SITE ENGINEERING DESIGN REPORT

Proposed Residential Subdivision
Summit Street
Derby, Connecticut
Job No. 2508

Prepared For:
Summit Hill, LLC

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INTRODUCTION:

Summit Hill, LLC is proposing the construction of 34 new residential duplex houses and 5 single-family detached dwellings on the two parcels totaling 17.725 acres at the end of Summit Street. The majority of the proposed dwellings will have a total floor area of approximately 2,080 square feet, distributed over two (2) stories.

Currently, the property is made up of 2 parcels. The entire site in general is a wooded area with little understory with some rock outcrops.

The stormwater runoff from the site flows in three directions: southwest to Coon Hollow Brook, which flows southerly and connects to an unnamed canal to the Housatonic River. To the northeast, where water flows to a tributary to the Naugatuck River that starts near Spring and Mohawk Ave. The southeast portion of the site flows southeast towards a tributary of the Naugatuck river which starts near the east end of Fall Street.

This site has an existing accessway to Summit Street. Two roadways are proposed for this development accessing Summit Street and Mountain Street in Derby. Upon completion of the development, garage parking will be provided for 78 cars; these spaces will be garage spaces located in the single houses 2-car garages, and the on car garage for each duplex unit.

EXISTING STORMWATER RUNOFF

For analysis purposes, the site has been examined as having four drainage areas. These four drainage areas will be referred to as DA-1 & DA-2(South west, North West drainage area flowing to Coon Hollow Brook), and DA-3 & DA-4 (North East and south East drainage area flowing to Mountain Street, and Fall Street).

Based on the above, it is apparent that there is three points of interest associated with the existing drainage pattern, the point immediately prior to the southwesterly portion of the property to a Coon Hollow Brook, where the site drains, and the two point immediately prior to the Northeasterly and southwesterly portions of the property. Peak rates of stormwater runoff, for 2, 10, 25, 50 and 100-year storm events, have been calculated for this point of interest. The rates are depicted on Table 1. The supporting calculations are included as Appendix A.

These existing flows will later be compared to post-development flows as a means of assessing the potential flow impact on surrounding infrastructures.

TABLE 1

Existing Flows (CFS)

Existing Runoff from the western watershed area to be developed

Drainage Area	2-Yr	10-Yr	25-Yr	50-Yr	100-Yr
DA-1 S. West	6.51	12.68	16.62	19.58	22.77
DA-2 N.West	3.99	7.71	10.09	11.87	13.79
WEST TOTAL	9.97	19.44	25.51	30.08	35.00

Existing Runoff from the eastern watershed area to be developed

DA-3 N. East	9.03	17.54	22.97	27.06	31.45
DA-4 S. East	8.96	17.41	22.81	26.87	31.23

PROPOSED STORM WATER DRAINAGE

The plans are designed to minimize potential impacts to adjacent properties and the existing stormwater infrastructure.

Without stormwater quality measures, the proposed development of this site will increase the Weighted Runoff Coefficient (WRC) and decrease the Time of Concentration (Tc), resulting in an increase in the peak rate of stormwater runoff. However, the construction of two (2) Storm Water Management Areas (SWMA) actually reduces the post-development rate of runoff relative to predevelopment conditions.

Design details for these systems are presented on Sheet SP-2 (part of the overall Project Documents). The system will drain the Roads, sidewalks, and grassy areas associated with the 34 new residential duplex houses and 5-single-family detached homes development. The Roads will be the major elements of the total impervious area on the site. (calculations included as Appendix A, Gutter flow analysis included as Appendix B) The roof, grassy areas, sidewalks, and driveways will contribute to the runoff totals seen in Table 2. The Roofs and driveways will be controlled by separate individual systems on each lot designed at a later time when the house's final layouts are known.

WEST POND

The Southwest Pond receives runoff from DA-1A, DA-2A, DA-3C and DA-4A. The basin provides approximately 100,937 cubic feet of storage with a maximum design depth of approximately 14.5 feet. Outlet control is provided through a low-flow outlet structure and an emergency overflow weir. The 100-year routed discharge from the pond is approximately 13.71 cfs.

NORTH SYSTEM

The North System receives runoff from DA-3A and consists of six rows of underground concrete chamber galleries approximately 100 feet in length. Total available storage is approximately 14,576 cubic feet. The system attenuates runoff from the northeastern drainage area before discharge to the downstream drainage network.

As indicated in the following summary and attached computations, the proposed development will reduce the peak rate of runoff to less than the pre-developed condition for all the water shed areas, Northwest, South West, Northeast, and Southeast on-site.

The development as proposed, will not have an adverse impact on the surrounding wetlands or watercourses.

Table 2, (below) represents the combined effect of these flow patterns on the existing infrastructures. Flows from the proposed systems will produce peak flows that are less than the existing peak flows from the two watersheds on the site.

TABLE 2

Proposed Flows (CFS) for new condition

Proposed Runoff from the western watershed area to be developed

Drainage Area	2-Yr	10-Yr	25-Yr	50-Yr	100-Yr
WEST TOTAL	3.193	5.924	7.511	8.677	15.55
Percent reduction	**-67.97%**	**-69.53%**	**-70.56%**	**-71.15%**	**-55.57%**

Proposed Runoff from the eastern watershed area to be developed

DA-3A N.East from galleries	7.92	15.71	20.45	23.91	27.58
Percent reduction	**-12.29%**	**-10.43%**	**-10.97%**	**-11.64%**	**-12.31%**
DA-4-B S.East	6.912	13.36	17.47	20.56	23.88
Percent reduction	**-22.86%**	**-23.26%**	**-23.41%**	**-23.48%**	**-23.54%**

SANITARY SEWER

Sanitary Sewer discharge will be through a proposed 8-inch PVC sanitary sewer line to the existing sewer main in Summit Street.

Using the technical standards of the Connecticut Public Health Code, the estimated sewage flow is 150 gallons per day per bedroom. This development will have no more than 219 bedrooms :

34 lots have 6 bedrooms + 5 lots have 3 bedrooms
(34 x 6) + (5x3)= 219 total bedrooms
219 x 150 = 32,850 gallons per day average flow

Average Daily Flow = 22.8 gpm per phase

Peak flow estimate = 22.8 x 5 (peaking factor) =114

= 114gpm Peak or 0.25 cfs

Other Utilities
All proposed utilities to the site will be through underground utility connections. Electrical service will be from existing aboveground electric utility line in proposed streets. Water service will be from an existing water main in the proposed streets.

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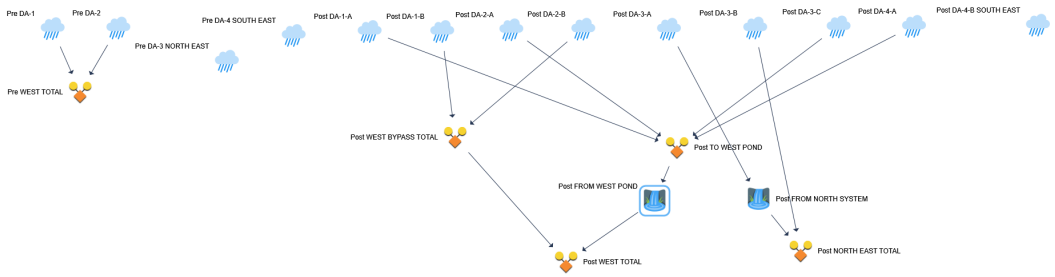
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Basin Model

Hydrology Studio v 3.0.0.44

Project Name: Sumitt St Derby
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Hydrograph by Return Period

Hydrology Studio v 3.0.0.44

Project Name: Sumitt St Derby
File: Draiange Calcs.hys
08-13-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Outflow (cfs)							
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
1	NRCS Runoff	Pre DA-1		6.512			12.68	16.62	19.58	22.77
2	NRCS Runoff	Pre DA-2		3.987			7.713	10.09	11.87	13.79
3	NRCS Runoff	Pre DA-3 NORTH EAST		9.025			17.54	22.97	27.06	31.45
4	NRCS Runoff	Pre DA-4 SOUTH EAST		8.956			17.41	22.81	26.87	31.23
5	NRCS Runoff	Post DA-1-A		7.913			15.01	19.50	22.87	26.48
6	NRCS Runoff	Post DA-1-B		1.278			2.470	3.230	3.800	4.414
7	NRCS Runoff	Post DA-2-A		3.574			6.780	8.810	10.33	11.96
8	NRCS Runoff	Post DA-2-B		1.037			2.005	2.622	3.085	3.583
9	NRCS Runoff	Post DA-3-A		4.497			8.181	10.48	12.20	14.05
10	NRCS Runoff	Post DA-3-B		7.292			13.94	18.16	21.32	24.72
11	NRCS Runoff	Post DA-3-C		1.217			2.252	2.903	3.390	3.912
12	NRCS Runoff	Post DA-4-A		5.939			10.52	13.36	15.48	17.75
13	NRCS Runoff	Post DA-4-B SOUTH EAST		6.912			13.36	17.47	20.56	23.88
14	Junction	Pre WEST TOTAL		9.969			19.44	25.51	30.08	35.00
15	Junction	Post TO WEST POND		18.64			34.56	44.58	52.07	60.11
16	Pond Route	Post FROM WEST POND		1.304			1.828	2.052	5.627	13.83
17	Junction	Post WEST BYPASS TOTAL		2.315			4.475	5.852	6.885	7.996
18	Junction	Post WEST TOTAL		3.193			5.924	7.511	8.677	15.67
19	Pond Route	Post FROM NORTH SYSTEM		0.531			2.051	2.677	3.380	8.628
20	Junction	Post NORTH EAST TOTAL		7.292			15.42	20.32	23.84	27.55

Hydrograph 2-yr Summary

Hydrology Studio v 3.0.0.44

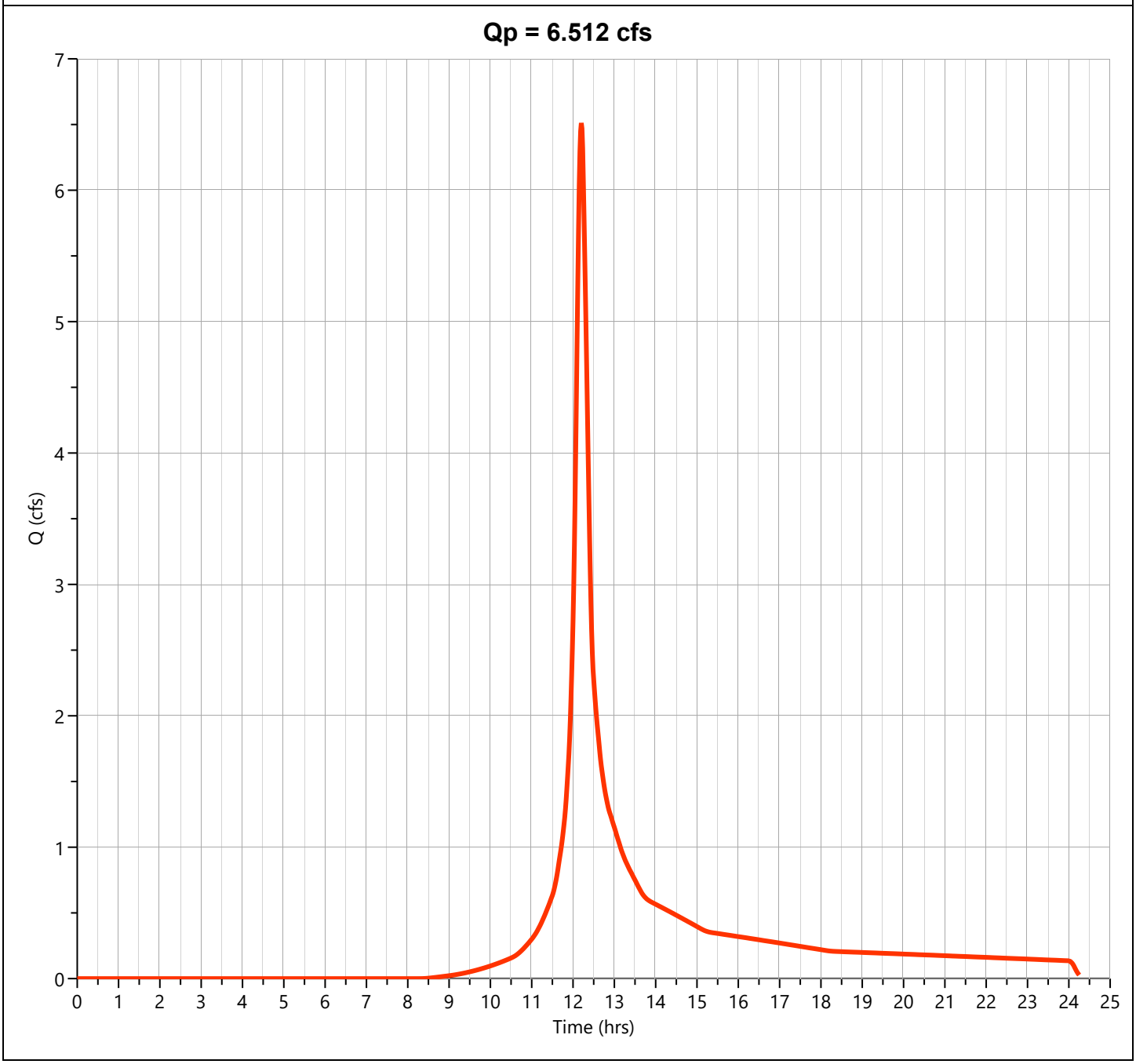
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Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	Pre DA-1	6.512	12.20	26,416	----		
2	NRCS Runoff	Pre DA-2	3.987	12.13	12,984	----		
3	NRCS Runoff	Pre DA-3 NORTH EAST	9.025	12.17	33,396	----		
4	NRCS Runoff	Pre DA-4 SOUTH EAST	8.956	12.18	34,451	----		
5	NRCS Runoff	Post DA-1-A	7.913	12.12	24,458	----		
6	NRCS Runoff	Post DA-1-B	1.278	12.12	3,948	----		
7	NRCS Runoff	Post DA-2-A	3.574	12.12	11,048	----		
8	NRCS Runoff	Post DA-2-B	1.037	12.12	3,204	----		
9	NRCS Runoff	Post DA-3-A	4.497	12.12	13,959	----		
10	NRCS Runoff	Post DA-3-B	7.292	12.12	22,532	----		
11	NRCS Runoff	Post DA-3-C	1.217	12.12	3,767	----		
12	NRCS Runoff	Post DA-4-A	5.939	12.12	18,545	----		
13	NRCS Runoff	Post DA-4-B SOUTH EAST	6.912	12.12	21,356	----		
14	Junction	Pre WEST TOTAL	9.969	12.17	39,400	1, 2		
15	Junction	Post TO WEST POND	18.64	12.12	57,818	5, 7, 11, 12		
16	Pond Route	Post FROM WEST POND	1.304	13.62	50,149	15	180.96	31,188
17	Junction	Post WEST BYPASS TOTAL	2.315	12.12	7,152	6, 8		
18	Junction	Post WEST TOTAL	3.193	12.13	57,301	16, 17		
19	Pond Route	Post FROM NORTH SYSTEM	0.531	12.98	7,654	9	226.08	7,548
20	Junction	Post NORTH EAST TOTAL	7.292	12.12	30,187	10, 19		

Pre DA-1

Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 6.512 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.20 hrs
Time Interval	= 1 min	Runoff Volume	= 26,416 cuft
Drainage Area	= 4.106 ac	Curve Number	= 80.00
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 14.46 min
Total Rainfall	= 3.67 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



DA-1

Hyd. No. 1

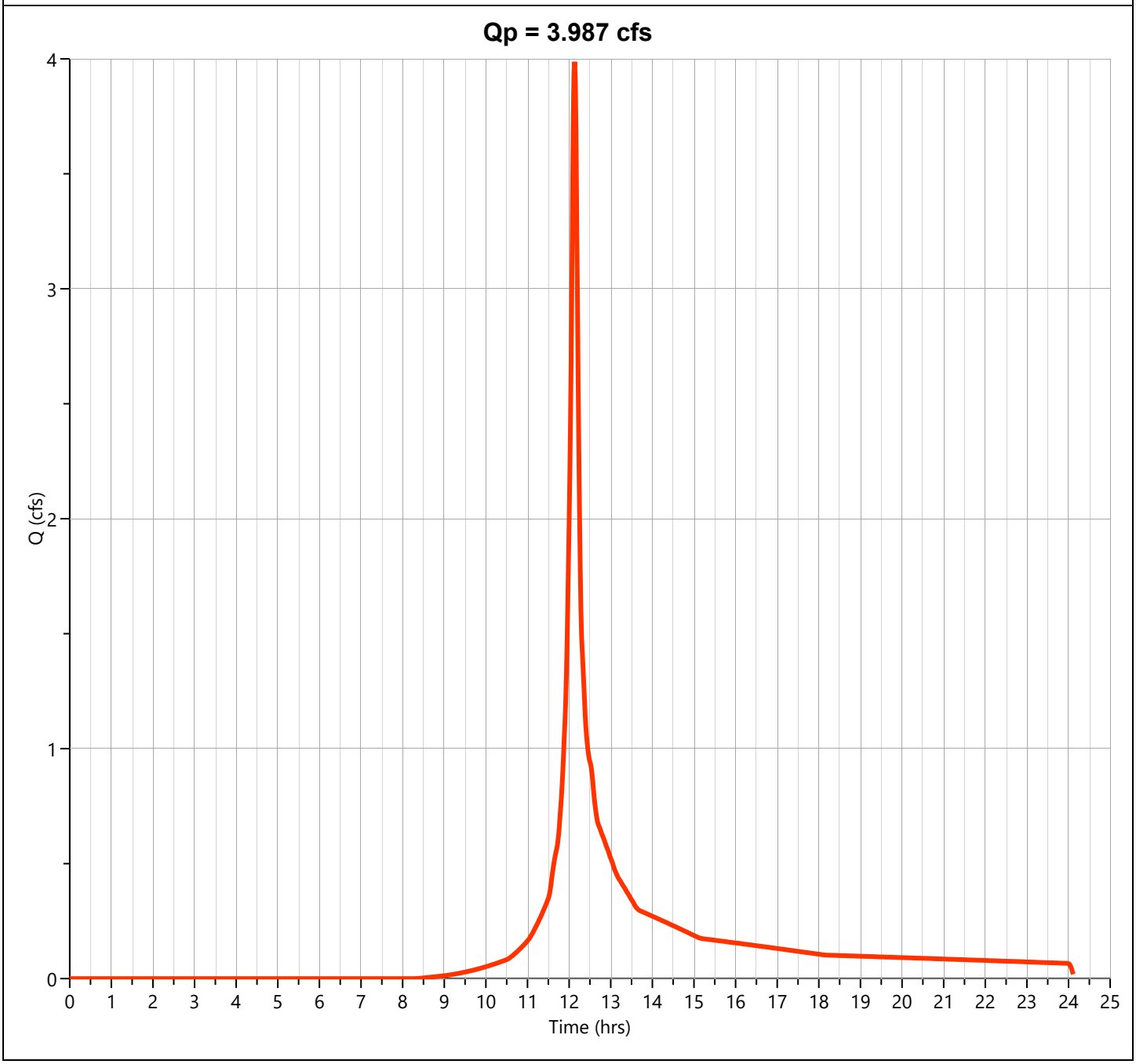
NRCS Runoff

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.150	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	3.48	3.48	3.48	
Land Slope (%)	15			
Travel Time (min)	**4.20**	**0.00**	**0.00**	**4.20**
Shallow Concentrated Flow				
Flow Length (ft)	600			
Watercourse Slope (%)	15.00	0.00	0.00	
Surface Description	Forest	Paved	Paved	
Average Velocity (ft/s)	.97			
Travel Time (min)	**10.26**	**0.00**	**0.00**	**10.26**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**14.46 min**

Pre DA-2

Hyd. No. 2

Hydrograph Type	= NRCS Runoff	Peak Flow	= 3.987 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Runoff Volume	= 12,984 cuft
Drainage Area	= 2.07 ac	Curve Number	= 80.00
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 7.34 min
Total Rainfall	= 3.67 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



DA-2

Hyd. No. 2

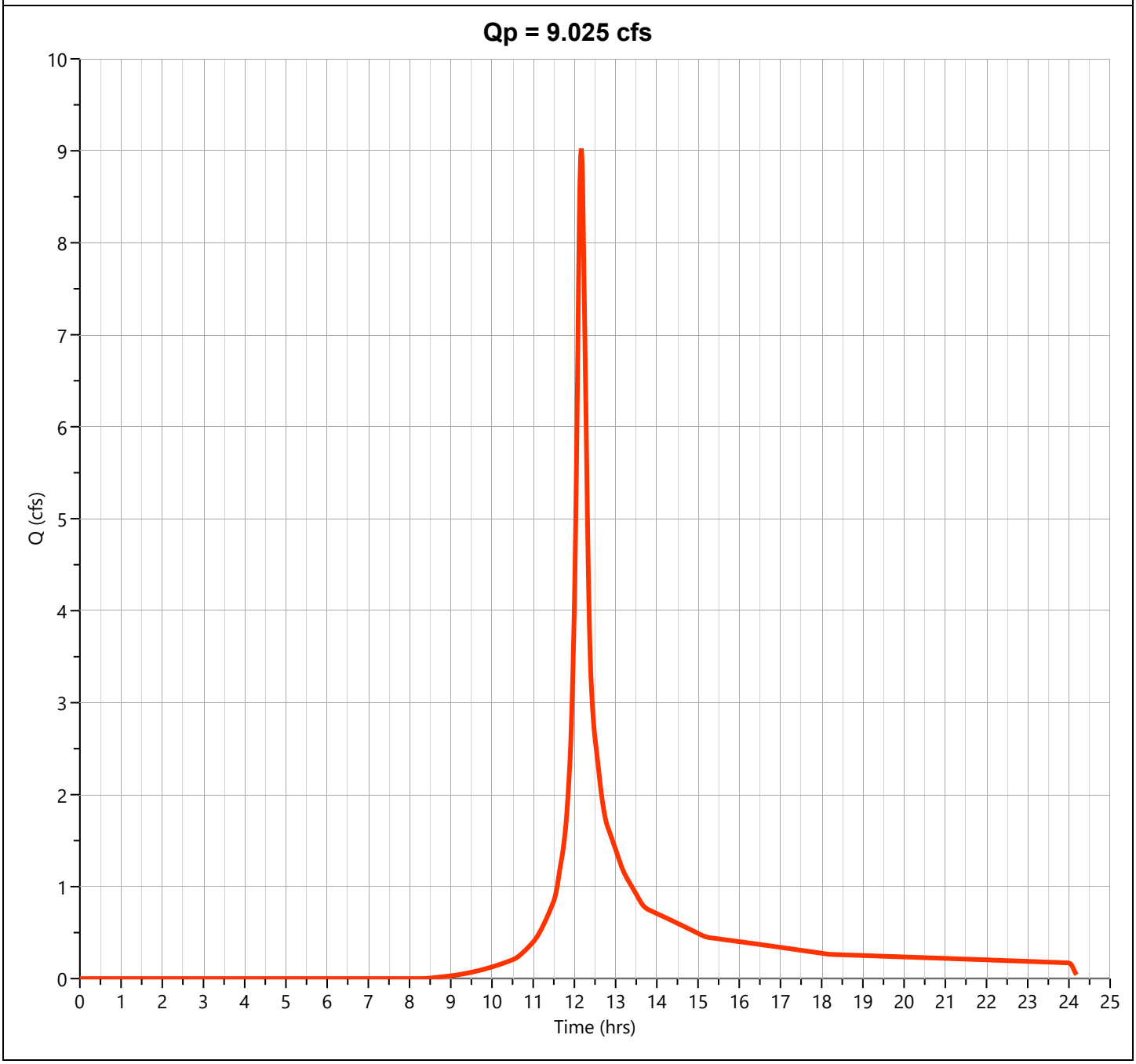
NRCS Runoff

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.150	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	3.67	3.67	3.67	
Land Slope (%)	15			
Travel Time (min)	**4.09**	**0.00**	**0.00**	**4.09**
Shallow Concentrated Flow				
Flow Length (ft)	190			
Watercourse Slope (%)	15.00	0.00	0.00	
Surface Description	Forest	Paved	Paved	
Average Velocity (ft/s)	.97			
Travel Time (min)	**3.25**	**0.00**	**0.00**	**3.25**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**7.34 min**

Pre DA-3 NORTH EAST

Hyd. No. 3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 9.025 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.17 hrs
Time Interval	= 1 min	Runoff Volume	= 33,396 cuft
Drainage Area	= 5.1 ac	Curve Number	= 80.00
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 10.24 min
Total Rainfall	= 3.67 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



DA-3 NORTH EAST

Hyd. No. 3

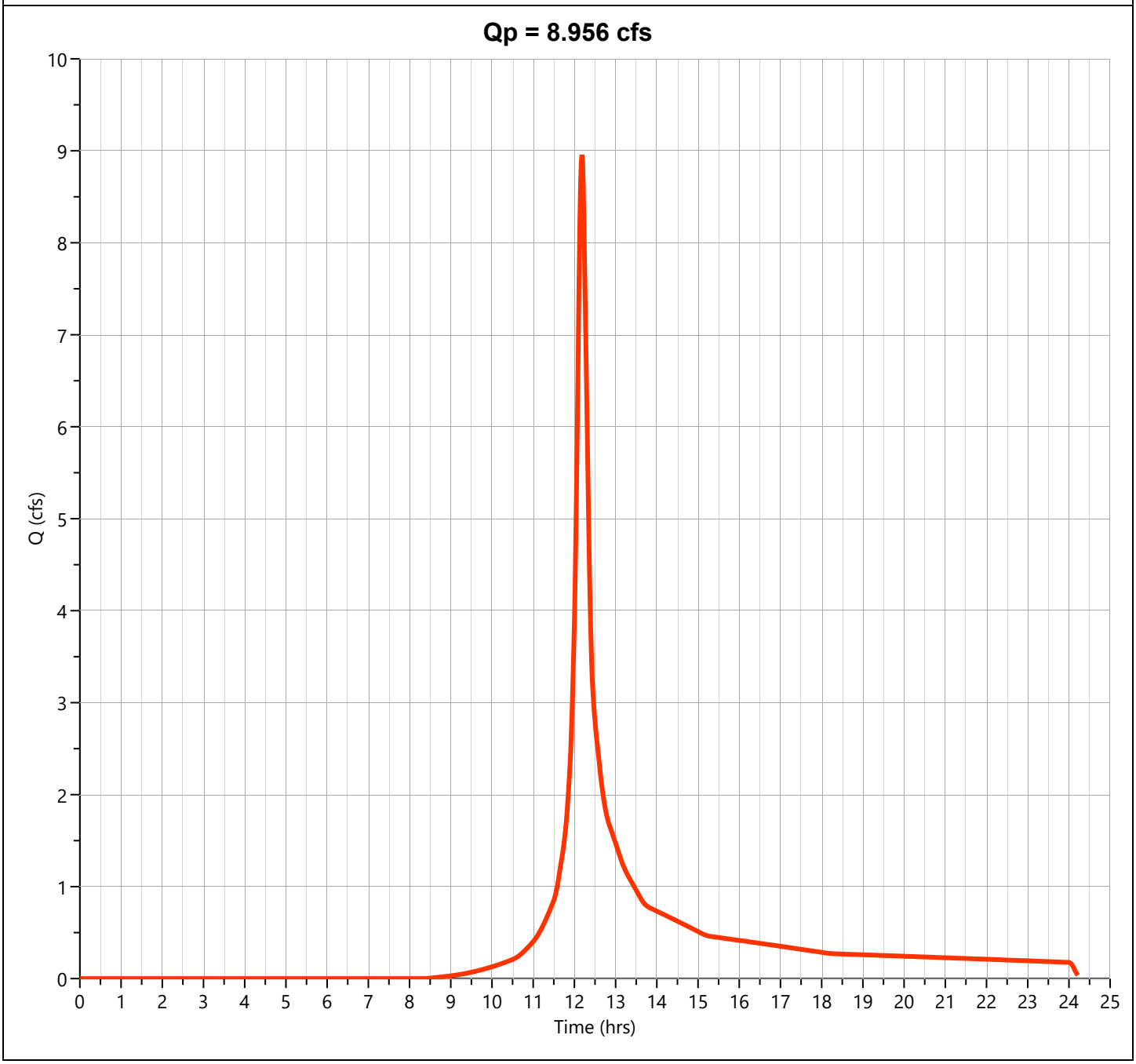
NRCS Runoff

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.150	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	3.67	3.67	3.67	
Land Slope (%)	15			
Travel Time (min)	**4.09**	**0.00**	**0.00**	**4.09**
Shallow Concentrated Flow				
Flow Length (ft)	360			
Watercourse Slope (%)	15.00	0.00	0.00	
Surface Description	Forest	Paved	Paved	
Average Velocity (ft/s)	.97			
Travel Time (min)	**6.16**	**0.00**	**0.00**	**6.16**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**10.24 min**

Pre DA-4 SOUTH EAST

Hyd. No. 4

Hydrograph Type	= NRCS Runoff	Peak Flow	= 8.956 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.18 hrs
Time Interval	= 1 min	Runoff Volume	= 34,451 cuft
Drainage Area	= 5.44 ac	Curve Number	= 80.00
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 12.26 min
Total Rainfall	= 3.67 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



DA-4 SOUTH EAST

Hyd. No. 4

NRCS Runoff

Description	Segments			
	A	B	C	Tc (min)
Sheet Flow				
Description				
Manning's n	0.150	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	3.67	3.67	3.67	
Land Slope (%)	15			
Travel Time (min)	**4.09**	**0.00**	**0.00**	**4.09**
Shallow Concentrated Flow				
Flow Length (ft)	478			
Watercourse Slope (%)	15.00	0.00	0.00	
Surface Description	Forest	Paved	Paved	
Average Velocity (ft/s)	.97			
Travel Time (min)	**8.18**	**0.00**	**0.00**	**8.18**
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	**0.00**	**0.00**	**0.00**	**0.00**
Total Travel Time				**12.26 min**

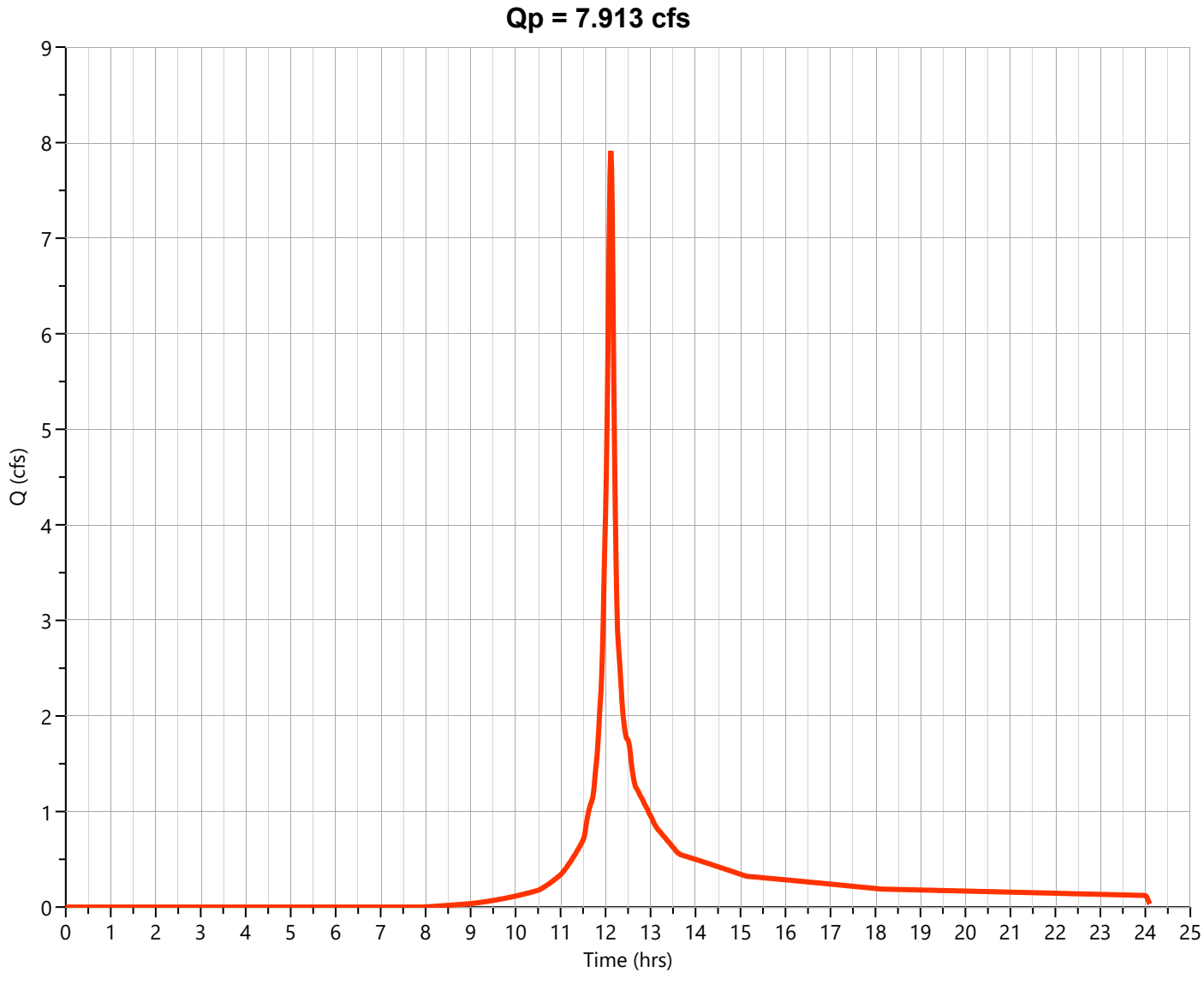
Post DA-1-A

Hyd. No. 5

Hydrograph Type	= NRCS Runoff	Peak Flow	= 7.913 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 24,458 cuft
Drainage Area	= 3.511 ac	Curve Number	= 81.18*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 3.67 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

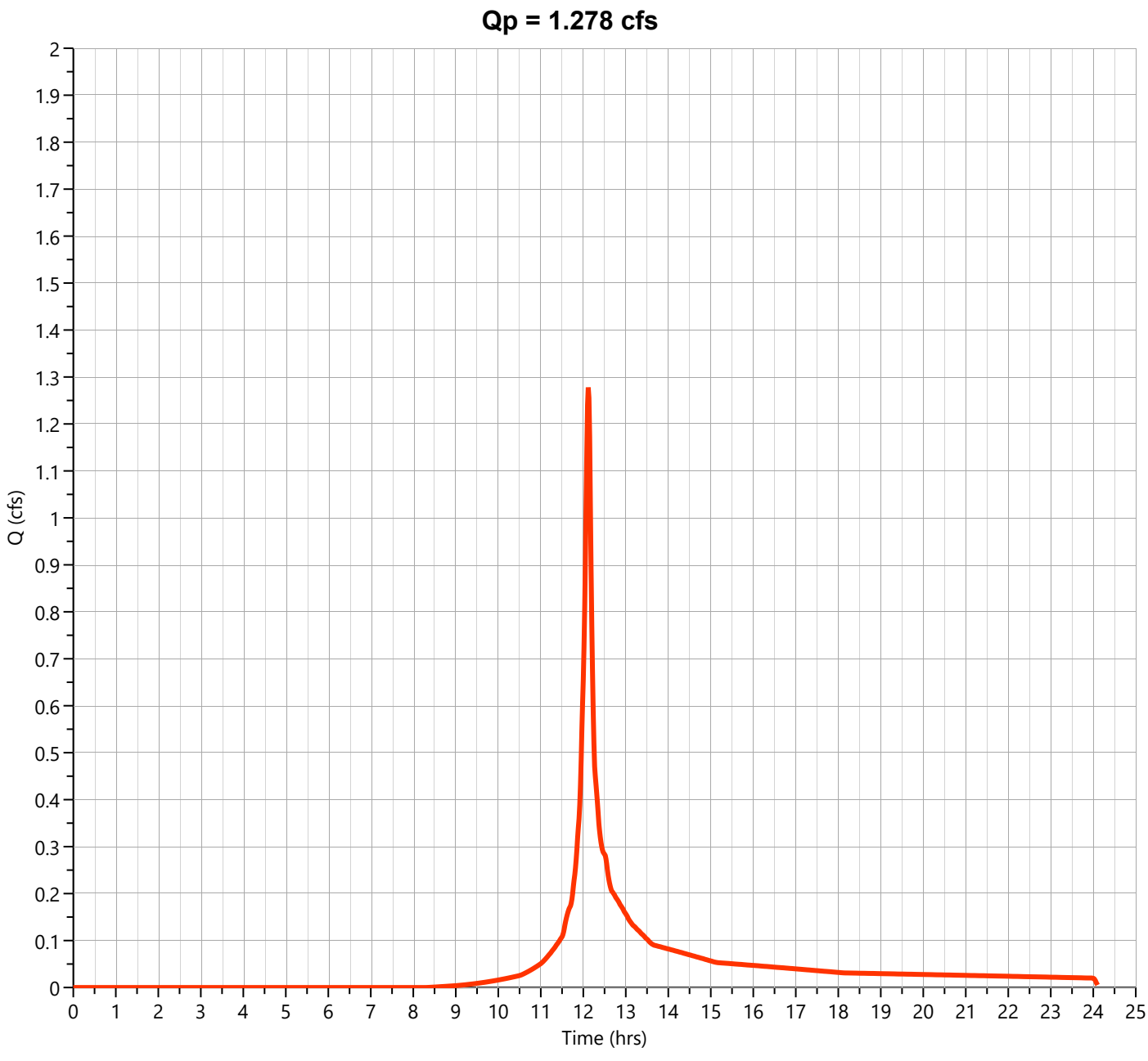
AREA (ac)	CN	DESCRIPTION
0.23	98.00	
3.281	80.00	
3.511	**81.18**	Weighted CN Method Employed



Post DA-1-B

Hyd. No. 6

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.278 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 3,948 cuft
Drainage Area	= 0.595 ac	Curve Number	= 80.00
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 3.67 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



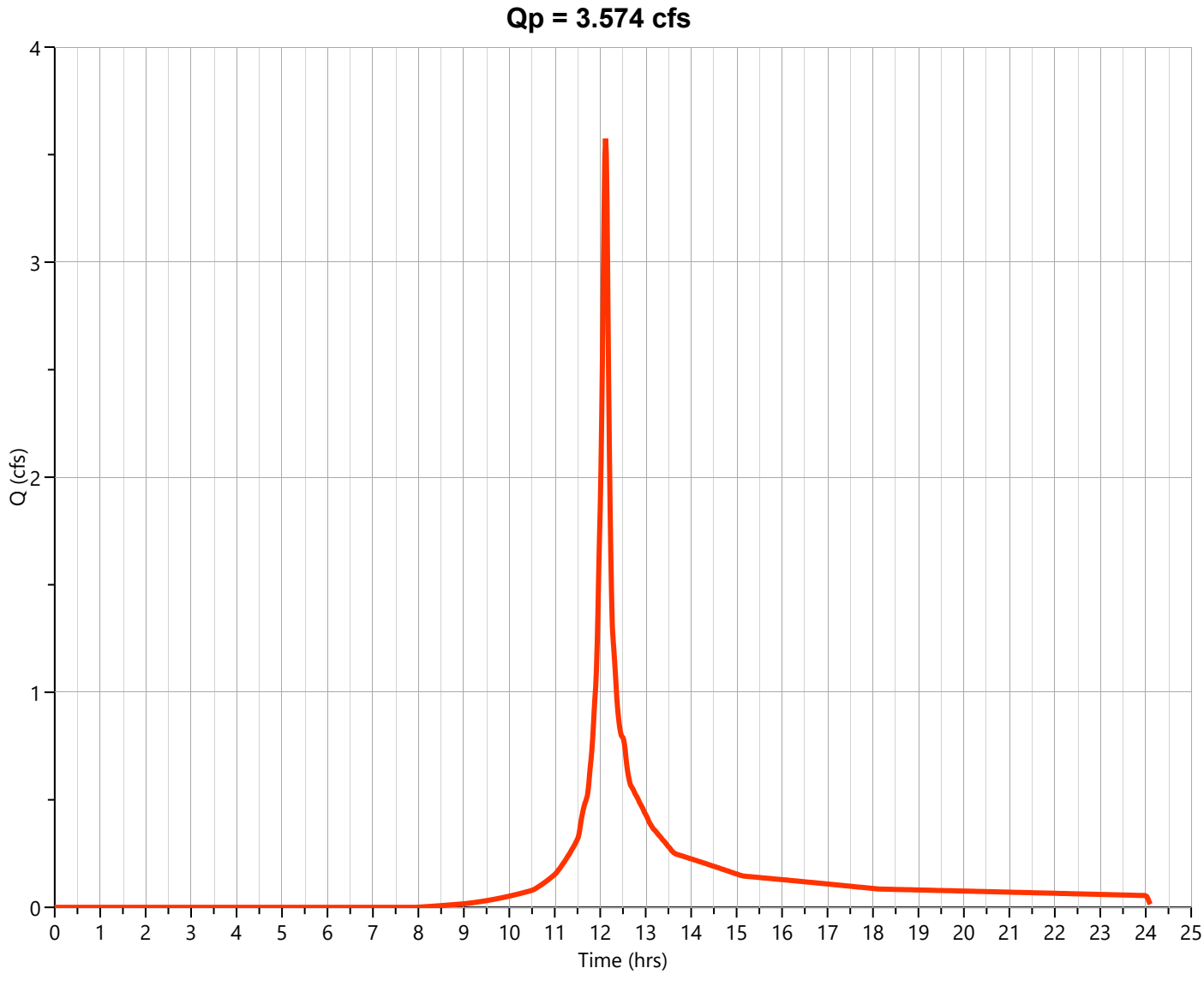
Post DA-2-A

Hyd. No. 7

Hydrograph Type	= NRCS Runoff	Peak Flow	= 3.574 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 11,048 cuft
Drainage Area	= 1.586 ac	Curve Number	= 81.18*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 3.67 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

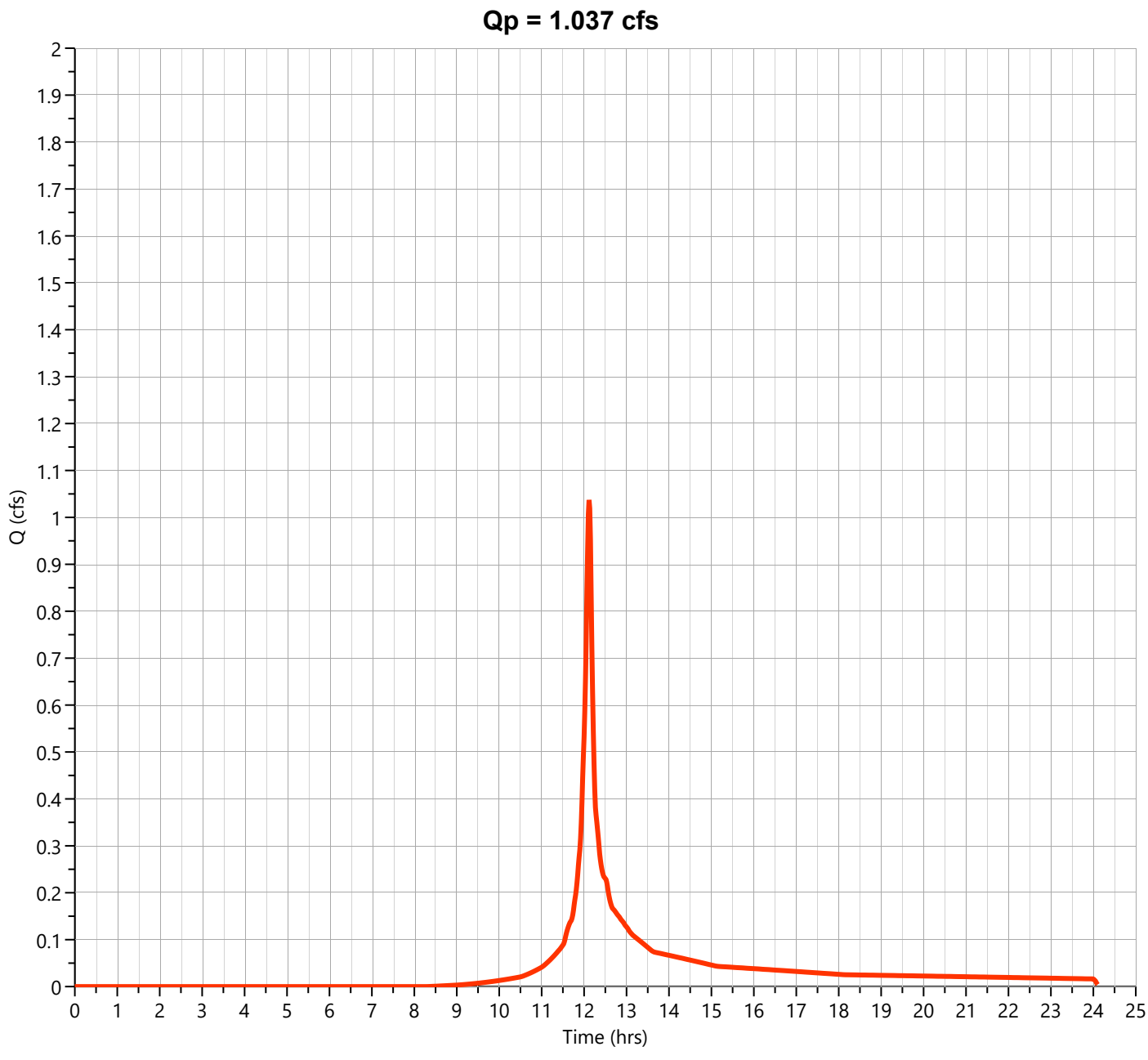
AREA (ac)	CN	DESCRIPTION
0.104	98.00	
1.482	80.00	
1.586	**81.18**	Weighted CN Method Employed



Post DA-2-B

Hyd. No. 8

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.037 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 3,204 cuft
Drainage Area	= 0.483 ac	Curve Number	= 80.00
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 3.67 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



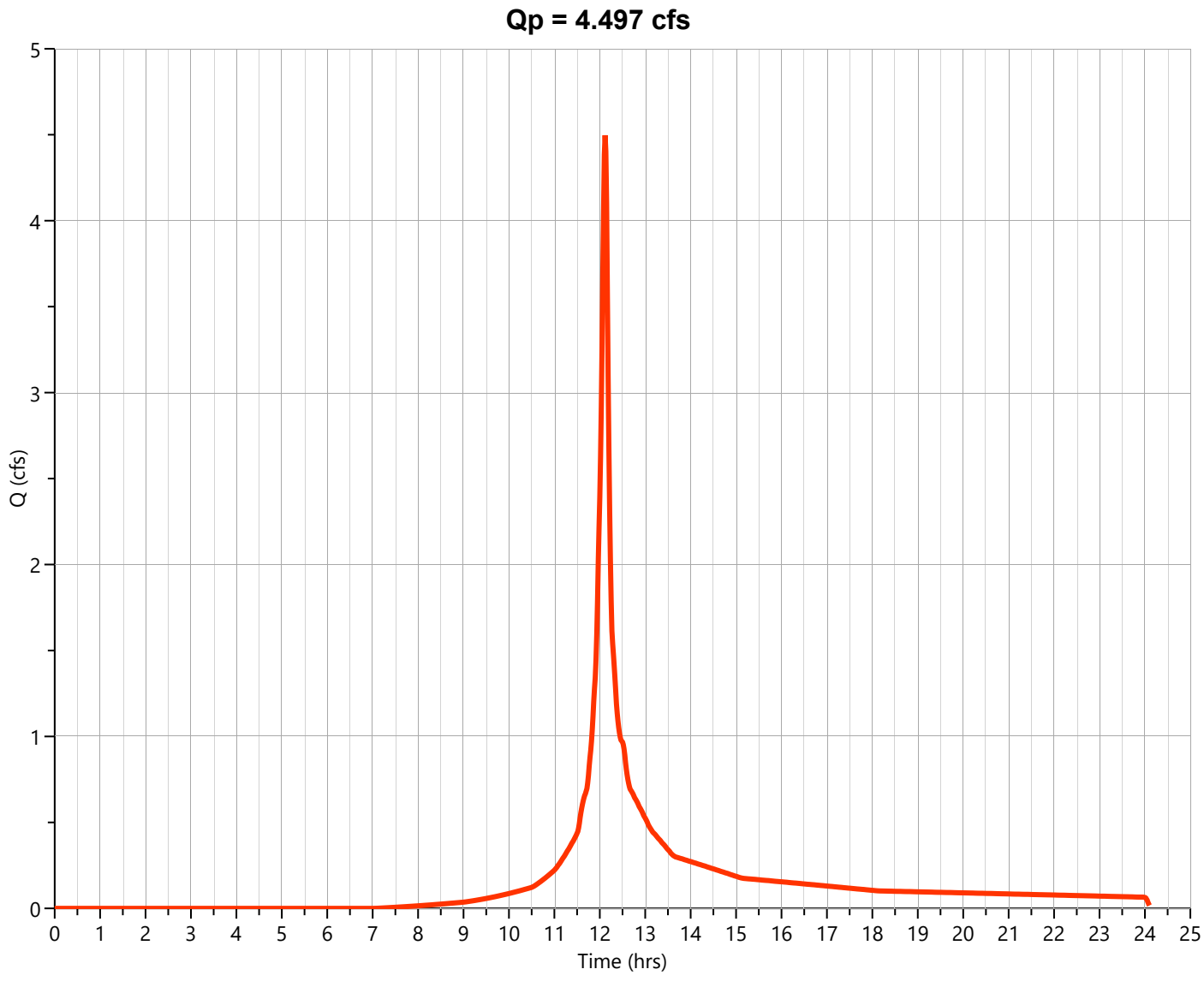
Post DA-3-A

Hyd. No. 9

Hydrograph Type	= NRCS Runoff	Peak Flow	= 4.497 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 13,959 cuft
Drainage Area	= 1.798 ac	Curve Number	= 83.89*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 3.67 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.389	98.00	
1.409	80.00	
1.798	**83.89**	Weighted CN Method Employed



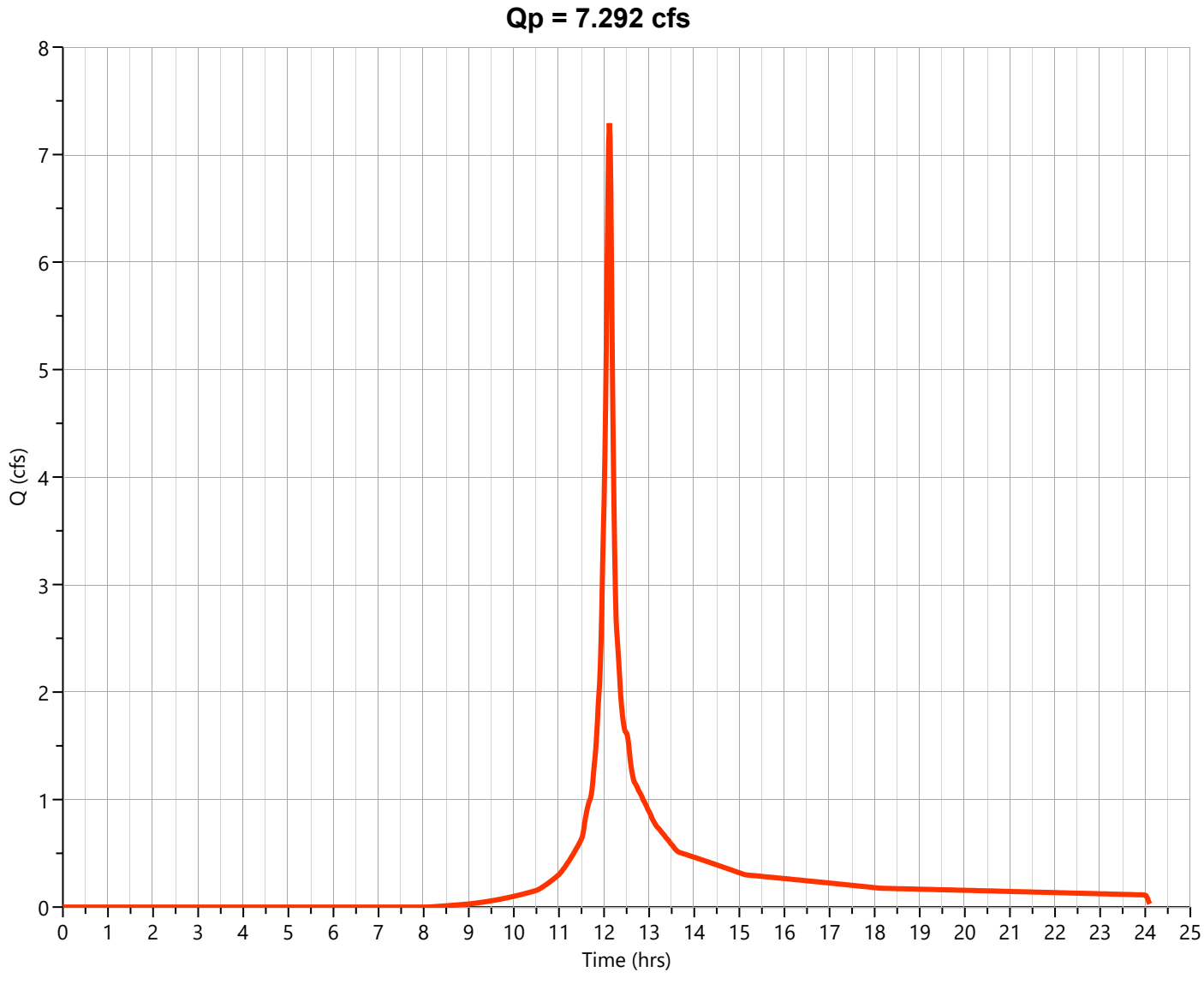
Post DA-3-B

Hyd. No. 10

Hydrograph Type	= NRCS Runoff	Peak Flow	= 7.292 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 22,532 cuft
Drainage Area	= 3.299 ac	Curve Number	= 80.70*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 3.67 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.128	98.00	
3.171	80.00	
3.299	**80.70**	Weighted CN Method Employed



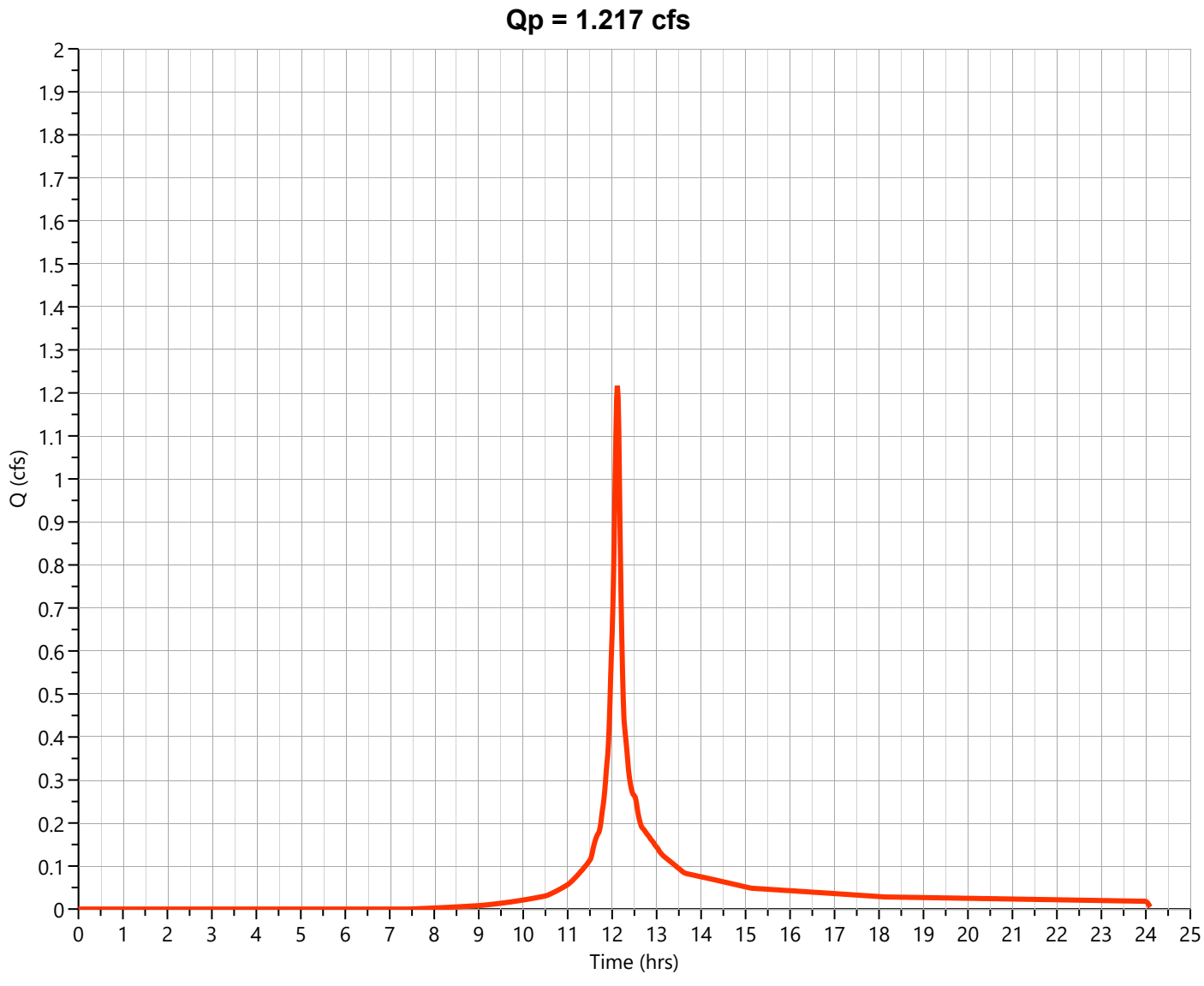
Post DA-3-C

Hyd. No. 11

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.217 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 3,767 cuft
Drainage Area	= 0.508 ac	Curve Number	= 82.73*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 3.67 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.077	98.00	
0.431	80.00	
0.508	**82.73**	Weighted CN Method Employed



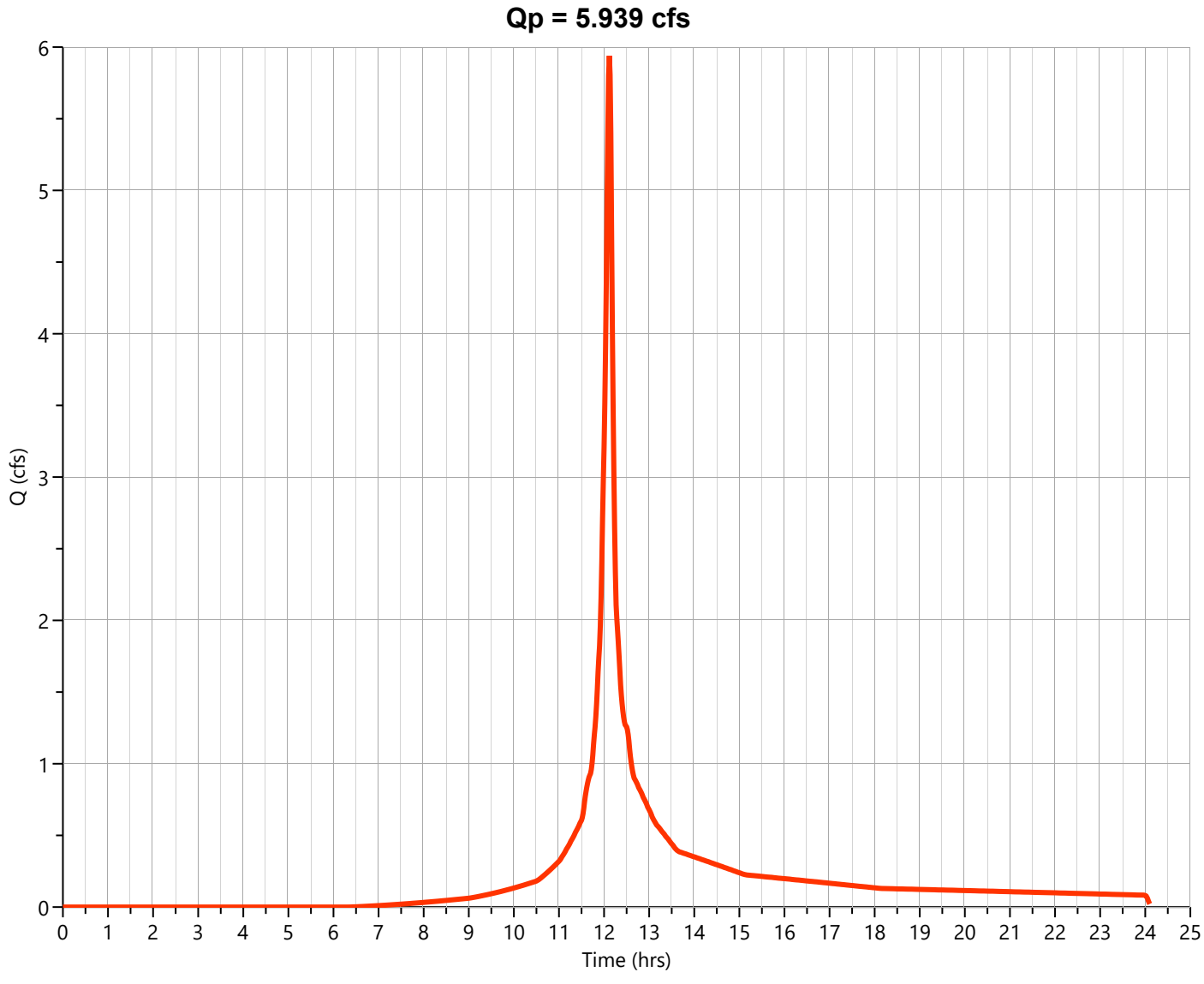
Post DA-4-A

Hyd. No. 12

Hydrograph Type	= NRCS Runoff	Peak Flow	= 5.939 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 18,545 cuft
Drainage Area	= 2.225 ac	Curve Number	= 85.73*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 3.67 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

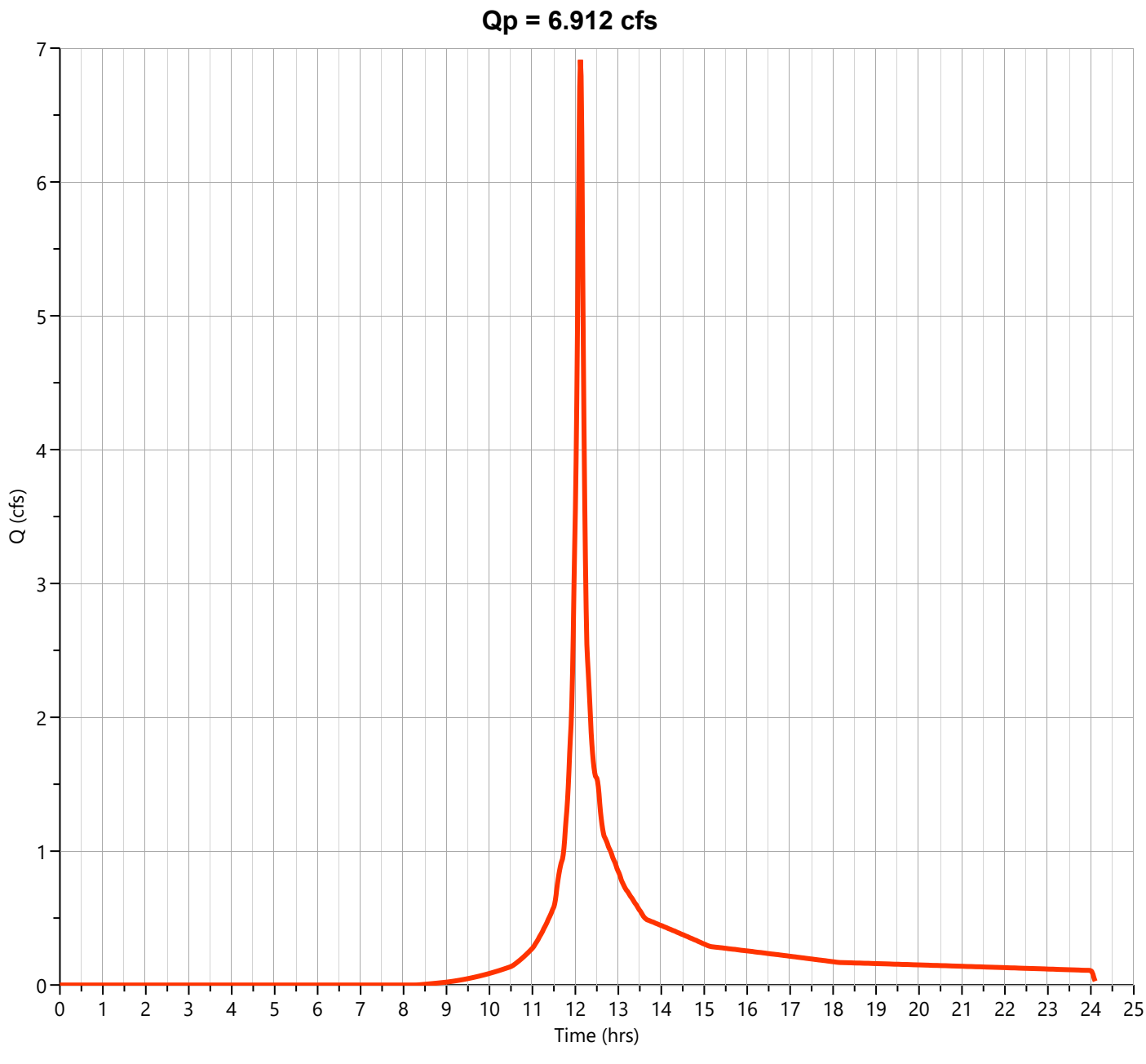
AREA (ac)	CN	DESCRIPTION
0.708	98.00	
1.517	80.00	
2.225	**85.73**	Weighted CN Method Employed



Post DA-4-B SOUTH EAST

Hyd. No. 13

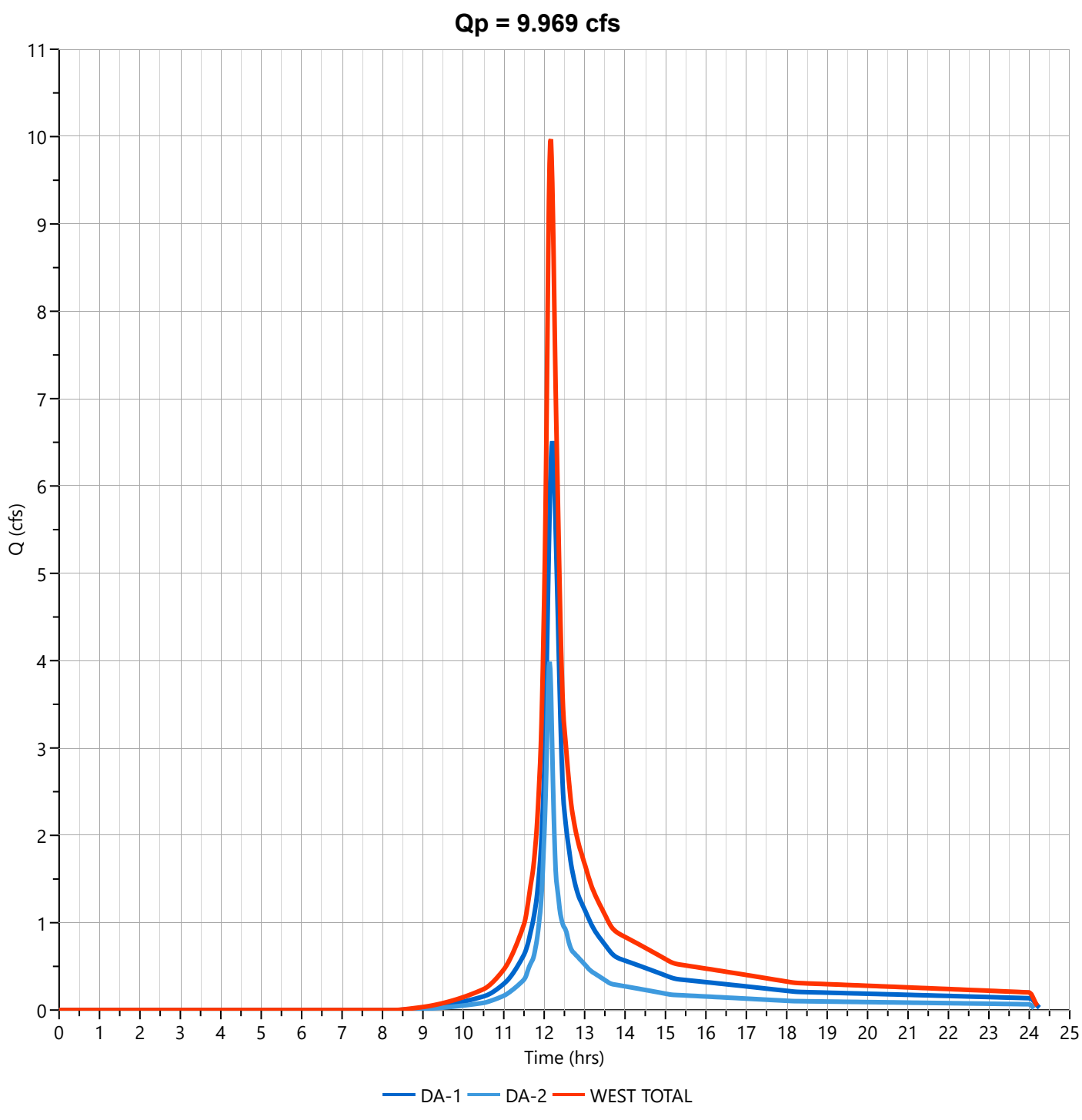
Hydrograph Type	= NRCS Runoff	Peak Flow	= 6.912 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 21,356 cuft
Drainage Area	= 3.219 ac	Curve Number	= 80.00
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 3.67 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Pre WEST TOTAL

Hyd. No. 14

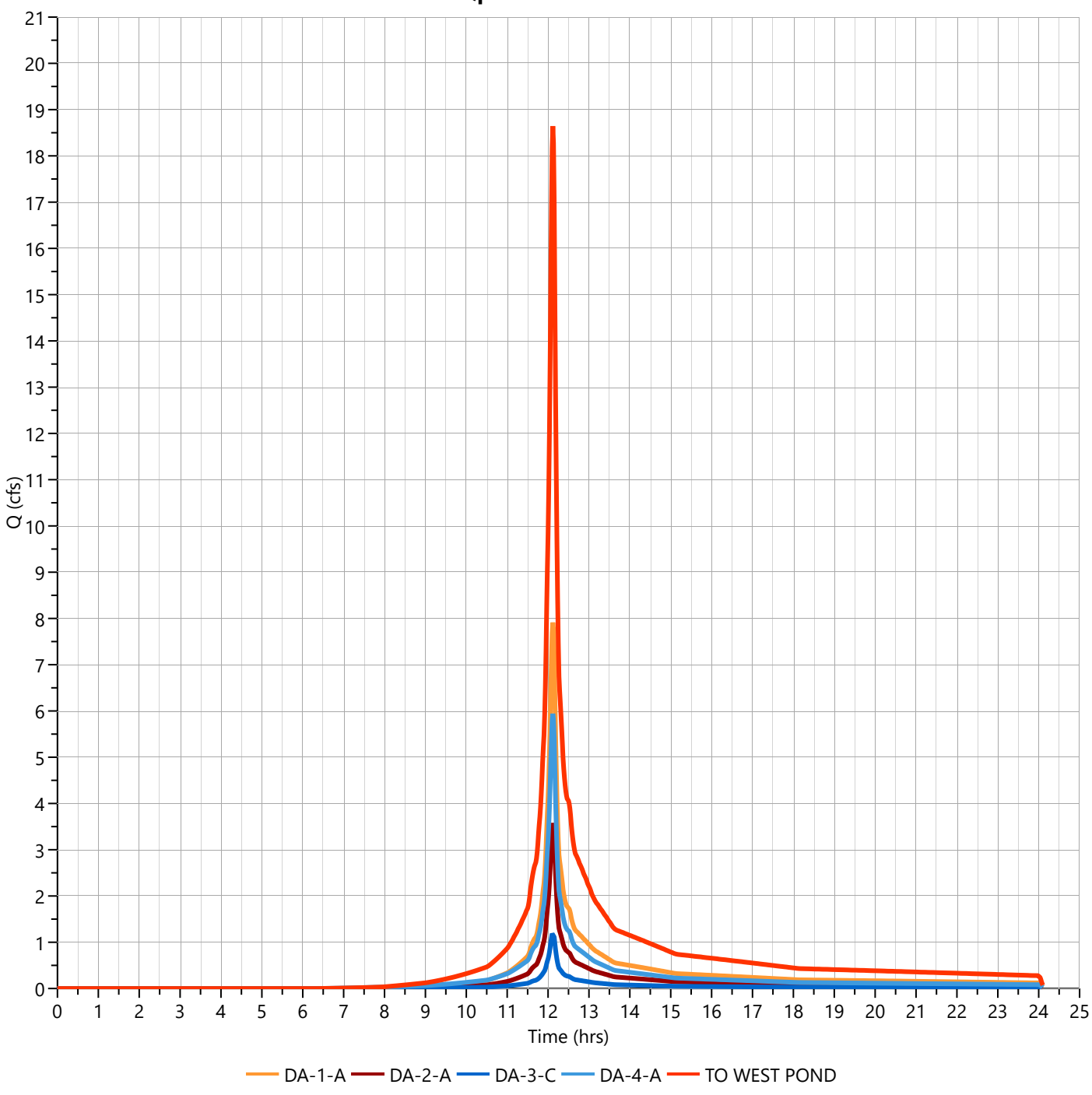
Hydrograph Type	= Junction	Peak Flow	= 9.969 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.17 hrs
Time Interval	= 1 min	Hydrograph Volume	= 39,400 cuft
Inflow Hydrographs	= 1, 2	Total Contrib. Area	= 6.176 ac



Post TO WEST POND

Hyd. No. 15

Hydrograph Type	= Junction	Peak Flow	= 18.64 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 57,818 cuft
Inflow Hydrographs	= 5, 7, 11, 12	Total Contrib. Area	= 7.83 ac



