V1-CID-24-04

STORMWATER IMPACT ANALYSIS

Reserve @ Mitchell Mill

Town of Rolesville

Wake County, NC

STRONGROCK
ENGINEERING GROUP

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1. Narrative

1.1. Project Data

Name:	Reserve at Mitchell Mill
Parent Pin:	1757571035
Address:	Jonesville Road & Mitchell Mill Rd, Rolesville
Property Boundary:	141.23 AC
Proposed Open Space:	675,608 SF (15.51 AC)
Proposed Impervious Area:	911,770 SF (20.93 AC)
Proposed Impervious Percentage:	14.82 %

1.2. Site History & Project Description

The project is 141.23-acres that includes undeveloped and grassed areas. The development proposes 387 residential lots and all the associated infrastructure including roadways, sidewalks, and public utilities needed to facilitate the development.

Structural and non-structural BMPs shall be used to ensure there is no net increase in peak flow leaving the site from the pre-development conditions for 1-, 10- and 100-year & 24-hour storm events. Eight (8) stormwater wet ponds with a curb and gutter/rolled curb storm network system have been proposed to meet the requirements.

1.3. Calculation Methodology

- Rainfall data for this area in Wake, NC region is obtained from NOAA website. This data contains a depth-duration-frequency (DDF) table describing rainfall depth versus time for varying return periods in the area. These rainfall depths are input into the meteorological model for peak flow rate calculations.

- Using WebSoil Survey, the on-site soils were determined to be of Hydrological Soil Groups ‘B’, ‘C’, and ‘D’. Since the method chosen to compute pre- and post-development peak flow rates and runoff volumes is dependent upon the soil type, care was taken when selecting the appropriate Soil Conservation Service Curve Number (SCS CN). Soil type D was used for this analysis as it was the worse case scenario for the site.

- The time of concentration was calculated using SCS TR-55 (Segmental Approach, 1986).

- The simple method and the SA/DA method were used for sizing the pond. AutoCAD Civil 3D, AutoCAD Sanitary Storm Analysis, and Excel Calculation Spreadsheets have been utilized in determining the pre- & post-development peak flow rates for the 1-, 2-, and 10-year storm events, as well as the Total Suspended Solids (TSS).

1.4. Results

The simple method and the SA/DA method were used for sizing the wet ponds. Based on the results, implementation of the eight designed wet ponds satisfies the minimum requirements for water quality volume, permanent pool volume, and forebay volume based on NCDEQ wet pond design criteria.

Table 1.1. SCM #1 Wet Pond Design Criteria

Forebay							
Designed Forebay						Criteria	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	1,060	0.0243	5	257	9,935	5,357	
Top	3,035	0.0697		262			
Main Pool							
Designed Main pool						Criteria	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	7,364	0.1691	5	257	48,263	21,428	
Top	12,863	0.2953		262			
Temporary pool							
Designed Temporary pool						Criteria	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	15,898	0.3650	1	262	17,521	16,969	
Top	18,969	0.4355		263			

Table 1.2. SCM #2 Wet Pond Design Criteria

SCM #2 (Wet Detention Basin)							
Forebay							
Designed Forebay						Criteria	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	2,395	0.0550	5	259	18,904	10,998	
Top	5,303	0.1217		264			
Main Pool							
Designed Main pool						Criteria	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	17,338	0.3980	5	259	101,117	43,990	
Top	24,204	0.5556		264			
Temporary pool							
Designed Temporary pool						Criteria	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	29,507	0.6774	2	264	66,060	34,622	
Top	35,523	0.8155		266			

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Table 1.3. SCM #3 Wet Pond Design Criteria

Forebay							
Designed Forebay						Criteria	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	1,434	0.0329	5	235	16,536	8,684	
Top	5,452	0.1252		240			

Main Pool							
Designed Main pool						Criteria	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	13,044	0.2994	5	235	78,388	34,737	
Top	19,339	0.4440		240			

Temporary pool							
Designed Temporary pool						Criteria	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	24,791	0.5691	2	240	57,092	27,391	
Top	31,406	0.7210		242			

Table 1.4. SCM #4 Wet Pond Design Criteria

Forebay							
Designed Forebay						Criteria	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	705	0.0162	5	235	7,219	6,283	
Top	2,325	0.0534		240			

Main Pool							
Designed Main pool						Criteria	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	3,025	0.0694	5	235	25,223	25,132	
Top	8,278	0.1900		240			

Temporary pool							
Designed Temporary pool						Criteria	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	10,603	0.2434	2	240	27,413	20,119	
Top	13,990	0.3212		242			

Table 1.5. SCM #5 Wet Pond Design Criteria

Forebay							
Designed Forebay						Criteria	
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	PASS
Bottom	145	0.0033	5	244	2,675	1,281	
Top	1,059	0.0243		249			

Main Pool							
Designed Main pool						Criteria	
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	PASS
Bottom	77	0.0018	5	244	5,133	5,124	
Top	2,883	0.0662		249			

Temporary pool							
Designed Temporary pool						Criteria	
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	PASS
Bottom	3,942	0.0905	2	249	11,140	4,365	
Top	6,916	0.1588		251			

Table 1.6. SCM #6 Wet Pond Design Criteria

Forebay							
Designed Forebay						Criteria	
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	PASS
Bottom	816	0.0187	5	232	8,730	8,175	
Top	2,814	0.0646		237			

Main Pool							
Designed Main pool						Criteria	
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	PASS
Bottom	6,640	0.1524	5	232	46,819	32,700	
Top	13,151	0.3019		237			

Temporary pool							
Designed Temporary pool						Criteria	
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	PASS
Bottom	15,965	0.3665	2	237	38,323	26,067	
Top	21,841	0.5014		239			

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Table 1.7. SCM #7 Wet Pond Design Criteria

Forebay							
Designed Forebay						Criteria	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	1,336	0.0307	6	233	14,425	8,820	
Top	3,660	0.0840		239			
Main Pool							
Designed Main pool						Criteria	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	6,945	0.1594	6	233	60,200	35,280	
Top	14,687	0.3372		239			
Temporary pool							
Designed Temporary pool						Criteria	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	18,347	0.4212	2	239	43,999	23,164	
Top	24,879	0.5711		241			

Table 1.8. SCM #8 Wet Pond Design Criteria

Forebay							
Designed Forebay						Criteria	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	132	0.0030	5	235	4,088	3,467	
Top	1,697	0.0390		240			
Main Pool							
Designed Main pool						Criteria	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	1,749	0.0402	5	235	14,164	13,867	
Top	4,476	0.1028		240			
Temporary pool							
Designed Temporary pool						Criteria	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	6,173	0.1417	2	240	15,901	10,989	
Top	9,227	0.2118		242			

Table 1.9. Point of Analysis Comparison

Storm Event	Pre-Development POI 1	Post Development POI 1
1	428.19 cfs	380.99 cfs
10	1,193.32 cfs	1099.58 cfs
100	2182.59 cfs	2014.04 cfs

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2. Stormwater Impact Analysis

2.1. Rainfall Data

NOAA Atlas 14, Volume 2, Version 3
Location name: Wake Forest, North Carolina, USA*
Latitude: 35.8853°, Longitude: -78.4782°
Elevation: 235 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**4.84** (4.43-5.30)	**5.63** (5.16-6.16)	**6.42** (5.88-7.01)	**7.20** (6.59-7.86)	**7.99** (7.27-8.71)	**8.62** (7.81-9.38)	**9.17** (8.27-9.98)	**9.66** (8.65-10.5)	**10.2** (9.07-11.1)	**10.7** (9.42-11.7)
10-min	**3.86** (3.54-4.23)	**4.50** (4.13-4.92)	**5.14** (4.71-5.61)	**5.76** (5.27-6.28)	**6.37** (5.80-6.94)	**6.86** (6.22-7.48)	**7.28** (6.56-7.93)	**7.66** (6.86-8.35)	**8.07** (7.17-8.81)	**8.41** (7.42-9.20)
15-min	**3.22** (2.95-3.53)	**3.77** (3.46-4.12)	**4.34** (3.97-4.73)	**4.86** (4.44-5.30)	**5.38** (4.90-5.86)	**5.79** (5.25-6.31)	**6.14** (5.53-6.68)	**6.44** (5.77-7.02)	**6.77** (6.02-7.39)	**7.04** (6.21-7.70)
30-min	**2.21** (2.02-2.42)	**2.60** (2.39-2.85)	**3.08** (2.82-3.36)	**3.52** (3.22-3.84)	**3.98** (3.63-4.34)	**4.36** (3.95-4.75)	**4.70** (4.24-5.12)	**5.01** (4.49-5.47)	**5.39** (4.79-5.88)	**5.70** (5.03-6.24)
60-min	**1.38** (1.26-1.51)	**1.63** (1.50-1.79)	**1.97** (1.81-2.15)	**2.29** (2.10-2.50)	**2.65** (2.42-2.89)	**2.95** (2.68-3.22)	**3.24** (2.92-3.53)	**3.52** (3.15-3.83)	**3.86** (3.44-4.22)	**4.16** (3.67-4.55)
2-hr	**0.805** (0.731-0.889)	**0.958** (0.875-1.05)	**1.17** (1.06-1.28)	**1.37** (1.25-1.51)	**1.61** (1.46-1.77)	**1.82** (1.64-2.00)	**2.03** (1.81-2.22)	**2.23** (1.98-2.44)	**2.50** (2.20-2.74)	**2.74** (2.38-3.00)
3-hr	**0.568** (0.516-0.629)	**0.676** (0.618-0.746)	**0.829** (0.754-0.915)	**0.980** (0.889-1.08)	**1.16** (1.05-1.28)	**1.33** (1.19-1.46)	**1.49** (1.32-1.63)	**1.66** (1.46-1.82)	**1.88** (1.64-2.06)	**2.09** (1.80-2.29)
6-hr	**0.341** (0.312-0.377)	**0.407** (0.373-0.448)	**0.499** (0.456-0.549)	**0.591** (0.538-0.648)	**0.704** (0.637-0.771)	**0.807** (0.724-0.881)	**0.909** (0.809-0.992)	**1.02** (0.896-1.11)	**1.16** (1.01-1.27)	**1.30** (1.11-1.41)
12-hr	**0.200** (0.183-0.220)	**0.238** (0.219-0.261)	**0.294** (0.269-0.322)	**0.349** (0.319-0.383)	**0.420** (0.380-0.458)	**0.484** (0.435-0.526)	**0.549** (0.488-0.596)	**0.618** (0.544-0.671)	**0.714** (0.618-0.775)	**0.803** (0.685-0.872)
24-hr	**0.119** (0.111-0.128)	**0.144** (0.134-0.155)	**0.181** (0.168-0.195)	**0.210** (0.195-0.226)	**0.250** (0.232-0.270)	**0.283** (0.261-0.304)	**0.316** (0.290-0.340)	**0.350** (0.320-0.377)	**0.397** (0.362-0.429)	**0.435** (0.394-0.470)
2-day	**0.069** (0.064-0.074)	**0.083** (0.077-0.089)	**0.103** (0.096-0.111)	**0.120** (0.111-0.129)	**0.142** (0.131-0.153)	**0.159** (0.147-0.172)	**0.178** (0.163-0.191)	**0.196** (0.180-0.212)	**0.222** (0.202-0.240)	**0.242** (0.220-0.262)
3-day	**0.048** (0.045-0.052)	**0.058** (0.054-0.063)	**0.072** (0.068-0.078)	**0.084** (0.078-0.090)	**0.099** (0.092-0.106)	**0.111** (0.103-0.119)	**0.124** (0.114-0.133)	**0.137** (0.125-0.147)	**0.154** (0.141-0.166)	**0.168** (0.153-0.182)
4-day	**0.038** (0.036-0.041)	**0.046** (0.043-0.049)	**0.057** (0.053-0.061)	**0.066** (0.061-0.070)	**0.078** (0.072-0.083)	**0.087** (0.081-0.093)	**0.097** (0.089-0.104)	**0.107** (0.098-0.115)	**0.121** (0.110-0.130)	**0.132** (0.120-0.142)
7-day	**0.025** (0.024-0.027)	**0.030** (0.028-0.032)	**0.037** (0.035-0.039)	**0.042** (0.039-0.045)	**0.050** (0.046-0.053)	**0.056** (0.052-0.059)	**0.062** (0.057-0.066)	**0.068** (0.062-0.073)	**0.076** (0.070-0.082)	**0.083** (0.076-0.089)
10-day	**0.020** (0.019-0.021)	**0.024** (0.022-0.025)	**0.029** (0.027-0.031)	**0.033** (0.031-0.035)	**0.038** (0.035-0.041)	**0.042** (0.039-0.045)	**0.046** (0.043-0.050)	**0.051** (0.047-0.054)	**0.057** (0.052-0.061)	**0.061** (0.056-0.066)
20-day	**0.013** (0.012-0.014)	**0.016** (0.015-0.017)	**0.019** (0.018-0.020)	**0.021** (0.020-0.022)	**0.024** (0.023-0.026)	**0.027** (0.025-0.029)	**0.029** (0.027-0.031)	**0.032** (0.030-0.034)	**0.035** (0.033-0.038)	**0.038** (0.035-0.041)
30-day	**0.011** (0.010-0.012)	**0.013** (0.012-0.014)	**0.015** (0.014-0.016)	**0.017** (0.016-0.018)	**0.019** (0.018-0.020)	**0.021** (0.019-0.022)	**0.023** (0.021-0.024)	**0.024** (0.023-0.026)	**0.027** (0.025-0.028)	**0.028** (0.026-0.030)
45-day	**0.009** (0.009-0.010)	**0.011** (0.010-0.011)	**0.012** (0.012-0.013)	**0.014** (0.013-0.015)	**0.015** (0.015-0.016)	**0.017** (0.016-0.018)	**0.018** (0.017-0.019)	**0.019** (0.018-0.020)	**0.021** (0.019-0.022)	**0.022** (0.020-0.023)
60-day	**0.008** (0.008-0.009)	**0.010** (0.009-0.010)	**0.011** (0.010-0.012)	**0.012** (0.011-0.013)	**0.013** (0.013-0.014)	**0.014** (0.014-0.015)	**0.015** (0.014-0.016)	**0.016** (0.015-0.017)	**0.018** (0.016-0.019)	**0.018** (0.017-0.020)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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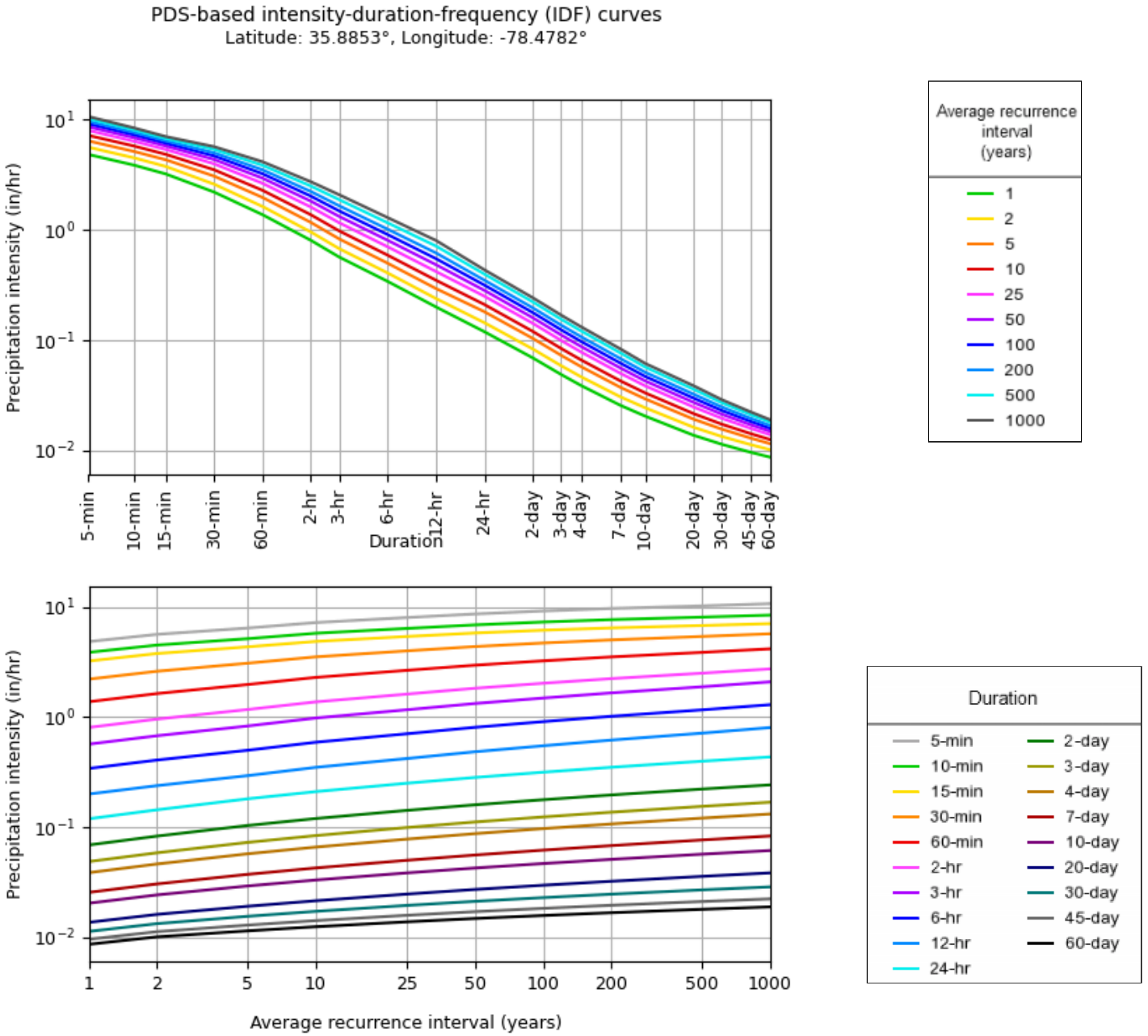
PF graphical



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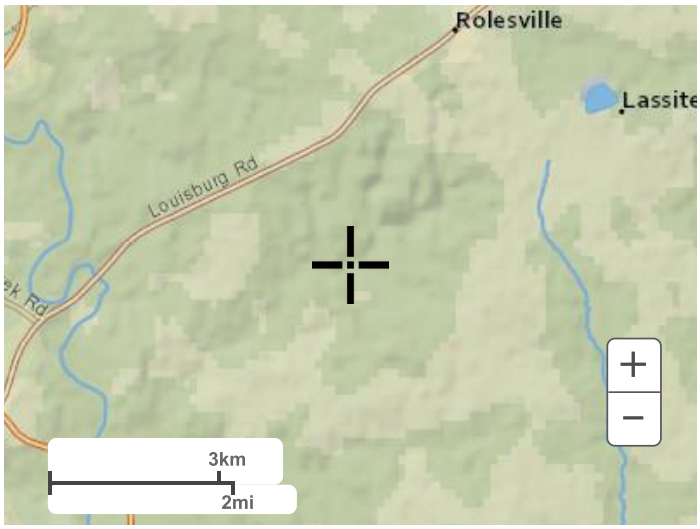
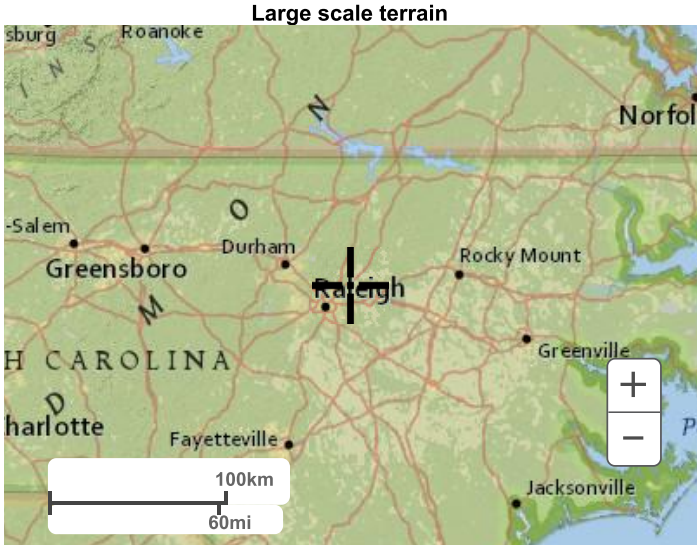
Maps & aerials

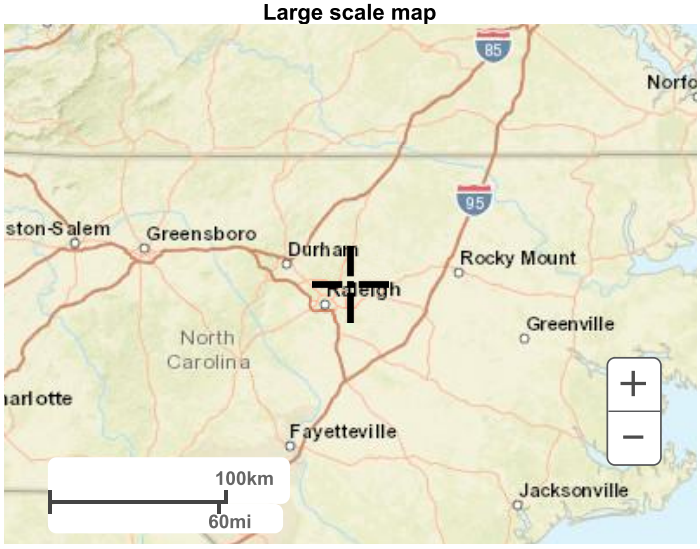
Small scale terrain



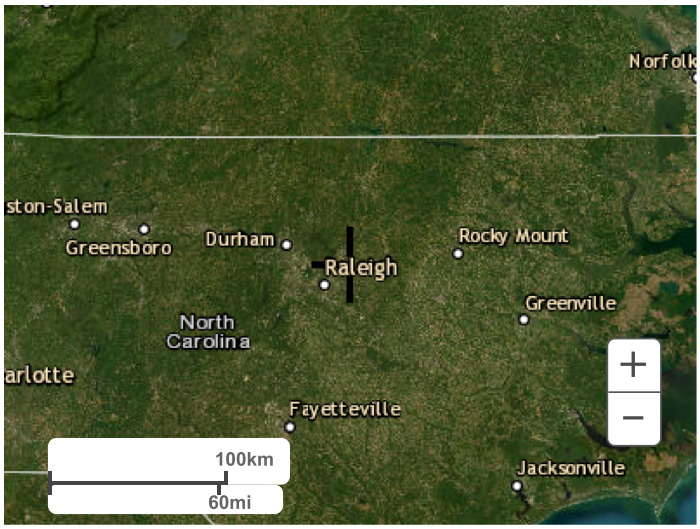
Large scale terrain



Large scale map



Large scale aerial



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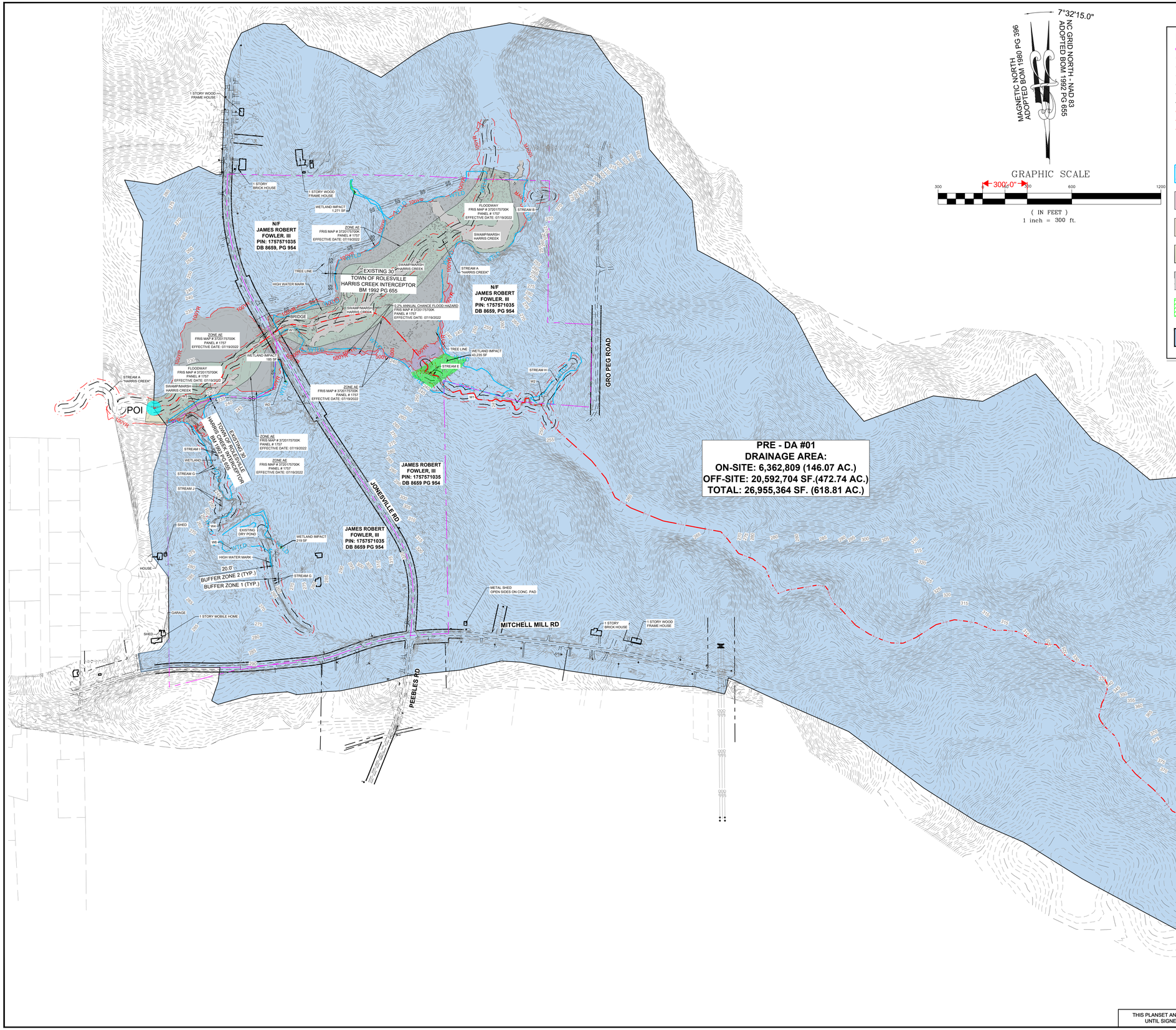
Disclaimer

2.2. Drainage Area Delineation Pre- & Post-Development

2.3 Pre-Development

PROGRESS PLOT DATE: 05/30/2024



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No.	REVISIONS	DATE	BY

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SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609

STRONG ROCK PROJECT	PSP-23-03		
NOT FOR CONSTRUCTION			
SCALE	AS SHOWN	DESIGNED BY	JWL
		DRAWN BY	SRG
		CHECKED BY	JWL

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
THE PRE - DRAINAGE AREA MAP

DRAWING SHEET
EX-01

01 OF 04

Pre-Development Hydrology

Project:	**Reserve at Mitchell Mill**
Subcatchment:	**Sub #1**

Location:	**0**
Date:	**6/4/2024**

Sub #1	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	All %	SCS CN CN * Area	SCS CN CN	Rational Runoff Coefficient, C value C * Area	C
On-Site	Impervious		0.00		0.00		0.00	294166	6.75	294,166	6.75	1.1%	661.8		6.42	
	Open		0.00		0.00		0.00	8405127	192.96	8,405,127	192.96	31.2%	15436.4		48.24	
	Wooded		0.00		0.00		0.00	17860894	410.03	17,860,894	410.03	66.3%	31572.3	78.5	61.50	0.20
	Pond		0.00		0.00		0.00	395326	9.08	395,326	9.08	1.5%	907.5		9.08	
	Sum		0.00		0.00		0.00	26,955,513	618.81	26,955,513	618.81	100.0%	48578.1		125.23	
Off-Site	Impervious		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Open		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Wooded		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Pond		0.00		0.00		0.00	0	0.00	0	0.00		0.0		0.00	
	Sum		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	

Total CN	**78.5**	Total C	**0.20**

Curve Number				
HSG	A	B	C	D
Impervious	98	98	98	98
Open	39	61	74	80
Wooded	30	55	70	77
Pond	100	100	100	100

Rational Runoff Coefficient, C	
Impervious	0.95
Unimproved Areas	0.35
Lawn (sandy soil)	0.15
Lawn (heavy soil)	0.25
Wooded areas	0.15
Wet pond	1

Total Area =	**618.81** ac
Composite SCS CN =	**78.5**
Rational Runoff Coefficient =	**0.20**
% Impervious =	**1.1%**
% Pervious =	**97.4%**

STRONGROCK ENGINEERING GROUP

TIME OF CONCENTRATION INFORMATION

Project:	**Reserve at Mitchell Mill**
Subcatchment:	**Sub #1**

Location:	**0**
Date:	**6/4/2024**

Segment 1: Sheet Flow (Overland Flow)

Length =	50	ft
Top Elev =	402.5	ft
Bot Elev =	402	ft
Height =	0.5	ft
Slope =	0.010	ft/ft
Surface Type =	Light Woods	
Manning's n =	0.4	
P (2-year/24-hour) =	3.46	inch
Tt =	0.26	hour
Tt =	**15.65**	**minutes**

$$T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5} s^{0.4}}$$

Segment 2: Shallow Concentrated Flow

Length =	857	ft
Top Elev =	402	ft
Bot Elev =	380	ft
Height =	22	ft
Slope =	0.026	ft/ft
Surface Type =	Unpaved	
Average Velocity =	2.59	ft/s
Tt =	0.09	hour
Tt =	**5.53**	**minutes**

$$T_t = \frac{L}{3600V}$$

Segment 3: Channel Flow

Length =	10000	ft
Top Elev =	380	ft
Bot Elev =	229.46	ft
Height =	150.54	ft
Slope =	0.015	ft/ft
Surface Type =	Grass	
Manning's n =	0.035	
Flow Area =	15	sf (5'w*3'h channel)
Wetted Perimeter =	11	ft (5'w*3'h channel)
Hydraulic Radius =	1.36	ft
Velocity =	6.42	ft/s
Tt =	0.43	hour
Tt =	**25.95**	**minutes**

$$T_t = \frac{L}{3600V} \qquad V = \frac{1.49 r^{\frac{2}{3}} s^{\frac{1}{2}}}{n}$$

Time of Concentration (Tc)

Tc = 47.1	**minutes**
SCS lag Time = 28.27	minutes
Time Increment = 8.20	minutes

Discharge point :		
Reach to point:		
Reach:		
Distance =		ft

2.4 Post-Development

PROGRESS PLOT DATE: 06/03/2024

TOWNHOME NOTES:

STATES INTERNAL TOWNHOME DRIVEWAYS ARE PRIVATE EASEMENTS AS PER CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT

LEGEND:

- STORM DRAIN LINE
- FLARED END SECTION
- YARD INLET
- CATCH BASIN
- EX. MAJOR CONTOURS
- EX. MINOR CONTOURS
- PROP. MAJOR CONTOURS
- PROP. MINOR CONTOURS
- PERVIOUS DRAINAGE AREA 1
- PERVIOUS DRAINAGE AREA 2
- PERVIOUS DRAINAGE AREA 3
- PERVIOUS DRAINAGE AREA 4
- PERVIOUS DRAINAGE AREA 5
- PERVIOUS DRAINAGE AREA 6
- PERVIOUS DRAINAGE AREA 7
- PERVIOUS DRAINAGE AREA 8
- IMPERVIOUS AREA
- EXISTING DRAINAGE AREA 1
- EXISTING DRAINAGE AREA 2
- EXISTING DRAINAGE AREA 3
- EXISTING DRAINAGE AREA 4
- EXISTING DRAINAGE AREA 5
- SOIL B
- SOIL C
- SOIL D

DA #6
DRAINAGE AREA:
TOTAL: 619,018 SF. (14.21 AC.)
IMPERVIOUS: 313,168 SF. (7.19 AC.)
SOIL C: 517,663 SF. (11.88 AC.)
SOIL D: 101,355 SF. (2.33 AC.)

EXISTING-DA #3 (OFFSITE)
DRAINAGE AREA:
TOTAL: 1,116,006 SF. (25.62 AC.)

DA #5
DRAINAGE AREA:
TOTAL: 177,389 SF. (4.07 AC.)
IMPERVIOUS: 100,797 SF. (2.31 AC.)
SOIL C: 136,787 SF. (3.14 AC.)
SOIL D: 40,590 SF. (0.93 AC.)

DA #7
DRAINAGE AREA:
TOTAL: 632,378 SF. (14.52 AC.)
IMPERVIOUS: 273,726 SF. (6.28 AC.)
SOIL C: 280,744 SF. (6.44 AC.)
SOIL D: 351,634 SF. (8.07 AC.)

DA #4
DRAINAGE AREA:
TOTAL: 367,292 SF. (8.43 AC.)
IMPERVIOUS: 196,923 SF. (4.52 AC.)
SOIL C: 279,788 SF. (6.42 AC.)
SOIL D: 87,504 SF. (2.01 AC.)

DA #3
DRAINAGE AREA:
TOTAL: 740,026 SF. (16.99 AC.)
IMPERVIOUS: 324,101 SF. (7.44 AC.)
SOIL C: 216,641 SF. (4.97 AC.)
SOIL D: 523,385 SF. (12.02 AC.)

EXISTING. DA #4
DRAINAGE AREA:
TOTAL: 83,756 SF. (1.92 AC.)

DA #8
DRAINAGE AREA:
TOTAL: 277,288 SF. (6.37 AC.)
IMPERVIOUS: 131,109 SF. (3.01 AC.)
SOIL B: 43,055 SF. (0.99 AC.)
SOIL C: 47,242 SF. (1.08 AC.)
SOIL D: 187,085 SF. (4.29 AC.)

EXISTING-DA #2 (OFFSITE)
DRAINAGE AREA:
TOTAL: 19,063,708 SF. (437.64 AC.)

EXISTING. DA #5
DRAINAGE AREA:
TOTAL: 27,192 SF. (0.62 AC.)

DA #2
DRAINAGE AREA:
TOTAL: 610,979 SF. (14.03 AC.)
IMPERVIOUS: 427,685 SF. (9.82 AC.)

EXISTING-DA #1 (OFFSITE)
DRAINAGE AREA:
TOTAL: 301,919 SF. (6.93 AC.)

DA #1
DRAINAGE AREA:
TOTAL: 432,366 SF. (9.93 AC.)
IMPERVIOUS: 202,232 SF. (4.64 AC.)
SOIL B: 100,967 SF. (2.32 AC.)
SOIL C: 293,999 SF. (6.75 AC.)
SOIL D: 37,401 SF. (0.86 AC.)

STREET 'Q' · STREET 'P' · STREET 'O' · STREET 'L' · STREET 'M' · STREET 'N' · STREET 'K' · STREET 'H' · STREET 'F' · STREET 'J' · STREET 'E' · STREET 'A' · STREET 'R' · STREET 'C' · STREET 'G' · STREET 'B'

PUBLIC ALLEY '4' · PUBLIC ALLEY '2' · PUBLIC ALLEY '3' · PUBLIC ALLEY '1'

JONESVILLE RD · MITCHELL MILL RD. (60' PUBLIC R/W) · PEEBLES RD. (60' PUBLIC R/W)

Gro Peg Road (47' PRIVATE R/W) RECORDED BOOK OF MAPS 1990 PAGE 396

PROPERTY LINE

POI #1 · POI #2 · POI #3 · POI #4 · POI #5 · POI #6 · POI #7 · POI #8 · POI

SCM #1 WET POND · SCM #2 WET POND · SCM #3 WET POND · SCM #4 WET POND · SCM #5 WET POND · SCM #6 WET POND · SCM #7 WET POND · SCM #8 WET POND

7°32'15.0"

MAGNETIC NORTH
ADOPTED BOM 1990 PG 396

NC GRID NORTH - NAD 83
ADOPTED BOM 1992 PG 655

GRAPHIC SCALE

300 0 150 300 600 1200

(IN FEET)
1 inch = 300 ft.

THIS PLANSET AND ANY ASSOCIATED DOCUMENTS ARE PRELIMINARY AND NOT AUTHORIZED FOR CONSTRUCTION UNTIL SIGNED, DATED, AND OFFICIALLY RELEASED FOR CONSTRUCTION BY THE ENGINEER OF RECORD.

No.	REVISIONS	DATE	BY
01	PRELIMINARY SUBDIVISION PLAT PSP-23-03	08/01/2023	SREG
02	TOWN OF ROLESVILLE COMMENTS PSP-23-03	12/05/2023	SREG
03	TOWN OF ROLESVILLE COMMENTS PSP V3-23-03	03/01/2024	SREG
04	TOWN OF ROLESVILLE COMMENTS PSP V4-23-03	06/04/2024	SREG

SEAL:
NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

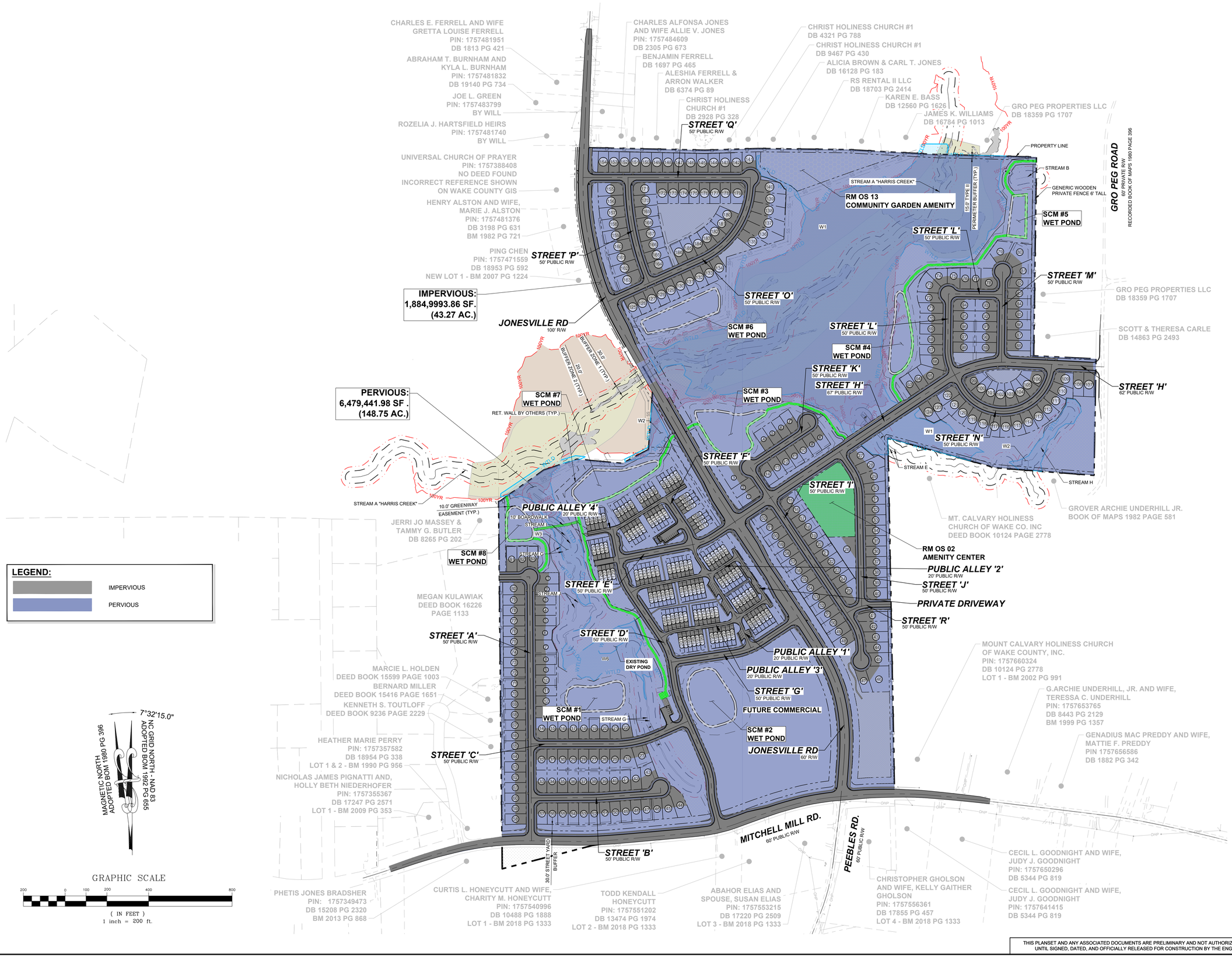
STRONG ROCK PROJECT PSP-23-03
NOT FOR CONSTRUCTION
SCALE AS SHOWN
DESIGNED BY JWL
DRAWN BY SRG
CHECKED BY JWL

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
PRELIMINARY SUBDIVISION PLAT
THE POST - DRAINAGE AREA FOR SCM

DRAWING SHEET
EXH-03

03 OF 04

PROGRESS PLOT DATE: 05/23/2024



LEGEND:

- IMPERVIOUS
- PERVIOUS

No.	REVISIONS	DATE	BY

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

SEAL

STRONGROCK ENGINEERING GROUP

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STRONG ROCK PROJECT PSP-23-03			
NOT FOR CONSTRUCTION	SCALE	AS SHOWN	
	DESIGNED BY	JWL	
	DRAWN BY	SRG	
	CHECKED BY	JWL	

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
THE IMPERVIOUS MAP

DRAWING SHEET
EXH-02

02 OF 04

THIS PLANSET AND ANY ASSOCIATED DOCUMENTS ARE PRELIMINARY AND NOT AUTHORIZED FOR CONSTRUCTION UNTIL SIGNED, DATED, AND OFFICIALLY RELEASED FOR CONSTRUCTION BY THE ENGINEER OF RECORD.

Project:	**Reserve at Mitchell Mill**
Location:	**0**
Date:	**6/4/2024**

ac	1
sf	43560

Acreage	6,140,471	140.9658	
Total number lots	387		
average lot size	4000		
Total disturbed area		0.00	
Location:	Rolesville		35.9895691
County	Wake		-78.7760686

Imperviuops area	Area (sf)	Area (ac)	
Roadway/parking	572,786	13.15	
Sidewalk	192,677	4.42	
Single family lots	146,191	3.36	
Play grounds/others	43,560	1.00	
Total	955,214	21.93	15.6%

Post-Development Hydrology Input Summary

Subcatchment	On-Site Area		Off-Site Area		ALL-SITE Area		Impervious Area		
	sf	ac	sf	ac	sf	ac	sf	ac	%
Sub #1	432,366	9.93		0.00	432,366	9.93	202,236	4.64	46.77%
Sub #2	610,979	14.03		0.00	610,979	14.03	68,647	1.58	11.24%
Sub #3	740,026	16.99		0.00	740,026	16.99	323,901	7.44	43.77%
Sub #4	367,292	8.43		0.00	367,292	8.43	197,019	4.52	53.64%
Sub #5	177,389	4.07		0.00	177,389	4.07	100,505	2.31	56.66%
Sub #6	619,018	14.21		0.00	619,018	14.21	313,396	7.19	50.63%
Sub #7	632,378	14.52		0.00	632,378	14.52	273,508	6.28	43.25%
Sub #8	277,288	6.37		0.00	277,288	6.37	131,313	3.01	47.36%
Bypass #1		0.00	301,919	6.93	301,919	6.93	0	0.00	
Bypass #2		0.00	19,063,708	437.64	19,063,708	437.64	0	0.00	
Bypass #3		0.00	1,116,006	25.62	1,116,006	25.62	0	0.00	
Bypass #4		0.00	83,756	1.92	83,756	1.92	0	0.00	
Bypass #5		0.00	15,539,791	356.74	15,539,791	356.74	0	0.00	
Bypass #6		0.00		0.00	0	0.00	0	0.00	
Bypass #7		0.00		0.00	0	0.00	0	0.00	
Bypass #8		0.00		0.00	0	0.00	0	0.00	
Bypass #9		0.00		0.00	0	0.00	0	0.00	
Bypass #10		0.00		0.00	0	0.00	0	0.00	
All	3,856,736	88.54	36,105,180	828.86	39,961,916	917.40	1,610,524	36.97	41.76%

Subcatchment	Description	Total Area (ac)	SCS CN	Tc (min)
Sub #1	DC	**2.05**	**98.0**	**6.5**
	NDC	**7.88**	**87.6**	
Sub #2	DC	**1.09**	**98.0**	**5.0**
	NDC	**12.93**	**81.5**	
Sub #3	DC	**3.60**	**98.0**	**7.4**
	NDC	**13.39**	**86.6**	
Sub #4	DC	**2.28**	**98.0**	**5.3**
	NDC	**6.15**	**88.5**	
Sub #5	DC	**1.13**	**98.0**	**5.0**
	NDC	**2.94**	**89.2**	
Sub #6	DC	**3.57**	**98.0**	**14.8**
	NDC	**10.64**	**87.5**	
Sub #7	DC	**2.69**	**98.0**	**6.2**
	NDC	**11.83**	**86.9**	
Sub #8	DC	**1.23**	**98.0**	**6.8**
	NDC	**5.14**	**87.5**	
Bypass #1	DC	**0.00**	**0.0**	**14.0**
	NDC	**6.93**	**78.9**	
Bypass #2	DC	**0.00**	**0.0**	**38.1**
	NDC	**437.64**	**78.9**	
Bypass #3	DC	**0.00**	**0.0**	**19.6**
	NDC	**25.62**	**78.9**	
Bypass #4	DC	**0.00**	**0.0**	**26.2**
	NDC	**1.92**	**78.9**	
Bypass #5	DC	**0.00**	**0.0**	**34.9**
	NDC	**356.74**	**77.6**	
Bypass #6	DC	**0.00**	**0.0**	**5.0**
	NDC	**1.54**	**80.0**	
Bypass #7	DC	**0.00**	**0.0**	
	NDC	**0.00**	**0.0**	
Bypass #8	DC	**0.00**	**0.0**	
	NDC	**0.00**	**0.0**	
Bypass #9	DC	**0.00**	**0.0**	
	NDC	**0.00**	**0.0**	
Bypass #10	DC	**0.00**	**0.0**	
	NDC	**0.00**	**0.0**	

Post-Development Hydrology

Project: **Reserve at Mitchell Mill**
Subcatchment: **Sub #1**

Location: **0**
Date: **6/4/2024**

Part 1: Land Use Breakdown

Sub #1	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	All %	SCS CN CN * Area	SCS CN CN	Rational Runoff Coefficient, C value C * Area	C
On-Site	Roadway		0.00		0.00		0.00	42,000	0.96	42,000	0.96	9.7%	94.5		0.92	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Driveway	0	0.00	0	0.00	0	0.00	16,000	0.37	16,000	0.37	3.7%	36.0		0.35	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00	0	0.00	0	0.00	0.0%	0.0		0.00	
	Roof	0	0.00	0	0.00	0	0.00	125,000	2.87	125,000	2.87	28.9%	281.2		2.87	
	Sidewalk (Includes Patios)	0	0.00	0	0.00	0	0.00	19,236	0.44	19,236	0.44	4.4%	43.3	89.8	0.42	0.64
	Lawn		0.00		0.00		0.00	109,000	2.50	109,000	2.50	25.2%	200.2		0.63	
	Managed pervious (Open Space)	0	0.00	0	0.00	0	0.00	92,342	2.12	92,342	2.12	21.4%	169.6		0.53	
	Woods		0.00		0.00		0.00	0	0.00	0	0.00	0.0%	0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00	28,788	0.66	28,788	0.66	6.7%	66.1		0.66	
	Sum		0.00		0.00		0.00	432,366	9.93	432,366	9.93	100.0%	890.8		6.37	
Off-Site	Roadway		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Driveway		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Roof		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Sidewalk (Includes Patios)		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Lawn		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Managed pervious (Open Space)		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Woods		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Sum		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
										432,366	9.93		CN	89.8	C	0.64

Part 2: Directly Connected (DC) Impervious Area (Only for On-Site Area)

DC	Area (ac)	2.05	(Assumption: Roadway, driveway, parking lot, and 25% of roofs are assumed as DC impervious areas
	CN	98.0	

Part 3: Pervious Area and Non-Directly Connected (NDC) Impervious Area

NDC	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	SCS CN CN * Area	SCS CN CN
On-Site	Impervious	0	0.00	0	0.00	0	0.00	112,986	2.59	112,986	2.59	254.2	
	Open	0	0.00	0	0.00	0	0.00	201,342	4.62	201,342	4.62	369.8	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	28788	0.66	28,788	0.66	66.1	
Off-Site	Impervious	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	87.6
	Open	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
										343,116	7.88	690.1	

Curve Number				
HSG	A	B	C	D
Impervious	98	98	98	98
Open	39	61	74	80
Wooded	30	55	70	77
Pond	100	100	100	100

Rational Runoff Coefficient, C	
Asphalt, Concrete	0.95
Roof	1
Unimproved Areas	0.35
Lawn (sandy soil)	0.15
Lawn (heavy soil)	0.25
Wooded areas	0.15
Wet pond	1

Sub #1	Area (ac)	SCS CN
DC	2.05	98.0
NDC	7.88	87.6

Post-Development Hydrology

Project: **Reserve at Mitchell Mill**
Subcatchment: **Sub #2**

Location: **0**
Date: **6/4/2024**

Part 1: Land Use Breakdown

Sub #2	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	All %	SCS CN CN * Area	SCS CN CN	Rational Runoff Coefficient, C value C * Area	C
On-Site	Roadway		0.00		0.00		0.00	46,000	1.06	46,000	1.06	7.5%	103.5		1.00	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Driveway	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0%	0.0		0.00	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00	1,579	0.04	1,579	0.04	0.3%	3.6		0.03	
	Roof	0	0.00		0.00	0	0.00	0	0.00	0	0.00	0.0%	0.0		0.00	
	Sidewalk (Includes Patios)	0	0.00	0	0.00	0	0.00	21,068	0.48	21,068	0.48	3.4%	47.4	82.7	0.46	0.36
	Lawn	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0%	0.0		0.00	
	Managed pervious (Open Space)	0	0.00	0	0.00	0	0.00	520,422	11.95	520,422	11.95	85.2%	955.8		2.99	
	Woods		0.00	0	0.00		0.00	0	0.00	0	0.00	0.0%	0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00	21,910	0.50	21,910	0.50	3.6%	50.3		0.50	
	Sum		0.00		0.00		0.00	610,979	14.03	610,979	14.03	100.0%	1160.5		4.99	
Off-Site	Roadway		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Driveway		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Roof		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Sidewalk (Includes Patios)		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Lawn		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Managed pervious (Open Space)		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Woods		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Sum		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
										610,979	14.03		CN	82.7	C	0.36

Part 2: Directly Connected (DC) Impervious Area (Only for On-Site Area)

DC	Area (ac)	1.09	(Assumption: Roadway, driveway, parking lot, and 25% of roofs are assumed as DC impervious areas
	CN	98.0	

Part 3: Pervious Area and Non-Directly Connected (NDC) Impervious Area

NDC	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	SCS CN CN * Area	SCS CN CN
On-Site	Impervious	0	0.00	0	0.00	0	0.00	21,068	0.48	21,068	0.48	47.4	
	Open	0	0.00	0	0.00	0	0.00	520,422	11.95	520,422	11.95	955.8	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	21910	0.50	21,910	0.50	50.3	
Off-Site	Impervious	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	81.5
	Open	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
										563,400	12.93	1053.5	

Curve Number				
HSG	A	B	C	D
Impervious	98	98	98	98
Open	39	61	74	80
Wooded	30	55	70	77
Pond	100	100	100	100

Rational Runoff Coefficient, C	
Asphalt, Concrete	0.95
Roof	1
Unimproved Areas	0.35
Lawn (sandy soil)	0.15
Lawn (heavy soil)	0.25
Wooded areas	0.15
Wet pond	1

Sub #2	Area (ac)	SCS CN
DC	1.09	98.0
NDC	12.93	81.5

Post-Development Hydrology

Project: **Reserve at Mitchell Mill**
Subcatchment: **Sub #1**

Location: **0**
Date: **6/4/2024**

Part 1: Land Use Breakdown

Sub #1	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	All %	SCS CN CN * Area	SCS CN CN	Rational Runoff Coefficient, C value C * Area	C
On-Site	Roadway		0.00		0.00		0.00	42,000	0.96	42,000	0.96	9.7%	94.5		0.92	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Driveway	0	0.00	0	0.00	0	0.00	16,000	0.37	16,000	0.37	3.7%	36.0		0.35	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00	0	0.00	0	0.00	0.0%	0.0		0.00	
	Roof	0	0.00	0	0.00	0	0.00	125,000	2.87	125,000	2.87	28.9%	281.2		2.87	
	Sidewalk (Includes Patios)	0	0.00	0	0.00	0	0.00	19,236	0.44	19,236	0.44	4.4%	43.3	89.8	0.42	0.64
	Lawn		0.00		0.00		0.00	109,000	2.50	109,000	2.50	25.2%	200.2		0.63	
	Managed pervious (Open Space)	0	0.00	0	0.00	0	0.00	92,342	2.12	92,342	2.12	21.4%	169.6		0.53	
	Woods		0.00		0.00		0.00	0	0.00	0	0.00	0.0%	0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00	28,788	0.66	28,788	0.66	6.7%	66.1		0.66	
	Sum		0.00		0.00		0.00	432,366	9.93	432,366	9.93	100.0%	890.8		6.37	
Off-Site	Roadway		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Driveway		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Roof		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Sidewalk (Includes Patios)		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Lawn		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Managed pervious (Open Space)		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Woods		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Sum		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
										432,366	9.93		CN	89.8	C	0.64

Part 2: Directly Connected (DC) Impervious Area (Only for On-Site Area)

DC	Area (ac)	2.05	(Assumption: Roadway, driveway, parking lot, and 25% of roofs are assumed as DC impervious areas
	CN	98.0	

Part 3: Pervious Area and Non-Directly Connected (NDC) Impervious Area

NDC	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	SCS CN CN * Area	SCS CN CN
On-Site	Impervious	0	0.00	0	0.00	0	0.00	112,986	2.59	112,986	2.59	254.2	
	Open	0	0.00	0	0.00	0	0.00	201,342	4.62	201,342	4.62	369.8	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	28788	0.66	28,788	0.66	66.1	
Off-Site	Impervious	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	87.6
	Open	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
										343,116	7.88	690.1	

Curve Number				
HSG	A	B	C	D
Impervious	98	98	98	98
Open	39	61	74	80
Wooded	30	55	70	77
Pond	100	100	100	100

Rational Runoff Coefficient, C	
Asphalt, Concrete	0.95
Roof	1
Unimproved Areas	0.35
Lawn (sandy soil)	0.15
Lawn (heavy soil)	0.25
Wooded areas	0.15
Wet pond	1

Sub #1	Area (ac)	SCS CN
DC	2.05	98.0
NDC	7.88	87.6

Post-Development Hydrology

Project: **Reserve at Mitchell Mill**
Subcatchment: **Sub #2**

Location: **0**
Date: **6/4/2024**

Part 1: Land Use Breakdown

Sub #2	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	All %	SCS CN CN * Area	SCS CN CN	Rational Runoff Coefficient, C value C * Area	C
On-Site	Roadway		0.00		0.00		0.00	46,000	1.06	46,000	1.06	7.5%	103.5		1.00	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Driveway	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0%	0.0		0.00	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00	1,579	0.04	1,579	0.04	0.3%	3.6		0.03	
	Roof	0	0.00		0.00	0	0.00	0	0.00	0	0.00	0.0%	0.0		0.00	
	Sidewalk (Includes Patios)	0	0.00	0	0.00	0	0.00	21,068	0.48	21,068	0.48	3.4%	47.4	82.7	0.46	0.36
	Lawn	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0%	0.0		0.00	
	Managed pervious (Open Space)	0	0.00	0	0.00	0	0.00	520,422	11.95	520,422	11.95	85.2%	955.8		2.99	
	Woods		0.00	0	0.00		0.00	0	0.00	0	0.00	0.0%	0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00	21,910	0.50	21,910	0.50	3.6%	50.3		0.50	
	Sum		0.00		0.00		0.00	610,979	14.03	610,979	14.03	100.0%	1160.5		4.99	
Off-Site	Roadway		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Driveway		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Roof		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Sidewalk (Includes Patios)		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Lawn		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Managed pervious (Open Space)		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Woods		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Sum		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
										610,979	14.03		CN	82.7	C	0.36

Part 2: Directly Connected (DC) Impervious Area (Only for On-Site Area)

DC	Area (ac)	1.09	(Assumption: Roadway, driveway, parking lot, and 25% of roofs are assumed as DC impervious areas
	CN	98.0	

Part 3: Pervious Area and Non-Directly Connected (NDC) Impervious Area

NDC	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	SCS CN CN * Area	SCS CN CN
On-Site	Impervious	0	0.00	0	0.00	0	0.00	21,068	0.48	21,068	0.48	47.4	
	Open	0	0.00	0	0.00	0	0.00	520,422	11.95	520,422	11.95	955.8	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	21910	0.50	21,910	0.50	50.3	
Off-Site	Impervious	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	81.5
	Open	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
										563,400	12.93	1053.5	

Curve Number				
HSG	A	B	C	D
Impervious	98	98	98	98
Open	39	61	74	80
Wooded	30	55	70	77
Pond	100	100	100	100

Rational Runoff Coefficient, C	
Asphalt, Concrete	0.95
Roof	1
Unimproved Areas	0.35
Lawn (sandy soil)	0.15
Lawn (heavy soil)	0.25
Wooded areas	0.15
Wet pond	1

Sub #2	Area (ac)	SCS CN
DC	1.09	98.0
NDC	12.93	81.5

Post-Development Hydrology

Project: **Reserve at Mitchell Mill**
Subcatchment: **Sub #3**

Location: **0**
Date: **6/4/2024**

Part 1: Land Use Breakdown

Sub #3	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	All %	SCS CN CN * Area	SCS CN CN	Rational Runoff Coefficient, C value C * Area	C
On-Site	Roadway		0.00		0.00		0.00	94,500	2.17	94,500	2.17	12.8%	212.6		2.06	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Driveway	0	0.00	0	0.00	0	0.00	21,120	0.48	21,120	0.48	2.9%	47.5		0.46	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00	0	0.00	0	0.00	0.0%	0.0		0.00	
	Roof	0	0.00	0	0.00	0	0.00	165,000	3.79	165,000	3.79	22.3%	371.2		3.79	
	Sidewalk (Includes Patios)	0	0.00	0	0.00	0	0.00	43,281	0.99	43,281	0.99	5.8%	97.4	89.0	0.94	0.61
	Lawn	0	0.00	0	0.00	0	0.00	143,880	3.30	143,880	3.30	19.4%	264.2		0.83	
	Managed pervious (Open Space)	0	0.00	0	0.00	0	0.00	229,958	5.28	229,958	5.28	31.1%	422.3		1.32	
	Woods		0.00		0.00		0.00	0	0.00	0	0.00	0.0%	0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00	42,287	0.97	42,287	0.97	5.7%	97.1		0.97	
	Sum		0.00		0.00		0.00	740,026	16.99	740,026	16.99	100.0%	1512.4		10.37	
Off-Site	Roadway		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Driveway		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Roof		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Sidewalk (Includes Patios)		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Lawn		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Managed pervious (Open Space)		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Woods		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Sum		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
										740,026	16.99		CN	89.0	C	0.61

Part 2: Directly Connected (DC) Impervious Area (Only for On-Site Area)

DC	Area (ac)	3.60	(Assumption: Roadway, driveway, parking lot, and 25% of roofs are assumed as DC impervious areas
	CN	98.0	

Part 3: Pervious Area and Non-Directly Connected (NDC) Impervious Area

NDC	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	SCS CN CN * Area	SCS CN CN
On-Site	Impervious	0	0.00	0	0.00	0	0.00	167,031	3.83	167,031	3.83	375.8	
	Open	0	0.00	0	0.00	0	0.00	373,838	8.58	373,838	8.58	686.6	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	42287	0.97	42,287	0.97	97.1	
Off-Site	Impervious	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	86.6
	Open	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
										583,156	13.39	1159.4	

Curve Number				
HSG	A	B	C	D
Impervious	98	98	98	98
Open	39	61	74	80
Wooded	30	55	70	77
Pond	100	100	100	100

Rational Runoff Coefficient, C	
Asphalt, Concrete	0.95
Roof	1
Unimproved Areas	0.35
Lawn (sandy soil)	0.15
Lawn (heavy soil)	0.25
Wooded areas	0.15
Wet pond	1

Sub #3	Area (ac)	SCS CN
DC	3.60	98.0
NDC	13.39	86.6

Post-Development Hydrology

Project: **Reserve at Mitchell Mill**
Subcatchment: **Sub #4**

Location: **0**
Date: **6/4/2024**

Part 1: Land Use Breakdown

Sub #4	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	All %	SCS CN CN * Area	SCS CN CN	Rational Runoff Coefficient, C value C * Area	C
On-Site	Roadway		0.00		0.00		0.00	65,500	1.50	65,500	1.50	17.8%	147.4		1.43	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Driveway	0	0.00	0	0.00	0	0.00	11,520	0.26	11,520	0.26	3.1%	25.9		0.25	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00	0	0.00	0	0.00	0.0%	0.0		0.00	
	Roof	0	0.00	0	0.00	0	0.00	90,000	2.07	90,000	2.07	24.5%	202.5		2.07	
	Sidewalk (Includes Patios)	0	0.00	0	0.00	0	0.00	29,999	0.69	29,999	0.69	8.2%	67.5	91.1	0.65	0.69
	Lawn	0	0.00	0	0.00	0	0.00	78,480	1.80	78,480	1.80	21.4%	144.1		0.45	
	Managed pervious (Open Space)	0	0.00	0	0.00	0	0.00	66,020	1.52	66,020	1.52	18.0%	121.2		0.38	
	Woods		0.00		0.00		0.00	0	0.00	0	0.00	0.0%	0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00	25,773	0.59	25,773	0.59	7.0%	59.2		0.59	
	Sum		0.00		0.00		0.00	367,292	8.43	367,292	8.43	100.0%	767.8		5.82	
Off-Site	Roadway		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Driveway		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Roof		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Sidewalk (Includes Patios)		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Lawn		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Managed pervious (Open Space)		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Woods		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Sum		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
										367,292	8.43		CN	91.1	C	0.69

Part 2: Directly Connected (DC) Impervious Area (Only for On-Site Area)

DC	Area (ac)	2.28	(Assumption: Roadway, driveway, parking lot, and 25% of roofs are assumed as DC impervious areas
	CN	98.0	

Part 3: Pervious Area and Non-Directly Connected (NDC) Impervious Area

NDC	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	SCS CN CN * Area	SCS CN CN
On-Site	Impervious	0	0.00	0	0.00	0	0.00	97,499	2.24	97,499	2.24	219.4	
	Open	0	0.00	0	0.00	0	0.00	144,500	3.32	144,500	3.32	265.4	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	25773	0.59	25,773	0.59	59.2	
Off-Site	Impervious	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	88.5
	Open	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
										267,772	6.15	543.9	

Curve Number				
HSG	A	B	C	D
Impervious	98	98	98	98
Open	39	61	74	80
Wooded	30	55	70	77
Pond	100	100	100	100

Rational Runoff Coefficient, C	
Asphalt, Concrete	0.95
Roof	1
Unimproved Areas	0.35
Lawn (sandy soil)	0.15
Lawn (heavy soil)	0.25
Wooded areas	0.15
Wet pond	1

Sub #4	Area (ac)	SCS CN
DC	2.28	98.0
NDC	6.15	88.5

Post-Development Hydrology

Project: **Reserve at Mitchell Mill**
Subcatchment: **Sub #5**

Location: **0**
Date: **6/4/2024**

Part 1: Land Use Breakdown

Sub #5	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	All %	SCS CN CN * Area	SCS CN CN	Rational Runoff Coefficient, C value C * Area	C
On-Site	Roadway		0.00		0.00		0.00	30,250	0.69	30,250	0.69	17.1%	68.1		0.66	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Driveway	0	0.00	0	0.00	0	0.00	6,400	0.15	6,400	0.15	3.6%	14.4		0.14	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00	0	0.00	0	0.00	0.0%	0.0		0.00	
	Roof	0	0.00	0	0.00	0	0.00	50,000	1.15	50,000	1.15	28.2%	112.5		1.15	
	Sidewalk (Includes Patios)	0	0.00	0	0.00	0	0.00	13,855	0.32	13,855	0.32	7.8%	31.2	91.6	0.30	0.71
	Lawn	0	0.00	0	0.00	0	0.00	43,600	1.00	43,600	1.00	24.6%	80.1		0.25	
	Managed pervious (Open Space)	0	0.00	0	0.00	0	0.00	20,831	0.48	20,831	0.48	11.7%	38.3		0.12	
	Woods		0.00		0.00		0.00	0	0.00	0	0.00	0.0%	0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00	12,454	0.29	12,454	0.29	7.0%	28.6		0.29	
	Sum		0.00		0.00		0.00	177,389	4.07	177,389	4.07	100.0%	373.0		2.90	
Off-Site	Roadway		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Driveway		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Roof		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Sidewalk (Includes Patios)		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Lawn		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Managed pervious (Open Space)		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Woods		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Sum		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
										177,389	4.07		CN	91.6	C	0.71

Part 2: Directly Connected (DC) Impervious Area (Only for On-Site Area)

DC	Area (ac)	1.13	(Assumption: Roadway, driveway, parking lot, and 25% of roofs are assumed as DC impervious areas
	CN	98.0	

Part 3: Pervious Area and Non-Directly Connected (NDC) Impervious Area

NDC	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	SCS CN CN * Area	SCS CN CN
On-Site	Impervious	0	0.00	0	0.00	0	0.00	51,355	1.18	51,355	1.18	115.5	
	Open	0	0.00	0	0.00	0	0.00	64,431	1.48	64,431	1.48	118.3	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	12454	0.29	12,454	0.29	28.6	
Off-Site	Impervious	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	89.2
	Open	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
										128,239	2.94	262.5	

Curve Number				
HSG	A	B	C	D
Impervious	98	98	98	98
Open	39	61	74	80
Wooded	30	55	70	77
Pond	100	100	100	100

Rational Runoff Coefficient, C	
Asphalt, Concrete	0.95
Roof	1
Unimproved Areas	0.35
Lawn (sandy soil)	0.15
Lawn (heavy soil)	0.25
Wooded areas	0.15
Wet pond	1

Sub #5	Area (ac)	SCS CN
DC	1.13	98.0
NDC	2.94	89.2

Post-Development Hydrology

Project: **Reserve at Mitchell Mill**
Subcatchment: **Sub #6**

Location: **0**
Date: **6/4/2024**

Part 1: Land Use Breakdown

Sub #6	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	All %	SCS CN CN * Area	SCS CN CN	Rational Runoff Coefficient, C value C * Area	C
On-Site	Roadway		0.00		0.00		0.00	98,900	2.27	98,900	2.27	16.0%	222.5		2.16	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Driveway	0	0.00	0	0.00	0	0.00	19,200	0.44	19,200	0.44	3.1%	43.2		0.42	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00	0	0.00	0	0.00	0.0%	0.0		0.00	
	Roof	0	0.00	0	0.00	0	0.00	150,000	3.44	150,000	3.44	24.2%	337.5		3.44	
	Sidewalk (Includes Patios)	0	0.00	0	0.00	0	0.00	45,296	1.04	45,296	1.04	7.3%	101.9	90.1	0.99	0.66
	Lawn	0	0.00	0	0.00	0	0.00	130,800	3.00	130,800	3.00	21.1%	240.2		0.75	
	Managed pervious (Open Space)	0	0.00	0	0.00	0	0.00	142,755	3.28	142,755	3.28	23.1%	262.2		0.82	
	Woods		0.00		0.00		0.00	0	0.00	0	0.00	0.0%	0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00	32,067	0.74	32,067	0.74	5.2%	73.6		0.74	
	Sum		0.00		0.00		0.00	619,018	14.21	619,018	14.21	100.0%	1281.1		9.31	
Off-Site	Roadway		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Driveway		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Roof		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Sidewalk (Includes Patios)		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Lawn		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Managed pervious (Open Space)		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Woods		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Sum		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
										619,018	14.21		CN	90.1	C	0.66

Part 2: Directly Connected (DC) Impervious Area (Only for On-Site Area)

DC	Area (ac)	3.57	(Assumption: Roadway, driveway, parking lot, and 25% of roofs are assumed as DC impervious areas
	CN	98.0	

Part 3: Pervious Area and Non-Directly Connected (NDC) Impervious Area

NDC	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	SCS CN CN * Area	SCS CN CN
On-Site	Impervious	0	0.00	0	0.00	0	0.00	157,796	3.62	157,796	3.62	355.0	
	Open	0	0.00	0	0.00	0	0.00	273,555	6.28	273,555	6.28	502.4	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	32067	0.74	32,067	0.74	73.6	
Off-Site	Impervious	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	87.5
	Open	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
										463,418	10.64	931.0	

Curve Number				
HSG	A	B	C	D
Impervious	98	98	98	98
Open	39	61	74	80
Wooded	30	55	70	77
Pond	100	100	100	100

Rational Runoff Coefficient, C	
Asphalt, Concrete	0.95
Roof	1
Unimproved Areas	0.35
Lawn (sandy soil)	0.15
Lawn (heavy soil)	0.25
Wooded areas	0.15
Wet pond	1

Sub #6	Area (ac)	SCS CN
DC	3.57	98.0
NDC	10.64	87.5

Post-Development Hydrology

Project: **Reserve at Mitchell Mill**
Subcatchment: **Sub #7**

Location: **0**
Date: **6/4/2024**

Part 1: Land Use Breakdown

Sub #7	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	All %	SCS CN CN * Area	SCS CN CN	Rational Runoff Coefficient, C value C * Area	C
On-Site	Roadway		0.00		0.00		0.00	32,200	0.74	32,200	0.74	5.1%	72.4		0.70	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Driveway	0	0.00	0	0.00	0	0.00	37,760	0.87	37,760	0.87	6.0%	85.0		0.82	
	Parking lot/Play ground/Pump station		0.00	0	0.00		0.00	0	0.00	0	0.00	0.0%	0.0		0.00	
	Roof	0	0.00	0	0.00	0	0.00	188,800	4.33	188,800	4.33	29.9%	424.8		4.33	
	Sidewalk (Includes Patios)	0	0.00	0	0.00	0	0.00	14,748	0.34	14,748	0.34	2.3%	33.2	88.9	0.32	0.61
	Lawn	0	0.00	0	0.00	0	0.00	9,440	0.22	9,440	0.22	1.5%	17.3		0.05	
	Managed pervious (Open Space)	0	0.00	0	0.00	0	0.00	313,640	7.20	313,640	7.20	49.6%	576.0		1.80	
	Woods		0.00	0	0.00		0.00	0	0.00	0	0.00	0.0%	0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00	35,790	0.82	35,790	0.82	5.7%	82.2		0.82	
	Sum		0.00		0.00		0.00	632,378	14.52	632,378	14.52	100.0%	1290.8		8.86	
Off-Site	Roadway		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Driveway		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Roof		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Sidewalk (Includes Patios)		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Lawn		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Managed pervious (Open Space)		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Woods		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Sum		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
										632,378	14.52		CN	88.9	C	0.61

Part 2: Directly Connected (DC) Impervious Area (Only for On-Site Area)

DC	Area (ac)	2.69	(Assumption: Roadway, driveway, parking lot, and 25% of roofs are assumed as DC impervious areas
	CN	98.0	

Part 3: Pervious Area and Non-Directly Connected (NDC) Impervious Area

NDC	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	SCS CN CN * Area	SCS CN CN
On-Site	Impervious	0	0.00	0	0.00	0	0.00	156,348	3.59	156,348	3.59	351.7	
	Open	0	0.00	0	0.00	0	0.00	323,080	7.42	323,080	7.42	593.4	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	35790	0.82	35,790	0.82	82.2	
Off-Site	Impervious	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	86.9
	Open	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
										515,218	11.83	1027.3	

Curve Number				
HSG	A	B	C	D
Impervious	98	98	98	98
Open	39	61	74	80
Wooded	30	55	70	77
Pond	100	100	100	100

Rational Runoff Coefficient, C	
Asphalt, Concrete	0.95
Roof	1
Unimproved Areas	0.35
Lawn (sandy soil)	0.15
Lawn (heavy soil)	0.25
Wooded areas	0.15
Wet pond	1

Sub #7	Area (ac)	SCS CN
DC	2.69	98.0
NDC	11.83	86.9

Post-Development Hydrology

Project: **Reserve at Mitchell Mill**
Subcatchment: **Sub #8**

Location: **0**
Date: **6/4/2024**

Part 1: Land Use Breakdown

Sub #8	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	All %	SCS CN CN * Area	SCS CN CN	Rational Runoff Coefficient, C value C * Area	C
On-Site	Roadway		0.00		0.00		0.00	18,500	0.42	18,500	0.42	6.7%	41.6		0.40	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Driveway	0	0.00	0	0.00	0	0.00	11,840	0.27	11,840	0.27	4.3%	26.6		0.26	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00	0	0.00	0	0.00	0.0%	0.0		0.00	
	Roof	0	0.00	0	0.00	0	0.00	92,500	2.12	92,500	2.12	33.4%	208.1		2.12	
	Sidewalk (Includes Patios)	0	0.00	0	0.00	0	0.00	8,473	0.19	8,473	0.19	3.1%	19.1	89.6	0.18	0.64
	Lawn	0	0.00	0	0.00	0	0.00	80,660	1.85	80,660	1.85	29.1%	148.1		0.46	
	Managed pervious (Open Space)	0	0.00	0	0.00	0	0.00	51,081	1.17	51,081	1.17	18.4%	93.8		0.29	
	Woods		0.00		0.00		0.00	0	0.00	0	0.00	0.0%	0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00	14,234	0.33	14,234	0.33	5.1%	32.7		0.33	
	Sum		0.00		0.00		0.00	277,288	6.37	277,288	6.37	100.0%	570.0		4.05	
Off-Site	Roadway		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Driveway		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Roof		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Sidewalk (Includes Patios)		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Lawn		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Managed pervious (Open Space)		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Woods		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Sum		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
										277,288	6.37		CN	89.6	C	0.64

Part 2: Directly Connected (DC) Impervious Area (Only for On-Site Area)

DC	Area (ac)	1.23	(Assumption: Roadway, driveway, parking lot, and 25% of roofs are assumed as DC impervious areas
	CN	98.0	

Part 3: Pervious Area and Non-Directly Connected (NDC) Impervious Area

NDC	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	SCS CN CN * Area	SCS CN CN
On-Site	Impervious	0	0.00	0	0.00	0	0.00	77,848	1.79	77,848	1.79	175.1	
	Open	0	0.00	0	0.00	0	0.00	131,741	3.02	131,741	3.02	241.9	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	14234	0.33	14,234	0.33	32.7	
Off-Site	Impervious	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	87.5
	Open	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
										223,823	5.14	449.8	

Curve Number				
HSG	A	B	C	D
Impervious	98	98	98	98
Open	39	61	74	80
Wooded	30	55	70	77
Pond	100	100	100	100

Rational Runoff Coefficient, C	
Asphalt, Concrete	0.95
Roof	1
Unimproved Areas	0.35
Lawn (sandy soil)	0.15
Lawn (heavy soil)	0.25
Wooded areas	0.15
Wet pond	1

Sub #8	Area (ac)	SCS CN
DC	1.23	98.0
NDC	5.14	87.5

Post-Development Hydrology

Project: **Reserve at Mitchell Mill**
Subcatchment: **Bypass #1**

Location: **0**
Date: **6/4/2024**

Part 1: Land Use Breakdown

Bypass #1	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	All %	SCS CN CN * Area	SCS CN CN	Rational Runoff Coefficient, C value C * Area	C
On-Site	Roadway		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Driveway	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00		0.0		0.00	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Roof	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00		0.0		0.00	
	Sidewalk (Includes Patios)	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00		0.0		0.00	
	Lawn	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00		0.0		0.00	
	Managed pervious (Open Space)	0	0.00	0	0.00	0	0.00		0.00	0	0.00		0.0		0.00	
	Woods		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Sum		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
Off-Site	Roadway		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Driveway		0.00		0.00		0.00	15,096	0.35	15,096	0.35	5.0%	34.0		0.33	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Roof		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Sidewalk (Includes Patios)		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0	78.9	0.00	0.2
	Lawn		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Managed pervious (Open Space)		0.00		0.00		0.00	81,518	1.87	81,518	1.87	27.0%	149.7		0.47	
	Woods		0.00		0.00		0.00	205,305	4.71	205,305	4.71	68.0%	362.9		0.71	
	Land Taken up by BMP		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Sum		0.00		0.00		0.00	301,919	6.93	301,919	6.93	100.0%	546.6		1.50	
										301,919	6.93		CN	78.9	C	0.22

Part 2: Directly Connected (DC) Impervious Area (Only for On-Site Area)

DC			
	Area (ac)	0.00	(Assumption: Roadway, driveway, parking lot, and 25% of roofs are assumed as DC impervious areas
	CN	0.0	

Part 3: Pervious Area and Non-Directly Connected (NDC) Impervious Area

NDC	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	SCS CN CN * Area	SCS CN CN
On-Site	Impervious	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Open	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
Off-Site	Impervious	0	0.00	0	0.00	0	0.00	15,096	0.35	15,096	0.35	34.0	78.9
	Open	0	0.00	0	0.00	0	0.00	81,518	1.87	81,518	1.87	149.7	
	Wooded	0	0.00	0	0.00	0	0.00	205,305	4.71	205,305	4.71	362.9	
	Pond	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
										301,919	6.93	546.6	

Curve Number				
HSG	A	B	C	D
Impervious	98	98	98	98
Open	39	61	74	80
Wooded	30	55	70	77
Pond	100	100	100	100

Rational Runoff Coefficient, C	
Asphalt, Concrete	0.95
Roof	1
Unimproved Areas	0.35
Lawn (sandy soil)	0.15
Lawn (heavy soil)	0.25
Wooded areas	0.15
Wet pond	1

Bypass #1	Area (ac)	SCS CN
DC	0.00	0.0
NDC	6.93	78.9

Post-Development Hydrology

Project: **Reserve at Mitchell Mill**
Subcatchment: **Bypass #2**

Location: **0**
Date: **6/4/2024**

Part 1: Land Use Breakdown

Bypass #2	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	All %	SCS CN CN * Area	SCS CN CN	Rational Runoff Coefficient, C value C * Area	C
On-Site	Roadway		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Driveway	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00		0.0		0.00	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Roof	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00		0.0		0.00	
	Sidewalk (Includes Patios)	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00		0.0		0.00	
	Lawn	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00		0.0		0.00	
	Managed pervious (Open Space)	0	0.00	0	0.00	0	0.00		0.00	0	0.00		0.0		0.00	
	Woods		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Sum		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
Off-Site	Roadway		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Driveway		0.00		0.00		0.00	953,185	21.88	953,185	21.88	5.0%	2144.4		20.79	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Roof		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Sidewalk (Includes Patios)		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0	78.9	0.00	0.2
	Lawn		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Managed pervious (Open Space)		0.00		0.00		0.00	5,147,201	118.16	5,147,201	118.16	27.0%	9453.1		29.54	
	Woods		0.00		0.00		0.00	12,963,321	297.60	12,963,321	297.60	68.0%	22915.0		44.64	
	Land Taken up by BMP		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Sum		0.00		0.00		0.00	19,063,707	437.64	19,063,707	437.64	100.0%	34512.5		94.97	
										19,063,707	437.64		CN	78.9	C	0.22

Part 2: Directly Connected (DC) Impervious Area (Only for On-Site Area)

DC			
	Area (ac)	0.00	(Assumption: Roadway, driveway, parking lot, and 25% of roofs are assumed as DC impervious areas
	CN	0.0	

Part 3: Pervious Area and Non-Directly Connected (NDC) Impervious Area

NDC	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	SCS CN CN * Area	SCS CN CN
On-Site	Impervious	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Open	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
Off-Site	Impervious	0	0.00	0	0.00	0	0.00	953,185	21.88	953,185	21.88	2144.4	78.9
	Open	0	0.00	0	0.00	0	0.00	5,147,201	118.16	5,147,201	118.16	9453.1	
	Wooded	0	0.00	0	0.00	0	0.00	12,963,321	297.60	12,963,321	297.60	22915.0	
	Pond	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
										19,063,707	437.64	34512.5	

Curve Number				
HSG	A	B	C	D
Impervious	98	98	98	98
Open	39	61	74	80
Wooded	30	55	70	77
Pond	100	100	100	100

Rational Runoff Coefficient, C	
Asphalt, Concrete	0.95
Roof	1
Unimproved Areas	0.35
Lawn (sandy soil)	0.15
Lawn (heavy soil)	0.25
Wooded areas	0.15
Wet pond	1

Bypass #2	Area (ac)	SCS CN
DC	0.00	0.0
NDC	437.64	78.9

Post-Development Hydrology

Project: **Reserve at Mitchell Mill**
Subcatchment: **Bypass #3**

Location: **0**
Date: **6/4/2024**

Part 1: Land Use Breakdown

Bypass #3	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	All %	SCS CN CN * Area	SCS CN CN	Rational Runoff Coefficient, C value C * Area	C
On-Site	Roadway		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Driveway	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00		0.0		0.00	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Roof	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00		0.0		0.00	
	Sidewalk (Includes Patios)	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00		0.0		0.00	
	Lawn	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00		0.0		0.00	
	Managed pervious (Open Space)	0	0.00	0	0.00	0	0.00		0.00	0	0.00		0.0		0.00	
	Woods		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Sum		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
Off-Site	Roadway		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Driveway		0.00		0.00		0.00	55,800	1.28	55,800	1.28	5.0%	125.5		1.22	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Roof		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Sidewalk (Includes Patios)		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0	78.9	0.00	0.2
	Lawn		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Managed pervious (Open Space)		0.00		0.00		0.00	301,322	6.92	301,322	6.92	27.0%	553.4		1.73	
	Woods		0.00		0.00		0.00	758,884	17.42	758,884	17.42	68.0%	1341.5		2.61	
	Land Taken up by BMP		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Sum		0.00		0.00		0.00		0.00	1,116,006	25.62	100.0%	2020.4		5.56	
										1,116,006	25.62		CN	78.9	C	0.22

Part 2: Directly Connected (DC) Impervious Area (Only for On-Site Area)

DC			
	Area (ac)	0.00	(Assumption: Roadway, driveway, parking lot, and 25% of roofs are assumed as DC impervious areas
	CN	0.0	

Part 3: Pervious Area and Non-Directly Connected (NDC) Impervious Area

NDC	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	SCS CN CN * Area	SCS CN CN
On-Site	Impervious	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Open	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
Off-Site	Impervious	0	0.00	0	0.00	0	0.00	55,800	1.28	55,800	1.28	125.5	78.9
	Open	0	0.00	0	0.00	0	0.00	301,322	6.92	301,322	6.92	553.4	
	Wooded	0	0.00	0	0.00	0	0.00	758,884	17.42	758,884	17.42	1341.5	
	Pond	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
										1,116,006	25.62	2020.4	

Curve Number				
HSG	A	B	C	D
Impervious	98	98	98	98
Open	39	61	74	80
Wooded	30	55	70	77
Pond	100	100	100	100

Rational Runoff Coefficient, C	
Asphalt, Concrete	0.95
Roof	1
Unimproved Areas	0.35
Lawn (sandy soil)	0.15
Lawn (heavy soil)	0.25
Wooded areas	0.15
Wet pond	1

Bypass #3	Area (ac)	SCS CN
DC	0.00	0.0
NDC	25.62	78.9

Post-Development Hydrology

Project: **Reserve at Mitchell Mill**
Subcatchment: **Bypass #4**

Location: **0**
Date: **6/4/2024**

Part 1: Land Use Breakdown

Bypass #4	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	All %	SCS CN CN * Area	SCS CN CN	Rational Runoff Coefficient, C value C * Area	C
On-Site	Roadway		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Driveway	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00		0.0		0.00	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Roof	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00		0.0		0.00	
	Sidewalk (Includes Patios)	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00		0.0		0.00	
	Lawn	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00		0.0		0.00	
	Managed pervious (Open Space)	0	0.00	0	0.00	0	0.00		0.00	0	0.00		0.0		0.00	
	Woods		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Sum		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
Off-Site	Roadway		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Driveway		0.00		0.00		0.00	4,189	0.10	4,189	0.10	5.0%	9.4		0.09	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Roof		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Sidewalk (Includes Patios)		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0	78.9	0.00	0.2
	Lawn		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Managed pervious (Open Space)		0.00		0.00		0.00	22,614	0.52	22,614	0.52	27.0%	41.5		0.13	
	Woods		0.00		0.00		0.00	56,954	1.31	56,954	1.31	68.0%	100.7		0.20	
	Land Taken up by BMP		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Sum		0.00		0.00		0.00		0.00	83,757	1.92	100.0%	151.6		0.42	
										83,757	1.92		CN	78.9	C	0.22

Part 2: Directly Connected (DC) Impervious Area (Only for On-Site Area)

DC			
	Area (ac)	0.00	(Assumption: Roadway, driveway, parking lot, and 25% of roofs are assumed as DC impervious areas
	CN	0.0	

Part 3: Pervious Area and Non-Directly Connected (NDC) Impervious Area

NDC	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	SCS CN CN * Area	SCS CN CN
On-Site	Impervious	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Open	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
Off-Site	Impervious	0	0.00	0	0.00	0	0.00	4,189	0.10	4,189	0.10	9.4	78.9
	Open	0	0.00	0	0.00	0	0.00	22,614	0.52	22,614	0.52	41.5	
	Wooded	0	0.00	0	0.00	0	0.00	56,954	1.31	56,954	1.31	100.7	
	Pond	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
										83,757	1.92	151.6	

Curve Number				
HSG	A	B	C	D
Impervious	98	98	98	98
Open	39	61	74	80
Wooded	30	55	70	77
Pond	100	100	100	100

Rational Runoff Coefficient, C	
Asphalt, Concrete	0.95
Roof	1
Unimproved Areas	0.35
Lawn (sandy soil)	0.15
Lawn (heavy soil)	0.25
Wooded areas	0.15
Wet pond	1

Bypass #4	Area (ac)	SCS CN
DC	0.00	0.0
NDC	1.92	78.9

Post-Development Hydrology

Project: **Reserve at Mitchell Mill**
Subcatchment: **Bypass #5**

Location: **0**
Date: **6/4/2024**

Part 1: Land Use Breakdown

Bypass #5	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	All %	SCS CN CN * Area	SCS CN CN	Rational Runoff Coefficient, C value C * Area	C
On-Site	Roadway		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Driveway	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00		0.0		0.00	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Roof	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00		0.0		0.00	
	Sidewalk (Includes Patios)	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00		0.0		0.00	
	Lawn	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00		0.0		0.00	
	Managed pervious (Open Space)	0	0.00	0	0.00	0	0.00		0.00	0	0.00		0.0		0.00	
	Woods		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Sum		0.00		0.00		0.00	0	0.00	0	0.00		0.0		0.00	
Off-Site	Roadway		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Driveway		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Roof		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Sidewalk (Includes Patios)		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0	77.6	0.00	0.2
	Lawn		0.00		0.00		0.00	3107958	71.35	3,107,958	71.35	20.0%	5707.9		17.84	
	Managed pervious (Open Space)		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Woods		0.00		0.00		0.00	12,431,833	285.40	12,431,833	285.40	80.0%	21975.5		42.81	
	Land Taken up by BMP		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Sum		0.00		0.00		0.00	15,539,791	356.74	15,539,791	356.74	100.0%	27683.4		60.65	
										15,539,791	356.74		CN	77.6	C	0.17

Part 2: Directly Connected (DC) Impervious Area (Only for On-Site Area)

DC			
	Area (ac)	0.00	(Assumption: Roadway, driveway, parking lot, and 25% of roofs are assumed as DC impervious areas
	CN	0.0	

Part 3: Pervious Area and Non-Directly Connected (NDC) Impervious Area

NDC	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	SCS CN CN * Area	SCS CN CN
On-Site	Impervious	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Open	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
Off-Site	Impervious	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	77.6
	Open	0	0.00	0	0.00	0	0.00	3,107,958	71.35	3,107,958	71.35	5707.9	
	Wooded	0	0.00	0	0.00	0	0.00	12,431,833	285.40	12,431,833	285.40	21975.5	
	Pond	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
										15,539,791	356.74	27683.4	

Curve Number				
HSG	A	B	C	D
Impervious	98	98	98	98
Open	39	61	74	80
Wooded	30	55	70	77
Pond	100	100	100	100

Rational Runoff Coefficient, C	
Asphalt, Concrete	0.95
Roof	1
Unimproved Areas	0.35
Lawn (sandy soil)	0.15
Lawn (heavy soil)	0.25
Wooded areas	0.15
Wet pond	1

Bypass #5	Area (ac)	SCS CN
DC	0.00	0.0
NDC	356.74	77.6

Post-Development Hydrology

Project: **Reserve at Mitchell Mill**
Subcatchment: **Bypass #6**

Location: **0**
Date: **6/4/2024**

Part 1: Land Use Breakdown

Bypass #6	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	All %	SCS CN CN * Area	SCS CN CN	Rational Runoff Coefficient, C value C * Area	C
On-Site	Roadway		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Driveway	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00		0.0		0.00	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Roof	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00		0.0		0.00	
	Sidewalk (Includes Patios)	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00		0.0		0.00	
	Lawn	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00		0.0		0.00	
	Managed pervious (Open Space)	0	0.00	0	0.00	0	0.00		0.00	0	0.00		0.0		0.00	
	Woods		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
	Sum		0.00		0.00		0.00		0.00	0	0.00		0.0		0.00	
Off-Site	Roadway		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Grassed Right-of-ways		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Driveway		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Parking lot/Play ground/Pump station		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Roof		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Sidewalk (Includes Patios)		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0	80.0	0.00	0.3
	Lawn		0.00		0.00		0.00	67002	1.54	67,002	1.54	100.0%	123.1		0.38	
	Managed pervious (Open Space)		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Woods		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Land Taken up by BMP		0.00		0.00		0.00		0.00	0	0.00	0.0%	0.0		0.00	
	Sum		0.00		0.00		0.00	67,002	1.54	67,002	1.54	100.0%	123.1		0.38	
										67,002	1.54		CN	80.0	C	0.25

Part 2: Directly Connected (DC) Impervious Area (Only for On-Site Area)

DC			
	Area (ac)	0.00	(Assumption: Roadway, driveway, parking lot, and 25% of roofs are assumed as DC impervious areas
	CN	0.0	

Part 3: Pervious Area and Non-Directly Connected (NDC) Impervious Area

NDC	Land use	Soil Type A sf	A ac	B sf	B ac	C sf	C ac	D sf	D ac	All sf	All ac	SCS CN CN * Area	SCS CN CN
On-Site	Impervious	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Open	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
Off-Site	Impervious	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	80.0
	Open	0	0.00	0	0.00	0	0.00	67,002	1.54	67,002	1.54	123.1	
	Wooded	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
	Pond	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0.0	
										67,002	1.54	123.1	

Curve Number				
HSG	A	B	C	D
Impervious	98	98	98	98
Open	39	61	74	80
Wooded	30	55	70	77
Pond	100	100	100	100

Rational Runoff Coefficient, C	
Asphalt, Concrete	0.95
Roof	1
Unimproved Areas	0.35
Lawn (sandy soil)	0.15
Lawn (heavy soil)	0.25
Wooded areas	0.15
Wet pond	1

Bypass #6	Area (ac)	SCS CN
DC	0.00	0.0
NDC	1.54	80.0

STRONGROCK ENGINEERING GROUP

TIME OF CONCENTRATION INFORMATION

Project:	**Reserve at Mitchell Mill**
Subcatchment:	**Sub #1**

Location:	**0**
Date:	**6/4/2024**

Segment 1: Sheet Flow (Overland Flow)

Length =	30	ft
Top Elev =	291.43	ft
Bot Elev =	291	ft
Height =	0.43	ft
Slope =	0.014	ft/ft
Surface Type =	Paved	
Manning's n =	0.011	
P (2-year/24-hour) =	3.46	inch
Tt =	0.01	hour
Tt = 0.51		**minutes**

$$T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5} s^{0.4}}$$

Segment 2: Shallow Concentrated Flow

Length =	930	ft
Top Elev =	291	ft
Bot Elev =	272.71	ft
Height =	18.29	ft
Slope =	0.020	ft/ft
Surface Type =	Paved	
Average Velocity =	2.85	ft/s
Tt =	0.09	hour
Tt = 5.44		**minutes**

$$T_t = \frac{L}{3600V}$$

Segment 3: Channel Flow

Length =	473	ft
Top Elev =	272.71	ft
Bot Elev =	262	ft
Height =	10.71	ft
Slope =	0.023	ft/ft
Surface Type =	Concrete finished	
Manning's n =	0.012	
Flow Area =	7.07	sf (36" pipe)
Wetted Perimeter =	9.42	ft (36" pipe)
Hydraulic Radius =	0.75	ft
Velocity =	15.42	ft/s
Tt =	0.01	hour
Tt = 0.51		**minutes**

$$T_t = \frac{L}{3600V} \qquad V = \frac{1.49 r^{\frac{2}{3}} s^{\frac{1}{2}}}{n}$$

Time of Concentration (Tc)

Tc = 6.5 minutes

SCS lag Time =	3.87 minutes
Time Increment =	1.12 minutes

Discharge point :		
Reach to point:		
Reach:		
Distance =		ft

STRONGROCK ENGINEERING GROUP

TIME OF CONCENTRATION INFORMATION

Project:	**Reserve at Mitchell Mill**
Subcatchment:	**Sub #2**

Location:	**0**
Date:	**6/4/2024**

Segment 1: Sheet Flow (Overland Flow)

Length =	30	ft
Top Elev =	322.43	ft
Bot Elev =	322	ft
Height =	0.43	ft
Slope =	0.014	ft/ft
Surface Type =	Paved	
Manning's n =	0.011	
P (2-year/24-hour) =	3.46	inch
Tt =	0.01	hour
Tt =	**0.51**	**minutes**

$$T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5} s^{0.4}}$$

Segment 2: Shallow Concentrated Flow

Length =	236	ft
Top Elev =	322	ft
Bot Elev =	307.75	ft
Height =	14.25	ft
Slope =	0.060	ft/ft
Surface Type =	Paved	
Average Velocity =	5.00	ft/s
Tt =	0.01	hour
Tt =	**0.79**	**minutes**

$$T_t = \frac{L}{3600V}$$

Segment 3: Channel Flow

Length =	1433	ft
Top Elev =	307.75	ft
Bot Elev =	264	ft
Height =	43.75	ft
Slope =	0.031	ft/ft
Surface Type =	Concrete finished	
Manning's n =	0.012	
Flow Area =	7.07	sf (36" pipe)
Wetted Perimeter =	9.42	ft (36" pipe)
Hydraulic Radius =	0.75	ft
Velocity =	17.91	ft/s
Tt =	0.02	hour
Tt =	**1.33**	**minutes**

$$T_t = \frac{L}{3600V} \qquad V = \frac{1.49 r^{\frac{2}{3}} s^{\frac{1}{2}}}{n}$$

Time of Concentration (Tc)

Tc = 5.0	**minutes**
SCS lag Time = 3.00	minutes
Time Increment = 0.87	minutes

Discharge point :		
Reach to point:		
Reach:		
Distance =		ft

STRONGROCK ENGINEERING GROUP

TIME OF CONCENTRATION INFORMATION

Project:	**Reserve at Mitchell Mill**
Subcatchment:	**Sub #3**

Location:	**0**
Date:	**6/4/2024**

Segment 1: Sheet Flow (Overland Flow)

Length =	50	ft
Top Elev =	311.54	ft
Bot Elev =	311	ft
Height =	0.54	ft
Slope =	0.011	ft/ft
Surface Type =	Paved	
Manning's n =	0.011	
P (2-year/24-hour) =	3.46	inch
Tt =	0.01	hour
Tt =	**0.86**	**minutes**

$$T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5} s^{0.4}}$$

Segment 2: Shallow Concentrated Flow

Length =	1515	ft
Top Elev =	311	ft
Bot Elev =	250	ft
Height =	61	ft
Slope =	0.040	ft/ft
Surface Type =	Paved	
Average Velocity =	4.08	ft/s
Tt =	0.10	hour
Tt =	**6.19**	**minutes**

$$T_t = \frac{L}{3600V}$$

Segment 3: Channel Flow

Length =	314	ft
Top Elev =	250	ft
Bot Elev =	242	ft
Height =	8	ft
Slope =	0.025	ft/ft
Surface Type =	Concrete finished	
Manning's n =	0.012	
Flow Area =	7.07	sf (36" pipe)
Wetted Perimeter =	9.42	ft (36" pipe)
Hydraulic Radius =	0.75	ft
Velocity =	16.36	ft/s
Tt =	0.01	hour
Tt =	**0.32**	**minutes**

$$T_t = \frac{L}{3600V} \qquad V = \frac{1.49 r^{\frac{2}{3}} s^{\frac{1}{2}}}{n}$$

Time of Concentration (Tc)

Tc = 7.4 minutes

SCS lag Time =	4.42	minutes
Time Increment =	1.28	minutes

Discharge point :		
Reach to point:		
Reach:		
Distance =		ft

STRONGROCK ENGINEERING GROUP

TIME OF CONCENTRATION INFORMATION

Project:	**Reserve at Mitchell Mill**
Subcatchment:	**Sub #4**

Location:	**0**
Date:	**6/4/2024**

Segment 1: Sheet Flow (Overland Flow)

Length =	60	ft
Top Elev =	288.66	ft
Bot Elev =	288	ft
Height =	0.66	ft
Slope =	0.011	ft/ft
Surface Type =	Paved	
Manning's n =	0.011	
P (2-year/24-hour) =	3.46	inch
Tt =	0.02	hour
Tt =	**0.98**	**minutes**

$$T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5} s^{0.4}}$$

Segment 2: Shallow Concentrated Flow

Length =	1000	ft
Top Elev =	288	ft
Bot Elev =	250	ft
Height =	38	ft
Slope =	0.038	ft/ft
Surface Type =	Paved	
Average Velocity =	3.96	ft/s
Tt =	0.07	hour
Tt =	**4.21**	**minutes**

$$T_t = \frac{L}{3600V}$$

Segment 3: Channel Flow

Length =	207	ft
Top Elev =	250	ft
Bot Elev =	238.5	ft
Height =	11.5	ft
Slope =	0.056	ft/ft
Surface Type =	Concrete finished	
Manning's n =	0.012	
Flow Area =	7.07	sf (36" pipe)
Wetted Perimeter =	9.42	ft (36" pipe)
Hydraulic Radius =	0.75	ft
Velocity =	24.16	ft/s
Tt =	0.00	hour
Tt =	**0.14**	**minutes**

$$T_t = \frac{L}{3600V} \qquad V = \frac{1.49 r^{\frac{2}{3}} s^{\frac{1}{2}}}{n}$$

Time of Concentration (Tc)

Tc = 5.3 minutes

SCS lag Time =	3.20	minutes
Time Increment =	0.93	minutes

Discharge point :		
Reach to point:		
Reach:		
Distance =		ft

STRONGROCK ENGINEERING GROUP

TIME OF CONCENTRATION INFORMATION

Project:	**Reserve at Mitchell Mill**
Subcatchment:	**Sub #5**

Location:	**0**
Date:	**6/4/2024**

Segment 1: Sheet Flow (Overland Flow)

Length =	43	ft
Top Elev =	263.91	ft
Bot Elev =	263	ft
Height =	0.91	ft
Slope =	0.021	ft/ft
Surface Type =	Paved	
Manning's n =	0.011	
P (2-year/24-hour) =	3.46	inch
Tt =	0.01	hour
Tt =	**0.58**	**minutes**

$$T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5} s^{0.4}}$$

Segment 2: Shallow Concentrated Flow

Length =	300	ft
Top Elev =	263	ft
Bot Elev =	260.24	ft
Height =	2.76	ft
Slope =	0.009	ft/ft
Surface Type =	Paved	
Average Velocity =	1.95	ft/s
Tt =	0.04	hour
Tt =	**2.56**	**minutes**

$$T_t = \frac{L}{3600V}$$

Segment 3: Channel Flow

Length =	167	ft
Top Elev =	260.24	ft
Bot Elev =	250	ft
Height =	10.24	ft
Slope =	0.061	ft/ft
Surface Type =	Concrete finished	
Manning's n =	0.012	
Flow Area =	4.91	sf (30" pipe)
Wetted Perimeter =	7.85	ft (30" pipe)
Hydraulic Radius =	0.63	ft
Velocity =	22.48	ft/s
Tt =	0.00	hour
Tt =	**0.12**	**minutes**

$$T_t = \frac{L}{3600V} \qquad V = \frac{1.49 r^{\frac{2}{3}} s^{\frac{1}{2}}}{n}$$

Time of Concentration (Tc)

Tc = 5.0	**minutes**
SCS lag Time = 3.00	minutes
Time Increment = 0.87	minutes

Discharge point :		
Reach to point:		
Reach:		
Distance =		ft

STRONGROCK ENGINEERING GROUP

TIME OF CONCENTRATION INFORMATION

Project:	**Reserve at Mitchell Mill**
Subcatchment:	**Sub #6**

Location:	**0**
Date:	**6/4/2024**

Segment 1: Sheet Flow (Overland Flow)

Length =	60	ft
Top Elev =	260.54	ft
Bot Elev =	260	ft
Height =	0.54	ft
Slope =	0.009	ft/ft
Surface Type =	Paved	
Manning's n =	0.011	
P (2-year/24-hour) =	3.46	inch
Tt =	0.02	hour
Tt =	**1.07**	**minutes**

$$T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5} s^{0.4}}$$

Segment 2: Shallow Concentrated Flow

Length =	1700	ft
Top Elev =	260	ft
Bot Elev =	241.93	ft
Height =	18.07	ft
Slope =	0.011	ft/ft
Surface Type =	Paved	
Average Velocity =	2.10	ft/s
Tt =	0.23	hour
Tt =	**13.52**	**minutes**

$$T_t = \frac{L}{3600V}$$

Segment 3: Channel Flow

Length =	199	ft
Top Elev =	241.93	ft
Bot Elev =	234	ft
Height =	7.93	ft
Slope =	0.040	ft/ft
Surface Type =	Concrete finished	
Manning's n =	0.012	
Flow Area =	4.91	sf (30" pipe)
Wetted Perimeter =	7.85	ft (30" pipe)
Hydraulic Radius =	0.63	ft
Velocity =	18.12	ft/s
Tt =	0.00	hour
Tt =	**0.18**	**minutes**

$$T_t = \frac{L}{3600V} \qquad V = \frac{1.49 r^{\frac{2}{3}} s^{\frac{1}{2}}}{n}$$

Time of Concentration (Tc)

Tc = 14.8 minutes

SCS lag Time =	8.86	minutes
Time Increment =	2.57	minutes

Discharge point :		
Reach to point:		
Reach:		
Distance =		ft

STRONGROCK ENGINEERING GROUP

TIME OF CONCENTRATION INFORMATION

Project:	**Reserve at Mitchell Mill**
Subcatchment:	**Sub #7**

Location:	**0**
Date:	**6/4/2024**

Segment 1: Sheet Flow (Overland Flow)

Length =	21	ft
Top Elev =	310.25	ft
Bot Elev =	310	ft
Height =	0.25	ft
Slope =	0.012	ft/ft
Surface Type =	Paved	
Manning's n =	0.011	
P (2-year/24-hour) =	3.46	inch
Tt =	0.01	hour
Tt =	**0.41**	**minutes**

$$T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5} s^{0.4}}$$

Segment 2: Shallow Concentrated Flow

Length =	1400	ft
Top Elev =	310	ft
Bot Elev =	248.75	ft
Height =	61.25	ft
Slope =	0.044	ft/ft
Surface Type =	Paved	
Average Velocity =	4.25	ft/s
Tt =	0.09	hour
Tt =	**5.49**	**minutes**

$$T_t = \frac{L}{3600V}$$

Segment 3: Channel Flow

Length =	313	ft
Top Elev =	248.75	ft
Bot Elev =	239	ft
Height =	9.75	ft
Slope =	0.031	ft/ft
Surface Type =	Concrete finished	
Manning's n =	0.012	
Flow Area =	9.62	sf (42" pipe)
Wetted Perimeter =	11.00	ft (42" pipe)
Hydraulic Radius =	0.88	ft
Velocity =	20.05	ft/s
Tt =	0.00	hour
Tt =	**0.26**	**minutes**

$$T_t = \frac{L}{3600V} \qquad V = \frac{1.49 r^{\frac{2}{3}} s^{\frac{1}{2}}}{n}$$

Time of Concentration (Tc)

Tc = 6.2 minutes

SCS lag Time =	3.70	minutes
Time Increment =	1.07	minutes

Discharge point :		
Reach to point:		
Reach:		
Distance =		ft

STRONGROCK ENGINEERING GROUP

TIME OF CONCENTRATION INFORMATION

Project:	**Reserve at Mitchell Mill**
Subcatchment:	**Sub #8**

Location:	**0**
Date:	**6/4/2024**

Segment 1: Sheet Flow (Overland Flow)

Length =	33	ft
Top Elev =	280.57	ft
Bot Elev =	280	ft
Height =	0.57	ft
Slope =	0.017	ft/ft
Surface Type =	Paved	
Manning's n =	0.011	
P (2-year/24-hour) =	3.46	inch
Tt =	0.01	hour
Tt =	**0.51**	**minutes**

$$T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5} s^{0.4}}$$

Segment 2: Shallow Concentrated Flow

Length =	850	ft
Top Elev =	280	ft
Bot Elev =	269.18	ft
Height =	10.82	ft
Slope =	0.013	ft/ft
Surface Type =	Paved	
Average Velocity =	2.29	ft/s
Tt =	0.10	hour
Tt =	**6.18**	**minutes**

$$T_t = \frac{L}{3600V}$$

Segment 3: Channel Flow

Length =	248	ft
Top Elev =	269.18	ft
Bot Elev =	238.72	ft
Height =	30.46	ft
Slope =	0.123	ft/ft
Surface Type =	Concrete finished	
Manning's n =	0.012	
Flow Area =	4.91	sf (36" pipe)
Wetted Perimeter =	7.85	ft (36" pipe)
Hydraulic Radius =	0.63	ft
Velocity =	31.81	ft/s
Tt =	0.00	hour
Tt =	**0.13**	**minutes**

$$T_t = \frac{L}{3600V} \qquad V = \frac{1.49 r^{\frac{2}{3}} s^{\frac{1}{2}}}{n}$$

Time of Concentration (Tc)

Tc = 6.8 minutes

SCS lag Time =	4.09	minutes
Time Increment =	1.19	minutes

Discharge point :		
Reach to point:		
Reach:		
Distance =		ft

STRONGROCK ENGINEERING GROUP

TIME OF CONCENTRATION INFORMATION

Project:	**Reserve at Mitchell Mill**
Subcatchment:	**Bypass #1**

Location:	**0**
Date:	**6/4/2024**

Segment 1: Sheet Flow (Overland Flow)

Length =	40	ft
Top Elev =	300	ft
Bot Elev =	298	ft
Height =	2	ft
Slope =	0.050	ft/ft
Surface Type =	Dense Woods	
Manning's n =	0.8	
P (2-year/24-hour) =	3.46	inch
Tt =	0.20	hour
Tt =	**11.97**	**minutes**

$$T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5} s^{0.4}}$$

Segment 2: Shallow Concentrated Flow

Length =	192	ft
Top Elev =	298	ft
Bot Elev =	290.13	ft
Height =	7.87	ft
Slope =	0.041	ft/ft
Surface Type =	Unpaved	
Average Velocity =	3.27	ft/s
Tt =	0.02	hour
Tt =	**0.98**	**minutes**

$$T_t = \frac{L}{3600V}$$

Segment 3: Channel Flow

Length =	556	ft
Top Elev =	290.13	ft
Bot Elev =	274.65	ft
Height =	15.48	ft
Slope =	0.028	ft/ft
Surface Type =	Grass	
Manning's n =	0.035	
Flow Area =	15	sf (5'w*3'h channel)
Wetted Perimeter =	11	ft (5'w*3'h channel)
Hydraulic Radius =	1.36	ft
Velocity =	8.74	ft/s
Tt =	0.02	hour
Tt =	**1.06**	**minutes**

$$T_t = \frac{L}{3600V} \qquad V = \frac{1.49 r^{\frac{2}{3}} s^{\frac{1}{2}}}{n}$$

Time of Concentration (Tc)

Tc = 14.0 minutes

SCS lag Time =	8.41	minutes
Time Increment =	2.44	minutes

Discharge point :		
Reach to point:		
Reach:		
Distance =		ft

STRONGROCK ENGINEERING GROUP

TIME OF CONCENTRATION INFORMATION

Project:	**Reserve at Mitchell Mill**
Subcatchment:	**Bypass #2**

Location:	**0**
Date:	**6/4/2024**

Segment 1: Sheet Flow (Overland Flow)

Length =	50	ft
Top Elev =	402.5	ft
Bot Elev =	402	ft
Height =	0.5	ft
Slope =	0.010	ft/ft
Surface Type =	Light Woods	
Manning's n =	0.4	
P (2-year/24-hour) =	3.46	inch
Tt =	0.26	hour
Tt =	**15.65**	**minutes**

$$T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5} s^{0.4}}$$

Segment 2: Shallow Concentrated Flow

Length =	857	ft
Top Elev =	402	ft
Bot Elev =	380	ft
Height =	22	ft
Slope =	0.026	ft/ft
Surface Type =	Unpaved	
Average Velocity =	2.59	ft/s
Tt =	0.09	hour
Tt =	**5.53**	**minutes**

$$T_t = \frac{L}{3600V}$$

Segment 3: Channel Flow

Length =	7515	ft
Top Elev =	380	ft
Bot Elev =	229.46	ft
Height =	150.54	ft
Slope =	0.020	ft/ft
Surface Type =	Grass	
Manning's n =	0.035	
Flow Area =	15	sf (5'w*3'h channel)
Wetted Perimeter =	11	ft (5'w*3'h channel)
Hydraulic Radius =	1.36	ft
Velocity =	7.41	ft/s
Tt =	0.28	hour
Tt =	**16.90**	**minutes**

$$T_t = \frac{L}{3600V} \qquad V = \frac{1.49 r^{\frac{2}{3}} s^{\frac{1}{2}}}{n}$$

Time of Concentration (Tc)

Tc = 38.1 minutes

SCS lag Time =	22.85	minutes
Time Increment =	6.63	minutes

Discharge point :		
Reach to point:		
Reach:		
Distance =		ft

STRONGROCK ENGINEERING GROUP

TIME OF CONCENTRATION INFORMATION

Project:	**Reserve at Mitchell Mill**
Subcatchment:	**Bypass #3**

Location:	**0**
Date:	**6/4/2024**

Segment 1: Sheet Flow (Overland Flow)

Length =	65	ft
Top Elev =	286.5	ft
Bot Elev =	286	ft
Height =	0.5	ft
Slope =	0.008	ft/ft
Surface Type =	Dense Grass	
Manning's n =	0.24	
P (2-year/24-hour) =	3.46	inch
Tt =	0.24	hour
Tt =	**14.25**	**minutes**

$$T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5} s^{0.4}}$$

Segment 2: Shallow Concentrated Flow

Length =	825	ft
Top Elev =	286	ft
Bot Elev =	249.9	ft
Height =	36.1	ft
Slope =	0.044	ft/ft
Surface Type =	Unpaved	
Average Velocity =	3.38	ft/s
Tt =	0.07	hour
Tt =	**4.07**	**minutes**

$$T_t = \frac{L}{3600V}$$

Segment 3: Channel Flow

Length =	663	ft
Top Elev =	249.9	ft
Bot Elev =	231.48	ft
Height =	18.42	ft
Slope =	0.028	ft/ft
Surface Type =	Grass	
Manning's n =	0.035	
Flow Area =	15	sf (5'w*3'h channel)
Wetted Perimeter =	11	ft (5'w*3'h channel)
Hydraulic Radius =	1.36	ft
Velocity =	8.73	ft/s
Tt =	0.02	hour
Tt =	**1.27**	**minutes**

$$T_t = \frac{L}{3600V} \qquad V = \frac{1.49 r^{\frac{2}{3}} s^{\frac{1}{2}}}{n}$$

Time of Concentration (Tc)

Tc = 19.6 minutes

SCS lag Time =	11.75	minutes
Time Increment =	3.41	minutes

Discharge point :		
Reach to point:		
Reach:		
Distance =		ft

STRONGROCK ENGINEERING GROUP

TIME OF CONCENTRATION INFORMATION

Project:	**Reserve at Mitchell Mill**
Subcatchment:	**Bypass #4**

Location:	**0**
Date:	**6/4/2024**

Segment 1: Sheet Flow (Overland Flow)

Length =	73	ft
Top Elev =	296.5	ft
Bot Elev =	296	ft
Height =	0.5	ft
Slope =	0.007	ft/ft
Surface Type =	Light Woods	
Manning's n =	0.4	
P (2-year/24-hour) =	3.46	inch
Tt =	0.41	hour
Tt =	**24.65**	**minutes**

$$T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5} s^{0.4}}$$

Segment 2: Shallow Concentrated Flow

Length =	456	ft
Top Elev =	296	ft
Bot Elev =	250	ft
Height =	46	ft
Slope =	0.101	ft/ft
Surface Type =	Unpaved	
Average Velocity =	5.12	ft/s
Tt =	0.02	hour
Tt =	**1.48**	**minutes**

$$T_t = \frac{L}{3600V}$$

Segment 3: Channel Flow

Length =	125	ft
Top Elev =	250	ft
Bot Elev =	232.53	ft
Height =	17.47	ft
Slope =	0.140	ft/ft
Surface Type =	Grass	
Manning's n =	0.035	
Flow Area =	15	sf (5'w*3'h channel)
Wetted Perimeter =	11	ft (5'w*3'h channel)
Hydraulic Radius =	1.36	ft
Velocity =	19.57	ft/s
Tt =	0.00	hour
Tt =	**0.11**	**minutes**

$$T_t = \frac{L}{3600V} \qquad V = \frac{1.49 r^{\frac{2}{3}} s^{\frac{1}{2}}}{n}$$

Time of Concentration (Tc)

Tc = 26.2 minutes

SCS lag Time =	15.74	minutes
Time Increment =	4.57	minutes

Discharge point :		
Reach to point:		
Reach:		
Distance =		ft

STRONGROCK ENGINEERING GROUP

TIME OF CONCENTRATION INFORMATION

Project:	**Reserve at Mitchell Mill**
Subcatchment:	**Bypass #5**

Location:	**0**
Date:	**6/4/2024**

Segment 1: Sheet Flow (Overland Flow)

Length =	46	ft
Top Elev =	402.5	ft
Bot Elev =	402	ft
Height =	0.5	ft
Slope =	0.011	ft/ft
Surface Type =	Light Woods	
Manning's n =	0.4	
P (2-year/24-hour) =	3.46	inch
Tt =	0.24	hour
Tt =	**14.16**	**minutes**

$$T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5} s^{0.4}}$$

Segment 2: Shallow Concentrated Flow

Length =	331	ft
Top Elev =	402	ft
Bot Elev =	382	ft
Height =	20	ft
Slope =	0.060	ft/ft
Surface Type =	Unpaved	
Average Velocity =	3.97	ft/s
Tt =	0.02	hour
Tt =	**1.39**	**minutes**

$$T_t = \frac{L}{3600V}$$

Segment 3: Channel Flow

Length =	8084	ft
Top Elev =	382	ft
Bot Elev =	238.99	ft
Height =	143.01	ft
Slope =	0.018	ft/ft
Surface Type =	Grass	
Manning's n =	0.035	
Flow Area =	15	sf (5'w*3'h channel)
Wetted Perimeter =	11	ft (5'w*3'h channel)
Hydraulic Radius =	1.36	ft
Velocity =	6.96	ft/s
Tt =	0.32	hour
Tt =	**19.35**	**minutes**

$$T_t = \frac{L}{3600V} \qquad V = \frac{1.49 r^{\frac{2}{3}} s^{\frac{1}{2}}}{n}$$

Time of Concentration (Tc)

Tc = 34.9 minutes

SCS lag Time =	20.94	minutes
Time Increment =	6.07	minutes

Discharge point :		
Reach to point:		
Reach:		
Distance =		ft

STRONGROCK ENGINEERING GROUP

TIME OF CONCENTRATION INFORMATION

Project:	**Reserve at Mitchell Mill**
Subcatchment:	**Bypass #6**

Location:	**0**
Date:	**6/4/2024**

Segment 1: Sheet Flow (Overland Flow)

Length =	11	ft
Top Elev =	276	ft
Bot Elev =	275.5	ft
Height =	0.5	ft
Slope =	0.045	ft/ft
Surface Type =	Short Grass	
Manning's n =	0.15	
P (2-year/24-hour) =	3.46	inch
Tt =	0.02	hour
Tt =	**1.16**	**minutes**

$$T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5} s^{0.4}}$$

Segment 2: Shallow Concentrated Flow

Length =	134	ft
Top Elev =	275.5	ft
Bot Elev =	269.88	ft
Height =	5.62	ft
Slope =	0.042	ft/ft
Surface Type =	Unpaved	
Average Velocity =	3.30	ft/s
Tt =	0.01	hour
Tt =	**0.68**	**minutes**

$$T_t = \frac{L}{3600V}$$

Segment 3: Channel Flow

Length =	270	ft
Top Elev =	269.88	ft
Bot Elev =	263.1	ft
Height =	6.78	ft
Slope =	0.025	ft/ft
Surface Type =	Grass	
Manning's n =	0.035	
Flow Area =	15.00	sf (5'w*3'h channe)
Wetted Perimeter =	11.00	ft (5'w*3'h channe)
Hydraulic Radius =	1.36	ft
Velocity =	8.30	ft/s
Tt =	0.01	hour
Tt =	**0.54**	**minutes**

$$T_t = \frac{L}{3600V} \qquad V = \frac{1.49 r^{\frac{2}{3}} s^{\frac{1}{2}}}{n}$$

Time of Concentration (Tc)

Tc = 5.0 minutes

SCS lag Time =	3.00	minutes
Time Increment =	0.87	minutes

Discharge point :		
Reach to point:		
Reach:		
Distance =		ft

PROGRESS PLOT DATE: 05/23/2024

LEGEND:

- STORM DRAIN LINE
- FLARED END SECTION
- YARD INLET
- CATCH BASIN
- 280 — EX. MAJOR CONTOURS
- EX. MINOR CONTOURS
- 280 — PROP. MAJOR CONTOURS
- PROP. MINOR CONTOURS
- CULVERT DRAINAGE AREA 1
- CULVERT DRAINAGE AREA 2
- CULVERT DRAINAGE AREA 3

RM OS 13
COMMUNITY GARDEN AMENITY

STREET 'Q'

POI #5

SCM #5
WET POND

Gro Peg Road
60' PRIVATE R/W
RECORDED BOOK OF MAPS 1980 PAGE 396

STREET 'L'

STREET 'P'

STREET 'O'

POI #4

STREET 'M'

JONESVILLE RD

STREET 'L'

SCM #6
WET POND

SCM #4
WET POND

POI #6

POI #3

STREET 'H'

STREET 'K'

STREET 'H'

SCM #3
WET POND

STREET 'F'

PUBLIC ALLEY '4'

POI #7

SCM #7
WET POND

STREET 'N'

POI #8

STREET 'H'

SCM #8
WET POND

STREET 'J'

STREET 'A'

RM OS 02
AMENITY CENTER

STREET 'I'

STREET 'E'

STREET 'R'

PUBLIC ALLEY '2'

PUBLIC ALLEY '3'

POI #1

PUBLIC ALLEY '1'

STREET 'A'

POI #2

STREET 'G'

SCM #2
WET POND

SCM #1
WET POND

JONESVILLE RD

FUTURE COMMERCIAL

STREET 'C'

STREET 'B'

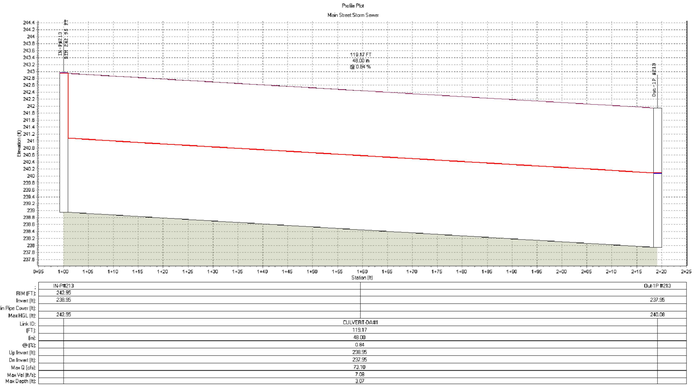
MITCHELL MILL RD.
80' PUBLIC R/W

PEEBLES RD.
60' PUBLIC R/W

CULVERT DA #3
67,002 SF. (1.54 AC.)
i=7.99
C=0.15
Q=1.85 (CFS)

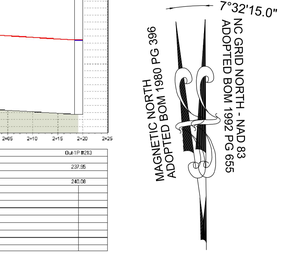
CULVERT DA #2
251,569 SF. (5.78 AC.)
i=7.99
C=0.15
Q=6.93 (CFS)

CULVERT DA #1
15,539,791 SF. (356.74 AC.)
i= 3.89
C=0.45
Q= 625 (CFS)



IN (FEET)		OUT OF (FEET)
RIM (FT)	242.95	
Invert (IN)	230.05	237.05
Min Pipe Cover (IN)		
Max HGL (IN)	240.95	240.06
CULVERT DA#3		
Length (ft)	115.57	
(FT)	60.00	
Slope	0.60	
(DEG)	298.05	
Up Invert (IN)	232.05	
Dn Invert (IN)	72.39	
Max Q (cfs)	7.09	
Max Vel (ft/s)	3.07	
Max Depth (ft)		

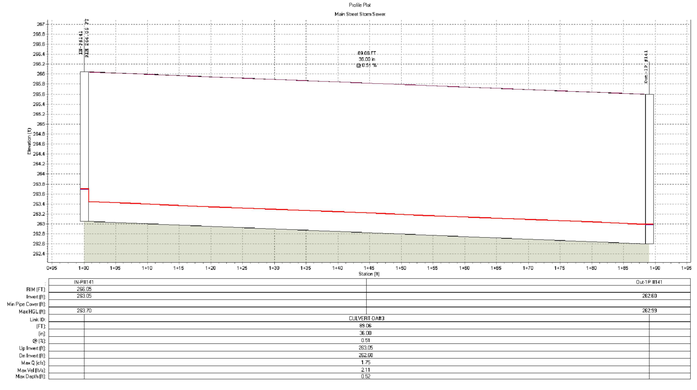
PROFILE HGL 25YR FOR CULVERT DA#1



GRAPHIC SCALE

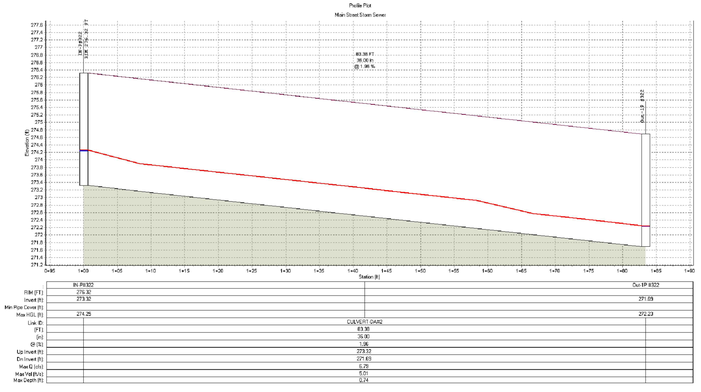
300 0 150 300 600 1200

(IN FEET)
1 inch = 300 ft.



IN (FEET)		OUT OF (FEET)
RIM (FT)	290.05	
Invert (IN)	282.05	282.69
Min Pipe Cover (IN)		
Max HGL (IN)	283.70	282.59
CULVERT DA#3		
Length (ft)	89.06	
(FT)	36.00	
Slope	0.59	
(DEG)	283.05	
Up Invert (IN)	262.69	
Dn Invert (IN)	1.75	
Max Q (cfs)	2.13	
Max Vel (ft/s)	0.50	
Max Depth (ft)		

PROFILE HGL 25YR FOR CULVERT DA#3



IN (FEET)		OUT OF (FEET)
RIM (FT)	279.32	
Invert (IN)	273.32	271.89
Min Pipe Cover (IN)		
Max HGL (IN)	274.25	272.23
CULVERT DA#2		
Length (ft)	83.30	
(FT)	36.00	
Slope	1.06	
(DEG)	279.33	
Up Invert (IN)	271.63	
Dn Invert (IN)	6.26	
Max Q (cfs)	6.01	
Max Vel (ft/s)	0.74	
Max Depth (ft)		

PROFILE HGL 25YR FOR CULVERT DA#2

TOWNHOME NOTES:

STATES INTERNAL TOWNHOME DRIVEWAYS ARE PRIVATE EASEMENTS AS PER CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT

THIS PLANSET AND ANY ASSOCIATED DOCUMENTS ARE PRELIMINARY AND NOT AUTHORIZED FOR CONSTRUCTION UNTIL SIGNED, DATED, AND OFFICIALLY RELEASED FOR CONSTRUCTION BY THE ENGINEER OF RECORD.

No.	REVISIONS	DATE	BY

SEAL
NORTH CAROLINA PROFESSIONAL
SEAL
036225
ENGINEER
JOSHUA W. LAMBERT

STRONGROCK
ENGINEERING GROUP
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	PSP-23-03
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
THE DRAINAGE AREA AND THE PROFILE HGL 25YR FOR CULVERT

DRAWING SHEET
EXH-04

04 OF 04

Culvert Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Tuesday, Jun 4 2024

CULVERT 1

Invert Elev Dn (ft)	=	237.95
Pipe Length (ft)	=	119.00
Slope (%)	=	0.84
Invert Elev Up (ft)	=	238.95
Rise (in)	=	72.0
Shape	=	Arch
Span (in)	=	144.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Arch Corrugated Metal
Culvert Entrance	=	90D headwall (A)
Coeff. K,M,c,Y,k	=	0.0083, 2, 0.0379, 0.69, 0.5

Embankment

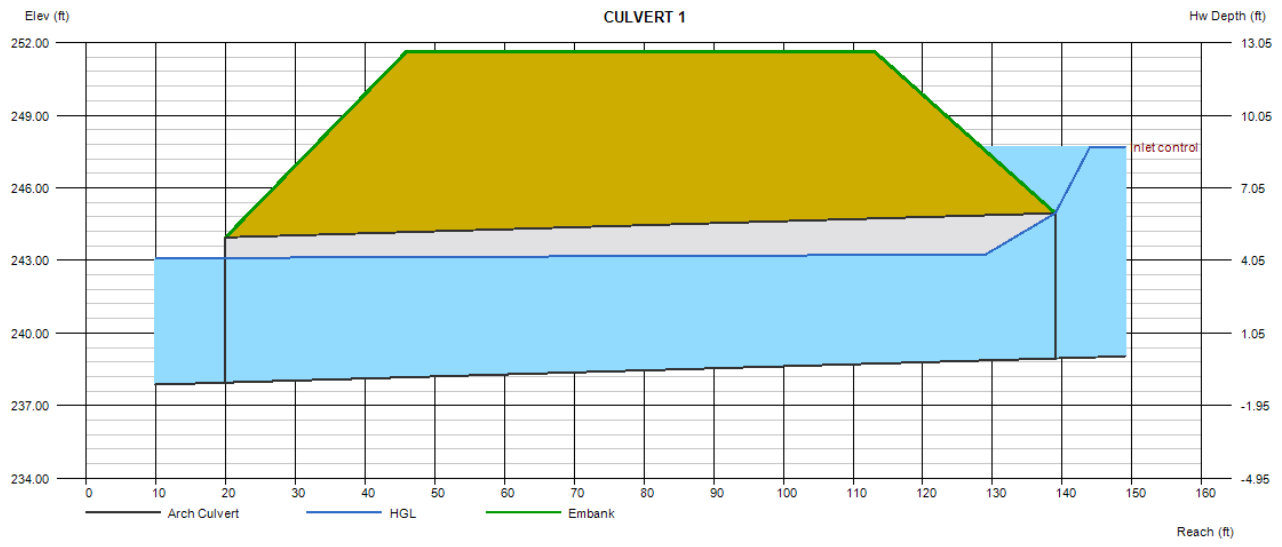
Top Elevation (ft)	=	251.65
Top Width (ft)	=	67.00
Crest Width (ft)	=	10.00

Calculations

Qmin (cfs)	=	625.00
Qmax (cfs)	=	625.00
Tailwater Elev (ft)	=	(dc+D)/2

Highlighted

Qtotal (cfs)	=	625.00
Qpipe (cfs)	=	625.00
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	11.79
Veloc Up (ft/s)	=	13.36
HGL Dn (ft)	=	243.10
HGL Up (ft)	=	243.25
Hw Elev (ft)	=	247.69
Hw/D (ft)	=	1.46
Flow Regime	=	Inlet Control



Culvert Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Tuesday, Jun 4 2024

CULVERT 2

Invert Elev Dn (ft)	=	262.60
Pipe Length (ft)	=	89.00
Slope (%)	=	0.51
Invert Elev Up (ft)	=	263.05
Rise (in)	=	36.0
Shape	=	Circular
Span (in)	=	36.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Concrete
Culvert Entrance	=	Square edge w/headwall (C)
Coeff. K,M,c,Y,k	=	0.0098, 2, 0.0398, 0.67, 0.5

Embankment

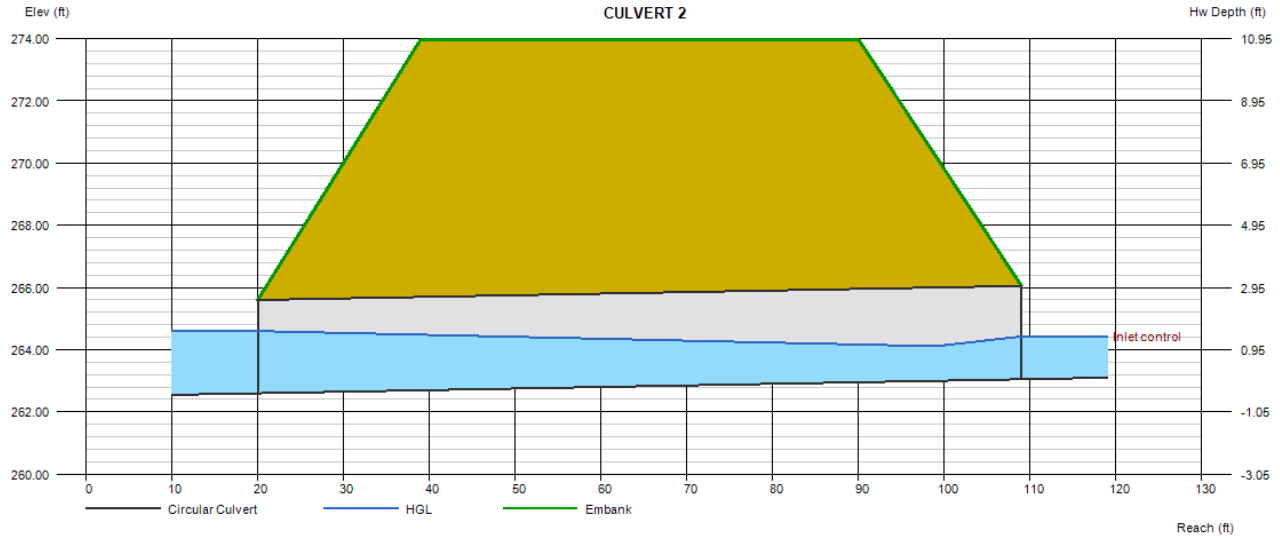
Top Elevation (ft)	=	273.98
Top Width (ft)	=	51.00
Crest Width (ft)	=	10.00

Calculations

Qmin (cfs)	=	9.99
Qmax (cfs)	=	9.99
Tailwater Elev (ft)	=	(dc+D)/2

Highlighted

Qtotal (cfs)	=	9.99
Qpipe (cfs)	=	9.99
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	2.00
Veloc Up (ft/s)	=	4.85
HGL Dn (ft)	=	264.60
HGL Up (ft)	=	264.05
Hw Elev (ft)	=	264.43
Hw/D (ft)	=	0.46
Flow Regime	=	Inlet Control



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3. SCM and Other Design Calculations

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3.1. WetPond #1

Project:	**Reserve @ Mitchell Mill**
SCM	**SCM #1 (Wet Detention Basin)**
Date:	**6/4/2024**

DETERMINE SCM TYPE AND DIMENSIONS

Pond Runoff Volume:

Simple Method: V = 3630*Rv*Rd*A

Rd: Rainfall Depth (inches)=	1	
Rv = 0.05+0.9*Ia		
Rv = Runoff Coefficient		
Ia = Impervious fraction = Impervious drainage area/ Total drainage area		
A = Drainage area (ac.) =	9.93	ac
Impervious portion of drainage area (ac.) =	4.64	ac
Ia =	0.47	
Rv = 0.05 +0.9*Ia		
Rv =	0.47	

Water Quality Volume Required:	WQV = DV = 3630 *Rv*Rd*A =	**16,969**	**cf**
Water Quality Volume Provided:		**17,521**	**cf**

MDC WET POND Sizing

SCM #1 (Wet Detention Basin)

SA/DA and Average Depth Method:

Impervious Ratio =	0.468	
Choose Permanent Pool Avg Depth, Davg =	**5**	ft

From Section 10.3.4 NCDENR Stormwater BMP Manual: The tabulated SA/DA Table
Table 10-1 SA/DA ratio to achive **85% TSS removal** efficiency in the **mountain and piedmont regions**

	% Impervious	Ratio
Lower Limit =	40%	1.09
Upper Limit =	50%	1.31
Acutal SA/DA Ratio =		**1.24**

SA/DA (%) =	1.24	%
DA (Drainage Area) =	9.93	ac
Therefore, SA = DA * coefficient		
SA =	0.123	ac
SA (Permanent Pool or PP) =	**5,357**	**sf**

Find Permanent Pool volume (Vpp)
Davg = Vpp / SA (PP average depth = PP volume / PP surface area)
V pp = Davg * SA

Vpp =	**26,785**	**cf**
Forebay volume (20% of Vpp) =	**5,357**	**cf**
Main Pool volume (80% of Vpp) =	**21,428**	**cf**

NCDEQ Stormwater BMP Manual

Table 1: Piedmont and Mountain SA/DA Table (Adapted from Driscoll, 1986)

Percent Impervious Cover	Permanent Pool Average Depth (ft)					
	3.0	4.0	5.0	6.0	7.0	8.0
10%	0.51	0.43	0.37	0.30	0.27	0.25
20%	0.84	0.69	0.61	0.51	0.44	0.40
30%	1.17	0.81	0.84	0.72	0.61	0.56
40%	1.51	1.22	1.09	0.91	0.78	0.71
50%	1.79	1.47	1.31	1.13	0.95	0.87
60%	2.09	1.73	1.49	1.31	1.12	1.03
70%	2.51	2.04	1.80	1.56	1.34	1.17
80%	2.92	2.36	2.07	1.82	1.62	1.40
90%	3.25	2.64	2.31	2.04	1.84	1.59

SCM #1 (Wet Detention Basin)							
Forebay							
Designed Forebay						**Criteria**	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	1,060	0.0243	5	257	9,935	5,357	
Top	3,035	0.0697		262			

Main Pool							
Designed Main pool						**Criteria**	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	7,364	0.1691	5	257	48,263	21,428	
Top	12,863	0.2953		262			

Temporary pool							
Designed Temporary pool						**Criteria**	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	15,898	0.3650	1	262	17,521	16,969	
Top	18,969	0.4355		263			

Forebay	Area (sf)	Volume (cf)	Total volume (cf)	Depth (ft)	Elevation (ft)
Permanent pool elv	3,035	0	0	0	262
depth 0.5	2,806	1,460	1,460	0.5	261.5
depth 1	2,583	1,347	2,807	1	261
depth 2	2,159	2,368	5,175	2	260
depth 3	1,764	1,958	7,133	3	259
depth 4	1,398	1,577	8,710	4	258
depth 5	1,060	1,225	9,935	5	257

Main Pool	Area (sf)	Volume (cf)	Total volume (cf)	Depth (ft)	Elevation (ft)
Permanent pool elv	12,863	0	0	0	262
depth 0.5 (vegetated shelf)	11,872	6,182	6,182	0.5	261.5
depth1	10,911	5,694	11,876	1	261
depth 2	9,980	10,442	22,318	2	260
depth 3	9,078	9,525	31,844	3	259
depth 4	8,206	8,638	40,482	4	258
depth 5	7,364	7,781	48,263	5	257

Temporary pool	Area (sf)	Volume (cf)	Total volume (cf)	Depth (ft)	Elevation (ft)
Permanent pool elv	15,898	0	0	0	262
depth 0.5 (Vegetated shelf)	17,620	8,376	8,376	0.5	262.5
depth 1	18,969	9,145	17,521	1	263

Design area above permanent pool elevation					
Elevation (ft)	Depth (ft)	Area (sf)	Volume (cf)	Total volume (cf)	Location
262	0	15,898	0	0	Permanent pool
262.5	0.5	17,620	8,376	8,376	Top of vegetated shelf
263	1	18,969	9,145	17,521	Temporary Pool
264	2	20,818	19,886	37,407	
265	3	22,725	21,765	59,172	
266	4	24,689	23,700	82,872	
267	5	26,710	25,693	108,565	
268	6	28,788	27,743	136,307	Top of Pond

SCM #1 (Wet Detention Basin)	
Designed Elevations (ft)	
Sediment clean-out bottom	256
Bottom of pond (sediment clean-out top)	257
Bottom of vegetated shelf	261.5
Permanent pool	262
Top of vegetated shelf	262.5
Temporary pool	263
Top of riser	267
Emergency spillway	267.5
Top of pond	268

Inlet Structure (FES)			Ok or not?
Start INV elv	262.85	ft	OKAY
Pipe length	61	ft	
INV IN FES	262	ft	
Slope	1.4%	%	

Outlet Structure or Riser				
	Elv	number	Rise (in)	Span (in)
Top	267	-	-	
Inv Out	262	1	24	24
Orifice	262	1	2.00	2.00
Orifice or Weir	263	2	6	12

Culv/Orifice	A	B	C
	(Outlet pipe)	(Orifice)	(Orifice or weir)
Rise (in)	24	2.0	6
Span (in)	24	2.0	12
No.Barrels	1	1	2
Invert Elev(ft)	262	262	263
Length (ft)	48	0	0
Slope(%)	0.96%	0	0
Multi-Stage	N/A	YES	YES
Discharge point	261.54		

Weir	A	B	C
	(Weir or Top of riser)	(Spillway)	
Weir type	Riser	Rectangular	
Crest Elev(ft)	267	267.5	
Crest Length(ft)	16	30	
Weir Coeff	3.33	2.66	
Multi stage	Yes	No	

Orifice Sizing - BMP A WETPOND (SCM #1)

$Q = Cd \times A \times \sqrt{2gh}$

Total Volume to be discharged from Ponds (Q) =	16,969	cf
Depth of Storage (H) =	1.0	

2 days to Discharge - 172,800 seconds

Q2 = 0.098199797 cfs

$$A2 = \frac{Q2}{Cd \times \sqrt{2gh}}$$

Cd =	0.60		
g =	32.2		
H/3 = h =	0.33		
A2 =	0.0353	sf	$A=\pi R^2=\pi D^2/4$
	5.087	sq in	
diameter	**2.545**	inches	D=sqrt (4A/π)

5 Days to Discharge - 432,000 seconds

Q5 = 0.039279919 cfs

$$A5 = \frac{Q5}{Cd \times \sqrt{2gh}}$$

Cd =	0.60		
g =	32.2		
H/3 = h =	0.33		
A5 =	0.014	sf	
	2.035	sq in	
diameter	**1.610**	inches	

Orifice Chosen

diameter =	**2.00**	inches
A =	0.0218	sf
Q = Cd x A x sqrt(2 x g x h)		
Q =	0.0606	cfs
time =	279790.78	seconds
Time =	**3.24**	**days**

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3.2. WetPond #2

Project:	**Reserve @ Mitchell Mill**
SCM	**SCM #2 (Wet Detention Basin)**
Date:	**6/4/2024**

DETERMINE SCM TYPE AND DIMENSIONS

Pond Runoff Volume:

Simple Method: V = 3630*Rv*Rd*A

Rd: Rainfall Depth (inches)=	1	
Rv = 0.05+0.9*Ia		
Rv = Runoff Coefficient		
Ia = Impervious fraction = Impervious drainage area/ Total drainage area		
A = Drainage area (ac.) =	14.03	ac
Impervious portion of drainage area (ac.) =	9.82	ac
427685.3		
Ia =	0.70	
Rv = 0.05 +0.9*Ia		
Rv =	0.68	
Water Quality Volume Required: WQV = DV = 3630 *Rv*Rd*A =	**34,622**	**cf**
Water Quality Volume Provided:	**66,060**	**cf**

MDC WET POND Sizing

SCM #2 (Wet Detention Basin)

SA/DA and Average Depth Method:

Impervious Ratio =	0.700	
Choose Permanent Pool Avg Depth, Davg =	5	ft

From Section 10.3.4 NCDENR Stormwater BMP Manual: The tabulated SA/DA Table
Table 10-1 SA/DA ratio to achive **85% TSS removal** efficiency in the **mountain and piedmont regions**

	% Impervious	Ratio
Lower Limit =	70%	1.8
Upper Limit =	70%	1.8
Acutal SA/DA Ratio =		1.80

SA/DA (%) =	1.80	%
DA (Drainage Area) =	14.03	ac
Therefore, SA = DA * coefficient		
SA =	0.252	ac
SA (Permanent Pool or PP) =	**10,998**	**sf**

Find Permanent Pool volume (Vpp)
Davg = Vpp / SA (PP average depth = PP volume / PP surface area)
V pp = Davg * SA

Vpp =	**54,988**	**cf**
Forebay volume (20% of Vpp) =	**10,998**	**cf**
Main Pool volume (80% of Vpp) =	**43,990**	**cf**

NCDEQ Stormwater BMP Manual

Table 1: Piedmont and Mountain SA/DA Table (Adapted from Driscoll, 1986)

Percent Impervious Cover	Permanent Pool Average Depth (ft)					
	3.0	4.0	5.0	6.0	7.0	8.0
10%	0.51	0.43	0.37	0.30	0.27	0.25
20%	0.84	0.69	0.61	0.51	0.44	0.40
30%	1.17	0.81	0.84	0.72	0.61	0.56
40%	1.51	1.22	1.09	0.91	0.78	0.71
50%	1.79	1.47	1.31	1.13	0.95	0.87
60%	2.09	1.73	1.49	1.31	1.12	1.03
70%	2.51	2.04	1.80	1.56	1.34	1.17
80%	2.92	2.36	2.07	1.82	1.62	1.40
90%	3.25	2.64	2.31	2.04	1.84	1.59

SCM #2 (Wet Detention Basin)							
Forebay							
Designed Forebay						**Criteria**	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	2,395	0.0550	5	259	18,904	10,998	
Top	5,303	0.1217		264			

Main Pool							
Designed Main pool						**Criteria**	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	17,338	0.3980	5	259	101,117	43,990	
Top	24,204	0.5556		264			

Temporary pool							
Designed Temporary pool						**Criteria**	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	29,507	0.6774	2	264	66,060	34,622	
Top	35,523	0.8155		266			

Forebay	Area (sf)	Volume (cf)	Total volume (cf)	Depth (ft)	Elevation (ft)
Permanent pool elv	5,303	0	0	0	264
depth 0.5	4,977	2,570	2,570	0.5	263.5
depth 1	4,658	2,408	4,978	1	263
depth 2	4,043	4,347	9,325	2	262
depth 3	3,461	3,748	13,073	3	261
depth 4	2,911	3,182	16,255	4	260
depth 5	2,395	2,649	18,904	5	259

Main Pool	Area (sf)	Volume (cf)	Total volume (cf)	Depth (ft)	Elevation (ft)
Permanent pool elv	24,204	0	0	0	264
depth 0.5 (vegetated shelf)	22,989	11,797	11,797	0.5	263.5
depth1	21,801	11,196	22,993	1	263
depth 2	20,643	21,219	44,212	2	262
depth 3	19,512	20,075	64,287	3	261
depth 4	18,410	18,958	83,246	4	260
depth 5	17,338	17,871	101,117	5	259

Temporary pool	Area (sf)	Volume (cf)	Total volume (cf)	Depth (ft)	Elevation (ft)
Permanent pool elv	29,507	0	0	0	264
depth 0.5 (Vegetated shelf)	31,803	15,324	15,324	0.5	264.5
depth 1	33,375	16,293	31,617	1	265
depth 2	35,523	34,443	66,060	2	266

Design area above permanent pool elevation					
Elevation (ft)	Depth (ft)	Area (sf)	Volume (cf)	Total volume (cf)	Location
264	0	29,507	0	0	Permanent pool
264.5	0.5	31,803	15,324	15,324	Top of vegetated shelf
265	1	33,375	16,293	31,617	
266	2	35,523	34,443	66,060	Temporary Pool
267	3	37,728	36,620	102,680	
268	4	39,991	38,854	141,534	
269	5	42,311	41,146	182,680	
270	6	44,689	43,495	226,174	Top of Pond

SCM #2 (Wet Detention Basin)	
Designed Elevations (ft)	
Sediment clean-out bottom	258
Bottom of pond (sediment clean-out top)	259
Bottom of vegetated shelf	263.5
Permanent pool	264
Top of vegetated shelf	264.5
Temporary pool	266
Top of riser	266.2
Emergency spillway	269.5
Top of pond	270

Inlet Structure (FES)			Ok or not?
Start INV elv	264.37	ft	OKAY
Pipe length	73	ft	
INV IN FES	264	ft	
Slope	0.5%	%	

Outlet Structure or Riser				
	Elv	number	Rise (in)	Span (in)
Top	266.2	-	-	
Inv Out	264	1	18	18
Orifice	264	1	2.50	2.50
Orifice or Weir	266	2	6	12

Culv/Orifice	A	B	C
	(Outlet pipe)	(Orifice)	(Orifice or weir)
Rise (in)	18	2.5	6
Span (in)	18	2.5	12
No.Barrels	1	1	2
Invert Elev(ft)	264	264	266
Length (ft)	154	0	0
Slope(%)	0.54%	0	0
Multi-Stage	N/A	YES	YES
Discharge point	263.17		

Weir	A	B	C
	(Weir or Top of riser)	(Spillway)	
Weir type	Riser	Rectangular	
Crest Elev(ft)	266.2	269.5	
Crest Length(ft)	16	30	
Weir Coeff	3.33	2.66	
Multi stage	Yes	No	

Orifice Sizing - BMP A WETPOND (SCM #2)

$Q = Cd \times A \times \sqrt{2gh}$

Total Volume to be discharged from Ponds (Q) =	34,622	cf
Depth of Storage (H) =	2.0	

2 days to Discharge - 172,800 seconds

Q2 = 0.200359626 cfs

$$A2 = \frac{Q2}{Cd \times \sqrt{2gh}}$$

Cd =	0.60		
g =	32.2		
H/3 = h =	0.67		
A2 =	0.0510	sf	$A=\pi R^2=\pi D^2/4$
	7.339	sq in	
diameter	**3.057**	inches	$D=\sqrt{4A/\pi}$

5 Days to Discharge - 432,000 seconds

Q5 = 0.08014385 cfs

$$A5 = \frac{Q5}{Cd \times \sqrt{2gh}}$$

Cd =	0.60	
g =	32.2	
H/3 = h =	0.67	
A5 =	0.020	sf
	2.936	sq in
diameter	**1.933**	inches

Orifice Chosen

diameter =	**2.50**	inches
A =	0.0341	sf
Q = Cd x A x sqrt(2 x g x h)		
Q =	0.1340	cfs
time =	258343.77	seconds
Time =	**2.99**	**days**

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3.3. Wet Pond #3

Project:	**Reserve @ Mitchell Mill**
SCM	**SCM #3 (Wet Detention Basin)**
Date:	**6/4/2024**

DETERMINE SCM TYPE AND DIMENSIONS

Pond Runoff Volume:

Simple Method: V = 3630*Rv*Rd*A

Rd: Rainfall Depth (inches)=	1	
Rv = 0.05+0.9*Ia		
Rv = Runoff Coefficient		
Ia = Impervious fraction = Impervious drainage area/ Total drainage area		
A = Drainage area (ac.) =	16.99	ac
Impervious portion of drainage area (ac.) =	7.44	ac
Ia =	0.44	
Rv = 0.05 +0.9*Ia		
Rv =	0.44	
Water Quality Volume Required: WQV = DV = 3630 *Rv*Rd*A =	**27,391**	**cf**
Water Quality Volume Provided:	**57,092**	**cf**

MDC WET POND Sizing

SCM #3 (Wet Detention Basin)

SA/DA and Average Depth Method:

Impervious Ratio =	0.438	
Choose Permanent Pool Avg Depth, Davg =	**5**	ft

From Section 10.3.4 NCDENR Stormwater BMP Manual: The tabulated SA/DA Table
Table 10-1 SA/DA ratio to achive **85% TSS removal** efficiency in the **mountain and piedmont regions**

	% Impervious	Ratio
Lower Limit =	40%	1.09
Upper Limit =	50%	1.31
Acutal SA/DA Ratio =		**1.17**

SA/DA (%) =	1.17	%
DA (Drainage Area) =	16.99	ac
Therefore, SA = DA * coefficient		
SA =	0.199	ac
SA (Permanent Pool or PP) =	**8,684**	**sf**

Find Permanent Pool volume (Vpp)
Davg = Vpp / SA (PP average depth = PP volume / PP surface area)
V pp = Davg * SA

Vpp =	**43,421**	**cf**
Forebay volume (20% of Vpp) =	**8,684**	**cf**
Main Pool volume (80% of Vpp) =	**34,737**	**cf**

NCDEQ Stormwater BMP Manual

Table 1: Piedmont and Mountain SA/DA Table (Adapted from Driscoll, 1986)

Percent Impervious Cover	Permanent Pool Average Depth (ft)					
	3.0	4.0	5.0	6.0	7.0	8.0
10%	0.51	0.43	0.37	0.30	0.27	0.25
20%	0.84	0.69	0.61	0.51	0.44	0.40
30%	1.17	0.81	0.84	0.72	0.61	0.56
40%	1.51	1.22	1.09	0.91	0.78	0.71
50%	1.79	1.47	1.31	1.13	0.95	0.87
60%	2.09	1.73	1.49	1.31	1.12	1.03
70%	2.51	2.04	1.80	1.56	1.34	1.17
80%	2.92	2.36	2.07	1.82	1.62	1.40
90%	3.25	2.64	2.31	2.04	1.84	1.59

SCM #3 (Wet Detention Basin)							
Forebay							
Designed Forebay						**Criteria**	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	1,434	0.0329	5	235	16,536	8,684	
Top	5,452	0.1252		240			

Main Pool							
Designed Main pool						**Criteria**	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	13,044	0.2994	5	235	78,388	34,737	
Top	19,339	0.4440		240			

Temporary pool							
Designed Temporary pool						**Criteria**	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	24,791	0.5691	2	240	57,092	27,391	
Top	31,406	0.7210		242			

Forebay	Area (sf)	Volume (cf)	Total volume (cf)	Depth (ft)	Elevation (ft)
Permanent pool elv	5,452	0	0	0	240
depth 0.5	4,984	2,608	2,608	0.5	239.5
depth 1	4,532	2,378	4,986	1	239
depth 2	3,659	4,088	9,074	2	238
depth 3	2,843	3,242	12,316	3	237
depth 4	2,101	2,463	14,779	4	236
depth 5	1,434	1,757	16,536	5	235

Main Pool	Area (sf)	Volume (cf)	Total volume (cf)	Depth (ft)	Elevation (ft)
Permanent pool elv	19,339	0	0	0	240
depth 0.5 (vegetated shelf)	18,215	9,387	9,387	0.5	239.5
depth1	17,121	8,833	18,220	1	239
depth 2	16,057	16,586	34,806	2	238
depth 3	15,022	15,537	50,342	3	237
depth 4	14,018	14,517	64,860	4	236
depth 5	13,044	13,528	78,388	5	235

Temporary pool	Area (sf)	Volume (cf)	Total volume (cf)	Depth (ft)	Elevation (ft)
Permanent pool elv	24,791	0	0	0	240
depth 0.5 (Vegetated shelf)	27,073	12,962	12,962	0.5	240.5
depth 1	28,893	13,989	26,951	1	241
depth 2	31,406	30,141	57,092	2	242

Design area above permanent pool elevation					
Elevation (ft)	Depth (ft)	Area (sf)	Volume (cf)	Total volume (cf)	Location
240	0	24,791	0	0	Permanent pool
240.5	0.5	27,073	12,962	12,962	Top of vegetated shelf
241	1	28,893	13,989	26,951	
242	2	31,406	30,141	57,092	Temporary Pool
243	3	34,019	32,704	89,795	
244	4	36,706	35,354	125,149	
245	5	39,464	38,077	163,226	
246	6	42,287	40,867	204,093	Top of Pond

SCM #3 (Wet Detention Basin)	
Designed Elevations (ft)	
Sediment clean-out bottom	234
Bottom of pond (sediment clean-out top)	235
Bottom of vegetated shelf	239.5
Permanent pool	240
Top of vegetated shelf	240.5
Temporary pool	242
Top of riser	243
Emergency spillway	245.5
Top of pond	246

Inlet Structure (FES)			Ok or not?
Start INV elv	240.97	ft	OKAY
Pipe length	163	ft	
INV IN FES	240	ft	
Slope	0.6%	%	

Outlet Structure or Riser				
	Elv	number	Rise (in)	Span (in)
Top	243	-	-	
Inv Out	239	1	18	18
Orifice	240	1	2.00	2.00
Orifice or Weir	242	2	6	12

Culv/Orifice	A	B	C
	(Outlet pipe)	(Orifice)	(Orifice or weir)
Rise (in)	18	2.0	6
Span (in)	18	2.0	12
No.Barrels	1	1	2
Invert Elev(ft)	239	240	242
Length (ft)	50	0	0
Slope(%)	2.00%	0	0
Multi-Stage	N/A	YES	YES
Discharge point	238		

Weir	A	B	C
	(Weir or Top of riser)	(Spillway)	
Weir type	Riser	Rectangular	
Crest Elev(ft)	243	245.5	
Crest Length(ft)	16	30	
Weir Coeff	3.33	2.66	
Multi stage	Yes	No	

Orifice Sizing - BMP A WETPOND (SCM #3)

$Q = Cd \times A \times \sqrt{2gh}$

Total Volume to be discharged from Ponds (Q) =	27,391	cf
Depth of Storage (H) =	2.0	

2 days to Discharge - 172,800 seconds

Q2 = 0.158512828 cfs

$$A2 = \frac{Q2}{Cd \times \sqrt{2gh}}$$

Cd = 0.60
g = 32.2
H/3 = h = 0.67

A2 = 0.0403 sf $A=\pi R^2=\pi D^2/4$
5.806 sq in
diameter **2.719** inches $D=\sqrt{4A/\pi}$

5 Days to Discharge - 432,000 seconds

Q5 = 0.063405131 cfs

$$A5 = \frac{Q5}{Cd \times \sqrt{2gh}}$$

Cd = 0.60
g = 32.2
H/3 = h = 0.67

A5 = 0.016 sf
2.322 sq in
diameter **1.720** inches

Orifice Chosen

diameter = **2.00** inches
A = 0.0218 sf

Q = Cd x A x sqrt(2 x g x h)
Q = 0.0858 cfs

time = 319353.89 seconds
Time = 3.70 days

3.4. Wet Pond #4

Project:	**Reserve @ Mitchell Mill**
SCM	**SCM #4 (Wet Detention Basin)**
Date:	**6/4/2024**

DETERMINE SCM TYPE AND DIMENSIONS

Pond Runoff Volume:

Simple Method: V = 3630*Rv*Rd*A

Rd: Rainfall Depth (inches)=	1	
Rv = 0.05+0.9*Ia		
Rv = Runoff Coefficient		
Ia = Impervious fraction = Impervious drainage area/ Total drainage area		
A = Drainage area (ac.) =	10.77	ac
Impervious portion of drainage area (ac.) =	5.56	ac
Ia =	0.52	
Rv = 0.05 +0.9*Ia		
Rv =	0.51	
Water Quality Volume Required: WQV = DV = 3630 *Rv*Rd*A =	**20,119**	**cf**
Water Quality Volume Provided:	**27,413**	**cf**

MDC WET POND Sizing

SCM #4 (Wet Detention Basin)

SA/DA and Average Depth Method:

Impervious Ratio =	0.516	
Choose Permanent Pool Avg Depth, Davg =	**5**	ft

From Section 10.3.4 NCDENR Stormwater BMP Manual: The tabulated SA/DA Table
Table 10-1 SA/DA ratio to achive **85% TSS removal** efficiency in the **mountain and piedmont regions**

	% Impervious	Ratio
Lower Limit =	50%	1.31
Upper Limit =	60%	1.49
Acutal SA/DA Ratio =		1.34

SA/DA (%) =	1.34	%
DA (Drainage Area) =	10.77	ac
Therefore, SA = DA * coefficient		
SA =	0.144	ac
SA (Permanent Pool or PP) =	**6,283**	**sf**

Find Permanent Pool volume (Vpp)
Davg = Vpp / SA (PP average depth = PP volume / PP surface area)
V pp = Davg * SA

Vpp =	**31,415**	**cf**
Forebay volume (20% of Vpp) =	**6,283**	**cf**
Main Pool volume (80% of Vpp) =	**25,132**	**cf**

NCDEQ Stormwater BMP Manual

Table 1: Piedmont and Mountain SA/DA Table (Adapted from Driscoll, 1986)

Percent Impervious Cover	Permanent Pool Average Depth (ft)					
	3.0	4.0	5.0	6.0	7.0	8.0
10%	0.51	0.43	0.37	0.30	0.27	0.25
20%	0.84	0.69	0.61	0.51	0.44	0.40
30%	1.17	0.81	0.84	0.72	0.61	0.56
40%	1.51	1.22	1.09	0.91	0.78	0.71
50%	1.79	1.47	1.31	1.13	0.95	0.87
60%	2.09	1.73	1.49	1.31	1.12	1.03
70%	2.51	2.04	1.80	1.56	1.34	1.17
80%	2.92	2.36	2.07	1.82	1.62	1.40
90%	3.25	2.64	2.31	2.04	1.84	1.59

SCM #4 (Wet Detention Basin)							
Forebay							
Designed Forebay						**Criteria**	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	705	0.0162	5	235	7,219	6,283	
Top	2,325	0.0534		240			

Main Pool							
Designed Main pool						**Criteria**	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	3,025	0.0694	5	235	25,223	25,132	
Top	8,278	0.1900		240			

Temporary pool							
Designed Temporary pool						**Criteria**	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	10,603	0.2434	2	240	27,413	20,119	
Top	13,990	0.3212		242			

Forebay	Area (sf)	Volume (cf)	Total volume (cf)	Depth (ft)	Elevation (ft)
Permanent pool elv	2,325	0	0	0	240
depth 0.5	2,126	1,112	1,112	0.5	239.5
depth 1	1,934	1,015	2,127	1	239
depth 2	1,575	1,751	3,878	2	238
depth 3	1,250	1,409	5,288	3	237
depth 4	960	1,102	6,390	4	236
depth 5	705	829	7,219	5	235

Main Pool	Area (sf)	Volume (cf)	Total volume (cf)	Depth (ft)	Elevation (ft)
Permanent pool elv	8,278	0	0	0	240
depth 0.5 (vegetated shelf)	7,223	3,872	3,872	0.5	239.5
depth1	6,187	3,349	7,221	1	239
depth 2	5,277	5,726	12,947	2	238
depth 3	4,448	4,857	17,804	3	237
depth 4	3,694	4,065	21,869	4	236
depth 5	3,025	3,354	25,223	5	235

Temporary pool	Area (sf)	Volume (cf)	Total volume (cf)	Depth (ft)	Elevation (ft)
Permanent pool elv	10,603	0	0	0	240
depth 0.5 (Vegetated shelf)	12,363	5,736	5,736	0.5	240.5
depth 1	13,990	6,584	12,320	1	241
depth 2	16,224	15,093	27,413	2	242

Design area above permanent pool elevation					
Elevation (ft)	Depth (ft)	Area (sf)	Volume (cf)	Total volume (cf)	Location
240	0	10,603	0	0	Permanent pool
240.5	0.5	12,363	5,736	5,736	Top of vegetated shelf
241	1	13,990	6,584	12,320	
242	2	16,224	15,093	27,413	Temporary Pool
243	3	18,528	17,363	44,776	
244	4	20,886	19,695	64,472	
245	5	23,301	22,082	86,554	
246	6	25,773	24,527	111,081	Top of Pond

SCM #4 (Wet Detention Basin)	
Designed Elevations (ft)	
Sediment clean-out bottom	234
Bottom of pond (sediment clean-out top)	235
Bottom of vegetated shelf	239.5
Permanent pool	240
Top of vegetated shelf	240.5
Temporary pool	242
Top of riser	245
Emergency spillway	245.5
Top of pond	246

Inlet Structure (FES)			Ok or not?
Start INV elv	240.84	ft	OKAY
Pipe length	53	ft	
INV IN FES	240	ft	
Slope	1.6%	%	

Outlet Structure or Riser				
	Elv	number	Rise (in)	Span (in)
Top	245	-	-	
Inv Out	240	1	18	18
Orifice	240	1	2.00	2.00
Orifice or Weir	242	2	6	12

Culv/Orifice	A	B	C
	(Outlet pipe)	(Orifice)	(Orifice or weir)
Rise (in)	18	2.0	6
Span (in)	18	2.0	12
No.Barrels	1	1	2
Invert Elev(ft)	240	240	242
Length (ft)	71	0	0
Slope(%)	2.11%	0	0
Multi-Stage	N/A	YES	YES
Discharge point	238.5		

Weir	A	B	C
	(Weir or Top of riser)	(Spillway)	
Weir type	Riser	Rectangular	
Crest Elev(ft)	245	245.5	
Crest Length(ft)	16	30	
Weir Coeff	3.33	2.66	
Multi stage	Yes	No	

Orifice Sizing - BMP A WETPOND (SCM #4)

$Q = Cd \times A \times \sqrt{2gh}$

Total Volume to be discharged from Ponds (Q) =	20,119	cf
Depth of Storage (H) =	2.0	

2 days to Discharge - 172,800 seconds

Q2 = 0.11643099 cfs

$$A2 = \frac{Q2}{Cd \times \sqrt{2gh}}$$

Cd =	0.60		
g =	32.2		
H/3 = h =	0.67		
A2 =	0.0296	sf	$A=\pi R^2=\pi D^2/4$
	4.265	sq in	
diameter	**2.330**	inches	D=sqrt (4A/π)

5 Days to Discharge - 432,000 seconds

Q5 = 0.046572396 cfs

$$A5 = \frac{Q5}{Cd \times \sqrt{2gh}}$$

Cd =	0.60		
g =	32.2		
H/3 = h =	0.67		
A5 =	0.012	sf	
	1.706	sq in	
diameter	**1.474**	inches	

Orifice Chosen

diameter =	**2.00**	inches
A =	0.0218	sf
Q = Cd x A x sqrt(2 x g x h)		
Q =	0.0858	cfs
time =	234572.12	seconds
Time =	**2.71**	**days**

3.5. Wet Pond #5

Project:	**Reserve @ Mitchell Mill**
SCM	**SCM #5 (Wet Detention Basin)**
Date:	**6/4/2024**

DETERMINE SCM TYPE AND DIMENSIONS

Pond Runoff Volume:

Simple Method: V = 3630*Rv*Rd*A

Rd: Rainfall Depth (inches)=	1	
Rv = 0.05+0.9*Ia		
Rv = Runoff Coefficient		
Ia = Impervious fraction = Impervious drainage area/ Total drainage area		
A = Drainage area (ac.) =	1.73	ac
Impervious portion of drainage area (ac.) =	1.24	ac
Ia =	0.72	
Rv = 0.05 +0.9*Ia		
Rv =	0.70	

Water Quality Volume Required:	WQV = DV = 3630 *Rv*Rd*A =	**4,365**	**cf**
Water Quality Volume Provided:		**11,140**	**cf**

MDC WET POND Sizing

SCM #5 (Wet Detention Basin)

SA/DA and Average Depth Method:

Impervious Ratio =	0.717	
Choose Permanent Pool Avg Depth, Davg =	**5**	ft

From Section 10.3.4 NCDENR Stormwater BMP Manual: The tabulated SA/DA Table
Table 10-1 SA/DA ratio to achive **85% TSS removal** efficiency in the **mountain and piedmont regions**

	% Impervious	Ratio
Lower Limit =	50%	1.31
Upper Limit =	60%	1.49
Acutal SA/DA Ratio =		**1.70**

SA/DA (%) =	1.70	%
DA (Drainage Area) =	1.73	ac
Therefore, SA = DA * coefficient		
SA =	0.029	ac
SA (Permanent Pool or PP) =	**1,281**	**sf**

Find Permanent Pool volume (Vpp)
Davg = Vpp / SA (PP average depth = PP volume / PP surface area)
V pp = Davg * SA

Vpp =	**6,405**	**cf**
Forebay volume (20% of Vpp) =	**1,281**	**cf**
Main Pool volume (80% of Vpp) =	**5,124**	**cf**

NCDEQ Stormwater BMP Manual

Table 1: Piedmont and Mountain SA/DA Table (Adapted from Driscoll, 1986)

