Stormwater Management Report
Vintage Hills II Subdivision
Barber Hill Road
South Windsor, Connecticut

Prepared by:

Design Professionals, Inc.
21 Jeffrey Drive
South Windsor, CT 06074

November 2, 2020

Table of Contents

Introduction

Vintage Hills II, LLC, is proposing a development at L006 Barber Hill Road, South Windsor, Connecticut. The property is referenced on the Town of South Windsor Tax Assessors map as Map 149 Lot 5. The proposed development is a six-lot subdivision which includes the extension of Vintage Lane. Associated site improvements will include but not be limited to new homes with driveways and septic systems, utilities, landscaping, and stormwater management BMP's.

The property consists of 12.7 acres. Approximately 4.49± acres are proposed to be disturbed for the construction of the subdivision. We expect the proposed development will lower existing peak flow conditions exiting the property. For more information, please refer to the plans entitled "Vintage Hills II ~ Subdivision Plan ~ South Windsor, CT" prepared by Design Professionals, Inc., and dated November 2, 2020, as amended.

Pre-Development Site Conditions

The existing surficial characteristics of the area to be utilized can be primarily classified as farmland with woodland areas surrounding the outskirts. Design Professionals, Inc. (DPI) conducted a topographic survey of the property. Along with the survey, the Town topography was utilized in analyzing the surrounding area (referenced on the Existing Conditions Drainage Area Map included in **Appendix F**). The topography of the survey indicated that runoff exits the property in three locations; Design Point (DP)#1, #2 and #3. DP#1 is located in the northwest corner of the property which is within an upland wetland review area. DP#2 is located midway along the northern property line. An existing depression allows runoff to infiltrate and excess leads off site to the north. The flow would eventually lead toward DP#1. DP#3 is in the southeastern corner of the property. An existing depression allows runoff to infiltrate and excess leads off site to the south. Some flow to DP#3 is directed across Barber Hill Road in an existing 15" RCP (10-year flow of 3.36 cfs). Infiltration values for DP#2 and #3 utilize a factor of safety of 2 and are based on the percolation tests in the areas. Existing conditions watershed delineations are identified in the Existing Conditions Drainage Map located in **Appendix F**.

Based on Natural Resources Conservation Service (NRCS) Hydrologic Soil Group (HSG) mapping, soils types A, B, C, & C/ D are located on site. See **Appendix D** for The NRCS Soil Map & Data.

An evaluation was performed to quantify the peak rate of stormwater discharge offsite to **Design Points #1, #2 and #3** for the 2-, 10-, 25-, 50- and 100-year storm events. The Natural Resources Conservation Service's TR-55 Manual was followed in predicting the peak rates of runoff and volumes. HydroCAD computer modeling software was utilized. Please refer to the Table in the Analysis section. The Pre-Development Drainage HydroCAD Report located in **Appendix A**.

Post-Development Site Conditions

The subject project proposes the construction of an extension of Vintage Lane and six homes. All runoff generated from the roadway will be collected in an underground storm water catchment

system and be conveyed to a proposed Water Quality Depression (PD1). All roadway runoff will be treated within the basin before discharging to toward DP#1.

See **Appendix B** for the Post Development Condition HydroCAD report. The Proposed Conditions Drainage Map for the site is located in **Appendix F**.

Analysis of Results

The following table contains the data for the pre-development and post-development conditions generated from the HydroCAD software:

Reach		2 year	10 year	25 year	50 year	100 year
DP#1 – Northwestern Property Corner	Pre	3.77	9.98	14.28	17.56	21.28
	Post	0.23	7.41	12.16	15.48	19.29
DP#2 – Northern Property Line Mid-Property	Pre	2.26	18.33	28.49	35.87	44.21
	Post	0	12.96	22.93	30.12	38.10
DP#3 – Southeaster Property Corner	Pre	0	3.47	6.72	9.12	11.78
	Post	0	2.86	6.06	8.42	11.07

As seen in the table above, we expect the subject project will result in peak runoff rates in the proposed condition that are less than the peak runoff rates of the existing condition for 2-, 10-, 25- and 100-year design storms.

Storm Sewer Collection System

The proposed subsurface stormwater collection and conveyance system was designed to adequately convey proposed runoff under 10- year storm event conditions. The design of the storm sewers followed the guidelines set forth in the Connecticut Department of Transportation's Drainage Manual. It is estimated that during a 10-year storm event, all proposed subsurface culverts will convey storm runoff without resulting in any unacceptable flooding conditions. Hydraflow Storm Sewers computer software was used for analysis. The computations are included as **Appendix C**.

Water Quality

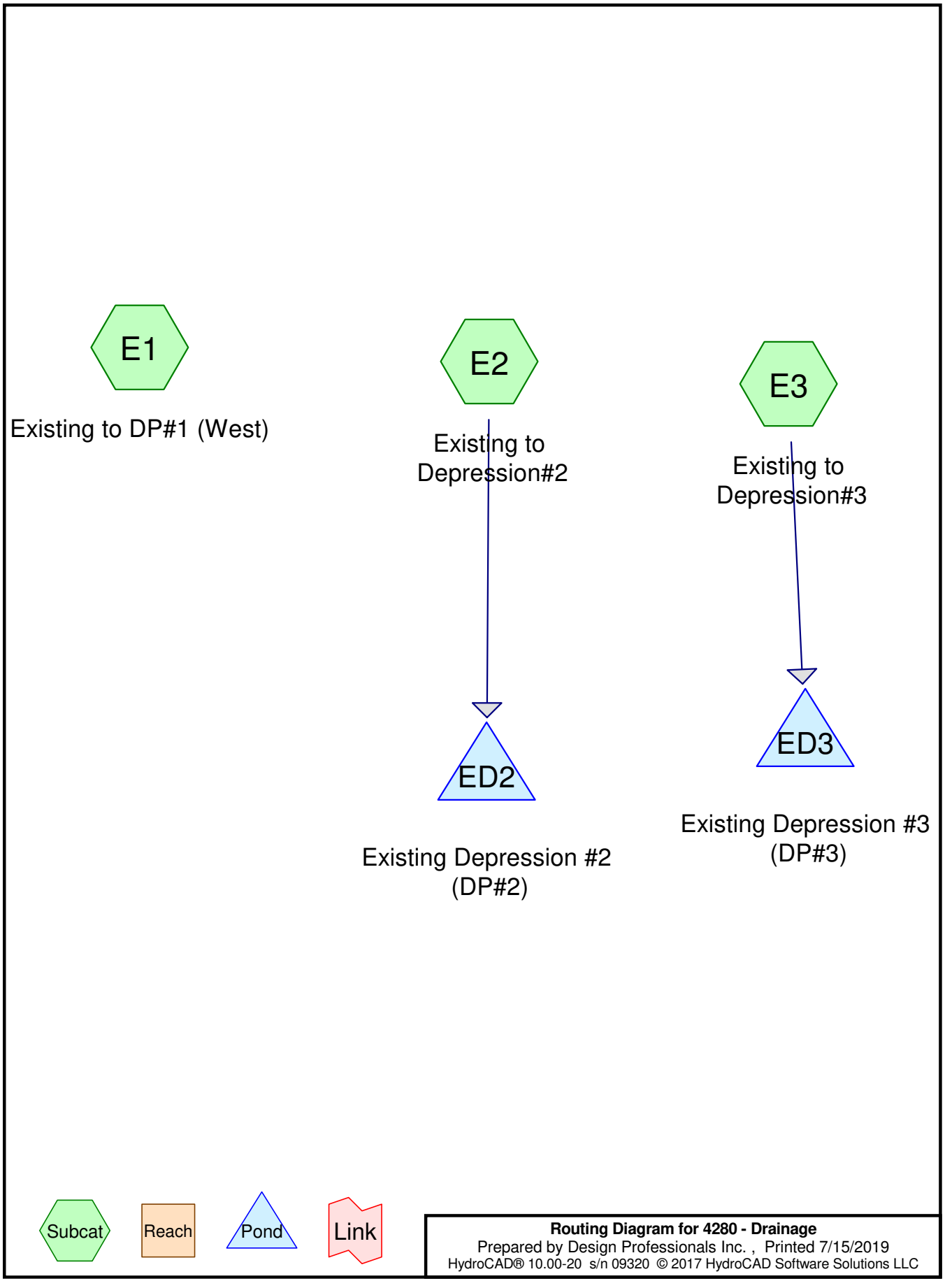
The proposed Water Quality Depression, PD1, was sized in accordance with the 2004 Connecticut Stormwater Quality Manual, to provide a pond volume that exceeds the determined water quality volume. See **Appendix E** for calculations

The proposed temporary sediment basin shall be sized in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control.

Conclusion

The proposed stormwater management system as discussed herein and shown on the referenced plans is appropriate for the proposed development on the subject site, is consistent with Town and State requirements, and should not pose any detrimental impacts to the environment.

APPENDIX A
Watershed Computations
(Pre-Development Drainage HydroCAD Report)



Routing Diagram for 4280 - Drainage
Prepared by Design Professionals Inc. , Printed 7/15/2019

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E1: Existing to DP#1 (West) Runoff Area=230,008 sf 0.54% Impervious Runoff Depth=0.90"
Flow Length=764' Tc=15.6 min CN=72 Runoff=3.77 cfs 0.395 af

Subcatchment E2: Existing to Runoff Area=548,007 sf 4.19% Impervious Runoff Depth=0.85"
Flow Length=918' Tc=16.4 min CN=71 Runoff=8.19 cfs 0.889 af

Subcatchment E3: Existing to Runoff Area=197,997 sf 5.97% Impervious Runoff Depth=1.00"
Flow Length=660' Tc=21.2 min CN=74 Runoff=3.31 cfs 0.381 af

Pond ED2: Existing Depression #2 (DP#2) Peak Elev=292.75' Storage=10,891 cf Inflow=8.19 cfs 0.889 af
Discarded=1.46 cfs 0.806 af Primary=2.26 cfs 0.083 af Outflow=3.72 cfs 0.889 af

Pond ED3: Existing Depression #3 (DP#3) Peak Elev=298.45' Storage=1,855 cf Inflow=3.31 cfs 0.381 af
Discarded=2.33 cfs 0.381 af Primary=0.00 cfs 0.000 af Outflow=2.33 cfs 0.381 af

Total Runoff Area = 22.406 ac Runoff Volume = 1.665 af Average Runoff Depth = 0.89"
96.31% Pervious = 21.579 ac 3.69% Impervious = 0.827 ac

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E1: Existing to DP#1 (West) Runoff Area=230,008 sf 0.54% Impervious Runoff Depth=2.19"
Flow Length=764' Tc=15.6 min CN=72 Runoff=9.98 cfs 0.964 af

Subcatchment E2: Existing to Runoff Area=548,007 sf 4.19% Impervious Runoff Depth=2.11"
Flow Length=918' Tc=16.4 min CN=71 Runoff=22.34 cfs 2.211 af

Subcatchment E3: Existing to Runoff Area=197,997 sf 5.97% Impervious Runoff Depth=2.36"
Flow Length=660' Tc=21.2 min CN=74 Runoff=8.19 cfs 0.893 af

Pond ED2: Existing Depression #2 (DP#2) Peak Elev=292.90' Storage=15,288 cf Inflow=22.34 cfs 2.211 af
Discarded=1.73 cfs 1.235 af Primary=18.33 cfs 0.976 af Outflow=20.06 cfs 2.211 af

Pond ED3: Existing Depression #3 (DP#3) Peak Elev=298.72' Storage=4,656 cf Inflow=8.19 cfs 0.893 af
Discarded=3.70 cfs 0.793 af Primary=3.47 cfs 0.100 af Outflow=7.16 cfs 0.893 af

Total Runoff Area = 22.406 ac Runoff Volume = 4.067 af Average Runoff Depth = 2.18"
96.31% Pervious = 21.579 ac 3.69% Impervious = 0.827 ac

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E1: Existing to DP#1 (West) Runoff Area=230,008 sf 0.54% Impervious Runoff Depth=3.10"
Flow Length=764' Tc=15.6 min CN=72 Runoff=14.28 cfs 1.364 af

Subcatchment E2: Existing to Runoff Area=548,007 sf 4.19% Impervious Runoff Depth=3.00"
Flow Length=918' Tc=16.4 min CN=71 Runoff=32.26 cfs 3.149 af

Subcatchment E3: Existing to Runoff Area=197,997 sf 5.97% Impervious Runoff Depth=3.29"
Flow Length=660' Tc=21.2 min CN=74 Runoff=11.53 cfs 1.248 af

Pond ED2: Existing Depression #2 (DP#2) Peak Elev=292.97' Storage=17,412 cf Inflow=32.26 cfs 3.149 af
Discarded=1.84 cfs 1.445 af Primary=28.49 cfs 1.704 af Outflow=30.33 cfs 3.149 af

Pond ED3: Existing Depression #3 (DP#3) Peak Elev=298.79' Storage=5,537 cf Inflow=11.53 cfs 1.248 af
Discarded=4.03 cfs 1.012 af Primary=6.72 cfs 0.236 af Outflow=10.75 cfs 1.248 af

Total Runoff Area = 22.406 ac Runoff Volume = 5.761 af Average Runoff Depth = 3.09"
96.31% Pervious = 21.579 ac 3.69% Impervious = 0.827 ac

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E1: Existing to DP#1 (West) Runoff Area=230,008 sf 0.54% Impervious Runoff Depth=3.80"
Flow Length=764' Tc=15.6 min CN=72 Runoff=17.56 cfs 1.674 af

Subcatchment E2: Existing to Runoff Area=548,007 sf 4.19% Impervious Runoff Depth=3.70"
Flow Length=918' Tc=16.4 min CN=71 Runoff=39.87 cfs 3.877 af

Subcatchment E3: Existing to Runoff Area=197,997 sf 5.97% Impervious Runoff Depth=4.02"
Flow Length=660' Tc=21.2 min CN=74 Runoff=14.07 cfs 1.521 af

Pond ED2: Existing Depression #2 (DP#2) Peak Elev=293.01' Storage=18,843 cf Inflow=39.87 cfs 3.877 af
Discarded=1.91 cfs 1.582 af Primary=35.87 cfs 2.295 af Outflow=37.79 cfs 3.877 af

Pond ED3: Existing Depression #3 (DP#3) Peak Elev=298.83' Storage=6,115 cf Inflow=14.07 cfs 1.521 af
Discarded=4.24 cfs 1.170 af Primary=9.12 cfs 0.352 af Outflow=13.36 cfs 1.521 af

Total Runoff Area = 22.406 ac Runoff Volume = 7.072 af Average Runoff Depth = 3.79"
96.31% Pervious = 21.579 ac 3.69% Impervious = 0.827 ac

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment E1: Existing to DP#1 (West) Runoff Area=230,008 sf 0.54% Impervious Runoff Depth=4.61"
Flow Length=764' Tc=15.6 min CN=72 Runoff=21.28 cfs 2.027 af

Subcatchment E2: Existing to Runoff Area=548,007 sf 4.19% Impervious Runoff Depth=4.49"
Flow Length=918' Tc=16.4 min CN=71 Runoff=48.49 cfs 4.710 af

Subcatchment E3: Existing to Runoff Area=197,997 sf 5.97% Impervious Runoff Depth=4.84"
Flow Length=660' Tc=21.2 min CN=74 Runoff=16.93 cfs 1.832 af

Pond ED2: Existing Depression #2 (DP#2) Peak Elev=293.06' Storage=20,371 cf Inflow=48.49 cfs 4.710 af
Discarded=1.97 cfs 1.721 af Primary=44.21 cfs 2.989 af Outflow=46.18 cfs 4.710 af

Pond ED3: Existing Depression #3 (DP#3) Peak Elev=298.87' Storage=6,710 cf Inflow=16.93 cfs 1.832 af
Discarded=4.44 cfs 1.342 af Primary=11.78 cfs 0.490 af Outflow=16.22 cfs 1.832 af

Total Runoff Area = 22.406 ac Runoff Volume = 8.569 af Average Runoff Depth = 4.59"
96.31% Pervious = 21.579 ac 3.69% Impervious = 0.827 ac

Summary for Subcatchment E1: Existing to DP#1 (West)

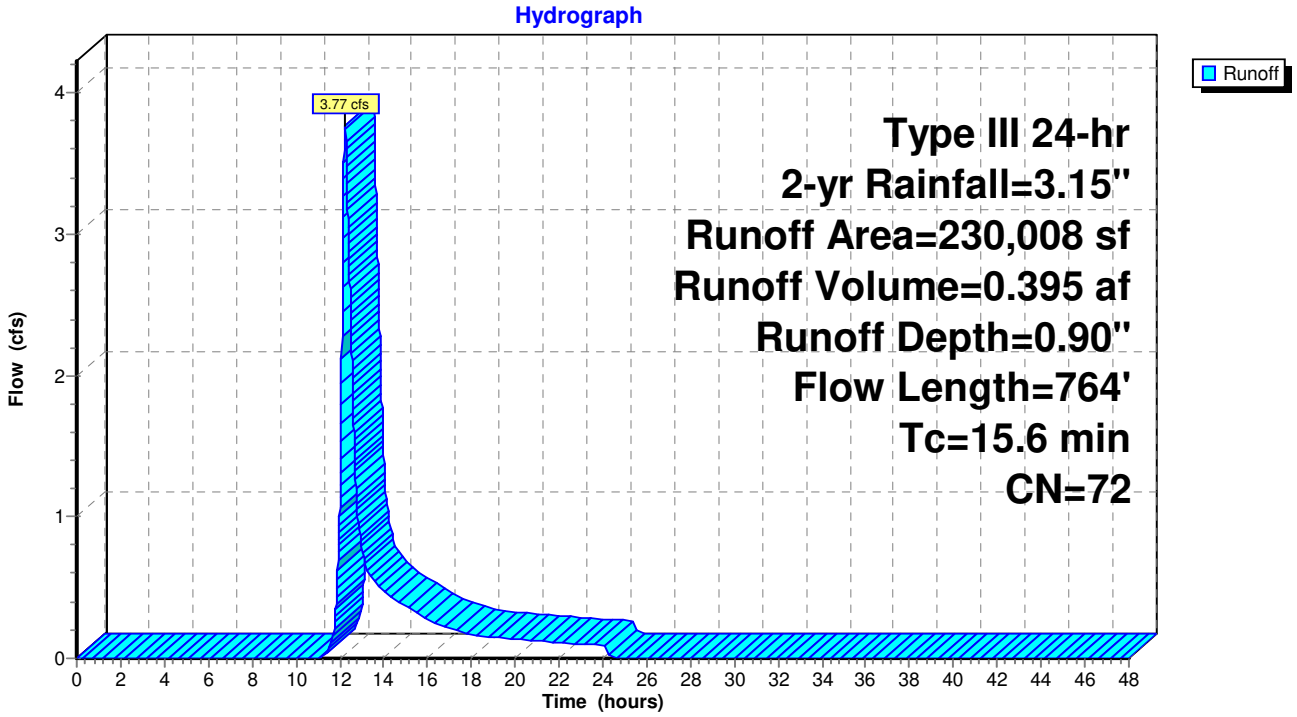
Runoff = 3.77 cfs @ 12.24 hrs, Volume= 0.395 af, Depth= 0.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.15"

Area (sf)	CN	Description
128,085	78	Row crops, straight row, Good, HSG B
80,544	66	Woods, Poor, HSG B
20,139	61	>75% Grass cover, Good, HSG B
1,240	98	Water Surface, HSG B
230,008	72	Weighted Average
228,768		99.46% Pervious Area
1,240		0.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	100	0.0286	0.19		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.15"
0.3	60	0.0370	2.89		**Shallow Concentrated Flow, Grass** Grassed Waterway Kv= 15.0 fps
3.1	347	0.0430	1.87		**Shallow Concentrated Flow, Crop Field** Cultivated Straight Rows Kv= 9.0 fps
3.3	148	0.0068	0.74		**Shallow Concentrated Flow, Crop Field** Cultivated Straight Rows Kv= 9.0 fps
0.3	109	0.0640	5.62	33.69	**Channel Flow, Woods** Area= 6.0 sf Perim= 20.0' r= 0.30' n= 0.030 Stream, clean & straight
15.6	764	Total			

Subcatchment E1: Existing to DP#1 (West)



Summary for Subcatchment E2: Existing to Depression#2

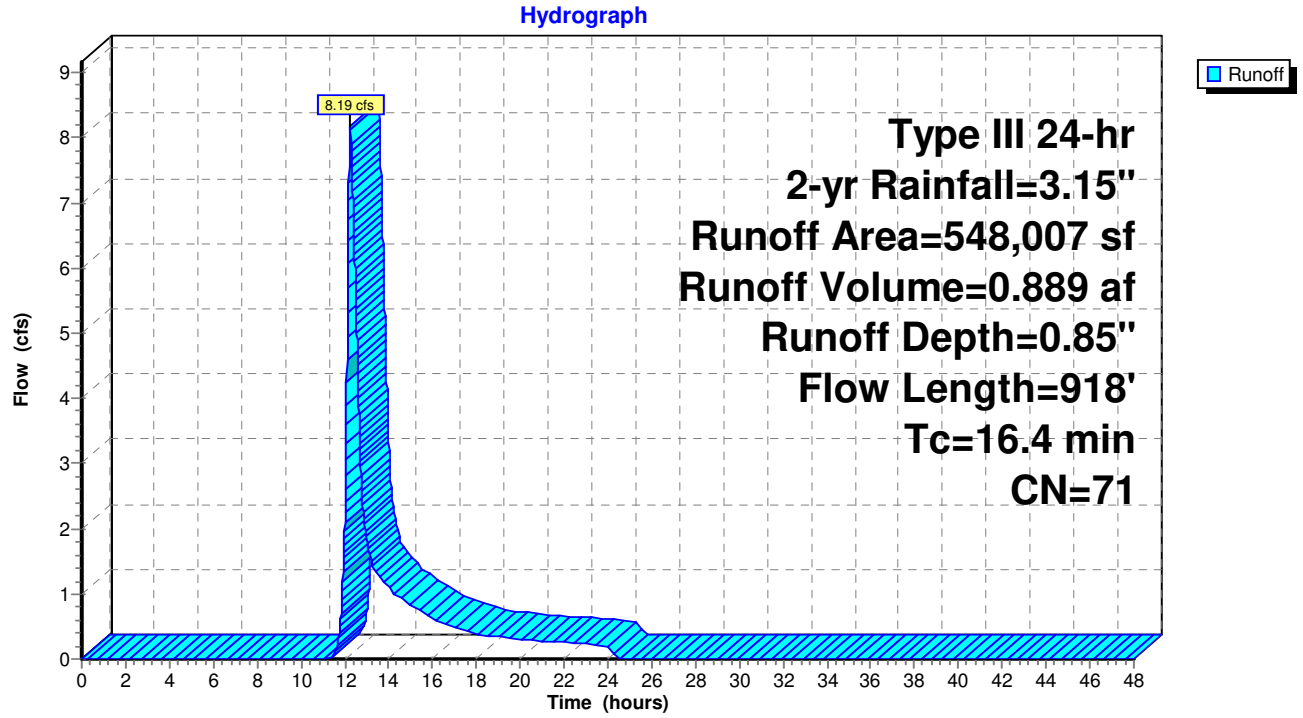
Runoff = 8.19 cfs @ 12.25 hrs, Volume= 0.889 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.15"

Area (sf)	CN	Description
299,776	75	Small grain, straight row, Good, HSG B
86,029	66	Woods, Poor, HSG B
139,227	61	>75% Grass cover, Good, HSG B
22,975	98	Paved parking, HSG B
548,007	71	Weighted Average
525,032		95.81% Pervious Area
22,975		4.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0330	0.21		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.15"
6.1	488	0.0080	1.34		**Shallow Concentrated Flow, Grass Shalllow Conc** Grassed Waterway Kv= 15.0 fps
2.2	330	0.0050	2.56	84.12	**Channel Flow, Crop Field** Area= 32.9 sf Perim= 84.0' r= 0.39' n= 0.022 Earth, clean & straight
16.4	918	Total			

Subcatchment E2: Existing to Depression#2



Summary for Subcatchment E3: Existing to Depression#3

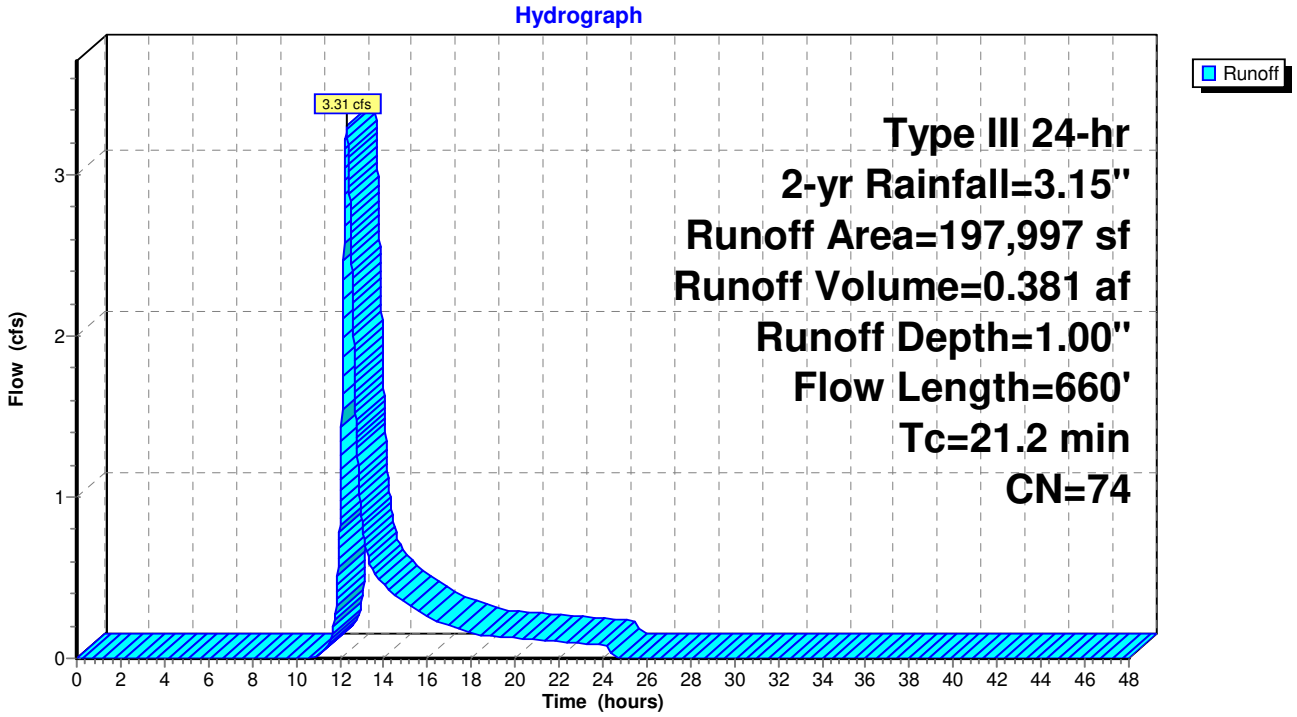
Runoff = 3.31 cfs @ 12.32 hrs, Volume= 0.381 af, Depth= 1.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.15"

Area (sf)	CN	Description
108,957	78	Row crops, straight row, Good, HSG B
71,192	66	Woods, Poor, HSG B
6,020	61	>75% Grass cover, Good, HSG B
11,828	98	Paved parking, HSG B
197,997	74	Weighted Average
186,169		94.03% Pervious Area
11,828		5.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	100	0.0350	0.10		**Sheet Flow, Woods Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.15"
1.1	100	0.0300	1.56		**Shallow Concentrated Flow, Crop Shallow Conc** Cultivated Straight Rows Kv= 9.0 fps
1.2	88	0.0600	1.22		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.3	82	0.1000	5.30	63.60	**Channel Flow, Wooded** Area= 12.0 sf Perim= 14.0' r= 0.86' n= 0.080 Earth, long dense weeds
1.3	290	0.0140	3.66	94.01	**Channel Flow, Crop Swale** Area= 25.7 sf Perim= 83.0' r= 0.31' n= 0.022 Earth, clean & straight
21.2	660	Total			

Subcatchment E3: Existing to Depression#3



Summary for Pond ED2: Existing Depression #2 (DP#2)

Inflow Area = 12.581 ac, 4.19% Impervious, Inflow Depth = 0.85" for 2-yr event
Inflow = 8.19 cfs @ 12.25 hrs, Volume= 0.889 af
Outflow = 3.72 cfs @ 12.64 hrs, Volume= 0.889 af, Atten= 55%, Lag= 23.4 min
Discarded = 1.46 cfs @ 12.64 hrs, Volume= 0.806 af
Primary = 2.26 cfs @ 12.64 hrs, Volume= 0.083 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 292.75' @ 12.64 hrs Surf.Area= 26,286 sf Storage= 10,891 cf

Plug-Flow detention time= 75.8 min calculated for 0.889 af (100% of inflow)
Center-of-Mass det. time= 75.8 min (958.8 - 883.0)

Volume	Invert	Avail.Storage	Storage Description
#1	292.00'	65,269 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

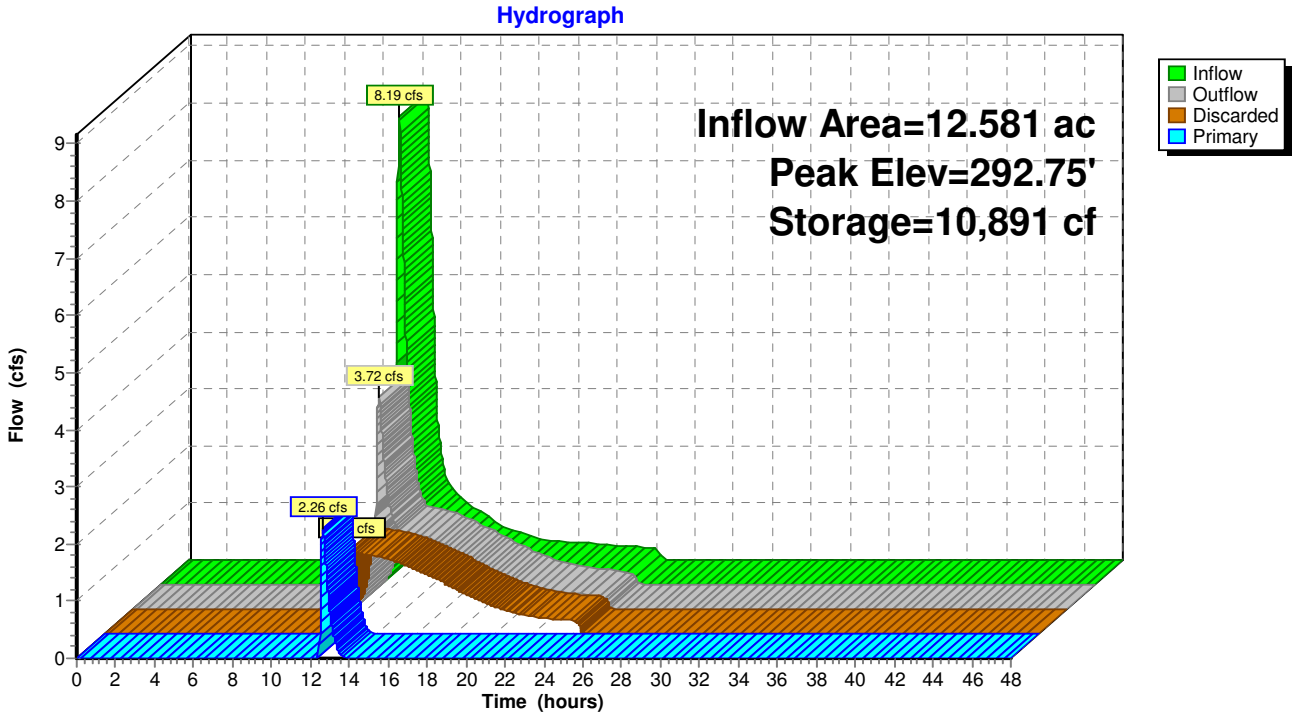
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
292.00	2,736	0	0
293.00	34,115	18,426	18,426
294.00	59,572	46,844	65,269

Device	Routing	Invert	Outlet Devices
#1	Discarded	292.00'	**2.400 in/hr Exfiltration (0.08x60/2) over Surface area** Phase-In= 0.01'
#2	Primary	292.70'	**84.0' long x 6.0' breadth Broad-Crested Rectangular Weir** 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) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Discarded OutFlow Max=1.46 cfs @ 12.64 hrs HW=292.75' (Free Discharge)
1=Exfiltration (0.08x60/2) (Exfiltration Controls 1.46 cfs)

