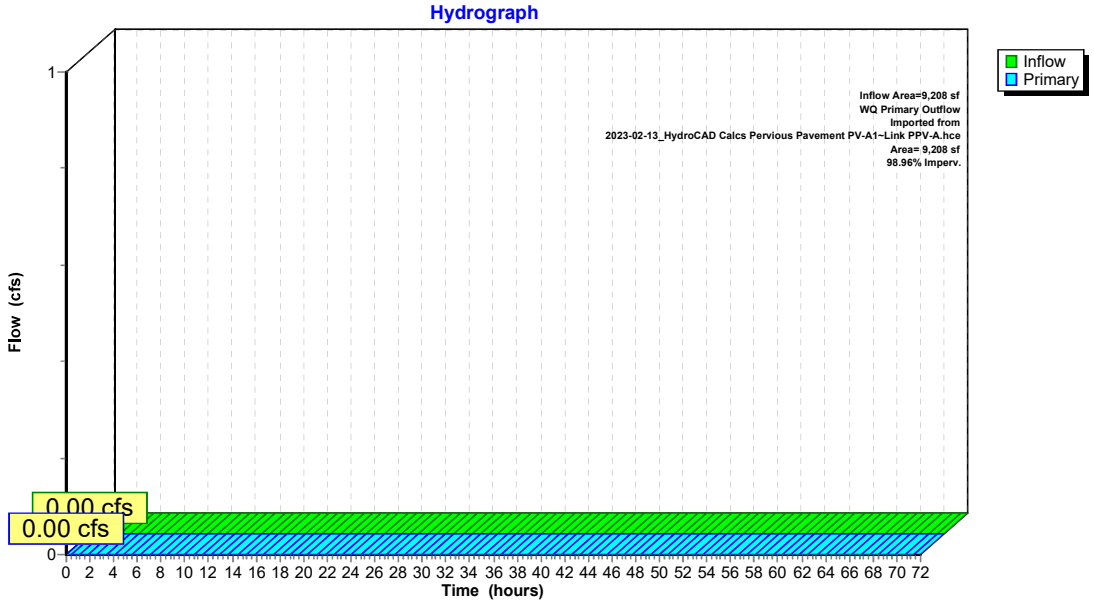
Summary for Link PPV-A: Pervious Pavement System Building A

Inflow Area = 9,208 sf, 98.96% Impervious, Inflow Depth = 0.00" for WQ event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Routed to Link PPV : Pervious Pavement Systems

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

WQ Primary Outflow Imported from 2023-02-13_HydroCAD Calcs Pervious Pavement PV-A1~Link PPV-A.hce

Link PPV-A: Pervious Pavement System Building A



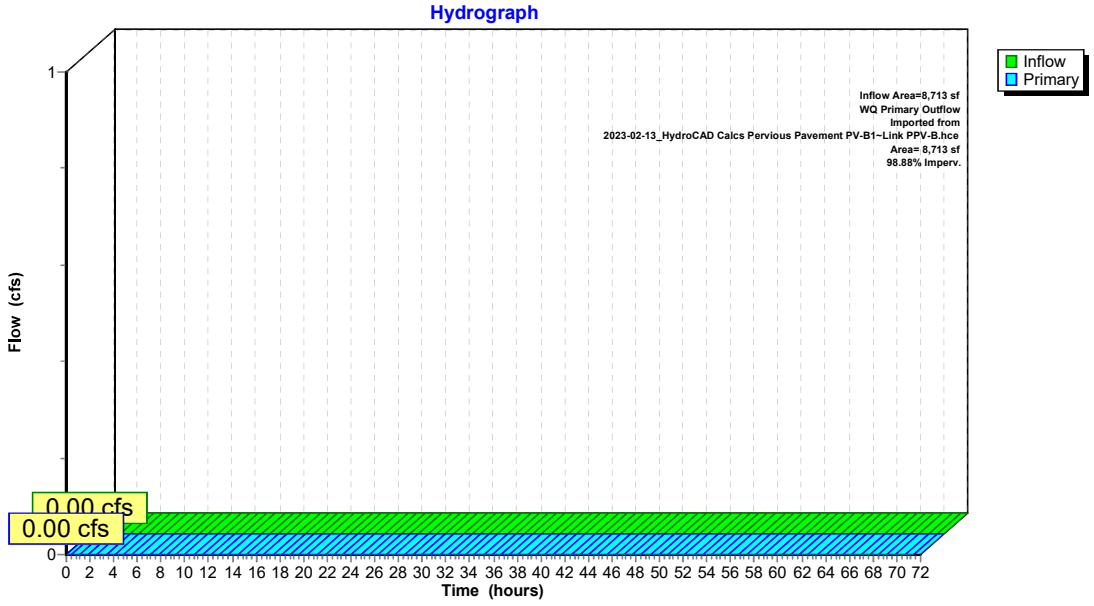
Summary for Link PPV-B: Pervious Pavement System Building B

Inflow Area = 8,713 sf, 98.88% Impervious, Inflow Depth = 0.00" for WQ event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Routed to Link PPV : Pervious Pavement Systems

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

WQ Primary Outflow Imported from 2023-02-13_HydroCAD Calcs Pervious Pavement PV-B1~Link PPV-B.hce

Link PPV-B: Pervious Pavement System Building B



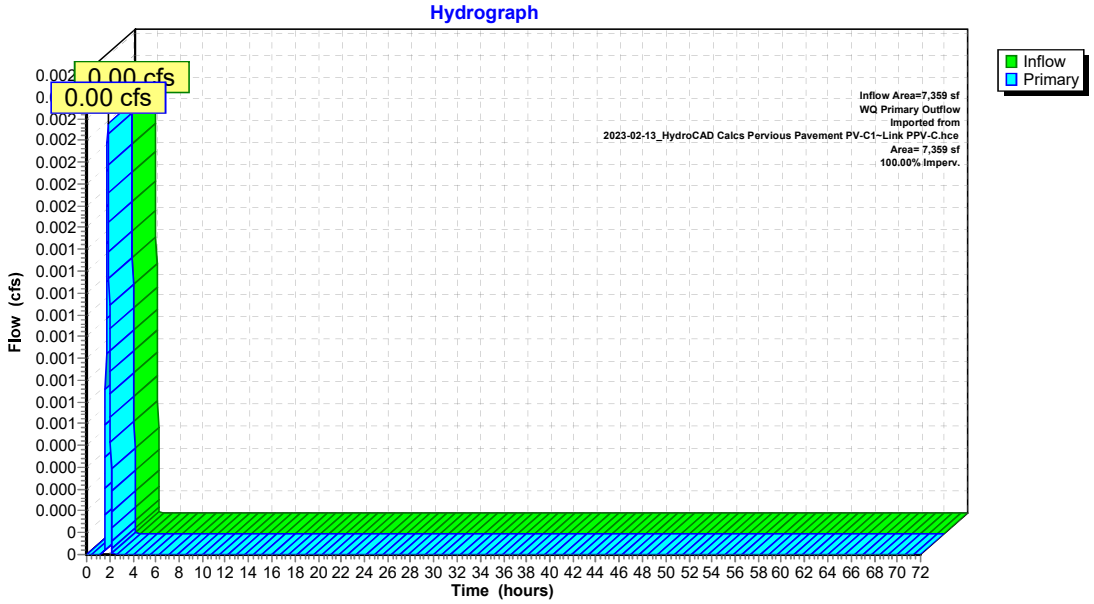
Summary for Link PPV-C: Pervious Pavement System Building C

Inflow Area = 7,359 sf,100.00% Impervious, Inflow Depth = 0.00" for WQ event
Inflow = 0.00 cfs @ 1.83 hrs, Volume= 2 cf
Primary = 0.00 cfs @ 1.83 hrs, Volume= 2 cf, Atten= 0%, Lag= 0.0 min
Routed to Link PPV : Pervious Pavement Systems

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

WQ Primary Outflow Imported from 2023-02-13_HydroCAD Calcs Pervious Pavement PV-C1~Link PPV-C.hce

Link PPV-C: Pervious Pavement System Building C



Time span=0.00-72.00 hrs, dt=0.02 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E-1A: EXISTING DRAINAGE TO LOT 13 Runoff Area=91,865 sf 0.00% Impervious Runoff Depth=1.10"
Flow Length=424' Tc=12.9 min CN=72/0 Runoff=2.03 cfs 8,431 cf

Subcatchment E-1B: EXISTING DRAINAGE UNDETAINED TO ROADWAY Runoff Area=108,912 sf 0.00% Impervious Runoff Depth=0.99"
Flow Length=281' Tc=12.6 min CN=70/0 Runoff=2.13 cfs 8,982 cf

Subcatchment P-1A: Proposed Drainage to Bioretention Area B1 Runoff Area=17,717 sf 20.82% Impervious Runoff Depth=1.95"
Flow Length=99' Tc=6.0 min CN=80/98 Runoff=0.89 cfs 2,880 cf

Subcatchment P-1B: Proposed Drainage to Bioretention Area A.1 Runoff Area=5,136 sf 13.92% Impervious Runoff Depth=1.50"
Flow Length=173' Tc=13.4 min CN=74/98 Runoff=0.15 cfs 642 cf

Subcatchment P-1C: Proposed Drainage to Bioretention Area A.2 Runoff Area=39,200 sf 47.79% Impervious Runoff Depth=2.18"
Flow Length=305' Tc=8.7 min CN=74/98 Runoff=1.88 cfs 7,132 cf

Subcatchment P-1E: Proposed Drainage Undetained to Valley Road Runoff Area=124,291 sf 0.00% Impervious Runoff Depth=0.99"
Flow Length=518' Tc=20.9 min CN=70/0 Runoff=1.93 cfs 10,250 cf

Reach SW-1: Rear Wall Swale (SW-1) Avg. Flow Depth=0.05' Max Vel=2.40 fps Inflow=1.93 cfs 10,250 cf
n=0.030 L=67.2' S=0.1414 '/' Capacity=102.47 cfs Outflow=1.93 cfs 10,250 cf

Reach SW-2: Rear Wall Swale (SW-2) Avg. Flow Depth=0.06' Max Vel=1.92 fps Inflow=1.93 cfs 10,250 cf
n=0.030 L=60.0' S=0.0667 '/' Capacity=70.37 cfs Outflow=1.93 cfs 10,250 cf

Reach SW-3: Rear Wall Swale (SW-3) Avg. Flow Depth=0.07' Max Vel=1.51 fps Inflow=1.93 cfs 10,250 cf
n=0.030 L=129.4' S=0.0309 '/' Capacity=47.92 cfs Outflow=1.92 cfs 10,250 cf

Pond A: Above Ground Bioretention Area (A) Peak Elev=329.38' Storage=2,475 cf Inflow=2.01 cfs 7,774 cf
Discarded=0.03 cfs 3,370 cf Primary=1.26 cfs 4,404 cf Secondary=0.00 cfs 0 cf Outflow=1.29 cfs 7,774 cf

Pond B: Above Ground Bioretention Area (B) Peak Elev=316.31' Storage=2,325 cf Inflow=2.16 cfs 8,573 cf
Discarded=0.03 cfs 1,699 cf Primary=0.94 cfs 6,874 cf Secondary=0.00 cfs 0 cf Outflow=0.97 cfs 8,573 cf

Link POI-1: POI-1 Existing Drainage Within Valley Road Inflow=0.94 cfs 6,874 cf
Primary=0.94 cfs 6,874 cf

Link PPV: Pervious Pavement Systems Inflow=0.53 cfs 1,289 cf
Primary=0.53 cfs 1,289 cf

Link PPV-A: 2-Year Primary Outflow Imported from 2023-02-13_HydroCAD Calcs Pervious Pavement PV-A1~Link PPV-A.hce Inflow=0.17 cfs 431 cf
Area= 9,208 sf 98.96% Imperv. Primary=0.17 cfs 431 cf

Link PPV-B: 2-Year Primary Outflow Imported from 2023-02-13_HydroCAD Calcs Pervious Pavement PV-B1~Link PPV-B.hce Inflow=0.20 cfs 462 cf
Area= 8,713 sf 98.88% Imperv. Primary=0.20 cfs 462 cf

Link PPV-C: 2-Year Primary Outflow Imported from 2023-02-13_HydroCAD Calcs Pervious Pavement PV-C1~Link PPV-C.hce Inflow=0.17 cfs 397 cf
Area= 7,359 sf 100.00% Imperv. Primary=0.17 cfs 397 cf

Total Runoff Area = 387,121 sf Runoff Volume = 38,318 cf Average Runoff Depth = 1.19"
94.02% Pervious = 363,984 sf 5.98% Impervious = 23,137 sf

Summary for Subcatchment E-1A: EXISTING DRAINAGE TO LOT 13

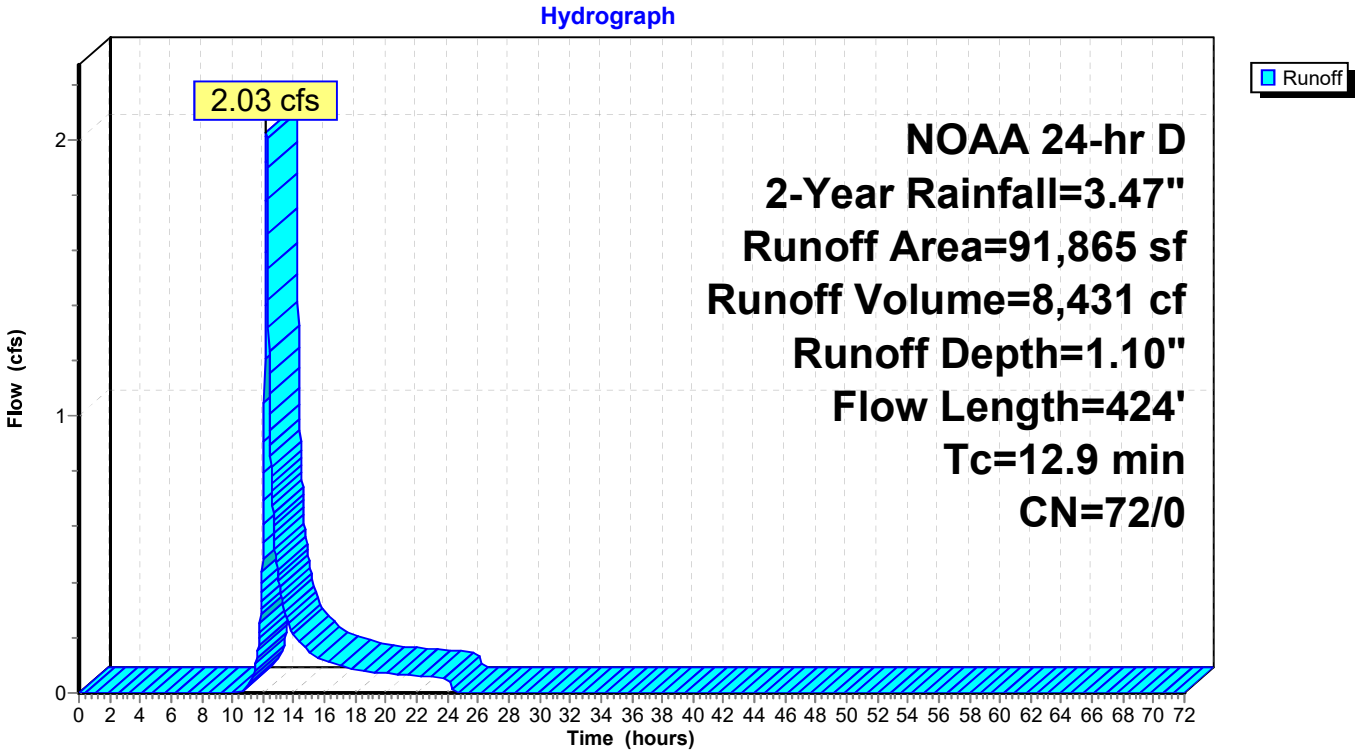
Runoff = 2.03 cfs @ 12.22 hrs, Volume= 8,431 cf, Depth= 1.10"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
NOAA 24-hr D 2-Year Rainfall=3.47"

Area (sf)	CN	Description
66,518	70	Woods, Good, HSG C
20,121	74	>75% Grass cover, Good, HSG C
5,226	98	Water Surface, 0% imp, HSG C
91,865	72	Weighted Average
91,865	72	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	73	0.0260	0.18		**Sheet Flow, B1-B2** Grass: Short n= 0.150 P2= 3.47"
0.6	52	0.0370	1.35		**Shallow Concentrated Flow, B2-B3** Short Grass Pasture Kv= 7.0 fps
1.5	98	0.0255	1.12		**Shallow Concentrated Flow, B3-B4** Short Grass Pasture Kv= 7.0 fps
0.6	37	0.0243	1.09		**Shallow Concentrated Flow, B4-B5** Short Grass Pasture Kv= 7.0 fps
0.2	16	0.0243	1.09		**Shallow Concentrated Flow, B5-B6** Short Grass Pasture Kv= 7.0 fps
0.6	23	0.0087	0.65		**Shallow Concentrated Flow, B6-B7** Short Grass Pasture Kv= 7.0 fps
0.2	15	0.0400	1.40		**Shallow Concentrated Flow, B7-B8** Short Grass Pasture Kv= 7.0 fps
1.1	45	0.0100	0.70		**Shallow Concentrated Flow, B8-B9** Short Grass Pasture Kv= 7.0 fps
1.2	47	0.0083	0.64		**Shallow Concentrated Flow, B-9-B10** Short Grass Pasture Kv= 7.0 fps
0.3	18	0.0166	0.90		**Shallow Concentrated Flow, B10-B11** Short Grass Pasture Kv= 7.0 fps
12.9	424	Total			

Subcatchment E-1A: EXISTING DRAINAGE TO LOT 13



Summary for Subcatchment E-1B: EXISTING DRAINAGE UNDETAINED TO ROADWAY

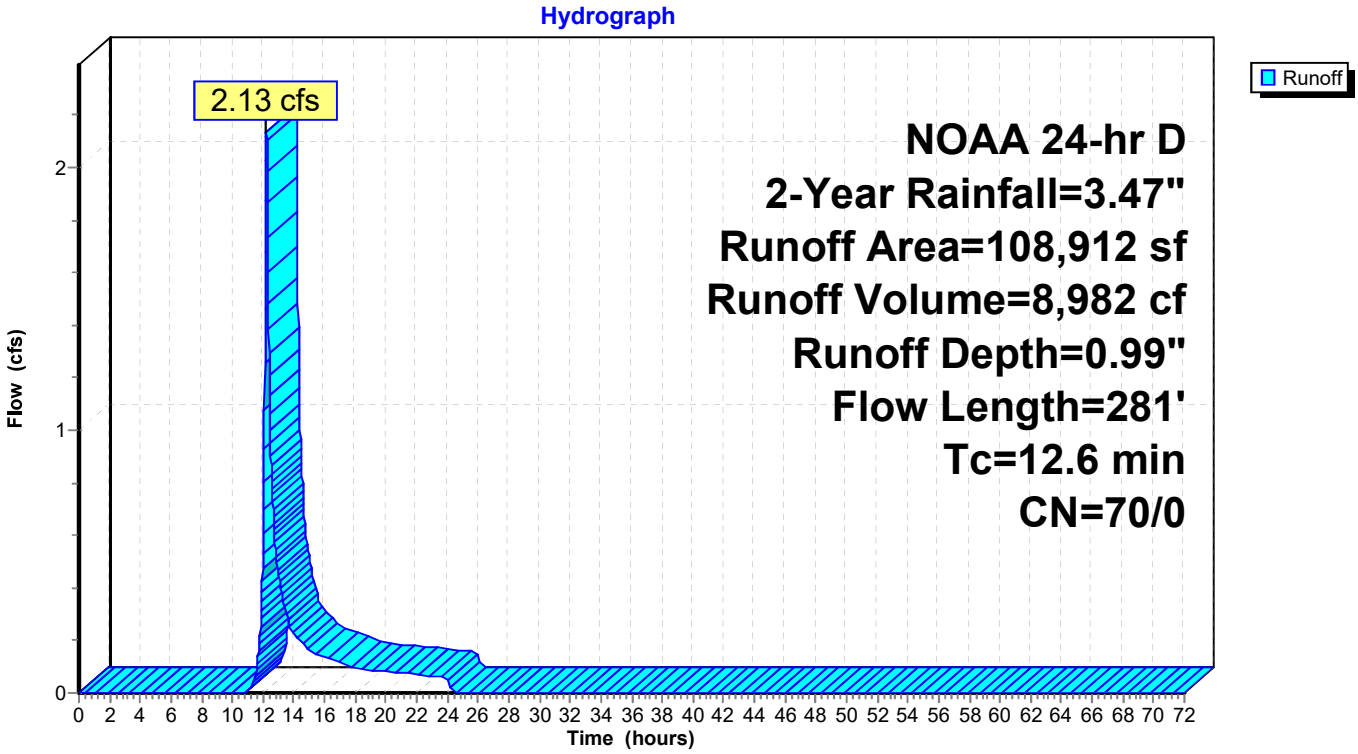
Runoff = 2.13 cfs @ 12.21 hrs, Volume= 8,982 cf, Depth= 0.99"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
NOAA 24-hr D 2-Year Rainfall=3.47"

Area (sf)	CN	Description
108,912	70	Woods, Good, HSG C
108,912	70	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0210	0.18		**Sheet Flow, A1-A2** Grass: Short n= 0.150 P2= 3.47"
1.5	68	0.0111	0.74		**Shallow Concentrated Flow, A2-A3** Short Grass Pasture Kv= 7.0 fps
1.6	95	0.0200	0.99		**Shallow Concentrated Flow, A3-A4** Short Grass Pasture Kv= 7.0 fps
0.3	18	0.0200	0.99		**Shallow Concentrated Flow, A4-A5** Short Grass Pasture Kv= 7.0 fps
12.6	281	Total			

