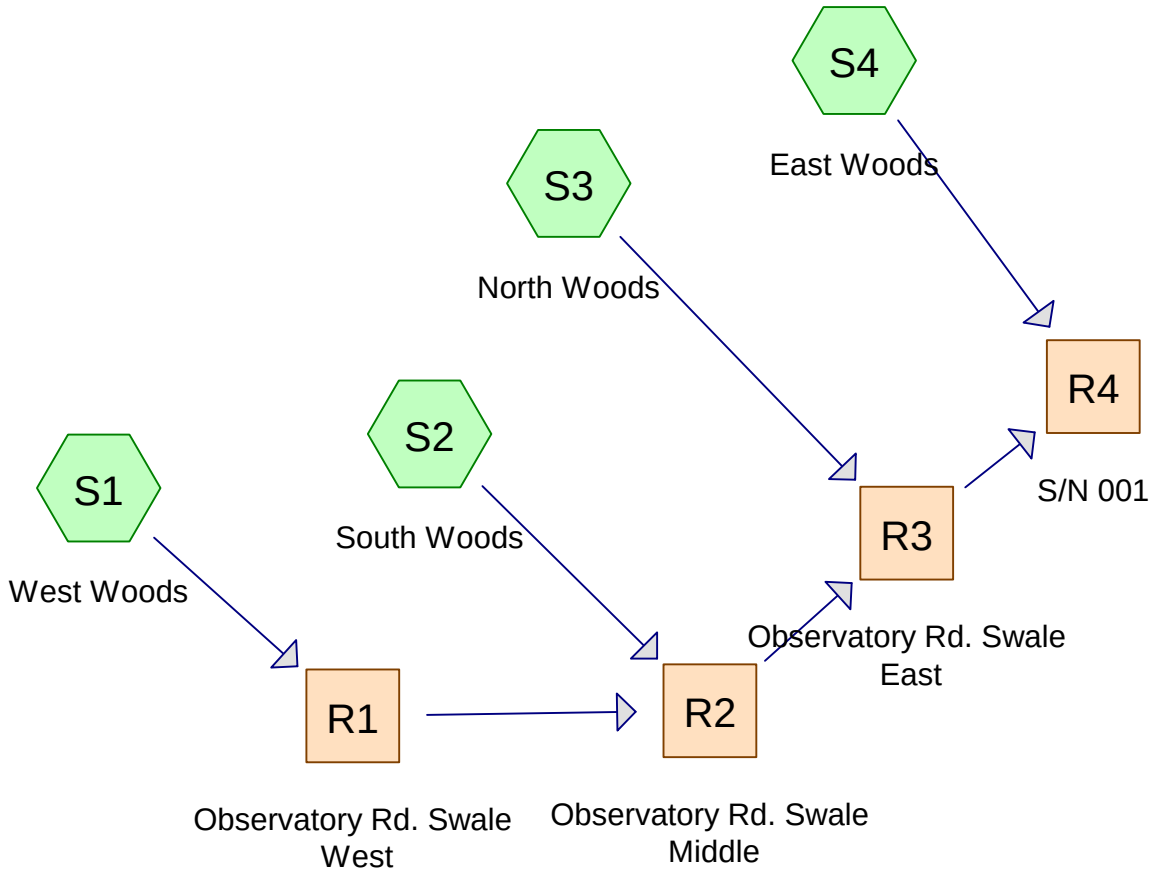


Subcat Reach Pond Link

Routing Diagram for Existing Conditions
Prepared by Microsoft, Printed 3/27/2024

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
6.821	30	Woods, Good, HSG A (S1, S2, S3, S4)
12.298	77	Woods, Good, HSG D (S1, S2, S3, S4)
19.119	**60**	**TOTAL AREA**

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment S1: West Woods Runoff Area=152,998 sf 0.00% Impervious Runoff Depth=0.42"
Flow Length=940' Tc=12.2 min CN=WQ Runoff=1.88 cfs 0.123 af

Subcatchment S2: South Woods Runoff Area=252,025 sf 0.00% Impervious Runoff Depth=0.30"
Flow Length=970' Tc=17.7 min CN=WQ Runoff=1.81 cfs 0.145 af

Subcatchment S3: North Woods Runoff Area=319,223 sf 0.00% Impervious Runoff Depth=0.28"
Flow Length=1,275' Tc=25.4 min CN=WQ Runoff=1.66 cfs 0.170 af

Subcatchment S4: East Woods Runoff Area=108,585 sf 0.00% Impervious Runoff Depth=0.23"
Flow Length=850' Tc=21.6 min CN=WQ Runoff=0.53 cfs 0.049 af

Reach R1: Observatory Rd. Swale West Avg. Flow Depth=0.34' Max Vel=4.69 fps Inflow=1.88 cfs 0.123 af
n=0.022 L=510.0' S=0.0392 '/' Capacity=152.97 cfs Outflow=1.78 cfs 0.123 af

Reach R2: Observatory Rd. Swale Avg. Flow Depth=0.49' Max Vel=5.33 fps Inflow=3.58 cfs 0.269 af
n=0.022 L=425.0' S=0.0329 '/' Capacity=140.20 cfs Outflow=3.47 cfs 0.269 af

Reach R3: Observatory Rd. Swale East Avg. Flow Depth=0.58' Max Vel=5.82 fps Inflow=5.04 cfs 0.438 af
n=0.022 L=500.0' S=0.0320 '/' Capacity=138.18 cfs Outflow=4.92 cfs 0.438 af

Reach R4: S/N 001 Inflow=5.43 cfs 0.487 af
Outflow=5.43 cfs 0.487 af

Total Runoff Area = 19.119 ac Runoff Volume = 0.487 af Average Runoff Depth = 0.31"
100.00% Pervious = 19.119 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment S1: West Woods

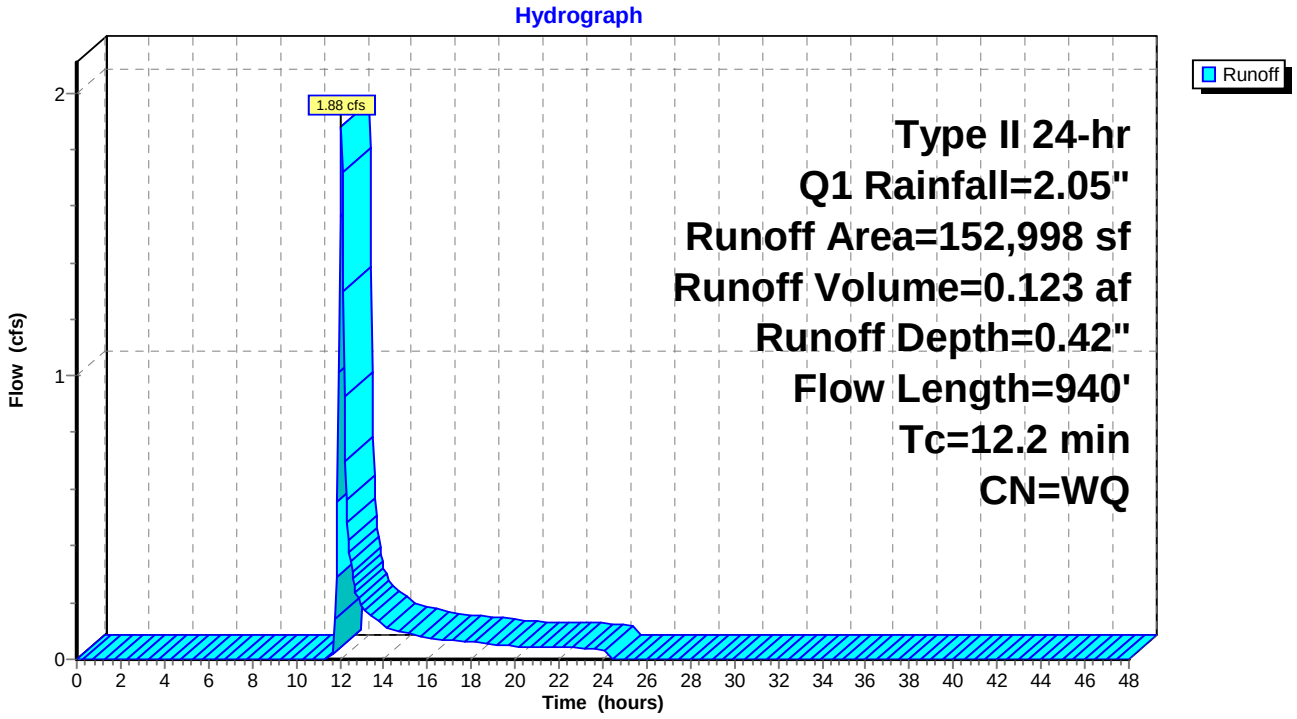
Runoff = 1.88 cfs @ 12.06 hrs, Volume= 0.123 af, Depth= 0.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q1 Rainfall=2.05"

Area (sf)	CN	Description
135,531	77	Woods, Good, HSG D
17,467	30	Woods, Good, HSG A
152,998		Weighted Average
152,998		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	660	0.1500	1.48		**Lag/CN Method, West Woods D Soils**
4.8	280	0.0900	0.97		**Lag/CN Method, West Woods A Soils**
12.2	940	Total			

Subcatchment S1: West Woods



Summary for Subcatchment S2: South Woods

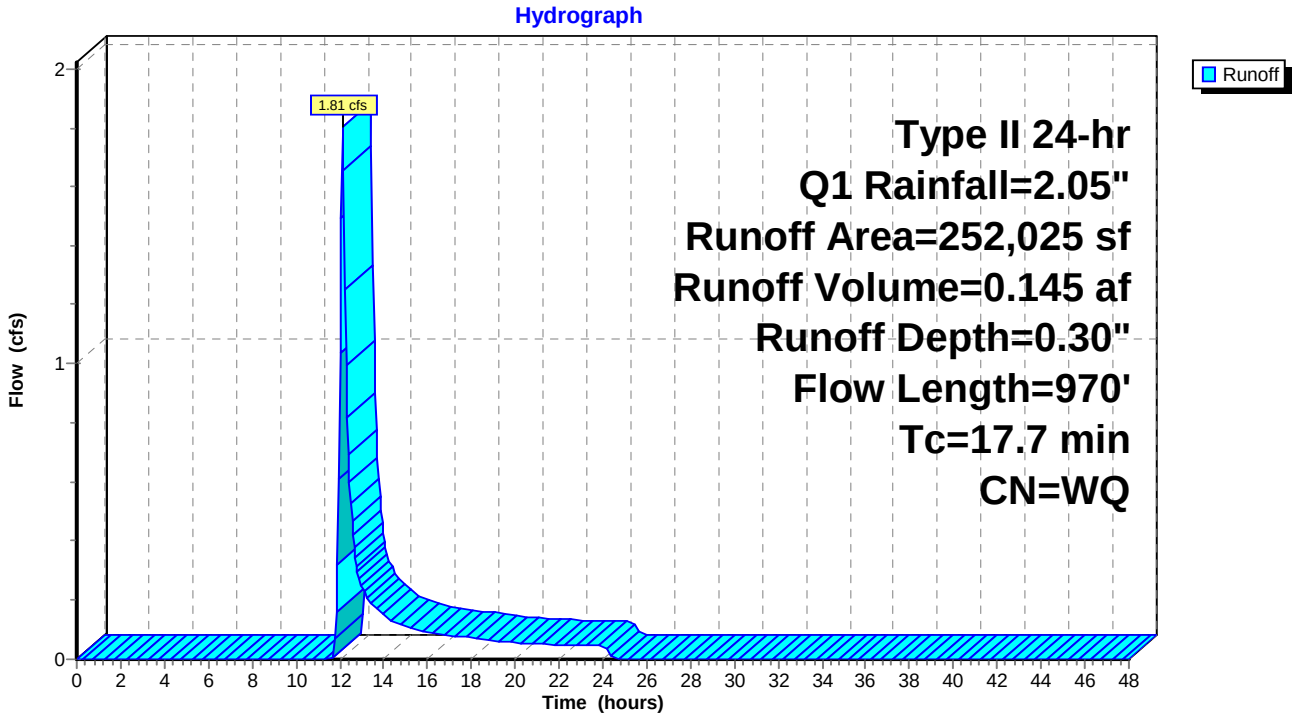
Runoff = 1.81 cfs @ 12.12 hrs, Volume= 0.145 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q1 Rainfall=2.05"

Area (sf)	CN	Description
159,925	77	Woods, Good, HSG D
92,100	30	Woods, Good, HSG A
252,025		Weighted Average
252,025		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	680	0.1300	1.01		**Lag/CN Method, South Woods D Soils**
6.5	290	0.1000	0.75		**Lag/CN Method, South Woods A Soils**
17.7	970	Total			

Subcatchment S2: South Woods



Summary for Subcatchment S3: North Woods

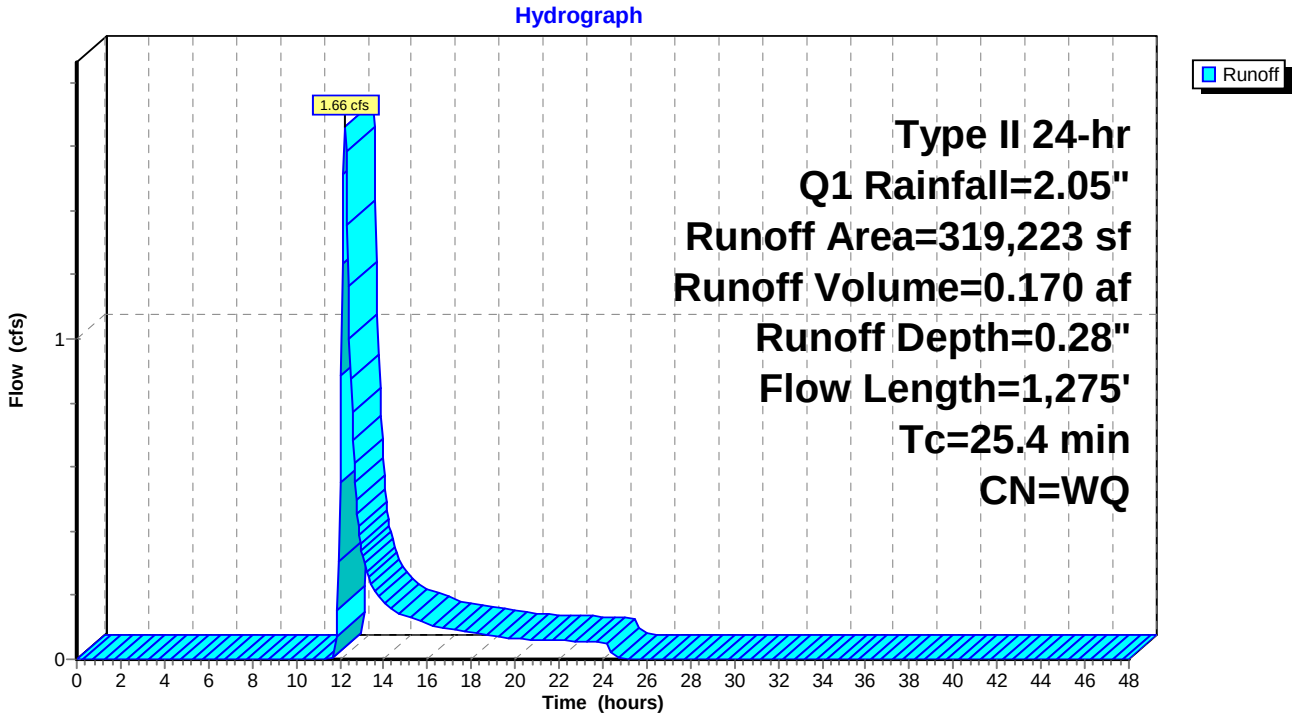
Runoff = 1.66 cfs @ 12.22 hrs, Volume= 0.170 af, Depth= 0.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q1 Rainfall=2.05"

Area (sf)	CN	Description
186,630	77	Woods, Good, HSG D
132,593	30	Woods, Good, HSG A
319,223		Weighted Average
319,223		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.4	900	0.1100	0.91		**Lag/CN Method, North Woods D Soils**
9.0	375	0.0900	0.69		**Lag/CN Method, North Woods A Soils**
25.4	1,275	Total			

Subcatchment S3: North Woods



Summary for Subcatchment S4: East Woods

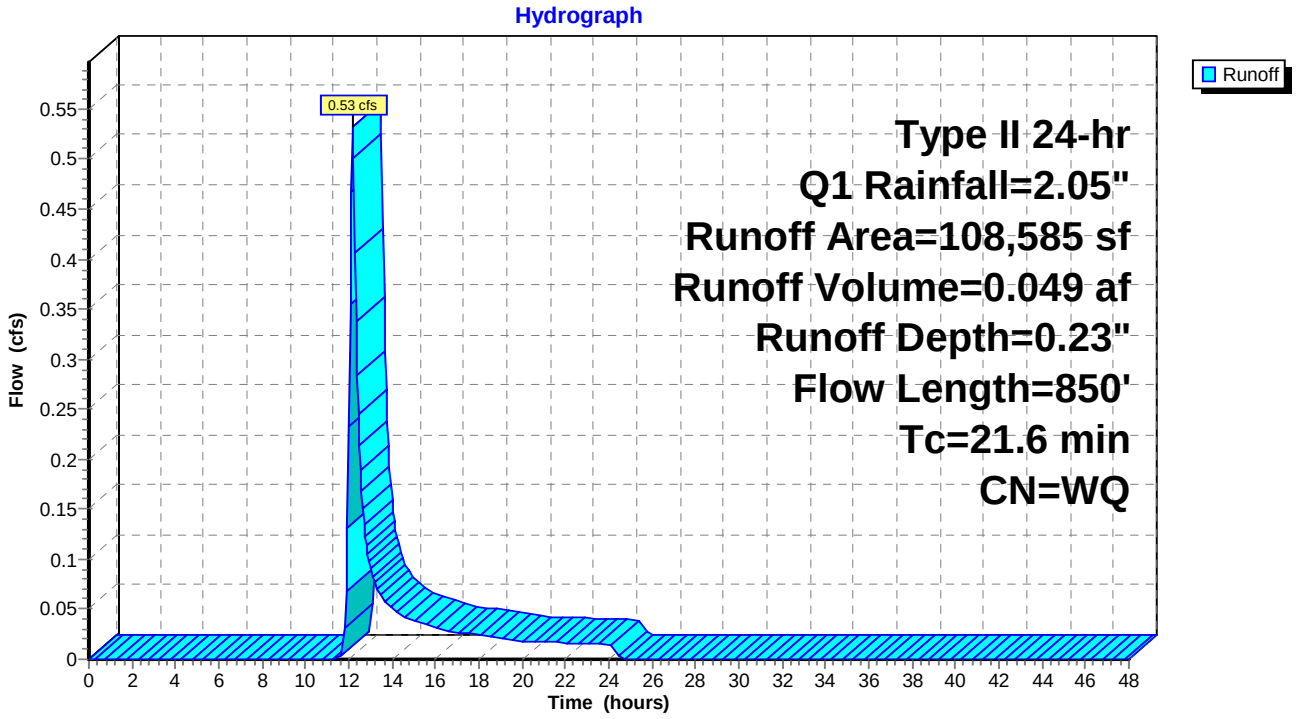
Runoff = 0.53 cfs @ 12.17 hrs, Volume= 0.049 af, Depth= 0.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q1 Rainfall=2.05"

Area (sf)	CN	Description
53,634	77	Woods, Good, HSG D
54,951	30	Woods, Good, HSG A
108,585		Weighted Average
108,585		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	450	0.0900	0.65		**Lag/CN Method, East Woods D Soils**
10.0	400	0.1000	0.67		**Lag/CN Method, East Woods A Soils**
21.6	850	Total			

Subcatchment S4: East Woods



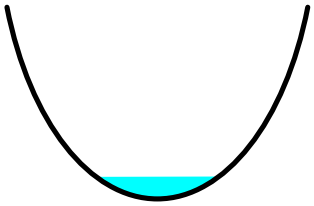
Summary for Reach R1: Observatory Rd. Swale West

Inflow Area = 3.512 ac, 0.00% Impervious, Inflow Depth = 0.42" for Q1 event
Inflow = 1.88 cfs @ 12.06 hrs, Volume= 0.123 af
Outflow = 1.78 cfs @ 12.11 hrs, Volume= 0.123 af, Atten= 5%, Lag= 3.3 min

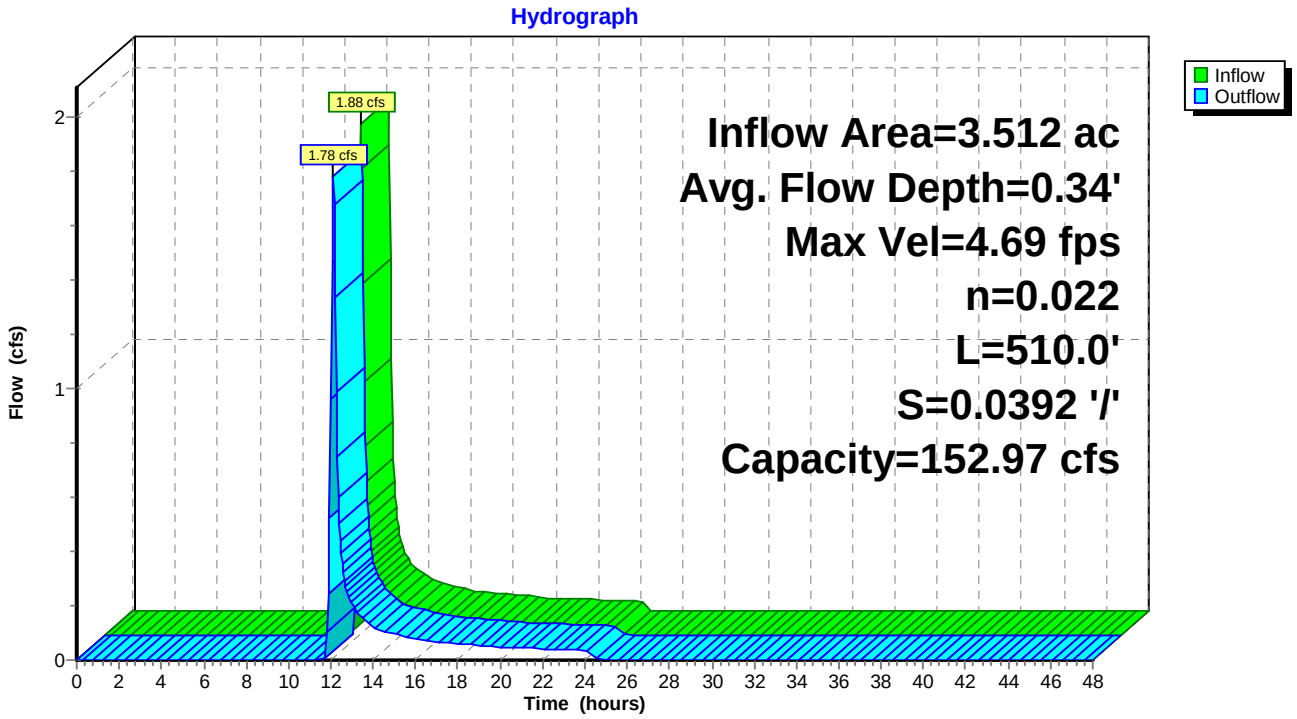
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.69 fps, Min. Travel Time= 1.8 min
Avg. Velocity = 1.83 fps, Avg. Travel Time= 4.7 min

Peak Storage= 198 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.34'
Bank-Full Depth= 3.00' Flow Area= 10.0 sf, Capacity= 152.97 cfs

5.00' x 3.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 510.0' Slope= 0.0392 '/'
Inlet Invert= 680.00', Outlet Invert= 660.00'



Reach R1: Observatory Rd. Swale West



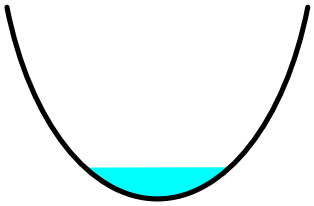
Summary for Reach R2: Observatory Rd. Swale Middle

Inflow Area = 9.298 ac, 0.00% Impervious, Inflow Depth = 0.35" for Q1 event
Inflow = 3.58 cfs @ 12.12 hrs, Volume= 0.269 af
Outflow = 3.47 cfs @ 12.16 hrs, Volume= 0.269 af, Atten= 3%, Lag= 2.5 min

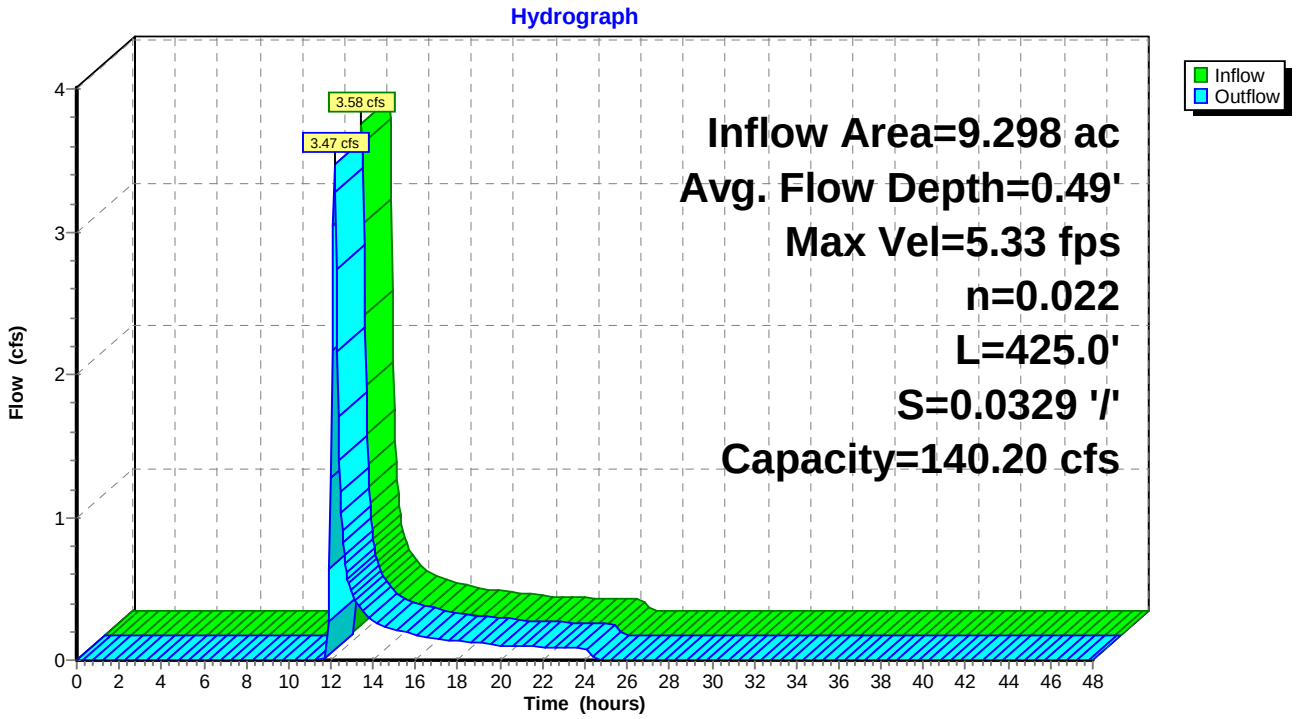
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.33 fps, Min. Travel Time= 1.3 min
Avg. Velocity = 2.12 fps, Avg. Travel Time= 3.3 min

Peak Storage= 282 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.49'
Bank-Full Depth= 3.00' Flow Area= 10.0 sf, Capacity= 140.20 cfs

5.00' x 3.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 425.0' Slope= 0.0329 '/'
Inlet Invert= 660.00', Outlet Invert= 646.00'



Reach R2: Observatory Rd. Swale Middle



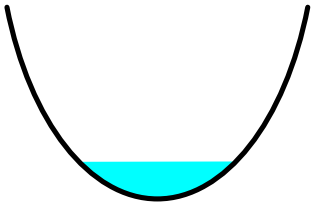
Summary for Reach R3: Observatory Rd. Swale East

Inflow Area = 16.626 ac, 0.00% Impervious, Inflow Depth = 0.32" for Q1 event
Inflow = 5.04 cfs @ 12.17 hrs, Volume= 0.438 af
Outflow = 4.92 cfs @ 12.22 hrs, Volume= 0.438 af, Atten= 2%, Lag= 2.7 min

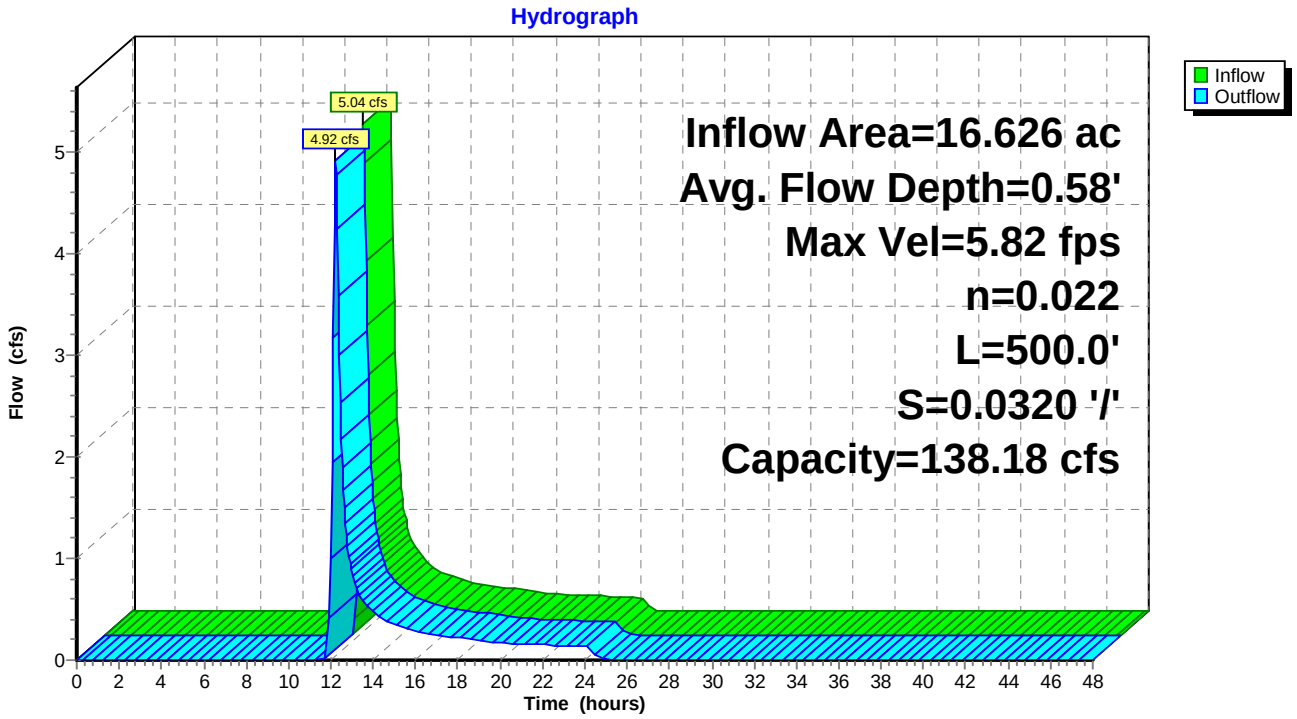
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.82 fps, Min. Travel Time= 1.4 min
Avg. Velocity = 2.40 fps, Avg. Travel Time= 3.5 min

Peak Storage= 429 cf @ 12.19 hrs
Average Depth at Peak Storage= 0.58'
Bank-Full Depth= 3.00' Flow Area= 10.0 sf, Capacity= 138.18 cfs

5.00' x 3.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 500.0' Slope= 0.0320 '/'
Inlet Invert= 646.00', Outlet Invert= 630.00'



Reach R3: Observatory Rd. Swale East

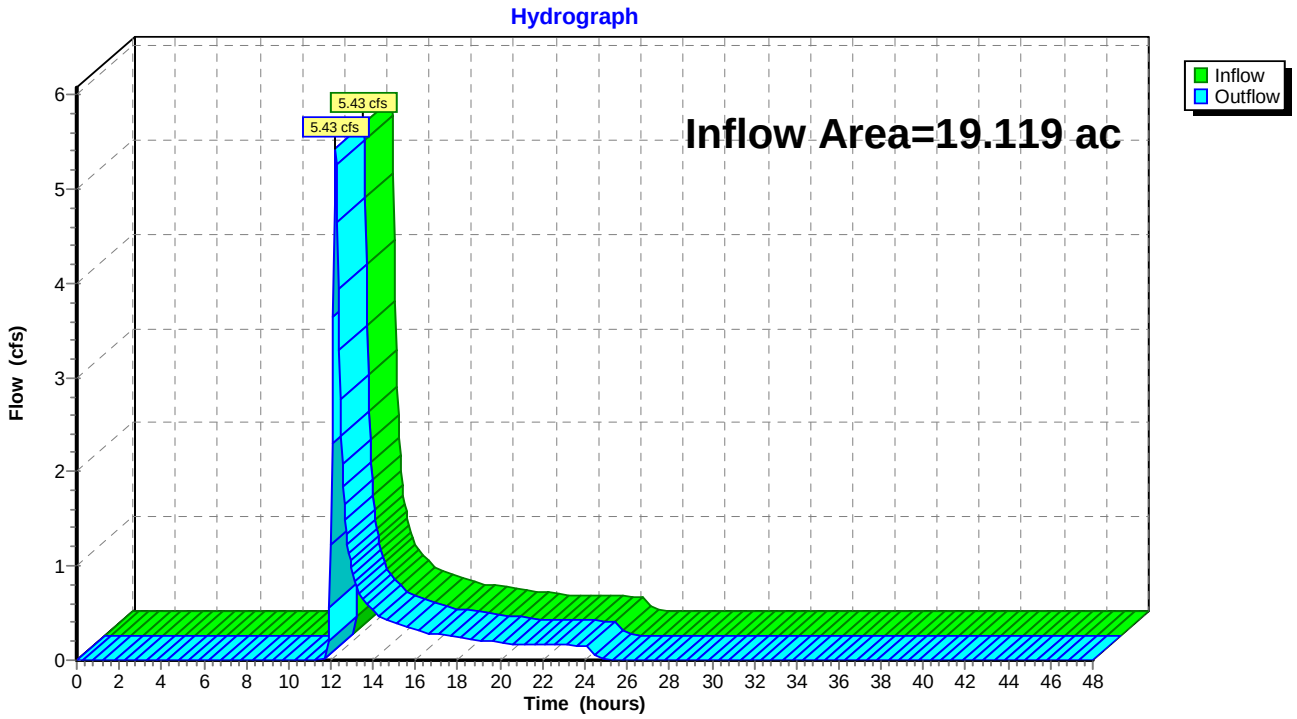


Summary for Reach R4: S/N 001

Inflow Area = 19.119 ac, 0.00% Impervious, Inflow Depth = 0.31" for Q1 event
Inflow = 5.43 cfs @ 12.21 hrs, Volume= 0.487 af
Outflow = 5.43 cfs @ 12.21 hrs, Volume= 0.487 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach R4: S/N 001



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment S1: West Woods Runoff Area=152,998 sf 0.00% Impervious Runoff Depth=1.27"
Flow Length=940' Tc=12.2 min CN=WQ Runoff=6.27 cfs 0.373 af

Subcatchment S2: South Woods Runoff Area=252,025 sf 0.00% Impervious Runoff Depth=0.91"
Flow Length=970' Tc=17.7 min CN=WQ Runoff=6.16 cfs 0.440 af

Subcatchment S3: North Woods Runoff Area=319,223 sf 0.00% Impervious Runoff Depth=0.84"
Flow Length=1,275' Tc=25.4 min CN=WQ Runoff=5.78 cfs 0.513 af

Subcatchment S4: East Woods Runoff Area=108,585 sf 0.00% Impervious Runoff Depth=0.71"
Flow Length=850' Tc=21.6 min CN=WQ Runoff=1.84 cfs 0.148 af

Reach R1: Observatory Rd. Swale West Avg. Flow Depth=0.62' Max Vel=6.64 fps Inflow=6.27 cfs 0.373 af
n=0.022 L=510.0' S=0.0392 '/' Capacity=152.97 cfs Outflow=6.00 cfs 0.373 af

Reach R2: Observatory Rd. Swale Avg. Flow Depth=0.89' Max Vel=7.50 fps Inflow=12.11 cfs 0.813 af
n=0.022 L=425.0' S=0.0329 '/' Capacity=140.20 cfs Outflow=11.82 cfs 0.813 af

Reach R3: Observatory Rd. Swale East Avg. Flow Depth=1.06' Max Vel=8.15 fps Inflow=17.14 cfs 1.326 af
n=0.022 L=500.0' S=0.0320 '/' Capacity=138.18 cfs Outflow=16.86 cfs 1.326 af

Reach R4: S/N 001 Inflow=18.69 cfs 1.474 af
Outflow=18.69 cfs 1.474 af

Total Runoff Area = 19.119 ac Runoff Volume = 1.474 af Average Runoff Depth = 0.92"
100.00% Pervious = 19.119 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment S1: West Woods

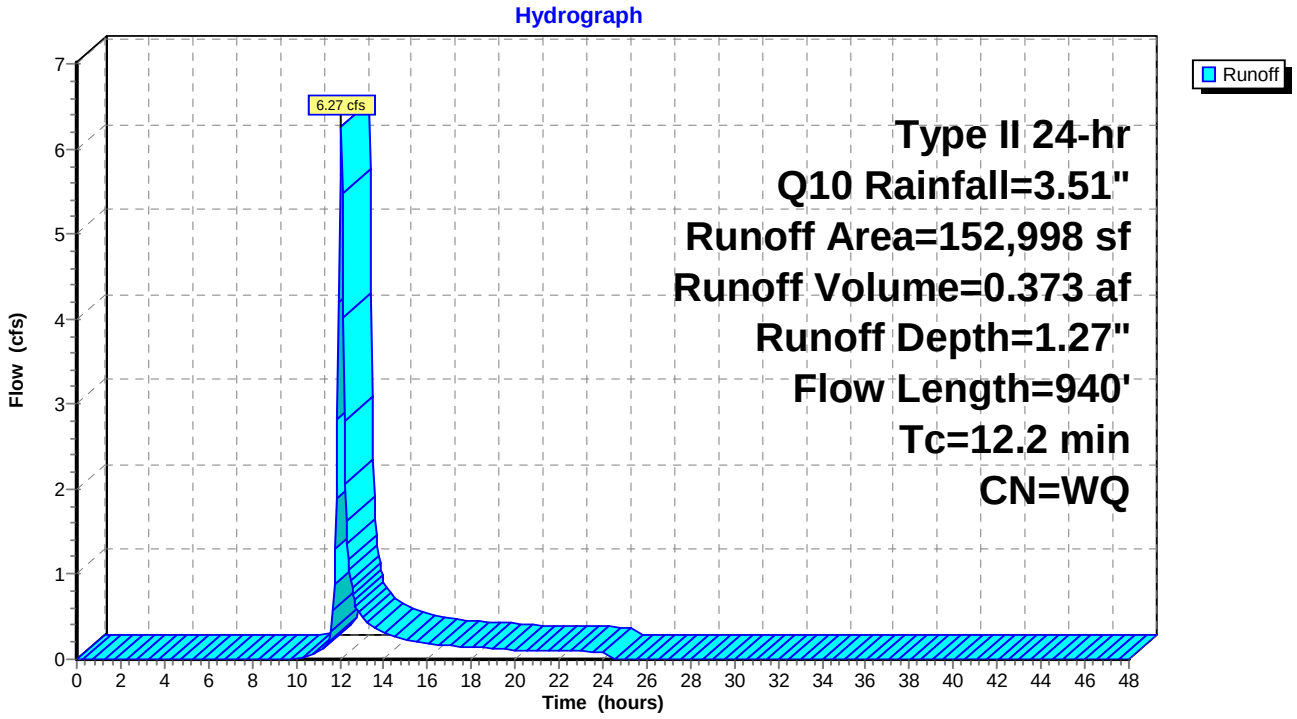
Runoff = 6.27 cfs @ 12.05 hrs, Volume= 0.373 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q10 Rainfall=3.51"

Area (sf)	CN	Description
135,531	77	Woods, Good, HSG D
17,467	30	Woods, Good, HSG A
152,998		Weighted Average
152,998		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	660	0.1500	1.48		**Lag/CN Method, West Woods D Soils**
4.8	280	0.0900	0.97		**Lag/CN Method, West Woods A Soils**
12.2	940	Total			

Subcatchment S1: West Woods



Summary for Subcatchment S2: South Woods

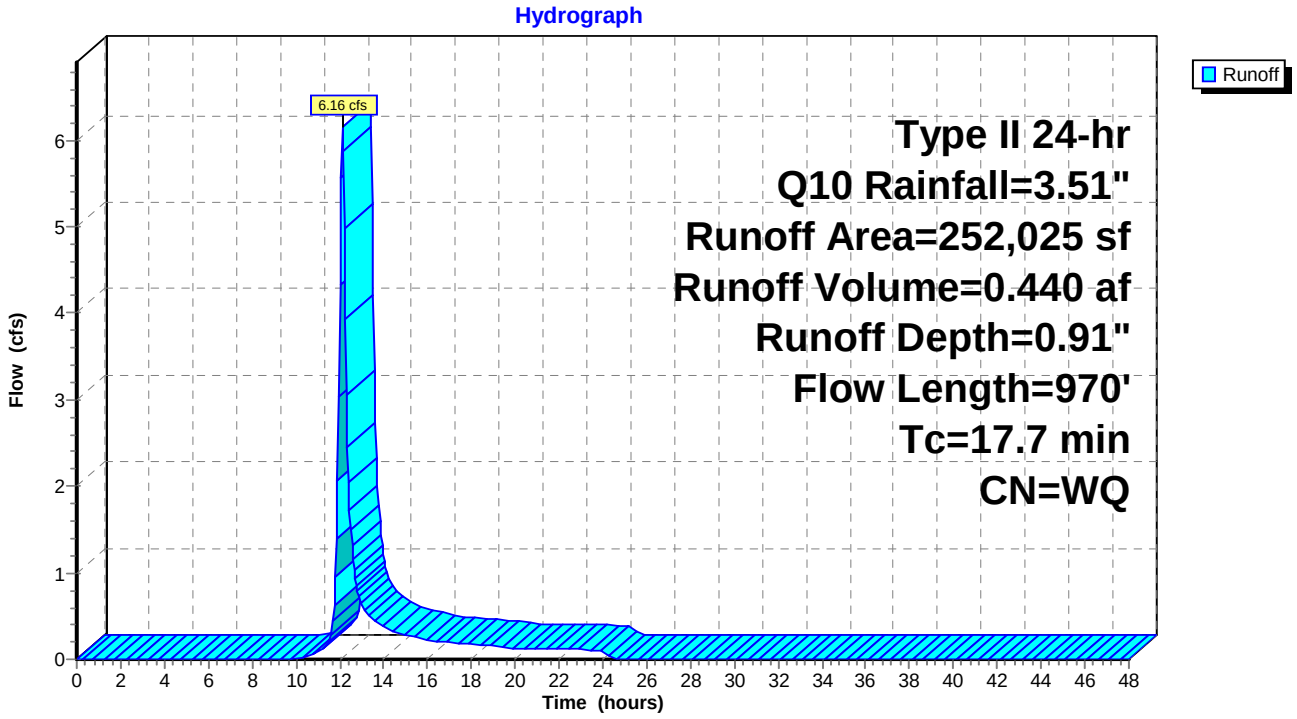
Runoff = 6.16 cfs @ 12.11 hrs, Volume= 0.440 af, Depth= 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q10 Rainfall=3.51"

Area (sf)	CN	Description
159,925	77	Woods, Good, HSG D
92,100	30	Woods, Good, HSG A
252,025		Weighted Average
252,025		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	680	0.1300	1.01		**Lag/CN Method, South Woods D Soils**
6.5	290	0.1000	0.75		**Lag/CN Method, South Woods A Soils**
17.7	970	Total			

Subcatchment S2: South Woods



Summary for Subcatchment S3: North Woods

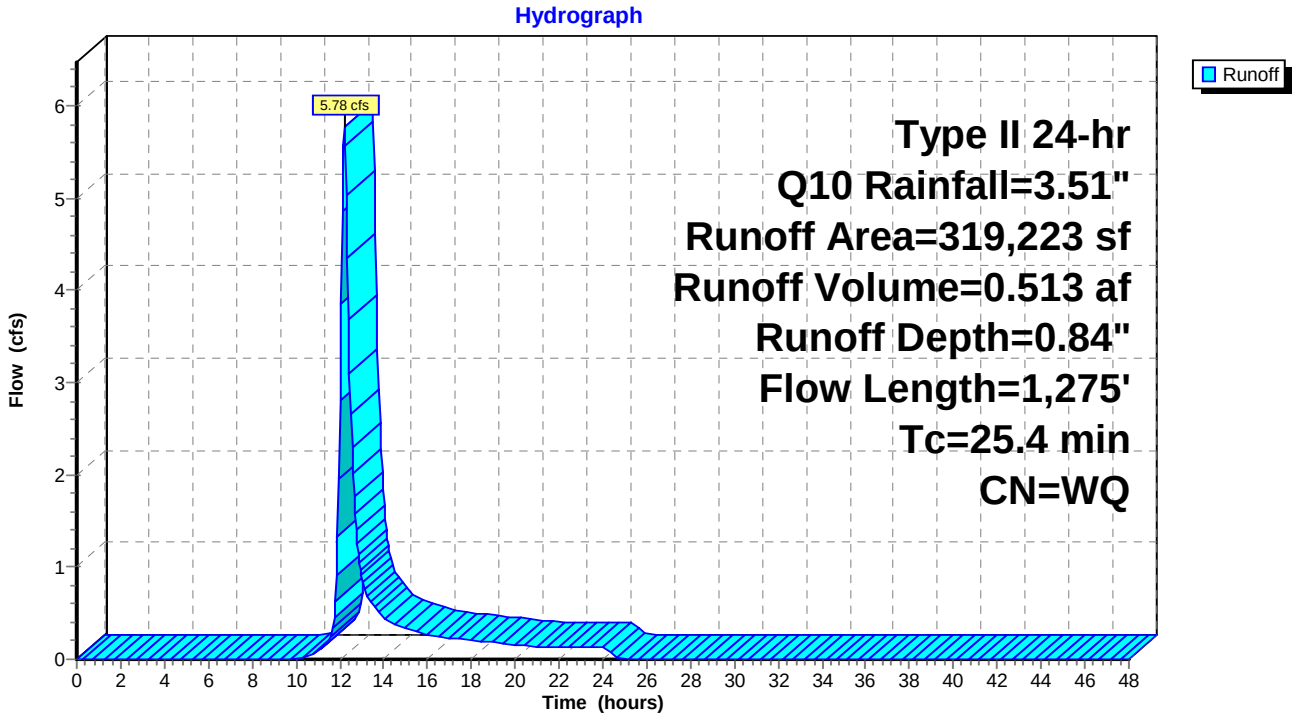
Runoff = 5.78 cfs @ 12.20 hrs, Volume= 0.513 af, Depth= 0.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q10 Rainfall=3.51"

Area (sf)	CN	Description
186,630	77	Woods, Good, HSG D
132,593	30	Woods, Good, HSG A
319,223		Weighted Average
319,223		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.4	900	0.1100	0.91		**Lag/CN Method, North Woods D Soils**
9.0	375	0.0900	0.69		**Lag/CN Method, North Woods A Soils**
25.4	1,275	Total			

Subcatchment S3: North Woods



Summary for Subcatchment S4: East Woods

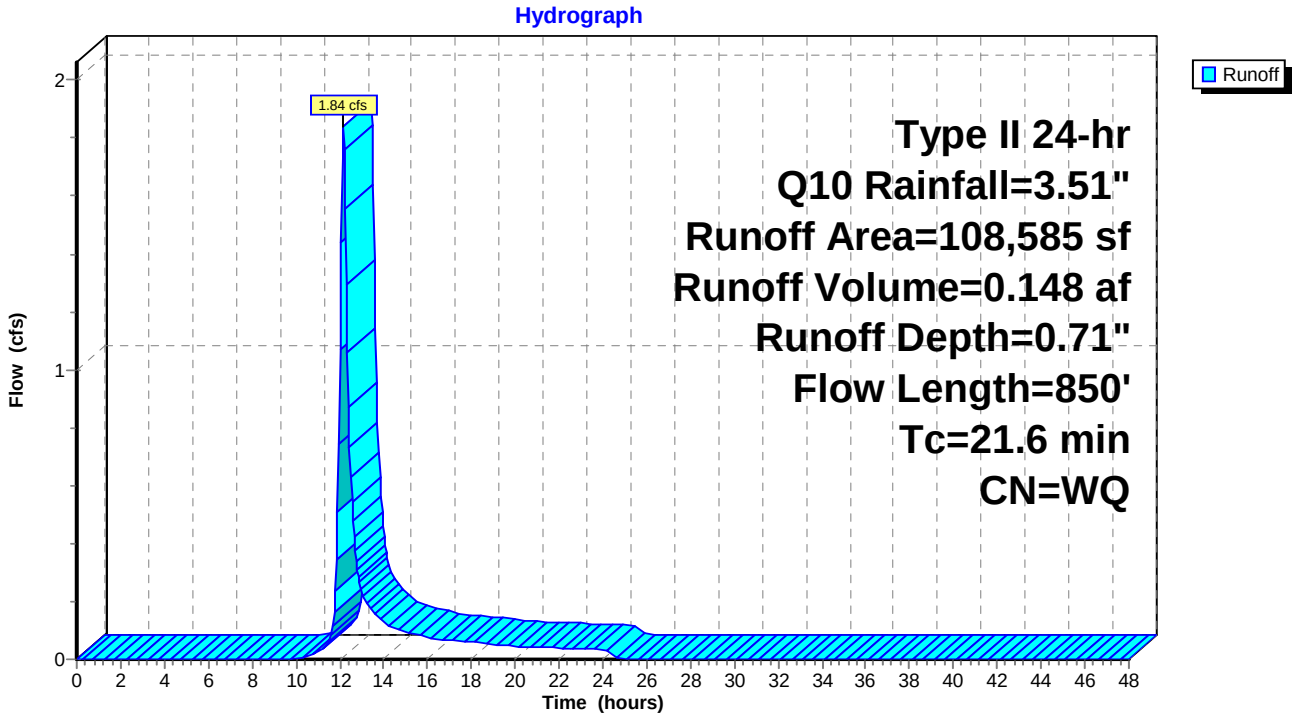
Runoff = 1.84 cfs @ 12.15 hrs, Volume= 0.148 af, Depth= 0.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q10 Rainfall=3.51"

Area (sf)	CN	Description
53,634	77	Woods, Good, HSG D
54,951	30	Woods, Good, HSG A
108,585		Weighted Average
108,585		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	450	0.0900	0.65		**Lag/CN Method, East Woods D Soils**
10.0	400	0.1000	0.67		**Lag/CN Method, East Woods A Soils**
21.6	850	Total			

Subcatchment S4: East Woods



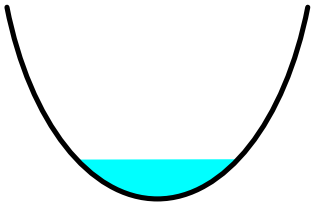
Summary for Reach R1: Observatory Rd. Swale West

Inflow Area = 3.512 ac, 0.00% Impervious, Inflow Depth = 1.27" for Q10 event
Inflow = 6.27 cfs @ 12.05 hrs, Volume= 0.373 af
Outflow = 6.00 cfs @ 12.08 hrs, Volume= 0.373 af, Atten= 4%, Lag= 2.3 min

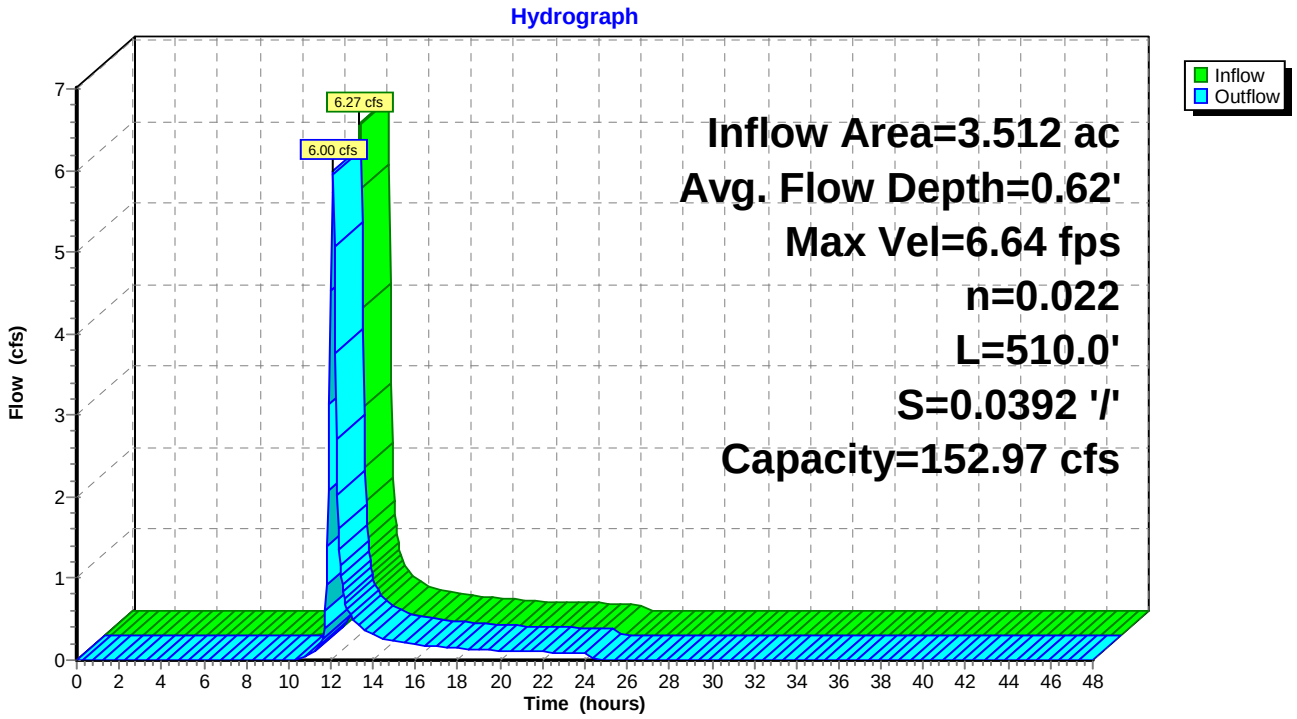
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.64 fps, Min. Travel Time= 1.3 min
Avg. Velocity = 2.32 fps, Avg. Travel Time= 3.7 min

Peak Storage= 474 cf @ 12.06 hrs
Average Depth at Peak Storage= 0.62'
Bank-Full Depth= 3.00' Flow Area= 10.0 sf, Capacity= 152.97 cfs

5.00' x 3.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 510.0' Slope= 0.0392 '/'
Inlet Invert= 680.00', Outlet Invert= 660.00'



Reach R1: Observatory Rd. Swale West



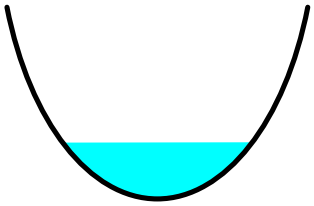
Summary for Reach R2: Observatory Rd. Swale Middle

Inflow Area = 9.298 ac, 0.00% Impervious, Inflow Depth = 1.05" for Q10 event
Inflow = 12.11 cfs @ 12.10 hrs, Volume= 0.813 af
Outflow = 11.82 cfs @ 12.12 hrs, Volume= 0.813 af, Atten= 2%, Lag= 1.6 min

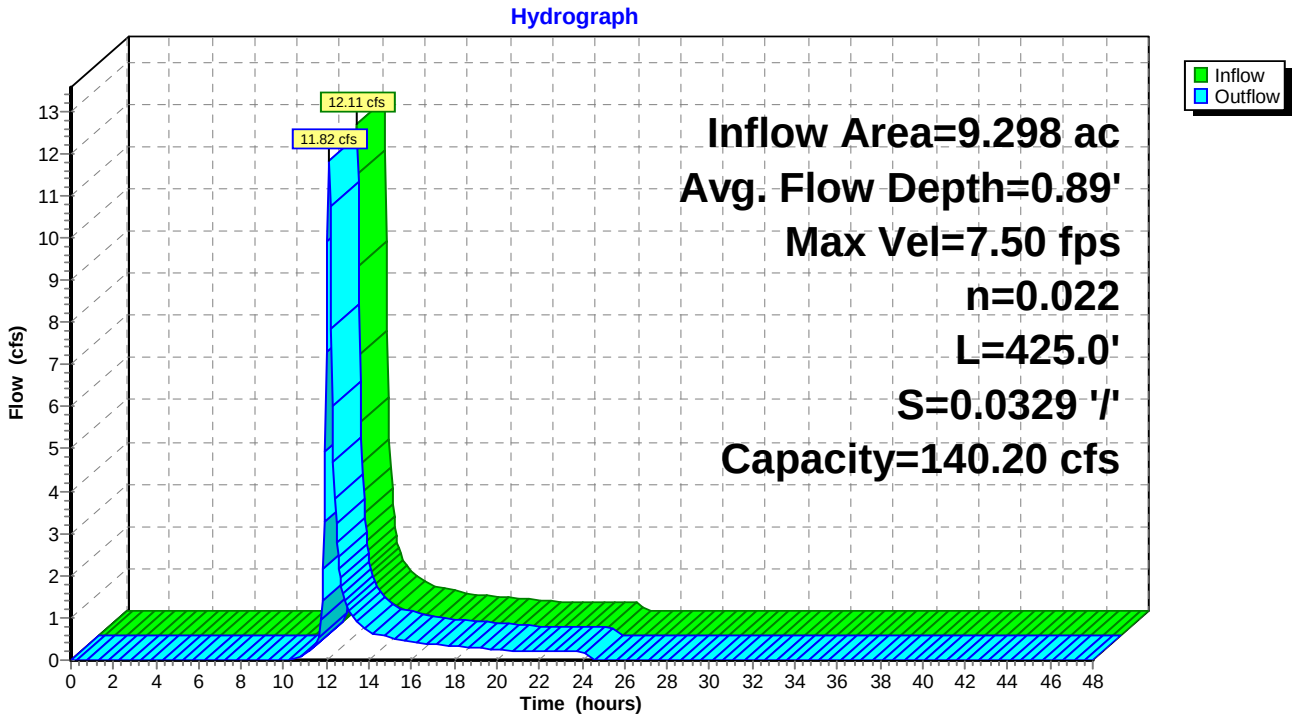
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 7.50 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 2.69 fps, Avg. Travel Time= 2.6 min

Peak Storage= 684 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.89'
Bank-Full Depth= 3.00' Flow Area= 10.0 sf, Capacity= 140.20 cfs

5.00' x 3.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 425.0' Slope= 0.0329 '/'
Inlet Invert= 660.00', Outlet Invert= 646.00'



Reach R2: Observatory Rd. Swale Middle



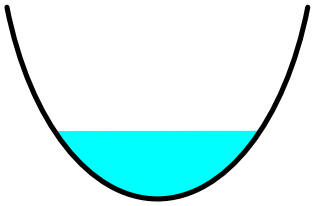
Summary for Reach R3: Observatory Rd. Swale East

Inflow Area = 16.626 ac, 0.00% Impervious, Inflow Depth = 0.96" for Q10 event
Inflow = 17.14 cfs @ 12.14 hrs, Volume= 1.326 af
Outflow = 16.86 cfs @ 12.17 hrs, Volume= 1.326 af, Atten= 2%, Lag= 1.8 min

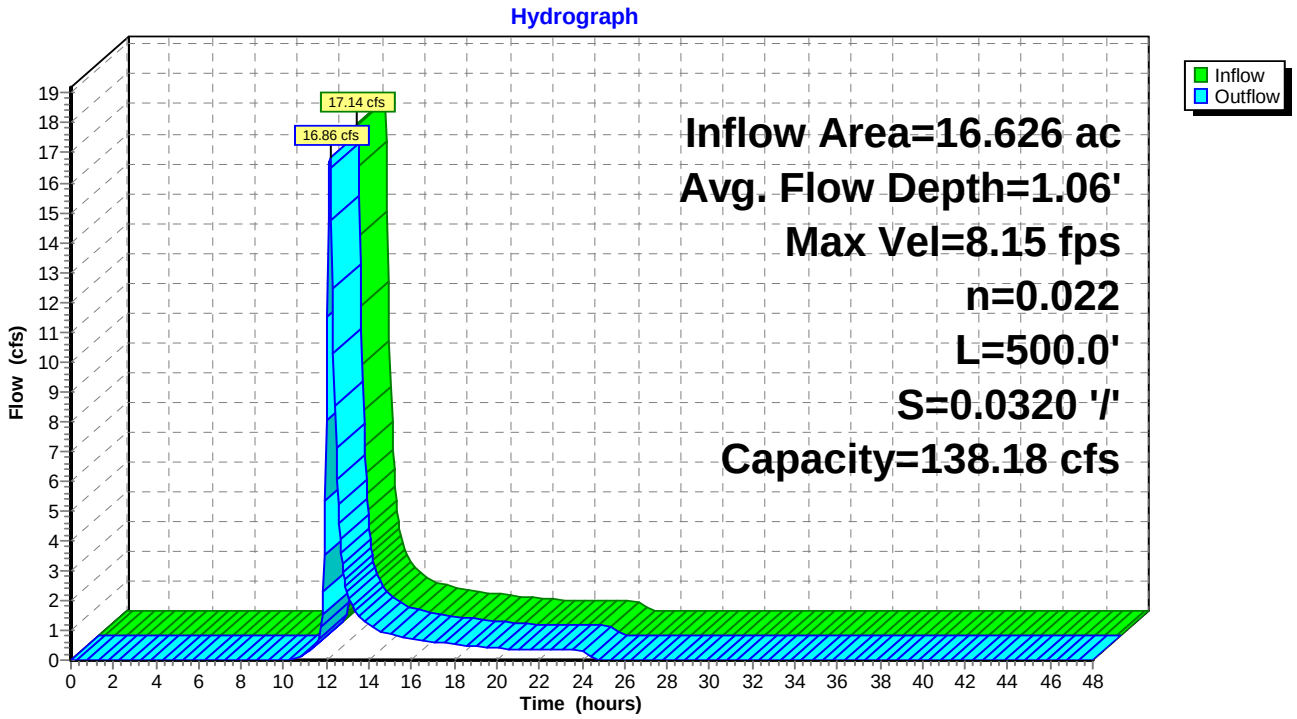
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 8.15 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 3.02 fps, Avg. Travel Time= 2.8 min