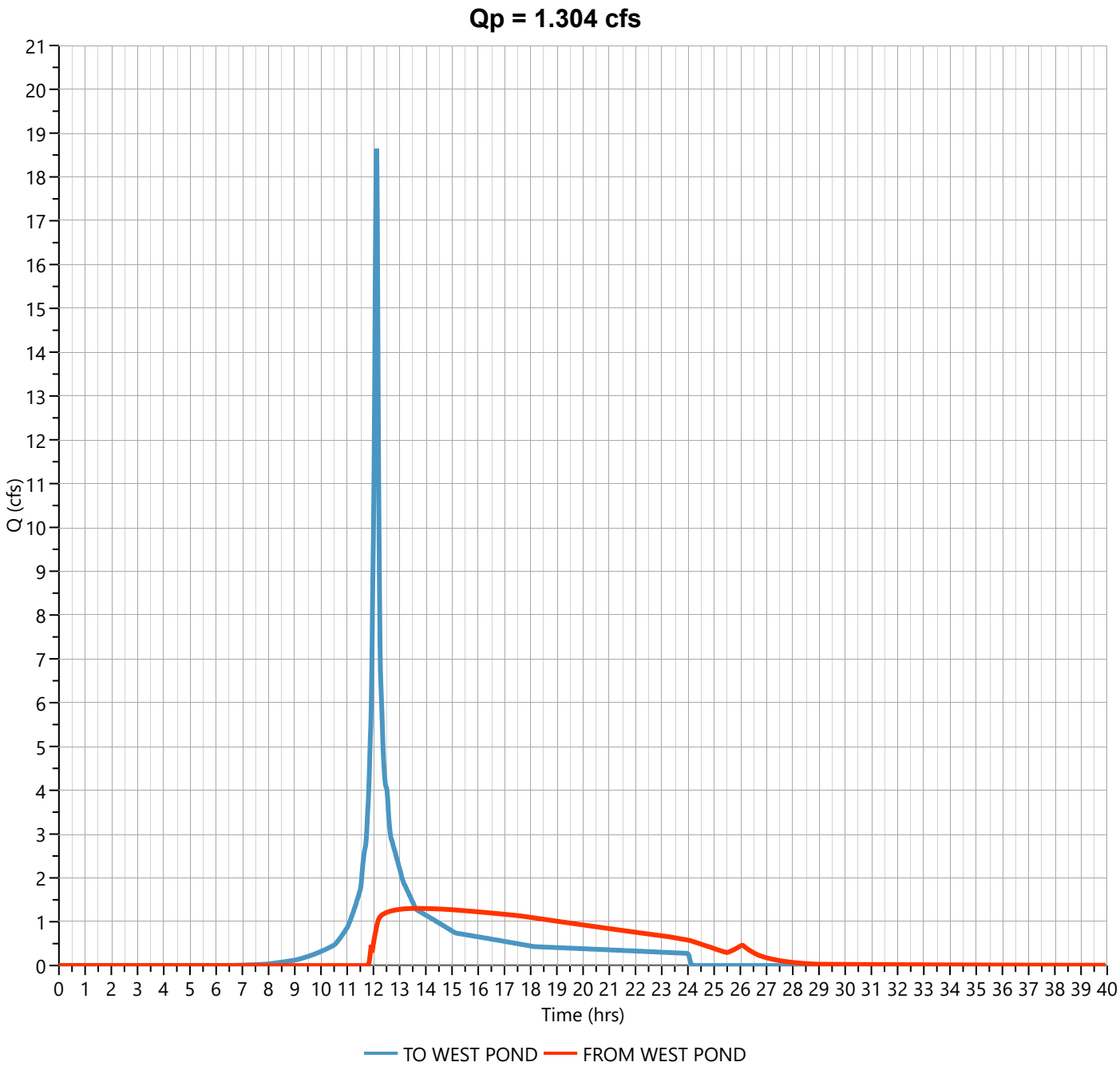
Post FROM WEST POND

Hyd. No. 16

Hydrograph Type	= Pond Route	Peak Flow	= 1.304 cfs
Storm Frequency	= 2-yr	Time to Peak	= 13.62 hrs
Time Interval	= 1 min	Hydrograph Volume	= 50,149 cuft
Inflow Hydrograph	= 15 - TO WEST POND	Max. Elevation	= 180.96 ft
Pond Name	= WEST POND	Max. Storage	= 31,188 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 4.28 hrs



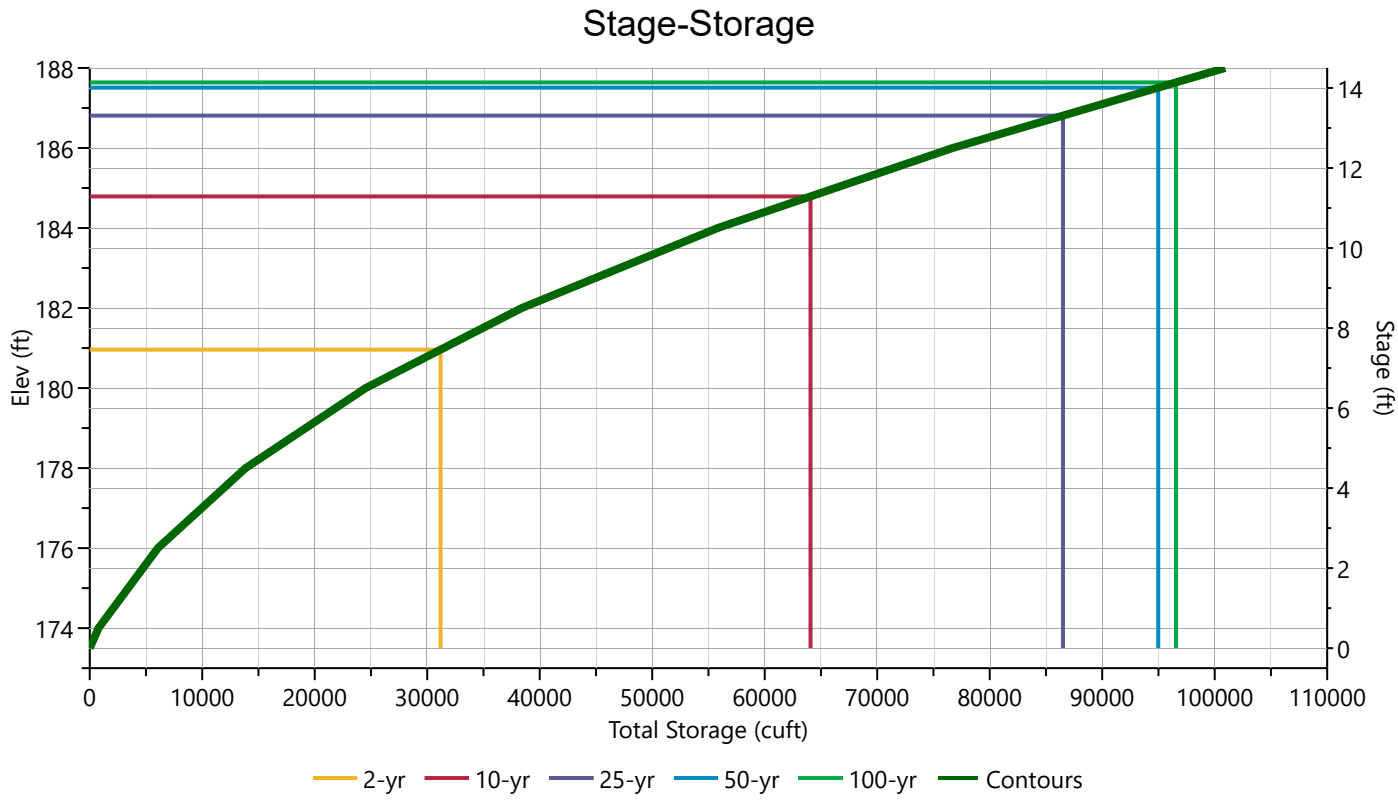
WEST POND

Stage-Storage

User Defined Contours	
Description	**Input**
Bottom Elevation, ft	173.50
Voids (%)	100.00
Volume Calc	None

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour Area (sqft)	Incr. Storage (cuft)	Total Storage (cuft)
0.00	173.50	1,056	0.000	0.000
0.50	174.00	2,050	777	777
2.50	176.00	3,227	5,277	6,054
4.50	178.00	4,575	7,802	13,856
6.50	180.00	6,094	10,669	24,525
8.50	182.00	7,782	13,876	38,401
10.50	184.00	9,641	17,423	55,824
12.50	186.00	11,251	20,892	76,716
14.50	188.00	12,970	24,221	100,937



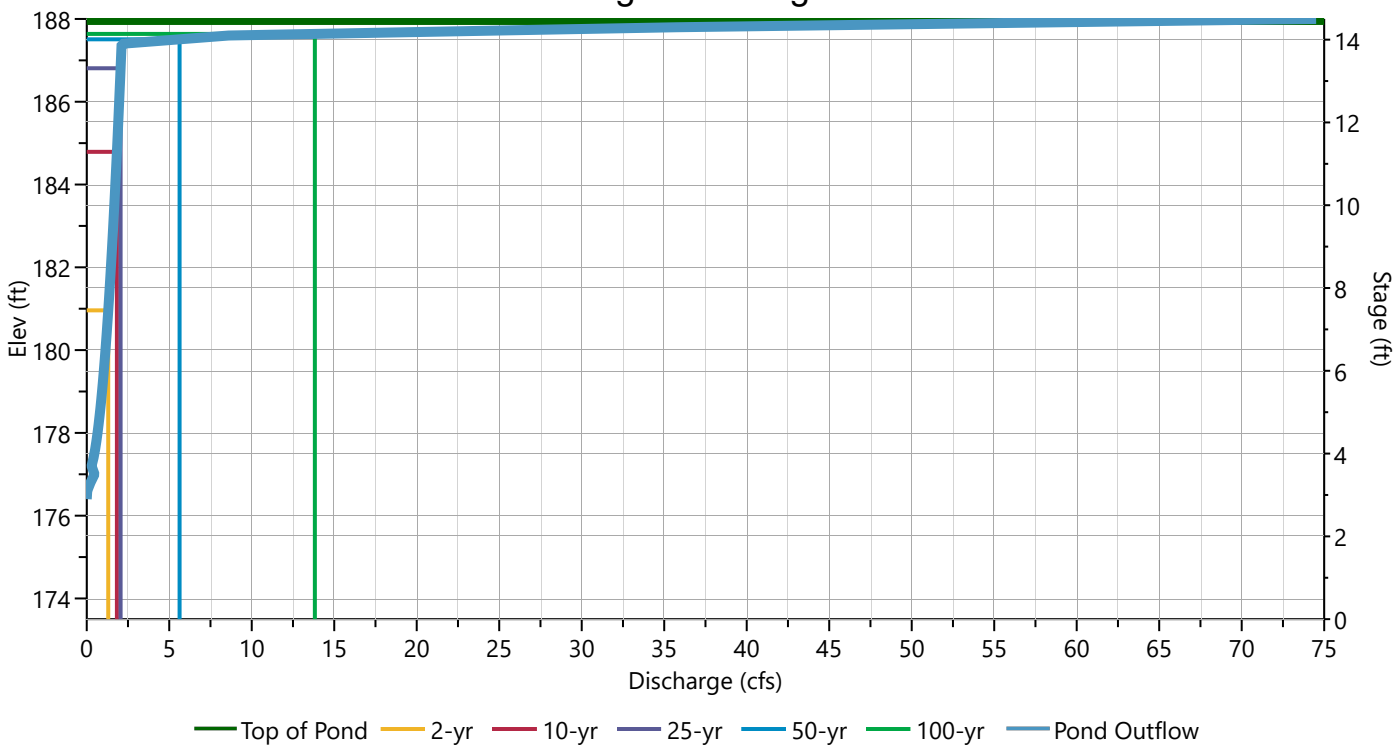
WEST POND

Stage-Discharge

Culvert / Orifices	Cir Culvert	Orifice			Perforated Riser	
		1	2	3		
Rise, in	6				Hole Diameter, in	
Span, in	6				No. holes	
No. Barrels	1				Invert Elevation, ft	
Invert Elevation, ft	176.50				Height, ft	
Orifice Coefficient, Co	0.60	0.60			Orifice Coefficient, Co	
Length, ft	55					
Barrel Slope, %						
N-Value, n	0.013					

Weirs	Riser	Weir			Ancillary	
		1 (i)	2	3		
Shape / Type		Rectangular			Exfiltration, in/hr	
Crest Elevation, ft		187.5				
Crest Length, ft		62				
Angle, deg						
Weir Coefficient, Cw		3.3				

m = Flows through Culvert, i = Independent



WEST POND

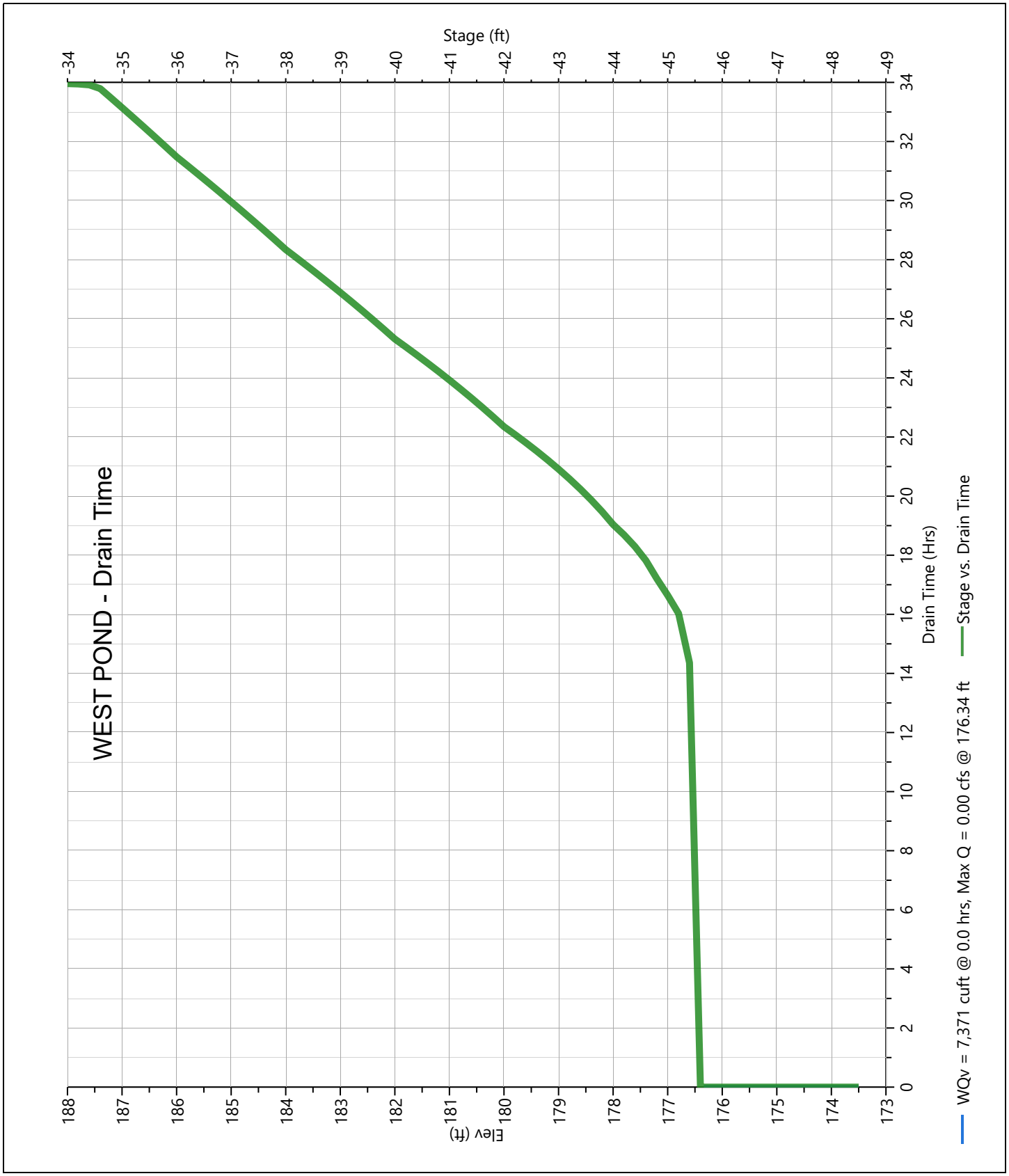
Stage-Storage-Discharge Summary

Stage (ft)	Elev. (ft)	Storage (cuft)	Culvert (cfs)	Orifices, cfs			Riser (cfs)	Weirs, cfs			Pf Riser (cfs)	Exfil (cfs)	User (cfs)	Total (cfs)
				1	2	3		1	2	3				
0.00	173.50	0.000	0.000					0.000						0.000
0.50	174.00	777	0.000					0.000						0.000
2.50	176.00	6,054	0.000					0.000						0.000
4.50	178.00	13,856	0.655 oc					0.000						0.655
6.50	180.00	24,525	1.135 oc					0.000						1.135
8.50	182.00	38,401	1.465 oc					0.000						1.465
10.50	184.00	55,824	1.733 oc					0.000						1.733
12.50	186.00	76,716	1.965 oc					0.000						1.965
14.50	188.00	100,937	2.173 oc					72.34						74.51

Suffix key: ic = inlet control, oc = outlet control, s = submerged weir

WEST POND

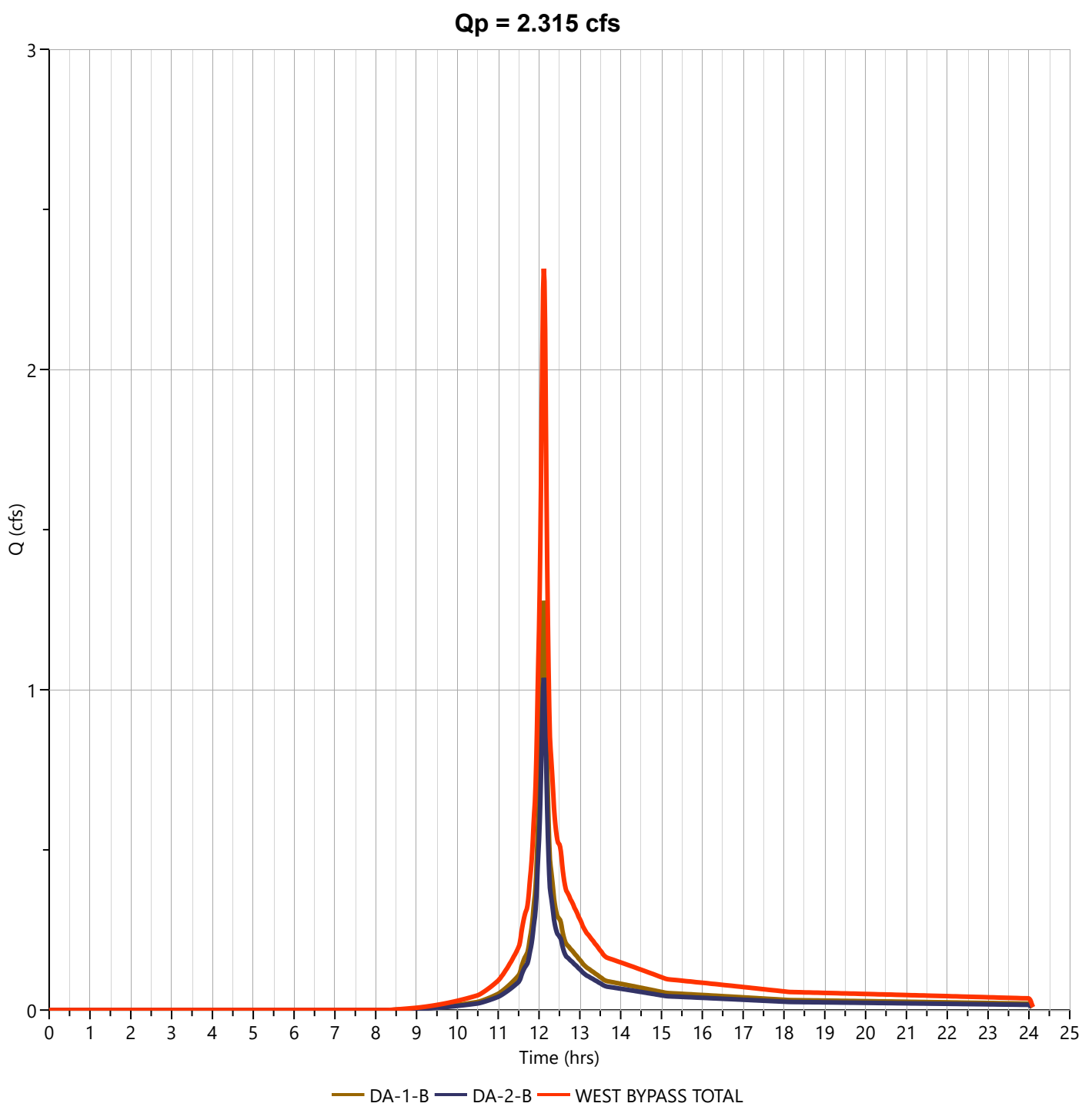
Extended Detention



Post WEST BYPASS TOTAL

Hyd. No. 17

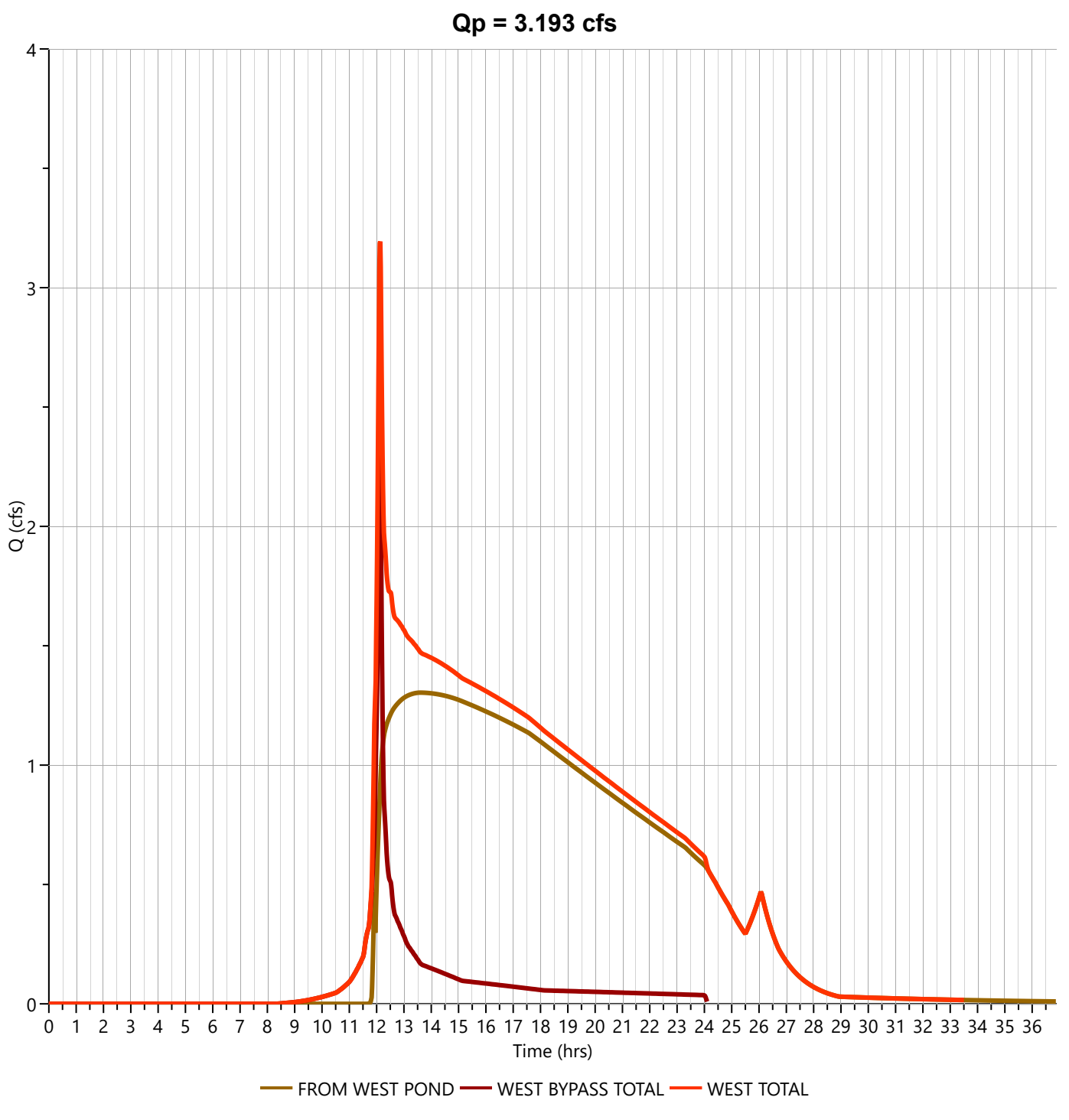
Hydrograph Type	= Junction	Peak Flow	= 2.315 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 7,152 cuft
Inflow Hydrographs	= 6, 8	Total Contrib. Area	= 1.078 ac



Post WEST TOTAL

Hyd. No. 18

Hydrograph Type	= Junction	Peak Flow	= 3.193 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Hydrograph Volume	= 57,301 cuft
Inflow Hydrographs		Total Contrib. Area	= 0.0 ac



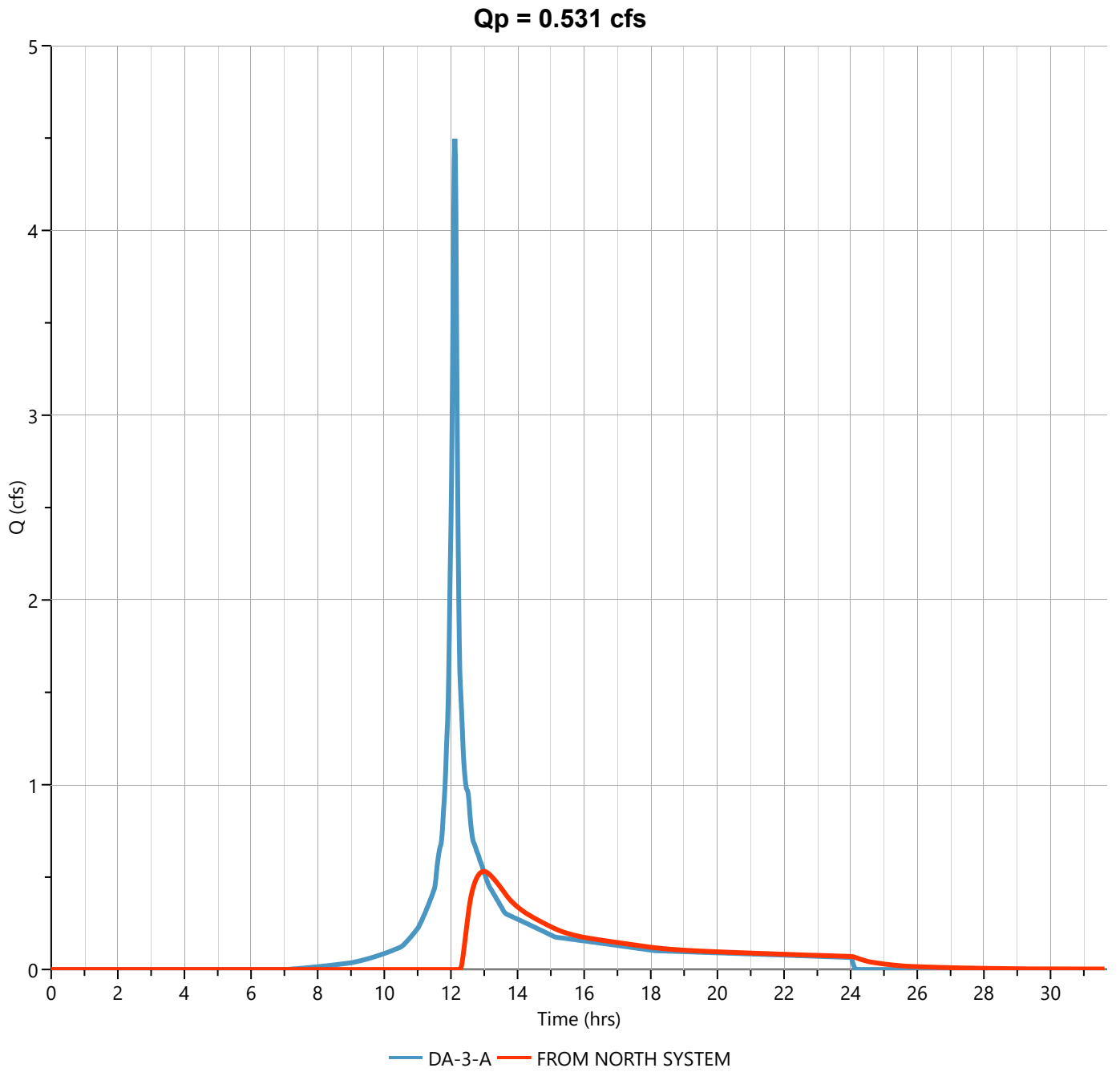
Post FROM NORTH SYSTEM

Hyd. No. 19

Hydrograph Type	= Pond Route	Peak Flow	= 0.531 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.98 hrs
Time Interval	= 1 min	Hydrograph Volume	= 7,654 cuft
Inflow Hydrograph	= 9 - DA-3-A	Max. Elevation	= 226.08 ft
Pond Name	= NORTH SYSTEM	Max. Storage	= 7,548 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 2.72 hrs



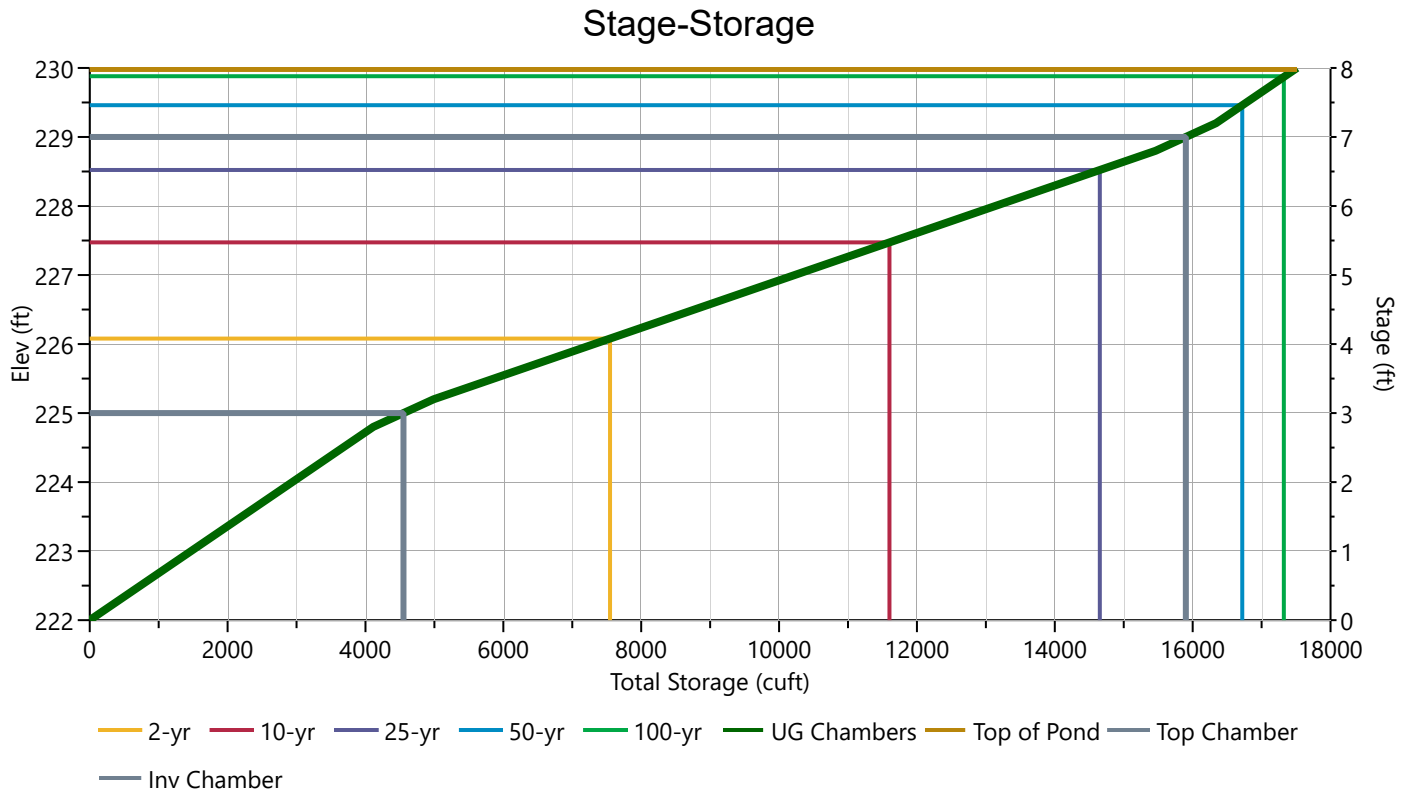
NORTH SYSTEM

Stage-Storage

Underground Chambers	
Description	**Input**
Invert Elev Down, ft	225.00
Chamber Rise, ft	4.00
Chamber Shape	Box
Chamber Span, ft	4.00
Barrel Length, ft	100.00
No. Barrels	6
Barrel Slope, %	0.00
Headers, y/n	No
Stone Encasement, y/n	Yes
Encasement Bottom Elevation, ft	222.00
Encasement Width per Chamber, ft	6.00
Encasement Depth, ft	8.00
Encasement Voids, %	40.00

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour Area (sqft)	Incr. Storage (cuft)	Total Storage (cuft)
0.00	222.00	3,672	0.000	0.000
0.40	222.40	3,672	588	588
0.80	222.80	3,672	588	1,175
1.20	223.20	3,672	588	1,763
1.60	223.60	3,672	588	2,351
2.00	224.00	3,672	588	2,938
2.40	224.40	3,672	588	3,526
2.80	224.80	3,672	588	4,113
3.20	225.20	3,672	876	4,989
3.60	225.60	3,672	1,164	6,153
4.00	226.00	3,672	1,164	7,317
4.40	226.40	3,672	1,164	8,480
4.80	226.80	3,672	1,164	9,644
5.20	227.20	3,672	1,164	10,808
5.60	227.60	3,672	1,164	11,972
6.00	228.00	3,672	1,164	13,135
6.40	228.40	3,672	1,164	14,299
6.80	228.80	3,672	1,164	15,463
7.20	229.20	3,672	876	16,339
7.60	229.60	3,672	588	16,926
8.00	230.00	3,672	588	17,514

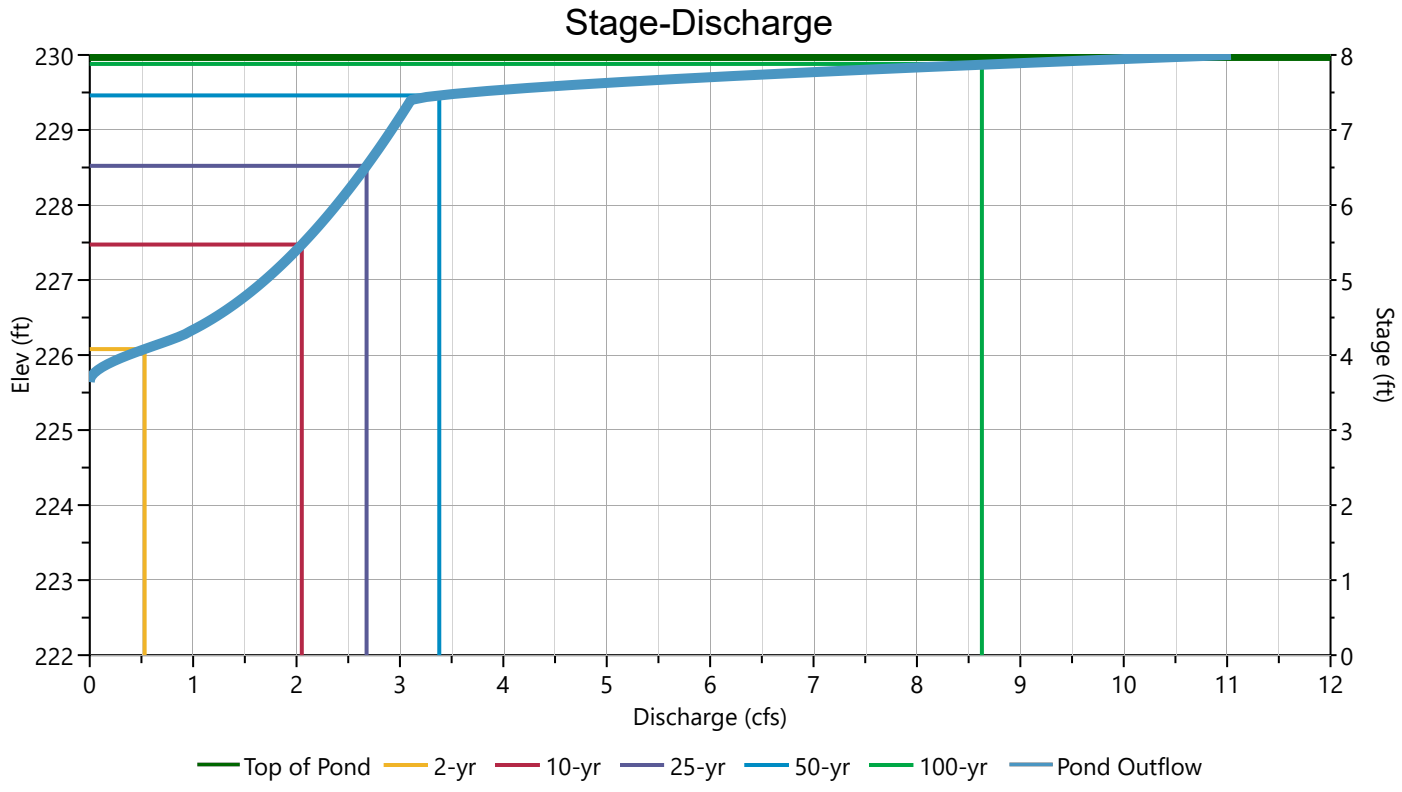


NORTH SYSTEM

Stage-Discharge

Culvert / Orifices	Cir Culvert	Orifice			Perforated Riser	
		1 (i)	2	3		
Rise, in		8			Hole Diameter, in	
Span, in		8			No. holes	
No. Barrels		1			Invert Elevation, ft	
Invert Elevation, ft		225.65			Height, ft	
Orifice Coefficient, Co		0.60			Orifice Coefficient, Co	
Length, ft						
Barrel Slope, %						
N-Value, n						
Weirs	**Riser**	**Weir**			**Ancillary**	
		1 (i)	2	3		
Shape / Type		Rectangular			Exfiltration, in/hr	
Crest Elevation, ft		229.4				
Crest Length, ft		5				
Angle, deg						
Weir Coefficient, Cw		3.3				

m = Flows through Culvert, i = Independent



NORTH SYSTEM

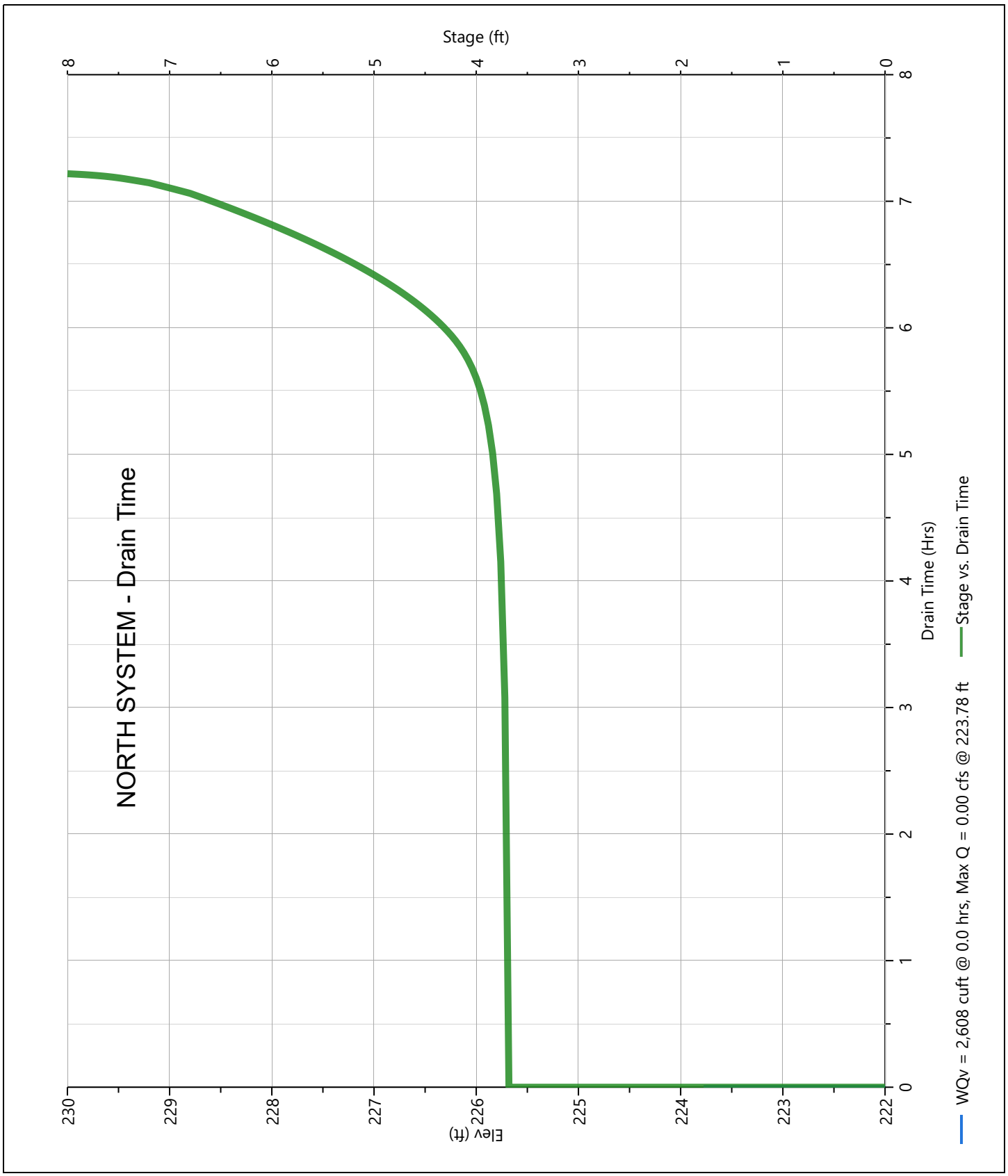
Stage-Storage-Discharge Summary

Stage (ft)	Elev. (ft)	Storage (cuft)	Culvert (cfs)	Orifices, cfs			Riser (cfs)	Weirs, cfs			Pf Riser (cfs)	Exfil (cfs)	User (cfs)	Total (cfs)
				1	2	3		1	2	3				
0.00	222.00	0.000		0.000				0.000						0.000
0.40	222.40	588		0.000				0.000						0.000
0.80	222.80	1,175		0.000				0.000						0.000
1.20	223.20	1,763		0.000				0.000						0.000
1.60	223.60	2,351		0.000				0.000						0.000
2.00	224.00	2,938		0.000				0.000						0.000
2.40	224.40	3,526		0.000				0.000						0.000
2.80	224.80	4,113		0.000				0.000						0.000
3.20	225.20	4,989		0.000				0.000						0.000
3.60	225.60	6,153		0.000				0.000						0.000
4.00	226.00	7,317		0.374				0.000						0.374
4.40	226.40	8,480		1.085				0.000						1.085
4.80	226.80	9,644		1.519				0.000						1.519
5.20	227.20	10,808		1.854				0.000						1.854
5.60	227.60	11,972		2.137				0.000						2.137
6.00	228.00	13,135		2.387				0.000						2.387
6.40	228.40	14,299		2.612				0.000						2.612
6.80	228.80	15,463		2.820				0.000						2.820
7.20	229.20	16,339		3.014				0.000						3.014
7.60	229.60	16,926		3.196				1.476						4.672
8.00	230.00	17,514		3.368				7.669						11.04

Suffix key: ic = inlet control, oc = outlet control, s = submerged weir

NORTH SYSTEM

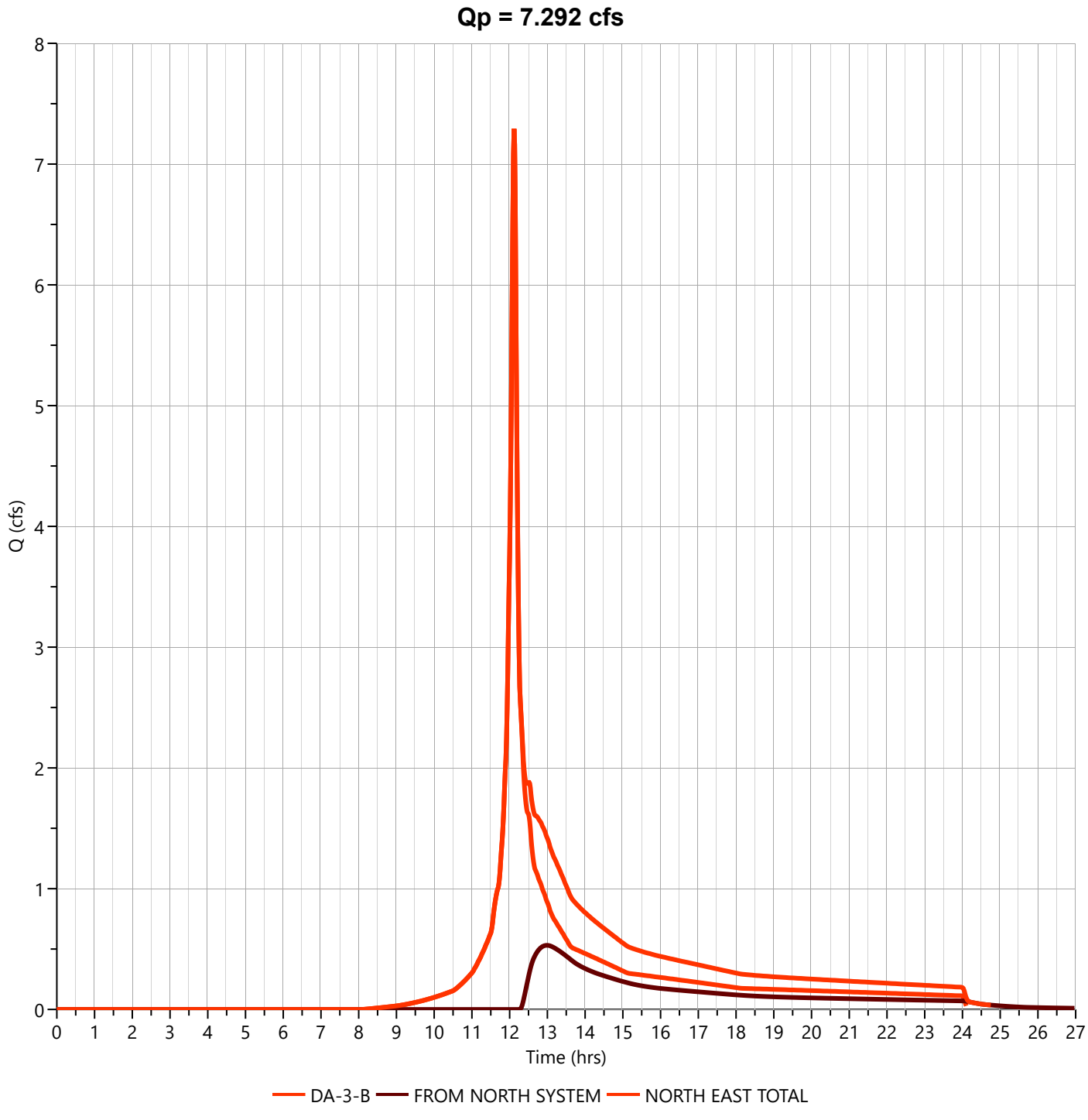
Extended Detention



Post NORTH EAST TOTAL

Hyd. No. 20

Hydrograph Type	= Junction	Peak Flow	= 7.292 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 30,187 cuft
Inflow Hydrographs	= 10	Total Contrib. Area	= 3.299 ac



Design Storm Report

Custom Storm filename:

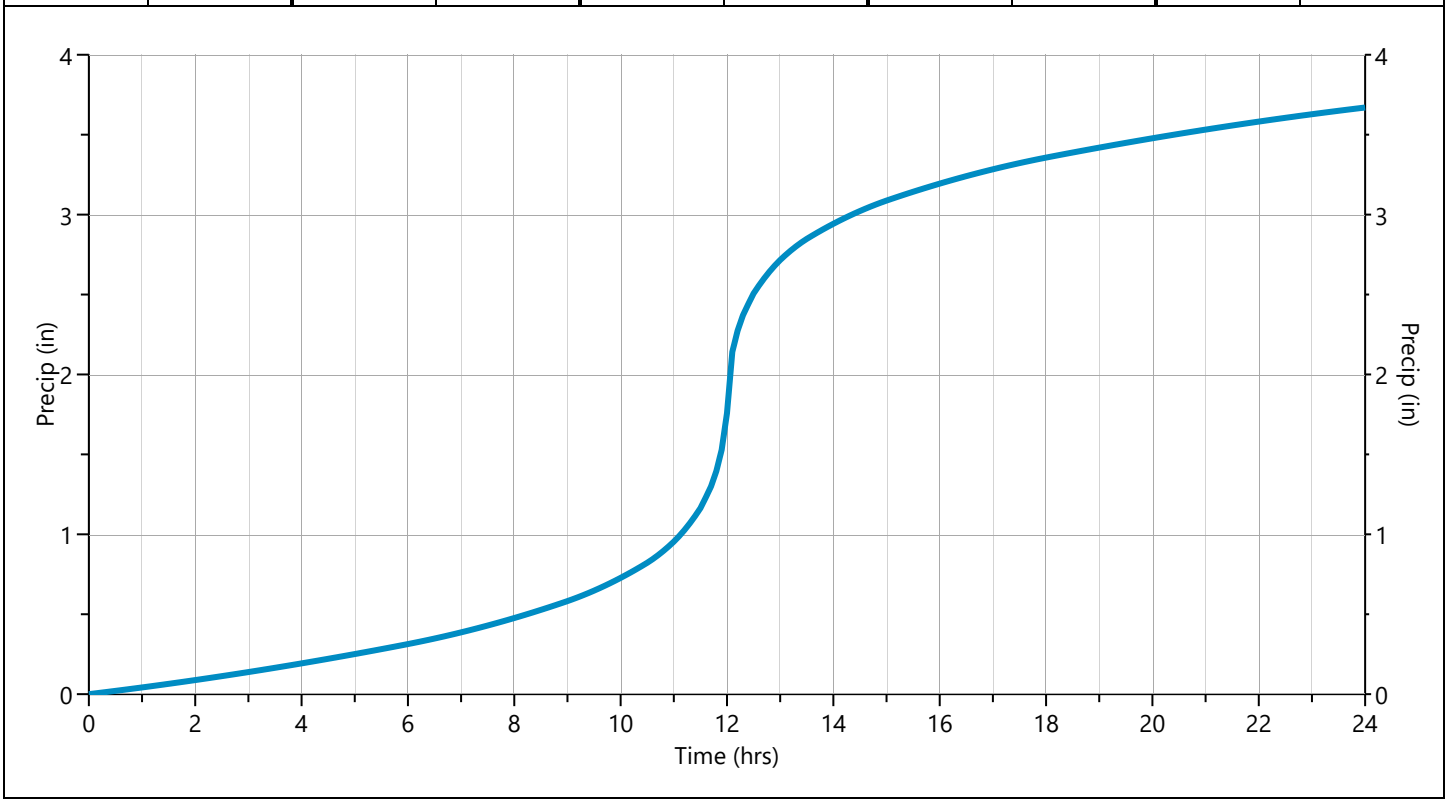
Hydrology Studio v 3.0.0.44

08-13-2026

Storm Distribution: NOAA-D, 24-hr

Storm Duration	Total Rainfall Volume (in)								
	1-yr	✔ 2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
24 hrs	3.01	3.67	0.00	4.75	5.65	6.88	7.80	8.79	

Incremental Rainfall Distribution, 2-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
11.60	0.011071	11.78	0.015983	11.97	0.038259	12.15	0.022178	12.33	0.011653
11.62	0.011652	11.80	0.015984	11.98	0.038261	12.17	0.022178	12.35	0.011652
11.63	0.011652	11.82	0.022178	12.00	0.038258	12.18	0.022180	12.37	0.011653
11.65	0.011653	11.83	0.022180	12.02	0.063838	12.20	0.022178	12.38	0.011652
11.67	0.011652	11.85	0.022179	12.03	0.063842	12.22	0.015983	12.40	0.011653
11.68	0.011653	11.87	0.022178	12.05	0.063838	12.23	0.015983	12.42	0.011071
11.70	0.011652	11.88	0.022180	12.07	0.063842	12.25	0.015983	12.43	0.011072
11.72	0.015983	11.90	0.022179	12.08	0.063838	12.27	0.015982	12.45	0.011071
11.73	0.015983	11.92	0.038261	**12.10**	**0.063842**	12.28	0.015983	12.47	0.011071
11.75	0.015982	11.93	0.038259	12.12	0.022178	12.30	0.015982	12.48	0.011072
11.77	0.015983	11.95	0.038261	12.13	0.022180	12.32	0.011652	12.50	0.011071



Hydrograph 10-yr Summary

Hydrology Studio v 3.0.0.44

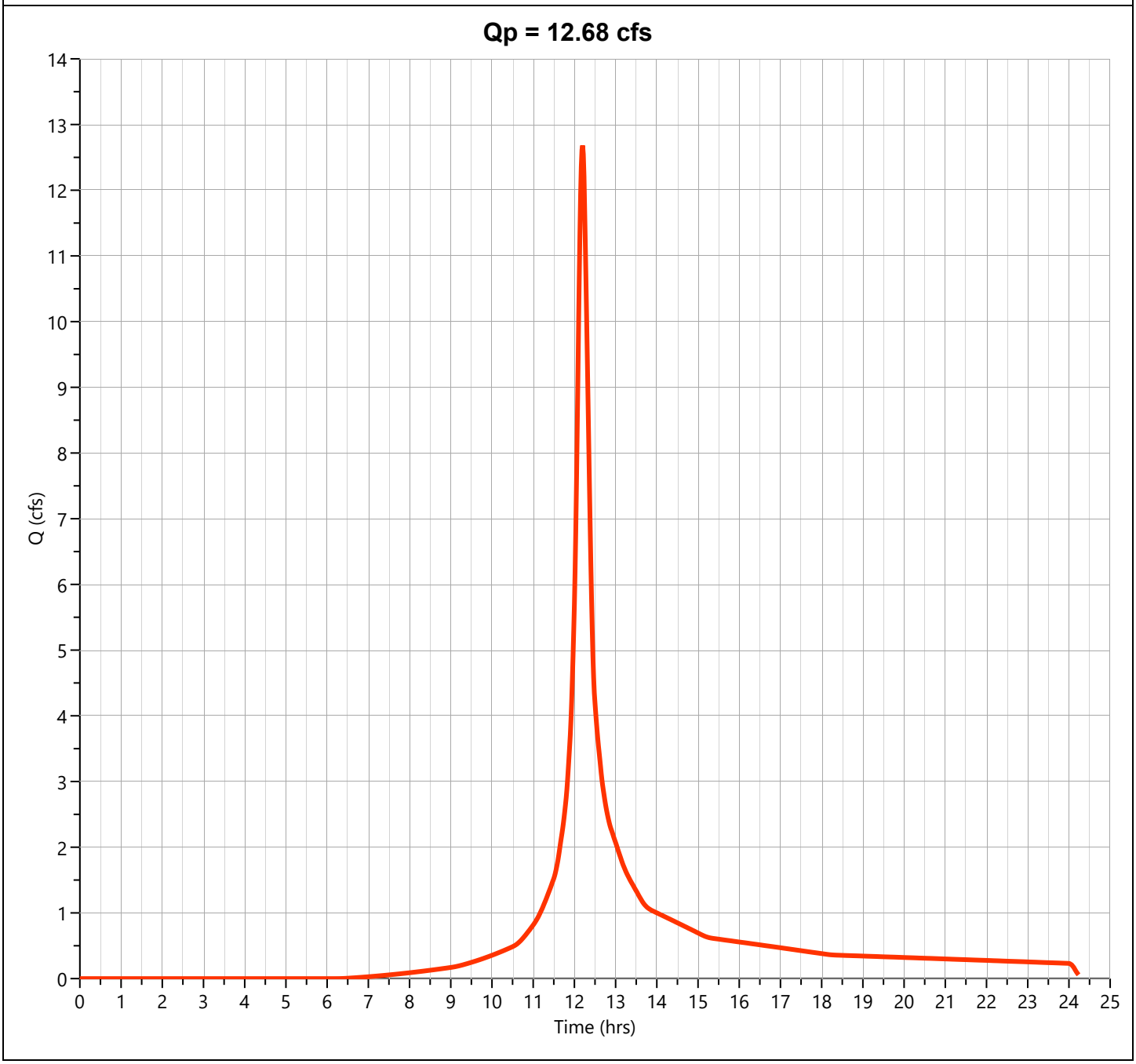
Project Name: Sumitt St Derby
File: Draiange Calcs.hys
08-13-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	Pre DA-1	12.68	12.20	51,675	----		
2	NRCS Runoff	Pre DA-2	7.713	12.13	25,400	----		
3	NRCS Runoff	Pre DA-3 NORTH EAST	17.54	12.17	65,331	----		
4	NRCS Runoff	Pre DA-4 SOUTH EAST	17.41	12.18	67,394	----		
5	NRCS Runoff	Post DA-1-A	15.01	12.12	47,108	----		
6	NRCS Runoff	Post DA-1-B	2.470	12.12	7,722	----		
7	NRCS Runoff	Post DA-2-A	6.780	12.12	21,280	----		
8	NRCS Runoff	Post DA-2-B	2.005	12.12	6,269	----		
9	NRCS Runoff	Post DA-3-A	8.181	12.12	25,972	----		
10	NRCS Runoff	Post DA-3-B	13.94	12.12	43,672	----		
11	NRCS Runoff	Post DA-3-C	2.252	12.12	7,113	----		
12	NRCS Runoff	Post DA-4-A	10.52	12.12	33,728	----		
13	NRCS Runoff	Post DA-4-B SOUTH EAST	13.36	12.12	41,778	----		
14	Junction	Pre WEST TOTAL	19.44	12.15	77,075	1, 2		
15	Junction	Post TO WEST POND	34.56	12.12	109,229	5, 7, 11, 12		
16	Pond Route	Post FROM WEST POND	1.828	14.23	101,491	15	184.79	64,072
17	Junction	Post WEST BYPASS TOTAL	4.475	12.12	13,991	6, 8		
18	Junction	Post WEST TOTAL	5.924	12.12	115,482	16, 17		
19	Pond Route	Post FROM NORTH SYSTEM	2.051	12.37	19,668	9	227.47	11,601
20	Junction	Post NORTH EAST TOTAL	15.42	12.12	63,340	10, 19		

Pre DA-1

Hyd. No. 1

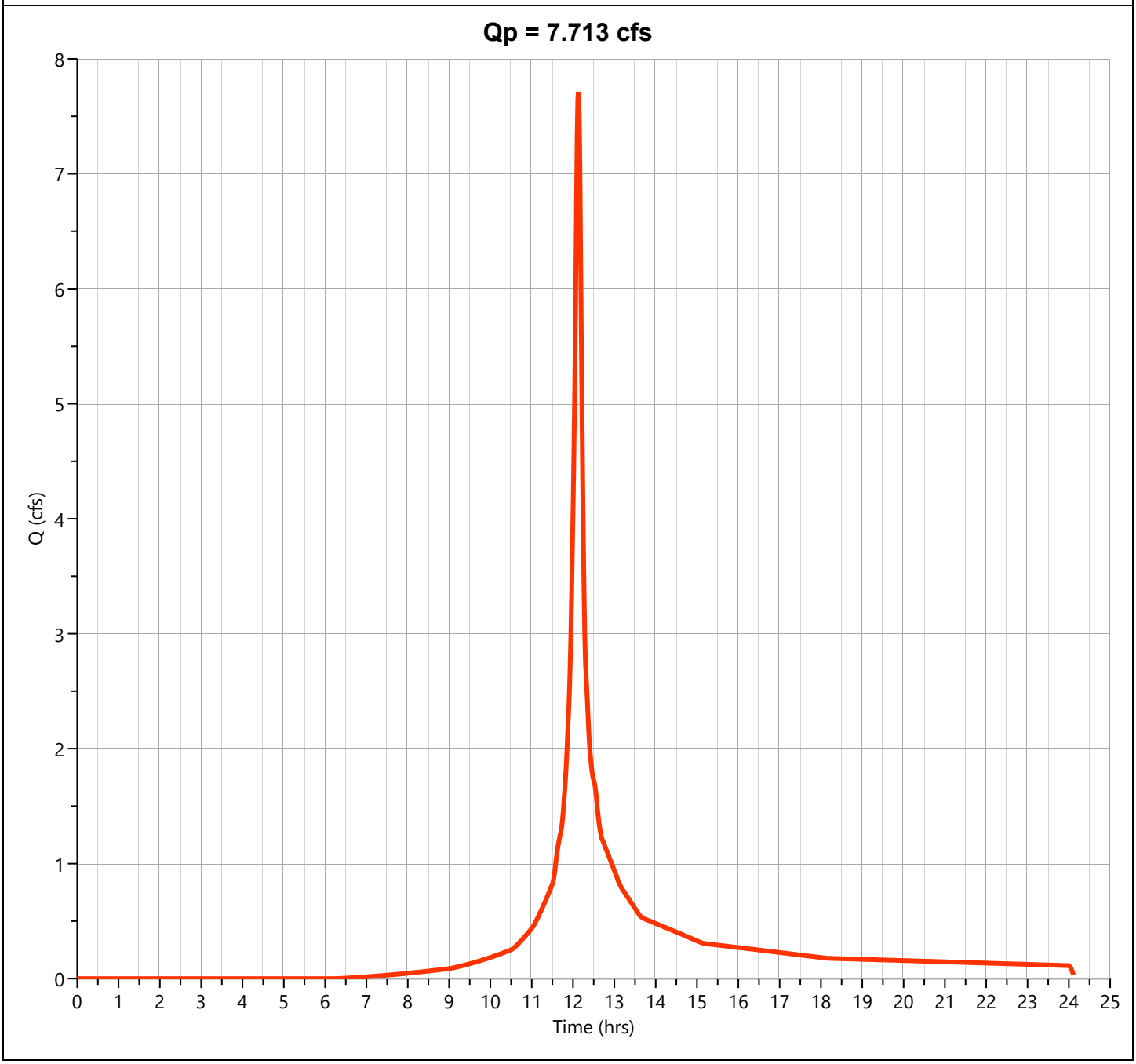
Hydrograph Type	= NRCS Runoff	Peak Flow	= 12.68 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.20 hrs
Time Interval	= 1 min	Runoff Volume	= 51,675 cuft
Drainage Area	= 4.106 ac	Curve Number	= 80.00
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 14.46 min
Total Rainfall	= 5.65 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Pre DA-2

Hyd. No. 2

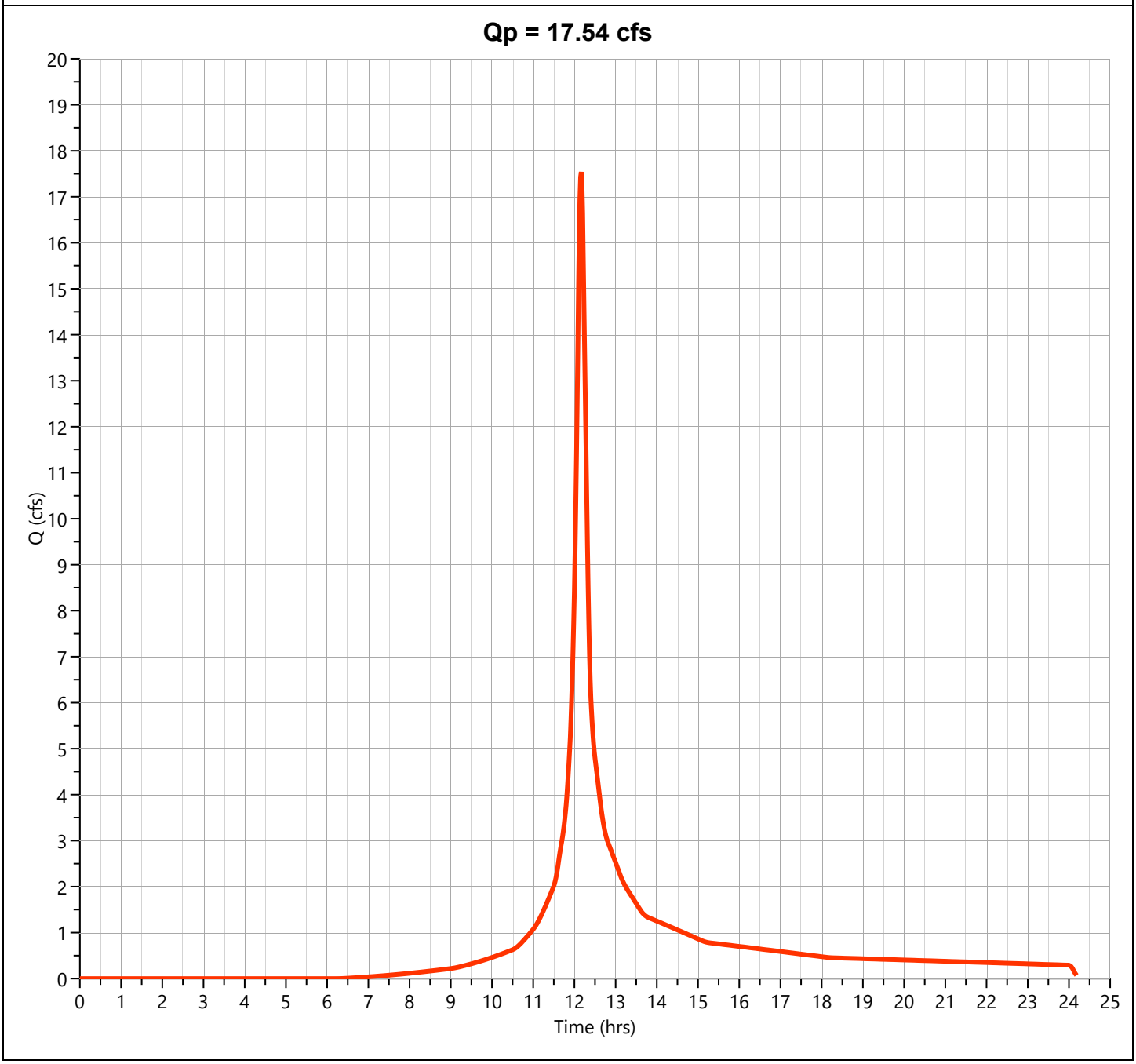
Hydrograph Type	= NRCS Runoff	Peak Flow	= 7.713 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Runoff Volume	= 25,400 cuft
Drainage Area	= 2.07 ac	Curve Number	= 80.00
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 7.34 min
Total Rainfall	= 5.65 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Pre DA-3 NORTH EAST

Hyd. No. 3

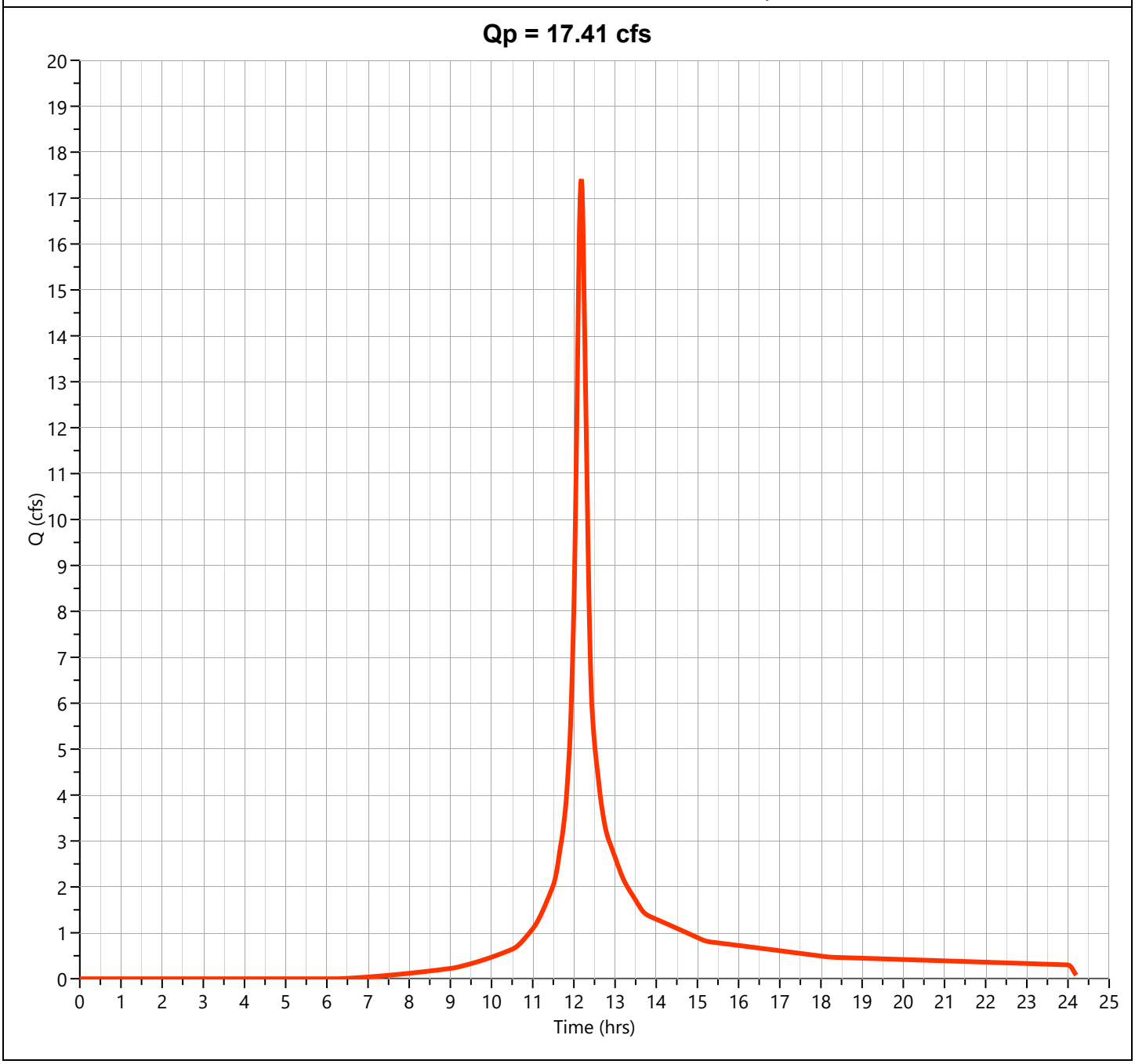
Hydrograph Type	= NRCS Runoff	Peak Flow	= 17.54 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.17 hrs
Time Interval	= 1 min	Runoff Volume	= 65,331 cuft
Drainage Area	= 5.1 ac	Curve Number	= 80.00
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 10.24 min
Total Rainfall	= 5.65 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Pre DA-4 SOUTH EAST

Hyd. No. 4

Hydrograph Type	= NRCS Runoff	Peak Flow	= 17.41 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.18 hrs
Time Interval	= 1 min	Runoff Volume	= 67,394 cuft
Drainage Area	= 5.44 ac	Curve Number	= 80.00
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 12.26 min
Total Rainfall	= 5.65 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



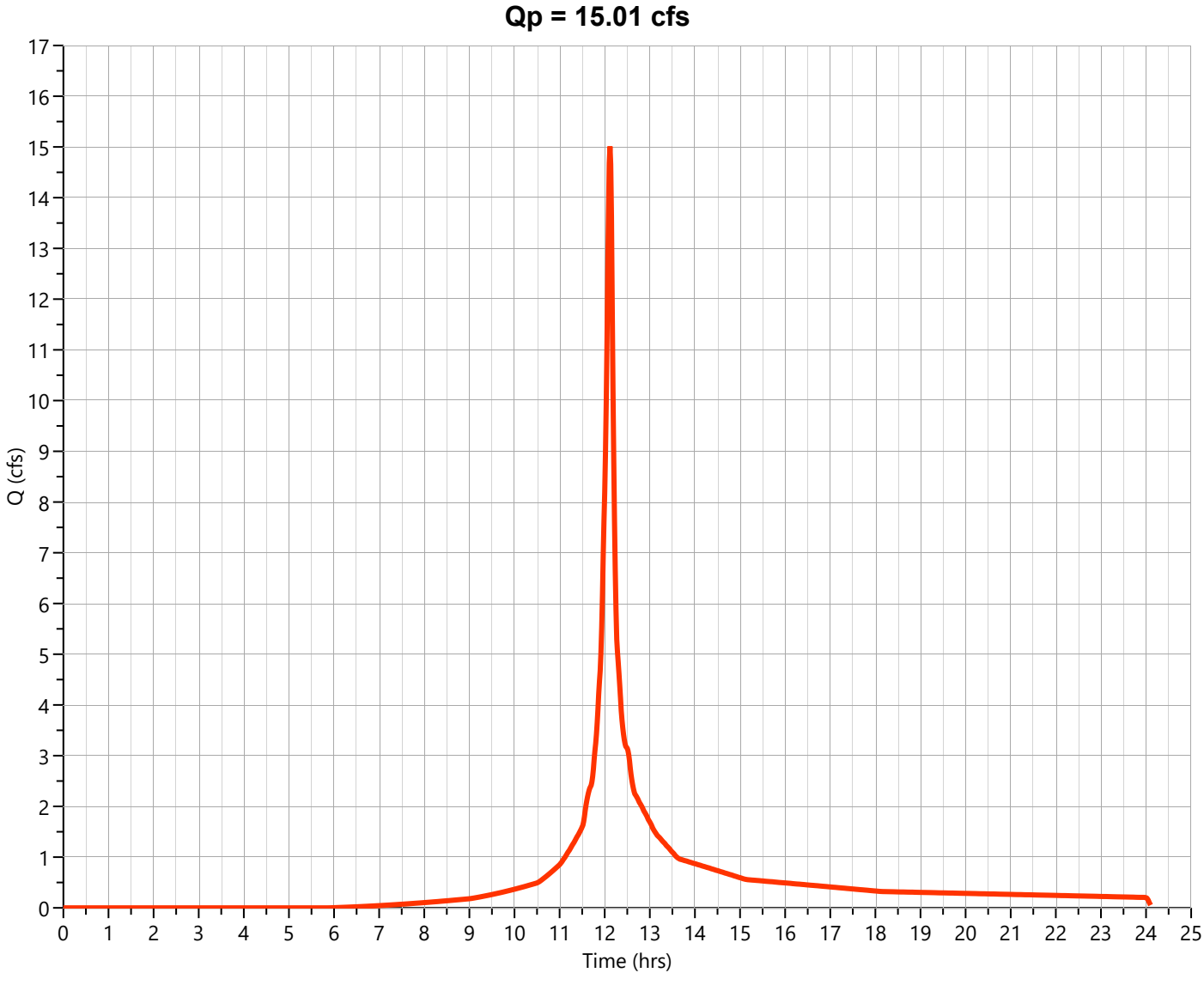
Post DA-1-A

Hyd. No. 5

Hydrograph Type	= NRCS Runoff	Peak Flow	= 15.01 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 47,108 cuft
Drainage Area	= 3.511 ac	Curve Number	= 81.18*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 5.65 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