Primary OutFlow Max=2.26 cfs @ 12.64 hrs HW=292.75' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 2.26 cfs @ 0.53 fps)

Pond ED2: Existing Depression #2 (DP#2)



Summary for Pond ED3: Existing Depression #3 (DP#3)

Inflow Area = 4.545 ac, 5.97% Impervious, Inflow Depth = 1.00" for 2-yr event
Inflow = 3.31 cfs @ 12.32 hrs, Volume= 0.381 af
Outflow = 2.33 cfs @ 12.56 hrs, Volume= 0.381 af, Atten= 29%, Lag= 14.7 min
Discarded = 2.33 cfs @ 12.56 hrs, Volume= 0.381 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 298.45' @ 12.56 hrs Surf.Area= 8,002 sf Storage= 1,855 cf

Plug-Flow detention time= 5.8 min calculated for 0.381 af (100% of inflow)
Center-of-Mass det. time= 5.8 min (883.0 - 877.2)

Volume	Invert	Avail.Storage	Storage Description
#1	298.00'	39,398 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

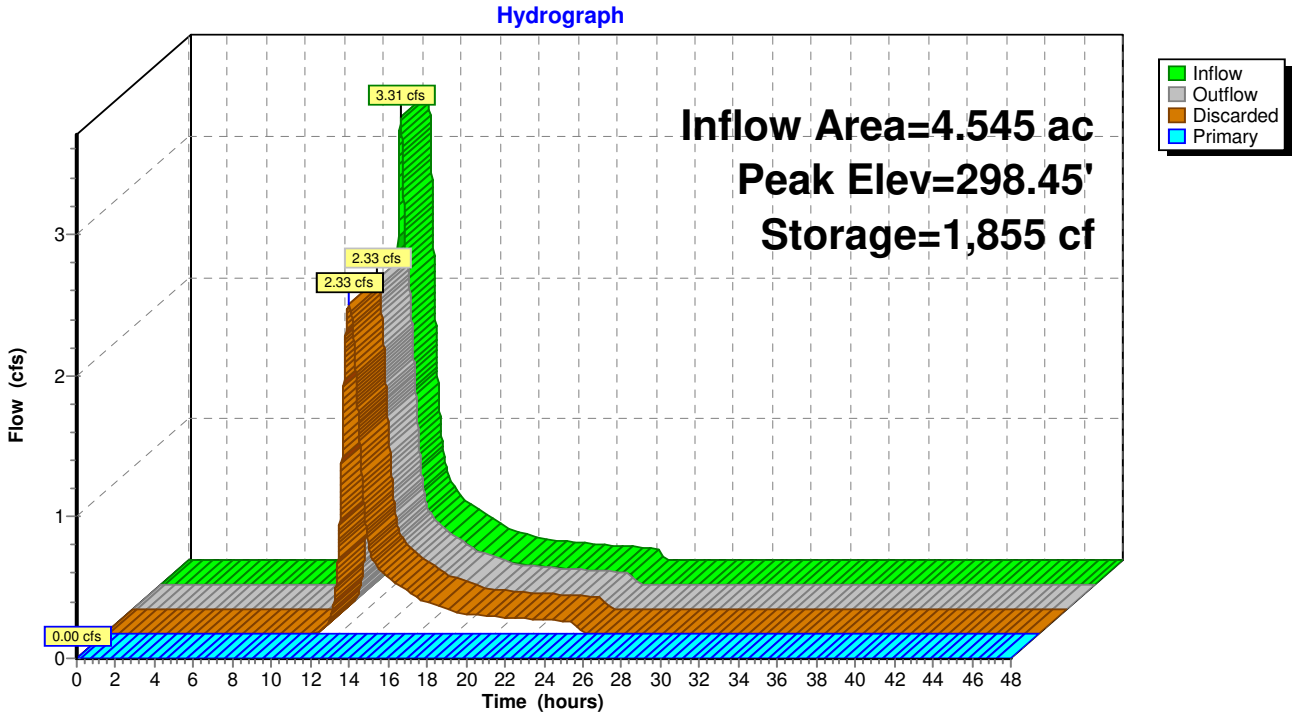
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.00	256	0	0
299.00	17,500	8,878	8,878
300.00	43,539	30,520	39,398

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.00'	**12.600 in/hr Exfiltration (0.42x60/2) over Surface area** Phase-In= 0.01'
#2	Primary	298.60'	**35.0' long x 4.0' breadth Broad-Crested Rectangular Weir** 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

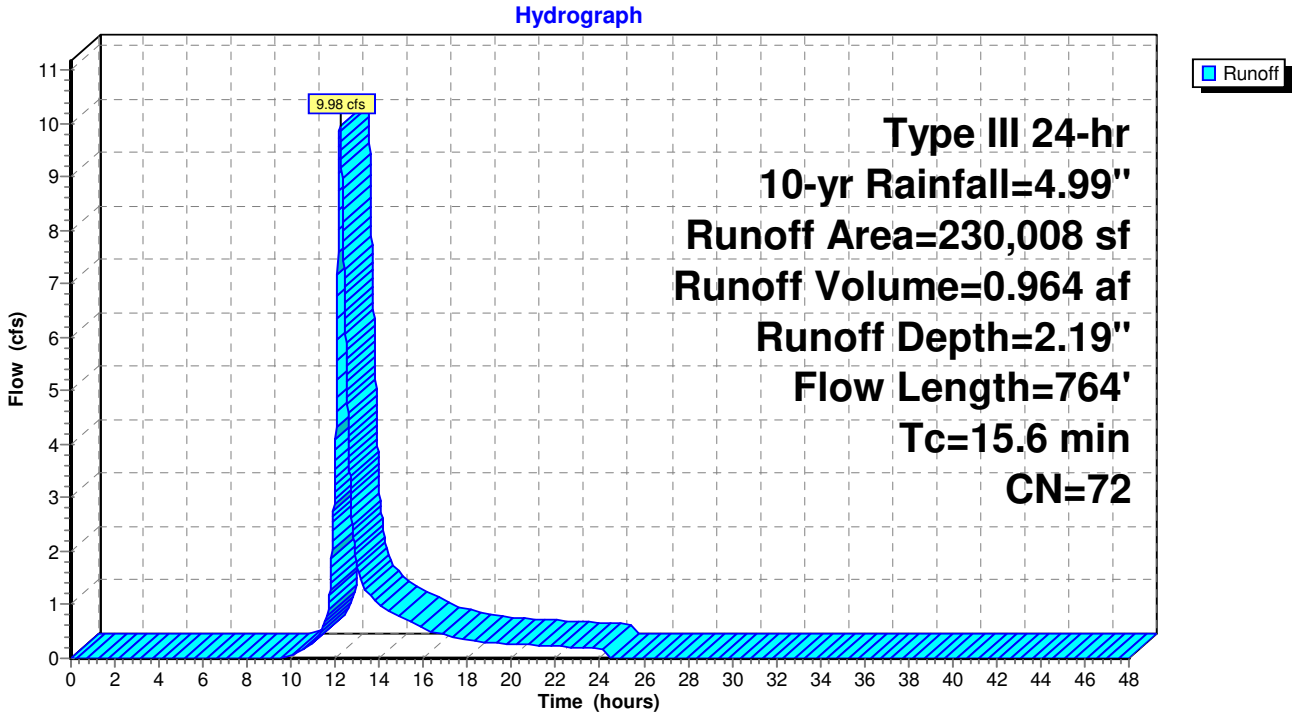
Discarded OutFlow Max=2.33 cfs @ 12.56 hrs HW=298.45' (Free Discharge)
1=Exfiltration (0.42x60/2) (Exfiltration Controls 2.33 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=298.00' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

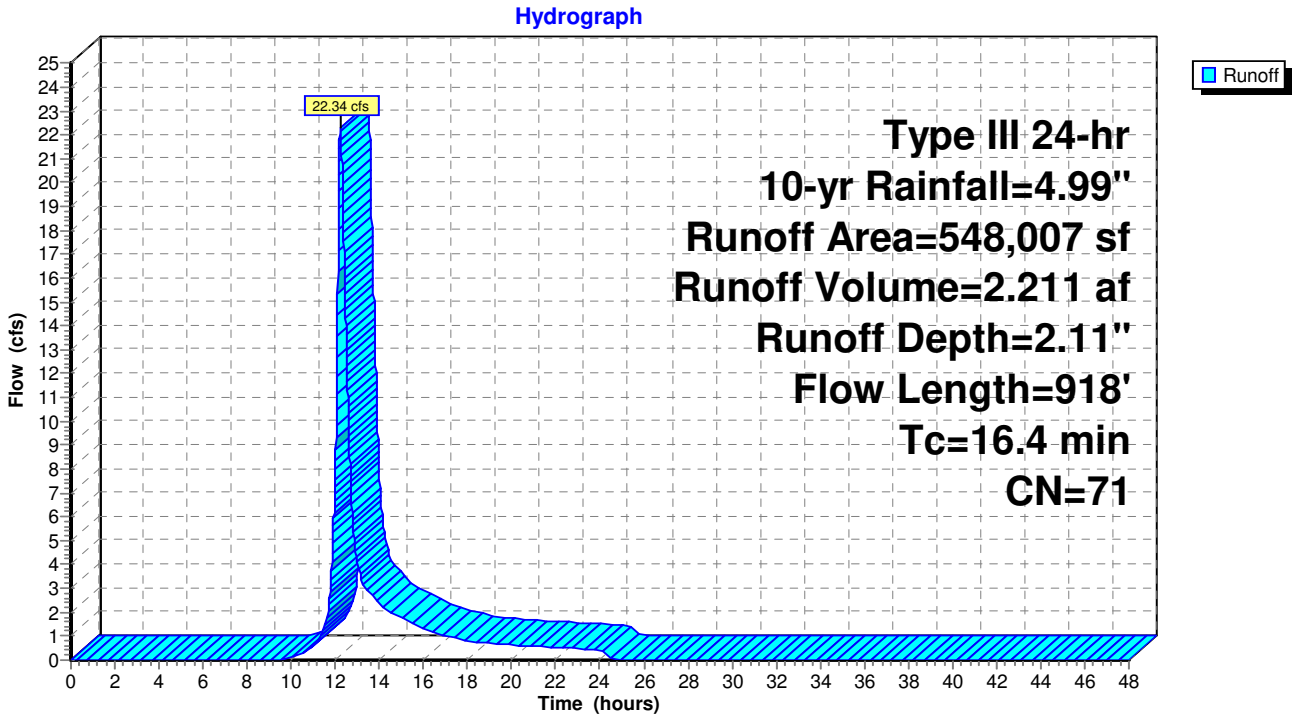
Pond ED3: Existing Depression #3 (DP#3)



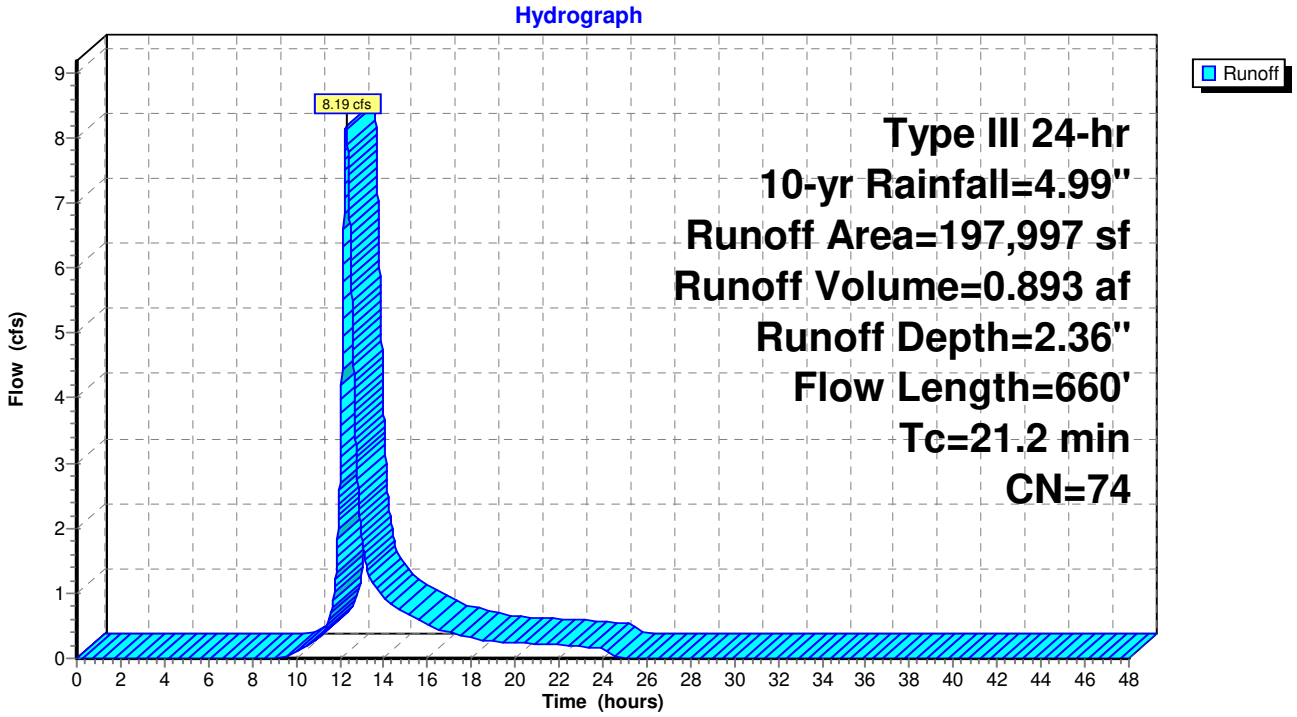
Subcatchment E1: Existing to DP#1 (West)



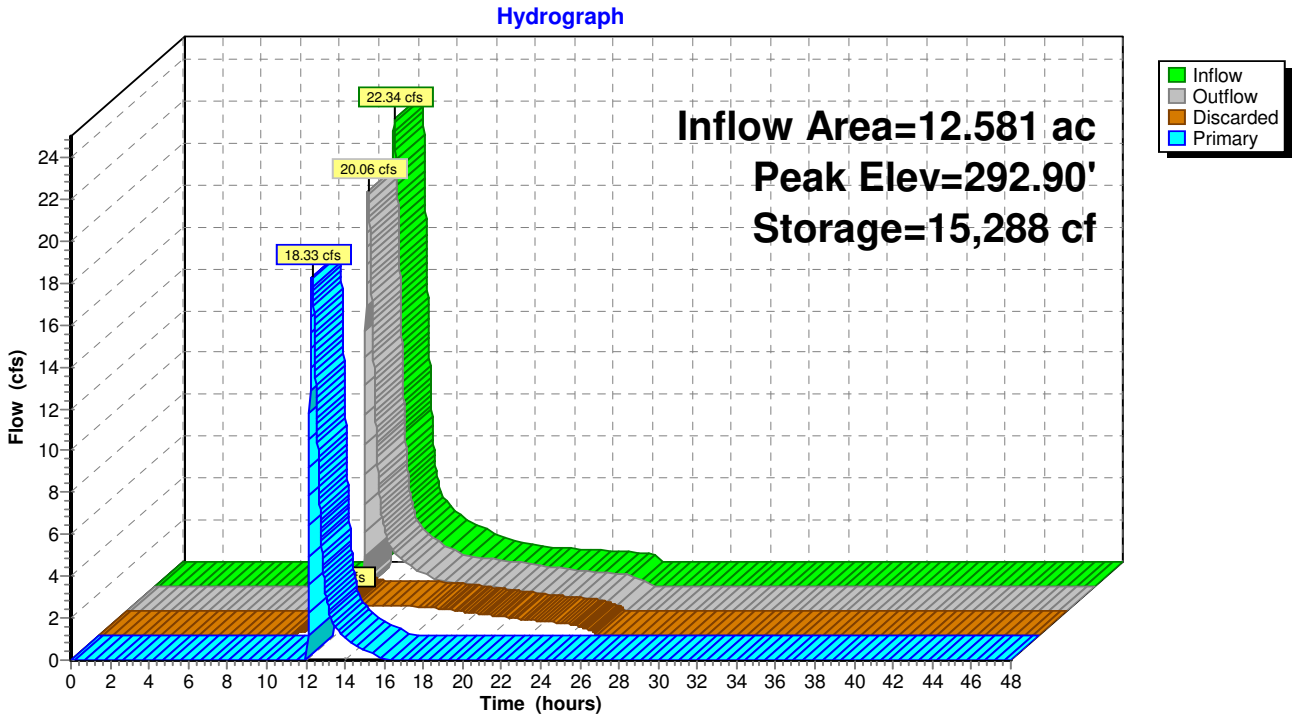
Subcatchment E2: Existing to Depression#2



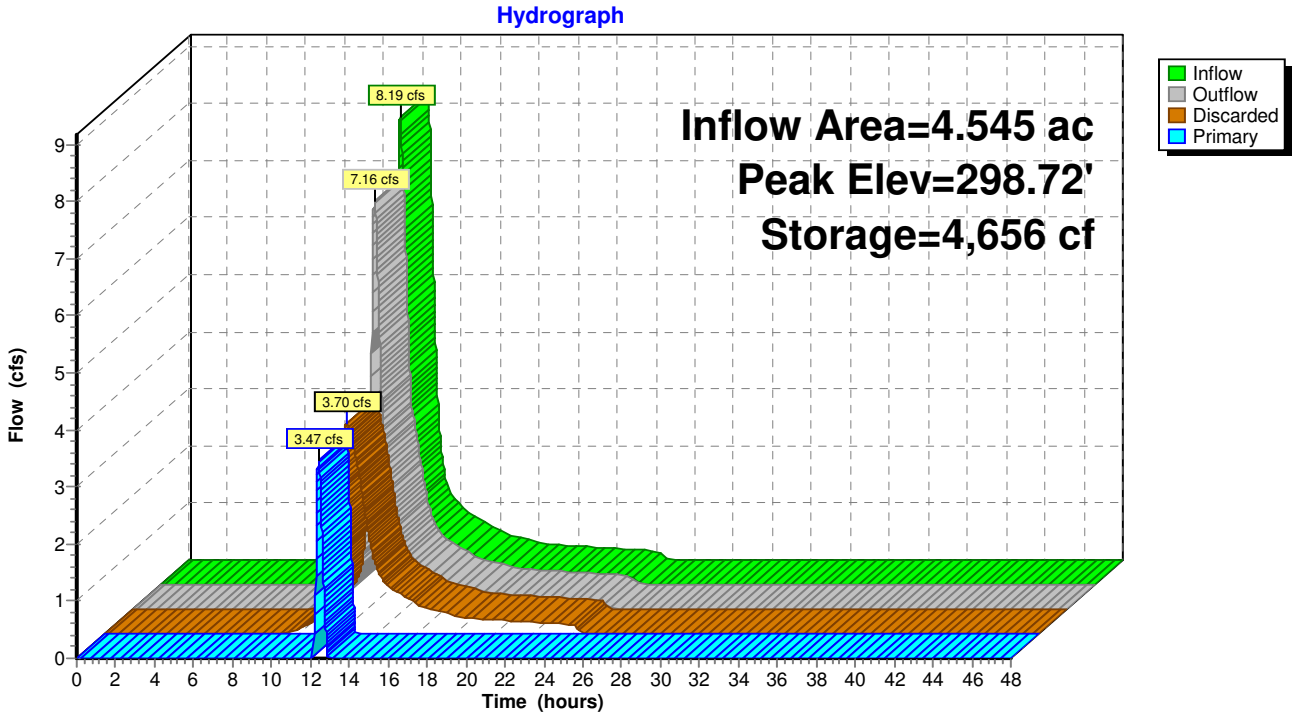
Subcatchment E3: Existing to Depression#3



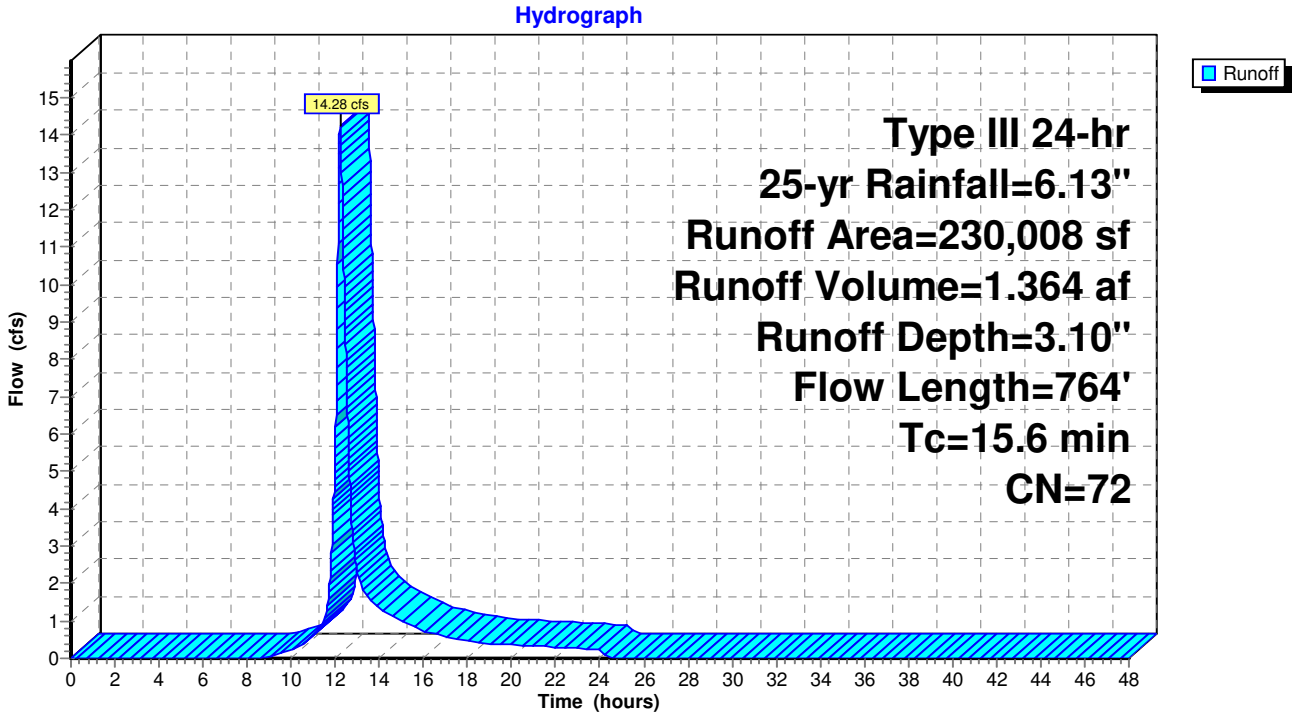
Pond ED2: Existing Depression #2 (DP#2)



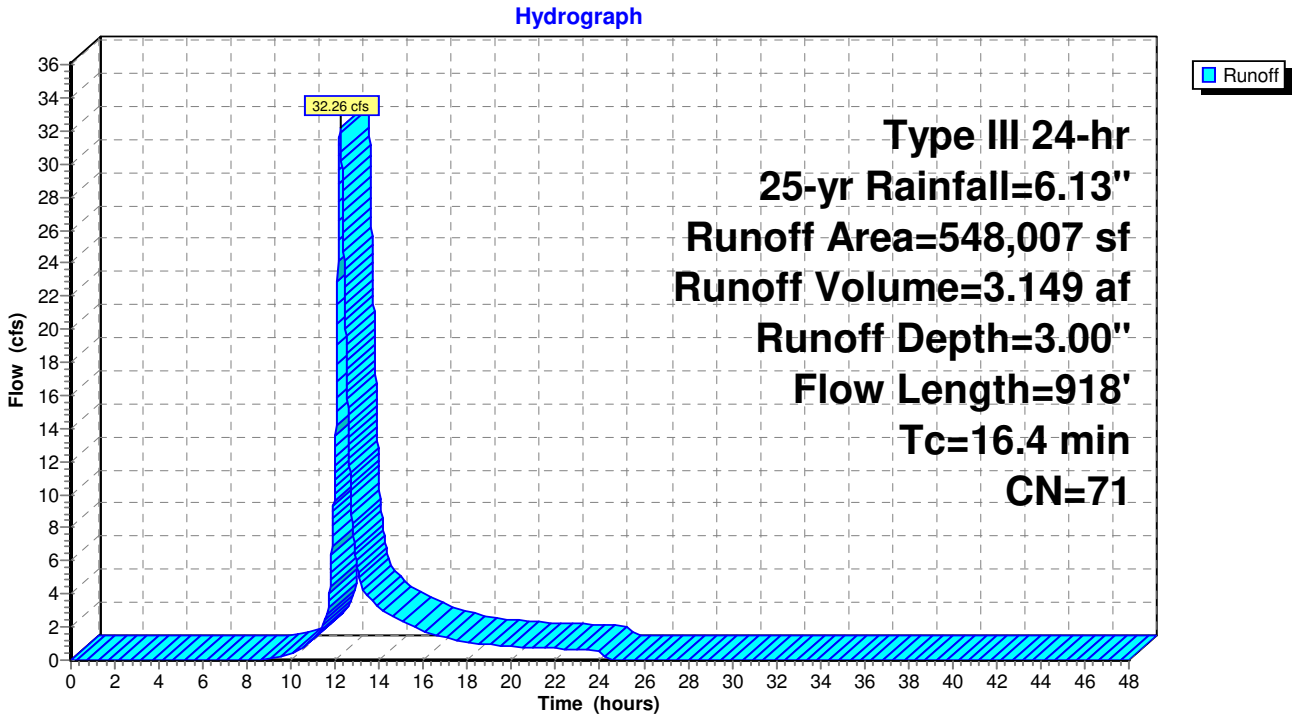
Pond ED3: Existing Depression #3 (DP#3)



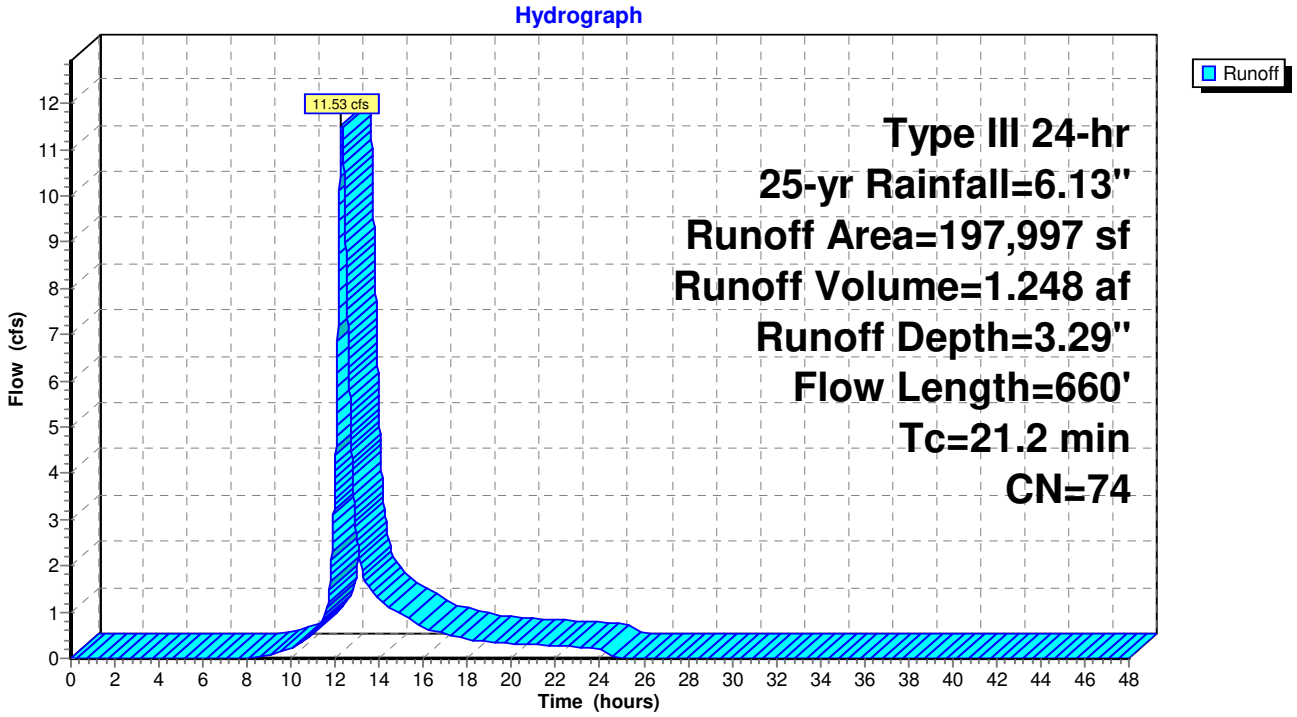
Subcatchment E1: Existing to DP#1 (West)



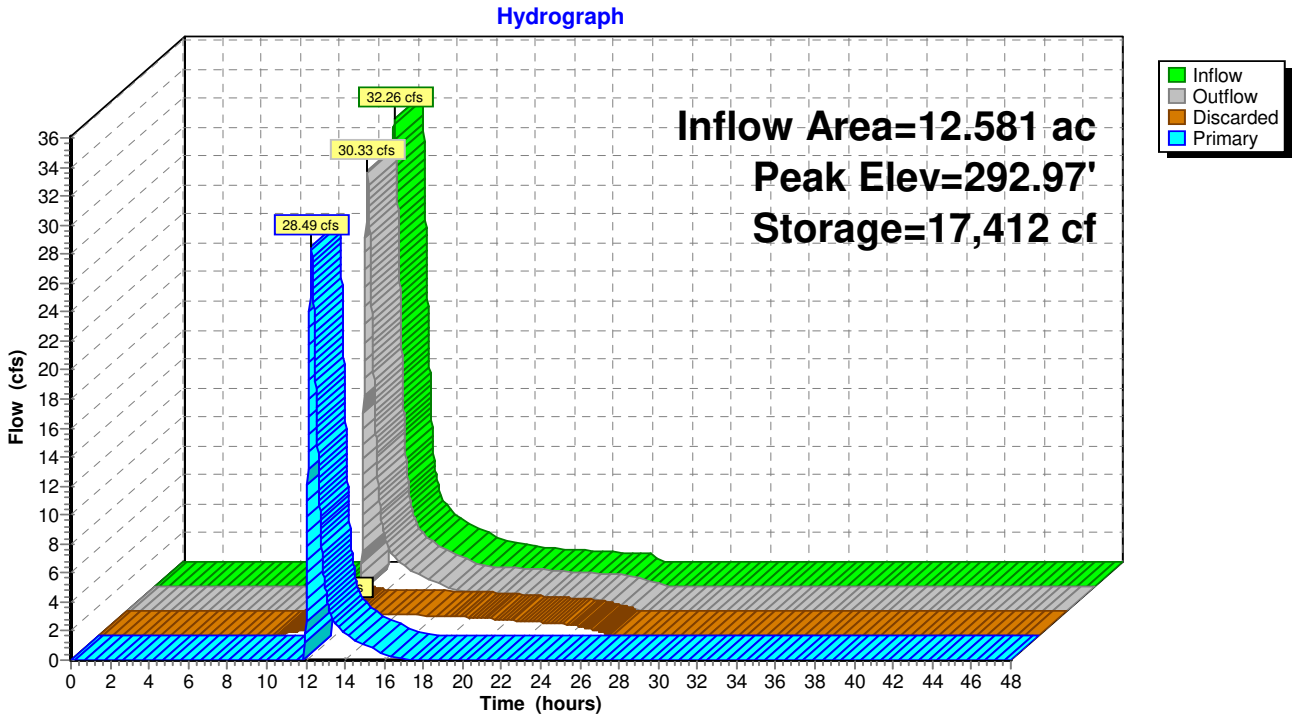
Subcatchment E2: Existing to Depression#2