Subcatchment E-1B: EXISTING DRAINAGE UNDETAINED TO ROADWAY



Summary for Subcatchment P-1A: Proposed Drainage to Bioretention Area B1

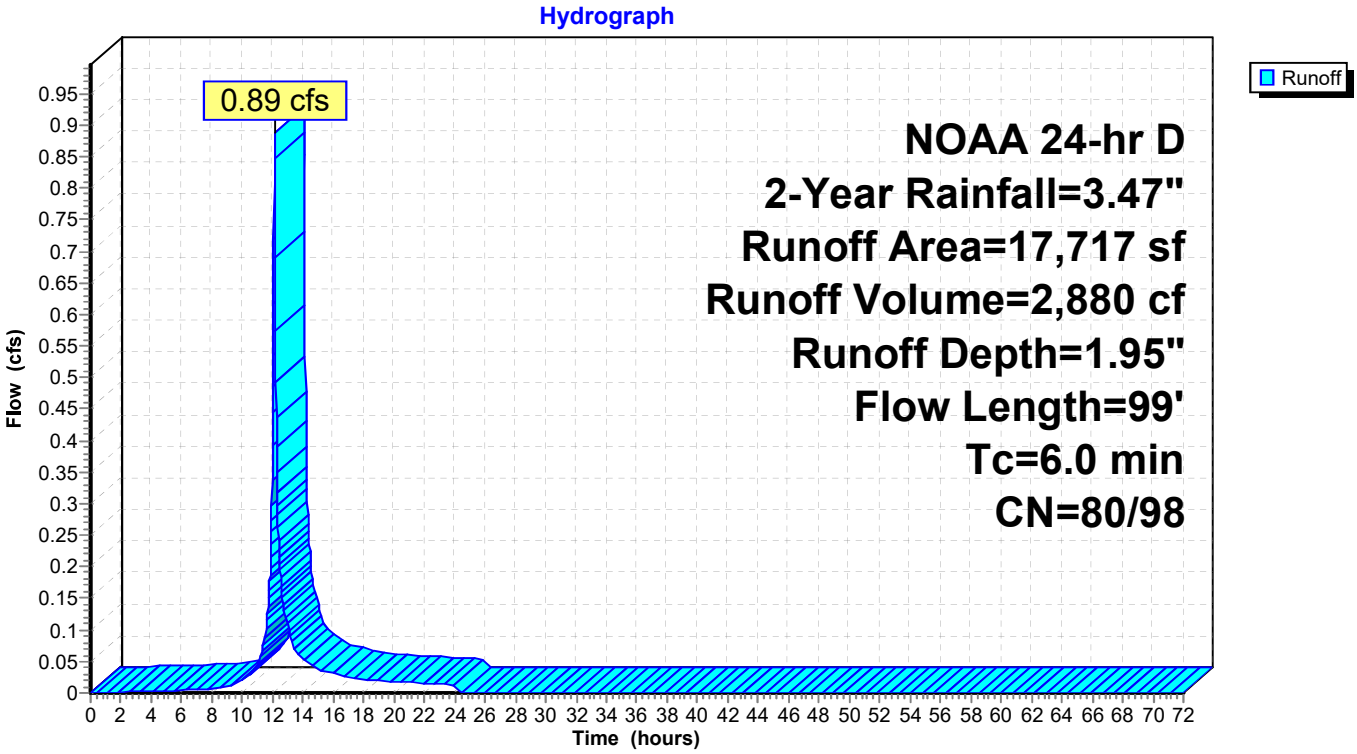
Runoff = 0.89 cfs @ 12.13 hrs, Volume= 2,880 cf, Depth= 1.95"
Routed to Pond B : Above Ground Bioretention Area (B)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
NOAA 24-hr D 2-Year Rainfall=3.47"

	Area (sf)	CN	Description
	14,029	80	>75% Grass cover, Good, HSG D
*	3,688	98	Impervious Area
	17,717	84	Weighted Average
	14,029	80	79.18% Pervious Area
	3,688	98	20.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.7	19	0.0157	0.12		**Sheet Flow, A1-A2** Grass: Short n= 0.150 P2= 3.47"
0.5	25	0.0120	0.77		**Shallow Concentrated Flow, A2-A3** Short Grass Pasture Kv= 7.0 fps
0.8	37	0.0108	0.73		**Shallow Concentrated Flow, A3-A4** Short Grass Pasture Kv= 7.0 fps
0.2	18	0.0333	1.28		**Shallow Concentrated Flow, A4-A5** Short Grass Pasture Kv= 7.0 fps
1.8					**Direct Entry, To Meet Minimum**
6.0	99	Total			

Subcatchment P-1A: Proposed Drainage to Bioretention Area B1



Summary for Subcatchment P-1B: Proposed Drainage to Bioretention Area A.1

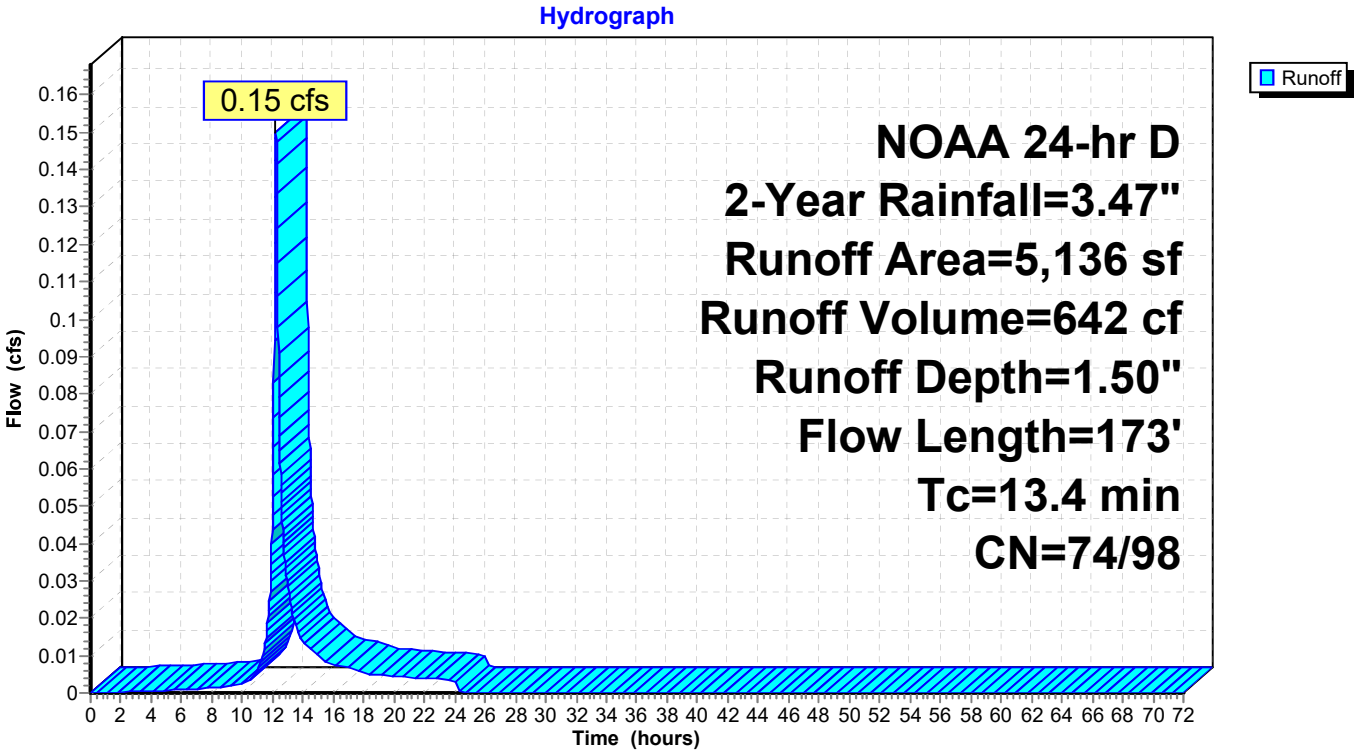
Runoff = 0.15 cfs @ 12.22 hrs, Volume= 642 cf, Depth= 1.50"
Routed to Pond A : Above Ground Bioretention Area (A)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
NOAA 24-hr D 2-Year Rainfall=3.47"

	Area (sf)	CN	Description
*	715	98	Impervious Area
	4,421	74	>75% Grass cover, Good, HSG C
	5,136	77	Weighted Average
	4,421	74	86.08% Pervious Area
	715	98	13.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	44	0.0045	0.08		**Sheet Flow, B1-B2** Grass: Short n= 0.150 P2= 3.47"
0.8	22	0.0044	0.46		**Shallow Concentrated Flow, B2-B3** Short Grass Pasture Kv= 7.0 fps
0.8	22	0.0044	0.46		**Shallow Concentrated Flow, B3-B4** Short Grass Pasture Kv= 7.0 fps
1.2	30	0.0033	0.40		**Shallow Concentrated Flow, B4-B5** Short Grass Pasture Kv= 7.0 fps
1.2	30	0.0033	0.40		**Shallow Concentrated Flow, B5-B6** Short Grass Pasture Kv= 7.0 fps
0.5	25	0.0120	0.77		**Shallow Concentrated Flow, B6-B7** Short Grass Pasture Kv= 7.0 fps
13.4	173	Total			

Subcatchment P-1B: Proposed Drainage to Bioretention Area A.1



Summary for Subcatchment P-1C: Proposed Drainage to Bioretention Area A.2

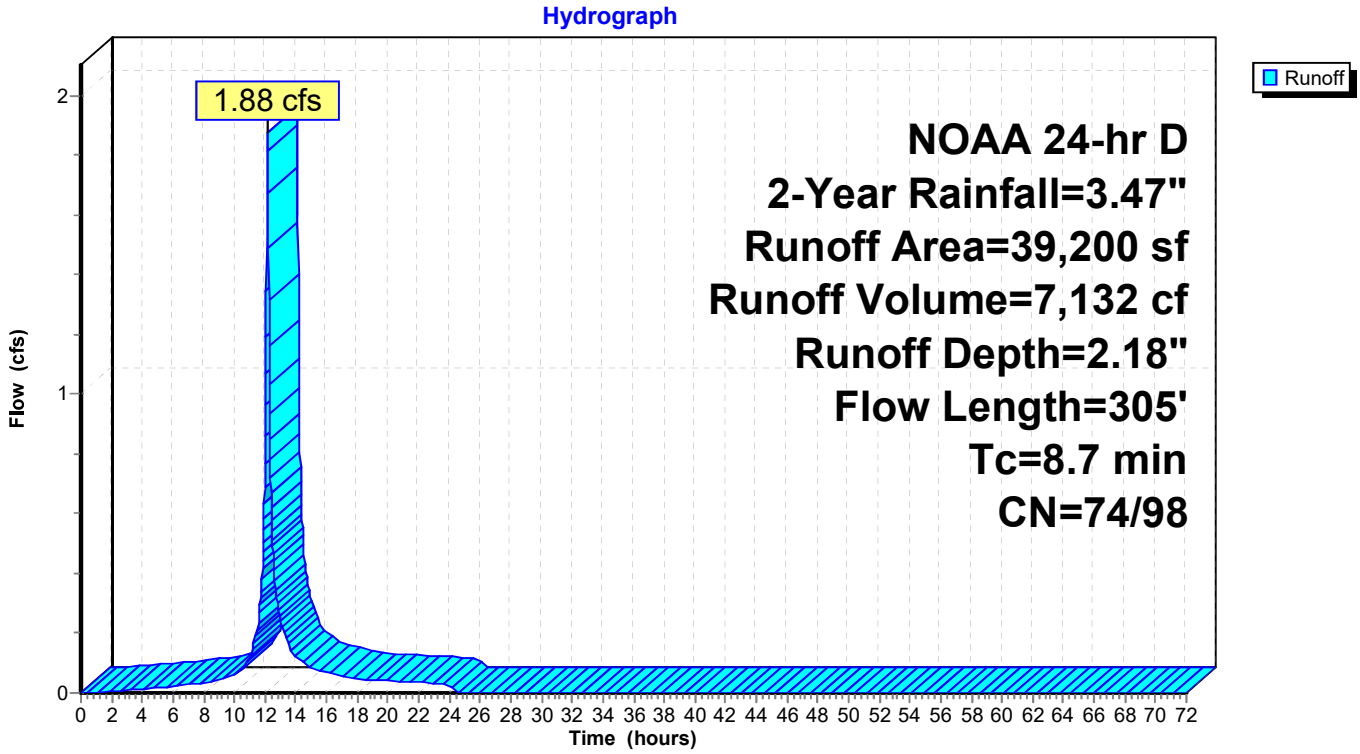
Runoff = 1.88 cfs @ 12.16 hrs, Volume= 7,132 cf, Depth= 2.18"
Routed to Pond A : Above Ground Bioretention Area (A)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
NOAA 24-hr D 2-Year Rainfall=3.47"

Area (sf)	CN	Description
18,734	98	Paved parking, HSG C
20,466	74	>75% Grass cover, Good, HSG C
39,200	85	Weighted Average
20,466	74	52.21% Pervious Area
18,734	98	47.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	61	0.0254	0.18		**Sheet Flow, C1-C2** Grass: Short n= 0.150 P2= 3.47"
0.3	24	0.0033	1.17		**Shallow Concentrated Flow, C2-C3** Paved Kv= 20.3 fps
0.9	77	0.0052	1.46		**Shallow Concentrated Flow, C3-C4** Paved Kv= 20.3 fps
1.0	90	0.0055	1.51		**Shallow Concentrated Flow, C4-C5** Paved Kv= 20.3 fps
0.7	53	0.0038	1.25		**Shallow Concentrated Flow, C5-C6** Paved Kv= 20.3 fps
8.7	305	Total			

Subcatchment P-1C: Proposed Drainage to Bioretention Area A.2



Summary for Subcatchment P-1E: Proposed Drainage Undetained to Valley Road

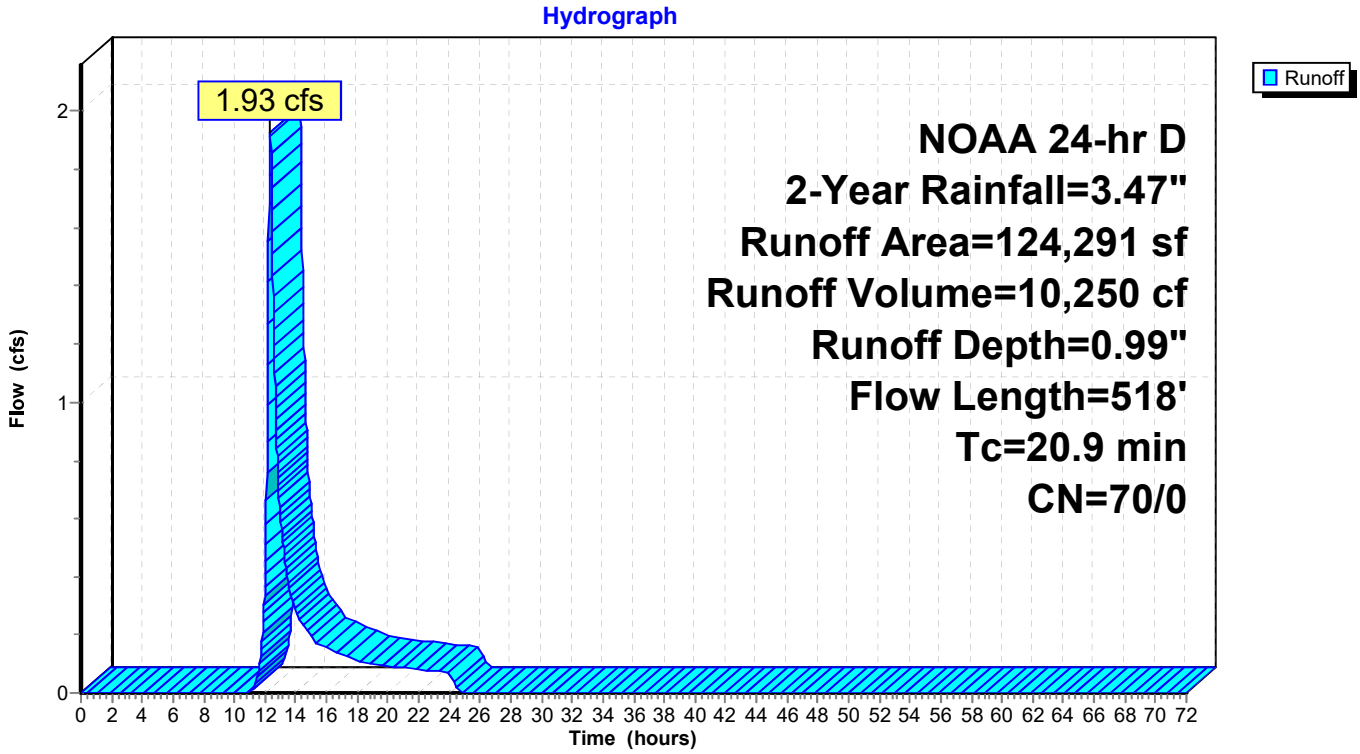
Runoff = 1.93 cfs @ 12.33 hrs, Volume= 10,250 cf, Depth= 0.99"
Routed to Reach SW-1 : Rear Wall Swale (SW-1)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
NOAA 24-hr D 2-Year Rainfall=3.47"

Area (sf)	CN	Description
124,291	70	Woods, Good, HSG C
124,291	70	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.0201	0.18		**Sheet Flow, E1-E2** Grass: Short n= 0.150 P2= 3.47"
1.5	68	0.0111	0.74		**Shallow Concentrated Flow, E2-E3** Short Grass Pasture Kv= 7.0 fps
1.6	95	0.0200	0.99		**Shallow Concentrated Flow, E3-E4** Short Grass Pasture Kv= 7.0 fps
0.7	37	0.0162	0.89		**Shallow Concentrated Flow, E3-E4** Short Grass Pasture Kv= 7.0 fps
1.6	60	0.0083	0.64		**Shallow Concentrated Flow, E5-E6** Short Grass Pasture Kv= 7.0 fps
3.5	96	0.0042	0.45		**Shallow Concentrated Flow, E6-E7** Short Grass Pasture Kv= 7.0 fps
1.8	39	0.0026	0.36		**Shallow Concentrated Flow, E7-E8** Short Grass Pasture Kv= 7.0 fps
0.8	23	0.0043	0.46		**Shallow Concentrated Flow, E8-E9** Short Grass Pasture Kv= 7.0 fps
20.9	518	Total			

Subcatchment P-1E: Proposed Drainage Undetained to Valley Road



Summary for Reach SW-1: Rear Wall Swale (SW-1)

Inflow Area = 124,291 sf, 0.00% Impervious, Inflow Depth = 0.99" for 2-Year event
Inflow = 1.93 cfs @ 12.33 hrs, Volume= 10,250 cf
Outflow = 1.93 cfs @ 12.33 hrs, Volume= 10,250 cf, Atten= 0%, Lag= 0.3 min
Routed to Reach SW-2 : Rear Wall Swale (SW-2)

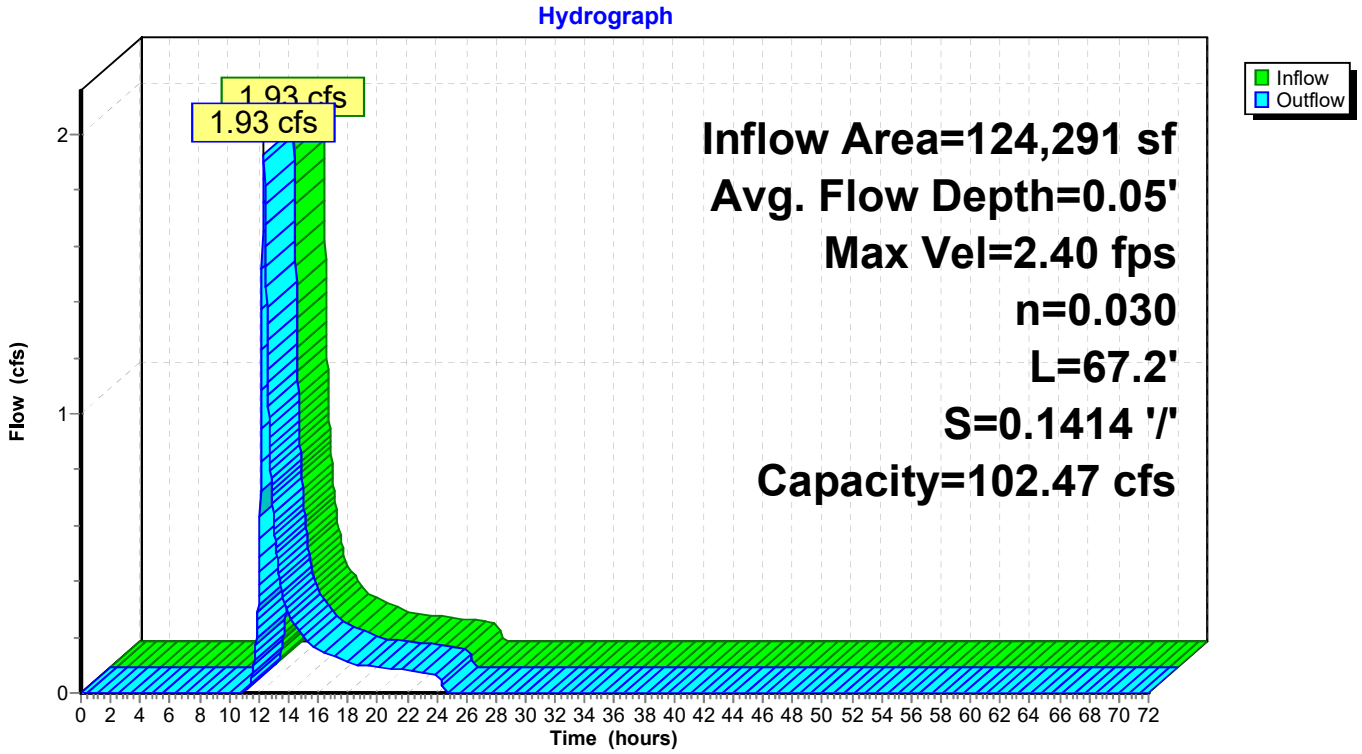
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Max. Velocity= 2.40 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 0.89 fps, Avg. Travel Time= 1.3 min

Peak Storage= 54 cf @ 12.33 hrs
Average Depth at Peak Storage= 0.05' , Surface Width= 17.28'
Bank-Full Depth= 0.50' Flow Area= 9.3 sf, Capacity= 102.47 cfs

