Exhibit F

PPI ENGINEERING
VINEYARD DESIGN
EROSION CONTROL
WATER DEVELOPMENT
DRAINAGE
PERMITTING
GPS/GIS

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MEMORANDUM

Date: August 12, 2024

To: Engineering Department - Napa County Planning, Building, and Environmental Services

From: Matthew S. Bueno, P.E.
Rachel L. Rosasco, E.I.T.



Re: Constellation Wappo Hill Track I ECP
APNs 039-040-050 & 039-040-054
Hydrologic Analysis

This memo transmits the findings of a hydrologic analysis for the above-referenced Track I Erosion Control Plan (ECP). HydroCAD software was used to estimate pre- and post-project runoff from watersheds containing the proposed development areas. The software uses the Natural Resource Conservation Service (NRCS) TR-20 method to calculate runoff. The analysis uses the Type IA 24-hr storm distribution and includes site-specific National Oceanic and Atmospheric Administration (NOAA) point precipitation data for the ranch.

Eleven (11) watersheds were delineated for the hydrologic modeling using 2-foot contours from PPI Engineering and 5-foot contours from Napa County Lidar data. Watersheds 1A (7.2 acres) and 1B (14.2 acres) drain to existing drainage ditches which flow to existing inlets to the west of Blocks 1A and 1B. These inlets convey the water to drainage pipelines that eventually outlet to the Napa River. Watershed 1C (4.0 acres) flows to the same existing swale as Watershed 2A (4.1 acres), this swale flows into an existing inlet which then directs water into an existing vineyard drainage system. Watershed 2B (4.9 acres) drains into the adjacent reservoir. Both Watersheds 3A (6.8 acres) and 3B (1.4 acres) flow into the existing reservoir overflow channel which then directs water to an existing inlet which is presumed to outlet to the existing channel along Silverado Trail. Watersheds 1D (6.7 acres), 2C (3.7 acres), and 5 (17.5 acres) drain east towards Silverado Trail through the existing vineyard. Watershed 4 (12.8 acres) drains to an existing inlet to the north of Block 4. Please see the attached figures for the location of each watershed.

Soils within the watersheds were obtained from the NRCS Web Soil Survey and are classified as the following:

Bale clay loam, 0-2% slopes (Map Unit Symbol 104)

Bale clay loam, 2-5% slopes (Map Unit Symbol 105)
Boomer-Forward-Felta complex, 30-50% slopes (Map Unit Symbol 110)
Cole silt loam, 0-2% slopes, MLRA 14 (Map Unit Symbol 118)
Forward silt loam, 5-39% slopes, MLRA 15 (Map Unit Symbol 139)
Perkins gravelly loam, 5-9% slopes (Map Unit Symbol 169)
Sobrante loam, 30-50% slopes (Map Unit Symbol 179)

The Bale clay loams (104 & 105) and the Boomer-Forward-Felta complex (110) are classified as Hydrologic Soil Group (HSG) B. The Cole silt loam (118), Forward silt loam (139), Perkins gravelly loam (169), and Sobrante loam (179) are all classified as HSG C. Additionally, there was a small area with map unit symbol 183 which is water that was modeled using HSG D. Please see the attached figures for soil type delineations within the vicinity of each watershed.

Land use areas were delineated based on a combination of Napa County orthophotos and site visits. A site visit was conducted on August 17th, 2023 by Matt Bueno of PPI Engineering to ground truth the orthophotos and determine the existing land use conditions. The land use hydrologic conditions were classified based on the respective covers as poor (less than 50% cover), fair (50-75% cover), or good (greater than or equal to 75% cover). The HydroCAD software analyzes the land use data along with the corresponding soil HSGs to determine a weighted Curve Number (CN) for runoff calculations. The majority of the property has been historically managed with grazing for fire protection. The pre-project condition of the grassed areas that are proposed to be converted to vineyard and were grazed were classified as Annual Grass in fair condition. The land use classification of Annual Grass is based upon the NRCS Engineering Field Manual Chapter 2, Supplement 1 definition. The wooded areas were classified as Woods in fair or good condition depending on the observed density of the vegetation at the time of the site visit. The post-project condition within the proposed vineyard will be classified as good (based on proposed ground cover in the ECP). Please see the attached figures for existing and proposed land use delineations.

The Time of Concentration (Tc) flow paths within each subwatershed were determined using PPI Engineering and Napa County contours. The flow paths were drafted from the hydrologically most distant point (longest travel time) in the subwatershed to the subwatershed outlet per NRCS standards. Please see attached figured for both the pre- and post-project Tc flow paths.

Pre- and post-project runoff calculations from the HydroCAD models for the subwatersheds along with their respective outlets are summarized in Table 1. Runoff was calculated for the 2-, 10-, 50- and 100-year storms respectively for each watershed and for the modeled outlets.

Table 1. Individual Watershed Summary

	Runoff (cfs)											
	Watershed 1A			Watershed 1B			Watershed 1C			Watershed 1D		
	Pre-Project	Post-Project	Increase/Decrease	Pre-Project	Post-Project	Increase/Decrease	Pre-Project	Post-Project	Increase/Decrease	Pre-Project	Post-Project	Increase/Decrease
2-Year Storm	1.88	1.74	0.14	3.64	3.22	0.42	1.13	1.05	0.08	1.36	1.36	0.00
10-Year Storm	4.29	4.09	0.20	8.36	7.69	0.67	2.51	2.39	0.12	3.44	3.44	0.00
50-Year Storm	7.03	6.80	0.23	13.76	12.86	0.90	4.06	3.93	0.13	5.90	5.90	0.00
100-Year Storm	8.25	8.01	0.24	16.15	15.17	0.98	4.75	4.61	0.14	7.01	7.01	0.00

	Runoff (cfs)											
	Watershed 2A			Watershed 2B			Watershed 2C			Watershed 3A		
	Pre-Project	Post-Project	Increase/Decrease	Pre-Project	Post-Project	Increase/Decrease	Pre-Project	Post-Project	Increase/Decrease	Pre-Project	Post-Project	Increase/Decrease
2-Year Storm	0.78	0.78	0.00	0.91	0.91	0.00	0.14	0.14	0.00	1.25	1.14	0.11
10-Year Storm	2.03	2.03	0.00	2.39	2.39	0.00	0.88	0.88	0.00	3.30	3.12	0.18
50-Year Storm	3.53	3.53	0.00	4.15	4.15	0.00	1.93	1.93	0.00	5.75	5.53	0.22
100-Year Storm	4.20	4.20	0.00	4.95	4.95	0.00	2.42	2.42	0.00	6.85	6.62	0.23

	Runoff (cfs)								
	Watershed 3B			Watershed 4			Watershed 5		
	Pre-Project	Post-Project	Increase/Decrease	Pre-Project	Post-Project	Increase/Decrease	Pre-Project	Post-Project	Increase/Decrease
2-Year Storm	0.33	0.31	0.02	1.98	1.82	0.16	2.63	2.63	0.00
10-Year Storm	0.78	0.74	0.04	4.67	4.45	0.22	6.81	6.81	0.00
50-Year Storm	1.29	1.25	0.04	7.79	7.52	0.27	11.80	11.80	0.00
100-Year Storm	1.52	1.48	0.04	9.17	8.89	0.28	14.06	14.06	0.00

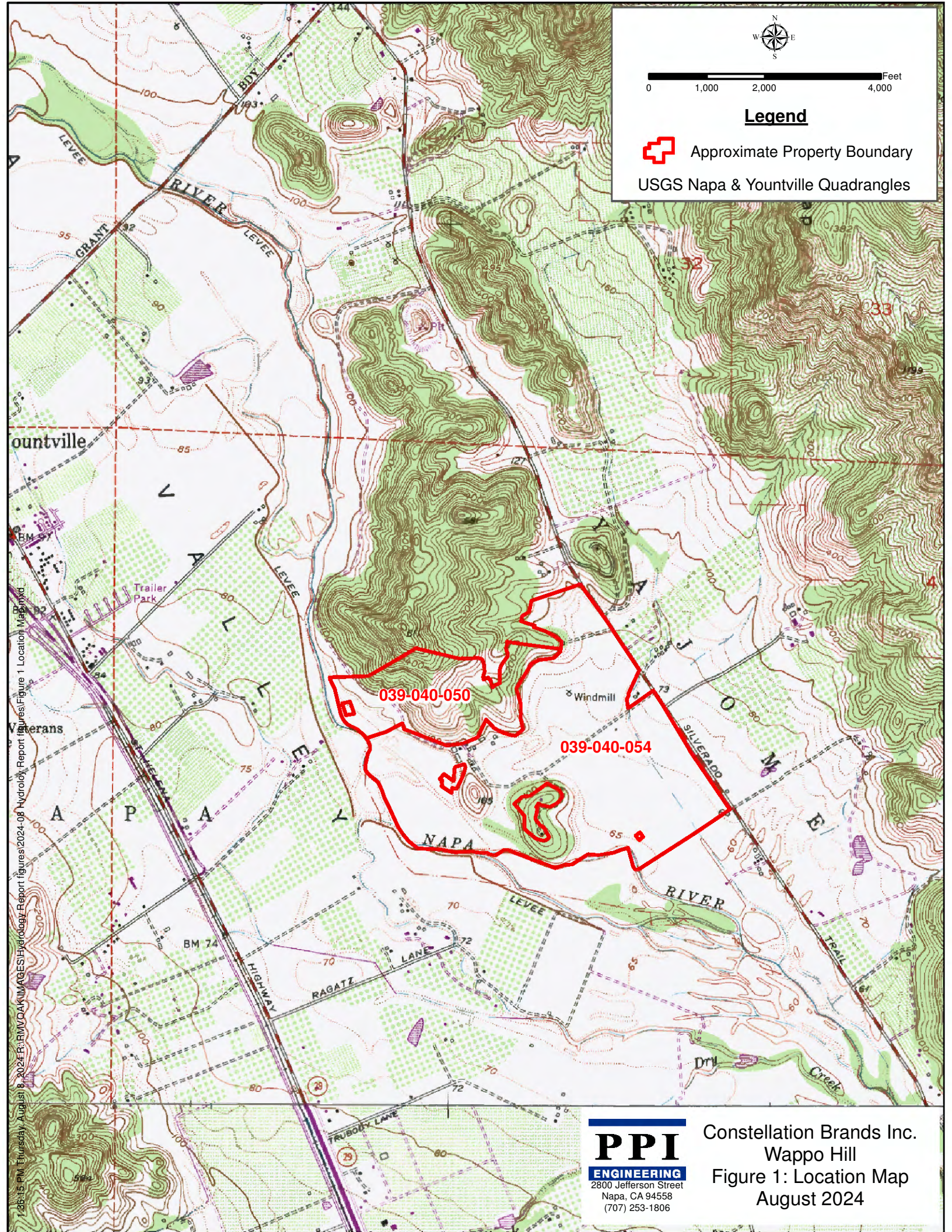
Watersheds 1D, 2A, 2C, and 5 had no changes in CN or Tc from pre- to post-project and therefore saw no changes in net runoff.

Watershed 2B exhibits a decrease in Tc of 0.2 but the model shows no runoff change and therefore the decrease is negligible in this instance. Watersheds 1A, 1B, 1C, 3A, 3B, and 4 all exhibit a decrease in CN post-project and therefore have a decrease in runoff. Although Watershed 1A saw a decrease in Tc the reduction in CN resulted in a net decrease.

Please see the attached HydroCAD analyses for inputs, details, and summaries of the hydrologic modeling. Based on our analysis, there are no predicted overall net runoff increases, and no negative hydrologic impacts are expected as a result of this project. The project as proposed is in compliance with Napa County's General Plan policy requiring no-net-increase in runoff.

ATTACHMENT A

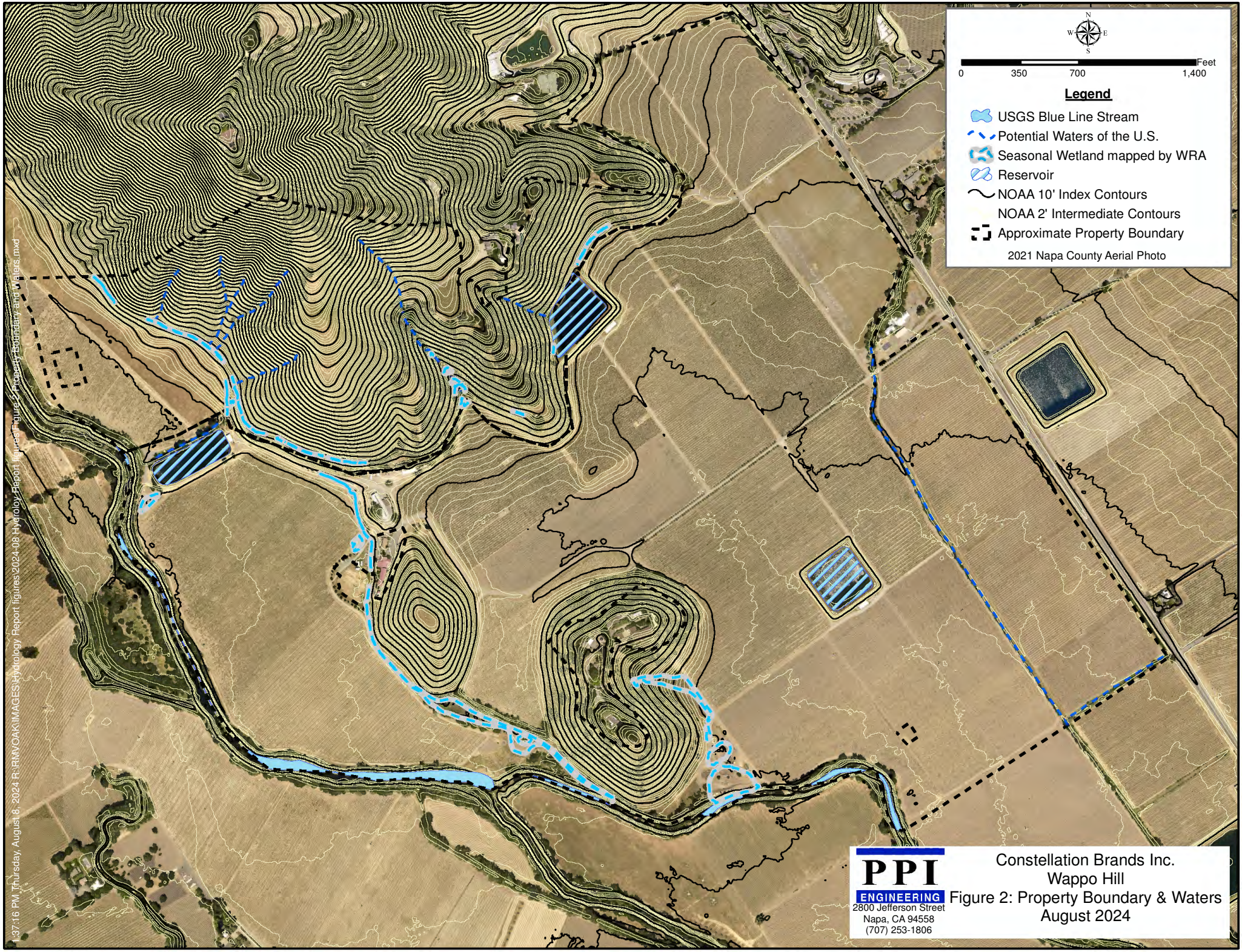
SUPPORTING FIGURES

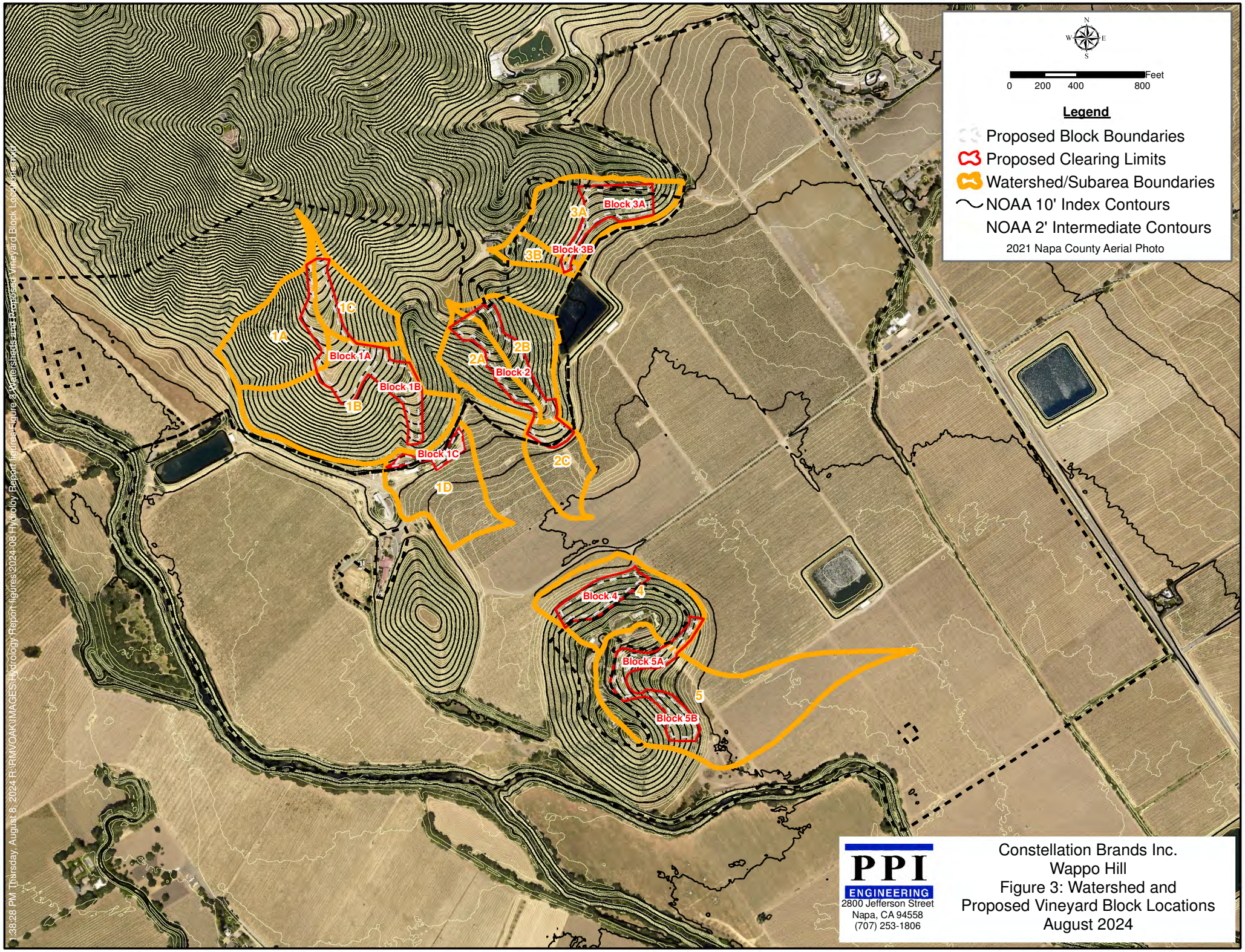


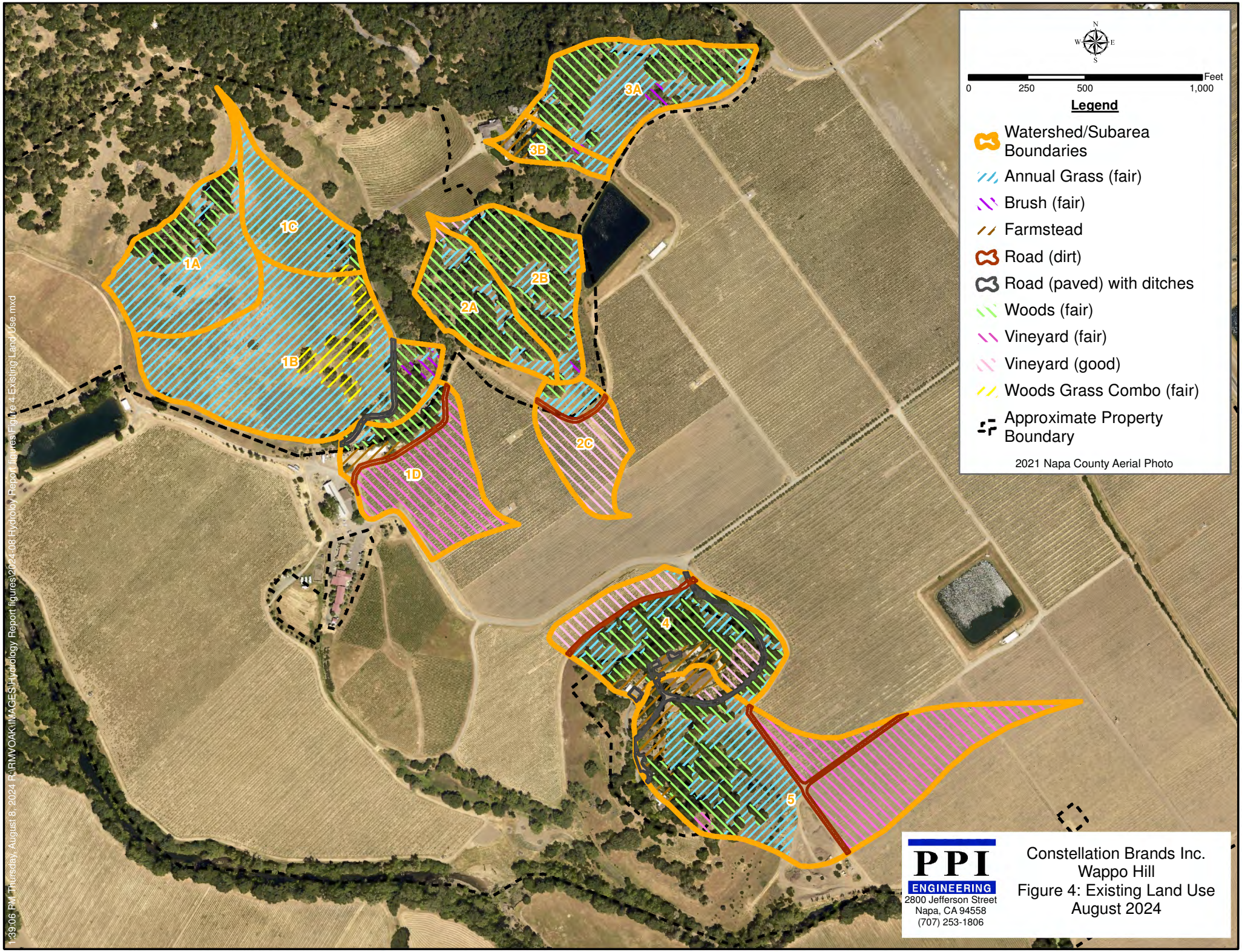
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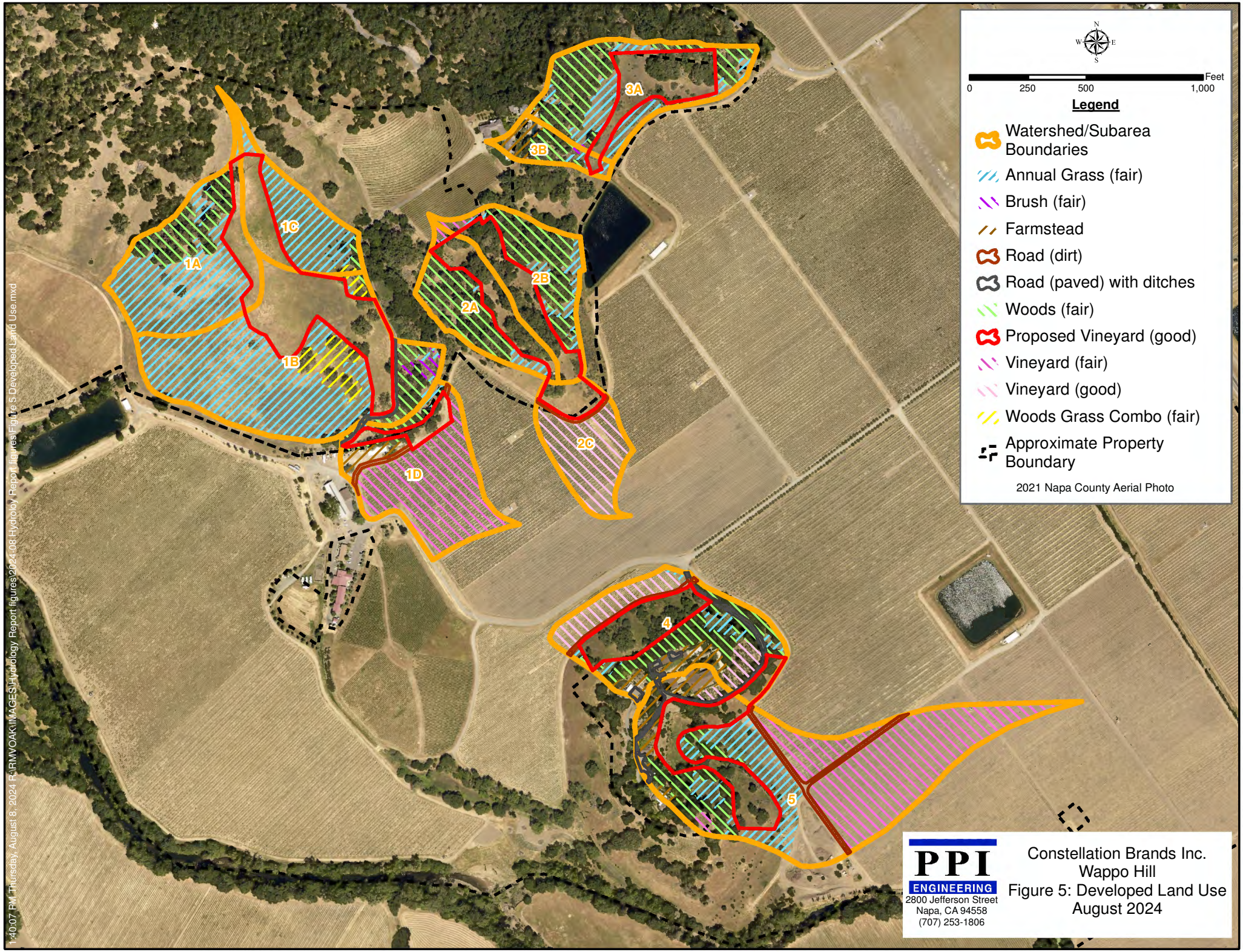
Constellation Brands Inc.
Wappo Hill
Figure 1: Location Map
August 2024

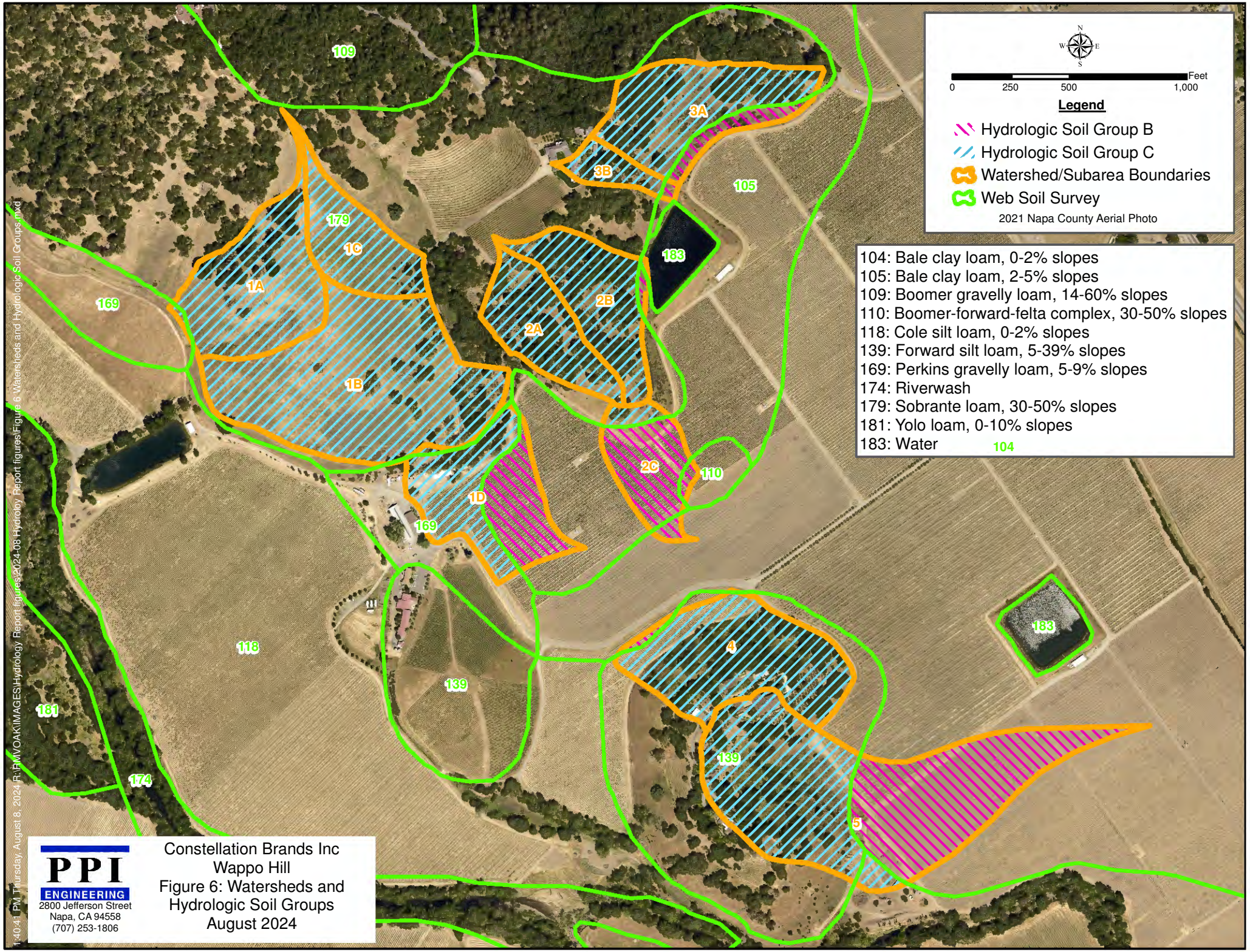
1:36:15 PM, Thursday, August 8, 2024 R:\RMVOA\IMAGES\Hydrology Report figures\2024-08 Hydrology Report Figures\Figure 1 Location Map.mxd


N
W
E
S
0
350
700
1,400
Feet
Legend
USGS Blue Line Stream
Potential Waters of the U.S.
Seasonal Wetland mapped by WRA
Reservoir
NOAA 10' Index Contours
NOAA 2' Intermediate Contours
Approximate Property Boundary
2021 Napa County Aerial Photo
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Figure 2: Property Boundary & Waters
August 2024
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N
W
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0
200
400
800
Feet
Legend
Proposed Block Boundaries
Proposed Clearing Limits
Watershed/Subarea Boundaries
NOAA 10' Index Contours
NOAA 2' Intermediate Contours
2021 Napa County Aerial Photo
Block 3A
3A
Block 3B
3B
1C
1A
Block 1A
Block 1B
1B
2A
2B
Block 2
Block 1C
2C
1D
Block 4
4
Block 5A
5
Block 5B
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Figure 3: Watershed and
Proposed Vineyard Block Locations
August 2024
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1A
1B
1C
1D
2A
2B
2C
3A
3B
4
5
N
W
E
S
0
250
500
1,000
Feet
Legend
Watershed/Subarea Boundaries
Annual Grass (fair)
Brush (fair)
Farmstead
Road (dirt)
Road (paved) with ditches
Woods (fair)
Vineyard (fair)
Vineyard (good)
Woods Grass Combo (fair)
Approximate Property Boundary
2021 Napa County Aerial Photo
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Figure 4: Existing Land Use
August 2024
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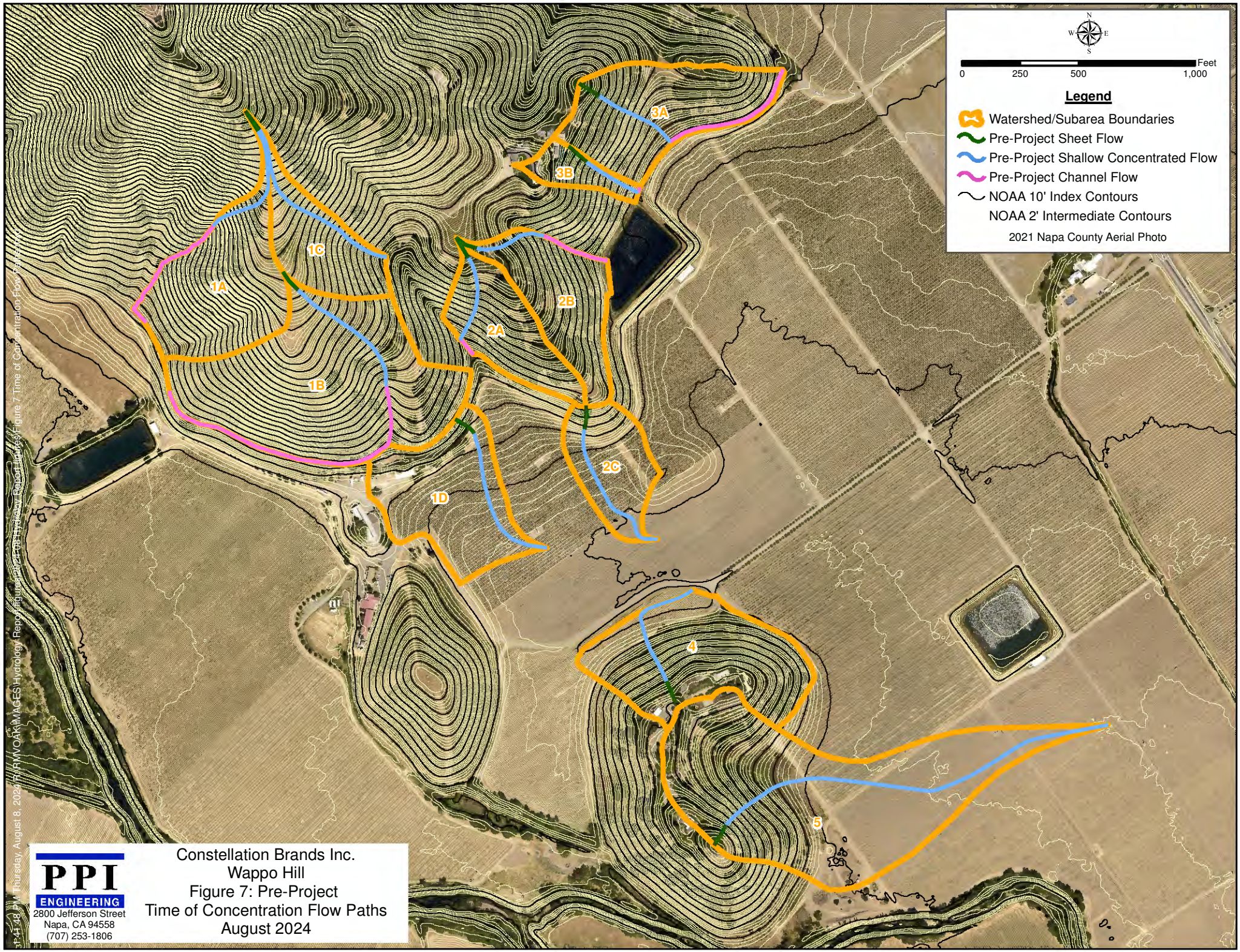

1A
1B
1C
1D
2A
2B
2C
3A
3B
4
5
N
W
E
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0
250
500
1,000
Feet
Legend
Watershed/Subarea Boundaries
Annual Grass (fair)
Brush (fair)
Farmstead
Road (dirt)
Road (paved) with ditches
Woods (fair)
Proposed Vineyard (good)
Vineyard (fair)
Vineyard (good)
Woods Grass Combo (fair)
Approximate Property Boundary
2021 Napa County Aerial Photo
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Figure 5: Developed Land Use
August 2024



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Figure 6: Watersheds and
Hydrologic Soil Groups
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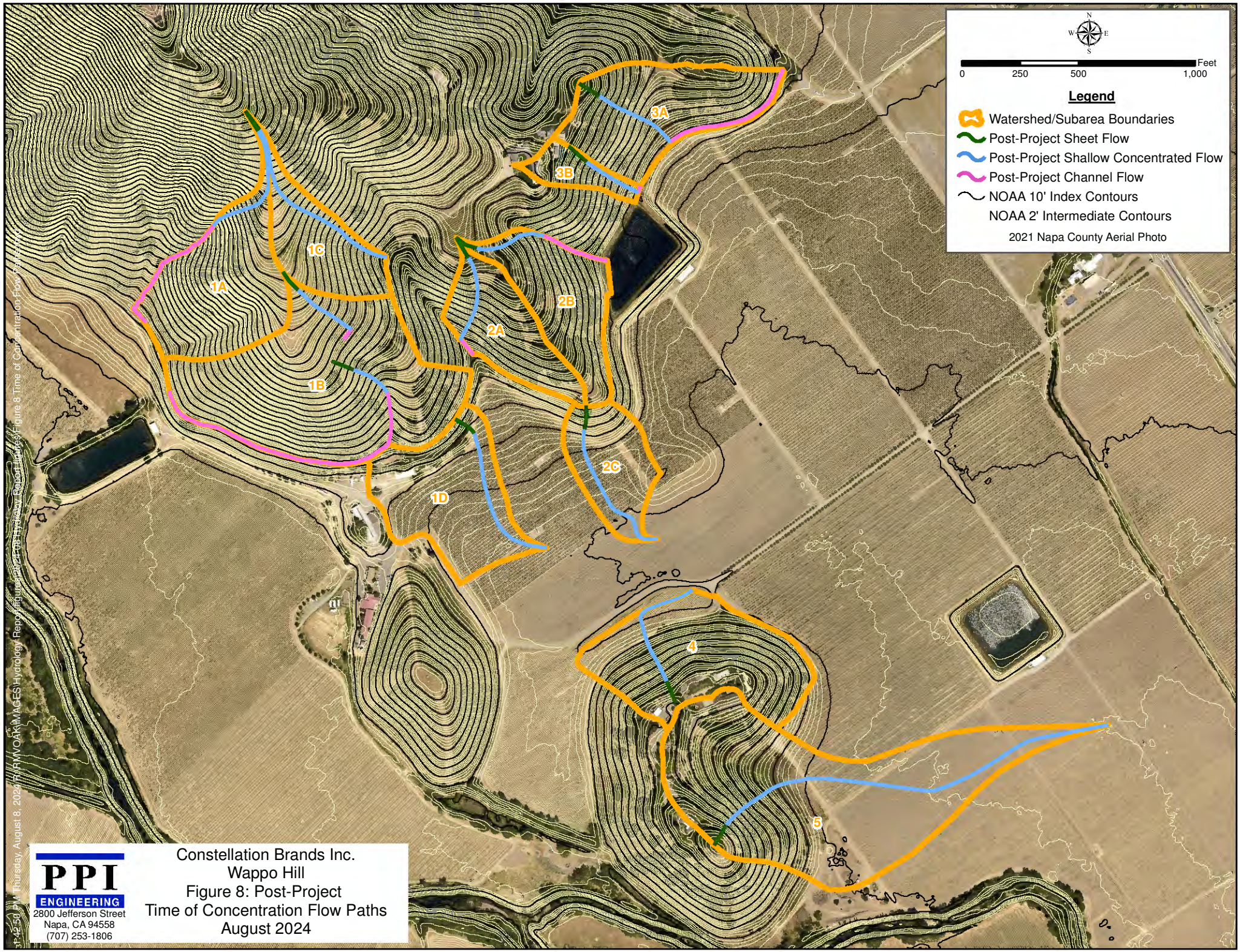
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Figure 7: Pre-Project
Time of Concentration Flow Paths
August 2024

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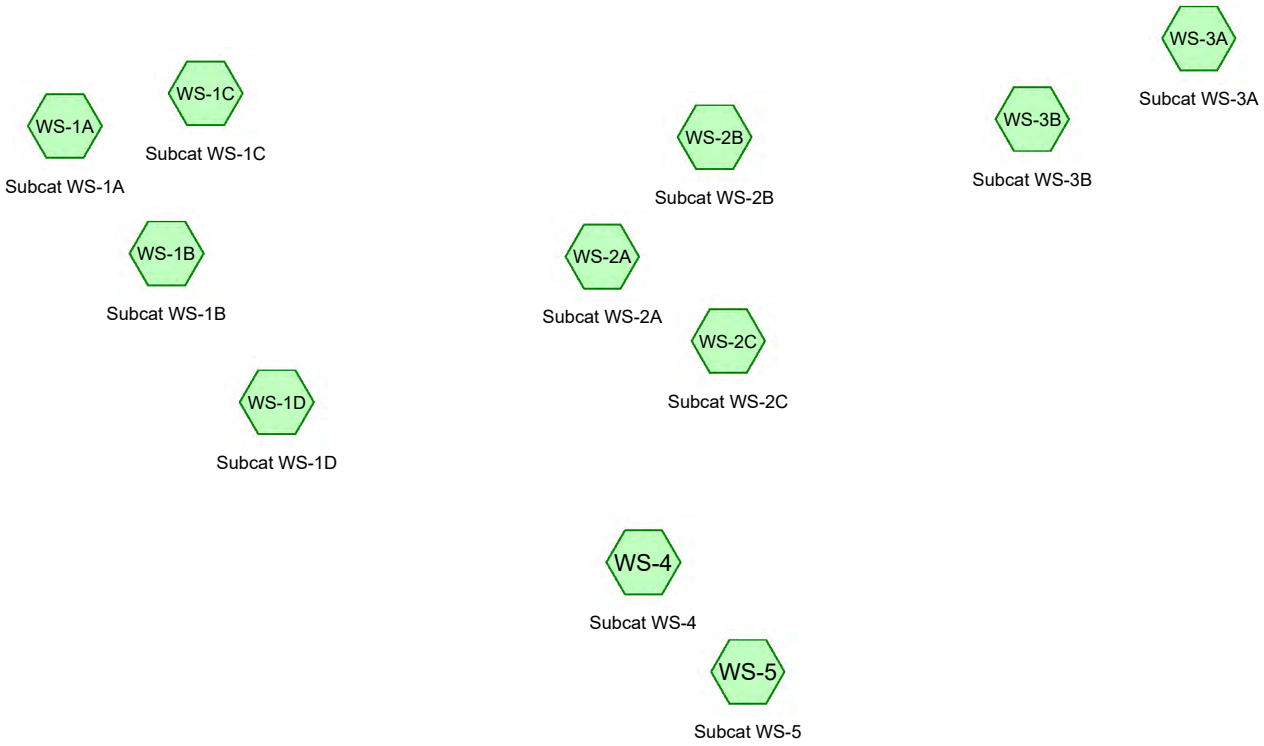
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Figure 8: Post-Project
Time of Concentration Flow Paths
August 2024

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ATTACHMENT B

HYDROCAD ANALYSES



Subcat Reach Pond Link

Routing Diagram for Pre-Project
Prepared by PPI Engineering, Printed 8/8/2024
HydroCAD® 10.20-4a s/n 09429 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment WS-1A: Subcat WS-1A

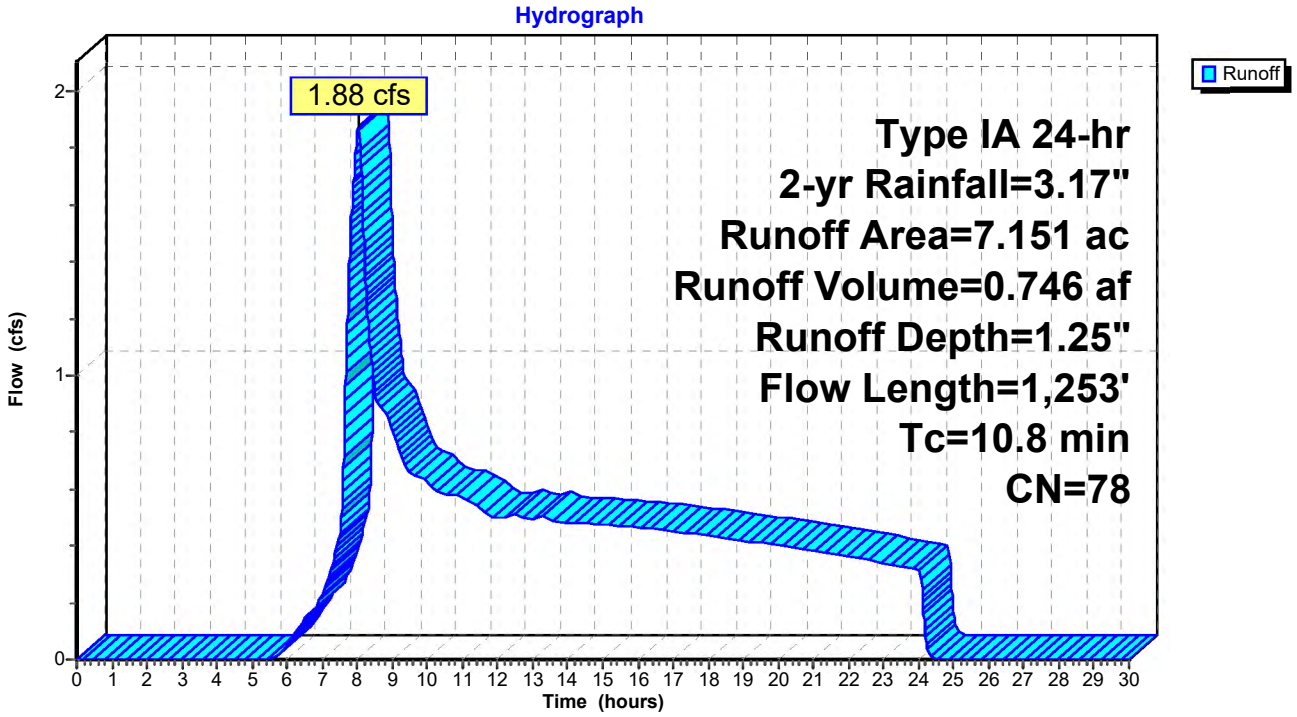
Runoff = 1.88 cfs @ 8.05 hrs, Volume= 0.746 af, Depth= 1.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.17"

Area (ac)	CN	Description
5.373	79	Annual Grass, Fair, HSG C
1.778	73	Woods, Fair, HSG C
7.151	78	Weighted Average
7.151		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.2800	0.22		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
1.2	265	0.3000	3.83		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
1.0	172	0.3600	3.00		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.4	116	0.5500	5.19		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.4	520	0.2800	23.89	286.66	**Trap/Vee/Rect Channel Flow, Ditch (WRA)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
0.3	80	0.0100	4.51	54.17	**Trap/Vee/Rect Channel Flow, Ditch (Wappo)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
10.8	1,253	Total			