Percent Impervious Cover	Permanent Pool Average Depth (ft)					
	3.0	4.0	5.0	6.0	7.0	8.0
10%	0.51	0.43	0.37	0.30	0.27	0.25
20%	0.84	0.69	0.61	0.51	0.44	0.40
30%	1.17	0.81	0.84	0.72	0.61	0.56
40%	1.51	1.22	1.09	0.91	0.78	0.71
50%	1.79	1.47	1.31	1.13	0.95	0.87
60%	2.09	1.73	1.49	1.31	1.12	1.03
70%	2.51	2.04	1.80	1.56	1.34	1.17
80%	2.92	2.36	2.07	1.82	1.62	1.40
90%	3.25	2.64	2.31	2.04	1.84	1.59

SCM #5 (Wet Detention Basin)							
Forebay							
Designed Forebay						**Criteria**	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	145	0.0033	5	244	2,675	1,281	
Top	1,059	0.0243		249			

Main Pool							
Designed Main pool						**Criteria**	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	77	0.0018	5	244	5,133	5,124	
Top	2,883	0.0662		249			

Temporary pool							
Designed Temporary pool						**Criteria**	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	3,942	0.0905	2	249	11,140	4,365	
Top	6,916	0.1588		251			

Forebay	Area (sf)	Volume (cf)	Total volume (cf)	Depth (ft)	Elevation (ft)
Permanent pool elv	1,059	0	0	0	249
depth 0.5	931	497	497	0.5	248.5
depth 1	812	435	933	1	248
depth 2	597	702	1,634	2	247
depth 3	414	503	2,137	3	246
depth 4	264	336	2,473	4	245
depth 5	145	202	2,675	5	244

Main Pool	Area (sf)	Volume (cf)	Total volume (cf)	Depth (ft)	Elevation (ft)
Permanent pool elv	2,883	0	0	0	249
depth 0.5 (vegetated shelf)	2,210	1,270	1,270	0.5	248.5
depth1	1,586	945	2,214	1	248
depth 2	1,123	1,348	3,562	2	247
depth 3	693	899	4,461	3	246
depth 4	312	490	4,951	4	245
depth 5	77	181	5,133	5	244

Temporary pool	Area (sf)	Volume (cf)	Total volume (cf)	Depth (ft)	Elevation (ft)
Permanent pool elv	3,942	0	0	0	249
depth 0.5 (Vegetated shelf)	4,858	2,196	2,196	0.5	249.5
depth 1	5,712	2,640	4,836	1	250
depth 2	6,916	6,304	11,140	2	251

Design area above permanent pool elevation					
Elevation (ft)	Depth (ft)	Area (sf)	Volume (cf)	Total volume (cf)	Location
249	0	3,942	0	0	Permanent pool
249.5	0.5	4,858	2,196	2,196	Top of vegetated shelf
250	1	5,712	2,640	4,836	
251	2	6,916	6,304	11,140	Temporary Pool
252	3	8,192	7,545	18,685	
253	4	9,540	8,857	27,542	
254	5	10,961	10,242	37,785	
255	6	12,454	11,700	49,484	Top of Pond

SCM #5 (Wet Detention Basin)	
Designed Elevations (ft)	
Sediment clean-out bottom	243
Bottom of pond (sediment clean-out top)	244
Bottom of vegetated shelf	248.5
Permanent pool	249
Top of vegetated shelf	249.5
Temporary pool	251
Top of riser	254
Emergency spillway	254.5
Top of pond	255

Inlet Structure (FES)			Ok or not?
Start INV elv	250.93	ft	OKAY
Pipe length	43	ft	
INV IN FES	249	ft	
Slope	4.5%	%	

Outlet Structure or Riser				
	Elv	number	Rise (in)	Span (in)
Top	254	-	-	
Inv Out	246.58	1	15	15
Orifice	249	1	1.00	1.00
Orifice or Weir	251	2	6	12

Culv/Orifice	A	B	C
	(Outlet pipe)	(Orifice)	(Orifice or weir)
Rise (in)	15	1.0	6
Span (in)	15	1.0	12
No.Barrels	1	1	2
Invert Elev(ft)	246.58	249	251
Length (ft)	106	0	0
Slope(%)	7.62%	0	0
Multi-Stage	N/A	YES	YES
Discharge point	238.5		

Weir	A	B	C
	(Weir or Top of riser)	(Spillway)	
Weir type	Riser	Rectangular	
Crest Elev(ft)	254	254.5	
Crest Length(ft)	16	30	
Weir Coeff	3.33	2.66	
Multi stage	Yes	No	

Orifice Sizing - BMP A WETPOND (SCM #5)

$Q = Cd \times A \times \sqrt{2gh}$

Total Volume to be discharged from Ponds (Q) =	4,365	cf
Depth of Storage (H) =	2.0	

2 days to Discharge - 172,800 seconds

Q2 = 0.025259023 cfs

$$A2 = \frac{Q2}{Cd \times \sqrt{2gh}}$$

Cd =	0.60		
g =	32.2		
H/3 = h =	0.67		
A2 =	0.0064	sf	$A=\pi R^2=\pi D^2/4$
	0.925	sq in	
diameter	**1.085**	inches	D=sqrt (4A/π)

5 Days to Discharge - 432,000 seconds

Q5 = 0.010103609 cfs

$$A5 = \frac{Q5}{Cd \times \sqrt{2gh}}$$

Cd =	0.60	
g =	32.2	
H/3 = h =	0.67	
A5 =	0.003	sf
	0.370	sq in
diameter	**0.686**	inches

Orifice Chosen

diameter =	**1.00**	inches
A =	0.0055	sf
Q =	Cd x A x sqrt(2 x g x h)	
Q =	0.0214	cfs
time =	203556.20	seconds
Time =	**2.36**	**days**

3.6. Wet Pond #6

Project:	**Reserve @ Mitchell Mill**
SCM	**SCM #6 (Wet Detention Basin)**
Date:	**6/4/2024**

DETERMINE SCM TYPE AND DIMENSIONS

Pond Runoff Volume:

Simple Method: V = 3630*Rv*Rd*A

Rd: Rainfall Depth (inches)=	1	
Rv = 0.05+0.9*Ia		
Rv = Runoff Coefficient		
Ia = Impervious fraction = Impervious drainage area/ Total drainage area		
A = Drainage area (ac.) =	14.21	ac
Impervious portion of drainage area (ac.) =	7.19	ac
Ia =	0.51	
Rv = 0.05 +0.9*Ia		
Rv =	0.51	

Water Quality Volume Required:	WQV = DV = 3630 *Rv*Rd*A =	**26,067**	**cf**
Water Quality Volume Provided:		**38,323**	**cf**

MDC WET POND Sizing

SCM #6 (Wet Detention Basin)

SA/DA and Average Depth Method:

Impervious Ratio =	0.506	
Choose Permanent Pool Avg Depth, Davg =	**5**	ft

From Section 10.3.4 NCDENR Stormwater BMP Manual: The tabulated SA/DA Table
Table 10-1 SA/DA ratio to achive **85% TSS removal** efficiency in the **mountain and piedmont regions**

	% Impervious	Ratio
Lower Limit =	50%	1.31
Upper Limit =	60%	1.49
Acutal SA/DA Ratio =		**1.32**

SA/DA (%) =	1.32	%
DA (Drainage Area) =	14.21	ac
Therefore, SA = DA * coefficient		
SA =	0.188	ac
SA (Permanent Pool or PP) =	**8,175**	**sf**

Find Permanent Pool volume (Vpp)
Davg = Vpp / SA (PP average depth = PP volume / PP surface area)
V pp = Davg * SA

Vpp =	**40,875**	**cf**
Forebay volume (20% of Vpp) =	**8,175**	**cf**
Main Pool volume (80% of Vpp) =	**32,700**	**cf**

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Table 1: Piedmont and Mountain SA/DA Table (Adapted from Driscoll, 1986)

Percent Impervious Cover	Permanent Pool Average Depth (ft)					
	3.0	4.0	5.0	6.0	7.0	8.0
10%	0.51	0.43	0.37	0.30	0.27	0.25
20%	0.84	0.69	0.61	0.51	0.44	0.40
30%	1.17	0.81	0.84	0.72	0.61	0.56
40%	1.51	1.22	1.09	0.91	0.78	0.71
50%	1.79	1.47	1.31	1.13	0.95	0.87
60%	2.09	1.73	1.49	1.31	1.12	1.03
70%	2.51	2.04	1.80	1.56	1.34	1.17
80%	2.92	2.36	2.07	1.82	1.62	1.40
90%	3.25	2.64	2.31	2.04	1.84	1.59

SCM #6 (Wet Detention Basin)							
Forebay							
Designed Forebay						**Criteria**	
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	PASS
Bottom	816	0.0187	5	232	8,730	8,175	
Top	2,814	0.0646		237			

Main Pool							
Designed Main pool						**Criteria**	
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	PASS
Bottom	6,640	0.1524	5	232	46,819	32,700	
Top	13,151	0.3019		237			

Temporary pool							
Designed Temporary pool						**Criteria**	
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	PASS
Bottom	15,965	0.3665	2	237	38,323	26,067	
Top	21,841	0.5014		239			

Forebay	Area (sf)	Volume (cf)	Total volume (cf)	Depth (ft)	Elevation (ft)
Permanent pool elv	2,814	0	0	0	237
depth 0.5	2,577	1,347	1,347	0.5	236.5
depth 1	2,349	1,231	2,578	1	236
depth 2	1,917	2,129	4,708	2	235
depth 3	1,518	1,714	6,421	3	234
depth 4	1,151	1,330	7,752	4	233
depth 5	816	979	8,730	5	232

Main Pool	Area (sf)	Volume (cf)	Total volume (cf)	Depth (ft)	Elevation (ft)
Permanent pool elv	13,151	0	0	0	237
depth 0.5 (vegetated shelf)	11,991	6,283	6,283	0.5	236.5
depth1	10,860	5,710	11,994	1	236
depth 2	9,759	10,305	22,298	2	235
depth 3	8,689	9,219	31,517	3	234
depth 4	7,649	8,163	39,681	4	233
depth 5	6,640	7,139	46,819	5	232

Temporary pool	Area (sf)	Volume (cf)	Total volume (cf)	Depth (ft)	Elevation (ft)
Permanent pool elv	15,965	0	0	0	237
depth 0.5 (Vegetated shelf)	17,692	8,411	8,411	0.5	237.5
depth 1	19,445	9,281	17,691	1	238
depth 2	21,841	20,631	38,323	2	239

Design area above permanent pool elevation					
Elevation (ft)	Depth (ft)	Area (sf)	Volume (cf)	Total volume (cf)	Location
237	0	15,965	0	0	Permanent pool
237.5	0.5	17,692	8,411	8,411	Top of vegetated shelf
238	1	19,445	9,281	17,691	
239	2	21,841	20,631	38,323	Temporary Pool
240	3	24,306	23,063	61,385	
241	4	26,833	25,559	86,944	
242	5	29,421	28,117	115,061	
243	6	32,067	30,735	145,796	Top of Pond

SCM #6 (Wet Detention Basin)	
Designed Elevations (ft)	
Sediment clean-out bottom	231
Bottom of pond (sediment clean-out top)	232
Bottom of vegetated shelf	236.5
Permanent pool	237
Top of vegetated shelf	237.5
Temporary pool	239
Top of riser	239
Emergency spillway	242.5
Top of pond	243

Inlet Structure (FES)			Ok or not?
Start INV elv	237.34	ft	OKAY
Pipe length	68	ft	
INV IN FES	237	ft	
Slope	0.5%	%	

Outlet Structure or Riser				
	Elv	number	Rise (in)	Span (in)
Top	239	-	-	
Inv Out	237	1	18	18
Orifice	237	1	2.00	2.00
Orifice or Weir	239	2	6	12

Culv/Orifice	A	B	C
	(Outlet pipe)	(Orifice)	(Orifice or weir)
Rise (in)	18	2.0	6
Span (in)	18	2.0	12
No.Barrels	1	1	2
Invert Elev(ft)	237	237	239
Length (ft)	100	0	0
Slope(%)	0.50%	0	0
Multi-Stage	N/A	YES	YES
Discharge point	236.5		

Weir	A	B	C
	(Weir or Top of riser)	(Spillway)	
Weir type	Riser	Rectangular	
Crest Elev(ft)	239	242.5	
Crest Length(ft)	16	30	
Weir Coeff	3.33	2.66	
Multi stage	Yes	No	

Orifice Sizing - BMP A WETPOND (SCM #5)

$Q = Cd \times A \times \sqrt{2gh}$

Total Volume to be discharged from Ponds (Q) =	26,067	cf
Depth of Storage (H) =	2.0	

2 days to Discharge - 172,800 seconds

Q2 = 0.150849778 cfs

$$A2 = \frac{Q2}{Cd \times \sqrt{2gh}}$$

Cd =	0.60		
g =	32.2		
H/3 = h =	0.67		
A2 =	0.0384	sf	$A=\pi R^2=\pi D^2/4$
	5.525	sq in	
diameter	**2.652**	inches	D=sqrt (4A/π)

5 Days to Discharge - 432,000 seconds

Q5 = 0.060339911 cfs

$$A5 = \frac{Q5}{Cd \times \sqrt{2gh}}$$

Cd =	0.60	
g =	32.2	
H/3 = h =	0.67	
A5 =	0.015	sf
	2.210	sq in
diameter	**1.678**	inches

Orifice Chosen

diameter =	**2.00**	inches
A =	0.0218	sf
Q = Cd x A x sqrt(2 x g x h)		
Q =	0.0858	cfs
time =	303915.24	seconds
Time =	**3.52**	**days**

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3.7. Wet Pond #7

Project:	**Reserve @ Mitchell Mill**
SCM	**SCM #7 (Wet Detention Basin)**
Date:	**6/4/2024**

DETERMINE SCM TYPE AND DIMENSIONS

Pond Runoff Volume:

Simple Method: V = 3630*Rv*Rd*A

Rd: Rainfall Depth (inches)=	1	
Rv = 0.05+0.9*Ia		
Rv = Runoff Coefficient		
Ia = Impervious fraction = Impervious drainage area/ Total drainage area		
A = Drainage area (ac.) =	14.52	ac
Impervious portion of drainage area (ac.) =	6.28	ac
Ia =	0.43	
Rv = 0.05 +0.9*Ia		
Rv =	0.44	
Water Quality Volume Required: WQV = DV = 3630 *Rv*Rd*A =	**23,164**	**cf**
Water Quality Volume Provided:	**43,999**	**cf**

MDC WET POND Sizing

SCM #7 (Wet Detention Basin)

SA/DA and Average Depth Method:

Impervious Ratio =	0.433	
Choose Permanent Pool Avg Depth, Davg =	**6**	ft

From Section 10.3.4 NCDENR Stormwater BMP Manual: The tabulated SA/DA Table
Table 10-1 SA/DA ratio to achive **85% TSS removal** efficiency in the **mountain and piedmont regions**

	% Impervious	Ratio
Lower Limit =	40%	1.09
Upper Limit =	50%	1.31
Acutal SA/DA Ratio =		**1.16**

SA/DA (%) =	1.16	%
DA (Drainage Area) =	14.52	ac
Therefore, SA = DA * coefficient		
SA =	0.169	ac
SA (Permanent Pool or PP) =	**7,350**	**sf**

Find Permanent Pool volume (Vpp)
Davg = Vpp / SA (PP average depth = PP volume / PP surface area)
V pp = Davg * SA

Vpp =	**44,100**	**cf**
Forebay volume (20% of Vpp) =	**8,820**	**cf**
Main Pool volume (80% of Vpp) =	**35,280**	**cf**

NCDEQ Stormwater BMP Manual

Table 1: Piedmont and Mountain SA/DA Table (Adapted from Driscoll, 1986)

Percent Impervious Cover	Permanent Pool Average Depth (ft)					
	3.0	4.0	5.0	6.0	7.0	8.0
10%	0.51	0.43	0.37	0.30	0.27	0.25
20%	0.84	0.69	0.61	0.51	0.44	0.40
30%	1.17	0.81	0.84	0.72	0.61	0.56
40%	1.51	1.22	1.09	0.91	0.78	0.71
50%	1.79	1.47	1.31	1.13	0.95	0.87
60%	2.09	1.73	1.49	1.31	1.12	1.03
70%	2.51	2.04	1.80	1.56	1.34	1.17
80%	2.92	2.36	2.07	1.82	1.62	1.40
90%	3.25	2.64	2.31	2.04	1.84	1.59

SCM #7 (Wet Detention Basin)							
Forebay							
Designed Forebay						**Criteria**	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	1,336	0.0307	6	233	14,425	8,820	
Top	3,660	0.0840		239			

Main Pool							
Designed Main pool						**Criteria**	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	6,945	0.1594	6	233	60,200	35,280	
Top	14,687	0.3372		239			

Temporary pool							
Designed Temporary pool						**Criteria**	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	18,347	0.4212	2	239	43,999	23,164	
Top	24,879	0.5711		241			

Forebay	Area (sf)	Volume (cf)	Total volume (cf)	Depth (ft)	Elevation (ft)
Permanent pool elv	3,660	0	0	0	239
depth 0.5	3,423	1,770	1,770	0.5	238.5
depth 1	3,194	1,654	3,424	1	238
depth 2	2,760	2,974	6,399	2	237
depth 3	2,358	2,556	8,955	3	236
depth 4	1,986	2,169	11,124	4	235
depth 5	1,645	1,813	12,937	5	234
depth 6	1,336	1,488	14,425	6	233

Main Pool	Area (sf)	Volume (cf)	Total volume (cf)	Depth (ft)	Elevation (ft)
Permanent pool elv	14,687	0	0	0	239
depth 0.5 (vegetated shelf)	13,350	7,007	7,007	0.5	238.5
depth1	12,089	6,357	13,364	1	238
depth 2	10,911	11,495	24,859	2	237
depth 3	9,815	10,358	35,217	3	236
depth 4	8,788	9,297	44,514	4	235
depth 5	7,829	8,304	52,818	5	234
depth 6	6,945	7,383	60,200	6	233

Temporary pool	Area (sf)	Volume (cf)	Total volume (cf)	Depth (ft)	Elevation (ft)
Permanent pool elv	18,347	0	0	0	239
depth 0.5 (Vegetated shelf)	20,480	9,702	9,702	0.5	239.5
depth 1	22,337	10,701	20,403	1	240
depth 2	24,879	23,597	43,999	2	241

Design area above permanent pool elevation					
Elevation (ft)	Depth (ft)	Area (sf)	Volume (cf)	Total volume (cf)	Location
239	0	18,347	0	0	Permanent pool
239.5	0.5	20,480	9,702	9,702	Top of vegetated shelf
240	1	22,337	10,701	20,403	
241	2	24,879	23,597	43,999	Temporary Pool
242	3	27,496	26,177	70,176	
243	4	30,187	28,831	99,007	
244	5	32,952	31,559	130,566	
245	6	35,790	34,361	164,928	Top of Pond

SCM #7 (Wet Detention Basin)	
Designed Elevations (ft)	
Sediment clean-out bottom	232
Bottom of pond (sediment clean-out top)	233
Bottom of vegetated shelf	238.5
Permanent pool	239
Top of vegetated shelf	239.5
Temporary pool	241
Top of riser	242
Emergency spillway	244.5
Top of pond	245

Inlet Structure (FES)			Ok or not?
Start INV elv	239.54	ft	OKAY
Pipe length	75	ft	
INV IN FES	239	ft	
Slope	0.7%	%	

Outlet Structure or Riser				
	Elv	number	Rise (in)	Span (in)
Top	242	-	-	
Inv Out	236	1	24	24
Orifice	239	1	2.00	2.00
Orifice or Weir	241	2	6	12

Culv/Orifice	A	B	C
	(Outlet pipe)	(Orifice)	(Orifice or weir)
Rise (in)	24	2.0	6
Span (in)	24	2.0	12
No.Barrels	1	1	2
Invert Elev(ft)	236	239	241
Length (ft)	108	0	0
Slope(%)	0.50%	0	0
Multi-Stage	N/A	YES	YES
Discharge point	235.46		

Weir	A	B	C
	(Weir or Top of riser)	(Spillway)	
Weir type	Riser	Rectangular	
Crest Elev(ft)	242	244.5	
Crest Length(ft)	16	30	
Weir Coeff	3.33	2.66	
Multi stage	Yes	No	

Orifice Sizing - BMP A WETPOND (SCM #7)

$Q = Cd \times A \times \sqrt{2gh}$

Total Volume to be discharged from Ponds (Q) =	23,164	cf
Depth of Storage (H) =	2.0	

2 days to Discharge - 172,800 seconds

Q2 = 0.134053 cfs

$$A2 = \frac{Q2}{Cd \times \sqrt{2gh}}$$

Cd =	0.60		
g =	32.2		
H/3 = h =	0.67		
A2 =	0.0341	sf	$A=\pi R^2=\pi D^2/4$
	4.910	sq in	
diameter	**2.500**	inches	$D=\sqrt{4A/\pi}$

5 Days to Discharge - 432,000 seconds

Q5 = 0.0536212 cfs

$$A5 = \frac{Q5}{Cd \times \sqrt{2gh}}$$

Cd =	0.60	
g =	32.2	
H/3 = h =	0.67	
A5 =	0.014	sf
	1.964	sq in
diameter	**1.581**	inches

Orifice Chosen

diameter =	**2.00**	inches
A =	0.0218	sf
Q = Cd x A x sqrt(2 x g x h)		
Q =	0.0858	cfs
time =	270074.97	seconds
Time =	**3.13**	**days**

3.8. Wet Pond #8

Project:	**Reserve @ Mitchell Mill**
SCM	**SCM #8 (Wet Detention Basin)**
Date:	**6/4/2024**

DETERMINE SCM TYPE AND DIMENSIONS

Pond Runoff Volume:

Simple Method: V = 3630*Rv*Rd*A

Rd: Rainfall Depth (inches)=	1	
Rv = 0.05+0.9*Ia		
Rv = Runoff Coefficient		
Ia = Impervious fraction = Impervious drainage area/ Total drainage area		
A = Drainage area (ac.) =	6.37	ac
Impervious portion of drainage area (ac.) =	3.01	ac
Ia =	0.47	
Rv = 0.05 +0.9*Ia		
Rv =	0.48	
Water Quality Volume Required: WQV = DV = 3630 *Rv*Rd*A =	**10,989**	**cf**
Water Quality Volume Provided:	**15,901**	**cf**

MDC WET POND Sizing

SCM #8 (Wet Detention Basin)

SA/DA and Average Depth Method:

Impervious Ratio =	0.473	
Choose Permanent Pool Avg Depth, Davg =	**5**	ft

From Section 10.3.4 NCDENR Stormwater BMP Manual: The tabulated SA/DA Table
Table 10-1 SA/DA ratio to achive **85% TSS removal** efficiency in the **mountain and piedmont regions**

	% Impervious	Ratio
Lower Limit =	40%	1.09
Upper Limit =	50%	1.31
Acutal SA/DA Ratio =		**1.25**

SA/DA (%) =	1.25	%
DA (Drainage Area) =	6.37	ac
Therefore, SA = DA * coefficient		
SA =	0.080	ac
SA (Permanent Pool or PP) =	**3,467**	**sf**

Find Permanent Pool volume (Vpp)
Davg = Vpp / SA (PP average depth = PP volume / PP surface area)
V pp = Davg * SA

Vpp =	**17,334**	**cf**
Forebay volume (20% of Vpp) =	**3,467**	**cf**
Main Pool volume (80% of Vpp) =	**13,867**	**cf**

NCDEQ Stormwater BMP Manual

Table 1: Piedmont and Mountain SA/DA Table (Adapted from Driscoll, 1986)

Percent Impervious Cover	Permanent Pool Average Depth (ft)					
	3.0	4.0	5.0	6.0	7.0	8.0
10%	0.51	0.43	0.37	0.30	0.27	0.25
20%	0.84	0.69	0.61	0.51	0.44	0.40
30%	1.17	0.81	0.84	0.72	0.61	0.56
40%	1.51	1.22	1.09	0.91	0.78	0.71
50%	1.79	1.47	1.31	1.13	0.95	0.87
60%	2.09	1.73	1.49	1.31	1.12	1.03
70%	2.51	2.04	1.80	1.56	1.34	1.17
80%	2.92	2.36	2.07	1.82	1.62	1.40
90%	3.25	2.64	2.31	2.04	1.84	1.59

SCM #8 (Wet Detention Basin)							
Forebay							
Designed Forebay						**Criteria**	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	132	0.0030	5	235	4,088	3,467	
Top	1,697	0.0390		240			

Main Pool							
Designed Main pool						**Criteria**	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	1,749	0.0402	5	235	14,164	13,867	
Top	4,476	0.1028		240			

Temporary pool							
Designed Temporary pool						**Criteria**	PASS
Location	Area (sf)	Area (ac)	Depth (ft)	elevation (ft)	Volume (cf)	Volume (cf)	
Bottom	6,173	0.1417	2	240	15,901	10,989	
Top	9,227	0.2118		242			

Forebay	Area (sf)	Volume (cf)	Total volume (cf)	Depth (ft)	Elevation (ft)
Permanent pool elv	1,697	0	0	0	240
depth 0.5	1,498	798	798	0.5	239.5
depth 1	1,307	701	1,499	1	239
depth 2	947	1,122	2,621	2	238
depth 3	617	776	3,397	3	237
depth 4	331	467	3,864	4	236
depth 5	132	224	4,088	5	235

Main Pool	Area (sf)	Volume (cf)	Total volume (cf)	Depth (ft)	Elevation (ft)
Permanent pool elv	4,476	0	0	0	240
depth 0.5 (vegetated shelf)	3,944	2,104	2,104	0.5	239.5
depth1	3,443	1,845	3,949	1	239
depth 2	2,973	3,205	7,154	2	238
depth 3	2,533	2,750	9,904	3	237
depth 4	2,125	2,326	12,230	4	236
depth 5	1,749	1,934	14,164	5	235

Temporary pool	Area (sf)	Volume (cf)	Total volume (cf)	Depth (ft)	Elevation (ft)
Permanent pool elv	6,173	0	0	0	240
depth 0.5 (Vegetated shelf)	7,330	3,372	3,372	0.5	240.5
depth 1	8,121	3,861	7,233	1	241
depth 2	9,227	8,668	15,901	2	242

Design area above permanent pool elevation					
Elevation (ft)	Depth (ft)	Area (sf)	Volume (cf)	Total volume (cf)	Location
240	0	6,173	0	0	Permanent pool
240.5	0.5	7,330	3,372	3,372	Top of vegetated shelf
241	1	8,121	3,861	7,233	
242	2	9,227	8,668	15,901	Temporary Pool
243	3	10,393	9,804	25,705	
244	4	11,617	10,999	36,704	
245	5	12,897	12,251	48,956	
246	6	14,234	13,560	62,516	Top of Pond

SCM #8 (Wet Detention Basin)	
Designed Elevations (ft)	
Sediment clean-out bottom	234
Bottom of pond (sediment clean-out top)	235
Bottom of vegetated shelf	239.5
Permanent pool	240
Top of vegetated shelf	240.5
Temporary pool	242
Top of riser	240
Emergency spillway	245.5
Top of pond	246

Inlet Structure (FES)			Ok or not?
Start INV elv	244.09	ft	OKAY
Pipe length	82	ft	
INV IN FES	240	ft	
Slope	5.0%	%	

Outlet Structure or Riser				
	Elv	number	Rise (in)	Span (in)
Top	240	-	-	
Inv Out	235.31	1	24	24
Orifice	240	1	1.50	1.50
Orifice or Weir	242	2	6	12

Culv/Orifice	A	B	C
	(Outlet pipe)	(Orifice)	(Orifice or weir)
Rise (in)	24	1.5	6
Span (in)	24	1.5	12
No.Barrels	1	1	2
Invert Elev(ft)	235.31	240	242
Length (ft)	58	0	0
Slope(%)	2.26%	0	0
Multi-Stage	N/A	YES	YES
Discharge point	234		

Weir	A	B	C
	(Weir or Top of riser)	(Spillway)	
Weir type	Riser	Rectangular	
Crest Elev(ft)	240	245.5	
Crest Length(ft)	16	30	
Weir Coeff	3.33	2.66	
Multi stage	Yes	No	

Orifice Sizing - BMP A WETPOND (SCM #8)

$Q = Cd \times A \times \sqrt{2gh}$

Total Volume to be discharged from Ponds (Q) =	10,989	cf
Depth of Storage (H) =	2.0	

2 days to Discharge - 172,800 seconds

Q2 = 0.063591098 cfs

$$A2 = \frac{Q2}{Cd \times \sqrt{2gh}}$$

Cd =	0.60		
g =	32.2		
H/3 = h =	0.67		
A2 =	0.0162	sf	$A=\pi R^2=\pi D^2/4$
	2.329	sq in	
diameter	**1.722**	inches	D=sqrt (4A/π)

5 Days to Discharge - 432,000 seconds

Q5 = 0.025436439 cfs

$$A5 = \frac{Q5}{Cd \times \sqrt{2gh}}$$

Cd =	0.60	
g =	32.2	
H/3 = h =	0.67	
A5 =	0.006	sf
	0.932	sq in
diameter	**1.089**	inches

Orifice Chosen

diameter =	**1.50**	inches
A =	0.0123	sf

Q = Cd x A x sqrt(2 x g x h)

Q =	0.0482	cfs
time =	227762.17	seconds
Time =	**2.64**	**days**

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4. Hydraulic Grade Line and Gutter Spread Analysis

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4.1. 2 Year Gutter Spread Analysis

2-YEAR RETURN PERIOD

GUTTER SPREAD ANALYSIS

RESERVE @ MITCHELL MILL

5109 MITCHELL MILL ROAD, TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

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STUDY DESCRIPTION.

This study utilized:

- Auto Desk Storm and Sanitary Analysis Program for analyzing and designing stormwater sewers.

Calculation requirements:

- For the Gutter Spread Analysis, the standard NCDOT intensity measurement is 4 in/ hr.
- Gutter Spread can be up to half a lane width.

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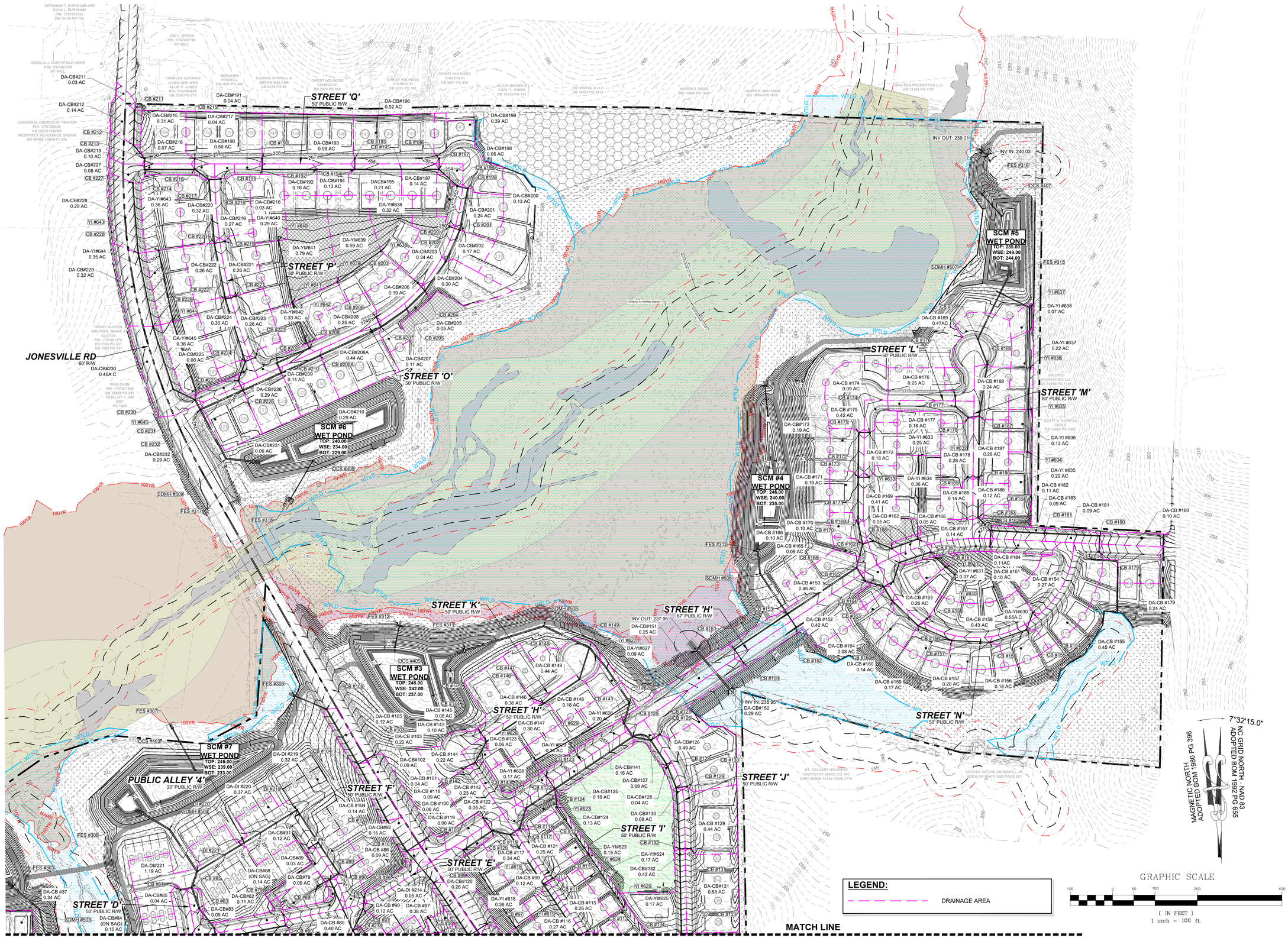
DRAINAGE MAP

PROGRESS PLOT DATE: 04/22/2024



No.	REVISIONS	DATE	BY

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

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STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 | INFORMATION@STRONGROCKGROUP.COM

STRONG ROCK PROJECT	PSP-23-03
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS
THE DRAINAGE MAP
EXHIBIT - 01

DRAWING SHEET
EX-01

01 OF 02

THIS PLANSET AND ANY ASSOCIATED DOCUMENTS ARE PRELIMINARY AND NOT AUTHORIZED FOR CONSTRUCTION UNTIL SIGNED, DATED, AND OFFICIALLY RELEASED FOR CONSTRUCTION BY THE ENGINEER OF RECORD.

PROGRESS PLOT DATE: 04/22/2024

MATCH LINE
FOR CONTINUATION, SEE EXH-01

SCM #7 WET POND
TOP: 245.00
WSE: 239.00
BOT: 233.00

SCM #8 WET POND
TOP: 246.00
WSE: 240.00
BOT: 235.00

SCM #1 WET POND
TOP: 269.00
WSE: 263.00
BOT: 258.00

SCM #2 WET POND
TOP: 270.00
WSE: 264.00
BOT: 259.00

LEGEND:
DRAINAGE AREA

7°32'15.0"
NC GRID NORTH - NAD 83
ADOPTED BOM 1992 PG 655
MAGNETIC NORTH
ADOPTED BOM 1980 PG 396

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

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No.	REVISIONS	DATE	BY

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT
SEAL

STRONGROCK
ENGINEERING GROUP
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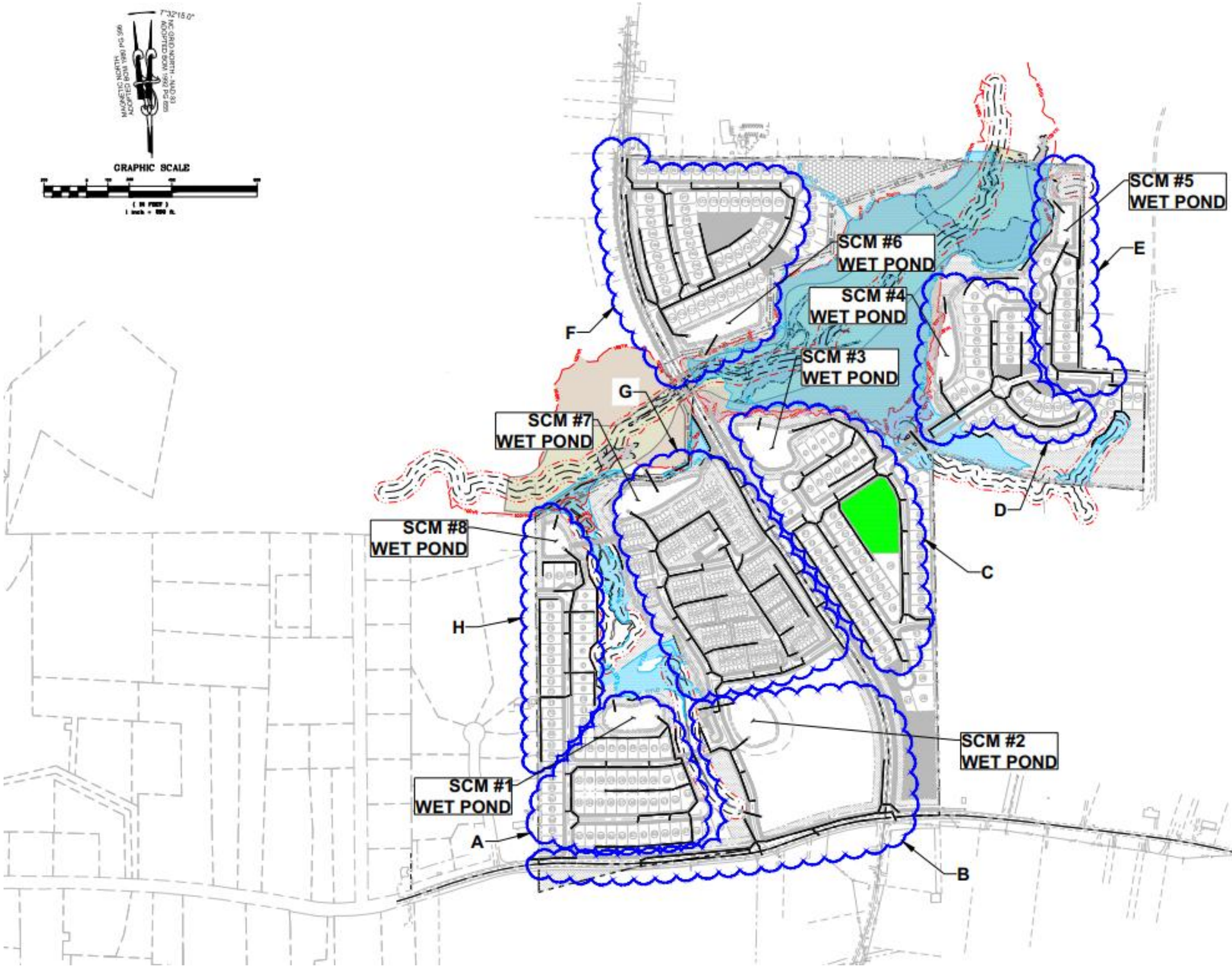
THE DRAINAGE MAP
EXHIBIT - 02

DRAWING SHEET
EX-02

02 OF 02

STRONGROCK
ENGINEERING GROUP

THE TABLE OF GUTTER SPREAD, THE TABLE OF DRAINAGE AREA


7°32'15.0"
MAGNETIC NORTH
ADOPTED 1995
NC GRID NORTH - NAD 83
ADOPTED 2001
GRAPHIC SCALE
SCM #5
WET POND
SCM #6
WET POND
SCM #4
WET POND
SCM #3
WET POND
SCM #7
WET POND
SCM #8
WET POND
SCM #2
WET POND
SCM #1
WET POND
E
F
G
D
C
H
A
B

S T O R M W A T E R AREA " A "

2-YEAR RETURN PERIOD FOR GUTTER SPREAD

PLAN VIEW

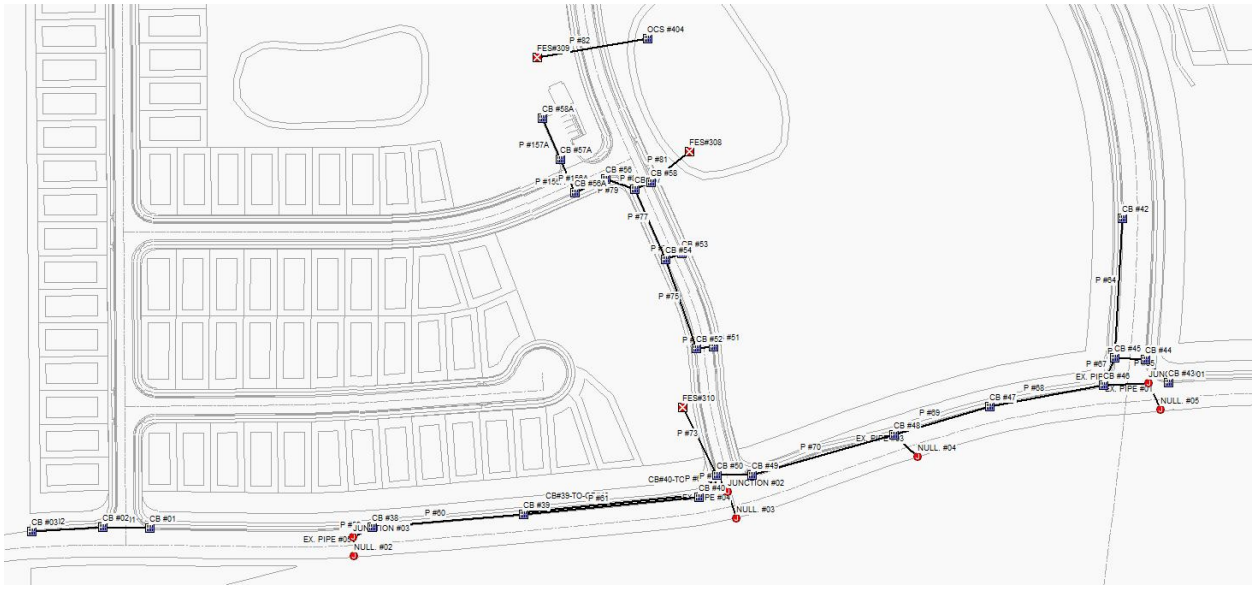
DRAINAGE AREA

SN	Element ID	Area (acres)	Drainage Node ID	Weighted Runoff Coefficient	Accumulated Precipitation (inches)	Total Runoff (inches)	Peak Runoff (cfs)	Rainfall Intensity (inches/hr)	Time of Concentration (days hh:mm:ss)
1	Sub-CB#04	0.11	CB #04	0.8700	0.33	0.29	0.38	4.000	0 00:05:00
2	Sub-CB#05	0.17	CB #05	0.7500	0.33	0.25	0.51	4.000	0 00:05:00
3	Sub-CB#06	0.10	CB #06	0.7900	0.33	0.26	0.32	4.000	0 00:05:00
4	Sub-CB#07	0.42	CB #07	0.7500	0.33	0.25	1.26	4.000	0 00:05:00
5	Sub-CB#08	0.04	CB #08	0.8700	0.33	0.29	0.14	4.000	0 00:05:00
6	Sub-CB#09	0.28	CB #09	0.7500	0.33	0.25	0.84	4.000	0 00:05:00
7	Sub-CB#10	0.13	CB #10	0.7900	0.33	0.26	0.41	4.000	0 00:05:00
8	Sub-CB#11	0.16	CB #11	0.7500	0.33	0.25	0.48	4.000	0 00:05:00
9	Sub-CB#12	0.14	CB #12	0.7500	0.33	0.25	0.42	4.000	0 00:05:00
10	Sub-CB#13	0.15	CB #13	0.7500	0.33	0.25	0.45	4.000	0 00:05:00
11	Sub-CB#14	0.36	CB #14	0.7500	0.33	0.25	1.08	4.000	0 00:05:00
12	Sub-CB#16	0.36	CB #16	0.7500	0.33	0.25	1.08	4.000	0 00:05:00
13	Sub-CB#17	0.15	CB #17	0.7500	0.33	0.25	0.45	4.000	0 00:05:00
14	Sub-CB#18	0.40	CB #18	0.7500	0.33	0.25	1.20	4.000	0 00:05:00
15	Sub-CB#19	0.40	CB #19	0.7500	0.33	0.25	1.20	4.000	0 00:05:00
16	Sub-CB#20	0.27	CB #20	0.7500	0.33	0.25	0.81	4.000	0 00:05:00
17	Sub-CB#21	0.28	CB #21	0.7500	0.33	0.25	0.84	4.000	0 00:05:00
18	Sub-CB#22	0.18	CB #22	0.7500	0.33	0.25	0.54	4.000	0 00:05:00
19	Sub-CB#23	0.11	CB #23	0.7500	0.33	0.25	0.33	4.000	0 00:05:00
20	Sub-CB#24	0.55	CB #24	0.7500	0.33	0.25	1.65	4.000	0 00:05:00
21	Sub-CB#25	0.25	CB #25	0.7500	0.33	0.25	0.75	4.000	0 00:05:00
22	Sub-CB#26	0.06	CB #26	0.8700	0.33	0.29	0.21	4.000	0 00:05:00
23	Sub-CB#27	0.22	CB #27	0.7500	0.33	0.25	0.66	4.000	0 00:05:00

MODEL INPUT															MODEL OUTPUT										
SN	Element ID	Manufacturer Part Number	Inlet Location	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Ponded Area (ft^2)	Grate Clogging Factor (%)	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (inches)	Surface Peak Flow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Total Peak Flow (cfs)	Inlet Efficiency during Peak Flow (%)	Max Gutter Spread during Peak Flow (ft)	Allowable Spread (ft)	Check	Max Gutter Water Elev. during Peak Flow (ft)	Max Gutter Water Depth during Peak Flow (ft)	Time of Maximum Depth Occurrence (days hh:mm)
1	CB #04	N/A	On Grade	279.77	284.37	279.77	N/A	0.00	0.0500	0.0208	0.0130	0.0600	2.00	1.4400	0.38	0.38	0.00	0.38	100.00	1.74	8.00	YES	284.48	0.10	0 00:05
2	CB #05	N/A	On Sag	278.16	282.88	278.16	6.00	0.00	N/A	0.0208	0.0130	0.0600	2.00	1.4400	0.51	N/A	N/A	0.51	N/A	2.39	8.00	YES	283.01	0.13	0 00:05
3	CB #06	N/A	On Grade	277.78	282.88	277.78	N/A	0.00	0.0050	0.0208	0.0130	0.0600	2.00	1.4400	0.32	0.31	0.01	0.32	98.09	3.34	8.00	YES	283.03	0.15	0 00:05
4	CB #07	N/A	On Grade	277.58	282.02	277.58	N/A	0.00	0.0500	0.0208	0.0130	0.0600	2.00	1.4400	1.26	1.18	0.08	1.26	93.76	3.92	8.00	YES	282.18	0.16	0 00:05
5	CB #08	N/A	On Grade	277.14	282.00	277.14	N/A	0.00	0.0500	0.0208	0.0130	0.0600	2.00	1.4400	0.14	0.15	0.00	0.15	100.00	1.23	8.00	YES	282.08	0.07	0 00:05
6	CB #09	N/A	On Grade	275.76	280.17	275.76	N/A	0.00	0.0095	0.0208	0.0130	0.0600	2.00	1.4400	0.84	0.79	0.11	0.91	87.38	5.26	8.00	YES	280.36	0.19	0 00:05
7	CB #10	N/A	On Grade	275.19	280.19	275.19	N/A	0.00	0.0095	0.0208	0.0130	0.0600	2.00	1.4400	0.41	0.40	0.01	0.41	98.16	3.20	8.00	YES	280.33	0.15	0 00:05
8	CB #11	N/A	On Grade	274.55	279.77	274.55	N/A	0.00	0.0080	0.0208	0.0130	0.0600	2.00	1.4400	0.48	0.46	0.02	0.48	95.83	3.81	8.00	YES	279.93	0.16	0 00:06
9	CB #12	N/A	On Grade	274.71	279.15	274.71	N/A	0.00	0.0191	0.0208	0.0130	0.0600	2.00	1.4400	0.42	0.42	0.00	0.42	99.80	2.44	8.00	YES	279.28	0.13	0 00:05
10	CB #13	N/A	On Grade	273.64	279.15	273.64	N/A	0.00	0.0191	0.0208	0.0130	0.0600	2.00	1.4400	0.45	0.45	0.00	0.45	99.58	2.60	8.00	YES	279.28	0.13	0 00:06
11	CB #14	N/A	On Grade	270.89	275.33	270.89	N/A	0.00	0.0191	0.0208	0.0130	0.0600	2.00	1.4400	1.08	0.96	0.12	1.08	88.96	4.78	8.00	YES	275.51	0.18	0 00:05
12	CB #16	N/A	On Grade	269.85	275.30	269.85	N/A	0.00	0.0191	0.0208	0.0130	0.0600	2.00	1.4400	1.08	0.96	0.12	1.08	88.98	4.78	8.00	YES	275.48	0.18	0 00:06
13	CB #17	N/A	On Grade	268.40	273.85	268.40	N/A	0.00	0.0191	0.0208	0.0130	0.0600	2.00	1.4400	0.45	0.46	0.00	0.46	99.45	2.67	8.00	YES	273.99	0.13	0 00:06
14	CB #18	N/A	On Grade	274.10	278.54	274.10	N/A	0.00	0.0268	0.0208	0.0130	0.0600	2.00	1.4400	1.20	1.07	0.12	1.20	89.69	4.60	8.00	YES	278.71	0.17	0 00:05
15	CB #19	N/A	On Grade	273.58	278.37	273.58	N/A	0.00	0.0268	0.0208	0.0130	0.0600	2.00	1.4400	1.20	1.07	0.12	1.20	89.69	4.60	8.00	YES	278.54	0.17	0 00:05
16	CB #20	N/A	On Grade	270.56	275.00	270.56	N/A	0.00	0.0268	0.0208	0.0130	0.0600	2.00	1.4400	0.81	0.87	0.06	0.93	94.00	3.94	8.00	YES	275.16	0.16	0 00:05
17	CB #21	N/A	On Grade	270.00	274.88	270.00	N/A	0.00	0.0268	0.0208	0.0130	0.0600	2.00	1.4400	0.84	0.82	0.04	0.86	95.03	3.76	8.00	YES	275.04	0.16	0 00:05
18	CB #22	N/A	On Grade	268.89	273.62	268.89	N/A	0.00	0.0165	0.0208	0.0130	0.0600	2.00	1.4400	0.54	0.54	0.01	0.56	97.63	3.28	8.00	YES	273.77	0.15	0 00:05
19	CB #23	N/A	On Grade	267.88	273.18	267.88	N/A	0.00	0.0165	0.0208	0.0130	0.0600	2.00	1.4400	0.33	0.33	0.00	0.33	100.00	2.09	8.00	YES	273.31	0.12	0 00:05
20	CB #24	N/A	On Sag	266.72	272.29	266.72	6.00	0.00	N/A	0.0208	0.0130	0.0600	2.00	1.4400	1.65	N/A	N/A	1.65	N/A	7.92	8.00	YES	272.54	0.24	0 00:05
21	CB #25	N/A	On Sag	264.98	273.45	264.98	6.00	0.00	N/A	0.0208	0.0130	0.0600	2.00	1.4400	0.75	N/A	N/A	0.76	N/A	2.81	8.00	YES	273.59	0.14	0 00:06
22	CB #26	N/A	On Sag	264.66	273.45	264.66	6.00	0.00	N/A	0.0208	0.0130	0.0600	2.00	1.4400	0.21	N/A	N/A	0.21	N/A	1.77	8.00	YES	273.56	0.12	0 00:06
23	CB #27	N/A	On Grade	264.11	273.52	264.11	N/A	0.00	0.0191	0.0208	0.0130	0.0600	2.00	1.4400	0.66	0.71	0.04	0.75	94.95	3.82	8.00	YES	273.68	0.16	0 00:06

S T O R M W A T E R AREA " B "

2-YEAR RETURN PERIOD FOR GUTTER SPREAD



PLAN VIEW

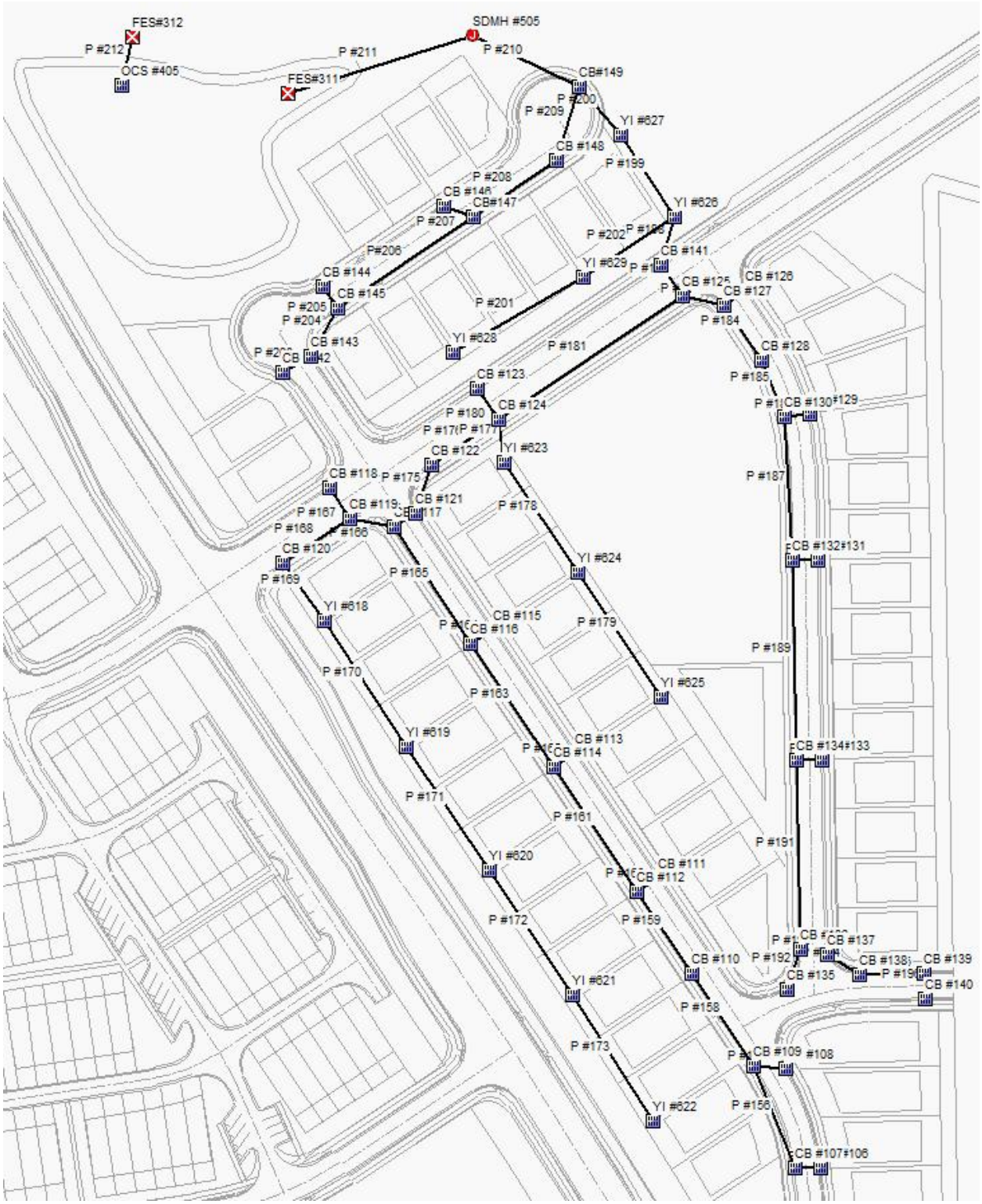
DRAINAGE AREA

SN	Element ID	Area (acres)	Drainage Node ID	Weighted Runoff Coefficient	Accumulated Precipitation (inches)	Total Runoff (inches)	Peak Runoff (cfs)	Rainfall Intensity (inches/hr)	Time of Concentration (days hh:mm:ss)
1	Sub-CB#01	0.07	CB #01	0.8400	0.33	0.28	0.24	4.000	0 00:05:00
2	Sub-CB#02	0.01	CB #02	0.8500	0.33	0.28	0.03	4.000	0 00:05:00
3	Sub-CB#03	0.08	CB #03	0.8300	0.33	0.28	0.27	4.000	0 00:05:00
4	Sub-CB#38	0.29	CB #38	0.8400	0.33	0.28	0.97	4.000	0 00:05:00
5	Sub-CB#39	0.10	CB #39	0.8400	0.33	0.28	0.34	4.000	0 00:05:00
6	Sub-CB#40	0.21	CB #40	0.8400	0.33	0.28	0.71	4.000	0 00:05:00
7	Sub-CB#42	0.49	CB #42	0.8100	0.33	0.27	1.59	4.000	0 00:05:00
8	Sub-CB#43	0.31	CB #43	0.6200	0.33	0.21	0.77	4.000	0 00:05:00
9	Sub-CB#44	0.10	CB #44	0.8000	0.33	0.27	0.32	4.000	0 00:05:00
10	Sub-CB#45	0.39	CB #45	0.8100	0.33	0.27	1.26	4.000	0 00:05:00
11	Sub-CB#46	0.06	CB #46	0.8400	0.33	0.28	0.20	4.000	0 00:05:00
12	Sub-CB#47	0.18	CB #47	0.6500	0.33	0.22	0.47	4.000	0 00:05:00
13	Sub-CB#48	0.17	CB #48	0.6400	0.33	0.21	0.44	4.000	0 00:05:00
14	Sub-CB#49	0.25	CB #49	0.7700	0.33	0.26	0.77	4.000	0 00:05:00
15	Sub-CB#50	0.05	CB #50	0.8900	0.33	0.30	0.18	4.000	0 00:05:00
16	Sub-CB#51	0.17	CB #51	0.8700	0.33	0.29	0.59	4.000	0 00:05:00
17	Sub-CB#52	0.11	CB #52	0.8700	0.33	0.29	0.38	4.000	0 00:05:00
18	Sub-CB#53	0.08	CB #53	0.8700	0.33	0.29	0.28	4.000	0 00:05:00
19	Sub-CB#54	0.08	CB #54	0.8700	0.33	0.29	0.28	4.000	0 00:05:00
20	Sub-CB#56	0.04	CB #56	0.8700	0.33	0.29	0.14	4.000	0 00:05:00
21	Sub-CB#56A	0.03	CB #56A	0.8700	0.33	0.29	0.10	4.000	0 00:05:00
22	Sub-CB#57	0.07	CB #57	0.8700	0.33	0.29	0.24	4.000	0 00:05:00
23	Sub-CB#57A	0.03	CB #57A	0.8700	0.33	0.29	0.10	4.000	0 00:05:00
24	Sub-CB#58	0.07	CB #58	0.8700	0.33	0.29	0.24	4.000	0 00:05:00
25	Sub-CB#58A	0.15	CB #58A	0.7100	0.33	0.24	0.43	4.000	0 00:05:00

MODEL INPUT															MODEL OUTPUT										
SN	Element ID	Inlet Location	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Ponded Area (ft²)	Grate Clogging Factor (%)	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (inches)	Surface Peak Flow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Total Peak Flow (cfs)	Inlet Efficiency during Peak Flow (%)	Max Gutter Spread during Peak Flow (ft)	Allowable Spread (ft)	Check	Max Gutter Water Elev. during Peak Flow (ft)	Max Gutter Water Depth during Peak Flow (ft)	Time of Maximum Depth Occurrence (days hh:mm)
1	CB #01	On Grade	286.65	291.64	286.65	0.00	N/A	0.00	0.0128	0.0089	0.0130	0.0600	2.00	1.4400	0.24	0.23	0.00	0.23	100.00	1.87	12.25	YES	291.75	0.11	0 00:05
2	CB #02	On Grade	285.07	290.30	285.07	0.00	N/A	0.00	0.0190	0.0099	0.0130	0.0600	2.00	1.4400	0.03	0.03	0.00	0.03	100.00	0.84	12.25	YES	290.35	0.05	0 00:06
3	CB #03	On Sag	284.34	288.61	284.34	0.00	6.00	0.00	N/A	0.0108	0.0130	0.0600	2.00	1.4400	0.27	N/A	N/A	0.27	N/A	1.90	12.50	YES	288.73	0.12	0 00:05
4	CB #38	On Sag	285.46	290.19	285.46	0.00	6.00	0.00	N/A	0.0612	0.0130	0.0600	2.00	1.4400	0.97	N/A	N/A	0.97	N/A	3.12	12.50	YES	290.38	0.19	0 00:05
5	CB #39	On Grade	283.96	288.98	283.96	0.00	N/A	0.00	0.0168	0.0341	0.0130	0.0600	2.00	1.4400	0.34	0.34	0.00	0.34	100.00	2.05	12.50	YES	289.11	0.12	0 00:06
6	CB #40	On Grade	279.94	285.23	279.94	0.00	N/A	0.00	0.0078	0.0137	0.0130	0.0600	2.00	1.4400	0.71	0.61	0.09	0.70	86.65	6.05	12.50	YES	285.40	0.18	0 00:06
7	CB #42	On Grade	300.49	305.75	300.49	0.00	N/A	0.00	0.0704	0.0424	0.0130	0.0600	2.00	1.4400	1.59	1.52	0.06	1.58	96.01	3.07	12.75	YES	305.91	0.17	0 00:05
8	CB #43	On Grade	289.66	294.44	289.66	0.00	N/A	0.00	0.0205	0.0052	0.0130	0.0600	2.00	1.4400	0.77	0.66	0.11	0.77	86.13	8.01	13.50	YES	294.59	0.15	0 00:05
9	CB #44	On Sag	289.14	294.14	289.14	0.00	6.00	0.00	N/A	0.0046	0.0130	0.0600	2.00	1.4400	0.32	N/A	N/A	0.40	N/A	2.18	12.75	YES	294.26	0.12	0 00:05
10	CB #45	On Grade	288.12	293.44	288.12	0.00	N/A	0.00	0.0481	0.0222	0.0130	0.0600	2.00	1.4400	1.26	1.20	0.08	1.28	93.53	3.90	12.75	YES	293.60	0.16	0 00:05
11	CB #46	On Grade	287.17	292.58	287.17	0.00	N/A	0.00	0.0205	0.0077	0.0130	0.0600	2.00	1.4400	0.20	0.22	0.00	0.22	100.00	1.68	12.25	YES	292.68	0.10	0 00:05
12	CB #47	On Grade	283.96	289.81	283.96	0.00	N/A	0.00	0.0132	0.0095	0.0130	0.0600	2.00	1.4400	0.47	0.45	0.02	0.47	96.32	4.33	12.25	YES	289.95	0.14	0 00:05
13	CB #48	On Grade	281.75	287.62	281.75	0.00	N/A	0.00	0.0168	0.0151	0.0130	0.0600	2.00	1.4400	0.44	0.43	0.00	0.44	99.23	2.92	12.25	YES	287.75	0.13	0 00:06
14	CB #49	On Grade	278.66	284.82	278.66	0.00	N/A	0.00	0.0021	0.0137	0.0130	0.0600	2.00	1.4400	0.77	0.62	0.15	0.77	80.34	9.07	19.50	YES	285.03	0.22	0 00:06
15	CB #50	On Grade	277.56	283.52	277.56	0.00	N/A	0.00	0.0543	0.0208	0.0130	0.0600	2.00	1.4400	0.18	0.27	0.00	0.27	100.00	1.50	8.00	YES	283.61	0.09	0 00:06
16	CB #51	On Grade	273.70	278.14	273.70	0.00	N/A	0.00	0.0109	0.0208	0.0130	0.0600	2.00	1.4400	0.59	0.68	0.06	0.74	91.63	4.51	8.00	YES	278.31	0.17	0 00:05
17	CB #52	On Grade	273.35	278.13	273.35	0.00	N/A	0.00	0.0109	0.0208	0.0130	0.0600	2.00	1.4400	0.38	0.38	0.00	0.38	99.08	2.87	8.00	YES	278.27	0.14	0 00:05
18	CB #53	On Grade	272.14	276.57	272.14	0.00	N/A	0.00	0.0109	0.0208	0.0130	0.0600	2.00	1.4400	0.28	0.30	0.00	0.30	99.90	2.35	8.00	YES	276.70	0.13	0 00:05
19	CB #54	On Grade	271.81	276.56	271.81	0.00	N/A	0.00	0.0109	0.0208	0.0130	0.0600	2.00	1.4400	0.28	0.28	0.00	0.28	99.99	2.15	8.00	YES	276.68	0.12	0 00:05
20	CB #56	On Grade	265.99	274.39	265.99	0.00	N/A	0.00	0.0054	0.0208	0.0130	0.0600	2.00	1.4400	0.14	0.14	0.00	0.14	100.00	1.83	8.00	YES	274.50	0.11	0 00:06
21	CB #56A	On Grade	266.44	274.12	266.44	0.00	N/A	0.00	0.0054	0.0208	0.0130	0.0600	2.00	1.4400	0.10	0.11	0.00	0.11	100.00	1.64	8.00	YES	274.22	0.10	0 00:06
22	CB #57	On Grade	265.53	275.31	265.53	0.00	N/A	0.00	0.0109	0.0208	0.0130	0.0600	2.00	1.4400	0.24	0.24	0.00	0.24	100.00	1.95	8.00	YES	275.42	0.12	0 00:05
23	CB #57A	On Grade	266.91	273.47	266.91	0.00	N/A	0.00	0.0200	0.0100	0.0130	0.0600	2.00	1.4400	0.10	0.10	0.00	0.10	100.00	1.26	8.00	YES	273.55	0.08	0 00:06
24	CB #58	On Grade	264.37	275.32	264.37	0.00	N/A	0.00	0.0109	0.0208	0.0130	0.0600	2.00	1.4400	0.24	0.25	0.00	0.25	100.00	1.96	8.00	YES	275.44	0.12	0 00:05
25	CB #58A	On Sag	267.45	271.89	267.45	0.00	6.00	0.00	N/A	0.0050	0.0130	0.0600	2.00	1.4400	0.43	N/A	N/A	0.43	N/A	2.24	8.00	YES	272.01	0.12	0 00:05

S T O R M W A T E R AREA " C "

2-YEAR RETURN PERIOD FOR GUTTER SPREAD



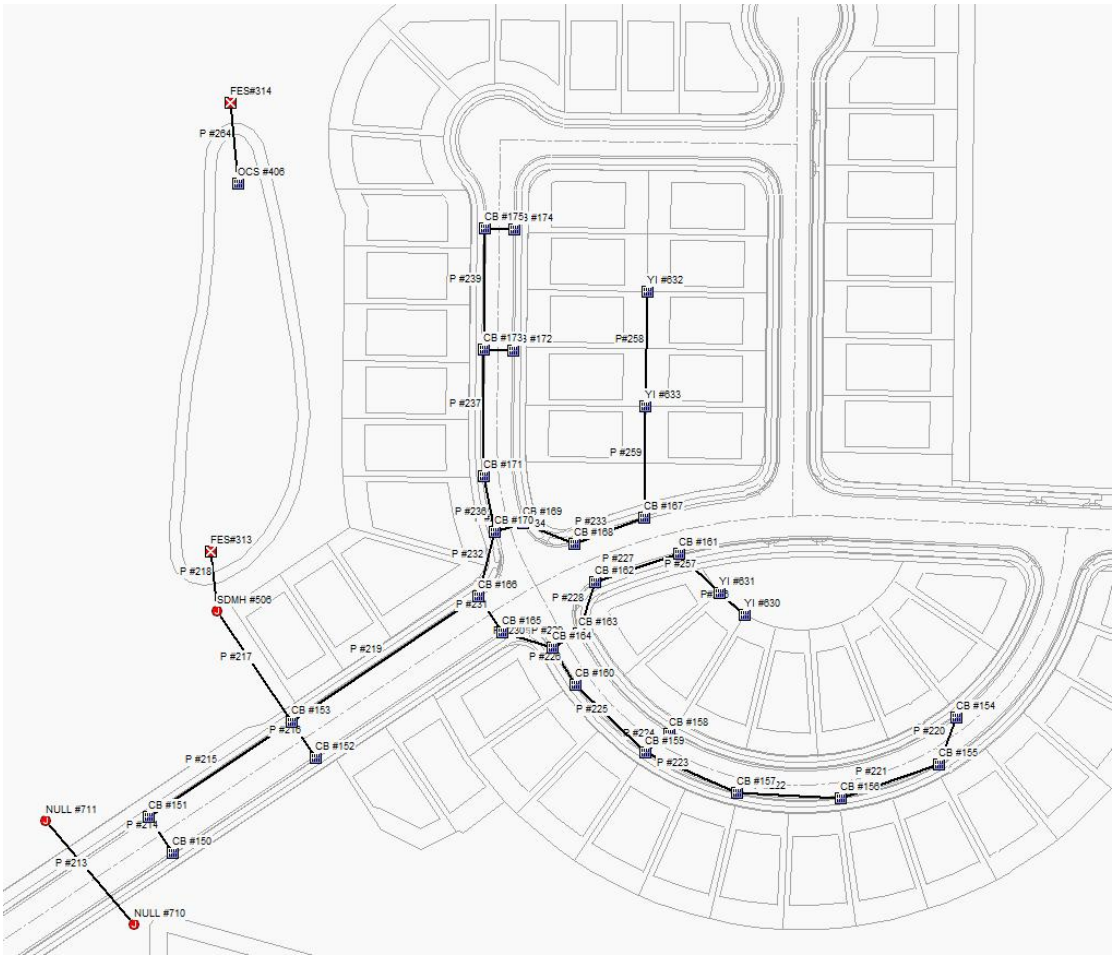
PLAN VIEW

SN	Element ID	Area (acres)	Drainage Node ID	Weighted Runoff Coefficient	Accumulated Precipitation (inches)	Total Runoff (inches)	Peak Runoff (cfs)	Rainfall Intensity (inches/hr)	Time of Concentration (days hh:mm:ss)
1	Sub-CB#106	0.50	CB #106	0.7100	0.33	0.24	1.42	4.000	0 00:05:00
2	Sub-CB#107	0.42	CB #107	0.5900	0.33	0.20	0.99	4.000	0 00:05:00
3	Sub-CB#108	0.41	CB #108	0.7100	0.33	0.24	1.16	4.000	0 00:05:00
4	Sub-CB#109	0.21	CB #109	0.6300	0.33	0.21	0.53	4.000	0 00:05:00
5	Sub-CB#110	0.20	CB #110	0.7500	0.33	0.25	0.60	4.000	0 00:05:00
6	Sub-CB#111	0.24	CB #111	0.7500	0.33	0.25	0.72	4.000	0 00:05:00
7	Sub-CB#112	0.18	CB #112	0.7500	0.33	0.25	0.54	4.000	0 00:05:00
8	Sub-CB#113	0.24	CB #113	0.7900	0.33	0.26	0.76	4.000	0 00:05:00
9	Sub-CB#114	0.27	CB #114	0.7500	0.33	0.25	0.81	4.000	0 00:05:00
10	Sub-CB#115	0.26	CB #115	0.7500	0.33	0.25	0.78	4.000	0 00:05:00
11	Sub-CB#116	0.27	CB #116	0.7500	0.33	0.25	0.81	4.000	0 00:05:00
12	Sub-CB#117	0.34	CB #117	0.7900	0.33	0.26	1.07	4.000	0 00:05:00
13	Sub-CB#118	0.09	CB #118	0.8700	0.33	0.29	0.31	4.000	0 00:05:00
14	Sub-CB#119	0.06	CB #119	0.8700	0.33	0.29	0.21	4.000	0 00:05:00
15	Sub-CB#120	0.26	CB #120	0.8700	0.33	0.29	0.91	4.000	0 00:05:00
16	Sub-CB#121	0.25	CB #121	0.7500	0.33	0.25	0.75	4.000	0 00:05:00
17	Sub-CB#122	0.05	CB #122	0.8700	0.33	0.29	0.17	4.000	0 00:05:00
18	Sub-CB#123	0.06	CB #123	0.8700	0.33	0.29	0.21	4.000	0 00:05:00
19	Sub-CB#124	0.13	CB #124	0.7500	0.33	0.25	0.39	4.000	0 00:05:00
20	Sub-CB#125	0.18	CB #125	0.8700	0.33	0.29	0.63	4.000	0 00:05:00
21	Sub-CB#126	0.45	CB #126	0.6700	0.33	0.22	1.21	4.000	0 00:05:00
22	Sub-CB#127	0.09	CB #127	0.8700	0.33	0.29	0.31	4.000	0 00:05:00
23	Sub-CB#128	0.04	CB #128	0.8700	0.33	0.29	0.14	4.000	0 00:05:00
24	Sub-CB#129	0.44	CB #129	0.6300	0.33	0.21	1.11	4.000	0 00:05:00
25	Sub-CB#130	0.08	CB #130	0.8700	0.33	0.29	0.28	4.000	0 00:05:00
26	Sub-CB#131	0.53	CB #131	0.6700	0.33	0.22	1.42	4.000	0 00:05:00
27	Sub-CB#132	0.43	CB #132	0.6300	0.33	0.21	1.08	4.000	0 00:05:00
28	Sub-CB#133	0.52	CB #133	0.6300	0.33	0.21	1.31	4.000	0 00:05:00
29	Sub-CB#134	0.26	CB #134	0.7500	0.33	0.25	0.78	4.000	0 00:05:00
30	Sub-CB#135	0.01	CB #135	0.8700	0.33	0.29	0.04	4.000	0 00:05:00
31	Sub-CB#136	0.03	CB #136	0.8700	0.33	0.29	0.10	4.000	0 00:05:00
32	Sub-CB#137	0.02	CB #137	0.8700	0.33	0.29	0.07	4.000	0 00:05:00
33	Sub-CB#138	0.02	CB #138	0.8700	0.33	0.29	0.07	4.000	0 00:05:00
34	Sub-CB#139	0.10	CB #139	0.7500	0.33	0.25	0.30	4.000	0 00:05:00
35	Sub-CB#140	0.23	CB #140	0.7500	0.33	0.25	0.69	4.000	0 00:05:00
36	Sub-CB#141	0.16	CB #141	0.8700	0.33	0.29	0.56	4.000	0 00:05:00
37	Sub-CB#142	0.23	CB #142	0.7500	0.33	0.25	0.69	4.000	0 00:05:00
38	Sub-CB#143	0.10	CB #143	0.8700	0.33	0.29	0.35	4.000	0 00:05:00
39	Sub-CB#144	0.22	CB #144	0.7500	0.33	0.25	0.66	4.000	0 00:05:00
40	Sub-CB#145	0.08	CB #145	0.7900	0.33	0.26	0.25	4.000	0 00:05:00
41	Sub-CB#146	0.36	CB #146	0.6300	0.33	0.21	0.91	4.000	0 00:05:00
42	Sub-CB#147	0.30	CB#147	0.7500	0.33	0.25	0.90	4.000	0 00:05:00
43	Sub-CB#148	0.18	CB #148	0.7500	0.33	0.25	0.54	4.000	0 00:05:00
44	Sub-CB#149	0.44	CB#149	0.6700	0.33	0.22	1.18	4.000	0 00:05:00

MODEL INPUT															MODEL OUTPUT										
SN	Element ID	Inlet Location	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Ponded Area (ft^2)	Grate Clogging Factor (%)	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (inches)	Surface Peak Flow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Total Peak Flow (cfs)	Inlet Efficiency during Peak Flow (%)	Max Gutter Spread during Peak Flow (ft)	Allowable Spread (ft)	Check	Max Gutter Water Elev. during Peak Flow (ft)	Max Gutter Water Depth during Peak Flow (ft)	Time of Maximum Depth Occurrence (days hh:mm)
1	CB #106	On Grade	302.74	307.18	302.74	0.00	N/A	0.00	0.0496	0.0208	0.0130	0.0600	2.00	1.4400	1.42	1.30	0.12	1.42	91.69	4.24	8.00	YES	307.34	0.17	0 00:05
2	CB #107	On Grade	302.36	307.00	302.36	0.00	N/A	0.00	0.0496	0.0208	0.0130	0.0600	2.00	1.4400	0.99	0.96	0.03	0.99	97.03	3.33	8.00	YES	307.15	0.15	0 00:05
3	CB #108	On Grade	297.71	302.14	297.71	0.00	N/A	0.00	0.0496	0.0208	0.0130	0.0600	2.00	1.4400	1.16	1.19	0.08	1.28	93.46	3.97	8.00	YES	302.31	0.16	0 00:05
4	CB #109	On Grade	296.48	301.20	296.48	0.00	N/A	0.00	0.0496	0.0208	0.0130	0.0600	2.00	1.4400	0.53	0.53	0.00	0.53	100.00	1.96	8.00	YES	301.32	0.12	0 00:05
5	CB #110	On Grade	291.23	295.96	291.23	0.00	N/A	0.00	0.0496	0.0208	0.0130	0.0600	2.00	1.4400	0.60	0.60	0.00	0.60	99.98	2.17	8.00	YES	296.08	0.12	0 00:05
6	CB #111	On Grade	288.57	293.00	288.57	0.00	N/A	0.00	0.0271	0.0208	0.0130	0.0600	2.00	1.4400	0.72	0.70	0.02	0.72	97.39	3.29	8.00	YES	293.15	0.15	0 00:05
7	CB #112	On Grade	288.24	293.00	288.24	0.00	N/A	0.00	0.0271	0.0208	0.0130	0.0600	2.00	1.4400	0.54	0.54	0.00	0.54	99.53	2.61	8.00	YES	293.13	0.13	0 00:05
8	CB #113	On Grade	282.61	286.84	282.61	0.00	N/A	0.00	0.0784	0.0208	0.0130	0.0600	2.00	1.4400	0.76	0.77	0.00	0.77	99.96	2.23	8.00	YES	286.97	0.12	0 00:05
9	CB #114	On Grade	281.98	286.82	281.98	0.00	N/A	0.00	0.0784	0.0208	0.0130	0.0600	2.00	1.4400	0.81	0.81	0.00	0.81	99.89	2.33	8.00	YES	286.95	0.13	0 00:05
10	CB #115	On Grade	271.06	275.50	271.06	0.00	N/A	0.00	0.0784	0.0208	0.0130	0.0600	2.00	1.4400	0.78	0.78	0.00	0.78	99.95	2.25	8.00	YES	275.63	0.13	0 00:05
11	CB #116	On Grade	267.32	275.46	267.32	0.00	N/A	0.00	0.0784	0.0208	0.0130	0.0600	2.00	1.4400	0.81	0.81	0.00	0.81	99.89	2.33	8.00	YES	275.58	0.13	0 00:05
12	CB #117	On Sag	263.40	269.27	263.40	0.00	6.00	0.00	N/A	0.0208	0.0130	0.0600	2.00	1.4400	1.07	N/A	N/A	1.07	N/A	5.73	8.00	YES	269.47	0.20	0 00:06
13	CB #118	On Grade	265.55	269.99	265.55	0.00	N/A	0.00	0.0455	0.0208	0.0130	0.0600	2.00	1.4400	0.31	0.31	0.00	0.31	100.00	1.64	11.00	YES	270.09	0.10	0 00:05
14	CB #119	On Grade	264.63	270.05	264.63	0.00	N/A	0.00	0.0455	0.0208	0.0130	0.0600	2.00	1.4400	0.21	0.22	0.00	0.22	100.00	1.43	11.00	YES	270.13	0.09	0 00:06
15	CB #120	On Grade	265.32	272.12	265.32	0.00	N/A	0.00	0.0208	0.0208	0.0130	0.0600	2.00	1.4400	0.91	0.84	0.07	0.90	92.65	4.20	11.00	YES	272.28	0.17	0 00:05
16	CB #121	On Grade	262.25	268.80	262.25	0.00	N/A	0.00	0.0292	0.0208	0.0130	0.0600	2.00	1.4400	0.75	0.73	0.02	0.75	97.32	3.30	8.00	YES	268.94	0.15	0 00:06
17	CB #122	On Grade	259.43	265.67	259.43	0.00	N/A	0.00	0.0455	0.0208	0.0130	0.0600	2.00	1.4400	0.17	0.17	0.00	0.17	100.00	1.32	11.00	YES	265.75	0.08	0 00:06
18	CB #123	On Grade	257.52	261.96	257.52	0.00	N/A	0.00	0.0455	0.0208	0.0130	0.0600	2.00	1.4400	0.21	0.21	0.00	0.21	100.00	1.41	11.00	YES	262.04	0.08	0 00:05
19	CB #124	On Grade	255.98	261.94	255.98	0.00	N/A	0.00	0.0455	0.0208	0.0130	0.0600	2.00	1.4400	0.39	0.39	0.00	0.39	100.00	1.77	11.00	YES	262.05	0.11	0 00:06
20	CB #125	On Grade	247.30	253.02	247.30	0.00	N/A	0.00	0.0455	0.0208	0.0130	0.0600	2.00	1.4400	0.63	0.63	0.00	0.63	99.85	2.37	11.00	YES	253.14	0.13	0 00:06
21	CB #126	On Grade	248.69	252.94	248.69	0.00	N/A	0.00	0.0267	0.0208	0.0130	0.0600	2.00	1.4400	1.21	1.08	0.13	1.21	89.47	4.64	8.00	YES	253.12	0.17	0 00:05
22	CB #127	On Sag	248.24	252.94	248.24	0.00	6.00	0.00	N/A	0.0208	0.0130	0.0600	2.00	1.4400	0.31	N/A	N/A	0.31	N/A	2.01	8.00	YES	253.06	0.12	0 00:06
23	CB #128	On Grade	250.03	254.74	250.03	0.00	N/A	0.00	0.0267	0.0208	0.0130	0.0600	2.00	1.4400	0.14	0.14	0.00	0.14	100.00	1.33	8.00	YES	254.82	0.08	0 00:05
24	CB #129	On Grade	252.17	256.60	252.17	0.00	N/A	0.00	0.0782	0.0208	0.0130	0.0600	2.00	1.4400	1.11	1.14	0.03	1.16	97.66	3.18	8.00	YES	256.75	0.14	0 00:05
25	CB #130	On Grade	251.65	256.48	251.65	0.00	N/A	0.00	0.0782	0.0208	0.0130	0.0600	2.00	1.4400	0.28	0.28	0.00	0.28	100.00	1.41	8.00	YES	256.56	0.08	0 00:05
26	CB #131	On Grade	259.42	263.86	259.42	0.00	N/A	0.00	0.0782	0.0208	0.0130	0.0600	2.00	1.4400	1.42	1.38	0.08	1.46	94.76	3.73	8.00	YES	264.01	0.16	0 00:05
27	CB #132	On Grade	258.13	263.86	258.13	0.00	N/A	0.00	0.0782	0.0208	0.0130	0.0600	2.00	1.4400	1.08	1.06	0.02	1.08	98.37	3.00	8.00	YES	264.00	0.14	0 00:05
28	CB #133	On Grade	274.92	279.36	274.92	0.00	N/A	0.00	0.0782	0.0208	0.0130	0.0600	2.00	1.4400	1.31	1.26	0.05	1.31	96.30	3.46	8.00	YES	279.51	0.15	0 00:05
29	CB #134	On Grade	274.22	279.32	274.22	0.00	N/A	0.00	0.0782	0.0208	0.0130	0.0600	2.00	1.4400	0.78	0.78	0.00	0.78	99.95	2.25	8.00	YES	279.45	0.13	0 00:05
30	CB #135	On Grade	283.00	297.03	283.00	0.00	N/A	0.00	0.0754	0.0208	0.0130	0.0600	2.00	1.4400	0.04	0.03	0.00	0.03	100.00	0.66	8.00	YES	297.07	0.04	0 00:05
31	CB #136	On Grade	281.82	294.20	281.82	0.00	N/A	0.00	0.0782	0.0208	0.0130	0.0600	2.00	1.4400	0.10	0.10	0.00	0.10	100.00	0.98	8.00	YES	294.26	0.06	0 00:06
32	CB #137	On Grade	282.16	292.58	282.16	0.00	N/A	0.00	0.0782	0.0208	0.0130	0.0600	2.00	1.4400	0.07	0.07	0.00	0.07	100.00	0.84	8.00	YES	292.63	0.05	0 00:06
33	CB #138	On Grade	282.55	291.80	282.55	0.00	N/A	0.00	0.0754	0.0208	0.0130	0.0600	2.00	1.4400	0.07	0.07	0.00	0.07	100.00	0.85	8.00	YES	291.85	0.05	0 00:05
34	CB #139	On Grade	283.08	287.85	283.08	0.00	N/A	0.00	0.0754	0.0208	0.0130	0.0600	2.00	1.4400	0.30	0.30	0.00	0.30	100.00	1.47	8.00	YES	287.93	0.09	0 00:05
35	CB #140	On Grade	283.41	287.85	283.41	0.00	N/A	0.00	0.0754	0.0208	0.0130	0.0600	2.00	1.4400	0.69	0.73	0.00	0.73	99.98	2.15	8.00	YES	287.97	0.12	0 00:05
36	CB #141	On Grade	246.07	253.00	246.07	0.00	N/A	0.00	0.0455	0.0208	0.0130	0.0600	2.00	1.4400	0.56	0.56	0.00	0.56	99.99	2.10	11.00	YES	253.12	0.12	0 00:06
37	CB #142	On Grade	254.75	259.19	254.75	0.00	N/A	0.00	0.0764	0.0208	0.0130	0.0600	2.00	1.4400	0.69	0.69	0.00	0.69	100.00	2.01	8.00	YES	259.31	0.12	0 00:05
38	CB #143	On Grade	253.00	258.67	253.00	0.00	N/A	0.00	0.0764	0.0208	0.0130	0.0600	2.00	1.4400	0.35	0.35	0.00	0.35	100.00	1.54	8.00	YES	258.76	0.09	0 00:05
39	CB #144	On Grade	248.86	253.30	248.86	0.00	N/A	0.00	0.0764	0.0208	0.0130	0.0600	2.00	1.4400	0.66	0.66	0.00	0.66	100.00	1.96	8.00	YES	253.42	0.12	0 00:05
40	CB #145	On Grade	247.80	253.72	247.80	0.00	N/A	0.00	0.0764	0.0208	0.0130	0.0600	2.00	1.4400	0.25	0.25	0.00	0.25	100.00	1.38	8.00	YES	253.80	0.08	0 00:05
41	CB #146	On Grade	246.51	250.94	246.51	0.00	N/A	0.00	0.0050	0.0208	0.0130	0.0600	2.00	1.4400	0.91	0.76	0.14	0.91	84.39	6.21	8.00	YES	251.15	0.21	0 00:05
42	CB #147	On Grade	244.71	250.35	245.42	0.00	N/A	0.00	0.0050	0.0208	0.0130	0.0600	2.00	1.4400	0.90	0.52	0.05	0.57	91.60	4.85	8.00	YES	250.53	0.18	0 00:06
43	CB #148	On Grade	245.42	250.85	244.71	0.00	N/A	0.00	0.0050	0.0208	0.0130	0.0600	2.00	1.4400	0.54	0.76	0.14	0.90	84.52	6.18	8.00	YES	251.06	0.21	0 00:05
44	CB #149	On Sag	242.15	250.01	242.15	0.00	6.00	0.00	N/A	0.0208	0.0130	0.0600	2.00	1.4400	1.18	N/A	N/A	1.18	N/A	6.15	8.00	YES	250.22	0.21	0 00:06

S T O R M W A T E R AREA " D "

2-YEAR RETURN PERIOD FOR GUTTER SPREAD



PLAN VIEW

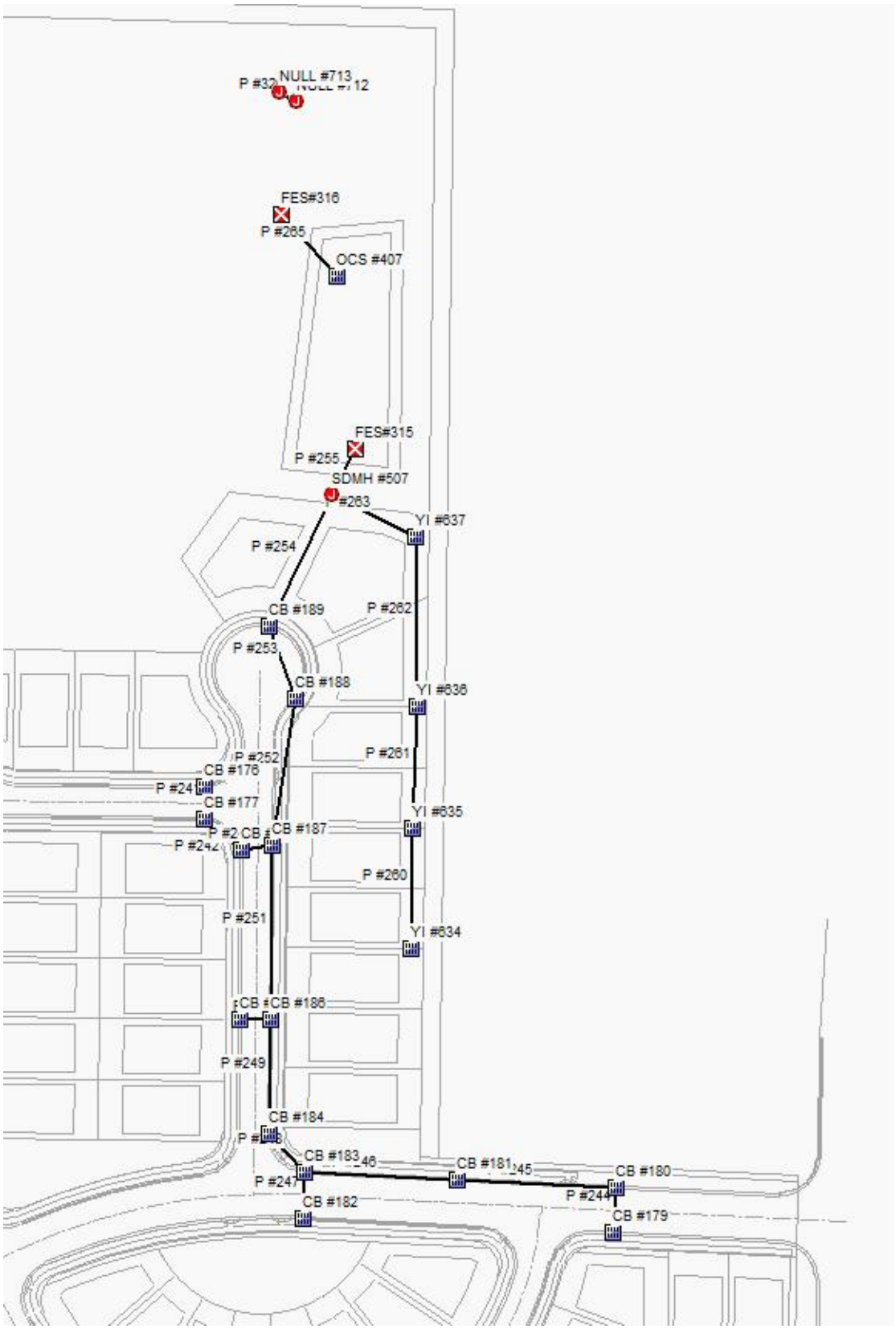
DRAINAGE AREA

SN	Element ID	Area (acres)	Drainage Node ID	Weighted Runoff Coefficient	Accumulated Precipitation (inches)	Total Runoff (inches)	Peak Runoff (cfs)	Rainfall Intensity (inches/hr)	Time of Concentration (days hh:mm:ss)
3	Sub-CB#150	0.29	CB #150	0.7100	0.33	0.24	0.82	4.000	0 00:05:00
4	Sub-CB#151	0.25	CB #151	0.8700	0.33	0.29	0.87	4.000	0 00:05:00
5	Sub-CB#152	0.42	CB #152	0.7500	0.33	0.25	1.26	4.000	0 00:05:00
6	Sub-CB#153	0.46	CB #153	0.7500	0.33	0.25	1.38	4.000	0 00:05:00
7	Sub-CB#154	0.27	CB #154	0.7500	0.33	0.25	0.81	4.000	0 00:05:00
8	Sub-CB#155	0.45	CB #155	0.7500	0.33	0.25	1.35	4.000	0 00:05:00
9	Sub-CB#156	0.18	CB #156	0.7500	0.33	0.25	0.54	4.000	0 00:05:00
10	Sub-CB#157	0.20	CB #157	0.7500	0.33	0.25	0.60	4.000	0 00:05:00
11	Sub-CB#158	0.43	CB #158	0.7500	0.33	0.25	1.29	4.000	0 00:05:00
12	Sub-CB#159	0.17	CB #159	0.7500	0.33	0.25	0.51	4.000	0 00:05:00
13	Sub-CB#160	0.14	CB #160	0.7500	0.33	0.25	0.42	4.000	0 00:05:00
14	Sub-CB#161	0.10	CB #161	0.8700	0.33	0.29	0.35	4.000	0 00:05:00
15	Sub-CB#162	0.05	CB #162	0.8700	0.33	0.29	0.17	4.000	0 00:05:00
16	Sub-CB#163	0.26	CB #163	0.7500	0.33	0.25	0.78	4.000	0 00:05:00
17	Sub-CB#164	0.08	CB #164	0.7900	0.33	0.26	0.25	4.000	0 00:05:00
18	Sub-CB#165	0.09	CB #165	0.7900	0.33	0.26	0.28	4.000	0 00:05:00
19	Sub-CB#166	0.10	CB #166	0.7900	0.33	0.26	0.32	4.000	0 00:05:00
20	Sub-CB#167	0.14	CB #167	0.5900	0.33	0.20	0.33	4.000	0 00:05:00
21	Sub-CB#168	0.05	CB #168	0.8700	0.33	0.29	0.17	4.000	0 00:05:00
22	Sub-CB#169	0.41	CB #169	0.5100	0.33	0.17	0.84	4.000	0 00:05:00
23	Sub-CB#170	0.10	CB #170	0.7900	0.33	0.26	0.32	4.000	0 00:05:00
24	Sub-CB#171	0.19	CB #171	0.7500	0.33	0.25	0.57	4.000	0 00:05:00
25	Sub-CB#172	0.18	CB #172	0.7500	0.33	0.25	0.54	4.000	0 00:05:00
26	Sub-CB#173	0.19	CB #173	0.7500	0.33	0.25	0.57	4.000	0 00:05:00
27	Sub-CB#174	0.09	CB #174	0.7900	0.33	0.26	0.28	4.000	0 00:05:00
28	Sub-CB#175	0.42	CB #175	0.7500	0.33	0.25	1.26	4.000	0 00:05:00

MODEL INPUT															MODEL OUTPUT										
SN	Element ID	Inlet Location	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Ponded Area (ft²)	Grate Clogging Factor (%)	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (inches)	Surface Peak Flow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Total Peak Flow (cfs)	Inlet Efficiency during Peak Flow (%)	Max Gutter Spread during Peak Flow (ft)	Allowable Spread (ft)	Check	Max Gutter Water Elev. during Peak Flow (ft)	Max Gutter Water Depth during Peak Flow (ft)	Time of Maximum Depth Occurrence (days hh:mm)
1	CB #150	On Grade	246.31	250.75	246.31	0.00	N/A	0.00	0.0058	0.0208	0.0130	0.0600	2.00	1.4400	0.82	0.71	0.11	0.82	86.54	5.69	11.00	YES	250.95	0.20	0 00:05
2	CB #151	On Grade	245.92	250.75	245.92	0.00	N/A	0.00	0.0058	0.0208	0.0130	0.0600	2.00	1.4400	0.87	0.74	0.12	0.87	85.63	5.86	11.00	YES	250.95	0.20	0 00:06
3	CB #152	On Sag	245.24	249.95	245.24	0.00	6.00	0.00	N/A	0.0208	0.0130	0.0600	2.00	1.4400	1.26	N/A	N/A	1.28	N/A	6.56	11.00	YES	250.17	0.21	0 00:06
4	CB #153	On Sag	243.02	249.95	243.02	0.00	6.00	0.00	N/A	0.0208	0.0130	0.0600	2.00	1.4400	1.38	N/A	N/A	1.39	N/A	6.96	11.00	YES	250.17	0.22	0 00:06
5	CB #154	On Grade	263.21	267.64	263.21	0.00	N/A	0.00	0.0632	0.0208	0.0130	0.0600	2.00	1.4400	0.81	0.81	0.00	0.81	99.57	2.57	8.00	YES	267.77	0.13	0 00:05
6	CB #155	On Grade	260.78	265.57	260.78	0.00	N/A	0.00	0.0632	0.0208	0.0130	0.0600	2.00	1.4400	1.35	1.27	0.08	1.35	94.42	3.80	8.00	YES	265.73	0.16	0 00:05
7	CB #156	On Grade	256.55	262.02	256.55	0.00	N/A	0.00	0.0632	0.0208	0.0130	0.0600	2.00	1.4400	0.54	0.54	0.00	0.54	100.00	1.90	8.00	YES	262.14	0.11	0 00:05
8	CB #157	On Grade	255.52	260.16	255.52	0.00	N/A	0.00	0.0200	0.0208	0.0130	0.0600	2.00	1.4400	0.60	0.59	0.01	0.60	97.79	3.22	8.00	YES	260.31	0.15	0 00:05
9	CB #158	On Grade	254.24	258.68	254.24	0.00	N/A	0.00	0.0200	0.0208	0.0130	0.0600	2.00	1.4400	1.29	1.11	0.18	1.29	85.97	5.21	8.00	YES	258.87	0.19	0 00:05
10	CB #159	On Grade	253.80	258.51	253.80	0.00	N/A	0.00	0.0200	0.0208	0.0130	0.0600	2.00	1.4400	0.51	0.50	0.00	0.51	99.06	2.84	8.00	YES	258.64	0.14	0 00:05
11	CB #160	On Grade	251.98	256.88	251.98	0.00	N/A	0.00	0.0200	0.0208	0.0130	0.0600	2.00	1.4400	0.42	0.42	0.00	0.42	99.85	2.39	8.00	YES	257.01	0.13	0 00:05
12	CB #161	On Grade	253.03	260.84	253.03	0.00	N/A	0.00	0.0798	0.0208	0.0130	0.0600	2.00	1.4400	0.35	0.35	0.00	0.35	100.00	1.53	11.00	YES	260.93	0.09	0 00:05
13	CB #162	On Grade	252.37	257.27	252.37	0.00	N/A	0.00	0.0321	0.0208	0.0130	0.0600	2.00	1.4400	0.17	0.17	0.00	0.17	100.00	1.41	11.00	YES	257.36	0.08	0 00:05
14	CB #163	On Sag	251.39	256.10	251.39	0.00	6.00	0.00	N/A	0.0208	0.0130	0.0600	2.00	1.4400	0.78	N/A	N/A	0.95	N/A	5.23	8.00	YES	256.29	0.19	0 00:06
15	CB #164	On Grade	250.78	256.14	250.78	0.00	N/A	0.00	0.0200	0.0208	0.0130	0.0600	2.00	1.4400	0.25	0.25	0.00	0.25	100.00	1.77	8.00	YES	256.25	0.11	0 00:06
16	CB #165	On Grade	248.69	254.24	248.69	0.00	N/A	0.00	0.0321	0.0208	0.0130	0.0600	2.00	1.4400	0.28	0.28	0.00	0.28	100.00	1.69	11.00	YES	254.34	0.10	0 00:06
17	CB #166	On Grade	248.30	254.21	248.30	0.00	N/A	0.00	0.0321	0.0208	0.0130	0.0600	2.00	1.4400	0.32	0.32	0.00	0.32	100.00	1.75	11.00	YES	254.32	0.10	0 00:06
18	CB #167	On Grade	253.47	259.68	253.47	0.00	N/A	0.00	0.0798	0.0208	0.0130	0.0600	2.00	1.4400	0.33	0.33	0.00	0.33	100.00	1.50	11.00	YES	259.77	0.09	0 00:05
19	CB #168	On Grade	252.51	257.14	252.51	0.00	N/A	0.00	0.0321	0.0208	0.0130	0.0600	2.00	1.4400	0.17	0.17	0.00	0.17	100.00	1.41	11.00	YES	257.23	0.08	0 00:05
20	CB #169	On Sag	251.72	256.42	251.72	0.00	6.00	0.00	N/A	0.0208	0.0130	0.0600	2.00	1.4400	0.84	N/A	N/A	0.84	N/A	2.94	8.00	YES	256.56	0.14	0 00:06
21	CB #170	On Grade	251.39	256.43	251.39	0.00	N/A	0.00	0.0254	0.0208	0.0130	0.0600	2.00	1.4400	0.32	0.32	0.00	0.32	100.00	1.84	8.00	YES	256.54	0.11	0 00:05
22	CB #171	On Grade	252.72	257.62	252.72	0.00	N/A	0.00	0.0254	0.0208	0.0130	0.0600	2.00	1.4400	0.57	0.56	0.01	0.57	99.08	2.81	8.00	YES	257.76	0.14	0 00:05
23	CB #172	On Grade	255.94	260.37	255.94	0.00	N/A	0.00	0.0254	0.0208	0.0130	0.0600	2.00	1.4400	0.54	0.54	0.00	0.54	99.38	2.69	8.00	YES	260.51	0.13	0 00:05
24	CB #173	On Grade	255.46	260.37	255.46	0.00	N/A	0.00	0.0254	0.0208	0.0130	0.0600	2.00	1.4400	0.57	0.62	0.01	0.63	98.39	3.04	8.00	YES	260.51	0.14	0 00:05
25	CB #174	On Grade	258.62	263.06	258.62	0.00	N/A	0.00	0.0254	0.0208	0.0130	0.0600	2.00	1.4400	0.28	0.28	0.00	0.28	100.00	1.77	8.00	YES	263.16	0.11	0 00:05
26	CB #175	On Grade	258.29	263.05	258.29	0.00	N/A	0.00	0.0254	0.0208	0.0130	0.0600	2.00	1.4400	1.26	1.11	0.15	1.26	88.35	4.81	8.00	YES	263.23	0.18	0 00:05

S T O R M W A T E R AREA " E "

2-YEAR RETURN PERIOD FOR GUTTER SPREAD



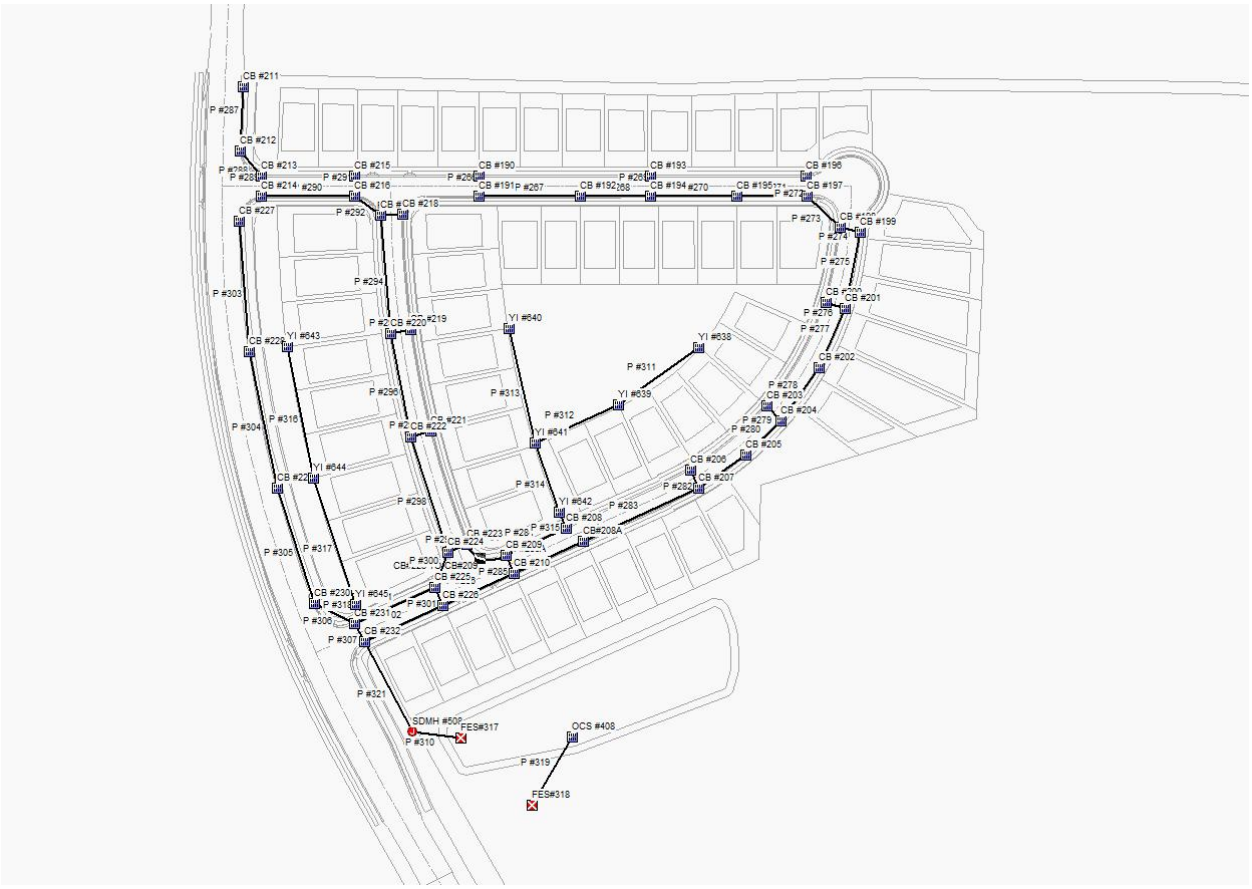
DRAINAGE AREA

SN	Element ID	Area (acres)	Drainage Node ID	Weighted Runoff Coefficient	Accumulated Precipitation (inches)	Total Runoff (inches)	Peak Runoff (cfs)	Rainfall Intensity (inches/hr)	Time of Concentration (days hh:mm:ss)
1	Sub-CB#176	0.25	CB #176	0.7500	0.33	0.25	0.75	4.000	0 00:05:00
2	Sub-CB#177	0.16	CB #177	0.7900	0.33	0.26	0.51	4.000	0 00:05:00
3	Sub-CB#178	0.26	CB #178	0.7500	0.33	0.25	0.78	4.000	0 00:05:00
4	Sub-CB#179	0.24	CB #179	0.7500	0.33	0.25	0.72	4.000	0 00:05:00
5	Sub-CB#180	0.10	CB #180	0.8700	0.33	0.29	0.35	4.000	0 00:05:00
6	Sub-CB#181	0.09	CB #181	0.8700	0.33	0.29	0.31	4.000	0 00:05:00
7	Sub-CB#182	0.11	CB #182	0.8700	0.33	0.29	0.38	4.000	0 00:05:00
8	Sub-CB#183	0.09	CB #183	0.8700	0.33	0.29	0.31	4.000	0 00:05:00
9	Sub-CB#184	0.11	CB #184	0.5500	0.33	0.18	0.24	4.000	0 00:05:00
10	Sub-CB#185	0.14	CB #185	0.7500	0.33	0.25	0.42	4.000	0 00:05:00
11	Sub-CB#186	0.12	CB #186	0.7900	0.33	0.26	0.38	4.000	0 00:05:00
12	Sub-CB#187	0.28	CB #187	0.7500	0.33	0.25	0.84	4.000	0 00:05:00
13	Sub-CB#188	0.24	CB #188	0.7500	0.33	0.25	0.72	4.000	0 00:05:00
14	Sub-CB#189	0.47	CB #189	0.7500	0.33	0.25	1.41	4.000	0 00:05:00

MODEL INPUT															MODEL OUTPUT										
SN	Element ID	Inlet Location	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Ponded Area (ft^2)	Grate Clogging Factor (%)	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (inches)	Surface Peak Flow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Total Peak Flow (cfs)	Inlet Efficiency during Peak Flow (%)	Max Gutter Spread during Peak Flow (ft)	Allowable Spread (ft)	Check	Max Gutter Water Elev. during Peak Flow (ft)	Max Gutter Water Depth during Peak Flow (ft)	Time of Maximum Depth Occurrence (days hh:mm)
1	CB #176	On Grade	257.89	262.33	257.89	0.00	N/A	0.00	0.0080	0.0208	0.0130	0.0600	2.00	1.4400	0.75	0.67	0.08	0.75	89.62	4.97	8.00	YES	262.51	0.18	0 00:05
2	CB #177	On Sag	257.56	262.33	257.56	0.00	6.00	0.00	N/A	0.0208	0.0130	0.0600	2.00	1.4400	0.51	N/A	N/A	0.50	N/A	2.39	8.00	YES	262.46	0.13	0 00:05
3	CB #178	On Grade	257.16	262.38	257.16	0.00	N/A	0.00	0.0094	0.0208	0.0130	0.0600	2.00	1.4400	0.78	0.70	0.08	0.78	89.88	4.86	8.00	YES	262.56	0.18	0 00:05
4	CB #179	On Grade	278.58	283.23	278.58	0.00	N/A	0.00	0.0671	0.0208	0.0130	0.0600	2.00	1.4400	0.72	0.72	0.00	0.72	99.95	2.24	11.00	YES	283.36	0.13	0 00:05
5	CB #180	On Grade	277.51	283.22	277.51	0.00	N/A	0.00	0.0671	0.0208	0.0130	0.0600	2.00	1.4400	0.35	0.35	0.00	0.35	100.00	1.59	11.00	YES	283.32	0.10	0 00:05
6	CB #181	On Grade	271.48	276.73	271.48	0.00	N/A	0.00	0.0671	0.0208	0.0130	0.0600	2.00	1.4400	0.31	0.31	0.00	0.31	100.00	1.52	11.00	YES	276.83	0.09	0 00:05
7	CB #182	On Grade	267.15	271.58	267.15	0.00	N/A	0.00	0.0798	0.0208	0.0130	0.0600	2.00	1.4400	0.38	0.38	0.00	0.38	100.00	1.59	11.00	YES	271.68	0.10	0 00:05
8	CB #183	On Grade	264.96	271.59	264.96	0.00	N/A	0.00	0.0798	0.0208	0.0130	0.0600	2.00	1.4400	0.31	0.31	0.00	0.31	100.00	1.48	11.00	YES	271.68	0.09	0 00:05
9	CB #184	On Grade	261.36	266.93	261.36	0.00	N/A	0.00	0.0400	0.0208	0.0130	0.0600	2.00	1.4400	0.24	0.24	0.00	0.24	100.00	1.52	8.00	YES	267.02	0.09	0 00:05
10	CB #185	On Grade	259.37	263.81	259.37	0.00	N/A	0.00	0.0400	0.0208	0.0130	0.0600	2.00	1.4400	0.42	0.42	0.00	0.42	100.00	1.87	8.00	YES	263.92	0.11	0 00:05
11	CB #186	On Grade	258.04	263.81	258.04	0.00	N/A	0.00	0.0400	0.0208	0.0130	0.0600	2.00	1.4400	0.38	0.38	0.00	0.38	100.00	1.81	8.00	YES	263.91	0.11	0 00:06
12	CB #187	On Grade	256.83	262.30	256.83	0.00	N/A	0.00	0.0094	0.0208	0.0130	0.0600	2.00	1.4400	0.84	0.74	0.10	0.84	88.64	5.06	8.00	YES	262.48	0.18	0 00:06
13	CB #188	On Grade	255.34	260.85	255.34	0.00	N/A	0.00	0.0094	0.0208	0.0130	0.0600	2.00	1.4400	0.72	0.67	0.07	0.73	90.84	4.70	17.00	YES	261.03	0.18	0 00:06
14	CB #189	On Sag	254.37	260.21	254.37	0.00	6.00	0.00	N/A	0.0208	0.0130	0.0600	2.00	1.4400	1.41	N/A	N/A	1.51	N/A	7.41	20.50	YES	260.44	0.23	0 00:06

S T O R M W A T E R AREA " F "

2-YEAR RETURN PERIOD FOR GUTTER SPREAD



PLAN VIEW

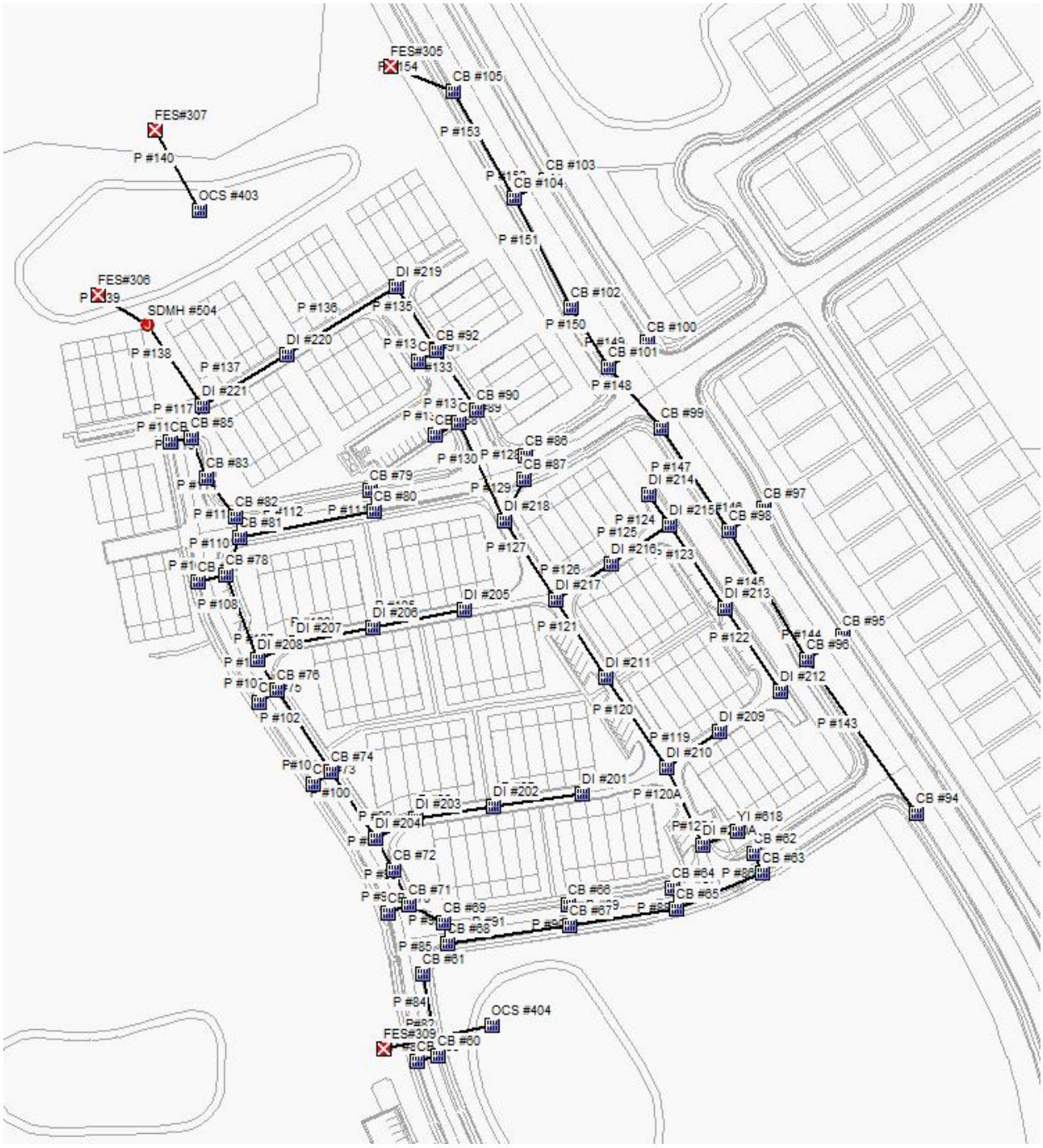
DRAINAGE AREA

SN	Element ID	Area (acres)	Drainage Node ID	Weighted Runoff Coefficient	Accumulated Precipitation (inches)	Total Runoff (inches)	Peak Runoff (cfs)	Rainfall Intensity (inches/hr)	Time of Concentration (days hh:mm:ss)
1	Sub-CB#190	0.50	CB #190	0.6700	0.33	0.22	1.34	4.000	0 00:05:00
2	Sub-CB#191	0.04	CB #191	0.8700	0.33	0.29	0.14	4.000	0 00:05:00
3	Sub-CB#192	0.16	CB #192	0.7500	0.33	0.25	0.48	4.000	0 00:05:00
4	Sub-CB#193	0.59	CB #193	0.6300	0.33	0.21	1.49	4.000	0 00:05:00
5	Sub-CB#194	0.13	CB #194	0.7500	0.33	0.25	0.39	4.000	0 00:05:00
6	Sub-CB#195	0.21	CB #195	0.7500	0.33	0.25	0.63	4.000	0 00:05:00
7	Sub-CB#196	0.52	CB #196	0.6700	0.33	0.22	1.39	4.000	0 00:05:00
8	Sub-CB#197	0.14	CB #197	0.7500	0.33	0.25	0.42	4.000	0 00:05:00
9	Sub-CB#198	0.05	CB #198	0.8700	0.33	0.29	0.17	4.000	0 00:05:00
10	Sub-CB#199	0.39	CB #199	0.7100	0.33	0.24	1.11	4.000	0 00:05:00
11	Sub-CB#200	0.13	CB #200	0.7500	0.33	0.25	0.39	4.000	0 00:05:00
12	Sub-CB#201	0.24	CB #201	0.7500	0.33	0.25	0.72	4.000	0 00:05:00
13	Sub-CB#202	0.17	CB #202	0.7500	0.33	0.25	0.51	4.000	0 00:05:00
14	Sub-CB#203	0.34	CB #203	0.5900	0.33	0.20	0.80	4.000	0 00:05:00
15	Sub-CB#204	0.30	CB #204	0.6300	0.33	0.21	0.76	4.000	0 00:05:00
16	Sub-CB#205	0.05	CB #205	0.5900	0.33	0.20	0.12	4.000	0 00:05:00
17	Sub-CB#206	0.19	CB #206	0.7500	0.33	0.25	0.57	4.000	0 00:05:00
18	Sub-CB#207	0.11	CB #207	0.6700	0.33	0.22	0.30	4.000	0 00:05:00
19	Sub-CB#208	0.25	CB #208	0.7500	0.33	0.25	0.75	4.000	0 00:05:00
20	Sub-CB#209	0.14	CB #209	0.7900	0.33	0.26	0.44	4.000	0 00:05:00
21	Sub-CB#210	0.29	CB #210	0.6300	0.33	0.21	0.73	4.000	0 00:05:00
22	Sub-CB#211	0.03	CB #211	0.8700	0.33	0.29	0.10	4.000	0 00:05:00
23	Sub-CB#212	0.14	CB #212	0.8700	0.33	0.29	0.49	4.000	0 00:05:00
24	Sub-CB#213	0.10	CB #213	0.8700	0.33	0.29	0.35	4.000	0 00:05:00
25	Sub-CB#214	0.01	CB #214	0.7000	0.33	0.23	0.03	4.000	0 00:05:00
26	Sub-CB#215	0.31	CB #215	0.5100	0.33	0.17	0.63	4.000	0 00:05:00
27	Sub-CB#216	0.07	CB #216	0.8700	0.33	0.29	0.24	4.000	0 00:05:00
28	Sub-CB#217	0.04	CB #217	0.8700	0.33	0.29	0.14	4.000	0 00:05:00
29	Sub-CB#218	0.03	CB #218	0.8800	0.33	0.29	0.11	4.000	0 00:05:00
30	Sub-CB#219	0.27	CB #219	0.7500	0.33	0.25	0.81	4.000	0 00:05:00
31	Sub-CB#220	0.32	CB #220	0.7500	0.33	0.25	0.96	4.000	0 00:05:00
32	Sub-CB#221	0.26	CB #221	0.7500	0.33	0.25	0.78	4.000	0 00:05:00
33	Sub-CB#222	0.26	CB #222	0.7500	0.33	0.25	0.78	4.000	0 00:05:00
34	Sub-CB#223	0.26	CB #223	0.7500	0.33	0.25	0.78	4.000	0 00:05:00
35	Sub-CB#224	0.30	CB #224	0.7500	0.33	0.25	0.90	4.000	0 00:05:00
36	Sub-CB#225	0.08	CB #225	0.7900	0.33	0.26	0.25	4.000	0 00:05:00
37	Sub-CB#226	0.29	CB #226	0.6300	0.33	0.21	0.73	4.000	0 00:05:00
38	Sub-CB#227	0.08	CB #227	0.8700	0.33	0.29	0.28	4.000	0 00:05:00
39	Sub-CB#228	0.29	CB #228	0.8700	0.33	0.29	1.01	4.000	0 00:05:00
40	Sub-CB#229	0.32	CB #229	0.8700	0.33	0.29	1.11	4.000	0 00:05:00
41	Sub-CB#230	0.40	CB #230	0.8700	0.33	0.29	1.39	4.000	0 00:05:00
42	Sub-CB#231	0.06	CB #231	0.8700	0.33	0.29	0.21	4.000	0 00:05:00
43	Sub-CB#232	0.29	CB #232	0.6300	0.33	0.21	0.73	4.000	0 00:05:00
44	Sub-CB#208A	0.44	CB#208A	0.6300	0.33	0.21	1.11	4.000	0 00:05:00

MODEL INPUT															MODEL OUTPUT										
SN	Element ID	Inlet Location	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Ponded Area (ft^2)	Grate Clogging Factor (%)	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (inches)	Surface Peak Flow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Total Peak Flow (cfs)	Inlet Efficiency during Peak Flow (%)	Max Gutter Spread during Peak Flow (ft)	Allowable Spread (ft)	Check	Max Gutter Water Elev. during Peak Flow (ft)	Max Gutter Water Depth during Peak Flow (ft)	Time of Maximum Depth Occurrence (days hh:mm)
1	CB #190	On Grade	253.33	257.77	253.33	0.00	N/A	0.00	0.0075	0.0208	0.0130	0.0600	2.00	1.4400	1.34	1.08	0.30	1.38	78.33	6.94	8.00	YES	257.99	0.22	0 00:05
2	CB #191	On Grade	253.00	257.77	253.00	0.00	N/A	0.00	0.0075	0.0208	0.0130	0.0600	2.00	1.4400	0.14	0.14	0.00	0.14	100.00	1.70	8.00	YES	257.87	0.10	0 00:05
3	CB #192	On Grade	252.16	256.80	252.16	0.00	N/A	0.00	0.0075	0.0208	0.0130	0.0600	2.00	1.4400	0.48	0.46	0.02	0.48	95.61	3.88	8.00	YES	256.96	0.16	0 00:06
4	CB #193	On Grade	251.69	256.13	251.69	0.00	N/A	0.00	0.0075	0.0208	0.0130	0.0600	2.00	1.4400	1.49	1.30	0.46	1.76	73.85	7.75	8.00	YES	256.37	0.24	0 00:05
5	CB #194	On Grade	251.36	256.13	251.36	0.00	N/A	0.00	0.0075	0.0208	0.0130	0.0600	2.00	1.4400	0.39	0.39	0.01	0.39	97.63	3.39	8.00	YES	256.28	0.15	0 00:05
6	CB #195	On Grade	250.33	255.30	250.33	0.00	N/A	0.00	0.0075	0.0208	0.0130	0.0600	2.00	1.4400	0.63	0.58	0.05	0.63	91.94	4.59	8.00	YES	255.48	0.17	0 00:06
7	CB #196	On Grade	250.17	254.61	250.17	0.00	N/A	0.00	0.0075	0.0208	0.0130	0.0600	2.00	1.4400	1.39	1.29	0.45	1.74	74.13	7.69	8.00	YES	254.85	0.24	0 00:05
8	CB #197	On Grade	249.51	254.47	249.51	0.00	N/A	0.00	0.0075	0.0208	0.0130	0.0600	2.00	1.4400	0.42	0.42	0.01	0.43	96.78	3.61	8.00	YES	254.63	0.15	0 00:05
9	CB #198	On Grade	247.61	252.61	247.61	0.00	N/A	0.00	0.0300	0.0208	0.0130	0.0600	2.00	1.4400	0.17	0.18	0.00	0.18	100.00	1.44	8.00	YES	252.70	0.09	0 00:06
10	CB #199	On Grade	246.98	252.50	246.98	0.00	N/A	0.00	0.0300	0.0208	0.0130	0.0600	2.00	1.4400	1.11	1.24	0.18	1.42	87.36	4.92	8.00	YES	252.68	0.18	0 00:05
11	CB #200	On Grade	245.15	249.59	245.15	0.00	N/A	0.00	0.0300	0.0208	0.0130	0.0600	2.00	1.4400	0.39	0.39	0.00	0.39	100.00	1.92	8.00	YES	249.70	0.12	0 00:05
12	CB #201	On Grade	244.29	249.58	244.29	0.00	N/A	0.00	0.0300	0.0208	0.0130	0.0600	2.00	1.4400	0.72	0.72	0.02	0.73	97.68	3.22	8.00	YES	249.73	0.15	0 00:05
13	CB #202	On Grade	242.06	247.62	242.06	0.00	N/A	0.00	0.0300	0.0208	0.0130	0.0600	2.00	1.4400	0.51	0.51	0.00	0.51	99.86	2.37	8.00	YES	247.75	0.13	0 00:06
14	CB #203	On Grade	242.00	246.71	242.00	0.00	N/A	0.00	0.0300	0.0208	0.0130	0.0600	2.00	1.4400	0.80	0.77	0.03	0.80	96.71	3.43	8.00	YES	246.86	0.15	0 00:05
15	CB #204	On Grade	240.90	246.70	240.90	0.00	N/A	0.00	0.0300	0.0208	0.0130	0.0600	2.00	1.4400	0.76	0.73	0.02	0.75	97.38	3.29	8.00	YES	246.84	0.15	0 00:06
16	CB #205	On Grade	240.37	246.36	240.37	0.00	N/A	0.00	0.0055	0.0208	0.0130	0.0600	2.00	1.4400	0.12	0.12	0.00	0.12	100.00	1.69	8.00	YES	246.46	0.10	0 00:06
17	CB #206	On Grade	241.55	245.99	241.55	0.00	N/A	0.00	0.0055	0.0208	0.0130	0.0600	2.00	1.4400	0.57	0.53	0.05	0.58	91.63	4.79	8.00	YES	246.16	0.18	0 00:05
18	CB #207	On Grade	239.80	245.97	239.80	0.00	N/A	0.00	0.0055	0.0208	0.0130	0.0600	2.00	1.4400	0.30	0.29	0.00	0.29	98.82	3.06	8.00	YES	246.11	0.14	0 00:06
19	CB #208	On Grade	237.80	245.02	237.80	0.00	N/A	0.00	0.0055	0.0208	0.0130	0.0600	2.00	1.4400	0.75	0.69	0.10	0.79	86.97	5.66	8.00	YES	245.21	0.20	0 00:05
20	CB #209	On Sag	237.18	244.50	237.18	0.00	6.00	0.00	N/A	0.0208	0.0130	0.0600	2.00	1.4400	0.44	N/A	N/A	0.51	N/A	2.39	8.00	YES	244.63	0.13	0 00:07
21	CB #210	On Grade	236.85	244.58	236.85	0.00	N/A	0.00	0.0055	0.0208	0.0130	0.0600	2.00	1.4400	0.73	0.69	0.11	0.80	86.77	5.69	8.00	YES	244.77	0.20	0 00:07
22	CB #211	On Grade	261.63	266.07	261.63	0.00	N/A	0.00	0.0468	0.0418	0.0130	0.0600	2.00	1.4400	0.10	0.10	0.00	0.10	100.00	1.08	12.75	YES	266.14	0.06	0 00:05
23	CB #212	On Grade	257.48	262.12	257.48	0.00	N/A	0.00	0.0459	0.0477	0.0130	0.0600	2.00	1.4400	0.49	0.49	0.00	0.49	100.00	1.93	12.75	YES	262.24	0.12	0 00:05
24	CB #213	On Grade	255.14	259.90	255.14	0.00	N/A	0.00	0.0075	0.0208	0.0130	0.0600	2.00	1.4400	0.35	0.34	0.00	0.35	98.63	3.09	8.00	YES	260.05	0.14	0 00:05
25	CB #214	On Grade	254.81	259.70	254.81	0.00	N/A	0.00	0.0200	0.0208	0.0130	0.0600	2.00	1.4400	0.03	0.03	0.00	0.03	100.00	0.78	8.00	YES	259.74	0.05	0 00:05
26	CB #215	On Grade	254.46	258.96	254.46	0.00	N/A	0.00	0.0075	0.0208	0.0130	0.0600	2.00	1.4400	0.63	0.59	0.05	0.64	91.67	4.64	8.00	YES	259.14	0.17	0 00:05
27	CB #216	On Grade	254.01	258.91	254.01	0.00	N/A	0.00	0.0075	0.0208	0.0130	0.0600	2.00	1.4400	0.24	0.24	0.00	0.24	99.96	2.27	8.00	YES	259.04	0.13	0 00:05
28	CB #217	On Grade	252.52	257.67	252.52	0.00	N/A	0.00	0.0277	0.0208	0.0130	0.0600	2.00	1.4400	0.14	0.14	0.00	0.14	100.00	1.35	8.00	YES	257.75	0.08	0 00:06
29	CB #218	On Grade	252.86	257.56	252.86	0.00	N/A	0.00	0.0277	0.0208	0.0130	0.0600	2.00	1.4400	0.11	0.11	0.00	0.11	100.00	1.20	8.00	YES	257.63	0.07	0 00:05
30	CB #219	On Grade	249.07	253.48	249.07	0.00	N/A	0.00	0.0277	0.0208	0.0130	0.0600	2.00	1.4400	0.81	0.78	0.03	0.81	96.13	3.55	8.00	YES	253.63	0.15	0 00:05
31	CB #220	On Grade	248.55	253.45	248.55	0.00	N/A	0.00	0.0277	0.0208	0.0130	0.0600	2.00	1.4400	0.96	0.90	0.06	0.96	93.73	3.98	8.00	YES	253.61	0.16	0 00:05
32	CB #221	On Grade	245.35	249.79	245.35	0.00	N/A	0.00	0.0227	0.0208	0.0130	0.0600	2.00	1.4400	0.78	0.77	0.04	0.81	94.93	3.80	8.00	YES	249.94	0.16	0 00:05
33	CB #222	On Grade	244.86	249.77	244.86	0.00	N/A	0.00	0.0277	0.0208	0.0130	0.0600	2.00	1.4400	0.78	0.76	0.03	0.78	96.53	3.47	8.00	YES	249.92	0.15	0 00:05
34	CB #223	On Grade	241.12	245.56	241.12	0.00	N/A	0.00	0.0227	0.0208	0.0130	0.0600	2.00	1.4400	0.78	0.77	0.04	0.81	94.83	3.82	8.00	YES	245.72	0.16	0 00:05
35	CB #224	On Grade	240.62	245.53	240.62	0.00	N/A	0.00	0.0277	0.0208	0.0130	0.0600	2.00	1.4400	0.90	0.85	0.05	0.90	94.69	3.82	8.00	YES	245.69	0.16	0 00:05
36	CB #225	On Grade	238.96	243.97	238.96	0.00	N/A	0.00	0.0055	0.0208	0.0130	0.0600	2.00	1.4400	0.25	0.28	0.00	0.28	99.03	2.98	8.00	YES	244.11	0.14	0 00:05
37	CB #226	On Grade	236.15	243.97	236.15	0.00	N/A	0.00	0.0055	0.0208	0.0130	0.0600	2.00	1.4400	0.73	0.66	0.09	0.75	87.83	5.50	8.00	YES	244.16	0.19	0 00:07
38	CB #227	On Grade	252.73	257.40	252.73	0.00	N/A	0.00	0.0523	0.0603	0.0130	0.0620	2.00	1.4400	0.28	0.28	0.00	0.28	100.00	1.50	12.75	YES	257.49	0.09	0 00:05
39	CB #228	On Grade	245.35	250.23	245.35	0.00	N/A	0.00	0.0347	0.0597	0.0130	0.0600	2.00	1.4400	1.01	0.99	0.02	1.01	98.08	2.67	12.75	YES	250.39	0.16	0 00:05
40	CB #229	On Grade	240.26	244.98	240.26	0.00	N/A	0.00	0.0278	0.0400	0.0130	0.0600	2.00	1.4400	1.11	1.06	0.05	1.11	95.14	3.30	12.75	YES	245.16	0.17	0 00:05
41	CB #230	On Sag	236.70	241.45	236.70	0.00	6.00	0.00	N/A	0.0347	0.0130	0.0600	2.00	1.4400	1.39	N/A	N/A	1.40	N/A	5.01	12.75	YES	241.67	0.22	0 00:05
42	CB #231	On Grade	235.87	241.91	235.87	0.00	N/A	0.00	0.0326	0.0208	0.0130	0.0600	2.00	1.4400	0.21	0.21	0.00	0.21	100.00	1.51	8.00	YES	242.00	0.09	0 00:07
43	CB #232	On Grade	235.20	241.90	235.20	0.00	N/A	0.00	0.0326	0.0208	0.0130	0.0600	2.00	1.4400	0.73	0.72	0.01	0.73	98.10	3.11	8.00	YES	242.04	0.14	0 00:07
44	CB#208A	On Grade	238.41	245.11	238.41	0.00	N/A	0.00	0.0055	0.0208	0.0130	0.0600	2.00	1.4400	1.11	0.90	0.21	1.11	81.29	6.69	8.00	YES	245.33	0.22	0 00:06

S T O R M W A T E R AREA " G "

STORMWATER PIPING AND HYDRAULIC GRADE LINE FOR 10-YR STORM



PLAN VIEW

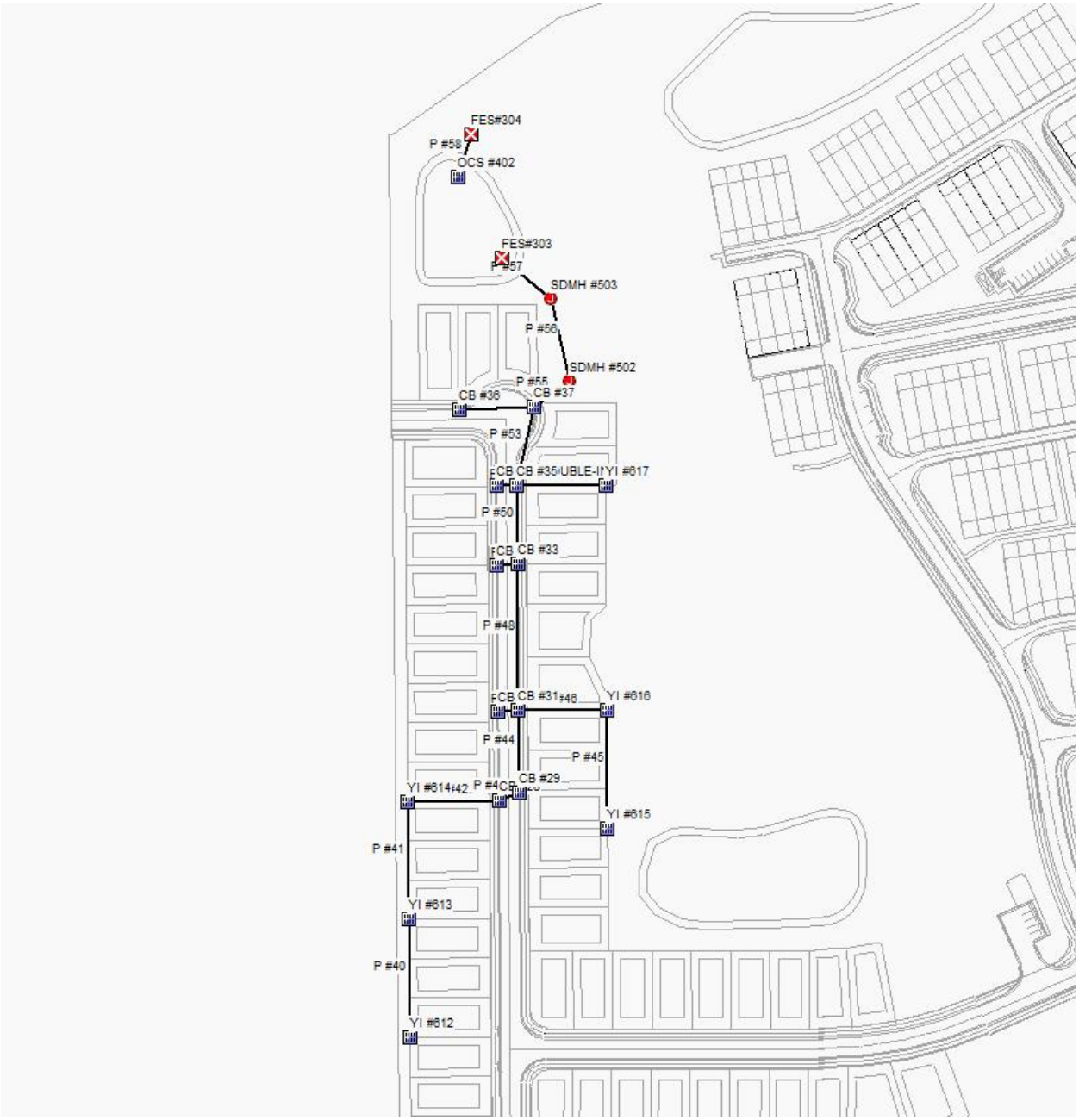
DRAINAGE AREA

SN	Element ID	Area (acres)	Drainage Node ID	Weighted Runoff Coefficient	Accumulated Precipitation (inches)	Total Runoff (inches)	Peak Runoff (cfs)	Rainfall Intensity (inches/hr)	Time of Concentration (days hh:mm:ss)
1	Sub-CB#100	0.06	CB #100	0.8700	0.33	0.29	0.21	4.000	0 00:05:00
2	Sub-CB#101	0.04	CB #101	0.8700	0.33	0.29	0.14	4.000	0 00:05:00
3	Sub-CB#102	0.09	CB #102	0.8700	0.33	0.29	0.31	4.000	0 00:05:00
4	Sub-CB#103	0.22	CB #103	0.8700	0.33	0.29	0.77	4.000	0 00:05:00
5	Sub-CB#104	0.13	CB #104	0.8700	0.33	0.29	0.45	4.000	0 00:05:00
6	Sub-CB#105	0.12	CB #105	0.8700	0.33	0.29	0.42	4.000	0 00:05:00
7	Sub-CB#59	0.10	CB #59	0.8700	0.33	0.29	0.35	4.000	0 00:05:00
8	Sub-CB#60	0.12	CB #60	0.8700	0.33	0.29	0.42	4.000	0 00:05:00
9	Sub-CB#61	0.11	CB #61	0.8700	0.33	0.29	0.38	4.000	0 00:05:00
10	Sub-CB#62	0.16	CB #62	0.5500	0.33	0.18	0.35	4.000	0 00:05:00
11	Sub-CB#63	0.19	CB #63	0.7100	0.33	0.24	0.54	4.000	0 00:05:00
12	Sub-CB#64	0.06	CB #64	0.6300	0.33	0.21	0.15	4.000	0 00:05:00
13	Sub-CB#65	0.11	CB #65	0.5100	0.33	0.17	0.22	4.000	0 00:05:00
14	Sub-CB#66	0.10	CB #66	0.6300	0.33	0.21	0.25	4.000	0 00:05:00
15	Sub-CB#67	0.12	CB #67	0.5900	0.33	0.20	0.28	4.000	0 00:05:00
16	Sub-CB#68	0.08	CB #68	0.8700	0.33	0.29	0.28	4.000	0 00:05:00
17	Sub-CB#69	0.08	CB #69	0.8700	0.33	0.29	0.28	4.000	0 00:05:00
18	Sub-CB#70	0.11	CB #70	0.8700	0.33	0.29	0.38	4.000	0 00:05:00
19	Sub-CB#71	0.40	CB #71	0.5900	0.33	0.20	0.94	4.000	0 00:05:00
20	Sub-CB#72	0.06	CB #72	0.4700	0.33	0.16	0.11	4.000	0 00:05:00
21	Sub-CB#73	0.11	CB #73	0.8700	0.33	0.29	0.38	4.000	0 00:05:00
22	Sub-CB#74	0.08	CB #74	0.6300	0.33	0.21	0.20	4.000	0 00:05:00
23	Sub-CB#75	0.07	CB #75	0.8700	0.33	0.29	0.24	4.000	0 00:05:00
24	Sub-CB#76	0.27	CB #76	0.6700	0.33	0.22	0.72	4.000	0 00:05:00
25	Sub-CB#77	0.09	CB #77	0.8700	0.33	0.29	0.31	4.000	0 00:05:00
26	Sub-CB#78	0.19	CB #78	0.6300	0.33	0.21	0.48	4.000	0 00:05:00
27	Sub-CB#79	0.09	CB #79	0.8700	0.33	0.29	0.31	4.000	0 00:05:00
28	Sub-CB#80	0.40	CB #80	0.5900	0.33	0.20	0.94	4.000	0 00:05:00
29	Sub-CB#81	0.45	CB #81	0.4700	0.33	0.16	0.85	4.000	0 00:05:00
30	Sub-CB#82	0.11	CB #82	0.8300	0.33	0.28	0.37	4.000	0 00:05:00
31	Sub-CB#83	0.05	CB #83	0.8700	0.33	0.29	0.17	4.000	0 00:05:00
32	Sub-CB#84	0.10	CB #84	0.5900	0.33	0.20	0.24	4.000	0 00:05:00
33	Sub-CB#85	0.04	CB #85	0.8700	0.33	0.29	0.14	4.000	0 00:05:00
34	Sub-CB#86	0.09	CB #86	0.8700	0.33	0.29	0.31	4.000	0 00:05:00
35	Sub-CB#87	0.38	CB #87	0.3900	0.33	0.13	0.59	4.000	0 00:05:00
36	Sub-CB#88	0.14	CB #88	0.6700	0.33	0.22	0.38	4.000	0 00:05:00
37	Sub-CB#89	0.03	CB #89	0.8700	0.33	0.29	0.10	4.000	0 00:05:00
38	Sub-CB#90	0.12	CB #90	0.6700	0.33	0.22	0.32	4.000	0 00:05:00
39	Sub-CB#91	0.12	CB #91	0.8700	0.33	0.29	0.42	4.000	0 00:05:00
40	Sub-CB#92	0.15	CB #92	0.5500	0.33	0.18	0.33	4.000	0 00:05:00
41	Sub-CB#94	0.49	CB #94	0.8700	0.33	0.29	1.71	4.000	0 00:05:00
42	Sub-CB#95	0.23	CB #95	0.8700	0.33	0.29	0.80	4.000	0 00:05:00
43	Sub-CB#96	0.18	CB #96	0.8700	0.33	0.29	0.63	4.000	0 00:05:00
44	Sub-CB#97	0.17	CB #97	0.8700	0.33	0.29	0.59	4.000	0 00:05:00
45	Sub-CB#98	0.16	CB #98	0.8700	0.33	0.29	0.56	4.000	0 00:05:00
46	Sub-CB#99	0.12	CB #99	0.8700	0.33	0.29	0.42	4.000	0 00:05:00

MODEL INPUT															MODEL OUTPUT									
SN	Element ID	Inlet Location	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Ponded Area (ft²)	Grate Clogging Factor (%)	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (inches)	Surface Peak Flow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Total Peak Flow (cfs)	Inlet Efficiency during Peak Flow (%)	Max Gutter Spread during Peak Flow (ft)	Allowable Spread (ft)	Check	Max Gutter Water Elev. during Peak Flow (ft)	Max Gutter Water Depth during Peak Flow (ft)	Time of Maximum Depth Occurrence (days hh:mm)
1	CB #100	On Grade	266.34	270.78	266.34	0.00	N/A	0.00	0.0560	0.0153	0.0130	0.0600	2.00	1.4400	0.21	0.21	0.00	0.21	100.00	1.36	15.50	YES	270.86	0.08	0 00:05
2	CB #101	On Grade	265.10	270.88	265.10	0.00	N/A	0.00	0.0560	0.0060	0.0130	0.0600	2.00	0.0000	0.14	0.14	0.00	0.14	100.00	1.16	15.50	YES	270.95	0.07	0 00:05
3	CB #102	On Grade	261.50	266.42	261.50	0.00	N/A	0.00	0.0546	0.0005	0.0130	0.0600	2.00	1.4400	0.31	0.31	0.00	0.31	100.00	1.59	15.50	YES	266.52	0.10	0 00:06
4	CB #103	On Grade	254.13	258.56	254.13	0.00	N/A	0.00	0.0508	0.0238	0.0130	0.0600	2.00	1.4400	0.77	0.76	0.00	0.76	99.41	2.61	12.75	YES	258.70	0.13	0 00:05
5	CB #104	On Grade	253.12	259.31	253.12	0.00	N/A	0.00	0.0508	0.0118	0.0130	0.0600	2.00	1.4400	0.45	0.45	0.00	0.45	100.00	1.84	12.75	YES	259.42	0.11	0 00:06
6	CB #105	On Grade	244.40	250.84	244.40	0.00	N/A	0.00	0.0481	0.0381	0.0130	0.0600	2.00	1.4400	0.42	0.42	0.00	0.42	100.00	1.81	12.75	YES	250.95	0.11	0 00:06
7	CB #59	On Grade	268.75	273.19	268.75	0.00	N/A	0.00	0.0109	0.0208	0.0130	0.0600	2.00	1.4400	0.35	0.35	0.00	0.35	99.54	2.65	8.00	YES	273.32	0.13	0 00:05
8	CB #60	On Grade	268.42	273.19	268.42	0.00	N/A	0.00	0.0109	0.0208	0.0130	0.0600	2.00	1.4400	0.42	0.41	0.01	0.42	98.51	3.08	8.00	YES	273.34	0.14	0 00:05
9	CB #61	On Sag	267.44	272.08	267.44	0.00	6.00	0.00	N/A	0.0208	0.0130	0.0600	2.00	1.4400	0.38	N/A	N/A	0.38	N/A	2.16	8.00	YES	272.20	0.12	0 00:06
10	CB #62	On Grade	292.49	296.92	292.49	0.00	N/A	0.00	0.0200	0.0500	0.0130	0.0600	2.00	0.0000	0.35	0.35	0.00	0.35	100.00	2.00	8.00	YES	297.04	0.12	0 00:05
11	CB #63	On Grade	291.99	296.63	291.99	0.00	N/A	0.00	0.0765	0.0208	0.0130	0.0600	2.00	1.4400	0.54	0.59	0.00	0.59	100.00	1.89	8.00	YES	296.74	0.11	0 00:05
12	CB #64	On Grade	283.95	288.39	283.95	0.00	N/A	0.00	0.0765	0.0208	0.0130	0.0600	2.00	1.4400	0.15	0.15	0.00	0.15	100.00	1.14	8.00	YES	288.46	0.07	0 00:05
13	CB #65	On Grade	283.46	288.25	283.46	0.00	N/A	0.00	0.0765	0.0208	0.0130	0.0600	2.00	1.4400	0.22	0.22	0.00	0.22	100.00	1.31	8.00	YES	288.33	0.08	0 00:05
14	CB #66	On Grade	274.19	278.63	274.19	0.00	N/A	0.00	0.0765	0.0208	0.0130	0.0600	2.00	1.4400	0.25	0.25	0.00	0.25	100.00	1.37	8.00	YES	278.71	0.08	0 00:05
15	CB #67	On Grade	273.15	278.54	273.15	0.00	N/A	0.00	0.0765	0.0208	0.0130	0.0600	2.00	1.4400	0.28	0.28	0.00	0.28	100.00	1.43	8.00	YES	278.63	0.09	0 00:05
16	CB #68	On Grade	267.00	272.36	267.00	0.00	N/A	0.00	0.0274	0.0208	0.0130	0.0600	2.00	1.4400	0.28	0.28	0.00	0.28	100.00	1.73	8.00	YES	272.46	0.10	0 00:06
17	CB #69	On Grade	266.67	272.33	266.67	0.00	N/A	0.00	0.0274	0.0208	0.0130	0.0600	2.00	1.4400	0.28	0.28	0.00	0.28	100.00	1.73	8.00	YES	272.44	0.10	0 00:06
18	CB #70	On Grade	266.74	271.18	266.74	0.00	N/A	0.00	0.0109	0.0208	0.0130	0.0600	2.00	1.4400	0.38	0.39	0.00	0.39	98.97	2.92	8.00	YES	271.32	0.14	0 00:06
19	CB #71	On Grade	266.23	271.29	266.23	0.00	N/A	0.00	0.0109	0.0208	0.0130	0.0600	2.00	1.4400	0.94	0.82	0.12	0.94	87.51	5.18	8.00	YES	271.48	0.19	0 00:06
20	CB #72	On Grade	265.76	270.67	265.76	0.00	N/A	0.00	0.0109	0.0208	0.0130	0.0600	2.00	1.4400	0.11	0.17	0.00	0.17	100.00	1.72	8.00	YES	270.77	0.10	0 00:06
21	CB #73	On Grade	261.91	266.35	261.91	0.00	N/A	0.00	0.0633	0.0208	0.0130	0.0600	2.00	1.4400	0.38	0.39	0.00	0.39	100.00	1.68	8.00	YES	266.45	0.10	0 00:05
22	CB #74	On Grade	261.17	266.35	261.17	0.00	N/A	0.00	0.0633	0.0208	0.0130	0.0600	2.00	1.4400	0.20	0.20	0.00	0.20	100.00	1.30	8.00	YES	266.43	0.08	0 00:06
23	CB #75	On Grade	254.46	258.89	254.46	0.00	N/A	0.00	0.0633	0.0208	0.0130	0.0600	2.00	1.4400	0.24	0.24	0.00	0.24	100.00	1.41	8.00	YES	258.98	0.08	0 00:05
24	CB #76	On Grade	253.99	258.93	253.99	0.00	N/A	0.00	0.0633	0.0208	0.0130	0.0600	2.00	1.4400	0.72	0.72	0.00	0.72	99.90	2.32	8.00	YES	259.06	0.13	0 00:06
25	CB #77	On Grade	246.80	251.09	246.80	0.00	N/A	0.00	0.0633	0.0208	0.0130	0.0600	2.00	1.4400	0.31	0.31	0.00	0.31	100.00	1.53	10.00	YES	251.18	0.09	0 00:05
26	CB #78	On Sag	245.23	251.07	245.23	0.00	6.00	0.00	N/A	0.0208	0.0130	0.0600	2.00	1.4400	0.48	N/A	N/A	0.48	N/A	2.34	10.00	YES	251.19	0.13	0 00:06
27	CB #79	On Grade	250.97	255.40	250.97	0.00	N/A	0.00	0.0550	0.0208	0.0130	0.0600	2.00	1.4400	0.31	0.31	0.00	0.31	100.00	1.59	8.00	YES	255.50	0.10	0 00:05
28	CB #80	On Grade	250.57	255.40	250.57	0.00	N/A	0.00	0.0550	0.0208	0.0130	0.0600	2.00	1.4400	0.94	0.92	0.02	0.94	98.06	3.09	8.00	YES	255.54	0.14	0 00:05
29	CB #81	On Sag	244.79	251.20	244.79	0.00	6.00	0.00	N/A	0.0208	0.0130	0.0600	2.00	1.4400	0.85	N/A	N/A	0.84	N/A	2.95	8.00	YES	251.34	0.14	0 00:06
30	CB #82	On Grade	244.46	251.20	244.46	0.00	N/A	0.00	0.0244	0.0208	0.0130	0.0600	2.00	1.4400	0.37	0.36	0.00	0.36	100.00	1.95	8.00	YES	251.32	0.12	0 00:06
31	CB #83	On Grade	242.39	248.53	242.39	0.00	N/A	0.00	0.0208	0.0208	0.0130	0.0600	2.00	1.4400	0.17	0.17	0.00	0.17	100.00	1.52	10.00	YES	248.62	0.09	0 00:06
32	CB #84	On Sag	242.03	247.84	242.03	0.00	6.00	0.00	N/A	0.0208	0.0130	0.0600	2.00	1.4400	0.24	N/A	N/A	0.24	N/A	1.83	8.25	YES	247.95	0.12	0 00:06
33	CB #85	On Grade	241.65	247.68	241.65	0.00	N/A	0.00	0.0208	0.0208	0.0130	0.0600	2.00	1.4400	0.14	0.14	0.00	0.14	100.00	1.40	8.25	YES	247.77	0.08	0 00:06
34	CB #86	On Grade	260.23	264.96	260.23	0.00	N/A	0.00	0.0550	0.0208	0.0130	0.0600	2.00	1.4400	0.31	0.31	0.00	0.31	100.00	1.59	8.00	YES	265.06	0.10	0 00:05
35	CB #87	On Grade	259.23	264.18	259.23	0.00	N/A	0.00	0.0550	0.0208	0.0130	0.0600	2.00	1.4400	0.59	0.59	0.00	0.59	100.00	2.03	8.00	YES	264.30	0.12	0 00:05
36	CB #88	On Sag	252.92	257.20	252.92	0.00	6.00	0.00	N/A	0.0208	0.0130	0.0600	2.00	1.4400	0.38	N/A	N/A	0.37	N/A	2.14	12.50	YES	257.32	0.12	0 00:06
37	CB #89	On Grade	252.41	259.06	252.41	0.00	N/A	0.00	0.0407	0.0208	0.0130	0.0600	2.00	1.4400	0.10	0.10	0.00	0.10	100.00	1.11	8.00	YES	259.13	0.07	0 00:05
38	CB #90	On Grade	251.65	258.93	251.65	0.00	N/A	0.00	0.0407	0.0208	0.0130	0.0600	2.00	1.4400	0.32	0.32	0.00	0.32	100.00	1.69	8.00	YES	259.04	0.10	0 00:06
39	CB #91	On Grade	250.90	255.34	250.90	0.00	N/A	0.00	0.0407	0.0500	0.0130	0.0600	2.00	1.4400	0.42	0.42	0.00	0.42	100.00	1.87	8.00	YES	255.45	0.11	0 00:05
40	CB #92	On Grade	249.73	255.37	249.73	0.00	N/A	0.00	0.0407	0.0208	0.0130	0.0600	2.00	1.4400	0.33	0.33	0.00	0.33	100.00	1.71	8.00	YES	255.47	0.10	0 00:06
41	CB #94	On Grade	309.07	313.71	309.07	0.00	N/A	0.00	0.0489	0.0208	0.0130	0.0600	2.00	1.4400	1.71	1.50	0.20	1.70	88.14	4.74	12.75	YES	313.89	0.18	0 00:05
42	CB #95	On Grade	294.25	298.69	294.25	0.00	N/A	0.00	0.0707	0.0053	0.0130	0.0600	2.00	1.4400	0.80	0.79	0.01	0.80	99.22	3.61	15.50	YES	298.82	0.13	0 00:05
43	CB #96	On Grade	293.53	298.17	293.53	0.00	N/A	0.00	0.0707	0.0212	0.0130	0.0600	2.00	1.4400	0.63	0.63	0.00	0.63	100.00	1.96	15.50	YES	298.28	0.12	0 00:05
44	CB #97	On Grade	280.71	285.15	280.71	0.00	N/A	0.00	0.0643	0.0174	0.0130	0.0600	2.00	1.4400	0.59	0.59	0.00	0.59	100.00	1.95	14.20	YES	285.27	0.12	0 00:05
45	CB #98	On Grade	279.82	285.15	279.82	0.00	N/A	0.00	0.0643	0.0227	0.0130	0.0600	2.00	1.4400	0.56	0.56	0.00	0.56	100.00	1.91	14.20	YES	285.26	0.11	0 00:05
46	CB #99	On Grade	270.79	275.93	270.79	0.00	N/A	0.00	0.0563	0.0309	0.0130	0.0600	2.00	1.4400	0.42	0.42	0.00	0.42	100.00	1.75	15.50	YES	276.04	0.11	0 00:05

S T O R M W A T E R AREA " H "

2-YEAR RETURN PERIOD FOR GUTTER SPREAD



PLAN VIEW

DRAINAGE AREA

SN	Element ID	Area (acres)	Drainage Node ID	Weighted Runoff Coefficient	Accumulated Precipitation (inches)	Total Runoff (inches)	Peak Runoff (cfs)	Rainfall Intensity (inches/hr)	Time of Concentration (days hh:mm:ss)
2	Sub-CB#28	0.64	CB #28	0.7500	0.33	0.25	1.92	4.000	0 00:05:00
3	Sub-CB#29	0.57	CB #29	0.7500	0.33	0.25	1.71	4.000	0 00:05:00
4	Sub-CB#30	0.37	CB #30	0.6300	0.33	0.21	0.93	4.000	0 00:05:00
5	Sub-CB#31	0.18	CB #31	0.7500	0.33	0.25	0.54	4.000	0 00:05:00
6	Sub-CB#32	0.46	CB #32	0.6300	0.33	0.21	1.16	4.000	0 00:05:00
7	Sub-CB#33	0.34	CB #33	0.7500	0.33	0.25	1.02	4.000	0 00:05:00
8	Sub-CB#34	0.63	CB #34(DOUBLE-INLET)	0.7500	0.33	0.25	1.89	4.000	0 00:05:00
9	Sub-CB#35	0.38	CB #35	0.7500	0.33	0.25	1.14	4.000	0 00:05:00
10	Sub-CB#36	0.20	CB #36	0.6300	0.33	0.21	0.50	4.000	0 00:05:00
11	Sub-CB#37	0.34	CB #37	0.6300	0.33	0.21	0.86	4.000	0 00:05:00

MODEL INPUT															MODEL OUTPUT										
SN	Element ID	Inlet Location	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Ponded Area (ft^2)	Grate Clogging Factor (%)	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (inches)	Surface Peak Flow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Total Peak Flow (cfs)	Inlet Efficiency during Peak Flow (%)	Max Gutter Spread during Peak Flow (ft)	Allowable Spread (ft)	Check	Max Gutter Water Elev. during Peak Flow (ft)	Max Gutter Water Depth during Peak Flow (ft)	Time of Maximum Depth Occurrence (days hh:mm)
1	CB #28	On Grade	269.06	273.77	269.06	0.00	N/A	0.00	0.0282	0.0208	0.0130	0.0600	2.00	1.4400	1.92	1.56	0.38	1.95	80.44	5.90	8.00	YES	273.97	0.20	0 00:06
2	CB #29	On Grade	268.58	273.46	268.58	0.00	N/A	0.00	0.0282	0.0208	0.0130	0.0600	2.00	1.4400	1.71	1.42	0.29	1.71	83.16	5.52	8.00	YES	273.65	0.19	0 00:06
3	CB #30	On Grade	266.15	270.59	266.15	0.00	N/A	0.00	0.0282	0.0208	0.0130	0.0600	2.00	1.4400	0.93	1.04	0.10	1.14	90.92	4.41	8.00	YES	270.76	0.17	0 00:05
4	CB #31	On Grade	264.90	270.59	264.90	0.00	N/A	0.00	0.0282	0.0208	0.0130	0.0600	2.00	1.4400	0.54	0.71	0.02	0.73	97.46	3.27	8.00	YES	270.73	0.15	0 00:05
5	CB #32	On Grade	264.25	268.69	264.25	0.00	N/A	0.00	0.0063	0.0208	0.0130	0.0600	2.00	1.4400	1.16	0.97	0.24	1.20	80.27	6.74	8.00	YES	268.91	0.22	0 00:05
6	CB #33	On Grade	262.76	268.66	262.76	0.00	N/A	0.00	0.0063	0.0208	0.0130	0.0600	2.00	1.4400	1.02	0.85	0.17	1.02	83.25	6.21	8.00	YES	268.87	0.21	0 00:06
7	CB #34(DOUBLE-INLET)	On Sag	263.71	268.15	263.71	0.00	12.00	0.00	N/A	0.0208	0.0130	0.0600	2.00	1.4400	1.89	N/A	N/A	2.10	N/A	7.28	8.00	YES	268.38	0.23	0 00:05
8	CB #35	On Sag	262.06	268.15	262.06	0.00	6.00	0.00	N/A	0.0208	0.0130	0.0600	2.00	1.4400	1.14	N/A	N/A	1.19	N/A	6.20	8.00	YES	268.36	0.21	0 00:06
9	CB #36	On Grade	265.92	270.60	265.92	0.00	N/A	0.00	0.0355	0.0208	0.0130	0.0600	2.00	1.4400	0.50	0.50	0.00	0.50	99.98	2.16	8.00	YES	270.73	0.12	0 00:05
10	CB #37	On Grade	260.50	269.22	260.50	0.00	N/A	0.00	0.0355	0.0208	0.0130	0.0600	2.00	1.4400	0.86	0.83	0.03	0.86	96.87	3.39	20.50	YES	269.37	0.15	0 00:06

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Company License # P-2166

4.2. 10 Year Storm Pipe Analysis & HGL Reports

10-YEAR RETURN PERIOD

STORM PIPE ANALYSIS

RESERVE @ MITCHELL MILL

5109 MITCHELL MILL ROAD, TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

PREPARED BY: KEITH SPALDING-ROBBINS
STRONG ROCK ENGINEERING GROUP, PLLC | COMPANY LICENSE # P-2166
305 CHURCH AT NORTH HILLS STREET, SUITE 1110 RALEIGH, NC 27609 |
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Stormwater Area G ……..75

Stormwater Area H ……..90

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STUDY DESCRIPTION.

This study utilized:

- Auto Desk Storm and Sanitary Analysis Program for analyzing and designing stormwater sewers.

Calculation requirements:

- Auto Desk Storm and Sanitary Analysis Program for analyzing and designing stormwater sewers.
- The program used to model the storm sewer system utilizes the rational method for the quantity of stormwater input.

The results of the storm sewer analysis shows that the 10-year event stays within the pipe and the 25-year event does not top the structures.

