

**Routing Diagram for Pret Development Analysis - MS 11-2-25**  
 Prepared by {enter your company name here}, Printed 11/2/2025  
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# Pret Development Analysis - MS 11-2-25

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## Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
4.171	80	>75% Grass cover, Good, HSG D (1S, 2S, 3S)
0.037	98	Paved parking, HSG D (3S)
0.084	98	Unconnected pavement, HSG D (2S)
<b>4.292</b>	<b>81</b>	<b>TOTAL AREA</b>

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### Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
4.292	HSG D	1S, 2S, 3S
0.000	Other	
<b>4.292</b>		<b>TOTAL AREA</b>

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**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	4.171	0.000	4.171	>75% Grass cover, Good	1S, 2S, 3S
0.000	0.000	0.000	0.037	0.000	0.037	Paved parking	3S
0.000	0.000	0.000	0.084	0.000	0.084	Unconnected pavement	2S
<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>4.292</b>	<b>0.000</b>	<b>4.292</b>	<b>TOTAL AREA</b>	

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**Pipe Listing (all nodes)**

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	2P	134.36	132.70	215.0	0.0077	0.011	12.0	0.0	0.0
2	5P	129.50	127.39	430.0	0.0049	0.011	21.0	0.0	0.0

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Sub-Catchment 1** Runoff Area=0.967 ac 0.00% Impervious Runoff Depth=1.46"  
Flow Length=388' Slope=0.0150 '/' Tc=13.0 min CN=80 Runoff=1.31 cfs 0.118 af**Subcatchment 2S: Sub-Catchment 2** Runoff Area=0.585 ac 14.36% Impervious Runoff Depth=1.53"  
Flow Length=128' Tc=3.9 min UI Adjusted CN=81 Runoff=1.13 cfs 0.075 af**Subcatchment 3S: Sub-Catchment 4** Runoff Area=2.740 ac 1.35% Impervious Runoff Depth=1.46"  
Flow Length=460' Slope=0.0150 '/' Tc=14.4 min CN=80 Runoff=3.57 cfs 0.334 af**Pond 1P: Outfall # 1 - Resource Area West** Inflow=1.31 cfs 0.118 af  
Primary=1.31 cfs 0.118 af**Pond 2P: Outfall #2 to CB** Peak Elev=134.88' Inflow=1.13 cfs 0.075 af  
12.0" Round Culvert n=0.011 L=215.0' S=0.0077 '/' Outflow=1.13 cfs 0.075 af**Pond 4P: Outfall # 4 - Resource Area North Corner** Inflow=4.12 cfs 0.409 af  
Primary=4.12 cfs 0.409 af**Pond 5P: (new Pond)** Peak Elev=129.97' Inflow=1.13 cfs 0.075 af  
21.0" Round Culvert n=0.011 L=430.0' S=0.0049 '/' Outflow=1.13 cfs 0.075 af**Total Runoff Area = 4.292 ac Runoff Volume = 0.527 af Average Runoff Depth = 1.47"**  
**97.18% Pervious = 4.171 ac 2.82% Impervious = 0.121 ac**

### Summary for Subcatchment 1S: Sub-Catchment 1

Runoff = 1.31 cfs @ 12.18 hrs, Volume= 0.118 af, Depth= 1.46"

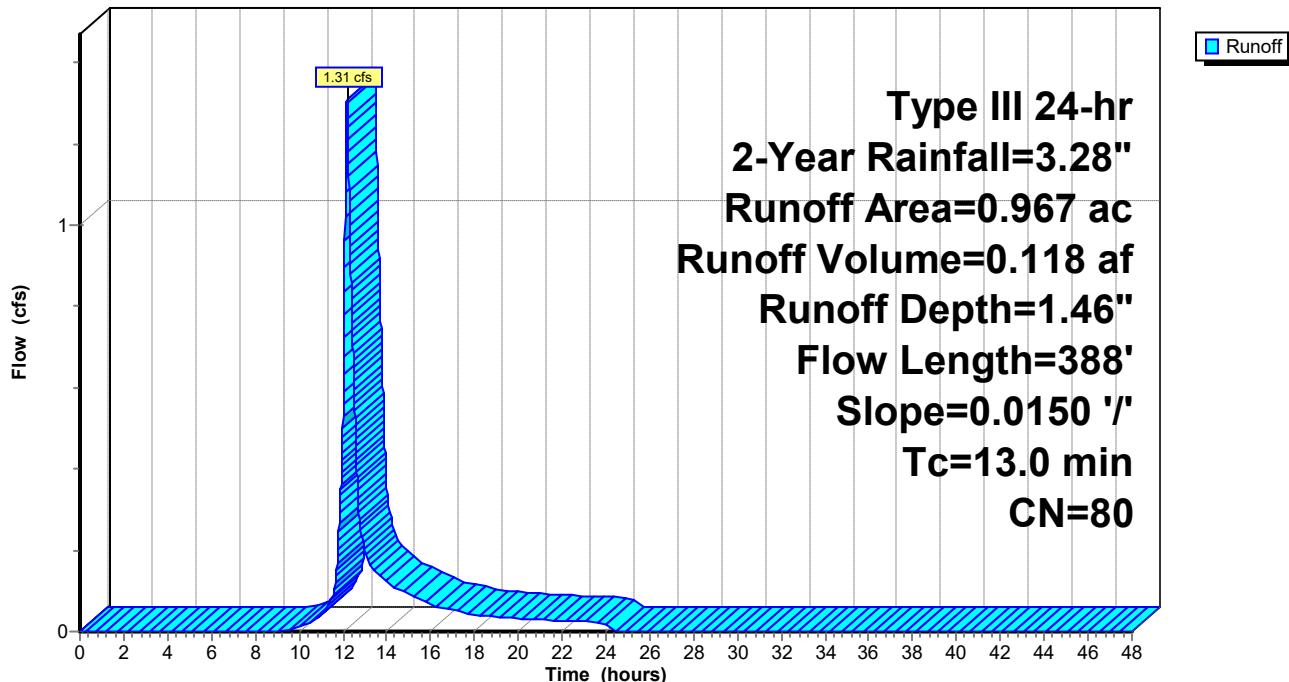
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-Year Rainfall=3.28"

Area (ac)	CN	Description
0.967	80	>75% Grass cover, Good, HSG D
0.967		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	50	0.0150	0.13		<b>Sheet Flow, Greass Area</b> Grass: Short n= 0.150 P2= 3.10"
6.6	338	0.0150	0.86		<b>Shallow Concentrated Flow, Grass Field</b> Short Grass Pasture Kv= 7.0 fps
13.0	388				Total

### Subcatchment 1S: Sub-Catchment 1

Hydrograph



### Summary for Subcatchment 2S: Sub-Catchment 2

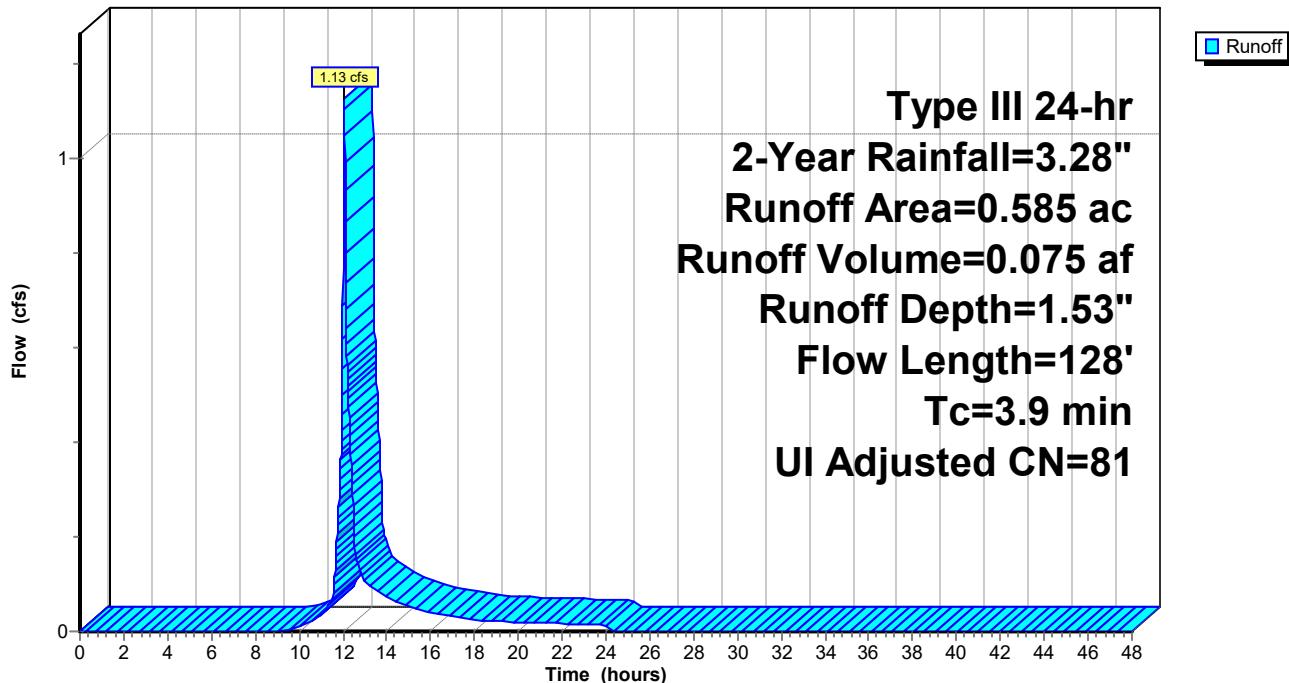
Runoff = 1.13 cfs @ 12.06 hrs, Volume= 0.075 af, Depth= 1.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-Year Rainfall=3.28"

Area (ac)	CN	Adj	Description
0.084	98		Unconnected pavement, HSG D
0.501	80		>75% Grass cover, Good, HSG D
0.585	83	81	Weighted Average, UI Adjusted
0.501			85.64% Pervious Area
0.084			14.36% Impervious Area
0.084			100.00% Unconnected
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)
3.3	50	0.0800	0.25
0.6	78	0.1000	2.21
3.9	128	Total	
			<b>Sheet Flow, Grass Hill</b> Grass: Short n= 0.150 P2= 3.10"
			<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps

### Subcatchment 2S: Sub-Catchment 2

Hydrograph



### Summary for Subcatchment 3S: Sub-Catchment 4

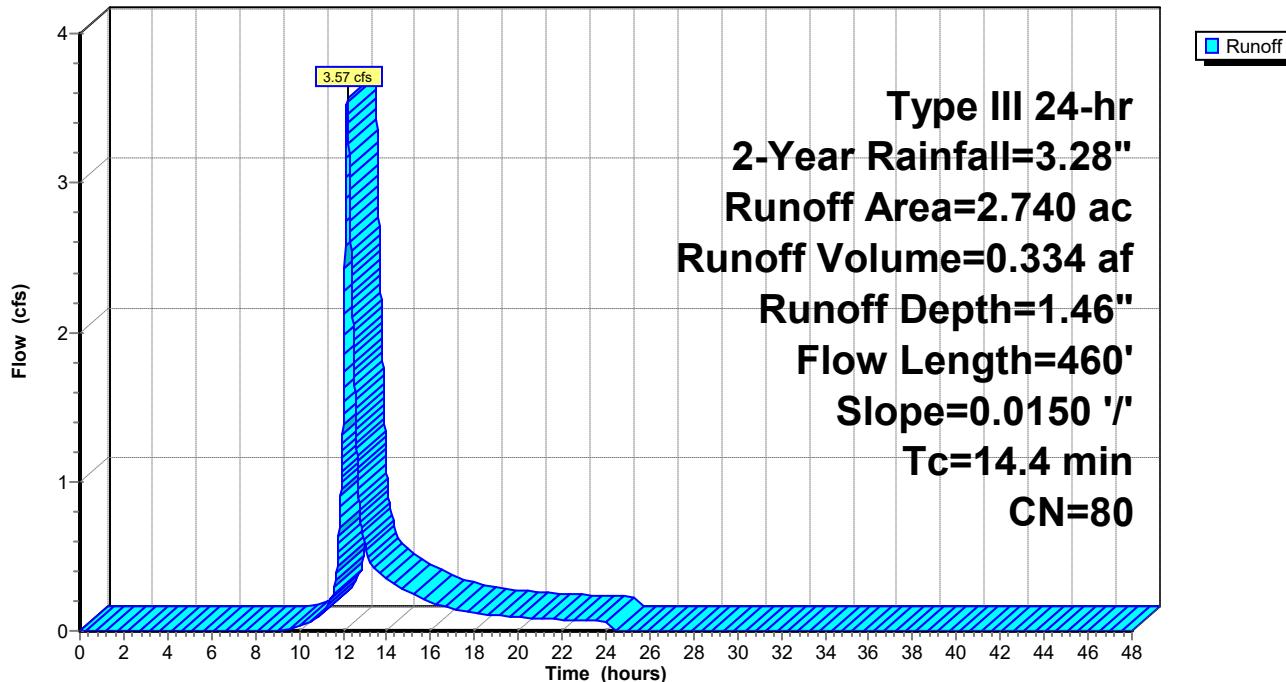
Runoff = 3.57 cfs @ 12.21 hrs, Volume= 0.334 af, Depth= 1.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 2-Year Rainfall=3.28"

