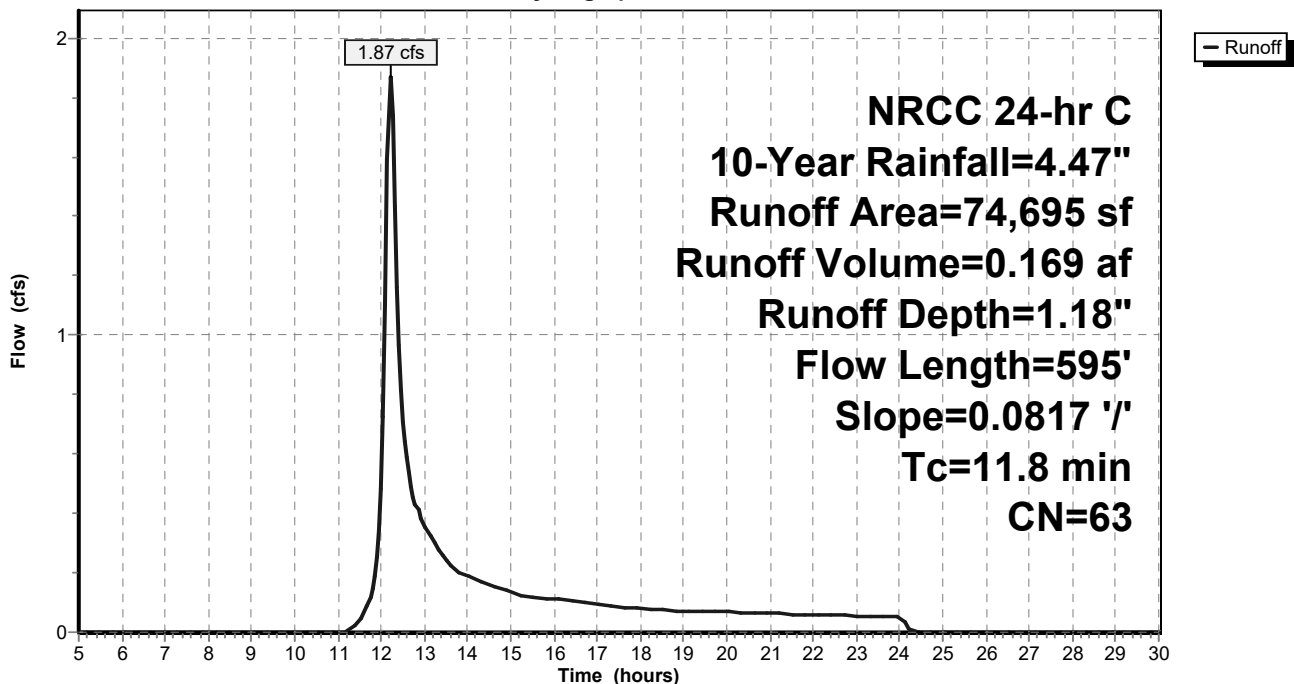
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C 10-Year Rainfall=4.47"

Area (sf)	CN	Description
15,000	98	Paved parking, HSG A
5,044	73	Woods, Fair, HSG C
11,221	36	Woods, Fair, HSG A
15,989	79	Pasture/grassland/range, Fair, HSG C
18,389	36	Woods, Fair, HSG A
3,100	73	Woods, Fair, HSG C
1,286	87	Dirt roads, HSG C
948	96	Gravel surface, HSG A
3,718	39	>75% Grass cover, Good, HSG A
74,695	63	Weighted Average
59,695		79.92% Pervious Area
15,000		20.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	595	0.0817	0.84		<b>Lag/CN Method,</b> Contour Length= 6,100' Interval= 1'

**Subcatchment P1: PROPOSED DRAINAGE TO CULVERT**

Hydrograph



### Summary for Subcatchment P2: PR PKG AND CONCRETE PAD

Runoff = 0.53 cfs @ 12.15 hrs, Volume= 0.042 af, Depth= 0.95"

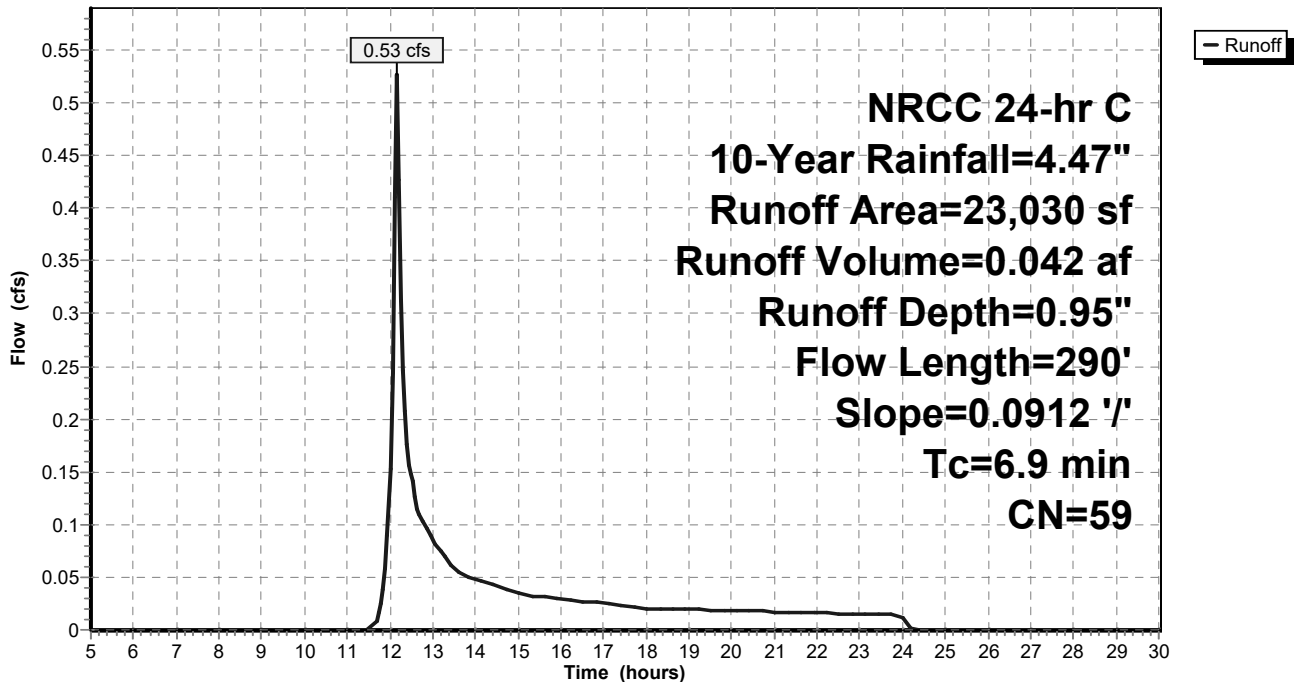
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C 10-Year Rainfall=4.47"

Area (sf)	CN	Description
5,310	36	Woods, Fair, HSG A
9,440	39	>75% Grass cover, Good, HSG A
900	96	Gravel surface, HSG A
7,380	98	Paved parking, HSG A
23,030	59	Weighted Average
15,650		67.95% Pervious Area
7,380		32.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	290	0.0912	0.70		Lag/CN Method, Contour Length= 2,100' Interval= 1'

### Subcatchment P2: PR PKG AND CONCRETE PAD

Hydrograph



**Summary for Subcatchment P3: PR NORTH DOG LOOP**

Runoff = 0.05 cfs @ 12.40 hrs, Volume= 0.016 af, Depth= 0.32"

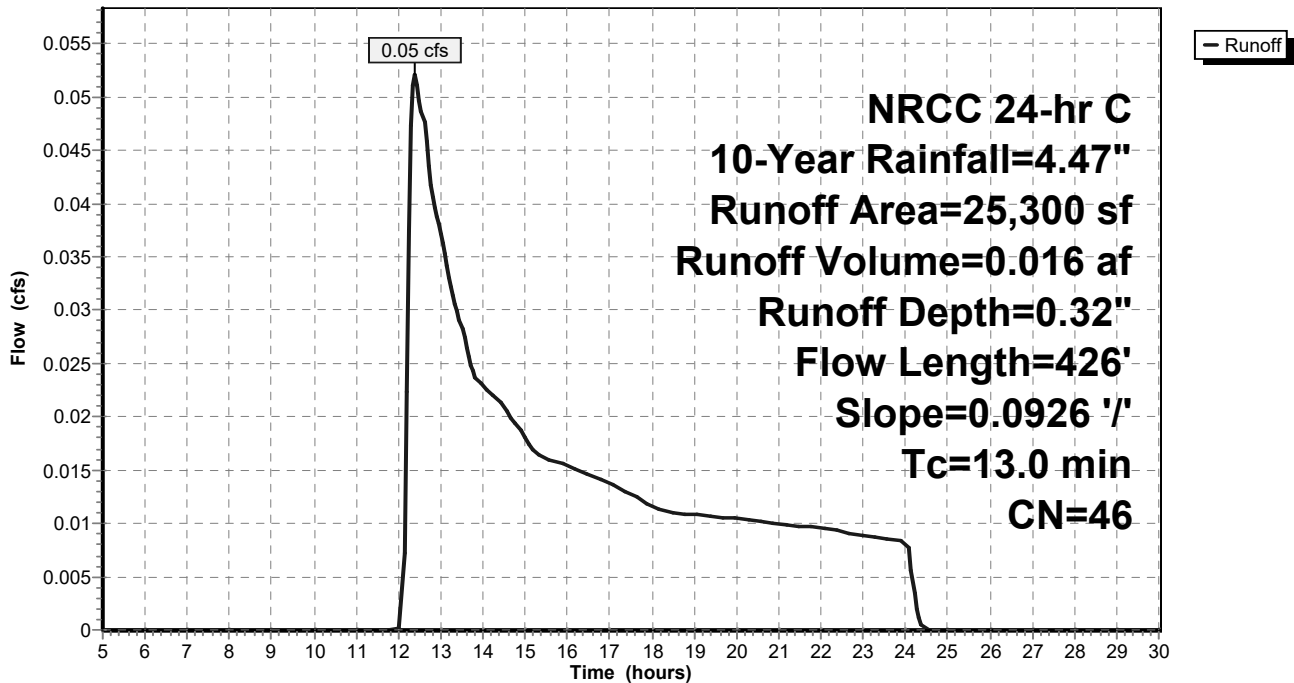
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C 10-Year Rainfall=4.47"

Area (sf)	CN	Description
2,015	98	Paved parking, HSG A
* 1,305	96	Gravel surface, HSG A
13,680	39	>75% Grass cover, Good, HSG A
2,748	36	Woods, Fair, HSG A
4,342	39	>75% Grass cover, Good, HSG A
1,210	39	>75% Grass cover, Good, HSG A
25,300	46	Weighted Average
23,285		92.04% Pervious Area
2,015		7.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	426	0.0926	0.54		Lag/CN Method, Contour Length= 2,342' Interval= 1'

**Subcatchment P3: PR NORTH DOG LOOP**

Hydrograph



**Summary for Subcatchment P4: PR NORTH DRAINAGE AREA**

Runoff = 0.39 cfs @ 12.40 hrs, Volume= 0.087 af, Depth= 0.45"

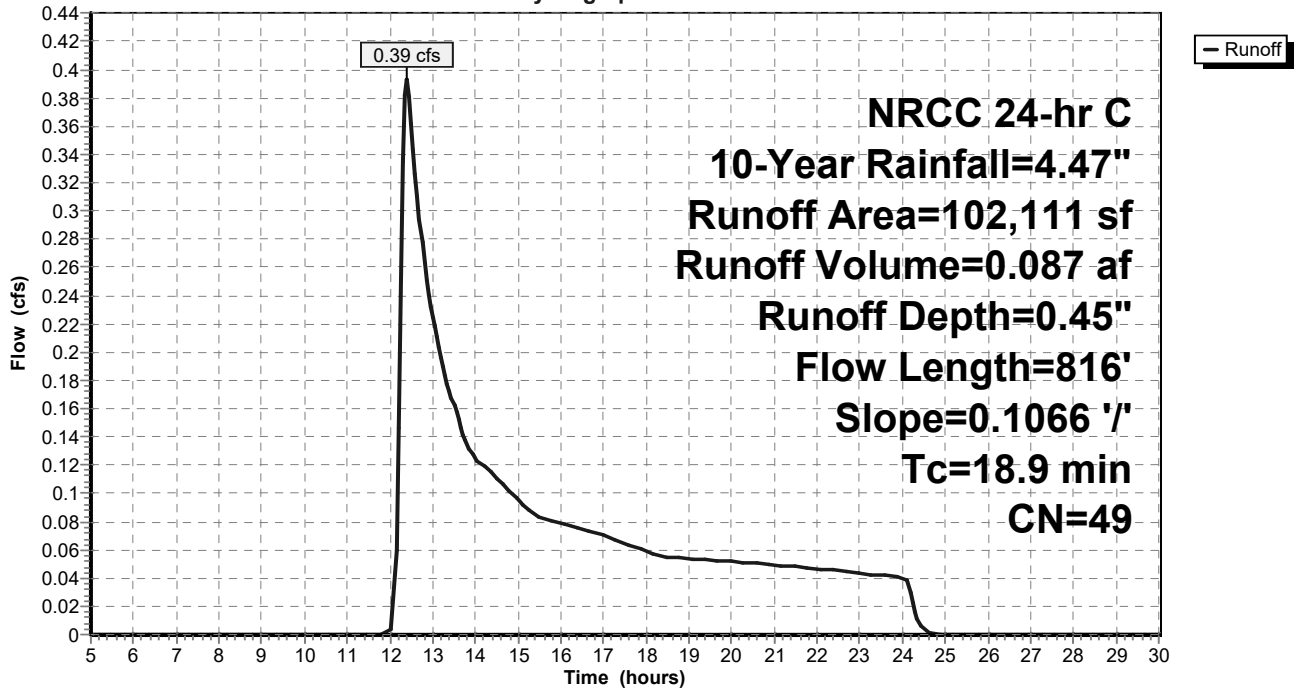
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C 10-Year Rainfall=4.47"

Area (sf)	CN	Description
35,242	36	Woods, Fair, HSG A
13,817	39	>75% Grass cover, Good, HSG A
826	98	Paved parking, HSG A
13,815	79	Pasture/grassland/range, Fair, HSG C
2,891	96	Gravel surface, HSG C
33,361	49	Pasture/grassland/range, Fair, HSG A
2,159	73	Woods, Fair, HSG C
102,111	49	Weighted Average
101,285		99.19% Pervious Area
826		0.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.9	816	0.1066	0.72		Lag/CN Method, Contour Length= 10,890' Interval= 1'

**Subcatchment P4: PR NORTH DRAINAGE AREA**

Hydrograph



### Summary for Subcatchment P5: PR SOUTH DRAINAGE

Runoff = 0.00 cfs @ 14.69 hrs, Volume= 0.004 af, Depth= 0.08"

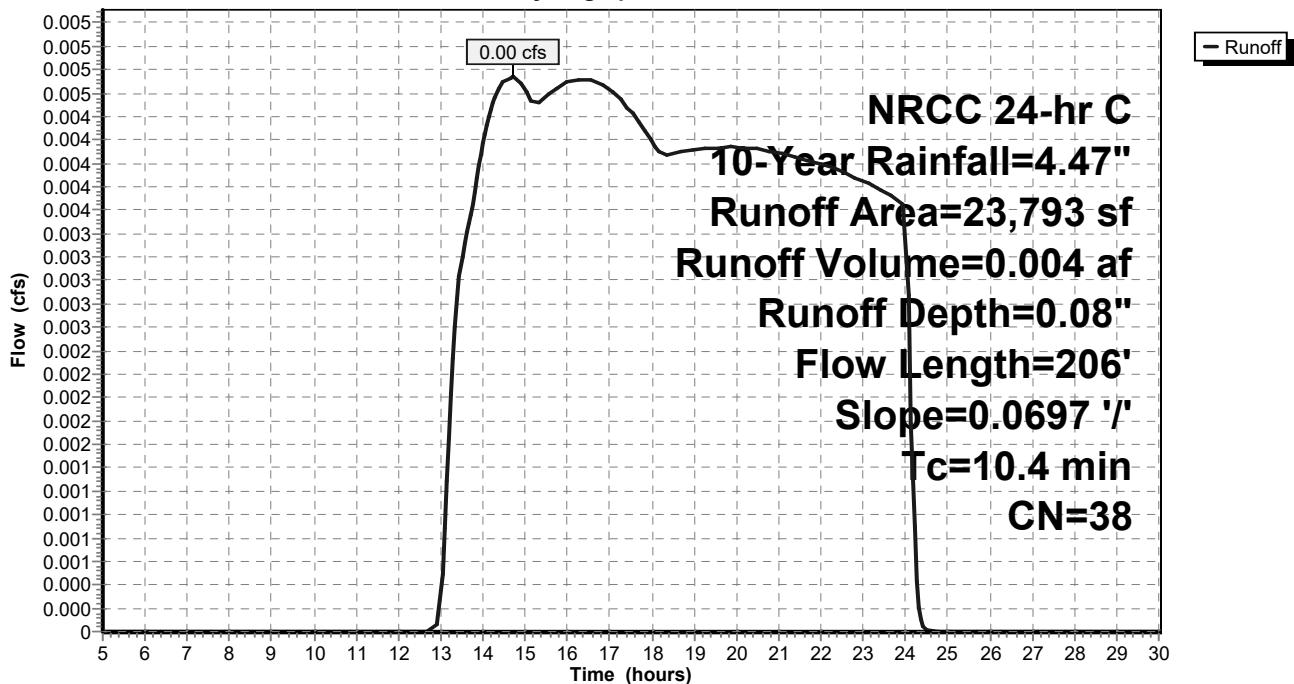
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C 10-Year Rainfall=4.47"

Area (sf)	CN	Description
17,687	36	Woods, Fair, HSG A
625	98	Paved parking, HSG A
5,481	39	>75% Grass cover, Good, HSG A
23,793	38	Weighted Average
23,168		97.37% Pervious Area
625		2.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.4	206	0.0697	0.33		Lag/CN Method, Contour Length= 1,659' Interval= 1'