Subcatchment WS-1A: Subcat WS-1A



Summary for Subcatchment WS-1B: Subcat WS-1B

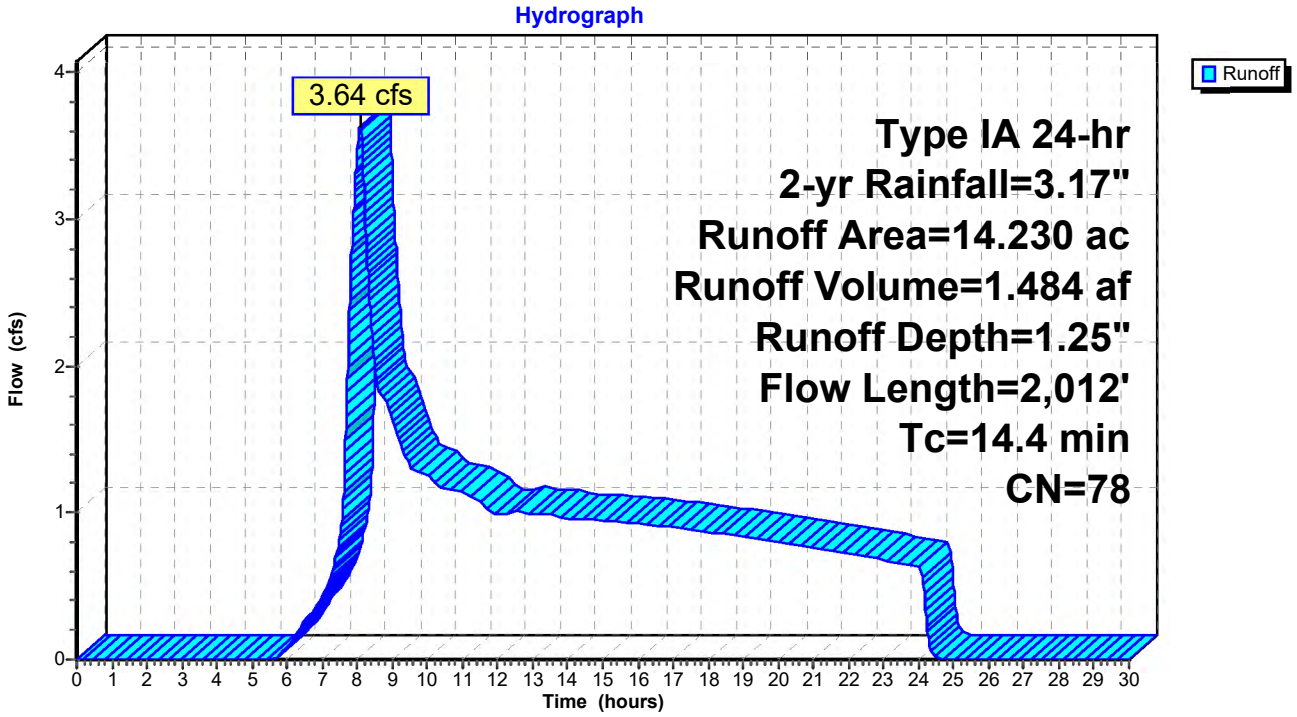
Runoff = 3.64 cfs @ 8.08 hrs, Volume= 1.484 af, Depth= 1.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.17"

Area (ac)	CN	Description
11.114	79	Annual Grass, Fair, HSG C
0.233	70	Brush, Fair, HSG C
0.167	92	Paved roads w/open ditches, 50% imp, HSG C
0.930	73	Woods, Fair, HSG C
1.786	76	Woods/grass comb., Fair, HSG C
14.230	78	Weighted Average
14.147		99.41% Pervious Area
0.084		0.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.1000	0.22		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
2.8	590	0.2600	3.57		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.2	261	0.2000	20.19	242.28	**Trap/Vee/Rect Channel Flow, Swale** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
3.9	1,061	0.0100	4.51	54.17	**Trap/Vee/Rect Channel Flow, Ditch (Wappo)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
14.4	2,012	Total			

Subcatchment WS-1B: Subcat WS-1B



Summary for Subcatchment WS-1C: Subcat WS-1C

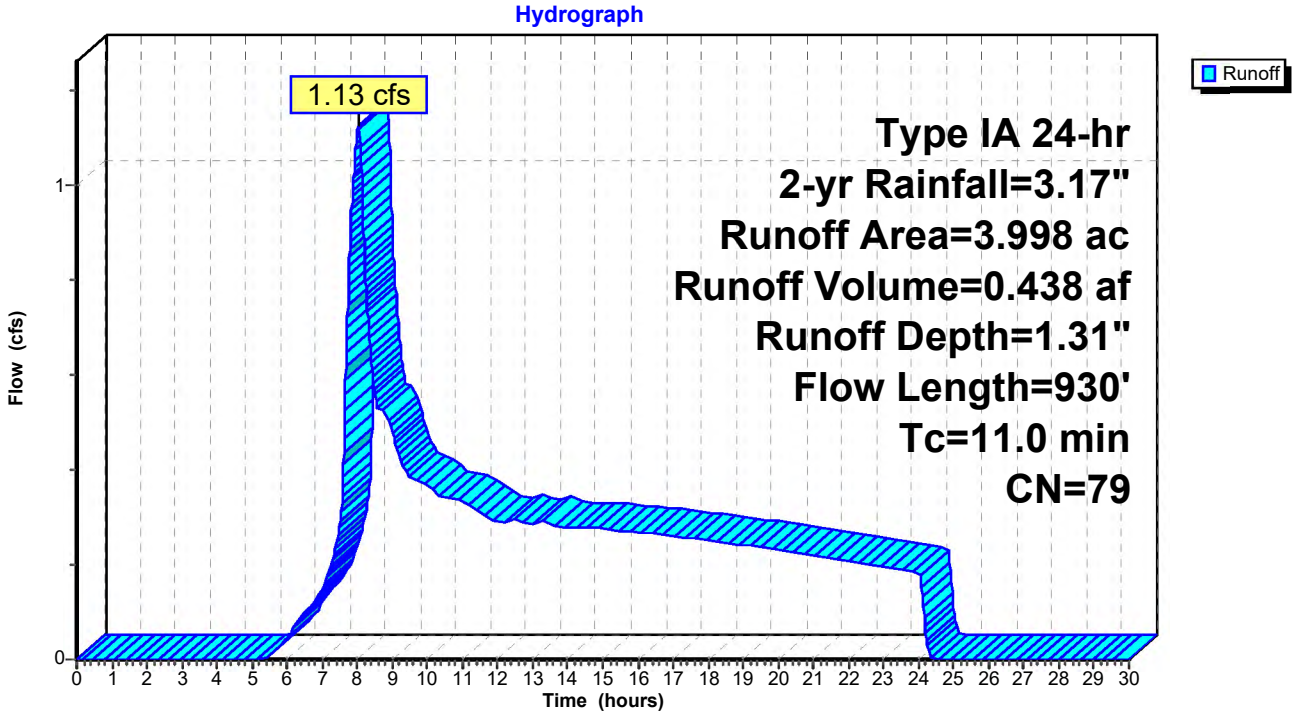
Runoff = 1.13 cfs @ 8.05 hrs, Volume= 0.438 af, Depth= 1.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.17"

Area (ac)	CN	Description
3.763	79	Annual Grass, Fair, HSG C
0.160	73	Woods, Fair, HSG C
0.076	76	Woods/grass comb., Fair, HSG C
3.998	79	Weighted Average
3.998		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.2800	0.22		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
3.5	830	0.3100	3.90		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
11.0	930	Total			

Subcatchment WS-1C: Subcat WS-1C



Summary for Subcatchment WS-1D: Subcat WS-1D

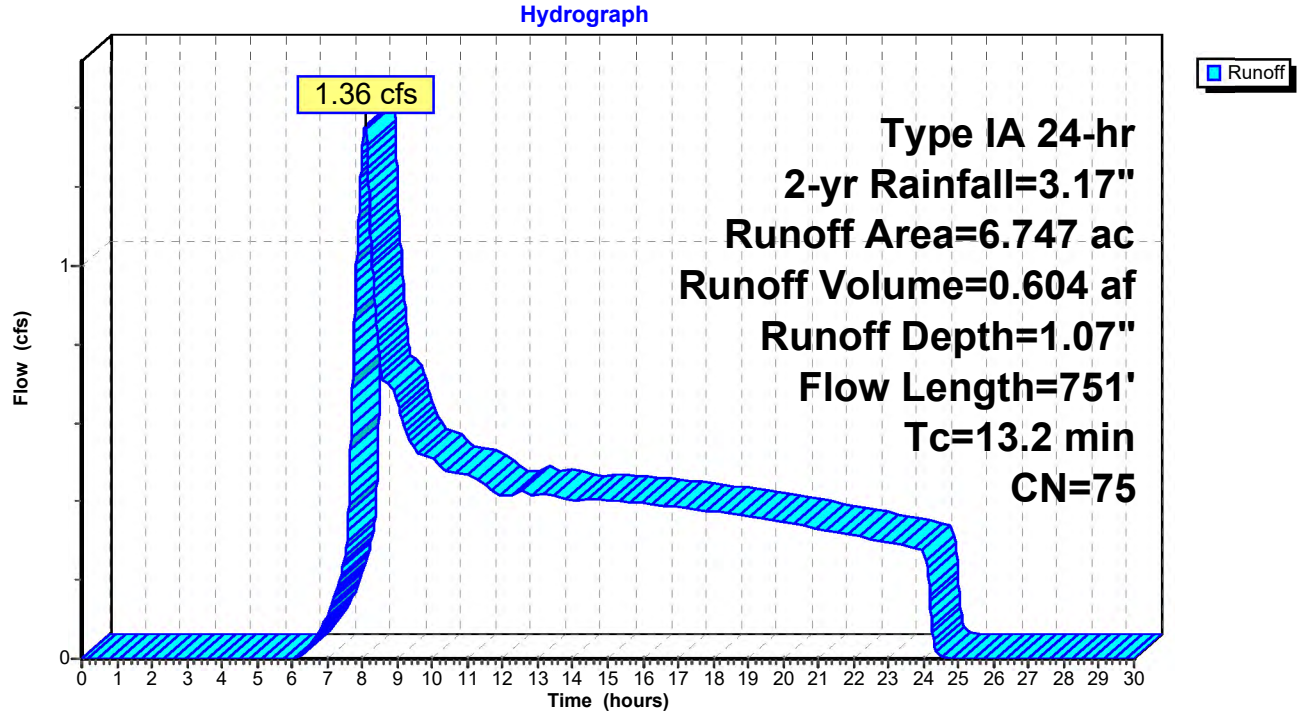
Runoff = 1.36 cfs @ 8.08 hrs, Volume= 0.604 af, Depth= 1.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.17"

Area (ac)	CN	Description
0.343	79	Annual Grass, Fair, HSG C
0.229	87	Dirt roads, HSG C
0.475	82	Farmsteads, HSG C
0.050	92	Paved roads w/open ditches, 50% imp, HSG C
2.808	69	Vineyard, Fair, HSG B
2.087	79	Vineyard, Fair, HSG C
0.755	73	Woods, Fair, HSG C
6.747	75	Weighted Average
6.721		99.63% Pervious Area
0.025		0.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	100	0.2300	0.31		**Sheet Flow, Sheet Flow** Grass: Dense n= 0.240 P2= 3.17"
7.8	651	0.0400	1.40		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
13.2	751	Total			

Subcatchment WS-1D: Subcat WS-1D



Summary for Subcatchment WS-2A: Subcat WS-2A

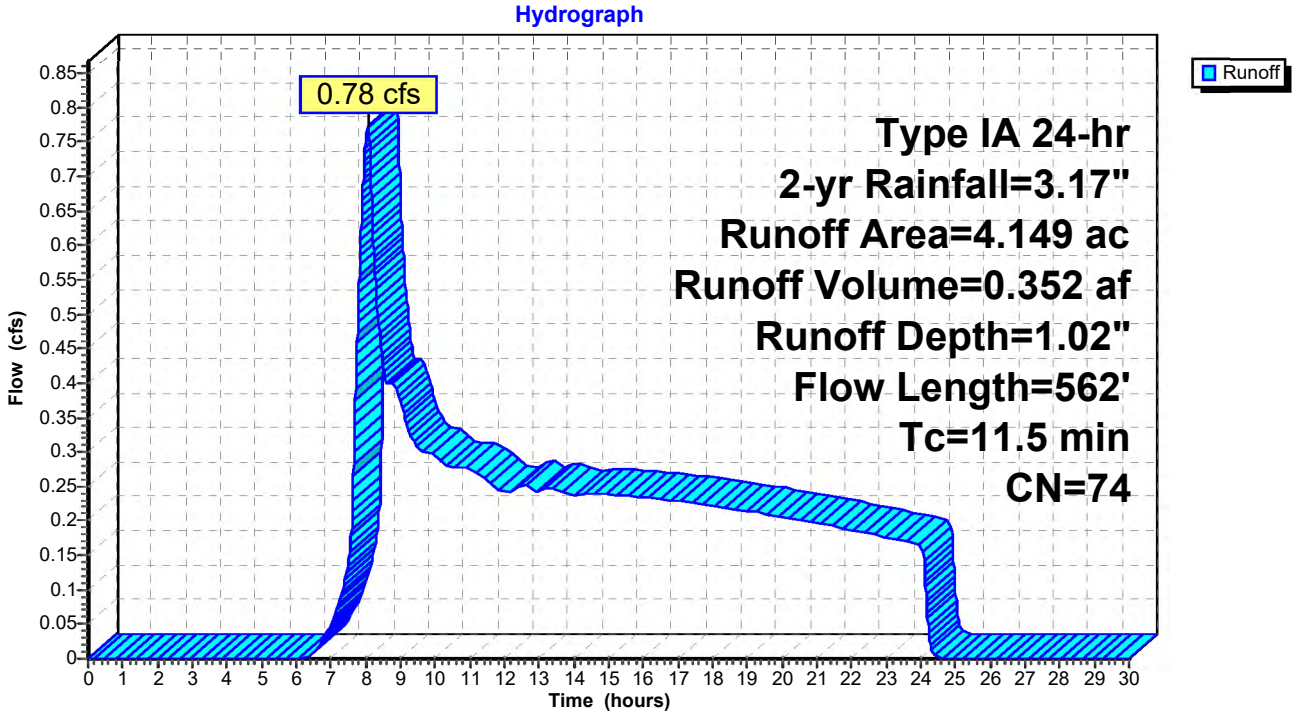
Runoff = 0.78 cfs @ 8.06 hrs, Volume= 0.352 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.17"

Area (ac)	CN	Description
0.753	79	Annual Grass, Fair, HSG C
0.086	75	Vineyard, Good, HSG C
3.310	73	Woods, Fair, HSG C
4.149	74	Weighted Average
4.149		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0600	0.18		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
0.9	157	0.1900	3.05		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
1.3	219	0.3200	2.83		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.1	86	0.1000	14.28	171.31	**Trap/Vee/Rect Channel Flow, Ditch (WRA)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
11.5	562	Total			

Subcatchment WS-2A: Subcat WS-2A



Summary for Subcatchment WS-2B: Subcat WS-2B

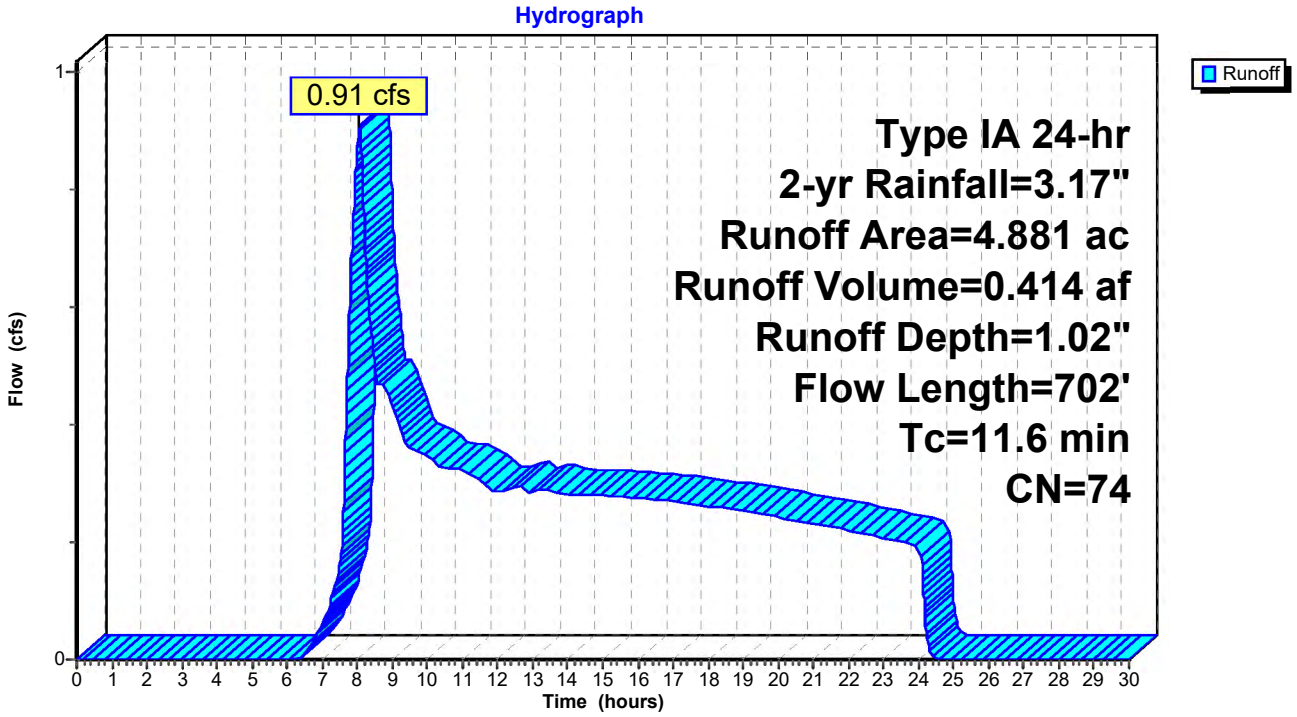
Runoff = 0.91 cfs @ 8.06 hrs, Volume= 0.414 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.17"

Area (ac)	CN	Description
0.161	69	Annual Grass, Fair, HSG B
0.963	79	Annual Grass, Fair, HSG C
0.055	70	Brush, Fair, HSG C
0.166	75	Vineyard, Good, HSG C
0.003	60	Woods, Fair, HSG B
3.533	73	Woods, Fair, HSG C
4.881	74	Weighted Average
4.881		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0600	0.18		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
0.8	105	0.1100	2.32		**Shallow Concentrated Flow, Short Grass** Short Grass Pasture Kv= 7.0 fps
1.4	200	0.2400	2.45		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.2	297	0.2200	21.18	254.10	**Trap/Vee/Rect Channel Flow, Ditch (WRA)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
11.6	702	Total			

Subcatchment WS-2B: Subcat WS-2B



Summary for Subcatchment WS-2C: Subcat WS-2C

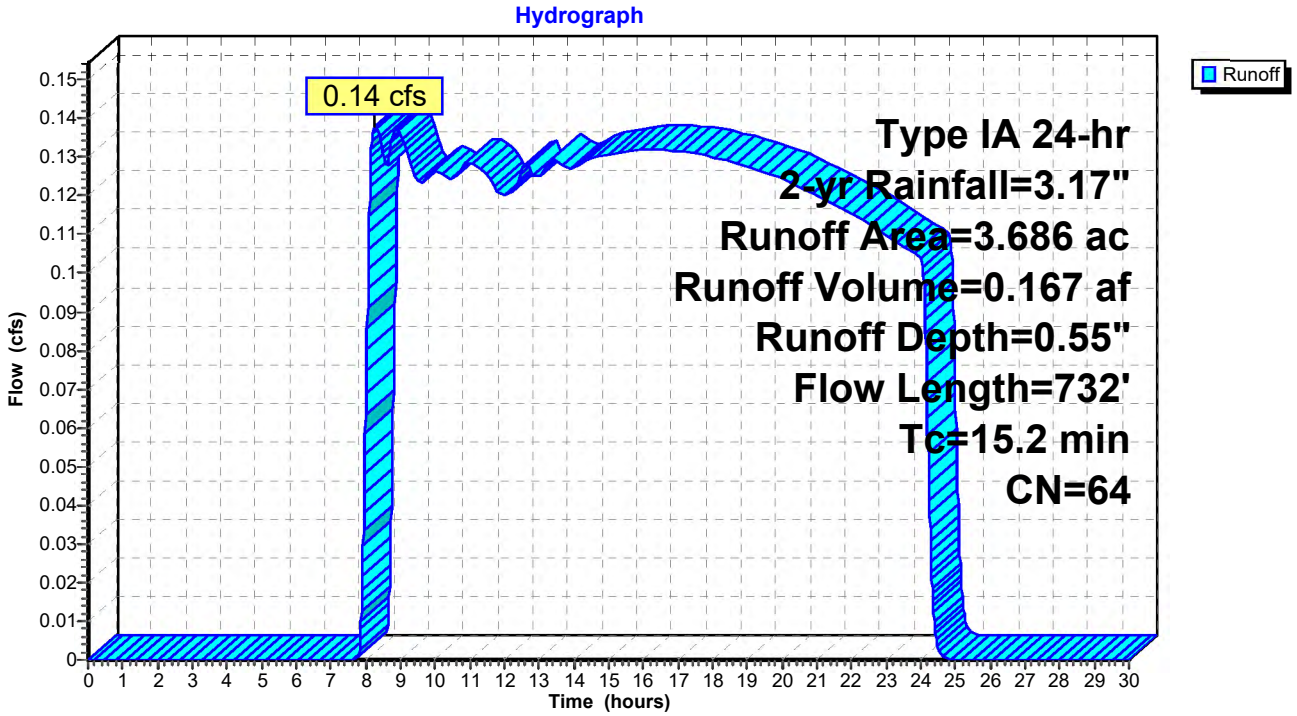
Runoff = 0.14 cfs @ 8.26 hrs, Volume= 0.167 af, Depth= 0.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.17"

Area (ac)	CN	Description
0.294	69	Annual Grass, Fair, HSG B
0.335	79	Annual Grass, Fair, HSG C
0.117	82	Dirt roads, HSG B
0.009	87	Dirt roads, HSG C
2.801	61	Vineyard, Good, HSG B
0.000	75	Vineyard, Good, HSG C
0.131	73	Woods, Fair, HSG C
3.686	64	Weighted Average
3.686		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	100	0.2600	0.22		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
7.5	632	0.0400	1.40		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
15.2	732	Total			

Subcatchment WS-2C: Subcat WS-2C



Summary for Subcatchment WS-3A: Subcat WS-3A

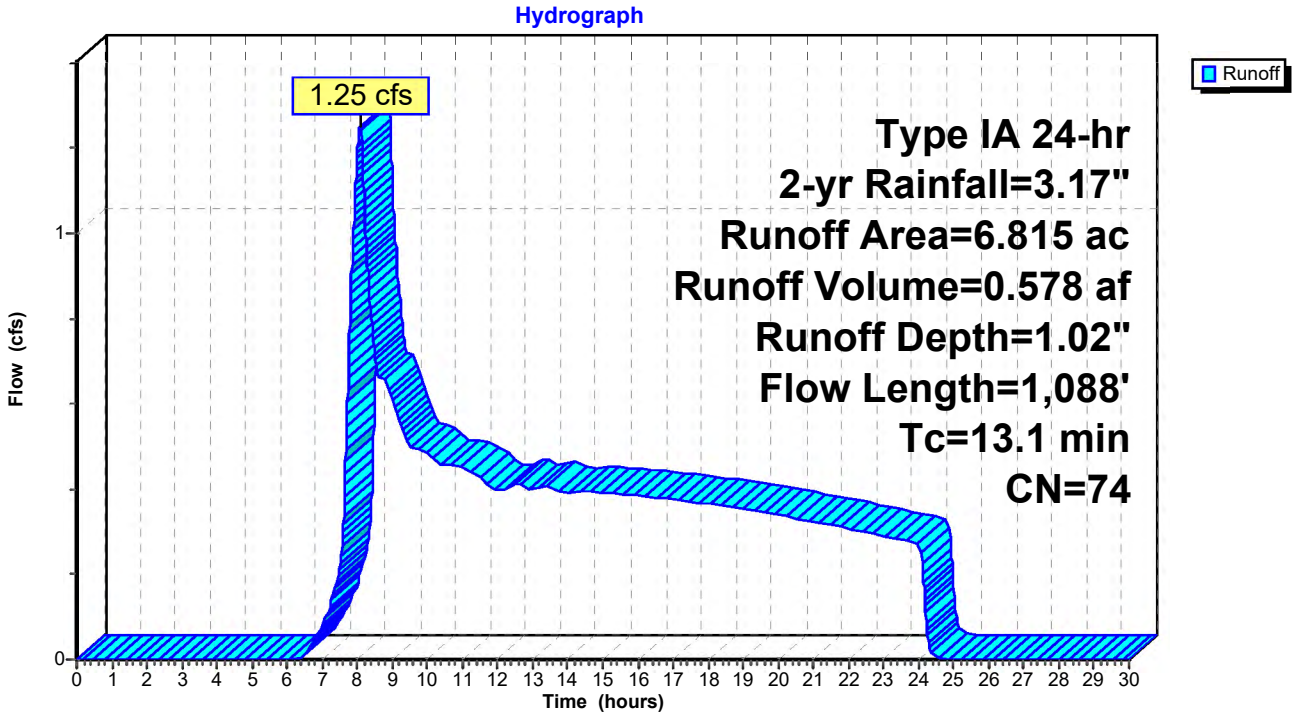
Runoff = 1.25 cfs @ 8.08 hrs, Volume= 0.578 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.17"

Area (ac)	CN	Description
0.890	69	Annual Grass, Fair, HSG B
2.181	79	Annual Grass, Fair, HSG C
0.064	56	Brush, Fair, HSG B
0.103	70	Brush, Fair, HSG C
0.054	82	Farmsteads, HSG C
0.107	60	Woods, Fair, HSG B
3.416	73	Woods, Fair, HSG C
6.815	74	Weighted Average
6.815		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.1800	0.19		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
0.7	133	0.3500	2.96		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
1.1	236	0.2600	3.57		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
2.3	619	0.0100	4.51	54.17	**Trap/Vee/Rect Channel Flow, Ditch (Wappo)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
13.1	1,088	Total			

Subcatchment WS-3A: Subcat WS-3A



Summary for Subcatchment WS-3B: Subcat WS-3B

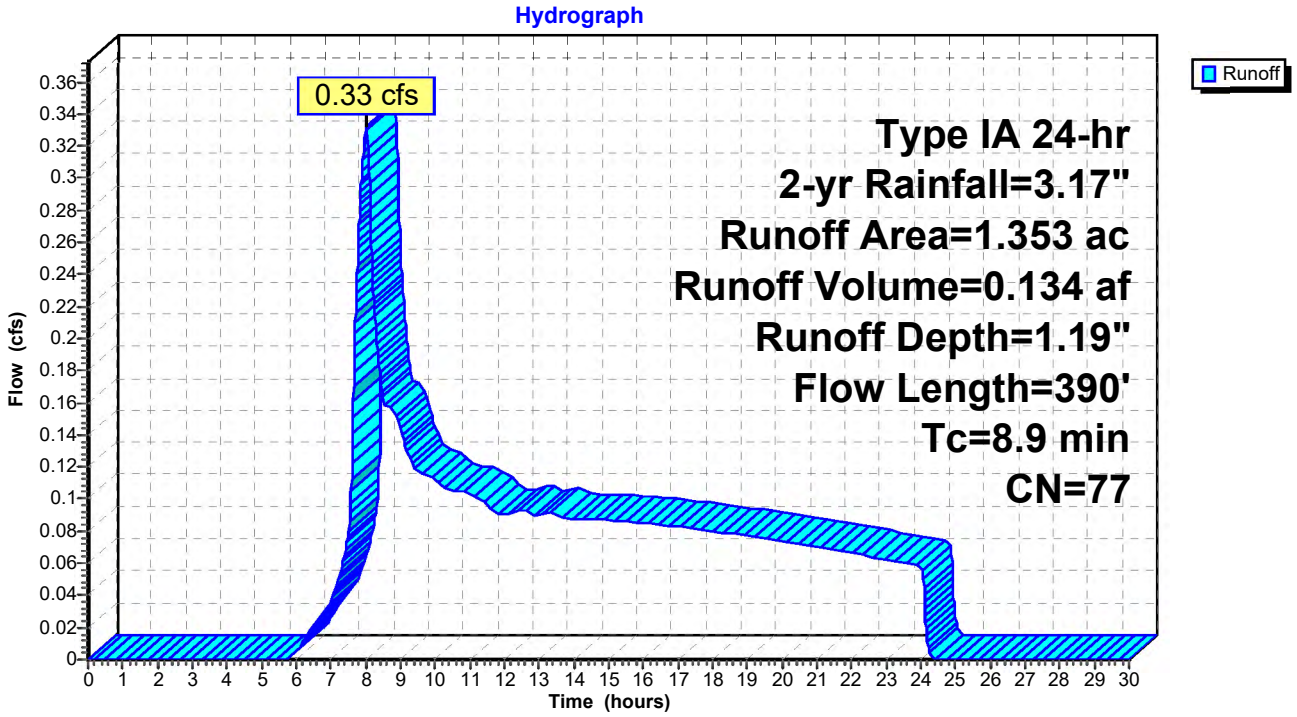
Runoff = 0.33 cfs @ 8.03 hrs, Volume= 0.134 af, Depth= 1.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.17"

Area (ac)	CN	Description
0.109	69	Annual Grass, Fair, HSG B
0.169	79	Annual Grass, Fair, HSG C
0.035	70	Brush, Fair, HSG C
0.478	82	Farmsteads, HSG C
0.562	73	Woods, Fair, HSG C
1.353	77	Weighted Average
1.353		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.2900	0.23		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
0.6	116	0.3800	3.08		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.7	145	0.2600	3.57		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.2	29	0.0100	2.74	3.36	**Pipe Channel, 15" CMP Culvert** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.025 Corrugated metal
8.9	390	Total			

Subcatchment WS-3B: Subcat WS-3B



Summary for Subcatchment WS-4: Subcat WS-4

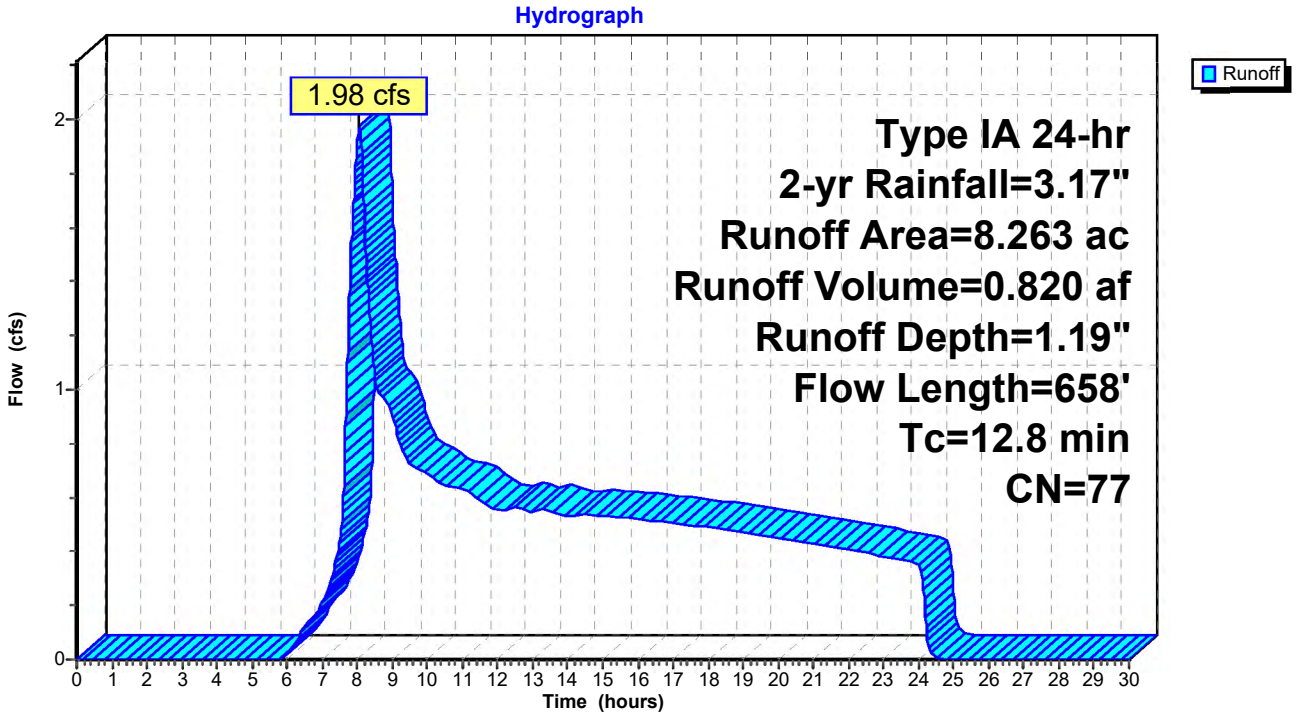
Runoff = 1.98 cfs @ 8.06 hrs, Volume= 0.820 af, Depth= 1.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.17"

Area (ac)	CN	Description
0.005	69	Annual Grass, Fair, HSG B
1.717	79	Annual Grass, Fair, HSG C
0.170	87	Dirt roads, HSG C
0.943	82	Farmsteads, HSG C
0.376	92	Paved roads w/open ditches, 50% imp, HSG C
0.173	61	Vineyard, Good, HSG B
1.748	75	Vineyard, Good, HSG C
3.133	73	Woods, Fair, HSG C
8.263	77	Weighted Average
8.075		97.72% Pervious Area
0.188		2.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.1900	0.19		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
4.0	558	0.1100	2.32		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
12.8	658	Total			

Subcatchment WS-4: Subcat WS-4



Summary for Subcatchment WS-5: Subcat WS-5

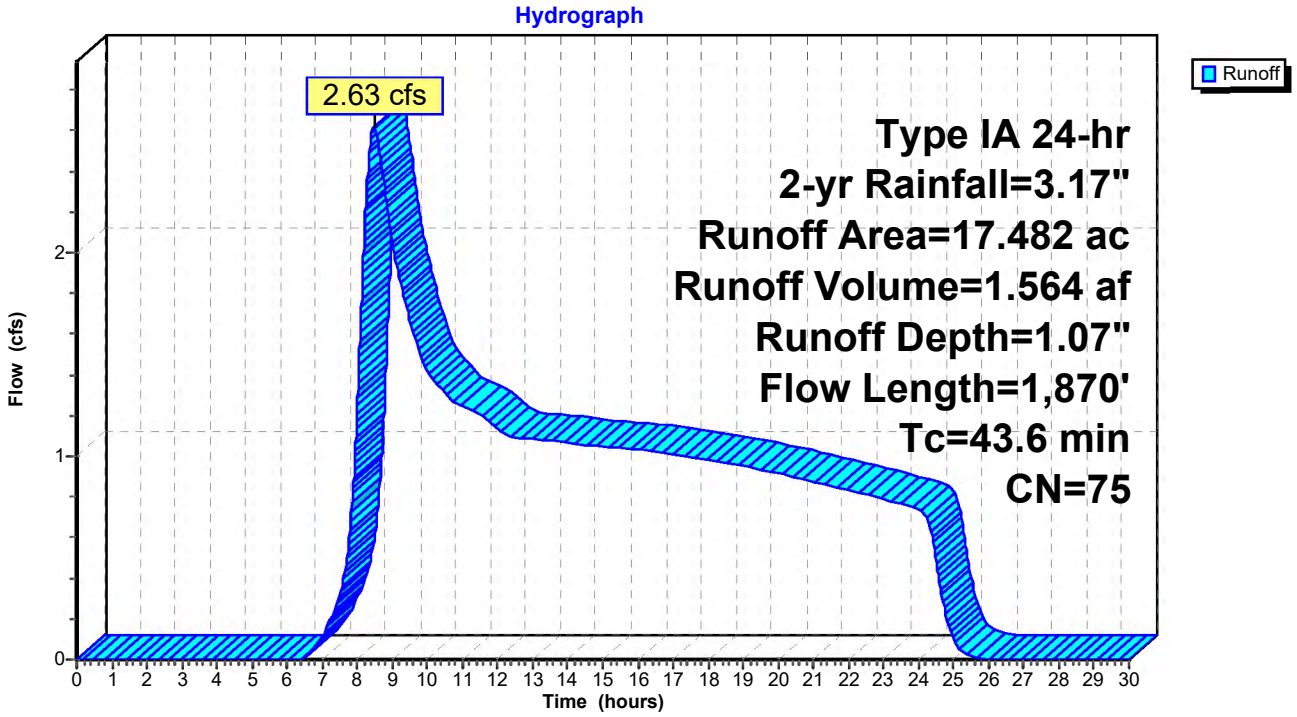
Runoff = 2.63 cfs @ 8.48 hrs, Volume= 1.564 af, Depth= 1.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.17"

Area (ac)	CN	Description
0.292	69	Annual Grass, Fair, HSG B
3.778	79	Annual Grass, Fair, HSG C
0.347	82	Dirt roads, HSG B
0.098	87	Dirt roads, HSG C
0.529	86	Fallow, bare soil, HSG B
0.460	91	Fallow, bare soil, HSG C
1.476	82	Farmsteads, HSG C
0.276	92	Paved roads w/open ditches, 50% imp, HSG C
7.201	69	Vineyard, Fair, HSG B
0.459	79	Vineyard, Fair, HSG C
0.175	75	Vineyard, Good, HSG C
2.390	73	Woods, Fair, HSG C
17.482	75	Weighted Average
17.344		99.21% Pervious Area
0.138		0.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.1800	0.19		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
2.1	404	0.2200	3.28		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
32.5	1,366	0.0100	0.70		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
43.6	1,870	Total			

Subcatchment WS-5: Subcat WS-5



Summary for Subcatchment WS-1A: Subcat WS-1A

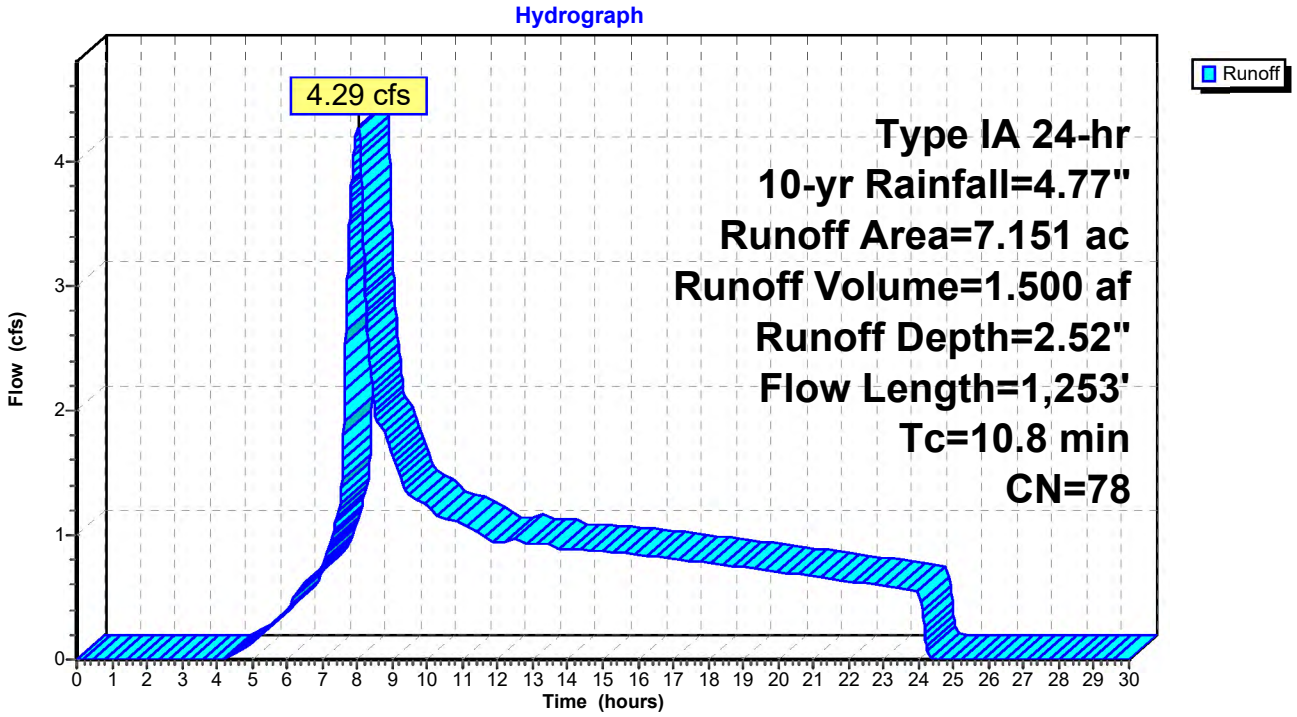
Runoff = 4.29 cfs @ 8.03 hrs, Volume= 1.500 af, Depth= 2.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.77"

Area (ac)	CN	Description
5.373	79	Annual Grass, Fair, HSG C
1.778	73	Woods, Fair, HSG C
7.151	78	Weighted Average
7.151		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.2800	0.22		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
1.2	265	0.3000	3.83		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
1.0	172	0.3600	3.00		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.4	116	0.5500	5.19		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.4	520	0.2800	23.89	286.66	**Trap/Vee/Rect Channel Flow, Ditch (WRA)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
0.3	80	0.0100	4.51	54.17	**Trap/Vee/Rect Channel Flow, Ditch (Wappo)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
10.8	1,253	Total			

Subcatchment WS-1A: Subcat WS-1A



Summary for Subcatchment WS-1B: Subcat WS-1B

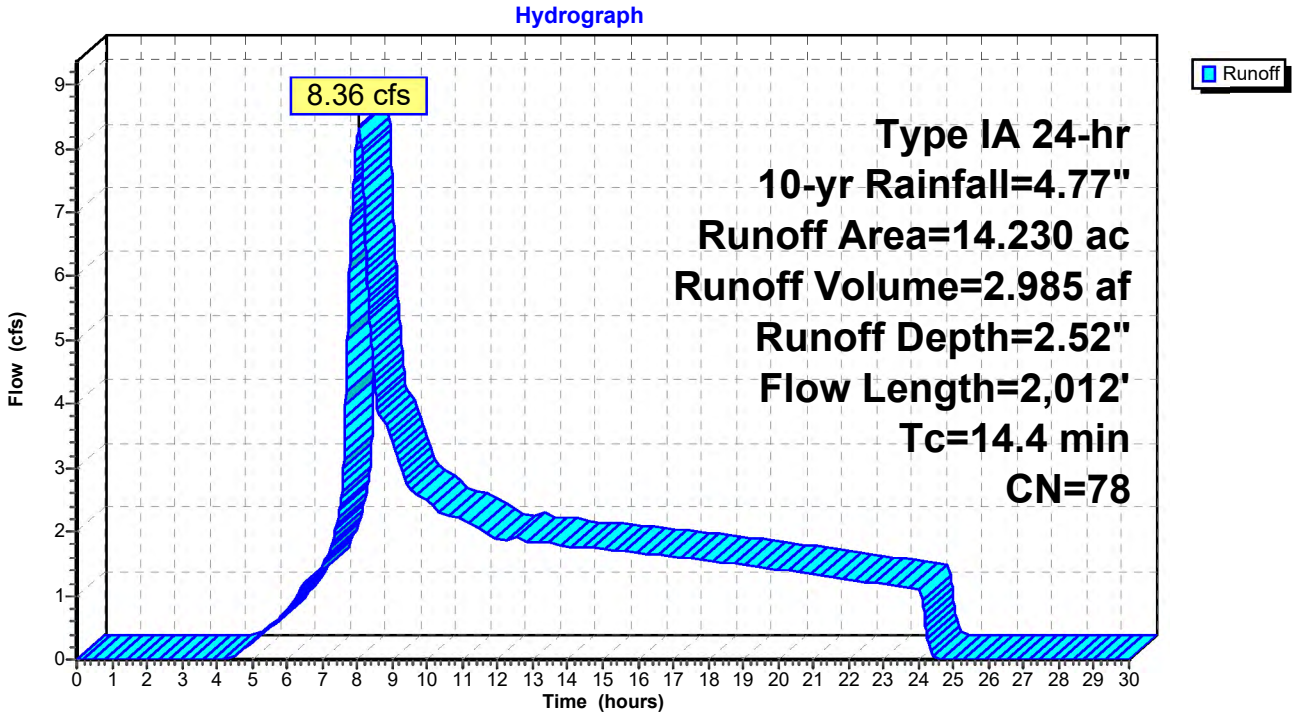
Runoff = 8.36 cfs @ 8.05 hrs, Volume= 2.985 af, Depth= 2.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.77"

Area (ac)	CN	Description
11.114	79	Annual Grass, Fair, HSG C
0.233	70	Brush, Fair, HSG C
0.167	92	Paved roads w/open ditches, 50% imp, HSG C
0.930	73	Woods, Fair, HSG C
1.786	76	Woods/grass comb., Fair, HSG C
14.230	78	Weighted Average
14.147		99.41% Pervious Area
0.084		0.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.1000	0.22		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
2.8	590	0.2600	3.57		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.2	261	0.2000	20.19	242.28	**Trap/Vee/Rect Channel Flow, Swale** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
3.9	1,061	0.0100	4.51	54.17	**Trap/Vee/Rect Channel Flow, Ditch (Wappo)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
14.4	2,012	Total			

Subcatchment WS-1B: Subcat WS-1B



Summary for Subcatchment WS-1C: Subcat WS-1C

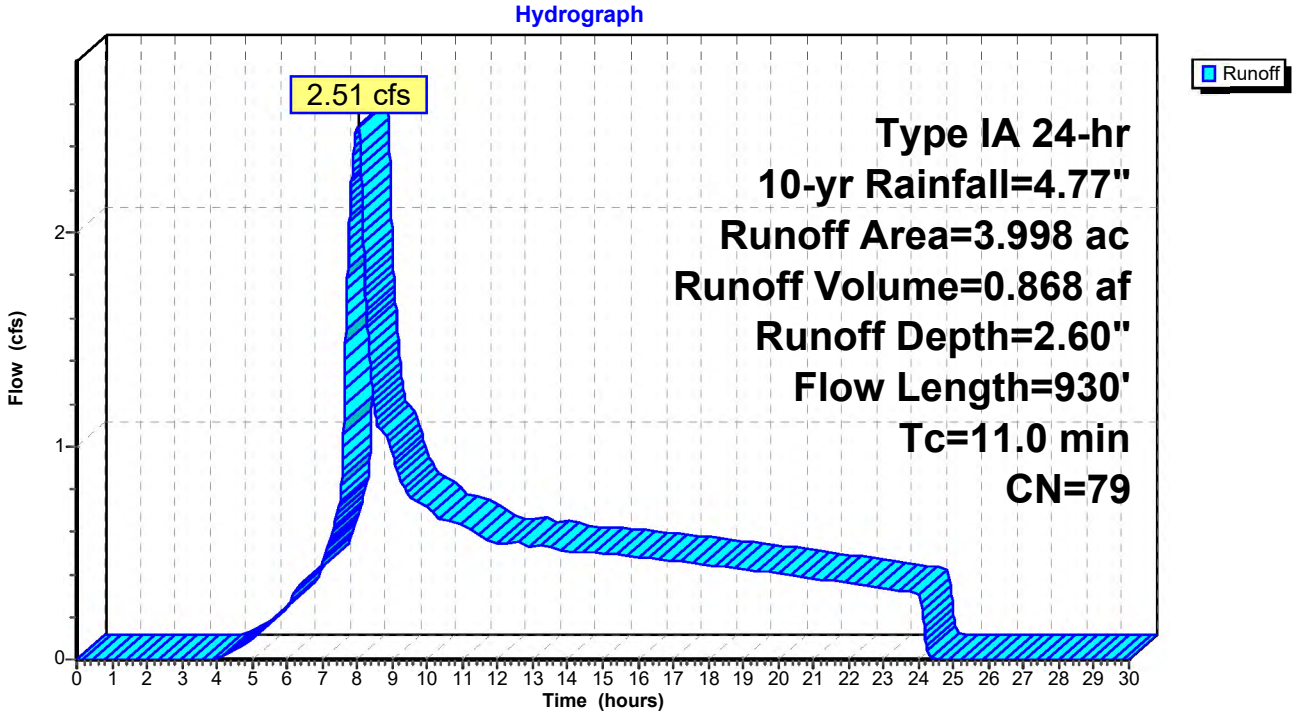
Runoff = 2.51 cfs @ 8.03 hrs, Volume= 0.868 af, Depth= 2.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.77"