Area (ac)	CN	Description		
0.037	98	Paved parking, HSG D		
2.703	80	>75% Grass cover, Good, HSG D		
2.740	80	Weighted Average		
2.703		98.65% Pervious Area		
0.037		1.35% Impervious Area		
Tc (min)	Length (feet)	Slope (ft/ft) Velocity (ft/sec) Capacity (cfs) Description		
6.4	50	0.0150	0.13	<b>Sheet Flow, Clay Infield</b> Grass: Short n= 0.150 P2= 3.10"
8.0	410	0.0150	0.86	<b>Shallow Concentrated Flow, Grass Field</b> Short Grass Pasture Kv= 7.0 fps
14.4	460	Total		

### Subcatchment 3S: Sub-Catchment 4

Hydrograph



### Summary for Pond 1P: Outfall # 1 - Resource Area West

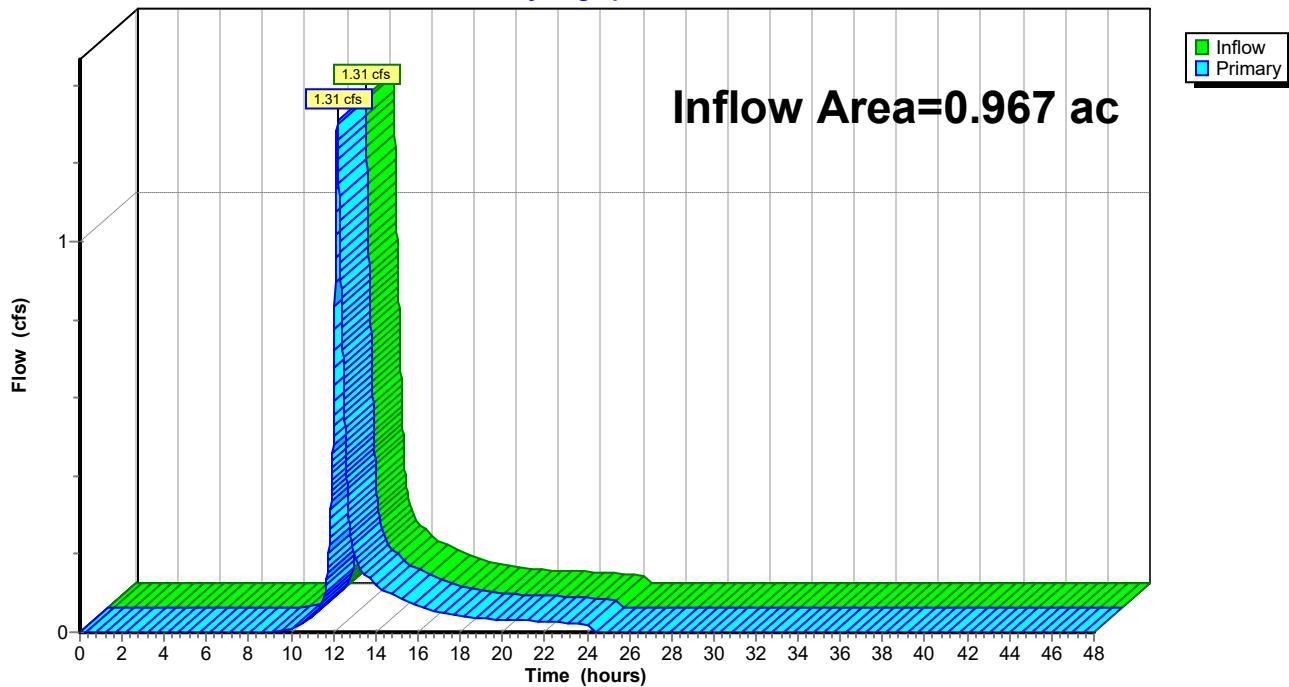
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.967 ac, 0.00% Impervious, Inflow Depth = 1.46" for 2-Year event  
 Inflow = 1.31 cfs @ 12.18 hrs, Volume= 0.118 af  
 Primary = 1.31 cfs @ 12.18 hrs, Volume= 0.118 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

### Pond 1P: Outfall # 1 - Resource Area West

Hydrograph



### Summary for Pond 2P: Outfall #2 to CB

Inflow Area = 0.585 ac, 14.36% Impervious, Inflow Depth = 1.53" for 2-Year event  
 Inflow = 1.13 cfs @ 12.06 hrs, Volume= 0.075 af  
 Outflow = 1.13 cfs @ 12.06 hrs, Volume= 0.075 af, Atten= 0%, Lag= 0.0 min  
 Primary = 1.13 cfs @ 12.06 hrs, Volume= 0.075 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 134.88' @ 12.06 hrs

Flood Elev= 138.00'

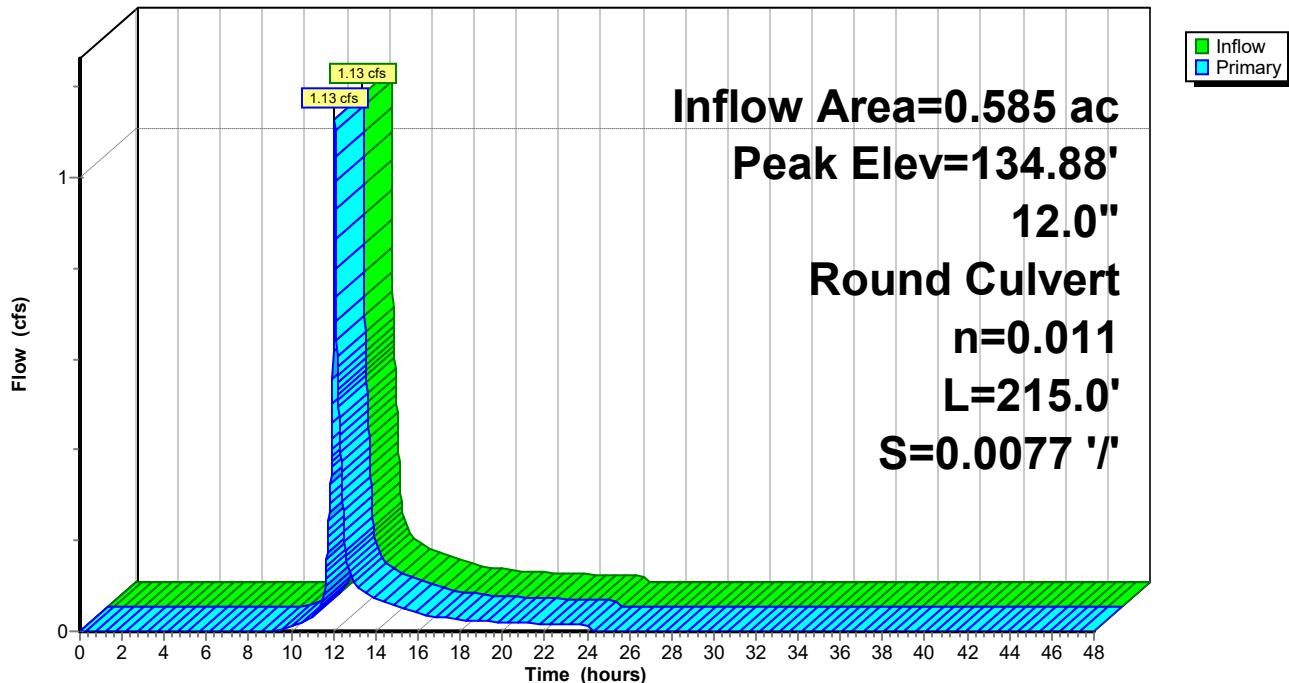
Device	Routing	Invert	Outlet Devices
#1	Primary	134.36'	<b>12.0" Round Culvert</b> L= 215.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 134.36' / 132.70' S= 0.0077 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

**Primary OutFlow** Max=1.13 cfs @ 12.06 hrs HW=134.88' (Free Discharge)

↑=Culvert (Barrel Controls 1.13 cfs @ 3.98 fps)

### Pond 2P: Outfall #2 to CB

Hydrograph



### Summary for Pond 4P: Outfall # 4 - Resource Area North Corner

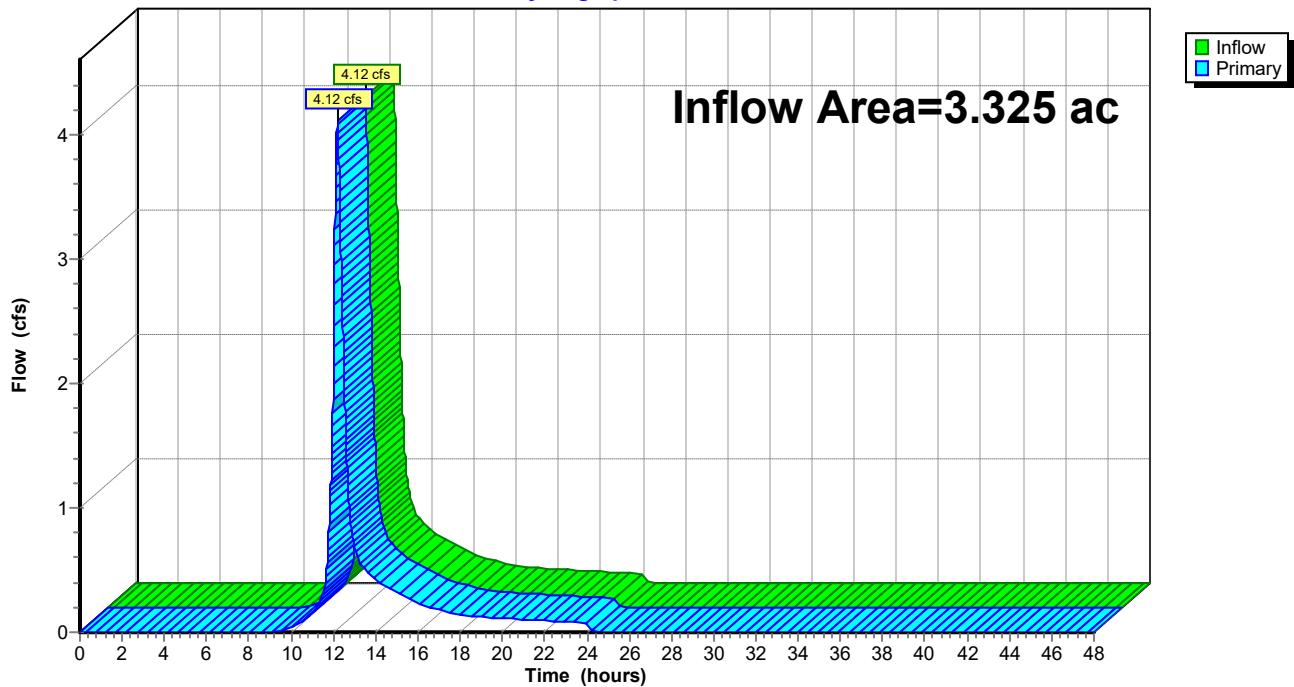
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.325 ac, 3.64% Impervious, Inflow Depth = 1.48" for 2-Year event  
 Inflow = 4.12 cfs @ 12.20 hrs, Volume= 0.409 af  
 Primary = 4.12 cfs @ 12.20 hrs, Volume= 0.409 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

#### Pond 4P: Outfall # 4 - Resource Area North Corner

Hydrograph



### Summary for Pond 5P: (new Pond)

Inflow Area = 0.585 ac, 14.36% Impervious, Inflow Depth = 1.53" for 2-Year event  
 Inflow = 1.13 cfs @ 12.06 hrs, Volume= 0.075 af  
 Outflow = 1.13 cfs @ 12.06 hrs, Volume= 0.075 af, Atten= 0%, Lag= 0.0 min  
 Primary = 1.13 cfs @ 12.06 hrs, Volume= 0.075 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 129.97' @ 12.06 hrs

Flood Elev= 138.90'

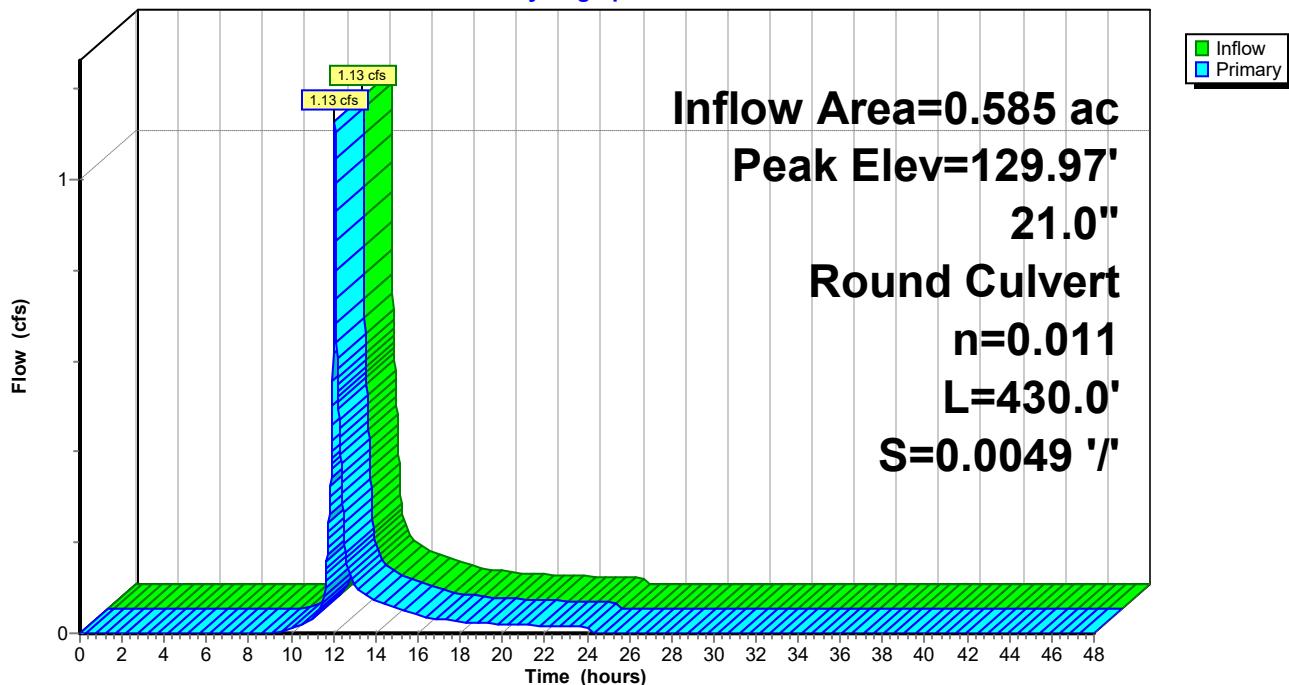
Device	Routing	Invert	Outlet Devices
#1	Primary	129.50'	<b>21.0" Round Culvert</b> L= 430.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 129.50' / 127.39' S= 0.0049 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 2.41 sf