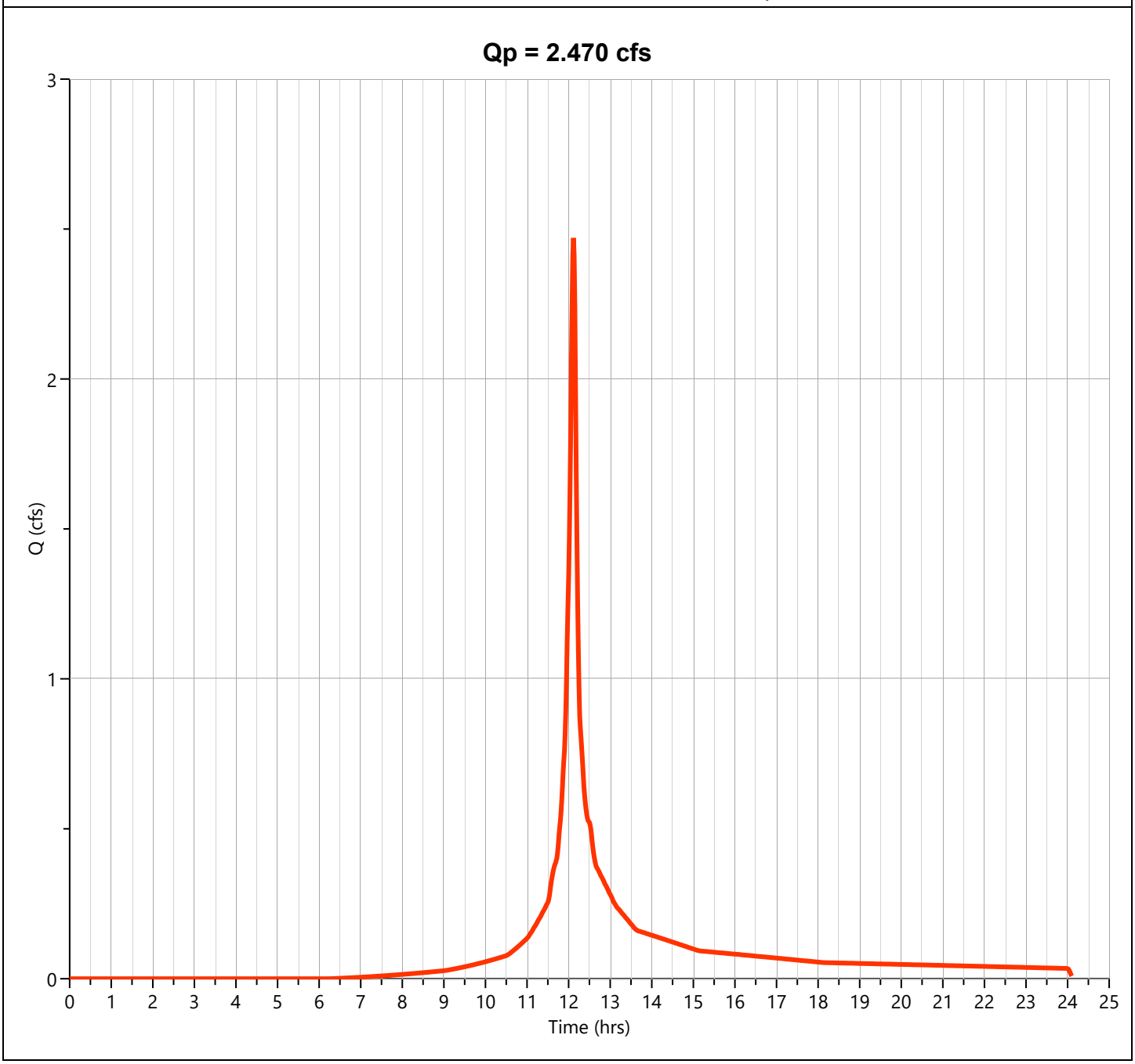
AREA (ac)	CN	DESCRIPTION
0.23	98.00	
3.281	80.00	
3.511	**81.18**	Weighted CN Method Employed



Post DA-1-B

Hyd. No. 6

Hydrograph Type	= NRCS Runoff	Peak Flow	= 2.470 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 7,722 cuft
Drainage Area	= 0.595 ac	Curve Number	= 80.00
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 5.65 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



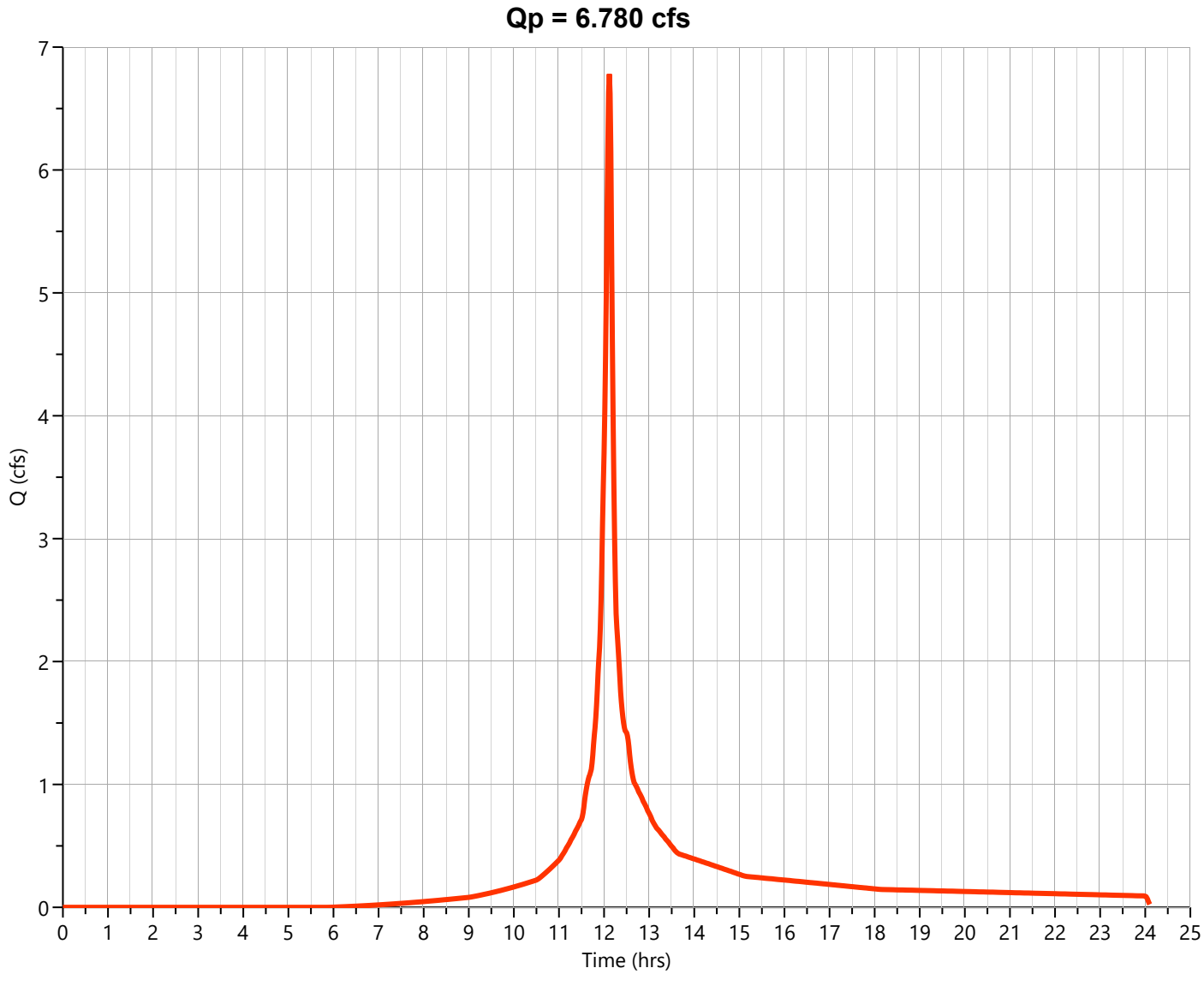
Post DA-2-A

Hyd. No. 7

Hydrograph Type	= NRCS Runoff	Peak Flow	= 6.780 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 21,280 cuft
Drainage Area	= 1.586 ac	Curve Number	= 81.18*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 5.65 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

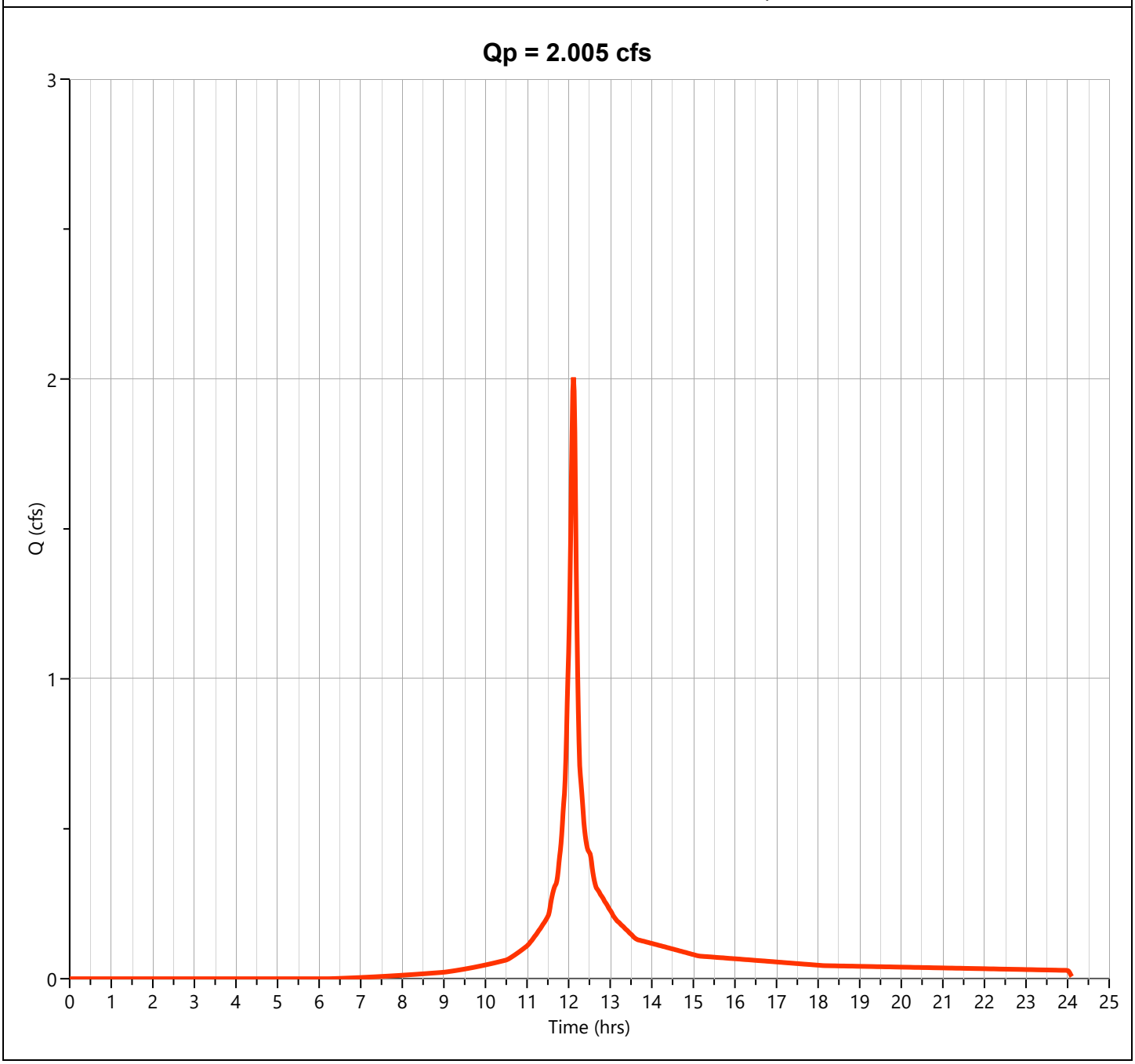
AREA (ac)	CN	DESCRIPTION
0.104	98.00	
1.482	80.00	
1.586	**81.18**	Weighted CN Method Employed



Post DA-2-B

Hyd. No. 8

Hydrograph Type	= NRCS Runoff	Peak Flow	= 2.005 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 6,269 cuft
Drainage Area	= 0.483 ac	Curve Number	= 80.00
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 5.65 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



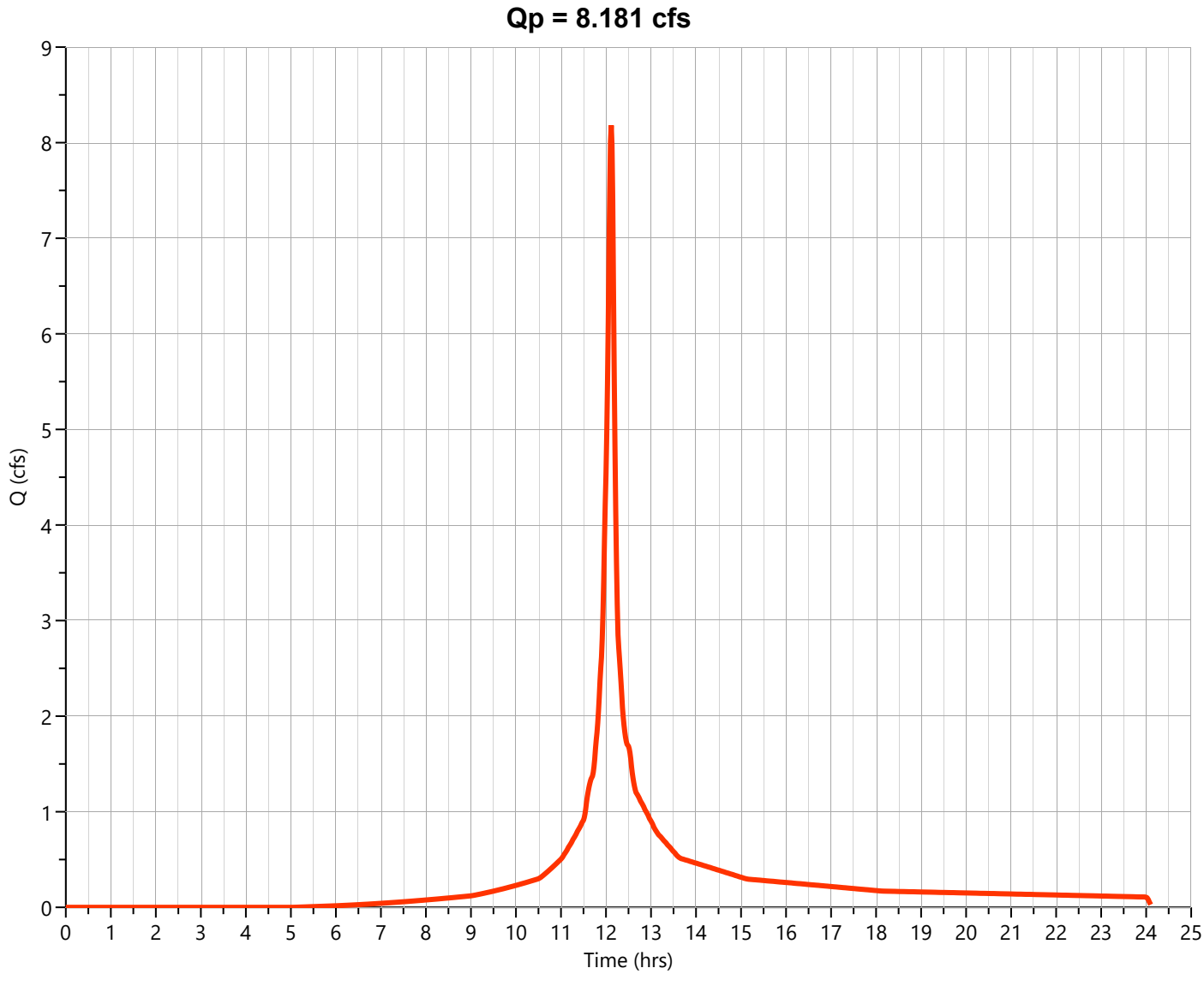
Post DA-3-A

Hyd. No. 9

Hydrograph Type	= NRCS Runoff	Peak Flow	= 8.181 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 25,972 cuft
Drainage Area	= 1.798 ac	Curve Number	= 83.89*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 5.65 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.389	98.00	
1.409	80.00	
1.798	**83.89**	Weighted CN Method Employed



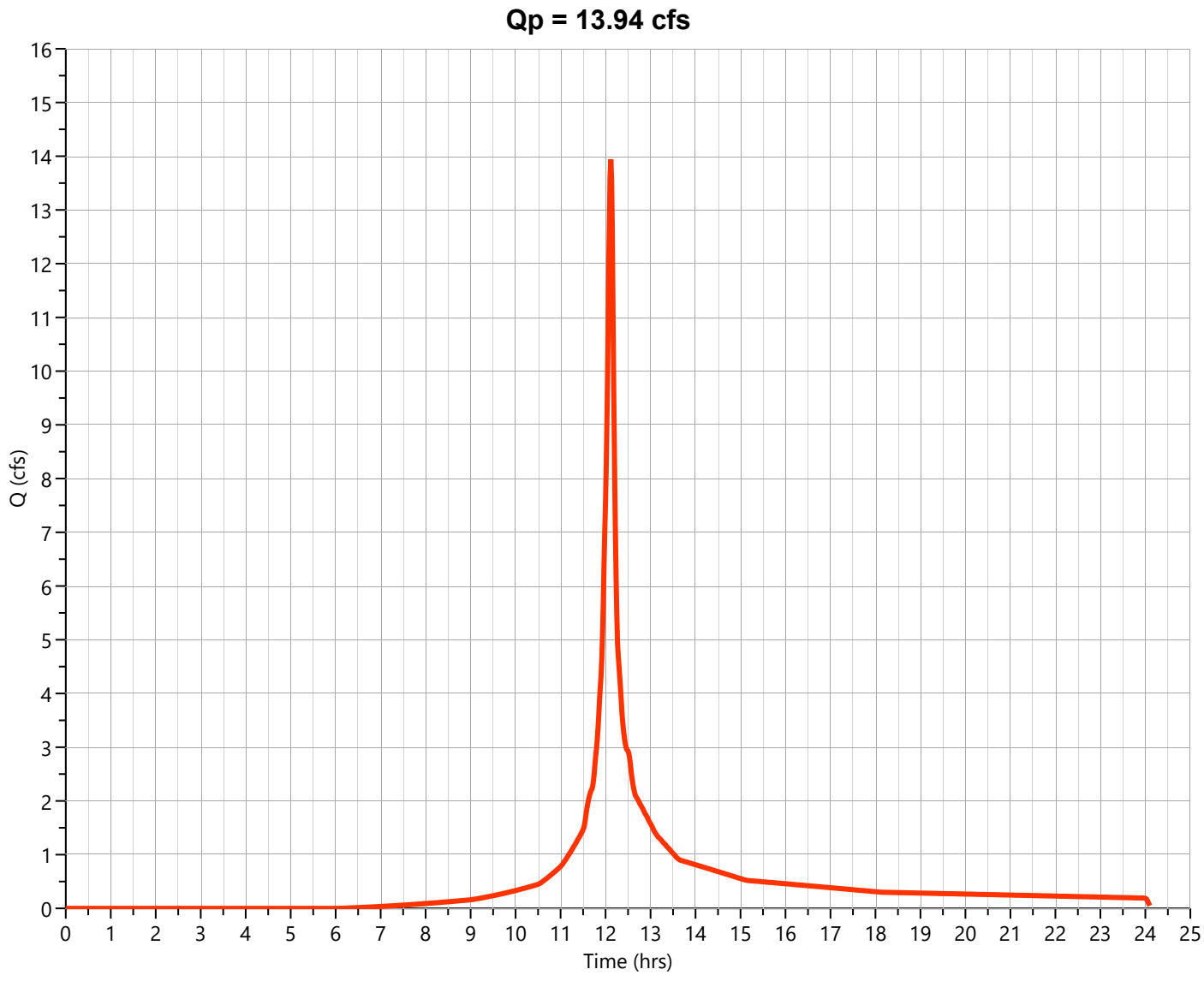
Post DA-3-B

Hyd. No. 10

Hydrograph Type	= NRCS Runoff	Peak Flow	= 13.94 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 43,672 cuft
Drainage Area	= 3.299 ac	Curve Number	= 80.70*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 5.65 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.128	98.00	
3.171	80.00	
3.299	**80.70**	Weighted CN Method Employed



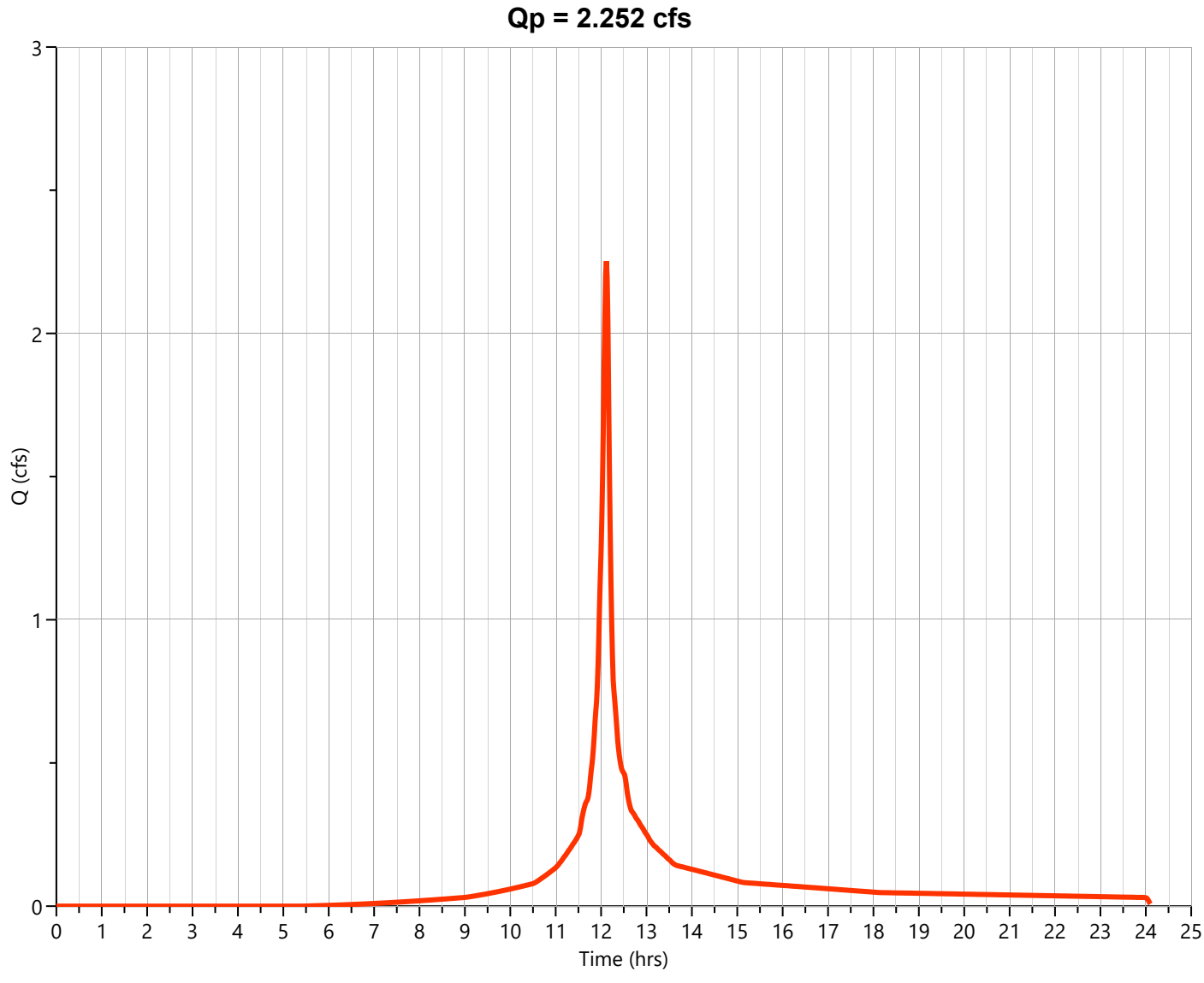
Post DA-3-C

Hyd. No. 11

Hydrograph Type	= NRCS Runoff	Peak Flow	= 2.252 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 7,113 cuft
Drainage Area	= 0.508 ac	Curve Number	= 82.73*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 5.65 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.077	98.00	
0.431	80.00	
0.508	**82.73**	Weighted CN Method Employed



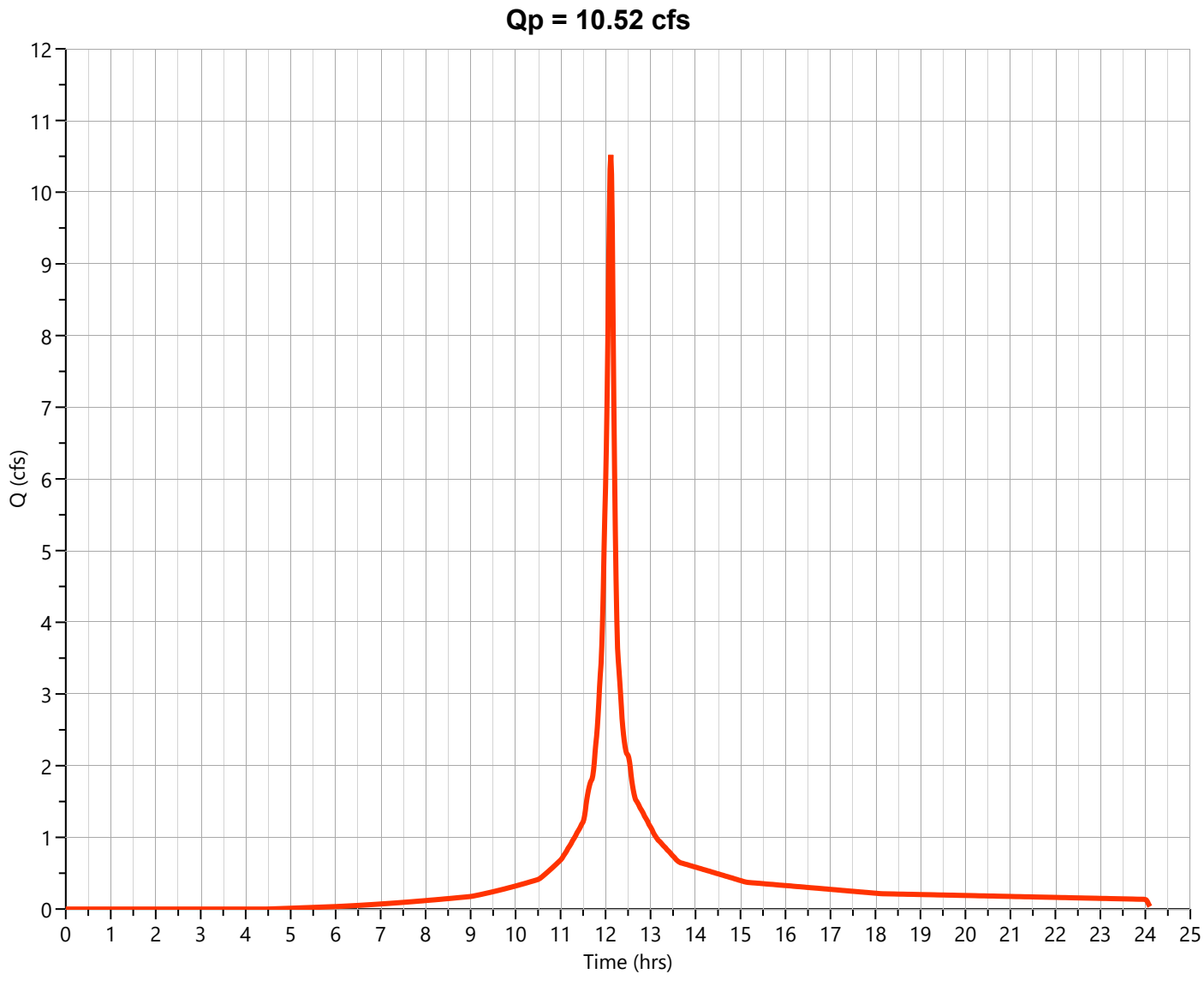
Post DA-4-A

Hyd. No. 12

Hydrograph Type	= NRCS Runoff	Peak Flow	= 10.52 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 33,728 cuft
Drainage Area	= 2.225 ac	Curve Number	= 85.73*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 5.65 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

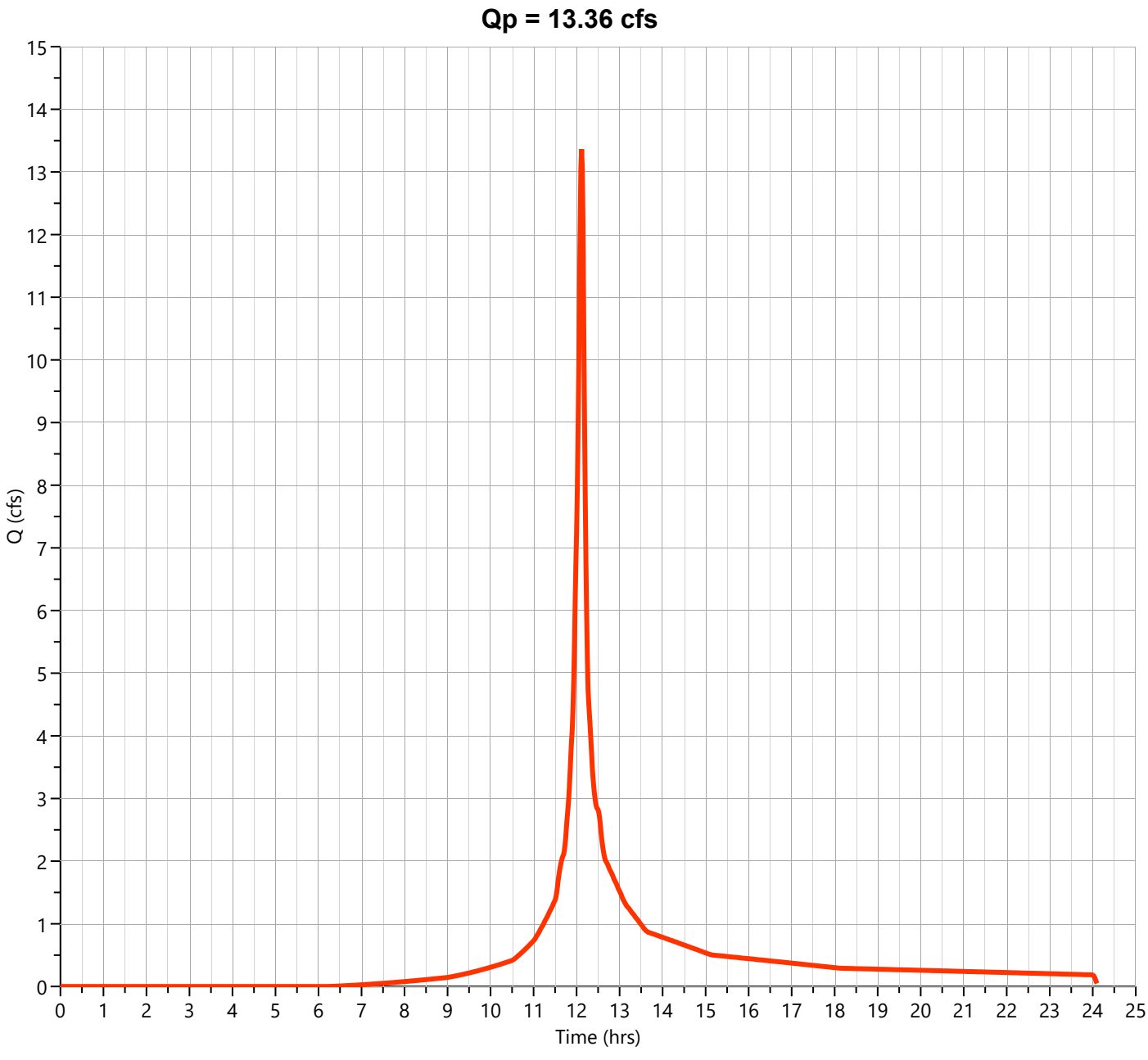
AREA (ac)	CN	DESCRIPTION
0.708	98.00	
1.517	80.00	
2.225	**85.73**	Weighted CN Method Employed



Post DA-4-B SOUTH EAST

Hyd. No. 13

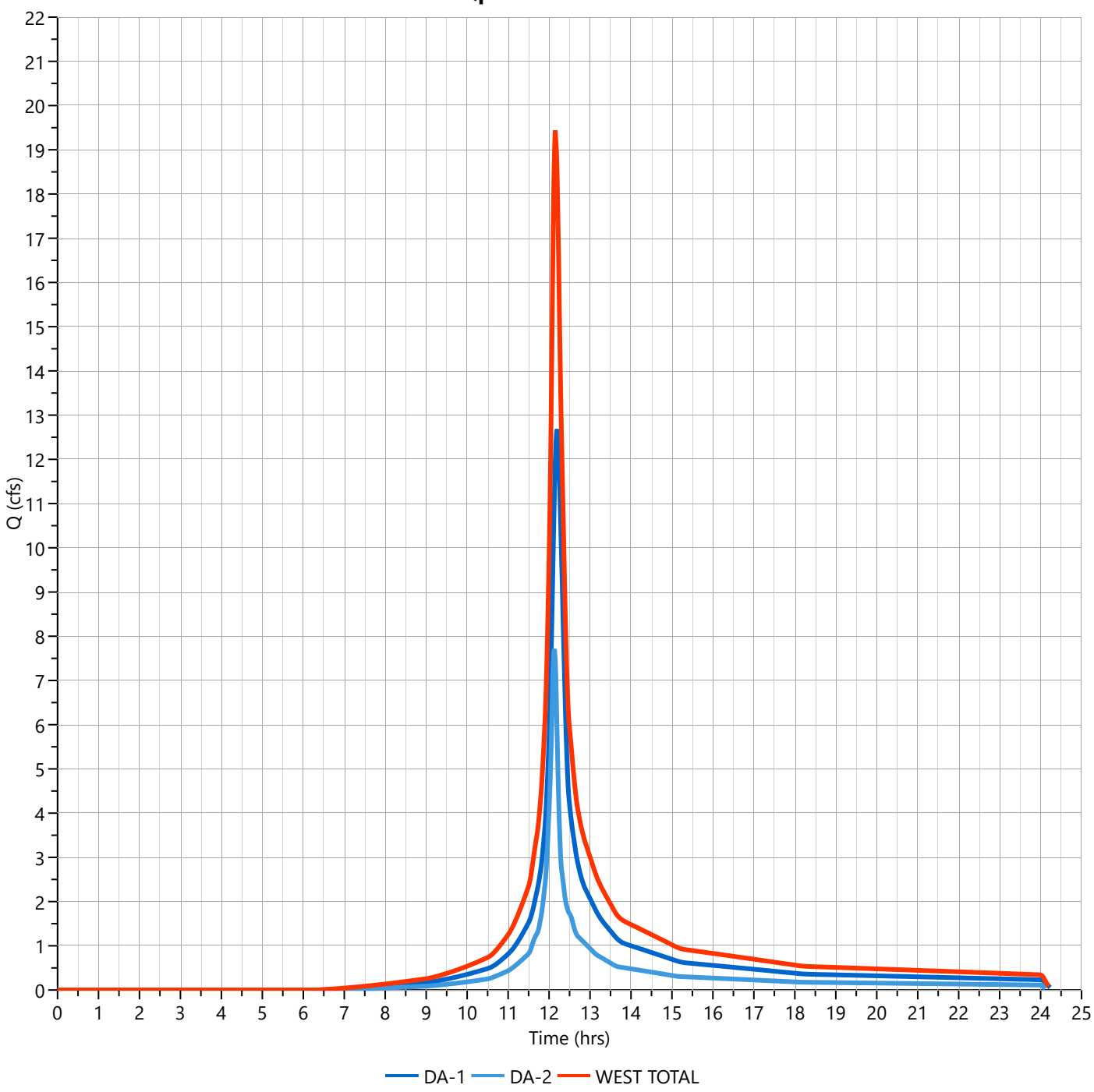
Hydrograph Type	= NRCS Runoff	Peak Flow	= 13.36 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 41,778 cuft
Drainage Area	= 3.219 ac	Curve Number	= 80.00
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 5.65 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Pre WEST TOTAL

Hyd. No. 14

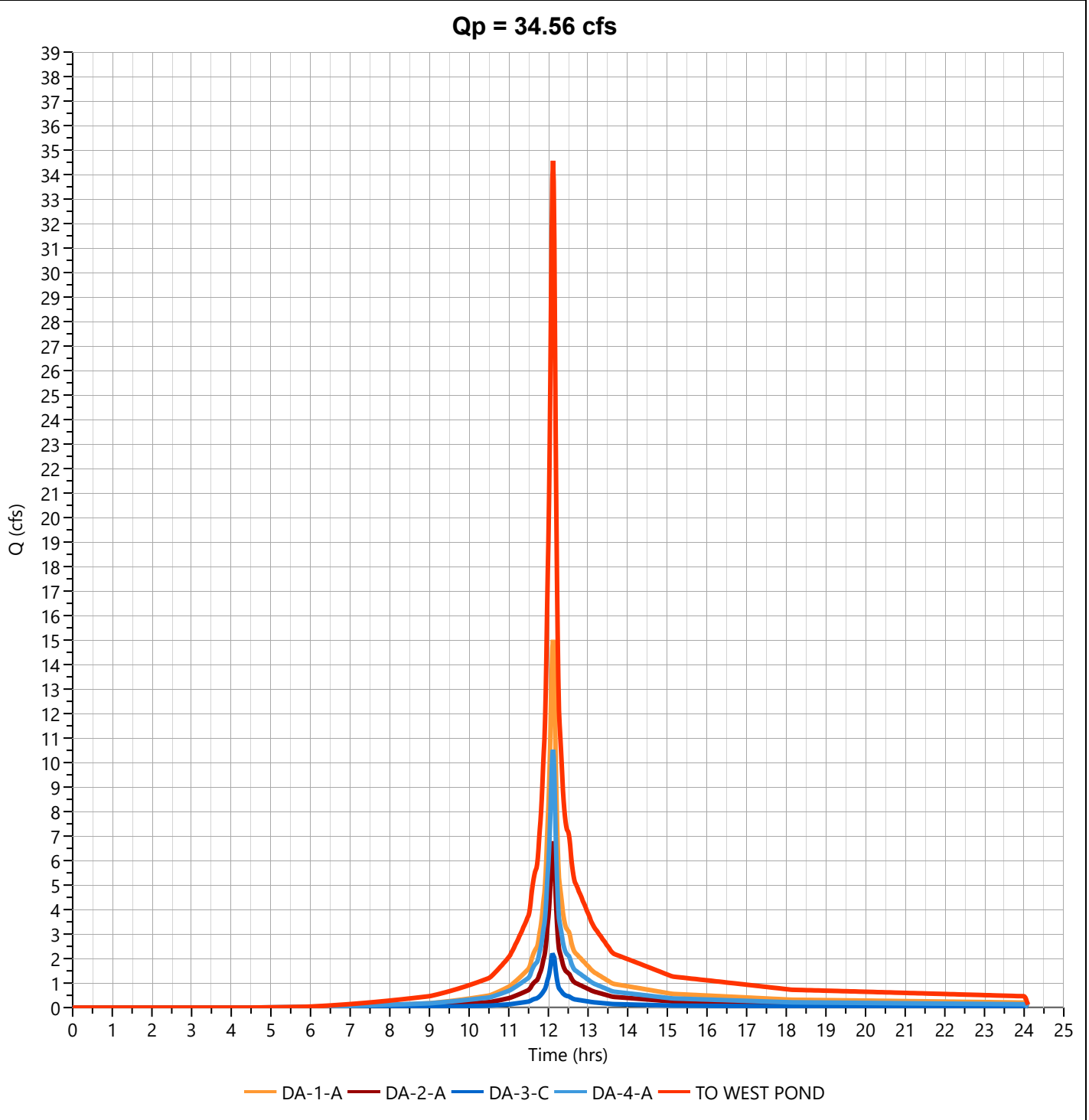
Hydrograph Type	= Junction	Peak Flow	= 19.44 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.15 hrs
Time Interval	= 1 min	Hydrograph Volume	= 77,075 cuft
Inflow Hydrographs	= 1, 2	Total Contrib. Area	= 6.176 ac



Post TO WEST POND

Hyd. No. 15

Hydrograph Type	= Junction	Peak Flow	= 34.56 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 109,229 cuft
Inflow Hydrographs	= 5, 7, 11, 12	Total Contrib. Area	= 7.83 ac



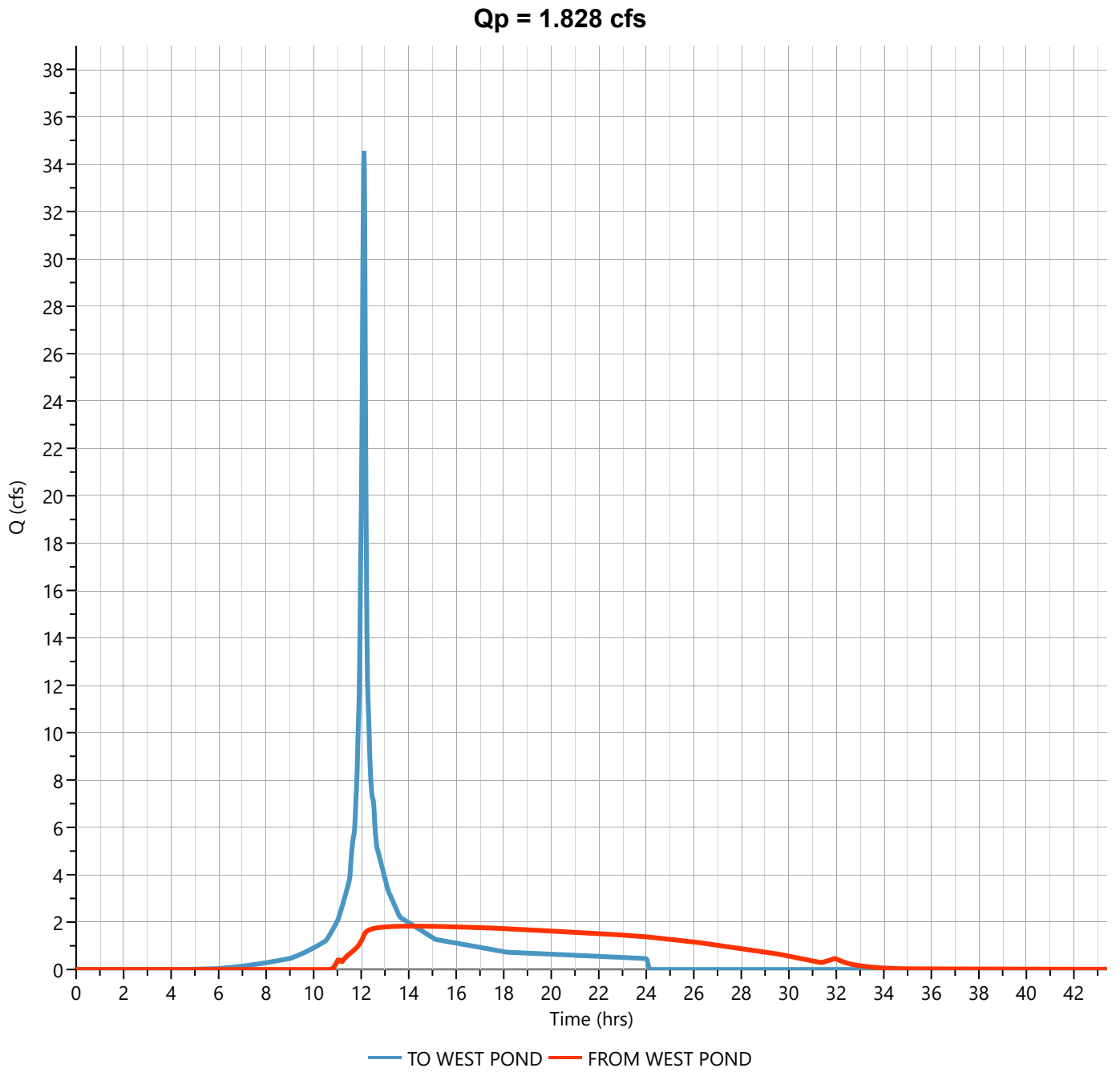
Post FROM WEST POND

Hyd. No. 16

Hydrograph Type	= Pond Route	Peak Flow	= 1.828 cfs
Storm Frequency	= 10-yr	Time to Peak	= 14.23 hrs
Time Interval	= 1 min	Hydrograph Volume	= 101,491 cuft
Inflow Hydrograph	= 15 - TO WEST POND	Max. Elevation	= 184.79 ft
Pond Name	= WEST POND	Max. Storage	= 64,072 cuft

Pond Routing by Storage Indication Method

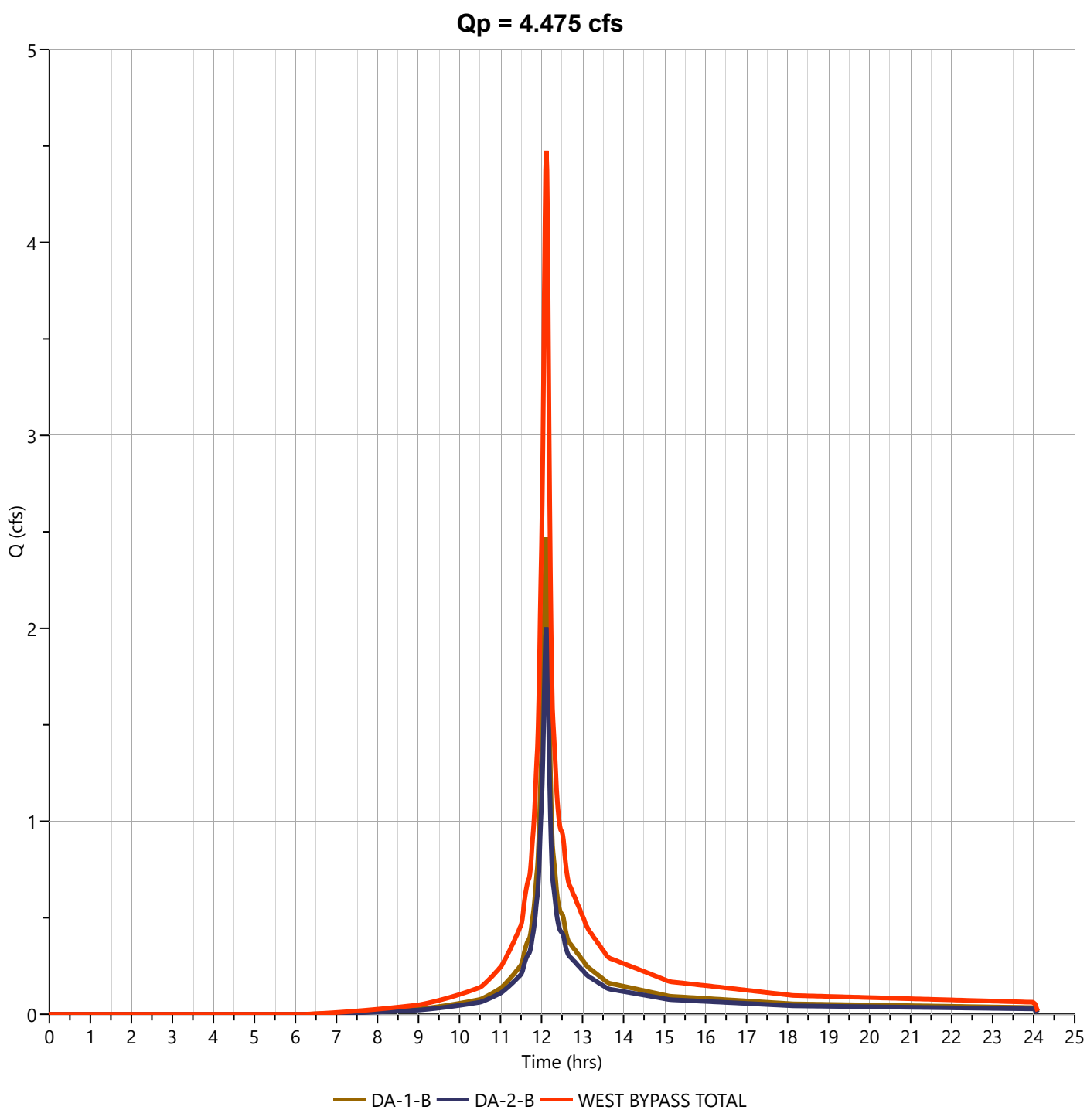
Center of mass detention time = 6.58 hrs



Post WEST BYPASS TOTAL

Hyd. No. 17

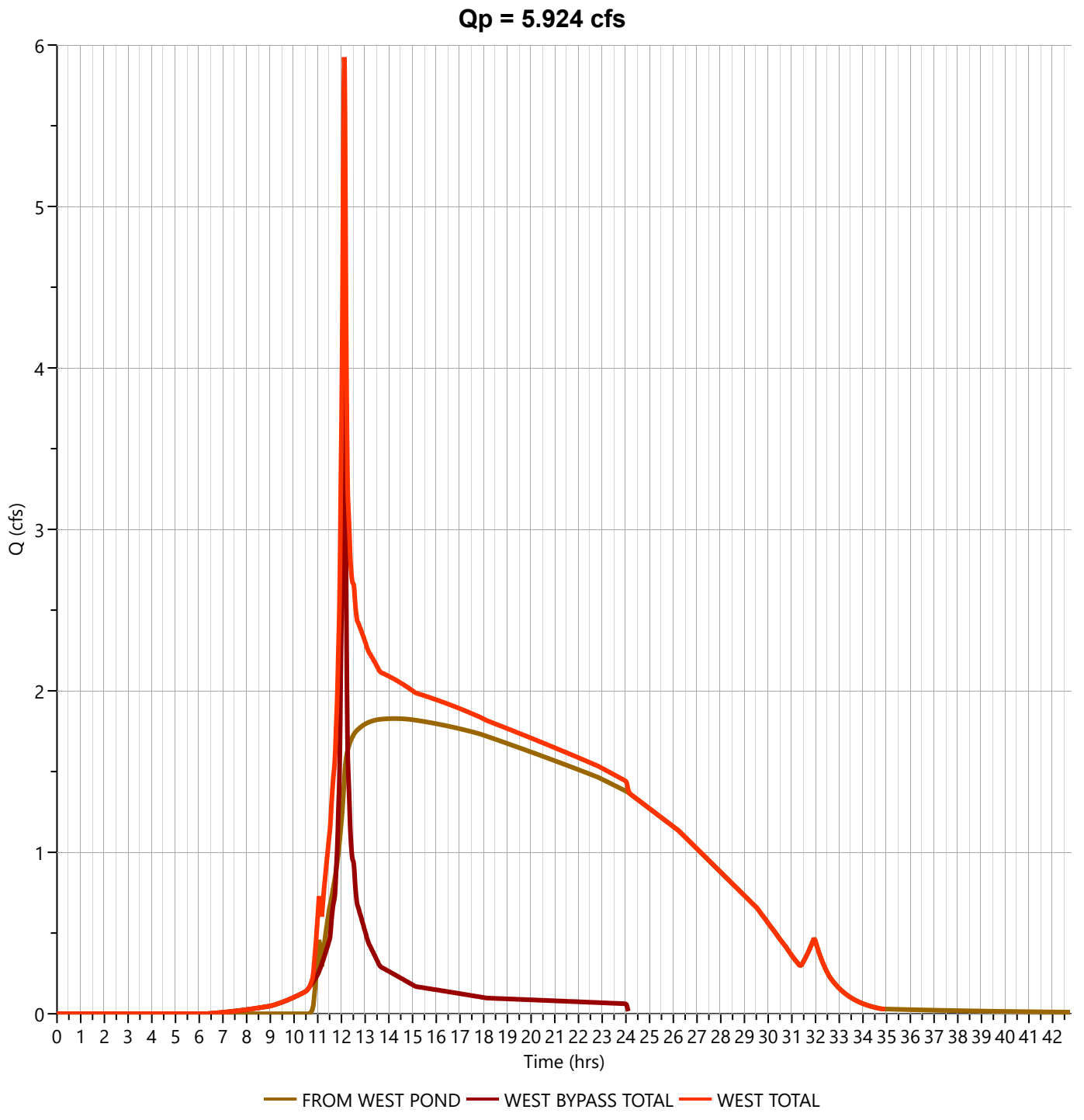
Hydrograph Type	= Junction	Peak Flow	= 4.475 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 13,991 cuft
Inflow Hydrographs	= 6, 8	Total Contrib. Area	= 1.078 ac



Post WEST TOTAL

Hyd. No. 18

Hydrograph Type	= Junction	Peak Flow	= 5.924 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 115,482 cuft
Inflow Hydrographs		Total Contrib. Area	= 0.0 ac



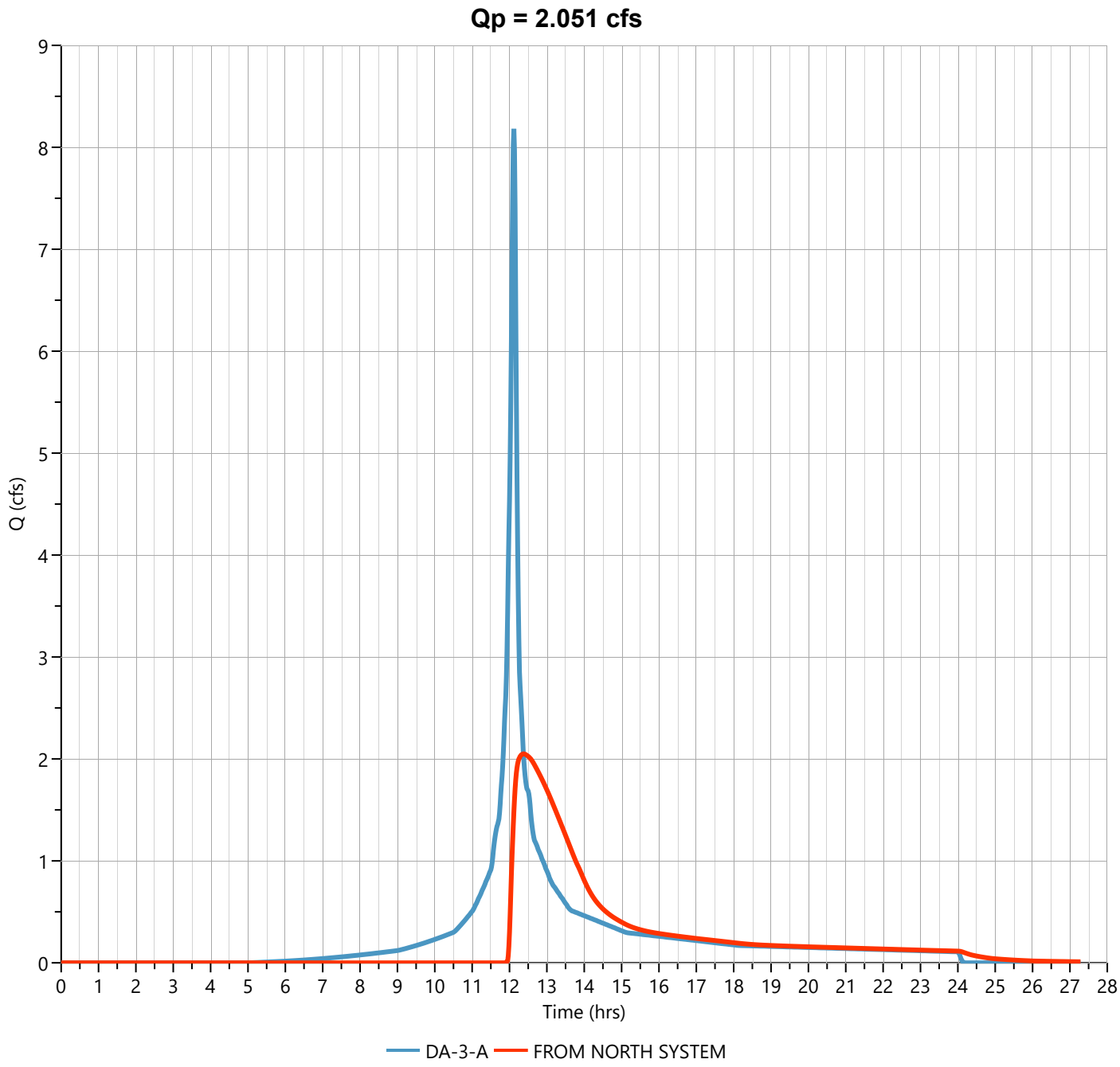
Post FROM NORTH SYSTEM

Hyd. No. 19

Hydrograph Type	= Pond Route	Peak Flow	= 2.051 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.37 hrs
Time Interval	= 1 min	Hydrograph Volume	= 19,668 cuft
Inflow Hydrograph	= 9 - DA-3-A	Max. Elevation	= 227.47 ft
Pond Name	= NORTH SYSTEM	Max. Storage	= 11,601 cuft

Pond Routing by Storage Indication Method

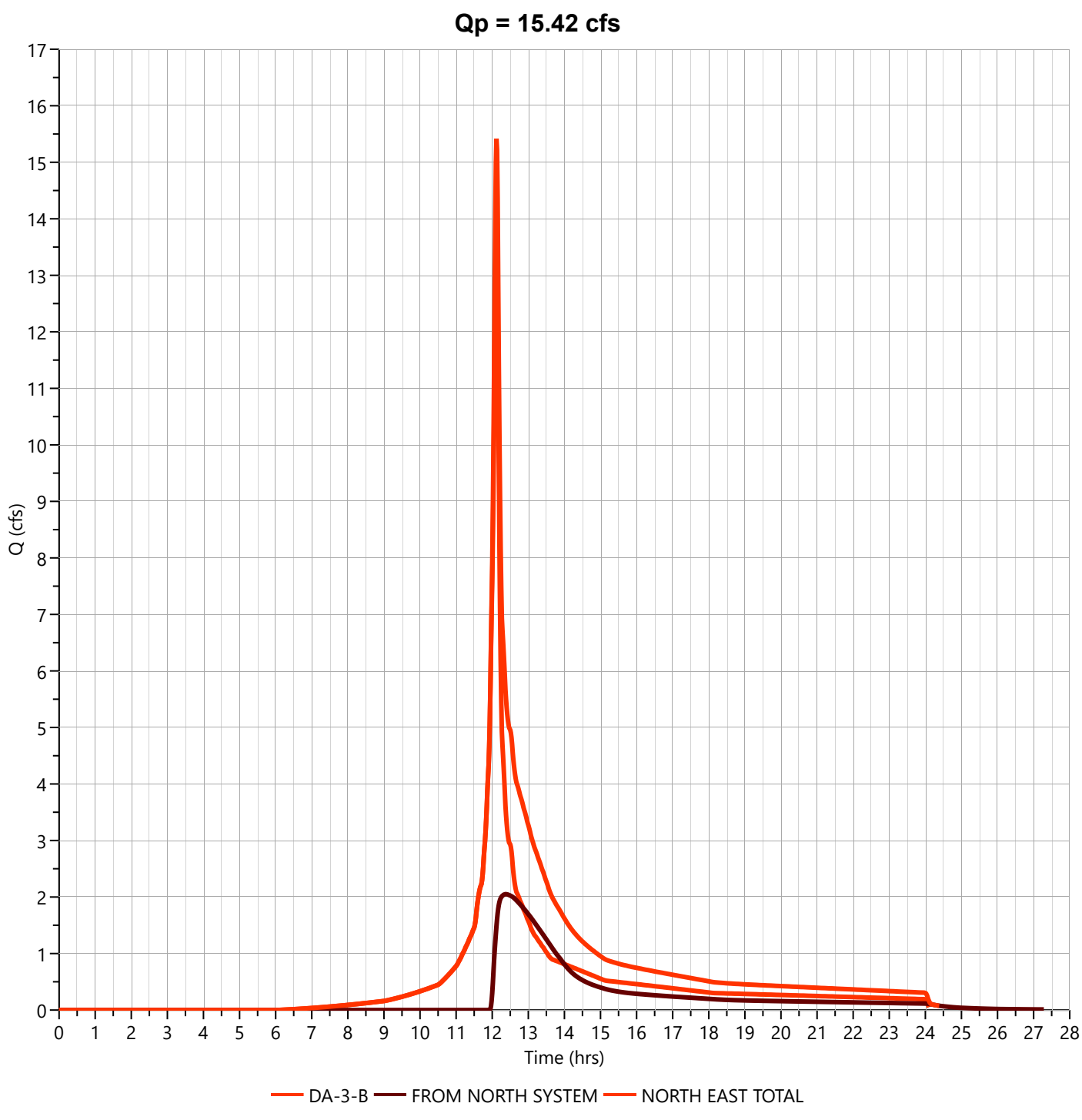
Center of mass detention time = 1.54 hrs



Post NORTH EAST TOTAL

Hyd. No. 20

Hydrograph Type	= Junction	Peak Flow	= 15.42 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 63,340 cuft
Inflow Hydrographs	= 10	Total Contrib. Area	= 3.299 ac



Design Storm Report

Custom Storm filename:

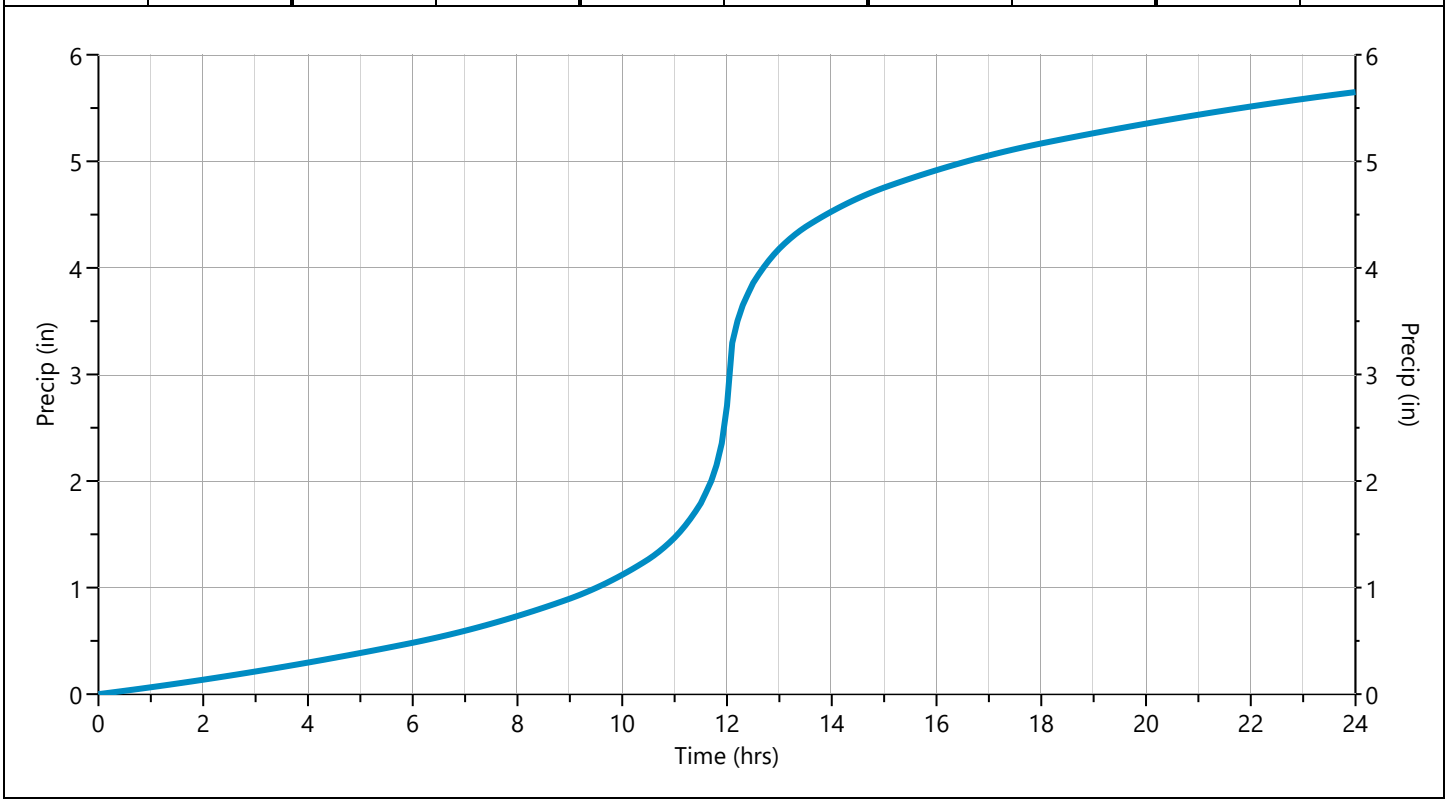
Hydrology Studio v 3.0.0.44

08-13-2026

Storm Distribution: NOAA-D, 24-hr

Storm Duration	Total Rainfall Volume (in)								
	1-yr	2-yr	3-yr	5-yr	✔ 10-yr	25-yr	50-yr	100-yr	
24 hrs	3.01	3.67	0.00	4.75	5.65	6.88	7.80	8.79	

Incremental Rainfall Distribution, 10-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
11.60	0.017044	11.78	0.024605	11.97	0.058900	12.15	0.034144	12.33	0.017939
11.62	0.017939	11.80	0.024608	11.98	0.058903	12.17	0.034144	12.35	0.017938
11.63	0.017938	11.82	0.034144	12.00	0.058899	12.18	0.034146	12.37	0.017940
11.65	0.017939	11.83	0.034146	12.02	0.098279	12.20	0.034144	12.38	0.017938
11.67	0.017938	11.85	0.034144	12.03	0.098285	12.22	0.024606	12.40	0.017940
11.68	0.017940	11.87	0.034144	12.05	0.098279	12.23	0.024605	12.42	0.017044
11.70	0.017938	11.88	0.034146	12.07	0.098284	12.25	0.024606	12.43	0.017045
11.72	0.024605	11.90	0.034144	12.08	0.098279	12.27	0.024605	12.45	0.017044
11.73	0.024606	11.92	0.058903	**12.10**	**0.098285**	12.28	0.024607	12.47	0.017044
11.75	0.024605	11.93	0.058900	12.12	0.034144	12.30	0.024605	12.48	0.017045
11.77	0.024606	11.95	0.058903	12.13	0.034146	12.32	0.017938	12.50	0.017044



Hydrograph 25-yr Summary

Hydrology Studio v 3.0.0.44

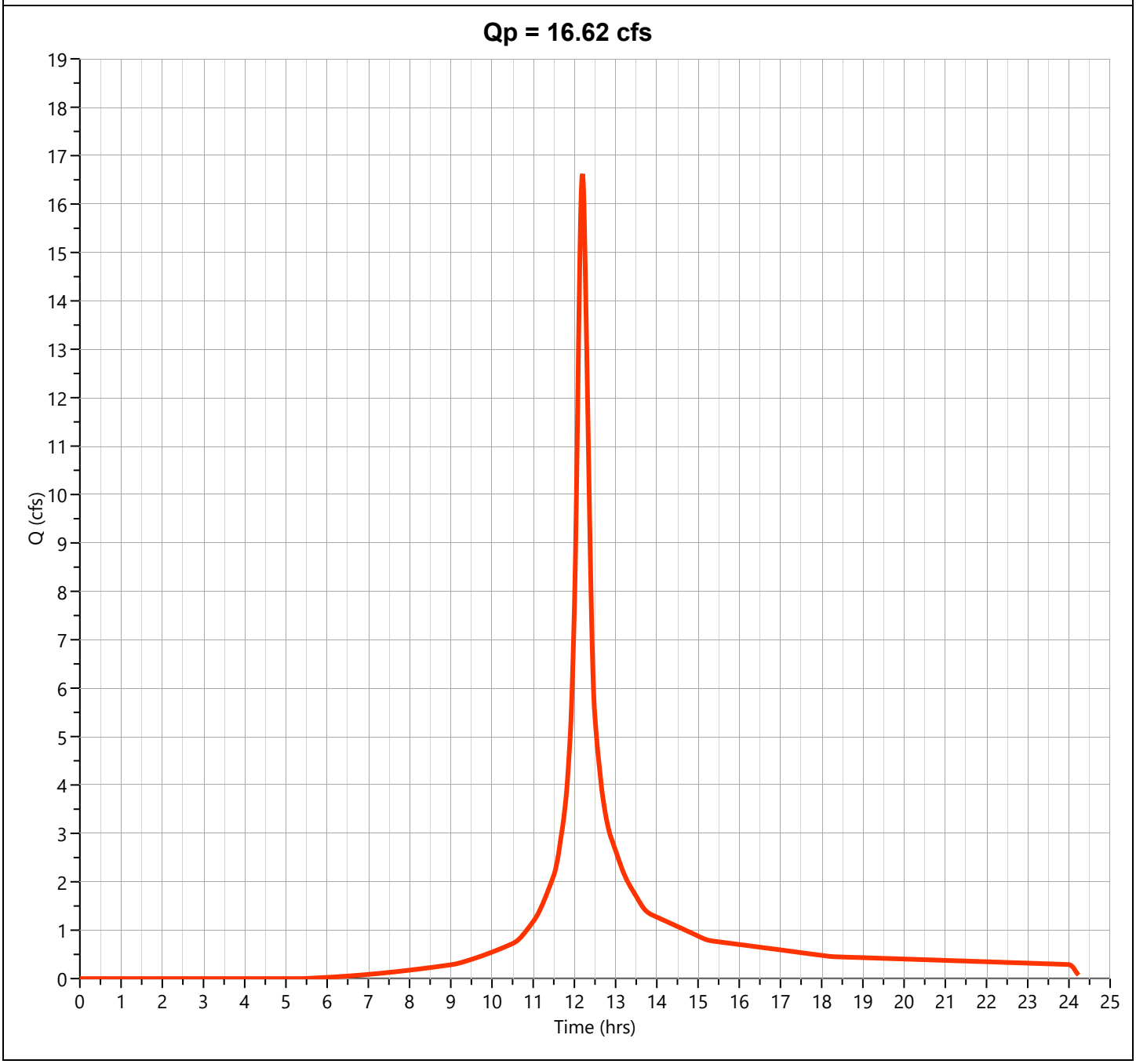
Project Name: Sumitt St Derby
File: Draiange Calcs.hys
08-13-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	Pre DA-1	16.62	12.20	68,321	----		
2	NRCS Runoff	Pre DA-2	10.09	12.13	33,582	----		
3	NRCS Runoff	Pre DA-3 NORTH EAST	22.97	12.17	86,376	----		
4	NRCS Runoff	Pre DA-4 SOUTH EAST	22.81	12.18	89,103	----		
5	NRCS Runoff	Post DA-1-A	19.50	12.12	61,949	----		
6	NRCS Runoff	Post DA-1-B	3.230	12.12	10,210	----		
7	NRCS Runoff	Post DA-2-A	8.810	12.12	27,984	----		
8	NRCS Runoff	Post DA-2-B	2.622	12.12	8,288	----		
9	NRCS Runoff	Post DA-3-A	10.48	12.12	33,746	----		
10	NRCS Runoff	Post DA-3-B	18.16	12.12	57,556	----		
11	NRCS Runoff	Post DA-3-C	2.903	12.12	9,289	----		
12	NRCS Runoff	Post DA-4-A	13.36	12.12	43,478	----		
13	NRCS Runoff	Post DA-4-B SOUTH EAST	17.47	12.12	55,236	----		
14	Junction	Pre WEST TOTAL	25.51	12.15	101,903	1, 2		
15	Junction	Post TO WEST POND	44.58	12.12	142,699	5, 7, 11, 12		
16	Pond Route	Post FROM WEST POND	2.052	14.55	134,881	15	186.81	86,512
17	Junction	Post WEST BYPASS TOTAL	5.852	12.12	18,498	6, 8		
18	Junction	Post WEST TOTAL	7.511	12.12	153,379	16, 17		
19	Pond Route	Post FROM NORTH SYSTEM	2.677	12.37	27,442	9	228.52	14,653
20	Junction	Post NORTH EAST TOTAL	20.32	12.12	84,998	10, 19		

Pre DA-1

Hyd. No. 1

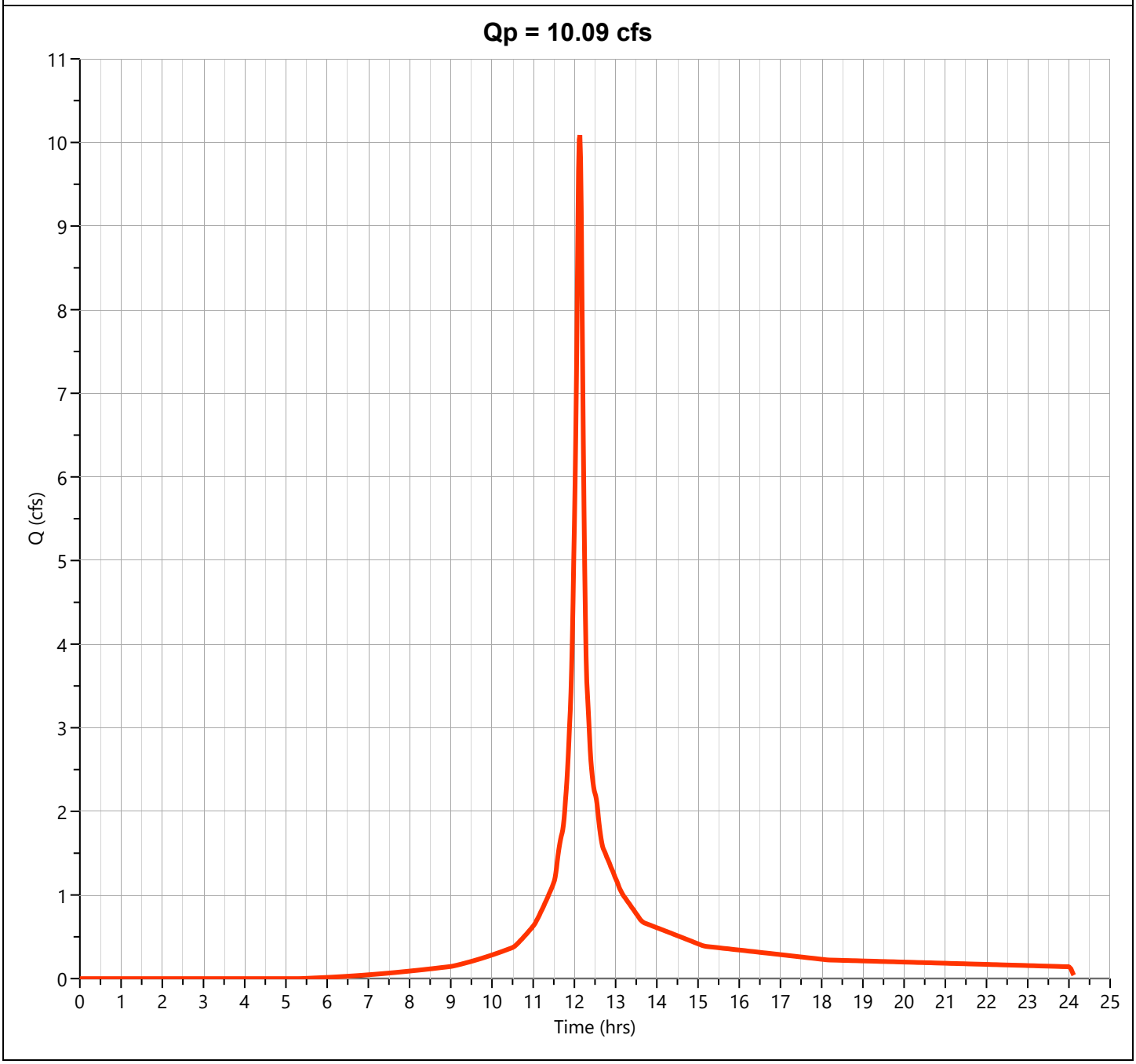
Hydrograph Type	= NRCS Runoff	Peak Flow	= 16.62 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.20 hrs
Time Interval	= 1 min	Runoff Volume	= 68,321 cuft
Drainage Area	= 4.106 ac	Curve Number	= 80.00
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 14.46 min
Total Rainfall	= 6.88 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Pre DA-2