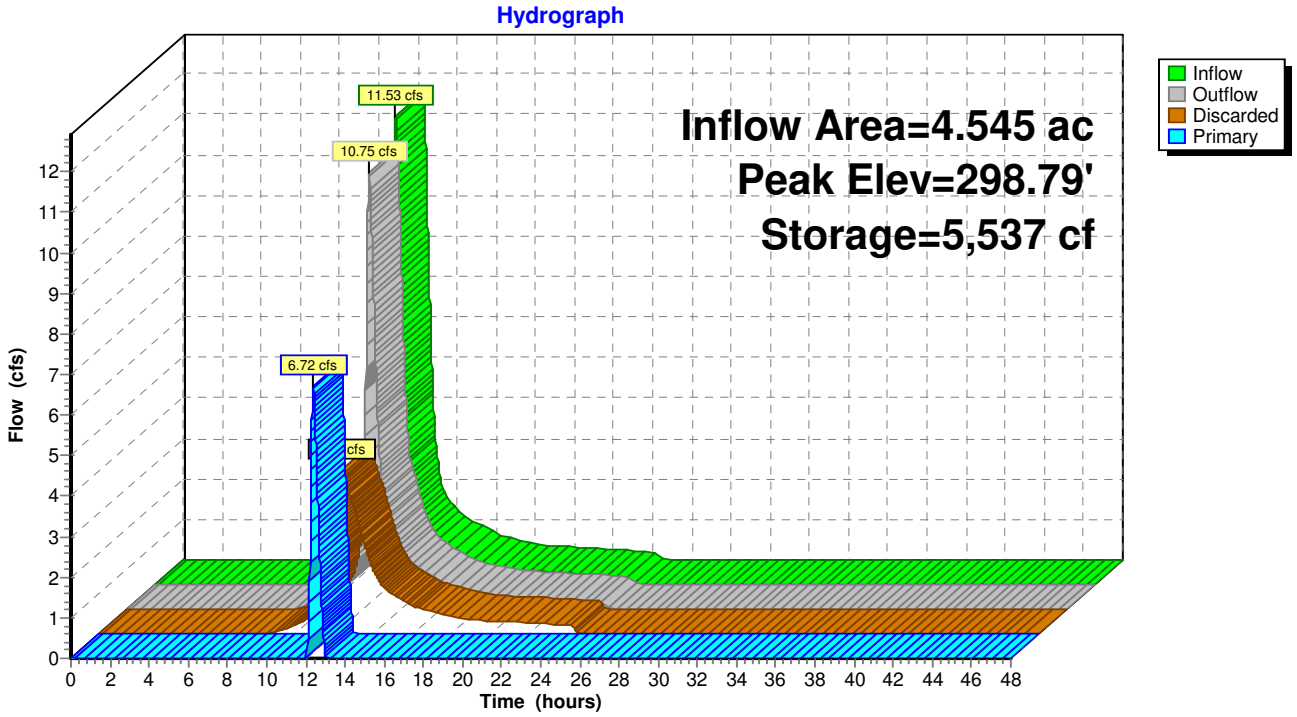
Subcatchment E3: Existing to Depression#3



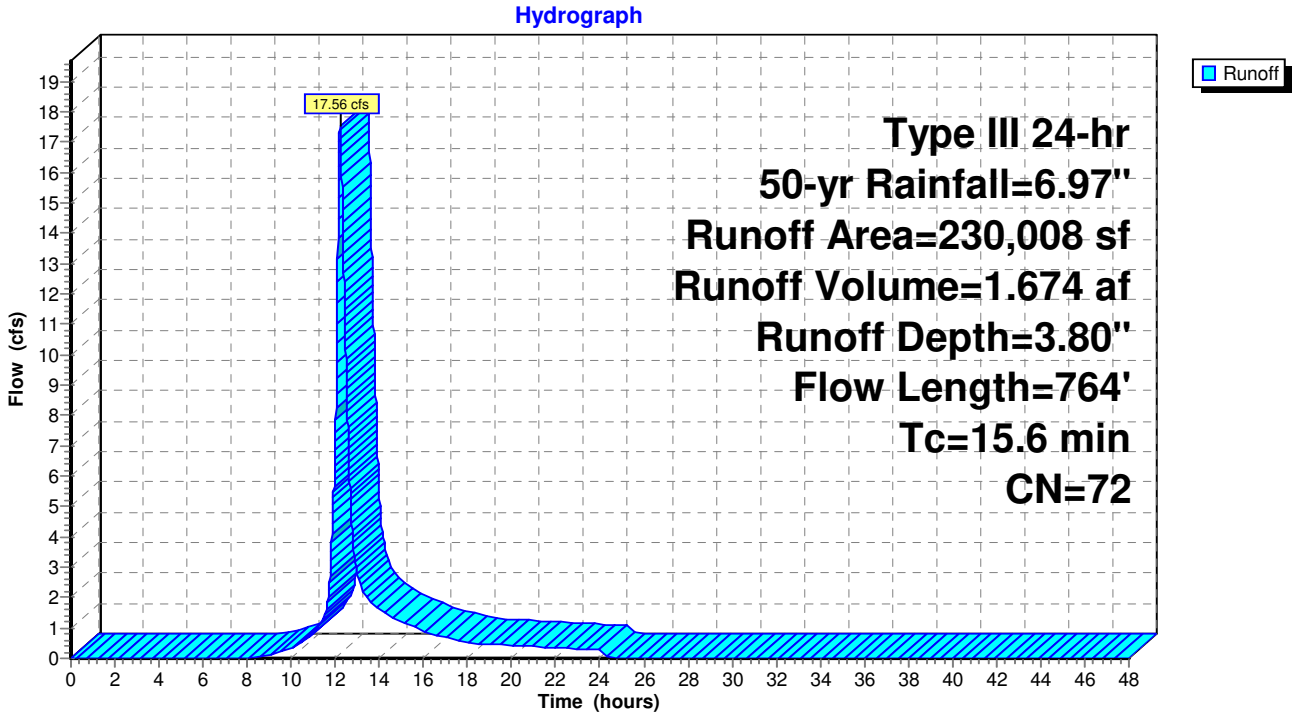
Pond ED2: Existing Depression #2 (DP#2)



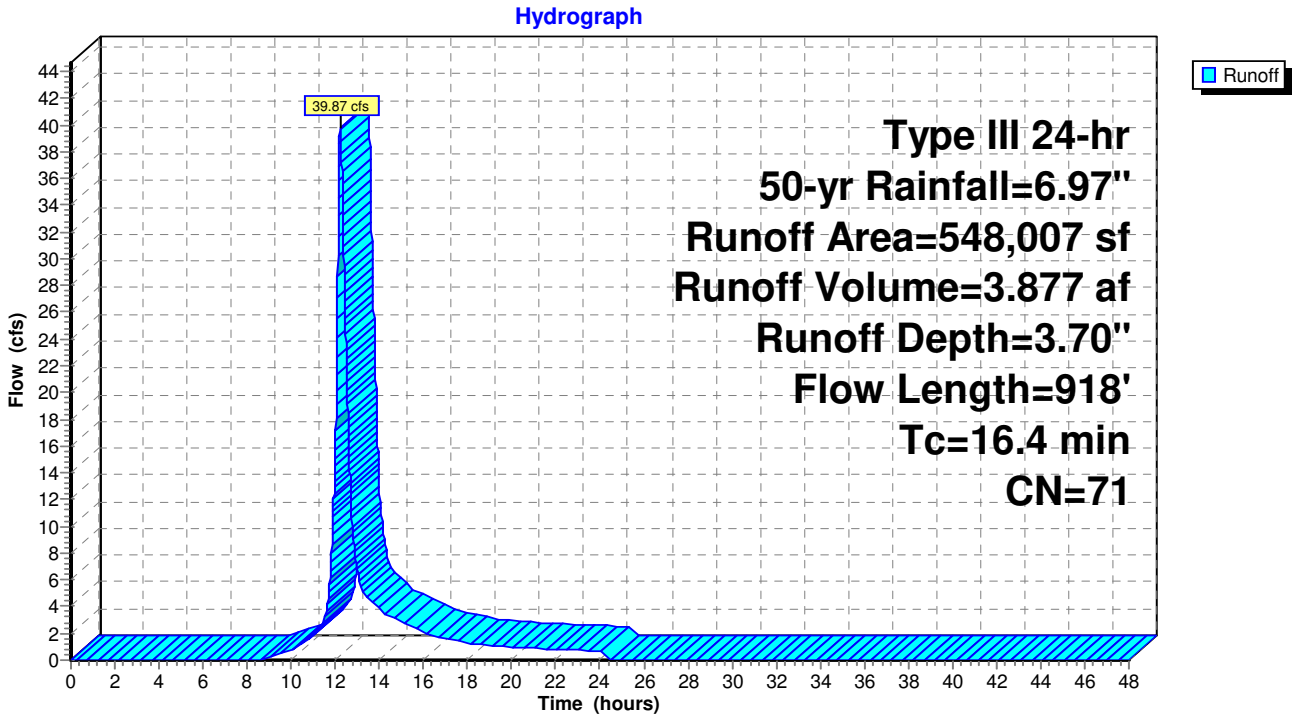
Pond ED3: Existing Depression #3 (DP#3)



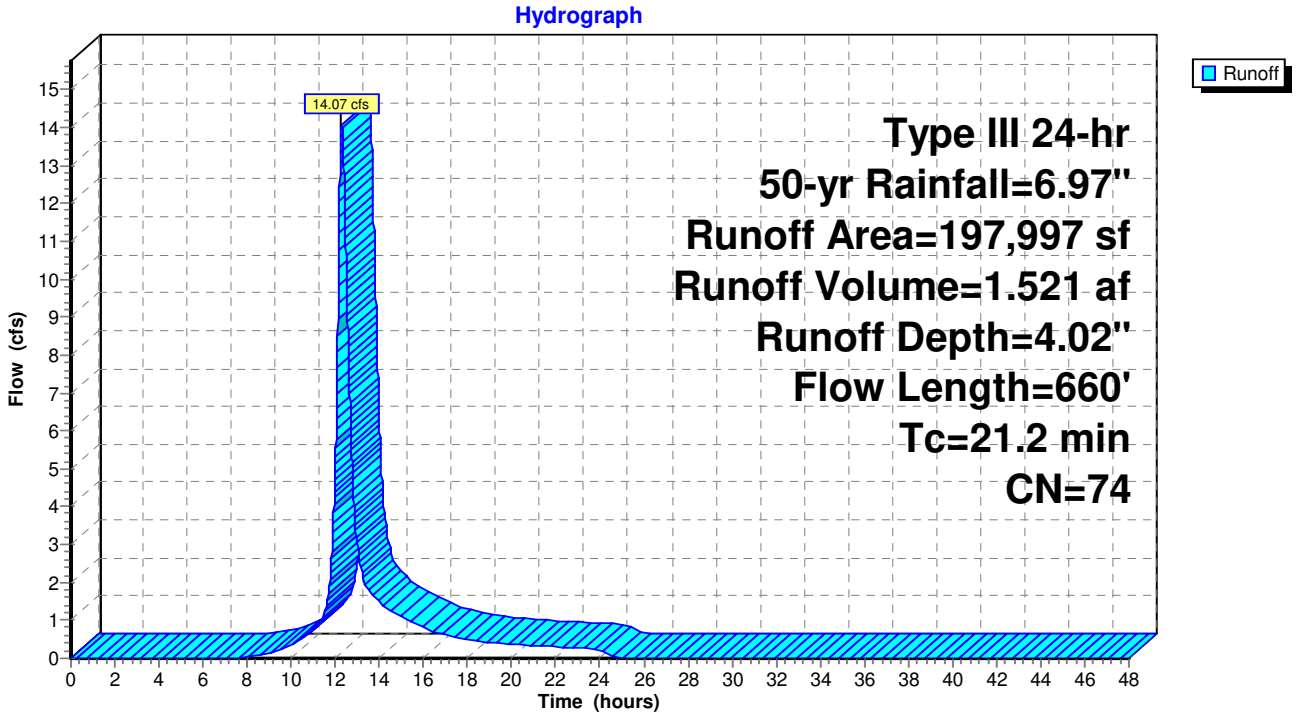
Subcatchment E1: Existing to DP#1 (West)



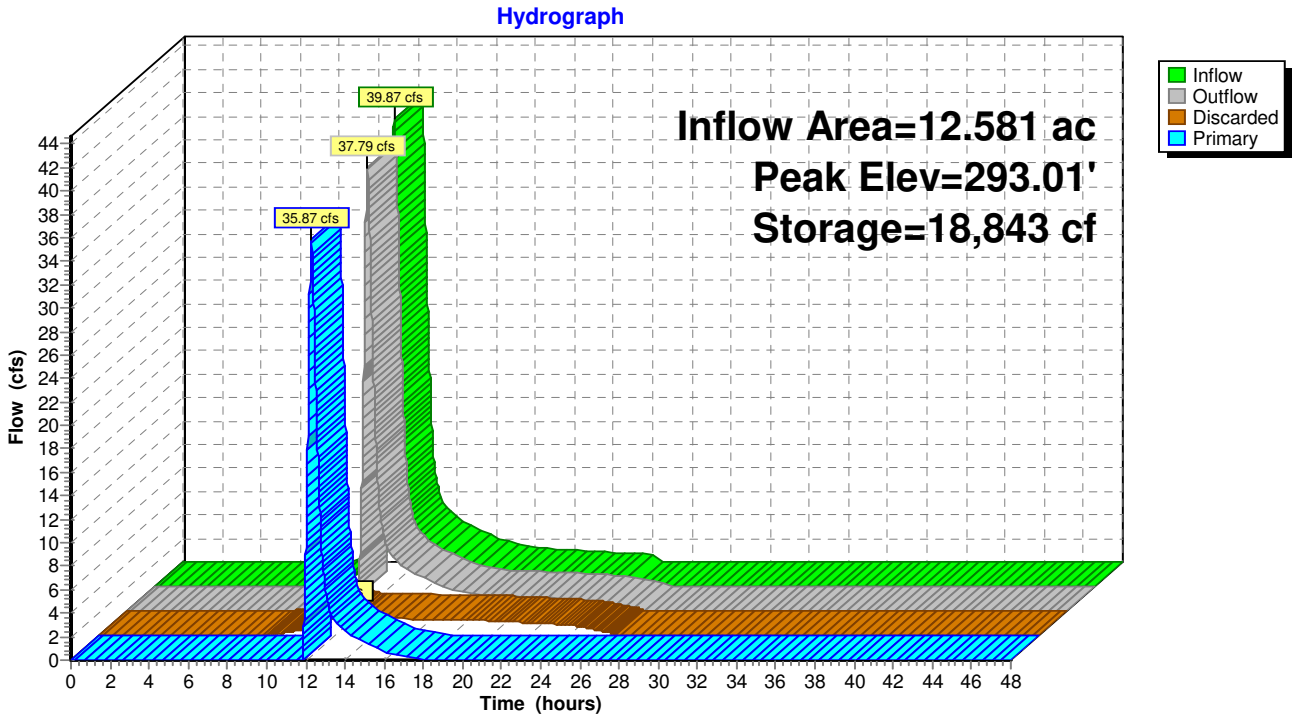
Subcatchment E2: Existing to Depression#2



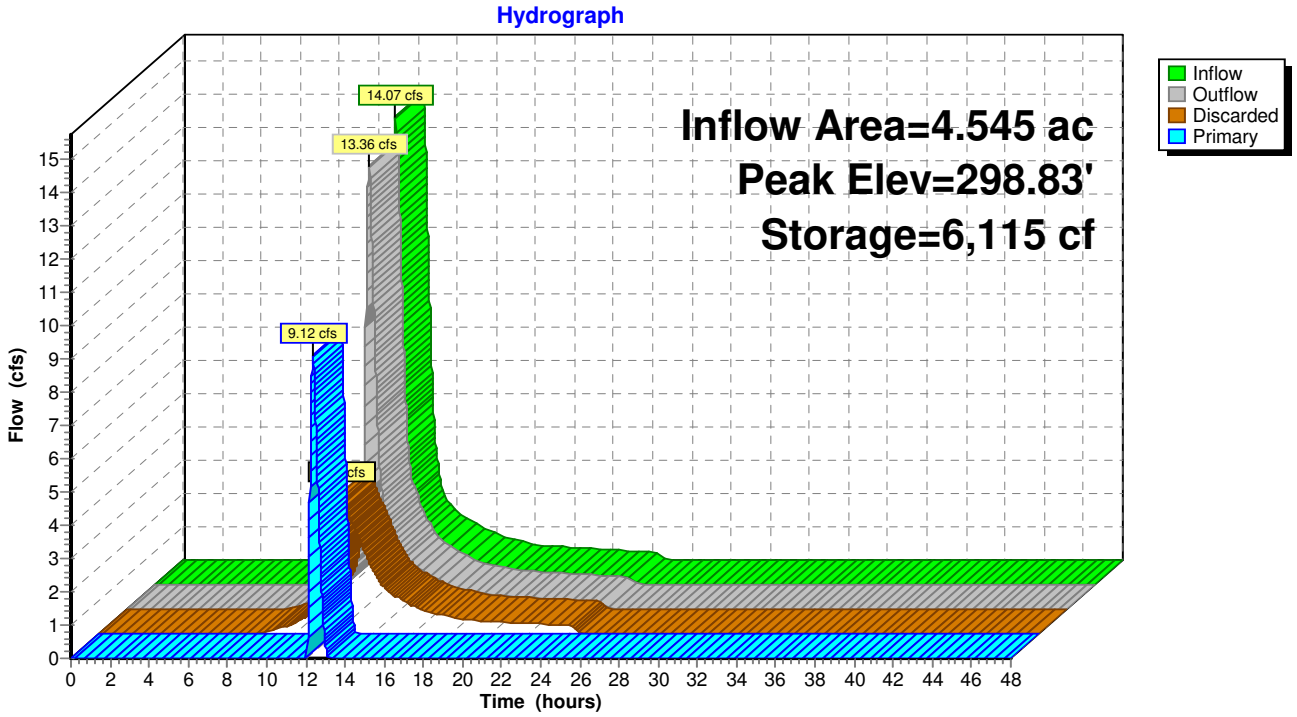
Subcatchment E3: Existing to Depression#3



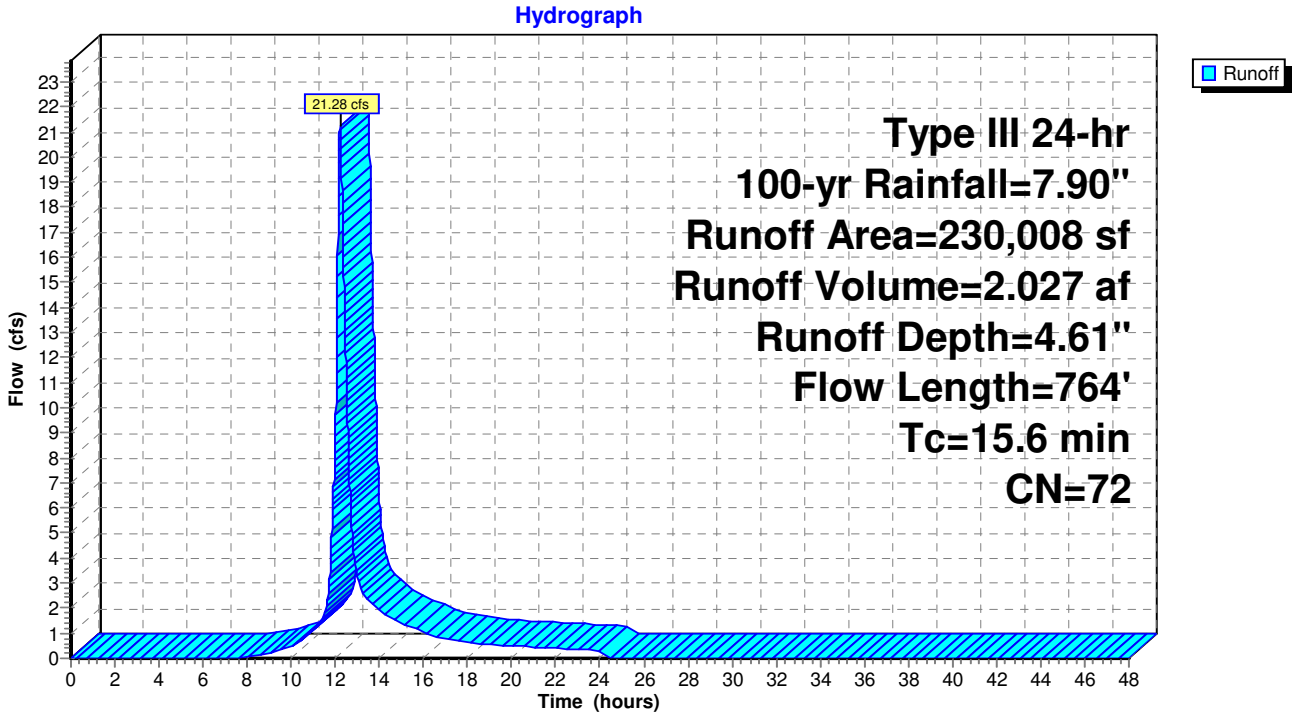
Pond ED2: Existing Depression #2 (DP#2)



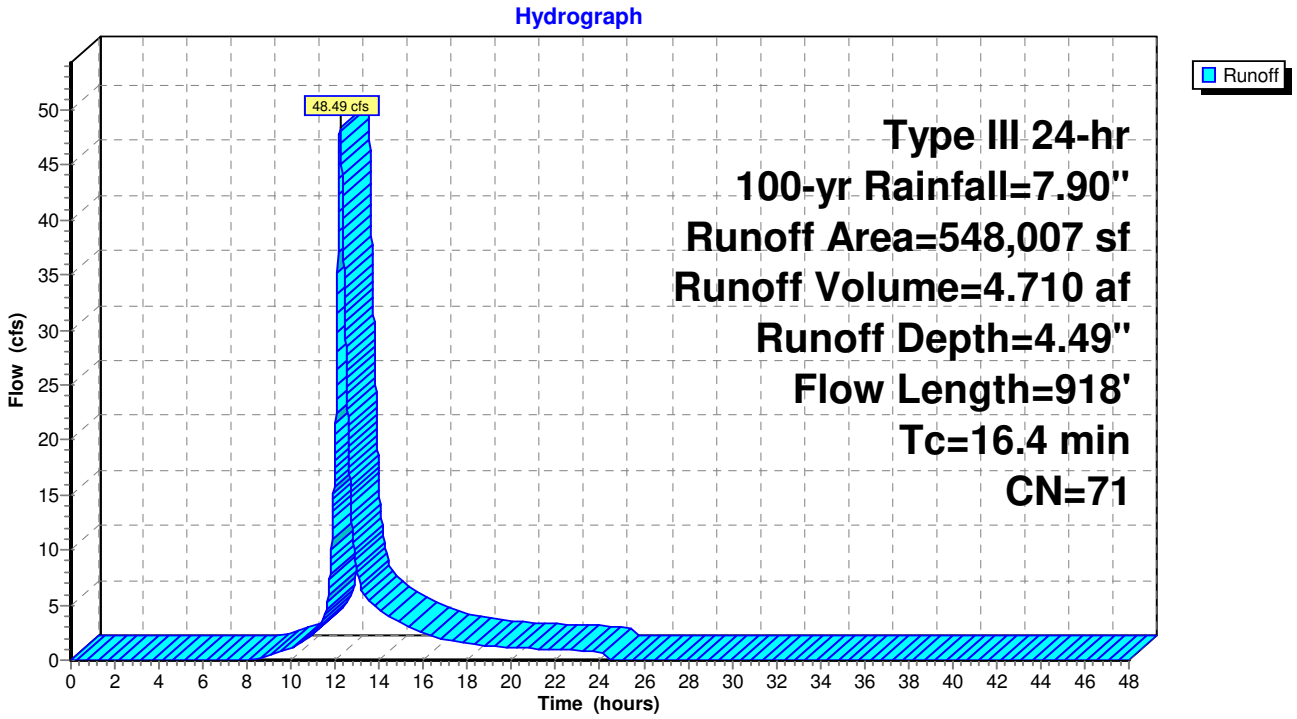
Pond ED3: Existing Depression #3 (DP#3)



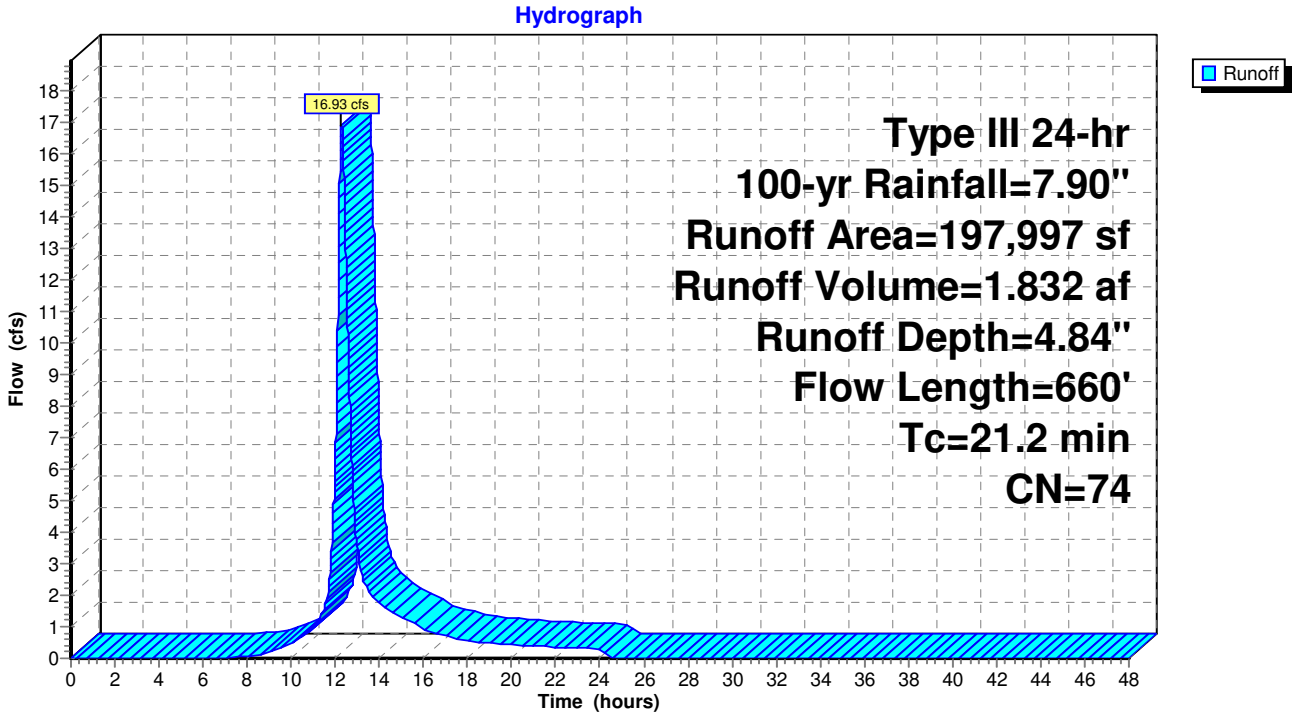
Subcatchment E1: Existing to DP#1 (West)



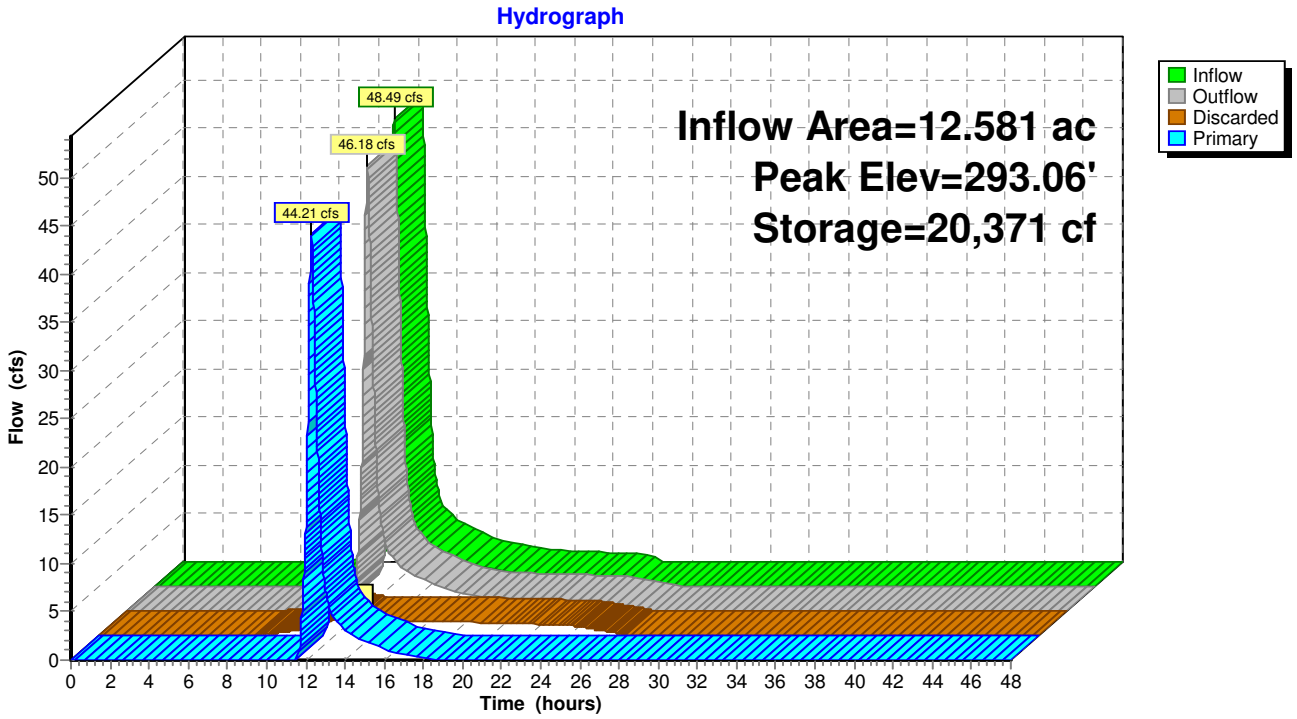
Subcatchment E2: Existing to Depression#2



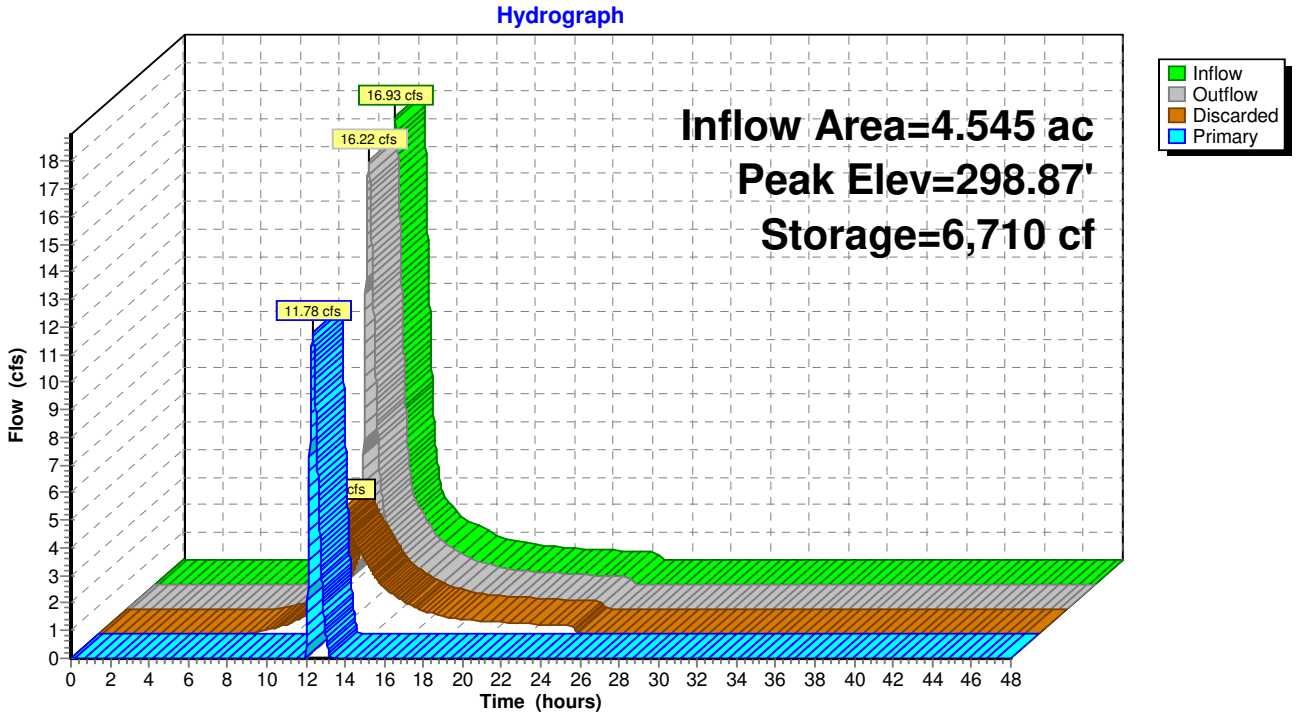
Subcatchment E3: Existing to Depression#3