17.00' x 0.50' deep channel, n= 0.030 Short grass
Side Slope Z-value= 3.0 '/' Top Width= 20.00'
Length= 67.2' Slope= 0.1414 '/'
Inlet Invert= 389.50', Outlet Invert= 380.00'

‡

Reach SW-1: Rear Wall Swale (SW-1)



Summary for Reach SW-2: Rear Wall Swale (SW-2)

Inflow Area = 124,291 sf, 0.00% Impervious, Inflow Depth = 0.99" for 2-Year event
Inflow = 1.93 cfs @ 12.33 hrs, Volume= 10,250 cf
Outflow = 1.93 cfs @ 12.34 hrs, Volume= 10,250 cf, Atten= 0%, Lag= 0.3 min
Routed to Reach SW-3 : Rear Wall Swale (SW-3)

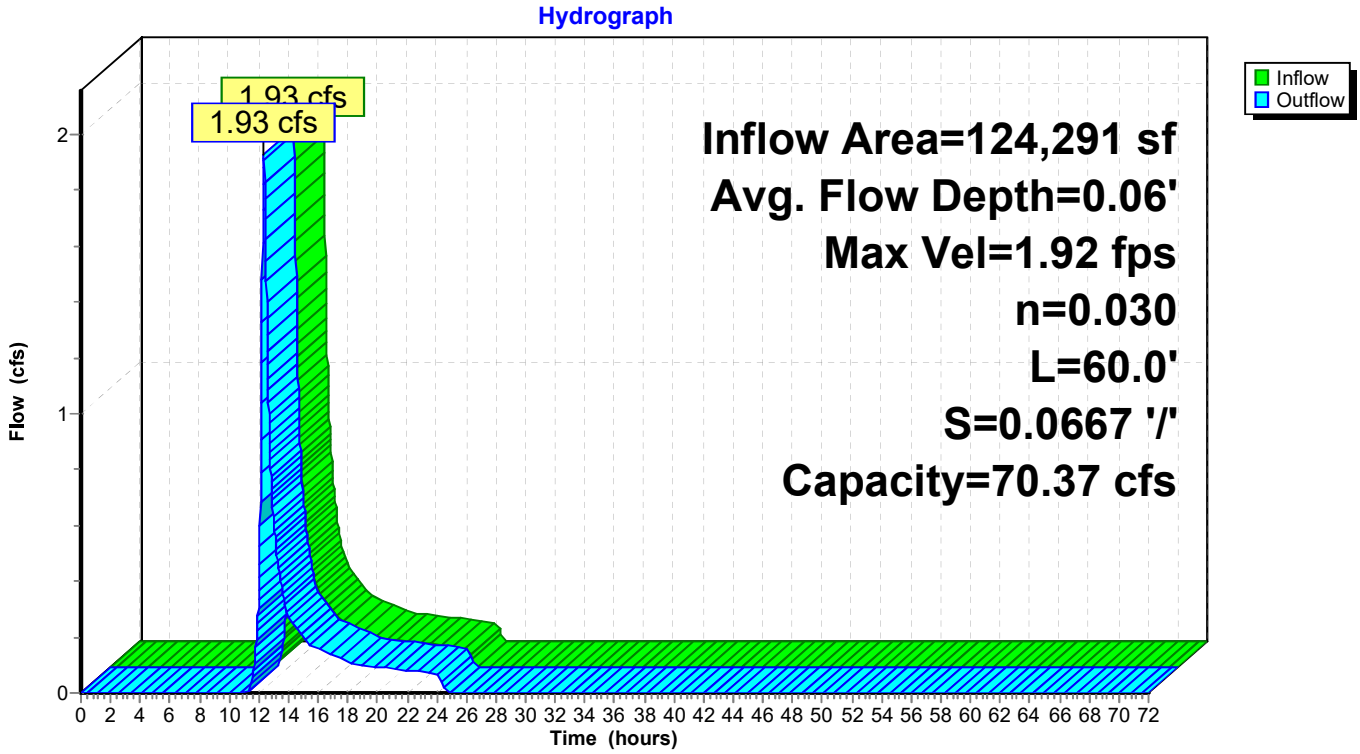
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Max. Velocity= 1.92 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 0.70 fps, Avg. Travel Time= 1.4 min

Peak Storage= 60 cf @ 12.34 hrs
Average Depth at Peak Storage= 0.06' , Surface Width= 17.35'
Bank-Full Depth= 0.50' Flow Area= 9.3 sf, Capacity= 70.37 cfs

17.00' x 0.50' deep channel, n= 0.030 Short grass
Side Slope Z-value= 3.0 '/' Top Width= 20.00'
Length= 60.0' Slope= 0.0667 '/'
Inlet Invert= 380.00', Outlet Invert= 376.00'

‡

Reach SW-2: Rear Wall Swale (SW-2)



Summary for Reach SW-3: Rear Wall Swale (SW-3)

Inflow Area = 124,291 sf, 0.00% Impervious, Inflow Depth = 0.99" for 2-Year event
Inflow = 1.93 cfs @ 12.34 hrs, Volume= 10,250 cf
Outflow = 1.92 cfs @ 12.35 hrs, Volume= 10,250 cf, Atten= 0%, Lag= 0.9 min

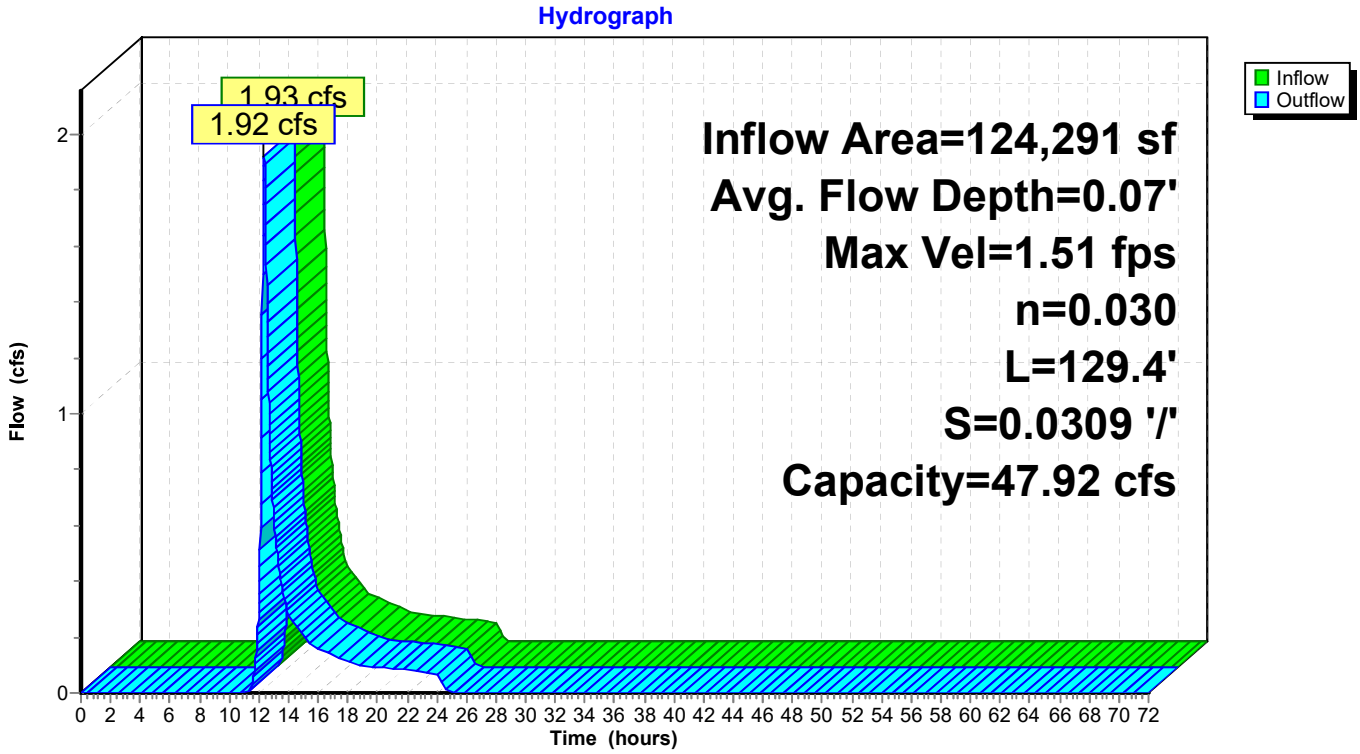
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Max. Velocity= 1.51 fps, Min. Travel Time= 1.4 min
Avg. Velocity = 0.54 fps, Avg. Travel Time= 4.0 min

Peak Storage= 164 cf @ 12.35 hrs
Average Depth at Peak Storage= 0.07' , Surface Width= 17.44'
Bank-Full Depth= 0.50' Flow Area= 9.3 sf, Capacity= 47.92 cfs

17.00' x 0.50' deep channel, n= 0.030 Short grass
Side Slope Z-value= 3.0 '/' Top Width= 20.00'
Length= 129.4' Slope= 0.0309 '/'
Inlet Invert= 376.00', Outlet Invert= 372.00'

‡

Reach SW-3: Rear Wall Swale (SW-3)



Summary for Pond A: Above Ground Bioretention Area (A)

Inflow Area = 44,336 sf, 43.87% Impervious, Inflow Depth = 2.10" for 2-Year event
Inflow = 2.01 cfs @ 12.16 hrs, Volume= 7,774 cf
Outflow = 1.29 cfs @ 12.26 hrs, Volume= 7,774 cf, Atten= 36%, Lag= 6.2 min
Discarded = 0.03 cfs @ 12.26 hrs, Volume= 3,370 cf
Primary = 1.26 cfs @ 12.26 hrs, Volume= 4,404 cf
Routed to Pond B : Above Ground Bioretention Area (B)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond B : Above Ground Bioretention Area (B)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 329.38' @ 12.26 hrs Surf.Area= 2,064 sf Storage= 2,475 cf

Plug-Flow detention time= 337.4 min calculated for 7,772 cf (100% of inflow)
Center-of-Mass det. time= 337.7 min (1,133.9 - 796.2)

Volume	Invert	Avail.Storage	Storage Description
#1	328.00'	7,803 cf	**Above Ground Bioretention Area (A) (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
328.00	1,530	162.0	0	0	1,530
329.00	1,910	176.9	1,716	1,716	1,966
330.00	2,325	192.7	2,114	3,831	2,466
331.00	2,764	208.1	2,541	6,372	2,997
331.50	2,962	213.8	1,431	7,803	3,215

Device	Routing	Invert	Outlet Devices
#1	Primary	326.50'	**12.0" Round Culvert** L= 64.0' Ke= 0.500 Inlet / Outlet Invert= 326.50' / 325.86' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	329.00'	**20.0" W x 6.0" H Vert. Low Flow** C= 0.600 Limited to weir flow at low heads
#3	Device 1	330.23'	**32.0" x 32.0" Horiz. Overflow Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	331.00'	**10.0' long x 7.0' breadth Emergency Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.40 2.52 2.70 2.68 2.68 2.67 2.66 2.65 2.65 2.65 2.66 2.65 2.66 2.68 2.70 2.73

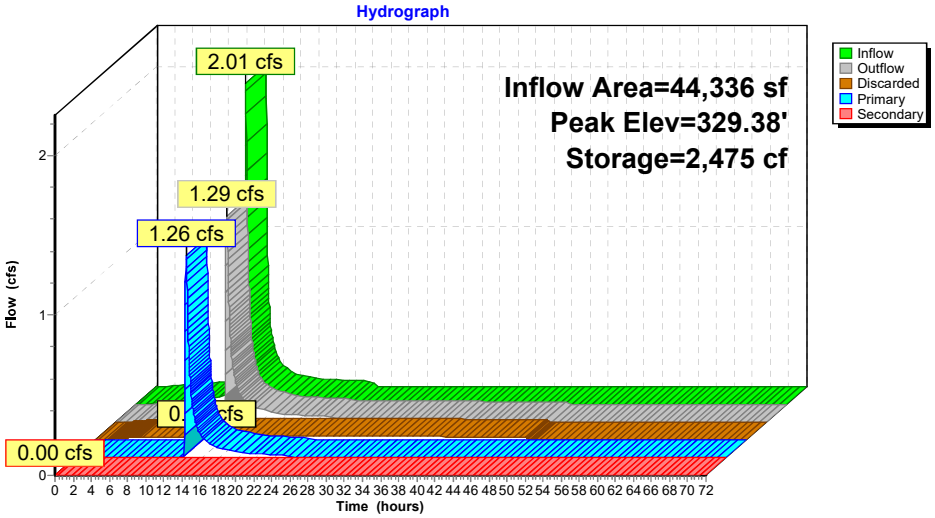
#5	Discarded	328.00'	2.78 **0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 310.00' Phase-In= 0.01'	

Discarded OutFlow Max=0.03 cfs @ 12.26 hrs HW=329.38' (Free Discharge)
└**5=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=1.26 cfs @ 12.26 hrs HW=329.38' TW=315.86' (Dynamic Tailwater)
└**1=Culvert** (Passes 1.26 cfs of 5.58 cfs potential flow)
└**2=Low Flow** (Orifice Controls 1.26 cfs @ 1.98 fps)
└**3=Overflow Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=328.00' TW=315.00' (Dynamic Tailwater)
└**4=Emergency Spillway** (Controls 0.00 cfs)

Pond A: Above Ground Bioretention Area (A)



Summary for Pond B: Above Ground Bioretention Area (B)

Inflow Area = 87,333 sf, 55.22% Impervious, Inflow Depth = 1.18" for 2-Year event
Inflow = 2.16 cfs @ 12.26 hrs, Volume= 8,573 cf
Outflow = 0.97 cfs @ 12.65 hrs, Volume= 8,573 cf, Atten= 55%, Lag= 23.7 min
Discarded = 0.03 cfs @ 12.65 hrs, Volume= 1,699 cf
Primary = 0.94 cfs @ 12.65 hrs, Volume= 6,874 cf
Routed to Link POI-1 : POI-1 Existing Drainage Within Valley Road
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link POI-1 : POI-1 Existing Drainage Within Valley Road

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 316.31' @ 12.65 hrs Surf.Area= 2,058 sf Storage= 2,325 cf

Plug-Flow detention time= 77.8 min calculated for 8,573 cf (100% of inflow)
Center-of-Mass det. time= 77.7 min (901.9 - 824.2)

Volume	Invert	Avail.Storage	Storage Description
#1	315.00'	11,202 cf	**Above Ground Bioretention Area (A) (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
315.00	1,499	165.1	0	0	1,499
316.00	1,923	188.6	1,707	1,707	2,184
317.00	2,373	210.7	2,144	3,851	2,914
318.00	2,836	232.0	2,601	6,452	3,696
319.00	3,284	250.9	3,057	9,509	4,461
319.50	3,491	258.4	1,693	11,202	4,791

Device	Routing	Invert	Outlet Devices
#1	Primary	314.04'	**12.0" Round Culvert** L= 30.0' Ke= 0.500 Inlet / Outlet Invert= 314.04' / 313.74' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	315.30'	**10.0" W x 3.0" H Vert. Low Flow** C= 0.600 Limited to weir flow at low heads
#3	Device 1	316.35'	**11.0" W x 5.0" H Vert. Control Orifice** C= 0.600 Limited to weir flow at low heads
#4	Device 1	318.40'	**32.0" x 32.0" Horiz. Overflow Grate** C= 0.600 Limited to weir flow at low heads
#5	Secondary	319.00'	**10.0' long x 8.0' breadth Emergency Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00

5.50
Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

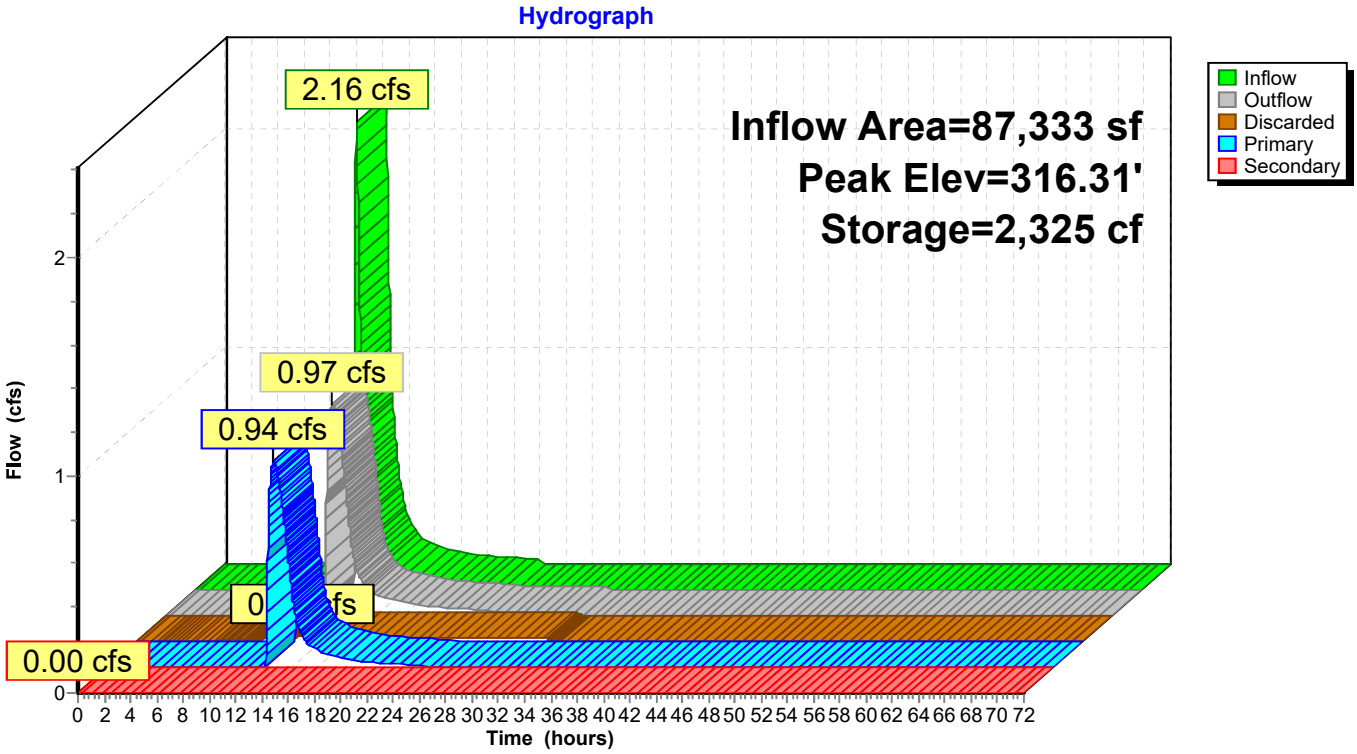
#6	Discarded	315.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 310.00' Phase-In= 0.01'

Discarded OutFlow Max=0.03 cfs @ 12.65 hrs HW=316.31' (Free Discharge)
└**6=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.94 cfs @ 12.65 hrs HW=316.31' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.94 cfs of 5.03 cfs potential flow)
  ├**2=Low Flow** (Orifice Controls 0.94 cfs @ 4.53 fps)
  ├**3=Control Orifice** (Controls 0.00 cfs)
  └**4=Overflow Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=315.00' TW=0.00' (Dynamic Tailwater)
└**5=Emergency Spillway** (Controls 0.00 cfs)

Pond B: Above Ground Bioretention Area (B)

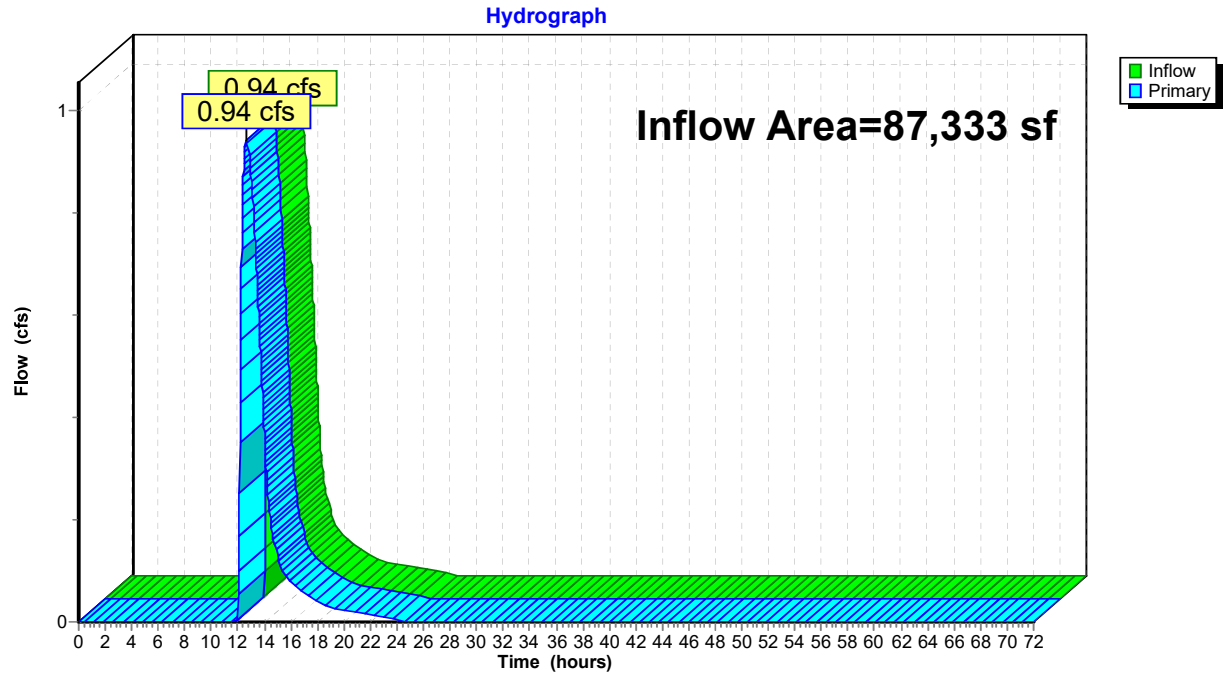


Summary for Link POI-1: POI-1 Existing Drainage Within Valley Road

Inflow Area = 87,333 sf, 55.22% Impervious, Inflow Depth = 0.94" for 2-Year event
Inflow = 0.94 cfs @ 12.65 hrs, Volume= 6,874 cf
Primary = 0.94 cfs @ 12.65 hrs, Volume= 6,874 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