Peak Storage= 1,050 cf @ 12.15 hrs
Average Depth at Peak Storage= 1.06'
Bank-Full Depth= 3.00' Flow Area= 10.0 sf, Capacity= 138.18 cfs

5.00' x 3.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 500.0' Slope= 0.0320 '/'
Inlet Invert= 646.00', Outlet Invert= 630.00'



Reach R3: Observatory Rd. Swale East

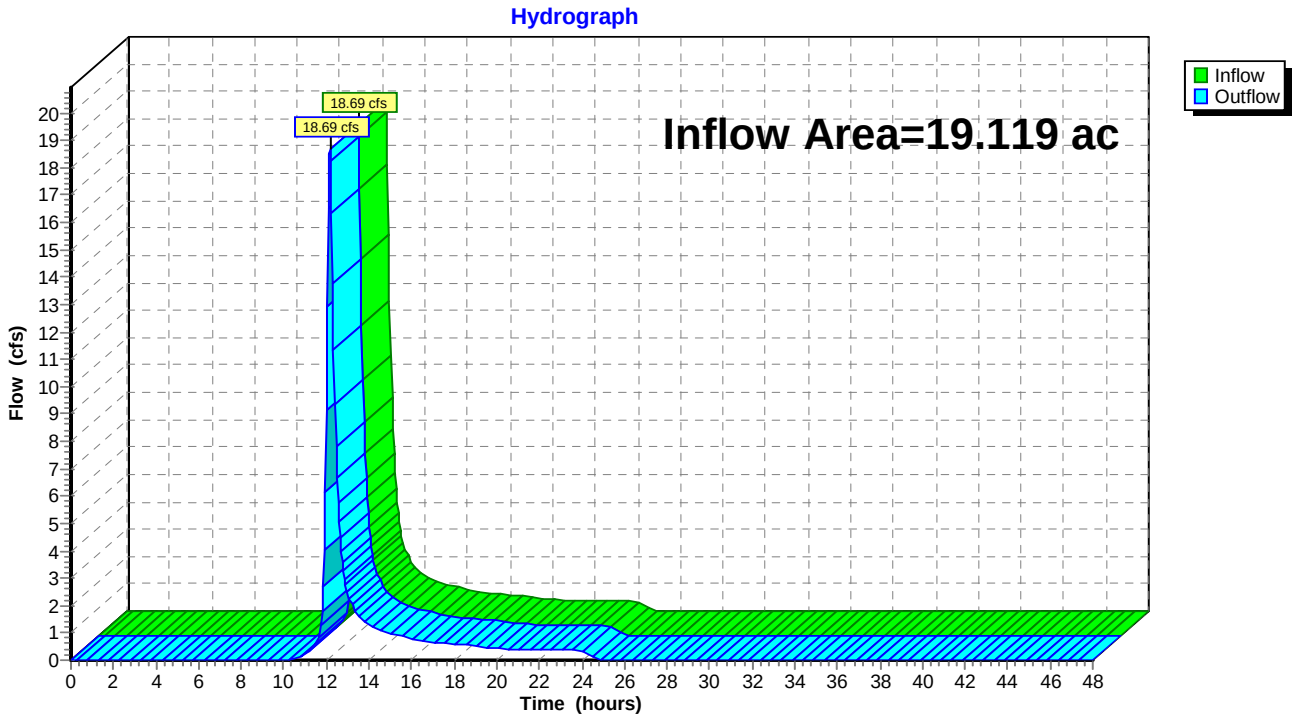


Summary for Reach R4: S/N 001

Inflow Area = 19.119 ac, 0.00% Impervious, Inflow Depth = 0.92" for Q10 event
Inflow = 18.69 cfs @ 12.17 hrs, Volume= 1.474 af
Outflow = 18.69 cfs @ 12.17 hrs, Volume= 1.474 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach R4: S/N 001



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment S1: West Woods Runoff Area=152,998 sf 0.00% Impervious Runoff Depth=0.04"
Flow Length=940' Tc=12.2 min CN=WQ Runoff=0.03 cfs 0.012 af

Subcatchment S2: South Woods Runoff Area=252,025 sf 0.00% Impervious Runoff Depth=0.03"
Flow Length=970' Tc=17.7 min CN=WQ Runoff=0.04 cfs 0.015 af

Subcatchment S3: North Woods Runoff Area=319,223 sf 0.00% Impervious Runoff Depth=0.03"
Flow Length=1,275' Tc=25.4 min CN=WQ Runoff=0.04 cfs 0.017 af

Subcatchment S4: East Woods Runoff Area=108,585 sf 0.00% Impervious Runoff Depth=0.02"
Flow Length=850' Tc=21.6 min CN=WQ Runoff=0.01 cfs 0.005 af

Reach R1: Observatory Rd. Swale West Avg. Flow Depth=0.05' Max Vel=1.44 fps Inflow=0.03 cfs 0.012 af
n=0.022 L=510.0' S=0.0392 '/' Capacity=152.97 cfs Outflow=0.03 cfs 0.012 af

Reach R2: Observatory Rd. Swale Avg. Flow Depth=0.07' Max Vel=1.68 fps Inflow=0.07 cfs 0.027 af
n=0.022 L=425.0' S=0.0329 '/' Capacity=140.20 cfs Outflow=0.07 cfs 0.027 af

Reach R3: Observatory Rd. Swale East Avg. Flow Depth=0.09' Max Vel=1.88 fps Inflow=0.10 cfs 0.044 af
n=0.022 L=500.0' S=0.0320 '/' Capacity=138.18 cfs Outflow=0.10 cfs 0.044 af

Reach R4: S/N 001 Inflow=0.11 cfs 0.049 af
Outflow=0.11 cfs 0.049 af

Total Runoff Area = 19.119 ac Runoff Volume = 0.049 af Average Runoff Depth = 0.03"
100.00% Pervious = 19.119 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment S1: West Woods

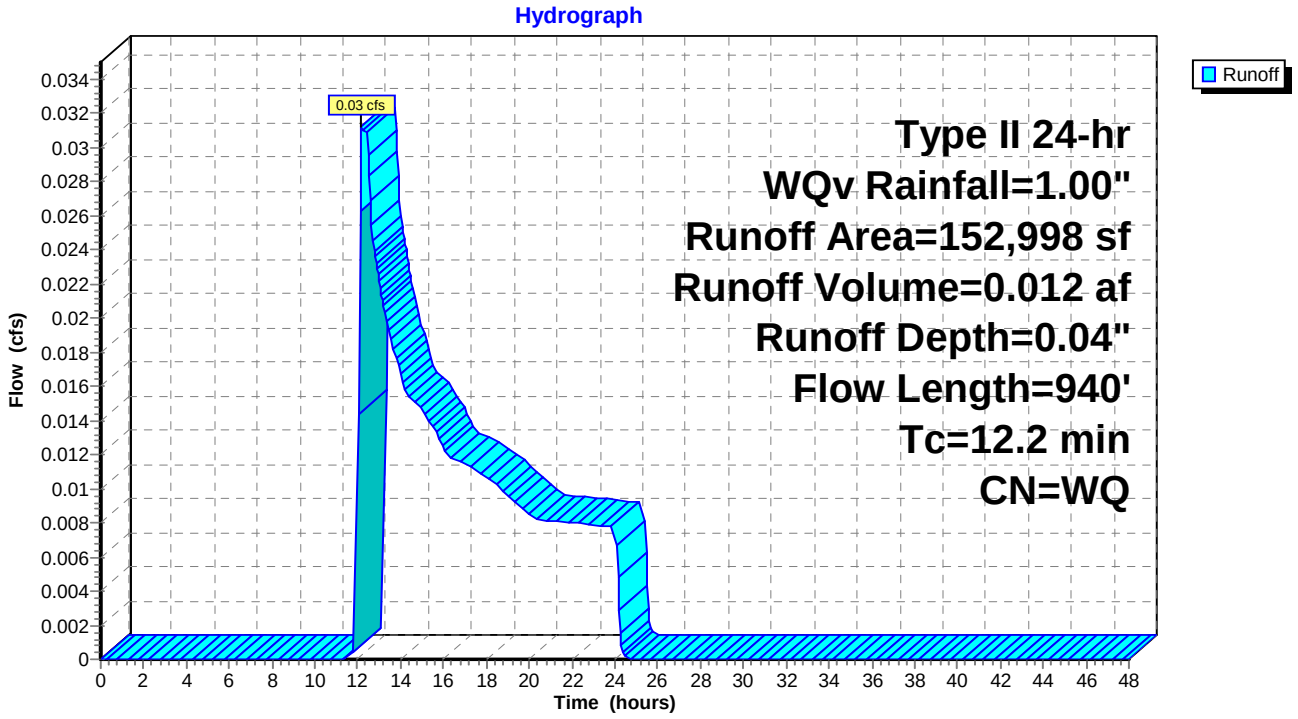
Runoff = 0.03 cfs @ 12.15 hrs, Volume= 0.012 af, Depth= 0.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr WQv Rainfall=1.00"

Area (sf)	CN	Description
135,531	77	Woods, Good, HSG D
17,467	30	Woods, Good, HSG A
152,998		Weighted Average
152,998		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	660	0.1500	1.48		**Lag/CN Method, West Woods D Soils**
4.8	280	0.0900	0.97		**Lag/CN Method, West Woods A Soils**
12.2	940	Total			

Subcatchment S1: West Woods



Summary for Subcatchment S2: South Woods

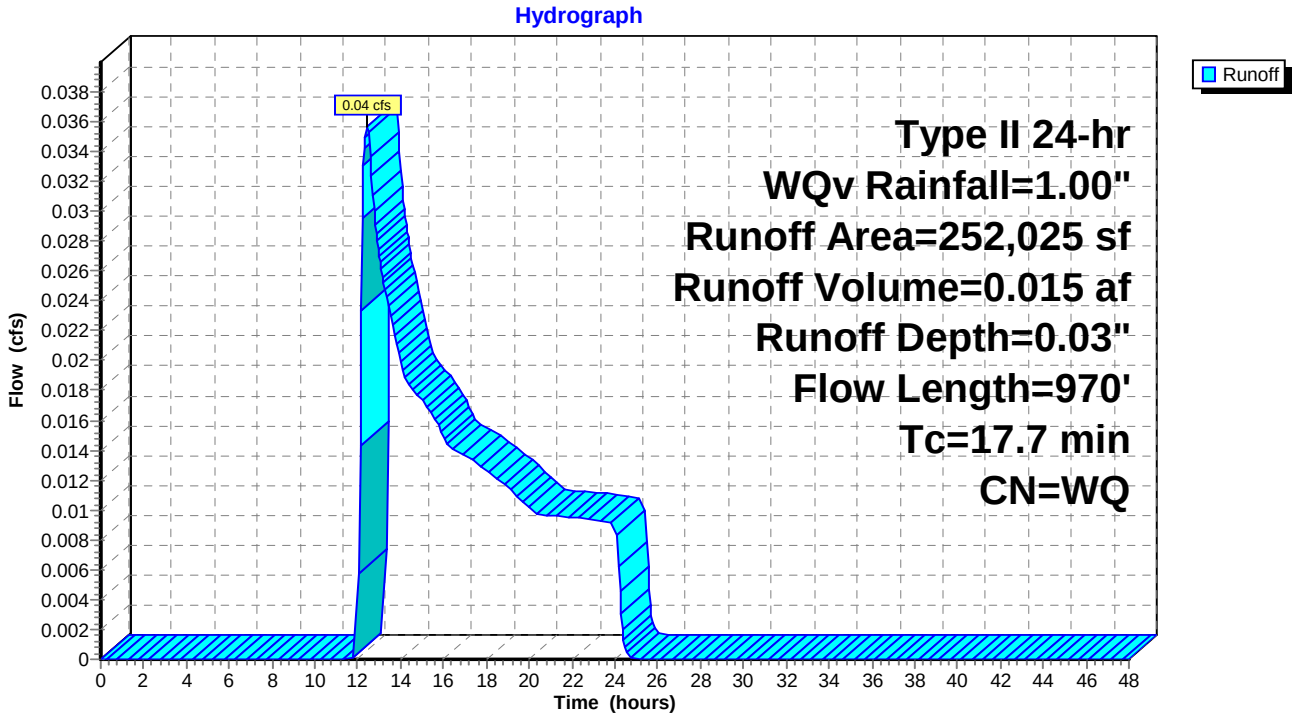
Runoff = 0.04 cfs @ 12.45 hrs, Volume= 0.015 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr WQv Rainfall=1.00"

Area (sf)	CN	Description
159,925	77	Woods, Good, HSG D
92,100	30	Woods, Good, HSG A
252,025		Weighted Average
252,025		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	680	0.1300	1.01		**Lag/CN Method, South Woods D Soils**
6.5	290	0.1000	0.75		**Lag/CN Method, South Woods A Soils**
17.7	970	Total			

Subcatchment S2: South Woods



Summary for Subcatchment S3: North Woods

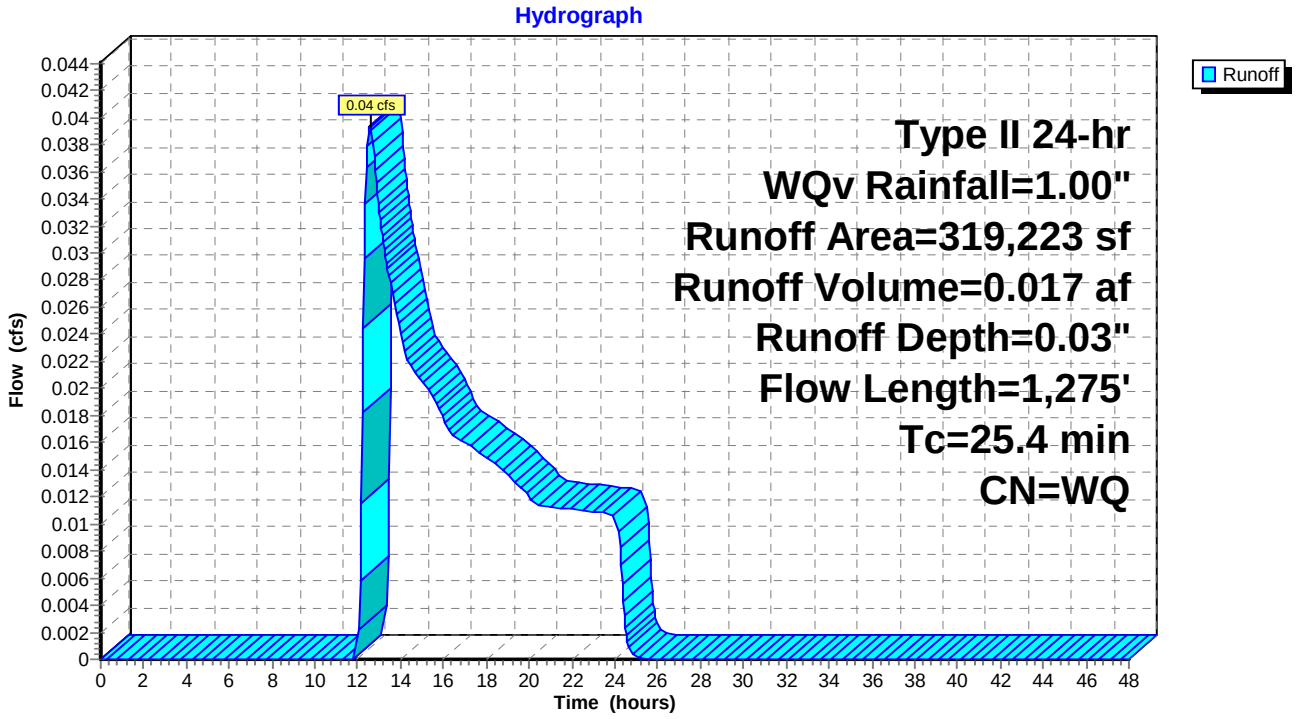
Runoff = 0.04 cfs @ 12.58 hrs, Volume= 0.017 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr WQv Rainfall=1.00"

Area (sf)	CN	Description
186,630	77	Woods, Good, HSG D
132,593	30	Woods, Good, HSG A
319,223		Weighted Average
319,223		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.4	900	0.1100	0.91		**Lag/CN Method, North Woods D Soils**
9.0	375	0.0900	0.69		**Lag/CN Method, North Woods A Soils**
25.4	1,275	Total			

Subcatchment S3: North Woods



Summary for Subcatchment S4: East Woods

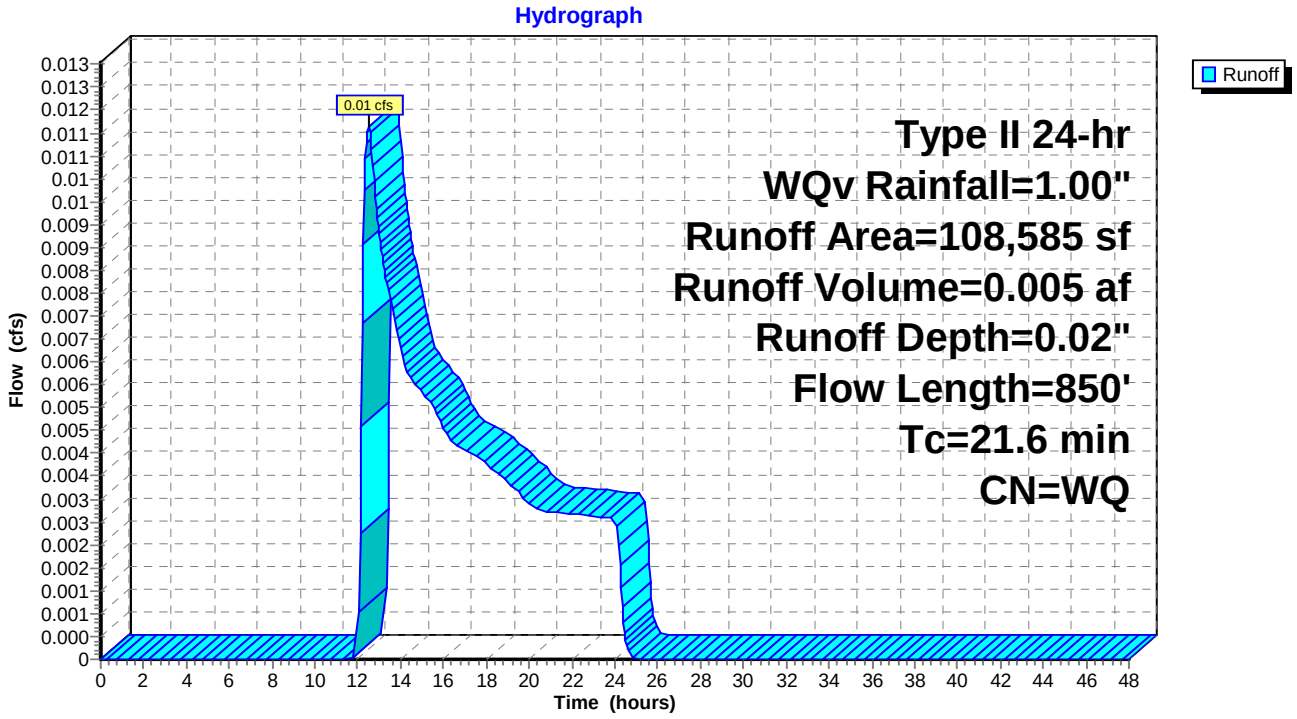
Runoff = 0.01 cfs @ 12.52 hrs, Volume= 0.005 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr WQv Rainfall=1.00"

Area (sf)	CN	Description
53,634	77	Woods, Good, HSG D
54,951	30	Woods, Good, HSG A
108,585		Weighted Average
108,585		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	450	0.0900	0.65		**Lag/CN Method, East Woods D Soils**
10.0	400	0.1000	0.67		**Lag/CN Method, East Woods A Soils**
21.6	850	Total			

Subcatchment S4: East Woods



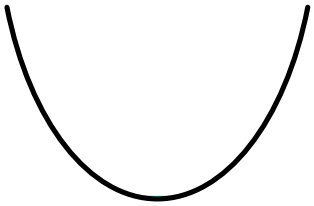
Summary for Reach R1: Observatory Rd. Swale West

Inflow Area = 3.512 ac, 0.00% Impervious, Inflow Depth = 0.04" for WQv event
Inflow = 0.03 cfs @ 12.15 hrs, Volume= 0.012 af
Outflow = 0.03 cfs @ 12.53 hrs, Volume= 0.012 af, Atten= 2%, Lag= 22.9 min

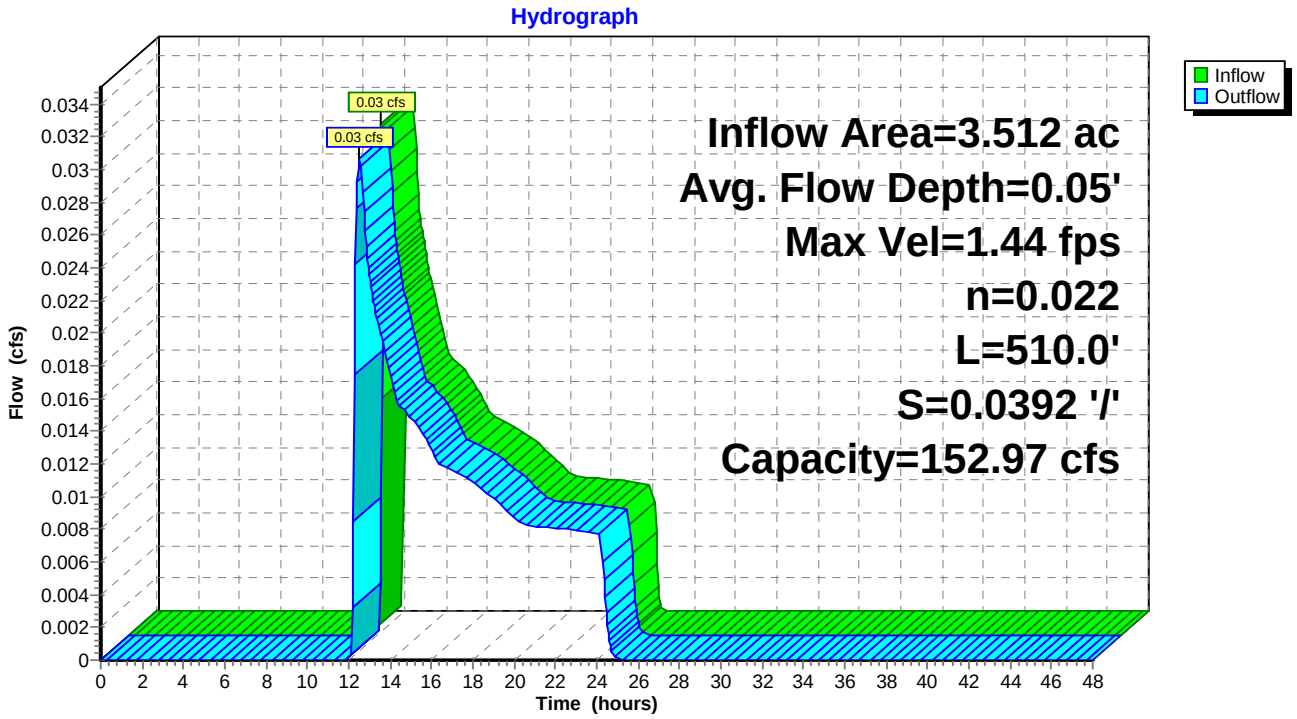
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.44 fps, Min. Travel Time= 5.9 min
Avg. Velocity = 1.07 fps, Avg. Travel Time= 7.9 min

Peak Storage= 11 cf @ 12.43 hrs
Average Depth at Peak Storage= 0.05'
Bank-Full Depth= 3.00' Flow Area= 10.0 sf, Capacity= 152.97 cfs

5.00' x 3.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 510.0' Slope= 0.0392 '/'
Inlet Invert= 680.00', Outlet Invert= 660.00'



Reach R1: Observatory Rd. Swale West



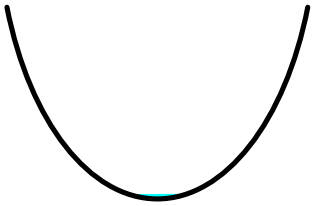
Summary for Reach R2: Observatory Rd. Swale Middle

Inflow Area = 9.298 ac, 0.00% Impervious, Inflow Depth = 0.03" for WQv event
Inflow = 0.07 cfs @ 12.49 hrs, Volume= 0.027 af
Outflow = 0.07 cfs @ 12.61 hrs, Volume= 0.027 af, Atten= 1%, Lag= 7.6 min

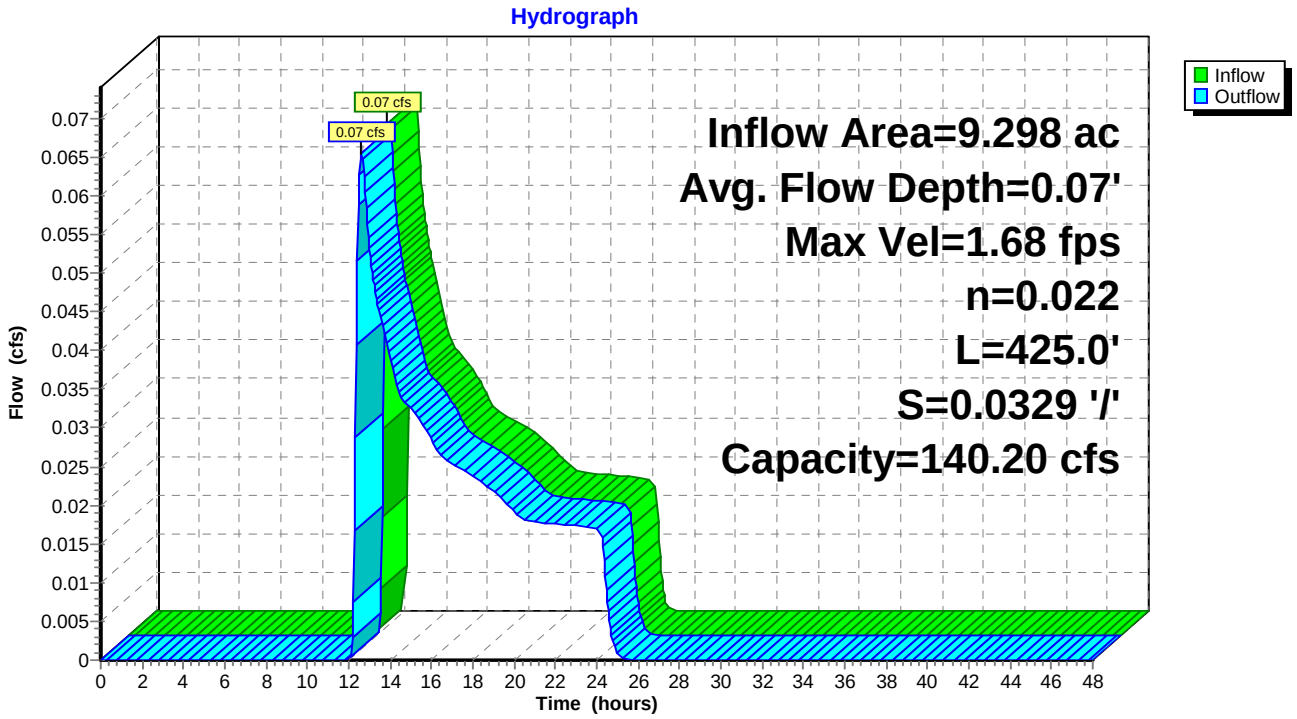
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.68 fps, Min. Travel Time= 4.2 min
Avg. Velocity = 1.25 fps, Avg. Travel Time= 5.7 min

Peak Storage= 17 cf @ 12.54 hrs
Average Depth at Peak Storage= 0.07'
Bank-Full Depth= 3.00' Flow Area= 10.0 sf, Capacity= 140.20 cfs

5.00' x 3.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 425.0' Slope= 0.0329 '/'
Inlet Invert= 660.00', Outlet Invert= 646.00'



Reach R2: Observatory Rd. Swale Middle



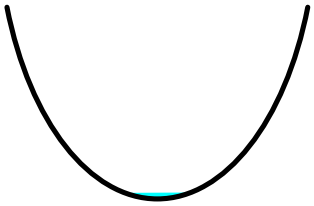
Summary for Reach R3: Observatory Rd. Swale East

Inflow Area = 16.626 ac, 0.00% Impervious, Inflow Depth = 0.03" for WQv event
Inflow = 0.10 cfs @ 12.60 hrs, Volume= 0.044 af
Outflow = 0.10 cfs @ 12.74 hrs, Volume= 0.044 af, Atten= 1%, Lag= 8.0 min

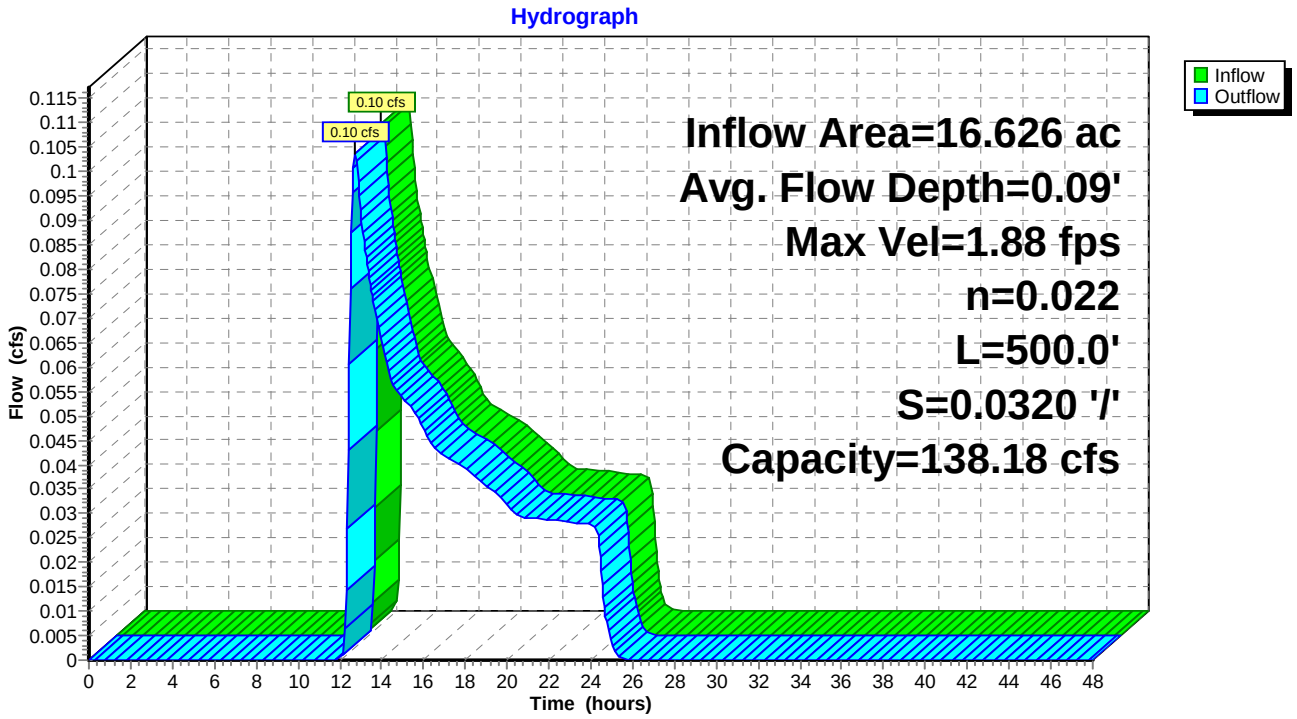
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.88 fps, Min. Travel Time= 4.4 min
Avg. Velocity = 1.39 fps, Avg. Travel Time= 6.0 min

Peak Storage= 28 cf @ 12.66 hrs
Average Depth at Peak Storage= 0.09'
Bank-Full Depth= 3.00' Flow Area= 10.0 sf, Capacity= 138.18 cfs

5.00' x 3.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 500.0' Slope= 0.0320 '/'
Inlet Invert= 646.00', Outlet Invert= 630.00'



Reach R3: Observatory Rd. Swale East

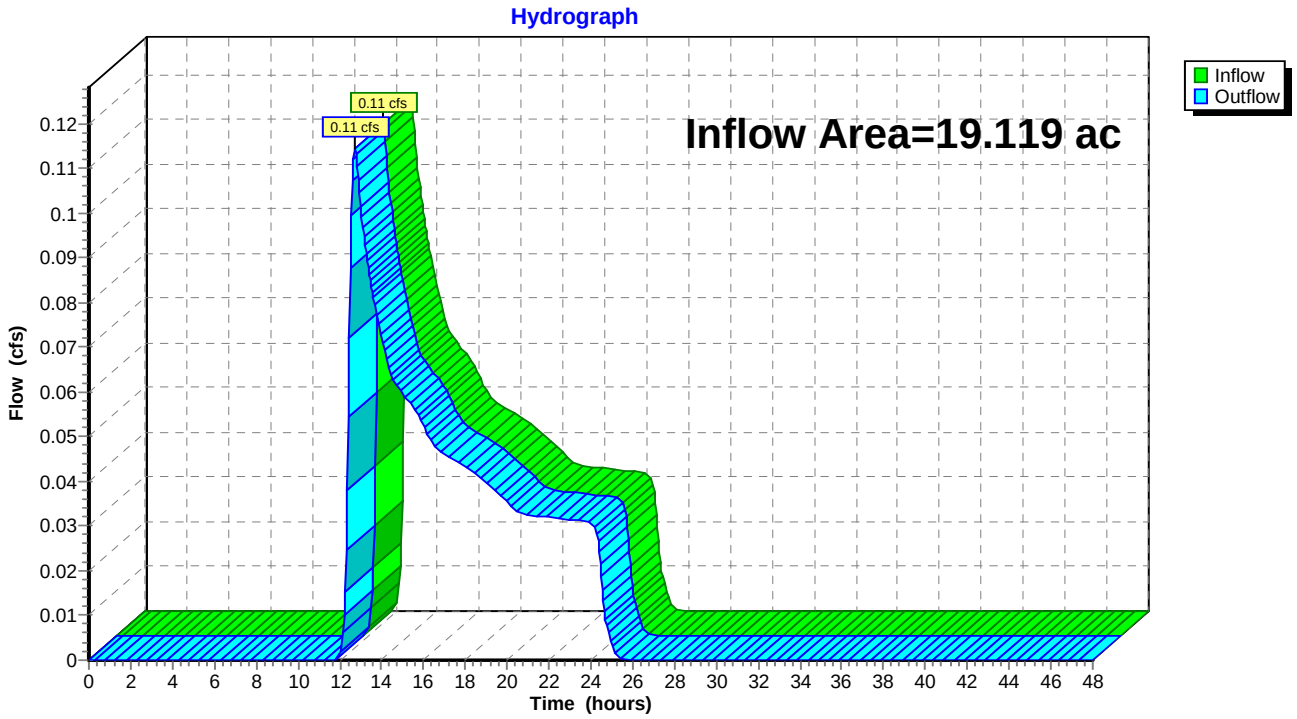


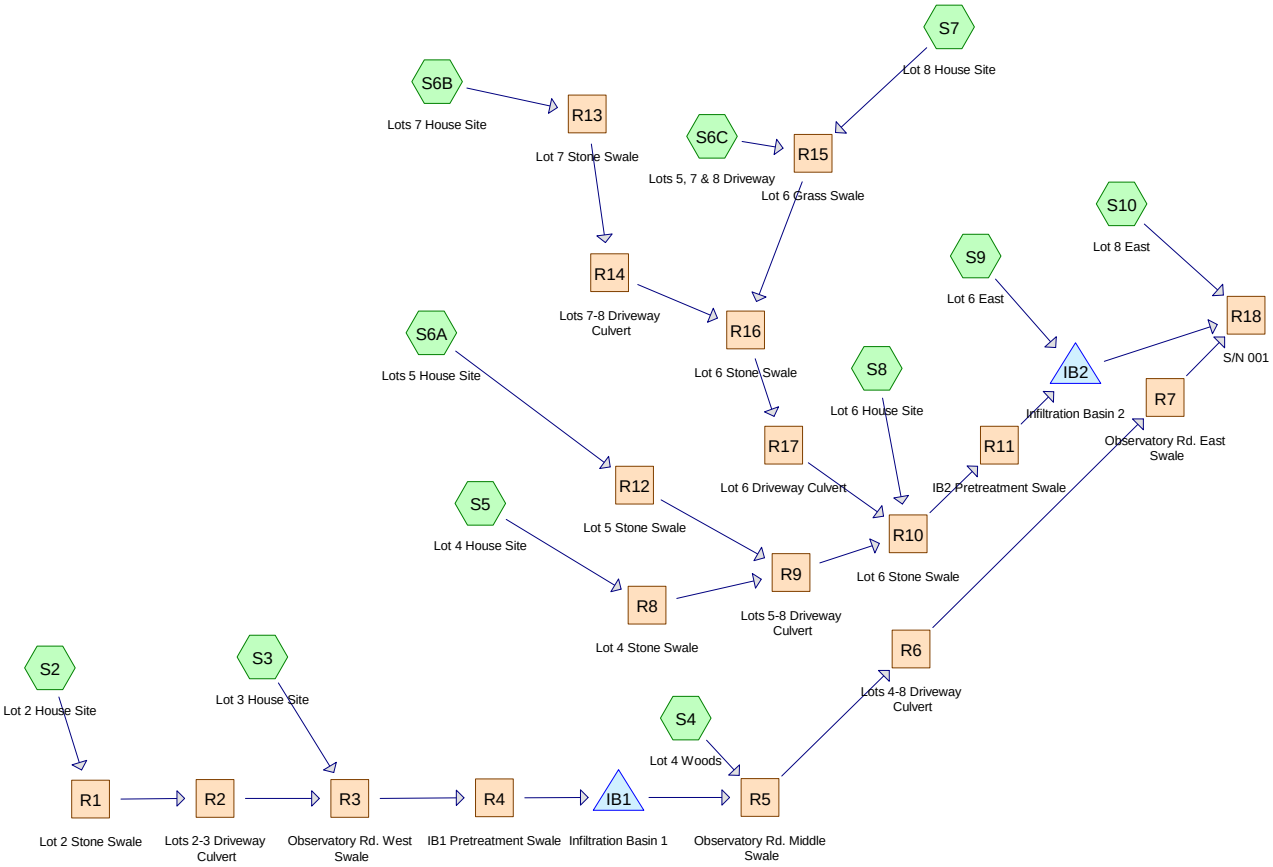
Summary for Reach R4: S/N 001

Inflow Area = 19.119 ac, 0.00% Impervious, Inflow Depth = 0.03" for WQv event
Inflow = 0.11 cfs @ 12.72 hrs, Volume= 0.049 af
Outflow = 0.11 cfs @ 12.72 hrs, Volume= 0.049 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach R4: S/N 001





Subcat Reach Pond Link

Routing Diagram for Proposed Conditions 4-9-24
Prepared by Microsoft, Printed 4/9/2024

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
3.357	39	>75% Grass cover, Good, HSG A (S10, S3, S4, S5, S6A, S6B, S6C, S7, S8, S9)
2.425	80	>75% Grass cover, Good, HSG D (S2, S3, S5, S6A, S6B, S7)
0.510	98	Paved parking, HSG A (S3, S5, S6A, S6B, S6C, S7, S8)
0.475	98	Paved parking, HSG D (S2, S3, S6A, S6B)
2.949	30	Woods, Good, HSG A (S10, S3, S4, S5, S7, S8, S9)
9.403	77	Woods, Good, HSG D (S2, S3, S4, S5, S6A, S6B, S7)
19.119	**65**	**TOTAL AREA**

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment S10: Lot 8 East Runoff Area=35,984 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=210' Tc=10.7 min CN=WQ Runoff=0.00 cfs 0.000 af

Subcatchment S2: Lot 2 House Site Runoff Area=84,188 sf 6.12% Impervious Runoff Depth=0.60"
Flow Length=420' Tc=5.1 min CN=WQ Runoff=1.95 cfs 0.097 af

Subcatchment S3: Lot 3 House Site Runoff Area=68,847 sf 10.45% Impervious Runoff Depth=0.54"
Flow Length=530' Tc=10.4 min CN=WQ Runoff=1.16 cfs 0.071 af

Subcatchment S4: Lot 4 Woods Runoff Area=89,067 sf 0.00% Impervious Runoff Depth=0.08"
Flow Length=560' Tc=21.6 min CN=WQ Runoff=0.16 cfs 0.014 af

Subcatchment S5: Lot 4 House Site Runoff Area=199,110 sf 2.15% Impervious Runoff Depth=0.40"
Flow Length=935' Tc=15.2 min CN=WQ Runoff=2.06 cfs 0.151 af

Subcatchment S6A: Lots 5 House Site Runoff Area=50,961 sf 9.89% Impervious Runoff Depth=0.64"
Flow Length=725' Tc=10.2 min CN=WQ Runoff=1.04 cfs 0.063 af

Subcatchment S6B: Lots 7 House Site Runoff Area=164,212 sf 2.67% Impervious Runoff Depth=0.51"
Flow Length=905' Tc=11.9 min CN=WQ Runoff=2.52 cfs 0.161 af

Subcatchment S6C: Lots 5, 7 & 8 Driveway Runoff Area=11,415 sf 50.10% Impervious Runoff Depth=0.91"
Flow Length=35' Slope=0.0500 '/' Tc=1.6 min CN=WQ Runoff=0.40 cfs 0.020 af

Subcatchment S7: Lot 8 House Site Runoff Area=46,146 sf 8.90% Impervious Runoff Depth=0.46"
Flow Length=535' Tc=12.4 min CN=WQ Runoff=0.62 cfs 0.041 af

Subcatchment S8: Lot 6 House Site Runoff Area=39,264 sf 17.89% Impervious Runoff Depth=0.33"
Flow Length=220' Tc=8.6 min CN=WQ Runoff=0.42 cfs 0.025 af

Subcatchment S9: Lot 6 East Runoff Area=43,637 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=235' Tc=12.6 min CN=WQ Runoff=0.00 cfs 0.000 af

Reach R1: Lot 2 Stone Swale Avg. Flow Depth=0.32' Max Vel=4.42 fps Inflow=1.95 cfs 0.097 af
n=0.040 L=315.0' S=0.1206 '/' Capacity=86.00 cfs Outflow=1.83 cfs 0.097 af

Reach R10: Lot 6 Stone Swale Avg. Flow Depth=0.63' Max Vel=5.25 fps Inflow=6.20 cfs 0.461 af
n=0.040 L=190.0' S=0.0737 '/' Capacity=67.22 cfs Outflow=6.12 cfs 0.461 af

Reach R11: IB2 Pretreatment Swale Avg. Flow Depth=1.16' Max Vel=1.45 fps Inflow=6.12 cfs 0.461 af
n=0.080 L=100.0' S=0.0100 '/' Capacity=78.61 cfs Outflow=5.95 cfs 0.461 af

Reach R12: Lot 5 Stone Swale Avg. Flow Depth=0.26' Max Vel=3.40 fps Inflow=1.04 cfs 0.063 af
n=0.040 L=190.0' S=0.0947 '/' Capacity=76.22 cfs Outflow=1.01 cfs 0.063 af

Reach R13: Lot 7 Stone Swale Avg. Flow Depth=0.41' Max Vel=4.06 fps Inflow=2.52 cfs 0.161 af
n=0.040 L=225.0' S=0.0756 '/' Capacity=68.06 cfs Outflow=2.41 cfs 0.161 af

Reach R14: Lots 7-8 Driveway Culvert Avg. Flow Depth=0.36' Max Vel=7.39 fps Inflow=2.41 cfs 0.161 af
18.0" Round Pipe n=0.013 L=30.0' S=0.0333 '/' Capacity=19.18 cfs Outflow=2.41 cfs 0.161 af

Reach R15: Lot 6 Grass Swale Avg. Flow Depth=0.31' Max Vel=1.73 fps Inflow=0.73 cfs 0.061 af
n=0.035 L=205.0' S=0.0146 '/' Capacity=34.23 cfs Outflow=0.70 cfs 0.061 af

Reach R16: Lot 6 Stone Swale Avg. Flow Depth=0.44' Max Vel=4.52 fps Inflow=3.09 cfs 0.222 af
n=0.040 L=140.0' S=0.0857 '/' Capacity=72.50 cfs Outflow=3.05 cfs 0.222 af

Reach R17: Lot 6 Driveway Culvert Avg. Flow Depth=0.36' Max Vel=10.35 fps Inflow=3.05 cfs 0.222 af
15.0" Round Pipe n=0.013 L=30.0' S=0.0667 '/' Capacity=16.68 cfs Outflow=3.05 cfs 0.222 af

Reach R18: S/N 001 Avg. Flow Depth=0.07' Max Vel=3.51 fps Inflow=0.14 cfs 0.014 af
36.0" Round Pipe n=0.013 L=35.0' S=0.0571 '/' Capacity=159.44 cfs Outflow=0.14 cfs 0.014 af

Reach R2: Lots 2-3 Driveway Culvert Avg. Flow Depth=0.24' Max Vel=10.08 fps Inflow=1.83 cfs 0.097 af
18.0" Round Pipe n=0.013 L=30.0' S=0.1000 '/' Capacity=33.22 cfs Outflow=1.82 cfs 0.097 af

Reach R3: Observatory Rd. West Swale Avg. Flow Depth=0.40' Max Vel=5.96 fps Inflow=2.96 cfs 0.167 af
n=0.022 L=190.0' S=0.0526 '/' Capacity=177.22 cfs Outflow=2.87 cfs 0.167 af

Reach R4: IB1 Pretreatment Swale Avg. Flow Depth=0.82' Max Vel=1.13 fps Inflow=2.87 cfs 0.167 af
n=0.080 L=110.0' S=0.0091 '/' Capacity=74.96 cfs Outflow=2.70 cfs 0.167 af

Reach R5: Observatory Rd. Middle Avg. Flow Depth=0.10' Max Vel=2.39 fps Inflow=0.16 cfs 0.014 af
n=0.022 L=375.0' S=0.0453 '/' Capacity=164.47 cfs Outflow=0.15 cfs 0.014 af

Reach R6: Lots 4-8 Driveway Culvert Avg. Flow Depth=0.08' Max Vel=4.32 fps Inflow=0.15 cfs 0.014 af
18.0" Round Pipe n=0.013 L=40.0' S=0.0750 '/' Capacity=28.77 cfs Outflow=0.15 cfs 0.014 af

Reach R7: Observatory Rd. East Swale Avg. Flow Depth=0.13' Max Vel=1.56 fps Inflow=0.15 cfs 0.014 af
n=0.022 L=415.0' S=0.0145 '/' Capacity=92.88 cfs Outflow=0.14 cfs 0.014 af

Reach R8: Lot 4 Stone Swale Avg. Flow Depth=0.40' Max Vel=3.44 fps Inflow=2.06 cfs 0.151 af
n=0.040 L=145.0' S=0.0552 '/' Capacity=58.16 cfs Outflow=2.02 cfs 0.151 af

Reach R9: Lots 5-8 Driveway Culvert Avg. Flow Depth=0.34' Max Vel=10.65 fps Inflow=2.92 cfs 0.214 af
15.0" Round Pipe n=0.013 L=40.0' S=0.0750 '/' Capacity=17.69 cfs Outflow=2.92 cfs 0.214 af

Pond IB1: Infiltration Basin 1 Peak Elev=659.47' Storage=3,644 cf Inflow=2.70 cfs 0.167 af
Discarded=0.14 cfs 0.167 af Primary=0.00 cfs 0.000 af Outflow=0.14 cfs 0.167 af

Pond IB2: Infiltration Basin 2 Peak Elev=640.20' Storage=9,064 cf Inflow=5.95 cfs 0.461 af
Discarded=0.45 cfs 0.461 af Primary=0.00 cfs 0.000 af Outflow=0.45 cfs 0.461 af

Total Runoff Area = 19.119 ac Runoff Volume = 0.642 af Average Runoff Depth = 0.40"
94.85% Pervious = 18.134 ac 5.15% Impervious = 0.985 ac

Summary for Subcatchment S10: Lot 8 East

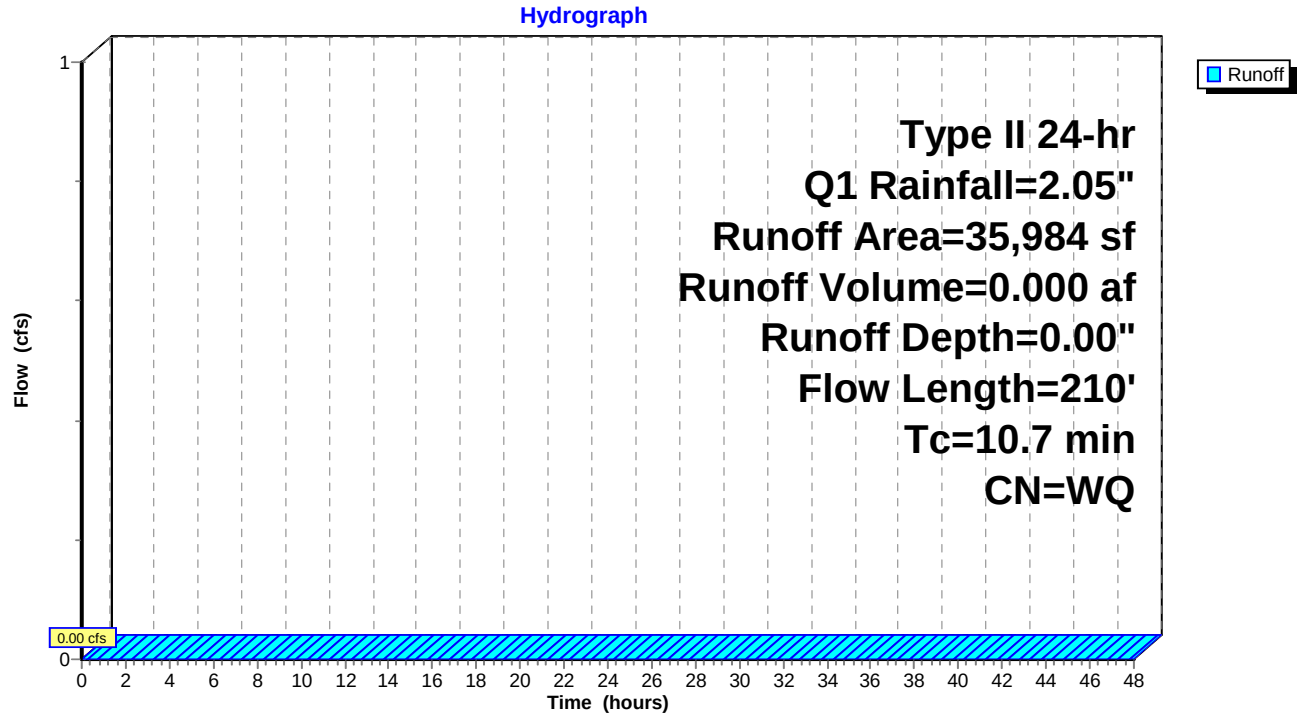
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q1 Rainfall=2.05"

Area (sf)	CN	Description
29,197	30	Woods, Good, HSG A
6,787	39	>75% Grass cover, Good, HSG A
35,984		Weighted Average
35,984		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	150	0.1600	0.39		**Lag/CN Method, Lot 8 Woods**
4.3	60	0.0800	0.23		**Lag/CN Method, Lot 8 Lawn**
10.7	210	Total			

Subcatchment S10: Lot 8 East



Summary for Subcatchment S2: Lot 2 House Site

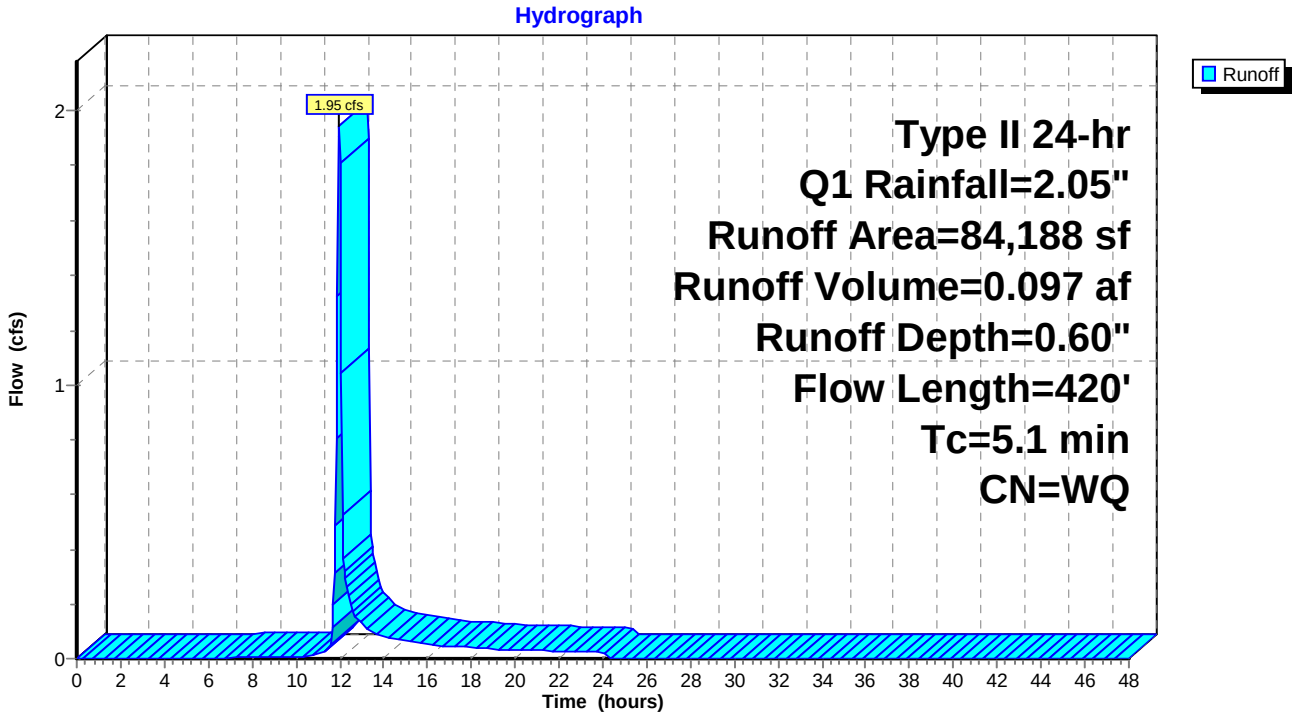
Runoff = 1.95 cfs @ 11.97 hrs, Volume= 0.097 af, Depth= 0.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q1 Rainfall=2.05"

Area (sf)	CN	Description
49,129	77	Woods, Good, HSG D
29,906	80	>75% Grass cover, Good, HSG D
5,153	98	Paved parking, HSG D
84,188		Weighted Average
79,035		93.88% Pervious Area
5,153		6.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	285	0.1700	1.63		**Lag/CN Method, Lot 2 Woods**
1.6	115	0.1300	1.19		**Lag/CN Method, Lot 2 Grass**
0.6	20	0.0500	0.52		**Lag/CN Method, Lot 2 Impervious**
5.1	420	Total			

Subcatchment S2: Lot 2 House Site



Summary for Subcatchment S3: Lot 3 House Site

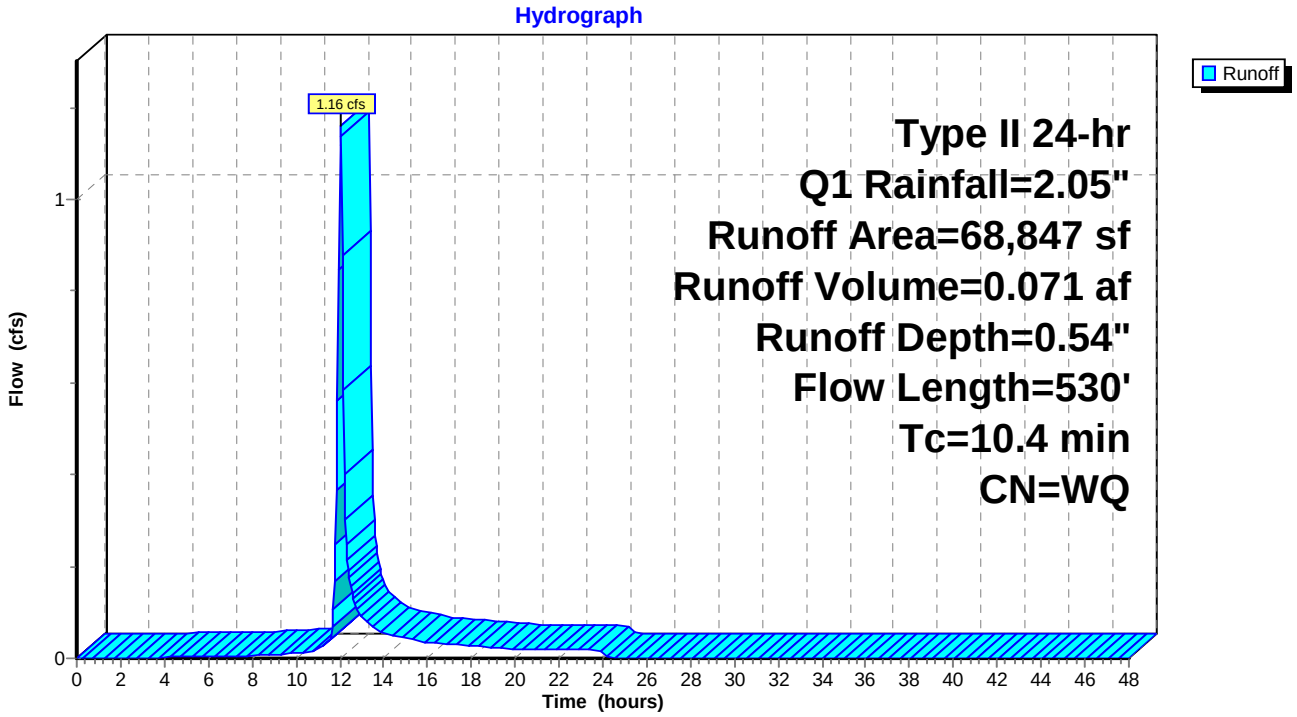
Runoff = 1.16 cfs @ 12.03 hrs, Volume= 0.071 af, Depth= 0.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q1 Rainfall=2.05"

Area (sf)	CN	Description
21,450	77	Woods, Good, HSG D
22,917	80	>75% Grass cover, Good, HSG D
7,155	98	Paved parking, HSG D
4,323	30	Woods, Good, HSG A
12,964	39	>75% Grass cover, Good, HSG A
38	98	Paved parking, HSG A
68,847		Weighted Average
61,654		89.55% Pervious Area
7,193		10.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	240	0.1800	1.25		**Lag/CN Method, Lot 3 D Soils Woods**
1.8	65	0.0700	0.60		**Lag/CN Method, Lot 3 D Soils Lawn**
0.8	20	0.0500	0.40		**Lag/CN Method, Lot 3 D Soils Impervious**
1.9	90	0.1100	0.81		**Lag/CN Method, Lot 3 A Soils Woods**
1.9	95	0.1100	0.81		**Lag/CN Method, Lot 3 A Soils Lawn**
0.8	20	0.0500	0.40		**Lag/CN Method, Lot 3 A Soils Impervious**
10.4	530	Total			

Subcatchment S3: Lot 3 House Site



Summary for Subcatchment S4: Lot 4 Woods

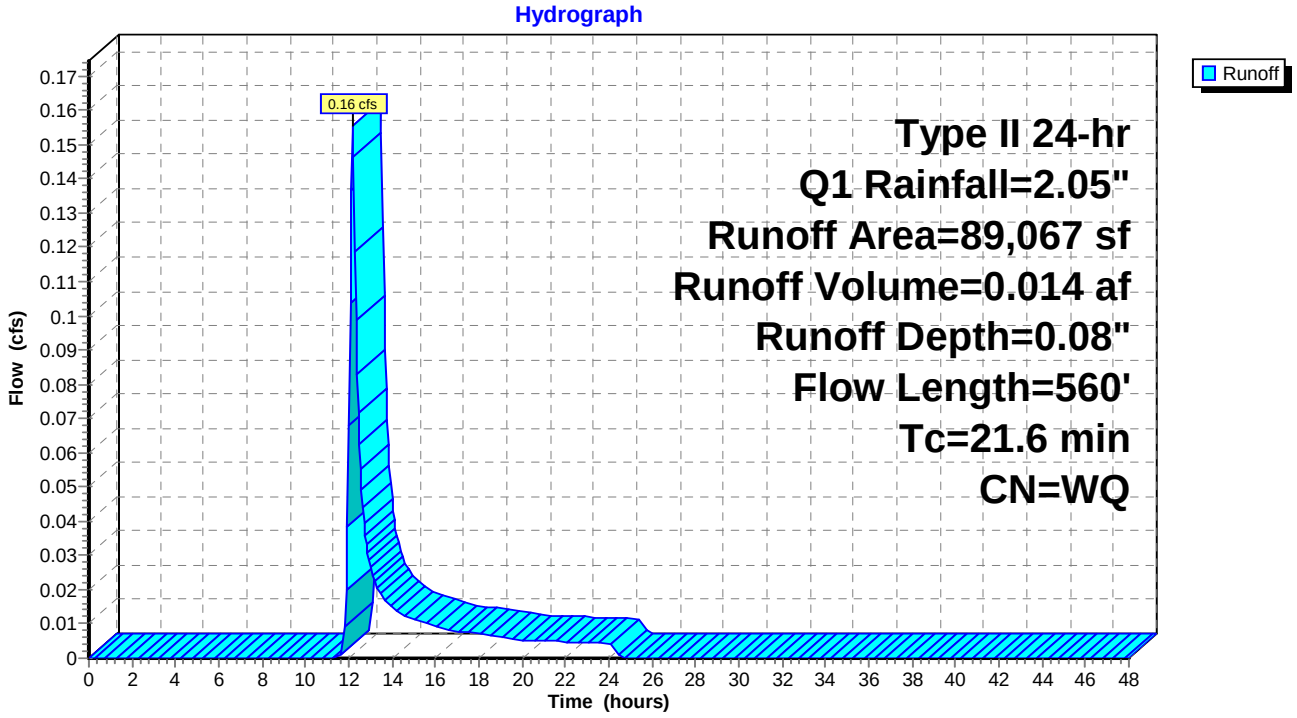
Runoff = 0.16 cfs @ 12.17 hrs, Volume= 0.014 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q1 Rainfall=2.05"