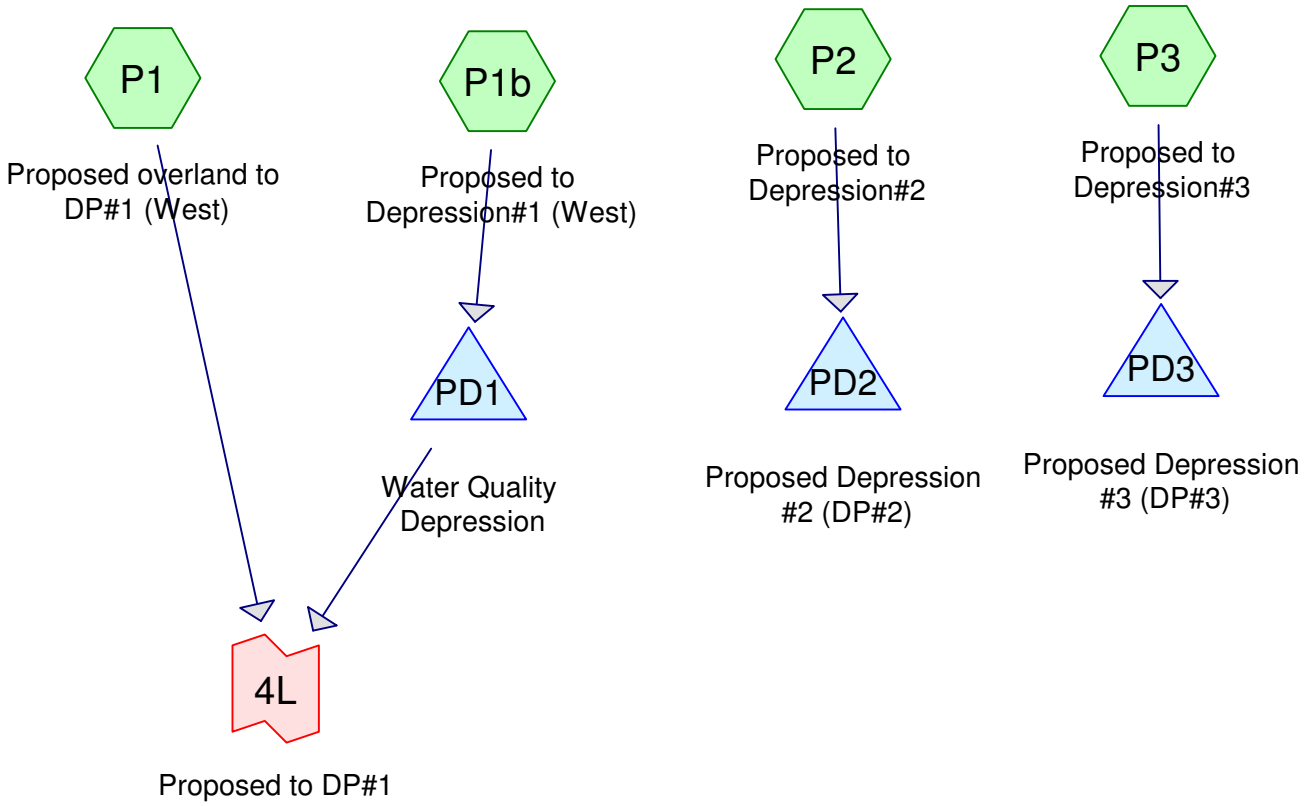
Pond ED2: Existing Depression #2 (DP#2)



Pond ED3: Existing Depression #3 (DP#3)



APPENDIX B
Watershed Computations
(Post-Development Drainage HydroCAD Report)



Subcat Reach Pond Link

Routing Diagram for 4280 - Drainage
Prepared by Design Professionals Inc. , Printed 10/23/2020

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P1: Proposed overland to Runoff Area=0.660 ac 0.00% Impervious Runoff Depth=0.54"
Flow Length=283' Tc=15.6 min CN=64 Runoff=0.23 cfs 0.029 af

Subcatchment P1b: Proposed to Runoff Area=4.620 ac 14.29% Impervious Runoff Depth=0.66"
Flow Length=434' Tc=12.2 min CN=67 Runoff=2.38 cfs 0.254 af

Subcatchment P2: Proposed to Runoff Area=12.580 ac 5.80% Impervious Runoff Depth=0.62"
Flow Length=918' Tc=16.4 min CN=66 Runoff=5.27 cfs 0.648 af

Subcatchment P3: Proposed to Runoff Area=197,997 sf 13.01% Impervious Runoff Depth=0.85"
Flow Length=600' Tc=20.9 min CN=71 Runoff=2.69 cfs 0.321 af

Pond PD1: Water Quality Depression Peak Elev=289.77' Storage=3,446 cf Inflow=2.38 cfs 0.254 af
Discarded=0.39 cfs 0.254 af Primary=0.00 cfs 0.000 af Outflow=0.39 cfs 0.254 af

Pond PD2: Proposed Depression #2 (DP#2) Peak Elev=292.63' Storage=7,926 cf Inflow=5.27 cfs 0.648 af
Discarded=1.25 cfs 0.648 af Primary=0.00 cfs 0.000 af Outflow=1.25 cfs 0.648 af

Pond PD3: Proposed Depression #3 (DP#3) Peak Elev=298.40' Storage=1,395 cf Inflow=2.69 cfs 0.321 af
Discarded=1.97 cfs 0.321 af Primary=0.00 cfs 0.000 af Outflow=1.97 cfs 0.321 af

Link 4L: Proposed to DP#1 Inflow=0.23 cfs 0.029 af
Primary=0.23 cfs 0.029 af

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P1: Proposed overland to Runoff Area=0.660 ac 0.00% Impervious Runoff Depth=1.57"
Flow Length=283' Tc=15.6 min CN=64 Runoff=0.85 cfs 0.087 af

Subcatchment P1b: Proposed to Runoff Area=4.620 ac 14.29% Impervious Runoff Depth=1.80"
Flow Length=434' Tc=12.2 min CN=67 Runoff=7.63 cfs 0.691 af

Subcatchment P2: Proposed to Runoff Area=12.580 ac 5.80% Impervious Runoff Depth=1.72"
Flow Length=918' Tc=16.4 min CN=66 Runoff=17.64 cfs 1.804 af

Subcatchment P3: Proposed to Runoff Area=197,997 sf 13.01% Impervious Runoff Depth=2.11"
Flow Length=600' Tc=20.9 min CN=71 Runoff=7.30 cfs 0.799 af

Pond PD1: Water Quality Depression Peak Elev=290.36' Storage=5,006 cf Inflow=7.63 cfs 0.691 af
Discarded=0.45 cfs 0.416 af Primary=6.57 cfs 0.276 af Outflow=7.02 cfs 0.691 af

Pond PD2: Proposed Depression #2 Peak Elev=292.86' Storage=14,010 cf Inflow=17.64 cfs 1.804 af
Discarded=1.65 cfs 1.137 af Primary=12.96 cfs 0.667 af Outflow=14.61 cfs 1.804 af

Pond PD3: Proposed Depression #3 (DP#3) Peak Elev=298.71' Storage=4,227 cf Inflow=7.30 cfs 0.799 af
Discarded=3.42 cfs 0.721 af Primary=2.86 cfs 0.078 af Outflow=6.28 cfs 0.799 af

Link 4L: Proposed to DP#1 Inflow=7.41 cfs 0.363 af
Primary=7.41 cfs 0.363 af

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P1: Proposed overland to Runoff Area=0.660 ac 0.00% Impervious Runoff Depth=2.36"
Flow Length=283' Tc=15.6 min CN=64 Runoff=1.32 cfs 0.130 af

Subcatchment P1b: Proposed to Runoff Area=4.620 ac 14.29% Impervious Runoff Depth=2.63"
Flow Length=434' Tc=12.2 min CN=67 Runoff=11.44 cfs 1.012 af

Subcatchment P2: Proposed to Runoff Area=12.580 ac 5.80% Impervious Runoff Depth=2.54"
Flow Length=918' Tc=16.4 min CN=66 Runoff=26.80 cfs 2.660 af

Subcatchment P3: Proposed to Runoff Area=197,997 sf 13.01% Impervious Runoff Depth=3.00"
Flow Length=600' Tc=20.9 min CN=71 Runoff=10.55 cfs 1.138 af

Pond PD1: Water Quality Depression Peak Elev=290.46' Storage=5,283 cf Inflow=11.44 cfs 1.012 af
Discarded=0.46 cfs 0.480 af Primary=10.87 cfs 0.532 af Outflow=11.33 cfs 1.012 af

Pond PD2: Proposed Depression #2 Peak Elev=292.94' Storage=16,278 cf Inflow=26.80 cfs 2.660 af
Discarded=1.78 cfs 1.344 af Primary=22.93 cfs 1.316 af Outflow=24.71 cfs 2.660 af

Pond PD3: Proposed Depression #3 (DP#3) Peak Elev=298.77' Storage=5,069 cf Inflow=10.55 cfs 1.138 af
Discarded=3.74 cfs 0.930 af Primary=6.06 cfs 0.207 af Outflow=9.80 cfs 1.138 af

Link 4L: Proposed to DP#1 Inflow=12.16 cfs 0.662 af
Primary=12.16 cfs 0.662 af

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P1: Proposed overland to Runoff Area=0.660 ac 0.00% Impervious Runoff Depth=2.98"
Flow Length=283' Tc=15.6 min CN=64 Runoff=1.69 cfs 0.164 af

Subcatchment P1b: Proposed to Runoff Area=4.620 ac 14.29% Impervious Runoff Depth=3.28"
Flow Length=434' Tc=12.2 min CN=67 Runoff=14.42 cfs 1.264 af

Subcatchment P2: Proposed to Runoff Area=12.580 ac 5.80% Impervious Runoff Depth=3.18"
Flow Length=918' Tc=16.4 min CN=66 Runoff=33.97 cfs 3.335 af

Subcatchment P3: Proposed to Runoff Area=197,997 sf 13.01% Impervious Runoff Depth=3.70"
Flow Length=600' Tc=20.9 min CN=71 Runoff=13.04 cfs 1.401 af

Pond PD1: Water Quality Depression Peak Elev=290.52' Storage=5,452 cf Inflow=14.42 cfs 1.264 af
Discarded=0.47 cfs 0.520 af Primary=13.84 cfs 0.744 af Outflow=14.30 cfs 1.264 af

Pond PD2: Proposed Depression #2 Peak Elev=292.98' Storage=17,734 cf Inflow=33.97 cfs 3.335 af
Discarded=1.86 cfs 1.479 af Primary=30.12 cfs 1.855 af Outflow=31.98 cfs 3.335 af

Pond PD3: Proposed Depression #3 (DP#3) Peak Elev=298.82' Storage=5,623 cf Inflow=13.04 cfs 1.401 af
Discarded=3.94 cfs 1.082 af Primary=8.42 cfs 0.319 af Outflow=12.37 cfs 1.401 af

Link 4L: Proposed to DP#1 Inflow=15.48 cfs 0.907 af
Primary=15.48 cfs 0.907 af

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment P1: Proposed overland to Runoff Area=0.660 ac 0.00% Impervious Runoff Depth=3.70"
Flow Length=283' Tc=15.6 min CN=64 Runoff=2.12 cfs 0.204 af

Subcatchment P1b: Proposed to Runoff Area=4.620 ac 14.29% Impervious Runoff Depth=4.04"
Flow Length=434' Tc=12.2 min CN=67 Runoff=17.82 cfs 1.555 af

Subcatchment P2: Proposed to Runoff Area=12.580 ac 5.80% Impervious Runoff Depth=3.93"
Flow Length=918' Tc=16.4 min CN=66 Runoff=42.19 cfs 4.116 af

Subcatchment P3: Proposed to Runoff Area=197,997 sf 13.01% Impervious Runoff Depth=4.49"
Flow Length=600' Tc=20.9 min CN=71 Runoff=15.87 cfs 1.702 af

Pond PD1: Water Quality Depression Peak Elev=290.58' Storage=5,633 cf Inflow=17.82 cfs 1.555 af
Discarded=0.47 cfs 0.559 af Primary=17.23 cfs 0.996 af Outflow=17.70 cfs 1.555 af

Pond PD2: Proposed Depression #2 Peak Elev=293.02' Storage=19,260 cf Inflow=42.19 cfs 4.116 af
Discarded=1.93 cfs 1.616 af Primary=38.10 cfs 2.499 af Outflow=40.03 cfs 4.116 af

Pond PD3: Proposed Depression #3 (DP#3) Peak Elev=298.86' Storage=6,189 cf Inflow=15.87 cfs 1.702 af
Discarded=4.14 cfs 1.248 af Primary=11.07 cfs 0.454 af Outflow=15.20 cfs 1.702 af

Link 4L: Proposed to DP#1 Inflow=19.29 cfs 1.199 af
Primary=19.29 cfs 1.199 af

Summary for Subcatchment P1: Proposed overland to DP#1 (West)

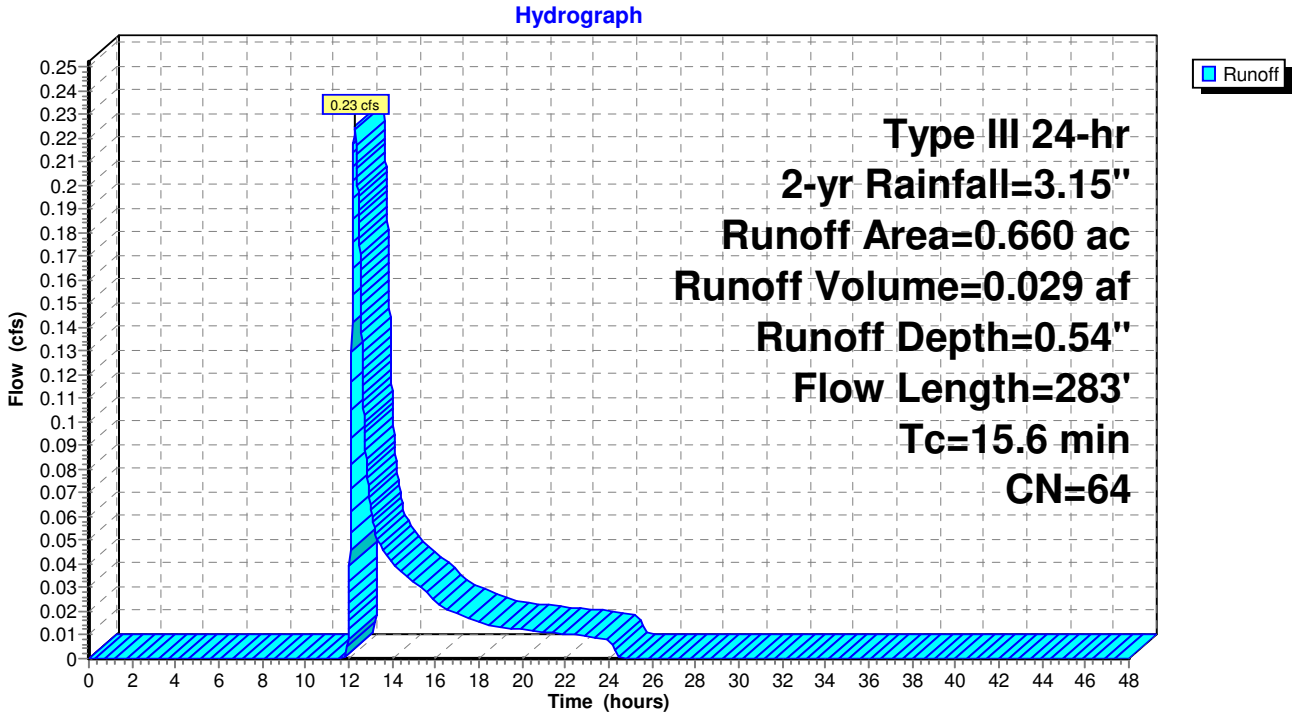
Runoff = 0.23 cfs @ 12.27 hrs, Volume= 0.029 af, Depth= 0.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.15"

Area (ac)	CN	Description
0.450	66	Woods, Poor, HSG B
0.210	61	>75% Grass cover, Good, HSG B
0.660	64	Weighted Average
0.660		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0650	0.12		**Sheet Flow, Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.15"
2.1	183	0.0820	1.43		**Shallow Concentrated Flow, Grass** Woodland Kv= 5.0 fps
15.6	283	Total			

Subcatchment P1: Proposed overland to DP#1 (West)



Summary for Subcatchment P1b: Proposed to Depression#1 (West)

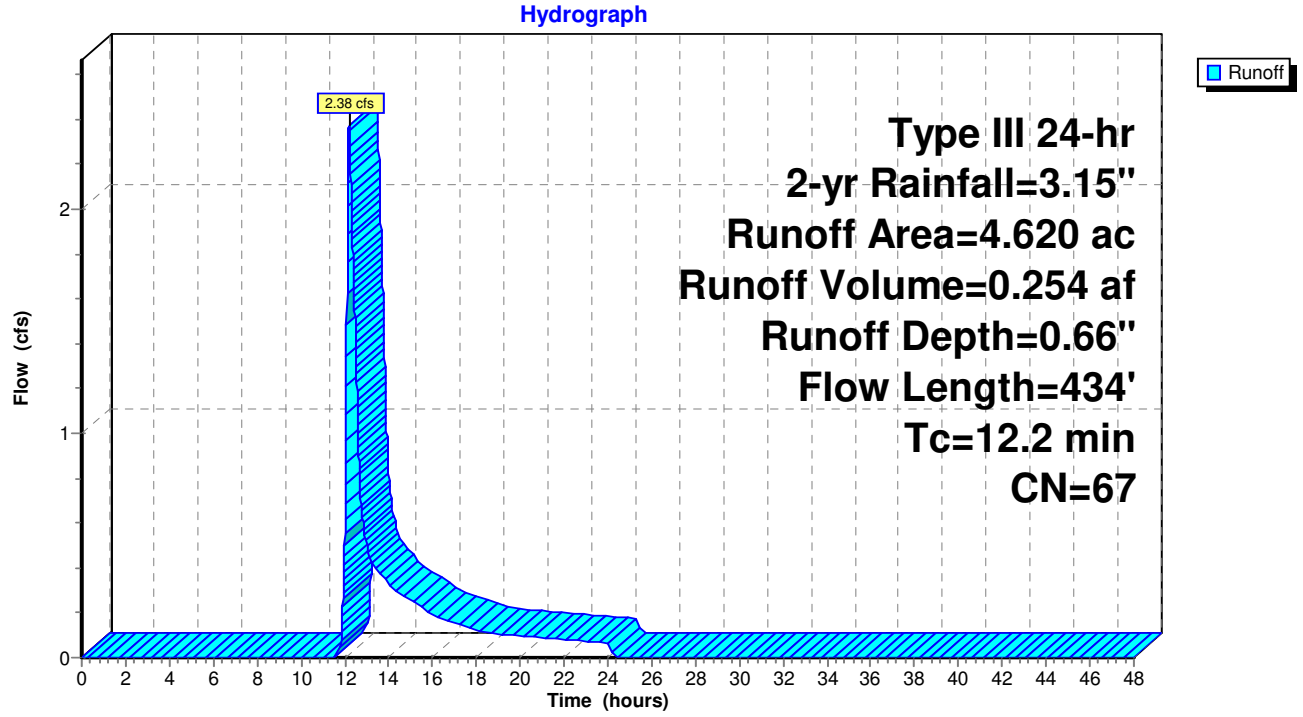
Runoff = 2.38 cfs @ 12.19 hrs, Volume= 0.254 af, Depth= 0.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.15"

	Area (ac)	CN	Description
	3.060	61	>75% Grass cover, Good, HSG B
	0.900	66	Woods, Poor, HSG B
*	0.660	98	IMPERVIOUS
	4.620	67	Weighted Average
	3.960		85.71% Pervious Area
	0.660		14.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	102	0.0340	0.21		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.15"
0.2	33	0.0200	2.87		**Shallow Concentrated Flow, Driveway** Paved Kv= 20.3 fps
3.9	299	0.0340	1.29		**Shallow Concentrated Flow, Grass SCF** Short Grass Pasture Kv= 7.0 fps
12.2	434	Total			

Subcatchment P1b: Proposed to Depression#1 (West)



Summary for Subcatchment P2: Proposed to Depression#2

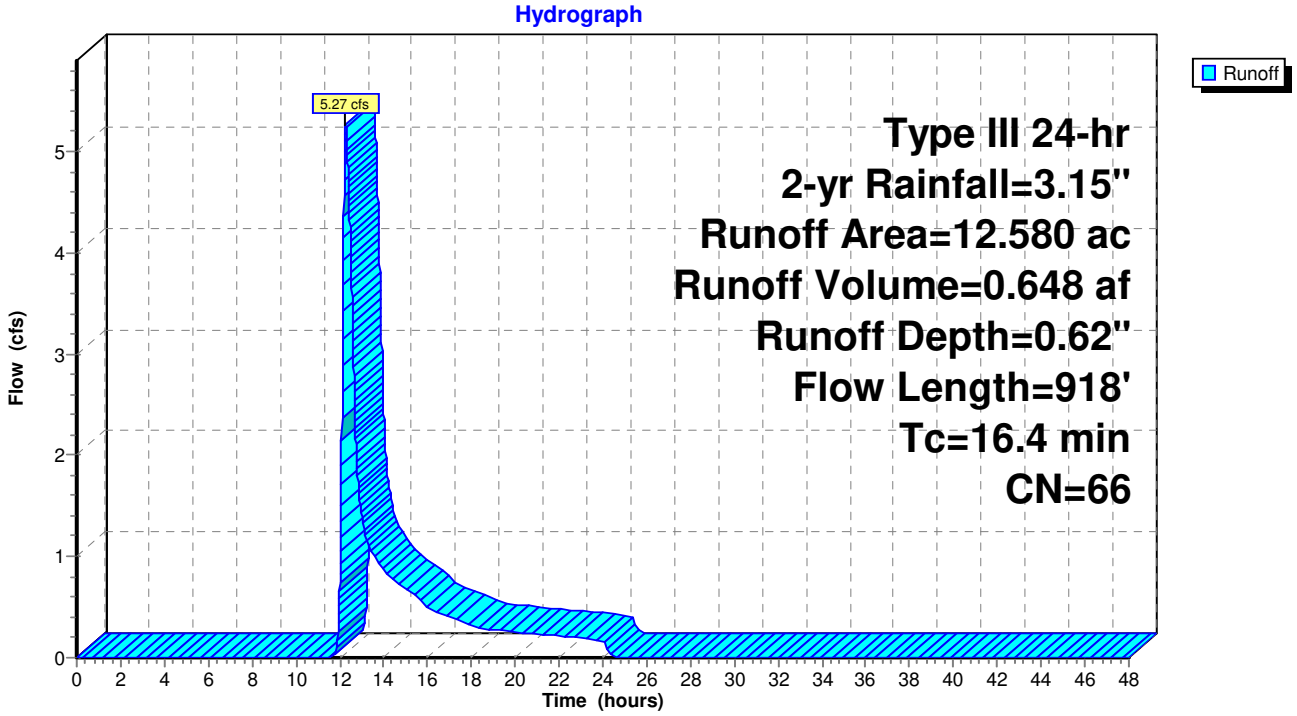
Runoff = 5.27 cfs @ 12.27 hrs, Volume= 0.648 af, Depth= 0.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.15"

	Area (ac)	CN	Description
	2.330	75	Small grain, straight row, Good, HSG B
	1.900	66	Woods, Poor, HSG B
	7.620	61	>75% Grass cover, Good, HSG B
*	0.730	98	IMPERVIOUS
	12.580	66	Weighted Average
	11.850		94.20% Pervious Area
	0.730		5.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0330	0.21		**Sheet Flow, Grass** Grass: Short n= 0.150 P2= 3.15"
6.1	488	0.0080	1.34		**Shallow Concentrated Flow, Grass Shalllow Conc** Grassed Waterway Kv= 15.0 fps
2.2	330	0.0050	2.56	84.12	**Channel Flow, Crop Field** Area= 32.9 sf Perim= 84.0' r= 0.39' n= 0.022 Earth, clean & straight
16.4	918	Total			

Subcatchment P2: Proposed to Depression#2



Summary for Subcatchment P3: Proposed to Depression#3

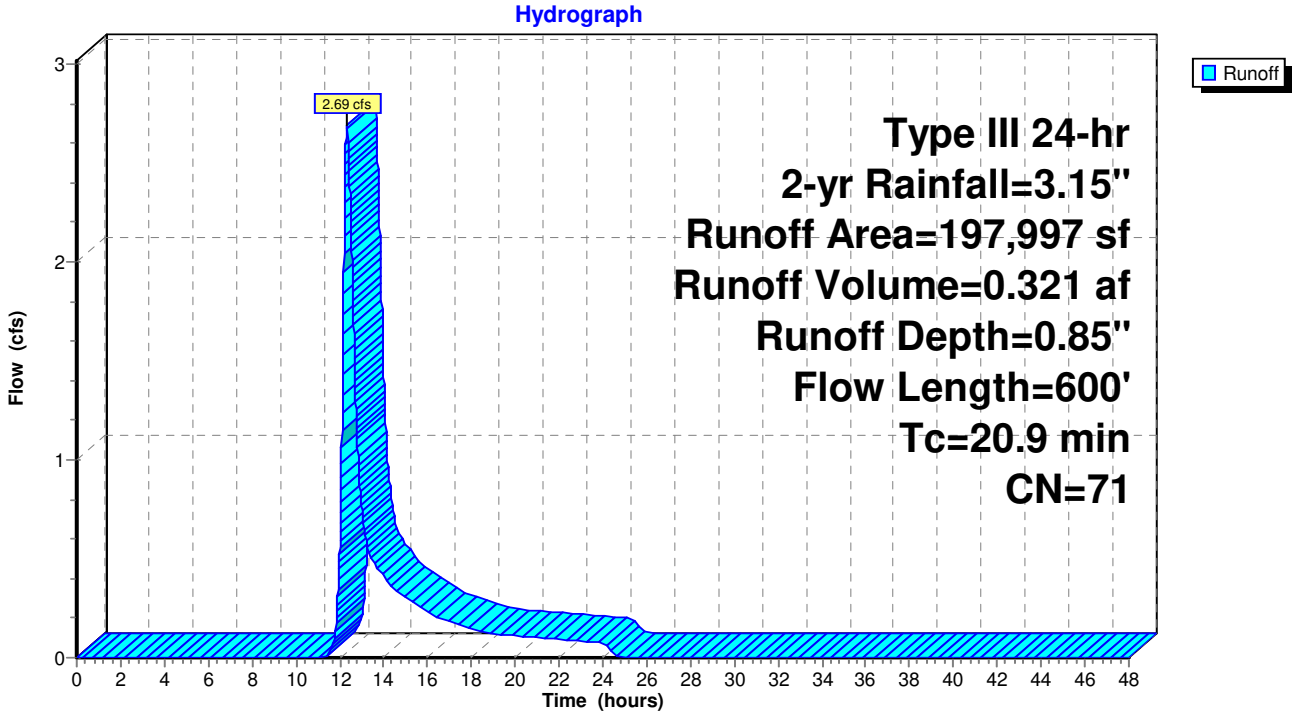
Runoff = 2.69 cfs @ 12.33 hrs, Volume= 0.321 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.15"

Area (sf)	CN	Description
38,011	78	Row crops, straight row, Good, HSG B
67,513	66	Woods, Poor, HSG B
66,710	61	>75% Grass cover, Good, HSG B
25,763	98	Paved parking, HSG B
197,997	71	Weighted Average
172,234		86.99% Pervious Area
25,763		13.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	100	0.0350	0.10		**Sheet Flow, Woods Sheet Flow** Woods: Light underbrush n= 0.400 P2= 3.15"
1.1	100	0.0300	1.56		**Shallow Concentrated Flow, Crop Shallow Conc** Cultivated Straight Rows Kv= 9.0 fps
1.2	88	0.0600	1.22		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.3	82	0.1000	5.30	63.60	**Channel Flow, Wooded** Area= 12.0 sf Perim= 14.0' r= 0.86' n= 0.080 Earth, long dense weeds
1.0	230	0.0140	3.66	94.01	**Channel Flow, grass swale (290-60'pipe)** Area= 25.7 sf Perim= 83.0' r= 0.31' n= 0.022 Earth, clean & straight
20.9	600	Total			

Subcatchment P3: Proposed to Depression#3



Summary for Pond PD1: Water Quality Depression

Inflow Area = 4.620 ac, 14.29% Impervious, Inflow Depth = 0.66" for 2-yr event
Inflow = 2.38 cfs @ 12.19 hrs, Volume= 0.254 af
Outflow = 0.39 cfs @ 13.47 hrs, Volume= 0.254 af, Atten= 84%, Lag= 76.2 min
Discarded = 0.39 cfs @ 13.47 hrs, Volume= 0.254 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 289.77' @ 13.47 hrs Surf.Area= 2,446 sf Storage= 3,446 cf

Plug-Flow detention time= 91.8 min calculated for 0.254 af (100% of inflow)
Center-of-Mass det. time= 91.8 min (986.0 - 894.2)

Volume	Invert	Avail.Storage	Storage Description
#1	288.00'	6,947 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

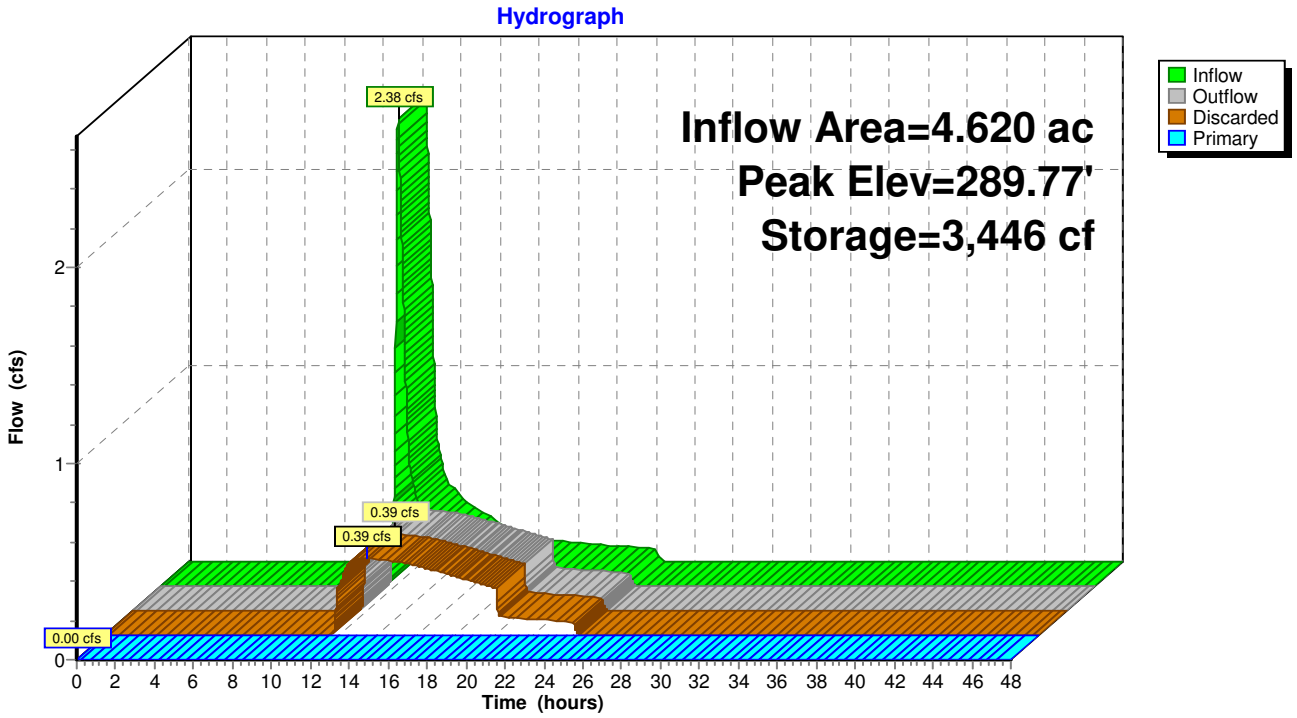
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
288.00	1,495	0	0	1,495
291.00	3,248	6,947	6,947	3,320

Device	Routing	Invert	Outlet Devices
#1	Discarded	288.00'	**6.900 in/hr Exfiltration (.23x60/2) over Surface area** Phase-In= 0.01'
#2	Primary	290.10'	**20.0' long x 3.0' breadth Broad-Crested Rectangular Weir** 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.39 cfs @ 13.47 hrs HW=289.77' (Free Discharge)
↑**1=Exfiltration (.23x60/2)** (Exfiltration Controls 0.39 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=288.00' TW=0.00' (Dynamic Tailwater)
↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond PD1: Water Quality Depression



Summary for Pond PD2: Proposed Depression #2 (DP#2)