Link POI-1: POI-1 Existing Drainage Within Valley Road

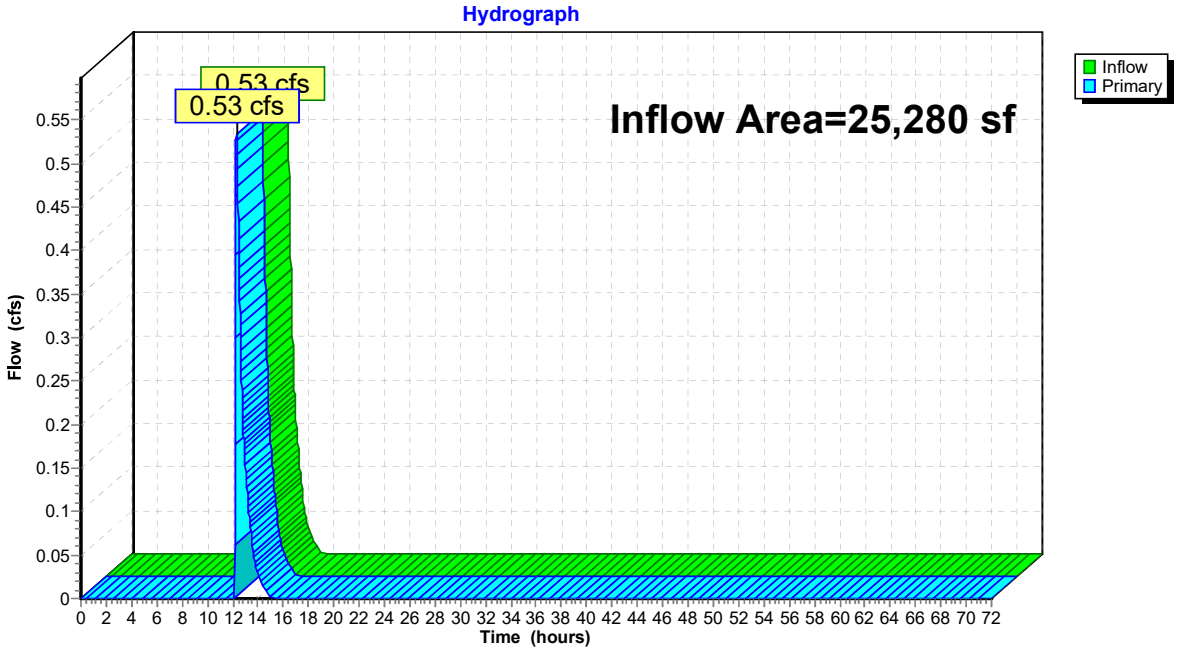


Summary for Link PPV: Pervious Pavement Systems

Inflow Area = 25,280 sf, 99.23% Impervious, Inflow Depth = 0.61" for 2-Year event
Inflow = 0.53 cfs @ 12.30 hrs, Volume= 1,289 cf
Primary = 0.53 cfs @ 12.30 hrs, Volume= 1,289 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond B : Above Ground Bioretention Area (B)

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

Link PPV: Pervious Pavement Systems



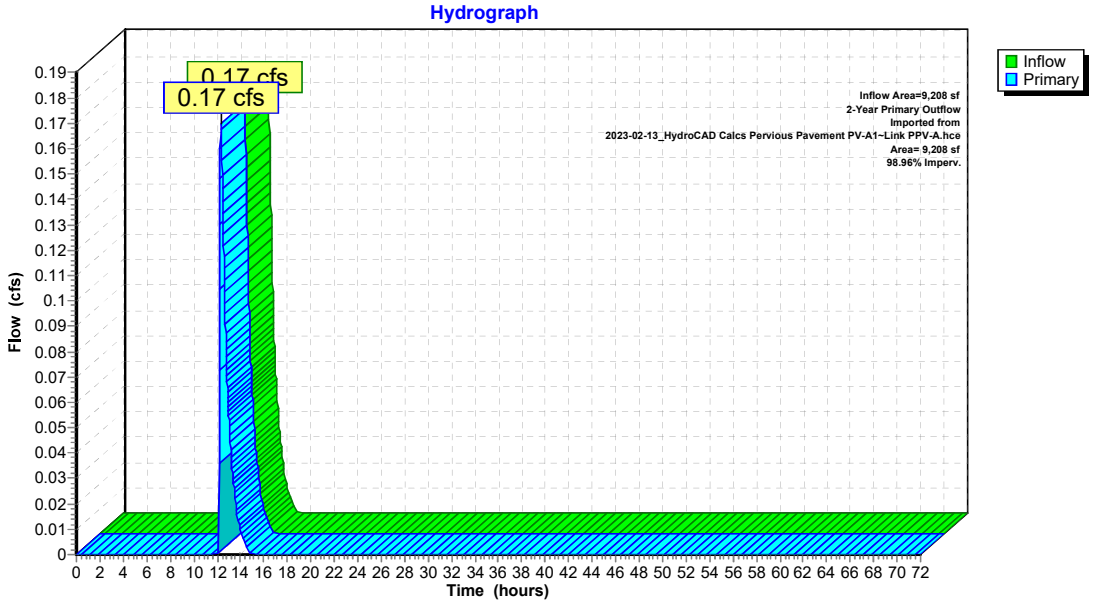
Summary for Link PPV-A: Pervious Pavement System Building A

Inflow Area = 9,208 sf, 98.96% Impervious, Inflow Depth = 0.56" for 2-Year event
Inflow = 0.17 cfs @ 12.34 hrs, Volume= 431 cf
Primary = 0.17 cfs @ 12.34 hrs, Volume= 431 cf, Atten= 0%, Lag= 0.0 min
Routed to Link PPV : Pervious Pavement Systems

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

2-Year Primary Outflow Imported from 2023-02-13_HydroCAD Calcs Pervious Pavement PV-A1~Link PPV-A.hce

Link PPV-A: Pervious Pavement System Building A



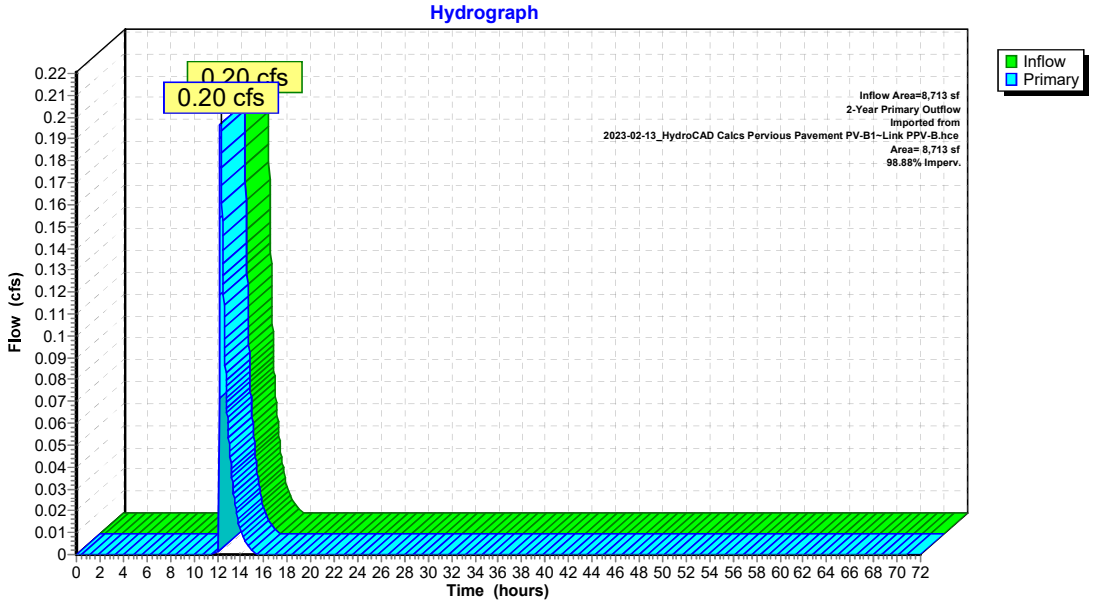
Summary for Link PPV-B: Pervious Pavement System Building B

Inflow Area = 8,713 sf, 98.88% Impervious, Inflow Depth = 0.64" for 2-Year event
Inflow = 0.20 cfs @ 12.29 hrs, Volume= 462 cf
Primary = 0.20 cfs @ 12.29 hrs, Volume= 462 cf, Atten= 0%, Lag= 0.0 min
Routed to Link PPV : Pervious Pavement Systems

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

2-Year Primary Outflow Imported from 2023-02-13_HydroCAD Calcs Pervious Pavement PV-B1~Link PPV-B.hce

Link PPV-B: Pervious Pavement System Building B



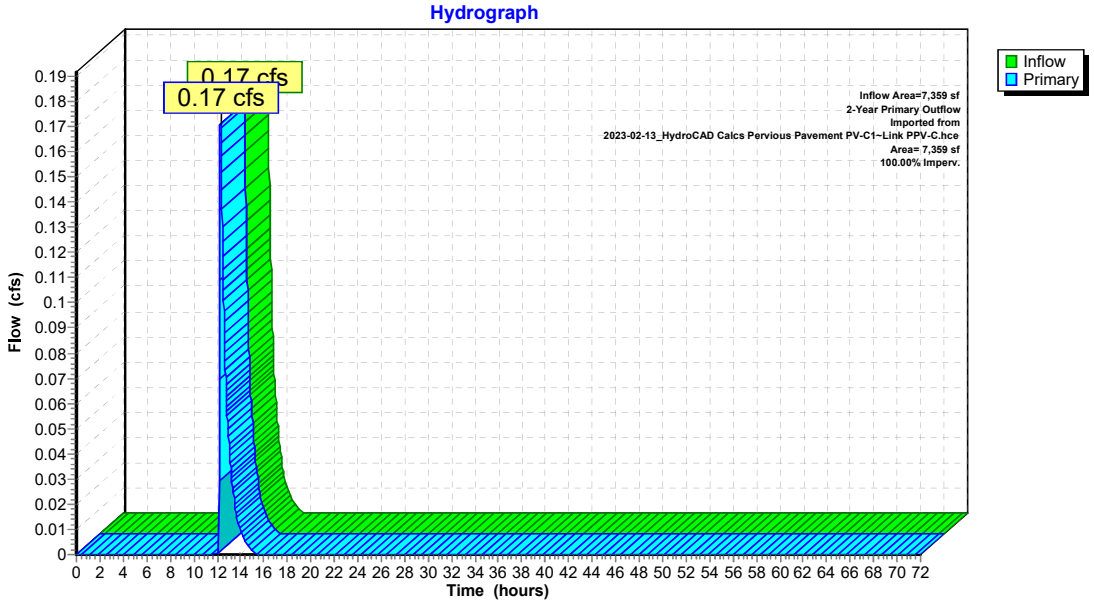
Summary for Link PPV-C: Pervious Pavement System Building C

Inflow Area = 7,359 sf,100.00% Impervious, Inflow Depth = 0.65" for 2-Year event
Inflow = 0.17 cfs @ 12.29 hrs, Volume= 397 cf
Primary = 0.17 cfs @ 12.29 hrs, Volume= 397 cf, Atten= 0%, Lag= 0.0 min
Routed to Link PPV : Pervious Pavement Systems

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

2-Year Primary Outflow Imported from 2023-02-13_HydroCAD Calcs Pervious Pavement PV-C1~Link PPV-C.hce

Link PPV-C: Pervious Pavement System Building C



Time span=0.00-72.00 hrs, dt=0.02 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E-1A: EXISTING DRAINAGE TO LOT 13 Runoff Area=91,865 sf 0.00% Impervious Runoff Depth=2.38"
Flow Length=424' Tc=12.9 min CN=72/0 Runoff=4.58 cfs 18,193 cf

Subcatchment E-1B: EXISTING DRAINAGE UNDETAINED TO ROADWAY Runoff Area=108,912 sf 0.00% Impervious Runoff Depth=2.21"
Flow Length=281' Tc=12.6 min CN=70/0 Runoff=5.06 cfs 20,044 cf

Subcatchment P-1A: Proposed Drainage to Bioretention Area B1 Runoff Area=17,717 sf 20.82% Impervious Runoff Depth=3.49"
Flow Length=99' Tc=6.0 min CN=80/98 Runoff=1.58 cfs 5,152 cf

Subcatchment P-1B: Proposed Drainage to Bioretention Area A.1 Runoff Area=5,136 sf 13.92% Impervious Runoff Depth=2.89"
Flow Length=173' Tc=13.4 min CN=74/98 Runoff=0.30 cfs 1,237 cf

Subcatchment P-1C: Proposed Drainage to Bioretention Area A.2 Runoff Area=39,200 sf 47.79% Impervious Runoff Depth=3.72"
Flow Length=305' Tc=8.7 min CN=74/98 Runoff=3.22 cfs 12,142 cf

Subcatchment P-1E: Proposed Drainage Undetained to Valley Road Runoff Area=124,291 sf 0.00% Impervious Runoff Depth=2.21"
Flow Length=518' Tc=20.9 min CN=70/0 Runoff=4.60 cfs 22,874 cf

Reach SW-1: Rear Wall Swale (SW-1) Avg. Flow Depth=0.08' Max Vel=3.39 fps Inflow=4.60 cfs 22,874 cf
n=0.030 L=67.2' S=0.1414 '/' Capacity=102.47 cfs Outflow=4.60 cfs 22,874 cf

Reach SW-2: Rear Wall Swale (SW-2) Avg. Flow Depth=0.10' Max Vel=2.70 fps Inflow=4.60 cfs 22,874 cf
n=0.030 L=60.0' S=0.0667 '/' Capacity=70.37 cfs Outflow=4.60 cfs 22,874 cf

Reach SW-3: Rear Wall Swale (SW-3) Avg. Flow Depth=0.12' Max Vel=2.13 fps Inflow=4.60 cfs 22,874 cf
n=0.030 L=129.4' S=0.0309 '/' Capacity=47.92 cfs Outflow=4.59 cfs 22,874 cf

Pond A: Above Ground Bioretention Area (A) Peak Elev=329.67' Storage=3,086 cf Inflow=3.49 cfs 13,379 cf
Discarded=0.03 cfs 3,506 cf Primary=2.56 cfs 9,873 cf Secondary=0.00 cfs 0 cf Outflow=2.59 cfs 13,379 cf

Pond B: Above Ground Bioretention Area (B) Peak Elev=317.36' Storage=4,725 cf Inflow=5.27 cfs 18,816 cf
Discarded=0.04 cfs 1,936 cf Primary=3.03 cfs 16,880 cf Secondary=0.00 cfs 0 cf Outflow=3.07 cfs 18,816 cf

Link POI-1: POI-1 Existing Drainage Within Valley Road Inflow=3.03 cfs 16,880 cf
Primary=3.03 cfs 16,880 cf

Link PPV: Pervious Pavement Systems Inflow=1.63 cfs 3,791 cf
Primary=1.63 cfs 3,791 cf

Link PPV-A: 10-Year Primary Outflow Imported from 2023-02-13_HydroCAD Calcs Pervious Pavement PV-A1~Link PPV-A.hce Inflow=0.55 cfs 1,315 cf
Area= 9,208 sf 98.96% Imperv. Primary=0.55 cfs 1,315 cf

Link PPV-B: 10-Year Primary Outflow Imported from 2023-02-13_HydroCAD Calcs Pervious Pavement PV-B1~Link PPV-B.hce Inflow=0.58 cfs 1,338 cf
Area= 8,713 sf 98.88% Imperv. Primary=0.58 cfs 1,338 cf

Link PPV-C: 10-Year Primary Outflow Imported from 2023-02-13_HydroCAD Calcs Pervious Pavement PV-C1~Link PPV-C.hce Inflow=0.50 cfs 1,138 cf
Area= 7,359 sf 100.00% Imperv. Primary=0.50 cfs 1,138 cf

Total Runoff Area = 387,121 sf Runoff Volume = 79,641 cf Average Runoff Depth = 2.47"
94.02% Pervious = 363,984 sf 5.98% Impervious = 23,137 sf

Summary for Subcatchment E-1A: EXISTING DRAINAGE TO LOT 13

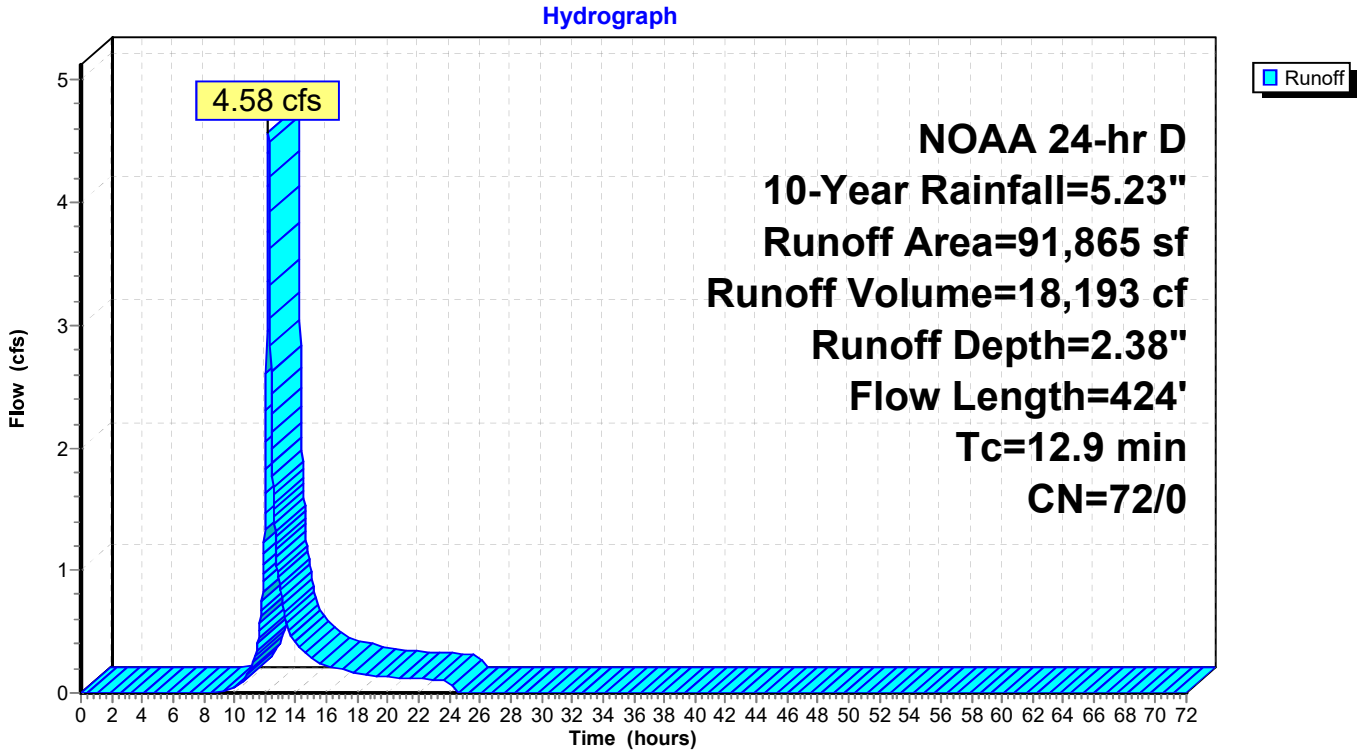
Runoff = 4.58 cfs @ 12.21 hrs, Volume= 18,193 cf, Depth= 2.38"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
NOAA 24-hr D 10-Year Rainfall=5.23"

Area (sf)	CN	Description
66,518	70	Woods, Good, HSG C
20,121	74	>75% Grass cover, Good, HSG C
5,226	98	Water Surface, 0% imp, HSG C
91,865	72	Weighted Average
91,865	72	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	73	0.0260	0.18		**Sheet Flow, B1-B2** Grass: Short n= 0.150 P2= 3.47"
0.6	52	0.0370	1.35		**Shallow Concentrated Flow, B2-B3** Short Grass Pasture Kv= 7.0 fps
1.5	98	0.0255	1.12		**Shallow Concentrated Flow, B3-B4** Short Grass Pasture Kv= 7.0 fps
0.6	37	0.0243	1.09		**Shallow Concentrated Flow, B4-B5** Short Grass Pasture Kv= 7.0 fps
0.2	16	0.0243	1.09		**Shallow Concentrated Flow, B5-B6** Short Grass Pasture Kv= 7.0 fps
0.6	23	0.0087	0.65		**Shallow Concentrated Flow, B6-B7** Short Grass Pasture Kv= 7.0 fps
0.2	15	0.0400	1.40		**Shallow Concentrated Flow, B7-B8** Short Grass Pasture Kv= 7.0 fps
1.1	45	0.0100	0.70		**Shallow Concentrated Flow, B8-B9** Short Grass Pasture Kv= 7.0 fps
1.2	47	0.0083	0.64		**Shallow Concentrated Flow, B-9-B10** Short Grass Pasture Kv= 7.0 fps
0.3	18	0.0166	0.90		**Shallow Concentrated Flow, B10-B11** Short Grass Pasture Kv= 7.0 fps
12.9	424	Total			