**Primary OutFlow** Max=1.13 cfs @ 12.06 hrs HW=129.97' (Free Discharge)

↑1=Culvert (Barrel Controls 1.13 cfs @ 3.28 fps)

### Pond 5P: (new Pond)

Hydrograph



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Sub-Catchment 1** Runoff Area=0.967 ac 0.00% Impervious Runoff Depth=3.05"  
Flow Length=388' Slope=0.0150 '/' Tc=13.0 min CN=80 Runoff=2.76 cfs 0.246 af**Subcatchment 2S: Sub-Catchment 2** Runoff Area=0.585 ac 14.36% Impervious Runoff Depth=3.14"  
Flow Length=128' Tc=3.9 min UI Adjusted CN=81 Runoff=2.32 cfs 0.153 af**Subcatchment 3S: Sub-Catchment 4** Runoff Area=2.740 ac 1.35% Impervious Runoff Depth=3.05"  
Flow Length=460' Slope=0.0150 '/' Tc=14.4 min CN=80 Runoff=7.53 cfs 0.697 af**Pond 1P: Outfall # 1 - Resource Area West** Inflow=2.76 cfs 0.246 af  
Primary=2.76 cfs 0.246 af**Pond 2P: Outfall #2 to CB** Peak Elev=135.16' Inflow=2.32 cfs 0.153 af  
12.0" Round Culvert n=0.011 L=215.0' S=0.0077 '/' Outflow=2.32 cfs 0.153 af**Pond 4P: Outfall # 4 - Resource Area North Corner** Inflow=8.63 cfs 0.850 af  
Primary=8.63 cfs 0.850 af**Pond 5P: (new Pond)** Peak Elev=130.18' Inflow=2.32 cfs 0.153 af  
21.0" Round Culvert n=0.011 L=430.0' S=0.0049 '/' Outflow=2.32 cfs 0.153 af**Total Runoff Area = 4.292 ac Runoff Volume = 1.096 af Average Runoff Depth = 3.06"**  
**97.18% Pervious = 4.171 ac 2.82% Impervious = 0.121 ac**

### Summary for Subcatchment 1S: Sub-Catchment 1

Runoff = 2.76 cfs @ 12.18 hrs, Volume= 0.246 af, Depth= 3.05"

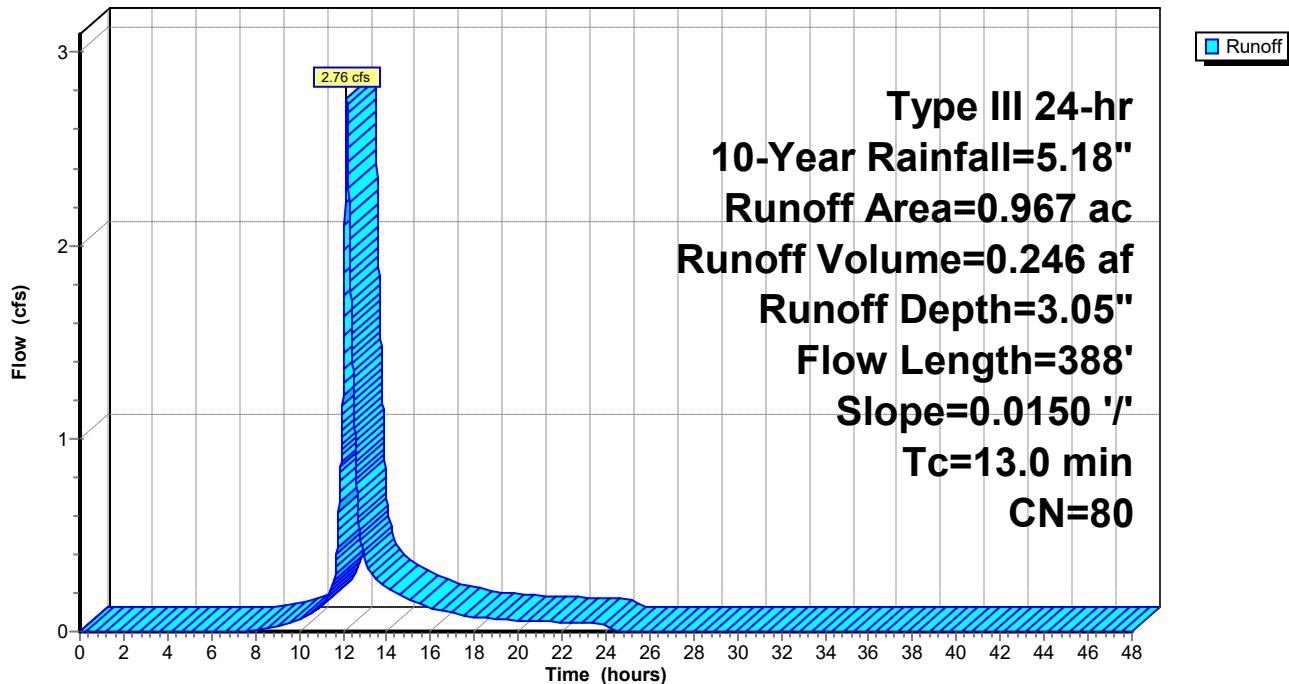
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-Year Rainfall=5.18"

Area (ac)	CN	Description
0.967	80	>75% Grass cover, Good, HSG D
0.967		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	50	0.0150	0.13		<b>Sheet Flow, Greass Area</b> Grass: Short n= 0.150 P2= 3.10"
6.6	338	0.0150	0.86		<b>Shallow Concentrated Flow, Grass Field</b> Short Grass Pasture Kv= 7.0 fps
13.0	388				Total

### Subcatchment 1S: Sub-Catchment 1

Hydrograph



## Summary for Subcatchment 2S: Sub-Catchment 2

Runoff = 2.32 cfs @ 12.06 hrs, Volume= 0.153 af, Depth= 3.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-Year Rainfall=5.18"

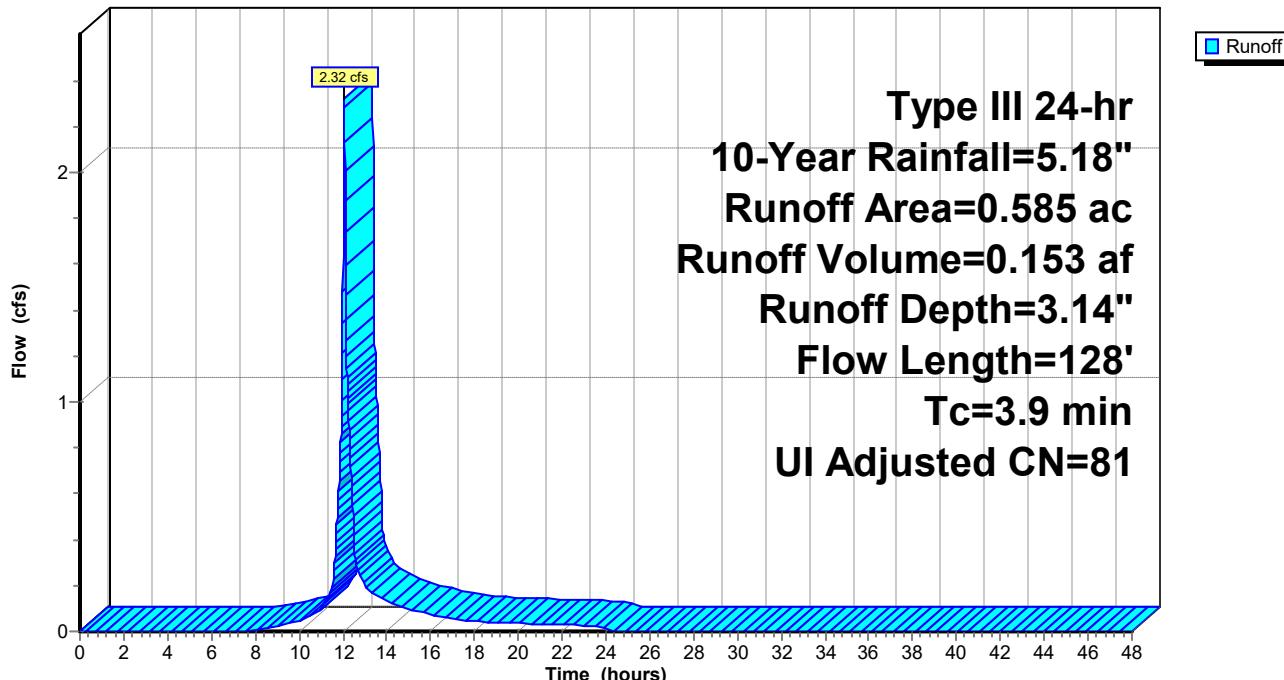
Area (ac)	CN	Adj	Description
0.084	98		Unconnected pavement, HSG D
0.501	80		>75% Grass cover, Good, HSG D
0.585	83	81	Weighted Average, UI Adjusted
0.501			85.64% Pervious Area
0.084			14.36% Impervious Area
0.084			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	50	0.0800	0.25		<b>Sheet Flow, Grass Hill</b> Grass: Short n= 0.150 P2= 3.10"
0.6	78	0.1000	2.21		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
3.9	128	Total			

## Subcatchment 2S: Sub-Catchment 2

Hydrograph



### Summary for Subcatchment 3S: Sub-Catchment 4

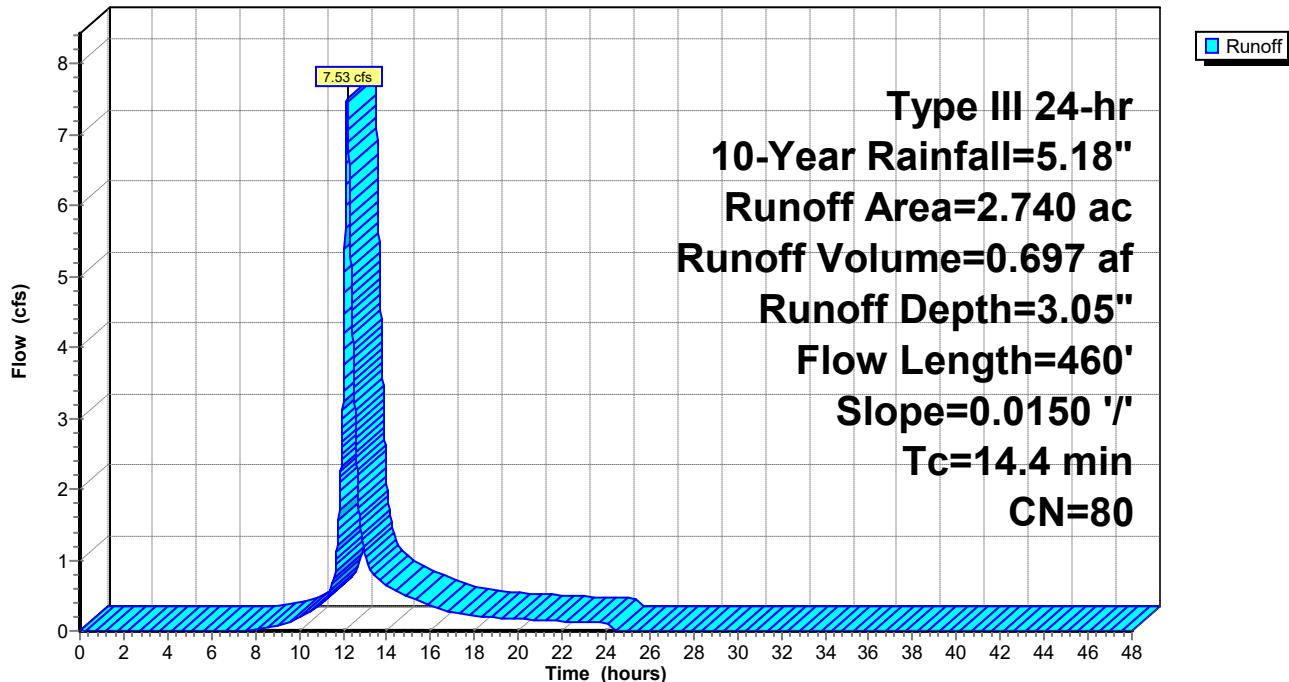
Runoff = 7.53 cfs @ 12.20 hrs, Volume= 0.697 af, Depth= 3.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-Year Rainfall=5.18"

