

**1903601 - Existing Hydrology**

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Type II 24-hr 2-yr Rainfall=3.56"

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**Summary for Subcatchment E-1a: E-1a**

Runoff = 34.44 cfs @ 12.27 hrs, Volume= 3.614 af, Depth> 1.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 2-yr Rainfall=3.56"

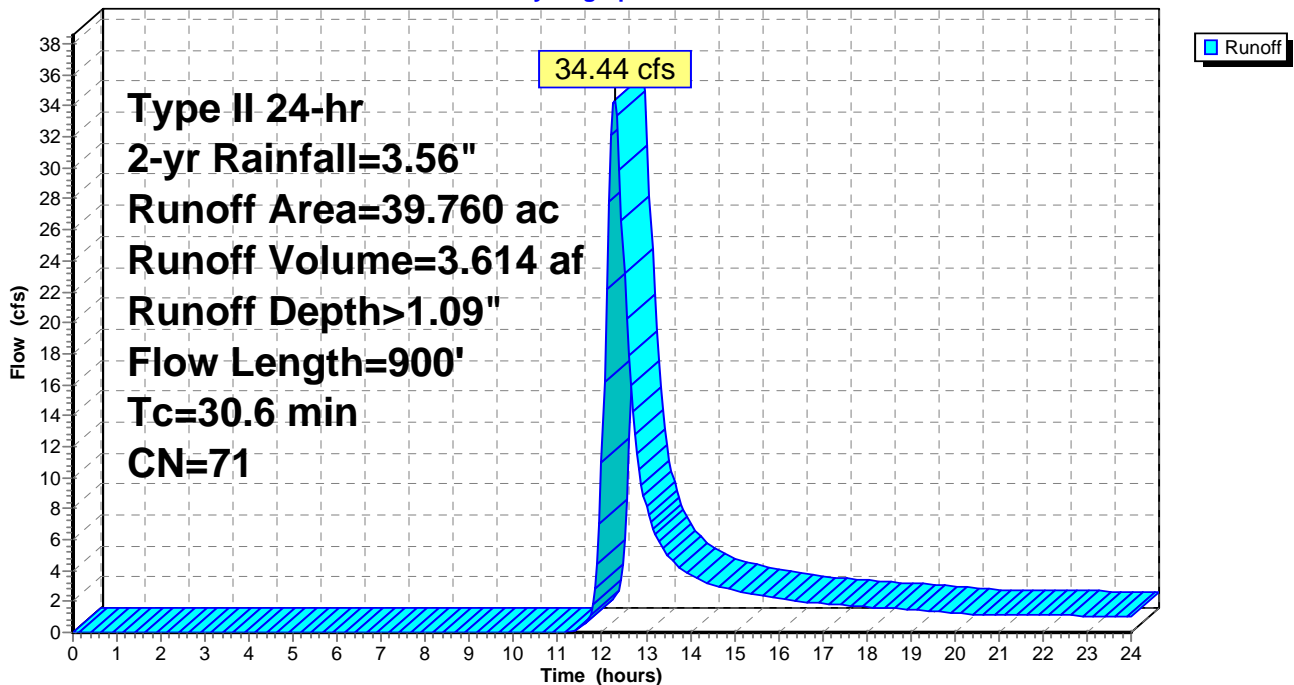
Area (ac)	CN	Description
18.250	77	Woods, Poor, HSG C
21.510	66	Woods, Poor, HSG B
39.760	71	Weighted Average
39.760		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.1	150	0.1870	0.12		<b>Sheet Flow, AB</b> Woods: Dense underbrush n= 0.800 P2= 3.56"
5.2	505	0.1030	1.60		<b>Shallow Concentrated Flow, BC</b> Woodland Kv= 5.0 fps
5.3	245	0.0240	0.77		<b>Shallow Concentrated Flow, CD</b> Woodland Kv= 5.0 fps
30.6	900	Total			

**Subcatchment E-1a: E-1a**

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**Summary for Subcatchment E-1b: E-1b**

Runoff = 23.31 cfs @ 12.10 hrs, Volume= 1.633 af, Depth> 1.10"