Hyd. No. 2

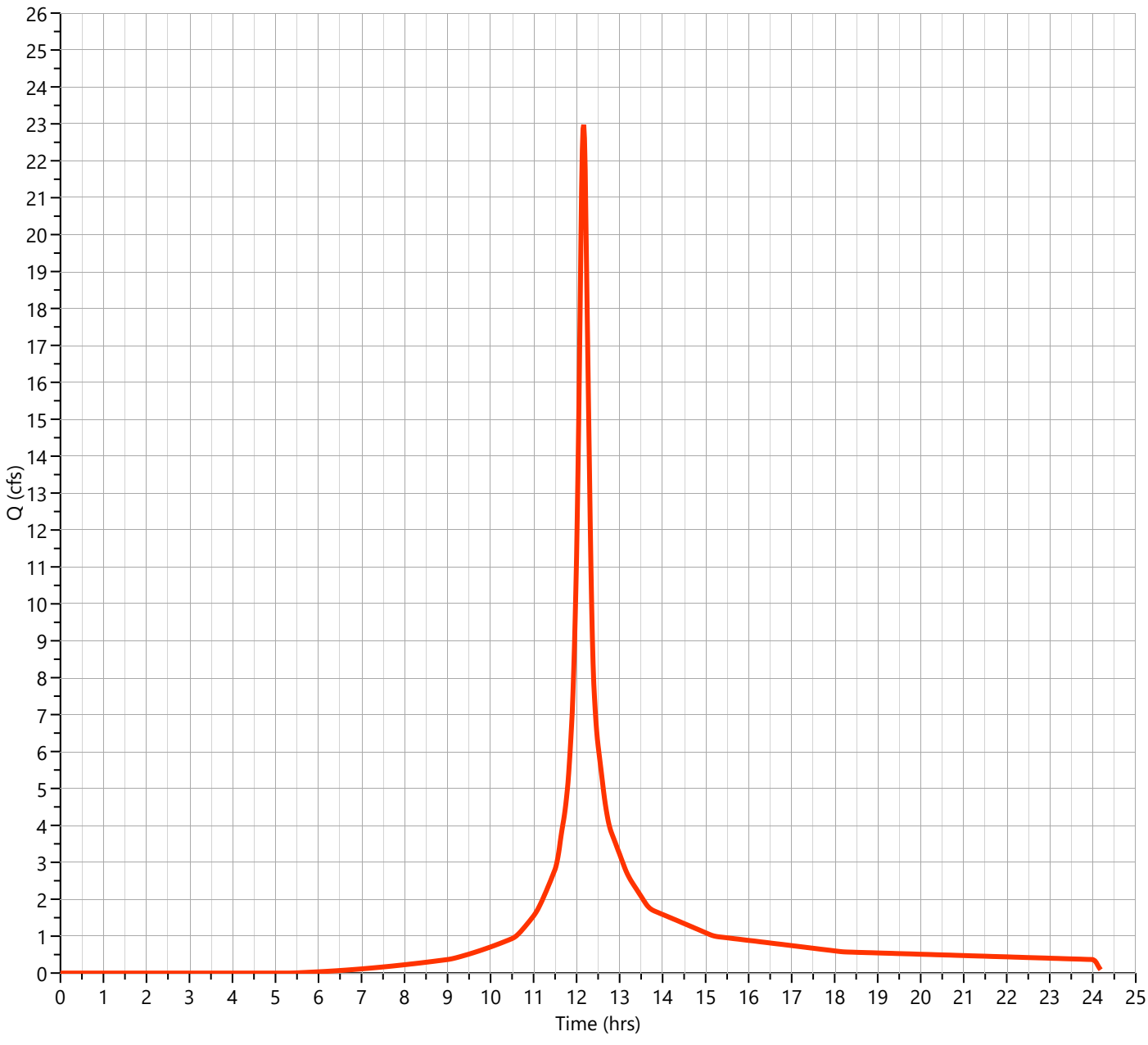
Hydrograph Type	= NRCS Runoff	Peak Flow	= 10.09 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Runoff Volume	= 33,582 cuft
Drainage Area	= 2.07 ac	Curve Number	= 80.00
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 7.34 min
Total Rainfall	= 6.88 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Pre DA-3 NORTH EAST

Hyd. No. 3

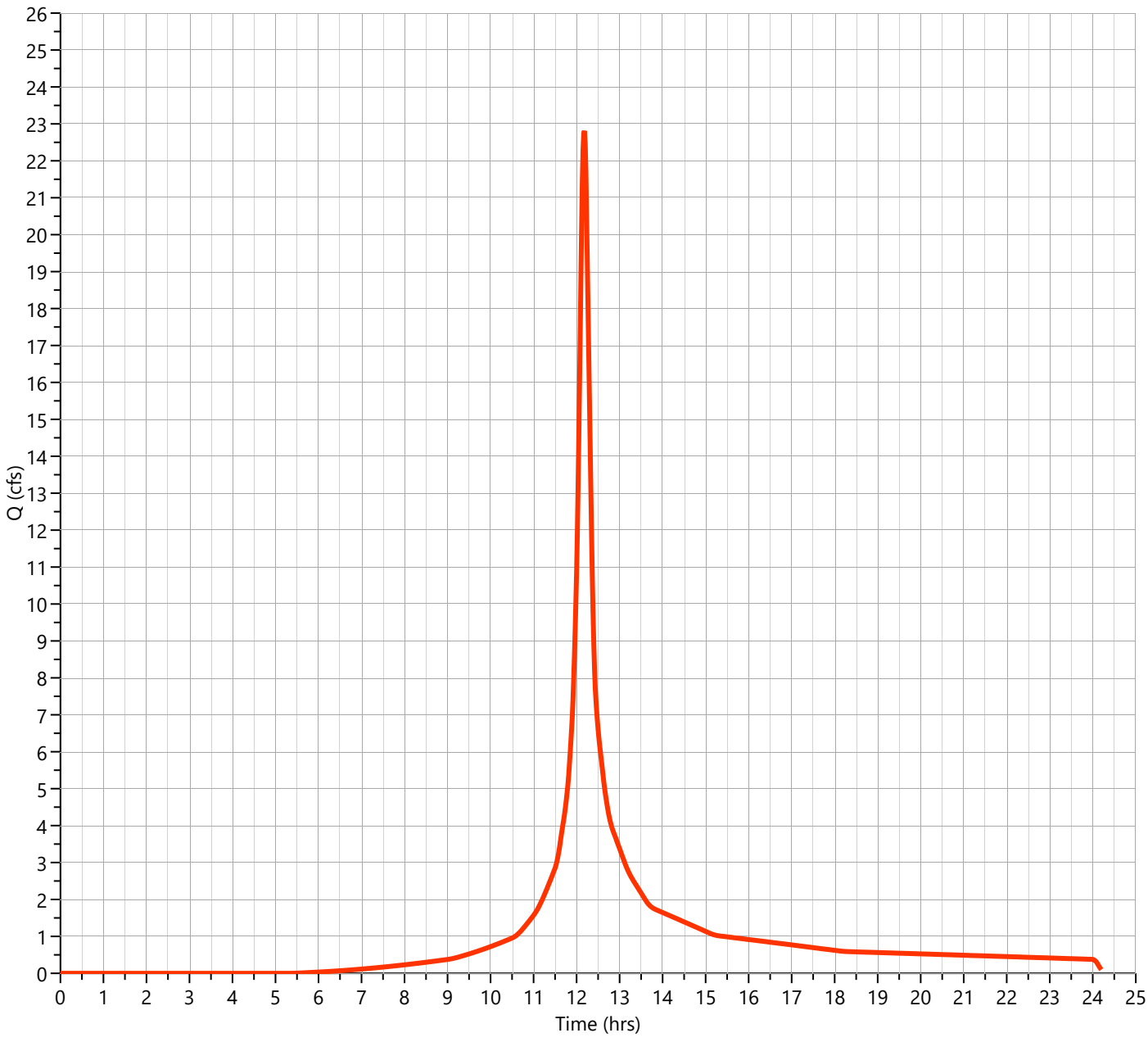
Hydrograph Type	= NRCS Runoff	Peak Flow	= 22.97 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.17 hrs
Time Interval	= 1 min	Runoff Volume	= 86,376 cuft
Drainage Area	= 5.1 ac	Curve Number	= 80.00
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 10.24 min
Total Rainfall	= 6.88 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Pre DA-4 SOUTH EAST

Hyd. No. 4

Hydrograph Type	= NRCS Runoff	Peak Flow	= 22.81 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.18 hrs
Time Interval	= 1 min	Runoff Volume	= 89,103 cuft
Drainage Area	= 5.44 ac	Curve Number	= 80.00
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 12.26 min
Total Rainfall	= 6.88 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



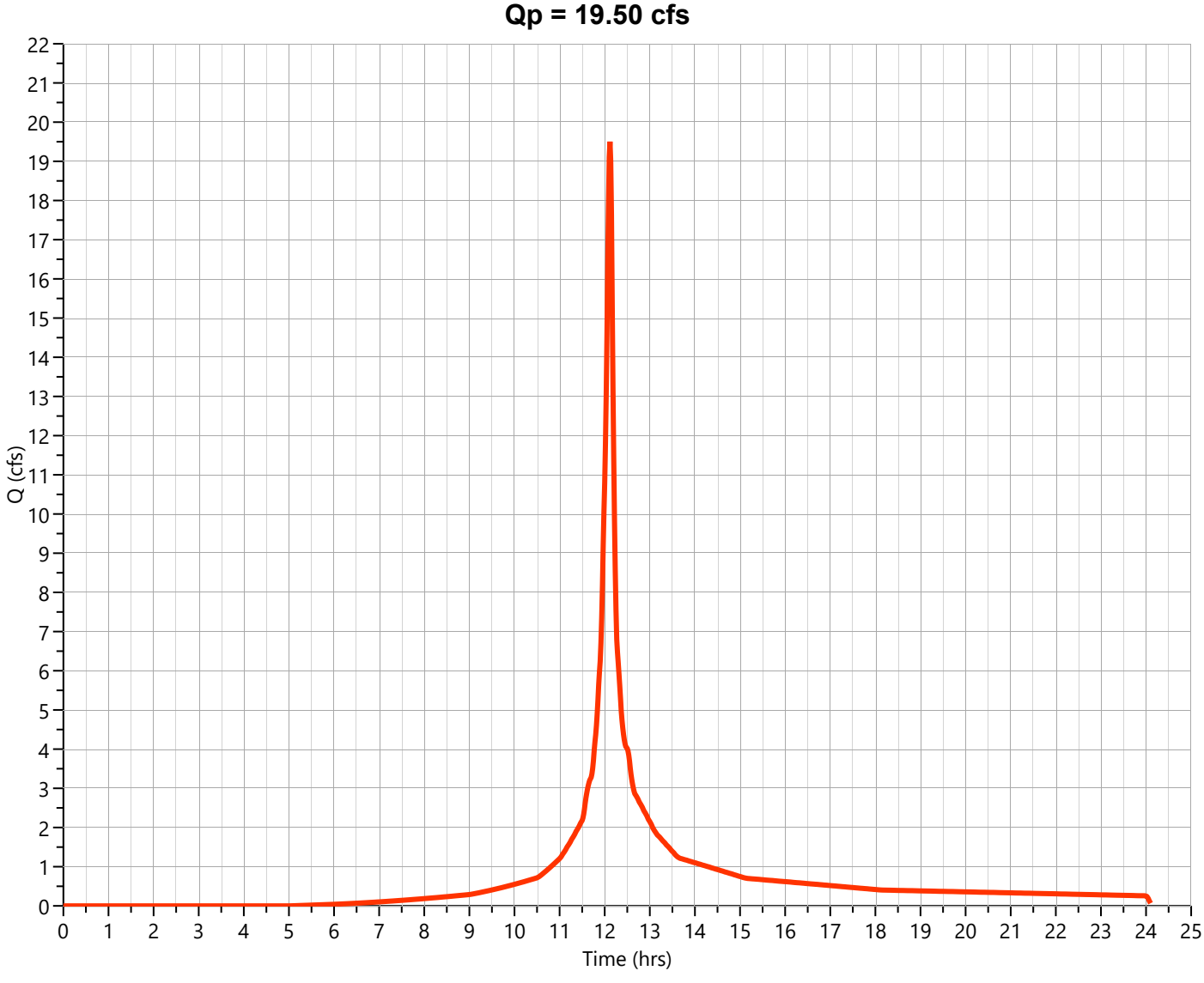
Post DA-1-A

Hyd. No. 5

Hydrograph Type	= NRCS Runoff	Peak Flow	= 19.50 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 61,949 cuft
Drainage Area	= 3.511 ac	Curve Number	= 81.18*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 6.88 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

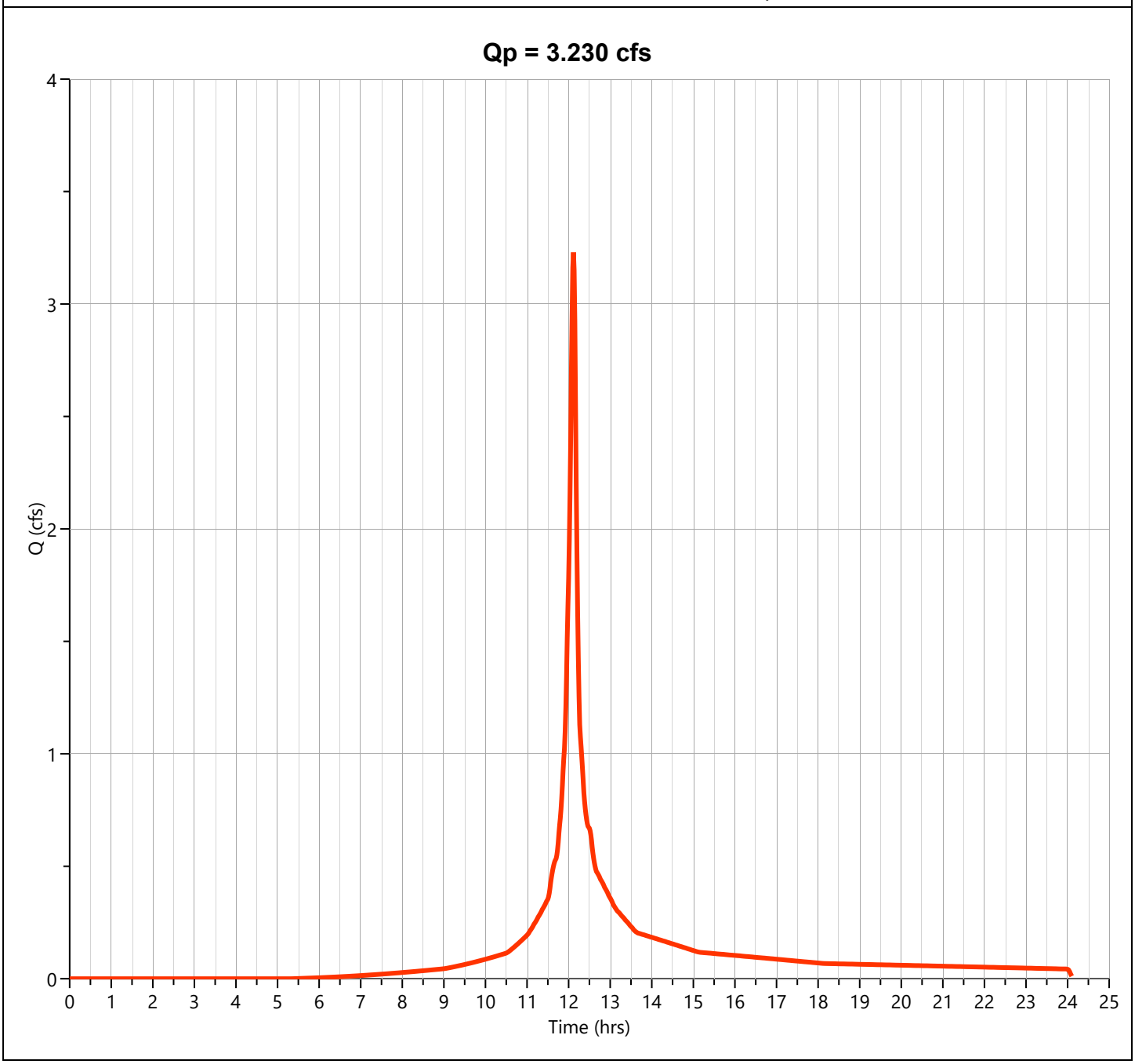
AREA (ac)	CN	DESCRIPTION
0.23	98.00	
3.281	80.00	
3.511	**81.18**	Weighted CN Method Employed



Post DA-1-B

Hyd. No. 6

Hydrograph Type	= NRCS Runoff	Peak Flow	= 3.230 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 10,210 cuft
Drainage Area	= 0.595 ac	Curve Number	= 80.00
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 6.88 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



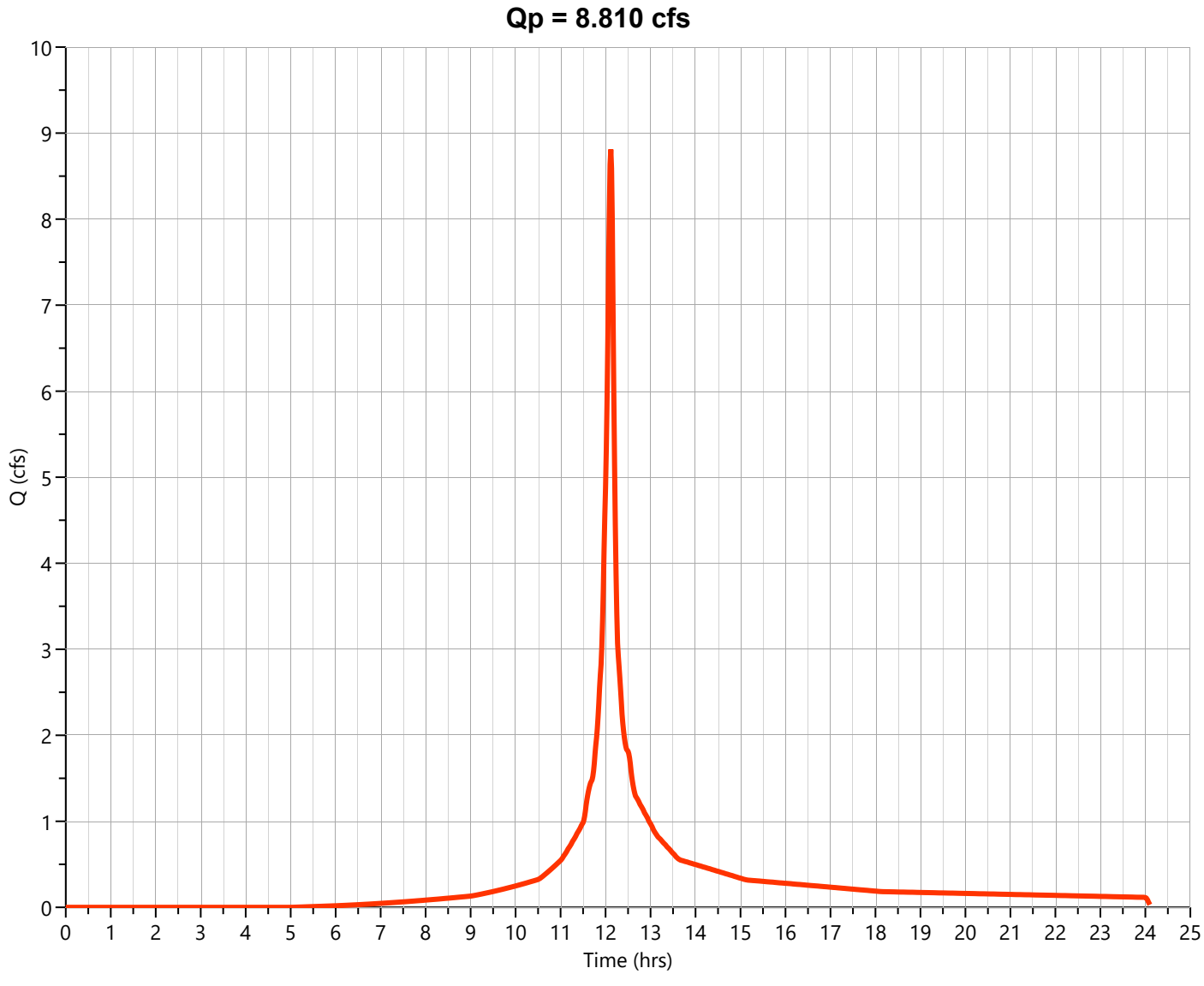
Post DA-2-A

Hyd. No. 7

Hydrograph Type	= NRCS Runoff	Peak Flow	= 8.810 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 27,984 cuft
Drainage Area	= 1.586 ac	Curve Number	= 81.18*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 6.88 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

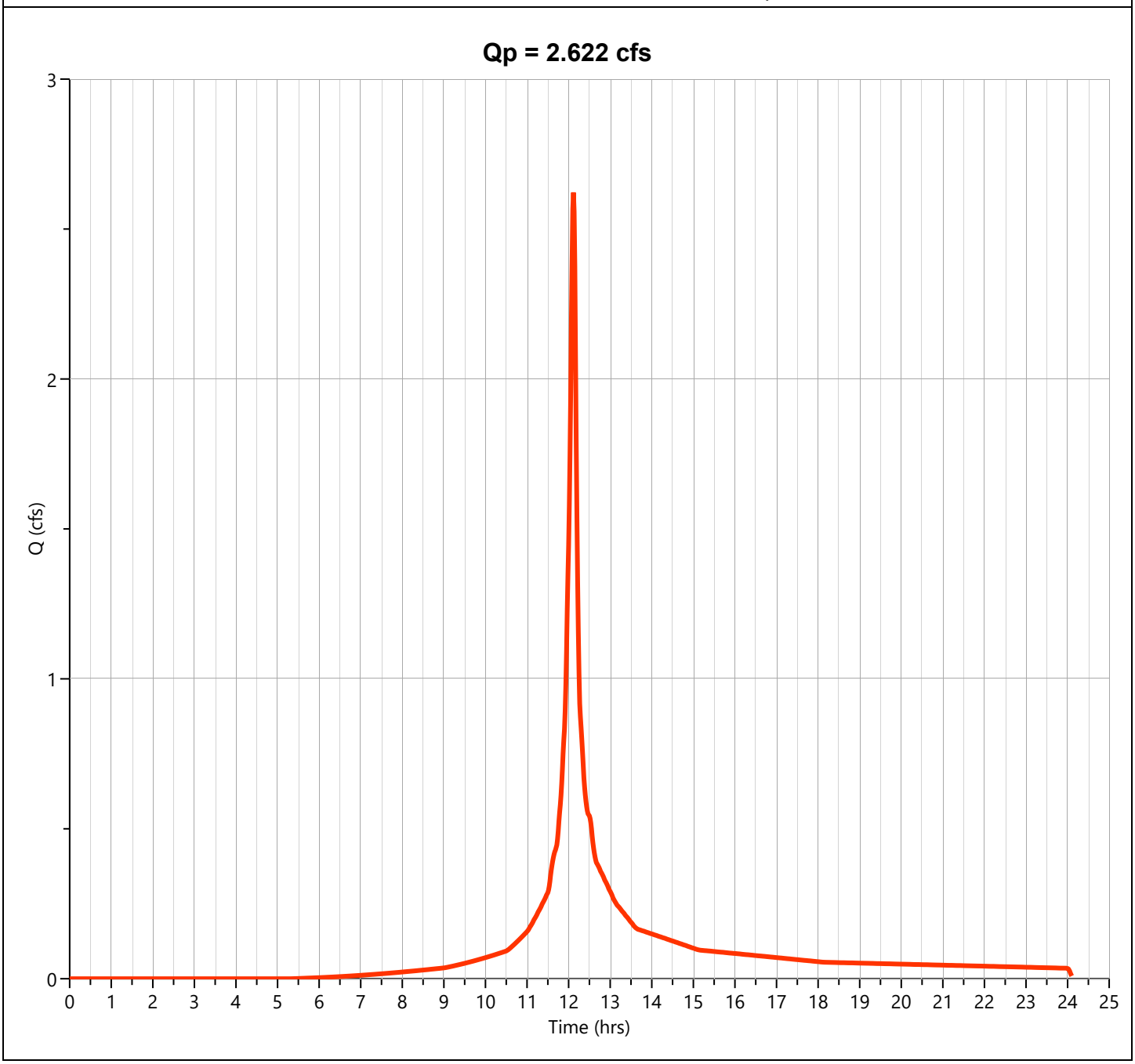
AREA (ac)	CN	DESCRIPTION
0.104	98.00	
1.482	80.00	
1.586	**81.18**	Weighted CN Method Employed



Post DA-2-B

Hyd. No. 8

Hydrograph Type	= NRCS Runoff	Peak Flow	= 2.622 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 8,288 cuft
Drainage Area	= 0.483 ac	Curve Number	= 80.00
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 6.88 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



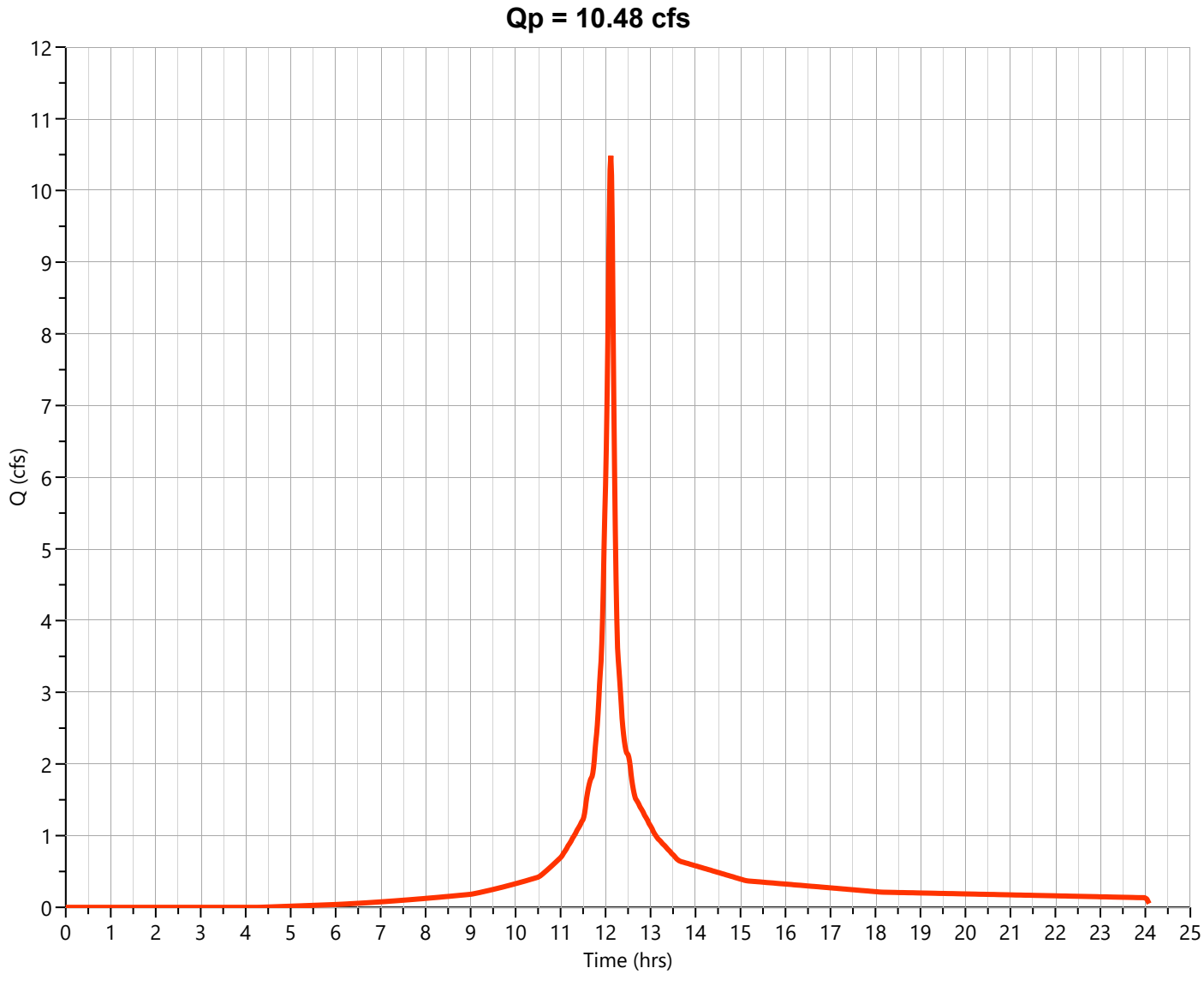
Post DA-3-A

Hyd. No. 9

Hydrograph Type	= NRCS Runoff	Peak Flow	= 10.48 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 33,746 cuft
Drainage Area	= 1.798 ac	Curve Number	= 83.89*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 6.88 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.389	98.00	
1.409	80.00	
1.798	**83.89**	Weighted CN Method Employed



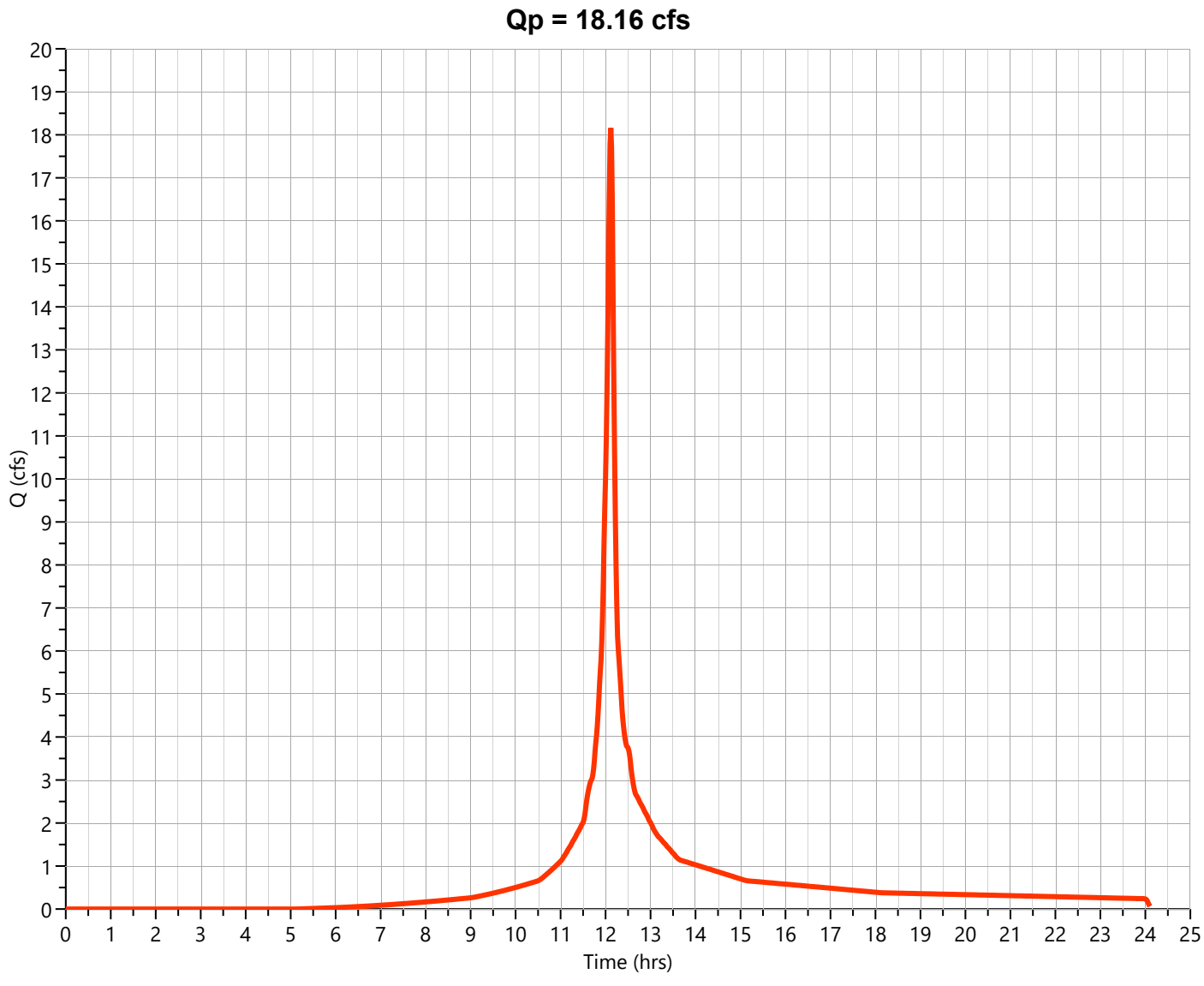
Post DA-3-B

Hyd. No. 10

Hydrograph Type	= NRCS Runoff	Peak Flow	= 18.16 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 57,556 cuft
Drainage Area	= 3.299 ac	Curve Number	= 80.70*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 6.88 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.128	98.00	
3.171	80.00	
3.299	**80.70**	Weighted CN Method Employed



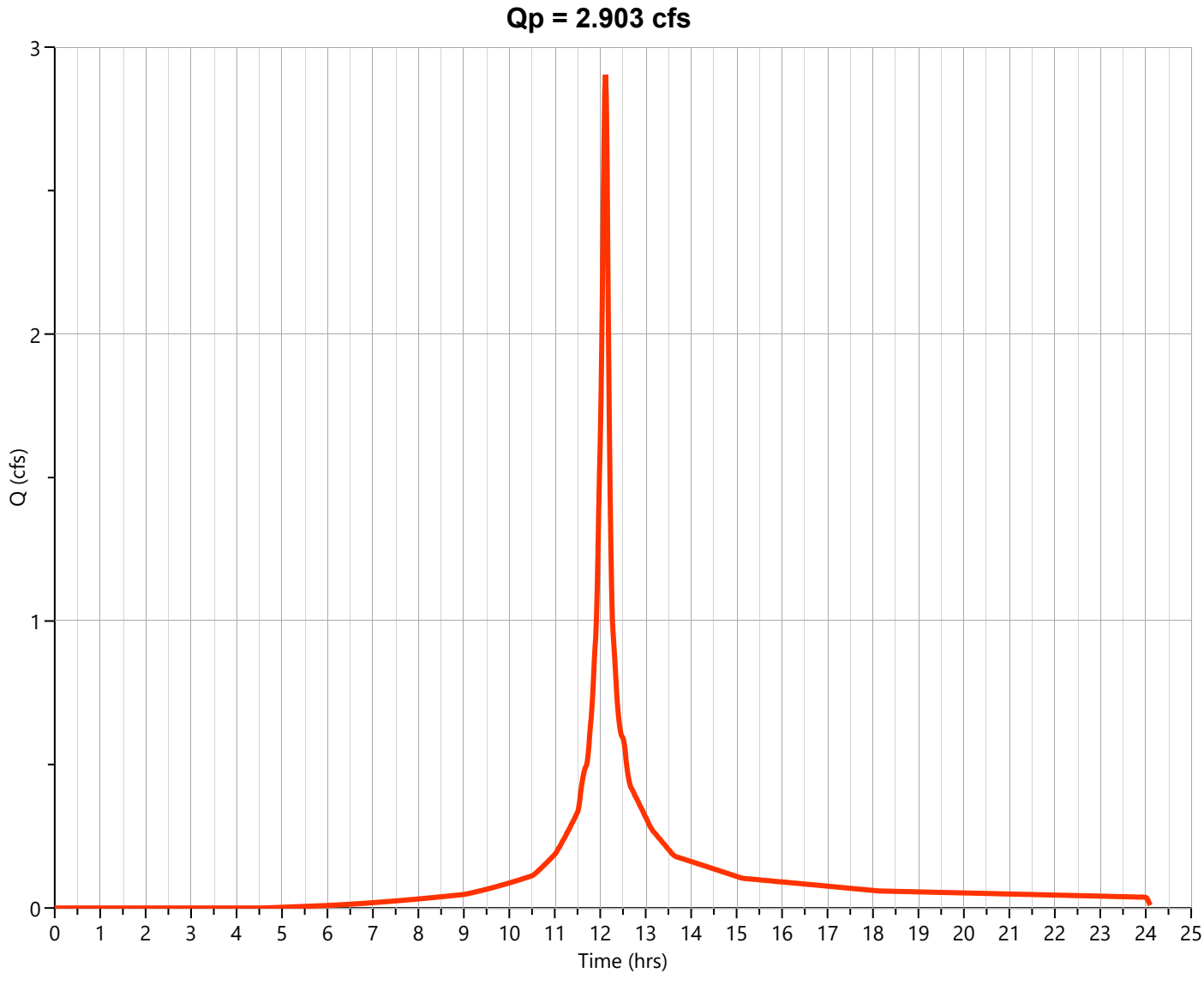
Post DA-3-C

Hyd. No. 11

Hydrograph Type	= NRCS Runoff	Peak Flow	= 2.903 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 9,289 cuft
Drainage Area	= 0.508 ac	Curve Number	= 82.73*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 6.88 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.077	98.00	
0.431	80.00	
0.508	**82.73**	Weighted CN Method Employed



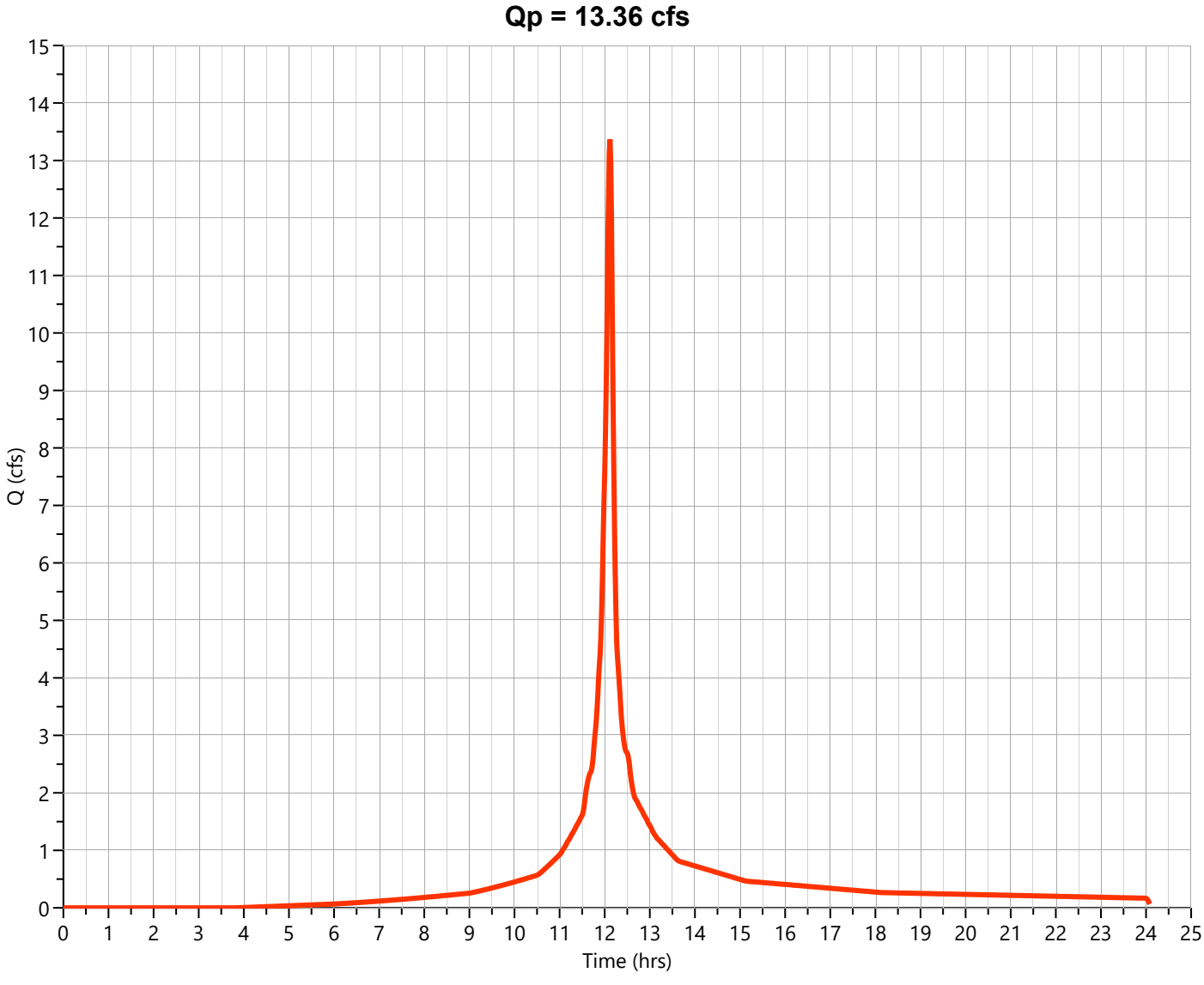
Post DA-4-A

Hyd. No. 12

Hydrograph Type	= NRCS Runoff	Peak Flow	= 13.36 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 43,478 cuft
Drainage Area	= 2.225 ac	Curve Number	= 85.73*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 6.88 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

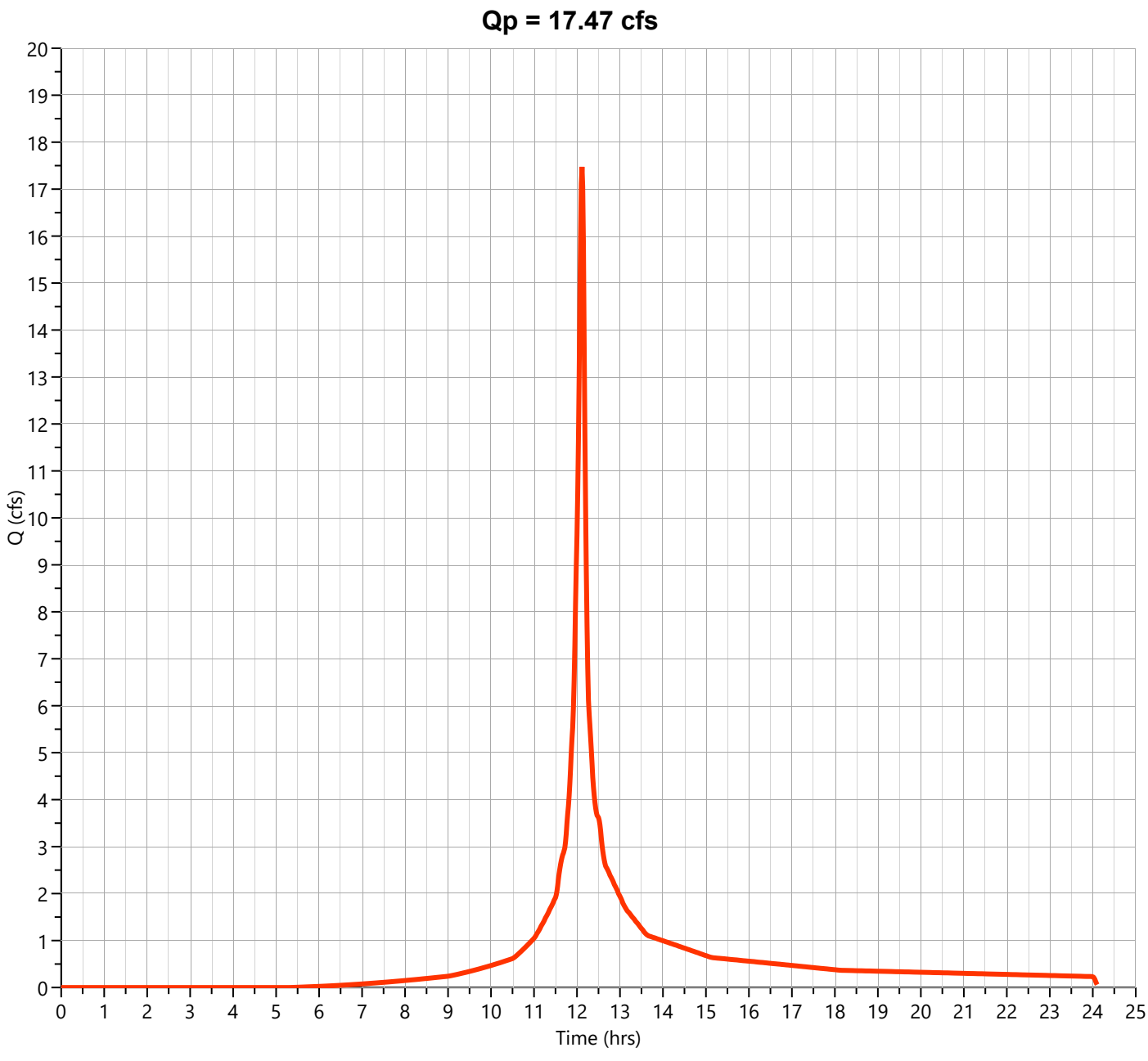
AREA (ac)	CN	DESCRIPTION
0.708	98.00	
1.517	80.00	
2.225	**85.73**	Weighted CN Method Employed



Post DA-4-B SOUTH EAST

Hyd. No. 13

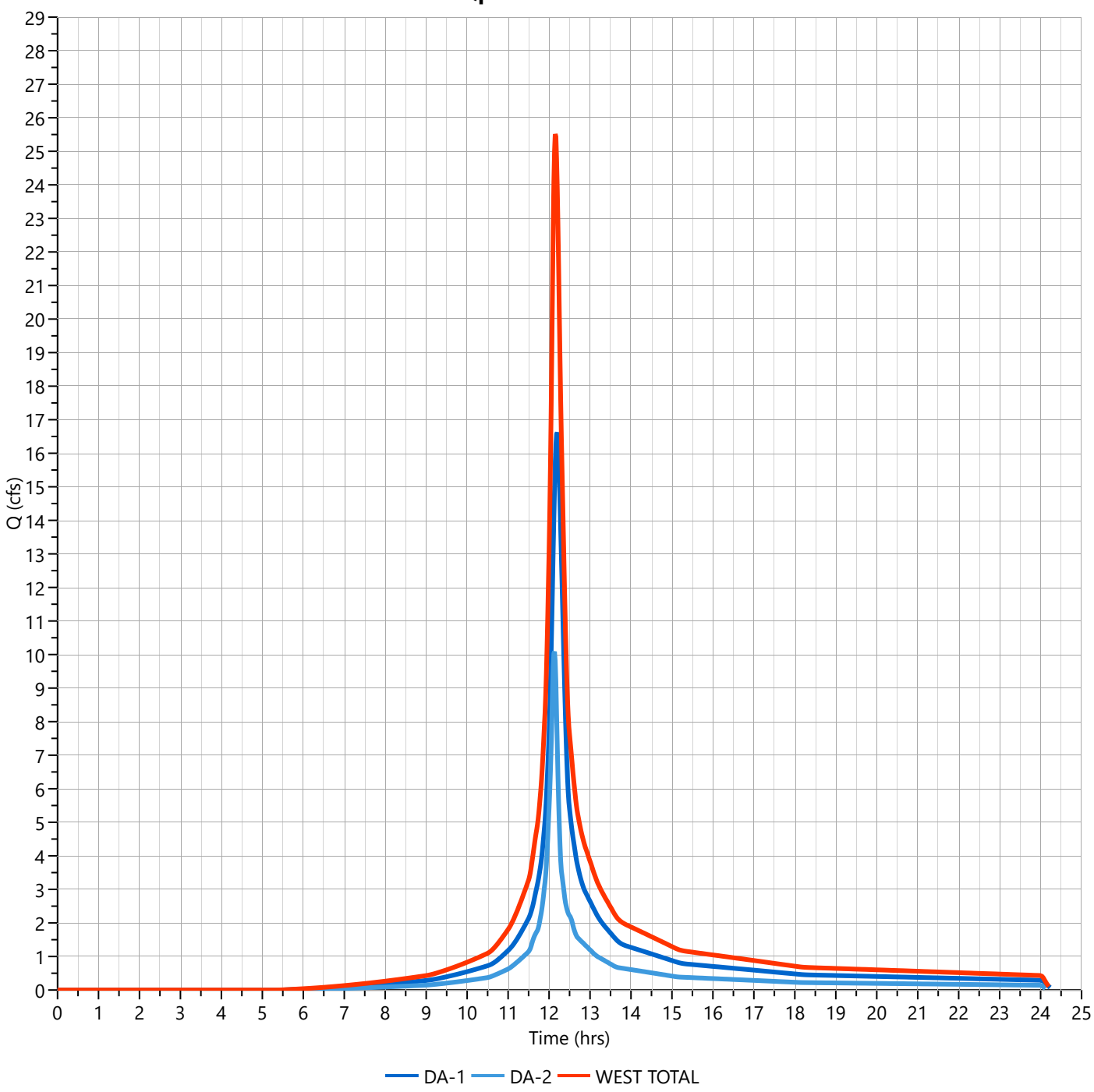
Hydrograph Type	= NRCS Runoff	Peak Flow	= 17.47 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 55,236 cuft
Drainage Area	= 3.219 ac	Curve Number	= 80.00
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 6.88 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Pre WEST TOTAL

Hyd. No. 14

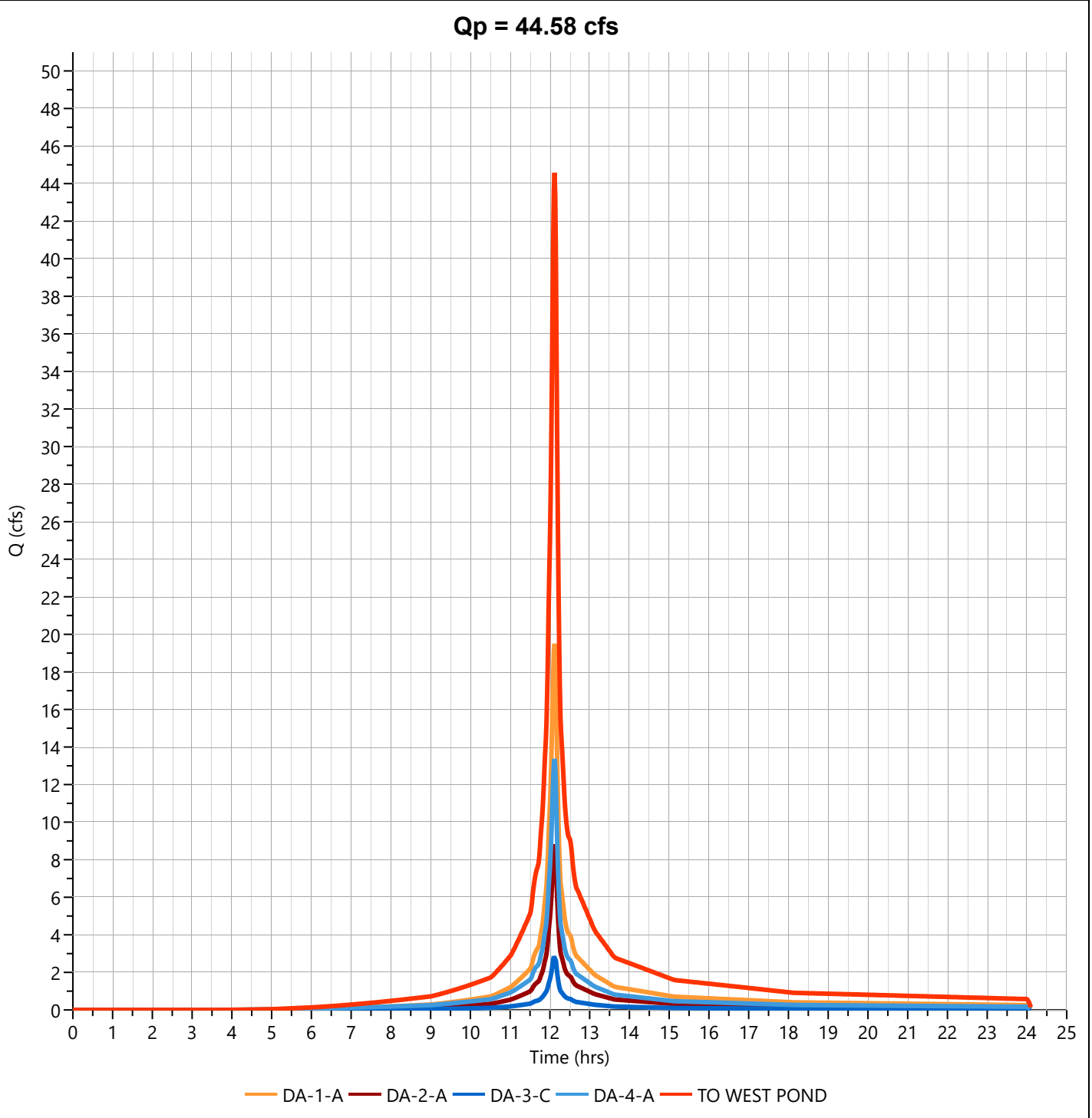
Hydrograph Type	= Junction	Peak Flow	= 25.51 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.15 hrs
Time Interval	= 1 min	Hydrograph Volume	= 101,903 cuft
Inflow Hydrographs	= 1, 2	Total Contrib. Area	= 6.176 ac



Post TO WEST POND

Hyd. No. 15

Hydrograph Type	= Junction	Peak Flow	= 44.58 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 142,699 cuft
Inflow Hydrographs	= 5, 7, 11, 12	Total Contrib. Area	= 7.83 ac



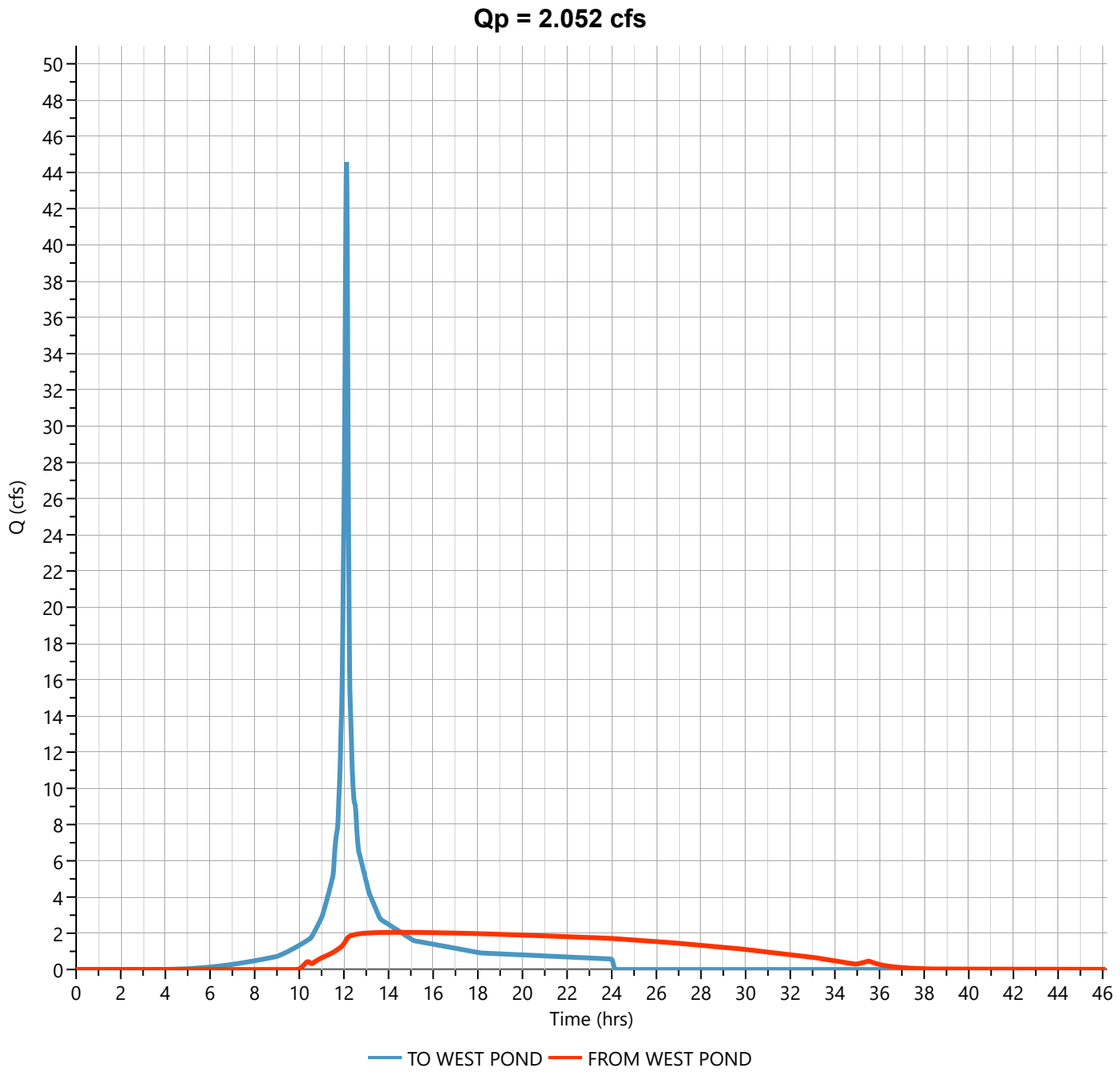
Post FROM WEST POND

Hyd. No. 16

Hydrograph Type	= Pond Route	Peak Flow	= 2.052 cfs
Storm Frequency	= 25-yr	Time to Peak	= 14.55 hrs
Time Interval	= 1 min	Hydrograph Volume	= 134,881 cuft
Inflow Hydrograph	= 15 - TO WEST POND	Max. Elevation	= 186.81 ft
Pond Name	= WEST POND	Max. Storage	= 86,512 cuft

Pond Routing by Storage Indication Method

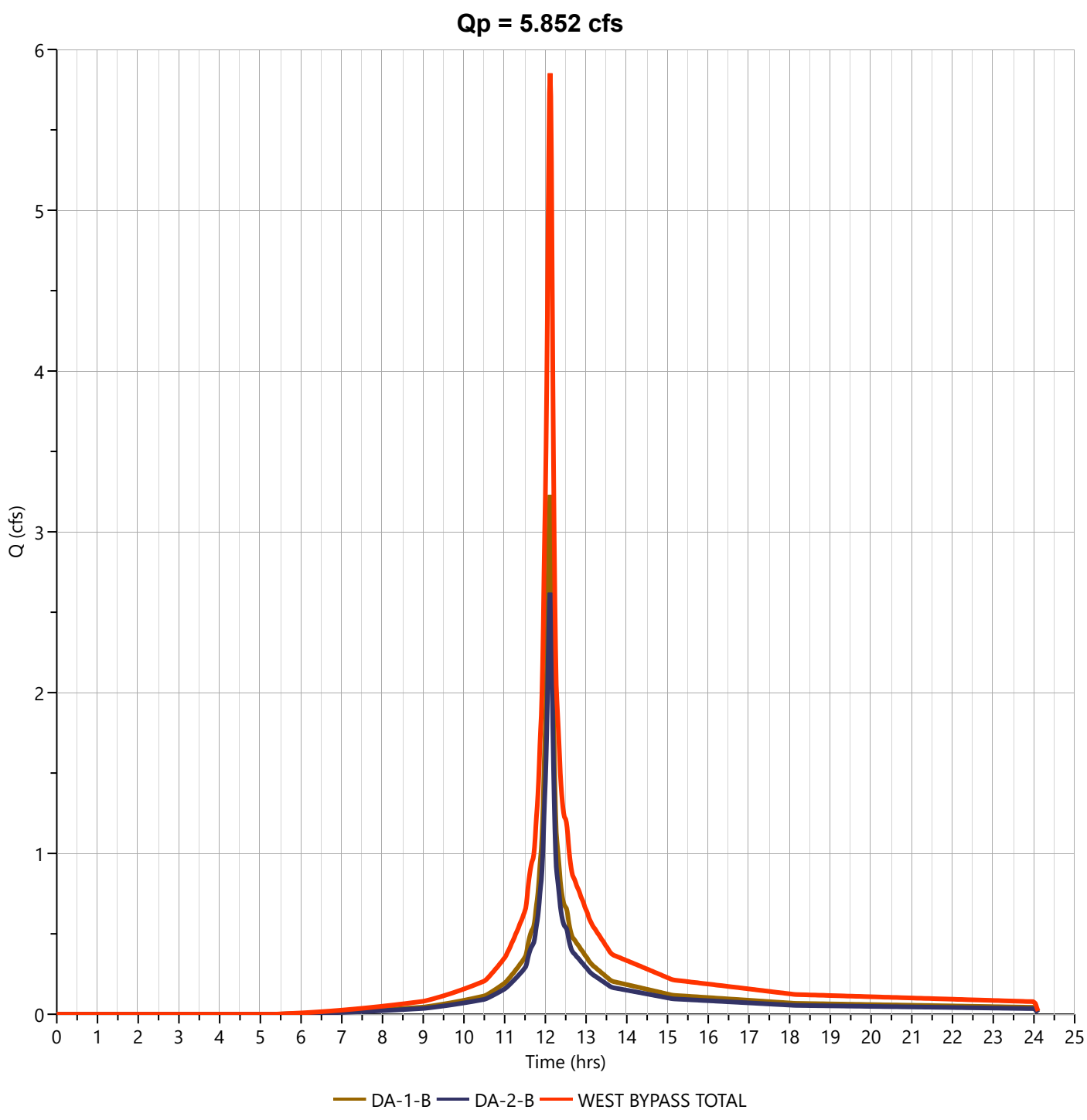
Center of mass detention time = 7.94 hrs



Post WEST BYPASS TOTAL

Hyd. No. 17

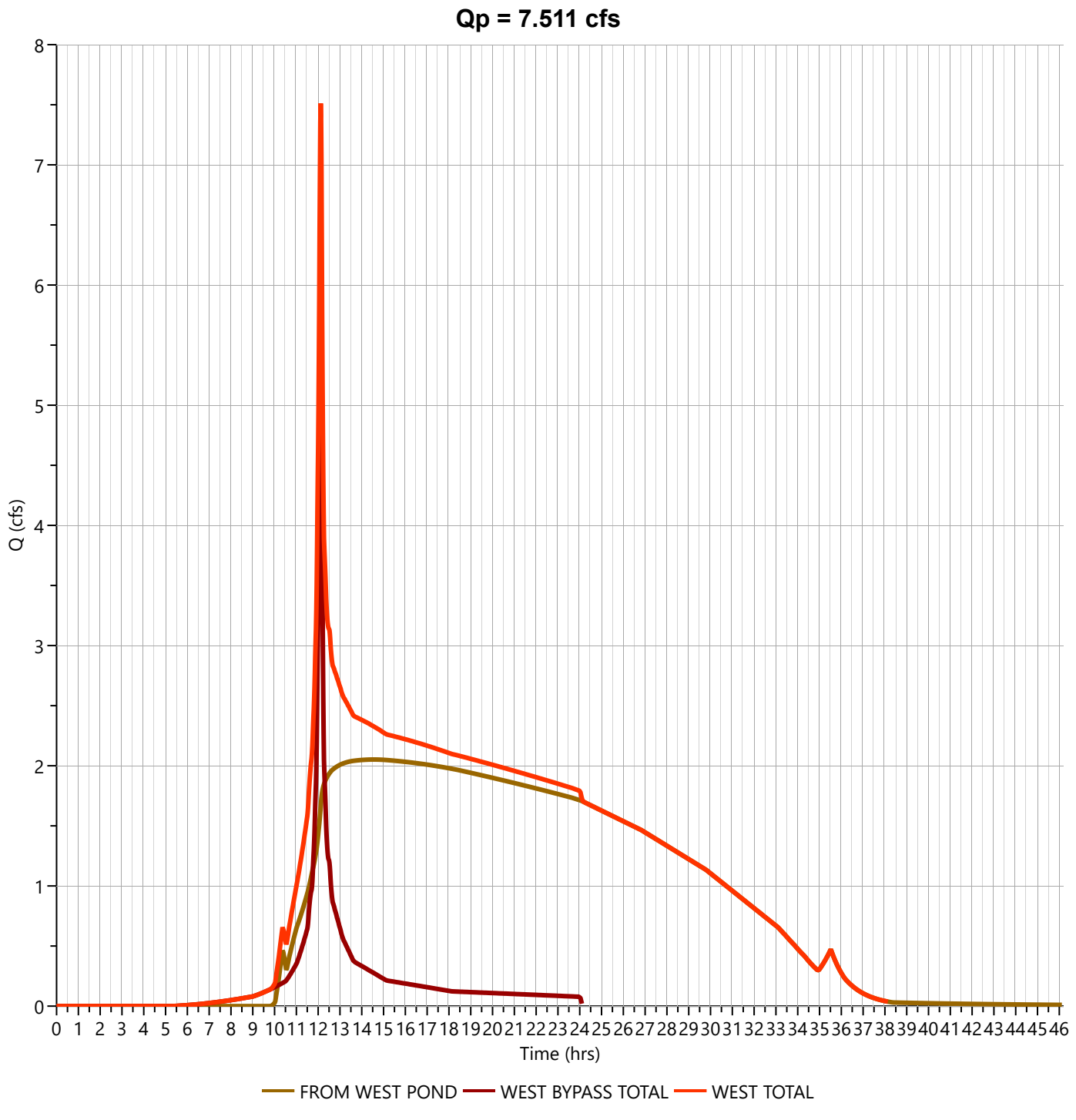
Hydrograph Type	= Junction	Peak Flow	= 5.852 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 18,498 cuft
Inflow Hydrographs	= 6, 8	Total Contrib. Area	= 1.078 ac



Post WEST TOTAL

Hyd. No. 18

Hydrograph Type	= Junction	Peak Flow	= 7.511 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 153,379 cuft
Inflow Hydrographs		Total Contrib. Area	= 0.0 ac



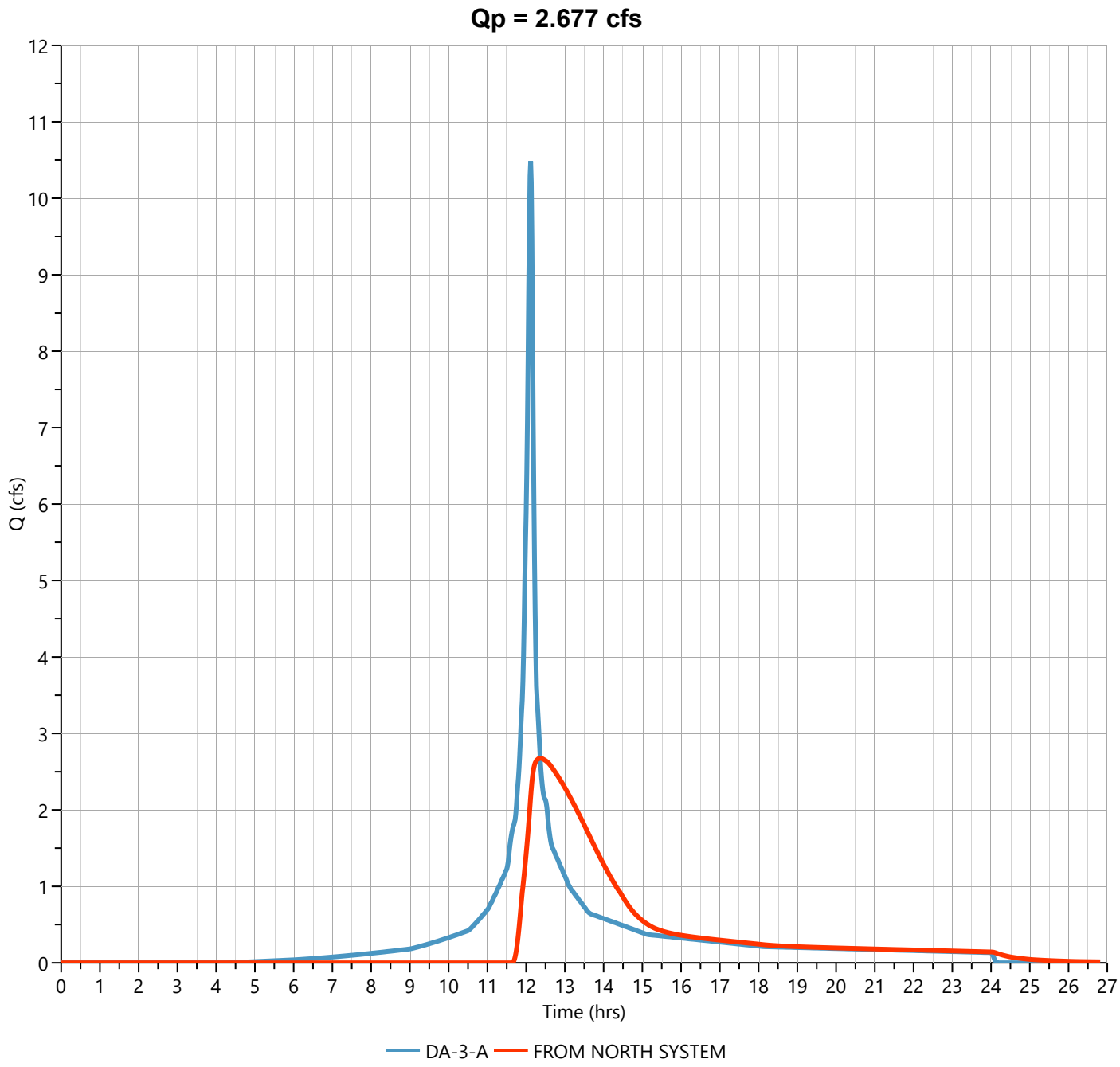
Post FROM NORTH SYSTEM

Hyd. No. 19

Hydrograph Type	= Pond Route	Peak Flow	= 2.677 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.37 hrs
Time Interval	= 1 min	Hydrograph Volume	= 27,442 cuft
Inflow Hydrograph	= 9 - DA-3-A	Max. Elevation	= 228.52 ft
Pond Name	= NORTH SYSTEM	Max. Storage	= 14,653 cuft

Pond Routing by Storage Indication Method

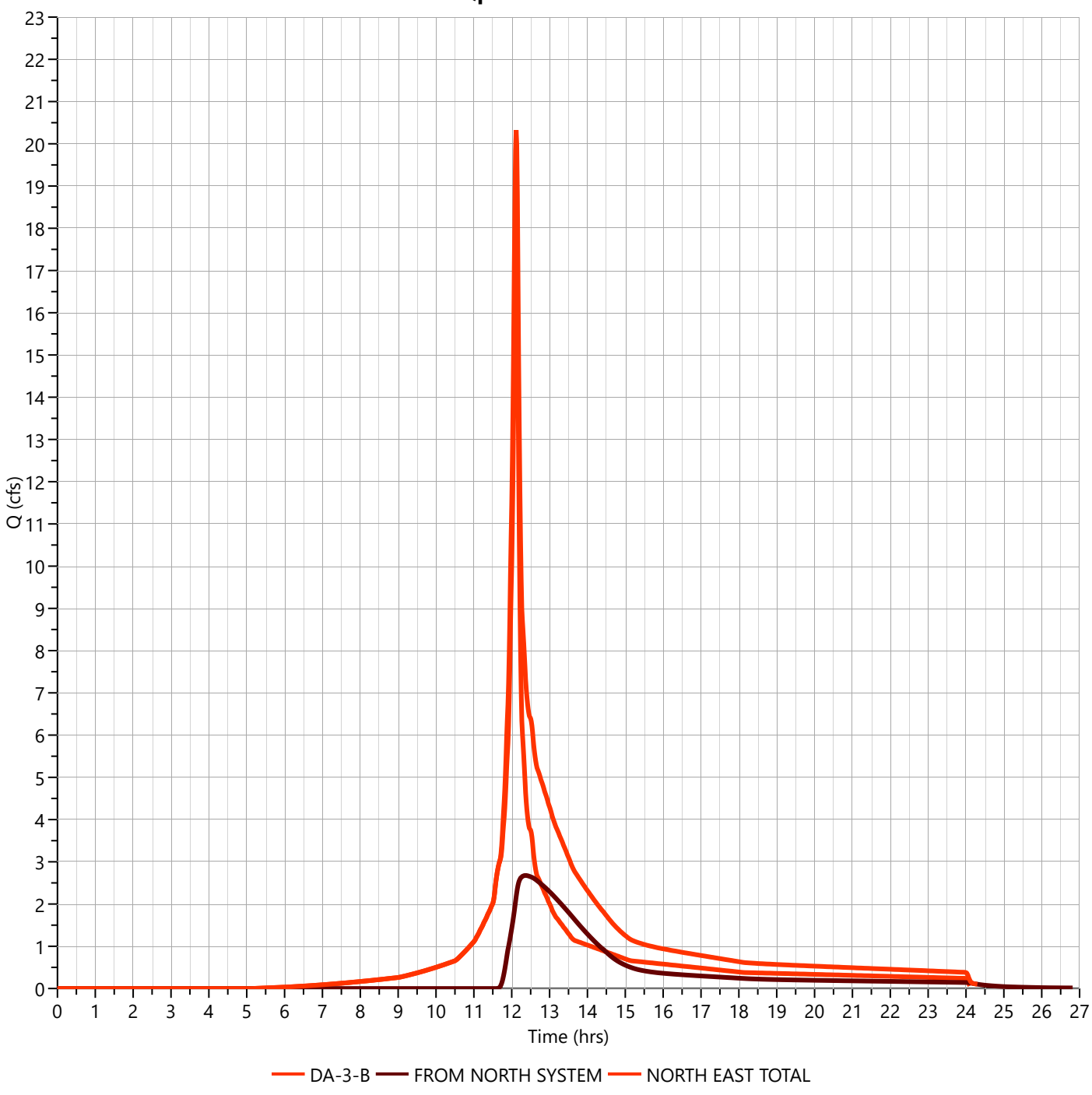
Center of mass detention time = 1.44 hrs



Post NORTH EAST TOTAL

Hyd. No. 20

Hydrograph Type	= Junction	Peak Flow	= 20.32 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 84,998 cuft
Inflow Hydrographs	= 10	Total Contrib. Area	= 3.299 ac



Design Storm Report

Custom Storm filename:

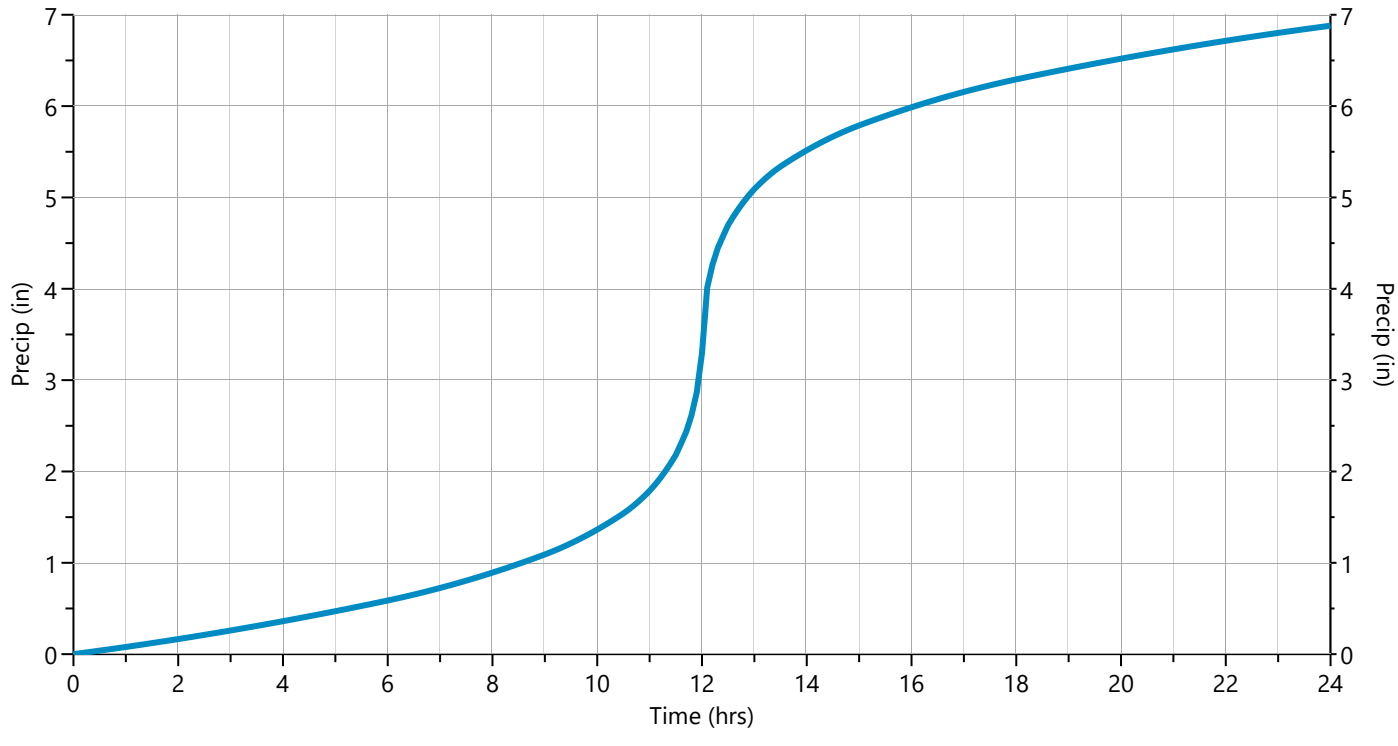
Hydrology Studio v 3.0.0.44

08-13-2026

Storm Distribution: NOAA-D, 24-hr

Storm Duration	Total Rainfall Volume (in)								
	1-yr	2-yr	3-yr	5-yr	10-yr	✔ 25-yr	50-yr	100-yr	
24 hrs	3.01	3.67	0.00	4.75	5.65	6.88	7.80	8.79	