Area (ac)	CN	Description
3.763	79	Annual Grass, Fair, HSG C
0.160	73	Woods, Fair, HSG C
0.076	76	Woods/grass comb., Fair, HSG C
3.998	79	Weighted Average
3.998		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.2800	0.22		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
3.5	830	0.3100	3.90		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
11.0	930	Total			

Subcatchment WS-1C: Subcat WS-1C



Summary for Subcatchment WS-1D: Subcat WS-1D

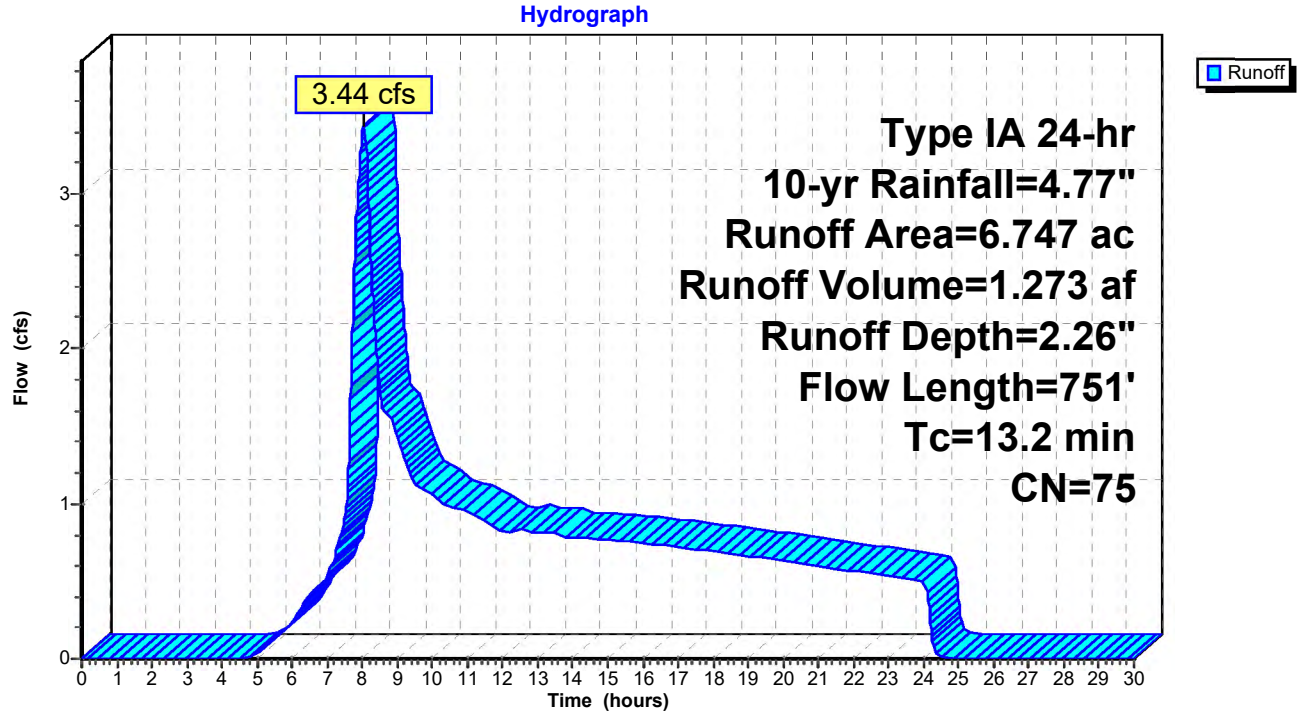
Runoff = 3.44 cfs @ 8.05 hrs, Volume= 1.273 af, Depth= 2.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.77"

Area (ac)	CN	Description
0.343	79	Annual Grass, Fair, HSG C
0.229	87	Dirt roads, HSG C
0.475	82	Farmsteads, HSG C
0.050	92	Paved roads w/open ditches, 50% imp, HSG C
2.808	69	Vineyard, Fair, HSG B
2.087	79	Vineyard, Fair, HSG C
0.755	73	Woods, Fair, HSG C
6.747	75	Weighted Average
6.721		99.63% Pervious Area
0.025		0.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	100	0.2300	0.31		**Sheet Flow, Sheet Flow** Grass: Dense n= 0.240 P2= 3.17"
7.8	651	0.0400	1.40		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
13.2	751	Total			

Subcatchment WS-1D: Subcat WS-1D



Summary for Subcatchment WS-2A: Subcat WS-2A

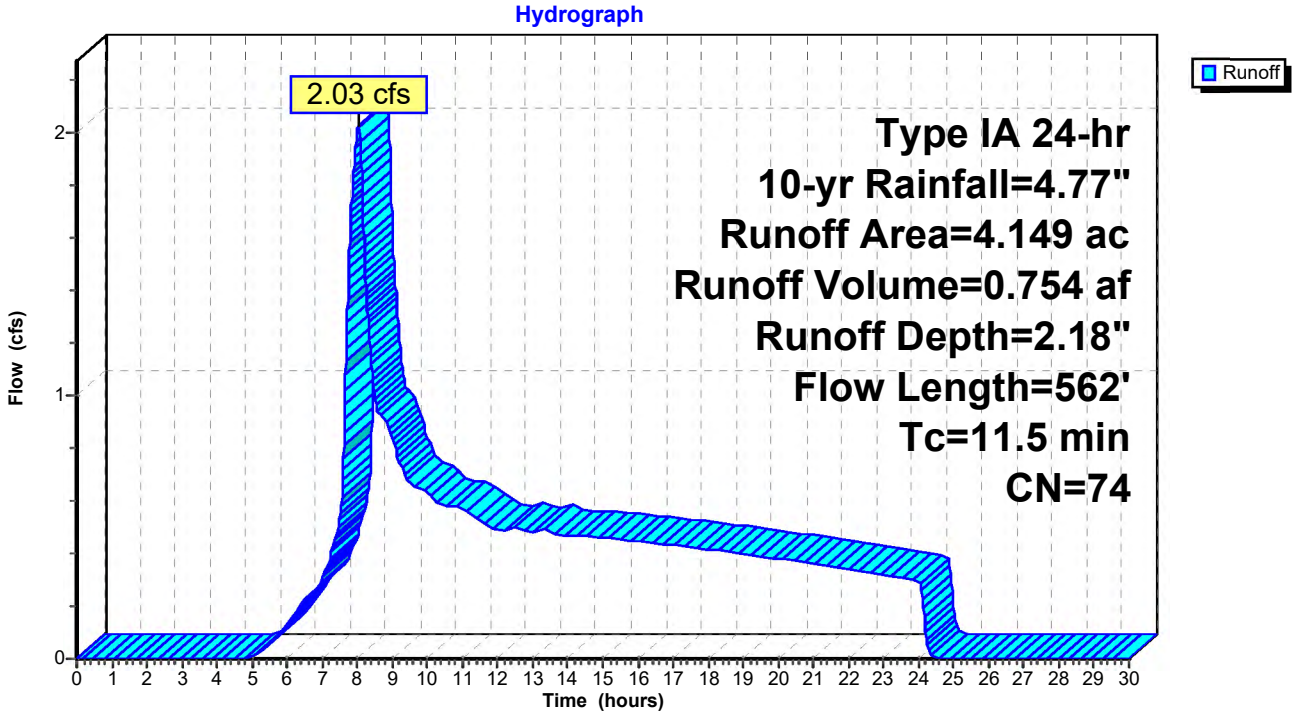
Runoff = 2.03 cfs @ 8.04 hrs, Volume= 0.754 af, Depth= 2.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.77"

Area (ac)	CN	Description
0.753	79	Annual Grass, Fair, HSG C
0.086	75	Vineyard, Good, HSG C
3.310	73	Woods, Fair, HSG C
4.149	74	Weighted Average
4.149		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0600	0.18		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
0.9	157	0.1900	3.05		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
1.3	219	0.3200	2.83		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.1	86	0.1000	14.28	171.31	**Trap/Vee/Rect Channel Flow, Ditch (WRA)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
11.5	562	Total			

Subcatchment WS-2A: Subcat WS-2A



Summary for Subcatchment WS-2B: Subcat WS-2B

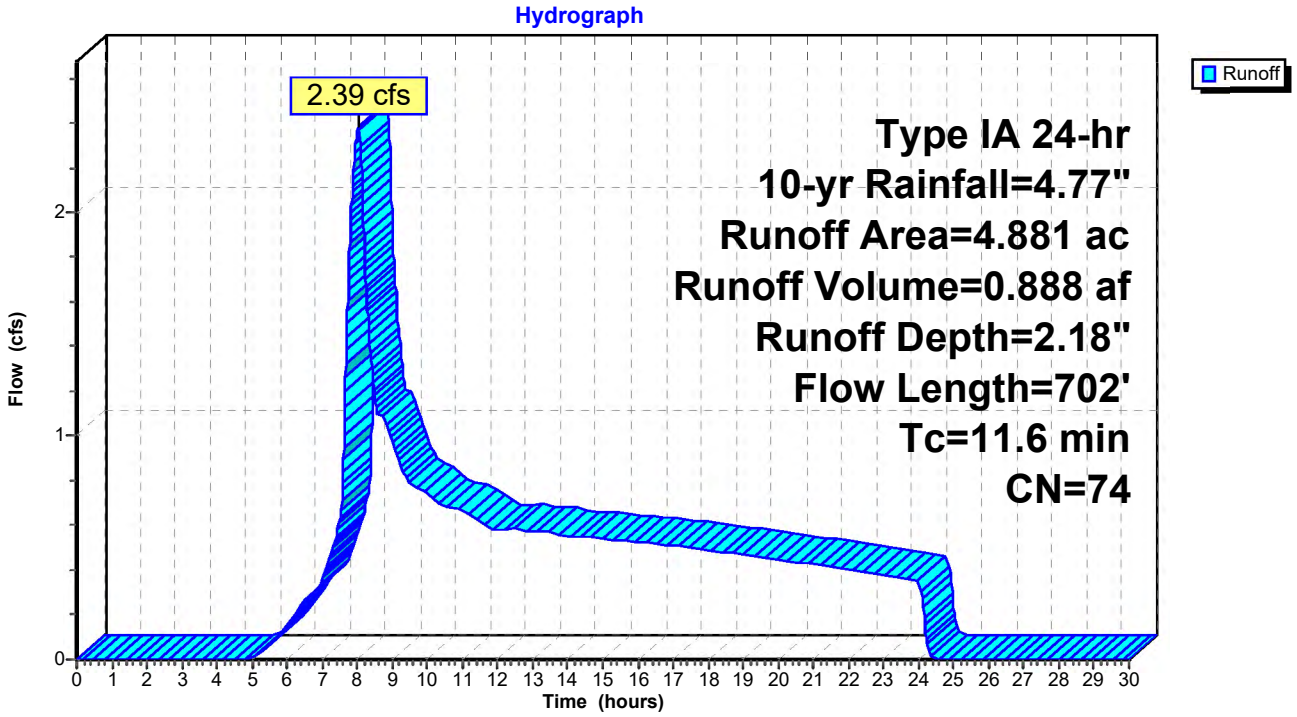
Runoff = 2.39 cfs @ 8.04 hrs, Volume= 0.888 af, Depth= 2.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.77"

Area (ac)	CN	Description
0.161	69	Annual Grass, Fair, HSG B
0.963	79	Annual Grass, Fair, HSG C
0.055	70	Brush, Fair, HSG C
0.166	75	Vineyard, Good, HSG C
0.003	60	Woods, Fair, HSG B
3.533	73	Woods, Fair, HSG C
4.881	74	Weighted Average
4.881		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0600	0.18		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
0.8	105	0.1100	2.32		**Shallow Concentrated Flow, Short Grass** Short Grass Pasture Kv= 7.0 fps
1.4	200	0.2400	2.45		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.2	297	0.2200	21.18	254.10	**Trap/Vee/Rect Channel Flow, Ditch (WRA)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
11.6	702	Total			

Subcatchment WS-2B: Subcat WS-2B



Summary for Subcatchment WS-2C: Subcat WS-2C

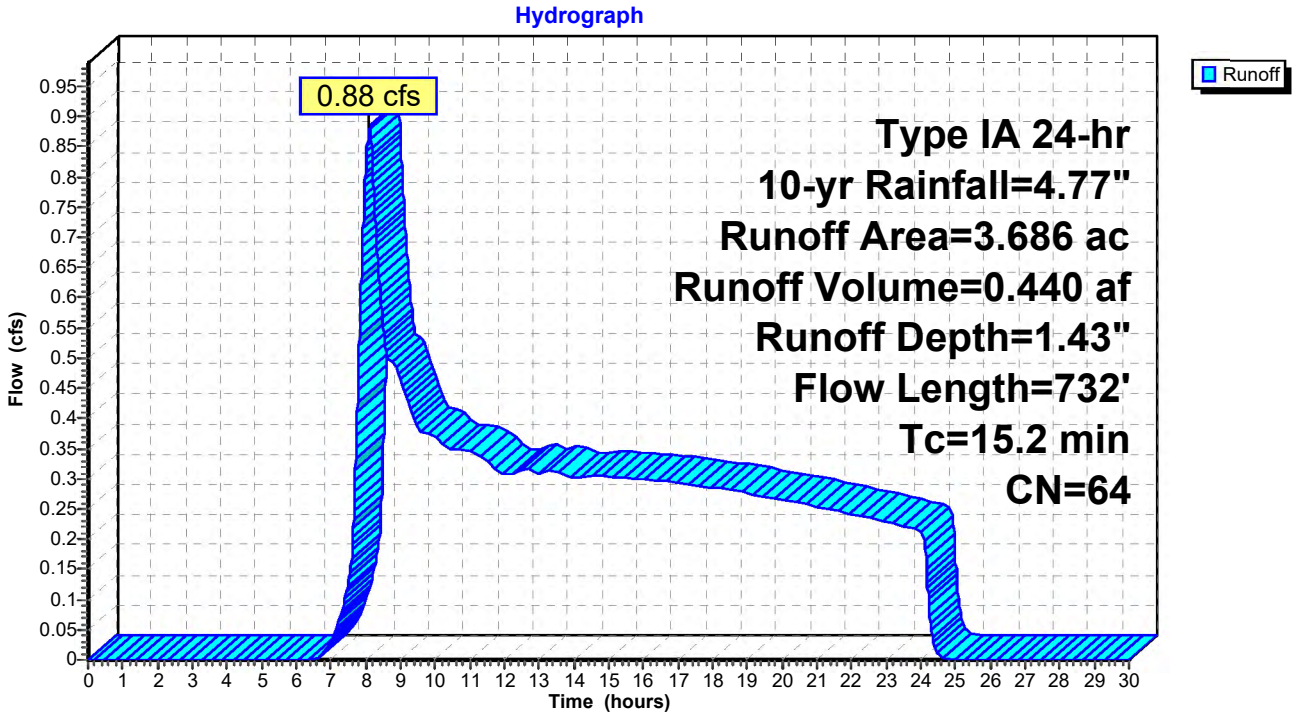
Runoff = 0.88 cfs @ 8.10 hrs, Volume= 0.440 af, Depth= 1.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.77"

Area (ac)	CN	Description
0.294	69	Annual Grass, Fair, HSG B
0.335	79	Annual Grass, Fair, HSG C
0.117	82	Dirt roads, HSG B
0.009	87	Dirt roads, HSG C
2.801	61	Vineyard, Good, HSG B
0.000	75	Vineyard, Good, HSG C
0.131	73	Woods, Fair, HSG C
3.686	64	Weighted Average
3.686		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	100	0.2600	0.22		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
7.5	632	0.0400	1.40		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
15.2	732	Total			

Subcatchment WS-2C: Subcat WS-2C



Summary for Subcatchment WS-3A: Subcat WS-3A

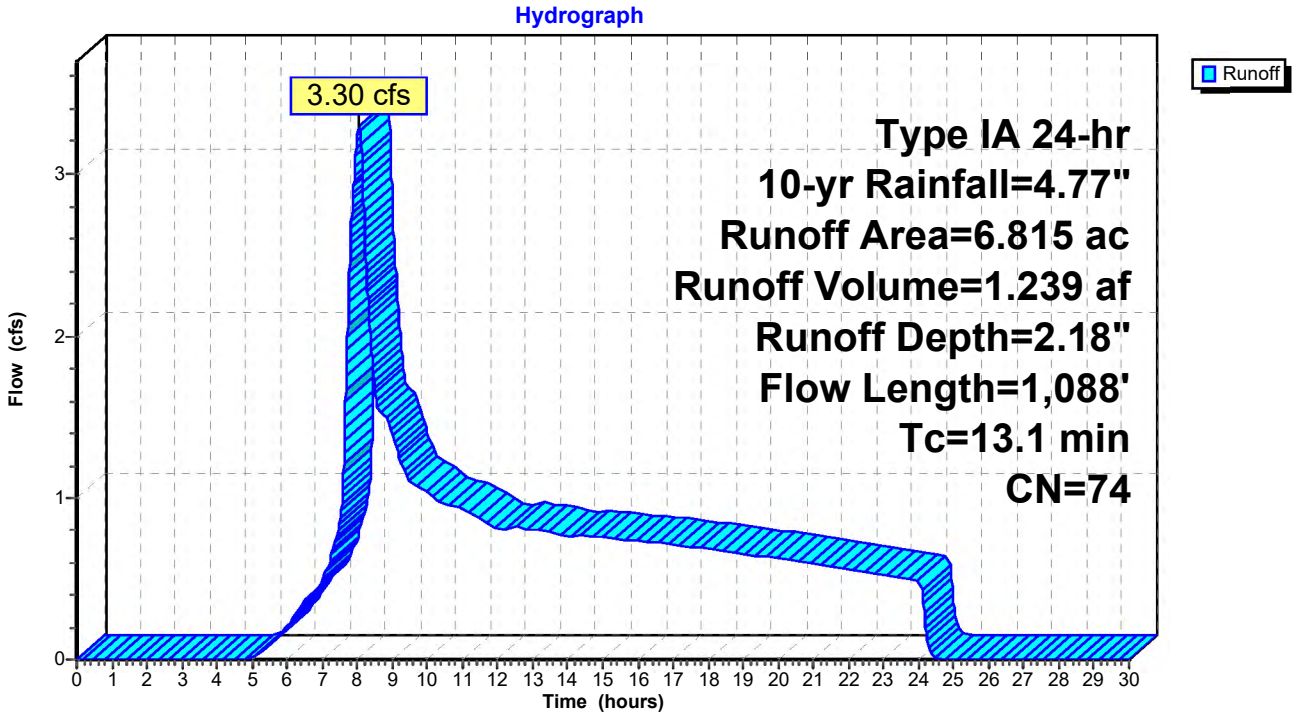
Runoff = 3.30 cfs @ 8.05 hrs, Volume= 1.239 af, Depth= 2.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.77"

Area (ac)	CN	Description
0.890	69	Annual Grass, Fair, HSG B
2.181	79	Annual Grass, Fair, HSG C
0.064	56	Brush, Fair, HSG B
0.103	70	Brush, Fair, HSG C
0.054	82	Farmsteads, HSG C
0.107	60	Woods, Fair, HSG B
3.416	73	Woods, Fair, HSG C
6.815	74	Weighted Average
6.815		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.1800	0.19		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
0.7	133	0.3500	2.96		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
1.1	236	0.2600	3.57		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
2.3	619	0.0100	4.51	54.17	**Trap/Vee/Rect Channel Flow, Ditch (Wappo)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
13.1	1,088	Total			

Subcatchment WS-3A: Subcat WS-3A



Summary for Subcatchment WS-3B: Subcat WS-3B

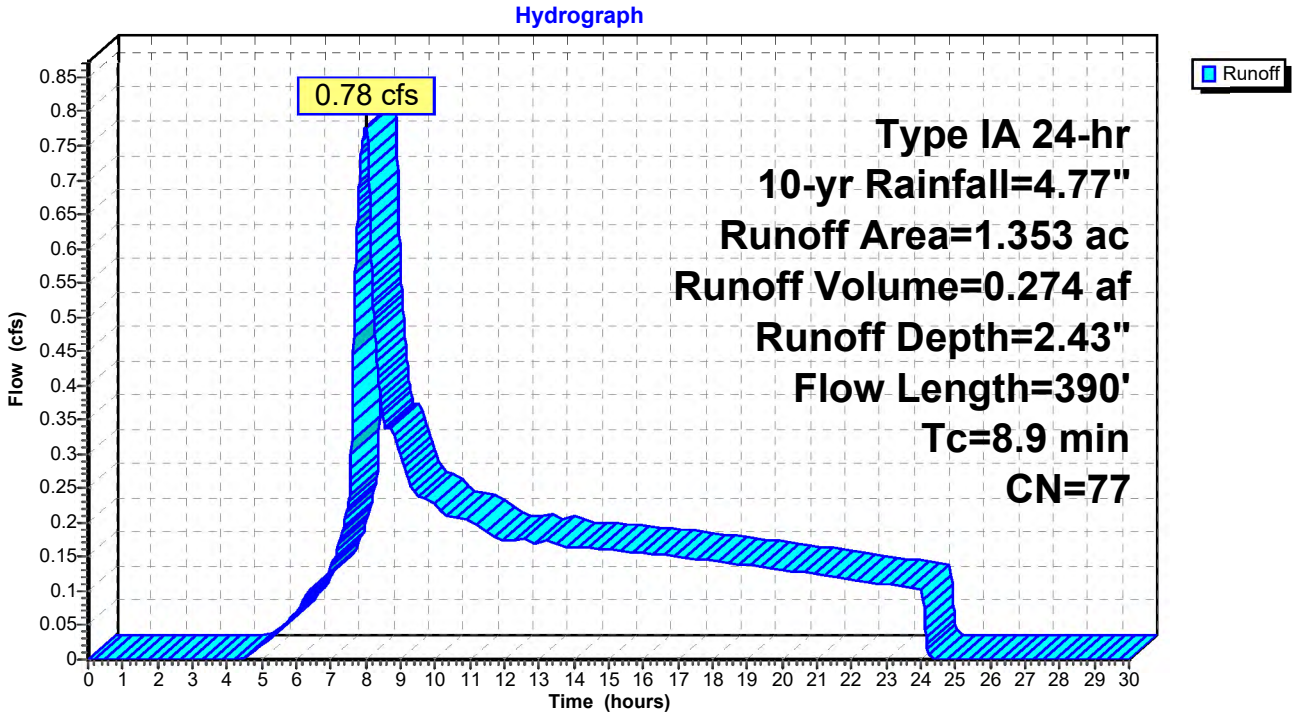
Runoff = 0.78 cfs @ 8.02 hrs, Volume= 0.274 af, Depth= 2.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.77"

Area (ac)	CN	Description
0.109	69	Annual Grass, Fair, HSG B
0.169	79	Annual Grass, Fair, HSG C
0.035	70	Brush, Fair, HSG C
0.478	82	Farmsteads, HSG C
0.562	73	Woods, Fair, HSG C
1.353	77	Weighted Average
1.353		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.2900	0.23		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
0.6	116	0.3800	3.08		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.7	145	0.2600	3.57		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.2	29	0.0100	2.74	3.36	**Pipe Channel, 15" CMP Culvert** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.025 Corrugated metal
8.9	390	Total			

Subcatchment WS-3B: Subcat WS-3B



Summary for Subcatchment WS-4: Subcat WS-4

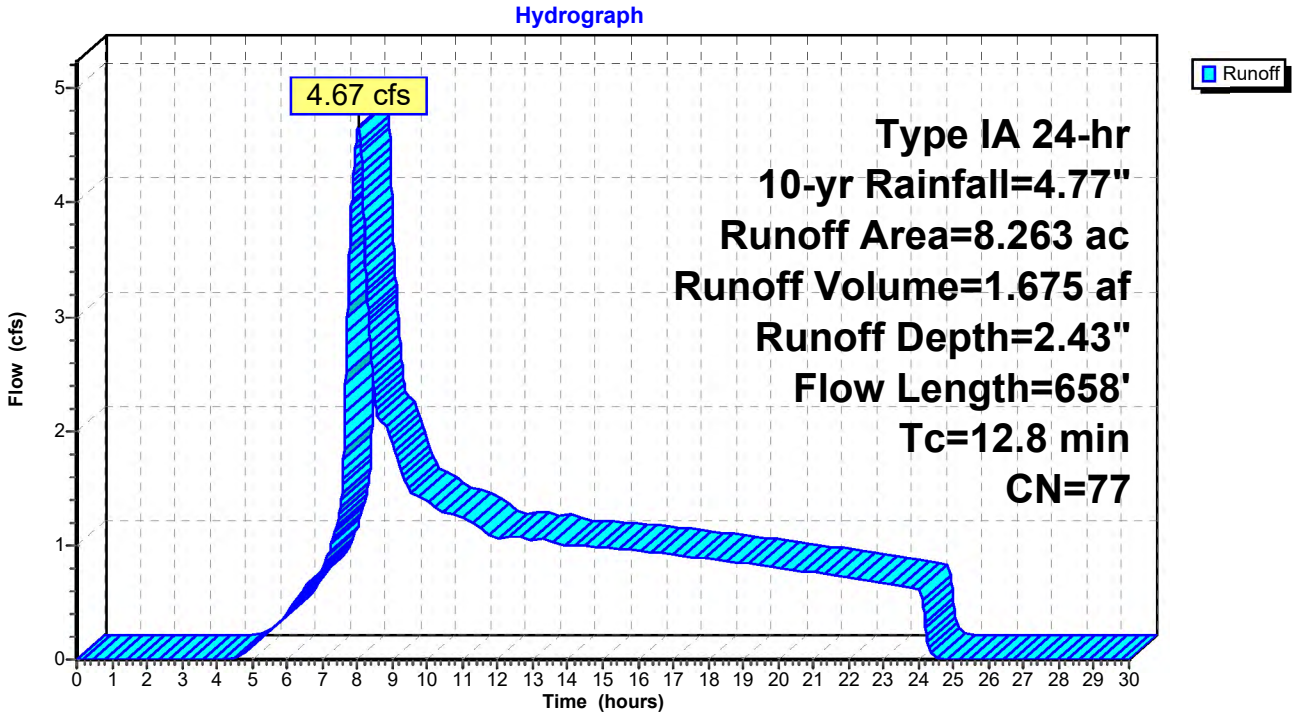
Runoff = 4.67 cfs @ 8.04 hrs, Volume= 1.675 af, Depth= 2.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.77"

Area (ac)	CN	Description
0.005	69	Annual Grass, Fair, HSG B
1.717	79	Annual Grass, Fair, HSG C
0.170	87	Dirt roads, HSG C
0.943	82	Farmsteads, HSG C
0.376	92	Paved roads w/open ditches, 50% imp, HSG C
0.173	61	Vineyard, Good, HSG B
1.748	75	Vineyard, Good, HSG C
3.133	73	Woods, Fair, HSG C
8.263	77	Weighted Average
8.075		97.72% Pervious Area
0.188		2.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.1900	0.19		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
4.0	558	0.1100	2.32		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
12.8	658	Total			

Subcatchment WS-4: Subcat WS-4



Summary for Subcatchment WS-5: Subcat WS-5

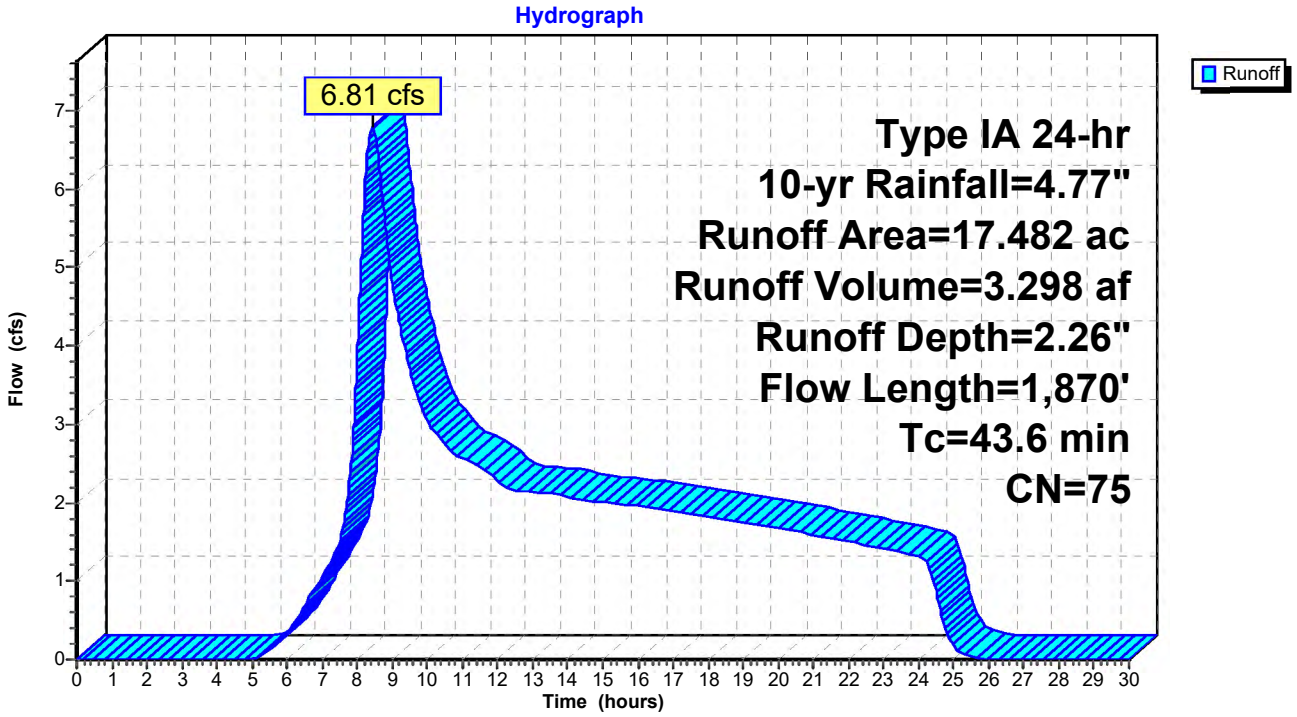
Runoff = 6.81 cfs @ 8.43 hrs, Volume= 3.298 af, Depth= 2.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.77"

Area (ac)	CN	Description
0.292	69	Annual Grass, Fair, HSG B
3.778	79	Annual Grass, Fair, HSG C
0.347	82	Dirt roads, HSG B
0.098	87	Dirt roads, HSG C
0.529	86	Fallow, bare soil, HSG B
0.460	91	Fallow, bare soil, HSG C
1.476	82	Farmsteads, HSG C
0.276	92	Paved roads w/open ditches, 50% imp, HSG C
7.201	69	Vineyard, Fair, HSG B
0.459	79	Vineyard, Fair, HSG C
0.175	75	Vineyard, Good, HSG C
2.390	73	Woods, Fair, HSG C
17.482	75	Weighted Average
17.344		99.21% Pervious Area
0.138		0.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.1800	0.19		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
2.1	404	0.2200	3.28		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
32.5	1,366	0.0100	0.70		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
43.6	1,870	Total			

Subcatchment WS-5: Subcat WS-5



Summary for Subcatchment WS-1A: Subcat WS-1A

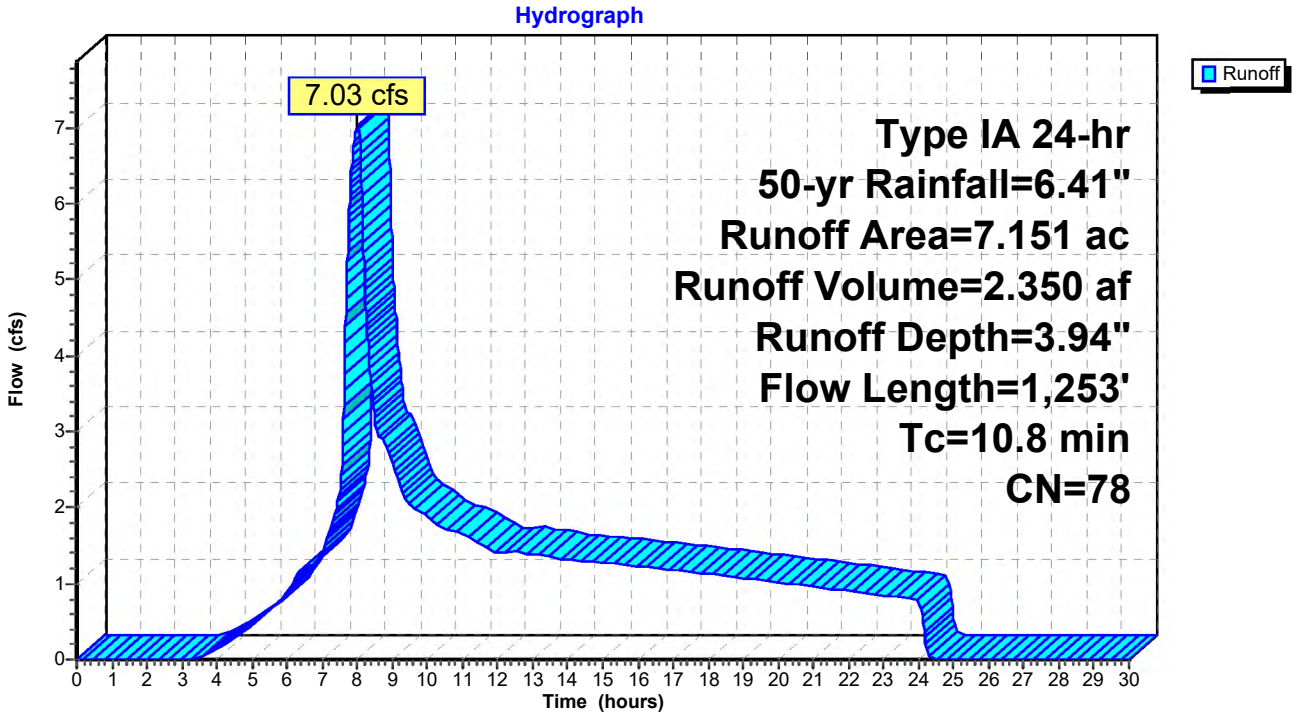
Runoff = 7.03 cfs @ 8.01 hrs, Volume= 2.350 af, Depth= 3.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=6.41"

Area (ac)	CN	Description
5.373	79	Annual Grass, Fair, HSG C
1.778	73	Woods, Fair, HSG C
7.151	78	Weighted Average
7.151		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.2800	0.22		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
1.2	265	0.3000	3.83		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
1.0	172	0.3600	3.00		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.4	116	0.5500	5.19		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.4	520	0.2800	23.89	286.66	**Trap/Vee/Rect Channel Flow, Ditch (WRA)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
0.3	80	0.0100	4.51	54.17	**Trap/Vee/Rect Channel Flow, Ditch (Wappo)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
10.8	1,253	Total			

Subcatchment WS-1A: Subcat WS-1A



Summary for Subcatchment WS-1B: Subcat WS-1B

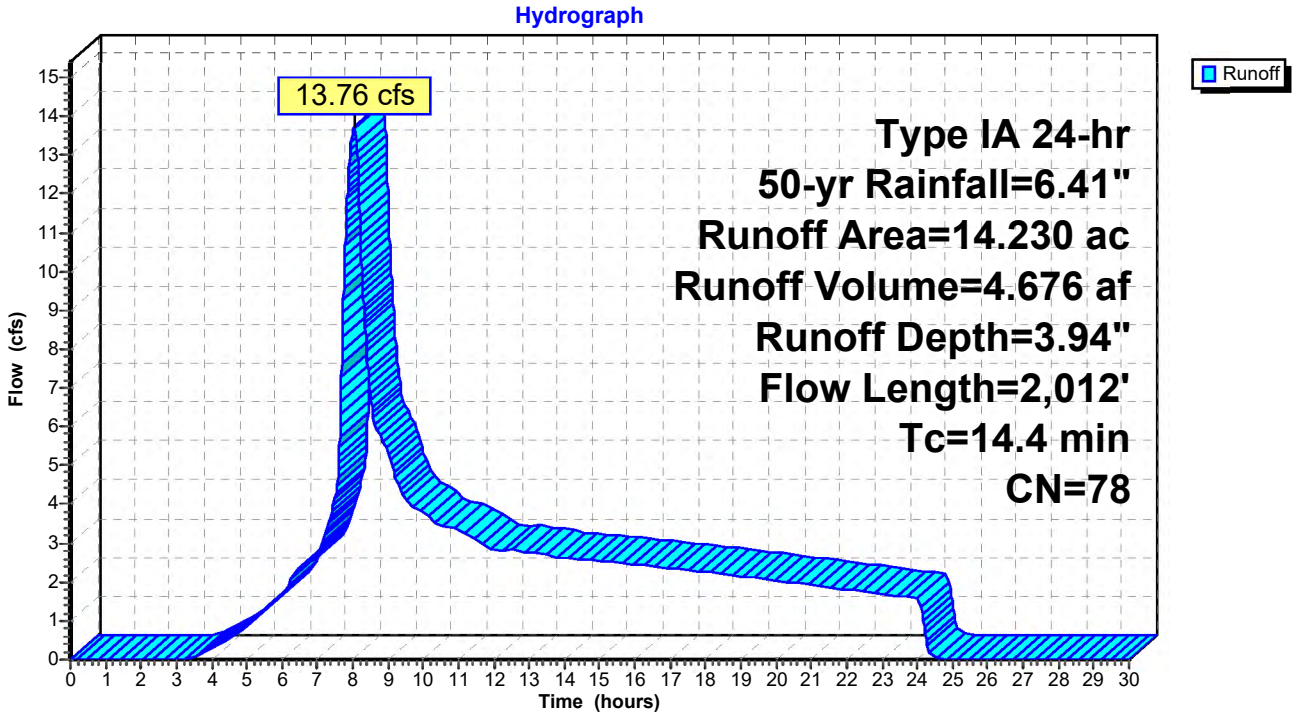
Runoff = 13.76 cfs @ 8.05 hrs, Volume= 4.676 af, Depth= 3.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=6.41"

Area (ac)	CN	Description
11.114	79	Annual Grass, Fair, HSG C
0.233	70	Brush, Fair, HSG C
0.167	92	Paved roads w/open ditches, 50% imp, HSG C
0.930	73	Woods, Fair, HSG C
1.786	76	Woods/grass comb., Fair, HSG C
14.230	78	Weighted Average
14.147		99.41% Pervious Area
0.084		0.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.1000	0.22		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
2.8	590	0.2600	3.57		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.2	261	0.2000	20.19	242.28	**Trap/Vee/Rect Channel Flow, Swale** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
3.9	1,061	0.0100	4.51	54.17	**Trap/Vee/Rect Channel Flow, Ditch (Wappo)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
14.4	2,012	Total			

Subcatchment WS-1B: Subcat WS-1B



Summary for Subcatchment WS-1C: Subcat WS-1C

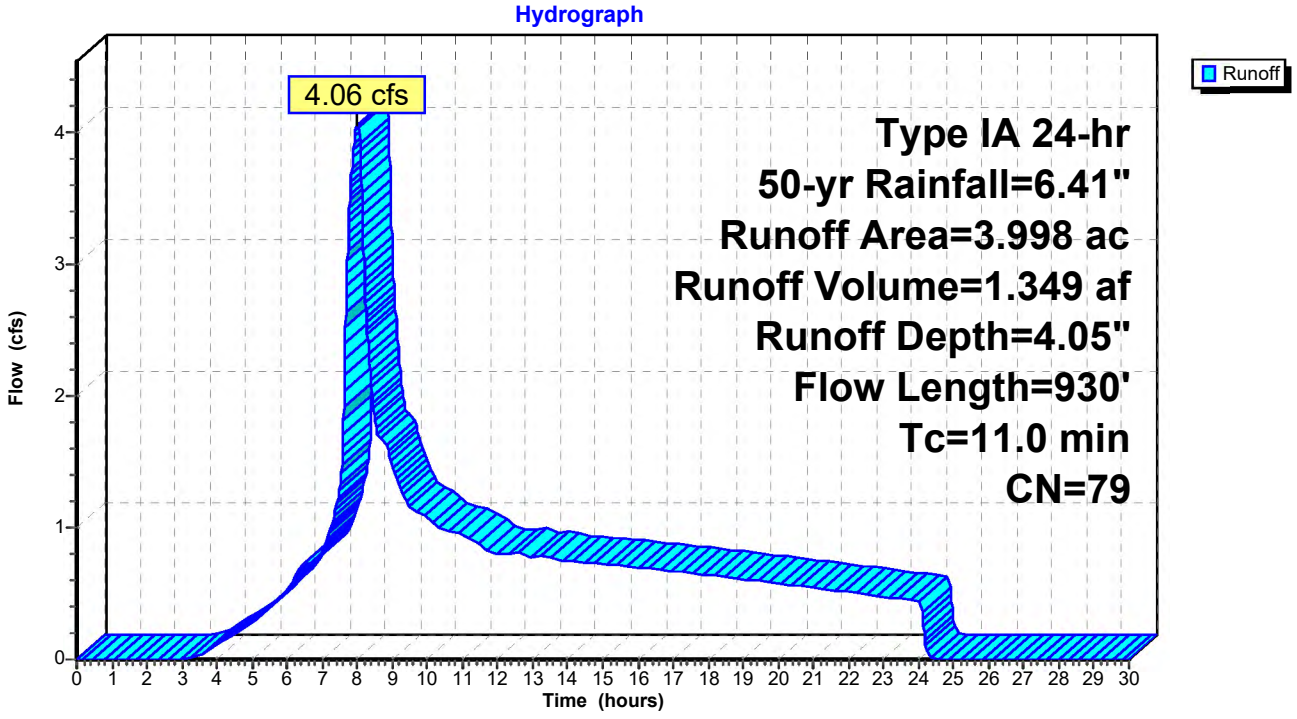
Runoff = 4.06 cfs @ 8.01 hrs, Volume= 1.349 af, Depth= 4.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=6.41"

Area (ac)	CN	Description
3.763	79	Annual Grass, Fair, HSG C
0.160	73	Woods, Fair, HSG C
0.076	76	Woods/grass comb., Fair, HSG C
3.998	79	Weighted Average
3.998		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.2800	0.22		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
3.5	830	0.3100	3.90		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
11.0	930	Total			

Subcatchment WS-1C: Subcat WS-1C



Summary for Subcatchment WS-1D: Subcat WS-1D

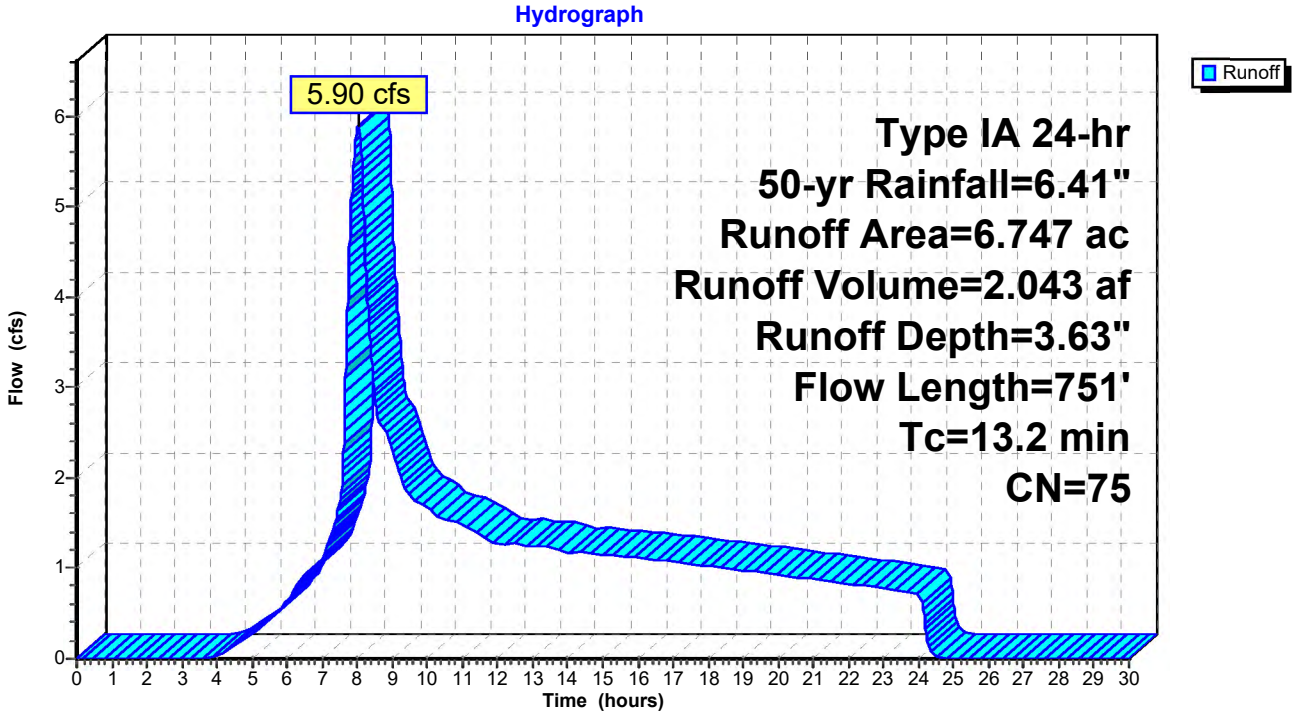
Runoff = 5.90 cfs @ 8.05 hrs, Volume= 2.043 af, Depth= 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=6.41"

Area (ac)	CN	Description
0.343	79	Annual Grass, Fair, HSG C
0.229	87	Dirt roads, HSG C
0.475	82	Farmsteads, HSG C
0.050	92	Paved roads w/open ditches, 50% imp, HSG C
2.808	69	Vineyard, Fair, HSG B
2.087	79	Vineyard, Fair, HSG C
0.755	73	Woods, Fair, HSG C
6.747	75	Weighted Average
6.721		99.63% Pervious Area
0.025		0.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	100	0.2300	0.31		**Sheet Flow, Sheet Flow** Grass: Dense n= 0.240 P2= 3.17"
7.8	651	0.0400	1.40		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
13.2	751	Total			