### Subcatchment P5: PR SOUTH DRAINAGE

Hydrograph



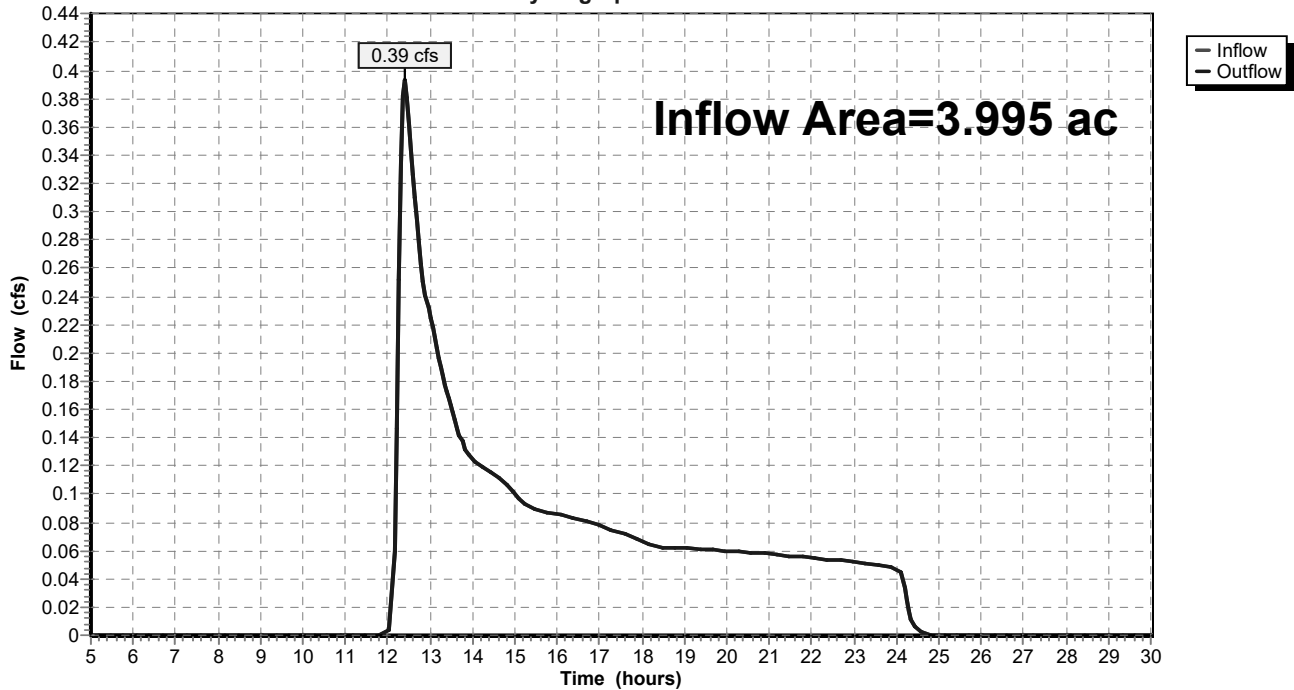
### Summary for Reach E: SITE TOTAL - EXISTING

Inflow Area = 3.995 ac, 0.00% Impervious, Inflow Depth = 0.28" for 10-Year event  
Inflow = 0.39 cfs @ 12.40 hrs, Volume= 0.093 af  
Outflow = 0.39 cfs @ 12.40 hrs, Volume= 0.093 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

### Reach E: SITE TOTAL - EXISTING

Hydrograph

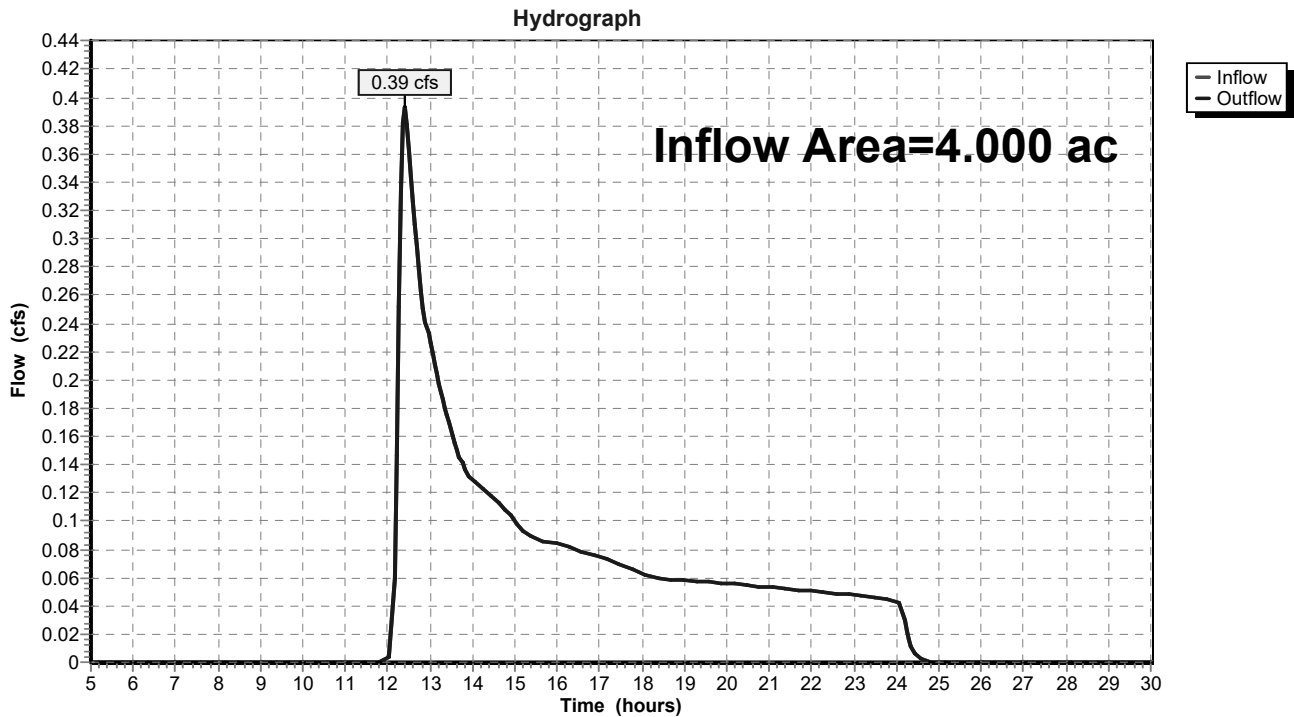


### Summary for Reach P: SITE TOTAL - PROPOSED

Inflow Area = 4.000 ac, 6.22% Impervious, Inflow Depth = 0.27" for 10-Year event  
Inflow = 0.39 cfs @ 12.40 hrs, Volume= 0.091 af  
Outflow = 0.39 cfs @ 12.40 hrs, Volume= 0.091 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

### Reach P: SITE TOTAL - PROPOSED





**Summary for Pond RG1: rain garden -pkg lot**

Inflow Area = 0.529 ac, 32.05% Impervious, Inflow Depth = 0.95" for 10-Year event  
 Inflow = 0.53 cfs @ 12.15 hrs, Volume= 0.042 af  
 Outflow = 0.09 cfs @ 12.95 hrs, Volume= 0.042 af, Atten= 83%, Lag= 48.1 min  
 Discarded = 0.04 cfs @ 12.95 hrs, Volume= 0.035 af  
 Primary = 0.06 cfs @ 12.95 hrs, Volume= 0.006 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs / 2  
 Peak Elev= 211.76' @ 12.95 hrs Surf.Area= 1,013 sf Storage= 584 cf

Plug-Flow detention time= 194.7 min calculated for 0.042 af (100% of inflow)  
 Center-of-Mass det. time= 194.5 min ( 1,098.6 - 904.1 )

Volume	Invert	Avail.Storage	Storage Description
#1	211.00'	1,525 cf	<b>Custom Stage Data (Prismatic)</b> Listed below
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
211.00	294	0	0
212.00	1,237	766	766
212.50	1,800	759	1,525

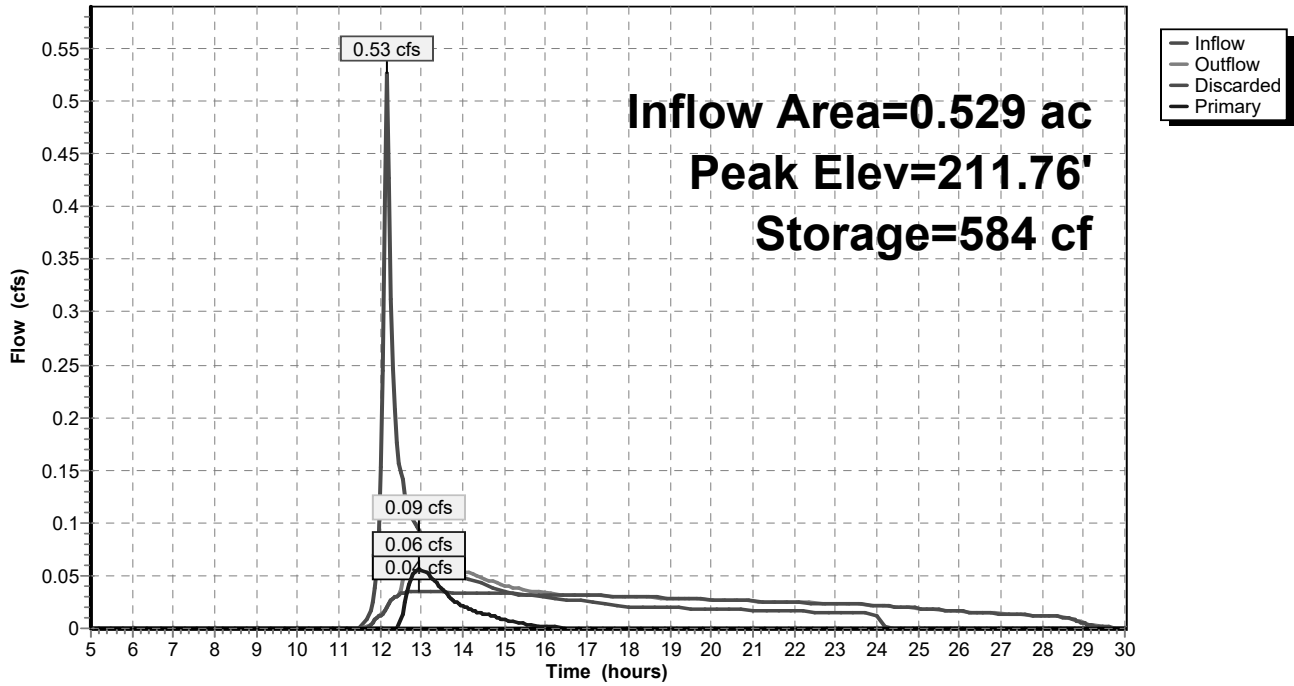
Device	Routing	Invert	Outlet Devices
#1	Discarded	211.00'	<b>1.500 in/hr Exfiltration over Surface area</b> Phase-In= 0.02'
#2	Primary	211.65'	<b>12.0" Vert. Orifice/Grate</b> C= 0.600

**Discarded OutFlow** Max=0.04 cfs @ 12.95 hrs HW=211.76' (Free Discharge)  
 ↑1=Exfiltration (Exfiltration Controls 0.04 cfs)

**Primary OutFlow** Max=0.06 cfs @ 12.95 hrs HW=211.76' (Free Discharge)  
 ↑2=Orifice/Grate (Orifice Controls 0.06 cfs @ 1.14 fps)

### Pond RG1: rain garden -pkg lot

Hydrograph



**Summary for Pond RG2: rain garden - north**

Inflow Area = 0.581 ac, 7.96% Impervious, Inflow Depth = 0.32" for 10-Year event  
 Inflow = 0.05 cfs @ 12.40 hrs, Volume= 0.016 af  
 Outflow = 0.02 cfs @ 16.16 hrs, Volume= 0.016 af, Atten= 71%, Lag= 225.6 min  
 Discarded = 0.02 cfs @ 16.16 hrs, Volume= 0.016 af  
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs / 2  
 Peak Elev= 210.53' @ 16.16 hrs Surf.Area= 437 sf Storage= 178 cf

Plug-Flow detention time= 153.3 min calculated for 0.016 af (100% of inflow)  
 Center-of-Mass det. time= 153.3 min ( 1,142.4 - 989.2 )

Volume	Invert	Avail.Storage	Storage Description
#1	210.00'	805 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
210.00	237	0	0
211.00	616	427	427
211.50	897	378	805

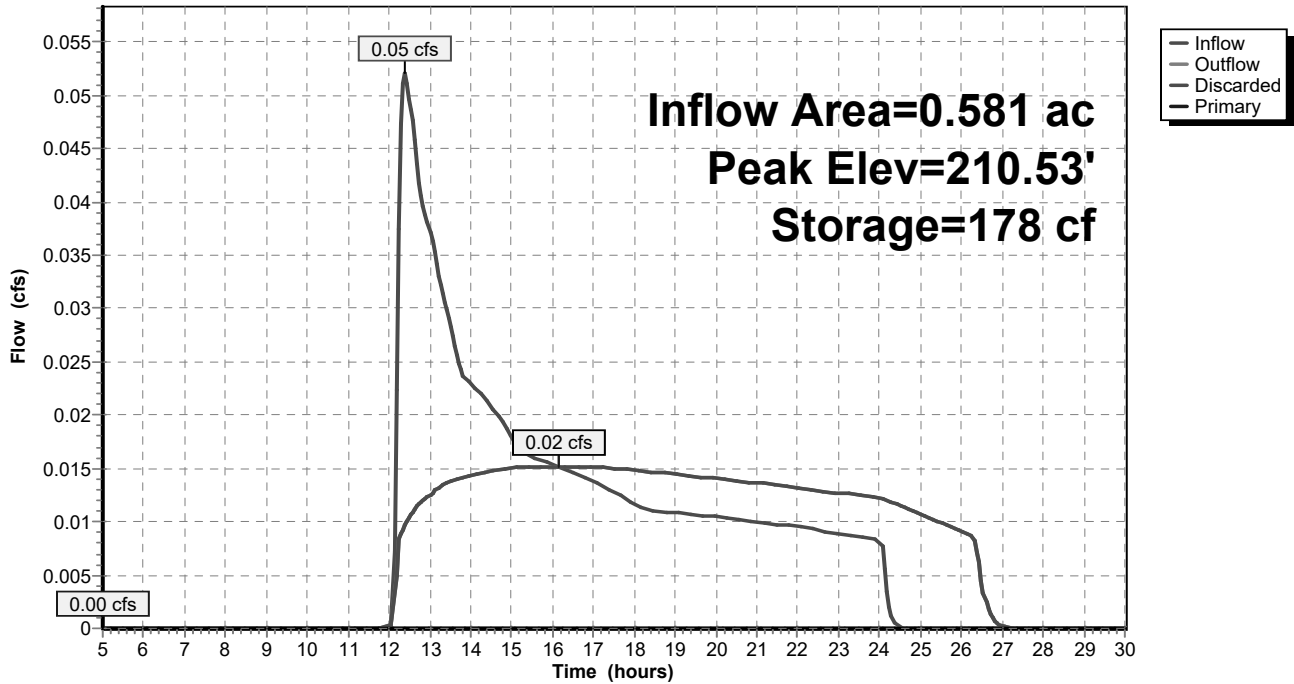
Device	Routing	Invert	Outlet Devices
#1	Primary	210.75'	<b>12.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#2	Discarded	210.00'	<b>1.500 in/hr Exfiltration over Surface area</b> Phase-In= 0.02'

**Discarded OutFlow** Max=0.02 cfs @ 16.16 hrs HW=210.53' (Free Discharge)  
 ↑**2=Exfiltration** (Exfiltration Controls 0.02 cfs)

**Primary OutFlow** Max=0.00 cfs @ 5.00 hrs HW=210.00' (Free Discharge)  
 ↑**1=Orifice/Grate** ( Controls 0.00 cfs)

### Pond RG2: rain garden - north

Hydrograph



**Summary for Pond STO: cultec system**

Inflow Area = 1.110 ac, 19.44% Impervious, Inflow Depth = 0.07" for 10-Year event  
 Inflow = 0.06 cfs @ 12.95 hrs, Volume= 0.006 af  
 Outflow = 0.04 cfs @ 12.95 hrs, Volume= 0.006 af, Atten= 28%, Lag= 0.0 min  
 Discarded = 0.04 cfs @ 12.95 hrs, Volume= 0.006 af  
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs / 2  
 Peak Elev= 204.60' @ 13.41 hrs Surf.Area= 1,159 sf Storage= 45 cf

Plug-Flow detention time= 13.9 min calculated for 0.006 af (100% of inflow)  
 Center-of-Mass det. time= 13.9 min ( 827.6 - 813.7 )

Volume	Invert	Avail.Storage	Storage Description
#1A	204.50'	819 cf	<b>24.50'W x 47.31'L x 2.71'H Field A</b> 3,139 cf Overall - 1,091 cf Embedded = 2,048 cf x 40.0% Voids
#2A	205.00'	1,091 cf	<b>Cultec R-180</b> x 49 Inside #1 Effective Size= 33.6"W x 20.0"H => 3.44 sf x 6.33'L = 21.8 cf Overall Size= 36.0"W x 20.5"H x 7.33'L with 1.00' Overlap Row Length Adjustment= +1.00' x 3.44 sf x 7 rows
#3	205.00'	72 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc)
		1,982 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
205.00	13	0	0	13
210.50	13	72	72	83

Device	Routing	Invert	Outlet Devices
#1	Primary	204.50'	<b>12.0" Round Culvert</b> L= 65.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 204.50' / 201.00' S= 0.0538 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Discarded	204.50'	<b>1.500 in/hr Exfiltration over Surface area</b> Phase-In= 0.02'
#3	Device 1	205.50'	<b>4.0" Vert. Orifice/Grate</b> C= 0.600
#4	Device 1	206.50'	<b>12.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.04 cfs @ 12.95 hrs HW=204.56' (Free Discharge)

↑ **2=Exfiltration** (Exfiltration Controls 0.04 cfs)

**Primary OutFlow** Max=0.00 cfs @ 5.00 hrs HW=204.50' (Free Discharge)

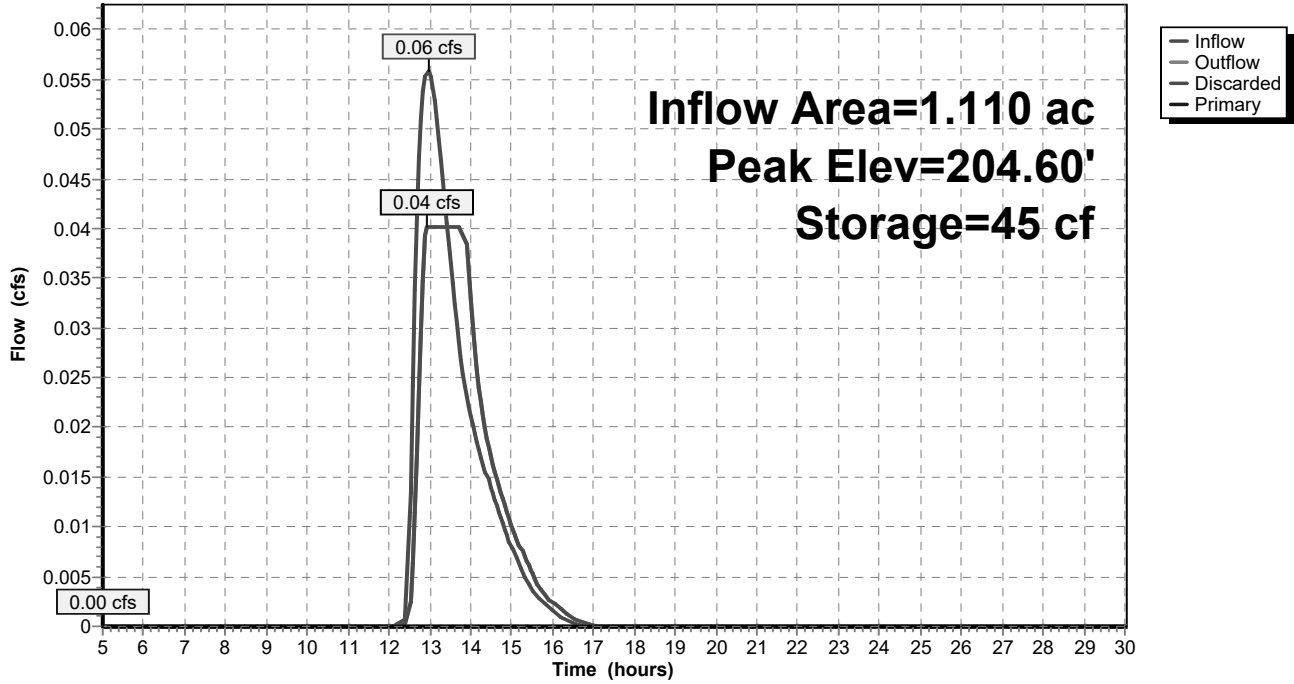
↑ **1=Culvert** ( Controls 0.00 cfs)