Incremental Rainfall Distribution, 25-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
11.60	0.020754	11.78	0.029962	11.97	0.071722	12.15	0.041577	12.33	0.021845
11.62	0.021844	11.80	0.029965	11.98	0.071726	12.17	0.041577	12.35	0.021843
11.63	0.021844	11.82	0.041577	12.00	0.071721	12.18	0.041580	12.37	0.021845
11.65	0.021845	11.83	0.041579	12.02	0.119675	12.20	0.041577	12.38	0.021843
11.67	0.021843	11.85	0.041577	12.03	0.119681	12.22	0.029963	12.40	0.021845
11.68	0.021845	11.87	0.041577	12.05	0.119675	12.23	0.029962	12.42	0.020754
11.70	0.021843	11.88	0.041579	12.07	0.119681	12.25	0.029963	12.43	0.020755
11.72	0.029962	11.90	0.041577	12.08	0.119674	12.27	0.029962	12.45	0.020754
11.73	0.029963	11.92	0.071725	**12.10**	**0.119681**	12.28	0.029963	12.47	0.020754
11.75	0.029962	11.93	0.071722	12.12	0.041577	12.30	0.029961	12.48	0.020756
11.77	0.029963	11.95	0.071726	12.13	0.041579	12.32	0.021843	12.50	0.020754



Hydrograph 50-yr Summary

Hydrology Studio v 3.0.0.44

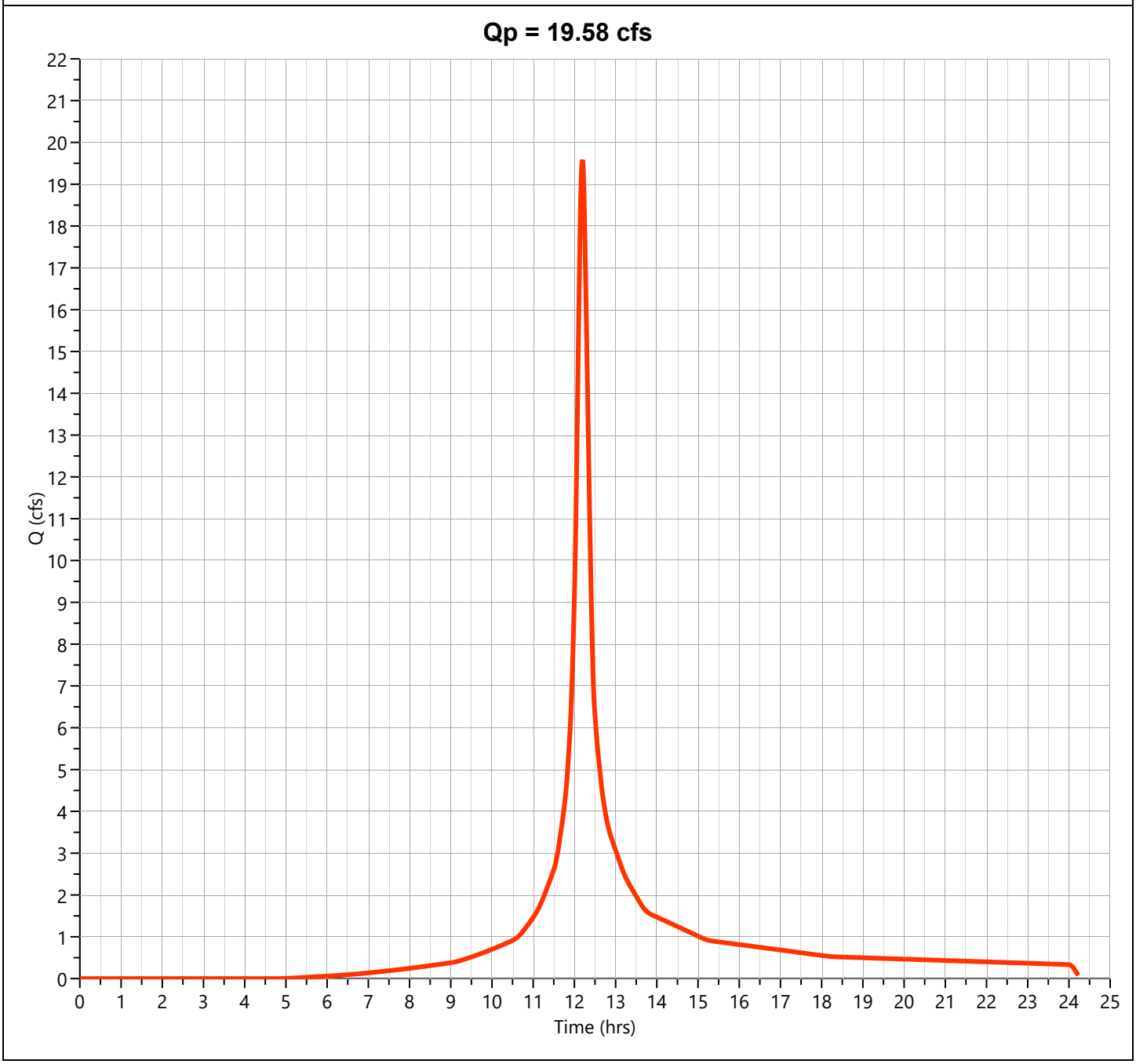
Project Name: Sumitt St Derby
File: Draiange Calcs.hys
08-13-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	Pre DA-1	19.58	12.20	81,049	----		
2	NRCS Runoff	Pre DA-2	11.87	12.13	39,838	----		
3	NRCS Runoff	Pre DA-3 NORTH EAST	27.06	12.17	102,467	----		
4	NRCS Runoff	Pre DA-4 SOUTH EAST	26.87	12.18	105,703	----		
5	NRCS Runoff	Post DA-1-A	22.87	12.12	73,270	----		
6	NRCS Runoff	Post DA-1-B	3.800	12.12	12,112	----		
7	NRCS Runoff	Post DA-2-A	10.33	12.12	33,098	----		
8	NRCS Runoff	Post DA-2-B	3.085	12.12	9,832	----		
9	NRCS Runoff	Post DA-3-A	12.20	12.12	39,648	----		
10	NRCS Runoff	Post DA-3-B	21.32	12.12	68,157	----		
11	NRCS Runoff	Post DA-3-C	3.390	12.12	10,944	----		
12	NRCS Runoff	Post DA-4-A	15.48	12.12	50,858	----		
13	NRCS Runoff	Post DA-4-B SOUTH EAST	20.56	12.12	65,526	----		
14	Junction	Pre WEST TOTAL	30.08	12.15	120,887	1, 2		
15	Junction	Post TO WEST POND	52.07	12.12	168,169	5, 7, 11, 12		
16	Pond Route	Post FROM WEST POND	5.627	13.00	160,306	15	187.51	94,982
17	Junction	Post WEST BYPASS TOTAL	6.885	12.12	21,944	6, 8		
18	Junction	Post WEST TOTAL	8.677	12.12	182,250	16, 17		
19	Pond Route	Post FROM NORTH SYSTEM	3.380	12.33	33,343	9	229.46	16,719
20	Junction	Post NORTH EAST TOTAL	23.84	12.12	101,500	10, 19		

Pre DA-1

Hyd. No. 1

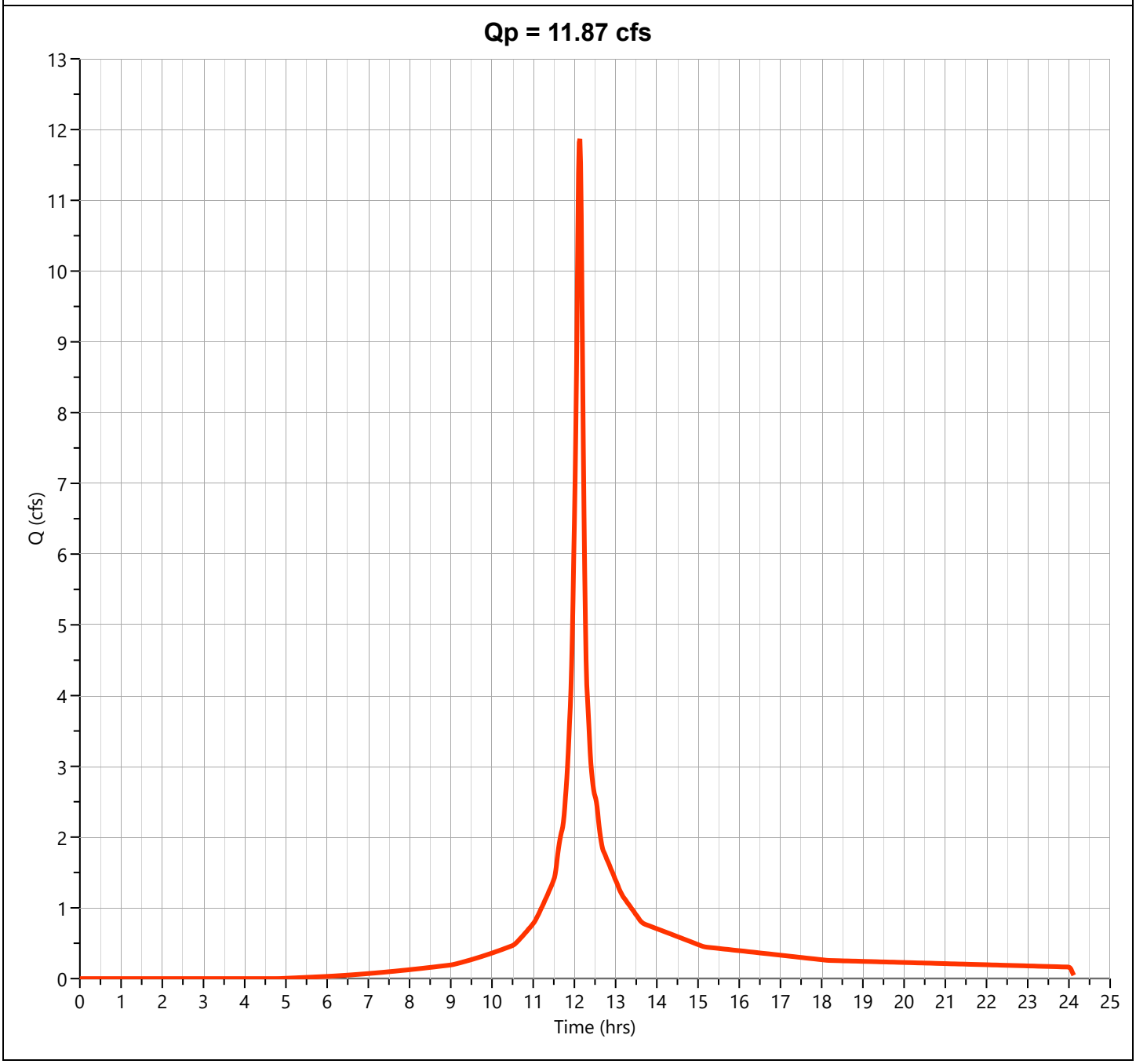
Hydrograph Type	= NRCS Runoff	Peak Flow	= 19.58 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.20 hrs
Time Interval	= 1 min	Runoff Volume	= 81,049 cuft
Drainage Area	= 4.106 ac	Curve Number	= 80.00
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 14.46 min
Total Rainfall	= 7.80 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Pre DA-2

Hyd. No. 2

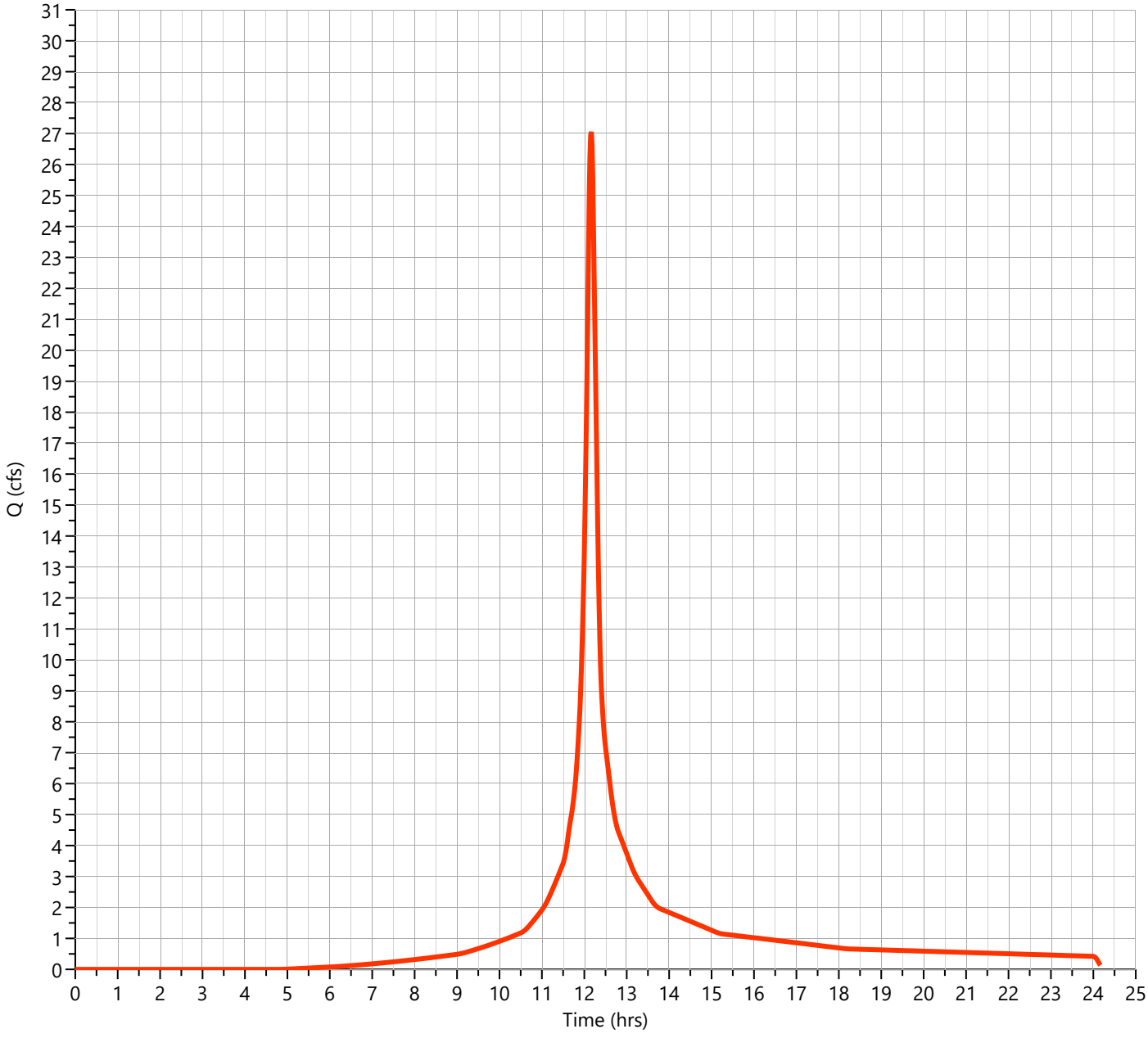
Hydrograph Type	= NRCS Runoff	Peak Flow	= 11.87 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Runoff Volume	= 39,838 cuft
Drainage Area	= 2.07 ac	Curve Number	= 80.00
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 7.34 min
Total Rainfall	= 7.80 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Pre DA-3 NORTH EAST

Hyd. No. 3

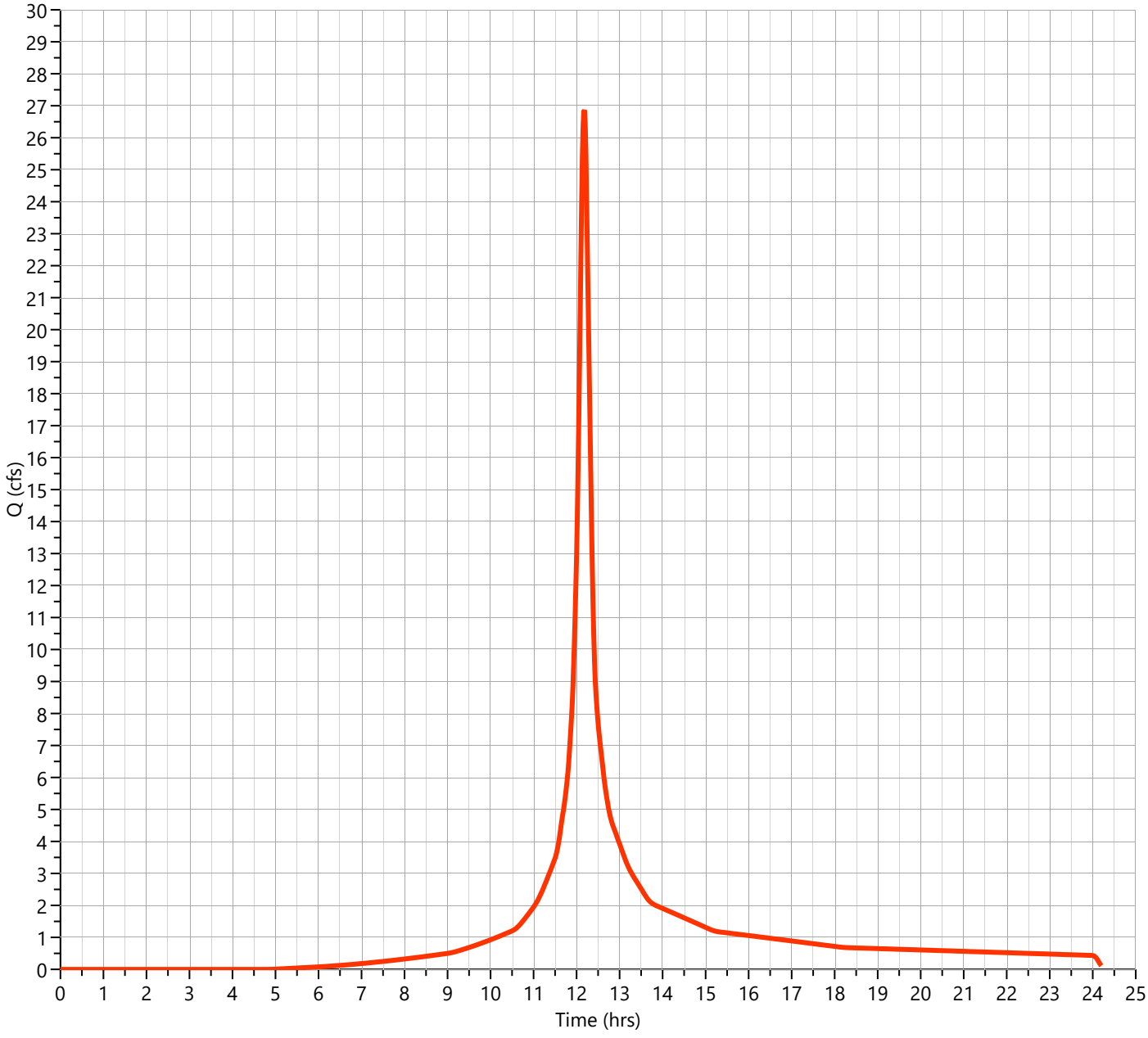
Hydrograph Type	= NRCS Runoff	Peak Flow	= 27.06 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.17 hrs
Time Interval	= 1 min	Runoff Volume	= 102,467 cuft
Drainage Area	= 5.1 ac	Curve Number	= 80.00
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 10.24 min
Total Rainfall	= 7.80 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Pre DA-4 SOUTH EAST

Hyd. No. 4

Hydrograph Type	= NRCS Runoff	Peak Flow	= 26.87 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.18 hrs
Time Interval	= 1 min	Runoff Volume	= 105,703 cuft
Drainage Area	= 5.44 ac	Curve Number	= 80.00
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 12.26 min
Total Rainfall	= 7.80 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



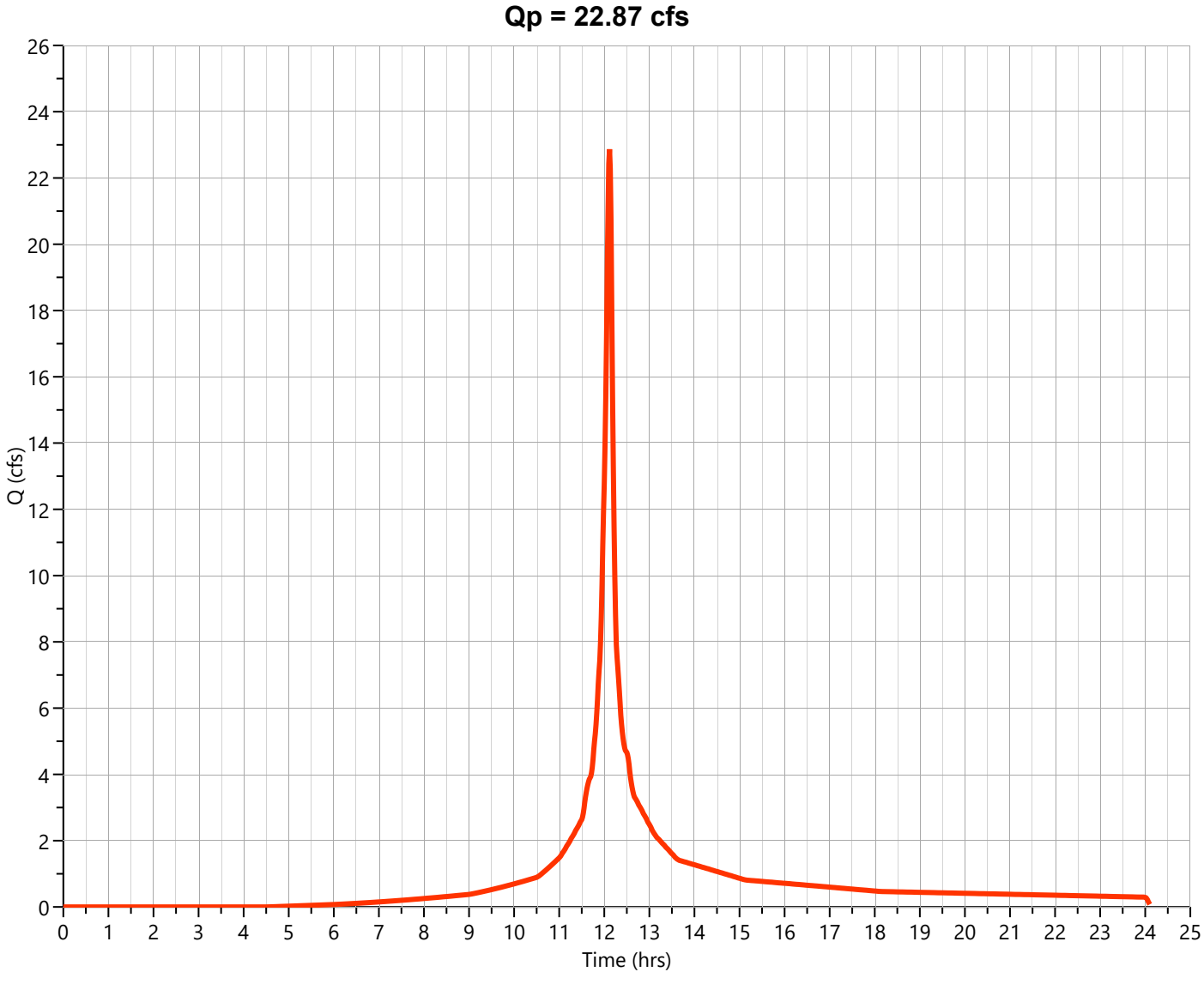
Post DA-1-A

Hyd. No. 5

Hydrograph Type	= NRCS Runoff	Peak Flow	= 22.87 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 73,270 cuft
Drainage Area	= 3.511 ac	Curve Number	= 81.18*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 7.80 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

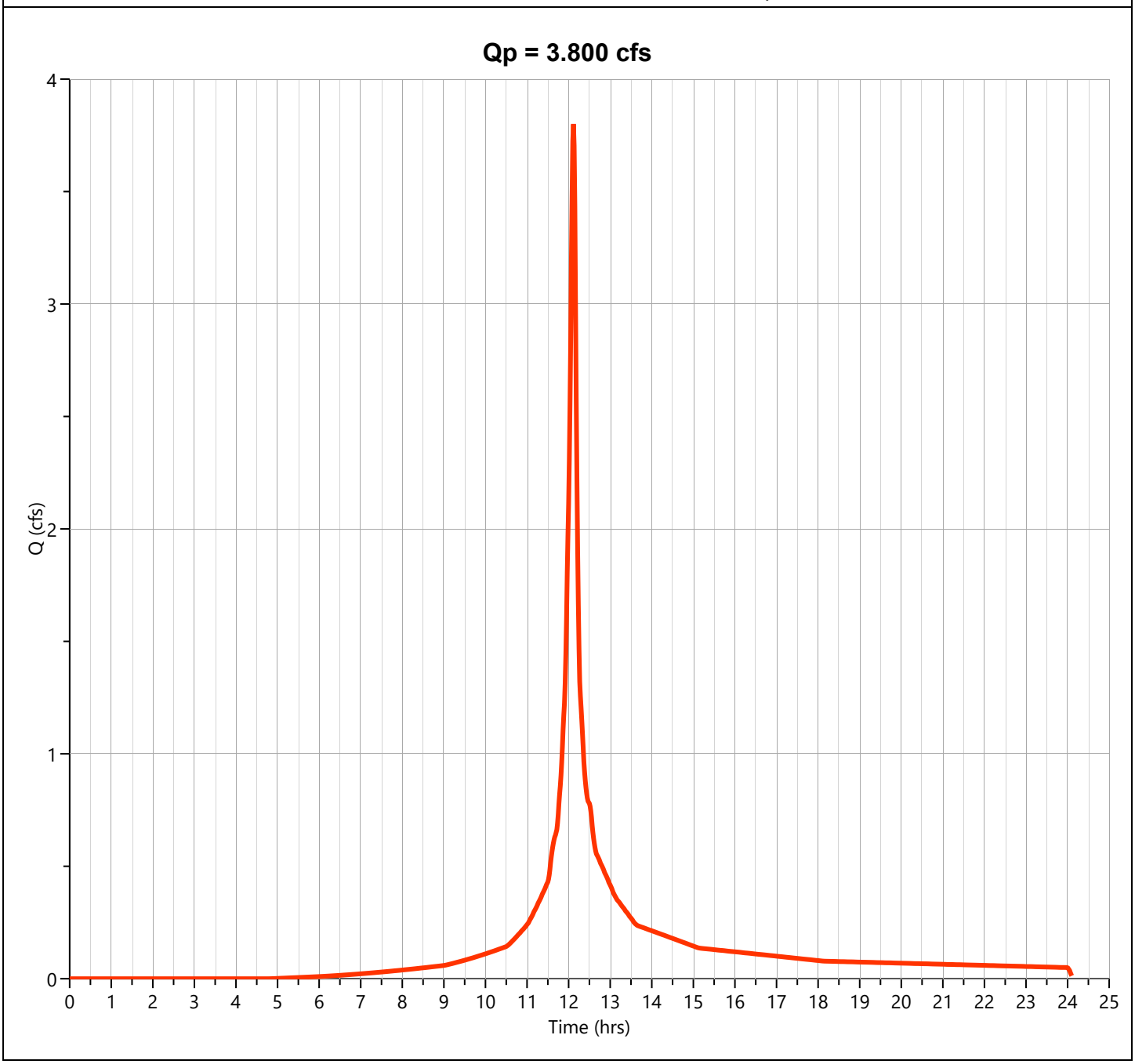
AREA (ac)	CN	DESCRIPTION
0.23	98.00	
3.281	80.00	
3.511	**81.18**	Weighted CN Method Employed



Post DA-1-B

Hyd. No. 6

Hydrograph Type	= NRCS Runoff	Peak Flow	= 3.800 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 12,112 cuft
Drainage Area	= 0.595 ac	Curve Number	= 80.00
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 7.80 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



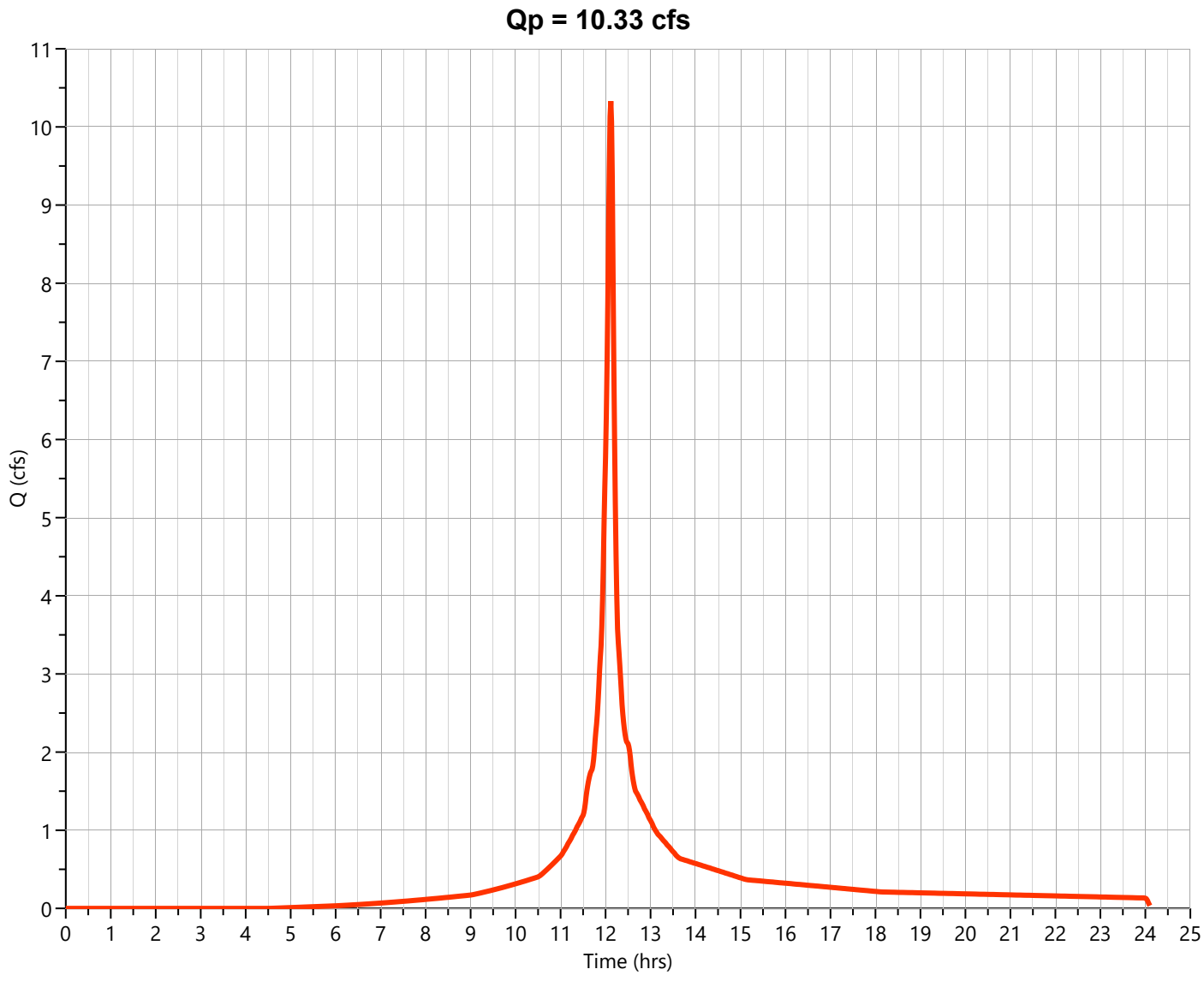
Post DA-2-A

Hyd. No. 7

Hydrograph Type	= NRCS Runoff	Peak Flow	= 10.33 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 33,098 cuft
Drainage Area	= 1.586 ac	Curve Number	= 81.18*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 7.80 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

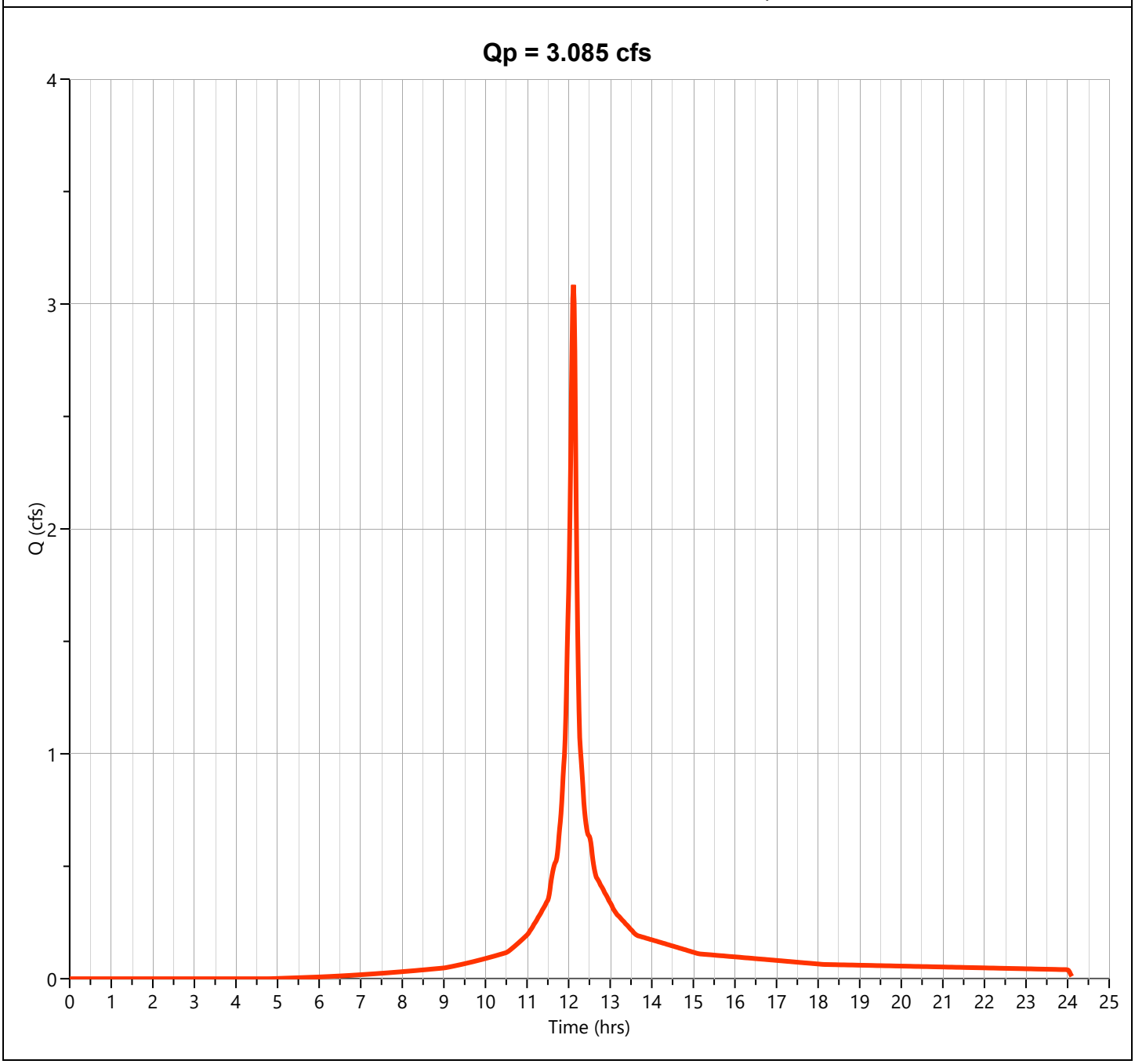
AREA (ac)	CN	DESCRIPTION
0.104	98.00	
1.482	80.00	
1.586	**81.18**	Weighted CN Method Employed



Post DA-2-B

Hyd. No. 8

Hydrograph Type	= NRCS Runoff	Peak Flow	= 3.085 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 9,832 cuft
Drainage Area	= 0.483 ac	Curve Number	= 80.00
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 7.80 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



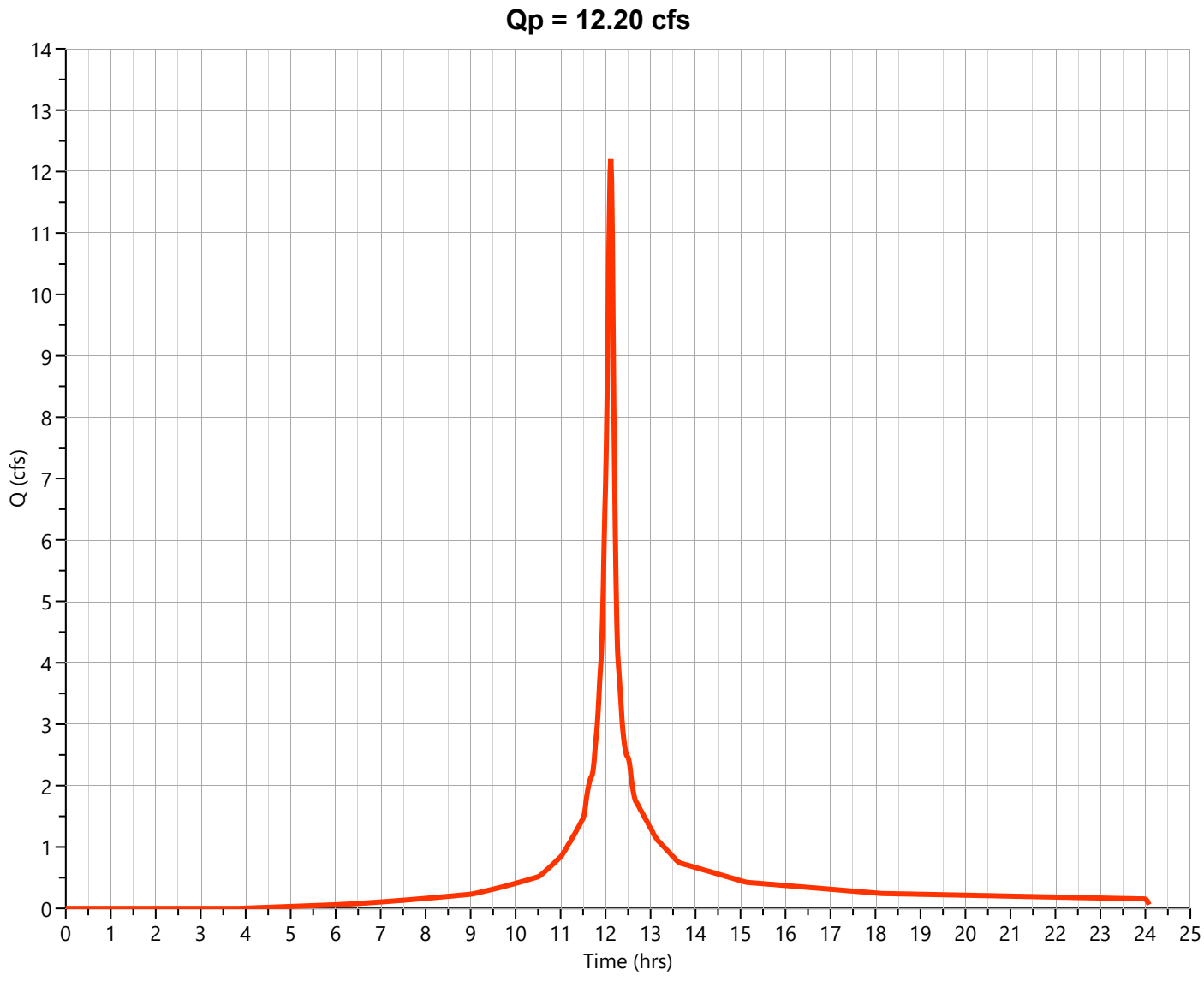
Post DA-3-A

Hyd. No. 9

Hydrograph Type	= NRCS Runoff	Peak Flow	= 12.20 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 39,648 cuft
Drainage Area	= 1.798 ac	Curve Number	= 83.89*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 7.80 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.389	98.00	
1.409	80.00	
1.798	**83.89**	Weighted CN Method Employed



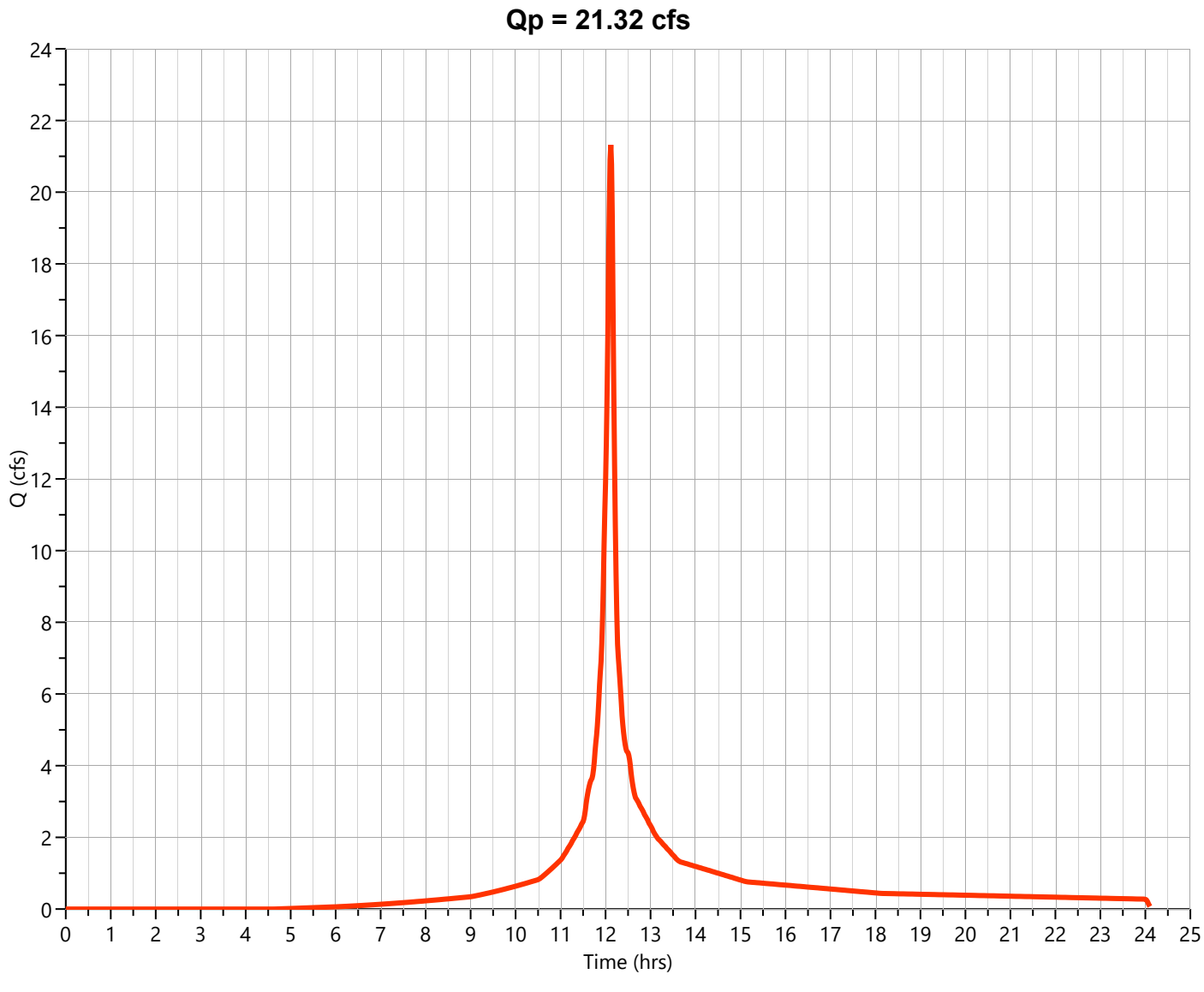
Post DA-3-B

Hyd. No. 10

Hydrograph Type	= NRCS Runoff	Peak Flow	= 21.32 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 68,157 cuft
Drainage Area	= 3.299 ac	Curve Number	= 80.70*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 7.80 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.128	98.00	
3.171	80.00	
3.299	**80.70**	Weighted CN Method Employed



Hydrograph Report

Hydrology Studio v 3.0.0.44

Project Name: Sumitt St Derby
File: Draiange Calcs.hys
08-13-2026

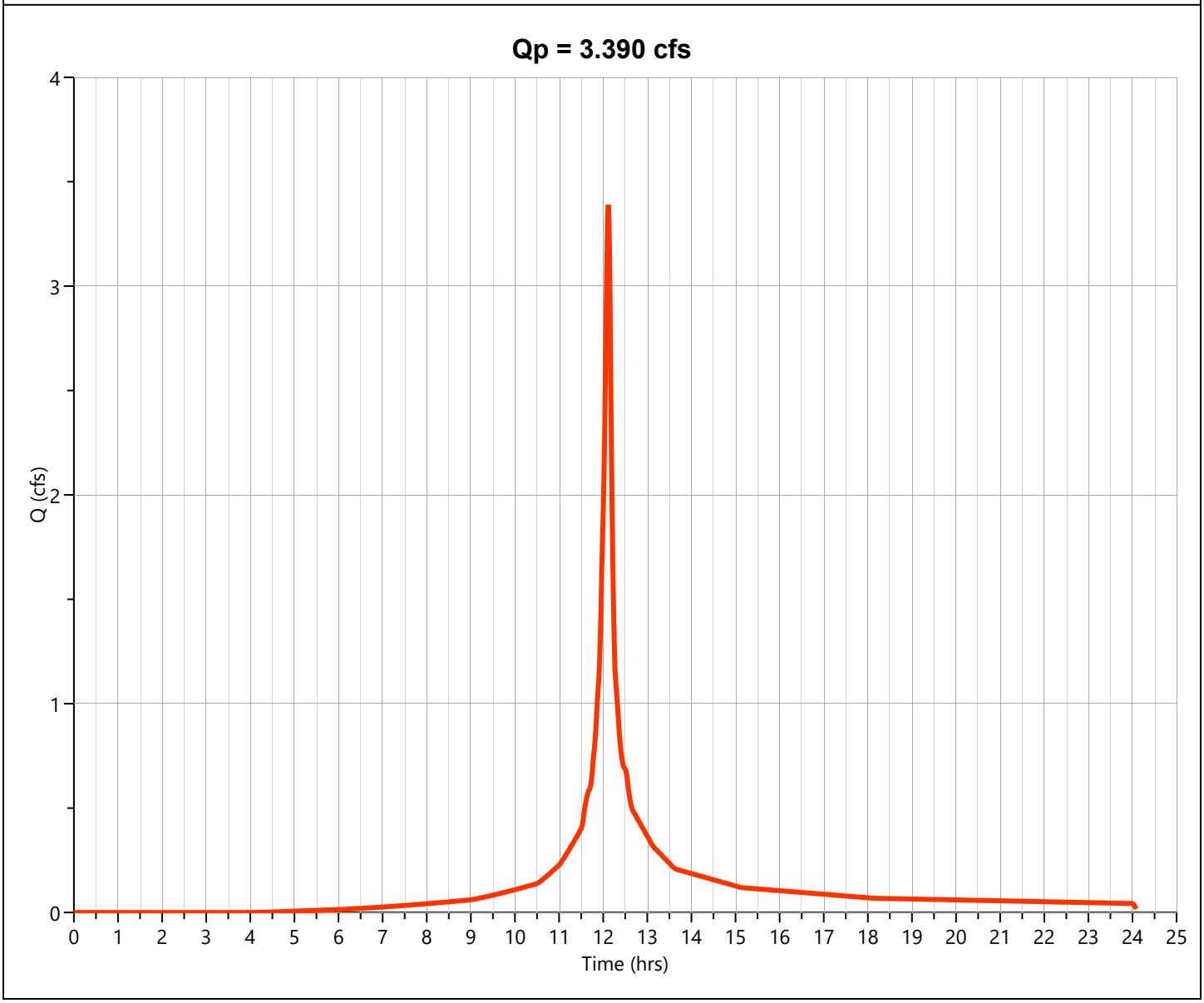
Post DA-3-C

Hyd. No. 11

Hydrograph Type	= NRCS Runoff	Peak Flow	= 3.390 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 10,944 cuft
Drainage Area	= 0.508 ac	Curve Number	= 82.73*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 7.80 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.077	98.00	
0.431	80.00	
0.508	**82.73**	Weighted CN Method Employed



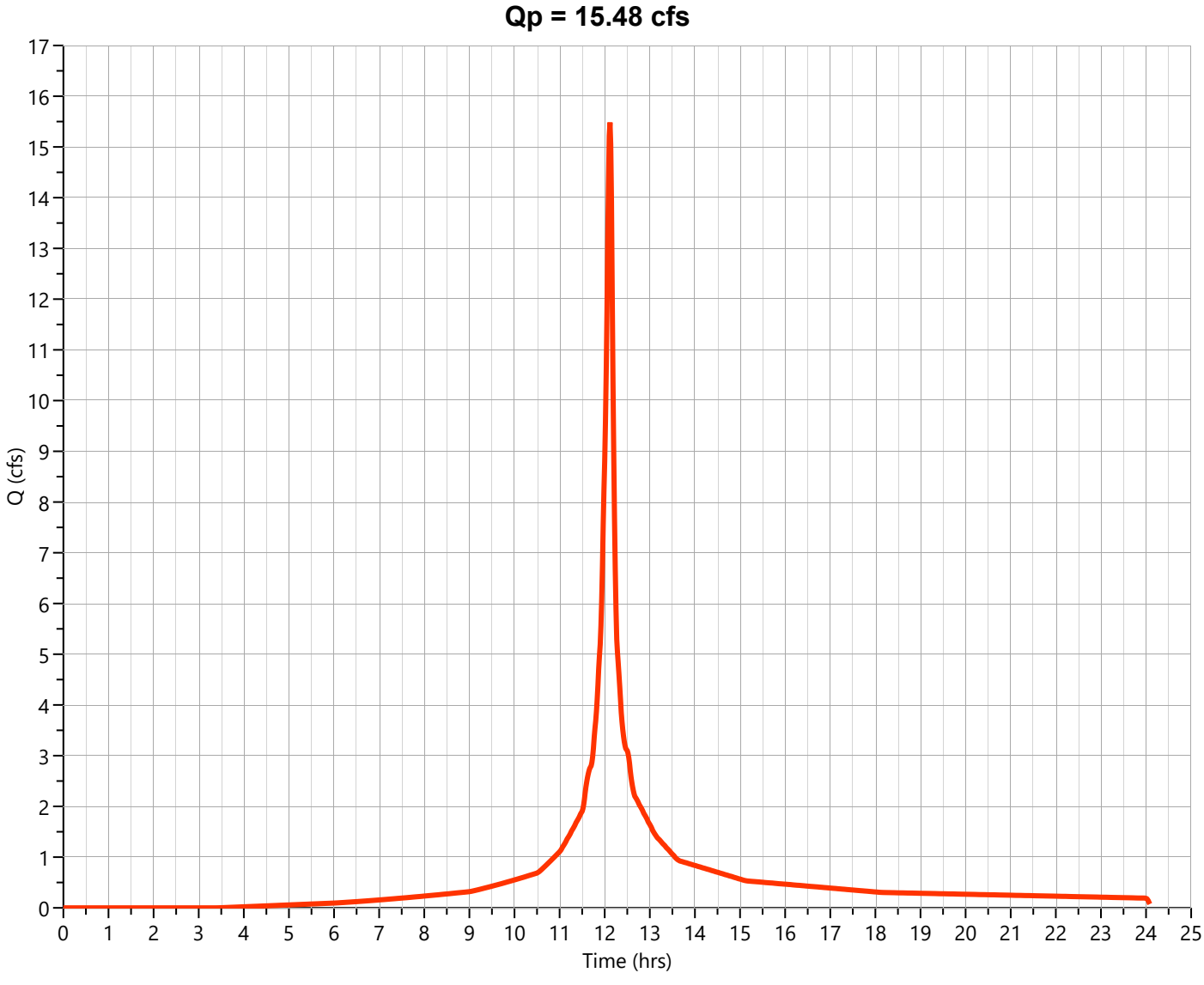
Post DA-4-A

Hyd. No. 12

Hydrograph Type	= NRCS Runoff	Peak Flow	= 15.48 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 50,858 cuft
Drainage Area	= 2.225 ac	Curve Number	= 85.73*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 7.80 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

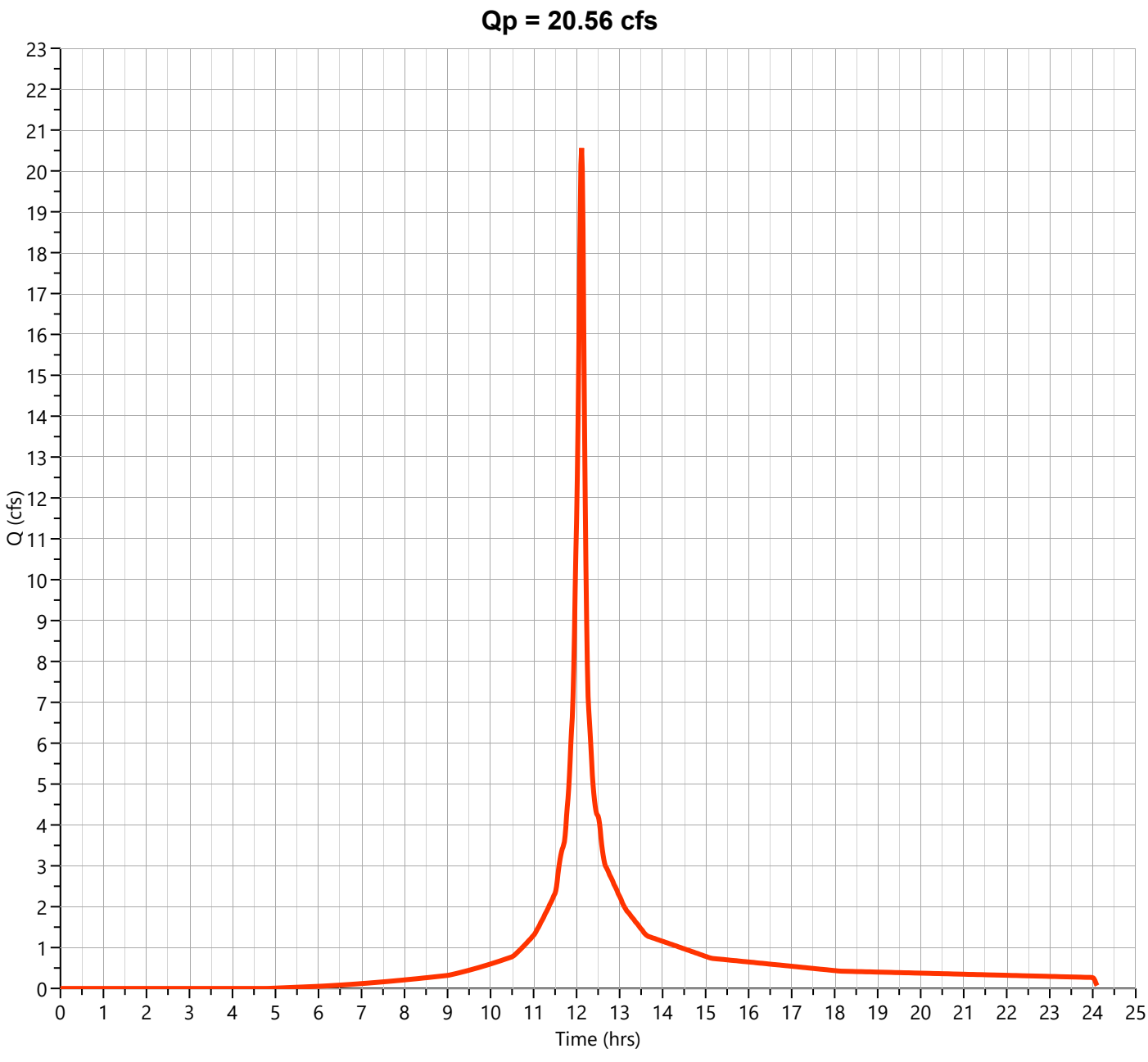
AREA (ac)	CN	DESCRIPTION
0.708	98.00	
1.517	80.00	
2.225	**85.73**	Weighted CN Method Employed



Post DA-4-B SOUTH EAST

Hyd. No. 13

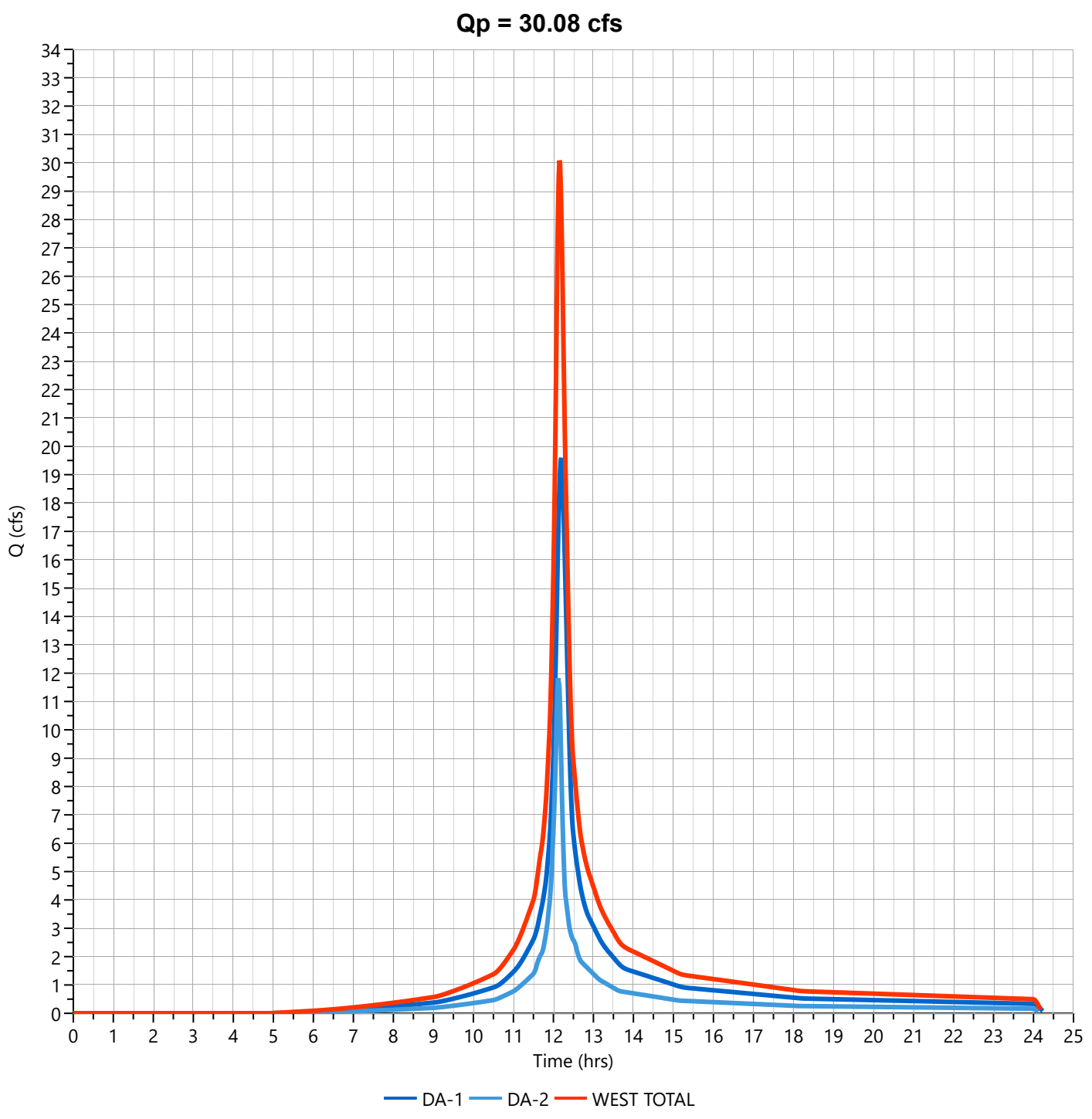
Hydrograph Type	= NRCS Runoff	Peak Flow	= 20.56 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 65,526 cuft
Drainage Area	= 3.219 ac	Curve Number	= 80.00
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 7.80 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Pre WEST TOTAL

Hyd. No. 14

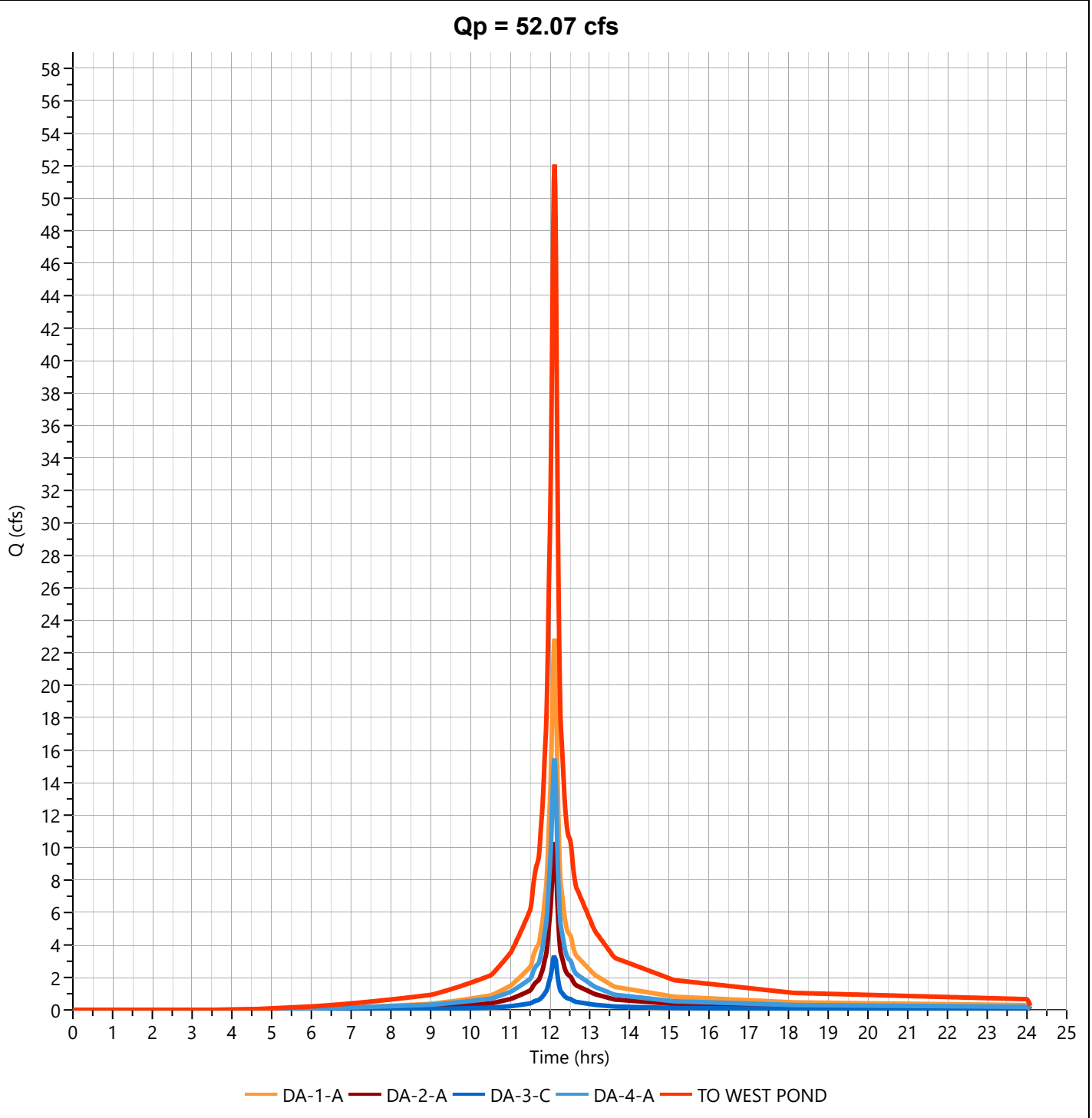
Hydrograph Type	= Junction	Peak Flow	= 30.08 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.15 hrs
Time Interval	= 1 min	Hydrograph Volume	= 120,887 cuft
Inflow Hydrographs	= 1, 2	Total Contrib. Area	= 6.176 ac



Post TO WEST POND

Hyd. No. 15

Hydrograph Type	= Junction	Peak Flow	= 52.07 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 168,169 cuft
Inflow Hydrographs	= 5, 7, 11, 12	Total Contrib. Area	= 7.83 ac



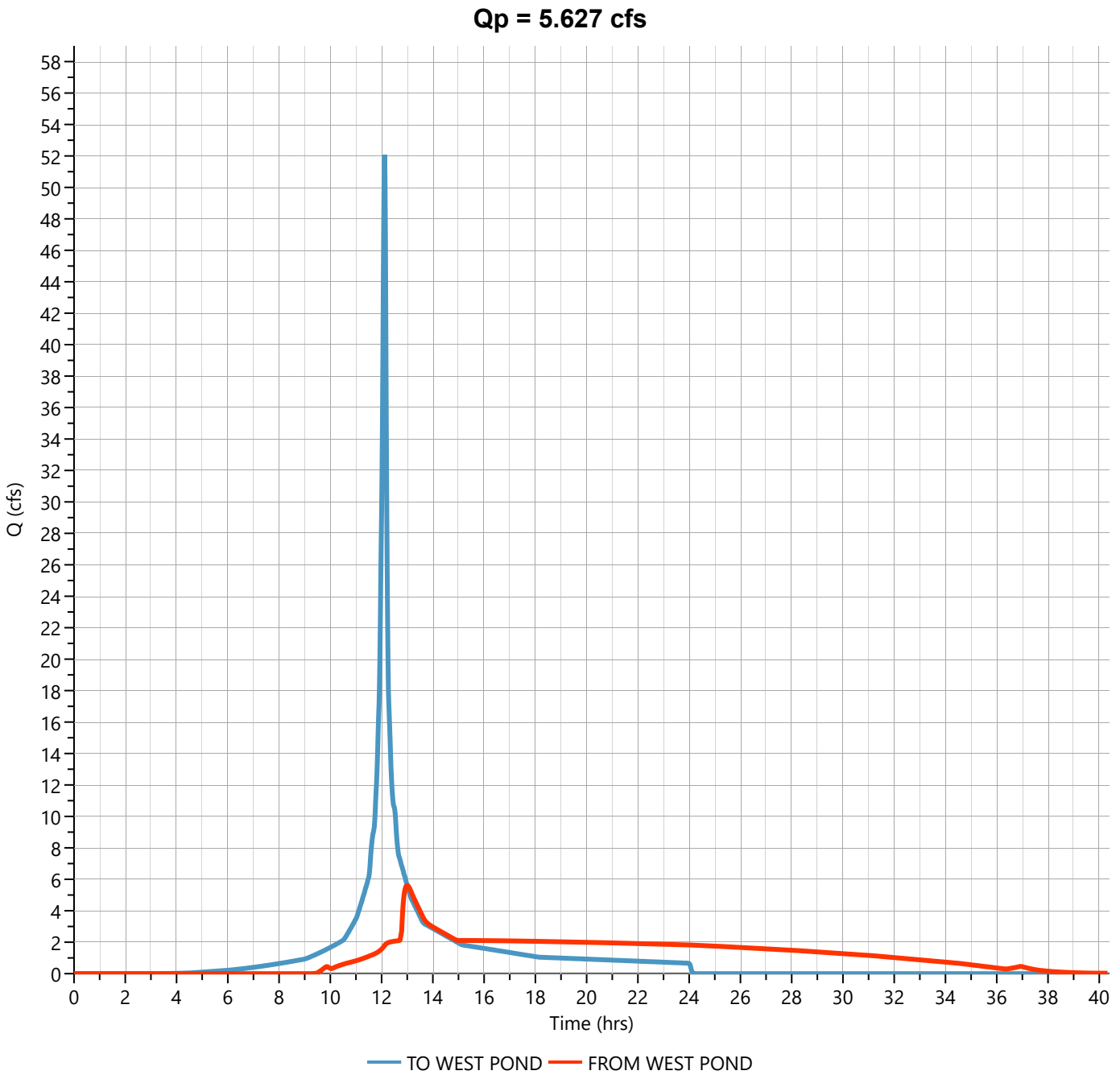
Post FROM WEST POND

Hyd. No. 16

Hydrograph Type	= Pond Route	Peak Flow	= 5.627 cfs
Storm Frequency	= 50-yr	Time to Peak	= 13.00 hrs
Time Interval	= 1 min	Hydrograph Volume	= 160,306 cuft
Inflow Hydrograph	= 15 - TO WEST POND	Max. Elevation	= 187.51 ft
Pond Name	= WEST POND	Max. Storage	= 94,982 cuft

Pond Routing by Storage Indication Method

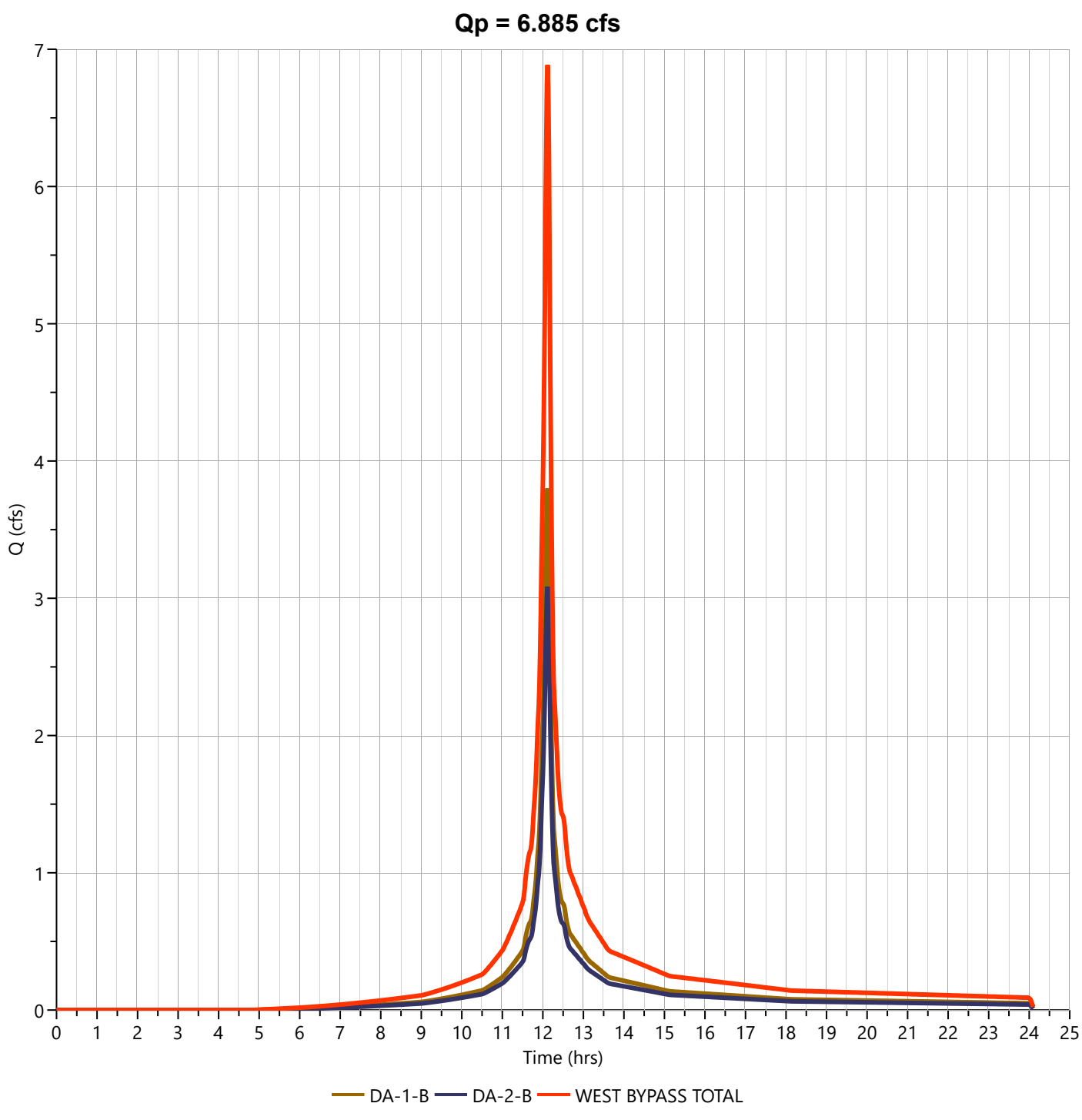
Center of mass detention time = 7.85 hrs