Subcatchment E-1A: EXISTING DRAINAGE TO LOT 13



Summary for Subcatchment E-1B: EXISTING DRAINAGE UNDETAINED TO ROADWAY

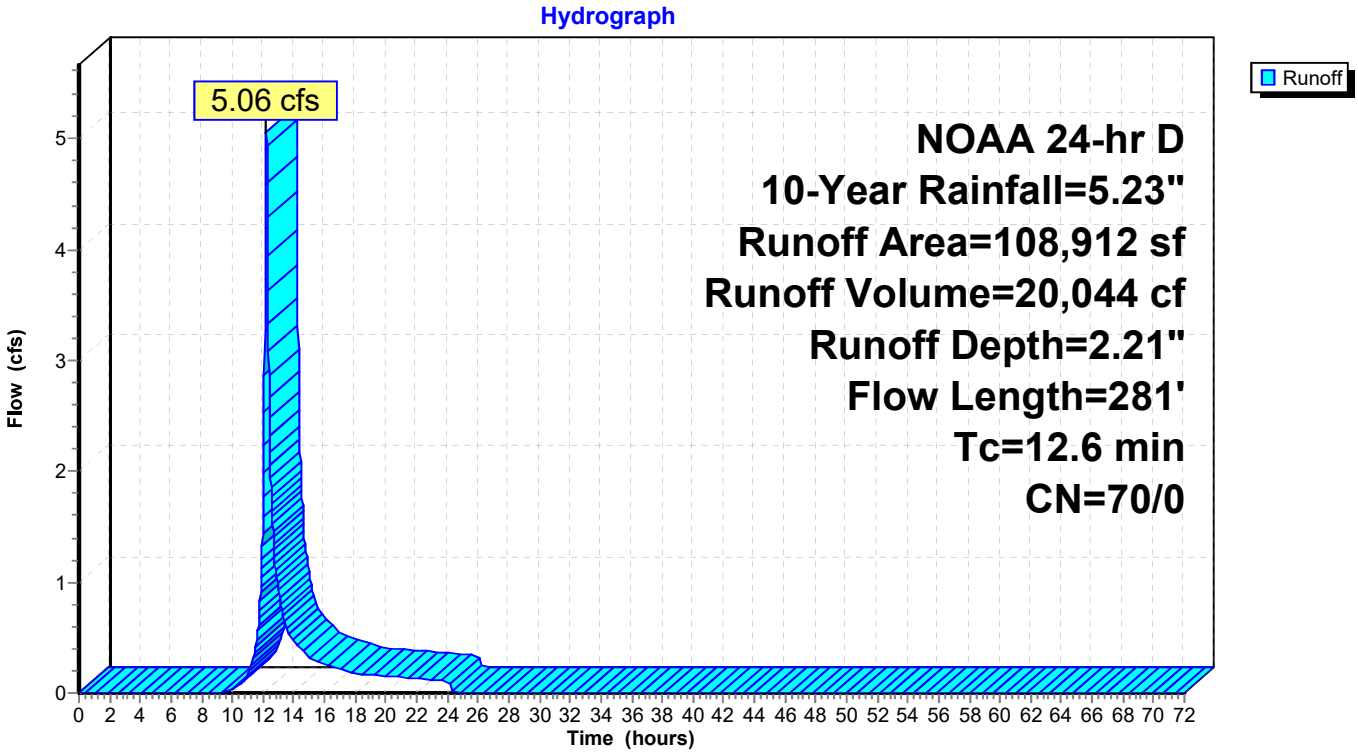
Runoff = 5.06 cfs @ 12.21 hrs, Volume= 20,044 cf, Depth= 2.21"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
NOAA 24-hr D 10-Year Rainfall=5.23"

Area (sf)	CN	Description
108,912	70	Woods, Good, HSG C
108,912	70	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0210	0.18		**Sheet Flow, A1-A2** Grass: Short n= 0.150 P2= 3.47"
1.5	68	0.0111	0.74		**Shallow Concentrated Flow, A2-A3** Short Grass Pasture Kv= 7.0 fps
1.6	95	0.0200	0.99		**Shallow Concentrated Flow, A3-A4** Short Grass Pasture Kv= 7.0 fps
0.3	18	0.0200	0.99		**Shallow Concentrated Flow, A4-A5** Short Grass Pasture Kv= 7.0 fps
12.6	281	Total			

Subcatchment E-1B: EXISTING DRAINAGE UNDETAINED TO ROADWAY



Summary for Subcatchment P-1A: Proposed Drainage to Bioretention Area B1

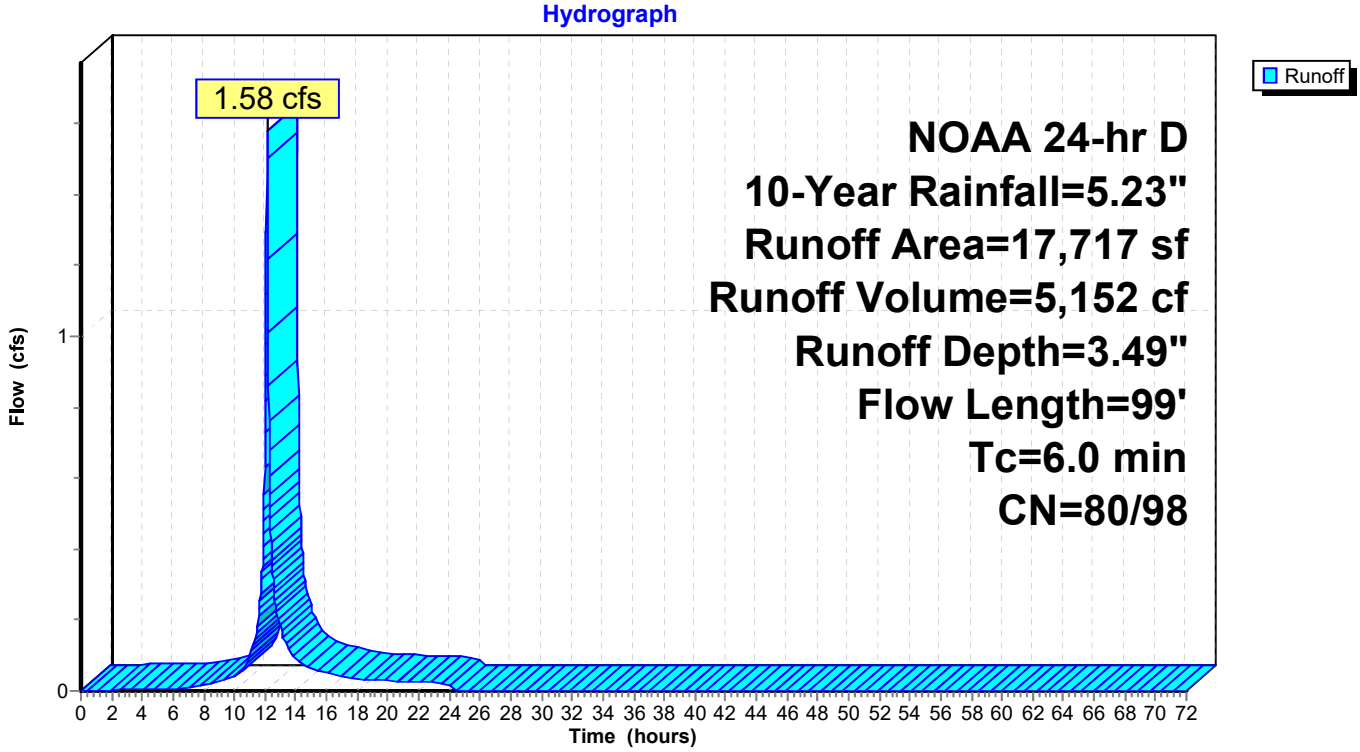
Runoff = 1.58 cfs @ 12.13 hrs, Volume= 5,152 cf, Depth= 3.49"
Routed to Pond B : Above Ground Bioretention Area (B)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
NOAA 24-hr D 10-Year Rainfall=5.23"

	Area (sf)	CN	Description
	14,029	80	>75% Grass cover, Good, HSG D
*	3,688	98	Impervious Area
	17,717	84	Weighted Average
	14,029	80	79.18% Pervious Area
	3,688	98	20.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.7	19	0.0157	0.12		**Sheet Flow, A1-A2** Grass: Short n= 0.150 P2= 3.47"
0.5	25	0.0120	0.77		**Shallow Concentrated Flow, A2-A3** Short Grass Pasture Kv= 7.0 fps
0.8	37	0.0108	0.73		**Shallow Concentrated Flow, A3-A4** Short Grass Pasture Kv= 7.0 fps
0.2	18	0.0333	1.28		**Shallow Concentrated Flow, A4-A5** Short Grass Pasture Kv= 7.0 fps
1.8					**Direct Entry, To Meet Minimum**
6.0	99	Total			

Subcatchment P-1A: Proposed Drainage to Bioretention Area B1



Summary for Subcatchment P-1B: Proposed Drainage to Bioretention Area A.1

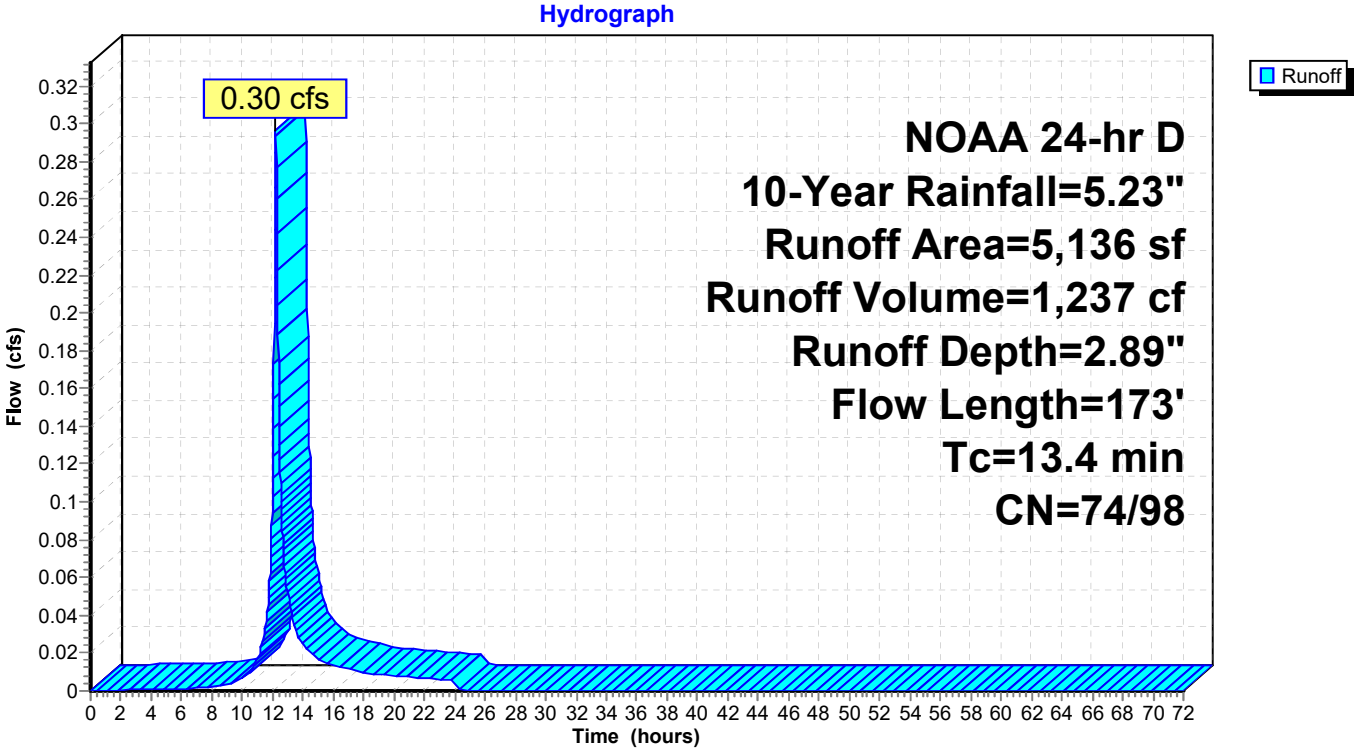
Runoff = 0.30 cfs @ 12.21 hrs, Volume= 1,237 cf, Depth= 2.89"
Routed to Pond A : Above Ground Bioretention Area (A)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
NOAA 24-hr D 10-Year Rainfall=5.23"

	Area (sf)	CN	Description
*	715	98	Impervious Area
	4,421	74	>75% Grass cover, Good, HSG C
	5,136	77	Weighted Average
	4,421	74	86.08% Pervious Area
	715	98	13.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	44	0.0045	0.08		**Sheet Flow, B1-B2** Grass: Short n= 0.150 P2= 3.47"
0.8	22	0.0044	0.46		**Shallow Concentrated Flow, B2-B3** Short Grass Pasture Kv= 7.0 fps
0.8	22	0.0044	0.46		**Shallow Concentrated Flow, B3-B4** Short Grass Pasture Kv= 7.0 fps
1.2	30	0.0033	0.40		**Shallow Concentrated Flow, B4-B5** Short Grass Pasture Kv= 7.0 fps
1.2	30	0.0033	0.40		**Shallow Concentrated Flow, B5-B6** Short Grass Pasture Kv= 7.0 fps
0.5	25	0.0120	0.77		**Shallow Concentrated Flow, B6-B7** Short Grass Pasture Kv= 7.0 fps
13.4	173	Total			

Subcatchment P-1B: Proposed Drainage to Bioretention Area A.1



Summary for Subcatchment P-1C: Proposed Drainage to Bioretention Area A.2

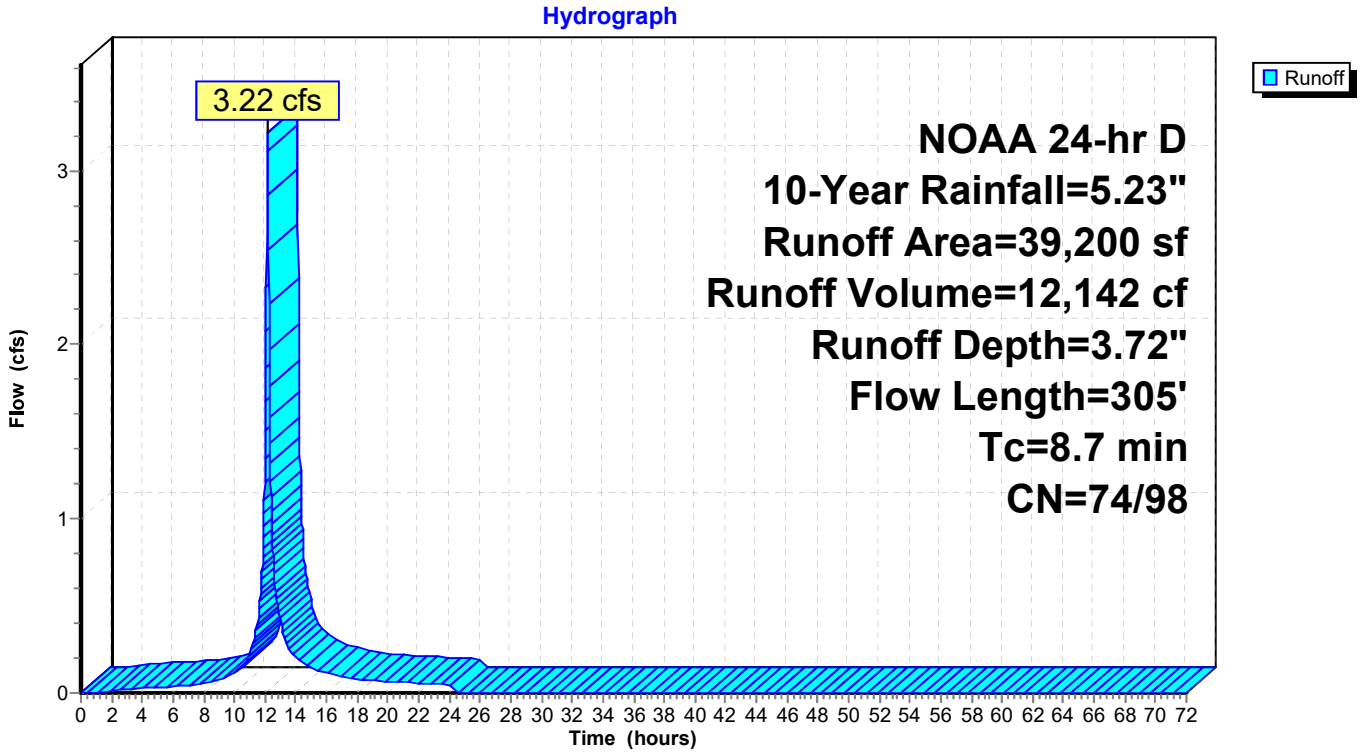
Runoff = 3.22 cfs @ 12.16 hrs, Volume= 12,142 cf, Depth= 3.72"
Routed to Pond A : Above Ground Bioretention Area (A)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
NOAA 24-hr D 10-Year Rainfall=5.23"

Area (sf)	CN	Description
18,734	98	Paved parking, HSG C
20,466	74	>75% Grass cover, Good, HSG C
39,200	85	Weighted Average
20,466	74	52.21% Pervious Area
18,734	98	47.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	61	0.0254	0.18		**Sheet Flow, C1-C2** Grass: Short n= 0.150 P2= 3.47"
0.3	24	0.0033	1.17		**Shallow Concentrated Flow, C2-C3** Paved Kv= 20.3 fps
0.9	77	0.0052	1.46		**Shallow Concentrated Flow, C3-C4** Paved Kv= 20.3 fps
1.0	90	0.0055	1.51		**Shallow Concentrated Flow, C4-C5** Paved Kv= 20.3 fps
0.7	53	0.0038	1.25		**Shallow Concentrated Flow, C5-C6** Paved Kv= 20.3 fps
8.7	305	Total			

Subcatchment P-1C: Proposed Drainage to Bioretention Area A.2



Summary for Subcatchment P-1E: Proposed Drainage Undetained to Valley Road

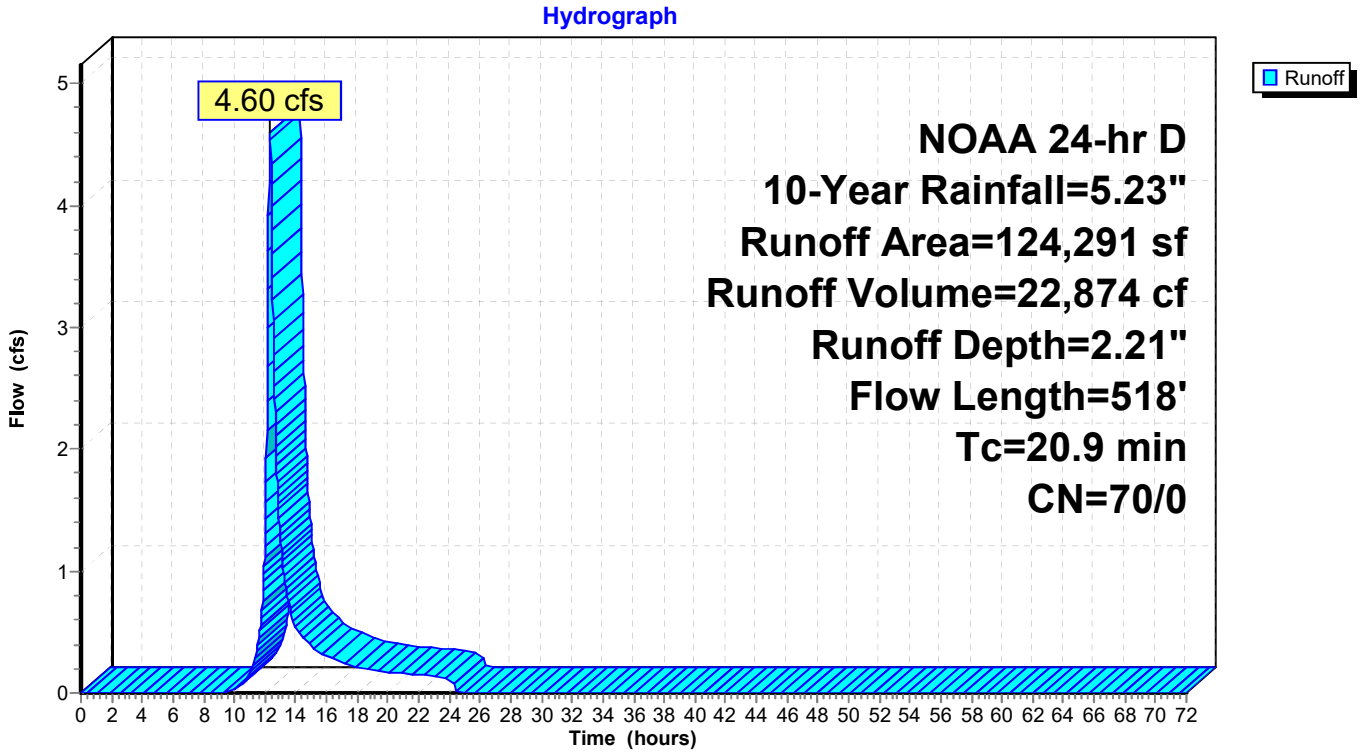
Runoff = 4.60 cfs @ 12.31 hrs, Volume= 22,874 cf, Depth= 2.21"
Routed to Reach SW-1 : Rear Wall Swale (SW-1)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
NOAA 24-hr D 10-Year Rainfall=5.23"

Area (sf)	CN	Description
124,291	70	Woods, Good, HSG C
124,291	70	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.0201	0.18		**Sheet Flow, E1-E2** Grass: Short n= 0.150 P2= 3.47"
1.5	68	0.0111	0.74		**Shallow Concentrated Flow, E2-E3** Short Grass Pasture Kv= 7.0 fps
1.6	95	0.0200	0.99		**Shallow Concentrated Flow, E3-E4** Short Grass Pasture Kv= 7.0 fps
0.7	37	0.0162	0.89		**Shallow Concentrated Flow, E3-E4** Short Grass Pasture Kv= 7.0 fps
1.6	60	0.0083	0.64		**Shallow Concentrated Flow, E5-E6** Short Grass Pasture Kv= 7.0 fps
3.5	96	0.0042	0.45		**Shallow Concentrated Flow, E6-E7** Short Grass Pasture Kv= 7.0 fps
1.8	39	0.0026	0.36		**Shallow Concentrated Flow, E7-E8** Short Grass Pasture Kv= 7.0 fps
0.8	23	0.0043	0.46		**Shallow Concentrated Flow, E8-E9** Short Grass Pasture Kv= 7.0 fps
20.9	518	Total			

Subcatchment P-1E: Proposed Drainage Undetained to Valley Road



Summary for Reach SW-1: Rear Wall Swale (SW-1)

Inflow Area = 124,291 sf, 0.00% Impervious, Inflow Depth = 2.21" for 10-Year event
Inflow = 4.60 cfs @ 12.31 hrs, Volume= 22,874 cf
Outflow = 4.60 cfs @ 12.32 hrs, Volume= 22,874 cf, Atten= 0%, Lag= 0.2 min
Routed to Reach SW-2 : Rear Wall Swale (SW-2)