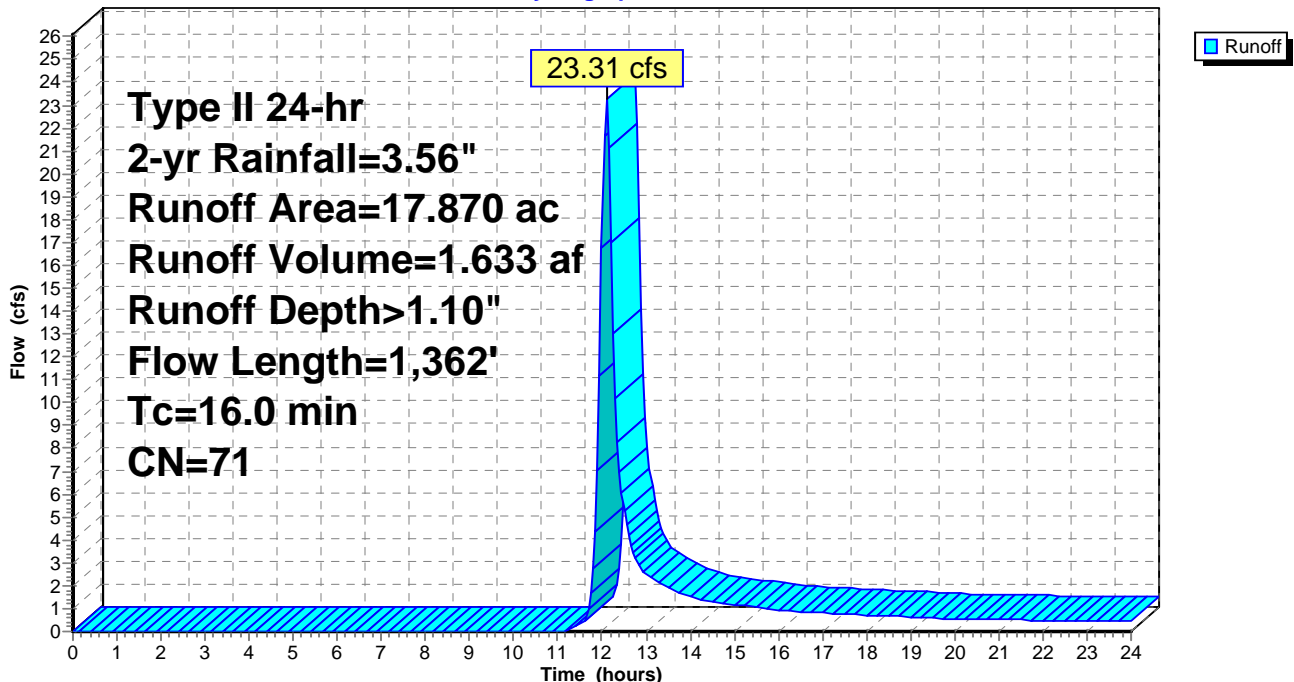
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type II 24-hr 2-yr Rainfall=3.56"

Area (ac)	CN	Description
4.450	98	Paved parking, HSG B
3.860	61	>75% Grass cover, Good, HSG B
6.200	66	Woods, Poor, HSG B
3.360	55	Woods, Good, HSG B
17.870	71	Weighted Average
13.420		75.10% Pervious Area
4.450		24.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	100	0.3600	0.15		<b>Sheet Flow, AB</b> Woods: Dense underbrush n= 0.800 P2= 3.56"
0.8	232	0.0950	4.96		<b>Shallow Concentrated Flow, BC</b> Unpaved Kv= 16.1 fps
1.0	130	0.0120	2.22		<b>Shallow Concentrated Flow, CD</b> Paved Kv= 20.3 fps
3.0	900		5.00		<b>Direct Entry, DE</b>
16.0	1,362	Total			

**Subcatchment E-1b: E-1b**

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**Summary for Subcatchment E-2: E-2**

Runoff = 4.94 cfs @ 13.14 hrs, Volume= 1.160 af, Depth> 0.96"

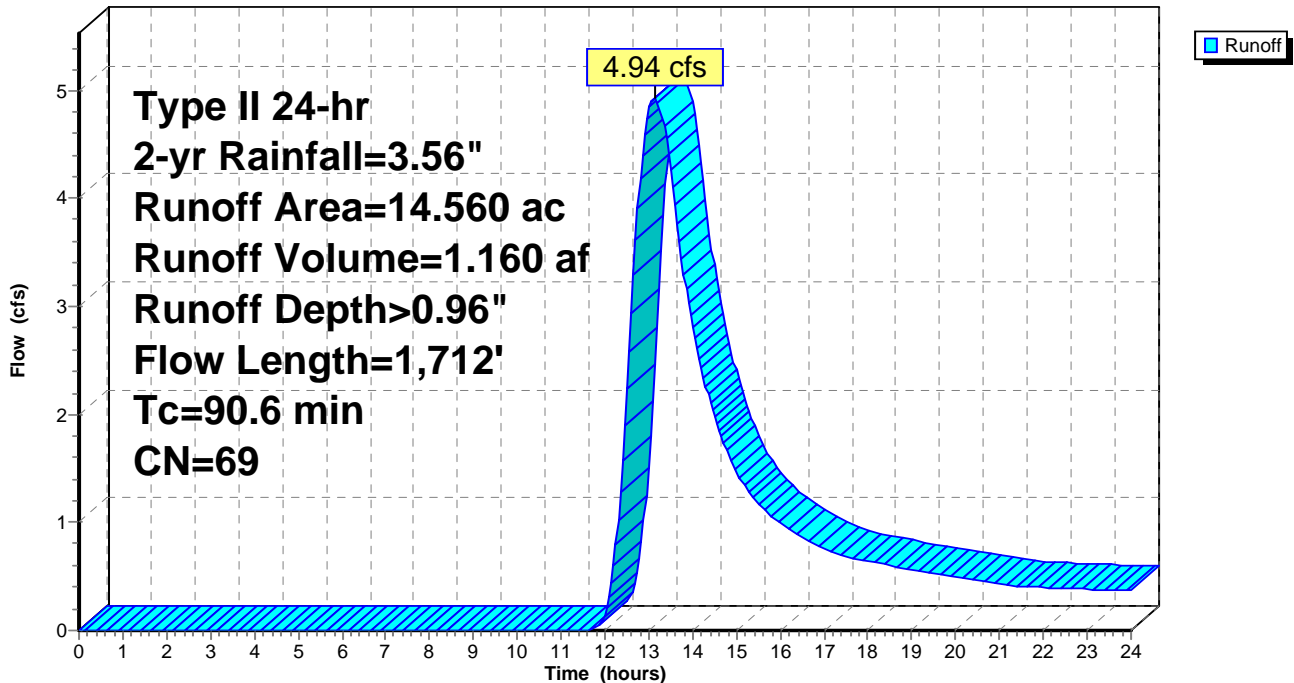
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 2-yr Rainfall=3.56"