↑ **3=Orifice/Grate** ( Controls 0.00 cfs)

↑ **4=Orifice/Grate** ( Controls 0.00 cfs)

### Pond STO: cultec system

Hydrograph



**Summary for Subcatchment E1: EXISTING DRAINAGE TO CULVERT**

Runoff = 5.84 cfs @ 12.20 hrs, Volume= 0.489 af, Depth= 3.42"

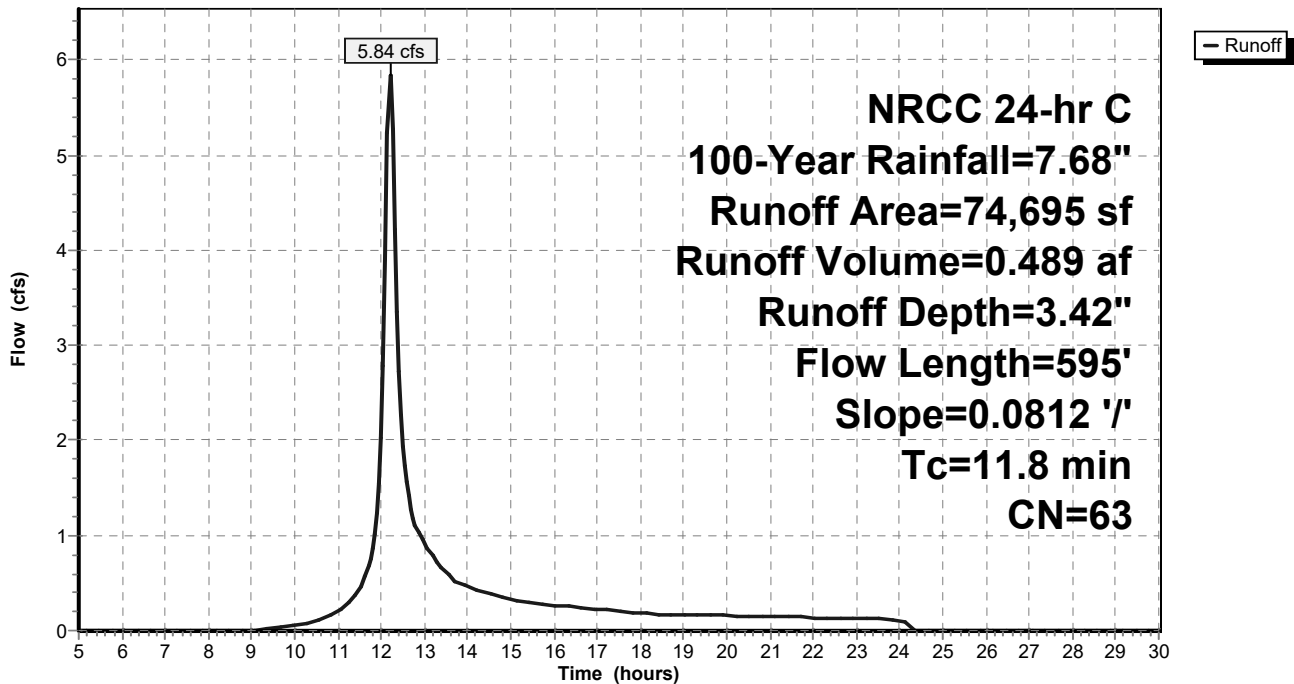
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
 NRCC 24-hr C 100-Year Rainfall=7.68"

Area (sf)	CN	Description
15,000	98	Paved parking, HSG A
5,044	73	Woods, Fair, HSG C
14,161	36	Woods, Fair, HSG A
15,989	79	Pasture/grassland/range, Fair, HSG C
20,115	36	Woods, Fair, HSG A
3,100	73	Woods, Fair, HSG C
1,286	96	Gravel surface, HSG C
74,695	63	Weighted Average
59,695		79.92% Pervious Area
15,000		20.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	595	0.0812	0.84		<b>Lag/CN Method,</b> Contour Length= 6,066' Interval= 1'

**Subcatchment E1: EXISTING DRAINAGE TO CULVERT**

Hydrograph



### Summary for Subcatchment E2: SOUTH DRAINAGE

Runoff = 0.16 cfs @ 12.29 hrs, Volume= 0.030 af, Depth= 0.78"

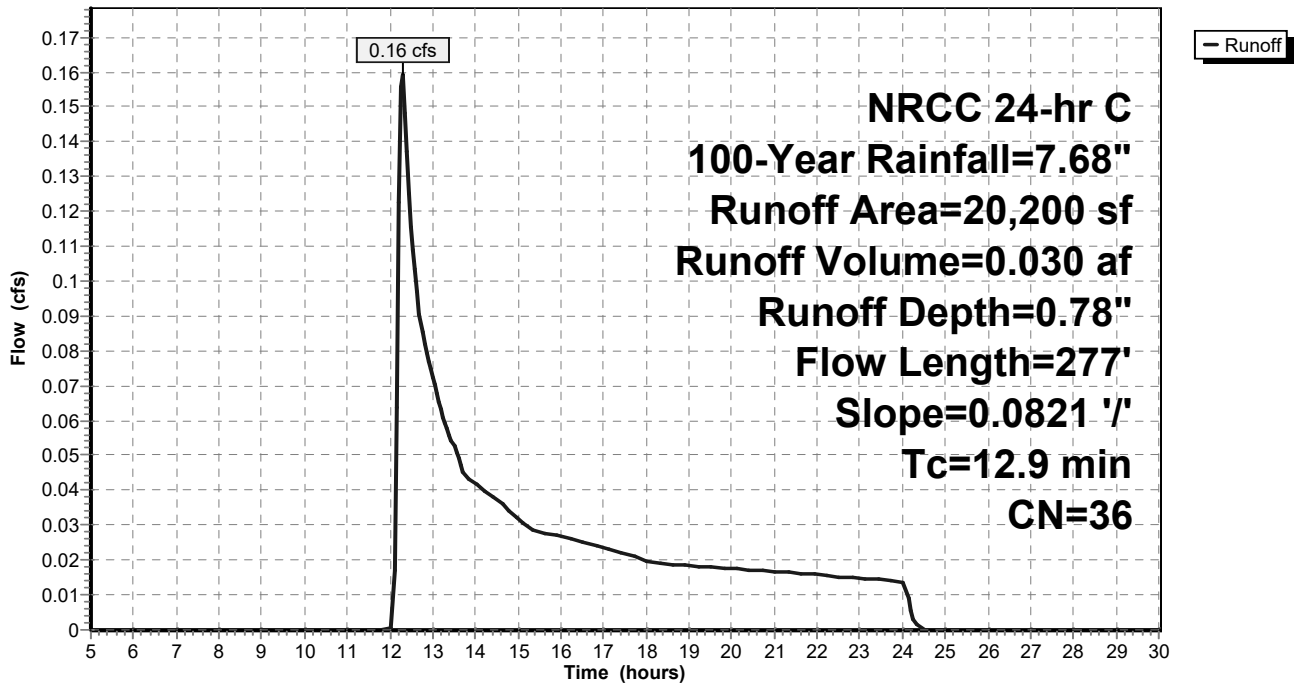
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
 NRCC 24-hr C 100-Year Rainfall=7.68"

Area (sf)	CN	Description
20,200	36	Woods, Fair, HSG A
20,200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	277	0.0821	0.36		<b>Lag/CN Method,</b> Contour Length= 1,659' Interval= 1'

### Subcatchment E2: SOUTH DRAINAGE

Hydrograph





### Summary for Subcatchment E3: MIDDLE DRAINAGE

Runoff = 0.20 cfs @ 12.37 hrs, Volume= 0.041 af, Depth= 0.78"

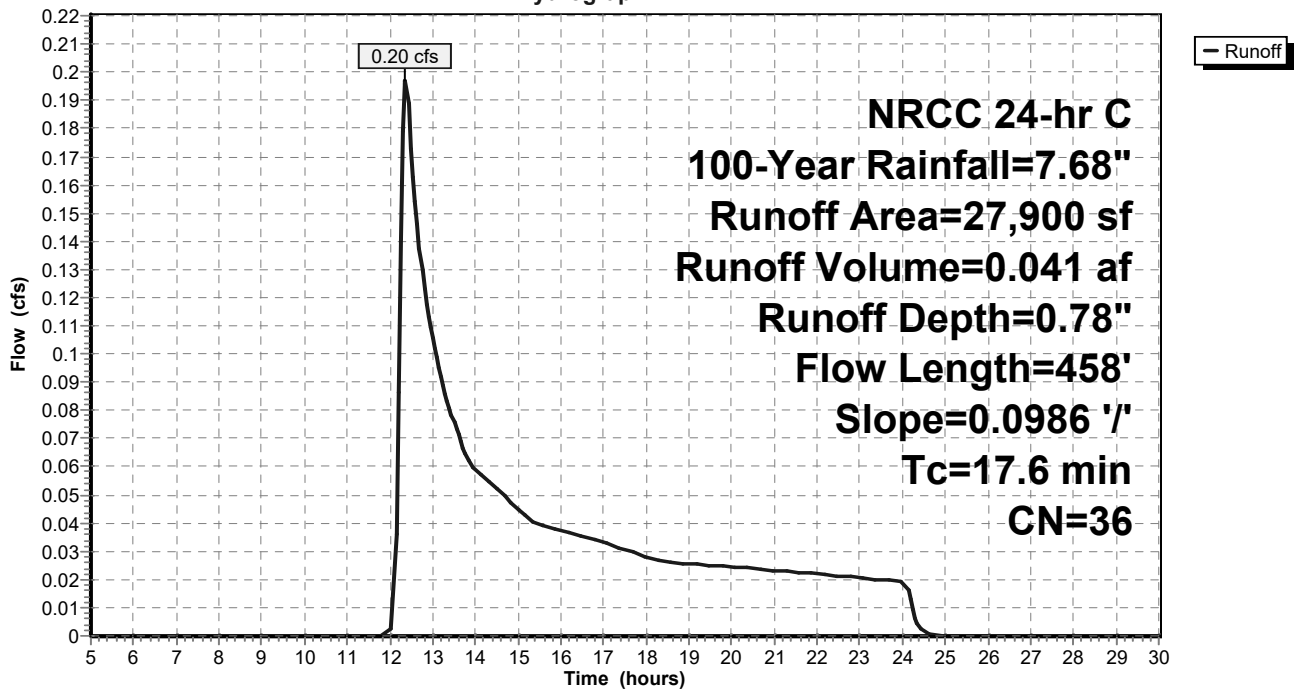
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
 NRCC 24-hr C 100-Year Rainfall=7.68"

Area (sf)	CN	Description
27,900	36	Woods, Fair, HSG A
27,900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.6	458	0.0986	0.43		Lag/CN Method, Contour Length= 2,750' Interval= 1'

### Subcatchment E3: MIDDLE DRAINAGE

Hydrograph



### Summary for Subcatchment E4: NORTH DRAINAGE

Runoff = 3.36 cfs @ 12.30 hrs, Volume= 0.382 af, Depth= 1.96"

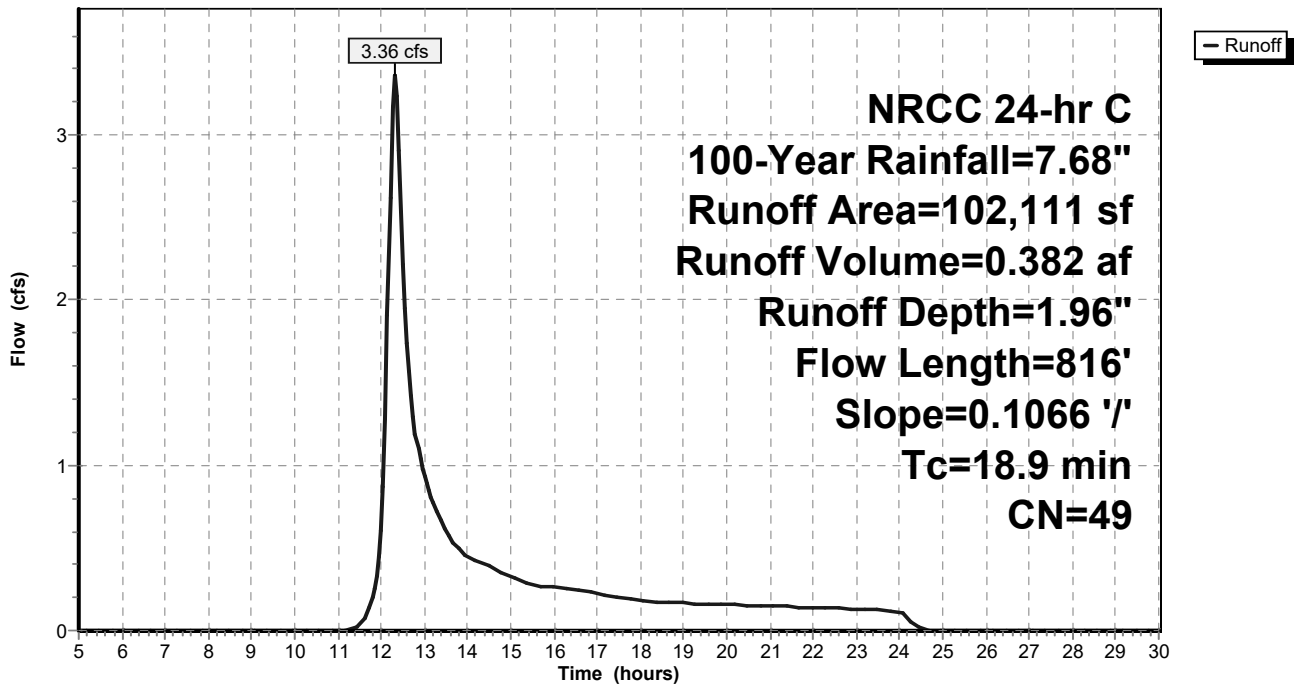
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
 NRCC 24-hr C 100-Year Rainfall=7.68"

Area (sf)	CN	Description
36,438	36	Woods, Fair, HSG A
13,818	79	Pasture/grassland/range, Fair, HSG C
33,361	49	Pasture/grassland/range, Fair, HSG A
2,890	96	Gravel surface, HSG C
13,445	36	Woods, Fair, HSG A
2,159	73	Woods, Fair, HSG C
102,111	49	Weighted Average
102,111		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.9	816	0.1066	0.72		Lag/CN Method, I Contour Length= 10,890' Interval= 1'

### Subcatchment E4: NORTH DRAINAGE

Hydrograph



### Summary for Subcatchment E5: S REMAINDER DRAINAGE

Runoff = 0.20 cfs @ 12.25 hrs, Volume= 0.035 af, Depth= 0.78"

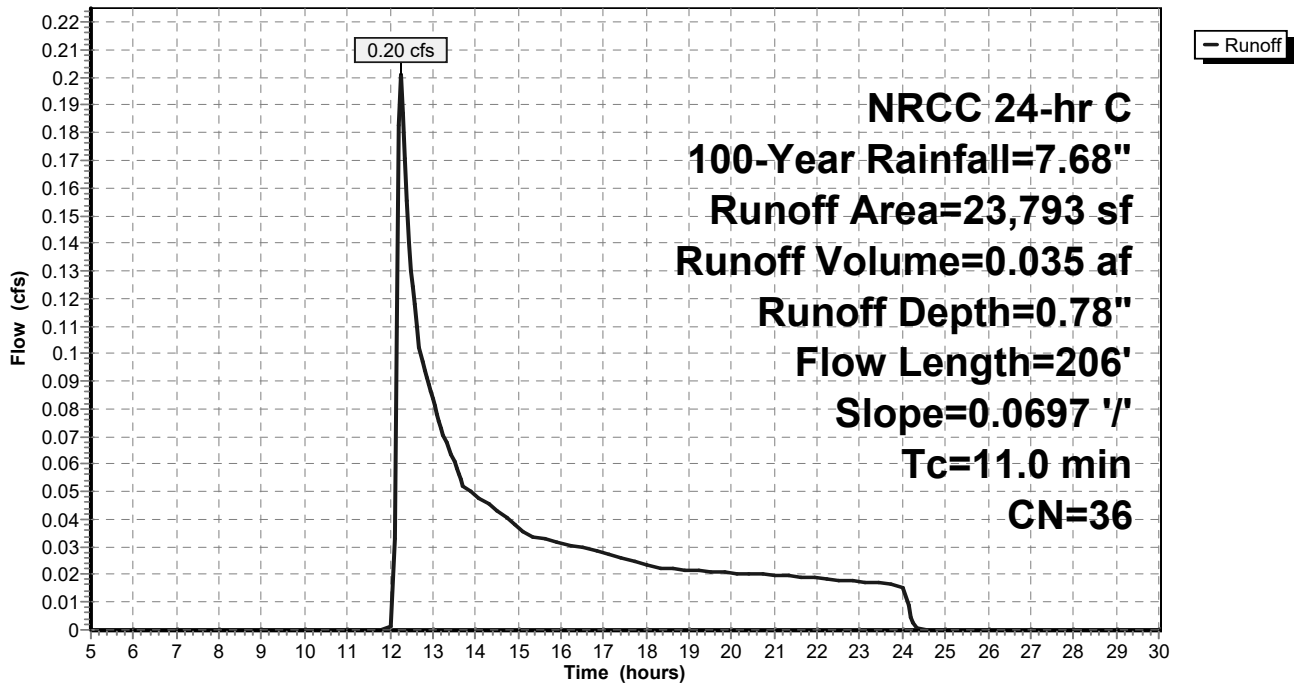
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
 NRCC 24-hr C 100-Year Rainfall=7.68"

Area (sf)	CN	Description
23,793	36	Woods, Fair, HSG A
23,793		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	206	0.0697	0.31		<b>Lag/CN Method,</b> Contour Length= 1,659' Interval= 1'