Area (sf)	CN	Description
15,676	77	Woods, Good, HSG D
48,302	30	Woods, Good, HSG A
25,089	39	>75% Grass cover, Good, HSG A
89,067		Weighted Average
89,067		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	255	0.1100	0.47		**Lag/CN Method, Lot 4 D Soils Woods**
10.2	260	0.0900	0.43		**Lag/CN Method, Lot 4 A Soils Woods**
2.3	45	0.1100	0.33		**Lag/CN Method, Lot 4 A Soils Lawn**
21.6	560	Total			

Subcatchment S4: Lot 4 Woods



Summary for Subcatchment S5: Lot 4 House Site

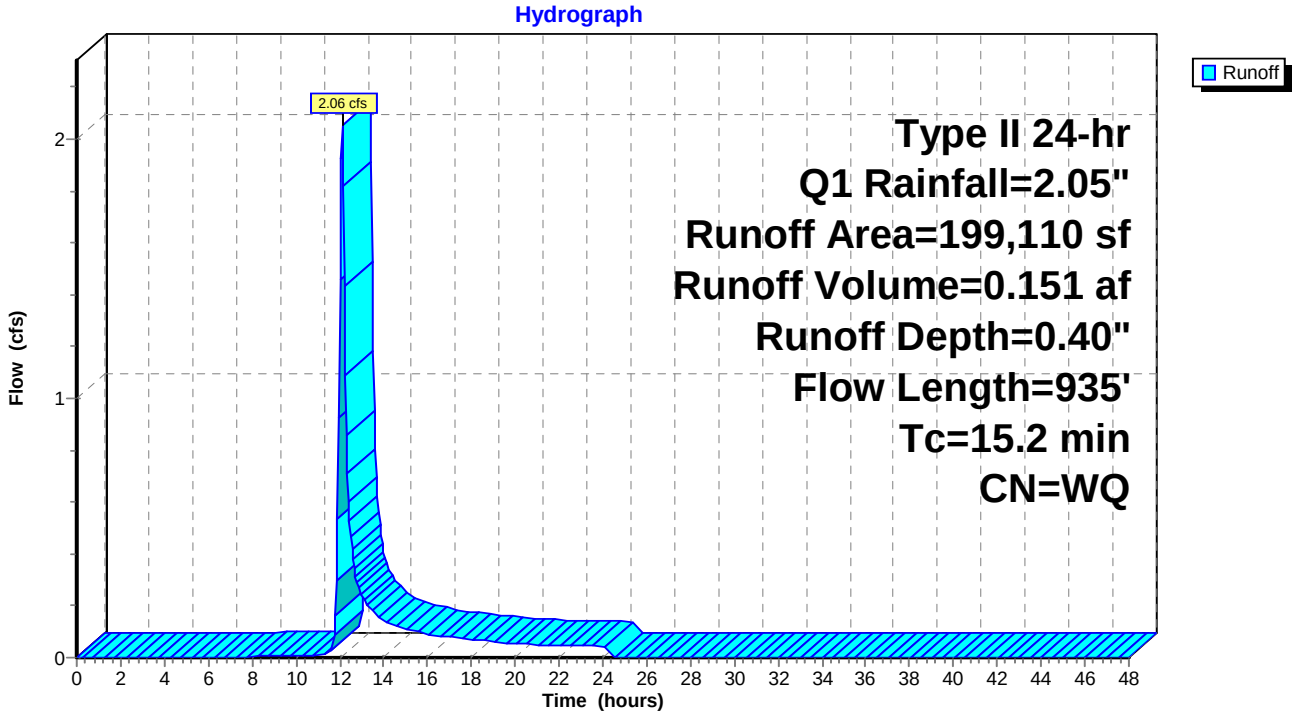
Runoff = 2.06 cfs @ 12.09 hrs, Volume= 0.151 af, Depth= 0.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q1 Rainfall=2.05"

Area (sf)	CN	Description
144,334	77	Woods, Good, HSG D
4,500	80	>75% Grass cover, Good, HSG D
27,918	30	Woods, Good, HSG A
18,079	39	>75% Grass cover, Good, HSG A
4,279	98	Paved parking, HSG A
199,110		Weighted Average
194,831		97.85% Pervious Area
4,279		2.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	655	0.1300	1.20		**Lag/CN Method, D Soils Woods**
1.6	100	0.2000	1.02		**Lag/CN Method, D Soils Lawn**
1.9	100	0.1500	0.89		**Lag/CN Method, A Soils Woods**
1.7	60	0.0800	0.58		**Lag/CN Method, A Soils Lawn**
0.9	20	0.0500	0.37		**Lag/CN Method, Lot 4 A Soils Impervious**
15.2	935	Total			

Subcatchment S5: Lot 4 House Site



Summary for Subcatchment S6A: Lots 5 House Site

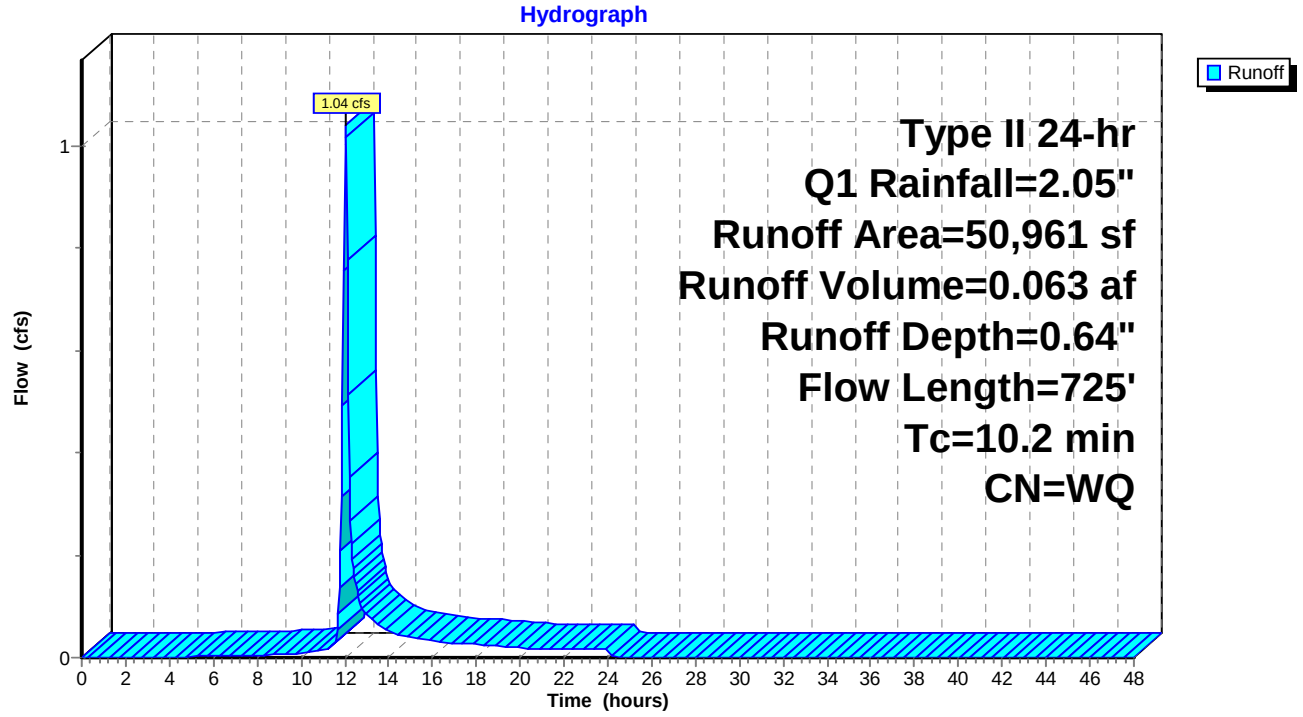
Runoff = 1.04 cfs @ 12.03 hrs, Volume= 0.063 af, Depth= 0.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q1 Rainfall=2.05"

Area (sf)	CN	Description
20,074	77	Woods, Good, HSG D
23,541	80	>75% Grass cover, Good, HSG D
4,372	98	Paved parking, HSG D
2,308	39	>75% Grass cover, Good, HSG A
666	98	Paved parking, HSG A
50,961		Weighted Average
45,923		90.11% Pervious Area
5,038		9.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	360	0.1300	1.49		**Lag/CN Method, Lots 5 D Soil Woods**
3.4	250	0.1000	1.22		**Lag/CN Method, Lots 5 D Soil Lawn**
0.6	20	0.0500	0.52		**Lag/CN Method, Lots 5 D Soil Impervious**
1.6	75	0.0700	0.80		**Lag/CN Method, Lots 5 A Soil Lawn**
0.6	20	0.0500	0.52		**Lag/CN Method, Lots 5 A Soil Impervious**
10.2	725	Total			

Subcatchment S6A: Lots 5 House Site



Summary for Subcatchment S6B: Lots 7 House Site

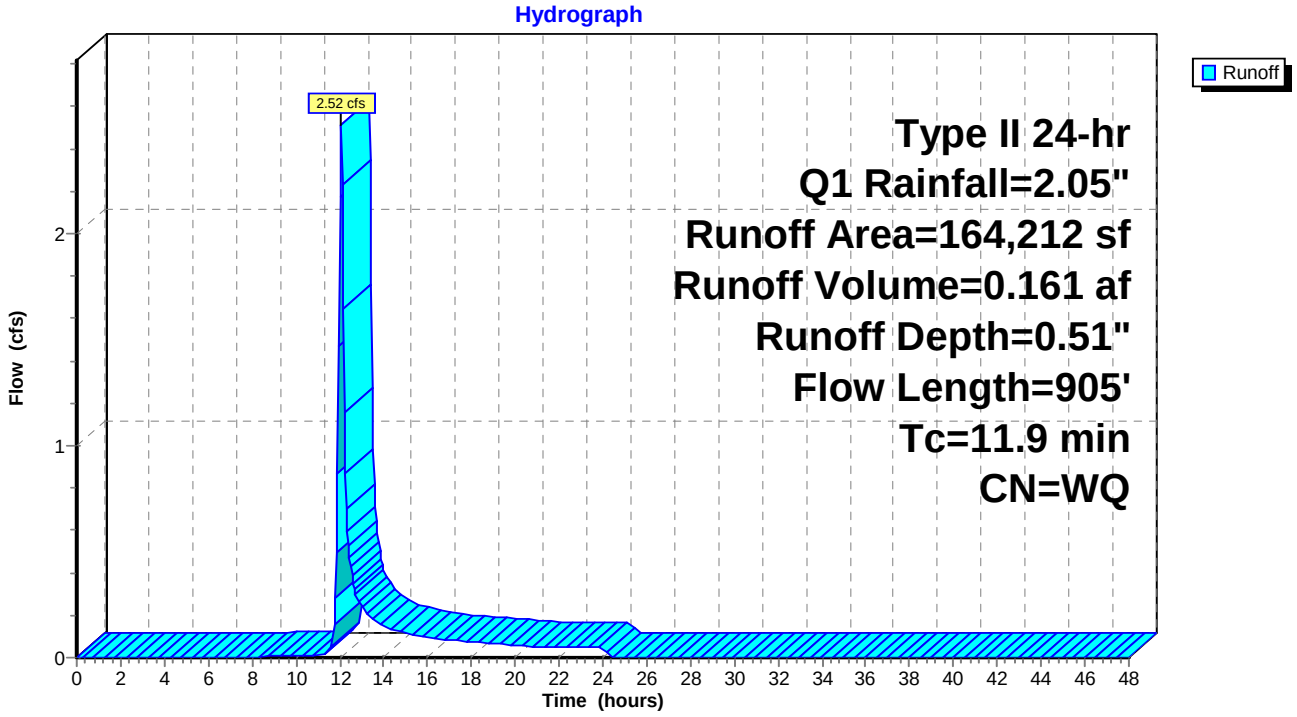
Runoff = 2.52 cfs @ 12.05 hrs, Volume= 0.161 af, Depth= 0.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q1 Rainfall=2.05"

Area (sf)	CN	Description
130,258	77	Woods, Good, HSG D
24,425	80	>75% Grass cover, Good, HSG D
3,993	98	Paved parking, HSG D
5,137	39	>75% Grass cover, Good, HSG A
399	98	Paved parking, HSG A
164,212		Weighted Average
159,820		97.33% Pervious Area
4,392		2.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	650	0.1300	1.58		**Lag/CN Method, Lot 7 D Soil Woods**
2.9	185	0.1000	1.08		**Lag/CN Method, Lot 7 D Soil Lawn**
0.7	20	0.0500	0.49		**Lag/CN Method, Lot 7 D Soil Impervious**
0.8	30	0.0700	0.63		**Lag/CN Method, Lot 7 A Soil Lawn**
0.7	20	0.0500	0.49		**Lag/CN Method, Lot 7 A Soil Impervious**
11.9	905	Total			

Subcatchment S6B: Lots 7 House Site



Summary for Subcatchment S6C: Lots 5, 7 & 8 Driveway

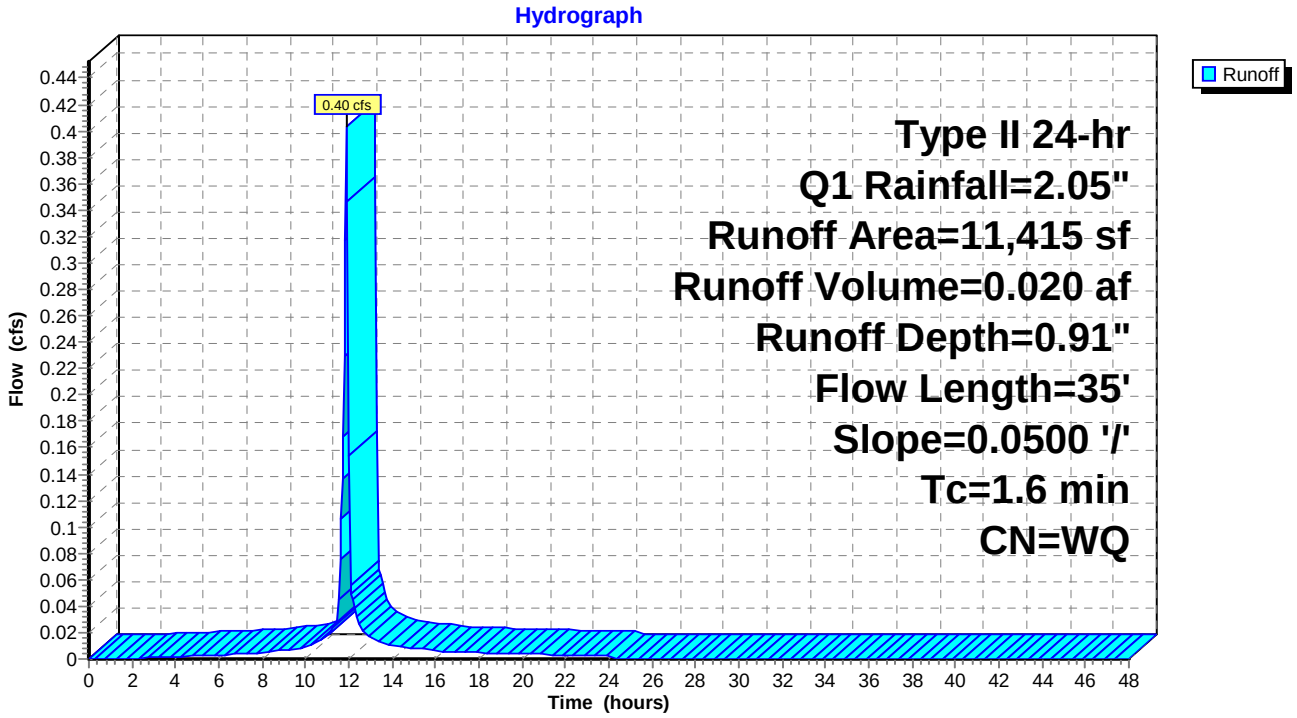
Runoff = 0.40 cfs @ 11.91 hrs, Volume= 0.020 af, Depth= 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q1 Rainfall=2.05"

Area (sf)	CN	Description
5,696	39	>75% Grass cover, Good, HSG A
5,719	98	Paved parking, HSG A
11,415		Weighted Average
5,696		49.90% Pervious Area
5,719		50.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	15	0.0500	0.37		**Lag/CN Method, Lots 5, 7 & 8 A Soil Lawn**
0.9	20	0.0500	0.39		**Lag/CN Method, Lots 5, 7 & 8 A Soil Impervious**
1.6	35	Total			

Subcatchment S6C: Lots 5, 7 & 8 Driveway



Summary for Subcatchment S7: Lot 8 House Site

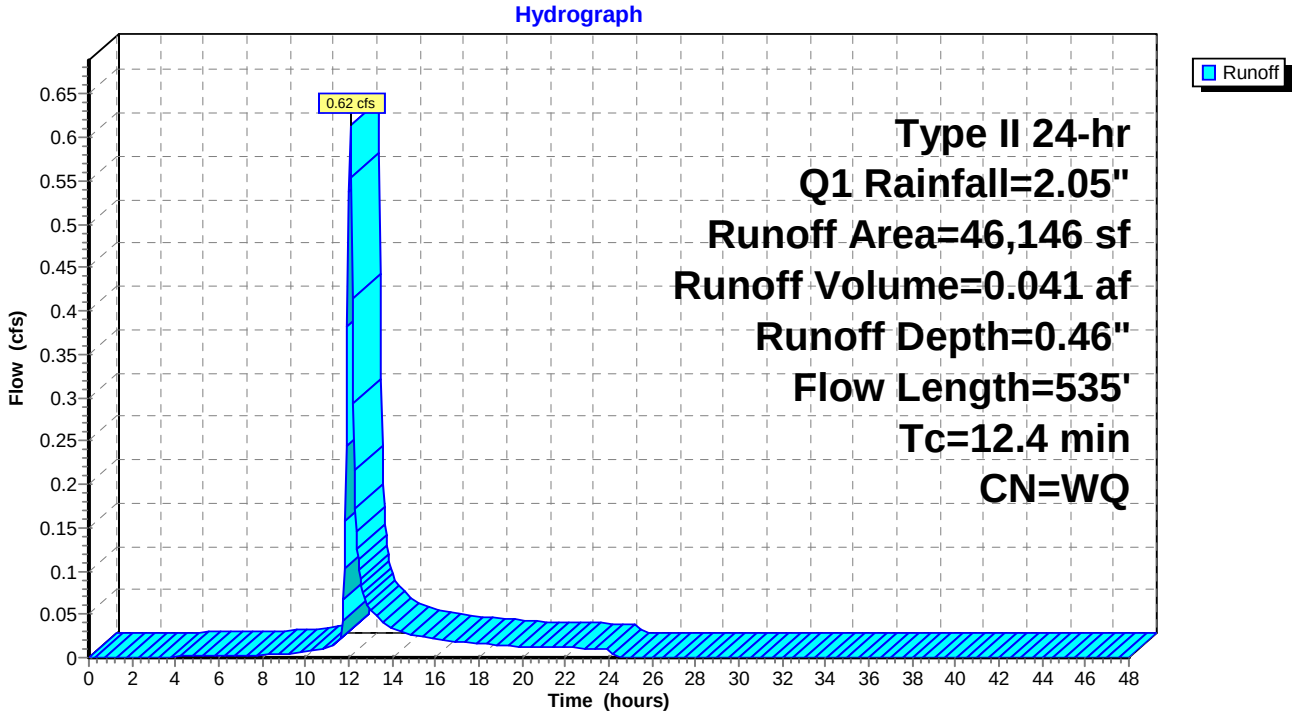
Runoff = 0.62 cfs @ 12.05 hrs, Volume= 0.041 af, Depth= 0.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q1 Rainfall=2.05"

Area (sf)	CN	Description
28,658	77	Woods, Good, HSG D
346	80	>75% Grass cover, Good, HSG D
4,702	30	Woods, Good, HSG A
8,332	39	>75% Grass cover, Good, HSG A
4,108	98	Paved parking, HSG A
46,146		Weighted Average
42,038		91.10% Pervious Area
4,108		8.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	415	0.0800	0.86		**Lag/CN Method, D Soil Woods**
0.7	20	0.0800	0.47		**Lag/CN Method, D Soils Lawn**
1.1	35	0.0800	0.52		**Lag/CN Method, A Soil Woods**
1.7	45	0.0500	0.44		**Lag/CN Method, A Soil Lawn**
0.9	20	0.0500	0.37		**Lag/CN Method, Lot 8 A Soil Impervious**
12.4	535	Total			

Subcatchment S7: Lot 8 House Site



Summary for Subcatchment S8: Lot 6 House Site

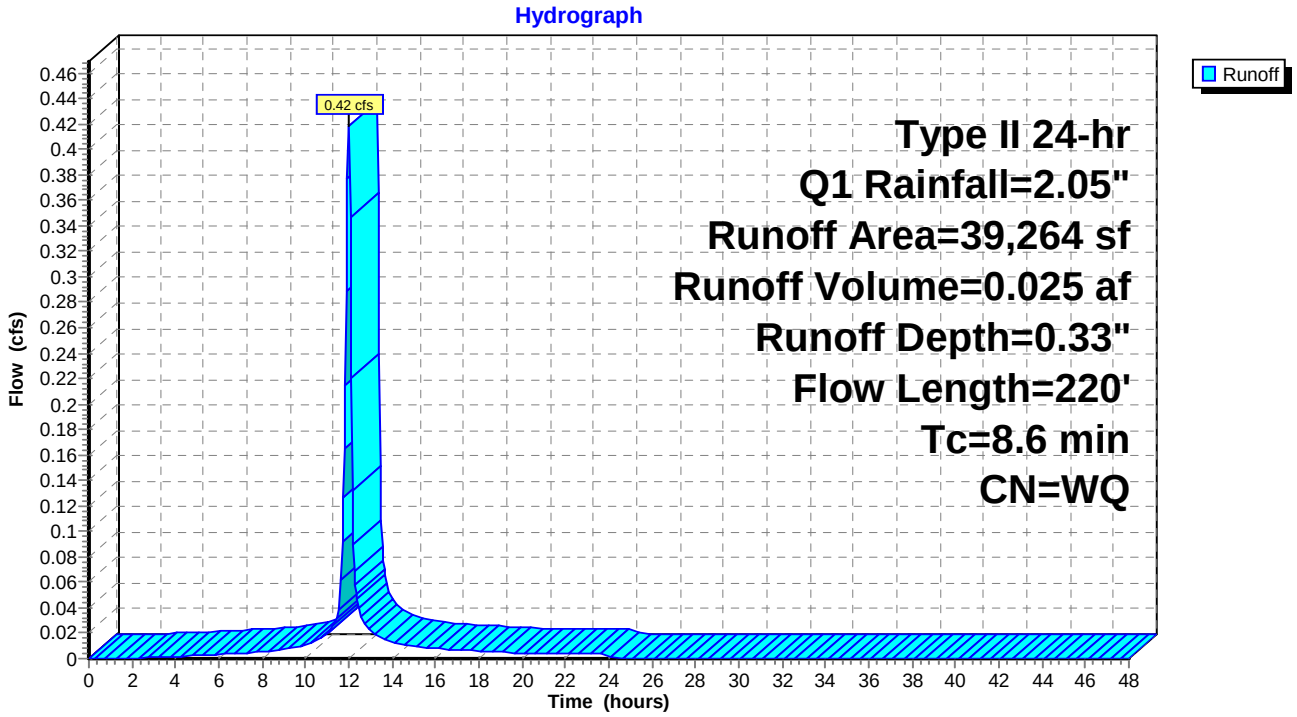
Runoff = 0.42 cfs @ 11.99 hrs, Volume= 0.025 af, Depth= 0.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q1 Rainfall=2.05"

Area (sf)	CN	Description
1,434	30	Woods, Good, HSG A
30,805	39	>75% Grass cover, Good, HSG A
7,025	98	Paved parking, HSG A
39,264		Weighted Average
32,239		82.11% Pervious Area
7,025		17.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	40	0.1200	0.42		**Lag/CN Method, Lot 6 Woods**
5.6	160	0.0900	0.48		**Lag/CN Method, Lot 6 Lawn**
1.4	20	0.0500	0.23		**Lag/CN Method, Lot 6 Impervious**
8.6	220	Total			

Subcatchment S8: Lot 6 House Site



Summary for Subcatchment S9: Lot 6 East

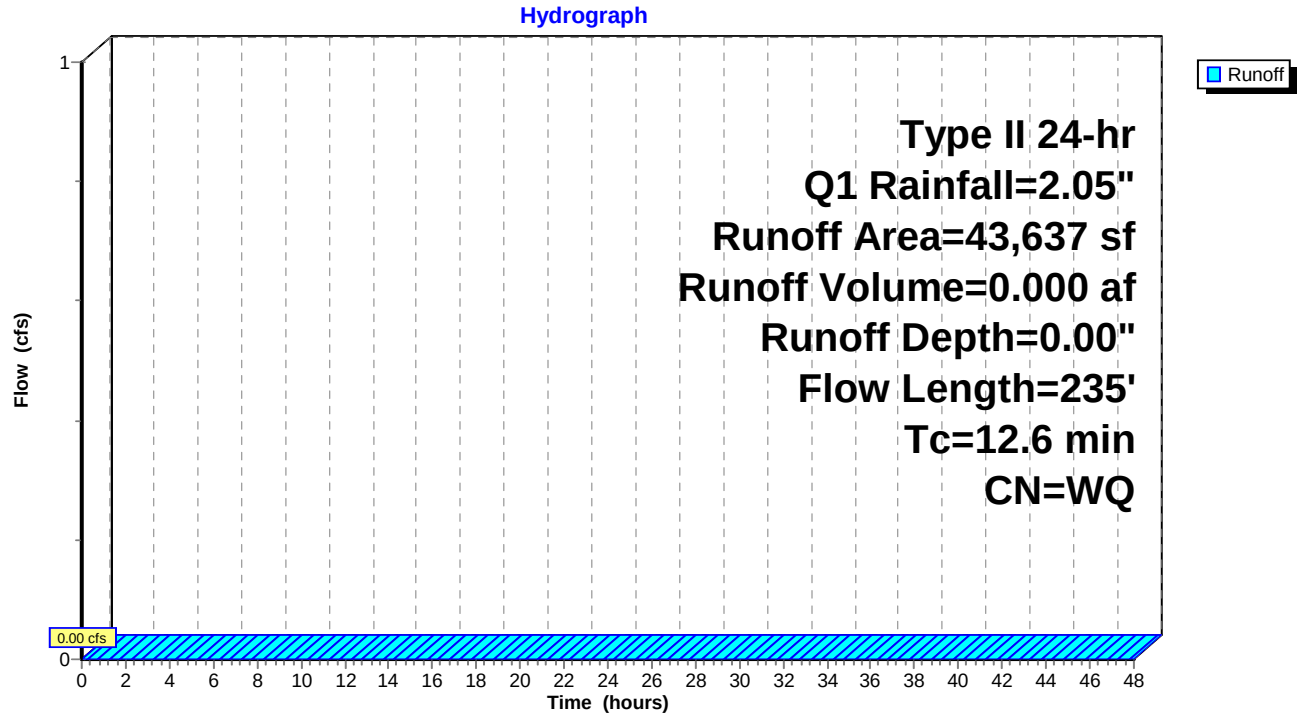
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q1 Rainfall=2.05"

Area (sf)	CN	Description
12,593	30	Woods, Good, HSG A
31,044	39	>75% Grass cover, Good, HSG A
43,637		Weighted Average
43,637		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	95	0.1200	0.35		**Lag/CN Method, Lot 6 Woods**
8.1	140	0.0700	0.29		**Lag/CN Method, Lot 6 Lawn**
12.6	235	Total			

Subcatchment S9: Lot 6 East



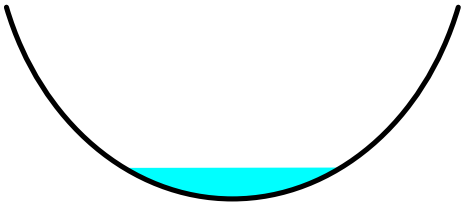
Summary for Reach R1: Lot 2 Stone Swale

Inflow Area = 1.933 ac, 6.12% Impervious, Inflow Depth = 0.60" for Q1 event
Inflow = 1.95 cfs @ 11.97 hrs, Volume= 0.097 af
Outflow = 1.83 cfs @ 12.00 hrs, Volume= 0.097 af, Atten= 6%, Lag= 2.0 min

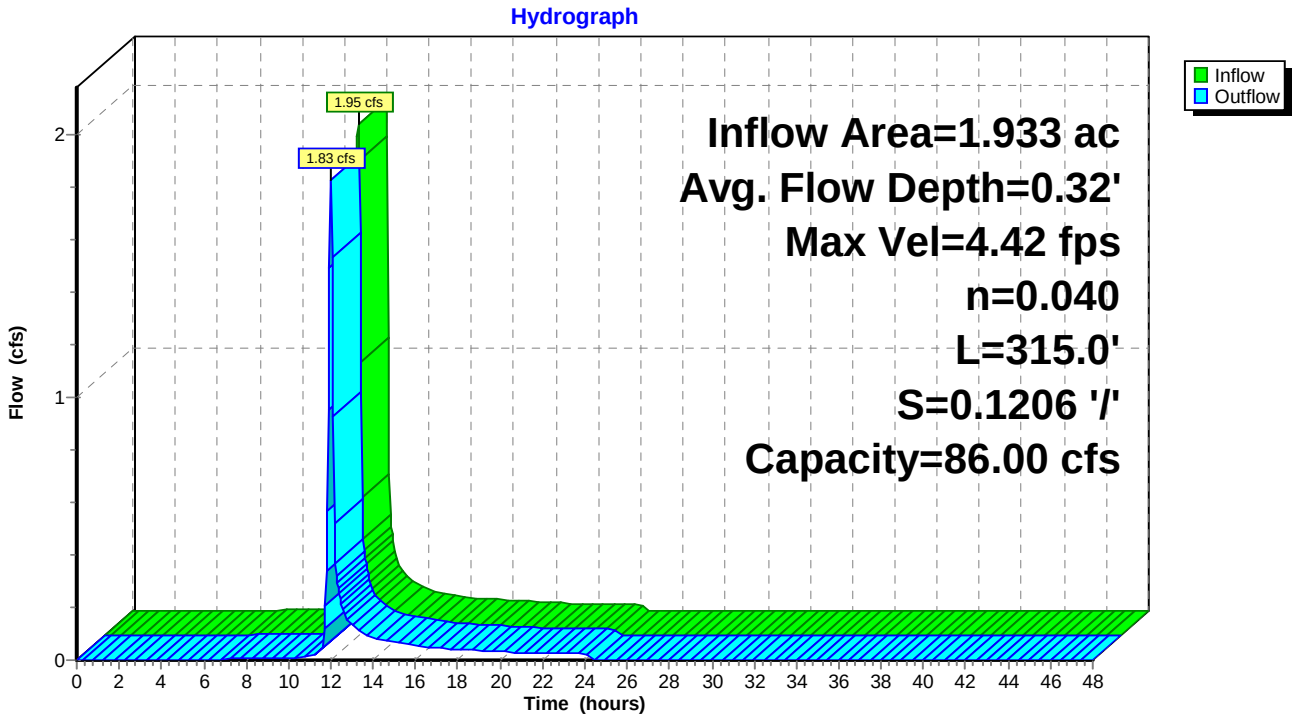
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.42 fps, Min. Travel Time= 1.2 min
Avg. Velocity = 1.22 fps, Avg. Travel Time= 4.3 min

Peak Storage= 136 cf @ 11.99 hrs
Average Depth at Peak Storage= 0.32'
Bank-Full Depth= 2.00' Flow Area= 6.7 sf, Capacity= 86.00 cfs

5.00' x 2.00' deep Parabolic Channel, n= 0.040 Earth, cobble bottom, clean sides
Length= 315.0' Slope= 0.1206 '/'
Inlet Invert= 710.00', Outlet Invert= 672.00'



Reach R1: Lot 2 Stone Swale



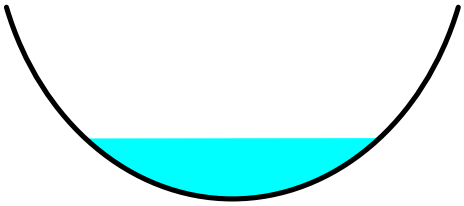
Summary for Reach R10: Lot 6 Stone Swale

Inflow Area = 11.733 ac, 5.98% Impervious, Inflow Depth = 0.47" for Q1 event
Inflow = 6.20 cfs @ 12.09 hrs, Volume= 0.461 af
Outflow = 6.12 cfs @ 12.11 hrs, Volume= 0.461 af, Atten= 1%, Lag= 1.0 min

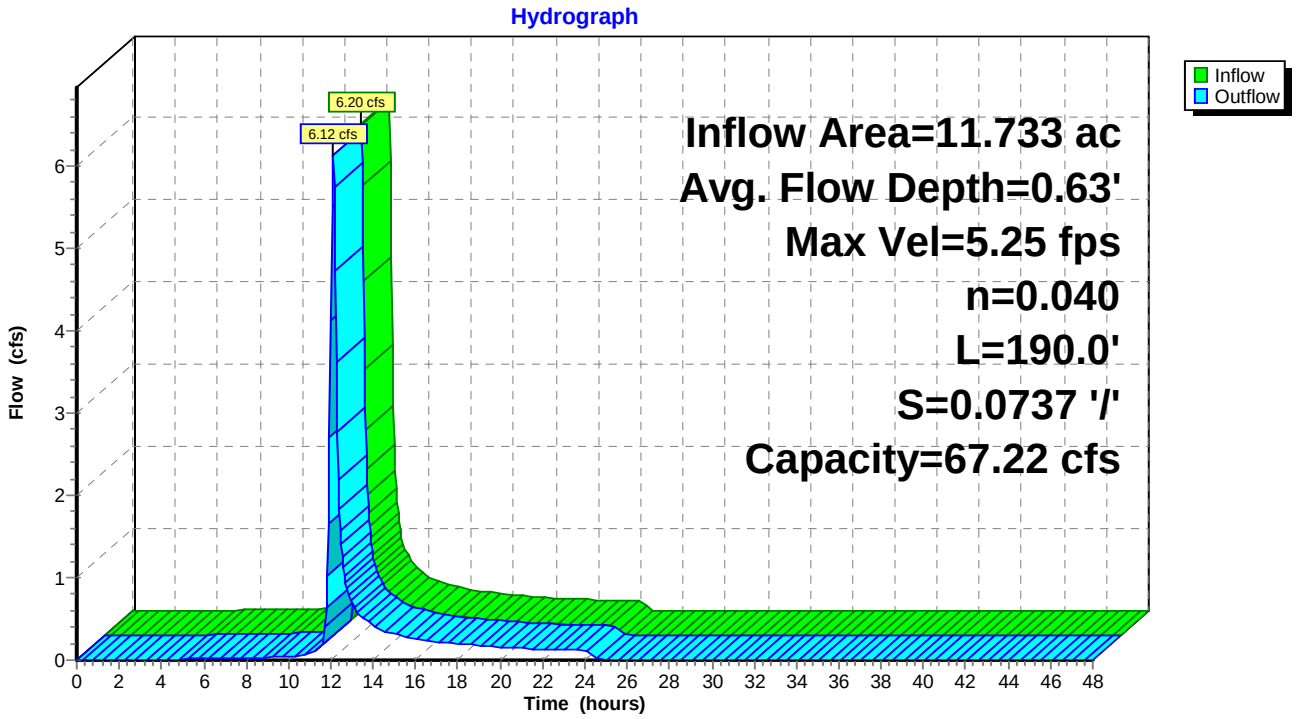
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.25 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 1.56 fps, Avg. Travel Time= 2.0 min

Peak Storage= 225 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.63'
Bank-Full Depth= 2.00' Flow Area= 6.7 sf, Capacity= 67.22 cfs

5.00' x 2.00' deep Parabolic Channel, n= 0.040 Earth, cobble bottom, clean sides
Length= 190.0' Slope= 0.0737 '/'
Inlet Invert= 653.00', Outlet Invert= 639.00'



Reach R10: Lot 6 Stone Swale



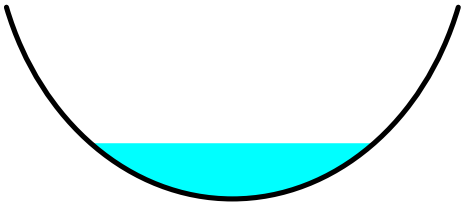
Summary for Reach R11: IB2 Pretreatment Swale

Inflow Area = 11.733 ac, 5.98% Impervious, Inflow Depth = 0.47" for Q1 event
Inflow = 6.12 cfs @ 12.11 hrs, Volume= 0.461 af
Outflow = 5.95 cfs @ 12.14 hrs, Volume= 0.461 af, Atten= 3%, Lag= 2.1 min

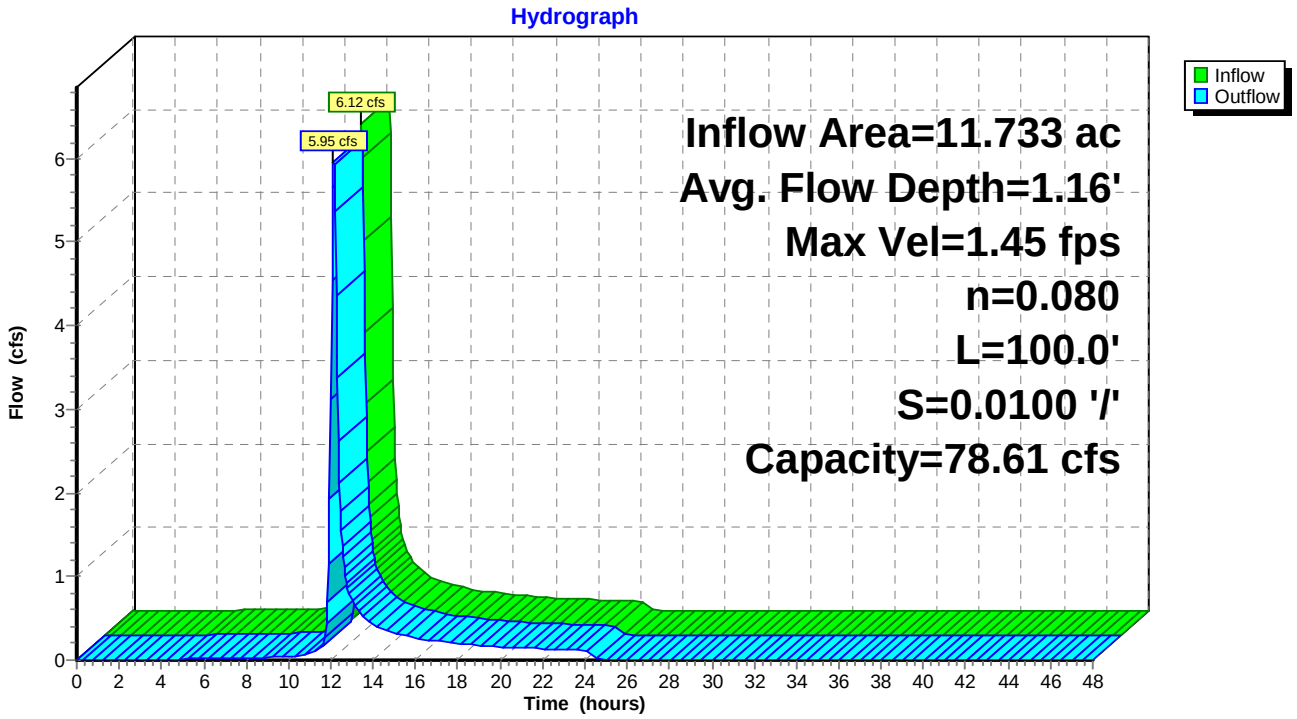
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.45 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 0.43 fps, Avg. Travel Time= 3.9 min

Peak Storage= 417 cf @ 12.12 hrs
Average Depth at Peak Storage= 1.16'
Bank-Full Depth= 4.00' Flow Area= 26.7 sf, Capacity= 78.61 cfs

10.00' x 4.00' deep Parabolic Channel, n= 0.080 Earth, long dense weeds
Length= 100.0' Slope= 0.0100 '/'
Inlet Invert= 639.00', Outlet Invert= 638.00'



Reach R11: IB2 Pretreatment Swale



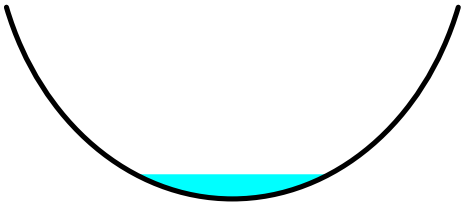
Summary for Reach R12: Lot 5 Stone Swale

Inflow Area = 1.170 ac, 9.89% Impervious, Inflow Depth = 0.64" for Q1 event
Inflow = 1.04 cfs @ 12.03 hrs, Volume= 0.063 af
Outflow = 1.01 cfs @ 12.05 hrs, Volume= 0.063 af, Atten= 3%, Lag= 1.6 min

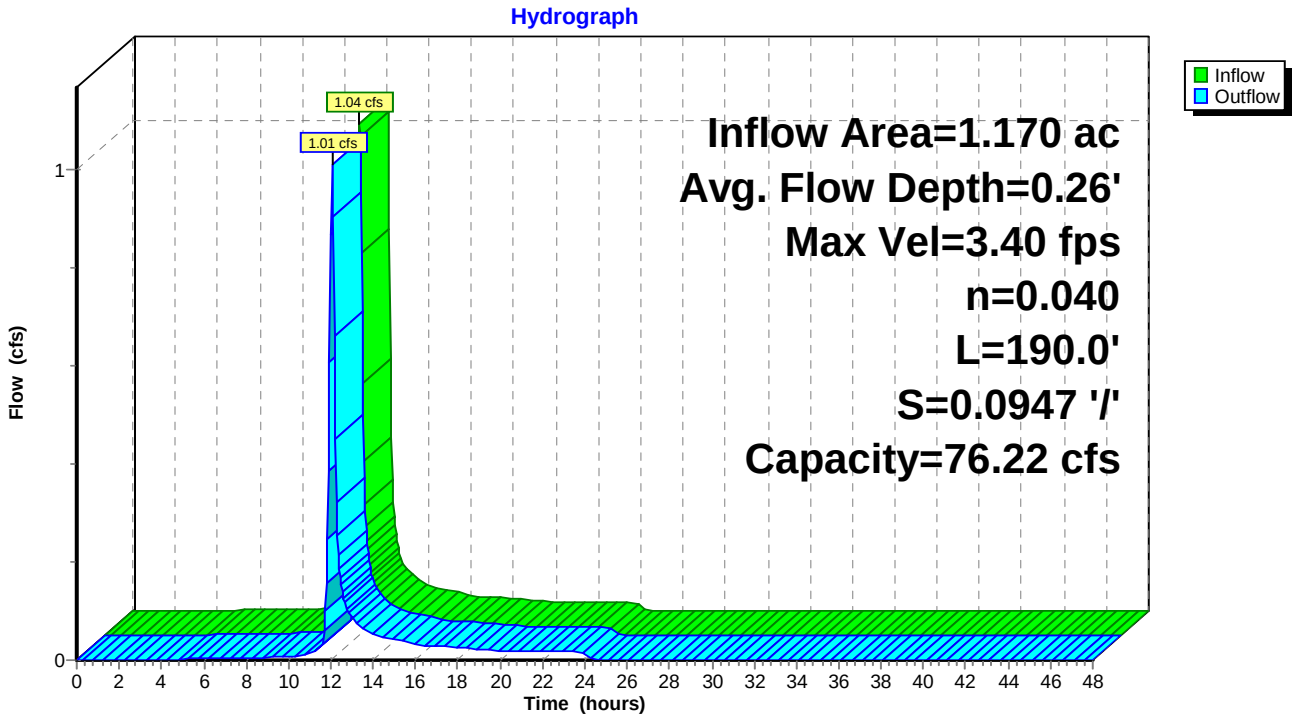
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.40 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 1.01 fps, Avg. Travel Time= 3.1 min

Peak Storage= 58 cf @ 12.04 hrs
Average Depth at Peak Storage= 0.26'
Bank-Full Depth= 2.00' Flow Area= 6.7 sf, Capacity= 76.22 cfs

5.00' x 2.00' deep Parabolic Channel, n= 0.040 Earth, cobble bottom, clean sides
Length= 190.0' Slope= 0.0947 '/'
Inlet Invert= 670.00', Outlet Invert= 652.00'



Reach R12: Lot 5 Stone Swale



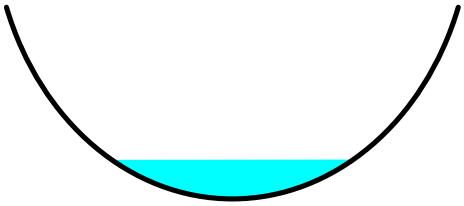
Summary for Reach R13: Lot 7 Stone Swale

Inflow Area = 3.770 ac, 2.67% Impervious, Inflow Depth = 0.51" for Q1 event
Inflow = 2.52 cfs @ 12.05 hrs, Volume= 0.161 af
Outflow = 2.41 cfs @ 12.08 hrs, Volume= 0.161 af, Atten= 4%, Lag= 1.7 min

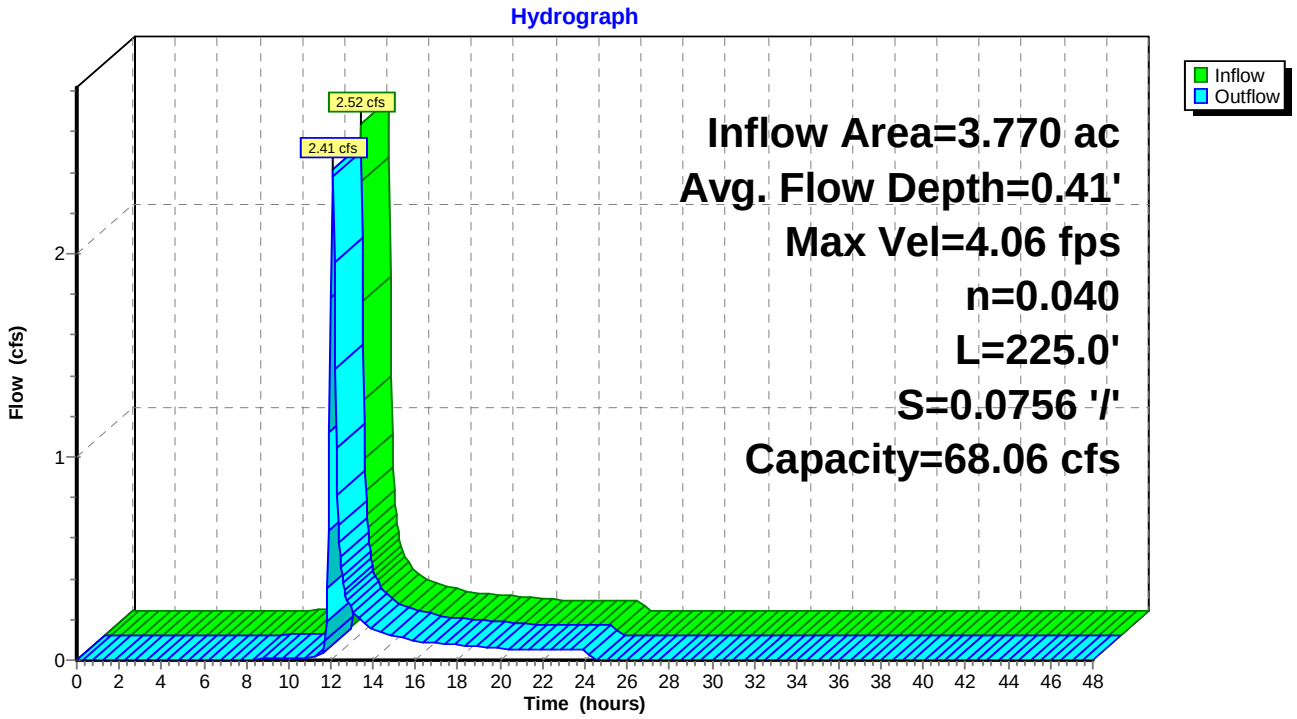
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.06 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 1.15 fps, Avg. Travel Time= 3.3 min

Peak Storage= 138 cf @ 12.06 hrs
Average Depth at Peak Storage= 0.41'
Bank-Full Depth= 2.00' Flow Area= 6.7 sf, Capacity= 68.06 cfs

5.00' x 2.00' deep Parabolic Channel, n= 0.040 Earth, cobble bottom, clean sides
Length= 225.0' Slope= 0.0756 '/'
Inlet Invert= 685.00', Outlet Invert= 668.00'



Reach R13: Lot 7 Stone Swale



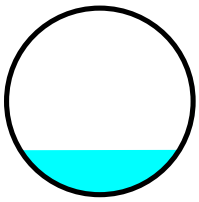
Summary for Reach R14: Lots 7-8 Driveway Culvert

Inflow Area = 3.770 ac, 2.67% Impervious, Inflow Depth = 0.51" for Q1 event
Inflow = 2.41 cfs @ 12.08 hrs, Volume= 0.161 af
Outflow = 2.41 cfs @ 12.08 hrs, Volume= 0.161 af, Atten= 0%, Lag= 0.1 min

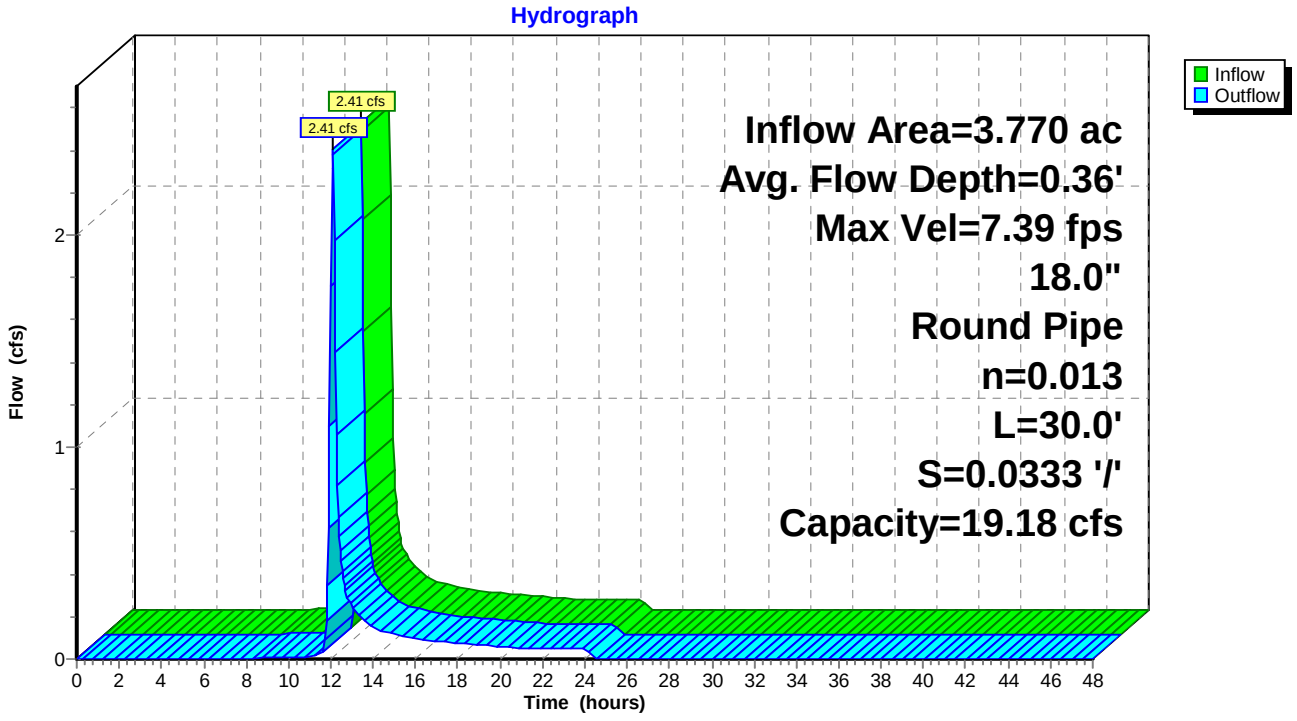
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 7.39 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.10 fps, Avg. Travel Time= 0.2 min

Peak Storage= 10 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.36'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 19.18 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 30.0' Slope= 0.0333 '/'
Inlet Invert= 668.00', Outlet Invert= 667.00'



Reach R14: Lots 7-8 Driveway Culvert



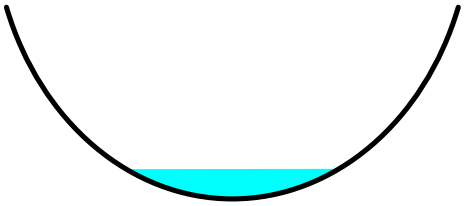
Summary for Reach R15: Lot 6 Grass Swale

Inflow Area = 1.321 ac, 17.07% Impervious, Inflow Depth = 0.55" for Q1 event
Inflow = 0.73 cfs @ 11.96 hrs, Volume= 0.061 af
Outflow = 0.70 cfs @ 12.03 hrs, Volume= 0.061 af, Atten= 4%, Lag= 4.2 min

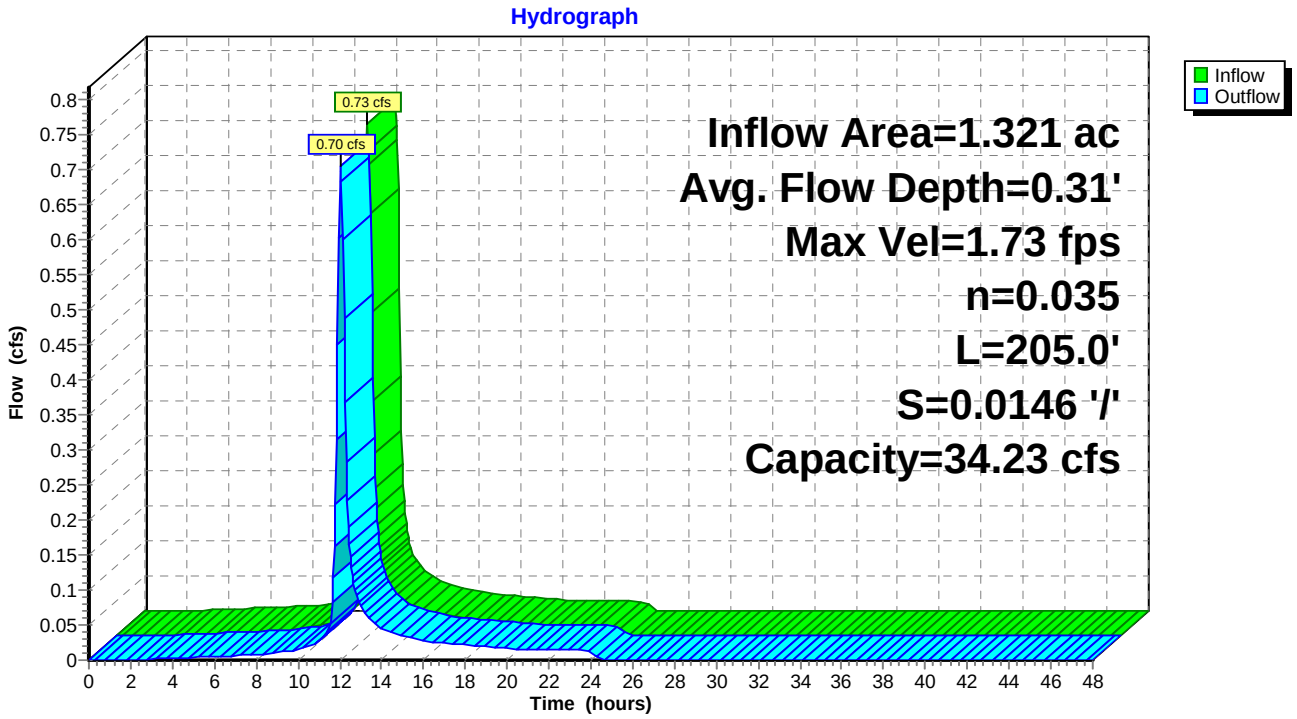
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.73 fps, Min. Travel Time= 2.0 min
Avg. Velocity = 0.56 fps, Avg. Travel Time= 6.1 min

Peak Storage= 84 cf @ 12.00 hrs
Average Depth at Peak Storage= 0.31'
Bank-Full Depth= 2.00' Flow Area= 6.7 sf, Capacity= 34.23 cfs

5.00' x 2.00' deep Parabolic Channel, n= 0.035 Earth, dense weeds
Length= 205.0' Slope= 0.0146 '/'
Inlet Invert= 670.00', Outlet Invert= 667.00'



Reach R15: Lot 6 Grass Swale



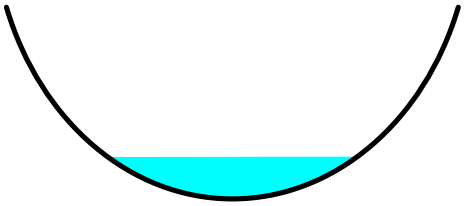
Summary for Reach R16: Lot 6 Stone Swale

Inflow Area = 5.091 ac, 6.41% Impervious, Inflow Depth = 0.52" for Q1 event
Inflow = 3.09 cfs @ 12.08 hrs, Volume= 0.222 af
Outflow = 3.05 cfs @ 12.09 hrs, Volume= 0.222 af, Atten= 1%, Lag= 0.9 min

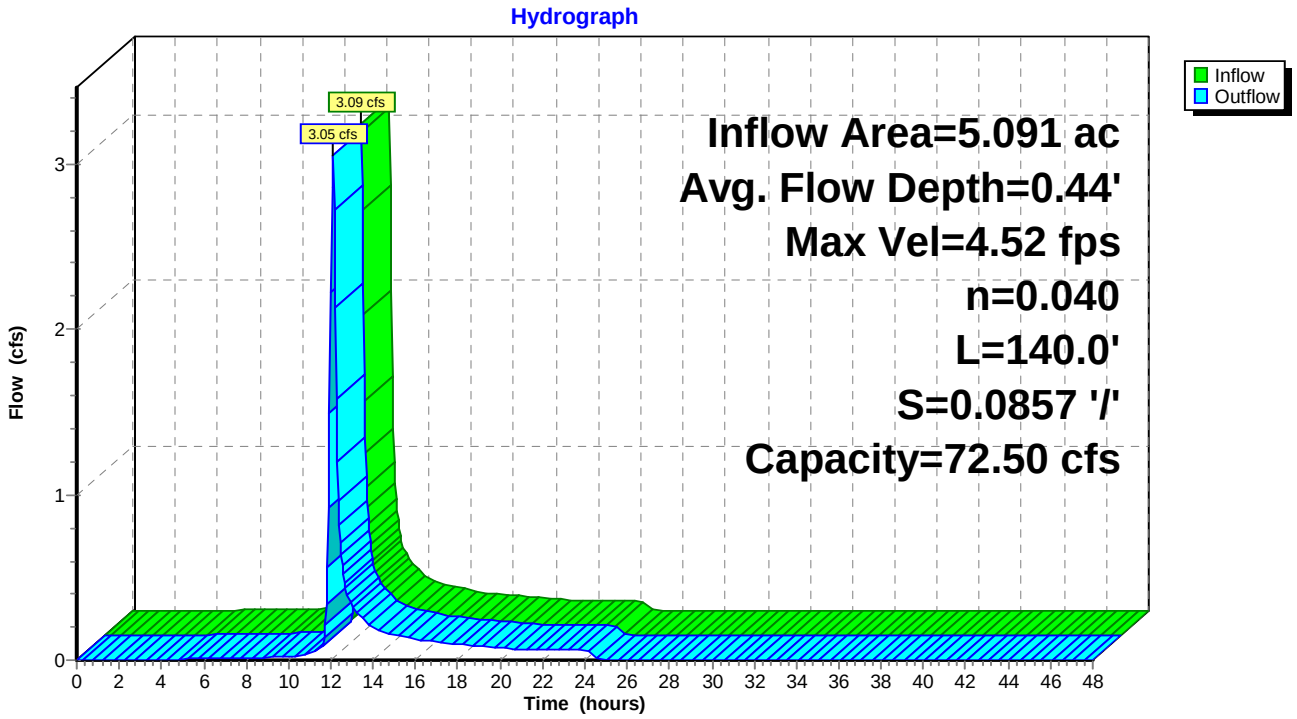
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.52 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.35 fps, Avg. Travel Time= 1.7 min

Peak Storage= 96 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.44'
Bank-Full Depth= 2.00' Flow Area= 6.7 sf, Capacity= 72.50 cfs

5.00' x 2.00' deep Parabolic Channel, n= 0.040 Earth, cobble bottom, clean sides
Length= 140.0' Slope= 0.0857 '/'
Inlet Invert= 667.00', Outlet Invert= 655.00'



Reach R16: Lot 6 Stone Swale



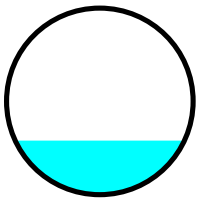
Summary for Reach R17: Lot 6 Driveway Culvert

Inflow Area = 5.091 ac, 6.41% Impervious, Inflow Depth = 0.52" for Q1 event
Inflow = 3.05 cfs @ 12.09 hrs, Volume= 0.222 af
Outflow = 3.05 cfs @ 12.09 hrs, Volume= 0.222 af, Atten= 0%, Lag= 0.1 min