Area (ac)	CN	Description
3.540	77	Woods, Poor, HSG C
11.020	66	Woods, Poor, HSG B
14.560	69	Weighted Average
14.560		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.4	150	0.2330	0.14		<b>Sheet Flow, BC</b> Woods: Dense underbrush n= 0.800 P2= 3.56"
2.5	211	0.0810	1.42		<b>Shallow Concentrated Flow, BC</b> Woodland Kv= 5.0 fps
65.2	1,157	0.0035	0.30		<b>Shallow Concentrated Flow, CD</b> Woodland Kv= 5.0 fps
4.5	194	0.0210	0.72		<b>Shallow Concentrated Flow, DE</b> Woodland Kv= 5.0 fps
90.6	1,712	Total			

**Subcatchment E-2: E-2**

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**Summary for Subcatchment E-3: E-3**

Runoff = 2.90 cfs @ 12.17 hrs, Volume= 0.260 af, Depth> 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 2-yr Rainfall=3.56"

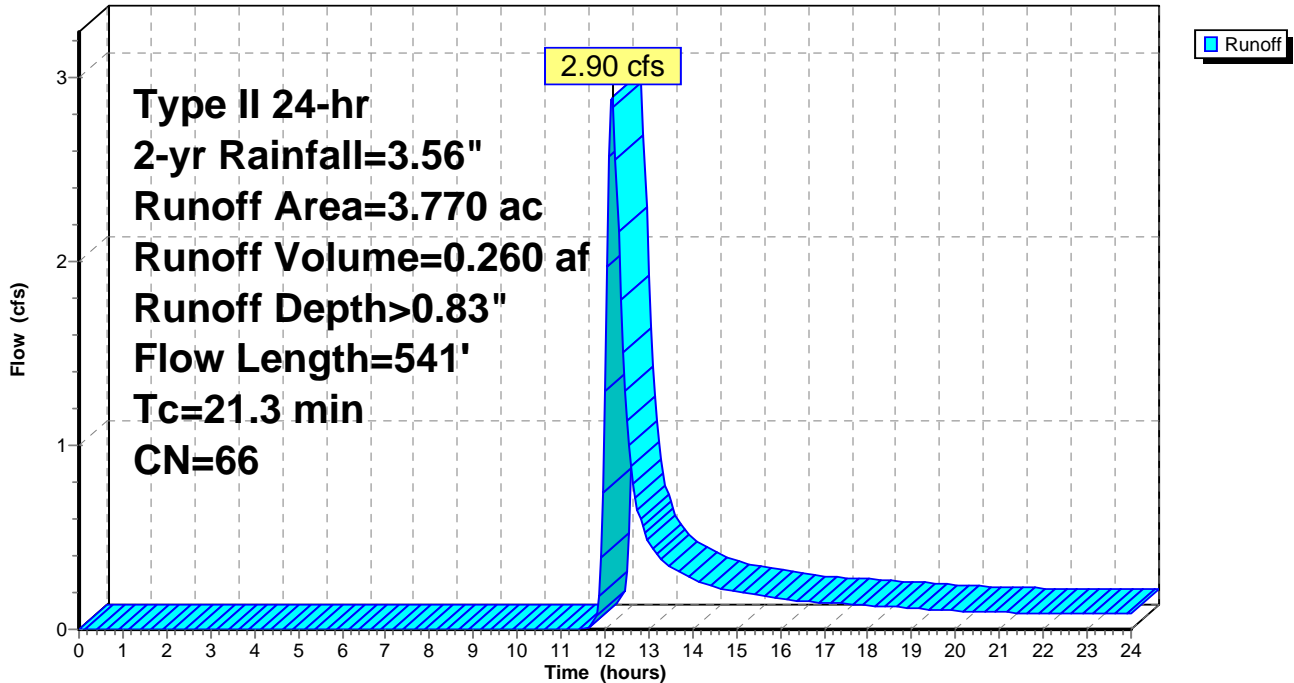
Area (ac)	CN	Description
3.770	66	Woods, Poor, HSG B
3.770		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.6	150	0.2600	0.14		<b>Sheet Flow, AB</b> Woods: Dense underbrush n= 0.800 P2= 3.56"
3.7	391	0.1230	1.75		<b>Shallow Concentrated Flow, BC</b> Woodland Kv= 5.0 fps
21.3	541	Total			

**Subcatchment E-3: E-3**

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**Summary for Subcatchment E-4: E-4**

Runoff = 5.08 cfs @ 12.28 hrs, Volume= 0.533 af, Depth> 1.15"