Area (ac)	CN	Description		
0.037	98	Paved parking, HSG D		
2.703	80	>75% Grass cover, Good, HSG D		
2.740	80	Weighted Average		
2.703		98.65% Pervious Area		
0.037		1.35% Impervious Area		
Tc (min)	Length (feet)	Slope (ft/ft) Velocity (ft/sec) Capacity (cfs) Description		
6.4	50	0.0150	0.13	<b>Sheet Flow, Clay Infield</b> Grass: Short n= 0.150 P2= 3.10"
8.0	410	0.0150	0.86	<b>Shallow Concentrated Flow, Grass Field</b> Short Grass Pasture Kv= 7.0 fps
14.4	460	Total		

### Subcatchment 3S: Sub-Catchment 4

Hydrograph



### Summary for Pond 1P: Outfall # 1 - Resource Area West

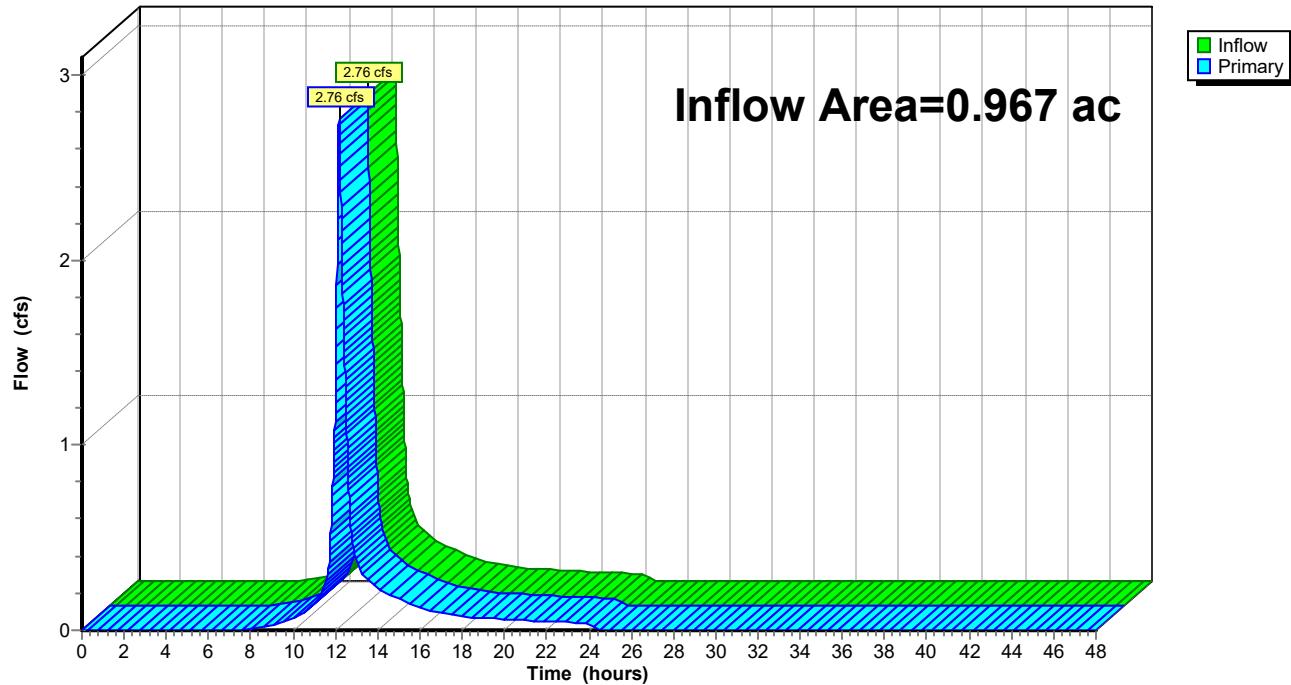
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.967 ac, 0.00% Impervious, Inflow Depth = 3.05" for 10-Year event  
 Inflow = 2.76 cfs @ 12.18 hrs, Volume= 0.246 af  
 Primary = 2.76 cfs @ 12.18 hrs, Volume= 0.246 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

### Pond 1P: Outfall # 1 - Resource Area West

Hydrograph



### Summary for Pond 2P: Outfall #2 to CB

Inflow Area = 0.585 ac, 14.36% Impervious, Inflow Depth = 3.14" for 10-Year event  
 Inflow = 2.32 cfs @ 12.06 hrs, Volume= 0.153 af  
 Outflow = 2.32 cfs @ 12.06 hrs, Volume= 0.153 af, Atten= 0%, Lag= 0.0 min  
 Primary = 2.32 cfs @ 12.06 hrs, Volume= 0.153 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 135.16' @ 12.06 hrs

Flood Elev= 138.00'

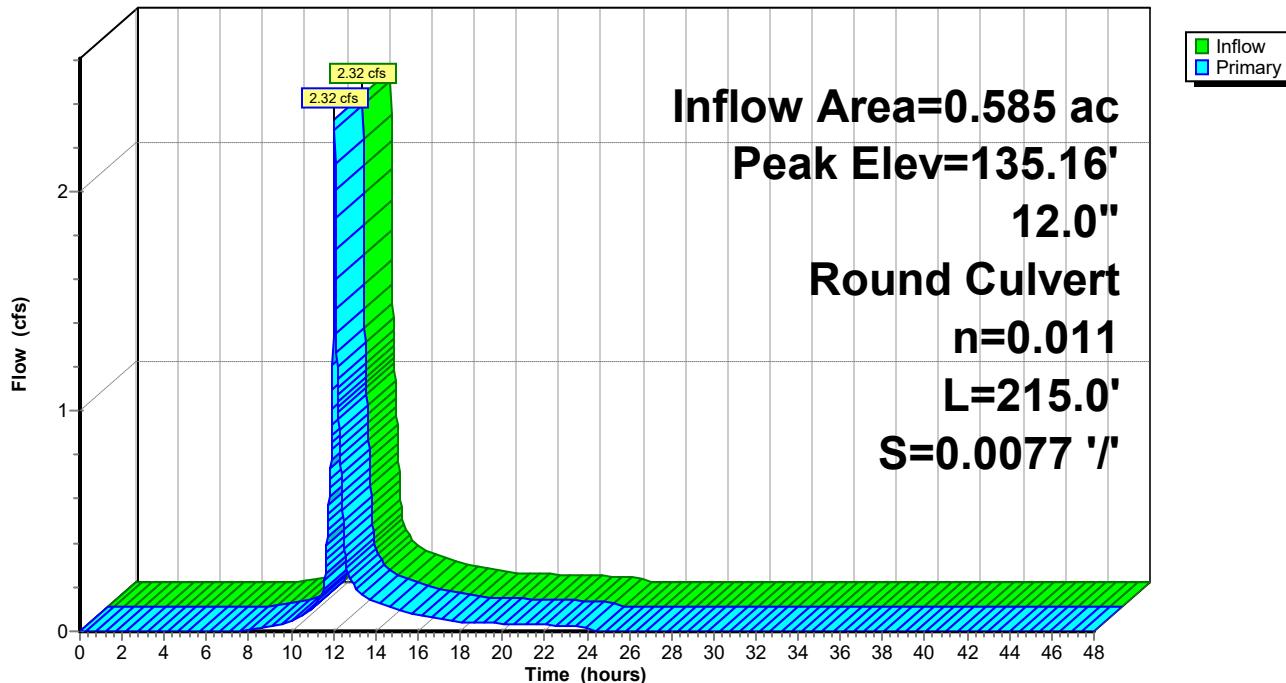
Device	Routing	Invert	Outlet Devices
#1	Primary	134.36'	<b>12.0" Round Culvert</b> L= 215.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 134.36' / 132.70' S= 0.0077 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

**Primary OutFlow** Max=2.32 cfs @ 12.06 hrs HW=135.16' (Free Discharge)

↑=Culvert (Barrel Controls 2.32 cfs @ 4.71 fps)

### Pond 2P: Outfall #2 to CB

Hydrograph



### Summary for Pond 4P: Outfall # 4 - Resource Area North Corner

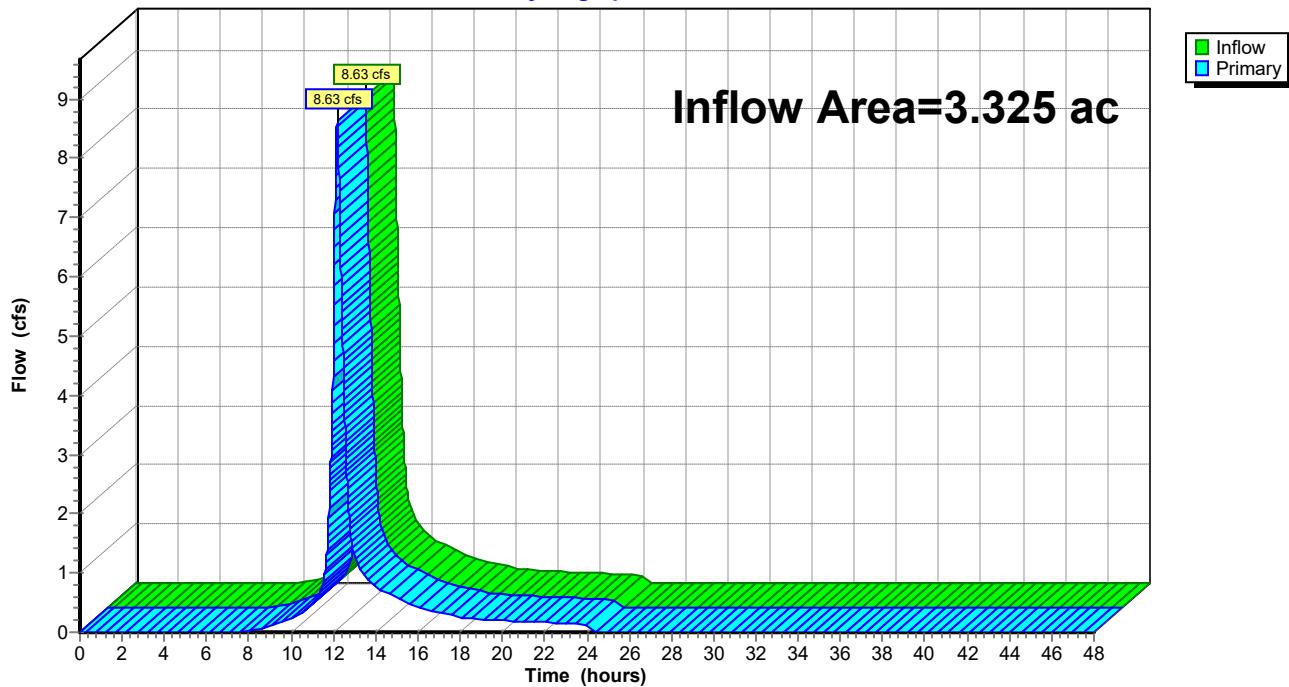
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.325 ac, 3.64% Impervious, Inflow Depth = 3.07" for 10-Year event  
 Inflow = 8.63 cfs @ 12.18 hrs, Volume= 0.850 af  
 Primary = 8.63 cfs @ 12.18 hrs, Volume= 0.850 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

#### Pond 4P: Outfall # 4 - Resource Area North Corner

Hydrograph



### Summary for Pond 5P: (new Pond)

Inflow Area = 0.585 ac, 14.36% Impervious, Inflow Depth = 3.14" for 10-Year event  
 Inflow = 2.32 cfs @ 12.06 hrs, Volume= 0.153 af  
 Outflow = 2.32 cfs @ 12.06 hrs, Volume= 0.153 af, Atten= 0%, Lag= 0.0 min  
 Primary = 2.32 cfs @ 12.06 hrs, Volume= 0.153 af