Post WEST BYPASS TOTAL

Hyd. No. 17

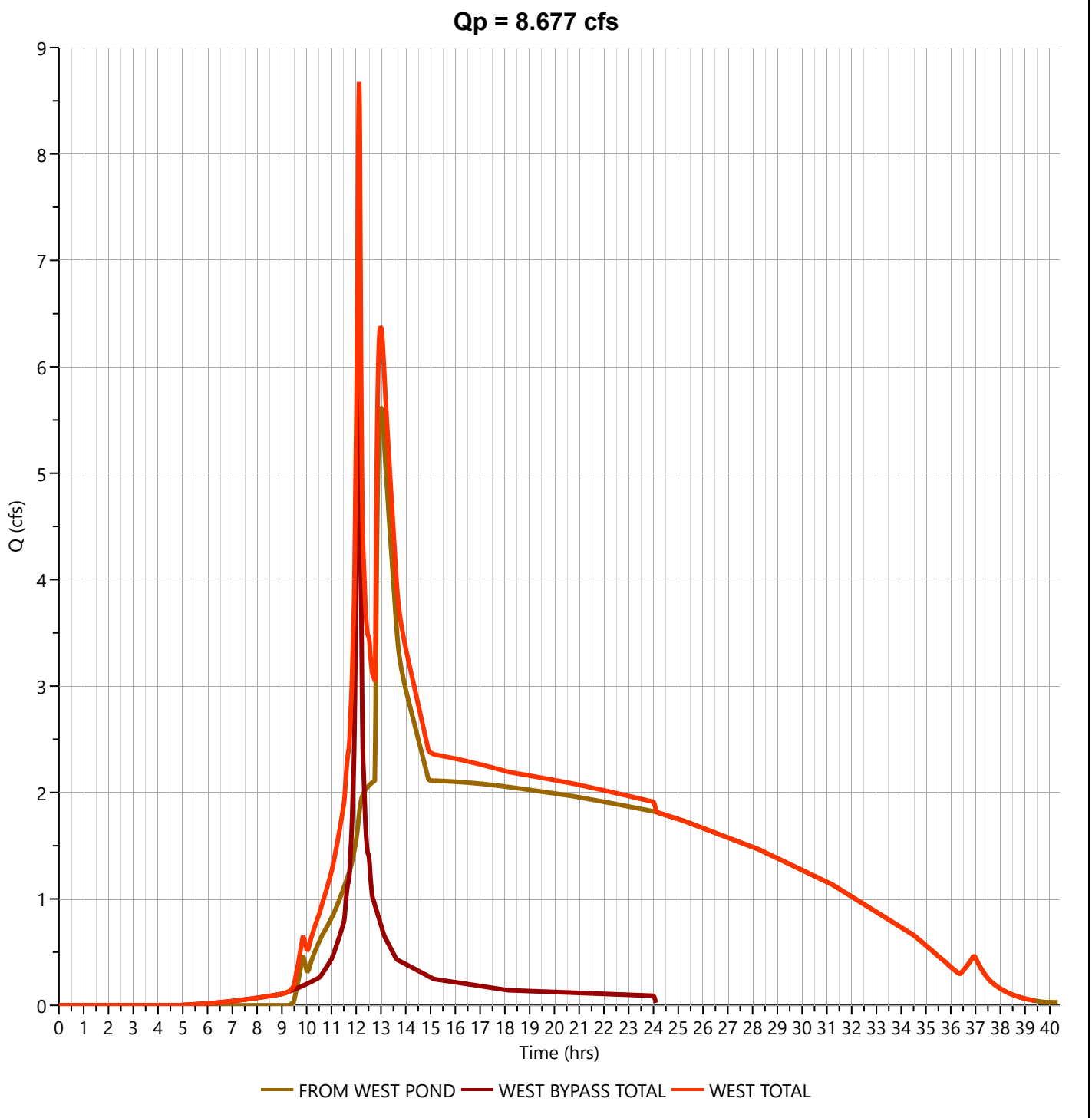
Hydrograph Type	= Junction	Peak Flow	= 6.885 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 21,944 cuft
Inflow Hydrographs	= 6, 8	Total Contrib. Area	= 1.078 ac



Post WEST TOTAL

Hyd. No. 18

Hydrograph Type	= Junction	Peak Flow	= 8.677 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 182,250 cuft
Inflow Hydrographs		Total Contrib. Area	= 0.0 ac



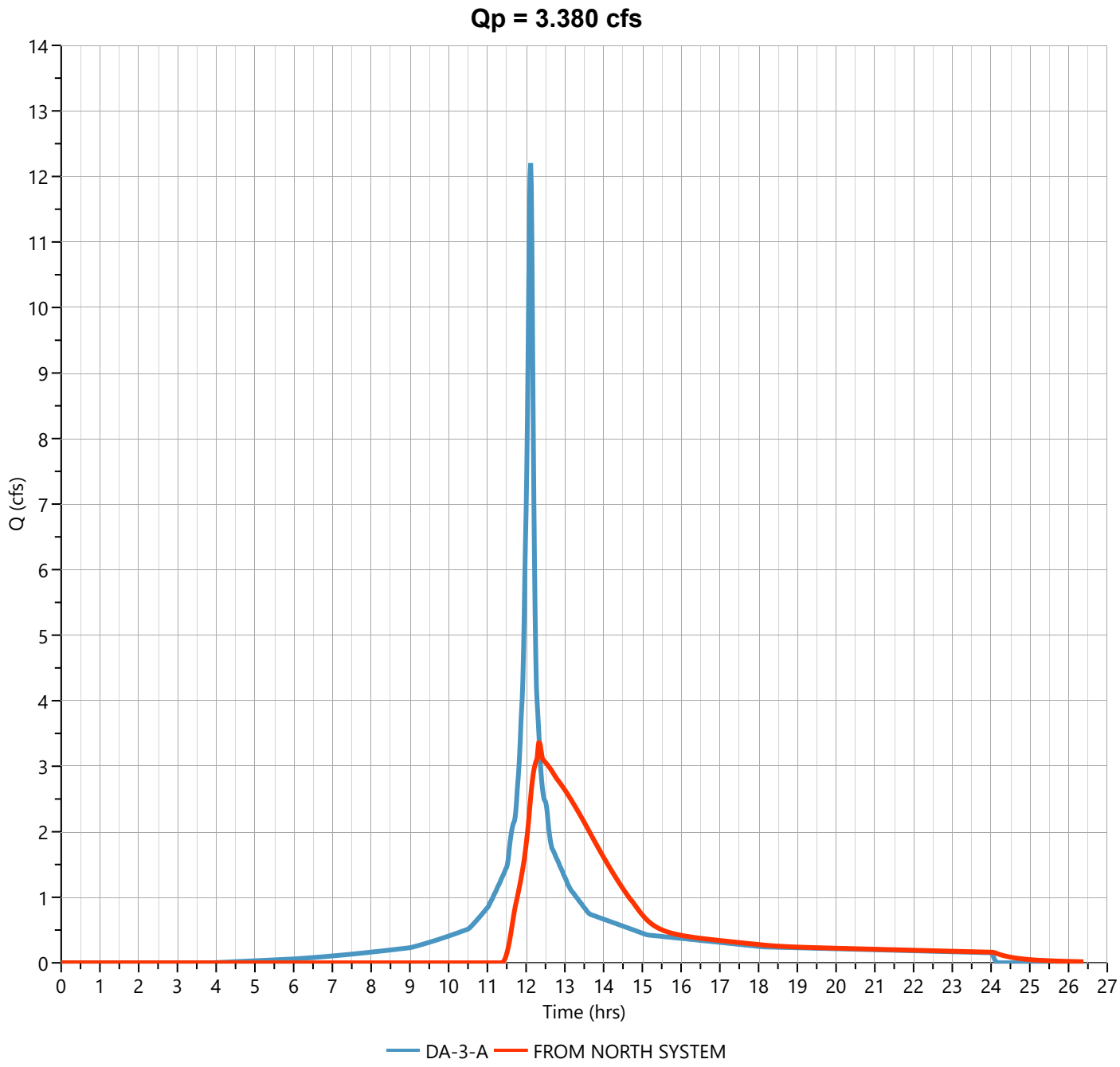
Post FROM NORTH SYSTEM

Hyd. No. 19

Hydrograph Type	= Pond Route	Peak Flow	= 3.380 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.33 hrs
Time Interval	= 1 min	Hydrograph Volume	= 33,343 cuft
Inflow Hydrograph	= 9 - DA-3-A	Max. Elevation	= 229.46 ft
Pond Name	= NORTH SYSTEM	Max. Storage	= 16,719 cuft

Pond Routing by Storage Indication Method

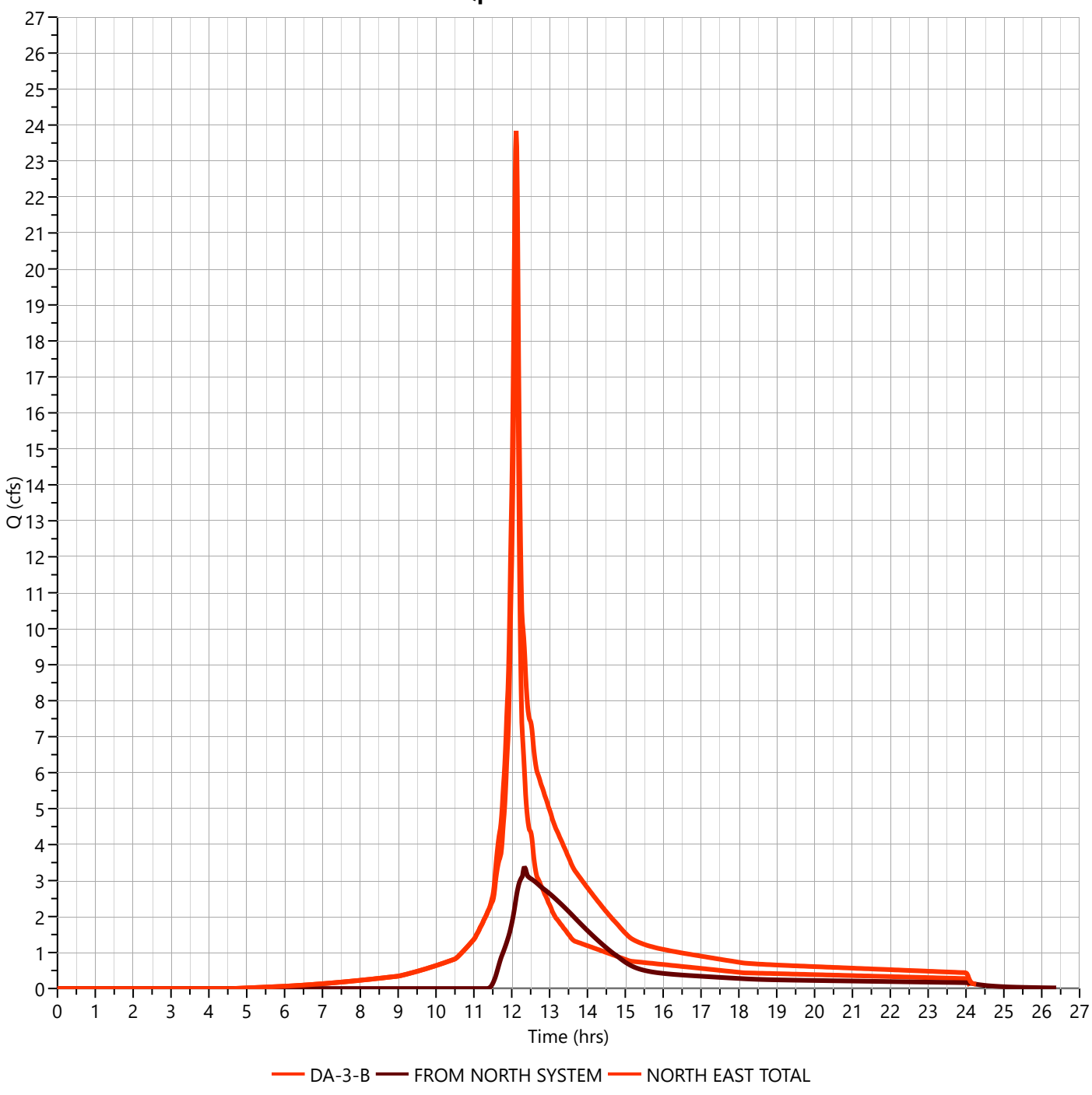
Center of mass detention time = 1.40 hrs



Post NORTH EAST TOTAL

Hyd. No. 20

Hydrograph Type	= Junction	Peak Flow	= 23.84 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 101,500 cuft
Inflow Hydrographs	= 10	Total Contrib. Area	= 3.299 ac



Design Storm Report

Custom Storm filename:

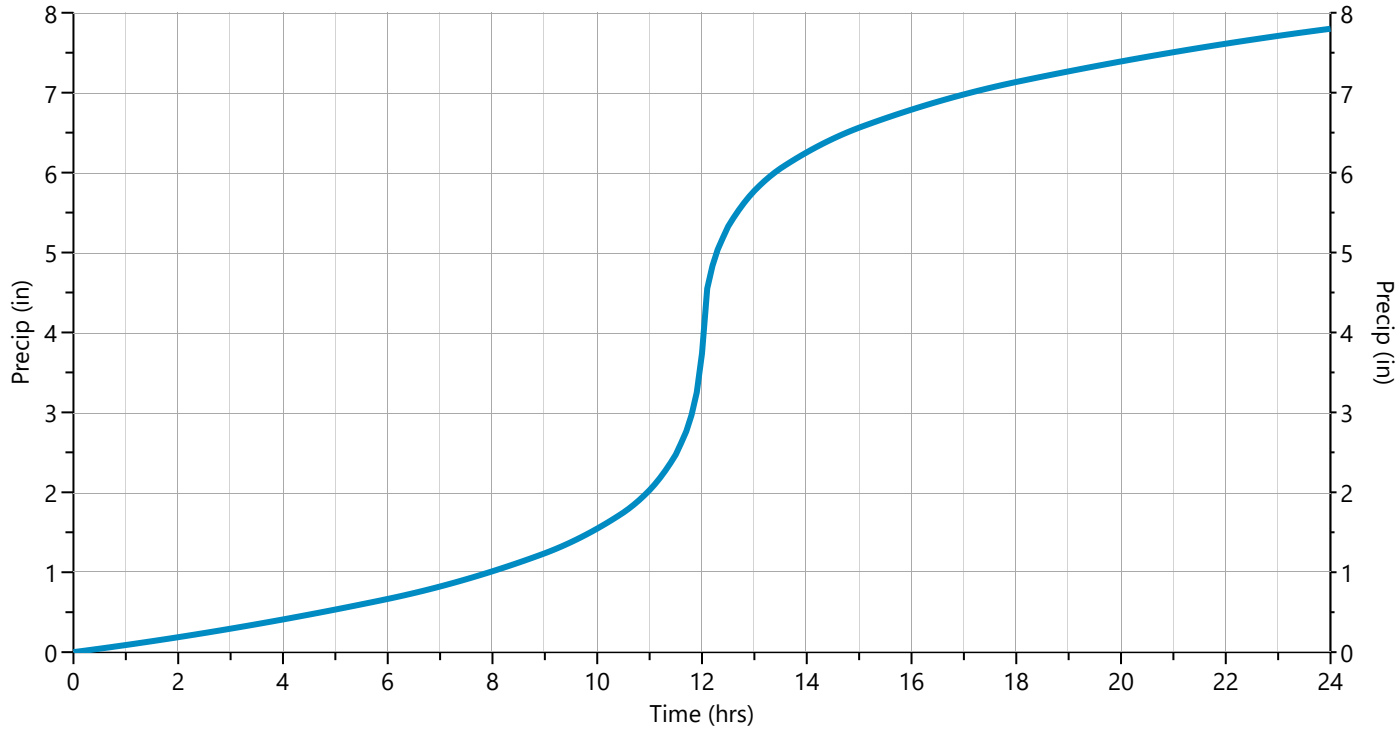
Hydrology Studio v 3.0.0.44

08-13-2026

Storm Distribution: NOAA-D, 24-hr

Storm Duration	Total Rainfall Volume (in)								
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	✔ 50-yr	100-yr	
24 hrs	3.01	3.67	0.00	4.75	5.65	6.88	7.80	8.79	

Incremental Rainfall Distribution, 50-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
11.60	0.023529	11.78	0.033968	11.97	0.081313	12.15	0.047137	12.33	0.024766
11.62	0.024765	11.80	0.033972	11.98	0.081318	12.17	0.047137	12.35	0.024765
11.63	0.024765	11.82	0.047137	12.00	0.081311	12.18	0.047140	12.37	0.024766
11.65	0.024766	11.83	0.047139	12.02	0.135678	12.20	0.047137	12.38	0.024764
11.67	0.024764	11.85	0.047137	12.03	0.135685	12.22	0.033969	12.40	0.024766
11.68	0.024766	11.87	0.047137	12.05	0.135678	12.23	0.033968	12.42	0.023530
11.70	0.024764	11.88	0.047139	12.07	0.135685	12.25	0.033970	12.43	0.023531
11.72	0.033968	11.90	0.047137	12.08	0.135677	12.27	0.033968	12.45	0.023530
11.73	0.033970	11.92	0.081317	**12.10**	**0.135685**	12.28	0.033970	12.47	0.023529
11.75	0.033968	11.93	0.081313	12.12	0.047137	12.30	0.033967	12.48	0.023531
11.77	0.033970	11.95	0.081318	12.13	0.047140	12.32	0.024764	12.50	0.023530



Hydrograph 100-yr Summary

Hydrology Studio v 3.0.0.44

Project Name: Sumitt St Derby
File: Draiange Calcs.hys
08-13-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	Pre DA-1	22.77	12.20	94,932	----		
2	NRCS Runoff	Pre DA-2	13.79	12.13	46,663	----		
3	NRCS Runoff	Pre DA-3 NORTH EAST	31.45	12.17	120,019	----		
4	NRCS Runoff	Pre DA-4 SOUTH EAST	31.23	12.18	123,809	----		
5	NRCS Runoff	Post DA-1-A	26.48	12.12	85,601	----		
6	NRCS Runoff	Post DA-1-B	4.414	12.12	14,186	----		
7	NRCS Runoff	Post DA-2-A	11.96	12.12	38,668	----		
8	NRCS Runoff	Post DA-2-B	3.583	12.12	11,516	----		
9	NRCS Runoff	Post DA-3-A	14.05	12.12	46,056	----		
10	NRCS Runoff	Post DA-3-B	24.72	12.12	79,710	----		
11	NRCS Runoff	Post DA-3-C	3.912	12.12	12,744	----		
12	NRCS Runoff	Post DA-4-A	17.75	12.12	58,856	----		
13	NRCS Runoff	Post DA-4-B SOUTH EAST	23.88	12.12	76,750	----		
14	Junction	Pre WEST TOTAL	35.00	12.15	141,595	1, 2		
15	Junction	Post TO WEST POND	60.11	12.12	195,869	5, 7, 11, 12		
16	Pond Route	Post FROM WEST POND	13.83	12.40	187,984	15	187.64	96,558
17	Junction	Post WEST BYPASS TOTAL	7.996	12.12	25,703	6, 8		
18	Junction	Post WEST TOTAL	15.67	12.40	213,687	16, 17		
19	Pond Route	Post FROM NORTH SYSTEM	8.628	12.20	39,752	9	229.88	17,323
20	Junction	Post NORTH EAST TOTAL	27.55	12.12	119,462	10, 19		

Hydrograph Report

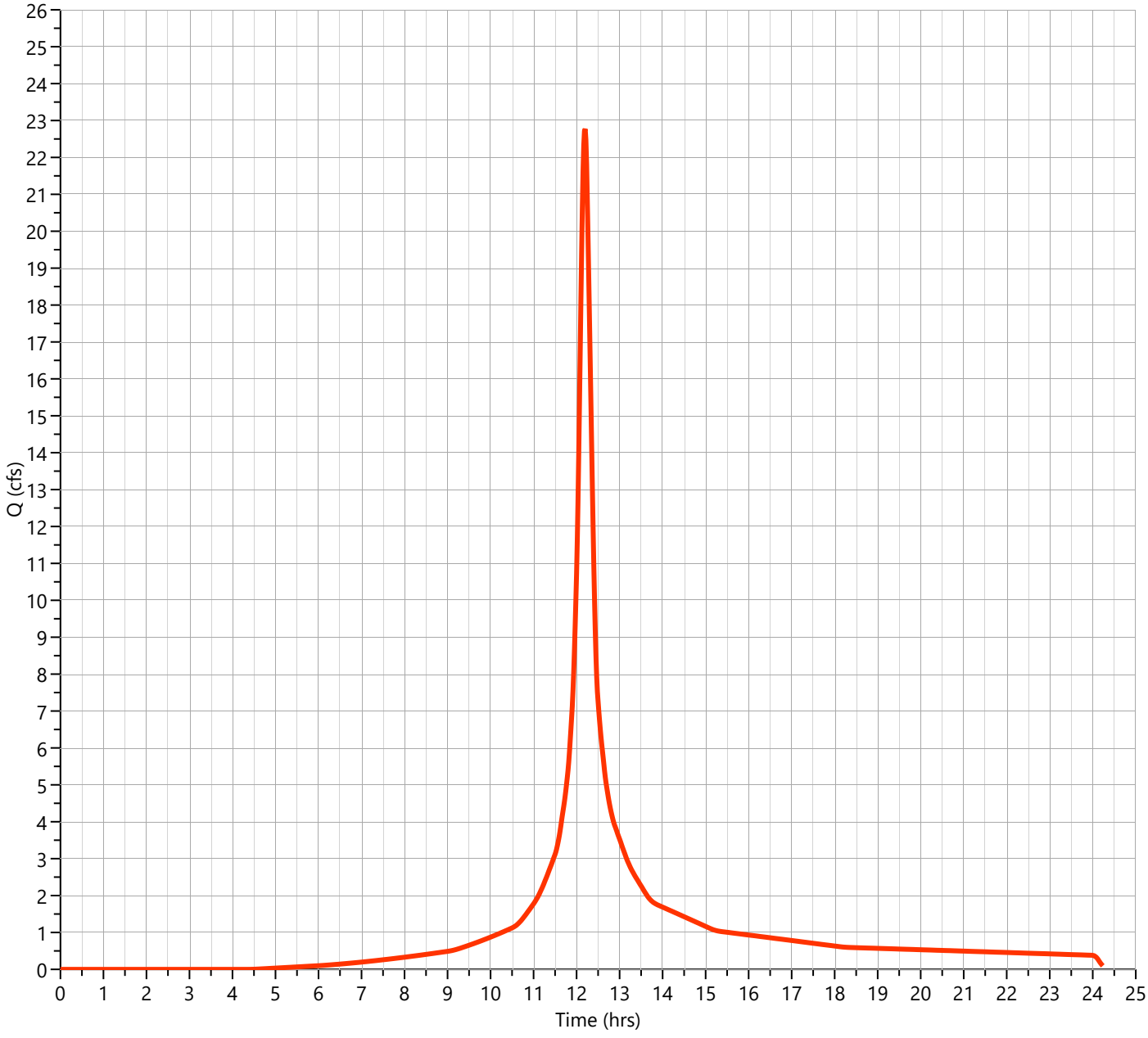
Hydrology Studio v 3.0.0.44

Project Name: Sumitt St Derby
File: Draiange Calcs.hys
08-13-2026

Pre DA-1

Hyd. No. 1

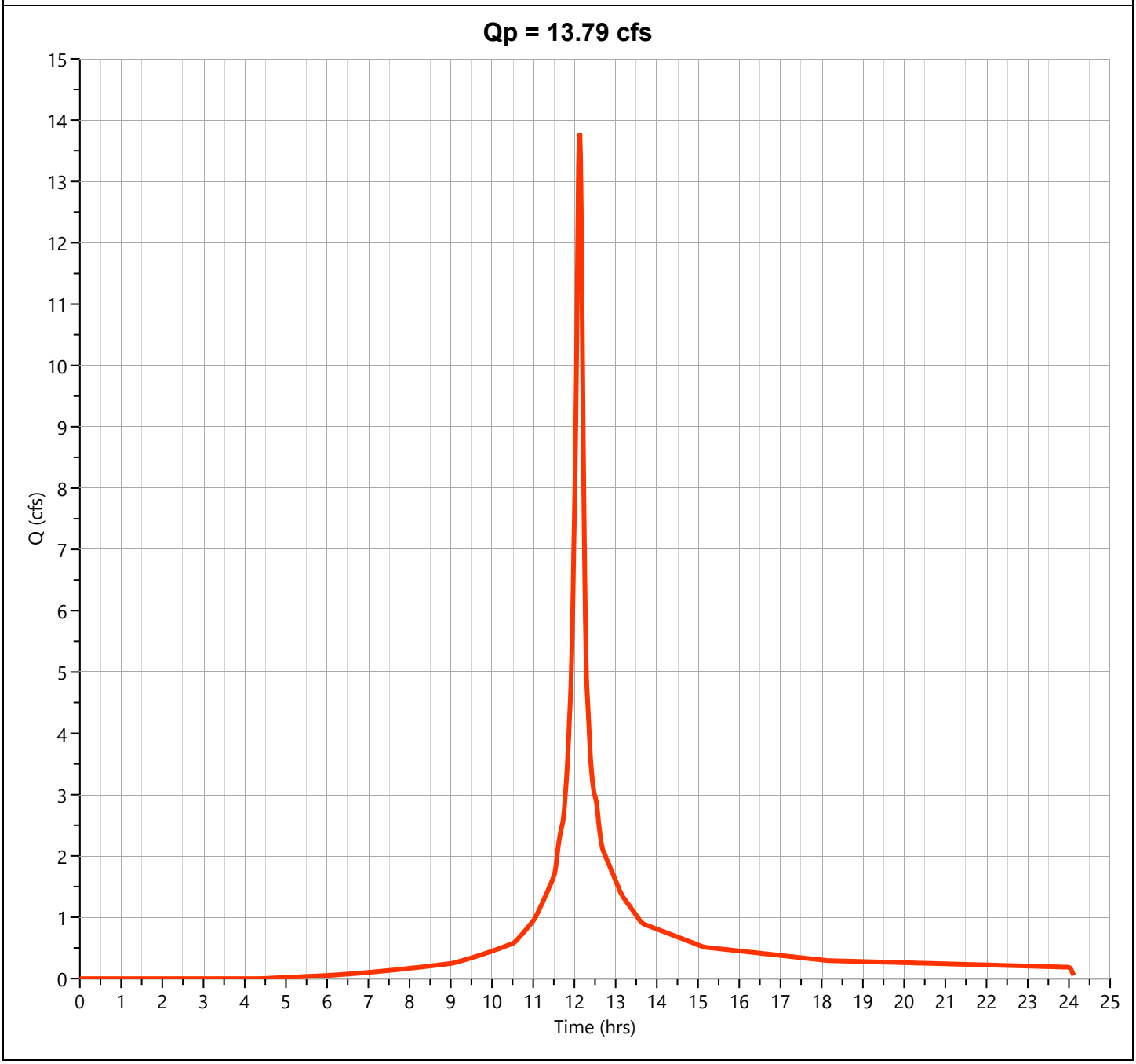
Hydrograph Type	= NRCS Runoff	Peak Flow	= 22.77 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.20 hrs
Time Interval	= 1 min	Runoff Volume	= 94,932 cuft
Drainage Area	= 4.106 ac	Curve Number	= 80.00
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 14.46 min
Total Rainfall	= 8.79 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Pre DA-2

Hyd. No. 2

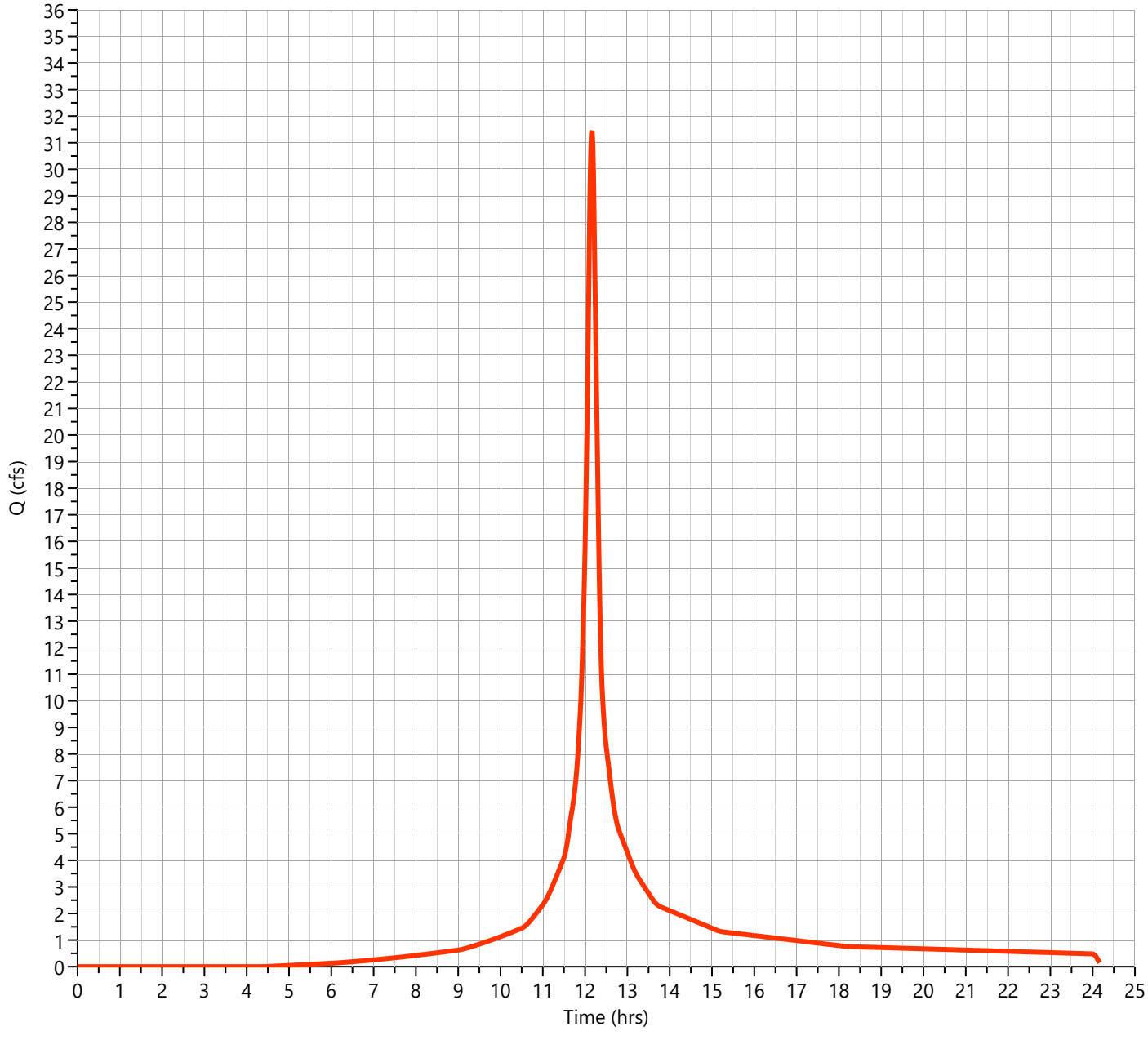
Hydrograph Type	= NRCS Runoff	Peak Flow	= 13.79 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.13 hrs
Time Interval	= 1 min	Runoff Volume	= 46,663 cuft
Drainage Area	= 2.07 ac	Curve Number	= 80.00
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 7.34 min
Total Rainfall	= 8.79 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Pre DA-3 NORTH EAST

Hyd. No. 3

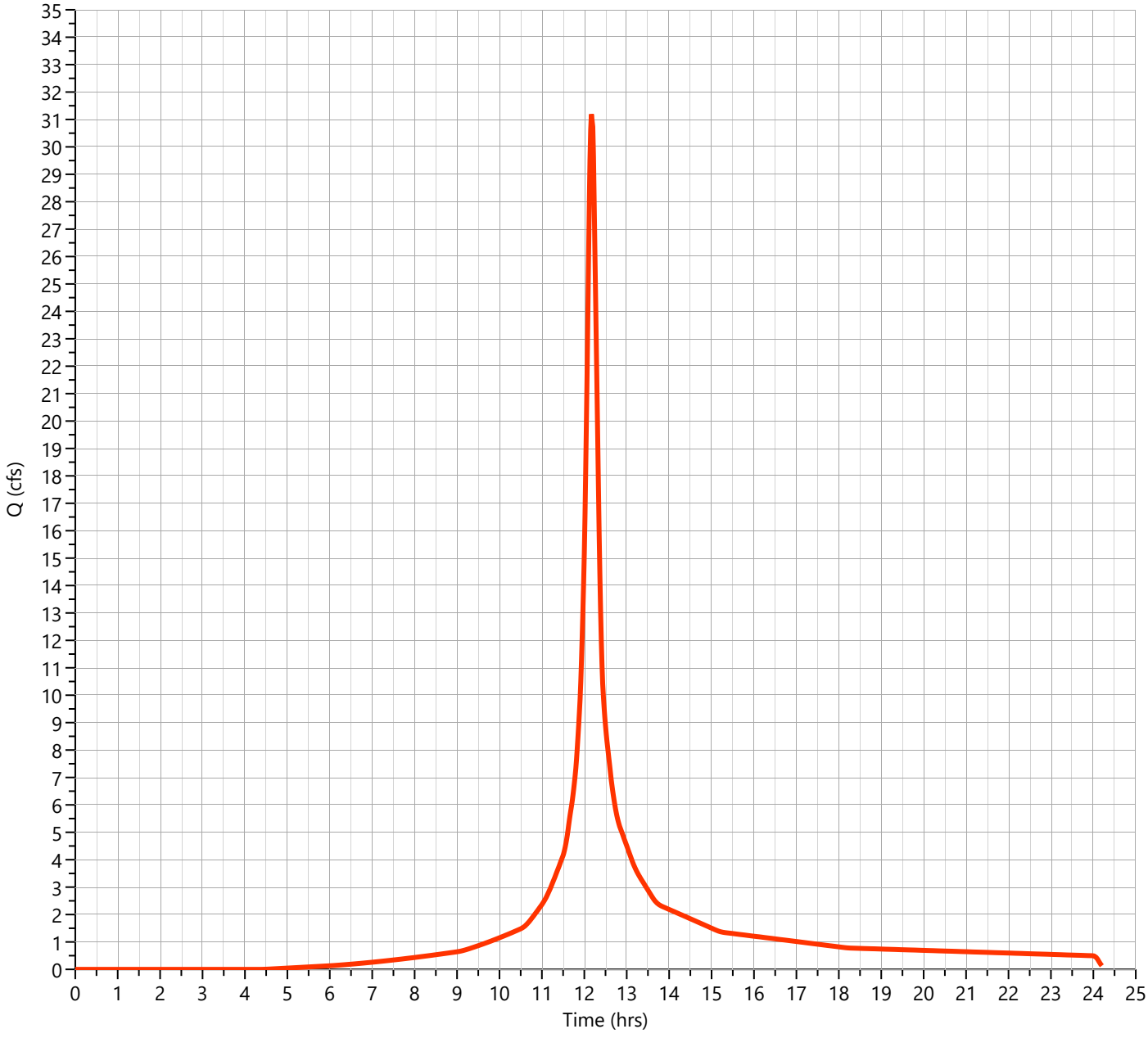
Hydrograph Type	= NRCS Runoff	Peak Flow	= 31.45 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.17 hrs
Time Interval	= 1 min	Runoff Volume	= 120,019 cuft
Drainage Area	= 5.1 ac	Curve Number	= 80.00
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 10.24 min
Total Rainfall	= 8.79 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Pre DA-4 SOUTH EAST

Hyd. No. 4

Hydrograph Type	= NRCS Runoff	Peak Flow	= 31.23 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.18 hrs
Time Interval	= 1 min	Runoff Volume	= 123,809 cuft
Drainage Area	= 5.44 ac	Curve Number	= 80.00
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 12.26 min
Total Rainfall	= 8.79 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



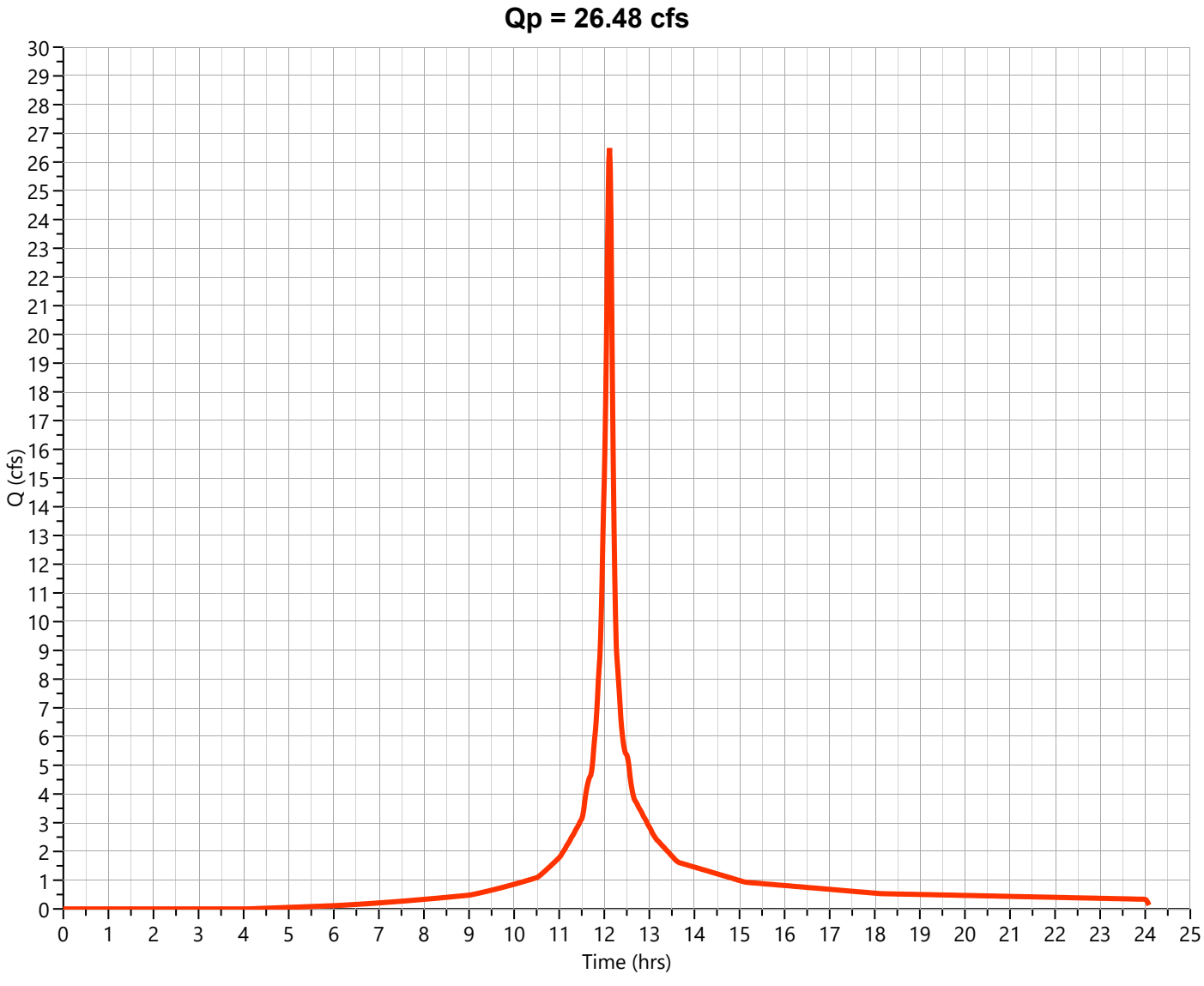
Post DA-1-A

Hyd. No. 5

Hydrograph Type	= NRCS Runoff	Peak Flow	= 26.48 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 85,601 cuft
Drainage Area	= 3.511 ac	Curve Number	= 81.18*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 8.79 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

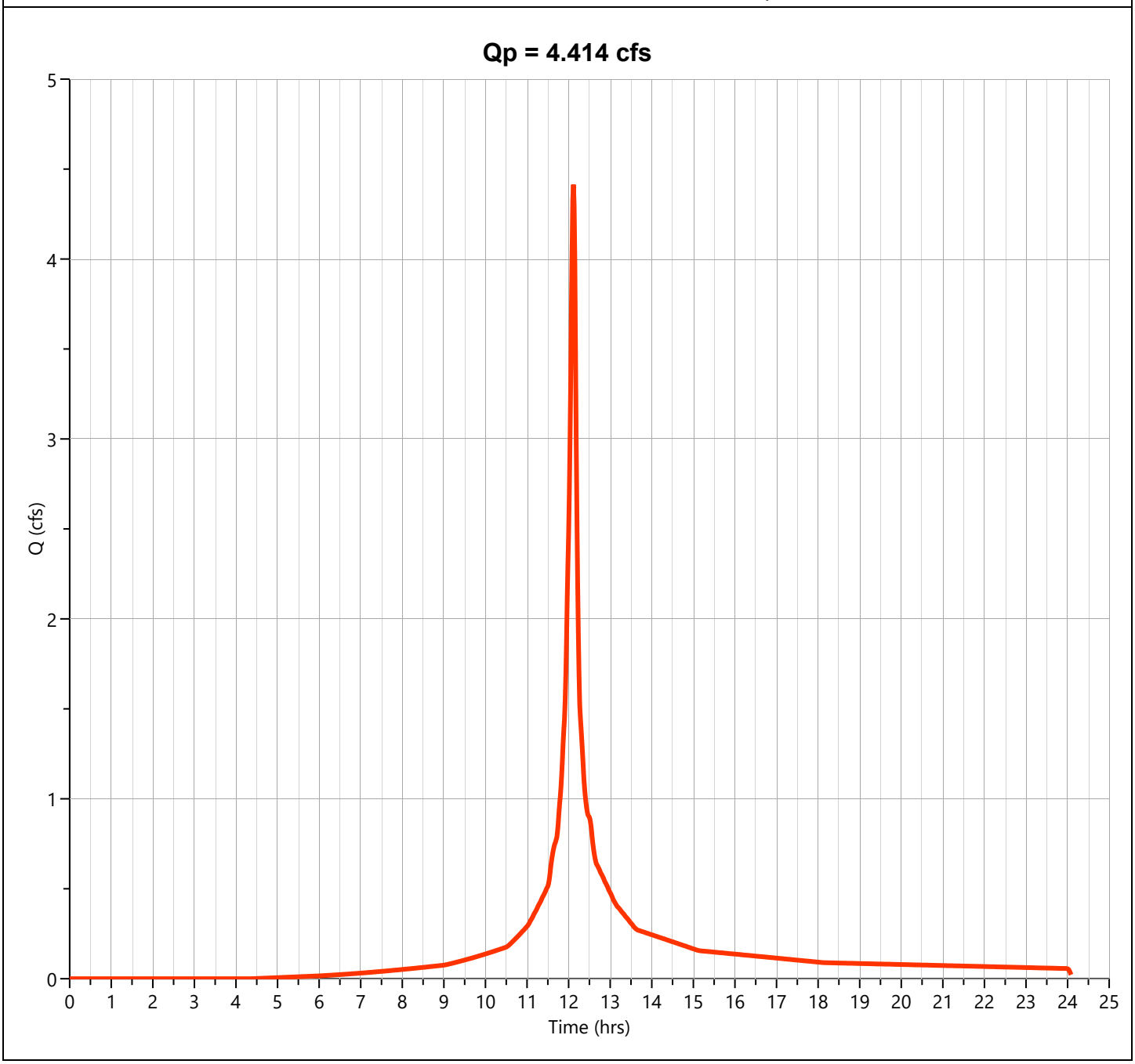
AREA (ac)	CN	DESCRIPTION
0.23	98.00	
3.281	80.00	
3.511	**81.18**	Weighted CN Method Employed



Post DA-1-B

Hyd. No. 6

Hydrograph Type	= NRCS Runoff	Peak Flow	= 4.414 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 14,186 cuft
Drainage Area	= 0.595 ac	Curve Number	= 80.00
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 8.79 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



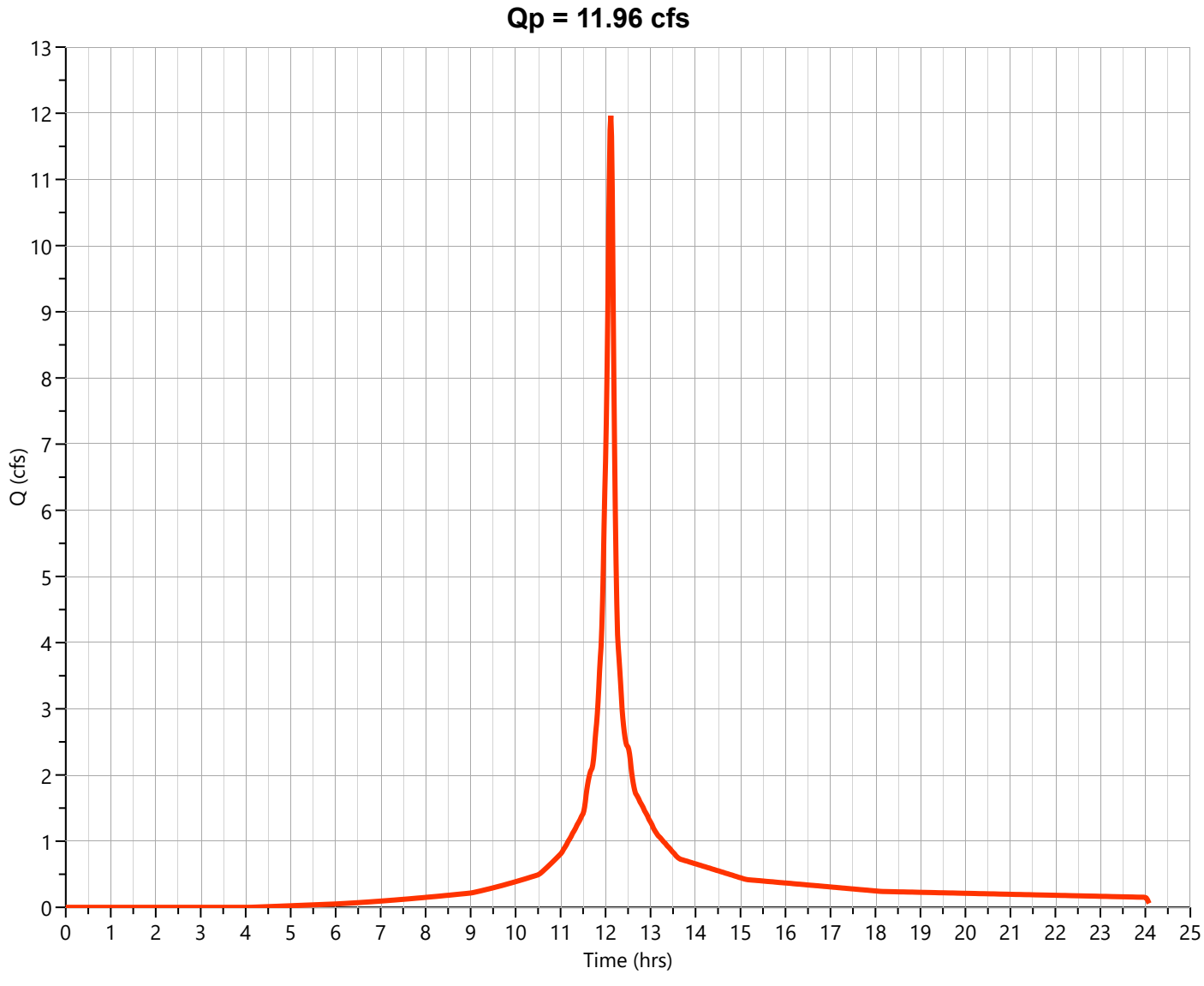
Post DA-2-A

Hyd. No. 7

Hydrograph Type	= NRCS Runoff	Peak Flow	= 11.96 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 38,668 cuft
Drainage Area	= 1.586 ac	Curve Number	= 81.18*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 8.79 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

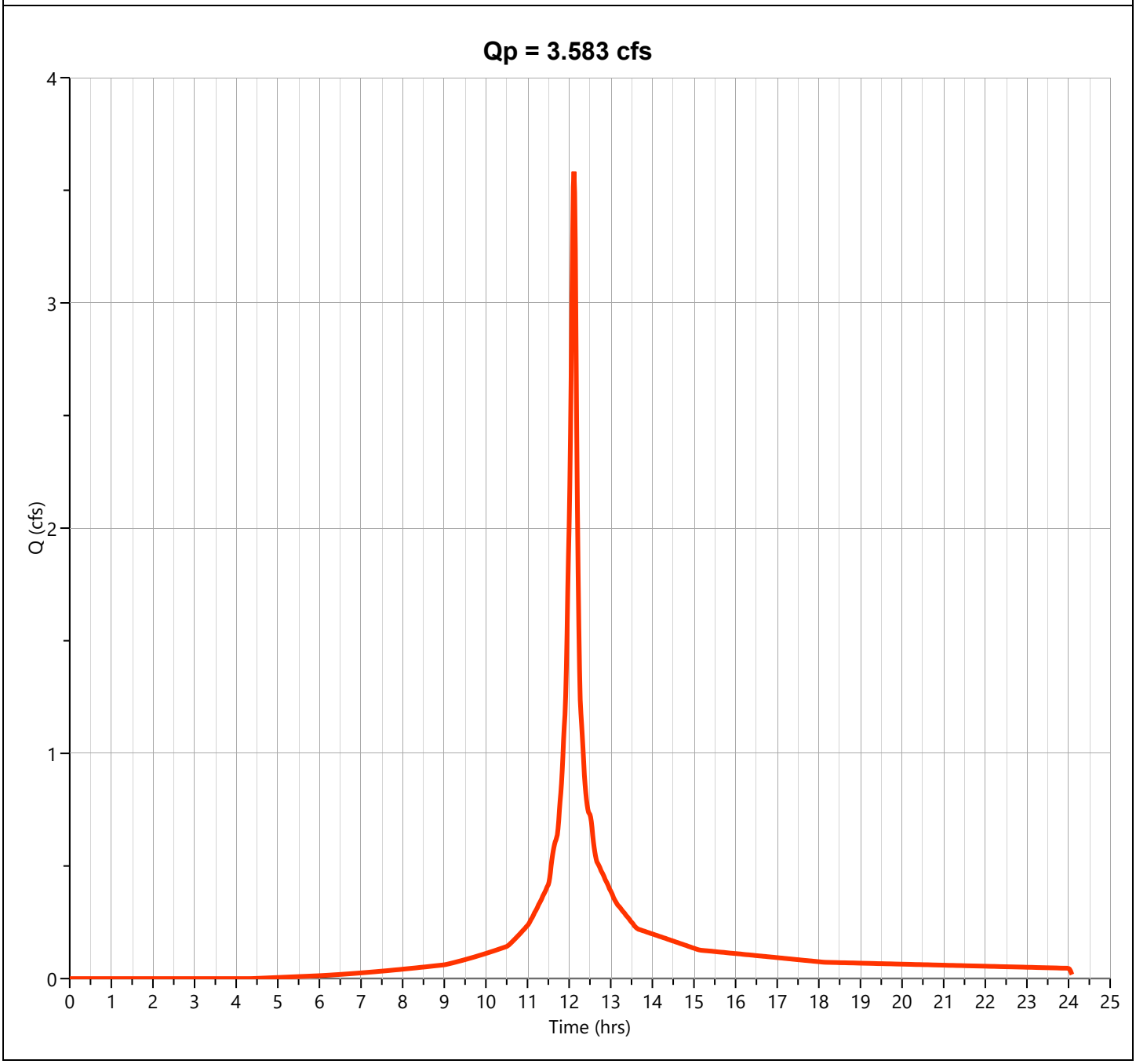
AREA (ac)	CN	DESCRIPTION
0.104	98.00	
1.482	80.00	
1.586	**81.18**	Weighted CN Method Employed



Post DA-2-B

Hyd. No. 8

Hydrograph Type	= NRCS Runoff	Peak Flow	= 3.583 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 11,516 cuft
Drainage Area	= 0.483 ac	Curve Number	= 80.00
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 8.79 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



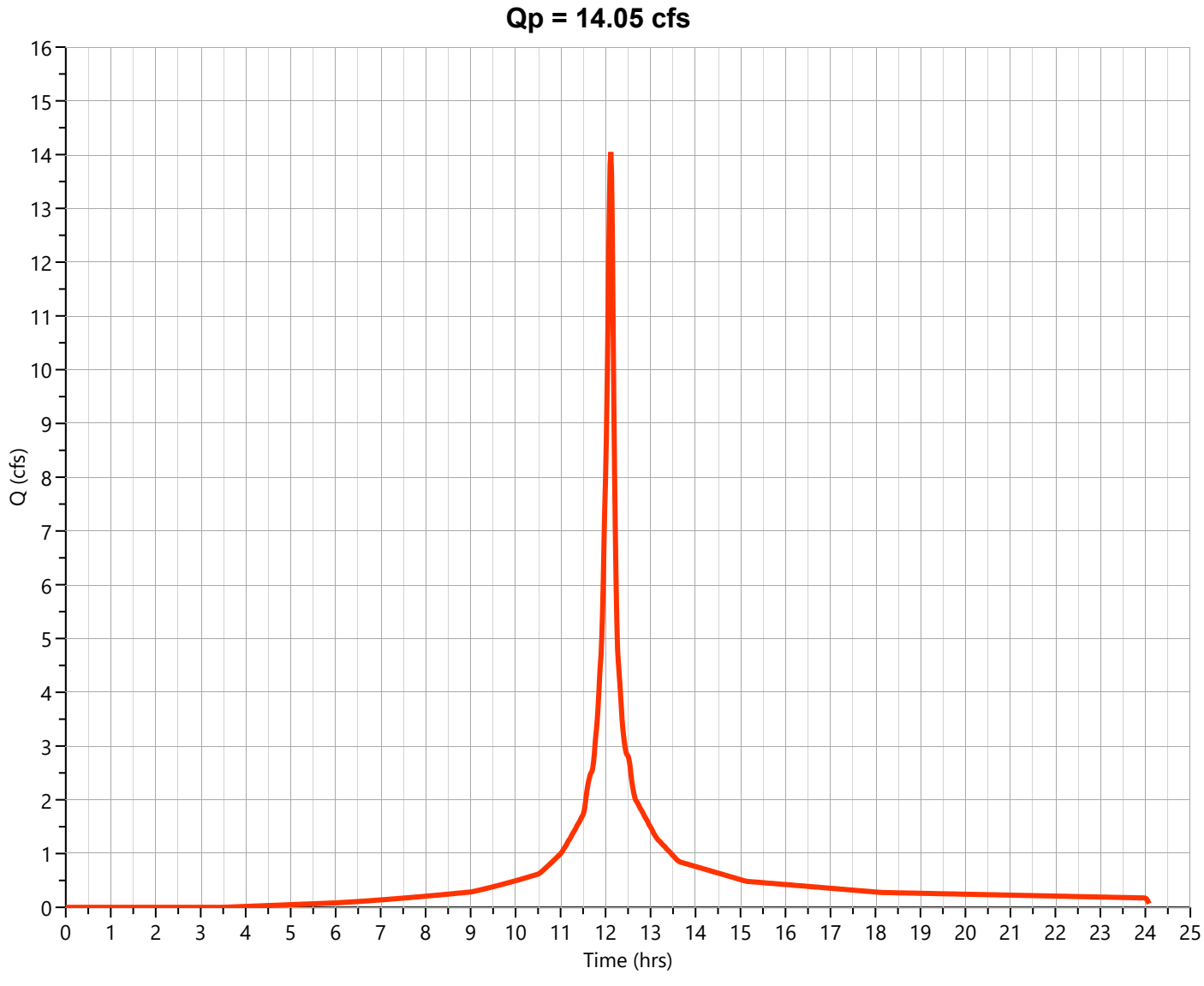
Post DA-3-A

Hyd. No. 9

Hydrograph Type	= NRCS Runoff	Peak Flow	= 14.05 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 46,056 cuft
Drainage Area	= 1.798 ac	Curve Number	= 83.89*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 8.79 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.389	98.00	
1.409	80.00	
1.798	**83.89**	Weighted CN Method Employed



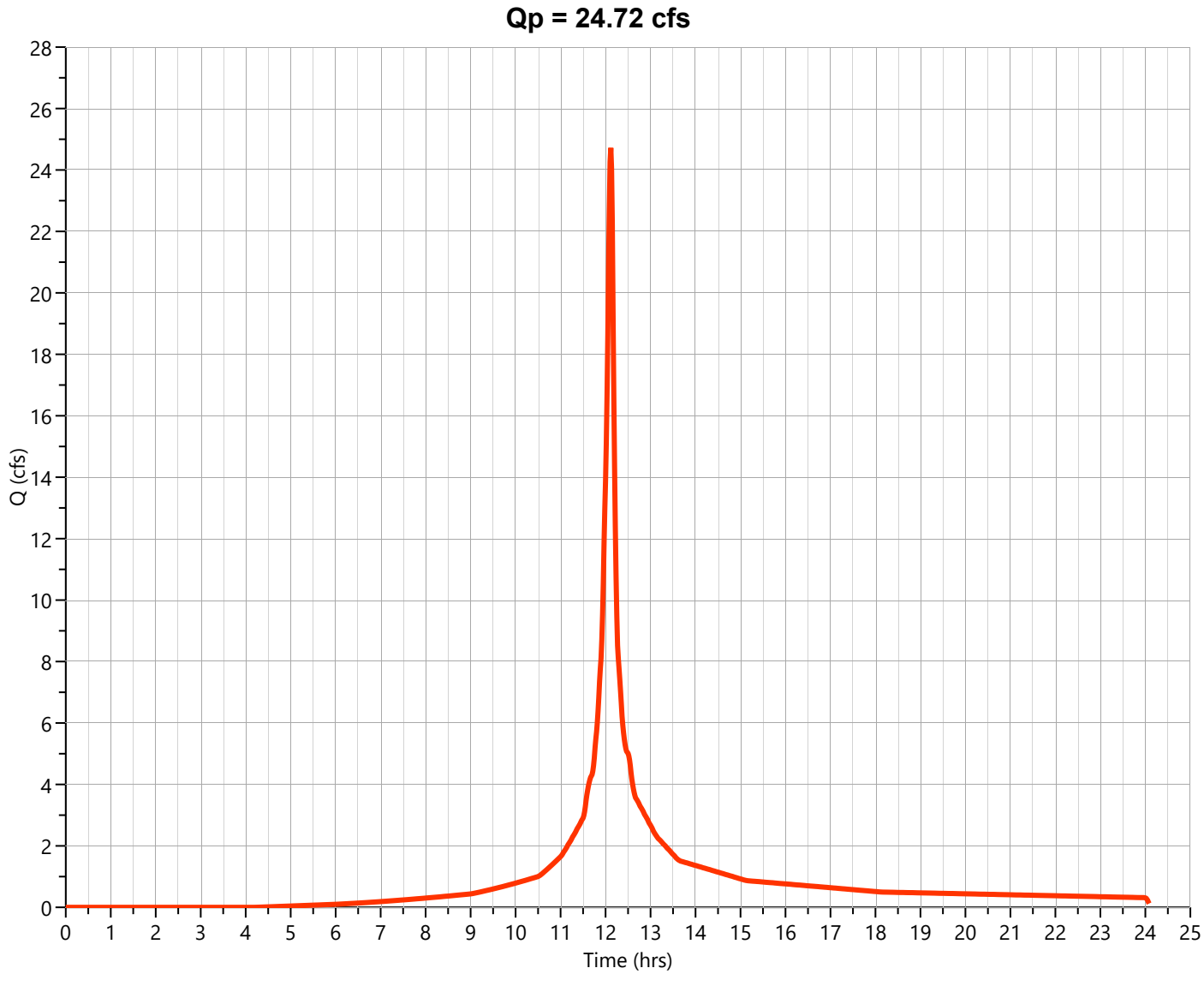
Post DA-3-B

Hyd. No. 10

Hydrograph Type	= NRCS Runoff	Peak Flow	= 24.72 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 79,710 cuft
Drainage Area	= 3.299 ac	Curve Number	= 80.70*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 8.79 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.128	98.00	
3.171	80.00	
3.299	**80.70**	Weighted CN Method Employed



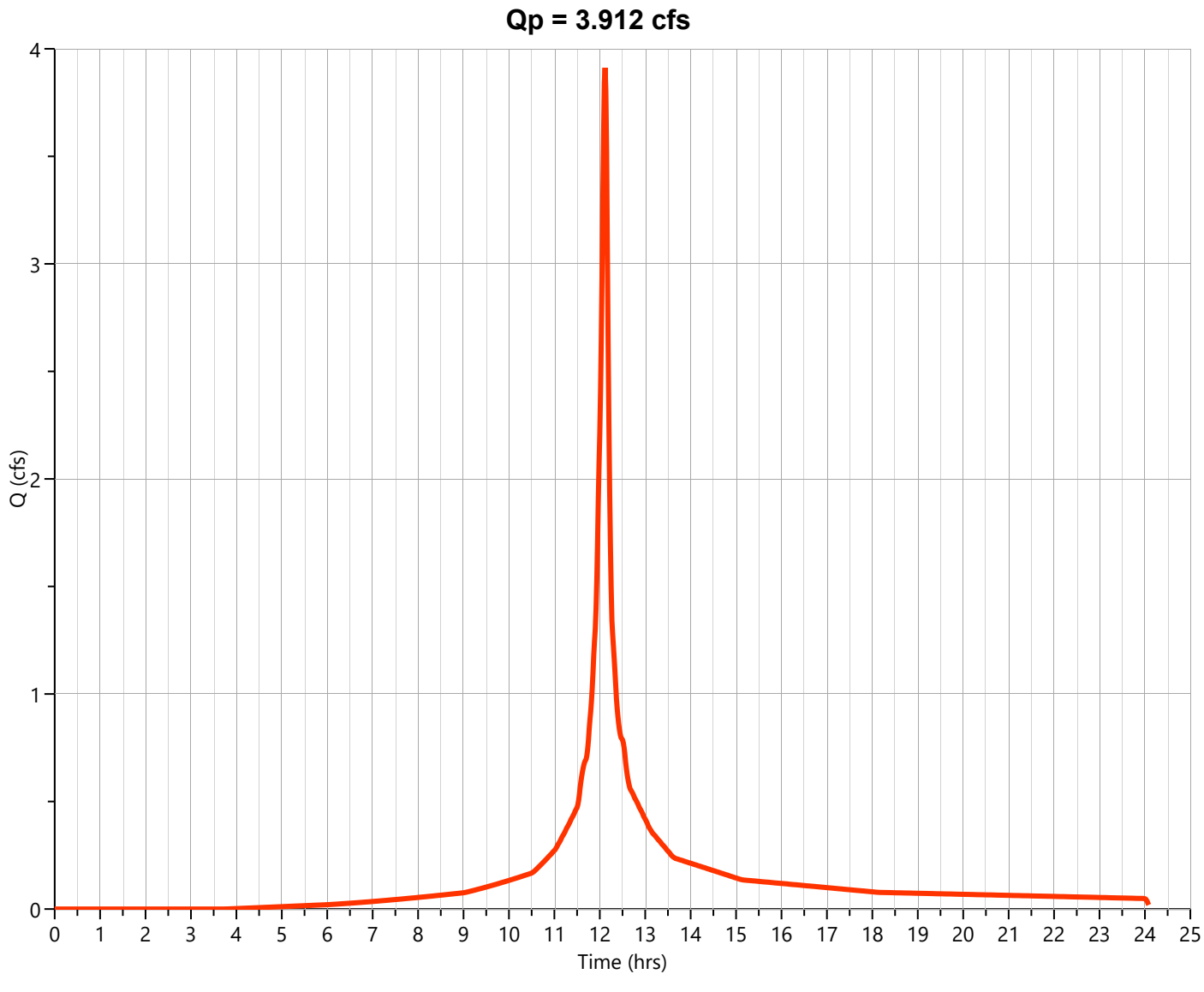
Post DA-3-C

Hyd. No. 11

Hydrograph Type	= NRCS Runoff	Peak Flow	= 3.912 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 12,744 cuft
Drainage Area	= 0.508 ac	Curve Number	= 82.73*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 8.79 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.077	98.00	
0.431	80.00	
0.508	**82.73**	Weighted CN Method Employed



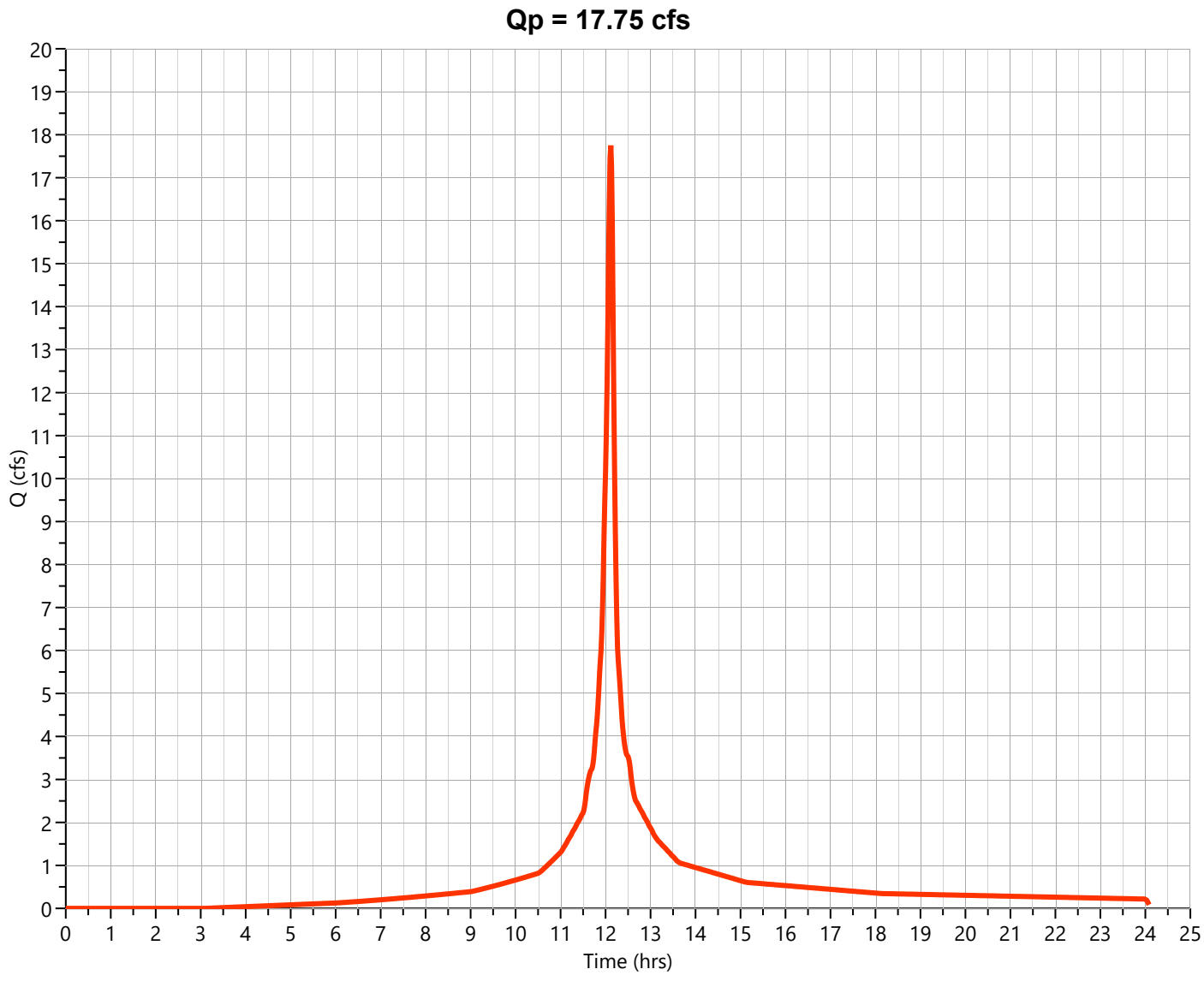
Post DA-4-A

Hyd. No. 12

Hydrograph Type	= NRCS Runoff	Peak Flow	= 17.75 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 58,856 cuft
Drainage Area	= 2.225 ac	Curve Number	= 85.73*
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 8.79 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

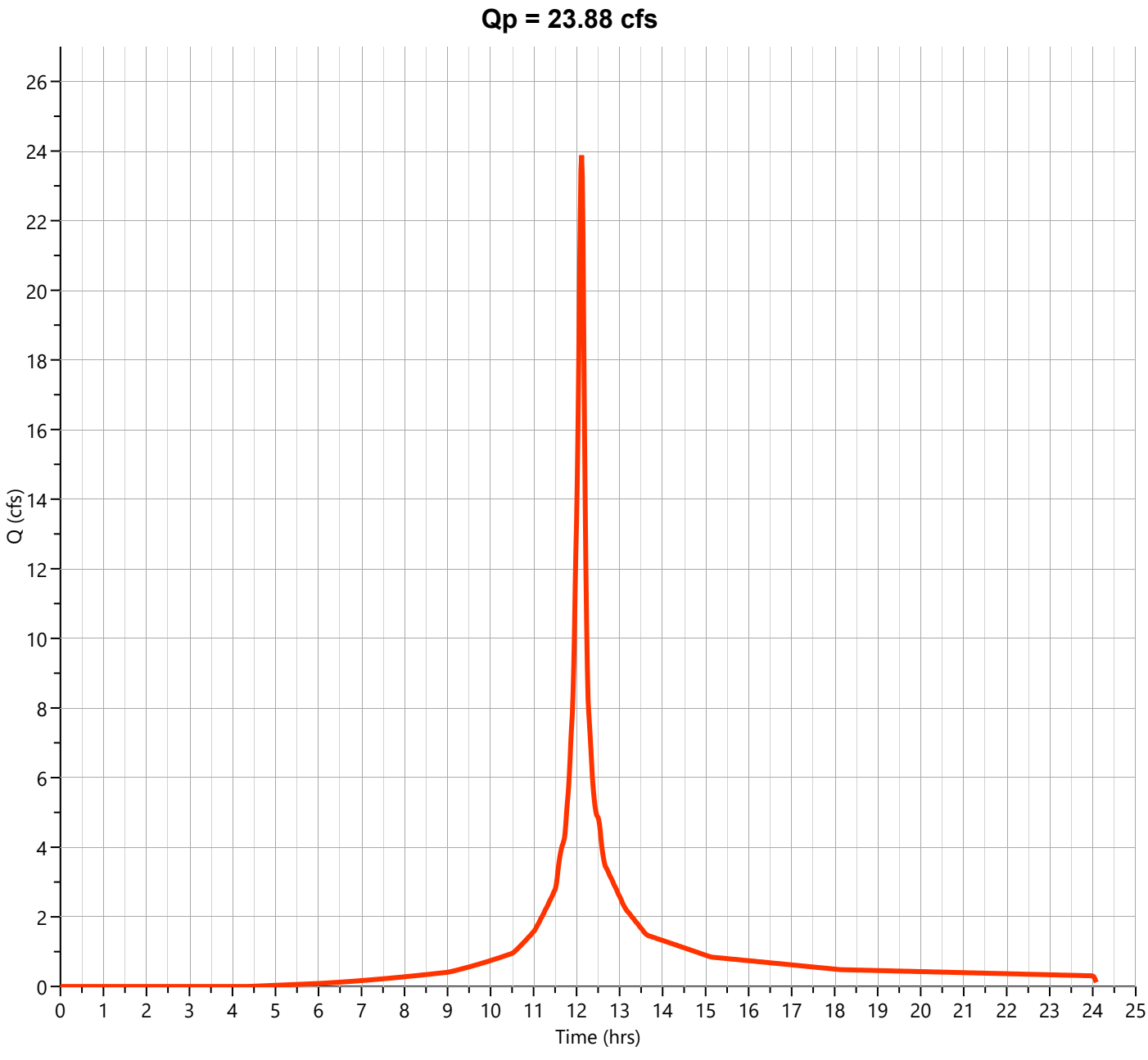
AREA (ac)	CN	DESCRIPTION
0.708	98.00	
1.517	80.00	
2.225	**85.73**	Weighted CN Method Employed



Post DA-4-B SOUTH EAST

Hyd. No. 13

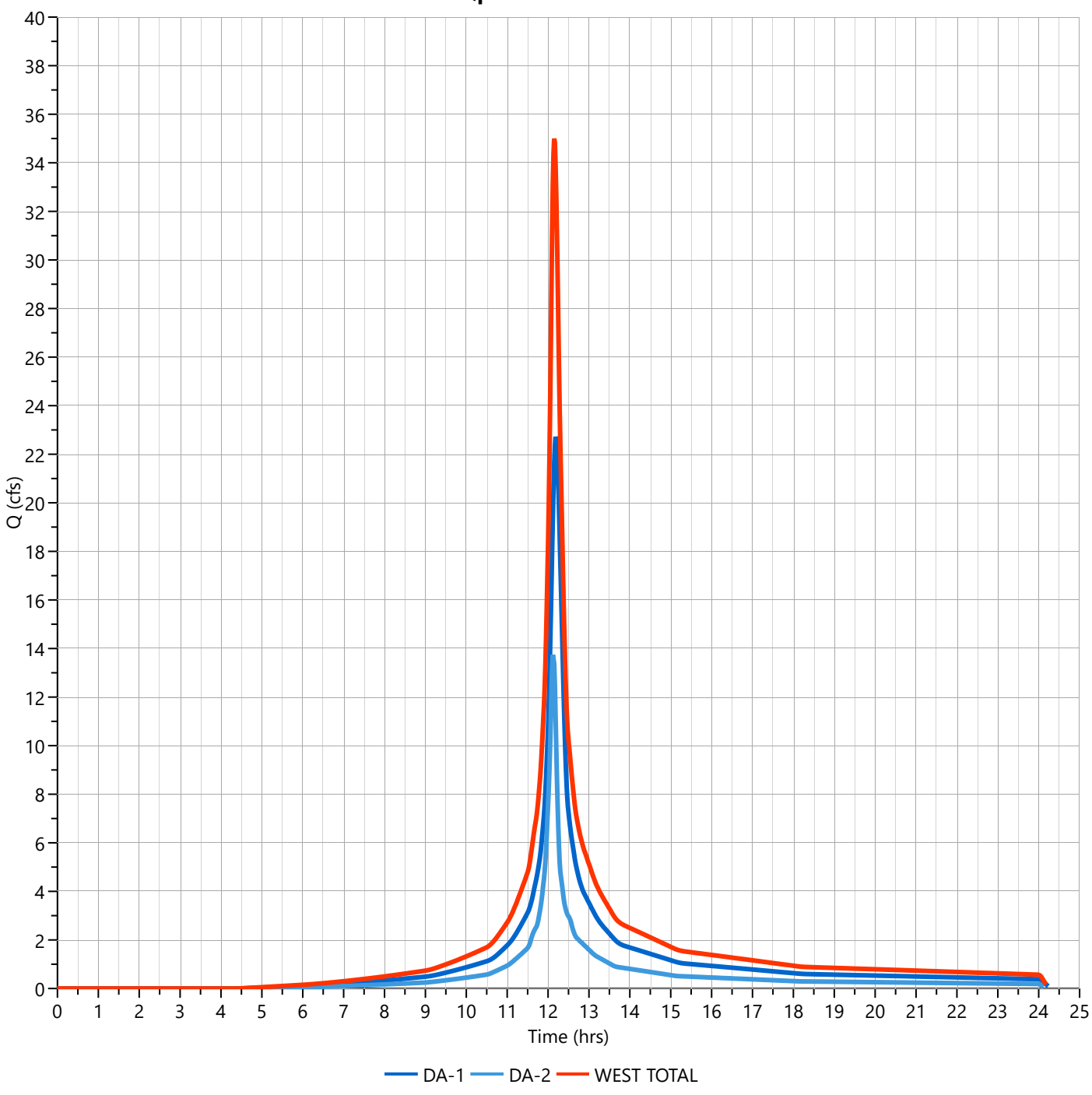
Hydrograph Type	= NRCS Runoff	Peak Flow	= 23.88 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Runoff Volume	= 76,750 cuft
Drainage Area	= 3.219 ac	Curve Number	= 80.00
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
Total Rainfall	= 8.79 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484