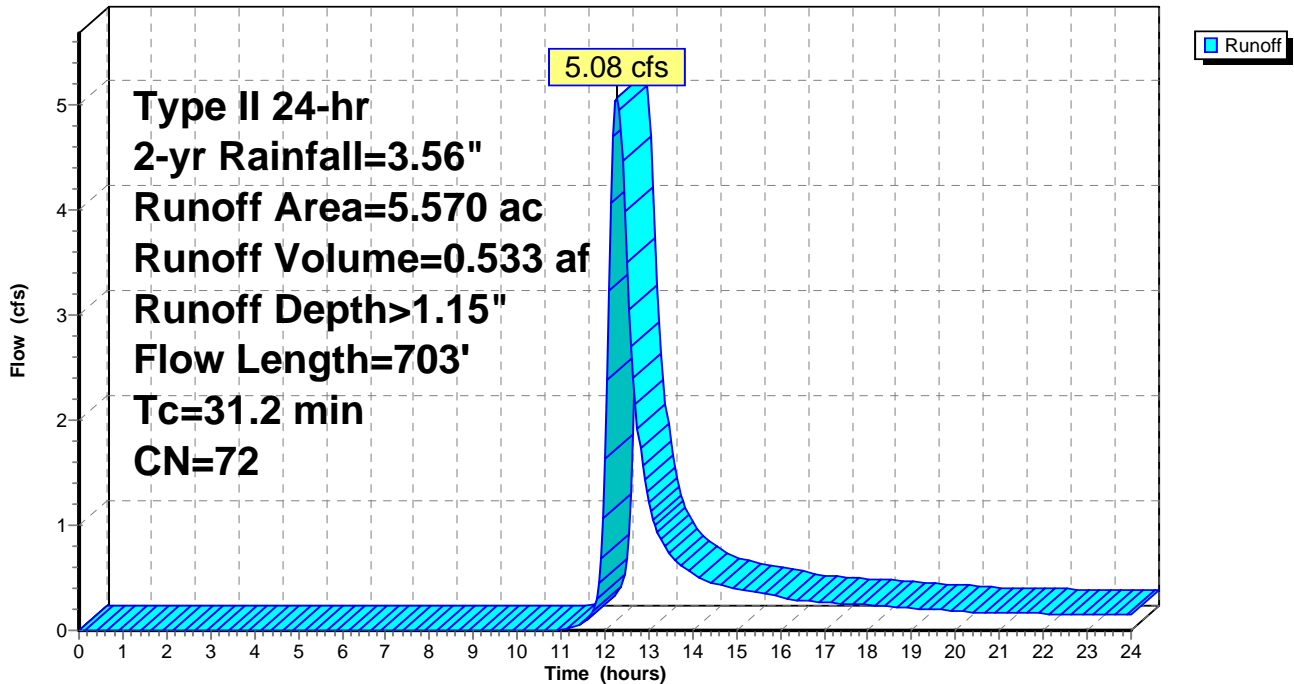
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type II 24-hr 2-yr Rainfall=3.56"

Area (ac)	CN	Description
3.670	66	Woods, Poor, HSG B
1.900	83	Woods, Poor, HSG D
5.570	72	Weighted Average
5.570		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.5	150	0.0930	0.09		<b>Sheet Flow, AB</b> Woods: Dense underbrush n= 0.800 P2= 3.56"
4.7	553	0.1570	1.98		<b>Shallow Concentrated Flow, BC</b> Woodland Kv= 5.0 fps
31.2	703	Total			

**Subcatchment E-4: E-4**

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Type II 24-hr 2-yr Rainfall=3.56"

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**Summary for Subcatchment P-1a: P-1a**

Runoff = 20.58 cfs @ 12.37 hrs, Volume= 2.451 af, Depth&gt; 1.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type II 24-hr 2-yr Rainfall=3.56"

Area (ac)	CN	Description
2.390	80	>75% Grass cover, Good, HSG D
14.130	77	Woods, Poor, HSG C
6.720	66	Woods, Poor, HSG B
23.240	74	Weighted Average
23.240		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.9	100	0.0100	0.09		<b>Sheet Flow, AB</b> Grass: Dense n= 0.240 P2= 3.56"
9.9	50	0.1200	0.08		<b>Sheet Flow, BC</b> Woods: Dense underbrush n= 0.800 P2= 3.56"
1.6	171	0.1300	1.80		<b>Shallow Concentrated Flow, CD</b> Woodland Kv= 5.0 fps
2.1	169	0.0700	1.32		<b>Shallow Concentrated Flow, DE</b> Woodland Kv= 5.0 fps
2.9	145	0.0280	0.84		<b>Shallow Concentrated Flow, EF</b> Woodland Kv= 5.0 fps
1.5	74	0.0270	0.82		<b>Shallow Concentrated Flow, FG</b> Woodland Kv= 5.0 fps
2.7	68	0.0070	0.42		<b>Shallow Concentrated Flow, GH</b> Woodland Kv= 5.0 fps
38.6	777	Total			

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**Summary for Subcatchment P-1b: P-1b**

Runoff = 22.43 cfs @ 12.17 hrs, Volume= 1.880 af, Depth> 1.40"