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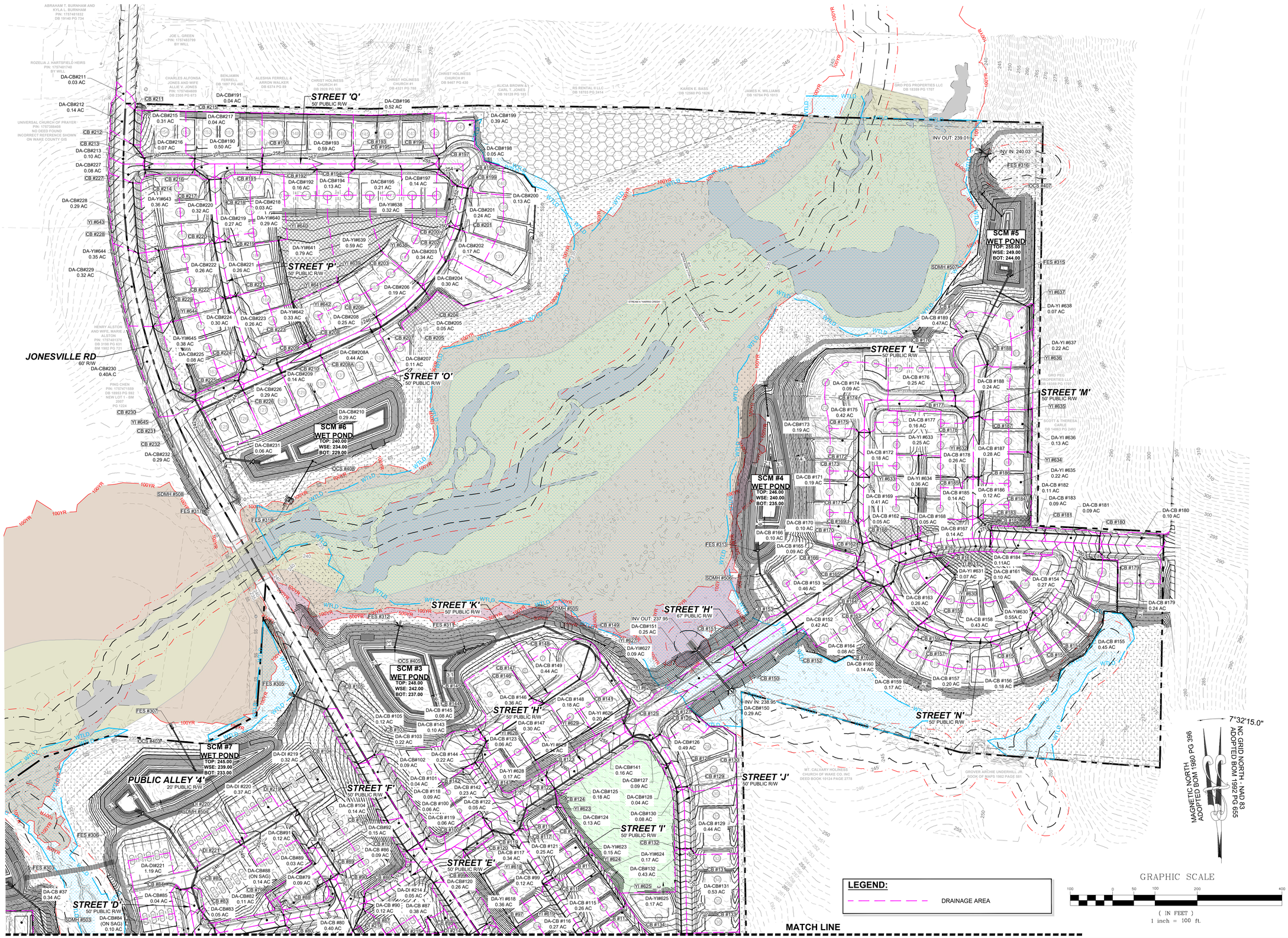
DRAINAGE MAP

PROGRESS PLOT DATE: 04/22/2024



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No.	REVISIONS	DATE	BY

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT

SEAL

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		DRAWN BY	SRG
		CHECKED BY	JWL

RESERVE @ MITCHELL MILL

TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA

CONSTRUCTION PLANS

THE DRAINAGE MAP
EXHIBIT - 01

DRAWING SHEET

EX-01

01 OF 02

PROGRESS PLOT DATE: 04/22/2024

MATCH LINE
FOR CONTINUATION, SEE EXH-01

JONESVILLE RD
60' R/W

STREET 'A'
50' PUBLIC R/W

STREET 'B'
50' PUBLIC R/W

STREET 'C'
50' PUBLIC R/W

STREET 'D'
50' PUBLIC R/W

STREET 'E'
50' PUBLIC R/W

STREET 'F'
50' PUBLIC R/W

STREET 'G'
50' PUBLIC R/W

STREET 'H'
50' PUBLIC R/W

STREET 'I'
50' PUBLIC R/W

STREET 'J'
50' PUBLIC R/W

STREET 'K'
50' PUBLIC R/W

PUBLIC ALLEY '1'
20' PUBLIC R/W

PUBLIC ALLEY '2'
20' PUBLIC R/W

PUBLIC ALLEY '3'
20' PUBLIC R/W

PUBLIC ALLEY '4'
20' PUBLIC R/W

PRIVATE DRIVEWAY
20' PRIVATE R/W

SCM #1
WET POND
TOP: 269.00
WSE: 263.00
BOT: 258.00

SCM #2
WET POND
TOP: 270.00
WSE: 264.00
BOT: 259.00

SCM #7
WET POND
TOP: 245.00
WSE: 239.00
BOT: 233.00

SCM #8
WET POND
TOP: 246.00
WSE: 240.00
BOT: 235.00

JUNCTION #01
INV IN: 290.51

JUNCTION #02
INV IN: 282.94

JUNCTION #03
INV IN: 288.17

INV OUT: 284.08

INV IN: 285.75

INV IN: 273.32

INV OUT: 271.69

INV IN: 263.05

INV OUT: 262.60

DA-INV #01 2.43 AC
DA-INV #02 1.34 AC
DA-INV #03 3.60 AC
DA-INV #04 1.85 AC

MOUNT CALVARY HOLINESS CHURCH OF WAKE CO. INC. DEED BOOK 10124 PAGE 2778

GROVER ARCHIE UNDERHILL JR BOOK OF MAPS 1952 PAGE 581

MT. CALVARY HOLINESS CHURCH OF WAKE CO. INC. PIN: 1757960324 DB 11124 PG 2778 LOT 1 - BM 2002 PG 991

CECIL L. GOODNIGHT AND WIFE, JUDY J. GOODNIGHT PIN: 1757641415 DB 5344 PG 819

ABAHOR ELIAS AND SPOUSE, SUSAN ELIAS PIN: 1757553215 DB 17220 PG 2509 LOT 3 - BM 2018 PG 1333

CHRISTOPHER GHOLSON AND WIFE, KELLY GATHER GHOLSON PIN: 1757556361 DB 17555 PG 407 LOT 4 - BM 2018 PG 1333

TODD KENDALL HONEYCUTT PIN: 1757551202 DB 13474 PG 1974 LOT 2 - BM 2018 PG 1333

CURTIS L. HONEYCUTT AND WIFE, CHARITY M. HONEYCUTT PIN: 1757540996 DB 10488 PG 1889 LOT 1 - BM 2018 PG 1333

PHETIS JONES BRADSHER PIN: 1757349473 DB 15208 PG 2320 BM 2013 PG 868

NICHOLAS JAMES PIGNATTI AND, HOLLY BETH NIEDERHOFER PIN: 1757356587 DB 17247 PG 2571 LOT 1 - BM 2009 PG 353

HEATHER MARIE PERRY PIN: 1757387582 DB 18954 PG 338 LOT 1 & 2 - BM 1990 PG 956

MEGAN KULAWIAK DEED BOOK 16229 PAGE 1133

JERRI JO MASSEY & TAMMY G. BUTLER DB 9265 PG 202

MARCIE HOLDEN DEED BOOK 15599 PAGE 1

BERNARD MILLER DEED BOOK 15479 PAGE 1651

KENNETH S. TOUTLOFF DEED BOOK 9236 PAGE 2229

LEGEND:

DRAINAGE AREA

7°32'15.0"
NC GRID NORTH - NAD 83
ADOPTED BOM 1992 PG 655
MAGNETIC NORTH
ADOPTED BOM 1980 PG 396

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

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No.	REVISIONS	DATE	BY

NORTH CAROLINA PROFESSIONAL SEAL 036225 ENGINEER JOSHUA W. LAMBERT
SEAL

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STRONG ROCK PROJECT	PSP-23-03
NOT FOR CONSTRUCTION	
SCALE	AS SHOWN
DESIGNED BY	JWL
DRAWN BY	SRG
CHECKED BY	JWL

RESERVE @ MITCHELL MILL
TOWN OF ROLESVILLE, WAKE COUNTY, NORTH CAROLINA
CONSTRUCTION PLANS

THE DRAINAGE MAP
EXHIBIT - 02

DRAWING SHEET
EX-02

02 OF 02

RAINFALL DATA

NOAA Atlas 14, Volume 2, Version 3
Location name: Wake Forest, North Carolina, USA*
Latitude: 35.8807°, Longitude: -78.4771°
Elevation: 282 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	4.85 (4.44-5.30)	5.63 (5.16-6.16)	6.42 (5.89-7.01)	7.21 (6.59-7.86)	7.99 (7.28-8.71)	8.62 (7.81-9.40)	9.17 (8.27-10.0)	9.66 (8.66-10.5)	10.2 (9.07-11.1)	10.7 (9.43-11.7)
10-min	3.87 (3.55-4.24)	4.50 (4.13-4.92)	5.14 (4.72-5.61)	5.76 (5.27-6.29)	6.37 (5.80-6.94)	6.86 (6.22-7.48)	7.29 (6.57-7.94)	7.66 (6.86-8.35)	8.07 (7.18-8.81)	8.42 (7.42-9.21)
15-min	3.22 (2.95-3.53)	3.77 (3.46-4.12)	4.34 (3.98-4.73)	4.86 (4.44-5.30)	5.38 (4.90-5.87)	5.79 (5.25-6.31)	6.14 (5.54-6.69)	6.44 (5.78-7.03)	6.77 (6.02-7.40)	7.04 (6.21-7.71)
30-min	2.21 (2.02-2.42)	2.61 (2.39-2.85)	3.08 (2.82-3.36)	3.52 (3.22-3.84)	3.99 (3.63-4.35)	4.36 (3.96-4.75)	4.70 (4.24-5.12)	5.02 (4.49-5.47)	5.39 (4.79-5.88)	5.70 (5.03-6.24)
60-min	1.38 (1.26-1.51)	1.64 (1.50-1.79)	1.98 (1.81-2.16)	2.29 (2.10-2.50)	2.65 (2.42-2.89)	2.96 (2.68-3.22)	3.24 (2.92-3.53)	3.52 (3.15-3.84)	3.87 (3.44-4.22)	4.16 (3.67-4.56)
2-hr	0.806 (0.732-0.889)	0.959 (0.875-1.05)	1.17 (1.07-1.29)	1.38 (1.25-1.51)	1.62 (1.46-1.77)	1.83 (1.64-2.00)	2.03 (1.81-2.22)	2.24 (1.98-2.44)	2.50 (2.20-2.74)	2.74 (2.38-3.00)
3-hr	0.568 (0.516-0.629)	0.677 (0.618-0.747)	0.830 (0.755-0.915)	0.981 (0.890-1.08)	1.16 (1.05-1.28)	1.33 (1.19-1.46)	1.49 (1.32-1.63)	1.66 (1.46-1.82)	1.88 (1.64-2.06)	2.09 (1.80-2.30)
6-hr	0.342 (0.312-0.377)	0.407 (0.373-0.448)	0.500 (0.456-0.549)	0.591 (0.538-0.648)	0.705 (0.637-0.771)	0.807 (0.725-0.882)	0.909 (0.810-0.992)	1.02 (0.897-1.11)	1.16 (1.01-1.27)	1.30 (1.11-1.42)
12-hr	0.200 (0.183-0.220)	0.238 (0.219-0.262)	0.294 (0.269-0.322)	0.350 (0.319-0.383)	0.420 (0.380-0.459)	0.484 (0.435-0.527)	0.549 (0.488-0.597)	0.619 (0.544-0.672)	0.715 (0.619-0.776)	0.804 (0.685-0.873)
24-hr	0.119 (0.111-0.128)	0.144 (0.134-0.155)	0.181 (0.168-0.195)	0.211 (0.195-0.227)	0.251 (0.232-0.270)	0.283 (0.261-0.305)	0.316 (0.290-0.341)	0.351 (0.321-0.378)	0.398 (0.363-0.430)	0.436 (0.395-0.472)
2-day	0.069 (0.064-0.074)	0.083 (0.077-0.089)	0.103 (0.096-0.112)	0.120 (0.111-0.129)	0.142 (0.131-0.153)	0.160 (0.147-0.172)	0.178 (0.163-0.192)	0.197 (0.180-0.212)	0.222 (0.203-0.241)	0.243 (0.220-0.263)
3-day	0.048 (0.045-0.052)	0.058 (0.054-0.063)	0.073 (0.068-0.078)	0.084 (0.078-0.090)	0.099 (0.092-0.106)	0.111 (0.103-0.120)	0.124 (0.114-0.133)	0.137 (0.126-0.147)	0.155 (0.141-0.167)	0.169 (0.153-0.182)
4-day	0.038 (0.036-0.041)	0.046 (0.043-0.049)	0.057 (0.053-0.061)	0.066 (0.061-0.070)	0.078 (0.072-0.083)	0.087 (0.081-0.093)	0.097 (0.089-0.104)	0.107 (0.098-0.115)	0.121 (0.110-0.130)	0.132 (0.120-0.142)
7-day	0.025 (0.024-0.027)	0.030 (0.028-0.032)	0.037 (0.035-0.039)	0.042 (0.040-0.045)	0.050 (0.046-0.053)	0.056 (0.052-0.059)	0.062 (0.057-0.066)	0.068 (0.063-0.073)	0.076 (0.070-0.082)	0.083 (0.076-0.089)
10-day	0.020 (0.019-0.021)	0.024 (0.022-0.025)	0.029 (0.027-0.031)	0.033 (0.031-0.035)	0.038 (0.036-0.041)	0.042 (0.039-0.045)	0.046 (0.043-0.050)	0.051 (0.047-0.054)	0.057 (0.052-0.061)	0.061 (0.056-0.066)
20-day	0.013 (0.012-0.014)	0.016 (0.015-0.017)	0.019 (0.018-0.020)	0.021 (0.020-0.022)	0.024 (0.023-0.026)	0.027 (0.025-0.029)	0.029 (0.027-0.031)	0.032 (0.030-0.034)	0.035 (0.033-0.038)	0.038 (0.035-0.041)
30-day	0.011 (0.010-0.012)	0.013 (0.012-0.014)	0.015 (0.014-0.016)	0.017 (0.016-0.018)	0.019 (0.018-0.020)	0.021 (0.019-0.022)	0.023 (0.021-0.024)	0.024 (0.023-0.026)	0.027 (0.025-0.028)	0.028 (0.026-0.030)
45-day	0.009 (0.009-0.010)	0.011 (0.010-0.011)	0.012 (0.012-0.013)	0.014 (0.013-0.015)	0.015 (0.015-0.016)	0.017 (0.016-0.018)	0.018 (0.017-0.019)	0.019 (0.018-0.020)	0.021 (0.019-0.022)	0.022 (0.020-0.023)
60-day	0.008 (0.008-0.009)	0.010 (0.009-0.010)	0.011 (0.010-0.012)	0.012 (0.011-0.013)	0.013 (0.013-0.014)	0.014 (0.014-0.015)	0.015 (0.014-0.016)	0.016 (0.015-0.017)	0.018 (0.016-0.019)	0.018 (0.017-0.020)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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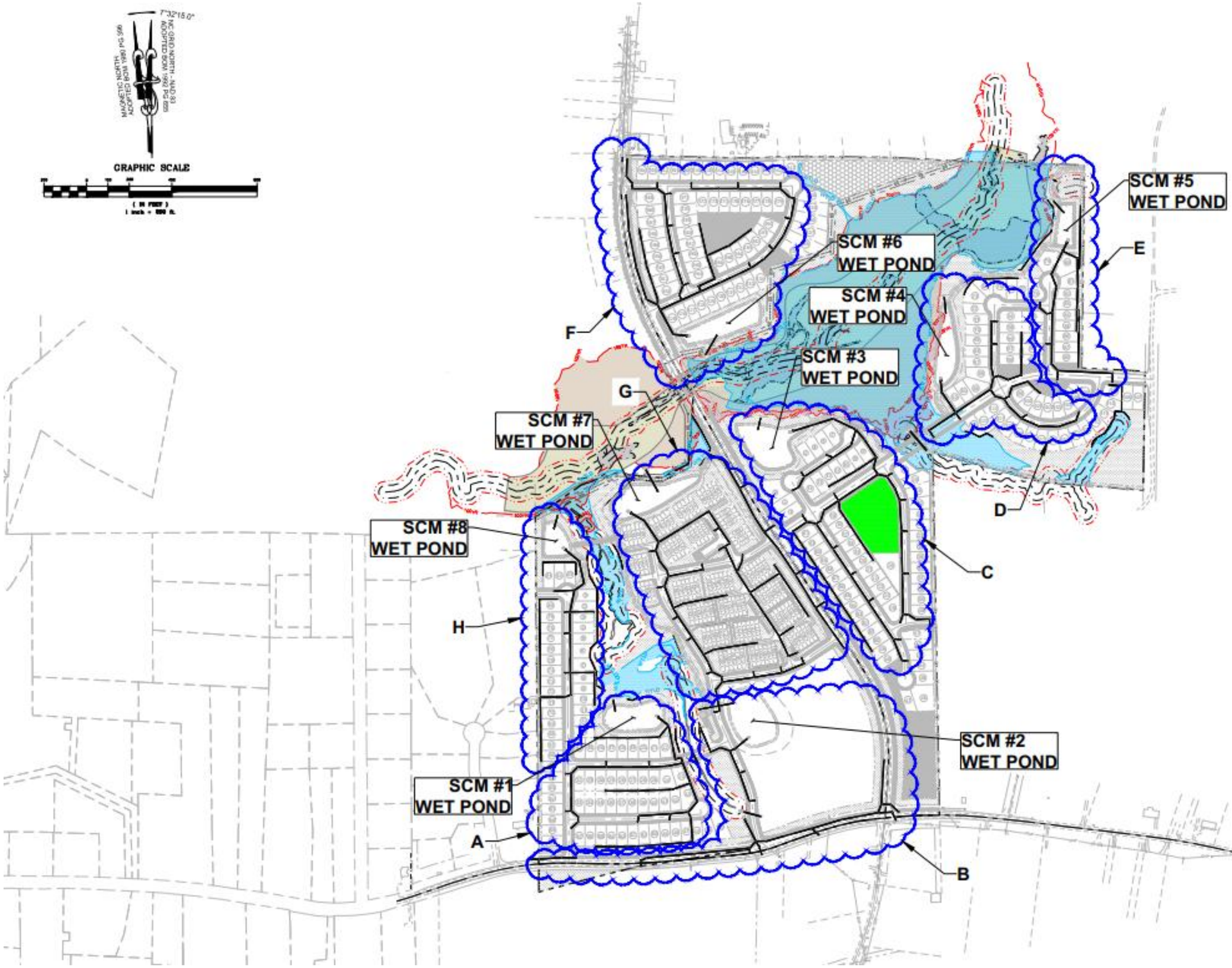
PF graphical

THE TABLE REPORT & PROFILE HGL OUTPUTS


7°32'15.0"
MAGNETIC NORTH
ADOPTED 1995
NC GRID NORTH - NAD 83
ADOPTED 2001
GRAPHIC SCALE
SCM #5
WET POND
SCM #6
WET POND
SCM #4
WET POND
SCM #3
WET POND
SCM #7
WET POND
SCM #8
WET POND
SCM #2
WET POND
SCM #1
WET POND
E
F
G
D
C
H
A
B

S T O R M W A T E R AREA " A "

STORMWATER PIPING AND HYDRAULIC GRADE LINE FOR 10-YR STORM

PLAN VIEW

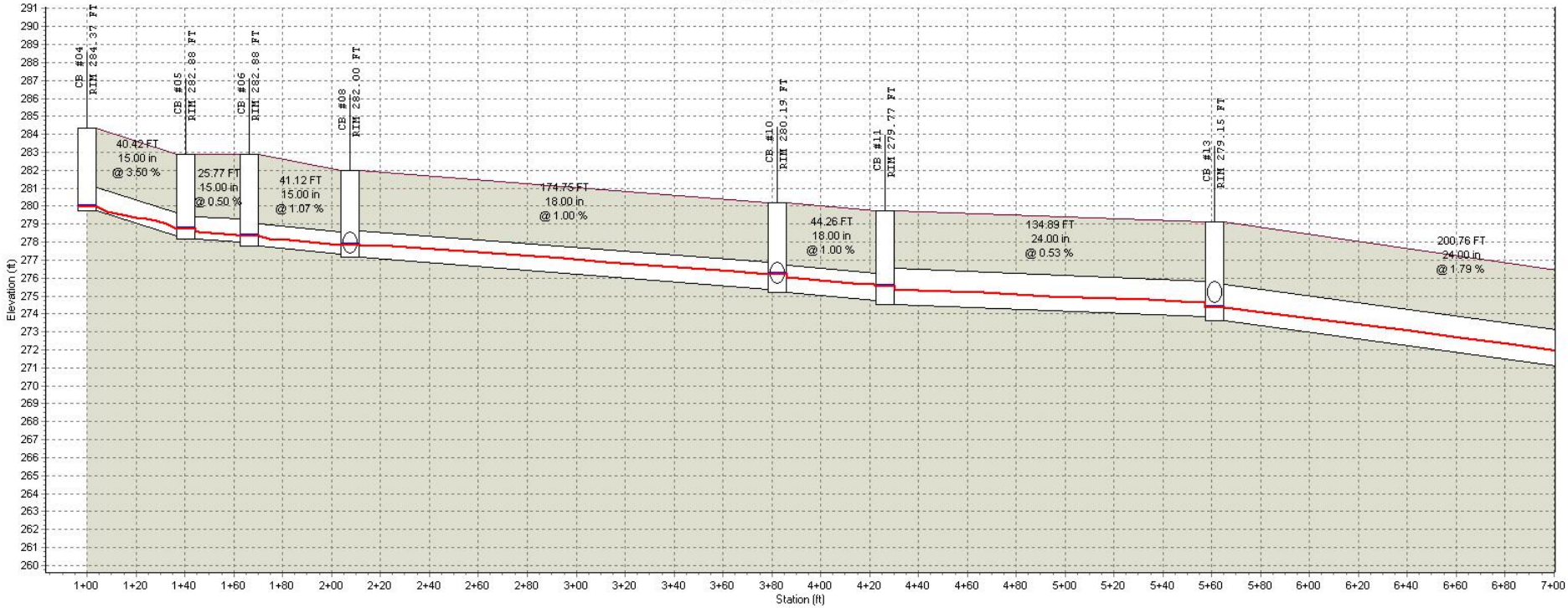
DRAINAGE AREA

SN	Element ID	Area (acres)	Drainage Node ID	Weighted Runoff Coefficient	Accumulated Precipitation (inches)	Total Runoff (inches)	Peak Runoff (cfs)	Rainfall Intensity (inches/hr)	Time of Concentration (days hh:mm:ss)
1	Sub-CB#04	0.11	CB #04	0.8700	0.60	0.52	0.69	7.210	0 00:05:00
2	Sub-CB#05	0.17	CB #05	0.7500	0.60	0.45	0.92	7.210	0 00:05:00
3	Sub-CB#06	0.10	CB #06	0.7900	0.60	0.48	0.57	7.210	0 00:05:00
4	Sub-CB#07	0.42	CB #07	0.7500	0.60	0.45	2.27	7.210	0 00:05:00
5	Sub-CB#08	0.04	CB #08	0.8700	0.60	0.52	0.25	7.210	0 00:05:00
6	Sub-CB#09	0.28	CB #09	0.7500	0.60	0.45	1.51	7.210	0 00:05:00
7	Sub-CB#10	0.13	CB #10	0.7900	0.60	0.48	0.74	7.210	0 00:05:00
8	Sub-CB#11	0.16	CB #11	0.7500	0.60	0.45	0.87	7.210	0 00:05:00
9	Sub-CB#12	0.14	CB #12	0.7500	0.60	0.45	0.76	7.210	0 00:05:00
10	Sub-CB#13	0.15	CB #13	0.7500	0.60	0.45	0.81	7.210	0 00:05:00
11	Sub-CB#14	0.36	CB #14	0.7500	0.60	0.45	1.95	7.210	0 00:05:00
12	Sub-CB#16	0.36	CB #16	0.7500	0.60	0.45	1.95	7.210	0 00:05:00
13	Sub-CB#17	0.15	CB #17	0.7500	0.60	0.45	0.81	7.210	0 00:05:00
14	Sub-CB#18	0.40	CB #18	0.7500	0.60	0.45	2.16	7.210	0 00:05:00
15	Sub-CB#19	0.40	CB #19	0.7500	0.60	0.45	2.16	7.210	0 00:05:00
16	Sub-CB#20	0.27	CB #20	0.7500	0.60	0.45	1.46	7.210	0 00:05:00
17	Sub-CB#21	0.28	CB #21	0.7500	0.60	0.45	1.51	7.210	0 00:05:00
18	Sub-CB#22	0.18	CB #22	0.7500	0.60	0.45	0.97	7.210	0 00:05:00
19	Sub-CB#23	0.11	CB #23	0.7500	0.60	0.45	0.60	7.210	0 00:05:00
20	Sub-CB#24	0.55	CB #24	0.7500	0.60	0.45	2.97	7.210	0 00:05:00
21	Sub-CB#25	0.25	CB #25	0.7500	0.60	0.45	1.35	7.210	0 00:05:00
22	Sub-CB#26	0.06	CB #26	0.8700	0.60	0.52	0.38	7.210	0 00:05:00
23	Sub-CB#27	0.22	CB #27	0.7500	0.60	0.45	1.19	7.210	0 00:05:00
24	Sub-YI#601	0.21	YI #601	0.7500	0.60	0.45	1.14	7.210	0 00:05:00
25	Sub-YI#602	0.33	YI #602	0.7500	0.60	0.45	1.78	7.210	0 00:05:00
26	Sub-YI#603	0.34	YI #603	0.7500	0.60	0.45	1.84	7.210	0 00:05:00
27	Sub-YI#604	0.80	YI #604	0.7500	0.60	0.45	4.33	7.210	0 00:05:00
28	Sub-YI#605	0.35	YI #605	0.7500	0.60	0.45	1.89	7.210	0 00:05:00
29	Sub-YI#606	0.34	YI #606	0.7500	0.60	0.45	1.84	7.210	0 00:05:00
30	Sub-YI#607	0.31	YI #607	0.7500	0.60	0.45	1.68	7.210	0 00:05:00
31	Sub-YI#608	0.23	YI #608	0.7500	0.60	0.45	1.24	7.210	0 00:05:00
32	Sub-YI#609	0.11	YI #609	0.7500	0.60	0.45	0.60	7.210	0 00:05:00
33	Sub-YI#610	0.19	YI #610	0.7500	0.60	0.45	1.03	7.210	0 00:05:00
34	Sub-YI#611	0.24	YI #611	0.7500	0.60	0.45	1.30	7.210	0 00:05:00

MODEL INPUT											MODEL OUTPUT									
SN	Element ID	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Total Drop (ft)	Average Slope (%)	Pipe Diameter or Height (inches)	Manning's Roughness	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Max Flow Velocity (ft/sec)	Travel Time (min)	Design Flow Capacity (cfs)	Additional flow capacity (cfs)	Max Flow / Design Flow Ratio	Max Flow Depth / Total Depth Ratio	Total Time Surcharged (min)	Max Flow Depth (ft)	Reported Condition
1	P #04	CB #04	CB #05	40.42	279.77	278.36	1.41	3.5000	15.000	0.0130	0.67	0 00:05	3.73	0.18	12.09	11.42	0.06	0.24	0.00	0.30	Calculated
2	P #05	CB #05	CB #06	25.77	278.16	278.03	0.13	0.5000	15.000	0.0130	1.53	0 00:05	2.99	0.14	4.57	3.04	0.33	0.43	0.00	0.54	Calculated
3	P #06	CB #06	CB #08	41.12	277.78	277.34	0.44	1.0700	15.000	0.0130	2.02	0 00:05	4.15	0.17	6.69	4.67	0.30	0.42	0.00	0.52	Calculated
4	P #07	CB #07	CB #08	25.98	277.58	277.34	0.24	0.9200	15.000	0.0130	1.86	0 00:05	3.79	0.11	6.21	4.35	0.30	0.42	0.00	0.53	Calculated
5	P #08	CB #08	CB #10	174.75	277.14	275.39	1.75	1.0000	18.000	0.0130	4.09	0 00:05	4.59	0.63	10.51	6.42	0.39	0.50	0.00	0.75	Calculated
6	P #09	CB #09	CB #10	25.72	275.76	275.63	0.13	0.5000	15.000	0.0130	1.53	0 00:05	2.81	0.15	4.57	3.04	0.34	0.47	0.00	0.59	Calculated
7	P #10	CB #10	CB #11	44.26	275.19	274.75	0.44	1.0000	18.000	0.0130	6.01	0 00:05	5.32	0.14	10.51	4.50	0.57	0.61	0.00	0.92	Calculated
8	P #11	CB #11	CB #13	134.89	274.55	273.84	0.71	0.5300	24.000	0.0130	6.64	0 00:06	4.57	0.49	16.40	9.76	0.40	0.47	0.00	0.94	Calculated
9	P #12	CB #12	CB #13	25.72	274.71	274.58	0.13	0.5000	15.000	0.0130	0.69	0 00:05	2.45	0.17	4.57	3.88	0.15	0.28	0.00	0.35	Calculated
10	P #13	CB #13	CB #16	200.76	273.64	270.05	3.58	1.7900	24.000	0.0130	7.85	0 00:06	6.87	0.49	30.23	22.38	0.26	0.39	0.00	0.79	Calculated
11	P #14	CB #14	CB #16	25.72	270.89	270.76	0.13	0.5000	15.000	0.0130	1.52	0 00:05	2.99	0.14	4.57	3.05	0.33	0.43	0.00	0.54	Calculated
12	P #15	CB #16	CB #17	87.06	269.85	268.60	1.25	1.4300	24.000	0.0130	10.44	0 00:06	7.08	0.20	27.10	16.66	0.39	0.48	0.00	0.95	Calculated
13	P #16	CB #17	CB #25	71.92	268.40	266.98	1.42	1.9800	24.000	0.0130	11.38	0 00:06	7.91	0.15	31.84	20.46	0.36	0.48	0.00	0.96	Calculated
14	P #18	YI #602	YI #603	155.38	274.60	272.19	2.41	1.5500	15.000	0.0130	2.79	0 00:05	5.67	0.46	8.04	5.25	0.35	0.42	0.00	0.53	Calculated
15	P #19	YI #603	YI #604	150.02	271.99	270.19	1.80	1.2000	18.000	0.0130	4.46	0 00:05	5.68	0.44	11.51	7.05	0.39	0.46	0.00	0.69	Calculated
16	P #20	YI #604	CB #22	113.04	269.68	269.09	0.59	0.5200	24.000	0.0130	8.25	0 00:05	4.72	0.40	16.32	8.07	0.51	0.55	0.00	1.09	Calculated
17	P #21	CB #22	CB #23	29.47	268.89	268.66	0.23	0.7800	30.000	0.0130	9.17	0 00:05	5.16	0.10	36.33	27.16	0.25	0.39	0.00	0.98	Calculated
18	P #22	CB #18	CB #19	26.47	274.10	273.93	0.17	0.6300	15.000	0.0130	1.66	0 00:05	3.27	0.13	5.11	3.45	0.32	0.43	0.00	0.54	Calculated
19	P #23	CB #19	CB #21	149.19	273.58	270.29	3.29	2.2000	15.000	0.0130	3.33	0 00:05	6.43	0.39	9.59	6.26	0.35	0.45	0.00	0.56	Calculated
20	P #24	CB #20	CB #21	26.71	270.56	270.43	0.13	0.5000	15.000	0.0130	1.70	0 00:05	3.08	0.14	4.57	2.87	0.37	0.46	0.00	0.58	Calculated
21	P #25	CB #21	CB #23	83.79	270.00	268.60	1.40	1.6700	18.000	0.0130	6.65	0 00:05	6.84	0.20	13.58	6.93	0.49	0.54	0.00	0.81	Calculated
22	P #26	CB #23	CB #24	64.19	267.88	266.92	0.96	1.5000	30.000	0.0130	16.41	0 00:05	5.85	0.18	50.24	33.83	0.33	0.58	0.00	1.45	Calculated
23	P #27	CB #24	YI #608	92.09	266.71	266.25	0.46	0.5000	36.000	0.0130	18.78	0 00:05	4.68	0.33	47.42	28.64	0.40	0.61	0.00	1.82	Calculated
24	P #28	YI #605	YI #606	150.00	276.24	273.55	2.69	1.8000	15.000	0.0130	1.87	0 00:05	5.03	0.50	8.66	6.79	0.22	0.35	0.00	0.43	Calculated
25	P #29	YI #606	YI #607	158.24	273.35	271.33	2.02	1.2800	15.000	0.0130	3.50	0 00:05	5.59	0.47	7.30	3.80	0.48	0.51	0.00	0.64	Calculated
26	P #30	YI #607	YI #608	92.62	271.13	268.00	3.13	3.3800	15.000	0.0130	5.01	0 00:05	8.50	0.18	11.87	6.86	0.42	0.49	0.00	0.61	Calculated
27	P #31	YI #608	CB #25	101.87	266.05	265.18	0.87	0.8600	36.000	0.0130	23.69	0 00:06	4.50	0.38	61.78	38.09	0.38	0.80	0.00	2.39	Calculated
28	P #32	CB #25	CB #26	25.66	264.98	264.86	0.13	0.5000	36.000	0.0130	35.93	0 00:06	5.49	0.08	47.16	11.23	0.76	0.87	0.00	2.62	Calculated
29	P #33	CB #26	CB #27	29.26	264.66	264.31	0.35	1.1800	36.000	0.0130	36.21	0 00:06	6.33	0.08	72.56	36.35	0.50	0.77	0.00	2.32	Calculated
30	P #34	CB #27	SDMH #501	160.90	264.11	263.05	1.06	0.6600	36.000	0.0130	37.27	0 00:06	7.13	0.38	54.03	16.76	0.69	0.70	0.00	2.09	Calculated
31	P #35	YI #609	YI #610	155.00	274.45	271.29	3.16	2.0400	15.000	0.0130	0.56	0 00:05	4.06	0.64	9.22	8.66	0.06	0.17	0.00	0.21	Calculated
32	P #36	YI #610	YI #611	146.69	271.09	268.37	2.71	1.8500	15.000	0.0130	1.51	0 00:05	5.18	0.47	8.79	7.28	0.17	0.29	0.00	0.36	Calculated
33	P #37	YI #611	SDMH #501	71.25	268.17	264.85	3.32	4.6600	15.000	0.0130	2.72	0 00:05	8.18	0.15	13.94	11.22	0.19	0.32	0.00	0.39	Calculated
34	P #38	SDMH #501	FES#301	61.07	262.85	262.00	0.85	1.4000	36.000	0.0130	39.55	0 00:06	8.93	0.11	78.85	39.30	0.50	0.60	0.00	1.80	Calculated
35	P#17	YI #601	YI #602	150.01	278.97	274.80	4.17	2.7800	15.000	0.0150	1.13	0 00:05	4.67	0.54	9.34	8.21	0.12	0.25	0.00	0.32	Calculated

Profile Plot

Main Street Storm Sewer



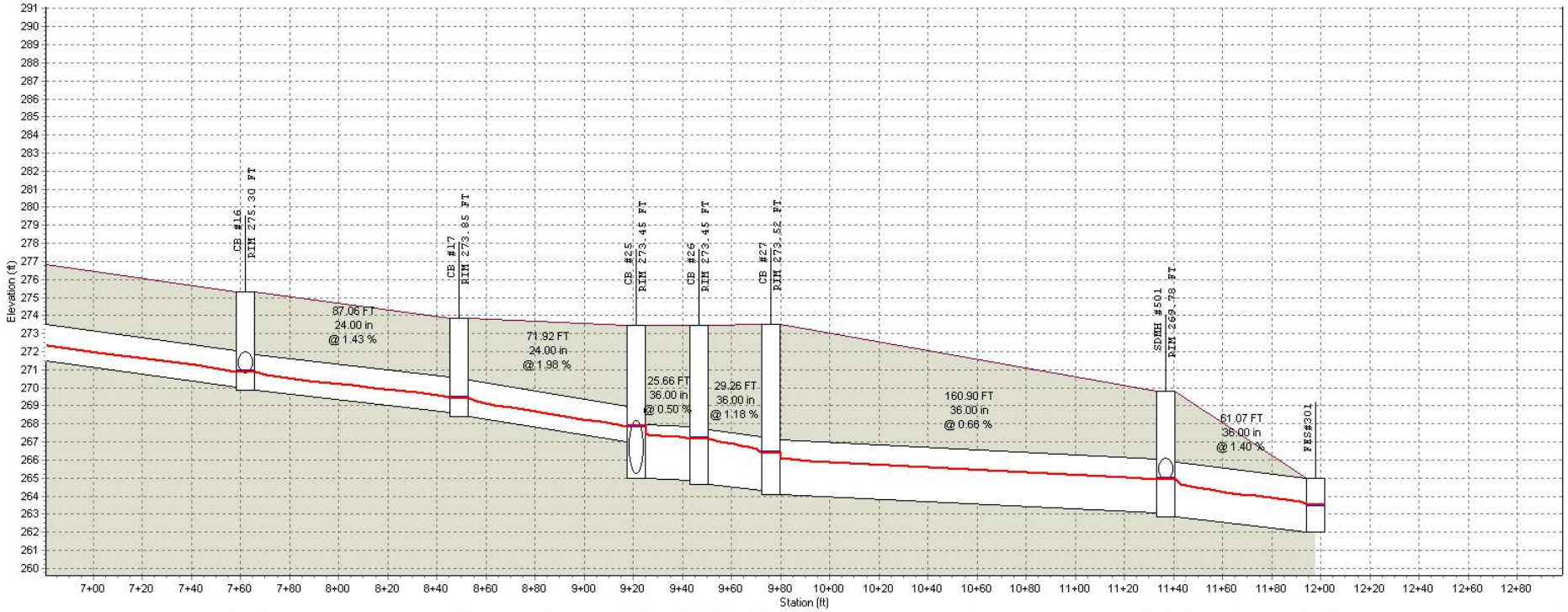
:	CB #04	CB #05	CB #06	CB #08	CB #10	CB #11	CB #13	
RIM (FT):	284.37	282.88	282.88	282.00	280.19	279.77	279.15	
Invert (ft):	279.77	278.16	277.78	277.14	275.19	274.55	273.64	
Min Pipe Cover (ft):								
Max HGL (ft):	279.97	278.75	278.34	277.83	276.21	275.55	274.37	

Link ID:	P #04	P #05	P #06	P #08	P #10	P #11	P #13
(FT):	40.42	25.77	41.12	174.75	44.26	134.89	200.76
(in):	15.00	15.00	15.00	18.00	18.00	24.00	24.00
@ (%):	3.50	0.50	1.07	1.00	1.00	0.53	1.79
Up Invert (ft):	279.77	278.16	277.78	277.14	275.19	274.55	273.64
Dn Invert (ft):	278.36	278.03	277.34	275.39	274.75	273.84	270.05
Max Q (cfs):	0.67	1.53	2.02	4.09	6.01	6.64	7.85
Max Vel (ft/s):	3.73	2.99	4.15	4.59	5.32	4.57	6.87
Max Depth (ft):	0.30	0.54	0.52	0.75	0.92	0.94	0.79

HGL

Profile Plot

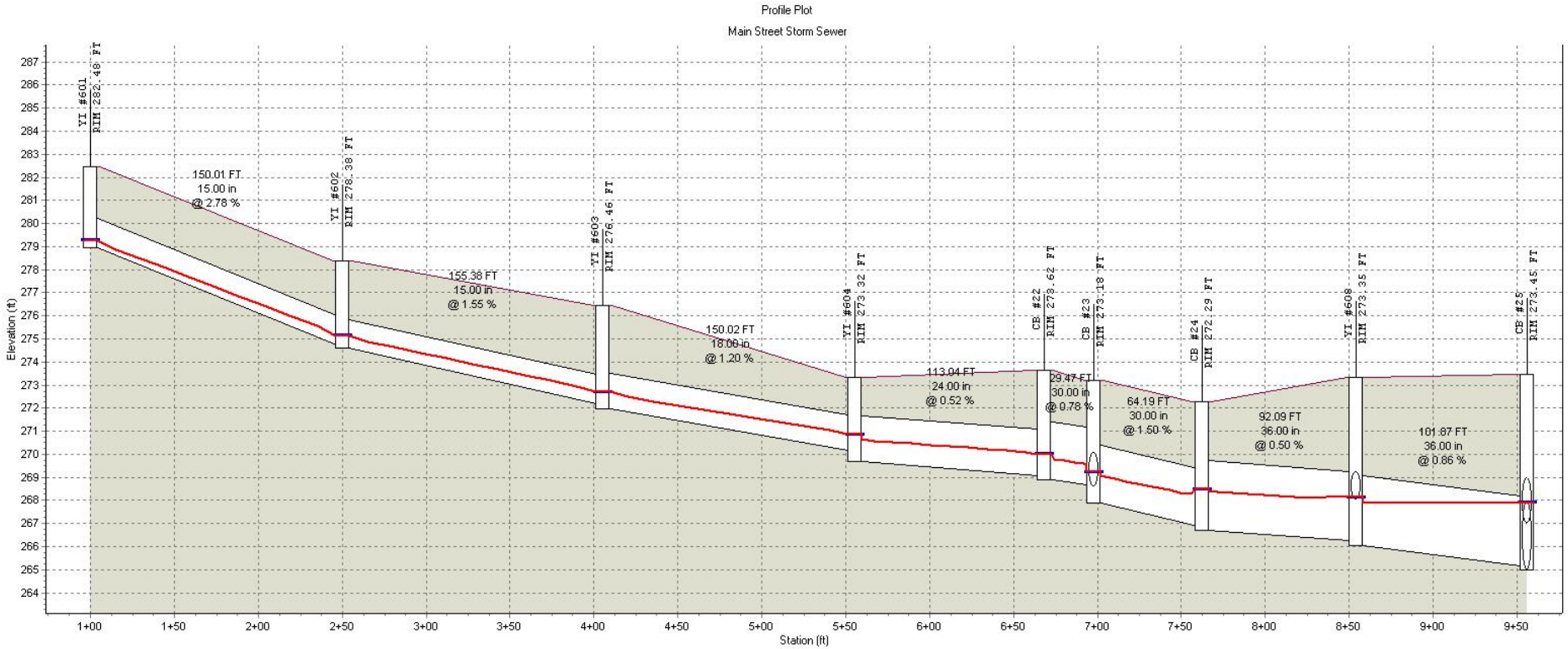
Main Street Storm Sewer



:	CB #16	CB #17	CB #25	CB #26	CB #27	SDMH #501	FES#301
RIM (FT):	275.30	273.85	273.45	273.45	273.52	269.78	
Invert (ft):	269.85	268.40	264.98	264.66	264.11	262.85	262.00
Min Pipe Cover (ft):						3.68	
Max HGL (ft):	270.90	269.43	267.88	267.20	266.40	264.95	263.50

Link ID:	P #15	P #16	P #32	P #33	P #34	P #38
(FT):	87.06	71.92	25.66	29.26	160.90	61.07
(in):	24.00	24.00	36.00	36.00	36.00	36.00
@ (%):	1.43	1.98	0.50	1.18	0.66	1.40
Up Invert (ft):	269.85	268.40	264.98	264.66	264.11	262.85
Dn Invert (ft):	268.60	266.98	264.86	264.31	263.05	262.00
Max Q (cfs):	10.44	11.38	35.93	36.21	37.27	39.55
Max Vel (ft/s):	7.08	7.91	5.49	6.33	7.13	8.93
Max Depth (ft):	0.95	0.96	2.62	2.32	2.09	1.80

HGL

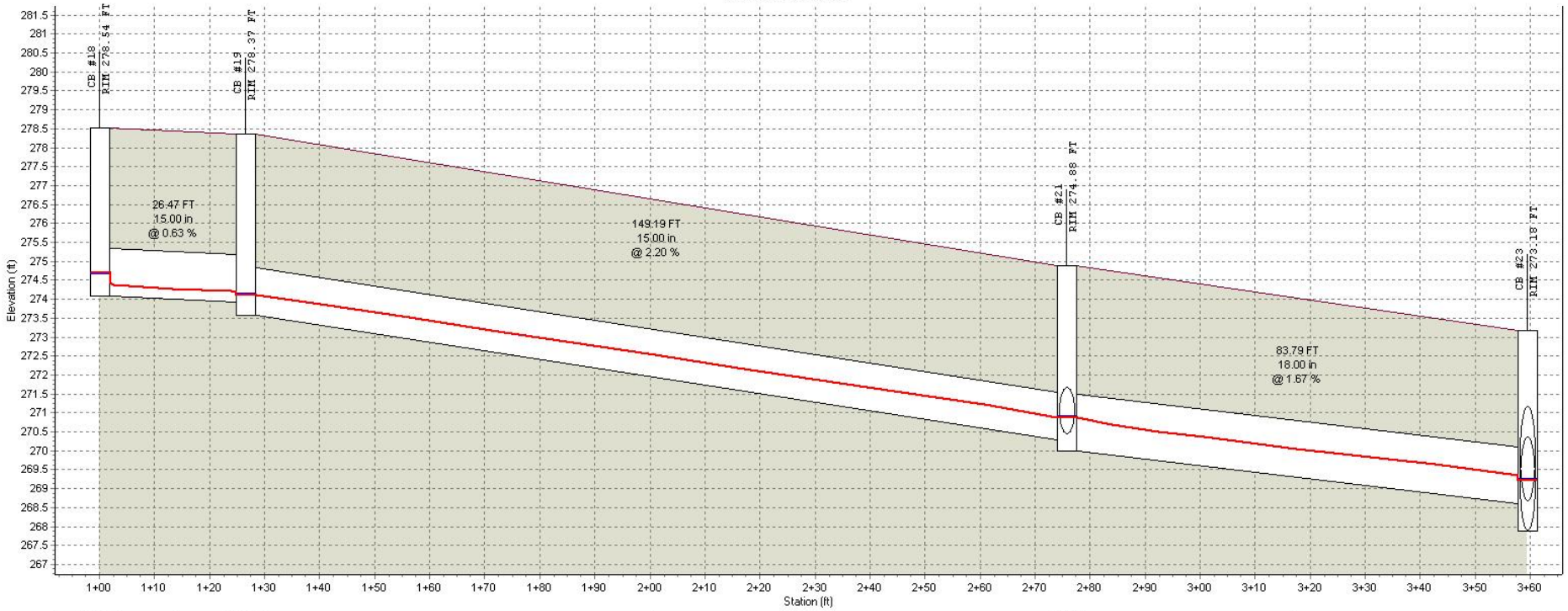


:	YI #601	YI #602	YI #603	YI #604	CB #22	CB #23	CB #24	YI #608	CB #25
RIM (FT):	282.48	278.38	276.46	273.32	273.62	273.18	272.29	273.35	273.45
Invert (ft):	278.97	274.60	271.99	269.68	268.89	267.88	266.72	266.05	264.98
Min Pipe Cover (ft):									
Max HGL (ft):	279.27	275.15	272.70	270.86	269.99	269.23	268.48	268.13	267.88

Link ID:	P#17	P #18	P #19	P #20	P #21	P #26	P #27	P #31
(FT):	150.01	155.38	150.02	113.04	29.47	64.19	92.09	101.87
(in):	15.00	15.00	18.00	24.00	30.00	30.00	36.00	36.00
@ (%):	2.78	1.55	1.20	0.52	0.78	1.50	0.50	0.86
Up Invert (ft):	278.97	274.60	271.99	269.68	268.89	267.88	266.71	266.05
Dn Invert (ft):	274.80	272.19	270.19	269.09	268.66	266.91	266.25	265.18
Max Q (cfs):	1.13	2.79	4.46	8.25	9.17	16.41	18.78	23.69
Max Vel (ft/s):	4.67	5.67	5.68	4.72	5.16	5.85	4.68	4.50
Max Depth (ft):	0.32	0.53	0.69	1.09	0.98	1.45	1.82	2.39

Profile Plot

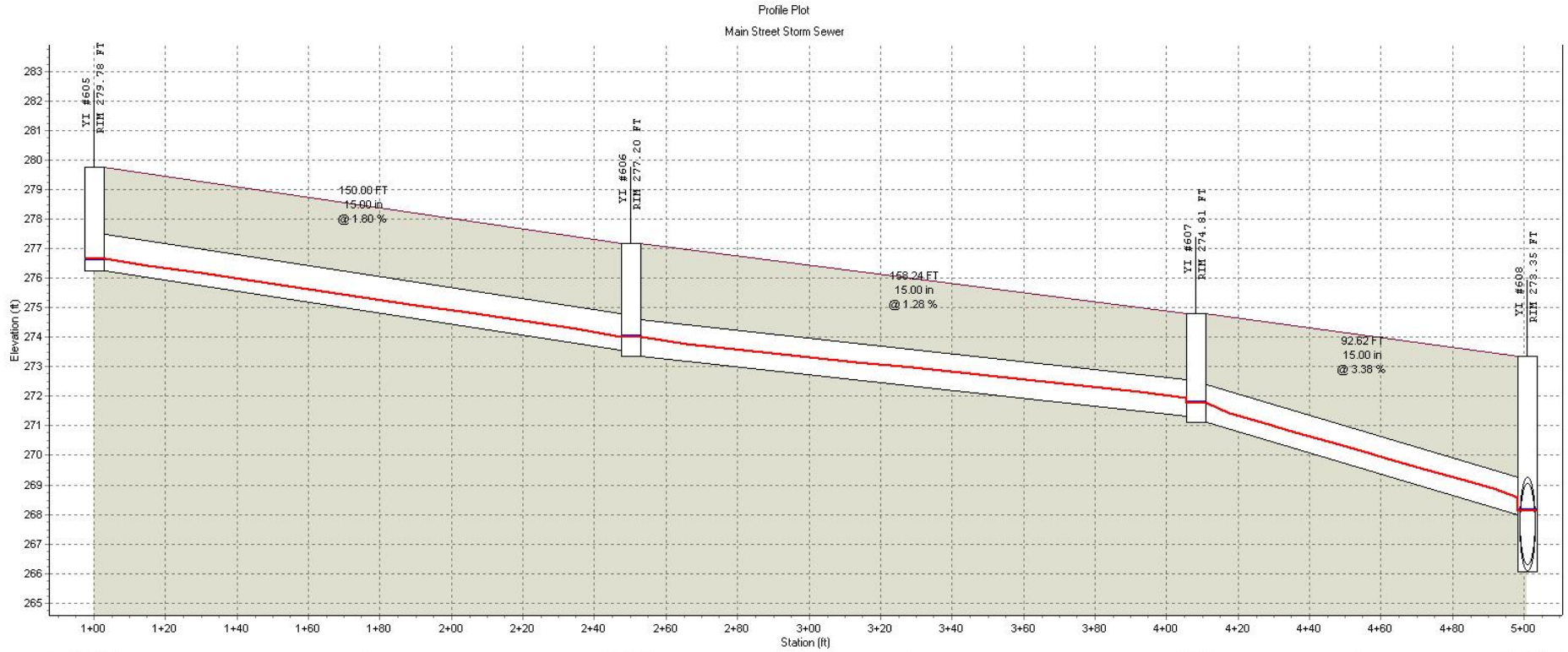
Main Street Storm Sewer



	CB #18	CB #19	CB #21	CB #23
RIM (FT):	278.54	278.37	274.88	273.18
Invert (ft):	274.10	273.58	270.00	267.88
Min Pipe Cover (ft):				
Max HGL (ft):	274.69	274.11	270.88	269.23

Link ID:	P #22	P #23	P #25
(FT):	26.47	149.19	83.79
(in):	15.00	15.00	18.00
@ (%):	0.63	2.20	1.67
Up Invert (ft):	274.10	273.58	270.00
Dn Invert (ft):	273.93	270.29	268.60
Max Q (cfs):	1.66	3.33	6.65
Max Vel (ft/s):	3.27	6.43	6.84
Max Depth (ft):	0.54	0.56	0.81

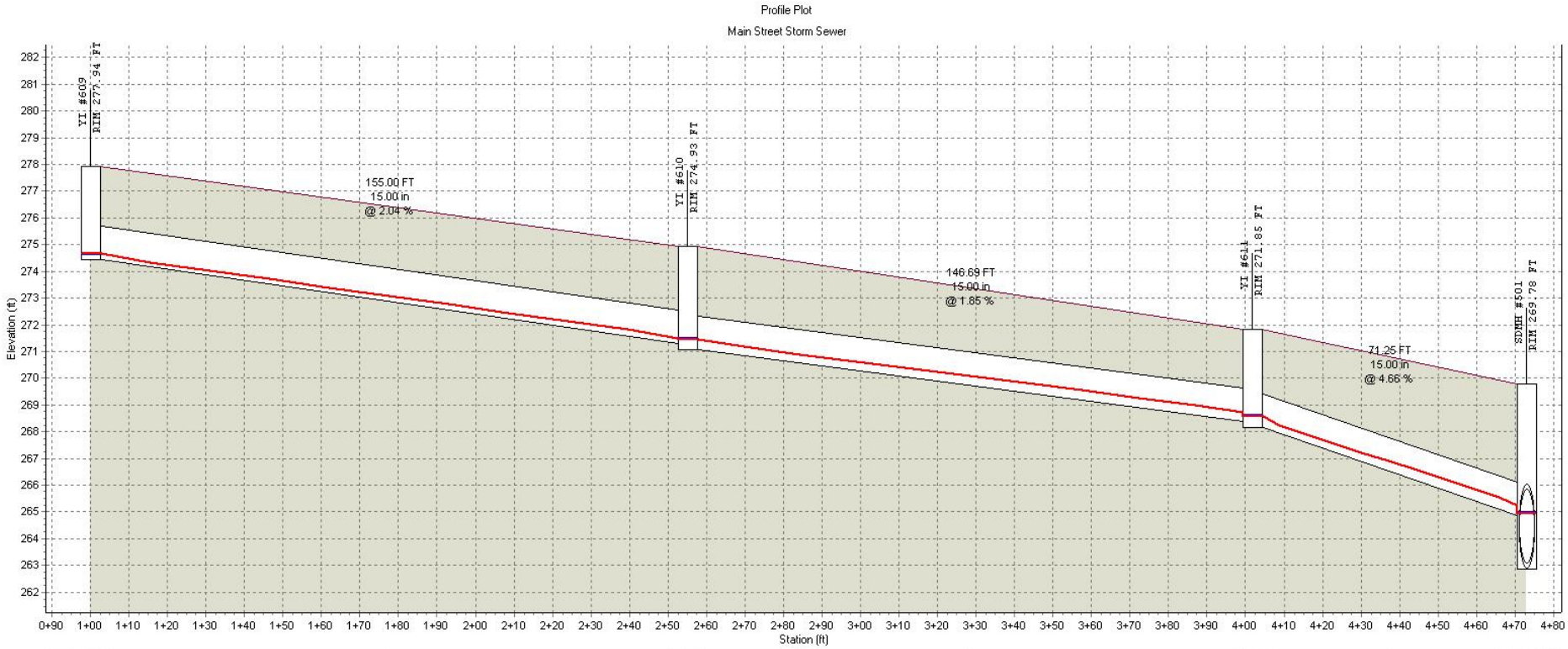
HGL



:	YI #605	YI #606	YI #607	YI #608
RIM (FT):	279.78	277.20	274.81	273.35
Invert (ft):	276.24	273.35	271.13	266.05
Min Pipe Cover (ft):				
Max HGL (ft):	276.65	274.01	271.78	268.13

Link ID:	P #28	P #29	P #30
(FT):	150.00	158.24	92.62
(in):	15.00	15.00	15.00
@ (%):	1.80	1.28	3.38
Up Invert (ft):	276.24	273.35	271.13
Dn Invert (ft):	273.55	271.33	268.00
Max Q (cfs):	1.87	3.50	5.01
Max Vel (ft/s):	5.03	5.59	8.50
Max Depth (ft):	0.43	0.64	0.61

HGL

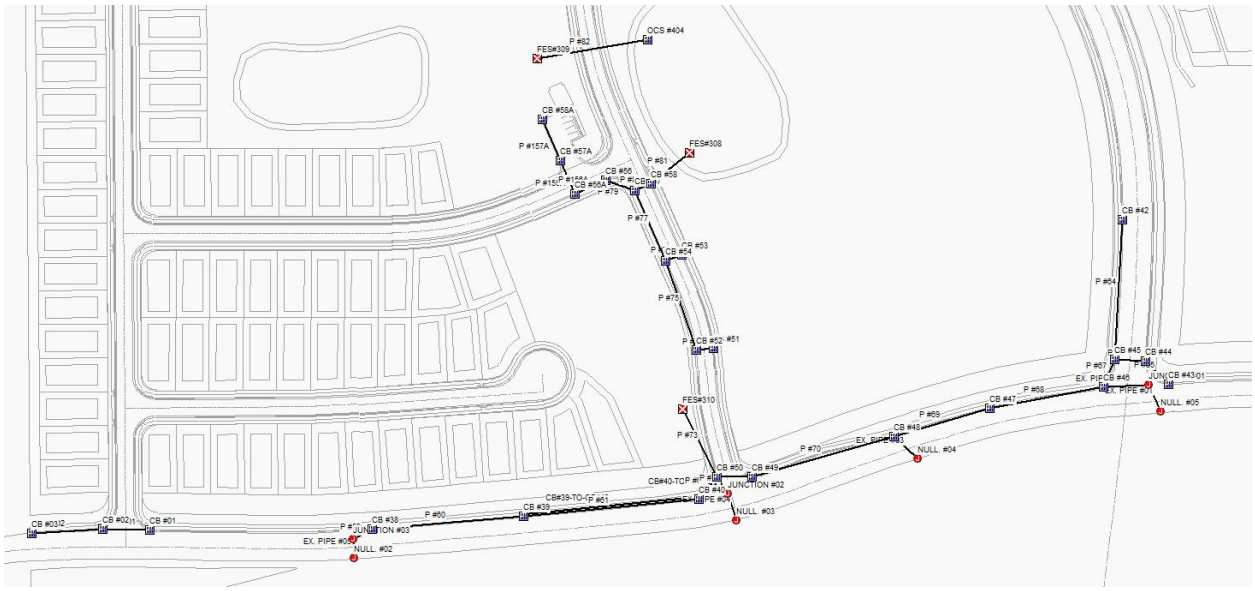


:	YI #609	YI #610	YI #611	SDMH #501
RIM (FT):	277.94	274.93	271.85	269.78
Invert (ft):	274.45	271.09	268.17	262.85
Min Pipe Cover (ft):				3.68
Max HGL (ft):	274.66	271.46	268.59	264.95

Link ID:	P #35	P #36	P #37
(FT):	155.00	146.69	71.25
(in):	15.00	15.00	15.00
@ (%):	2.04	1.85	4.66
Up Invert (ft):	274.45	271.09	268.17
Dn Invert (ft):	271.29	268.37	264.85
Max Q (cfs):	0.56	1.51	2.72
Max Vel (ft/s):	4.06	5.18	8.18
Max Depth (ft):	0.21	0.36	0.39

S T O R M W A T E R AREA " B "

STORMWATER PIPING AND HYDRAULIC GRADE LINE FOR 10-YR STORM

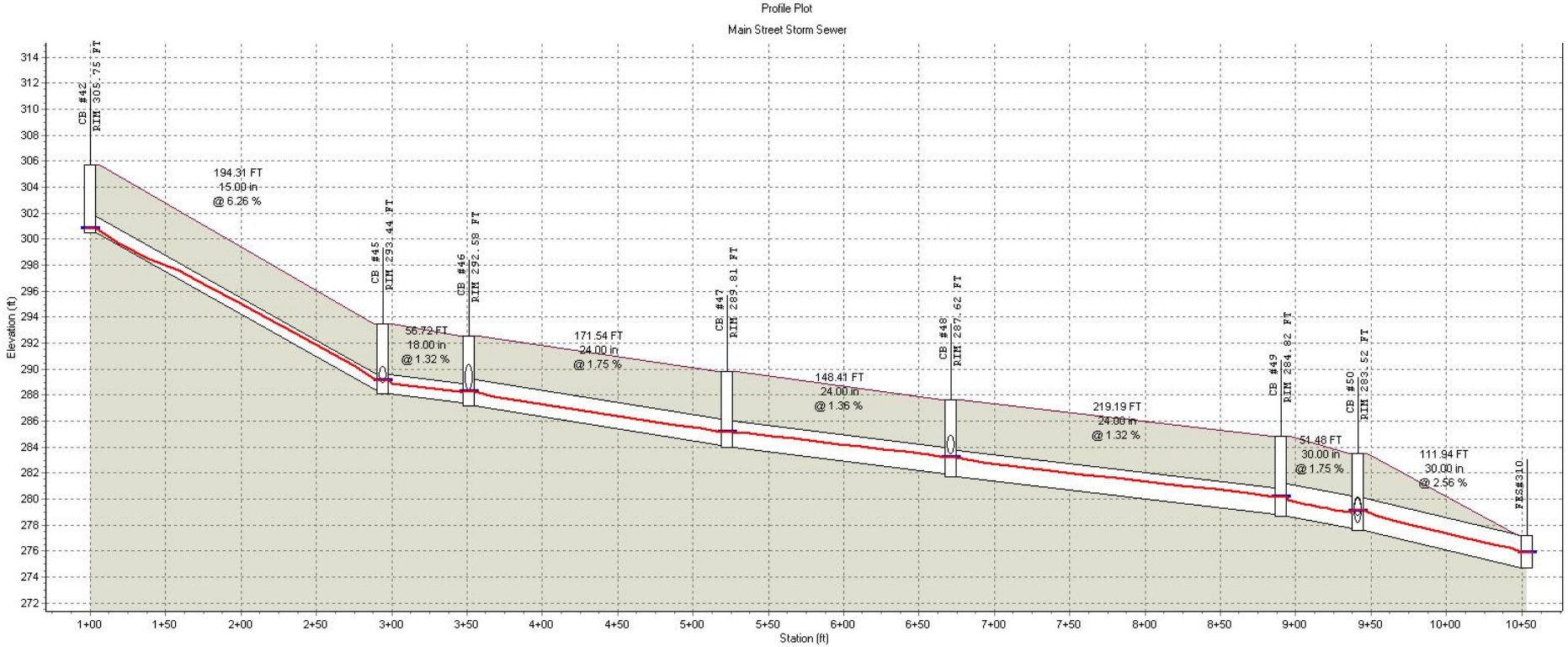


PLAN VIEW

DRAINAGE AREA

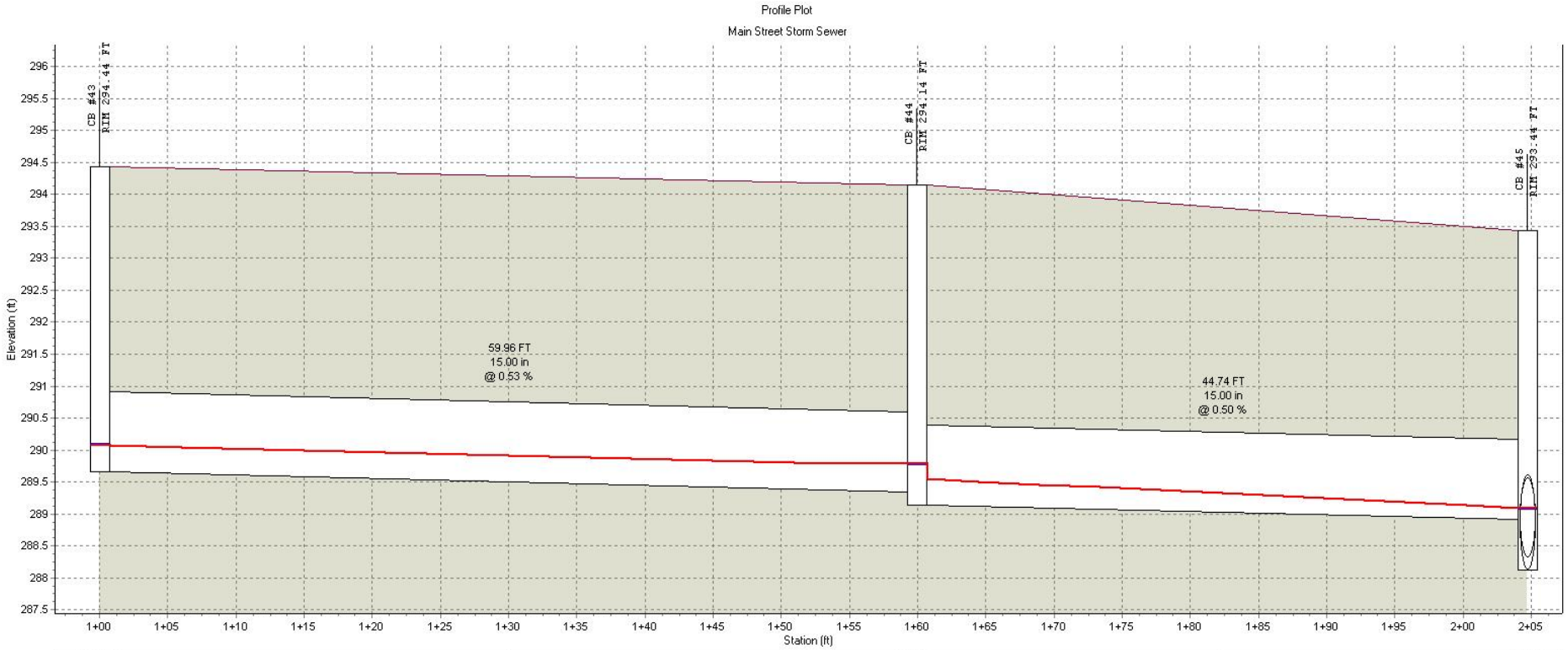
SN	Element ID	Area (acres)	Drainage Node ID	Weighted Runoff Coefficient	Accumulated Precipitation (inches)	Total Runoff (inches)	Peak Runoff (cfs)	Rainfall Intensity (inches/hr)	Time of Concentration (days hh:mm:ss)
1	Sub-CB#01	0.07	CB #01	0.8400	0.60	0.51	0.42	7.210	0 00:05:00
2	Sub-CB#02	0.01	CB #02	0.8500	0.60	0.51	0.06	7.210	0 00:05:00
3	Sub-CB#03	0.08	CB #03	0.8300	0.60	0.50	0.48	7.210	0 00:05:00
4	Sub-CB#38	0.29	CB #38	0.8400	0.60	0.51	1.76	7.210	0 00:05:00
5	Sub-CB#39	0.10	CB #39	0.8400	0.60	0.51	0.61	7.210	0 00:05:00
6	Sub-CB#40	0.21	CB #40	0.8400	0.60	0.51	1.27	7.210	0 00:05:00
7	Sub-CB#42	0.49	CB #42	0.8100	0.60	0.49	2.86	7.210	0 00:05:00
8	Sub-CB#43	0.31	CB #43	0.6200	0.60	0.37	1.39	7.210	0 00:05:00
9	Sub-CB#44	0.10	CB #44	0.8000	0.60	0.48	0.58	7.210	0 00:05:00
10	Sub-CB#45	0.39	CB #45	0.8100	0.60	0.49	2.28	7.210	0 00:05:00
11	Sub-CB#46	0.06	CB #46	0.8400	0.60	0.51	0.36	7.210	0 00:05:00
12	Sub-CB#47	0.18	CB #47	0.6500	0.60	0.39	0.84	7.210	0 00:05:00
13	Sub-CB#48	0.17	CB #48	0.6400	0.60	0.39	0.78	7.210	0 00:05:00
14	Sub-CB#49	0.25	CB #49	0.7700	0.60	0.46	1.39	7.210	0 00:05:00
15	Sub-CB#50	0.05	CB #50	0.8900	0.60	0.54	0.32	7.210	0 00:05:00
16	Sub-CB#51	0.17	CB #51	0.8700	0.60	0.52	1.07	7.210	0 00:05:00
17	Sub-CB#52	0.11	CB #52	0.8700	0.60	0.52	0.69	7.210	0 00:05:00
18	Sub-CB#53	0.08	CB #53	0.8700	0.60	0.52	0.50	7.210	0 00:05:00
19	Sub-CB#54	0.08	CB #54	0.8700	0.60	0.52	0.50	7.210	0 00:05:00
20	Sub-CB#56	0.04	CB #56	0.8700	0.60	0.52	0.25	7.210	0 00:05:00
21	Sub-CB#56A	0.03	CB #56A	0.8700	0.60	0.52	0.19	7.210	0 00:05:00
22	Sub-CB#57	0.07	CB #57	0.8700	0.60	0.52	0.44	7.210	0 00:05:00
23	Sub-CB#57A	0.03	CB #57A	0.8700	0.60	0.52	0.19	7.210	0 00:05:00
24	Sub-CB#58	0.07	CB #58	0.8700	0.60	0.52	0.44	7.210	0 00:05:00
25	Sub-CB#58A	0.15	CB #58A	0.7100	0.60	0.43	0.77	7.210	0 00:05:00
26	Sub-NULL#02	1.85	NULL. #02	0.1500	0.60	0.09	2.00	7.210	0 00:05:00
27	Sub-NULL#03	3.60	NULL. #03	0.3800	0.60	0.23	9.86	7.210	0 00:05:00
28	Sub-NULL#04	1.34	NULL. #04	0.5500	0.60	0.33	5.31	7.210	0 00:05:00
29	Sub-NULL#05	2.43	NULL. #05	0.5100	0.60	0.31	8.94	7.210	0 00:05:00

MODEL INPUT											MODEL OUTPUT										
SN	Element ID	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Total Drop (ft)	Average Slope (%)	Pipe Diameter or Height (inches)	Manning's Roughness	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Max Flow Velocity (ft/sec)	Travel Time (min)	Design Flow Capacity (cfs)	Additional Flow Capacity (cfs)	Max Flow / Design Flow Ratio	Max Flow Depth / Total Depth Ratio	Total Time Surcharged (min)	Max Flow Depth (ft)	Reported Condition
1	EX. PIPE #01	NULL. #05	JUNCTION #01	43.62	292.01	289.86	0.65	1.4900	18.000	0.0130	6.42	0 00:03	4.52	0.16	12.82	6.40	0.50	0.75	0.00	1.13	Calculated
2	EX. PIPE #02	JUNCTION #01	CB #46	66.68	289.66	288.37	1.29	1.9300	24.000	0.0130	6.44	0 00:04	6.93	0.16	31.46	25.02	0.20	0.34	0.00	0.67	Calculated
3	EX. PIPE #03	NULL. #04	CB #48	48.38	287.75	283.40	2.35	4.8600	18.000	0.0130	5.18	0 00:05	4.83	0.17	23.15	17.97	0.22	0.59	0.00	0.88	Calculated
4	EX. PIPE #04	NULL. #03	JUNCTION #02	41.86	284.94	281.31	1.63	3.8900	18.000	0.0130	6.24	0 00:03	4.87	0.14	20.73	14.49	0.30	0.69	0.00	1.03	Calculated
5	EX. PIPE #05	NULL. #02	JUNCTION #03	27.71	289.17	287.16	1.01	3.6400	18.000	0.0130	2.08	0 00:05	4.11	0.11	20.05	17.97	0.10	0.33	0.00	0.49	Calculated
6	P #01	CB #01	CB #02	68.84	286.65	285.27	1.38	2.0000	18.000	0.0130	0.38	0 00:05	3.49	0.33	14.85	14.47	0.03	0.12	0.00	0.17	Calculated
7	P #02	CB #02	CB #03	105.71	285.07	284.54	0.53	0.5000	18.000	0.0130	0.42	0 00:06	2.22	0.79	7.43	7.01	0.06	0.16	0.00	0.25	Calculated
8	P #03	CB #03	Out-1P #03	53.06	284.34	284.08	0.27	0.5000	18.000	0.0130	0.85	0 00:05	2.61	0.34	7.43	6.58	0.12	0.24	0.00	0.36	Calculated
9	P #155A	CB #57A	CB #56A	54.16	266.91	266.64	0.12	0.5000	15.000	0.0130	0.85	0 00:06	3.35	0.12	6.73	5.88	0.13	0.26	0.00	0.33	Calculated
10	P #156A	CB #56A	CB #56	49.70	266.44	266.19	0.25	0.5000	15.000	0.0130	1.01	0 00:06	2.77	0.30	4.57	3.56	0.22	0.34	0.00	0.42	Calculated
11	P #157A	CB #58A	CB #57A	66.30	267.45	266.11	0.48	0.5000	15.000	0.0130	0.70	0 00:06	2.61	0.61	4.57	3.87	0.15	0.27	0.00	0.34	Calculated
12	P #59	JUNCTION #03	CB #38	31.68	286.96	285.66	1.30	4.1100	18.000	0.0130	1.99	0 00:05	5.59	0.09	21.30	19.31	0.09	0.29	0.00	0.44	Calculated
13	P #60	CB #38	CB #39	225.54	285.46	284.26	1.20	0.5300	18.000	0.0130	3.36	0 00:06	4.03	0.93	7.67	4.31	0.44	0.48	0.00	0.72	Calculated
14	P #61	CB #39	CB #40	260.75	283.96	280.14	3.82	1.4600	18.000	0.0130	3.77	0 00:06	6.06	0.72	12.71	8.94	0.30	0.38	0.00	0.57	Calculated
15	P #62	CB #40	CB #50	42.13	279.94	278.10	1.85	4.3900	24.000	0.0130	4.53	0 00:06	6.53	0.11	47.37	42.84	0.10	0.37	0.00	0.74	Calculated
16	P #64	CB #42	CB #45	194.31	300.49	288.32	12.17	6.2600	15.000	0.0130	2.31	0 00:05	6.65	0.49	16.17	13.86	0.14	0.43	0.00	0.54	Calculated
17	P #65	CB #43	CB #44	59.96	289.66	289.34	0.32	0.5300	15.000	0.0130	0.93	0 00:05	2.67	0.37	4.70	3.77	0.20	0.34	0.00	0.42	Calculated
18	P #66	CB #44	CB #45	44.74	289.14	288.92	0.22	0.5000	15.000	0.0130	1.82	0 00:05	3.21	0.23	4.57	2.75	0.40	0.47	0.00	0.59	Calculated
19	P #67	CB #45	CB #46	56.72	288.12	287.37	0.75	1.3200	18.000	0.0130	6.34	0 00:05	5.64	0.17	12.08	5.74	0.52	0.61	0.00	0.91	Calculated
20	P #68	CB #46	CB #47	171.54	287.17	284.16	3.00	1.7500	24.000	0.0130	13.37	0 00:06	8.19	0.35	29.94	16.57	0.45	0.52	0.00	1.03	Calculated
21	P #69	CB #47	CB #48	148.41	283.96	281.95	2.01	1.3600	24.000	0.0130	13.95	0 00:06	6.96	0.36	26.35	12.40	0.53	0.62	0.00	1.24	Calculated
22	P #70	CB #48	CB #49	219.19	281.75	278.86	2.89	1.3200	24.000	0.0130	19.07	0 00:06	8.30	0.44	25.97	6.90	0.73	0.69	0.00	1.38	Calculated
23	P #71	CB #49	CB #50	51.48	278.66	277.76	0.90	1.7500	30.000	0.0130	19.89	0 00:06	7.09	0.12	54.27	34.38	0.37	0.56	0.00	1.41	Calculated
24	P #72	JUNCTION #02	CB #50	29.73	280.42	278.69	1.73	5.8400	18.000	0.0130	6.25	0 00:03	9.55	0.05	25.38	19.13	0.25	0.40	0.00	0.60	Calculated
25	P #73	CB #50	FES#310	111.94	277.56	274.69	2.87	2.5600	30.000	0.0130	31.13	0 00:06	11.19	0.17	65.67	34.54	0.47	0.55	0.00	1.38	Calculated
26	P #74	CB #51	CB #52	25.77	273.70	273.55	0.15	0.5700	15.000	0.0130	1.27	0 00:05	2.95	0.15	4.87	3.60	0.26	0.38	0.00	0.48	Calculated
27	P #75	CB #52	CB #54	139.25	273.35	272.08	1.27	0.9100	15.000	0.0130	1.83	0 00:05	4.19	0.55	6.17	4.34	0.30	0.39	0.00	0.48	Calculated
28	P #76	CB #53	CB #54	25.70	272.14	272.01	0.13	0.5000	15.000	0.0130	0.63	0 00:05	2.38	0.18	4.57	3.94	0.14	0.27	0.00	0.33	Calculated
29	P #77	CB #54	CB #57	113.81	271.81	265.73	6.08	5.3400	18.000	0.0130	2.89	0 00:05	8.07	0.24	24.27	21.38	0.12	0.26	0.00	0.39	Calculated
30	P #79	CB #56	CB #57	46.51	265.99	265.76	0.23	0.5000	15.000	0.0130	1.20	0 00:06	2.89	0.27	4.57	3.37	0.26	0.37	0.00	0.47	Calculated
31	P #80	CB #57	CB #58	25.73	265.53	264.57	0.96	3.7300	18.000	0.0130	4.43	0 00:05	6.03	0.07	20.28	15.85	0.22	0.43	0.00	0.65	Calculated
32	P #81	CB #58	FES#308	73.47	264.37	264.00	0.37	0.5000	24.000	0.0130	4.82	0 00:05	4.01	0.31	16.00	11.18	0.30	0.41	0.00	0.82	Calculated

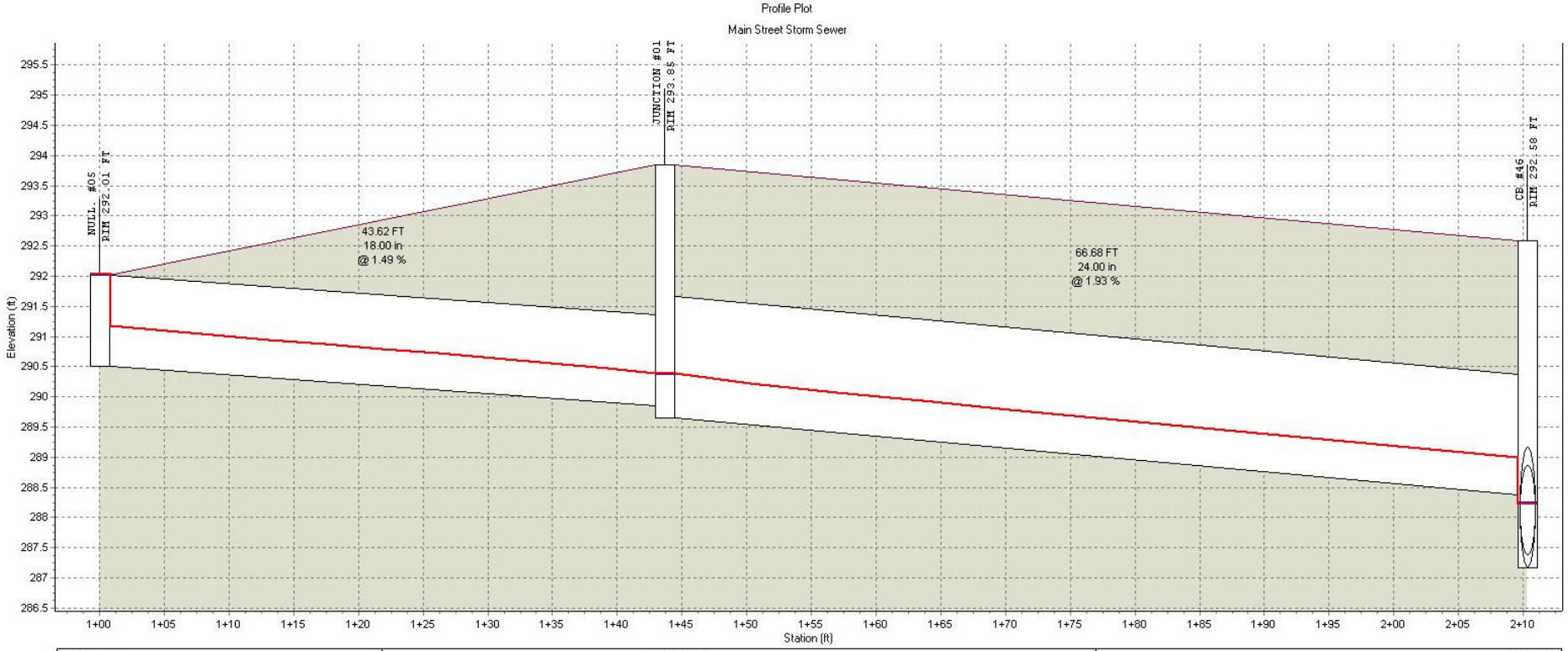


:	CB #42	CB #45	CB #46	CB #47	CB #48	CB #49	CB #50	FES#310
RIM (FT):	305.75	293.44	292.58	289.81	287.62	284.82	283.52	
Invert (ft):	300.49	288.12	287.17	283.96	281.75	278.66	277.56	274.69
Min Pipe Cover (ft):								
Max HGL (ft):	300.81	289.09	288.23	285.17	283.23	280.13	279.11	275.90

Link ID:	P #64	P #67	P #68	P #69	P #70	P #71	P #73
(FT):	194.31	56.72	171.54	148.41	219.19	51.48	111.94
(in):	15.00	18.00	24.00	24.00	24.00	30.00	30.00
@ (%):	6.26	1.32	1.75	1.36	1.32	1.75	2.56
Up Invert (ft):	300.49	288.12	287.17	283.96	281.75	278.66	277.56
Dn Invert (ft):	288.32	287.37	284.16	281.95	278.86	277.76	274.69
Max Q (cfs):	2.31	6.34	13.37	13.95	19.07	19.89	31.13
Max Vel (ft/s):	6.65	5.64	8.19	6.96	8.30	7.09	11.19
Max Depth (ft):	0.54	0.91	1.03	1.24	1.38	1.41	1.38

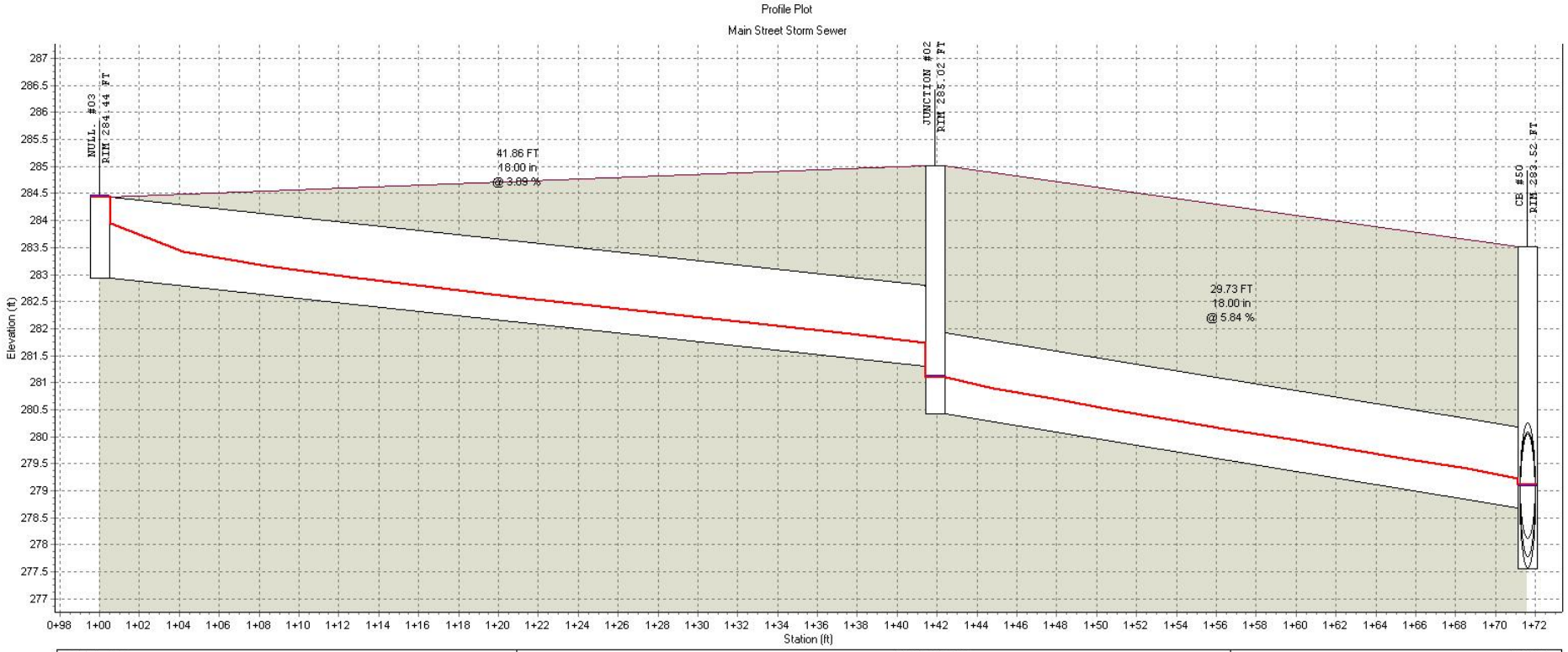


	CB #43		CB #44		CB #45
RIM (FT):	294.44		294.14		293.44
Invert (ft):	289.66		289.14		288.12
Min Pipe Cover (ft):					
Max HGL (ft):	290.08		289.78		289.09
Link ID:		P #65		P #66	
(FT):		59.96		44.74	
(in):		15.00		15.00	
@ (%):		0.53		0.50	
Up Invert (ft):		289.66		289.14	
Dn Invert (ft):		289.34		288.92	
Max Q (cfs):		0.93		1.82	
Max Vel (ft/s):		2.67		3.21	
Max Depth (ft):		0.42		0.59	



:	NULL. #05	JUNCTION #01	CB #46
RIM (FT):	292.01	293.85	292.58
Invert (ft):	290.51	289.66	287.17
Min Pipe Cover (ft):	0.00	2.19	
Max HGL (ft):	292.03	290.39	288.23

Link ID:	EX. PIPE #01	EX. PIPE #02
(FT):	43.62	66.68
(in):	18.00	24.00
@ (%):	1.49	1.93
Up Invert (ft):	290.51	289.66
Dn Invert (ft):	289.86	288.37
Max Q (cfs):	6.42	6.45
Max Vel (ft/s):	4.52	6.93
Max Depth (ft):	1.13	0.67



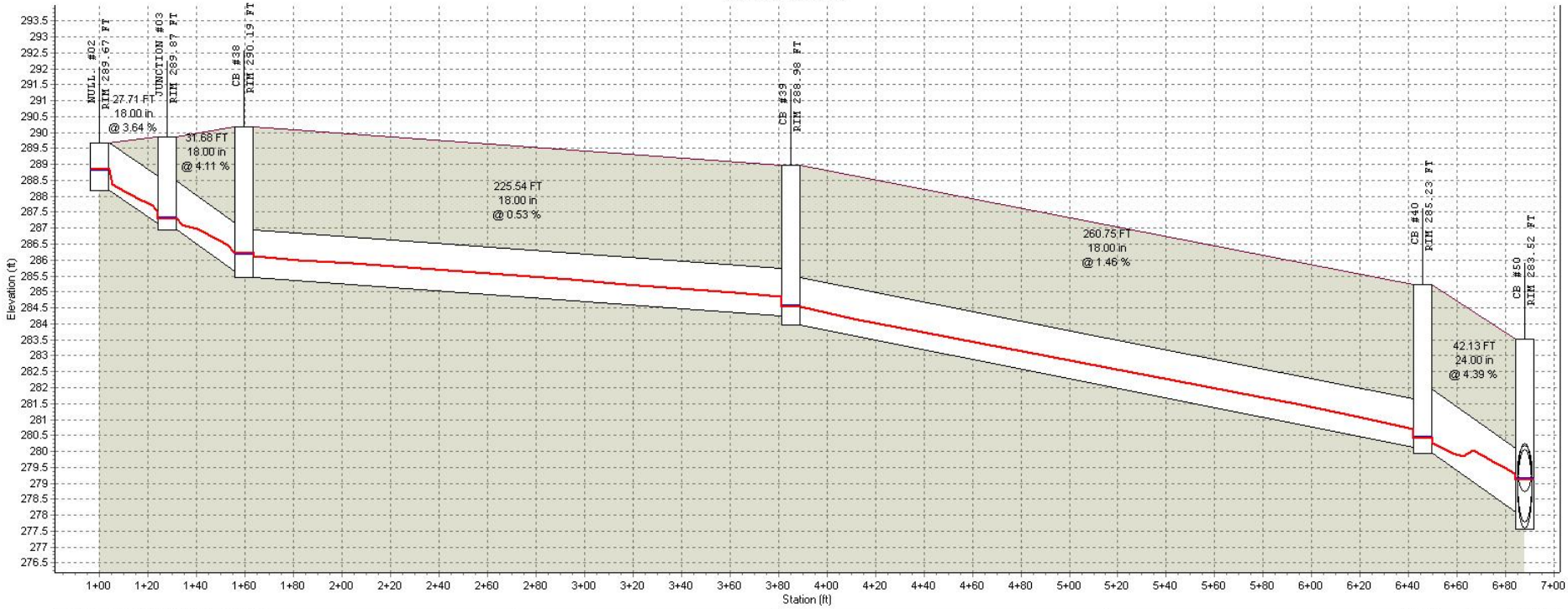
	NULL. #03	JUNCTION #02	CB #50
RIM (FT):	284.44	285.02	283.52
Invert (ft):	282.94	280.42	277.56
Min Pipe Cover (ft):	0.00	2.21	
Max HGL (ft):	284.44	281.11	279.11

Link ID:	EX. PIPE #04	P #72
(FT):	41.86	29.73
(in):	18.00	18.00
@ (%):	3.89	5.84
Up Invert (ft):	282.94	280.42
Dn Invert (ft):	281.31	278.69
Max Q (cfs):	6.24	6.25
Max Vel (ft/s):	4.87	9.55
Max Depth (ft):	1.03	0.60

HGL

Profile Plot

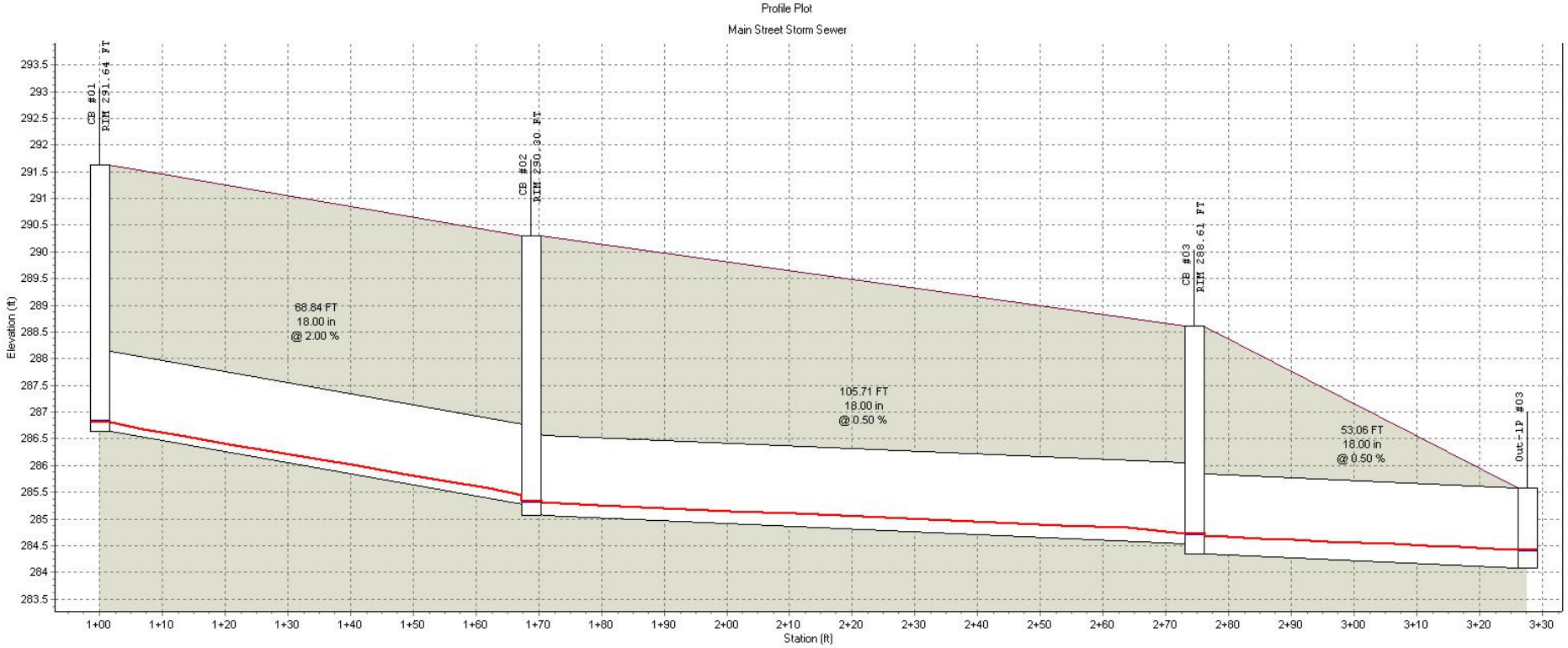
Main Street Storm Sewer



	NULL. #02	JUNCTION #03	CB #38	CB #39	CB #40	CB #50
RIM (FT):	289.67	289.87	290.19	288.98	285.23	283.52
Invert (ft):	288.17	286.96	285.46	283.96	279.94	277.56
Min Pipe Cover (ft):	0.00	1.21				
Max HGL (ft):	288.84	287.31	286.20	284.55	280.41	279.11

Link ID:	EX. PIPE #05	P #59	P #60	P #61	P #62
(FT):	27.71	31.68	225.54	260.75	42.13
(in):	18.00	18.00	18.00	18.00	24.00
@ (%):	3.64	4.11	0.53	1.46	4.39
Up Invert (ft):	288.17	286.96	285.46	283.96	279.94
Dn Invert (ft):	287.16	285.66	284.26	280.14	278.10
Max Q (cfs):	2.08	1.99	3.36	3.77	4.53
Max Vel (ft/s):	4.11	5.59	4.03	6.06	6.53
Max Depth (ft):	0.49	0.44	0.72	0.57	0.74

HGL



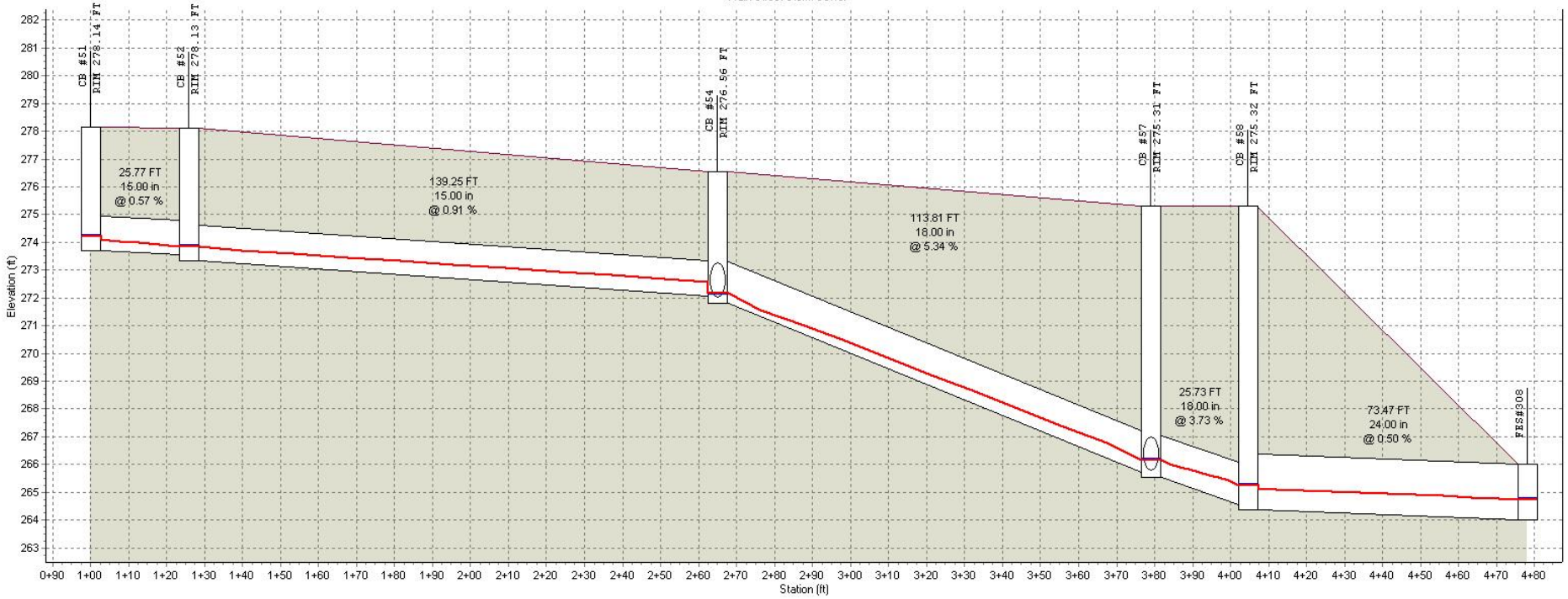
:	CB #01	CB #02	CB #03	Out-1P #03
RIM (FT):	291.64	290.30	288.61	
Invert (ft):	286.65	285.07	284.34	284.08
Min Pipe Cover (ft):				
Max HGL (ft):	286.82	285.33	284.72	284.42

Link ID:	P #01	P #02	P #03
(FT):	68.84	105.71	53.06
(in):	18.00	18.00	18.00
@ (%):	2.00	0.50	0.50
Up Invert (ft):	286.65	285.07	284.34
Dn Invert (ft):	285.27	284.54	284.08
Max Q (cfs):	0.38	0.42	0.85
Max Vel (ft/s):	3.49	2.22	2.61
Max Depth (ft):	0.17	0.25	0.36

HGL

Profile Plot

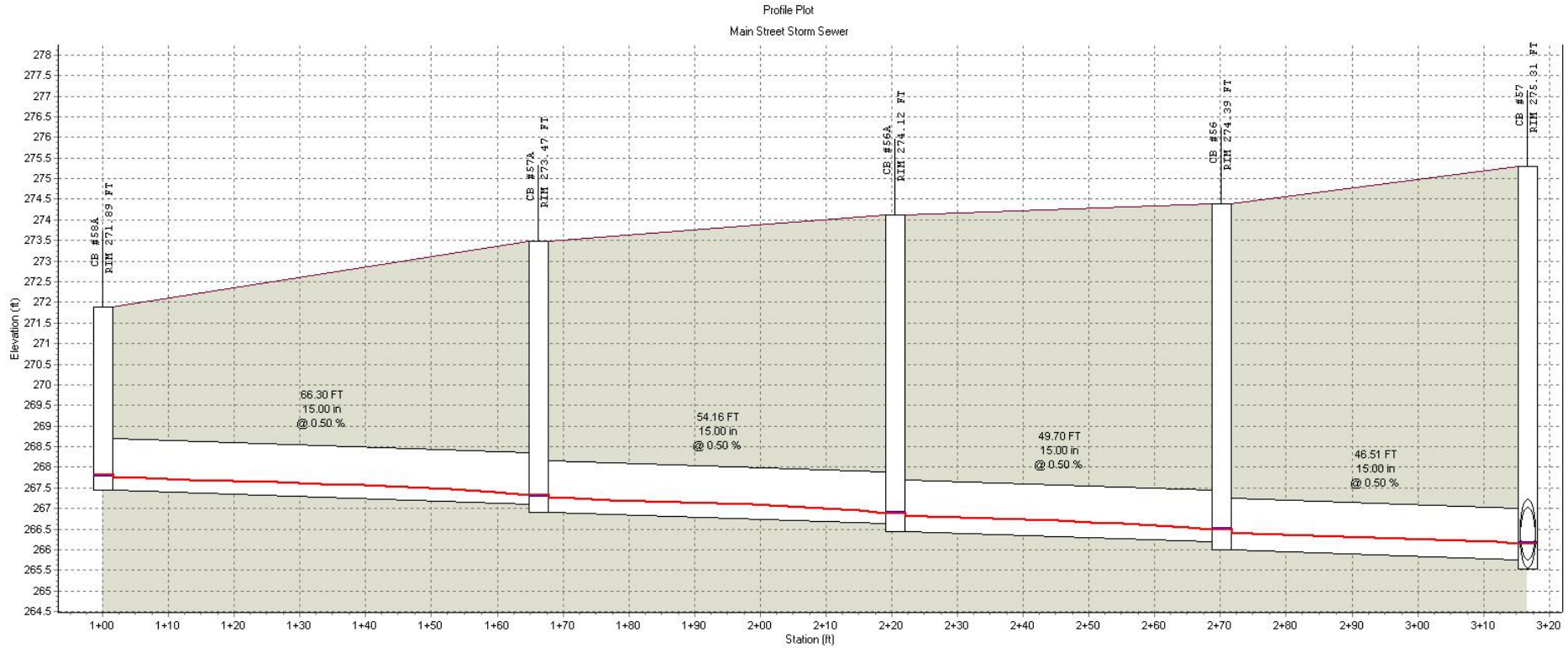
Main Street Storm Sewer



:	CB #51	CB #52	CB #54	CB #57	CB #58	FES#308
RIM (FT):	278.14	278.13	276.56	275.31	275.32	
Invert (ft):	273.70	273.35	271.81	265.53	264.37	264.00
Min Pipe Cover (ft):						
Max HGL (ft):	274.22	273.85	272.16	266.16	265.25	264.75

Link ID:	P #74	P #75	P #77	P #80	P #81
(FT):	25.77	139.25	113.81	25.73	73.47
(in):	15.00	15.00	18.00	18.00	24.00
@ (%):	0.57	0.91	5.34	3.73	0.50
Up Invert (ft):	273.70	273.35	271.81	265.53	264.37
Dn Invert (ft):	273.55	272.08	265.73	264.57	264.00
Max Q (cfs):	1.27	1.83	2.89	4.43	4.82
Max Vel (ft/s):	2.95	4.19	8.07	6.03	4.01
Max Depth (ft):	0.48	0.48	0.39	0.65	0.82

HGL

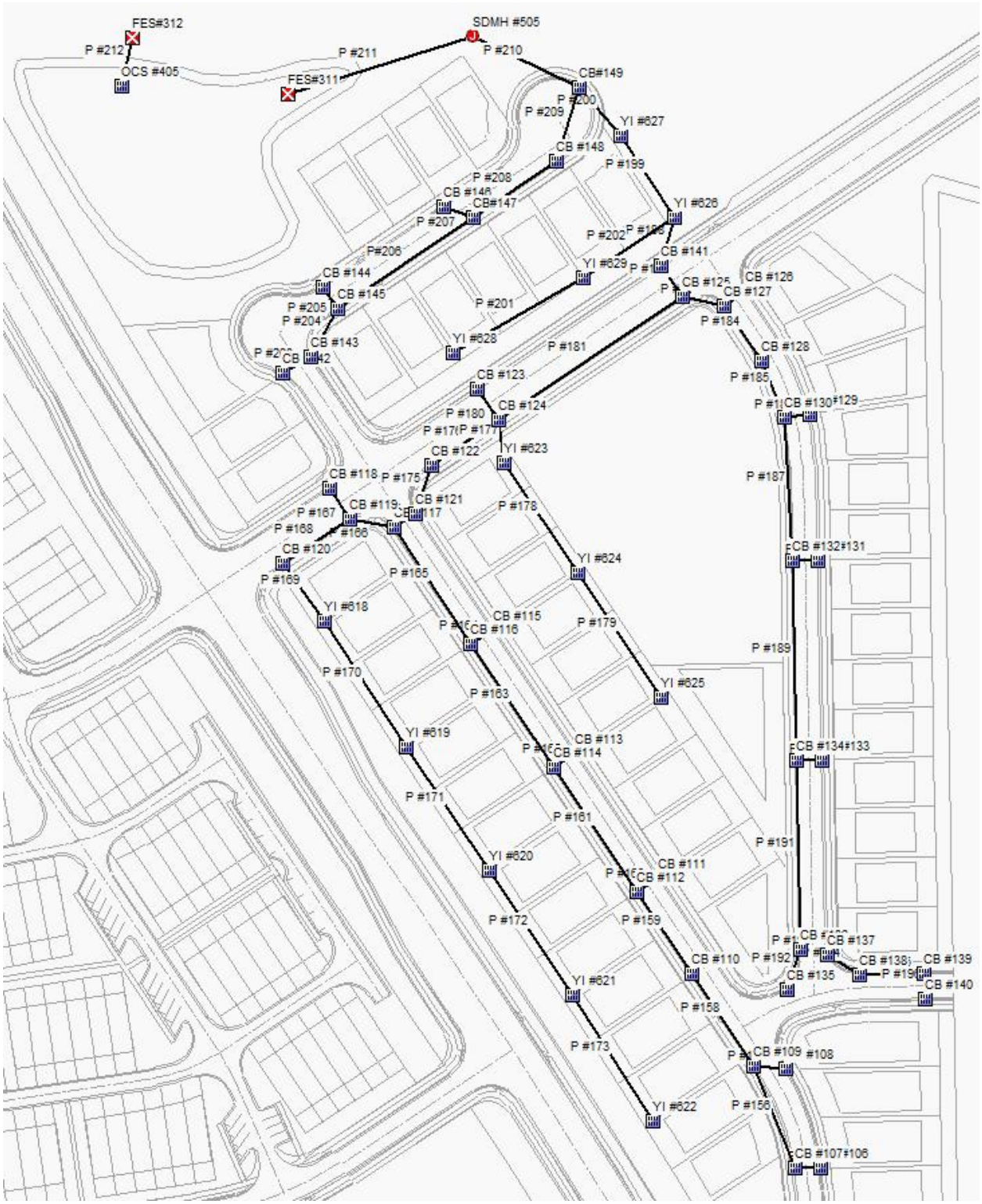


:	CB #58A	CB #57A	CB #56A	CB #56	CB #57
RIM (FT):	271.89	273.47	274.12	274.39	275.31
Invert (ft):	267.45	266.91	266.44	265.99	265.53
Min Pipe Cover (ft):					
Max HGL (ft):	267.81	267.32	266.89	266.49	266.16

Link ID:	P #157A	P #155A	P #156A	P #79
(FT):	66.30	54.16	49.70	46.51
(in):	15.00	15.00	15.00	15.00
@ (%):	0.50	0.50	0.50	0.50
Up Invert (ft):	267.45	266.91	266.44	265.99
Dn Invert (ft):	267.11	266.64	266.19	265.76
Max Q (cfs):	0.71	0.86	1.01	1.20
Max Vel (ft/s):	2.58	2.68	2.78	2.90
Max Depth (ft):	0.35	0.39	0.42	0.47

S T O R M W A T E R AREA " C "

STORMWATER PIPING AND HYDRAULIC GRADE LINE FOR 10-YR STORM



PLAN VIEW

DRAINAGE AREA

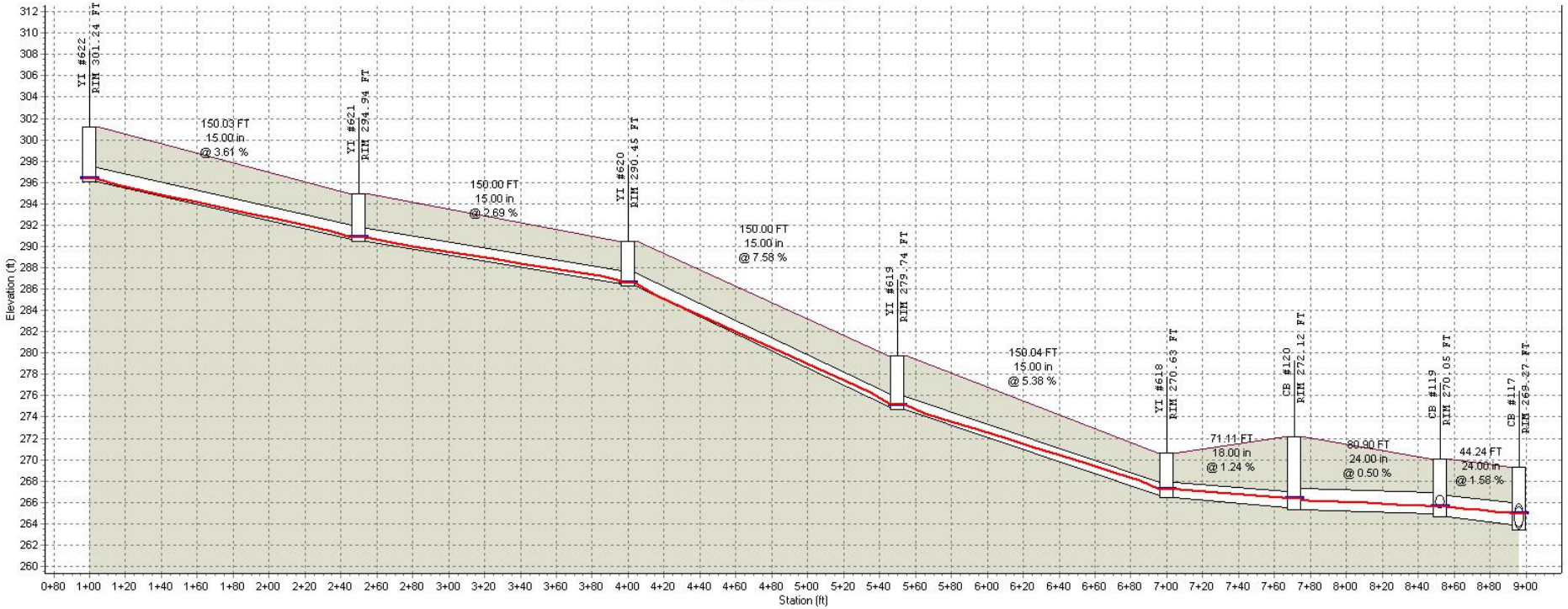
SN	Element ID	Area (acres)	Drainage Node ID	Weighted Runoff Coefficient	Accumulated Precipitation (inches)	Total Runoff (inches)	Peak Runoff (cfs)	Rainfall Intensity (inches/hr)	Time of Concentration (days hh:mm:ss)
1	Sub-CB#106	0.50	CB #106	0.7100	0.60	0.43	2.56	7.210	0 00:05:00
2	Sub-CB#107	0.42	CB #107	0.5900	0.60	0.35	1.79	7.210	0 00:05:00
3	Sub-CB#108	0.41	CB #108	0.7100	0.60	0.43	2.10	7.210	0 00:05:00
4	Sub-CB#109	0.21	CB #109	0.6300	0.60	0.38	0.95	7.210	0 00:05:00
5	Sub-CB#110	0.20	CB #110	0.7500	0.60	0.45	1.08	7.210	0 00:05:00
6	Sub-CB#111	0.24	CB #111	0.7500	0.60	0.45	1.30	7.210	0 00:05:00
7	Sub-CB#112	0.18	CB #112	0.7500	0.60	0.45	0.97	7.210	0 00:05:00
8	Sub-CB#113	0.24	CB #113	0.7900	0.60	0.48	1.37	7.210	0 00:05:00
9	Sub-CB#114	0.27	CB #114	0.7500	0.60	0.45	1.46	7.210	0 00:05:00
10	Sub-CB#115	0.26	CB #115	0.7500	0.60	0.45	1.41	7.210	0 00:05:00
11	Sub-CB#116	0.27	CB #116	0.7500	0.60	0.45	1.46	7.210	0 00:05:00
12	Sub-CB#117	0.34	CB #117	0.7900	0.60	0.48	1.94	7.210	0 00:05:00
13	Sub-CB#118	0.09	CB #118	0.8700	0.60	0.52	0.57	7.210	0 00:05:00
14	Sub-CB#119	0.06	CB #119	0.8700	0.60	0.52	0.38	7.210	0 00:05:00
15	Sub-CB#120	0.26	CB #120	0.8700	0.60	0.52	1.63	7.210	0 00:05:00
16	Sub-CB#121	0.25	CB #121	0.7500	0.60	0.45	1.35	7.210	0 00:05:00
17	Sub-CB#122	0.05	CB #122	0.8700	0.60	0.52	0.31	7.210	0 00:05:00
18	Sub-CB#123	0.06	CB #123	0.8700	0.60	0.52	0.38	7.210	0 00:05:00
19	Sub-CB#124	0.13	CB #124	0.7500	0.60	0.45	0.70	7.210	0 00:05:00
20	Sub-CB#125	0.18	CB #125	0.8700	0.60	0.52	1.13	7.210	0 00:05:00
21	Sub-CB#126	0.45	CB #126	0.6700	0.60	0.40	2.17	7.210	0 00:05:00
22	Sub-CB#127	0.09	CB #127	0.8700	0.60	0.52	0.57	7.210	0 00:05:00
23	Sub-CB#128	0.04	CB #128	0.8700	0.60	0.52	0.25	7.210	0 00:05:00
24	Sub-CB#129	0.44	CB #129	0.6300	0.60	0.38	2.00	7.210	0 00:05:00
25	Sub-CB#130	0.08	CB #130	0.8700	0.60	0.52	0.50	7.210	0 00:05:00
26	Sub-CB#131	0.53	CB #131	0.6700	0.60	0.40	2.56	7.210	0 00:05:00
27	Sub-CB#132	0.43	CB #132	0.6300	0.60	0.38	1.95	7.210	0 00:05:00
28	Sub-CB#133	0.52	CB #133	0.6300	0.60	0.38	2.36	7.210	0 00:05:00
29	Sub-CB#134	0.26	CB #134	0.7500	0.60	0.45	1.41	7.210	0 00:05:00
30	Sub-CB#135	0.01	CB #135	0.8700	0.60	0.52	0.06	7.210	0 00:05:00
31	Sub-CB#136	0.03	CB #136	0.8700	0.60	0.52	0.19	7.210	0 00:05:00
32	Sub-CB#137	0.02	CB #137	0.8700	0.60	0.52	0.13	7.210	0 00:05:00
33	Sub-CB#138	0.02	CB #138	0.8700	0.60	0.52	0.13	7.210	0 00:05:00
34	Sub-CB#139	0.10	CB #139	0.7500	0.60	0.45	0.54	7.210	0 00:05:00
35	Sub-CB#140	0.23	CB #140	0.7500	0.60	0.45	1.24	7.210	0 00:05:00
36	Sub-CB#141	0.16	CB #141	0.8700	0.60	0.52	1.00	7.210	0 00:05:00
37	Sub-CB#142	0.23	CB #142	0.7500	0.60	0.45	1.24	7.210	0 00:05:00
38	Sub-CB#143	0.10	CB #143	0.8700	0.60	0.52	0.63	7.210	0 00:05:00
39	Sub-CB#144	0.22	CB #144	0.7500	0.60	0.45	1.19	7.210	0 00:05:00
40	Sub-CB#145	0.08	CB #145	0.7900	0.60	0.48	0.46	7.210	0 00:05:00
41	Sub-CB#146	0.36	CB #146	0.6300	0.60	0.38	1.64	7.210	0 00:05:00
42	Sub-CB#147	0.30	CB#147	0.7500	0.60	0.45	1.62	7.210	0 00:05:00
43	Sub-CB#148	0.18	CB #148	0.7500	0.60	0.45	0.97	7.210	0 00:05:00
44	Sub-CB#149	0.44	CB#149	0.6700	0.60	0.40	2.13	7.210	0 00:05:00
45	Sub-YI#618	0.36	YI #618	0.4300	0.60	0.26	1.12	7.210	0 00:05:00
46	Sub-YI#619	0.60	YI #619	0.3500	0.60	0.21	1.51	7.210	0 00:05:00
47	Sub-YI#620	0.19	YI #620	0.8300	0.60	0.50	1.14	7.210	0 00:05:00
48	Sub-YI#621	0.19	YI #621	0.8300	0.60	0.50	1.14	7.210	0 00:05:00
49	Sub-YI#622	0.17	YI #622	0.5900	0.60	0.35	0.72	7.210	0 00:05:00
50	Sub-YI#623	0.15	YI #623	0.8300	0.60	0.50	0.90	7.210	0 00:05:00
51	Sub-YI#624	0.17	YI #624	0.8300	0.60	0.50	1.02	7.210	0 00:05:00
52	Sub-YI#625	0.17	YI #625	0.8300	0.60	0.50	1.02	7.210	0 00:05:00
53	Sub-YI#626	0.20	YI #626	0.5900	0.60	0.35	0.85	7.210	0 00:05:00
54	Sub-YI#627	0.09	YI #627	0.7900	0.60	0.48	0.51	7.210	0 00:05:00
55	Sub-YI#628	0.17	YI #628	0.5900	0.60	0.35	0.72	7.210	0 00:05:00
56	Sub-YI#629	0.24	YI #629	0.5900	0.60	0.35	1.02	7.210	0 00:05:00

MODEL INPUT											MODEL OUTPUT										
SN	Element ID	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Total Drop (ft)	Average Slope (%)	Pipe Diameter or Height (inches)	Manning's Roughness	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Max Flow Velocity (ft/sec)	Travel Time (min)	Design Flow Capacity (cfs)	Additional flow capacity (cfs)	Max Flow / Design Flow Ratio	Max Flow Depth / Total Depth Ratio	Total Time Surcharged (min)	Max Flow Depth (ft)	Reported Condition
1	P #155	CB #106	CB #107	25.78	302.74	302.56	0.18	0.6900	15.000	0.0130	2.02	0 00:05	3.54	0.12	5.35	3.33	0.38	0.47	0.00	0.59	Calculated
2	P #156	CB #107	CB #109	109.68	302.36	296.68	5.68	5.1800	15.000	0.0130	3.56	0 00:05	8.71	0.21	14.70	11.14	0.24	0.37	0.00	0.47	Calculated
3	P #157	CB #108	CB #109	32.38	297.71	296.76	0.94	2.9200	15.000	0.0130	2.27	0 00:05	5.95	0.09	11.03	8.76	0.21	0.35	0.00	0.44	Calculated
4	P #158	CB #109	CB #110	111.36	296.48	291.43	5.05	4.5300	15.000	0.0130	6.94	0 00:05	9.51	0.20	13.76	6.82	0.50	0.58	0.00	0.72	Calculated
5	P #159	CB #110	CB #112	99.15	291.23	288.57	2.66	2.6800	15.000	0.0130	7.80	0 00:05	8.48	0.19	10.58	2.78	0.74	0.70	0.00	0.88	Calculated
6	P #160	CB #111	CB #112	25.69	288.57	288.44	0.13	0.5000	15.000	0.0130	1.11	0 00:05	2.40	0.18	4.57	3.46	0.24	0.46	0.00	0.57	Calculated
7	P #161	CB #112	CB #114	150.16	288.24	282.18	6.06	4.0400	18.000	0.0130	9.63	0 00:05	10.85	0.23	21.10	11.47	0.46	0.50	0.00	0.75	Calculated
8	P #162	CB #113	CB #114	25.64	282.61	282.48	0.13	0.5000	15.000	0.0130	1.43	0 00:05	2.94	0.15	4.57	3.14	0.31	0.42	0.00	0.52	Calculated
9	P #163	CB #114	CB #116	149.56	281.98	269.65	12.33	8.2500	18.000	0.0130	12.17	0 00:05	15.05	0.17	30.16	17.99	0.40	0.47	0.00	0.70	Calculated
10	P #164	CB #115	CB #116	25.74	271.06	269.74	1.32	5.1400	15.000	0.0130	1.38	0 00:05	6.63	0.06	14.65	13.27	0.09	0.23	0.00	0.28	Calculated
11	P #165	CB #116	CB #117	140.18	267.32	263.60	3.72	2.6500	24.000	0.0130	14.67	0 00:05	7.92	0.30	36.83	22.16	0.40	0.57	0.00	1.15	Calculated
12	P #166	CB #119	CB #117	44.24	264.63	263.93	0.70	1.5800	24.000	0.0130	7.58	0 00:05	5.75	0.13	28.48	20.90	0.27	0.48	0.00	0.96	Calculated
13	P #167	CB #118	CB #119	37.73	265.55	265.36	0.19	0.5000	15.000	0.0130	0.54	0 00:05	2.35	0.27	4.57	4.03	0.12	0.24	0.00	0.31	Calculated
14	P #168	CB #120	CB #119	80.90	265.32	264.92	0.40	0.5000	24.000	0.0130	6.49	0 00:05	4.33	0.31	16.00	9.51	0.41	0.48	0.00	0.97	Calculated
15	P #169	YI #618	CB #120	71.11	266.41	265.52	0.88	1.2400	18.000	0.0130	5.27	0 00:05	5.13	0.23	11.71	6.44	0.45	0.56	0.00	0.85	Calculated
16	P #170	YI #619	YI #618	150.04	274.69	266.61	8.08	5.3800	15.000	0.0130	4.22	0 00:05	8.27	0.30	14.99	10.77	0.28	0.44	0.00	0.55	Calculated
17	P #171	YI #620	YI #619	150.00	286.26	274.89	11.38	7.5800	15.000	0.0130	2.80	0 00:05	10.24	0.24	17.79	14.99	0.16	0.27	0.00	0.34	Calculated
18	P #172	YI #621	YI #620	150.00	290.49	286.46	4.03	2.6900	15.000	0.0130	1.75	0 00:05	6.18	0.40	10.59	8.84	0.17	0.28	0.00	0.35	Calculated
19	P #173	YI #622	YI #621	150.03	296.11	290.69	5.42	3.6100	15.000	0.0130	0.69	0 00:05	5.30	0.47	12.28	11.59	0.06	0.16	0.00	0.20	Calculated
20	P #174	CB #117	CB #121	25.79	263.40	262.45	0.95	3.7000	30.000	0.0130	24.03	0 00:05	9.58	0.04	78.93	54.90	0.30	0.51	0.00	1.27	Calculated
21	P #175	CB #121	CB #122	51.30	262.25	259.63	2.62	5.1000	30.000	0.0130	25.14	0 00:05	11.56	0.07	92.66	67.52	0.27	0.46	0.00	1.14	Calculated
22	P #176	CB #122	CB #124	81.56	259.43	256.18	3.25	3.9900	30.000	0.0130	25.53	0 00:06	12.25	0.11	81.88	56.35	0.31	0.44	0.00	1.10	Calculated
23	P #177	YI #623	CB #124	43.47	260.44	257.35	3.09	7.1000	18.000	0.0130	2.82	0 00:05	9.16	0.08	28.00	25.18	0.10	0.23	0.00	0.35	Calculated
24	P #178	YI #624	YI #623	133.59	270.28	260.64	9.65	7.2200	15.000	0.0130	1.96	0 00:05	9.08	0.25	17.36	15.40	0.11	0.23	0.00	0.29	Calculated
25	P #179	YI #625	YI #624	149.79	281.88	270.48	11.39	7.6100	15.000	0.0130	0.98	0 00:05	7.66	0.33	17.82	16.84	0.06	0.16	0.00	0.20	Calculated
26	P #180	CB #123	CB #124	37.69	257.52	257.33	0.19	0.5000	15.000	0.0130	0.36	0 00:05	2.12	0.30	4.57	4.21	0.08	0.20	0.00	0.25	Calculated
27	P #181	CB #124	CB #125	221.47	255.98	247.80	8.18	3.6900	30.000	0.0130	29.20	0 00:06	10.98	0.34	78.81	49.61	0.37	0.58	0.00	1.45	Calculated
28	P #182	CB #127	CB #125	43.66	248.24	247.80	0.44	1.0000	30.000	0.0130	14.11	0 00:06	5.30	0.14	41.00	26.89	0.34	0.69	0.00	1.73	Calculated
29	P #183	CB #126	CB #127	25.73	248.69	248.56	0.13	0.5000	15.000	0.0130	1.87	0 00:05	3.15	0.14	4.57	2.70	0.41	0.55	0.00	0.69	Calculated
30	P #184	CB #128	CB #127	66.31	250.03	248.44	1.59	2.4000	24.000	0.0130	12.28	0 00:05	6.50	0.17	35.07	22.79	0.35	0.62	0.00	1.24	Calculated
31	P #185	CB #130	CB #128	60.56	251.65	250.23	1.42	2.3400	24.000	0.0130	12.09	0 00:05	8.22	0.12	34.62	22.53	0.35	0.48	0.00	0.95	Calculated
32	P #186	CB #129	CB #130	26.08	252.17	252.03	0.13	0.5000	15.000	0.0130	2.17	0 00:05	3.17	0.14	4.57	2.40	0.48	0.56	0.00	0.70	Calculated
33	P #187	CB #132	CB #130	144.82	258.13	251.85	6.28	4.3400	18.000	0.0130	9.42	0 00:05	9.97	0.24	21.87	12.45	0.43	0.53	0.00	0.79	Calculated
34	P #188	CB #131	CB #132	25.82	259.42	259.29	0.13	0.5000	15.000	0.0130	2.44	0 00:05	3.40	0.13	4.57	2.13	0.53	0.57	0.00	0.71	Calculated
35	P #189	CB #134	CB #132	199.91	274.21	258.33	15.89	7.9500	15.000	0.0130	5.32	0 00:05	11.69	0.29	18.21	12.89	0.29	0.40	0.00	0.51	Calculated
36	P #190	CB #133	CB #134	25.63	274.92	274.79	0.13	0.5000	15.000	0.0130	1.98	0 00:05	3.21	0.13	4.57	2.59	0.43	0.50	0.00	0.63	Calculated
37	P #191	CB #136	CB #134	190.24	281.82	274.42	7.41	3.8900	15.000	0.0130	2.37	0 00:06	7.72	0.41	12.75	10.38	0.19	0.30	0.00	0.37	Calculated
38	P #192	CB #135	CB #136	42.41	283.00	282.41	0.59	1.3900	15.000	0.0130	0.06	0 00:05	1.81	0.39	7.62	7.56	0.01	0.06	0.00	0.08	Calculated
39	P #193	CB #137	CB #136	28.13	282.16	282.02	0.14	0.5000	15.000	0.0130	2.19	0 00:05	3.31	0.14	4.57	2.38	0.48	0.53	0.00	0.66	Calculated
40	P #194	CB #138	CB #137	37.57	282.55	282.36	0.19	0.5000	15.000	0.0130	2.09	0 00:05	3.30	0.19	4.57	2.48	0.46	0.51	0.00	0.64	Calculated
41	P #195	CB #139	CB #138	65.53	283.08	282.75	0.33	0.5000	15.000	0.0130	1.98	0 00:05	3.35	0.33	4.57	2.59	0.43	0.49	0.00	0.61	Calculated
42	P #196	CB #140	CB #139	25.78	283.41	283.28	0.13	0.5000	15.000	0.0130	1.50	0 00:05	2.98	0.14	4.57	3.07	0.33	0.43	0.00	0.54	Calculated
43	P #197	CB #125	CB #141	37.65	247.30	246.27	1.03	2.7400	36.000	0.0130	44.10	0 00:06	7.98	0.08	110.31	66.21	0.40	0.76	0.00	2.28	Calculated
44	P #198	CB #141	YI #626	50.50	246.07	245.08	0.99	1.9600	36.000	0.0130	44.77	0 00:06	7.58	0.11	93.29	48.52	0.48	0.80	0.00	2.40	Calculated
45	P #199	YI #626	YI #627	98.01	244.88	243.69	1.20	1.2200	36.000	0.0130	46.81	0 00:06	7.68	0.21	73.68	26.87	0.64	0.82	0.00	2.46	Calculated
46	P #200	YI #627	CB#149	63.35	243.49	242.35	1.14	1.8000	36.000	0.0130	46.98	0 00:06	7.22	0.15	89.47	42.49	0.53	0.87	0.00	2.60	Calculated
47	P #201	YI #628	YI #629	150.56	248.49	247.74	0.75	0.5000	15.000	0.0130	0.70	0 00:05	2.55	0.98	4.57	3.87	0.15	0.27	0.00	0.34	Calculated
48	P #202	YI #629	YI #626	109.82	247.54	246.99	0.55	0.5000	15.000	0.0130	1.56	0 00:06	3.22	0.57	4.57	3.01	0.34	0.42	0.00	0.52	Calculated
49	P #203	CB #142	CB #143	32.02	254.75	253.20	1.55	4.8500	15.000	0.0130	1.19	0 00:05	6.39	0.08	14.22	13.03	0.08	0.21	0.00	0.26	Calculated
50	P #204	CB #143	CB #145	56.25	253.00	248.00	5.00	8.8900	15.000	0.0130	1.81	0 00:05	7.51	0.12	19.26	17.45	0.09	0.26	0.00	0.32	Calculated
51	P #205	CB #144	CB #145	25.73	248.86	248.73	0.13	0.5000	15.000	0.0130	1.16	0 00:05	2.78	0.15	4.57	3.41	0.25	0.37	0.00	0.47	Calculated
52	P #207	CB #146	CB#147	31.19	246.51	246.35	0.16	0.5000	15.000	0.0130	1.20	0 00:05	2.84	0.18	4.57	3.37	0.26	0.38	0.00	0.47	Calculated
53	P #208	CB#147	CB #148	101.24	245.42	244.91	0.51	0.5000	18.000	0.0130	5.42	0 00:06	4.32	0.39	7.43	2.01	0.73	0.67	0.00	1.00	Calculated
54	P #209	CB #148	CB#149	78.06	244.71	244.32	0.39	0.5000	24.000	0.0130	6.38	0 00:06	4.30	0.30	16.00	9.62	0.40	0.48	0.00	0.96	Calculated
55	P #210	CB#149	SDMH #505	118.96	242.15	241.17	0.98	0.8200	42.000	0.0130	55.08	0 00:06	6.84	0.29	91.27	36.19	0.60	0.79	0.00	2.76	Calculated

MODEL INPUT											MODEL OUTPUT										
SN	Element ID	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Total Drop (ft)	Average Slope (%)	Pipe Diameter or Height (inches)	Manning's Roughness	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Max Flow Velocity (ft/sec)	Travel Time (min)	Design Flow Capacity (cfs)	Additional flow capacity (cfs)	Max Flow / Design Flow Ratio	Max Flow Depth / Total Depth Ratio	Total Time Surcharged (min)	Max Flow Depth (ft)	Reported Condition
56	P #211	SDMH #505	FES#311	193.41	240.97	240.00	0.97	0.5000	42.000	0.0130	54.81	0 00:07	7.17	0.45	71.14	16.33	0.77	0.74	0.00	2.60	Calculated
57	P#206	CB #145	CB#147	162.89	247.80	245.62	2.18	1.3400	18.000	0.0150	3.35	0 00:05	3.96	0.69	10.53	7.18	0.32	0.49	0.00	0.74	Calculated

Profile Plot

Main Street Storm Sewer



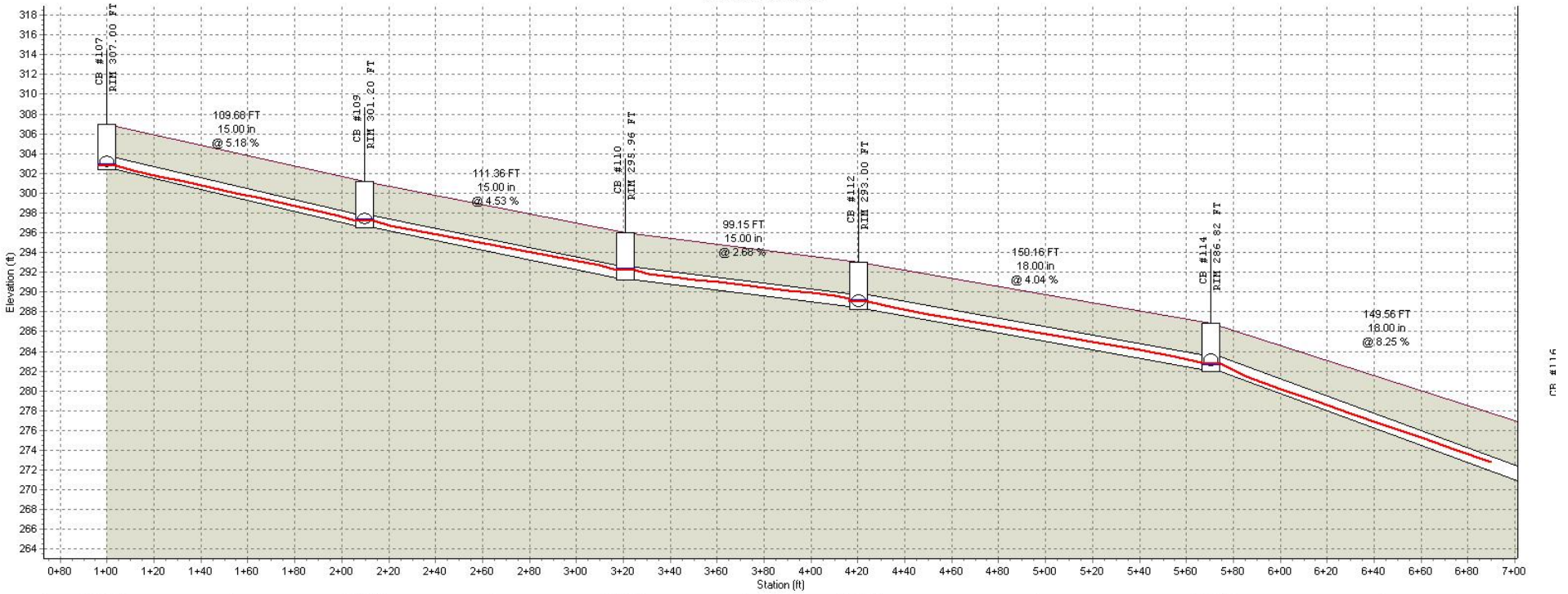
:	YI #622	YI #621	YI #620	YI #619	YI #618	CB #120	CB #119	CB #117
RIM (FT):	301.24	294.94	290.45	279.74	270.63	272.12	270.05	269.27
Invert (ft):	296.11	290.49	286.26	274.69	266.41	265.32	264.63	263.40
Min Pipe Cover (ft):								
Max HGL (ft):	296.32	290.85	286.61	275.14	267.25	266.37	265.57	264.92

Link ID:	P #173	P #172	P #171	P #170	P #169	P #168	P #166
(FT):	150.03	150.00	150.00	150.04	71.11	80.90	44.24
(in):	15.00	15.00	15.00	15.00	18.00	24.00	24.00
@ (%):	3.61	2.69	7.58	5.38	1.24	0.50	1.58
Up Invert (ft):	296.11	290.49	286.26	274.69	266.41	265.32	264.63
Dn Invert (ft):	290.69	286.46	274.89	266.61	265.52	264.92	263.93
Max Q (cfs):	0.69	1.75	2.80	4.22	5.27	6.49	7.58
Max Vel (ft/s):	5.30	6.18	10.24	8.27	5.13	4.33	5.75
Max Depth (ft):	0.20	0.35	0.34	0.55	0.85	0.97	0.96

HGL

Profile Plot

Main Street Storm Sewer



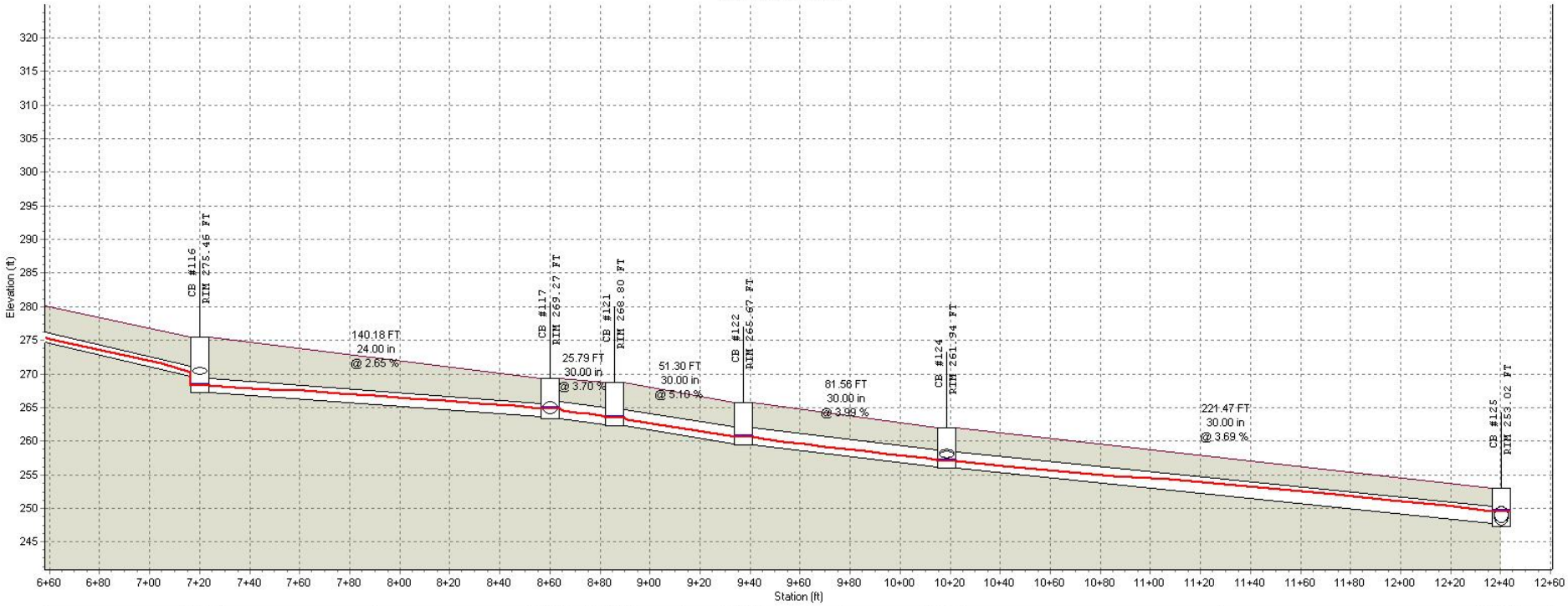
:	CB #107	CB #109	CB #110	CB #112	CB #114	
RIM (FT):	307.00	301.20	295.96	293.00	286.82	
Invert (ft):	302.36	296.48	291.23	288.24	281.98	
Min Pipe Cover (ft):						
Max HGL (ft):	302.80	297.17	292.19	289.04	282.72	

Link ID:	P #156	P #158	P #159	P #161	P #163
(FT):	109.68	111.36	99.15	150.16	149.56
(in):	15.00	15.00	15.00	18.00	18.00
@ (%):	5.18	4.53	2.68	4.04	8.25
Up Invert (ft):	302.36	296.48	291.23	288.24	281.98
Dn Invert (ft):	296.68	291.43	288.57	282.18	269.65
Max Q (cfs):	3.56	6.94	7.80	9.63	12.17
Max Vel (ft/s):	8.71	9.51	8.48	10.85	15.05
Max Depth (ft):	0.47	0.72	0.88	0.75	0.70

HGL

Profile Plot

Main Street Storm Sewer



:	CB #116		CB #117	CB #121	CB #122	CB #124	CB #125
RIM (FT):	275.46		269.27	268.80	265.67	261.94	253.02
Invert (ft):	267.32		263.40	262.25	259.43	255.98	247.30
Min Pipe Cover (ft):							
Max HGL (ft):	268.29		264.92	263.47	260.67	257.07	249.61

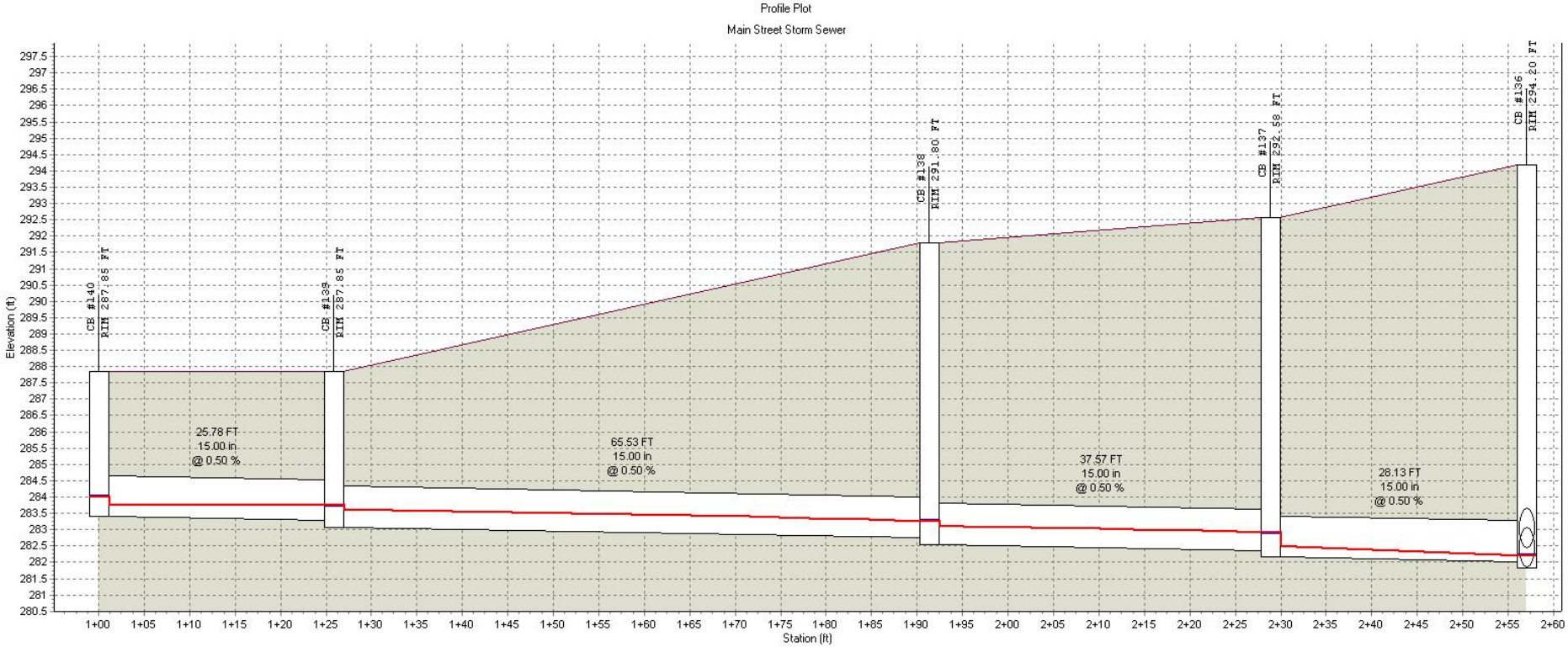
Link ID:	P #165	P #174	P #175	P #176	P #181	
(FT):	140.18	25.79	51.30	81.56	221.47	
(in):	24.00	30.00	30.00	30.00	30.00	
@ (%):	2.65	3.70	5.10	3.99	3.69	
Up Invert (ft):	267.32	263.40	262.25	259.43	255.98	
Dn Invert (ft):	263.60	262.45	259.63	256.18	247.80	
Max Q (cfs):	14.67	24.00	25.11	25.51	29.17	
Max Vel (ft/s):	7.93	9.57	11.56	12.25	10.98	
Max Depth (ft):	1.14	1.27	1.14	1.10	1.45	

HGL

	YI #625	YI #624	YI #623	CB #124
RIM (FT):	286.32	274.92	269.43	261.94
Invert (ft):	281.88	270.28	260.44	255.98
Min Pipe Cover (ft):				
Max HGL (ft):	282.08	270.58	260.80	257.07

Link ID:	P #179	P #178	P #177
(FT):	149.79	133.59	43.47
(in):	15.00	15.00	18.00
@ (%):	7.61	7.22	7.10
Up Invert (ft):	281.88	270.28	260.44
Dn Invert (ft):	270.48	260.64	257.35
Max Q (cfs):	0.98	1.96	2.82
Max Vel (ft/s):	7.66	9.08	9.16
Max Depth (ft):	0.20	0.29	0.35

HGL



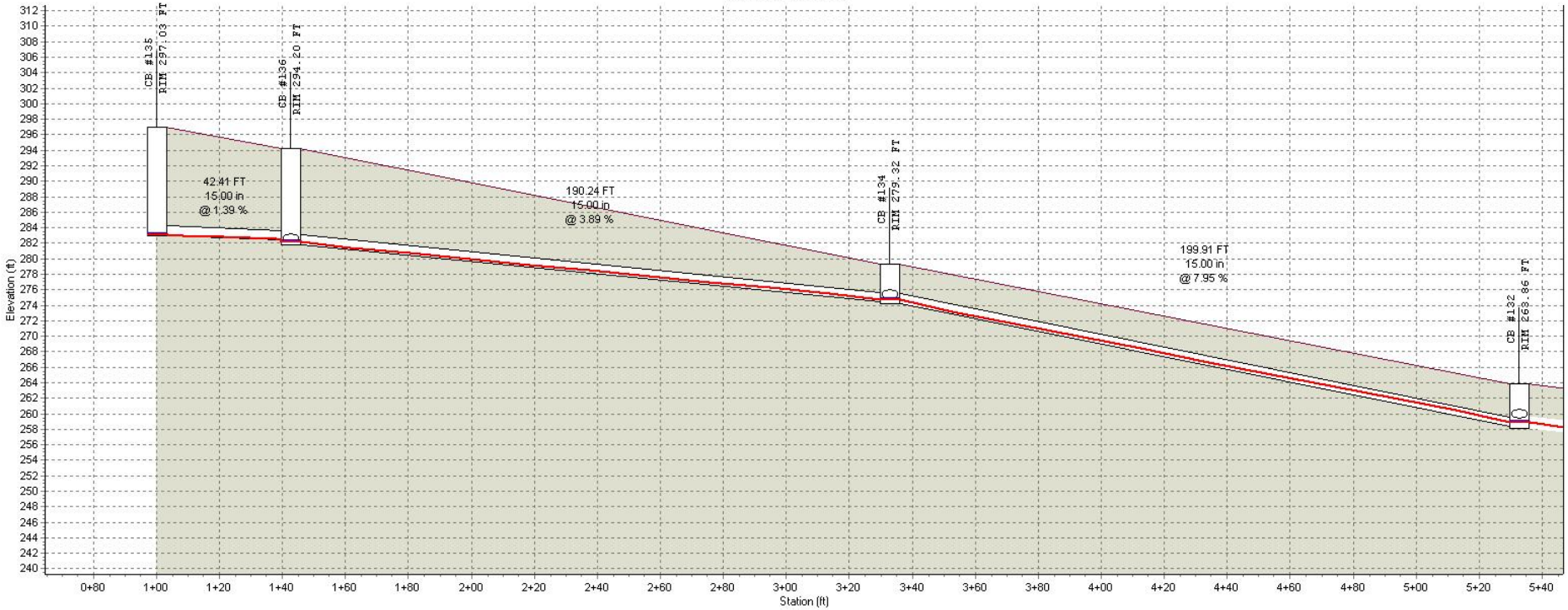
:	CB #140	CB #139	CB #138	CB #137	CB #136
RIM (FT):	287.85	287.85	291.80	292.58	294.20
Invert (ft):	283.41	283.08	282.55	282.16	281.82
Min Pipe Cover (ft):					
Max HGL (ft):	284.00	283.74	283.26	282.90	282.20

Link ID:	P #196	P #195	P #194	P #193
(FT):	25.78	65.53	37.57	28.13
(in):	15.00	15.00	15.00	15.00
@ (%):	0.50	0.50	0.50	0.50
Up Invert (ft):	283.41	283.08	282.55	282.16
Dn Invert (ft):	283.28	282.75	282.36	282.02
Max Q (cfs):	1.50	1.98	2.09	2.19
Max Vel (ft/s):	2.98	3.35	3.30	3.31
Max Depth (ft):	0.54	0.61	0.64	0.66

HGL

Profile Plot

Main Street Storm Sewer



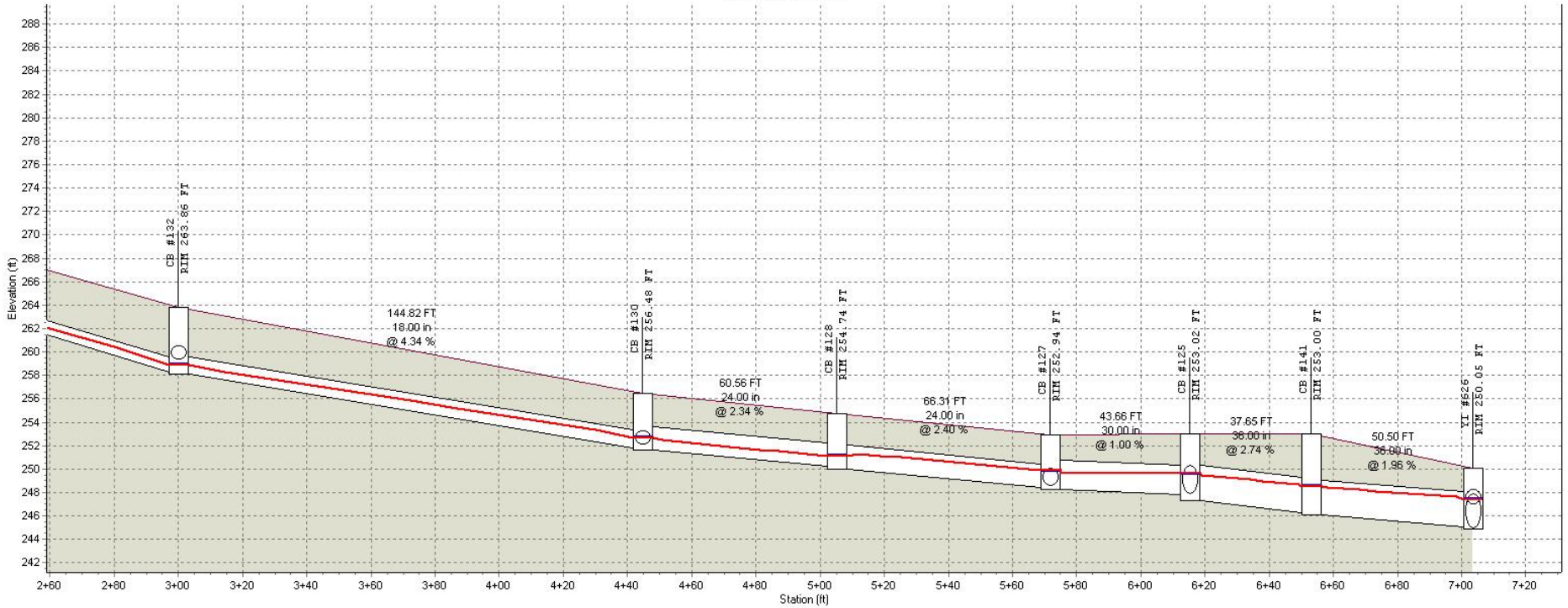
:	CB #135	CB #136	CB #134	CB #132
RIM (FT):	297.03	294.20	279.32	263.86
Invert (ft):	283.00	281.82	274.21	258.13
Min Pipe Cover (ft):				
Max HGL (ft):	283.08	282.20	274.69	258.87

Link ID:	P #192	P #191	P #189
(FT):	42.41	190.24	199.91
(in):	15.00	15.00	15.00
@ (%):	1.39	3.89	7.95
Up Invert (ft):	283.00	281.82	274.21
Dn Invert (ft):	282.41	274.42	258.33
Max Q (cfs):	0.06	2.37	5.32
Max Vel (ft/s):	1.81	7.72	11.69
Max Depth (ft):	0.08	0.37	0.51

HGL

Profile Plot

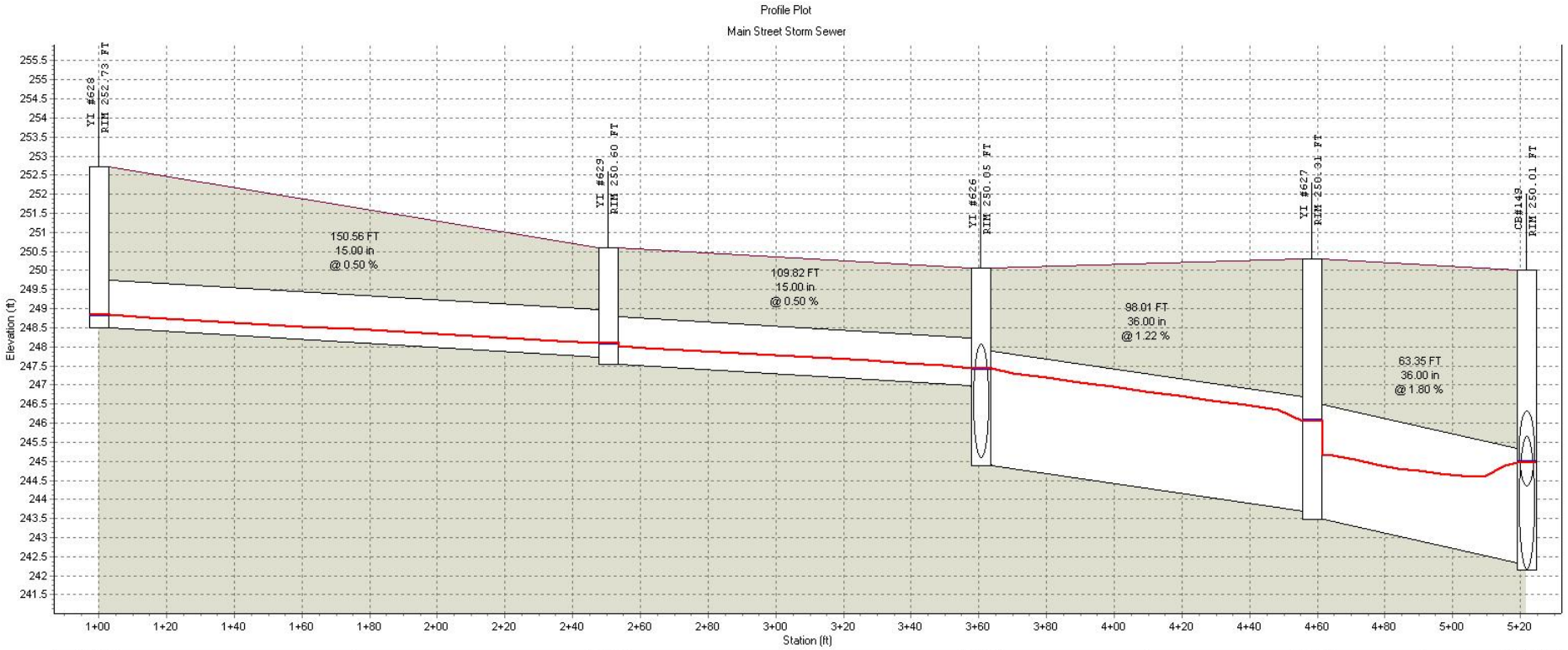
Main Street Storm Sewer



:	CB #132	CB #130	CB #128	CB #127	CB #125	CB #141	YI #626
RIM (FT):	263.86	256.48	254.74	252.94	253.02	253.00	250.05
Invert (ft):	258.13	251.65	250.03	248.24	247.30	246.07	244.88
Min Pipe Cover (ft):							
Max HGL (ft):	258.87	252.70	251.09	249.87	249.61	248.52	247.43

Link ID:	P #187	P #185	P #184	P #182	P #197	P #198	
(FT):	144.82	60.56	66.31	43.66	37.65	50.50	
(in):	18.00	24.00	24.00	30.00	36.00	36.00	
@ (%):	4.34	2.34	2.40	1.00	2.74	1.96	
Up Invert (ft):	258.13	251.65	250.03	248.24	247.30	246.07	
Dn Invert (ft):	251.85	250.23	248.44	247.80	246.27	245.08	
Max Q (cfs):	9.42	12.09	12.28	14.04	44.05	44.71	
Max Vel (ft/s):	9.97	8.23	6.53	5.28	7.98	7.58	
Max Depth (ft):	0.79	0.95	1.24	1.72	2.28	2.40	

HGL

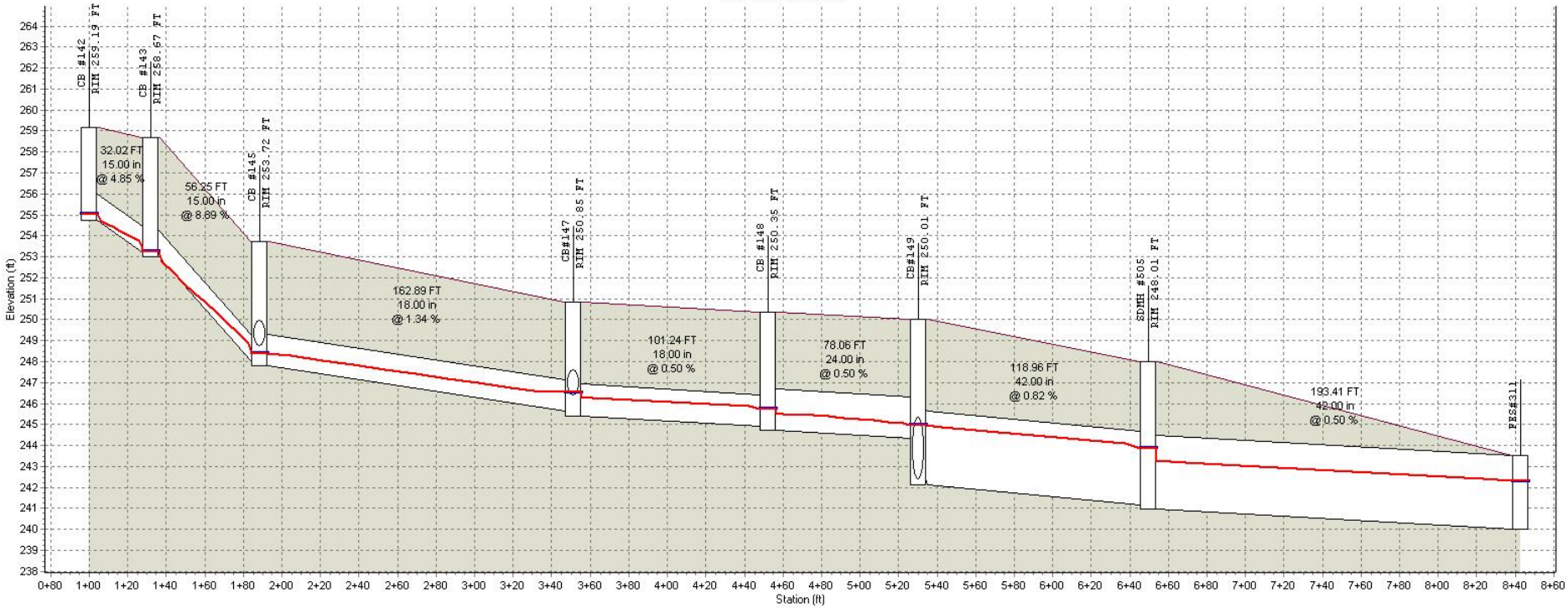


:	YI #628	YI #629	YI #626	YI #627	CB#149
RIM (FT):	252.73	250.60	250.05	250.31	250.01
Invert (ft):	248.49	247.54	244.88	243.49	242.15
Min Pipe Cover (ft):					
Max HGL (ft):	248.84	248.09	247.43	246.06	244.98

Link ID:	P #201	P #202	P #199	P #200
(FT):	150.56	109.82	98.01	63.35
(in):	15.00	15.00	36.00	36.00
@ (%):	0.50	0.50	1.22	1.80
Up Invert (ft):	248.49	247.54	244.88	243.49
Dn Invert (ft):	247.74	246.99	243.69	242.35
Max Q (cfs):	0.70	1.56	46.78	46.96
Max Vel (ft/s):	2.55	3.22	7.68	7.22
Max Depth (ft):	0.34	0.52	2.46	2.60

Profile Plot

Main Street Storm Sewer



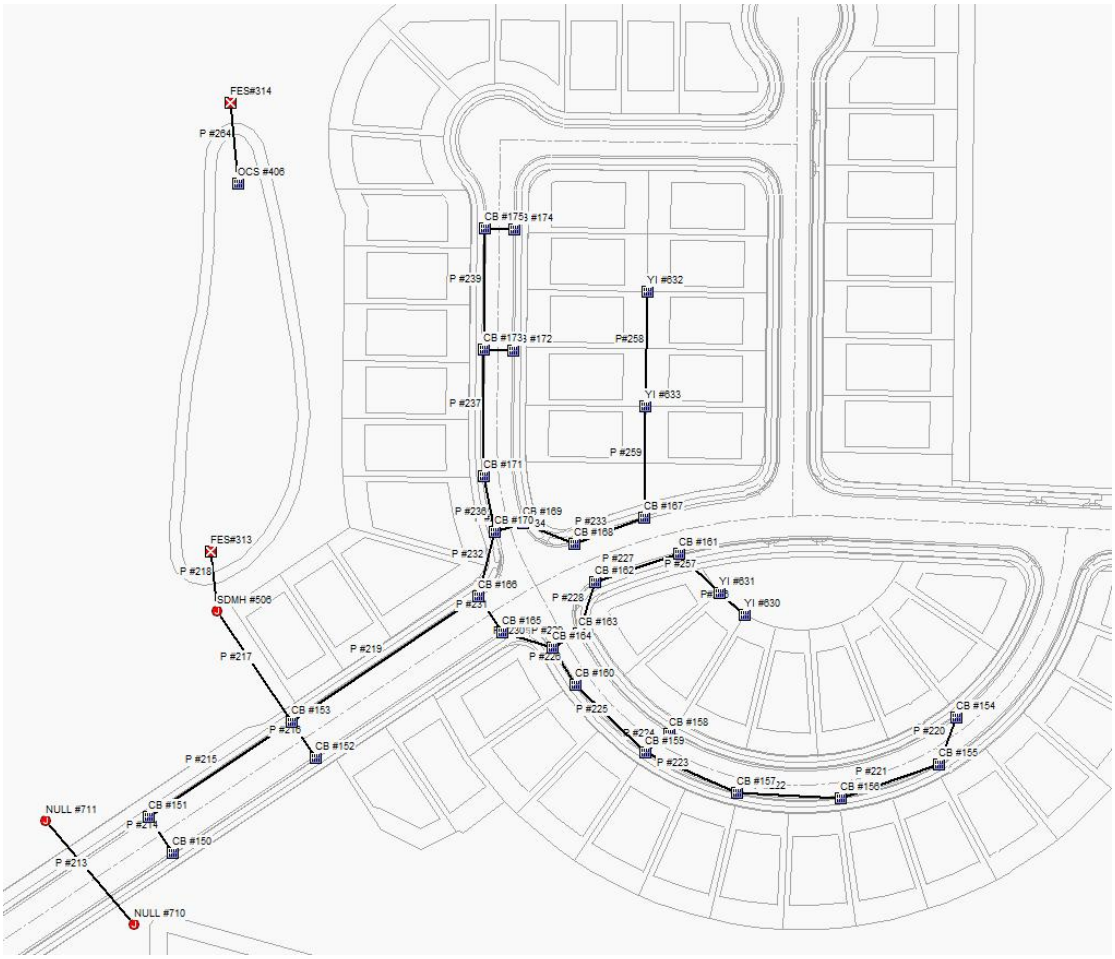
:	CB #142	CB #143	CB #145	CB#147	CB #148	CB#149	SDMH #505	FES#311
RIM (FT):	259.19	258.67	253.72	250.85	250.35	250.01	248.01	
Invert (ft):	254.75	253.00	247.80	245.42	244.71	242.15	240.97	240.00
Min Pipe Cover (ft):							3.34	
Max HGL (ft):	255.03	253.26	248.38	246.53	245.75	244.98	243.87	242.30

Link ID:	P #203	P #204	P#206	P #208	P #209	P #210	P #211
(FT):	32.02	56.25	162.89	101.24	78.06	118.96	193.41
(in):	15.00	15.00	18.00	18.00	24.00	42.00	42.00
@ (%):	4.85	8.89	1.34	0.50	0.50	0.82	0.50
Up Invert (ft):	254.75	253.00	247.80	245.42	244.71	242.15	240.97
Dn Invert (ft):	253.20	248.00	245.62	244.91	244.32	241.17	240.00
Max Q (cfs):	1.19	1.81	3.35	5.42	6.38	55.06	54.79
Max Vel (ft/s):	6.39	7.51	3.96	4.32	4.30	6.84	7.17
Max Depth (ft):	0.26	0.32	0.74	1.00	0.96	2.76	2.60

HGL

S T O R M W A T E R AREA “ D ”

STORMWATER PIPING AND HYDRAULIC GRADE LINE FOR 10-YR STORM

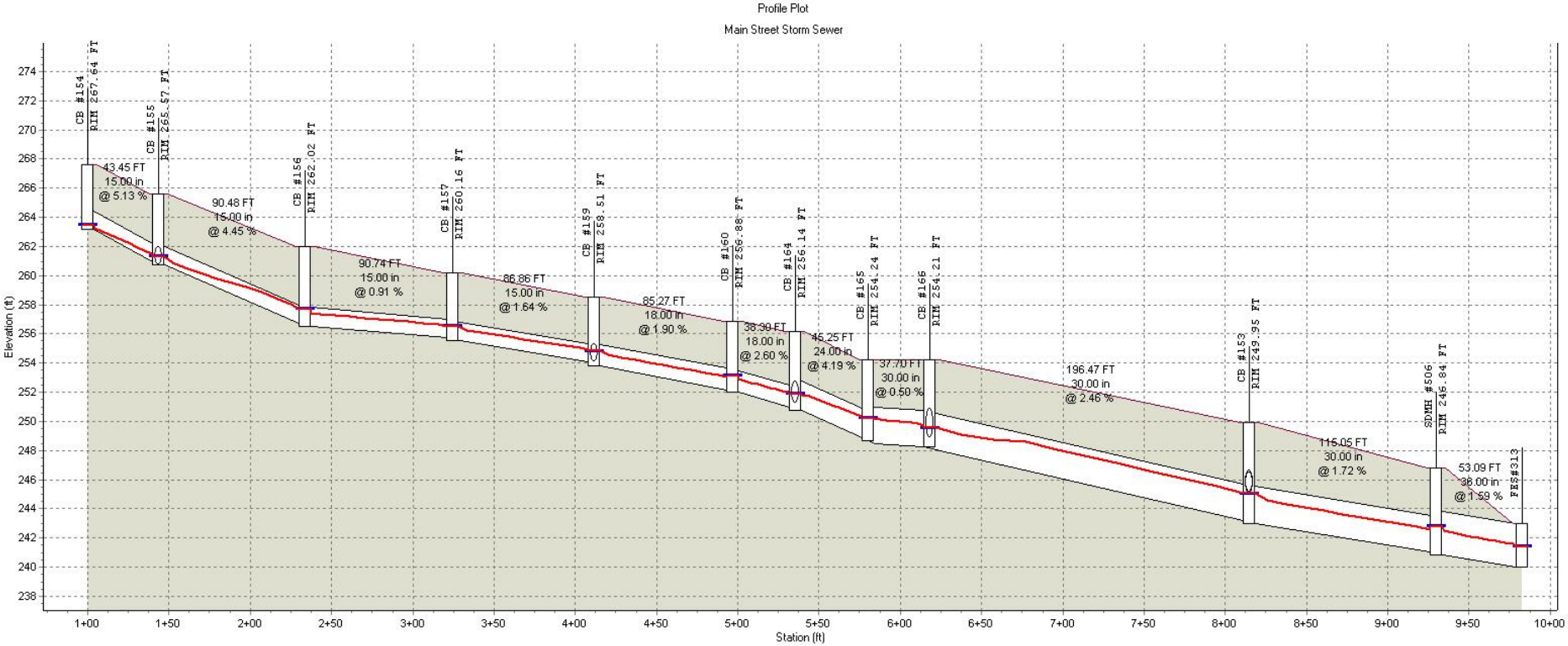


PLAN VIEW

DRAINAGE AREA

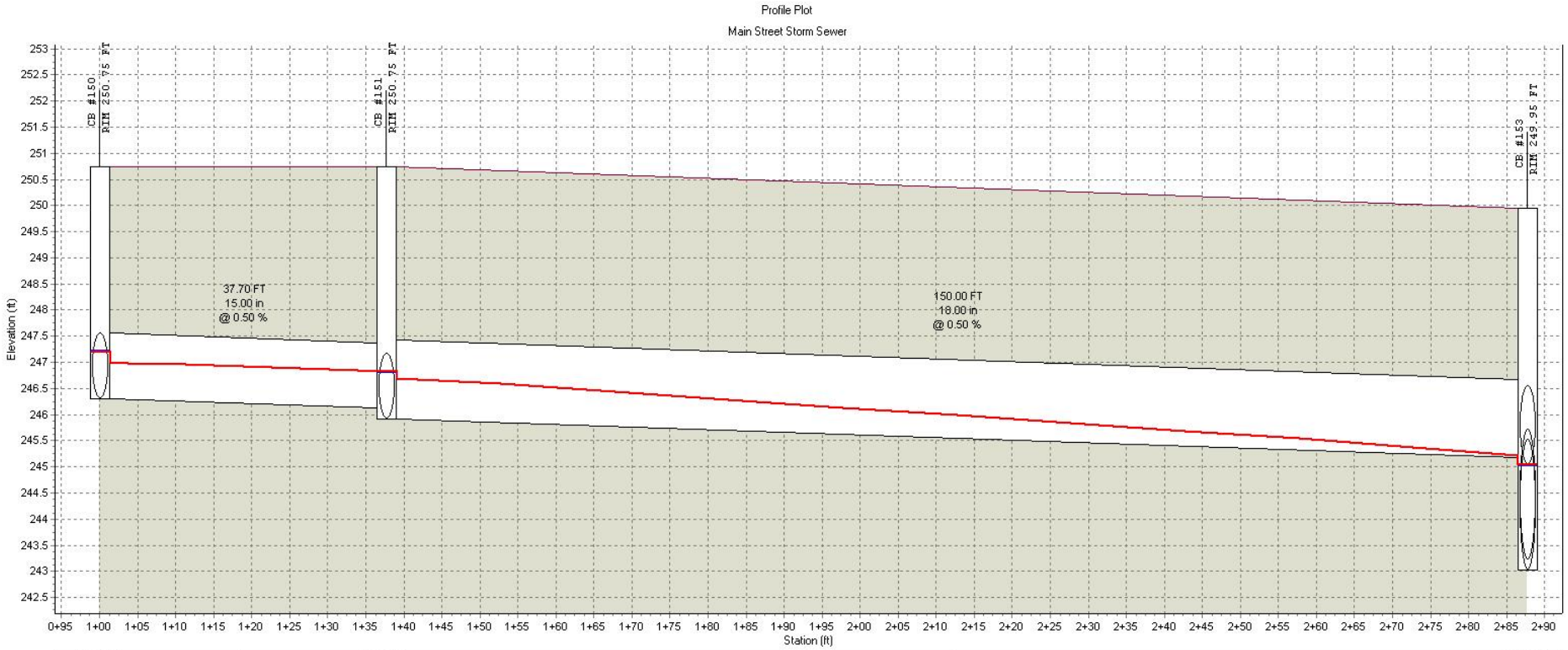
SN	Element ID	Area (acres)	Drainage Node ID	Weighted Runoff Coefficient	Accumulated Precipitation (inches)	Total Runoff (inches)	Peak Runoff (cfs)	Rainfall Intensity (inches/hr)	Time of Concentration (days hh:mm:ss)
1	Sub-CB#150	0.29	CB #150	0.7100	0.60	0.43	1.49	7.210	0 00:05:00
2	Sub-CB#151	0.25	CB #151	0.8700	0.60	0.52	1.57	7.210	0 00:05:00
3	Sub-CB#152	0.42	CB #152	0.7500	0.60	0.45	2.27	7.210	0 00:05:00
4	Sub-CB#153	0.46	CB #153	0.7500	0.60	0.45	2.49	7.210	0 00:05:00
5	Sub-CB#154	0.27	CB #154	0.7500	0.60	0.45	1.46	7.210	0 00:05:00
6	Sub-CB#155	0.45	CB #155	0.7500	0.60	0.45	2.43	7.210	0 00:05:00
7	Sub-CB#156	0.18	CB #156	0.7500	0.60	0.45	0.97	7.210	0 00:05:00
8	Sub-CB#157	0.20	CB #157	0.7500	0.60	0.45	1.08	7.210	0 00:05:00
9	Sub-CB#158	0.43	CB #158	0.7500	0.60	0.45	2.33	7.210	0 00:05:00
10	Sub-CB#159	0.17	CB #159	0.7500	0.60	0.45	0.92	7.210	0 00:05:00
11	Sub-CB#160	0.14	CB #160	0.7500	0.60	0.45	0.76	7.210	0 00:05:00
12	Sub-CB#161	0.10	CB #161	0.8700	0.60	0.52	0.63	7.210	0 00:05:00
13	Sub-CB#162	0.05	CB #162	0.8700	0.60	0.52	0.31	7.210	0 00:05:00
14	Sub-CB#163	0.26	CB #163	0.7500	0.60	0.45	1.41	7.210	0 00:05:00
15	Sub-CB#164	0.08	CB #164	0.7900	0.60	0.48	0.46	7.210	0 00:05:00
16	Sub-CB#165	0.09	CB #165	0.7900	0.60	0.48	0.51	7.210	0 00:05:00
17	Sub-CB#166	0.10	CB #166	0.7900	0.60	0.48	0.57	7.210	0 00:05:00
18	Sub-CB#167	0.14	CB #167	0.5900	0.60	0.35	0.60	7.210	0 00:05:00
19	Sub-CB#168	0.05	CB #168	0.8700	0.60	0.52	0.31	7.210	0 00:05:00
20	Sub-CB#169	0.41	CB #169	0.5100	0.60	0.31	1.51	7.210	0 00:05:00
21	Sub-CB#170	0.10	CB #170	0.7900	0.60	0.48	0.57	7.210	0 00:05:00
22	Sub-CB#171	0.19	CB #171	0.7500	0.60	0.45	1.03	7.210	0 00:05:00
23	Sub-CB#172	0.18	CB #172	0.7500	0.60	0.45	0.97	7.210	0 00:05:00
24	Sub-CB#173	0.19	CB #173	0.7500	0.60	0.45	1.03	7.210	0 00:05:00
25	Sub-CB#174	0.09	CB #174	0.7900	0.60	0.48	0.51	7.210	0 00:05:00
26	Sub-CB#175	0.42	CB #175	0.7500	0.60	0.45	2.27	7.210	0 00:05:00
27	Sub-YI#630	0.55	YI #630	0.5500	0.60	0.33	2.18	7.210	0 00:05:00
28	Sub-YI#631	0.07	YI #631	0.7100	0.60	0.43	0.36	7.210	0 00:05:00
29	Sub-YI#632	0.25	YI #632	0.8300	0.60	0.50	1.50	7.210	0 00:05:00
30	Sub-YI#633	0.36	YI #633	0.8300	0.60	0.50	2.15	7.210	0 00:05:00