Subcatchment WS-1D: Subcat WS-1D



Summary for Subcatchment WS-2A: Subcat WS-2A

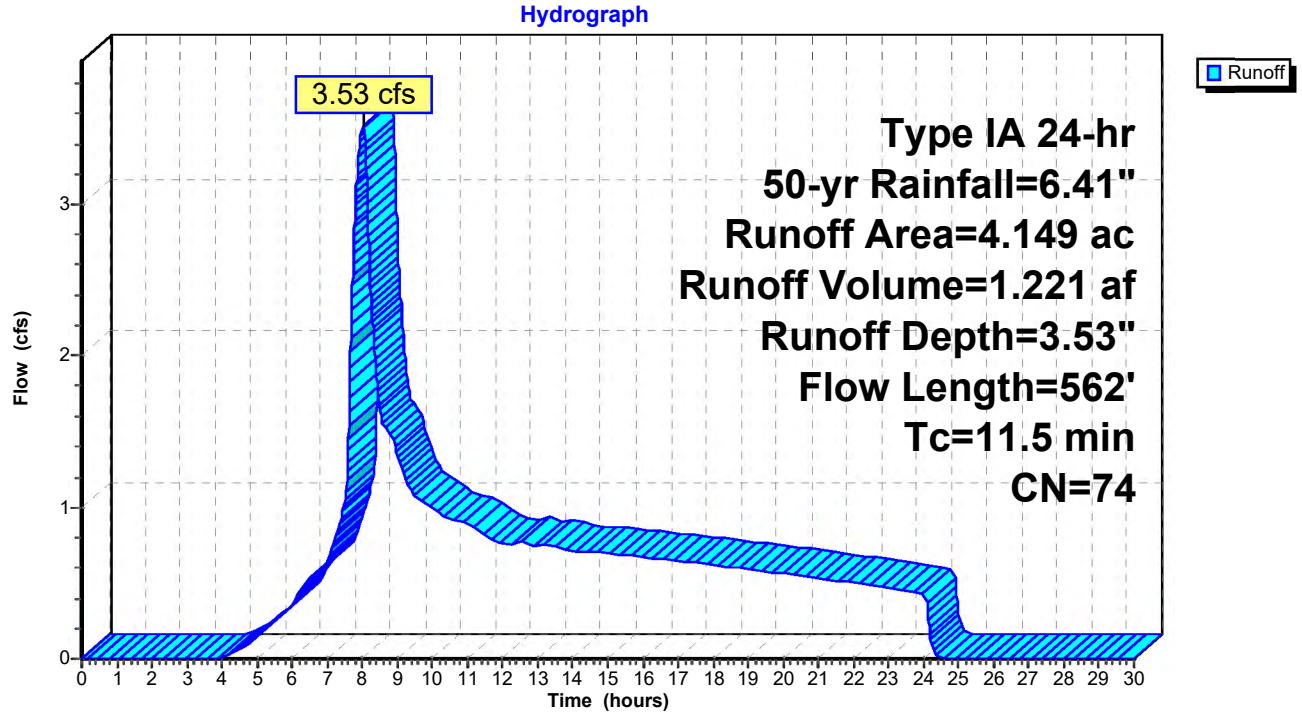
Runoff = 3.53 cfs @ 8.03 hrs, Volume= 1.221 af, Depth= 3.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=6.41"

Area (ac)	CN	Description
0.753	79	Annual Grass, Fair, HSG C
0.086	75	Vineyard, Good, HSG C
3.310	73	Woods, Fair, HSG C
4.149	74	Weighted Average
4.149		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0600	0.18		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
0.9	157	0.1900	3.05		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
1.3	219	0.3200	2.83		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.1	86	0.1000	14.28	171.31	**Trap/Vee/Rect Channel Flow, Ditch (WRA)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
11.5	562	Total			

Subcatchment WS-2A: Subcat WS-2A



Summary for Subcatchment WS-2B: Subcat WS-2B

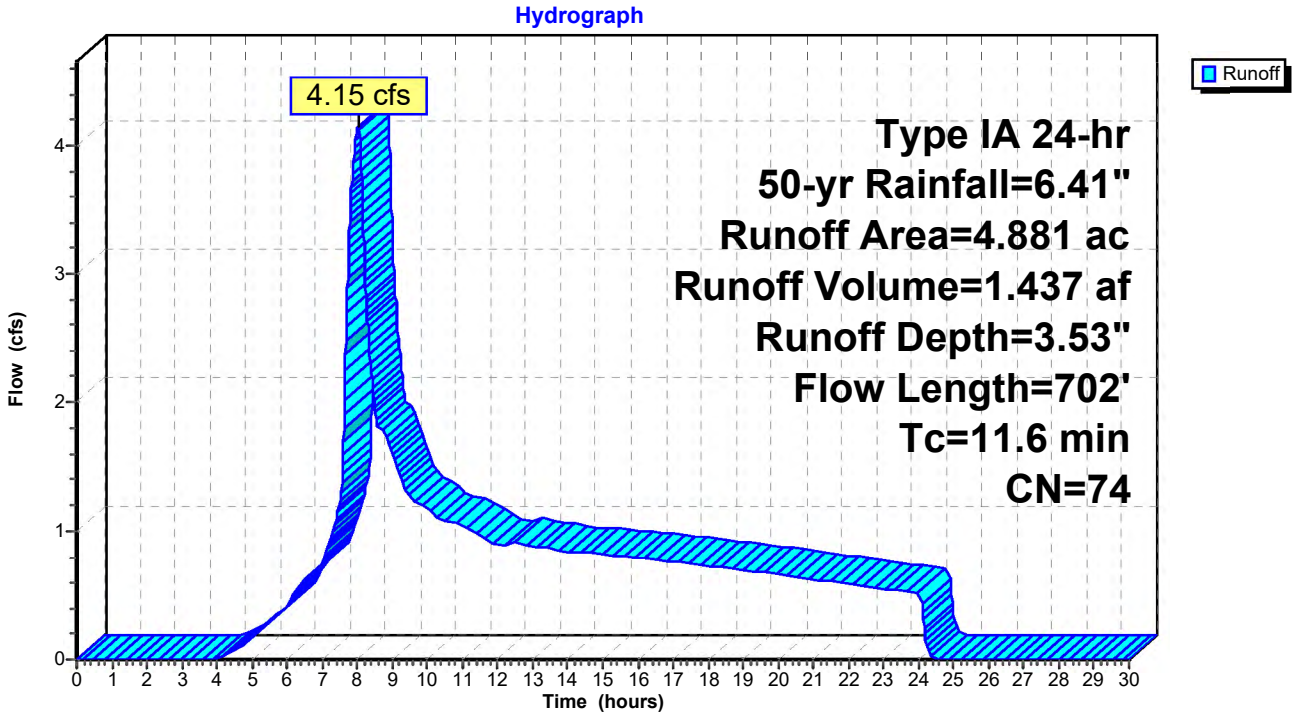
Runoff = 4.15 cfs @ 8.03 hrs, Volume= 1.437 af, Depth= 3.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=6.41"

Area (ac)	CN	Description
0.161	69	Annual Grass, Fair, HSG B
0.963	79	Annual Grass, Fair, HSG C
0.055	70	Brush, Fair, HSG C
0.166	75	Vineyard, Good, HSG C
0.003	60	Woods, Fair, HSG B
3.533	73	Woods, Fair, HSG C
4.881	74	Weighted Average
4.881		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0600	0.18		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
0.8	105	0.1100	2.32		**Shallow Concentrated Flow, Short Grass** Short Grass Pasture Kv= 7.0 fps
1.4	200	0.2400	2.45		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.2	297	0.2200	21.18	254.10	**Trap/Vee/Rect Channel Flow, Ditch (WRA)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
11.6	702	Total			

Subcatchment WS-2B: Subcat WS-2B



Summary for Subcatchment WS-2C: Subcat WS-2C

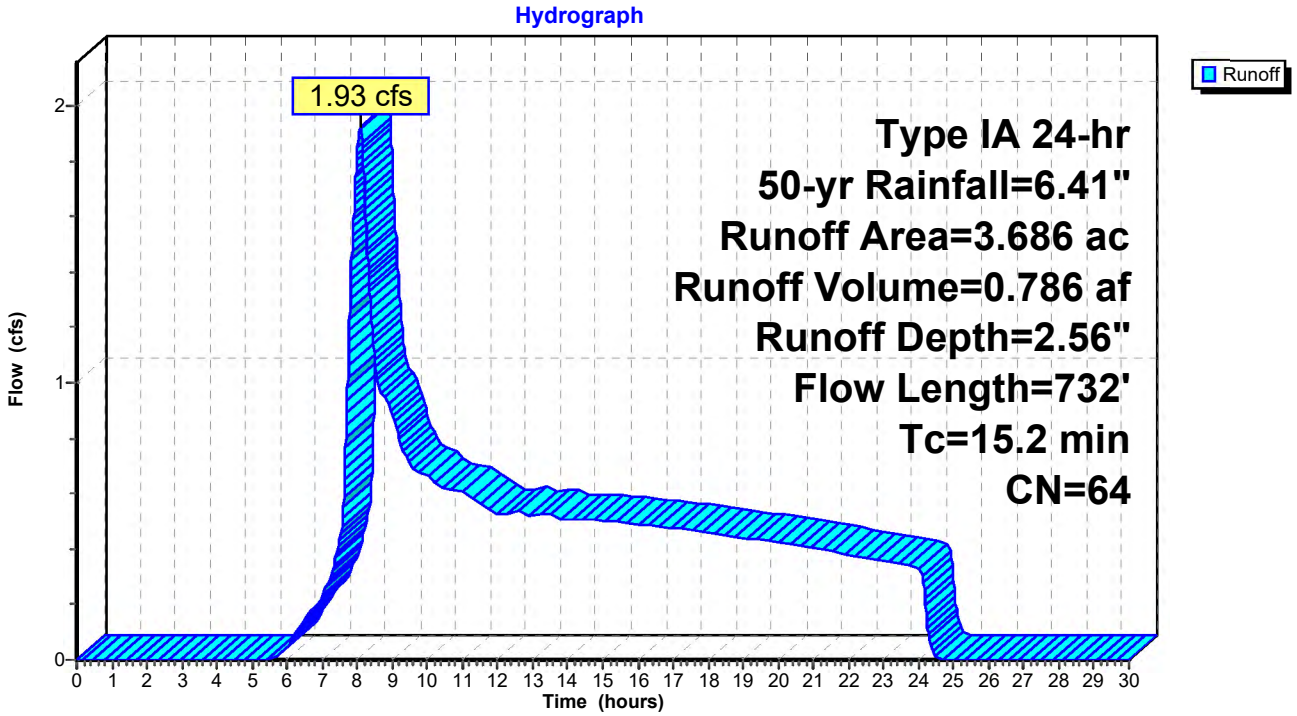
Runoff = 1.93 cfs @ 8.09 hrs, Volume= 0.786 af, Depth= 2.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=6.41"

Area (ac)	CN	Description
0.294	69	Annual Grass, Fair, HSG B
0.335	79	Annual Grass, Fair, HSG C
0.117	82	Dirt roads, HSG B
0.009	87	Dirt roads, HSG C
2.801	61	Vineyard, Good, HSG B
0.000	75	Vineyard, Good, HSG C
0.131	73	Woods, Fair, HSG C
3.686	64	Weighted Average
3.686		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	100	0.2600	0.22		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
7.5	632	0.0400	1.40		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
15.2	732	Total			

Subcatchment WS-2C: Subcat WS-2C



Summary for Subcatchment WS-3A: Subcat WS-3A

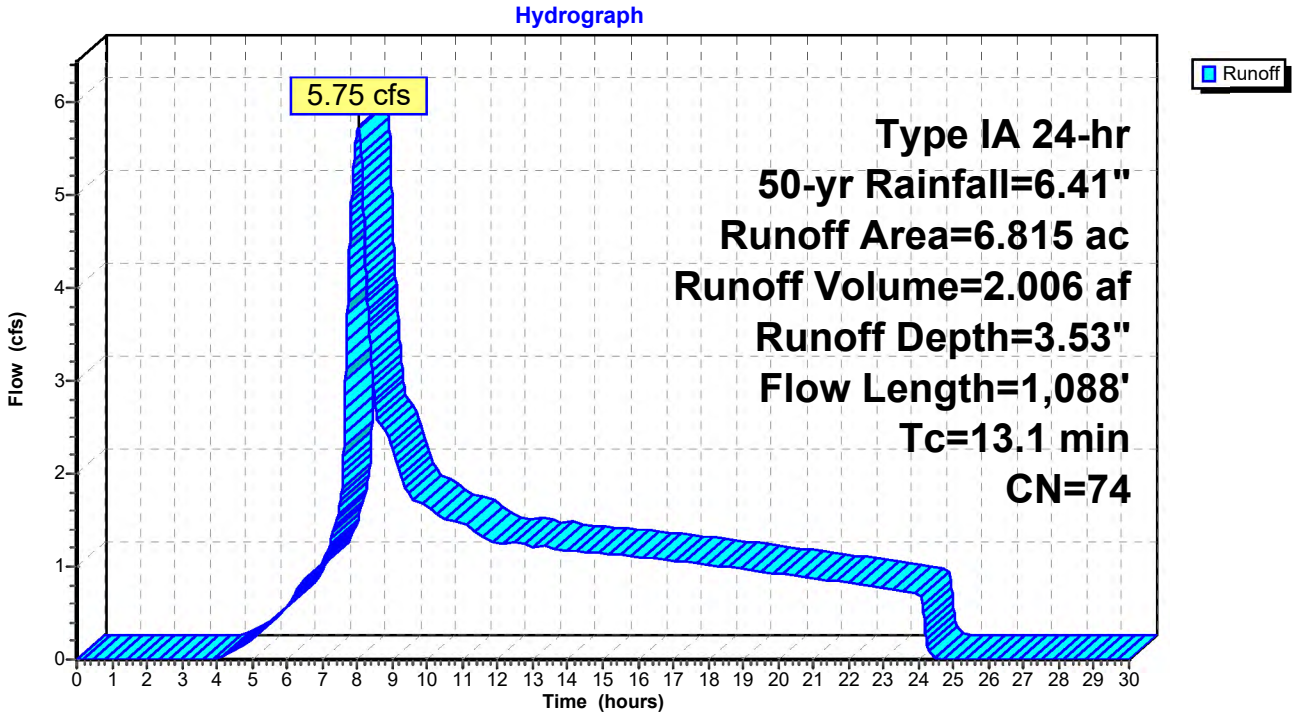
Runoff = 5.75 cfs @ 8.05 hrs, Volume= 2.006 af, Depth= 3.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=6.41"

Area (ac)	CN	Description
0.890	69	Annual Grass, Fair, HSG B
2.181	79	Annual Grass, Fair, HSG C
0.064	56	Brush, Fair, HSG B
0.103	70	Brush, Fair, HSG C
0.054	82	Farmsteads, HSG C
0.107	60	Woods, Fair, HSG B
3.416	73	Woods, Fair, HSG C
6.815	74	Weighted Average
6.815		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.1800	0.19		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
0.7	133	0.3500	2.96		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
1.1	236	0.2600	3.57		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
2.3	619	0.0100	4.51	54.17	**Trap/Vee/Rect Channel Flow, Ditch (Wappo)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
13.1	1,088	Total			

Subcatchment WS-3A: Subcat WS-3A



Summary for Subcatchment WS-3B: Subcat WS-3B

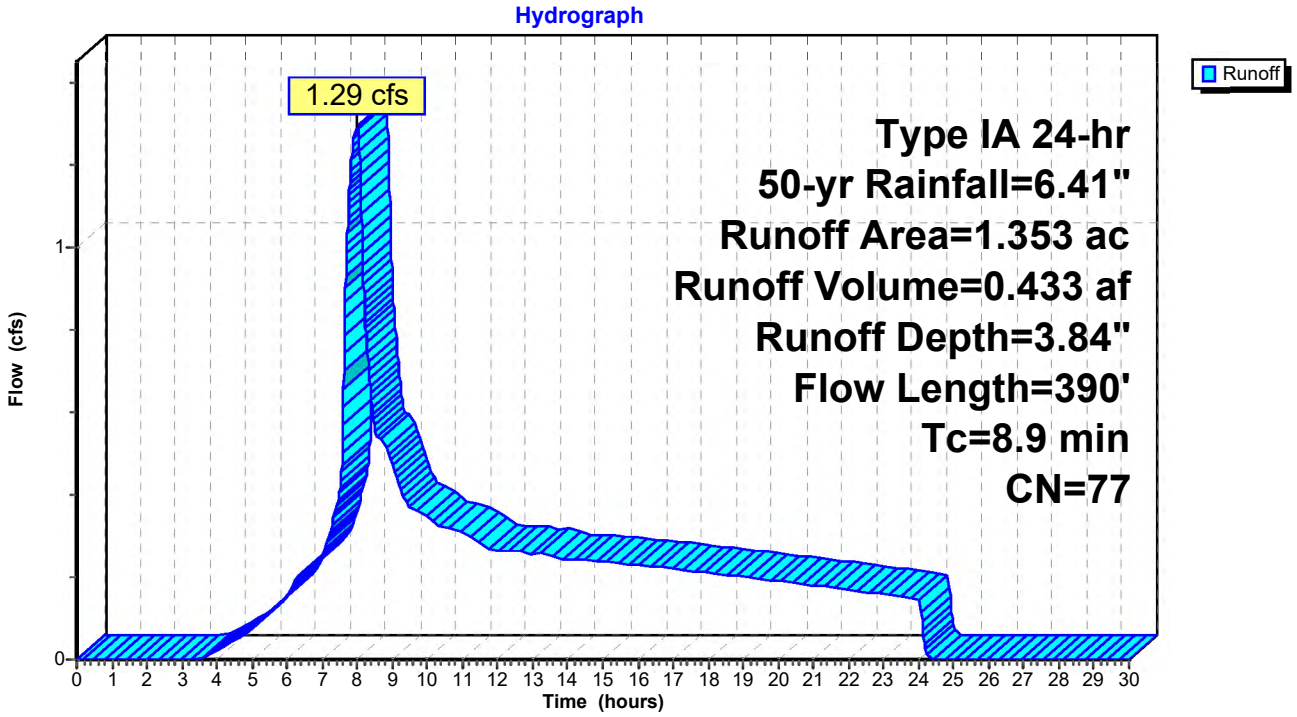
Runoff = 1.29 cfs @ 8.00 hrs, Volume= 0.433 af, Depth= 3.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=6.41"

Area (ac)	CN	Description
0.109	69	Annual Grass, Fair, HSG B
0.169	79	Annual Grass, Fair, HSG C
0.035	70	Brush, Fair, HSG C
0.478	82	Farmsteads, HSG C
0.562	73	Woods, Fair, HSG C
1.353	77	Weighted Average
1.353		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.2900	0.23		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
0.6	116	0.3800	3.08		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.7	145	0.2600	3.57		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.2	29	0.0100	2.74	3.36	**Pipe Channel, 15" CMP Culvert** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.025 Corrugated metal
8.9	390	Total			

Subcatchment WS-3B: Subcat WS-3B



Summary for Subcatchment WS-4: Subcat WS-4

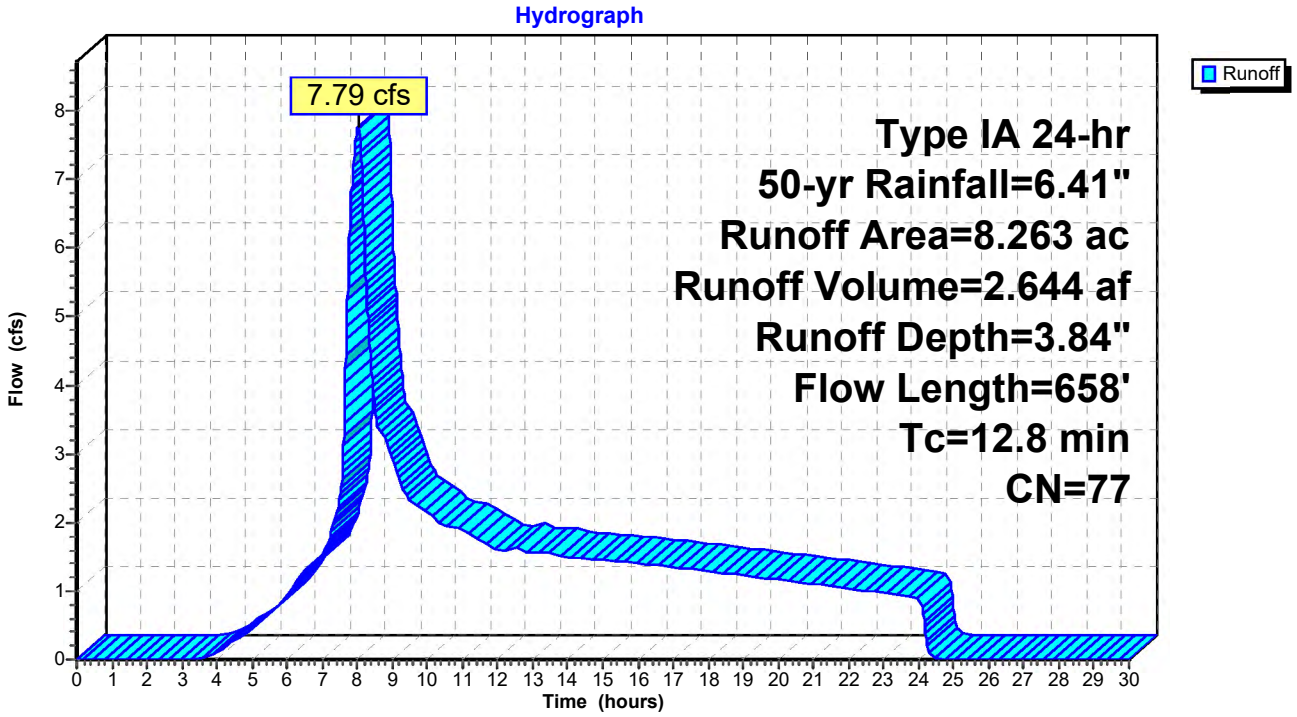
Runoff = 7.79 cfs @ 8.04 hrs, Volume= 2.644 af, Depth= 3.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=6.41"

Area (ac)	CN	Description
0.005	69	Annual Grass, Fair, HSG B
1.717	79	Annual Grass, Fair, HSG C
0.170	87	Dirt roads, HSG C
0.943	82	Farmsteads, HSG C
0.376	92	Paved roads w/open ditches, 50% imp, HSG C
0.173	61	Vineyard, Good, HSG B
1.748	75	Vineyard, Good, HSG C
3.133	73	Woods, Fair, HSG C
8.263	77	Weighted Average
8.075		97.72% Pervious Area
0.188		2.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.1900	0.19		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
4.0	558	0.1100	2.32		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
12.8	658	Total			

Subcatchment WS-4: Subcat WS-4



Summary for Subcatchment WS-5: Subcat WS-5

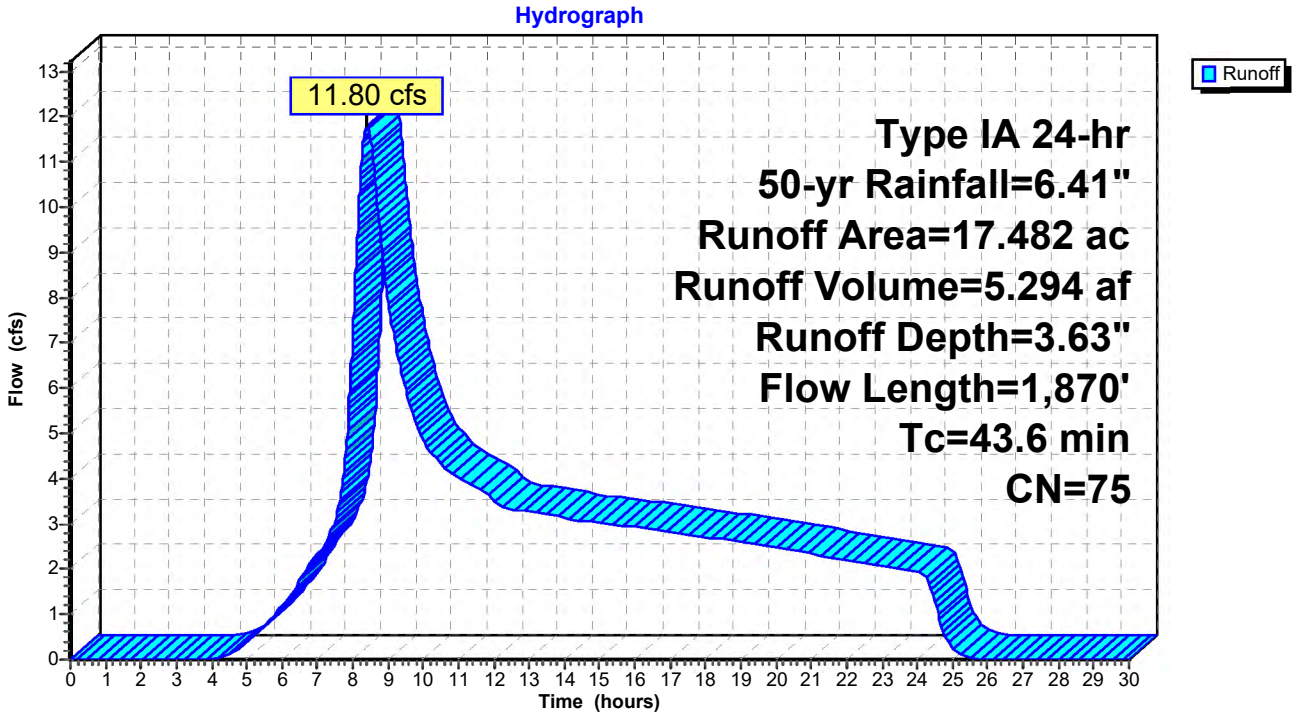
Runoff = 11.80 cfs @ 8.39 hrs, Volume= 5.294 af, Depth= 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=6.41"

Area (ac)	CN	Description
0.292	69	Annual Grass, Fair, HSG B
3.778	79	Annual Grass, Fair, HSG C
0.347	82	Dirt roads, HSG B
0.098	87	Dirt roads, HSG C
0.529	86	Fallow, bare soil, HSG B
0.460	91	Fallow, bare soil, HSG C
1.476	82	Farmsteads, HSG C
0.276	92	Paved roads w/open ditches, 50% imp, HSG C
7.201	69	Vineyard, Fair, HSG B
0.459	79	Vineyard, Fair, HSG C
0.175	75	Vineyard, Good, HSG C
2.390	73	Woods, Fair, HSG C
17.482	75	Weighted Average
17.344		99.21% Pervious Area
0.138		0.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.1800	0.19		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
2.1	404	0.2200	3.28		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
32.5	1,366	0.0100	0.70		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
43.6	1,870	Total			

Subcatchment WS-5: Subcat WS-5



Summary for Subcatchment WS-1A: Subcat WS-1A

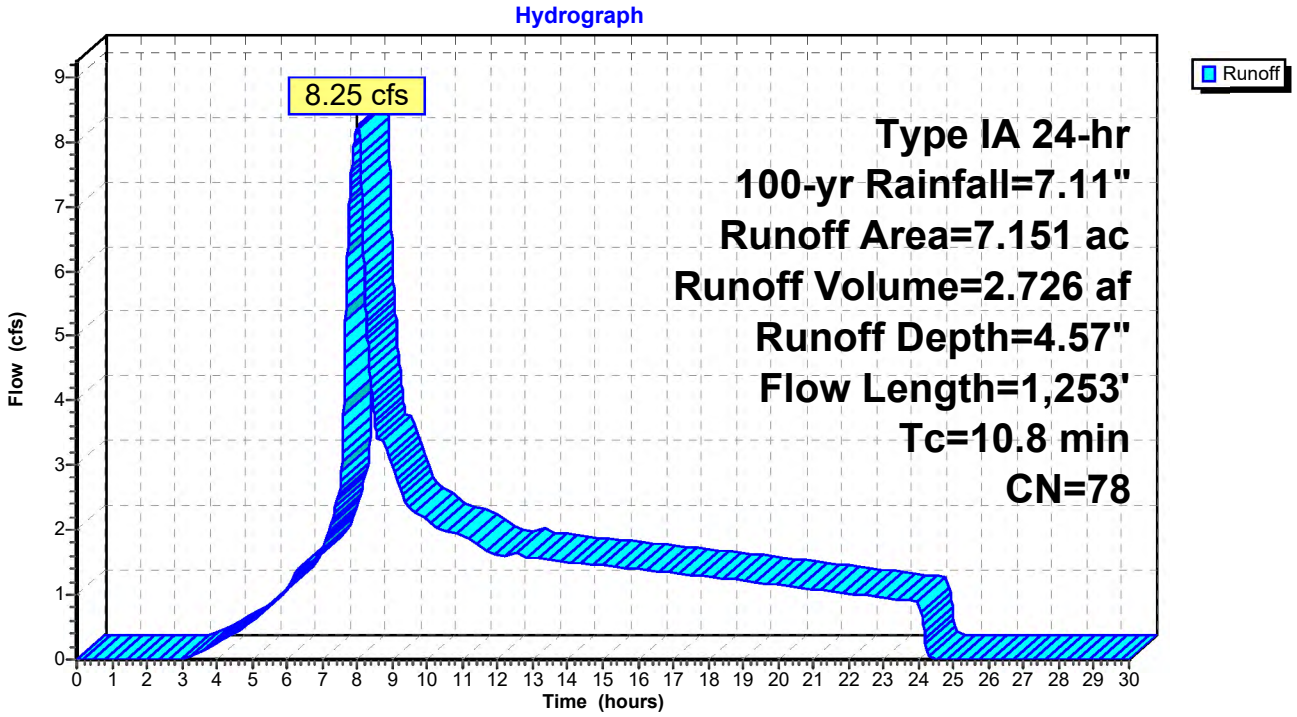
Runoff = 8.25 cfs @ 8.01 hrs, Volume= 2.726 af, Depth= 4.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=7.11"

Area (ac)	CN	Description
5.373	79	Annual Grass, Fair, HSG C
1.778	73	Woods, Fair, HSG C
7.151	78	Weighted Average
7.151		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.2800	0.22		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
1.2	265	0.3000	3.83		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
1.0	172	0.3600	3.00		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.4	116	0.5500	5.19		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.4	520	0.2800	23.89	286.66	**Trap/Vee/Rect Channel Flow, Ditch (WRA)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
0.3	80	0.0100	4.51	54.17	**Trap/Vee/Rect Channel Flow, Ditch (Wappo)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
10.8	1,253	Total			

Subcatchment WS-1A: Subcat WS-1A



Summary for Subcatchment WS-1B: Subcat WS-1B

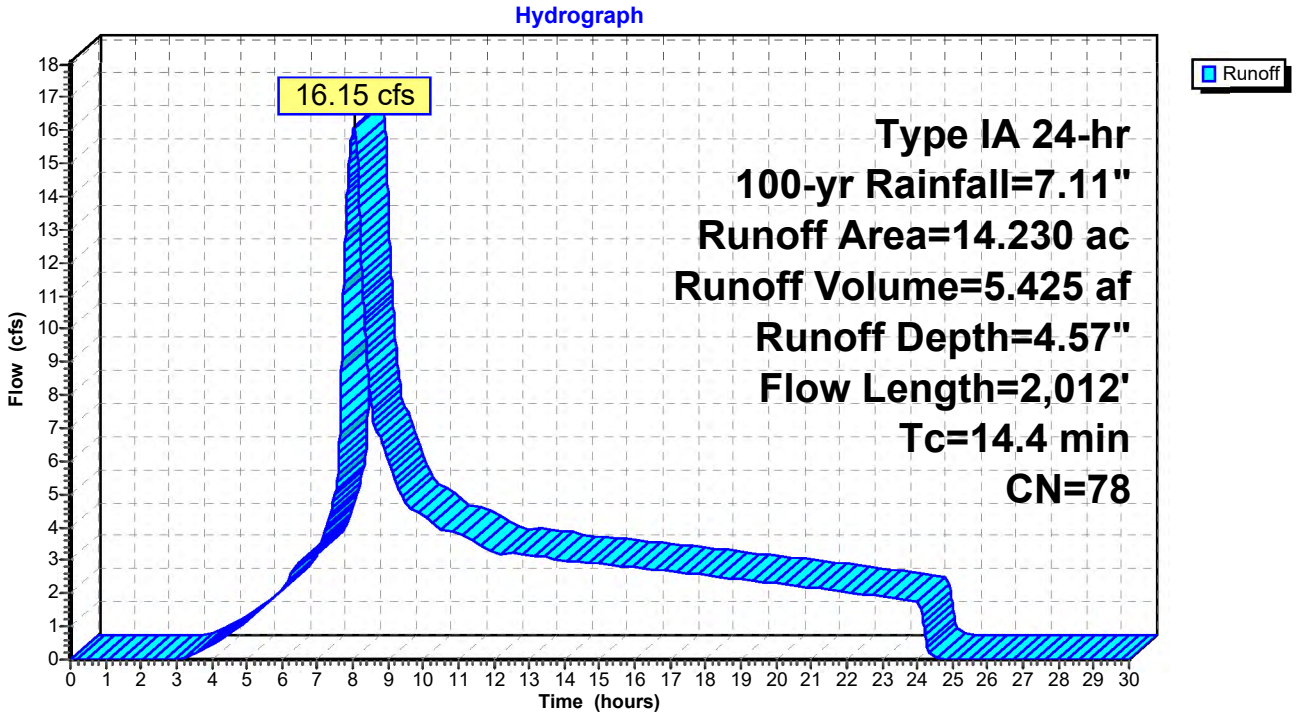
Runoff = 16.15 cfs @ 8.05 hrs, Volume= 5.425 af, Depth= 4.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=7.11"

Area (ac)	CN	Description
11.114	79	Annual Grass, Fair, HSG C
0.233	70	Brush, Fair, HSG C
0.167	92	Paved roads w/open ditches, 50% imp, HSG C
0.930	73	Woods, Fair, HSG C
1.786	76	Woods/grass comb., Fair, HSG C
14.230	78	Weighted Average
14.147		99.41% Pervious Area
0.084		0.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.1000	0.22		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
2.8	590	0.2600	3.57		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.2	261	0.2000	20.19	242.28	**Trap/Vee/Rect Channel Flow, Swale** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
3.9	1,061	0.0100	4.51	54.17	**Trap/Vee/Rect Channel Flow, Ditch (Wappo)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
14.4	2,012	Total			

Subcatchment WS-1B: Subcat WS-1B



Summary for Subcatchment WS-1C: Subcat WS-1C

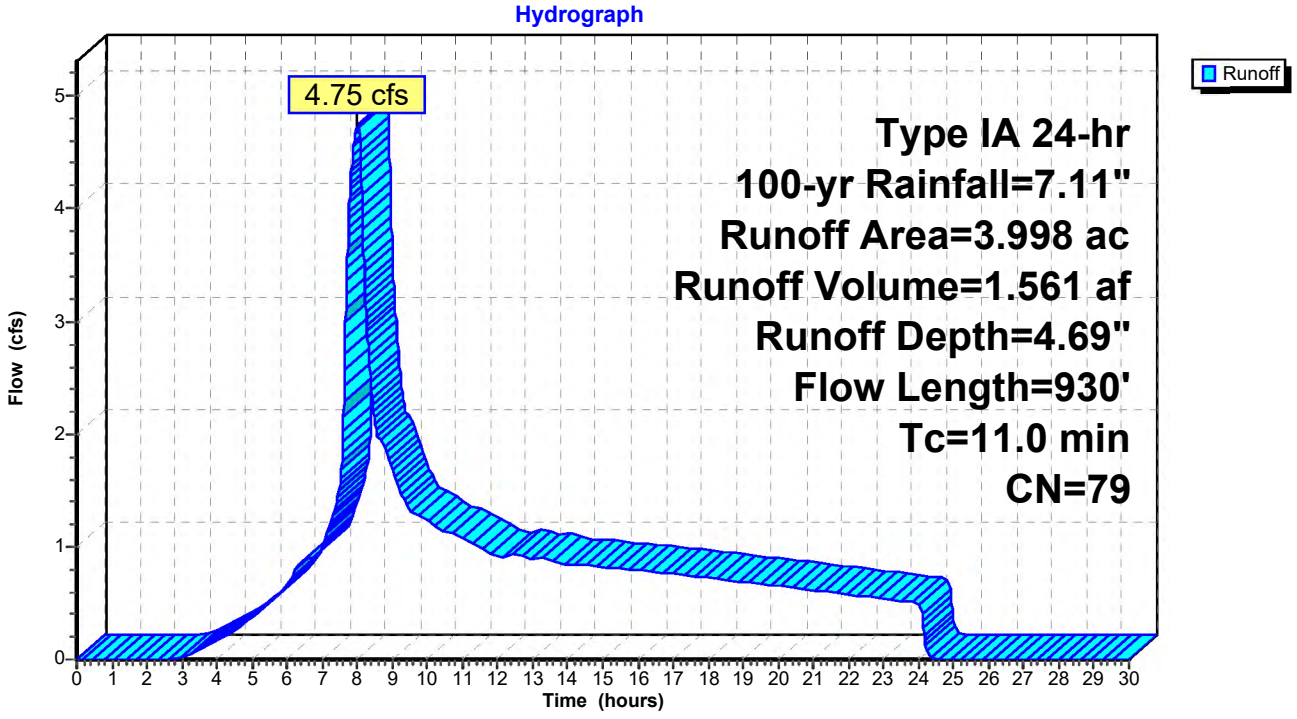
Runoff = 4.75 cfs @ 8.01 hrs, Volume= 1.561 af, Depth= 4.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=7.11"

Area (ac)	CN	Description
3.763	79	Annual Grass, Fair, HSG C
0.160	73	Woods, Fair, HSG C
0.076	76	Woods/grass comb., Fair, HSG C
3.998	79	Weighted Average
3.998		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.2800	0.22		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
3.5	830	0.3100	3.90		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
11.0	930	Total			

Subcatchment WS-1C: Subcat WS-1C



Summary for Subcatchment WS-1D: Subcat WS-1D

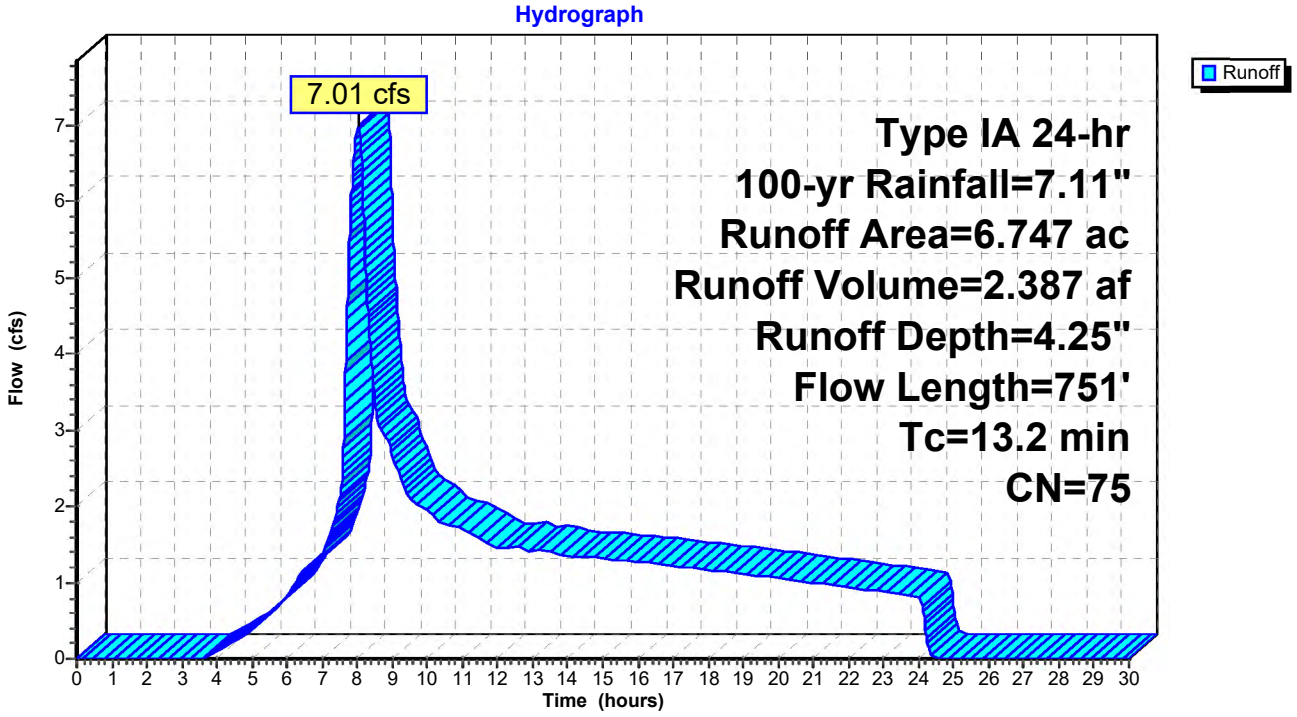
Runoff = 7.01 cfs @ 8.05 hrs, Volume= 2.387 af, Depth= 4.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=7.11"

Area (ac)	CN	Description
0.343	79	Annual Grass, Fair, HSG C
0.229	87	Dirt roads, HSG C
0.475	82	Farmsteads, HSG C
0.050	92	Paved roads w/open ditches, 50% imp, HSG C
2.808	69	Vineyard, Fair, HSG B
2.087	79	Vineyard, Fair, HSG C
0.755	73	Woods, Fair, HSG C
6.747	75	Weighted Average
6.721		99.63% Pervious Area
0.025		0.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	100	0.2300	0.31		**Sheet Flow, Sheet Flow** Grass: Dense n= 0.240 P2= 3.17"
7.8	651	0.0400	1.40		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
13.2	751	Total			

Subcatchment WS-1D: Subcat WS-1D



Summary for Subcatchment WS-2A: Subcat WS-2A

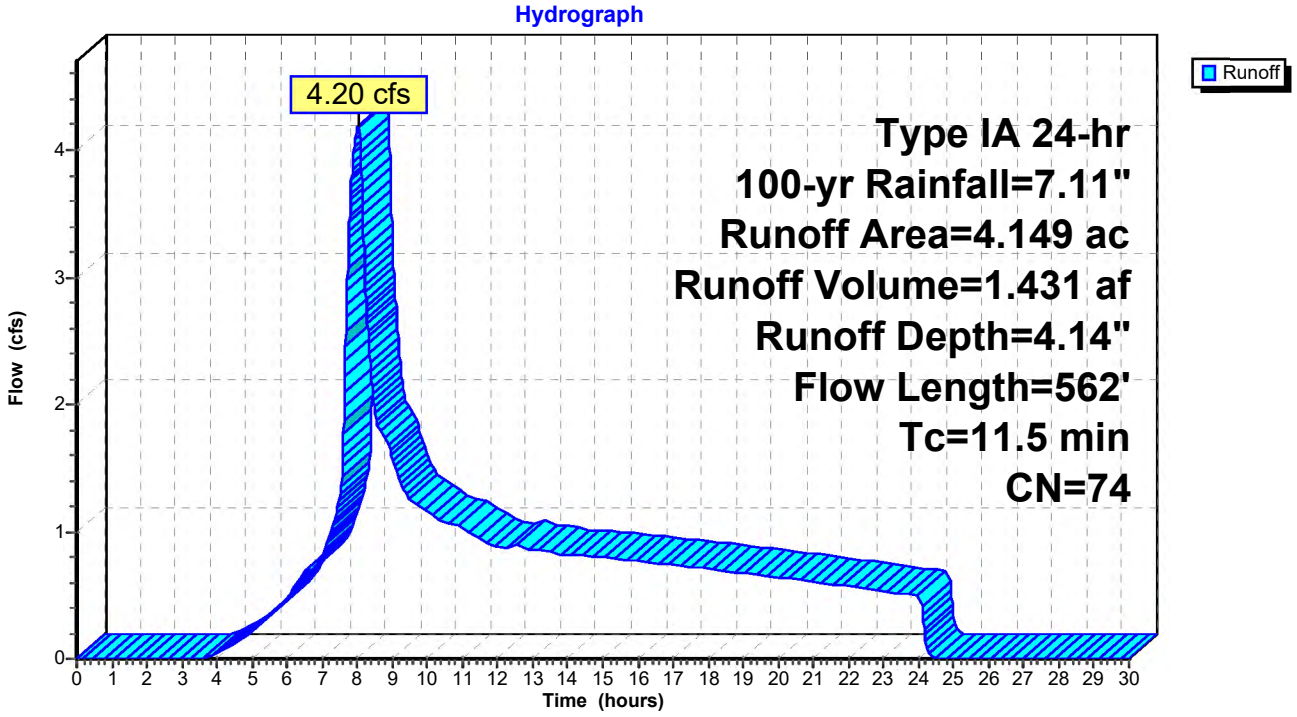
Runoff = 4.20 cfs @ 8.03 hrs, Volume= 1.431 af, Depth= 4.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=7.11"

Area (ac)	CN	Description
0.753	79	Annual Grass, Fair, HSG C
0.086	75	Vineyard, Good, HSG C
3.310	73	Woods, Fair, HSG C
4.149	74	Weighted Average
4.149		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0600	0.18		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
0.9	157	0.1900	3.05		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
1.3	219	0.3200	2.83		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.1	86	0.1000	14.28	171.31	**Trap/Vee/Rect Channel Flow, Ditch (WRA)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
11.5	562	Total			

Subcatchment WS-2A: Subcat WS-2A



Summary for Subcatchment WS-2B: Subcat WS-2B

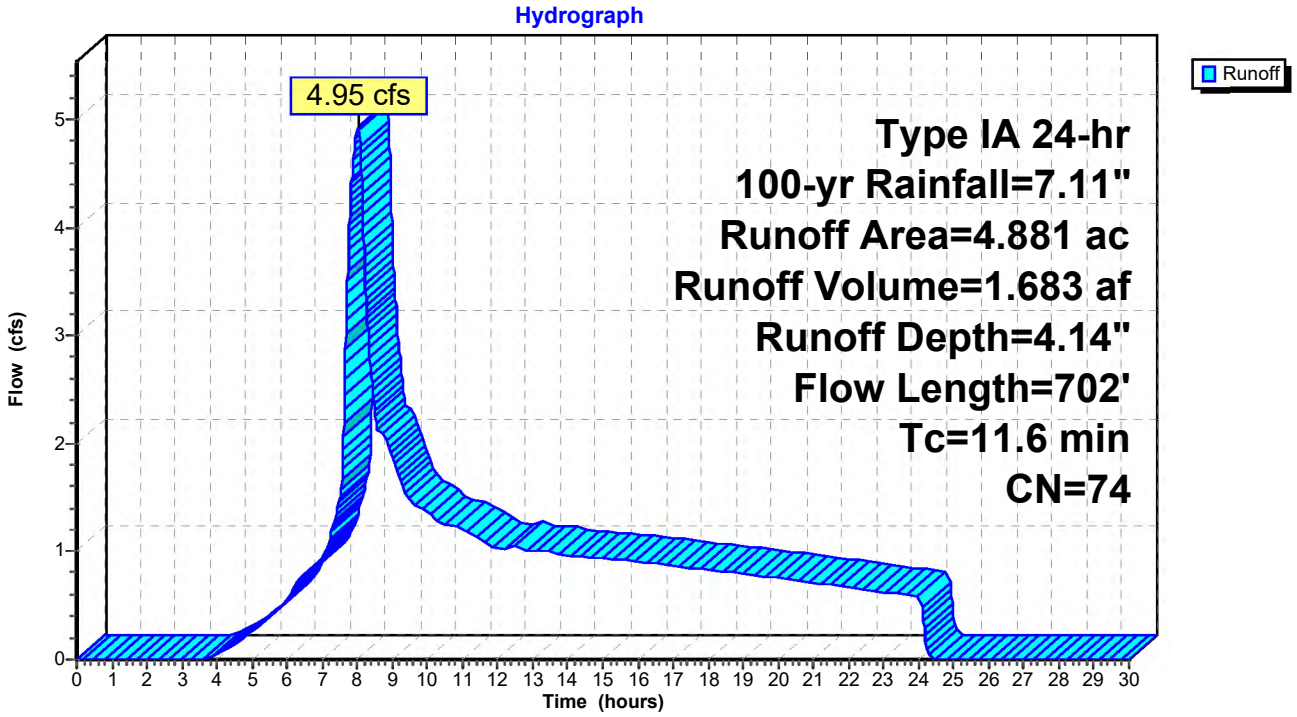
Runoff = 4.95 cfs @ 8.03 hrs, Volume= 1.683 af, Depth= 4.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=7.11"