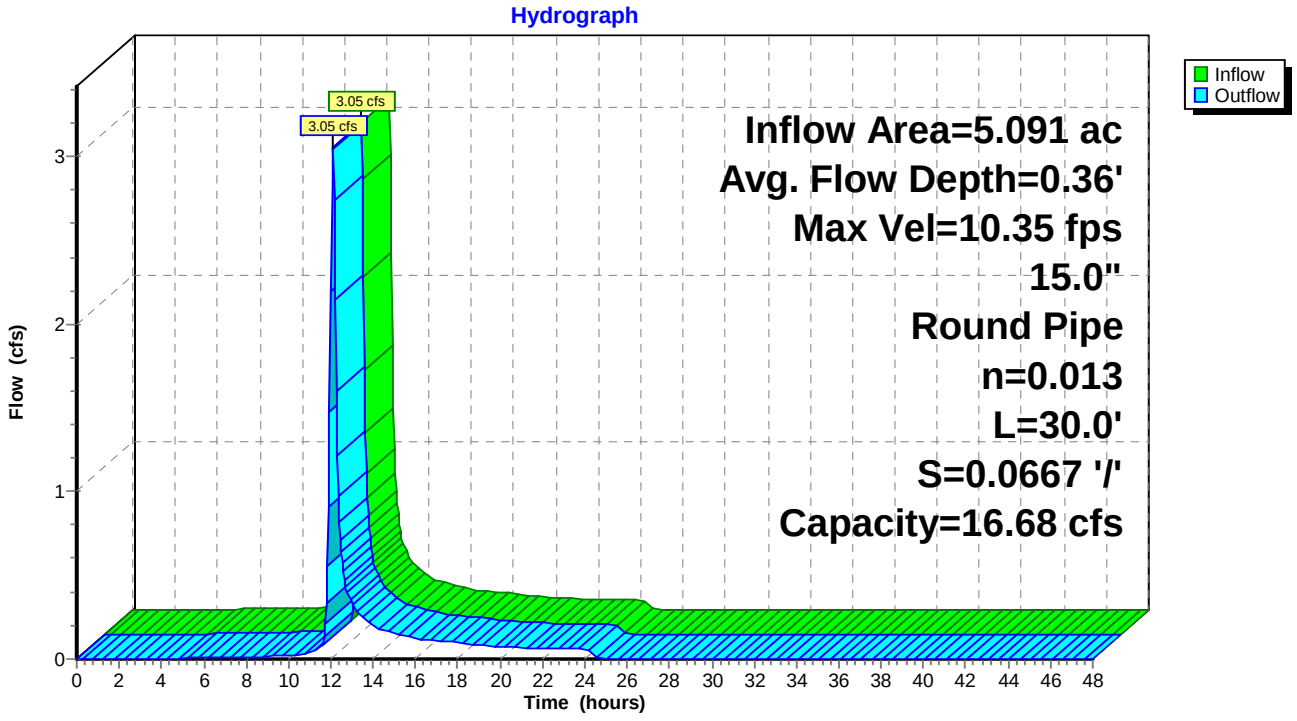
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 10.35 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 3.08 fps, Avg. Travel Time= 0.2 min

Peak Storage= 9 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.36'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 16.68 cfs

15.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 30.0' Slope= 0.0667 '/'
Inlet Invert= 655.00', Outlet Invert= 653.00'



Reach R17: Lot 6 Driveway Culvert



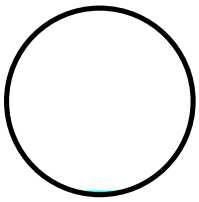
Summary for Reach R18: S/N 001

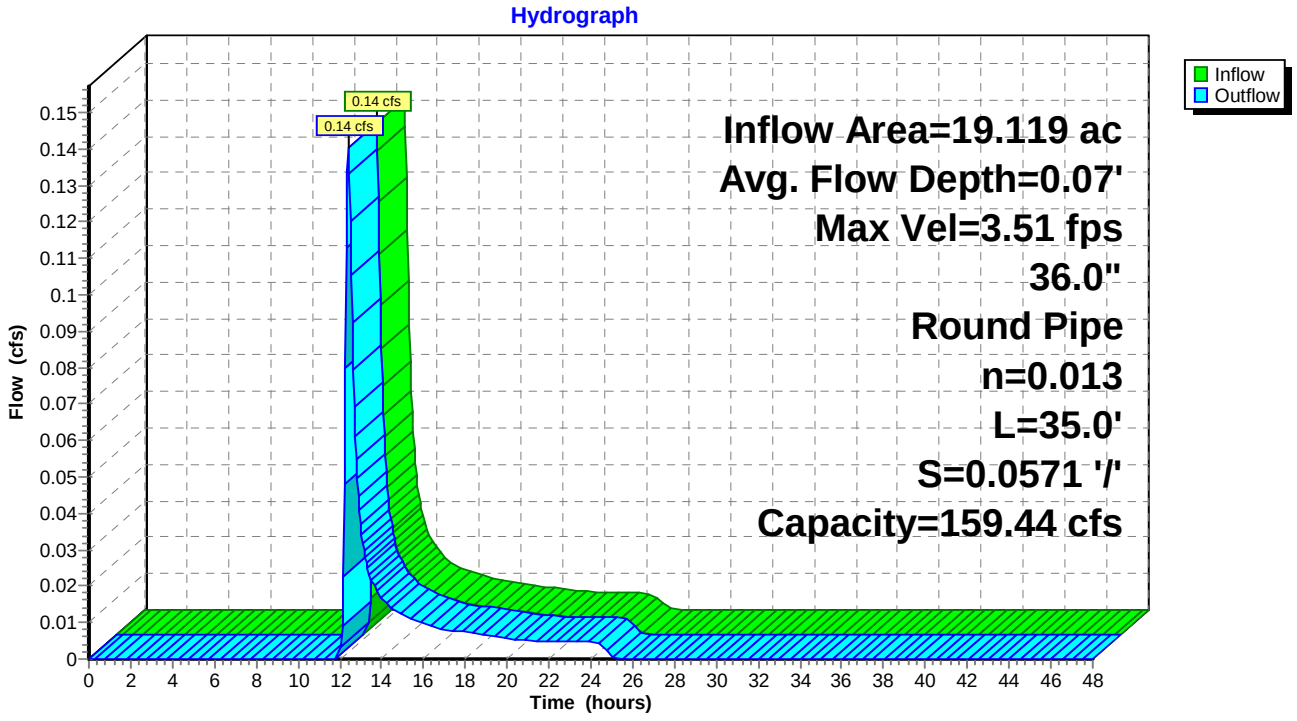
Inflow Area = 19.119 ac, 5.15% Impervious, Inflow Depth = 0.01" for Q1 event
Inflow = 0.14 cfs @ 12.39 hrs, Volume= 0.014 af
Outflow = 0.14 cfs @ 12.40 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.51 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.07 fps, Avg. Travel Time= 0.3 min

Peak Storage= 1 cf @ 12.40 hrs
Average Depth at Peak Storage= 0.07'
Bank-Full Depth= 3.00' Flow Area= 7.1 sf, Capacity= 159.44 cfs

36.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 35.0' Slope= 0.0571 '/'
Inlet Invert= 632.00', Outlet Invert= 630.00'





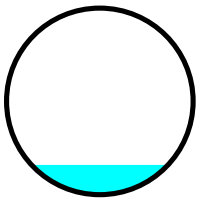
Summary for Reach R2: Lots 2-3 Driveway Culvert

Inflow Area = 1.933 ac, 6.12% Impervious, Inflow Depth = 0.60" for Q1 event
Inflow = 1.83 cfs @ 12.00 hrs, Volume= 0.097 af
Outflow = 1.82 cfs @ 12.00 hrs, Volume= 0.097 af, Atten= 0%, Lag= 0.1 min

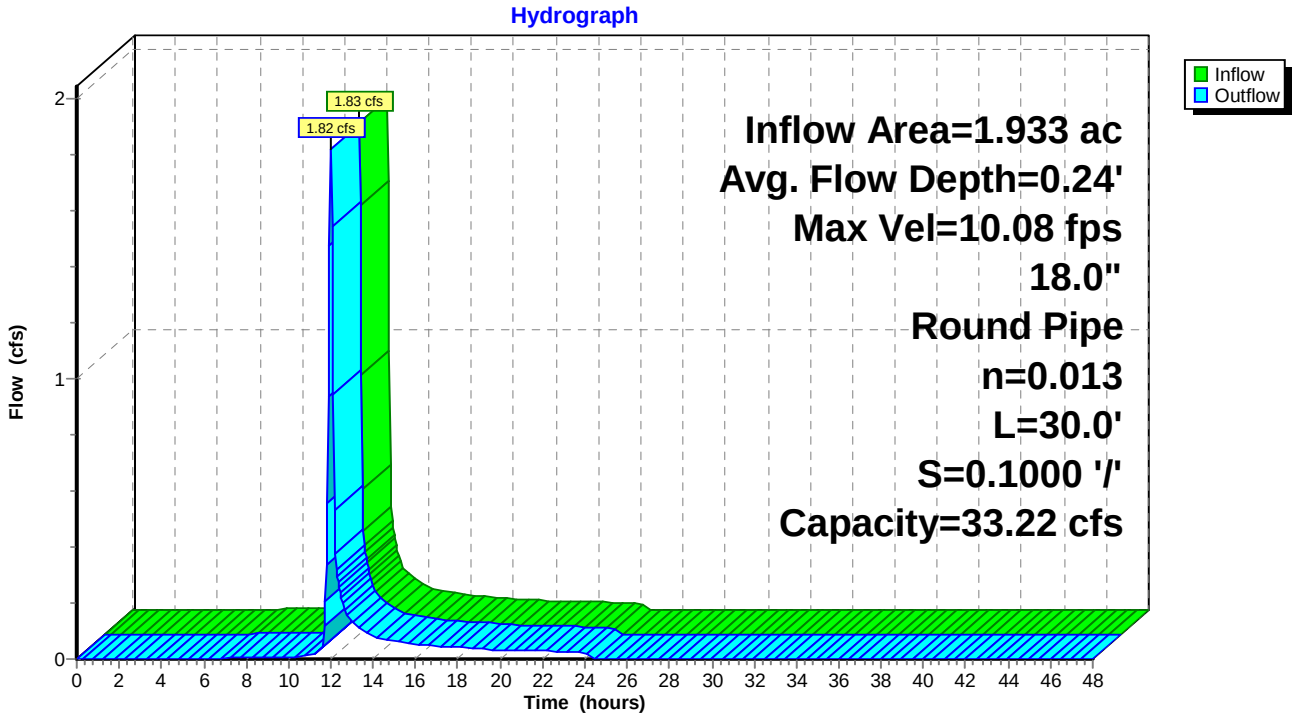
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 10.08 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 2.81 fps, Avg. Travel Time= 0.2 min

Peak Storage= 5 cf @ 12.00 hrs
Average Depth at Peak Storage= 0.24'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 33.22 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 30.0' Slope= 0.1000 '/'
Inlet Invert= 672.00', Outlet Invert= 669.00'



Reach R2: Lots 2-3 Driveway Culvert



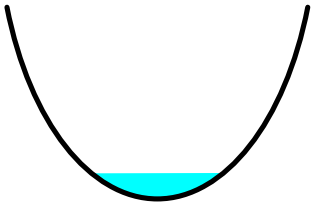
Summary for Reach R3: Observatory Rd. West Swale

Inflow Area = 3.513 ac, 8.07% Impervious, Inflow Depth = 0.57" for Q1 event
Inflow = 2.96 cfs @ 12.01 hrs, Volume= 0.167 af
Outflow = 2.87 cfs @ 12.03 hrs, Volume= 0.167 af, Atten= 3%, Lag= 1.0 min

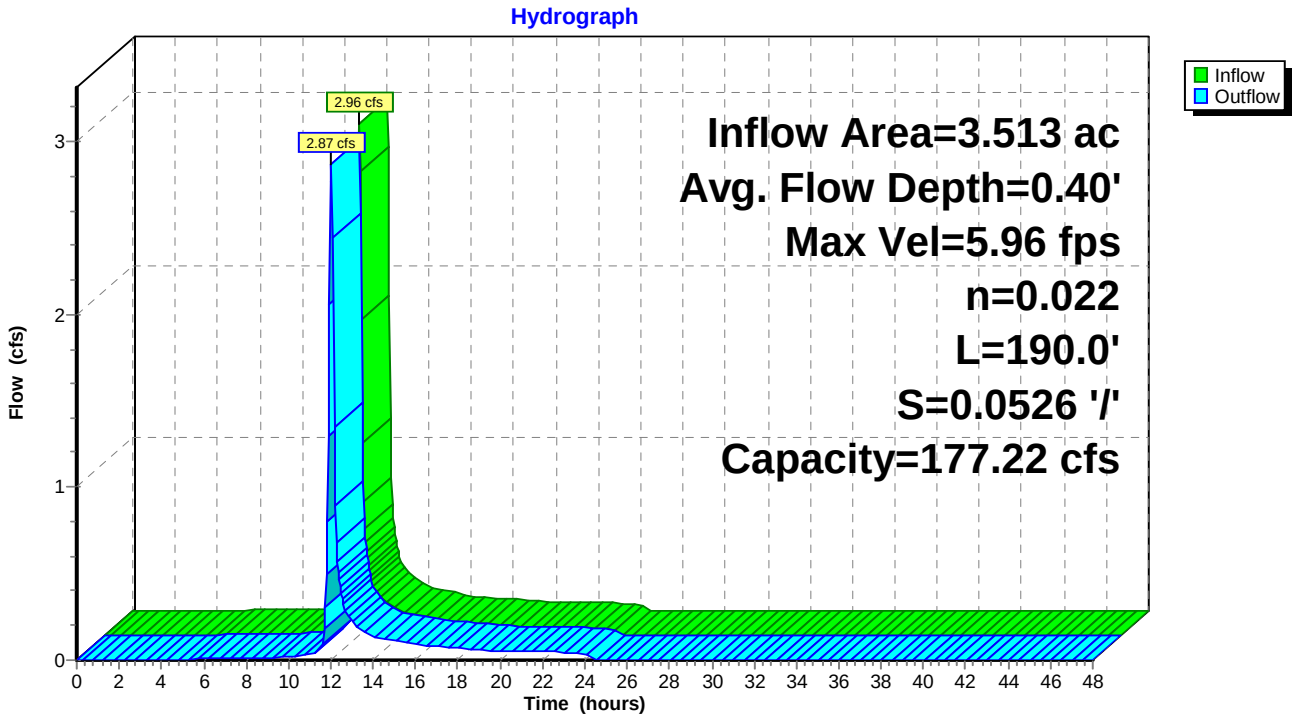
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.96 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.77 fps, Avg. Travel Time= 1.8 min

Peak Storage= 93 cf @ 12.02 hrs
Average Depth at Peak Storage= 0.40'
Bank-Full Depth= 3.00' Flow Area= 10.0 sf, Capacity= 177.22 cfs

5.00' x 3.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 190.0' Slope= 0.0526 '/'
Inlet Invert= 669.00', Outlet Invert= 659.00'



Reach R3: Observatory Rd. West Swale



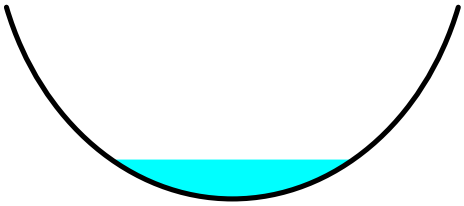
Summary for Reach R4: IB1 Pretreatment Swale

Inflow Area = 3.513 ac, 8.07% Impervious, Inflow Depth = 0.57" for Q1 event
Inflow = 2.87 cfs @ 12.03 hrs, Volume= 0.167 af
Outflow = 2.70 cfs @ 12.07 hrs, Volume= 0.167 af, Atten= 6%, Lag= 2.9 min

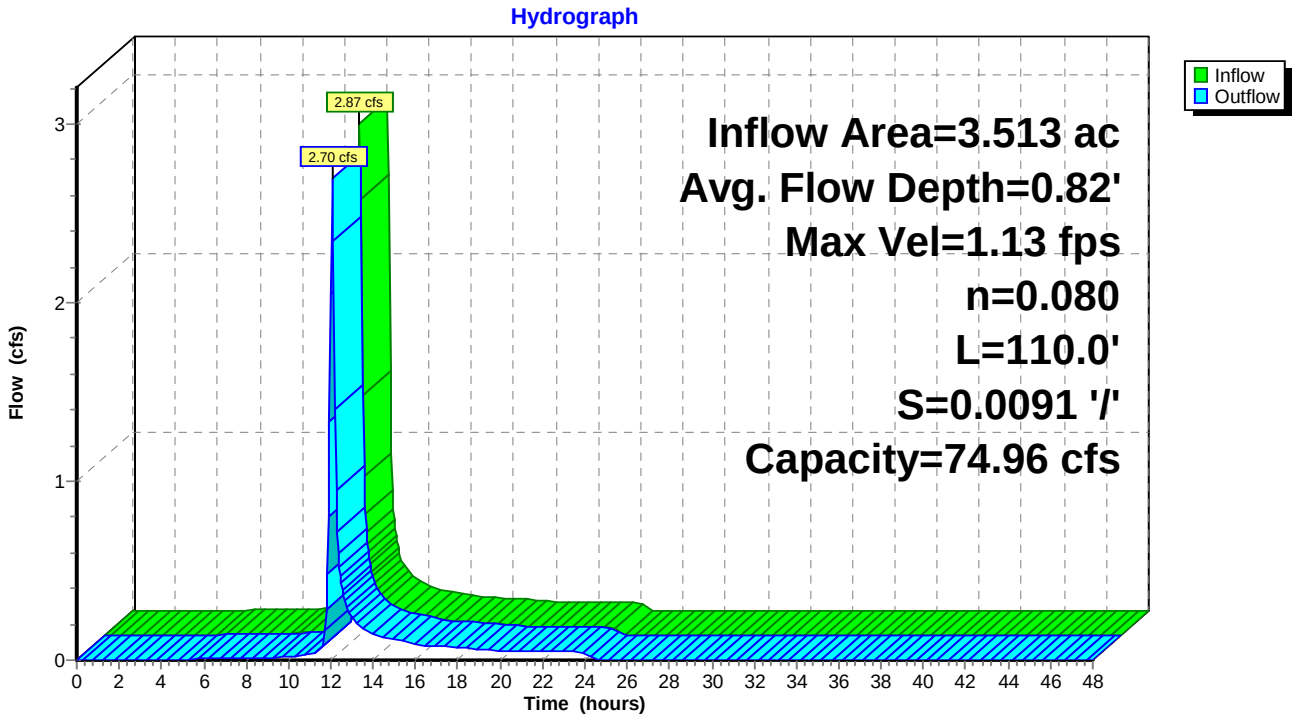
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.13 fps, Min. Travel Time= 1.6 min
Avg. Velocity = 0.31 fps, Avg. Travel Time= 5.8 min

Peak Storage= 275 cf @ 12.05 hrs
Average Depth at Peak Storage= 0.82'
Bank-Full Depth= 4.00' Flow Area= 26.7 sf, Capacity= 74.96 cfs

10.00' x 4.00' deep Parabolic Channel, n= 0.080 Earth, long dense weeds
Length= 110.0' Slope= 0.0091 '/'
Inlet Invert= 659.00', Outlet Invert= 658.00'



Reach R4: IB1 Pretreatment Swale



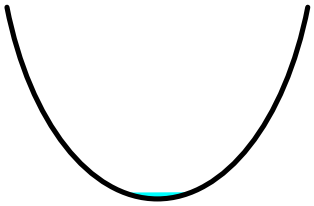
Summary for Reach R5: Observatory Rd. Middle Swale

Inflow Area = 5.558 ac, 5.10% Impervious, Inflow Depth = 0.03" for Q1 event
Inflow = 0.16 cfs @ 12.17 hrs, Volume= 0.014 af
Outflow = 0.15 cfs @ 12.25 hrs, Volume= 0.014 af, Atten= 3%, Lag= 4.8 min

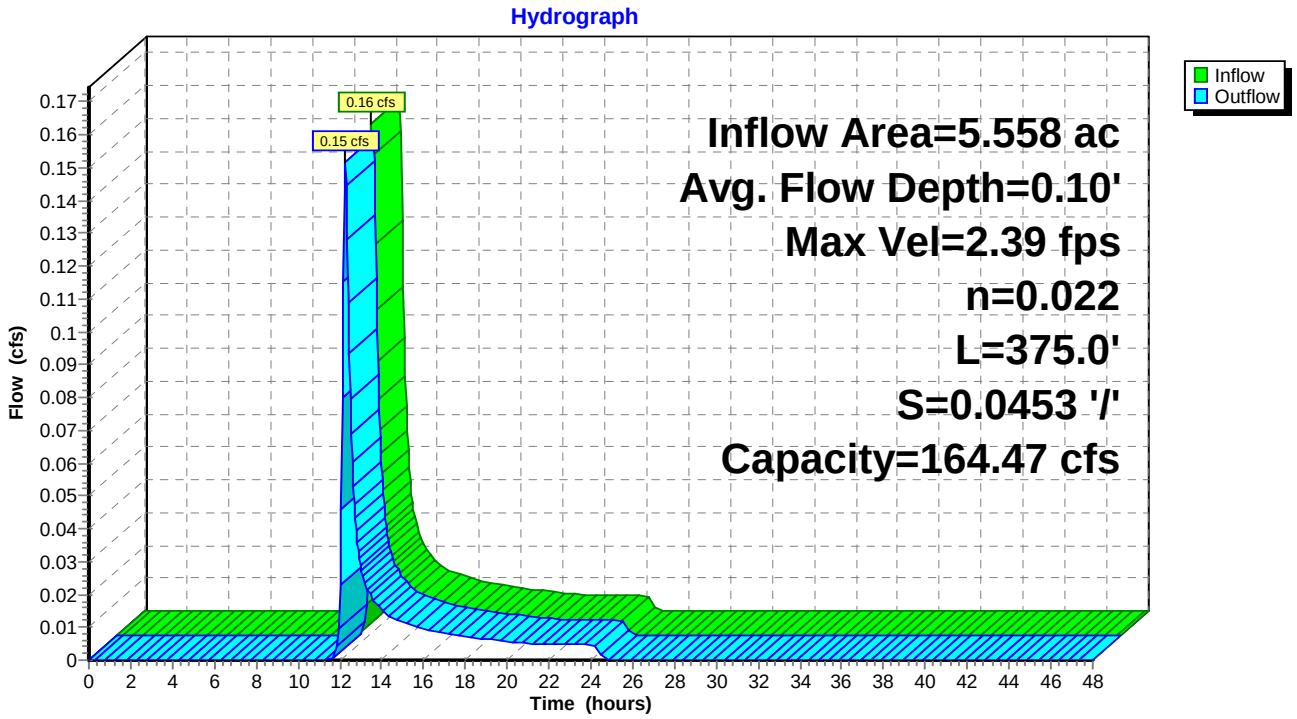
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.39 fps, Min. Travel Time= 2.6 min
Avg. Velocity = 1.15 fps, Avg. Travel Time= 5.4 min

Peak Storage= 24 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.10'
Bank-Full Depth= 3.00' Flow Area= 10.0 sf, Capacity= 164.47 cfs

5.00' x 3.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 375.0' Slope= 0.0453 '/'
Inlet Invert= 658.00', Outlet Invert= 641.00'



Reach R5: Observatory Rd. Middle Swale



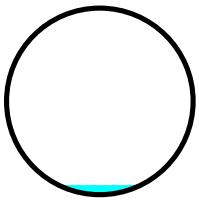
Summary for Reach R6: Lots 4-8 Driveway Culvert

Inflow Area = 5.558 ac, 5.10% Impervious, Inflow Depth = 0.03" for Q1 event
Inflow = 0.15 cfs @ 12.25 hrs, Volume= 0.014 af
Outflow = 0.15 cfs @ 12.26 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.2 min

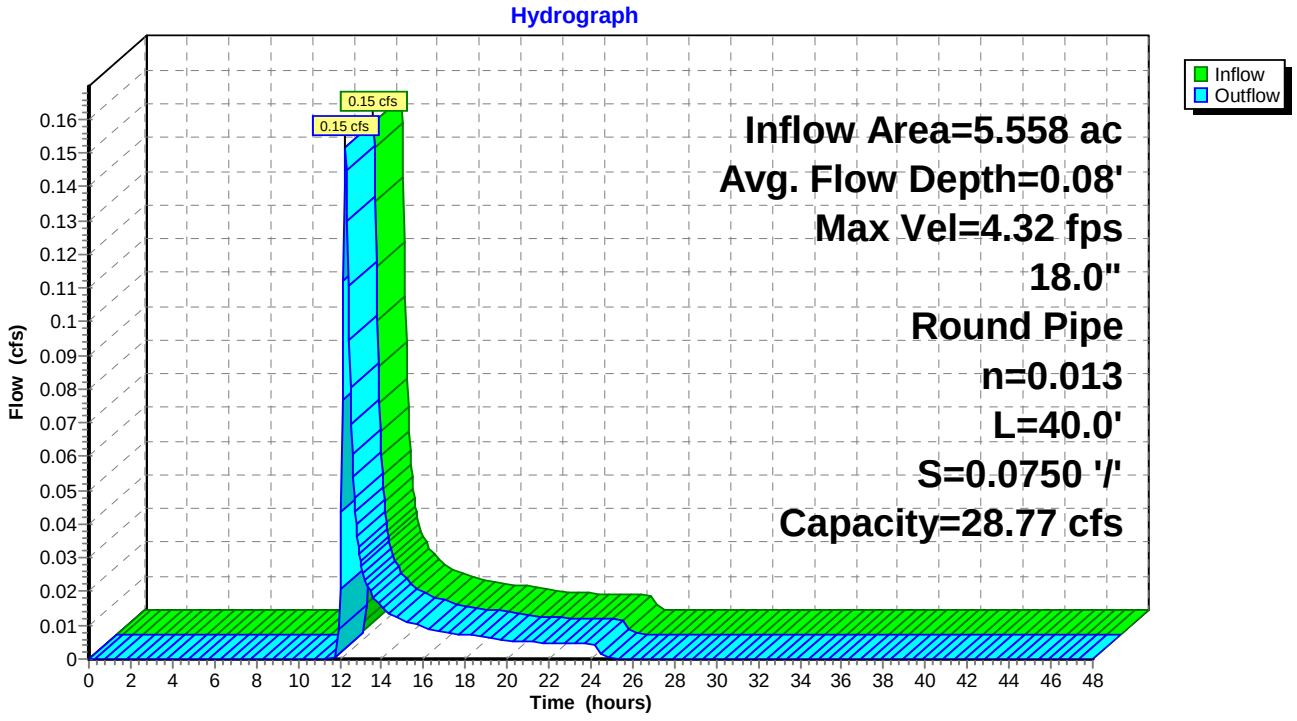
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.32 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.89 fps, Avg. Travel Time= 0.4 min

Peak Storage= 1 cf @ 12.25 hrs
Average Depth at Peak Storage= 0.08'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 28.77 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 40.0' Slope= 0.0750 '/'
Inlet Invert= 641.00', Outlet Invert= 638.00'



Reach R6: Lots 4-8 Driveway Culvert



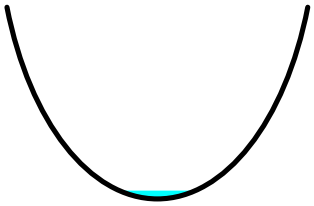
Summary for Reach R7: Observatory Rd. East Swale

Inflow Area = 5.558 ac, 5.10% Impervious, Inflow Depth = 0.03" for Q1 event
Inflow = 0.15 cfs @ 12.26 hrs, Volume= 0.014 af
Outflow = 0.14 cfs @ 12.39 hrs, Volume= 0.014 af, Atten= 7%, Lag= 8.2 min

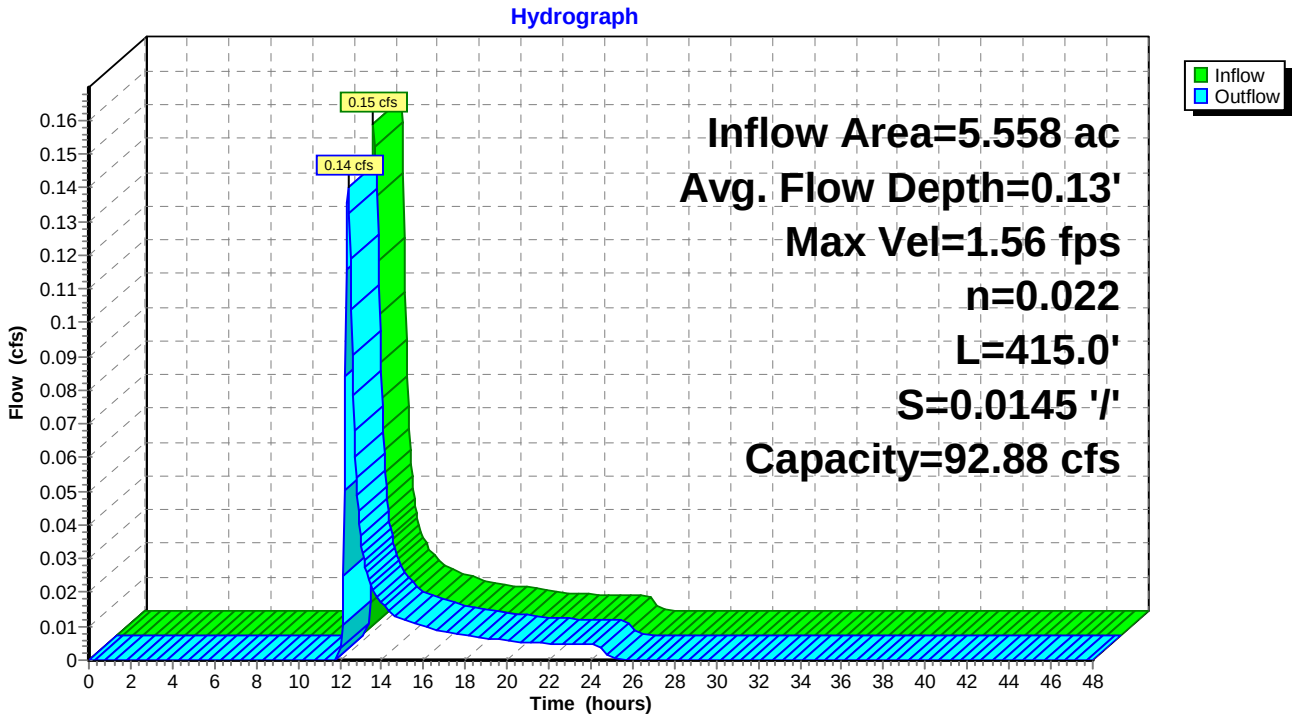
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.56 fps, Min. Travel Time= 4.4 min
Avg. Velocity = 0.71 fps, Avg. Travel Time= 9.8 min

Peak Storage= 38 cf @ 12.32 hrs
Average Depth at Peak Storage= 0.13'
Bank-Full Depth= 3.00' Flow Area= 10.0 sf, Capacity= 92.88 cfs

5.00' x 3.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 415.0' Slope= 0.0145 '/'
Inlet Invert= 638.00', Outlet Invert= 632.00'



Reach R7: Observatory Rd. East Swale



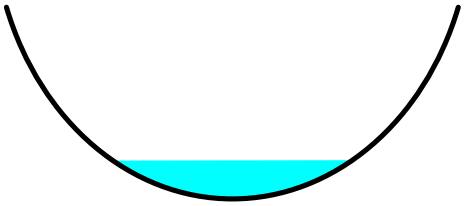
Summary for Reach R8: Lot 4 Stone Swale

Inflow Area = 4.571 ac, 2.15% Impervious, Inflow Depth = 0.40" for Q1 event
Inflow = 2.06 cfs @ 12.09 hrs, Volume= 0.151 af
Outflow = 2.02 cfs @ 12.11 hrs, Volume= 0.151 af, Atten= 2%, Lag= 1.2 min

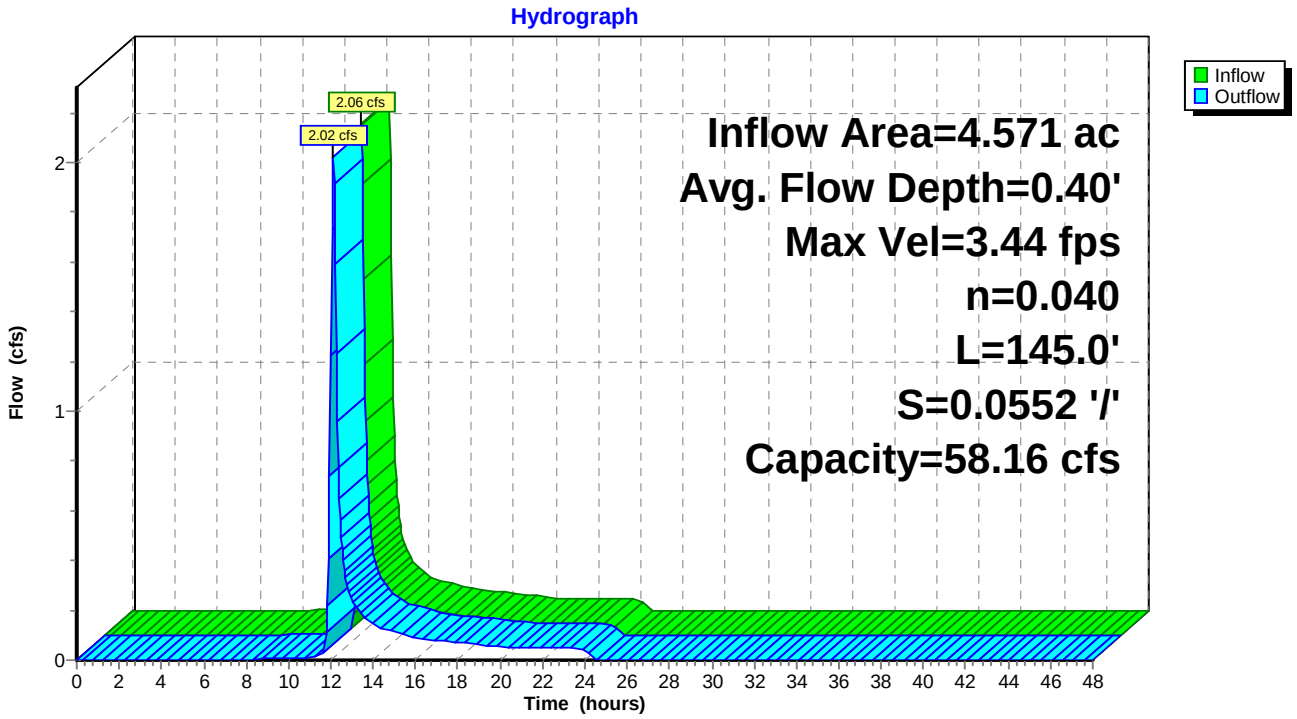
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.44 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 1.01 fps, Avg. Travel Time= 2.4 min

Peak Storage= 87 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.40'
Bank-Full Depth= 2.00' Flow Area= 6.7 sf, Capacity= 58.16 cfs

5.00' x 2.00' deep Parabolic Channel, n= 0.040 Earth, cobble bottom, clean sides
Length= 145.0' Slope= 0.0552 '/'
Inlet Invert= 660.00', Outlet Invert= 652.00'



Reach R8: Lot 4 Stone Swale



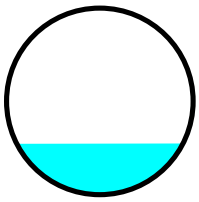
Summary for Reach R9: Lots 5-8 Driveway Culvert

Inflow Area = 5.741 ac, 3.73% Impervious, Inflow Depth = 0.45" for Q1 event
Inflow = 2.92 cfs @ 12.09 hrs, Volume= 0.214 af
Outflow = 2.92 cfs @ 12.09 hrs, Volume= 0.214 af, Atten= 0%, Lag= 0.1 min

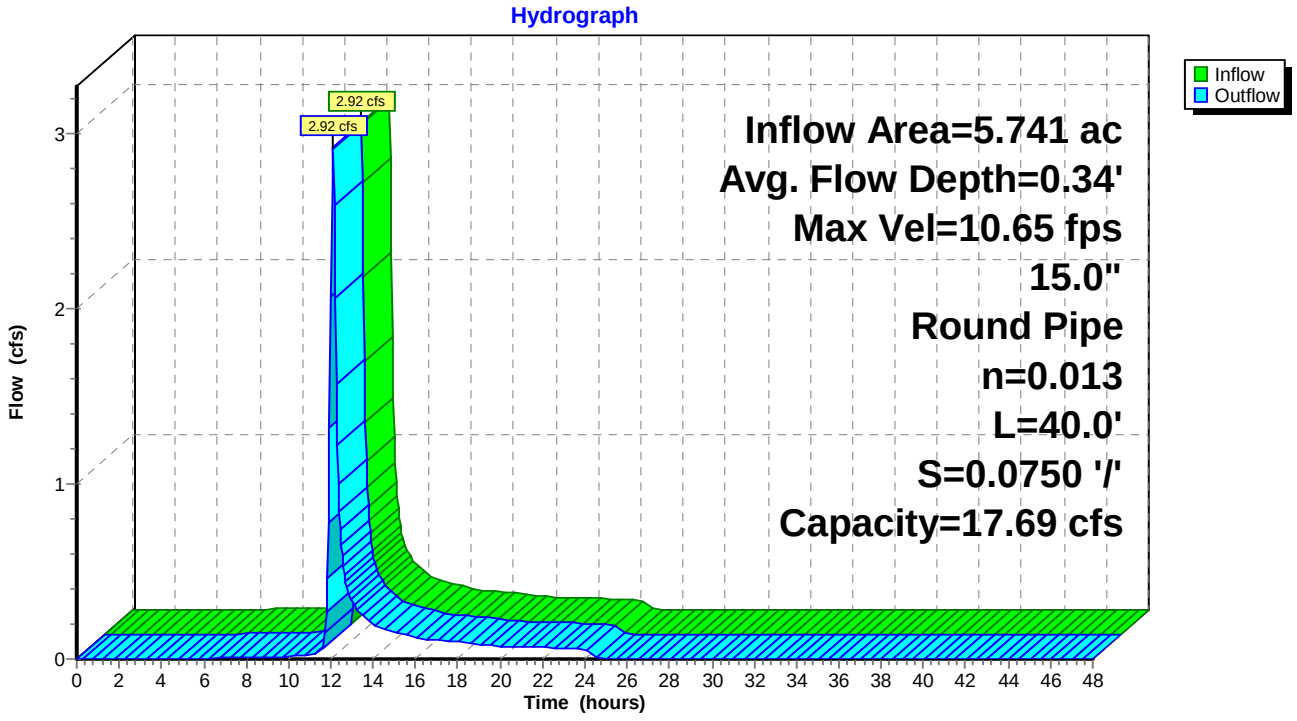
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 10.65 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.14 fps, Avg. Travel Time= 0.2 min

Peak Storage= 11 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.34'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 17.69 cfs

15.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 40.0' Slope= 0.0750 '/'
Inlet Invert= 652.00', Outlet Invert= 649.00'



Reach R9: Lots 5-8 Driveway Culvert



Summary for Pond IB1: Infiltration Basin 1

Inflow Area = 3.513 ac, 8.07% Impervious, Inflow Depth = 0.57" for Q1 event
Inflow = 2.70 cfs @ 12.07 hrs, Volume= 0.167 af
Outflow = 0.14 cfs @ 14.11 hrs, Volume= 0.167 af, Atten= 95%, Lag= 122.3 min
Discarded = 0.14 cfs @ 14.11 hrs, Volume= 0.167 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 659.47' @ 14.11 hrs Surf.Area= 2,764 sf Storage= 3,644 cf

Plug-Flow detention time= 361.4 min calculated for 0.167 af (100% of inflow)
Center-of-Mass det. time= 359.6 min (1,214.5 - 855.0)

Volume	Invert	Avail.Storage	Storage Description
#1	658.00'	16,081 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

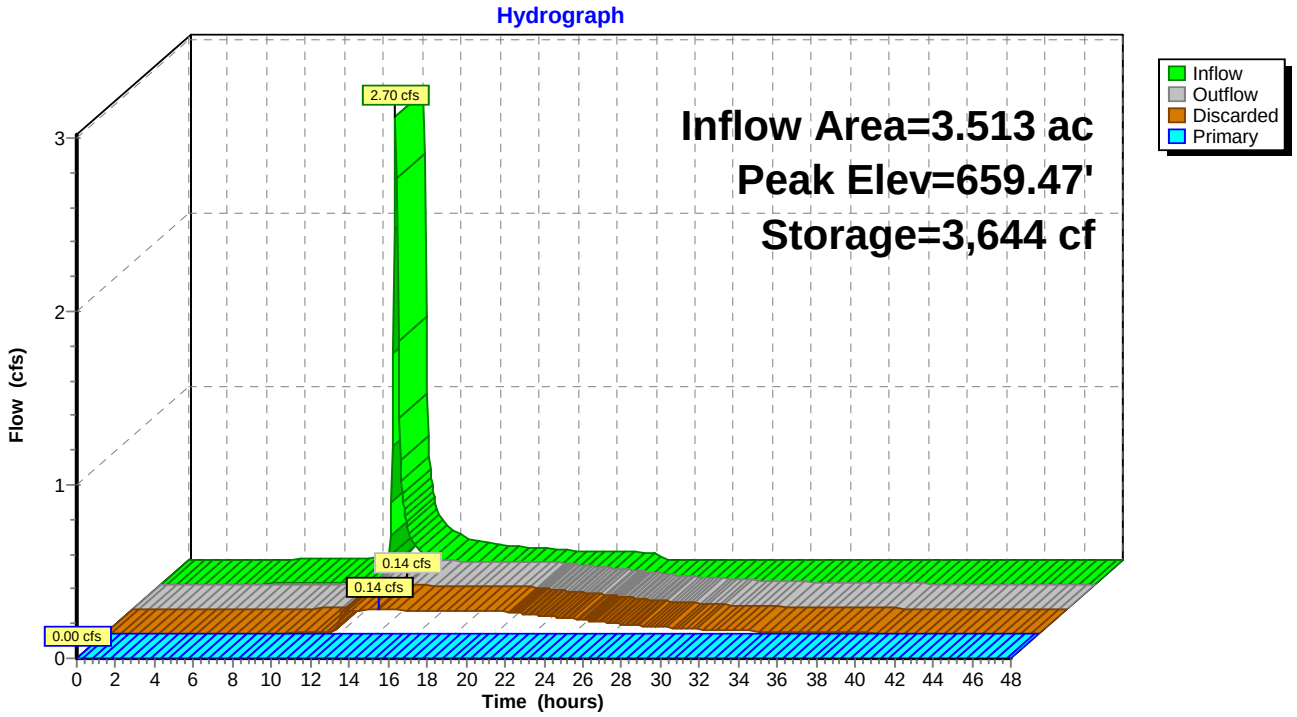
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
658.00	2,197	0	0
659.00	2,575	2,386	2,386
660.00	2,977	2,776	5,162
661.00	3,405	3,191	8,353
661.50	3,629	1,759	10,112
662.00	3,859	1,872	11,984
663.00	4,336	4,098	16,081

Device	Routing	Invert	Outlet Devices
#1	Discarded	658.00'	**2.140 in/hr Exfiltration over Surface area** Phase-In= 1.00'
#2	Primary	661.50'	**15.0' long x 15.0' breadth Emergency Spillway**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.14 cfs @ 14.11 hrs HW=659.47' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.14 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=658.00' (Free Discharge)
↑—**2=Emergency Spillway** (Controls 0.00 cfs)

Pond IB1: Infiltration Basin 1



Summary for Pond IB2: Infiltration Basin 2

Inflow Area = 12.735 ac, 5.51% Impervious, Inflow Depth = 0.43" for Q1 event
Inflow = 5.95 cfs @ 12.14 hrs, Volume= 0.461 af
Outflow = 0.45 cfs @ 13.84 hrs, Volume= 0.461 af, Atten= 92%, Lag= 101.8 min
Discarded = 0.45 cfs @ 13.84 hrs, Volume= 0.461 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 640.20' @ 13.84 hrs Surf.Area= 4,846 sf Storage= 9,064 cf

Plug-Flow detention time= 245.4 min calculated for 0.460 af (100% of inflow)
Center-of-Mass det. time= 246.2 min (1,111.8 - 865.6)

Volume	Invert	Avail.Storage	Storage Description
#1	638.00'	25,379 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

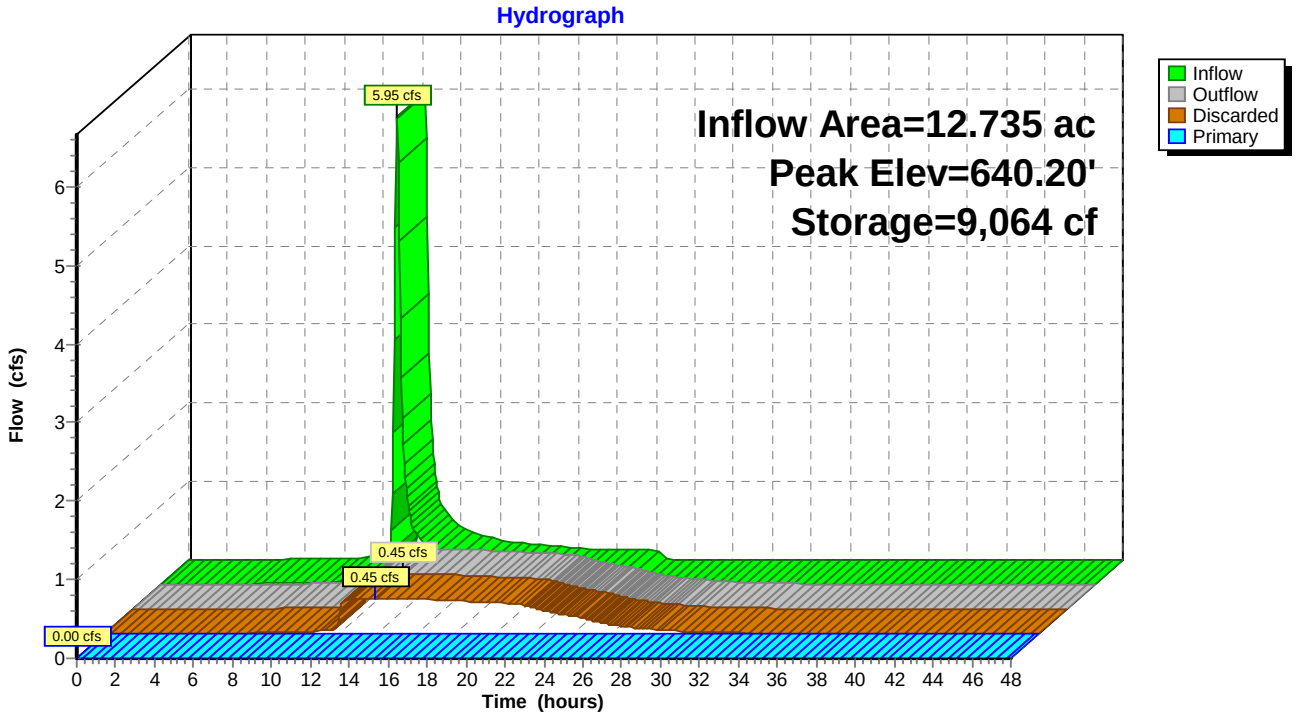
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
638.00	3,396	0	0
639.00	4,038	3,717	3,717
640.00	4,705	4,372	8,089
641.00	5,397	5,051	13,140
641.50	5,753	2,788	15,927
642.00	6,114	2,967	18,894
643.00	6,857	6,486	25,379

Device	Routing	Invert	Outlet Devices
#1	Discarded	638.00'	**4.040 in/hr Exfiltration over Surface area** Phase-In= 1.00'
#2	Primary	641.00'	**15.0' long x 15.0' breadth Emergency Spillway**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.45 cfs @ 13.84 hrs HW=640.20' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.45 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=638.00' (Free Discharge)
↑—**2=Emergency Spillway** (Controls 0.00 cfs)

Pond IB2: Infiltration Basin 2



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment S10: Lot 8 East Runoff Area=35,984 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=210' Tc=10.7 min CN=WQ Runoff=0.00 cfs 0.000 af

Subcatchment S2: Lot 2 House Site Runoff Area=84,188 sf 6.12% Impervious Runoff Depth=1.62"
Flow Length=420' Tc=5.1 min CN=WQ Runoff=5.52 cfs 0.262 af

Subcatchment S3: Lot 3 House Site Runoff Area=68,847 sf 10.45% Impervious Runoff Depth=1.34"
Flow Length=530' Tc=10.4 min CN=WQ Runoff=3.04 cfs 0.176 af

Subcatchment S4: Lot 4 Woods Runoff Area=89,067 sf 0.00% Impervious Runoff Depth=0.26"
Flow Length=560' Tc=21.6 min CN=WQ Runoff=0.54 cfs 0.044 af

Subcatchment S5: Lot 4 House Site Runoff Area=199,110 sf 2.15% Impervious Runoff Depth=1.15"
Flow Length=935' Tc=15.2 min CN=WQ Runoff=6.58 cfs 0.438 af

Subcatchment S6A: Lots 5 House Site Runoff Area=50,961 sf 9.89% Impervious Runoff Depth=1.65"
Flow Length=725' Tc=10.2 min CN=WQ Runoff=2.82 cfs 0.161 af

Subcatchment S6B: Lots 7 House Site Runoff Area=164,212 sf 2.67% Impervious Runoff Depth=1.47"
Flow Length=905' Tc=11.9 min CN=WQ Runoff=7.81 cfs 0.463 af

Subcatchment S6C: Lots 5, 7 & 8 Driveway Runoff Area=11,415 sf 50.10% Impervious Runoff Depth=1.65"
Flow Length=35' Slope=0.0500 '/' Tc=1.6 min CN=WQ Runoff=0.70 cfs 0.036 af

Subcatchment S7: Lot 8 House Site Runoff Area=46,146 sf 8.90% Impervious Runoff Depth=1.20"
Flow Length=535' Tc=12.4 min CN=WQ Runoff=1.71 cfs 0.106 af

Subcatchment S8: Lot 6 House Site Runoff Area=39,264 sf 17.89% Impervious Runoff Depth=0.59"
Flow Length=220' Tc=8.6 min CN=WQ Runoff=0.73 cfs 0.045 af

Subcatchment S9: Lot 6 East Runoff Area=43,637 sf 0.00% Impervious Runoff Depth=0.01"
Flow Length=235' Tc=12.6 min CN=WQ Runoff=0.00 cfs 0.001 af

Reach R1: Lot 2 Stone Swale Avg. Flow Depth=0.53' Max Vel=5.95 fps Inflow=5.52 cfs 0.262 af
n=0.040 L=315.0' S=0.1206 '/' Capacity=86.00 cfs Outflow=5.27 cfs 0.262 af

Reach R10: Lot 6 Stone Swale Avg. Flow Depth=1.07' Max Vel=7.12 fps Inflow=18.81 cfs 1.248 af
n=0.040 L=190.0' S=0.0737 '/' Capacity=67.22 cfs Outflow=18.56 cfs 1.248 af

Reach R11: IB2 Pretreatment Swale Avg. Flow Depth=1.98' Max Vel=2.00 fps Inflow=18.56 cfs 1.248 af
n=0.080 L=100.0' S=0.0100 '/' Capacity=78.61 cfs Outflow=18.22 cfs 1.248 af

Reach R12: Lot 5 Stone Swale Avg. Flow Depth=0.41' Max Vel=4.54 fps Inflow=2.82 cfs 0.161 af
n=0.040 L=190.0' S=0.0947 '/' Capacity=76.22 cfs Outflow=2.76 cfs 0.161 af

Reach R13: Lot 7 Stone Swale Avg. Flow Depth=0.70' Max Vel=5.65 fps Inflow=7.81 cfs 0.463 af
n=0.040 L=225.0' S=0.0756 '/' Capacity=68.06 cfs Outflow=7.62 cfs 0.463 af

Reach R14: Lots 7-8 Driveway Culvert Avg. Flow Depth=0.66' Max Vel=10.22 fps Inflow=7.62 cfs 0.463 af
18.0" Round Pipe n=0.013 L=30.0' S=0.0333 '/' Capacity=19.18 cfs Outflow=7.61 cfs 0.463 af

Reach R15: Lot 6 Grass Swale Avg. Flow Depth=0.49' Max Vel=2.28 fps Inflow=1.83 cfs 0.142 af
n=0.035 L=205.0' S=0.0146 '/' Capacity=34.23 cfs Outflow=1.82 cfs 0.142 af

Reach R16: Lot 6 Stone Swale Avg. Flow Depth=0.74' Max Vel=6.22 fps Inflow=9.42 cfs 0.605 af
n=0.040 L=140.0' S=0.0857 '/' Capacity=72.50 cfs Outflow=9.30 cfs 0.605 af

Reach R17: Lot 6 Driveway Culvert Avg. Flow Depth=0.67' Max Vel=13.91 fps Inflow=9.30 cfs 0.605 af
15.0" Round Pipe n=0.013 L=30.0' S=0.0667 '/' Capacity=16.68 cfs Outflow=9.29 cfs 0.605 af

Reach R18: S/N 001 Avg. Flow Depth=0.61' Max Vel=13.98 fps Inflow=14.44 cfs 0.578 af
36.0" Round Pipe n=0.013 L=35.0' S=0.0571 '/' Capacity=159.44 cfs Outflow=14.53 cfs 0.578 af

Reach R2: Lots 2-3 Driveway Culvert Avg. Flow Depth=0.40' Max Vel=13.69 fps Inflow=5.27 cfs 0.262 af
18.0" Round Pipe n=0.013 L=30.0' S=0.1000 '/' Capacity=33.22 cfs Outflow=5.26 cfs 0.262 af

Reach R3: Observatory Rd. West Swale Avg. Flow Depth=0.66' Max Vel=7.99 fps Inflow=8.19 cfs 0.438 af
n=0.022 L=190.0' S=0.0526 '/' Capacity=177.22 cfs Outflow=8.02 cfs 0.438 af

Reach R4: IB1 Pretreatment Swale Avg. Flow Depth=1.34' Max Vel=1.51 fps Inflow=8.02 cfs 0.438 af
n=0.080 L=110.0' S=0.0091 '/' Capacity=74.96 cfs Outflow=7.64 cfs 0.438 af

Reach R5: Observatory Rd. Middle Avg. Flow Depth=0.19' Max Vel=3.44 fps Inflow=0.54 cfs 0.093 af
n=0.022 L=375.0' S=0.0453 '/' Capacity=164.47 cfs Outflow=0.53 cfs 0.093 af

Reach R6: Lots 4-8 Driveway Culvert Avg. Flow Depth=0.14' Max Vel=6.28 fps Inflow=0.53 cfs 0.093 af
18.0" Round Pipe n=0.013 L=40.0' S=0.0750 '/' Capacity=28.77 cfs Outflow=0.53 cfs 0.093 af

Reach R7: Observatory Rd. East Swale Avg. Flow Depth=0.24' Max Vel=2.28 fps Inflow=0.53 cfs 0.093 af
n=0.022 L=415.0' S=0.0145 '/' Capacity=92.88 cfs Outflow=0.51 cfs 0.093 af

Reach R8: Lot 4 Stone Swale Avg. Flow Depth=0.70' Max Vel=4.80 fps Inflow=6.58 cfs 0.438 af
n=0.040 L=145.0' S=0.0552 '/' Capacity=58.16 cfs Outflow=6.51 cfs 0.438 af

Reach R9: Lots 5-8 Driveway Culvert Avg. Flow Depth=0.63' Max Vel=14.41 fps Inflow=9.01 cfs 0.599 af
15.0" Round Pipe n=0.013 L=40.0' S=0.0750 '/' Capacity=17.69 cfs Outflow=8.98 cfs 0.599 af

Pond IB1: Infiltration Basin 1 Peak Elev=661.55' Storage=10,286 cf Inflow=7.64 cfs 0.438 af
Discarded=0.18 cfs 0.383 af Primary=0.43 cfs 0.049 af Outflow=0.61 cfs 0.432 af

Pond IB2: Infiltration Basin 2 Peak Elev=641.49' Storage=15,888 cf Inflow=18.22 cfs 1.249 af
Discarded=0.54 cfs 0.764 af Primary=14.01 cfs 0.485 af Outflow=14.54 cfs 1.249 af

Total Runoff Area = 19.119 ac Runoff Volume = 1.730 af Average Runoff Depth = 1.09"
94.85% Pervious = 18.134 ac 5.15% Impervious = 0.985 ac

Summary for Subcatchment S10: Lot 8 East

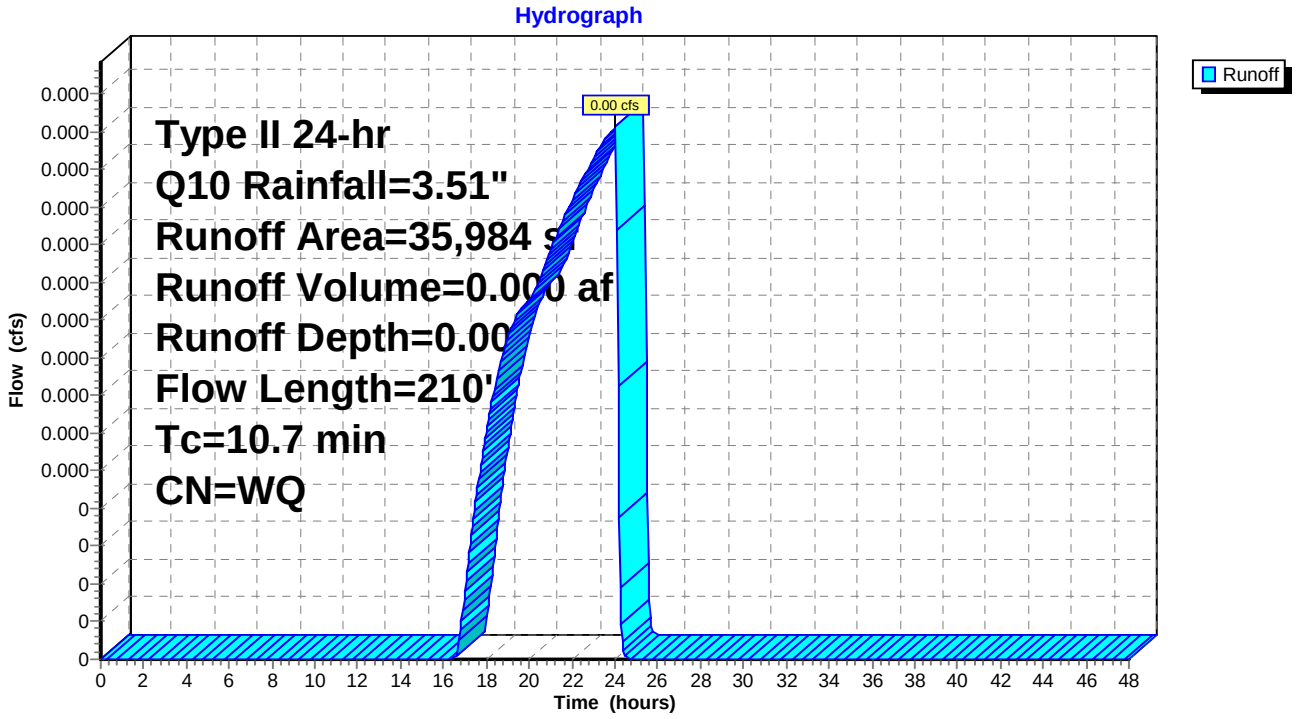
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q10 Rainfall=3.51"

Area (sf)	CN	Description
29,197	30	Woods, Good, HSG A
6,787	39	>75% Grass cover, Good, HSG A
35,984		Weighted Average
35,984		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	150	0.1600	0.39		**Lag/CN Method, Lot 8 Woods**
4.3	60	0.0800	0.23		**Lag/CN Method, Lot 8 Lawn**
10.7	210	Total			

Subcatchment S10: Lot 8 East



Summary for Subcatchment S2: Lot 2 House Site

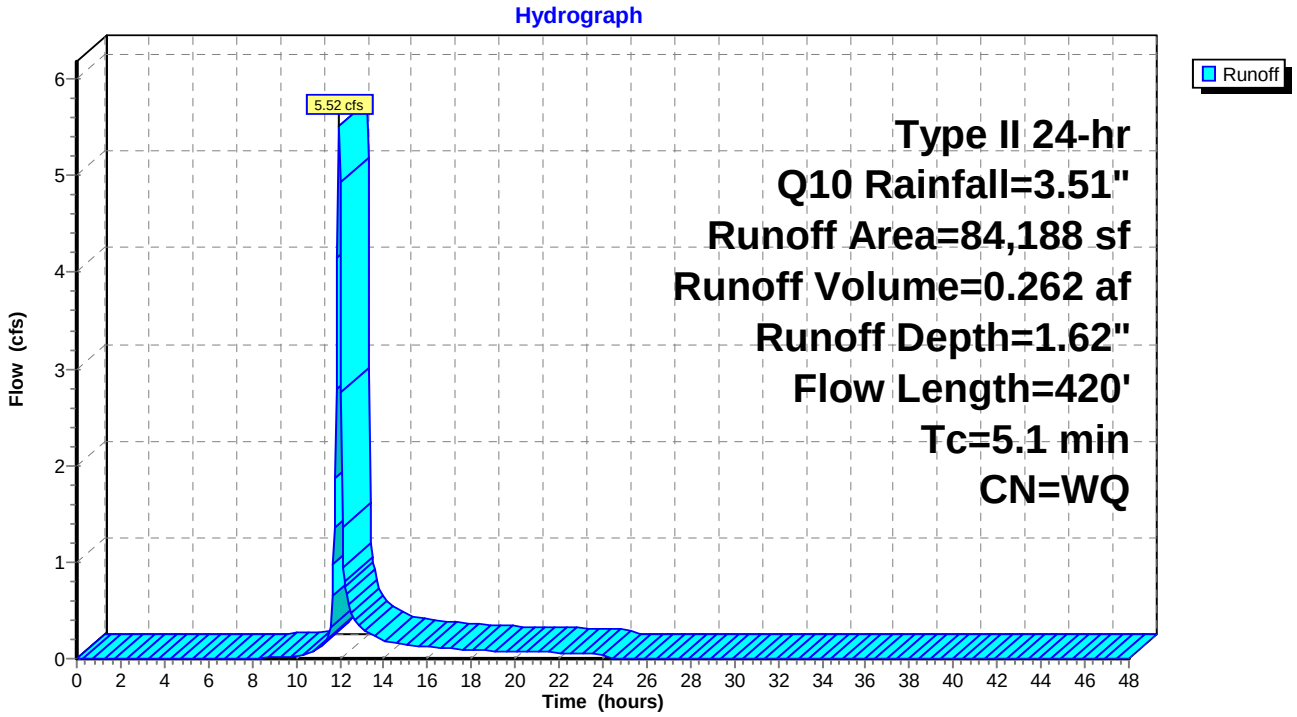
Runoff = 5.52 cfs @ 11.96 hrs, Volume= 0.262 af, Depth= 1.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q10 Rainfall=3.51"

Area (sf)	CN	Description
49,129	77	Woods, Good, HSG D
29,906	80	>75% Grass cover, Good, HSG D
5,153	98	Paved parking, HSG D
84,188		Weighted Average
79,035		93.88% Pervious Area
5,153		6.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	285	0.1700	1.63		**Lag/CN Method, Lot 2 Woods**
1.6	115	0.1300	1.19		**Lag/CN Method, Lot 2 Grass**
0.6	20	0.0500	0.52		**Lag/CN Method, Lot 2 Impervious**
5.1	420	Total			