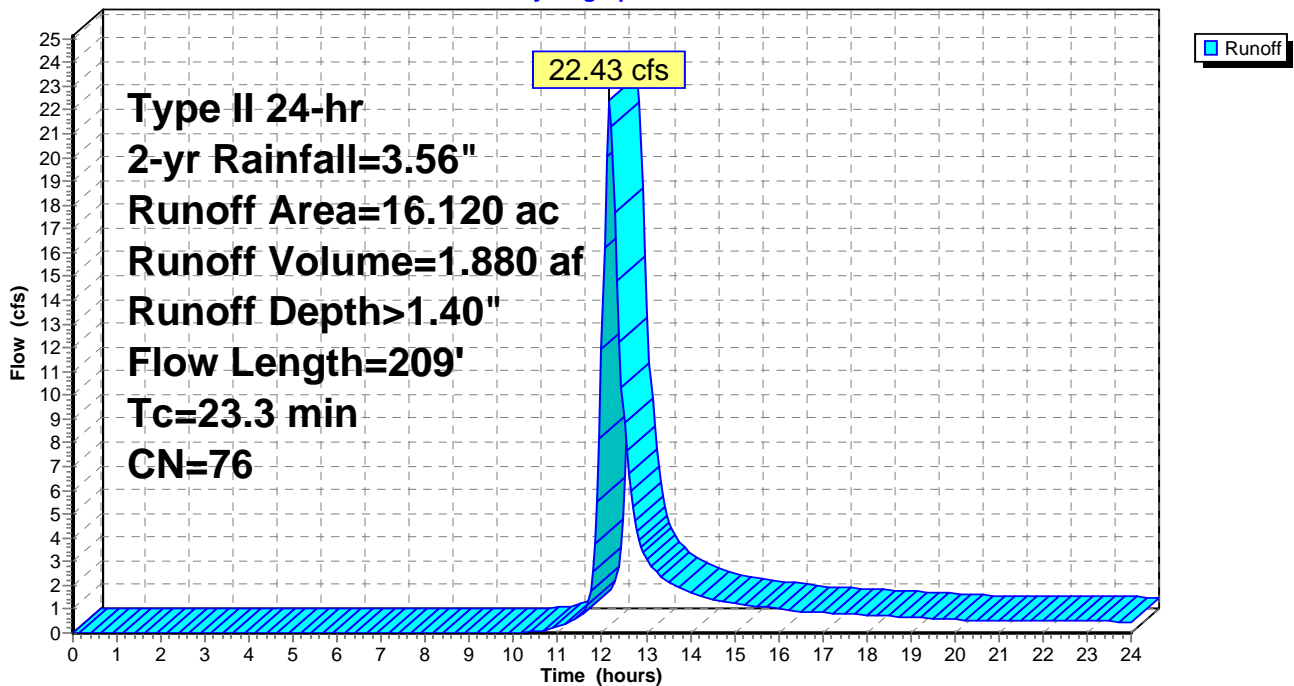
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type II 24-hr 2-yr Rainfall=3.56"

Area (ac)	CN	Description
3.910	61	>75% Grass cover, Good, HSG B
4.450	98	Paved parking, HSG B
2.910	55	Woods, Good, HSG B
4.850	80	>75% Grass cover, Good, HSG D
16.120	76	Weighted Average
11.670		72.39% Pervious Area
4.450		27.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	93	0.0190	0.12		<b>Sheet Flow, AB</b> Grass: Dense n= 0.240 P2= 3.56"
9.2	57	0.0170	0.10		<b>Sheet Flow, BC</b> Grass: Dense n= 0.240 P2= 3.56"
1.1	59	0.0170	0.91		<b>Shallow Concentrated Flow, CD</b> Short Grass Pasture Kv= 7.0 fps
23.3	209	Total			

**Subcatchment P-1b: P-1b**

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## Summary for Subcatchment P-1c: P-1c

Runoff = 10.76 cfs @ 12.49 hrs, Volume= 1.451 af, Depth> 1.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type II 24-hr 2-yr Rainfall=3.56"

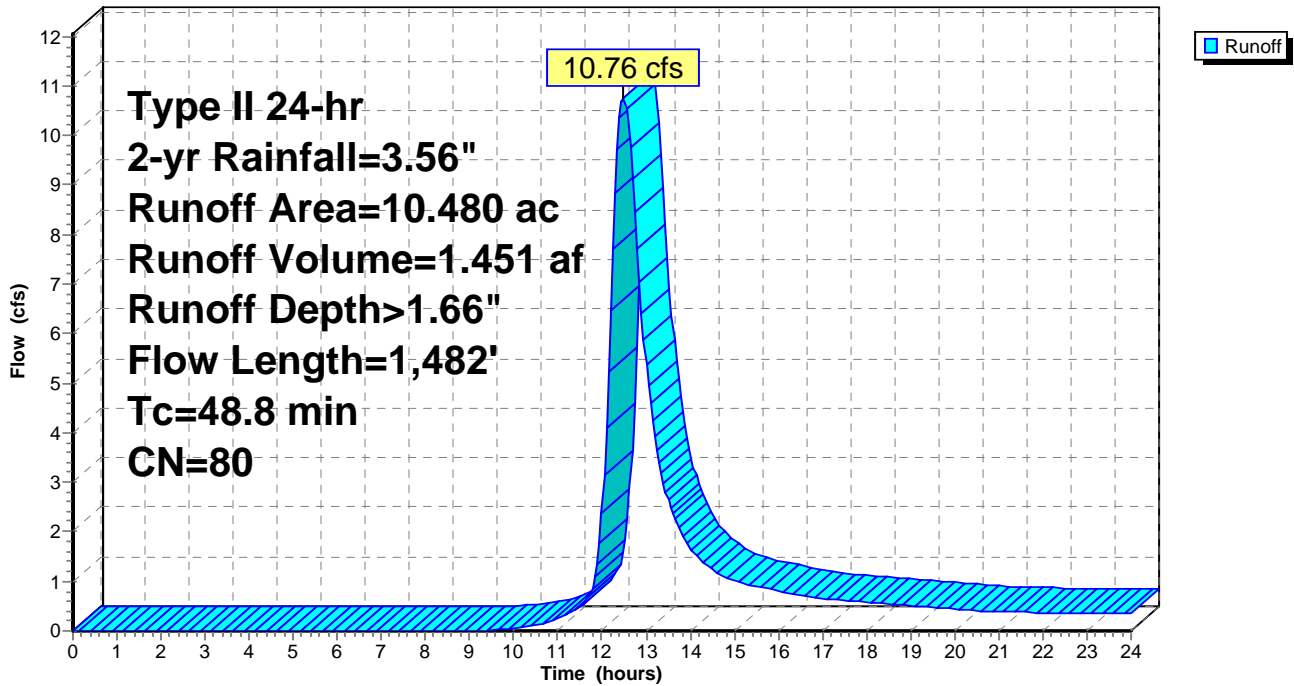
Area (ac)	CN	Description
10.480	80	>75% Grass cover, Good, HSG D
10.480		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.7	150	0.0100	0.10		<b>Sheet Flow, AB</b> Grass: Dense n= 0.240 P2= 3.56"
23.6	993	0.0100	0.70		<b>Shallow Concentrated Flow, BC</b> Short Grass Pasture Kv= 7.0 fps
0.5	339	0.0500	11.90	77.32	<b>Channel Flow, DE</b> Area= 6.5 sf Perim= 9.3' r= 0.70' n= 0.022 Earth, clean & straight
48.8	1,482	Total			