### Subcatchment E5: S REMAINDER DRAINAGE

Hydrograph



**Summary for Subcatchment P1: PROPOSED DRAINAGE TO CULVERT**

Runoff = 5.84 cfs @ 12.20 hrs, Volume= 0.489 af, Depth= 3.42"

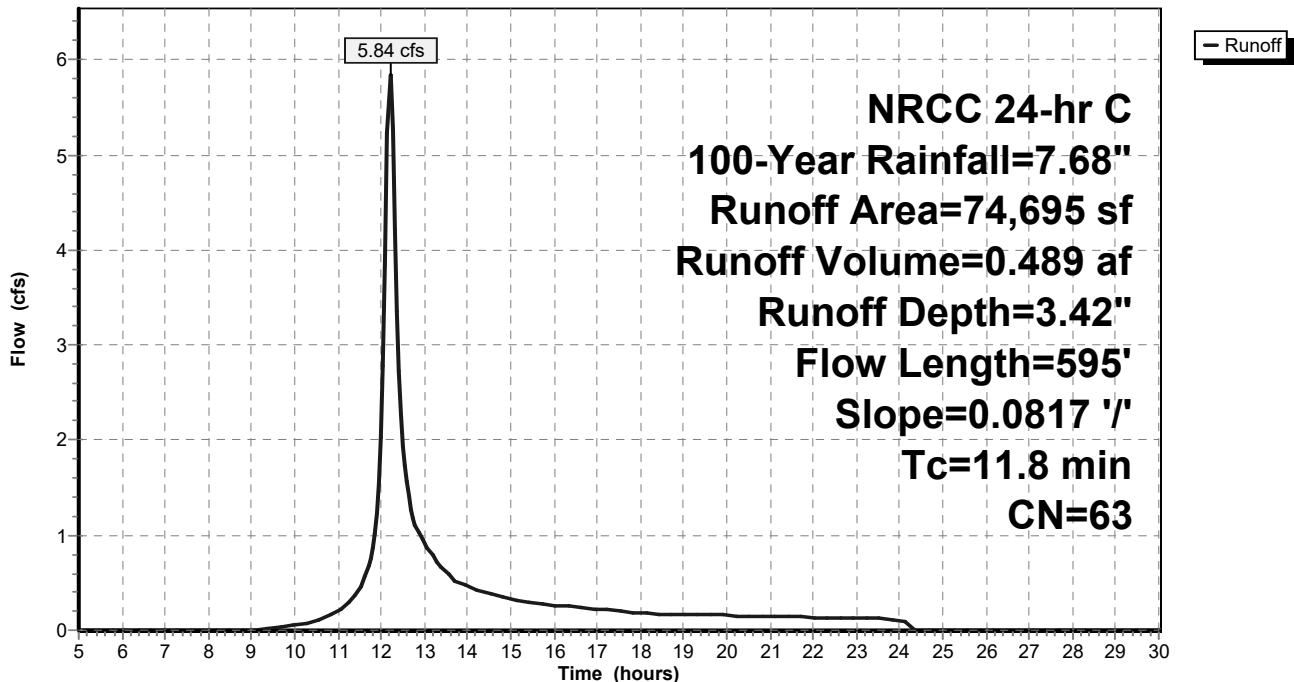
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
 NRCC 24-hr C 100-Year Rainfall=7.68"

Area (sf)	CN	Description
15,000	98	Paved parking, HSG A
5,044	73	Woods, Fair, HSG C
11,221	36	Woods, Fair, HSG A
15,989	79	Pasture/grassland/range, Fair, HSG C
18,389	36	Woods, Fair, HSG A
3,100	73	Woods, Fair, HSG C
1,286	87	Dirt roads, HSG C
948	96	Gravel surface, HSG A
3,718	39	>75% Grass cover, Good, HSG A
74,695	63	Weighted Average
59,695		79.92% Pervious Area
15,000		20.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	595	0.0817	0.84		<b>Lag/CN Method,</b> Contour Length= 6,100' Interval= 1'

**Subcatchment P1: PROPOSED DRAINAGE TO CULVERT**

Hydrograph



**Summary for Subcatchment P2: PR PKG AND CONCRETE PAD**

Runoff = 1.88 cfs @ 12.14 hrs, Volume= 0.132 af, Depth= 2.99"

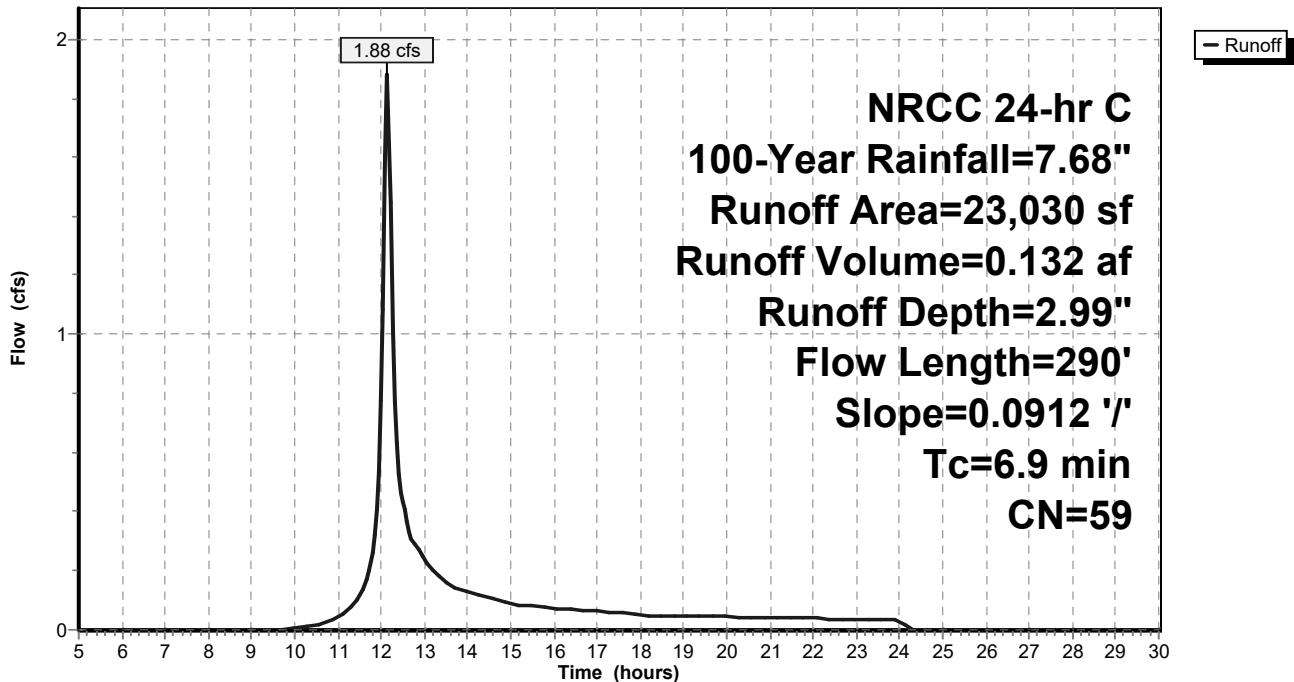
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C 100-Year Rainfall=7.68"

Area (sf)	CN	Description
5,310	36	Woods, Fair, HSG A
9,440	39	>75% Grass cover, Good, HSG A
900	96	Gravel surface, HSG A
7,380	98	Paved parking, HSG A
23,030	59	Weighted Average
15,650		67.95% Pervious Area
7,380		32.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	290	0.0912	0.70		Lag/CN Method, Contour Length= 2,100' Interval= 1'

**Subcatchment P2: PR PKG AND CONCRETE PAD**

Hydrograph



**Summary for Subcatchment P3: PR NORTH DOG LOOP**

Runoff = 0.79 cfs @ 12.23 hrs, Volume= 0.081 af, Depth= 1.67"

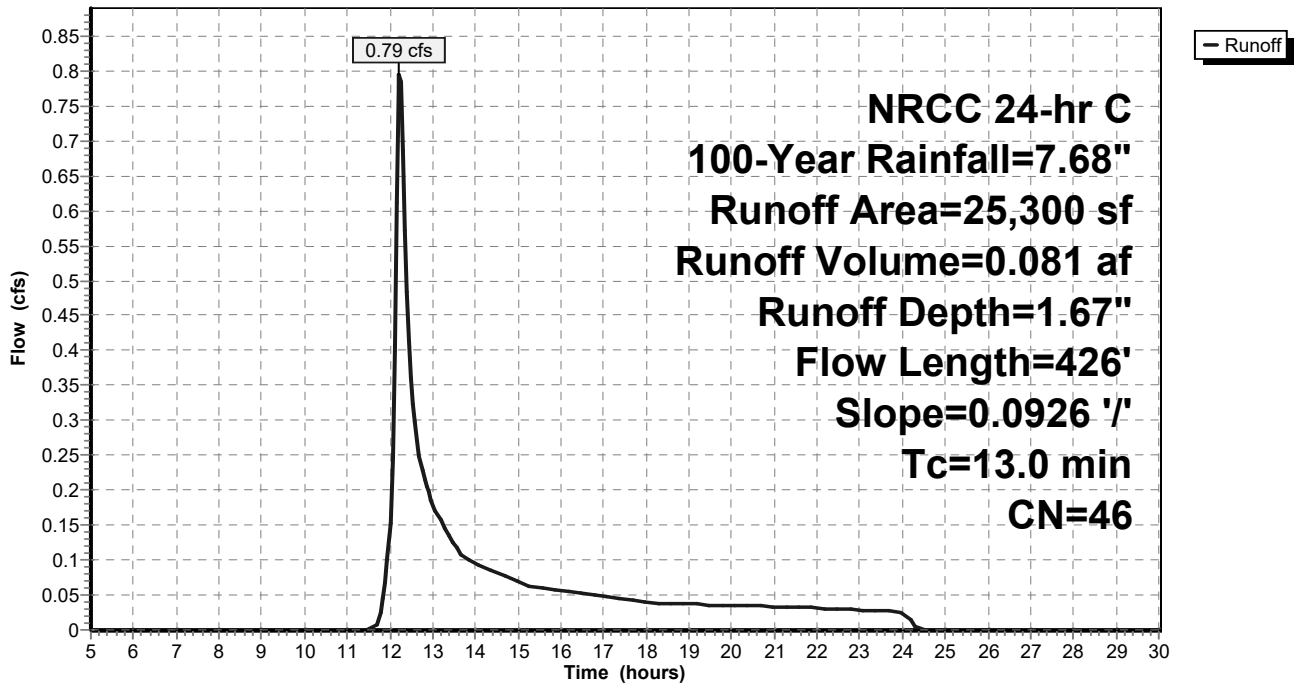
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C 100-Year Rainfall=7.68"

Area (sf)	CN	Description
2,015	98	Paved parking, HSG A
* 1,305	96	Gravel surface, HSG A
13,680	39	>75% Grass cover, Good, HSG A
2,748	36	Woods, Fair, HSG A
4,342	39	>75% Grass cover, Good, HSG A
1,210	39	>75% Grass cover, Good, HSG A
25,300	46	Weighted Average
23,285		92.04% Pervious Area
2,015		7.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	426	0.0926	0.54		Lag/CN Method, Contour Length= 2,342' Interval= 1'

**Subcatchment P3: PR NORTH DOG LOOP**

Hydrograph



**Summary for Subcatchment P4: PR NORTH DRAINAGE AREA**

Runoff = 3.36 cfs @ 12.30 hrs, Volume= 0.382 af, Depth= 1.96"

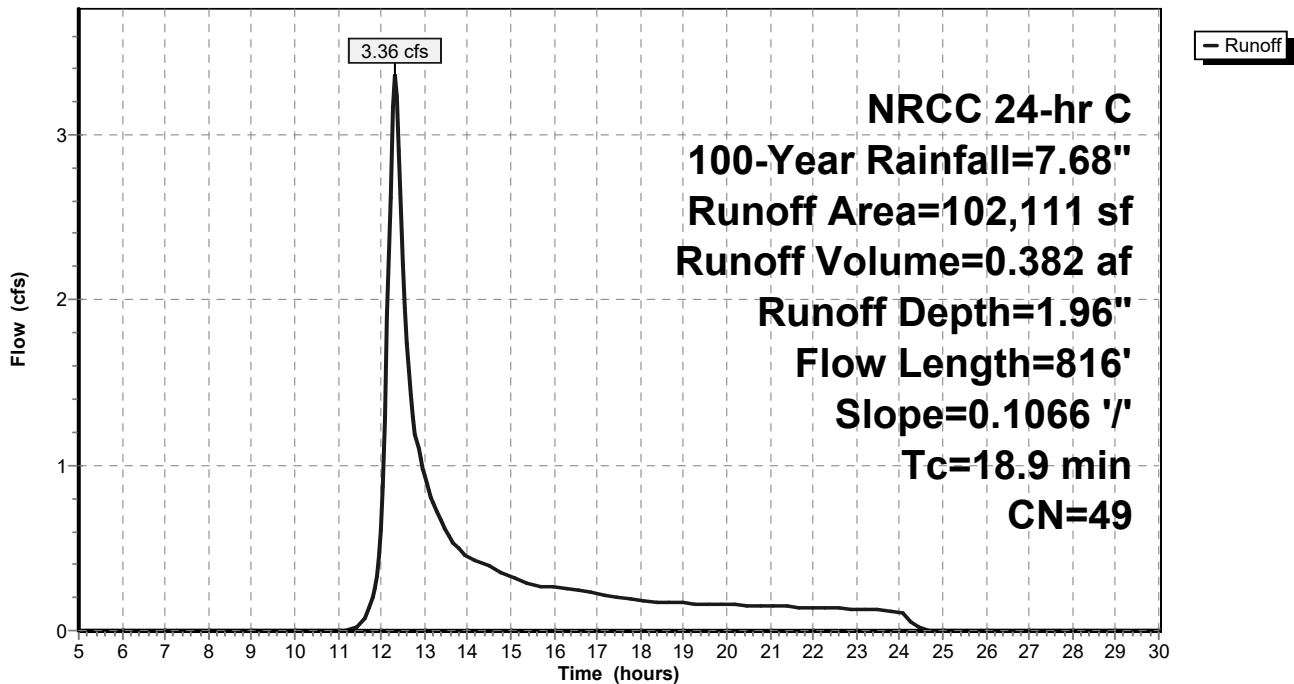
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C 100-Year Rainfall=7.68"

Area (sf)	CN	Description
35,242	36	Woods, Fair, HSG A
13,817	39	>75% Grass cover, Good, HSG A
826	98	Paved parking, HSG A
13,815	79	Pasture/grassland/range, Fair, HSG C
2,891	96	Gravel surface, HSG C
33,361	49	Pasture/grassland/range, Fair, HSG A
2,159	73	Woods, Fair, HSG C
102,111	49	Weighted Average
101,285		99.19% Pervious Area
826		0.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.9	816	0.1066	0.72		<b>Lag/CN Method,</b> Contour Length= 10,890' Interval= 1'

**Subcatchment P4: PR NORTH DRAINAGE AREA**

Hydrograph



### Summary for Subcatchment P5: PR SOUTH DRAINAGE

Runoff = 0.32 cfs @ 12.22 hrs, Volume= 0.043 af, Depth= 0.94"

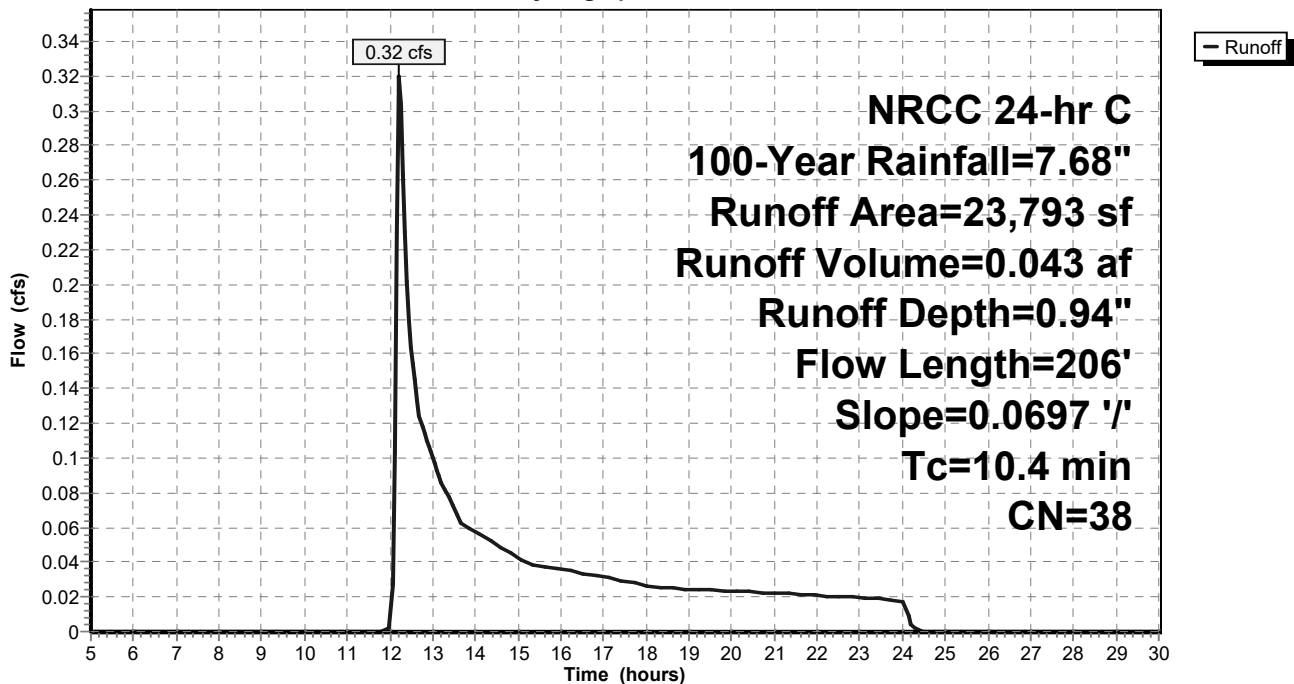
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C 100-Year Rainfall=7.68"

Area (sf)	CN	Description
17,687	36	Woods, Fair, HSG A
625	98	Paved parking, HSG A
5,481	39	>75% Grass cover, Good, HSG A
23,793	38	Weighted Average
23,168		97.37% Pervious Area
625		2.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.4	206	0.0697	0.33		<b>Lag/CN Method,</b> Contour Length= 1,659' Interval= 1'