Inflow Area = 12.580 ac, 5.80% Impervious, Inflow Depth = 0.62" for 2-yr event
Inflow = 5.27 cfs @ 12.27 hrs, Volume= 0.648 af
Outflow = 1.25 cfs @ 13.12 hrs, Volume= 0.648 af, Atten= 76%, Lag= 50.7 min
Discarded = 1.25 cfs @ 13.12 hrs, Volume= 0.648 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 292.63' @ 13.12 hrs Surf.Area= 22,470 sf Storage= 7,926 cf

Plug-Flow detention time= 70.7 min calculated for 0.648 af (100% of inflow)
Center-of-Mass det. time= 70.7 min (972.9 - 902.2)

Volume	Invert	Avail.Storage	Storage Description
#1	292.00'	65,269 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

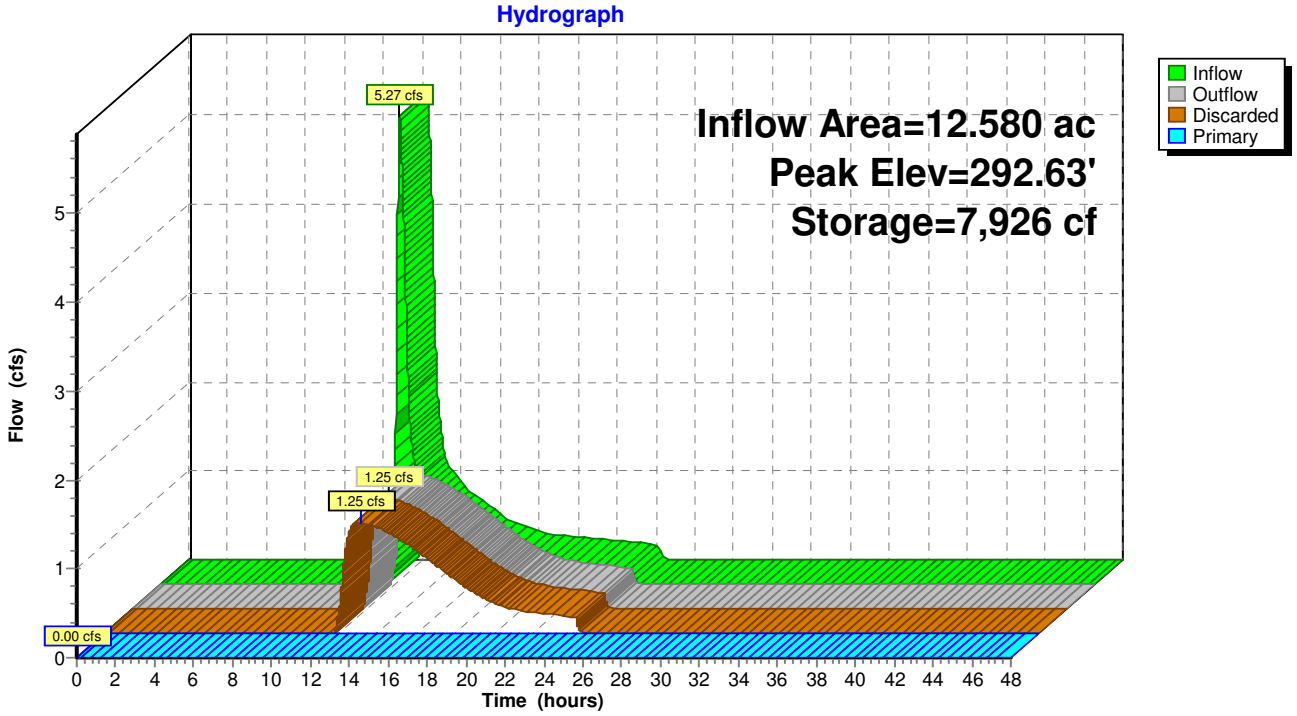
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
292.00	2,736	0	0
293.00	34,115	18,426	18,426
294.00	59,572	46,844	65,269

Device	Routing	Invert	Outlet Devices
#1	Discarded	292.00'	**2.400 in/hr Exfiltration (0.08x60/2) over Surface area** Phase-In= 0.01'
#2	Primary	292.70'	**84.0' long x 6.0' breadth Broad-Crested Rectangular Weir** 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) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Discarded OutFlow Max=1.25 cfs @ 13.12 hrs HW=292.63' (Free Discharge)
1=Exfiltration (0.08x60/2) (Exfiltration Controls 1.25 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=292.00' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond PD2: Proposed Depression #2 (DP#2)



Summary for Pond PD3: Proposed Depression #3 (DP#3)

Inflow Area = 4.545 ac, 13.01% Impervious, Inflow Depth = 0.85" for 2-yr event
Inflow = 2.69 cfs @ 12.33 hrs, Volume= 0.321 af
Outflow = 1.97 cfs @ 12.56 hrs, Volume= 0.321 af, Atten= 27%, Lag= 14.0 min
Discarded = 1.97 cfs @ 12.56 hrs, Volume= 0.321 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 298.40' @ 12.56 hrs Surf.Area= 6,738 sf Storage= 1,395 cf

Plug-Flow detention time= 5.1 min calculated for 0.321 af (100% of inflow)
Center-of-Mass det. time= 5.1 min (892.2 - 887.2)

Volume	Invert	Avail.Storage	Storage Description
#1	298.00'	34,401 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

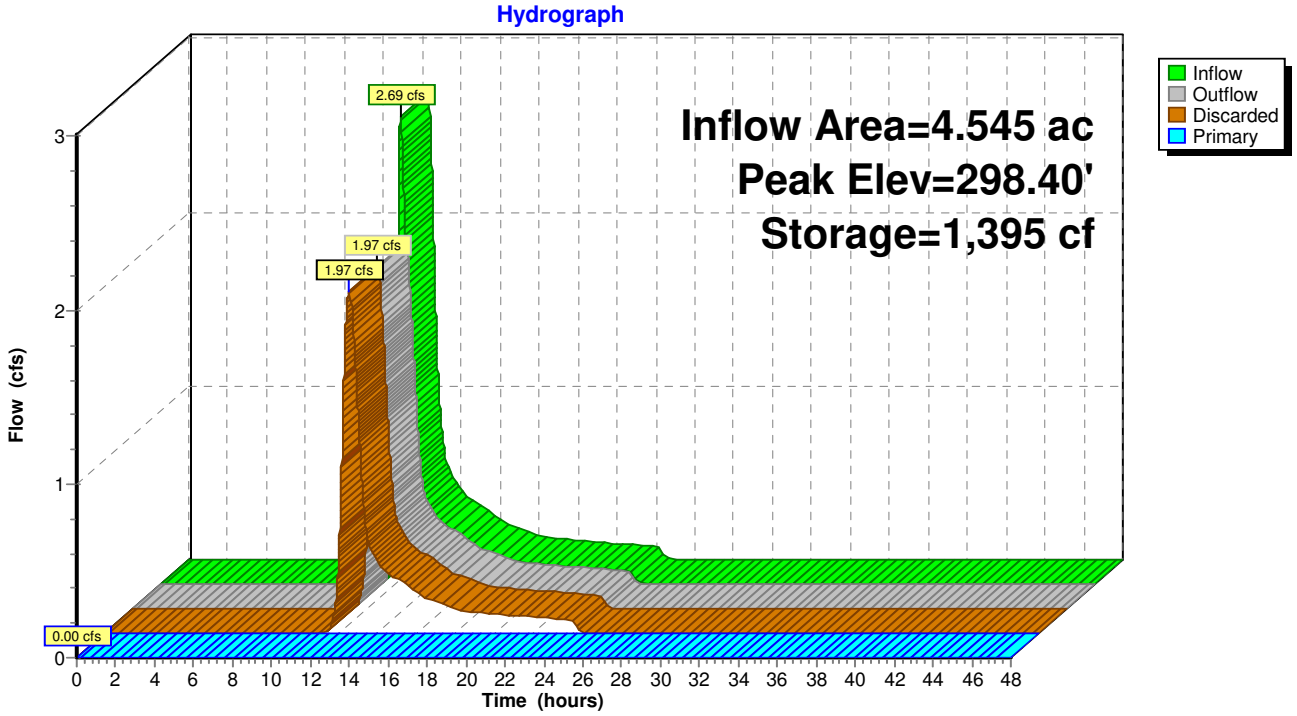
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.00	256	0	0
299.00	16,508	8,382	8,382
300.00	35,530	26,019	34,401

Device	Routing	Invert	Outlet Devices
#1	Discarded	298.00'	**12.600 in/hr Exfiltration (0.42x60/2) over Surface area** Phase-In= 0.01'
#2	Primary	298.60'	**35.0' long x 4.0' breadth Broad-Crested Rectangular Weir** 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Discarded OutFlow Max=1.97 cfs @ 12.56 hrs HW=298.40' (Free Discharge)
1=Exfiltration (0.42x60/2) (Exfiltration Controls 1.97 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=298.00' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond PD3: Proposed Depression #3 (DP#3)

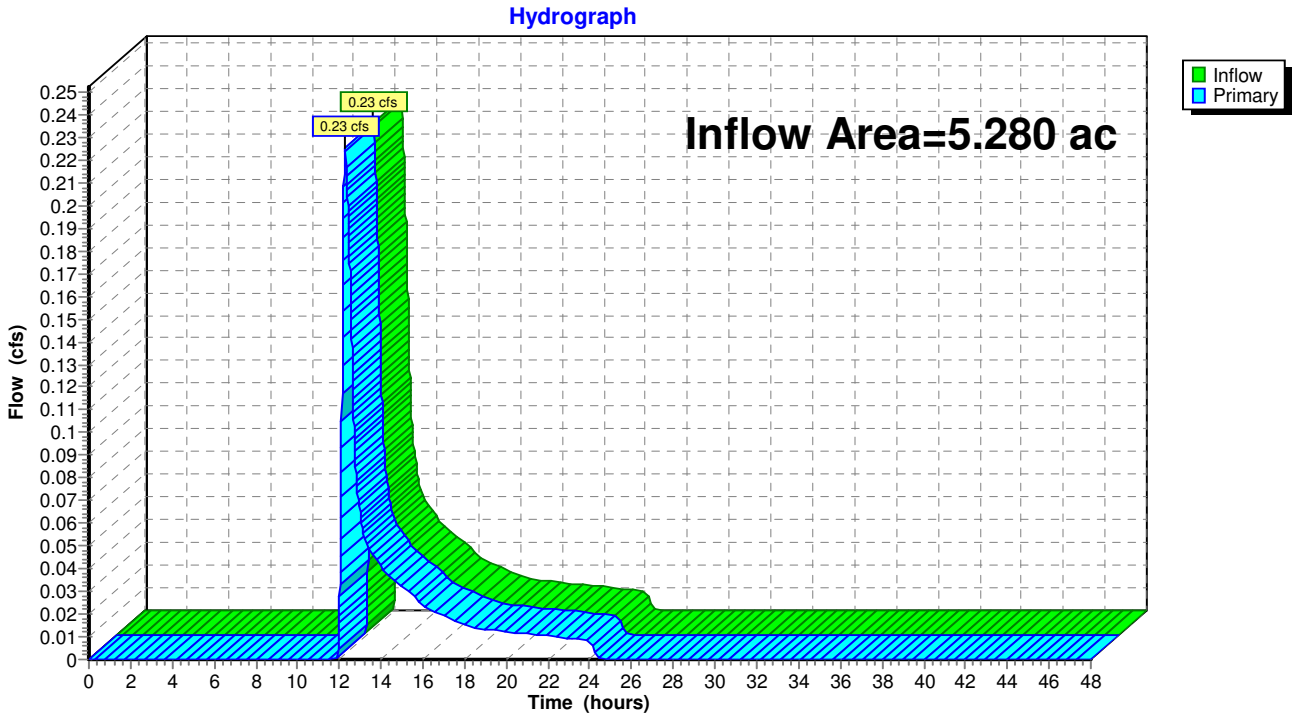


Summary for Link 4L: Proposed to DP#1

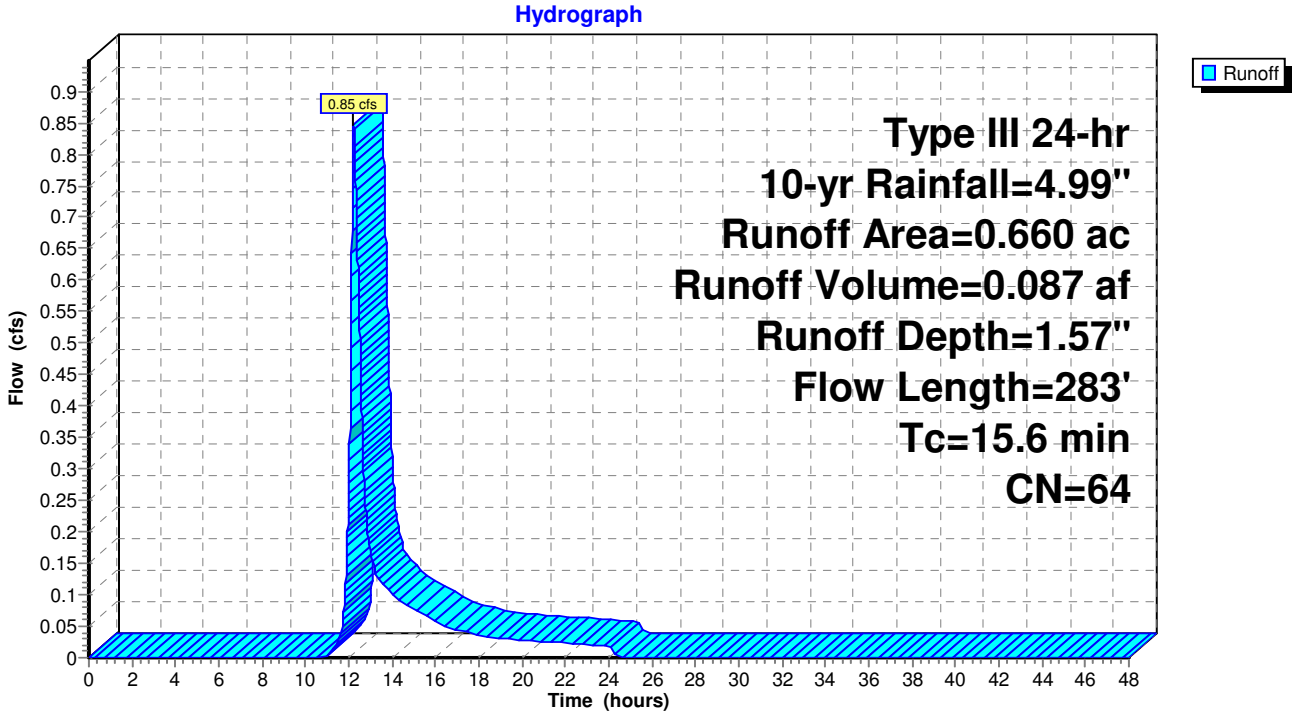
Inflow Area = 5.280 ac, 12.50% Impervious, Inflow Depth = 0.07" for 2-yr event
Inflow = 0.23 cfs @ 12.27 hrs, Volume= 0.029 af
Primary = 0.23 cfs @ 12.27 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

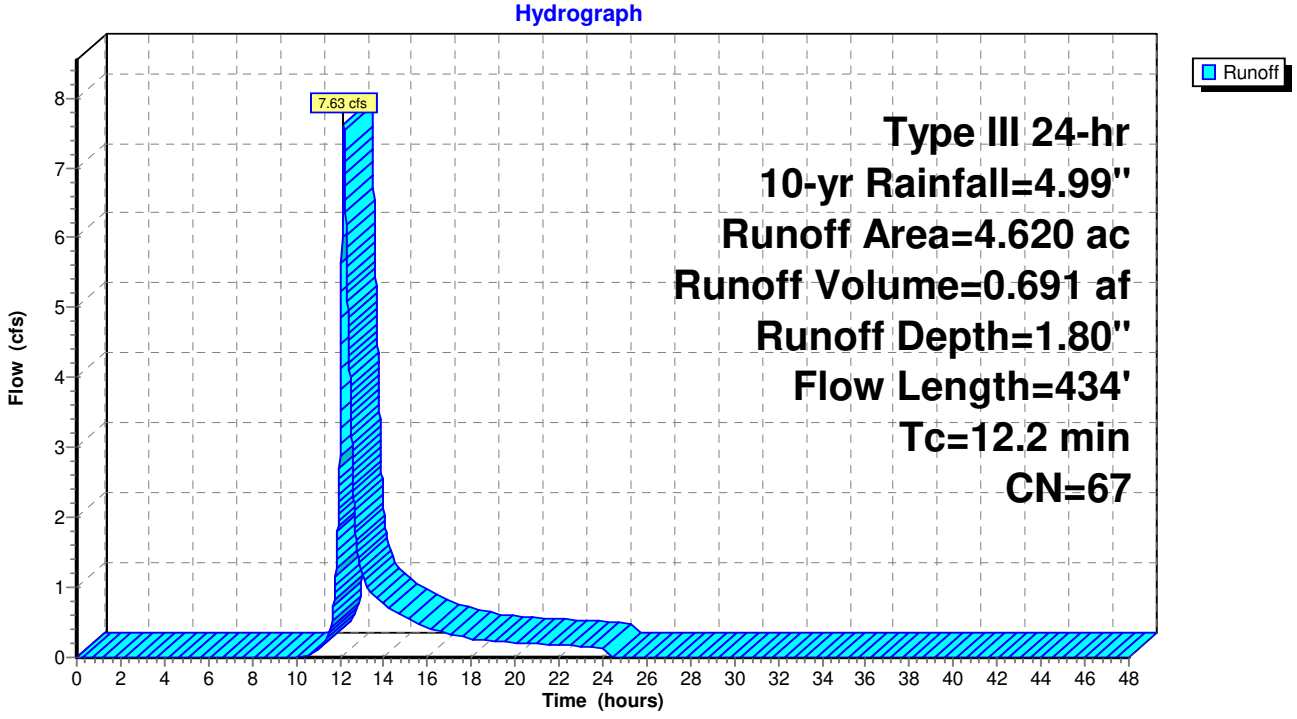
Link 4L: Proposed to DP#1



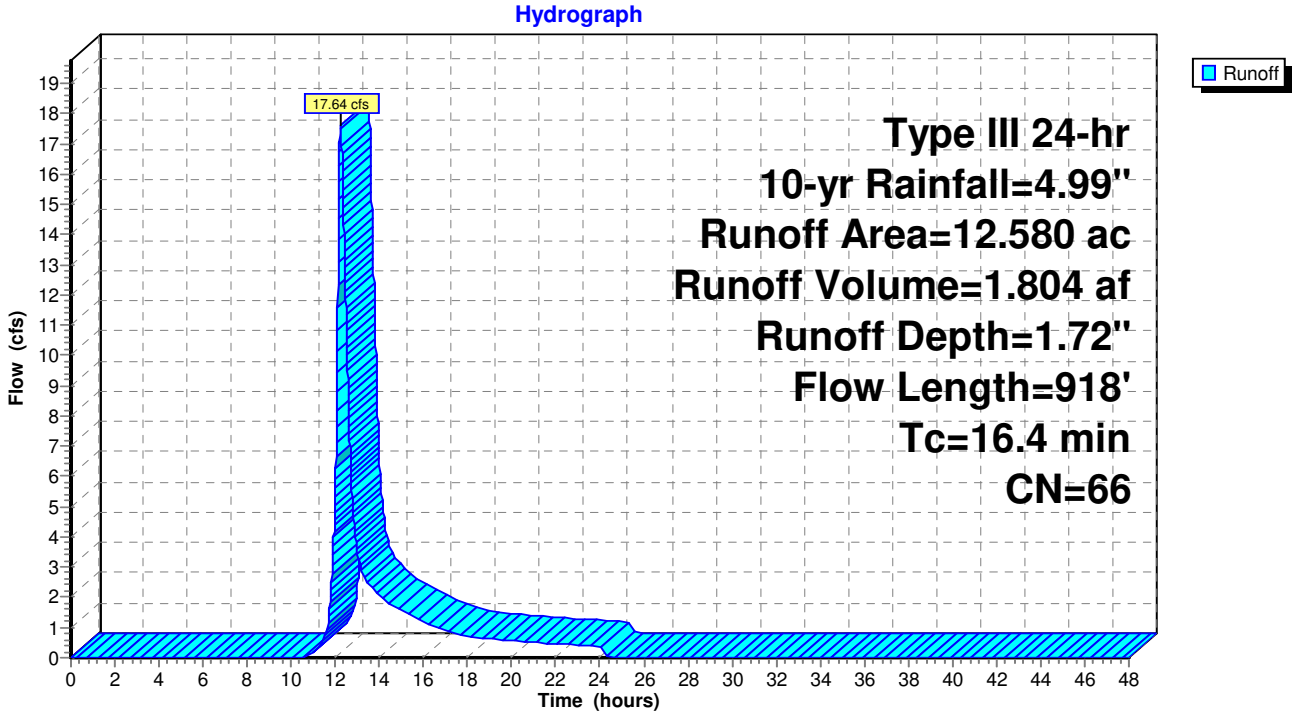
Subcatchment P1: Proposed overland to DP#1 (West)



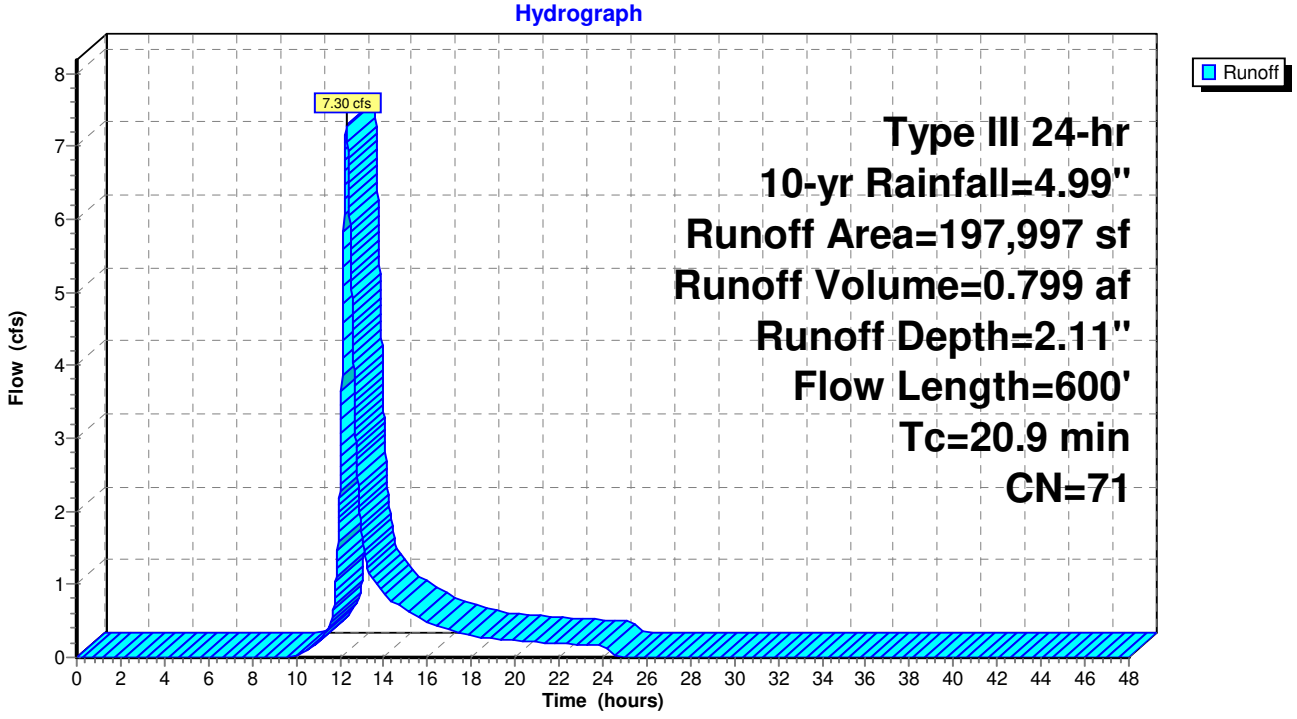
Subcatchment P1b: Proposed to Depression#1 (West)



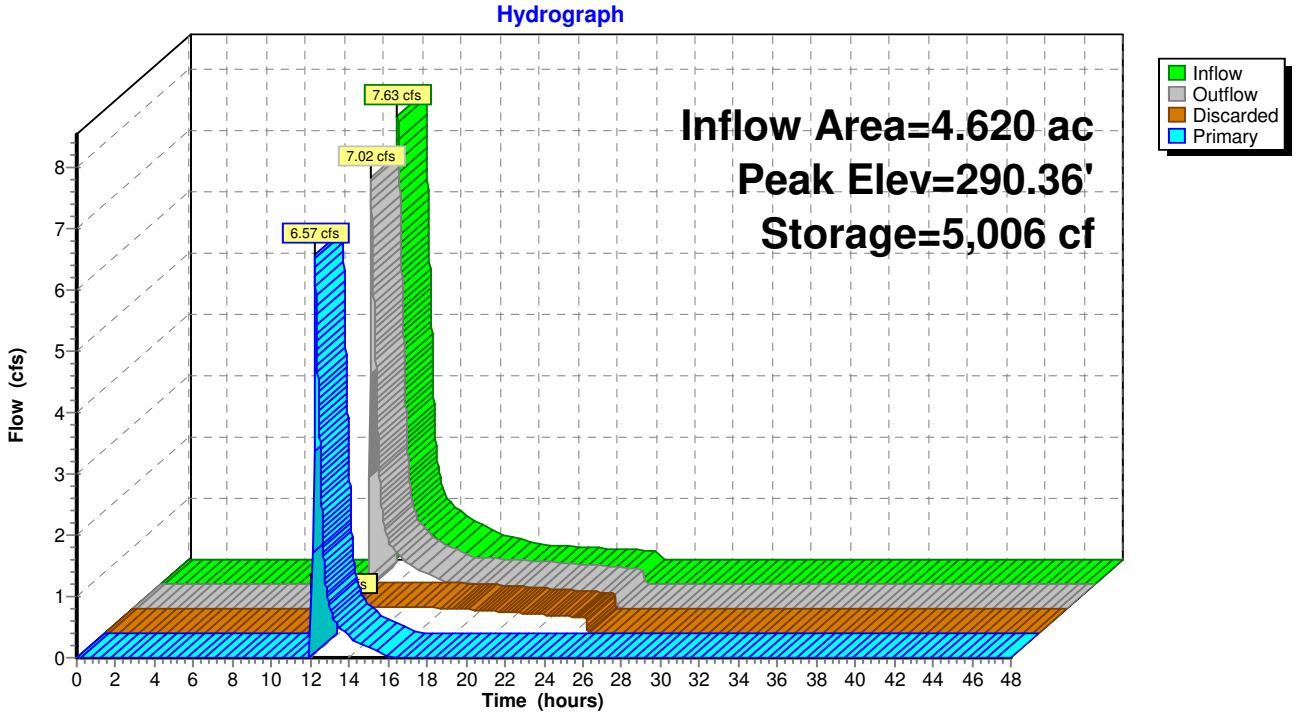
Subcatchment P2: Proposed to Depression#2



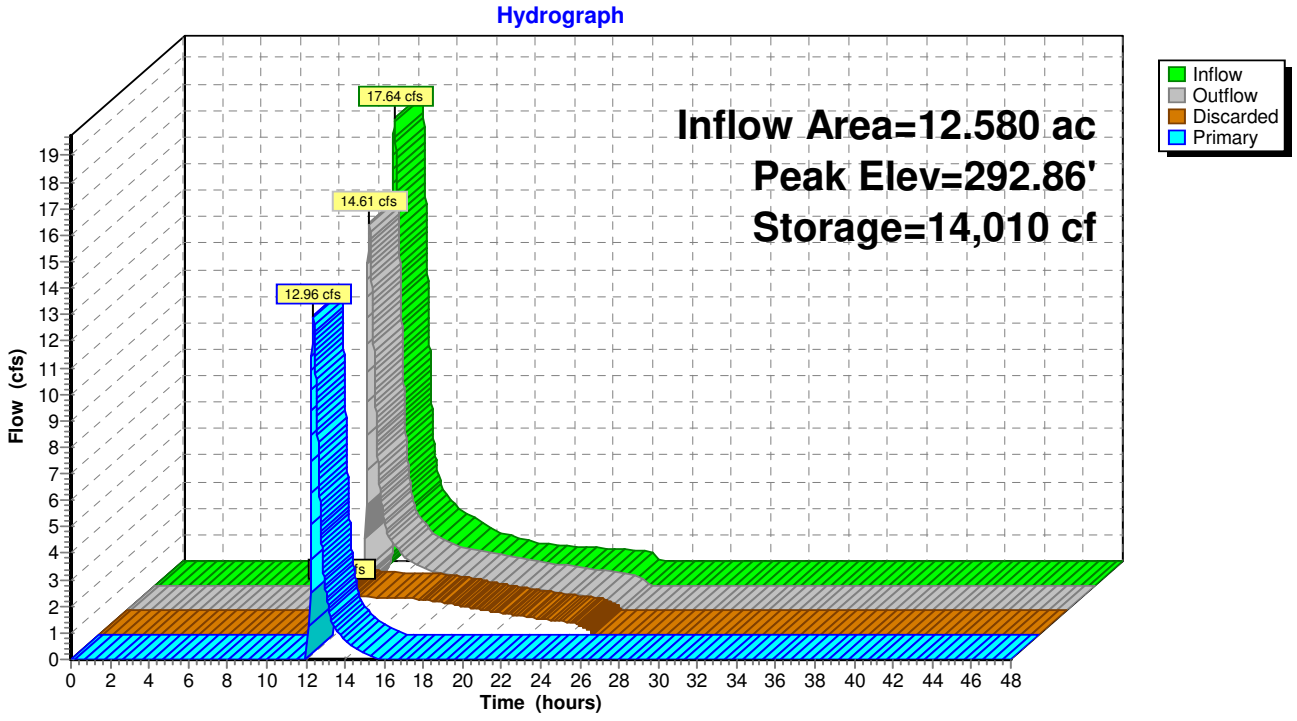
Subcatchment P3: Proposed to Depression#3