Subcatchment S2: Lot 2 House Site



Summary for Subcatchment S3: Lot 3 House Site

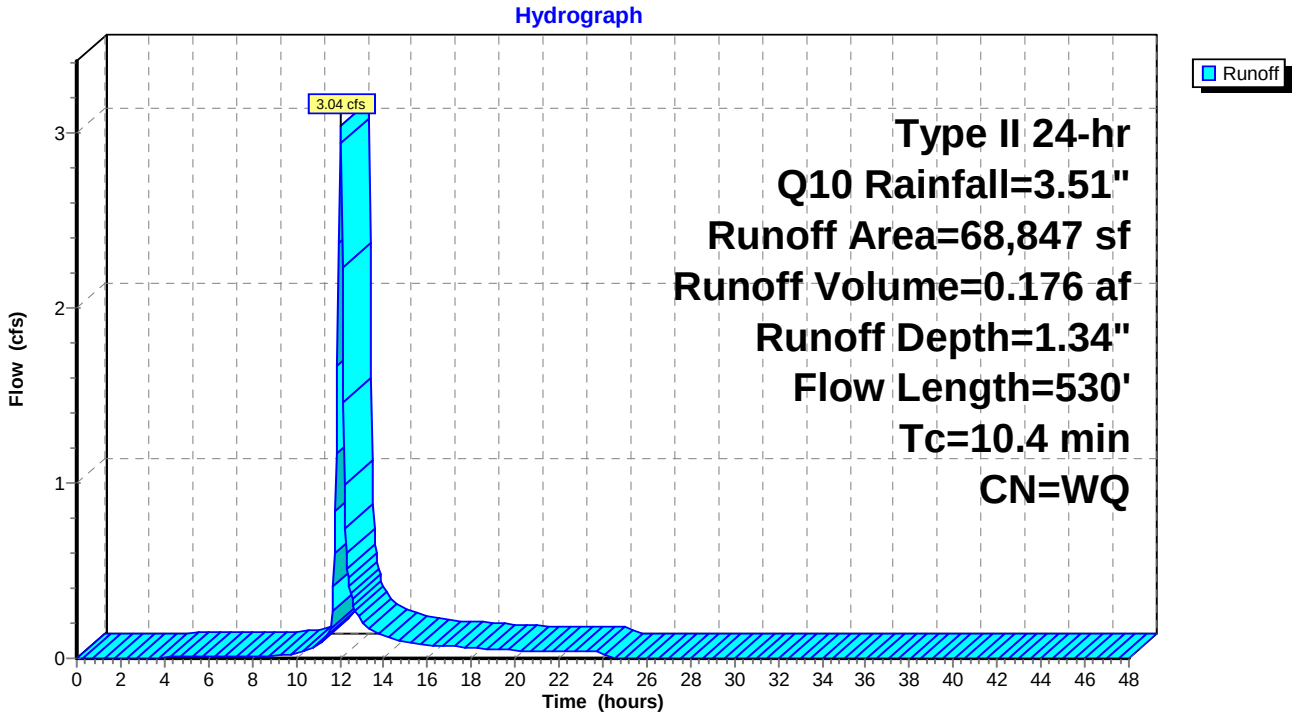
Runoff = 3.04 cfs @ 12.02 hrs, Volume= 0.176 af, Depth= 1.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q10 Rainfall=3.51"

Area (sf)	CN	Description
21,450	77	Woods, Good, HSG D
22,917	80	>75% Grass cover, Good, HSG D
7,155	98	Paved parking, HSG D
4,323	30	Woods, Good, HSG A
12,964	39	>75% Grass cover, Good, HSG A
38	98	Paved parking, HSG A
68,847		Weighted Average
61,654		89.55% Pervious Area
7,193		10.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	240	0.1800	1.25		**Lag/CN Method, Lot 3 D Soils Woods**
1.8	65	0.0700	0.60		**Lag/CN Method, Lot 3 D Soils Lawn**
0.8	20	0.0500	0.40		**Lag/CN Method, Lot 3 D Soils Impervious**
1.9	90	0.1100	0.81		**Lag/CN Method, Lot 3 A Soils Woods**
1.9	95	0.1100	0.81		**Lag/CN Method, Lot 3 A Soils Lawn**
0.8	20	0.0500	0.40		**Lag/CN Method, Lot 3 A Soils Impervious**
10.4	530	Total			

Subcatchment S3: Lot 3 House Site



Summary for Subcatchment S4: Lot 4 Woods

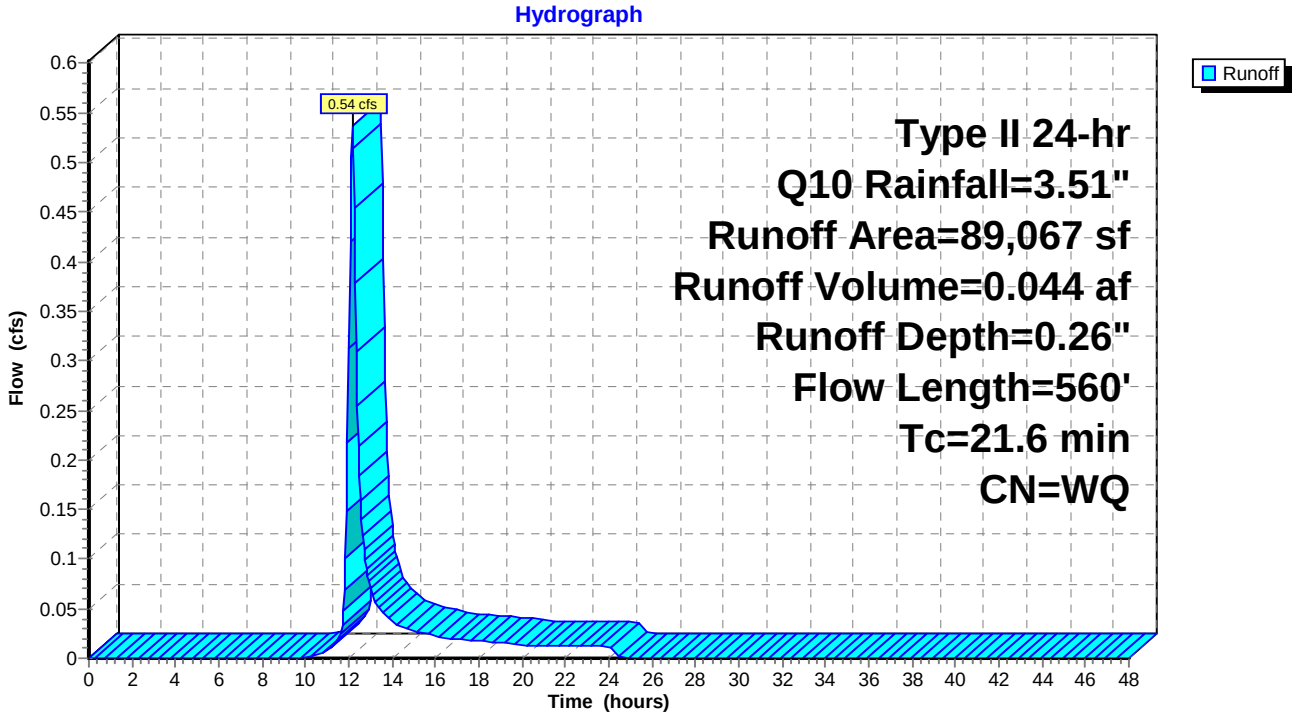
Runoff = 0.54 cfs @ 12.15 hrs, Volume= 0.044 af, Depth= 0.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q10 Rainfall=3.51"

Area (sf)	CN	Description
15,676	77	Woods, Good, HSG D
48,302	30	Woods, Good, HSG A
25,089	39	>75% Grass cover, Good, HSG A
89,067		Weighted Average
89,067		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	255	0.1100	0.47		**Lag/CN Method, Lot 4 D Soils Woods**
10.2	260	0.0900	0.43		**Lag/CN Method, Lot 4 A Soils Woods**
2.3	45	0.1100	0.33		**Lag/CN Method, Lot 4 A Soils Lawn**
21.6	560	Total			

Subcatchment S4: Lot 4 Woods



Summary for Subcatchment S5: Lot 4 House Site

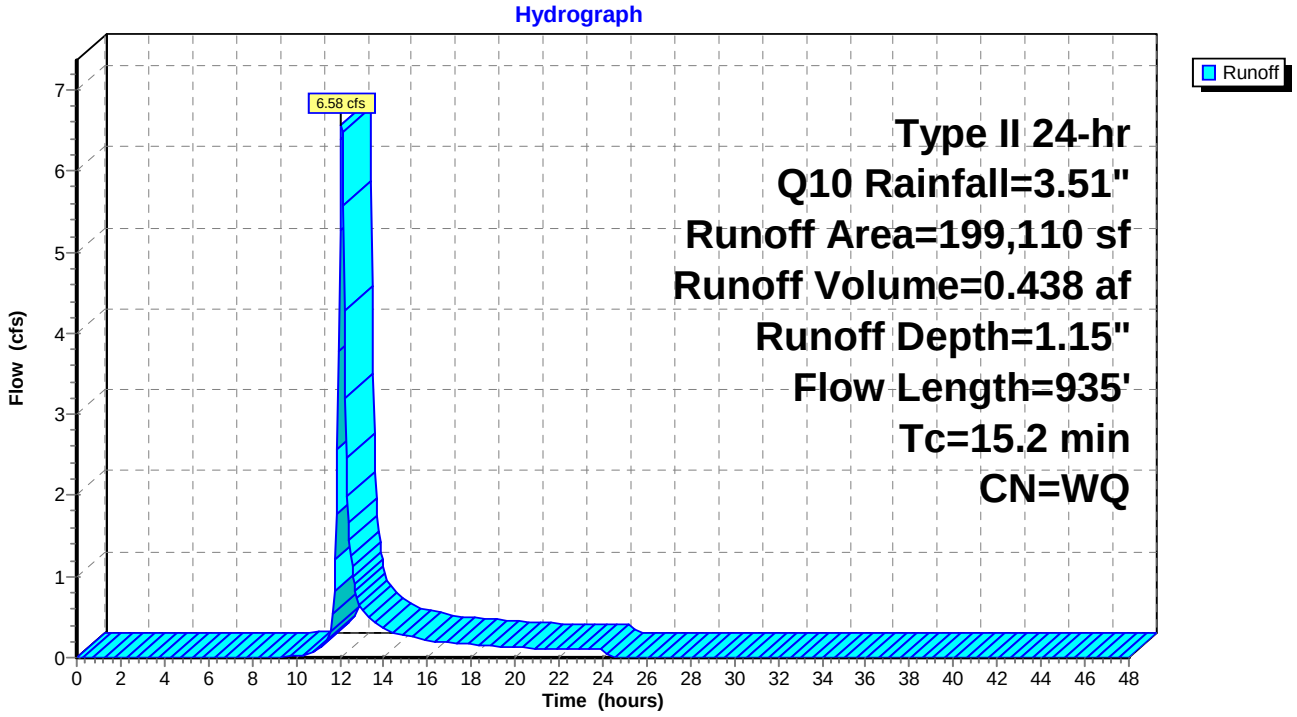
Runoff = 6.58 cfs @ 12.08 hrs, Volume= 0.438 af, Depth= 1.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q10 Rainfall=3.51"

Area (sf)	CN	Description
144,334	77	Woods, Good, HSG D
4,500	80	>75% Grass cover, Good, HSG D
27,918	30	Woods, Good, HSG A
18,079	39	>75% Grass cover, Good, HSG A
4,279	98	Paved parking, HSG A
199,110		Weighted Average
194,831		97.85% Pervious Area
4,279		2.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	655	0.1300	1.20		**Lag/CN Method, D Soils Woods**
1.6	100	0.2000	1.02		**Lag/CN Method, D Soils Lawn**
1.9	100	0.1500	0.89		**Lag/CN Method, A Soils Woods**
1.7	60	0.0800	0.58		**Lag/CN Method, A Soils Lawn**
0.9	20	0.0500	0.37		**Lag/CN Method, Lot 4 A Soils Impervious**
15.2	935	Total			

Subcatchment S5: Lot 4 House Site



Summary for Subcatchment S6A: Lots 5 House Site

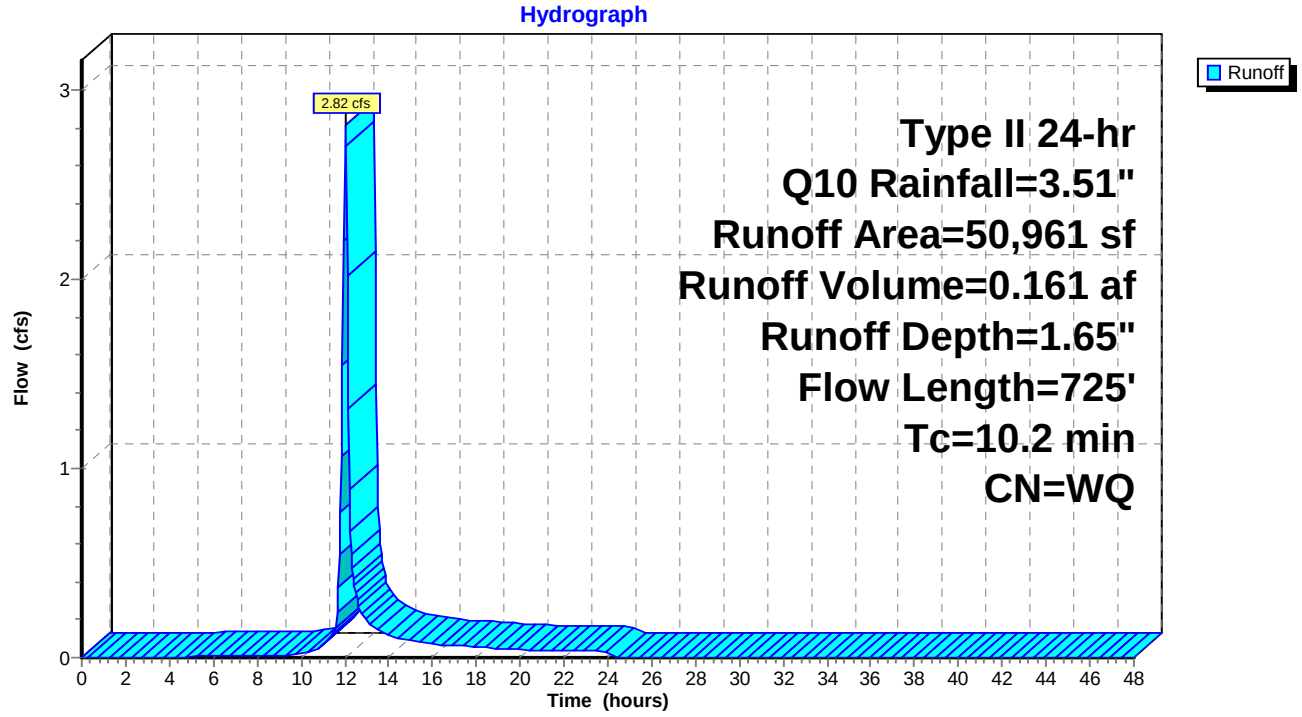
Runoff = 2.82 cfs @ 12.02 hrs, Volume= 0.161 af, Depth= 1.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q10 Rainfall=3.51"

Area (sf)	CN	Description
20,074	77	Woods, Good, HSG D
23,541	80	>75% Grass cover, Good, HSG D
4,372	98	Paved parking, HSG D
2,308	39	>75% Grass cover, Good, HSG A
666	98	Paved parking, HSG A
50,961		Weighted Average
45,923		90.11% Pervious Area
5,038		9.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	360	0.1300	1.49		**Lag/CN Method, Lots 5 D Soil Woods**
3.4	250	0.1000	1.22		**Lag/CN Method, Lots 5 D Soil Lawn**
0.6	20	0.0500	0.52		**Lag/CN Method, Lots 5 D Soil Impervious**
1.6	75	0.0700	0.80		**Lag/CN Method, Lots 5 A Soil Lawn**
0.6	20	0.0500	0.52		**Lag/CN Method, Lots 5 A Soil Impervious**
10.2	725	Total			

Subcatchment S6A: Lots 5 House Site



Summary for Subcatchment S6B: Lots 7 House Site

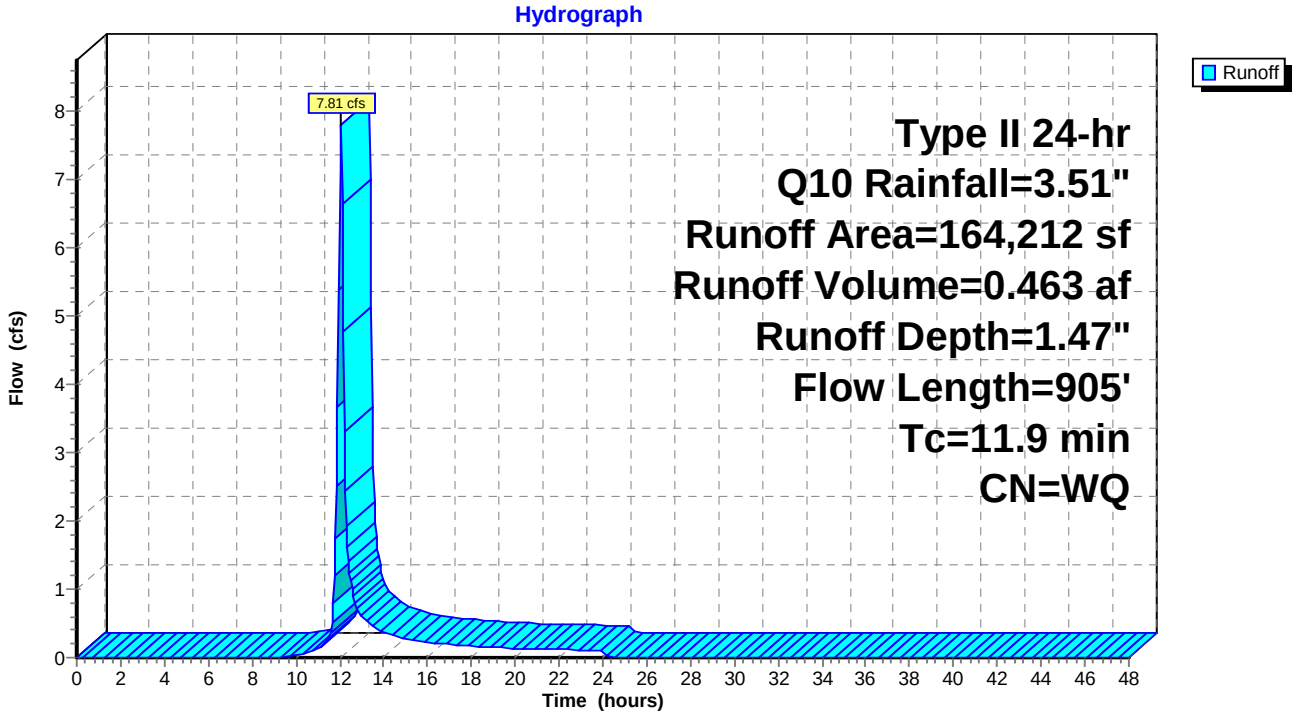
Runoff = 7.81 cfs @ 12.04 hrs, Volume= 0.463 af, Depth= 1.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q10 Rainfall=3.51"

Area (sf)	CN	Description
130,258	77	Woods, Good, HSG D
24,425	80	>75% Grass cover, Good, HSG D
3,993	98	Paved parking, HSG D
5,137	39	>75% Grass cover, Good, HSG A
399	98	Paved parking, HSG A
164,212		Weighted Average
159,820		97.33% Pervious Area
4,392		2.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	650	0.1300	1.58		**Lag/CN Method, Lot 7 D Soil Woods**
2.9	185	0.1000	1.08		**Lag/CN Method, Lot 7 D Soil Lawn**
0.7	20	0.0500	0.49		**Lag/CN Method, Lot 7 D Soil Impervious**
0.8	30	0.0700	0.63		**Lag/CN Method, Lot 7 A Soil Lawn**
0.7	20	0.0500	0.49		**Lag/CN Method, Lot 7 A Soil Impervious**
11.9	905	Total			

Subcatchment S6B: Lots 7 House Site



Summary for Subcatchment S6C: Lots 5, 7 & 8 Driveway

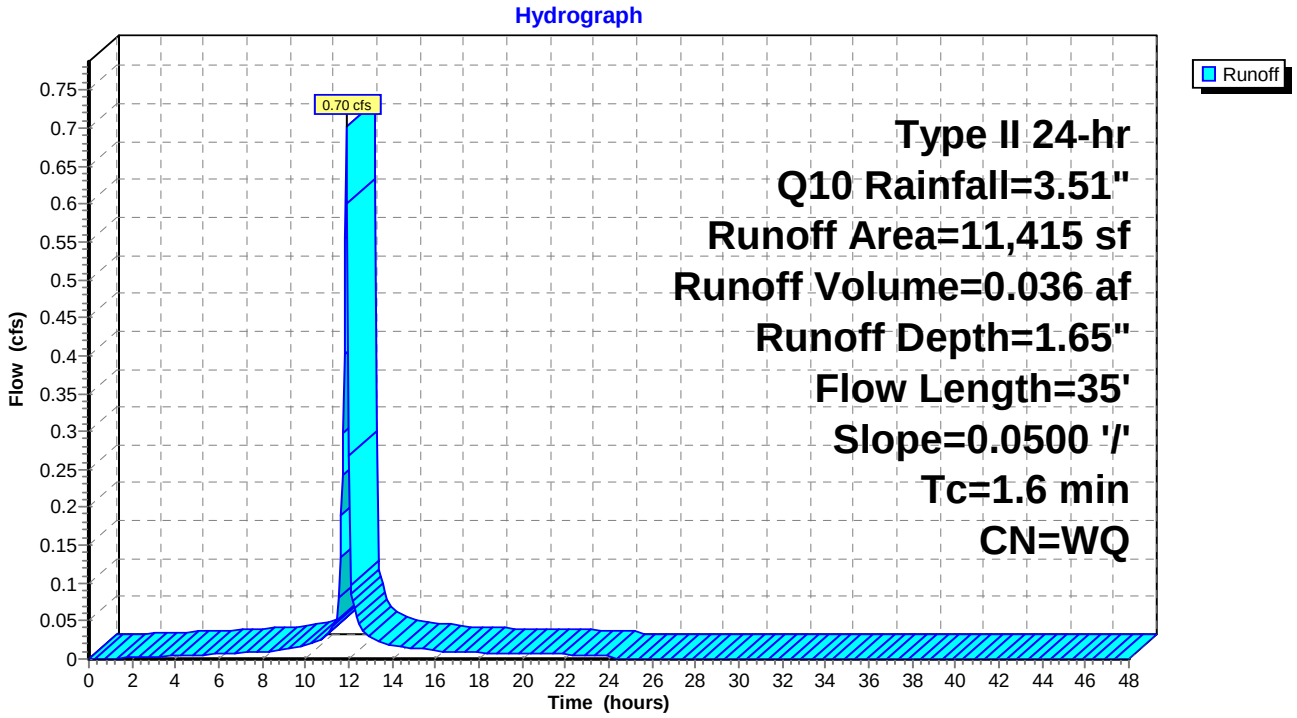
Runoff = 0.70 cfs @ 11.90 hrs, Volume= 0.036 af, Depth= 1.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q10 Rainfall=3.51"

Area (sf)	CN	Description
5,696	39	>75% Grass cover, Good, HSG A
5,719	98	Paved parking, HSG A
11,415		Weighted Average
5,696		49.90% Pervious Area
5,719		50.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	15	0.0500	0.37		**Lag/CN Method, Lots 5, 7 & 8 A Soil Lawn**
0.9	20	0.0500	0.39		**Lag/CN Method, Lots 5, 7 & 8 A Soil Impervious**
1.6	35	Total			

Subcatchment S6C: Lots 5, 7 & 8 Driveway



Summary for Subcatchment S7: Lot 8 House Site

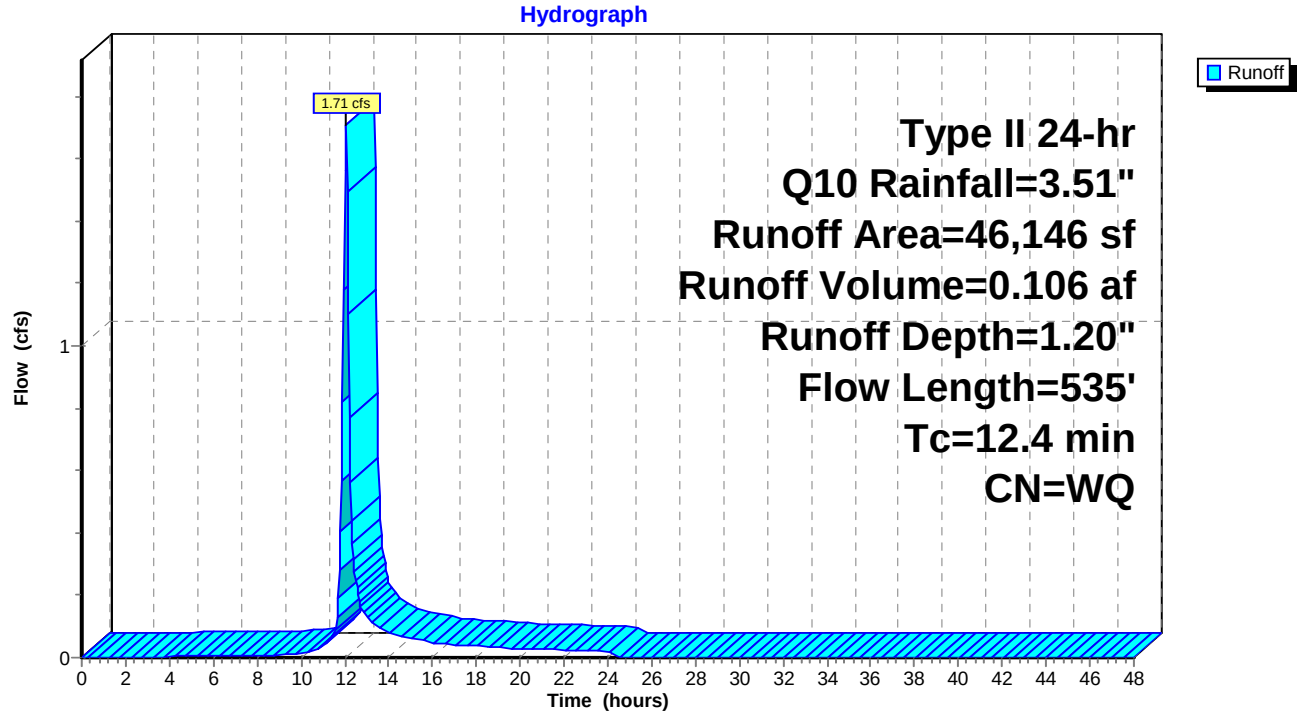
Runoff = 1.71 cfs @ 12.05 hrs, Volume= 0.106 af, Depth= 1.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q10 Rainfall=3.51"

Area (sf)	CN	Description
28,658	77	Woods, Good, HSG D
346	80	>75% Grass cover, Good, HSG D
4,702	30	Woods, Good, HSG A
8,332	39	>75% Grass cover, Good, HSG A
4,108	98	Paved parking, HSG A
46,146		Weighted Average
42,038		91.10% Pervious Area
4,108		8.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	415	0.0800	0.86		**Lag/CN Method, D Soil Woods**
0.7	20	0.0800	0.47		**Lag/CN Method, D Soils Lawn**
1.1	35	0.0800	0.52		**Lag/CN Method, A Soil Woods**
1.7	45	0.0500	0.44		**Lag/CN Method, A Soil Lawn**
0.9	20	0.0500	0.37		**Lag/CN Method, Lot 8 A Soil Impervious**
12.4	535	Total			

Subcatchment S7: Lot 8 House Site



Summary for Subcatchment S8: Lot 6 House Site

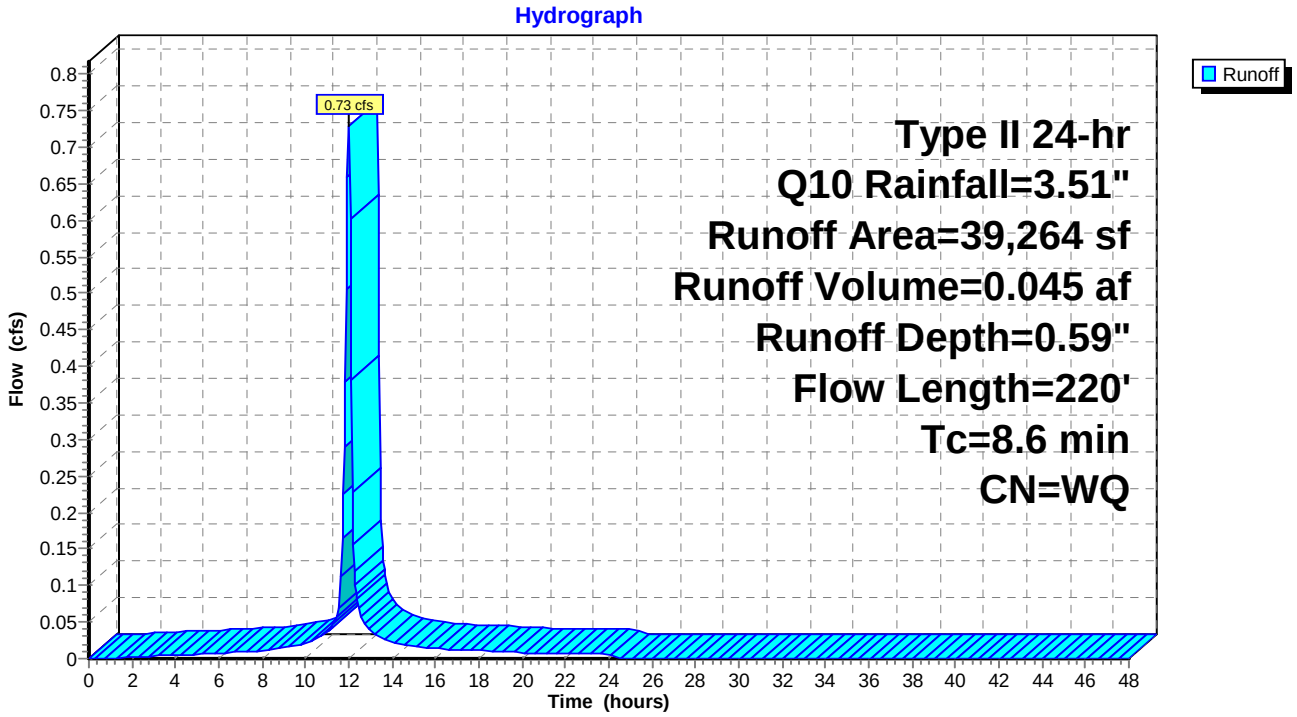
Runoff = 0.73 cfs @ 11.99 hrs, Volume= 0.045 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q10 Rainfall=3.51"

Area (sf)	CN	Description
1,434	30	Woods, Good, HSG A
30,805	39	>75% Grass cover, Good, HSG A
7,025	98	Paved parking, HSG A
39,264		Weighted Average
32,239		82.11% Pervious Area
7,025		17.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	40	0.1200	0.42		**Lag/CN Method, Lot 6 Woods**
5.6	160	0.0900	0.48		**Lag/CN Method, Lot 6 Lawn**
1.4	20	0.0500	0.23		**Lag/CN Method, Lot 6 Impervious**
8.6	220	Total			

Subcatchment S8: Lot 6 House Site



Summary for Subcatchment S9: Lot 6 East

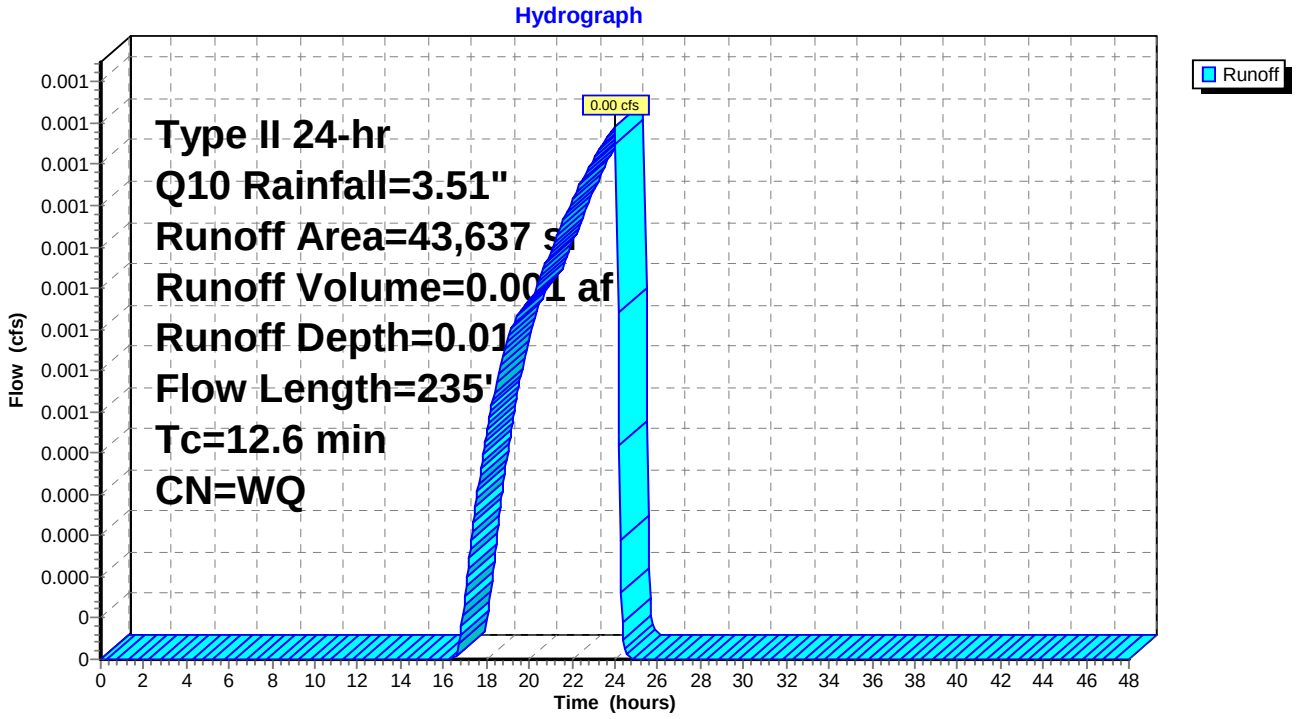
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr Q10 Rainfall=3.51"

Area (sf)	CN	Description
12,593	30	Woods, Good, HSG A
31,044	39	>75% Grass cover, Good, HSG A
43,637		Weighted Average
43,637		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	95	0.1200	0.35		**Lag/CN Method, Lot 6 Woods**
8.1	140	0.0700	0.29		**Lag/CN Method, Lot 6 Lawn**
12.6	235	Total			

Subcatchment S9: Lot 6 East



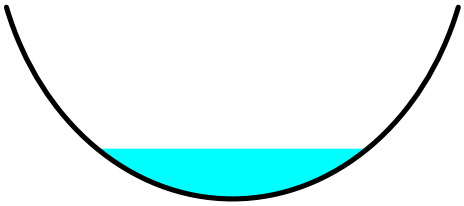
Summary for Reach R1: Lot 2 Stone Swale

Inflow Area = 1.933 ac, 6.12% Impervious, Inflow Depth = 1.62" for Q10 event
Inflow = 5.52 cfs @ 11.96 hrs, Volume= 0.262 af
Outflow = 5.27 cfs @ 11.99 hrs, Volume= 0.262 af, Atten= 5%, Lag= 1.6 min

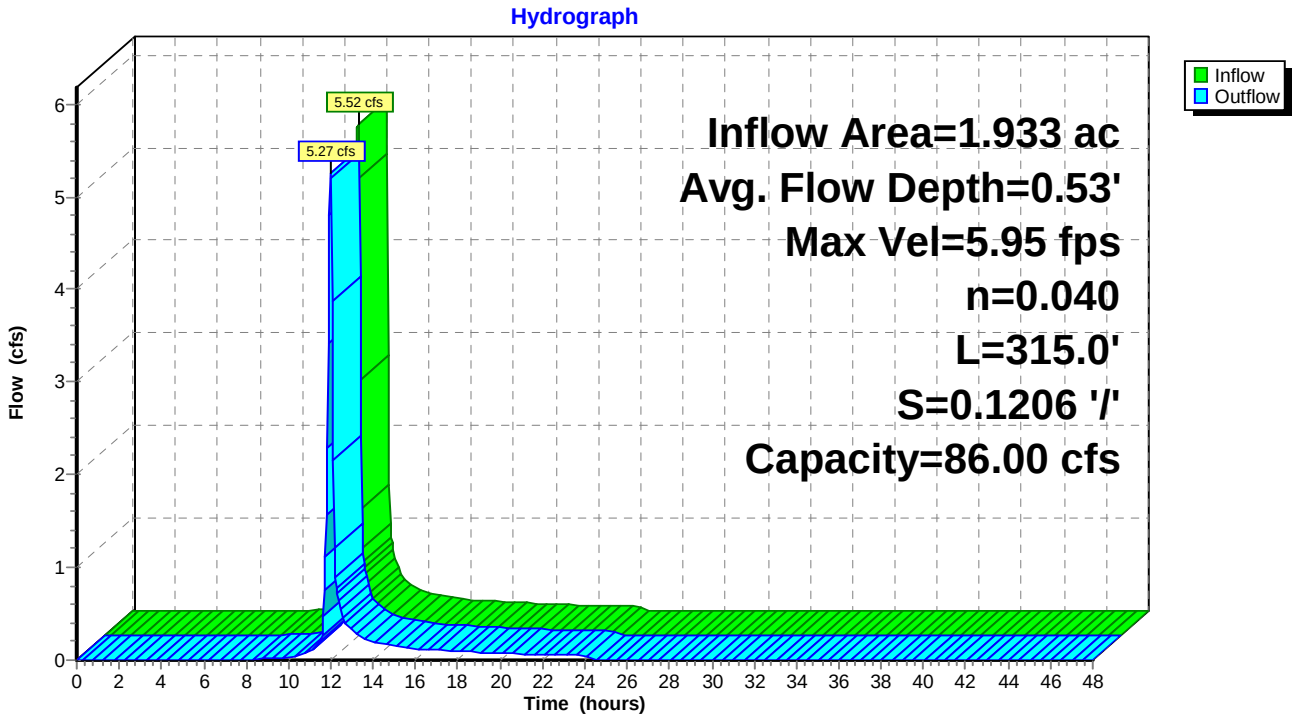
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.95 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 1.52 fps, Avg. Travel Time= 3.4 min

Peak Storage= 283 cf @ 11.97 hrs
Average Depth at Peak Storage= 0.53'
Bank-Full Depth= 2.00' Flow Area= 6.7 sf, Capacity= 86.00 cfs

5.00' x 2.00' deep Parabolic Channel, n= 0.040 Earth, cobble bottom, clean sides
Length= 315.0' Slope= 0.1206 '/'
Inlet Invert= 710.00', Outlet Invert= 672.00'



Reach R1: Lot 2 Stone Swale



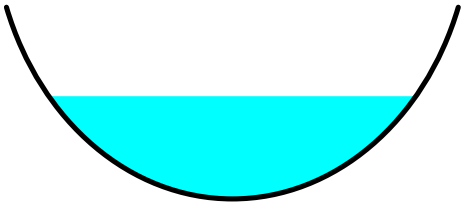
Summary for Reach R10: Lot 6 Stone Swale

Inflow Area = 11.733 ac, 5.98% Impervious, Inflow Depth = 1.28" for Q10 event
Inflow = 18.81 cfs @ 12.07 hrs, Volume= 1.248 af
Outflow = 18.56 cfs @ 12.08 hrs, Volume= 1.248 af, Atten= 1%, Lag= 0.8 min

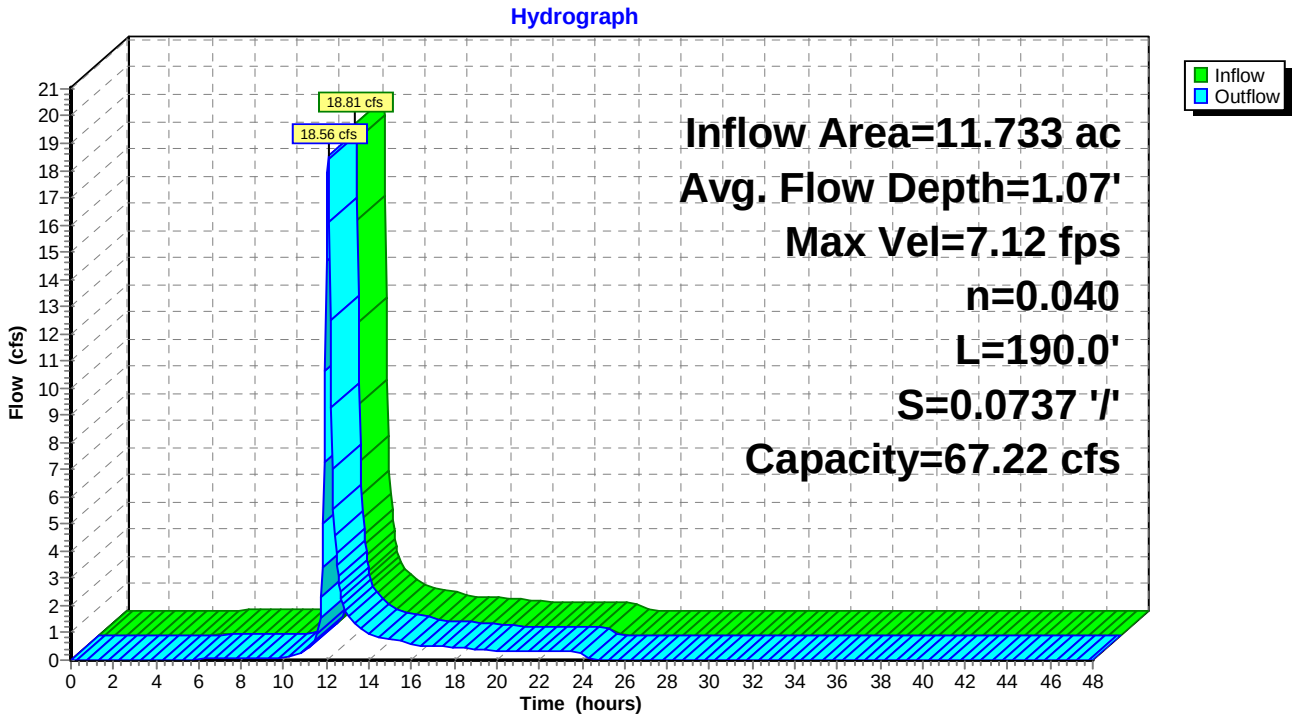
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 7.12 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.99 fps, Avg. Travel Time= 1.6 min

Peak Storage= 498 cf @ 12.08 hrs
Average Depth at Peak Storage= 1.07'
Bank-Full Depth= 2.00' Flow Area= 6.7 sf, Capacity= 67.22 cfs

5.00' x 2.00' deep Parabolic Channel, n= 0.040 Earth, cobble bottom, clean sides
Length= 190.0' Slope= 0.0737 '/'
Inlet Invert= 653.00', Outlet Invert= 639.00'



Reach R10: Lot 6 Stone Swale



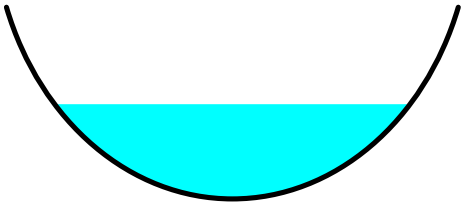
Summary for Reach R11: IB2 Pretreatment Swale

Inflow Area = 11.733 ac, 5.98% Impervious, Inflow Depth = 1.28" for Q10 event
Inflow = 18.56 cfs @ 12.08 hrs, Volume= 1.248 af
Outflow = 18.22 cfs @ 12.11 hrs, Volume= 1.248 af, Atten= 2%, Lag= 1.4 min

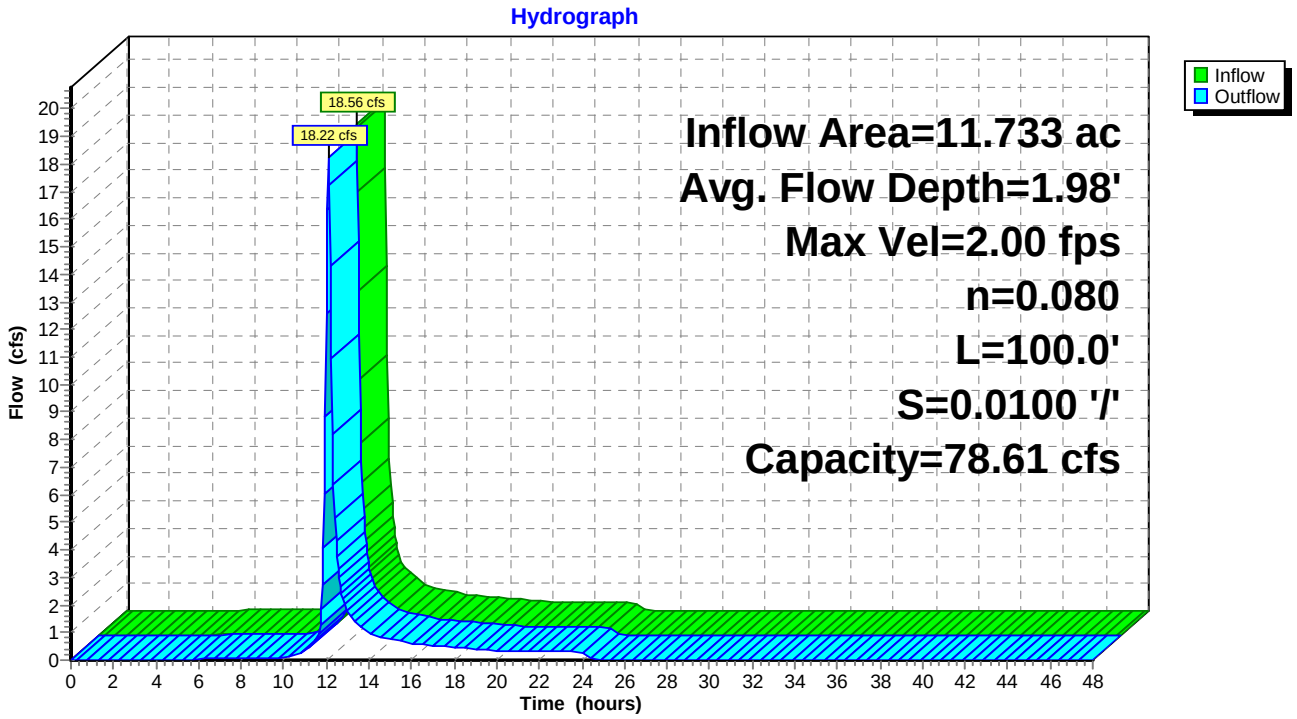
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.00 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 0.55 fps, Avg. Travel Time= 3.0 min

Peak Storage= 928 cf @ 12.09 hrs
Average Depth at Peak Storage= 1.98'
Bank-Full Depth= 4.00' Flow Area= 26.7 sf, Capacity= 78.61 cfs

10.00' x 4.00' deep Parabolic Channel, n= 0.080 Earth, long dense weeds
Length= 100.0' Slope= 0.0100 '/'
Inlet Invert= 639.00', Outlet Invert= 638.00'



Reach R11: IB2 Pretreatment Swale



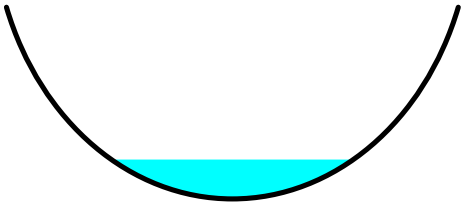
Summary for Reach R12: Lot 5 Stone Swale

Inflow Area = 1.170 ac, 9.89% Impervious, Inflow Depth = 1.65" for Q10 event
Inflow = 2.82 cfs @ 12.02 hrs, Volume= 0.161 af
Outflow = 2.76 cfs @ 12.04 hrs, Volume= 0.161 af, Atten= 2%, Lag= 1.2 min

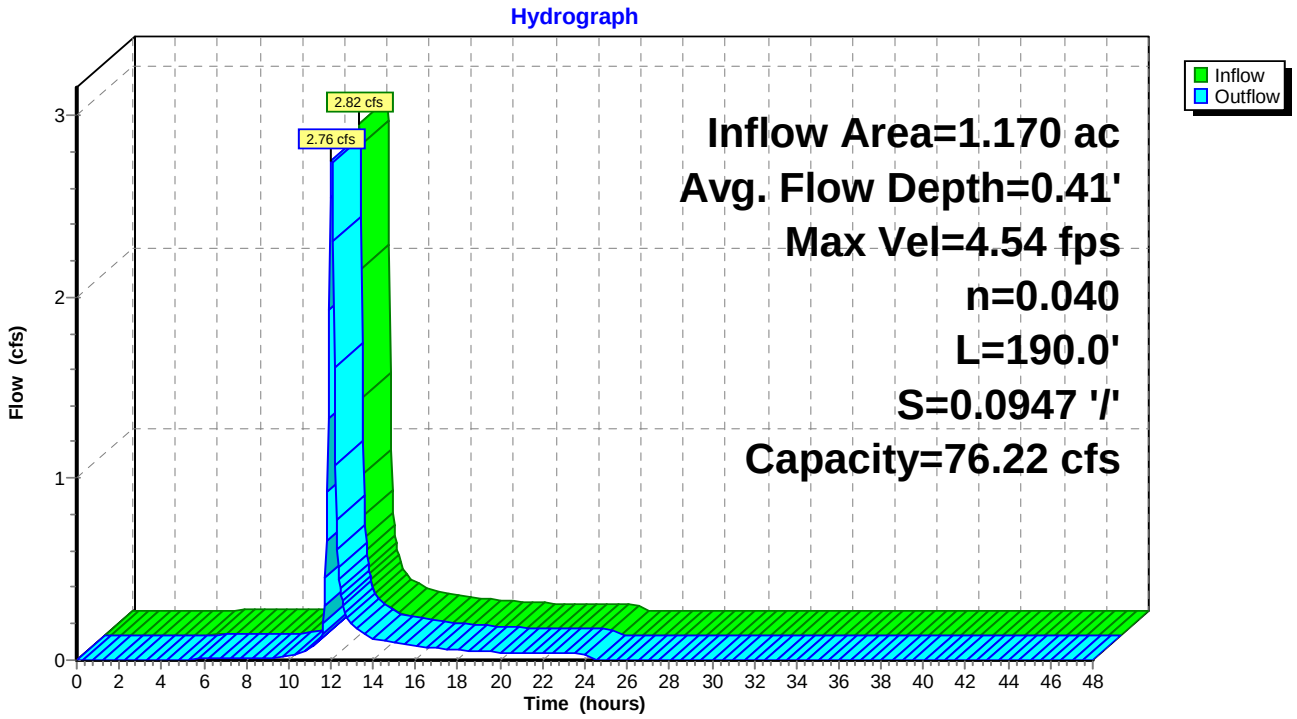
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.54 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 1.25 fps, Avg. Travel Time= 2.5 min

Peak Storage= 117 cf @ 12.03 hrs
Average Depth at Peak Storage= 0.41'
Bank-Full Depth= 2.00' Flow Area= 6.7 sf, Capacity= 76.22 cfs

5.00' x 2.00' deep Parabolic Channel, n= 0.040 Earth, cobble bottom, clean sides
Length= 190.0' Slope= 0.0947 '/'
Inlet Invert= 670.00', Outlet Invert= 652.00'



Reach R12: Lot 5 Stone Swale



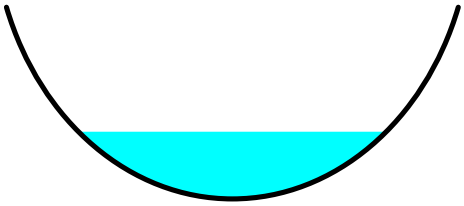
Summary for Reach R13: Lot 7 Stone Swale

Inflow Area = 3.770 ac, 2.67% Impervious, Inflow Depth = 1.47" for Q10 event
Inflow = 7.81 cfs @ 12.04 hrs, Volume= 0.463 af
Outflow = 7.62 cfs @ 12.06 hrs, Volume= 0.463 af, Atten= 2%, Lag= 1.1 min

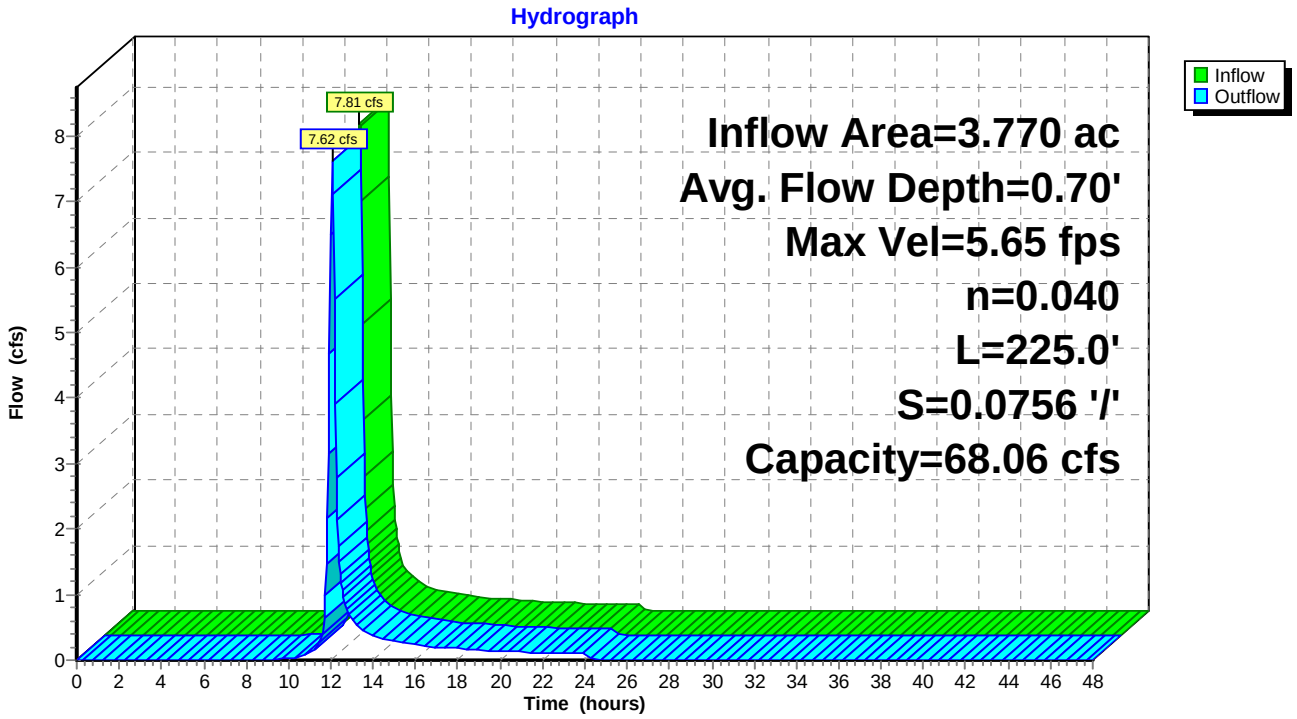
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.65 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 1.47 fps, Avg. Travel Time= 2.5 min

Peak Storage= 310 cf @ 12.05 hrs
Average Depth at Peak Storage= 0.70'
Bank-Full Depth= 2.00' Flow Area= 6.7 sf, Capacity= 68.06 cfs

5.00' x 2.00' deep Parabolic Channel, n= 0.040 Earth, cobble bottom, clean sides
Length= 225.0' Slope= 0.0756 '/'
Inlet Invert= 685.00', Outlet Invert= 668.00'



Reach R13: Lot 7 Stone Swale



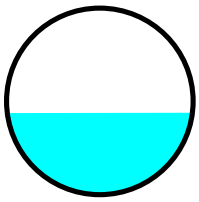
Summary for Reach R14: Lots 7-8 Driveway Culvert

Inflow Area = 3.770 ac, 2.67% Impervious, Inflow Depth = 1.47" for Q10 event
Inflow = 7.62 cfs @ 12.06 hrs, Volume= 0.463 af
Outflow = 7.61 cfs @ 12.06 hrs, Volume= 0.463 af, Atten= 0%, Lag= 0.1 min

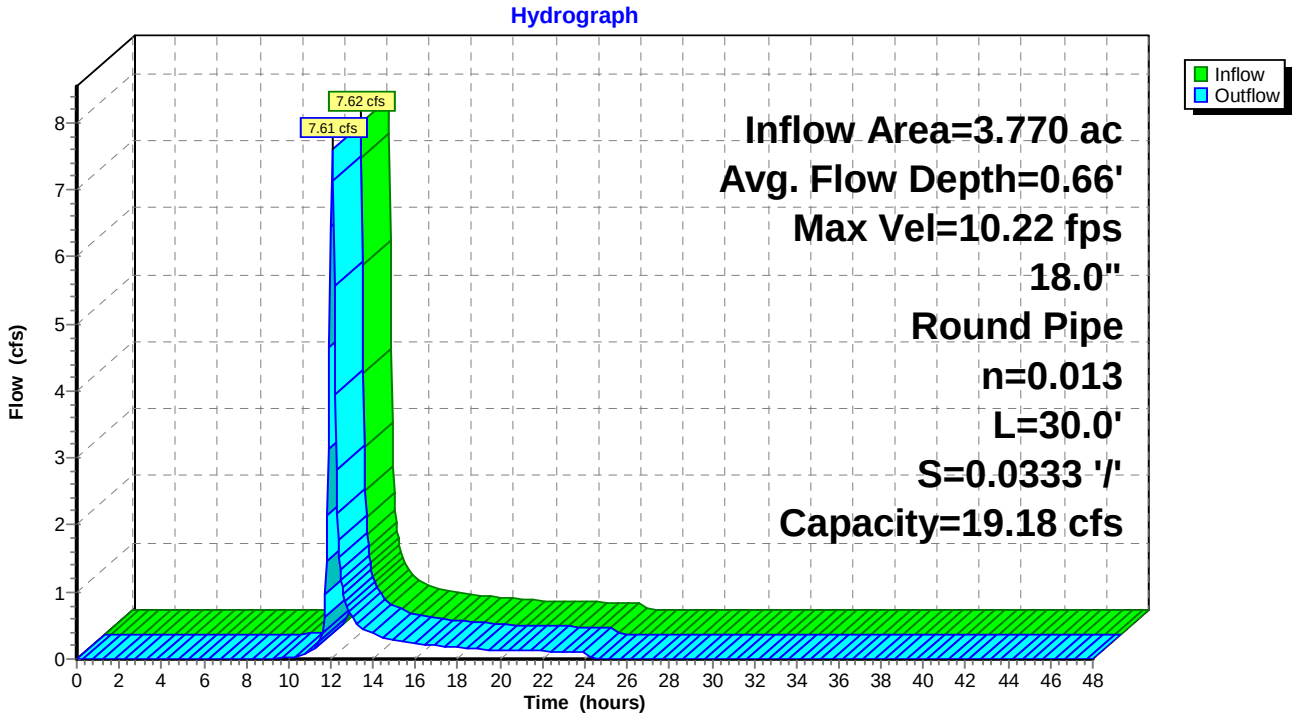
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 10.22 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 2.70 fps, Avg. Travel Time= 0.2 min

Peak Storage= 22 cf @ 12.06 hrs
Average Depth at Peak Storage= 0.66'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 19.18 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 30.0' Slope= 0.0333 '/'
Inlet Invert= 668.00', Outlet Invert= 667.00'



Reach R14: Lots 7-8 Driveway Culvert



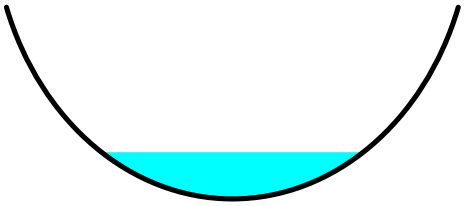
Summary for Reach R15: Lot 6 Grass Swale

Inflow Area = 1.321 ac, 17.07% Impervious, Inflow Depth = 1.29" for Q10 event
Inflow = 1.83 cfs @ 12.01 hrs, Volume= 0.142 af
Outflow = 1.82 cfs @ 12.05 hrs, Volume= 0.142 af, Atten= 1%, Lag= 2.3 min

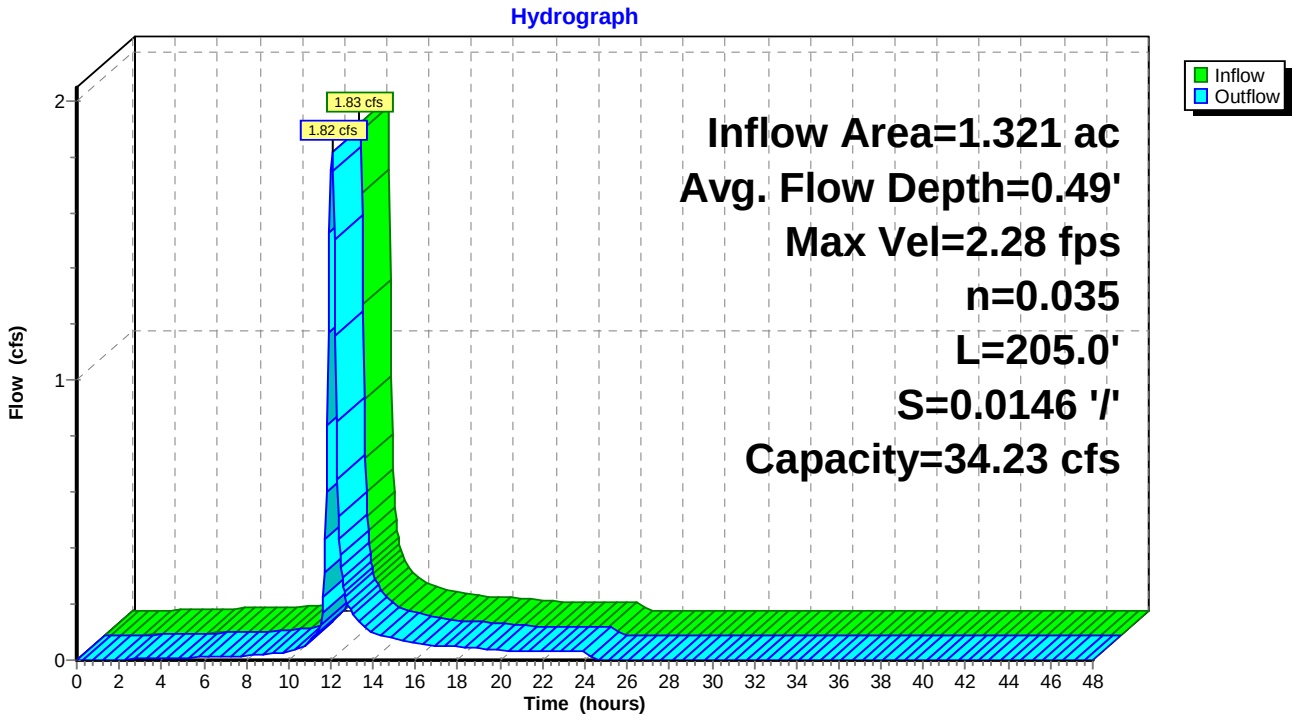
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.28 fps, Min. Travel Time= 1.5 min
Avg. Velocity = 0.70 fps, Avg. Travel Time= 4.9 min