Area (ac)	CN	Description
0.161	69	Annual Grass, Fair, HSG B
0.963	79	Annual Grass, Fair, HSG C
0.055	70	Brush, Fair, HSG C
0.166	75	Vineyard, Good, HSG C
0.003	60	Woods, Fair, HSG B
3.533	73	Woods, Fair, HSG C
4.881	74	Weighted Average
4.881		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0600	0.18		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
0.8	105	0.1100	2.32		**Shallow Concentrated Flow, Short Grass** Short Grass Pasture Kv= 7.0 fps
1.4	200	0.2400	2.45		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.2	297	0.2200	21.18	254.10	**Trap/Vee/Rect Channel Flow, Ditch (WRA)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
11.6	702	Total			

Subcatchment WS-2B: Subcat WS-2B



Summary for Subcatchment WS-2C: Subcat WS-2C

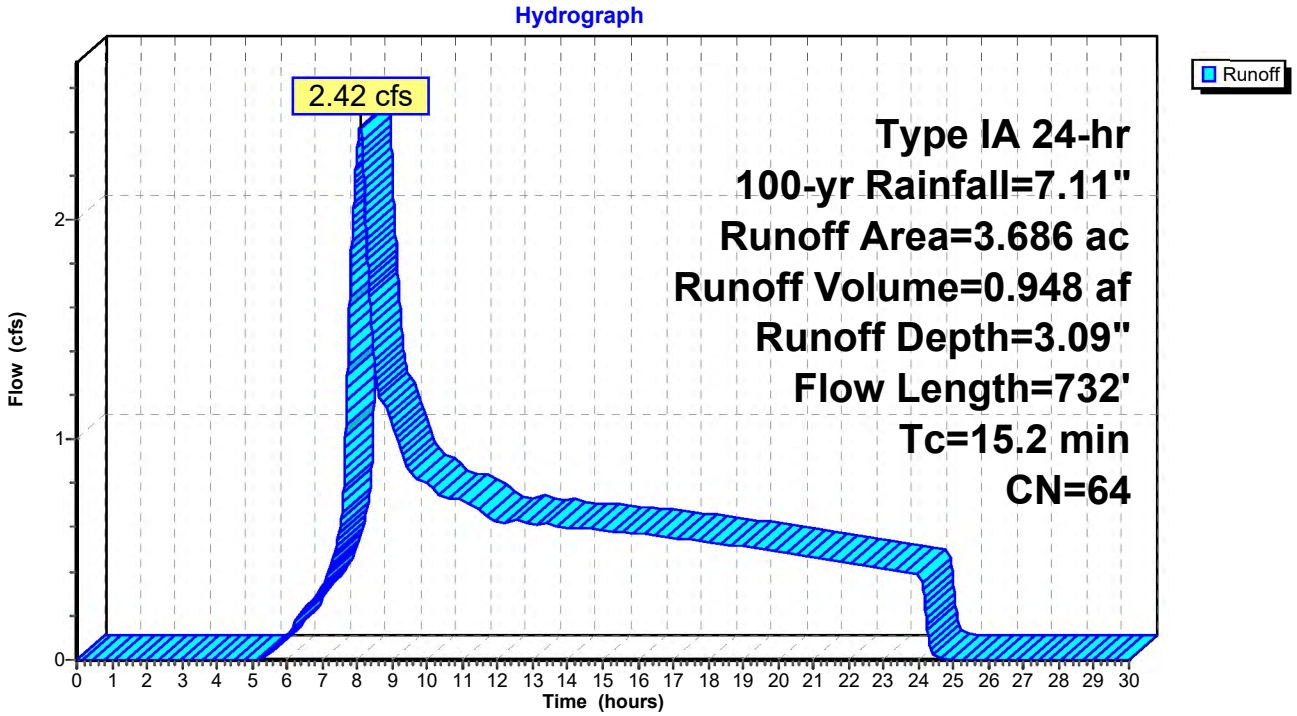
Runoff = 2.42 cfs @ 8.09 hrs, Volume= 0.948 af, Depth= 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=7.11"

Area (ac)	CN	Description
0.294	69	Annual Grass, Fair, HSG B
0.335	79	Annual Grass, Fair, HSG C
0.117	82	Dirt roads, HSG B
0.009	87	Dirt roads, HSG C
2.801	61	Vineyard, Good, HSG B
0.000	75	Vineyard, Good, HSG C
0.131	73	Woods, Fair, HSG C
3.686	64	Weighted Average
3.686		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	100	0.2600	0.22		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
7.5	632	0.0400	1.40		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
15.2	732	Total			

Subcatchment WS-2C: Subcat WS-2C



Summary for Subcatchment WS-3A: Subcat WS-3A

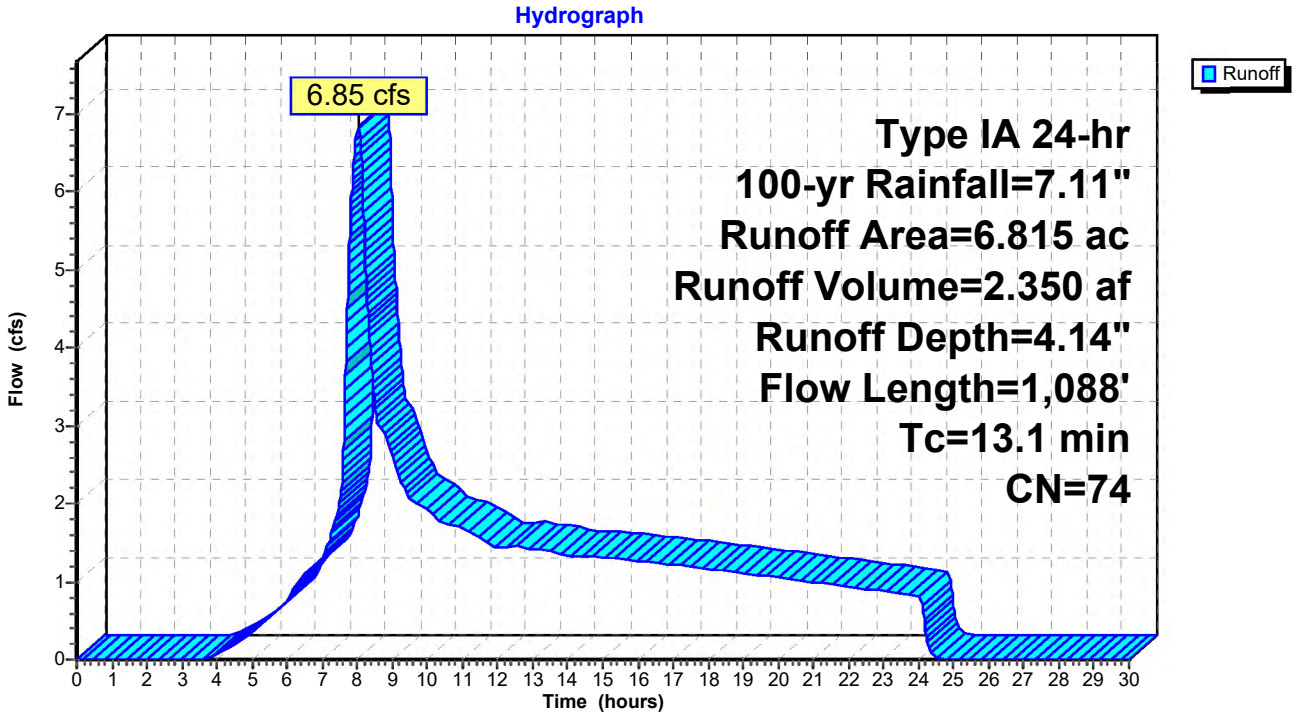
Runoff = 6.85 cfs @ 8.05 hrs, Volume= 2.350 af, Depth= 4.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=7.11"

Area (ac)	CN	Description
0.890	69	Annual Grass, Fair, HSG B
2.181	79	Annual Grass, Fair, HSG C
0.064	56	Brush, Fair, HSG B
0.103	70	Brush, Fair, HSG C
0.054	82	Farmsteads, HSG C
0.107	60	Woods, Fair, HSG B
3.416	73	Woods, Fair, HSG C
6.815	74	Weighted Average
6.815		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.1800	0.19		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
0.7	133	0.3500	2.96		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
1.1	236	0.2600	3.57		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
2.3	619	0.0100	4.51	54.17	**Trap/Vee/Rect Channel Flow, Ditch (Wappo)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
13.1	1,088	Total			

Subcatchment WS-3A: Subcat WS-3A



Summary for Subcatchment WS-3B: Subcat WS-3B

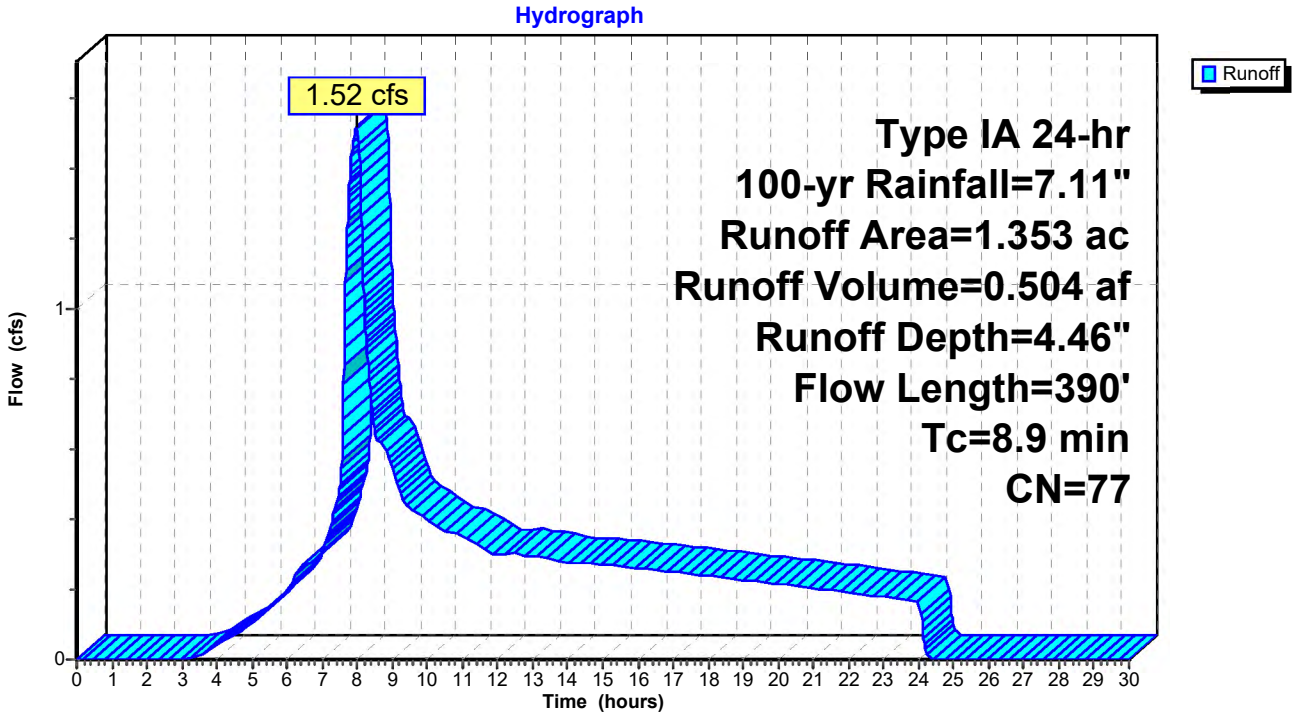
Runoff = 1.52 cfs @ 7.98 hrs, Volume= 0.504 af, Depth= 4.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=7.11"

Area (ac)	CN	Description
0.109	69	Annual Grass, Fair, HSG B
0.169	79	Annual Grass, Fair, HSG C
0.035	70	Brush, Fair, HSG C
0.478	82	Farmsteads, HSG C
0.562	73	Woods, Fair, HSG C
1.353	77	Weighted Average
1.353		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.2900	0.23		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
0.6	116	0.3800	3.08		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.7	145	0.2600	3.57		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.2	29	0.0100	2.74	3.36	**Pipe Channel, 15" CMP Culvert** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.025 Corrugated metal
8.9	390	Total			

Subcatchment WS-3B: Subcat WS-3B



Summary for Subcatchment WS-4: Subcat WS-4

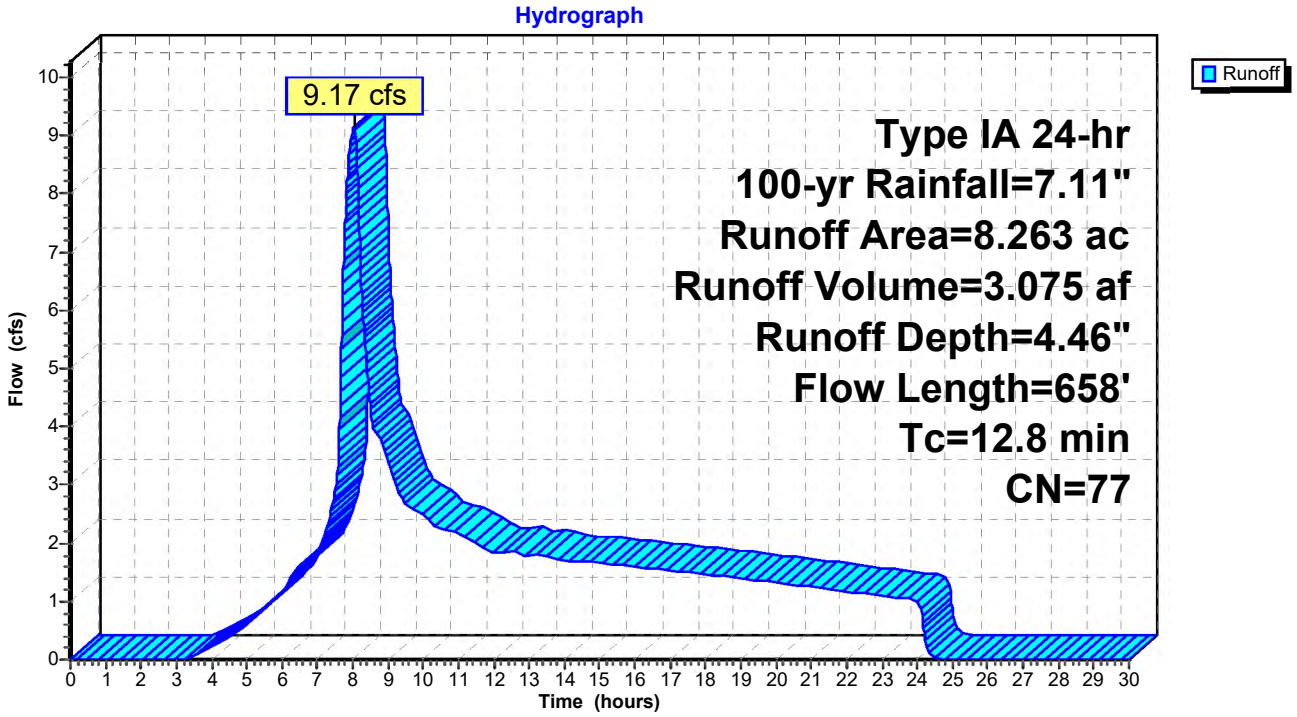
Runoff = 9.17 cfs @ 8.03 hrs, Volume= 3.075 af, Depth= 4.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=7.11"

Area (ac)	CN	Description
0.005	69	Annual Grass, Fair, HSG B
1.717	79	Annual Grass, Fair, HSG C
0.170	87	Dirt roads, HSG C
0.943	82	Farmsteads, HSG C
0.376	92	Paved roads w/open ditches, 50% imp, HSG C
0.173	61	Vineyard, Good, HSG B
1.748	75	Vineyard, Good, HSG C
3.133	73	Woods, Fair, HSG C
8.263	77	Weighted Average
8.075		97.72% Pervious Area
0.188		2.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.1900	0.19		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
4.0	558	0.1100	2.32		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
12.8	658	Total			

Subcatchment WS-4: Subcat WS-4



Summary for Subcatchment WS-5: Subcat WS-5

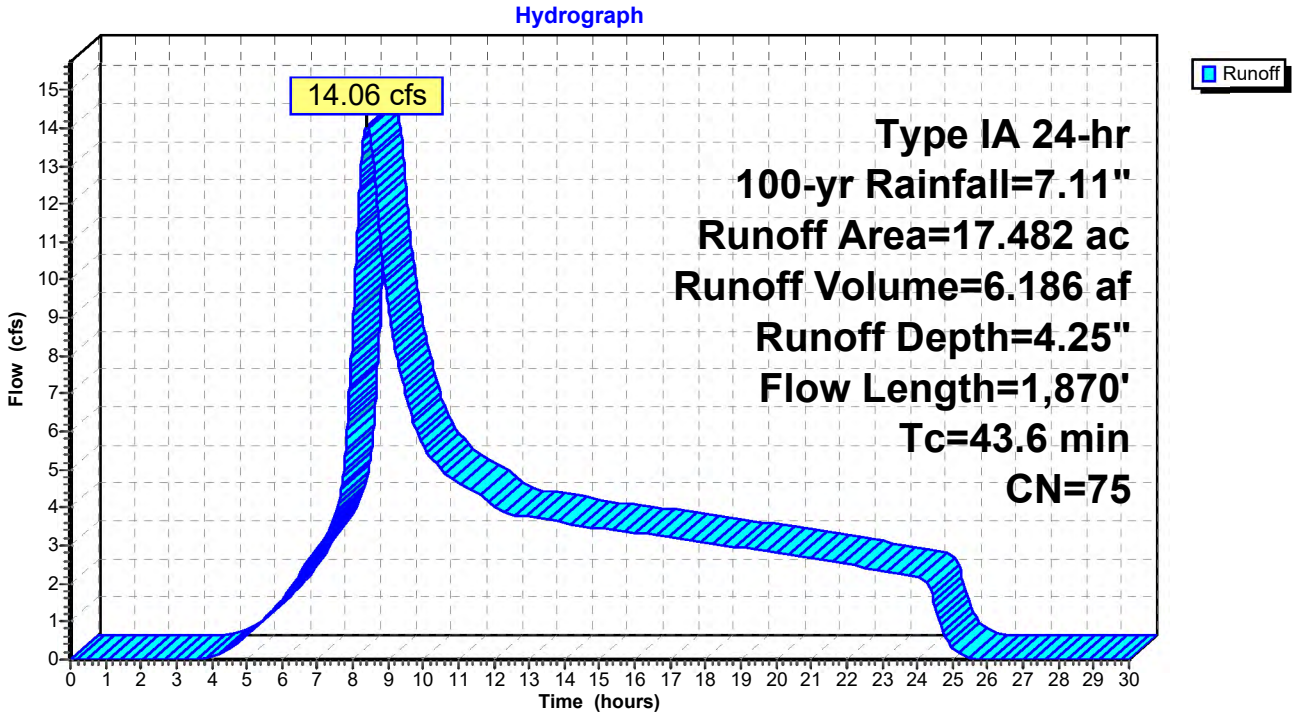
Runoff = 14.06 cfs @ 8.39 hrs, Volume= 6.186 af, Depth= 4.25"

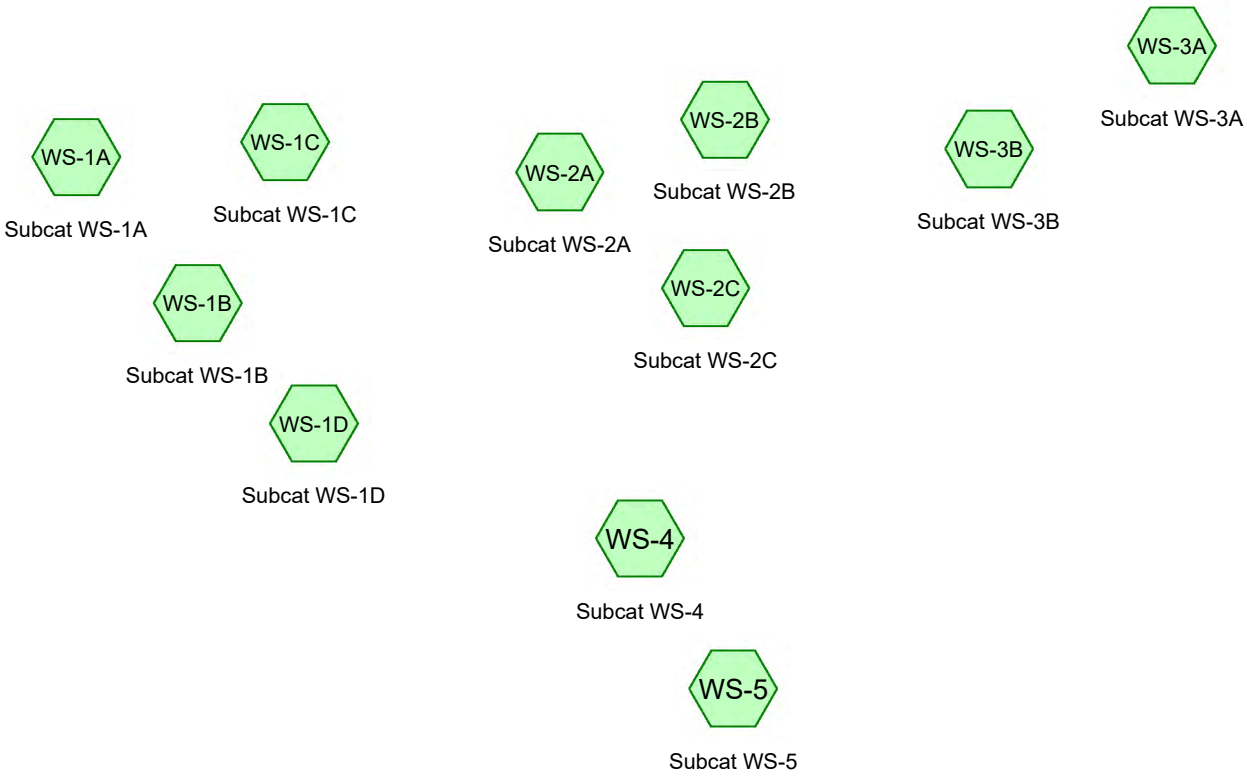
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=7.11"

Area (ac)	CN	Description
0.292	69	Annual Grass, Fair, HSG B
3.778	79	Annual Grass, Fair, HSG C
0.347	82	Dirt roads, HSG B
0.098	87	Dirt roads, HSG C
0.529	86	Fallow, bare soil, HSG B
0.460	91	Fallow, bare soil, HSG C
1.476	82	Farmsteads, HSG C
0.276	92	Paved roads w/open ditches, 50% imp, HSG C
7.201	69	Vineyard, Fair, HSG B
0.459	79	Vineyard, Fair, HSG C
0.175	75	Vineyard, Good, HSG C
2.390	73	Woods, Fair, HSG C
17.482	75	Weighted Average
17.344		99.21% Pervious Area
0.138		0.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.1800	0.19		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
2.1	404	0.2200	3.28		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
32.5	1,366	0.0100	0.70		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
43.6	1,870	Total			

Subcatchment WS-5: Subcat WS-5





Subcat Reach Pond Link

Routing Diagram for Post-Project
Prepared by PPI Engineering, Printed 8/8/2024
HydroCAD® 10.20-4a s/n 09429 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment WS-1A: Subcat WS-1A

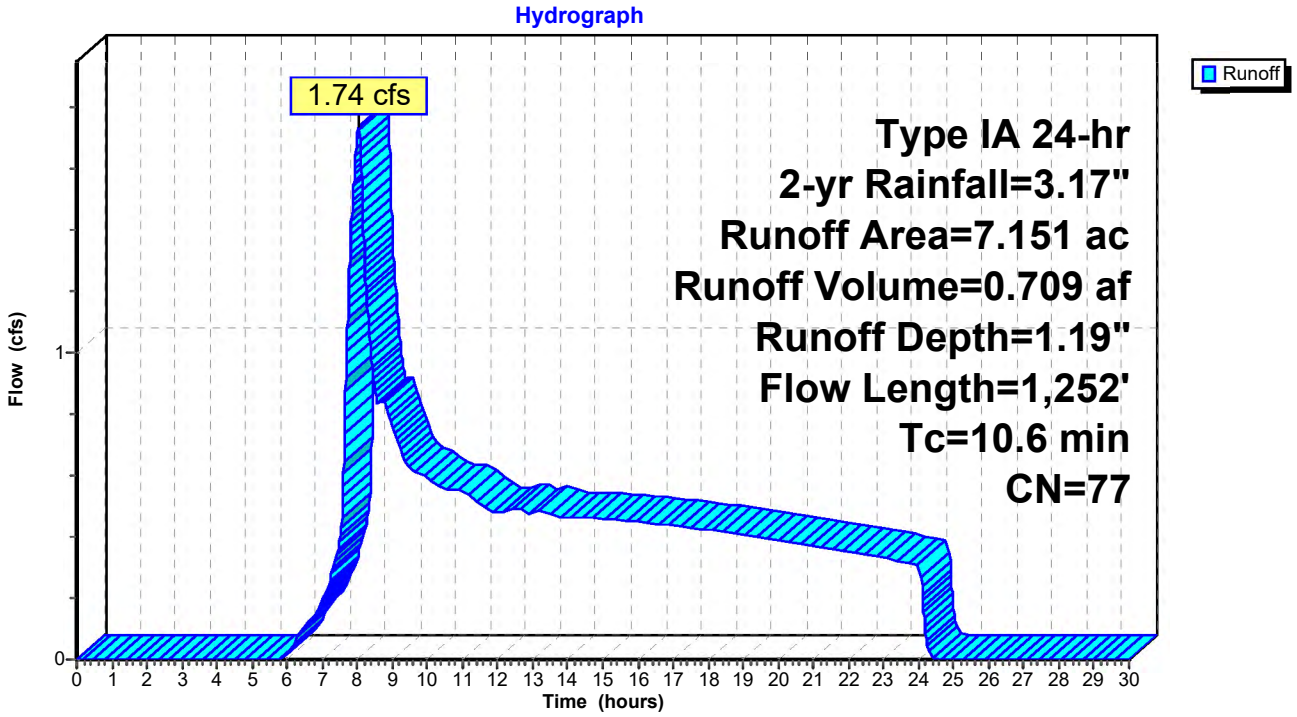
Runoff = 1.74 cfs @ 8.04 hrs, Volume= 0.709 af, Depth= 1.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.17"

Area (ac)	CN	Description
4.489	79	Annual Grass, Fair, HSG C
0.965	75	Vineyard, Good, HSG C
1.697	73	Woods, Fair, HSG C
7.151	77	Weighted Average
7.151		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.2800	0.22		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
1.4	326	0.2900	3.77		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.6	110	0.4400	3.32		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.4	116	0.5500	5.19		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.4	520	0.2800	23.89	286.66	**Trap/Vee/Rect Channel Flow, Channel (WRA)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
0.3	80	0.0100	4.51	54.17	**Trap/Vee/Rect Channel Flow, Ditch (Wappo)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
10.6	1,252	Total			

Subcatchment WS-1A: Subcat WS-1A



Summary for Subcatchment WS-1B: Subcat WS-1B

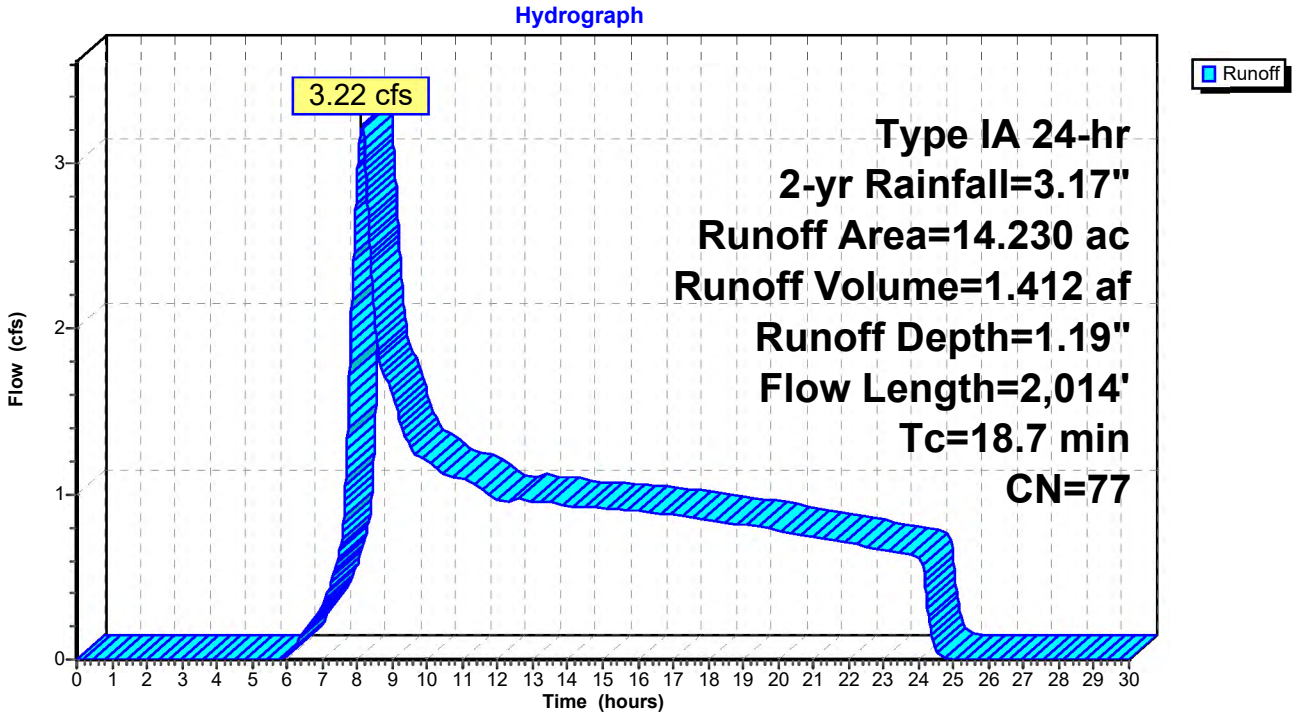
Runoff = 3.22 cfs @ 8.12 hrs, Volume= 1.412 af, Depth= 1.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.17"

Area (ac)	CN	Description
7.663	79	Annual Grass, Fair, HSG C
0.233	70	Brush, Fair, HSG C
0.167	92	Paved roads w/open ditches, 50% imp, HSG C
4.048	75	Vineyard, Good, HSG C
0.930	73	Woods, Fair, HSG C
1.190	76	Woods/grass comb., Fair, HSG C
14.230	77	Weighted Average
14.147		99.41% Pervious Area
0.084		0.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.1000	0.22		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
1.4	288	0.2300	3.36		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.3	52	0.0100	2.62	10.47	**Trap/Vee/Rect Channel Flow, Insloped Ave.** Bot.W=0.00' D=1.00' Z= 5.0 & 3.0 '/' Top.W=8.00' n= 0.035
4.6	100	0.3400	0.36		**Sheet Flow, Sheet - Post Level Spreader** Grass: Dense n= 0.240 P2= 3.17"
0.8	180	0.3200	3.96		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.2	233	0.1900	19.68	236.14	**Trap/Vee/Rect Channel Flow, Swale** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
3.9	1,061	0.0100	4.51	54.17	**Trap/Vee/Rect Channel Flow, Ditch (Wappo)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
18.7	2,014	Total			

Subcatchment WS-1B: Subcat WS-1B



Summary for Subcatchment WS-1C: Subcat WS-1C

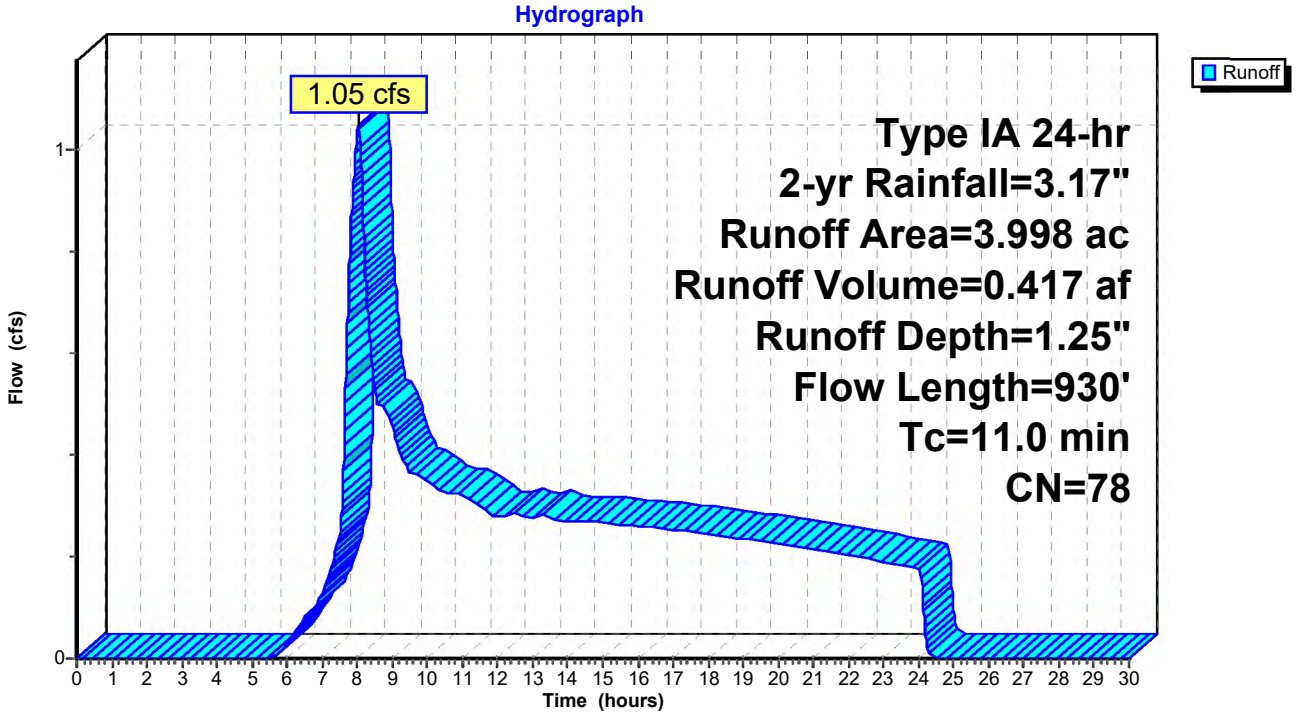
Runoff = 1.05 cfs @ 8.05 hrs, Volume= 0.417 af, Depth= 1.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.17"

Area (ac)	CN	Description
2.585	79	Annual Grass, Fair, HSG C
1.192	75	Vineyard, Good, HSG C
0.145	73	Woods, Fair, HSG C
0.076	76	Woods/grass comb., Fair, HSG C
3.998	78	Weighted Average
3.998		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.2800	0.22		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
3.5	830	0.3100	3.90		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
11.0	930	Total			

Subcatchment WS-1C: Subcat WS-1C



Summary for Subcatchment WS-1D: Subcat WS-1D

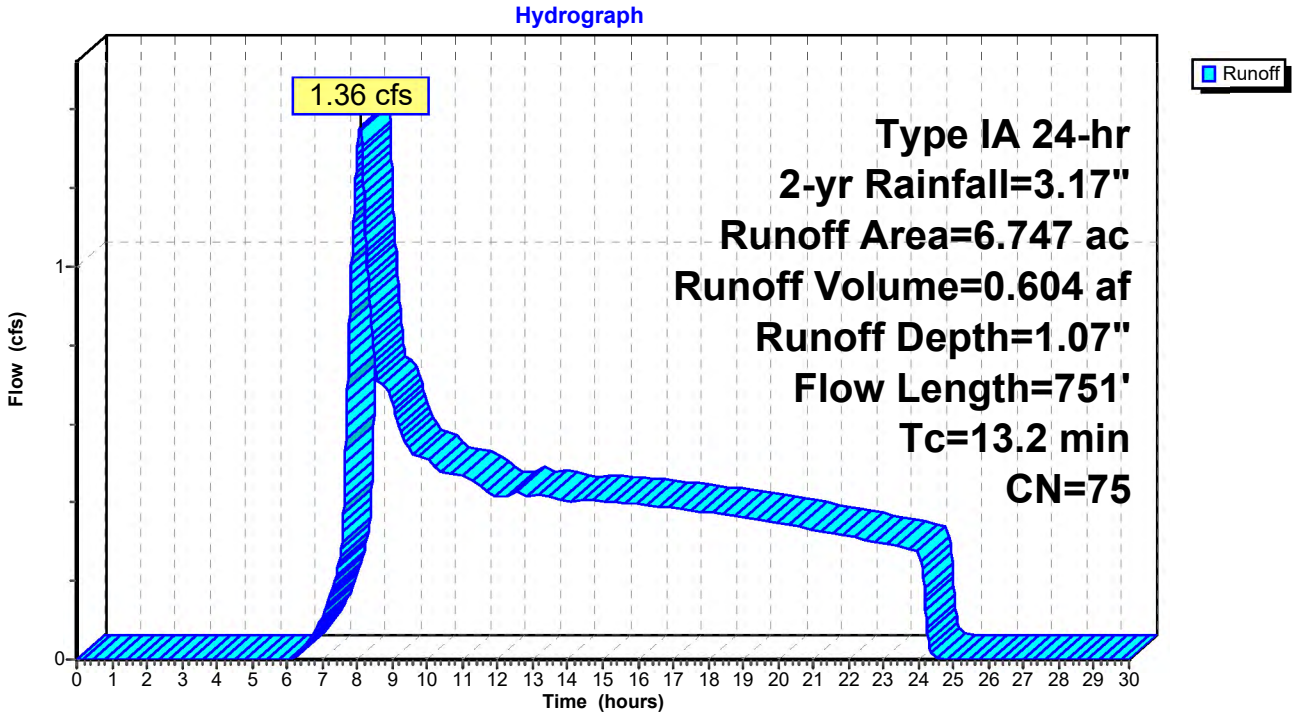
Runoff = 1.36 cfs @ 8.08 hrs, Volume= 0.604 af, Depth= 1.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.17"

Area (ac)	CN	Description
0.163	79	Annual Grass, Fair, HSG C
0.127	87	Dirt roads, HSG C
0.470	82	Farmsteads, HSG C
0.050	92	Paved roads w/open ditches, 50% imp, HSG C
2.803	69	Vineyard, Fair, HSG B
2.040	79	Vineyard, Fair, HSG C
0.005	61	Vineyard, Good, HSG B
0.665	75	Vineyard, Good, HSG C
0.424	73	Woods, Fair, HSG C
6.747	75	Weighted Average
6.721		99.63% Pervious Area
0.025		0.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	100	0.2300	0.31		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
7.8	651	0.0400	1.40		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
13.2	751	Total			

Subcatchment WS-1D: Subcat WS-1D



Summary for Subcatchment WS-2A: Subcat WS-2A

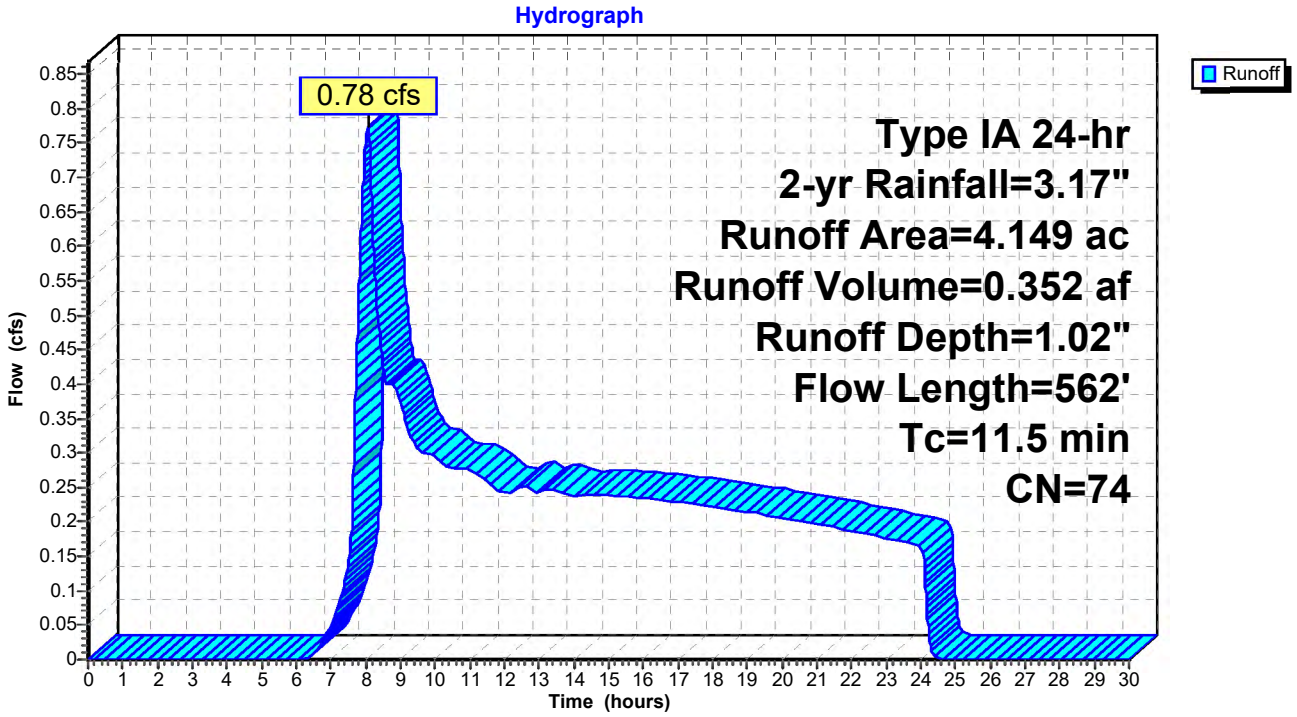
Runoff = 0.78 cfs @ 8.06 hrs, Volume= 0.352 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.17"

Area (ac)	CN	Description
0.251	79	Annual Grass, Fair, HSG C
0.086	79	Vineyard, Fair, HSG C
1.677	75	Vineyard, Good, HSG C
2.134	73	Woods, Fair, HSG C
4.149	74	Weighted Average
4.149		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0600	0.18		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
0.9	157	0.1900	3.05		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
1.3	219	0.3200	2.83		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.1	86	0.1000	14.28	171.31	**Trap/Vee/Rect Channel Flow, Ditch (WRA)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
11.5	562	Total			

Subcatchment WS-2A: Subcat WS-2A



Summary for Subcatchment WS-2B: Subcat WS-2B

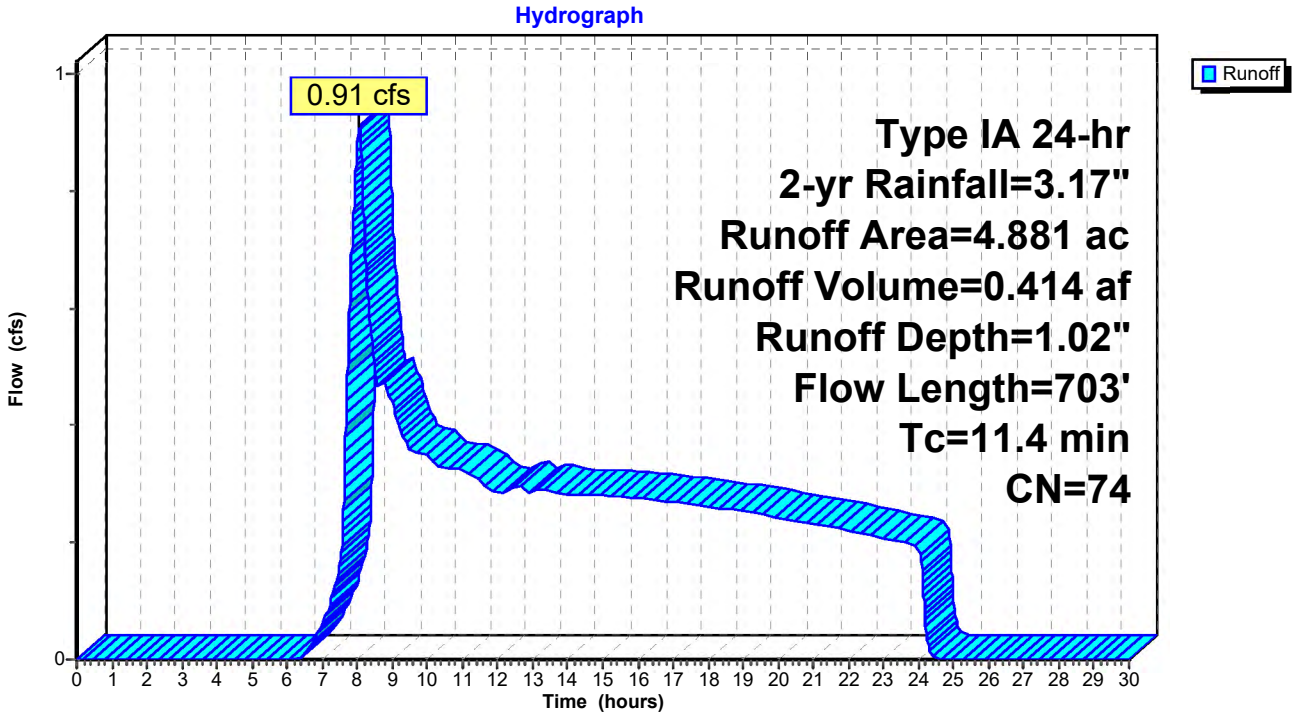
Runoff = 0.91 cfs @ 8.06 hrs, Volume= 0.414 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.17"

Area (ac)	CN	Description
0.161	69	Annual Grass, Fair, HSG B
0.521	79	Annual Grass, Fair, HSG C
0.008	70	Brush, Fair, HSG C
0.166	79	Vineyard, Fair, HSG C
1.897	75	Vineyard, Good, HSG C
0.003	60	Woods, Fair, HSG B
2.126	73	Woods, Fair, HSG C
4.881	74	Weighted Average
4.881		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0600	0.18		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
0.9	145	0.1400	2.62		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
1.1	161	0.2500	2.50		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.2	297	0.2200	21.18	254.10	**Trap/Vee/Rect Channel Flow, Ditch (WRA)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
11.4	703	Total			

Subcatchment WS-2B: Subcat WS-2B



Summary for Subcatchment WS-2C: Subcat WS-2C

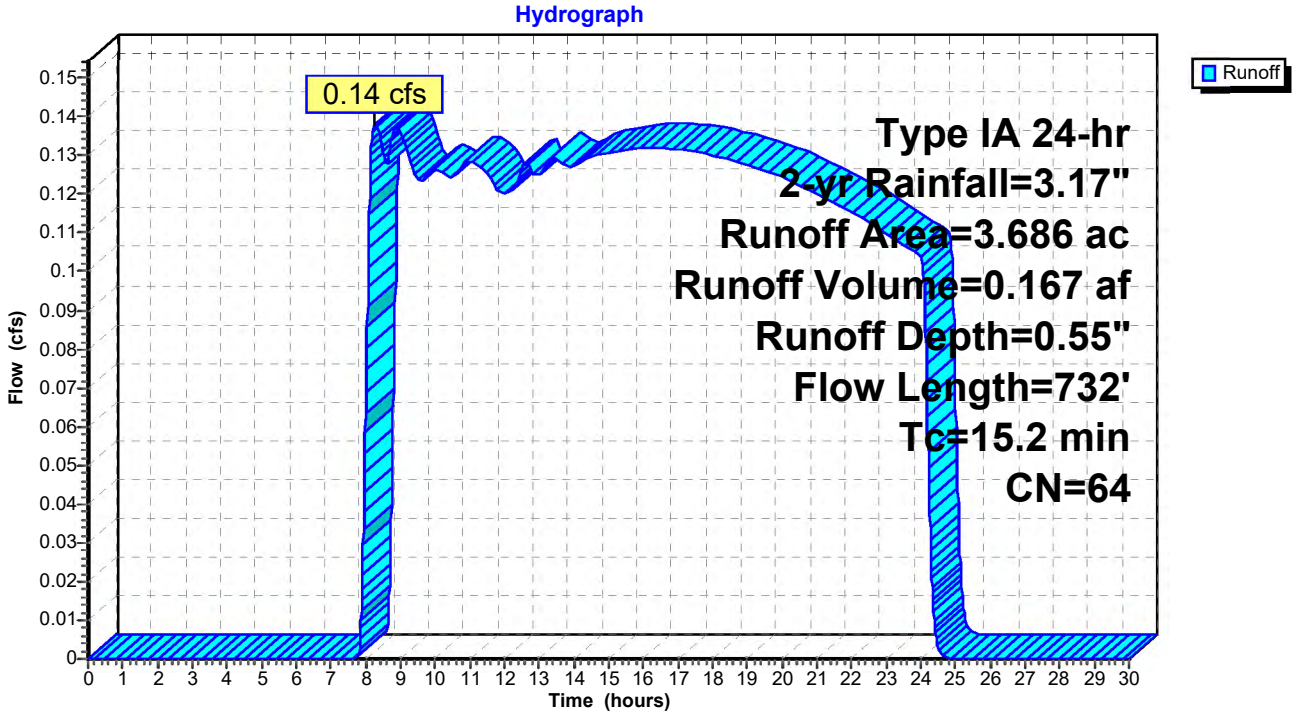
Runoff = 0.14 cfs @ 8.26 hrs, Volume= 0.167 af, Depth= 0.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.17"