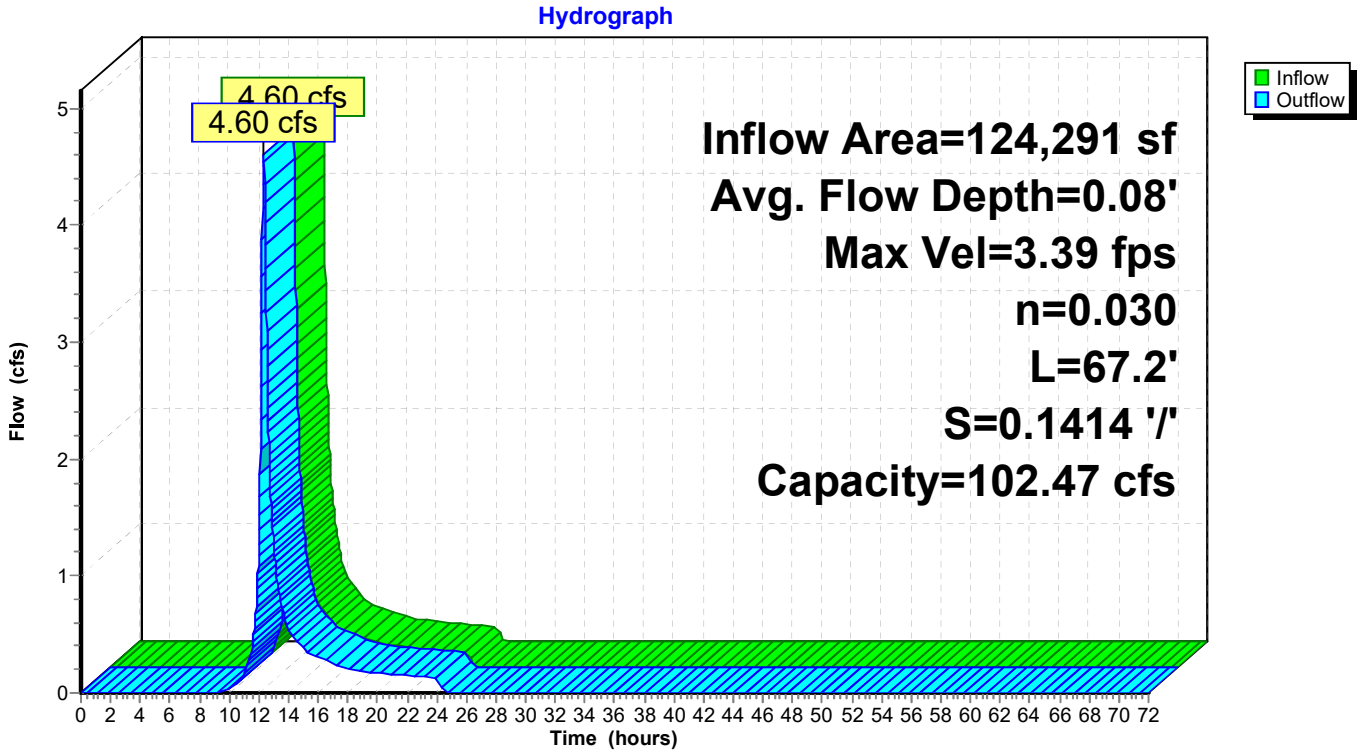
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Max. Velocity= 3.39 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.11 fps, Avg. Travel Time= 1.0 min

Peak Storage= 91 cf @ 12.32 hrs
Average Depth at Peak Storage= 0.08' , Surface Width= 17.47'
Bank-Full Depth= 0.50' Flow Area= 9.3 sf, Capacity= 102.47 cfs

17.00' x 0.50' deep channel, n= 0.030 Short grass
Side Slope Z-value= 3.0 '/' Top Width= 20.00'
Length= 67.2' Slope= 0.1414 '/'
Inlet Invert= 389.50', Outlet Invert= 380.00'

‡

Reach SW-1: Rear Wall Swale (SW-1)



Summary for Reach SW-2: Rear Wall Swale (SW-2)

Inflow Area = 124,291 sf, 0.00% Impervious, Inflow Depth = 2.21" for 10-Year event
Inflow = 4.60 cfs @ 12.32 hrs, Volume= 22,874 cf
Outflow = 4.60 cfs @ 12.32 hrs, Volume= 22,874 cf, Atten= 0%, Lag= 0.2 min
Routed to Reach SW-3 : Rear Wall Swale (SW-3)

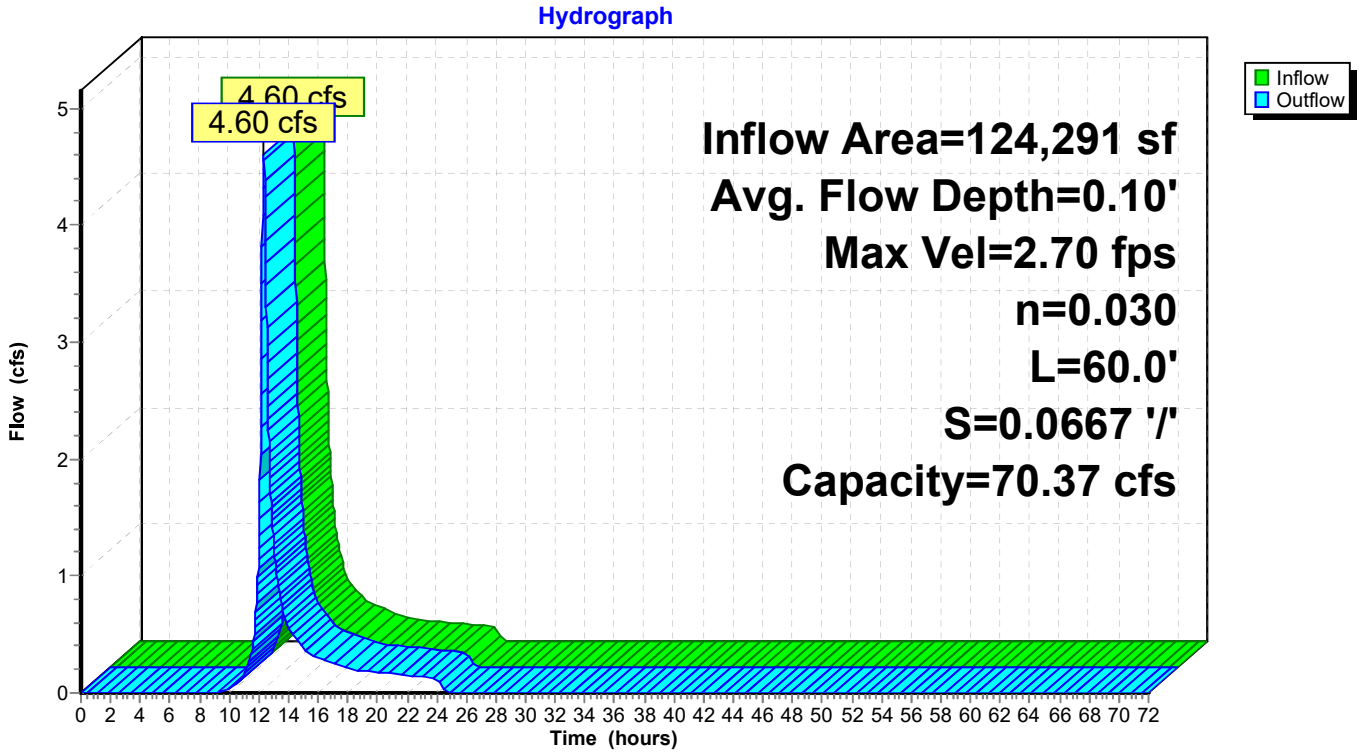
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Max. Velocity= 2.70 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 0.88 fps, Avg. Travel Time= 1.1 min

Peak Storage= 102 cf @ 12.32 hrs
Average Depth at Peak Storage= 0.10' , Surface Width= 17.59'
Bank-Full Depth= 0.50' Flow Area= 9.3 sf, Capacity= 70.37 cfs

17.00' x 0.50' deep channel, n= 0.030 Short grass
Side Slope Z-value= 3.0 '/' Top Width= 20.00'
Length= 60.0' Slope= 0.0667 '/'
Inlet Invert= 380.00', Outlet Invert= 376.00'

‡

Reach SW-2: Rear Wall Swale (SW-2)



Summary for Reach SW-3: Rear Wall Swale (SW-3)

Inflow Area = 124,291 sf, 0.00% Impervious, Inflow Depth = 2.21" for 10-Year event
Inflow = 4.60 cfs @ 12.32 hrs, Volume= 22,874 cf
Outflow = 4.59 cfs @ 12.33 hrs, Volume= 22,874 cf, Atten= 0%, Lag= 0.6 min

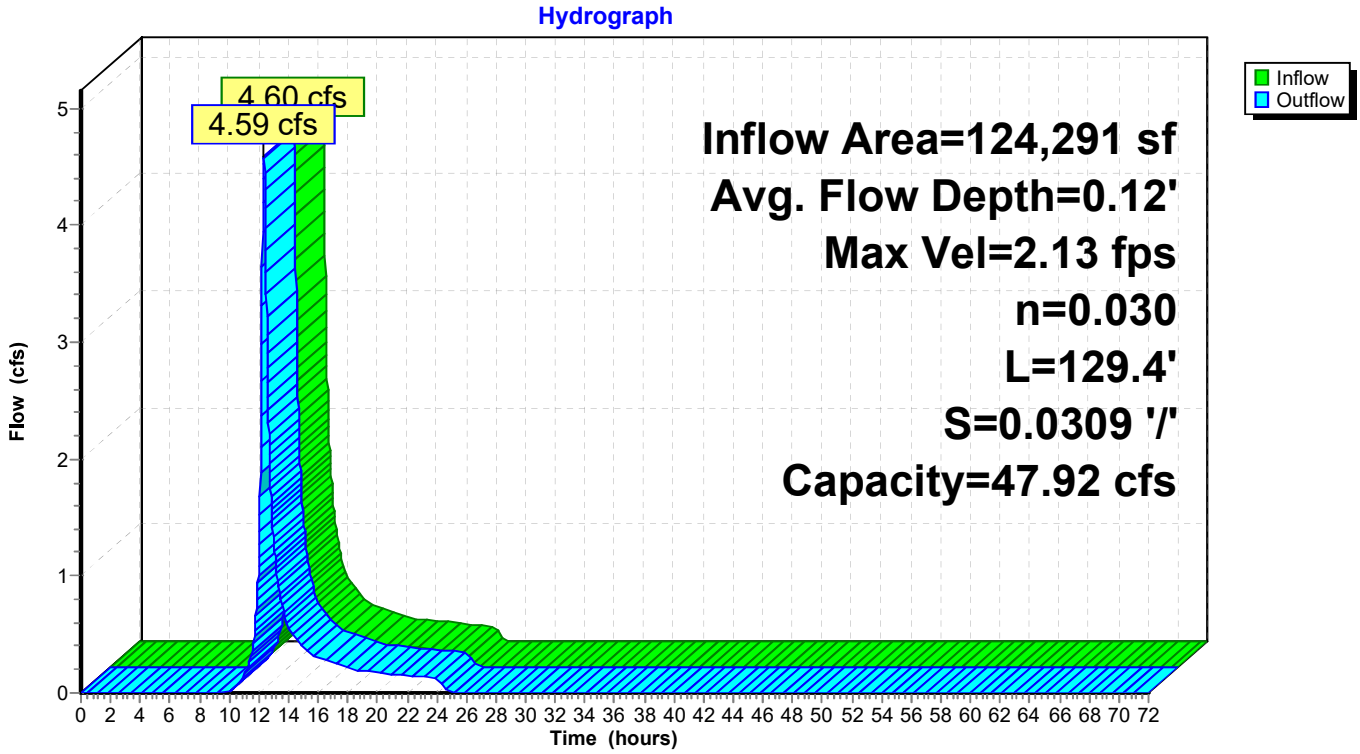
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Max. Velocity= 2.13 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 0.68 fps, Avg. Travel Time= 3.2 min

Peak Storage= 279 cf @ 12.33 hrs
Average Depth at Peak Storage= 0.12' , Surface Width= 17.74'
Bank-Full Depth= 0.50' Flow Area= 9.3 sf, Capacity= 47.92 cfs

17.00' x 0.50' deep channel, n= 0.030 Short grass
Side Slope Z-value= 3.0 '/' Top Width= 20.00'
Length= 129.4' Slope= 0.0309 '/'
Inlet Invert= 376.00', Outlet Invert= 372.00'

‡

Reach SW-3: Rear Wall Swale (SW-3)



Summary for Pond A: Above Ground Bioretention Area (A)

Inflow Area = 44,336 sf, 43.87% Impervious, Inflow Depth = 3.62" for 10-Year event
Inflow = 3.49 cfs @ 12.16 hrs, Volume= 13,379 cf
Outflow = 2.59 cfs @ 12.24 hrs, Volume= 13,379 cf, Atten= 26%, Lag= 4.6 min
Discarded = 0.03 cfs @ 12.24 hrs, Volume= 3,506 cf
Primary = 2.56 cfs @ 12.24 hrs, Volume= 9,873 cf
Routed to Pond B : Above Ground Bioretention Area (B)
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond B : Above Ground Bioretention Area (B)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 329.67' @ 12.24 hrs Surf.Area= 2,183 sf Storage= 3,086 cf

Plug-Flow detention time= 213.8 min calculated for 13,375 cf (100% of inflow)
Center-of-Mass det. time= 214.2 min (1,004.0 - 789.8)

Volume	Invert	Avail.Storage	Storage Description
#1	328.00'	7,803 cf	**Above Ground Bioretention Area (A) (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
328.00	1,530	162.0	0	0	1,530
329.00	1,910	176.9	1,716	1,716	1,966
330.00	2,325	192.7	2,114	3,831	2,466
331.00	2,764	208.1	2,541	6,372	2,997
331.50	2,962	213.8	1,431	7,803	3,215

Device	Routing	Invert	Outlet Devices
#1	Primary	326.50'	**12.0" Round Culvert** L= 64.0' Ke= 0.500 Inlet / Outlet Invert= 326.50' / 325.86' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Device 1	329.00'	**20.0" W x 6.0" H Vert. Low Flow** C= 0.600 Limited to weir flow at low heads
#3	Device 1	330.23'	**32.0" x 32.0" Horiz. Overflow Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	331.00'	**10.0' long x 7.0' breadth Emergency Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.40 2.52 2.70 2.68 2.68 2.67 2.66 2.65 2.65 2.65 2.66 2.65 2.66 2.68 2.70 2.73

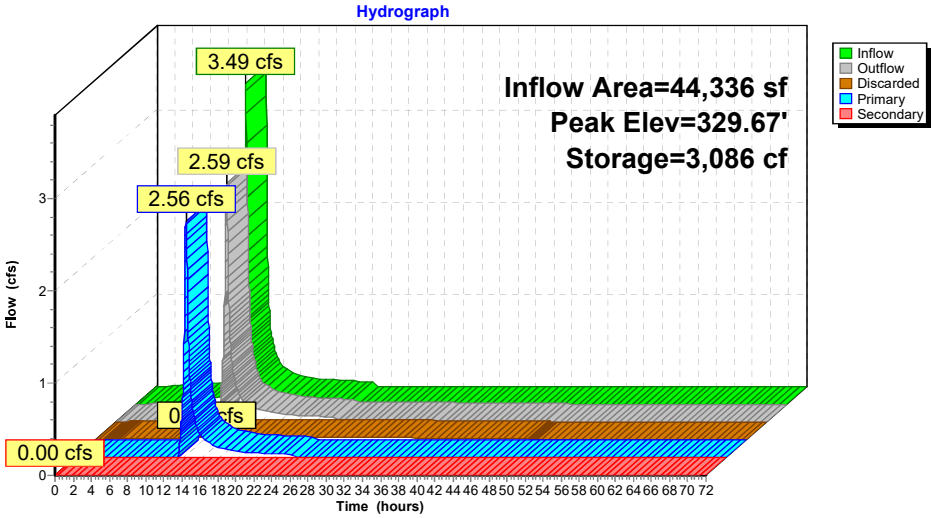
#5	Discarded	328.00'	2.78 **0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 310.00' Phase-In= 0.01'	

Discarded OutFlow Max=0.03 cfs @ 12.24 hrs HW=329.67' (Free Discharge)
└**5=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=2.56 cfs @ 12.24 hrs HW=329.67' TW=317.01' (Dynamic Tailwater)
└**1=Culvert** (Passes 2.56 cfs of 5.89 cfs potential flow)
└**2=Low Flow** (Orifice Controls 2.56 cfs @ 3.07 fps)
└**3=Overflow Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=328.00' TW=315.00' (Dynamic Tailwater)
└**4=Emergency Spillway** (Controls 0.00 cfs)

Pond A: Above Ground Bioretention Area (A)



Summary for Pond B: Above Ground Bioretention Area (B)

Inflow Area = 87,333 sf, 55.22% Impervious, Inflow Depth = 2.59" for 10-Year event
Inflow = 5.27 cfs @ 12.17 hrs, Volume= 18,816 cf
Outflow = 3.07 cfs @ 12.44 hrs, Volume= 18,816 cf, Atten= 42%, Lag= 16.4 min
Discarded = 0.04 cfs @ 12.44 hrs, Volume= 1,936 cf
Primary = 3.03 cfs @ 12.44 hrs, Volume= 16,880 cf
Routed to Link POI-1 : POI-1 Existing Drainage Within Valley Road
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link POI-1 : POI-1 Existing Drainage Within Valley Road

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
Peak Elev= 317.36' @ 12.44 hrs Surf.Area= 2,533 sf Storage= 4,725 cf

Plug-Flow detention time= 50.1 min calculated for 18,811 cf (100% of inflow)
Center-of-Mass det. time= 50.3 min (862.5 - 812.2)

Volume	Invert	Avail.Storage	Storage Description
#1	315.00'	11,202 cf	**Above Ground Bioretention Area (A) (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
315.00	1,499	165.1	0	0	1,499
316.00	1,923	188.6	1,707	1,707	2,184
317.00	2,373	210.7	2,144	3,851	2,914
318.00	2,836	232.0	2,601	6,452	3,696
319.00	3,284	250.9	3,057	9,509	4,461
319.50	3,491	258.4	1,693	11,202	4,791

Device	Routing	Invert	Outlet Devices
#1	Primary	314.04'	**12.0" Round Culvert** L= 30.0' Ke= 0.500 Inlet / Outlet Invert= 314.04' / 313.74' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	315.30'	**10.0" W x 3.0" H Vert. Low Flow** C= 0.600 Limited to weir flow at low heads
#3	Device 1	316.35'	**11.0" W x 5.0" H Vert. Control Orifice** C= 0.600 Limited to weir flow at low heads
#4	Device 1	318.40'	**32.0" x 32.0" Horiz. Overflow Grate** C= 0.600 Limited to weir flow at low heads
#5	Secondary	319.00'	**10.0' long x 8.0' breadth Emergency Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00

5.50
Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

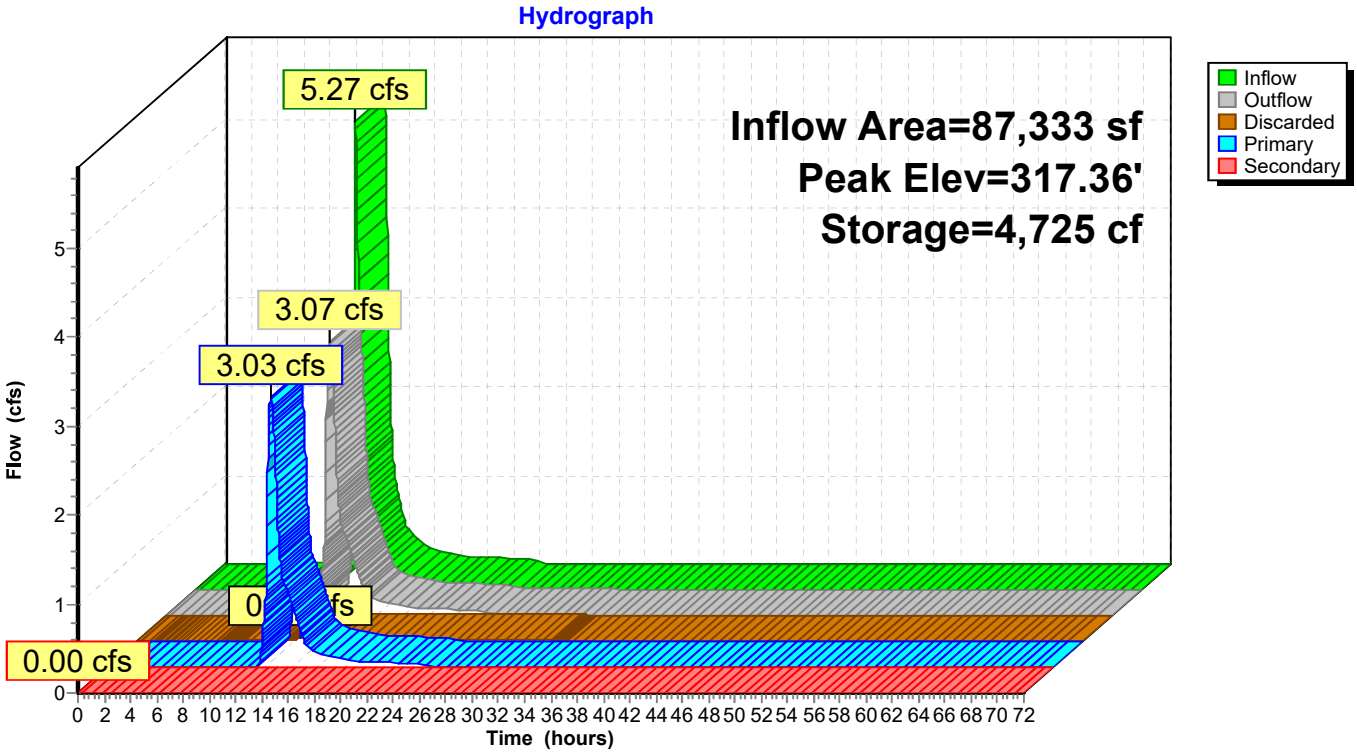
#6 Discarded 315.00' **0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 310.00'
Phase-In= 0.01'