Peak Storage= 165 cf @ 12.02 hrs
Average Depth at Peak Storage= 0.49'
Bank-Full Depth= 2.00' Flow Area= 6.7 sf, Capacity= 34.23 cfs

5.00' x 2.00' deep Parabolic Channel, n= 0.035 Earth, dense weeds
Length= 205.0' Slope= 0.0146 '/'
Inlet Invert= 670.00', Outlet Invert= 667.00'



Reach R15: Lot 6 Grass Swale



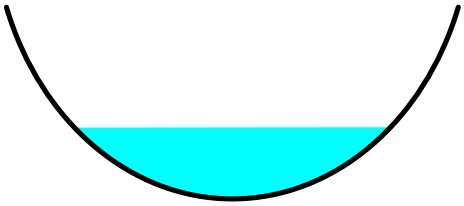
Summary for Reach R16: Lot 6 Stone Swale

Inflow Area = 5.091 ac, 6.41% Impervious, Inflow Depth = 1.42" for Q10 event
Inflow = 9.42 cfs @ 12.06 hrs, Volume= 0.605 af
Outflow = 9.30 cfs @ 12.07 hrs, Volume= 0.605 af, Atten= 1%, Lag= 0.6 min

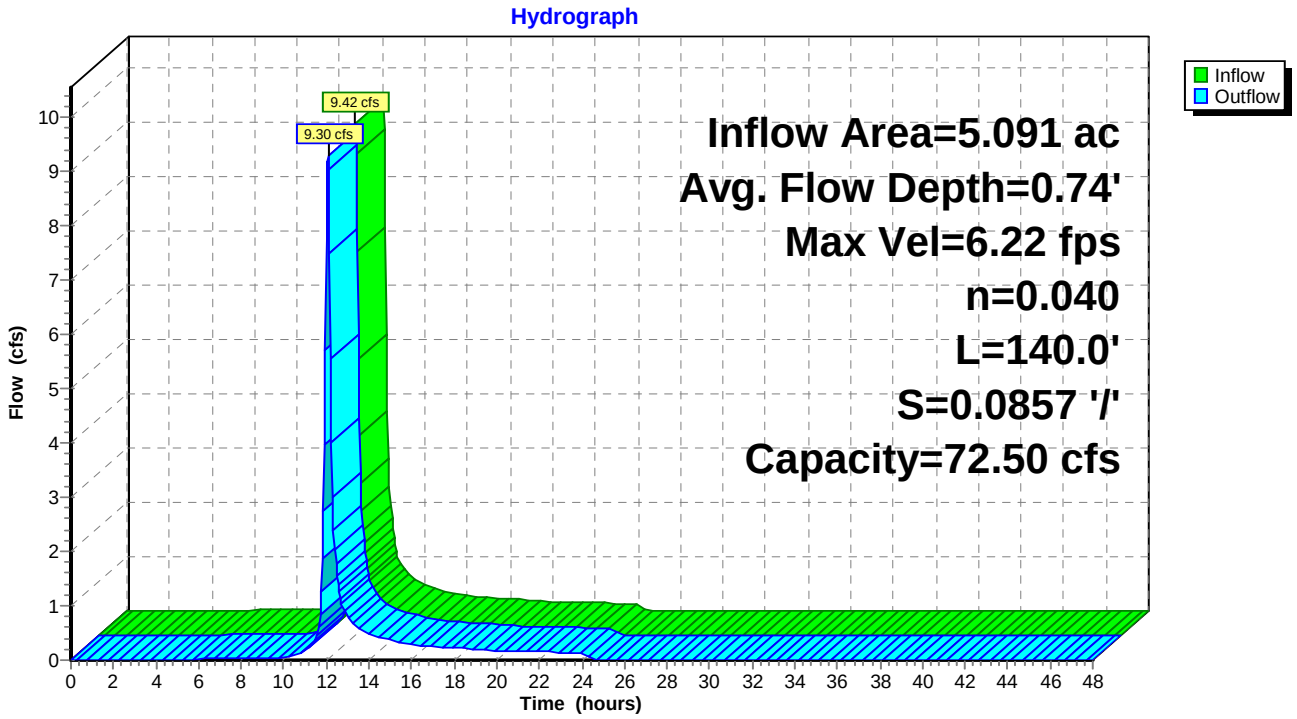
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.22 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.71 fps, Avg. Travel Time= 1.4 min

Peak Storage= 211 cf @ 12.06 hrs
Average Depth at Peak Storage= 0.74'
Bank-Full Depth= 2.00' Flow Area= 6.7 sf, Capacity= 72.50 cfs

5.00' x 2.00' deep Parabolic Channel, n= 0.040 Earth, cobble bottom, clean sides
Length= 140.0' Slope= 0.0857 '/'
Inlet Invert= 667.00', Outlet Invert= 655.00'



Reach R16: Lot 6 Stone Swale



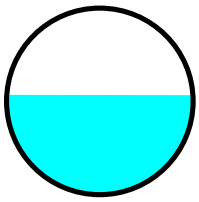
Summary for Reach R17: Lot 6 Driveway Culvert

Inflow Area = 5.091 ac, 6.41% Impervious, Inflow Depth = 1.42" for Q10 event
Inflow = 9.30 cfs @ 12.07 hrs, Volume= 0.605 af
Outflow = 9.29 cfs @ 12.07 hrs, Volume= 0.605 af, Atten= 0%, Lag= 0.1 min

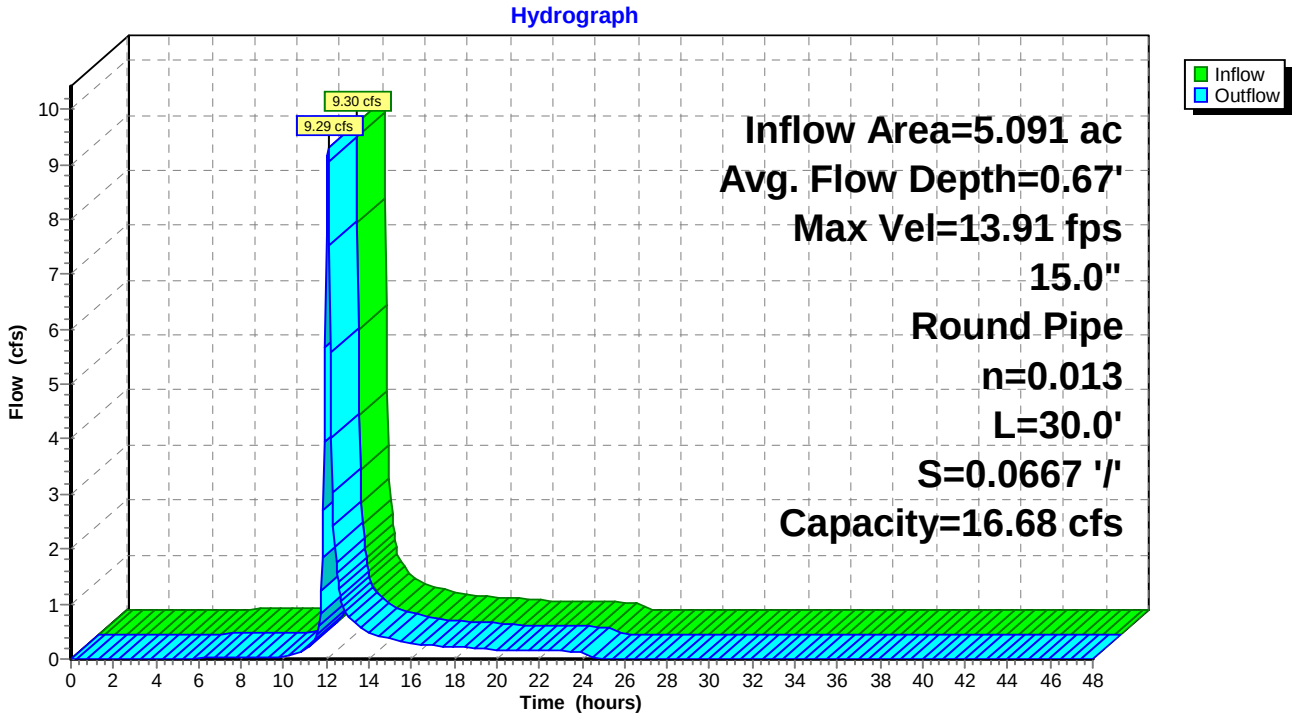
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 13.91 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 3.93 fps, Avg. Travel Time= 0.1 min

Peak Storage= 20 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.67'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 16.68 cfs

15.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 30.0' Slope= 0.0667 '/'
Inlet Invert= 655.00', Outlet Invert= 653.00'



Reach R17: Lot 6 Driveway Culvert



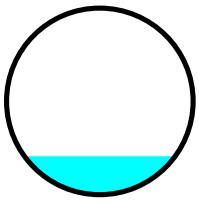
Summary for Reach R18: S/N 001

Inflow Area = 19.119 ac, 5.15% Impervious, Inflow Depth = 0.36" for Q10 event
Inflow = 14.44 cfs @ 12.21 hrs, Volume= 0.578 af
Outflow = 14.53 cfs @ 12.21 hrs, Volume= 0.578 af, Atten= 0%, Lag= 0.0 min

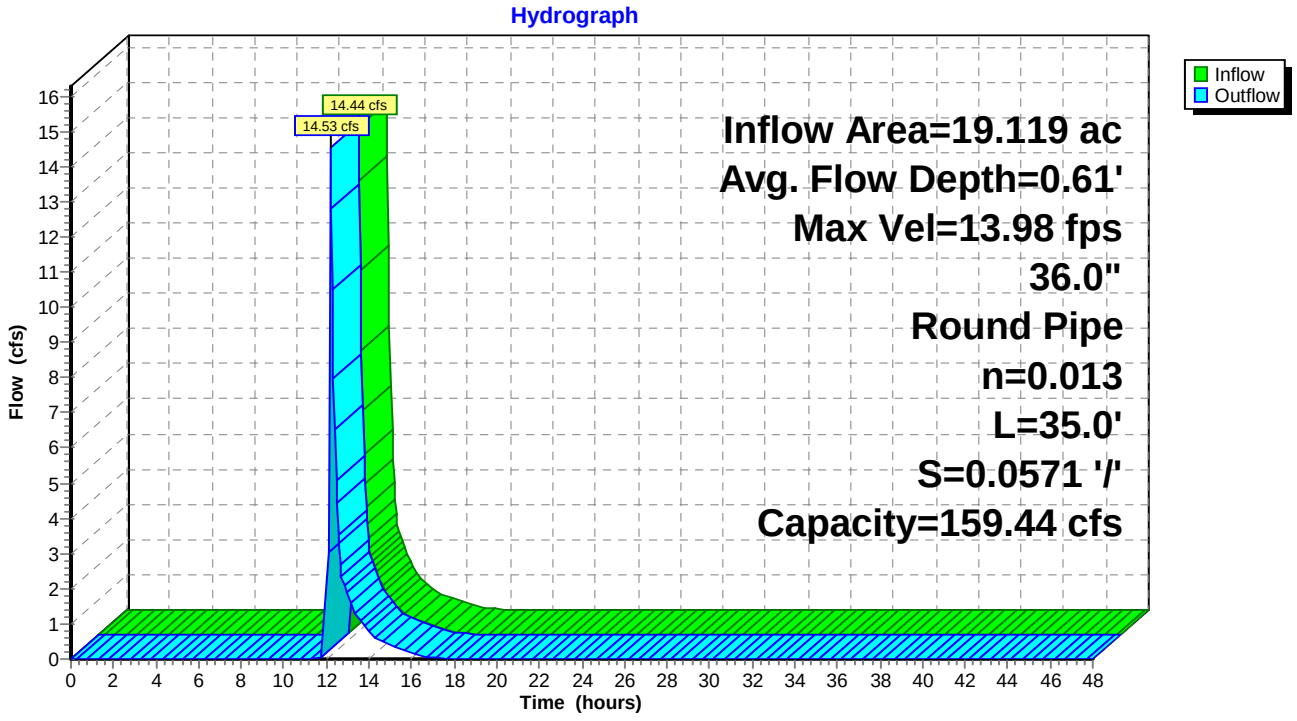
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 13.98 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 3.24 fps, Avg. Travel Time= 0.2 min

Peak Storage= 36 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.61'
Bank-Full Depth= 3.00' Flow Area= 7.1 sf, Capacity= 159.44 cfs

36.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 35.0' Slope= 0.0571 '/'
Inlet Invert= 632.00', Outlet Invert= 630.00'



Reach R18: S/N 001



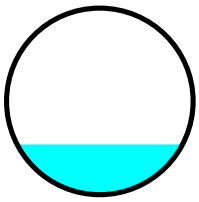
Summary for Reach R2: Lots 2-3 Driveway Culvert

Inflow Area = 1.933 ac, 6.12% Impervious, Inflow Depth = 1.62" for Q10 event
Inflow = 5.27 cfs @ 11.99 hrs, Volume= 0.262 af
Outflow = 5.26 cfs @ 11.99 hrs, Volume= 0.262 af, Atten= 0%, Lag= 0.1 min

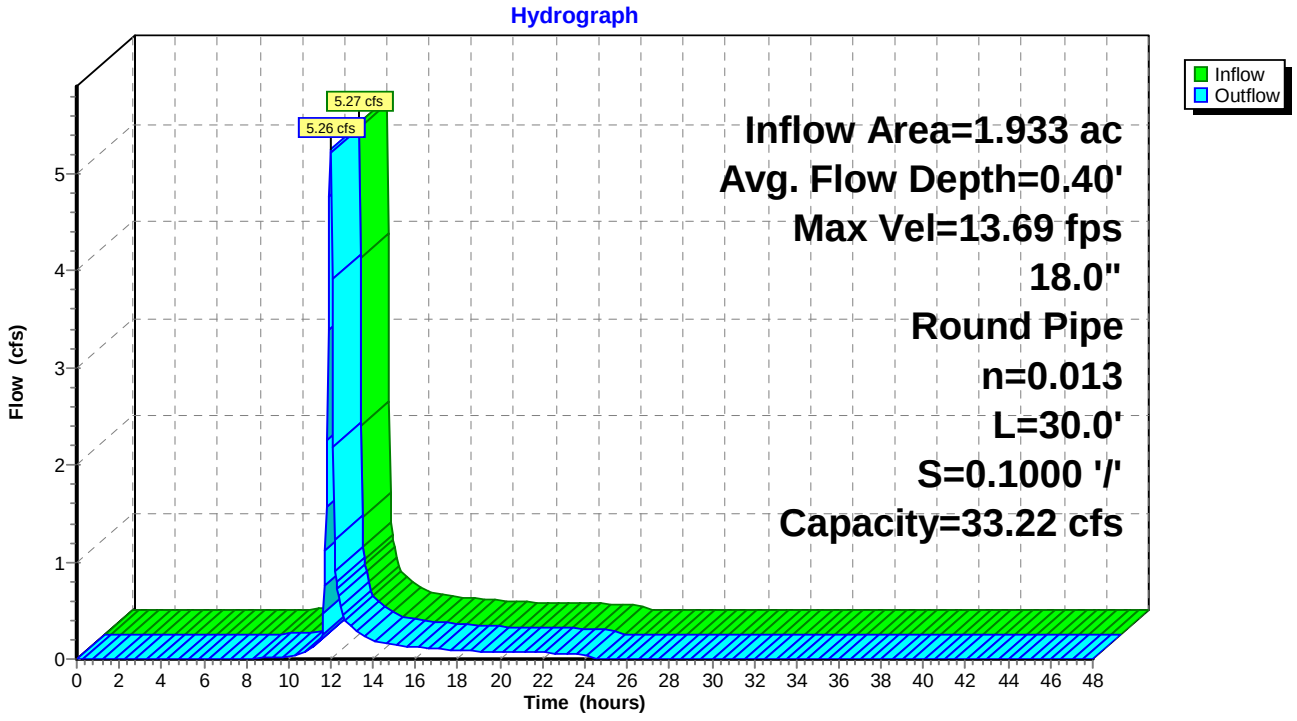
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 13.69 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 3.51 fps, Avg. Travel Time= 0.1 min

Peak Storage= 12 cf @ 11.99 hrs
Average Depth at Peak Storage= 0.40'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 33.22 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 30.0' Slope= 0.1000 '/'
Inlet Invert= 672.00', Outlet Invert= 669.00'



Reach R2: Lots 2-3 Driveway Culvert



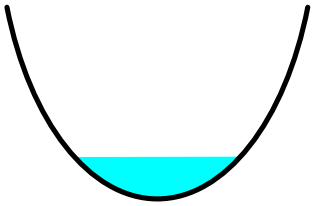
Summary for Reach R3: Observatory Rd. West Swale

Inflow Area = 3.513 ac, 8.07% Impervious, Inflow Depth = 1.50" for Q10 event
Inflow = 8.19 cfs @ 12.00 hrs, Volume= 0.438 af
Outflow = 8.02 cfs @ 12.01 hrs, Volume= 0.438 af, Atten= 2%, Lag= 0.6 min

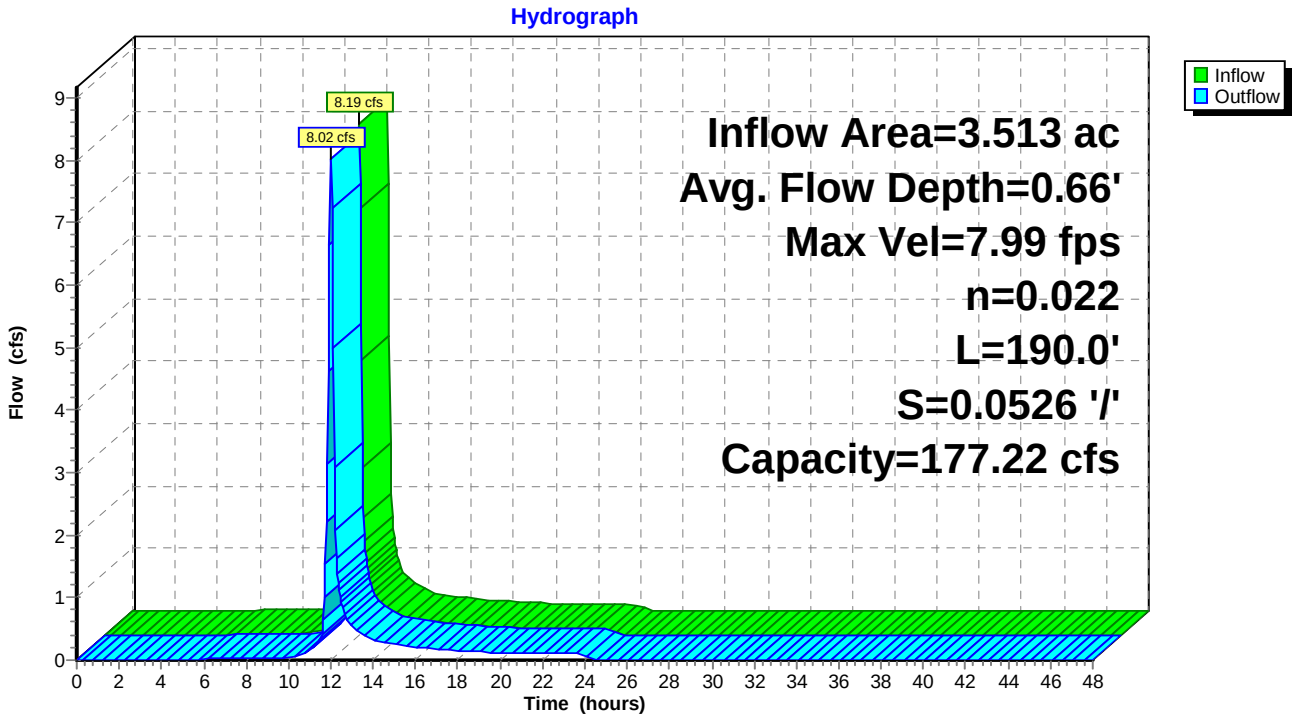
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 7.99 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 2.19 fps, Avg. Travel Time= 1.4 min

Peak Storage= 194 cf @ 12.00 hrs
Average Depth at Peak Storage= 0.66'
Bank-Full Depth= 3.00' Flow Area= 10.0 sf, Capacity= 177.22 cfs

5.00' x 3.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 190.0' Slope= 0.0526 '/'
Inlet Invert= 669.00', Outlet Invert= 659.00'



Reach R3: Observatory Rd. West Swale



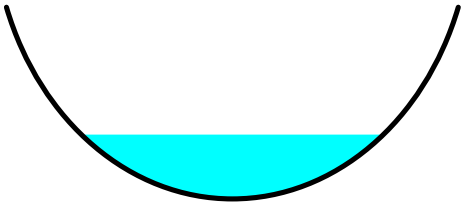
Summary for Reach R4: IB1 Pretreatment Swale

Inflow Area = 3.513 ac, 8.07% Impervious, Inflow Depth = 1.50" for Q10 event
Inflow = 8.02 cfs @ 12.01 hrs, Volume= 0.438 af
Outflow = 7.64 cfs @ 12.04 hrs, Volume= 0.438 af, Atten= 5%, Lag= 2.2 min

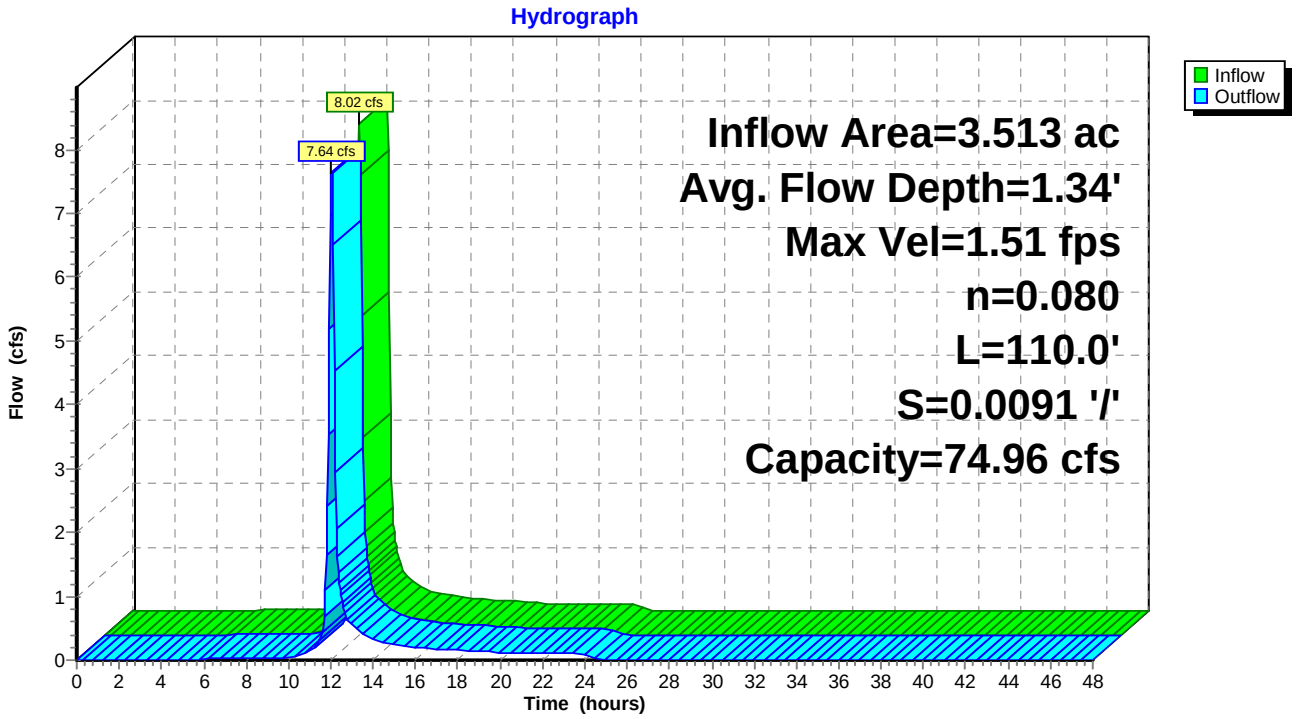
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.51 fps, Min. Travel Time= 1.2 min
Avg. Velocity = 0.40 fps, Avg. Travel Time= 4.6 min

Peak Storage= 570 cf @ 12.02 hrs
Average Depth at Peak Storage= 1.34'
Bank-Full Depth= 4.00' Flow Area= 26.7 sf, Capacity= 74.96 cfs

10.00' x 4.00' deep Parabolic Channel, n= 0.080 Earth, long dense weeds
Length= 110.0' Slope= 0.0091 '/'
Inlet Invert= 659.00', Outlet Invert= 658.00'



Reach R4: IB1 Pretreatment Swale



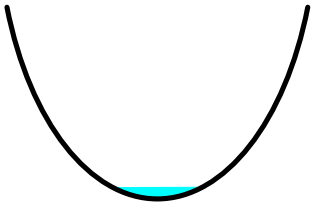
Summary for Reach R5: Observatory Rd. Middle Swale

Inflow Area = 5.558 ac, 5.10% Impervious, Inflow Depth = 0.20" for Q10 event
Inflow = 0.54 cfs @ 12.15 hrs, Volume= 0.093 af
Outflow = 0.53 cfs @ 12.21 hrs, Volume= 0.093 af, Atten= 2%, Lag= 3.3 min

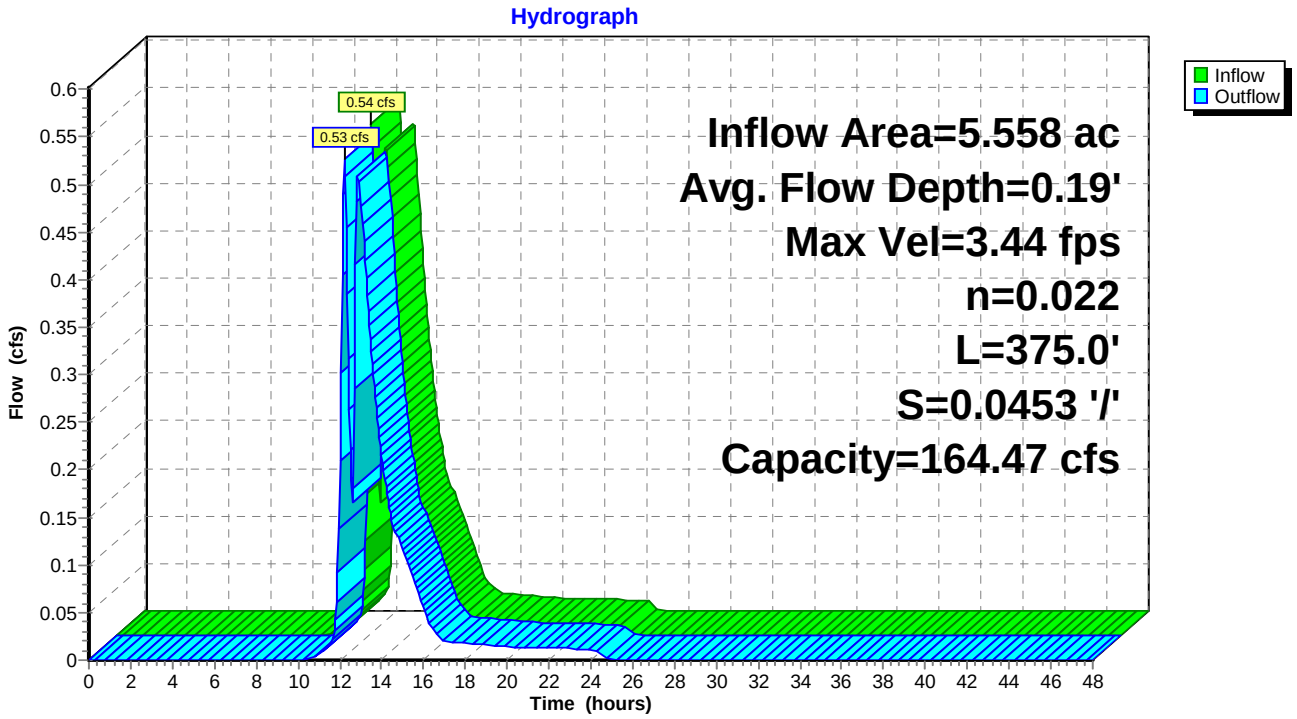
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.44 fps, Min. Travel Time= 1.8 min
Avg. Velocity = 1.59 fps, Avg. Travel Time= 3.9 min

Peak Storage= 58 cf @ 12.18 hrs
Average Depth at Peak Storage= 0.19'
Bank-Full Depth= 3.00' Flow Area= 10.0 sf, Capacity= 164.47 cfs

5.00' x 3.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 375.0' Slope= 0.0453 '/'
Inlet Invert= 658.00', Outlet Invert= 641.00'



Reach R5: Observatory Rd. Middle Swale



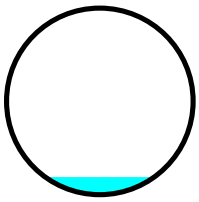
Summary for Reach R6: Lots 4-8 Driveway Culvert

Inflow Area = 5.558 ac, 5.10% Impervious, Inflow Depth = 0.20" for Q10 event
Inflow = 0.53 cfs @ 12.21 hrs, Volume= 0.093 af
Outflow = 0.53 cfs @ 12.21 hrs, Volume= 0.093 af, Atten= 0%, Lag= 0.2 min

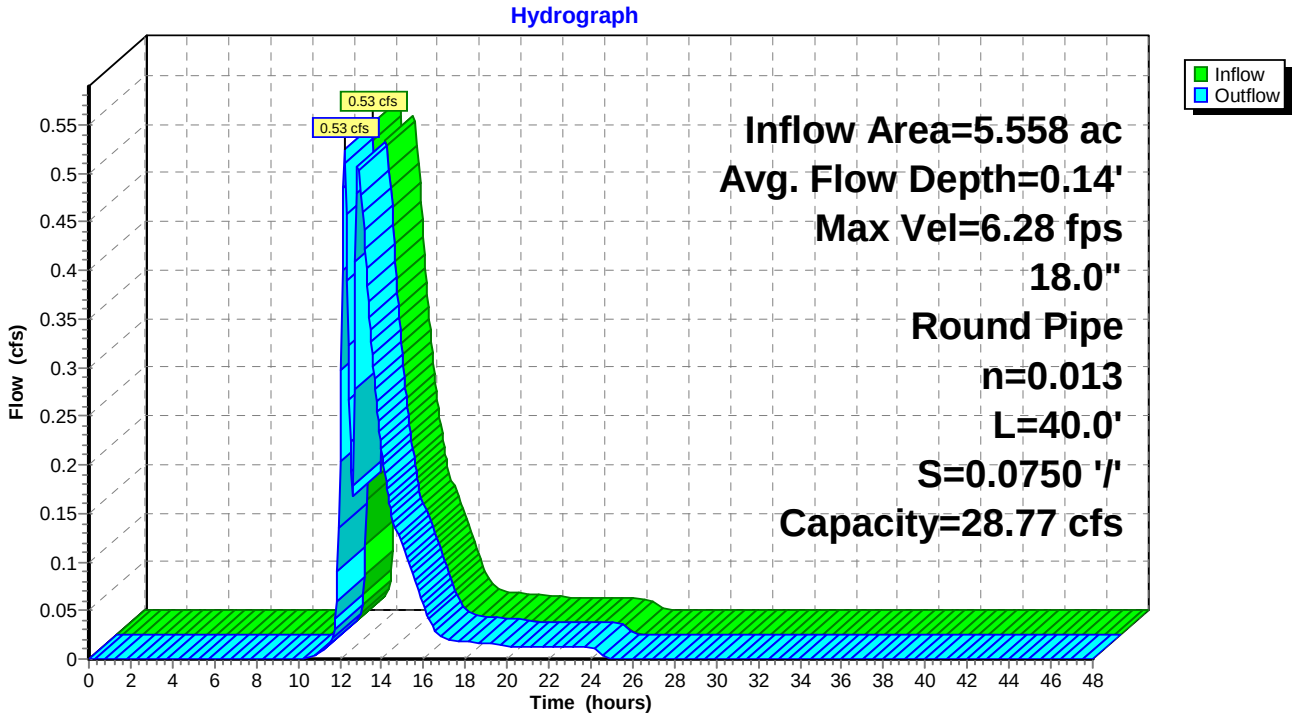
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.28 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.83 fps, Avg. Travel Time= 0.2 min

Peak Storage= 3 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.14'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 28.77 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 40.0' Slope= 0.0750 '/'
Inlet Invert= 641.00', Outlet Invert= 638.00'



Reach R6: Lots 4-8 Driveway Culvert



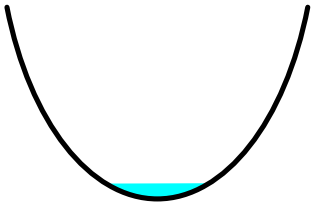
Summary for Reach R7: Observatory Rd. East Swale

Inflow Area = 5.558 ac, 5.10% Impervious, Inflow Depth = 0.20" for Q10 event
Inflow = 0.53 cfs @ 12.21 hrs, Volume= 0.093 af
Outflow = 0.51 cfs @ 12.30 hrs, Volume= 0.093 af, Atten= 3%, Lag= 5.4 min

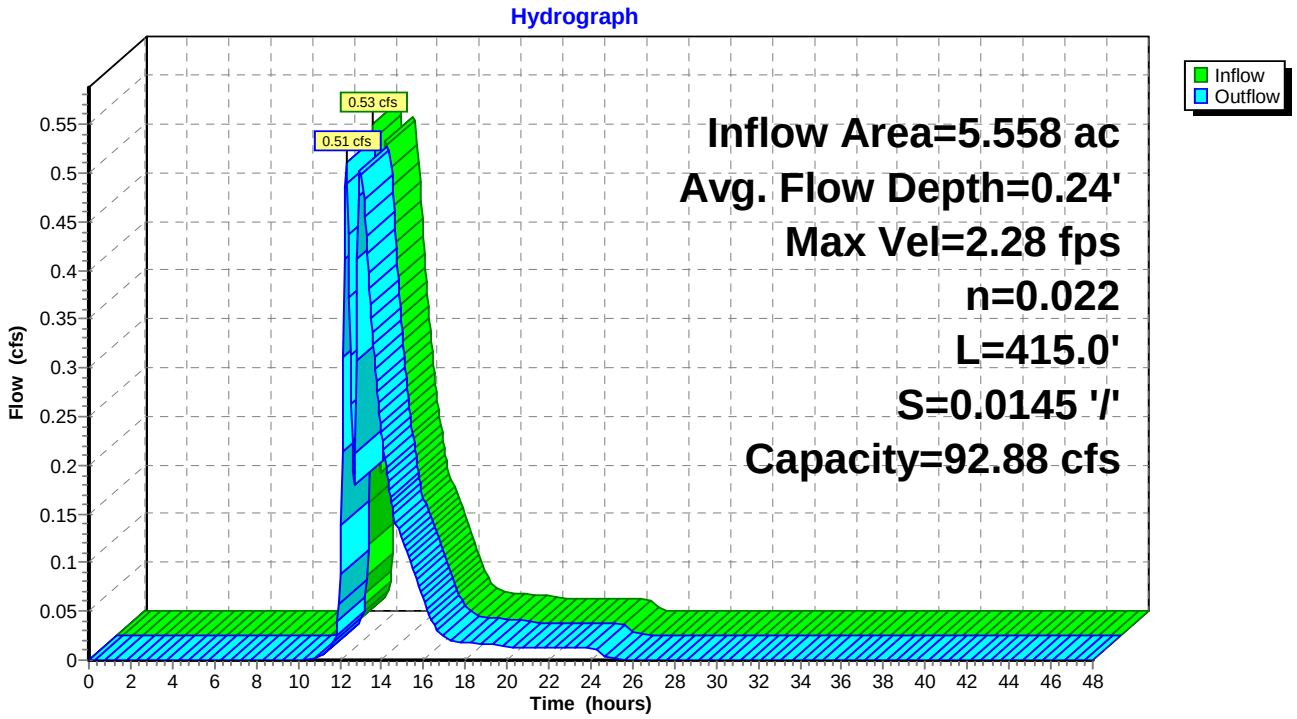
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.28 fps, Min. Travel Time= 3.0 min
Avg. Velocity = 1.04 fps, Avg. Travel Time= 6.6 min

Peak Storage= 93 cf @ 12.25 hrs
Average Depth at Peak Storage= 0.24'
Bank-Full Depth= 3.00' Flow Area= 10.0 sf, Capacity= 92.88 cfs

5.00' x 3.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 415.0' Slope= 0.0145 '/'
Inlet Invert= 638.00', Outlet Invert= 632.00'



Reach R7: Observatory Rd. East Swale



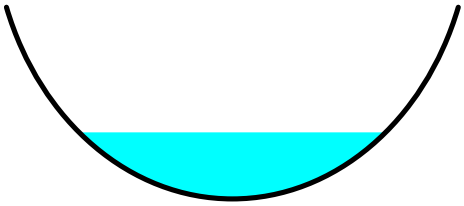
Summary for Reach R8: Lot 4 Stone Swale

Inflow Area = 4.571 ac, 2.15% Impervious, Inflow Depth = 1.15" for Q10 event
Inflow = 6.58 cfs @ 12.08 hrs, Volume= 0.438 af
Outflow = 6.51 cfs @ 12.09 hrs, Volume= 0.438 af, Atten= 1%, Lag= 0.9 min

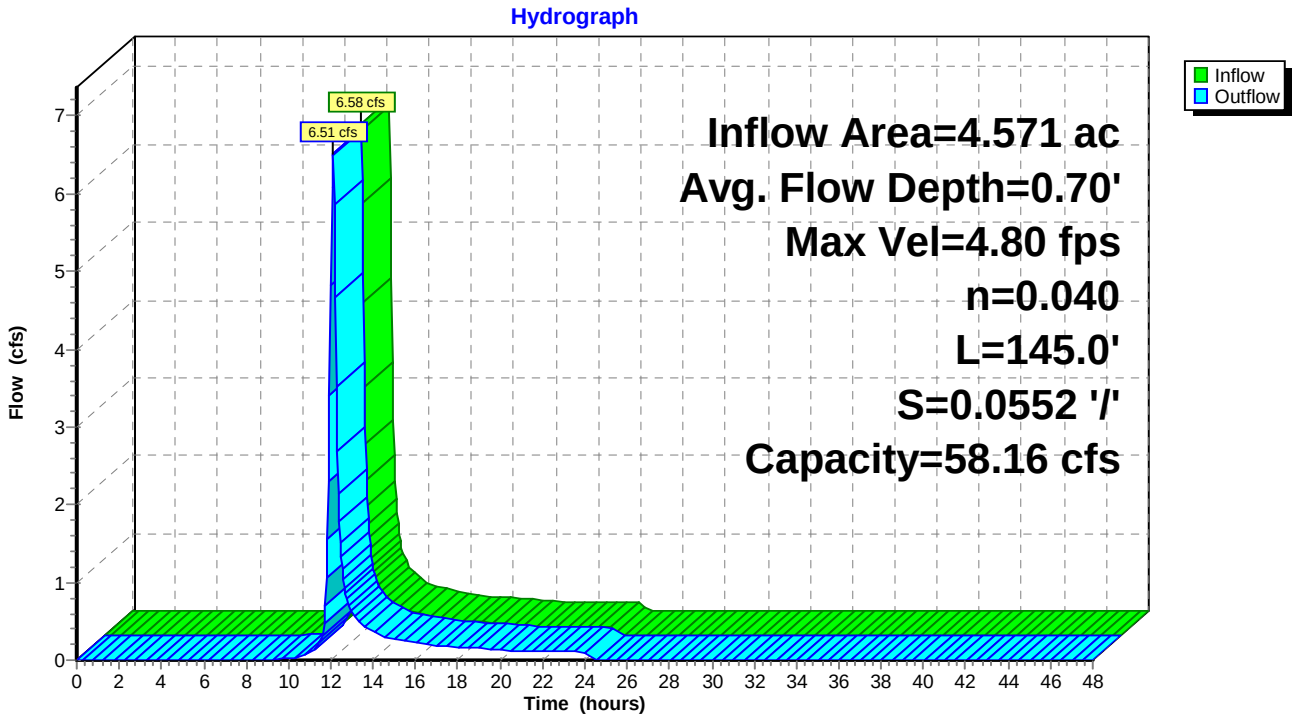
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.80 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.30 fps, Avg. Travel Time= 1.9 min

Peak Storage= 198 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.70'
Bank-Full Depth= 2.00' Flow Area= 6.7 sf, Capacity= 58.16 cfs

5.00' x 2.00' deep Parabolic Channel, n= 0.040 Earth, cobble bottom, clean sides
Length= 145.0' Slope= 0.0552 '/'
Inlet Invert= 660.00', Outlet Invert= 652.00'



Reach R8: Lot 4 Stone Swale



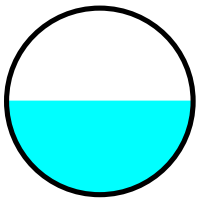
Summary for Reach R9: Lots 5-8 Driveway Culvert

Inflow Area = 5.741 ac, 3.73% Impervious, Inflow Depth = 1.25" for Q10 event
Inflow = 9.01 cfs @ 12.07 hrs, Volume= 0.599 af
Outflow = 8.98 cfs @ 12.08 hrs, Volume= 0.599 af, Atten= 0%, Lag= 0.1 min

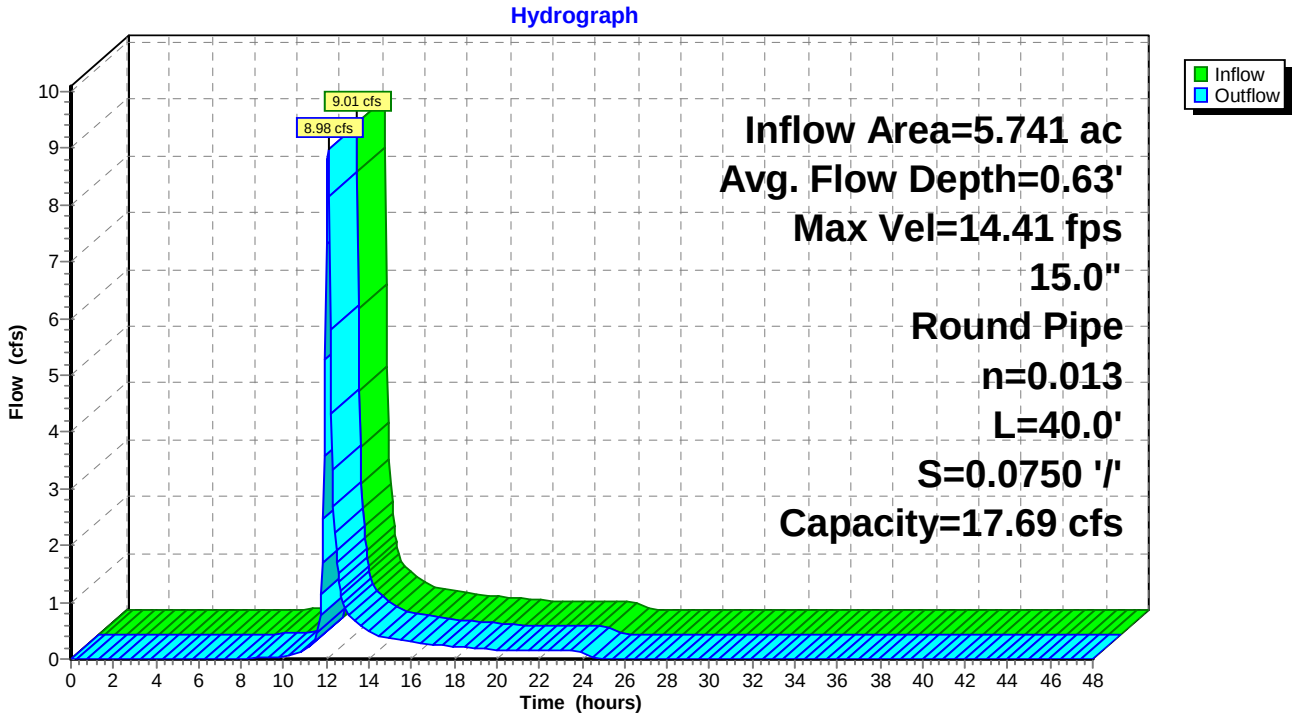
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 14.41 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 4.04 fps, Avg. Travel Time= 0.2 min

Peak Storage= 25 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.63'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 17.69 cfs

15.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 40.0' Slope= 0.0750 '/'
Inlet Invert= 652.00', Outlet Invert= 649.00'



Reach R9: Lots 5-8 Driveway Culvert



Summary for Pond IB1: Infiltration Basin 1

Inflow Area = 3.513 ac, 8.07% Impervious, Inflow Depth = 1.50" for Q10 event
Inflow = 7.64 cfs @ 12.04 hrs, Volume= 0.438 af
Outflow = 0.61 cfs @ 12.87 hrs, Volume= 0.432 af, Atten= 92%, Lag= 49.3 min
Discarded = 0.18 cfs @ 12.87 hrs, Volume= 0.383 af
Primary = 0.43 cfs @ 12.87 hrs, Volume= 0.049 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 661.55' @ 12.87 hrs Surf.Area= 3,651 sf Storage= 10,286 cf

Plug-Flow detention time= 605.6 min calculated for 0.432 af (99% of inflow)
Center-of-Mass det. time= 597.3 min (1,429.5 - 832.2)

Volume	Invert	Avail.Storage	Storage Description
#1	658.00'	16,081 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

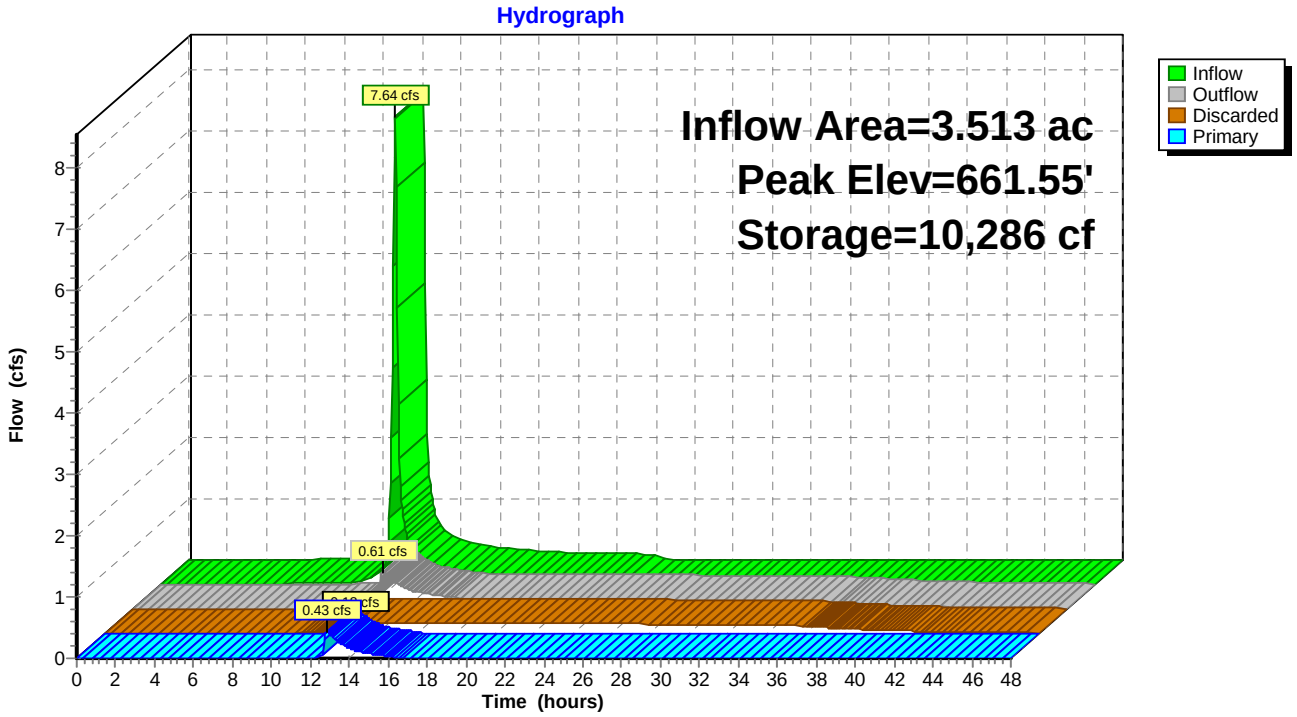
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
658.00	2,197	0	0
659.00	2,575	2,386	2,386
660.00	2,977	2,776	5,162
661.00	3,405	3,191	8,353
661.50	3,629	1,759	10,112
662.00	3,859	1,872	11,984
663.00	4,336	4,098	16,081

Device	Routing	Invert	Outlet Devices
#1	Discarded	658.00'	**2.140 in/hr Exfiltration over Surface area** Phase-In= 1.00'
#2	Primary	661.50'	**15.0' long x 15.0' breadth Emergency Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.18 cfs @ 12.87 hrs HW=661.55' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.18 cfs)

Primary OutFlow Max=0.42 cfs @ 12.87 hrs HW=661.55' (Free Discharge)
↑**2=Emergency Spillway** (Weir Controls 0.42 cfs @ 0.59 fps)

Pond IB1: Infiltration Basin 1



Summary for Pond IB2: Infiltration Basin 2

Inflow Area = 12.735 ac, 5.51% Impervious, Inflow Depth = 1.18" for Q10 event
Inflow = 18.22 cfs @ 12.11 hrs, Volume= 1.249 af
Outflow = 14.54 cfs @ 12.21 hrs, Volume= 1.249 af, Atten= 20%, Lag= 6.4 min
Discarded = 0.54 cfs @ 12.21 hrs, Volume= 0.764 af
Primary = 14.01 cfs @ 12.21 hrs, Volume= 0.485 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 641.49' @ 12.21 hrs Surf.Area= 5,748 sf Storage= 15,888 cf

Plug-Flow detention time= 214.6 min calculated for 1.247 af (100% of inflow)
Center-of-Mass det. time= 215.5 min (1,057.1 - 841.7)

Volume	Invert	Avail.Storage	Storage Description
#1	638.00'	25,379 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

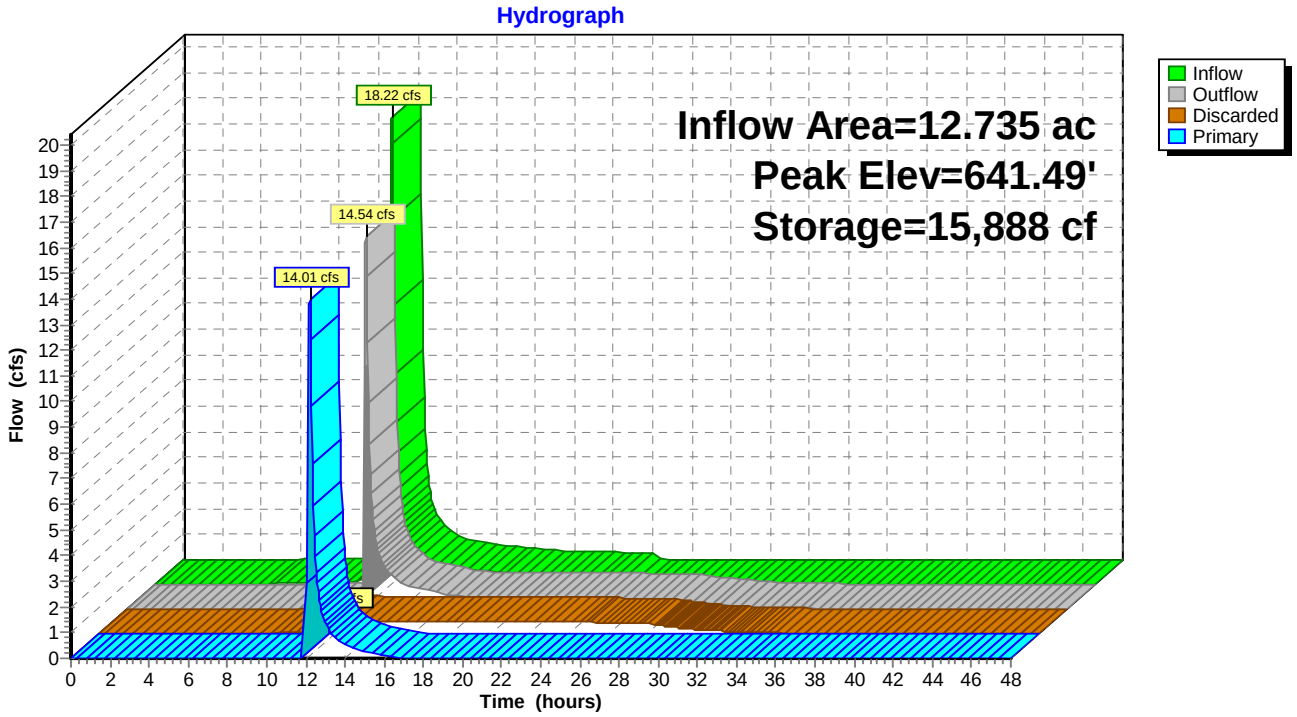
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
638.00	3,396	0	0
639.00	4,038	3,717	3,717
640.00	4,705	4,372	8,089
641.00	5,397	5,051	13,140
641.50	5,753	2,788	15,927
642.00	6,114	2,967	18,894
643.00	6,857	6,486	25,379

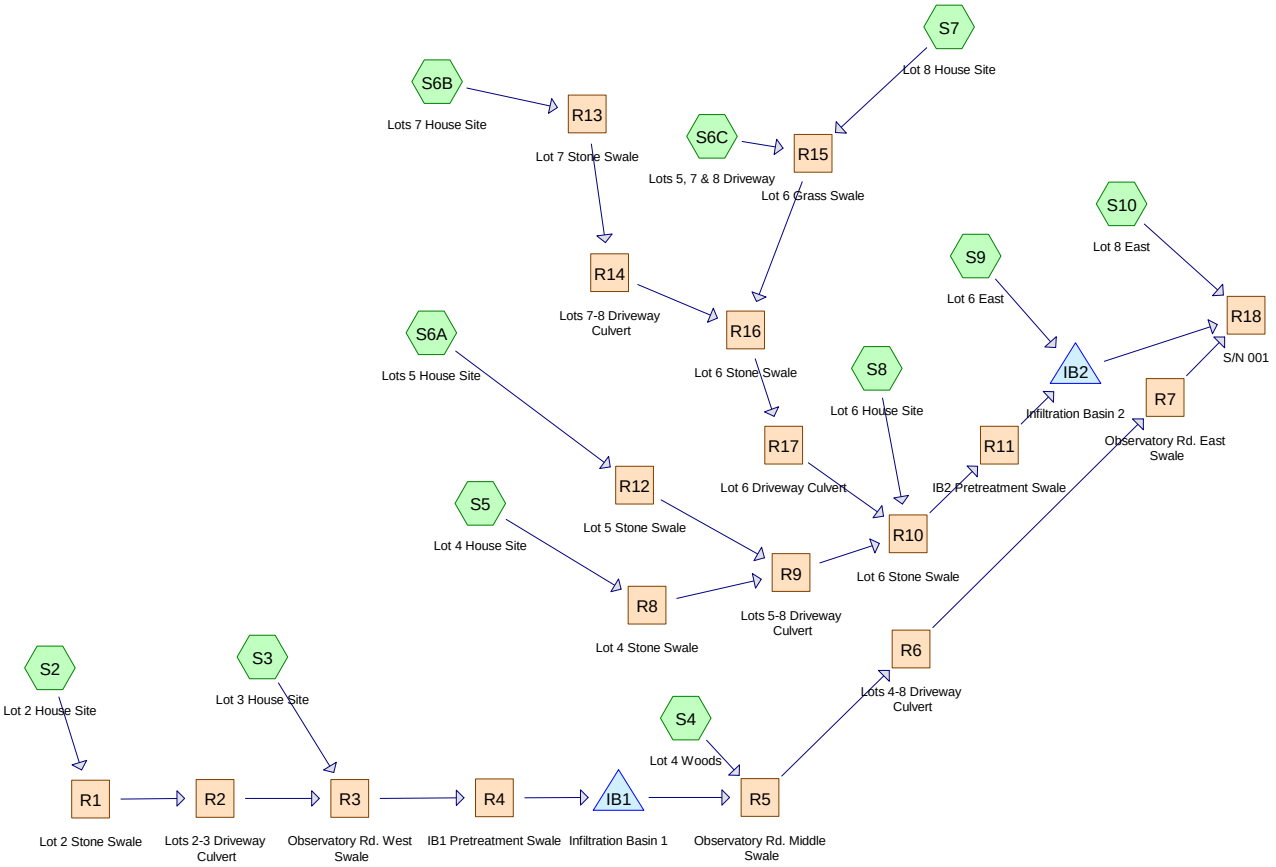
Device	Routing	Invert	Outlet Devices
#1	Discarded	638.00'	**4.040 in/hr Exfiltration over Surface area** Phase-In= 1.00'
#2	Primary	641.00'	**15.0' long x 15.0' breadth Emergency Spillway**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.54 cfs @ 12.21 hrs HW=641.48' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.54 cfs)

Primary OutFlow Max=13.36 cfs @ 12.21 hrs HW=641.48' (Free Discharge)
↑—**2=Emergency Spillway** (Weir Controls 13.36 cfs @ 1.87 fps)

Pond IB2: Infiltration Basin 2





Subcat Reach Pond Link

Routing Diagram for Proposed Conditions Mod CN for WQv 4-9-24

Prepared by Microsoft, Printed 4/9/2024

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.732	39	>75% Grass cover, Good, HSG A (S10, S4)
0.298	82	>75% Grass cover, Good, HSG A (S3)
2.328	81	>75% Grass cover, Good, HSG A (S5, S6A, S6B, S6C, S7, S8, S9)
1.213	82	>75% Grass cover, Good, HSG D (S2, S3)
1.212	81	>75% Grass cover, Good, HSG D (S5, S6A, S6B, S7)
0.001	82	Paved parking, HSG A (S3)
0.510	81	Paved parking, HSG A (S5, S6A, S6B, S6C, S7, S8)
0.283	82	Paved parking, HSG D (S2, S3)
0.192	81	Paved parking, HSG D (S6A, S6B)
1.779	30	Woods, Good, HSG A (S10, S4)
0.099	82	Woods, Good, HSG A (S3)
1.071	81	Woods, Good, HSG A (S5, S7, S8, S9)
1.620	82	Woods, Good, HSG D (S2, S3)
0.360	77	Woods, Good, HSG D (S4)
7.422	81	Woods, Good, HSG D (S5, S6A, S6B, S7)
19.119	**75**	**TOTAL AREA**

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment S10: Lot 8 East Runoff Area=35,984 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=210' Tc=10.7 min CN=WQ Runoff=0.00 cfs 0.000 af

Subcatchment S2: Lot 2 House Site Runoff Area=84,188 sf 0.00% Impervious Runoff Depth=0.11"
Flow Length=420' Tc=4.7 min CN=WQ Runoff=0.29 cfs 0.018 af

Subcatchment S3: Lot 3 House Site Runoff Area=68,847 sf 0.00% Impervious Runoff Depth=0.11"
Flow Length=530' Tc=7.4 min CN=WQ Runoff=0.20 cfs 0.015 af

Subcatchment S4: Lot 4 Woods Runoff Area=89,067 sf 0.00% Impervious Runoff Depth=0.01"
Flow Length=560' Tc=21.6 min CN=WQ Runoff=0.00 cfs 0.001 af

Subcatchment S5: Lot 4 House Site Runoff Area=199,110 sf 0.00% Impervious Runoff Depth=0.10"
Flow Length=935' Tc=10.2 min CN=WQ Runoff=0.37 cfs 0.037 af

Subcatchment S6A: Lots 5 House Site Runoff Area=50,961 sf 0.00% Impervious Runoff Depth=0.10"
Flow Length=725' Tc=9.7 min CN=WQ Runoff=0.10 cfs 0.010 af

Subcatchment S6B: Lots 7 House Site Runoff Area=164,212 sf 0.00% Impervious Runoff Depth=0.10"
Flow Length=905' Tc=10.4 min CN=WQ Runoff=0.31 cfs 0.031 af

Subcatchment S6C: Lots 5, 7 & 8 Driveway Runoff Area=11,415 sf 0.00% Impervious Runoff Depth=0.10"
Flow Length=35' Slope=0.0500 '/' Tc=1.1 min CN=WQ Runoff=0.04 cfs 0.002 af

Subcatchment S7: Lot 8 House Site Runoff Area=46,146 sf 0.00% Impervious Runoff Depth=0.10"
Flow Length=535' Tc=8.4 min CN=WQ Runoff=0.10 cfs 0.009 af

Subcatchment S8: Lot 6 House Site Runoff Area=39,264 sf 0.00% Impervious Runoff Depth=0.10"
Flow Length=220' Tc=3.7 min CN=WQ Runoff=0.10 cfs 0.007 af

Subcatchment S9: Lot 6 East Runoff Area=43,637 sf 0.00% Impervious Runoff Depth=0.10"
Flow Length=235' Tc=3.8 min CN=WQ Runoff=0.12 cfs 0.008 af

Reach R1: Lot 2 Stone Swale Avg. Flow Depth=0.13' Max Vel=2.43 fps Inflow=0.29 cfs 0.018 af
n=0.040 L=315.0' S=0.1206 '/' Capacity=86.00 cfs Outflow=0.25 cfs 0.018 af

Reach R10: Lot 6 Stone Swale Avg. Flow Depth=0.24' Max Vel=2.86 fps Inflow=0.78 cfs 0.096 af
n=0.040 L=190.0' S=0.0737 '/' Capacity=67.22 cfs Outflow=0.75 cfs 0.096 af

Reach R11: IB2 Pretreatment Swale Avg. Flow Depth=0.43' Max Vel=0.78 fps Inflow=0.75 cfs 0.096 af
n=0.080 L=100.0' S=0.0100 '/' Capacity=78.61 cfs Outflow=0.72 cfs 0.096 af