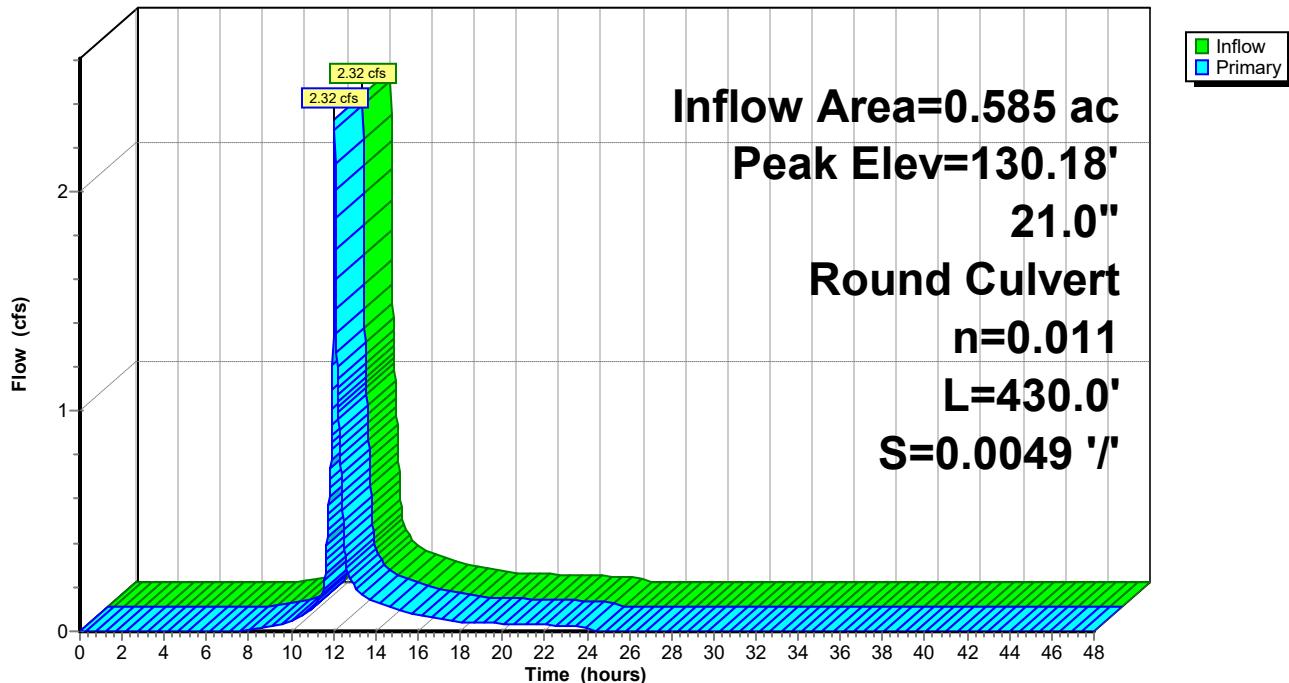
Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
 Peak Elev= 130.18' @ 12.06 hrs  
 Flood Elev= 138.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	129.50'	<b>21.0" Round Culvert</b> L= 430.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 129.50' / 127.39' S= 0.0049 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 2.41 sf

**Primary OutFlow** Max=2.32 cfs @ 12.06 hrs HW=130.18' (Free Discharge)  
 ↑1=Culvert (Barrel Controls 2.32 cfs @ 4.01 fps)

### Pond 5P: (new Pond)

Hydrograph



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Sub-Catchment 1** Runoff Area=0.967 ac 0.00% Impervious Runoff Depth=4.12"  
Flow Length=388' Slope=0.0150 '/' Tc=13.0 min CN=80 Runoff=3.71 cfs 0.332 af**Subcatchment 2S: Sub-Catchment 2** Runoff Area=0.585 ac 14.36% Impervious Runoff Depth=4.22"  
Flow Length=128' Tc=3.9 min UI Adjusted CN=81 Runoff=3.10 cfs 0.206 af**Subcatchment 3S: Sub-Catchment 4** Runoff Area=2.740 ac 1.35% Impervious Runoff Depth=4.12"  
Flow Length=460' Slope=0.0150 '/' Tc=14.4 min CN=80 Runoff=10.12 cfs 0.940 af**Pond 1P: Outfall # 1 - Resource Area West** Inflow=3.71 cfs 0.332 af  
Primary=3.71 cfs 0.332 af**Pond 2P: Outfall #2 to CB** Peak Elev=135.35' Inflow=3.10 cfs 0.206 af  
12.0" Round Culvert n=0.011 L=215.0' S=0.0077 '/' Outflow=3.10 cfs 0.206 af**Pond 4P: Outfall # 4 - Resource Area North Corner** Inflow=11.58 cfs 1.146 af  
Primary=11.58 cfs 1.146 af**Pond 5P: (new Pond)** Peak Elev=130.29' Inflow=3.10 cfs 0.206 af  
21.0" Round Culvert n=0.011 L=430.0' S=0.0049 '/' Outflow=3.10 cfs 0.206 af**Total Runoff Area = 4.292 ac Runoff Volume = 1.478 af Average Runoff Depth = 4.13"**  
**97.18% Pervious = 4.171 ac 2.82% Impervious = 0.121 ac**

### Summary for Subcatchment 1S: Sub-Catchment 1

Runoff = 3.71 cfs @ 12.18 hrs, Volume= 0.332 af, Depth= 4.12"

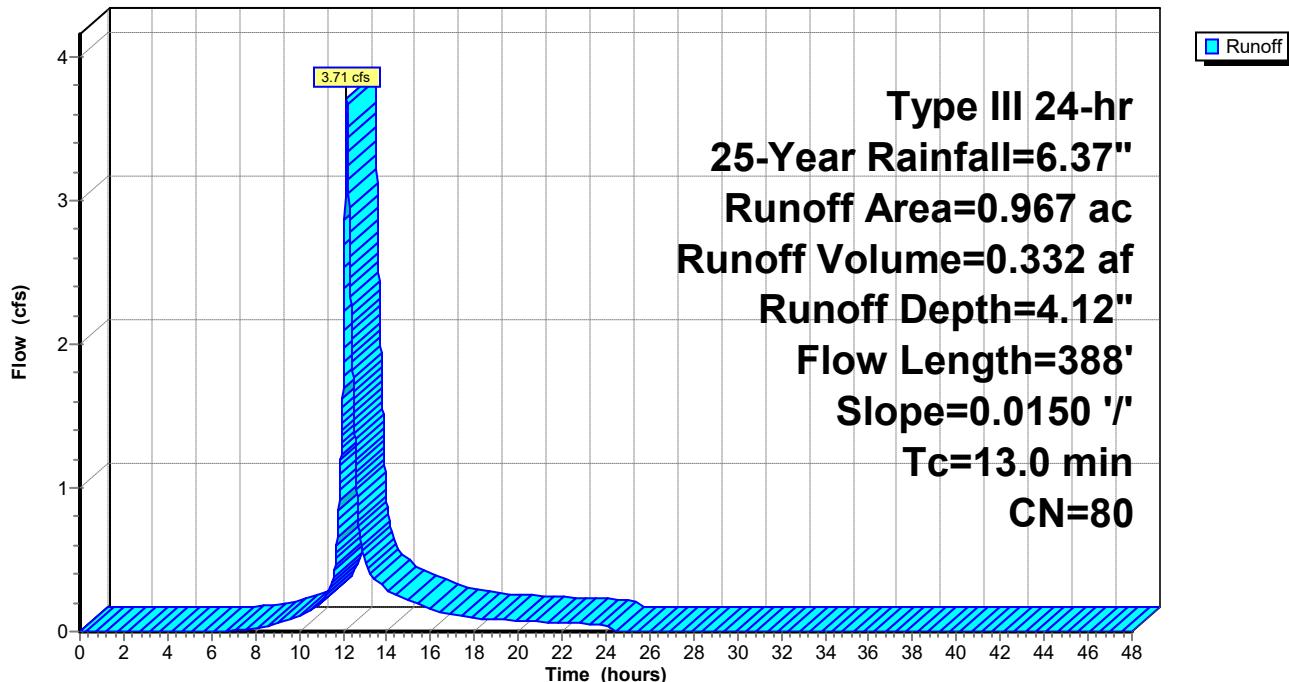
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-Year Rainfall=6.37"

Area (ac)	CN	Description
0.967	80	>75% Grass cover, Good, HSG D
0.967		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	50	0.0150	0.13		<b>Sheet Flow, Greass Area</b> Grass: Short n= 0.150 P2= 3.10"
6.6	338	0.0150	0.86		<b>Shallow Concentrated Flow, Grass Field</b> Short Grass Pasture Kv= 7.0 fps
13.0	388				Total

### Subcatchment 1S: Sub-Catchment 1

Hydrograph



### Summary for Subcatchment 2S: Sub-Catchment 2

Runoff = 3.10 cfs @ 12.06 hrs, Volume= 0.206 af, Depth= 4.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-Year Rainfall=6.37"

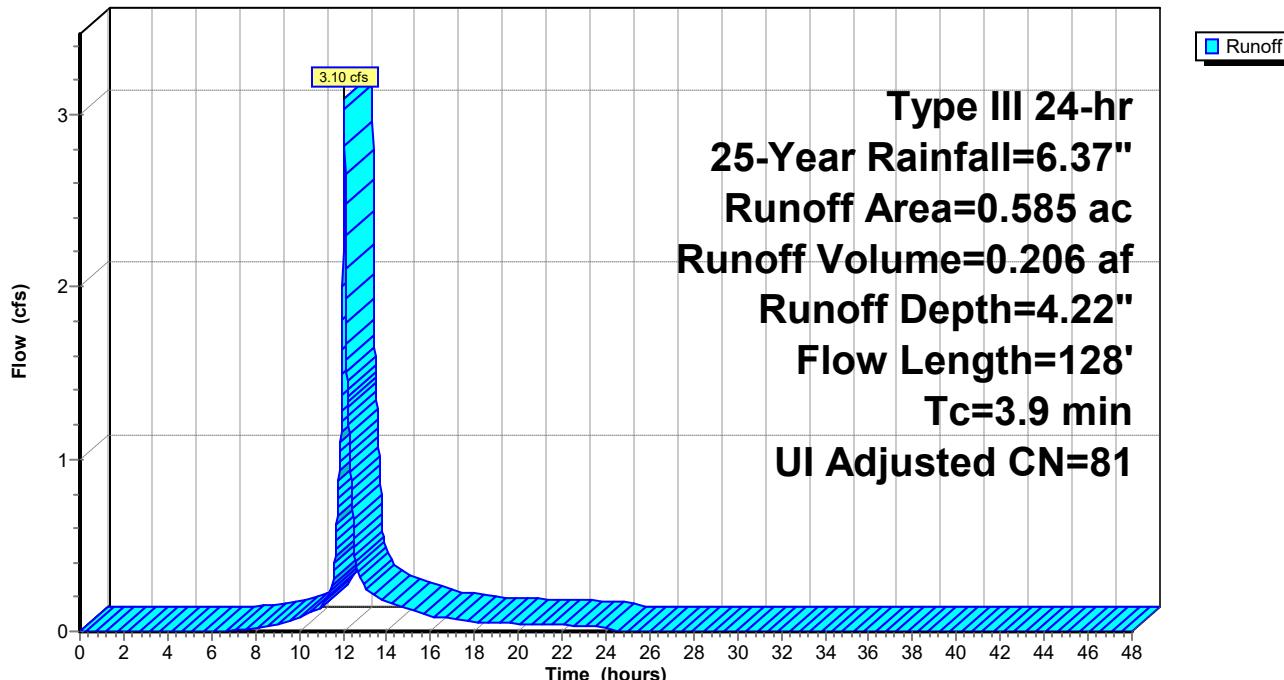
Area (ac)	CN	Adj	Description
0.084	98		Unconnected pavement, HSG D
0.501	80		>75% Grass cover, Good, HSG D
0.585	83	81	Weighted Average, UI Adjusted
0.501			85.64% Pervious Area
0.084			14.36% Impervious Area
0.084			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	50	0.0800	0.25		<b>Sheet Flow, Grass Hill</b> Grass: Short n= 0.150 P2= 3.10"
0.6	78	0.1000	2.21		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
3.9	128	Total			

### Subcatchment 2S: Sub-Catchment 2

Hydrograph



### Summary for Subcatchment 3S: Sub-Catchment 4

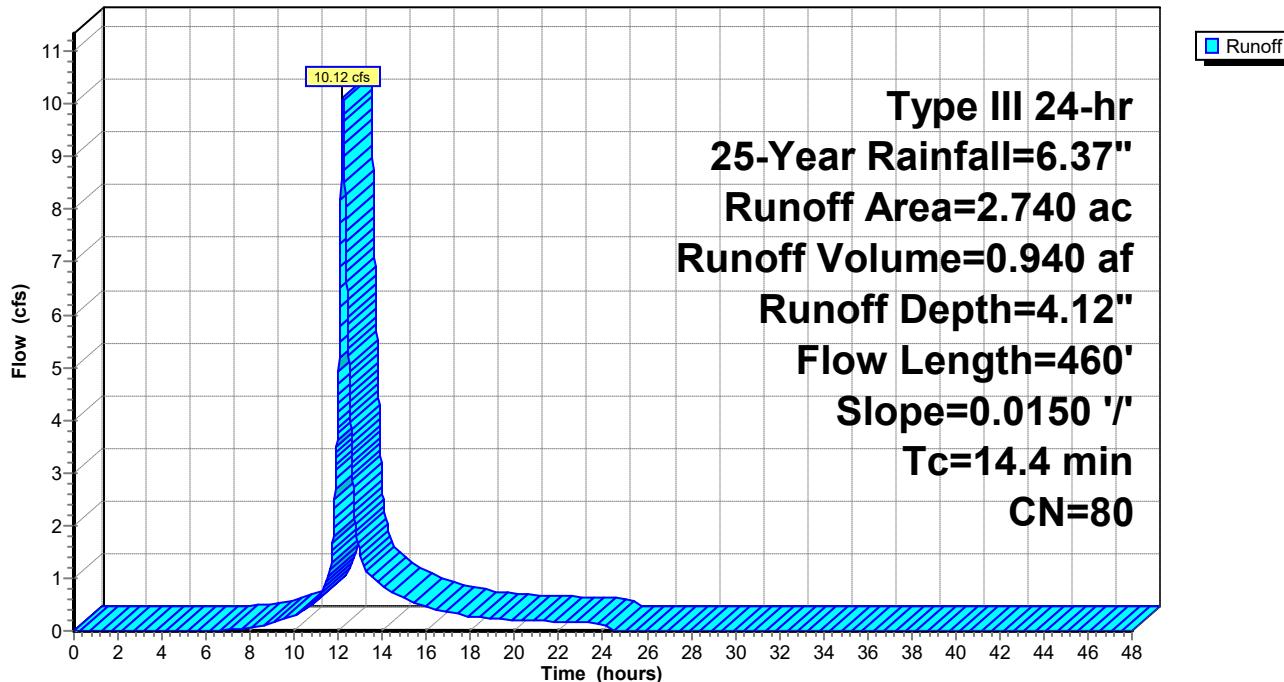
Runoff = 10.12 cfs @ 12.20 hrs, Volume= 0.940 af, Depth= 4.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25-Year Rainfall=6.37"