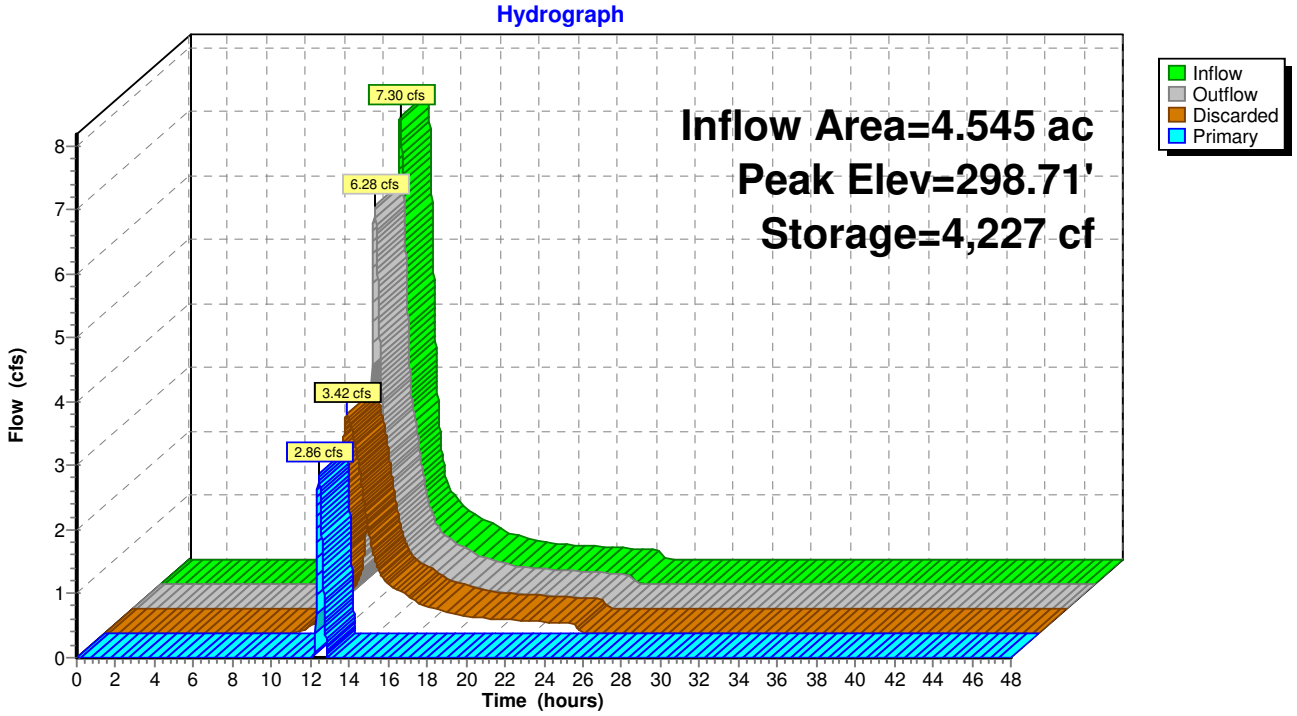
Pond PD1: Water Quality Depression



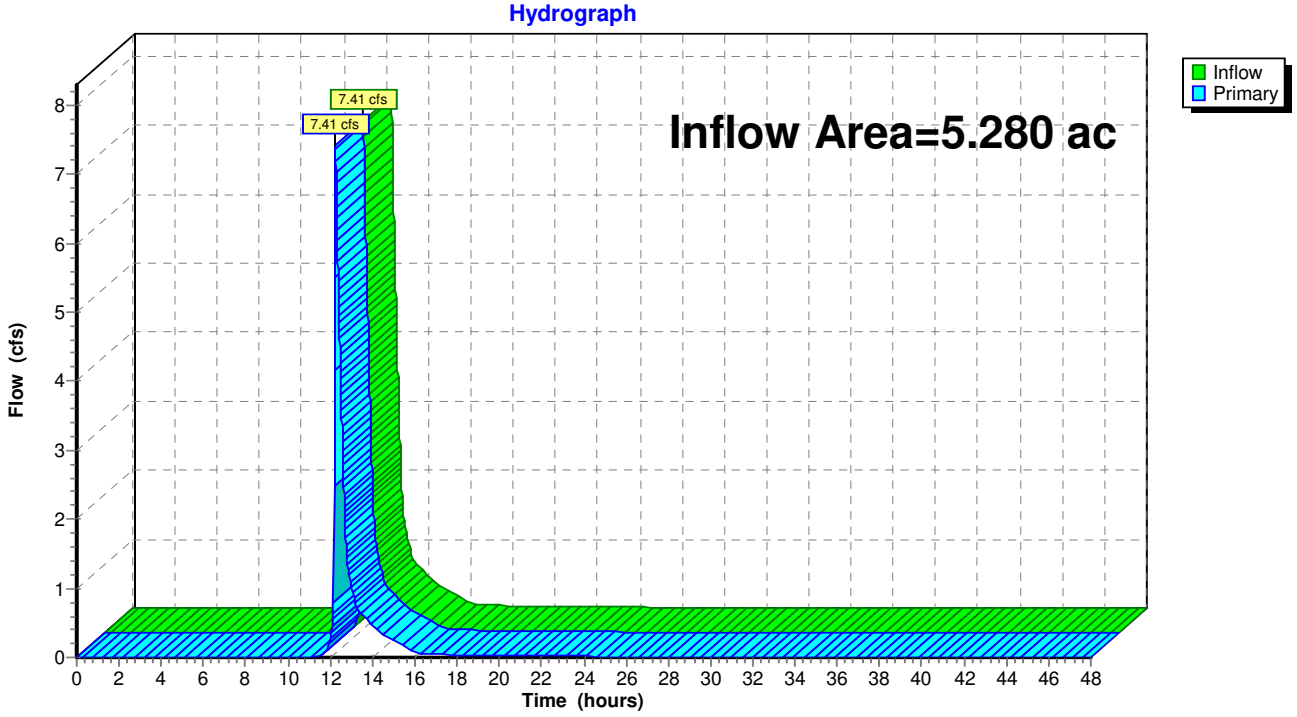
Pond PD2: Proposed Depression #2 (DP#2)



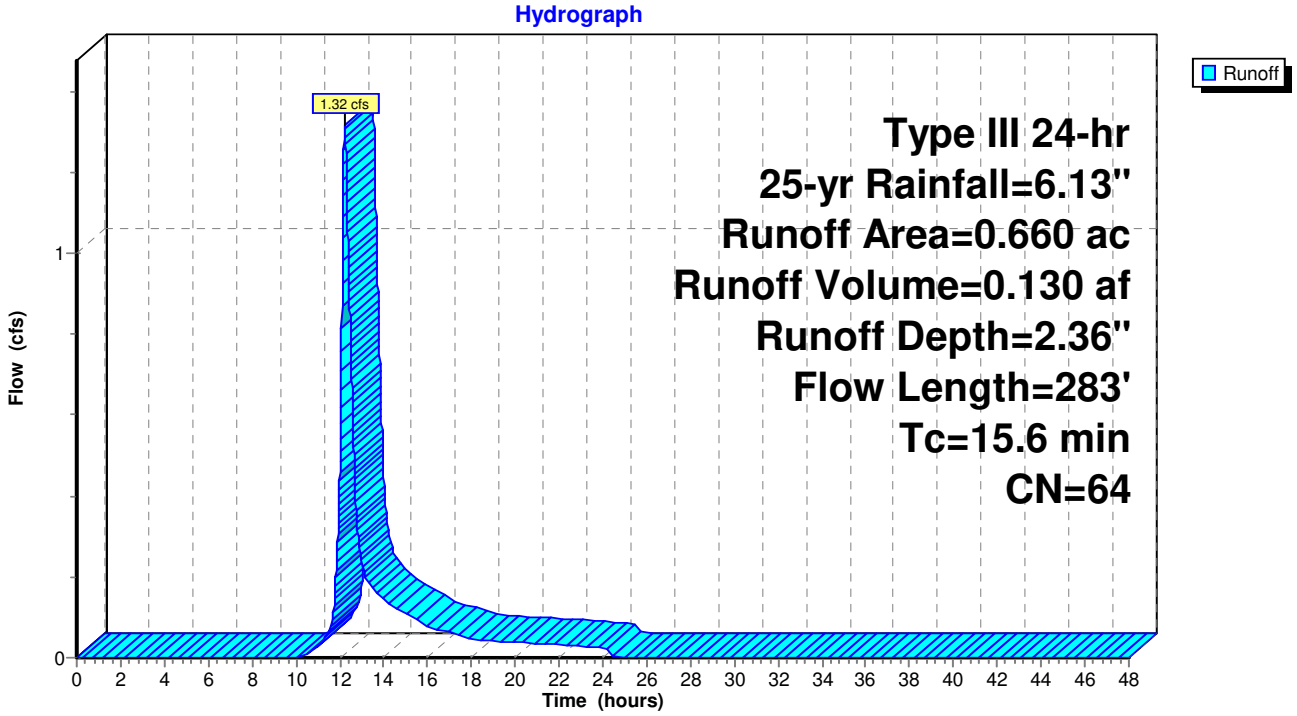
Pond PD3: Proposed Depression #3 (DP#3)



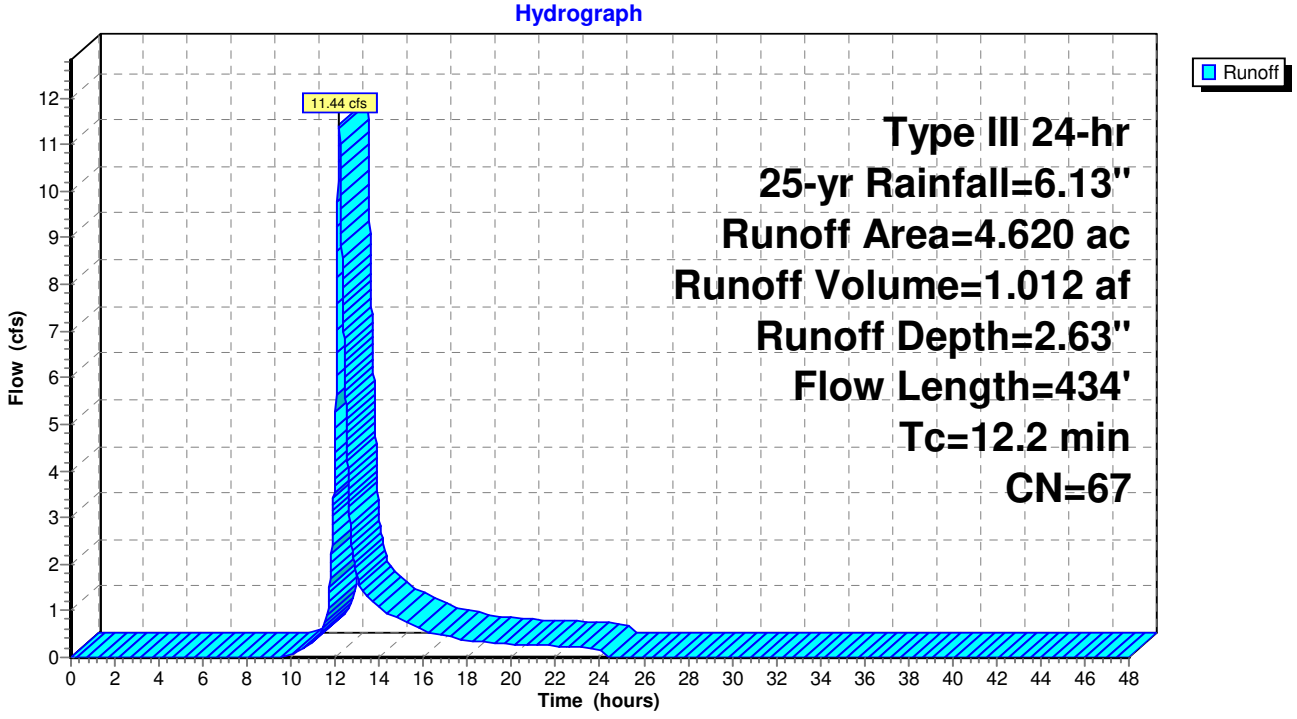
Link 4L: Proposed to DP#1



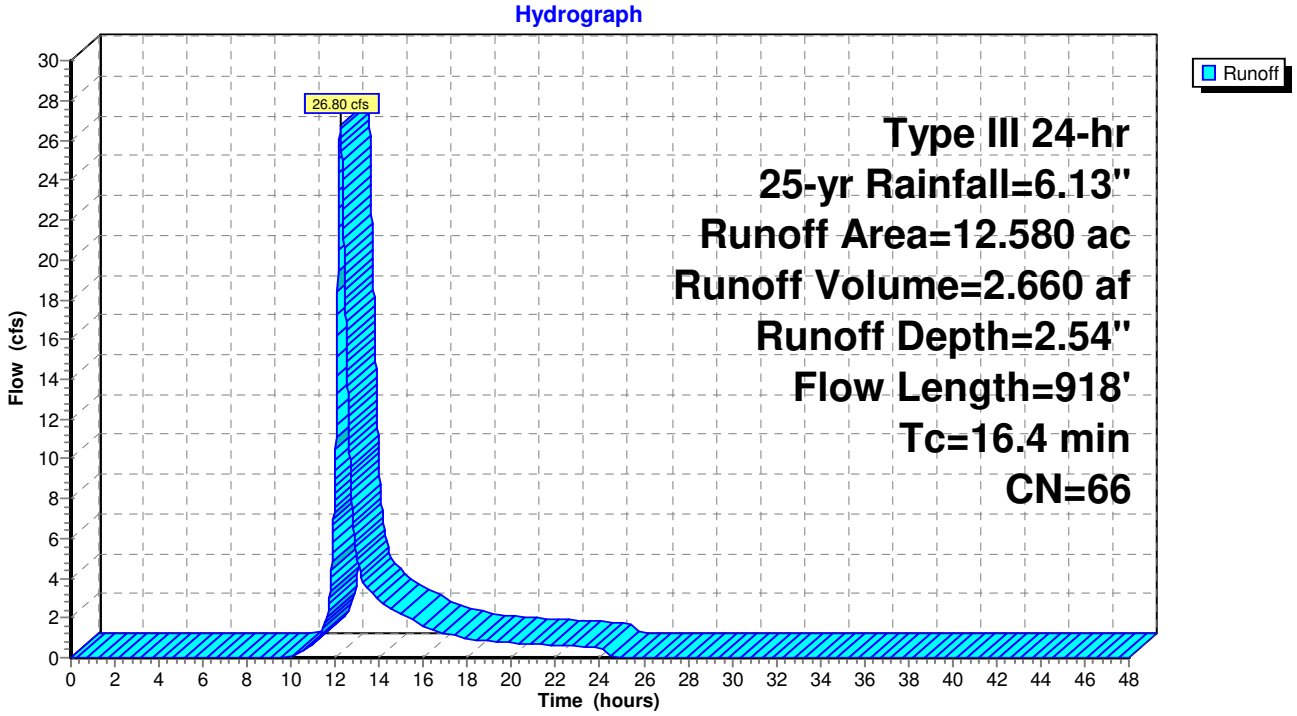
Subcatchment P1: Proposed overland to DP#1 (West)



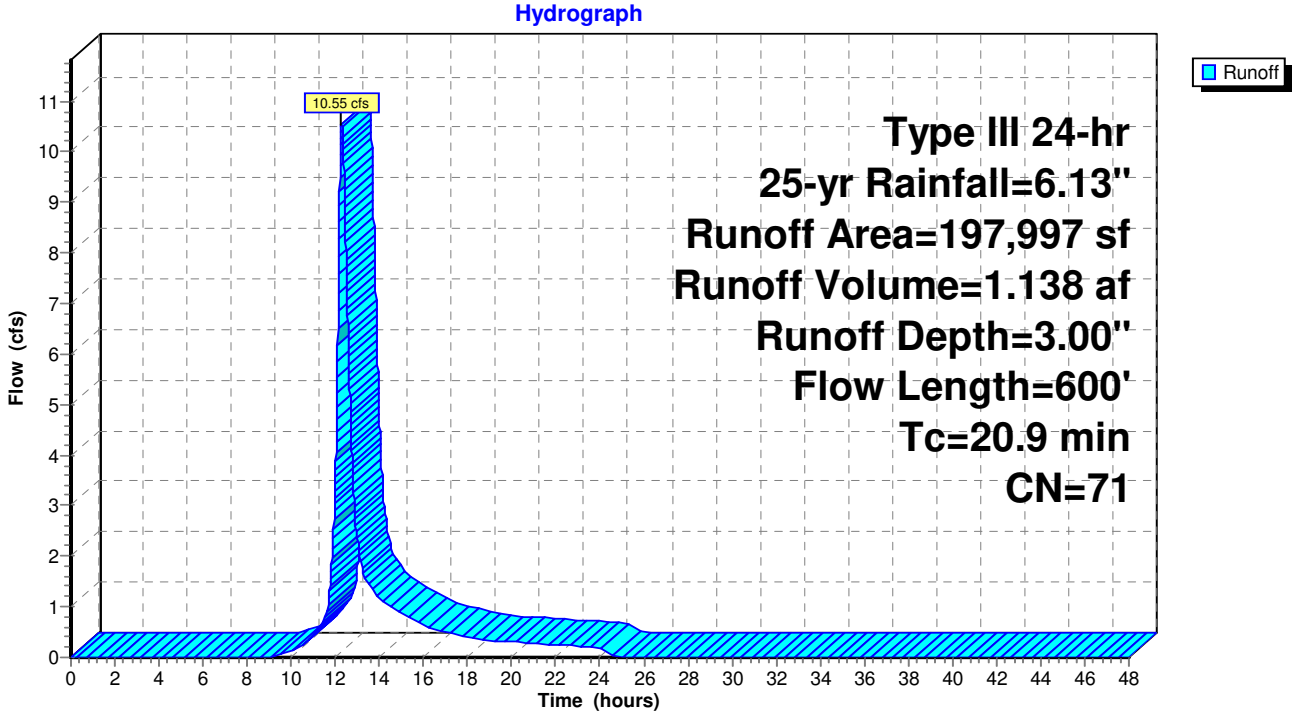
Subcatchment P1b: Proposed to Depression#1 (West)



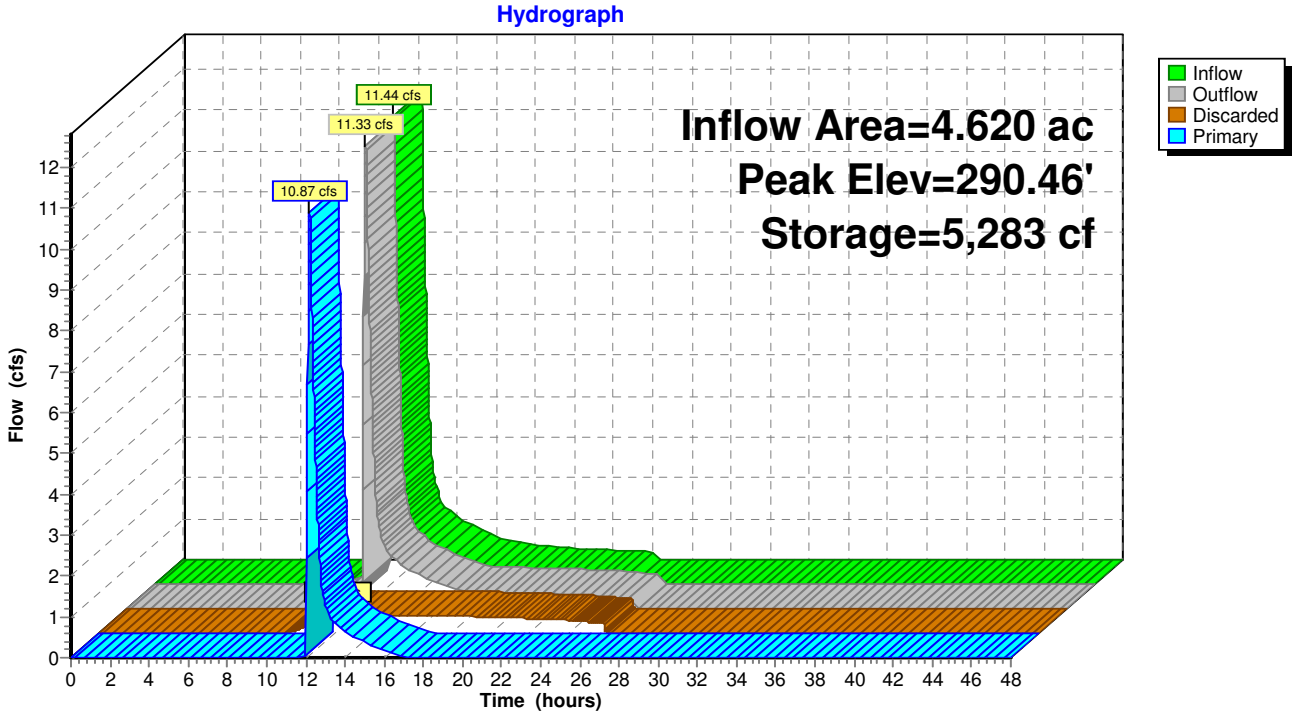
Subcatchment P2: Proposed to Depression#2



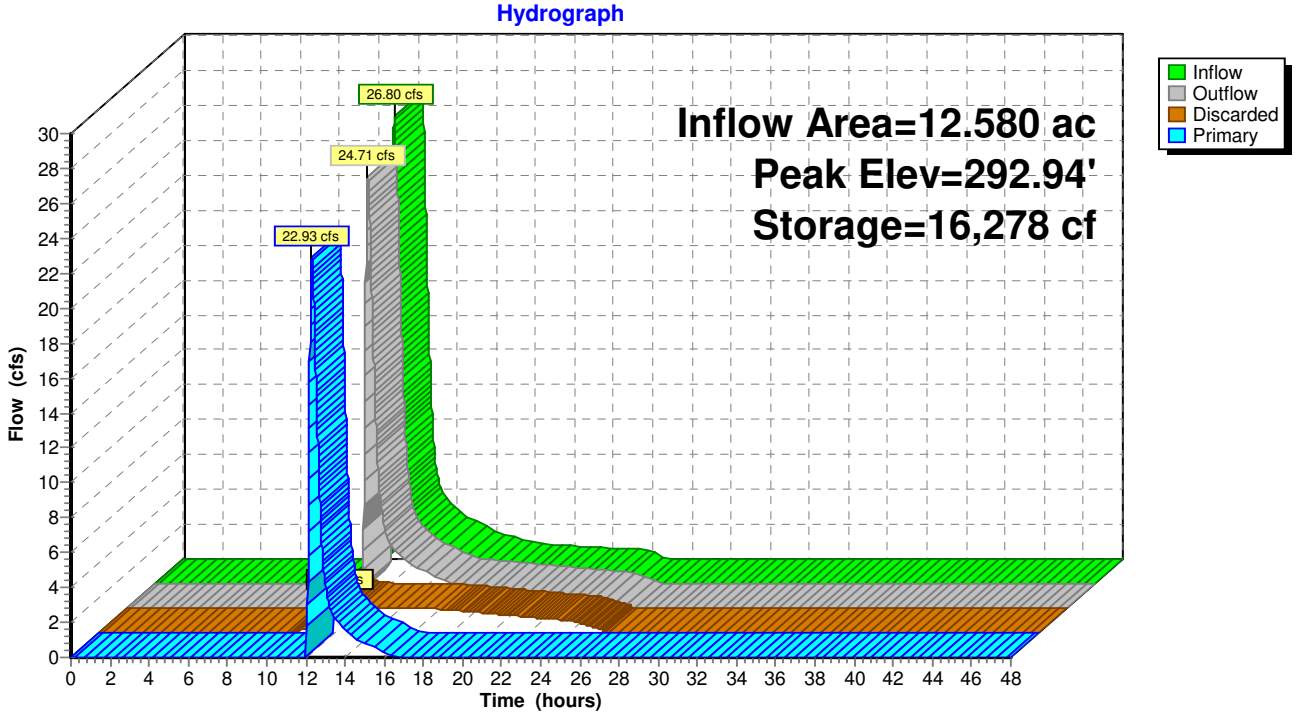
Subcatchment P3: Proposed to Depression#3



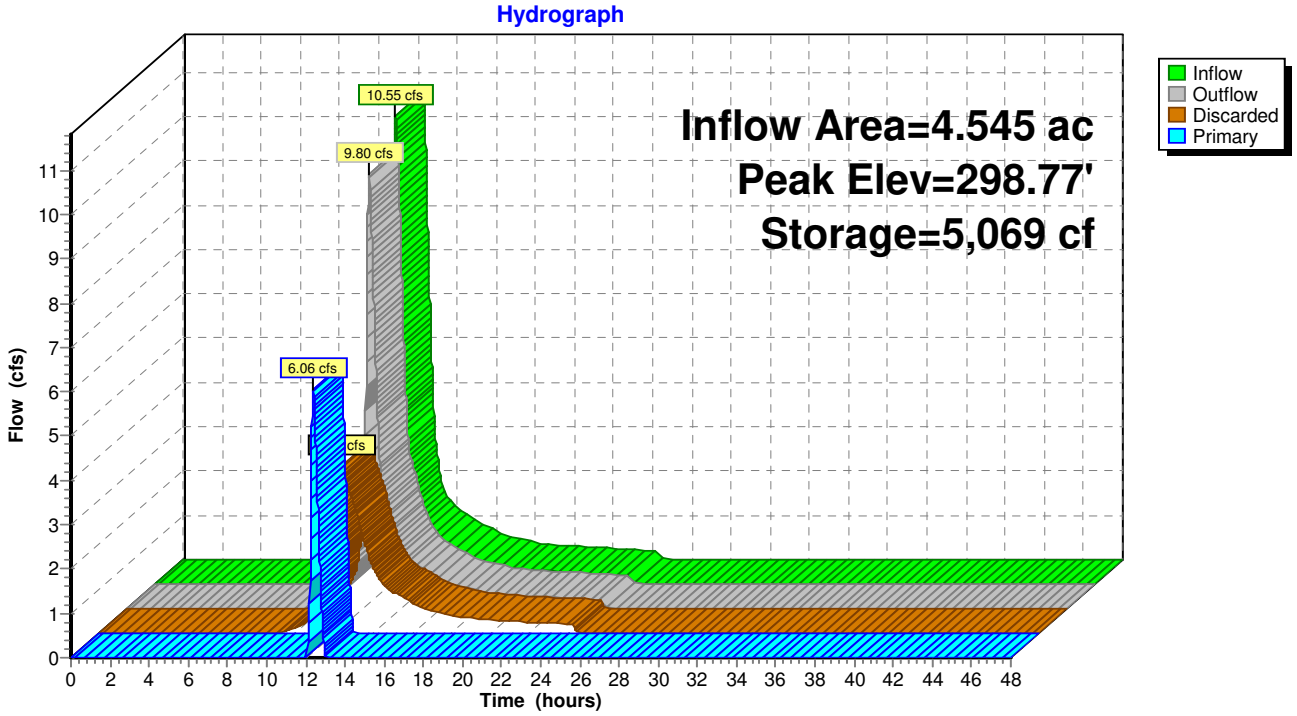
Pond PD1: Water Quality Depression



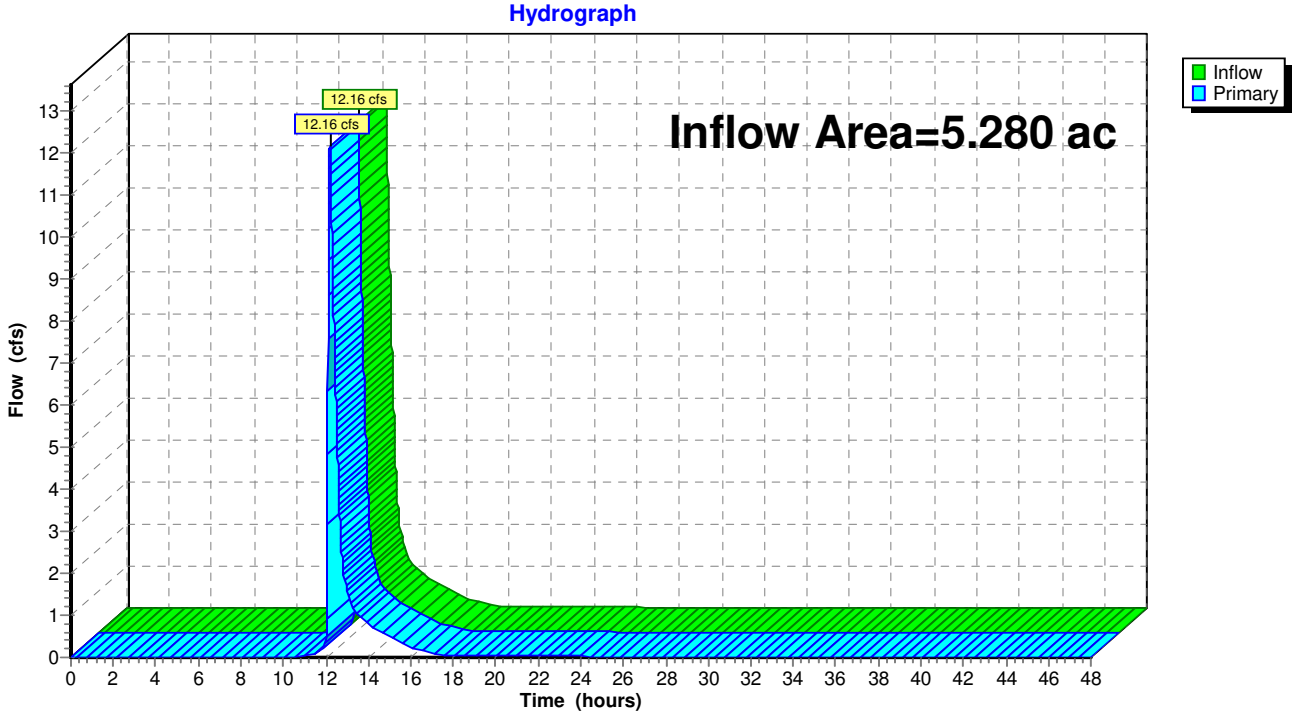
Pond PD2: Proposed Depression #2 (DP#2)



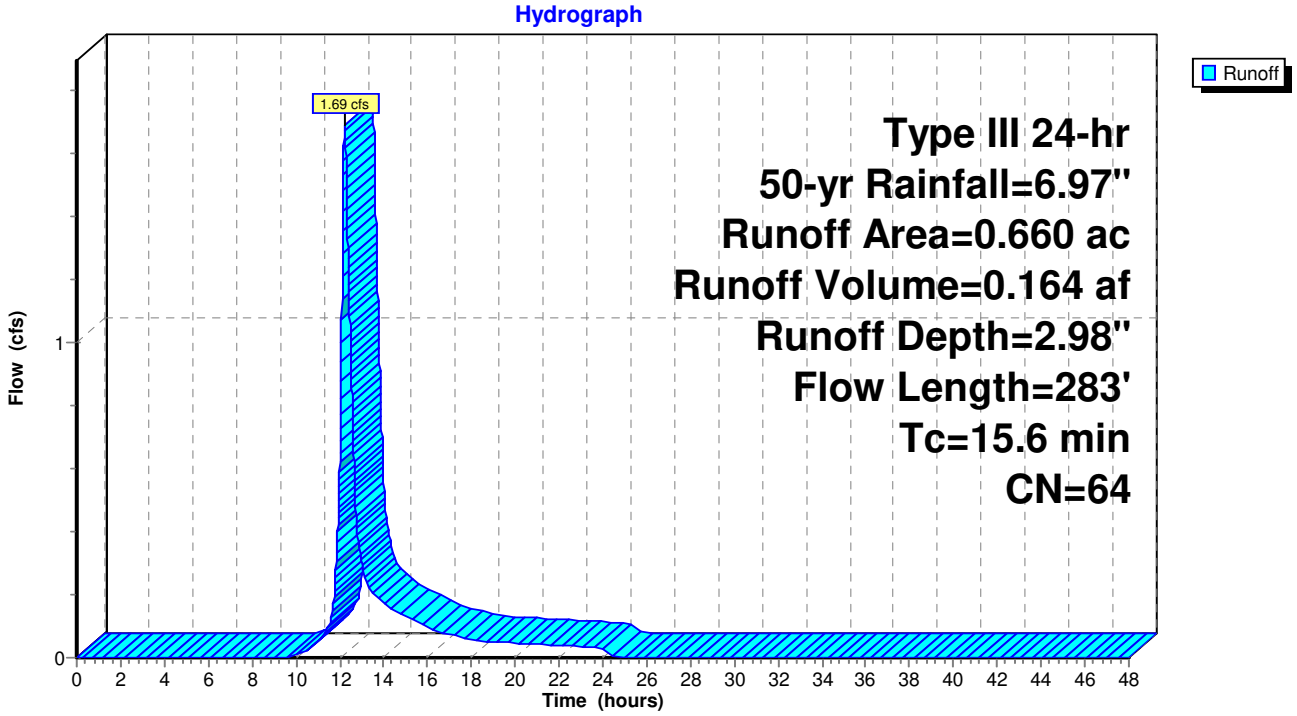
Pond PD3: Proposed Depression #3 (DP#3)