## Subcatchment P-1c: P-1c

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**Summary for Subcatchment P-1d: P-1d**

Runoff = 13.53 cfs @ 12.59 hrs, Volume= 2.004 af, Depth> 1.66"

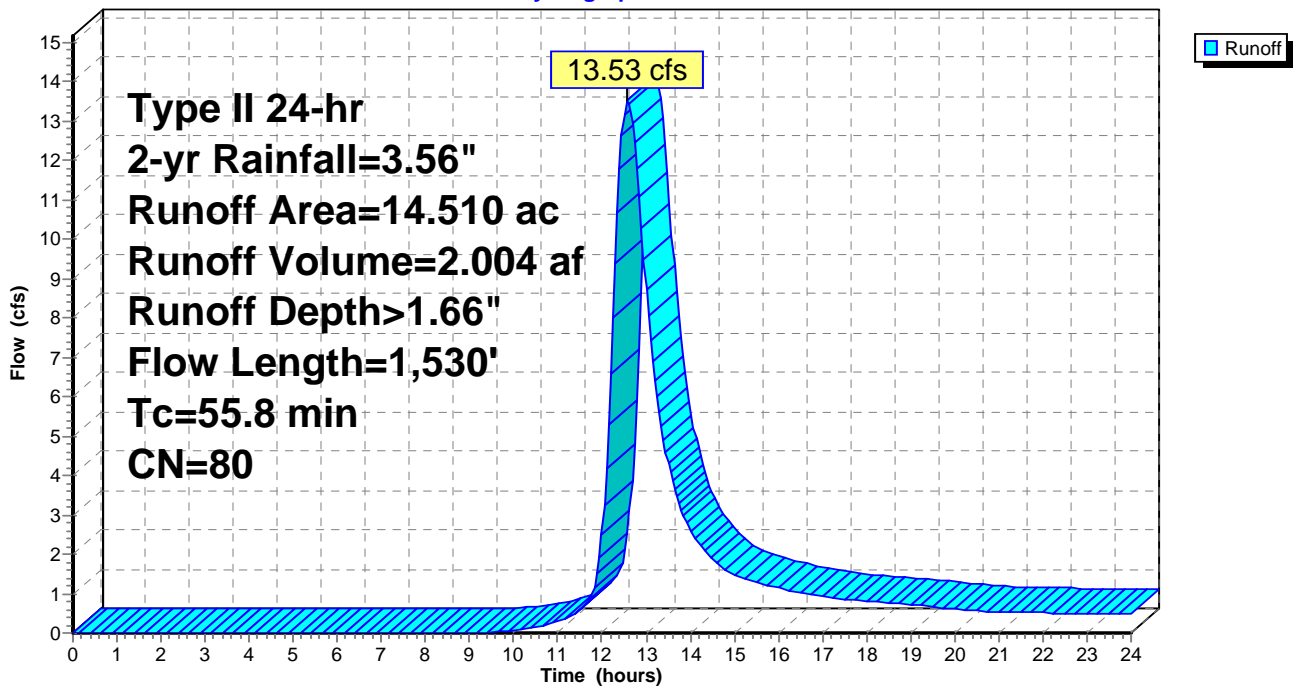
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type II 24-hr 2-yr Rainfall=3.56"

Area (ac)	CN	Description
14.280	80	>75% Grass cover, Good, HSG D
0.230	98	Paved parking, HSG B
14.510	80	Weighted Average
14.280		98.41% Pervious Area
0.230		1.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	75	0.0260	0.13		<b>Sheet Flow, AB</b> Grass: Dense n= 0.240 P2= 3.56"
14.2	75	0.0100	0.09		<b>Sheet Flow, BC</b> Grass: Dense n= 0.240 P2= 3.56"
31.1	1,306	0.0100	0.70		<b>Shallow Concentrated Flow, BC</b> Short Grass Pasture Kv= 7.0 fps
0.8	74	0.0500	1.57		<b>Shallow Concentrated Flow, DE</b> Short Grass Pasture Kv= 7.0 fps
55.8	1,530	Total			

**Subcatchment P-1d: P-1d**

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**Summary for Subcatchment P-1e: P-1e**