### Subcatchment P5: PR SOUTH DRAINAGE

Hydrograph





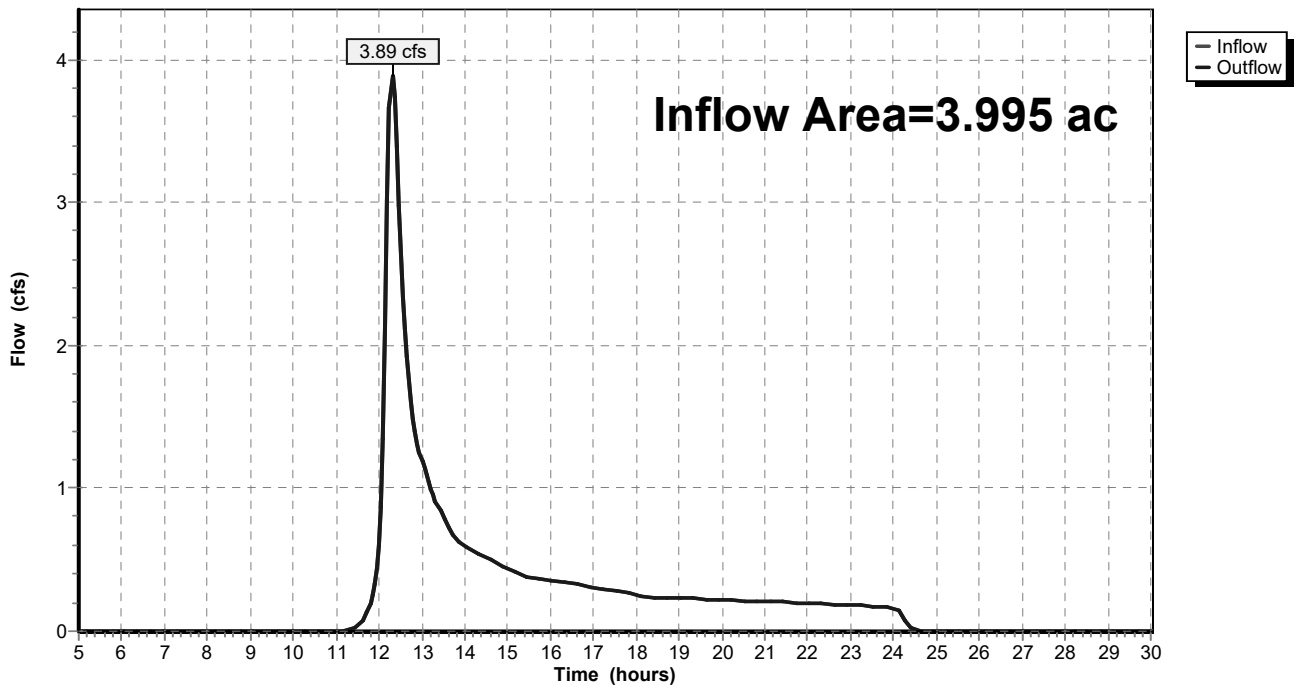
### Summary for Reach E: SITE TOTAL - EXISTING

Inflow Area = 3.995 ac, 0.00% Impervious, Inflow Depth = 1.47" for 100-Year event  
Inflow = 3.89 cfs @ 12.31 hrs, Volume= 0.489 af  
Outflow = 3.89 cfs @ 12.31 hrs, Volume= 0.489 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

### Reach E: SITE TOTAL - EXISTING

Hydrograph

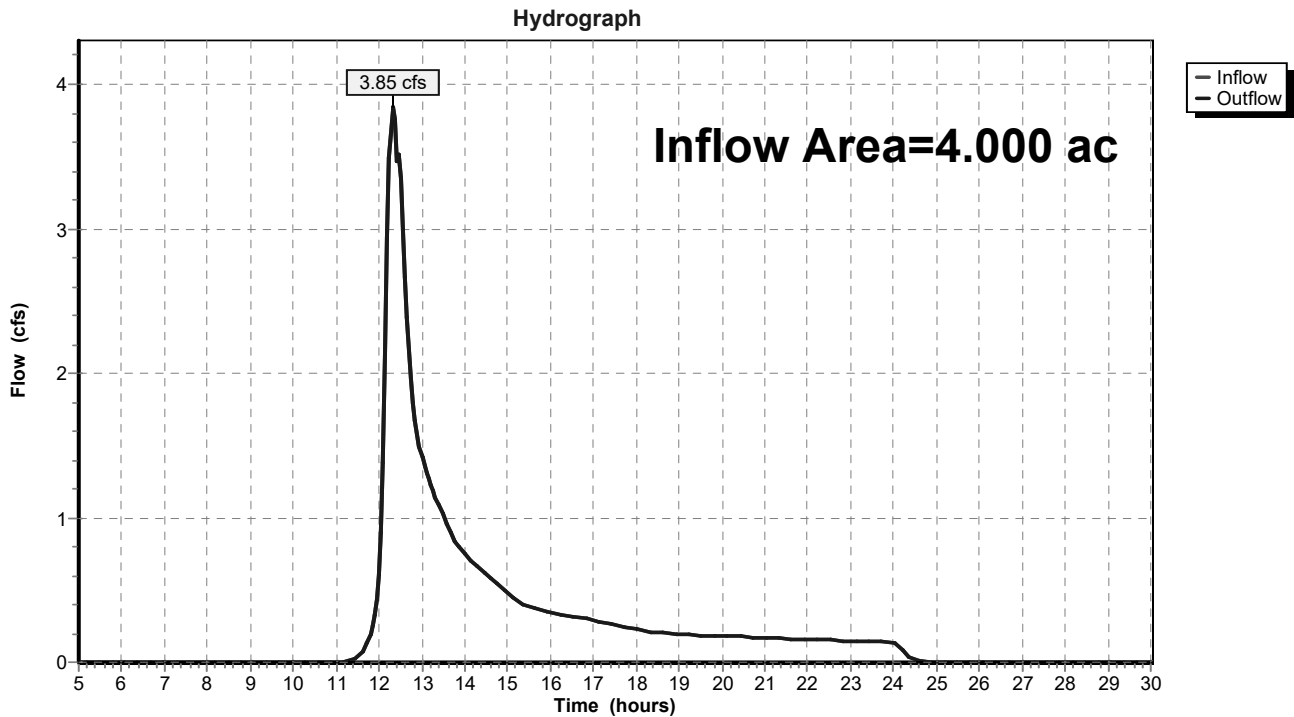


### Summary for Reach P: SITE TOTAL - PROPOSED

Inflow Area = 4.000 ac, 6.22% Impervious, Inflow Depth = 1.54" for 100-Year event  
Inflow = 3.85 cfs @ 12.32 hrs, Volume= 0.513 af  
Outflow = 3.85 cfs @ 12.32 hrs, Volume= 0.513 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

### Reach P: SITE TOTAL - PROPOSED



**Summary for Pond RG1: rain garden -pkg lot**

Inflow Area = 0.529 ac, 32.05% Impervious, Inflow Depth = 2.99" for 100-Year event  
 Inflow = 1.88 cfs @ 12.14 hrs, Volume= 0.132 af  
 Outflow = 1.28 cfs @ 12.22 hrs, Volume= 0.130 af, Atten= 32%, Lag= 4.6 min  
 Discarded = 0.05 cfs @ 12.22 hrs, Volume= 0.047 af  
 Primary = 1.23 cfs @ 12.22 hrs, Volume= 0.083 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs / 2  
 Peak Elev= 212.23' @ 12.22 hrs Surf.Area= 1,497 sf Storage= 1,116 cf

Plug-Flow detention time= 88.5 min calculated for 0.130 af (99% of inflow)  
 Center-of-Mass det. time= 82.0 min ( 945.4 - 863.4 )

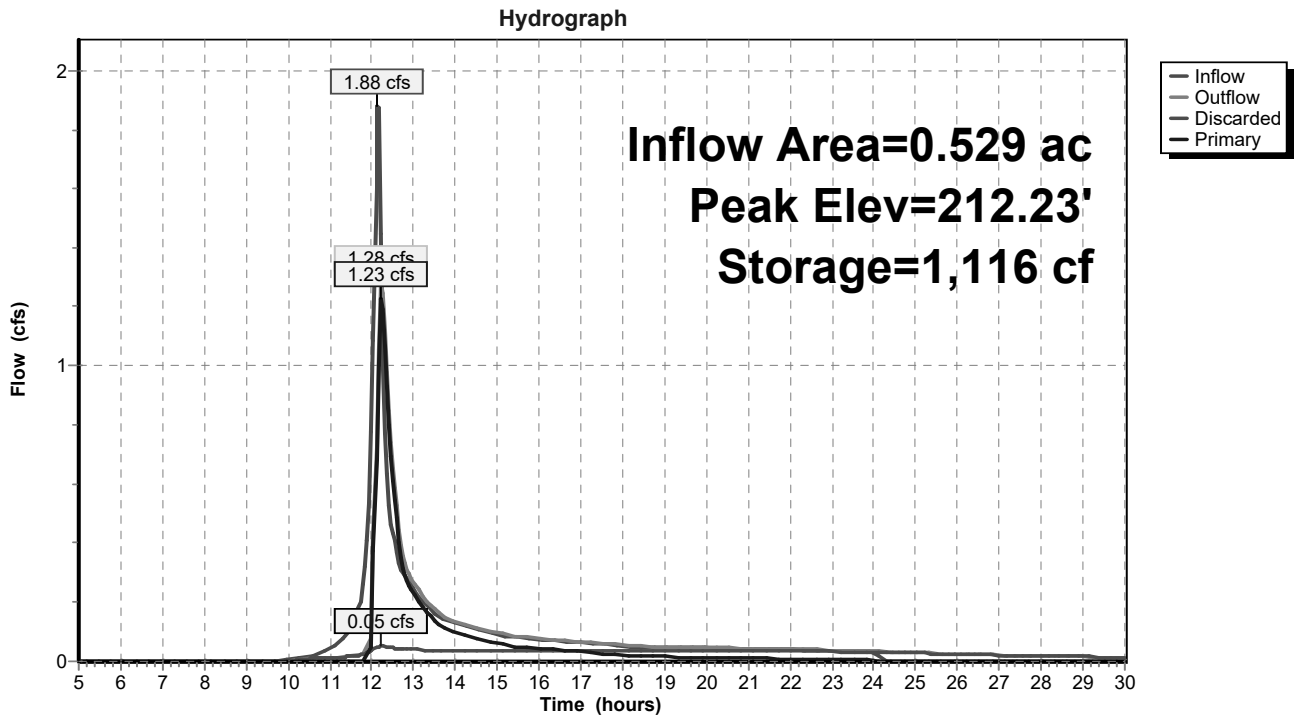
Volume	Invert	Avail.Storage	Storage Description
#1	211.00'	1,525 cf	<b>Custom Stage Data (Prismatic)</b> Listed below
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
211.00	294	0	0
212.00	1,237	766	766
212.50	1,800	759	1,525

Device	Routing	Invert	Outlet Devices
#1	Discarded	211.00'	<b>1.500 in/hr Exfiltration over Surface area</b> Phase-In= 0.02'
#2	Primary	211.65'	<b>12.0" Vert. Orifice/Grate</b> C= 0.600

**Discarded OutFlow** Max=0.05 cfs @ 12.22 hrs HW=212.22' (Free Discharge)  
 ↑1=Exfiltration (Exfiltration Controls 0.05 cfs)

**Primary OutFlow** Max=1.20 cfs @ 12.22 hrs HW=212.22' (Free Discharge)  
 ↑2=Orifice/Grate (Orifice Controls 1.20 cfs @ 2.58 fps)

### Pond RG1: rain garden -pkg lot



**Summary for Pond RG2: rain garden - north**

Inflow Area = 0.581 ac, 7.96% Impervious, Inflow Depth = 1.67" for 100-Year event  
 Inflow = 0.79 cfs @ 12.23 hrs, Volume= 0.081 af  
 Outflow = 0.73 cfs @ 12.28 hrs, Volume= 0.081 af, Atten= 8%, Lag= 2.9 min  
 Discarded = 0.02 cfs @ 12.28 hrs, Volume= 0.025 af  
 Primary = 0.71 cfs @ 12.28 hrs, Volume= 0.055 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs / 2  
 Peak Elev= 210.92' @ 12.28 hrs Surf.Area= 585 sf Storage= 378 cf

Plug-Flow detention time= 72.4 min calculated for 0.080 af (100% of inflow)  
 Center-of-Mass det. time= 72.7 min ( 980.8 - 908.1 )

Volume	Invert	Avail.Storage	Storage Description
#1	210.00'	805 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
210.00	237	0	0
211.00	616	427	427
211.50	897	378	805

Device	Routing	Invert	Outlet Devices
#1	Primary	210.75'	<b>12.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#2	Discarded	210.00'	<b>1.500 in/hr Exfiltration over Surface area</b> Phase-In= 0.02'

**Discarded OutFlow** Max=0.02 cfs @ 12.28 hrs HW=210.92' (Free Discharge)

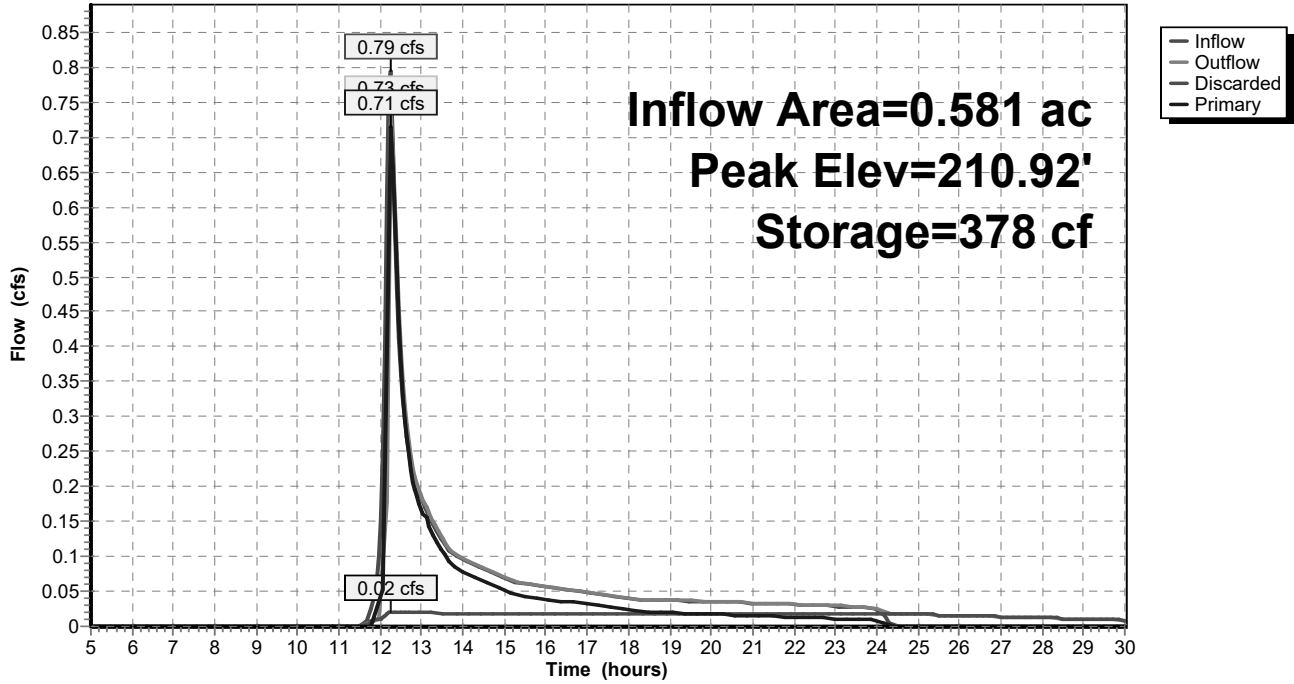
↑**2=Exfiltration** (Exfiltration Controls 0.02 cfs)

**Primary OutFlow** Max=0.70 cfs @ 12.28 hrs HW=210.92' (Free Discharge)

↑**1=Orifice/Grate** (Weir Controls 0.70 cfs @ 1.34 fps)

### Pond RG2: rain garden - north

Hydrograph



**Summary for Pond STO: cultec system**

Inflow Area = 1.110 ac, 19.44% Impervious, Inflow Depth = 1.49" for 100-Year event  
 Inflow = 1.91 cfs @ 12.26 hrs, Volume= 0.138 af  
 Outflow = 1.02 cfs @ 12.51 hrs, Volume= 0.138 af, Atten= 47%, Lag= 14.7 min  
 Discarded = 0.04 cfs @ 12.15 hrs, Volume= 0.050 af  
 Primary = 0.97 cfs @ 12.51 hrs, Volume= 0.088 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs / 2  
 Peak Elev= 206.64' @ 12.51 hrs Surf.Area= 1,172 sf Storage= 1,668 cf

Plug-Flow detention time= 107.3 min calculated for 0.138 af (100% of inflow)  
 Center-of-Mass det. time= 107.9 min ( 949.0 - 841.1 )

Volume	Invert	Avail.Storage	Storage Description
#1A	204.50'	819 cf	<b>24.50'W x 47.31'L x 2.71'H Field A</b> 3,139 cf Overall - 1,091 cf Embedded = 2,048 cf x 40.0% Voids
#2A	205.00'	1,091 cf	<b>Cultec R-180</b> x 49 Inside #1 Effective Size= 33.6"W x 20.0"H => 3.44 sf x 6.33'L = 21.8 cf Overall Size= 36.0"W x 20.5"H x 7.33'L with 1.00' Overlap Row Length Adjustment= +1.00' x 3.44 sf x 7 rows
#3	205.00'	72 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc)
		1,982 cf	Total Available Storage

Storage Group A created with Chamber Wizard

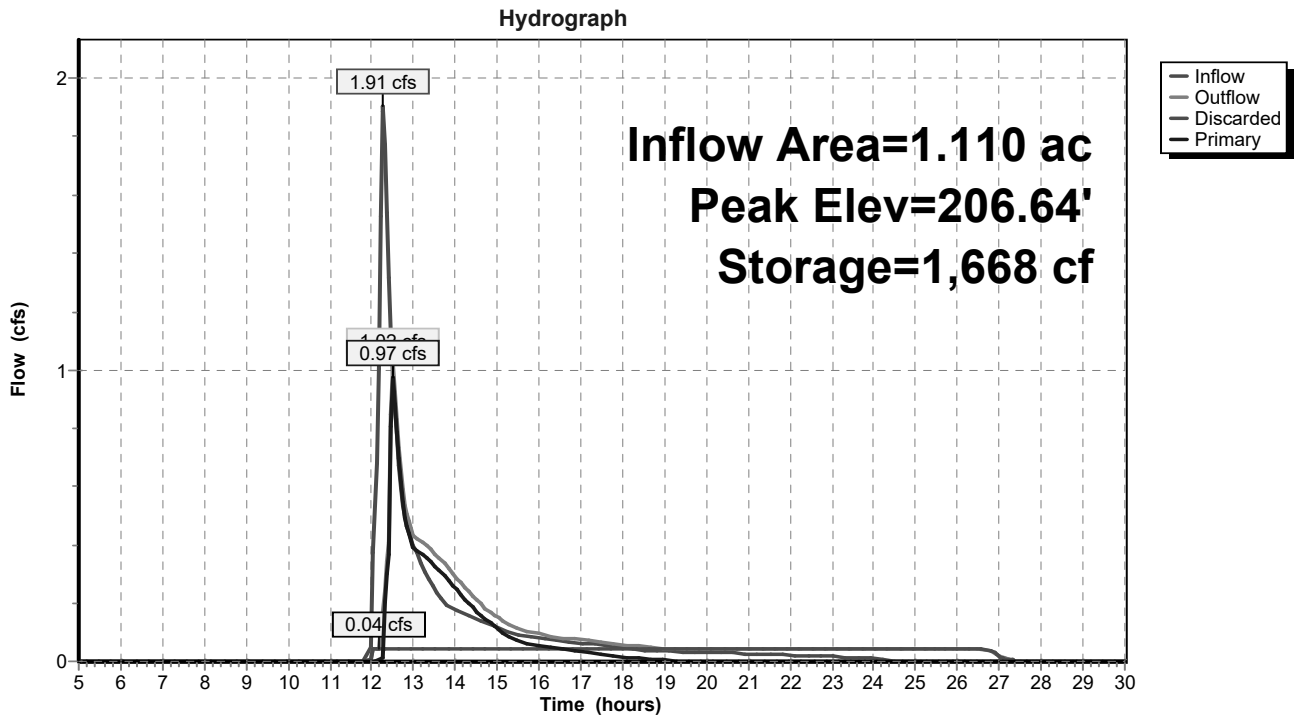
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
205.00	13	0	0	13
210.50	13	72	72	83