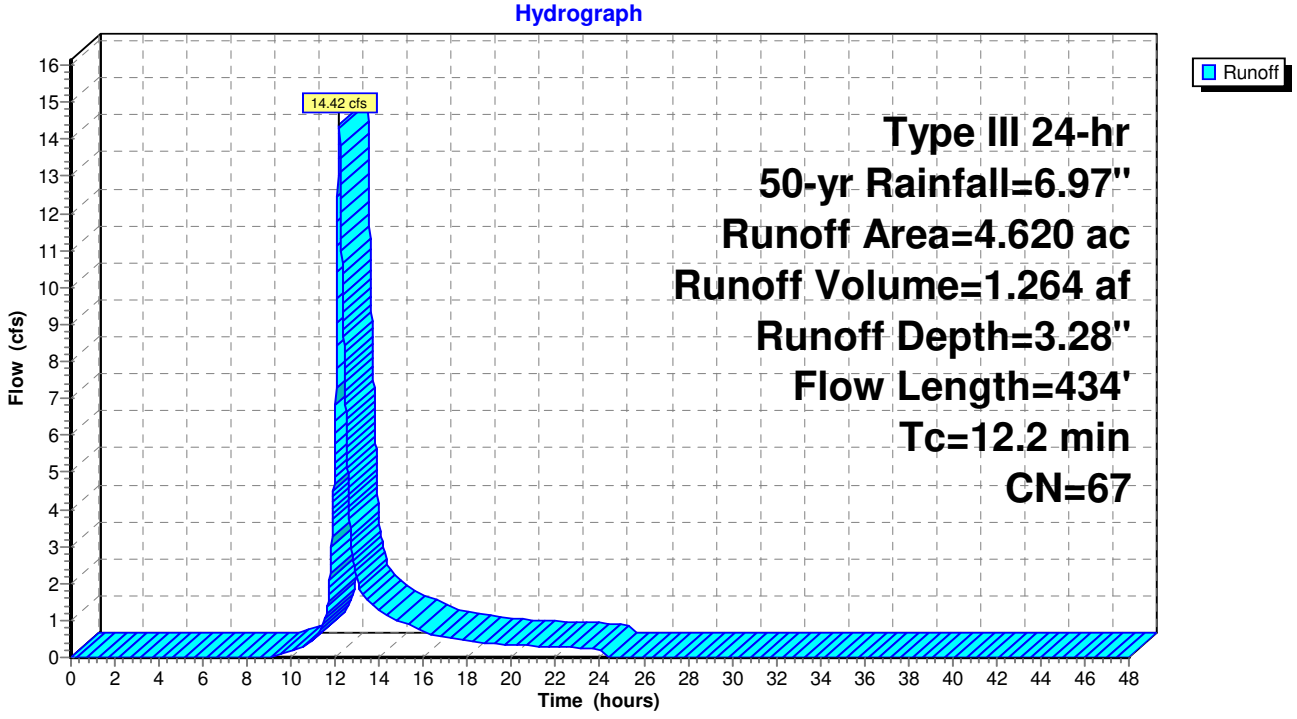
Link 4L: Proposed to DP#1



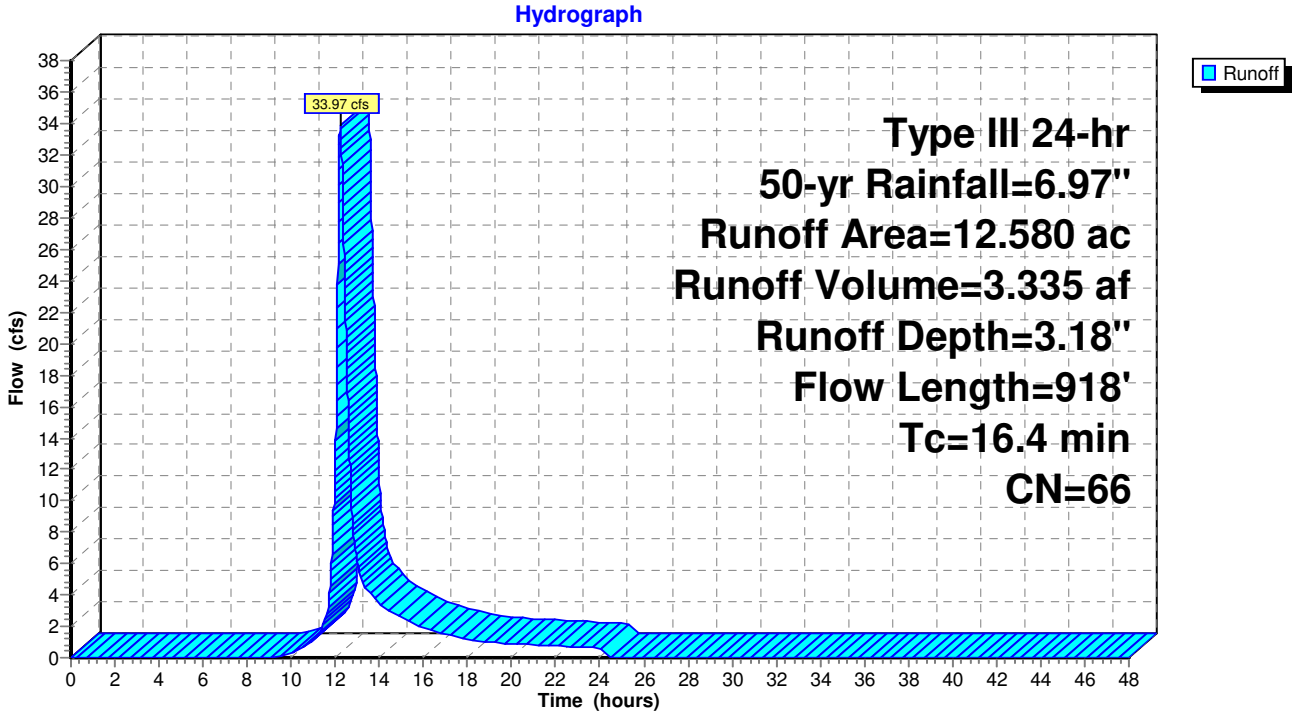
Subcatchment P1: Proposed overland to DP#1 (West)



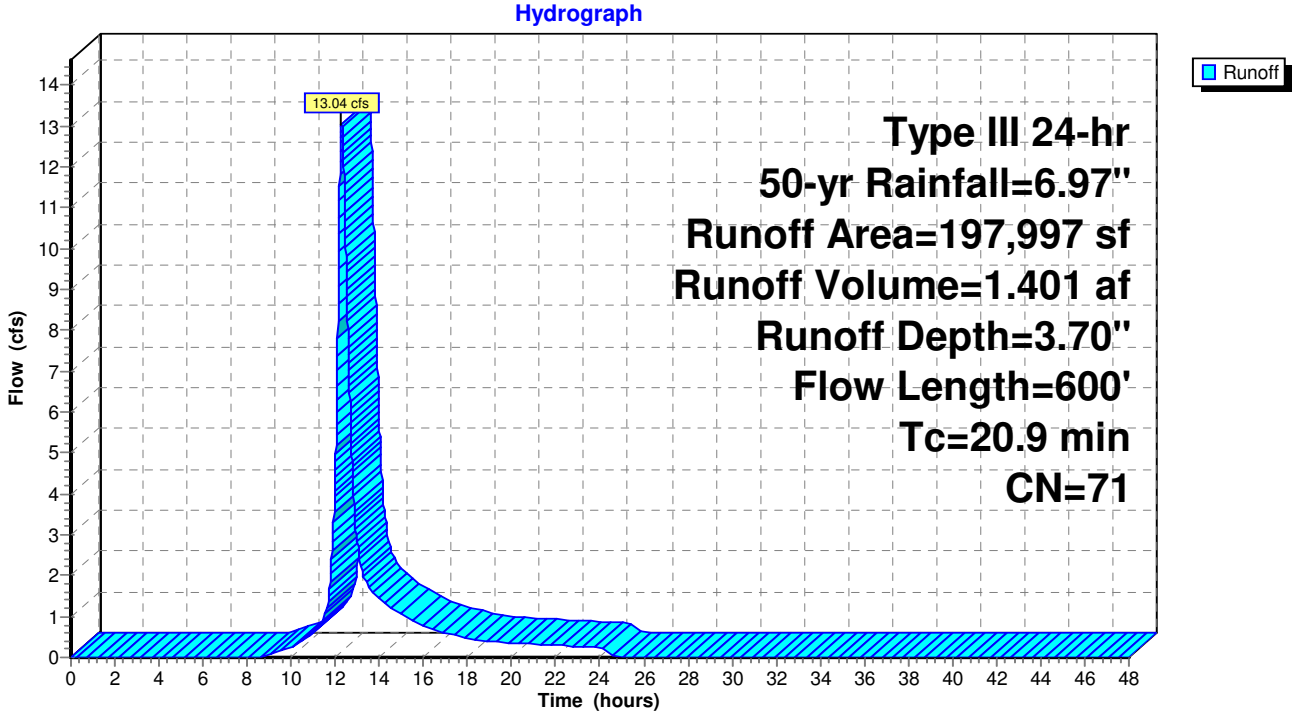
Subcatchment P1b: Proposed to Depression#1 (West)



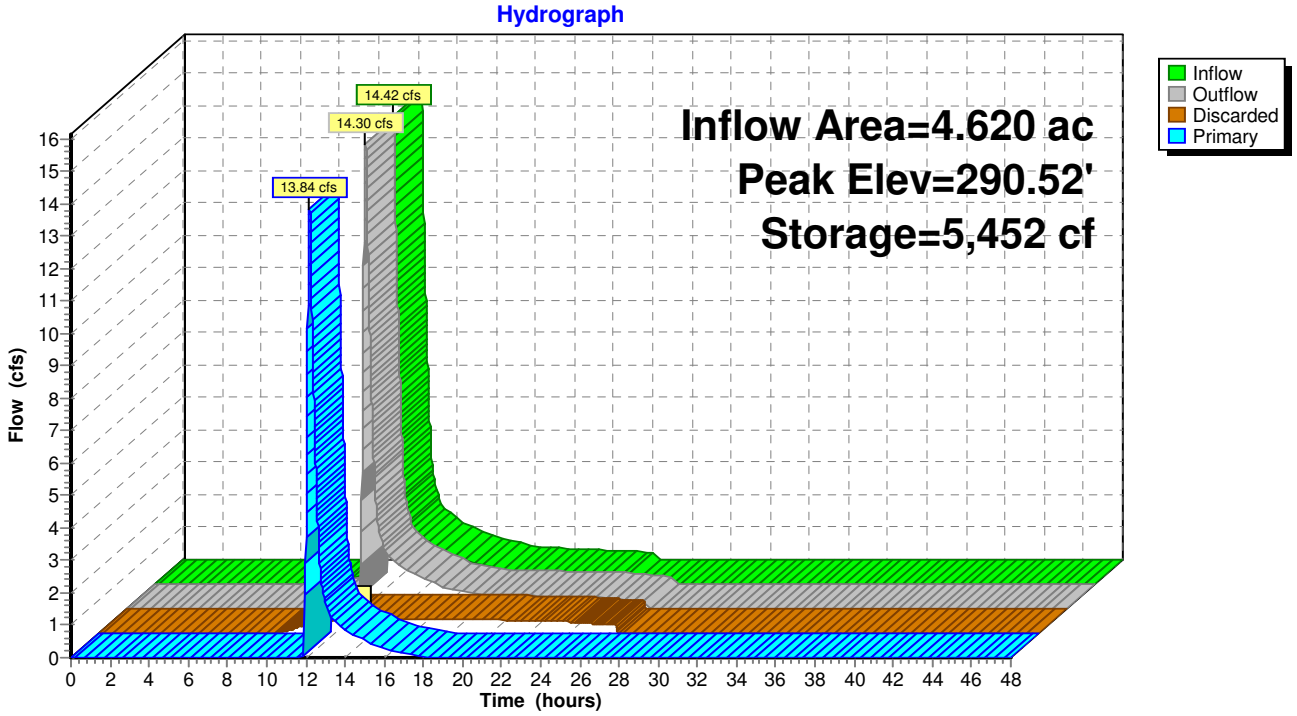
Subcatchment P2: Proposed to Depression#2



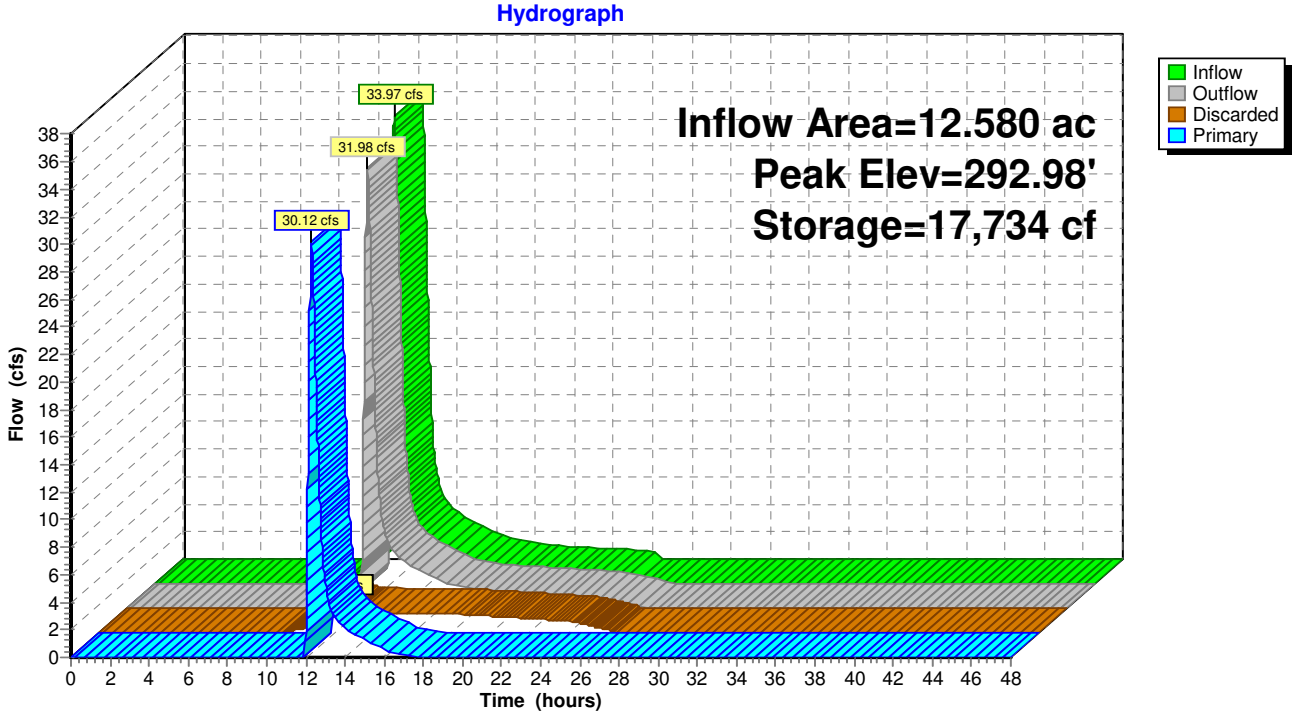
Subcatchment P3: Proposed to Depression#3



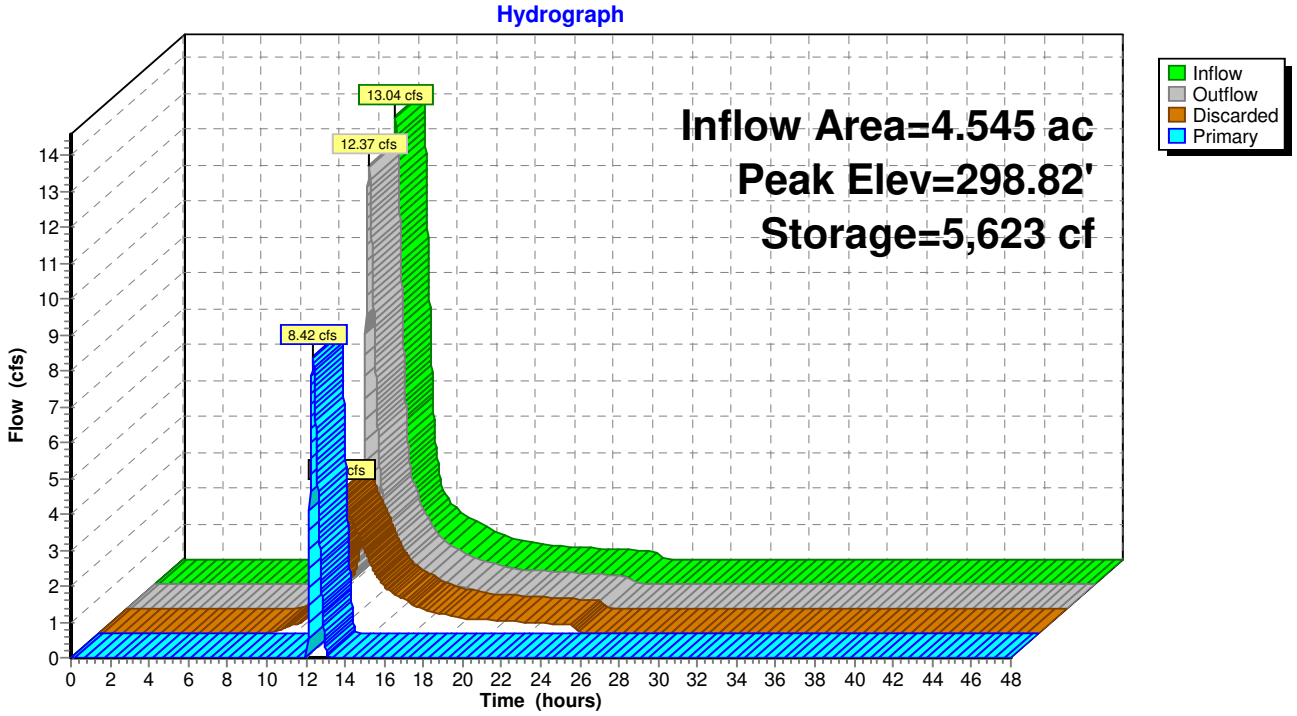
Pond PD1: Water Quality Depression



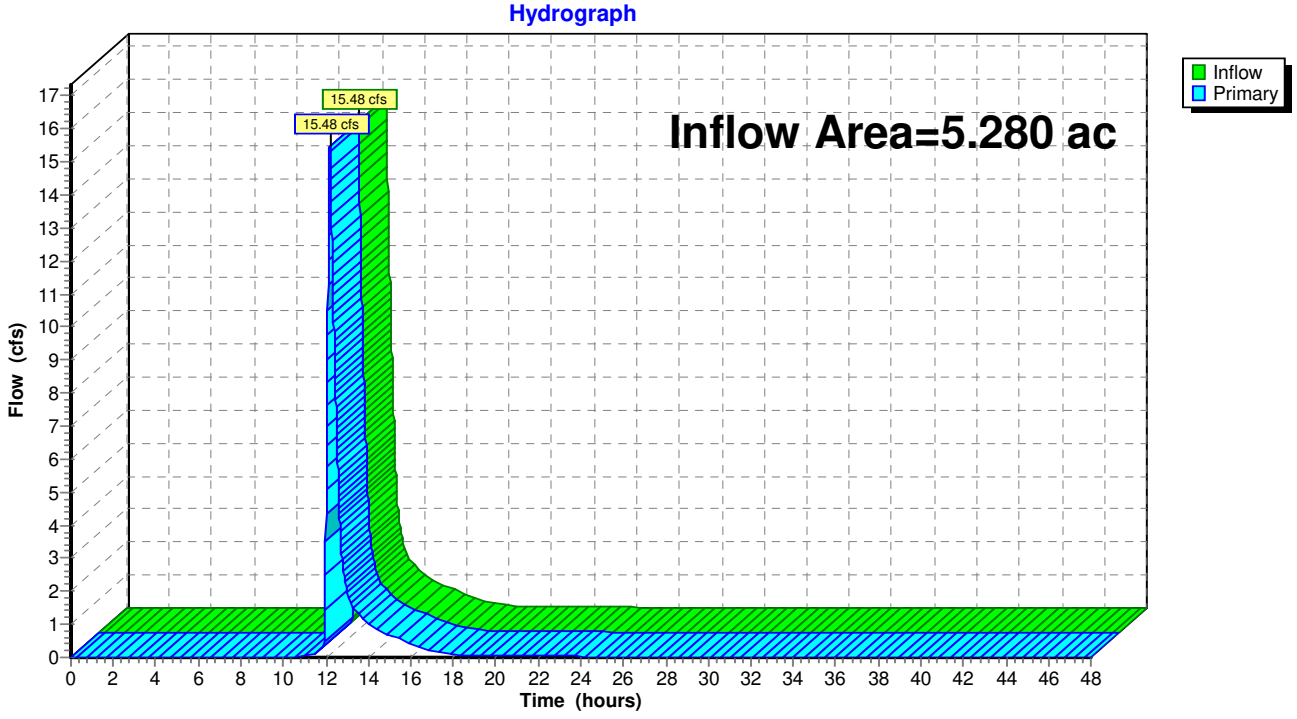
Pond PD2: Proposed Depression #2 (DP#2)



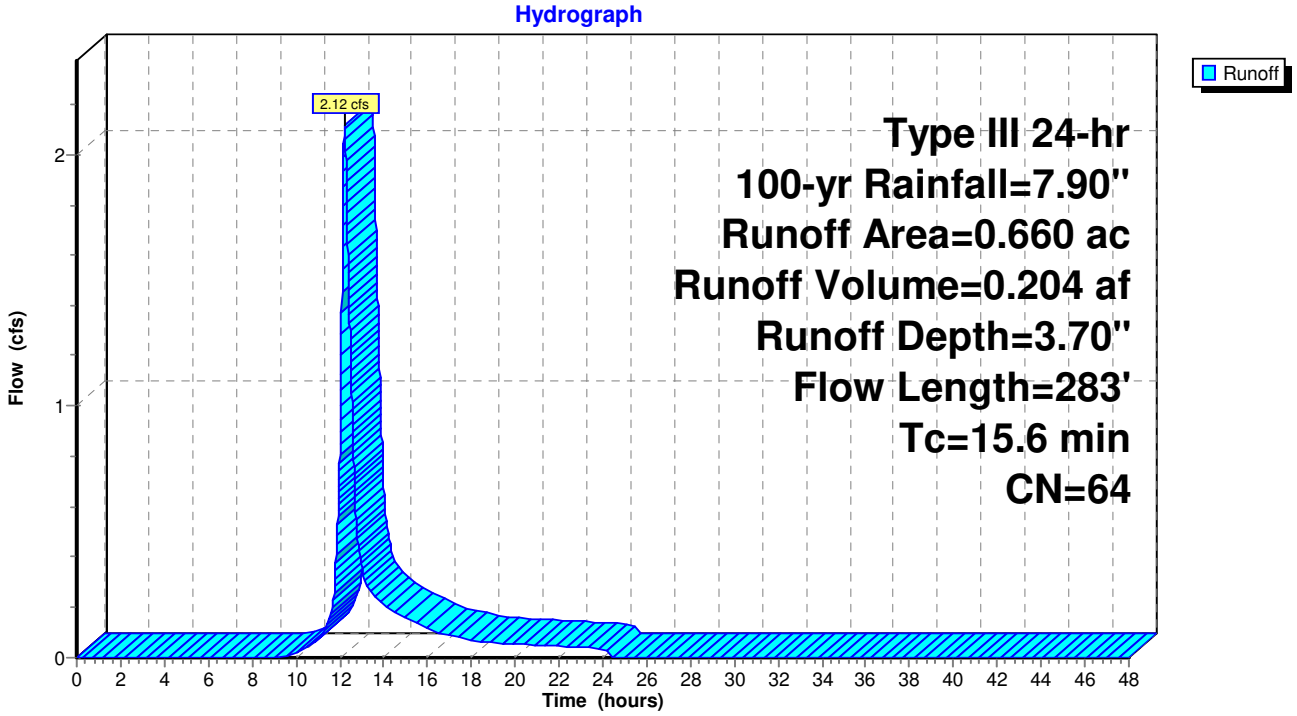
Pond PD3: Proposed Depression #3 (DP#3)



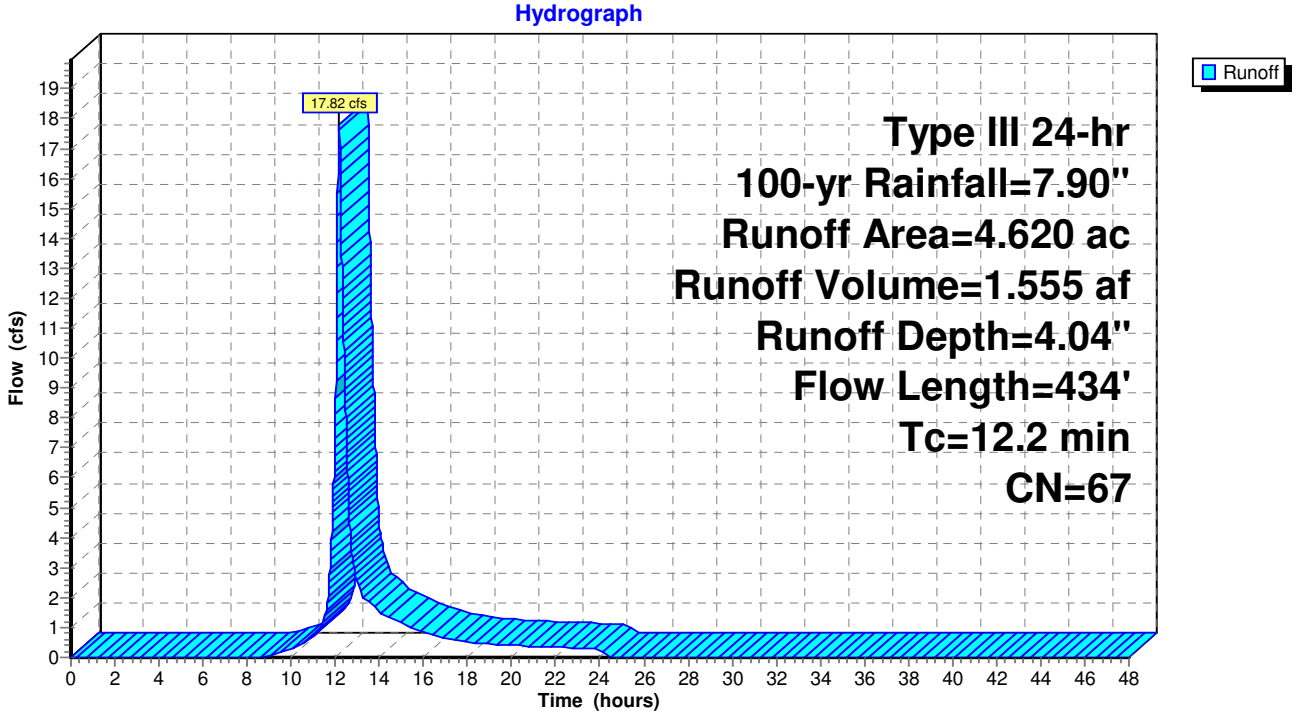
Link 4L: Proposed to DP#1



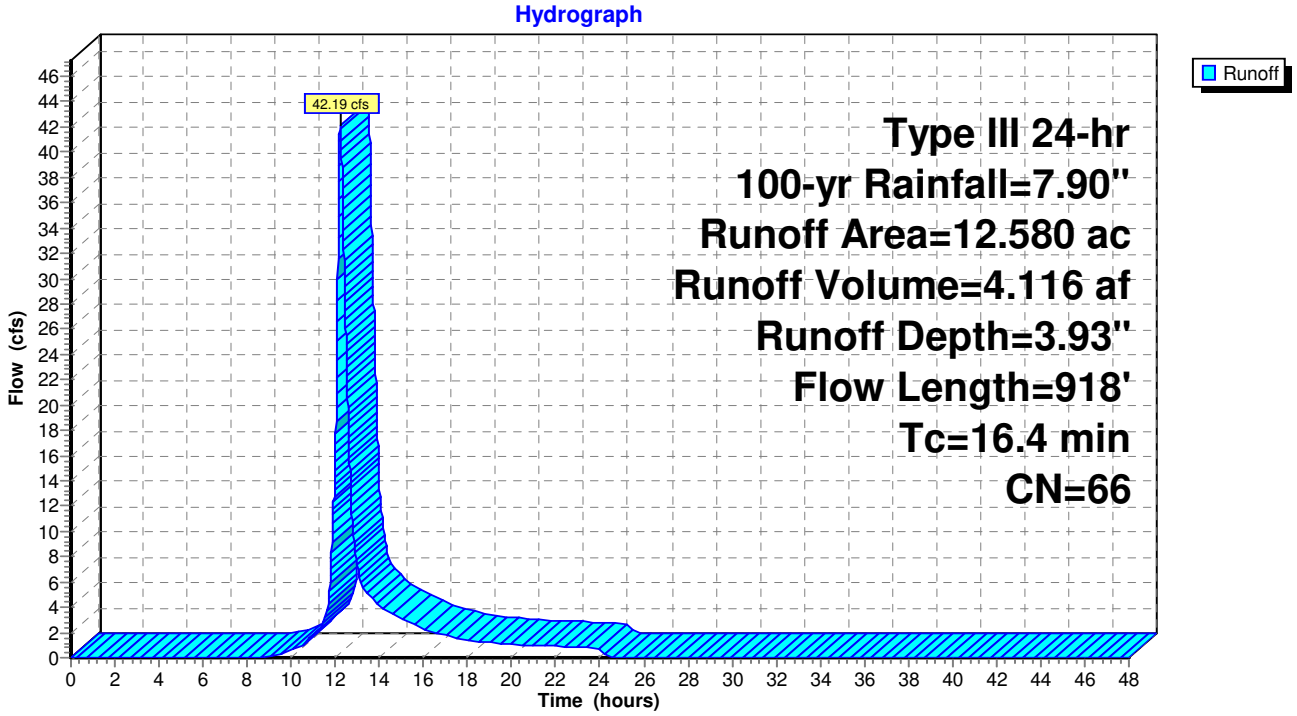
Subcatchment P1: Proposed overland to DP#1 (West)



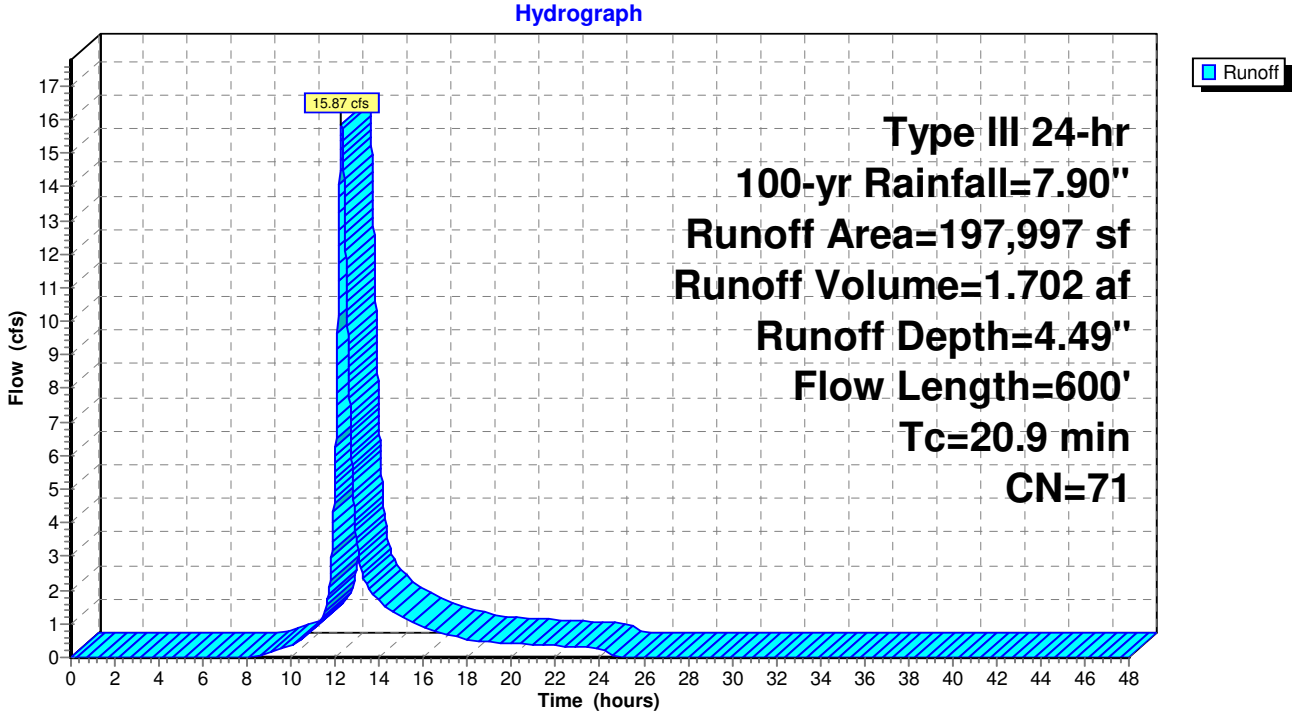
Subcatchment P1b: Proposed to Depression#1 (West)