Area (ac)	CN	Description
0.002	69	Annual Grass, Fair, HSG B
0.031	79	Annual Grass, Fair, HSG C
0.117	82	Dirt roads, HSG B
0.009	87	Dirt roads, HSG C
3.092	61	Vineyard, Good, HSG B
0.434	75	Vineyard, Good, HSG C
3.686	64	Weighted Average
3.686		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	100	0.2600	0.22		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
7.5	632	0.0400	1.40		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
15.2	732	Total			

Subcatchment WS-2C: Subcat WS-2C



Summary for Subcatchment WS-3A: Subcat WS-3A

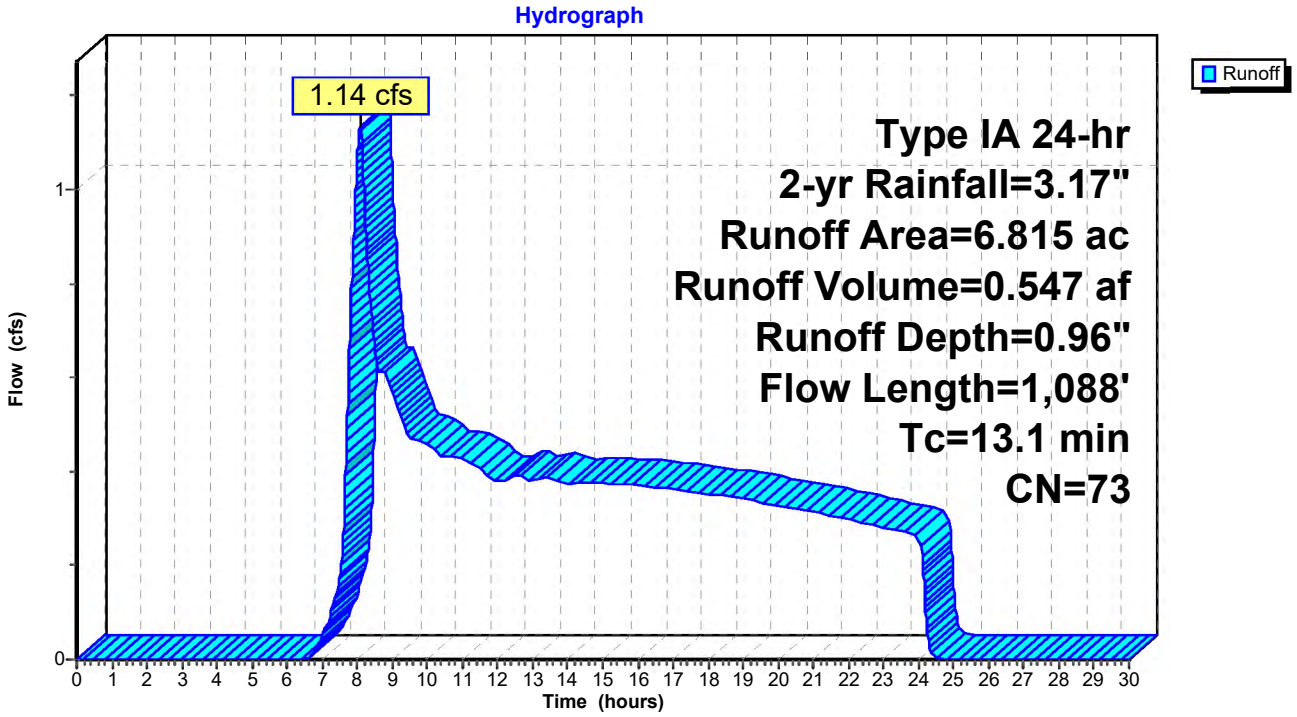
Runoff = 1.14 cfs @ 8.08 hrs, Volume= 0.547 af, Depth= 0.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.17"

Area (ac)	CN	Description
0.666	69	Annual Grass, Fair, HSG B
1.063	79	Annual Grass, Fair, HSG C
0.032	56	Brush, Fair, HSG B
0.035	70	Brush, Fair, HSG C
0.054	82	Farmsteads, HSG C
0.292	61	Vineyard, Good, HSG B
2.066	75	Vineyard, Good, HSG C
0.071	60	Woods, Fair, HSG B
2.537	73	Woods, Fair, HSG C
6.815	73	Weighted Average
6.815		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.1800	0.19		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
0.7	133	0.3500	2.96		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
1.1	236	0.2600	3.57		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
2.3	619	0.0100	4.51	54.17	**Trap/Vee/Rect Channel Flow, Ditch (Wappo)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
13.1	1,088	Total			

Subcatchment WS-3A: Subcat WS-3A



Summary for Subcatchment WS-3B: Subcat WS-3B

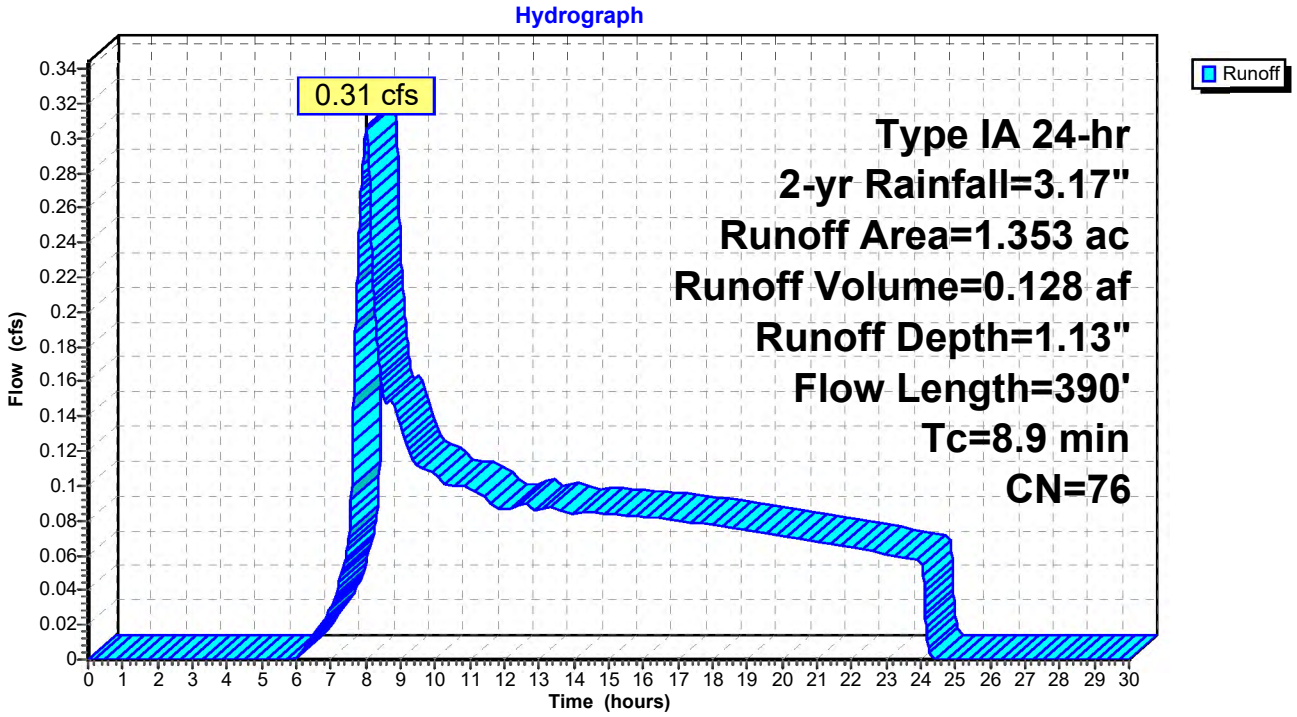
Runoff = 0.31 cfs @ 8.04 hrs, Volume= 0.128 af, Depth= 1.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.17"

Area (ac)	CN	Description
0.093	69	Annual Grass, Fair, HSG B
0.097	79	Annual Grass, Fair, HSG C
0.035	70	Brush, Fair, HSG C
0.478	82	Farmsteads, HSG C
0.016	61	Vineyard, Good, HSG B
0.072	75	Vineyard, Good, HSG C
0.562	73	Woods, Fair, HSG C
1.353	76	Weighted Average
1.353		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.2900	0.23		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
0.6	116	0.3800	3.08		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.7	145	0.2600	3.57		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.2	29	0.0100	2.74	3.36	**Pipe Channel, 15" CMP Culvert** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.025 Corrugated metal
8.9	390	Total			

Subcatchment WS-3B: Subcat WS-3B



Summary for Subcatchment WS-4: Subcat WS-4

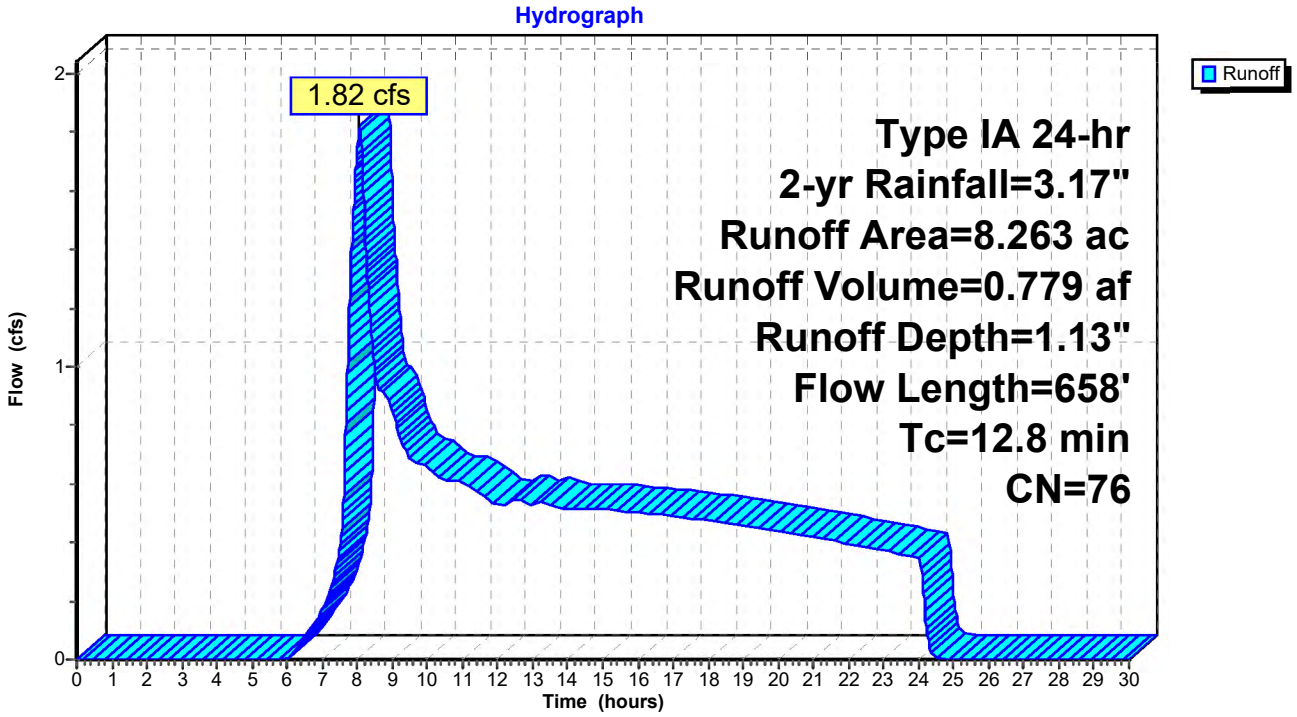
Runoff = 1.82 cfs @ 8.07 hrs, Volume= 0.779 af, Depth= 1.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.17"

Area (ac)	CN	Description
0.005	69	Annual Grass, Fair, HSG B
0.628	79	Annual Grass, Fair, HSG C
0.170	87	Dirt roads, HSG C
0.943	82	Farmsteads, HSG C
0.376	92	Paved roads w/open ditches, 50% imp, HSG C
0.173	61	Vineyard, Good, HSG B
4.086	75	Vineyard, Good, HSG C
1.884	73	Woods, Fair, HSG C
8.263	76	Weighted Average
8.075		97.72% Pervious Area
0.188		2.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.1900	0.19		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
4.0	558	0.1100	2.32		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
12.8	658	Total			

Subcatchment WS-4: Subcat WS-4



Summary for Subcatchment WS-5: Subcat WS-5

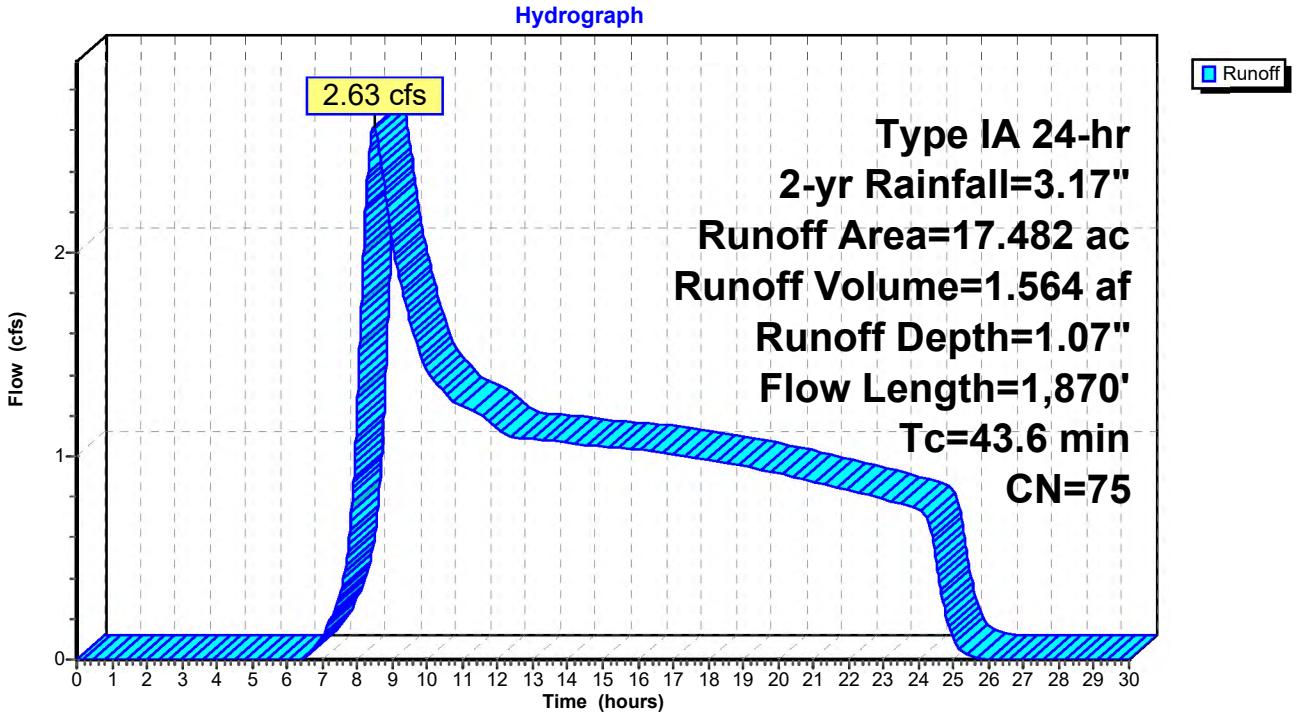
Runoff = 2.63 cfs @ 8.48 hrs, Volume= 1.564 af, Depth= 1.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.17"

Area (ac)	CN	Description
0.292	69	Annual Grass, Fair, HSG B
2.317	79	Annual Grass, Fair, HSG C
0.347	82	Dirt roads, HSG B
0.098	87	Dirt roads, HSG C
0.529	86	Fallow, bare soil, HSG B
0.460	91	Fallow, bare soil, HSG C
1.261	82	Farmsteads, HSG C
0.276	92	Paved roads w/open ditches, 50% imp, HSG C
7.201	69	Vineyard, Fair, HSG B
0.459	79	Vineyard, Fair, HSG C
2.670	75	Vineyard, Good, HSG C
1.571	73	Woods, Fair, HSG C
17.482	75	Weighted Average
17.344		99.21% Pervious Area
0.138		0.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.1800	0.19		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
2.1	404	0.2200	3.28		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
32.5	1,366	0.0100	0.70		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
43.6	1,870	Total			

Subcatchment WS-5: Subcat WS-5



Summary for Subcatchment WS-1A: Subcat WS-1A

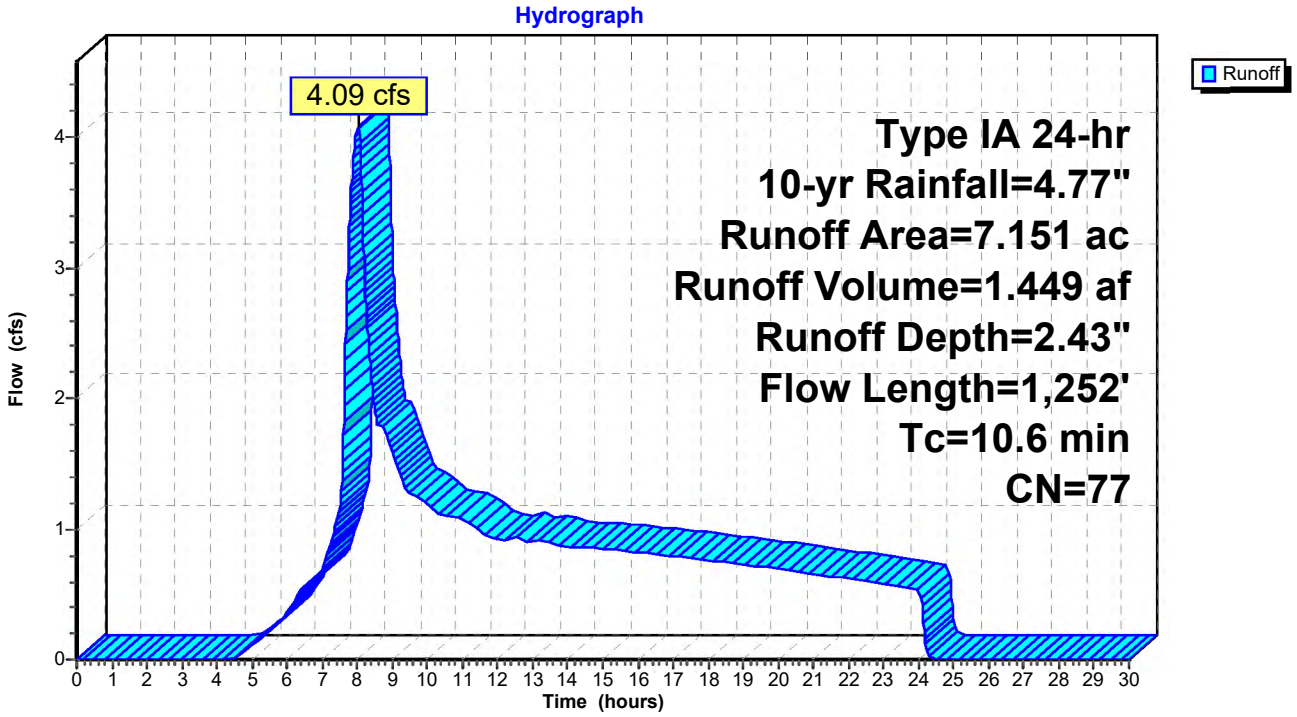
Runoff = 4.09 cfs @ 8.02 hrs, Volume= 1.449 af, Depth= 2.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.77"

Area (ac)	CN	Description
4.489	79	Annual Grass, Fair, HSG C
0.965	75	Vineyard, Good, HSG C
1.697	73	Woods, Fair, HSG C
7.151	77	Weighted Average
7.151		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.2800	0.22		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
1.4	326	0.2900	3.77		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.6	110	0.4400	3.32		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.4	116	0.5500	5.19		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.4	520	0.2800	23.89	286.66	**Trap/Vee/Rect Channel Flow, Channel (WRA)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
0.3	80	0.0100	4.51	54.17	**Trap/Vee/Rect Channel Flow, Ditch (Wappo)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
10.6	1,252	Total			

Subcatchment WS-1A: Subcat WS-1A



Summary for Subcatchment WS-1B: Subcat WS-1B

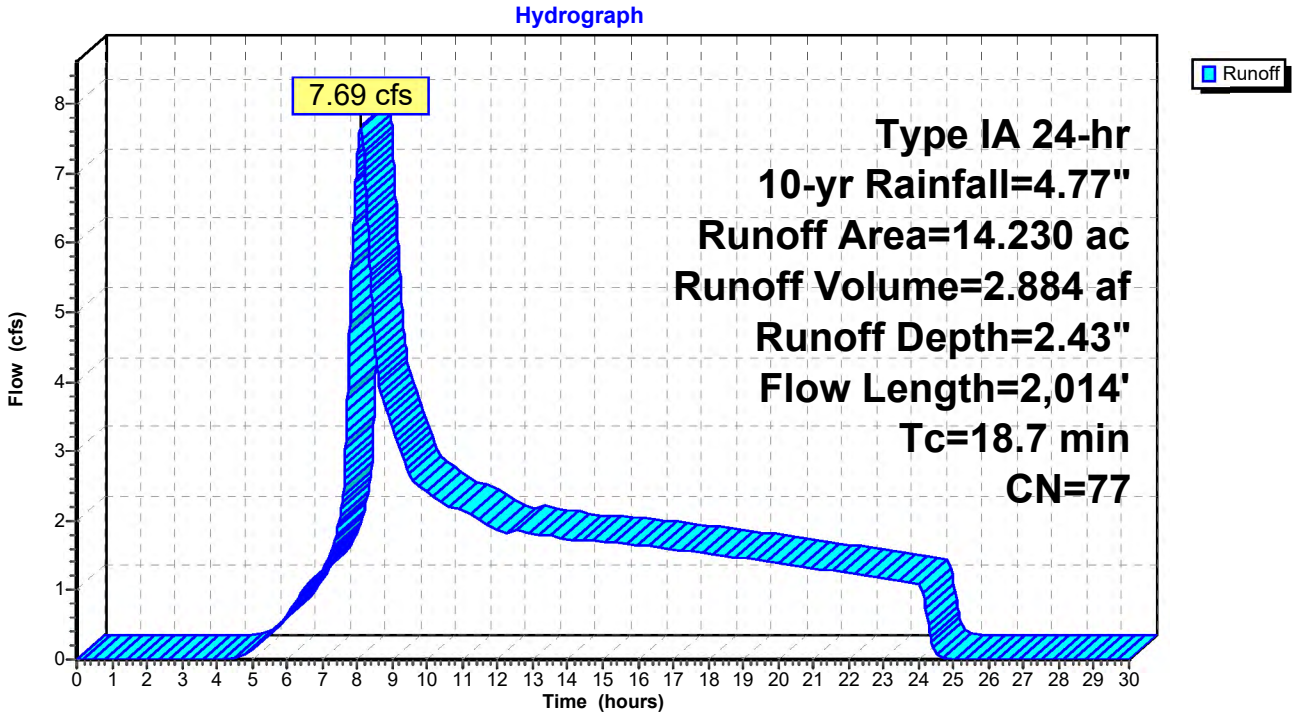
Runoff = 7.69 cfs @ 8.11 hrs, Volume= 2.884 af, Depth= 2.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.77"

Area (ac)	CN	Description
7.663	79	Annual Grass, Fair, HSG C
0.233	70	Brush, Fair, HSG C
0.167	92	Paved roads w/open ditches, 50% imp, HSG C
4.048	75	Vineyard, Good, HSG C
0.930	73	Woods, Fair, HSG C
1.190	76	Woods/grass comb., Fair, HSG C
14.230	77	Weighted Average
14.147		99.41% Pervious Area
0.084		0.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.1000	0.22		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
1.4	288	0.2300	3.36		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.3	52	0.0100	2.62	10.47	**Trap/Vee/Rect Channel Flow, Insloped Ave.** Bot.W=0.00' D=1.00' Z= 5.0 & 3.0 '/' Top.W=8.00' n= 0.035
4.6	100	0.3400	0.36		**Sheet Flow, Sheet - Post Level Spreader** Grass: Dense n= 0.240 P2= 3.17"
0.8	180	0.3200	3.96		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.2	233	0.1900	19.68	236.14	**Trap/Vee/Rect Channel Flow, Swale** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
3.9	1,061	0.0100	4.51	54.17	**Trap/Vee/Rect Channel Flow, Ditch (Wappo)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
18.7	2,014	Total			

Subcatchment WS-1B: Subcat WS-1B



Summary for Subcatchment WS-1C: Subcat WS-1C

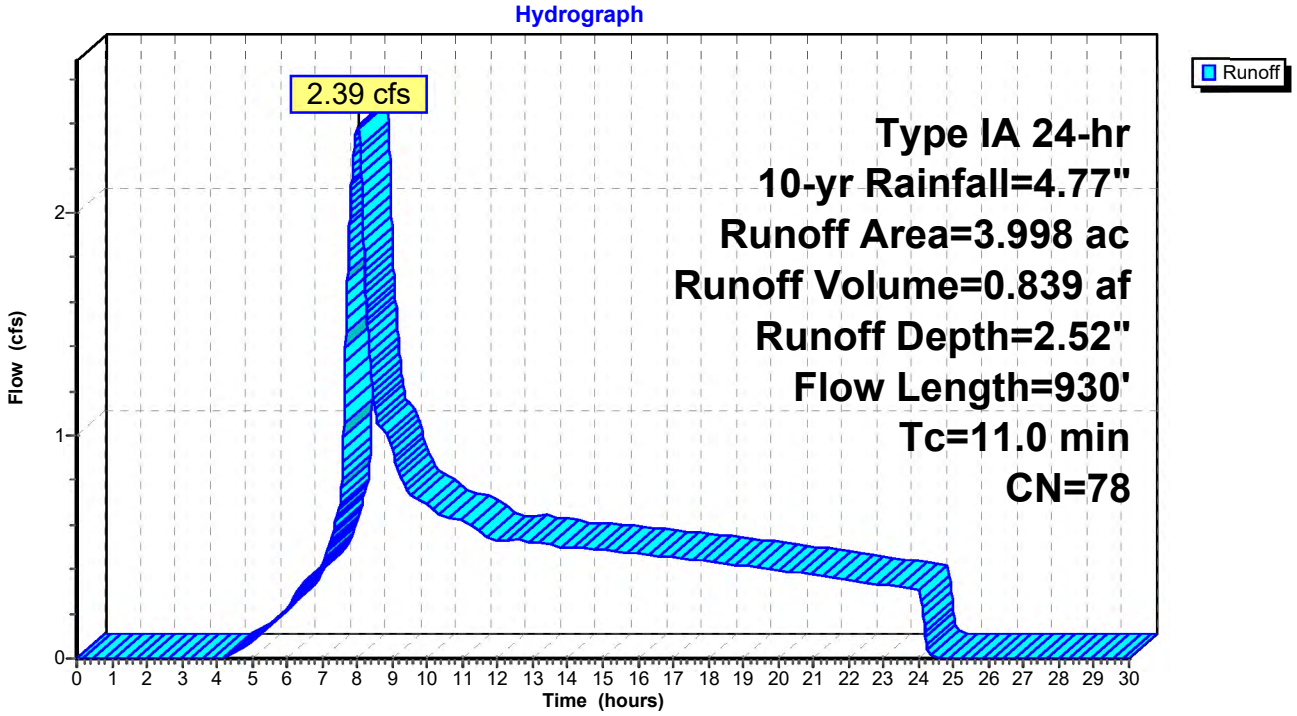
Runoff = 2.39 cfs @ 8.03 hrs, Volume= 0.839 af, Depth= 2.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.77"

Area (ac)	CN	Description
2.585	79	Annual Grass, Fair, HSG C
1.192	75	Vineyard, Good, HSG C
0.145	73	Woods, Fair, HSG C
0.076	76	Woods/grass comb., Fair, HSG C
3.998	78	Weighted Average
3.998		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.2800	0.22		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
3.5	830	0.3100	3.90		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
11.0	930	Total			

Subcatchment WS-1C: Subcat WS-1C



Summary for Subcatchment WS-1D: Subcat WS-1D

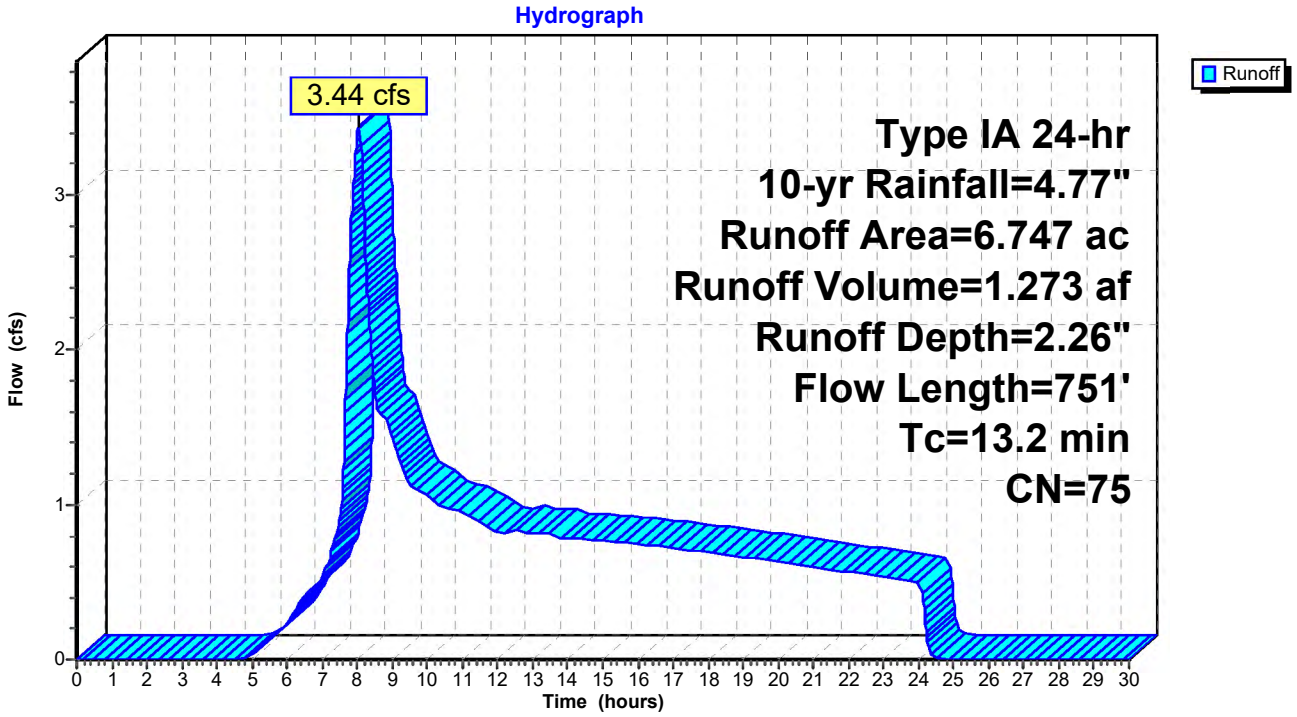
Runoff = 3.44 cfs @ 8.05 hrs, Volume= 1.273 af, Depth= 2.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.77"

Area (ac)	CN	Description
0.163	79	Annual Grass, Fair, HSG C
0.127	87	Dirt roads, HSG C
0.470	82	Farmsteads, HSG C
0.050	92	Paved roads w/open ditches, 50% imp, HSG C
2.803	69	Vineyard, Fair, HSG B
2.040	79	Vineyard, Fair, HSG C
0.005	61	Vineyard, Good, HSG B
0.665	75	Vineyard, Good, HSG C
0.424	73	Woods, Fair, HSG C
6.747	75	Weighted Average
6.721		99.63% Pervious Area
0.025		0.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	100	0.2300	0.31		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
7.8	651	0.0400	1.40		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
13.2	751	Total			

Subcatchment WS-1D: Subcat WS-1D



Summary for Subcatchment WS-2A: Subcat WS-2A

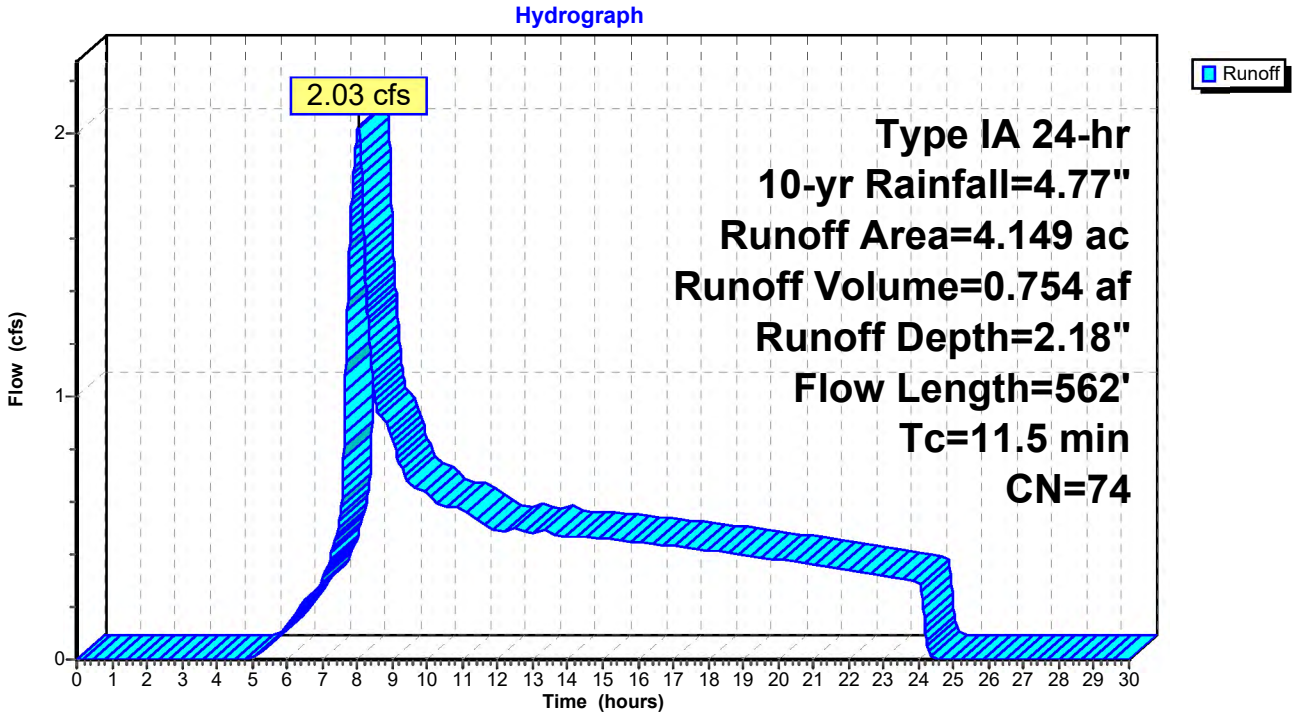
Runoff = 2.03 cfs @ 8.04 hrs, Volume= 0.754 af, Depth= 2.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.77"

Area (ac)	CN	Description
0.251	79	Annual Grass, Fair, HSG C
0.086	79	Vineyard, Fair, HSG C
1.677	75	Vineyard, Good, HSG C
2.134	73	Woods, Fair, HSG C
4.149	74	Weighted Average
4.149		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0600	0.18		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
0.9	157	0.1900	3.05		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
1.3	219	0.3200	2.83		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.1	86	0.1000	14.28	171.31	**Trap/Vee/Rect Channel Flow, Ditch (WRA)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
11.5	562	Total			

Subcatchment WS-2A: Subcat WS-2A



Summary for Subcatchment WS-2B: Subcat WS-2B

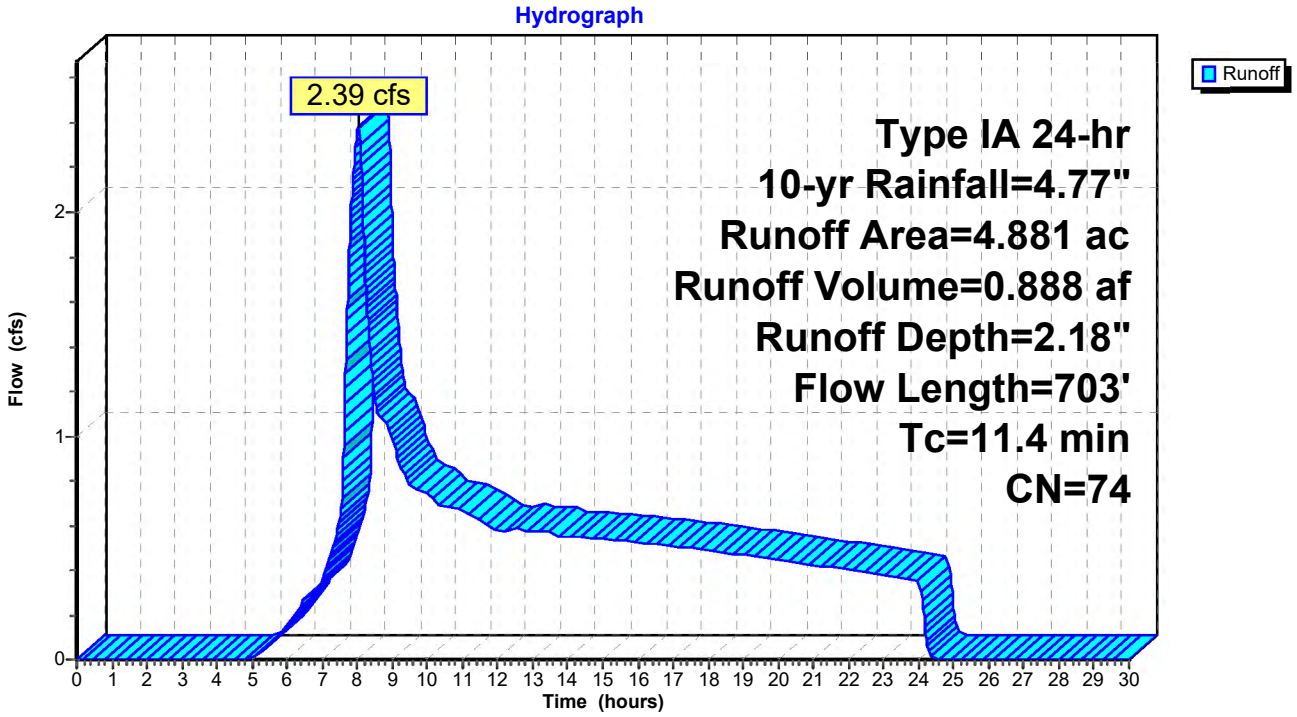
Runoff = 2.39 cfs @ 8.04 hrs, Volume= 0.888 af, Depth= 2.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.77"

Area (ac)	CN	Description
0.161	69	Annual Grass, Fair, HSG B
0.521	79	Annual Grass, Fair, HSG C
0.008	70	Brush, Fair, HSG C
0.166	79	Vineyard, Fair, HSG C
1.897	75	Vineyard, Good, HSG C
0.003	60	Woods, Fair, HSG B
2.126	73	Woods, Fair, HSG C
4.881	74	Weighted Average
4.881		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0600	0.18		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
0.9	145	0.1400	2.62		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
1.1	161	0.2500	2.50		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.2	297	0.2200	21.18	254.10	**Trap/Vee/Rect Channel Flow, Ditch (WRA)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
11.4	703	Total			

Subcatchment WS-2B: Subcat WS-2B



Summary for Subcatchment WS-2C: Subcat WS-2C

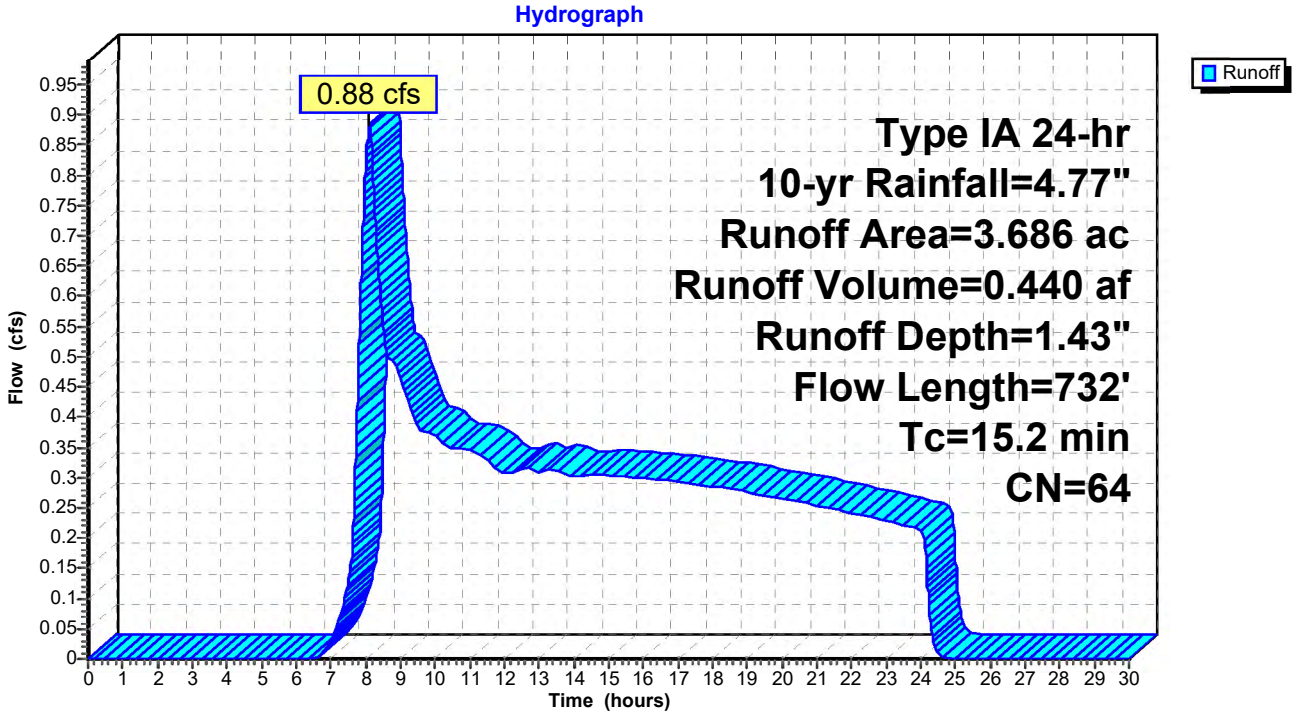
Runoff = 0.88 cfs @ 8.10 hrs, Volume= 0.440 af, Depth= 1.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.77"

Area (ac)	CN	Description
0.002	69	Annual Grass, Fair, HSG B
0.031	79	Annual Grass, Fair, HSG C
0.117	82	Dirt roads, HSG B
0.009	87	Dirt roads, HSG C
3.092	61	Vineyard, Good, HSG B
0.434	75	Vineyard, Good, HSG C
3.686	64	Weighted Average
3.686		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	100	0.2600	0.22		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
7.5	632	0.0400	1.40		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
15.2	732	Total			

Subcatchment WS-2C: Subcat WS-2C



Summary for Subcatchment WS-3A: Subcat WS-3A

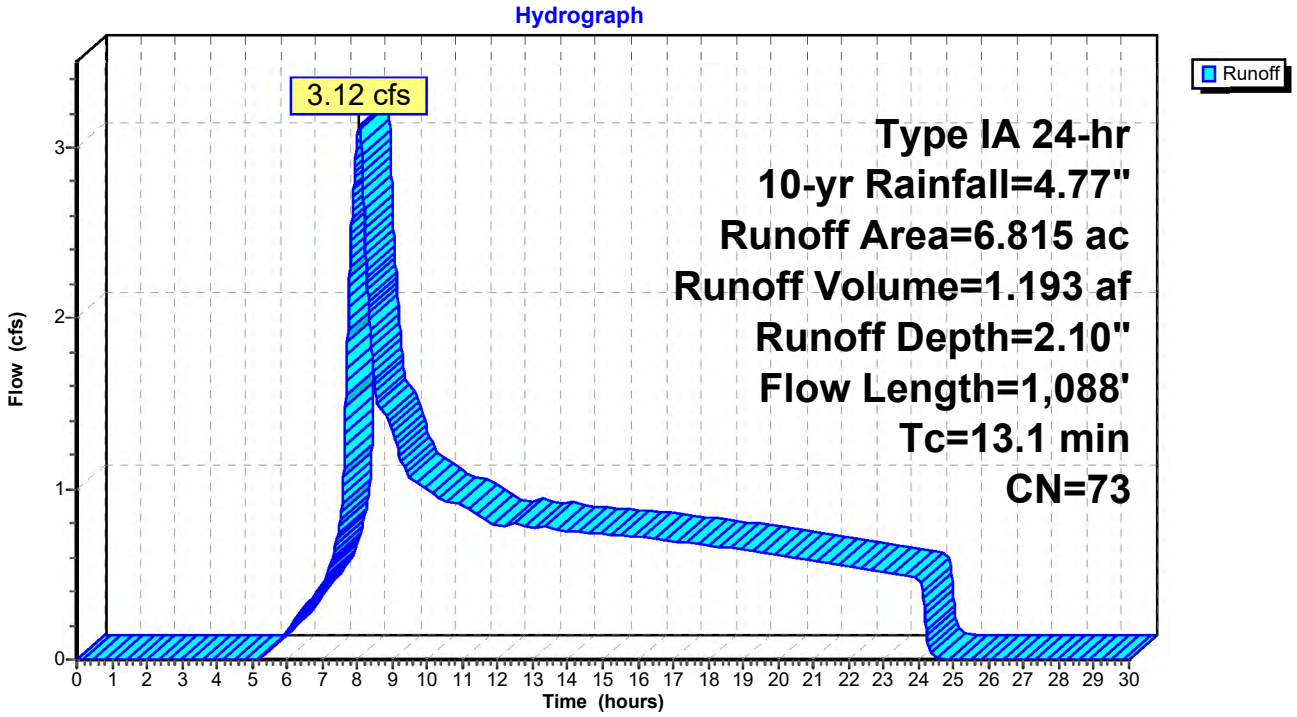
Runoff = 3.12 cfs @ 8.05 hrs, Volume= 1.193 af, Depth= 2.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.77"