MODEL INPUT											MODEL OUTPUT										
SN	Element ID	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Total Drop (ft)	Average Slope (%)	Pipe Diameter or Height (inches)	Manning's Roughness	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Max Flow Velocity (ft/sec)	Travel Time (min)	Design Flow Capacity (cfs)	Additional flow capacity (cfs)	Max Flow / Design Flow Ratio	Max Flow Depth / Total Depth Ratio	Total Time Surcharged (min)	Max Flow Depth (ft)	Reported Condition
1	P #214	CB #150	CB #151	37.70	246.31	246.12	0.19	0.5000	15.000	0.0130	2.97	0 00:05	3.65	0.17	4.57	1.60	0.65	0.63	0.00	0.79	Calculated
2	P #215	CB #151	CB #153	150.00	245.92	245.17	0.75	0.5000	18.000	0.0130	4.15	0 00:06	4.10	0.61	7.43	3.28	0.56	0.56	0.00	0.84	Calculated
3	P #216	CB #152	CB #153	37.73	245.24	245.05	0.19	0.5000	18.000	0.0130	2.31	0 00:05	3.29	0.19	7.43	5.12	0.31	0.42	0.00	0.63	Calculated
4	P #217	CB #153	SDMH #506	115.05	243.02	241.04	1.98	1.7200	30.000	0.0130	36.48	0 00:06	9.19	0.21	53.80	17.32	0.68	0.76	0.00	1.89	Calculated
5	P #218	SDMH #506	FES#313	53.09	240.84	240.00	0.84	1.5900	36.000	0.0130	36.49	0 00:06	9.01	0.10	84.10	47.61	0.43	0.56	0.00	1.67	Calculated
6	P #219	CB #166	CB #153	196.47	248.06	243.22	4.83	2.4600	30.000	0.0130	28.04	0 00:06	9.33	0.35	65.91	37.87	0.43	0.61	0.00	1.53	Calculated
7	P #220	CB #154	CB #155	43.45	263.21	260.98	2.23	5.1300	15.000	0.0130	1.35	0 00:05	6.27	0.12	14.63	13.28	0.09	0.23	0.00	0.29	Calculated
8	P #221	CB #155	CB #156	90.48	260.78	256.75	4.03	4.4500	15.000	0.0130	4.57	0 00:05	7.21	0.21	13.63	9.06	0.34	0.58	0.00	0.72	Calculated
9	P #222	CB #156	CB #157	90.74	256.55	255.72	0.83	0.9100	15.000	0.0130	5.48	0 00:05	5.12	0.30	6.16	0.68	0.89	0.83	0.00	1.03	Calculated
10	P #223	CB #157	CB #159	86.86	255.52	254.10	1.43	1.6400	15.000	0.0130	6.31	0 00:06	6.65	0.22	8.28	1.97	0.76	0.72	0.00	0.90	Calculated
11	P #224	CB #158	CB #159	27.12	254.24	254.10	0.14	0.5300	15.000	0.0130	1.77	0 00:05	2.88	0.16	4.71	2.94	0.38	0.57	0.00	0.71	Calculated
12	P #225	CB #159	CB #160	85.27	253.80	252.18	1.62	1.9000	18.000	0.0130	8.75	0 00:05	7.07	0.20	14.49	5.74	0.60	0.66	0.00	0.99	Calculated
13	P #226	CB #160	CB #164	38.30	251.98	250.98	1.00	2.6000	18.000	0.0150	9.42	0 00:05	7.37	0.09	14.68	5.26	0.64	0.68	0.00	1.03	Calculated
14	P #227	CB #161	CB #162	77.51	253.03	252.57	0.46	0.5900	18.000	0.0130	3.63	0 00:05	4.06	0.32	8.08	4.45	0.45	0.51	0.00	0.76	Calculated
15	P #228	CB #162	CB #163	47.01	252.37	251.59	0.78	1.6500	18.000	0.0130	3.90	0 00:05	4.06	0.19	13.49	9.59	0.29	0.57	0.00	0.85	Calculated
16	P #229	CB #163	CB #164	25.73	251.39	251.26	0.13	0.5000	18.000	0.0130	5.71	0 00:05	4.20	0.10	7.43	1.72	0.77	0.72	0.00	1.08	Calculated
17	P #230	CB #164	CB #165	45.25	250.78	248.89	1.89	4.1900	24.000	0.0130	15.54	0 00:05	8.03	0.09	46.28	30.74	0.34	0.60	0.00	1.19	Calculated
18	P #231	CB #165	CB #166	37.70	248.44	248.26	0.19	0.5000	30.000	0.0130	15.97	0 00:05	5.86	0.11	41.64	25.67	0.38	0.55	0.00	1.38	Calculated
19	P #232	CB #170	CB #166	57.92	251.39	248.87	2.52	4.3500	24.000	0.0130	11.50	0 00:05	10.37	0.09	47.20	35.70	0.24	0.38	0.00	0.77	Calculated
20	P #233	CB #167	CB #168	65.21	253.47	252.71	0.76	1.1700	15.000	0.0130	3.90	0 00:05	5.24	0.21	6.98	3.08	0.56	0.58	0.00	0.73	Calculated
21	P #234	CB #168	CB #169	47.73	252.51	251.92	0.59	1.2300	18.000	0.0130	4.17	0 00:05	3.82	0.21	11.66	7.49	0.36	0.60	0.00	0.90	Calculated
22	P #235	CB #169	CB #170	25.80	251.72	251.59	0.13	0.5000	18.000	0.0130	5.57	0 00:06	4.17	0.10	7.43	1.86	0.75	0.71	0.00	1.06	Calculated
23	P #236	CB #171	CB #170	49.61	252.72	251.72	1.00	2.0100	18.000	0.0130	5.42	0 00:05	6.68	0.12	14.89	9.47	0.36	0.47	0.00	0.70	Calculated
24	P #237	CB #173	CB #171	109.56	255.46	252.92	2.55	2.3300	18.000	0.0130	4.56	0 00:05	7.07	0.26	16.02	11.46	0.28	0.39	0.00	0.59	Calculated
25	P #238	CB #172	CB #173	25.73	255.94	255.81	0.13	0.5000	15.000	0.0130	0.89	0 00:05	2.60	0.16	4.57	3.68	0.19	0.32	0.00	0.40	Calculated
26	P #239	CB #175	CB #173	105.59	258.29	255.66	2.63	2.4900	18.000	0.0130	2.22	0 00:05	5.95	0.30	16.56	14.34	0.13	0.27	0.00	0.40	Calculated
27	P #240	CB #174	CB #175	25.70	258.62	258.49	0.13	0.5000	15.000	0.0130	0.50	0 00:05	2.25	0.19	4.57	4.07	0.11	0.24	0.00	0.30	Calculated
28	P #257	YI #631	CB #161	49.00	253.47	253.23	0.25	0.5000	15.000	0.0130	2.46	0 00:05	3.50	0.23	4.57	2.11	0.54	0.56	0.00	0.70	Calculated
29	P #259	YI #633	CB #167	97.52	254.15	253.67	0.49	0.5000	15.000	0.0130	3.37	0 00:05	3.91	0.42	4.57	1.20	0.74	0.66	0.00	0.83	Calculated
30	P#256	YI #630	YI #631	29.02	253.82	253.67	0.15	0.5000	15.000	0.0130	2.14	0 00:05	3.29	0.15	4.57	2.43	0.47	0.52	0.00	0.66	Calculated
31	P#258	YI #632	YI #633	100.00	256.27	254.35	1.92	1.9200	15.000	0.0130	1.47	0 00:05	3.64	0.46	8.94	7.47	0.16	0.42	0.00	0.53	Calculated



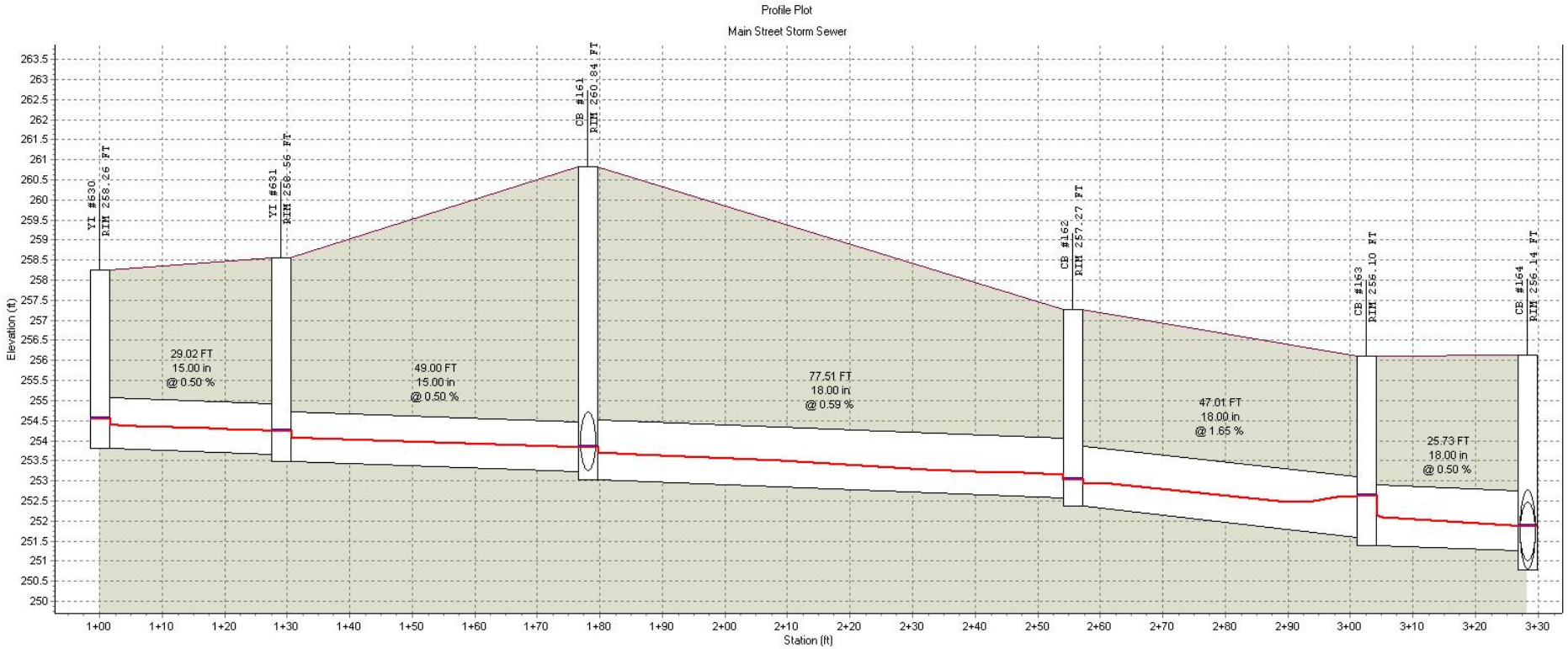
:	CB #154	CB #155	CB #156	CB #157	CB #159	CB #160	CB #164	CB #165	CB #166	CB #153	SDMH #506	FES#313
RIM (FT):	267.64	265.57	262.02	260.16	258.51	256.88	256.14	254.24	254.21	249.95	246.84	
Invert (ft):	263.21	260.78	256.55	255.52	253.80	251.98	250.78	248.69	248.30	243.02	240.84	240.00
Min Pipe Cover (ft):											2.99	
Max HGL (ft):	263.48	261.28	257.70	256.52	254.82	253.14	251.87	250.19	249.55	245.04	242.81	241.38

Link ID:	P #220	P #221	P #222	P #223	P #225	P #226	P #230	P #231	P #219	P #217	P #218
(FT):	43.45	90.48	90.74	86.86	85.27	38.30	45.25	37.70	196.47	115.05	53.09
(in):	15.00	15.00	15.00	15.00	18.00	18.00	24.00	30.00	30.00	30.00	36.00
@ (%):	5.13	4.45	0.91	1.64	1.90	2.60	4.19	0.50	2.46	1.72	1.59
Up Invert (ft):	263.21	260.78	256.55	255.52	253.80	251.98	250.78	248.44	248.06	243.02	240.84
Dn Invert (ft):	260.98	256.75	255.72	254.10	252.18	250.98	248.89	248.26	243.22	241.04	240.00
Max Q (cfs):	1.35	4.57	5.48	6.31	8.75	9.42	15.54	15.97	28.04	36.48	36.49
Max Vel (ft/s):	6.27	7.21	5.12	6.65	7.07	7.37	8.03	5.86	9.33	9.19	9.01
Max Depth (ft):	0.29	0.72	1.03	0.90	0.99	1.03	1.19	1.38	1.53	1.89	1.67



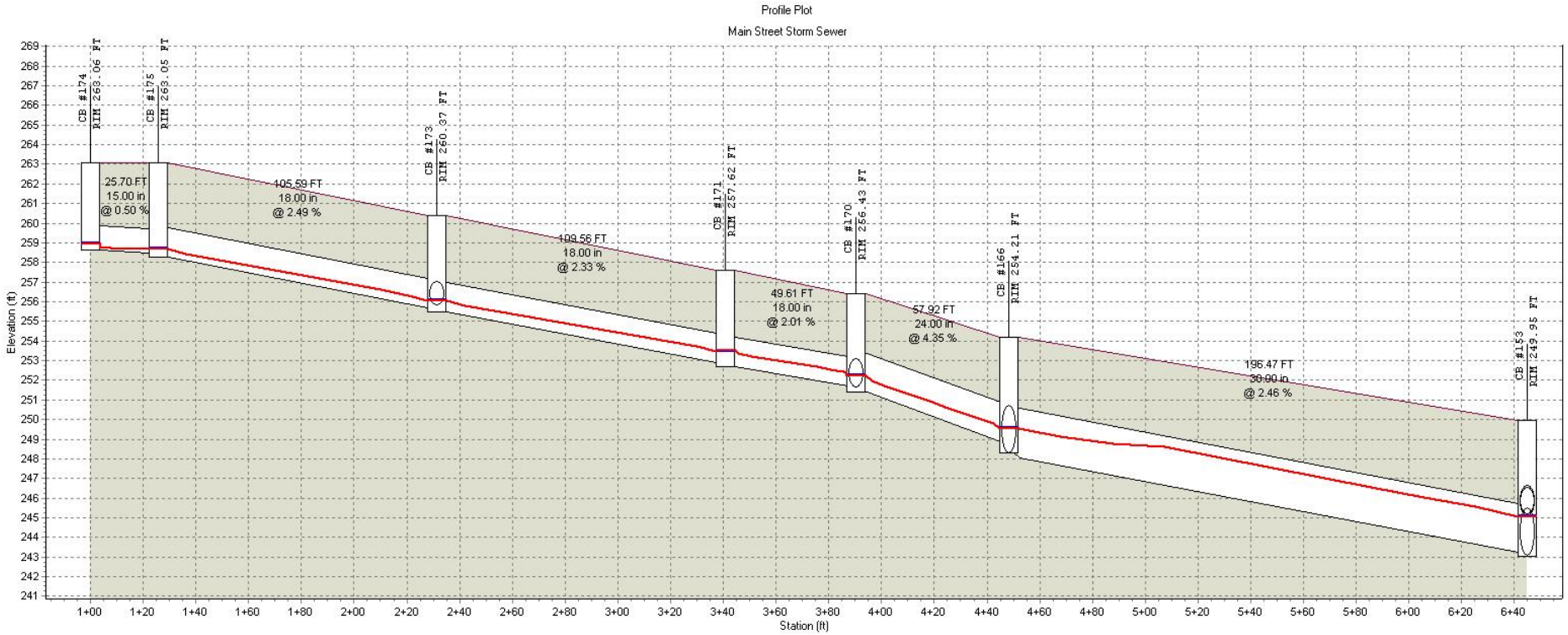
	CB #150	CB #151	CB #153
RIM (FT):	250.75	250.75	249.95
Invert (ft):	246.31	245.92	243.02
Min Pipe Cover (ft):			
Max HGL (ft):	247.20	246.82	245.04

Link ID:	P #214	P #215
(FT):	37.70	150.00
(in):	15.00	18.00
@ (%):	0.50	0.50
Up Invert (ft):	246.31	245.92
Dn Invert (ft):	246.12	245.17
Max Q (cfs):	2.97	4.15
Max Vel (ft/s):	3.65	4.10
Max Depth (ft):	0.79	0.84



:	YI #630	YI #631	CB #161	CB #162	CB #163	CB #164
RIM (FT):	258.26	258.56	260.84	257.27	256.10	256.14
Invert (ft):	253.82	253.47	253.03	252.37	251.39	250.78
Min Pipe Cover (ft):						
Max HGL (ft):	254.55	254.24	253.84	253.03	252.63	251.87

Link ID:	P#256	P #257	P #227	P #228	P #229
(FT):	29.02	49.00	77.51	47.01	25.73
(in):	15.00	15.00	18.00	18.00	18.00
@ (%):	0.50	0.50	0.59	1.65	0.50
Up Invert (ft):	253.82	253.47	253.03	252.37	251.39
Dn Invert (ft):	253.67	253.23	252.57	251.59	251.26
Max Q (cfs):	2.14	2.46	3.63	3.90	5.71
Max Vel (ft/s):	3.29	3.50	4.06	4.06	4.20
Max Depth (ft):	0.66	0.70	0.76	0.85	1.08



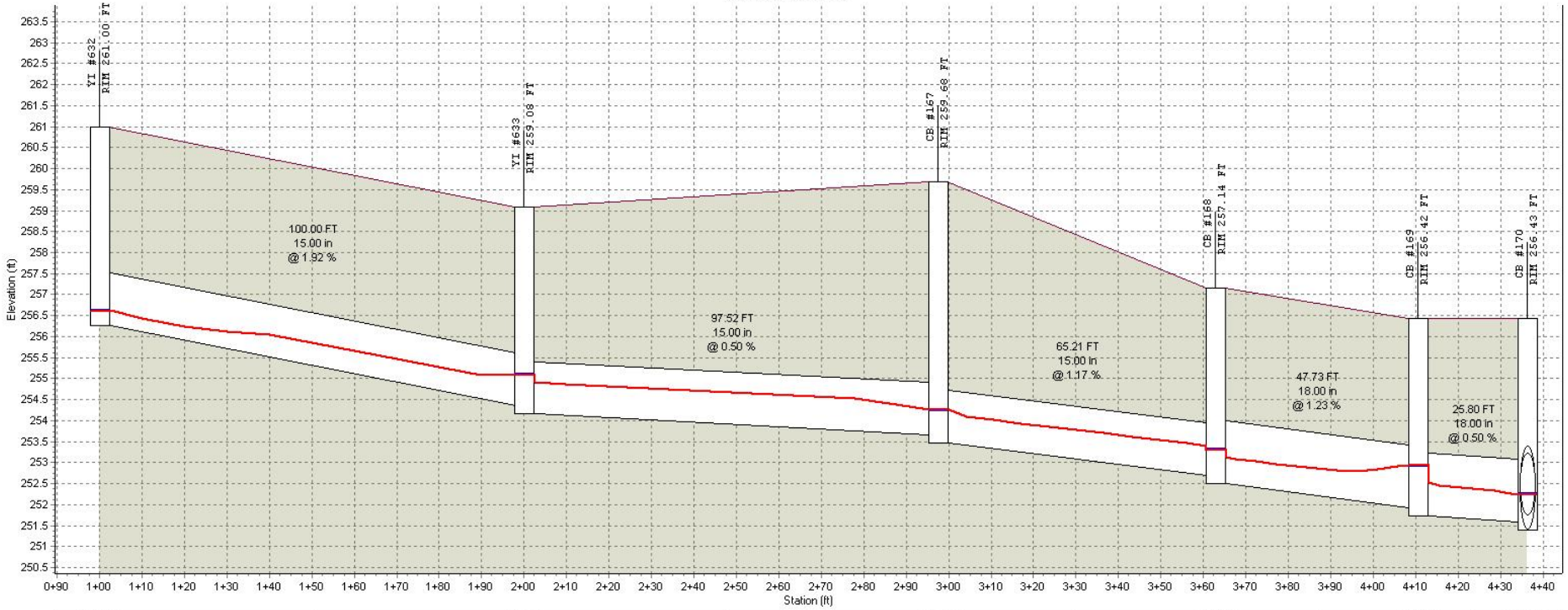
	CB #174	CB #175	CB #173	CB #171	CB #170	CB #166	CB #153
RIM (FT):	263.06	263.05	260.37	257.62	256.43	254.21	249.95
Invert (ft):	258.62	258.29	255.46	252.72	251.39	248.30	243.02
Min Pipe Cover (ft):							
Max HGL (ft):	258.94	258.68	256.07	253.50	252.24	249.55	245.04

Link ID:	P #240	P #239	P #237	P #236	P #232	P #219
(FT):	25.70	105.59	109.56	49.61	57.92	196.47
(in):	15.00	18.00	18.00	18.00	24.00	30.00
@ (%):	0.50	2.49	2.33	2.01	4.35	2.46
Up Invert (ft):	258.62	258.29	255.46	252.72	251.39	248.06
Dn Invert (ft):	258.49	255.66	252.92	251.72	248.87	243.22
Max Q (cfs):	0.50	2.22	4.56	5.42	11.50	28.04
Max Vel (ft/s):	2.25	5.95	7.07	6.68	10.37	9.33
Max Depth (ft):	0.30	0.40	0.59	0.70	0.77	1.53

HGL

Profile Plot

Main Street Storm Sewer



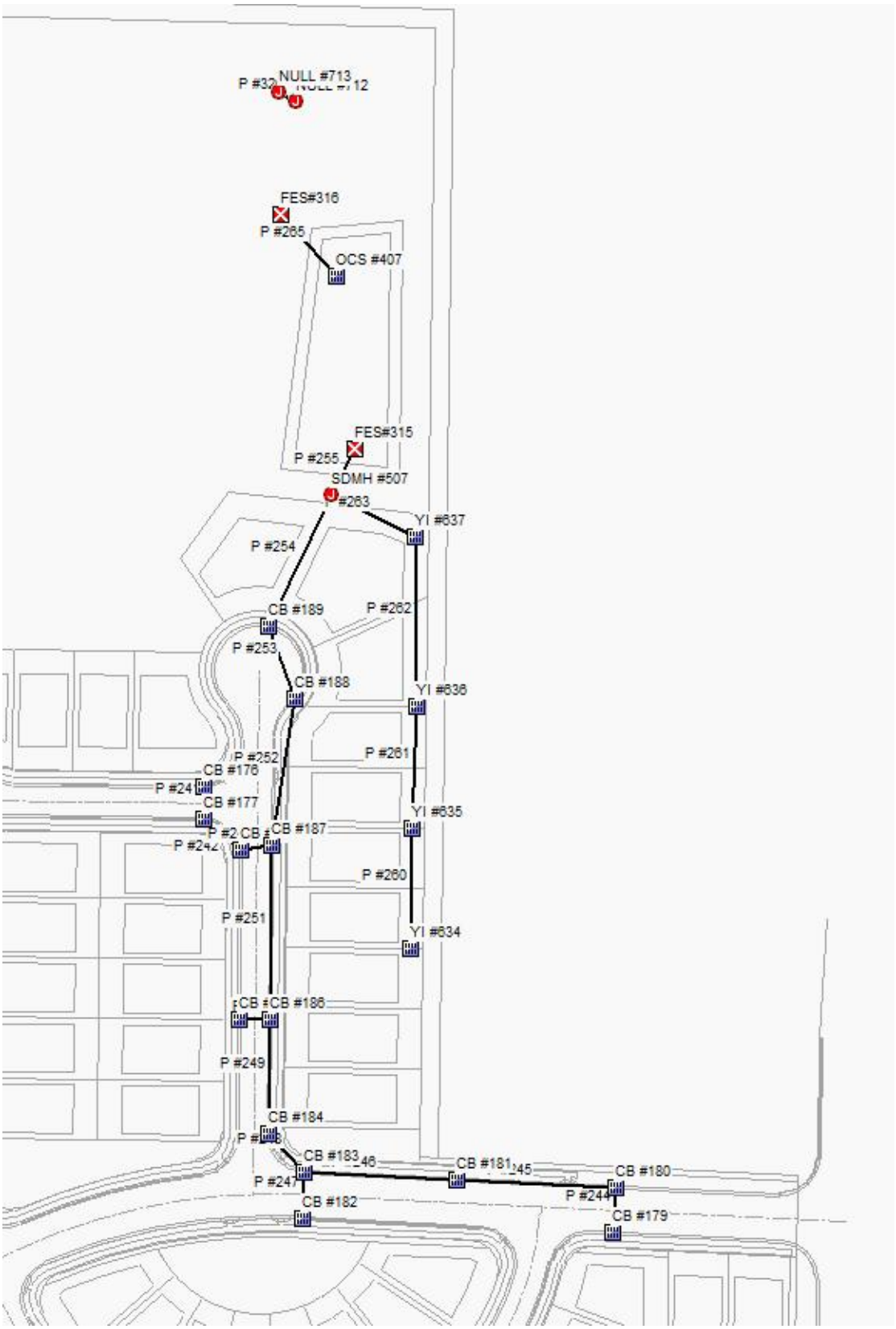
	YI #632	YI #633	CB #167	CB #168	CB #169	CB #170
RIM (FT):	261.00	259.08	259.68	257.14	256.42	256.43
Invert (ft):	256.27	254.15	253.47	252.51	251.72	251.39
Min Pipe Cover (ft):						
Max HGL (ft):	256.61	255.08	254.26	253.30	252.93	252.24

Link ID:	P#258	P #259	P #233	P #234	P #235
(FT):	100.00	97.52	65.21	47.73	25.80
(in):	15.00	15.00	15.00	18.00	18.00
@ (%):	1.92	0.50	1.17	1.23	0.50
Up Invert (ft):	256.27	254.15	253.47	252.51	251.72
Dn Invert (ft):	254.35	253.67	252.71	251.92	251.59
Max Q (cfs):	1.47	3.37	3.90	4.17	5.57
Max Vel (ft/s):	3.64	3.91	5.24	3.82	4.17
Max Depth (ft):	0.53	0.83	0.73	0.90	1.06

HGL

S T O R M W A T E R AREA " E "

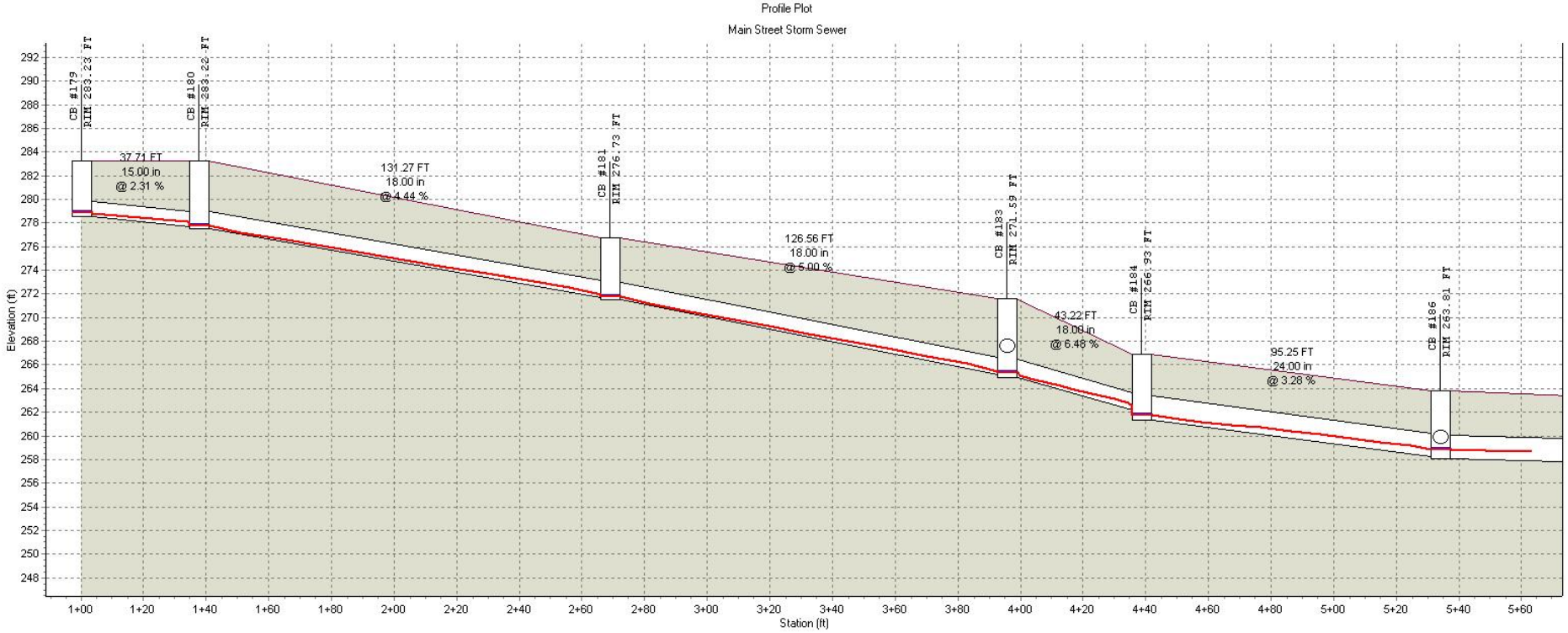
STORMWATER PIPING AND HYDRAULIC GRADE LINE FOR 10-YR STORM



DRAINAGE AREA

SN	Element ID	Area (acres)	Drainage Node ID	Weighted Runoff Coefficient	Accumulated Precipitation (inches)	Total Runoff (inches)	Peak Runoff (cfs)	Rainfall Intensity (inches/hr)	Time of Concentration (days hh:mm:ss)
1	Sub-CB#176	0.25	CB #176	0.7500	0.60	0.45	1.35	7.210	0 00:05:00
2	Sub-CB#177	0.16	CB #177	0.7900	0.60	0.48	0.91	7.210	0 00:05:00
3	Sub-CB#178	0.26	CB #178	0.7500	0.60	0.45	1.41	7.210	0 00:05:00
4	Sub-CB#179	0.24	CB #179	0.7500	0.60	0.45	1.30	7.210	0 00:05:00
5	Sub-CB#180	0.10	CB #180	0.8700	0.60	0.52	0.63	7.210	0 00:05:00
6	Sub-CB#181	0.09	CB #181	0.8700	0.60	0.52	0.57	7.210	0 00:05:00
7	Sub-CB#182	0.11	CB #182	0.8700	0.60	0.52	0.69	7.210	0 00:05:00
8	Sub-CB#183	0.09	CB #183	0.8700	0.60	0.52	0.57	7.210	0 00:05:00
9	Sub-CB#184	0.11	CB #184	0.5500	0.60	0.33	0.44	7.210	0 00:05:00
10	Sub-CB#185	0.14	CB #185	0.7500	0.60	0.45	0.76	7.210	0 00:05:00
11	Sub-CB#186	0.12	CB #186	0.7900	0.60	0.48	0.68	7.210	0 00:05:00
12	Sub-CB#187	0.28	CB #187	0.7500	0.60	0.45	1.51	7.210	0 00:05:00
13	Sub-CB#188	0.24	CB #188	0.7500	0.60	0.45	1.30	7.210	0 00:05:00
14	Sub-CB#189	0.47	CB #189	0.7500	0.60	0.45	2.54	7.210	0 00:05:00
15	Sub-YI#634	0.22	YI #634	0.7100	0.60	0.43	1.13	7.210	0 00:05:00
16	Sub-YI#635	0.13	YI #635	0.8300	0.60	0.50	0.78	7.210	0 00:05:00
17	Sub-YI#636	0.22	YI #636	0.8300	0.60	0.50	1.32	7.210	0 00:05:00
18	Sub-YI#637	0.07	YI #637	0.8700	0.60	0.52	0.44	7.210	0 00:05:00

MODEL INPUT											MODEL OUTPUT										
SN	Element ID	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Total Drop (ft)	Average Slope (%)	Pipe Diameter or Height (inches)	Manning's Roughness	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Max Flow Velocity (ft/sec)	Travel Time (min)	Design Flow Capacity (cfs)	Additional flow capacity (cfs)	Max Flow / Design Flow Ratio	Max Flow Depth / Total Depth Ratio	Total Time Surcharged (min)	Max Flow Depth (ft)	Reported Condition
1	P #241	CB #176	CB #177	25.77	257.89	257.76	0.13	0.5000	15.000	0.0130	1.04	0 00:05	2.42	0.18	4.57	3.53	0.23	0.43	0.00	0.54	Calculated
2	P #242	CB #177	CB #178	40.13	257.56	257.36	0.20	0.5000	15.000	0.0130	2.18	0 00:05	3.00	0.22	4.57	2.39	0.48	0.59	0.00	0.74	Calculated
3	P #243	CB #178	CB #187	26.56	257.16	257.03	0.13	0.5000	18.000	0.0130	3.21	0 00:05	3.26	0.14	7.43	4.22	0.43	0.58	0.00	0.87	Calculated
4	P #244	CB #179	CB #180	37.71	278.58	277.71	0.87	2.3100	15.000	0.0130	1.22	0 00:05	4.95	0.13	9.81	8.59	0.12	0.25	0.00	0.32	Calculated
5	P #245	CB #180	CB #181	131.27	277.51	271.68	5.83	4.4400	18.000	0.0130	1.80	0 00:05	7.31	0.30	22.13	20.33	0.08	0.20	0.00	0.30	Calculated
6	P #246	CB #181	CB #183	126.56	271.48	265.16	6.33	5.0000	18.000	0.0130	2.32	0 00:05	8.17	0.26	23.49	21.17	0.10	0.22	0.00	0.33	Calculated
7	P #247	CB #182	CB #183	37.71	267.15	266.96	0.19	0.5000	15.000	0.0130	0.70	0 00:05	2.50	0.25	4.57	3.87	0.15	0.28	0.00	0.35	Calculated
8	P #248	CB #183	CB #184	43.22	264.96	262.15	2.80	6.4800	18.000	0.0130	3.54	0 00:05	9.32	0.08	26.74	23.20	0.13	0.27	0.00	0.40	Calculated
9	P #249	CB #184	CB #186	95.25	261.36	258.24	3.12	3.2800	24.000	0.0130	3.95	0 00:05	6.44	0.25	40.97	37.02	0.10	0.26	0.00	0.52	Calculated
10	P #250	CB #185	CB #186	25.73	259.37	259.24	0.13	0.5000	15.000	0.0130	0.72	0 00:05	2.47	0.17	4.57	3.85	0.16	0.29	0.00	0.36	Calculated
11	P #251	CB #186	CB #187	144.78	258.04	257.05	0.99	0.6800	24.000	0.0130	5.27	0 00:05	4.46	0.54	18.68	13.41	0.28	0.40	0.00	0.81	Calculated
12	P #252	CB #187	CB #188	123.38	256.83	255.54	1.29	1.0500	24.000	0.0130	9.47	0 00:06	6.16	0.33	23.14	13.67	0.41	0.49	0.00	0.99	Calculated
13	P #253	CB #188	CB #189	63.83	255.34	254.57	0.77	1.2000	24.000	0.0130	10.56	0 00:06	6.51	0.16	24.78	14.22	0.43	0.51	0.00	1.03	Calculated
14	P #254	CB #189	SDMH #507	120.48	254.37	252.00	2.37	1.9700	30.000	0.0130	13.19	0 00:06	8.54	0.24	57.55	44.36	0.23	0.35	0.00	0.88	Calculated
15	P #255	SDMH #507	FES#315	42.94	250.93	250.00	0.93	2.1700	36.000	0.0130	16.45	0 00:06	8.18	0.09	98.25	81.80	0.17	0.33	0.00	0.98	Calculated
16	P #260	YI #634	YI #635	100.00	257.46	256.00	1.46	1.4600	15.000	0.0130	1.09	0 00:05	4.30	0.39	7.81	6.72	0.14	0.26	0.00	0.32	Calculated
17	P #261	YI #635	YI #636	99.98	255.80	254.56	1.24	1.2400	15.000	0.0130	1.84	0 00:05	3.96	0.42	7.20	5.36	0.26	0.42	0.00	0.53	Calculated
18	P #262	YI #636	YI #637	141.58	254.36	253.65	0.71	0.5000	15.000	0.0130	2.90	0 00:06	3.82	0.62	4.57	1.67	0.64	0.60	0.00	0.74	Calculated
19	P #263	YI #637	SDMH #507	77.43	253.45	251.13	2.32	3.0000	18.000	0.0130	3.27	0 00:06	4.92	0.26	18.19	14.92	0.18	0.46	0.00	0.68	Calculated



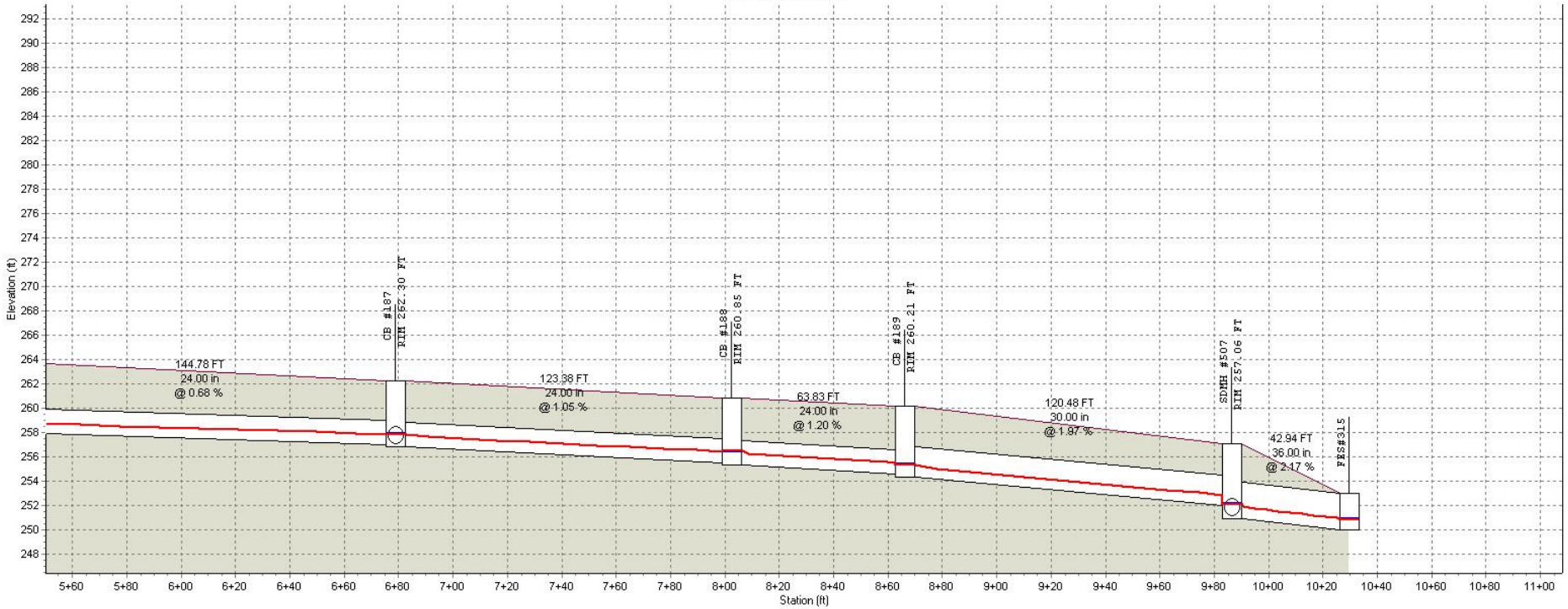
	CB #179	CB #180	CB #181	CB #183	CB #184	CB #186
RIM (FT):	283.23	283.22	276.73	271.59	266.93	263.81
Invert (ft):	278.58	277.51	271.48	264.96	261.36	258.04
Min Pipe Cover (ft):						
Max HGL (ft):	278.92	277.81	271.82	265.39	261.79	258.84

Link ID:	P #244	P #245	P #246	P #248	P #249	
(FT):	37.71	131.27	126.56	43.22	95.25	
(in):	15.00	18.00	18.00	18.00	24.00	
@ (%):	2.31	4.44	5.00	6.48	3.28	
Up Invert (ft):	278.58	277.51	271.48	264.96	261.36	
Dn Invert (ft):	277.71	271.68	265.16	262.15	258.24	
Max Q (cfs):	1.22	1.80	2.32	3.54	3.95	
Max Vel (ft/s):	4.95	7.31	8.17	9.32	6.44	
Max Depth (ft):	0.32	0.30	0.33	0.40	0.52	

HGL

Profile Plot

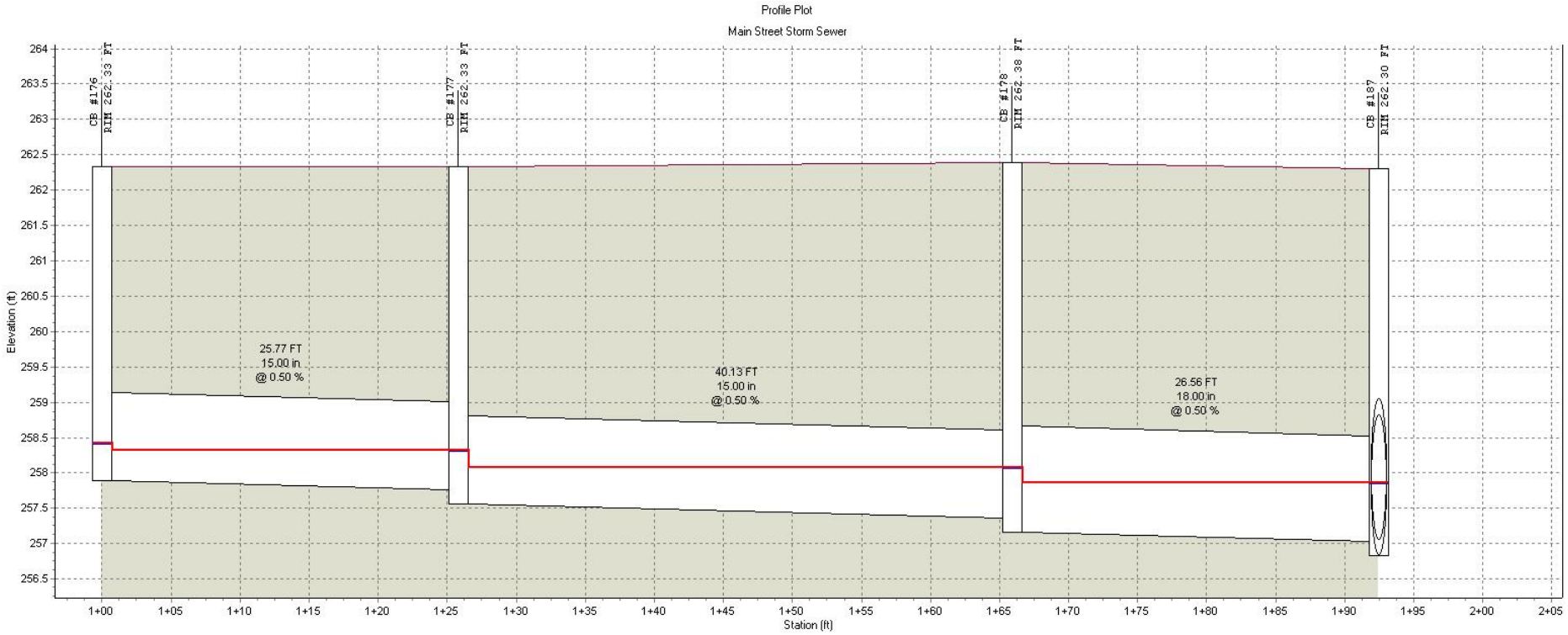
Main Street Storm Sewer



	CB #187	CB #188	CB #189	SDMH #507	FES#315	
RIM (FT):	262.30	260.85	260.21	257.06		
Invert (ft):	256.83	255.34	254.37	250.93	250.00	
Min Pipe Cover (ft):				2.56		
Max HGL (ft):	257.86	256.48	255.32	252.07	250.83	

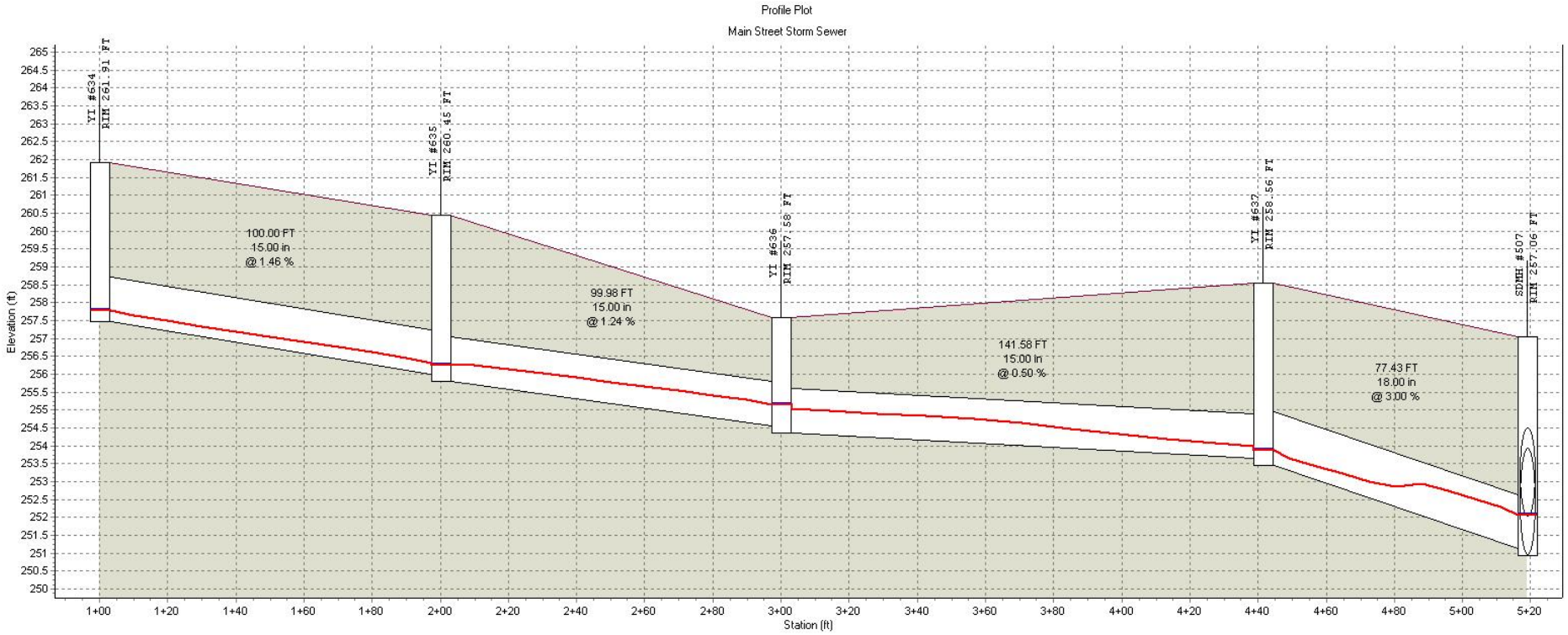
Link ID:	P #251	P #252	P #253	P #254	P #255	
(FT):	144.78	123.38	63.83	120.48	42.94	
(in):	24.00	24.00	24.00	30.00	36.00	
@ (%):	0.68	1.05	1.20	1.97	2.17	
Up Invert (ft):	258.04	256.83	255.34	254.37	250.93	
Dn Invert (ft):	257.05	255.54	254.57	252.00	250.00	
Max Q (cfs):	5.27	9.47	10.56	13.19	16.45	
Max Vel (ft/s):	4.46	6.16	6.51	8.54	8.18	
Max Depth (ft):	0.81	0.99	1.03	0.88	0.98	

HGL



	CB #176	CB #177	CB #178	CB #187
RIM (FT):	262.33	262.33	262.38	262.30
Invert (ft):	257.89	257.56	257.16	256.83
Min Pipe Cover (ft):				
Max HGL (ft):	258.42	258.32	258.08	257.86

Link ID:	P #241	P #242	P #243
(FT):	25.77	40.13	26.56
(in):	15.00	15.00	18.00
@ (%):	0.50	0.50	0.50
Up Invert (ft):	257.89	257.56	257.16
Dn Invert (ft):	257.76	257.36	257.03
Max Q (cfs):	1.04	2.18	3.21
Max Vel (ft/s):	2.42	3.00	3.26
Max Depth (ft):	0.54	0.74	0.87

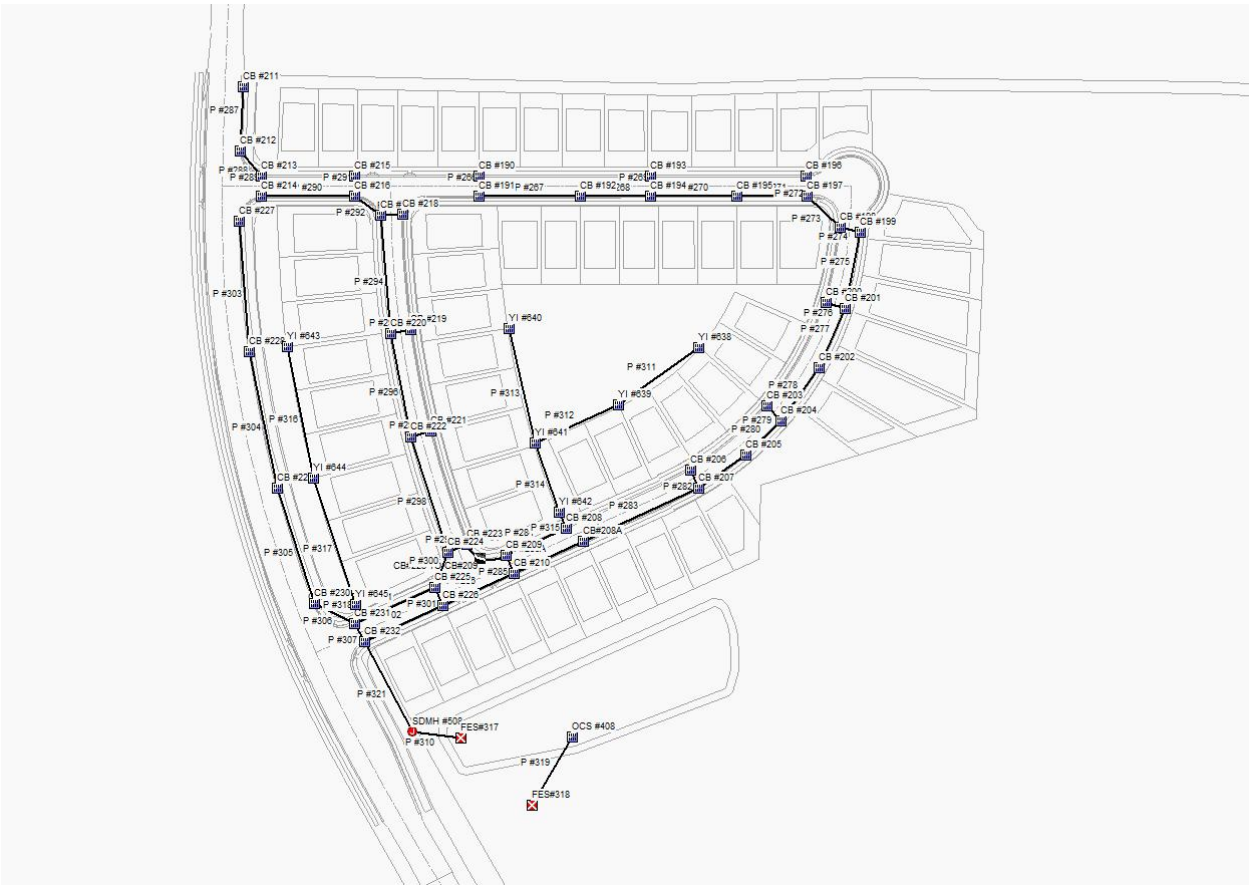


	YI #634	YI #635	YI #636	YI #637	SDMH #507
RIM (FT):	261.91	260.45	257.58	258.56	257.06
Invert (ft):	257.46	255.80	254.36	253.45	250.93
Min Pipe Cover (ft):					2.56
Max HGL (ft):	257.80	256.26	255.17	253.89	252.07

Link ID:	P #260	P #261	P #262	P #263
(FT):	100.00	99.98	141.58	77.43
(in):	15.00	15.00	15.00	18.00
@ (%):	1.46	1.24	0.50	3.00
Up Invert (ft):	257.46	255.80	254.36	253.45
Dn Invert (ft):	256.00	254.56	253.65	251.13
Max Q (cfs):	1.09	1.84	2.90	3.27
Max Vel (ft/s):	4.30	3.96	3.82	4.92
Max Depth (ft):	0.32	0.53	0.74	0.68

S T O R M W A T E R AREA " F "

STORMWATER PIPING AND HYDRAULIC GRADE LINE FOR 10-YR STORM



PLAN VIEW

DRAINAGE AREA

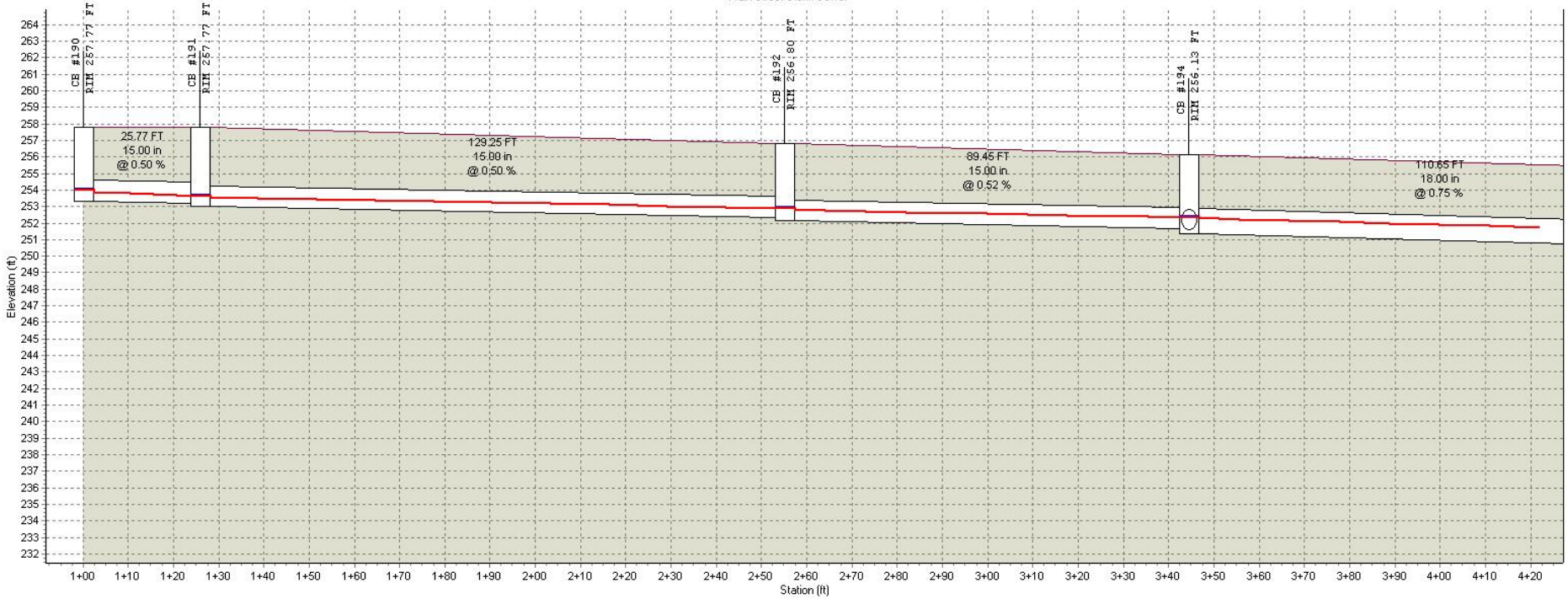
SN	Element ID	Area (acres)	Drainage Node ID	Weighted Runoff Coefficient	Accumulated Precipitation (inches)	Total Runoff (inches)	Peak Runoff (cfs)	Rainfall Intensity (inches/hr)	Time of Concentration (days hh:mm:ss)
1	Sub-CB#190	0.50	CB #190	0.6700	0.60	0.40	2.42	7.210	0 00:05:00
2	Sub-CB#191	0.04	CB #191	0.8700	0.60	0.52	0.25	7.210	0 00:05:00
3	Sub-CB#192	0.16	CB #192	0.7500	0.60	0.45	0.87	7.210	0 00:05:00
4	Sub-CB#193	0.59	CB #193	0.6300	0.60	0.38	2.68	7.210	0 00:05:00
5	Sub-CB#194	0.13	CB #194	0.7500	0.60	0.45	0.70	7.210	0 00:05:00
6	Sub-CB#195	0.21	CB #195	0.7500	0.60	0.45	1.14	7.210	0 00:05:00
7	Sub-CB#196	0.52	CB #196	0.6700	0.60	0.40	2.51	7.210	0 00:05:00
8	Sub-CB#197	0.14	CB #197	0.7500	0.60	0.45	0.76	7.210	0 00:05:00
9	Sub-CB#198	0.05	CB #198	0.8700	0.60	0.52	0.31	7.210	0 00:05:00
10	Sub-CB#199	0.39	CB #199	0.7100	0.60	0.43	2.00	7.210	0 00:05:00
11	Sub-CB#200	0.13	CB #200	0.7500	0.60	0.45	0.70	7.210	0 00:05:00
12	Sub-CB#201	0.24	CB #201	0.7500	0.60	0.45	1.30	7.210	0 00:05:00
13	Sub-CB#202	0.17	CB #202	0.7500	0.60	0.45	0.92	7.210	0 00:05:00
14	Sub-CB#203	0.34	CB #203	0.5900	0.60	0.35	1.45	7.210	0 00:05:00
15	Sub-CB#204	0.30	CB #204	0.6300	0.60	0.38	1.36	7.210	0 00:05:00
16	Sub-CB#205	0.05	CB #205	0.5900	0.60	0.35	0.21	7.210	0 00:05:00
17	Sub-CB#206	0.19	CB #206	0.7500	0.60	0.45	1.03	7.210	0 00:05:00
18	Sub-CB#207	0.11	CB #207	0.6700	0.60	0.40	0.53	7.210	0 00:05:00
19	Sub-CB#208	0.25	CB #208	0.7500	0.60	0.45	1.35	7.210	0 00:05:00
20	Sub-CB#209	0.14	CB #209	0.7900	0.60	0.48	0.80	7.210	0 00:05:00
21	Sub-CB#210	0.29	CB #210	0.6300	0.60	0.38	1.32	7.210	0 00:05:00
22	Sub-CB#211	0.03	CB #211	0.8700	0.60	0.52	0.19	7.210	0 00:05:00
23	Sub-CB#212	0.14	CB #212	0.8700	0.60	0.52	0.88	7.210	0 00:05:00
24	Sub-CB#213	0.10	CB #213	0.8700	0.60	0.52	0.63	7.210	0 00:05:00
25	Sub-CB#214	0.01	CB #214	0.7000	0.60	0.42	0.05	7.210	0 00:05:00
26	Sub-CB#215	0.31	CB #215	0.5100	0.60	0.31	1.14	7.210	0 00:05:00
27	Sub-CB#216	0.07	CB #216	0.8700	0.60	0.52	0.44	7.210	0 00:05:00
28	Sub-CB#217	0.04	CB #217	0.8700	0.60	0.52	0.25	7.210	0 00:05:00
29	Sub-CB#218	0.03	CB #218	0.8800	0.60	0.53	0.19	7.210	0 00:05:00
30	Sub-CB#219	0.27	CB #219	0.7500	0.60	0.45	1.46	7.210	0 00:05:00
31	Sub-CB#220	0.32	CB #220	0.7500	0.60	0.45	1.73	7.210	0 00:05:00
32	Sub-CB#221	0.26	CB #221	0.7500	0.60	0.45	1.41	7.210	0 00:05:00
33	Sub-CB#222	0.26	CB #222	0.7500	0.60	0.45	1.41	7.210	0 00:05:00
34	Sub-CB#223	0.26	CB #223	0.7500	0.60	0.45	1.41	7.210	0 00:05:00
35	Sub-CB#224	0.30	CB #224	0.7500	0.60	0.45	1.62	7.210	0 00:05:00
36	Sub-CB#225	0.08	CB #225	0.7900	0.60	0.48	0.46	7.210	0 00:05:00
37	Sub-CB#226	0.29	CB #226	0.6300	0.60	0.38	1.32	7.210	0 00:05:00
38	Sub-CB#227	0.08	CB #227	0.8700	0.60	0.52	0.50	7.210	0 00:05:00
39	Sub-CB#228	0.29	CB #228	0.8700	0.60	0.52	1.82	7.210	0 00:05:00
40	Sub-CB#229	0.32	CB #229	0.8700	0.60	0.52	2.01	7.210	0 00:05:00
41	Sub-CB#230	0.40	CB #230	0.8700	0.60	0.52	2.51	7.210	0 00:05:00
42	Sub-CB#231	0.06	CB #231	0.8700	0.60	0.52	0.38	7.210	0 00:05:00
43	Sub-CB#232	0.29	CB #232	0.6300	0.60	0.38	1.32	7.210	0 00:05:00
44	Sub-CB#208A	0.44	CB#208A	0.6300	0.60	0.38	2.00	7.210	0 00:05:00
45	Sub-YI#638	0.32	YI #638	0.5900	0.60	0.35	1.36	7.210	0 00:05:00
46	Sub-YI#639	0.59	YI #639	0.3900	0.60	0.23	1.66	7.210	0 00:05:00
47	Sub-YI#640	0.29	YI #640	0.8300	0.60	0.50	1.74	7.210	0 00:05:00
48	Sub-YI#641	0.79	YI #641	0.3500	0.60	0.21	1.99	7.210	0 00:05:00
49	Sub-YI#642	0.33	YI #642	0.6300	0.60	0.38	1.50	7.210	0 00:05:00
50	Sub-YI#643	0.36	YI #643	0.5500	0.60	0.33	1.43	7.210	0 00:05:00
51	Sub-YI#644	0.35	YI #644	0.5500	0.60	0.33	1.39	7.210	0 00:05:00
52	Sub-YI#645	0.38	YI #645	0.5900	0.60	0.35	1.62	7.210	0 00:05:00

MODEL INPUT											MODEL OUTPUT										
SN	Element ID	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Total Drop (ft)	Average Slope (%)	Pipe Diameter or Height (inches)	Manning's Roughness	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Max Flow Velocity (ft/sec)	Travel Time (min)	Design Flow Capacity (cfs)	Additional flow capacity (cfs)	Max Flow / Design Flow Ratio	Max Flow Depth / Total Depth Ratio	Total Time Surcharged (min)	Max Flow Depth (ft)	Reported Condition
1	P #266	CB #190	CB #191	25.77	253.33	253.20	0.13	0.5000	15.000	0.0130	1.80	0 00:05	3.12	0.14	4.57	2.77	0.39	0.48	0.00	0.60	Calculated
2	P #267	CB #191	CB #192	129.25	253.00	252.36	0.65	0.5000	15.000	0.0130	1.93	0 00:05	3.43	0.63	4.57	2.64	0.42	0.47	0.00	0.59	Calculated
3	P #268	CB #192	CB #194	89.45	252.16	251.69	0.47	0.5200	15.000	0.0130	2.57	0 00:06	3.66	0.41	4.66	2.09	0.55	0.56	0.00	0.70	Calculated
4	P #269	CB #193	CB #194	25.79	251.69	251.56	0.13	0.5000	15.000	0.0130	2.42	0 00:05	3.14	0.14	4.57	2.15	0.53	0.64	0.00	0.79	Calculated
5	P #270	CB #194	CB #195	110.65	251.36	250.53	0.83	0.7500	18.000	0.0130	5.40	0 00:05	4.77	0.39	9.10	3.70	0.59	0.62	0.00	0.94	Calculated
6	P #271	CB #195	CB #197	88.33	250.33	249.71	0.62	0.7000	18.000	0.0130	6.20	0 00:06	4.85	0.30	8.79	2.59	0.71	0.68	0.00	1.02	Calculated
7	P #272	CB #196	CB #197	25.73	250.17	250.03	0.14	0.5300	15.000	0.0130	2.50	0 00:05	3.45	0.12	4.72	2.22	0.53	0.57	0.00	0.72	Calculated
8	P #273	CB #197	CB #198	58.40	249.51	247.81	1.71	2.9200	18.000	0.0130	9.14	0 00:05	7.95	0.12	17.95	8.81	0.51	0.62	0.00	0.93	Calculated
9	P #274	CB #198	CB #199	25.90	247.61	247.18	0.43	1.6600	24.000	0.0130	9.49	0 00:05	6.55	0.07	29.13	19.64	0.33	0.47	0.00	0.94	Calculated
10	P #275	CB #199	CB #201	99.97	246.98	244.73	2.25	2.2500	24.000	0.0130	11.65	0 00:05	8.69	0.19	33.97	22.32	0.34	0.44	0.00	0.89	Calculated
11	P #276	CB #200	CB #201	25.76	245.15	245.02	0.13	0.5000	15.000	0.0130	0.66	0 00:05	2.42	0.18	4.57	3.91	0.15	0.28	0.00	0.34	Calculated
12	P #277	CB #201	CB #202	82.16	244.29	242.26	2.03	2.4700	24.000	0.0130	13.65	0 00:05	6.96	0.20	35.57	21.92	0.38	0.61	0.00	1.21	Calculated
13	P #278	CB #202	CB #204	83.96	242.06	241.40	0.66	0.7900	24.000	0.0130	14.42	0 00:06	6.08	0.23	20.13	5.71	0.72	0.71	0.00	1.41	Calculated
14	P #279	CB #203	CB #204	25.86	242.00	241.87	0.13	0.5000	18.000	0.0130	1.16	0 00:05	2.65	0.16	7.45	6.29	0.16	0.49	0.00	0.73	Calculated
15	P #280	CB #204	CB #205	61.50	240.90	240.57	0.32	0.5300	30.000	0.0130	16.38	0 00:06	4.94	0.21	29.95	13.57	0.55	0.65	0.00	1.62	Calculated
16	P #281	CB #205	CB #207	73.85	240.37	240.00	0.37	0.5000	30.000	0.0130	16.57	0 00:06	5.29	0.23	29.03	12.46	0.57	0.61	0.00	1.52	Calculated
17	P #282	CB #206	CB #207	25.84	241.55	241.42	0.13	0.5000	15.000	0.0130	1.00	0 00:05	2.68	0.16	4.57	3.57	0.22	0.34	0.00	0.43	Calculated
18	P #283	CB #207	CB #208A	158.74	239.80	238.61	1.20	0.7500	30.000	0.0130	17.72	0 00:06	5.76	0.46	35.60	17.88	0.50	0.61	0.00	1.52	Calculated
19	P #284	CB #208	CB #209	84.21	237.80	237.38	0.42	0.5000	30.000	0.0130	7.81	0 00:05	3.84	0.37	29.00	21.19	0.27	0.72	0.00	1.81	Calculated
20	P #285	CB #209	CB #210	25.68	237.18	237.05	0.13	0.5000	36.000	0.0130	7.89	0 00:06	3.05	0.14	47.16	39.27	0.17	0.75	0.00	2.24	Calculated
21	P #286	CB #210	CB #226	100.00	236.85	236.35	0.50	0.5000	36.000	0.0130	26.99	0 00:07	4.47	0.37	47.16	20.17	0.57	0.84	0.00	2.53	Calculated
22	P #287	CB #211	CB #212	81.77	261.63	257.68	3.95	4.8300	15.000	0.0130	0.18	0 00:05	3.95	0.35	14.20	14.02	0.01	0.08	0.00	0.10	Calculated
23	P #288	CB #212	CB #213	41.74	257.48	255.34	2.13	5.1100	15.000	0.0130	1.04	0 00:05	5.15	0.14	14.61	13.57	0.07	0.24	0.00	0.30	Calculated
24	P #289	CB #213	CB #214	26.21	255.14	255.01	0.13	0.5000	18.000	0.0130	1.66	0 00:05	2.98	0.15	7.43	5.77	0.22	0.35	0.00	0.53	Calculated
25	P #290	CB #214	CB #216	118.58	254.81	254.22	0.59	0.5000	18.000	0.0130	1.62	0 00:06	3.21	0.62	7.43	5.81	0.22	0.33	0.00	0.50	Calculated
26	P #291	CB #215	CB #216	25.74	254.46	254.32	0.13	0.5200	15.000	0.0130	0.97	0 00:06	2.69	0.16	4.67	3.70	0.21	0.34	0.00	0.42	Calculated
27	P #292	CB #216	CB #217	41.66	254.01	252.87	1.15	2.7500	18.000	0.0130	2.90	0 00:06	6.44	0.11	17.43	14.53	0.17	0.30	0.00	0.45	Calculated
28	P #293	CB #218	CB #217	27.75	252.86	252.72	0.14	0.5000	15.000	0.0130	0.18	0 00:05	1.53	0.30	4.57	4.39	0.04	0.18	0.00	0.23	Calculated
29	P #294	CB #217	CB #220	150.72	252.52	248.75	3.77	2.5000	18.000	0.0130	3.27	0 00:05	6.97	0.36	16.62	13.35	0.20	0.31	0.00	0.47	Calculated
30	P #295	CB #219	CB #220	25.70	249.07	248.94	0.13	0.5000	15.000	0.0130	1.24	0 00:05	2.83	0.15	4.58	3.34	0.27	0.39	0.00	0.48	Calculated
31	P #296	CB #220	CB #222	134.21	248.55	245.06	3.48	2.5900	18.000	0.0130	5.79	0 00:05	7.95	0.28	16.92	11.13	0.34	0.43	0.00	0.65	Calculated
32	P #297	CB #221	CB #222	25.74	245.35	245.22	0.13	0.5000	15.000	0.0130	1.37	0 00:05	2.90	0.15	4.57	3.20	0.30	0.41	0.00	0.51	Calculated
33	P #298	CB #222	CB #224	154.96	244.86	240.82	4.04	2.6100	18.000	0.0130	8.29	0 00:06	8.88	0.29	16.96	8.67	0.49	0.52	0.00	0.78	Calculated
34	P #299	CB #223	CB #224	25.75	241.12	240.99	0.13	0.5100	15.000	0.0130	1.37	0 00:05	2.75	0.16	4.61	3.24	0.30	0.45	0.00	0.56	Calculated
35	P #300	CB #224	CB #225	47.72	240.62	239.16	1.47	3.0700	24.000	0.0130	10.79	0 00:05	7.21	0.11	39.66	28.87	0.27	0.48	0.00	0.96	Calculated
36	P #301	CB #225	CB #226	25.72	238.96	238.49	0.47	1.8300	24.000	0.0130	11.35	0 00:05	7.01	0.06	30.59	19.24	0.37	0.51	0.00	1.02	Calculated
37	P #302	CB #226	CB #232	110.14	236.15	235.57	0.58	0.5200	36.000	0.0130	37.87	0 00:07	5.87	0.31	48.29	10.42	0.78	0.86	0.00	2.58	Calculated
38	P #303	CB #227	CB #228	166.94	252.73	245.55	7.17	4.3000	15.000	0.0130	0.49	0 00:05	4.79	0.58	13.39	12.90	0.04	0.14	0.00	0.18	Calculated
39	P #304	CB #228	CB #229	176.63	245.35	240.46	4.89	2.7700	15.000	0.0130	2.07	0 00:05	6.56	0.45	10.75	8.68	0.19	0.30	0.00	0.38	Calculated
40	P #305	CB #229	CB #230	154.98	240.26	236.90	3.36	2.1700	18.000	0.0130	3.74	0 00:05	5.52	0.47	15.48	11.74	0.24	0.53	0.00	0.80	Calculated
41	P #306	CB #230	CB #231	58.23	236.70	236.40	0.30	0.5100	24.000	0.0130	5.81	0 00:05	3.98	0.24	16.11	10.30	0.36	0.73	0.00	1.47	Calculated
42	P #307	CB #231	CB #232	25.87	235.87	235.40	0.47	1.8000	36.000	0.0130	7.75	0 00:07	4.45	0.10	89.57	81.82	0.09	0.78	0.00	2.34	Calculated
43	P #310	SDMH #508	FES #317	61.87	234.35	234.00	0.35	0.5700	42.000	0.0130	46.28	0 00:07	6.89	0.15	75.70	29.42	0.61	0.66	0.00	2.30	Calculated
44	P #311	YI #638	YI #639	125.93	242.14	241.14	1.00	0.7900	15.000	0.0130	1.36	0 00:05	3.02	0.69	5.76	4.40	0.24	0.40	0.00	0.49	Calculated
45	P #312	YI #639	YI #641	116.56	240.94	240.35	0.58	0.5000	15.000	0.0130	2.75	0 00:05	3.74	0.52	4.57	1.82	0.60	0.58	0.00	0.73	Calculated
46	P #313	YI #640	YI #641	149.84	245.22	240.55	4.67	3.1200	15.000	0.0130	1.67	0 00:05	6.44	0.39	11.40	9.73	0.15	0.26	0.00	0.33	Calculated
47	P #314	YI #641	YI #642	93.56	240.15	238.31	1.85	1.9700	24.000	0.0130	6.24	0 00:05	4.86	0.32	31.79	25.55	0.20	0.45	0.00	0.89	Calculated
48	P #315	YI #642	CB #208	22.00	238.11	238.00	0.11	0.5000	24.000	0.0130	7.32	0 00:05	4.12	0.09	16.00	8.68	0.46	0.71	0.00	1.42	Calculated
49	P #316	YI #643	YI #644	171.61	246.56	241.00	5.57	3.2400	15.000	0.0130	1.37	0 00:05	6.20	0.46	11.64	10.27	0.12	0.24	0.00	0.29	Calculated

MODEL INPUT											MODEL OUTPUT										
SN	Element ID	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Total Drop (ft)	Average Slope (%)	Pipe Diameter or Height (inches)	Manning's Roughness	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Max Flow Velocity (ft/sec)	Travel Time (min)	Design Flow Capacity (cfs)	Additional flow capacity (cfs)	Max Flow / Design Flow Ratio	Max Flow Depth / Total Depth Ratio	Total Time Surcharged (min)	Max Flow Depth (ft)	Reported Condition
50	P #317	YI #644	YI #645	168.91	240.80	236.39	4.40	2.6100	24.000	0.0130	2.68	0 00:05	4.74	0.59	36.52	33.84	0.07	0.48	0.00	0.96	Calculated
51	P #318	YI #645	CB #231	24.53	236.19	236.07	0.12	0.5000	30.000	0.0130	2.98	0 00:06	3.04	0.13	29.00	26.02	0.10	0.74	0.00	1.86	Calculated
52	P #321	CB #232	SDMH #508	130.90	235.20	234.55	0.66	0.5000	42.000	0.0130	46.33	0 00:07	6.06	0.36	71.20	24.87	0.65	0.74	0.00	2.60	Calculated
53	P #283A	CB #208A	CB #210	100.15	238.41	237.85	0.56	0.5600	30.000	0.0130	18.48	0 00:07	5.68	0.29	30.73	12.25	0.60	0.65	0.00	1.63	Calculated

Profile Plot

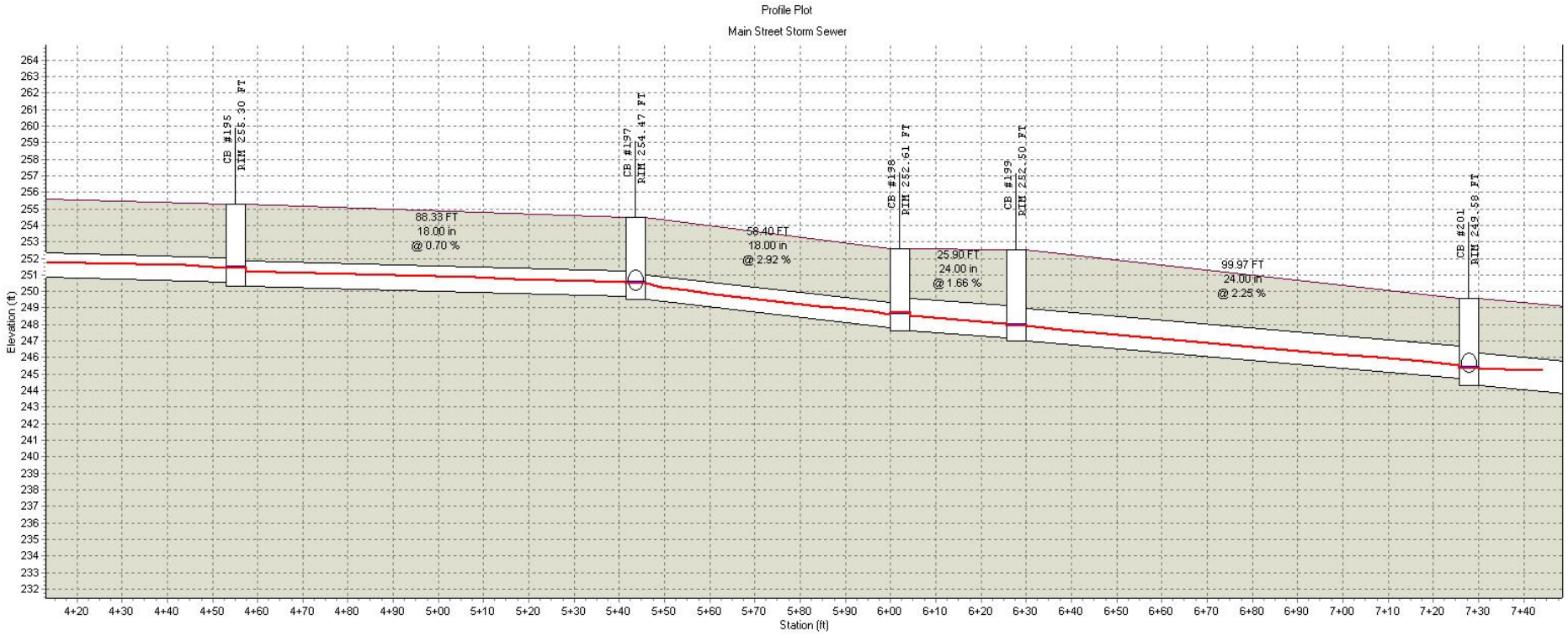
Main Street Storm Sewer



:	CB #190	CB #191	CB #192	CB #194	
RIM (FT):	257.77	257.77	256.80	256.13	
Invert (ft):	253.33	253.00	252.16	251.36	
Min Pipe Cover (ft):					
Max HGL (ft):	253.99	253.62	252.91	252.33	

Link ID:	P #266	P #267	P #268	P #270
(FT):	25.77	129.25	89.45	110.65
(in):	15.00	15.00	15.00	18.00
@ (%):	0.50	0.50	0.52	0.75
Up Invert (ft):	253.33	253.00	252.16	251.36
Dn Invert (ft):	253.20	252.36	251.69	250.53
Max Q (cfs):	1.80	1.93	2.57	5.40
Max Vel (ft/s):	3.12	3.43	3.66	4.77
Max Depth (ft):	0.60	0.59	0.70	0.94

HGL

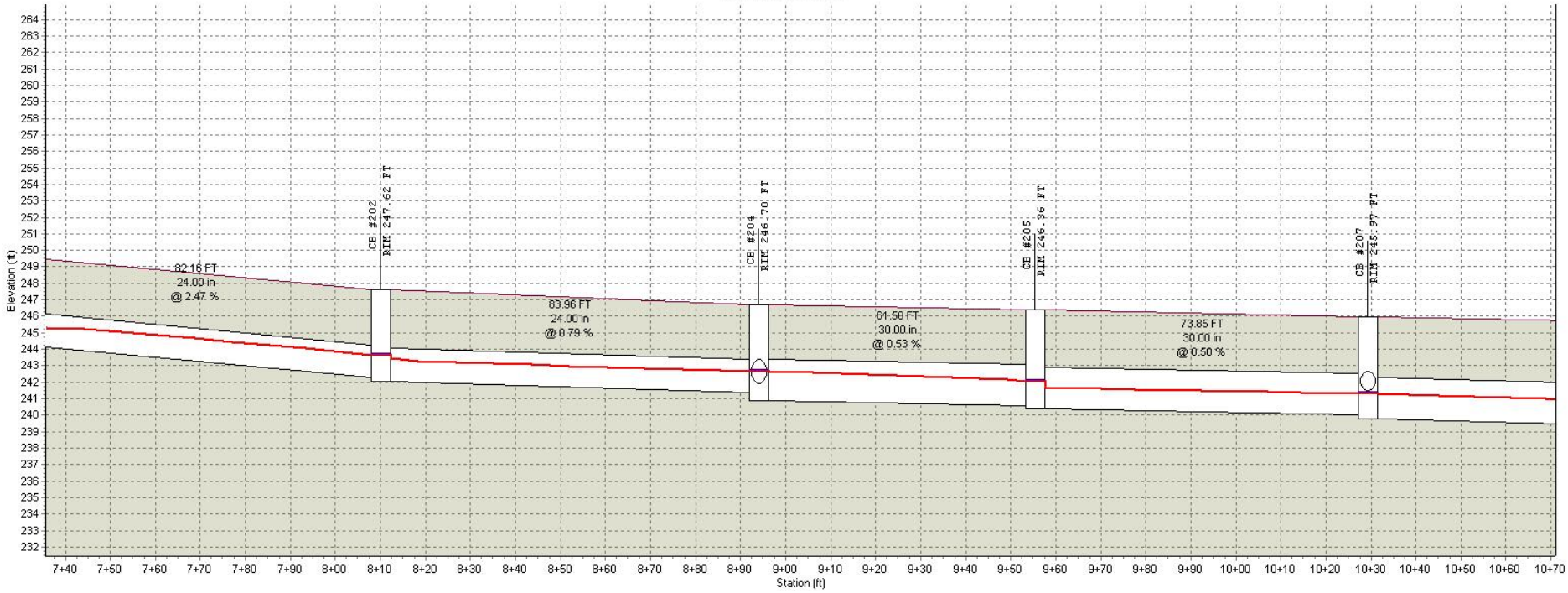


	CB #195	CB #197	CB #198	CB #199	CB #201
RIM (FT):	255.30	254.47	252.61	252.50	249.58
Invert (ft):	250.33	249.51	247.61	246.98	244.29
Min Pipe Cover (ft):					
Max HGL (ft):	251.44	250.48	248.70	247.94	245.35

Link ID:	P #271	P #273	P #274	P #275
(FT):	88.33	58.40	25.90	99.97
(in):	18.00	18.00	24.00	24.00
@ (%):	0.70	2.92	1.66	2.25
Up Invert (ft):	250.33	249.51	247.61	246.98
Dn Invert (ft):	249.71	247.81	247.18	244.73
Max Q (cfs):	6.19	9.14	9.49	11.65
Max Vel (ft/s):	4.85	7.95	6.55	8.69
Max Depth (ft):	1.02	0.93	0.94	0.89

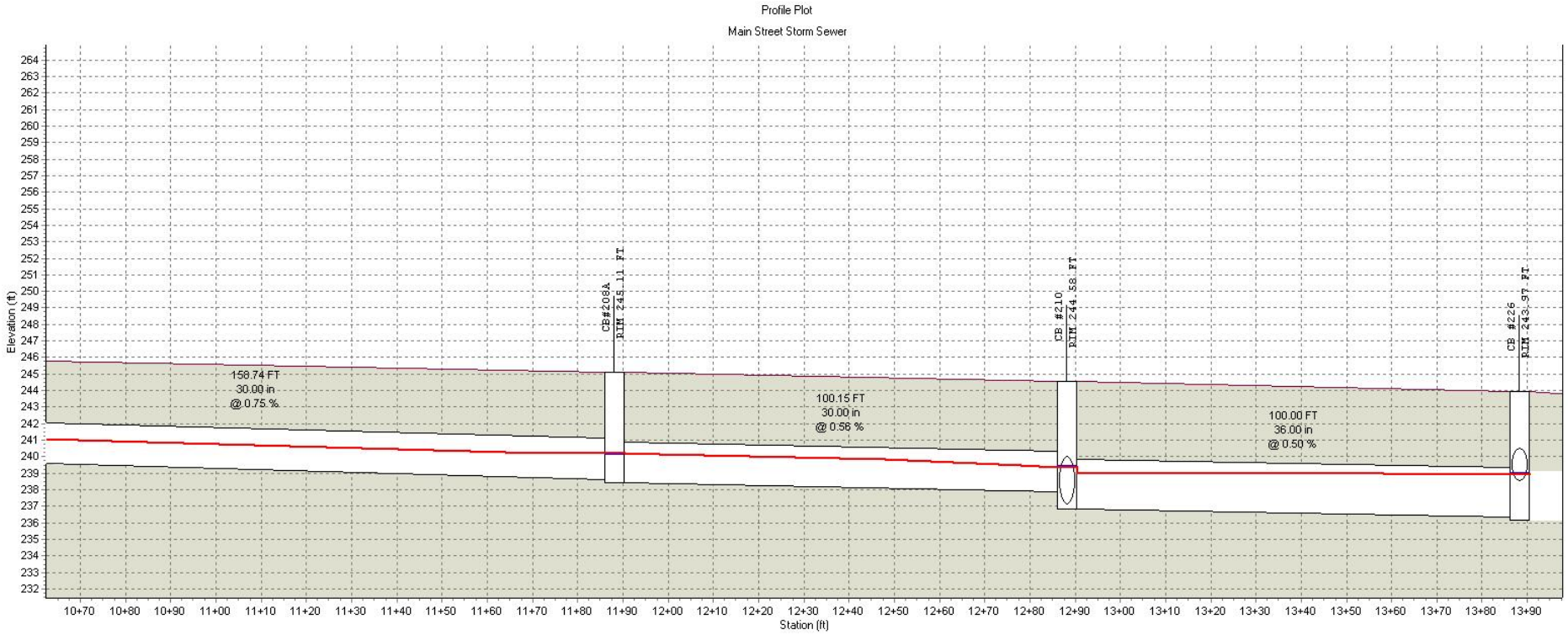
Profile Plot

Main Street Storm Sewer



	CB #202	CB #204	CB #205	CB #207
RIM (FT):	247.62	246.70	246.36	245.97
Invert (ft):	242.06	240.90	240.37	239.80
Min Pipe Cover (ft):				
Max HGL (ft):	243.63	242.65	242.07	241.30

Link ID:	P #277	P #278	P #280	P #281
(FT):	82.16	83.96	61.50	73.85
(in):	24.00	24.00	30.00	30.00
@ (%):	2.47	0.79	0.53	0.50
Up Invert (ft):	244.29	242.06	240.90	240.37
Dn Invert (ft):	242.26	241.40	240.57	240.00
Max Q (cfs):	13.64	14.42	16.38	16.57
Max Vel (ft/s):	6.96	6.08	4.94	5.29
Max Depth (ft):	1.21	1.41	1.62	1.52

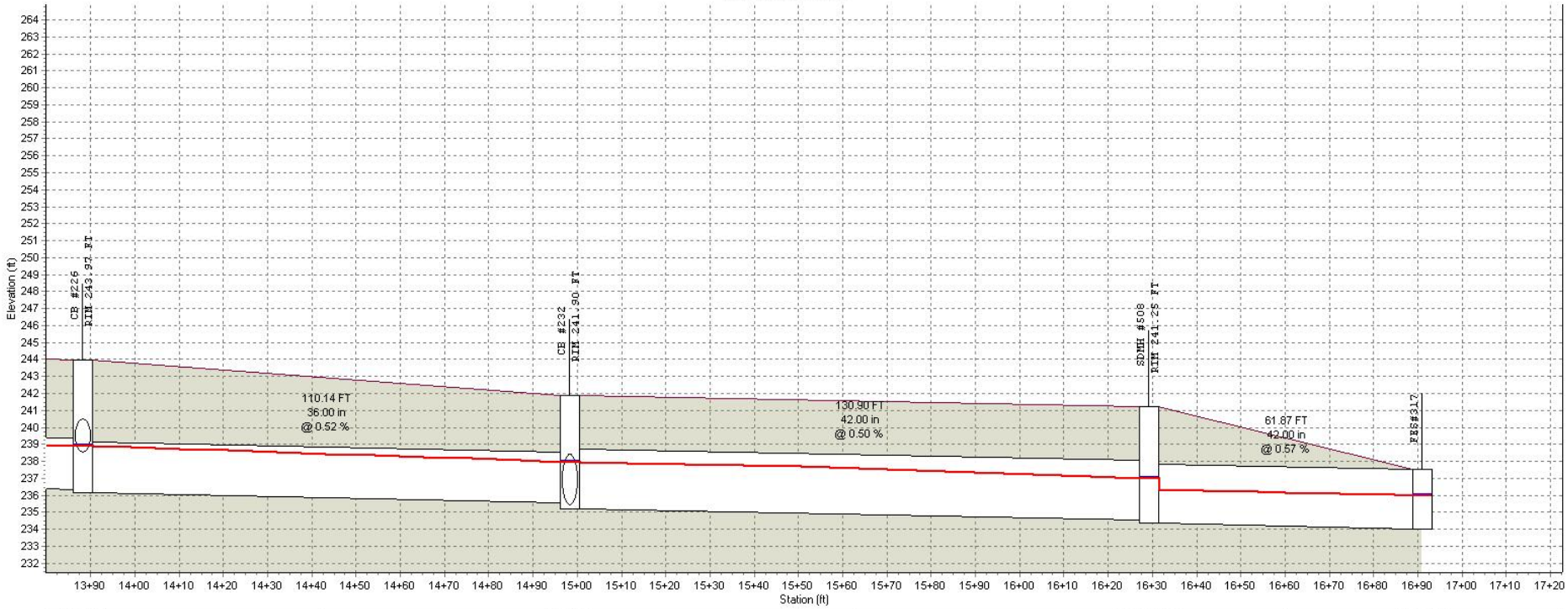


		CB#208A	CB #210	CB #226
RIM (FT):		245.11	244.58	243.97
Invert (ft):		238.41	236.85	236.15
Min Pipe Cover (ft):				
Max HGL (ft):		240.18	239.35	238.93
Link ID:	P #283	P#283A	P #286	
(FT):	158.74	100.15	100.00	
(in):	30.00	30.00	36.00	
@ (%):	0.75	0.56	0.50	
Up Invert (ft):	239.80	238.41	236.85	
Dn Invert (ft):	238.61	237.85	236.35	
Max Q (cfs):	17.72	18.49	26.98	
Max Vel (ft/s):	5.76	5.68	4.49	
Max Depth (ft):	1.53	1.63	2.54	

HGL

Profile Plot

Main Street Storm Sewer



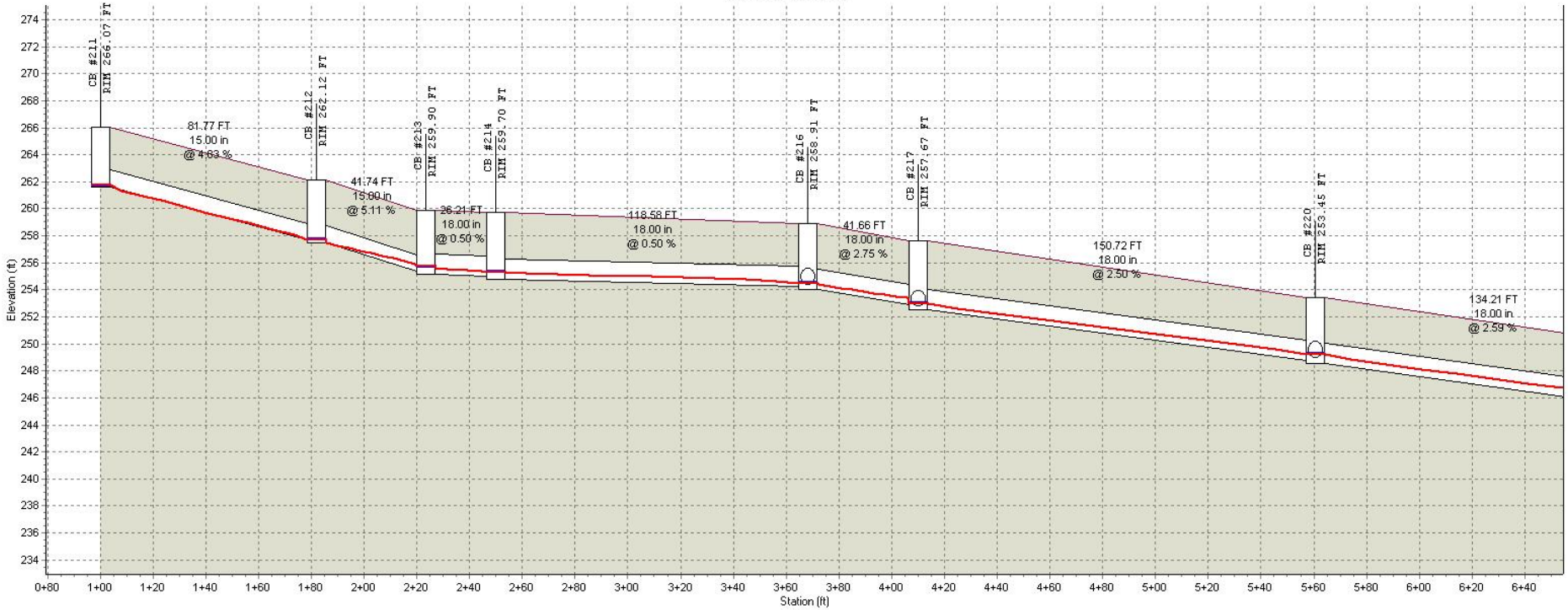
:	CB #226	CB #232	SDMH #508	FES#317
RIM (FT):	243.97	241.90	241.25	
Invert (ft):	236.15	235.20	234.35	234.00
Min Pipe Cover (ft):			3.20	
Max HGL (ft):	238.92	237.97	236.98	235.98

Link ID:	P #302	P #321	P #310	
(FT):	110.14	130.90	61.87	
(in):	36.00	42.00	42.00	
@ (%):	0.52	0.50	0.57	
Up Invert (ft):	236.15	235.20	234.35	
Dn Invert (ft):	235.57	234.55	234.00	
Max Q (cfs):	37.87	46.33	46.28	
Max Vel (ft/s):	5.87	6.06	6.89	
Max Depth (ft):	2.58	2.60	2.30	

HGL

Profile Plot

Main Street Storm Sewer



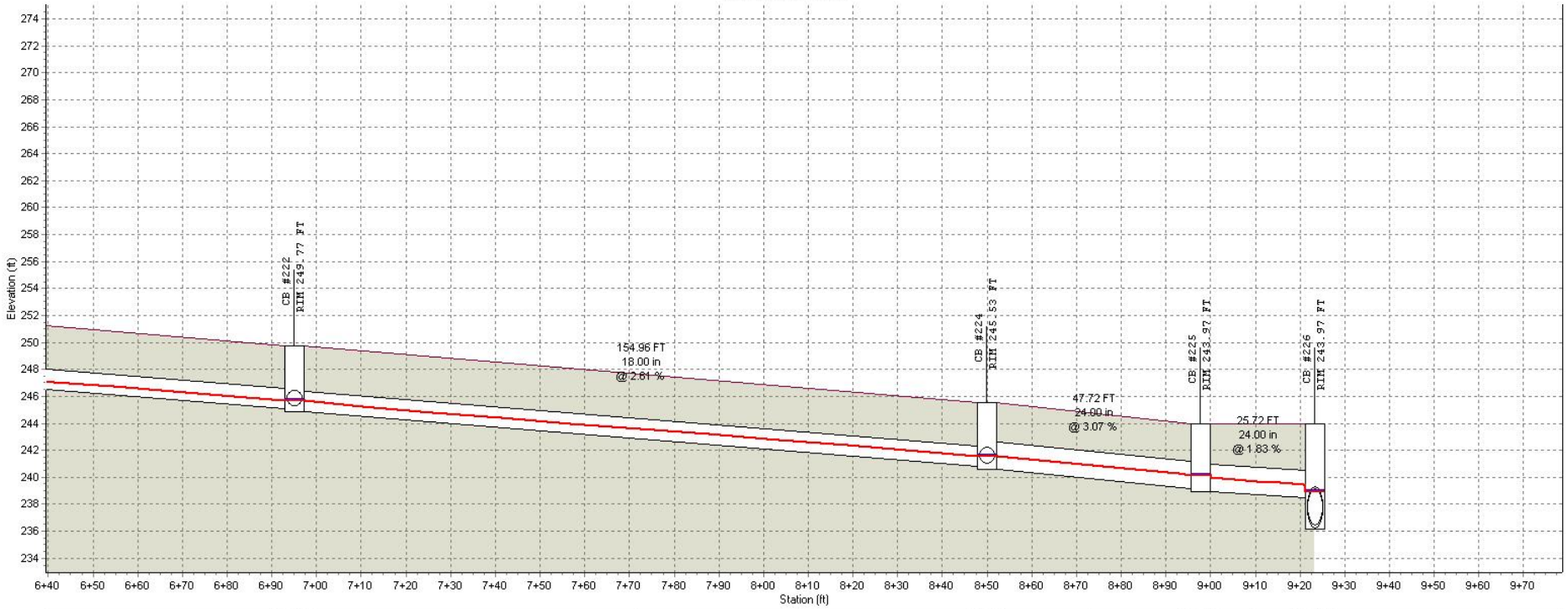
:	CB #211	CB #212	CB #213	CB #214	CB #216	CB #217	CB #220	
RIM (FT):	266.07	262.12	259.90	259.70	258.91	257.67	253.45	
Invert (ft):	261.63	257.48	255.14	254.81	254.01	252.52	248.55	
Min Pipe Cover (ft):								
Max HGL (ft):	261.73	257.70	255.72	255.33	254.51	253.00	249.21	

Link ID:	P #287	P #288	P #289	P #290	P #292	P #294	P #296
(FT):	81.77	41.74	26.21	118.58	41.66	150.72	134.21
(in):	15.00	15.00	18.00	18.00	18.00	18.00	18.00
@ (%):	4.83	5.11	0.50	0.50	2.75	2.50	2.59
Up Invert (ft):	261.63	257.48	255.14	254.81	254.01	252.52	248.55
Dn Invert (ft):	257.68	255.34	255.01	254.22	252.87	248.75	245.06
Max Q (cfs):	0.18	1.04	1.66	1.62	2.90	3.27	5.79
Max Vel (ft/s):	3.95	5.15	2.98	3.21	6.44	6.97	7.95
Max Depth (ft):	0.10	0.30	0.53	0.50	0.45	0.47	0.65

HGL

Profile Plot

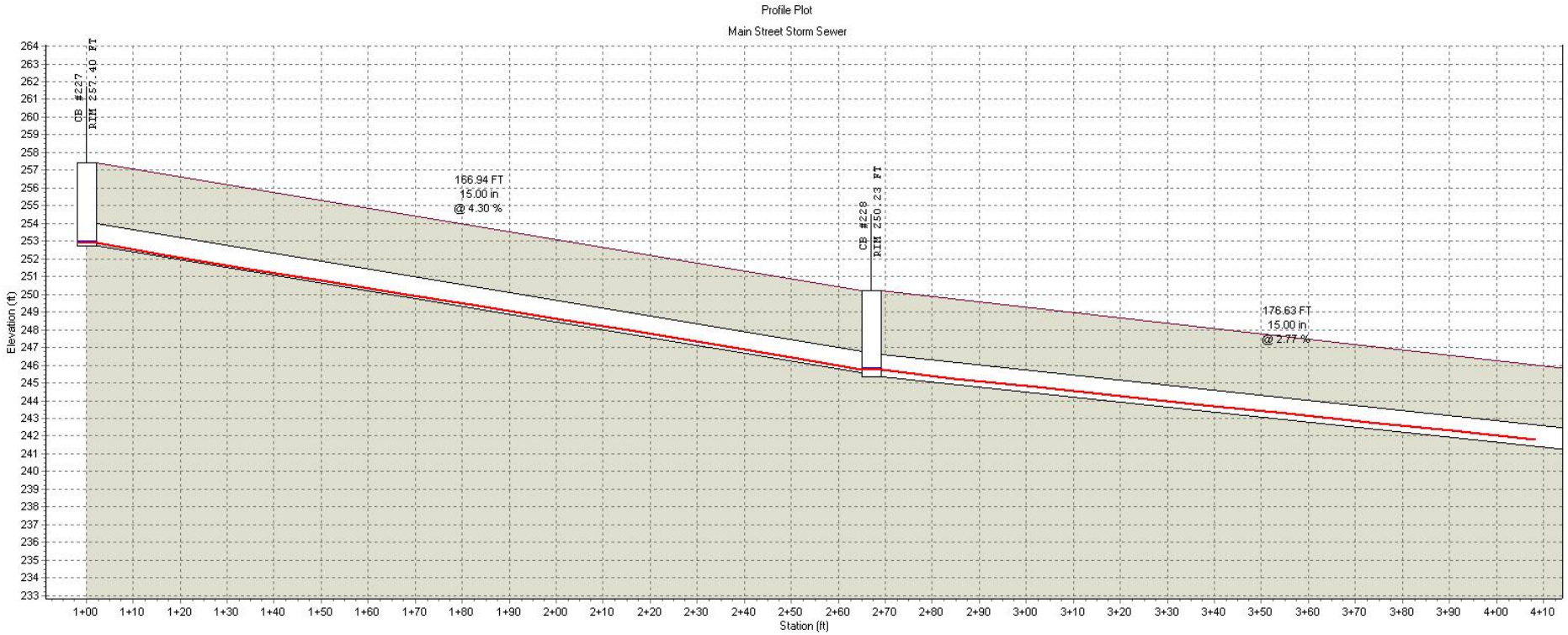
Main Street Storm Sewer



:	CB #222	CB #224	CB #225	CB #226
RIM (FT):	249.77	245.53	243.97	243.97
Invert (ft):	244.86	240.62	238.96	236.15
Min Pipe Cover (ft):				
Max HGL (ft):	245.69	241.55	240.16	238.92

Link ID:	P #298	P #300	P #301
(FT):	154.96	47.72	25.72
(in):	18.00	24.00	24.00
@ (%):	2.61	3.07	1.83
Up Invert (ft):	244.86	240.62	238.96
Dn Invert (ft):	240.82	239.16	238.49
Max Q (cfs):	8.29	10.79	11.35
Max Vel (ft/s):	8.88	7.21	7.01
Max Depth (ft):	0.78	0.96	1.02

HGL



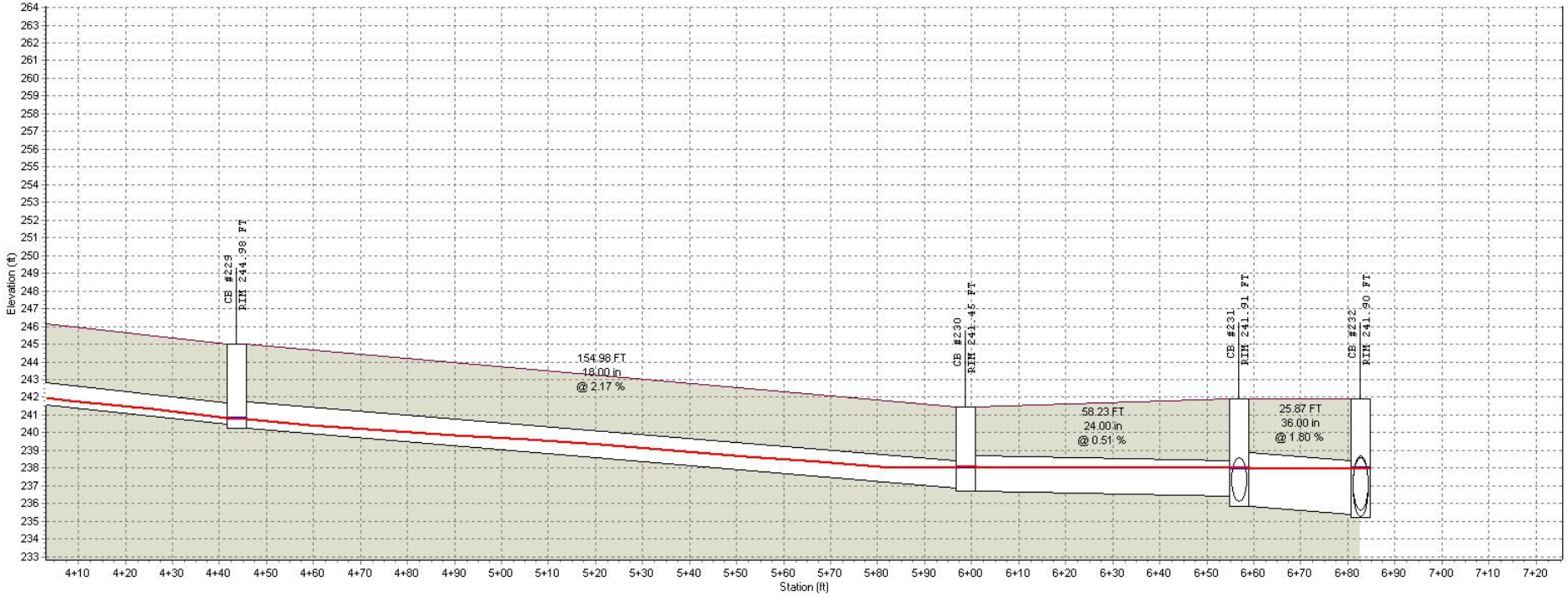
	CB #227	CB #228	
RIM (FT):	257.40	250.23	
Invert (ft):	252.73	245.35	
Min Pipe Cover (ft):			
Max HGL (ft):	252.89	245.74	

Link ID:	P #303	P #304
(FT):	166.94	176.63
(in):	15.00	15.00
@ (%):	4.30	2.77
Up Invert (ft):	252.73	245.35
Dn Invert (ft):	245.55	240.46
Max Q (cfs):	0.49	2.07
Max Vel (ft/s):	4.79	6.56
Max Depth (ft):	0.18	0.38

HGL

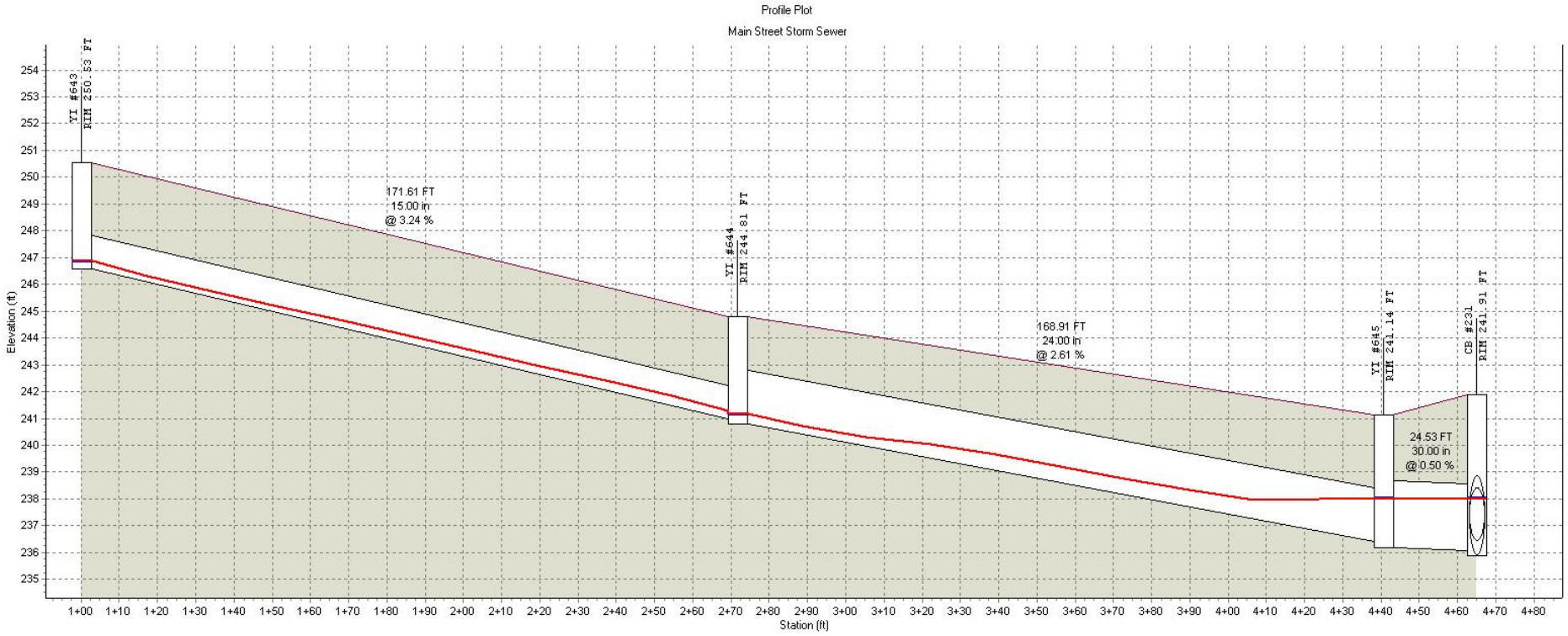
Profile Plot

Main Street Storm Sewer



	CB #229		CB #230		CB #231	CB #232
RIM (FT):	244.98		241.45		241.91	241.90
Invert (ft):	240.26		236.70		235.87	235.20
Min Pipe Cover (ft):						
Max HGL (ft):	240.76		238.05		238.00	237.98
Link ID:		P #305		P #306	P #307	
(FT):		154.98		58.23	25.87	
(in):		18.00		24.00	36.00	
@ (%):		2.17		0.51	1.80	
Up Invert (ft):		240.26		236.70	235.87	
Dn Invert (ft):		236.90		236.40	235.40	
Max Q (cfs):		3.74		5.79	7.94	
Max Vel (ft/s):		5.52		3.97	4.47	
Max Depth (ft):		0.80		1.48	2.35	

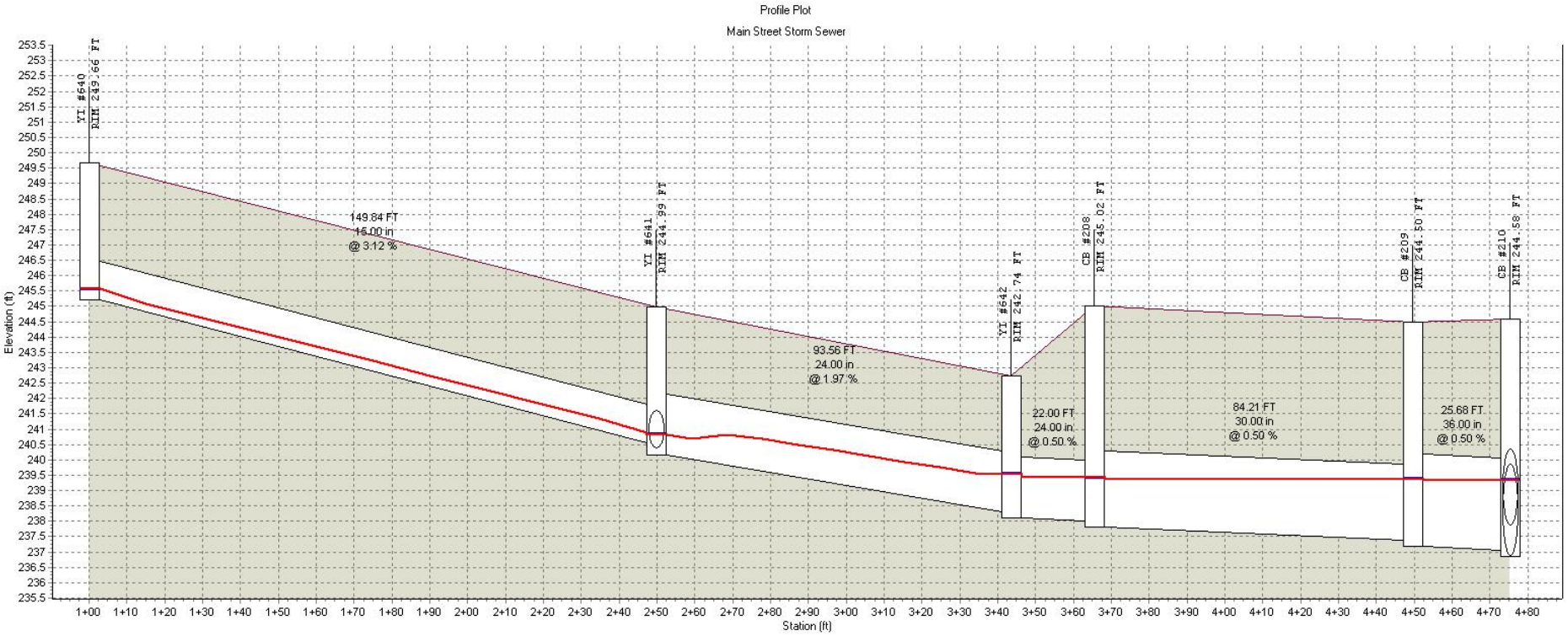
HGL



	YI #643	YI #644	YI #645	CB #231
RIM (FT):	250.53	244.81	241.14	241.91
Invert (ft):	246.56	240.80	236.19	235.87
Min Pipe Cover (ft):				
Max HGL (ft):	246.86	241.16	238.00	237.99

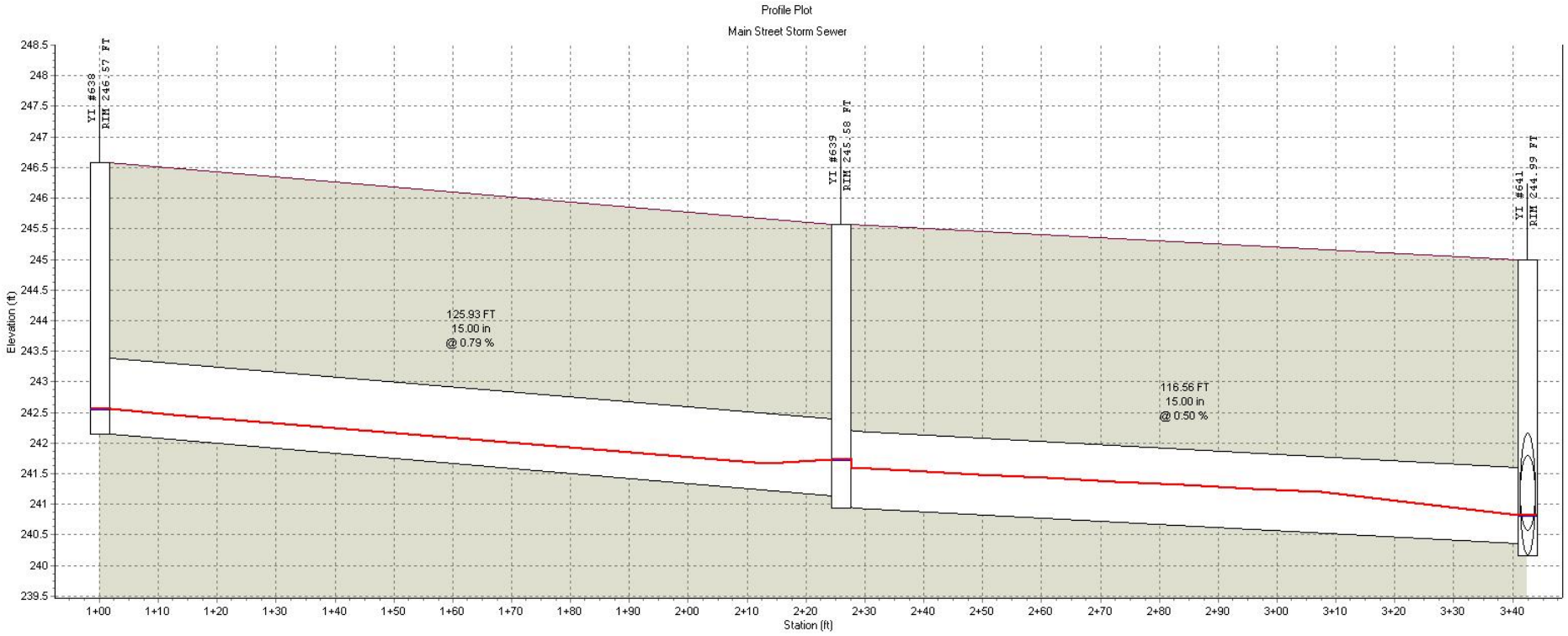
Link ID:	P #316	P #317	P #318
(FT):	171.61	168.91	24.53
(in):	15.00	24.00	30.00
@ (%):	3.24	2.61	0.50
Up Invert (ft):	246.56	240.80	236.19
Dn Invert (ft):	241.00	236.39	236.07
Max Q (cfs):	1.37	2.68	2.98
Max Vel (ft/s):	6.20	4.74	3.04
Max Depth (ft):	0.29	0.96	1.86

HGL



	YI #640	YI #641	YI #642	CB #208	CB #209	CB #210
RIM (FT):	249.66	244.99	242.74	245.02	244.50	244.58
Invert (ft):	245.22	240.15	238.11	237.80	237.18	236.85
Min Pipe Cover (ft):						
Max HGL (ft):	245.56	240.82	239.53	239.42	239.37	239.34

Link ID:	P #313	P #314	P #315	P #284	P #285
(FT):	149.84	93.56	22.00	84.21	25.68
(in):	15.00	24.00	24.00	30.00	36.00
@ (%):	3.12	1.97	0.50	0.50	0.50
Up Invert (ft):	245.22	240.15	238.11	237.80	237.18
Dn Invert (ft):	240.55	238.31	238.00	237.38	237.05
Max Q (cfs):	1.67	6.24	7.32	7.81	7.89
Max Vel (ft/s):	6.44	4.86	4.12	3.84	3.05
Max Depth (ft):	0.33	0.89	1.42	1.81	2.24



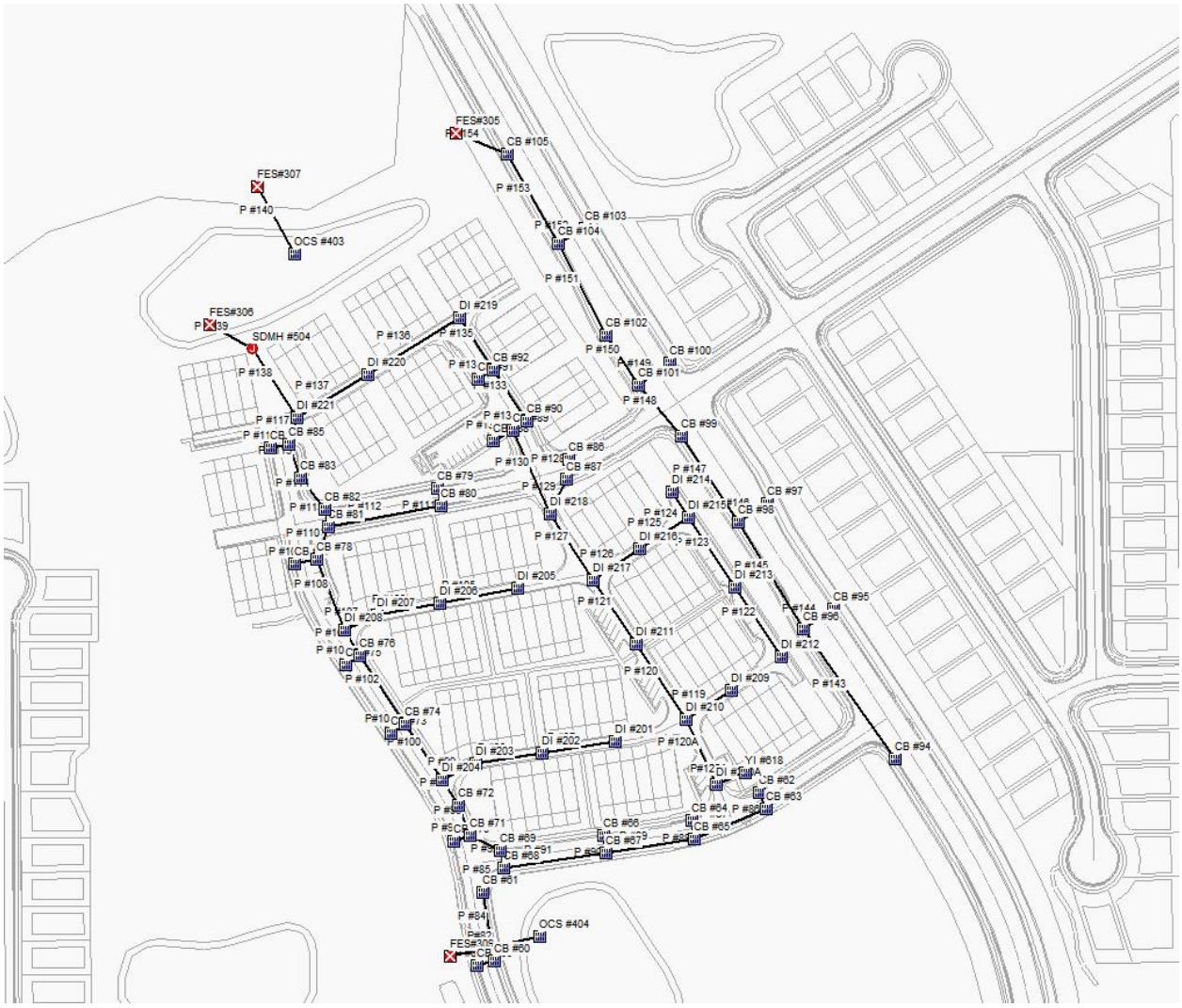
	YI #638	YI #639	YI #641
RIM (FT):	246.57	245.58	244.99
Invert (ft):	242.14	240.94	240.15
Min Pipe Cover (ft):			
Max HGL (ft):	242.55	241.72	240.82

Link ID:	P #311	P #312
(FT):	125.93	116.56
(in):	15.00	15.00
@ (%):	0.79	0.50
Up Invert (ft):	242.14	240.94
Dn Invert (ft):	241.14	240.35
Max Q (cfs):	1.36	2.75
Max Vel (ft/s):	3.02	3.74
Max Depth (ft):	0.49	0.73

HGL

S T O R M W A T E R AREA " G "

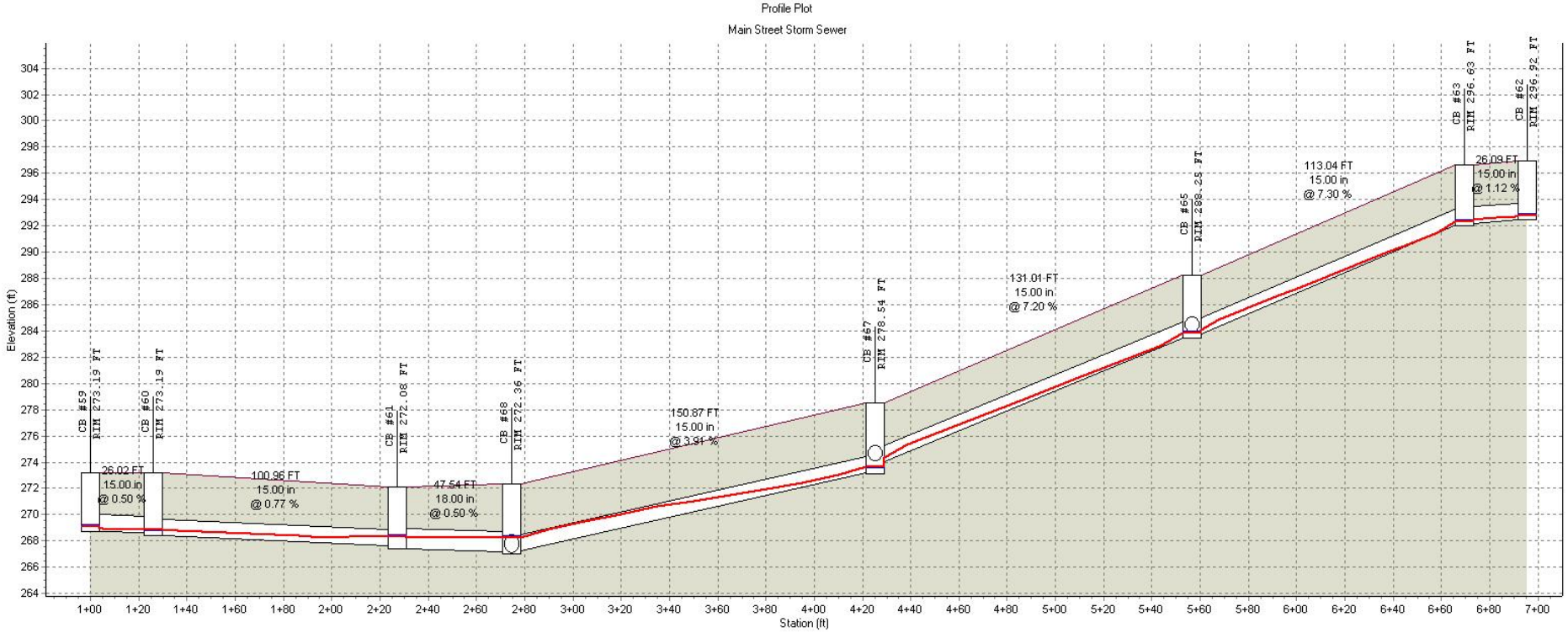
STORMWATER PIPING AND HYDRAULIC GRADE LINE FOR 10-YR STORM



PLAN VIEW

DRAINAGE AREA									
SN	Element ID	Area (acres)	Drainage Node ID	Weighted Runoff Coefficient	Accumulated Precipitation (inches)	Total Runoff (inches)	Peak Runoff (cfs)	Rainfall Intensity (inches/hr)	Time of Concentration (days hh:mm:ss)
1	Sub-CB#100	0.06	CB #100	0.8700	0.60	0.52	0.38	7.210	0 00:05:00
2	Sub-CB#101	0.04	CB #101	0.8700	0.60	0.52	0.25	7.210	0 00:05:00
3	Sub-CB#102	0.09	CB #102	0.8700	0.60	0.52	0.57	7.210	0 00:05:00
4	Sub-CB#103	0.22	CB #103	0.8700	0.60	0.52	1.38	7.210	0 00:05:00
5	Sub-CB#104	0.13	CB #104	0.8700	0.60	0.52	0.82	7.210	0 00:05:00
6	Sub-CB#105	0.12	CB #105	0.8700	0.60	0.52	0.75	7.210	0 00:05:00
7	Sub-CB#59	0.10	CB #59	0.8700	0.60	0.52	0.63	7.210	0 00:05:00
8	Sub-CB#60	0.12	CB #60	0.8700	0.60	0.52	0.75	7.210	0 00:05:00
9	Sub-CB#61	0.11	CB #61	0.8700	0.60	0.52	0.69	7.210	0 00:05:00
10	Sub-CB#62	0.16	CB #62	0.5500	0.60	0.33	0.63	7.210	0 00:05:00
11	Sub-CB#63	0.19	CB #63	0.7100	0.60	0.43	0.97	7.210	0 00:05:00
12	Sub-CB#64	0.06	CB #64	0.6300	0.60	0.38	0.27	7.210	0 00:05:00
13	Sub-CB#65	0.11	CB #65	0.5100	0.60	0.31	0.40	7.210	0 00:05:00
14	Sub-CB#66	0.10	CB #66	0.6300	0.60	0.38	0.45	7.210	0 00:05:00
15	Sub-CB#67	0.12	CB #67	0.5900	0.60	0.35	0.51	7.210	0 00:05:00
16	Sub-CB#68	0.08	CB #68	0.8700	0.60	0.52	0.50	7.210	0 00:05:00
17	Sub-CB#69	0.08	CB #69	0.8700	0.60	0.52	0.50	7.210	0 00:05:00
18	Sub-CB#70	0.11	CB #70	0.8700	0.60	0.52	0.69	7.210	0 00:05:00
19	Sub-CB#71	0.40	CB #71	0.5900	0.60	0.35	1.70	7.210	0 00:05:00
20	Sub-CB#72	0.06	CB #72	0.4700	0.60	0.28	0.20	7.210	0 00:05:00
21	Sub-CB#73	0.11	CB #73	0.8700	0.60	0.52	0.69	7.210	0 00:05:00
22	Sub-CB#74	0.08	CB #74	0.6300	0.60	0.38	0.36	7.210	0 00:05:00
23	Sub-CB#75	0.07	CB #75	0.8700	0.60	0.52	0.44	7.210	0 00:05:00
24	Sub-CB#76	0.27	CB #76	0.6700	0.60	0.40	1.30	7.210	0 00:05:00
25	Sub-CB#77	0.09	CB #77	0.8700	0.60	0.52	0.57	7.210	0 00:05:00
26	Sub-CB#78	0.19	CB #78	0.6300	0.60	0.38	0.86	7.210	0 00:05:00
27	Sub-CB#79	0.09	CB #79	0.8700	0.60	0.52	0.57	7.210	0 00:05:00
28	Sub-CB#80	0.40	CB #80	0.5900	0.60	0.35	1.70	7.210	0 00:05:00
29	Sub-CB#81	0.45	CB #81	0.4700	0.60	0.28	1.53	7.210	0 00:05:00
30	Sub-CB#82	0.11	CB #82	0.8300	0.60	0.50	0.66	7.210	0 00:05:00
31	Sub-CB#83	0.05	CB #83	0.8700	0.60	0.52	0.31	7.210	0 00:05:00
32	Sub-CB#84	0.10	CB #84	0.5900	0.60	0.35	0.43	7.210	0 00:05:00
33	Sub-CB#85	0.04	CB #85	0.8700	0.60	0.52	0.25	7.210	0 00:05:00
34	Sub-CB#86	0.09	CB #86	0.8700	0.60	0.52	0.57	7.210	0 00:05:00
35	Sub-CB#87	0.38	CB #87	0.3900	0.60	0.23	1.07	7.210	0 00:05:00
36	Sub-CB#88	0.14	CB #88	0.6700	0.60	0.40	0.68	7.210	0 00:05:00
37	Sub-CB#89	0.03	CB #89	0.8700	0.60	0.52	0.19	7.210	0 00:05:00
38	Sub-CB#90	0.12	CB #90	0.6700	0.60	0.40	0.58	7.210	0 00:05:00
39	Sub-CB#91	0.12	CB #91	0.8700	0.60	0.52	0.75	7.210	0 00:05:00
40	Sub-CB#92	0.15	CB #92	0.5500	0.60	0.33	0.60	7.210	0 00:05:00
41	Sub-CB#94	0.49	CB #94	0.8700	0.60	0.52	3.07	7.210	0 00:05:00
42	Sub-CB#95	0.23	CB #95	0.8700	0.60	0.52	1.44	7.210	0 00:05:00
43	Sub-CB#96	0.18	CB #96	0.8700	0.60	0.52	1.13	7.210	0 00:05:00
44	Sub-CB#97	0.17	CB #97	0.8700	0.60	0.52	1.07	7.210	0 00:05:00
45	Sub-CB#98	0.16	CB #98	0.8700	0.60	0.52	1.00	7.210	0 00:05:00
46	Sub-CB#99	0.12	CB #99	0.8700	0.60	0.52	0.75	7.210	0 00:05:00
47	Sub-DI#201	0.22	DI #201	0.5900	0.60	0.35	0.94	7.210	0 00:05:00
48	Sub-DI#202	0.28	DI #202	0.7500	0.60	0.45	1.51	7.210	0 00:05:00
49	Sub-DI#203	0.23	DI #203	0.8300	0.60	0.50	1.38	7.210	0 00:05:00
50	Sub-DI#204	0.16	DI #204	0.5100	0.60	0.31	0.59	7.210	0 00:05:00
51	Sub-DI#205	0.38	DI #205	0.5100	0.60	0.31	1.40	7.210	0 00:05:00

DRAINAGE AREA									
SN	Element ID	Area (acres)	Drainage Node ID	Weighted Runoff Coefficient	Accumulated Precipitation (inches)	Total Runoff (inches)	Peak Runoff (cfs)	Rainfall Intensity (inches/hr)	Time of Concentration (days hh:mm:ss)
52	Sub-DI#206	0.53	DI #206	0.4700	0.60	0.28	1.80	7.210	0 00:05:00
53	Sub-DI#207	0.41	DI #207	0.7500	0.60	0.45	2.22	7.210	0 00:05:00
54	Sub-DI#208	0.12	DI #208	0.3500	0.60	0.21	0.30	7.210	0 00:05:00
55	Sub-DI#209	0.16	DI #209	0.8300	0.60	0.50	0.96	7.210	0 00:05:00
56	Sub-DI#210	0.36	DI #210	0.7100	0.60	0.43	1.84	7.210	0 00:05:00
57	Sub-DI#210A	0.06	DI #210A	0.7100	0.60	0.43	0.31	7.210	0 00:05:00
58	Sub-DI#211	0.32	DI #211	0.7500	0.60	0.45	1.73	7.210	0 00:05:00
59	Sub-DI#212	0.15	DI #212	0.2700	0.60	0.16	0.29	7.210	0 00:05:00
60	Sub-DI#213	0.17	DI #213	0.6300	0.60	0.38	0.77	7.210	0 00:05:00
61	Sub-DI#214	0.05	DI #214	0.4700	0.60	0.28	0.17	7.210	0 00:05:00
62	Sub-DI#215	0.18	DI #215	0.5500	0.60	0.33	0.71	7.210	0 00:05:00
63	Sub-DI#216	0.20	DI #216	0.7900	0.60	0.48	1.14	7.210	0 00:05:00
64	Sub-DI#217	0.63	DI #217	0.6700	0.60	0.40	3.04	7.210	0 00:05:00
65	Sub-DI#218	0.06	DI #218	0.6700	0.60	0.40	0.29	7.210	0 00:05:00
66	Sub-DI#219	0.32	DI #219	0.6700	0.60	0.40	1.55	7.210	0 00:05:00
67	Sub-DI#220	0.37	DI #220	0.7100	0.60	0.43	1.89	7.210	0 00:05:00
68	Sub-DI#221	1.19	DI #221	0.5100	0.60	0.31	4.38	7.210	0 00:05:00
69	Sub-YI#618	0.13	YI #618	0.8300	0.60	0.50	0.78	7.210	0 00:05:00



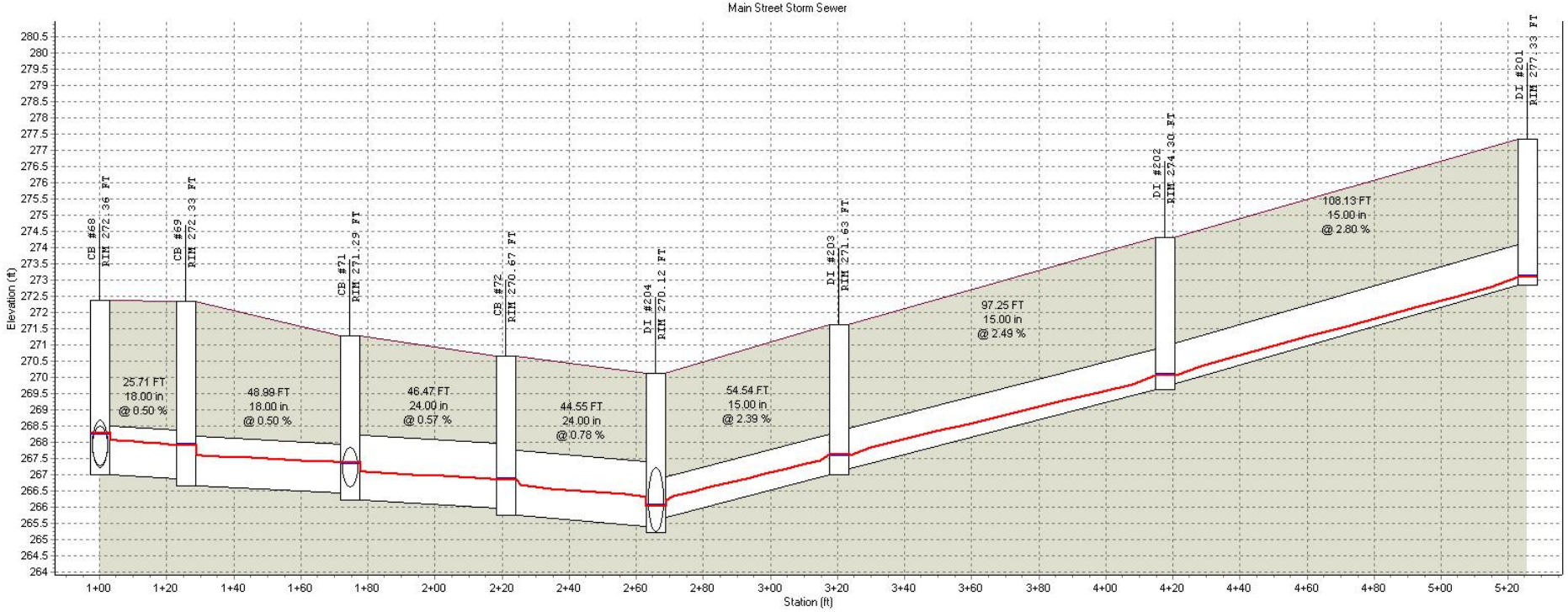
:	CB #59	CB #60	CB #61	CB #68	CB #67	CB #65	CB #63	CB #62
RIM (FT):	273.19	273.19	272.08	272.36	278.54	288.25	296.63	296.92
Invert (ft):	268.75	268.42	267.44	267.00	273.15	283.46	291.99	292.49
Min Pipe Cover (ft):								
Max HGL (ft):	269.09	268.83	268.32	268.27	273.62	283.82	292.31	292.77

Link ID:	P #83	P #84	P #85	P #91	P #89	P #87	P #86
(FT):	26.02	100.96	47.54	150.87	131.01	113.04	26.09
(in):	15.00	15.00	18.00	15.00	15.00	15.00	15.00
@ (%):	0.50	0.77	0.50	3.91	7.20	7.30	1.12
Up Invert (ft):	268.75	268.42	267.44	273.15	283.46	291.99	292.49
Dn Invert (ft):	268.62	267.64	267.20	267.25	274.03	283.74	292.19
Max Q (cfs):	0.57	1.28	1.75	3.71	2.84	2.23	0.61
Max Vel (ft/s):	2.33	3.23	2.17	5.86	10.04	9.42	3.14
Max Depth (ft):	0.32	0.52	0.97	0.73	0.35	0.31	0.27

HGL

Profile Plot

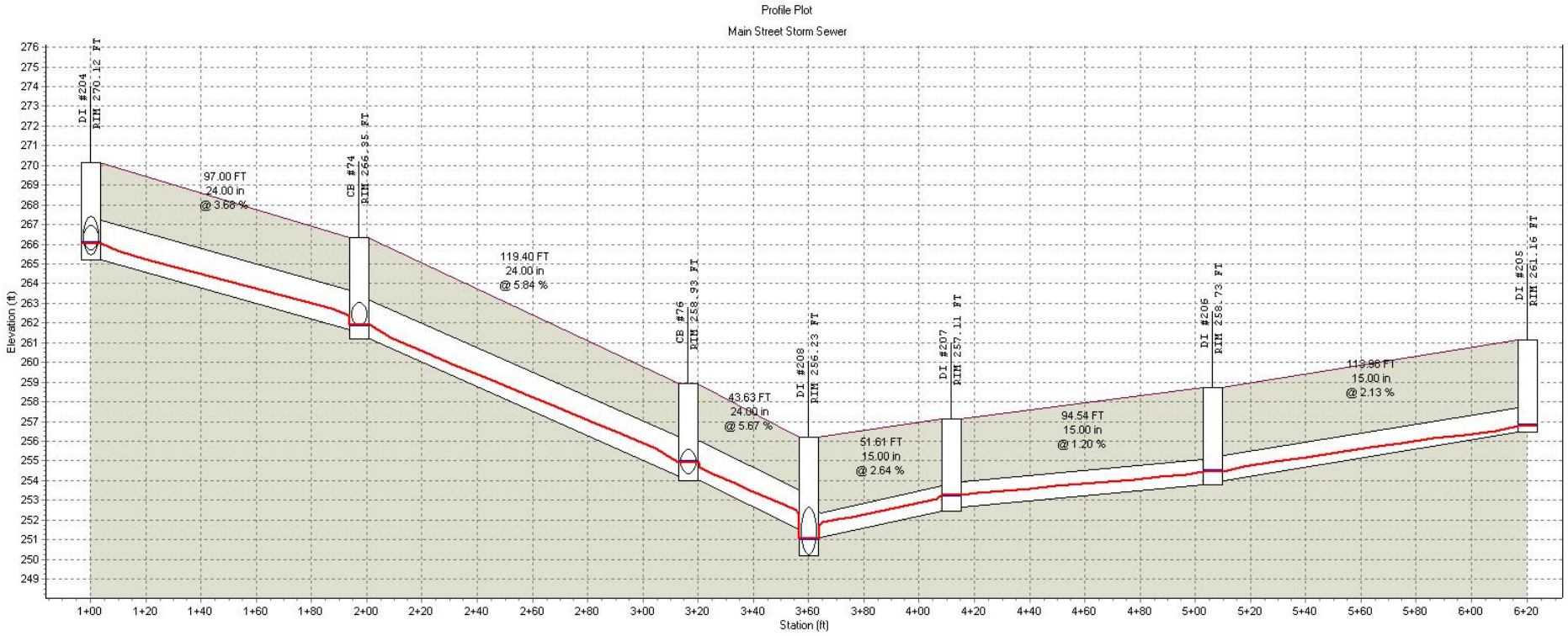
Main Street Storm Sewer



:	CB #68	CB #69	CB #71	CB #72	DI #204	DI #203	DI #202	DI #201
RIM (FT):	272.36	272.33	271.29	270.67	270.12	271.63	274.30	277.33
Invert (ft):	267.00	266.67	266.23	265.76	265.22	266.99	269.61	272.84
Min Pipe Cover (ft):								
Max HGL (ft):	268.27	267.91	267.37	266.85	266.05	267.62	270.06	273.10

Link ID:	P #92	P #93	P #95	P #96	P #99	P #98	P #97
(FT):	25.71	48.99	46.47	44.55	54.54	97.25	108.13
(in):	18.00	18.00	24.00	24.00	15.00	15.00	15.00
@ (%):	0.50	0.50	0.57	0.78	2.39	2.49	2.80
Up Invert (ft):	267.00	266.67	266.23	265.76	266.99	269.61	272.84
Dn Invert (ft):	266.87	266.43	265.96	265.42	265.69	267.19	269.81
Max Q (cfs):	5.47	5.86	7.45	7.89	3.67	2.38	0.92
Max Vel (ft/s):	3.76	4.28	4.55	5.16	6.67	6.27	5.21
Max Depth (ft):	1.15	1.09	1.03	0.98	0.57	0.43	0.25

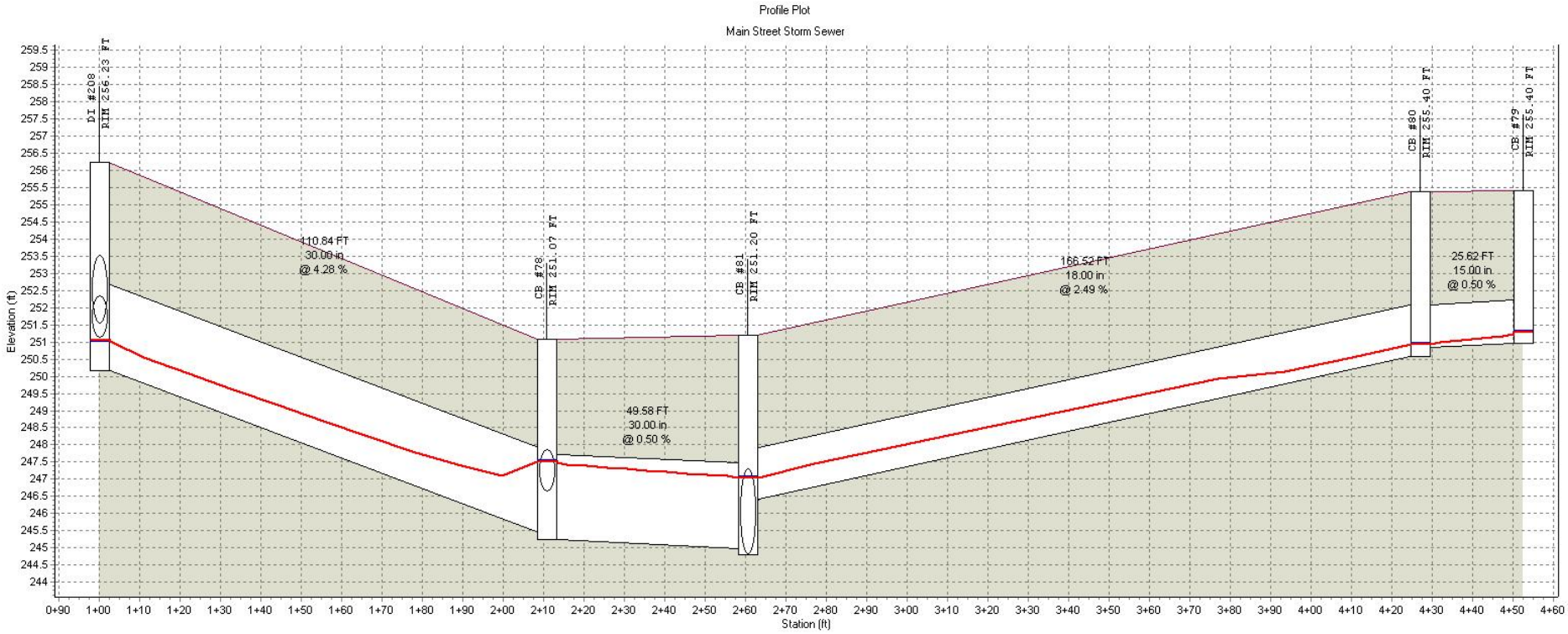
HGL



	DI #204	CB #74	CB #76	DI #208	DI #207	DI #206	DI #205
RIM (FT):	270.12	266.35	258.93	256.23	257.11	258.73	261.16
Invert (ft):	265.22	261.17	253.99	250.18	252.48	253.81	256.44
Min Pipe Cover (ft):							
Max HGL (ft):	266.05	261.89	254.94	251.04	253.25	254.46	256.77

Link ID:	P #100	P #102	P #104	P #107	P #106	P #105
(FT):	97.00	119.40	43.63	51.61	94.54	113.98
(in):	24.00	24.00	24.00	15.00	15.00	15.00
@ (%):	3.68	5.84	5.67	2.64	1.20	2.13
Up Invert (ft):	265.22	261.17	253.99	252.48	253.81	256.44
Dn Invert (ft):	261.64	254.19	251.52	251.11	252.68	254.01
Max Q (cfs):	11.62	12.58	13.96	5.20	3.10	1.39
Max Vel (ft/s):	10.43	12.02	11.48	7.38	5.17	4.46
Max Depth (ft):	0.77	0.73	0.82	0.70	0.62	0.39

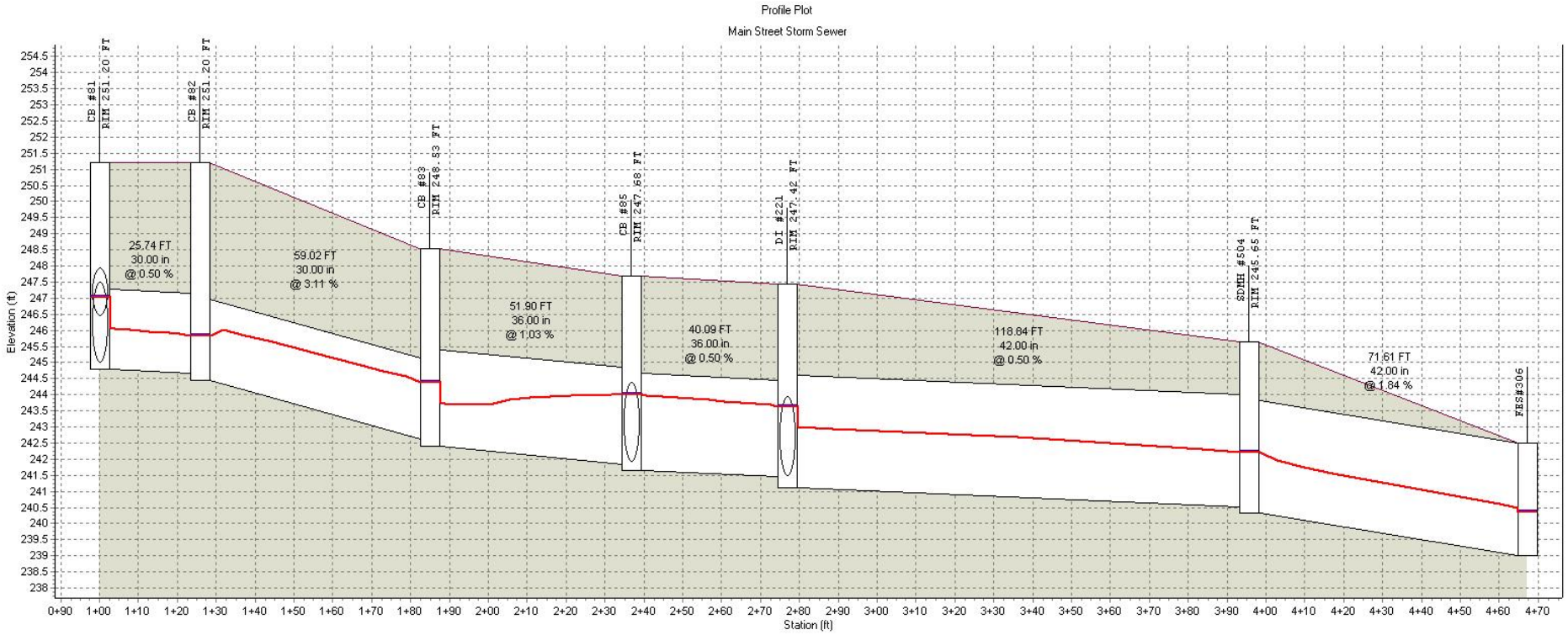
HGL



	DI #208	CB #78	CB #81	CB #80	CB #79
RIM (FT):	256.23	251.07	251.20	255.40	255.40
Invert (ft):	250.18	245.23	244.79	250.57	250.97
Min Pipe Cover (ft):					
Max HGL (ft):	251.04	247.51	247.04	250.94	251.30

Link ID:	P #108	P #110	P #112	P #111
(FT):	110.84	49.58	166.52	25.62
(in):	30.00	30.00	18.00	15.00
@ (%):	4.28	0.50	2.49	0.50
Up Invert (ft):	250.18	245.23	250.57	250.97
Dn Invert (ft):	245.44	244.99	246.42	250.84
Max Q (cfs):	19.14	20.06	2.13	0.55
Max Vel (ft/s):	7.25	4.45	6.02	2.31
Max Depth (ft):	1.46	2.17	0.47	0.31

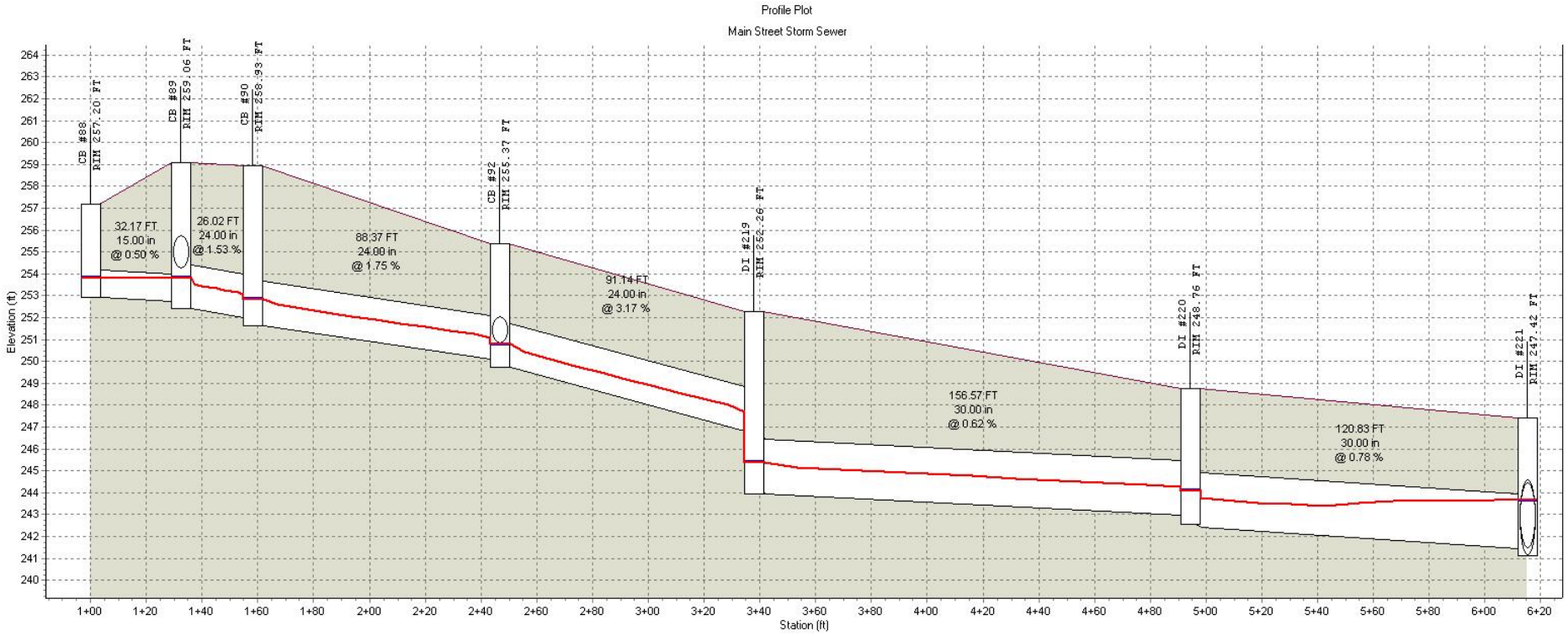
HGL



	CB #81	CB #82	CB #83	CB #85	DI #221	SDMH #504	FES#306
RIM (FT):	251.20	251.20	248.53	247.68	247.42	245.65	
Invert (ft):	244.79	244.46	242.39	241.65	241.11	240.32	239.00
Min Pipe Cover (ft):						1.64	
Max HGL (ft):	247.04	245.84	244.38	244.01	243.65	242.22	240.37

Link ID:	P #113	P #114	P #115	P #117	P #138	P #139
(FT):	25.74	59.02	51.90	40.09	118.84	71.61
(in):	30.00	30.00	36.00	36.00	42.00	42.00
@ (%):	0.50	3.11	1.03	0.50	0.50	1.84
Up Invert (ft):	244.79	244.46	242.39	241.65	241.11	240.32
Dn Invert (ft):	244.66	242.63	241.85	241.45	240.52	239.00
Max Q (cfs):	23.15	23.63	23.68	23.98	44.25	44.28
Max Vel (ft/s):	5.66	8.02	5.23	4.19	6.73	10.02
Max Depth (ft):	1.94	1.56	2.07	2.28	2.27	1.64

HGL



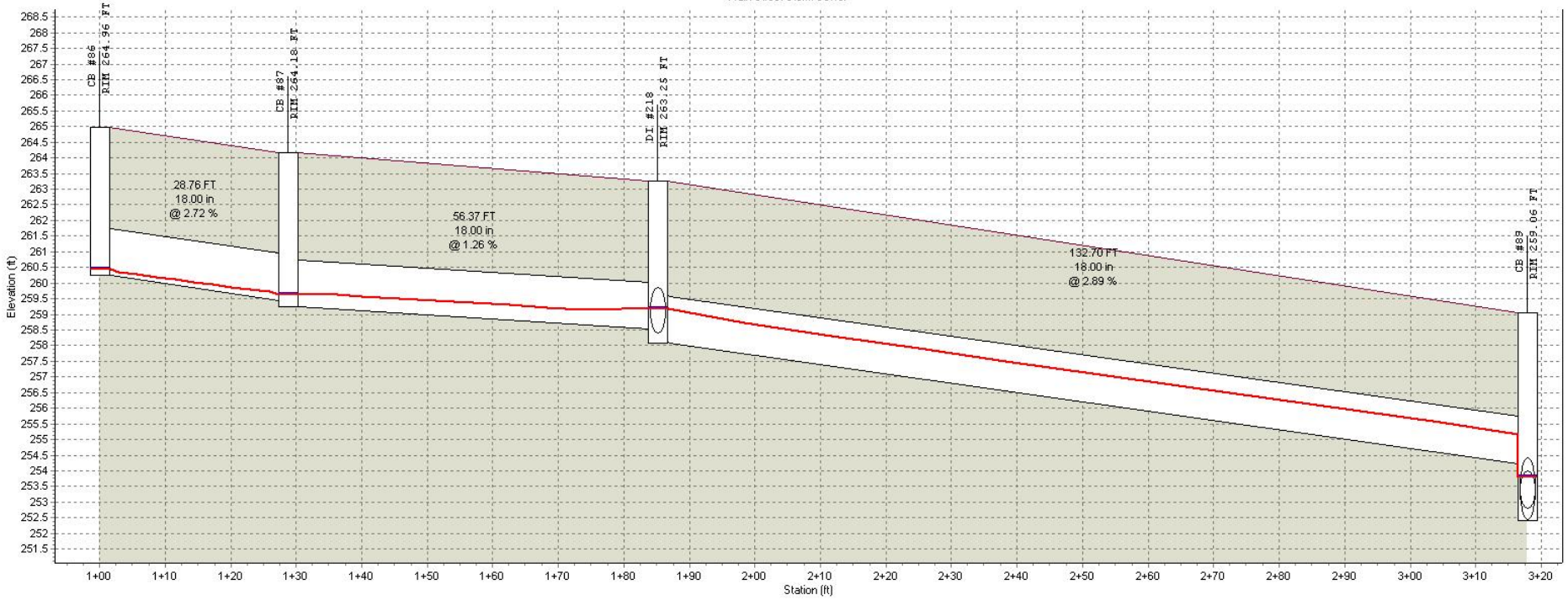
	CB #88	CB #89	CB #90	CB #92	DI #219	DI #220	DI #221
RIM (FT):	257.20	259.06	258.93	255.37	252.26	248.76	247.42
Invert (ft):	252.92	252.41	251.65	249.73	243.92	242.55	241.11
Min Pipe Cover (ft):							
Max HGL (ft):	253.81	253.80	252.85	250.77	245.38	244.07	243.65

Link ID:	P #131	P #132	P #133	P #135	P #136	P #137
(FT):	32.17	26.02	88.37	91.14	156.57	120.83
(in):	15.00	24.00	24.00	24.00	30.00	30.00
@ (%):	0.50	1.53	1.75	3.17	0.62	0.78
Up Invert (ft):	252.92	252.41	251.65	249.73	243.92	242.40
Dn Invert (ft):	252.76	252.01	250.10	246.84	242.95	241.45
Max Q (cfs):	0.63	13.56	14.04	15.15	16.31	17.57
Max Vel (ft/s):	1.78	6.96	8.13	10.35	6.02	4.58
Max Depth (ft):	0.97	1.19	1.08	0.95	1.36	1.86

HGL

Profile Plot

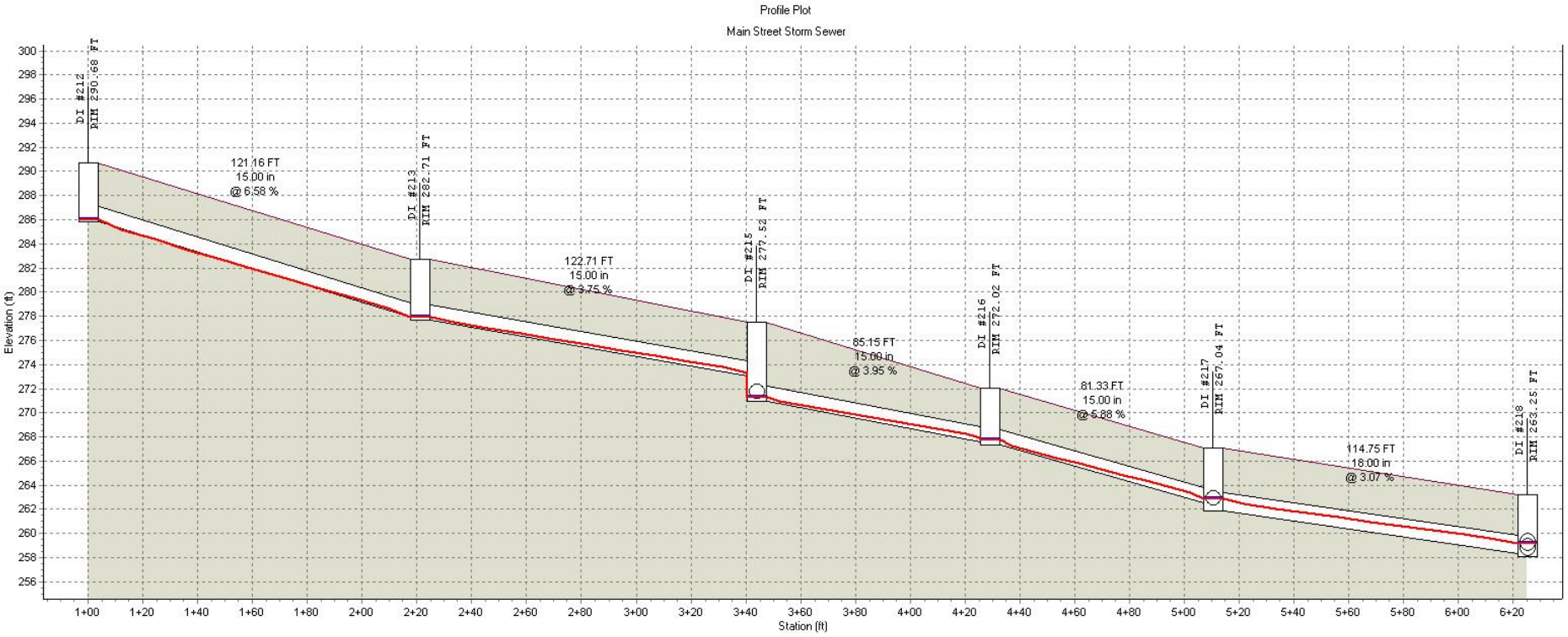
Main Street Storm Sewer



	CB #86	CB #87	DI #218	CB #89
RIM (FT):	264.96	264.18	263.25	259.06
Invert (ft):	260.23	259.23	258.06	252.41
Min Pipe Cover (ft):				
Max HGL (ft):	260.44	259.64	259.19	253.80