Area (ac)	CN	Description		
0.037	98	Paved parking, HSG D		
2.703	80	>75% Grass cover, Good, HSG D		
2.740	80	Weighted Average		
2.703		98.65% Pervious Area		
0.037		1.35% Impervious Area		
Tc (min)	Length (feet)	Slope (ft/ft) Velocity (ft/sec) Capacity (cfs) Description		
6.4	50	0.0150	0.13	<b>Sheet Flow, Clay Infield</b> Grass: Short n= 0.150 P2= 3.10"
8.0	410	0.0150	0.86	<b>Shallow Concentrated Flow, Grass Field</b> Short Grass Pasture Kv= 7.0 fps
14.4	460	Total		

### Subcatchment 3S: Sub-Catchment 4

Hydrograph



### Summary for Pond 1P: Outfall # 1 - Resource Area West

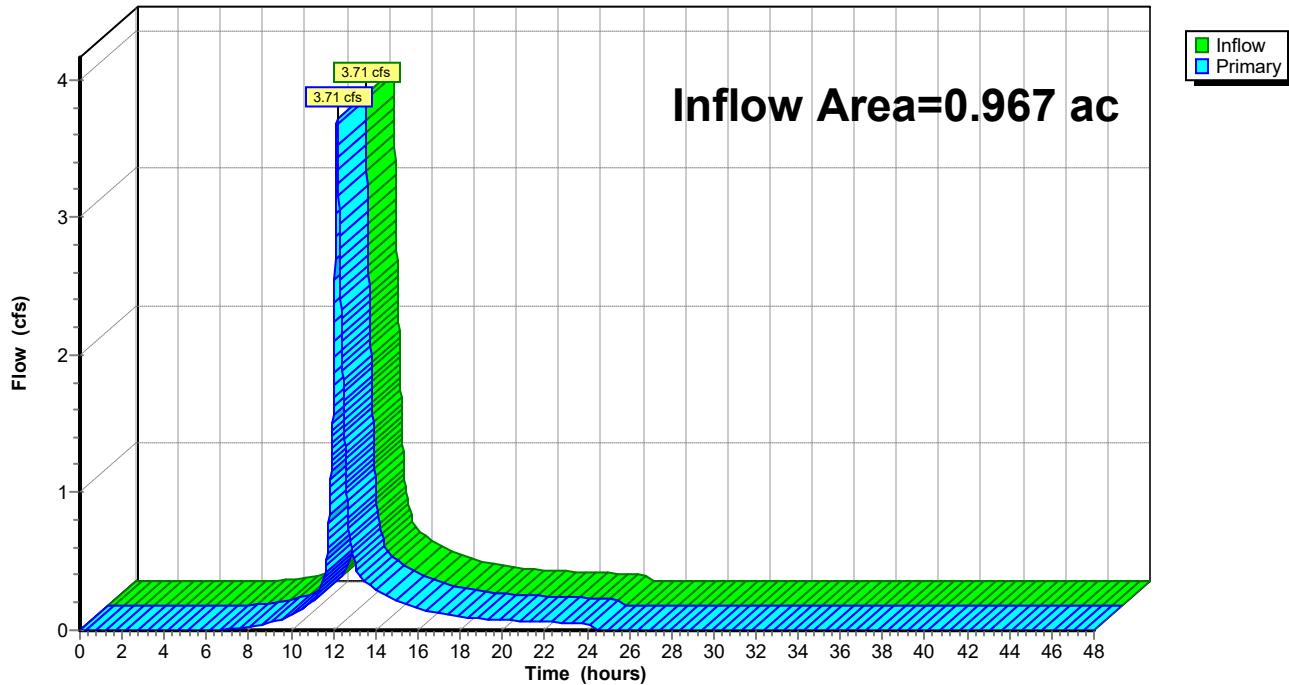
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.967 ac, 0.00% Impervious, Inflow Depth = 4.12" for 25-Year event  
 Inflow = 3.71 cfs @ 12.18 hrs, Volume= 0.332 af  
 Primary = 3.71 cfs @ 12.18 hrs, Volume= 0.332 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

### Pond 1P: Outfall # 1 - Resource Area West

Hydrograph



### Summary for Pond 2P: Outfall #2 to CB

Inflow Area = 0.585 ac, 14.36% Impervious, Inflow Depth = 4.22" for 25-Year event  
 Inflow = 3.10 cfs @ 12.06 hrs, Volume= 0.206 af  
 Outflow = 3.10 cfs @ 12.06 hrs, Volume= 0.206 af, Atten= 0%, Lag= 0.0 min  
 Primary = 3.10 cfs @ 12.06 hrs, Volume= 0.206 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 135.35' @ 12.06 hrs

Flood Elev= 138.00'

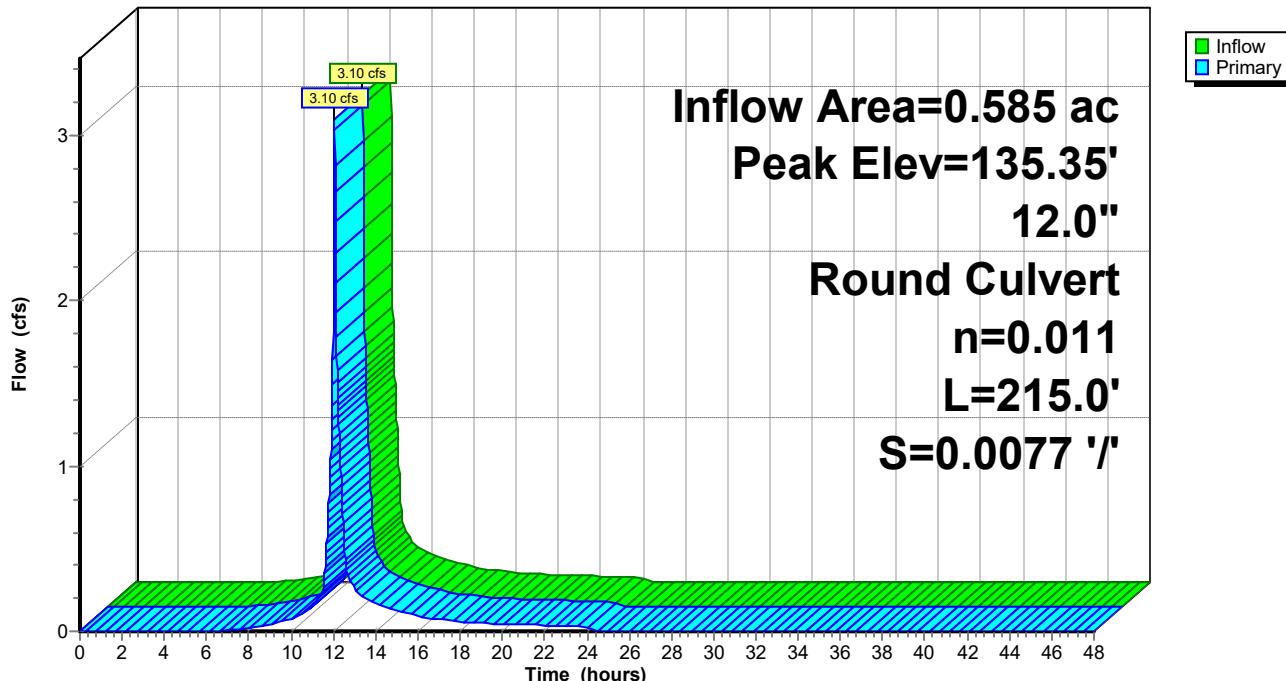
Device	Routing	Invert	Outlet Devices
#1	Primary	134.36'	<b>12.0" Round Culvert</b> L= 215.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 134.36' / 132.70' S= 0.0077 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

**Primary OutFlow** Max=3.09 cfs @ 12.06 hrs HW=135.35' (Free Discharge)

↑=Culvert (Barrel Controls 3.09 cfs @ 4.97 fps)

### Pond 2P: Outfall #2 to CB

Hydrograph



### Summary for Pond 4P: Outfall # 4 - Resource Area North Corner

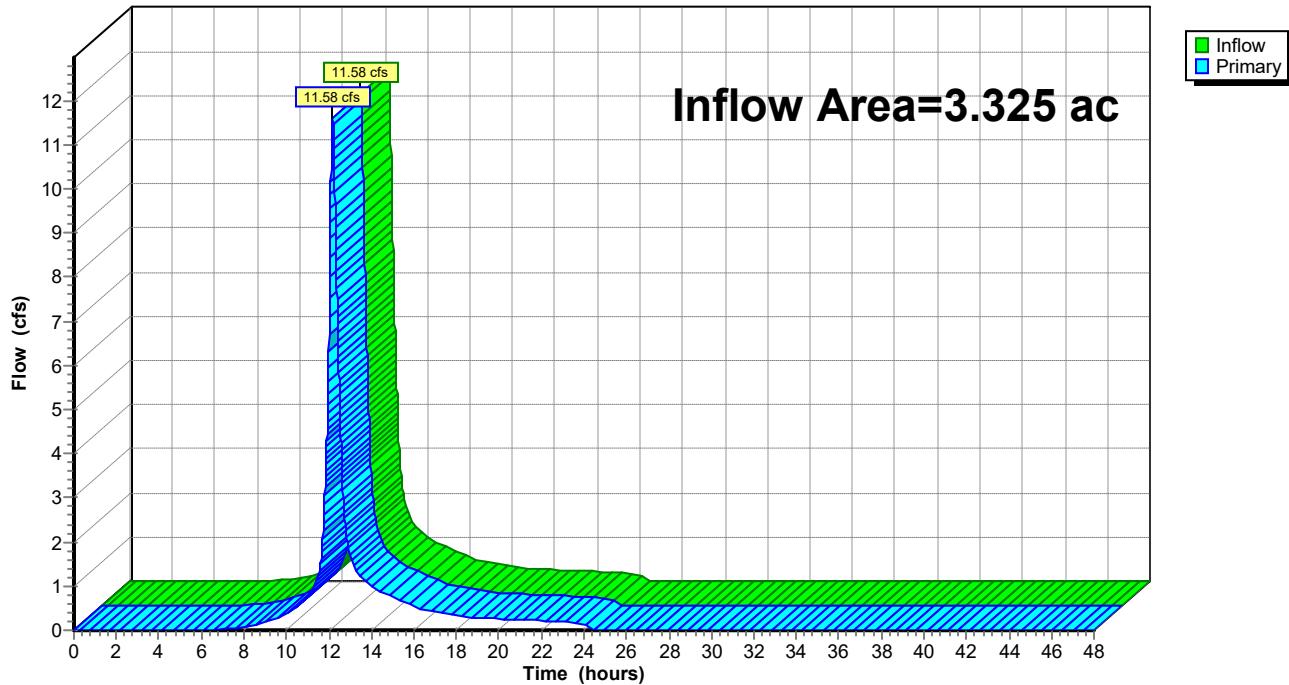
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.325 ac, 3.64% Impervious, Inflow Depth = 4.14" for 25-Year event  
 Inflow = 11.58 cfs @ 12.18 hrs, Volume= 1.146 af  
 Primary = 11.58 cfs @ 12.18 hrs, Volume= 1.146 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

#### Pond 4P: Outfall # 4 - Resource Area North Corner

Hydrograph



### Summary for Pond 5P: (new Pond)

Inflow Area = 0.585 ac, 14.36% Impervious, Inflow Depth = 4.22" for 25-Year event  
 Inflow = 3.10 cfs @ 12.06 hrs, Volume= 0.206 af  
 Outflow = 3.10 cfs @ 12.06 hrs, Volume= 0.206 af, Atten= 0%, Lag= 0.0 min  
 Primary = 3.10 cfs @ 12.06 hrs, Volume= 0.206 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 130.29' @ 12.06 hrs

Flood Elev= 138.90'