Reach R12: Lot 5 Stone Swale Avg. Flow Depth=0.08' Max Vel=1.65 fps Inflow=0.10 cfs 0.010 af
n=0.040 L=190.0' S=0.0947 '/' Capacity=76.22 cfs Outflow=0.09 cfs 0.010 af

Reach R13: Lot 7 Stone Swale Avg. Flow Depth=0.15' Max Vel=2.16 fps Inflow=0.31 cfs 0.031 af
n=0.040 L=225.0' S=0.0756 '/' Capacity=68.06 cfs Outflow=0.28 cfs 0.031 af

Reach R14: Lots 7-8 Driveway Culvert Avg. Flow Depth=0.13' Max Vel=3.98 fps Inflow=0.28 cfs 0.031 af
15.0" Round Pipe n=0.013 L=30.0' S=0.0333 '/' Capacity=11.79 cfs Outflow=0.28 cfs 0.031 af

Reach R15: Lot 6 Grass Swale Avg. Flow Depth=0.12' Max Vel=0.93 fps Inflow=0.10 cfs 0.011 af
n=0.035 L=205.0' S=0.0146 '/' Capacity=34.23 cfs Outflow=0.09 cfs 0.011 af

Reach R16: Lot 6 Stone Swale Avg. Flow Depth=0.16' Max Vel=2.41 fps Inflow=0.37 cfs 0.042 af
n=0.040 L=140.0' S=0.0857 '/' Capacity=72.50 cfs Outflow=0.36 cfs 0.042 af

Reach R17: Lot 6 Driveway Culvert Avg. Flow Depth=0.13' Max Vel=5.47 fps Inflow=0.36 cfs 0.042 af
15.0" Round Pipe n=0.013 L=30.0' S=0.0667 '/' Capacity=16.68 cfs Outflow=0.36 cfs 0.042 af

Reach R18: S/N 001 Avg. Flow Depth=0.00' Max Vel=2.01 fps Inflow=0.00 cfs 0.001 af
36.0" Round Pipe n=0.013 L=35.0' S=0.0571 '/' Capacity=159.44 cfs Outflow=0.00 cfs 0.001 af

Reach R2: Lots 2-3 Driveway Culvert Avg. Flow Depth=0.09' Max Vel=5.52 fps Inflow=0.25 cfs 0.018 af
18.0" Round Pipe n=0.013 L=30.0' S=0.1000 '/' Capacity=33.22 cfs Outflow=0.25 cfs 0.018 af

Reach R3: Observatory Rd. West Swale Avg. Flow Depth=0.16' Max Vel=3.41 fps Inflow=0.43 cfs 0.033 af
n=0.022 L=190.0' S=0.0526 '/' Capacity=177.22 cfs Outflow=0.40 cfs 0.033 af

Reach R4: IB1 Pretreatment Swale Avg. Flow Depth=0.32' Max Vel=0.61 fps Inflow=0.40 cfs 0.033 af
n=0.080 L=110.0' S=0.0091 '/' Capacity=74.96 cfs Outflow=0.36 cfs 0.033 af

Reach R5: Observatory Rd. Middle Avg. Flow Depth=0.01' Max Vel=1.05 fps Inflow=0.00 cfs 0.001 af
n=0.022 L=375.0' S=0.0453 '/' Capacity=164.47 cfs Outflow=0.00 cfs 0.001 af

Reach R6: Lots 4-8 Driveway Culvert Avg. Flow Depth=0.01' Max Vel=1.45 fps Inflow=0.00 cfs 0.001 af
18.0" Round Pipe n=0.013 L=40.0' S=0.0750 '/' Capacity=28.77 cfs Outflow=0.00 cfs 0.001 af

Reach R7: Observatory Rd. East Swale Avg. Flow Depth=0.02' Max Vel=0.59 fps Inflow=0.00 cfs 0.001 af
n=0.022 L=415.0' S=0.0145 '/' Capacity=92.88 cfs Outflow=0.00 cfs 0.001 af

Reach R8: Lot 4 Stone Swale Avg. Flow Depth=0.18' Max Vel=2.05 fps Inflow=0.37 cfs 0.037 af
n=0.040 L=145.0' S=0.0552 '/' Capacity=58.16 cfs Outflow=0.35 cfs 0.037 af

Reach R9: Lots 5-8 Driveway Culvert Avg. Flow Depth=0.14' Max Vel=6.08 fps Inflow=0.44 cfs 0.047 af
15.0" Round Pipe n=0.013 L=40.0' S=0.0750 '/' Capacity=17.69 cfs Outflow=0.44 cfs 0.047 af

Pond IB1: Infiltration Basin 1 Peak Elev=658.25' Storage=564 cf Inflow=0.36 cfs 0.033 af
Discarded=0.03 cfs 0.033 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.033 af

Pond IB2: Infiltration Basin 2 Peak Elev=638.36' Storage=1,280 cf Inflow=0.74 cfs 0.104 af
Discarded=0.12 cfs 0.104 af Primary=0.00 cfs 0.000 af Outflow=0.12 cfs 0.104 af

Total Runoff Area = 19.119 ac Runoff Volume = 0.139 af Average Runoff Depth = 0.09"
100.00% Pervious = 19.119 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment S10: Lot 8 East

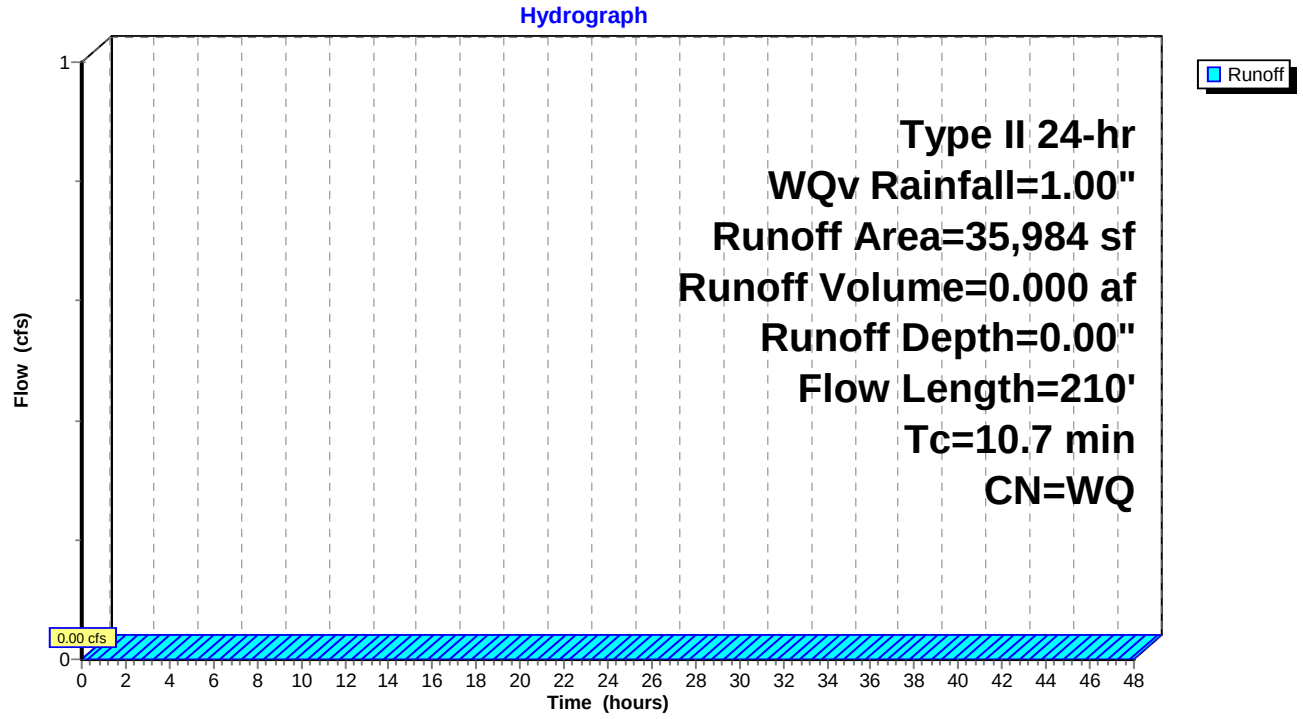
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr WQv Rainfall=1.00"

Area (sf)	CN	Description
29,197	30	Woods, Good, HSG A
6,787	39	>75% Grass cover, Good, HSG A
35,984		Weighted Average
35,984		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	150	0.1600	0.39		**Lag/CN Method, Lot 8 Woods**
4.3	60	0.0800	0.23		**Lag/CN Method, Lot 8 Lawn**
10.7	210	Total			

Subcatchment S10: Lot 8 East



Summary for Subcatchment S2: Lot 2 House Site

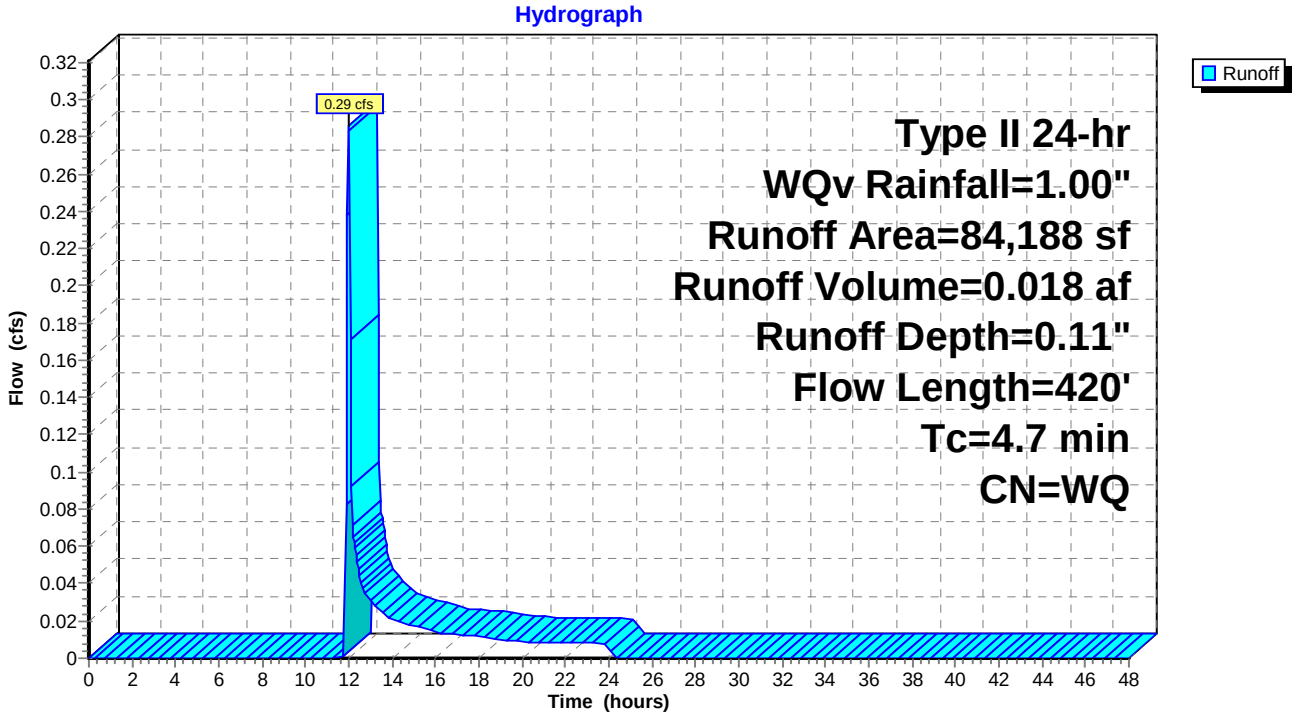
Runoff = 0.29 cfs @ 11.99 hrs, Volume= 0.018 af, Depth= 0.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr WQv Rainfall=1.00"

	Area (sf)	CN	Description
*	49,129	82	Woods, Good, HSG D
*	29,906	82	>75% Grass cover, Good, HSG D
*	5,153	82	Paved parking, HSG D
	84,188		Weighted Average
	84,188		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	285	0.1700	1.79		**Lag/CN Method, Lot 2 Woods**
1.5	115	0.1300	1.31		**Lag/CN Method, Lot 2 Grass**
0.6	20	0.0500	0.57		**Lag/CN Method, Lot 2 Impervious**
4.7	420	Total			

Subcatchment S2: Lot 2 House Site



Summary for Subcatchment S3: Lot 3 House Site

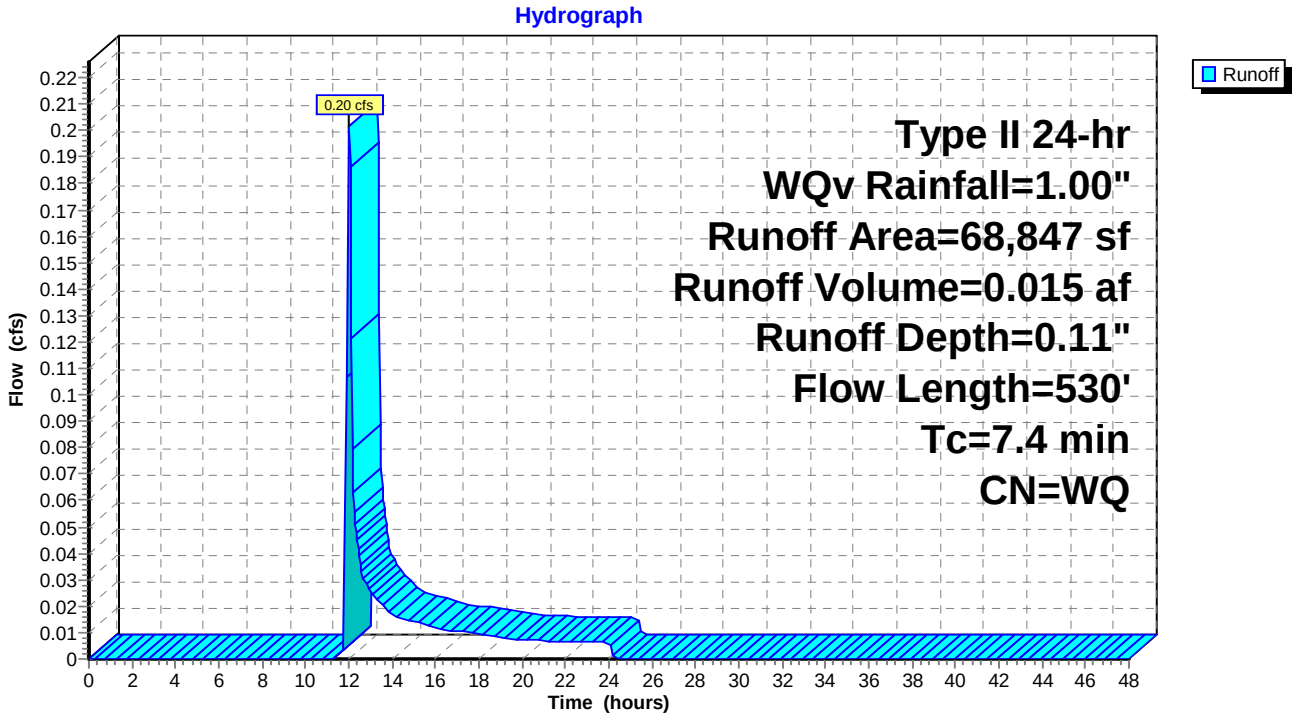
Runoff = 0.20 cfs @ 12.02 hrs, Volume= 0.015 af, Depth= 0.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr WQv Rainfall=1.00"

	Area (sf)	CN	Description
*	21,450	82	Woods, Good, HSG D
*	22,917	82	>75% Grass cover, Good, HSG D
*	7,155	82	Paved parking, HSG D
*	4,323	82	Woods, Good, HSG A
*	12,964	82	>75% Grass cover, Good, HSG A
*	38	82	Paved parking, HSG A
	68,847		Weighted Average
	68,847		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	240	0.1800	1.78		**Lag/CN Method, Lot 3 D Soils Woods**
1.3	65	0.0700	0.86		**Lag/CN Method, Lot 3 D Soils Lawn**
0.6	20	0.0500	0.57		**Lag/CN Method, Lot 3 D Soils Impervious**
1.3	90	0.1100	1.15		**Lag/CN Method, Lot 3 A Soils Woods**
1.4	95	0.1100	1.16		**Lag/CN Method, Lot 3 A Soils Lawn**
0.6	20	0.0500	0.57		**Lag/CN Method, Lot 3 A Soils Impervious**
7.4	530	Total			

Subcatchment S3: Lot 3 House Site



Summary for Subcatchment S4: Lot 4 Woods

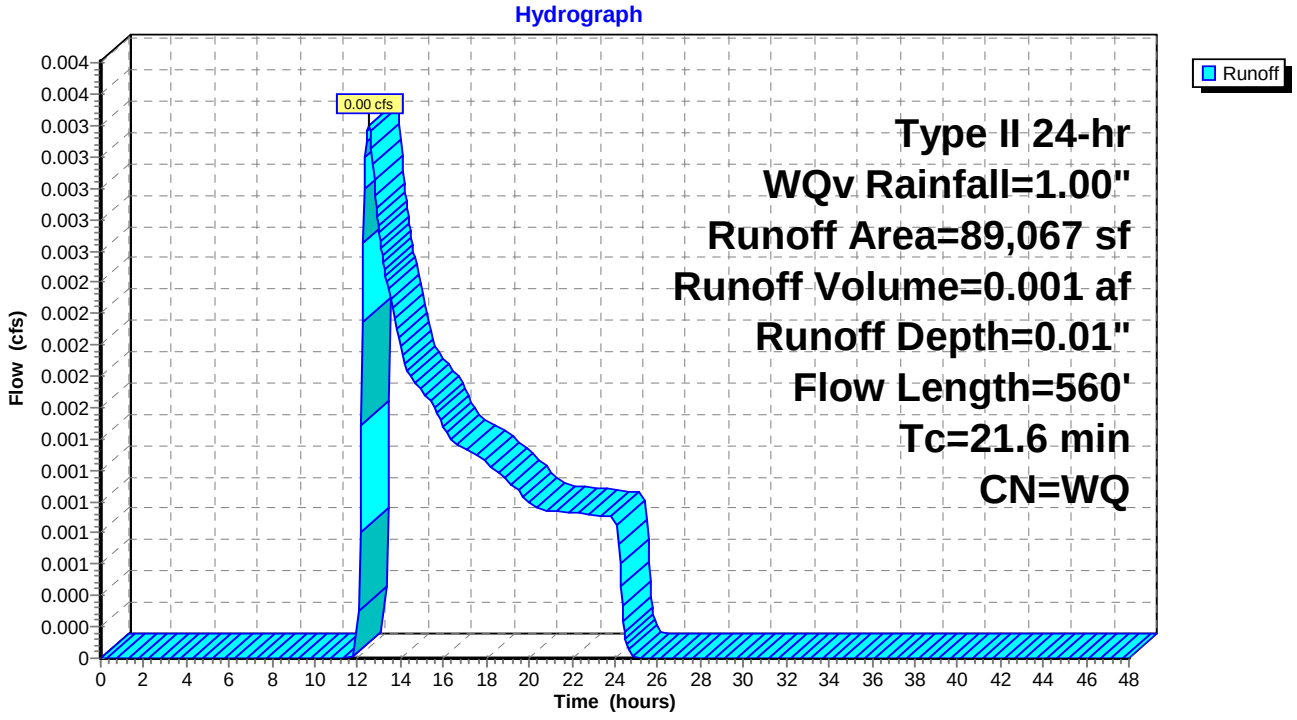
Runoff = 0.00 cfs @ 12.52 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr WQv Rainfall=1.00"

Area (sf)	CN	Description
15,676	77	Woods, Good, HSG D
48,302	30	Woods, Good, HSG A
25,089	39	>75% Grass cover, Good, HSG A
89,067		Weighted Average
89,067		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	255	0.1100	0.47		**Lag/CN Method, Lot 4 D Soils Woods**
10.2	260	0.0900	0.43		**Lag/CN Method, Lot 4 A Soils Woods**
2.3	45	0.1100	0.33		**Lag/CN Method, Lot 4 A Soils Lawn**
21.6	560	Total			

Subcatchment S4: Lot 4 Woods



Summary for Subcatchment S5: Lot 4 House Site

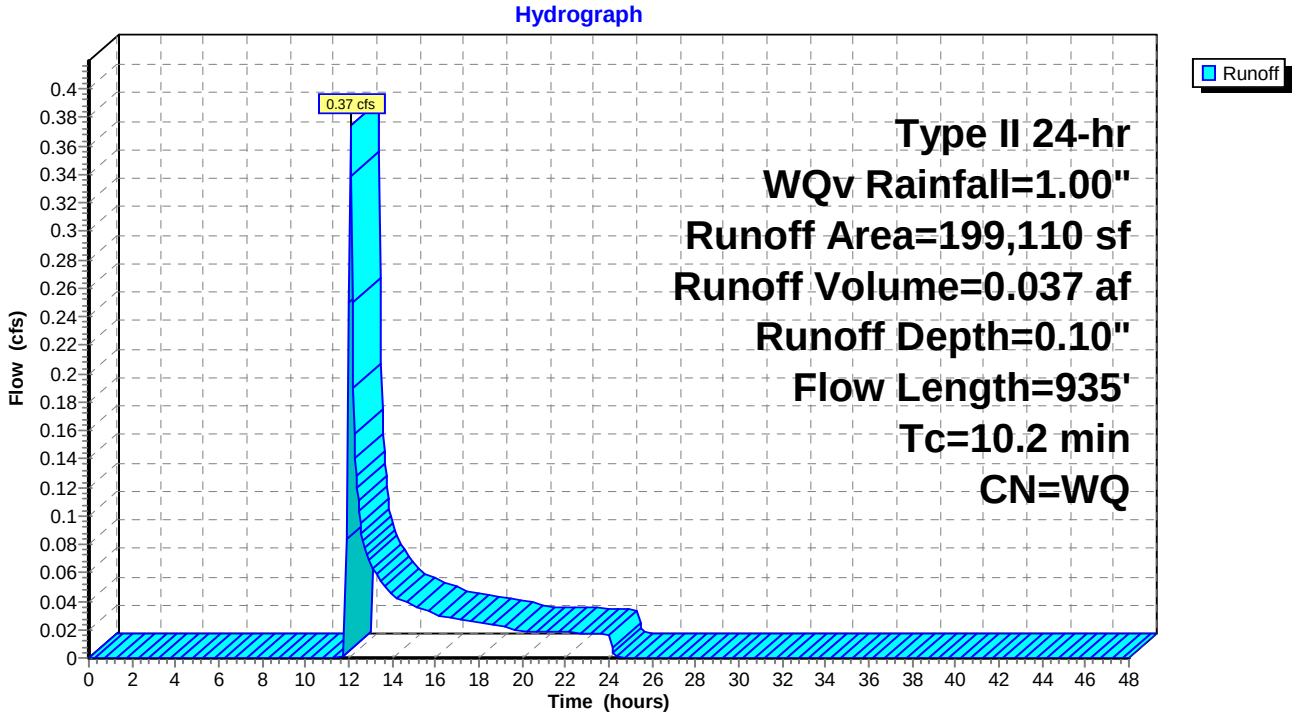
Runoff = 0.37 cfs @ 12.07 hrs, Volume= 0.037 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr WQv Rainfall=1.00"

	Area (sf)	CN	Description
*	144,334	81	Woods, Good, HSG D
*	4,500	81	>75% Grass cover, Good, HSG D
*	27,918	81	Woods, Good, HSG A
*	18,079	81	>75% Grass cover, Good, HSG A
*	4,279	81	Paved parking, HSG A
	199,110		Weighted Average
	199,110		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	655	0.1300	1.79		**Lag/CN Method, D Soils Woods**
1.1	100	0.2000	1.53		**Lag/CN Method, D Soils Lawn**
1.3	100	0.1500	1.32		**Lag/CN Method, A Soils Woods**
1.1	60	0.0800	0.87		**Lag/CN Method, A Soils Lawn**
0.6	20	0.0500	0.55		**Lag/CN Method, Lot 4 A Soils Impervious**
10.2	935	Total			

Subcatchment S5: Lot 4 House Site



Summary for Subcatchment S6A: Lots 5 House Site

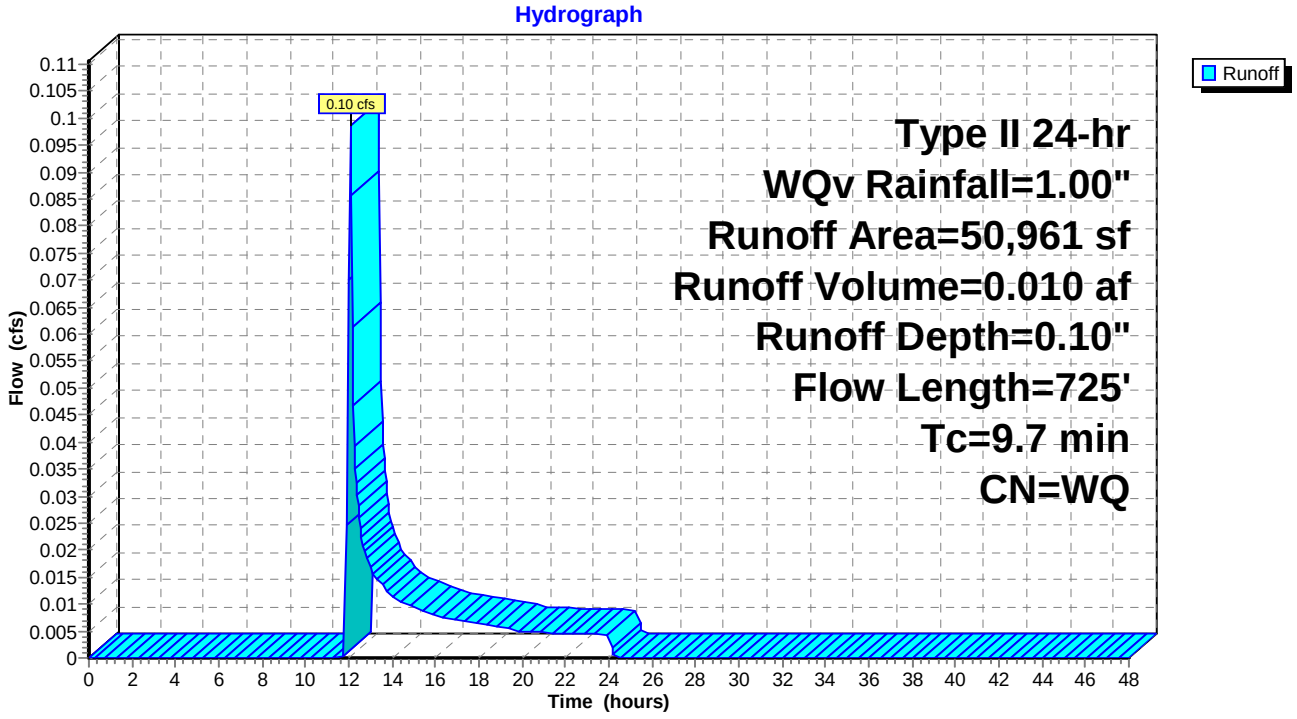
Runoff = 0.10 cfs @ 12.06 hrs, Volume= 0.010 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr WQv Rainfall=1.00"

	Area (sf)	CN	Description
*	20,074	81	Woods, Good, HSG D
*	23,541	81	>75% Grass cover, Good, HSG D
*	4,372	81	Paved parking, HSG D
*	2,308	81	>75% Grass cover, Good, HSG A
*	666	81	Paved parking, HSG A
	50,961		Weighted Average
	50,961		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	360	0.1300	1.59		**Lag/CN Method, Lots 5 D Soil Woods**
3.2	250	0.1000	1.30		**Lag/CN Method, Lots 5 D Soil Lawn**
0.6	20	0.0500	0.55		**Lag/CN Method, Lots 5 D Soil Impervious**
1.5	75	0.0700	0.85		**Lag/CN Method, Lots 5 A Soil Lawn**
0.6	20	0.0500	0.55		**Lag/CN Method, Lots 5 A Soil Impervious**
9.7	725	Total			

Subcatchment S6A: Lots 5 House Site



Summary for Subcatchment S6B: Lots 7 House Site

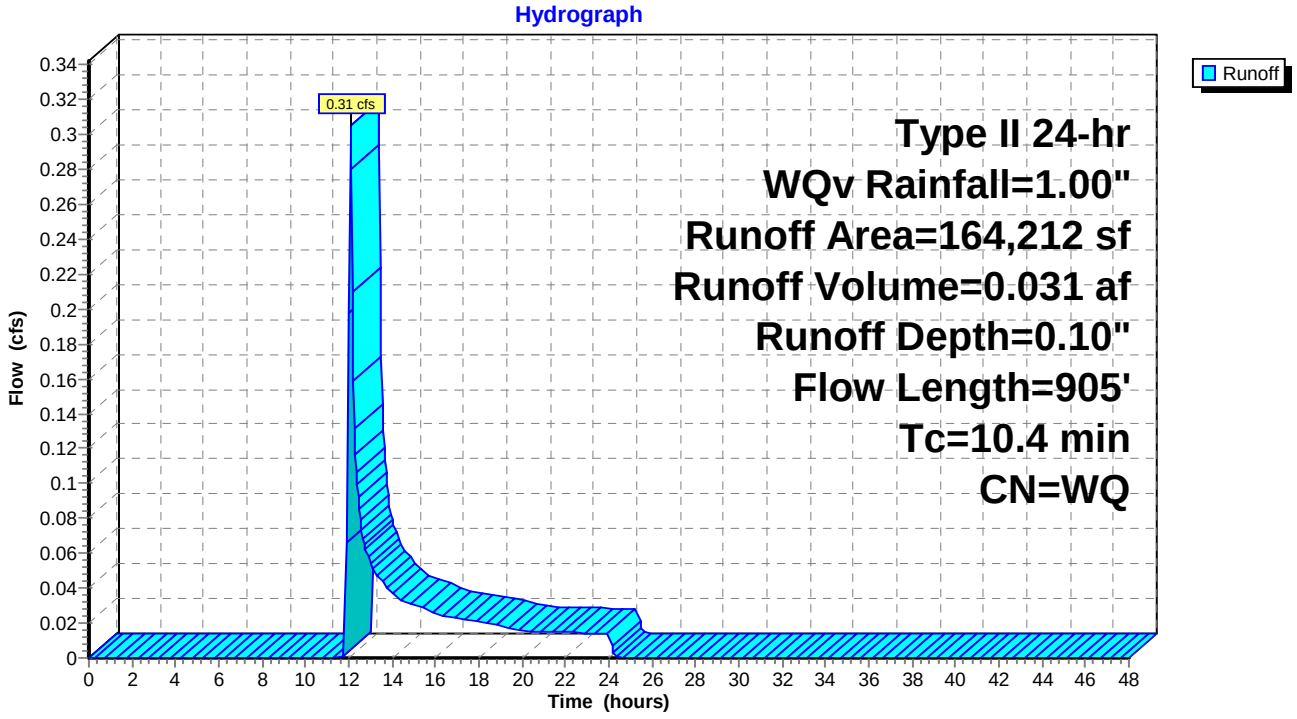
Runoff = 0.31 cfs @ 12.07 hrs, Volume= 0.031 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr WQv Rainfall=1.00"

	Area (sf)	CN	Description
*	130,258	81	Woods, Good, HSG D
*	24,425	81	>75% Grass cover, Good, HSG D
*	3,993	81	Paved parking, HSG D
*	5,137	81	>75% Grass cover, Good, HSG A
*	399	81	Paved parking, HSG A
	164,212		Weighted Average
	164,212		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	650	0.1300	1.79		**Lag/CN Method, Lot 7 D Soil Woods**
2.5	185	0.1000	1.22		**Lag/CN Method, Lot 7 D Soil Lawn**
0.6	20	0.0500	0.55		**Lag/CN Method, Lot 7 D Soil Impervious**
0.7	30	0.0700	0.71		**Lag/CN Method, Lot 7 A Soil Lawn**
0.6	20	0.0500	0.55		**Lag/CN Method, Lot 7 A Soil Impervious**
10.4	905	Total			

Subcatchment S6B: Lots 7 House Site



Summary for Subcatchment S6C: Lots 5, 7 & 8 Driveway

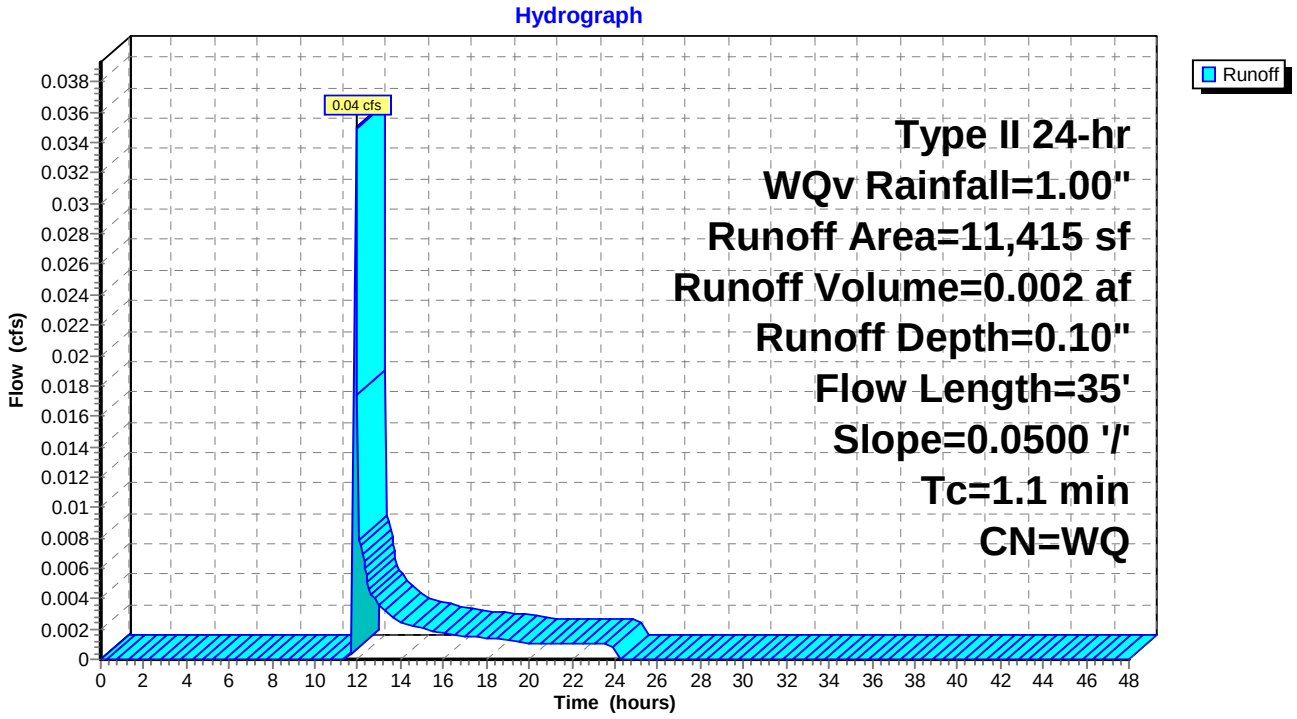
Runoff = 0.04 cfs @ 11.94 hrs, Volume= 0.002 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr WQv Rainfall=1.00"

	Area (sf)	CN	Description
*	5,696	81	>75% Grass cover, Good, HSG A
*	5,719	81	Paved parking, HSG A
	11,415		Weighted Average
	11,415		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	15	0.0500	0.52		**Lag/CN Method, Lots 5, 7 & 8 A Soil Lawn**
0.6	20	0.0500	0.55		**Lag/CN Method, Lots 5, 7 & 8 A Soil Impervious**
1.1	35	Total			

Subcatchment S6C: Lots 5, 7 & 8 Driveway



Summary for Subcatchment S7: Lot 8 House Site

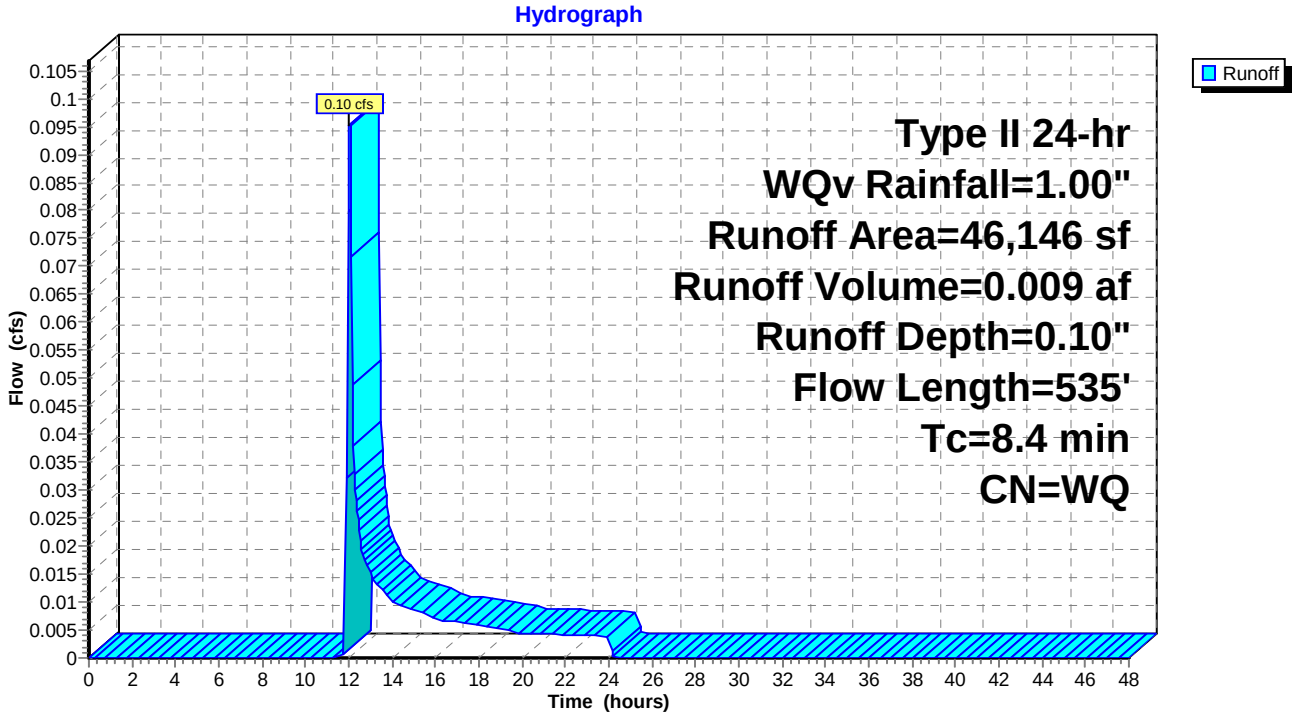
Runoff = 0.10 cfs @ 12.04 hrs, Volume= 0.009 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr WQv Rainfall=1.00"

	Area (sf)	CN	Description
*	28,658	81	Woods, Good, HSG D
*	346	81	>75% Grass cover, Good, HSG D
*	4,702	81	Woods, Good, HSG A
*	8,332	81	>75% Grass cover, Good, HSG A
*	4,108	81	Paved parking, HSG A
	46,146		Weighted Average
	46,146		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	415	0.0800	1.28		**Lag/CN Method, D Soil Woods**
0.5	20	0.0800	0.70		**Lag/CN Method, D Soils Lawn**
0.7	35	0.0800	0.78		**Lag/CN Method, A Soil Woods**
1.2	45	0.0500	0.65		**Lag/CN Method, A Soil Lawn**
0.6	20	0.0500	0.55		**Lag/CN Method, Lot 8 A Soil Impervious**
8.4	535	Total			

Subcatchment S7: Lot 8 House Site



Summary for Subcatchment S8: Lot 6 House Site

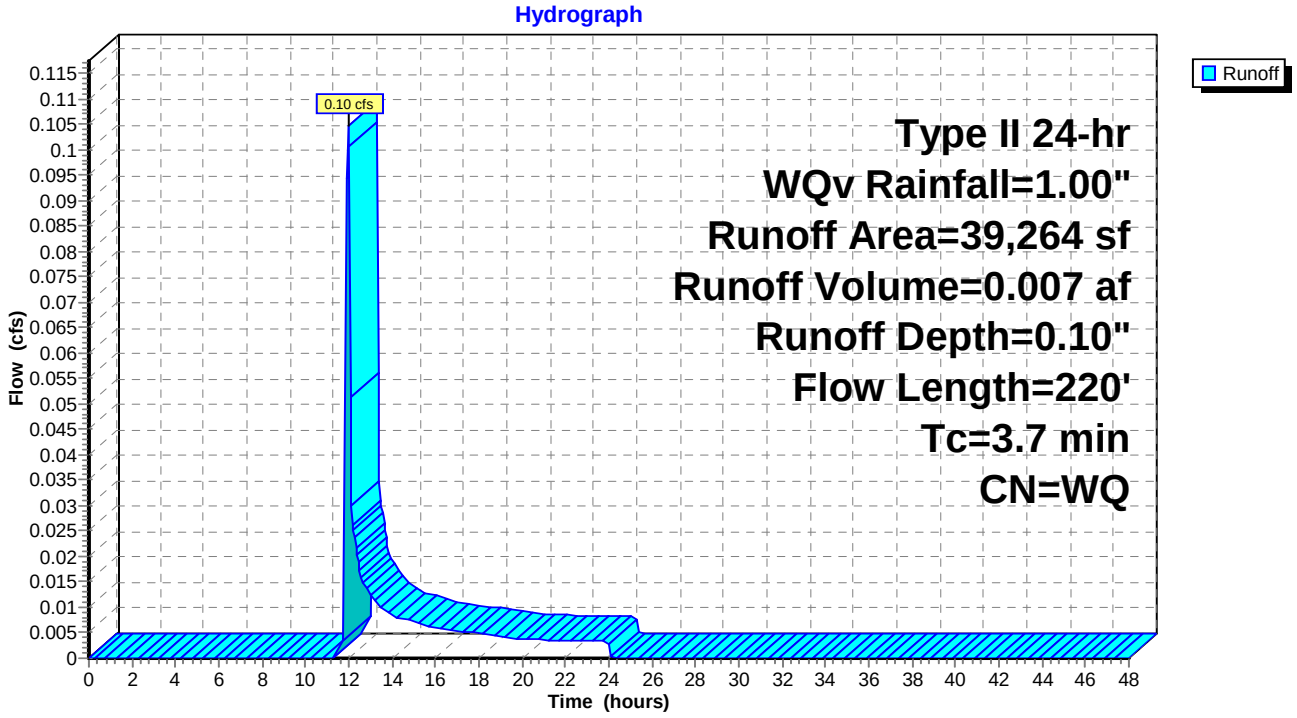
Runoff = 0.10 cfs @ 11.98 hrs, Volume= 0.007 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr WQv Rainfall=1.00"

	Area (sf)	CN	Description
*	1,434	81	Woods, Good, HSG A
*	30,805	81	>75% Grass cover, Good, HSG A
*	7,025	81	Paved parking, HSG A
	39,264		Weighted Average
	39,264		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	40	0.1200	0.99		**Lag/CN Method, Lot 6 Woods**
2.4	160	0.0900	1.13		**Lag/CN Method, Lot 6 Lawn**
0.6	20	0.0500	0.55		**Lag/CN Method, Lot 6 Impervious**
3.7	220	Total			

Subcatchment S8: Lot 6 House Site



Summary for Subcatchment S9: Lot 6 East

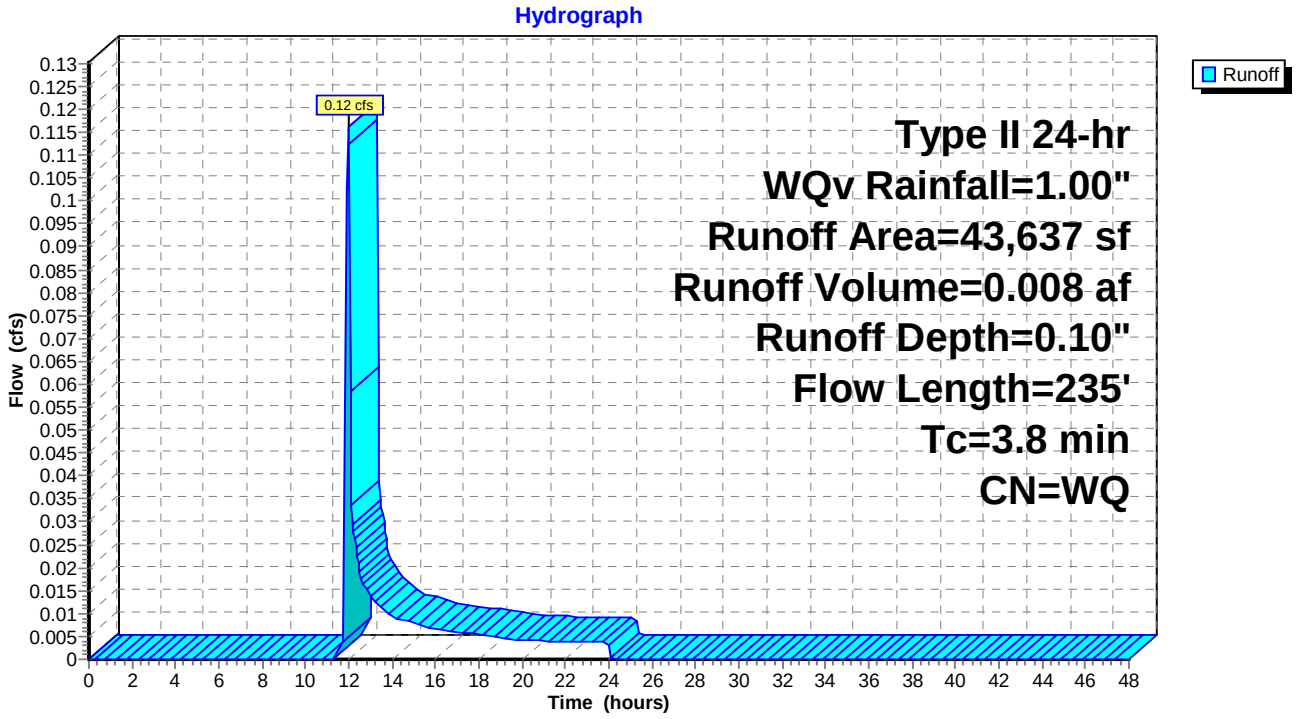
Runoff = 0.12 cfs @ 11.98 hrs, Volume= 0.008 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr WQv Rainfall=1.00"

	Area (sf)	CN	Description
*	12,593	81	Woods, Good, HSG A
*	31,044	81	>75% Grass cover, Good, HSG A
	43,637		Weighted Average
	43,637		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	95	0.1200	1.17		**Lag/CN Method, Lot 6 Woods**
2.4	140	0.0700	0.97		**Lag/CN Method, Lot 6 Lawn**
3.8	235	Total			

Subcatchment S9: Lot 6 East



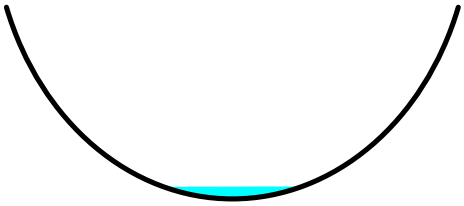
Summary for Reach R1: Lot 2 Stone Swale

Inflow Area = 1.933 ac, 0.00% Impervious, Inflow Depth = 0.11" for WQv event
Inflow = 0.29 cfs @ 11.99 hrs, Volume= 0.018 af
Outflow = 0.25 cfs @ 12.06 hrs, Volume= 0.018 af, Atten= 13%, Lag= 4.1 min

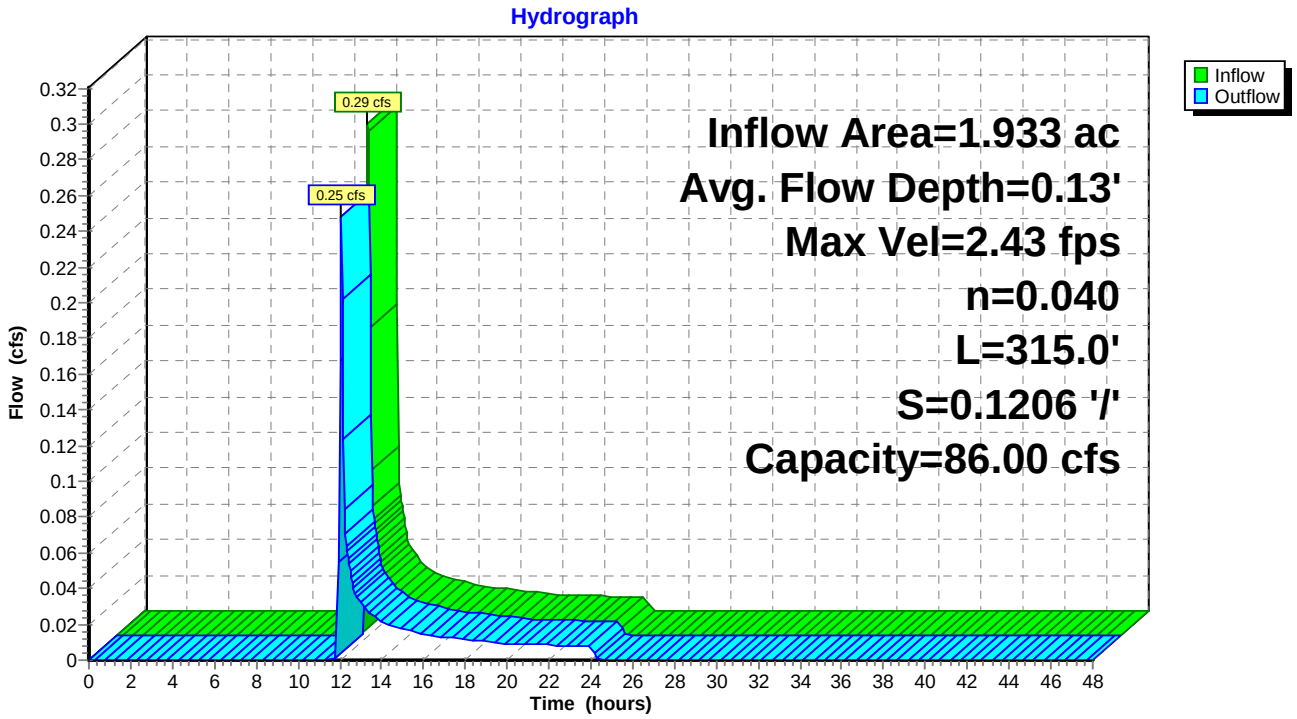
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.43 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 1.04 fps, Avg. Travel Time= 5.1 min

Peak Storage= 34 cf @ 12.02 hrs
Average Depth at Peak Storage= 0.13'
Bank-Full Depth= 2.00' Flow Area= 6.7 sf, Capacity= 86.00 cfs

5.00' x 2.00' deep Parabolic Channel, n= 0.040 Earth, cobble bottom, clean sides
Length= 315.0' Slope= 0.1206 '/'
Inlet Invert= 710.00', Outlet Invert= 672.00'



Reach R1: Lot 2 Stone Swale



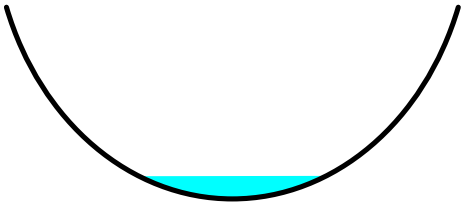
Summary for Reach R10: Lot 6 Stone Swale

Inflow Area = 11.733 ac, 0.00% Impervious, Inflow Depth = 0.10" for WQv event
Inflow = 0.78 cfs @ 12.14 hrs, Volume= 0.096 af
Outflow = 0.75 cfs @ 12.17 hrs, Volume= 0.096 af, Atten= 3%, Lag= 2.0 min

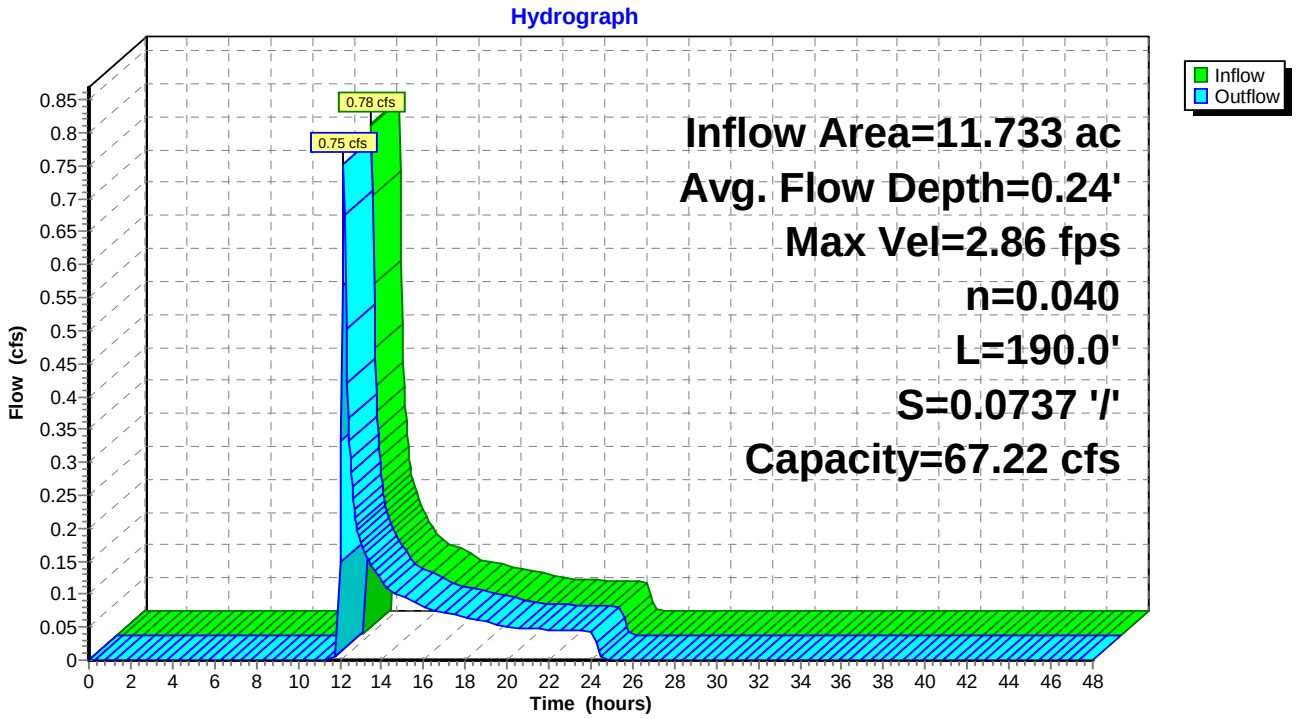
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.86 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 1.37 fps, Avg. Travel Time= 2.3 min

Peak Storage= 52 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.24'
Bank-Full Depth= 2.00' Flow Area= 6.7 sf, Capacity= 67.22 cfs

5.00' x 2.00' deep Parabolic Channel, n= 0.040 Earth, cobble bottom, clean sides
Length= 190.0' Slope= 0.0737 '/'
Inlet Invert= 653.00', Outlet Invert= 639.00'



Reach R10: Lot 6 Stone Swale



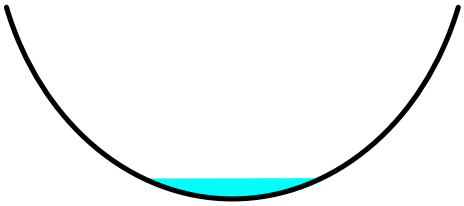
Summary for Reach R11: IB2 Pretreatment Swale

Inflow Area = 11.733 ac, 0.00% Impervious, Inflow Depth = 0.10" for WQv event
Inflow = 0.75 cfs @ 12.17 hrs, Volume= 0.096 af
Outflow = 0.72 cfs @ 12.24 hrs, Volume= 0.096 af, Atten= 5%, Lag= 4.3 min

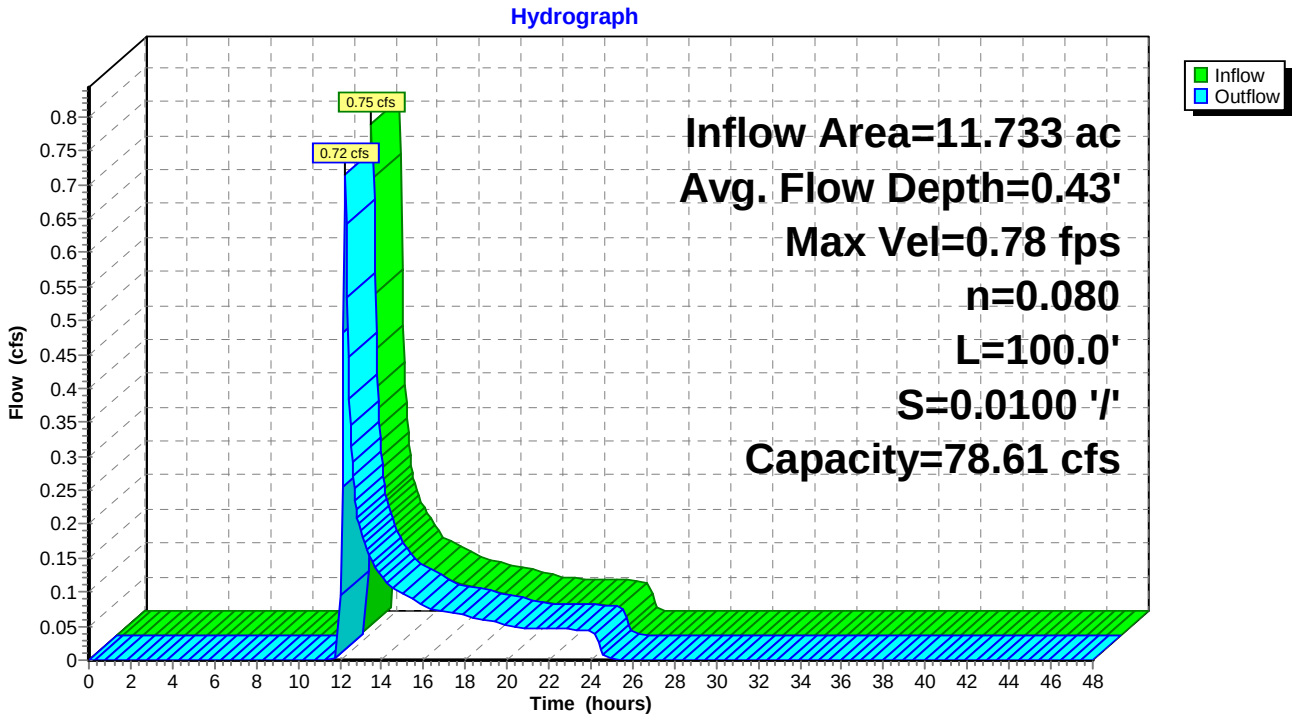
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.78 fps, Min. Travel Time= 2.1 min
Avg. Velocity = 0.37 fps, Avg. Travel Time= 4.4 min

Peak Storage= 93 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.43'
Bank-Full Depth= 4.00' Flow Area= 26.7 sf, Capacity= 78.61 cfs

10.00' x 4.00' deep Parabolic Channel, n= 0.080 Earth, long dense weeds
Length= 100.0' Slope= 0.0100 '/'
Inlet Invert= 639.00', Outlet Invert= 638.00'



Reach R11: IB2 Pretreatment Swale



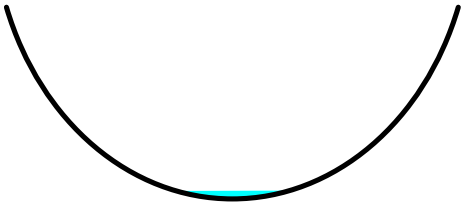
Summary for Reach R12: Lot 5 Stone Swale

Inflow Area = 1.170 ac, 0.00% Impervious, Inflow Depth = 0.10" for WQv event
Inflow = 0.10 cfs @ 12.06 hrs, Volume= 0.010 af
Outflow = 0.09 cfs @ 12.12 hrs, Volume= 0.010 af, Atten= 9%, Lag= 3.8 min

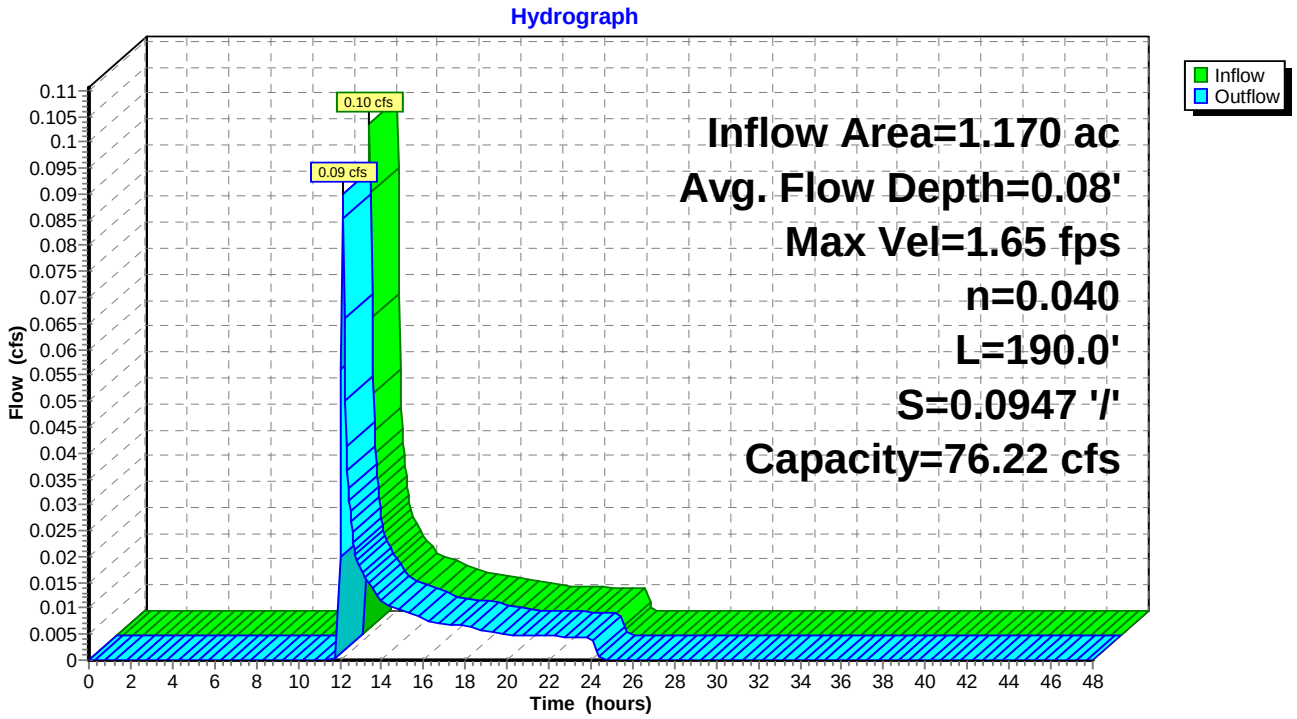
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.65 fps, Min. Travel Time= 1.9 min
Avg. Velocity = 0.79 fps, Avg. Travel Time= 4.0 min