Link ID:	P #128	P #129	P #130
(FT):	28.76	56.37	132.70
(in):	18.00	18.00	18.00
@ (%):	2.72	1.26	2.89
Up Invert (ft):	260.23	259.23	258.06
Dn Invert (ft):	259.45	258.52	254.23
Max Q (cfs):	0.56	1.61	12.79
Max Vel (ft/s):	4.16	3.79	9.91
Max Depth (ft):	0.19	0.51	1.03

HGL

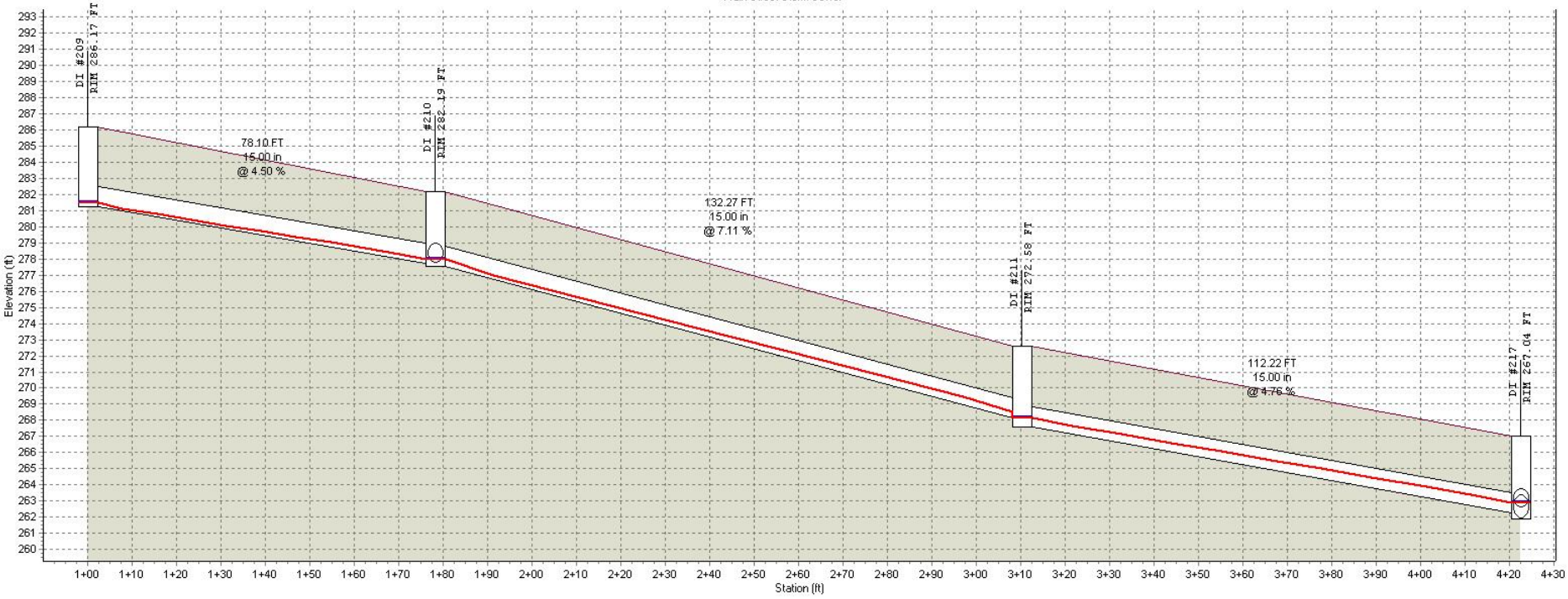


	DI #212	DI #213	DI #215	DI #216	DI #217	DI #218
RIM (FT):	290.68	282.71	277.52	272.02	267.04	263.25
Invert (ft):	285.87	277.69	270.95	267.33	261.87	258.06
Min Pipe Cover (ft):						
Max HGL (ft):	285.98	277.94	271.29	267.73	262.87	259.19

Link ID:	P #122	P #123	P #125	P #126	P #127
(FT):	121.16	122.71	85.15	81.33	114.75
(in):	15.00	15.00	15.00	15.00	18.00
@ (%):	6.58	3.75	3.95	5.88	3.07
Up Invert (ft):	285.87	277.69	270.95	267.33	261.87
Dn Invert (ft):	277.89	273.09	267.59	262.54	258.35
Max Q (cfs):	0.28	1.02	1.85	2.92	11.09
Max Vel (ft/s):	4.99	5.98	7.06	9.16	9.80
Max Depth (ft):	0.11	0.25	0.33	0.38	0.92

Profile Plot

Main Street Storm Sewer



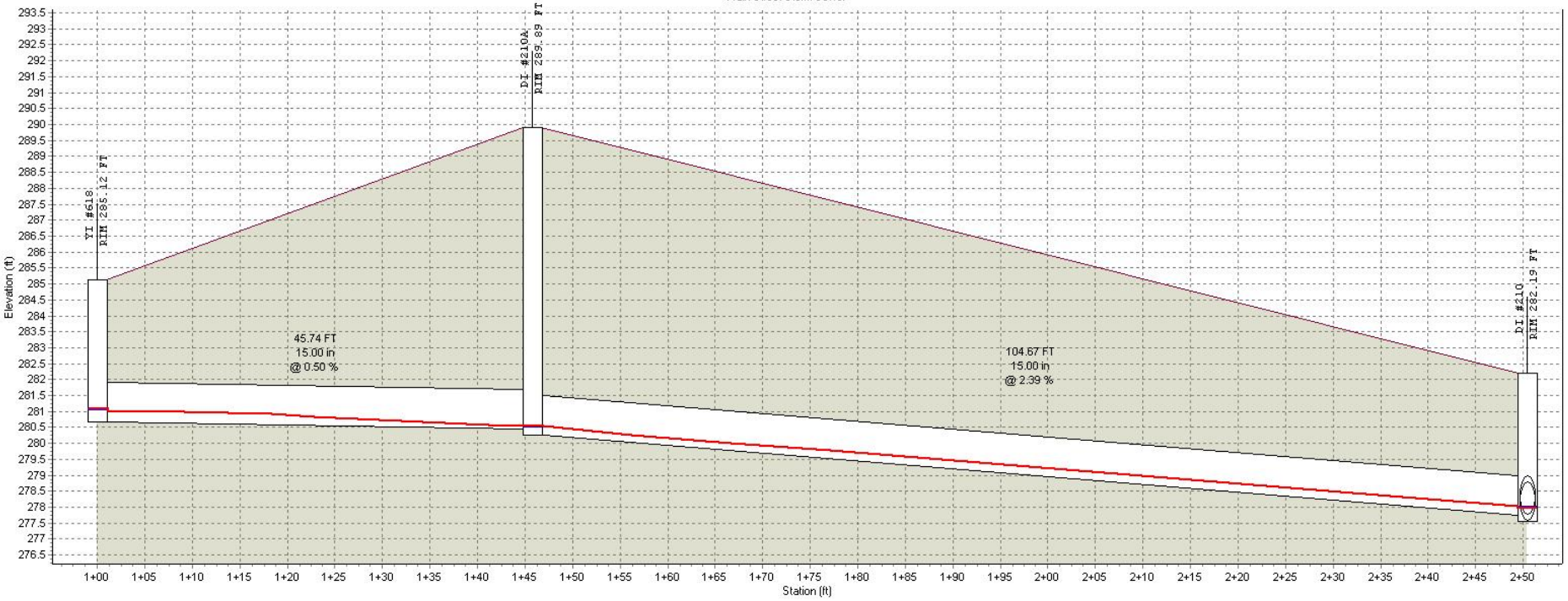
	DI #209	DI #210	DI #211	DI #217
RIM (FT):	286.17	282.19	272.58	267.04
Invert (ft):	281.26	277.55	267.60	261.87
Min Pipe Cover (ft):				
Max HGL (ft):	281.50	277.97	268.18	262.87

Link ID:	P #119	P #120	P #121
(FT):	78.10	132.27	112.22
(in):	15.00	15.00	15.00
@ (%):	4.50	7.11	4.76
Up Invert (ft):	281.26	277.55	267.60
Dn Invert (ft):	277.75	268.14	262.26
Max Q (cfs):	0.94	3.69	5.37
Max Vel (ft/s):	6.12	10.70	9.51
Max Depth (ft):	0.23	0.41	0.59

HGL

Profile Plot

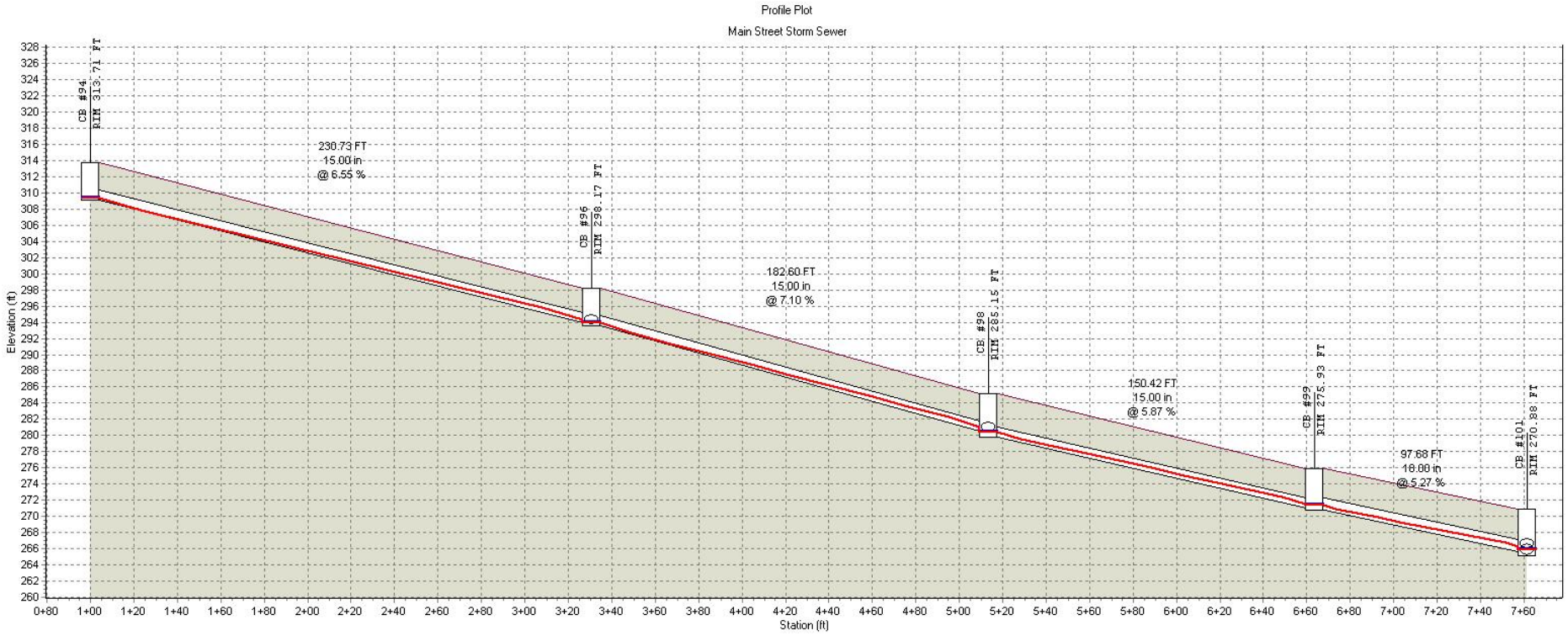
Main Street Storm Sewer



	YI #618	DI #210A	DI #210
RIM (FT):	285.12	289.89	282.19
Invert (ft):	280.68	280.25	277.55
Min Pipe Cover (ft):			
Max HGL (ft):	281.08	280.53	277.97

Link ID:	P#122A	P #120A
(FT):	45.74	104.67
(in):	15.00	15.00
@ (%):	0.50	2.39
Up Invert (ft):	280.68	280.25
Dn Invert (ft):	280.45	277.75
Max Q (cfs):	0.75	1.03
Max Vel (ft/s):	2.46	5.07
Max Depth (ft):	0.37	0.28

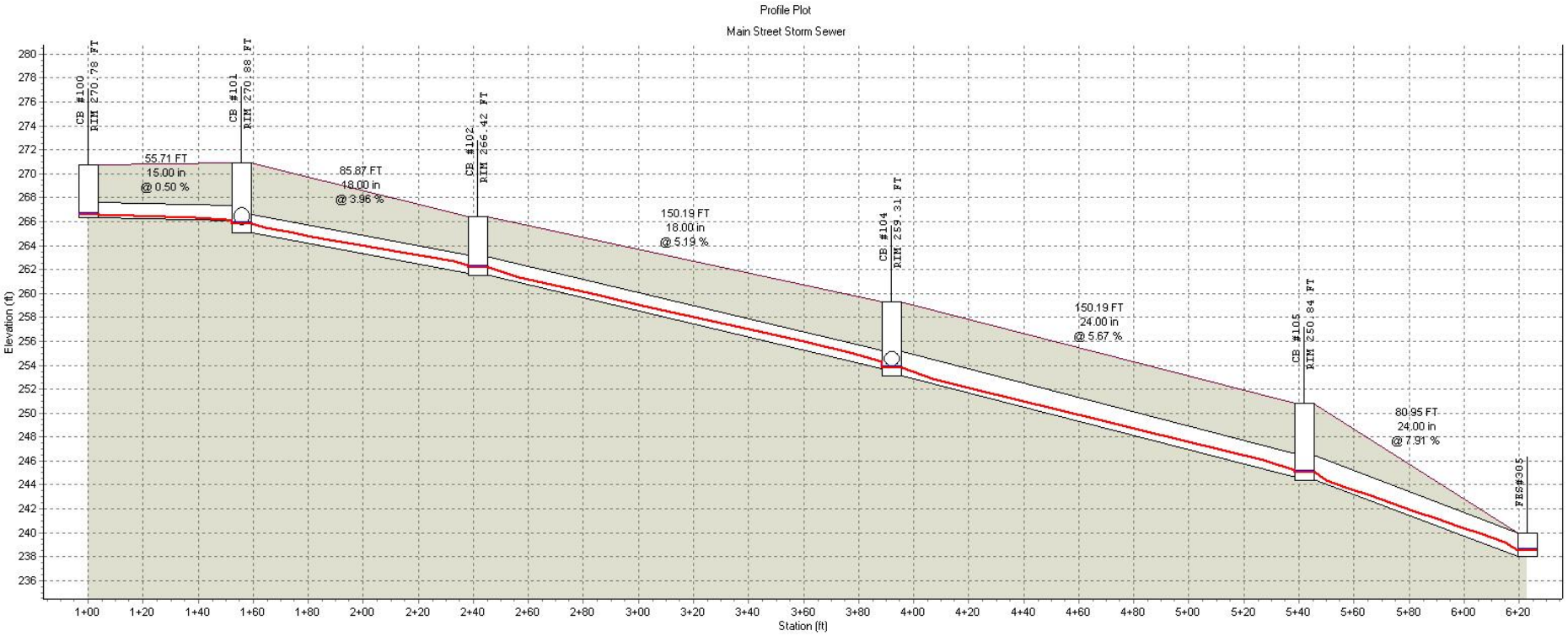
HGL



	CB #94	CB #96	CB #98	CB #99	CB #101
RIM (FT):	313.71	298.17	285.15	275.93	270.88
Invert (ft):	309.07	293.53	279.82	270.79	265.10
Min Pipe Cover (ft):					
Max HGL (ft):	309.39	293.99	280.43	271.43	265.85

Link ID:	P #143	P #145	P #147	P #148
(FT):	230.73	182.60	150.42	97.68
(in):	15.00	15.00	15.00	18.00
@ (%):	6.55	7.10	5.87	5.27
Up Invert (ft):	309.07	293.53	279.82	270.79
Dn Invert (ft):	293.96	280.57	270.99	265.64
Max Q (cfs):	2.26	4.49	6.58	7.24
Max Vel (ft/s):	9.25	11.38	11.53	10.93
Max Depth (ft):	0.32	0.45	0.59	0.60

HGL



	CB #100	CB #101	CB #102	CB #104	CB #105	FES#305
RIM (FT):	270.78	270.88	266.42	259.31	250.84	
Invert (ft):	266.34	265.10	261.50	253.12	244.40	238.00
Min Pipe Cover (ft):						
Max HGL (ft):	266.60	265.85	262.17	253.76	245.05	238.56

Link ID:	P #149	P #150	P #151	P #153	P #154
(FT):	55.71	85.87	150.19	150.19	80.95
(in):	15.00	18.00	18.00	24.00	24.00
@ (%):	0.50	3.96	5.19	5.67	7.91
Up Invert (ft):	266.34	265.10	261.50	253.12	244.40
Dn Invert (ft):	266.06	261.70	253.71	244.60	238.00
Max Q (cfs):	0.36	7.81	8.28	10.08	10.69
Max Vel (ft/s):	2.15	9.84	11.54	12.31	13.47
Max Depth (ft):	0.24	0.69	0.64	0.61	0.60

HGL

S T O R M W A T E R AREA " H "

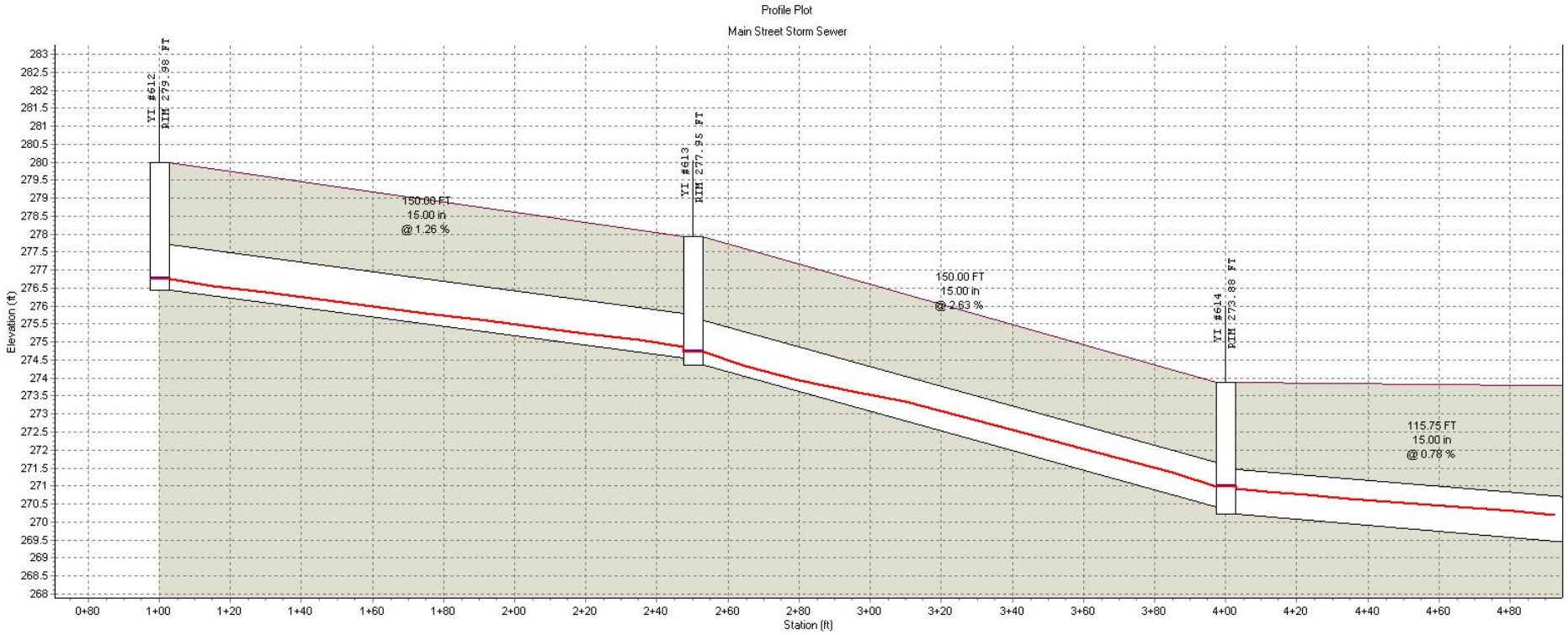
STORMWATER PIPING AND HYDRAULIC GRADE LINE FOR 10-YR STORM

PLAN VIEW

DRAINAGE AREA

SN	Element ID	Area (acres)	Drainage Node ID	Weighted Runoff Coefficient	Accumulated Precipitation (inches)	Total Runoff (inches)	Peak Runoff (cfs)	Rainfall Intensity (inches/hr)	Time of Concentration (days hh:mm:ss)
1	Sub-CB#28	0.64	CB #28	0.7500	0.60	0.45	3.46	7.210	0 00:05:00
2	Sub-CB#29	0.57	CB #29	0.7500	0.60	0.45	3.08	7.210	0 00:05:00
3	Sub-CB#30	0.37	CB #30	0.6300	0.60	0.38	1.68	7.210	0 00:05:00
4	Sub-CB#31	0.18	CB #31	0.7500	0.60	0.45	0.97	7.210	0 00:05:00
5	Sub-CB#32	0.46	CB #32	0.6300	0.60	0.38	2.09	7.210	0 00:05:00
6	Sub-CB#33	0.34	CB #33	0.7500	0.60	0.45	1.84	7.210	0 00:05:00
7	Sub-CB#34	0.63	CB #34(DOUBLE-INLET)	0.7500	0.60	0.45	3.41	7.210	0 00:05:00
8	Sub-CB#35	0.38	CB #35	0.7500	0.60	0.45	2.06	7.210	0 00:05:00
9	Sub-CB#36	0.20	CB #36	0.6300	0.60	0.38	0.91	7.210	0 00:05:00
10	Sub-CB#37	0.34	CB #37	0.6300	0.60	0.38	1.54	7.210	0 00:05:00
11	Sub-YI#612	0.18	YI #612	0.7500	0.60	0.45	0.97	7.210	0 00:05:00
12	Sub-YI#613	0.22	YI #613	0.7500	0.60	0.45	1.19	7.210	0 00:05:00
13	Sub-YI#614	0.25	YI #614	0.7900	0.60	0.48	1.42	7.210	0 00:05:00
14	Sub-YI#615	0.09	YI #615	0.7900	0.60	0.48	0.51	7.210	0 00:05:00
15	Sub-YI#616	0.27	YI #616	0.7500	0.60	0.45	1.46	7.210	0 00:05:00
16	Sub-YI#617	0.40	YI #617	0.7900	0.60	0.48	2.28	7.210	0 00:05:00

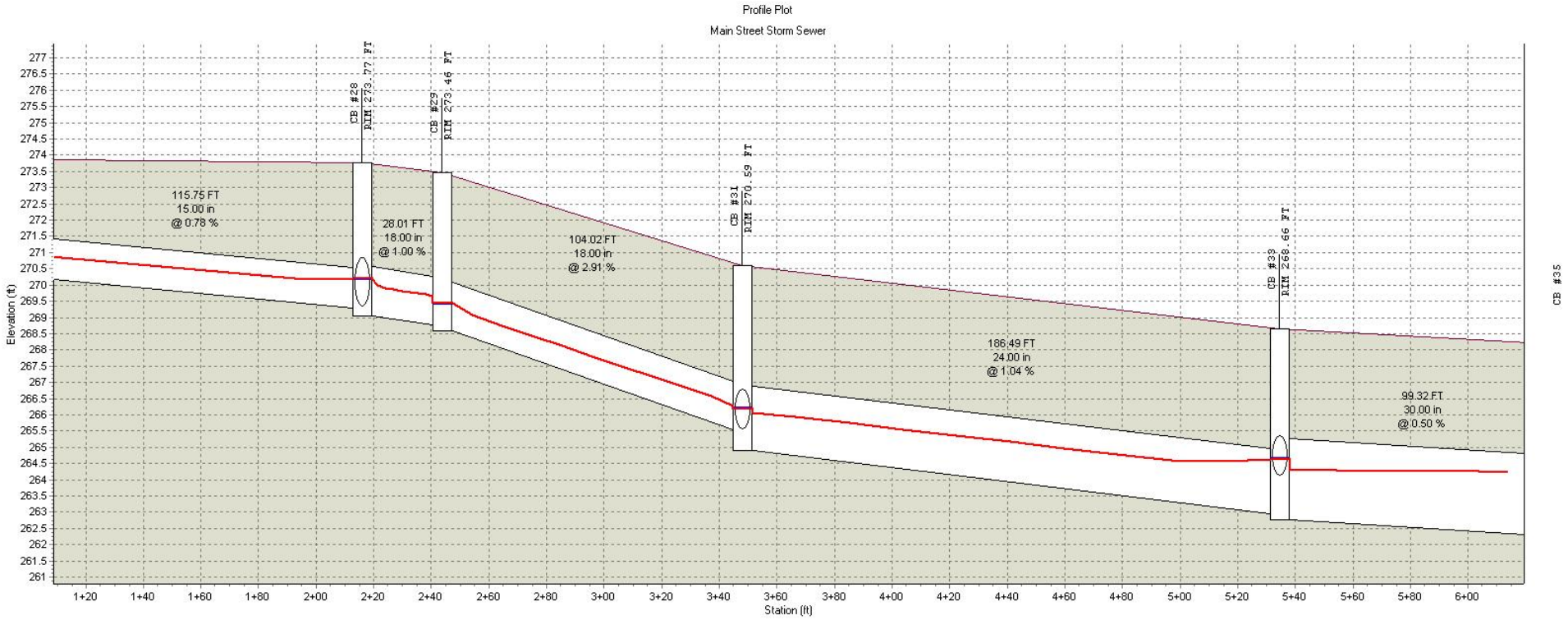
MODEL INPUT											MODEL OUTPUT									
SN	Element ID	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Total Drop (ft)	Average Slope (%)	Pipe Diameter or Height (inches)	Manning's Roughness	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Max Flow Velocity (ft/sec)	Travel Time (min)	Design Flow Capacity (cfs)	Additional flow capacity (cfs)	Max Flow / Design Flow Ratio	Max Flow Depth / Total Depth Ratio	Total Time Surcharged (min)	Max Flow Depth (ft)	Reported Condition
1	P #40	YI #612	YI #613	150.00	276.45	274.56	1.90	1.2600	15.000	0.0130	0.91	0 00:05	3.94	0.63	7.26	6.35	0.13	0.24	0.00	0.31	Calculated
2	P #41	YI #613	YI #614	150.00	274.36	270.66	3.70	2.4700	15.000	0.0130	2.04	0 00:05	5.42	0.46	10.14	8.10	0.20	0.36	0.00	0.45	Calculated
3	P #42	YI #614	CB #28	115.75	270.46	269.30	1.16	1.0000	15.000	0.0130	3.41	0 00:05	4.21	0.46	6.46	3.05	0.53	0.63	0.00	0.79	Calculated
4	P #43	CB #28	CB #29	28.01	269.06	268.78	0.28	1.0000	18.000	0.0130	6.65	0 00:06	5.31	0.09	10.50	3.85	0.63	0.67	0.00	1.00	Calculated
5	P #44	CB #29	CB #31	104.02	268.58	265.55	3.03	2.9100	18.000	0.0130	8.52	0 00:06	9.04	0.19	17.93	9.41	0.48	0.53	0.00	0.79	Calculated
6	P #45	YI #615	YI #616	150.00	271.40	266.72	4.68	3.1200	15.000	0.0130	0.50	0 00:05	3.57	0.70	11.41	10.91	0.04	0.20	0.00	0.25	Calculated
7	P #46	YI #616	CB #31	112.15	266.52	265.55	0.97	0.8700	15.000	0.0130	1.90	0 00:05	3.77	0.50	6.01	4.11	0.32	0.45	0.00	0.57	Calculated
8	P #47	CB #30	CB #31	25.71	266.15	265.55	0.60	2.3300	15.000	0.0130	2.28	0 00:05	5.06	0.08	9.85	7.57	0.23	0.46	0.00	0.57	Calculated
9	P #48	CB #31	CB #33	186.49	264.90	262.96	1.94	1.0400	24.000	0.0130	14.10	0 00:06	5.74	0.54	23.07	8.97	0.61	0.73	0.00	1.47	Calculated
10	P #49	CB #32	CB #33	26.21	264.25	264.12	0.13	0.5000	15.000	0.0130	1.75	0 00:05	3.10	0.14	4.57	2.82	0.38	0.47	0.00	0.59	Calculated
11	P #50	CB #33	CB #35	99.32	262.76	262.26	0.50	0.5000	30.000	0.0130	16.34	0 00:06	4.09	0.40	28.99	12.65	0.56	0.77	0.00	1.93	Calculated
12	P #51	YI #617	CB #35	112.15	263.79	263.22	0.56	0.5000	15.000	0.0130	2.28	0 00:05	3.30	0.57	4.57	2.29	0.50	0.63	0.00	0.79	Calculated
13	P #52	CB #34(DOUBLE-INLET)	CB #35	25.71	263.71	263.58	0.13	0.5000	15.000	0.0130	3.96	0 00:05	3.95	0.11	4.57	0.61	0.87	0.76	0.00	0.95	Calculated
14	P #53	CB #35	CB #37	102.86	262.06	261.55	0.51	0.5000	30.000	0.0130	23.65	0 00:06	5.88	0.29	28.99	5.34	0.82	0.76	0.00	1.91	Calculated
15	P #54	CB #36	CB #37	94.96	265.92	262.89	3.04	3.2000	15.000	0.0130	0.84	0 00:05	5.32	0.30	11.55	10.71	0.07	0.19	0.00	0.23	Calculated
16	P #55	CB #37	SDMH #502	55.35	260.50	256.07	4.43	8.0000	30.000	0.0130	25.45	0 00:06	15.07	0.06	116.01	90.56	0.22	0.38	0.00	0.94	Calculated
17	P #56	SDMH #502	SDMH #503	107.32	254.50	246.09	8.41	7.8400	30.000	0.0130	25.46	0 00:06	16.50	0.11	114.82	89.36	0.22	0.35	0.00	0.88	Calculated
18	P #57	SDMH #503	FES#303	81.92	244.09	240.00	4.09	4.9900	30.000	0.0130	25.47	0 00:06	13.36	0.10	91.67	66.20	0.28	0.41	0.00	1.03	Calculated



	YI #612	YI #613	YI #614	
RIM (FT):	279.98	277.95	273.88	
Invert (ft):	276.45	274.36	270.21	
Min Pipe Cover (ft):				
Max HGL (ft):	276.76	274.73	270.98	

Link ID:	P #40	P #41	P #42
(FT):	150.00	150.00	115.75
(in):	15.00	15.00	15.00
@ (%):	1.26	2.63	0.78
Up Invert (ft):	276.45	274.36	270.21
Dn Invert (ft):	274.56	270.41	269.30
Max Q (cfs):	0.91	2.03	3.37
Max Vel (ft/s):	3.94	5.14	4.00
Max Depth (ft):	0.31	0.47	0.82

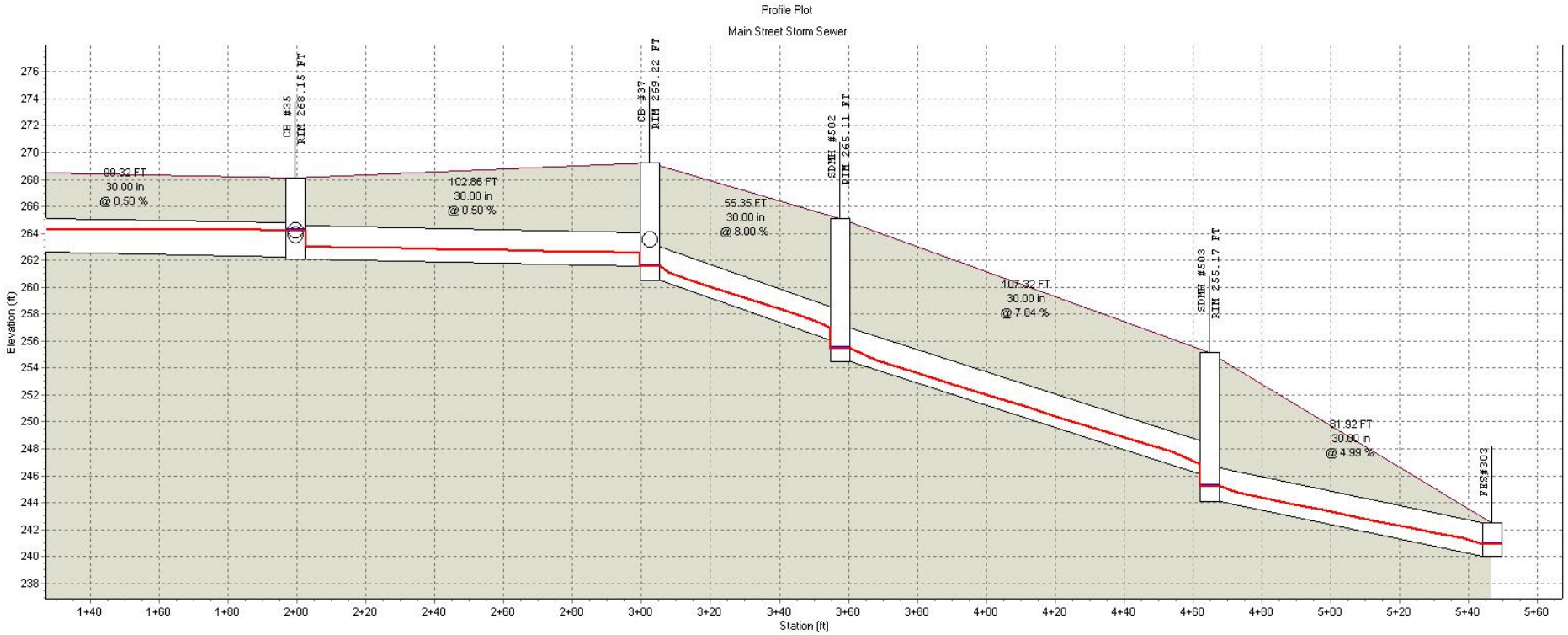
HGL



		CB #28	CB #29	CB #31	CB #33	
RIM (FT):		273.77	273.46	270.59	268.66	
Invert (ft):		269.06	268.58	264.90	262.76	
Min Pipe Cover (ft):						
Max HGL (ft):		270.19	269.43	266.18	264.64	

Link ID:	P #42	P #43	P #44	P #48	P #50
(FT):	115.75	28.01	104.02	186.49	99.32
(in):	15.00	18.00	18.00	24.00	30.00
@ (%):	0.78	1.00	2.91	1.04	0.50
Up Invert (ft):	270.21	269.06	268.58	264.90	262.76
Dn Invert (ft):	269.30	268.78	265.55	262.96	262.26
Max Q (cfs):	3.37	6.65	8.51	14.10	16.38
Max Vel (ft/s):	4.00	5.31	9.04	5.75	4.08
Max Depth (ft):	0.82	1.00	0.79	1.47	1.93

HGL



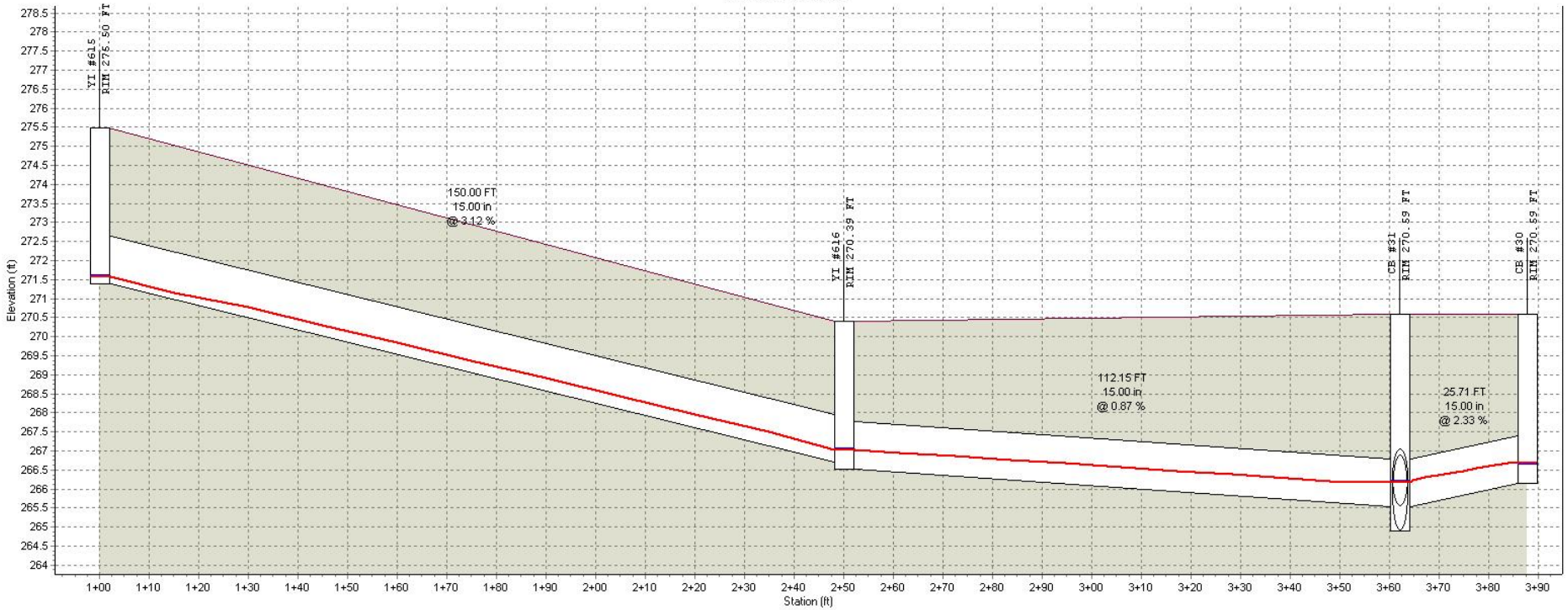
	CB #35	CB #37	SDMH #502	SDMH #503	FES#303
RIM (FT):	268.15	269.22	265.11	255.17	
Invert (ft):	262.06	260.50	254.50	244.09	240.00
Min Pipe Cover (ft):			6.54	6.58	
Max HGL (ft):	264.23	261.59	255.46	245.25	240.90

Link ID:	P #50	P #53	P #55	P #56	P #57
(FT):	99.32	102.86	55.35	107.32	81.92
(in):	30.00	30.00	30.00	30.00	30.00
@ (%):	0.50	0.50	8.00	7.84	4.99
Up Invert (ft):	262.76	262.06	260.50	254.50	244.09
Dn Invert (ft):	262.26	261.55	256.07	246.09	240.00
Max Q (cfs):	16.38	23.66	25.44	25.45	25.46
Max Vel (ft/s):	4.08	5.88	15.07	16.50	13.36
Max Depth (ft):	1.93	1.91	0.94	0.88	1.03

HGL

Profile Plot

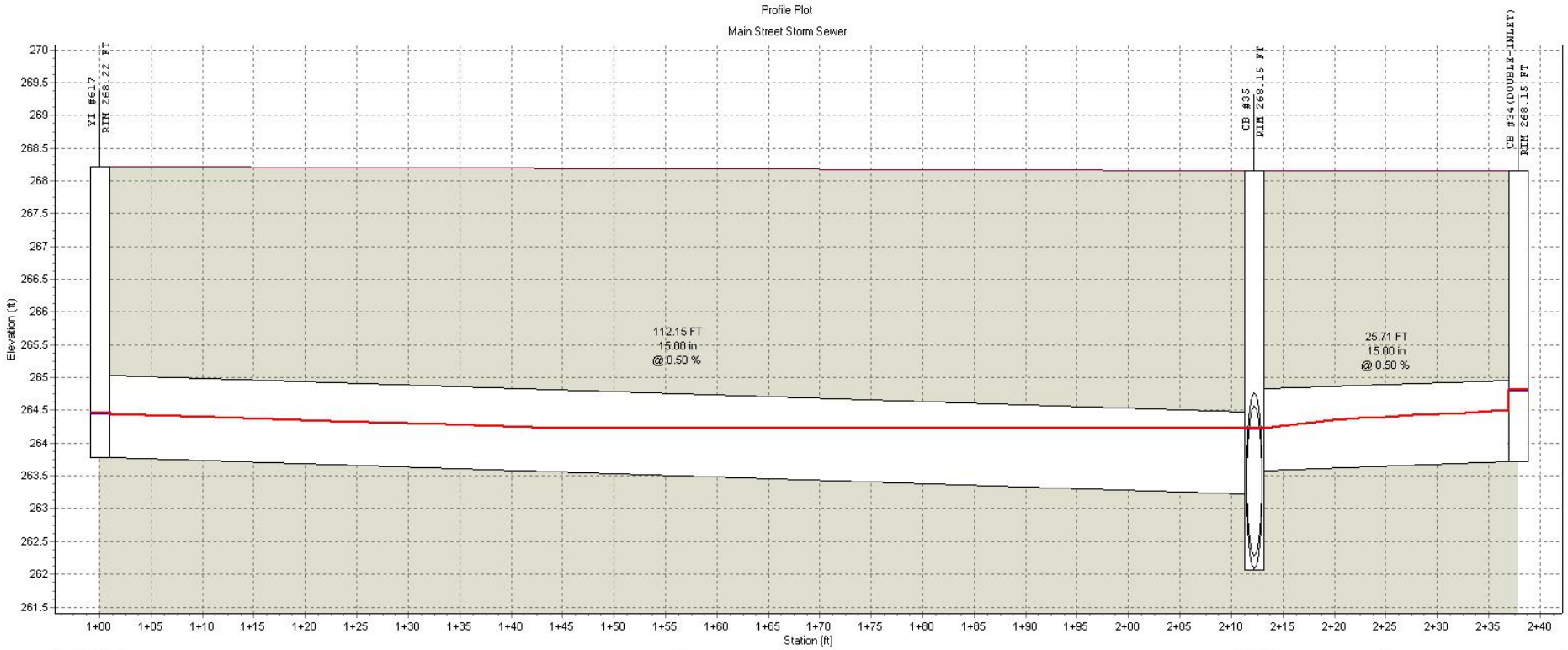
Main Street Storm Sewer



	YI #615	YI #616	CB #31	CB #30
RIM (FT):	275.50	270.39	270.59	270.59
Invert (ft):	271.40	266.52	264.90	266.15
Min Pipe Cover (ft):				
Max HGL (ft):	271.58	267.04	266.18	266.67

Link ID:	P #45	P #46	P #47
(FT):	150.00	112.15	25.71
(in):	15.00	15.00	15.00
@ (%):	3.12	0.87	2.33
Up Invert (ft):	271.40	266.52	266.15
Dn Invert (ft):	266.72	265.55	265.55
Max Q (cfs):	0.50	1.90	2.28
Max Vel (ft/s):	3.57	3.77	5.06
Max Depth (ft):	0.25	0.57	0.57

HGL



:	YI #617		CB #35	
RIM (FT):	268.22		268.15	268.15
Invert (ft):	263.79		262.06	263.71
Min Pipe Cover (ft):				
Max HGL (ft):	264.46		264.23	264.81
Link ID:		P #51	P #52	
(FT):		112.15	25.71	
(in):		15.00	15.00	
@ (%):		0.50	0.50	
Up Invert (ft):		263.79	263.71	
Dn Invert (ft):		263.22	263.58	
Max Q (cfs):		2.28	3.96	
Max Vel (ft/s):		3.30	3.95	
Max Depth (ft):		0.79	0.95	

5. APPENDIX A: Hydrograph Report

Watershed Model Schematic

Legend

Hyd.	Origin	Description
1	SCS Runoff	PRE DA#1
2	SCS Runoff	POST DA#1
3	SCS Runoff	POST DA#2
4	SCS Runoff	POST DA #3
5	SCS Runoff	POST DA#4
6	SCS Runoff	POST DA#5
7	SCS Runoff	POST DA#6
8	SCS Runoff	POST DA#7
9	SCS Runoff	POST DA#8
10	SCS Runoff	POST DA#1 OFFSITE
11	SCS Runoff	POST DA#2 OFFSITE
12	SCS Runoff	POST DA#3 OFFSITE
13	SCS Runoff	POST DA#4 OFFSITE
14	Reservoir	POST DA#1 TO SCM#1
15	Reservoir	POST DA#2 TO SCM#2
16	Reservoir	POST DA#3 TO SCM#3
17	Reservoir	POST DA#4 TO SCM#4
18	Reservoir	POST DA#5 TO SCM#5
19	Reservoir	POST DA#6 TO SCM#6
20	Reservoir	POST DA#7 TO SCM#7
21	Reservoir	POST DA#8 TO SCM#8
22	Combine	UPSTREAM AOI#1
23	Combine	DOWNSTREAM AOI#2
24	Combine	POI
25	SCS Runoff	CULVERT DA#1
26	SCS Runoff	CULVERT DA#2

Hydrograph Return Period Recap

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)							Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	------	428.19	619.52	-------	-------	1193.32	1563.67	1866.25	2182.59	PRE DA#1
2	SCS Runoff	------	28.04	36.57	-------	-------	60.22	74.65	86.17	98.06	POST DA#1
3	SCS Runoff	------	31.71	43.14	-------	-------	76.01	96.45	112.87	129.87	POST DA#2
4	SCS Runoff	------	43.41	57.22	-------	-------	95.81	119.46	138.36	157.88	POST DA #3
5	SCS Runoff	------	24.71	31.98	-------	-------	52.05	64.27	74.02	84.08	POST DA#4
6	SCS Runoff	------	12.27	15.79	-------	-------	25.47	31.35	36.05	40.89	POST DA#5
7	SCS Runoff	------	30.14	39.51	-------	-------	65.62	81.60	94.36	107.54	POST DA#6
8	SCS Runoff	------	39.80	52.22	-------	-------	86.78	107.92	124.79	142.23	POST DA#7
9	SCS Runoff	------	16.93	22.14	-------	-------	36.63	45.48	52.55	59.85	POST DA#8
10	SCS Runoff	------	9.426	13.47	-------	-------	25.48	33.14	39.35	45.83	POST DA#1 OFFSITE
11	SCS Runoff	------	347.32	499.38	-------	-------	953.74	1247.07	1485.78	1735.11	POST DA#2 OFFSITE
12	SCS Runoff	------	31.88	45.60	-------	-------	86.67	112.91	134.22	156.44	POST DA#3 OFFSITE
13	SCS Runoff	------	1.994	2.854	-------	-------	5.447	7.107	8.457	9.865	POST DA#4 OFFSITE
14	Reservoir	2	3.158	4.577	-------	-------	7.157	8.252	8.910	9.527	POST DA#1 TO SCM#1
15	Reservoir	3	0.206	0.620	-------	-------	9.056	10.82	11.92	13.01	POST DA#2 TO SCM#2
16	Reservoir	4	1.493	3.409	-------	-------	23.14	26.28	28.40	44.14	POST DA#3 TO SCM#3
17	Reservoir	5	1.120	2.941	-------	-------	6.236	7.513	9.682	23.54	POST DA#4 TO SCM#4
18	Reservoir	6	1.499	3.556	-------	-------	6.328	7.373	8.254	15.78	POST DA#5 TO SCM#5
19	Reservoir	7	7.499	13.13	-------	-------	19.98	22.82	24.79	39.92	POST DA#6 TO SCM#6
20	Reservoir	8	1.483	3.414	-------	-------	36.66	42.77	45.30	47.54	POST DA#7 TO SCM#7
21	Reservoir	9	16.17	21.34	-------	-------	31.62	33.63	35.19	37.26	POST DA#8 TO SCM#8
22	Combine	11, 15, 17, 18, 19,	357.03	518.65	-------	-------	994.94	1295.27	1539.67	1809.76	UPSTREAM AOI#1
23	Combine	12, 13, 14, 16, 20, 21,	50.55	74.06	-------	-------	187.75	229.53	259.00	297.14	DOWNSTREAM AOI#2
24	Combine	22, 23	380.99	559.13	-------	-------	1099.58	1437.64	1707.66	2014.04	POI
25	SCS Runoff	------	276.33	403.44	-------	-------	787.77	1037.75	1241.84	1455.45	CULVERT DA#1
26	SCS Runoff	------	3.057	4.232	-------	-------	7.760	9.987	11.79	13.65	CULVERT DA#2

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

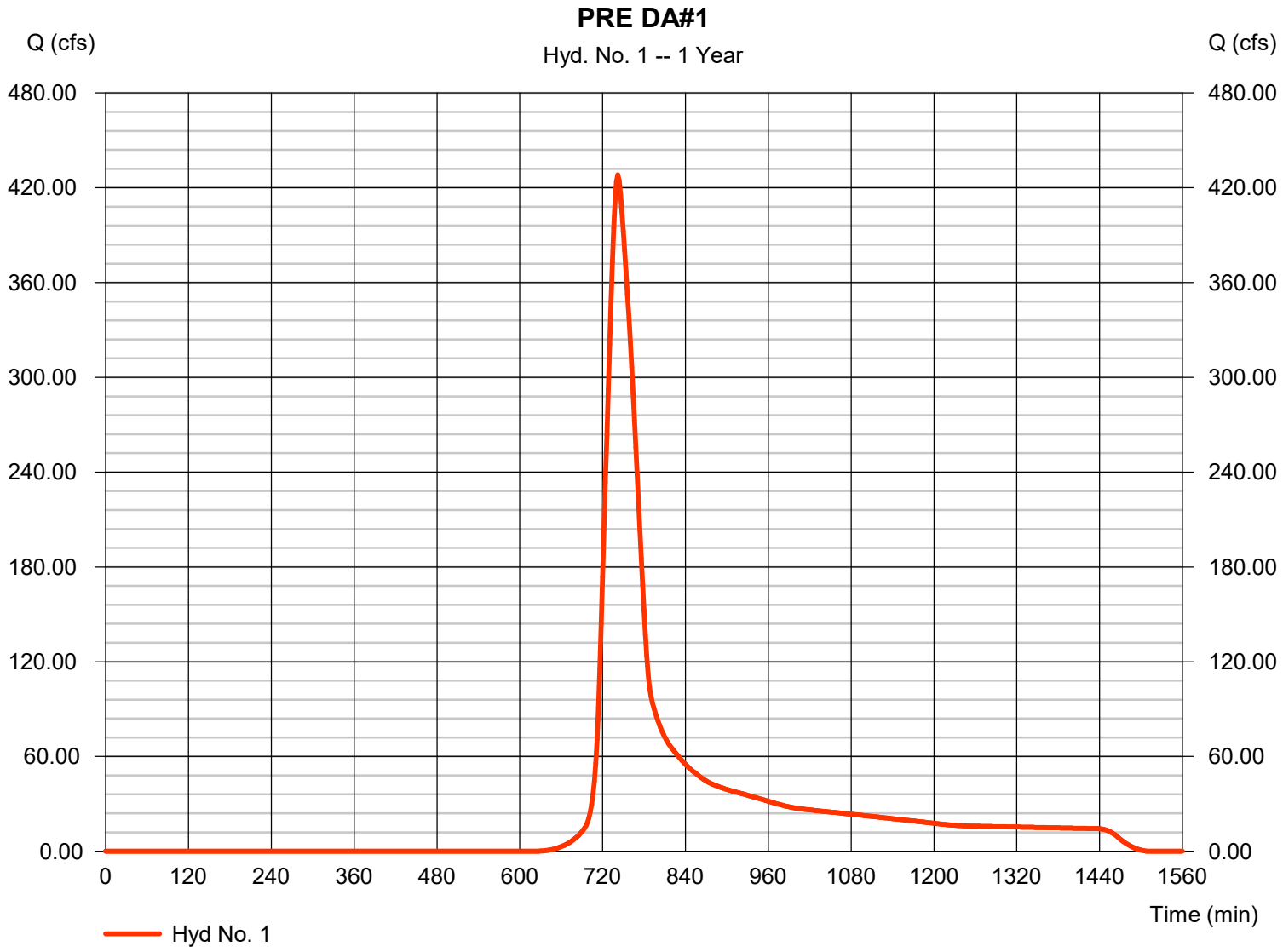
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	428.19	2	742	2,403,652	------	------	------	PRE DA#1
2	SCS Runoff	28.04	2	716	57,093	------	------	------	POST DA#1
3	SCS Runoff	31.71	2	718	63,914	------	------	------	POST DA#2
4	SCS Runoff	43.41	2	718	99,493	------	------	------	POST DA #3
5	SCS Runoff	24.71	2	716	50,502	------	------	------	POST DA#4
6	SCS Runoff	12.27	2	716	25,167	------	------	------	POST DA#5
7	SCS Runoff	30.14	2	722	84,580	------	------	------	POST DA#6
8	SCS Runoff	39.80	2	716	80,832	------	------	------	POST DA#7
9	SCS Runoff	16.93	2	718	38,888	------	------	------	POST DA#8
10	SCS Runoff	9.426	2	722	27,050	------	------	------	POST DA#1 OFFSITE
11	SCS Runoff	347.32	2	738	1,752,031	------	------	------	POST DA#2 OFFSITE
12	SCS Runoff	31.88	2	726	102,566	------	------	------	POST DA#3 OFFSITE
13	SCS Runoff	1.994	2	730	7,566	------	------	------	POST DA#4 OFFSITE
14	Reservoir	3.158	2	738	55,411	2	263.65	77,092	POST DA#1 TO SCM#1
15	Reservoir	0.206	2	1442	48,977	3	265.77	156,426	POST DA#2 TO SCM#2
16	Reservoir	1.493	2	848	75,221	4	242.34	143,450	POST DA#3 TO SCM#3
17	Reservoir	1.120	2	790	48,385	5	242.27	55,990	POST DA#4 TO SCM#4
18	Reservoir	1.499	2	734	22,200	6	251.36	18,330	POST DA#5 TO SCM#5
19	Reservoir	7.499	2	738	76,025	7	239.25	89,410	POST DA#6 TO SCM#6
20	Reservoir	1.483	2	818	67,552	8	241.33	110,915	POST DA#7 TO SCM#7
21	Reservoir	16.17	2	720	38,887	9	240.45	16,952	POST DA#8 TO SCM#8
22	Combine	357.03	2	738	1,947,618	11, 15, 17, 18, 19,	------	------	UPSTREAM AOI#1
23	Combine	50.55	2	724	347,204	12, 13, 14, 16, 20, 21,	------	------	DOWNSTREAM AOI#2
24	Combine	380.99	2	738	2,294,823	22, 23	------	------	POI
25	SCS Runoff	276.33	2	736	1,316,989	------	------	------	CULVERT DA#1
26	SCS Runoff	3.057	2	718	6,122	------	------	------	CULVERT DA#2

Hydrograph Report

Hyd. No. 1

PRE DA#1

Hydrograph type	=	SCS Runoff	Peak discharge	=	428.19 cfs
Storm frequency	=	1 yrs	Time to peak	=	742 min
Time interval	=	2 min	Hyd. volume	=	2,403,652 cuft
Drainage area	=	618.810 ac	Curve number	=	78.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	47.00 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

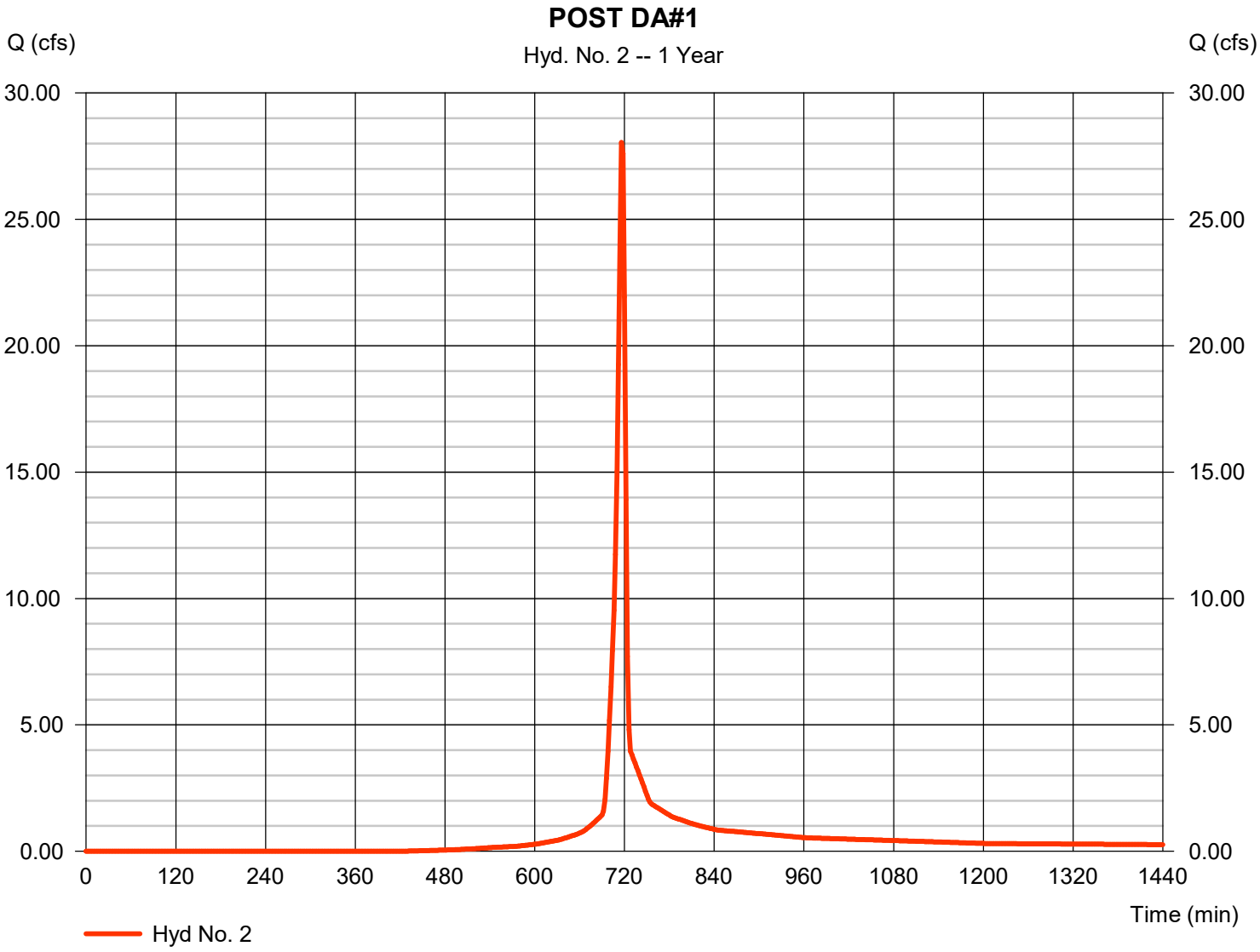


Hydrograph Report

Hyd. No. 2

POST DA#1

Hydrograph type	=	SCS Runoff	Peak discharge	=	28.04 cfs
Storm frequency	=	1 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	57,093 cuft
Drainage area	=	9.930 ac	Curve number	=	87.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.50 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

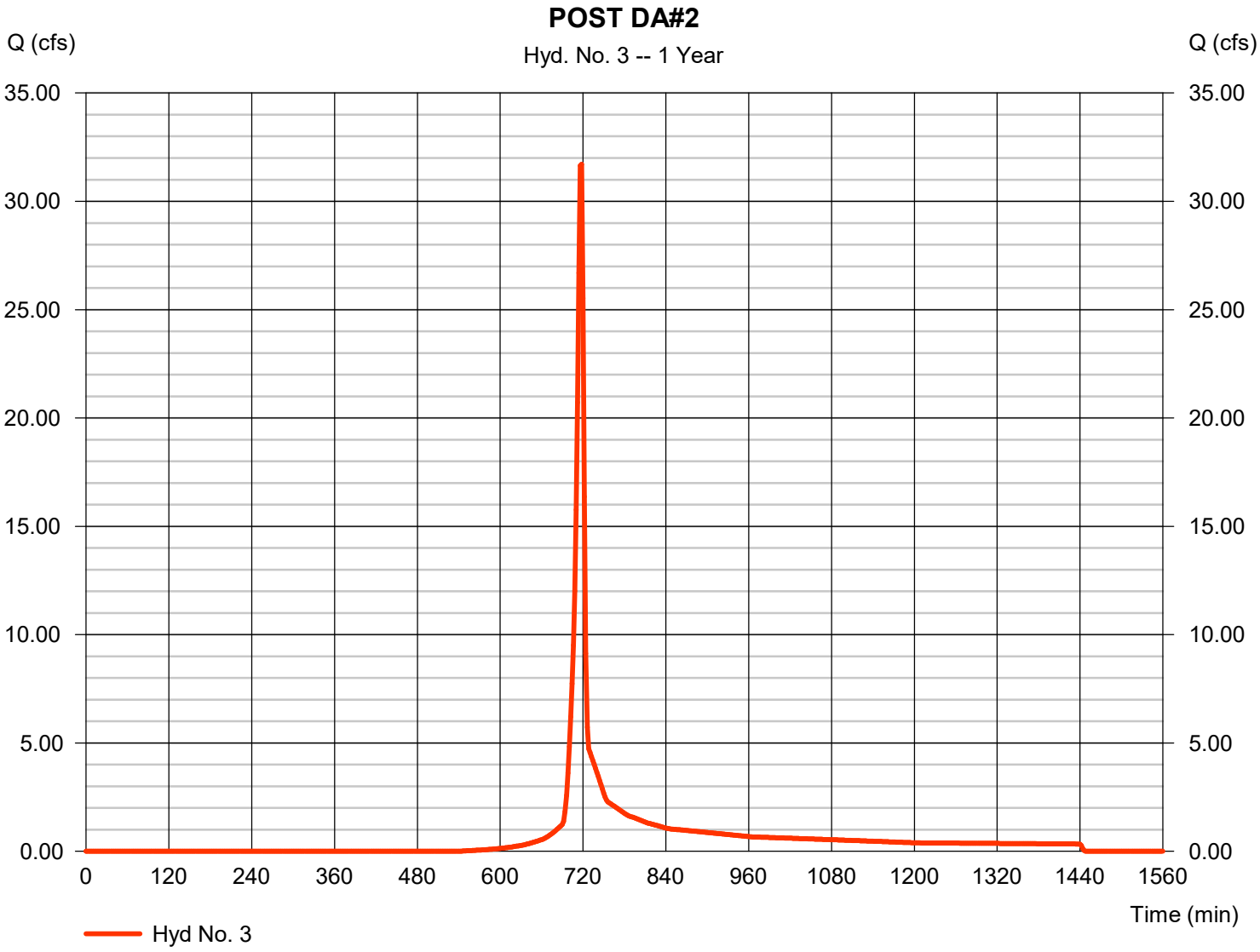


Hydrograph Report

Hyd. No. 3

POST DA#2

Hydrograph type	=	SCS Runoff	Peak discharge	=	31.71 cfs
Storm frequency	=	1 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	63,914 cuft
Drainage area	=	14.030 ac	Curve number	=	82.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

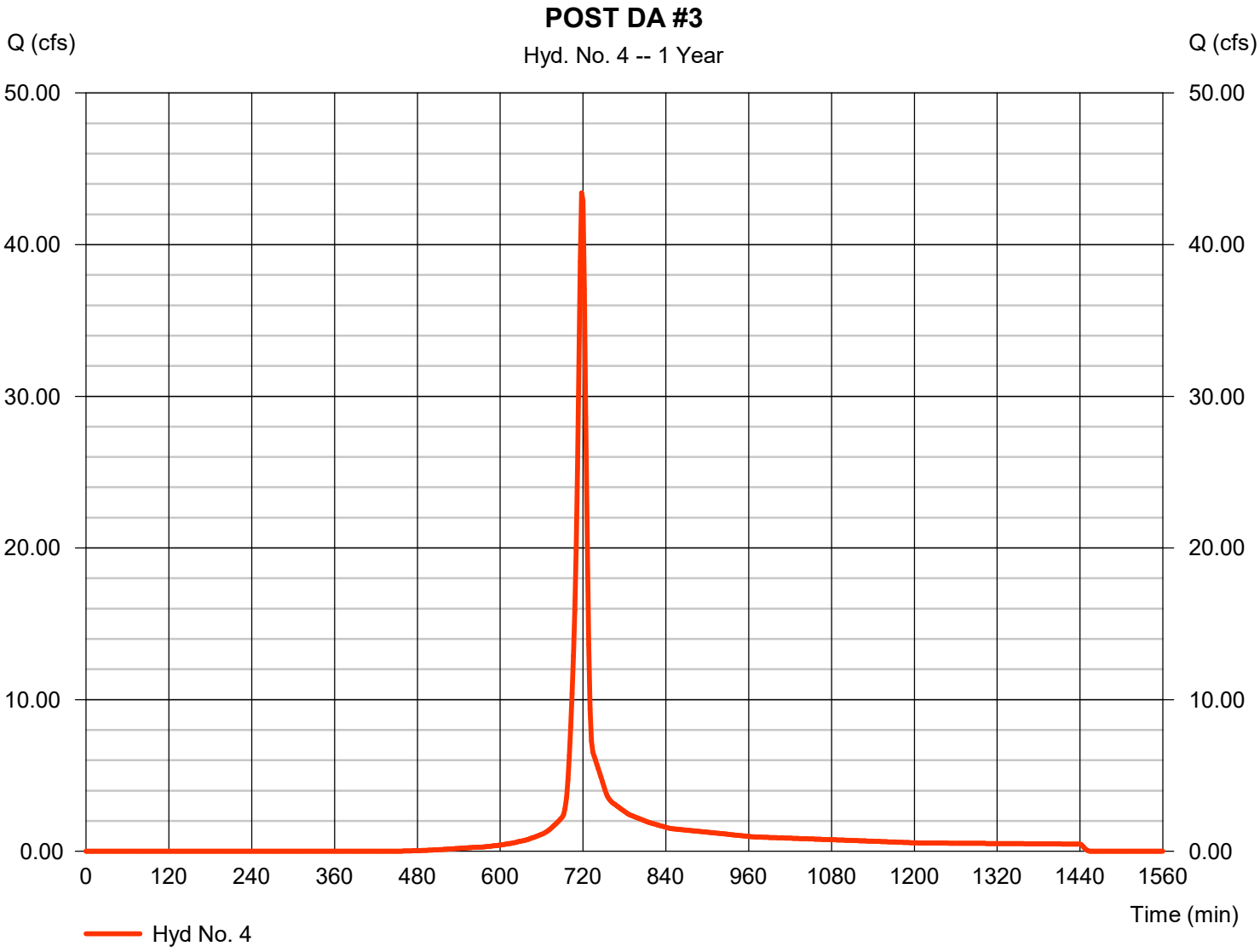


Hydrograph Report

Hyd. No. 4

POST DA #3

Hydrograph type	=	SCS Runoff	Peak discharge	=	43.41 cfs
Storm frequency	=	1 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	99,493 cuft
Drainage area	=	16.990 ac	Curve number	=	86.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	7.40 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

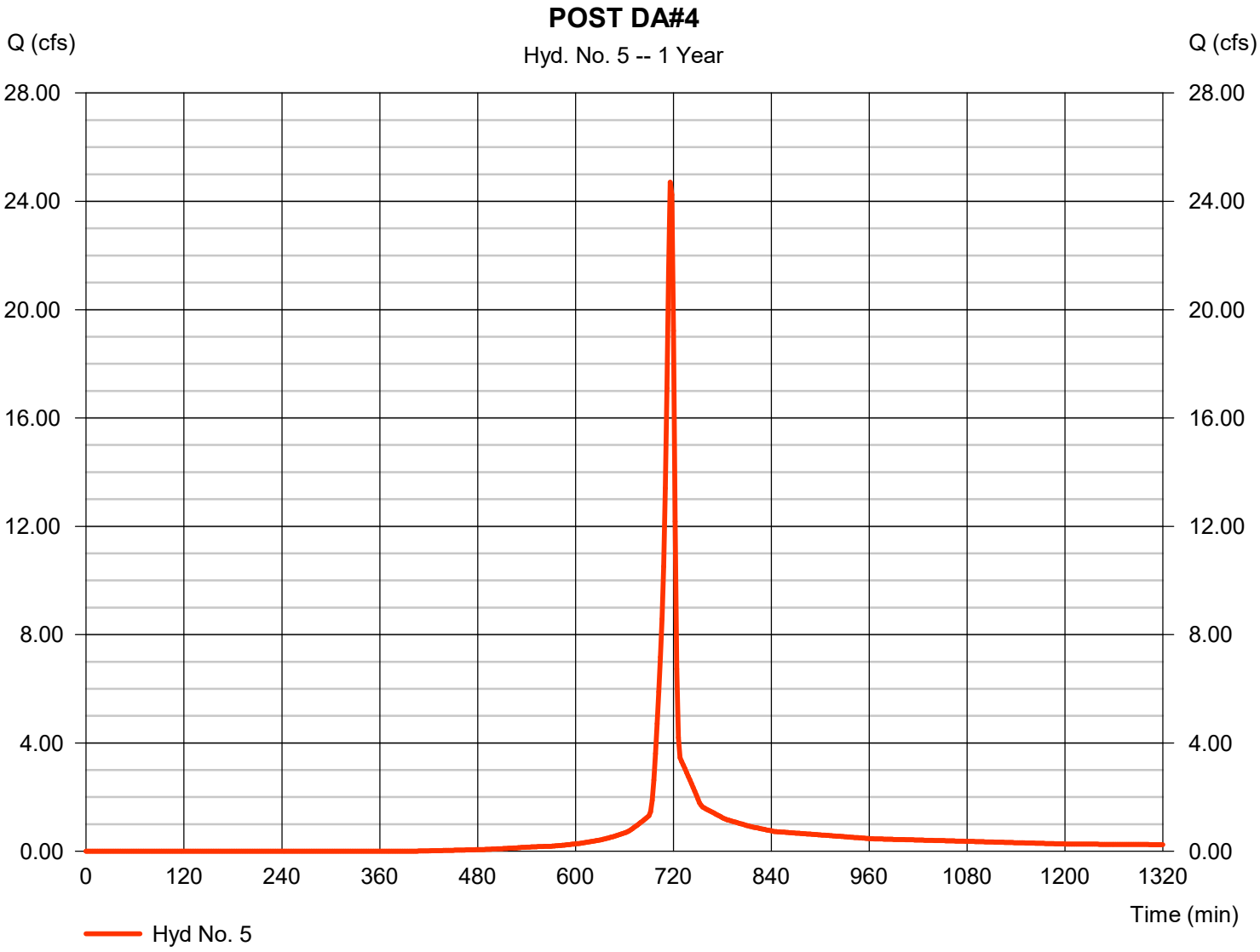


Hydrograph Report

Hyd. No. 5

POST DA#4

Hydrograph type	=	SCS Runoff	Peak discharge	=	24.71 cfs
Storm frequency	=	1 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	50,502 cuft
Drainage area	=	8.430 ac	Curve number	=	88.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.30 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

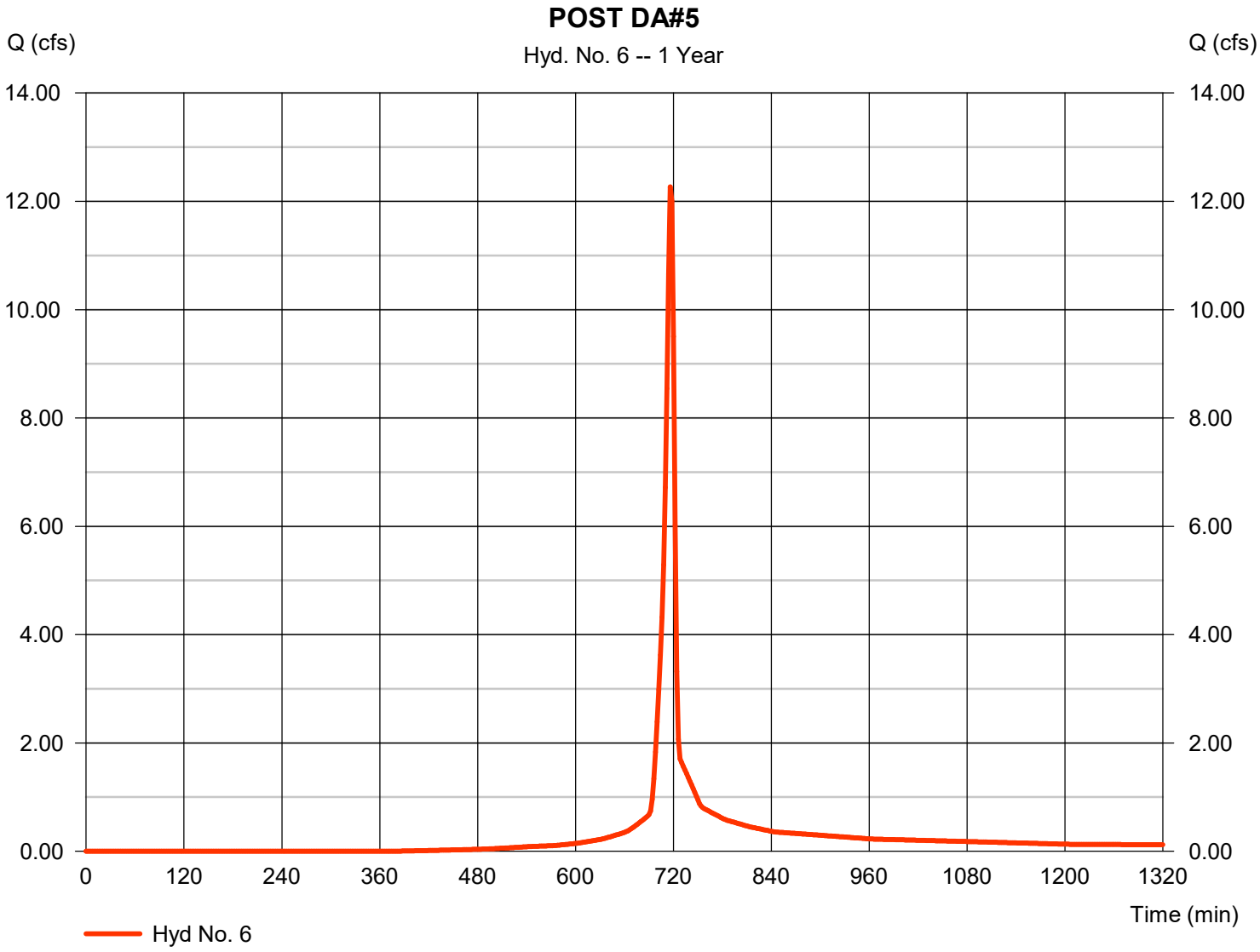


Hydrograph Report

Hyd. No. 6

POST DA#5

Hydrograph type	=	SCS Runoff	Peak discharge	=	12.27 cfs
Storm frequency	=	1 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	25,167 cuft
Drainage area	=	4.070 ac	Curve number	=	89.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

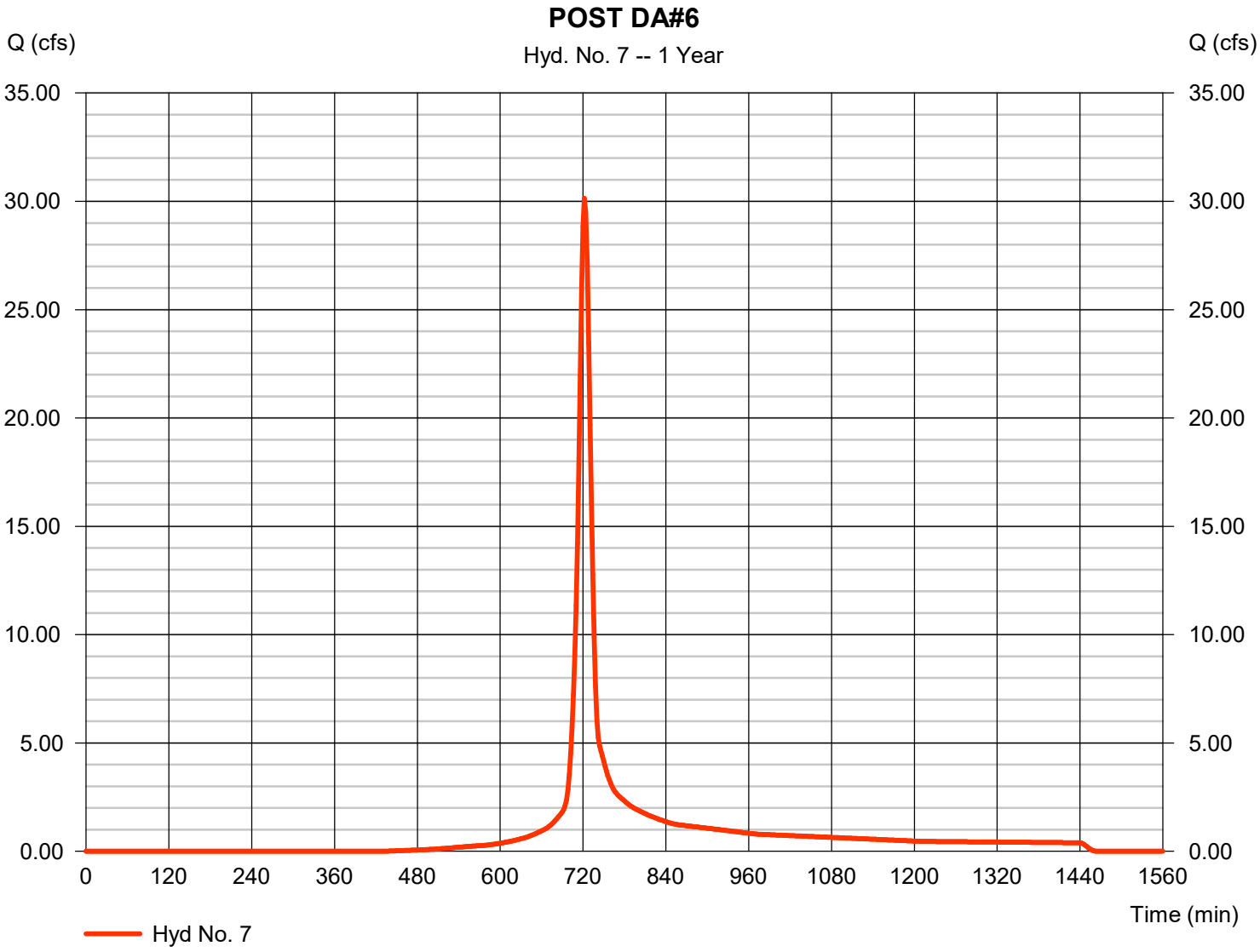


Hydrograph Report

Hyd. No. 7

POST DA#6

Hydrograph type	=	SCS Runoff	Peak discharge	=	30.14 cfs
Storm frequency	=	1 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	84,580 cuft
Drainage area	=	14.210 ac	Curve number	=	87.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	14.80 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

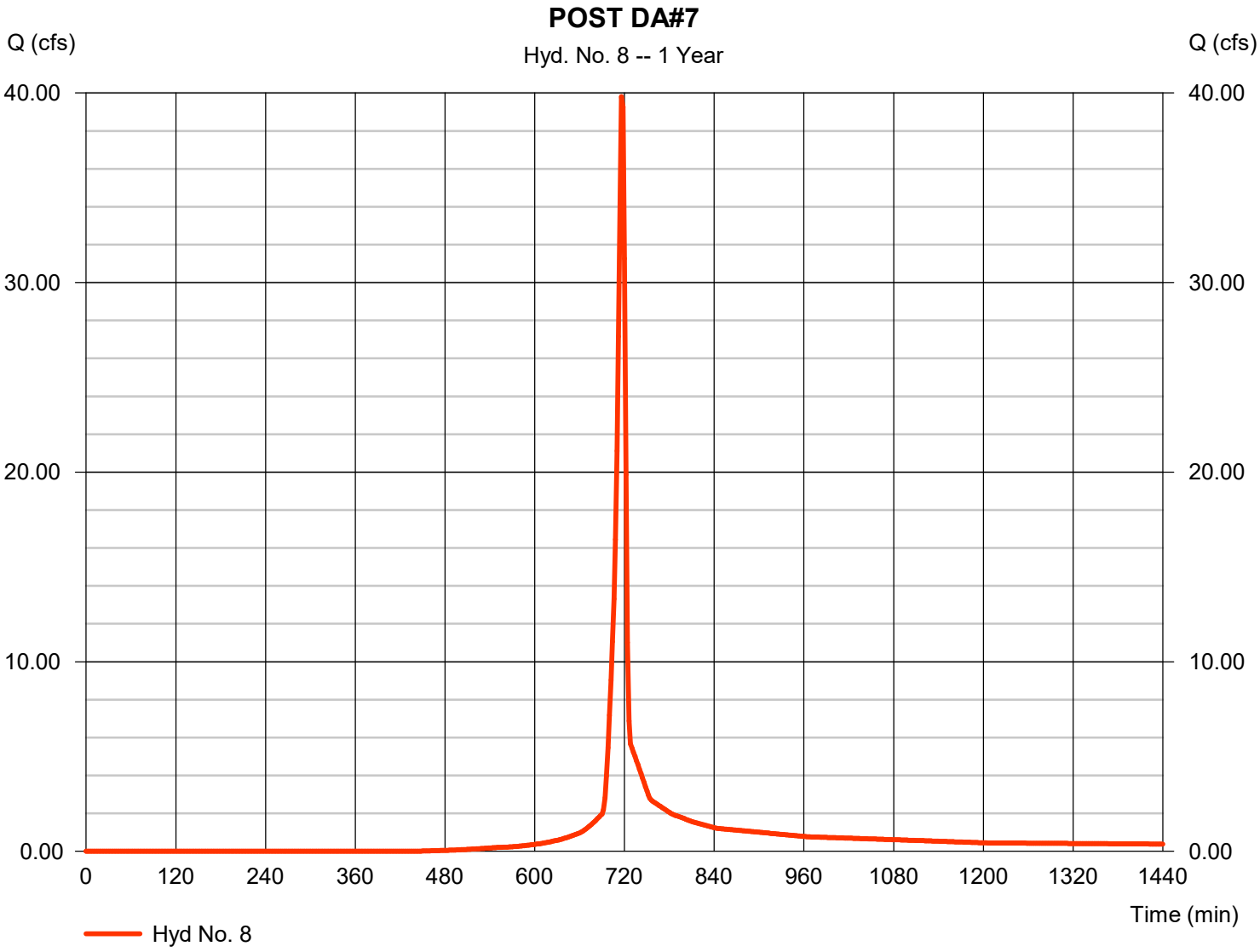


Hydrograph Report

Hyd. No. 8

POST DA#7

Hydrograph type	=	SCS Runoff	Peak discharge	=	39.80 cfs
Storm frequency	=	1 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	80,832 cuft
Drainage area	=	14.520 ac	Curve number	=	86.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.20 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

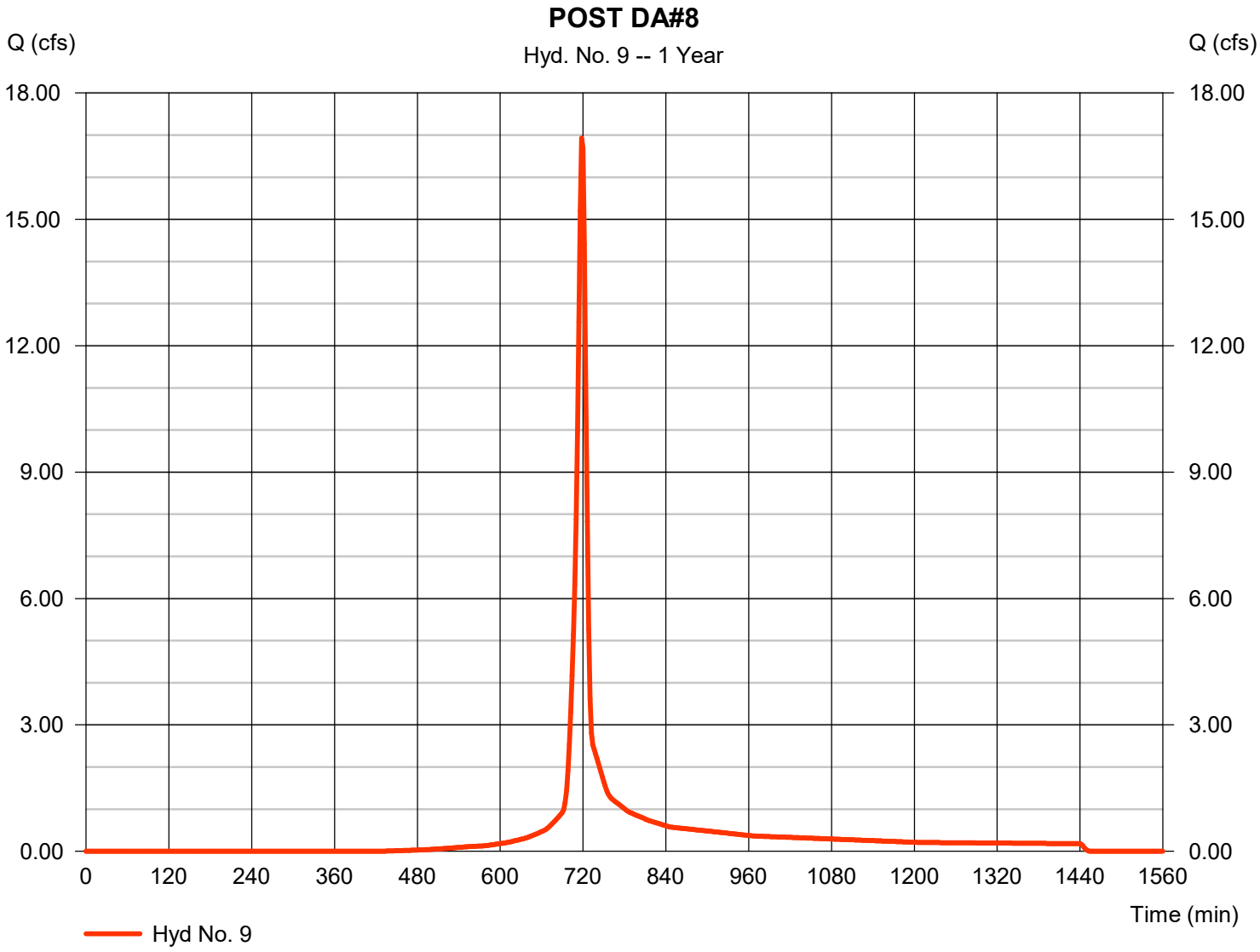


Hydrograph Report

Hyd. No. 9

POST DA#8

Hydrograph type	=	SCS Runoff	Peak discharge	=	16.93 cfs
Storm frequency	=	1 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	38,888 cuft
Drainage area	=	6.370 ac	Curve number	=	87.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.80 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

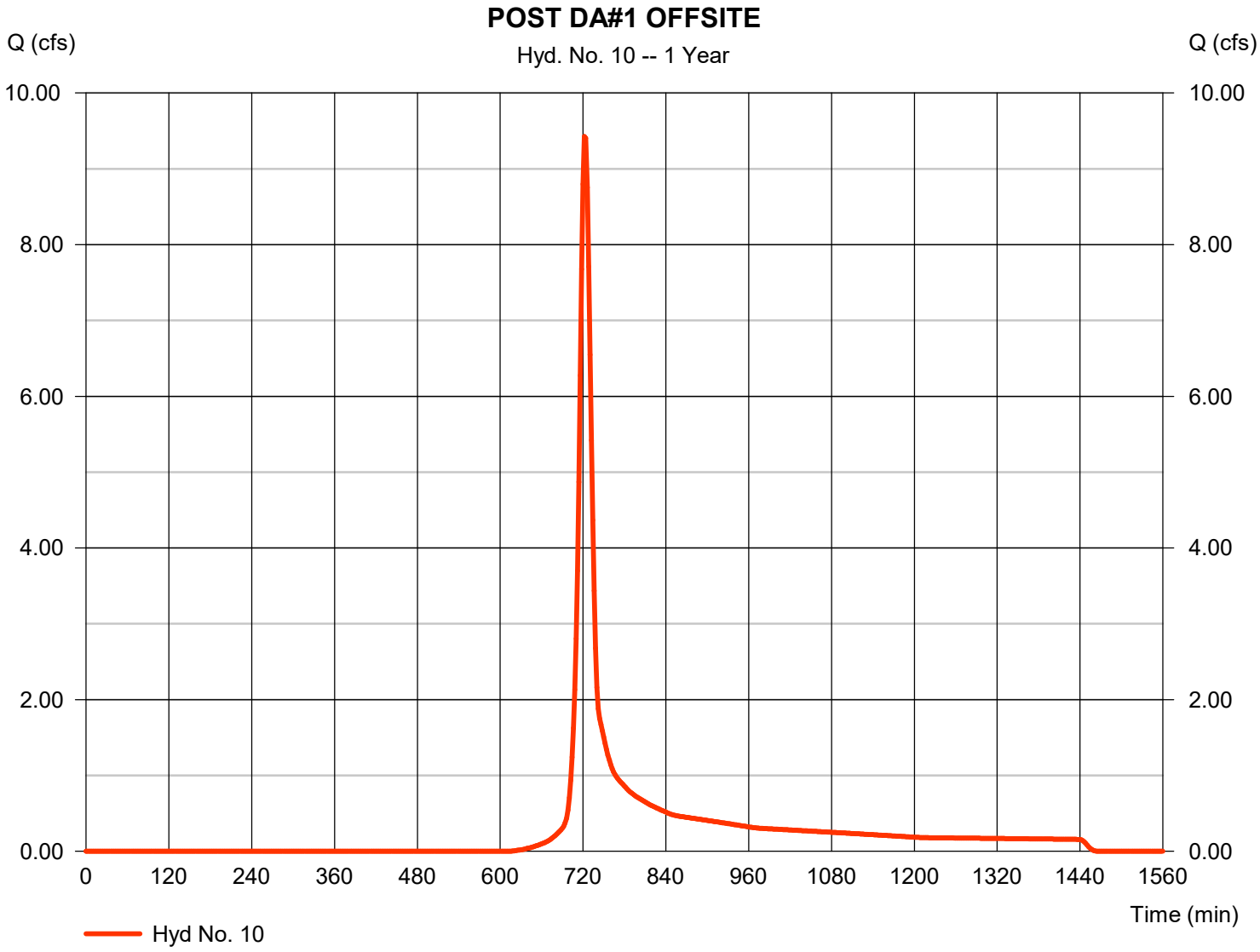


Hydrograph Report

Hyd. No. 10

POST DA#1 OFFSITE

Hydrograph type	= SCS Runoff	Peak discharge	= 9.426 cfs
Storm frequency	= 1 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 27,050 cuft
Drainage area	= 6.930 ac	Curve number	= 78.9
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 14.00 min
Total precip.	= 2.89 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

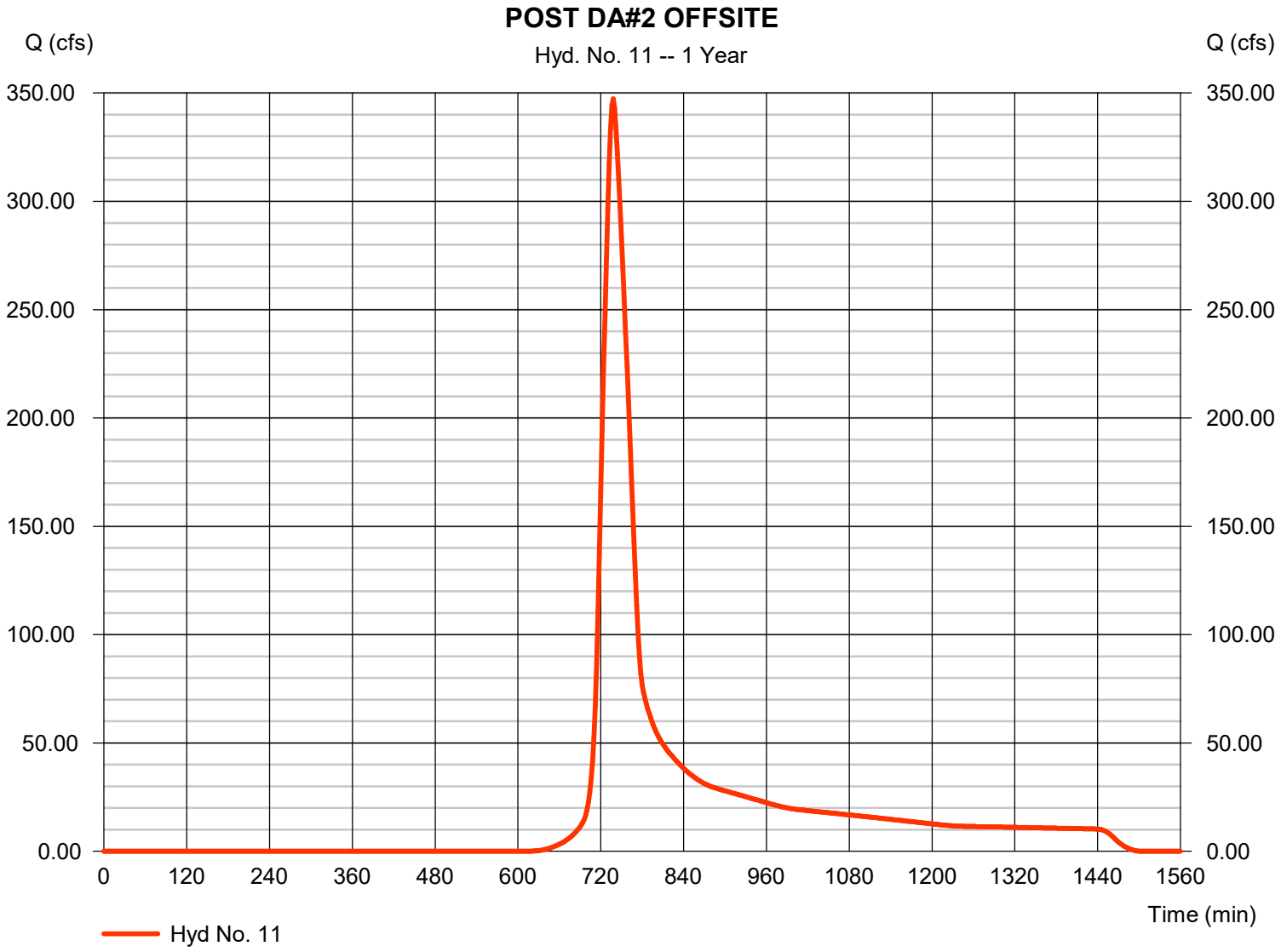


Hydrograph Report

Hyd. No. 11

POST DA#2 OFFSITE

Hydrograph type	=	SCS Runoff	Peak discharge	=	347.32 cfs
Storm frequency	=	1 yrs	Time to peak	=	738 min
Time interval	=	2 min	Hyd. volume	=	1,752,031 cuft
Drainage area	=	437.640 ac	Curve number	=	78.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	38.10 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

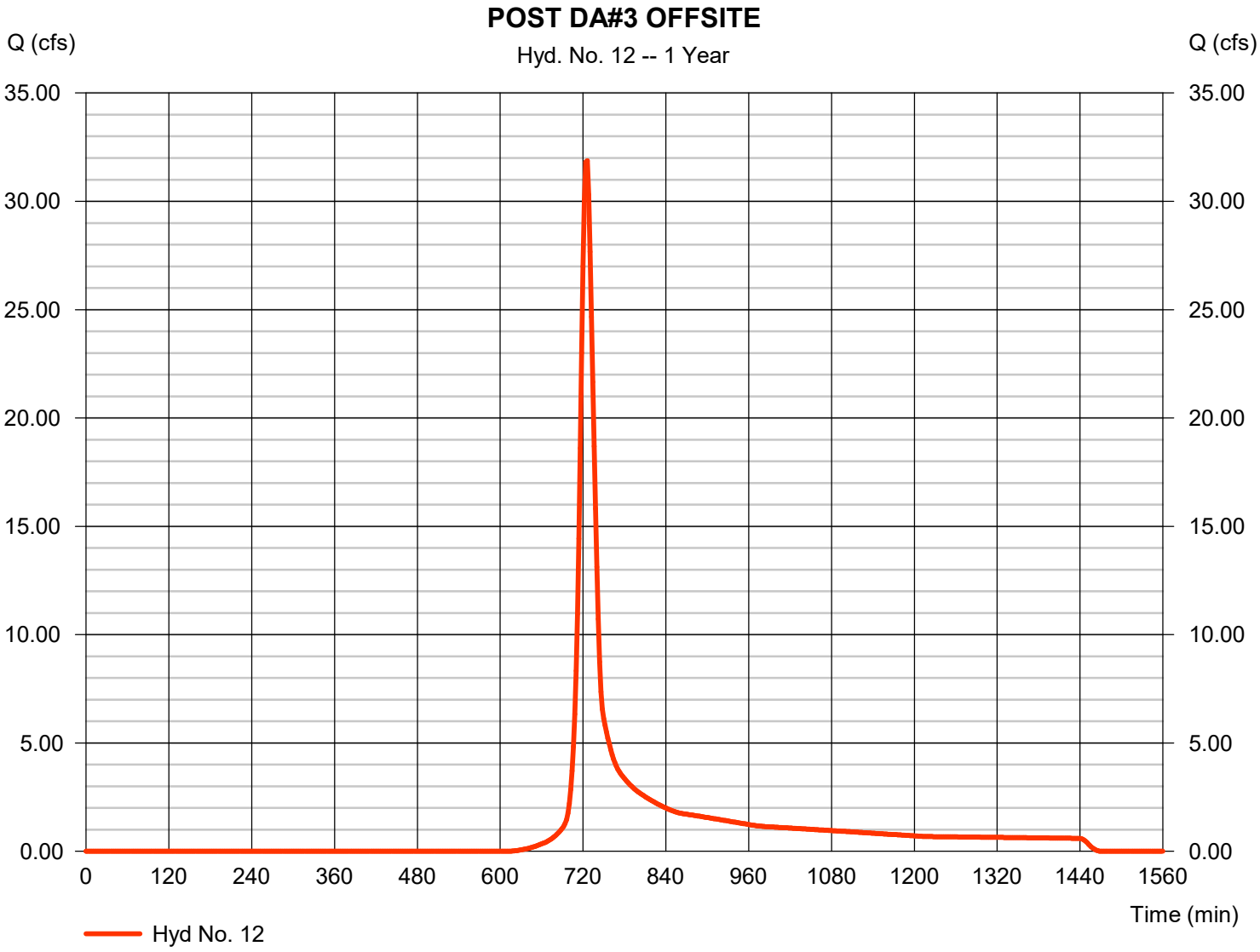


Hydrograph Report

Hyd. No. 12

POST DA#3 OFFSITE

Hydrograph type	= SCS Runoff	Peak discharge	= 31.88 cfs
Storm frequency	= 1 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 102,566 cuft
Drainage area	= 25.620 ac	Curve number	= 78.9
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 19.60 min
Total precip.	= 2.89 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

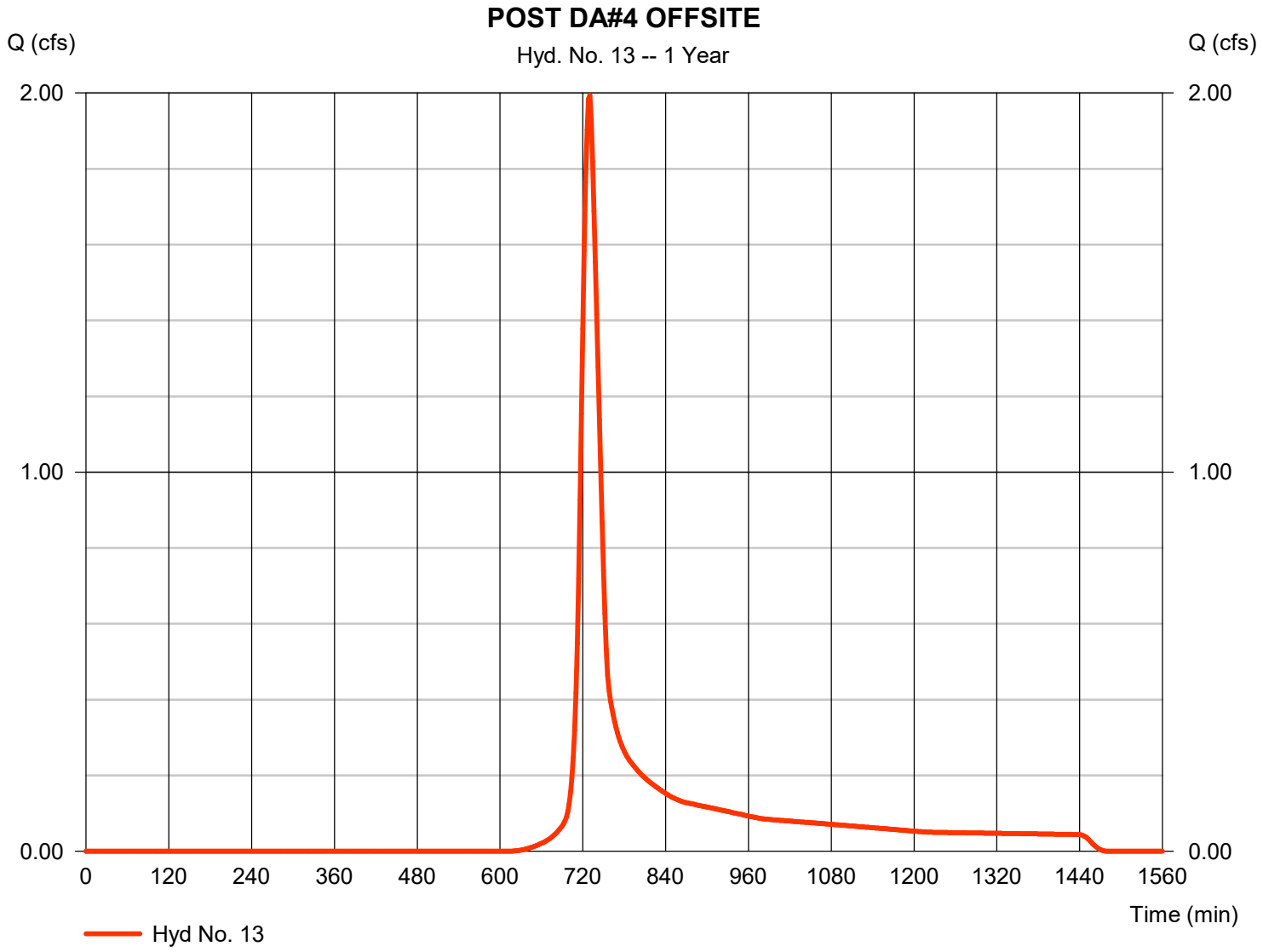


Hydrograph Report

Hyd. No. 13

POST DA#4 OFFSITE

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.994 cfs
Storm frequency	=	1 yrs	Time to peak	=	730 min
Time interval	=	2 min	Hyd. volume	=	7,566 cuft
Drainage area	=	1.920 ac	Curve number	=	78.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	26.20 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



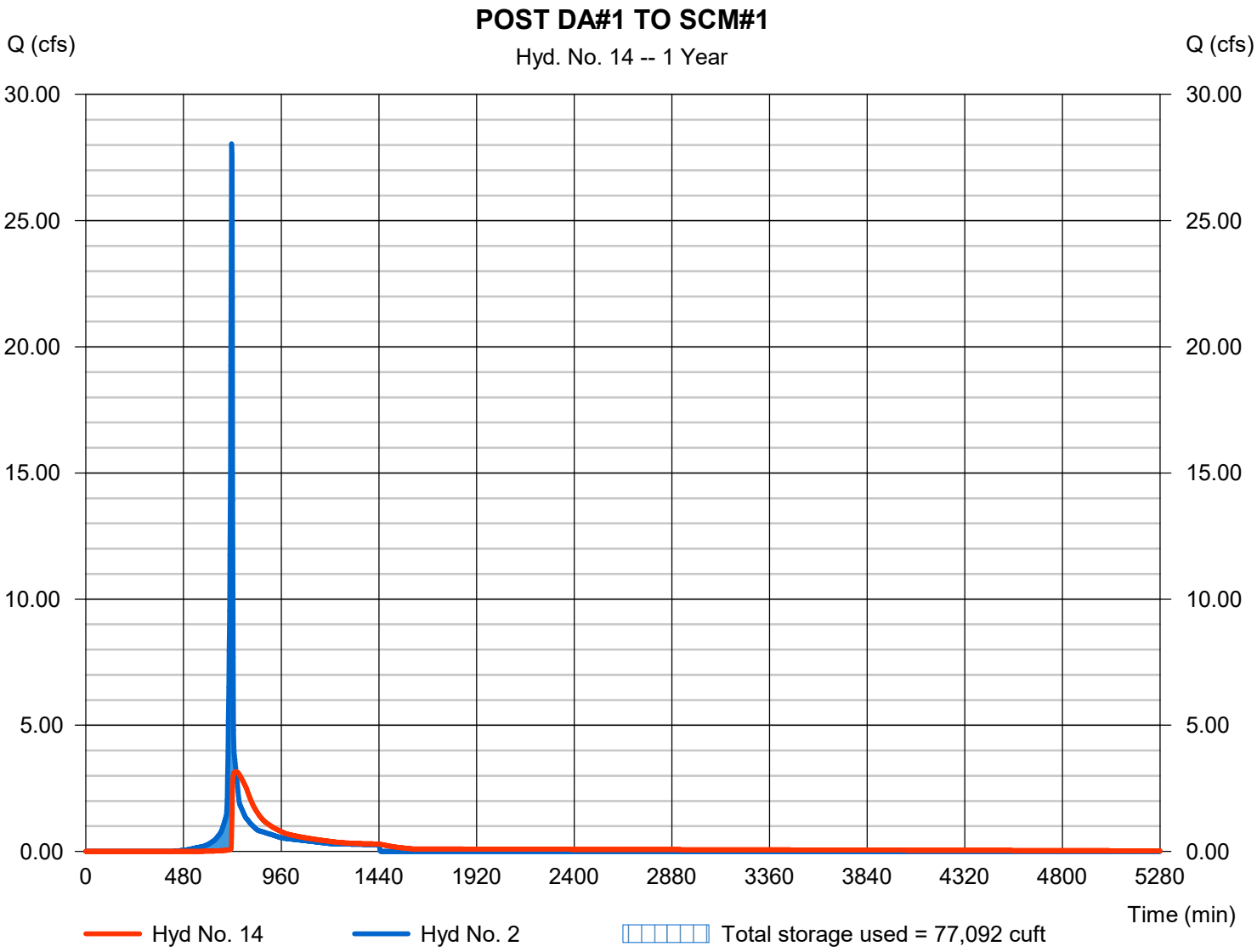
Hydrograph Report

Hyd. No. 14

POST DA#1 TO SCM#1

Hydrograph type	= Reservoir	Peak discharge	= 3.158 cfs
Storm frequency	= 1 yrs	Time to peak	= 738 min
Time interval	= 2 min	Hyd. volume	= 55,411 cuft
Inflow hyd. No.	= 2 - POST DA#1	Max. Elevation	= 263.65 ft
Reservoir name	= SCM#1	Max. Storage	= 77,092 cuft

Storage Indication method used. Wet pond routing start elevation = 262.00 ft.



Pond No. 1 - SCM#1

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 257.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	257.00	7,364	0	0
1.00	258.00	8,206	7,780	7,780
2.00	259.00	9,078	8,637	16,418
3.00	260.00	9,980	9,524	25,942
4.00	261.00	10,911	10,441	36,383
5.00	262.00	12,863	11,872	48,256
6.00	263.00	18,969	15,816	64,072
7.00	264.00	20,818	19,884	83,956
8.00	265.00	22,725	21,762	105,718
9.00	266.00	24,689	23,698	129,416
10.00	267.00	26,710	25,690	155,107
11.00	268.00	28,788	27,740	182,846

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	2.00	6.00	0.00
Span (in)	= 24.00	2.00	12.00	0.00
No. Barrels	= 1	1	2	0
Invert El. (ft)	= 262.00	262.00	263.00	0.00
Length (ft)	= 220.00	0.00	0.00	0.00
Slope (%)	= 0.96	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	30.00	0.00	0.00
Crest El. (ft)	= 267.00	267.50	0.00	0.00
Weir Coeff.	= 3.33	2.66	3.33	3.33
Weir Type	= 1	Rect	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.000 (by Contour)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	257.00	0.00	0.00	0.00	---	---	0.00	---	---	---	---	0.000
1.00	7,780	258.00	0.00	0.00	0.00	---	---	0.00	---	---	---	---	0.000
2.00	16,418	259.00	0.00	0.00	0.00	---	---	0.00	---	---	---	---	0.000
3.00	25,942	260.00	0.00	0.00	0.00	---	---	0.00	---	---	---	---	0.000
4.00	36,383	261.00	0.00	0.00	0.00	---	---	0.00	---	---	---	---	0.000
5.00	48,256	262.00	0.00	0.00	0.00	---	---	0.00	---	---	---	---	0.000
6.00	64,072	263.00	0.11 ic	0.10 ic	0.00	---	---	0.00	---	---	---	---	0.098
7.00	83,956	264.00	4.30 ic	0.11 ic	4.17 ic	---	---	0.00	---	---	---	---	4.281
8.00	105,718	265.00	6.53 ic	0.14 ic	6.37 ic	---	---	0.00	---	---	---	---	6.514
9.00	129,416	266.00	8.13 ic	0.17 ic	7.96 ic	---	---	0.00	---	---	---	---	8.132
10.00	155,107	267.00	9.38 ic	0.20 ic	9.16 ic	---	---	0.00	---	---	---	---	9.357
11.00	182,846	268.00	10.45 ic	0.22 ic	10.23 ic	---	---	28.21	---	---	---	---	38.67

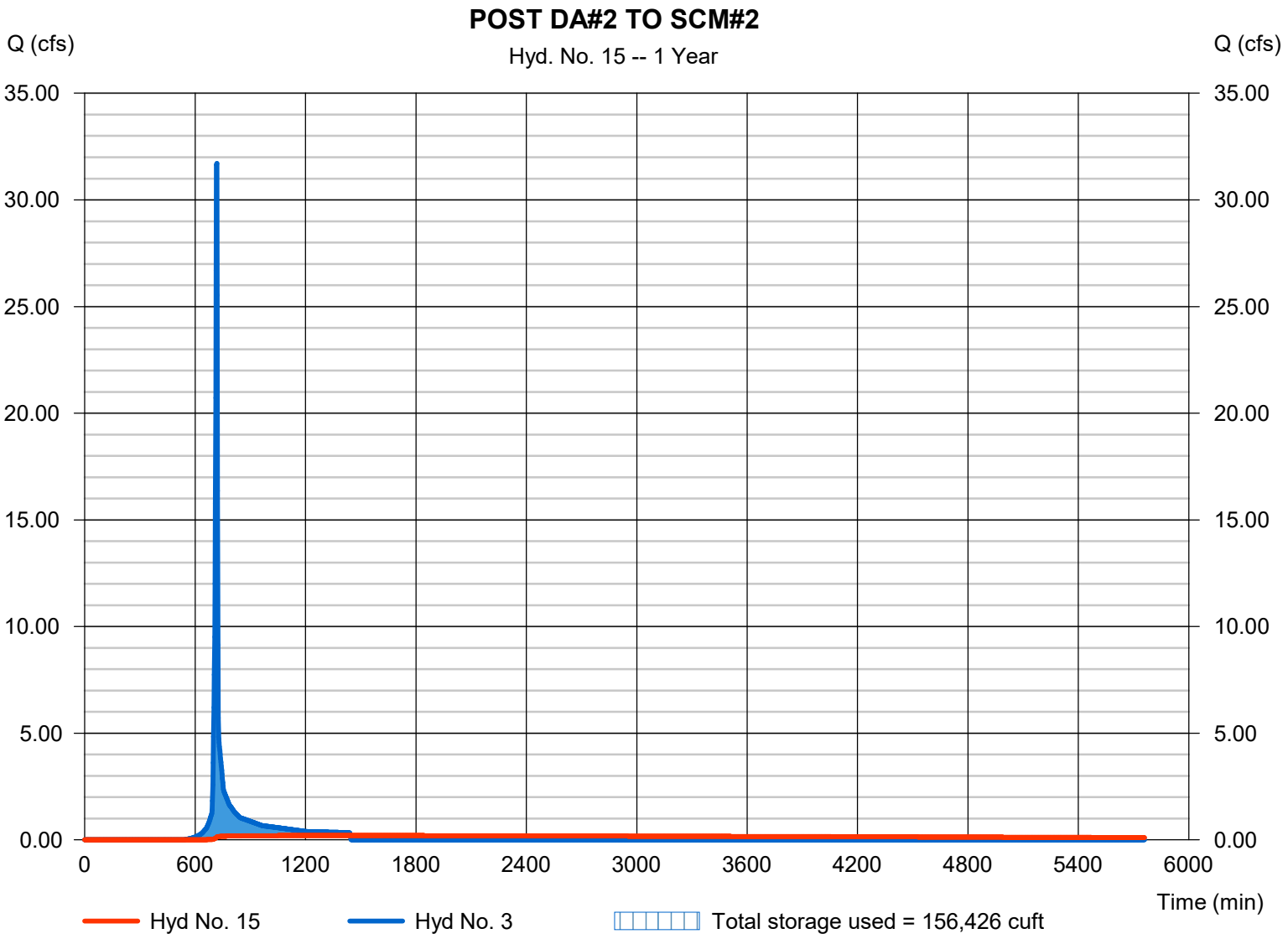
Hydrograph Report

Hyd. No. 15

POST DA#2 TO SCM#2

Hydrograph type	= Reservoir	Peak discharge	= 0.206 cfs
Storm frequency	= 1 yrs	Time to peak	= 1442 min
Time interval	= 2 min	Hyd. volume	= 48,977 cuft
Inflow hyd. No.	= 3 - POST DA#2	Max. Elevation	= 265.77 ft
Reservoir name	= SCM#2	Max. Storage	= 156,426 cuft

Storage Indication method used. Wet pond routing start elevation = 264.00 ft.



Pond Report

Pond No. 2 - SCM#2

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 259.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	259.00	17,338	0	0
1.00	260.00	18,410	17,870	17,870
2.00	261.00	19,512	18,956	36,826
3.00	262.00	20,643	20,073	56,899
4.00	263.00	21,801	21,217	78,116
5.00	264.00	24,204	22,990	101,106
6.00	265.00	33,375	28,664	129,770
7.00	266.00	35,523	34,440	164,210
8.00	267.00	37,728	36,616	200,826
9.00	268.00	39,991	38,850	239,676
10.00	269.00	42,311	41,142	280,818
11.00	270.00	44,689	43,490	324,308

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 18.00	2.50	6.00	0.00
Span (in)	= 18.00	2.50	12.00	0.00
No. Barrels	= 1	1	2	0
Invert El. (ft)	= 264.00	264.00	266.00	0.00
Length (ft)	= 154.00	0.00	0.00	0.00
Slope (%)	= 0.54	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	Yes	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 16.00	30.00	0.00	0.00
Crest El. (ft)	= 266.20	269.50	0.00	0.00
Weir Coeff.	= 3.33	2.66	3.33	3.33
Weir Type	= 1	Rect	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	259.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
1.00	17,870	260.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
2.00	36,826	261.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
3.00	56,899	262.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
4.00	78,116	263.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
5.00	101,106	264.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
6.00	129,770	265.00	0.16 ic	0.15 ic	0.00	---	0.00	0.00	---	---	---	---	0.150
7.00	164,210	266.00	0.22 ic	0.22 ic	0.00	---	0.00	0.00	---	---	---	---	0.220
8.00	200,826	267.00	10.43 oc	0.02 ic	0.60 ic	---	9.80 s	0.00	---	---	---	---	10.42
9.00	239,676	268.00	12.50 oc	0.01 ic	0.25 ic	---	12.18 s	0.00	---	---	---	---	12.43
10.00	280,818	269.00	14.26 oc	0.01 ic	0.16 ic	---	14.06 s	0.00	---	---	---	---	14.22
11.00	324,308	270.00	15.82 oc	0.00 ic	0.11 ic	---	14.71 s	28.21	---	---	---	---	43.04

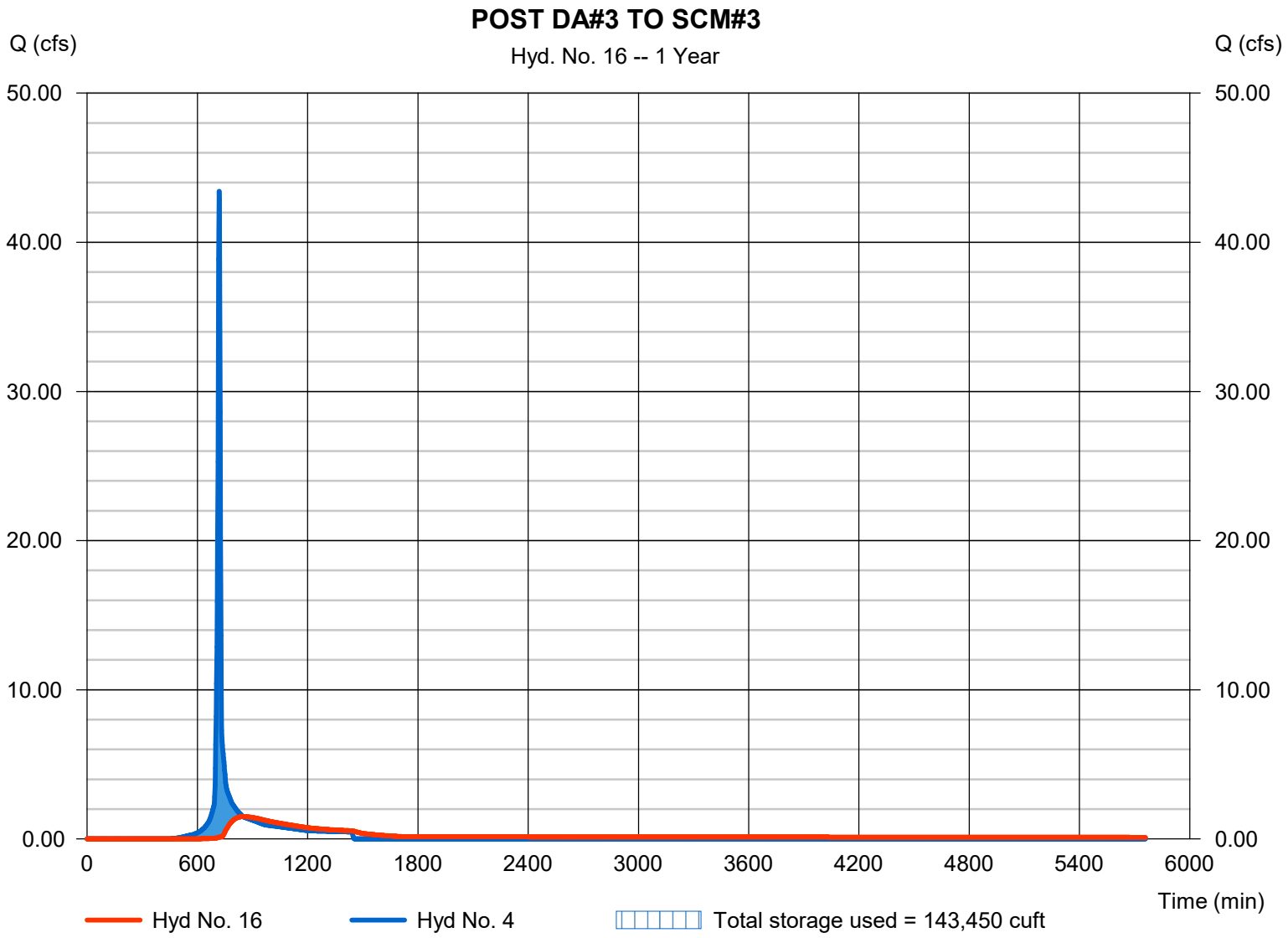
Hydrograph Report

Hyd. No. 16

POST DA#3 TO SCM#3

Hydrograph type	= Reservoir	Peak discharge	= 1.493 cfs
Storm frequency	= 1 yrs	Time to peak	= 848 min
Time interval	= 2 min	Hyd. volume	= 75,221 cuft
Inflow hyd. No.	= 4 - POST DA #3	Max. Elevation	= 242.34 ft
Reservoir name	= SCM#3	Max. Storage	= 143,450 cuft

Storage Indication method used. Wet pond routing start elevation = 240.00 ft.



Pond No. 3 - SCM#3

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 235.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	235.00	13,044	0	0
1.00	236.00	14,018	13,527	13,527
2.00	237.00	15,022	14,516	28,042
3.00	238.00	16,057	15,535	43,577
4.00	239.00	17,121	16,585	60,162
5.00	240.00	19,339	18,217	78,379
6.00	241.00	28,893	23,954	102,333
7.00	242.00	31,406	30,138	132,471
8.00	243.00	34,019	32,701	165,172
9.00	244.00	36,706	35,350	200,522
10.00	245.00	39,464	38,073	238,595
11.00	246.00	42,287	40,863	279,458

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 18.00	2.00	6.00	0.00
Span (in)	= 18.00	2.00	12.00	0.00
No. Barrels	= 1	1	2	0
Invert El. (ft)	= 239.00	240.00	242.00	0.00
Length (ft)	= 50.00	0.00	0.00	0.00
Slope (%)	= 2.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 16.00	30.00	0.00	0.00
Crest El. (ft)	= 243.00	245.50	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	Rect	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	235.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
1.00	13,527	236.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
2.00	28,042	237.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
3.00	43,577	238.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
4.00	60,162	239.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
5.00	78,379	240.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
6.00	102,333	241.00	0.00	0.10 ic	0.00	---	0.00	0.00	---	---	---	---	0.101
7.00	132,471	242.00	0.00	0.15 ic	0.00	---	0.00	0.00	---	---	---	---	0.145
8.00	165,172	243.00	0.00	0.18 ic	4.17 ic	---	0.00	0.00	---	---	---	---	4.349
9.00	200,522	244.00	17.46 ic	0.21 ic	6.37 ic	---	17.46 s	0.00	---	---	---	---	24.03
10.00	238,595	245.00	19.48 ic	0.23 ic	7.98 ic	---	19.42 s	0.00	---	---	---	---	27.63
11.00	279,458	246.00	21.26 ic	0.26 ic	9.32 ic	---	21.19 s	35.32	---	---	---	---	66.09

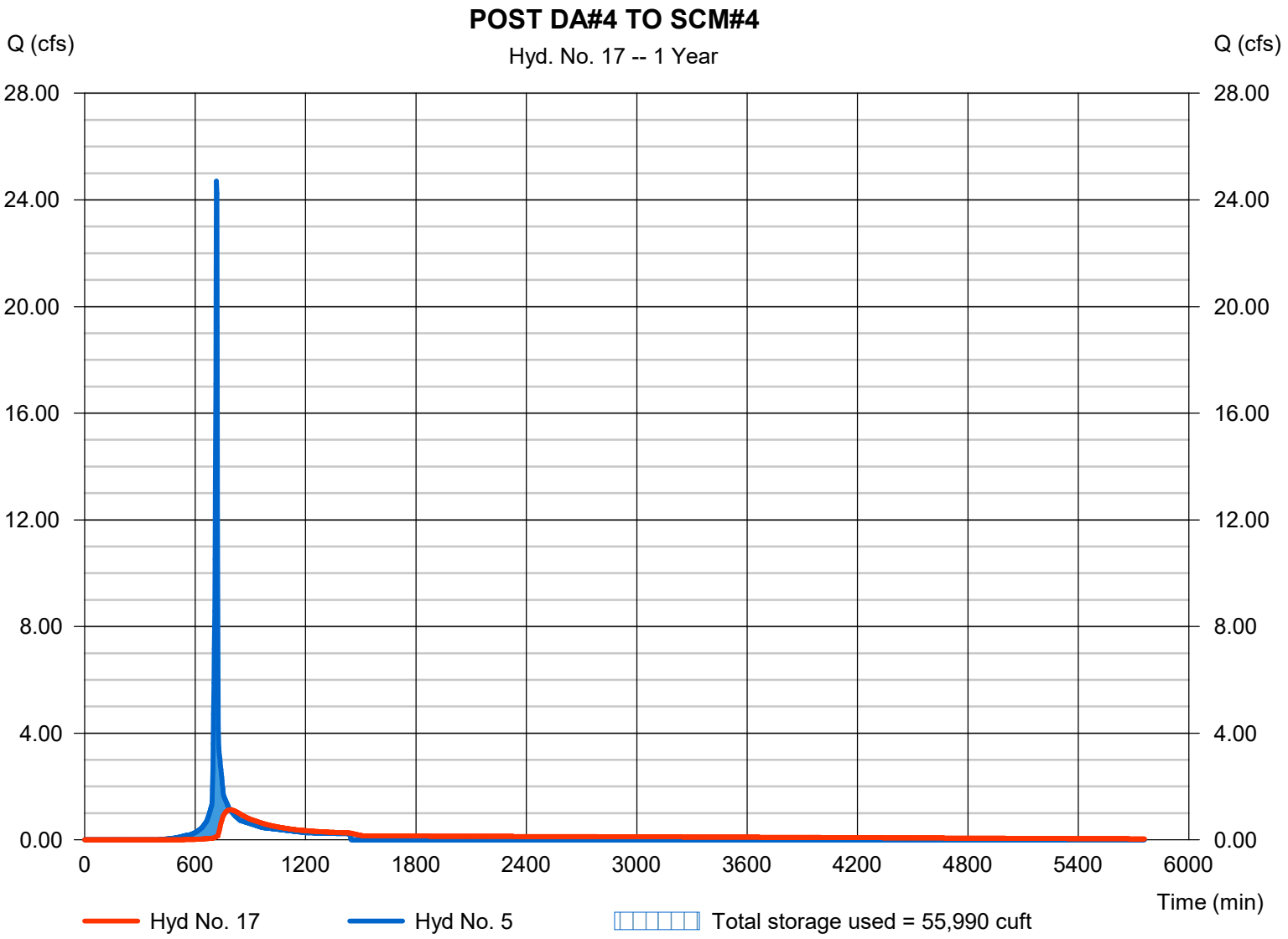
Hydrograph Report

Hyd. No. 17

POST DA#4 TO SCM#4

Hydrograph type	= Reservoir	Peak discharge	= 1.120 cfs
Storm frequency	= 1 yrs	Time to peak	= 790 min
Time interval	= 2 min	Hyd. volume	= 48,385 cuft
Inflow hyd. No.	= 5 - POST DA#4	Max. Elevation	= 242.27 ft
Reservoir name	= SCM#4	Max. Storage	= 55,990 cuft

Storage Indication method used. Wet pond routing start elevation = 240.00 ft.



Pond No. 4 - SCM#4

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 235.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	235.00	3,025	0	0
1.00	236.00	3,694	3,354	3,354
2.00	237.00	4,448	4,065	7,418
3.00	238.00	5,277	4,856	12,274
4.00	239.00	6,187	5,725	18,000
5.00	240.00	8,278	7,206	25,206
6.00	241.00	13,990	11,009	36,215
7.00	242.00	16,224	15,092	51,307
8.00	243.00	18,525	17,360	68,667
9.00	244.00	20,886	19,692	88,359
10.00	245.00	23,301	22,080	110,439
11.00	246.00	25,773	24,524	134,963

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 18.00	2.00	6.00	0.00
Span (in)	= 18.00	2.00	12.00	0.00
No. Barrels	= 1	1	2	0
Invert El. (ft)	= 240.00	240.00	242.00	0.00
Length (ft)	= 71.00	0.00	0.00	0.00
Slope (%)	= 2.11	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 16.00	30.00	0.00	0.00
Crest El. (ft)	= 245.00	245.50	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	Rect	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	235.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
1.00	3,354	236.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
2.00	7,418	237.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
3.00	12,274	238.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
4.00	18,000	239.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
5.00	25,206	240.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
6.00	36,215	241.00	0.00	0.10 ic	0.00	---	0.00	0.00	---	---	---	---	0.101
7.00	51,307	242.00	0.00	0.15 ic	0.00	---	0.00	0.00	---	---	---	---	0.145
8.00	68,667	243.00	0.00	0.18 ic	4.17 ic	---	0.00	0.00	---	---	---	---	4.349
9.00	88,359	244.00	0.00	0.21 ic	6.37 ic	---	0.00	0.00	---	---	---	---	6.577
10.00	110,439	245.00	0.00	0.23 ic	7.98 ic	---	0.00	0.00	---	---	---	---	8.218
11.00	134,963	246.00	19.40 ic	0.26 ic	9.32 ic	---	19.40 s	35.32	---	---	---	---	64.30

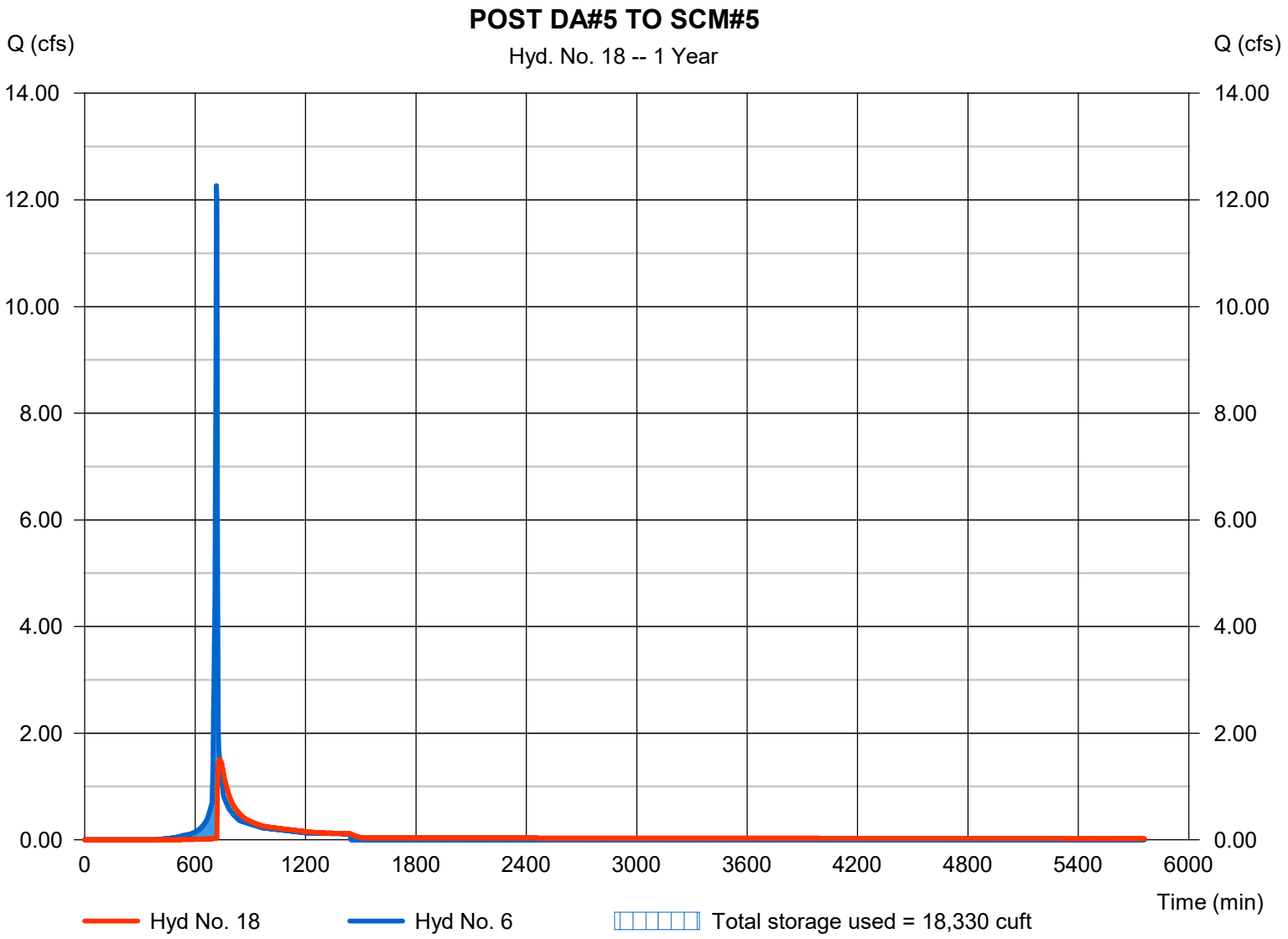
Hydrograph Report

Hyd. No. 18

POST DA#5 TO SCM#5

Hydrograph type	= Reservoir	Peak discharge	= 1.499 cfs
Storm frequency	= 1 yrs	Time to peak	= 734 min
Time interval	= 2 min	Hyd. volume	= 22,200 cuft
Inflow hyd. No.	= 6 - POST DA#5	Max. Elevation	= 251.36 ft
Reservoir name	= SCM#5	Max. Storage	= 18,330 cuft

Storage Indication method used. Wet pond routing start elevation = 249.00 ft.



Pond No. 5 - SCM#5

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 244.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	244.00	77	0	0
1.00	245.00	312	181	181
2.00	246.00	693	490	671
3.00	247.00	1,123	899	1,571
4.00	248.00	1,586	1,348	2,918
5.00	249.00	2,883	2,202	5,121
6.00	250.00	5,712	4,217	9,338
7.00	251.00	6,916	6,304	15,642
8.00	252.00	8,192	7,544	23,186
9.00	253.00	9,540	8,857	32,042
10.00	254.00	10,961	10,241	42,284
11.00	255.00	12,454	11,698	53,982

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 15.00	1.00	6.00	0.00
Span (in)	= 15.00	1.00	12.00	0.00
No. Barrels	= 1	1	2	0
Invert El. (ft)	= 246.58	249.00	251.00	0.00
Length (ft)	= 106.00	0.00	0.00	0.00
Slope (%)	= 7.62	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 16.00	30.00	0.00	0.00
Crest El. (ft)	= 254.00	254.50	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	Rect	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	244.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
1.00	181	245.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
2.00	671	246.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
3.00	1,571	247.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
4.00	2,918	248.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
5.00	5,121	249.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
6.00	9,338	250.00	0.00	0.03 ic	0.00	---	0.00	0.00	---	---	---	---	0.026
7.00	15,642	251.00	0.00	0.04 ic	0.00	---	0.00	0.00	---	---	---	---	0.037
8.00	23,186	252.00	0.00	0.05 ic	4.17 ic	---	0.00	0.00	---	---	---	---	4.215
9.00	32,042	253.00	0.00	0.05 ic	6.37 ic	---	0.00	0.00	---	---	---	---	6.422
10.00	42,284	254.00	0.00	0.06 ic	7.98 ic	---	0.00	0.00	---	---	---	---	8.043
11.00	53,982	255.00	16.46 ic	0.06 ic	9.32 ic	---	16.44 s	35.32	---	---	---	---	61.15

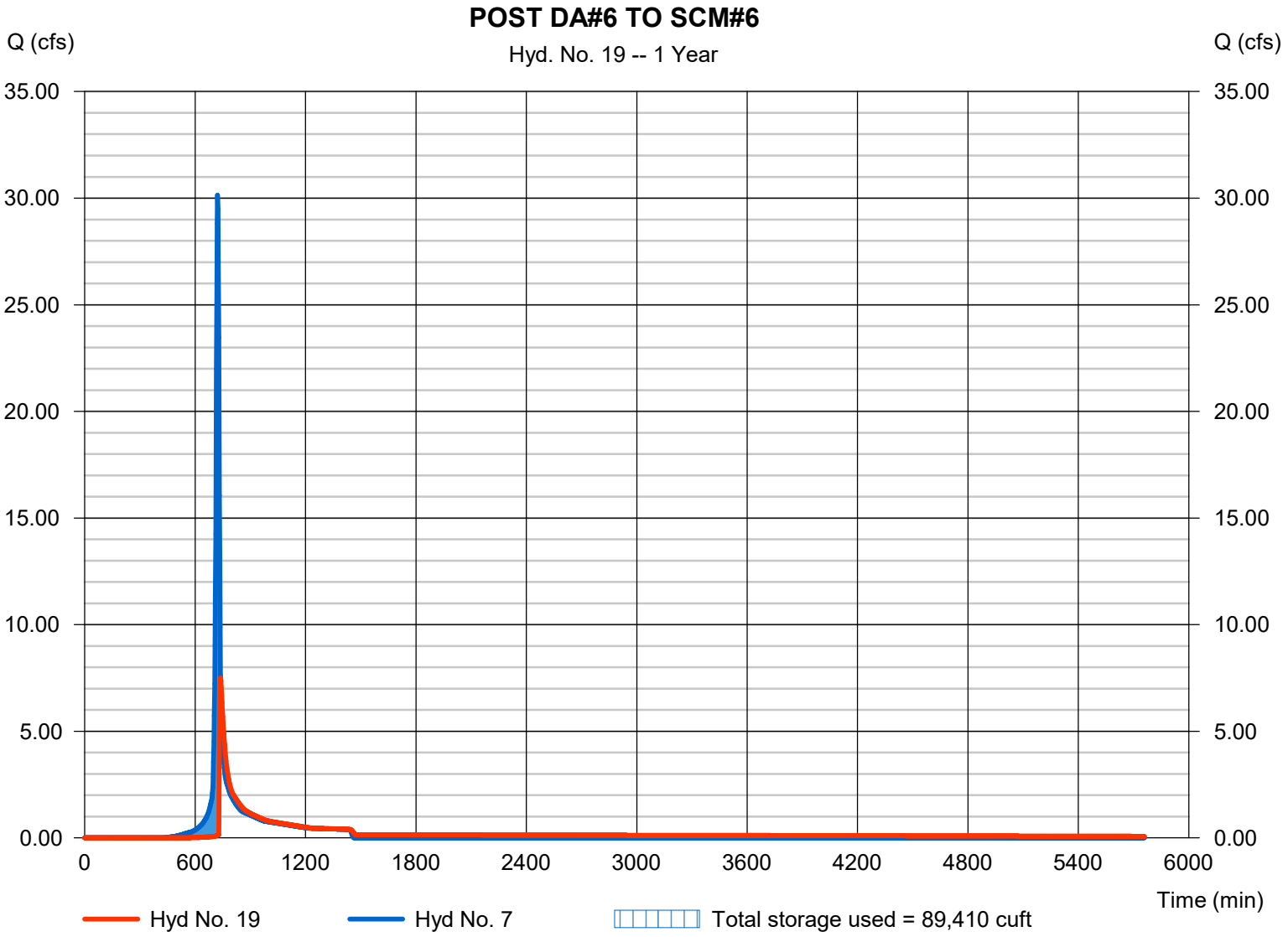
Hydrograph Report

Hyd. No. 19

POST DA#6 TO SCM#6

Hydrograph type	=	Reservoir	Peak discharge	=	7.499 cfs
Storm frequency	=	1 yrs	Time to peak	=	738 min
Time interval	=	2 min	Hyd. volume	=	76,025 cuft
Inflow hyd. No.	=	7 - POST DA#6	Max. Elevation	=	239.25 ft
Reservoir name	=	SCM#6	Max. Storage	=	89,410 cuft

Storage Indication method used. Wet pond routing start elevation = 237.00 ft.



Pond Report

Pond No. 6 - SCM#6

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 232.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	232.00	6,640	0	0
1.00	233.00	7,649	7,138	7,138
2.00	234.00	8,689	8,163	15,301
3.00	235.00	9,759	9,218	24,518
4.00	236.00	10,860	10,304	34,822
5.00	237.00	13,151	11,986	46,808
6.00	238.00	19,445	16,194	63,002
7.00	239.00	21,841	20,629	83,632
8.00	240.00	24,306	23,060	106,692
9.00	241.00	26,833	25,557	132,248
10.00	242.00	29,421	28,114	160,363
11.00	243.00	32,067	30,732	191,094

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 18.00	2.00	6.00	0.00
Span (in)	= 18.00	2.00	12.00	0.00
No. Barrels	= 1	1	2	0
Invert El. (ft)	= 237.00	237.00	239.00	0.00
Length (ft)	= 100.00	0.00	0.00	0.00
Slope (%)	= 0.50	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 16.00	30.00	0.00	0.00
Crest El. (ft)	= 239.00	242.50	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	Rect	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	232.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
1.00	7,138	233.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
2.00	15,301	234.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
3.00	24,518	235.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
4.00	34,822	236.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
5.00	46,808	237.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
6.00	63,002	238.00	0.00	0.10 ic	0.00	---	0.00	0.00	---	---	---	---	0.101
7.00	83,632	239.00	0.00	0.15 ic	0.00	---	0.00	0.00	---	---	---	---	0.145
8.00	106,692	240.00	11.00 oc	0.18 ic	4.17 ic	---	10.97 s	0.00	---	---	---	---	15.32
9.00	132,248	241.00	13.50 oc	0.21 ic	6.37 ic	---	13.30 s	0.00	---	---	---	---	19.88
10.00	160,363	242.00	15.59 oc	0.23 ic	7.98 ic	---	15.23 s	0.00	---	---	---	---	23.45
11.00	191,094	243.00	17.43 oc	0.26 ic	9.32 ic	---	16.82 s	35.32	---	---	---	---	61.72

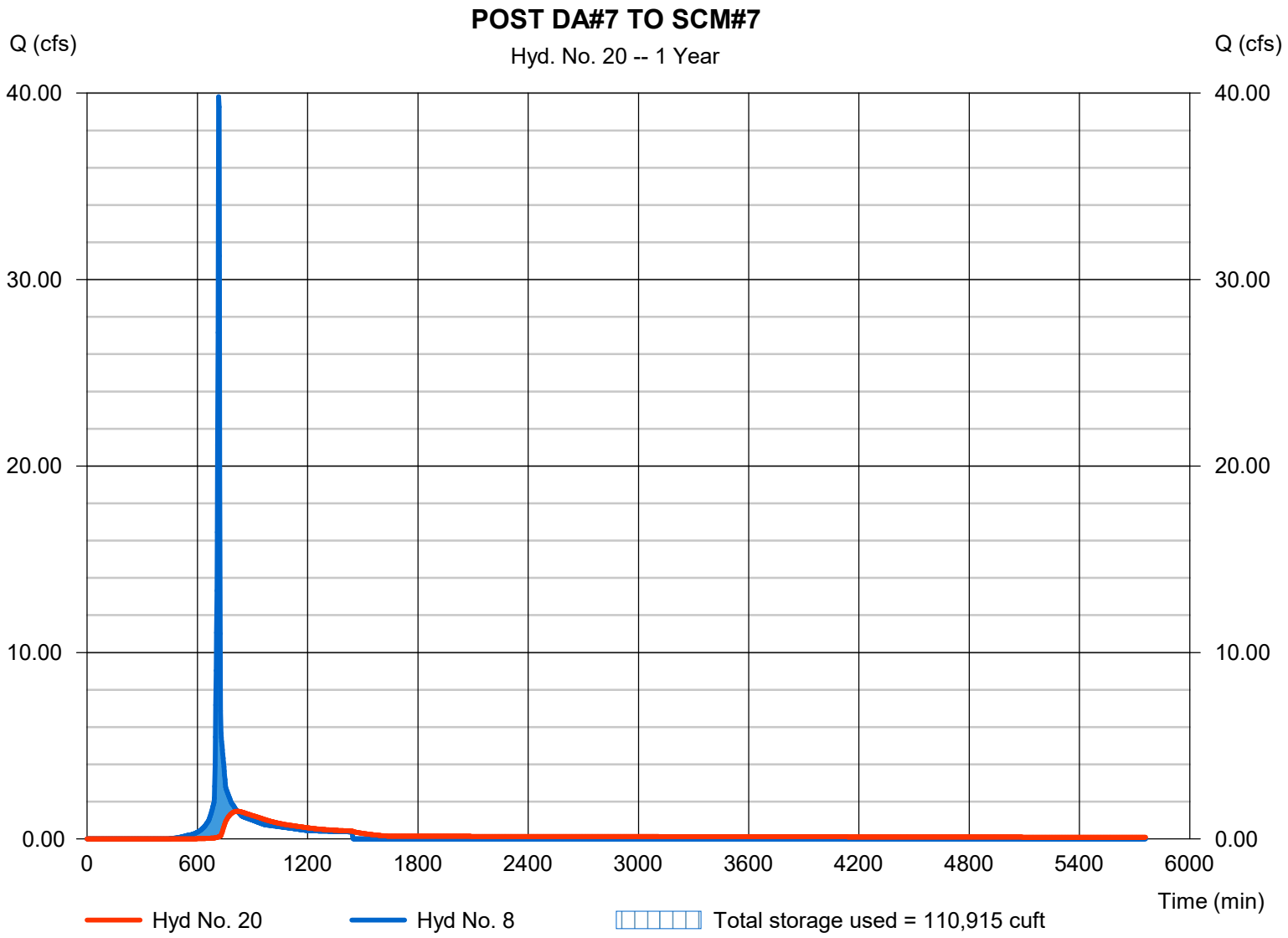
Hydrograph Report

Hyd. No. 20

POST DA#7 TO SCM#7

Hydrograph type	=	Reservoir	Peak discharge	=	1.483 cfs
Storm frequency	=	1 yrs	Time to peak	=	818 min
Time interval	=	2 min	Hyd. volume	=	67,552 cuft
Inflow hyd. No.	=	8 - POST DA#7	Max. Elevation	=	241.33 ft
Reservoir name	=	SCM#7	Max. Storage	=	110,915 cuft

Storage Indication method used. Wet pond routing start elevation = 239.00 ft.



Pond Report

Pond No. 7 - SCM#7

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 233.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	233.00	6,945	0	0
1.00	234.00	7,829	7,382	7,382
2.00	235.00	8,788	8,303	15,685
3.00	236.00	9,815	9,296	24,981
4.00	237.00	10,911	10,357	35,338
5.00	238.00	12,089	11,494	46,832
6.00	239.00	14,687	13,366	60,197
7.00	240.00	22,337	18,377	78,574
8.00	241.00	24,879	23,594	102,169
9.00	242.00	27,496	26,174	128,343
10.00	243.00	30,187	28,828	157,171
11.00	244.00	32,952	31,556	188,727
12.00	245.00	35,790	34,358	223,085

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	2.00	6.00	0.00
Span (in)	= 24.00	2.00	12.00	0.00
No. Barrels	= 1	1	2	0
Invert El. (ft)	= 236.00	239.00	241.00	0.00
Length (ft)	= 108.00	0.00	0.00	0.00
Slope (%)	= 0.50	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 16.00	30.00	0.00	0.00
Crest El. (ft)	= 242.00	244.50	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	Rect	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	233.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
1.00	7,382	234.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
2.00	15,685	235.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
3.00	24,981	236.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
4.00	35,338	237.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
5.00	46,832	238.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
6.00	60,197	239.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
7.00	78,574	240.00	0.00	0.10 ic	0.00	---	0.00	0.00	---	---	---	---	0.101
8.00	102,169	241.00	0.00	0.15 ic	0.00	---	0.00	0.00	---	---	---	---	0.145
9.00	128,343	242.00	0.00	0.18 ic	4.17 ic	---	0.00	0.00	---	---	---	---	4.349
10.00	157,171	243.00	34.53 oc	0.21 ic	6.37 ic	---	34.52 s	0.00	---	---	---	---	41.10
11.00	188,727	244.00	38.20 oc	0.23 ic	7.98 ic	---	38.19 s	0.00	---	---	---	---	46.40
12.00	223,085	245.00	41.10 oc	0.26 ic	9.32 ic	---	41.07 s	35.32	---	---	---	---	85.97

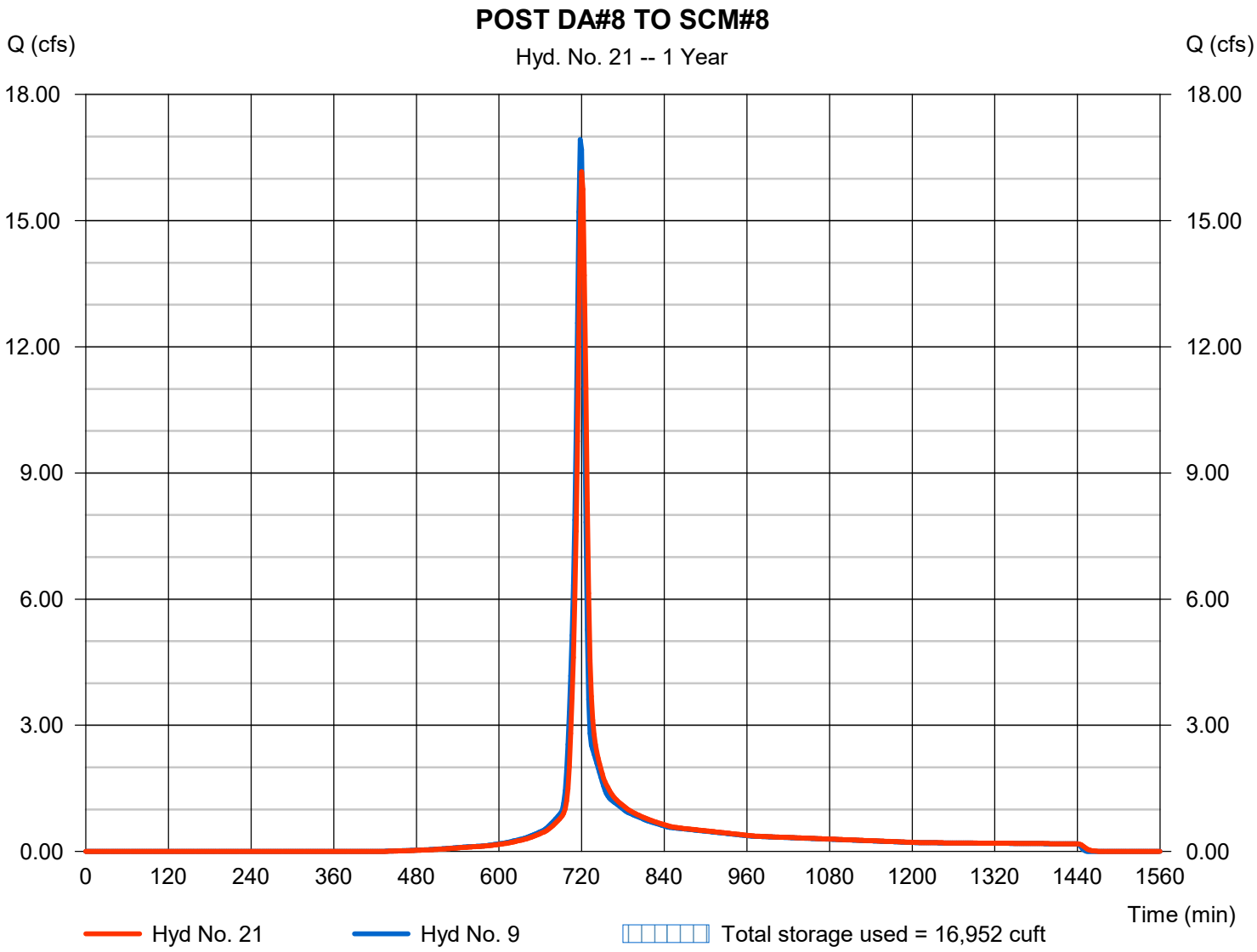
Hydrograph Report

Hyd. No. 21

POST DA#8 TO SCM#8

Hydrograph type	=	Reservoir	Peak discharge	=	16.17 cfs
Storm frequency	=	1 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	38,887 cuft
Inflow hyd. No.	=	9 - POST DA#8	Max. Elevation	=	240.45 ft
Reservoir name	=	SCM#8	Max. Storage	=	16,952 cuft

Storage Indication method used. Wet pond routing start elevation = 240.00 ft.