Pre WEST TOTAL

Hyd. No. 14

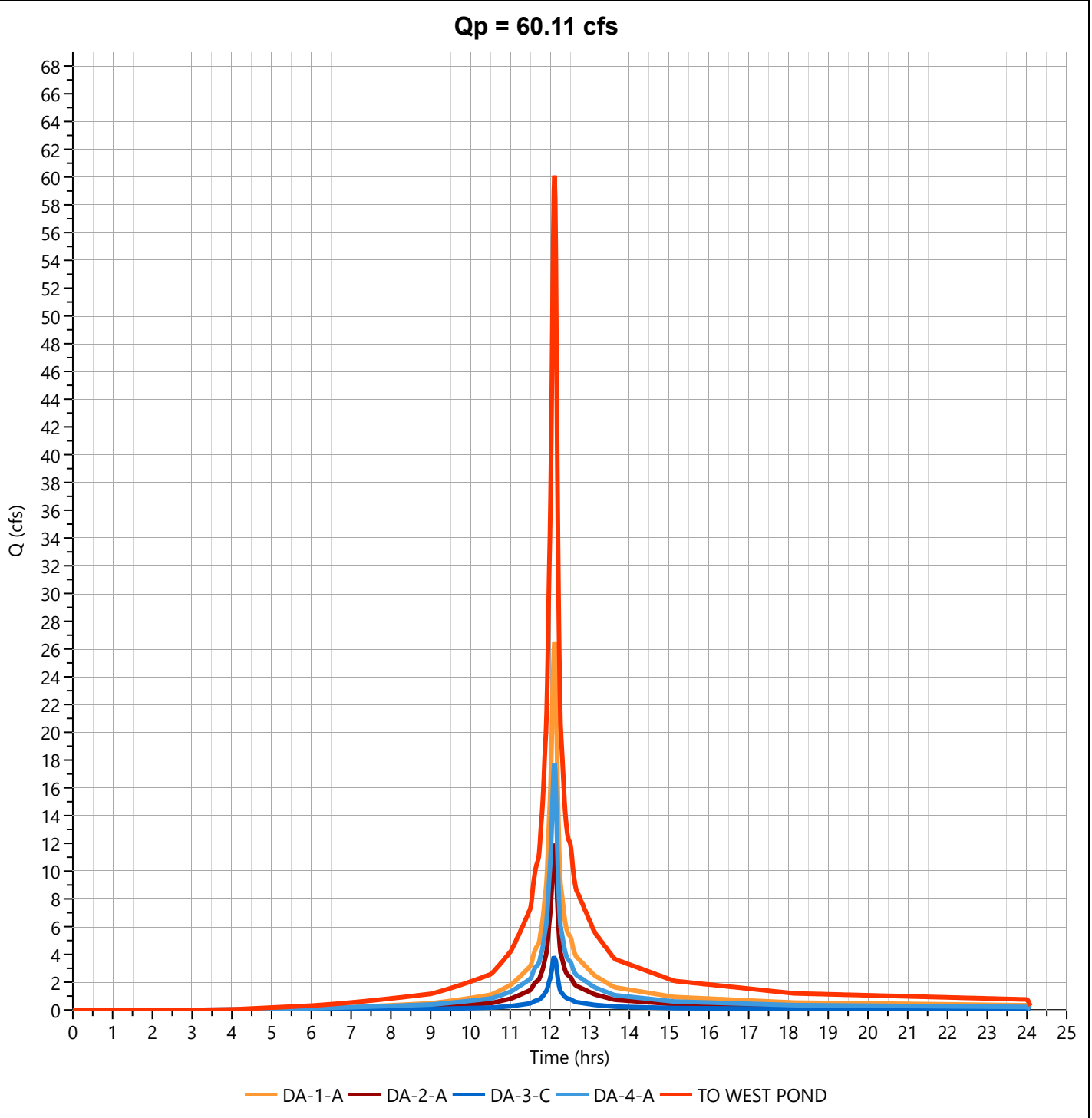
Hydrograph Type	= Junction	Peak Flow	= 35.00 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.15 hrs
Time Interval	= 1 min	Hydrograph Volume	= 141,595 cuft
Inflow Hydrographs	= 1, 2	Total Contrib. Area	= 6.176 ac



Post TO WEST POND

Hyd. No. 15

Hydrograph Type	= Junction	Peak Flow	= 60.11 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 195,869 cuft
Inflow Hydrographs	= 5, 7, 11, 12	Total Contrib. Area	= 7.83 ac



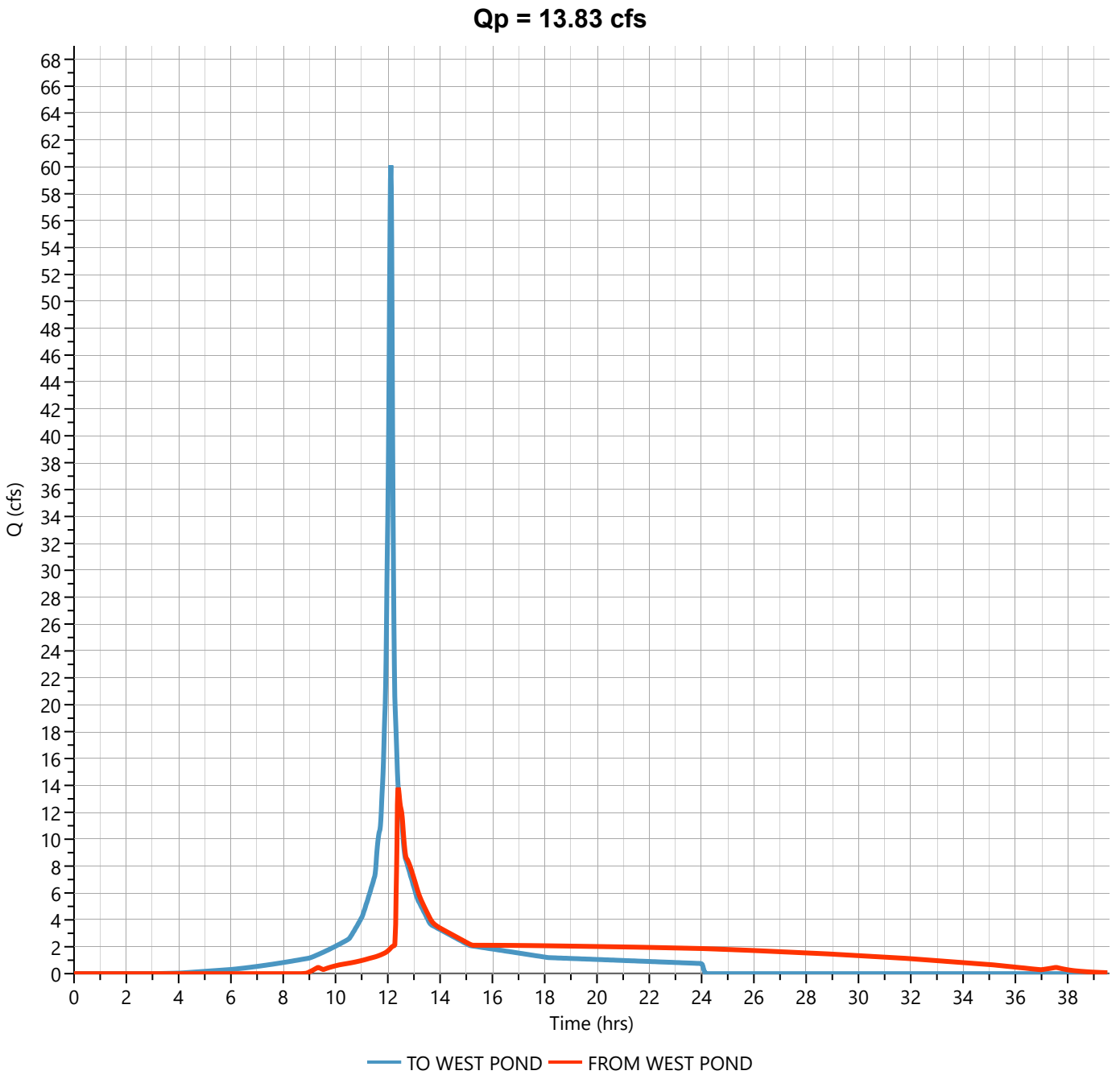
Post FROM WEST POND

Hyd. No. 16

Hydrograph Type	= Pond Route	Peak Flow	= 13.83 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.40 hrs
Time Interval	= 1 min	Hydrograph Volume	= 187,984 cuft
Inflow Hydrograph	= 15 - TO WEST POND	Max. Elevation	= 187.64 ft
Pond Name	= WEST POND	Max. Storage	= 96,558 cuft

Pond Routing by Storage Indication Method

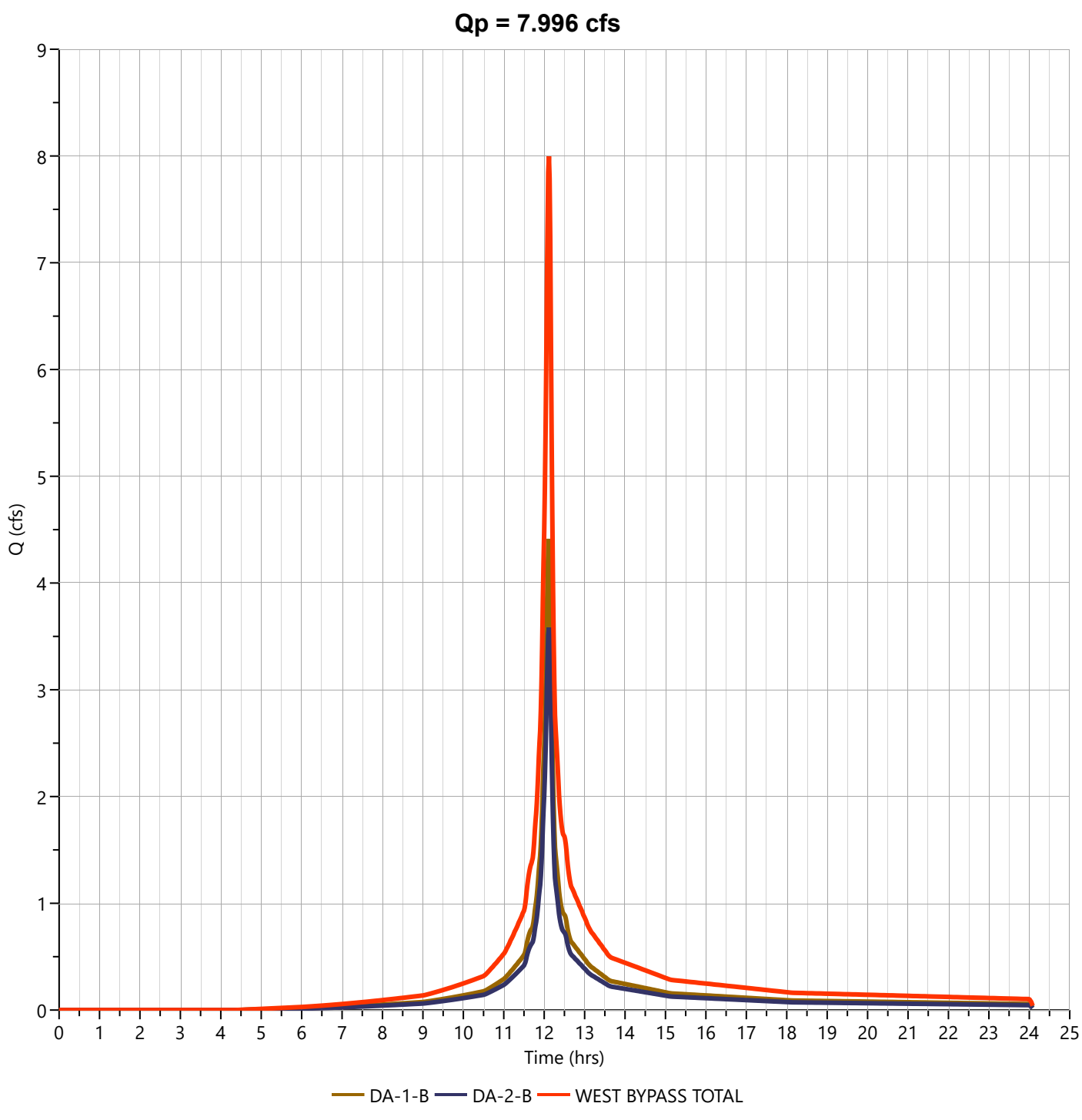
Center of mass detention time = 7.08 hrs



Post WEST BYPASS TOTAL

Hyd. No. 17

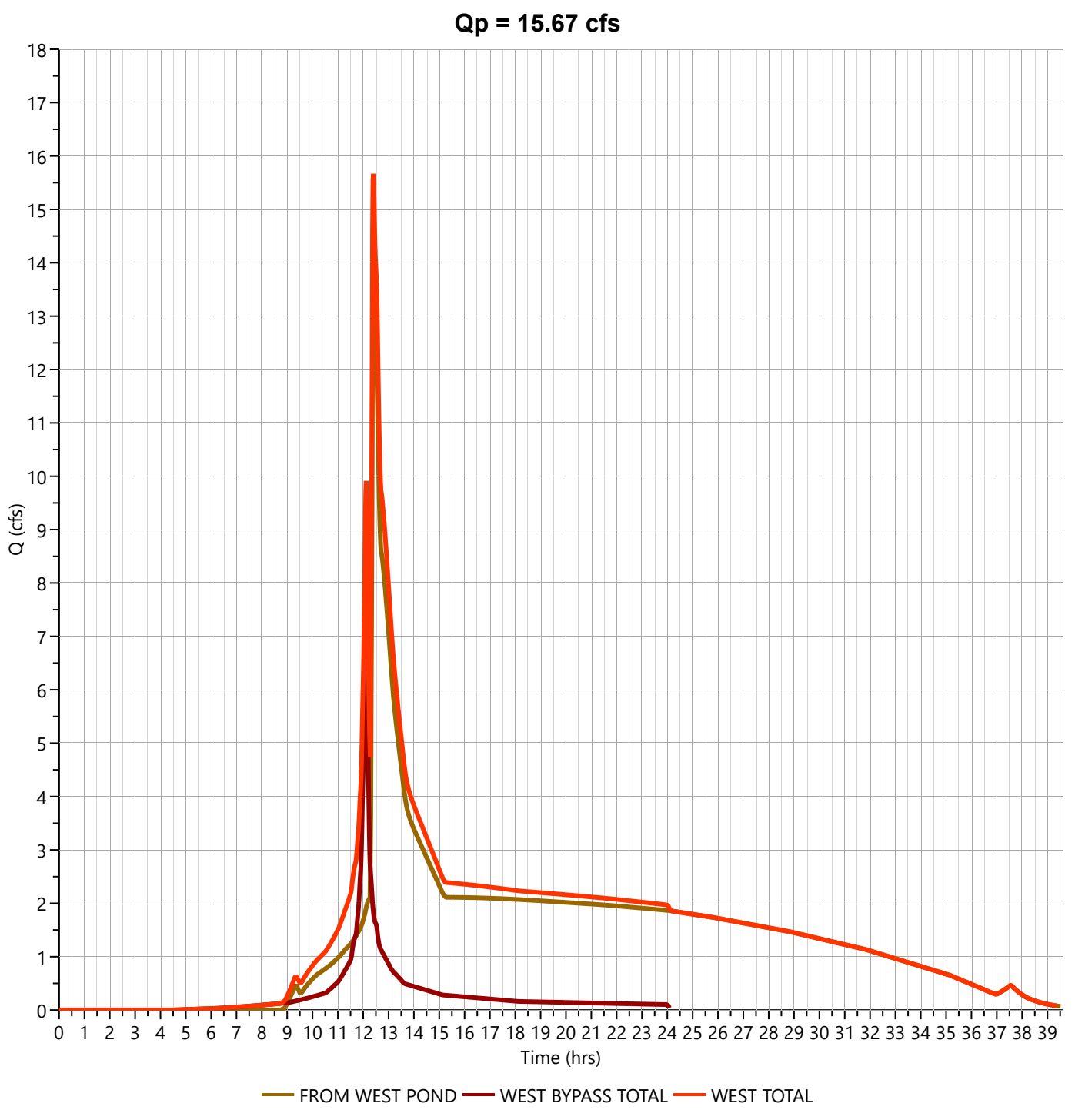
Hydrograph Type	= Junction	Peak Flow	= 7.996 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 25,703 cuft
Inflow Hydrographs	= 6, 8	Total Contrib. Area	= 1.078 ac



Post WEST TOTAL

Hyd. No. 18

Hydrograph Type	= Junction	Peak Flow	= 15.67 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.40 hrs
Time Interval	= 1 min	Hydrograph Volume	= 213,687 cuft
Inflow Hydrographs		Total Contrib. Area	= 0.0 ac



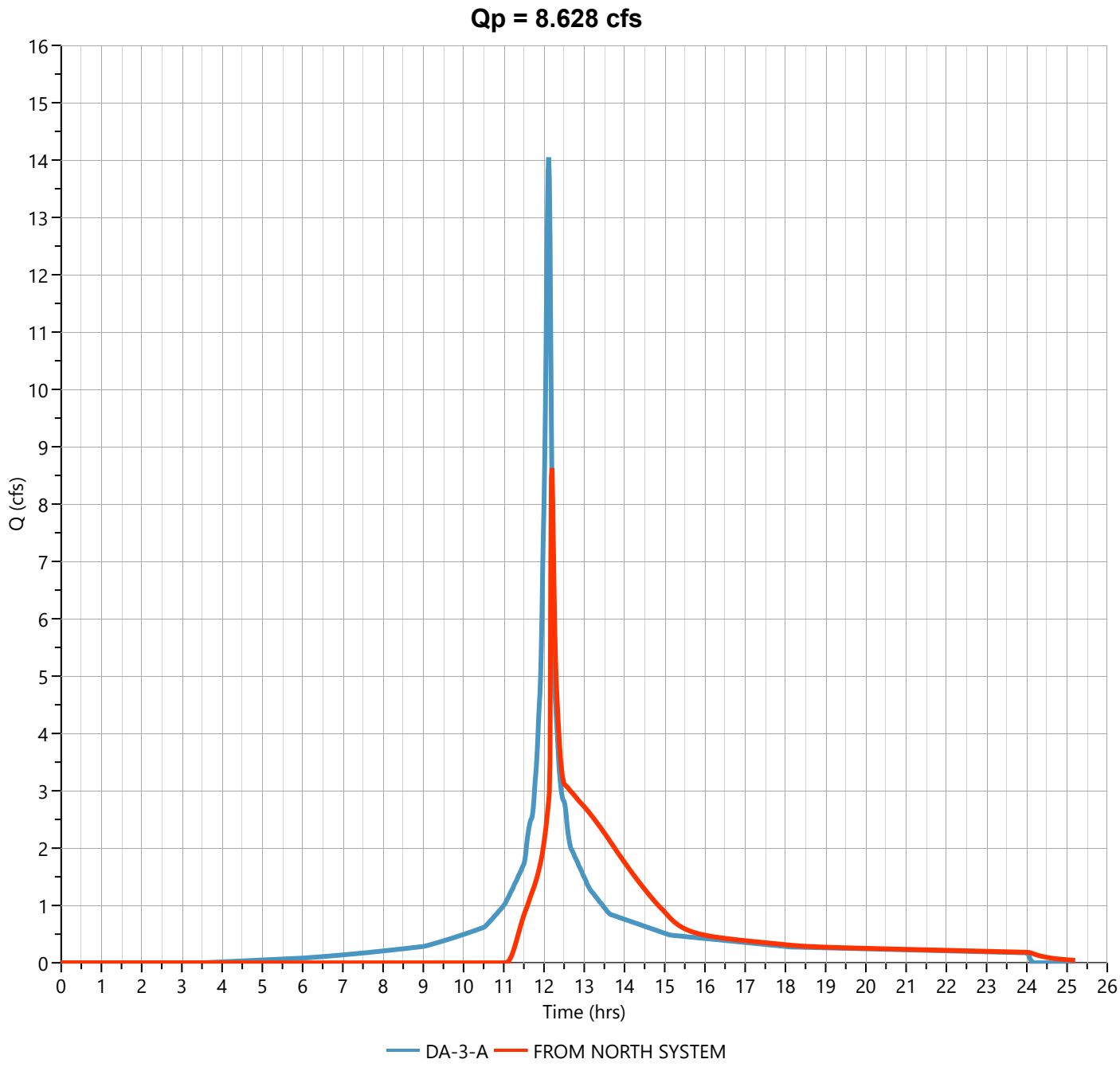
Post FROM NORTH SYSTEM

Hyd. No. 19

Hydrograph Type	= Pond Route	Peak Flow	= 8.628 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.20 hrs
Time Interval	= 1 min	Hydrograph Volume	= 39,752 cuft
Inflow Hydrograph	= 9 - DA-3-A	Max. Elevation	= 229.88 ft
Pond Name	= NORTH SYSTEM	Max. Storage	= 17,323 cuft

Pond Routing by Storage Indication Method

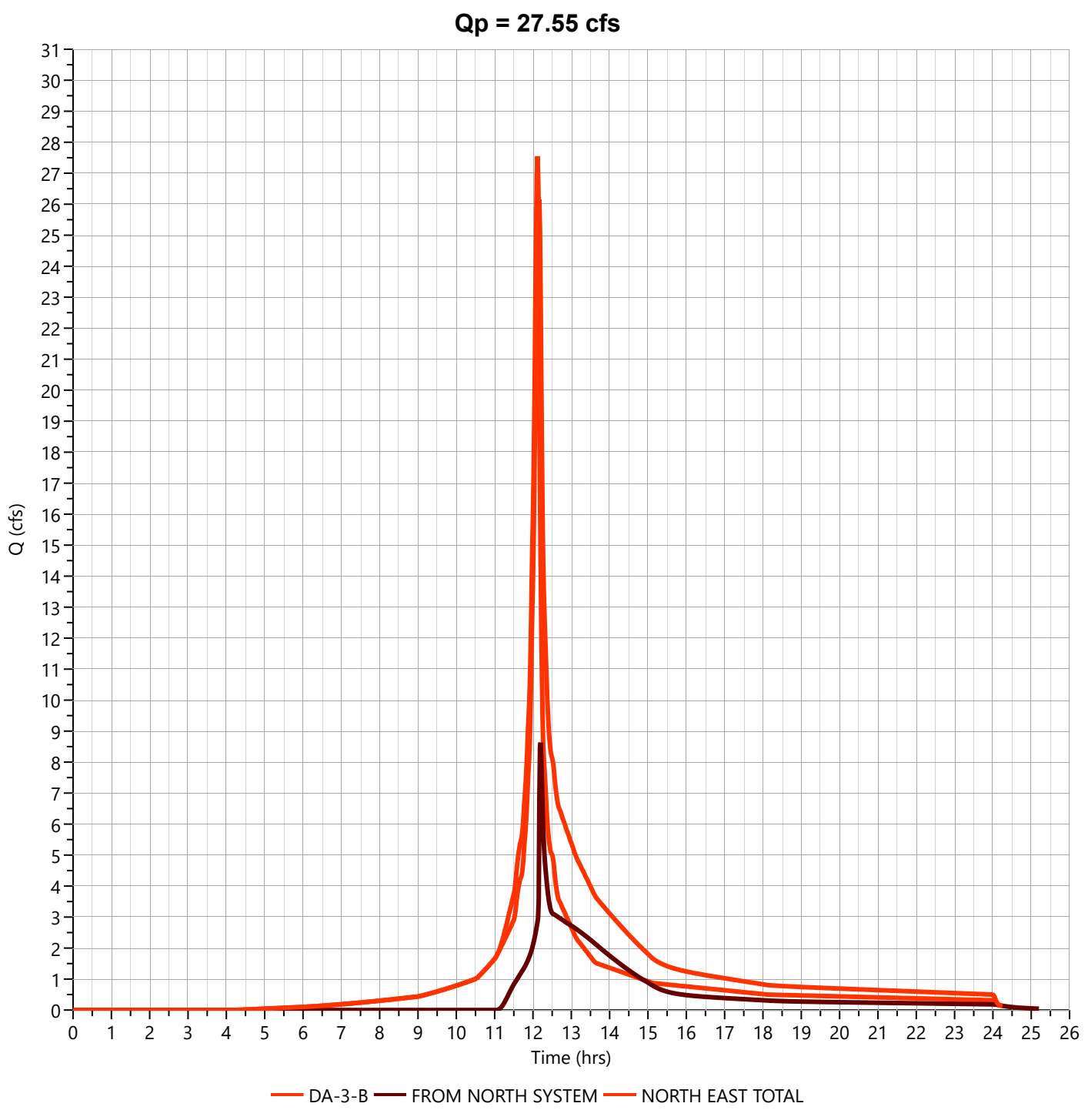
Center of mass detention time = 1.26 hrs



Post NORTH EAST TOTAL

Hyd. No. 20

Hydrograph Type	= Junction	Peak Flow	= 27.55 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.12 hrs
Time Interval	= 1 min	Hydrograph Volume	= 119,462 cuft
Inflow Hydrographs	= 10	Total Contrib. Area	= 3.299 ac



Design Storm Report

Custom Storm filename:

Hydrology Studio v 3.0.0.44

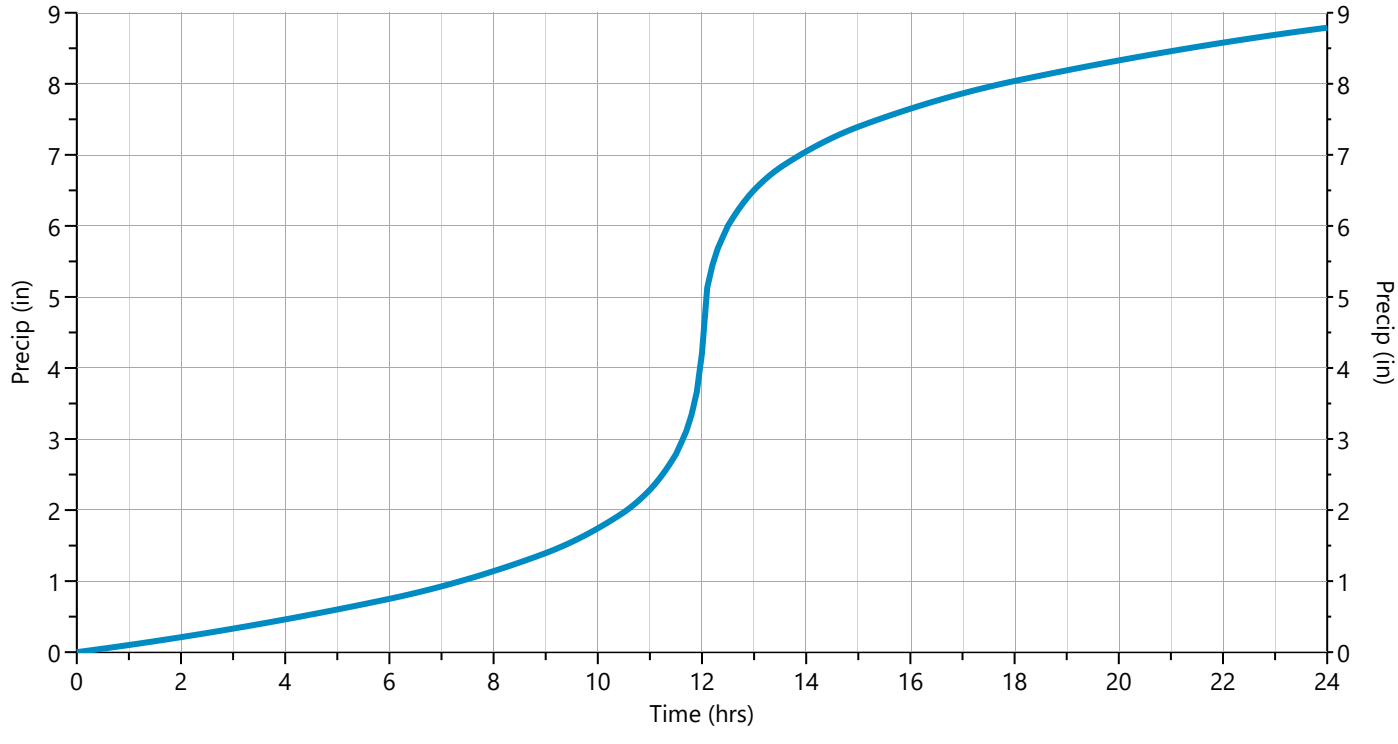
08-13-2026

Storm Distribution: NOAA-D, 24-hr

Storm Duration	Total Rainfall Volume (in)								
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	✔ 100-yr	
24 hrs	3.01	3.67	0.00	4.75	5.65	6.88	7.80	8.79	

Incremental Rainfall Distribution, 100-yr

Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
11.60	0.026516	11.78	0.038280	11.97	0.091633	12.15	0.053119	12.33	0.027909
11.62	0.027909	11.80	0.038284	11.98	0.091639	12.17	0.053120	12.35	0.027907
11.63	0.027908	11.82	0.053119	12.00	0.091632	12.18	0.053123	12.37	0.027909
11.65	0.027909	11.83	0.053123	12.02	0.152898	12.20	0.053120	12.38	0.027907
11.67	0.027907	11.85	0.053120	12.03	0.152906	12.22	0.038280	12.40	0.027910
11.68	0.027909	11.87	0.053119	12.05	0.152898	12.23	0.038280	12.42	0.026516
11.70	0.027907	11.88	0.053123	12.07	0.152907	12.25	0.038281	12.43	0.026518
11.72	0.038280	11.90	0.053120	12.08	0.152898	12.27	0.038280	12.45	0.026516
11.73	0.038282	11.92	0.091638	**12.10**	**0.152907**	12.28	0.038282	12.47	0.026515
11.75	0.038280	11.93	0.091633	12.12	0.053119	12.30	0.038279	12.48	0.026518
11.77	0.038281	11.95	0.091639	12.13	0.053123	12.32	0.027907	12.50	0.026516



IDF Report

IDF filename: Derby Summit st NOAA.IDF

Hydrology Studio v 3.0.0.44

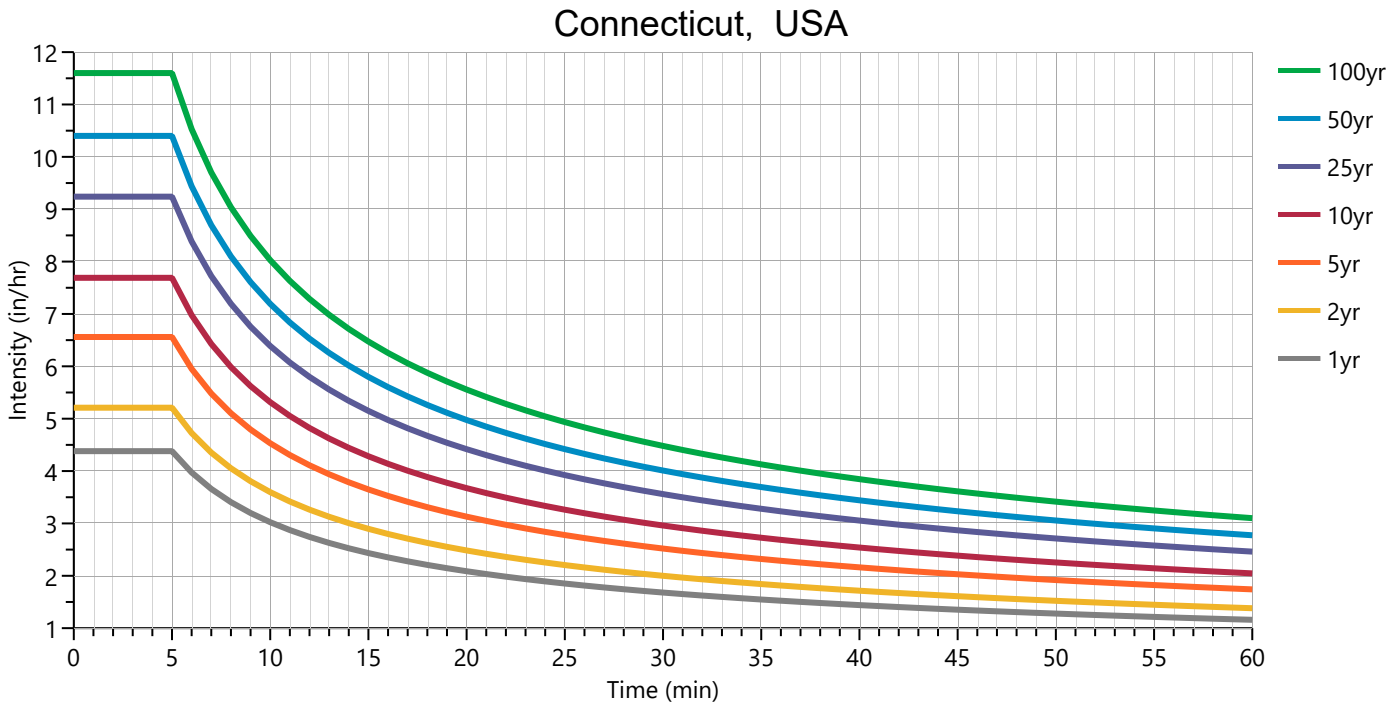
08-13-2026

Equation Coefficients	Intensity = B / (Tc + D)^E (in/hr)								
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
B	10.3584	12.3122	0.0000	15.4927	18.1288	21.7643	24.4797	27.2643	
D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
E	0.5348	0.5344	0.0000	0.5340	0.5328	0.5323	0.5319	0.5310	

Minimum Tc = 5 minutes

Tc (min)	Intensity Values (in/hr)								
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
Cf	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
5	4.38	5.21	0	6.56	7.69	9.24	10.40	11.60	
10	3.02	3.60	0	4.53	5.32	6.39	7.19	8.03	
15	2.43	2.90	0	3.65	4.28	5.15	5.80	6.47	
20	2.09	2.48	0	3.13	3.67	4.42	4.98	5.56	
25	1.85	2.20	0	2.78	3.26	3.92	4.42	4.94	
30	1.68	2.00	0	2.52	2.96	3.56	4.01	4.48	
35	1.55	1.84	0	2.32	2.73	3.28	3.69	4.13	
40	1.44	1.72	0	2.16	2.54	3.05	3.44	3.85	
45	1.35	1.61	0	2.03	2.38	2.87	3.23	3.61	
50	1.28	1.52	0	1.92	2.25	2.71	3.06	3.42	
55	1.21	1.45	0	1.82	2.14	2.58	2.90	3.25	
60	1.16	1.38	0	1.74	2.05	2.46	2.77	3.10	

Cf = Correction Factor applied to Rational Method runoff coefficient.



Precipitation Report

Precipitation filename: derby-noaa-ct.pcp

Hydrology Studio v 3.0.0.44 (Rainfall totals in Inches)

08-13-2026

	Active	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Active			✔			✔	✔	✔	✔
SCS Storms	**> SCS Dimensionless Storms**								
SCS 6hr		2.04	2.42	0	3.05	3.57	4.29	4.82	5.39
Type I, 24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
Type IA, 24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
Type II, 24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
Type II FL, 24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
Type III, 24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
Synthetic Storms	**> IDF-Based Synthetic Storms**								
1-hr		1.16	1.38	0	1.74	2.05	2.46	2.77	3.10
2-hr		1.60	1.91	0	2.40	2.83	3.40	3.84	4.29
3-hr		1.93	2.30	0	2.90	3.42	4.11	4.64	5.19
6-hr		2.67	3.18	0	4.01	4.73	5.69	6.42	7.18
12-hr		3.68	4.39	0	5.54	6.53	7.87	8.88	9.94
24-hr		5.09	6.07	0	7.65	9.03	10.88	12.28	13.77
Huff Distribution	**> 1st Quartile (0 to 6 hrs)**								
1-hr		1.07	1.28	0	1.61	1.89	2.27	2.56	2.86
2-hr		1.39	1.64	0	2.06	2.41	2.88	3.24	3.62
3-hr		1.60	1.90	0	2.38	2.78	3.33	3.74	4.17
6-hr		2.04	2.42	0	3.05	3.57	4.29	4.82	5.39
Huff Distribution	**> 2nd Quartile (>6 to 12 hrs)**								
8-hr		0	0	0	0	0	0	0	0
12-hr		2.54	3.05	0	3.89	4.58	5.53	6.24	6.99
Huff Distribution	**> 3rd Quartile (>12 to 24 hrs)**								
18-hr		0	0	0	0	0	0	0	0
24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
Custom Storms	**> Custom Storm Distributions**								
My Custom Storm 1		0	0	0	0	0	0	0	0
My Custom Storm 2		0	0	0	0	0	0	0	0
My Custom Storm 3		0	0	0	0	0	0	0	0
My Custom Storm 4		0	0	0	0	0	0	0	0
My Custom Storm 5		0	0	0	0	0	0	0	0
My Custom Storm 6		0	0	0	0	0	0	0	0
My Custom Storm 7		0	0	0	0	0	0	0	0
My Custom Storm 8		0	0	0	0	0	0	0	0
My Custom Storm 9		0	0	0	0	0	0	0	0
My Custom Storm 10		0	0	0	0	0	0	0	0

Precipitation Report Cont'd

Precipitation filename: derby-noaa-ct.pcp

Rainfall totals in Inches

08-13-2026

	Active	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Active			✔			✔	✔	✔	✔
Huff Indiana	**> Indianapolis**								
30-min		0.84	1.00	0	1.26	1.48	1.78	2.00	2.24
1-hr		1.07	1.28	0	1.61	1.89	2.27	2.56	2.86
2-hr		1.39	1.64	0	2.06	2.41	2.88	3.24	3.62
3-hr		1.60	1.90	0	2.38	2.78	3.33	3.74	4.17
6-hr		2.04	2.42	0	3.05	3.57	4.29	4.82	5.39
12-hr		2.54	3.05	0	3.89	4.58	5.53	6.24	6.99
24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
Huff Indiana	**> Evansville**								
30-min		0.84	1.00	0	1.26	1.48	1.78	2.00	2.24
1-hr		1.07	1.28	0	1.61	1.89	2.27	2.56	2.86
2-hr		1.39	1.64	0	2.06	2.41	2.88	3.24	3.62
3-hr		1.60	1.90	0	2.38	2.78	3.33	3.74	4.17
6-hr		2.04	2.42	0	3.05	3.57	4.29	4.82	5.39
12-hr		2.54	3.05	0	3.89	4.58	5.53	6.24	6.99
24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
Huff Indiana	**> Fort Wayne**								
30-min		0.84	1.00	0	1.26	1.48	1.78	2.00	2.24
1-hr		1.07	1.28	0	1.61	1.89	2.27	2.56	2.86
2-hr		1.39	1.64	0	2.06	2.41	2.88	3.24	3.62
3-hr		1.60	1.90	0	2.38	2.78	3.33	3.74	4.17
6-hr		2.04	2.42	0	3.05	3.57	4.29	4.82	5.39
12-hr		2.54	3.05	0	3.89	4.58	5.53	6.24	6.99
24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
Huff Indiana	**> South Bend**								
30-min		0.84	1.00	0	1.26	1.48	1.78	2.00	2.24
1-hr		1.07	1.28	0	1.61	1.89	2.27	2.56	2.86
2-hr		1.39	1.64	0	2.06	2.41	2.88	3.24	3.62
3-hr		1.60	1.90	0	2.38	2.78	3.33	3.74	4.17
6-hr		2.04	2.42	0	3.05	3.57	4.29	4.82	5.39
12-hr		2.54	3.05	0	3.89	4.58	5.53	6.24	6.99
24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79

Precipitation Report Cont'd

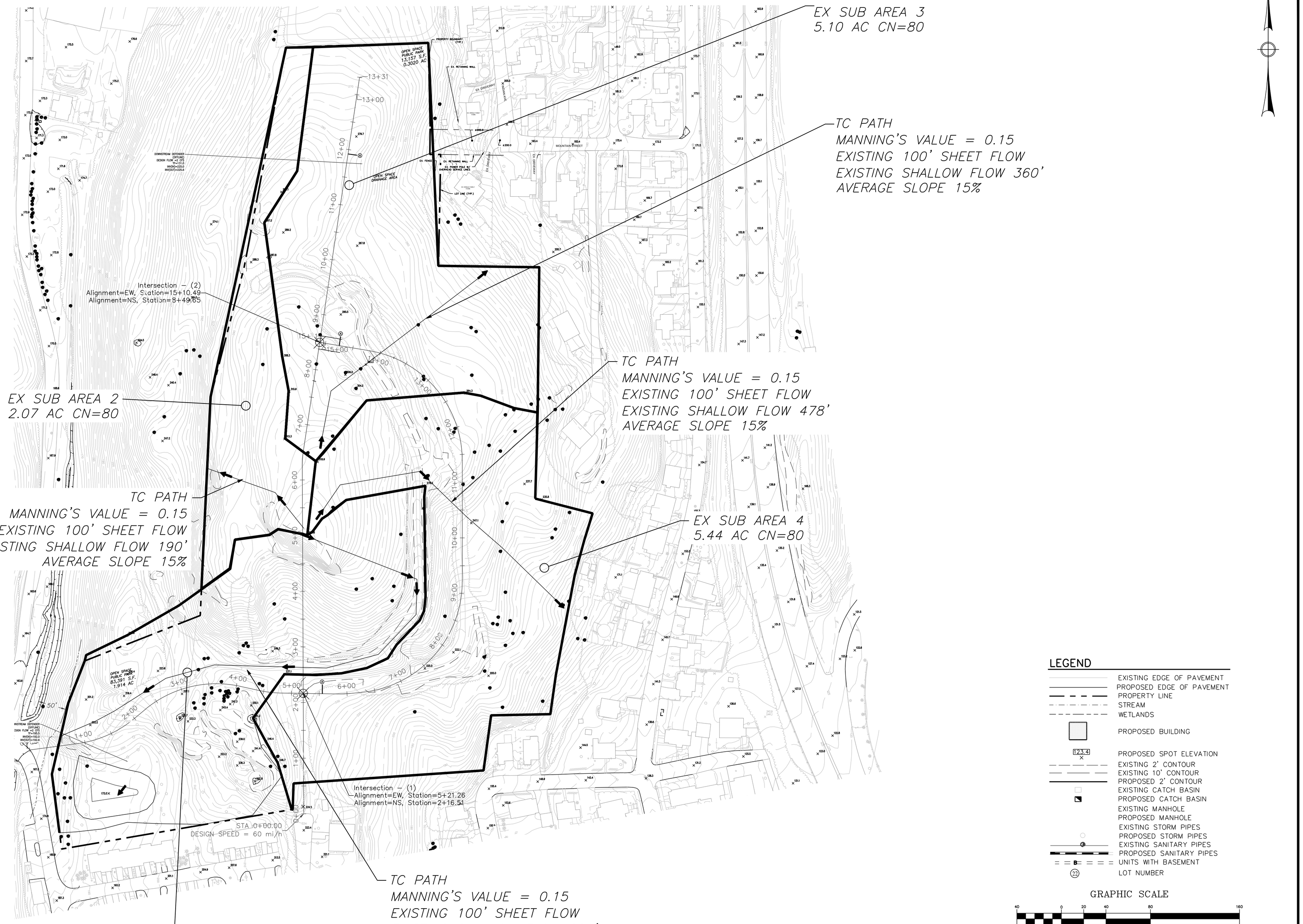
Precipitation filename: derby-noaa-ct.pcp

Rainfall totals in Inches

08-13-2026

	Active	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Active			✔			✔	✔	✔	✔
NRCS Storms	**> NRCS Dimensionless Storms**								
NRCS MSE1, 24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
NRCS MSE2, 24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
NRCS MSE3, 24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
NRCS MSE4, 24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
NRCS MSE5, 24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
NRCS MSE6, 24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
NOAA-A, 24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
NOAA-B, 24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
NOAA-C, 24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
NOAA-D, 24-hr	✔	3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
NRCC-A, 24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
NRCC-B, 24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
NRCC-C, 24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
NRCC-D, 24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
CA-1, 24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
CA-2, 24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
CA-3, 24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
CA-4, 24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
CA-5, 24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
CA-6, 24-hr		3.01	3.67	0	4.75	5.65	6.88	7.80	8.79
FDOT Storms	**> Florida DOT Storms**								
FDOT, 1-hr		1.07	1.28	2.36	1.61	1.89	2.27	2.56	2.86
FDOT, 2-hr		1.39	1.64	3.00	2.06	2.41	2.88	3.24	3.62
FDOT, 4-hr		0	3.28	3.76	4.00	4.80	5.50	6.20	6.80
FDOT, 8-hr		0	3.76	4.32	4.80	5.60	6.20	7.20	8.00
FDOT, 24-hr		3.01	3.67	4.75	4.75	5.65	6.88	7.80	8.79
FDOT, 72-hr		0	5.44	6.10	6.74	7.98	9.92	11.60	13.40
SFWMD, 72-hr		0	5.44	6.10	6.74	7.98	9.92	11.60	13.40
Austin Storms	**> Austin Frequency Storms**								
Austin Zone 1, 24-hr		0	4.14	0	5.51	6.84	8.90	10.69	12.80
Austin Zone 2, 24-hr		0	4.06	0	5.38	6.65	8.59	10.28	12.23

Appendix B
Drainage Area Maps, Existing & Proposed Conditions



LEGEND

- EXISTING EDGE OF PAVEMENT
- PROPOSED EDGE OF PAVEMENT
- PROPERTY LINE
- STREAM
- WETLANDS
- PROPOSED BUILDING
- PROPOSED SPOT ELEVATION
- EXISTING 2' CONTOUR
- EXISTING 10' CONTOUR
- PROPOSED 2' CONTOUR
- EXISTING CATCH BASIN
- PROPOSED CATCH BASIN
- EXISTING MANHOLE
- PROPOSED MANHOLE
- EXISTING STORM PIPES
- PROPOSED STORM PIPES
- EXISTING SANITARY PIPES
- PROPOSED SANITARY PIPES
- UNITS WITH BASEMENT
- LOT NUMBER

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

ROSE •TISO & CO. LLC.
ARCHITECTS ● SURVEYORS ● ENGINEERS
WWW.ROSETISO.COM
35 BRENTWOOD AVENUE, FAIRFIELD, CT 06825
TEL: (203)610-6262 ● FAX: (203)610-6404

REVISIONS

NO.	BY	DATE	DESCRIPTION
1.	MJS	03-05-26	ALTERNATIVE ACCESS
2.	MJS	06-24-26	ENGINEERING COMMENTS

PROJECT TITLE

PROPOSED SUBDIVISION

SUMMIT STREET EXTENSION
DERBY, CONNECTICUT

Prepared For:

SUMMIT HILL, LLC

SHEET TITLE

EXISTING DRAINAGE AREA MAP

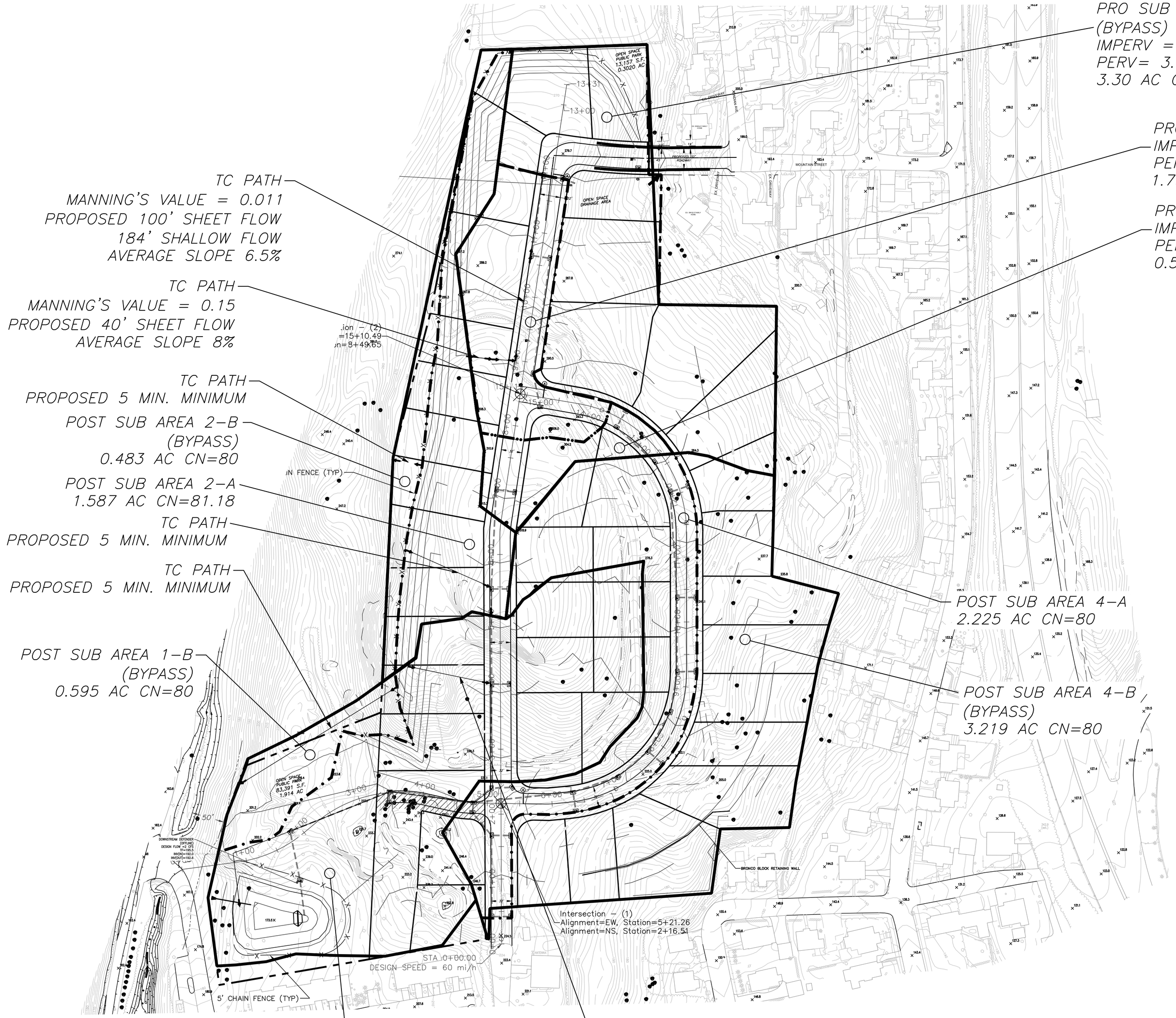
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DRAWN BY: SFS	DATE: 01-05-23
CHECKED BY: MJS	PROJECT NUMBER: 2508
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SEAL

STATE OF CONNECTICUT · MANUEL JOSE SILVA · 24924 · REGISTERED PROFESSIONAL ENGINEER

SHEET NUMBER

C-1



LEGEND

- EXISTING EDGE OF PAVEMENT
- PROPOSED EDGE OF PAVEMENT
- PROPERTY LINE
- STREAM
- WETLANDS
- PROPOSED BUILDING
- PROPOSED SPOT ELEVATION
- EXISTING 2' CONTOUR
- EXISTING 10' CONTOUR
- PROPOSED 2' CONTOUR
- EXISTING CATCH BASIN
- PROPOSED CATCH BASIN
- EXISTING MANHOLE
- PROPOSED MANHOLE
- EXISTING STORM PIPES
- PROPOSED STORM PIPES
- EXISTING SANITARY PIPES
- PROPOSED SANITARY PIPES
- GRADE TO DRAIN
- SITE LIGHTING
- UNITS WITH BASEMENT

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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35 BRENTWOOD AVENUE, FAIRFIELD, CT 06825
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REVISIONS

NO.	BY	DATE	DESCRIPTION
1.	MJS	03-05-26	ALTERNATIVE ACCESS
2.	MJS	06-24-26	ENGINEERING COMMENTS

PROJECT TITLE

PROPOSED SUBDIVISION

SUMMIT STREET EXTENSION DERBY, CONNECTICUT

Prepared For:

SUMMIT HILL, LLC

SHEET TITLE

PROPOSED DRAINAGE AREA MAP

DESIGNED BY: SFS	SCALE: 1"=80'
DRAWN BY: SFS	DATE: 01-05-23
CHECKED BY: MJS	PROJECT NUMBER: 2508
CAD FILE: R:\2508\dwg\2508	

SEAL

STATE OF CONNECTICUT · MANUEL JOSE SILVA · 29149 · REGISTERED PROFESSIONAL ENGINEER

SHEET NUMBER

C-2

Soil Map—State of Connecticut, Western Part



Map Scale: 1:3,320 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 45 90 180 270

Feet: 0 150 300 600 900

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

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

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

Special Point Features

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

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: State of Connecticut, Western Part
Survey Area Data: Version 6, Sep 16, 2025

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

Date(s) aerial images were photographed: Oct 21, 2022—Oct 27, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
60D	Canton and Charlton soils, 15 to 25 percent slopes	2.0	3.8%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	2.0	3.7%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	5.6	10.4%
75C	Hollis-Chatfield-Rock outcrop complex, 3 to 15 percent slopes	4.0	7.5%
75E	Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes	17.3	31.8%
229B	Agawam-Urban land complex, 0 to 8 percent slopes	2.2	4.1%
260B	Charlton-Urban land complex, 3 to 8 percent slopes	5.5	10.1%
260C	Charlton-Urban land complex, 8 to 15 percent slopes	0.3	0.6%
260D	Charlton-Urban land complex, 15 to 25 percent slopes	1.2	2.2%
273C	Urban land-Charlton-Chatfield complex, rocky, 3 to 15 percent slopes	0.3	0.6%
273E	Urban land-Charlton-Chatfield complex, rocky, 15 to 45 percent slopes	8.3	15.2%
306	Udorthents-Urban land complex	5.5	10.1%
Totals for Area of Interest		**54.3**	**100.0%**

State of Connecticut, Western Part

75E—Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes

Map Unit Setting

National map unit symbol: 9lqp
Landscape: Uplands
Elevation: 0 to 1,200 feet
Mean annual precipitation: 43 to 56 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition

Hollis and similar soils: 35 percent
Chatfield and similar soils: 30 percent
Rock outcrop: 15 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hollis

Setting

Landscape: Uplands
Landform: Bedrock controlled ridges, Bedrock controlled hills
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy melt-out till derived from granite and/or schist and/or gneiss

Typical profile

Oa - 0 to 1 inches: highly decomposed plant material
A - 1 to 6 inches: gravelly fine sandy loam
Bw1 - 6 to 9 inches: channery fine sandy loam
Bw2 - 9 to 15 inches: gravelly fine sandy loam
2R - 15 to 80 inches: bedrock

Properties and qualities

Slope: 15 to 45 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: F144AY033MA - Shallow Dry Till Uplands
Hydric soil rating: No

Description of Chatfield

Setting

Landscape: Uplands
Landform: Bedrock controlled ridges, Bedrock controlled hills
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy melt-out till derived from granite and/or schist and/or gneiss

Typical profile

Oa - 0 to 1 inches: highly decomposed plant material
A - 1 to 6 inches: gravelly fine sandy loam
Bw1 - 6 to 15 inches: gravelly fine sandy loam
Bw2 - 15 to 29 inches: gravelly fine sandy loam
2R - 29 to 80 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 45 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Rock Outcrop

Typical profile

R - 0 to 0 inches: bedrock

Properties and qualities

Slope: 15 to 45 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Runoff class: Very high

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: Unranked

Minor Components

Charlton

Percent of map unit: 7 percent
Landscape: Uplands
Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Sutton, very stony

Percent of map unit: 5 percent
Landscape: Uplands
Landform: Drainageways, Depressions
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Leicester

Percent of map unit: 5 percent
Landscape: Uplands
Landform: Drainageways, Depressions
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

Brimfield

Percent of map unit: 1 percent
Landscape: Uplands
Landform: Bedrock controlled ridges, Bedrock controlled hills
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Unnamed, red parent material

Percent of map unit: 1 percent
Hydric soil rating: No

Unnamed, sandy subsoil

Percent of map unit: 1 percent
Hydric soil rating: No

Data Source Information

Soil Survey Area: State of Connecticut, Western Part
Survey Area Data: Version 6, Sep 16, 2025

State of Connecticut, Western Part

75C—Hollis-Chatfield-Rock outcrop complex, 3 to 15 percent slopes

Map Unit Setting

National map unit symbol: 9lqn
Landscape: Uplands
Elevation: 0 to 1,200 feet
Mean annual precipitation: 43 to 56 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition

Hollis and similar soils: 35 percent
Chatfield and similar soils: 30 percent
Rock outcrop: 15 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hollis

Setting

Landscape: Uplands
Landform: Bedrock controlled ridges, Bedrock controlled hills
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy melt-out till derived from granite and/or schist and/or gneiss

Typical profile

Oa - 0 to 1 inches: highly decomposed plant material
A - 1 to 6 inches: gravelly fine sandy loam
Bw1 - 6 to 9 inches: channery fine sandy loam
Bw2 - 9 to 15 inches: gravelly fine sandy loam
2R - 15 to 80 inches: bedrock

Properties and qualities

Slope: 3 to 15 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: F144AY033MA - Shallow Dry Till Uplands
Hydric soil rating: No

Description of Chatfield

Setting

Landscape: Uplands
Landform: Bedrock controlled ridges, Bedrock controlled hills
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy melt-out till derived from granite and/or schist and/or gneiss

Typical profile

Oa - 0 to 1 inches: highly decomposed plant material
A - 1 to 6 inches: gravelly fine sandy loam
Bw1 - 6 to 15 inches: gravelly fine sandy loam
Bw2 - 15 to 29 inches: gravelly fine sandy loam
2R - 29 to 80 inches: unweathered bedrock

Properties and qualities

Slope: 3 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Rock Outcrop

Typical profile

R - 0 to 0 inches: bedrock

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Runoff class: Very high

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: Unranked

Minor Components

Charlton

Percent of map unit: 7 percent
Landscape: Uplands
Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Sutton, very stony

Percent of map unit: 5 percent
Landscape: Uplands
Landform: Drainageways, Depressions
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Leicester

Percent of map unit: 5 percent
Landscape: Uplands
Landform: Drainageways, Depressions
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

Brimfield

Percent of map unit: 1 percent
Landscape: Uplands
Landform: Bedrock controlled ridges, Bedrock controlled hills
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Unnamed, sandy subsoil

Percent of map unit: 1 percent
Hydric soil rating: No

Unnamed, red parent material

Percent of map unit: 1 percent
Hydric soil rating: No

Data Source Information

Soil Survey Area: State of Connecticut, Western Part
Survey Area Data: Version 6, Sep 16, 2025

APPENDIX C
Water quality Volume Calcs

WATER QUALITY VOLUME COMPUTATION SOUTH POND:
RESIDENTAL DEVELOPMENT (SOUTH) = 9.83 AC SF
IMPERV=1.19 AC OR 12.1%
WQV= (P*RV*A); RV=0.05+0.009*I
RV= 0.05+0.009*I= 0.1589 WATERSHED INCHES
WQV= (1.3*0.1589"*428,194)/12=5,670 CF REQUIRED
PROVIDED = 7,371 CF @ ELEVATION 176.5'

RESIDENTIAL DEVELOPMENT NORTH = 5.097 AC
IMPERVIOUS = 0.517 AC OR 10.1%
WQV= (P*RV*A); RV=0.05+0.009*I
RV= 0.05+0.009*I= 0.141 WATERSHED INCHES
WQV= (0.141"*222,025)/12=2,608 CF REQUIRED
PROVIDED = 2,608 CF @ ELEVATION 224.78'

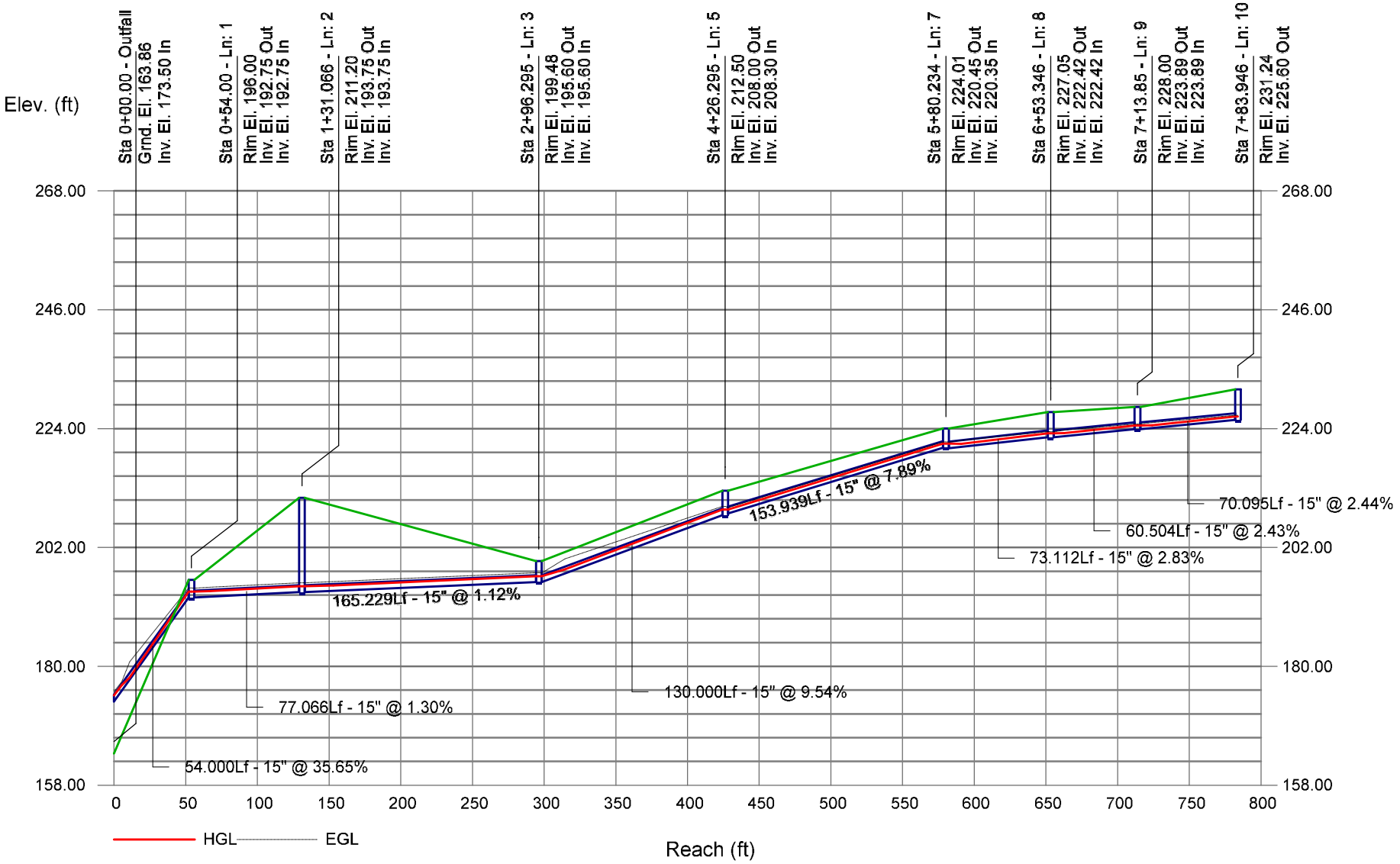
APPENDIX D

HGL storm sewer calculation 10-year storm

Storm sewer Calcs with Gutter flow analysis

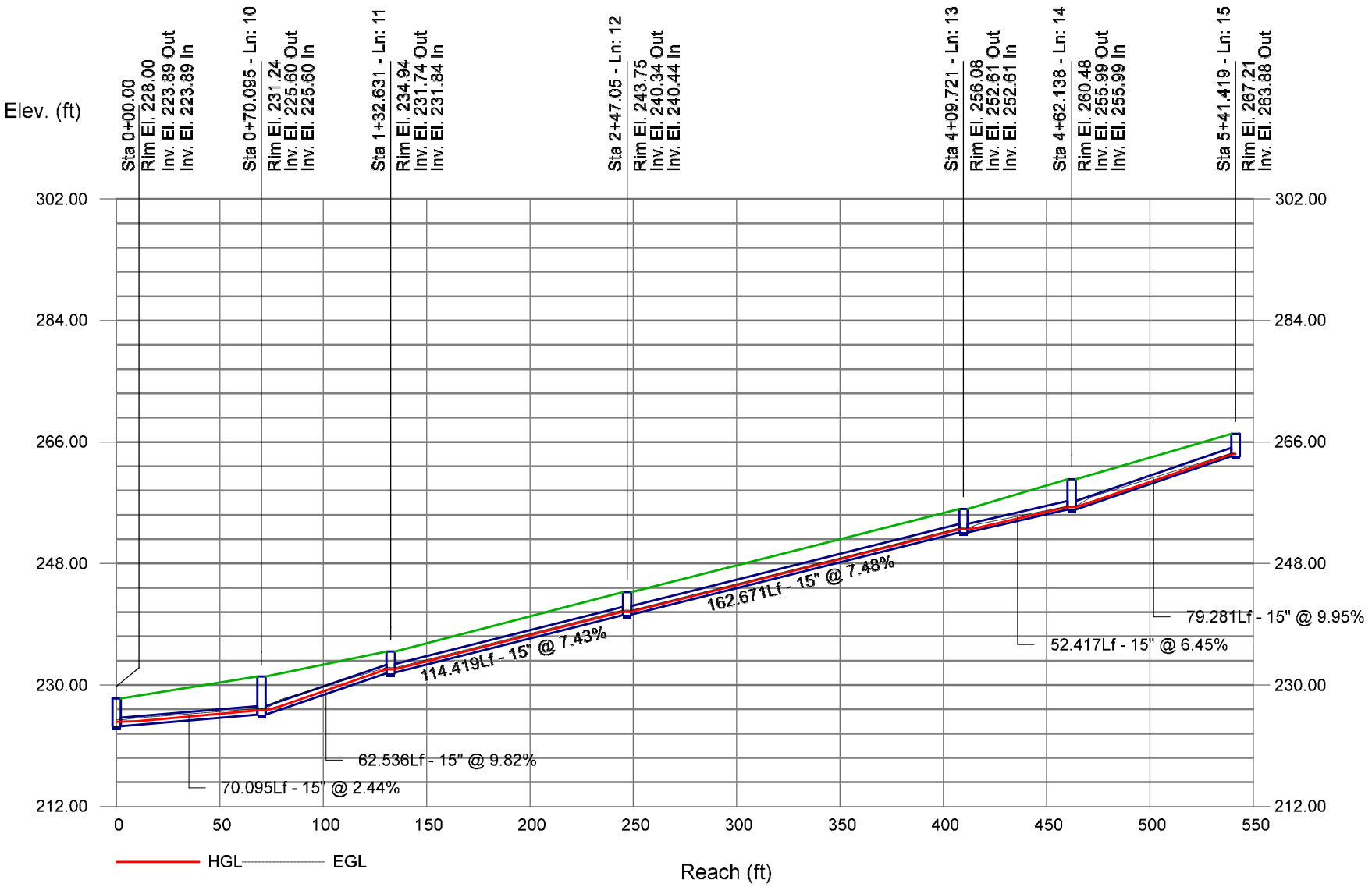
Storm Sewer Profile

Proj. file: Storrm sewers.stm



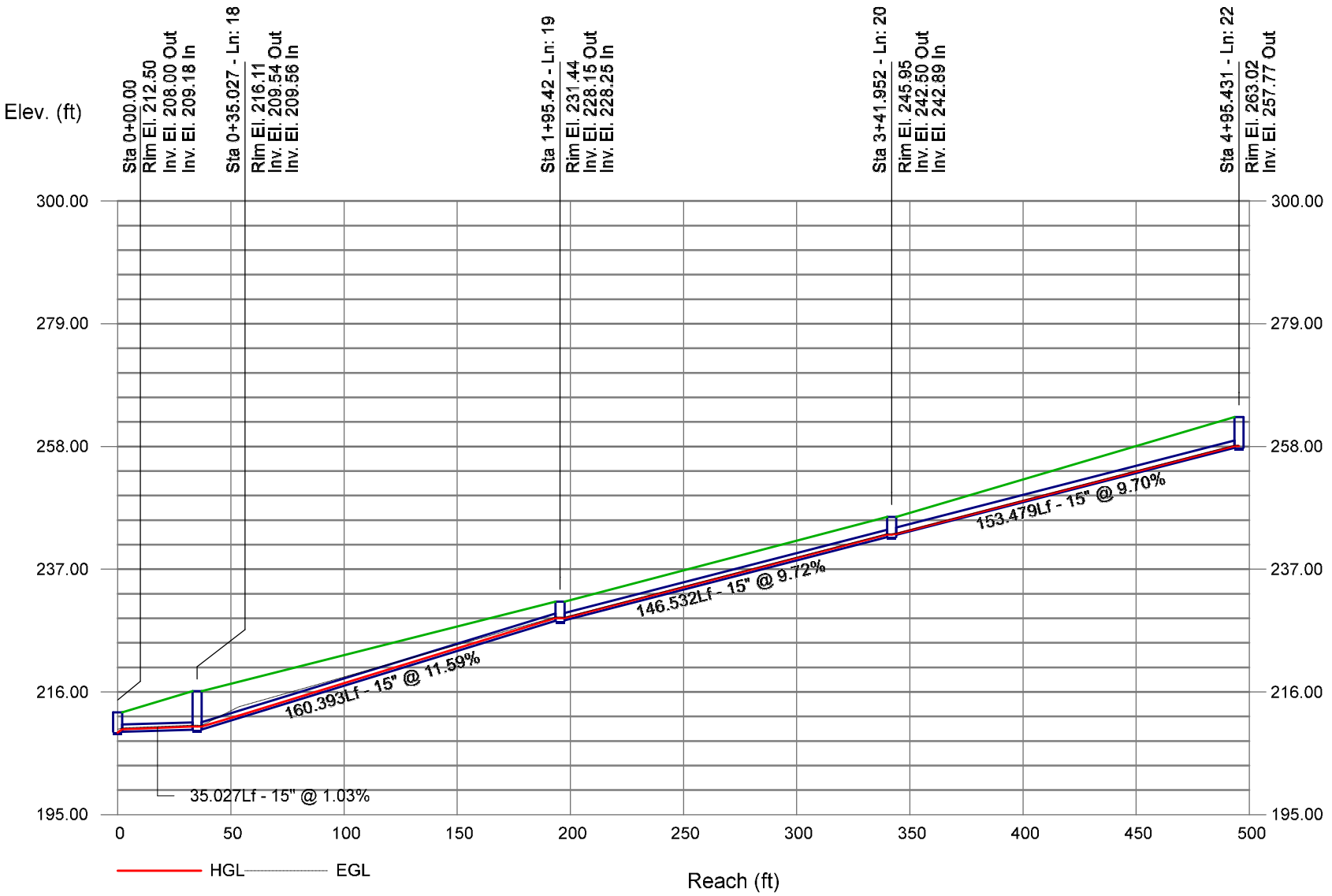
Storm Sewer Profile

Proj. file: Storrm sewers.stm

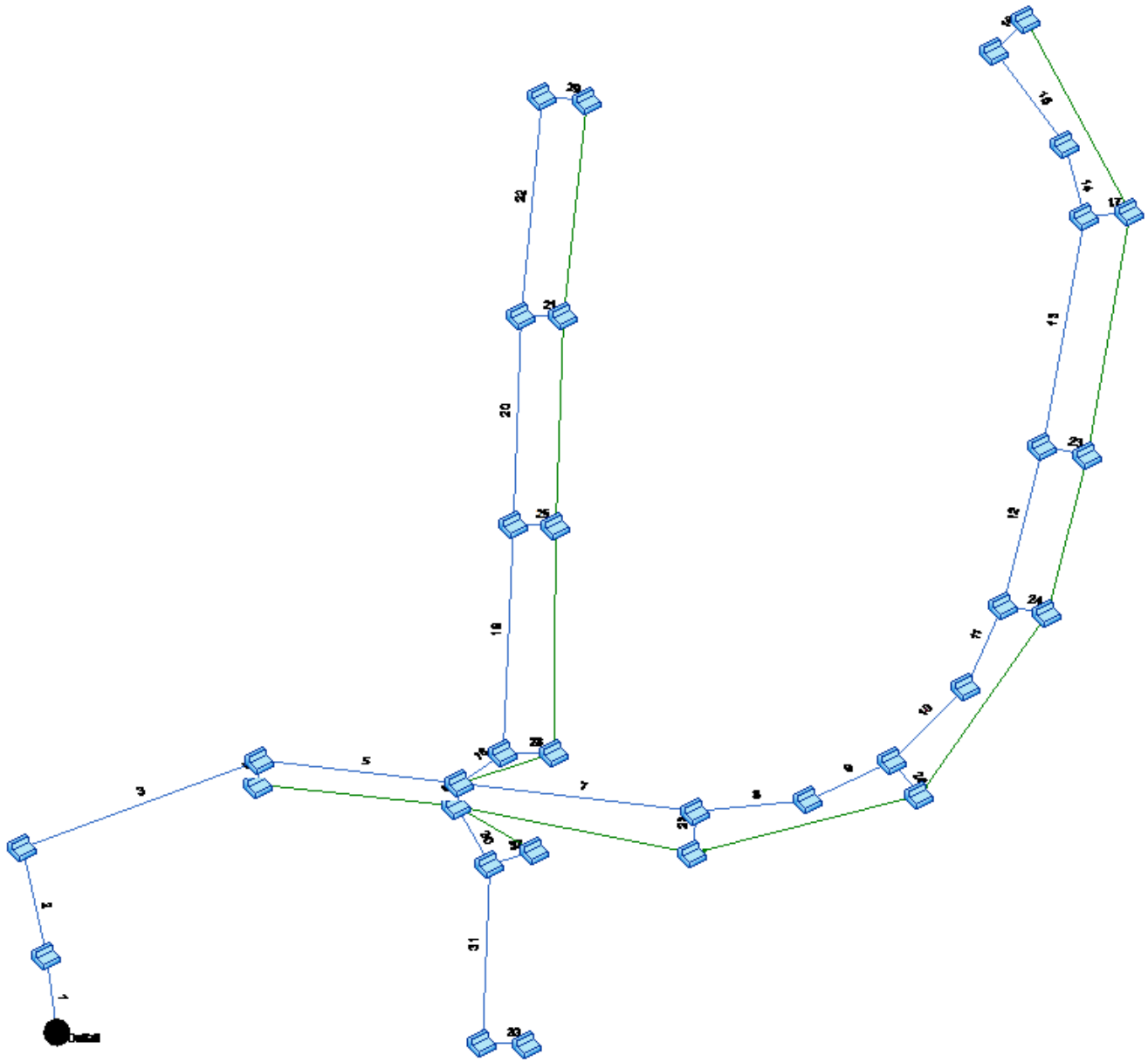


Storm Sewer Profile

Proj. file: Storrm sewers.stm



Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Project File: Storrm sewers.stm	Number of lines: 33	Date: 6/26/2026

Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
1	End	54.000	-97.078	Comb	0.00	0.06	0.90	5.0	173.50	35.65	192.75	15	Cir	0.012	0.50	196.00	Pipe - (252)
2	1	77.066	-4.421	Comb	0.00	0.06	0.90	5.0	192.75	1.30	193.75	15	Cir	0.012	1.48	211.20	Pipe - (244)
3	2	165.229	79.718	Comb	0.00	0.06	0.90	5.0	193.75	1.12	195.60	15	Cir	0.012	1.82	199.48	Pipe - (243)
4	3	17.082	116.686	Comb	0.00	0.06	0.90	5.0	195.60	1.52	195.86	15	Cir	0.012	1.00	199.11	Pipe - (247)
5	3	130.000	29.000	Comb	0.00	0.06	0.90	5.0	195.60	9.54	208.00	15	Cir	0.012	1.66	212.50	Pipe - (242)
6	5	16.000	90.000	Comb	0.00	0.06	0.90	5.0	208.09	1.19	208.28	15	Cir	0.012	0.94	212.50	Pipe - (234)
7	5	153.939	0.000	Comb	0.00	0.06	0.90	5.0	208.30	7.89	220.45	15	Cir	0.012	1.50	224.01	Pipe - (233)
8	7	73.112	-13.226	Comb	0.00	0.06	0.90	5.0	220.35	2.83	222.42	15	Cir	0.012	0.61	227.05	Pipe - (266)
9	8	60.504	-20.809	Comb	0.00	0.06	0.90	5.0	222.42	2.43	223.89	15	Cir	0.012	1.48	228.00	Pipe - (232)
10	9	70.095	-20.376	Comb	0.00	0.06	0.90	5.0	223.89	2.44	225.60	15	Cir	0.012	0.60	231.24	Pipe - (265)
11	10	62.536	-20.329	Comb	0.00	0.06	0.90	5.0	225.60	9.82	231.74	15	Cir	0.012	1.48	234.94	Pipe - (231)
12	11	114.419	-9.356	Comb	0.00	0.06	0.90	5.0	231.84	7.43	240.34	15	Cir	0.012	1.50	243.75	Pipe - (230)
13	12	162.671	-3.640	Comb	0.00	0.06	0.90	5.0	240.44	7.48	252.61	15	Cir	0.012	1.46	256.08	Pipe - (229)
14	13	52.417	-23.773	Comb	0.00	0.06	0.90	5.0	252.61	6.45	255.99	15	Cir	0.012	0.60	260.48	Pipe - (264)
15	14	79.281	-20.372	Comb	0.00	0.06	0.90	5.0	255.99	9.95	263.88	15	Cir	0.012	1.47	267.21	Pipe - (228)
16	15	29.485	77.993	Comb	0.00	0.06	0.90	5.0	263.98	1.05	264.29	15	Cir	0.012	1.00	267.15	Pipe - (227)
17	13	29.529	74.678	Comb	0.00	0.06	0.90	5.0	252.92	1.02	253.22	15	Cir	0.012	1.00	256.08	Pipe - (271)
18	5	35.027	-44.029	Comb	0.00	0.06	0.90	5.0	209.18	1.03	209.54	15	Cir	0.012	1.46	216.11	Pipe - (276)
19	18	160.393	-50.812	Comb	0.00	0.06	0.90	5.0	209.56	11.59	228.15	15	Cir	0.012	1.50	231.44	Pipe - (203)
20	19	146.532	-0.428	Comb	0.00	0.06	0.90	5.0	228.25	9.72	242.50	15	Cir	0.012	1.75	245.95	Pipe - (202)
21	20	27.339	89.968	Comb	0.00	0.06	0.90	5.0	242.70	1.50	243.11	15	Cir	0.012	1.00	245.96	Pipe - (205)
22	20	153.479	3.119	Comb	0.00	0.06	0.90	5.0	242.89	9.70	257.77	15	Cir	0.012	1.50	0.00	Pipe - (201)
23	12	29.438	90.226	Comb	0.00	0.06	0.90	5.0	240.08	2.75	240.89	15	Cir	0.012	1.00	243.74	Pipe - (270)