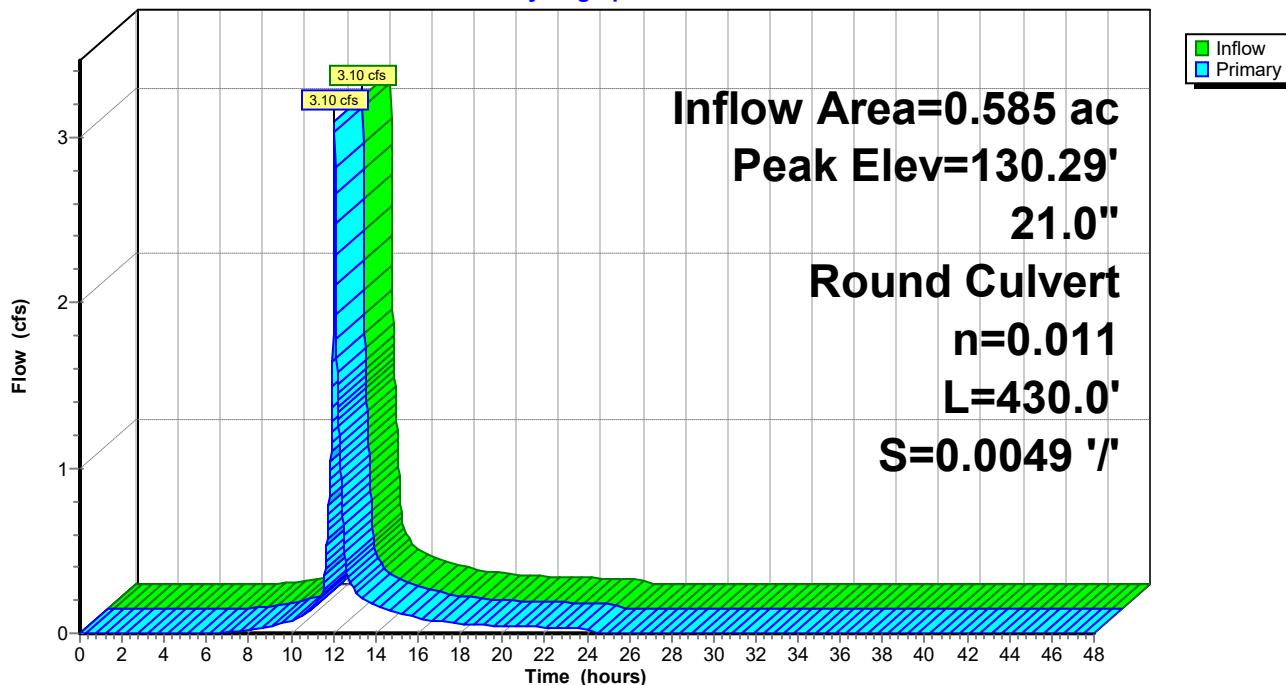
Device	Routing	Invert	Outlet Devices
#1	Primary	129.50'	<b>21.0" Round Culvert</b> L= 430.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 129.50' / 127.39' S= 0.0049 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 2.41 sf

**Primary OutFlow** Max=3.09 cfs @ 12.06 hrs HW=130.29' (Free Discharge)

↑1=Culvert (Barrel Controls 3.09 cfs @ 4.33 fps)

### Pond 5P: (new Pond)

Hydrograph



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Sub-Catchment 1** Runoff Area=0.967 ac 0.00% Impervious Runoff Depth=5.81" Flow Length=388' Slope=0.0150 '/' Tc=13.0 min CN=80 Runoff=5.19 cfs 0.468 af**Subcatchment 2S: Sub-Catchment 2** Runoff Area=0.585 ac 14.36% Impervious Runoff Depth=5.93" Flow Length=128' Tc=3.9 min UI Adjusted CN=81 Runoff=4.30 cfs 0.289 af**Subcatchment 3S: Sub-Catchment 4** Runoff Area=2.740 ac 1.35% Impervious Runoff Depth=5.81" Flow Length=460' Slope=0.0150 '/' Tc=14.4 min CN=80 Runoff=14.15 cfs 1.327 af**Pond 1P: Outfall # 1 - Resource Area West** Inflow=5.19 cfs 0.468 af Primary=5.19 cfs 0.468 af**Pond 2P: Outfall #2 to CB** Peak Elev=136.50' Inflow=4.30 cfs 0.289 af 12.0" Round Culvert n=0.011 L=215.0' S=0.0077 '/' Outflow=4.30 cfs 0.289 af**Pond 4P: Outfall # 4 - Resource Area North Corner** Inflow=16.17 cfs 1.616 af Primary=16.17 cfs 1.616 af**Pond 5P: (new Pond)** Peak Elev=130.44' Inflow=4.30 cfs 0.289 af 21.0" Round Culvert n=0.011 L=430.0' S=0.0049 '/' Outflow=4.30 cfs 0.289 af**Total Runoff Area = 4.292 ac Runoff Volume = 2.085 af Average Runoff Depth = 5.83"**  
**97.18% Pervious = 4.171 ac 2.82% Impervious = 0.121 ac**

### Summary for Subcatchment 1S: Sub-Catchment 1

Runoff = 5.19 cfs @ 12.18 hrs, Volume= 0.468 af, Depth= 5.81"

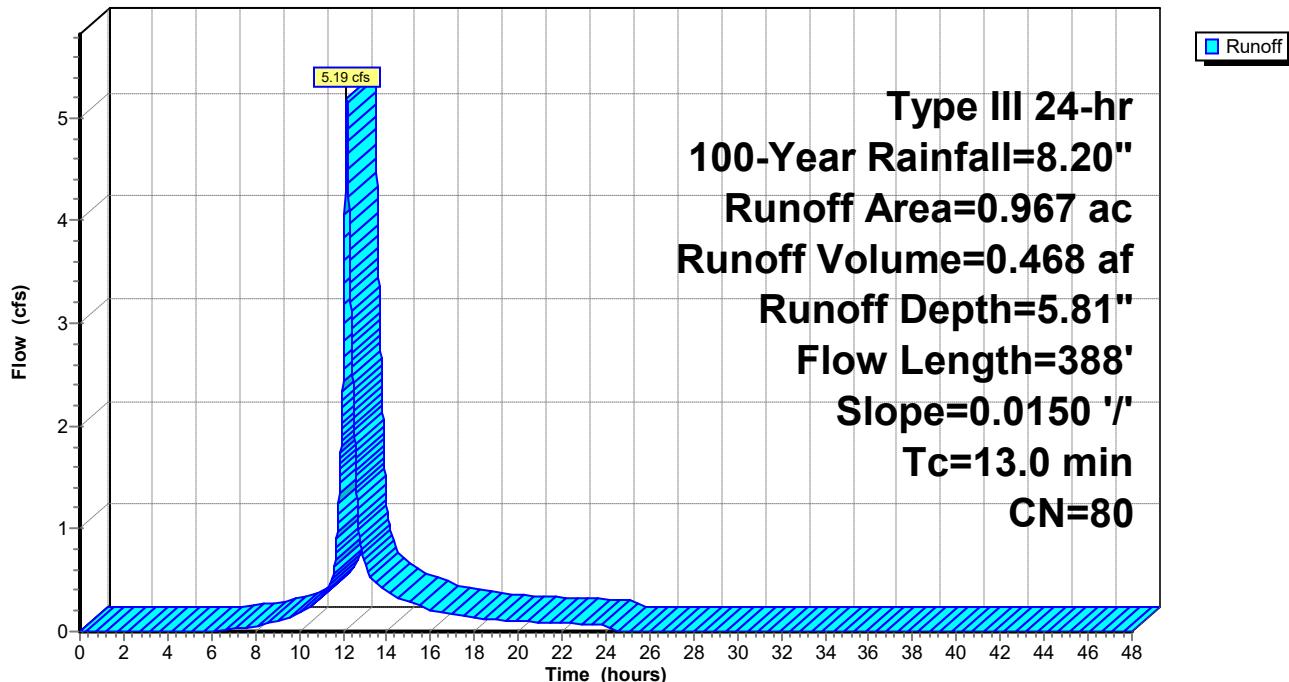
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=8.20"

Area (ac)	CN	Description
0.967	80	>75% Grass cover, Good, HSG D
0.967		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	50	0.0150	0.13		<b>Sheet Flow, Greass Area</b> Grass: Short n= 0.150 P2= 3.10"
6.6	338	0.0150	0.86		<b>Shallow Concentrated Flow, Grass Field</b> Short Grass Pasture Kv= 7.0 fps
13.0	388				Total

### Subcatchment 1S: Sub-Catchment 1

Hydrograph



### Summary for Subcatchment 2S: Sub-Catchment 2

Runoff = 4.30 cfs @ 12.06 hrs, Volume= 0.289 af, Depth= 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=8.20"

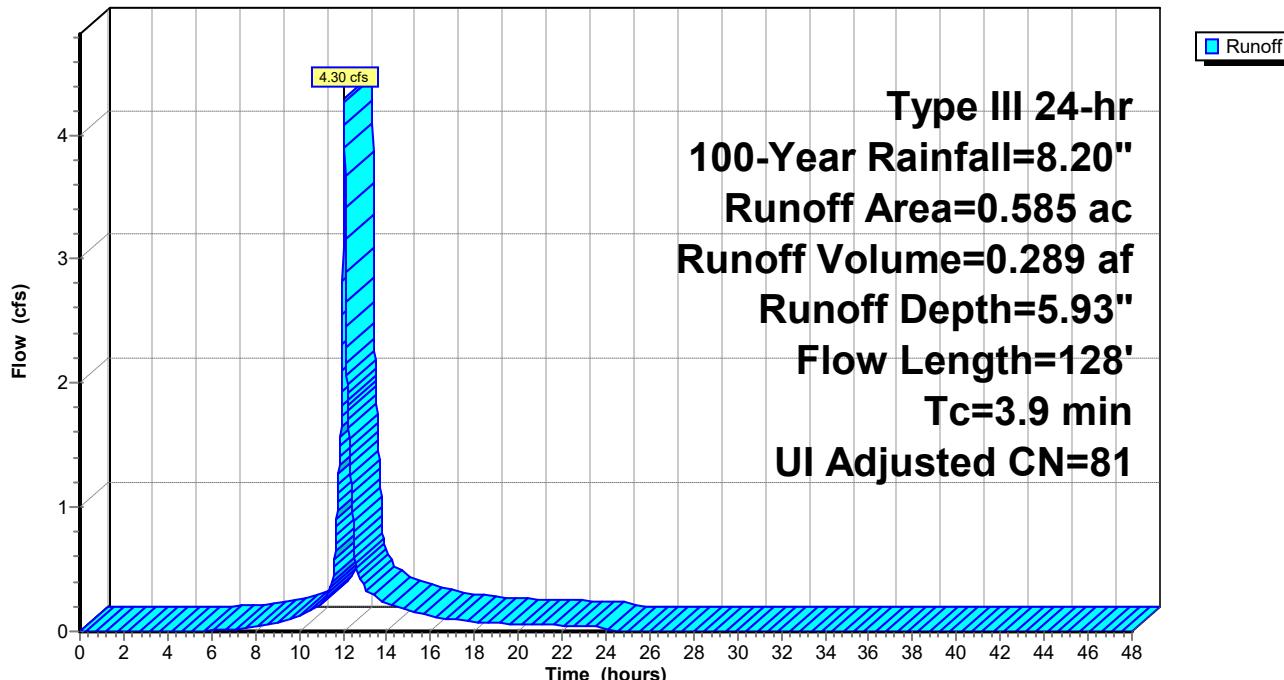
Area (ac)	CN	Adj	Description
0.084	98		Unconnected pavement, HSG D
0.501	80		>75% Grass cover, Good, HSG D
0.585	83	81	Weighted Average, UI Adjusted
0.501			85.64% Pervious Area
0.084			14.36% Impervious Area
0.084			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	50	0.0800	0.25		<b>Sheet Flow, Grass Hill</b> Grass: Short n= 0.150 P2= 3.10"
0.6	78	0.1000	2.21		<b>Shallow Concentrated Flow,</b> Short Grass Pasture Kv= 7.0 fps
3.9	128	Total			

### Subcatchment 2S: Sub-Catchment 2

Hydrograph



### Summary for Subcatchment 3S: Sub-Catchment 4

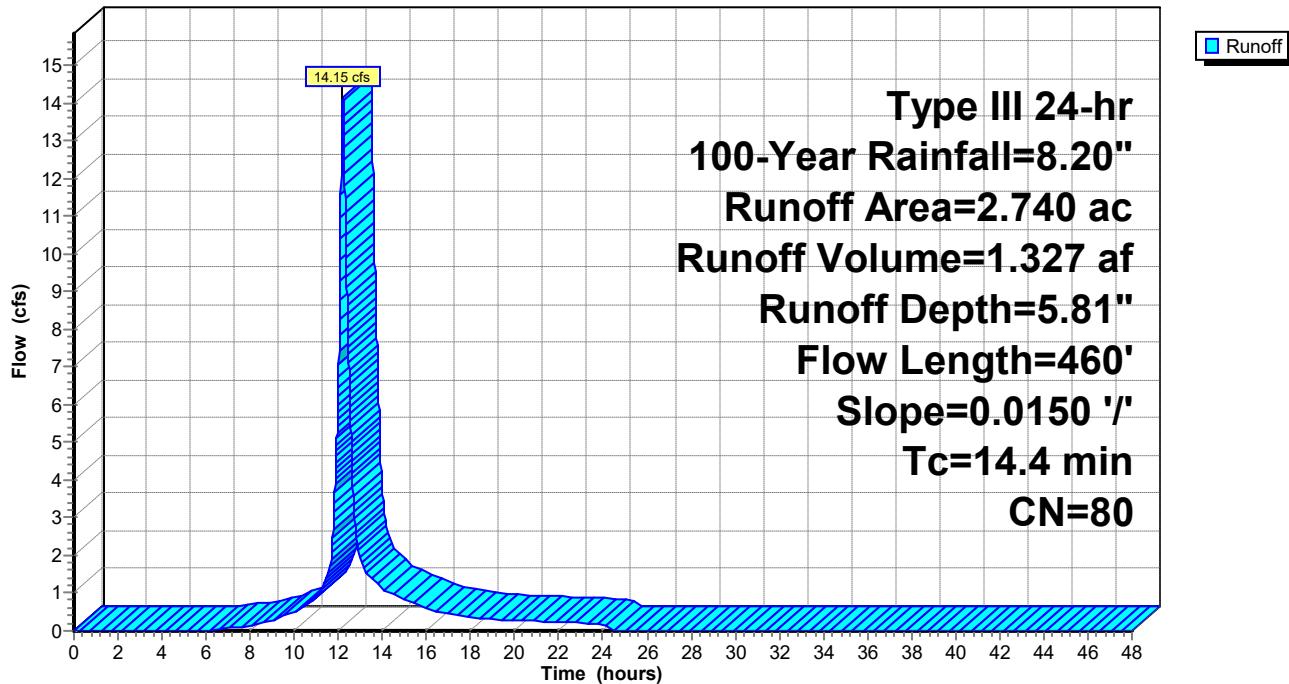
Runoff = 14.15 cfs @ 12.19 hrs, Volume= 1.327 af, Depth= 5.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr 100-Year Rainfall=8.20"