Pond Report

Pond No. 8 - SCM#8

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 235.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	235.00	1,749	0	0
1.00	236.00	2,125	1,934	1,934
2.00	237.00	2,533	2,326	4,260
3.00	238.00	2,973	2,750	7,009
4.00	239.00	3,443	3,205	10,214
5.00	240.00	4,476	3,948	14,162
6.00	241.00	8,121	6,208	20,370
7.00	242.00	9,227	8,667	29,037
8.00	243.00	10,393	9,803	38,841
9.00	244.00	11,617	10,998	49,839
10.00	245.00	12,897	12,250	62,089
11.00	246.00	14,234	13,559	75,648

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	1.50	6.00	0.00
Span (in)	= 24.00	1.50	12.00	0.00
No. Barrels	= 1	1	2	0
Invert El. (ft)	= 235.31	240.00	242.00	0.00
Length (ft)	= 58.00	0.00	0.00	0.00
Slope (%)	= 2.26	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 16.00	30.00	0.00	0.00
Crest El. (ft)	= 240.00	245.50	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	Rect	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

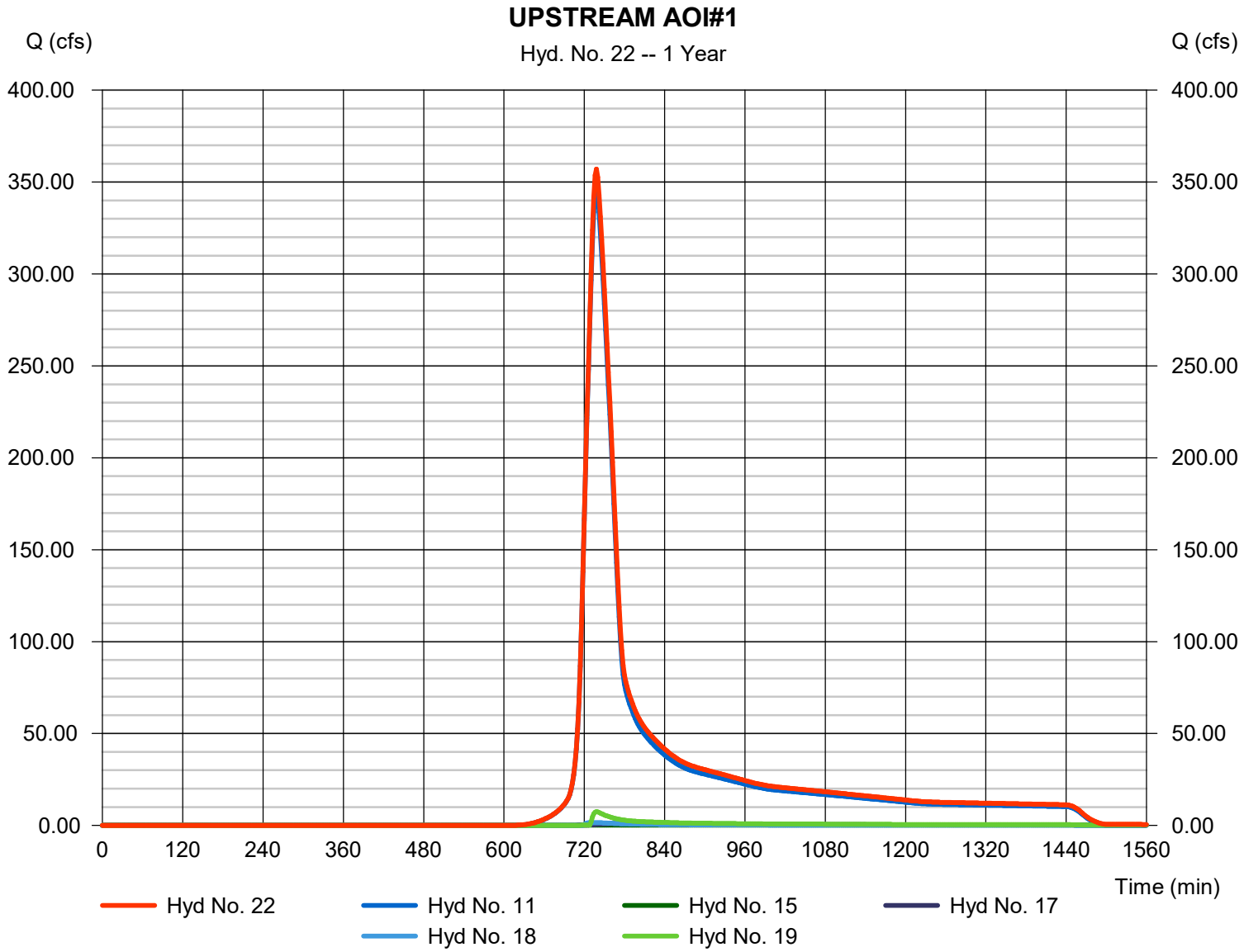
Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	235.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
1.00	1,934	236.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
2.00	4,260	237.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
3.00	7,009	238.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
4.00	10,214	239.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
5.00	14,162	240.00	0.00	0.00	0.00	---	0.00	0.00	---	---	---	---	0.000
6.00	20,370	241.00	32.09 ic	0.06 ic	0.00	---	32.09 s	0.00	---	---	---	---	32.14
7.00	29,037	242.00	35.98 ic	0.08 ic	0.00	---	35.95 s	0.00	---	---	---	---	36.04
8.00	38,841	243.00	39.08 ic	0.10 ic	4.17 ic	---	39.07 s	0.00	---	---	---	---	43.34
9.00	49,839	244.00	41.92 ic	0.12 ic	6.37 ic	---	41.72 s	0.00	---	---	---	---	48.20
10.00	62,089	245.00	44.58 ic	0.13 ic	7.98 ic	---	44.28 s	0.00	---	---	---	---	52.40
11.00	75,648	246.00	47.08 ic	0.14 ic	9.32 ic	---	46.64 s	35.32	---	---	---	---	91.43

Hydrograph Report

Hyd. No. 22

UPSTREAM AOI#1

Hydrograph type	= Combine	Peak discharge	= 357.03 cfs
Storm frequency	= 1 yrs	Time to peak	= 738 min
Time interval	= 2 min	Hyd. volume	= 1,947,618 cuft
Inflow hyds.	= 11, 15, 17, 18, 19	Contrib. drain. area	= 437.640 ac

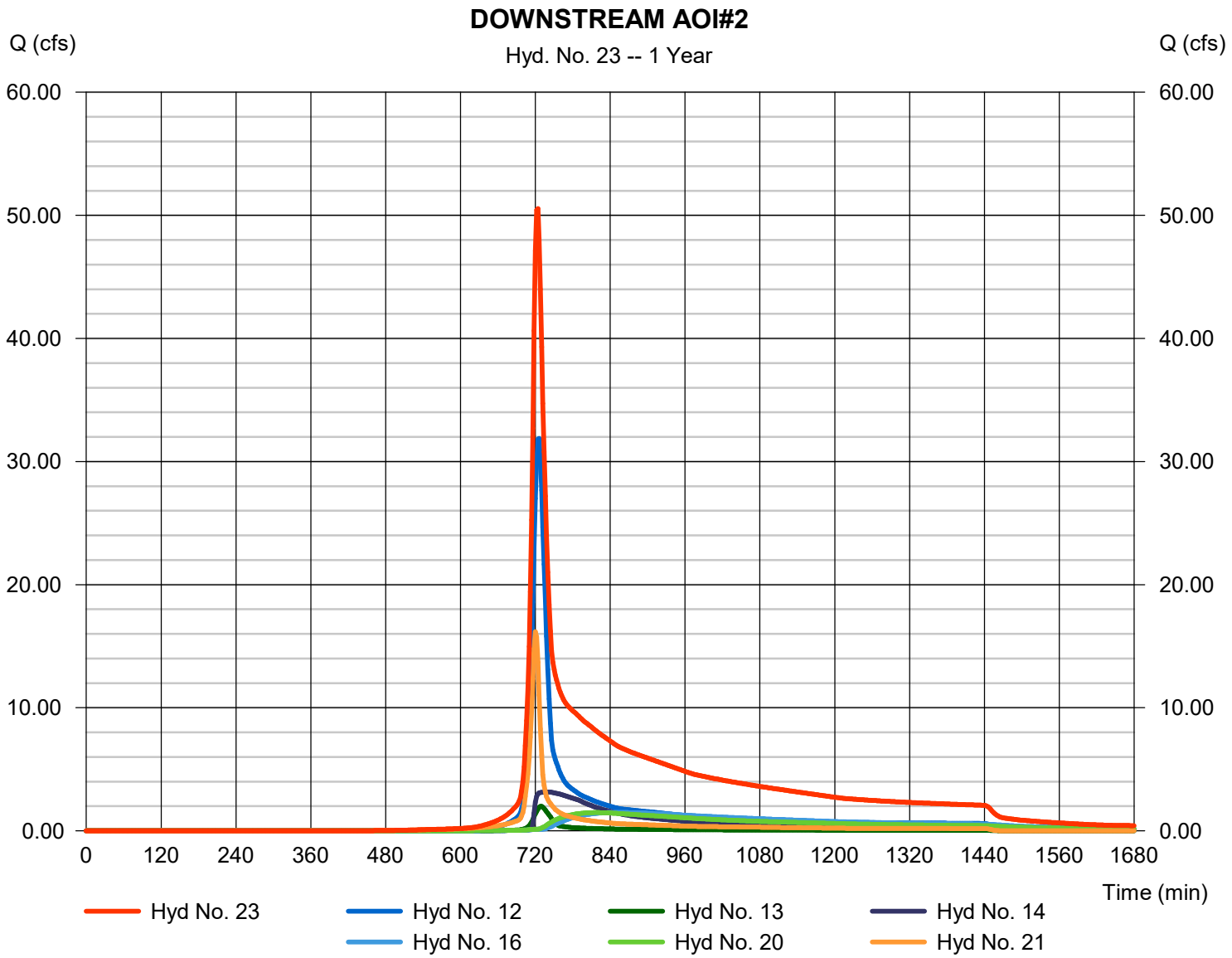


Hydrograph Report

Hyd. No. 23

DOWNSTREAM AOI#2

Hydrograph type	= Combine	Peak discharge	= 50.55 cfs
Storm frequency	= 1 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 347,204 cuft
Inflow hyds.	= 12, 13, 14, 16, 20, 21	Contrib. drain. area	= 27.540 ac

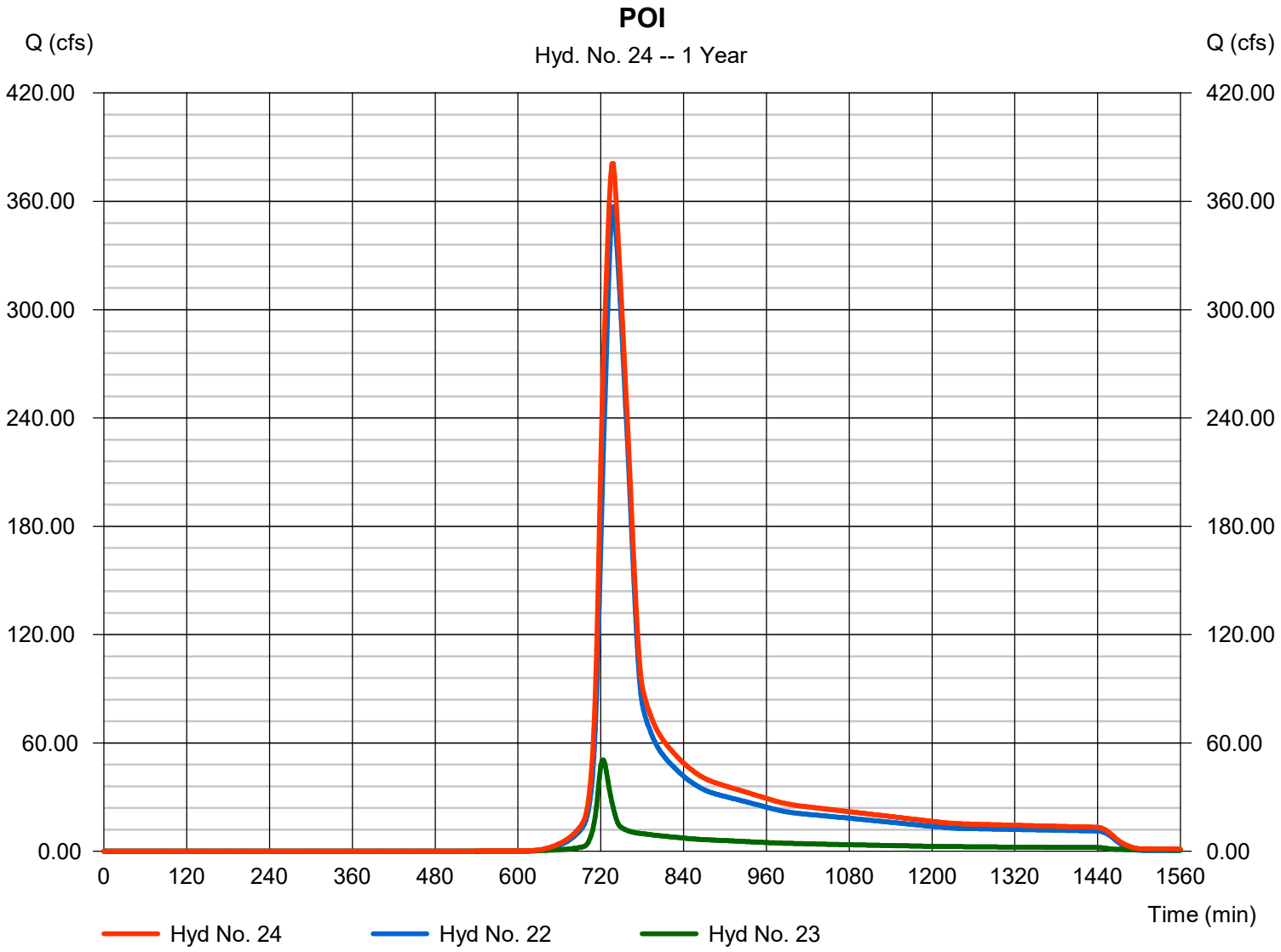


Hydrograph Report

Hyd. No. 24

POI

Hydrograph type	=	Combine	Peak discharge	=	380.99 cfs
Storm frequency	=	1 yrs	Time to peak	=	738 min
Time interval	=	2 min	Hyd. volume	=	2,294,823 cuft
Inflow hyds.	=	22, 23	Contrib. drain. area	=	0.000 ac

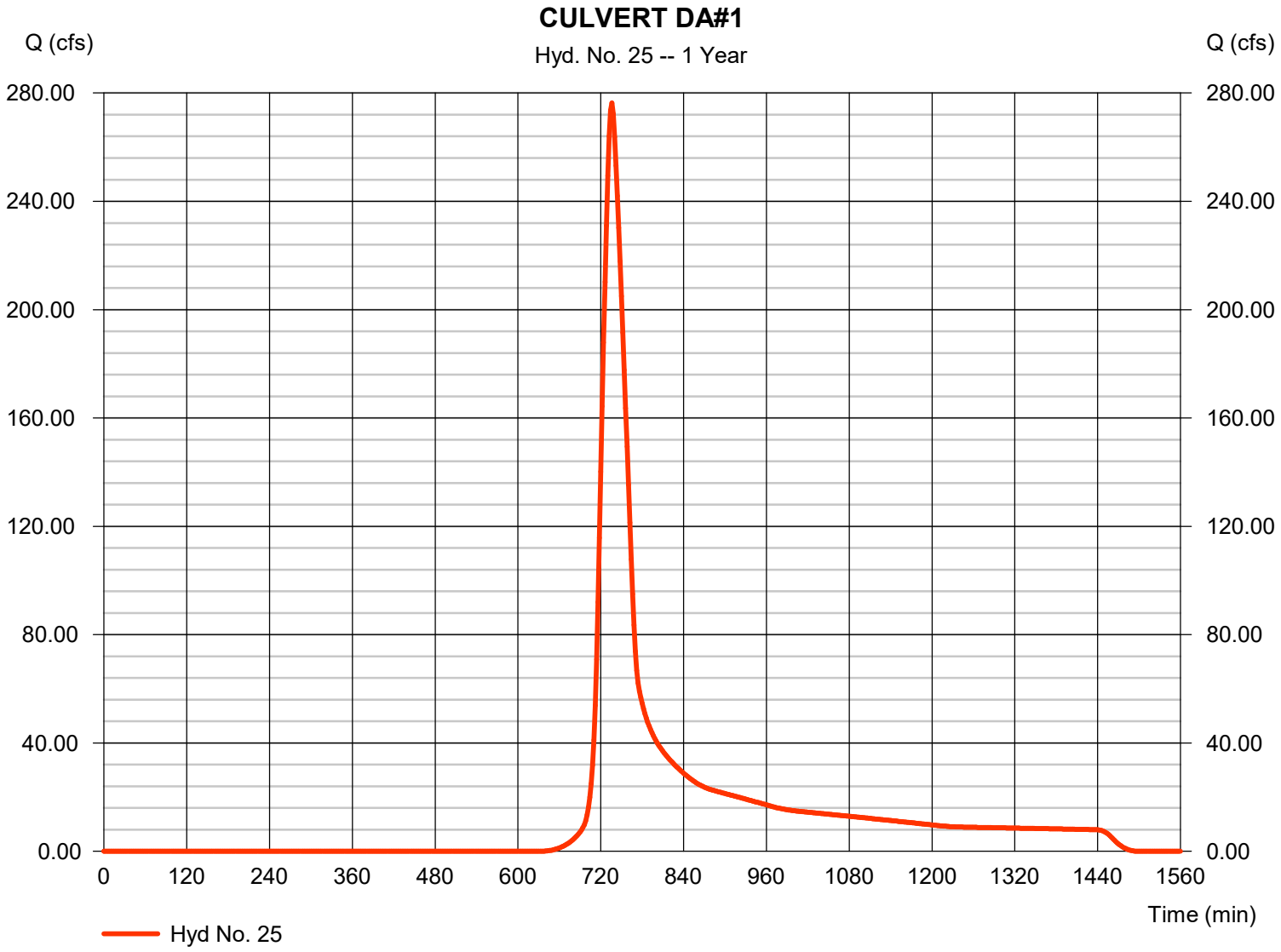


Hydrograph Report

Hyd. No. 25

CULVERT DA#1

Hydrograph type	=	SCS Runoff	Peak discharge	=	276.33 cfs
Storm frequency	=	1 yrs	Time to peak	=	736 min
Time interval	=	2 min	Hyd. volume	=	1,316,989 cuft
Drainage area	=	356.740 ac	Curve number	=	77.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	34.90 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

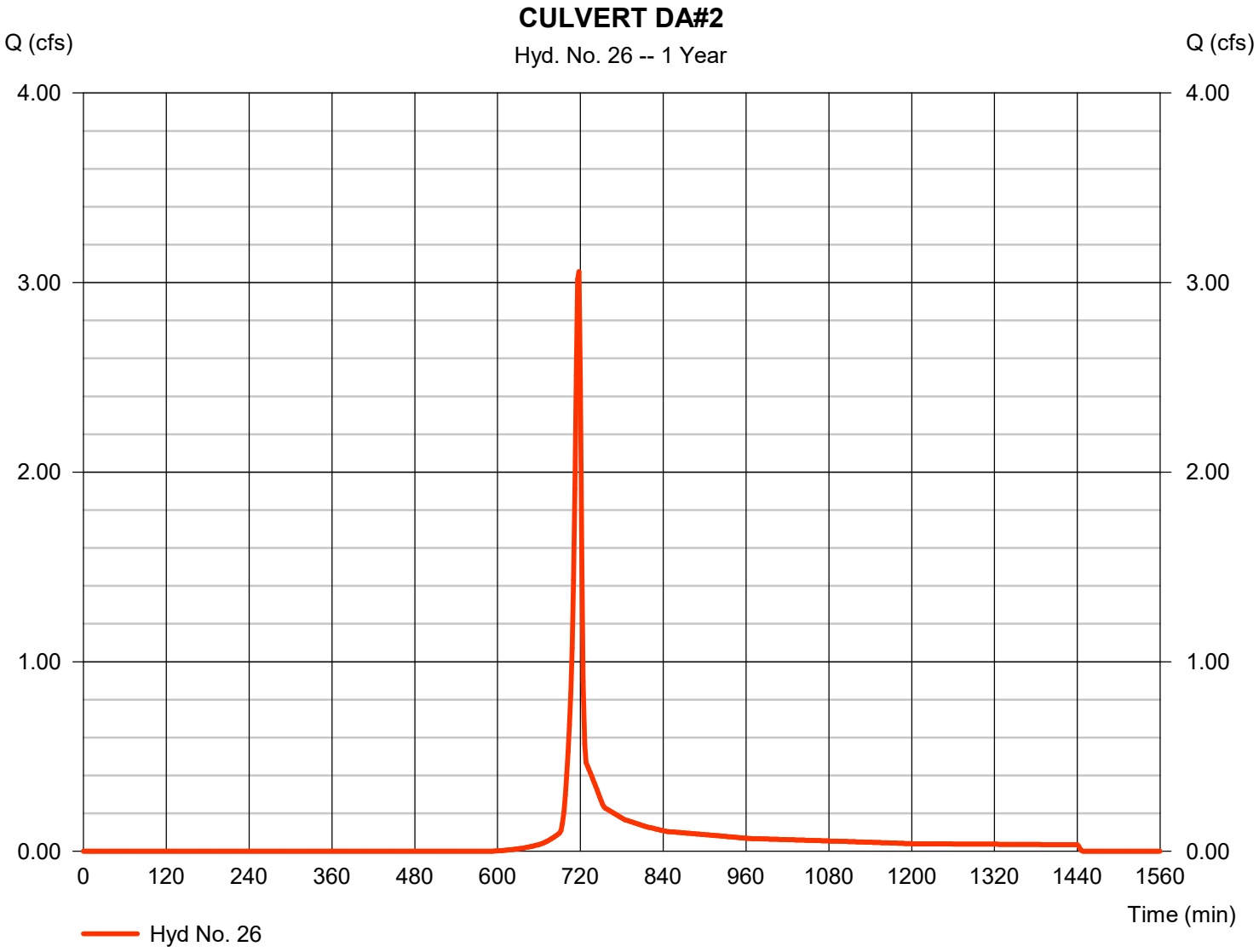


Hydrograph Report

Hyd. No. 26

CULVERT DA#2

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.057 cfs
Storm frequency	=	1 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	6,122 cuft
Drainage area	=	1.540 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	2.89 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

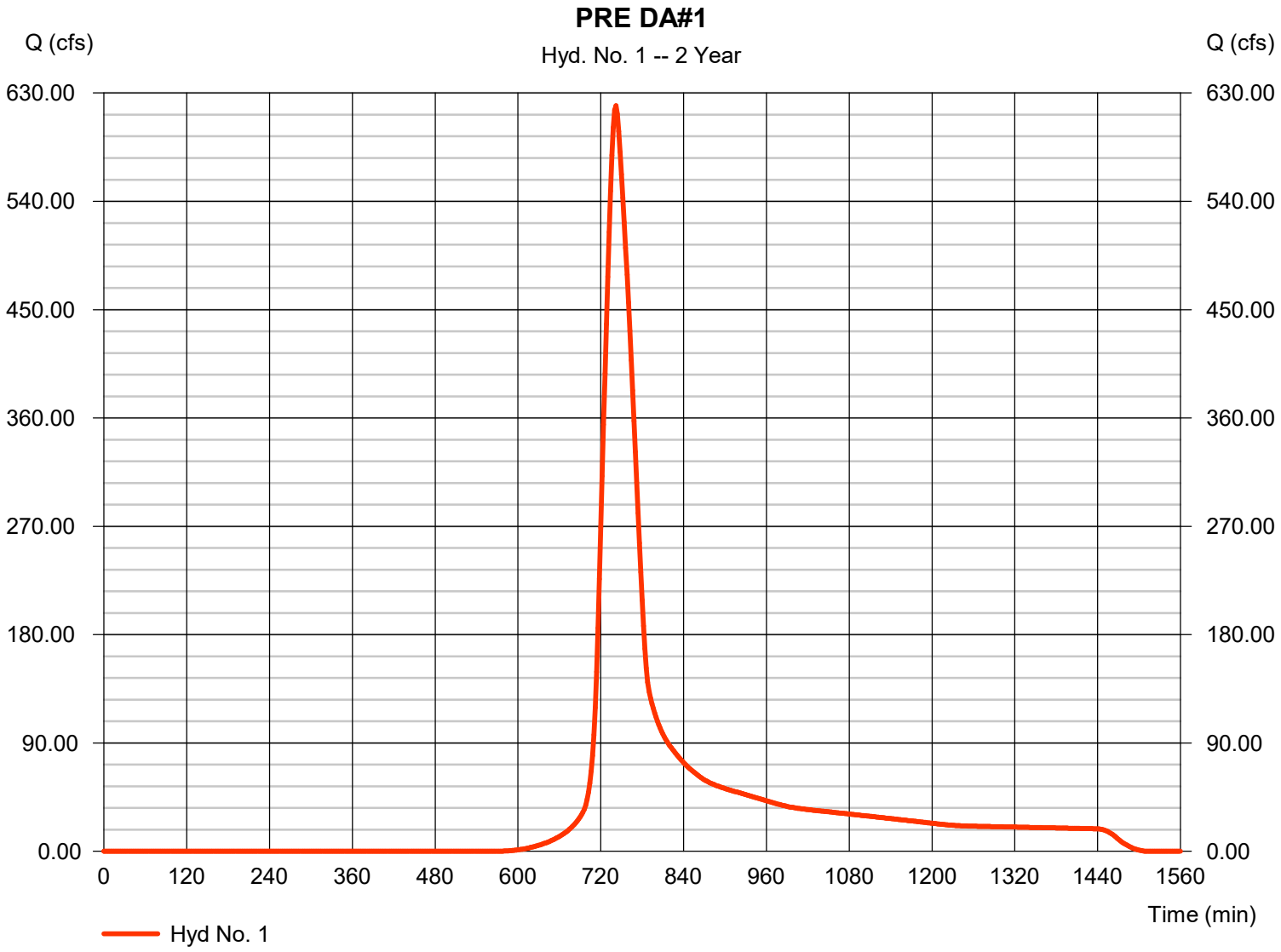
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	619.52	2	742	3,392,275	------	------	------	PRE DA#1
2	SCS Runoff	36.57	2	716	75,184	------	------	------	POST DA#1
3	SCS Runoff	43.14	2	716	87,242	------	------	------	POST DA#2
4	SCS Runoff	57.22	2	718	131,957	------	------	------	POST DA #3
5	SCS Runoff	31.98	2	716	66,082	------	------	------	POST DA#4
6	SCS Runoff	15.79	2	716	32,769	------	------	------	POST DA#5
7	SCS Runoff	39.51	2	722	111,460	------	------	------	POST DA#6
8	SCS Runoff	52.22	2	716	106,977	------	------	------	POST DA#7
9	SCS Runoff	22.14	2	718	51,246	------	------	------	POST DA#8
10	SCS Runoff	13.47	2	722	38,049	------	------	------	POST DA#1 OFFSITE
11	SCS Runoff	499.38	2	738	2,464,438	------	------	------	POST DA#2 OFFSITE
12	SCS Runoff	45.60	2	724	144,271	------	------	------	POST DA#3 OFFSITE
13	SCS Runoff	2.854	2	728	10,643	------	------	------	POST DA#4 OFFSITE
14	Reservoir	4.577	2	732	73,482	2	264.11	86,326	POST DA#1 TO SCM#1
15	Reservoir	0.620	2	1124	66,809	3	266.15	169,582	POST DA#2 TO SCM#2
16	Reservoir	3.409	2	778	107,507	4	242.70	155,444	POST DA#3 TO SCM#3
17	Reservoir	2.941	2	744	63,910	5	242.58	61,434	POST DA#4 TO SCM#4
18	Reservoir	3.556	2	724	29,786	6	251.78	21,548	POST DA#5 TO SCM#5
19	Reservoir	13.13	2	736	102,886	7	239.65	98,673	POST DA#6 TO SCM#6
20	Reservoir	3.414	2	756	93,574	8	241.70	120,595	POST DA#7 TO SCM#7
21	Reservoir	21.34	2	720	51,246	9	240.54	17,524	POST DA#8 TO SCM#8
22	Combine	518.65	2	738	2,727,833	11, 15, 17, 18, 19,	------	------	UPSTREAM AOI#1
23	Combine	74.06	2	724	480,722	12, 13, 14, 16, 20, 21,	------	------	DOWNSTREAM AOI#2
24	Combine	559.13	2	736	3,208,551	22, 23	------	------	POI
25	SCS Runoff	403.44	2	736	1,872,865	------	------	------	CULVERT DA#1
26	SCS Runoff	4.232	2	718	8,534	------	------	------	CULVERT DA#2

Hydrograph Report

Hyd. No. 1

PRE DA#1

Hydrograph type	=	SCS Runoff	Peak discharge	=	619.52 cfs
Storm frequency	=	2 yrs	Time to peak	=	742 min
Time interval	=	2 min	Hyd. volume	=	3,392,275 cuft
Drainage area	=	618.810 ac	Curve number	=	78.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	47.00 min
Total precip.	=	3.49 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

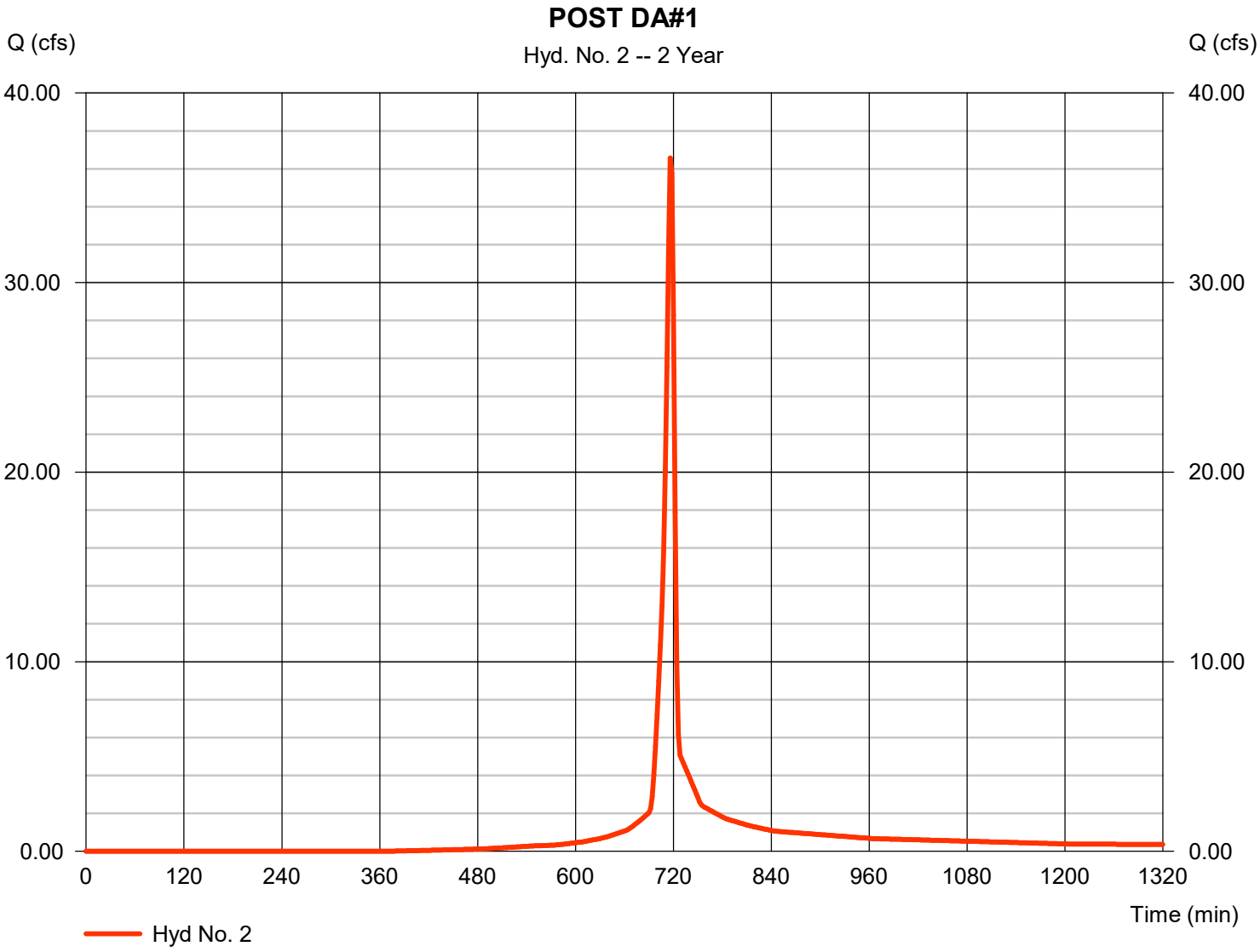


Hydrograph Report

Hyd. No. 2

POST DA#1

Hydrograph type	=	SCS Runoff	Peak discharge	=	36.57 cfs
Storm frequency	=	2 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	75,184 cuft
Drainage area	=	9.930 ac	Curve number	=	87.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.50 min
Total precip.	=	3.49 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

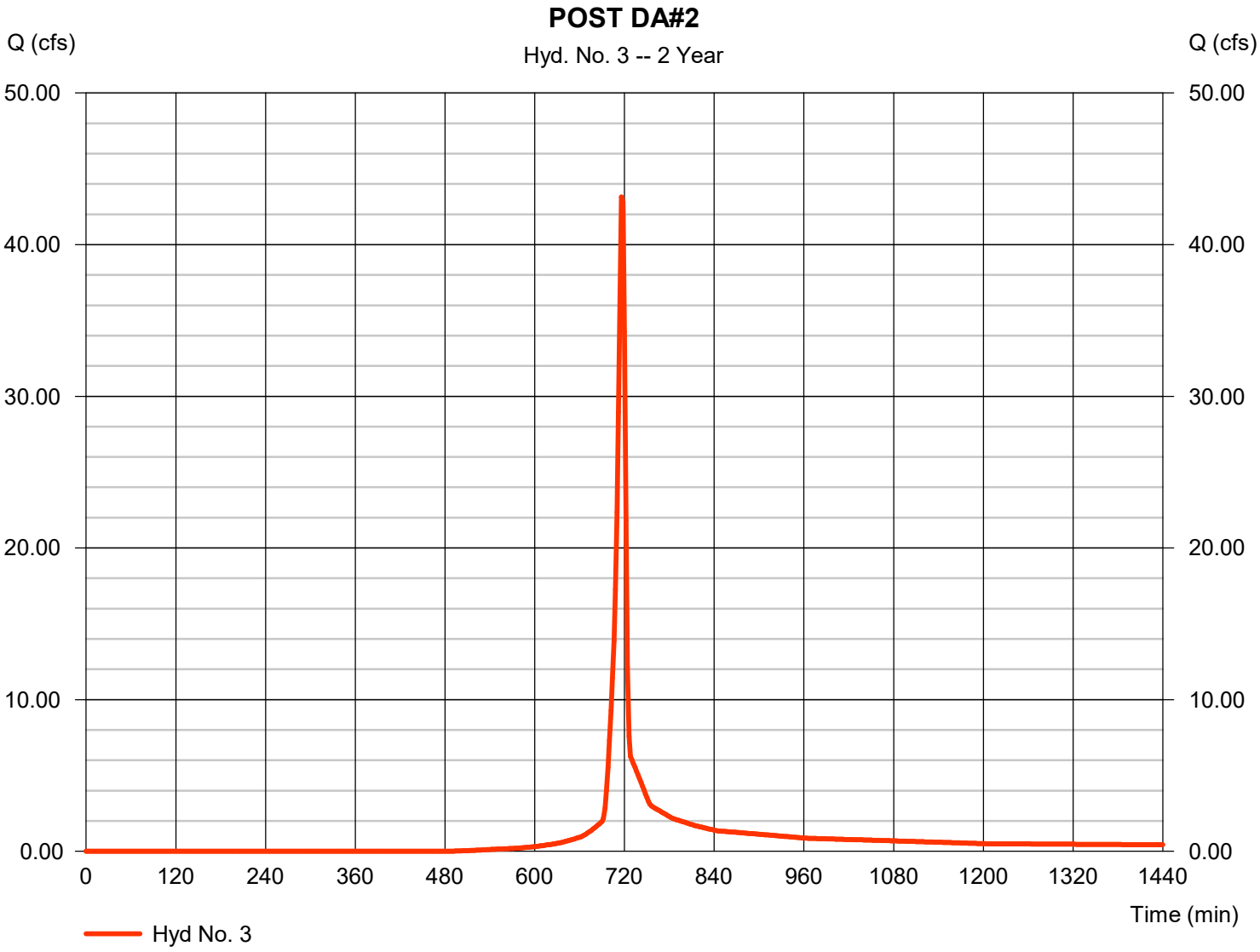


Hydrograph Report

Hyd. No. 3

POST DA#2

Hydrograph type	=	SCS Runoff	Peak discharge	=	43.14 cfs
Storm frequency	=	2 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	87,242 cuft
Drainage area	=	14.030 ac	Curve number	=	82.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	3.49 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

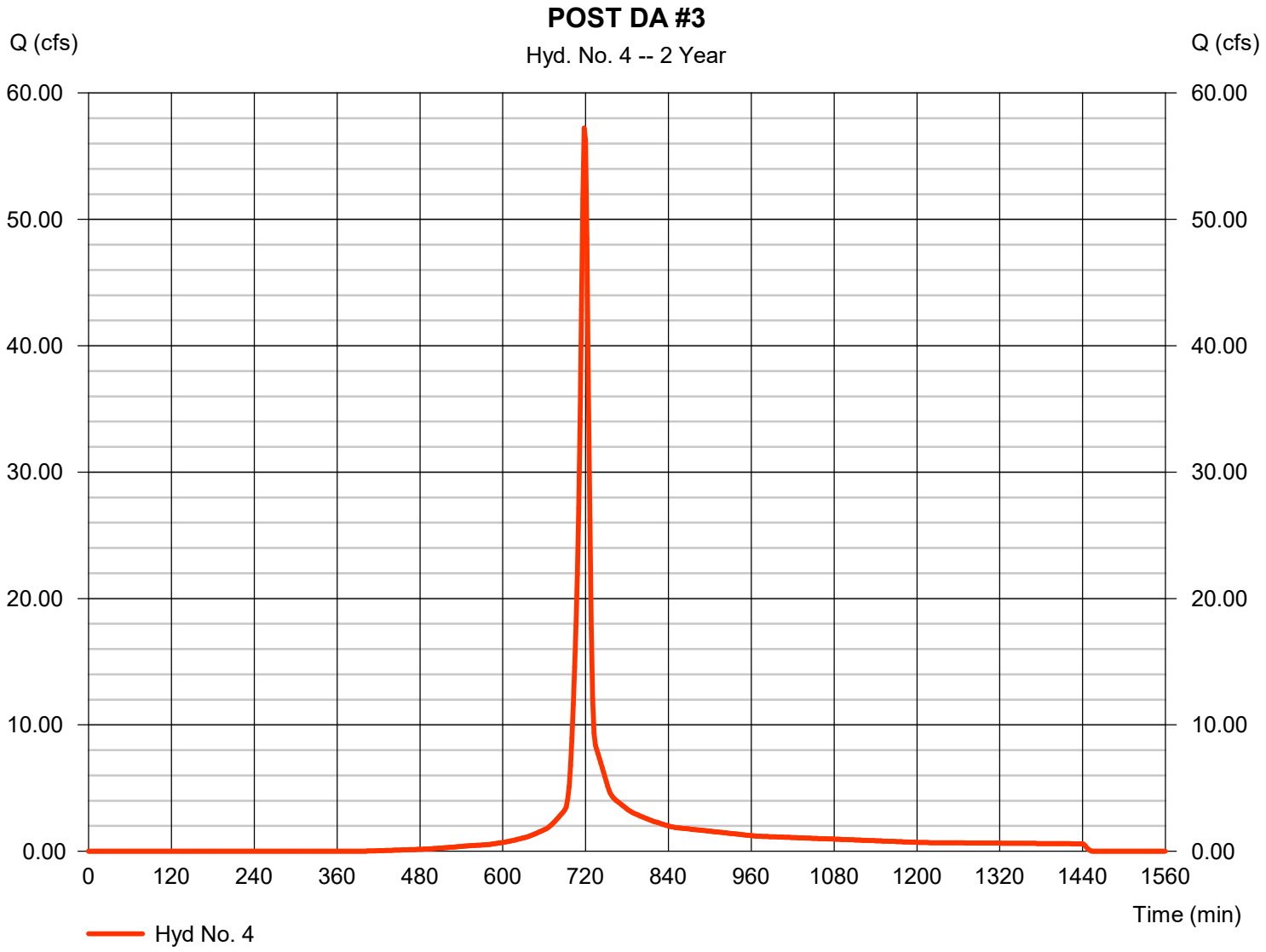


Hydrograph Report

Hyd. No. 4

POST DA #3

Hydrograph type	=	SCS Runoff	Peak discharge	=	57.22 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	131,957 cuft
Drainage area	=	16.990 ac	Curve number	=	86.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	7.40 min
Total precip.	=	3.49 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

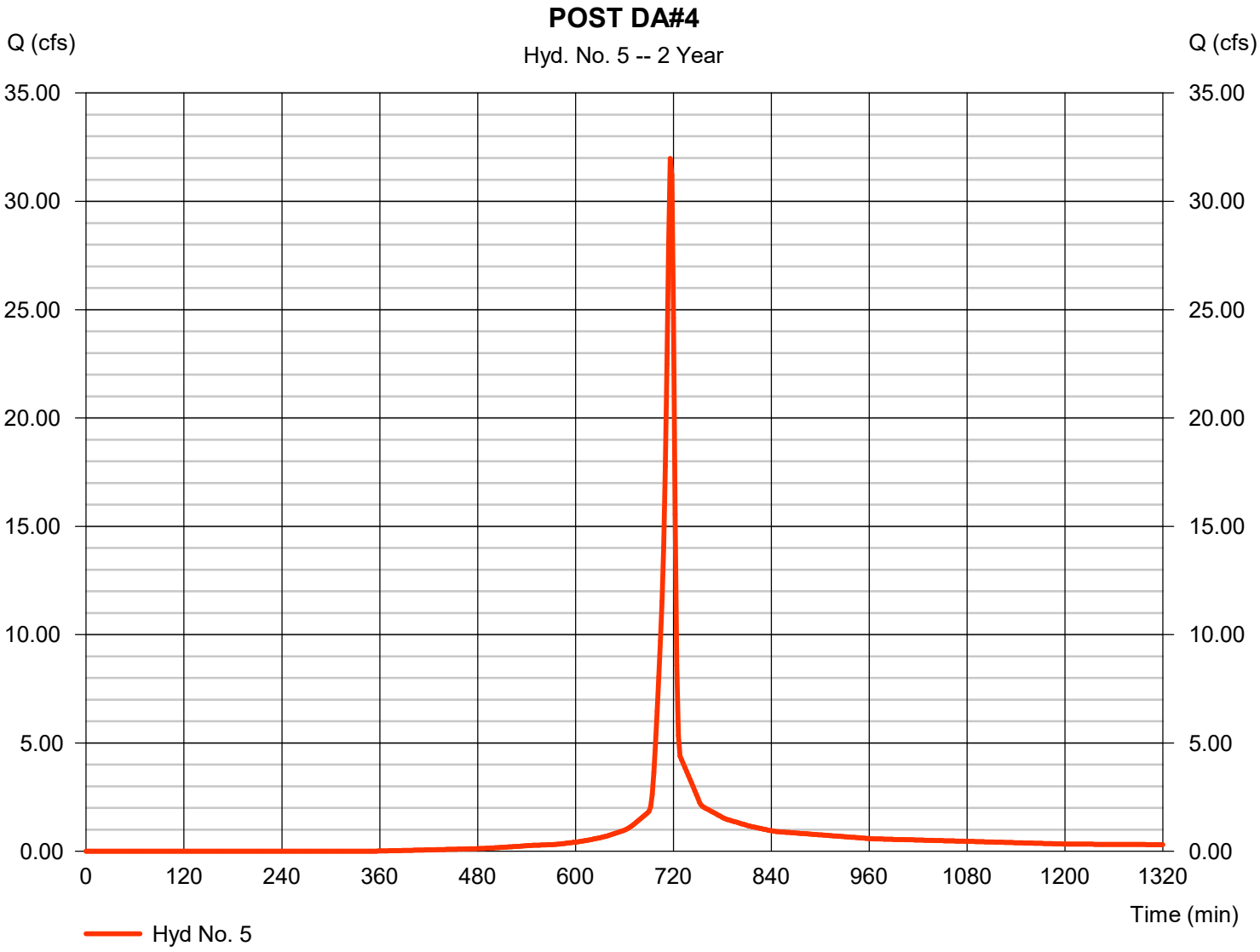


Hydrograph Report

Hyd. No. 5

POST DA#4

Hydrograph type	=	SCS Runoff	Peak discharge	=	31.98 cfs
Storm frequency	=	2 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	66,082 cuft
Drainage area	=	8.430 ac	Curve number	=	88.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.30 min
Total precip.	=	3.49 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

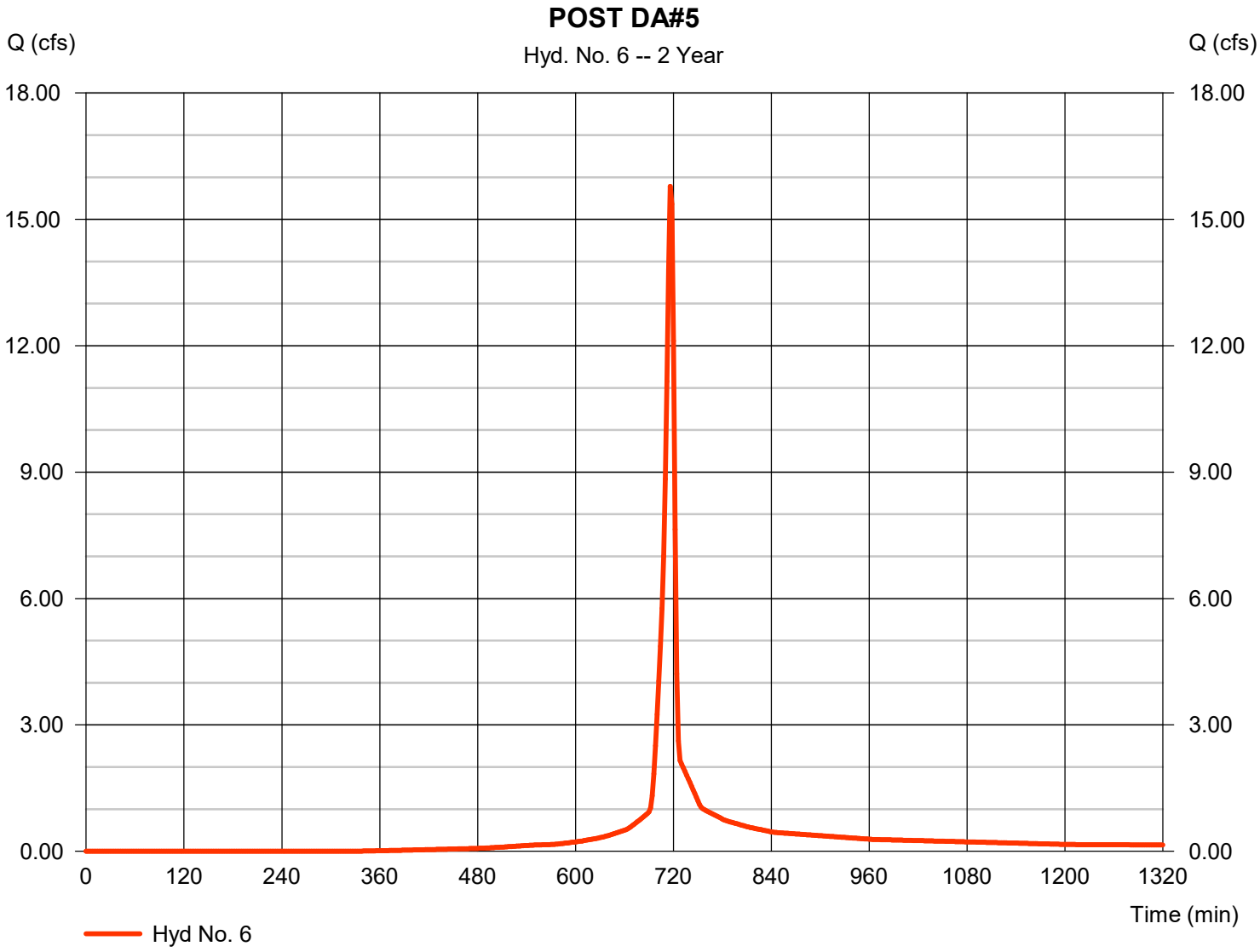


Hydrograph Report

Hyd. No. 6

POST DA#5

Hydrograph type	=	SCS Runoff	Peak discharge	=	15.79 cfs
Storm frequency	=	2 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	32,769 cuft
Drainage area	=	4.070 ac	Curve number	=	89.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	3.49 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

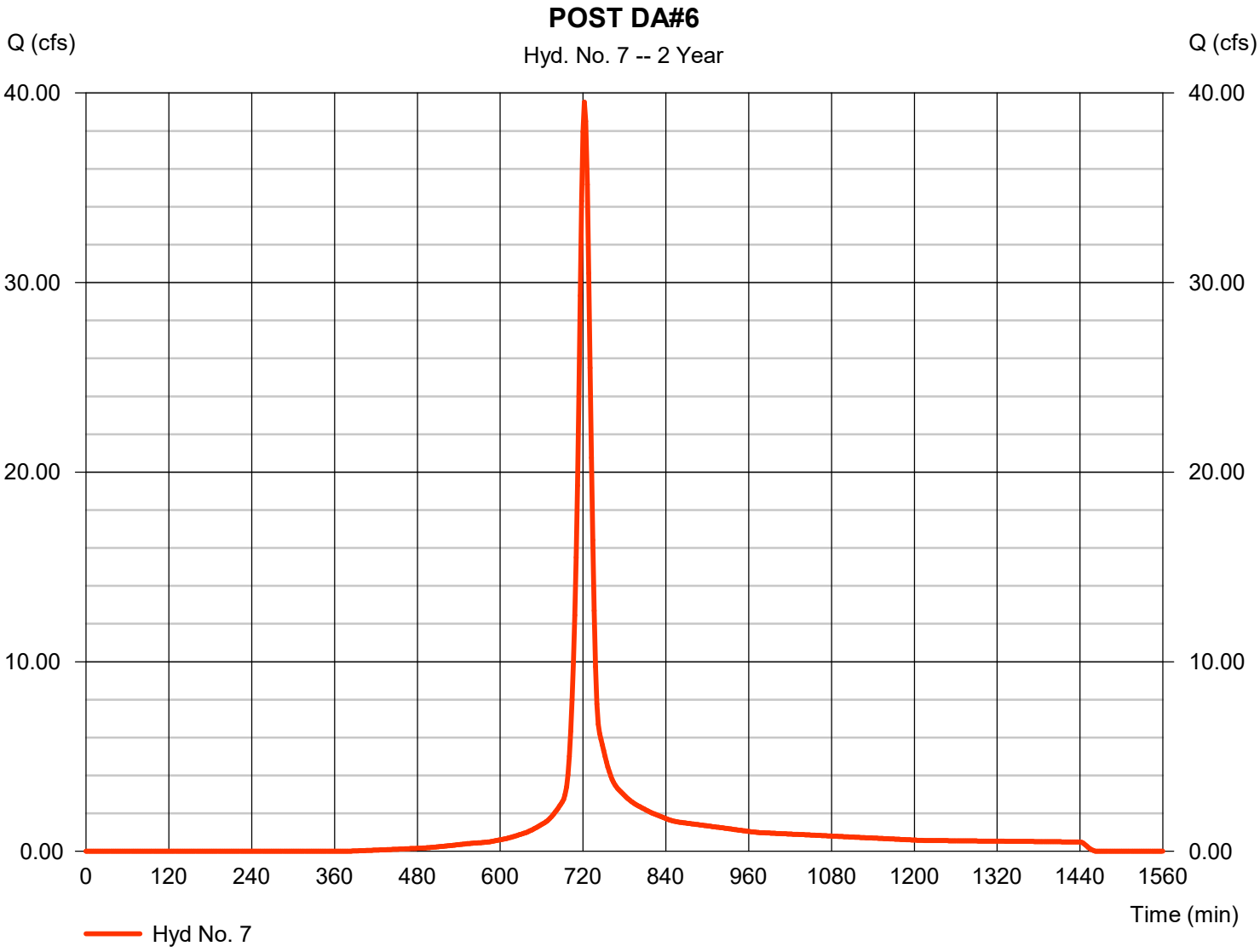


Hydrograph Report

Hyd. No. 7

POST DA#6

Hydrograph type	=	SCS Runoff	Peak discharge	=	39.51 cfs
Storm frequency	=	2 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	111,460 cuft
Drainage area	=	14.210 ac	Curve number	=	87.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	14.80 min
Total precip.	=	3.49 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

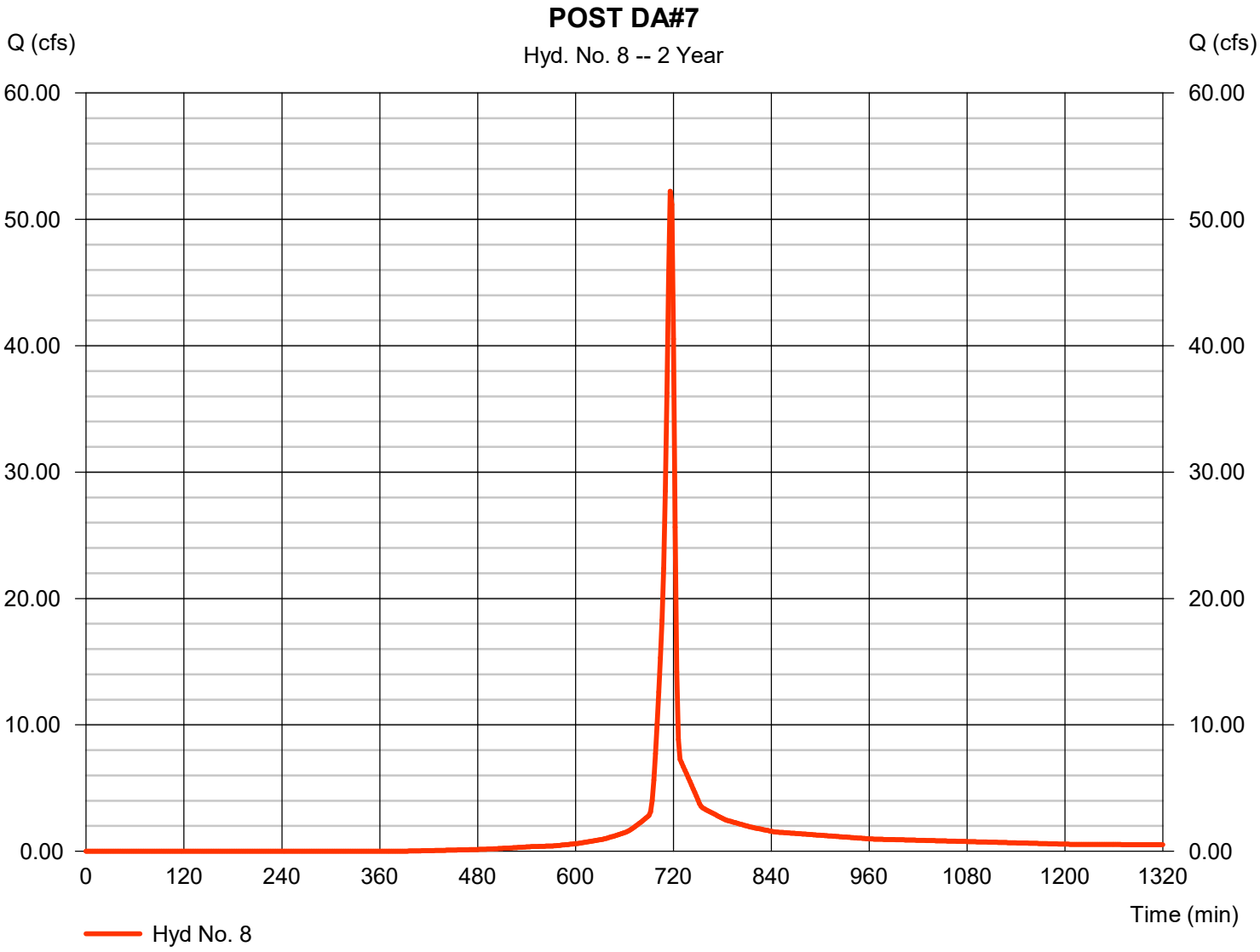


Hydrograph Report

Hyd. No. 8

POST DA#7

Hydrograph type	=	SCS Runoff	Peak discharge	=	52.22 cfs
Storm frequency	=	2 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	106,977 cuft
Drainage area	=	14.520 ac	Curve number	=	86.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.20 min
Total precip.	=	3.49 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

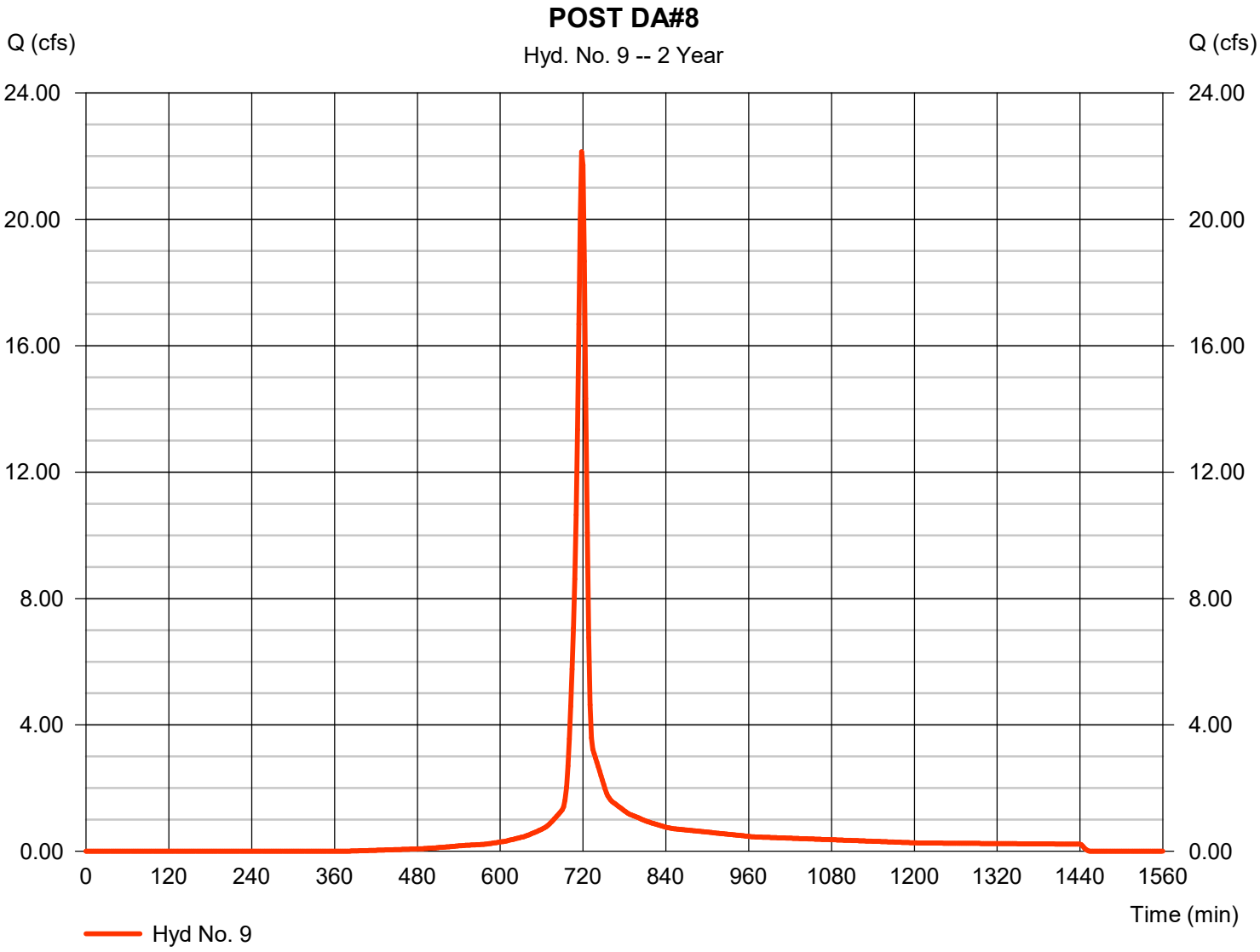


Hydrograph Report

Hyd. No. 9

POST DA#8

Hydrograph type	=	SCS Runoff	Peak discharge	=	22.14 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	51,246 cuft
Drainage area	=	6.370 ac	Curve number	=	87.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.80 min
Total precip.	=	3.49 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

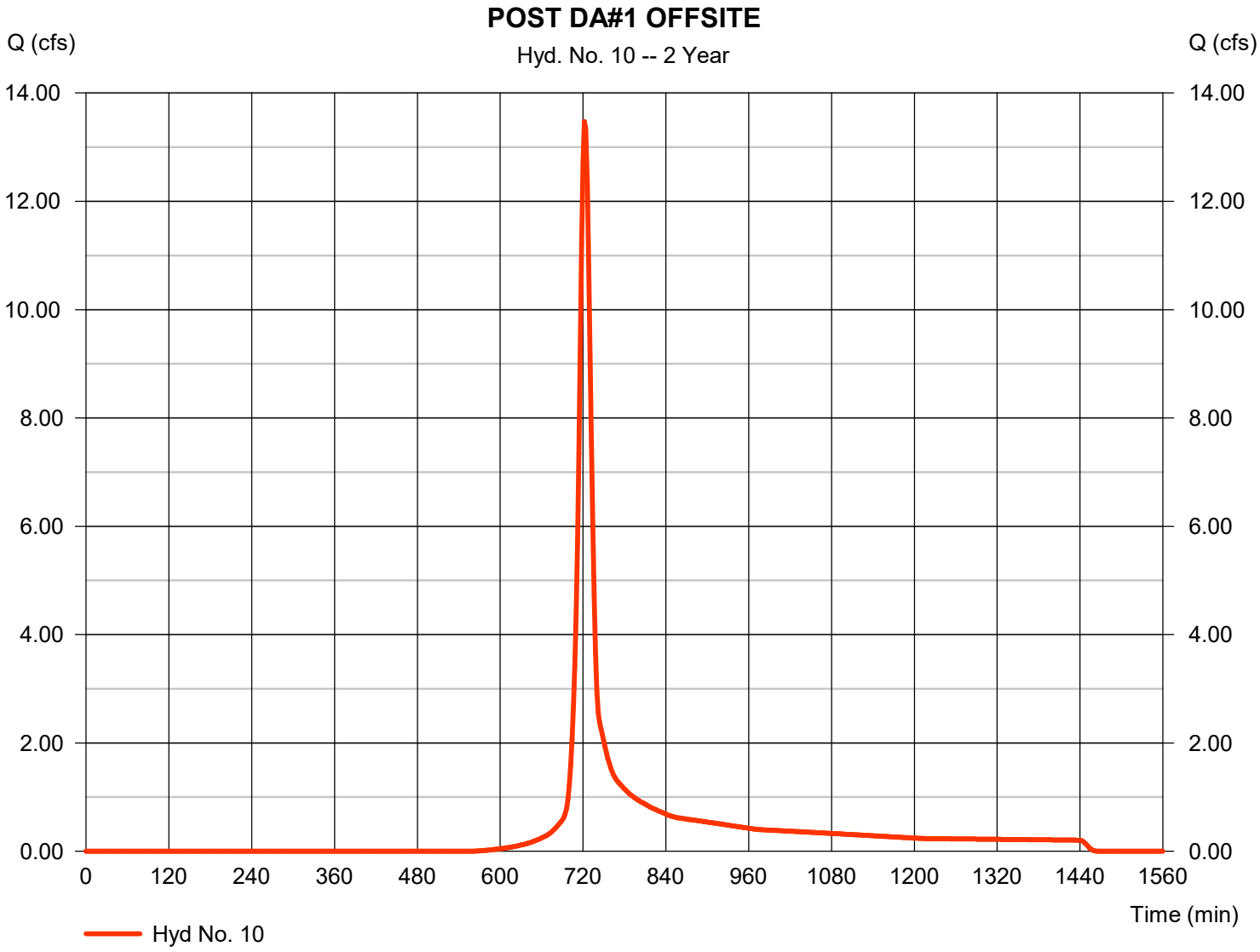


Hydrograph Report

Hyd. No. 10

POST DA#1 OFFSITE

Hydrograph type	= SCS Runoff	Peak discharge	= 13.47 cfs
Storm frequency	= 2 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 38,049 cuft
Drainage area	= 6.930 ac	Curve number	= 78.9
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 14.00 min
Total precip.	= 3.49 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

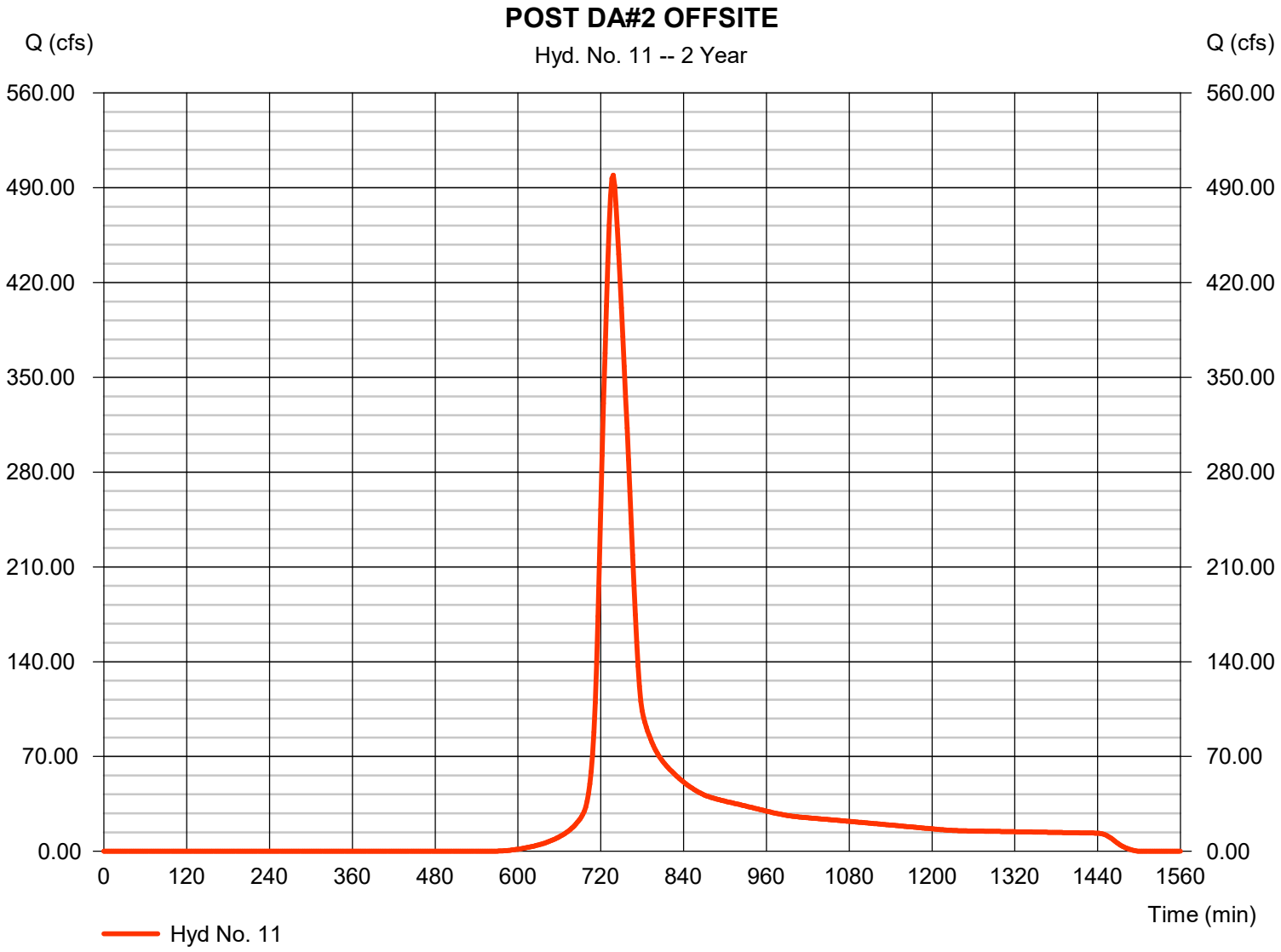


Hydrograph Report

Hyd. No. 11

POST DA#2 OFFSITE

Hydrograph type	=	SCS Runoff	Peak discharge	=	499.38 cfs
Storm frequency	=	2 yrs	Time to peak	=	738 min
Time interval	=	2 min	Hyd. volume	=	2,464,438 cuft
Drainage area	=	437.640 ac	Curve number	=	78.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	38.10 min
Total precip.	=	3.49 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

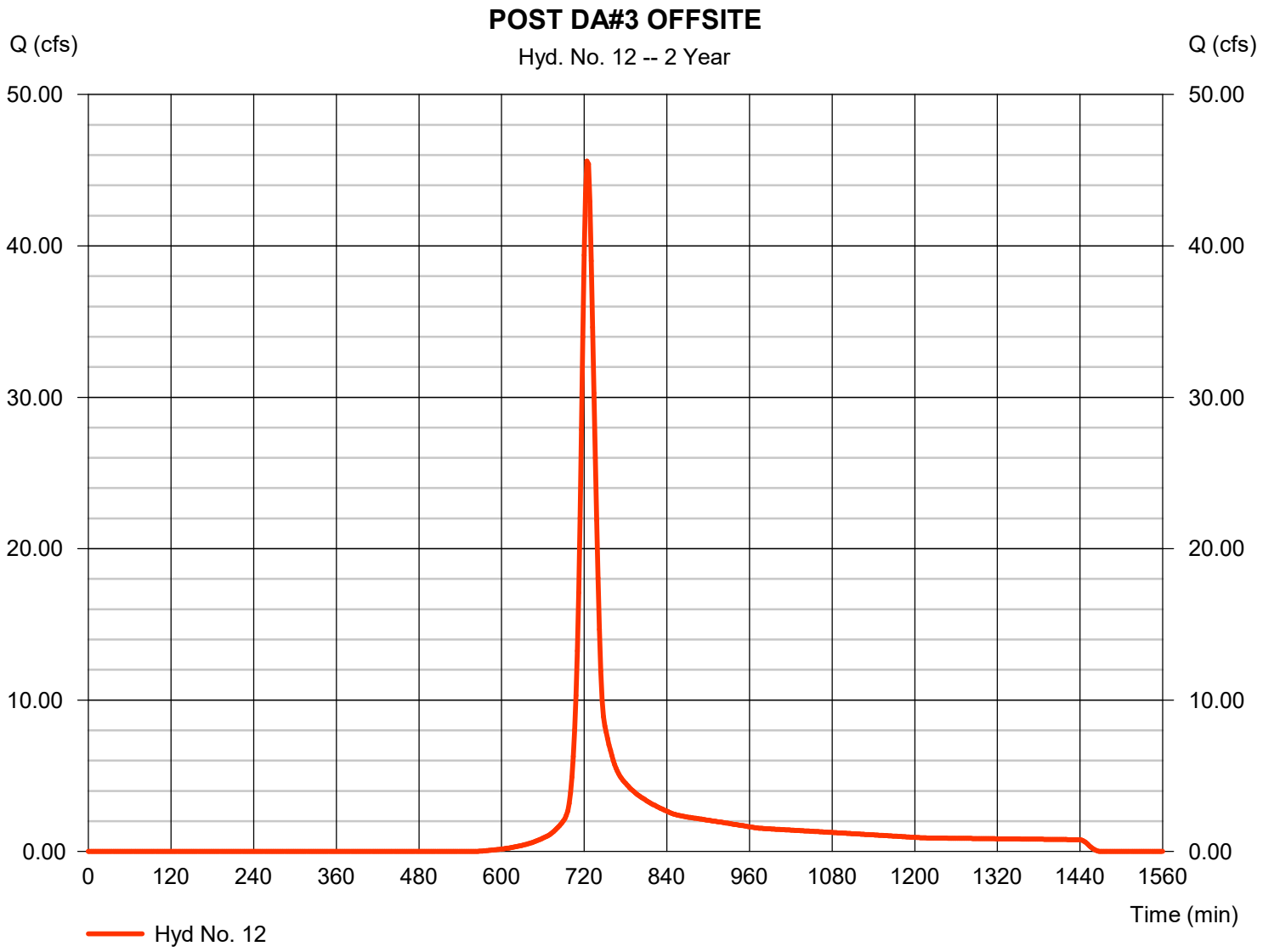


Hydrograph Report

Hyd. No. 12

POST DA#3 OFFSITE

Hydrograph type	= SCS Runoff	Peak discharge	= 45.60 cfs
Storm frequency	= 2 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 144,271 cuft
Drainage area	= 25.620 ac	Curve number	= 78.9
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 19.60 min
Total precip.	= 3.49 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

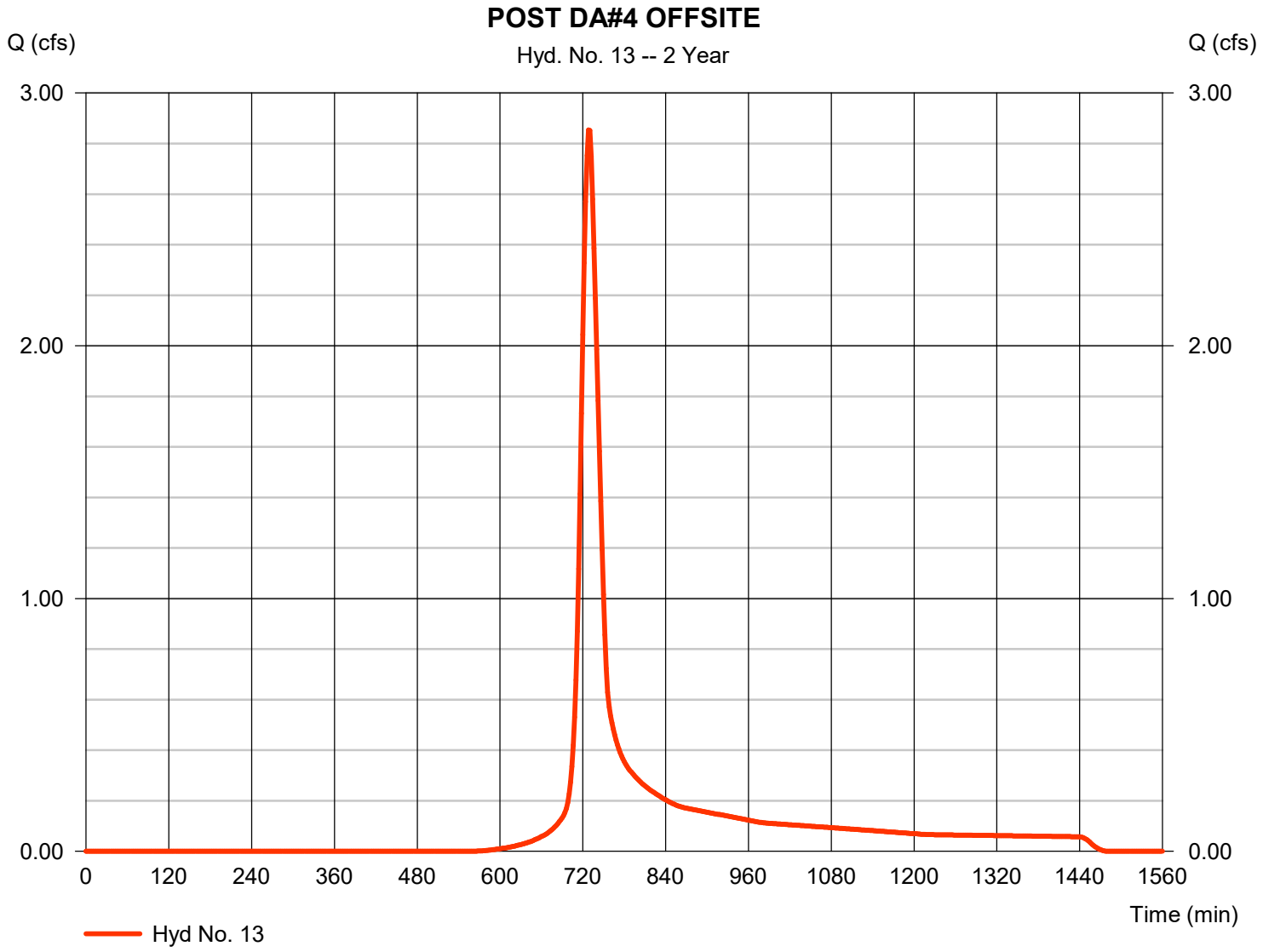


Hydrograph Report

Hyd. No. 13

POST DA#4 OFFSITE

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.854 cfs
Storm frequency	=	2 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	10,643 cuft
Drainage area	=	1.920 ac	Curve number	=	78.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	26.20 min
Total precip.	=	3.49 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



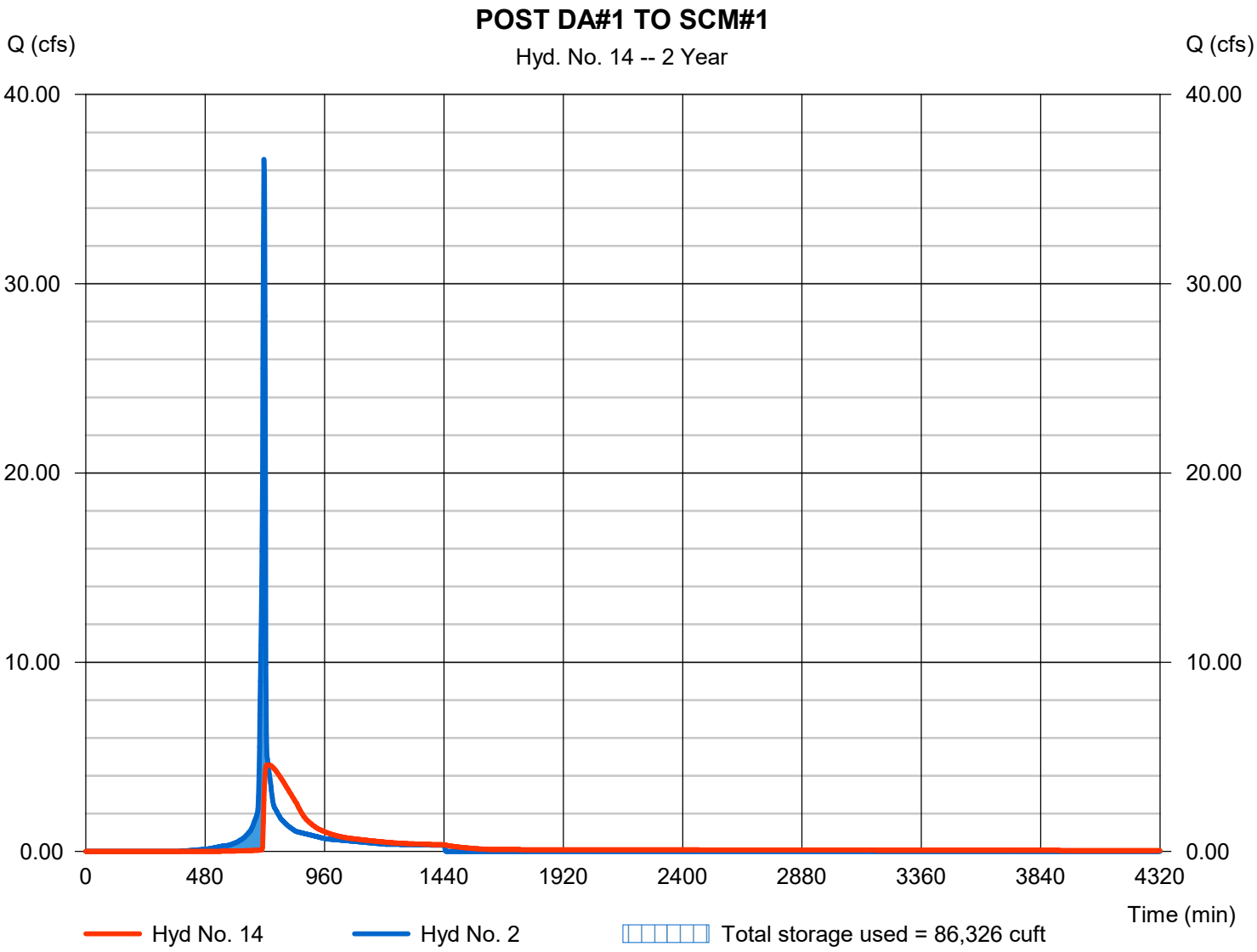
Hydrograph Report

Hyd. No. 14

POST DA#1 TO SCM#1

Hydrograph type	= Reservoir	Peak discharge	= 4.577 cfs
Storm frequency	= 2 yrs	Time to peak	= 732 min
Time interval	= 2 min	Hyd. volume	= 73,482 cuft
Inflow hyd. No.	= 2 - POST DA#1	Max. Elevation	= 264.11 ft
Reservoir name	= SCM#1	Max. Storage	= 86,326 cuft

Storage Indication method used. Wet pond routing start elevation = 262.00 ft.



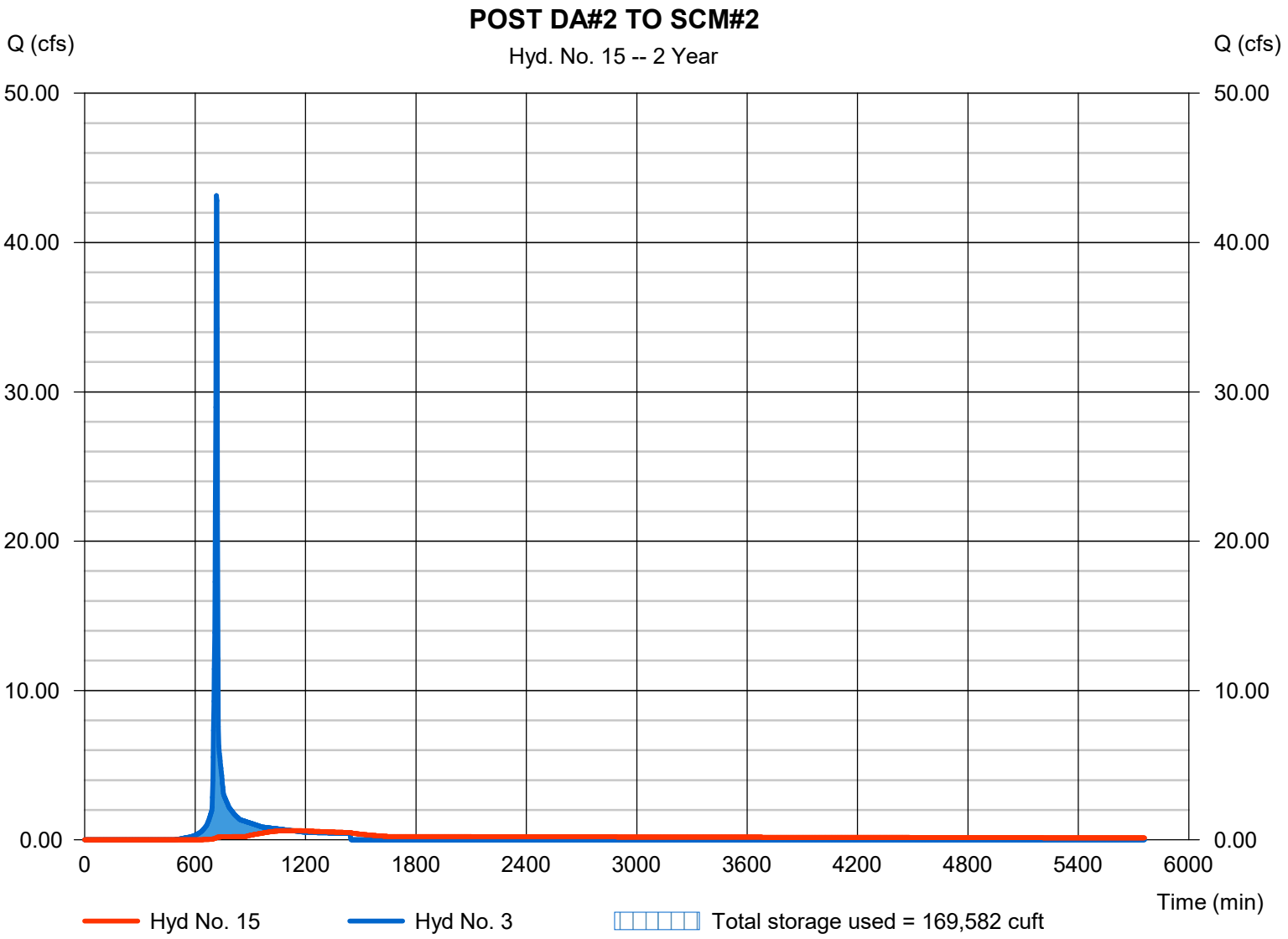
Hydrograph Report

Hyd. No. 15

POST DA#2 TO SCM#2

Hydrograph type	= Reservoir	Peak discharge	= 0.620 cfs
Storm frequency	= 2 yrs	Time to peak	= 1124 min
Time interval	= 2 min	Hyd. volume	= 66,809 cuft
Inflow hyd. No.	= 3 - POST DA#2	Max. Elevation	= 266.15 ft
Reservoir name	= SCM#2	Max. Storage	= 169,582 cuft

Storage Indication method used. Wet pond routing start elevation = 264.00 ft.



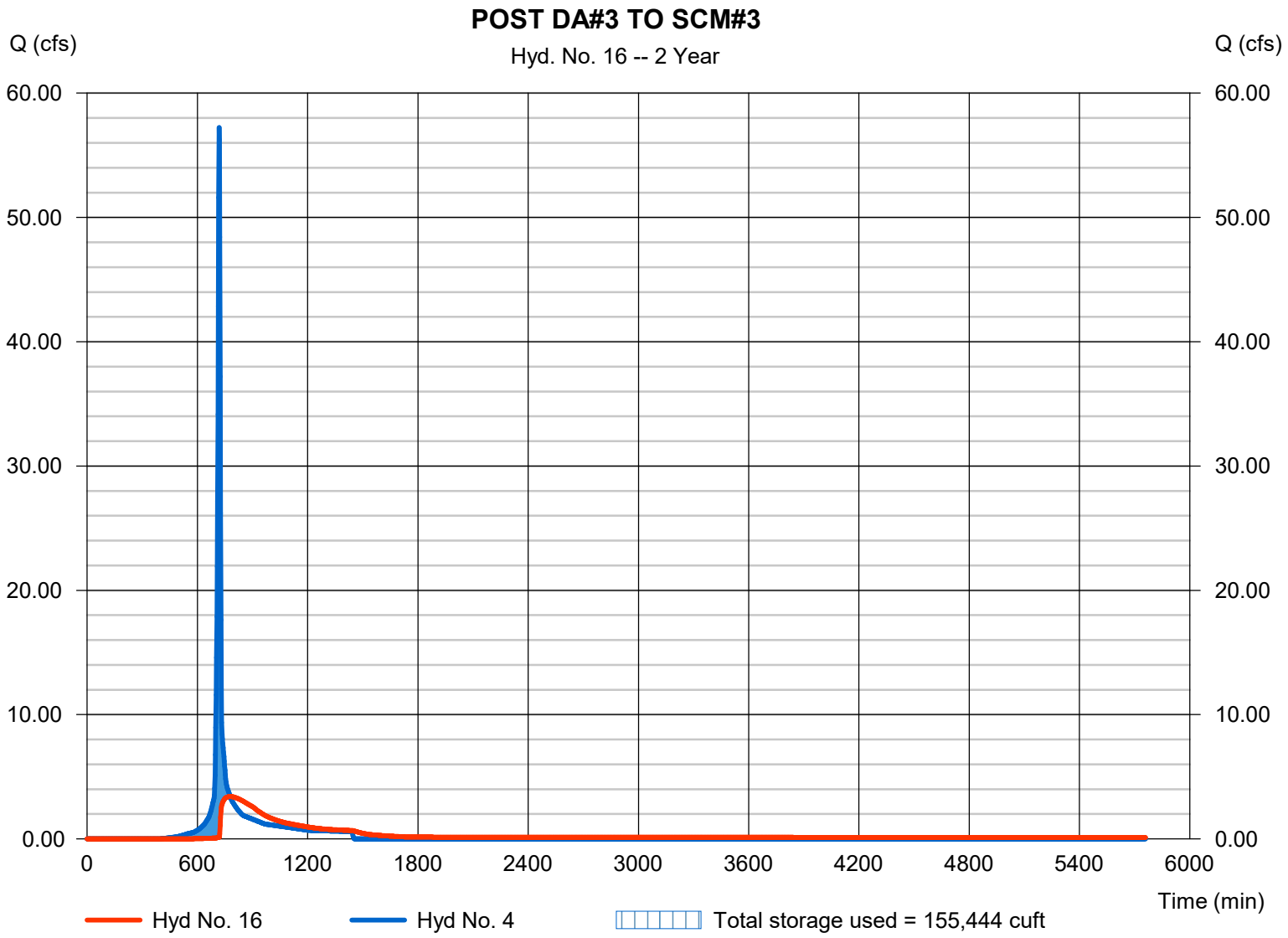
Hydrograph Report

Hyd. No. 16

POST DA#3 TO SCM#3

Hydrograph type	= Reservoir	Peak discharge	= 3.409 cfs
Storm frequency	= 2 yrs	Time to peak	= 778 min
Time interval	= 2 min	Hyd. volume	= 107,507 cuft
Inflow hyd. No.	= 4 - POST DA #3	Max. Elevation	= 242.70 ft
Reservoir name	= SCM#3	Max. Storage	= 155,444 cuft

Storage Indication method used. Wet pond routing start elevation = 240.00 ft.



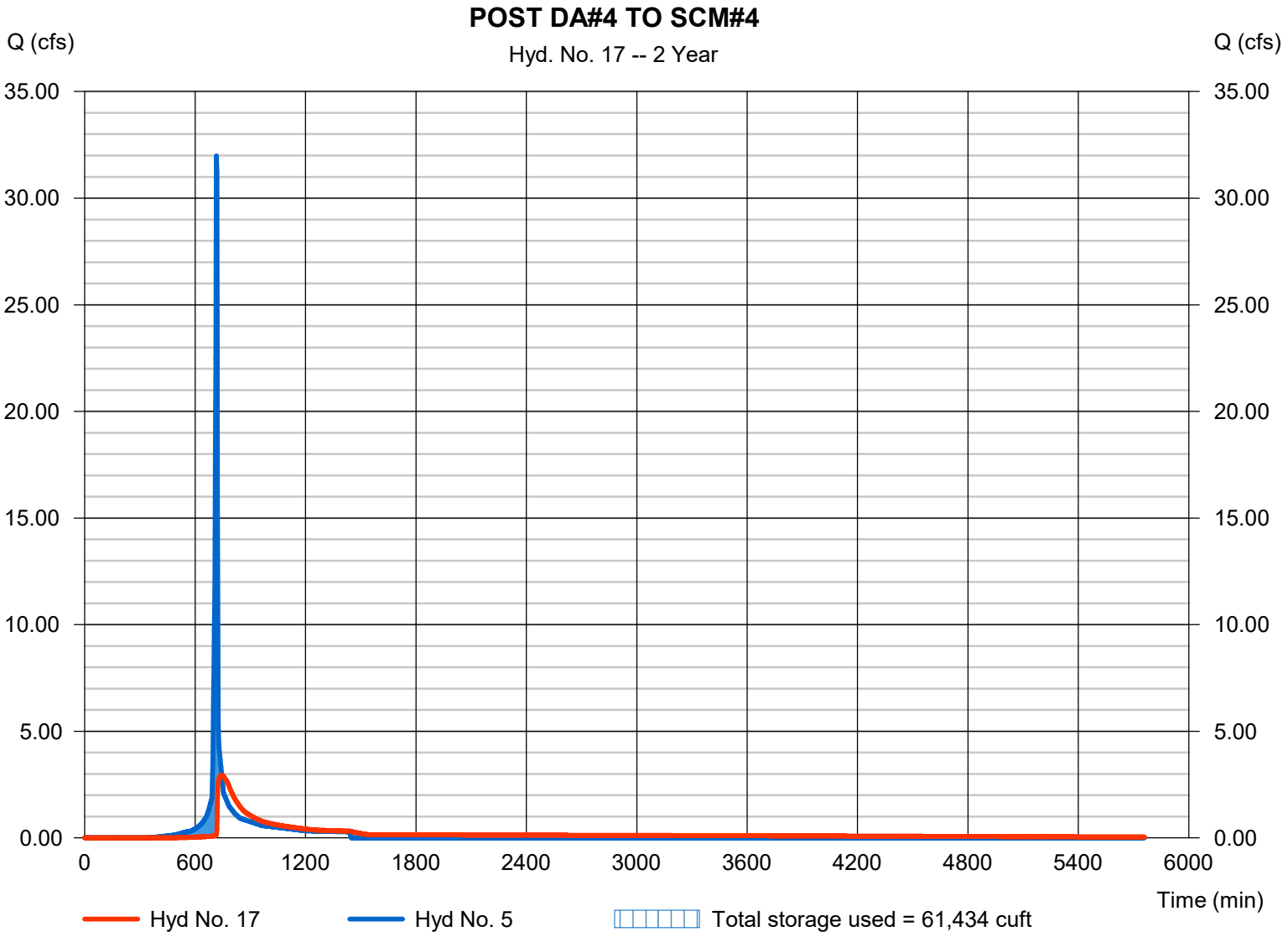
Hydrograph Report

Hyd. No. 17

POST DA#4 TO SCM#4

Hydrograph type	=	Reservoir	Peak discharge	=	2.941 cfs
Storm frequency	=	2 yrs	Time to peak	=	744 min
Time interval	=	2 min	Hyd. volume	=	63,910 cuft
Inflow hyd. No.	=	5 - POST DA#4	Max. Elevation	=	242.58 ft
Reservoir name	=	SCM#4	Max. Storage	=	61,434 cuft

Storage Indication method used. Wet pond routing start elevation = 240.00 ft.



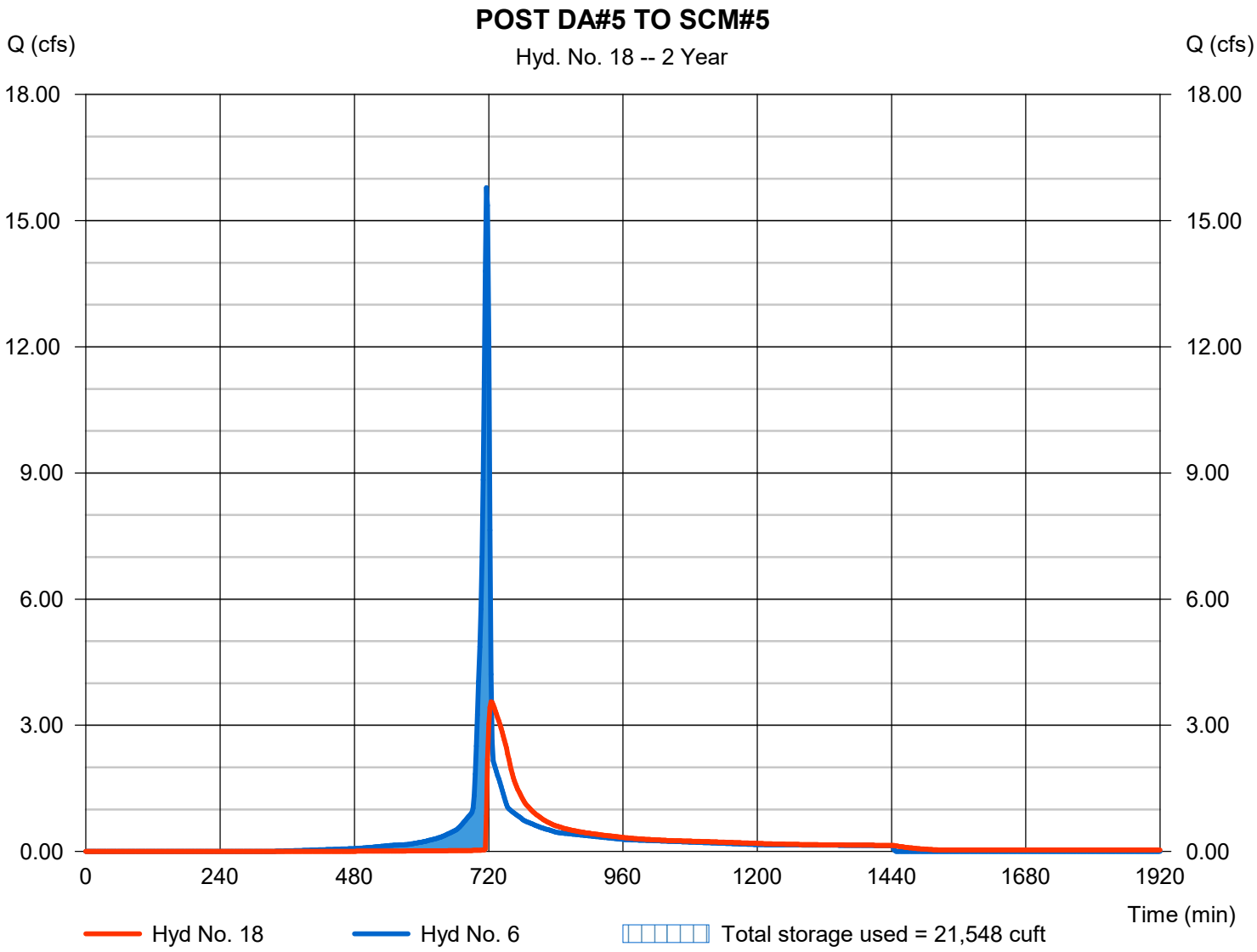
Hydrograph Report

Hyd. No. 18

POST DA#5 TO SCM#5

Hydrograph type	= Reservoir	Peak discharge	= 3.556 cfs
Storm frequency	= 2 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 29,786 cuft
Inflow hyd. No.	= 6 - POST DA#5	Max. Elevation	= 251.78 ft
Reservoir name	= SCM#5	Max. Storage	= 21,548 cuft

Storage Indication method used. Wet pond routing start elevation = 249.00 ft.



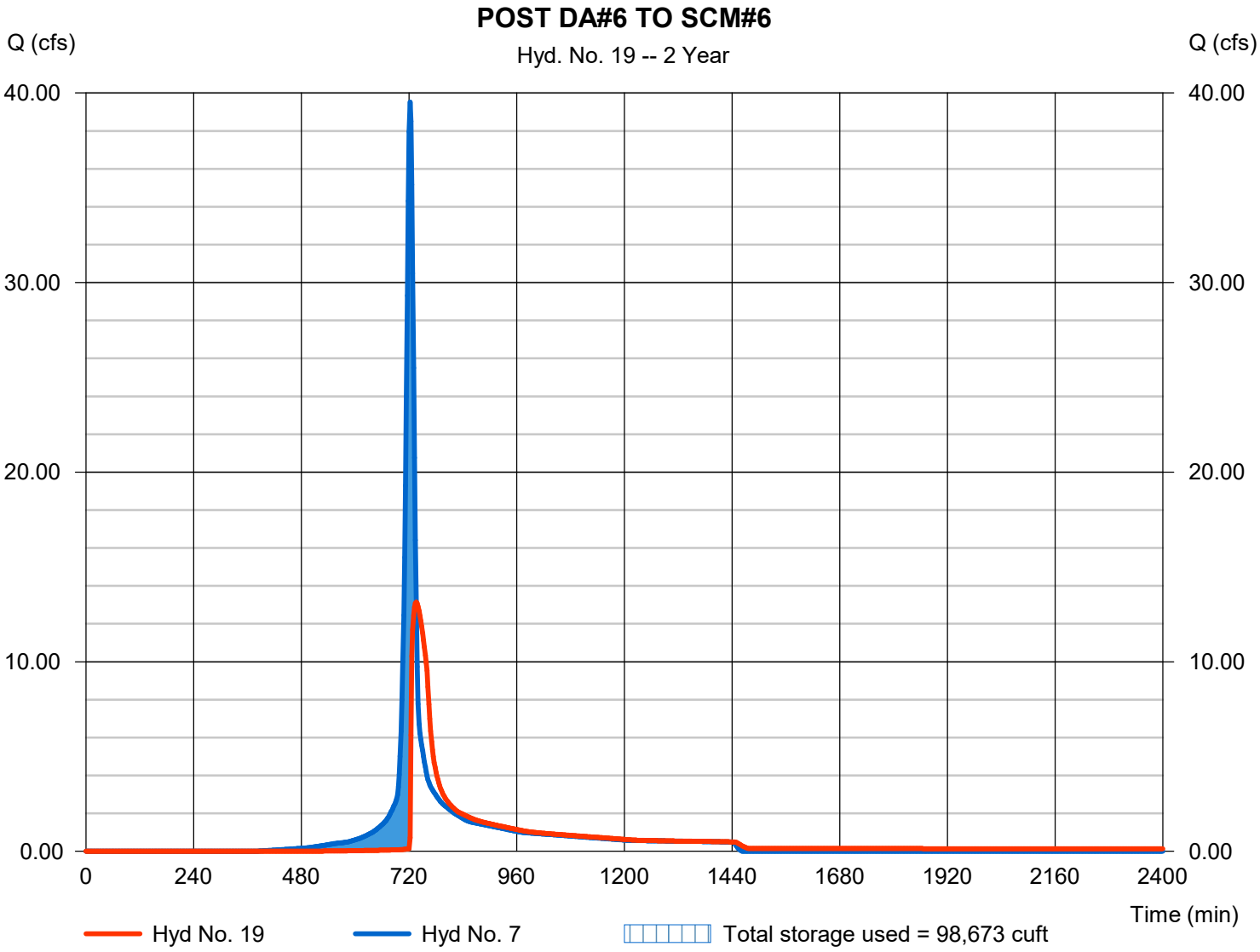
Hydrograph Report

Hyd. No. 19

POST DA#6 TO SCM#6

Hydrograph type	=	Reservoir	Peak discharge	=	13.13 cfs
Storm frequency	=	2 yrs	Time to peak	=	736 min
Time interval	=	2 min	Hyd. volume	=	102,886 cuft
Inflow hyd. No.	=	7 - POST DA#6	Max. Elevation	=	239.65 ft
Reservoir name	=	SCM#6	Max. Storage	=	98,673 cuft

Storage Indication method used. Wet pond routing start elevation = 237.00 ft.



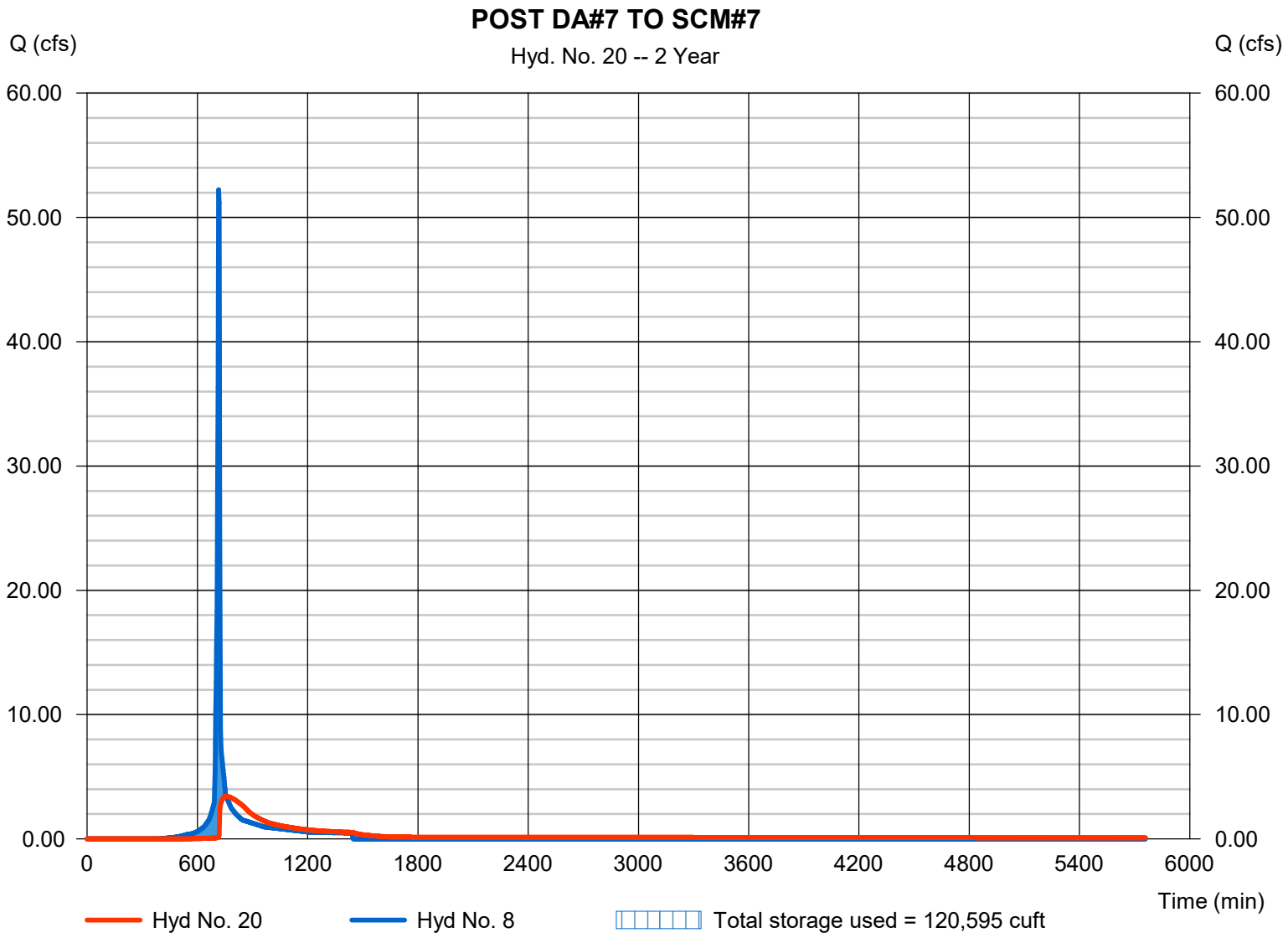
Hydrograph Report

Hyd. No. 20

POST DA#7 TO SCM#7

Hydrograph type	=	Reservoir	Peak discharge	=	3.414 cfs
Storm frequency	=	2 yrs	Time to peak	=	756 min
Time interval	=	2 min	Hyd. volume	=	93,574 cuft
Inflow hyd. No.	=	8 - POST DA#7	Max. Elevation	=	241.70 ft
Reservoir name	=	SCM#7	Max. Storage	=	120,595 cuft

Storage Indication method used. Wet pond routing start elevation = 239.00 ft.



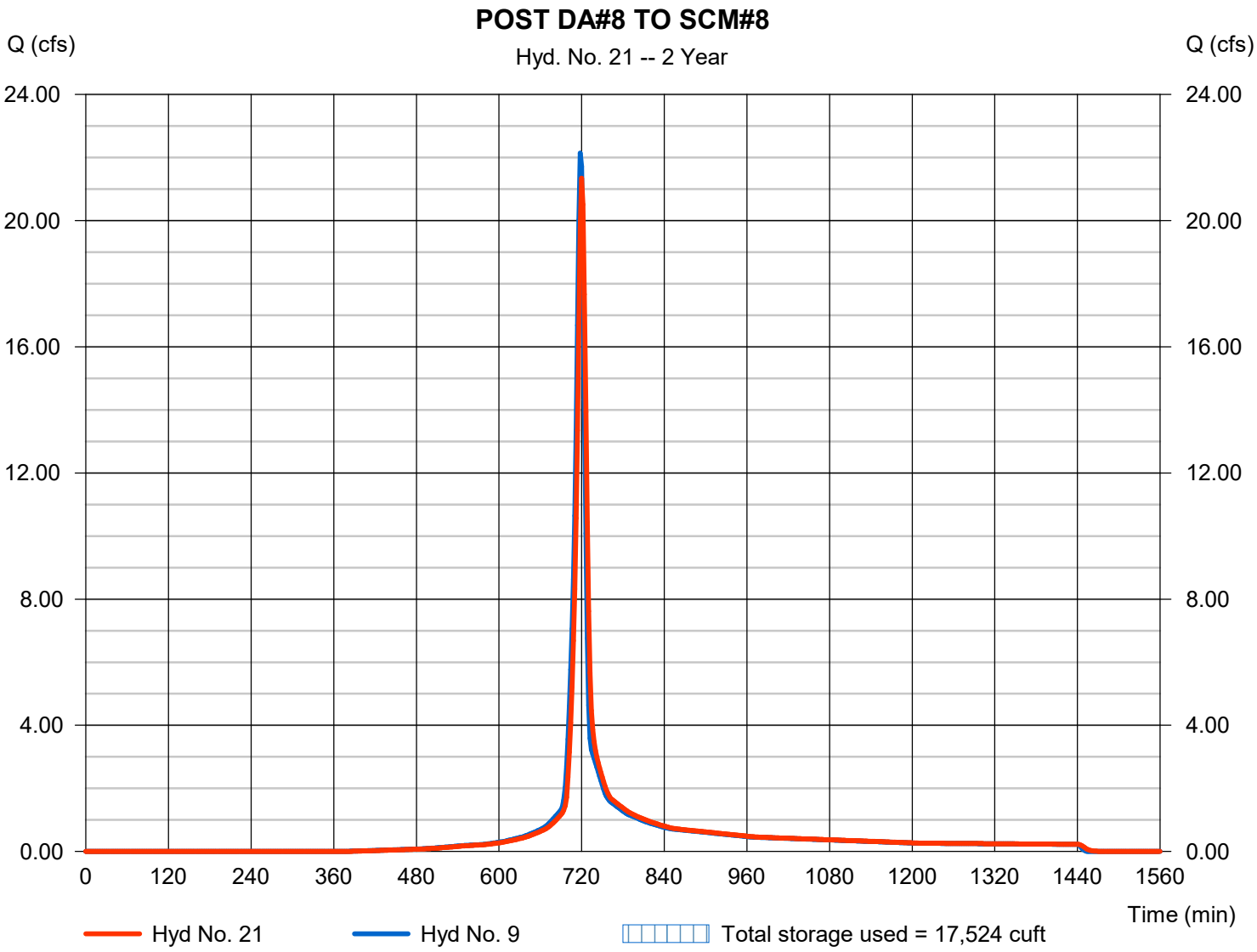
Hydrograph Report

Hyd. No. 21

POST DA#8 TO SCM#8

Hydrograph type	=	Reservoir	Peak discharge	=	21.34 cfs
Storm frequency	=	2 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	51,246 cuft
Inflow hyd. No.	=	9 - POST DA#8	Max. Elevation	=	240.54 ft
Reservoir name	=	SCM#8	Max. Storage	=	17,524 cuft

Storage Indication method used. Wet pond routing start elevation = 240.00 ft.

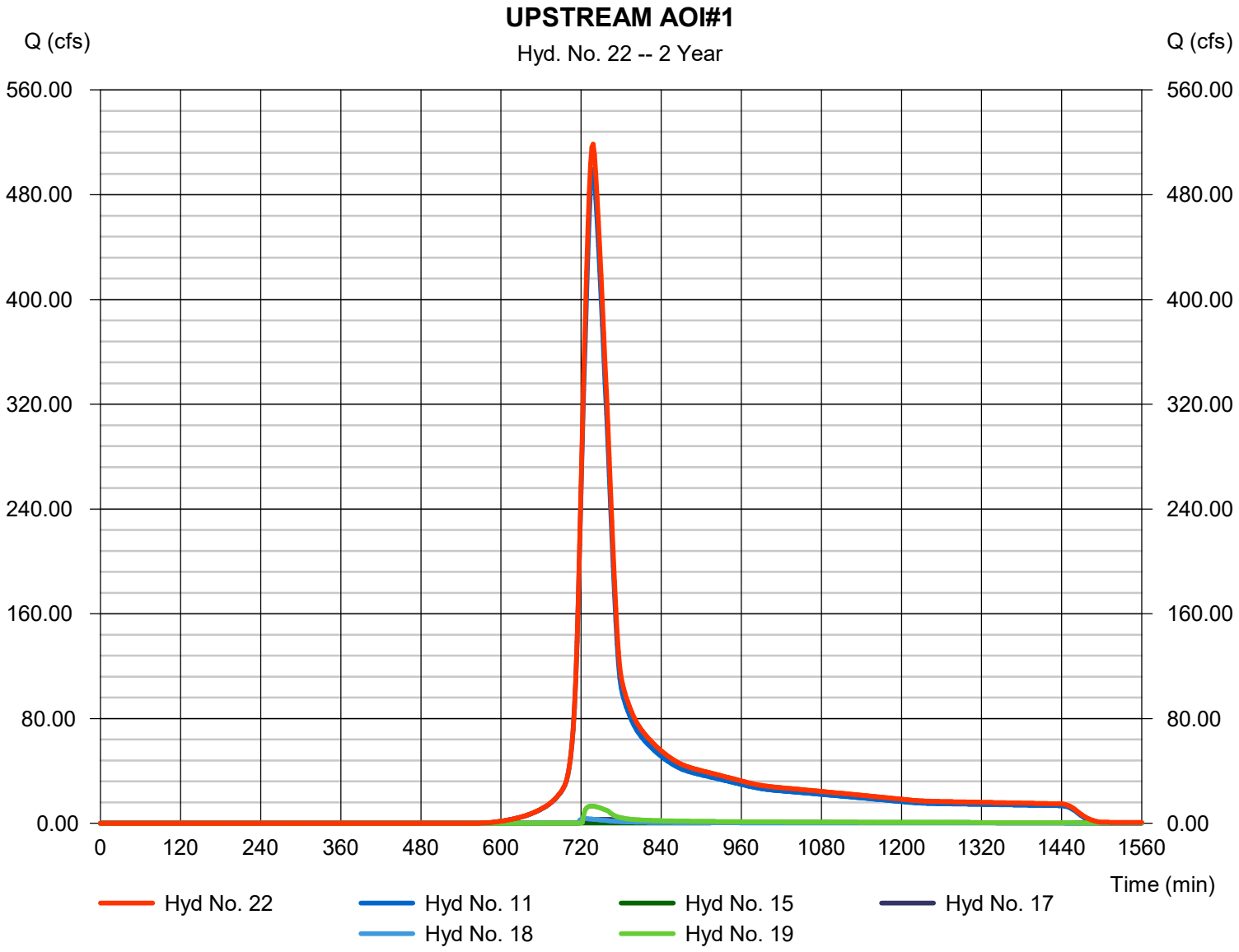


Hydrograph Report

Hyd. No. 22

UPSTREAM AOI#1

Hydrograph type	= Combine	Peak discharge	= 518.65 cfs
Storm frequency	= 2 yrs	Time to peak	= 738 min
Time interval	= 2 min	Hyd. volume	= 2,727,833 cuft
Inflow hyds.	= 11, 15, 17, 18, 19	Contrib. drain. area	= 437.640 ac

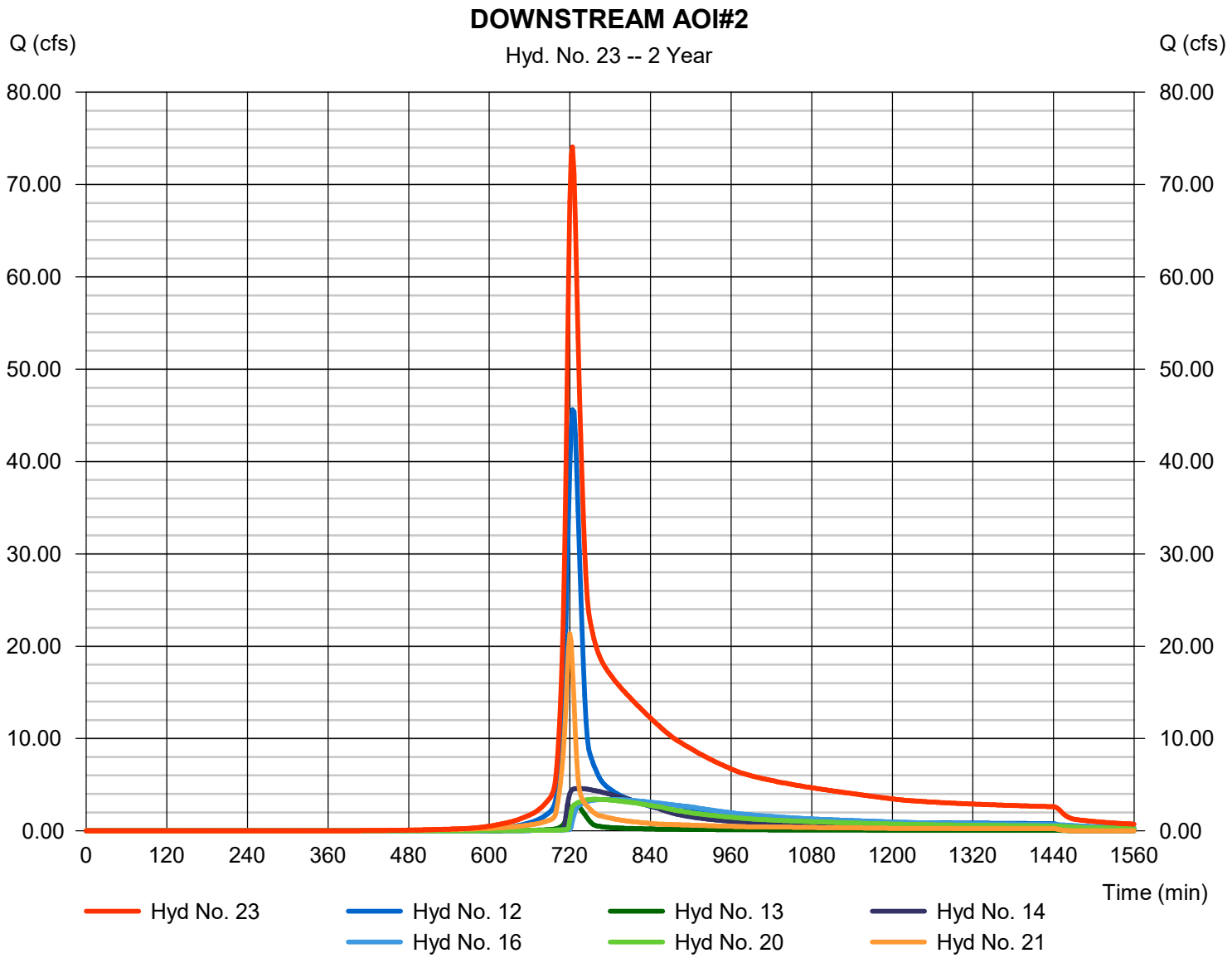


Hydrograph Report

Hyd. No. 23

DOWNSTREAM AOI#2

Hydrograph type	= Combine	Peak discharge	= 74.06 cfs
Storm frequency	= 2 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 480,722 cuft
Inflow hyds.	= 12, 13, 14, 16, 20, 21	Contrib. drain. area	= 27.540 ac

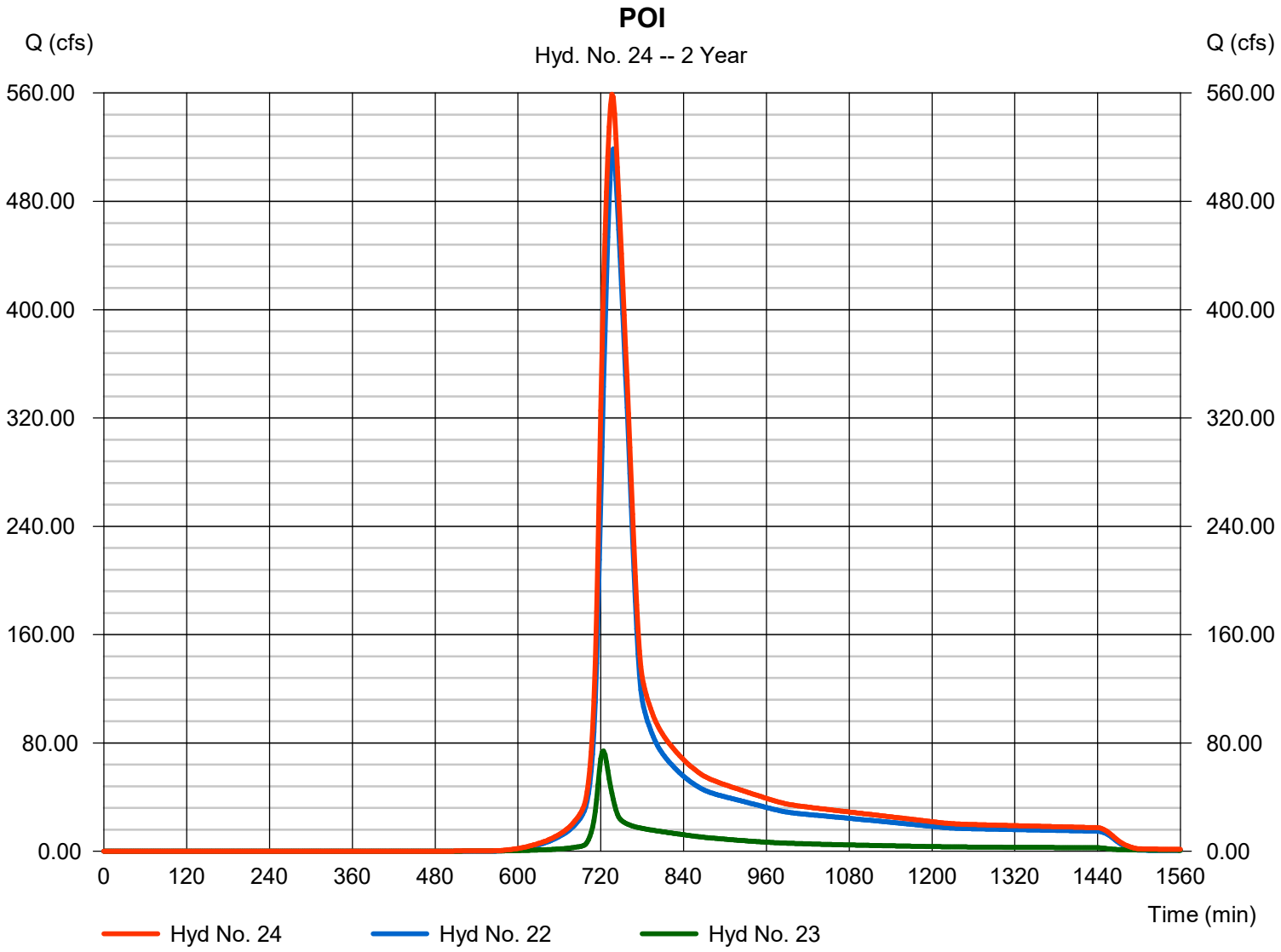


Hydrograph Report

Hyd. No. 24

POI

Hydrograph type	= Combine	Peak discharge	= 559.13 cfs
Storm frequency	= 2 yrs	Time to peak	= 736 min
Time interval	= 2 min	Hyd. volume	= 3,208,551 cuft
Inflow hyds.	= 22, 23	Contrib. drain. area	= 0.000 ac

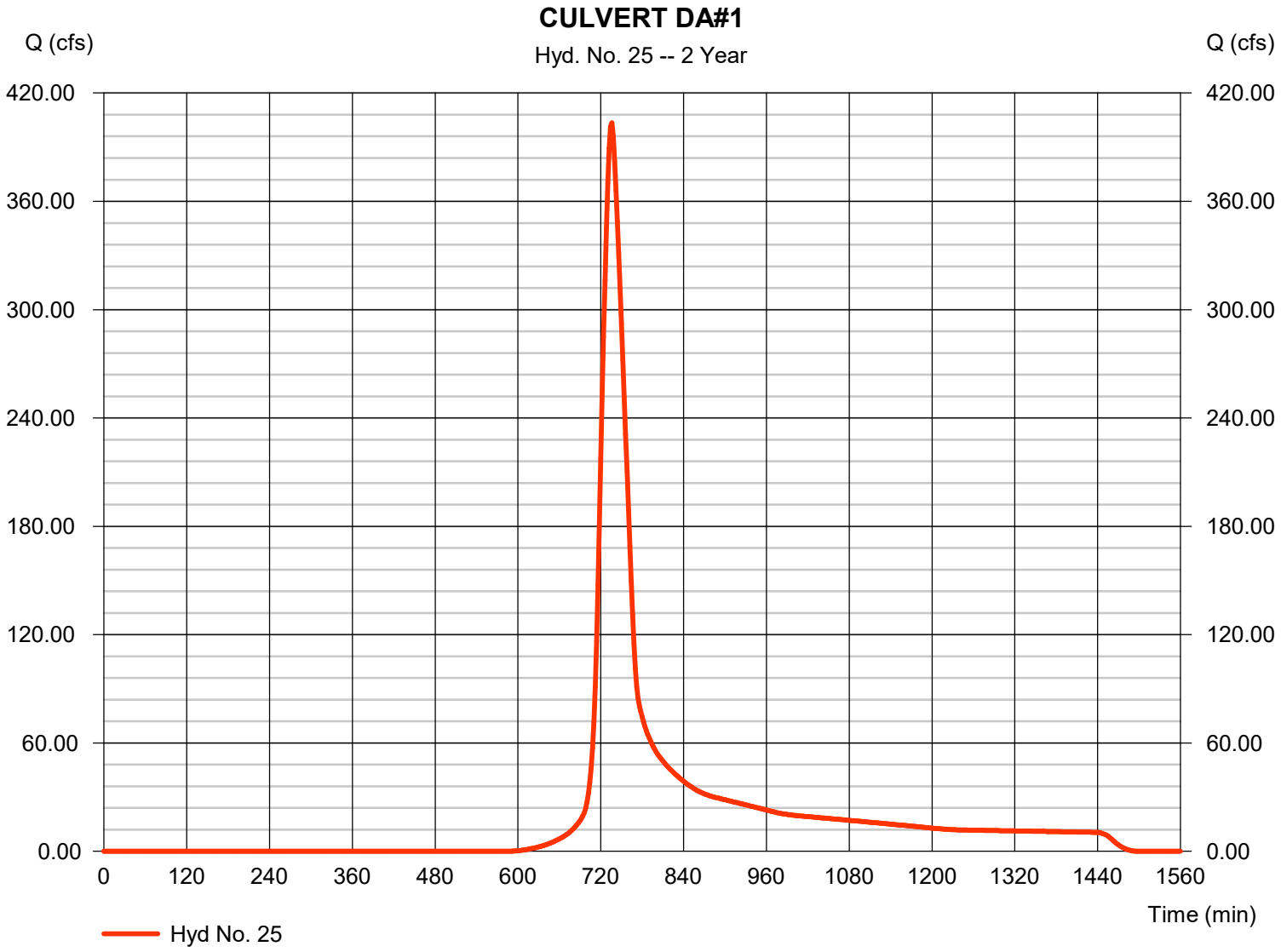


Hydrograph Report

Hyd. No. 25

CULVERT DA#1

Hydrograph type	=	SCS Runoff	Peak discharge	=	403.44 cfs
Storm frequency	=	2 yrs	Time to peak	=	736 min
Time interval	=	2 min	Hyd. volume	=	1,872,865 cuft
Drainage area	=	356.740 ac	Curve number	=	77.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	34.90 min
Total precip.	=	3.49 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

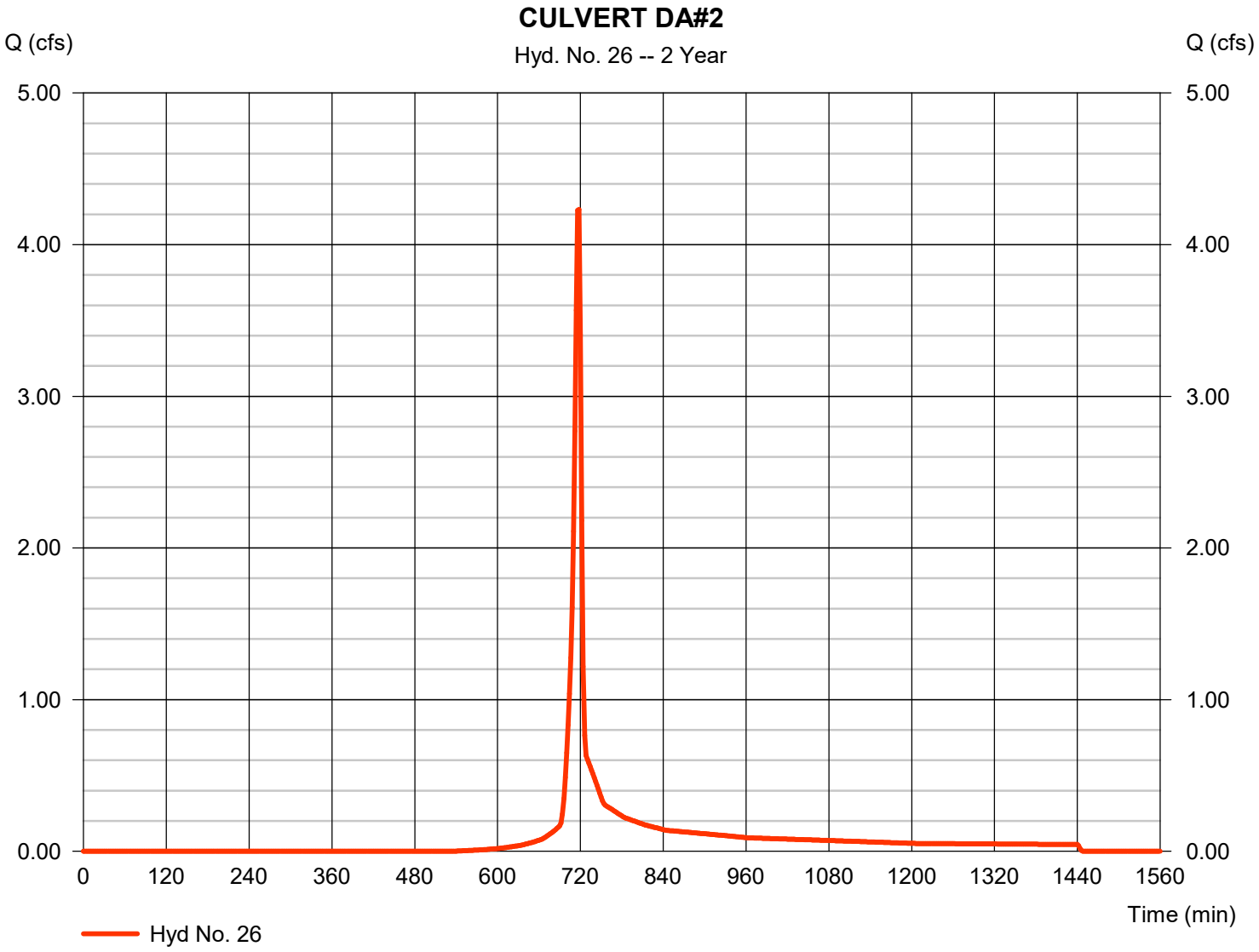


Hydrograph Report

Hyd. No. 26

CULVERT DA#2

Hydrograph type	=	SCS Runoff	Peak discharge	=	4.232 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	8,534 cuft
Drainage area	=	1.540 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	3.49 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

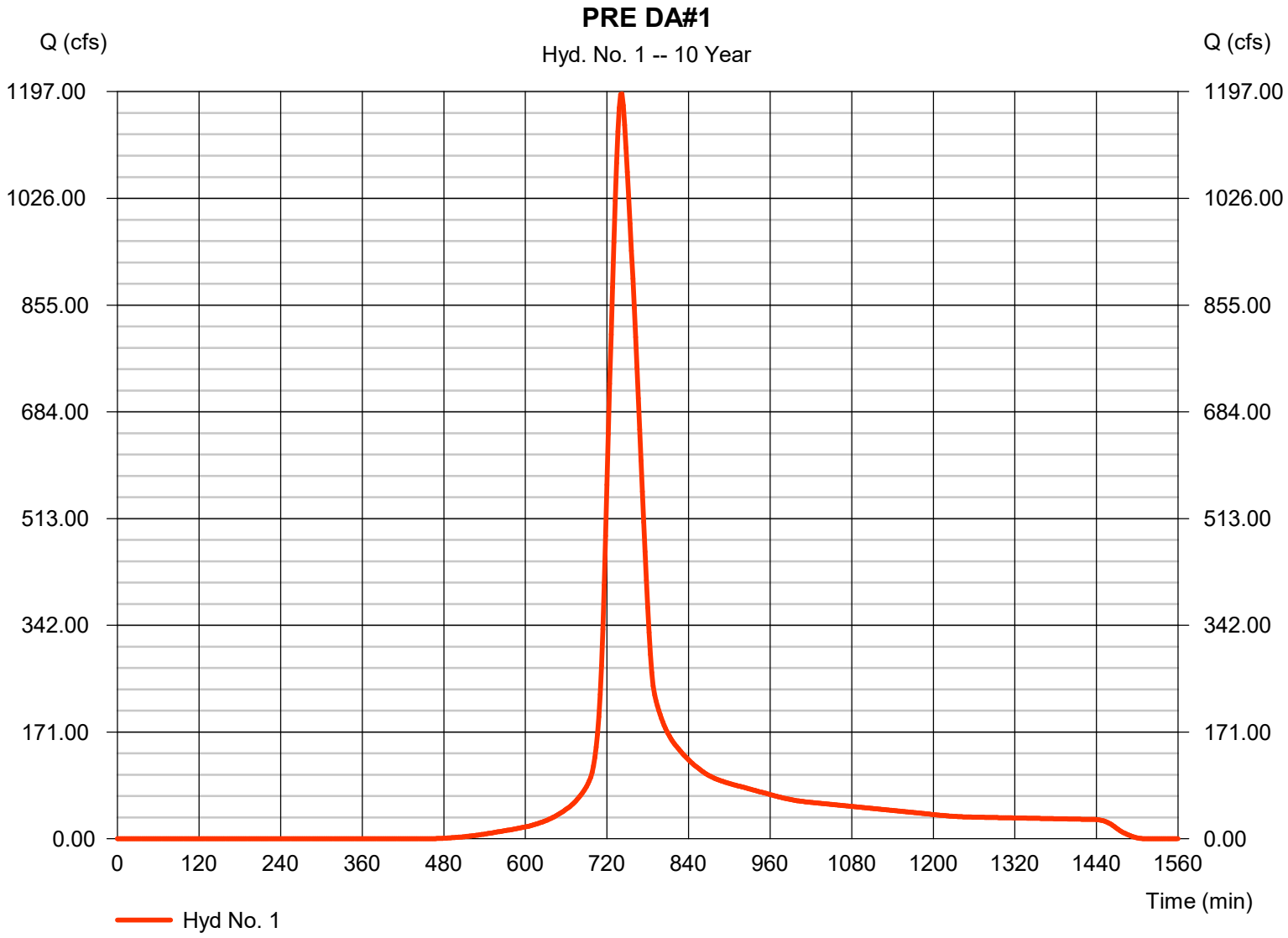
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	1193.32	2	742	6,403,945	------	------	------	PRE DA#1
2	SCS Runoff	60.22	2	716	127,089	------	------	------	POST DA#1
3	SCS Runoff	76.01	2	716	156,223	------	------	------	POST DA#2
4	SCS Runoff	95.81	2	718	225,639	------	------	------	POST DA #3
5	SCS Runoff	52.05	2	716	110,563	------	------	------	POST DA#4
6	SCS Runoff	25.47	2	716	54,393	------	------	------	POST DA#5
7	SCS Runoff	65.62	2	722	188,625	------	------	------	POST DA#6
8	SCS Runoff	86.78	2	716	182,292	------	------	------	POST DA#7
9	SCS Runoff	36.63	2	718	86,724	------	------	------	POST DA#8
10	SCS Runoff	25.48	2	722	71,455	------	------	------	POST DA#1 OFFSITE
11	SCS Runoff	953.74	2	736	4,628,216	------	------	------	POST DA#2 OFFSITE
12	SCS Runoff	86.67	2	724	270,942	------	------	------	POST DA#3 OFFSITE
13	SCS Runoff	5.447	2	728	19,988	------	------	------	POST DA#4 OFFSITE
14	Reservoir	7.157	2	734	125,351	2	265.37	114,370	POST DA#1 TO SCM#1
15	Reservoir	9.056	2	736	135,285	3	266.53	183,642	POST DA#2 TO SCM#2
16	Reservoir	23.14	2	730	200,895	4	243.79	193,149	POST DA#3 TO SCM#3
17	Reservoir	6.236	2	734	108,311	5	243.82	84,811	POST DA#4 TO SCM#4
18	Reservoir	6.328	2	724	51,378	6	252.95	31,592	POST DA#5 TO SCM#5
19	Reservoir	19.98	2	736	180,014	7	241.02	132,862	POST DA#6 TO SCM#6
20	Reservoir	36.66	2	722	168,665	8	242.69	148,288	POST DA#7 TO SCM#7
21	Reservoir	31.62	2	722	86,724	9	240.91	19,804	POST DA#8 TO SCM#8
22	Combine	994.94	2	736	5,103,205	11, 15, 17, 18, 19,	------	------	UPSTREAM AOI#1
23	Combine	187.75	2	724	872,564	12, 13, 14, 16, 20, 21,	------	------	DOWNSTREAM AOI#2
24	Combine	1099.58	2	736	5,975,766	22, 23	------	------	POI
25	SCS Runoff	787.77	2	734	3,577,838	------	------	------	CULVERT DA#1
26	SCS Runoff	7.760	2	716	15,803	------	------	------	CULVERT DA#2

Hydrograph Report

Hyd. No. 1

PRE DA#1

Hydrograph type	= SCS Runoff	Peak discharge	= 1193.32 cfs
Storm frequency	= 10 yrs	Time to peak	= 742 min
Time interval	= 2 min	Hyd. volume	= 6,403,945 cuft
Drainage area	= 618.810 ac	Curve number	= 78.5
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 47.00 min
Total precip.	= 5.14 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

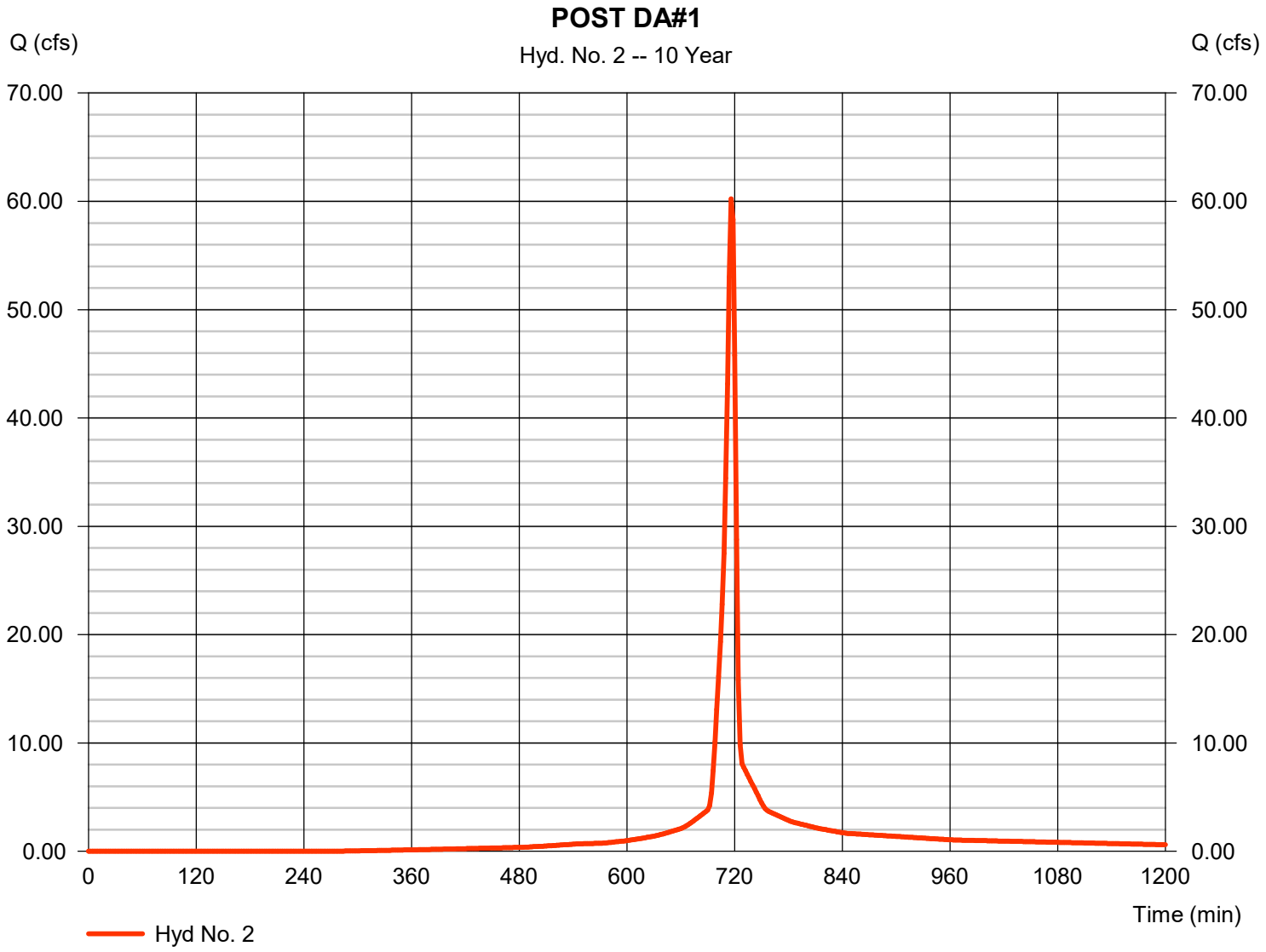


Hydrograph Report

Hyd. No. 2

POST DA#1

Hydrograph type	=	SCS Runoff	Peak discharge	=	60.22 cfs
Storm frequency	=	10 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	127,089 cuft
Drainage area	=	9.930 ac	Curve number	=	87.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.50 min
Total precip.	=	5.14 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

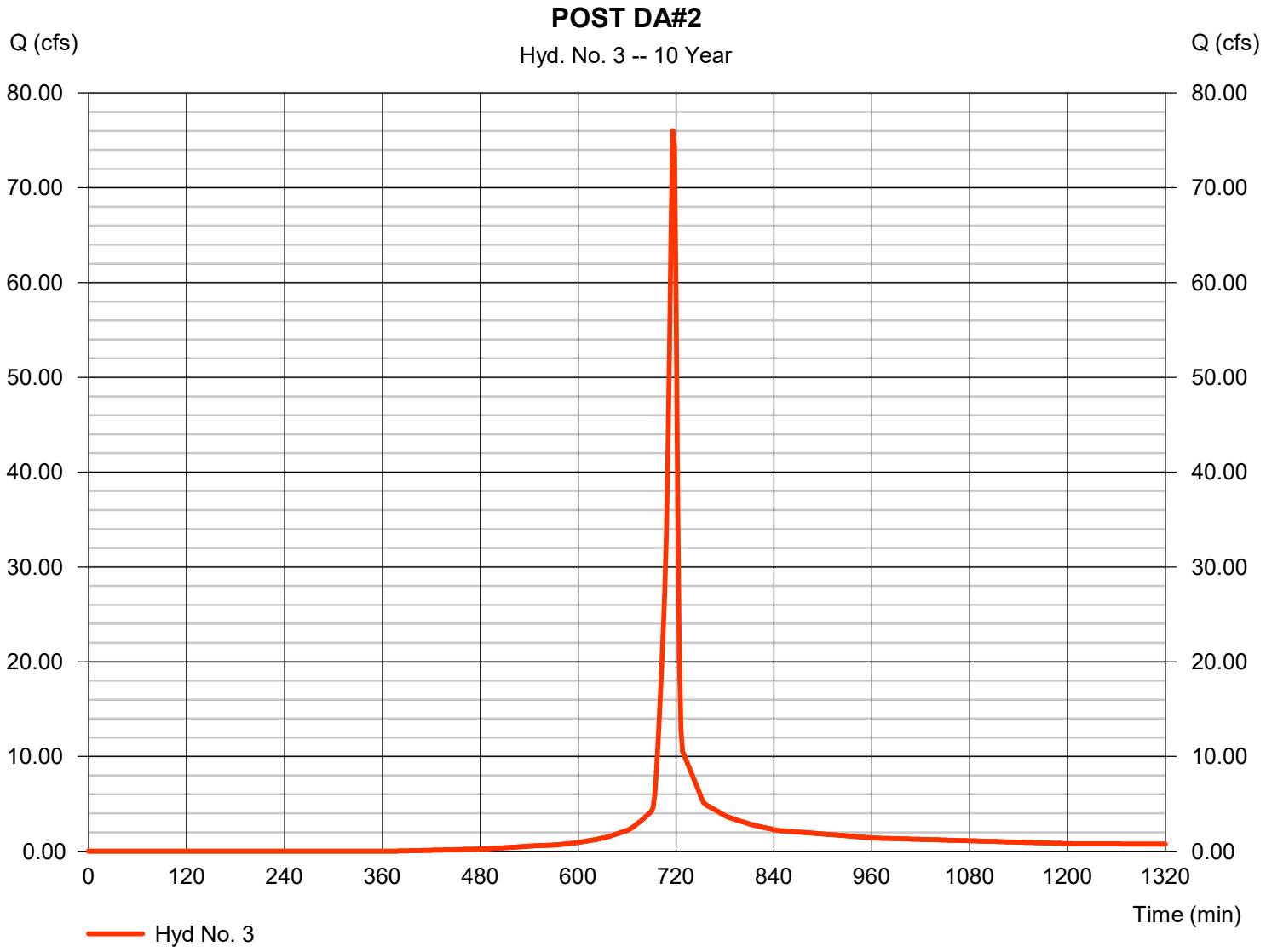


Hydrograph Report

Hyd. No. 3

POST DA#2

Hydrograph type	=	SCS Runoff	Peak discharge	=	76.01 cfs
Storm frequency	=	10 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	156,223 cuft
Drainage area	=	14.030 ac	Curve number	=	82.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	5.14 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

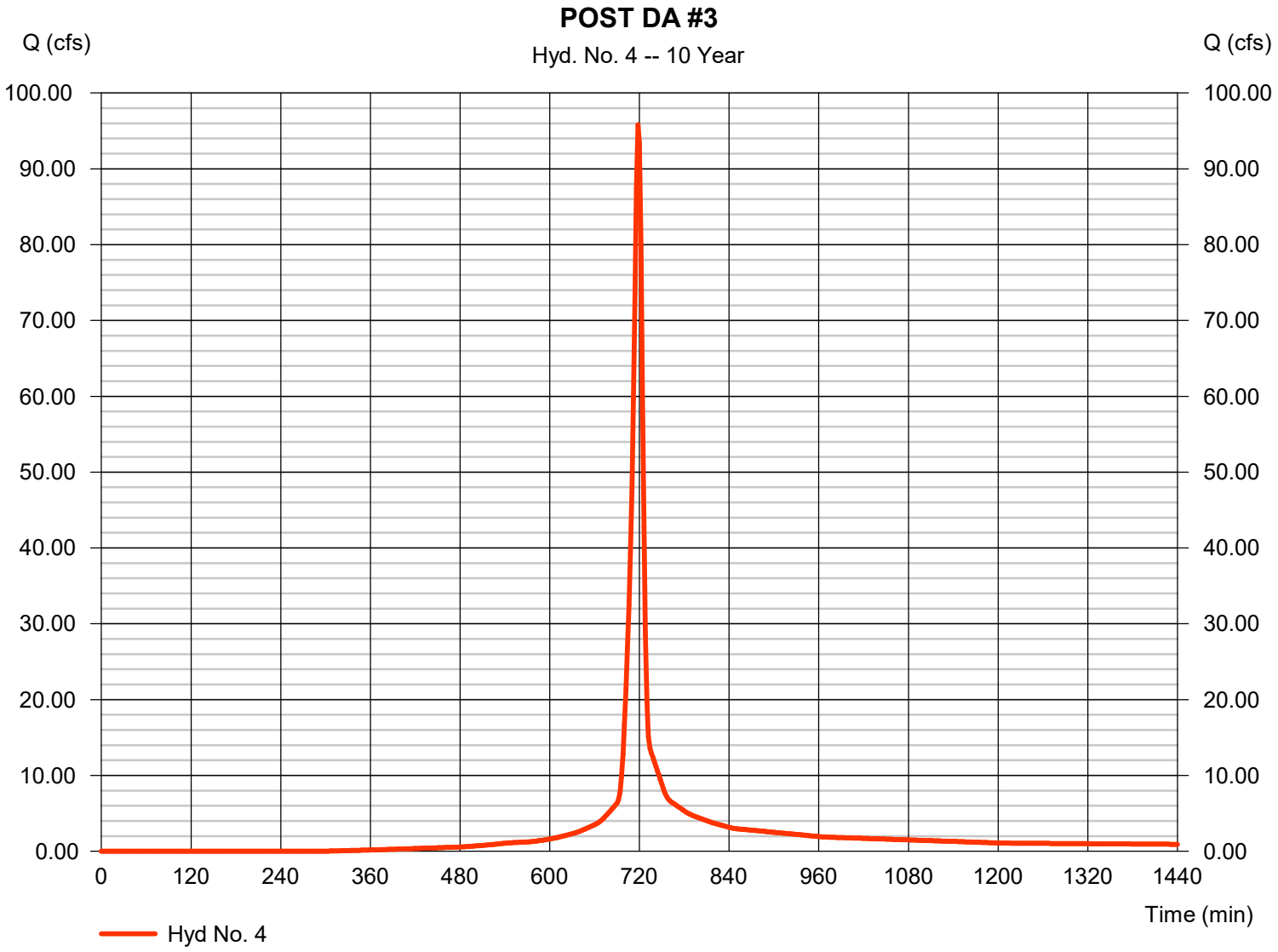


Hydrograph Report

Hyd. No. 4

POST DA #3

Hydrograph type	=	SCS Runoff	Peak discharge	=	95.81 cfs
Storm frequency	=	10 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	225,639 cuft
Drainage area	=	16.990 ac	Curve number	=	86.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	7.40 min
Total precip.	=	5.14 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

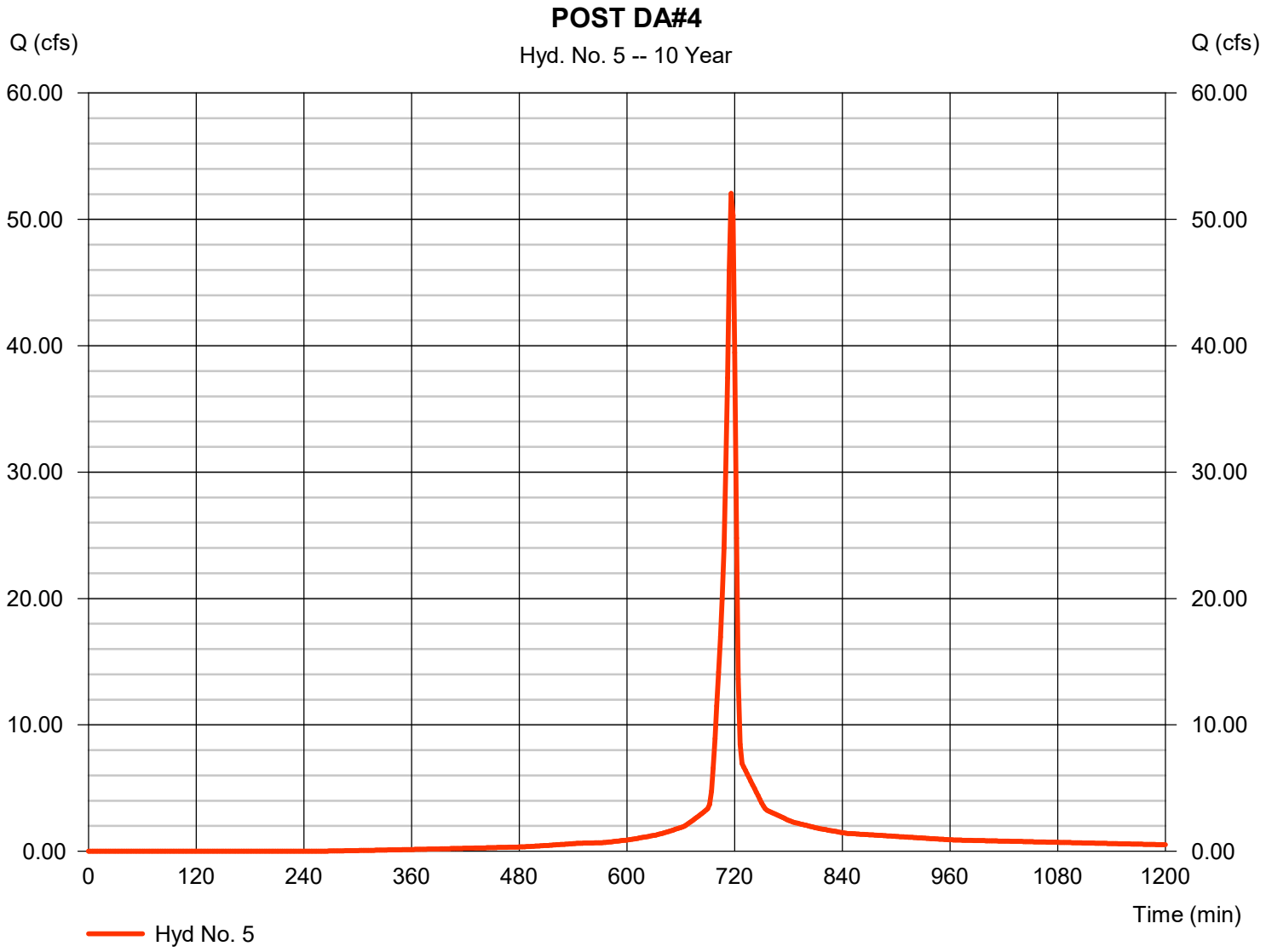


Hydrograph Report

Hyd. No. 5

POST DA#4

Hydrograph type	=	SCS Runoff	Peak discharge	=	52.05 cfs
Storm frequency	=	10 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	110,563 cuft
Drainage area	=	8.430 ac	Curve number	=	88.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.30 min
Total precip.	=	5.14 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

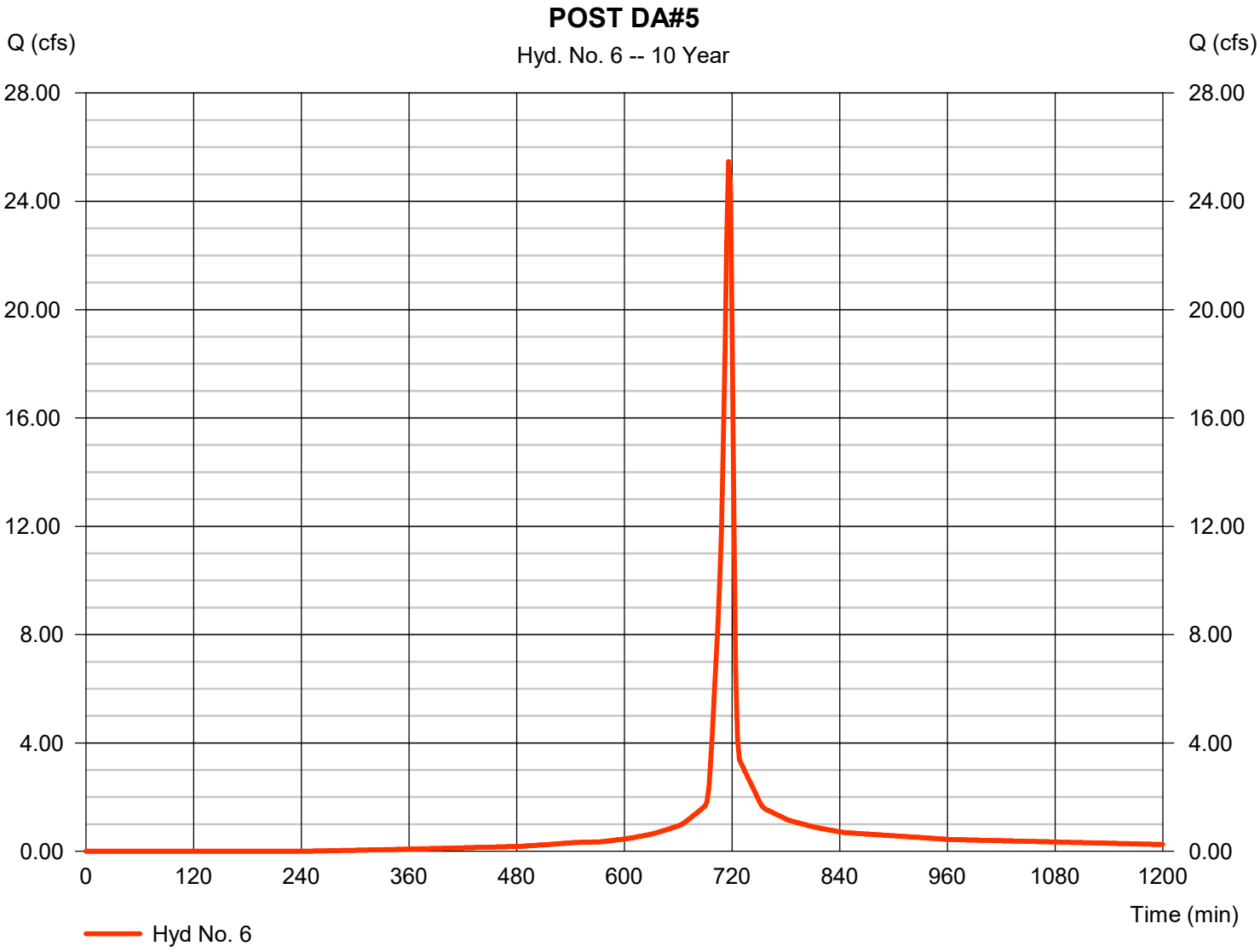


Hydrograph Report

Hyd. No. 6

POST DA#5

Hydrograph type	=	SCS Runoff	Peak discharge	=	25.47 cfs
Storm frequency	=	10 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	54,393 cuft
Drainage area	=	4.070 ac	Curve number	=	89.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	5.14 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

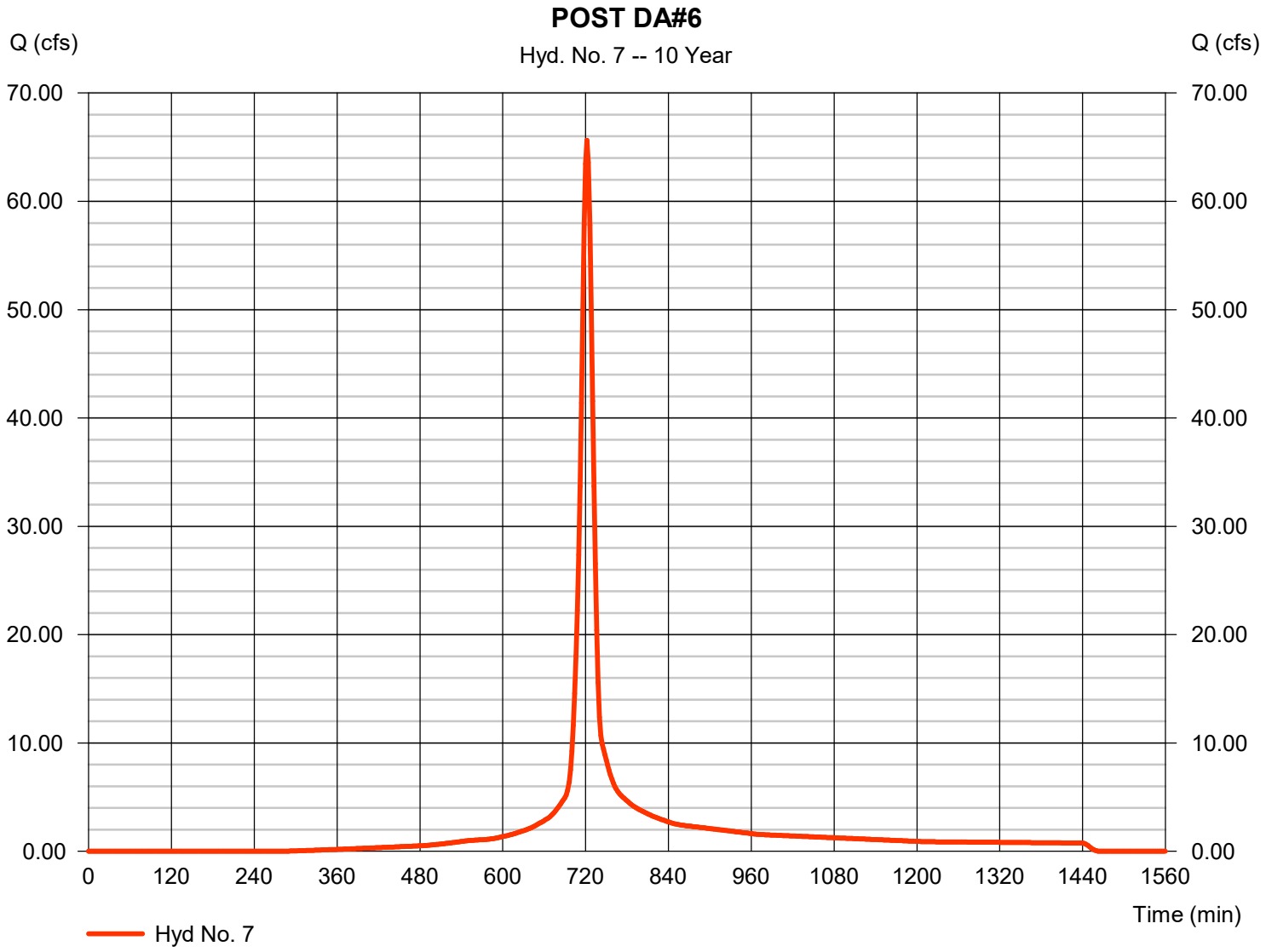


Hydrograph Report

Hyd. No. 7

POST DA#6

Hydrograph type	= SCS Runoff	Peak discharge	= 65.62 cfs
Storm frequency	= 10 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 188,625 cuft
Drainage area	= 14.210 ac	Curve number	= 87.5
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 14.80 min
Total precip.	= 5.14 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

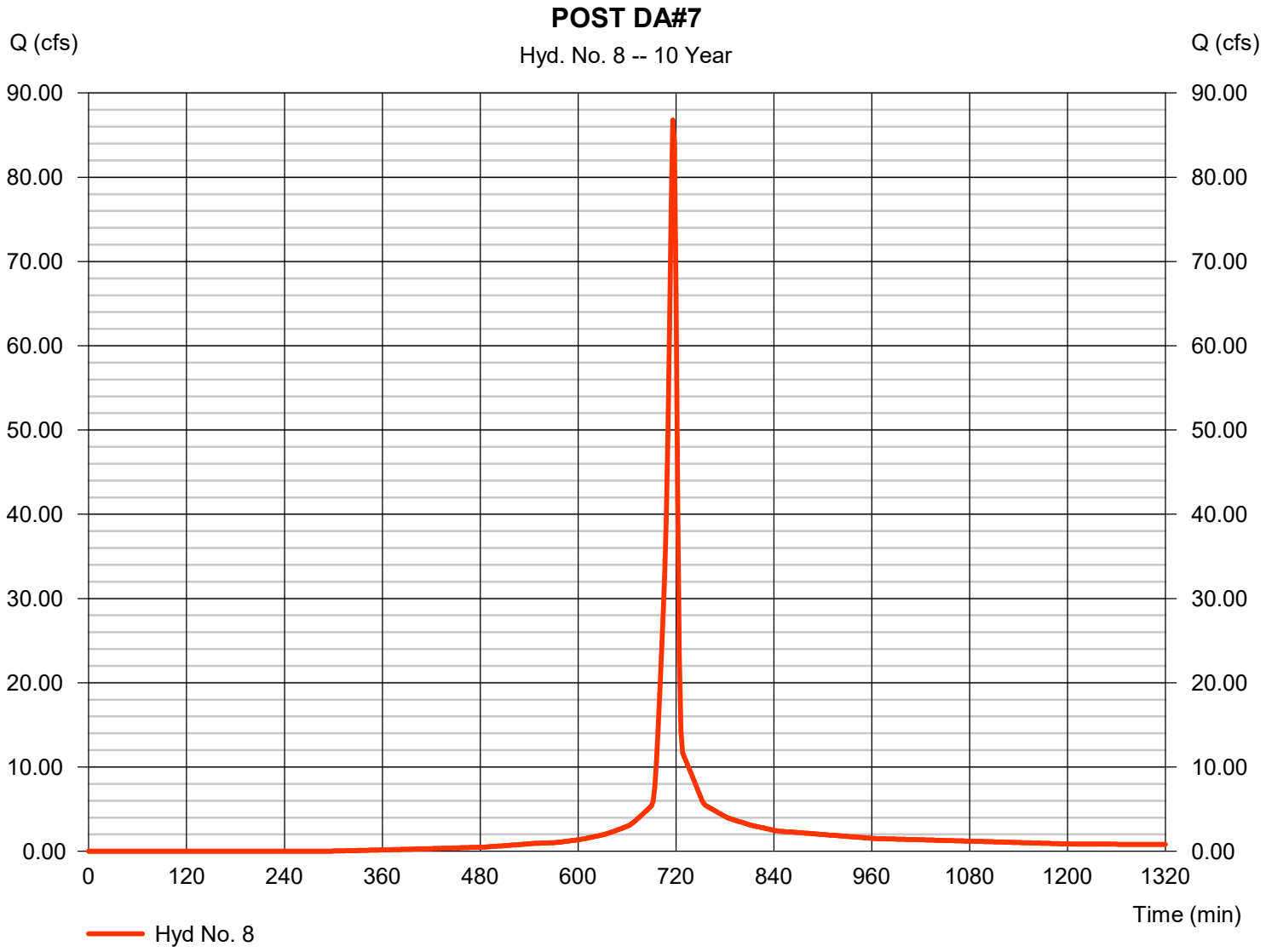


Hydrograph Report

Hyd. No. 8

POST DA#7

Hydrograph type	=	SCS Runoff	Peak discharge	=	86.78 cfs
Storm frequency	=	10 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	182,292 cuft
Drainage area	=	14.520 ac	Curve number	=	86.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.20 min
Total precip.	=	5.14 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

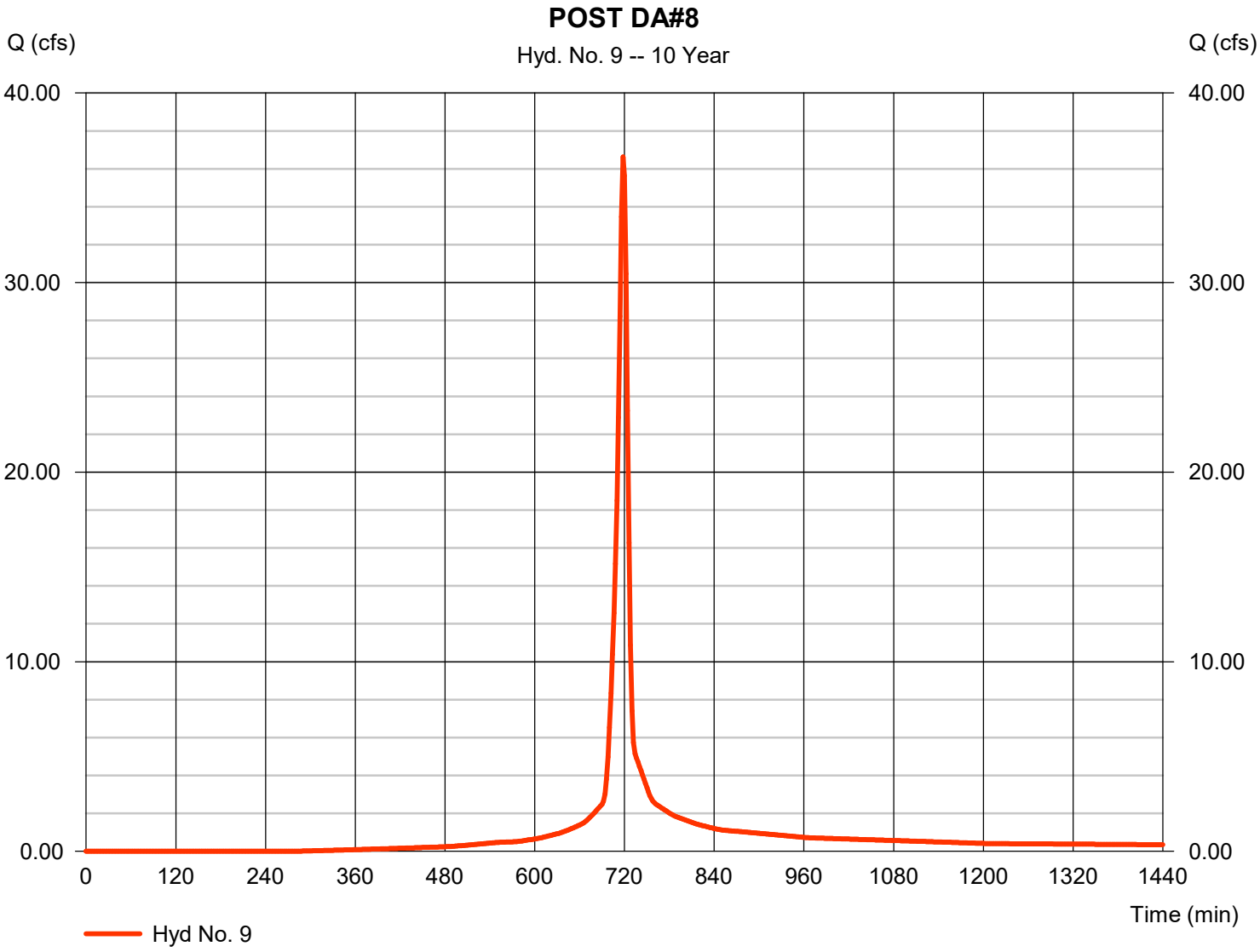


Hydrograph Report

Hyd. No. 9

POST DA#8

Hydrograph type	=	SCS Runoff	Peak discharge	=	36.63 cfs
Storm frequency	=	10 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	86,724 cuft
Drainage area	=	6.370 ac	Curve number	=	87.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.80 min
Total precip.	=	5.14 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

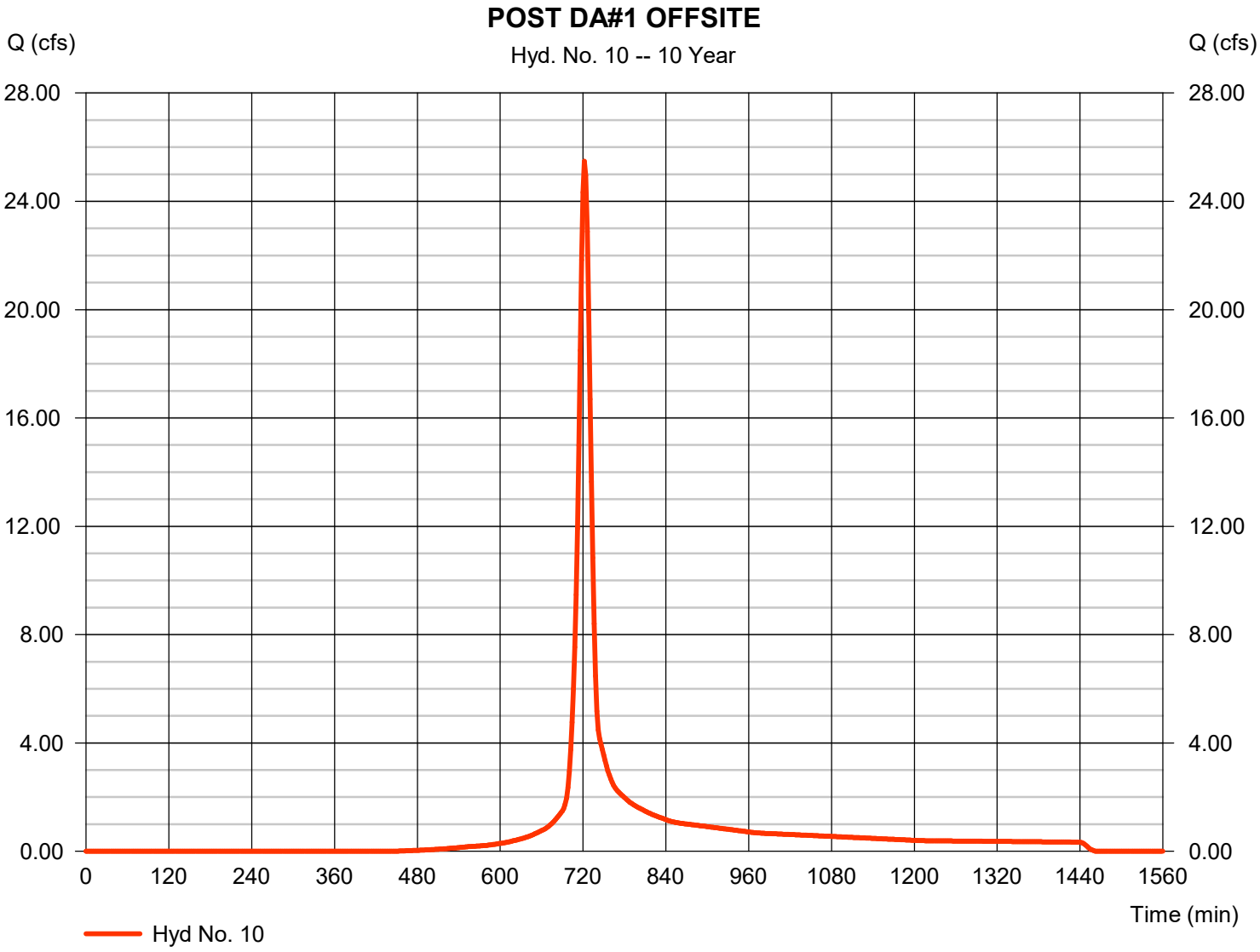


Hydrograph Report

Hyd. No. 10

POST DA#1 OFFSITE

Hydrograph type	= SCS Runoff	Peak discharge	= 25.48 cfs
Storm frequency	= 10 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 71,455 cuft
Drainage area	= 6.930 ac	Curve number	= 78.9
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 14.00 min
Total precip.	= 5.14 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

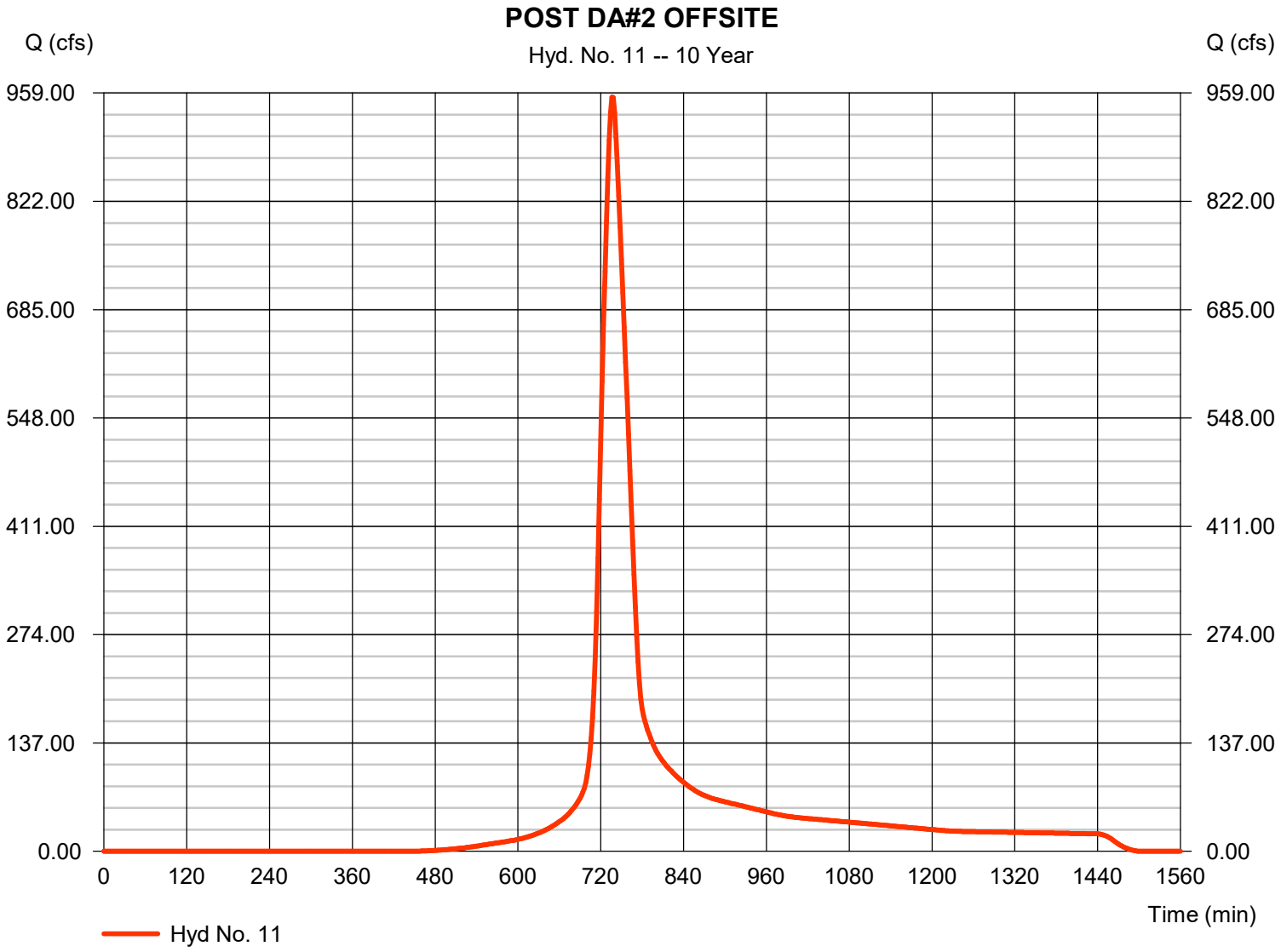


Hydrograph Report

Hyd. No. 11

POST DA#2 OFFSITE

Hydrograph type	=	SCS Runoff	Peak discharge	=	953.74 cfs
Storm frequency	=	10 yrs	Time to peak	=	736 min
Time interval	=	2 min	Hyd. volume	=	4,628,216 cuft
Drainage area	=	437.640 ac	Curve number	=	78.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	38.10 min
Total precip.	=	5.14 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

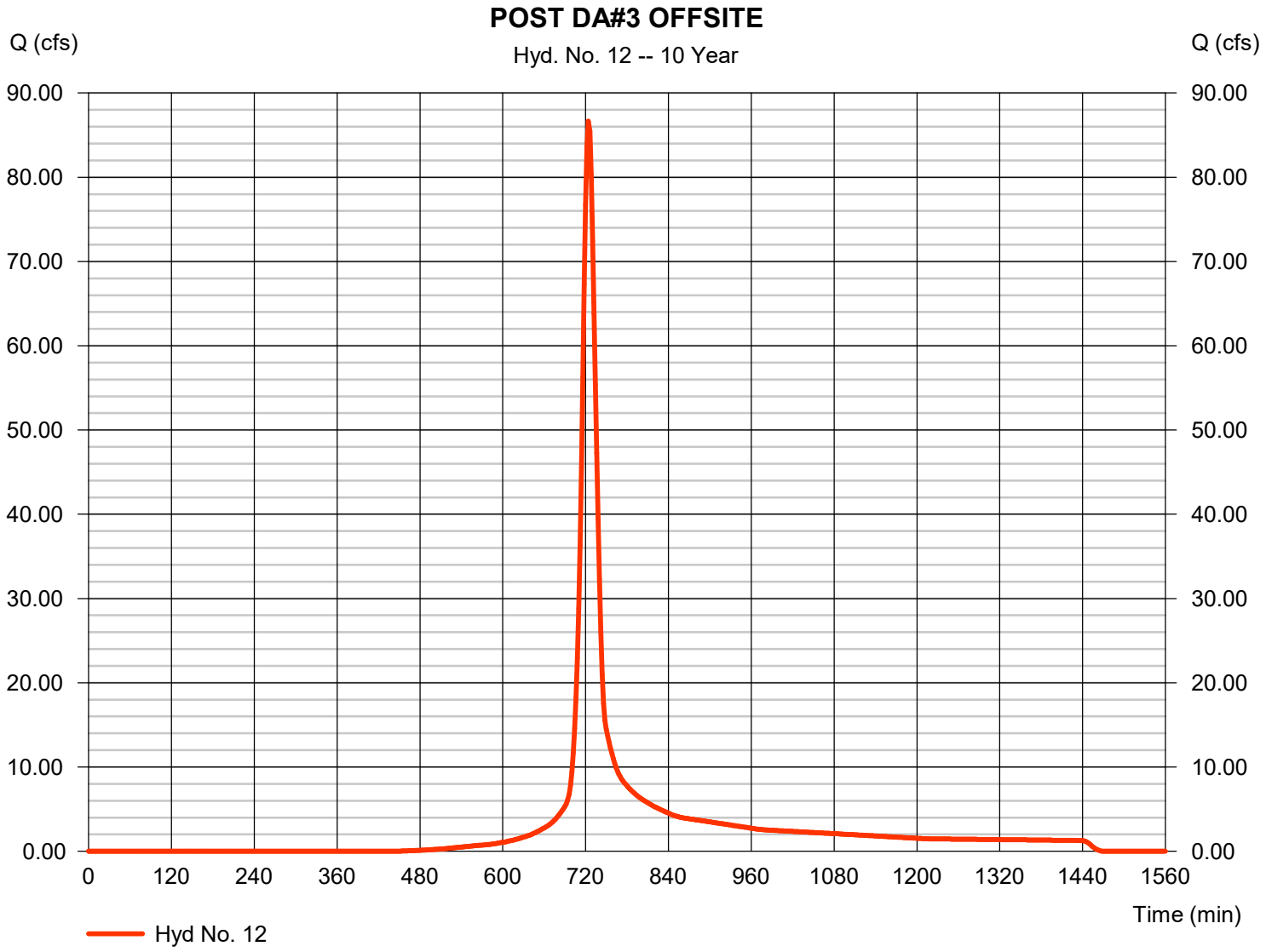


Hydrograph Report

Hyd. No. 12

POST DA#3 OFFSITE

Hydrograph type	=	SCS Runoff	Peak discharge	=	86.67 cfs
Storm frequency	=	10 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	270,942 cuft
Drainage area	=	25.620 ac	Curve number	=	78.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	19.60 min
Total precip.	=	5.14 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

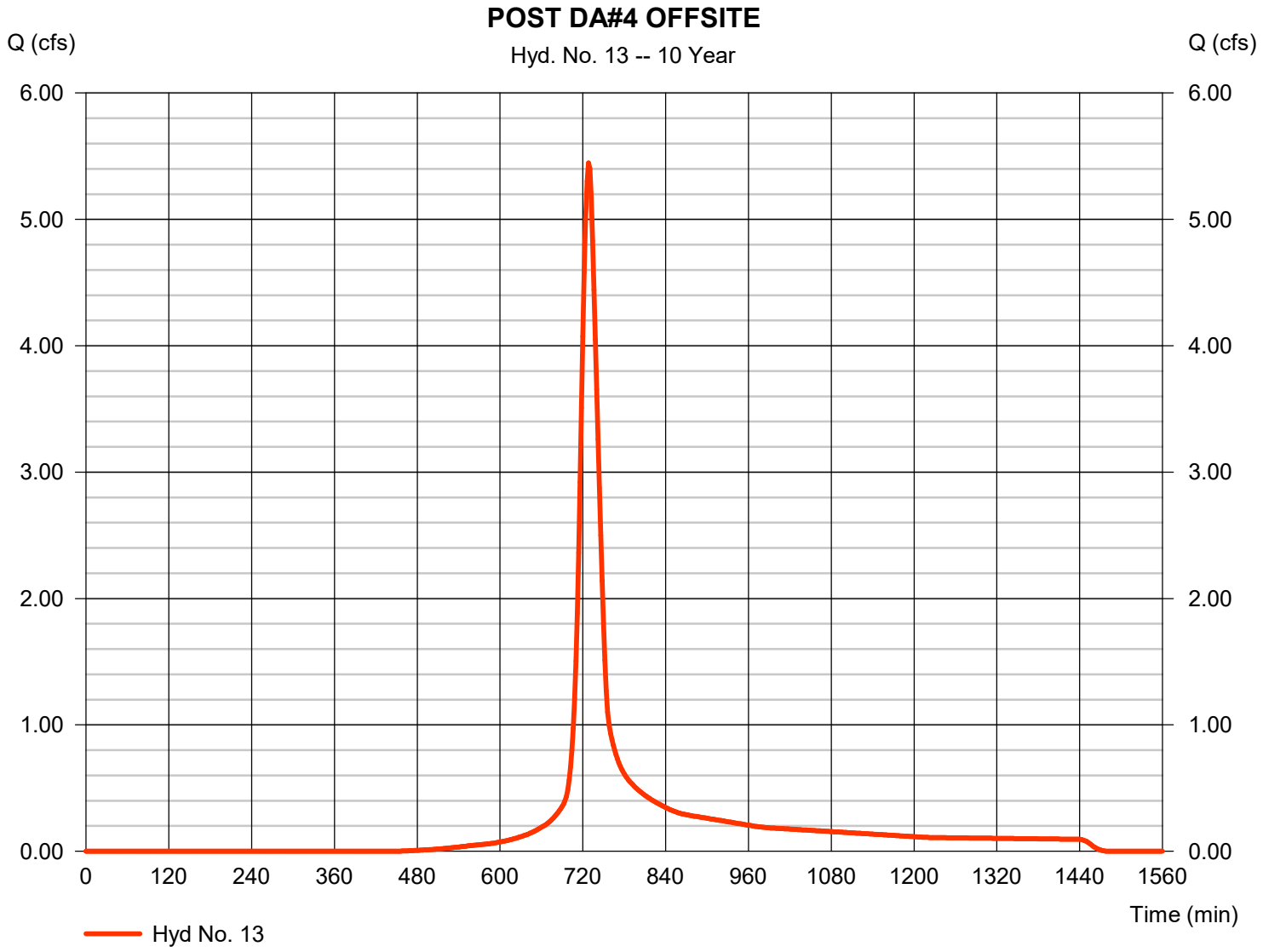


Hydrograph Report

Hyd. No. 13

POST DA#4 OFFSITE

Hydrograph type	=	SCS Runoff	Peak discharge	=	5.447 cfs
Storm frequency	=	10 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	19,988 cuft
Drainage area	=	1.920 ac	Curve number	=	78.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	26.20 min
Total precip.	=	5.14 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



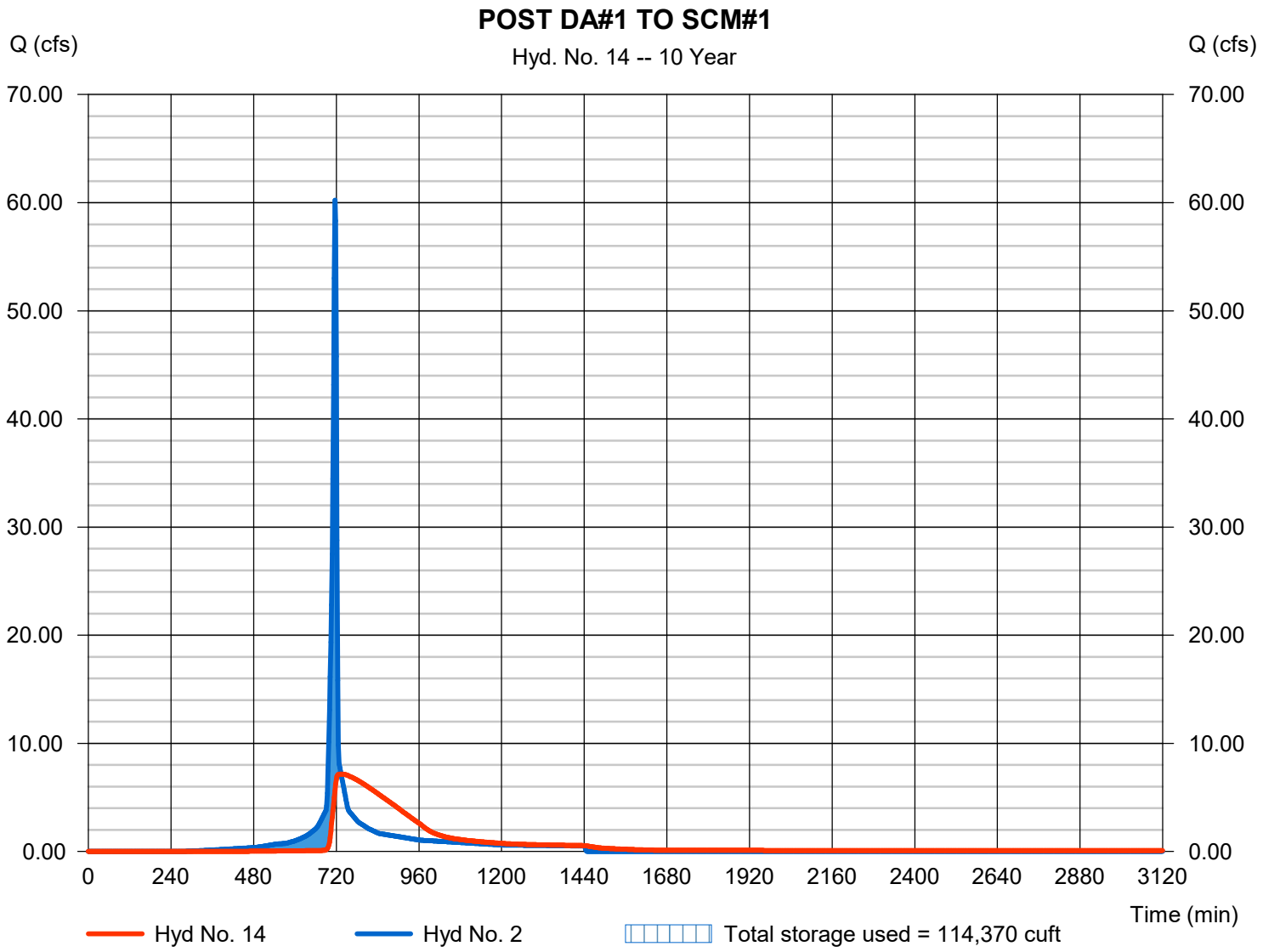
Hydrograph Report

Hyd. No. 14

POST DA#1 TO SCM#1

Hydrograph type	= Reservoir	Peak discharge	= 7.157 cfs
Storm frequency	= 10 yrs	Time to peak	= 734 min
Time interval	= 2 min	Hyd. volume	= 125,351 cuft
Inflow hyd. No.	= 2 - POST DA#1	Max. Elevation	= 265.37 ft
Reservoir name	= SCM#1	Max. Storage	= 114,370 cuft

Storage Indication method used. Wet pond routing start elevation = 262.00 ft.