Area (ac)	CN	Description
0.666	69	Annual Grass, Fair, HSG B
1.063	79	Annual Grass, Fair, HSG C
0.032	56	Brush, Fair, HSG B
0.035	70	Brush, Fair, HSG C
0.054	82	Farmsteads, HSG C
0.292	61	Vineyard, Good, HSG B
2.066	75	Vineyard, Good, HSG C
0.071	60	Woods, Fair, HSG B
2.537	73	Woods, Fair, HSG C
6.815	73	Weighted Average
6.815		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.1800	0.19		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
0.7	133	0.3500	2.96		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
1.1	236	0.2600	3.57		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
2.3	619	0.0100	4.51	54.17	**Trap/Vee/Rect Channel Flow, Ditch (Wappo)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
13.1	1,088	Total			

Subcatchment WS-3A: Subcat WS-3A



Summary for Subcatchment WS-3B: Subcat WS-3B

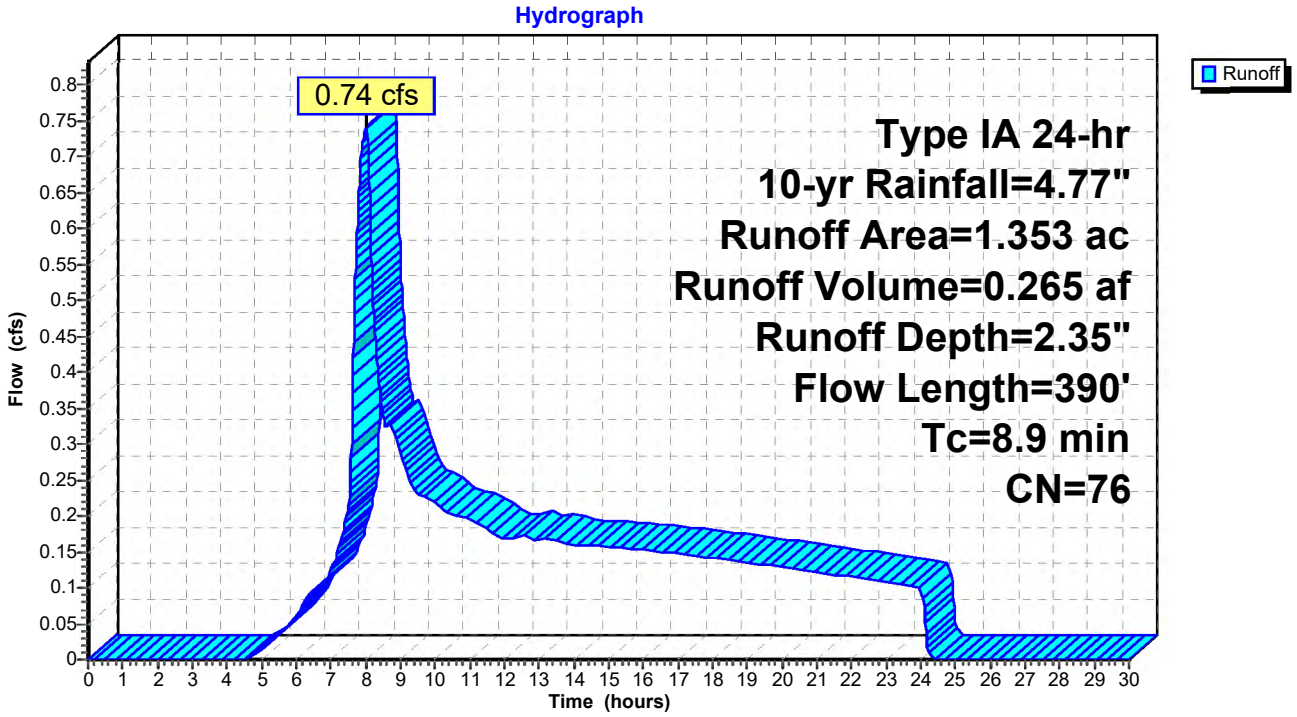
Runoff = 0.74 cfs @ 8.02 hrs, Volume= 0.265 af, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.77"

Area (ac)	CN	Description
0.093	69	Annual Grass, Fair, HSG B
0.097	79	Annual Grass, Fair, HSG C
0.035	70	Brush, Fair, HSG C
0.478	82	Farmsteads, HSG C
0.016	61	Vineyard, Good, HSG B
0.072	75	Vineyard, Good, HSG C
0.562	73	Woods, Fair, HSG C
1.353	76	Weighted Average
1.353		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.2900	0.23		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
0.6	116	0.3800	3.08		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.7	145	0.2600	3.57		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.2	29	0.0100	2.74	3.36	**Pipe Channel, 15" CMP Culvert** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.025 Corrugated metal
8.9	390	Total			

Subcatchment WS-3B: Subcat WS-3B



Summary for Subcatchment WS-4: Subcat WS-4

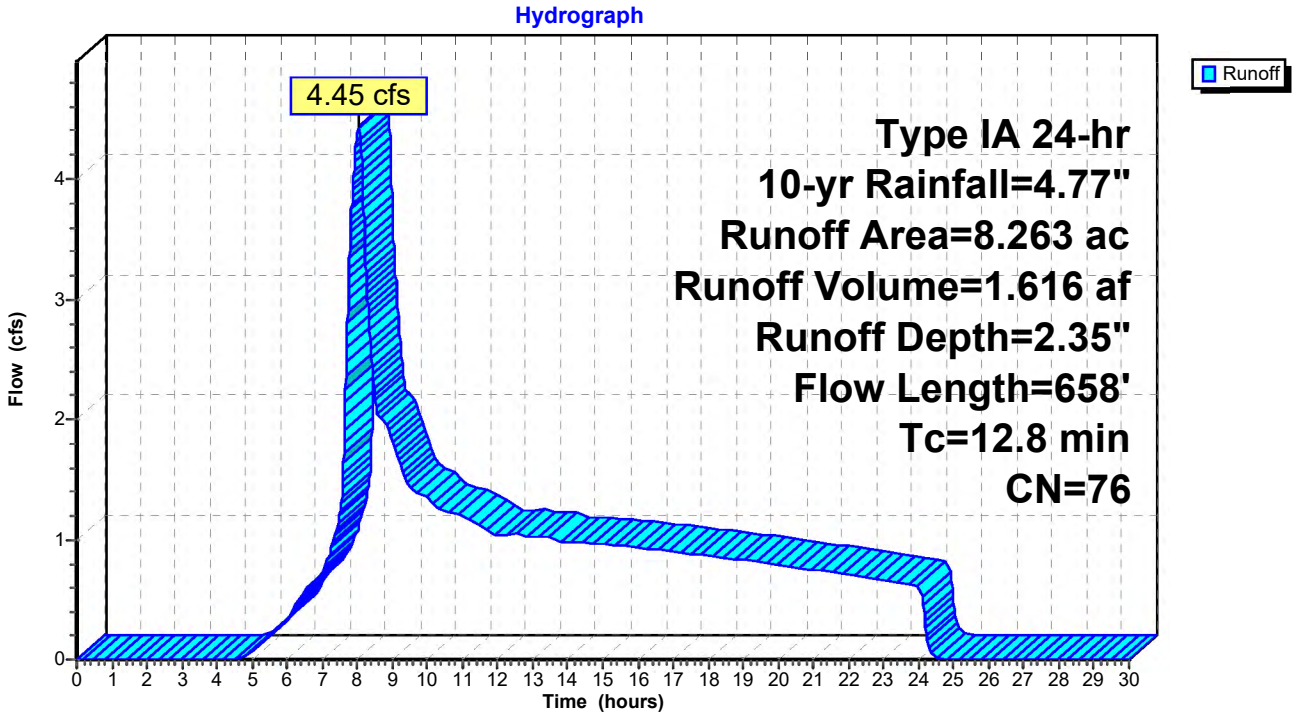
Runoff = 4.45 cfs @ 8.04 hrs, Volume= 1.616 af, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.77"

Area (ac)	CN	Description
0.005	69	Annual Grass, Fair, HSG B
0.628	79	Annual Grass, Fair, HSG C
0.170	87	Dirt roads, HSG C
0.943	82	Farmsteads, HSG C
0.376	92	Paved roads w/open ditches, 50% imp, HSG C
0.173	61	Vineyard, Good, HSG B
4.086	75	Vineyard, Good, HSG C
1.884	73	Woods, Fair, HSG C
8.263	76	Weighted Average
8.075		97.72% Pervious Area
0.188		2.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.1900	0.19		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
4.0	558	0.1100	2.32		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
12.8	658	Total			

Subcatchment WS-4: Subcat WS-4



Summary for Subcatchment WS-5: Subcat WS-5

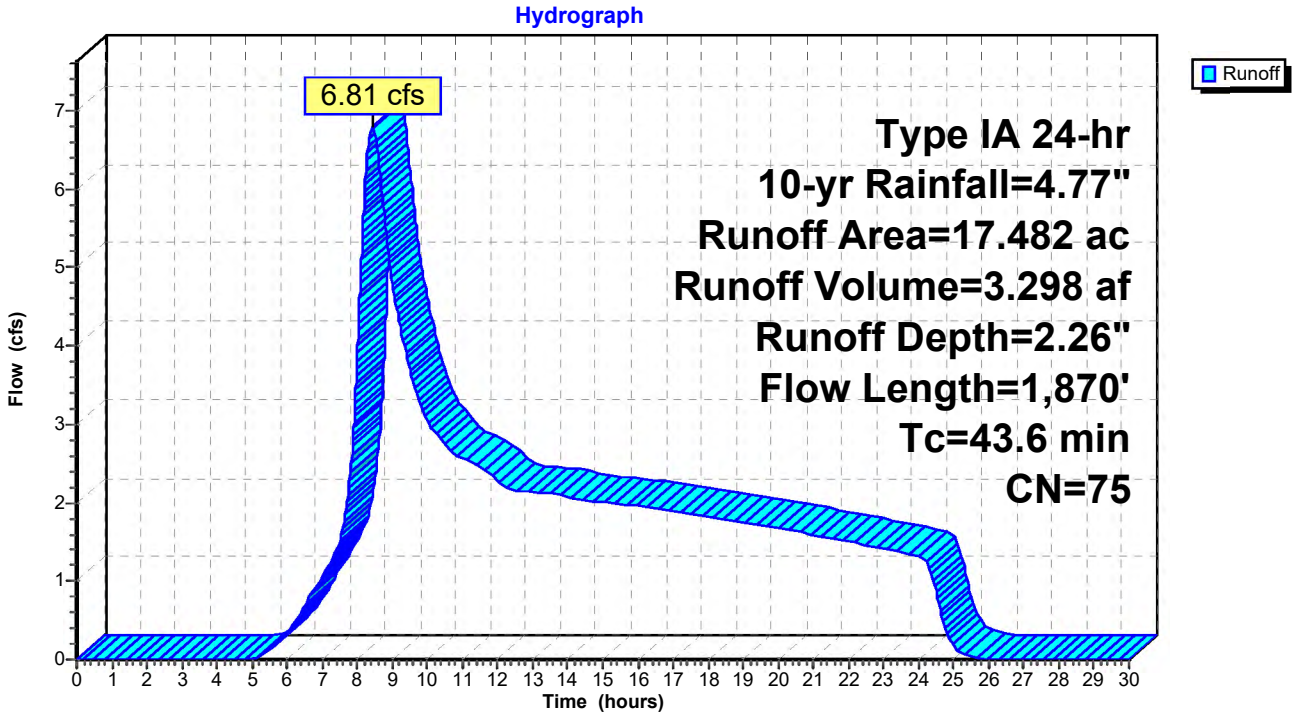
Runoff = 6.81 cfs @ 8.43 hrs, Volume= 3.298 af, Depth= 2.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.77"

Area (ac)	CN	Description
0.292	69	Annual Grass, Fair, HSG B
2.317	79	Annual Grass, Fair, HSG C
0.347	82	Dirt roads, HSG B
0.098	87	Dirt roads, HSG C
0.529	86	Fallow, bare soil, HSG B
0.460	91	Fallow, bare soil, HSG C
1.261	82	Farmsteads, HSG C
0.276	92	Paved roads w/open ditches, 50% imp, HSG C
7.201	69	Vineyard, Fair, HSG B
0.459	79	Vineyard, Fair, HSG C
2.670	75	Vineyard, Good, HSG C
1.571	73	Woods, Fair, HSG C
17.482	75	Weighted Average
17.344		99.21% Pervious Area
0.138		0.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.1800	0.19		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
2.1	404	0.2200	3.28		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
32.5	1,366	0.0100	0.70		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
43.6	1,870	Total			

Subcatchment WS-5: Subcat WS-5



Summary for Subcatchment WS-1A: Subcat WS-1A

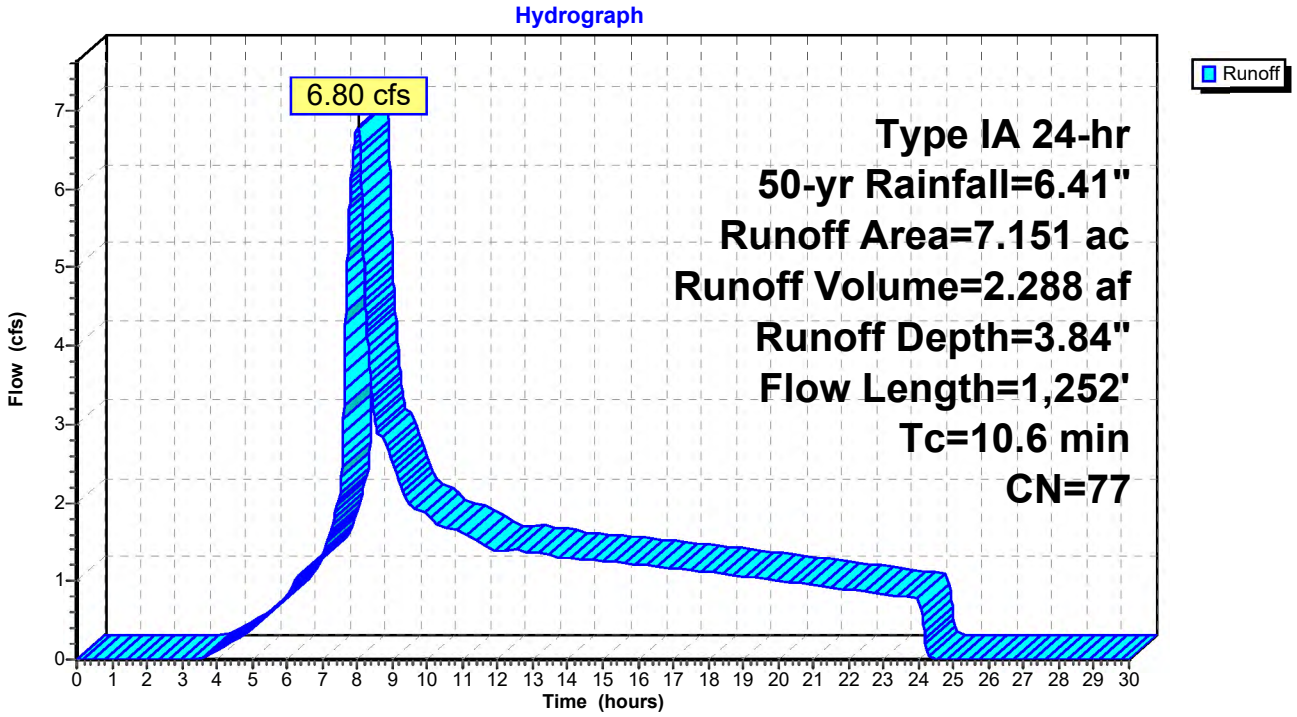
Runoff = 6.80 cfs @ 8.02 hrs, Volume= 2.288 af, Depth= 3.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=6.41"

Area (ac)	CN	Description
4.489	79	Annual Grass, Fair, HSG C
0.965	75	Vineyard, Good, HSG C
1.697	73	Woods, Fair, HSG C
7.151	77	Weighted Average
7.151		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.2800	0.22		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
1.4	326	0.2900	3.77		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.6	110	0.4400	3.32		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.4	116	0.5500	5.19		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.4	520	0.2800	23.89	286.66	**Trap/Vee/Rect Channel Flow, Channel (WRA)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
0.3	80	0.0100	4.51	54.17	**Trap/Vee/Rect Channel Flow, Ditch (Wappo)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
10.6	1,252	Total			

Subcatchment WS-1A: Subcat WS-1A



Summary for Subcatchment WS-1B: Subcat WS-1B

[47] Hint: Peak is 123% of capacity of segment #3

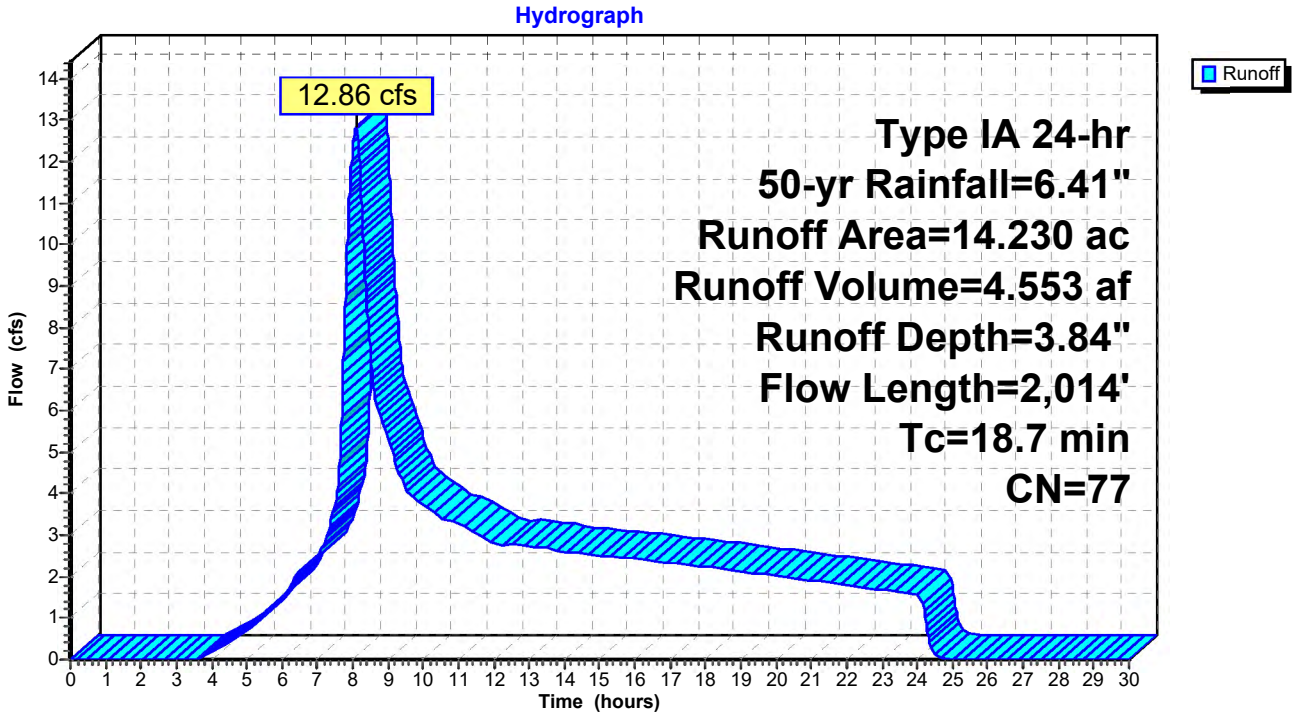
Runoff = 12.86 cfs @ 8.09 hrs, Volume= 4.553 af, Depth= 3.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=6.41"

Area (ac)	CN	Description
7.663	79	Annual Grass, Fair, HSG C
0.233	70	Brush, Fair, HSG C
0.167	92	Paved roads w/open ditches, 50% imp, HSG C
4.048	75	Vineyard, Good, HSG C
0.930	73	Woods, Fair, HSG C
1.190	76	Woods/grass comb., Fair, HSG C
14.230	77	Weighted Average
14.147		99.41% Pervious Area
0.084		0.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.1000	0.22		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
1.4	288	0.2300	3.36		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.3	52	0.0100	2.62	10.47	**Trap/Vee/Rect Channel Flow, Insloped Ave.** Bot.W=0.00' D=1.00' Z= 5.0 & 3.0 '/' Top.W=8.00' n= 0.035
4.6	100	0.3400	0.36		**Sheet Flow, Sheet - Post Level Spreader** Grass: Dense n= 0.240 P2= 3.17"
0.8	180	0.3200	3.96		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.2	233	0.1900	19.68	236.14	**Trap/Vee/Rect Channel Flow, Swale** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
3.9	1,061	0.0100	4.51	54.17	**Trap/Vee/Rect Channel Flow, Ditch (Wappo)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
18.7	2,014	Total			

Subcatchment WS-1B: Subcat WS-1B



Summary for Subcatchment WS-1C: Subcat WS-1C

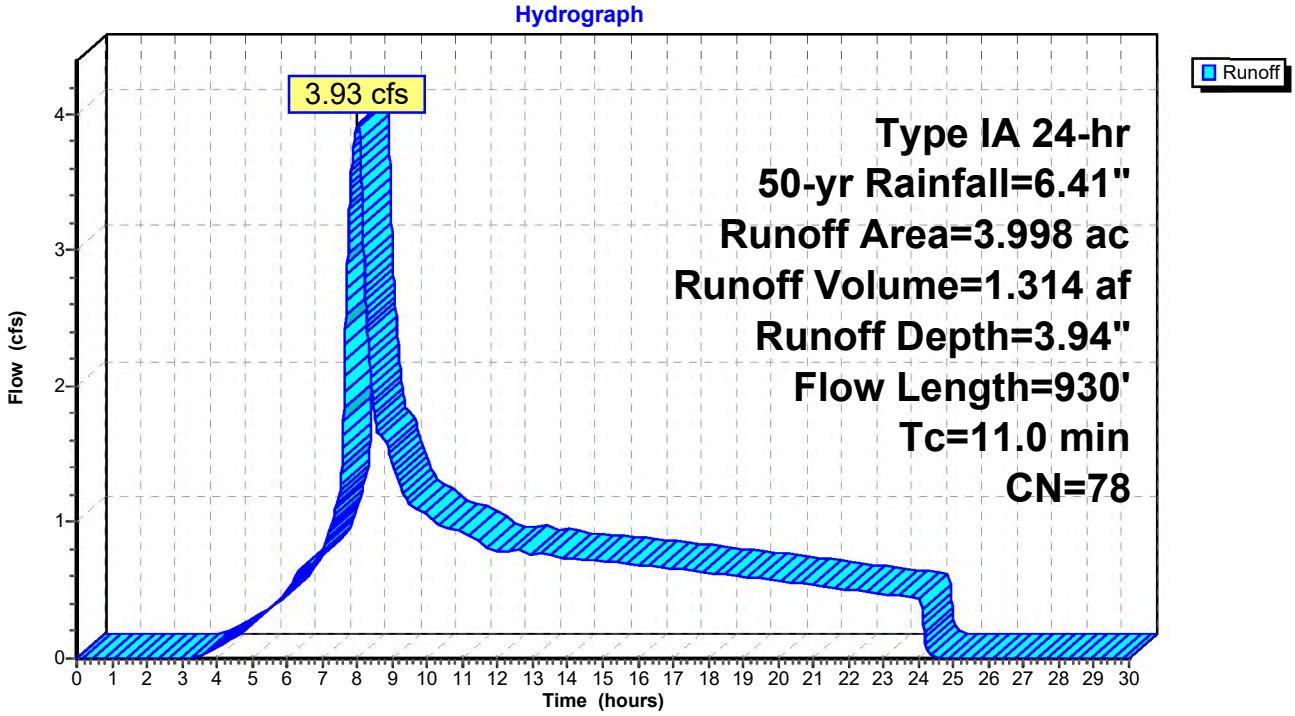
Runoff = 3.93 cfs @ 8.01 hrs, Volume= 1.314 af, Depth= 3.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=6.41"

Area (ac)	CN	Description
2.585	79	Annual Grass, Fair, HSG C
1.192	75	Vineyard, Good, HSG C
0.145	73	Woods, Fair, HSG C
0.076	76	Woods/grass comb., Fair, HSG C
3.998	78	Weighted Average
3.998		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.2800	0.22		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
3.5	830	0.3100	3.90		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
11.0	930	Total			

Subcatchment WS-1C: Subcat WS-1C



Summary for Subcatchment WS-1D: Subcat WS-1D

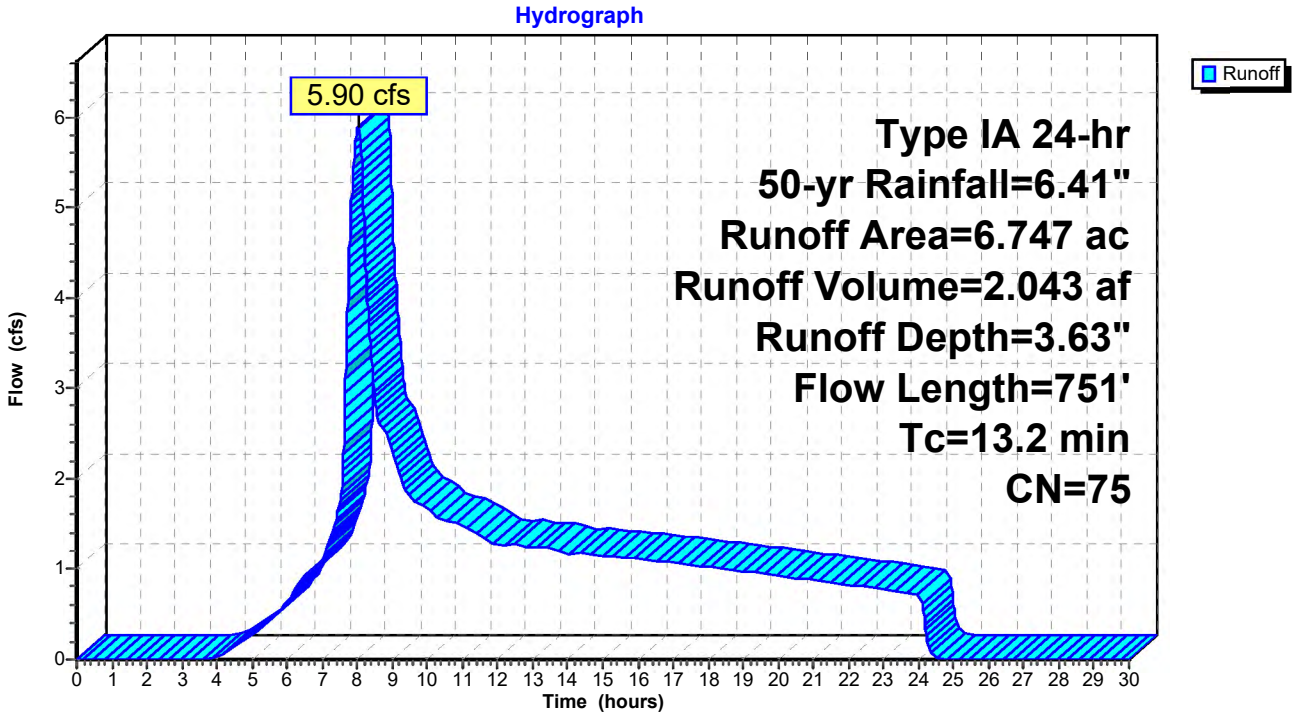
Runoff = 5.90 cfs @ 8.05 hrs, Volume= 2.043 af, Depth= 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=6.41"

Area (ac)	CN	Description
0.163	79	Annual Grass, Fair, HSG C
0.127	87	Dirt roads, HSG C
0.470	82	Farmsteads, HSG C
0.050	92	Paved roads w/open ditches, 50% imp, HSG C
2.803	69	Vineyard, Fair, HSG B
2.040	79	Vineyard, Fair, HSG C
0.005	61	Vineyard, Good, HSG B
0.665	75	Vineyard, Good, HSG C
0.424	73	Woods, Fair, HSG C
6.747	75	Weighted Average
6.721		99.63% Pervious Area
0.025		0.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	100	0.2300	0.31		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
7.8	651	0.0400	1.40		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
13.2	751	Total			

Subcatchment WS-1D: Subcat WS-1D



Summary for Subcatchment WS-2A: Subcat WS-2A

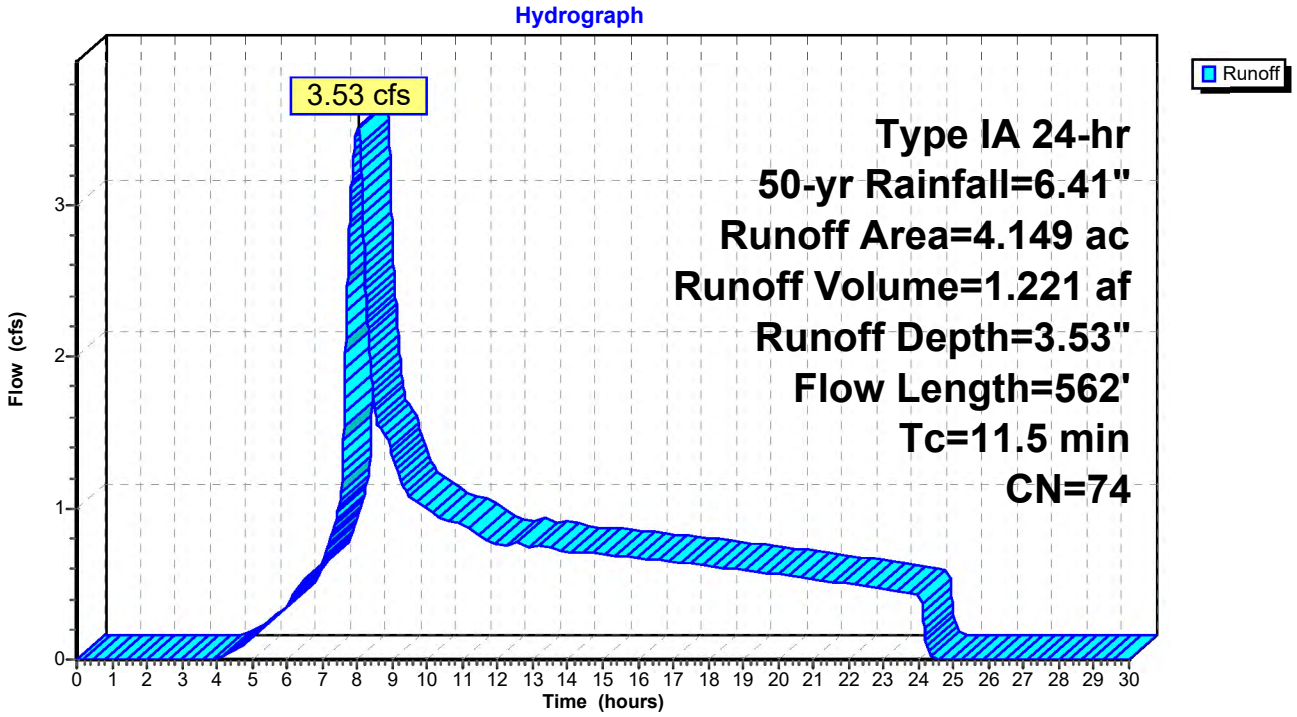
Runoff = 3.53 cfs @ 8.03 hrs, Volume= 1.221 af, Depth= 3.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=6.41"

Area (ac)	CN	Description
0.251	79	Annual Grass, Fair, HSG C
0.086	79	Vineyard, Fair, HSG C
1.677	75	Vineyard, Good, HSG C
2.134	73	Woods, Fair, HSG C
4.149	74	Weighted Average
4.149		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0600	0.18		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
0.9	157	0.1900	3.05		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
1.3	219	0.3200	2.83		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.1	86	0.1000	14.28	171.31	**Trap/Vee/Rect Channel Flow, Ditch (WRA)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
11.5	562	Total			

Subcatchment WS-2A: Subcat WS-2A



Summary for Subcatchment WS-2B: Subcat WS-2B

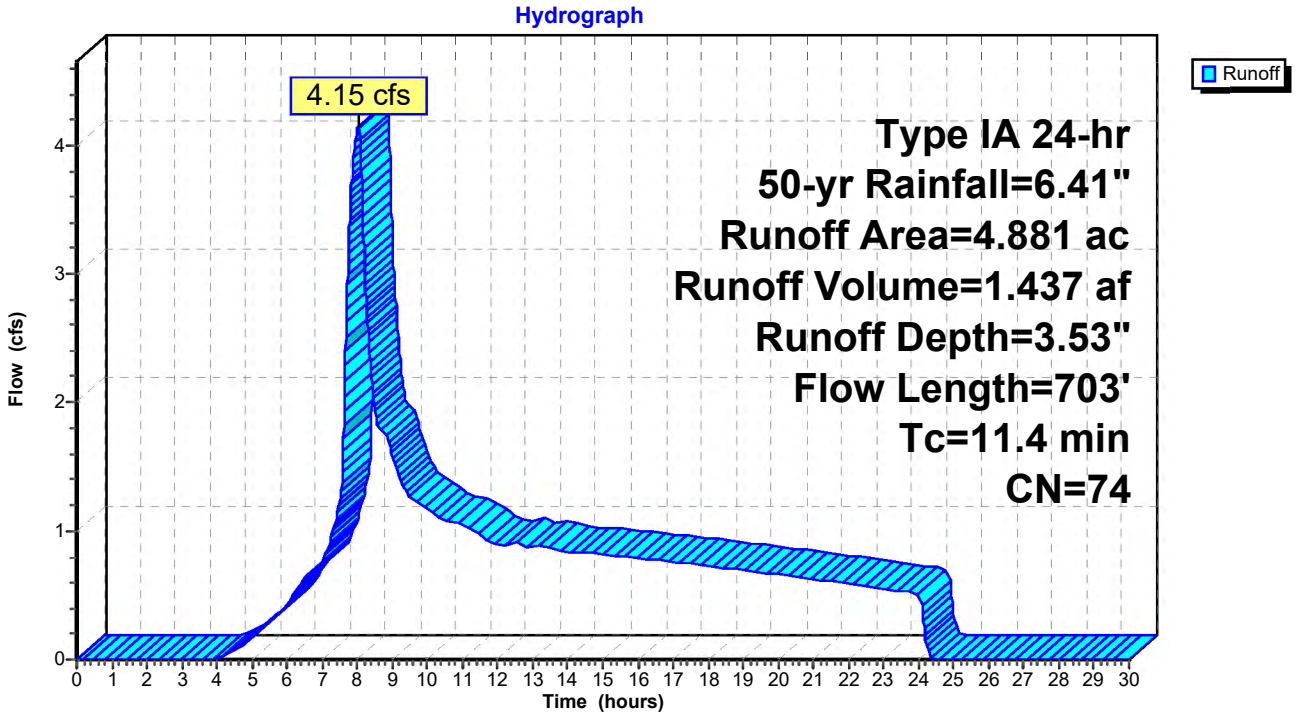
Runoff = 4.15 cfs @ 8.02 hrs, Volume= 1.437 af, Depth= 3.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=6.41"

Area (ac)	CN	Description
0.161	69	Annual Grass, Fair, HSG B
0.521	79	Annual Grass, Fair, HSG C
0.008	70	Brush, Fair, HSG C
0.166	79	Vineyard, Fair, HSG C
1.897	75	Vineyard, Good, HSG C
0.003	60	Woods, Fair, HSG B
2.126	73	Woods, Fair, HSG C
4.881	74	Weighted Average
4.881		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0600	0.18		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
0.9	145	0.1400	2.62		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
1.1	161	0.2500	2.50		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.2	297	0.2200	21.18	254.10	**Trap/Vee/Rect Channel Flow, Ditch (WRA)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
11.4	703	Total			

Subcatchment WS-2B: Subcat WS-2B



Summary for Subcatchment WS-2C: Subcat WS-2C

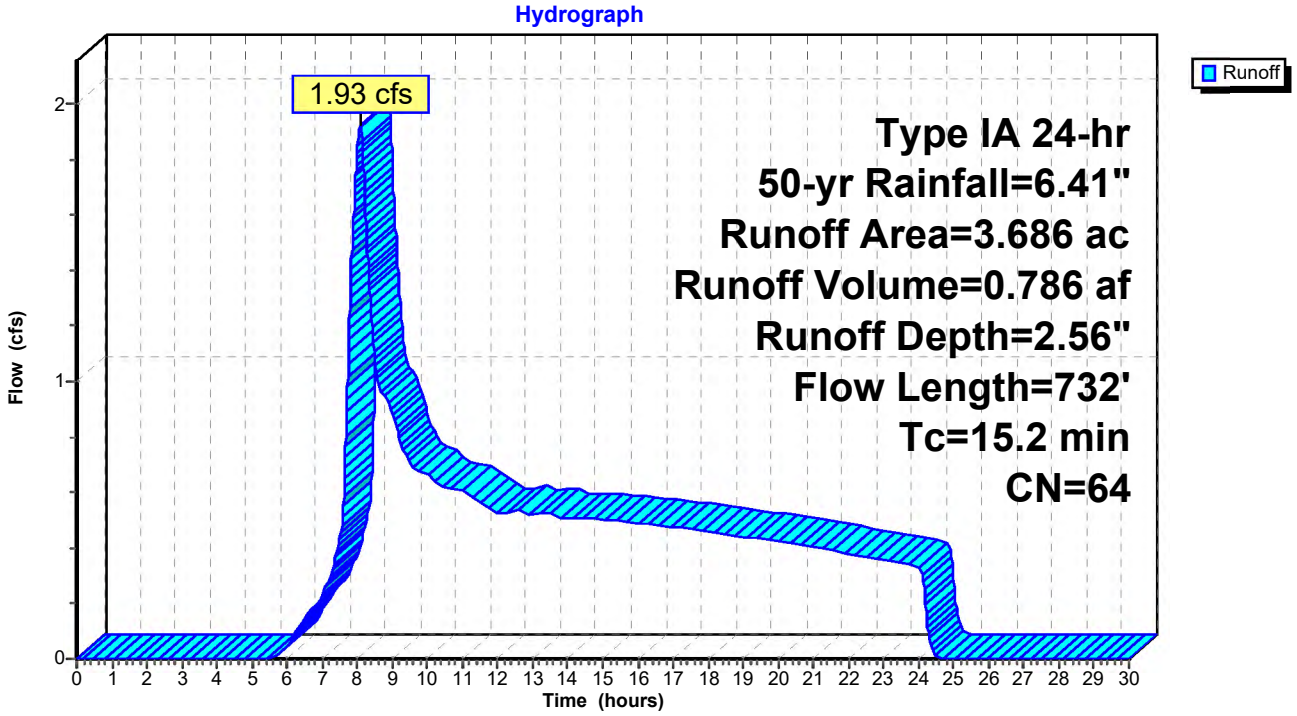
Runoff = 1.93 cfs @ 8.09 hrs, Volume= 0.786 af, Depth= 2.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=6.41"

Area (ac)	CN	Description
0.002	69	Annual Grass, Fair, HSG B
0.031	79	Annual Grass, Fair, HSG C
0.117	82	Dirt roads, HSG B
0.009	87	Dirt roads, HSG C
3.092	61	Vineyard, Good, HSG B
0.434	75	Vineyard, Good, HSG C
3.686	64	Weighted Average
3.686		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	100	0.2600	0.22		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
7.5	632	0.0400	1.40		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
15.2	732	Total			

Subcatchment WS-2C: Subcat WS-2C



Summary for Subcatchment WS-3A: Subcat WS-3A

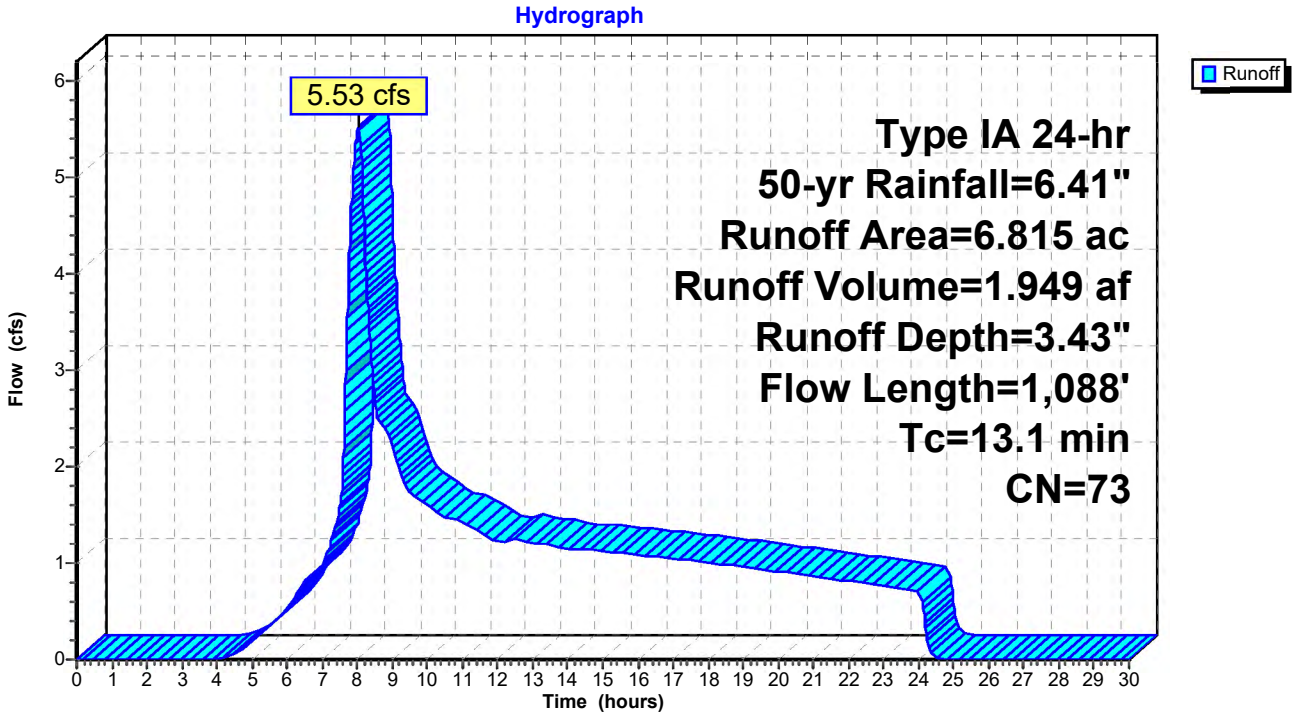
Runoff = 5.53 cfs @ 8.05 hrs, Volume= 1.949 af, Depth= 3.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=6.41"

Area (ac)	CN	Description
0.666	69	Annual Grass, Fair, HSG B
1.063	79	Annual Grass, Fair, HSG C
0.032	56	Brush, Fair, HSG B
0.035	70	Brush, Fair, HSG C
0.054	82	Farmsteads, HSG C
0.292	61	Vineyard, Good, HSG B
2.066	75	Vineyard, Good, HSG C
0.071	60	Woods, Fair, HSG B
2.537	73	Woods, Fair, HSG C
6.815	73	Weighted Average
6.815		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.1800	0.19		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
0.7	133	0.3500	2.96		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
1.1	236	0.2600	3.57		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
2.3	619	0.0100	4.51	54.17	**Trap/Vee/Rect Channel Flow, Ditch (Wappo)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
13.1	1,088	Total			

Subcatchment WS-3A: Subcat WS-3A



Summary for Subcatchment WS-3B: Subcat WS-3B

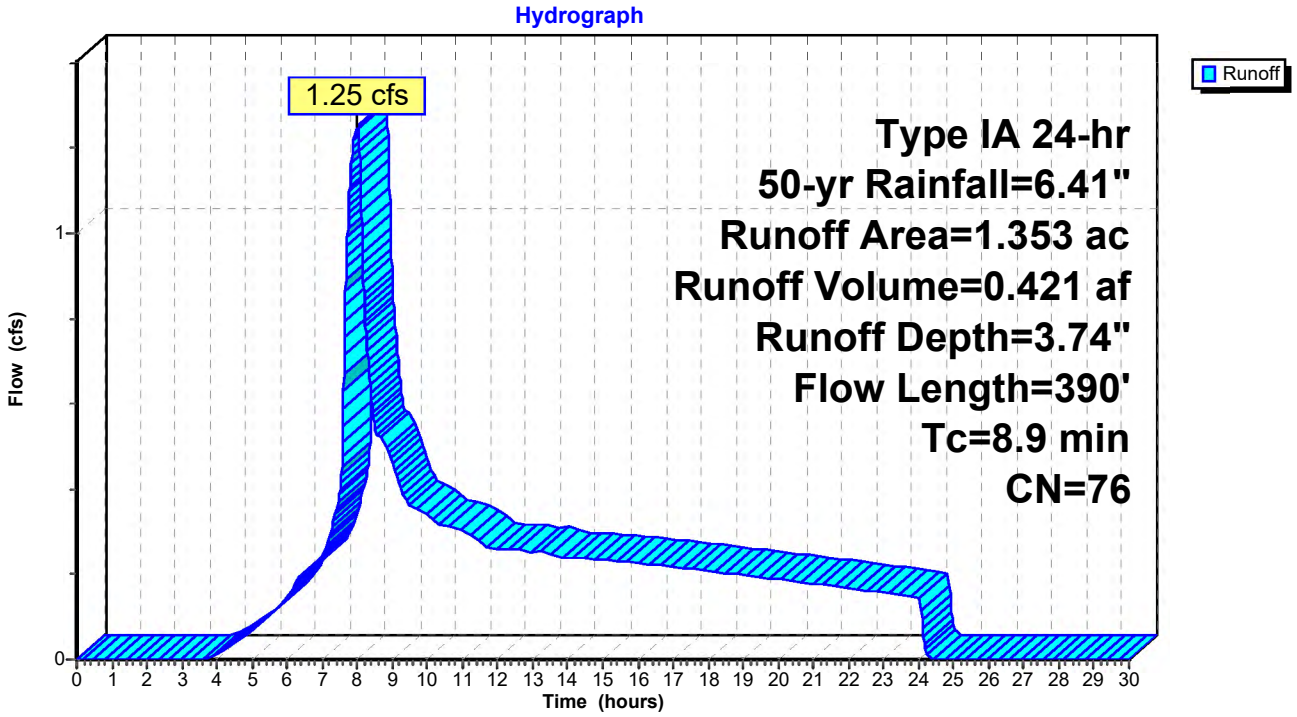
Runoff = 1.25 cfs @ 8.00 hrs, Volume= 0.421 af, Depth= 3.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=6.41"

Area (ac)	CN	Description
0.093	69	Annual Grass, Fair, HSG B
0.097	79	Annual Grass, Fair, HSG C
0.035	70	Brush, Fair, HSG C
0.478	82	Farmsteads, HSG C
0.016	61	Vineyard, Good, HSG B
0.072	75	Vineyard, Good, HSG C
0.562	73	Woods, Fair, HSG C
1.353	76	Weighted Average
1.353		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.2900	0.23		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
0.6	116	0.3800	3.08		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.7	145	0.2600	3.57		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.2	29	0.0100	2.74	3.36	**Pipe Channel, 15" CMP Culvert** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.025 Corrugated metal
8.9	390	Total			