Discarded OutFlow Max=0.04 cfs @ 12.44 hrs HW=317.36' (Free Discharge)
└**6=Exfiltration** (Controls 0.04 cfs)

Primary OutFlow Max=3.03 cfs @ 12.44 hrs HW=317.36' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 3.03 cfs of 6.35 cfs potential flow)
├**2=Low Flow** (Orifice Controls 1.39 cfs @ 6.69 fps)
├**3=Control Orifice** (Orifice Controls 1.64 cfs @ 4.29 fps)
└**4=Overflow Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=315.00' TW=0.00' (Dynamic Tailwater)
└**5=Emergency Spillway** (Controls 0.00 cfs)

Pond B: Above Ground Bioretention Area (B)

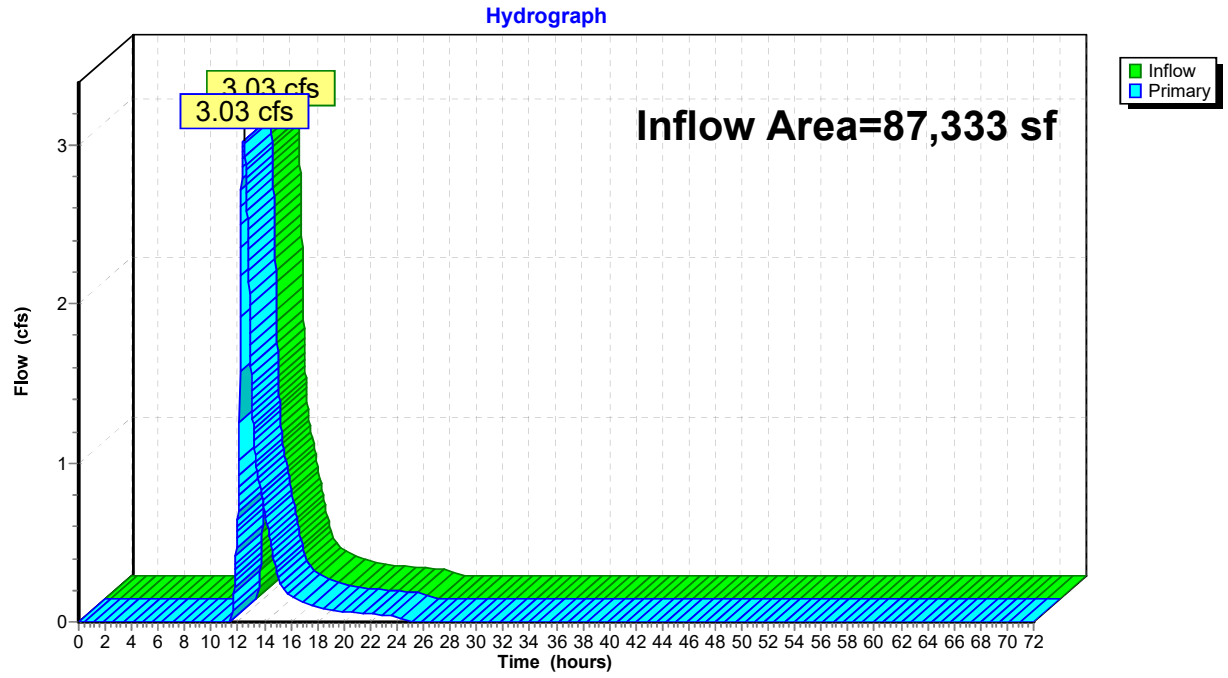


Summary for Link POI-1: POI-1 Existing Drainage Within Valley Road

Inflow Area = 87,333 sf, 55.22% Impervious, Inflow Depth = 2.32" for 10-Year event
Inflow = 3.03 cfs @ 12.44 hrs, Volume= 16,880 cf
Primary = 3.03 cfs @ 12.44 hrs, Volume= 16,880 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

Link POI-1: POI-1 Existing Drainage Within Valley Road

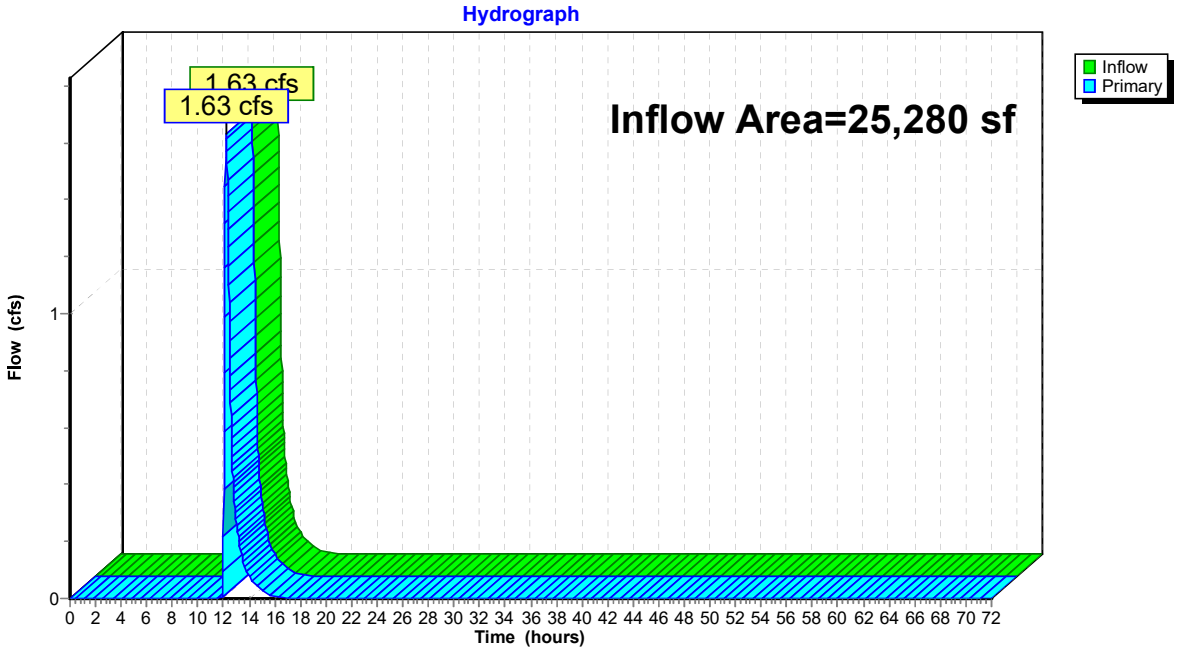


Summary for Link PPV: Pervious Pavement Systems

Inflow Area = 25,280 sf, 99.23% Impervious, Inflow Depth = 1.80" for 10-Year event
Inflow = 1.63 cfs @ 12.21 hrs, Volume= 3,791 cf
Primary = 1.63 cfs @ 12.21 hrs, Volume= 3,791 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond B : Above Ground Bioretention Area (B)

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

Link PPV: Pervious Pavement Systems



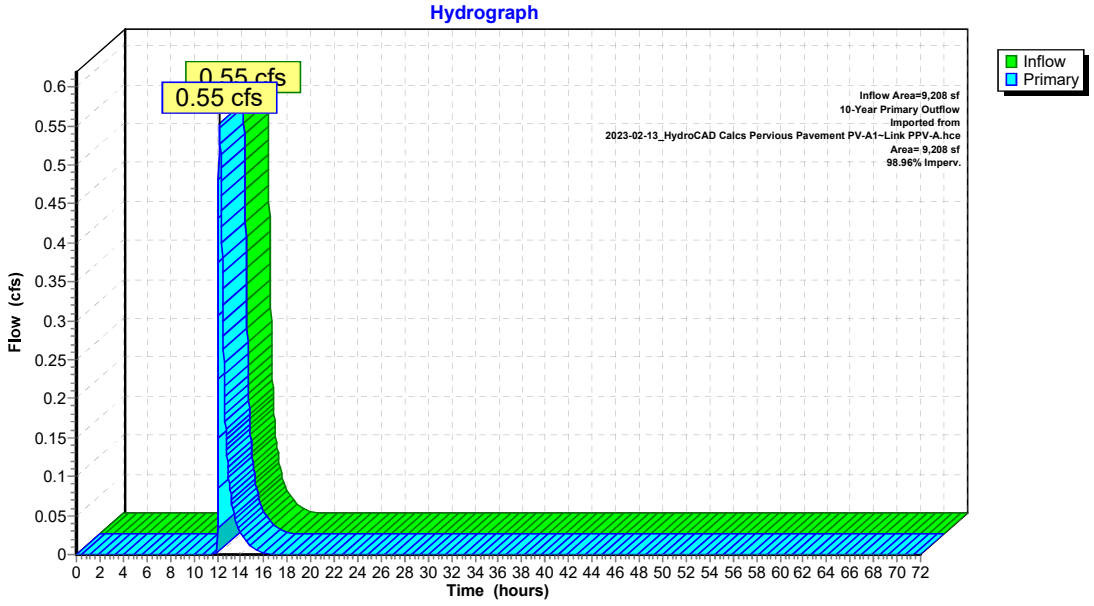
Summary for Link PPV-A: Pervious Pavement System Building A

Inflow Area = 9,208 sf, 98.96% Impervious, Inflow Depth = 1.71" for 10-Year event
Inflow = 0.55 cfs @ 12.21 hrs, Volume= 1,315 cf
Primary = 0.55 cfs @ 12.21 hrs, Volume= 1,315 cf, Atten= 0%, Lag= 0.0 min
Routed to Link PPV : Pervious Pavement Systems

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

10-Year Primary Outflow Imported from 2023-02-13_HydroCAD Calcs Pervious Pavement PV-A1~Link PPV-A.hce

Link PPV-A: Pervious Pavement System Building A



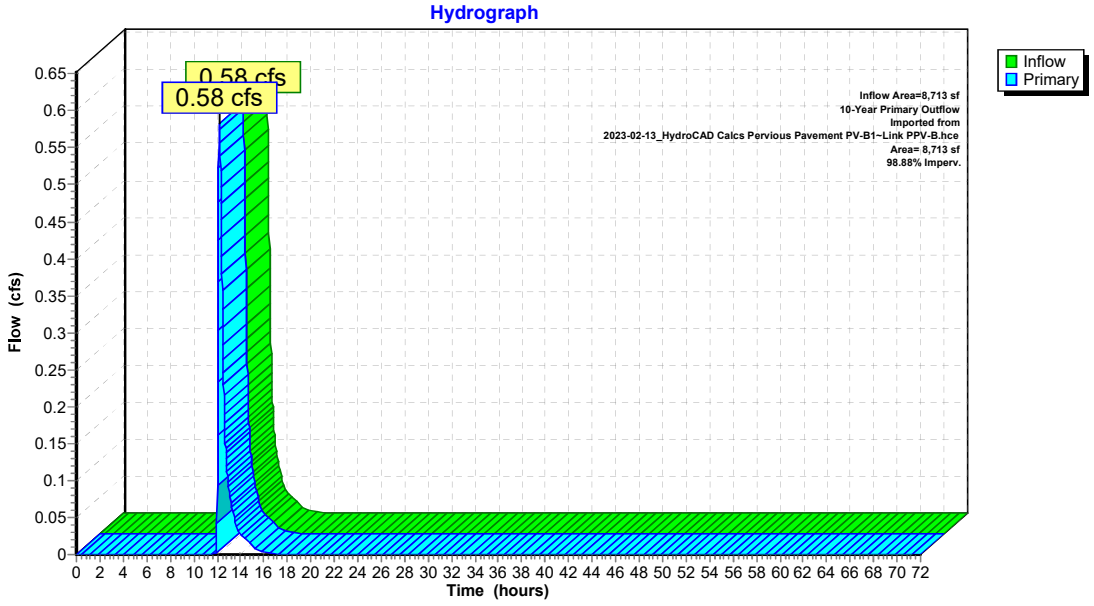
Summary for Link PPV-B: Pervious Pavement System Building B

Inflow Area = 8,713 sf, 98.88% Impervious, Inflow Depth = 1.84" for 10-Year event
Inflow = 0.58 cfs @ 12.20 hrs, Volume= 1,338 cf
Primary = 0.58 cfs @ 12.20 hrs, Volume= 1,338 cf, Atten= 0%, Lag= 0.0 min
Routed to Link PPV : Pervious Pavement Systems

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

10-Year Primary Outflow Imported from 2023-02-13_HydroCAD Calcs Pervious Pavement PV-B1~Link PPV-B.hce

Link PPV-B: Pervious Pavement System Building B



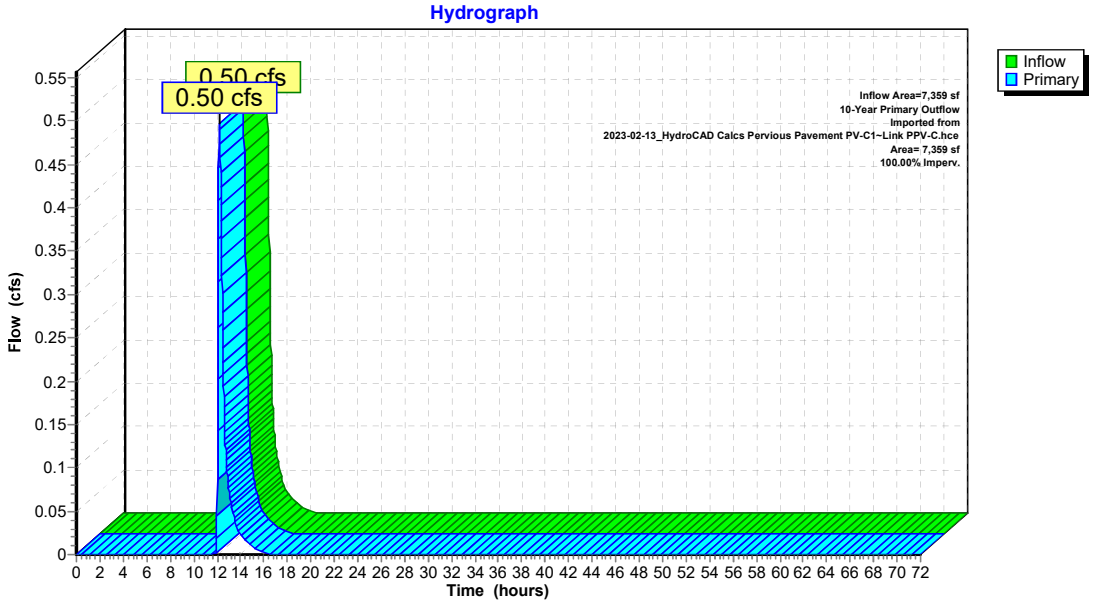
Summary for Link PPV-C: Pervious Pavement System Building C

Inflow Area = 7,359 sf,100.00% Impervious, Inflow Depth = 1.86" for 10-Year event
Inflow = 0.50 cfs @ 12.20 hrs, Volume= 1,138 cf
Primary = 0.50 cfs @ 12.20 hrs, Volume= 1,138 cf, Atten= 0%, Lag= 0.0 min
Routed to Link PPV : Pervious Pavement Systems

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.02 hrs

10-Year Primary Outflow Imported from 2023-02-13_HydroCAD Calcs Pervious Pavement PV-C1~Link PPV-C.hce

Link PPV-C: Pervious Pavement System Building C



Time span=0.00-72.00 hrs, dt=0.02 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E-1A: EXISTING DRAINAGE TO LOT 13 Runoff Area=91,865 sf 0.00% Impervious Runoff Depth=3.35"
Flow Length=424' Tc=12.9 min CN=72/0 Runoff=6.48 cfs 25,634 cf

Subcatchment E-1B: EXISTING DRAINAGE UNDETAINED TO ROADWAY Runoff Area=108,912 sf 0.00% Impervious Runoff Depth=3.15"
Flow Length=281' Tc=12.6 min CN=70/0 Runoff=7.28 cfs 28,591 cf

Subcatchment P-1A: Proposed Drainage to Bioretention Area B1 Runoff Area=17,717 sf 20.82% Impervious Runoff Depth=4.59"
Flow Length=99' Tc=6.0 min CN=80/98 Runoff=2.07 cfs 6,780 cf

Subcatchment P-1B: Proposed Drainage to Bioretention Area A.1 Runoff Area=5,136 sf 13.92% Impervious Runoff Depth=3.92"
Flow Length=173' Tc=13.4 min CN=74/98 Runoff=0.40 cfs 1,677 cf

Subcatchment P-1C: Proposed Drainage to Bioretention Area A.2 Runoff Area=39,200 sf 47.79% Impervious Runoff Depth=4.81"
Flow Length=305' Tc=8.7 min CN=74/98 Runoff=4.17 cfs 15,720 cf

Subcatchment P-1E: Proposed Drainage Undetained to Valley Road Runoff Area=124,291 sf 0.00% Impervious Runoff Depth=3.15"
Flow Length=518' Tc=20.9 min CN=70/0 Runoff=6.64 cfs 32,629 cf

Reach SW-1: Rear Wall Swale (SW-1) Avg. Flow Depth=0.10' Max Vel=3.91 fps Inflow=6.64 cfs 32,629 cf
n=0.030 L=67.2' S=0.1414 '/' Capacity=102.47 cfs Outflow=6.63 cfs 32,629 cf

Reach SW-2: Rear Wall Swale (SW-2) Avg. Flow Depth=0.12' Max Vel=3.11 fps Inflow=6.63 cfs 32,629 cf
n=0.030 L=60.0' S=0.0667 '/' Capacity=70.37 cfs Outflow=6.63 cfs 32,629 cf

Reach SW-3: Rear Wall Swale (SW-3) Avg. Flow Depth=0.15' Max Vel=2.46 fps Inflow=6.63 cfs 32,629 cf
n=0.030 L=129.4' S=0.0309 '/' Capacity=47.92 cfs Outflow=6.63 cfs 32,629 cf

Pond A: Above Ground Bioretention Area (A) Peak Elev=329.87' Storage=3,532 cf Inflow=4.53 cfs 17,396 cf
Discarded=0.03 cfs 3,564 cf Primary=3.14 cfs 13,832 cf Secondary=0.00 cfs 0 cf Outflow=3.17 cfs 17,396 cf

Pond B: Above Ground Bioretention Area (B) Peak Elev=317.99' Storage=6,412 cf Inflow=6.61 cfs 26,297 cf
Discarded=0.05 cfs 2,068 cf Primary=3.80 cfs 24,228 cf Secondary=0.00 cfs 0 cf Outflow=3.85 cfs 26,297 cf

Link POI-1: POI-1 Existing Drainage Within Valley Road Inflow=3.80 cfs 24,228 cf
Primary=3.80 cfs 24,228 cf

Link PPV: Pervious Pavement Systems Inflow=2.03 cfs 5,685 cf
Primary=2.03 cfs 5,685 cf

Link PPV-A: 25-Year Primary Outflow Imported from 2023-02-13_HydroCAD Calcs Pervious Pavement PV-A1~Link PPV-A.hce Inflow=0.70 cfs 1,982 cf
Area= 9,208 sf 98.96% Imperv. Primary=0.70 cfs 1,982 cf

Link PPV-B: 25-Year Primary Outflow Imported from 2023-02-13_HydroCAD Calcs Pervious Pavement PV-B1~Link PPV-B.hce Inflow=0.72 cfs 2,004 cf
Area= 8,713 sf 98.88% Imperv. Primary=0.72 cfs 2,004 cf

Link PPV-C: 25-Year Primary Outflow Imported from 2023-02-13_HydroCAD Calcs Pervious Pavement PV-C1~Link PPV-C.hce Inflow=0.61 cfs 1,700 cf
Area= 7,359 sf 100.00% Imperv. Primary=0.61 cfs 1,700 cf

Total Runoff Area = 387,121 sf Runoff Volume = 111,030 cf Average Runoff Depth = 3.44"
94.02% Pervious = 363,984 sf 5.98% Impervious = 23,137 sf

Summary for Subcatchment E-1A: EXISTING DRAINAGE TO LOT 13

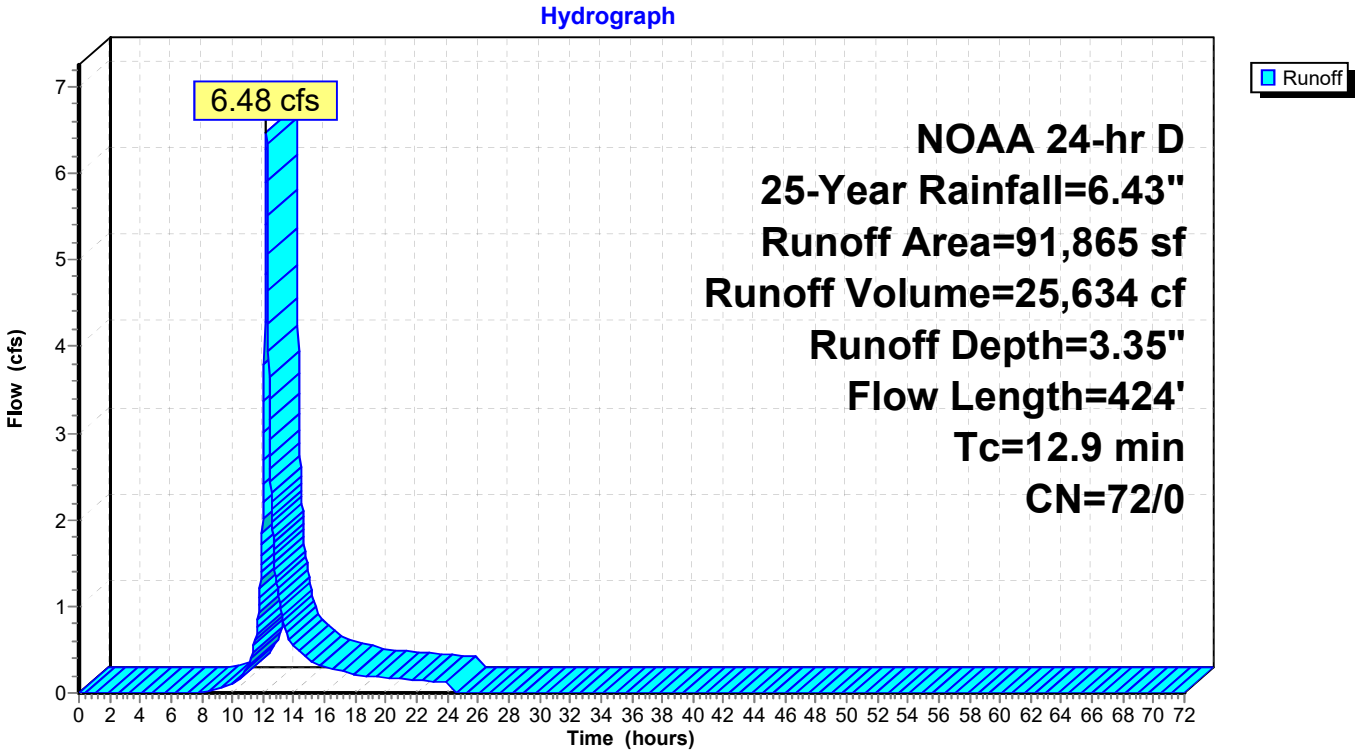
Runoff = 6.48 cfs @ 12.21 hrs, Volume= 25,634 cf, Depth= 3.35"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
NOAA 24-hr D 25-Year Rainfall=6.43"