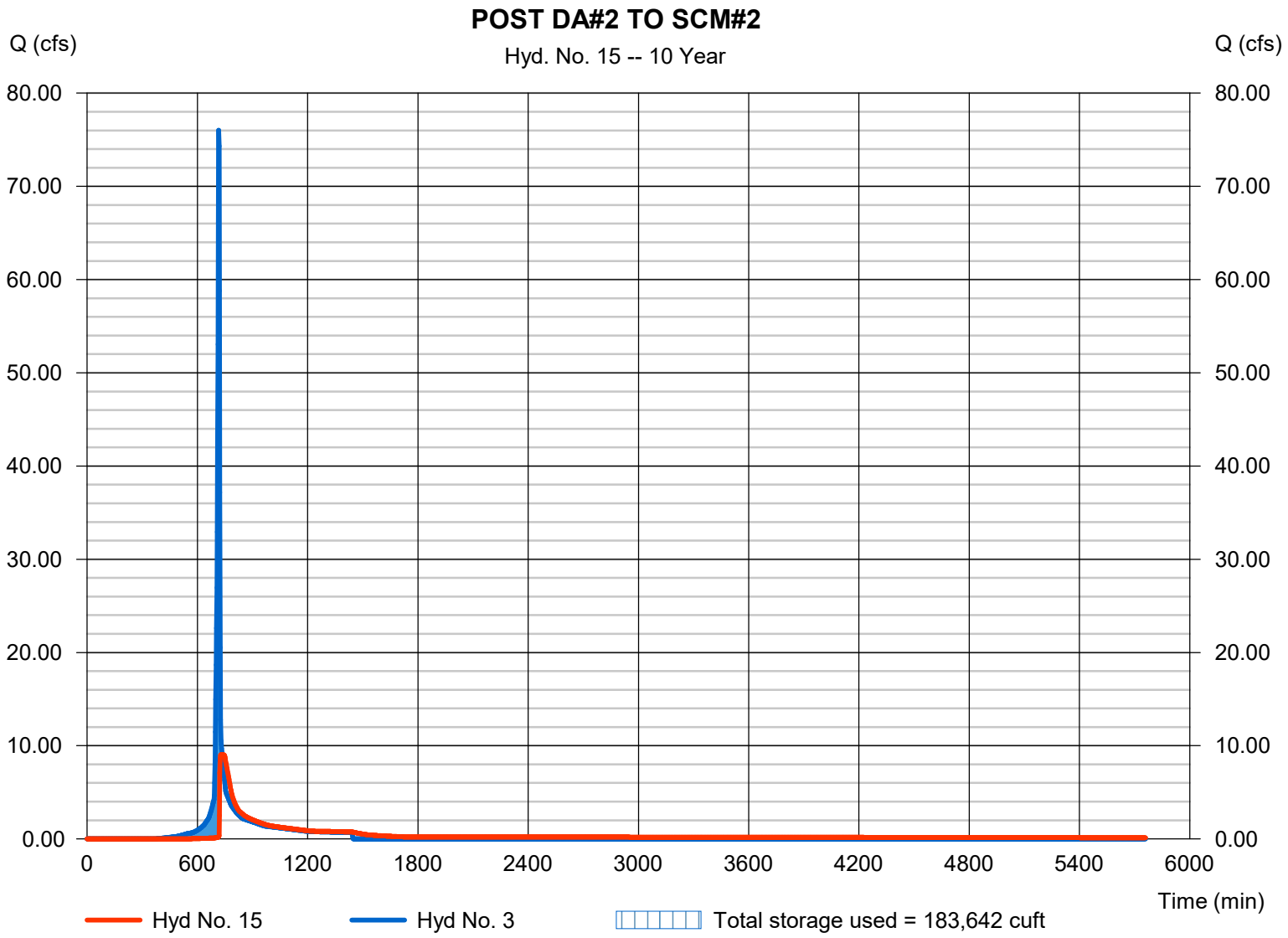
Hydrograph Report

Hyd. No. 15

POST DA#2 TO SCM#2

Hydrograph type	= Reservoir	Peak discharge	= 9.056 cfs
Storm frequency	= 10 yrs	Time to peak	= 736 min
Time interval	= 2 min	Hyd. volume	= 135,285 cuft
Inflow hyd. No.	= 3 - POST DA#2	Max. Elevation	= 266.53 ft
Reservoir name	= SCM#2	Max. Storage	= 183,642 cuft

Storage Indication method used. Wet pond routing start elevation = 264.00 ft.



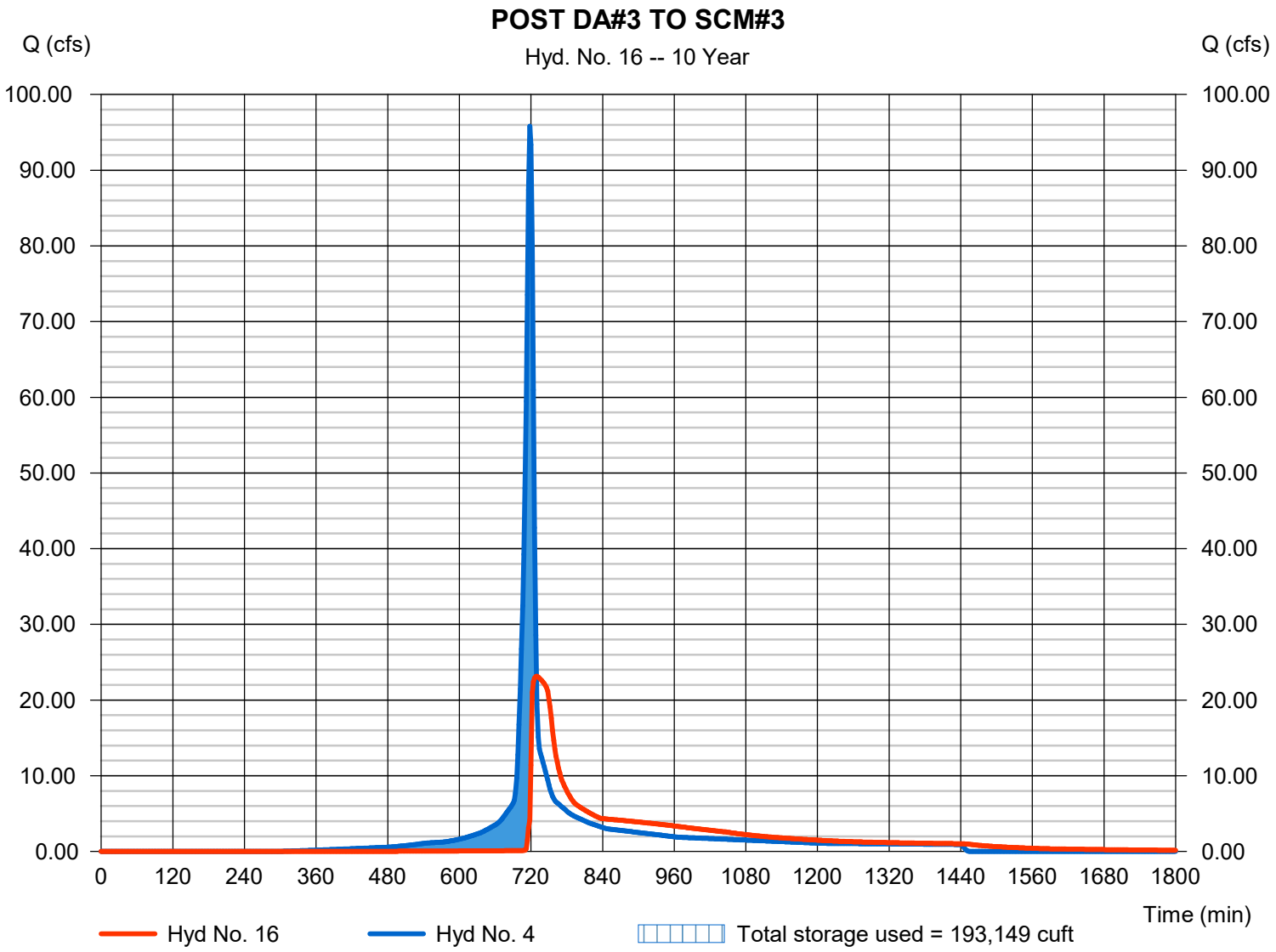
Hydrograph Report

Hyd. No. 16

POST DA#3 TO SCM#3

Hydrograph type	= Reservoir	Peak discharge	= 23.14 cfs
Storm frequency	= 10 yrs	Time to peak	= 730 min
Time interval	= 2 min	Hyd. volume	= 200,895 cuft
Inflow hyd. No.	= 4 - POST DA #3	Max. Elevation	= 243.79 ft
Reservoir name	= SCM#3	Max. Storage	= 193,149 cuft

Storage Indication method used. Wet pond routing start elevation = 240.00 ft.



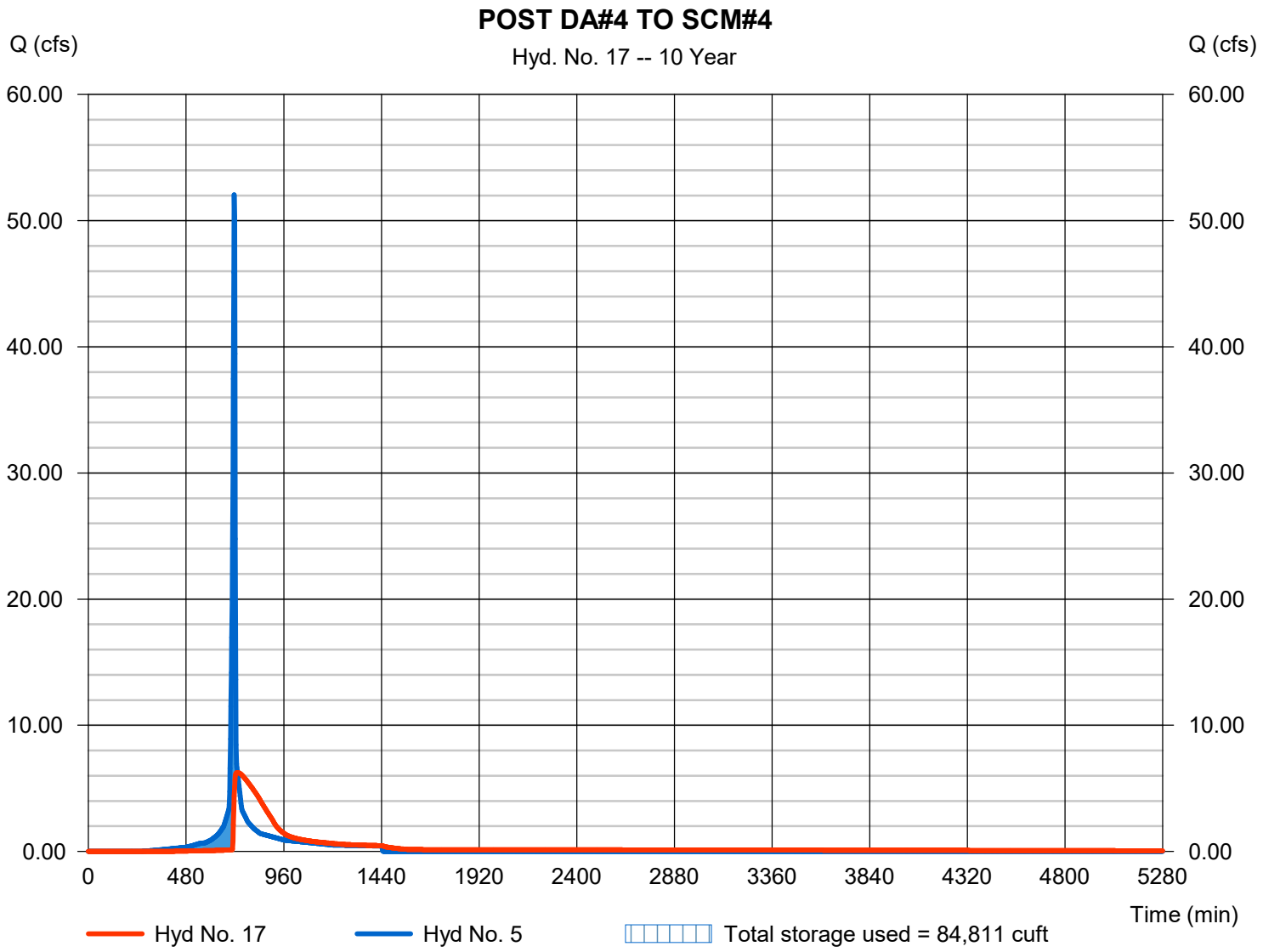
Hydrograph Report

Hyd. No. 17

POST DA#4 TO SCM#4

Hydrograph type	=	Reservoir	Peak discharge	=	6.236 cfs
Storm frequency	=	10 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	108,311 cuft
Inflow hyd. No.	=	5 - POST DA#4	Max. Elevation	=	243.82 ft
Reservoir name	=	SCM#4	Max. Storage	=	84,811 cuft

Storage Indication method used. Wet pond routing start elevation = 240.00 ft.



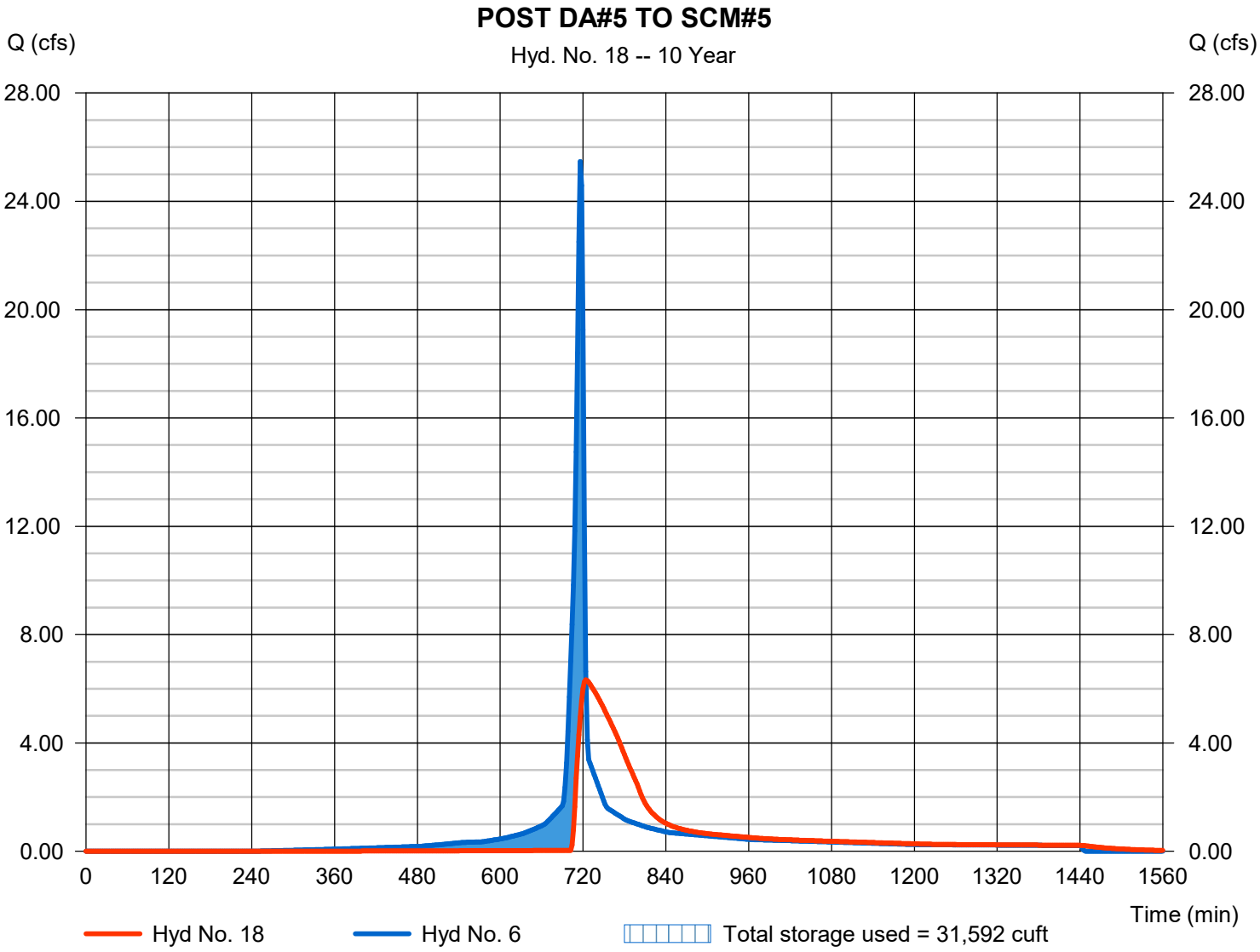
Hydrograph Report

Hyd. No. 18

POST DA#5 TO SCM#5

Hydrograph type	= Reservoir	Peak discharge	= 6.328 cfs
Storm frequency	= 10 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 51,378 cuft
Inflow hyd. No.	= 6 - POST DA#5	Max. Elevation	= 252.95 ft
Reservoir name	= SCM#5	Max. Storage	= 31,592 cuft

Storage Indication method used. Wet pond routing start elevation = 249.00 ft.



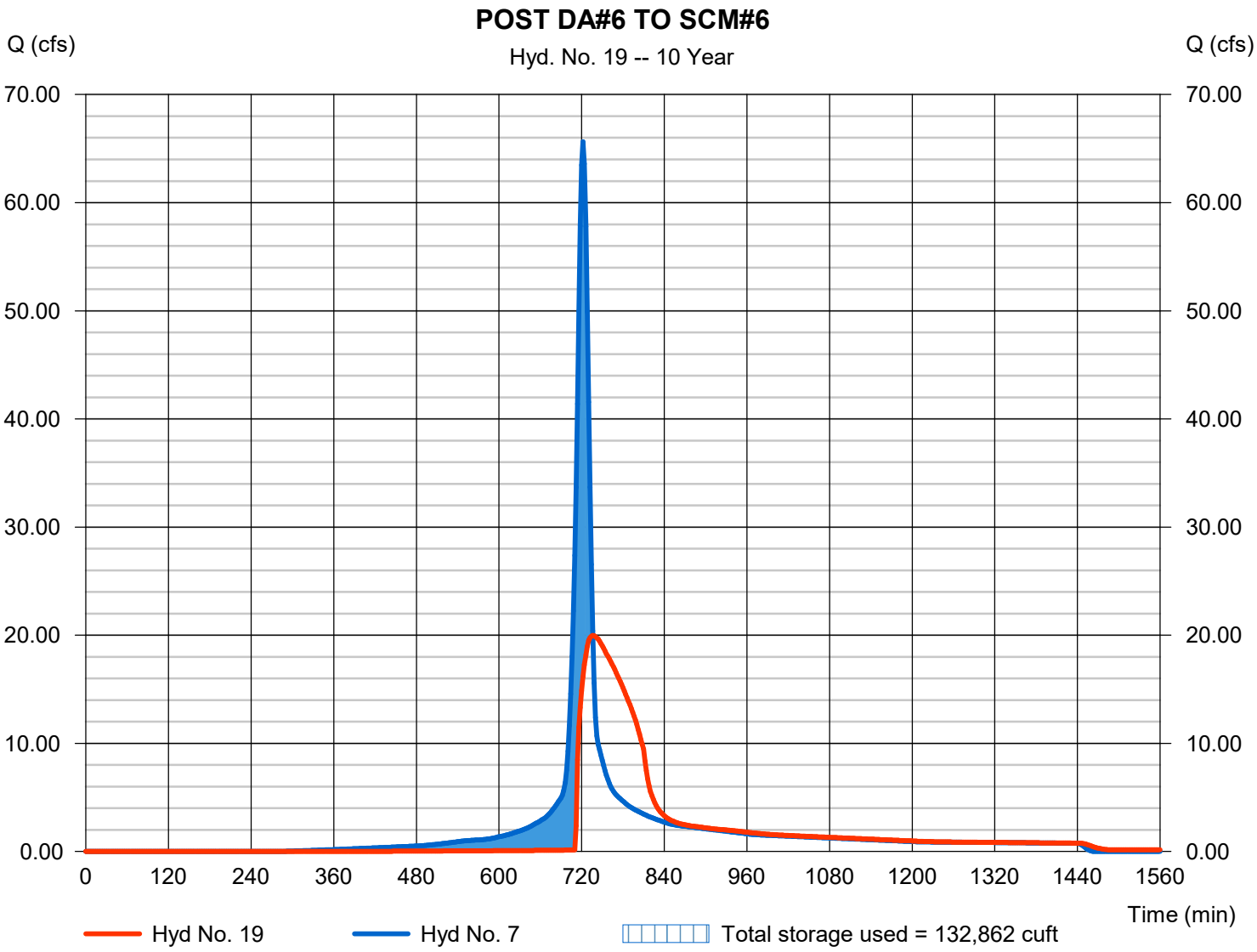
Hydrograph Report

Hyd. No. 19

POST DA#6 TO SCM#6

Hydrograph type	= Reservoir	Peak discharge	= 19.98 cfs
Storm frequency	= 10 yrs	Time to peak	= 736 min
Time interval	= 2 min	Hyd. volume	= 180,014 cuft
Inflow hyd. No.	= 7 - POST DA#6	Max. Elevation	= 241.02 ft
Reservoir name	= SCM#6	Max. Storage	= 132,862 cuft

Storage Indication method used. Wet pond routing start elevation = 237.00 ft.



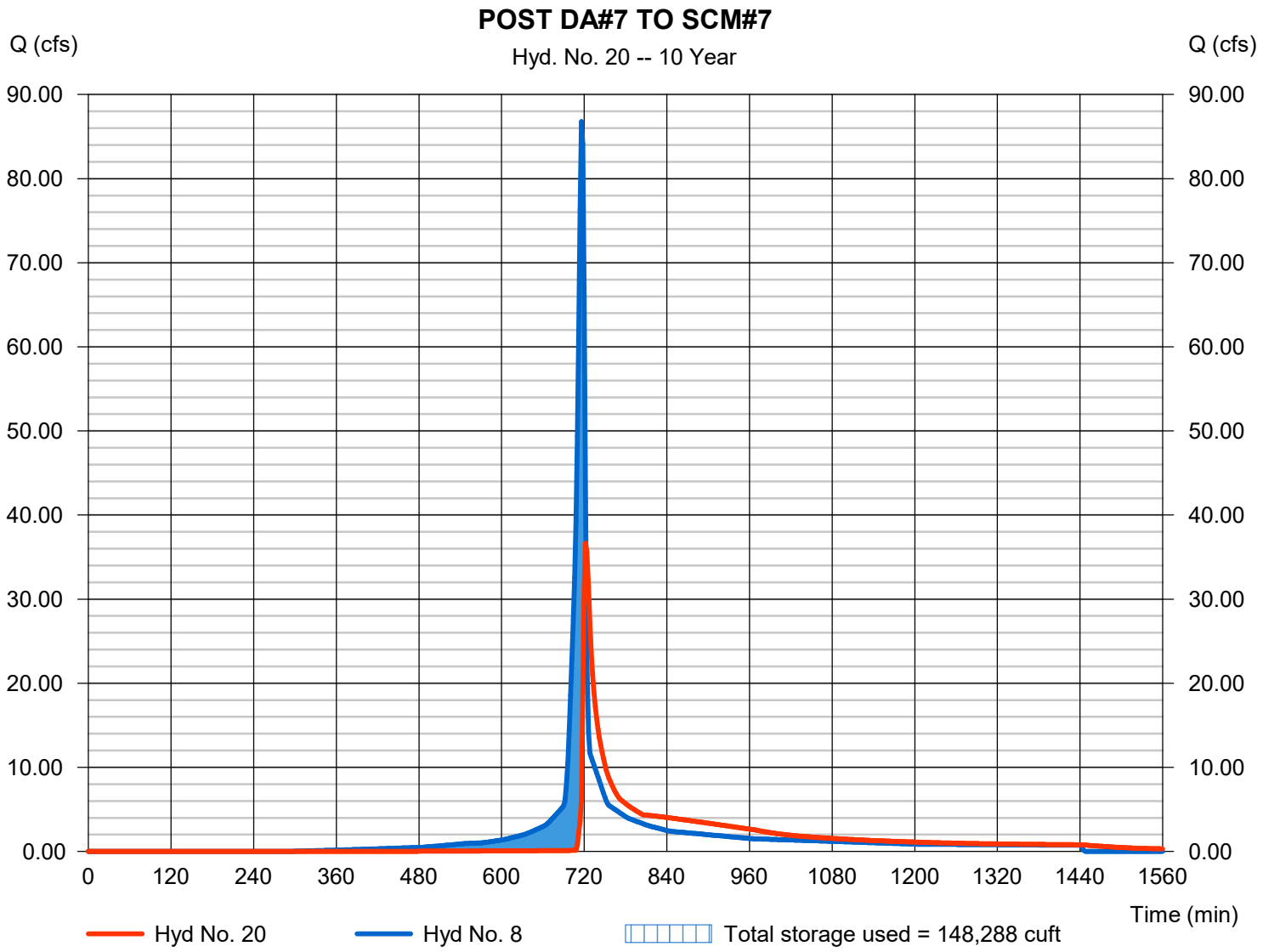
Hydrograph Report

Hyd. No. 20

POST DA#7 TO SCM#7

Hydrograph type	= Reservoir	Peak discharge	= 36.66 cfs
Storm frequency	= 10 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 168,665 cuft
Inflow hyd. No.	= 8 - POST DA#7	Max. Elevation	= 242.69 ft
Reservoir name	= SCM#7	Max. Storage	= 148,288 cuft

Storage Indication method used. Wet pond routing start elevation = 239.00 ft.



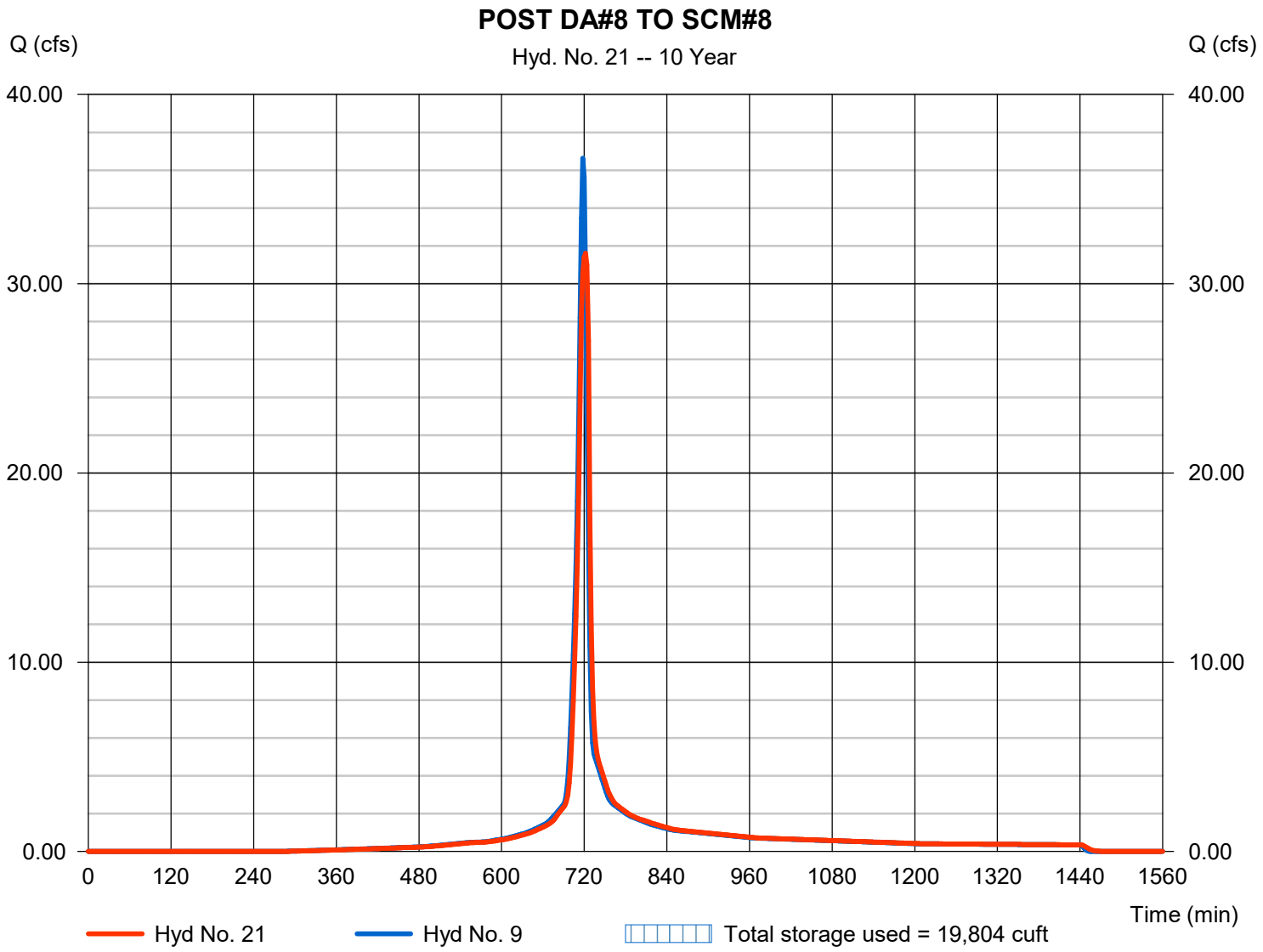
Hydrograph Report

Hyd. No. 21

POST DA#8 TO SCM#8

Hydrograph type	= Reservoir	Peak discharge	= 31.62 cfs
Storm frequency	= 10 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 86,724 cuft
Inflow hyd. No.	= 9 - POST DA#8	Max. Elevation	= 240.91 ft
Reservoir name	= SCM#8	Max. Storage	= 19,804 cuft

Storage Indication method used. Wet pond routing start elevation = 240.00 ft.

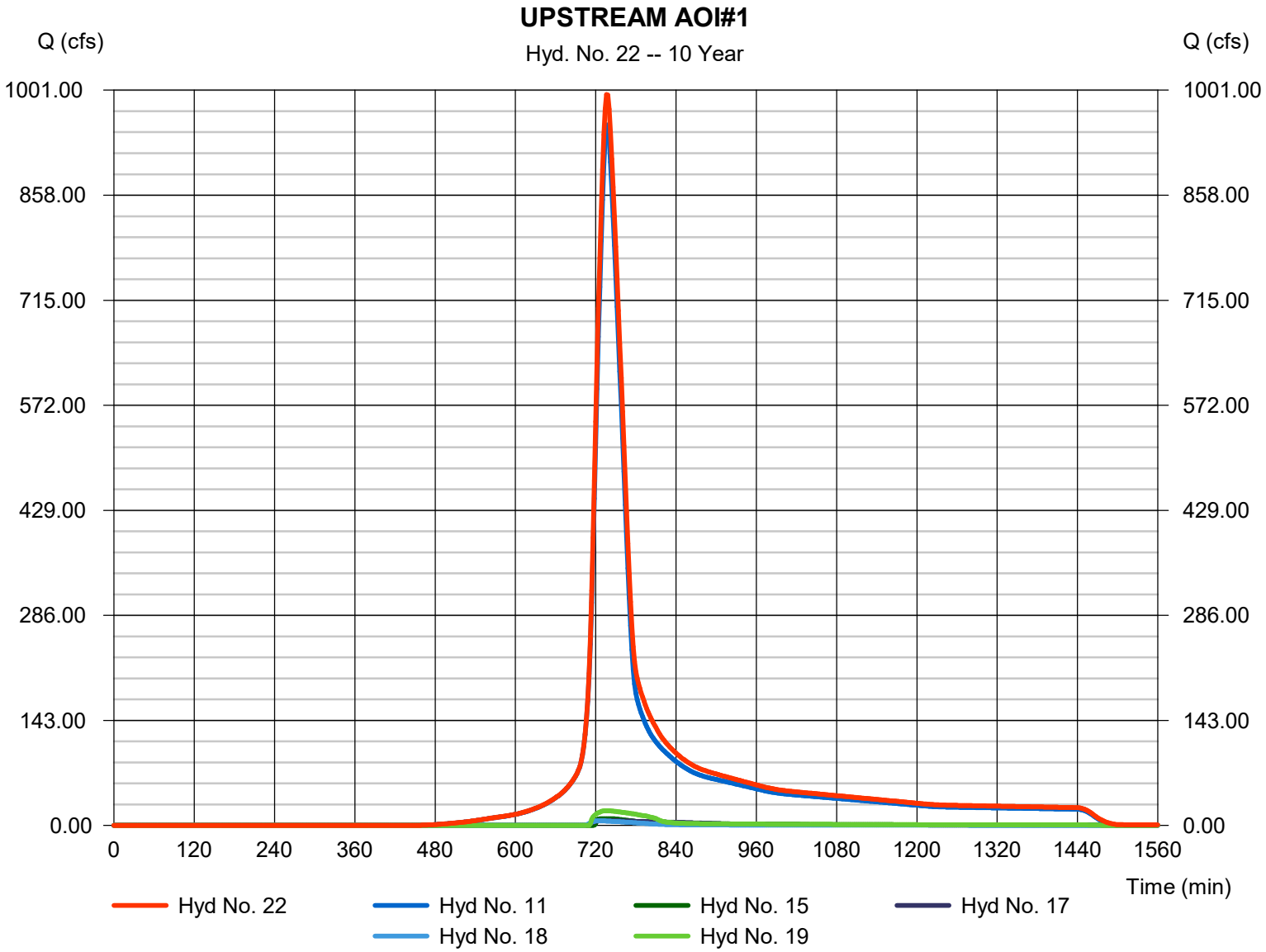


Hydrograph Report

Hyd. No. 22

UPSTREAM AOI#1

Hydrograph type	= Combine	Peak discharge	= 994.94 cfs
Storm frequency	= 10 yrs	Time to peak	= 736 min
Time interval	= 2 min	Hyd. volume	= 5,103,205 cuft
Inflow hyds.	= 11, 15, 17, 18, 19	Contrib. drain. area	= 437.640 ac

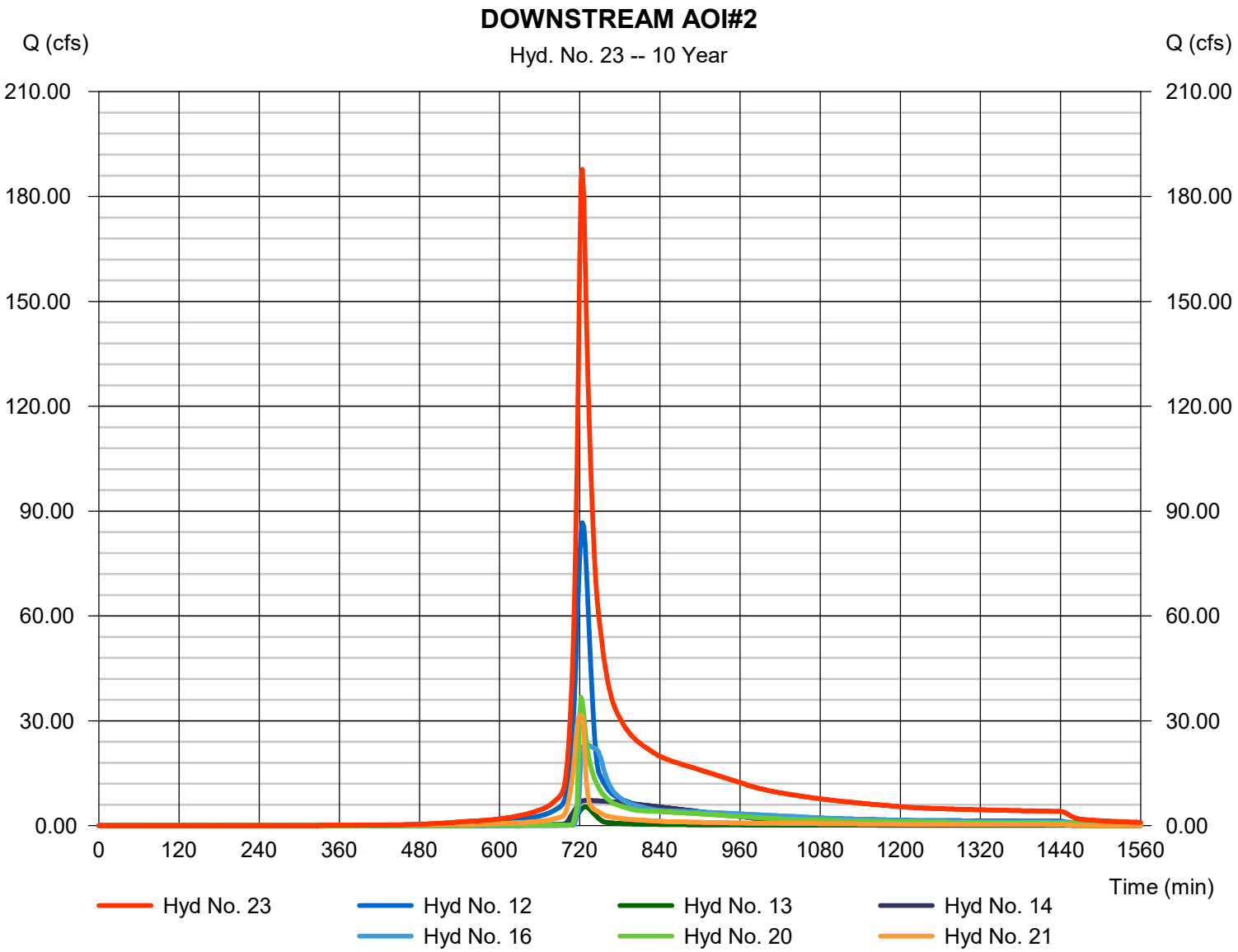


Hydrograph Report

Hyd. No. 23

DOWNSTREAM AOI#2

Hydrograph type	= Combine	Peak discharge	= 187.75 cfs
Storm frequency	= 10 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 872,564 cuft
Inflow hyds.	= 12, 13, 14, 16, 20, 21	Contrib. drain. area	= 27.540 ac

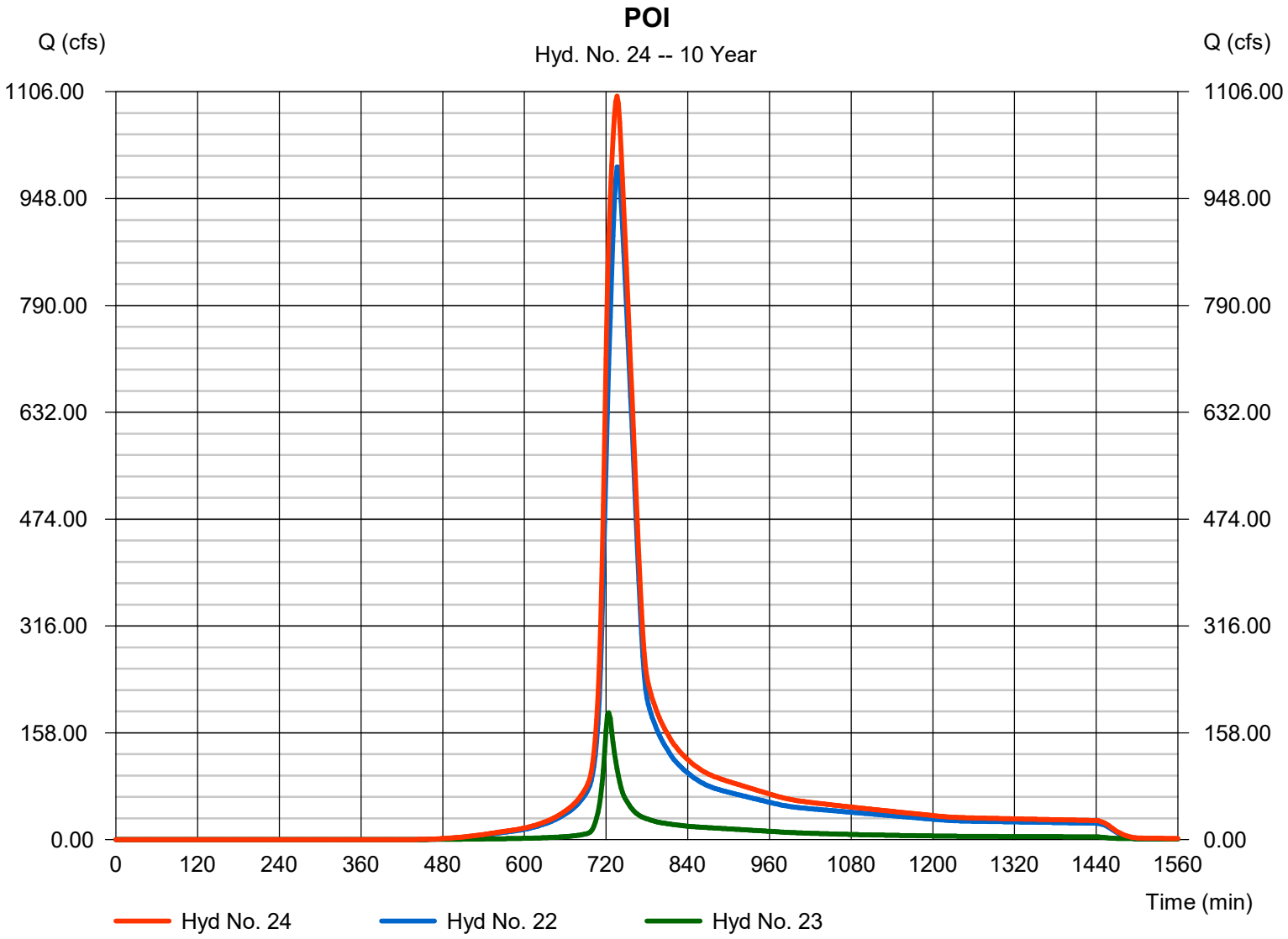


Hydrograph Report

Hyd. No. 24

POI

Hydrograph type	=	Combine	Peak discharge	=	1099.58 cfs
Storm frequency	=	10 yrs	Time to peak	=	736 min
Time interval	=	2 min	Hyd. volume	=	5,975,766 cuft
Inflow hyds.	=	22, 23	Contrib. drain. area	=	0.000 ac

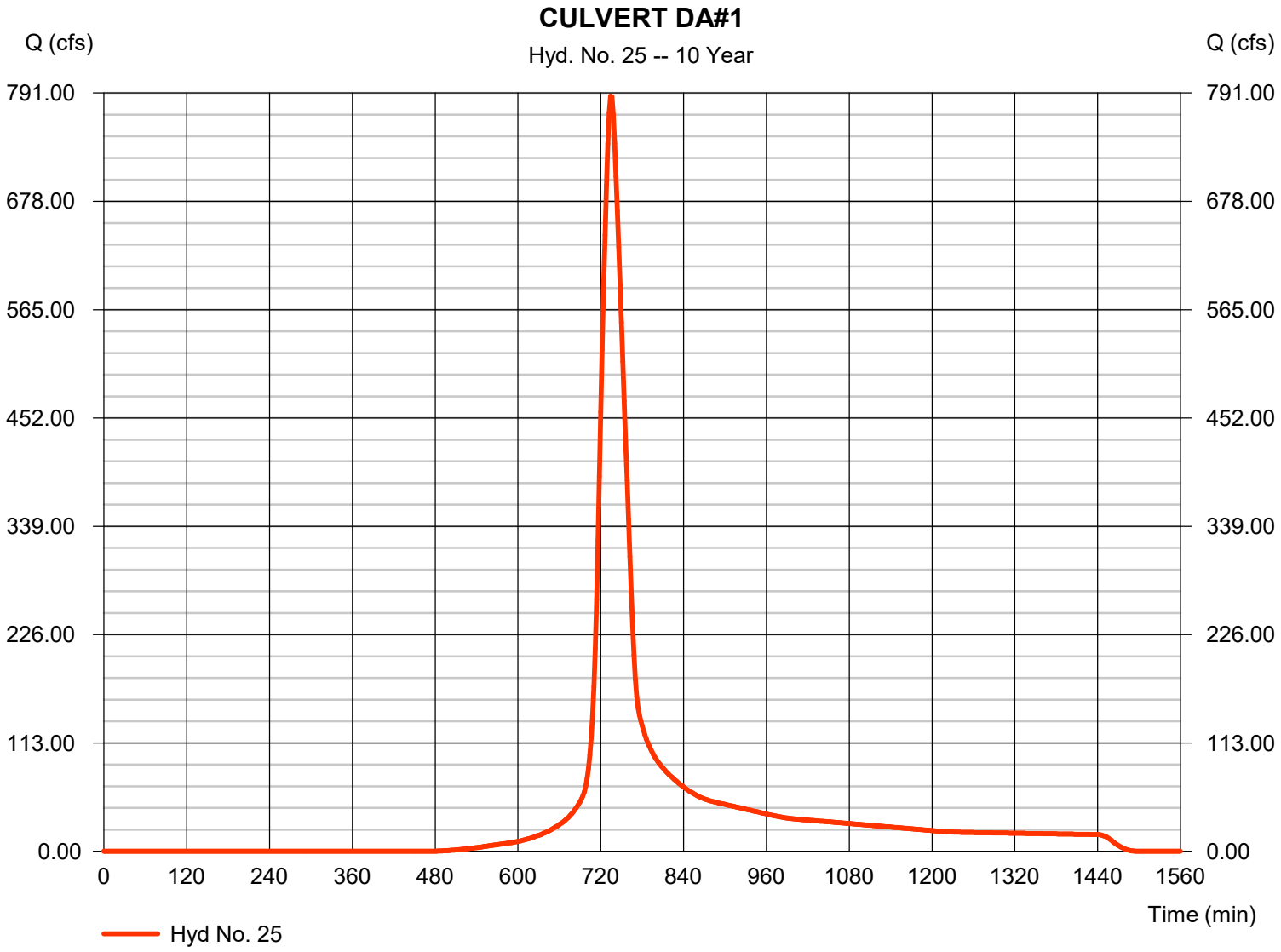


Hydrograph Report

Hyd. No. 25

CULVERT DA#1

Hydrograph type	=	SCS Runoff	Peak discharge	=	787.77 cfs
Storm frequency	=	10 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	3,577,838 cuft
Drainage area	=	356.740 ac	Curve number	=	77.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	34.90 min
Total precip.	=	5.14 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

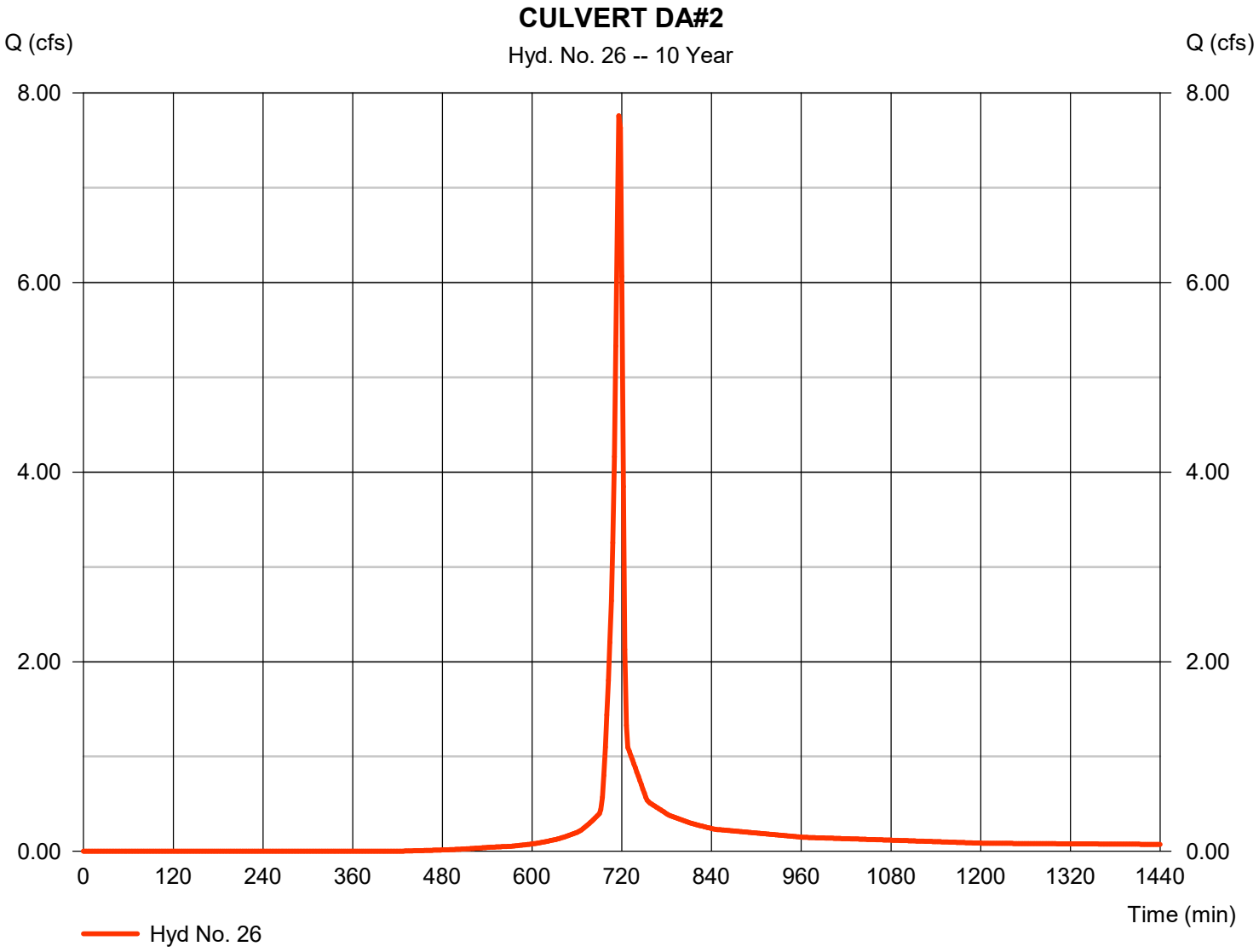


Hydrograph Report

Hyd. No. 26

CULVERT DA#2

Hydrograph type	=	SCS Runoff	Peak discharge	=	7.760 cfs
Storm frequency	=	10 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	15,803 cuft
Drainage area	=	1.540 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	5.14 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

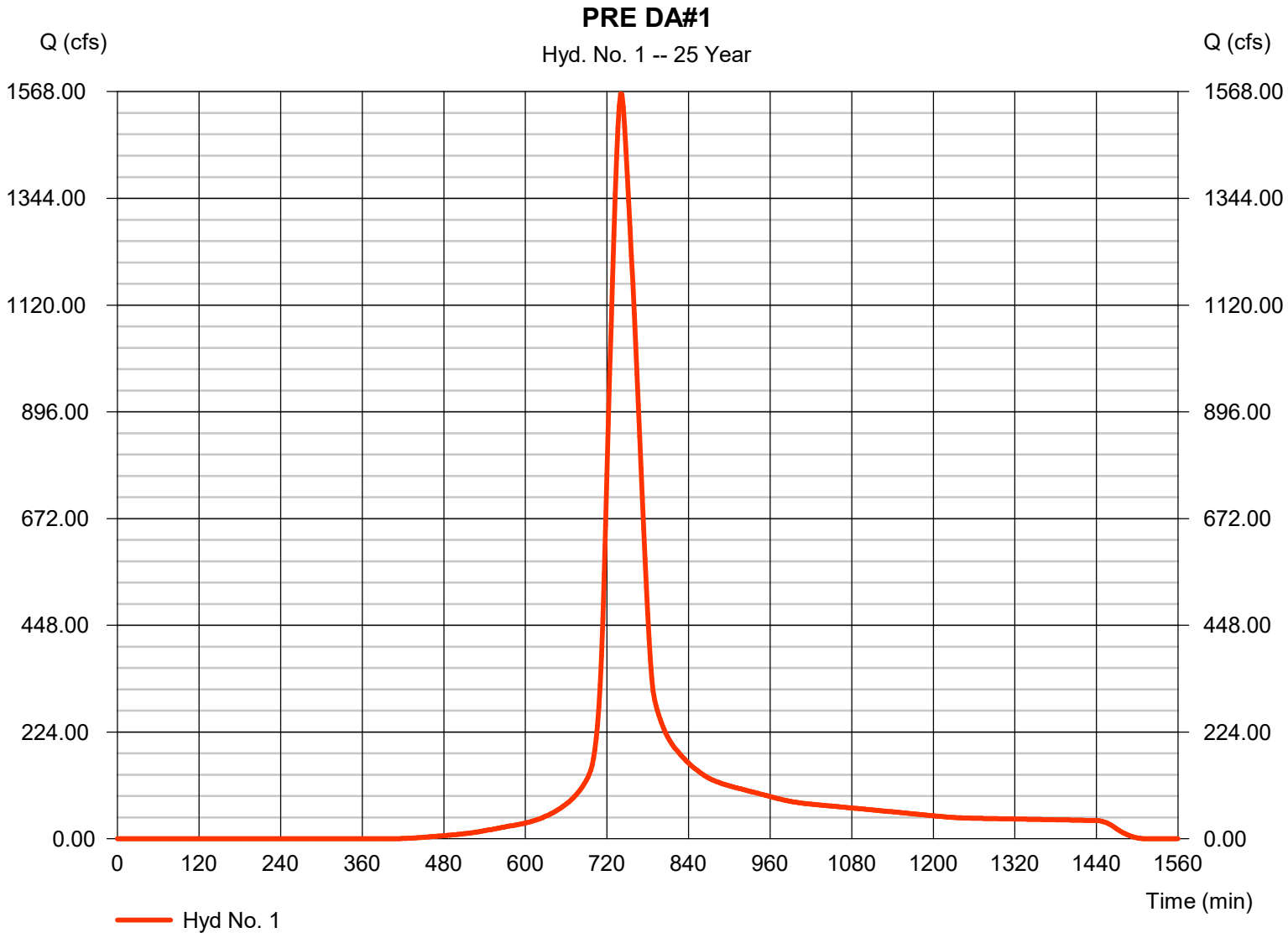
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	1563.67	2	740	8,376,606	------	------	------	PRE DA#1
2	SCS Runoff	74.65	2	716	159,723	------	------	------	POST DA#1
3	SCS Runoff	96.45	2	716	200,488	------	------	------	POST DA#2
4	SCS Runoff	119.46	2	718	284,764	------	------	------	POST DA #3
5	SCS Runoff	64.27	2	716	138,437	------	------	------	POST DA#4
6	SCS Runoff	31.35	2	716	67,910	------	------	------	POST DA#5
7	SCS Runoff	81.60	2	722	237,158	------	------	------	POST DA#6
8	SCS Runoff	107.92	2	716	229,770	------	------	------	POST DA#7
9	SCS Runoff	45.48	2	718	109,038	------	------	------	POST DA#8
10	SCS Runoff	33.14	2	722	93,292	------	------	------	POST DA#1 OFFSITE
11	SCS Runoff	1247.07	2	736	6,042,571	------	------	------	POST DA#2 OFFSITE
12	SCS Runoff	112.91	2	724	353,740	------	------	------	POST DA#3 OFFSITE
13	SCS Runoff	7.107	2	728	26,096	------	------	------	POST DA#4 OFFSITE
14	Reservoir	8.252	2	736	157,968	2	266.09	131,754	POST DA#1 TO SCM#1
15	Reservoir	10.82	2	736	179,422	3	267.18	207,917	POST DA#2 TO SCM#2
16	Reservoir	26.28	2	730	259,900	4	244.59	223,012	POST DA#3 TO SCM#3
17	Reservoir	7.513	2	734	136,154	5	244.54	100,356	POST DA#4 TO SCM#4
18	Reservoir	7.373	2	724	64,884	6	253.56	37,772	POST DA#5 TO SCM#5
19	Reservoir	22.82	2	736	228,531	7	241.81	155,019	POST DA#6 TO SCM#6
20	Reservoir	42.77	2	722	216,059	8	243.27	165,643	POST DA#7 TO SCM#7
21	Reservoir	33.63	2	722	109,038	9	241.33	23,194	POST DA#8 TO SCM#8
22	Combine	1295.27	2	736	6,651,559	11, 15, 17, 18, 19,	------	------	UPSTREAM AOI#1
23	Combine	229.53	2	724	1,122,802	12, 13, 14, 16, 20, 21,	------	------	DOWNSTREAM AOI#2
24	Combine	1437.64	2	736	7,774,362	22, 23	------	------	POI
25	SCS Runoff	1037.75	2	734	4,699,916	------	------	------	CULVERT DA#1
26	SCS Runoff	9.987	2	716	20,528	------	------	------	CULVERT DA#2

Hydrograph Report

Hyd. No. 1

PRE DA#1

Hydrograph type	=	SCS Runoff	Peak discharge	=	1563.67 cfs
Storm frequency	=	25 yrs	Time to peak	=	740 min
Time interval	=	2 min	Hyd. volume	=	8,376,606 cuft
Drainage area	=	618.810 ac	Curve number	=	78.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	47.00 min
Total precip.	=	6.15 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

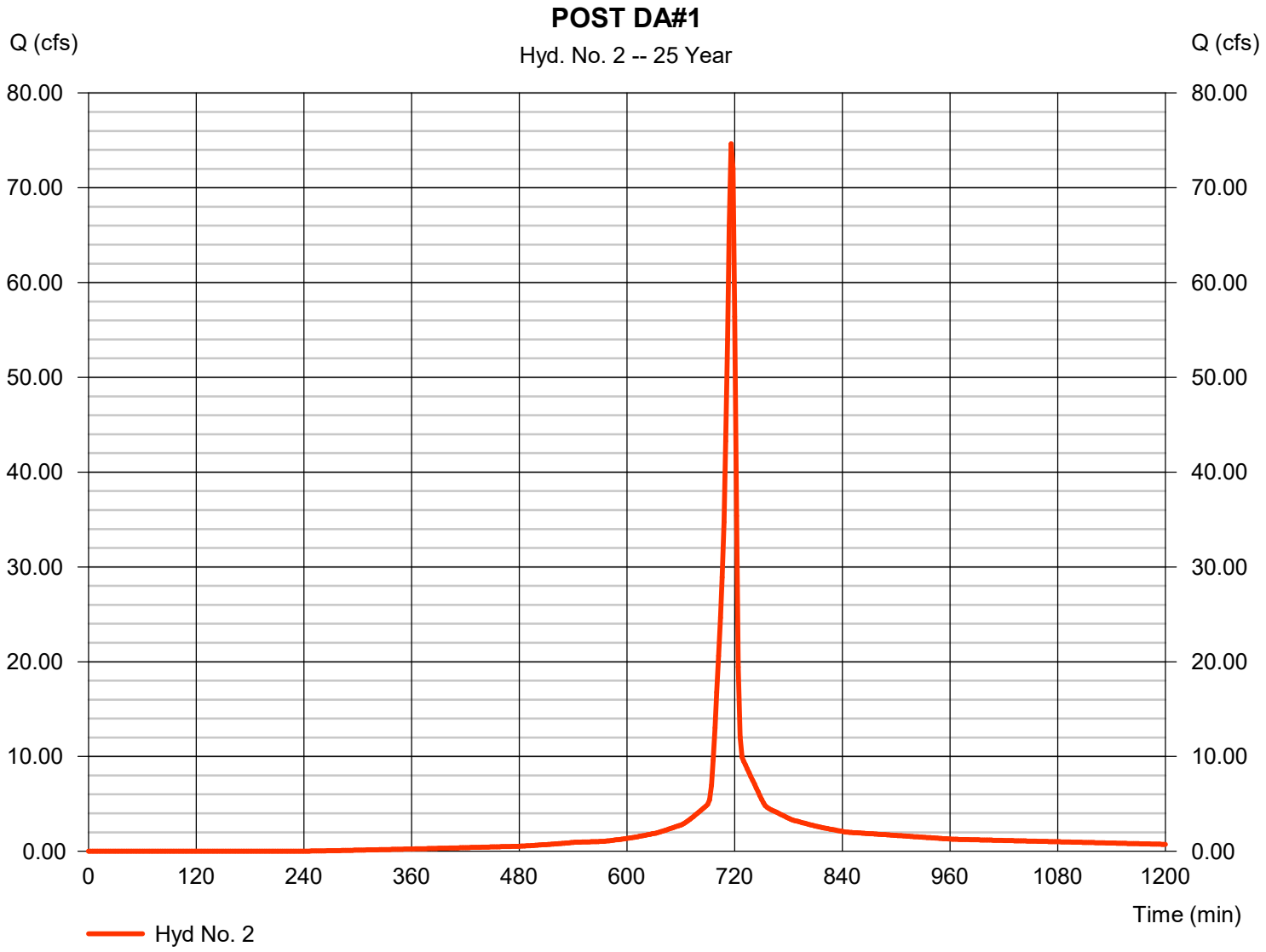


Hydrograph Report

Hyd. No. 2

POST DA#1

Hydrograph type	=	SCS Runoff	Peak discharge	=	74.65 cfs
Storm frequency	=	25 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	159,723 cuft
Drainage area	=	9.930 ac	Curve number	=	87.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.50 min
Total precip.	=	6.15 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

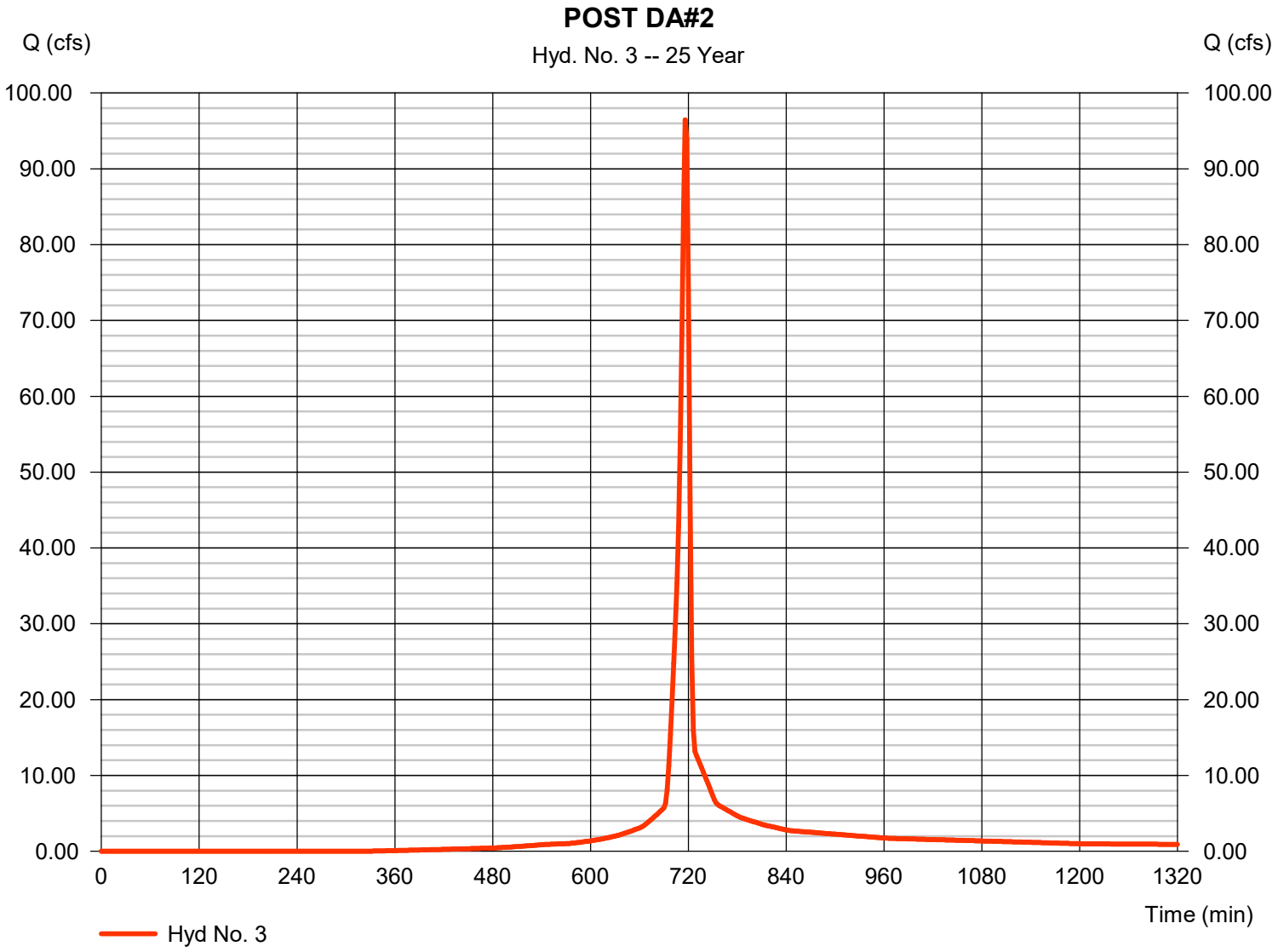


Hydrograph Report

Hyd. No. 3

POST DA#2

Hydrograph type	=	SCS Runoff	Peak discharge	=	96.45 cfs
Storm frequency	=	25 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	200,488 cuft
Drainage area	=	14.030 ac	Curve number	=	82.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	6.15 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

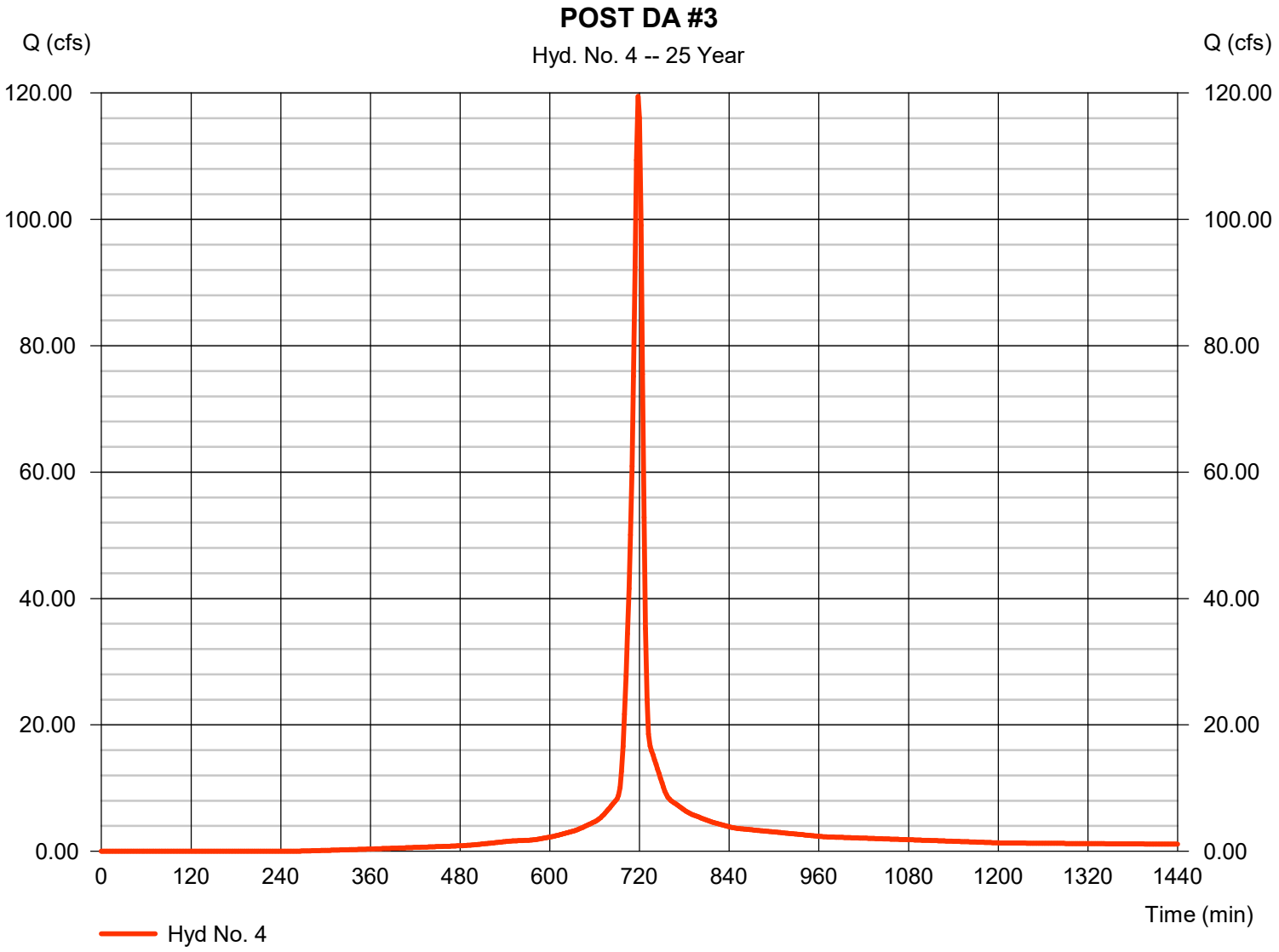


Hydrograph Report

Hyd. No. 4

POST DA #3

Hydrograph type	=	SCS Runoff	Peak discharge	=	119.46 cfs
Storm frequency	=	25 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	284,764 cuft
Drainage area	=	16.990 ac	Curve number	=	86.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	7.40 min
Total precip.	=	6.15 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

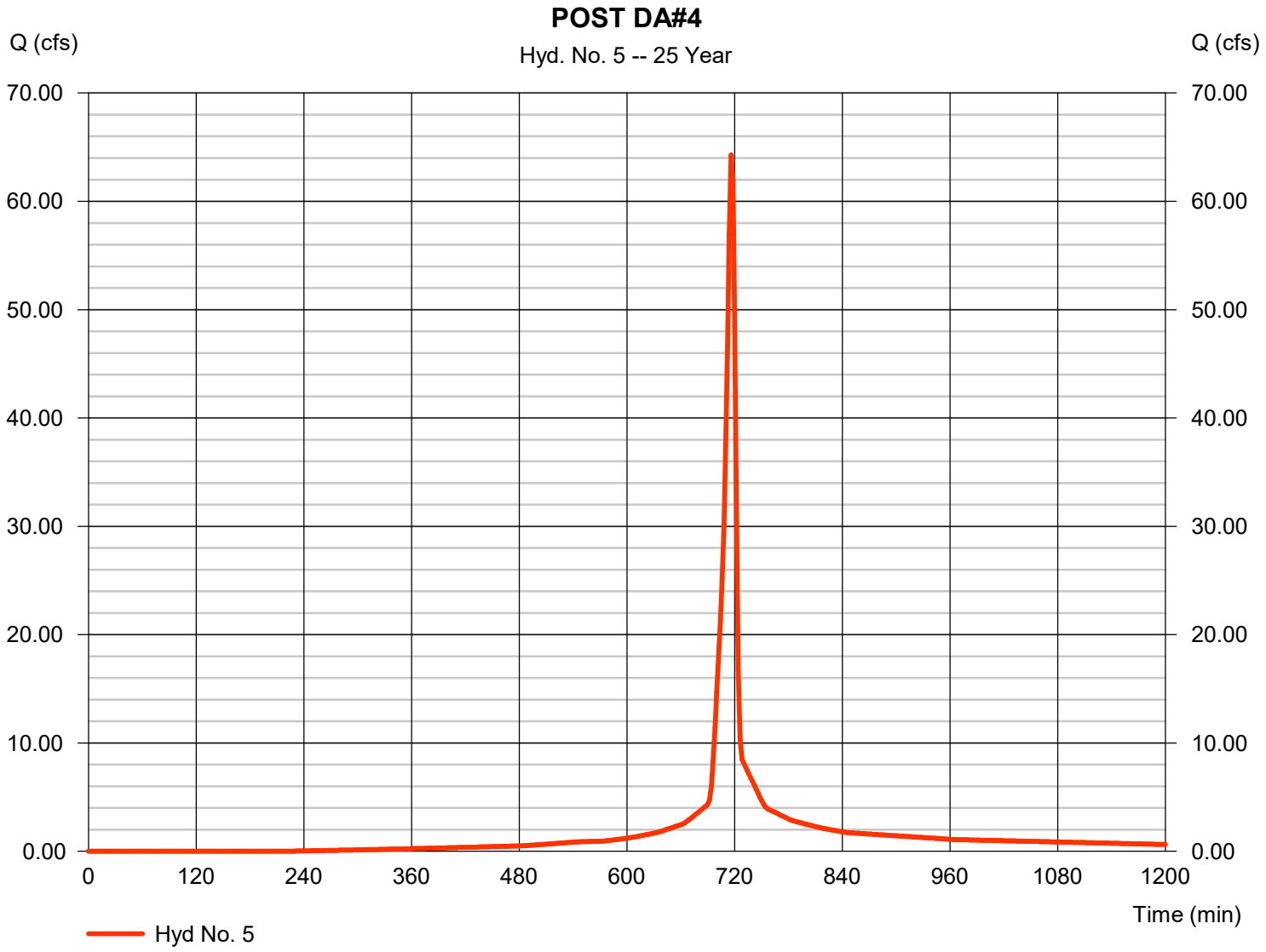


Hydrograph Report

Hyd. No. 5

POST DA#4

Hydrograph type	=	SCS Runoff	Peak discharge	=	64.27 cfs
Storm frequency	=	25 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	138,437 cuft
Drainage area	=	8.430 ac	Curve number	=	88.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.30 min
Total precip.	=	6.15 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

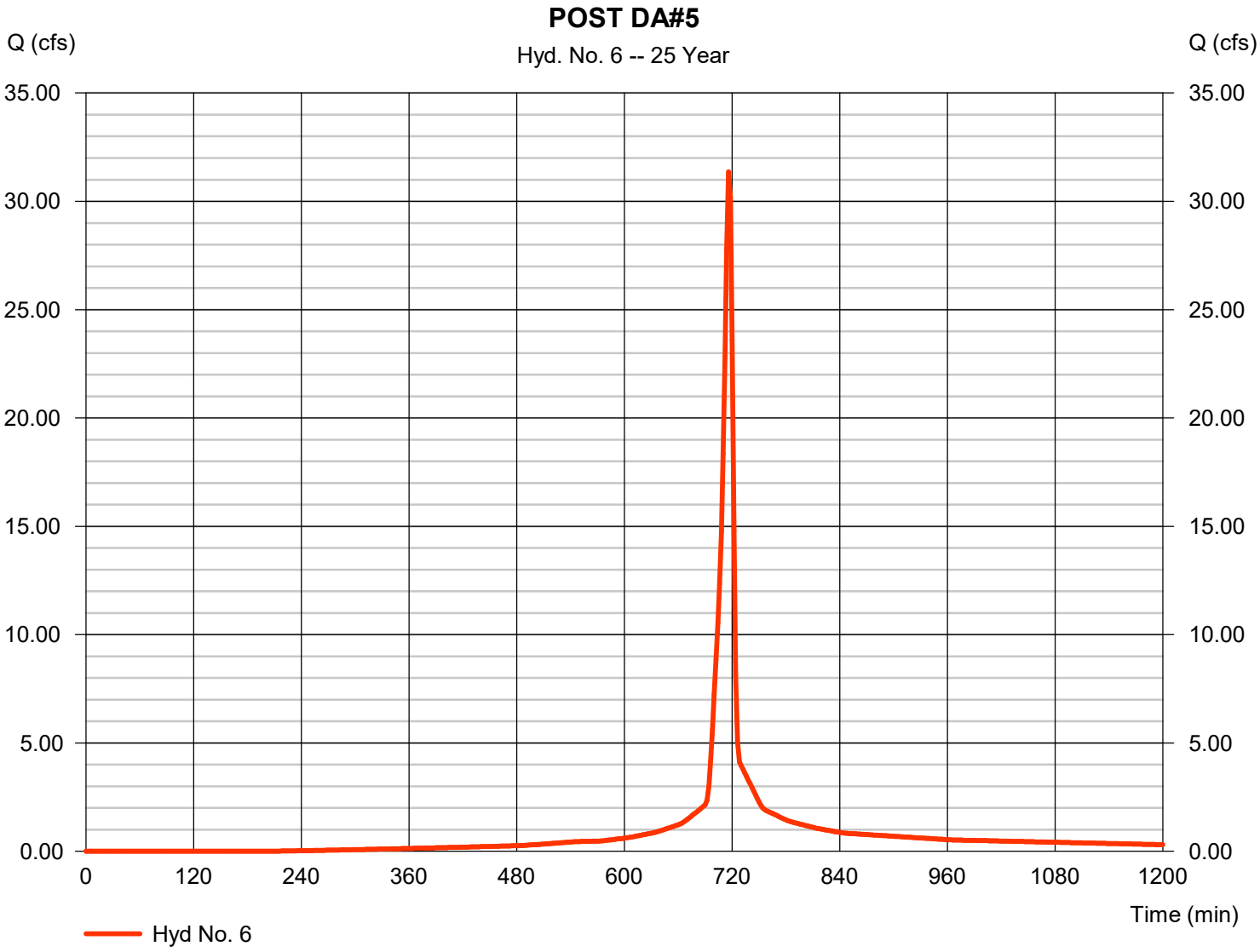


Hydrograph Report

Hyd. No. 6

POST DA#5

Hydrograph type	=	SCS Runoff	Peak discharge	=	31.35 cfs
Storm frequency	=	25 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	67,910 cuft
Drainage area	=	4.070 ac	Curve number	=	89.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	6.15 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

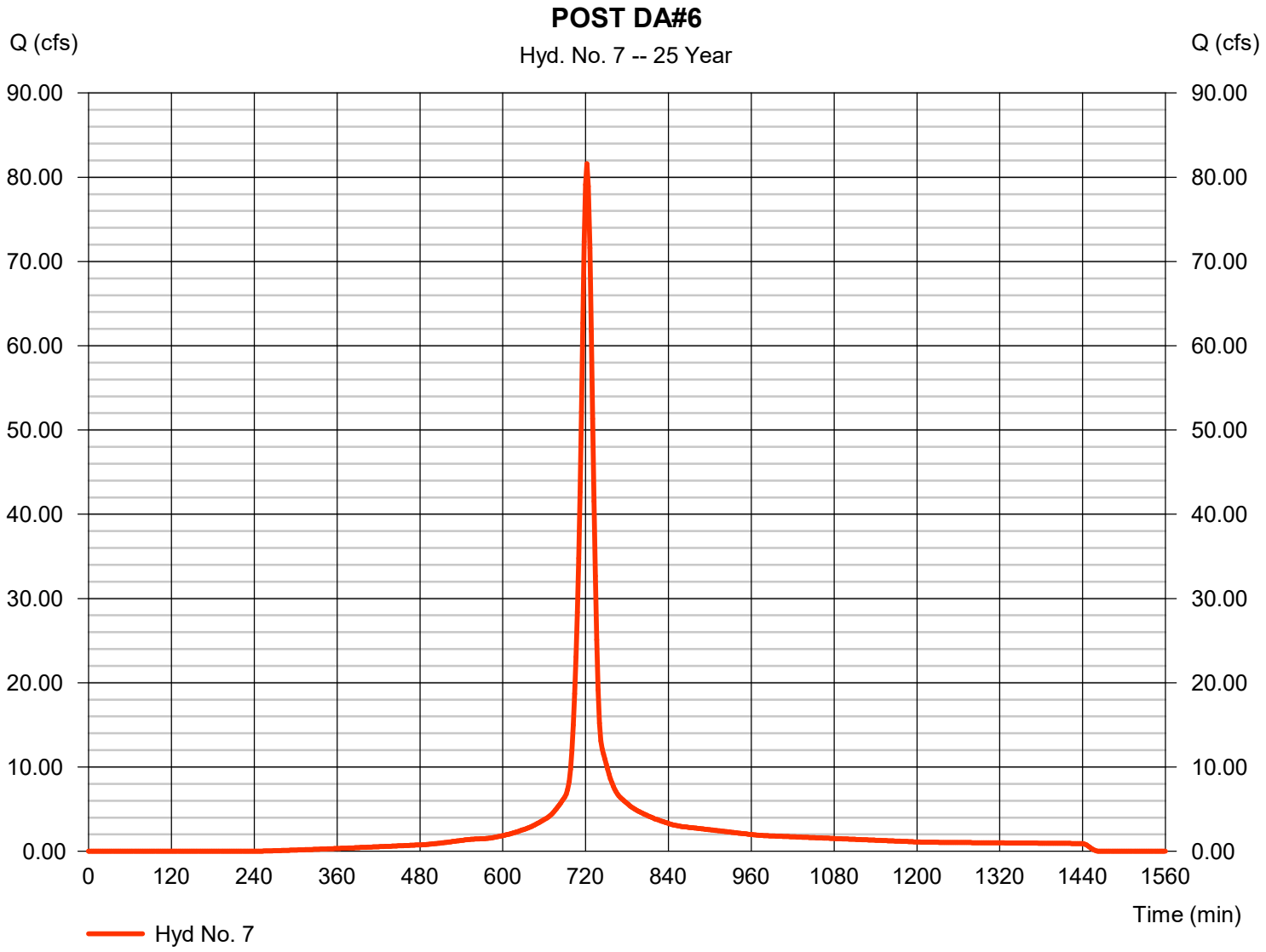


Hydrograph Report

Hyd. No. 7

POST DA#6

Hydrograph type	=	SCS Runoff	Peak discharge	=	81.60 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	237,158 cuft
Drainage area	=	14.210 ac	Curve number	=	87.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	14.80 min
Total precip.	=	6.15 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

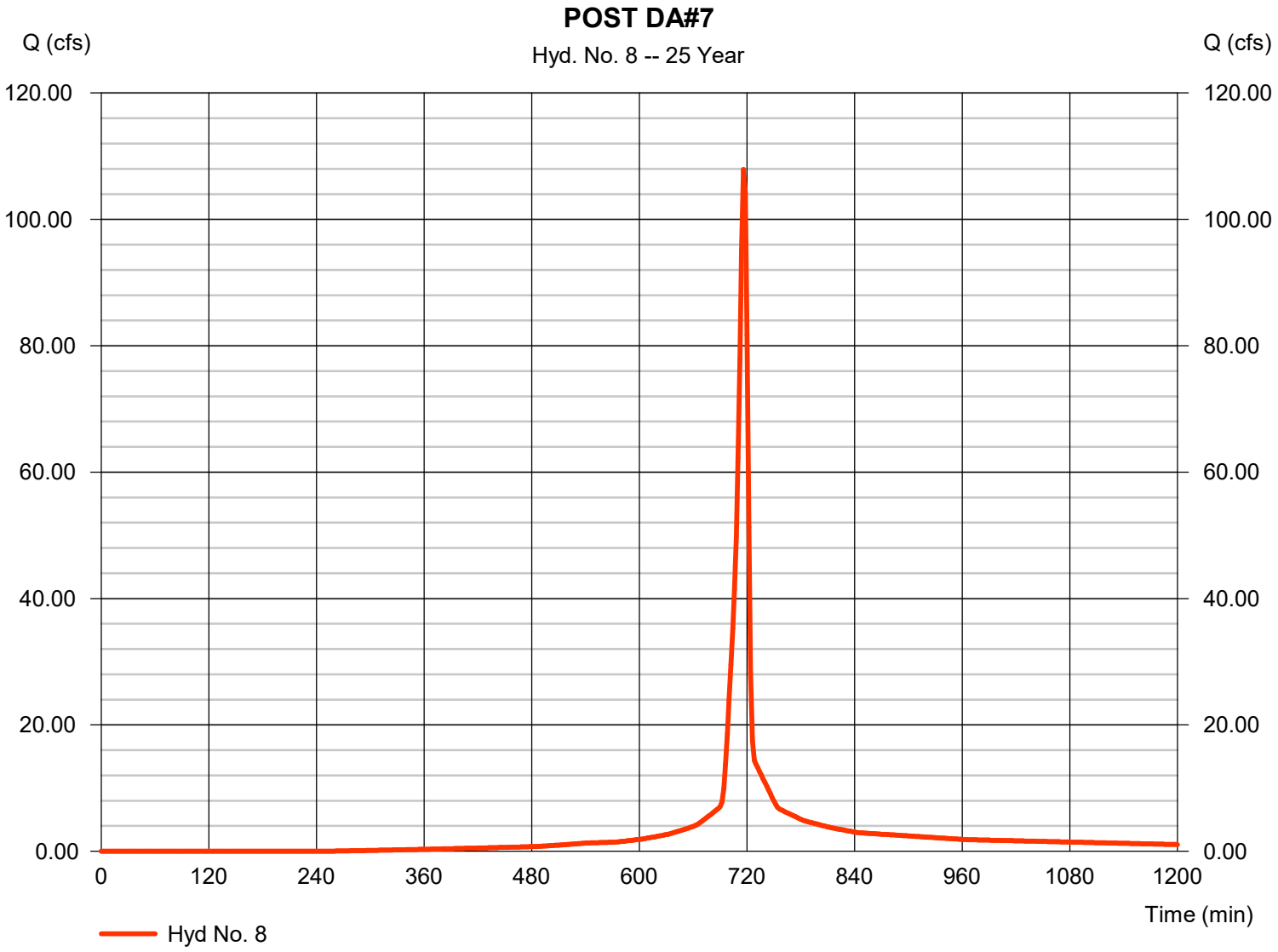


Hydrograph Report

Hyd. No. 8

POST DA#7

Hydrograph type	=	SCS Runoff	Peak discharge	=	107.92 cfs
Storm frequency	=	25 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	229,770 cuft
Drainage area	=	14.520 ac	Curve number	=	86.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.20 min
Total precip.	=	6.15 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

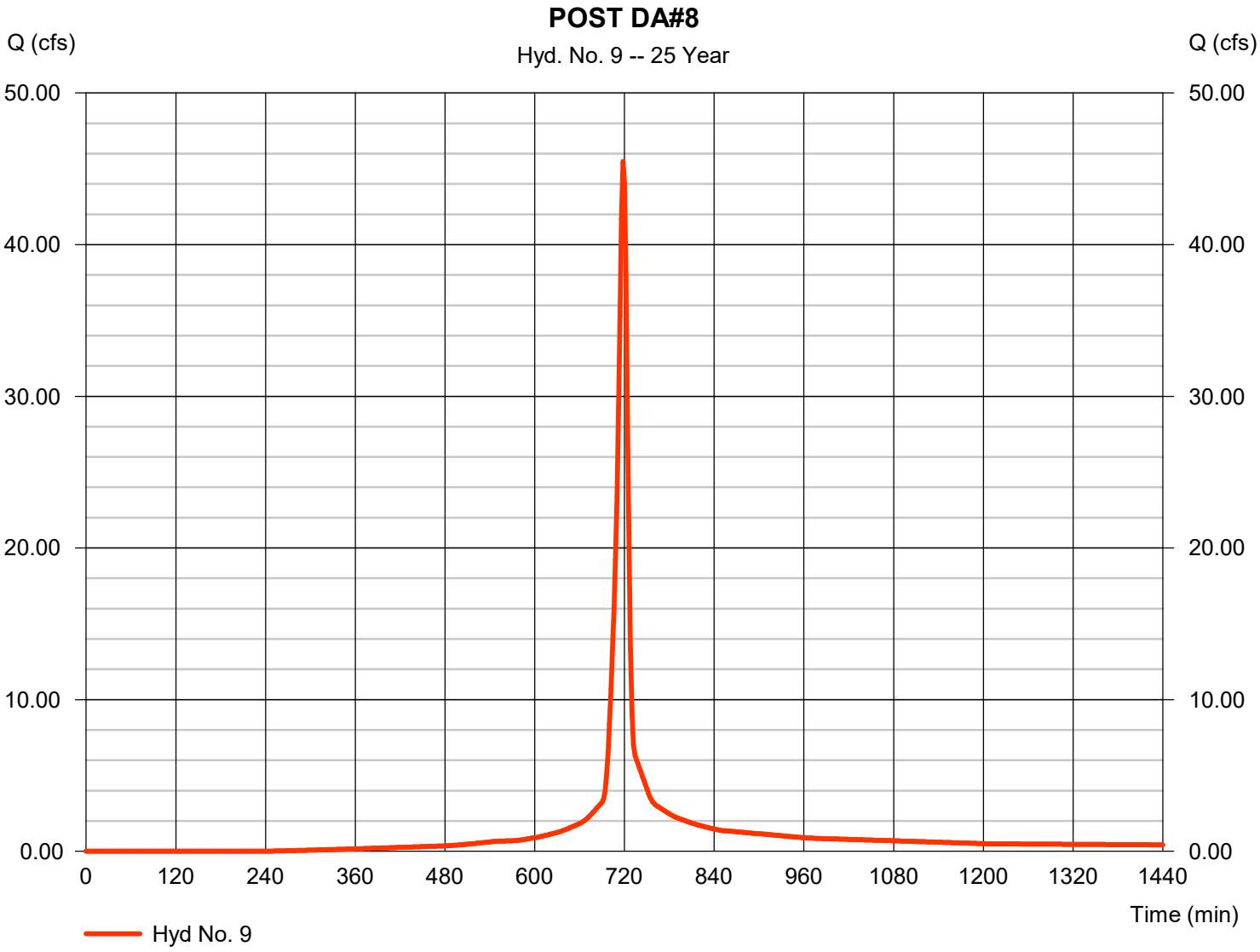


Hydrograph Report

Hyd. No. 9

POST DA#8

Hydrograph type	=	SCS Runoff	Peak discharge	=	45.48 cfs
Storm frequency	=	25 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	109,038 cuft
Drainage area	=	6.370 ac	Curve number	=	87.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.80 min
Total precip.	=	6.15 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

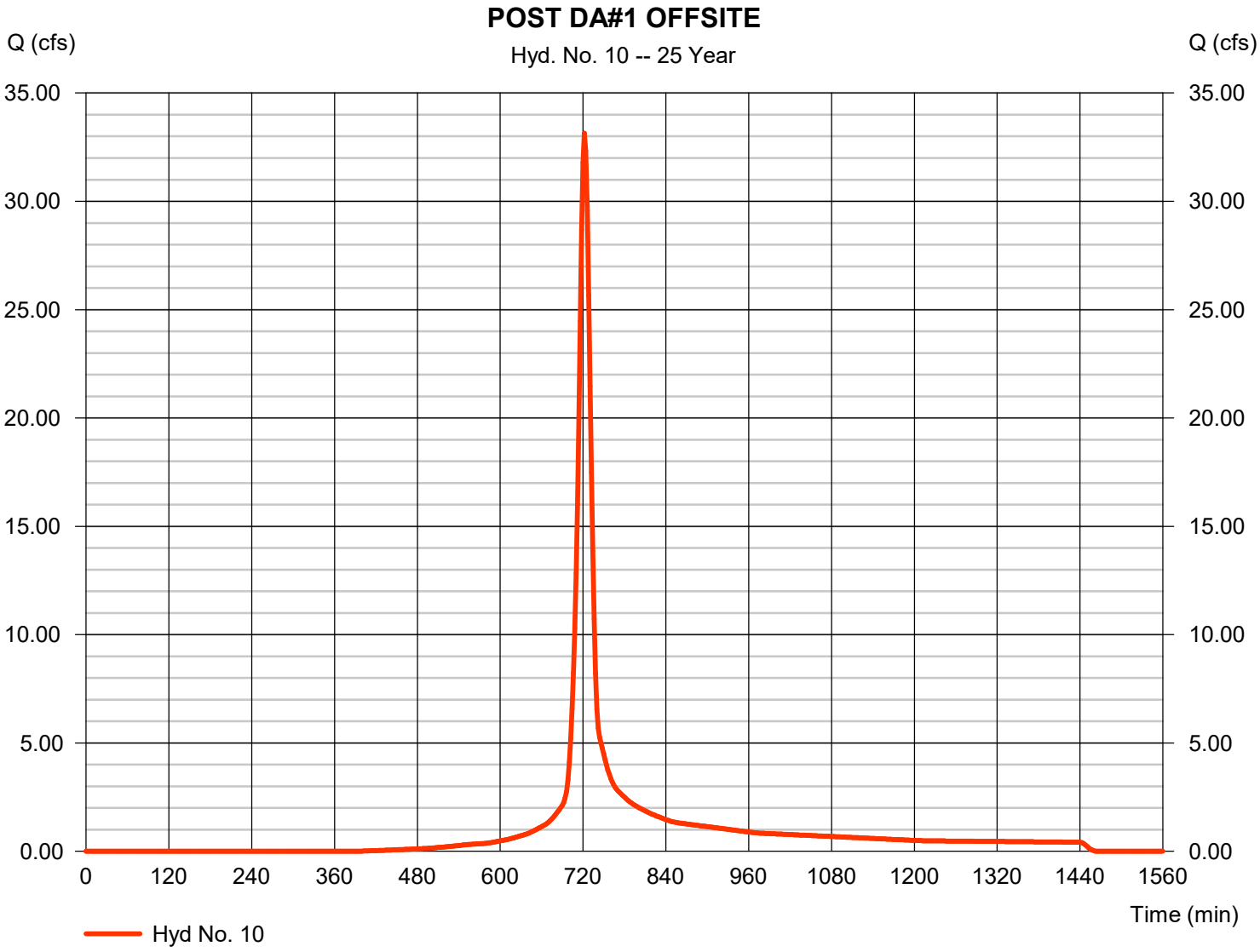


Hydrograph Report

Hyd. No. 10

POST DA#1 OFFSITE

Hydrograph type	=	SCS Runoff	Peak discharge	=	33.14 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	93,292 cuft
Drainage area	=	6.930 ac	Curve number	=	78.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	14.00 min
Total precip.	=	6.15 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

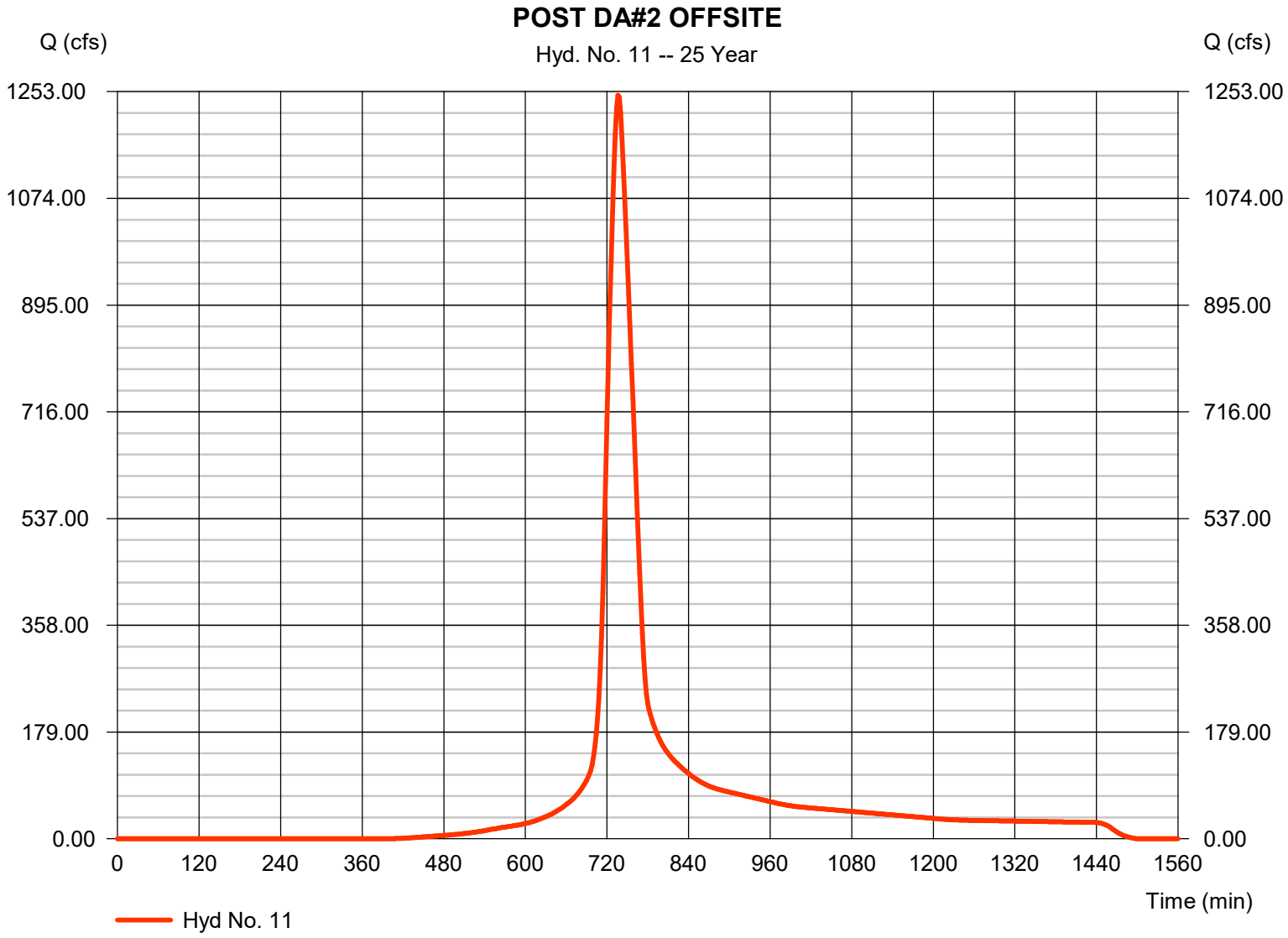


Hydrograph Report

Hyd. No. 11

POST DA#2 OFFSITE

Hydrograph type	= SCS Runoff	Peak discharge	= 1247.07 cfs
Storm frequency	= 25 yrs	Time to peak	= 736 min
Time interval	= 2 min	Hyd. volume	= 6,042,571 cuft
Drainage area	= 437.640 ac	Curve number	= 78.9
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 38.10 min
Total precip.	= 6.15 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

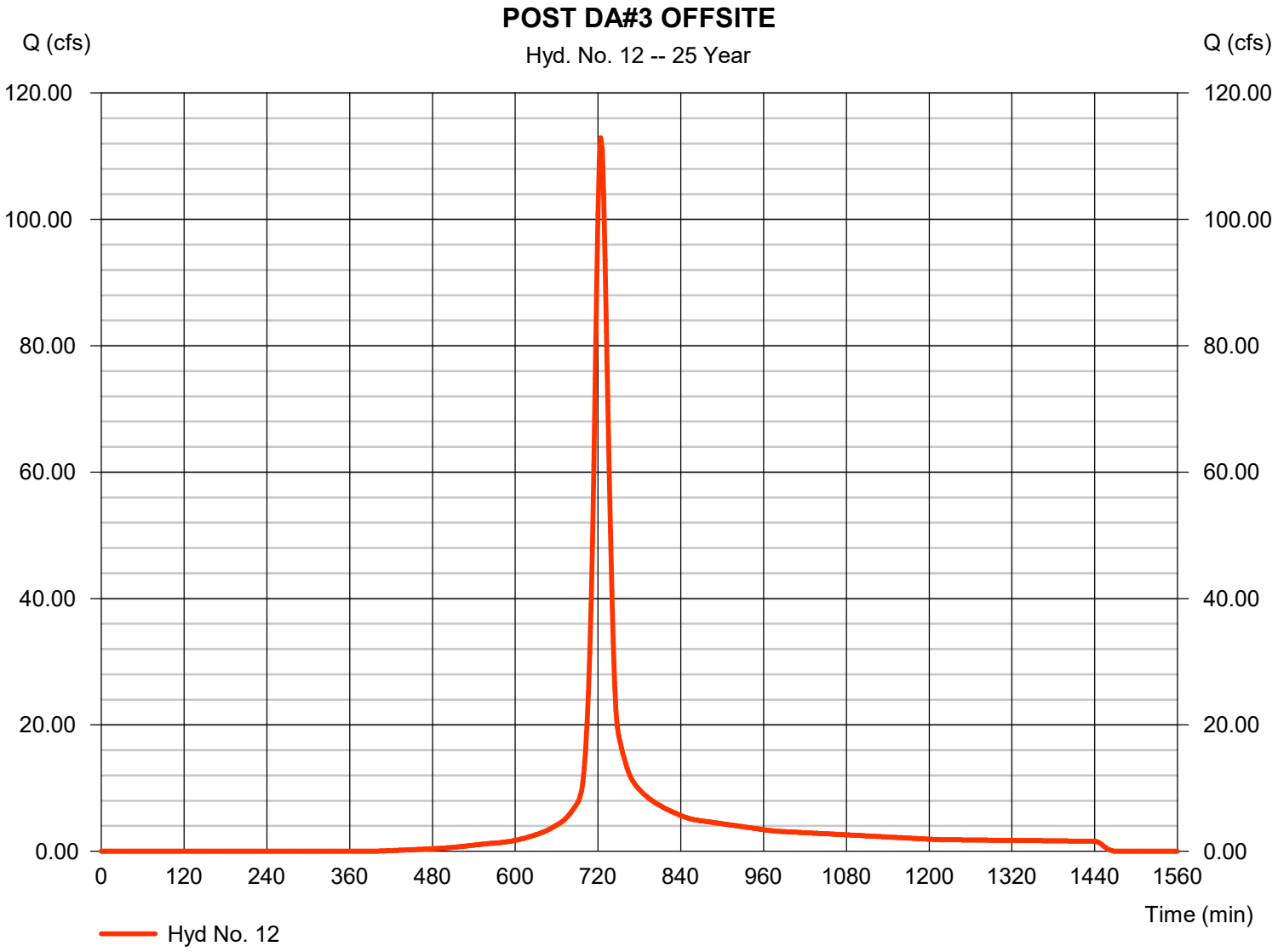


Hydrograph Report

Hyd. No. 12

POST DA#3 OFFSITE

Hydrograph type	=	SCS Runoff	Peak discharge	=	112.91 cfs
Storm frequency	=	25 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	353,740 cuft
Drainage area	=	25.620 ac	Curve number	=	78.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	19.60 min
Total precip.	=	6.15 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

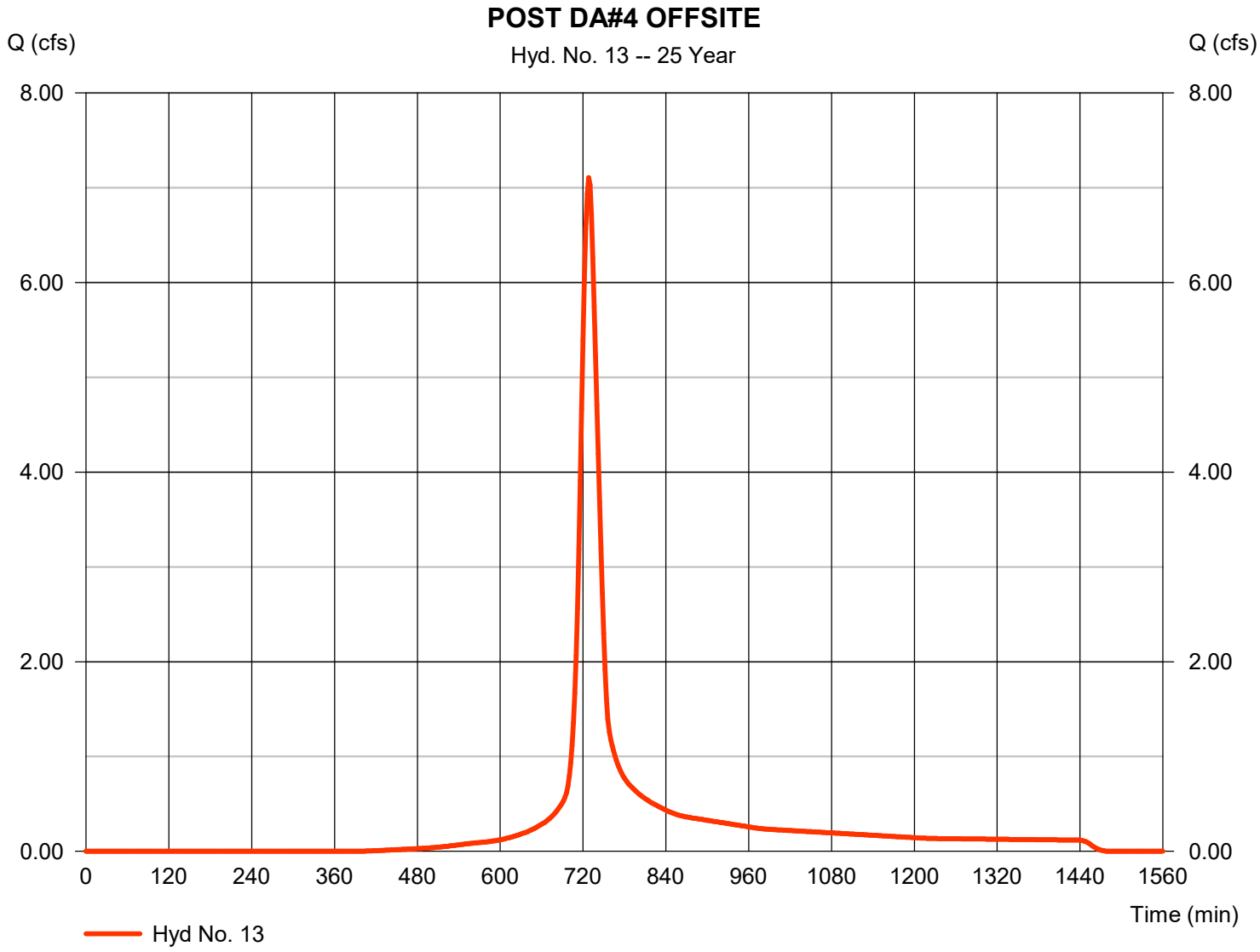


Hydrograph Report

Hyd. No. 13

POST DA#4 OFFSITE

Hydrograph type	=	SCS Runoff	Peak discharge	=	7.107 cfs
Storm frequency	=	25 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	26,096 cuft
Drainage area	=	1.920 ac	Curve number	=	78.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	26.20 min
Total precip.	=	6.15 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



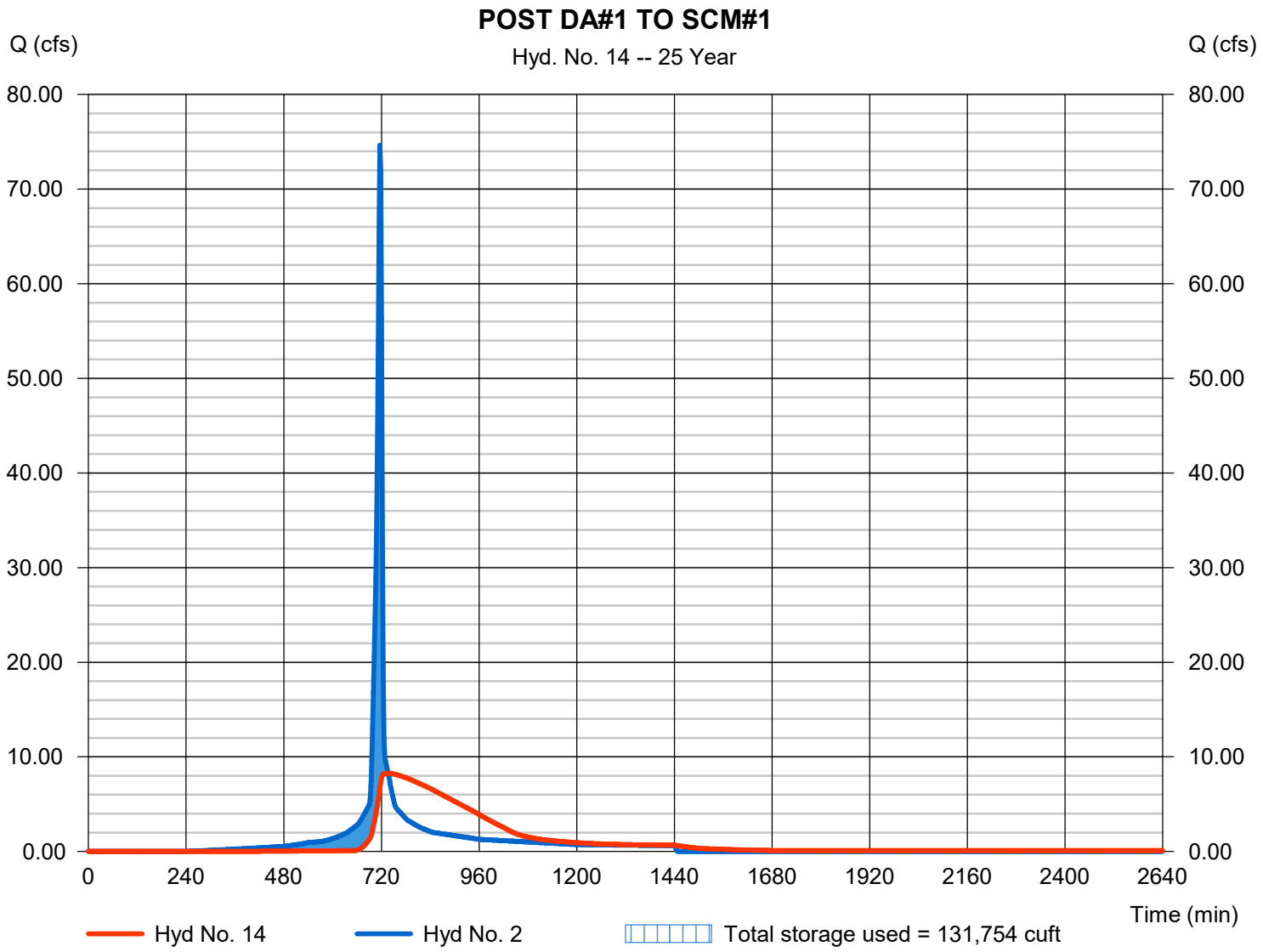
Hydrograph Report

Hyd. No. 14

POST DA#1 TO SCM#1

Hydrograph type	= Reservoir	Peak discharge	= 8.252 cfs
Storm frequency	= 25 yrs	Time to peak	= 736 min
Time interval	= 2 min	Hyd. volume	= 157,968 cuft
Inflow hyd. No.	= 2 - POST DA#1	Max. Elevation	= 266.09 ft
Reservoir name	= SCM#1	Max. Storage	= 131,754 cuft

Storage Indication method used. Wet pond routing start elevation = 262.00 ft.



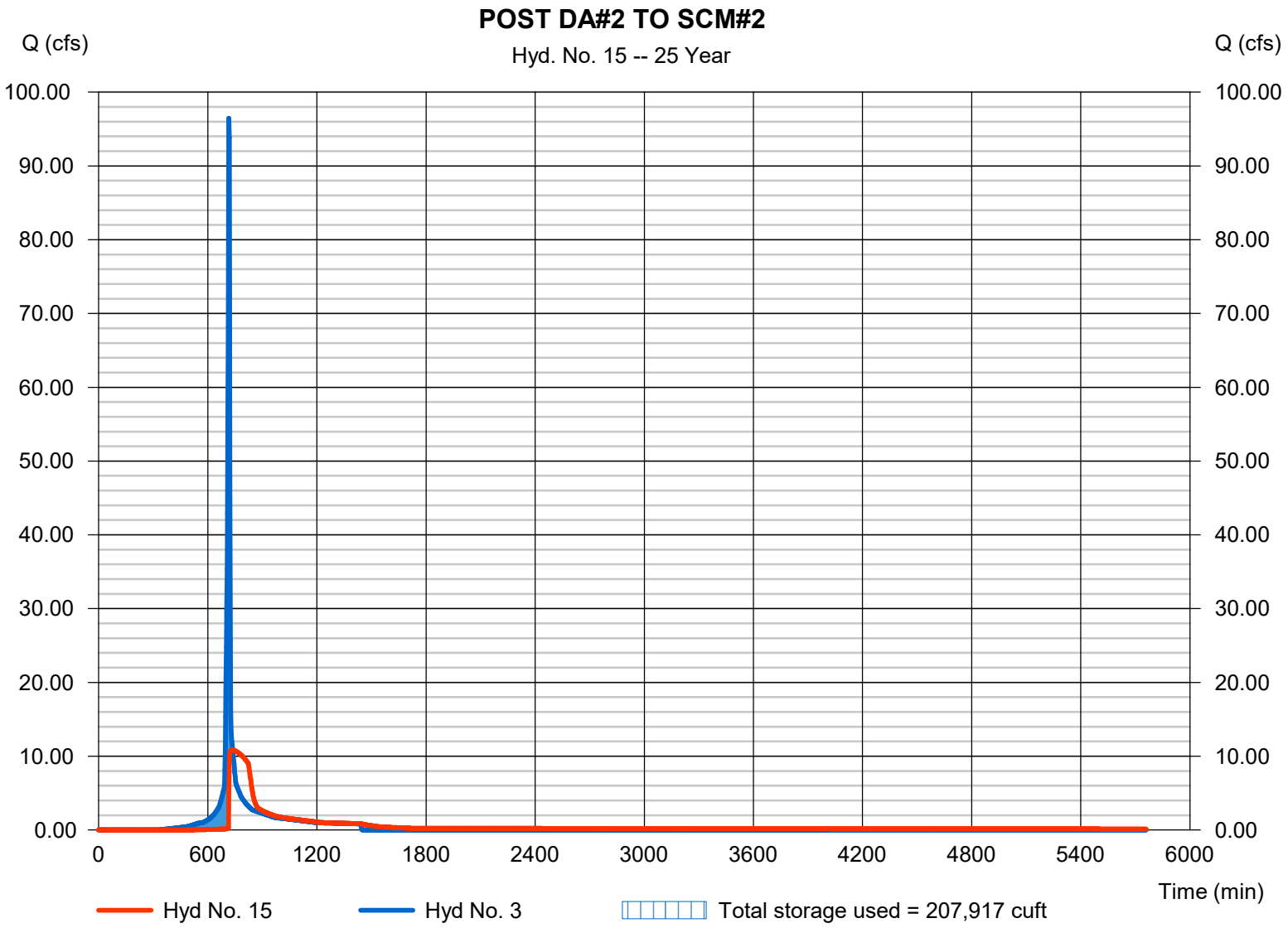
Hydrograph Report

Hyd. No. 15

POST DA#2 TO SCM#2

Hydrograph type	= Reservoir	Peak discharge	= 10.82 cfs
Storm frequency	= 25 yrs	Time to peak	= 736 min
Time interval	= 2 min	Hyd. volume	= 179,422 cuft
Inflow hyd. No.	= 3 - POST DA#2	Max. Elevation	= 267.18 ft
Reservoir name	= SCM#2	Max. Storage	= 207,917 cuft

Storage Indication method used. Wet pond routing start elevation = 264.00 ft.



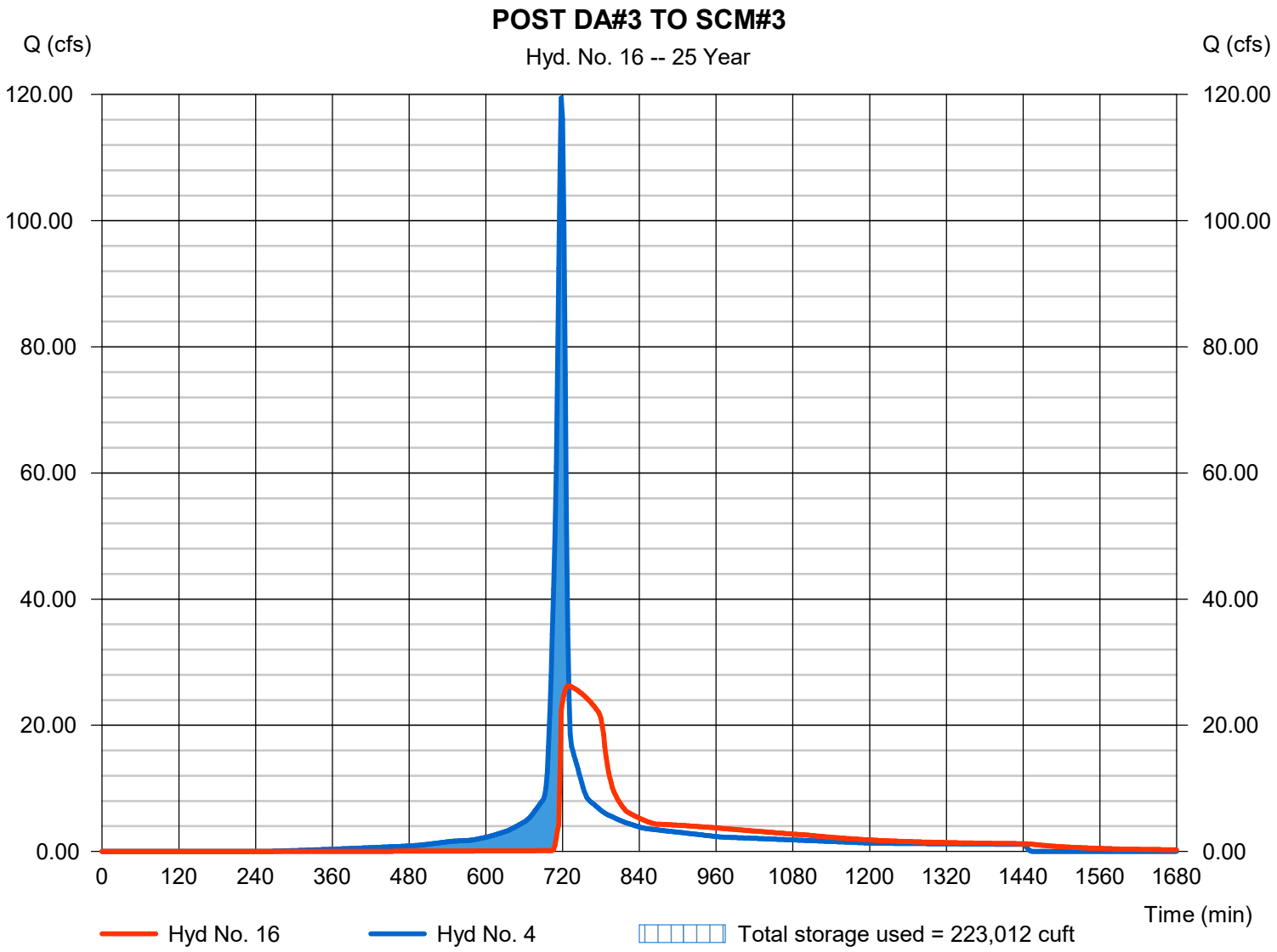
Hydrograph Report

Hyd. No. 16

POST DA#3 TO SCM#3

Hydrograph type	= Reservoir	Peak discharge	= 26.28 cfs
Storm frequency	= 25 yrs	Time to peak	= 730 min
Time interval	= 2 min	Hyd. volume	= 259,900 cuft
Inflow hyd. No.	= 4 - POST DA #3	Max. Elevation	= 244.59 ft
Reservoir name	= SCM#3	Max. Storage	= 223,012 cuft

Storage Indication method used. Wet pond routing start elevation = 240.00 ft.



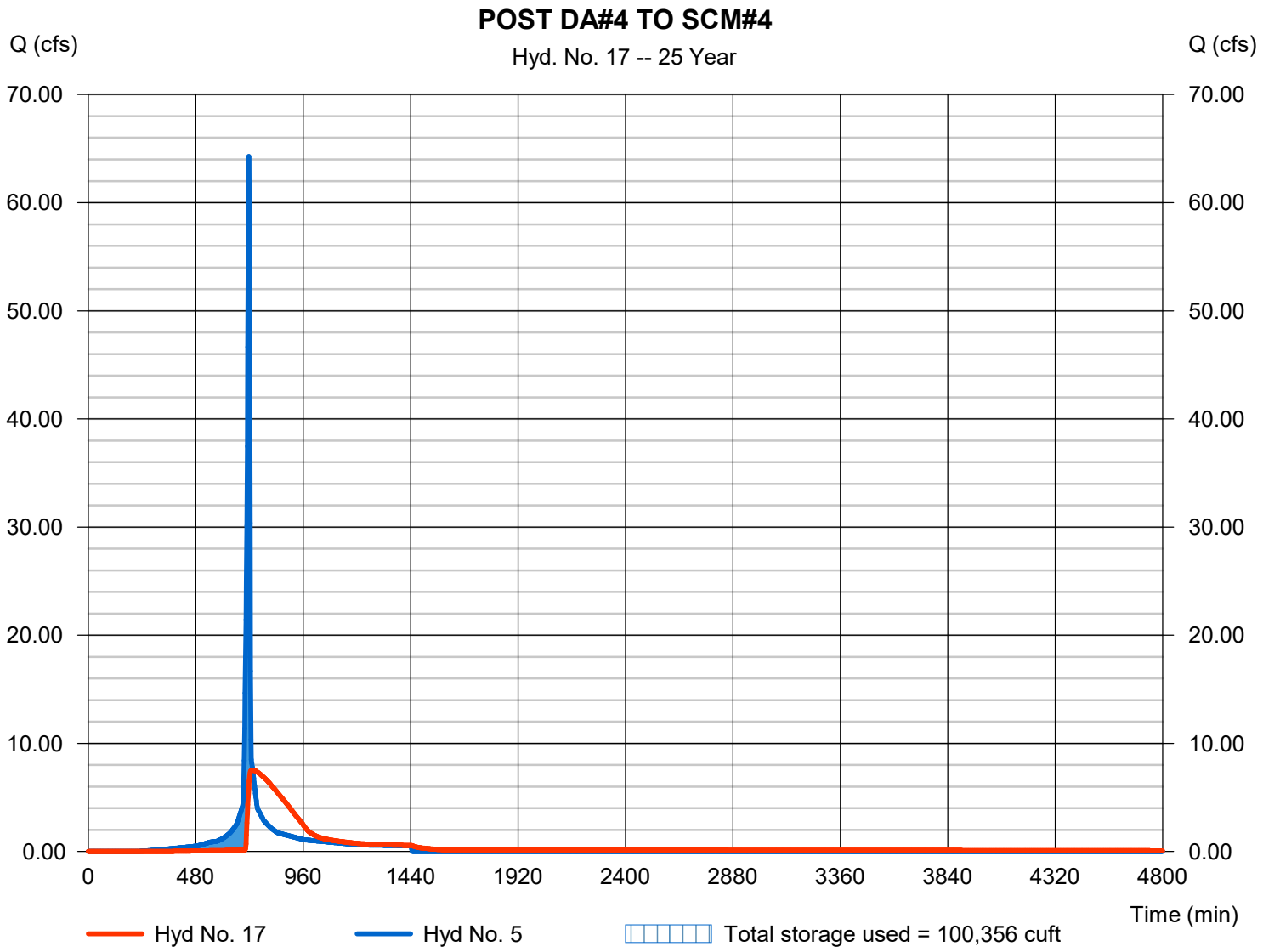
Hydrograph Report

Hyd. No. 17

POST DA#4 TO SCM#4

Hydrograph type	=	Reservoir	Peak discharge	=	7.513 cfs
Storm frequency	=	25 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	136,154 cuft
Inflow hyd. No.	=	5 - POST DA#4	Max. Elevation	=	244.54 ft
Reservoir name	=	SCM#4	Max. Storage	=	100,356 cuft

Storage Indication method used. Wet pond routing start elevation = 240.00 ft.



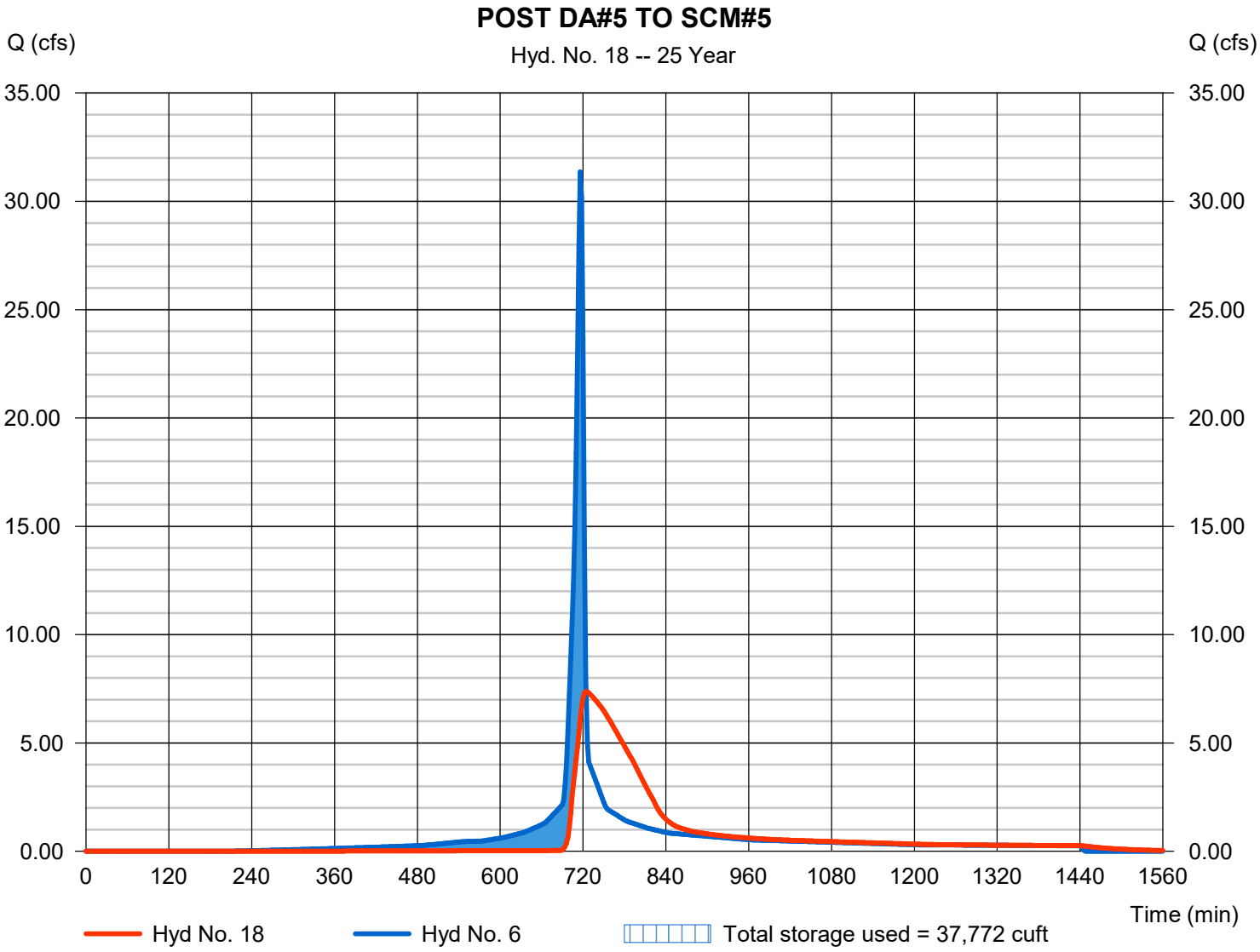
Hydrograph Report

Hyd. No. 18

POST DA#5 TO SCM#5

Hydrograph type	= Reservoir	Peak discharge	= 7.373 cfs
Storm frequency	= 25 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 64,884 cuft
Inflow hyd. No.	= 6 - POST DA#5	Max. Elevation	= 253.56 ft
Reservoir name	= SCM#5	Max. Storage	= 37,772 cuft

Storage Indication method used. Wet pond routing start elevation = 249.00 ft.



Hydrograph Report

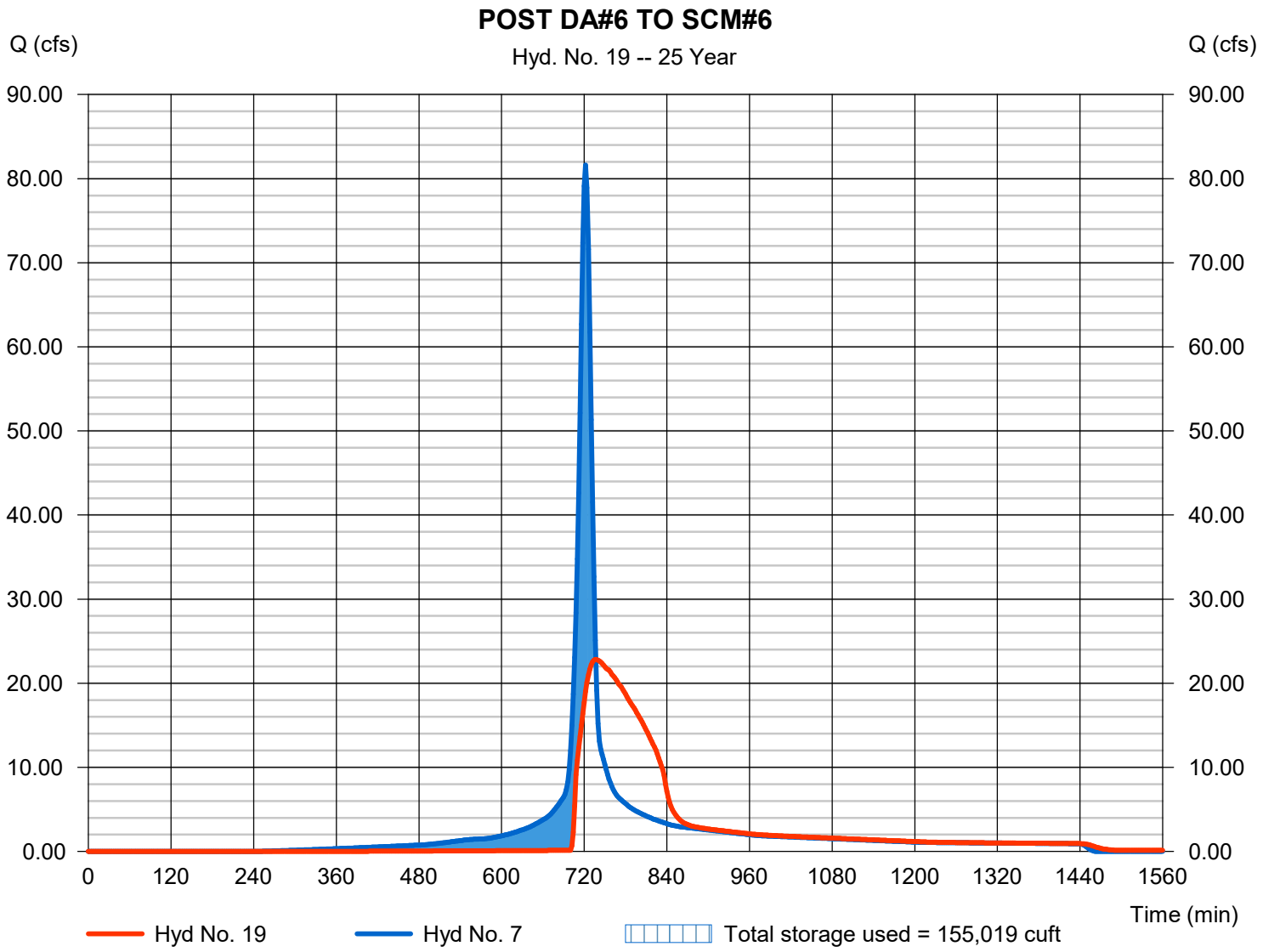
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Tuesday, 06 / 4 / 2024

Hyd. No. 19

POST DA#6 TO SCM#6

Hydrograph type	= Reservoir	Peak discharge	= 22.82 cfs
Storm frequency	= 25 yrs	Time to peak	= 736 min
Time interval	= 2 min	Hyd. volume	= 228,531 cuft
Inflow hyd. No.	= 7 - POST DA#6	Max. Elevation	= 241.81 ft
Reservoir name	= SCM#6	Max. Storage	= 155,019 cuft

Storage Indication method used. Wet pond routing start elevation = 237.00 ft.



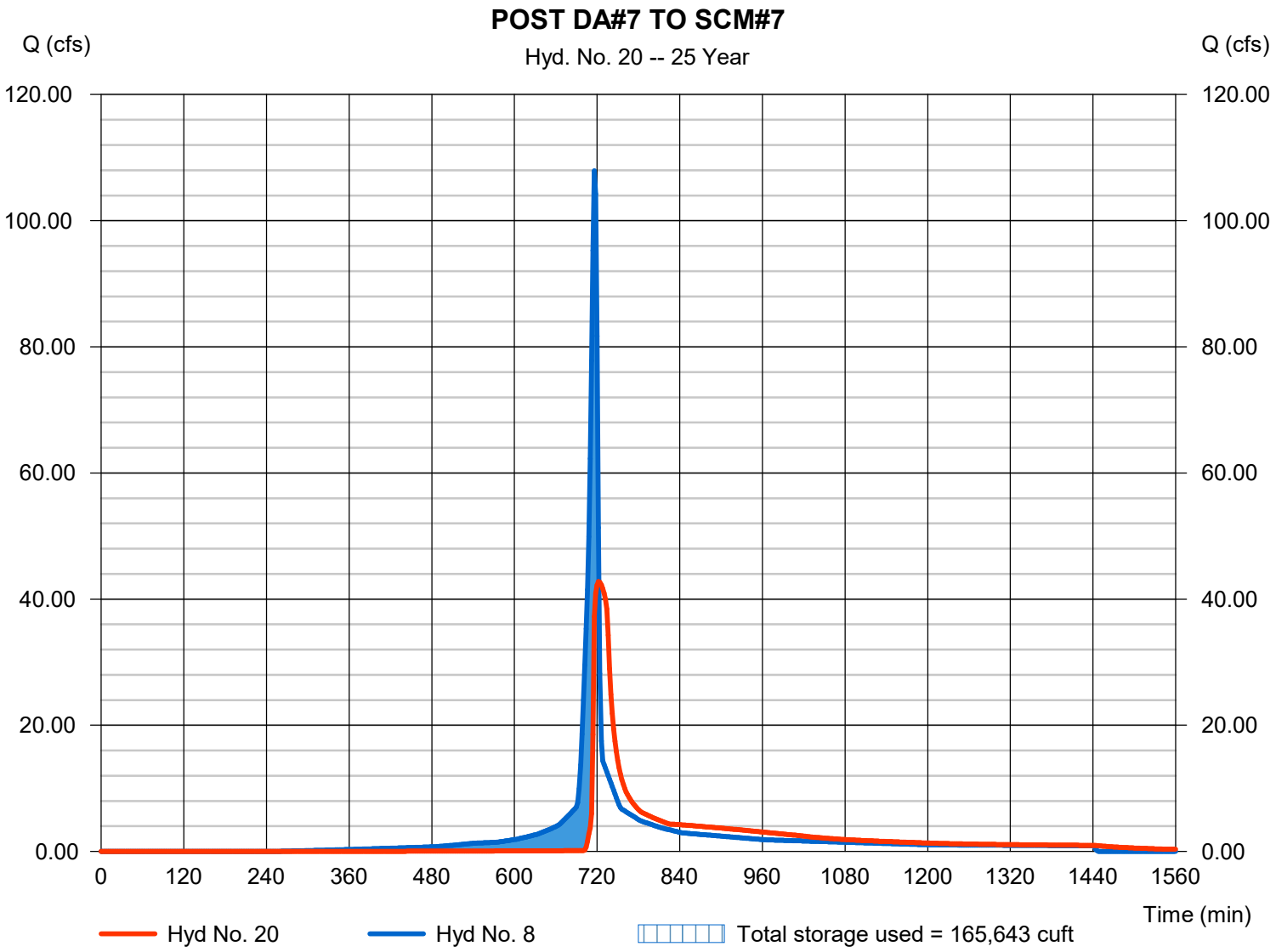
Hydrograph Report

Hyd. No. 20

POST DA#7 TO SCM#7

Hydrograph type	= Reservoir	Peak discharge	= 42.77 cfs
Storm frequency	= 25 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 216,059 cuft
Inflow hyd. No.	= 8 - POST DA#7	Max. Elevation	= 243.27 ft
Reservoir name	= SCM#7	Max. Storage	= 165,643 cuft

Storage Indication method used. Wet pond routing start elevation = 239.00 ft.



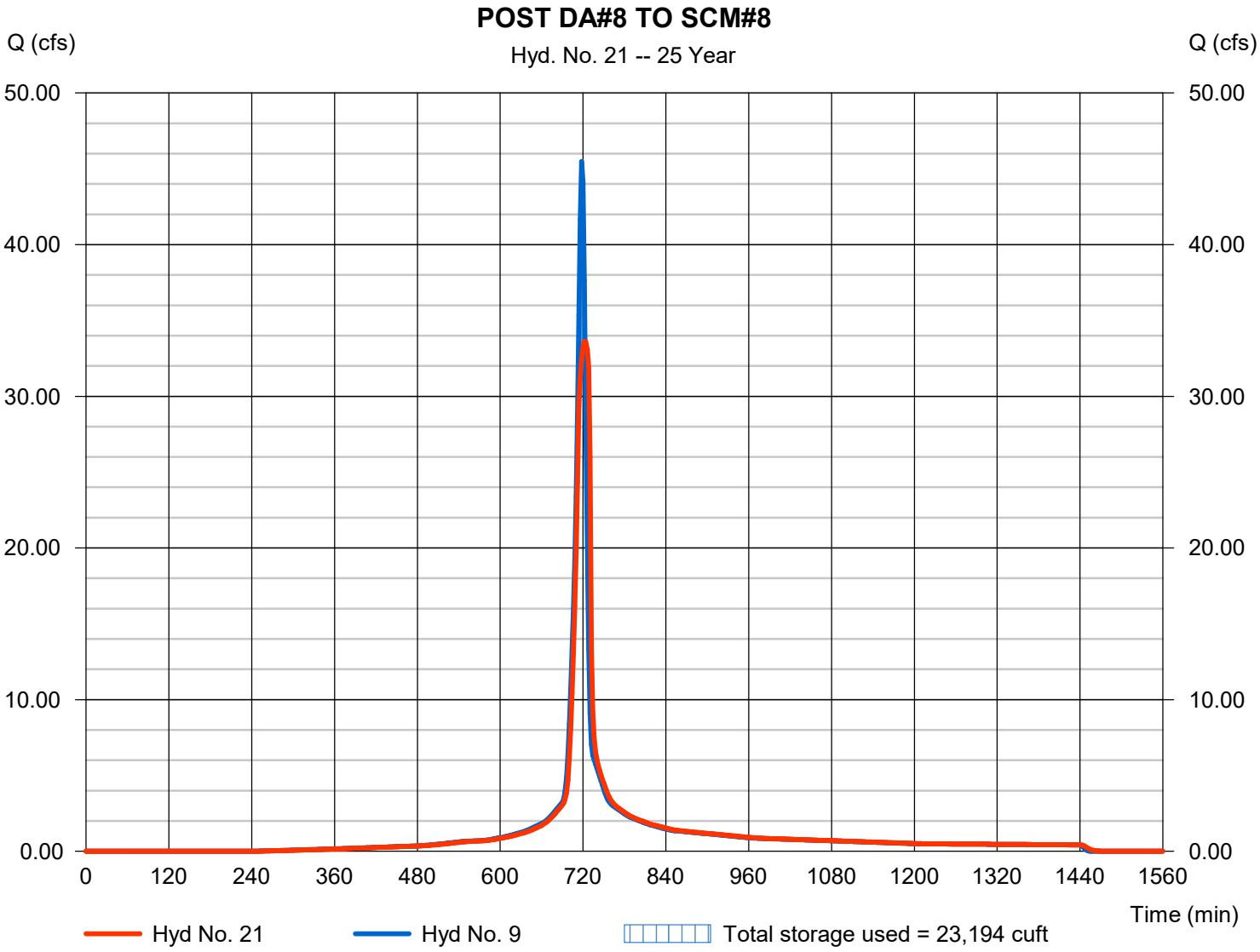
Hydrograph Report

Hyd. No. 21

POST DA#8 TO SCM#8

Hydrograph type	=	Reservoir	Peak discharge	=	33.63 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	109,038 cuft
Inflow hyd. No.	=	9 - POST DA#8	Max. Elevation	=	241.33 ft
Reservoir name	=	SCM#8	Max. Storage	=	23,194 cuft

Storage Indication method used. Wet pond routing start elevation = 240.00 ft.