Subcatchment WS-3B: Subcat WS-3B



Summary for Subcatchment WS-4: Subcat WS-4

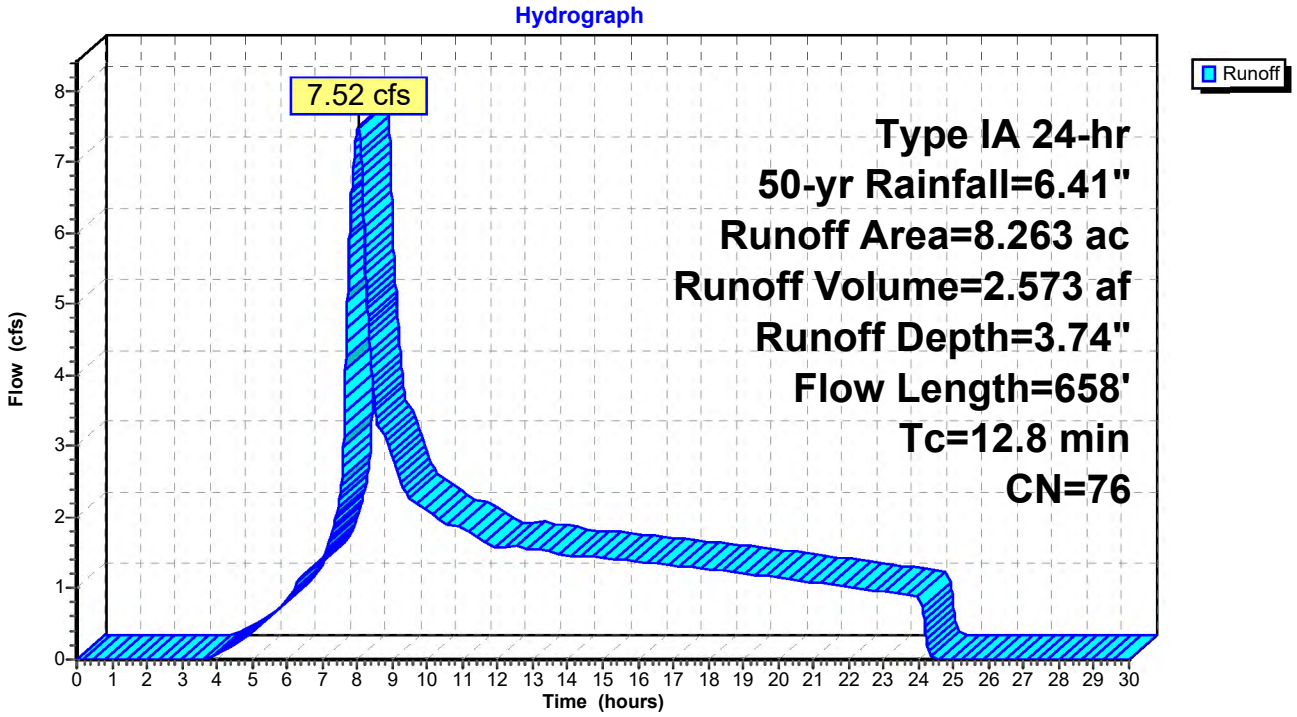
Runoff = 7.52 cfs @ 8.04 hrs, Volume= 2.573 af, Depth= 3.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=6.41"

Area (ac)	CN	Description
0.005	69	Annual Grass, Fair, HSG B
0.628	79	Annual Grass, Fair, HSG C
0.170	87	Dirt roads, HSG C
0.943	82	Farmsteads, HSG C
0.376	92	Paved roads w/open ditches, 50% imp, HSG C
0.173	61	Vineyard, Good, HSG B
4.086	75	Vineyard, Good, HSG C
1.884	73	Woods, Fair, HSG C
8.263	76	Weighted Average
8.075		97.72% Pervious Area
0.188		2.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.1900	0.19		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
4.0	558	0.1100	2.32		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
12.8	658	Total			

Subcatchment WS-4: Subcat WS-4



Summary for Subcatchment WS-5: Subcat WS-5

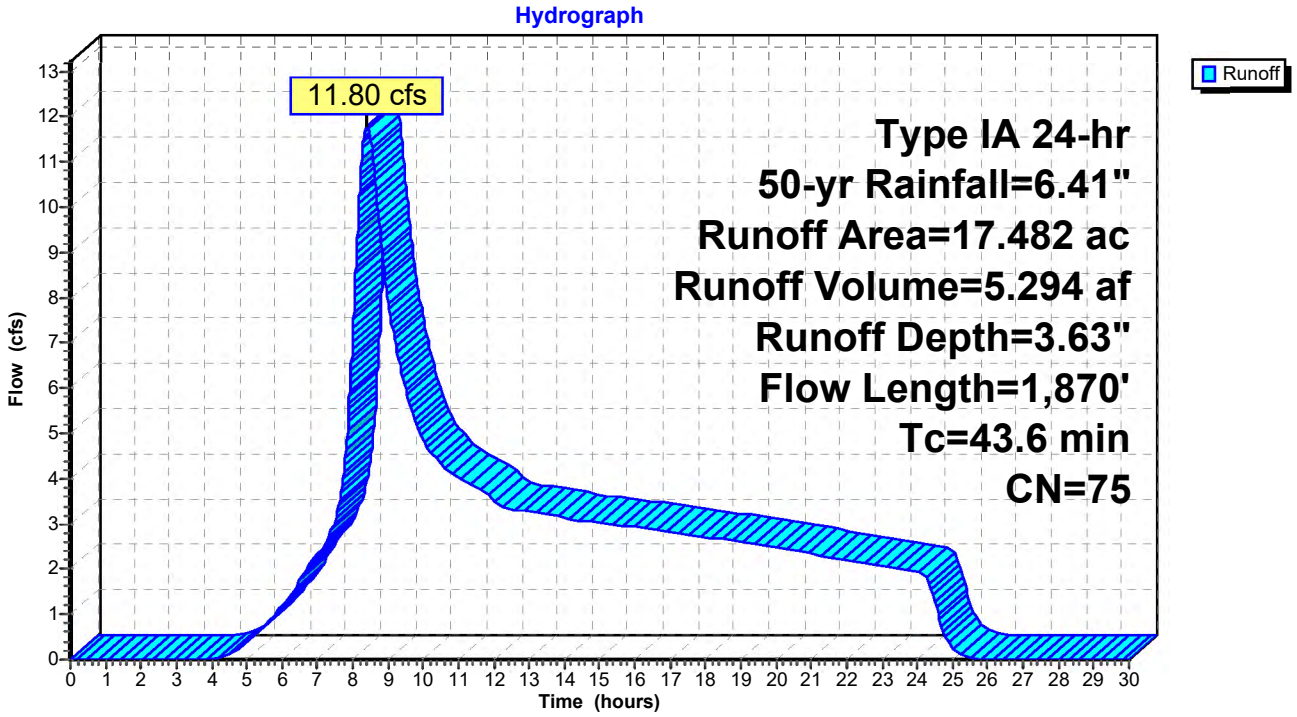
Runoff = 11.80 cfs @ 8.39 hrs, Volume= 5.294 af, Depth= 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=6.41"

Area (ac)	CN	Description
0.292	69	Annual Grass, Fair, HSG B
2.317	79	Annual Grass, Fair, HSG C
0.347	82	Dirt roads, HSG B
0.098	87	Dirt roads, HSG C
0.529	86	Fallow, bare soil, HSG B
0.460	91	Fallow, bare soil, HSG C
1.261	82	Farmsteads, HSG C
0.276	92	Paved roads w/open ditches, 50% imp, HSG C
7.201	69	Vineyard, Fair, HSG B
0.459	79	Vineyard, Fair, HSG C
2.670	75	Vineyard, Good, HSG C
1.571	73	Woods, Fair, HSG C
17.482	75	Weighted Average
17.344		99.21% Pervious Area
0.138		0.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.1800	0.19		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
2.1	404	0.2200	3.28		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
32.5	1,366	0.0100	0.70		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
43.6	1,870	Total			

Subcatchment WS-5: Subcat WS-5



Summary for Subcatchment WS-1A: Subcat WS-1A

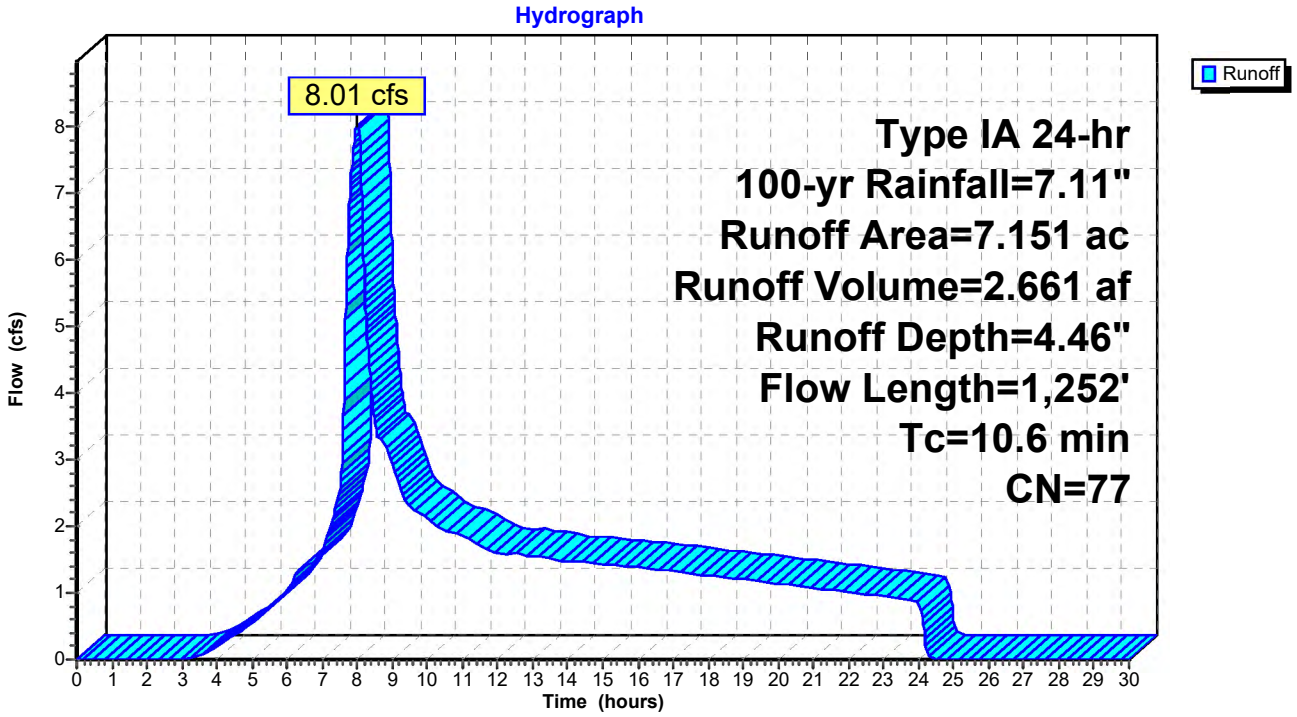
Runoff = 8.01 cfs @ 8.00 hrs, Volume= 2.661 af, Depth= 4.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=7.11"

Area (ac)	CN	Description
4.489	79	Annual Grass, Fair, HSG C
0.965	75	Vineyard, Good, HSG C
1.697	73	Woods, Fair, HSG C
7.151	77	Weighted Average
7.151		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.2800	0.22		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
1.4	326	0.2900	3.77		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.6	110	0.4400	3.32		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.4	116	0.5500	5.19		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.4	520	0.2800	23.89	286.66	**Trap/Vee/Rect Channel Flow, Channel (WRA)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
0.3	80	0.0100	4.51	54.17	**Trap/Vee/Rect Channel Flow, Ditch (Wappo)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
10.6	1,252	Total			

Subcatchment WS-1A: Subcat WS-1A



Summary for Subcatchment WS-1B: Subcat WS-1B

[47] Hint: Peak is 145% of capacity of segment #3

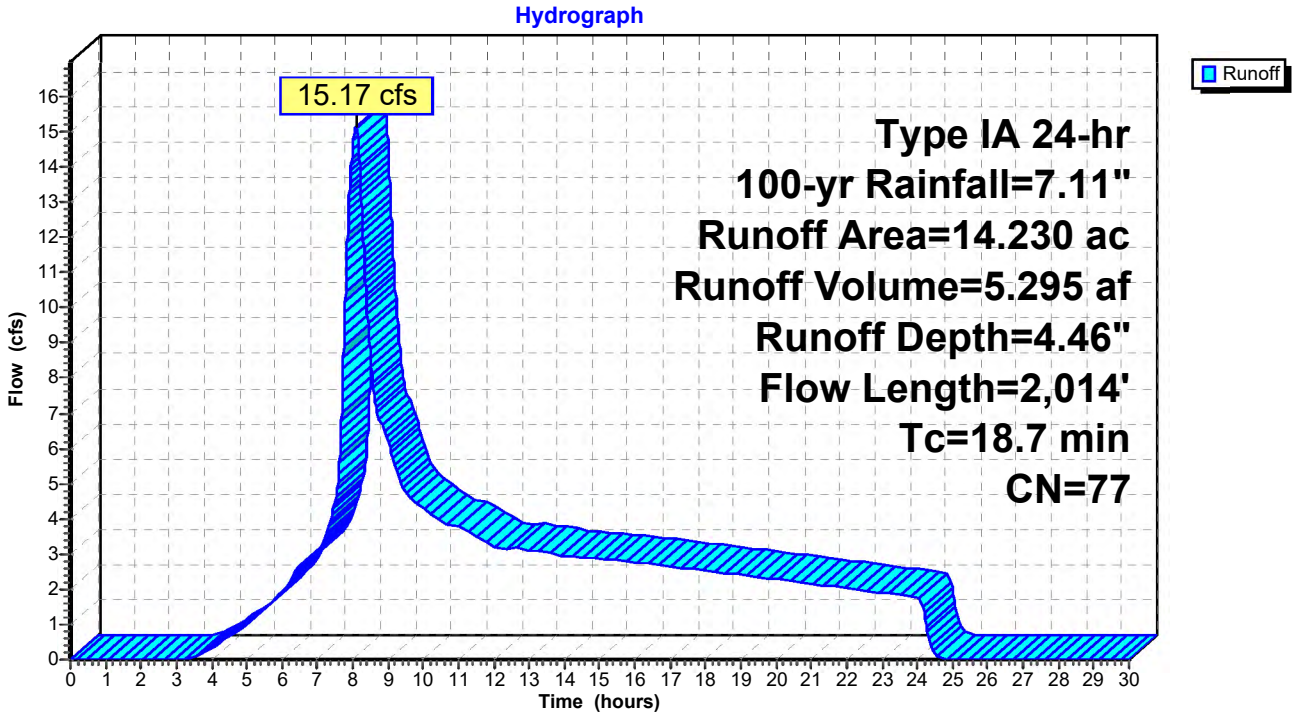
Runoff = 15.17 cfs @ 8.09 hrs, Volume= 5.295 af, Depth= 4.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=7.11"

Area (ac)	CN	Description
7.663	79	Annual Grass, Fair, HSG C
0.233	70	Brush, Fair, HSG C
0.167	92	Paved roads w/open ditches, 50% imp, HSG C
4.048	75	Vineyard, Good, HSG C
0.930	73	Woods, Fair, HSG C
1.190	76	Woods/grass comb., Fair, HSG C
14.230	77	Weighted Average
14.147		99.41% Pervious Area
0.084		0.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.1000	0.22		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
1.4	288	0.2300	3.36		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.3	52	0.0100	2.62	10.47	**Trap/Vee/Rect Channel Flow, Insloped Ave.** Bot.W=0.00' D=1.00' Z= 5.0 & 3.0 '/' Top.W=8.00' n= 0.035
4.6	100	0.3400	0.36		**Sheet Flow, Sheet - Post Level Spreader** Grass: Dense n= 0.240 P2= 3.17"
0.8	180	0.3200	3.96		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.2	233	0.1900	19.68	236.14	**Trap/Vee/Rect Channel Flow, Swale** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
3.9	1,061	0.0100	4.51	54.17	**Trap/Vee/Rect Channel Flow, Ditch (Wappo)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
18.7	2,014	Total			

Subcatchment WS-1B: Subcat WS-1B



Summary for Subcatchment WS-1C: Subcat WS-1C

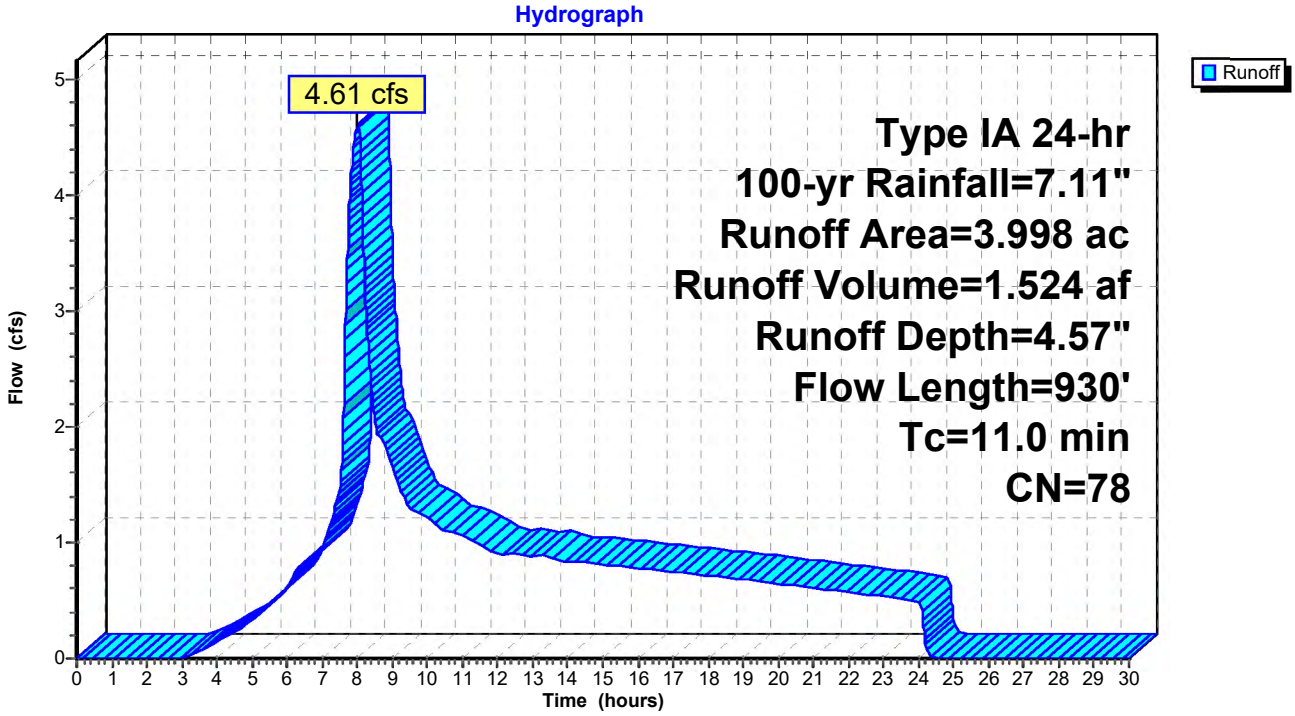
Runoff = 4.61 cfs @ 8.01 hrs, Volume= 1.524 af, Depth= 4.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=7.11"

Area (ac)	CN	Description
2.585	79	Annual Grass, Fair, HSG C
1.192	75	Vineyard, Good, HSG C
0.145	73	Woods, Fair, HSG C
0.076	76	Woods/grass comb., Fair, HSG C
3.998	78	Weighted Average
3.998		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.2800	0.22		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
3.5	830	0.3100	3.90		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
11.0	930	Total			

Subcatchment WS-1C: Subcat WS-1C



Summary for Subcatchment WS-1D: Subcat WS-1D

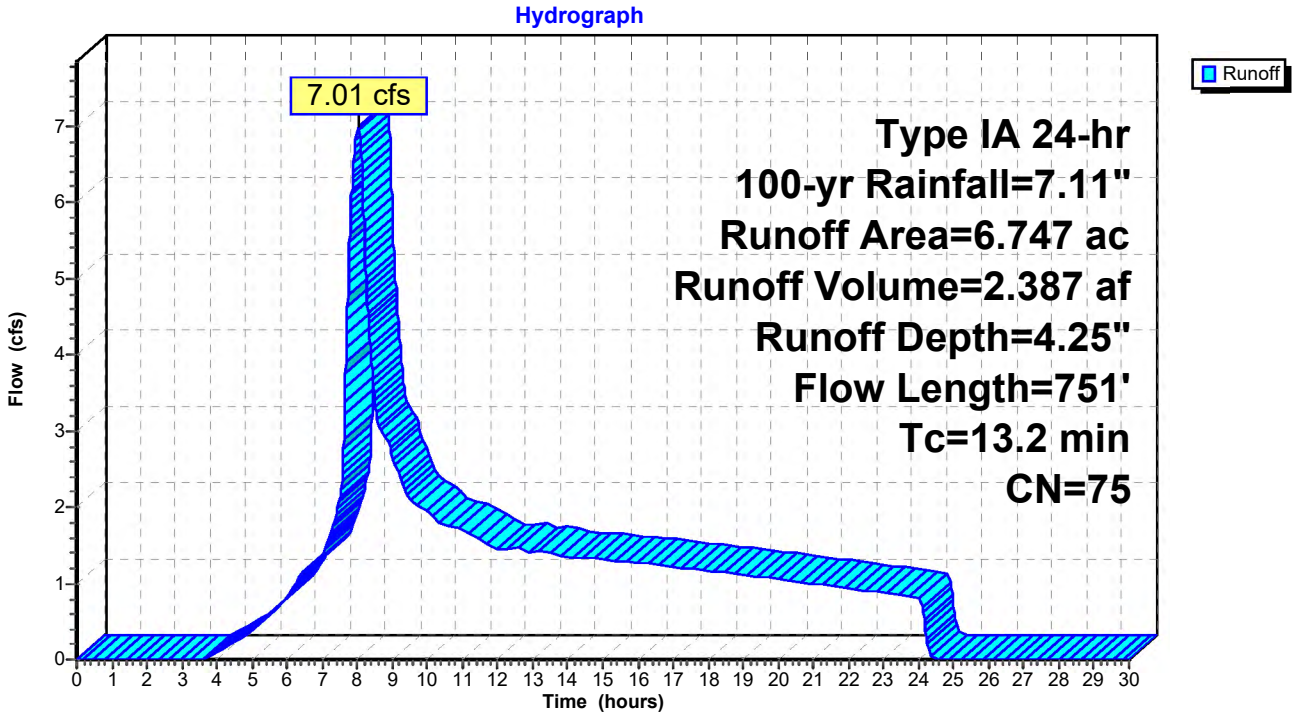
Runoff = 7.01 cfs @ 8.05 hrs, Volume= 2.387 af, Depth= 4.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=7.11"

Area (ac)	CN	Description
0.163	79	Annual Grass, Fair, HSG C
0.127	87	Dirt roads, HSG C
0.470	82	Farmsteads, HSG C
0.050	92	Paved roads w/open ditches, 50% imp, HSG C
2.803	69	Vineyard, Fair, HSG B
2.040	79	Vineyard, Fair, HSG C
0.005	61	Vineyard, Good, HSG B
0.665	75	Vineyard, Good, HSG C
0.424	73	Woods, Fair, HSG C
6.747	75	Weighted Average
6.721		99.63% Pervious Area
0.025		0.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	100	0.2300	0.31		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
7.8	651	0.0400	1.40		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
13.2	751	Total			

Subcatchment WS-1D: Subcat WS-1D



Summary for Subcatchment WS-2A: Subcat WS-2A

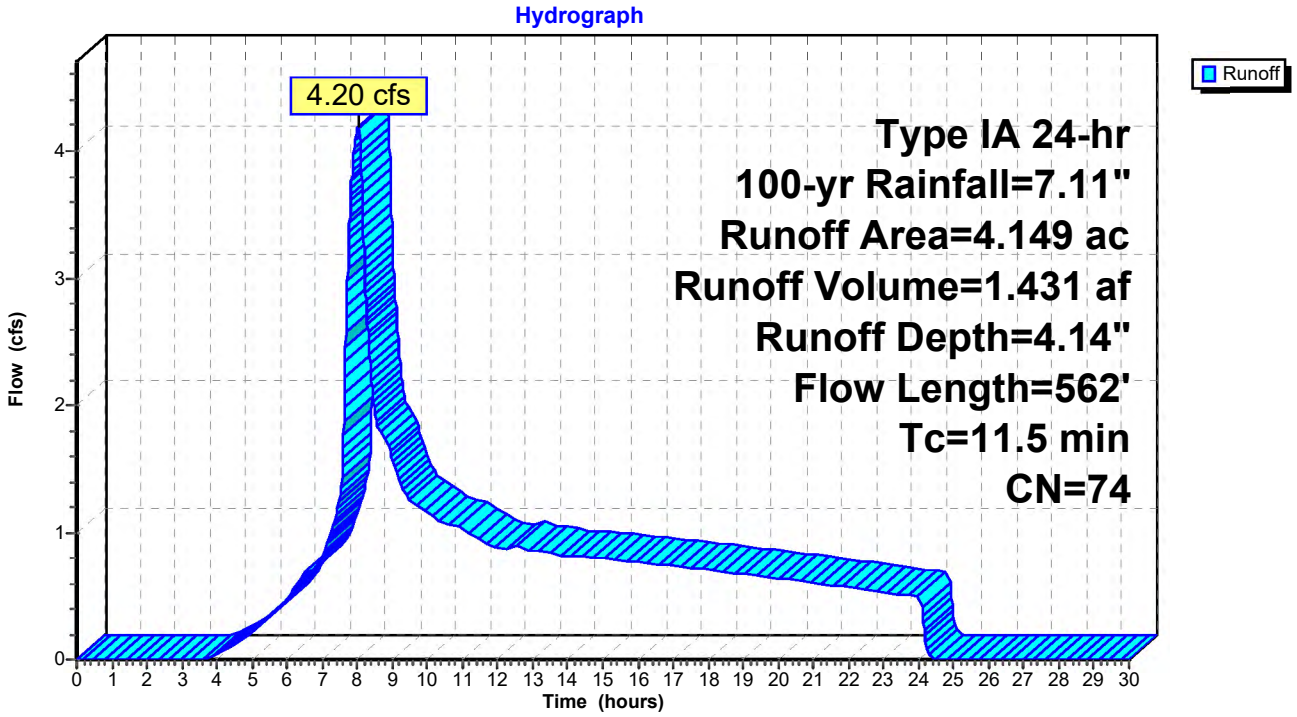
Runoff = 4.20 cfs @ 8.03 hrs, Volume= 1.431 af, Depth= 4.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=7.11"

Area (ac)	CN	Description
0.251	79	Annual Grass, Fair, HSG C
0.086	79	Vineyard, Fair, HSG C
1.677	75	Vineyard, Good, HSG C
2.134	73	Woods, Fair, HSG C
4.149	74	Weighted Average
4.149		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0600	0.18		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
0.9	157	0.1900	3.05		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
1.3	219	0.3200	2.83		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.1	86	0.1000	14.28	171.31	**Trap/Vee/Rect Channel Flow, Ditch (WRA)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
11.5	562	Total			

Subcatchment WS-2A: Subcat WS-2A



Summary for Subcatchment WS-2B: Subcat WS-2B

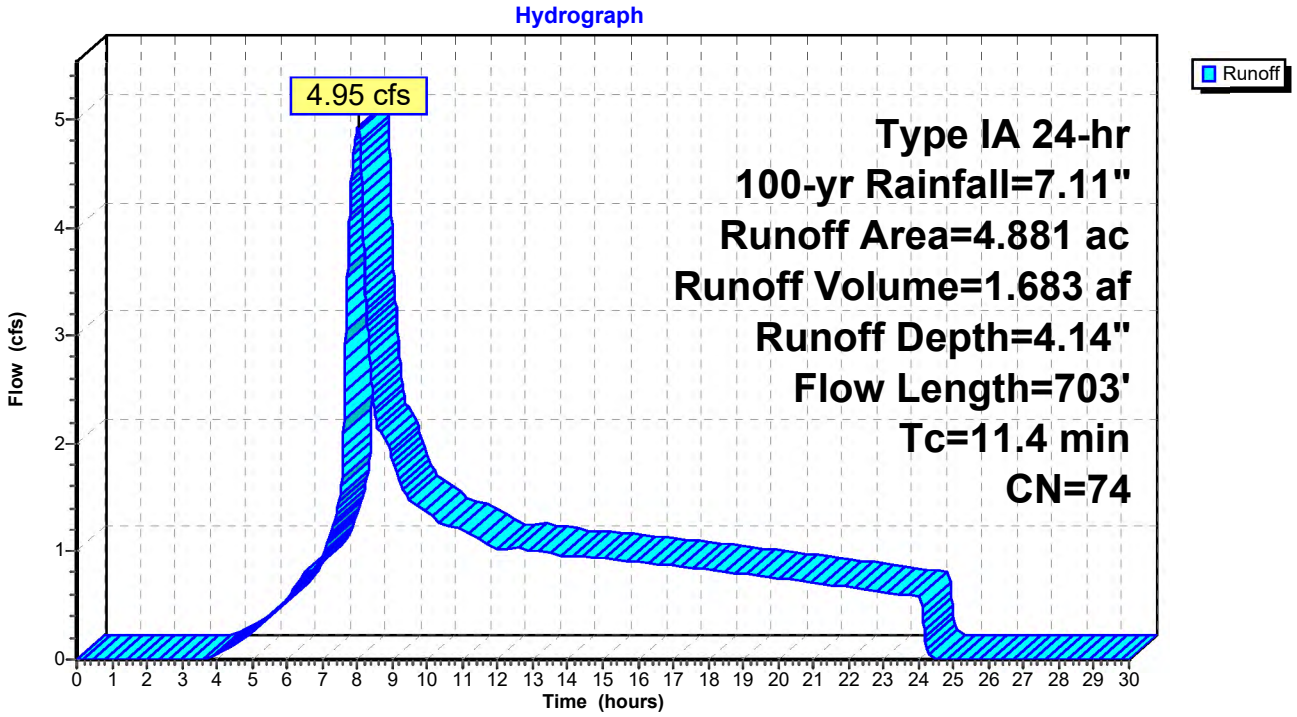
Runoff = 4.95 cfs @ 8.02 hrs, Volume= 1.683 af, Depth= 4.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=7.11"

Area (ac)	CN	Description
0.161	69	Annual Grass, Fair, HSG B
0.521	79	Annual Grass, Fair, HSG C
0.008	70	Brush, Fair, HSG C
0.166	79	Vineyard, Fair, HSG C
1.897	75	Vineyard, Good, HSG C
0.003	60	Woods, Fair, HSG B
2.126	73	Woods, Fair, HSG C
4.881	74	Weighted Average
4.881		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	100	0.0600	0.18		**Sheet Flow, Sheet** Grass: Dense n= 0.240 P2= 3.17"
0.9	145	0.1400	2.62		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
1.1	161	0.2500	2.50		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.2	297	0.2200	21.18	254.10	**Trap/Vee/Rect Channel Flow, Ditch (WRA)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
11.4	703	Total			

Subcatchment WS-2B: Subcat WS-2B



Summary for Subcatchment WS-2C: Subcat WS-2C

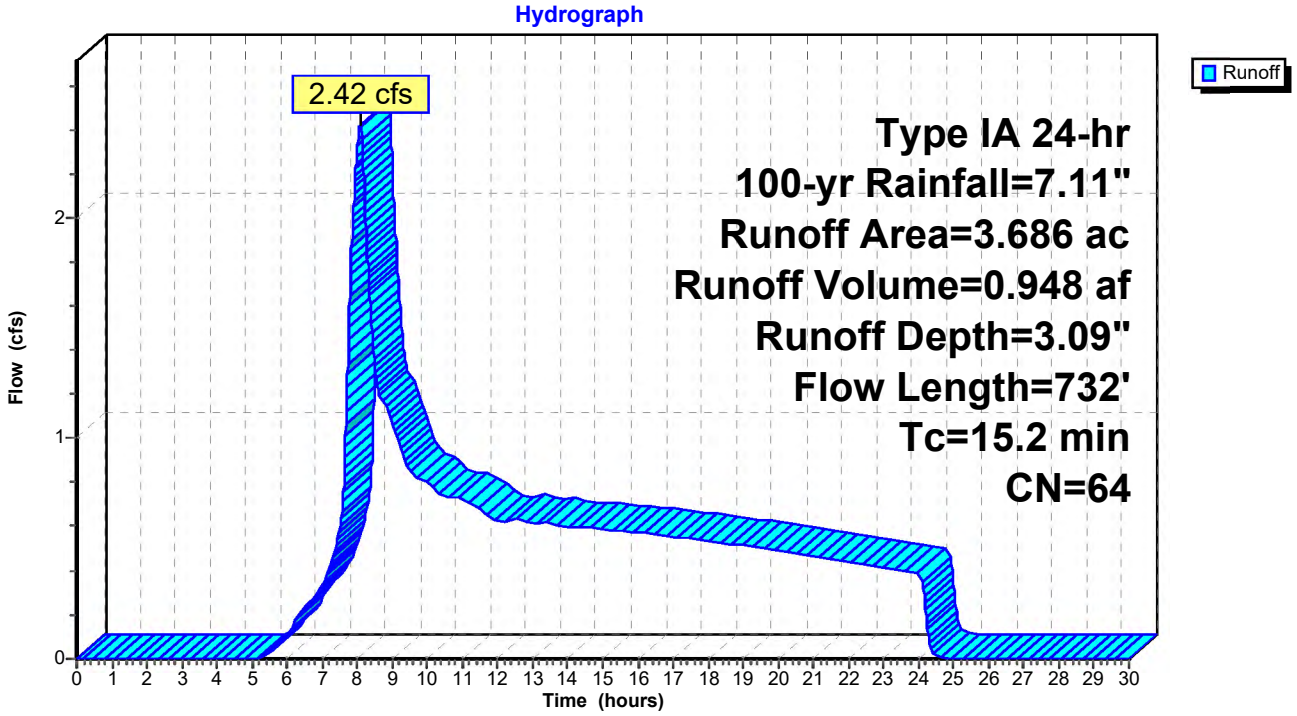
Runoff = 2.42 cfs @ 8.09 hrs, Volume= 0.948 af, Depth= 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=7.11"

Area (ac)	CN	Description
0.002	69	Annual Grass, Fair, HSG B
0.031	79	Annual Grass, Fair, HSG C
0.117	82	Dirt roads, HSG B
0.009	87	Dirt roads, HSG C
3.092	61	Vineyard, Good, HSG B
0.434	75	Vineyard, Good, HSG C
3.686	64	Weighted Average
3.686		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	100	0.2600	0.22		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
7.5	632	0.0400	1.40		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
15.2	732	Total			

Subcatchment WS-2C: Subcat WS-2C



Summary for Subcatchment WS-3A: Subcat WS-3A

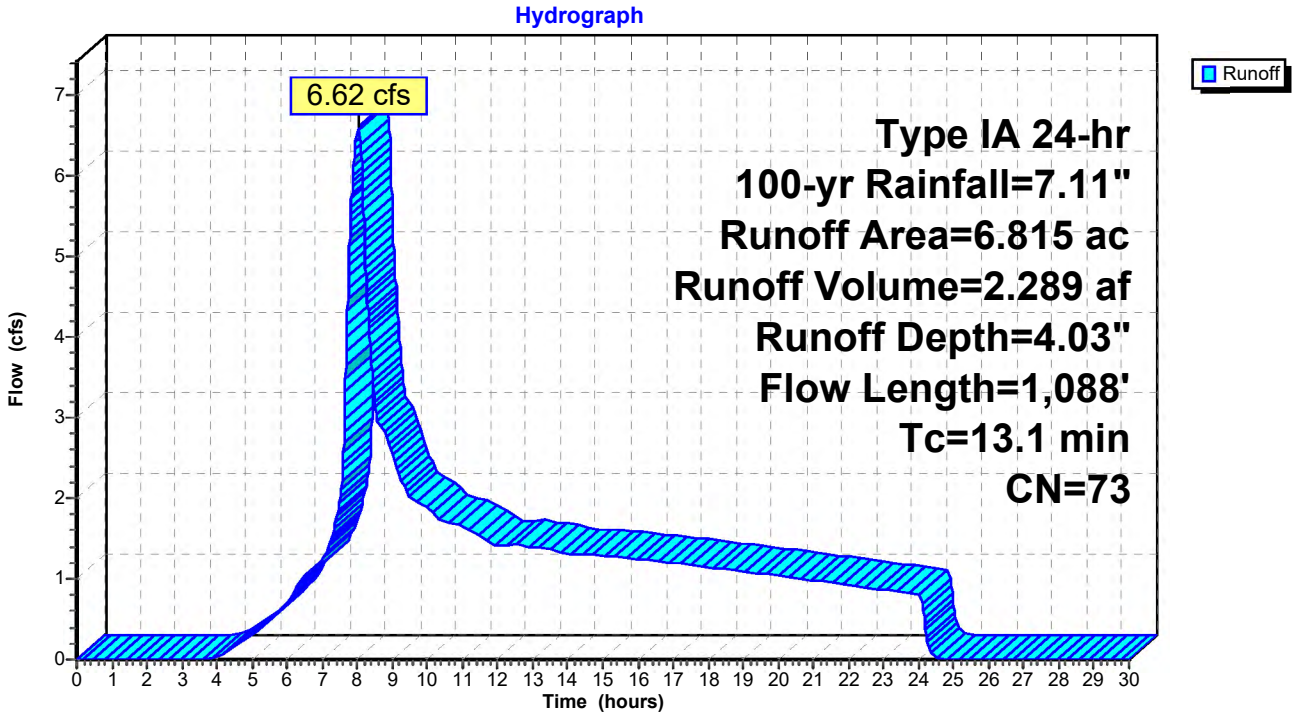
Runoff = 6.62 cfs @ 8.05 hrs, Volume= 2.289 af, Depth= 4.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=7.11"

Area (ac)	CN	Description
0.666	69	Annual Grass, Fair, HSG B
1.063	79	Annual Grass, Fair, HSG C
0.032	56	Brush, Fair, HSG B
0.035	70	Brush, Fair, HSG C
0.054	82	Farmsteads, HSG C
0.292	61	Vineyard, Good, HSG B
2.066	75	Vineyard, Good, HSG C
0.071	60	Woods, Fair, HSG B
2.537	73	Woods, Fair, HSG C
6.815	73	Weighted Average
6.815		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.1800	0.19		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
0.7	133	0.3500	2.96		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
1.1	236	0.2600	3.57		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
2.3	619	0.0100	4.51	54.17	**Trap/Vee/Rect Channel Flow, Ditch (Wappo)** Bot.W=2.00' D=2.00' Z= 2.0 '/' Top.W=10.00' n= 0.035
13.1	1,088	Total			

Subcatchment WS-3A: Subcat WS-3A



Summary for Subcatchment WS-3B: Subcat WS-3B

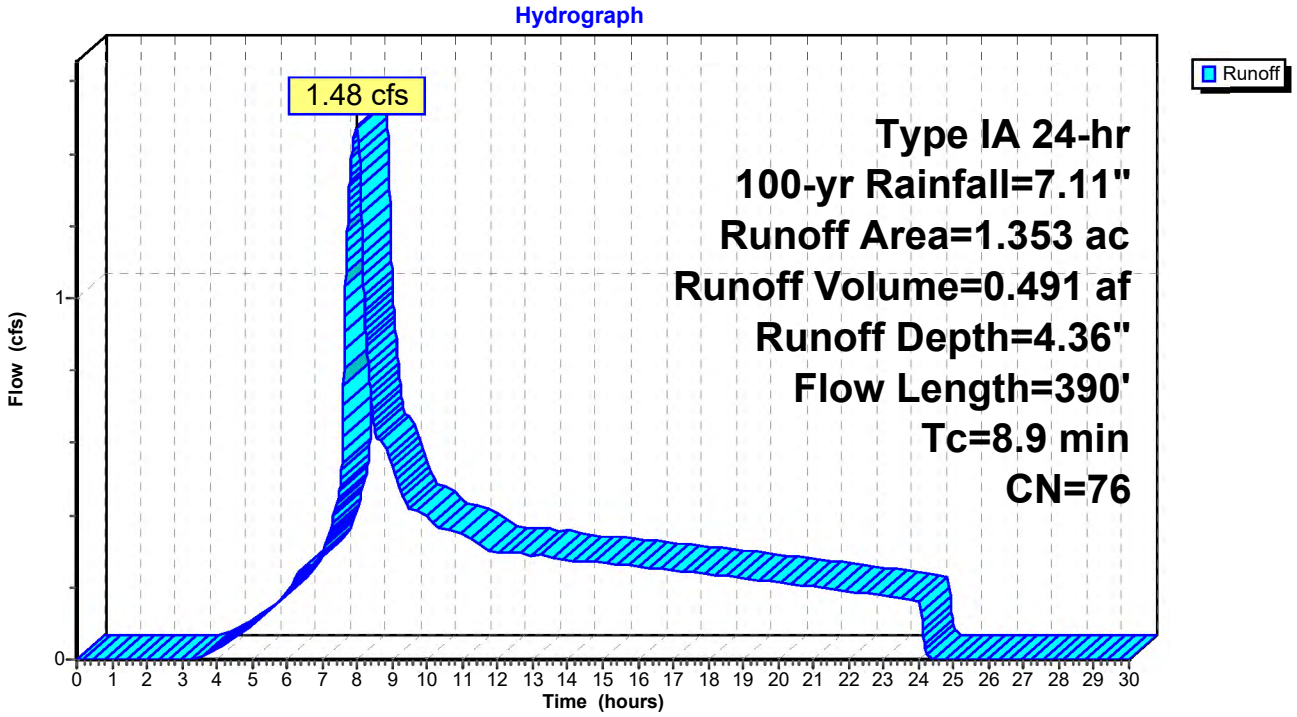
Runoff = 1.48 cfs @ 7.98 hrs, Volume= 0.491 af, Depth= 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=7.11"

Area (ac)	CN	Description
0.093	69	Annual Grass, Fair, HSG B
0.097	79	Annual Grass, Fair, HSG C
0.035	70	Brush, Fair, HSG C
0.478	82	Farmsteads, HSG C
0.016	61	Vineyard, Good, HSG B
0.072	75	Vineyard, Good, HSG C
0.562	73	Woods, Fair, HSG C
1.353	76	Weighted Average
1.353		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.2900	0.23		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
0.6	116	0.3800	3.08		**Shallow Concentrated Flow, Shallow - Woodland** Woodland Kv= 5.0 fps
0.7	145	0.2600	3.57		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
0.2	29	0.0100	2.74	3.36	**Pipe Channel, 15" CMP Culvert** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.025 Corrugated metal
8.9	390	Total			

Subcatchment WS-3B: Subcat WS-3B



Summary for Subcatchment WS-4: Subcat WS-4

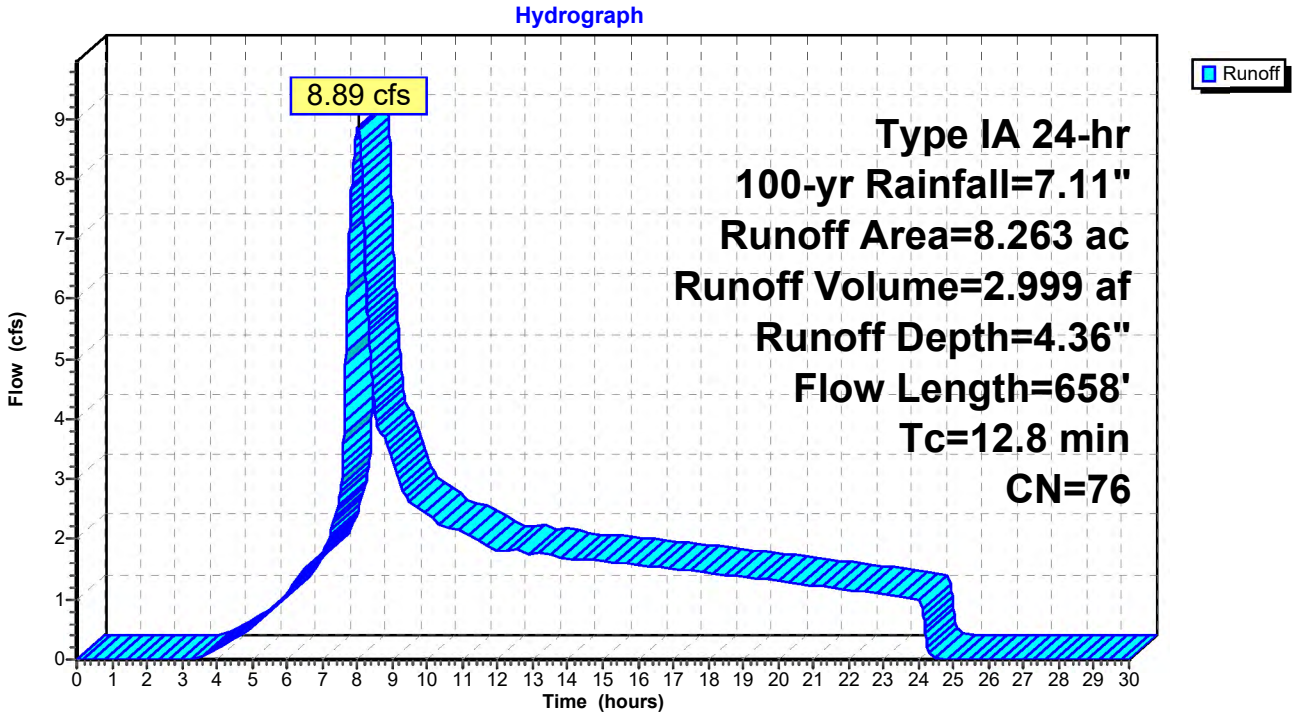
Runoff = 8.89 cfs @ 8.03 hrs, Volume= 2.999 af, Depth= 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=7.11"

Area (ac)	CN	Description
0.005	69	Annual Grass, Fair, HSG B
0.628	79	Annual Grass, Fair, HSG C
0.170	87	Dirt roads, HSG C
0.943	82	Farmsteads, HSG C
0.376	92	Paved roads w/open ditches, 50% imp, HSG C
0.173	61	Vineyard, Good, HSG B
4.086	75	Vineyard, Good, HSG C
1.884	73	Woods, Fair, HSG C
8.263	76	Weighted Average
8.075		97.72% Pervious Area
0.188		2.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.1900	0.19		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
4.0	558	0.1100	2.32		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
12.8	658	Total			

Subcatchment WS-4: Subcat WS-4



Summary for Subcatchment WS-5: Subcat WS-5

Runoff = 14.06 cfs @ 8.39 hrs, Volume= 6.186 af, Depth= 4.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=7.11"

Area (ac)	CN	Description
0.292	69	Annual Grass, Fair, HSG B
2.317	79	Annual Grass, Fair, HSG C
0.347	82	Dirt roads, HSG B
0.098	87	Dirt roads, HSG C
0.529	86	Fallow, bare soil, HSG B
0.460	91	Fallow, bare soil, HSG C
1.261	82	Farmsteads, HSG C
0.276	92	Paved roads w/open ditches, 50% imp, HSG C
7.201	69	Vineyard, Fair, HSG B
0.459	79	Vineyard, Fair, HSG C
2.670	75	Vineyard, Good, HSG C
1.571	73	Woods, Fair, HSG C
17.482	75	Weighted Average
17.344		99.21% Pervious Area
0.138		0.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.1800	0.19		**Sheet Flow, Sheet** Woods: Light underbrush n= 0.400 P2= 3.17"
2.1	404	0.2200	3.28		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
32.5	1,366	0.0100	0.70		**Shallow Concentrated Flow, Shallow - Short Grass** Short Grass Pasture Kv= 7.0 fps
43.6	1,870	Total			

Subcatchment WS-5: Subcat WS-5