Project File: Storrm sewers.stm | Number of lines: 33 | Date: 6/26/2026

Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
24	11	29.319	79.689	Comb	0.00	0.06	0.90	5.0	231.89	0.99	232.18	15	Cir	0.012	1.00	235.03	Pipe - (269)
25	19	27.356	89.612	Comb	0.00	0.06	0.90	5.0	228.14	1.54	228.56	15	Cir	0.012	1.00	231.41	Pipe - (206)
26	9	29.553	80.138	Comb	0.00	0.06	0.90	5.0	224.85	0.98	225.14	15	Cir	0.012	1.00	228.00	Pipe - (268)
27	7	29.556	87.270	Comb	0.00	0.06	0.90	5.0	220.86	0.98	221.15	15	Cir	0.012	1.00	224.01	Pipe - (238)
28	18	32.611	36.535	Comb	0.00	0.06	0.90	5.0	209.64	0.98	209.96	15	Cir	0.012	1.00	217.95	Pipe - (275)
29	22	29.000	90.000	Comb	0.00	0.06	0.90	5.0	257.87	1.55	258.32	15	Cir	0.012	1.00	0.00	Pipe - (200)
30	6	46.000	-35.000	Comb	0.00	0.06	0.90	5.0	208.25	1.00	208.71	15	Cir	0.012	1.48	212.14	Pipe - (235)
31	30	125.000	30.000	Comb	0.00	0.06	0.90	5.0	208.72	9.38	220.44	15	Cir	0.012	1.50	223.99	Pipe - (272)
32	30	30.000	-80.000	Comb	0.00	0.06	0.90	5.0	207.85	0.90	208.12	15	Cir	0.012	1.00	216.29	Pipe - (236)
33	31	29.252	-90.144	Comb	0.00	0.06	0.90	5.0	220.84	1.00	221.13	15	Cir	0.012	1.00	223.99	Pipe - (267)

Project File: Storrm sewers.stm | Number of lines: 33 | Date: 6/26/2026

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
1	Structure - (277)	Combination	196.00	Rect	4.00	4.00	15	Cir	192.75	15	Cir	192.75
2	Structure - (264)	Combination	211.20	Rect	4.00	4.00	15	Cir	193.75	15	Cir	193.75
3	Structure - (263)	Combination	199.48	Rect	4.00	4.00	15	Cir	195.60	15 15	Cir Cir	195.60 195.60
4	Structure - (272)	Combination	199.11	Rect	4.00	4.00	15	Cir	195.86			
5	Structure - (300)	Combination	212.50	Rect	4.00	4.00	15	Cir	208.00	15 15 15	Cir Cir Cir	208.09 208.30 209.18
6	Structure - (300)	Combination	212.50	Rect	4.00	4.00	15	Cir	208.28	15	Cir	208.25
7	Structure - (253)	Combination	224.01	Rect	4.00	4.00	15	Cir	220.45	15 15	Cir Cir	220.35 220.86
8	Structure - (296)	Combination	227.05	Rect	4.00	4.00	15	Cir	222.42	15	Cir	222.42
9	Structure - (252)	Combination	228.00	Rect	4.00	4.00	15	Cir	223.89	15 15	Cir Cir	223.89 224.85
10	Structure - (295)	Combination	231.24	Rect	4.00	4.00	15	Cir	225.60	15	Cir	225.60
11	Structure - (251)	Combination	234.94	Rect	4.00	4.00	15	Cir	231.74	15 15	Cir Cir	231.84 231.89
12	Structure - (250)	Combination	243.75	Rect	4.00	4.00	15	Cir	240.34	15 15	Cir Cir	240.44 240.08
13	Structure - (249)	Combination	256.08	Rect	4.00	4.00	15	Cir	252.61	15 15	Cir Cir	252.61 252.92
14	Structure - (294)	Combination	260.48	Rect	4.00	4.00	15	Cir	255.99	15	Cir	255.99
15	Structure - (248)	Combination	267.21	Rect	4.00	4.00	15	Cir	263.88	15	Cir	263.98
16	Structure - (247)	Combination	267.15	Rect	4.00	4.00	15	Cir	264.29			
17	Structure - (262)	Combination	256.08	Rect	4.00	4.00	15	Cir	253.22			
18	Structure - (217)	Combination	216.11	Rect	4.00	4.00	15	Cir	209.54	15 15	Cir Cir	209.56 209.64

Project File: Storrm sewers.stm | Number of Structures: 33 | Run Date: 6/26/2026

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
19	Structure - (216)	Combination	231.44	Rect	4.00	4.00	15	Cir	228.15	15 15	Cir Cir	228.25 228.14
20	Structure - (215)	Combination	245.95	Rect	4.00	4.00	15	Cir	242.50	15 15	Cir Cir	242.70 242.89
21	Structure - (219)	Combination	245.96	Rect	4.00	4.00	15	Cir	243.11			
22	Null Structure	Combination	0.00	Rect	4.00	4.00	15	Cir	257.77	15	Cir	257.87
23	Structure - (269)	Combination	243.74	Rect	4.00	4.00	15	Cir	240.89			
24	Structure - (261)	Combination	235.03	Rect	4.00	4.00	15	Cir	232.18			
25	Structure - (220)	Combination	231.41	Rect	4.00	4.00	15	Cir	228.56			
26	Structure - (260)	Combination	228.00	Rect	4.00	4.00	15	Cir	225.14			
27	Structure - (259)	Combination	224.01	Rect	4.00	4.00	15	Cir	221.15			
28	Structure - (221)	Combination	217.95	Rect	4.00	4.00	15	Cir	209.96			
29	Null Structure	Combination	0.00	Rect	4.00	4.00	15	Cir	258.32			
30	Structure - (274)	Combination	212.14	Rect	4.00	4.00	15	Cir	208.71	15 15	Cir Cir	208.72 207.85
31	Structure - (297)	Combination	223.99	Rect	4.00	4.00	15	Cir	220.44	15	Cir	220.84
32	Structure - (256)	Combination	216.29	Rect	4.00	4.00	15	Cir	208.12			
33	Structure - (298)	Combination	223.99	Rect	4.00	4.00	15	Cir	221.13			

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	54.000	0.06	1.96	0.90	0.05	1.76	5.0	16.4	4.2	7.36	41.77	6.42	15	35.65	173.50	192.75	174.63	193.83	163.86	196.00	Pipe - (252)
2	1	77.066	0.06	1.90	0.90	0.05	1.71	5.0	16.2	4.2	7.18	7.97	6.39	15	1.30	192.75	193.75	193.83	194.82	196.00	211.20	Pipe - (244)
3	2	165.229	0.06	1.84	0.90	0.05	1.66	5.0	15.8	4.3	7.06	7.40	6.33	15	1.12	193.75	195.60	194.82	196.66	211.20	199.48	Pipe - (243)
4	3	17.082	0.06	0.06	0.90	0.05	0.05	5.0	5.0	6.5	0.32	8.63	1.25	15	1.52	195.60	195.86	196.66	196.08	199.48	199.11	Pipe - (247)
5	3	130.000	0.06	1.73	0.90	0.05	1.55	5.0	15.5	4.3	6.68	21.61	6.07	15	9.54	195.60	208.00	196.66	209.04	199.48	212.50	Pipe - (242)
6	5	16.000	0.06	0.29	0.90	0.05	0.26	5.0	11.6	4.9	1.28	7.62	2.27	15	1.19	208.09	208.28	209.04	208.73	212.50	212.50	Pipe - (234)
7	5	153.939	0.06	0.90	0.90	0.05	0.81	5.0	14.8	4.4	3.55	19.65	4.62	15	7.89	208.30	220.45	209.04	221.21	212.50	224.01	Pipe - (233)
8	7	73.112	0.06	0.78	0.90	0.05	0.70	5.0	14.4	4.5	3.11	11.77	3.89	15	2.83	220.35	222.42	221.21	223.13	224.01	227.05	Pipe - (266)
9	8	60.504	0.06	0.72	0.90	0.05	0.64	5.0	14.0	4.5	2.90	10.91	4.13	15	2.43	222.42	223.89	223.13	224.57	227.05	228.00	Pipe - (232)
10	9	70.095	0.06	0.60	0.90	0.05	0.54	5.0	13.6	4.6	2.47	10.93	3.79	15	2.44	223.89	225.60	224.57	226.23	228.00	231.24	Pipe - (265)
11	10	62.536	0.06	0.54	0.90	0.05	0.49	5.0	13.1	4.6	2.26	21.92	3.77	15	9.82	225.60	231.74	226.23	232.34	231.24	234.94	Pipe - (231)
12	11	114.419	0.06	0.42	0.90	0.05	0.38	5.0	12.1	4.8	1.82	19.07	3.80	15	7.43	231.84	240.34	232.34	240.88	234.94	243.75	Pipe - (230)
13	12	162.671	0.06	0.30	0.90	0.05	0.27	5.0	10.1	5.2	1.40	19.13	3.51	15	7.48	240.44	252.61	240.88	253.08	243.75	256.08	Pipe - (229)
14	13	52.417	0.06	0.18	0.90	0.05	0.16	5.0	9.0	5.4	0.88	17.76	2.50	15	6.45	252.61	255.99	253.08	256.36	256.08	260.48	Pipe - (264)
15	14	79.281	0.06	0.12	0.90	0.05	0.11	5.0	6.7	6.0	0.65	22.07	2.42	15	9.95	255.99	263.88	256.36	264.19	260.48	267.21	Pipe - (228)
16	15	29.485	0.06	0.06	0.90	0.05	0.05	5.0	5.0	6.5	0.35	7.17	2.40	15	1.05	263.98	264.29	264.19	264.52	267.21	267.15	Pipe - (227)
17	13	29.529	0.06	0.06	0.90	0.05	0.05	5.0	5.0	6.5	0.35	7.05	2.63	15	1.02	252.92	253.22	253.11	253.45	256.08	256.08	Pipe - (271)
18	5	35.027	0.06	0.48	0.90	0.05	0.43	5.0	15.1	4.3	1.88	7.09	4.27	15	1.03	209.18	209.54	209.62	210.09	212.50	216.11	Pipe - (276)
19	18	160.393	0.06	0.36	0.90	0.05	0.32	5.0	13.4	4.6	1.49	23.82	3.23	15	11.59	209.56	228.15	210.09	228.63	216.11	231.44	Pipe - (203)
20	19	146.532	0.06	0.24	0.90	0.05	0.22	5.0	11.2	5.0	1.07	21.82	3.23	15	9.72	228.25	242.50	228.63	242.91	231.44	245.95	Pipe - (202)
21	20	27.339	0.06	0.06	0.90	0.05	0.05	5.0	5.0	6.5	0.35	8.57	2.45	15	1.50	242.70	243.11	242.91	243.34	245.95	245.96	Pipe - (205)
22	20	153.479	0.06	0.12	0.90	0.05	0.11	5.0	6.7	6.0	0.65	21.78	5.29	15	9.70	242.89	257.77	243.04	258.08	245.95	0.00	Pipe - (201)

Project File: Storrm sewers.stm

Number of lines: 33

Run Date: 6/26/2026

NOTES:Intensity = 69.04 / (Inlet time + 11.60) ^ 0.84; Return period =Yrs. 10 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
23	12	29.438	0.06	0.06	0.90	0.05	0.05	5.0	5.0	6.5	0.35	11.60	1.35	15	2.75	240.08	240.89	240.88	241.12	243.75	243.74	Pipe - (270)
24	11	29.319	0.06	0.06	0.90	0.05	0.05	5.0	5.0	6.5	0.35	6.96	1.58	15	0.99	231.89	232.18	232.34	232.41	234.94	235.03	Pipe - (269)
25	19	27.356	0.06	0.06	0.90	0.05	0.05	5.0	5.0	6.5	0.35	8.67	1.53	15	1.54	228.14	228.56	228.63	228.79	231.44	231.41	Pipe - (206)
26	9	29.553	0.06	0.06	0.90	0.05	0.05	5.0	5.0	6.5	0.35	6.93	2.61	15	0.98	224.85	225.14	225.04	225.37	228.00	228.00	Pipe - (268)
27	7	29.556	0.06	0.06	0.90	0.05	0.05	5.0	5.0	6.5	0.35	6.93	1.76	15	0.98	220.86	221.15	221.21	221.38	224.01	224.01	Pipe - (238)
28	18	32.611	0.06	0.06	0.90	0.05	0.05	5.0	5.0	6.5	0.35	6.93	1.58	15	0.98	209.64	209.96	210.09	210.19	216.11	217.95	Pipe - (275)
29	22	29.000	0.06	0.06	0.90	0.05	0.05	5.0	5.0	6.5	0.35	8.71	2.39	15	1.55	257.87	258.32	258.08	258.55	0.00	0.00	Pipe - (200)
30	6	46.000	0.06	0.23	0.90	0.05	0.21	5.0	10.9	5.0	1.04	7.00	2.75	15	1.00	208.25	208.71	208.73	209.11	212.50	212.14	Pipe - (235)
31	30	125.000	0.06	0.11	0.90	0.05	0.10	5.0	6.9	5.9	0.59	21.42	2.20	15	9.38	208.72	220.44	209.11	220.74	212.14	223.99	Pipe - (272)
32	30	30.000	0.06	0.06	0.90	0.05	0.05	5.0	5.0	6.5	0.35	6.64	0.31	15	0.90	207.85	208.12	209.11	209.11	212.14	216.29	Pipe - (236)
33	31	29.252	0.06	0.06	0.90	0.05	0.05	5.0	5.0	6.5	0.32	7.00	2.56	15	1.00	220.84	221.13	221.02	221.35	223.99	223.99	Pipe - (267)

Project File: Storrm sewers.stm | Number of lines: 33 | Run Date: 6/26/2026

NOTES:Intensity = 69.04 / (Inlet time + 11.60) ^ 0.84; Return period =Yrs. 10 ; c = cir e = ellip b = box

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
1	Structure - (277)	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	Off
2	Structure - (264)	0.32	0.00	0.32	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	2.99	0.00	0.01	0.0	Off
3	Structure - (263)	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	2
4	Structure - (272)	0.32	0.00	0.32	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	2.99	0.00	0.01	0.0	Off
5	Structure - (300)	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	3
6	Structure - (300)	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	4
7	Structure - (253)	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	5
8	Structure - (296)	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	7
9	Structure - (252)	0.32	0.00	0.32	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	2.99	0.00	0.01	0.0	Off
10	Structure - (295)	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	9
11	Structure - (251)	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	10
12	Structure - (250)	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	11
13	Structure - (249)	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	12
14	Structure - (294)	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	13
15	Structure - (248)	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	14
16	Structure - (247)	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	17
17	Structure - (262)	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	23
18	Structure - (217)	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	5
19	Structure - (216)	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	18
20	Structure - (215)	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	19
21	Structure - (219)	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	25
22	Null Structure	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	20
23	Structure - (269)	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	24

Project File: Storrm sewers.stm | Number of lines: 33 | Run Date: 6/26/2026

NOTES: Inlet N-Values = 0.016; Intensity = 69.04 / (Inlet time + 11.60) ^ 0.84; Return period = 10 Yrs. ; * Indicates Known Q added.All curb inlets are throat.

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
24	Structure - (261)	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	26
25	Structure - (220)	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	28
26	Structure - (260)	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	27
27	Structure - (259)	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	6
28	Structure - (221)	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	5
29	Null Structure	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	21
30	Structure - (274)	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	6
31	Structure - (297)	0.32	0.00	0.32	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	2.99	0.00	0.01	0.0	Off
32	Structure - (256)	0.35	0.00	0.35	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	3.09	0.00	0.01	0.0	6
33	Structure - (298)	0.32	0.00	0.32	0.00	Comb	5.0	3.00	0.00	2.33	1.35	0.100	4.00	0.020	0.020	0.015	0.06	2.99	0.00	0.01	0.0	Off

Project File: Storrm sewers.stm | Number of lines: 33 | Run Date: 6/26/2026

NOTES: Inlet N-Values = 0.016; Intensity = 69.04 / (Inlet time + 11.60) ^ 0.84; Return period = 10 Yrs. ; * Indicates Known Q added.All curb inlets are throat.

FL-DOT Report

Line No	To Line	Type of struc	n - Value	Len	Drainage Area			Time of conc	Time of Flow in sect	Inten (I)	Total CA	Add Q	Inlet elev	Elev of HGL			Rise	HGL	ADD		Date: 6/26/2026
					C1 = 0.2 C2 = 0.5 C3 = 0.9							Total Flow		Elev of Crown			Span	Pipe	Full Flow		Frequency: 10 yrs
					Increment (ac)	Sub-Total (ac)	Sum CA					Q		Elev of Invert Up	Down	Fall	Size	Slope	Vel	Cap	Proj: Storrm sewers.stm
				(ft)				(min)	(min)	(in/hr)		(cfs)	(ft)	(ft)	(ft)	(ft)	(in)	(%)	(ft/s)	(cfs)	Line description
1	End	Comb	0.012	54.000	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	16.40	0.13	4.19	1.76	0.00 7.36	196.00	193.83 194.00 192.75	174.63 174.75 173.50	19.20 19.25	15 15 Cir	35.56 35.65	6.42 34.04	7.36 41.77	Pipe - (252)
2	1	Comb	0.012	77.066	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	16.21	0.19	4.21	1.71	0.00 7.18	211.20	194.82 195.00 193.75	193.83 194.00 192.75	0.99 1.00	15 15 Cir	1.28 1.30	6.39 6.49	7.18 7.97	Pipe - (244)
3	2	Comb	0.012	165.229	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	15.82	0.40	4.26	1.66	0.00 7.06	199.48	196.66 196.85 195.60	194.82 195.00 193.75	1.84 1.85	15 15 Cir	1.12 1.12	6.33 6.03	7.06 7.40	Pipe - (243)
4	3	Comb	0.012	17.082	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.00	1.09	6.50	0.05	0.00 0.32	199.11	196.08 197.11 195.86	196.66 196.85 195.60	-0.58 0.26	15 15 Cir	-3.41 1.52	1.25 7.03	0.32 8.63	Pipe - (247)
5	3	Comb	0.012	130.000	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	15.49	0.33	4.30	1.55	0.00 6.68	212.50	209.04 209.25 208.00	196.66 196.85 195.60	12.38 12.40	15 15 Cir	9.52 9.54	6.07 17.61	6.68 21.61	Pipe - (242)
6	5	Comb	0.012	16.000	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	11.60	0.20	4.90	0.26	0.00 1.28	212.50	208.73 209.53 208.28	209.04 209.34 208.09	-0.31 0.19	15 15 Cir	-1.95 1.19	2.27 6.21	1.28 7.62	Pipe - (234)
7	5	Comb	0.012	153.939	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	14.77	0.72	4.40	0.81	0.00 3.55	224.01	221.21 221.70 220.45	209.04 209.55 208.30	12.17 12.15	15 15 Cir	7.91 7.89	4.62 16.02	3.55 19.65	Pipe - (233)
8	7	Comb	0.012	73.112	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	14.38	0.39	4.46	0.70	0.00 3.11	227.05	223.13 223.67 222.42	221.21 221.60 220.35	1.92 2.07	15 15 Cir	2.63 2.83	3.89 9.59	3.11 11.77	Pipe - (266)
9	8	Comb	0.012	60.504	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	14.04	0.34	4.51	0.64	0.00 2.90	228.00	224.57 225.14 223.89	223.13 223.67 222.42	1.45 1.47	15 15 Cir	2.39 2.43	4.13 8.89	2.90 10.91	Pipe - (232)
10	9	Comb	0.012	70.095	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	13.57	0.47	4.58	0.54	0.00 2.47	231.24	226.23 226.85 225.60	224.57 225.14 223.89	1.65 1.71	15 15 Cir	2.36 2.44	3.79 8.90	2.47 10.93	Pipe - (265)

NOTES: Intensity = 69.04 / (Inlet time + 11.60) ^ 0.84 (in/hr) ; Time of flow in section is based on full flow.

Project File: Storrm sewers.stm

FL-DOT Report

Line No	To Line	Type of struc	n - Value	Len	Drainage Area			Time of conc	Time of Flow in sect	Inten (I)	Total CA	Add Q	Inlet elev	Elev of HGL			Rise	HGL	ADD		Date: 6/26/2026
					C1 = 0.2 C2 = 0.5 C3 = 0.9							Total Flow		Elev of Crown			Span	Pipe	Full Flow		Frequency: 10 yrs
														Elev of Invert							Proj: Storrm sewers.stm
					Increment (ac)	Sub-Total (ac)	Sum CA					Q		Up	Down	Fall	Size	Slope	Vel	Cap	
				(ft)				(min)	(min)	(in/hr)		(cfs)	(ft)	(ft)	(ft)	(ft)	(in)	(%)	(ft/s)	(cfs)	Line description
11	10	Comb	0.012	62.536	0.00	0.00	0.00	13.12	0.45	4.65	0.49	0.00	234.94	232.34	226.23	6.11	15	9.77	3.77	2.26	Pipe - (231)
					0.00	0.00	0.00					2.26		232.99	226.85		15	9.82	17.86	21.92	
					0.00	0.00	0.00							231.74	225.60	6.14	Cir				
12	11	Comb	0.012	114.419	0.00	0.00	0.00	12.08	1.04	4.82	0.38	0.00	243.75	240.88	232.34	8.54	15	7.46	3.80	1.82	Pipe - (230)
					0.00	0.00	0.00					1.82		241.59	233.09		15	7.43	15.54	19.07	
					0.00	0.00	0.00							240.34	231.84	8.50	Cir				
13	12	Comb	0.012	162.671	0.00	0.00	0.00	10.10	1.98	5.19	0.27	0.00	256.08	253.08	240.88	12.20	15	7.50	3.51	1.40	Pipe - (229)
					0.00	0.00	0.00					1.40		253.86	241.69		15	7.48	15.59	19.13	
					0.00	0.00	0.00							252.61	240.44	12.17	Cir				
14	13	Comb	0.012	52.417	0.00	0.00	0.00	9.05	1.05	5.41	0.16	0.00	260.48	256.36	253.08	3.28	15	6.26	2.50	0.88	Pipe - (264)
					0.00	0.00	0.00					0.88		257.24	253.86		15	6.45	14.48	17.76	
					0.00	0.00	0.00							255.99	252.61	3.38	Cir				
15	14	Comb	0.012	79.281	0.00	0.00	0.00	6.72	2.33	5.98	0.11	0.00	267.21	264.19	256.36	7.84	15	9.88	2.42	0.65	Pipe - (228)
					0.00	0.00	0.00					0.65		265.13	257.24		15	9.95	17.98	22.07	
					0.00	0.00	0.00							263.88	255.99	7.89	Cir				
16	15	Comb	0.012	29.485	0.00	0.00	0.00	5.00	1.72	6.50	0.05	0.00	267.15	264.52	264.19	0.33	15	1.11	2.40	0.35	Pipe - (227)
					0.00	0.00	0.00					0.35		265.54	265.23		15	1.05	5.85	7.17	
					0.00	0.00	0.00							264.29	263.98	0.31	Cir				
17	13	Comb	0.012	29.529	0.00	0.00	0.00	5.00	1.72	6.50	0.05	0.00	256.08	253.45	253.11	0.34	15	1.15	2.63	0.35	Pipe - (271)
					0.00	0.00	0.00					0.35		254.47	254.17		15	1.02	5.75	7.05	
					0.00	0.00	0.00							253.22	252.92	0.30	Cir				
18	5	Comb	0.012	35.027	0.00	0.00	0.00	15.15	0.29	4.35	0.43	0.00	216.11	210.09	209.62	0.47	15	1.33	4.27	1.88	Pipe - (276)
					0.00	0.00	0.00					1.88		210.79	210.43		15	1.03	5.78	7.09	
					0.00	0.00	0.00							209.54	209.18	0.36	Cir				
19	18	Comb	0.012	160.393	0.00	0.00	0.00	13.45	1.70	4.60	0.32	0.00	231.44	228.63	210.09	18.55	15	11.56	3.23	1.49	Pipe - (203)
					0.00	0.00	0.00					1.49		229.40	210.81		15	11.59	19.41	23.82	
					0.00	0.00	0.00							228.15	209.56	18.59	Cir				
20	19	Comb	0.012	146.532	0.00	0.00	0.00	11.20	2.24	4.98	0.22	0.00	245.95	242.91	228.63	14.27	15	9.74	3.23	1.07	Pipe - (202)
					0.00	0.00	0.00					1.07		243.75	229.50		15	9.72	17.78	21.82	
					0.00	0.00	0.00							242.50	228.25	14.25	Cir				

NOTES: Intensity = 69.04 / (Inlet time + 11.60) ^ 0.84 (in/hr) ; Time of flow in section is based on full flow.

Project File: Storrm sewers.stm

FL-DOT Report

Line No	To Line	Type of struc	n - Value	Len	Drainage Area			Time of conc	Time of Flow in sect	Inten (I)	Total CA	Add Q	Inlet elev	Elev of HGL			Rise	HGL	ADD		Date: 6/26/2026
					C1 = 0.2 C2 = 0.5 C3 = 0.9							Total Flow		Elev of Crown			Span	Pipe	Full Flow		Frequency: 10 yrs
														Elev of Invert							Proj: Storrm sewers.stm
				(ft)	Increment (ac)	Sub-Total (ac)	Sum CA	(min)	(min)	(in/hr)		Q (cfs)	(ft)	Up (ft)	Down (ft)	Fall (ft)	Size (in)	Slope (%)	Vel (ft/s)	Cap (cfs)	Line description
21	20	Comb	0.012	27.339	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.00	1.59	6.50	0.05	0.00 0.35	245.96	243.34 244.36 243.11	242.91 243.95 242.70	0.43 0.41	15 15 Cir	1.58 1.50	2.45 6.98	0.35 8.57	Pipe - (205)
22	20	Comb	0.012	153.479	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	6.69	4.51	5.99	0.11	0.00 0.65	0.00	258.08 259.02 257.77	243.04 244.14 242.89	15.05 14.88	15 15 Cir	9.80 9.70	5.29 17.75	0.65 21.78	Pipe - (201)
23	12	Comb	0.012	29.438	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.00	1.72	6.50	0.05	0.00 0.35	243.74	241.12 242.14 240.89	240.88 241.33 240.08	0.24 0.81	15 15 Cir	0.83 2.75	1.35 9.46	0.35 11.60	Pipe - (270)
24	11	Comb	0.012	29.319	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.00	1.71	6.50	0.05	0.00 0.35	235.03	232.41 233.43 232.18	232.34 233.14 231.89	0.07 0.29	15 15 Cir	0.24 0.99	1.58 5.67	0.35 6.96	Pipe - (269)
25	19	Comb	0.012	27.356	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.00	1.59	6.50	0.05	0.00 0.35	231.41	228.79 229.81 228.56	228.63 229.39 228.14	0.16 0.42	15 15 Cir	0.57 1.54	1.53 7.06	0.35 8.67	Pipe - (206)
26	9	Comb	0.012	29.553	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.00	1.72	6.50	0.05	0.00 0.35	228.00	225.37 226.39 225.14	225.04 226.10 224.85	0.33 0.29	15 15 Cir	1.11 0.98	2.61 5.65	0.35 6.93	Pipe - (268)
27	7	Comb	0.012	29.556	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.00	1.72	6.50	0.05	0.00 0.35	224.01	221.38 222.40 221.15	221.21 222.11 220.86	0.17 0.29	15 15 Cir	0.58 0.98	1.76 5.65	0.35 6.93	Pipe - (238)
28	18	Comb	0.012	32.611	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.00	1.90	6.50	0.05	0.00 0.35	217.95	210.19 211.21 209.96	210.09 210.89 209.64	0.10 0.32	15 15 Cir	0.32 0.98	1.58 5.65	0.35 6.93	Pipe - (275)
29	22	Comb	0.012	29.000	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	5.00	1.69	6.50	0.05	0.00 0.35	0.00	258.55 259.57 258.32	258.08 259.12 257.87	0.47 0.45	15 15 Cir	1.61 1.55	2.39 7.10	0.35 8.71	Pipe - (200)
30	6	Comb	0.012	46.000	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	10.87	0.73	5.04	0.21	0.00 1.04	212.14	209.11 209.96 208.71	208.73 209.50 208.25	0.39 0.46	15 15 Cir	0.84 1.00	2.75 5.70	1.04 7.00	Pipe - (235)

NOTES: Intensity = 69.04 / (Inlet time + 11.60) ^ 0.84 (in/hr) ; Time of flow in section is based on full flow.

Project File: Storrm sewers.stm

FL-DOT Report

Line No	To Line	Type of struc	n - Value	Len	Drainage Area			Time of conc	Time of Flow in sect	Inten (I)	Total CA	Add Q / Total Flow	Inlet elev	Elev of HGL / Elev of Crown / Elev of Invert			Rise / Span	HGL / Pipe	ADD / Full Flow		Date: 6/26/2026 / Frequency: 10 yrs / Proj: Storrm sewers.stm
					C1 = 0.2 C2 = 0.5 C3 = 0.9																
					Increment (ac)	Sub-Total (ac)	Sum CA					Q		Up	Down	Fall	Size	Slope	Vel	Cap	
				(ft)				(min)	(min)	(in/hr)		(cfs)	(ft)	(ft)	(ft)	(ft)	(in)	(%)	(ft/s)	(cfs)	Line description
31	30	Comb	0.012	125.000	0.00	0.00	0.00	6.86	4.01	5.94	0.10	0.00	223.99	220.74	209.11	11.63	15	9.30	2.20	0.59	Pipe - (272)
					0.00	0.00	0.00					0.59		221.69	209.97		15	9.38	17.46	21.42	
					0.00	0.00	0.00							220.44	208.72	11.72	Cir				
32	30	Comb	0.012	30.000	0.00	0.00	0.00	5.00	1.75	6.50	0.05	0.00	216.29	209.11	209.11	0.00	15	0.00	0.31	0.35	Pipe - (236)
					0.00	0.00	0.00					0.35		209.37	209.10		15	0.90	5.41	6.64	
					0.00	0.00	0.00							208.12	207.85	0.27	Cir				
33	31	Comb	0.012	29.252	0.00	0.00	0.00	5.00	1.86	6.50	0.05	0.00	223.99	221.35	221.02	0.33	15	1.13	2.56	0.32	Pipe - (267)
					0.00	0.00	0.00					0.32		222.38	222.09		15	1.00	5.70	7.00	
					0.00	0.00	0.00							221.13	220.84	0.29	Cir				

NOTES: Intensity = 69.04 / (Inlet time + 11.60) ^ 0.84 (in/hr) ; Time of flow in section is based on full flow.

Project File: Storrm sewers.stm

MyReport

Line No.	Area Dn (sqft)	Area Up (sqft)	Byp Ln No	Coeff C1 (C)	Coeff C2 (C)	Coeff C3 (C)	Capac Full (cfs)	Crit Depth (ft)	Cross Sl, Sw (ft/ft)	Cross Sl, Sx (ft/ft)	Curb Len (ft)	Defl Ang (Deg)	Depth Dn (ft)	Depth Up (ft)	DnStm Ln No	Drng Area (ac)	Easting X (ft)	EGL Dn (ft)	EGL Up (ft)	Energy Loss (ft)
1	1.13	1.13	Offsite	0.20	0.50	0.90	41.77	1.08	0.020	0.020	3.00	-97.078	1.13	1.08**	Outfall	0.06	904915.35	175.29	194.49	0.000
2	1.12	1.12	Offsite	0.20	0.50	0.90	7.97	1.07	0.020	0.020	3.00	-4.421	1.08	1.07**	1	0.06	904899.99	194.47	195.46	0.000
3	1.11	1.11	2	0.20	0.50	0.90	7.40	1.06	0.020	0.020	3.00	79.718	1.07	1.06**	2	0.06	905053.42	195.45	197.29	0.000
4	0.15	0.15	Offsite	0.20	0.50	0.90	8.63	0.22	0.020	0.020	3.00	116.686	1.06	0.22**	3	0.06	905051.96	196.74	196.16	0.000
5	1.09	1.09	3	0.20	0.50	0.90	21.61	1.04	0.020	0.020	3.00	29.000	1.06	1.04**	3	0.06	905182.39	197.25	209.62	0.000
6	0.39	0.39	4	0.20	0.50	0.90	7.62	0.45	0.020	0.020	3.00	90.000	0.95	0.45**	5	0.06	905180.38	209.20	208.89	0.000
7	0.75	0.78	5	0.20	0.50	0.90	19.65	0.76	0.020	0.020	3.00	0.000	0.74	0.76**	5	0.06	905335.11	209.36	221.53	0.000
8	0.72	0.72	7	0.20	0.50	0.90	11.77	0.71	0.020	0.020	3.00	-13.226	0.86	0.71**	7	0.06	905407.82	221.50	223.42	0.000
9	0.69	0.69	Offsite	0.20	0.50	0.90	10.91	0.68	0.020	0.020	3.00	-20.809	0.71	0.68**	8	0.06	905461.82	223.41	224.85	0.000
10	0.62	0.62	9	0.20	0.50	0.90	10.93	0.63	0.020	0.020	3.00	-20.376	0.68	0.63**	9	0.06	905509.45	224.82	226.48	0.000
11	0.58	0.58	10	0.20	0.50	0.90	21.92	0.60	0.020	0.020	3.00	-20.329	0.63	0.60**	10	0.06	905533.36	226.46	232.57	0.000
12	0.46	0.50	11	0.20	0.50	0.90	19.07	0.54	0.020	0.020	3.00	-9.356	0.50	0.54**	11	0.06	905559.34	232.54	241.08	0.000
13	0.38	0.42	12	0.20	0.50	0.90	19.13	0.47	0.020	0.020	3.00	-3.640	0.44	0.47**	12	0.06	905586.14	241.05	253.25	0.000
14	0.30	0.30	13	0.20	0.50	0.90	17.76	0.37	0.020	0.020	3.00	-23.773	0.47	0.37**	13	0.06	905573.20	253.21	256.49	0.000
15	0.24	0.24	14	0.20	0.50	0.90	22.07	0.31	0.020	0.020	3.00	-20.372	0.37	0.31**	14	0.06	905528.11	256.47	264.31	0.000
16	0.14	0.15	17	0.20	0.50	0.90	7.17	0.23	0.020	0.020	3.00	77.993	0.21	0.23**	15	0.06	905548.35	264.27	264.60	0.000
17	0.12	0.15	23	0.20	0.50	0.90	7.05	0.23	0.020	0.020	3.00	74.678	0.19	0.23**	13	0.06	905615.52	253.19	253.53	0.000
18	0.39	0.51	5	0.20	0.50	0.90	7.09	0.55	0.020	0.020	3.00	-44.029	0.44	0.55**	5	0.06	905210.43	209.83	210.29	0.000
19	0.44	0.44	18	0.20	0.50	0.90	23.82	0.48	0.020	0.020	3.00	-50.812	0.53	0.48**	18	0.06	905217.09	210.27	228.81	0.000
20	0.32	0.35	19	0.20	0.50	0.90	21.82	0.41	0.020	0.020	3.00	-0.428	0.38	0.41**	19	0.06	905222.08	228.78	243.06	0.000
21	0.13	0.15	25	0.20	0.50	0.90	8.57	0.23	0.020	0.020	3.00	89.968	0.21	0.23**	20	0.06	905249.40	242.99	243.42	0.000
22	0.08	0.24	20	0.20	0.50	0.90	21.78	0.31	0.020	0.020	3.00	3.119	0.15	0.31**	20	0.06	905235.64	243.15	258.20	0.000
23	0.15	0.15	24	0.20	0.50	0.90	11.60	0.23	0.020	0.020	3.00	90.226	0.80	0.23**	12	0.06	905587.98	240.96	241.20	0.000

Project File: Storrm sewers.stm | Number of lines: 33 | Date: 6/26/2026

NOTES: ** Critical depth

MyReport

Line No.	Area Dn (sqft)	Area Up (sqft)	Byp Ln No	Coeff C1 (C)	Coeff C2 (C)	Coeff C3 (C)	Capac Full (cfs)	Crit Depth (ft)	Cross Sl, Sw (ft/ft)	Cross Sl, Sx (ft/ft)	Curb Len (ft)	Defl Ang (Deg)	Depth Dn (ft)	Depth Up (ft)	DnStm Ln No	Drng Area (ac)	Easting X (ft)	EGL Dn (ft)	EGL Up (ft)	Energy Loss (ft)
24	0.15	0.15	26	0.20	0.50	0.90	6.96	0.23	0.020	0.020	3.00	79.689	0.45	0.23**	11	0.06	905562.02	232.42	232.49	0.000
25	0.15	0.15	28	0.20	0.50	0.90	8.67	0.23	0.020	0.020	3.00	89.612	0.49	0.23**	19	0.06	905244.43	228.71	228.87	0.000
26	0.12	0.15	27	0.20	0.50	0.90	6.93	0.23	0.020	0.020	3.00	80.138	0.19	0.23**	9	0.06	905479.47	225.12	225.45	0.000
27	0.15	0.15	6	0.20	0.50	0.90	6.93	0.23	0.020	0.020	3.00	87.270	0.35	0.23**	7	0.06	905332.80	221.29	221.46	0.000
28	0.15	0.15	5	0.20	0.50	0.90	6.93	0.23	0.020	0.020	3.00	36.535	0.45	0.23**	18	0.06	905243.04	210.17	210.27	0.000
29	0.14	0.15	21	0.20	0.50	0.90	8.71	0.23	0.020	0.020	3.00	90.000	0.21	0.23**	22	0.06	905264.52	258.16	258.63	0.000
30	0.34	0.34	6	0.20	0.50	0.90	7.00	0.40	0.020	0.020	3.00	-35.000	0.48	0.40**	6	0.06	905201.82	208.87	209.26	0.000
31	0.23	0.23	Offsite	0.20	0.50	0.90	21.42	0.30	0.020	0.020	3.00	30.000	0.39	0.30**	30	0.06	905196.98	209.22	220.84	0.000
32	1.23	1.04	6	0.20	0.50	0.90	6.64	0.23	0.020	0.020	3.00	-80.000	1.25	0.99	30	0.06	905230.39	209.11	209.11	0.001
33	0.11	0.15	Offsite	0.20	0.50	0.90	7.00	0.22	0.020	0.020	3.00	-90.144	0.18	0.22**	31	0.06	905226.21	221.10	221.42	0.000

Project File: Storrm sewers.stm | Number of lines: 33 | Date: 6/26/2026

NOTES: ** Critical depth

MyReport

Flow Rate (cfs)	Sf Ave (ft/ft)	Sf Dn (ft/ft)	Grate Area (sqft)	Grate Len (ft)	Grate Width (ft)	Gnd/Rim El Dn (ft)	Gnd/Rim El Up (ft)	Gutter Depth (ft)	Gutter Slope (ft/ft)	Gutter Spread (ft)	Gutter Width (ft)	HGL Dn (ft)	HGL Up (ft)	HGL Jnct (ft)	HGL Jmp Dn (ft)	HGL Jmp Up (ft)	Incr CxA	Incr Q (cfs)	Inlet Depth (ft)	Inlet Eff (%)
7.36	0.000	0.000	....	2.33	1.35	163.86	196.00	0.06	0.100	3.09	4.00	174.63	193.83 j	193.83	176.51	177.92	0.05	0.35	0.06	100
7.18	0.000	0.000	....	2.33	1.35	196.00	211.20	0.06	0.100	2.99	4.00	193.83	194.82 j	194.82	193.92	193.90	0.05	0.32	0.06	100
7.06	0.000	0.000	....	2.33	1.35	211.20	199.48	0.06	0.100	3.09	4.00	194.82	196.66 j	196.66	195.00	194.98	0.05	0.35	0.06	100
0.32	0.000	0.000	....	2.33	1.35	199.48	199.11	0.06	0.100	2.99	4.00	196.66	196.08	196.08	....	....	0.05	0.32	0.06	100
6.68	0.000	0.000	....	2.33	1.35	199.48	212.50	0.06	0.100	3.09	4.00	196.66	209.04 j	209.04	197.88	197.95	0.05	0.35	0.06	100
1.28	0.000	0.000	....	2.33	1.35	212.50	212.50	0.06	0.100	3.09	4.00	209.04	208.73	208.73	....	....	0.05	0.35	0.06	100
3.55	0.000	0.000	....	2.33	1.35	212.50	224.01	0.06	0.100	3.09	4.00	209.04	221.21	221.21	....	....	0.05	0.35	0.06	100
3.11	0.000	0.000	....	2.33	1.35	224.01	227.05	0.06	0.100	3.09	4.00	221.21	223.13 j	223.13	221.27	221.19	0.05	0.35	0.06	100
2.90	0.000	0.000	....	2.33	1.35	227.05	228.00	0.06	0.100	2.99	4.00	223.13	224.57 j	224.57	223.25	223.18	0.05	0.32	0.06	100
2.47	0.000	0.000	....	2.33	1.35	228.00	231.24	0.06	0.100	3.09	4.00	224.57	226.23 j	226.23	224.69	224.62	0.05	0.35	0.06	100
2.26	0.000	0.000	....	2.33	1.35	231.24	234.94	0.06	0.100	3.09	4.00	226.23	232.34 j	232.34	226.81	226.86	0.05	0.35	0.06	100
1.82	0.000	0.000	....	2.33	1.35	234.94	243.75	0.06	0.100	3.09	4.00	232.34	240.88	240.88	....	....	0.05	0.35	0.06	100
1.40	0.000	0.000	....	2.33	1.35	243.75	256.08	0.06	0.100	3.09	4.00	240.88	253.08	253.08	....	....	0.05	0.35	0.06	100
0.88	0.000	0.000	....	2.33	1.35	256.08	260.48	0.06	0.100	3.09	4.00	253.08	256.36 j	256.36	253.31	253.29	0.05	0.35	0.06	100
0.65	0.000	0.000	....	2.33	1.35	260.48	267.21	0.06	0.100	3.09	4.00	256.36	264.19 j	264.19	257.09	257.10	0.05	0.35	0.06	100
0.35	0.000	0.000	....	2.33	1.35	267.21	267.15	0.06	0.100	3.09	4.00	264.19	264.52	264.52	....	....	0.05	0.35	0.06	100
0.35	0.000	0.000	....	2.33	1.35	256.08	256.08	0.06	0.100	3.09	4.00	253.11	253.45	253.45	....	....	0.05	0.35	0.06	100
1.88	0.000	0.000	....	2.33	1.35	212.50	216.11	0.06	0.100	3.09	4.00	209.62	210.09	210.09	....	....	0.05	0.35	0.06	100
1.49	0.000	0.000	....	2.33	1.35	216.11	231.44	0.06	0.100	3.09	4.00	210.09	228.63 j	228.63	211.90	211.92	0.05	0.35	0.06	100
1.07	0.000	0.000	....	2.33	1.35	231.44	245.95	0.06	0.100	3.09	4.00	228.63	242.91	242.91	....	....	0.05	0.35	0.06	100
0.35	0.000	0.000	....	2.33	1.35	245.95	245.96	0.06	0.100	3.09	4.00	242.91	243.34	243.34	....	....	0.05	0.35	0.06	100
0.65	0.000	0.000	....	2.33	1.35	245.95	0.00	0.06	0.100	3.09	4.00	243.04	258.08	258.08	....	....	0.05	0.35	0.06	100
0.35	0.000	0.000	....	2.33	1.35	243.75	243.74	0.06	0.100	3.09	4.00	240.88	241.12 j	241.12	240.86	240.69	0.05	0.35	0.06	100

Project File: Storrm sewers.stm | Number of lines: 33 | Date: 6/26/2026

NOTES: ** Critical depth

MyReport

Flow Rate (cfs)	Sf Ave (ft/ft)	Sf Dn (ft/ft)	Grate Area (sqft)	Grate Len (ft)	Grate Width (ft)	Gnd/Rim El Dn (ft)	Gnd/Rim El Up (ft)	Gutter Depth (ft)	Gutter Slope (ft/ft)	Gutter Spread (ft)	Gutter Width (ft)	HGL Dn (ft)	HGL Up (ft)	HGL Jnct (ft)	HGL Jmp Dn (ft)	HGL Jmp Up (ft)	Incr CxA	Incr Q (cfs)	Inlet Depth (ft)	Inlet Eff (%)
0.35	0.000	0.000	....	2.33	1.35	234.94	235.03	0.06	0.100	3.09	4.00	232.34	232.41 j	232.41	232.32	232.24	0.05	0.35	0.06	100
0.35	0.000	0.000	....	2.33	1.35	231.44	231.41	0.06	0.100	3.09	4.00	228.63	228.79 j	228.79	228.61	228.51	0.05	0.35	0.06	100
0.35	0.000	0.000	....	2.33	1.35	228.00	228.00	0.06	0.100	3.09	4.00	225.04	225.37	225.37	....	....	0.05	0.35	0.06	100
0.35	0.000	0.000	....	2.33	1.35	224.01	224.01	0.06	0.100	3.09	4.00	221.21	221.38 j	221.38	221.20	221.12	0.05	0.35	0.06	100
0.35	0.000	0.000	....	2.33	1.35	216.11	217.95	0.06	0.100	3.09	4.00	210.09	210.19 j	210.19	210.07	209.97	0.05	0.35	0.06	100
0.35	0.000	0.000	....	2.33	1.35	0.00	0.00	0.06	0.100	3.09	4.00	258.08	258.55	258.55	....	....	0.05	0.35	0.06	100
1.04	0.000	0.000	....	2.33	1.35	212.50	212.14	0.06	0.100	3.09	4.00	208.73	209.11 j	209.11	208.70	208.66	0.05	0.35	0.06	100
0.59	0.000	0.000	....	2.33	1.35	212.14	223.99	0.06	0.100	2.99	4.00	209.11	220.74 j	220.74	210.19	210.18	0.05	0.32	0.06	100
0.35	0.003	0.003	....	2.33	1.35	212.14	216.29	0.06	0.100	3.09	4.00	209.11	209.11	209.11	....	....	0.05	0.35	0.06	100
0.32	0.000	0.000	....	2.33	1.35	223.99	223.99	0.06	0.100	2.99	4.00	221.02	221.35	221.35	....	....	0.05	0.32	0.06	100

Project File: Storrm sewers.stm | Number of lines: 33 | Date: 6/26/2026

NOTES: ** Critical depth

MyReport

Inlet ID	Inlet Loc	(ft)	Inlet Time (min)	i Sys (in/hr)	i Inlet (in/hr)	Invert Dn (ft)	Invert Up (ft)	Jump Loc (ft)	Jump Len (ft)	Vel Hd Jmp Dn (ft)	Vel Hd Jmp Up (ft)	J-Loss Coeff	Junct Type	Known Q (cfs)	Cost RCP	Cost CMP	Cost PVC	Line ID
Structure - (277)	On Grade		5.0	4.19	6.50	173.50	192.75	5.40	5.40	0.66	2.90	0.50 z	Comb.	0.00	1,720	1,548	1,462	Pipe - (252)
Structure - (264)	On Grade		5.0	4.21	6.50	192.75	193.75	7.71	5.36	0.64	0.74	1.48 z	Comb.	0.00	3,913	3,521	3,326	Pipe - (244)
Structure - (263)	On Grade		5.0	4.26	6.50	193.75	195.60	16.52	5.33	0.62	0.72	1.82 z	Comb.	0.00	8,218	7,396	6,985	Pipe - (243)
Structure - (272)	On Grade		5.0	6.50	6.50	195.60	195.86	....	....	0.00	0.00	1.00 z	Comb.	0.00	610	549	519	Pipe - (247)
Structure - (300)	On Grade		5.0	4.30	6.50	195.60	208.00	13.00	5.19	0.58	1.95	1.66 z	Comb.	0.00	4,545	4,091	3,863	Pipe - (242)
Structure - (300)	On Grade		5.0	4.90	6.50	208.09	208.28	....	....	0.00	0.00	0.94 z	Comb.	0.00	680	612	578	Pipe - (234)
Structure - (253)	On Grade		5.0	4.40	6.50	208.30	220.45	....	....	0.00	0.00	1.50 z	Comb.	0.00	4,945	4,451	4,203	Pipe - (233)
Structure - (296)	On Grade		5.0	4.46	6.50	220.35	222.42	7.31	3.55	0.29	0.61	0.61 z	Comb.	0.00	2,548	2,293	2,165	Pipe - (266)
Structure - (252)	On Grade		5.0	4.51	6.50	222.42	223.89	6.05	3.42	0.28	0.52	1.48 z	Comb.	0.00	2,238	2,014	1,902	Pipe - (232)
Structure - (295)	On Grade		5.0	4.58	6.50	223.89	225.60	7.01	3.14	0.25	0.51	0.60 z	Comb.	0.00	2,570	2,313	2,185	Pipe - (265)
Structure - (251)	On Grade		5.0	4.65	6.50	225.60	231.74	6.25	3.00	0.23	0.98	1.48 z	Comb.	0.00	2,185	1,967	1,857	Pipe - (231)
Structure - (250)	On Grade		5.0	4.82	6.50	231.84	240.34	....	....	0.00	0.00	1.50 z	Comb.	0.00	3,520	3,168	2,992	Pipe - (230)
Structure - (249)	On Grade		5.0	5.19	6.50	240.44	252.61	....	....	0.00	0.00	1.46 z	Comb.	0.00	4,975	4,478	4,229	Pipe - (229)
Structure - (294)	On Grade		5.0	5.41	6.50	252.61	255.99	5.24	1.83	0.13	0.52	0.60 z	Comb.	0.00	1,805	1,625	1,534	Pipe - (264)
Structure - (248)	On Grade		5.0	5.98	6.50	255.99	263.88	7.93	1.57	0.11	0.75	1.47 z	Comb.	0.00	2,635	2,372	2,240	Pipe - (228)
Structure - (247)	On Grade		5.0	6.50	6.50	263.98	264.29	....	....	0.00	0.00	1.00 z	Comb.	0.00	970	873	825	Pipe - (227)
Structure - (262)	On Grade		5.0	6.50	6.50	252.92	253.22	....	....	0.00	0.00	1.00 z	Comb.	0.00	985	887	837	Pipe - (271)
Structure - (217)	On Grade		5.0	4.35	6.50	209.18	209.54	....	....	0.00	0.00	1.46 z	Comb.	0.00	1,353	1,217	1,150	Pipe - (276)
Structure - (216)	On Grade		5.0	4.60	6.50	209.56	228.15	16.04	2.41	0.18	1.54	1.50 z	Comb.	0.00	5,660	5,094	4,811	Pipe - (203)
Structure - (215)	On Grade		5.0	4.98	6.50	228.25	242.50	....	....	0.00	0.00	1.75 z	Comb.	0.00	4,495	4,046	3,821	Pipe - (202)
Structure - (219)	On Grade		5.0	6.50	6.50	242.70	243.11	....	....	0.00	0.00	1.00 z	Comb.	0.00	910	819	774	Pipe - (205)
Null Structure	On Grade		5.0	5.99	6.50	242.89	257.77	....	....	0.00	0.00	1.50 z	Comb.	0.00	4,690	4,221	3,987	Pipe - (201)
Structure - (269)	On Grade		5.0	6.50	6.50	240.08	240.89	14.72	1.89	0.02	0.27	1.00 z	Comb.	0.00	970	873	825	Pipe - (270)

Project File: Storrm sewers.stm | Number of lines: 33 | Date: 6/26/2026

NOTES: Intensity = 69.04 / (Inlet time + 11.60) ^ 0.84 -- Return period = 10 Yrs. ; ** Critical depth

MyReport

Inlet ID	Inlet Loc	(ft)	Inlet Time (min)	i Sys (in/hr)	i Inlet (in/hr)	Invert Dn (ft)	Invert Up (ft)	Jump Loc (ft)	Jump Len (ft)	Vel Hd Jmp Dn (ft)	Vel Hd Jmp Up (ft)	J-Loss Coeff	Junct Type	Known Q (cfs)	Cost RCP	Cost CMP	Cost PVC	Line ID
Structure - (261)	On Grade		5.0	6.50	6.50	231.89	232.18	14.66	1.42	0.04	0.13	1.00 z	Comb.	0.00	970	873	825	Pipe - (269)
Structure - (220)	On Grade		5.0	6.50	6.50	228.14	228.56	10.94	1.53	0.04	0.18	1.00 z	Comb.	0.00	910	819	774	Pipe - (206)
Structure - (260)	On Grade		5.0	6.50	6.50	224.85	225.14	....	....	0.00	0.00	1.00 z	Comb.	0.00	985	887	837	Pipe - (268)
Structure - (259)	On Grade		5.0	6.50	6.50	220.86	221.15	5.91	1.39	0.05	0.13	1.00 z	Comb.	0.00	985	887	837	Pipe - (238)
Structure - (221)	On Grade		5.0	6.50	6.50	209.64	209.96	13.04	1.50	0.04	0.13	1.00 z	Comb.	0.00	1,430	1,287	1,216	Pipe - (275)
Null Structure	On Grade		5.0	6.50	6.50	257.87	258.32	....	....	0.00	0.00	1.00 z	Comb.	0.00	970	873	825	Pipe - (200)
Structure - (274)	On Grade		5.0	5.04	6.50	208.25	208.71	4.60	2.02	0.14	0.22	1.48 z	Comb.	0.00	1,550	1,395	1,318	Pipe - (235)
Structure - (297)	On Grade		5.0	5.94	6.50	208.72	220.44	12.50	1.49	0.11	0.85	1.50 z	Comb.	0.00	3,850	3,465	3,273	Pipe - (272)
Structure - (256)	On Grade		5.0	6.50	6.50	207.85	208.12	....	....	0.00	0.00	1.00	Comb.	0.00	1,283	1,154	1,090	Pipe - (236)
Structure - (298)	On Grade		5.0	6.50	6.50	220.84	221.13	....	....	0.00	0.00	1.00 z	Comb.	0.00	970	873	825	Pipe - (267)

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NOTES: Intensity = 69.04 / (Inlet time + 11.60) ^ 0.84 -- Return period = 10 Yrs. ; ** Critical depth

MyReport

Line Length (ft)	Line Size (in)	Line Slope (%)	Line Type	Local Depr (in)	n-val Gutter	n-val Pipe	Minor Loss (ft)	Northing Y (ft)	Pipe Travel (min)	Q Byp (cfs)	Q Capt (cfs)	Q Carry (cfs)	Line Rise (in)	Runoff Coeff (C)	Line Span (in)	Area A1 (ac)	Area A2 (ac)	Area A3 (ac)	Tc (min)	Throat Ht (in)	Total Area (ac)	Total CxA
54.000	15	35.65	Cir	0.0	0.015	0.012	n/a	681979.98	0.13	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	16.4	5.0	1.96	1.76
77.066	15	1.30	Cir	0.0	0.015	0.012	n/a	682055.50	0.19	0.00	0.32	0.00	15	0.90	15	0.00	0.00	0.00	16.2	5.0	1.90	1.71
165.229	15	1.12	Cir	0.0	0.015	0.012	n/a	682116.81	0.40	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	15.8	5.0	1.84	1.66
17.082	15	1.52	Cir	0.0	0.015	0.012	n/a	682099.79	1.09	0.00	0.32	0.00	15	0.90	15	0.00	0.00	0.00	5.0	5.0	0.06	0.05
130.000	15	9.54	Cir	0.0	0.015	0.012	n/a	682100.47	0.33	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	15.5	5.0	1.73	1.55
16.000	15	1.19	Cir	0.0	0.015	0.012	0.15	682084.60	0.20	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	11.6	5.0	0.29	0.26
153.939	15	7.89	Cir	0.0	0.015	0.012	n/a	682081.13	0.72	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	14.8	5.0	0.90	0.81
73.112	15	2.83	Cir	0.0	0.015	0.012	n/a	682088.78	0.39	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	14.4	5.0	0.78	0.70
60.504	15	2.43	Cir	0.0	0.015	0.012	n/a	682116.08	0.34	0.00	0.32	0.00	15	0.90	15	0.00	0.00	0.00	14.0	5.0	0.72	0.64
70.095	15	2.44	Cir	0.0	0.015	0.012	n/a	682167.50	0.47	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	13.6	5.0	0.60	0.54
62.536	15	9.82	Cir	0.0	0.015	0.012	n/a	682225.28	0.45	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	13.1	5.0	0.54	0.49
114.419	15	7.43	Cir	0.0	0.015	0.012	n/a	682336.71	1.04	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	12.1	5.0	0.42	0.38
162.671	15	7.48	Cir	0.0	0.015	0.012	0.25	682497.16	1.98	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	10.1	5.0	0.30	0.27
52.417	15	6.45	Cir	0.0	0.015	0.012	n/a	682547.96	1.05	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	9.0	5.0	0.18	0.16
79.281	15	9.95	Cir	0.0	0.015	0.012	n/a	682613.17	2.33	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	6.7	5.0	0.12	0.11
29.485	15	1.05	Cir	0.0	0.015	0.012	n/a	682634.62	1.72	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	5.0	5.0	0.06	0.05
29.529	15	1.02	Cir	0.0	0.015	0.012	0.08	682500.17	1.72	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	5.0	5.0	0.06	0.05
35.027	15	1.03	Cir	0.0	0.015	0.012	0.30	682121.46	0.29	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	15.1	5.0	0.48	0.43
160.393	15	11.59	Cir	0.0	0.015	0.012	n/a	682281.72	1.70	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	13.4	5.0	0.36	0.32
146.532	15	9.72	Cir	0.0	0.015	0.012	n/a	682428.16	2.24	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	11.2	5.0	0.24	0.22
27.339	15	1.50	Cir	0.0	0.015	0.012	0.08	682427.25	1.59	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	5.0	5.0	0.06	0.05
153.479	15	9.70	Cir	0.0	0.015	0.012	n/a	682581.04	4.51	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	6.7	5.0	0.12	0.11
29.438	15	2.75	Cir	0.0	0.015	0.012	n/a	682329.92	1.72	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	5.0	5.0	0.06	0.05

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NOTES: ** Critical depth

MyReport

Line Length (ft)	Line Size (in)	Line Slope (%)	Line Type	Local Depr (in)	n-val Gutter	n-val Pipe	Minor Loss (ft)	Northing Y (ft)	Pipe Travel (min)	Q Byp (cfs)	Q Capt (cfs)	Q Carry (cfs)	Line Rise (in)	Runoff Coeff (C)	Line Span (in)	Area A1 (ac)	Area A2 (ac)	Area A3 (ac)	Tc (min)	Throat Ht (in)	Total Area (ac)	Total CxA
29.319	15	0.99	Cir	0.0	0.015	0.012	n/a	682219.10	1.71	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	5.0	5.0	0.06	0.05
27.356	15	1.54	Cir	0.0	0.015	0.012	n/a	682280.77	1.59	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	5.0	5.0	0.06	0.05
29.553	15	0.98	Cir	0.0	0.015	0.012	0.08	682092.37	1.72	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	5.0	5.0	0.06	0.05
29.556	15	0.98	Cir	0.0	0.015	0.012	n/a	682051.66	1.72	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	5.0	5.0	0.06	0.05
32.611	15	0.98	Cir	0.0	0.015	0.012	n/a	682121.62	1.90	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	5.0	5.0	0.06	0.05
29.000	15	1.55	Cir	0.0	0.015	0.012	n/a	682578.48	1.69	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	5.0	5.0	0.06	0.05
46.000	15	1.00	Cir	0.0	0.015	0.012	n/a	682043.90	0.73	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	10.9	5.0	0.23	0.21
125.000	15	9.38	Cir	0.0	0.015	0.012	n/a	681919.00	4.01	0.00	0.32	0.00	15	0.90	15	0.00	0.00	0.00	6.9	5.0	0.11	0.10
30.000	15	0.90	Cir	0.0	0.015	0.012	0.00	682053.06	1.75	0.00	0.35	0.00	15	0.90	15	0.00	0.00	0.00	5.0	5.0	0.06	0.05
29.252	15	1.00	Cir	0.0	0.015	0.012	n/a	681917.94	1.86	0.00	0.32	0.00	15	0.90	15	0.00	0.00	0.00	5.0	5.0	0.06	0.05

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NOTES: ** Critical depth

MyReport

Total Runoff (cfs)	Vel Ave (ft/s)	Vel Dn (ft/s)	Vel Hd Dn (ft)	Vel Hd Up (ft)	Vel Up (ft/s)	Cover Dn (ft)	Cover Up (ft)	Storage (cft)
7.36	6.42	6.31	0.66	0.66	6.53	-10.89	2.00	61.99
7.18	6.39	6.36	0.64	0.64	6.42	2.00	16.20	86.56
7.06	6.33	6.31	0.63	0.63	6.34	16.20	2.63	184.27
0.32	1.25	0.29	0.08	0.08	2.22	2.63	2.00	10.80
6.68	6.07	6.01	0.58	0.58	6.13	2.63	3.25	143.13
1.28	2.27	1.28	0.16	0.16	3.26	3.16	2.97	11.22
3.55	4.62	4.70	0.32	0.32	4.54	2.95	2.31	118.15
3.11	3.89	3.46	0.29	0.29	4.33	2.41	3.38	59.22
2.90	4.13	4.03	0.28	0.28	4.22	3.38	2.86	42.53
2.47	3.79	3.59	0.25	0.25	4.00	2.86	4.39	45.79
2.26	3.77	3.65	0.23	0.23	3.88	4.39	1.95	37.54
1.82	3.80	3.98	0.20	0.20	3.62	1.85	2.16	54.97
1.40	3.51	3.68	0.17	0.17	3.34	2.06	2.22	65.04
0.88	2.50	2.09	0.13	0.13	2.92	2.22	3.24	18.81
0.65	2.42	2.15	0.11	0.11	2.68	3.24	2.08	21.44
0.35	2.40	2.52	0.08	0.08	2.27	1.98	1.61	4.33
0.35	2.63	2.99	0.08	0.08	2.27	1.91	1.61	4.01
1.88	4.27	4.88	0.21	0.21	3.66	2.07	5.32	15.73
1.49	3.23	3.05	0.18	0.18	3.41	5.30	2.04	74.28
1.07	3.23	3.37	0.15	0.15	3.09	1.94	2.20	48.77
0.35	2.45	2.62	0.08	0.08	2.27	2.00	1.60	3.94
0.65	5.29	7.91	0.11	0.11	2.68	1.81	n/a	24.21
0.35	1.35	0.43	0.08	0.08	2.27	2.42	1.60	14.11

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NOTES: ** Critical depth

MyReport

Total Runoff (cfs)	Vel Ave (ft/s)	Vel Dn (ft/s)	Vel Hd Dn (ft)	Vel Hd Up (ft)	Vel Up (ft/s)	Cover Dn (ft)	Cover Up (ft)	Storage (cft)
0.35	1.58	0.88	0.08	0.08	2.27	1.80	1.60	7.97
0.35	1.53	0.78	0.08	0.08	2.27	2.05	1.60	8.11
0.35	2.61	2.95	0.08	0.08	2.27	1.90	1.61	4.03
0.35	1.76	1.25	0.08	0.08	2.27	1.90	1.61	6.38
0.35	1.58	0.90	0.08	0.08	2.27	5.22	6.74	8.77
0.35	2.39	2.51	0.08	0.08	2.27	n/a	n/a	4.26
1.04	2.75	2.43	0.15	0.15	3.07	3.00	2.18	17.68
0.59	2.20	1.79	0.11	0.11	2.61	2.17	2.30	34.51
0.35	0.31	0.29	0.00	0.00	0.34	3.04	6.92	34.63
0.32	2.56	2.89	0.08	0.08	2.22	1.90	1.61	3.74

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NOTES: ** Critical depth

Hydraulic Grade Line Computations

Line	Size	Q	Downstream								Len	Upstream								Check		JL coeff	Minor loss
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
(1)	(in) (2)	(cfs) (3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(ft) (12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(K) (23)	(ft) (24)
1	15	7.36	173.50	174.63	1.13	1.13	6.31	0.66	175.29	0.000	54.000	192.75	193.83 j	1.08**	1.13	6.53	0.66	194.49	0.000	0.000	n/a	0.50	n/a
2	15	7.18	192.75	193.83	1.08	1.12	6.36	0.64	194.47	0.000	77.066	193.75	194.82 j	1.07**	1.12	6.42	0.64	195.46	0.000	0.000	n/a	1.48	0.95
3	15	7.06	193.75	194.82	1.07	1.11	6.31	0.63	195.45	0.000	165.229	195.60	196.66 j	1.06**	1.11	6.34	0.63	197.29	0.000	0.000	n/a	1.82	n/a
4	15	0.32	195.60	196.66	1.06	0.15	0.29	0.08	196.74	0.000	17.082	195.86	196.08	0.22**	0.15	2.22	0.08	196.16	0.000	0.000	n/a	1.00	n/a
5	15	6.68	195.60	196.66	1.06	1.09	6.01	0.58	197.25	0.000	130.000	208.00	209.04 j	1.04**	1.09	6.13	0.58	209.62	0.000	0.000	n/a	1.66	0.97
6	15	1.28	208.09	209.04	0.95	0.39	1.28	0.16	209.20	0.000	16.000	208.28	208.73	0.45**	0.39	3.26	0.16	208.89	0.000	0.000	n/a	0.94	0.15
7	15	3.55	208.30	209.04	0.74	0.75	4.70	0.32	209.36	0.000	153.939	220.45	221.21	0.76**	0.78	4.54	0.32	221.53	0.000	0.000	n/a	1.50	n/a
8	15	3.11	220.35	221.21	0.86	0.72	3.46	0.29	221.50	0.000	73.112	222.42	223.13 j	0.71**	0.72	4.33	0.29	223.42	0.000	0.000	n/a	0.61	0.18
9	15	2.90	222.42	223.13	0.71	0.69	4.03	0.28	223.41	0.000	60.504	223.89	224.57 j	0.68**	0.69	4.22	0.28	224.85	0.000	0.000	n/a	1.48	0.41
10	15	2.47	223.89	224.57	0.68	0.62	3.59	0.25	224.82	0.000	70.095	225.60	226.23 j	0.63**	0.62	4.00	0.25	226.48	0.000	0.000	n/a	0.60	n/a
11	15	2.26	225.60	226.23	0.63	0.58	3.65	0.23	226.46	0.000	62.536	231.74	232.34 j	0.60**	0.58	3.88	0.23	232.57	0.000	0.000	n/a	1.48	n/a
12	15	1.82	231.84	232.34	0.50	0.46	3.98	0.20	232.54	0.000	114.419	240.34	240.88	0.54**	0.50	3.62	0.20	241.08	0.000	0.000	n/a	1.50	n/a
13	15	1.40	240.44	240.88	0.44	0.38	3.68	0.17	241.05	0.000	162.671	252.61	253.08	0.47**	0.42	3.34	0.17	253.25	0.000	0.000	n/a	1.46	0.25
14	15	0.88	252.61	253.08	0.47	0.30	2.09	0.13	253.21	0.000	52.417	255.99	256.36 j	0.37**	0.30	2.92	0.13	256.49	0.000	0.000	n/a	0.60	n/a
15	15	0.65	255.99	256.36	0.37	0.24	2.15	0.11	256.47	0.000	79.281	263.88	264.19 j	0.31**	0.24	2.68	0.11	264.31	0.000	0.000	n/a	1.47	n/a
16	15	0.35	263.98	264.19	0.21	0.14	2.52	0.08	264.27	0.000	29.485	264.29	264.52	0.23**	0.15	2.27	0.08	264.60	0.000	0.000	n/a	1.00	n/a
17	15	0.35	252.92	253.11	0.19*	0.12	2.99	0.08	253.19	0.000	29.529	253.22	253.45	0.23**	0.15	2.27	0.08	253.53	0.000	0.000	n/a	1.00	0.08
18	15	1.88	209.18	209.62	0.44*	0.39	4.88	0.21	209.83	0.000	35.027	209.54	210.09	0.55**	0.51	3.66	0.21	210.29	0.000	0.000	n/a	1.46	0.30
19	15	1.49	209.56	210.09	0.53	0.44	3.05	0.18	210.27	0.000	160.393	228.15	228.63 j	0.48**	0.44	3.41	0.18	228.81	0.000	0.000	n/a	1.50	0.27
20	15	1.07	228.25	228.63	0.38	0.32	3.37	0.15	228.78	0.000	146.532	242.50	242.91	0.41**	0.35	3.09	0.15	243.06	0.000	0.000	n/a	1.75	n/a
21	15	0.35	242.70	242.91	0.21	0.13	2.62	0.08	242.99	0.000	27.339	243.11	243.34	0.23**	0.15	2.27	0.08	243.42	0.000	0.000	n/a	1.00	0.08

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Notes: * depth assumed; ** Critical depth.; j-Line contains hyd. jump ; c = cir e = ellip b = box

Hydraulic Grade Line Computations

Line	Size	Q	Downstream								Len	Upstream								Check		JL coeff	Minor loss
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
(1)	(in) (2)	(cfs) (3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(ft) (12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(K) (23)	(ft) (24)
22	15	0.65	242.89	243.04	0.15*	0.08	7.91	0.11	243.15	0.000	153.479	257.77	258.08	0.31**	0.24	2.68	0.11	258.20	0.000	0.000	n/a	1.50	n/a
23	15	0.35	240.08	240.88	0.80	0.15	0.43	0.08	240.96	0.000	29.438	240.89	241.12 j	0.23**	0.15	2.27	0.08	241.20	0.000	0.000	n/a	1.00	0.08
24	15	0.35	231.89	232.34	0.45	0.15	0.88	0.08	232.42	0.000	29.319	232.18	232.41 j	0.23**	0.15	2.27	0.08	232.49	0.000	0.000	n/a	1.00	0.08
25	15	0.35	228.14	228.63	0.49	0.15	0.78	0.08	228.71	0.000	27.356	228.56	228.79 j	0.23**	0.15	2.27	0.08	228.87	0.000	0.000	n/a	1.00	0.08
26	15	0.35	224.85	225.04	0.19*	0.12	2.95	0.08	225.12	0.000	29.553	225.14	225.37	0.23**	0.15	2.27	0.08	225.45	0.000	0.000	n/a	1.00	0.08
27	15	0.35	220.86	221.21	0.35	0.15	1.25	0.08	221.29	0.000	29.556	221.15	221.38 j	0.23**	0.15	2.27	0.08	221.46	0.000	0.000	n/a	1.00	0.08
28	15	0.35	209.64	210.09	0.45	0.15	0.90	0.08	210.17	0.000	32.611	209.96	210.19 j	0.23**	0.15	2.27	0.08	210.27	0.000	0.000	n/a	1.00	0.08
29	15	0.35	257.87	258.08	0.21	0.14	2.51	0.08	258.16	0.000	29.000	258.32	258.55	0.23**	0.15	2.27	0.08	258.63	0.000	0.000	n/a	1.00	n/a
30	15	1.04	208.25	208.73	0.48	0.34	2.43	0.15	208.87	0.000	46.000	208.71	209.11 j	0.40**	0.34	3.07	0.15	209.26	0.000	0.000	n/a	1.48	0.22
31	15	0.59	208.72	209.11	0.39	0.23	1.79	0.11	209.22	0.000	125.000	220.44	220.74 j	0.30**	0.23	2.61	0.11	220.84	0.000	0.000	n/a	1.50	n/a
32	15	0.35	207.85	209.11	1.25	1.23	0.29	0.00	209.11	0.003	30.000	208.12	209.11	0.99	1.04	0.34	0.00	209.11	0.003	0.003	0.001	1.00	0.00
33	15	0.32	220.84	221.02	0.18*	0.11	2.89	0.08	221.10	0.000	29.252	221.13	221.35	0.22**	0.15	2.22	0.08	221.42	0.000	0.000	n/a	1.00	n/a

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Notes: * depth assumed; ** Critical depth.; j-Line contains hyd. jump ; c = cir e = ellip b = box

Hydraflow HGL Computation Procedure

General Procedure:

Hydraflow computes the HGL using the Bernoulli energy equation. Manning's equation is used to determine energy losses due to pipe friction. In a standard step, iterative procedure, Hydraflow assumes upstream HGLs until the energy equation balances. If the energy equation cannot balance, supercritical flow exists and critical depth is temporarily assumed at the upstream end. A supercritical flow Profile is then computed using the same procedure in a downstream direction using momentum principles.

Col. 1 The line number being computed. Calculations begin at Line 1 and proceed upstream.

Col. 2 The line size. In the case of non-circular pipes, the line rise is printed above the span.

Col. 3 Total flow rate in the line.

Col. 4 The elevation of the downstream invert.

Col. 5 Elevation of the hydraulic grade line at the downstream end. This is computed as the upstream HGL + Minor loss of this line's downstream line.

Col. 6 The downstream depth of flow inside the pipe (HGL - Invert elevation) but not greater than the line size.

Col. 7 Cross-sectional area of the flow at the downstream end.

Col. 8 The velocity of the flow at the downstream end, (Col. 3 / Col. 7).

Col. 9 Velocity head (Velocity squared / 2g).

Col. 10 The elevation of the energy grade line at the downstream end, HGL + Velocity head, (Col. 5 + Col. 9).

Col. 11 The friction slope at the downstream end (the S or Slope term in Manning's equation).

Col. 12 The line length.

Col. 13 The elevation of the upstream invert.

Col. 14 Elevation of the hydraulic grade line at the upstream end.

Col. 15 The upstream depth of flow inside the pipe (HGL - Invert elevation) but not greater than the line size.

Col. 16 Cross-sectional area of the flow at the upstream end.

Col. 17 The velocity of the flow at the upstream end, (Col. 3 / Col. 16).

Col. 18 Velocity head (Velocity squared / 2g).

Col. 19 The elevation of the energy grade line at the upstream end, HGL + Velocity head, (Col. 14 + Col. 18) .

Col. 20 The friction slope at the upstream end (the S or Slope term in Manning's equation).

Col. 21 The average of the downstream and upstream friction slopes.

Col. 22 Energy loss. Average Sf/100 x Line Length (Col. 21/100 x Col. 12). Equals (EGL upstream - EGL downstream) +/- tolerance.

Col. 23 The junction loss coefficient (K).

Col. 24 Minor loss. (Col. 23 x Col. 18). Is added to upstream HGL and used as the starting HGL for the next upstream line(s).