Peak Storage= 11 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.08'
Bank-Full Depth= 2.00' Flow Area= 6.7 sf, Capacity= 76.22 cfs

5.00' x 2.00' deep Parabolic Channel, n= 0.040 Earth, cobble bottom, clean sides
Length= 190.0' Slope= 0.0947 '/'
Inlet Invert= 670.00', Outlet Invert= 652.00'



Reach R12: Lot 5 Stone Swale



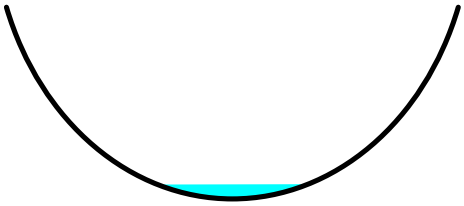
Summary for Reach R13: Lot 7 Stone Swale

Inflow Area = 3.770 ac, 0.00% Impervious, Inflow Depth = 0.10" for WQv event
Inflow = 0.31 cfs @ 12.07 hrs, Volume= 0.031 af
Outflow = 0.28 cfs @ 12.13 hrs, Volume= 0.031 af, Atten= 9%, Lag= 3.5 min

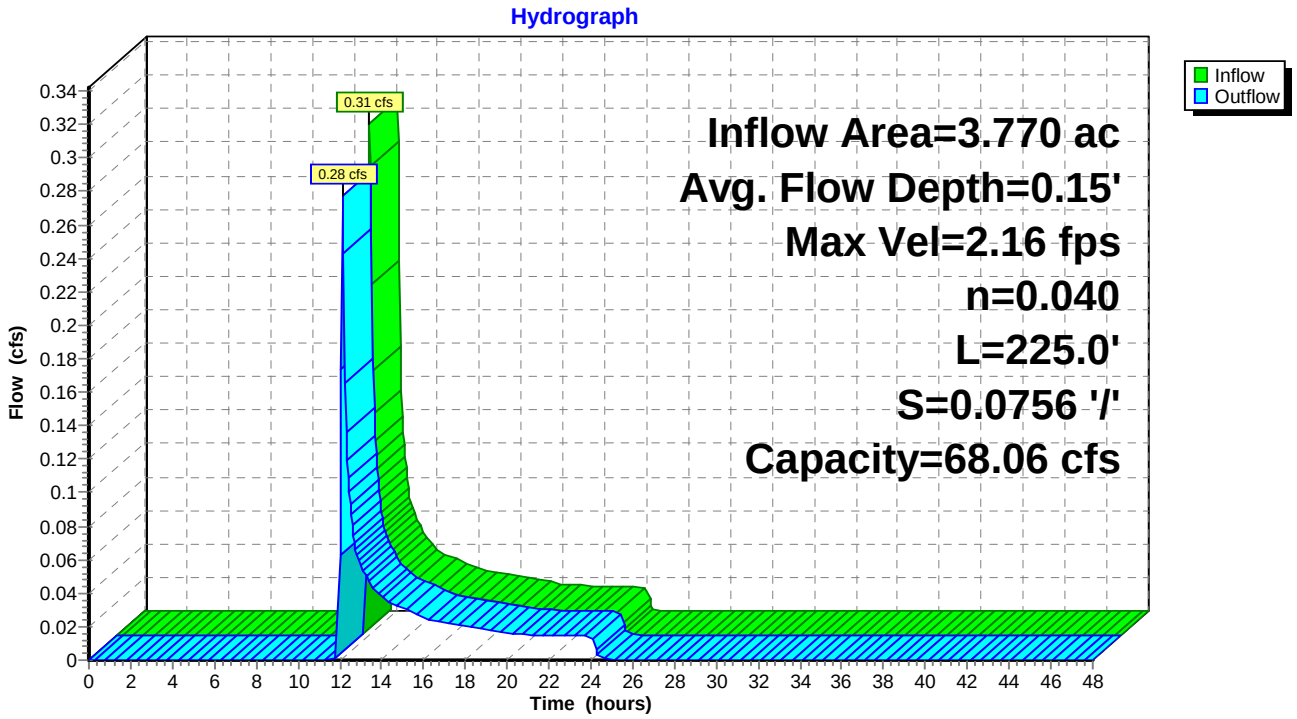
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.16 fps, Min. Travel Time= 1.7 min
Avg. Velocity = 1.01 fps, Avg. Travel Time= 3.7 min

Peak Storage= 31 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.15'
Bank-Full Depth= 2.00' Flow Area= 6.7 sf, Capacity= 68.06 cfs

5.00' x 2.00' deep Parabolic Channel, n= 0.040 Earth, cobble bottom, clean sides
Length= 225.0' Slope= 0.0756 '/'
Inlet Invert= 685.00', Outlet Invert= 668.00'



Reach R13: Lot 7 Stone Swale



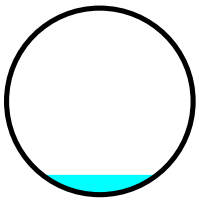
Summary for Reach R14: Lots 7-8 Driveway Culvert

Inflow Area = 3.770 ac, 0.00% Impervious, Inflow Depth = 0.10" for WQv event
Inflow = 0.28 cfs @ 12.13 hrs, Volume= 0.031 af
Outflow = 0.28 cfs @ 12.13 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.3 min

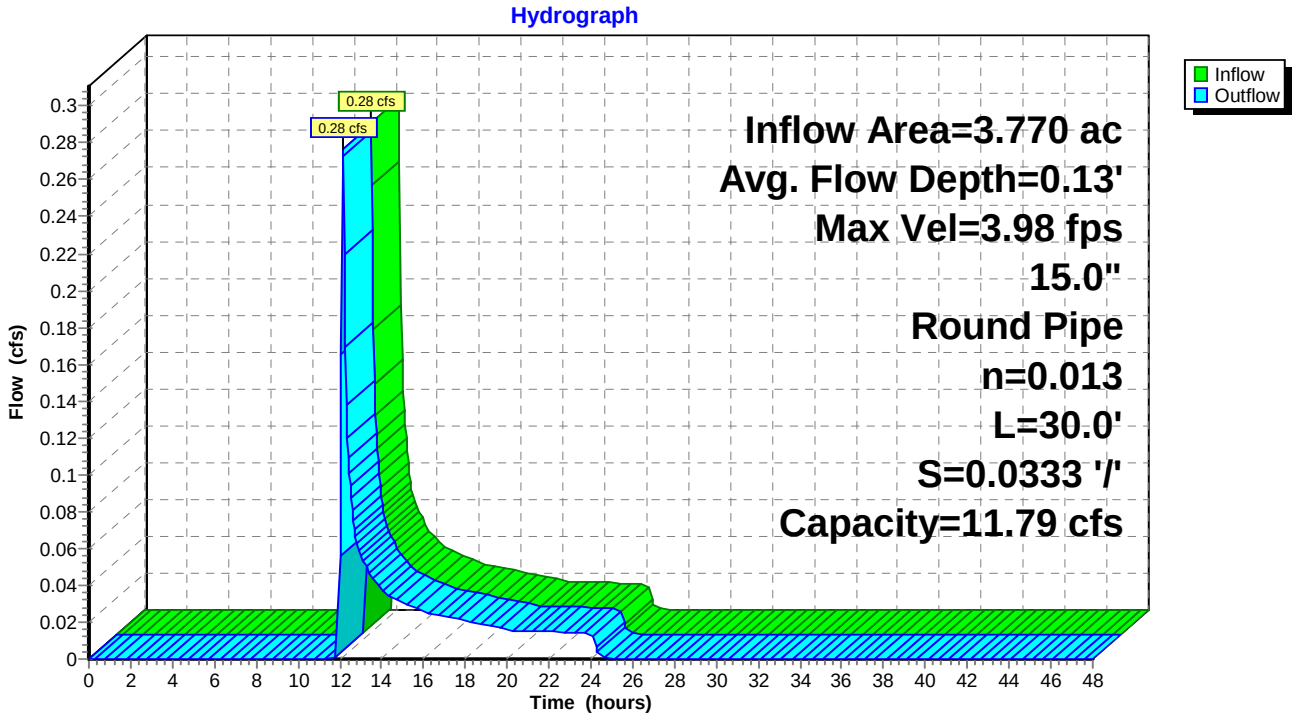
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.98 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 1.90 fps, Avg. Travel Time= 0.3 min

Peak Storage= 2 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.13'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 11.79 cfs

15.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 30.0' Slope= 0.0333 '/'
Inlet Invert= 668.00', Outlet Invert= 667.00'



Reach R14: Lots 7-8 Driveway Culvert



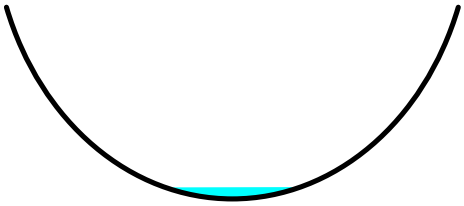
Summary for Reach R15: Lot 6 Grass Swale

Inflow Area = 1.321 ac, 0.00% Impervious, Inflow Depth = 0.10" for WQv event
Inflow = 0.10 cfs @ 12.03 hrs, Volume= 0.011 af
Outflow = 0.09 cfs @ 12.14 hrs, Volume= 0.011 af, Atten= 13%, Lag= 6.5 min

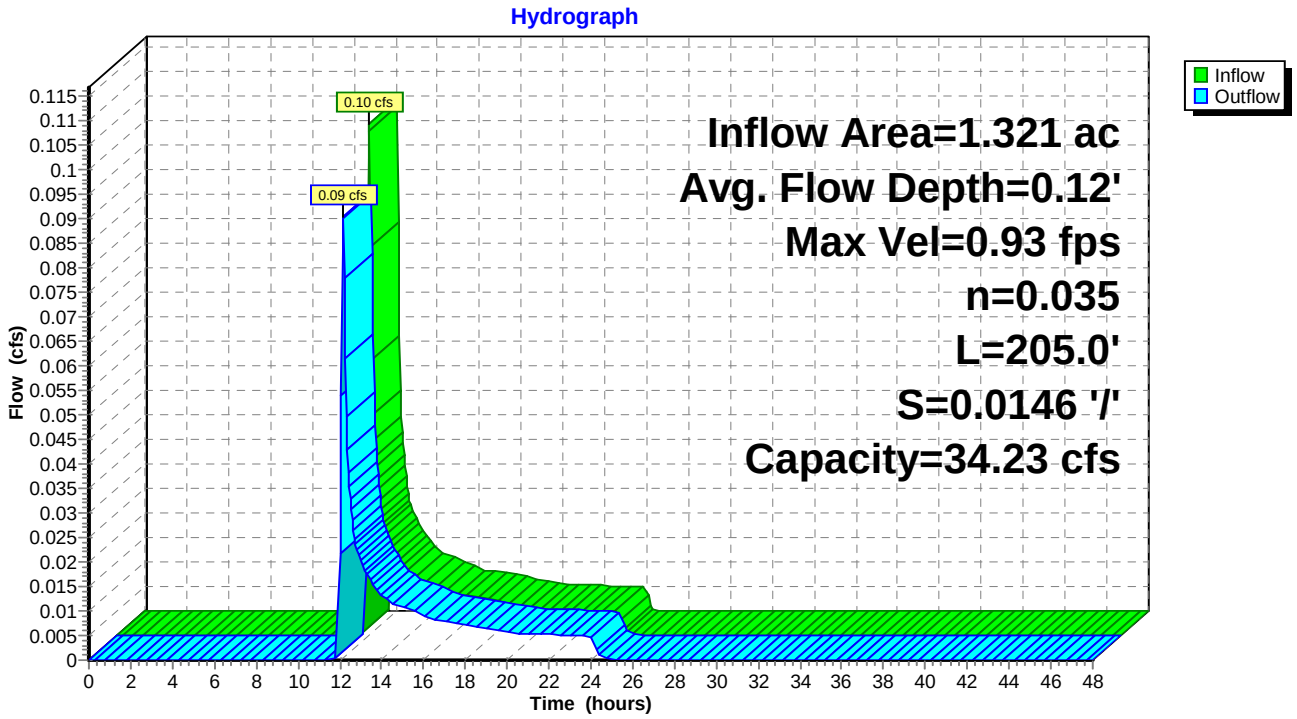
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.93 fps, Min. Travel Time= 3.7 min
Avg. Velocity = 0.46 fps, Avg. Travel Time= 7.5 min

Peak Storage= 20 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 2.00' Flow Area= 6.7 sf, Capacity= 34.23 cfs

5.00' x 2.00' deep Parabolic Channel, n= 0.035 Earth, dense weeds
Length= 205.0' Slope= 0.0146 '/'
Inlet Invert= 670.00', Outlet Invert= 667.00'



Reach R15: Lot 6 Grass Swale



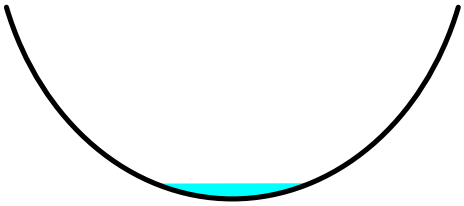
Summary for Reach R16: Lot 6 Stone Swale

Inflow Area = 5.091 ac, 0.00% Impervious, Inflow Depth = 0.10" for WQv event
Inflow = 0.37 cfs @ 12.13 hrs, Volume= 0.042 af
Outflow = 0.36 cfs @ 12.17 hrs, Volume= 0.042 af, Atten= 3%, Lag= 1.8 min

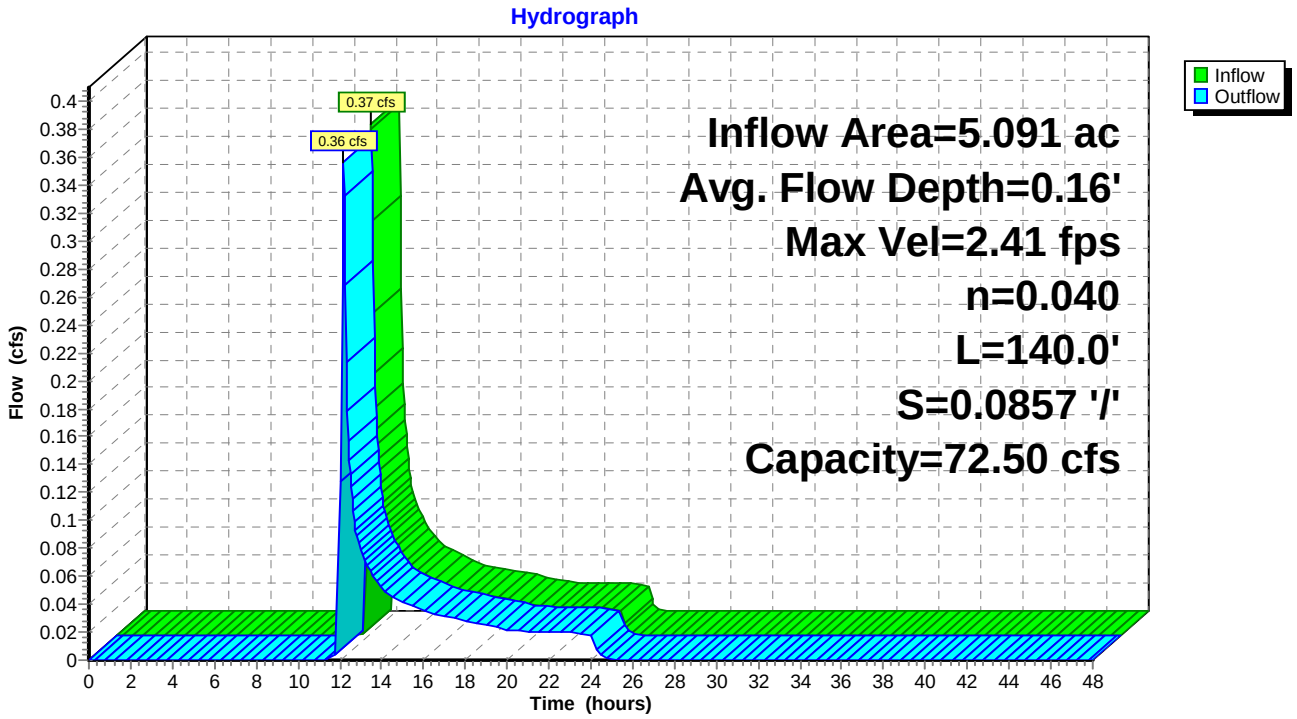
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.41 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 1.14 fps, Avg. Travel Time= 2.0 min

Peak Storage= 21 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.16'
Bank-Full Depth= 2.00' Flow Area= 6.7 sf, Capacity= 72.50 cfs

5.00' x 2.00' deep Parabolic Channel, n= 0.040 Earth, cobble bottom, clean sides
Length= 140.0' Slope= 0.0857 '/'
Inlet Invert= 667.00', Outlet Invert= 655.00'



Reach R16: Lot 6 Stone Swale



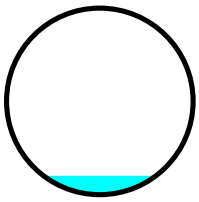
Summary for Reach R17: Lot 6 Driveway Culvert

Inflow Area = 5.091 ac, 0.00% Impervious, Inflow Depth = 0.10" for WQv event
Inflow = 0.36 cfs @ 12.17 hrs, Volume= 0.042 af
Outflow = 0.36 cfs @ 12.17 hrs, Volume= 0.042 af, Atten= 0%, Lag= 0.1 min

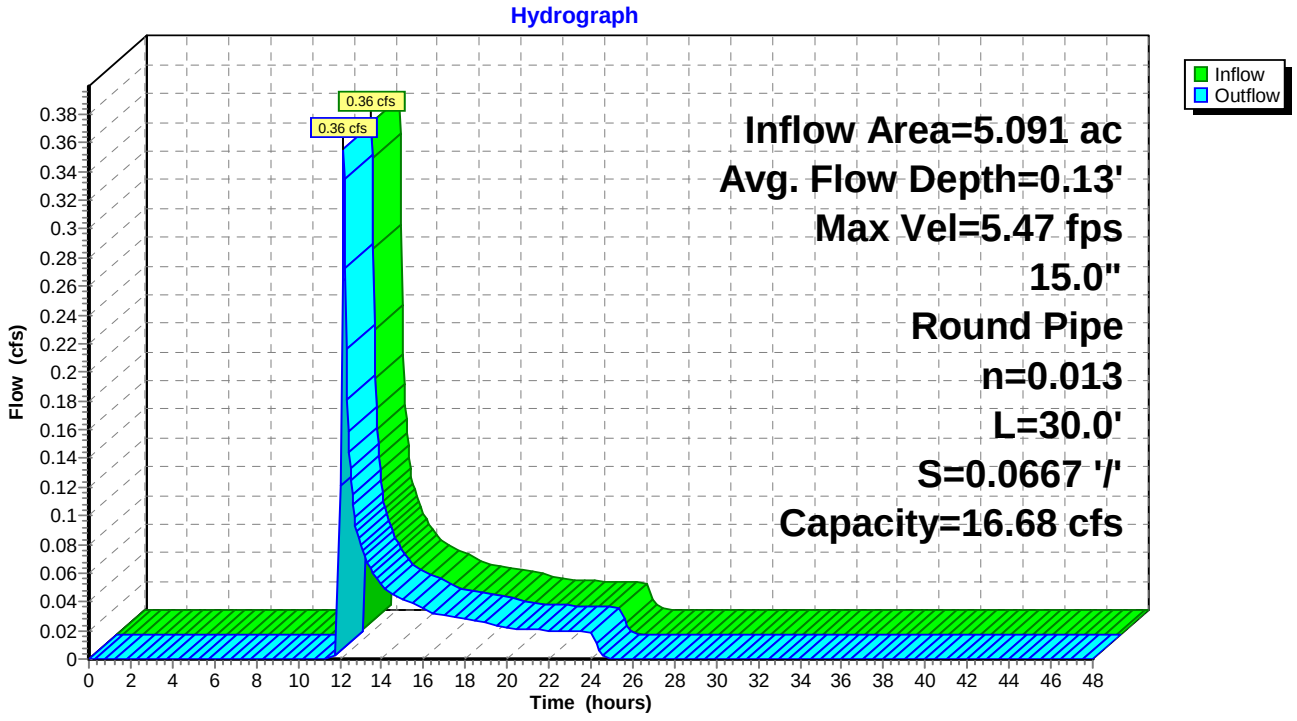
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.47 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.63 fps, Avg. Travel Time= 0.2 min

Peak Storage= 2 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.13'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 16.68 cfs

15.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 30.0' Slope= 0.0667 '/'
Inlet Invert= 655.00', Outlet Invert= 653.00'



Reach R17: Lot 6 Driveway Culvert



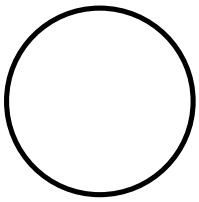
Summary for Reach R18: S/N 001

Inflow Area = 19.119 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 13.17 hrs, Volume= 0.001 af
Outflow = 0.00 cfs @ 13.19 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.7 min

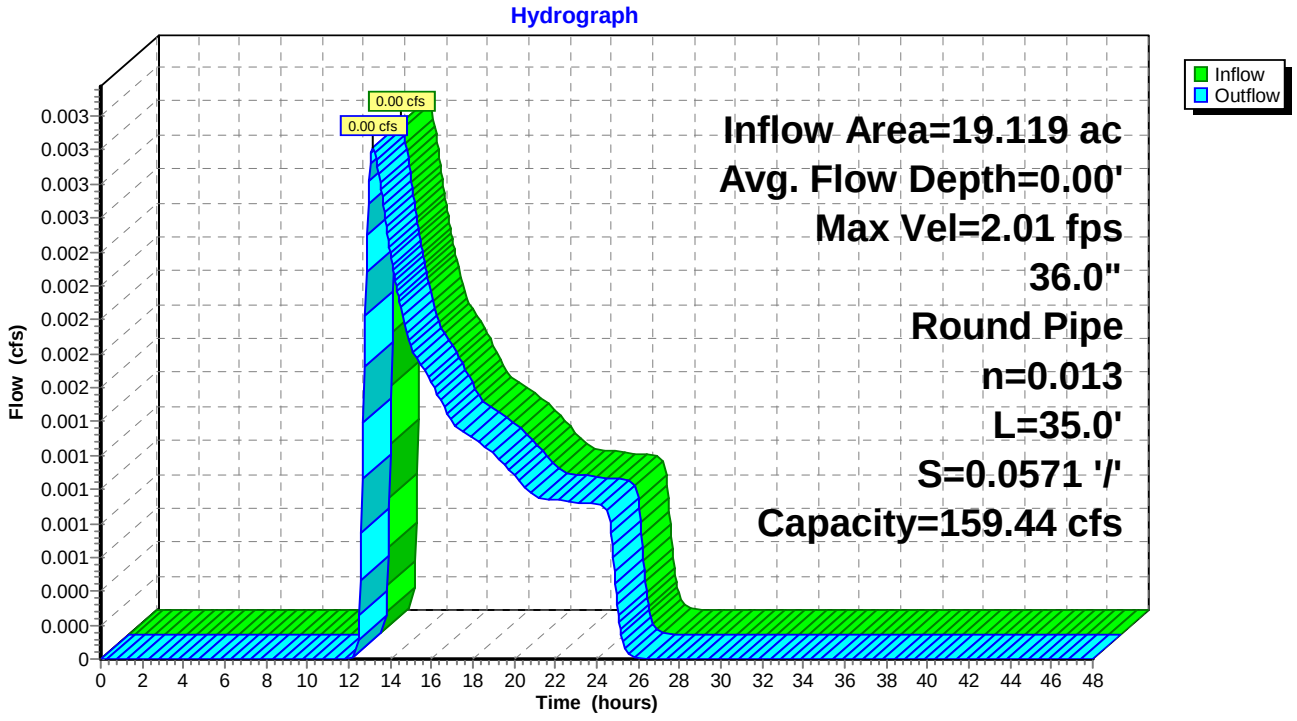
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.01 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 2.01 fps, Avg. Travel Time= 0.3 min

Peak Storage= 0 cf @ 13.18 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 3.00' Flow Area= 7.1 sf, Capacity= 159.44 cfs

36.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 35.0' Slope= 0.0571 '/'
Inlet Invert= 632.00', Outlet Invert= 630.00'



Reach R18: S/N 001



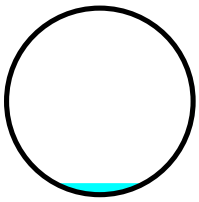
Summary for Reach R2: Lots 2-3 Driveway Culvert

Inflow Area = 1.933 ac, 0.00% Impervious, Inflow Depth = 0.11" for WQv event
Inflow = 0.25 cfs @ 12.06 hrs, Volume= 0.018 af
Outflow = 0.25 cfs @ 12.06 hrs, Volume= 0.018 af, Atten= 1%, Lag= 0.1 min

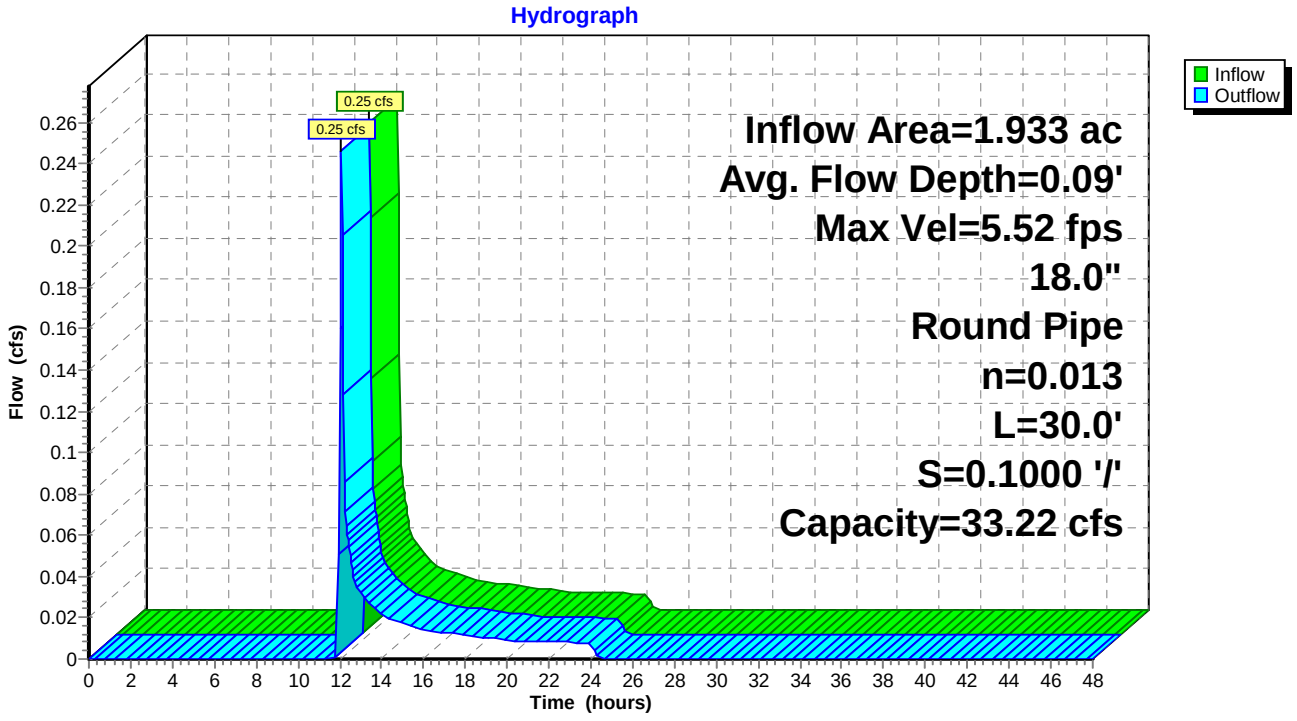
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.52 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.38 fps, Avg. Travel Time= 0.2 min

Peak Storage= 1 cf @ 12.06 hrs
Average Depth at Peak Storage= 0.09'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 33.22 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 30.0' Slope= 0.1000 '/'
Inlet Invert= 672.00', Outlet Invert= 669.00'



Reach R2: Lots 2-3 Driveway Culvert



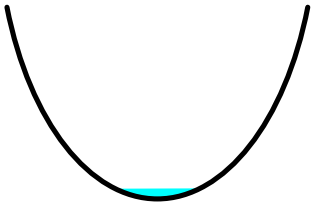
Summary for Reach R3: Observatory Rd. West Swale

Inflow Area = 3.513 ac, 0.00% Impervious, Inflow Depth = 0.11" for WQv event
Inflow = 0.43 cfs @ 12.05 hrs, Volume= 0.033 af
Outflow = 0.40 cfs @ 12.07 hrs, Volume= 0.033 af, Atten= 6%, Lag= 1.6 min

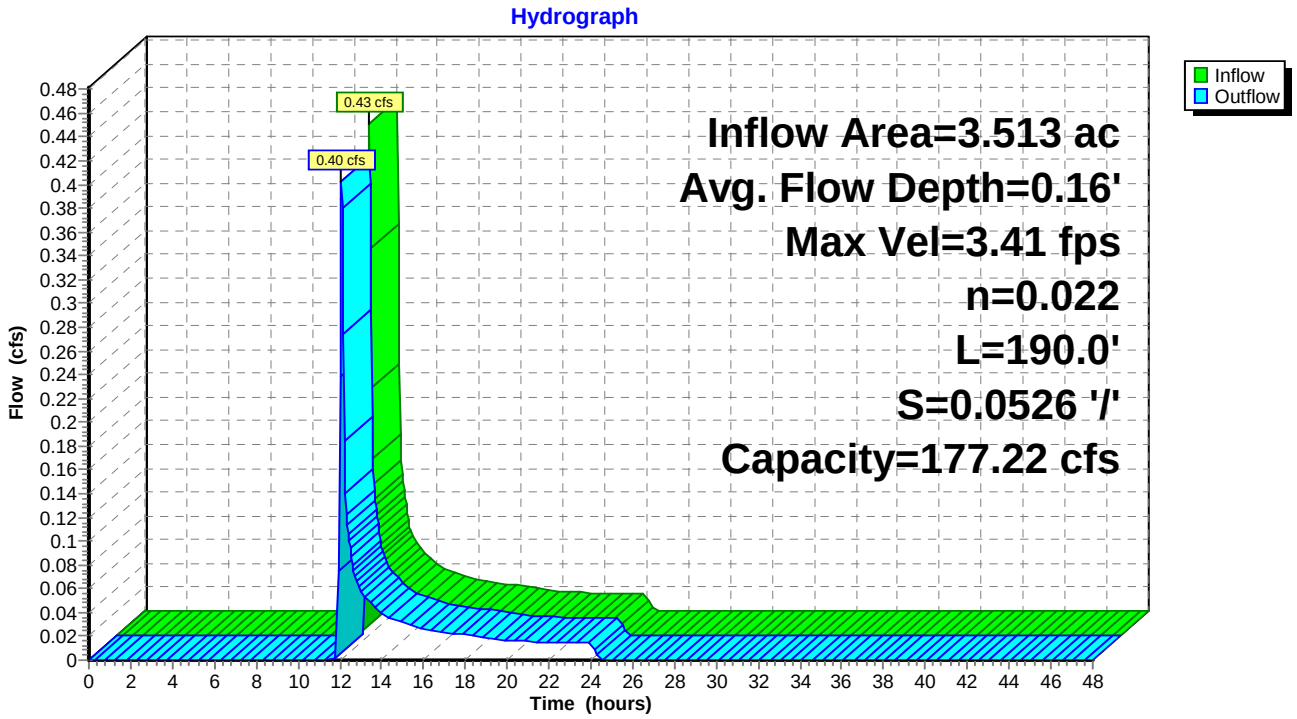
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.41 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 1.51 fps, Avg. Travel Time= 2.1 min

Peak Storage= 24 cf @ 12.06 hrs
Average Depth at Peak Storage= 0.16'
Bank-Full Depth= 3.00' Flow Area= 10.0 sf, Capacity= 177.22 cfs

5.00' x 3.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 190.0' Slope= 0.0526 '/'
Inlet Invert= 669.00', Outlet Invert= 659.00'



Reach R3: Observatory Rd. West Swale



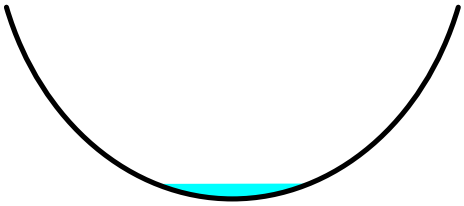
Summary for Reach R4: IB1 Pretreatment Swale

Inflow Area = 3.513 ac, 0.00% Impervious, Inflow Depth = 0.11" for WQv event
Inflow = 0.40 cfs @ 12.07 hrs, Volume= 0.033 af
Outflow = 0.36 cfs @ 12.17 hrs, Volume= 0.033 af, Atten= 10%, Lag= 5.5 min

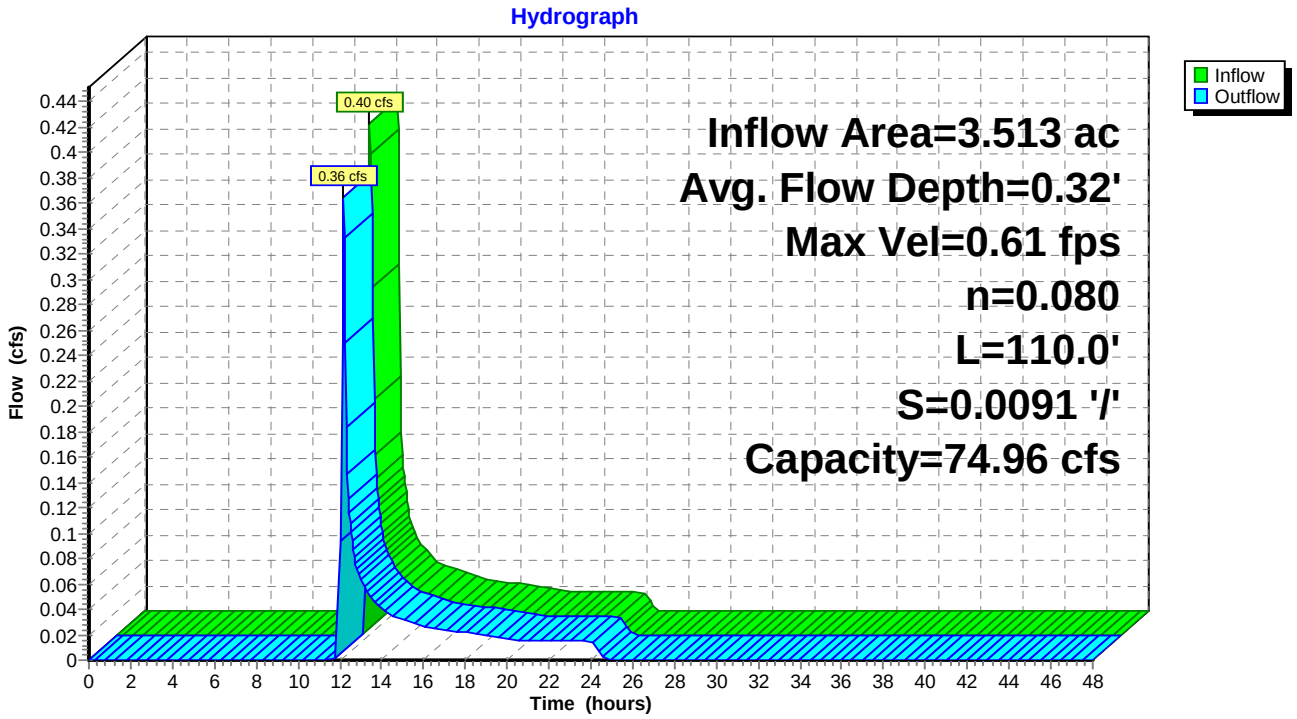
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.61 fps, Min. Travel Time= 3.0 min
Avg. Velocity = 0.27 fps, Avg. Travel Time= 6.8 min

Peak Storage= 65 cf @ 12.12 hrs
Average Depth at Peak Storage= 0.32'
Bank-Full Depth= 4.00' Flow Area= 26.7 sf, Capacity= 74.96 cfs

10.00' x 4.00' deep Parabolic Channel, n= 0.080 Earth, long dense weeds
Length= 110.0' Slope= 0.0091 '/'
Inlet Invert= 659.00', Outlet Invert= 658.00'



Reach R4: IB1 Pretreatment Swale



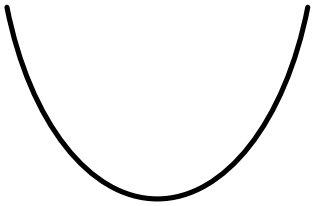
Summary for Reach R5: Observatory Rd. Middle Swale

Inflow Area = 5.558 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 12.52 hrs, Volume= 0.001 af
Outflow = 0.00 cfs @ 12.72 hrs, Volume= 0.001 af, Atten= 3%, Lag= 12.4 min

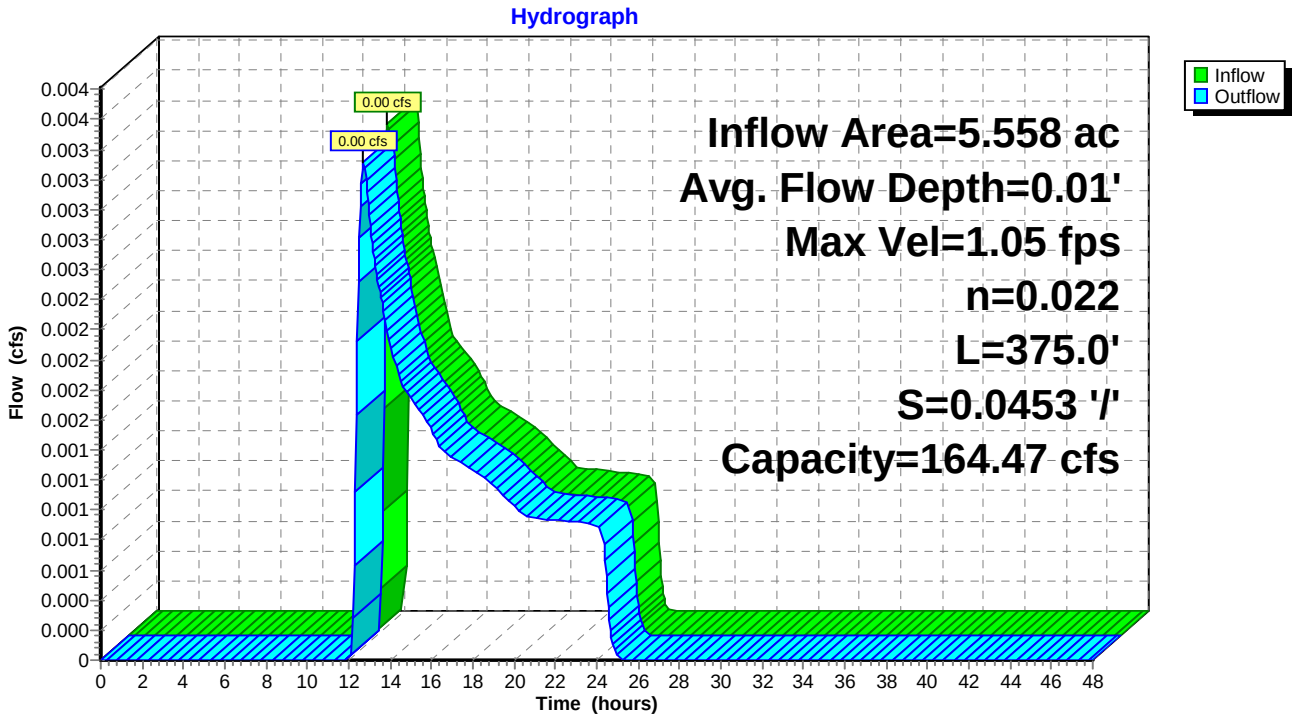
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.05 fps, Min. Travel Time= 5.9 min
Avg. Velocity = 1.05 fps, Avg. Travel Time= 5.9 min

Peak Storage= 1 cf @ 12.62 hrs
Average Depth at Peak Storage= 0.01'
Bank-Full Depth= 3.00' Flow Area= 10.0 sf, Capacity= 164.47 cfs

5.00' x 3.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 375.0' Slope= 0.0453 '/'
Inlet Invert= 658.00', Outlet Invert= 641.00'



Reach R5: Observatory Rd. Middle Swale



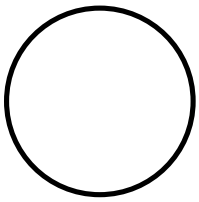
Summary for Reach R6: Lots 4-8 Driveway Culvert

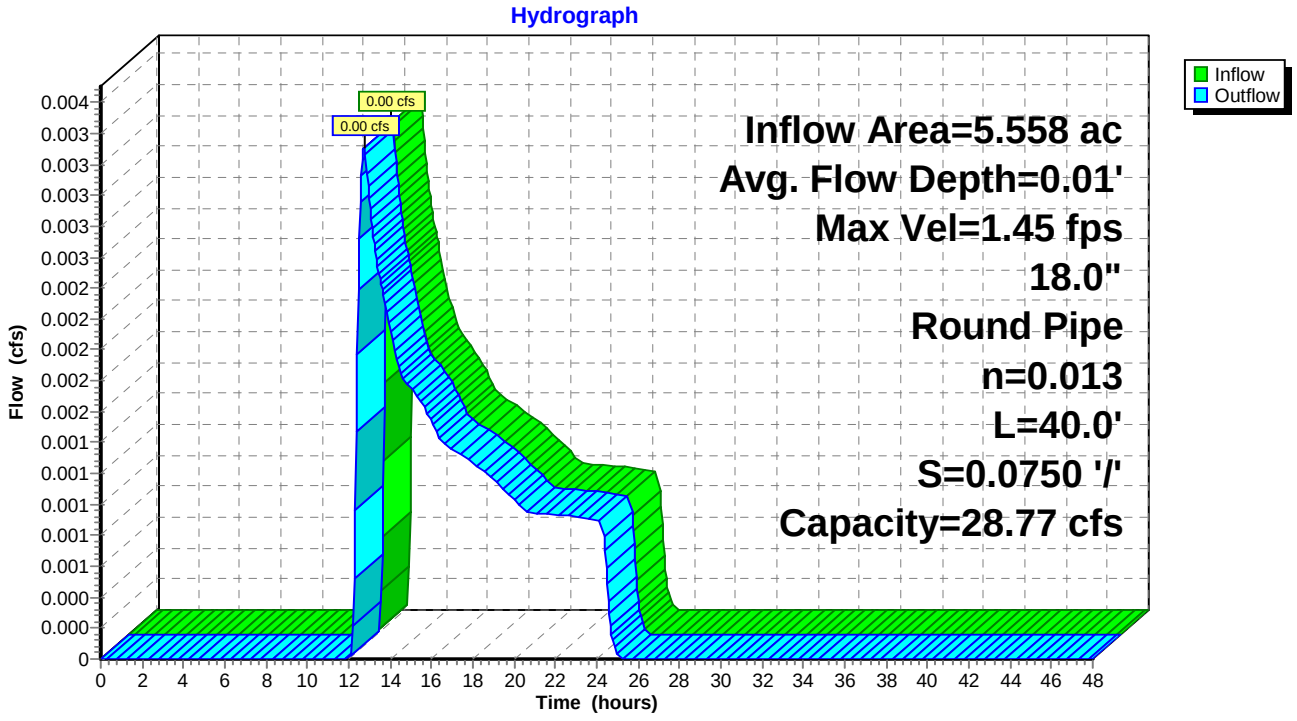
Inflow Area = 5.558 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 12.72 hrs, Volume= 0.001 af
Outflow = 0.00 cfs @ 12.74 hrs, Volume= 0.001 af, Atten= 0%, Lag= 1.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.45 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.45 fps, Avg. Travel Time= 0.5 min

Peak Storage= 0 cf @ 12.73 hrs
Average Depth at Peak Storage= 0.01'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 28.77 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 40.0' Slope= 0.0750 '/'
Inlet Invert= 641.00', Outlet Invert= 638.00'





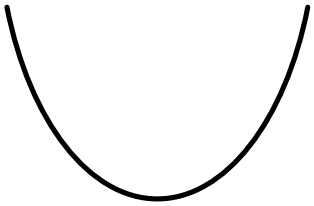
Summary for Reach R7: Observatory Rd. East Swale

Inflow Area = 5.558 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 12.74 hrs, Volume= 0.001 af
Outflow = 0.00 cfs @ 13.17 hrs, Volume= 0.001 af, Atten= 9%, Lag= 26.1 min

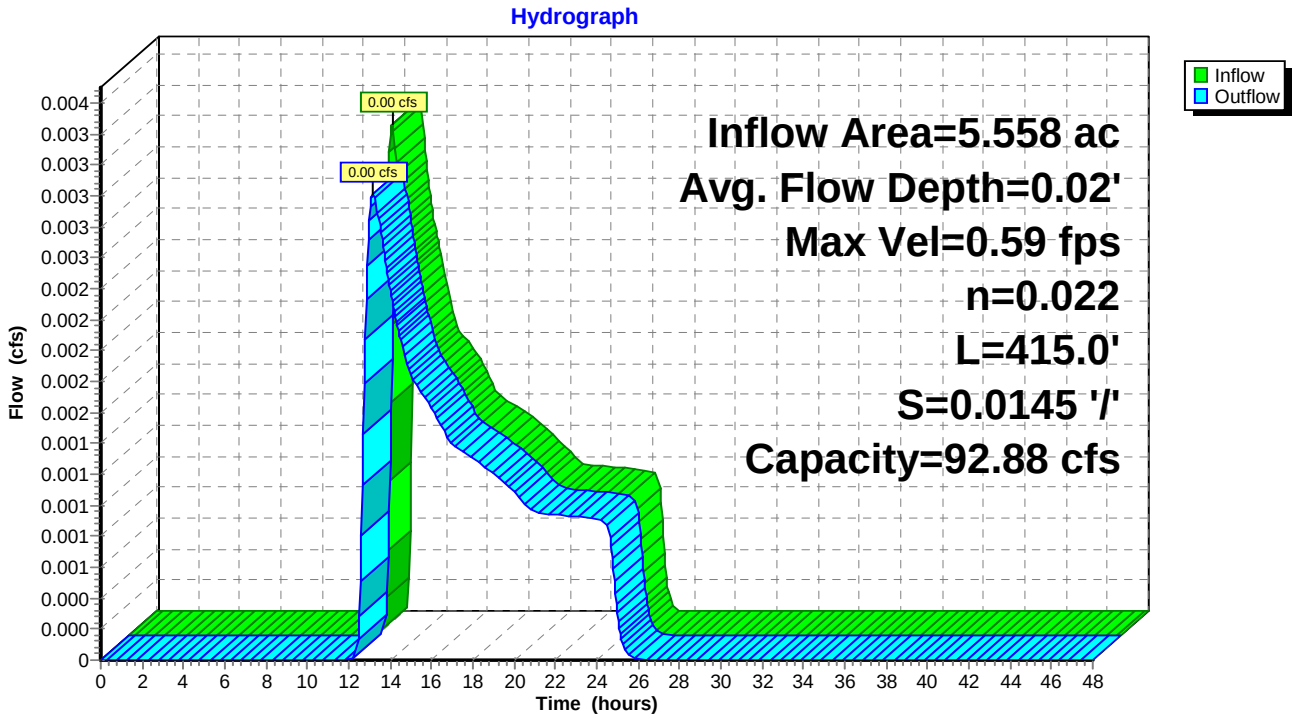
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.59 fps, Min. Travel Time= 11.6 min
Avg. Velocity = 0.59 fps, Avg. Travel Time= 11.6 min

Peak Storage= 2 cf @ 12.98 hrs
Average Depth at Peak Storage= 0.02'
Bank-Full Depth= 3.00' Flow Area= 10.0 sf, Capacity= 92.88 cfs

5.00' x 3.00' deep Parabolic Channel, n= 0.022 Earth, clean & straight
Length= 415.0' Slope= 0.0145 '/'
Inlet Invert= 638.00', Outlet Invert= 632.00'



Reach R7: Observatory Rd. East Swale



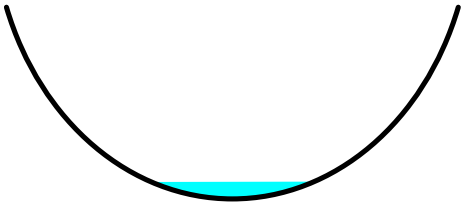
Summary for Reach R8: Lot 4 Stone Swale

Inflow Area = 4.571 ac, 0.00% Impervious, Inflow Depth = 0.10" for WQv event
Inflow = 0.37 cfs @ 12.07 hrs, Volume= 0.037 af
Outflow = 0.35 cfs @ 12.11 hrs, Volume= 0.037 af, Atten= 6%, Lag= 2.5 min

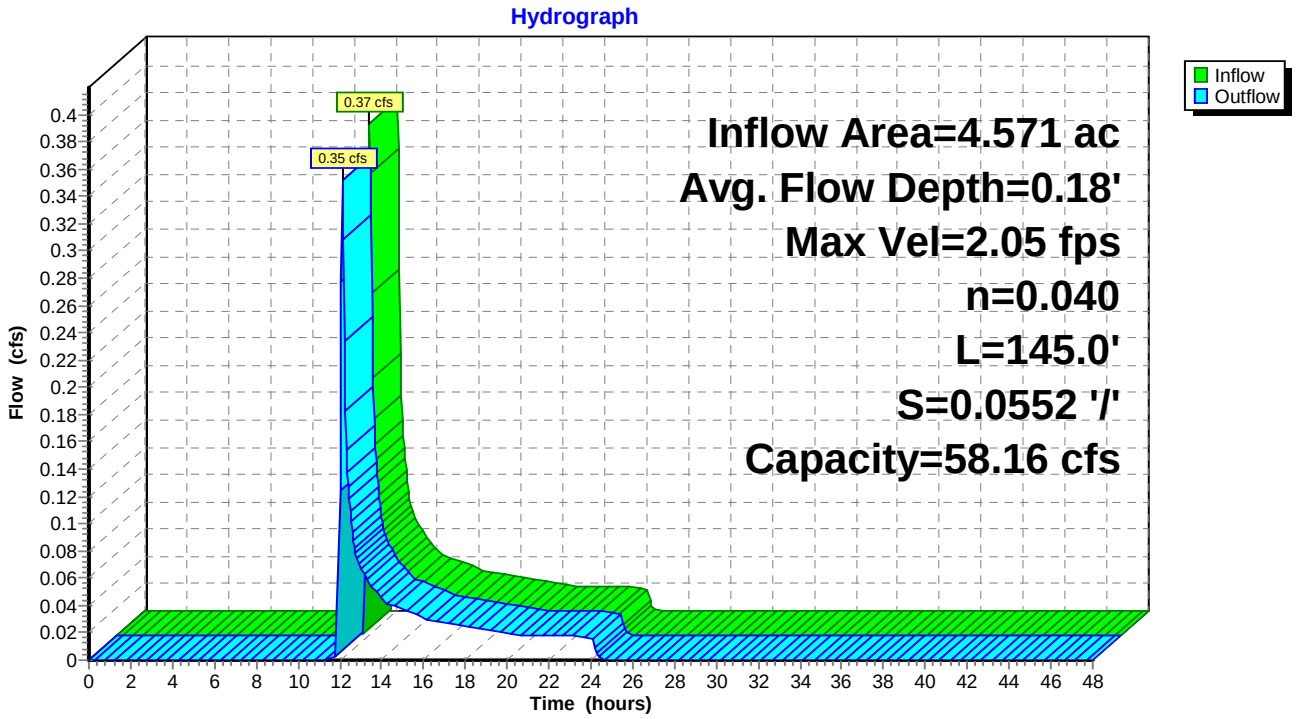
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.05 fps, Min. Travel Time= 1.2 min
Avg. Velocity = 0.96 fps, Avg. Travel Time= 2.5 min

Peak Storage= 26 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.18'
Bank-Full Depth= 2.00' Flow Area= 6.7 sf, Capacity= 58.16 cfs

5.00' x 2.00' deep Parabolic Channel, n= 0.040 Earth, cobble bottom, clean sides
Length= 145.0' Slope= 0.0552 '/'
Inlet Invert= 660.00', Outlet Invert= 652.00'



Reach R8: Lot 4 Stone Swale



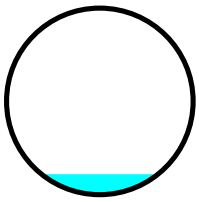
Summary for Reach R9: Lots 5-8 Driveway Culvert

Inflow Area = 5.741 ac, 0.00% Impervious, Inflow Depth = 0.10" for WQv event
Inflow = 0.44 cfs @ 12.11 hrs, Volume= 0.047 af
Outflow = 0.44 cfs @ 12.11 hrs, Volume= 0.047 af, Atten= 1%, Lag= 0.2 min

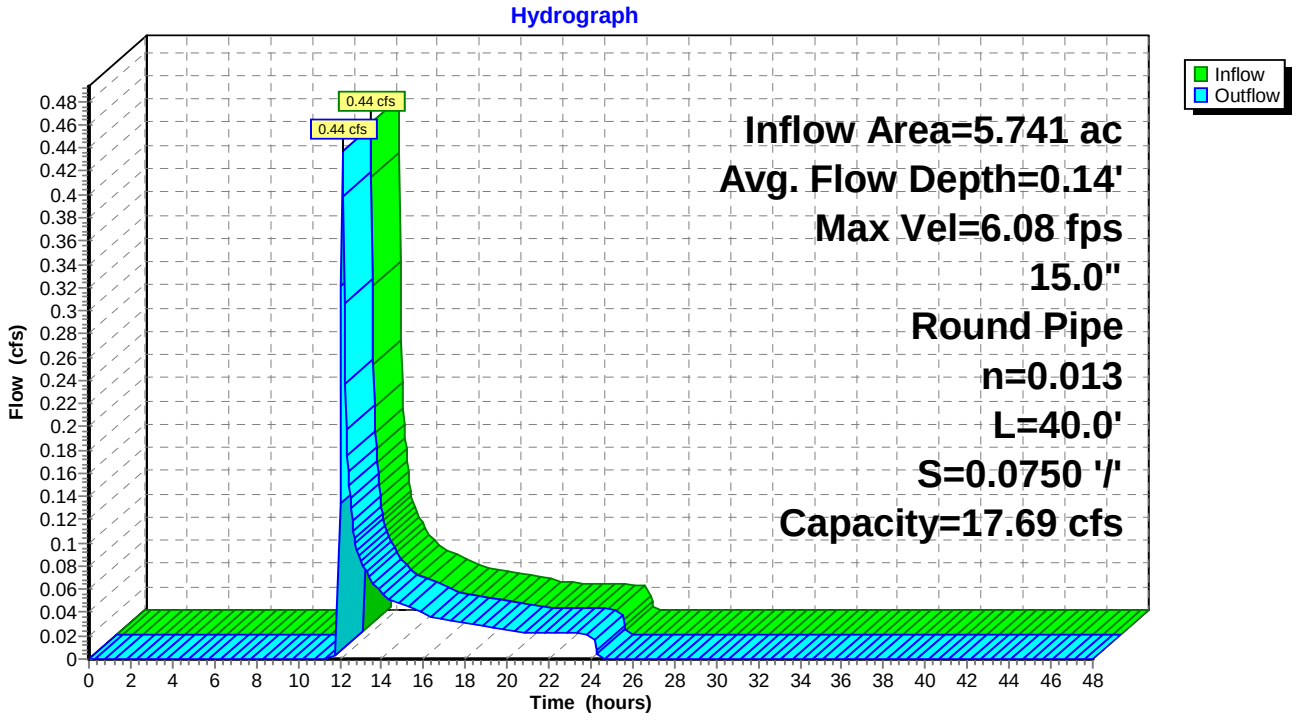
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.08 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.87 fps, Avg. Travel Time= 0.2 min

Peak Storage= 3 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.14'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 17.69 cfs

15.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 40.0' Slope= 0.0750 '/'
Inlet Invert= 652.00', Outlet Invert= 649.00'



Reach R9: Lots 5-8 Driveway Culvert



Summary for Pond IB1: Infiltration Basin 1

Inflow Area = 3.513 ac, 0.00% Impervious, Inflow Depth = 0.11" for WQv event
Inflow = 0.36 cfs @ 12.17 hrs, Volume= 0.033 af
Outflow = 0.03 cfs @ 15.75 hrs, Volume= 0.033 af, Atten= 92%, Lag= 215.1 min
Discarded = 0.03 cfs @ 15.75 hrs, Volume= 0.033 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 658.25' @ 15.75 hrs Surf.Area= 2,292 sf Storage= 564 cf

Plug-Flow detention time= 324.7 min calculated for 0.033 af (100% of inflow)
Center-of-Mass det. time= 323.8 min (1,266.2 - 942.4)

Volume	Invert	Avail.Storage	Storage Description
#1	658.00'	11,984 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

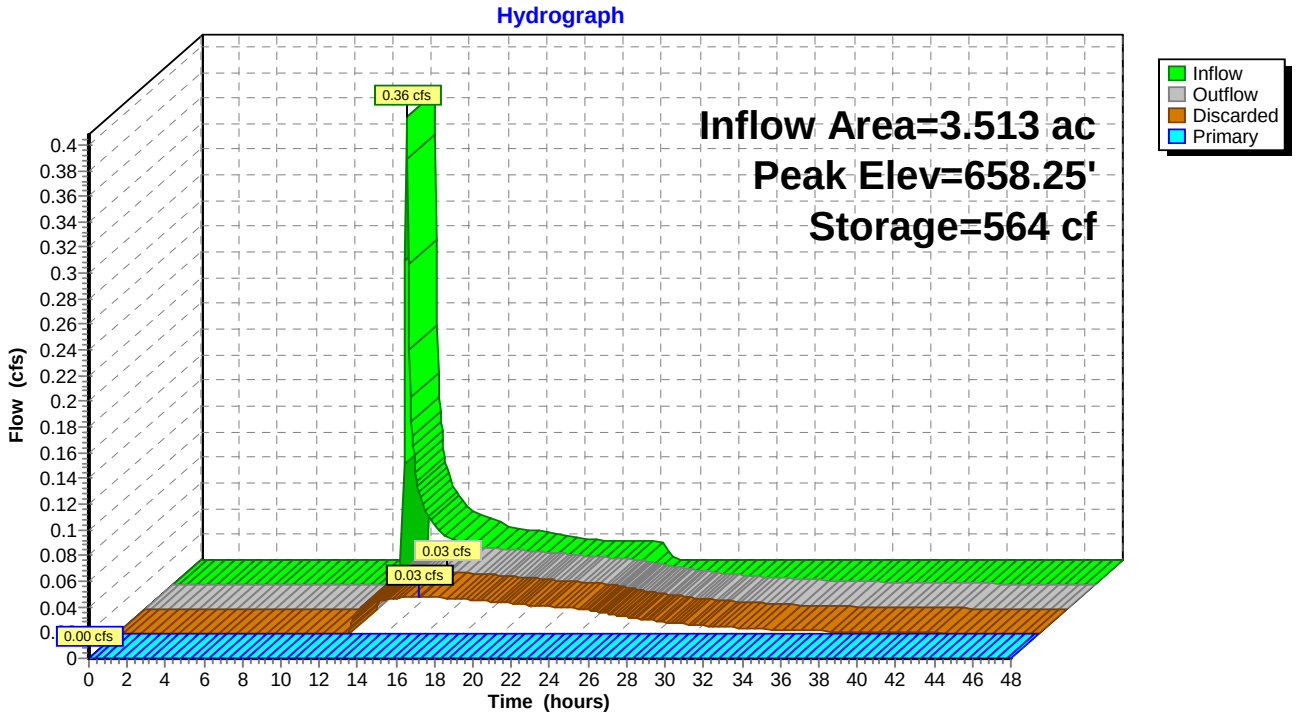
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
658.00	2,197	0	0
659.00	2,575	2,386	2,386
660.00	2,977	2,776	5,162
661.00	3,405	3,191	8,353
661.50	3,629	1,759	10,112
662.00	3,859	1,872	11,984

Device	Routing	Invert	Outlet Devices
#1	Discarded	658.00'	**2.140 in/hr Exfiltration over Surface area** Phase-In= 1.00'
#2	Primary	661.50'	**15.0' long x 15.0' breadth Emergency Spillway**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.03 cfs @ 15.75 hrs HW=658.25' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=658.00' (Free Discharge)
2=Emergency Spillway (Controls 0.00 cfs)

Pond IB1: Infiltration Basin 1



Summary for Pond IB2: Infiltration Basin 2

Inflow Area = 12.735 ac, 0.00% Impervious, Inflow Depth = 0.10" for WQv event
Inflow = 0.74 cfs @ 12.24 hrs, Volume= 0.104 af
Outflow = 0.12 cfs @ 14.18 hrs, Volume= 0.104 af, Atten= 83%, Lag= 115.9 min
Discarded = 0.12 cfs @ 14.18 hrs, Volume= 0.104 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 638.36' @ 14.18 hrs Surf.Area= 3,630 sf Storage= 1,280 cf

Plug-Flow detention time= 173.2 min calculated for 0.104 af (100% of inflow)
Center-of-Mass det. time= 174.0 min (1,129.5 - 955.5)

Volume	Invert	Avail.Storage	Storage Description
#1	638.00'	18,894 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
638.00	3,396	0	0
639.00	4,038	3,717	3,717
640.00	4,705	4,372	8,089
641.00	5,397	5,051	13,140
641.50	5,753	2,788	15,927
642.00	6,114	2,967	18,894

Device	Routing	Invert	Outlet Devices
#1	Discarded	638.00'	**4.040 in/hr Exfiltration over Surface area** Phase-In= 1.00'
#2	Primary	641.00'	**15.0' long x 15.0' breadth Emergency Spillway**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.12 cfs @ 14.18 hrs HW=638.36' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.12 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=638.00' (Free Discharge)
2=Emergency Spillway (Controls 0.00 cfs)

Pond IB2: Infiltration Basin 2