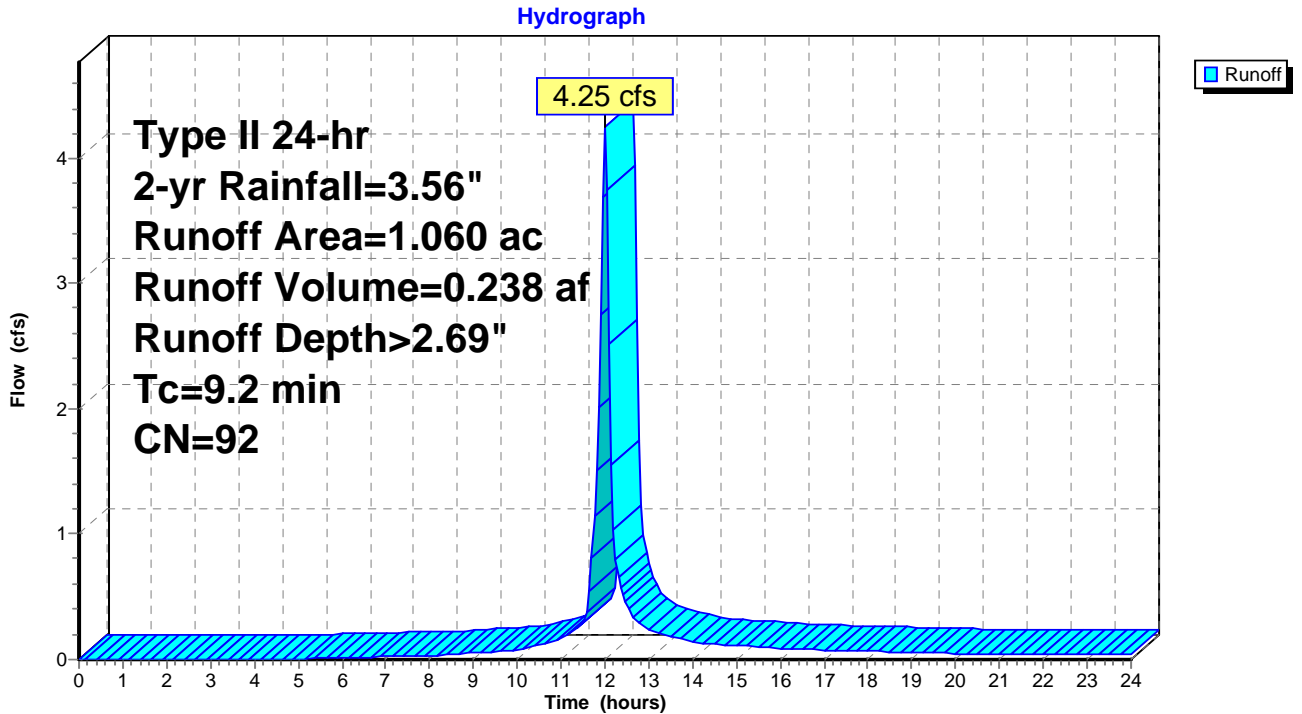
Runoff = 4.25 cfs @ 12.00 hrs, Volume= 0.238 af, Depth> 2.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type II 24-hr 2-yr Rainfall=3.56"

Area (ac)	CN	Description
0.690	98	Paved parking, HSG B
0.370	80	>75% Grass cover, Good, HSG D
1.060	92	Weighted Average
0.370		34.91% Pervious Area
0.690		65.09% Impervious Area

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

**Subcatchment P-1e: P-1e**



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**Summary for Subcatchment P-2: P-2**

Runoff = 5.27 cfs @ 12.94 hrs, Volume= 1.060 af, Depth> 1.31"

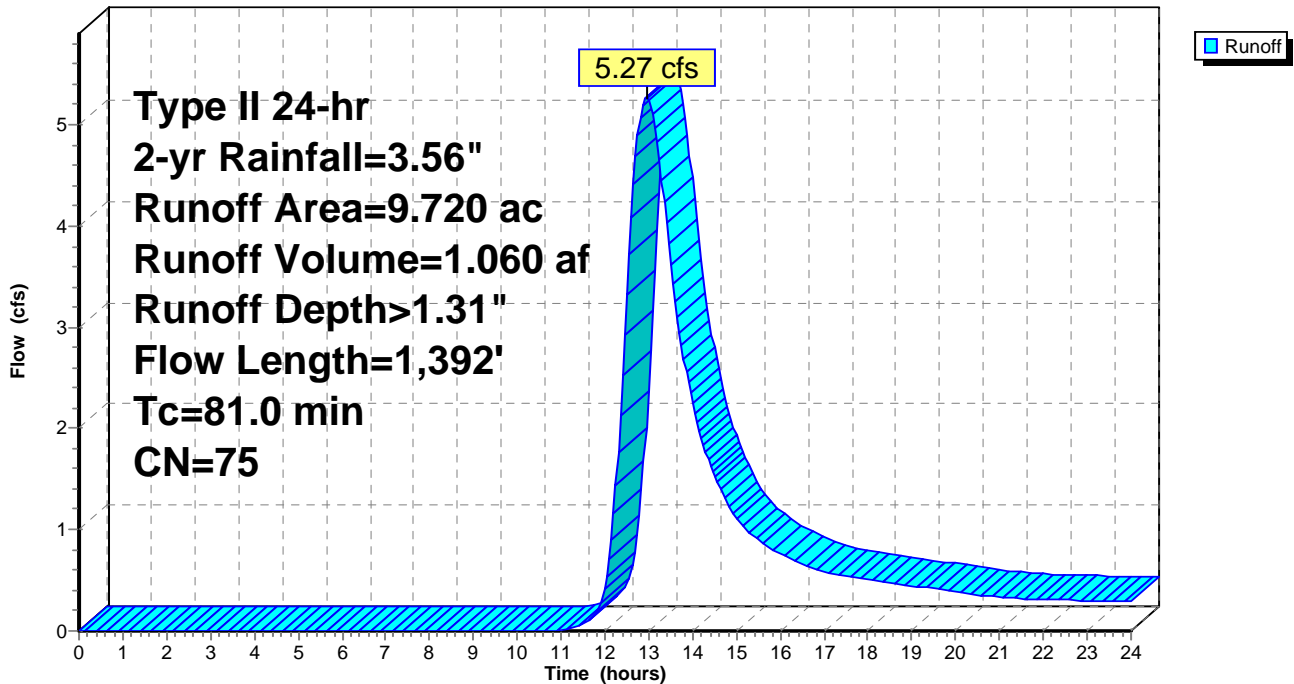
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 2-yr Rainfall=3.56"