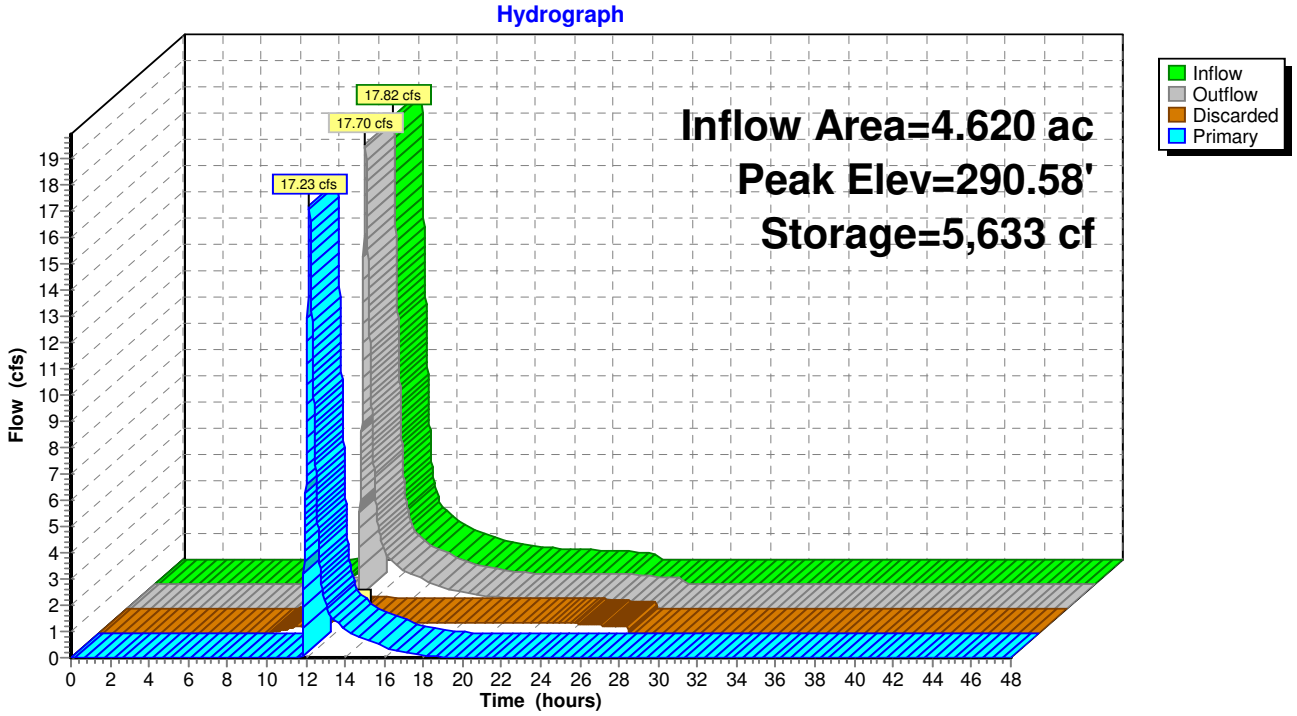
Subcatchment P2: Proposed to Depression#2



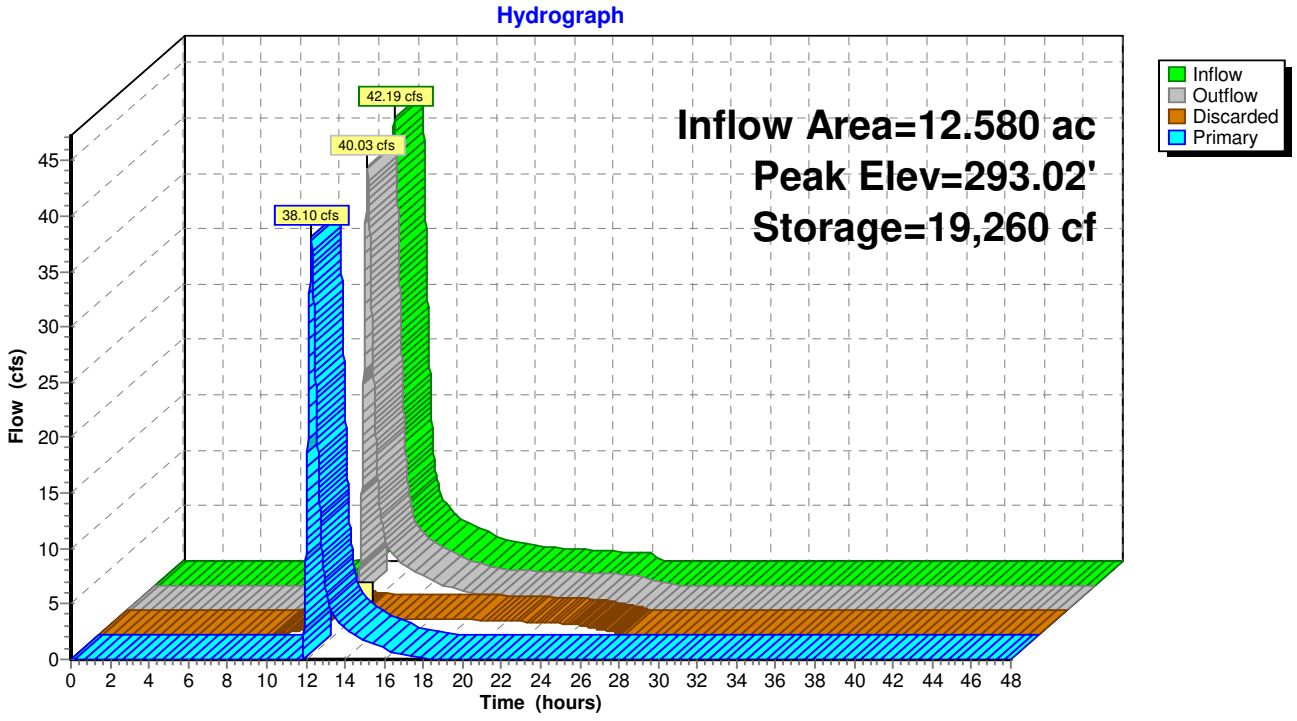
Subcatchment P3: Proposed to Depression#3



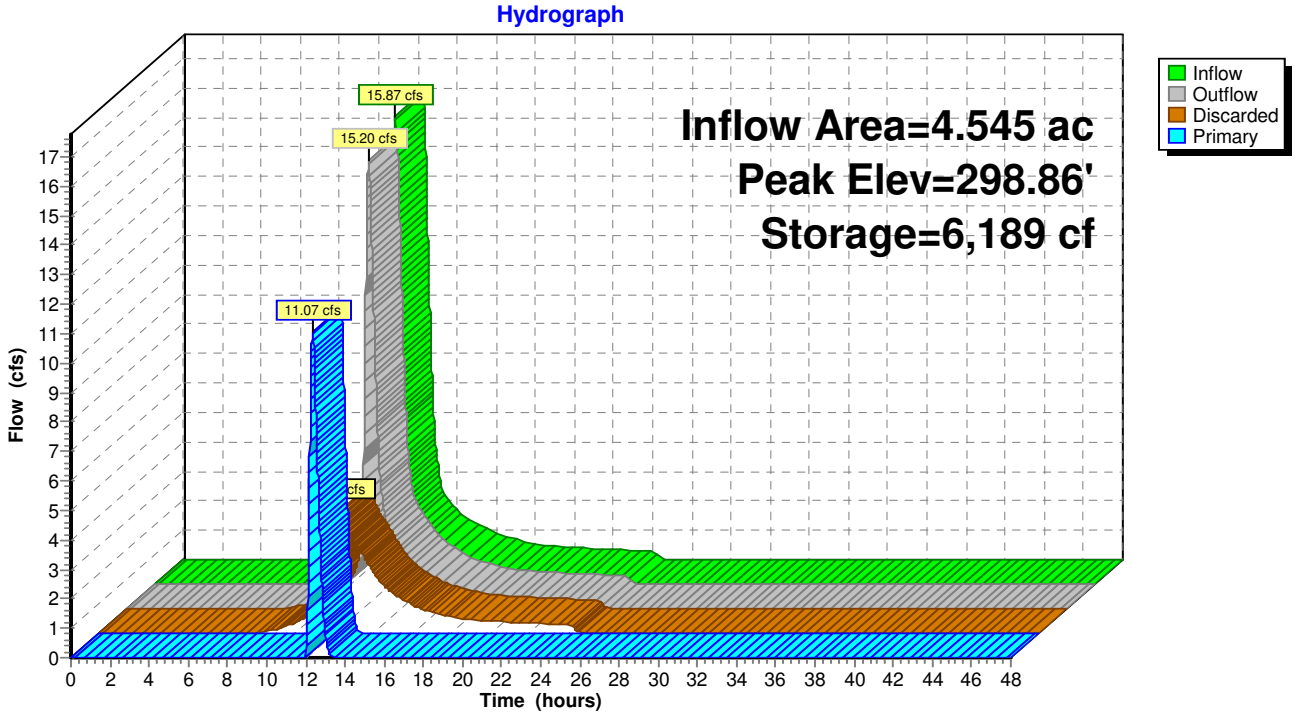
Pond PD1: Water Quality Depression



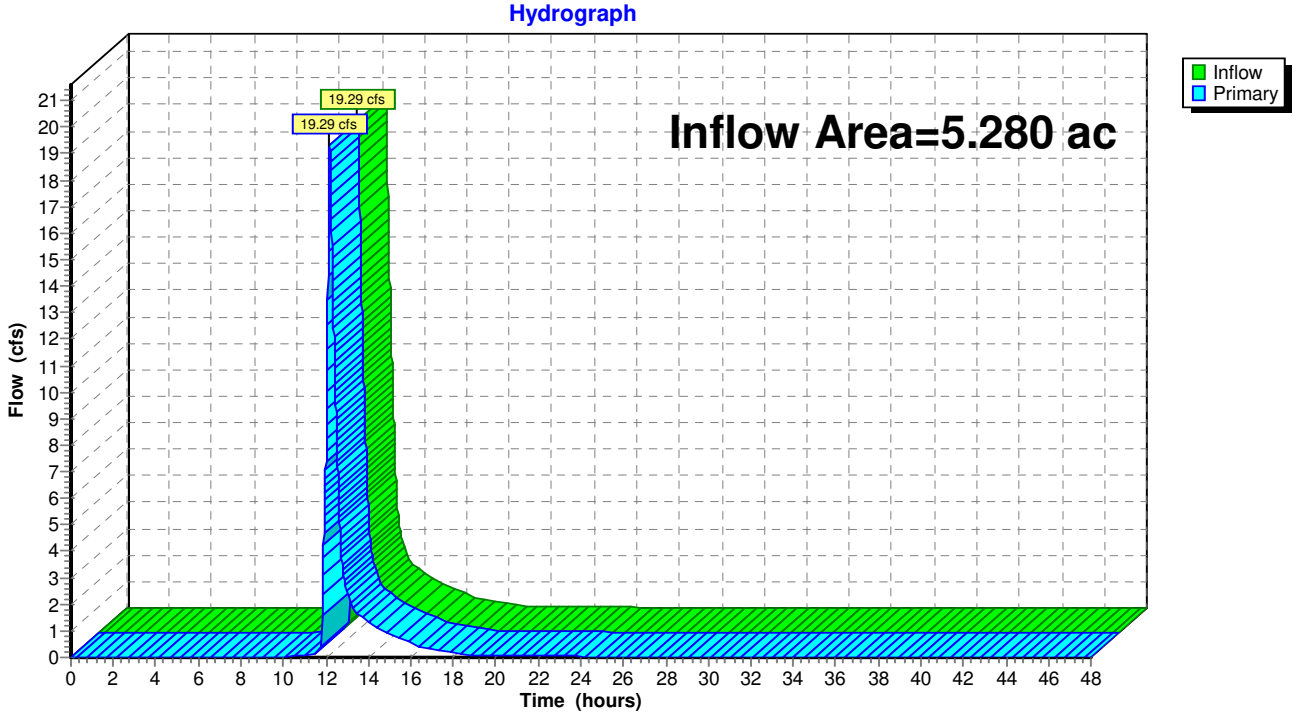
Pond PD2: Proposed Depression #2 (DP#2)



Pond PD3: Proposed Depression #3 (DP#3)



Link 4L: Proposed to DP#1



Summary for Pond PD1: Water Quality Depression

Inflow Area = 4.620 ac, 14.29% Impervious, Inflow Depth = 4.04" for 100-yr event
Inflow = 17.82 cfs @ 12.17 hrs, Volume= 1.555 af
Outflow = 17.70 cfs @ 12.19 hrs, Volume= 1.555 af, Atten= 1%, Lag= 1.0 min
Discarded = 0.47 cfs @ 12.19 hrs, Volume= 0.559 af
Primary = 17.23 cfs @ 12.19 hrs, Volume= 0.996 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 290.58' @ 12.19 hrs Surf.Area= 2,960 sf Storage= 5,633 cf

Plug-Flow detention time= 51.9 min calculated for 1.555 af (100% of inflow)
Center-of-Mass det. time= 51.9 min (889.4 - 837.5)

Volume	Invert	Avail.Storage	Storage Description
#1	288.00'	6,947 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
288.00	1,495	0	0	1,495
291.00	3,248	6,947	6,947	3,320

Device	Routing	Invert	Outlet Devices
#1	Discarded	288.00'	**6.900 in/hr Exfiltration (.23x60/2) over Surface area** Phase-In= 0.01'
#2	Primary	290.10'	**20.0' long x 3.0' breadth Broad-Crested Rectangular Weir** 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.47 cfs @ 12.19 hrs HW=290.58' (Free Discharge)
↑—**1=Exfiltration (.23x60/2)** (Exfiltration Controls 0.47 cfs)

Primary OutFlow Max=17.21 cfs @ 12.19 hrs HW=290.58' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 17.21 cfs @ 1.81 fps)

APPENDIX C
NRCS Soil Map & Data

State of Connecticut

66B—Narragansett silt loam, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9lq3
Elevation: 0 to 1,200 feet
Mean annual precipitation: 43 to 54 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Narragansett and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Narragansett

Setting

Landform: Hills, till plains
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Coarse-loamy eolian deposits over sandy and gravelly melt-out till derived from gneiss and/or schist and/or sandstone and shale

Typical profile

Ap - 0 to 6 inches: silt loam
Bw1 - 6 to 15 inches: silt loam
Bw2 - 15 to 24 inches: silt loam
Bw3 - 24 to 28 inches: gravelly silt loam
2C - 28 to 60 inches: very gravelly loamy coarse sand

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Broadbrook
Percent of map unit: 5 percent
Landform: Drumlins, hills, till plains
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Charlton
Percent of map unit: 5 percent
Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Leicester
Percent of map unit: 3 percent
Landform: Depressions, drainageways
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

Unnamed, red parent material
Percent of map unit: 2 percent
Hydric soil rating: No

Canton
Percent of map unit: 2 percent
Landform: Hills
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Wapping
Percent of map unit: 2 percent
Landform: Hills, till plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Sutton
Percent of map unit: 1 percent
Landform: Depressions, drainageways
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Data Source Information

Soil Survey Area: State of Connecticut
Survey Area Data: Version 18, Dec 6, 2018

Soil Map—State of Connecticut
(Vintage Hills II)

Map Scale: 1:3,200 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 45 90 180 270

Feet
0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
Survey Area Data: Version 18, Dec 6, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 27, 2016—Oct 30, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
12	Raypol silt loam	0.2	0.4%
66B	Narragansett silt loam, 2 to 8 percent slopes	43.1	91.7%
67B	Narragansett silt loam, 3 to 8 percent slopes, very stony	0.8	1.6%
67C	Narragansett silt loam, 8 to 15 percent slopes, very stony	1.8	3.8%
704A	Enfield silt loam, 0 to 3 percent slopes	1.2	2.5%
Totals for Area of Interest		**47.0**	**100.0%**

State of Connecticut

67B—Narragansett silt loam, 3 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 9lq5
Elevation: 0 to 1,200 feet
Mean annual precipitation: 43 to 54 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition

Narragansett and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Narragansett

Setting

Landform: Hills, till plains
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Coarse-loamy eolian deposits over sandy and gravelly melt-out till derived from gneiss and/or schist and/or sandstone and shale

Typical profile

Ap - 0 to 6 inches: silt loam
Bw1 - 6 to 15 inches: silt loam
Bw2 - 15 to 24 inches: silt loam
Bw3 - 24 to 28 inches: gravelly silt loam
2C - 28 to 60 inches: very gravelly loamy coarse sand

Properties and qualities

Slope: 3 to 8 percent
Percent of area covered with surface fragments: 1.6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Charlton
Percent of map unit: 5 percent
Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Broadbrook
Percent of map unit: 5 percent
Landform: Drumlins, hills, till plains
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Leicester
Percent of map unit: 3 percent
Landform: Depressions, drainageways
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

Unnamed, red parent material
Percent of map unit: 2 percent
Hydric soil rating: No

Canton
Percent of map unit: 2 percent
Landform: Hills
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Wapping
Percent of map unit: 2 percent
Landform: Hills, till plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Sutton
Percent of map unit: 1 percent
Landform: Depressions, drainageways
Down-slope shape: Concave
Across-slope shape: Linear

Hydric soil rating: No

Data Source Information

Soil Survey Area: State of Connecticut
Survey Area Data: Version 18, Dec 6, 2018

State of Connecticut

67C—Narragansett silt loam, 8 to 15 percent slopes, very stony

Map Unit Setting

National map unit symbol: 9lq6
Elevation: 0 to 1,200 feet
Mean annual precipitation: 43 to 54 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition

Narragansett and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Narragansett

Setting

Landform: Hills, till plains
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Coarse-loamy eolian deposits over sandy and gravelly melt-out till derived from gneiss and/or schist and/or sandstone and shale

Typical profile

Ap - 0 to 6 inches: silt loam
Bw1 - 6 to 15 inches: silt loam
Bw2 - 15 to 24 inches: silt loam
Bw3 - 24 to 28 inches: gravelly silt loam
2C - 28 to 60 inches: very gravelly loamy coarse sand

Properties and qualities

Slope: 8 to 15 percent
Percent of area covered with surface fragments: 1.6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Broadbrook
Percent of map unit: 5 percent
Landform: Drumlins, hills, till plains
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Canton
Percent of map unit: 5 percent
Landform: Hills
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Charlton
Percent of map unit: 3 percent
Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Wapping
Percent of map unit: 3 percent
Landform: Hills, till plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Sutton
Percent of map unit: 2 percent
Landform: Depressions, drainageways
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Leicester
Percent of map unit: 2 percent
Landform: Depressions, drainageways
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: State of Connecticut
Survey Area Data: Version 18, Dec 6, 2018

APPENDIX D
Storm Sewer Analysis

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	43.000	2.93	2.93	0.70	2.05	2.05	10.0	10.0	5.3	10.96	14.27	6.58	18	1.09	298.70	299.17	300.14	300.44	301.00	300.29	FE-2 - FE-3
2	End	211.000	0.18	0.96	0.74	0.13	0.45	6.0	8.3	5.9	2.66	4.56	3.18	15	0.50	290.20	291.25	291.32	291.91	290.20	298.44	CB-1 TO FE
3	2	64.000	0.78	0.78	0.41	0.32	0.32	8.0	8.0	6.0	1.91	4.57	3.55	15	0.50	293.27	293.59	293.83	294.16	298.44	298.46	CB-2 - CB-1

Project File: 4280 STM.stm | Number of lines: 3 | Run Date: 10/23/2020

NOTES:Intensity = 35.84 / (Inlet time + 3.80) ^ 0.73; Return period =Yrs. 10 ; c = cir e = ellip b = box

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
1	FE-3	10.96	0.00	0.00	10.96	None	0.0	0.00	0.00	0.00	0.00	Sag	2.00	0.050	0.020	0.013	0.00	0.00	0.00	0.00	0.0	Off
2	CB-1 (DOUBLE T	0.91	0.00	0.91	0.00	Comb	3.0	5.83	9.79	5.83	1.68	Sag	12.00	0.030	0.030	0.013	0.12	5.58	0.21	5.58	1.0	Off
3	CB-2 (DOUBLE T	1.91	0.00	1.91	0.00	Comb	3.0	5.83	9.79	5.83	1.68	Sag	12.00	0.030	0.030	0.013	0.25	9.15	0.34	9.15	1.0	Off

Project File: 4280 STM.stm | Number of lines: 3 | Run Date: 10/23/2020

NOTES: Inlet N-Values = 0.016; Intensity = 35.84 / (Inlet time + 3.80) ^ 0.73; Return period = 10 Yrs. ; * Indicates Known Q added. All curb inlets are Horiz throat.

APPENDIX E
Water Quality Calculations

Stage-Area-Storage for Pond PD1: Water Quality Depression

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
288.00	1,495	0
288.05	1,519	75
288.10	1,543	152
288.15	1,567	230
288.20	1,591	309
288.25	1,615	389
288.30	1,640	470
288.35	1,665	553
288.40	1,690	637
288.45	1,715	722
288.50	1,741	808
288.55	1,766	896
288.60	1,792	985
288.65	1,818	1,075
288.70	1,844	1,167
288.75	1,870	1,259
288.80	1,897	1,354
288.85	1,923	1,449
288.90	1,950	1,546
288.95	1,977	1,644
289.00	2,005	1,744
289.05	2,032	1,845
289.10	2,060	1,947
289.15	2,088	2,051
289.20	2,116	2,156
289.25	2,144	2,262
289.30	2,172	2,370
289.35	2,201	2,479
289.40	2,229	2,590
289.45	2,258	2,702
289.50	2,288	2,816
289.55	2,317	2,931
289.60	2,346	3,048
289.65	2,376	3,166
289.70	2,406	3,285
289.75	2,436	3,406
289.80	2,466	3,529
289.85	2,497	3,653
289.90	2,527	3,778
289.95	2,558	3,906
290.00	2,589	4,034
290.05	2,620	4,165
290.10	2,652	4,296
290.15	2,683	4,430
290.20	2,715	4,565
290.25	2,747	4,701
290.30	2,779	4,839
290.35	2,811	4,979
290.40	2,844	5,120
290.45	2,876	5,263
290.50	2,909	5,408
290.55	2,942	5,554
290.60	2,975	5,702
290.65	3,009	5,852
290.70	3,042	6,003
290.75	3,076	6,156
290.80	3,110	6,311
290.85	3,144	6,467
290.90	3,179	6,625
290.95	3,213	6,785
291.00	**3,248**	**6,947**

Vintage Hills II – DPI Project No.: 4280
November 2, 2020

Water Quality Volume Calculations
Per 2004 Connecticut Stormwater Quality Manual, Section 7.4.1:

Areas for Calculation: On Site to Water Quality Depression

	P1b
Impervious	0.66 ac
Pervious	3.96 ac
Total Area	4.62 ac
%Impervious	14.3 %

Water Quality Volume (WQV) = (1")(R)(A)/12, where:

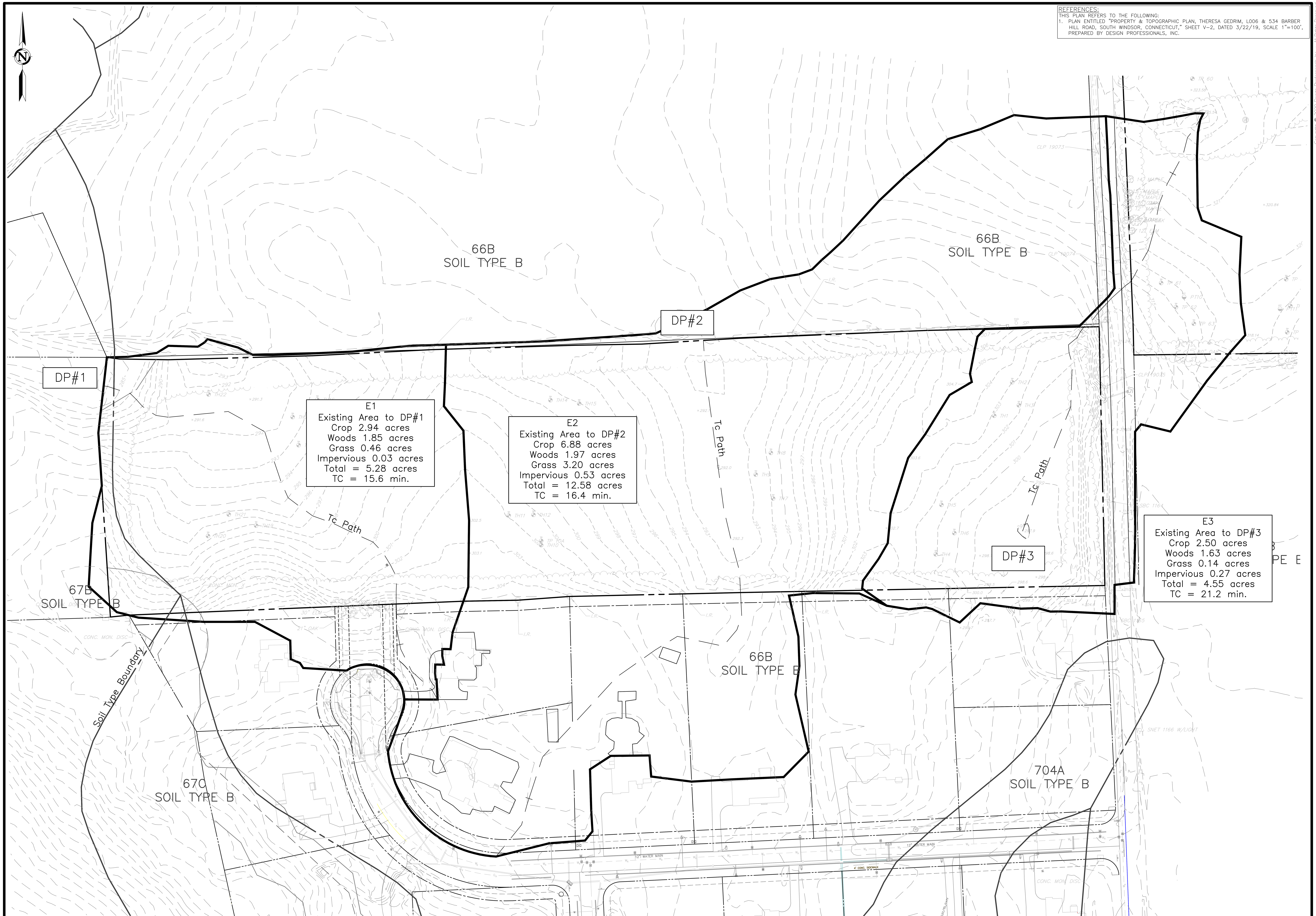
R = unitless volumetric runoff coefficient = 0.05 + 0.009(I), where:
I = percent impervious cover of drainage area = 14.3%
R = 0.05 + 0.009(I)
R = 0.05 + 0.009(14.3)
R = 0.179

A = drainage area in acres = 4.62 acres

WQV = (1")(R)(A acres)/12 inches per foot
WQV = (1")(0.179)(4.62 acres)/12 inches per foot
WQV = 0.069 acre-feet required = 3,002 cft

Proposed BMP
The proposed water quality basin is proposed to provide **4,296 cft** (below overflow elevation 290.10). The basin will provide storage for **143%** of the determined water quality volume draining to the basin.

APPENDIX F
Drainage Area Maps



Design Professionals

21 JEFFREY DRIVE
P.O. BOX 167
SOUTH WINDSOR, CT 06074
860-291-8755 - T
860-291-8757 - F
www.designprofessionalsinc.com

CIVIL & TRAFFIC ENGINEERS / LAND SURVEYORS
PLANNERS / LANDSCAPE ARCHITECTS

Prepared for:
Vintage Hills II, LLC
18-3 Arthur Drive
South Windsor, CT 06074
860-268-2452 - T

PROJECT NO. 4280
DATE 11/2/2020
DESIGN BY BPW
DRAWN BY DHI
CHECKED BY DHI

VINTAGE HILLS II
SUBDIVISION APPLICATION
503 BARBER HILL ROAD
SOUTH WINDSOR, CONNECTICUT
GIS No. 07800503

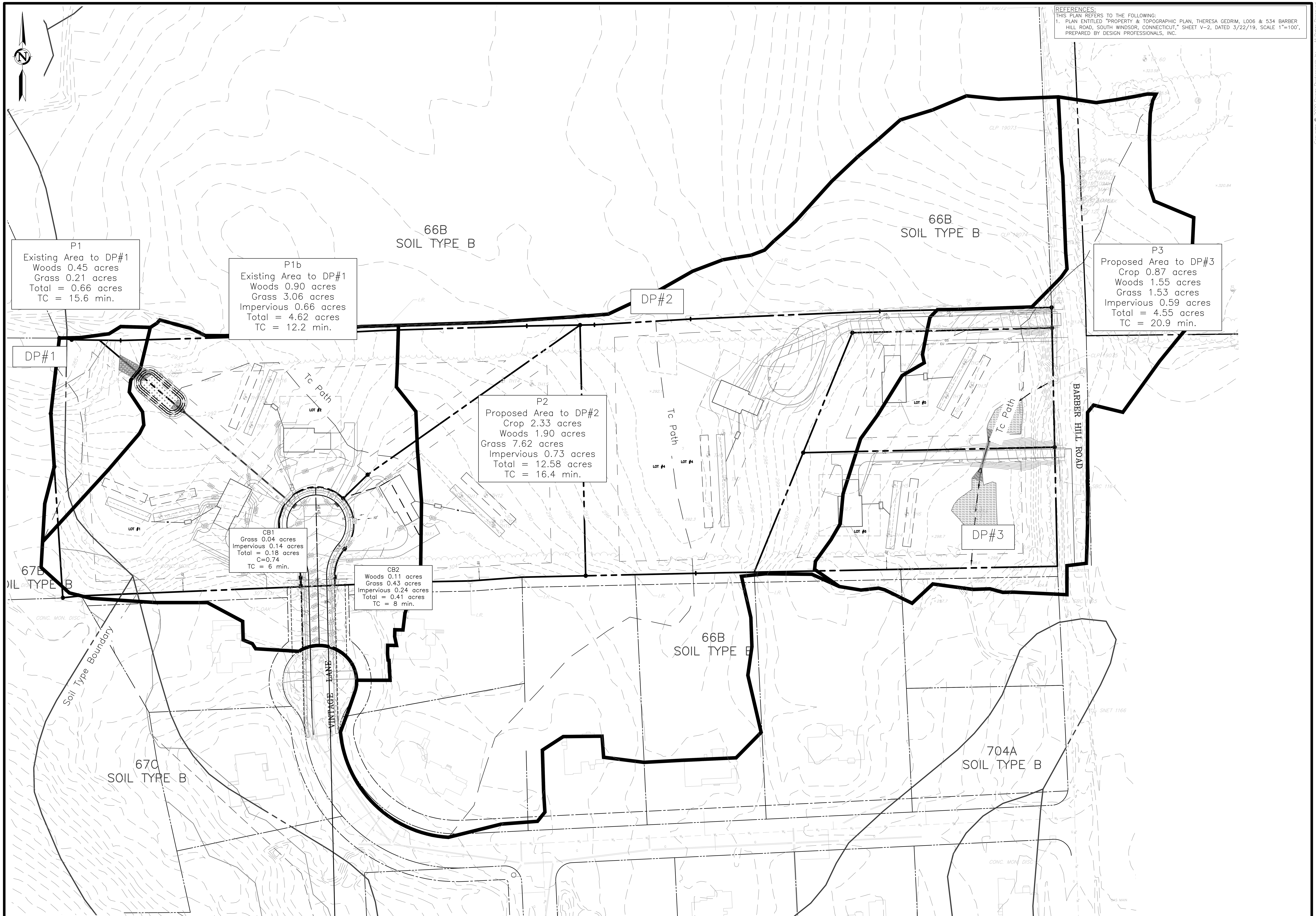
REVISIONS

NO.	DATE		BY

EXISTING DRAINAGE AREA MAP

SCALE: 1" = 60' 0 30' 60' 120'

SHEET
C-DA1
SHEET 1 of 2



REFERENCES:

THIS PLAN REFERS TO THE FOLLOWING:

1. PLAN ENTITLED "PROPERTY & TOPOGRAPHIC PLAN, THERESA GEDRIM, L006 & 534 BARBER HILL ROAD, SOUTH WINDSOR, CONNECTICUT," SHEET V-2, DATED 3/22/19, SCALE 1"=100', PREPARED BY DESIGN PROFESSIONALS, INC.

File: C:\jobs\4280\Engineering\AutoCAD\4280 Eng Base.dwg Layout: 17 C-DA2 Plotted: 10/23/2020 10:19 AM Last Saved: 10/23/2020 9:59 AM Last Saved By: daniel.jameson

Design Professionals INC

CIVIL & TRAFFIC ENGINEERS / LAND SURVEYORS
PLANNERS / LANDSCAPE ARCHITECTS

21 JEFFREY DRIVE
P.O. BOX 1167
SOUTH WINDSOR, CT 06074
860-291-8755 – T
860-291-8757 – F
www.designprofessionalsinc.com

Prepared for:

Vintage Hills II, LLC
18-3 Arthur Drive
South Windsor, CT 06074
860-268-2452 – T

PROJECT NO.:	4280
DATE:	11/2/2020
DESIGN BY:	BPW
DRAWN BY:	BPW
CHECKED BY:	DHI

VINTAGE HILLS II
SUBDIVISION APPLICATION
503 BARBER HILL ROAD
SOUTH WINDSOR, CONNECTICUT
GIS No. 07800503

NO.	DATE	REVISIONS	BY

PROPOSED DRAINAGE AREA MAP

SCALE: 1" = 60'   0   30'   60'   120'

SHEET

C-DA2

SHEET 2 of 2