Device	Routing	Invert	Outlet Devices
#1	Primary	204.50'	<b>12.0" Round Culvert</b> L= 65.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 204.50' / 201.00' S= 0.0538 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Discarded	204.50'	<b>1.500 in/hr Exfiltration over Surface area</b> Phase-In= 0.02'
#3	Device 1	205.50'	<b>4.0" Vert. Orifice/Grate</b> C= 0.600
#4	Device 1	206.50'	<b>12.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.04 cfs @ 12.15 hrs HW=205.04' (Free Discharge)  
 ↳ **2=Exfiltration** (Exfiltration Controls 0.04 cfs)

**Primary OutFlow** Max=0.95 cfs @ 12.51 hrs HW=206.64' (Free Discharge)  
 ↳ **1=Culvert** (Passes 0.95 cfs of 6.60 cfs potential flow)  
 ↳ **3=Orifice/Grate** (Orifice Controls 0.41 cfs @ 4.75 fps)  
 ↳ **4=Orifice/Grate** (Weir Controls 0.53 cfs @ 1.22 fps)

### Pond STO: cultec system





**Summary for Subcatchment E1: EXISTING DRAINAGE TO CULVERT**

Runoff = 5.84 cfs @ 12.20 hrs, Volume= 0.489 af, Depth= 3.42"

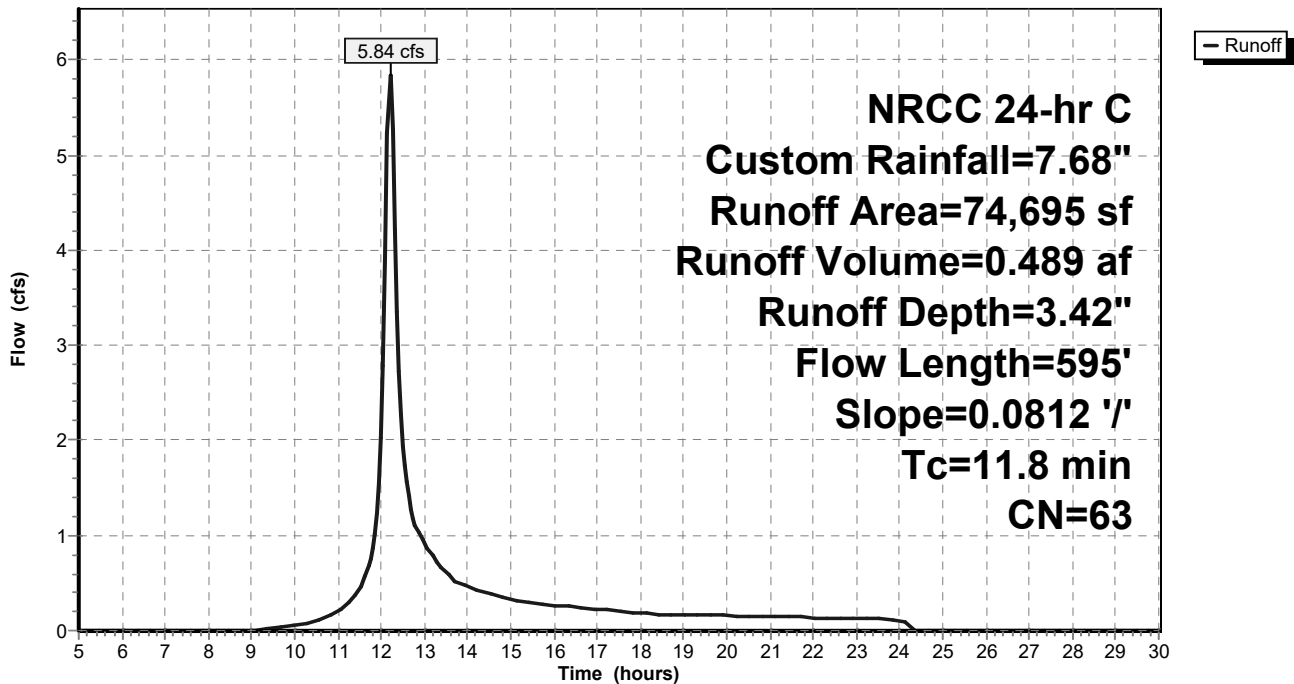
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
 NRCC 24-hr C Custom Rainfall=7.68"

Area (sf)	CN	Description
15,000	98	Paved parking, HSG A
5,044	73	Woods, Fair, HSG C
14,161	36	Woods, Fair, HSG A
15,989	79	Pasture/grassland/range, Fair, HSG C
20,115	36	Woods, Fair, HSG A
3,100	73	Woods, Fair, HSG C
1,286	96	Gravel surface, HSG C
74,695	63	Weighted Average
59,695		79.92% Pervious Area
15,000		20.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	595	0.0812	0.84		<b>Lag/CN Method,</b> Contour Length= 6,066' Interval= 1'

**Subcatchment E1: EXISTING DRAINAGE TO CULVERT**

Hydrograph



**Summary for Subcatchment E2: SOUTH DRAINAGE**

Runoff = 0.16 cfs @ 12.29 hrs, Volume= 0.030 af, Depth= 0.78"

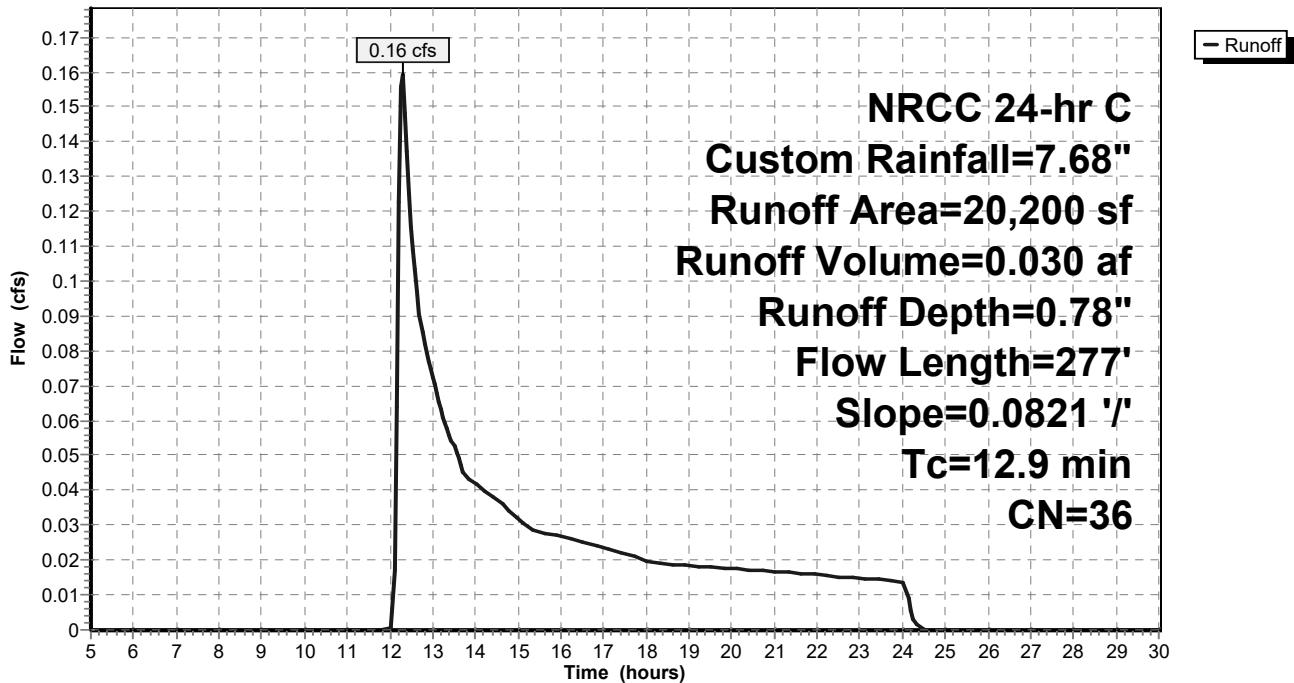
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C Custom Rainfall=7.68"

Area (sf)	CN	Description
20,200	36	Woods, Fair, HSG A
20,200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	277	0.0821	0.36		<b>Lag/CN Method,</b> Contour Length= 1,659' Interval= 1'

**Subcatchment E2: SOUTH DRAINAGE**

Hydrograph



### Summary for Subcatchment E3: MIDDLE DRAINAGE

Runoff = 0.20 cfs @ 12.37 hrs, Volume= 0.041 af, Depth= 0.78"

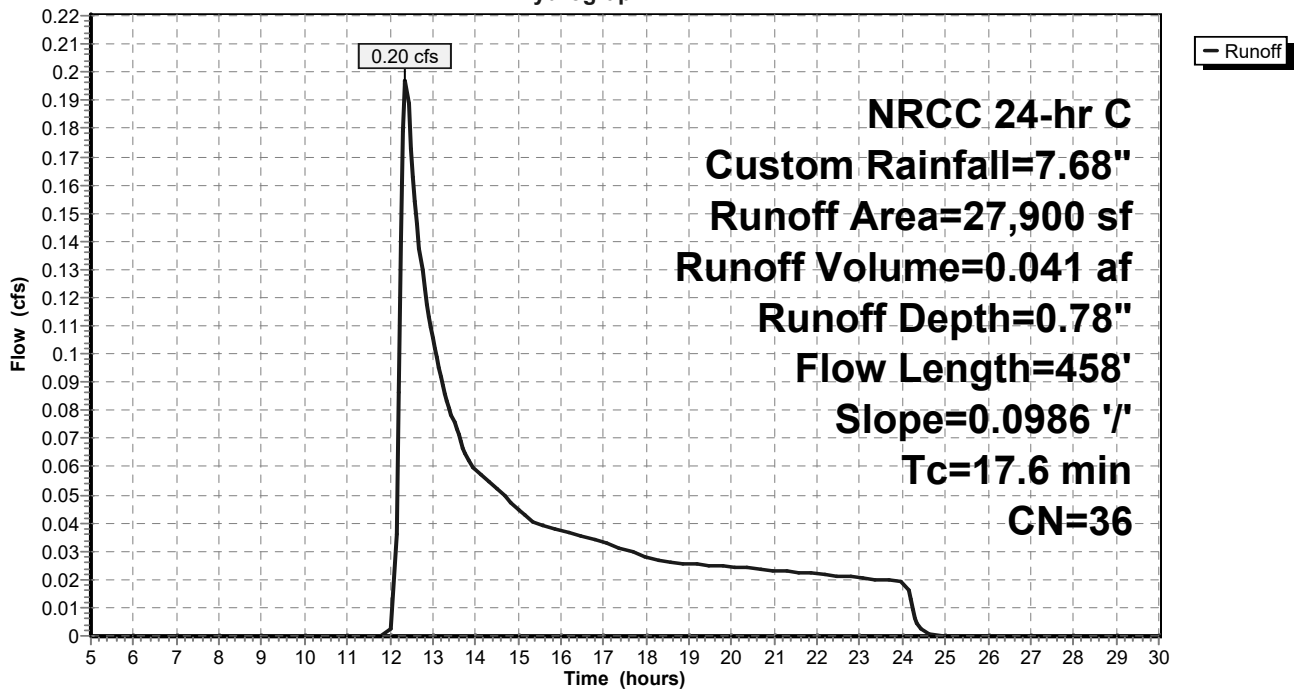
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C Custom Rainfall=7.68"

Area (sf)	CN	Description
27,900	36	Woods, Fair, HSG A
27,900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.6	458	0.0986	0.43		Lag/CN Method, Contour Length= 2,750' Interval= 1'

### Subcatchment E3: MIDDLE DRAINAGE

Hydrograph



### Summary for Subcatchment E4: NORTH DRAINAGE

Runoff = 3.36 cfs @ 12.30 hrs, Volume= 0.382 af, Depth= 1.96"

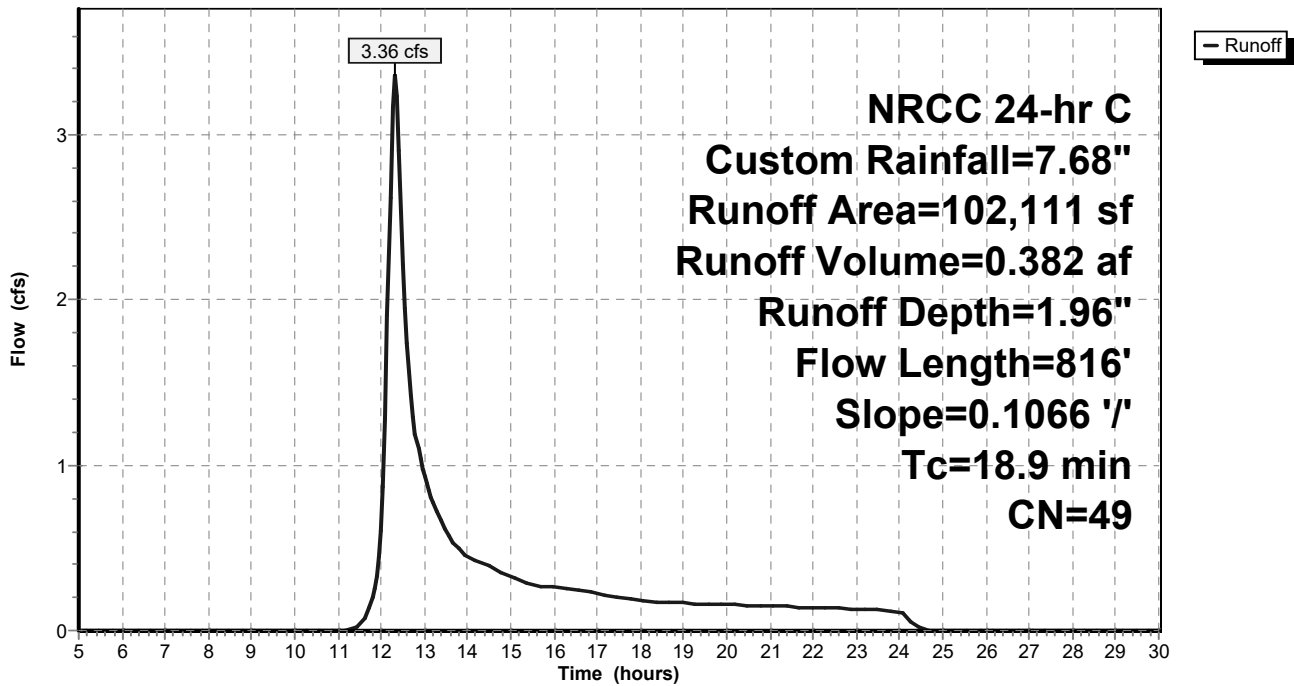
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C Custom Rainfall=7.68"

Area (sf)	CN	Description
36,438	36	Woods, Fair, HSG A
13,818	79	Pasture/grassland/range, Fair, HSG C
33,361	49	Pasture/grassland/range, Fair, HSG A
2,890	96	Gravel surface, HSG C
13,445	36	Woods, Fair, HSG A
2,159	73	Woods, Fair, HSG C
102,111	49	Weighted Average
102,111		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.9	816	0.1066	0.72		Lag/CN Method, I Contour Length= 10,890' Interval= 1'

### Subcatchment E4: NORTH DRAINAGE

Hydrograph



### Summary for Subcatchment E5: S REMAINDER DRAINAGE

Runoff = 0.20 cfs @ 12.25 hrs, Volume= 0.035 af, Depth= 0.78"

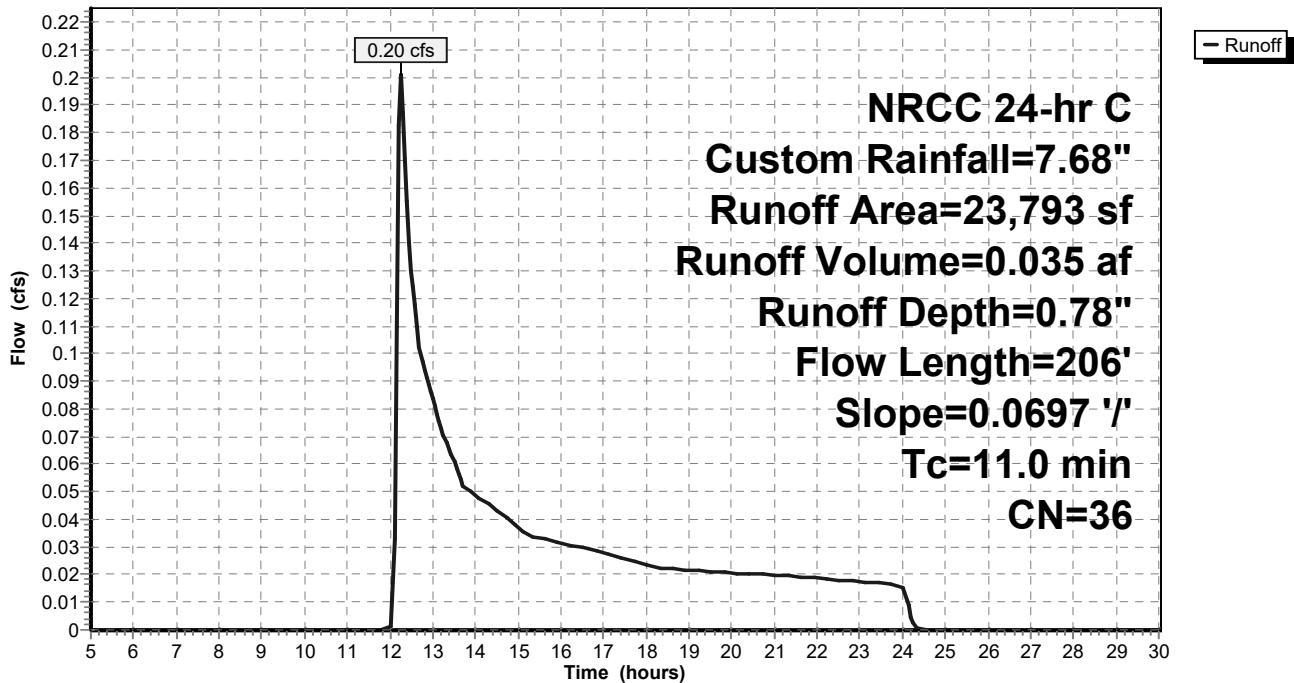
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
 NRCC 24-hr C Custom Rainfall=7.68"