Area (ac)	CN	Description
2.390	66	Woods, Poor, HSG B
3.450	77	Woods, Poor, HSG C
3.880	80	>75% Grass cover, Good, HSG D
9.720	75	Weighted Average
9.720		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	150	0.0660	0.14		<b>Sheet Flow, AB</b> Woods: Light underbrush n= 0.400 P2= 3.56"
59.0	1,048	0.0035	0.30		<b>Shallow Concentrated Flow, BC</b> Woodland Kv= 5.0 fps
4.5	194	0.0210	0.72		<b>Shallow Concentrated Flow, CD</b> Woodland Kv= 5.0 fps
81.0	1,392	Total			

**Subcatchment P-2: P-2**

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## Summary for Subcatchment P-3: P-3

Runoff = 4.89 cfs @ 12.19 hrs, Volume= 0.422 af, Depth> 1.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type II 24-hr 2-yr Rainfall=3.56"

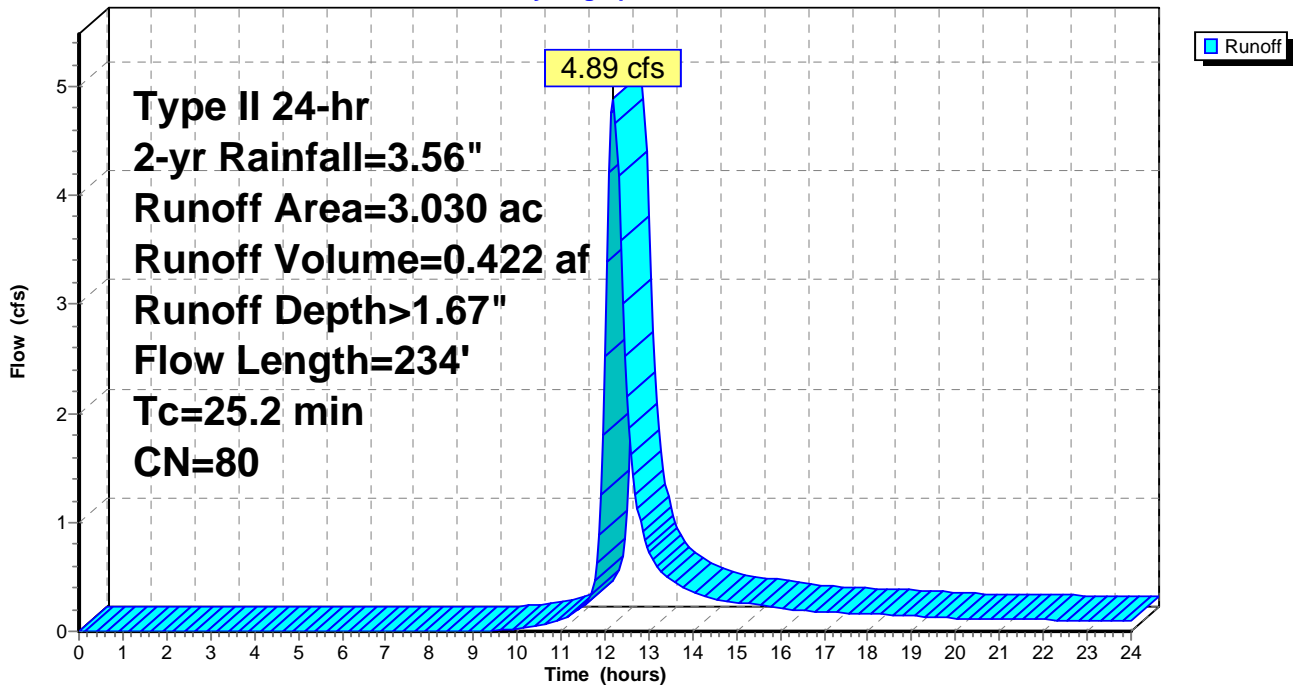
Area (ac)	CN	Description
3.030	80	>75% Grass cover, Good, HSG D
3.030		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.8	150	0.0110	0.11		<b>Sheet Flow, AB</b> Grass: Dense n= 0.240 P2= 3.56"
1.4	84	0.0210	1.01		<b>Shallow Concentrated Flow, BC</b> Short Grass Pasture Kv= 7.0 fps
25.2	234	Total			

## Subcatchment P-3: P-3

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**Summary for Subcatchment P-4: P-4**

Runoff = 3.48 cfs @ 12.34 hrs, Volume= 0.391 af, Depth> 1.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
Type II 24-hr 2-yr Rainfall=3.56"

Area (ac)	CN	Description
1.830	83	Woods, Poor, HSG D
1.140	66	Woods, Poor, HSG B
0.290	80	>75% Grass cover, Good, HSG D
0.110	61	>75% Grass cover, Good, HSG B
3.370	76	Weighted Average
3.370		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.6	150	0.0600	0.08		<b>Sheet Flow, AB</b> Woods: Dense underbrush n= 0.800 P2= 3.56"
4.9	440	0.0890	1.49		<b>Shallow Concentrated Flow, BC</b> Woodland Kv= 5.0 fps
36.5	590	Total			

**Subcatchment P-4: P-4**

Hydrograph