Area (ac)	CN	Description		
0.037	98	Paved parking, HSG D		
2.703	80	>75% Grass cover, Good, HSG D		
2.740	80	Weighted Average		
2.703		98.65% Pervious Area		
0.037		1.35% Impervious Area		
Tc (min)	Length (feet)	Slope (ft/ft) Velocity (ft/sec) Capacity (cfs) Description		
6.4	50	0.0150	0.13	<b>Sheet Flow, Clay Infield</b> Grass: Short n= 0.150 P2= 3.10"
8.0	410	0.0150	0.86	<b>Shallow Concentrated Flow, Grass Field</b> Short Grass Pasture Kv= 7.0 fps
14.4	460	Total		

### Subcatchment 3S: Sub-Catchment 4

Hydrograph



### Summary for Pond 1P: Outfall # 1 - Resource Area West

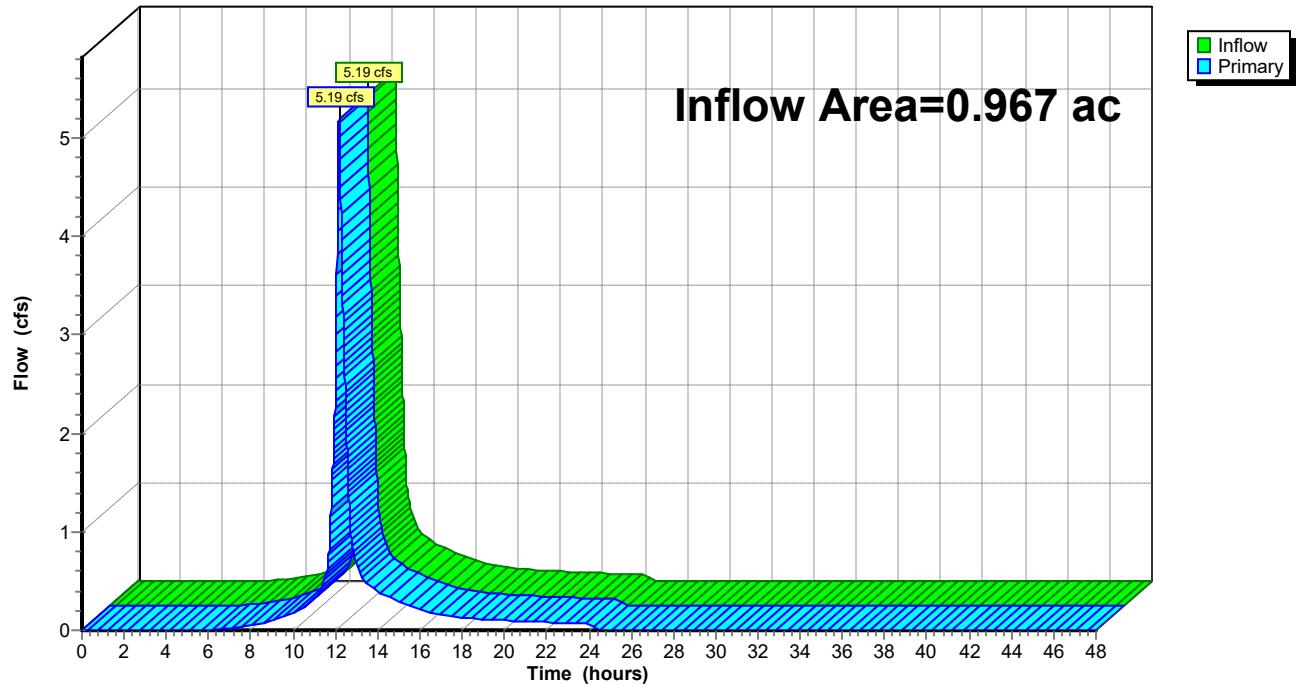
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.967 ac, 0.00% Impervious, Inflow Depth = 5.81" for 100-Year event  
 Inflow = 5.19 cfs @ 12.18 hrs, Volume= 0.468 af  
 Primary = 5.19 cfs @ 12.18 hrs, Volume= 0.468 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

### Pond 1P: Outfall # 1 - Resource Area West

Hydrograph



### Summary for Pond 2P: Outfall #2 to CB

Inflow Area = 0.585 ac, 14.36% Impervious, Inflow Depth = 5.93" for 100-Year event  
 Inflow = 4.30 cfs @ 12.06 hrs, Volume= 0.289 af  
 Outflow = 4.30 cfs @ 12.06 hrs, Volume= 0.289 af, Atten= 0%, Lag= 0.0 min  
 Primary = 4.30 cfs @ 12.06 hrs, Volume= 0.289 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 136.50' @ 12.06 hrs

Flood Elev= 138.00'

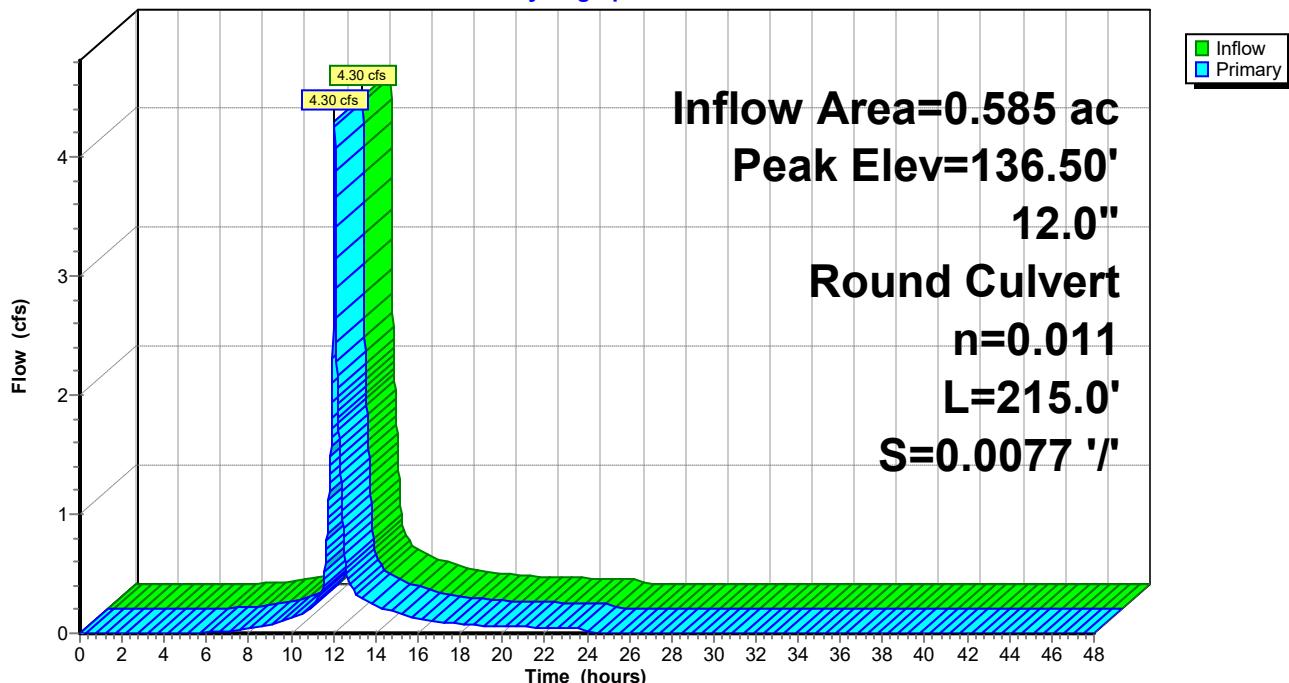
Device	Routing	Invert	Outlet Devices
#1	Primary	134.36'	<b>12.0" Round Culvert</b> L= 215.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 134.36' / 132.70' S= 0.0077 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf

**Primary OutFlow** Max=4.29 cfs @ 12.06 hrs HW=136.49' (Free Discharge)

↑1=Culvert (Barrel Controls 4.29 cfs @ 5.46 fps)

### Pond 2P: Outfall #2 to CB

Hydrograph



### Summary for Pond 4P: Outfall # 4 - Resource Area North Corner

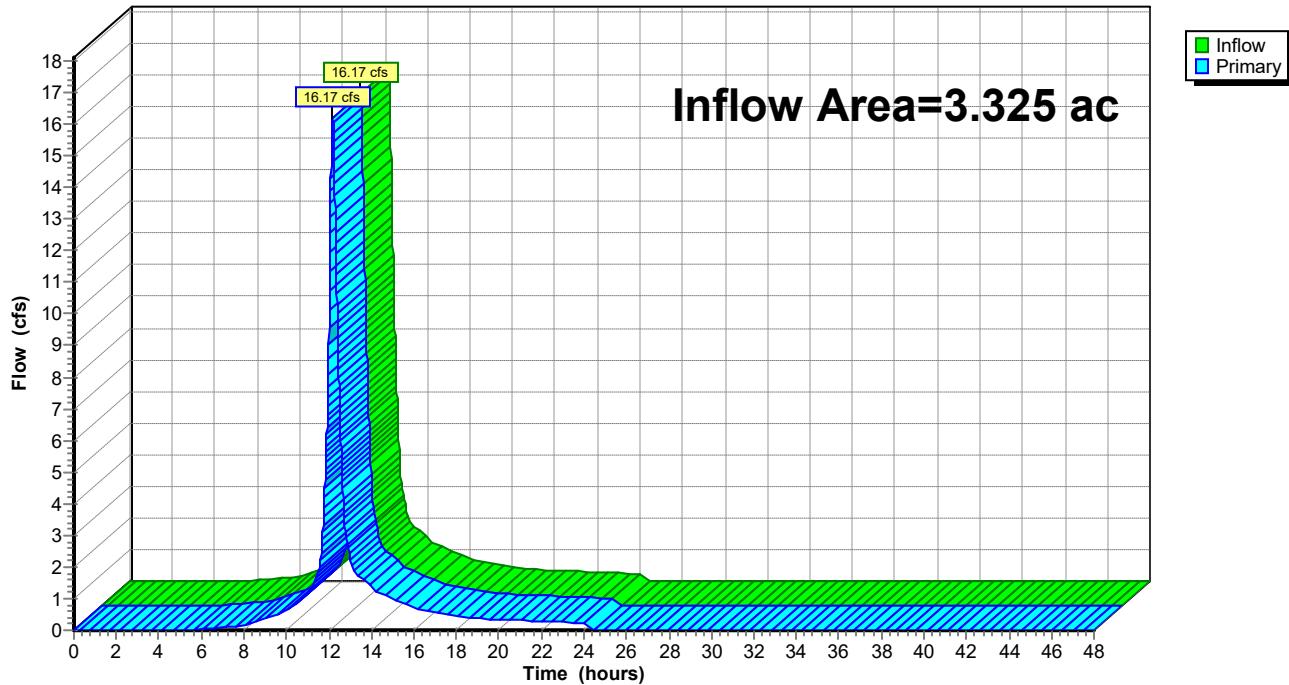
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.325 ac, 3.64% Impervious, Inflow Depth = 5.83" for 100-Year event  
 Inflow = 16.17 cfs @ 12.18 hrs, Volume= 1.616 af  
 Primary = 16.17 cfs @ 12.18 hrs, Volume= 1.616 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

#### Pond 4P: Outfall # 4 - Resource Area North Corner

Hydrograph



### Summary for Pond 5P: (new Pond)

Inflow Area = 0.585 ac, 14.36% Impervious, Inflow Depth = 5.93" for 100-Year event  
 Inflow = 4.30 cfs @ 12.06 hrs, Volume= 0.289 af  
 Outflow = 4.30 cfs @ 12.06 hrs, Volume= 0.289 af, Atten= 0%, Lag= 0.0 min  
 Primary = 4.30 cfs @ 12.06 hrs, Volume= 0.289 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Peak Elev= 130.44' @ 12.06 hrs

Flood Elev= 138.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	129.50'	<b>21.0" Round Culvert</b> L= 430.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 129.50' / 127.39' S= 0.0049 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 2.41 sf

**Primary OutFlow** Max=4.29 cfs @ 12.06 hrs HW=130.44' (Free Discharge)

↑1=Culvert (Barrel Controls 4.29 cfs @ 4.72 fps)

### Pond 5P: (new Pond)

Hydrograph