Area (sf)	CN	Description
23,793	36	Woods, Fair, HSG A
23,793		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	206	0.0697	0.31		Lag/CN Method, Contour Length= 1,659' Interval= 1'

### Subcatchment E5: S REMAINDER DRAINAGE

Hydrograph



### Summary for Subcatchment P1: PROPOSED DRAINAGE TO CULVERT

Runoff = 5.84 cfs @ 12.20 hrs, Volume= 0.489 af, Depth= 3.42"

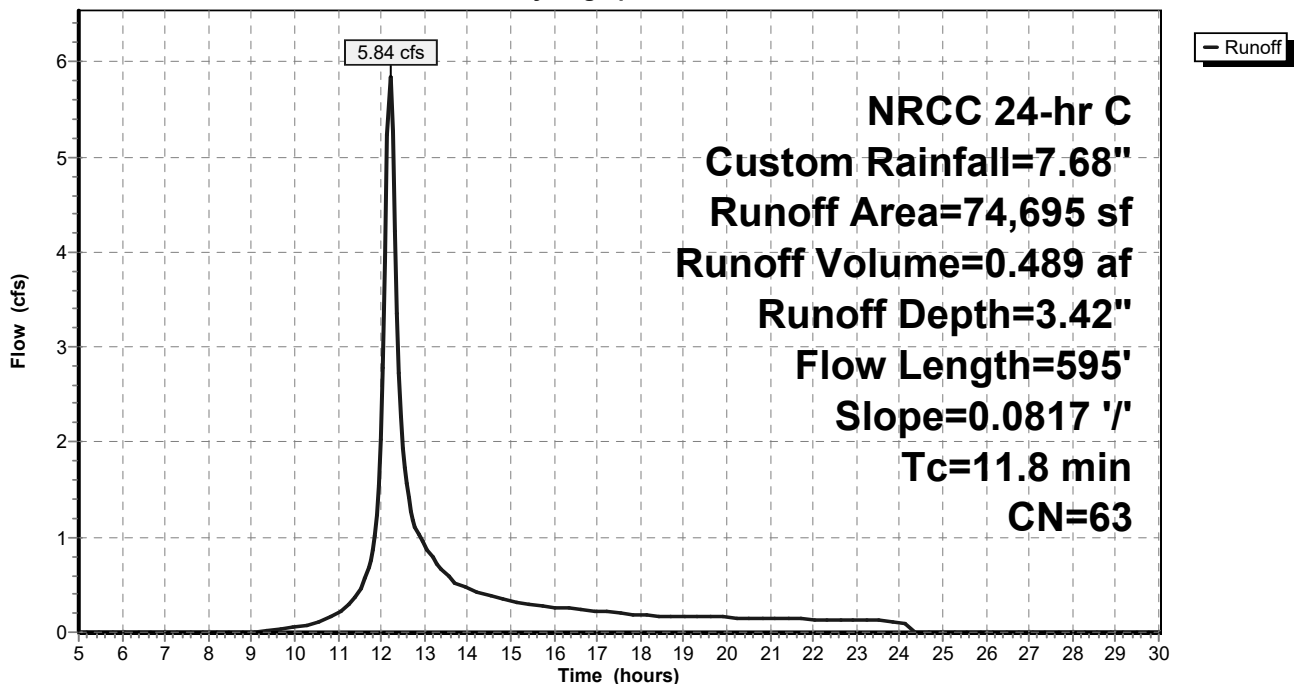
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
 NRCC 24-hr C Custom Rainfall=7.68"

Area (sf)	CN	Description
15,000	98	Paved parking, HSG A
5,044	73	Woods, Fair, HSG C
11,221	36	Woods, Fair, HSG A
15,989	79	Pasture/grassland/range, Fair, HSG C
18,389	36	Woods, Fair, HSG A
3,100	73	Woods, Fair, HSG C
1,286	87	Dirt roads, HSG C
948	96	Gravel surface, HSG A
3,718	39	>75% Grass cover, Good, HSG A
74,695	63	Weighted Average
59,695		79.92% Pervious Area
15,000		20.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	595	0.0817	0.84		Lag/CN Method, Contour Length= 6,100' Interval= 1'

### Subcatchment P1: PROPOSED DRAINAGE TO CULVERT

Hydrograph



**Summary for Subcatchment P2: PR PKG AND CONCRETE PAD**

Runoff = 1.88 cfs @ 12.14 hrs, Volume= 0.132 af, Depth= 2.99"

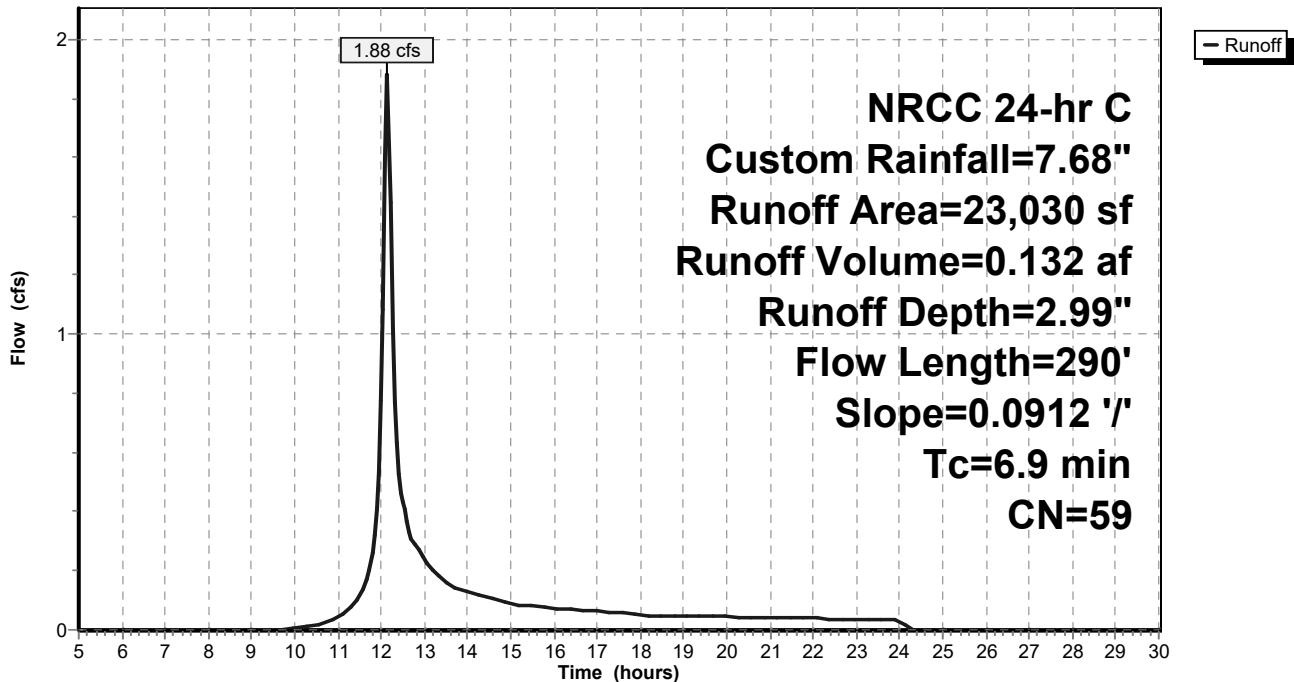
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C Custom Rainfall=7.68"

Area (sf)	CN	Description
5,310	36	Woods, Fair, HSG A
9,440	39	>75% Grass cover, Good, HSG A
900	96	Gravel surface, HSG A
7,380	98	Paved parking, HSG A
23,030	59	Weighted Average
15,650		67.95% Pervious Area
7,380		32.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	290	0.0912	0.70		Lag/CN Method, Contour Length= 2,100' Interval= 1'

**Subcatchment P2: PR PKG AND CONCRETE PAD**

Hydrograph



### Summary for Subcatchment P3: PR NORTH DOG LOOP

Runoff = 0.79 cfs @ 12.23 hrs, Volume= 0.081 af, Depth= 1.67"

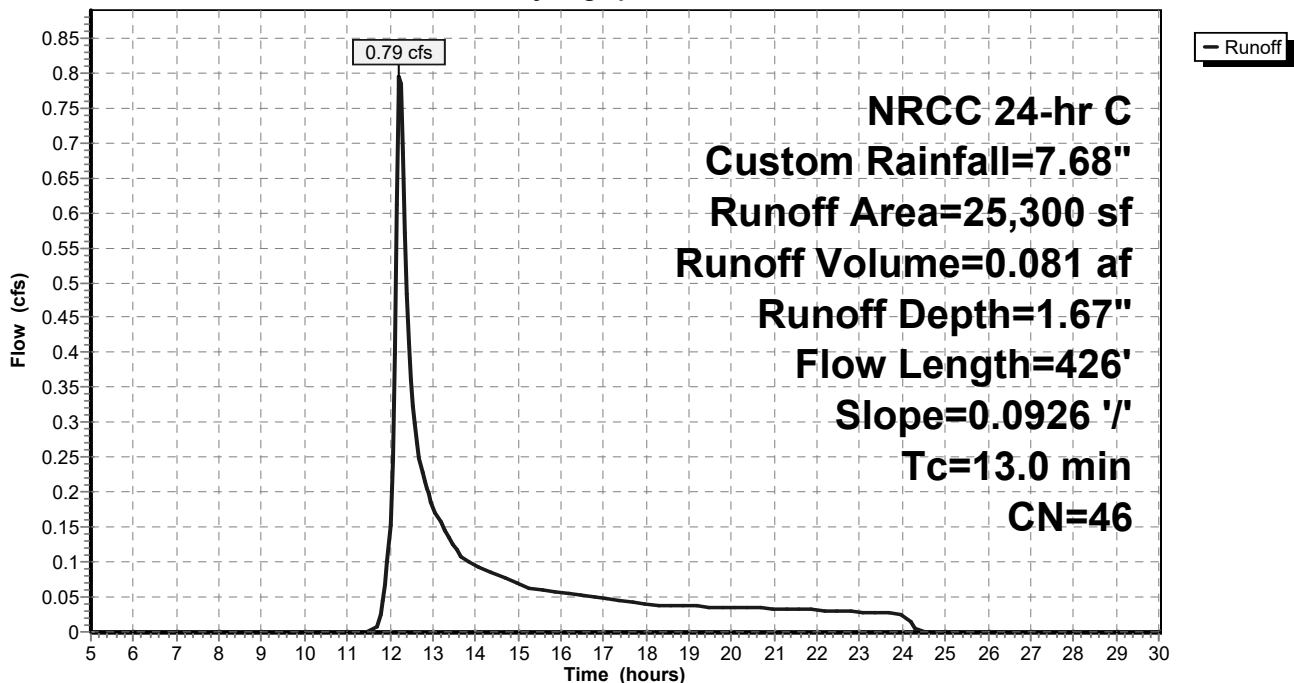
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C Custom Rainfall=7.68"

Area (sf)	CN	Description
2,015	98	Paved parking, HSG A
* 1,305	96	Gravel surface, HSG A
13,680	39	>75% Grass cover, Good, HSG A
2,748	36	Woods, Fair, HSG A
4,342	39	>75% Grass cover, Good, HSG A
1,210	39	>75% Grass cover, Good, HSG A
25,300	46	Weighted Average
23,285		92.04% Pervious Area
2,015		7.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	426	0.0926	0.54		Lag/CN Method, Contour Length= 2,342' Interval= 1'

### Subcatchment P3: PR NORTH DOG LOOP

Hydrograph





### Summary for Subcatchment P4: PR NORTH DRAINAGE AREA

Runoff = 3.36 cfs @ 12.30 hrs, Volume= 0.382 af, Depth= 1.96"

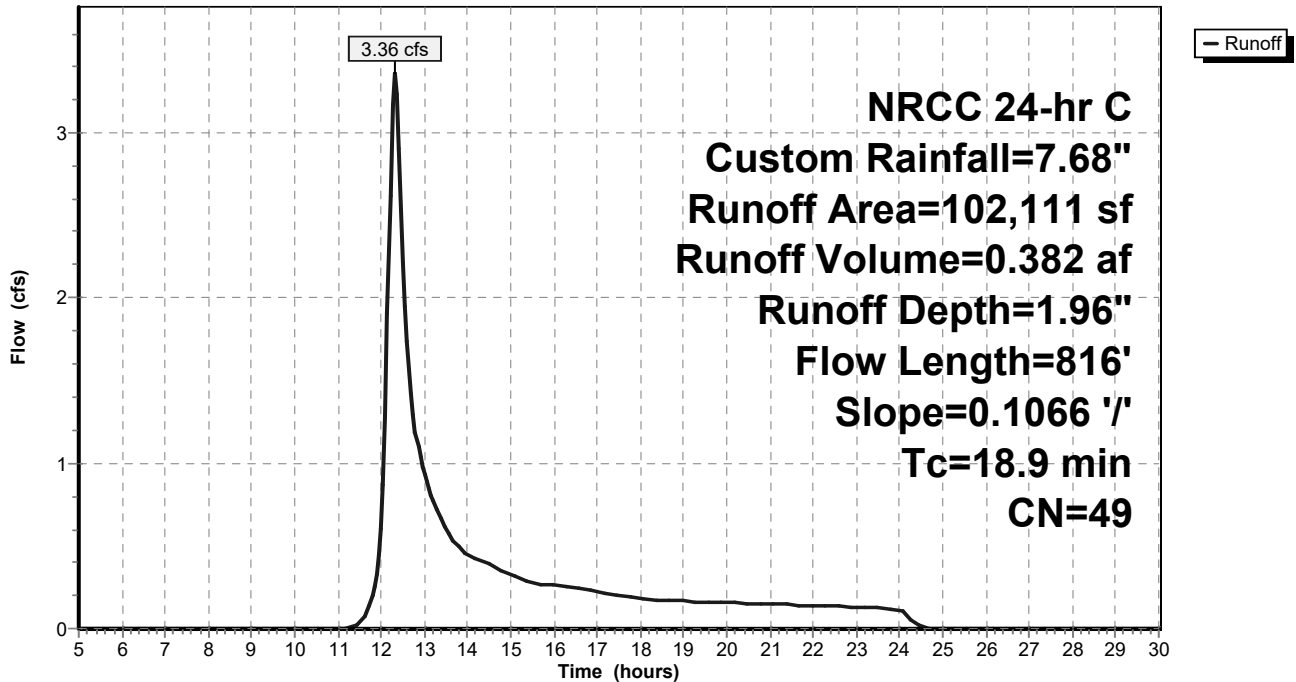
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
NRCC 24-hr C Custom Rainfall=7.68"

Area (sf)	CN	Description
35,242	36	Woods, Fair, HSG A
13,817	39	>75% Grass cover, Good, HSG A
826	98	Paved parking, HSG A
13,815	79	Pasture/grassland/range, Fair, HSG C
2,891	96	Gravel surface, HSG C
33,361	49	Pasture/grassland/range, Fair, HSG A
2,159	73	Woods, Fair, HSG C
102,111	49	Weighted Average
101,285		99.19% Pervious Area
826		0.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.9	816	0.1066	0.72		Lag/CN Method, Contour Length= 10,890' Interval= 1'

### Subcatchment P4: PR NORTH DRAINAGE AREA

Hydrograph



### Summary for Subcatchment P5: PR SOUTH DRAINAGE

Runoff = 0.32 cfs @ 12.22 hrs, Volume= 0.043 af, Depth= 0.94"

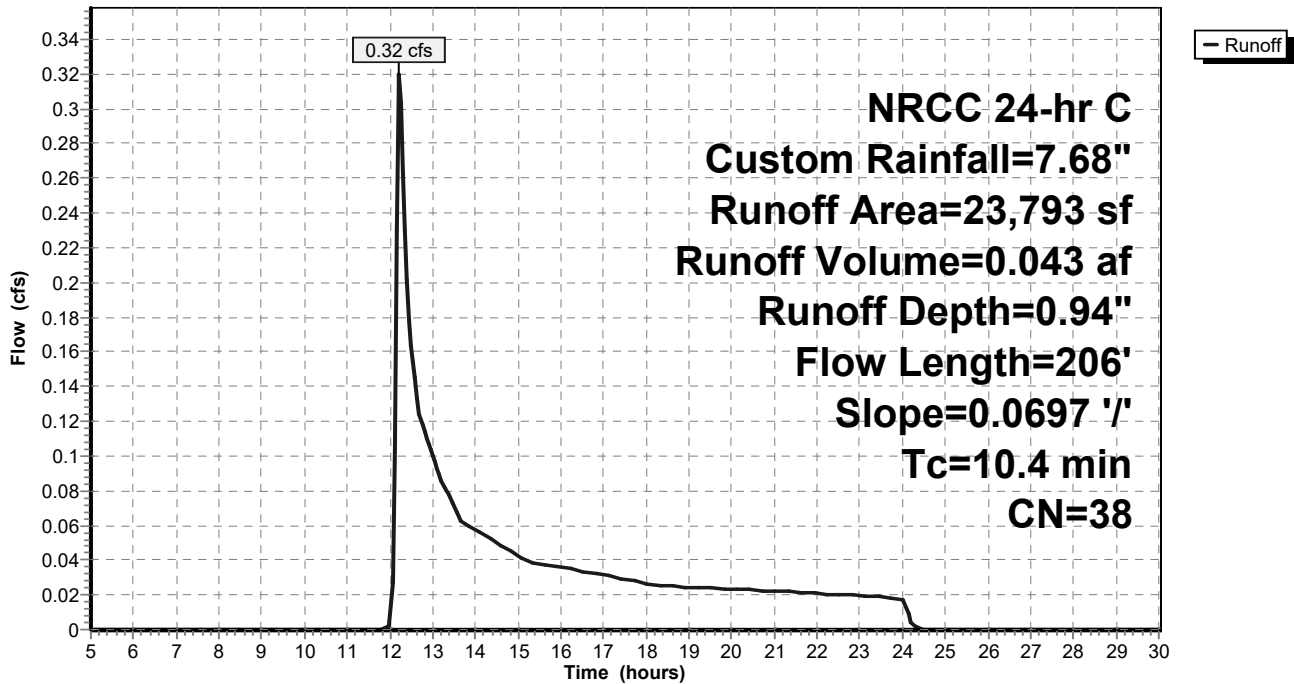
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs  
 NRCC 24-hr C Custom Rainfall=7.68"

Area (sf)	CN	Description
17,687	36	Woods, Fair, HSG A
625	98	Paved parking, HSG A
5,481	39	>75% Grass cover, Good, HSG A
23,793	38	Weighted Average
23,168		97.37% Pervious Area
625		2.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.4	206	0.0697	0.33		Lag/CN Method, Contour Length= 1,659' Interval= 1'