Area (sf)	CN	Description
66,518	70	Woods, Good, HSG C
20,121	74	>75% Grass cover, Good, HSG C
5,226	98	Water Surface, 0% imp, HSG C
91,865	72	Weighted Average
91,865	72	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	73	0.0260	0.18		**Sheet Flow, B1-B2** Grass: Short n= 0.150 P2= 3.47"
0.6	52	0.0370	1.35		**Shallow Concentrated Flow, B2-B3** Short Grass Pasture Kv= 7.0 fps
1.5	98	0.0255	1.12		**Shallow Concentrated Flow, B3-B4** Short Grass Pasture Kv= 7.0 fps
0.6	37	0.0243	1.09		**Shallow Concentrated Flow, B4-B5** Short Grass Pasture Kv= 7.0 fps
0.2	16	0.0243	1.09		**Shallow Concentrated Flow, B5-B6** Short Grass Pasture Kv= 7.0 fps
0.6	23	0.0087	0.65		**Shallow Concentrated Flow, B6-B7** Short Grass Pasture Kv= 7.0 fps
0.2	15	0.0400	1.40		**Shallow Concentrated Flow, B7-B8** Short Grass Pasture Kv= 7.0 fps
1.1	45	0.0100	0.70		**Shallow Concentrated Flow, B8-B9** Short Grass Pasture Kv= 7.0 fps
1.2	47	0.0083	0.64		**Shallow Concentrated Flow, B-9-B10** Short Grass Pasture Kv= 7.0 fps
0.3	18	0.0166	0.90		**Shallow Concentrated Flow, B10-B11** Short Grass Pasture Kv= 7.0 fps
12.9	424	Total			

Subcatchment E-1A: EXISTING DRAINAGE TO LOT 13



Summary for Subcatchment E-1B: EXISTING DRAINAGE UNDETAINED TO ROADWAY

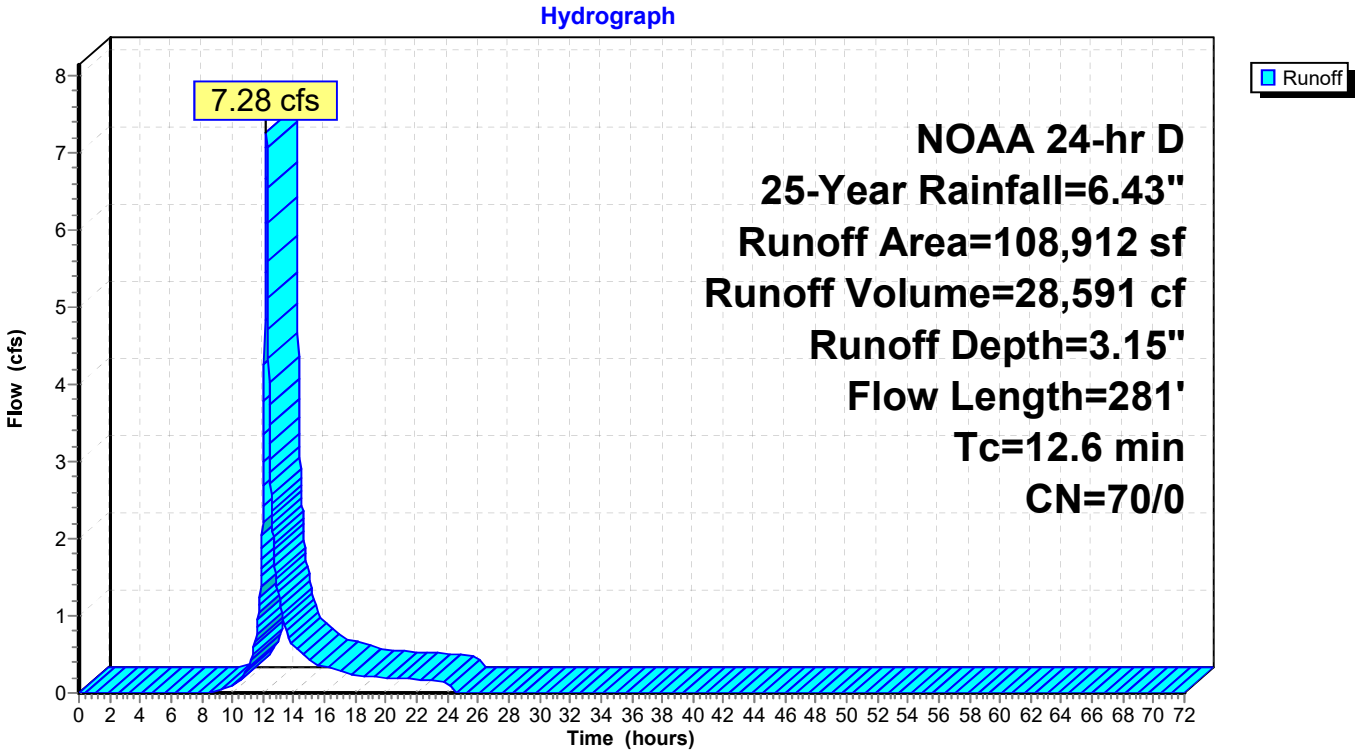
Runoff = 7.28 cfs @ 12.21 hrs, Volume= 28,591 cf, Depth= 3.15"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
NOAA 24-hr D 25-Year Rainfall=6.43"

Area (sf)	CN	Description
108,912	70	Woods, Good, HSG C
108,912	70	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0210	0.18		**Sheet Flow, A1-A2** Grass: Short n= 0.150 P2= 3.47"
1.5	68	0.0111	0.74		**Shallow Concentrated Flow, A2-A3** Short Grass Pasture Kv= 7.0 fps
1.6	95	0.0200	0.99		**Shallow Concentrated Flow, A3-A4** Short Grass Pasture Kv= 7.0 fps
0.3	18	0.0200	0.99		**Shallow Concentrated Flow, A4-A5** Short Grass Pasture Kv= 7.0 fps
12.6	281	Total			

Subcatchment E-1B: EXISTING DRAINAGE UNDETAINED TO ROADWAY



Summary for Subcatchment P-1A: Proposed Drainage to Bioretention Area B1

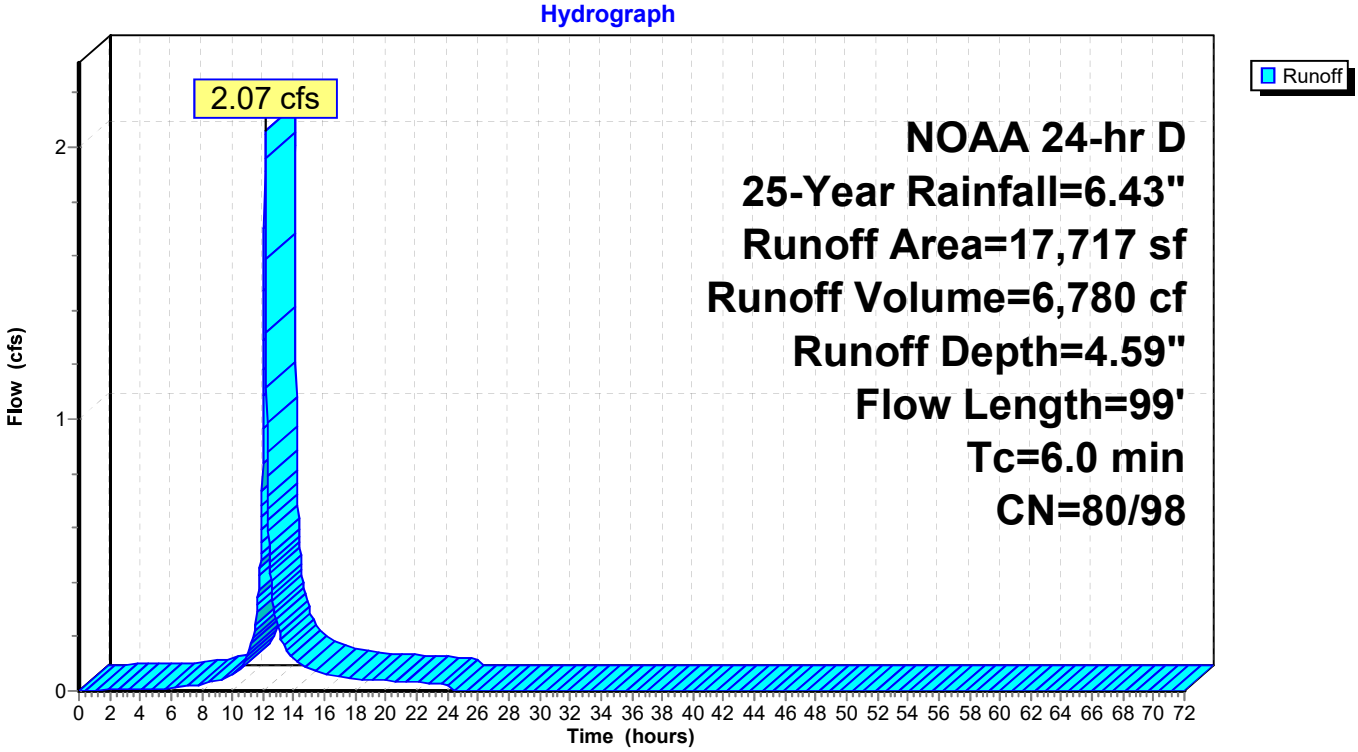
Runoff = 2.07 cfs @ 12.13 hrs, Volume= 6,780 cf, Depth= 4.59"
Routed to Pond B : Above Ground Bioretention Area (B)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
NOAA 24-hr D 25-Year Rainfall=6.43"

	Area (sf)	CN	Description
	14,029	80	>75% Grass cover, Good, HSG D
*	3,688	98	Impervious Area
	17,717	84	Weighted Average
	14,029	80	79.18% Pervious Area
	3,688	98	20.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.7	19	0.0157	0.12		**Sheet Flow, A1-A2** Grass: Short n= 0.150 P2= 3.47"
0.5	25	0.0120	0.77		**Shallow Concentrated Flow, A2-A3** Short Grass Pasture Kv= 7.0 fps
0.8	37	0.0108	0.73		**Shallow Concentrated Flow, A3-A4** Short Grass Pasture Kv= 7.0 fps
0.2	18	0.0333	1.28		**Shallow Concentrated Flow, A4-A5** Short Grass Pasture Kv= 7.0 fps
1.8					**Direct Entry, To Meet Minimum**
6.0	99	Total			

Subcatchment P-1A: Proposed Drainage to Bioretention Area B1



Summary for Subcatchment P-1B: Proposed Drainage to Bioretention Area A.1

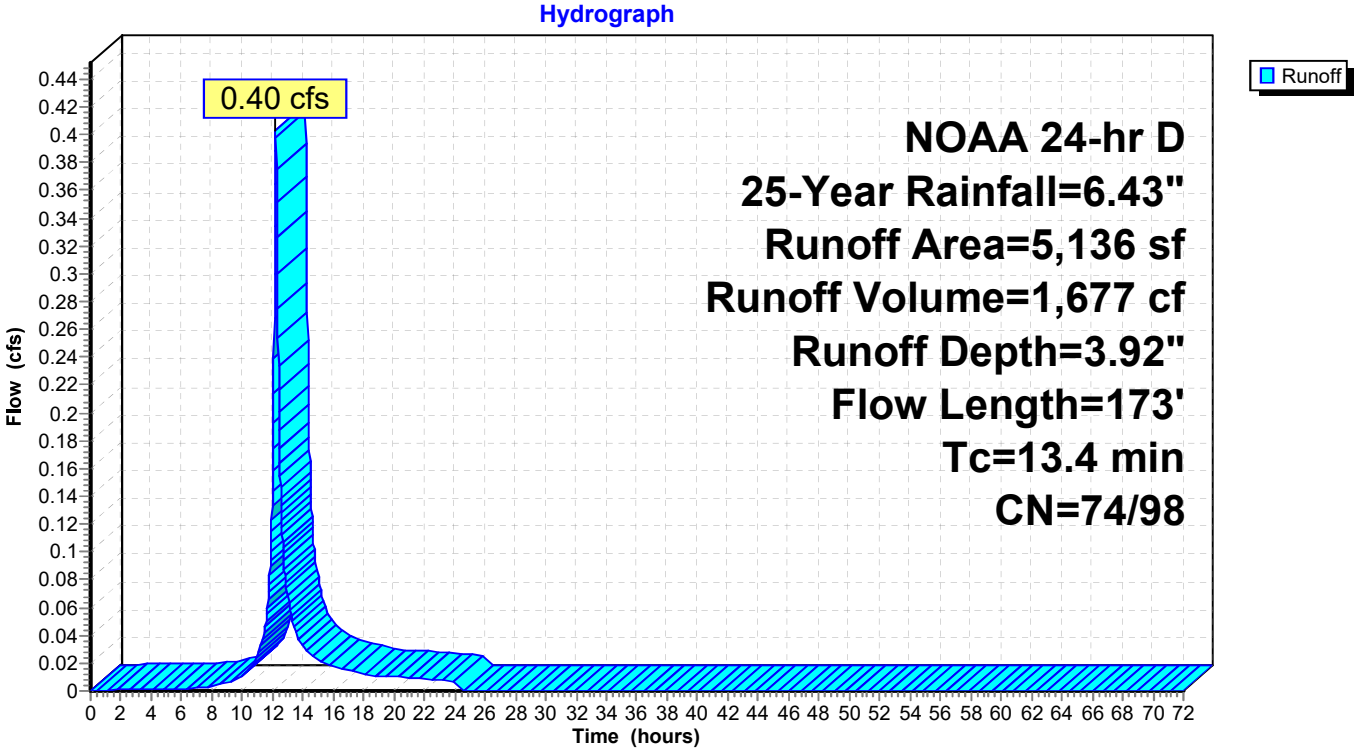
Runoff = 0.40 cfs @ 12.21 hrs, Volume= 1,677 cf, Depth= 3.92"
Routed to Pond A : Above Ground Bioretention Area (A)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
NOAA 24-hr D 25-Year Rainfall=6.43"

	Area (sf)	CN	Description
*	715	98	Impervious Area
	4,421	74	>75% Grass cover, Good, HSG C
	5,136	77	Weighted Average
	4,421	74	86.08% Pervious Area
	715	98	13.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	44	0.0045	0.08		**Sheet Flow, B1-B2** Grass: Short n= 0.150 P2= 3.47"
0.8	22	0.0044	0.46		**Shallow Concentrated Flow, B2-B3** Short Grass Pasture Kv= 7.0 fps
0.8	22	0.0044	0.46		**Shallow Concentrated Flow, B3-B4** Short Grass Pasture Kv= 7.0 fps
1.2	30	0.0033	0.40		**Shallow Concentrated Flow, B4-B5** Short Grass Pasture Kv= 7.0 fps
1.2	30	0.0033	0.40		**Shallow Concentrated Flow, B5-B6** Short Grass Pasture Kv= 7.0 fps
0.5	25	0.0120	0.77		**Shallow Concentrated Flow, B6-B7** Short Grass Pasture Kv= 7.0 fps
13.4	173	Total			

Subcatchment P-1B: Proposed Drainage to Bioretention Area A.1



Summary for Subcatchment P-1C: Proposed Drainage to Bioretention Area A.2

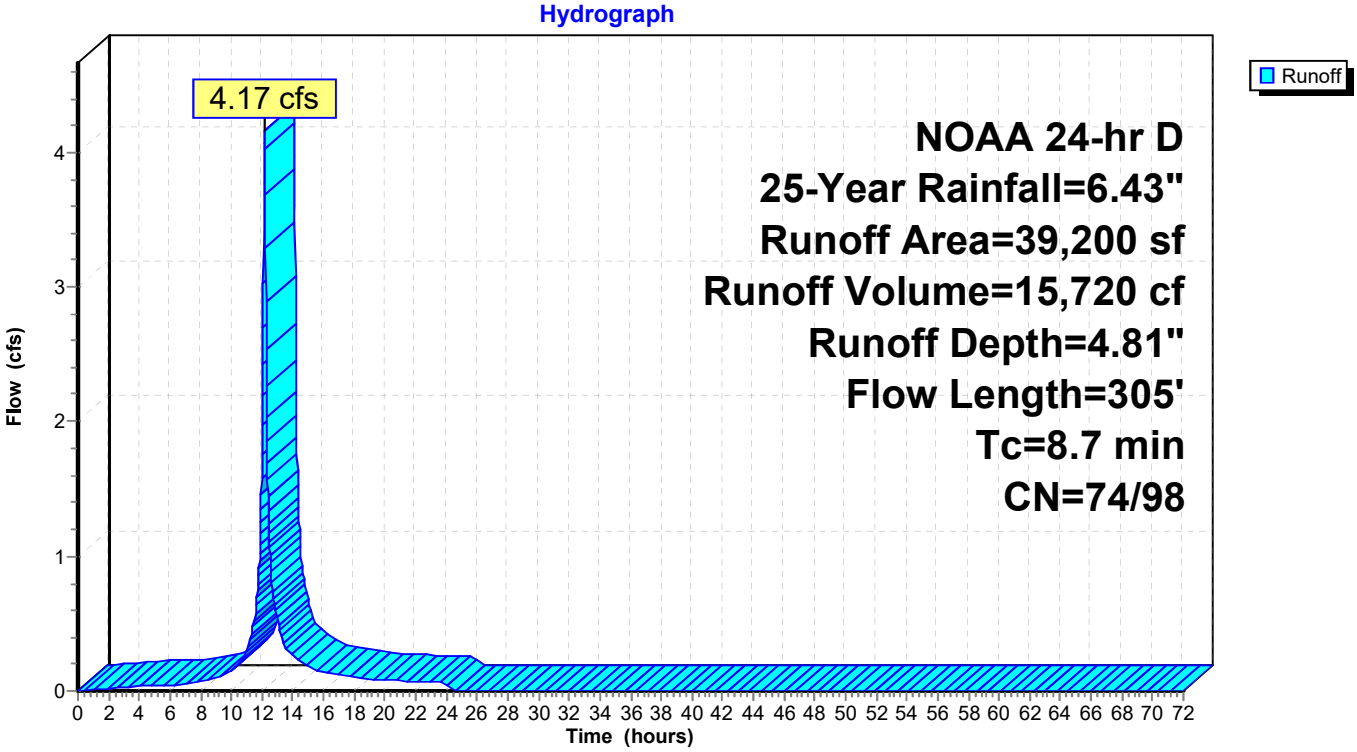
Runoff = 4.17 cfs @ 12.16 hrs, Volume= 15,720 cf, Depth= 4.81"
Routed to Pond A : Above Ground Bioretention Area (A)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
NOAA 24-hr D 25-Year Rainfall=6.43"

Area (sf)	CN	Description
18,734	98	Paved parking, HSG C
20,466	74	>75% Grass cover, Good, HSG C
39,200	85	Weighted Average
20,466	74	52.21% Pervious Area
18,734	98	47.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.8	61	0.0254	0.18		**Sheet Flow, C1-C2** Grass: Short n= 0.150 P2= 3.47"
0.3	24	0.0033	1.17		**Shallow Concentrated Flow, C2-C3** Paved Kv= 20.3 fps
0.9	77	0.0052	1.46		**Shallow Concentrated Flow, C3-C4** Paved Kv= 20.3 fps
1.0	90	0.0055	1.51		**Shallow Concentrated Flow, C4-C5** Paved Kv= 20.3 fps
0.7	53	0.0038	1.25		**Shallow Concentrated Flow, C5-C6** Paved Kv= 20.3 fps
8.7	305	Total			

Subcatchment P-1C: Proposed Drainage to Bioretention Area A.2



Summary for Subcatchment P-1E: Proposed Drainage Undetained to Valley Road

Runoff = 6.64 cfs @ 12.31 hrs, Volume= 32,629 cf, Depth= 3.15"
Routed to Reach SW-1 : Rear Wall Swale (SW-1)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.02 hrs
NOAA 24-hr D 25-Year Rainfall=6.43"

Area (sf)	CN	Description
124,291	70	Woods, Good, HSG C
124,291	70	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.0201	0.18		**Sheet Flow, E1-E2** Grass: Short n= 0.150 P2= 3.47"
1.5	68	0.0111	0.74		**Shallow Concentrated Flow, E2-E3** Short Grass Pasture Kv= 7.0 fps
1.6	95	0.0200	0.99		**Shallow Concentrated Flow, E3-E4** Short Grass Pasture Kv= 7.0 fps
0.7	37	0.0162	0.89		**Shallow Concentrated Flow, E3-E4** Short Grass Pasture Kv= 7.0 fps
1.6	60	0.0083	0.64		**Shallow Concentrated Flow, E5-E6** Short Grass Pasture Kv= 7.0 fps
3.5	96	0.0042	0.45		**Shallow Concentrated Flow, E6-E7** Short Grass Pasture Kv= 7.0 fps
1.8	39	0.0026	0.36		**Shallow Concentrated Flow, E7-E8** Short Grass Pasture Kv= 7.0 fps
0.8	23	0.0043	0.46		**Shallow Concentrated Flow, E8-E9** Short Grass Pasture Kv= 7.0 fps
20.9	518	Total			

Subcatchment P-1E: Proposed Drainage Undetained to Valley Road