### Subcatchment P5: PR SOUTH DRAINAGE

Hydrograph



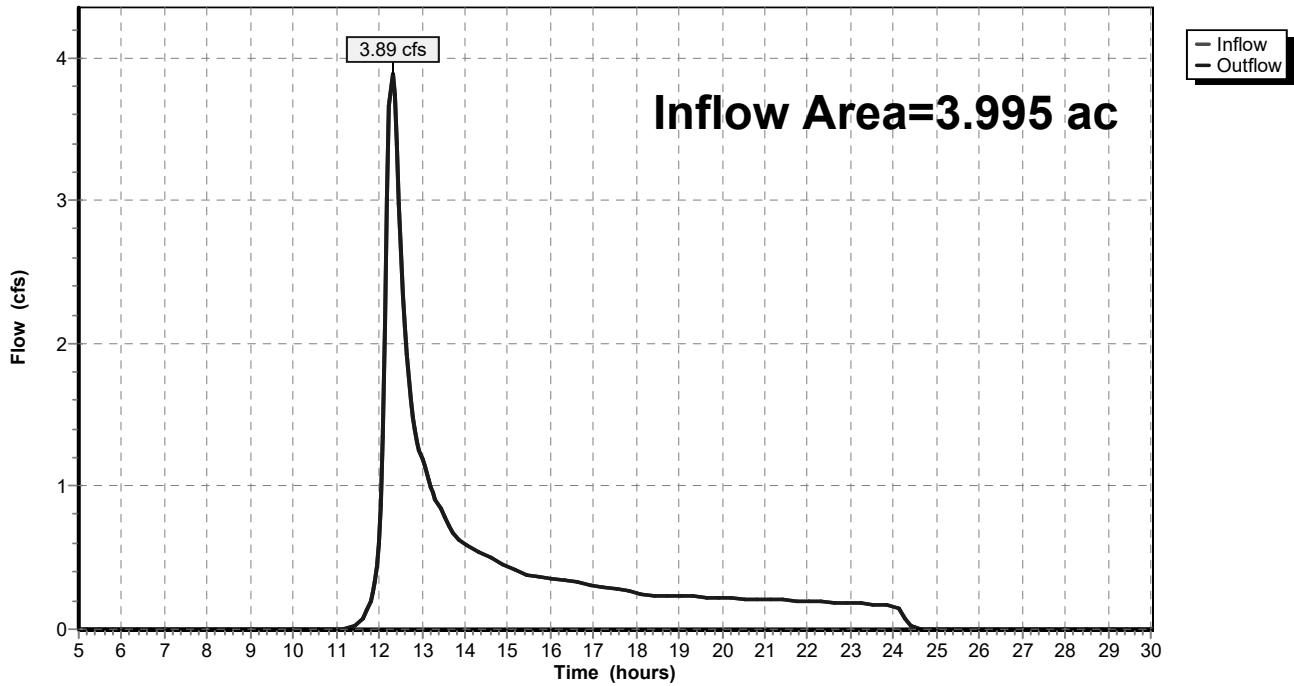
### Summary for Reach E: SITE TOTAL - EXISTING

Inflow Area = 3.995 ac, 0.00% Impervious, Inflow Depth = 1.47" for Custom event  
Inflow = 3.89 cfs @ 12.31 hrs, Volume= 0.489 af  
Outflow = 3.89 cfs @ 12.31 hrs, Volume= 0.489 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

### Reach E: SITE TOTAL - EXISTING

Hydrograph

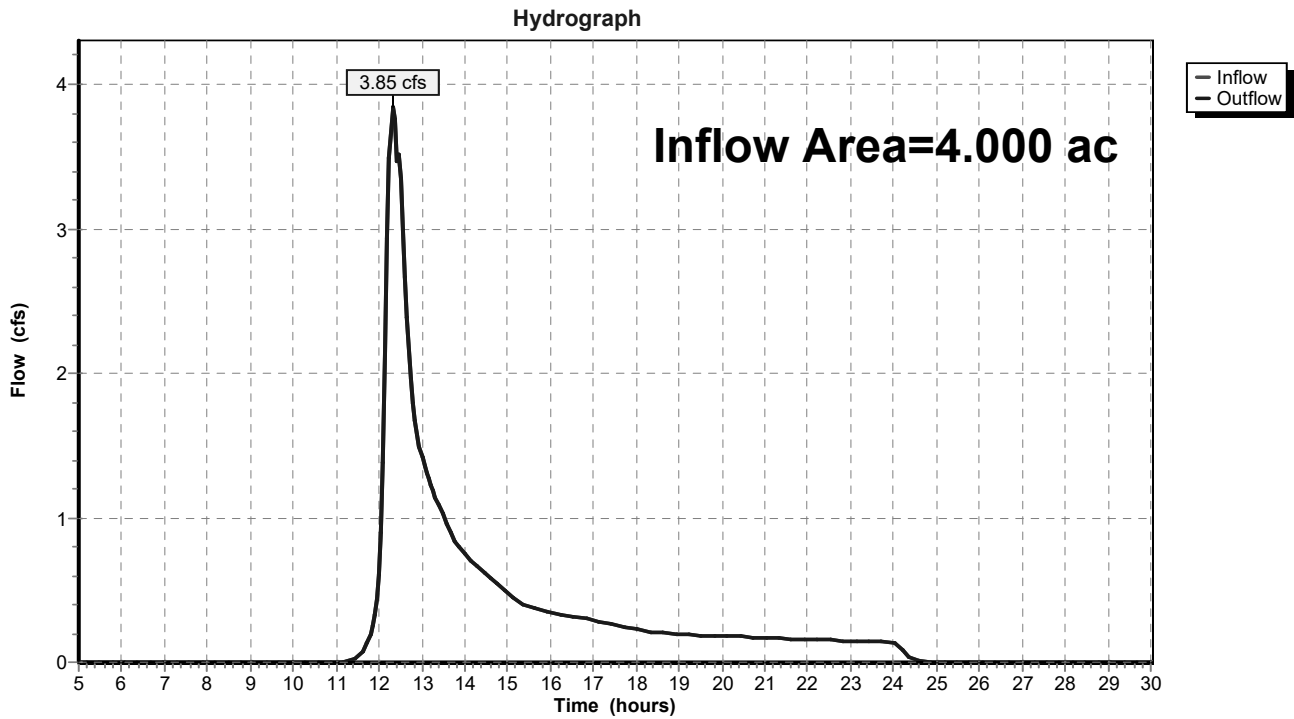


### Summary for Reach P: SITE TOTAL - PROPOSED

Inflow Area = 4.000 ac, 6.22% Impervious, Inflow Depth = 1.54" for Custom event  
Inflow = 3.85 cfs @ 12.32 hrs, Volume= 0.513 af  
Outflow = 3.85 cfs @ 12.32 hrs, Volume= 0.513 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

### Reach P: SITE TOTAL - PROPOSED



**Summary for Pond RG1: rain garden -pkg lot**

Inflow Area = 0.529 ac, 32.05% Impervious, Inflow Depth = 2.99" for Custom event  
 Inflow = 1.88 cfs @ 12.14 hrs, Volume= 0.132 af  
 Outflow = 1.28 cfs @ 12.22 hrs, Volume= 0.130 af, Atten= 32%, Lag= 4.6 min  
 Discarded = 0.05 cfs @ 12.22 hrs, Volume= 0.047 af  
 Primary = 1.23 cfs @ 12.22 hrs, Volume= 0.083 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs / 2  
 Peak Elev= 212.23' @ 12.22 hrs Surf.Area= 1,497 sf Storage= 1,116 cf

Plug-Flow detention time= 88.5 min calculated for 0.130 af (99% of inflow)  
 Center-of-Mass det. time= 82.0 min ( 945.4 - 863.4 )

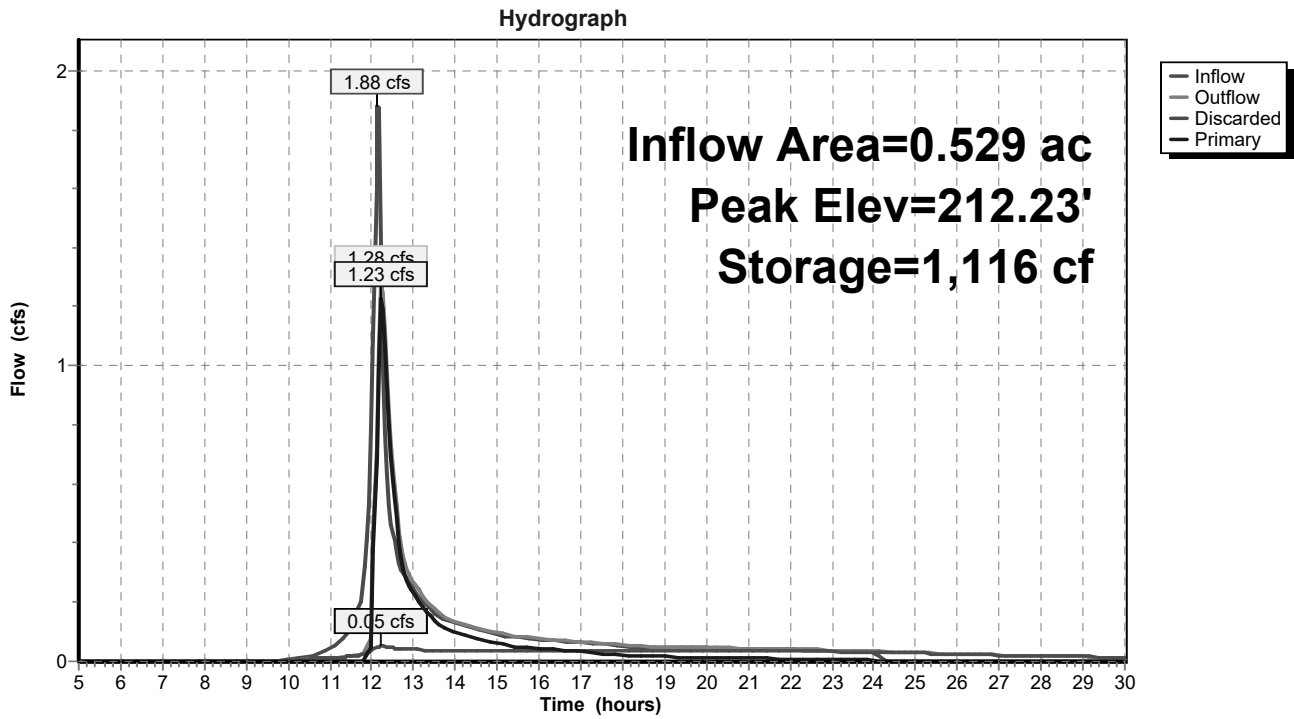
Volume	Invert	Avail.Storage	Storage Description
#1	211.00'	1,525 cf	<b>Custom Stage Data (Prismatic)</b> Listed below
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
211.00	294	0	0
212.00	1,237	766	766
212.50	1,800	759	1,525

Device	Routing	Invert	Outlet Devices
#1	Discarded	211.00'	<b>1.500 in/hr Exfiltration over Surface area</b> Phase-In= 0.02'
#2	Primary	211.65'	<b>12.0" Vert. Orifice/Grate</b> C= 0.600

**Discarded OutFlow** Max=0.05 cfs @ 12.22 hrs HW=212.22' (Free Discharge)  
 ↑1=Exfiltration (Exfiltration Controls 0.05 cfs)

**Primary OutFlow** Max=1.20 cfs @ 12.22 hrs HW=212.22' (Free Discharge)  
 ↑2=Orifice/Grate (Orifice Controls 1.20 cfs @ 2.58 fps)

### Pond RG1: rain garden -pkg lot



**Summary for Pond RG2: rain garden - north**

Inflow Area = 0.581 ac, 7.96% Impervious, Inflow Depth = 1.67" for Custom event  
 Inflow = 0.79 cfs @ 12.23 hrs, Volume= 0.081 af  
 Outflow = 0.73 cfs @ 12.28 hrs, Volume= 0.081 af, Atten= 8%, Lag= 2.9 min  
 Discarded = 0.02 cfs @ 12.28 hrs, Volume= 0.025 af  
 Primary = 0.71 cfs @ 12.28 hrs, Volume= 0.055 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs / 2  
 Peak Elev= 210.92' @ 12.28 hrs Surf.Area= 585 sf Storage= 378 cf

Plug-Flow detention time= 72.4 min calculated for 0.080 af (100% of inflow)  
 Center-of-Mass det. time= 72.7 min ( 980.8 - 908.1 )

Volume	Invert	Avail.Storage	Storage Description
#1	210.00'	805 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
210.00	237	0	0
211.00	616	427	427
211.50	897	378	805

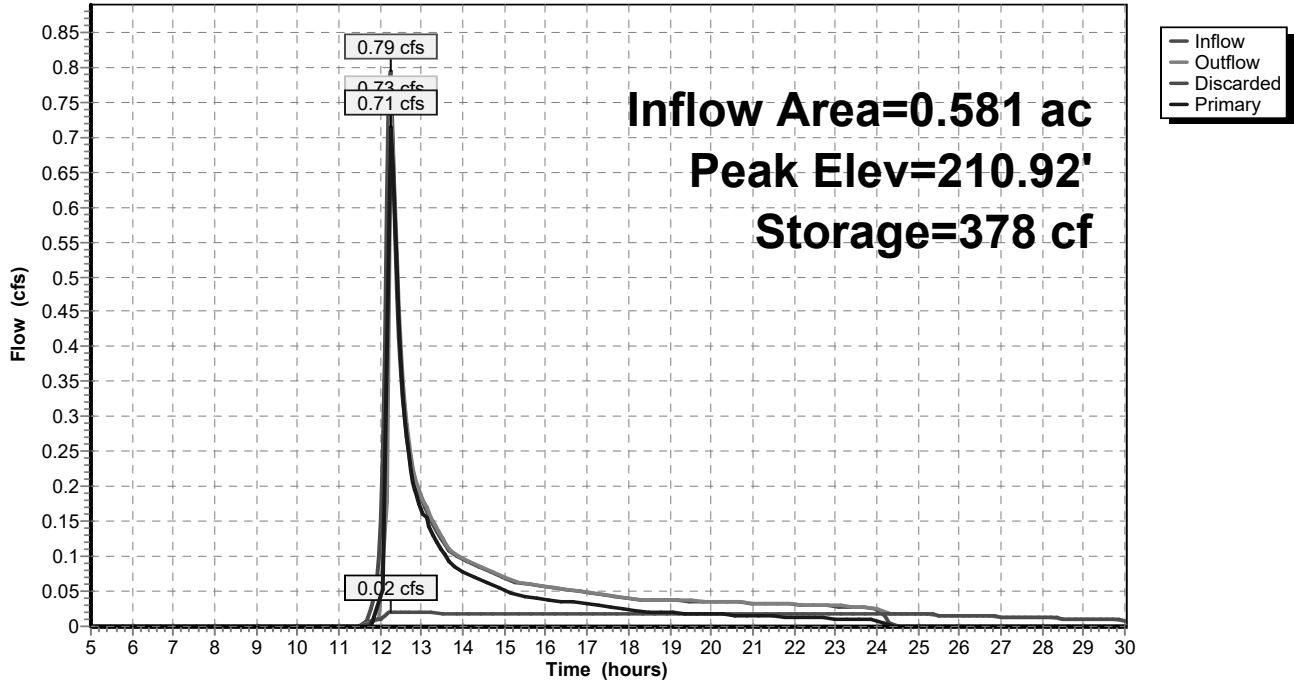
Device	Routing	Invert	Outlet Devices
#1	Primary	210.75'	<b>12.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#2	Discarded	210.00'	<b>1.500 in/hr Exfiltration over Surface area</b> Phase-In= 0.02'

**Discarded OutFlow** Max=0.02 cfs @ 12.28 hrs HW=210.92' (Free Discharge)  
 ↑**2=Exfiltration** (Exfiltration Controls 0.02 cfs)

**Primary OutFlow** Max=0.70 cfs @ 12.28 hrs HW=210.92' (Free Discharge)  
 ↑**1=Orifice/Grate** (Weir Controls 0.70 cfs @ 1.34 fps)

### Pond RG2: rain garden - north

Hydrograph





**Summary for Pond STO: cultec system**

Inflow Area = 1.110 ac, 19.44% Impervious, Inflow Depth = 1.49" for Custom event  
 Inflow = 1.91 cfs @ 12.26 hrs, Volume= 0.138 af  
 Outflow = 1.02 cfs @ 12.51 hrs, Volume= 0.138 af, Atten= 47%, Lag= 14.7 min  
 Discarded = 0.04 cfs @ 12.15 hrs, Volume= 0.050 af  
 Primary = 0.97 cfs @ 12.51 hrs, Volume= 0.088 af

Routing by Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs / 2  
 Peak Elev= 206.64' @ 12.51 hrs Surf.Area= 1,172 sf Storage= 1,668 cf

Plug-Flow detention time= 107.3 min calculated for 0.138 af (100% of inflow)  
 Center-of-Mass det. time= 107.9 min ( 949.0 - 841.1 )

Volume	Invert	Avail.Storage	Storage Description
#1A	204.50'	819 cf	<b>24.50'W x 47.31'L x 2.71'H Field A</b> 3,139 cf Overall - 1,091 cf Embedded = 2,048 cf x 40.0% Voids
#2A	205.00'	1,091 cf	<b>Cultec R-180</b> x 49 Inside #1 Effective Size= 33.6"W x 20.0"H => 3.44 sf x 6.33'L = 21.8 cf Overall Size= 36.0"W x 20.5"H x 7.33'L with 1.00' Overlap Row Length Adjustment= +1.00' x 3.44 sf x 7 rows
#3	205.00'	72 cf	<b>Custom Stage Data (Conic)</b> Listed below (Recalc)
		1,982 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
205.00	13	0	0	13
210.50	13	72	72	83

Device	Routing	Invert	Outlet Devices
#1	Primary	204.50'	<b>12.0" Round Culvert</b> L= 65.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 204.50' / 201.00' S= 0.0538 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Discarded	204.50'	<b>1.500 in/hr Exfiltration over Surface area</b> Phase-In= 0.02'
#3	Device 1	205.50'	<b>4.0" Vert. Orifice/Grate</b> C= 0.600
#4	Device 1	206.50'	<b>12.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads

**Discarded OutFlow** Max=0.04 cfs @ 12.15 hrs HW=205.04' (Free Discharge)

↳ **2=Exfiltration** (Exfiltration Controls 0.04 cfs)

**Primary OutFlow** Max=0.95 cfs @ 12.51 hrs HW=206.64' (Free Discharge)

↳ **1=Culvert** (Passes 0.95 cfs of 6.60 cfs potential flow)  
 ↳ **3=Orifice/Grate** (Orifice Controls 0.41 cfs @ 4.75 fps)  
 ↳ **4=Orifice/Grate** (Weir Controls 0.53 cfs @ 1.22 fps)

### Pond STO: cultec system

Hydrograph