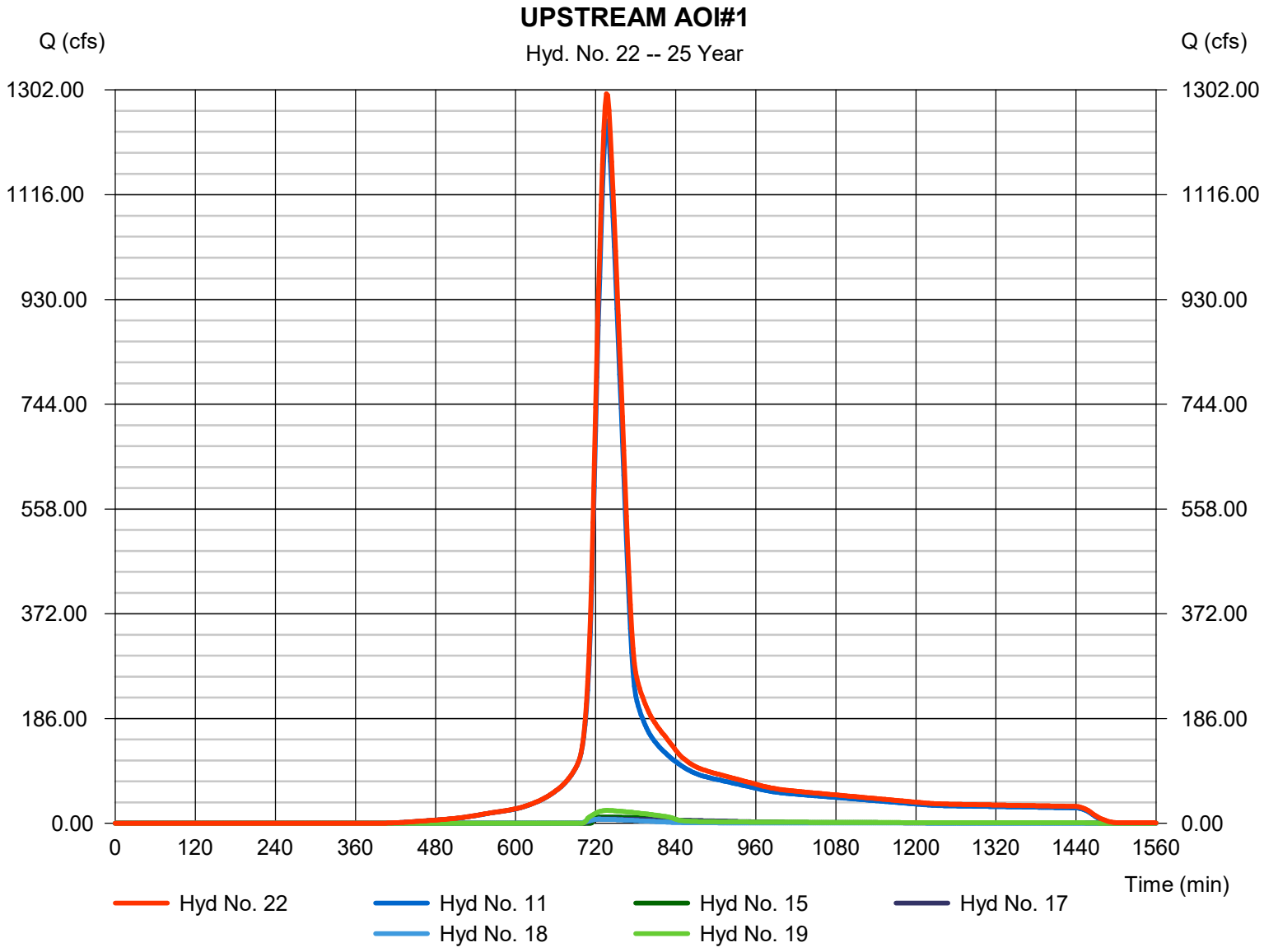


Hydrograph Report

Hyd. No. 22

UPSTREAM AOI#1

Hydrograph type	= Combine	Peak discharge	= 1295.27 cfs
Storm frequency	= 25 yrs	Time to peak	= 736 min
Time interval	= 2 min	Hyd. volume	= 6,651,559 cuft
Inflow hyds.	= 11, 15, 17, 18, 19	Contrib. drain. area	= 437.640 ac

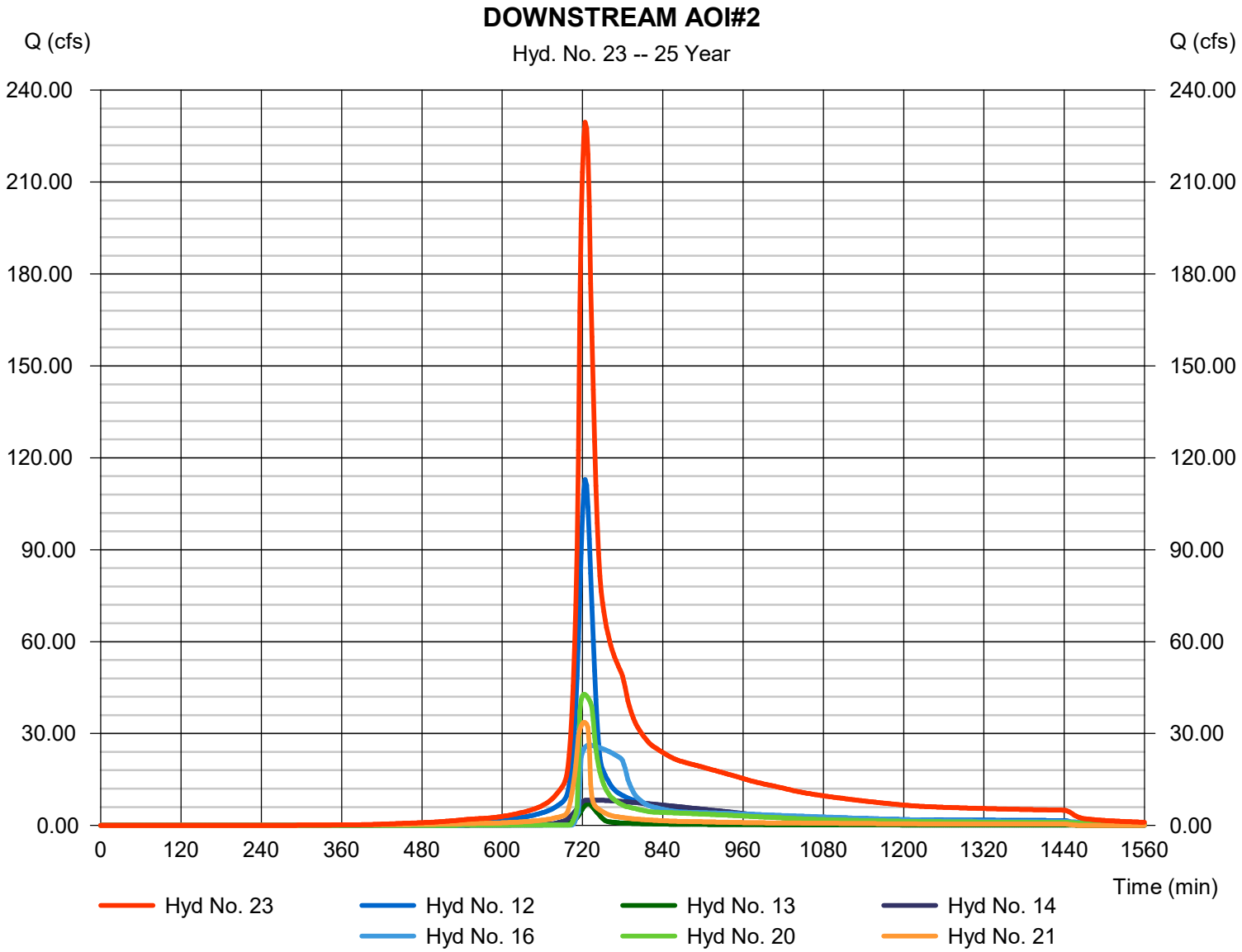


Hydrograph Report

Hyd. No. 23

DOWNSTREAM AOI#2

Hydrograph type	= Combine	Peak discharge	= 229.53 cfs
Storm frequency	= 25 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 1,122,802 cuft
Inflow hyds.	= 12, 13, 14, 16, 20, 21	Contrib. drain. area	= 27.540 ac

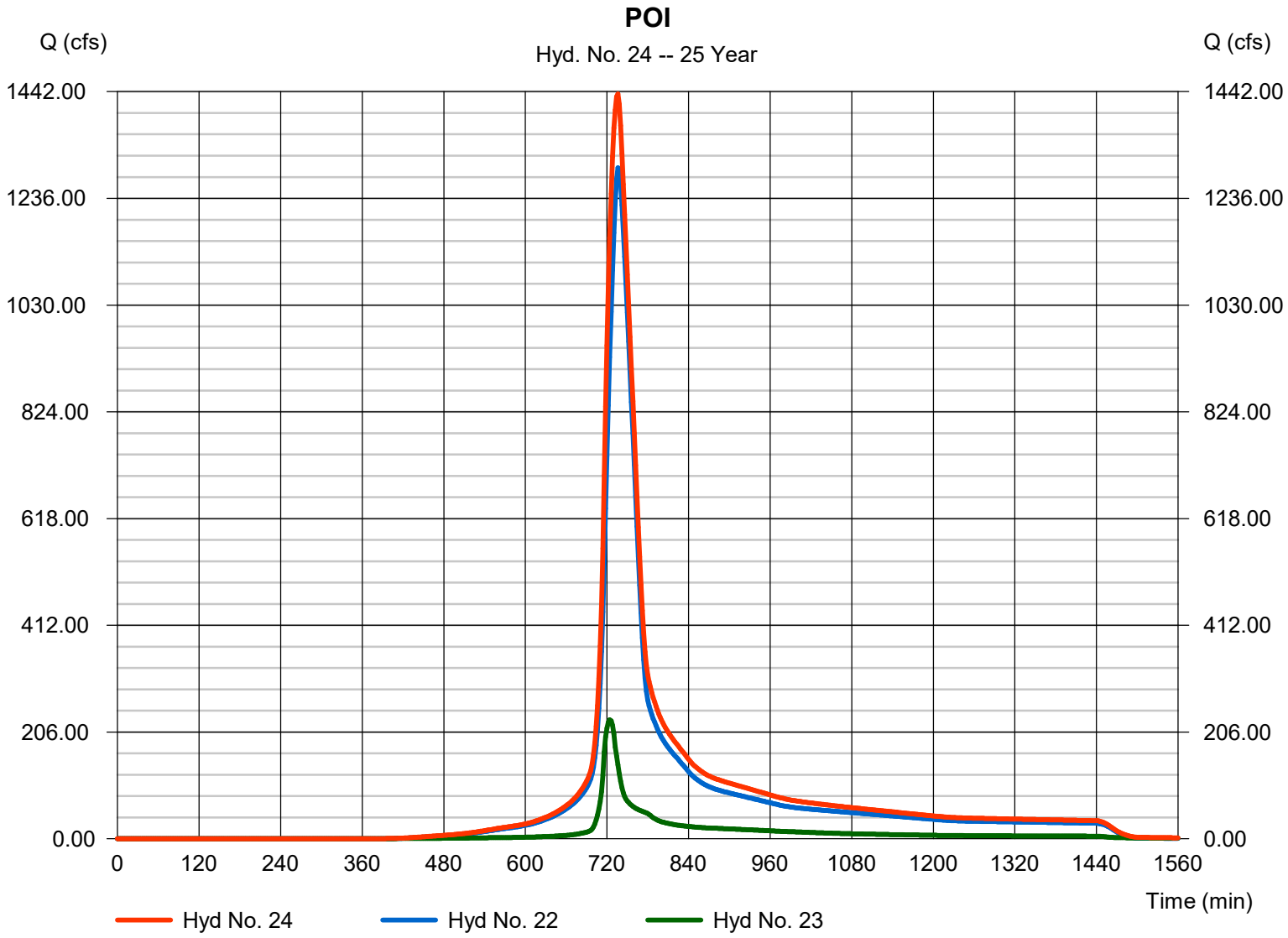


Hydrograph Report

Hyd. No. 24

POI

Hydrograph type	= Combine	Peak discharge	= 1437.64 cfs
Storm frequency	= 25 yrs	Time to peak	= 736 min
Time interval	= 2 min	Hyd. volume	= 7,774,362 cuft
Inflow hyds.	= 22, 23	Contrib. drain. area	= 0.000 ac

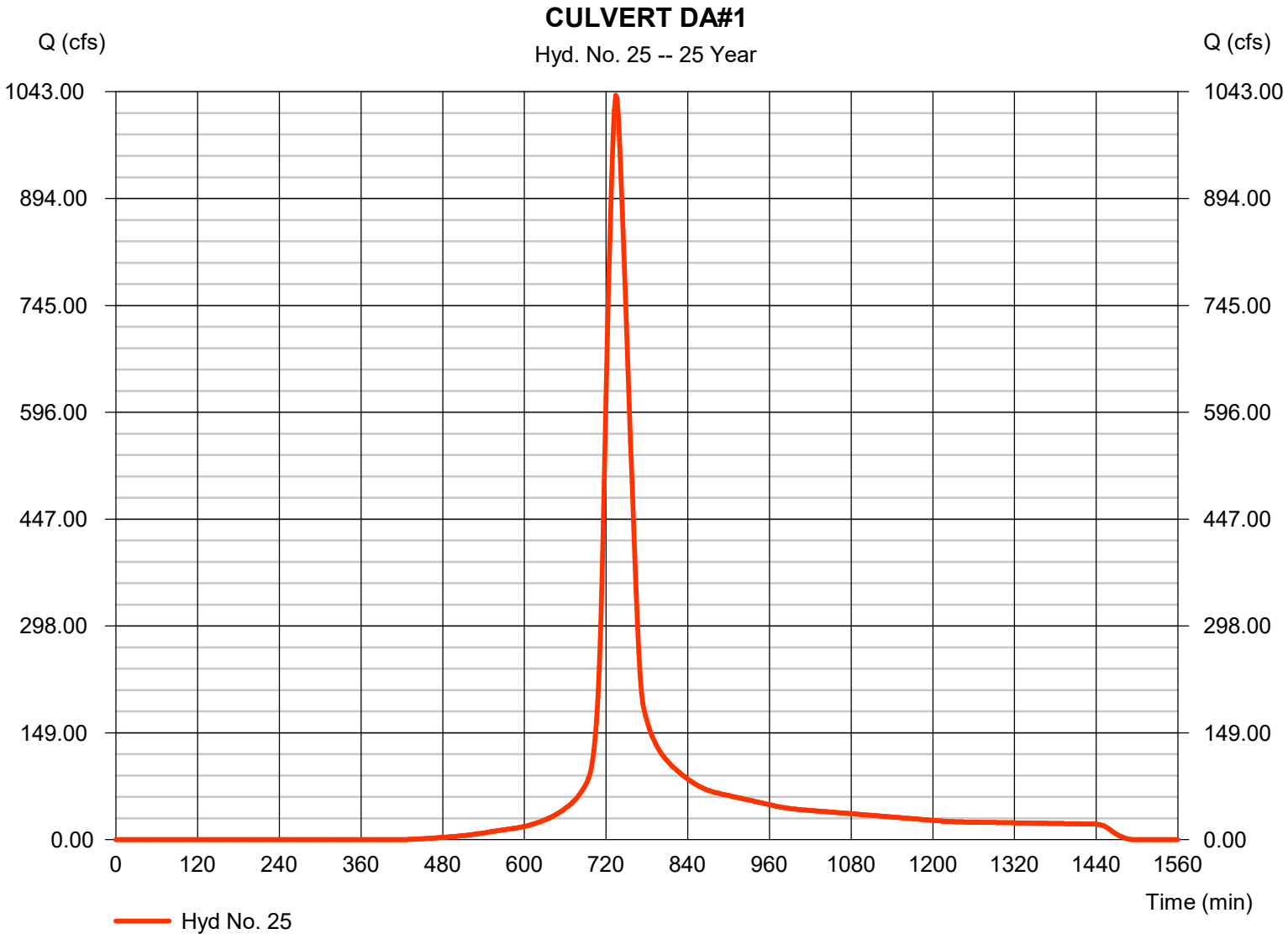


Hydrograph Report

Hyd. No. 25

CULVERT DA#1

Hydrograph type	=	SCS Runoff	Peak discharge	=	1037.75 cfs
Storm frequency	=	25 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	4,699,916 cuft
Drainage area	=	356.740 ac	Curve number	=	77.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	34.90 min
Total precip.	=	6.15 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

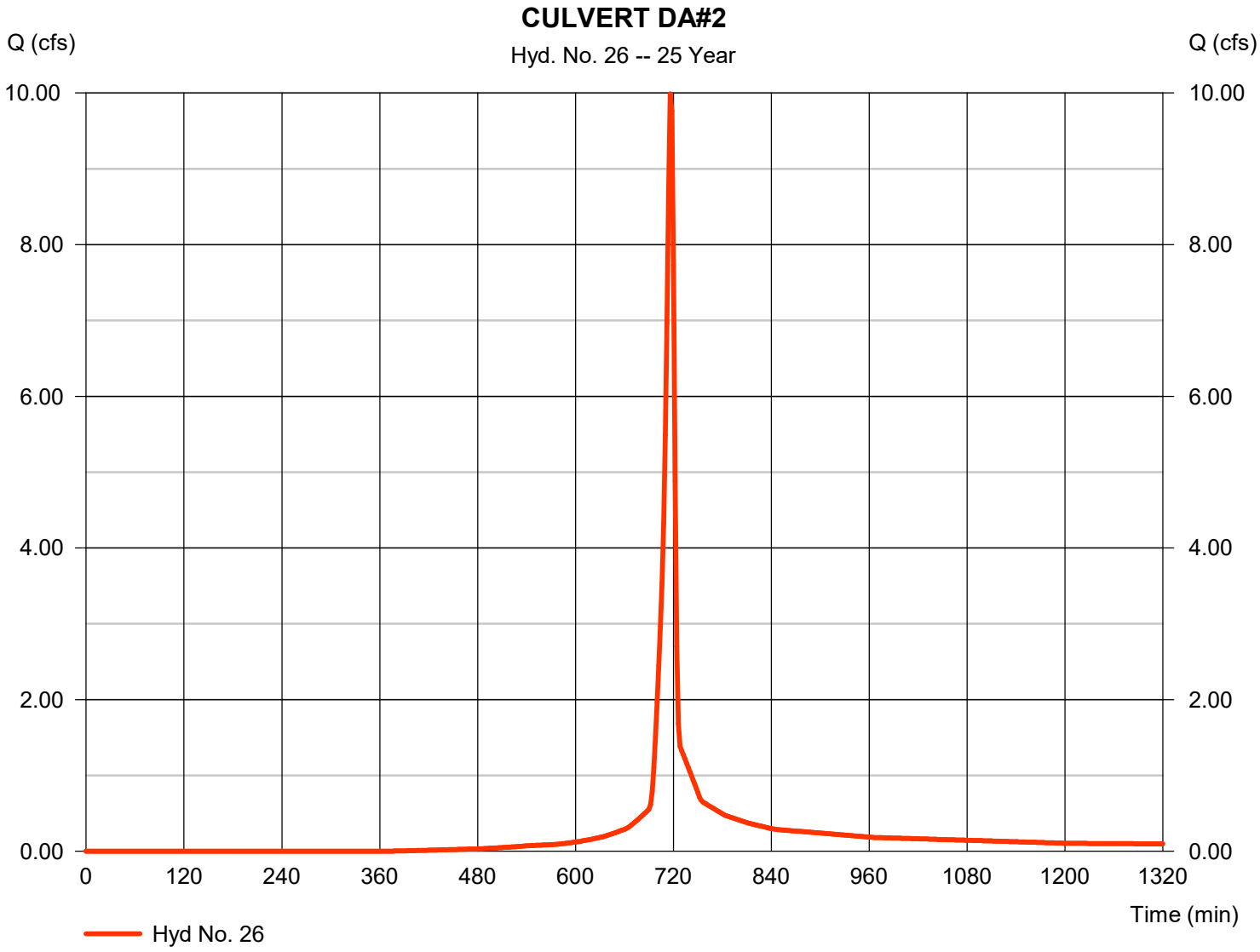


Hydrograph Report

Hyd. No. 26

CULVERT DA#2

Hydrograph type	=	SCS Runoff	Peak discharge	=	9.987 cfs
Storm frequency	=	25 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	20,528 cuft
Drainage area	=	1.540 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	6.15 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

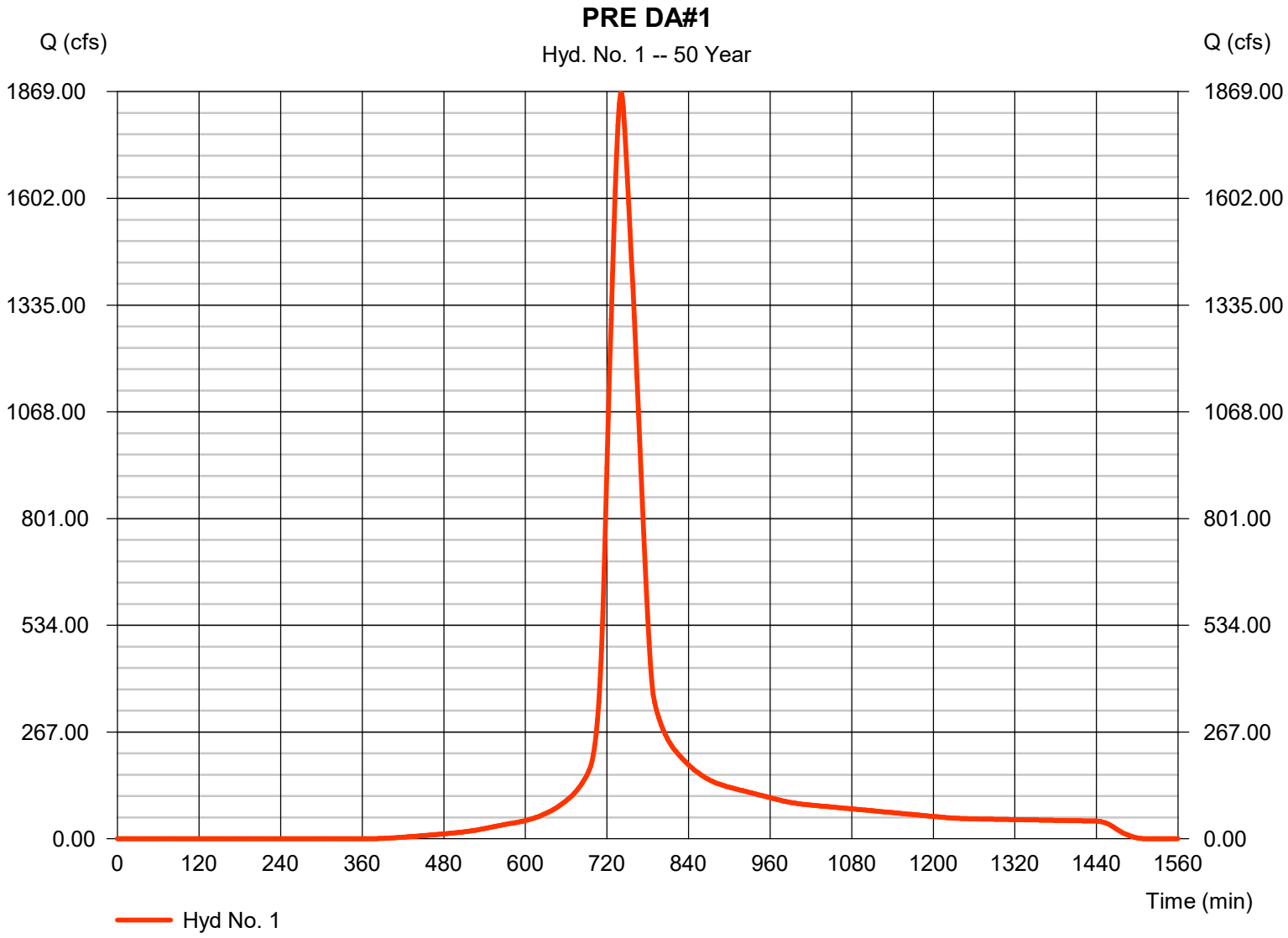
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	1866.25	2	740	10,002,640	------	------	------	PRE DA#1
2	SCS Runoff	86.17	2	716	186,165	------	------	------	POST DA#1
3	SCS Runoff	112.87	2	716	236,656	------	------	------	POST DA#2
4	SCS Runoff	138.36	2	718	332,745	------	------	------	POST DA #3
5	SCS Runoff	74.02	2	716	160,992	------	------	------	POST DA#4
6	SCS Runoff	36.05	2	716	78,838	------	------	------	POST DA#5
7	SCS Runoff	94.36	2	722	276,488	------	------	------	POST DA#6
8	SCS Runoff	124.79	2	716	268,281	------	------	------	POST DA#7
9	SCS Runoff	52.55	2	718	127,121	------	------	------	POST DA#8
10	SCS Runoff	39.35	2	722	111,275	------	------	------	POST DA#1 OFFSITE
11	SCS Runoff	1485.78	2	736	7,207,357	------	------	------	POST DA#2 OFFSITE
12	SCS Runoff	134.22	2	724	421,928	------	------	------	POST DA#3 OFFSITE
13	SCS Runoff	8.457	2	728	31,126	------	------	------	POST DA#4 OFFSITE
14	Reservoir	8.910	2	738	184,400	2	266.62	145,395	POST DA#1 TO SCM#1
15	Reservoir	11.92	2	738	215,562	3	267.72	228,925	POST DA#2 TO SCM#2
16	Reservoir	28.40	2	730	307,806	4	245.22	247,736	POST DA#3 TO SCM#3
17	Reservoir	9.682	2	728	158,689	5	245.08	112,400	POST DA#4 TO SCM#4
18	Reservoir	8.254	2	724	75,806	6	254.01	42,418	POST DA#5 TO SCM#5
19	Reservoir	24.79	2	738	267,850	7	242.38	171,911	POST DA#6 TO SCM#6
20	Reservoir	45.30	2	724	254,513	8	243.76	181,245	POST DA#7 TO SCM#7
21	Reservoir	35.19	2	724	127,121	9	241.75	26,865	POST DA#8 TO SCM#8
22	Combine	1539.67	2	736	7,925,261	11, 15, 17, 18, 19,	------	------	UPSTREAM AOI#1
23	Combine	259.00	2	724	1,326,895	12, 13, 14, 16, 20, 21,	------	------	DOWNSTREAM AOI#2
24	Combine	1707.66	2	736	9,252,163	22, 23	------	------	POI
25	SCS Runoff	1241.84	2	734	5,626,715	------	------	------	CULVERT DA#1
26	SCS Runoff	11.79	2	716	24,409	------	------	------	CULVERT DA#2

Hydrograph Report

Hyd. No. 1

PRE DA#1

Hydrograph type	=	SCS Runoff	Peak discharge	=	1866.25 cfs
Storm frequency	=	50 yrs	Time to peak	=	740 min
Time interval	=	2 min	Hyd. volume	=	10,002,640 cuft
Drainage area	=	618.810 ac	Curve number	=	78.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	47.00 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

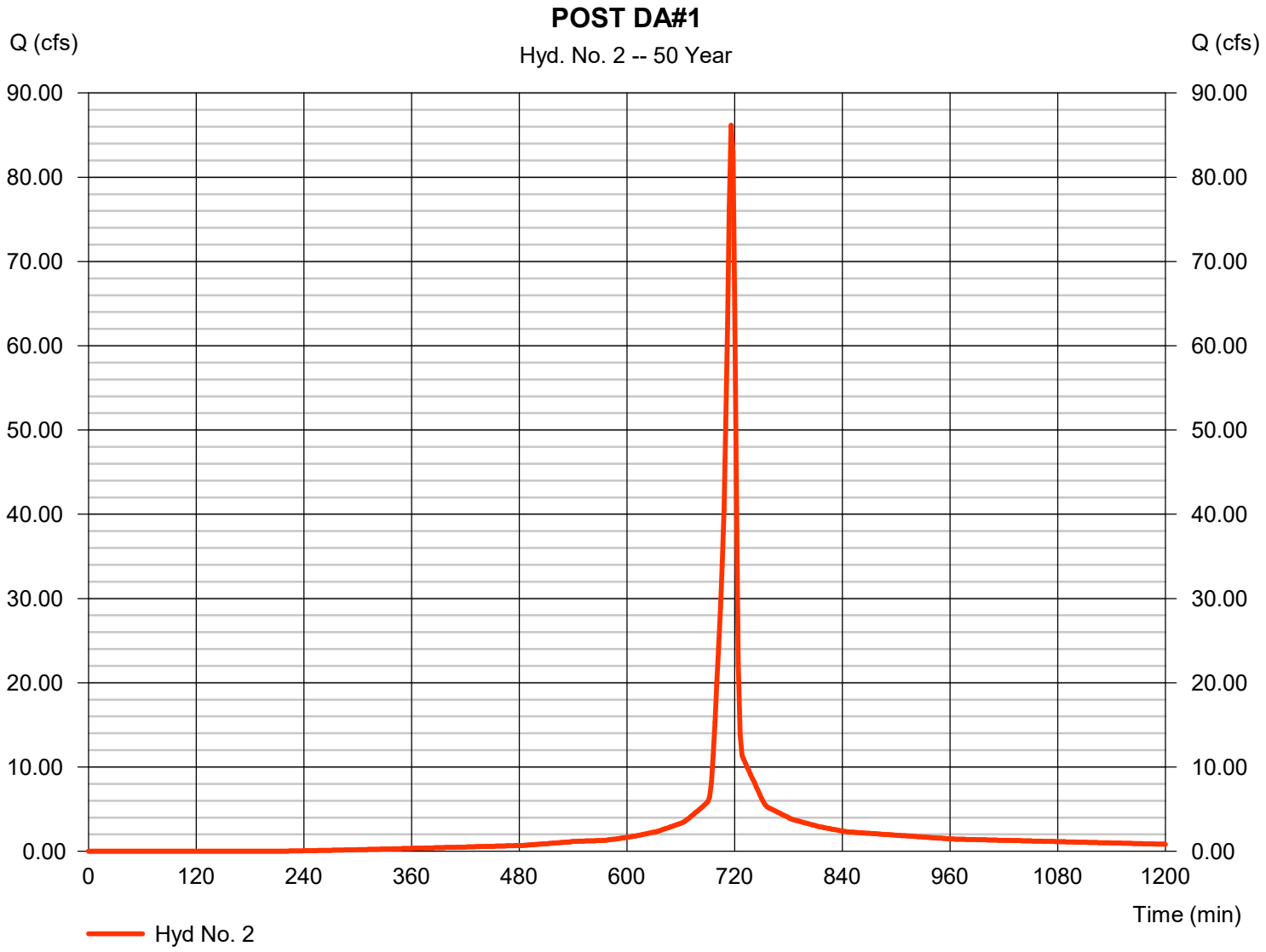


Hydrograph Report

Hyd. No. 2

POST DA#1

Hydrograph type	=	SCS Runoff	Peak discharge	=	86.17 cfs
Storm frequency	=	50 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	186,165 cuft
Drainage area	=	9.930 ac	Curve number	=	87.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.50 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

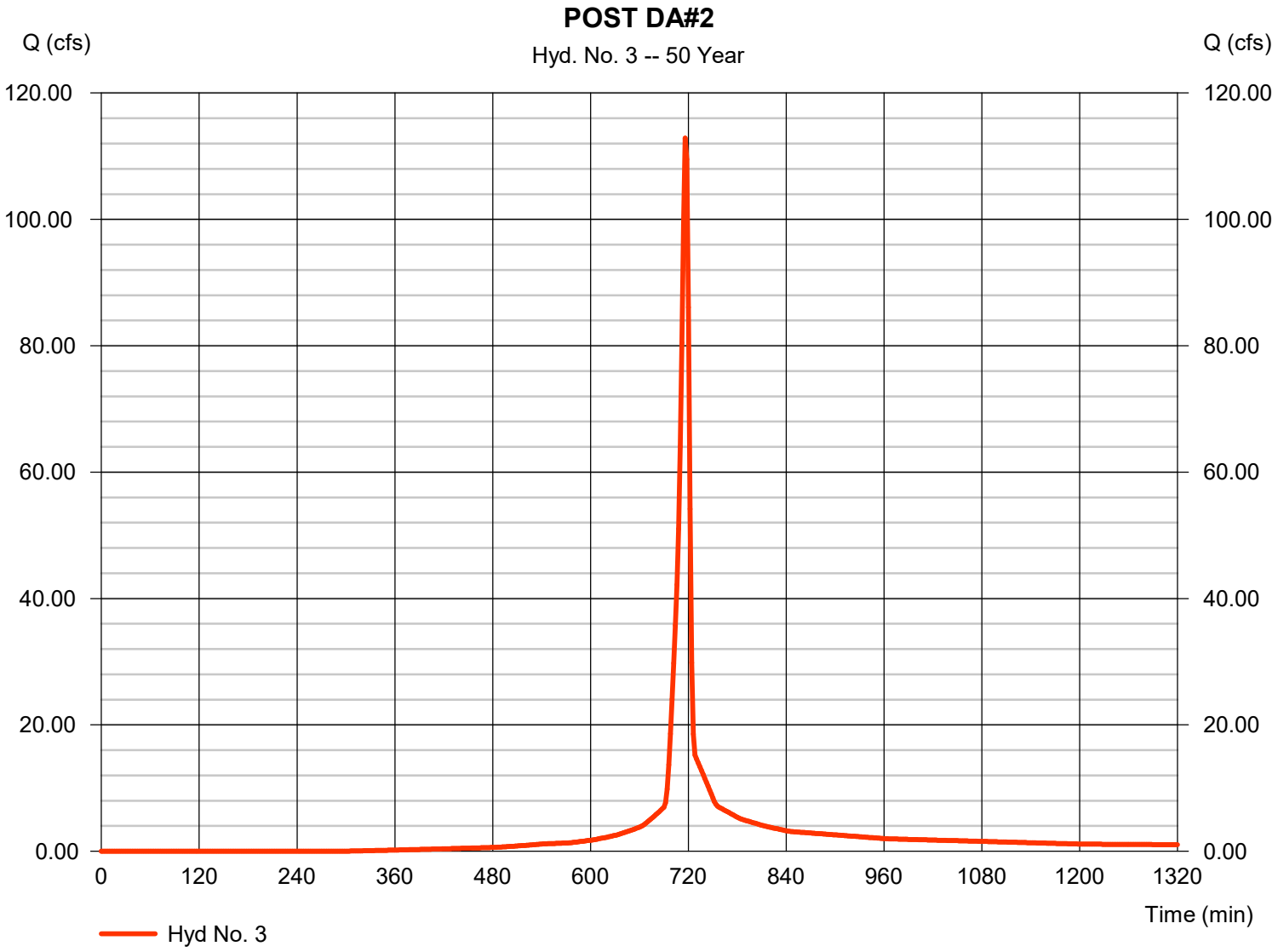


Hydrograph Report

Hyd. No. 3

POST DA#2

Hydrograph type	=	SCS Runoff	Peak discharge	=	112.87 cfs
Storm frequency	=	50 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	236,656 cuft
Drainage area	=	14.030 ac	Curve number	=	82.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

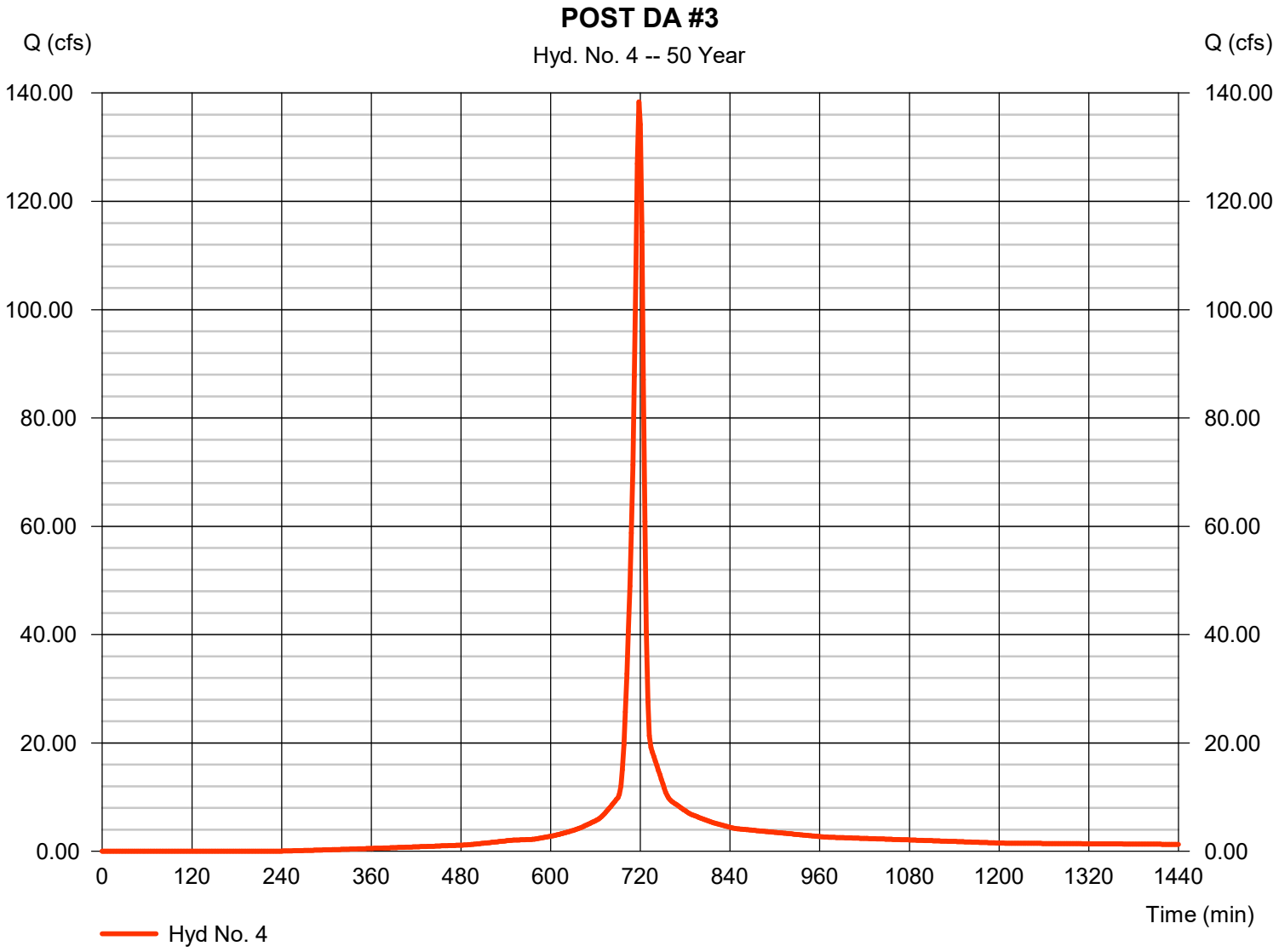


Hydrograph Report

Hyd. No. 4

POST DA #3

Hydrograph type	=	SCS Runoff	Peak discharge	=	138.36 cfs
Storm frequency	=	50 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	332,745 cuft
Drainage area	=	16.990 ac	Curve number	=	86.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	7.40 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

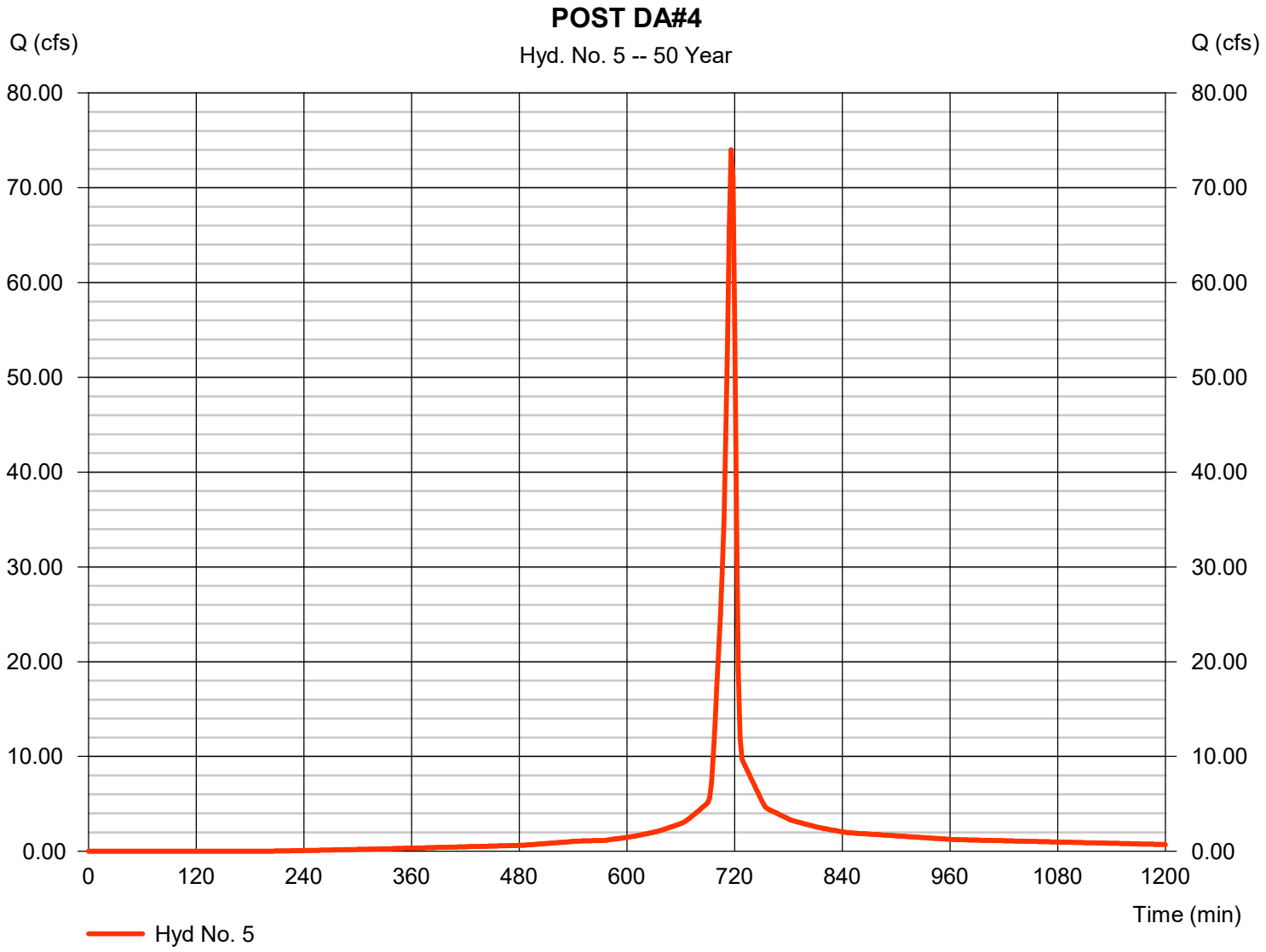


Hydrograph Report

Hyd. No. 5

POST DA#4

Hydrograph type	=	SCS Runoff	Peak discharge	=	74.02 cfs
Storm frequency	=	50 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	160,992 cuft
Drainage area	=	8.430 ac	Curve number	=	88.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.30 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

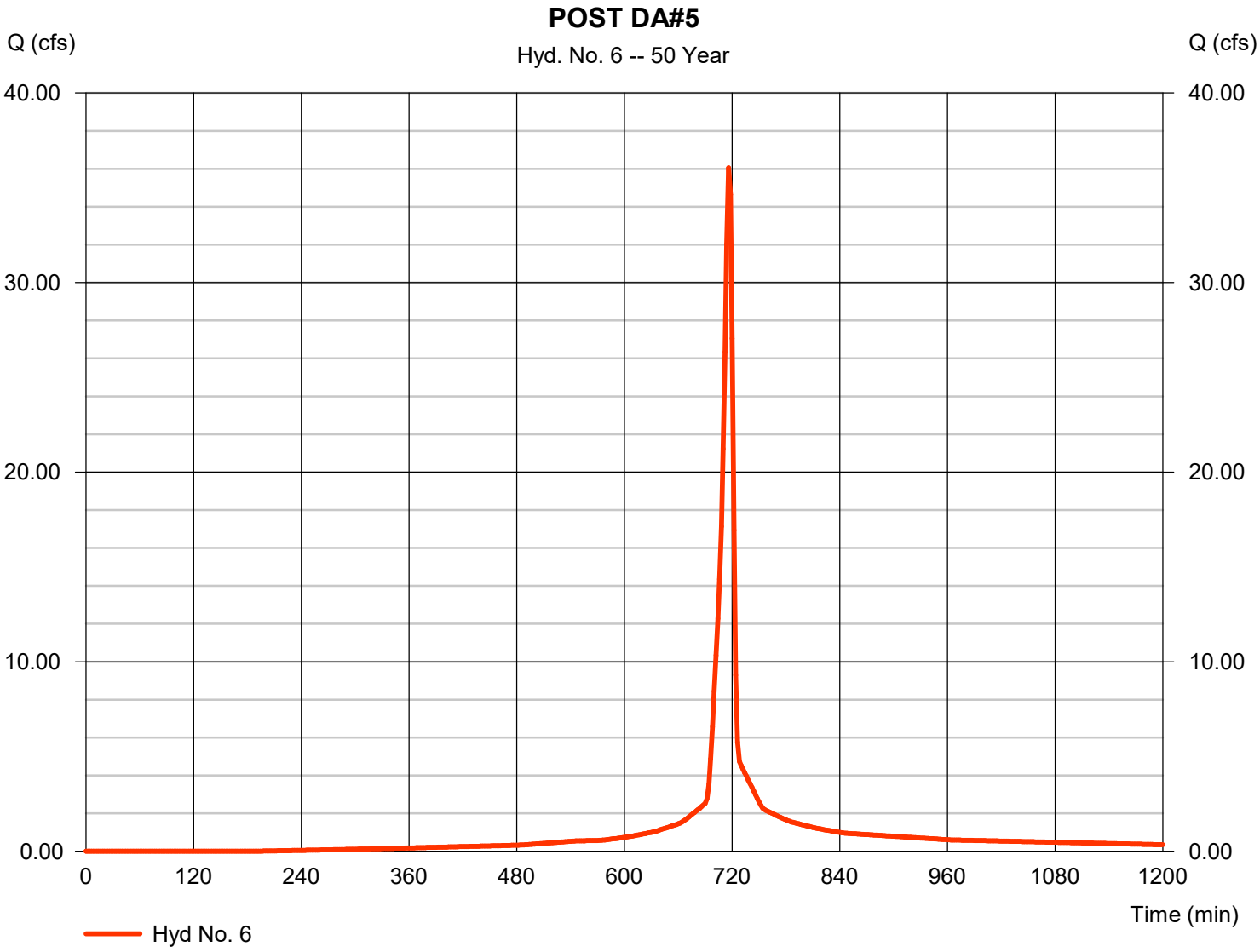


Hydrograph Report

Hyd. No. 6

POST DA#5

Hydrograph type	=	SCS Runoff	Peak discharge	=	36.05 cfs
Storm frequency	=	50 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	78,838 cuft
Drainage area	=	4.070 ac	Curve number	=	89.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

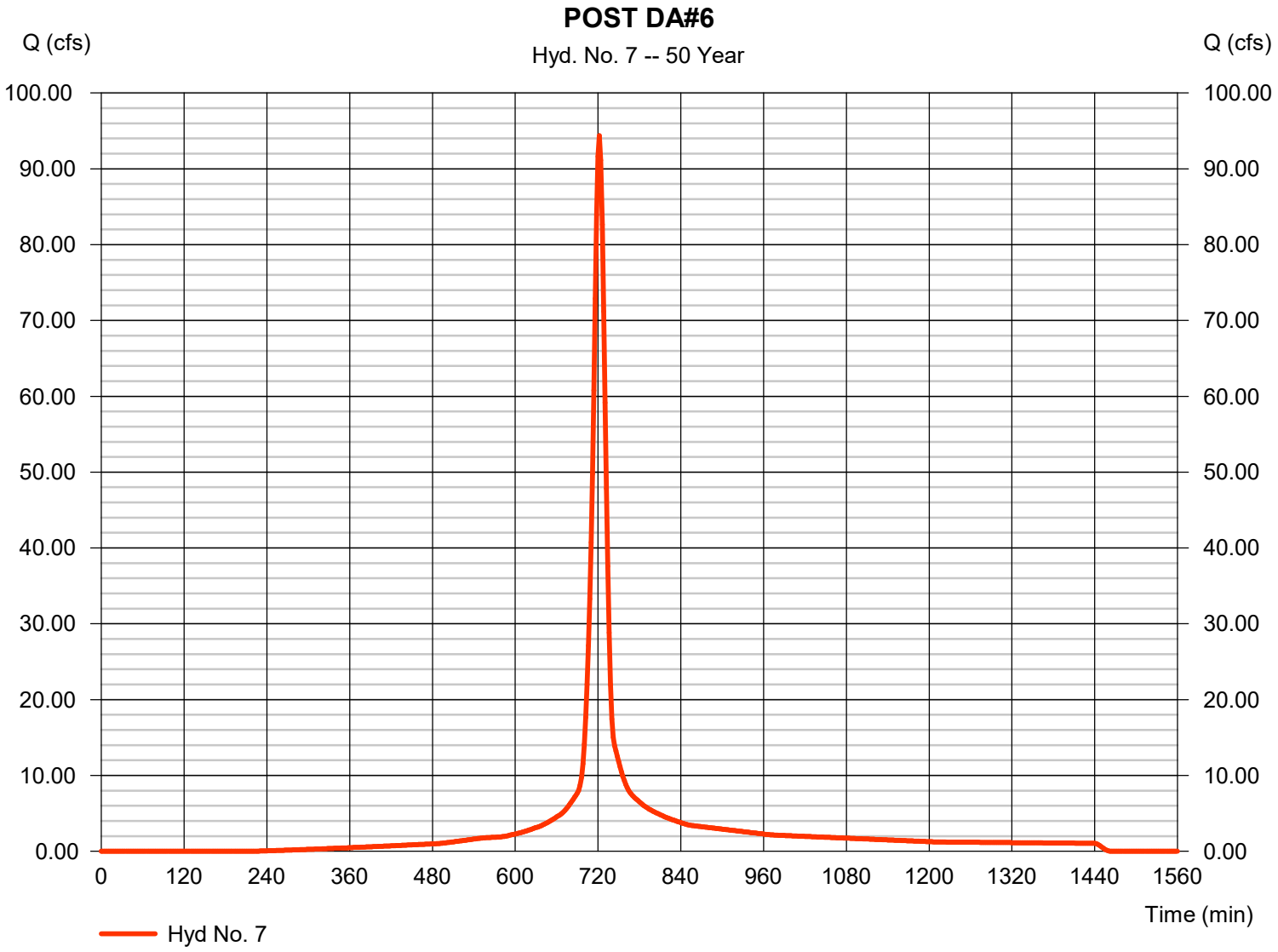


Hydrograph Report

Hyd. No. 7

POST DA#6

Hydrograph type	=	SCS Runoff	Peak discharge	=	94.36 cfs
Storm frequency	=	50 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	276,488 cuft
Drainage area	=	14.210 ac	Curve number	=	87.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	14.80 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

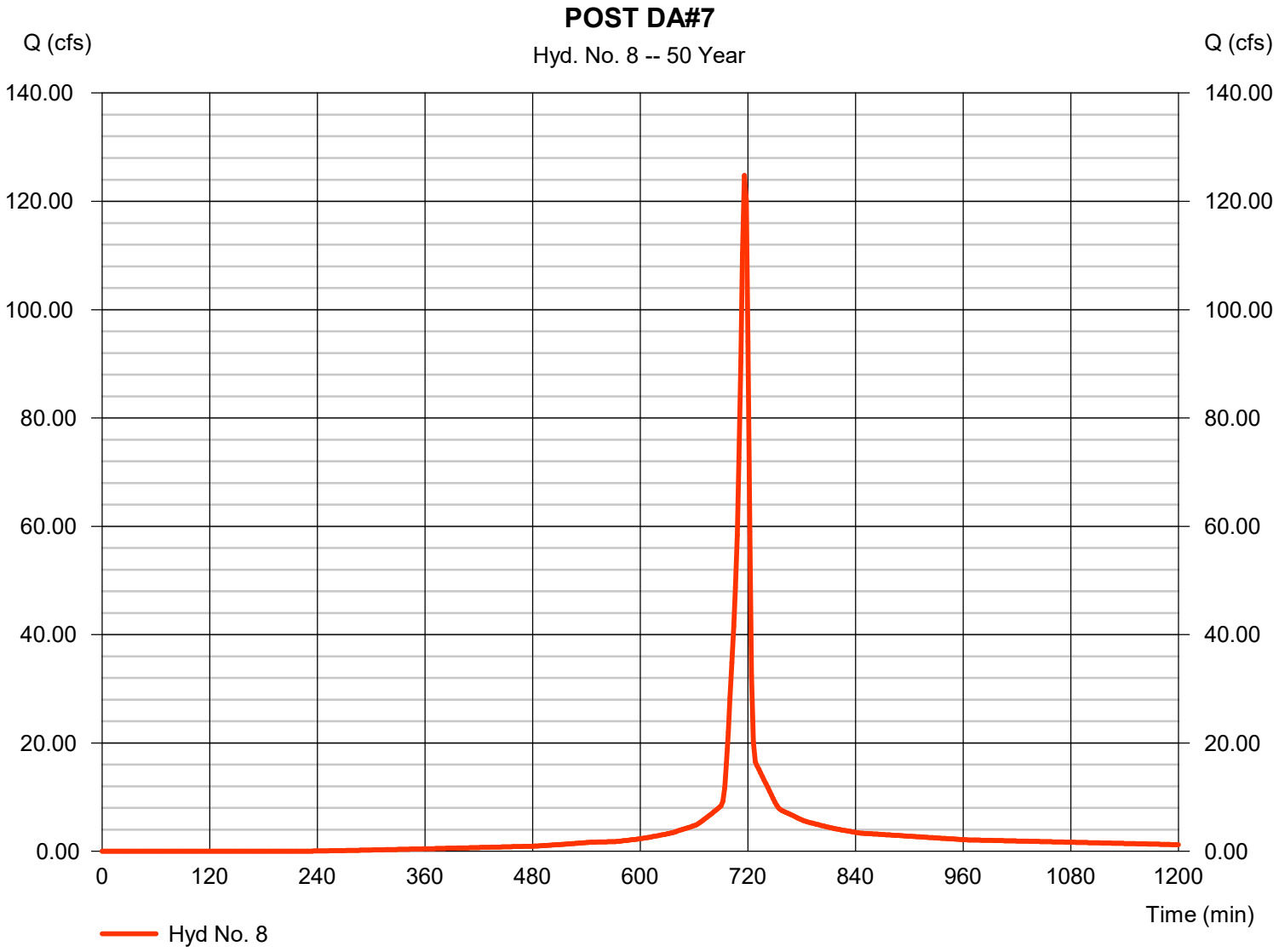


Hydrograph Report

Hyd. No. 8

POST DA#7

Hydrograph type	=	SCS Runoff	Peak discharge	=	124.79 cfs
Storm frequency	=	50 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	268,281 cuft
Drainage area	=	14.520 ac	Curve number	=	86.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.20 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

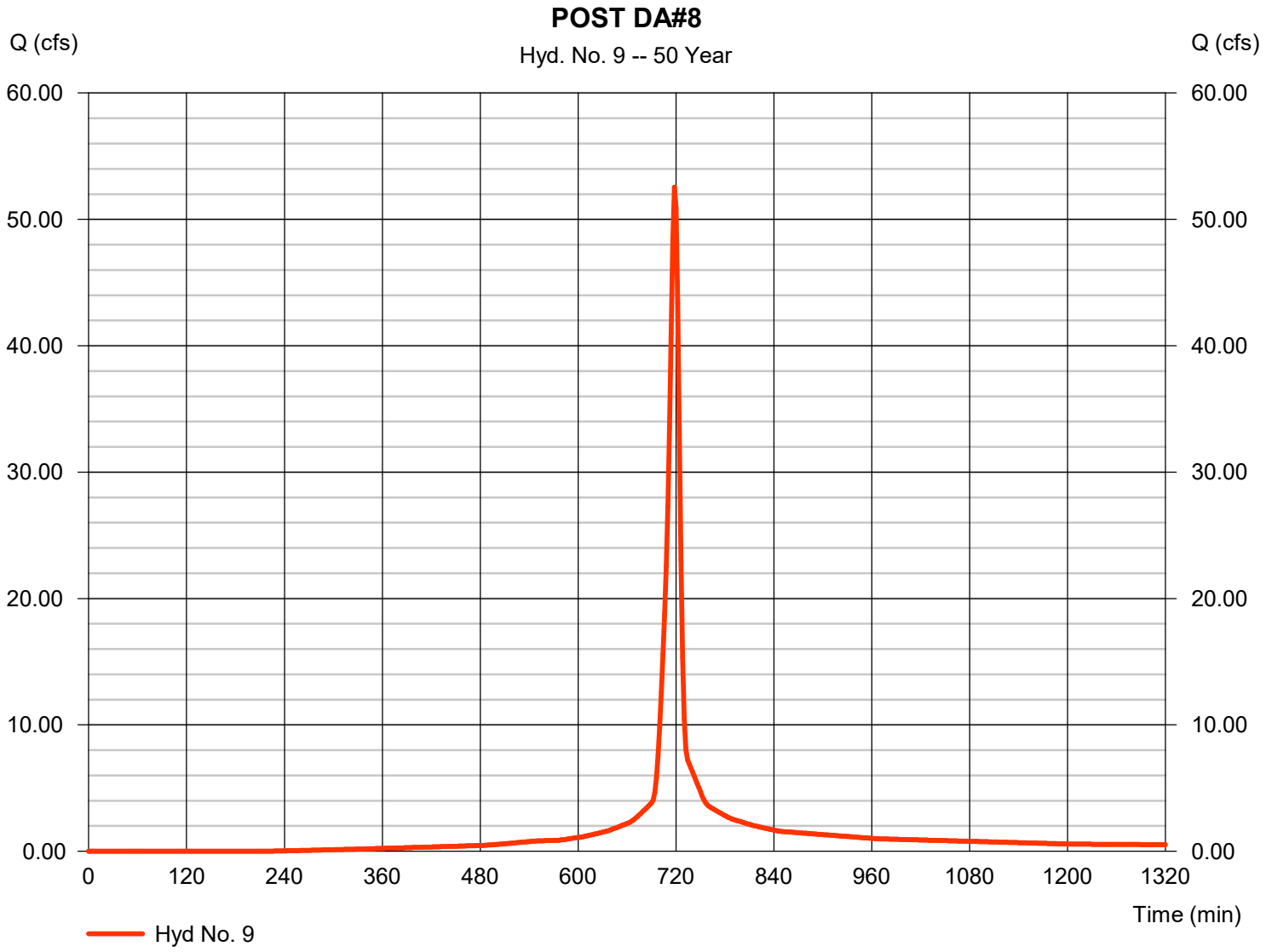


Hydrograph Report

Hyd. No. 9

POST DA#8

Hydrograph type	=	SCS Runoff	Peak discharge	=	52.55 cfs
Storm frequency	=	50 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	127,121 cuft
Drainage area	=	6.370 ac	Curve number	=	87.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.80 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

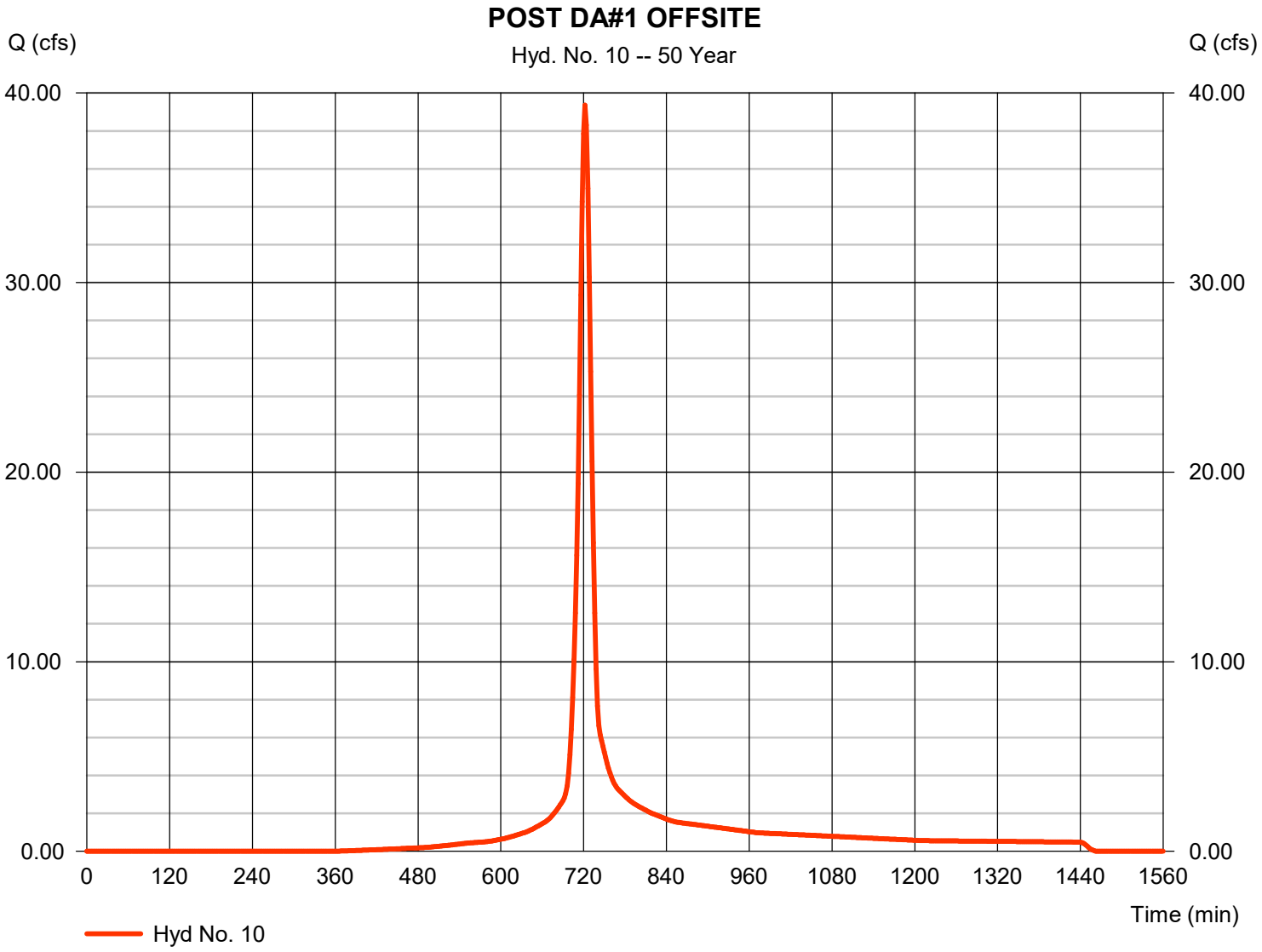


Hydrograph Report

Hyd. No. 10

POST DA#1 OFFSITE

Hydrograph type	= SCS Runoff	Peak discharge	= 39.35 cfs
Storm frequency	= 50 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 111,275 cuft
Drainage area	= 6.930 ac	Curve number	= 78.9
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 14.00 min
Total precip.	= 6.96 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

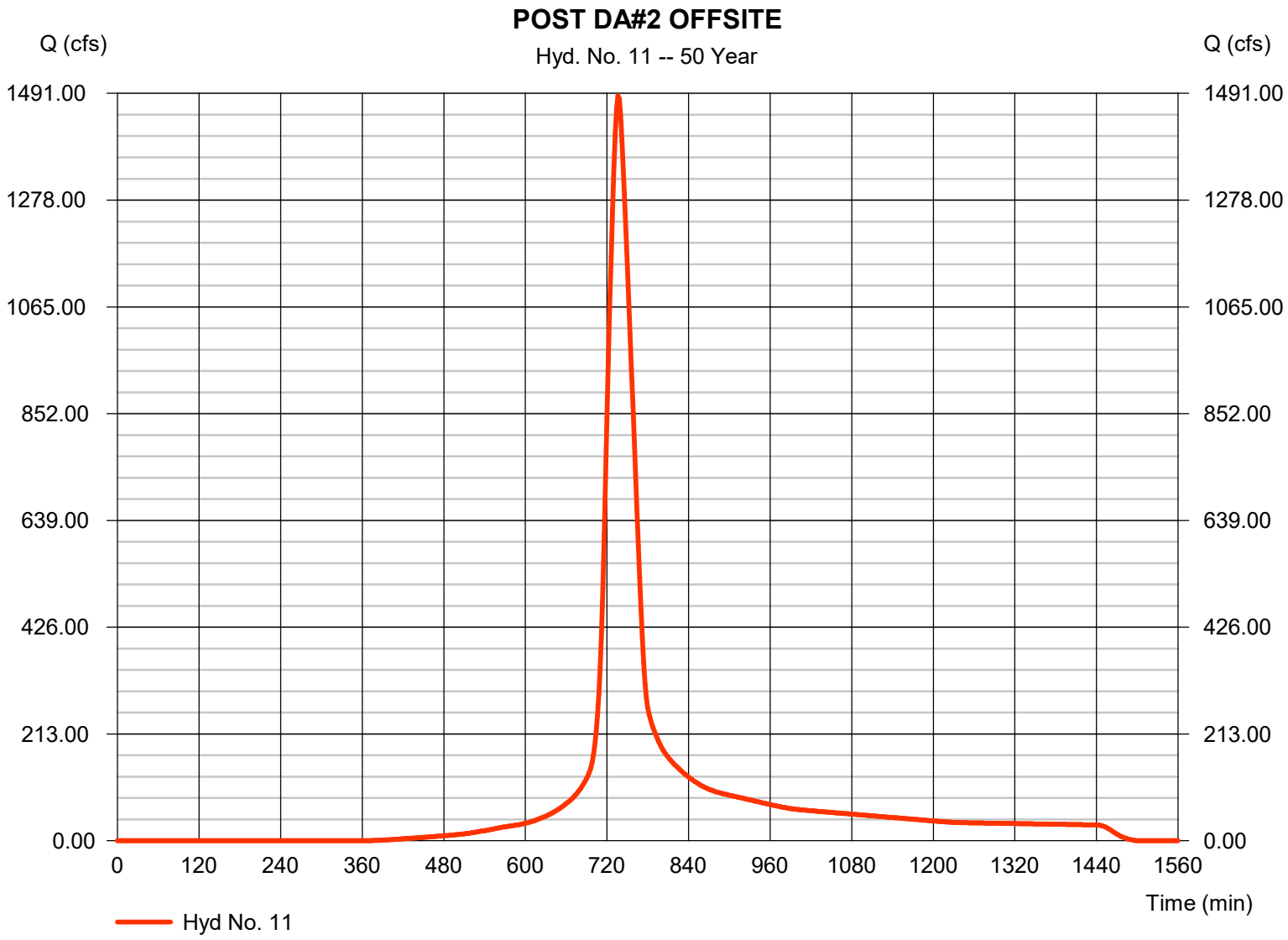


Hydrograph Report

Hyd. No. 11

POST DA#2 OFFSITE

Hydrograph type	=	SCS Runoff	Peak discharge	=	1485.78 cfs
Storm frequency	=	50 yrs	Time to peak	=	736 min
Time interval	=	2 min	Hyd. volume	=	7,207,357 cuft
Drainage area	=	437.640 ac	Curve number	=	78.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	38.10 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

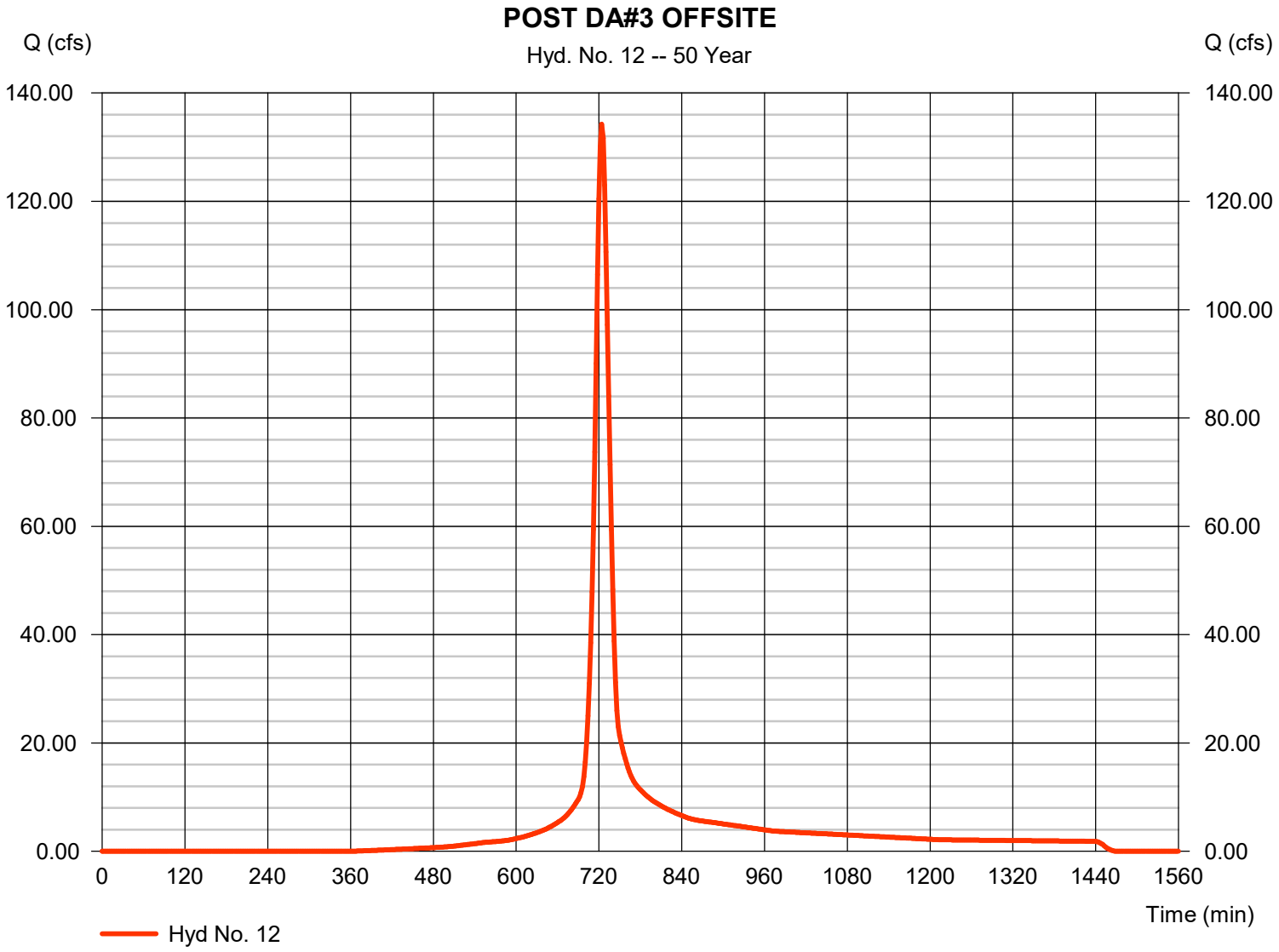


Hydrograph Report

Hyd. No. 12

POST DA#3 OFFSITE

Hydrograph type	=	SCS Runoff	Peak discharge	=	134.22 cfs
Storm frequency	=	50 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	421,928 cuft
Drainage area	=	25.620 ac	Curve number	=	78.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	19.60 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

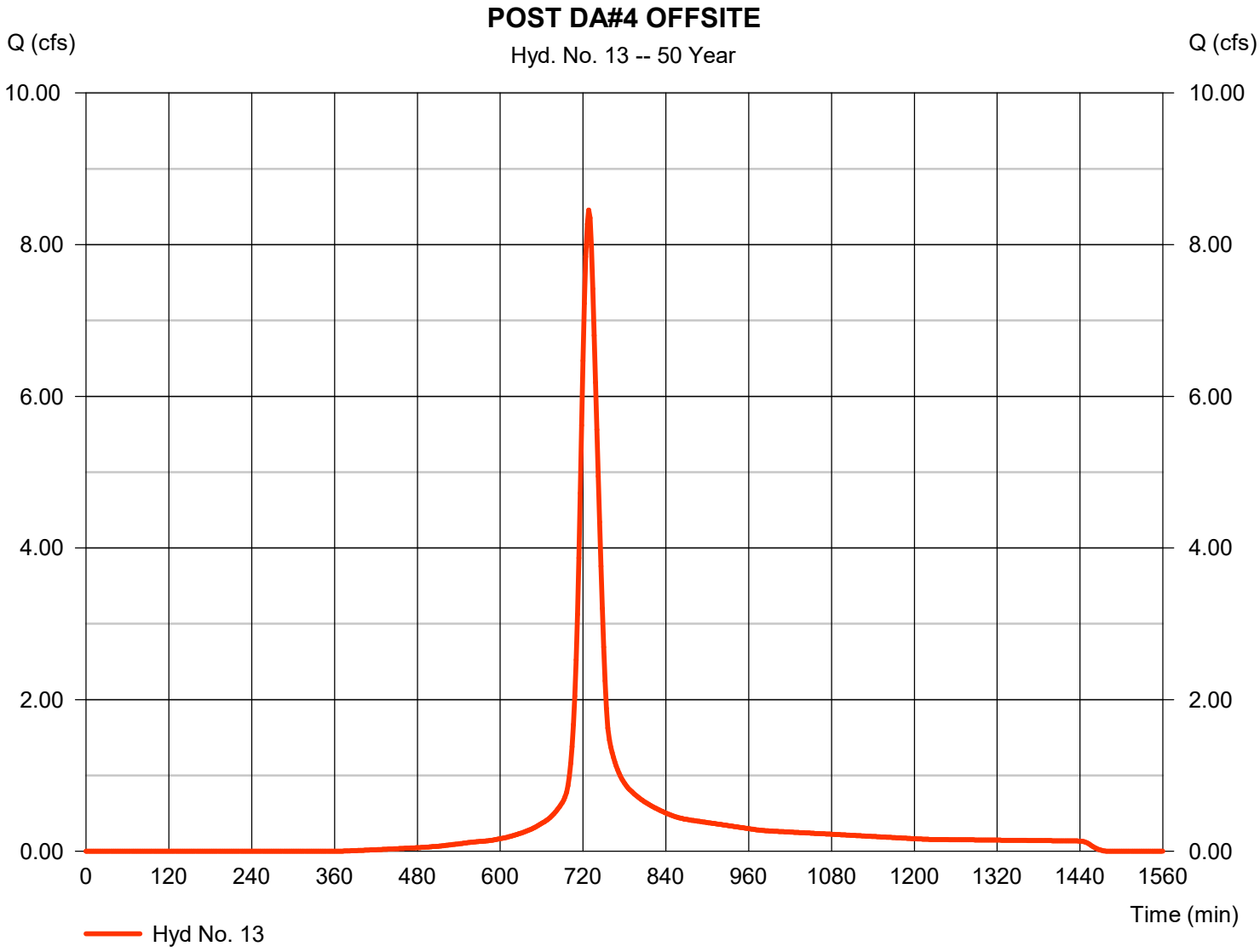


Hydrograph Report

Hyd. No. 13

POST DA#4 OFFSITE

Hydrograph type	=	SCS Runoff	Peak discharge	=	8.457 cfs
Storm frequency	=	50 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	31,126 cuft
Drainage area	=	1.920 ac	Curve number	=	78.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	26.20 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

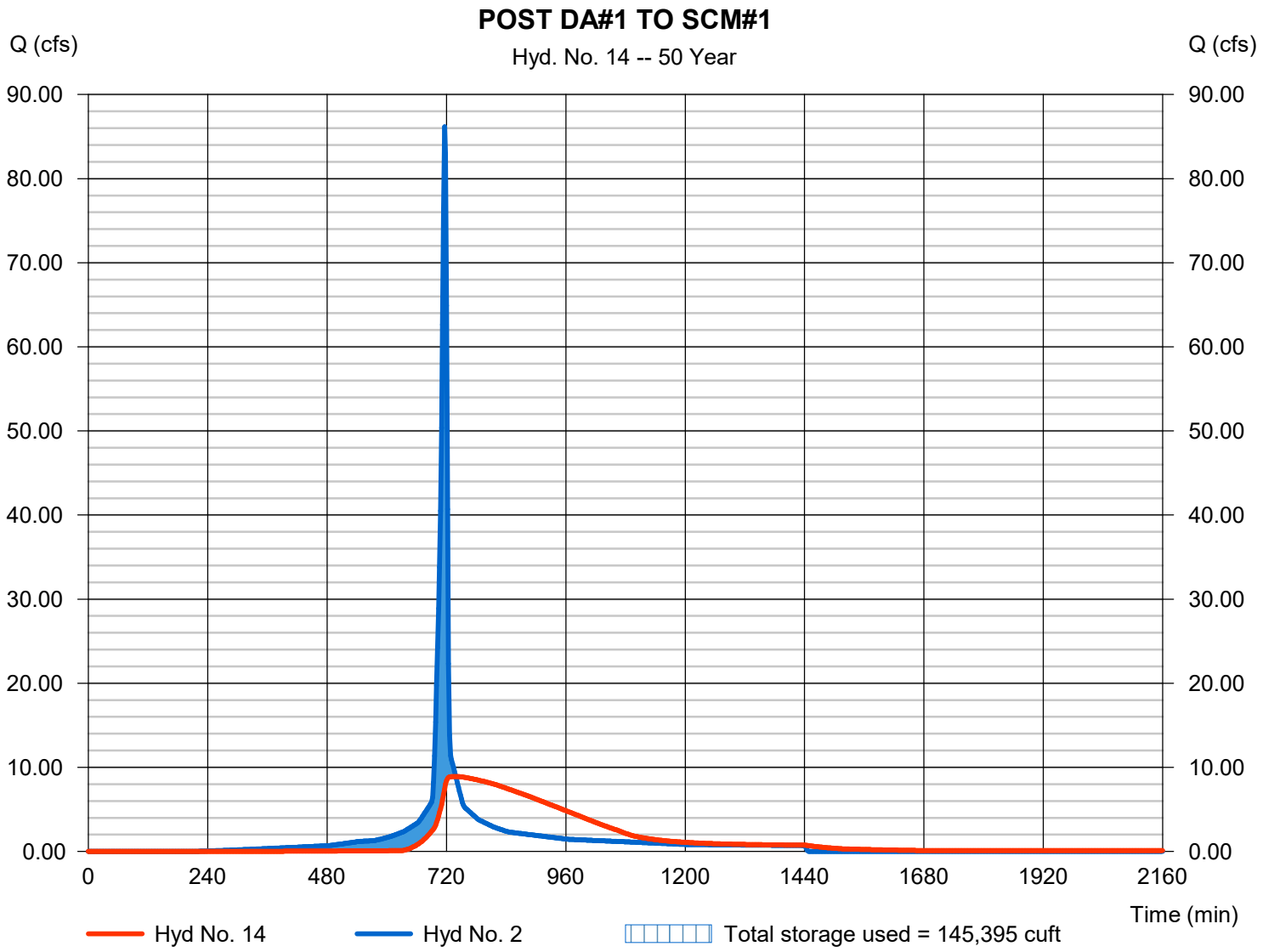
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Tuesday, 06 / 4 / 2024

Hyd. No. 14

POST DA#1 TO SCM#1

Hydrograph type	=	Reservoir	Peak discharge	=	8.910 cfs
Storm frequency	=	50 yrs	Time to peak	=	738 min
Time interval	=	2 min	Hyd. volume	=	184,400 cuft
Inflow hyd. No.	=	2 - POST DA#1	Max. Elevation	=	266.62 ft
Reservoir name	=	SCM#1	Max. Storage	=	145,395 cuft

Storage Indication method used. Wet pond routing start elevation = 262.00 ft.



Hydrograph Report

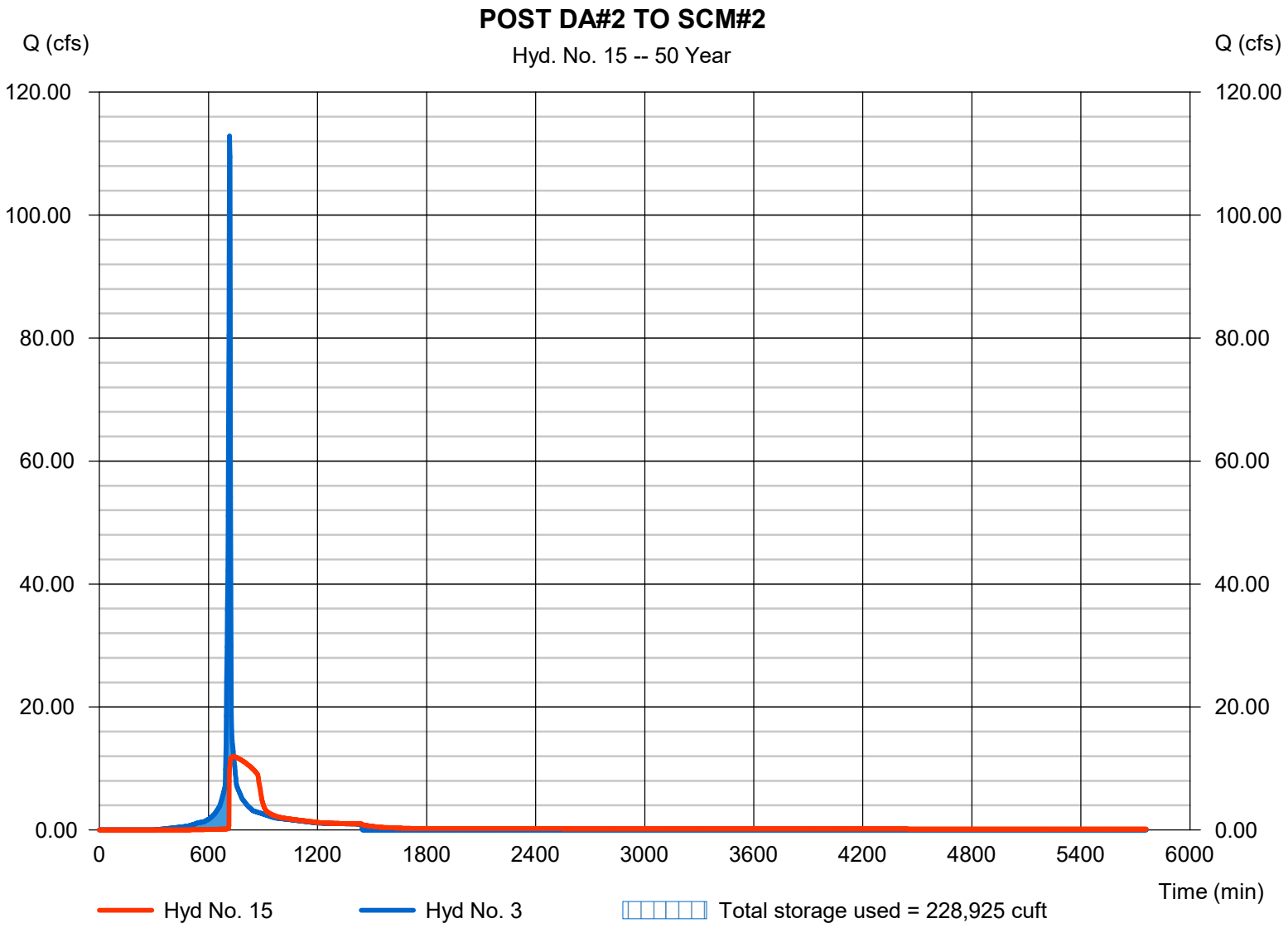
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Tuesday, 06 / 4 / 2024

Hyd. No. 15

POST DA#2 TO SCM#2

Hydrograph type	= Reservoir	Peak discharge	= 11.92 cfs
Storm frequency	= 50 yrs	Time to peak	= 738 min
Time interval	= 2 min	Hyd. volume	= 215,562 cuft
Inflow hyd. No.	= 3 - POST DA#2	Max. Elevation	= 267.72 ft
Reservoir name	= SCM#2	Max. Storage	= 228,925 cuft

Storage Indication method used. Wet pond routing start elevation = 264.00 ft.



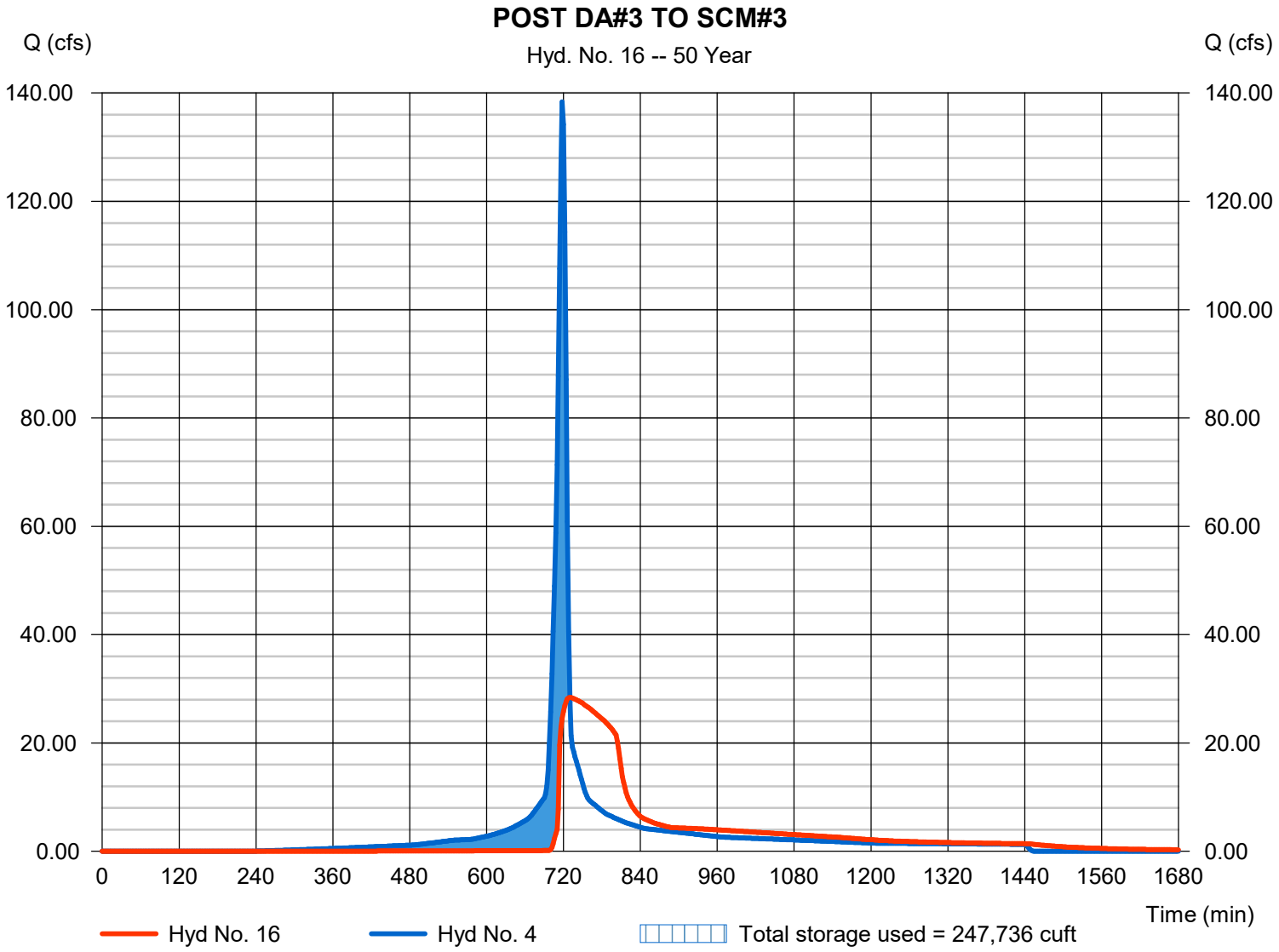
Hydrograph Report

Hyd. No. 16

POST DA#3 TO SCM#3

Hydrograph type	= Reservoir	Peak discharge	= 28.40 cfs
Storm frequency	= 50 yrs	Time to peak	= 730 min
Time interval	= 2 min	Hyd. volume	= 307,806 cuft
Inflow hyd. No.	= 4 - POST DA #3	Max. Elevation	= 245.22 ft
Reservoir name	= SCM#3	Max. Storage	= 247,736 cuft

Storage Indication method used. Wet pond routing start elevation = 240.00 ft.



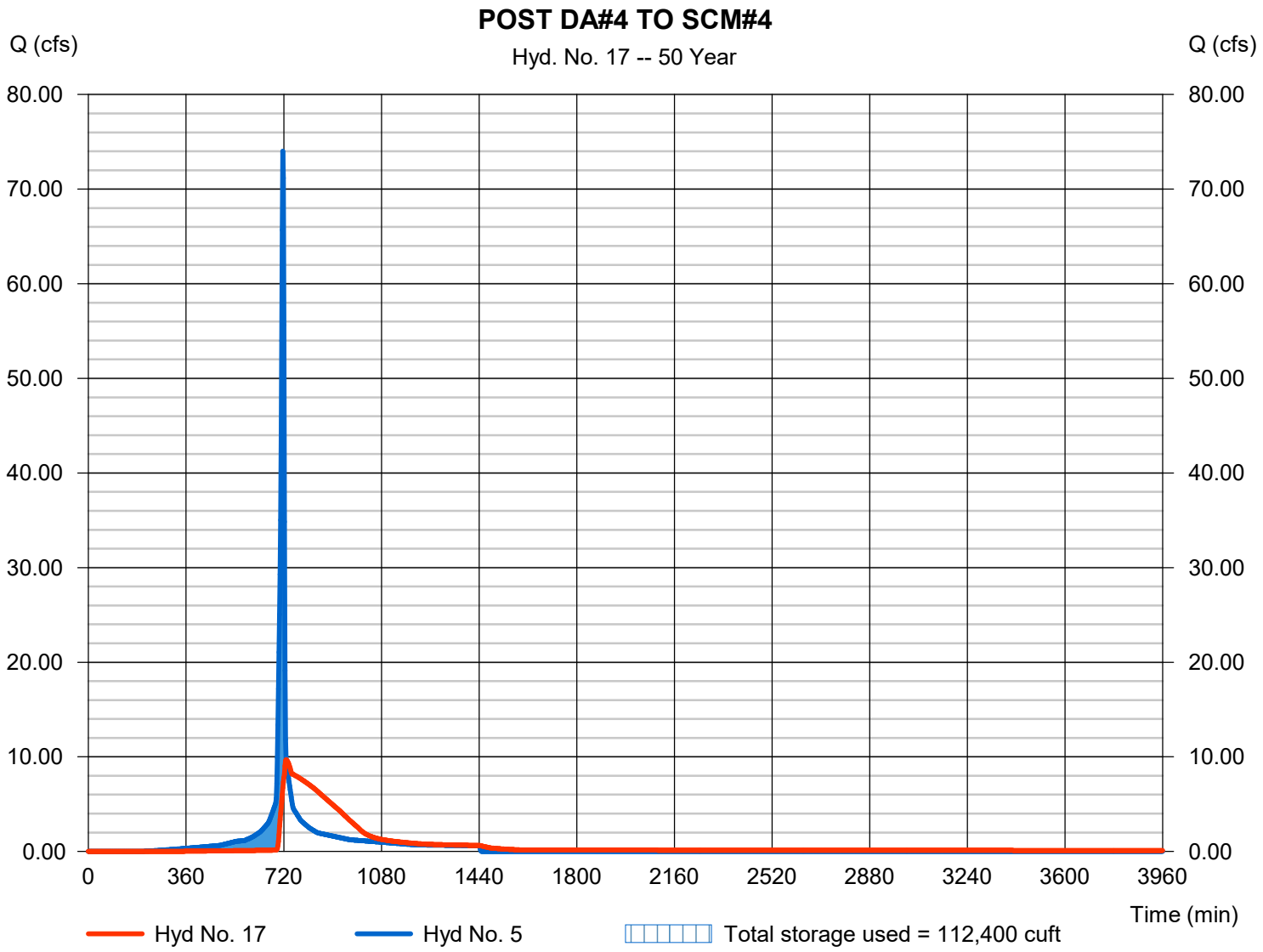
Hydrograph Report

Hyd. No. 17

POST DA#4 TO SCM#4

Hydrograph type	= Reservoir	Peak discharge	= 9.682 cfs
Storm frequency	= 50 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 158,689 cuft
Inflow hyd. No.	= 5 - POST DA#4	Max. Elevation	= 245.08 ft
Reservoir name	= SCM#4	Max. Storage	= 112,400 cuft

Storage Indication method used. Wet pond routing start elevation = 240.00 ft.



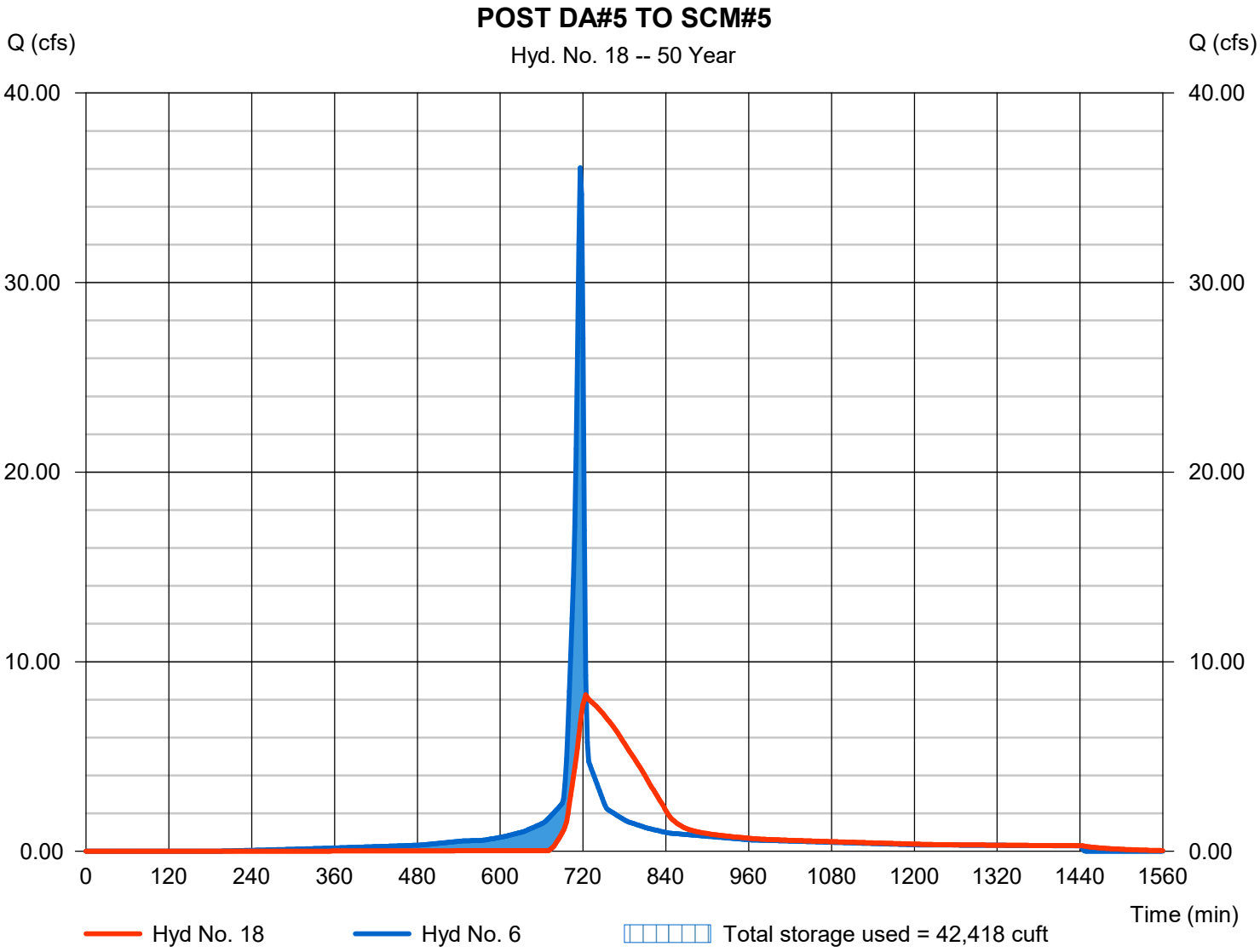
Hydrograph Report

Hyd. No. 18

POST DA#5 TO SCM#5

Hydrograph type	= Reservoir	Peak discharge	= 8.254 cfs
Storm frequency	= 50 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 75,806 cuft
Inflow hyd. No.	= 6 - POST DA#5	Max. Elevation	= 254.01 ft
Reservoir name	= SCM#5	Max. Storage	= 42,418 cuft

Storage Indication method used. Wet pond routing start elevation = 249.00 ft.



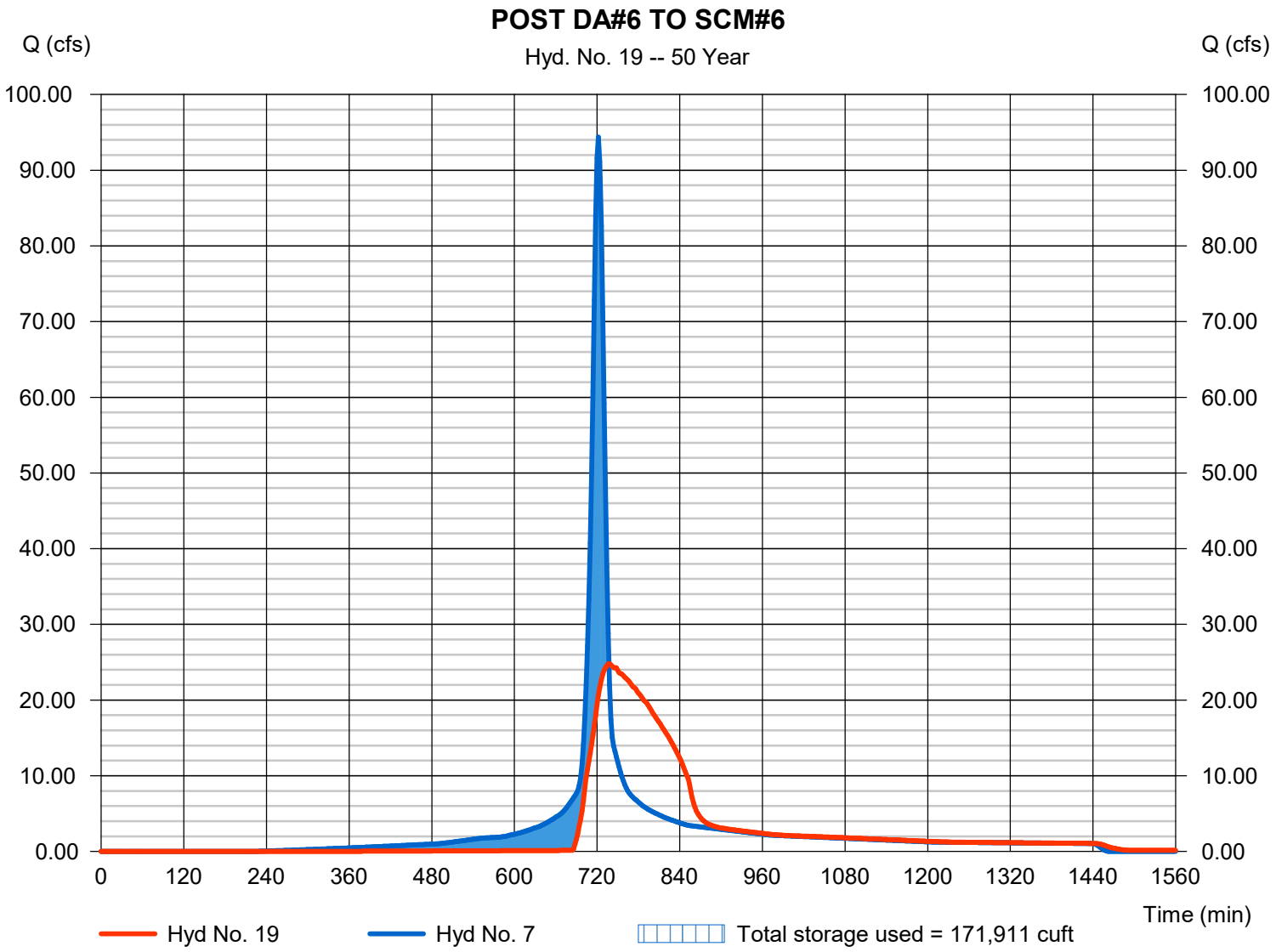
Hydrograph Report

Hyd. No. 19

POST DA#6 TO SCM#6

Hydrograph type	=	Reservoir	Peak discharge	=	24.79 cfs
Storm frequency	=	50 yrs	Time to peak	=	738 min
Time interval	=	2 min	Hyd. volume	=	267,850 cuft
Inflow hyd. No.	=	7 - POST DA#6	Max. Elevation	=	242.38 ft
Reservoir name	=	SCM#6	Max. Storage	=	171,911 cuft

Storage Indication method used. Wet pond routing start elevation = 237.00 ft.



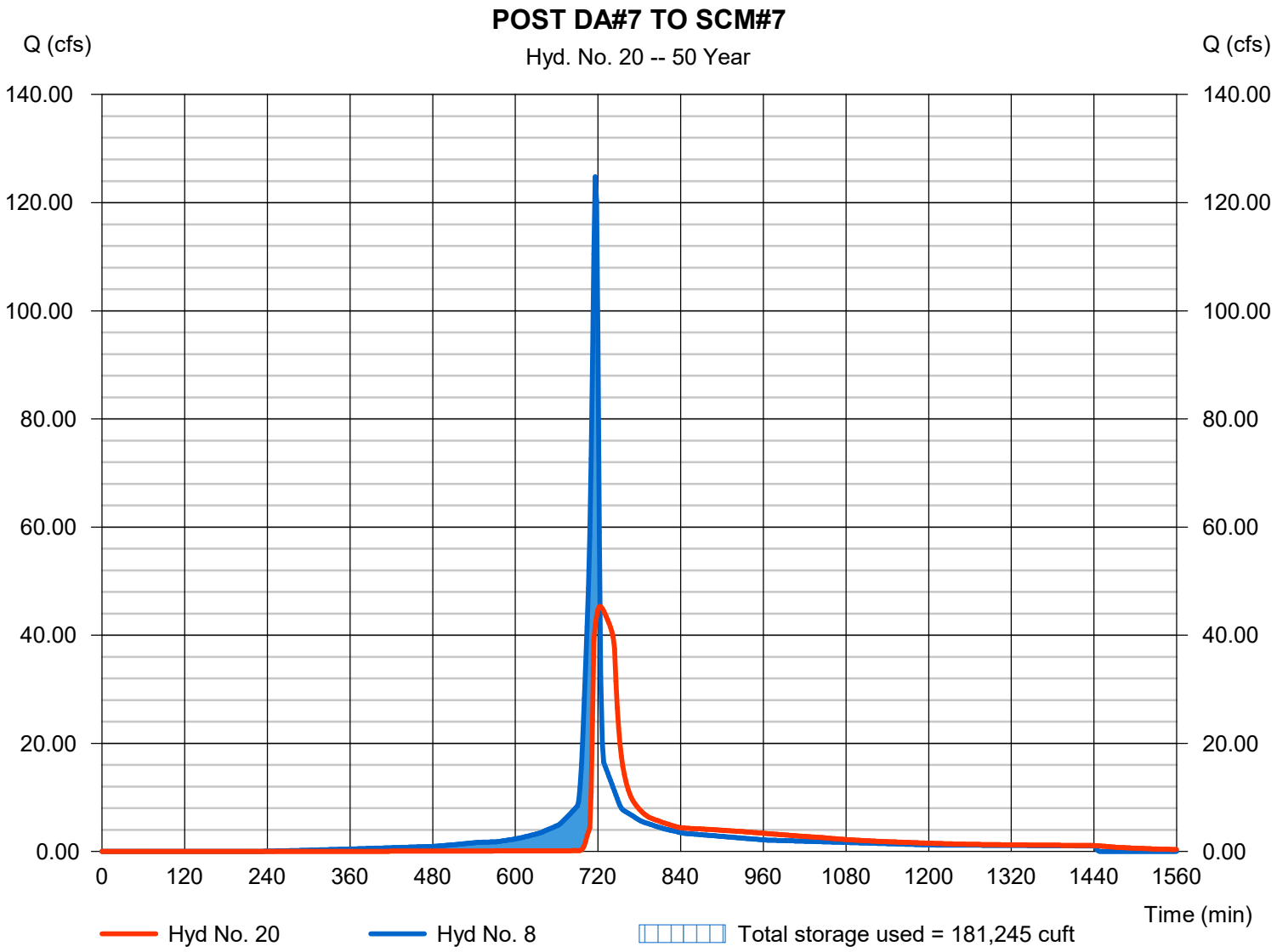
Hydrograph Report

Hyd. No. 20

POST DA#7 TO SCM#7

Hydrograph type	=	Reservoir	Peak discharge	=	45.30 cfs
Storm frequency	=	50 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	254,513 cuft
Inflow hyd. No.	=	8 - POST DA#7	Max. Elevation	=	243.76 ft
Reservoir name	=	SCM#7	Max. Storage	=	181,245 cuft

Storage Indication method used. Wet pond routing start elevation = 239.00 ft.



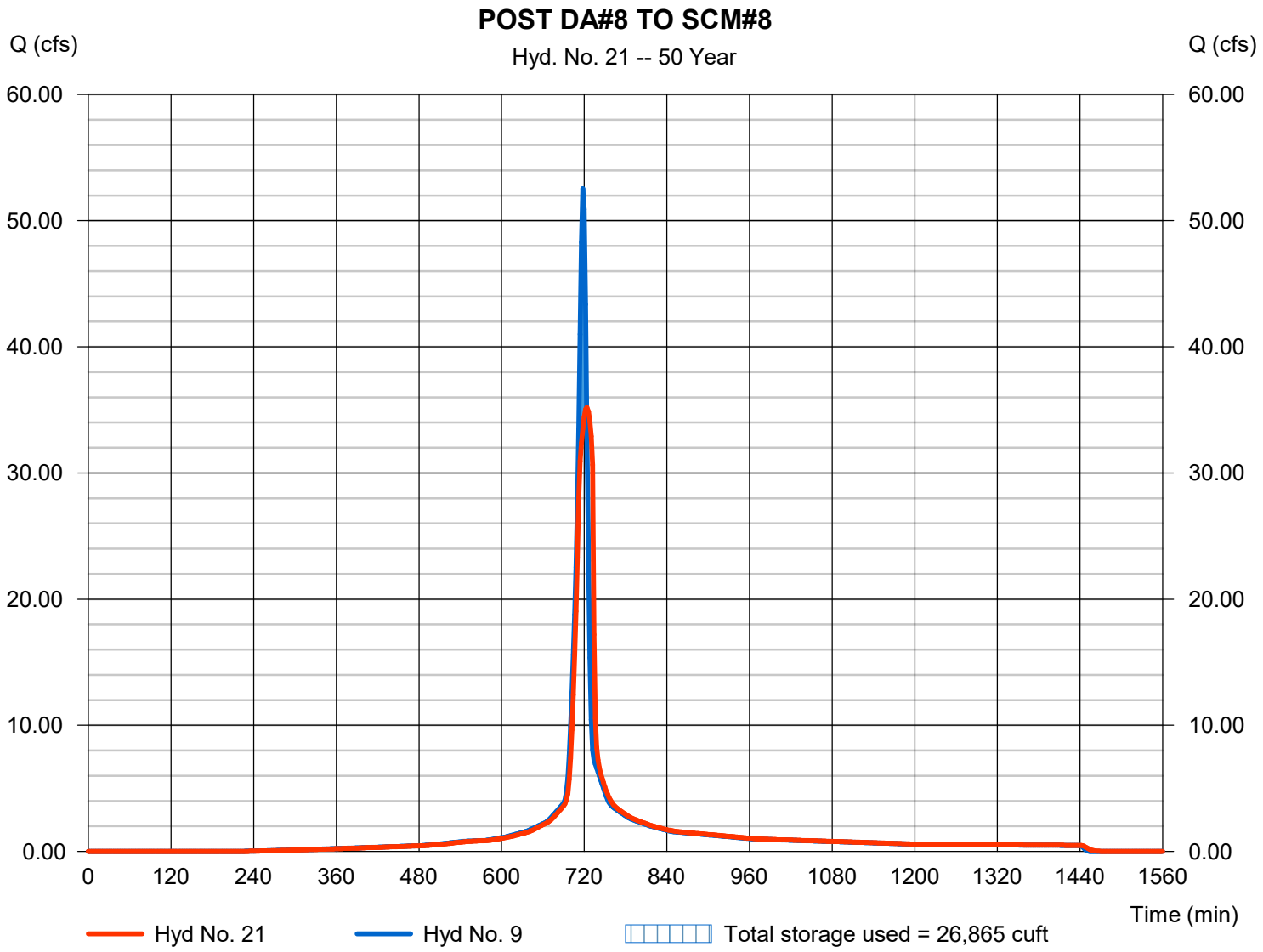
Hydrograph Report

Hyd. No. 21

POST DA#8 TO SCM#8

Hydrograph type	= Reservoir	Peak discharge	= 35.19 cfs
Storm frequency	= 50 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 127,121 cuft
Inflow hyd. No.	= 9 - POST DA#8	Max. Elevation	= 241.75 ft
Reservoir name	= SCM#8	Max. Storage	= 26,865 cuft

Storage Indication method used. Wet pond routing start elevation = 240.00 ft.

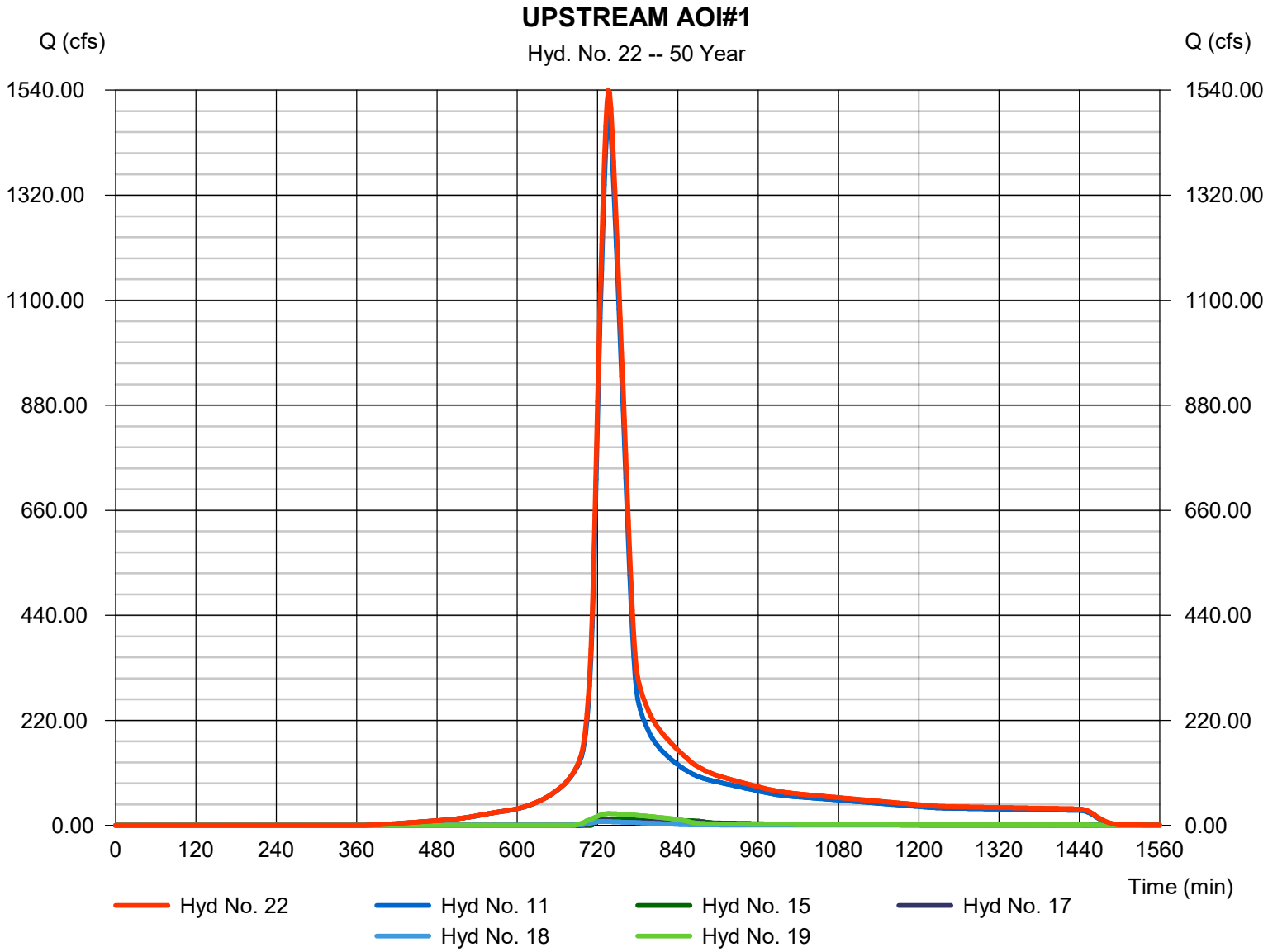


Hydrograph Report

Hyd. No. 22

UPSTREAM AOI#1

Hydrograph type	= Combine	Peak discharge	= 1539.67 cfs
Storm frequency	= 50 yrs	Time to peak	= 736 min
Time interval	= 2 min	Hyd. volume	= 7,925,261 cuft
Inflow hyds.	= 11, 15, 17, 18, 19	Contrib. drain. area	= 437.640 ac

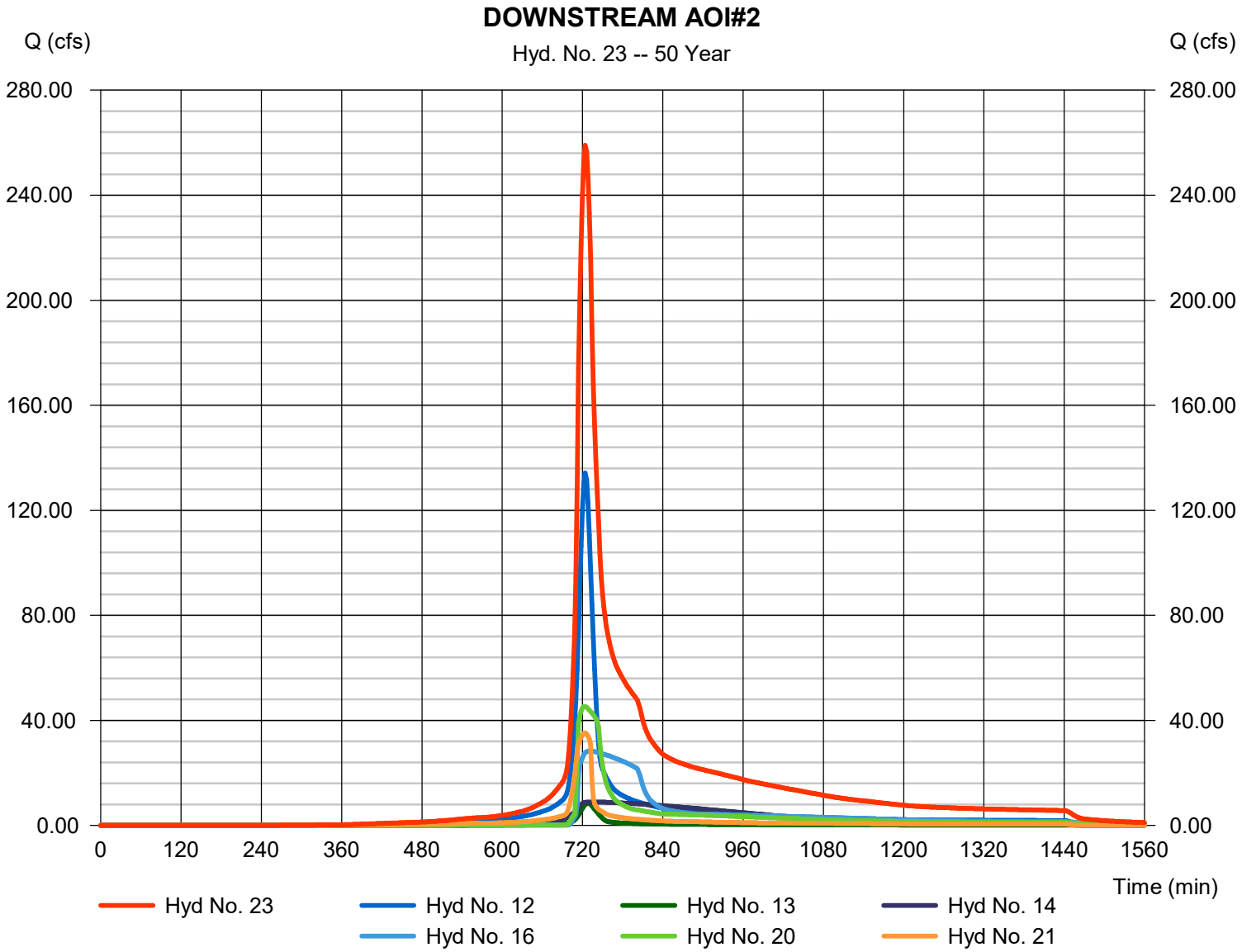


Hydrograph Report

Hyd. No. 23

DOWNSTREAM AOI#2

Hydrograph type	= Combine	Peak discharge	= 259.00 cfs
Storm frequency	= 50 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 1,326,895 cuft
Inflow hyds.	= 12, 13, 14, 16, 20, 21	Contrib. drain. area	= 27.540 ac

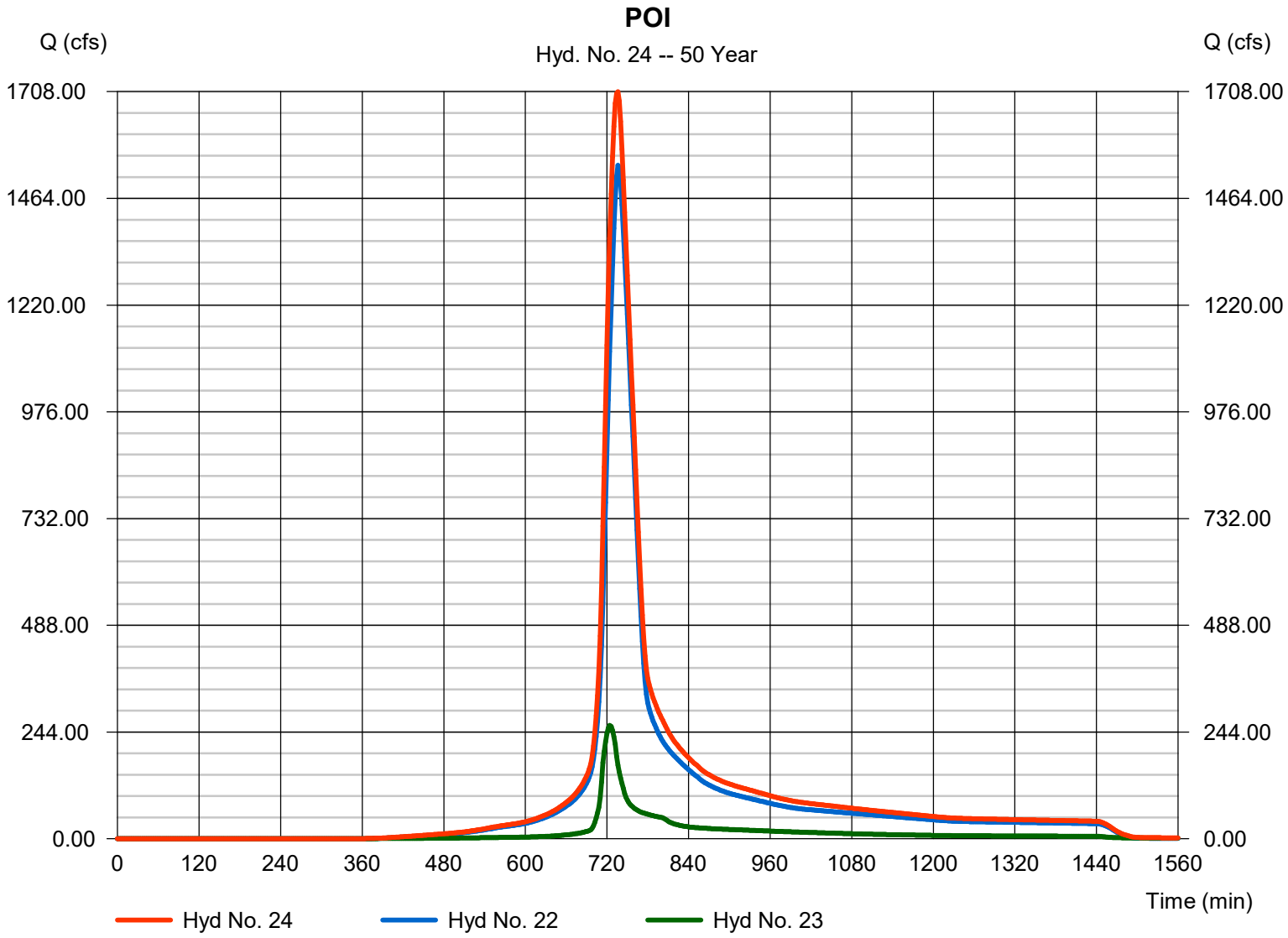


Hydrograph Report

Hyd. No. 24

POI

Hydrograph type	=	Combine	Peak discharge	=	1707.66 cfs
Storm frequency	=	50 yrs	Time to peak	=	736 min
Time interval	=	2 min	Hyd. volume	=	9,252,163 cuft
Inflow hyds.	=	22, 23	Contrib. drain. area	=	0.000 ac

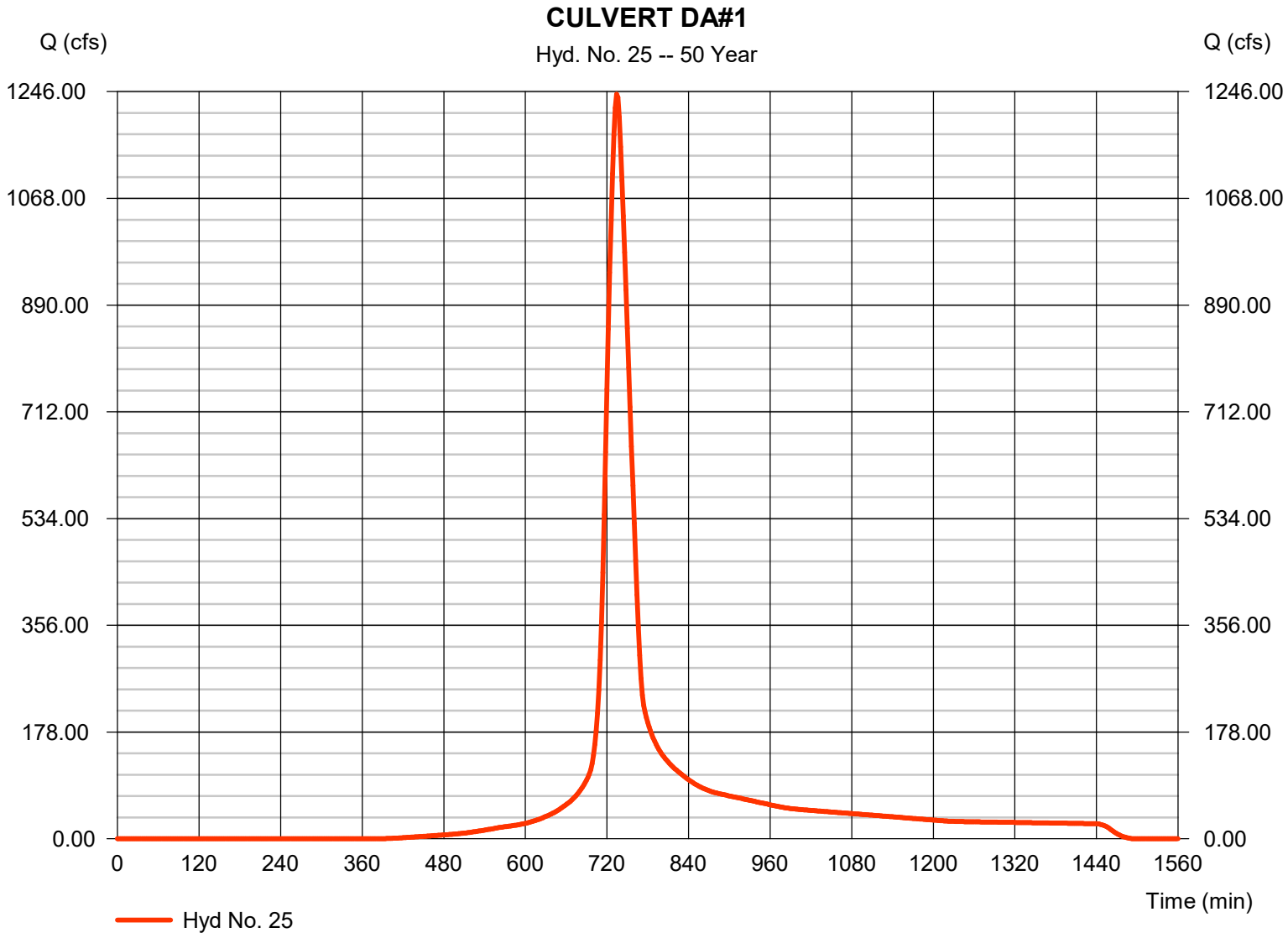


Hydrograph Report

Hyd. No. 25

CULVERT DA#1

Hydrograph type	=	SCS Runoff	Peak discharge	=	1241.84 cfs
Storm frequency	=	50 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	5,626,715 cuft
Drainage area	=	356.740 ac	Curve number	=	77.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	34.90 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

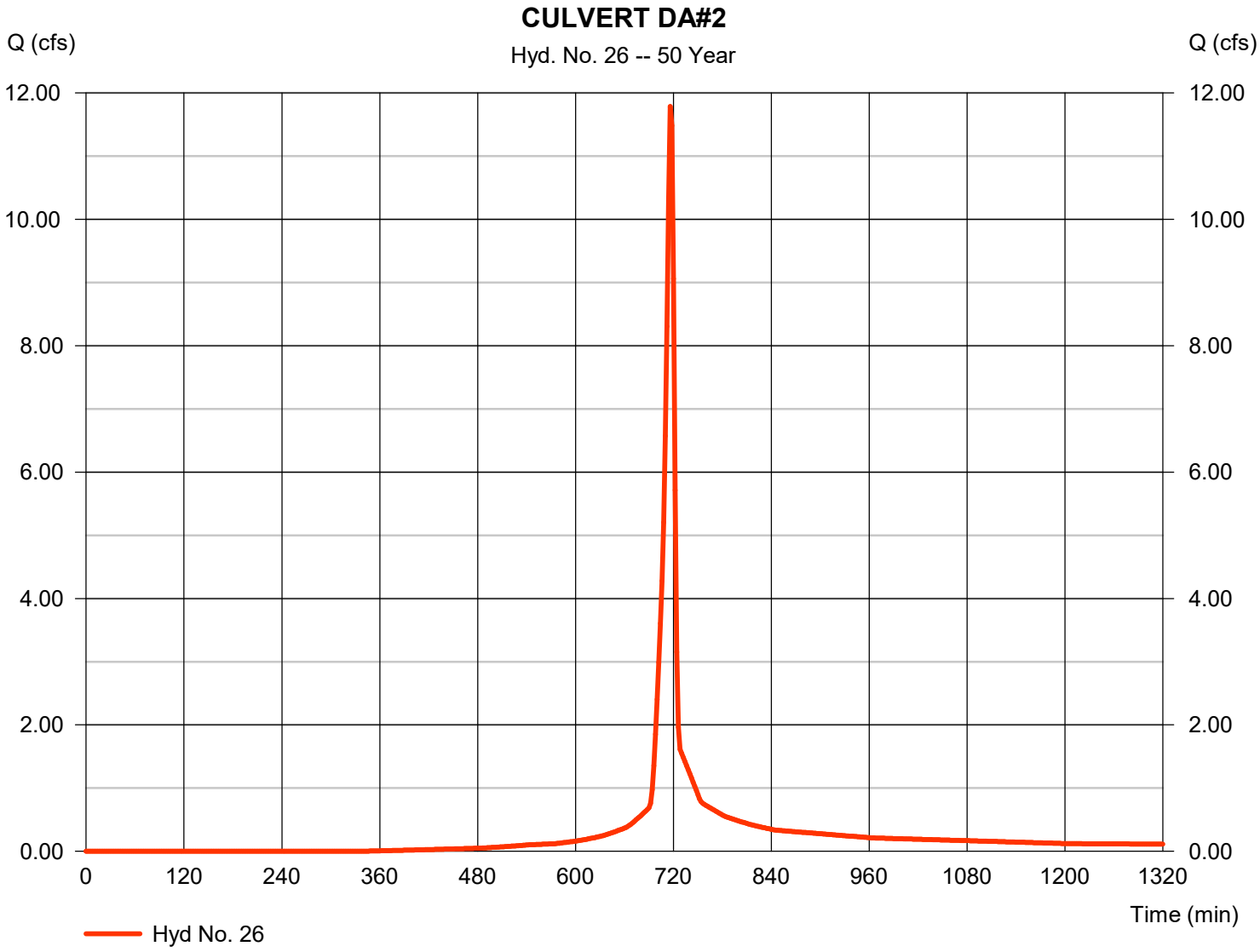


Hydrograph Report

Hyd. No. 26

CULVERT DA#2

Hydrograph type	=	SCS Runoff	Peak discharge	=	11.79 cfs
Storm frequency	=	50 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	24,409 cuft
Drainage area	=	1.540 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

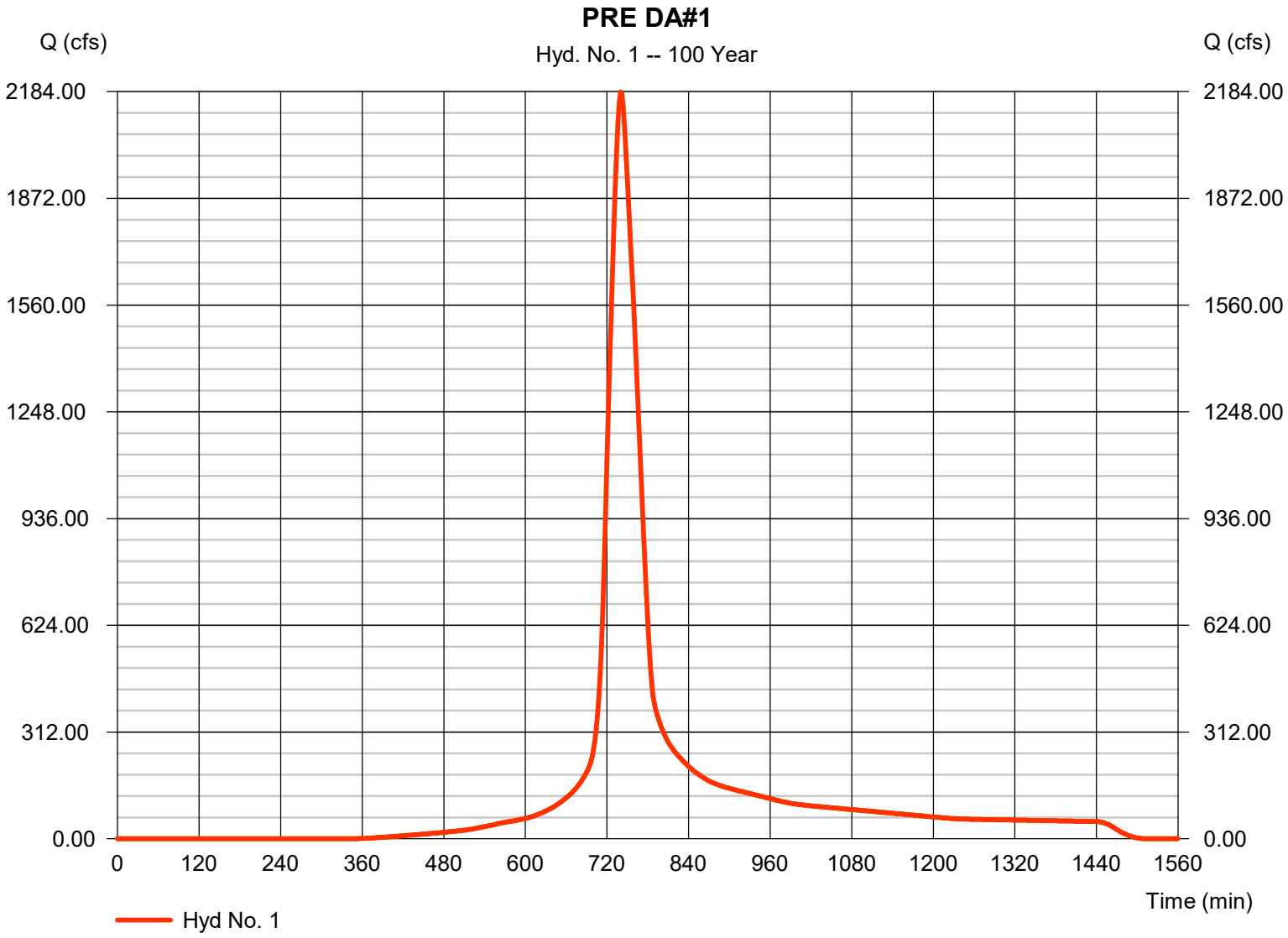
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	2182.59	2	740	11,719,240	------	------	------	PRE DA#1
2	SCS Runoff	98.06	2	716	213,764	------	------	------	POST DA#1
3	SCS Runoff	129.87	2	716	274,617	------	------	------	POST DA#2
4	SCS Runoff	157.88	2	718	382,877	------	------	------	POST DA #3
5	SCS Runoff	84.08	2	716	184,515	------	------	------	POST DA#4
6	SCS Runoff	40.89	2	716	90,227	------	------	------	POST DA#5
7	SCS Runoff	107.54	2	722	317,545	------	------	------	POST DA#6
8	SCS Runoff	142.23	2	716	308,505	------	------	------	POST DA#7
9	SCS Runoff	59.85	2	718	145,997	------	------	------	POST DA#8
10	SCS Runoff	45.83	2	722	130,248	------	------	------	POST DA#1 OFFSITE
11	SCS Runoff	1735.11	2	736	8,436,282	------	------	------	POST DA#2 OFFSITE
12	SCS Runoff	156.44	2	724	493,871	------	------	------	POST DA#3 OFFSITE
13	SCS Runoff	9.865	2	728	36,433	------	------	------	POST DA#4 OFFSITE
14	Reservoir	9.527	2	740	211,992	2	267.15	159,371	POST DA#1 TO SCM#1
15	Reservoir	13.01	2	740	253,496	3	268.28	251,293	POST DA#2 TO SCM#2
16	Reservoir	44.14	2	728	357,872	4	245.77	270,071	POST DA#3 TO SCM#3
17	Reservoir	23.54	2	724	182,193	5	245.43	120,947	POST DA#4 TO SCM#4
18	Reservoir	15.78	2	722	87,190	6	254.26	45,384	POST DA#5 TO SCM#5
19	Reservoir	39.92	2	734	308,896	7	242.77	183,964	POST DA#6 TO SCM#6
20	Reservoir	47.54	2	724	294,688	8	244.26	197,600	POST DA#7 TO SCM#7
21	Reservoir	37.26	2	724	145,997	9	242.20	30,969	POST DA#8 TO SCM#8
22	Combine	1809.76	2	736	9,268,062	11, 15, 17, 18, 19,	------	------	UPSTREAM AOI#1
23	Combine	297.14	2	726	1,540,854	12, 13, 14, 16, 20, 21,	------	------	DOWNSTREAM AOI#2
24	Combine	2014.04	2	734	10,808,910	22, 23	------	------	POI
25	SCS Runoff	1455.45	2	734	6,606,502	------	------	------	CULVERT DA#1
26	SCS Runoff	13.65	2	716	28,498	------	------	------	CULVERT DA#2

Hydrograph Report

Hyd. No. 1

PRE DA#1

Hydrograph type	=	SCS Runoff	Peak discharge	=	2182.59 cfs
Storm frequency	=	100 yrs	Time to peak	=	740 min
Time interval	=	2 min	Hyd. volume	=	11,719,240 cuft
Drainage area	=	618.810 ac	Curve number	=	78.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	47.00 min
Total precip.	=	7.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

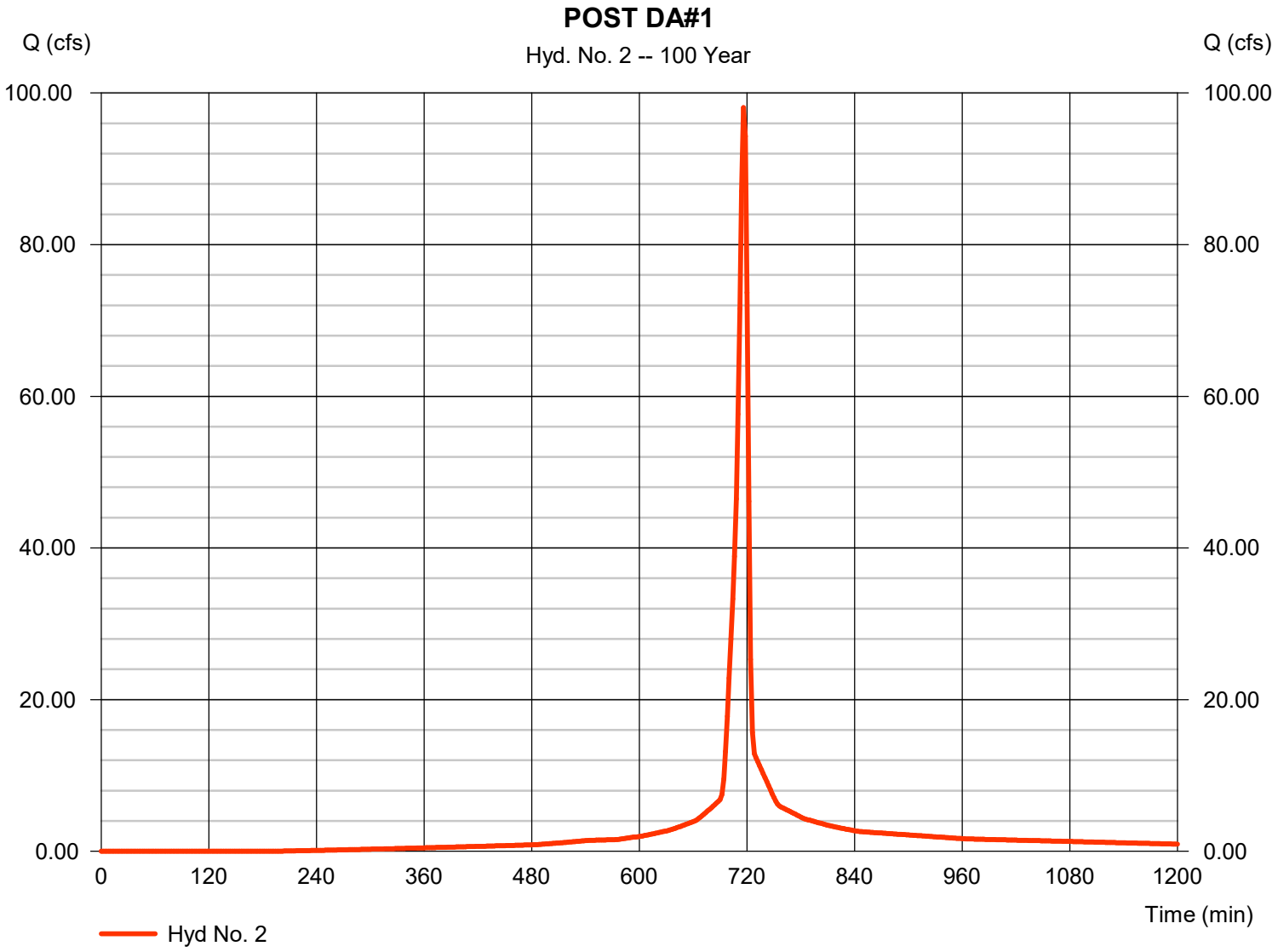


Hydrograph Report

Hyd. No. 2

POST DA#1

Hydrograph type	=	SCS Runoff	Peak discharge	=	98.06 cfs
Storm frequency	=	100 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	213,764 cuft
Drainage area	=	9.930 ac	Curve number	=	87.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.50 min
Total precip.	=	7.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

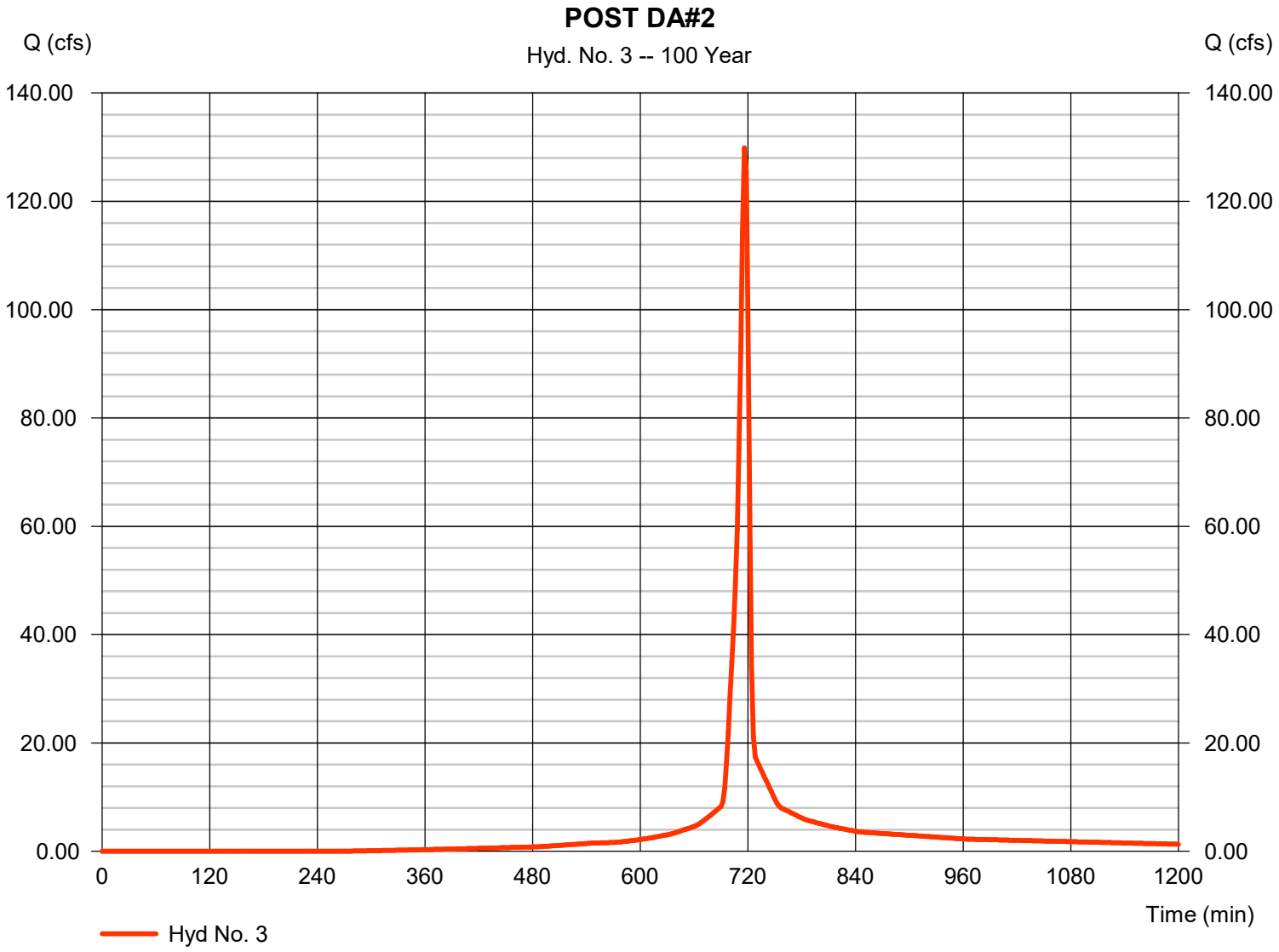


Hydrograph Report

Hyd. No. 3

POST DA#2

Hydrograph type	=	SCS Runoff	Peak discharge	=	129.87 cfs
Storm frequency	=	100 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	274,617 cuft
Drainage area	=	14.030 ac	Curve number	=	82.7
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	7.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

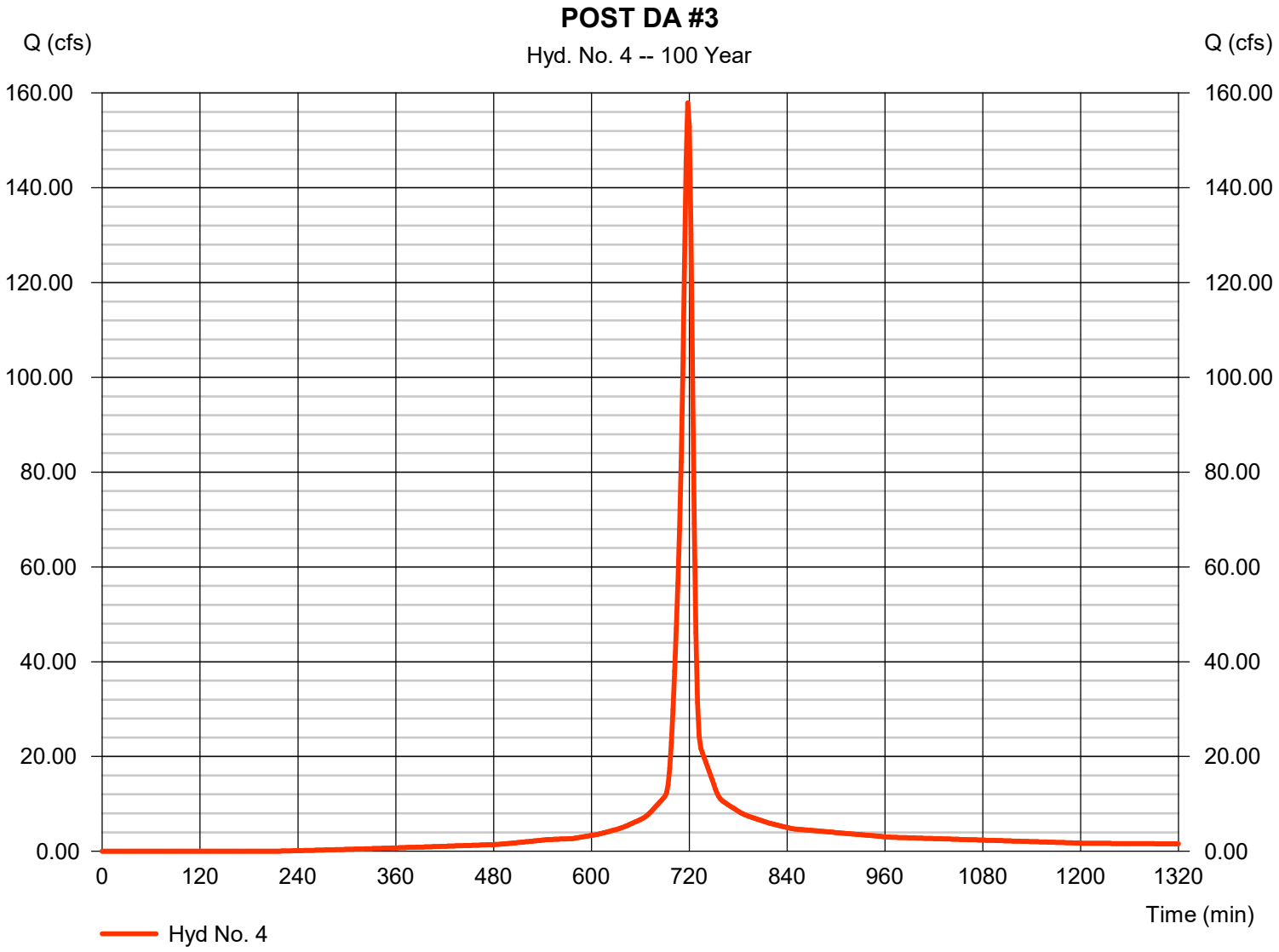


Hydrograph Report

Hyd. No. 4

POST DA #3

Hydrograph type	=	SCS Runoff	Peak discharge	=	157.88 cfs
Storm frequency	=	100 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	382,877 cuft
Drainage area	=	16.990 ac	Curve number	=	86.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	7.40 min
Total precip.	=	7.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

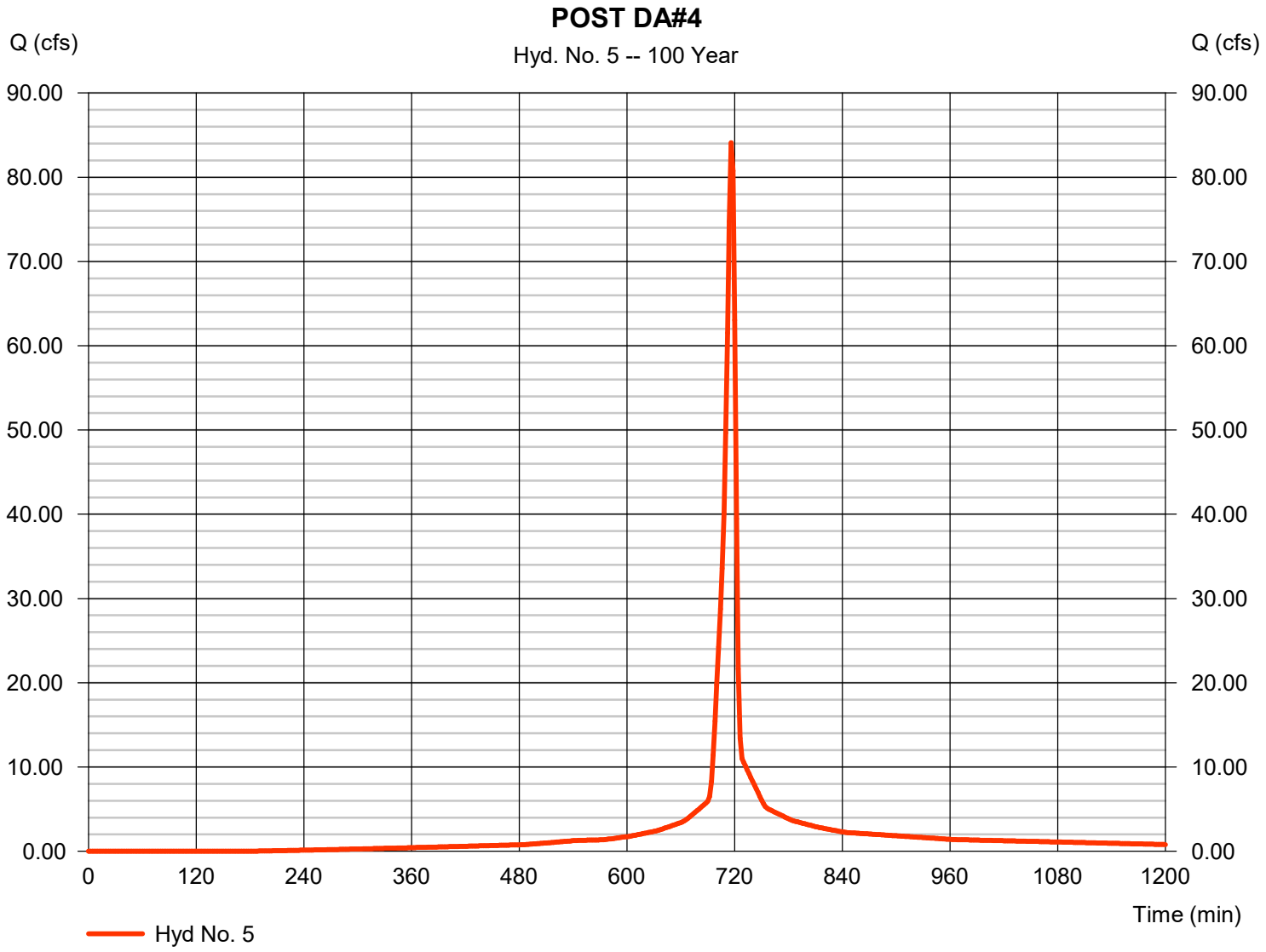


Hydrograph Report

Hyd. No. 5

POST DA#4

Hydrograph type	=	SCS Runoff	Peak discharge	=	84.08 cfs
Storm frequency	=	100 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	184,515 cuft
Drainage area	=	8.430 ac	Curve number	=	88.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.30 min
Total precip.	=	7.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

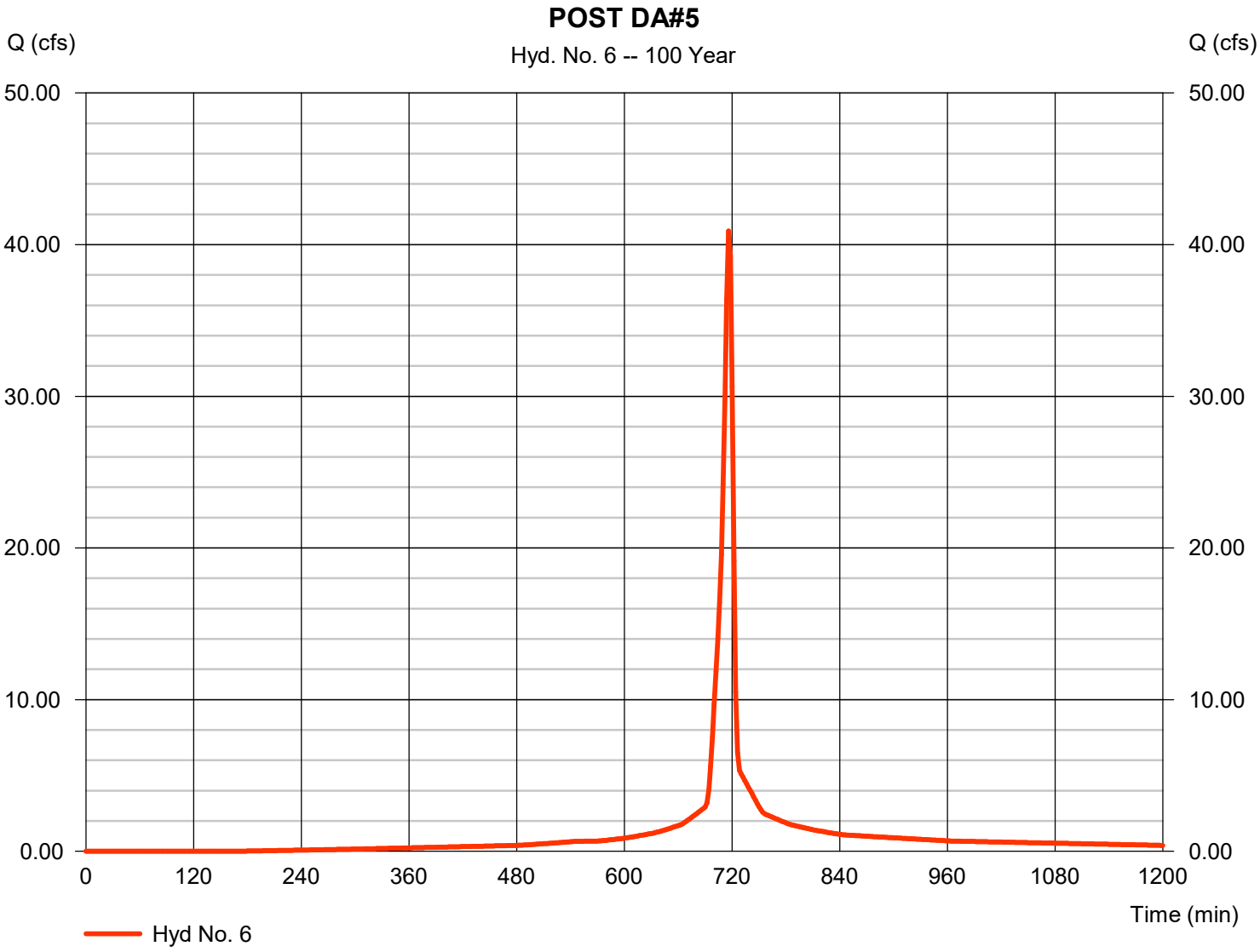


Hydrograph Report

Hyd. No. 6

POST DA#5

Hydrograph type	=	SCS Runoff	Peak discharge	=	40.89 cfs
Storm frequency	=	100 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	90,227 cuft
Drainage area	=	4.070 ac	Curve number	=	89.2
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	7.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

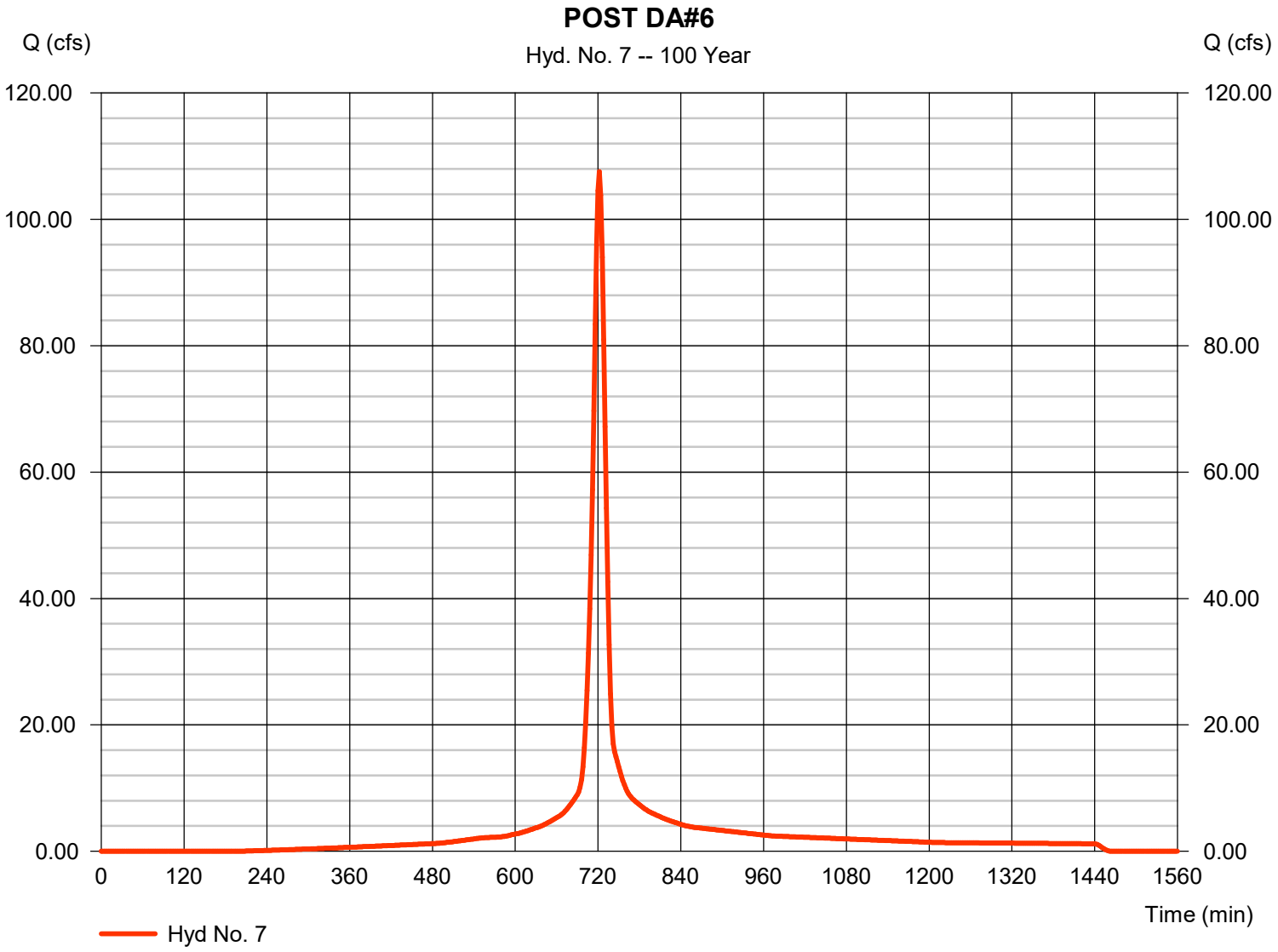


Hydrograph Report

Hyd. No. 7

POST DA#6

Hydrograph type	=	SCS Runoff	Peak discharge	=	107.54 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	317,545 cuft
Drainage area	=	14.210 ac	Curve number	=	87.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	14.80 min
Total precip.	=	7.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

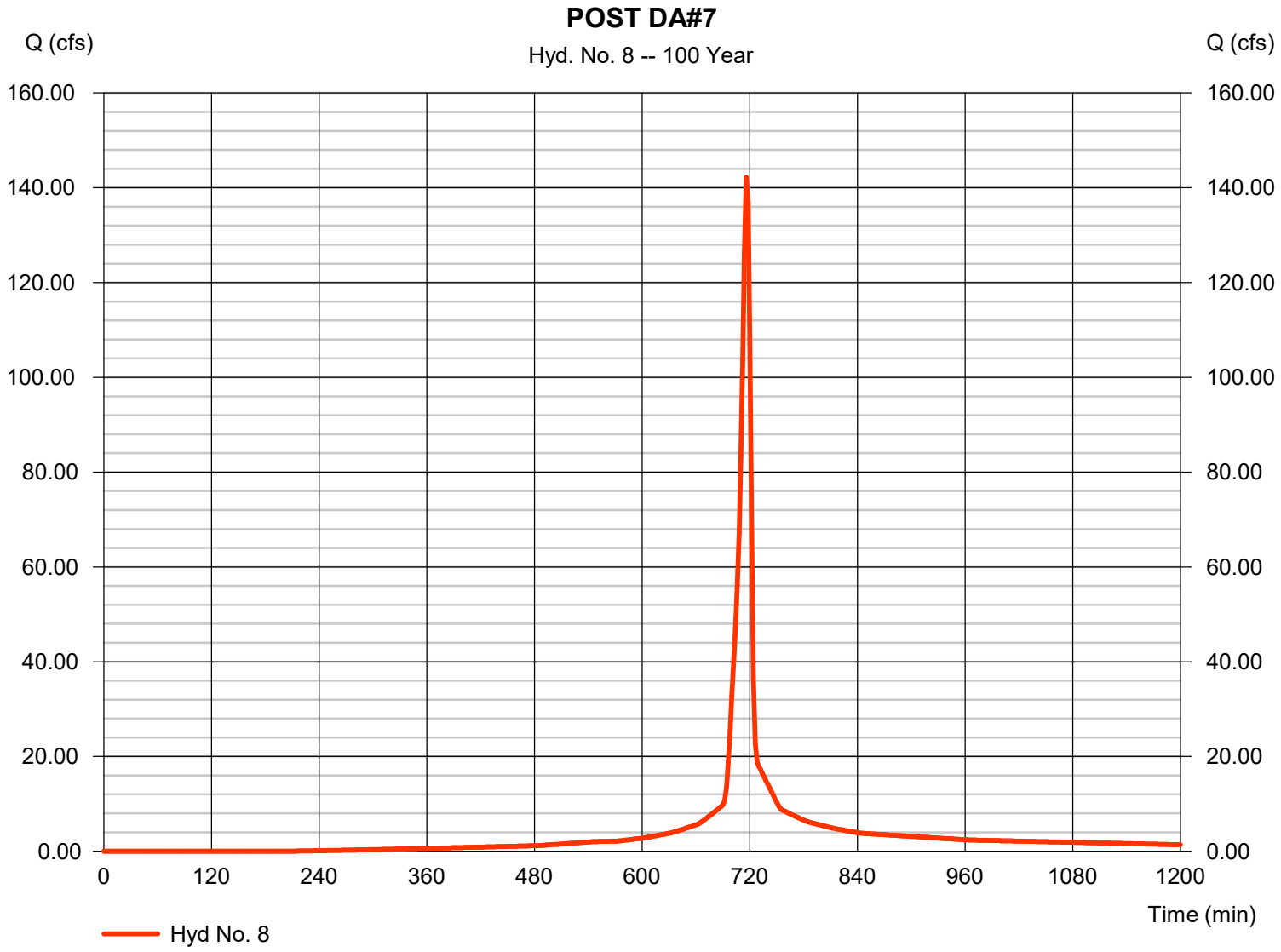


Hydrograph Report

Hyd. No. 8

POST DA#7

Hydrograph type	=	SCS Runoff	Peak discharge	=	142.23 cfs
Storm frequency	=	100 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	308,505 cuft
Drainage area	=	14.520 ac	Curve number	=	86.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.20 min
Total precip.	=	7.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

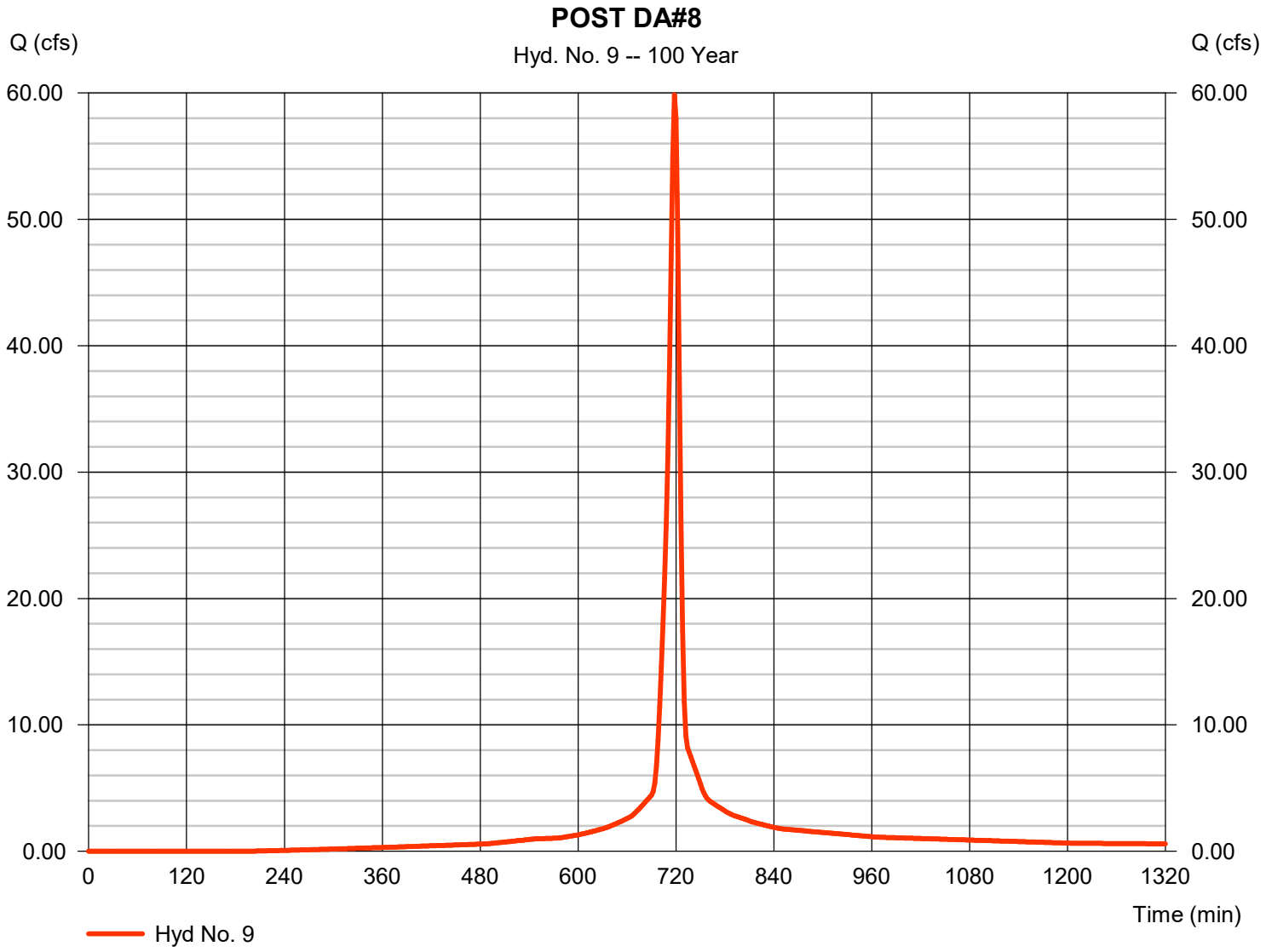


Hydrograph Report

Hyd. No. 9

POST DA#8

Hydrograph type	=	SCS Runoff	Peak discharge	=	59.85 cfs
Storm frequency	=	100 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	145,997 cuft
Drainage area	=	6.370 ac	Curve number	=	87.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.80 min
Total precip.	=	7.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

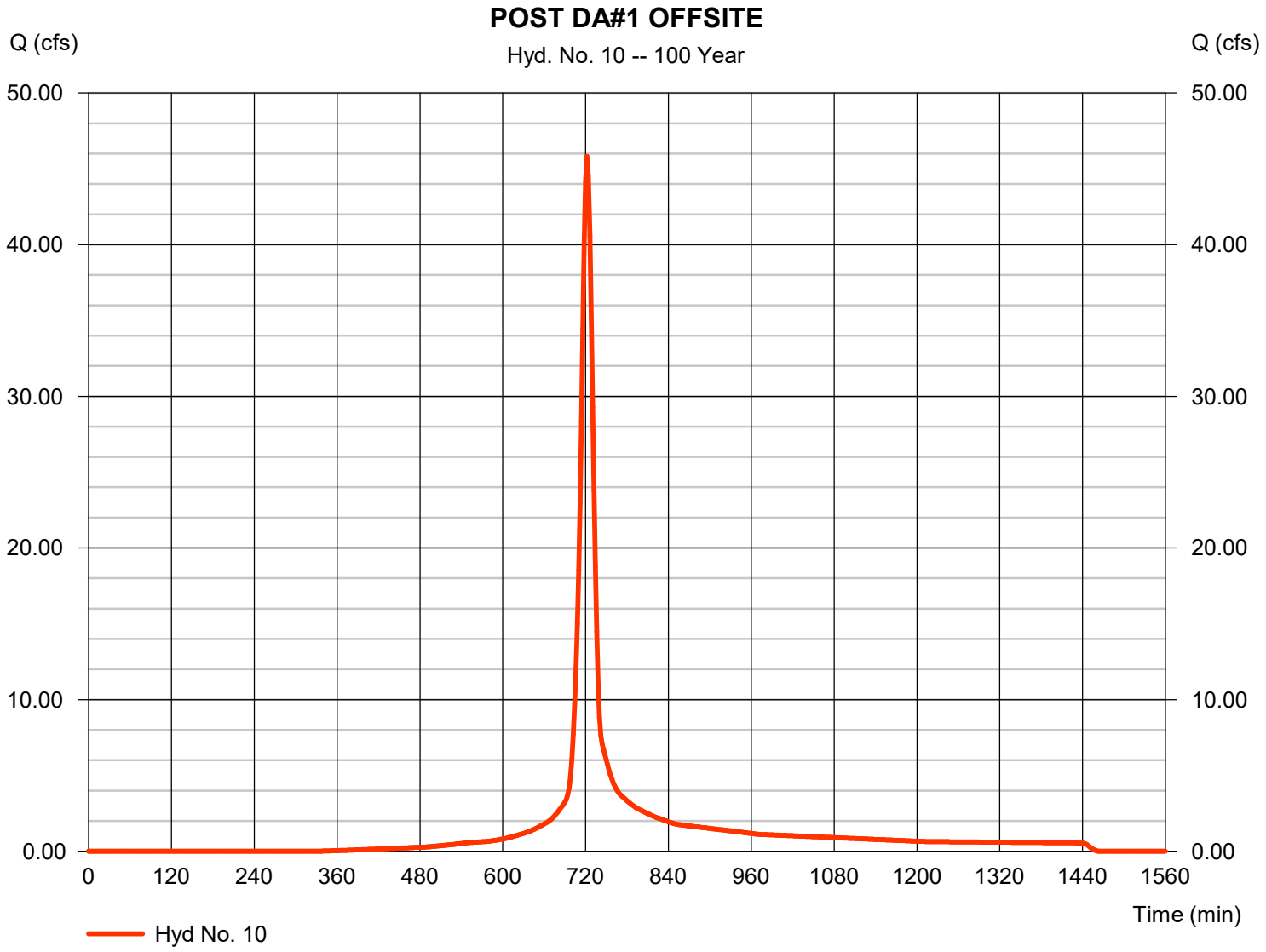


Hydrograph Report

Hyd. No. 10

POST DA#1 OFFSITE

Hydrograph type	= SCS Runoff	Peak discharge	= 45.83 cfs
Storm frequency	= 100 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 130,248 cuft
Drainage area	= 6.930 ac	Curve number	= 78.9
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 14.00 min
Total precip.	= 7.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

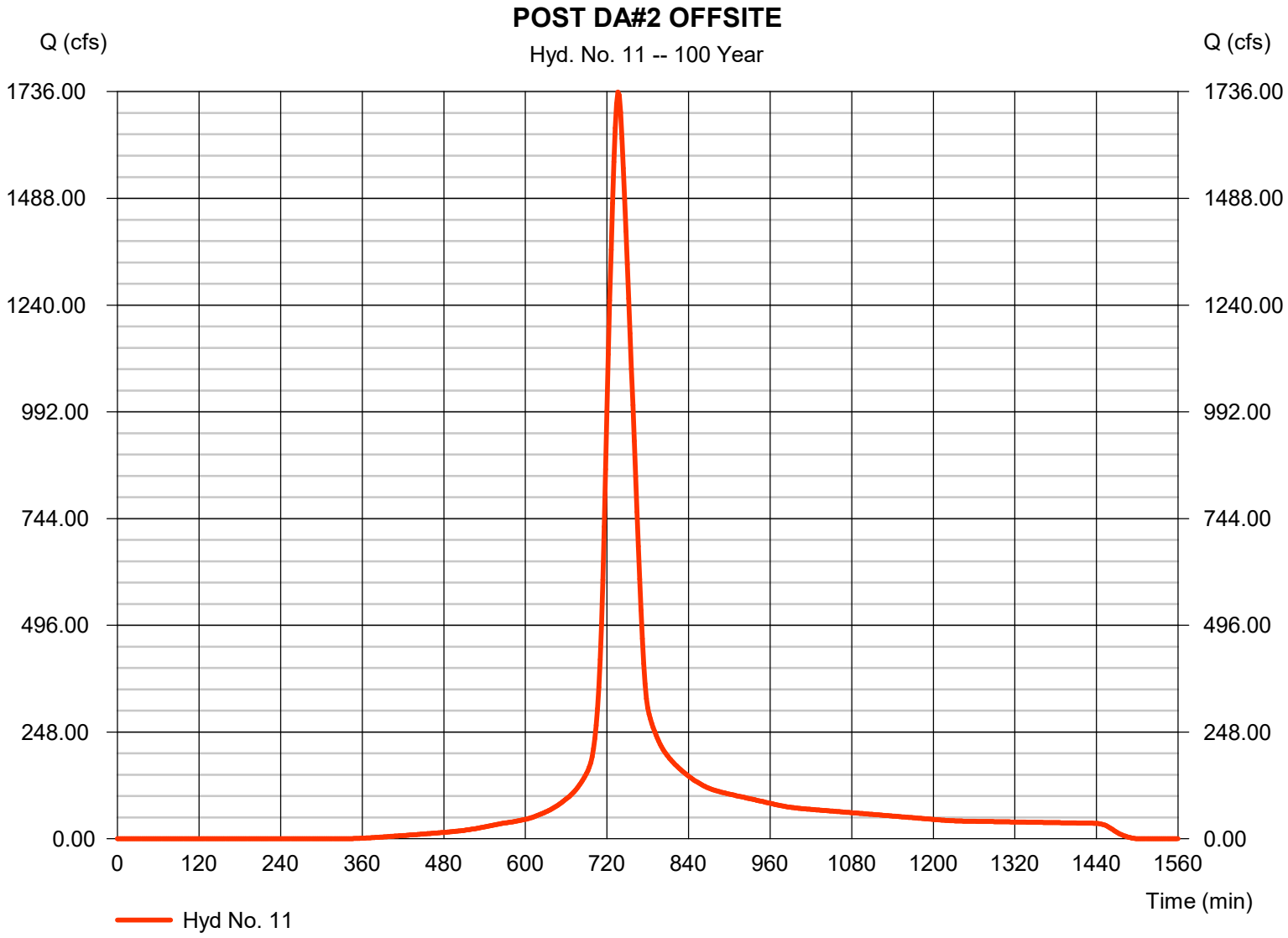


Hydrograph Report

Hyd. No. 11

POST DA#2 OFFSITE

Hydrograph type	=	SCS Runoff	Peak discharge	=	1735.11 cfs
Storm frequency	=	100 yrs	Time to peak	=	736 min
Time interval	=	2 min	Hyd. volume	=	8,436,282 cuft
Drainage area	=	437.640 ac	Curve number	=	78.9
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	38.10 min
Total precip.	=	7.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

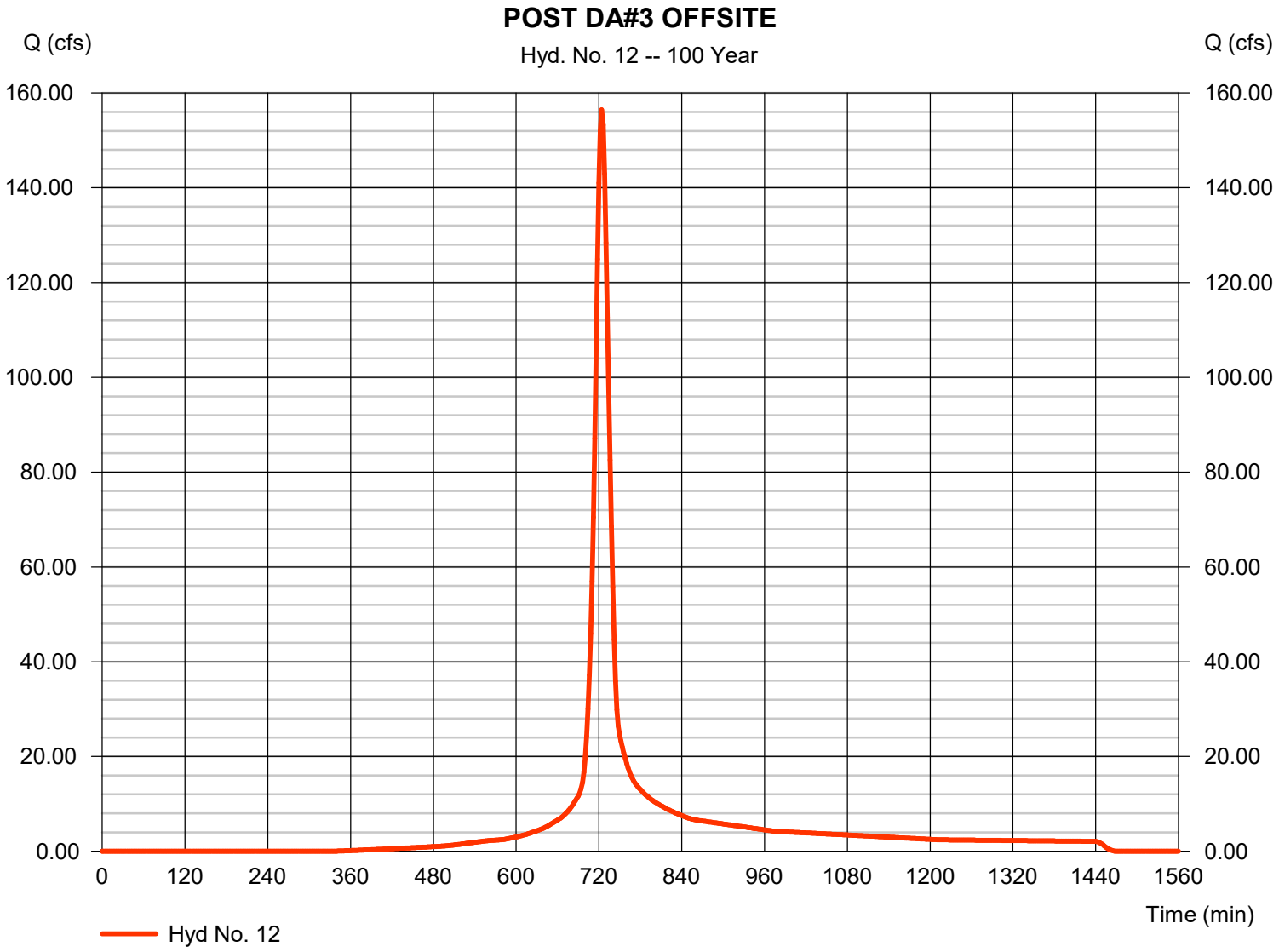


Hydrograph Report

Hyd. No. 12

POST DA#3 OFFSITE

Hydrograph type	= SCS Runoff	Peak discharge	= 156.44 cfs
Storm frequency	= 100 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 493,871 cuft
Drainage area	= 25.620 ac	Curve number	= 78.9
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 19.60 min
Total precip.	= 7.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

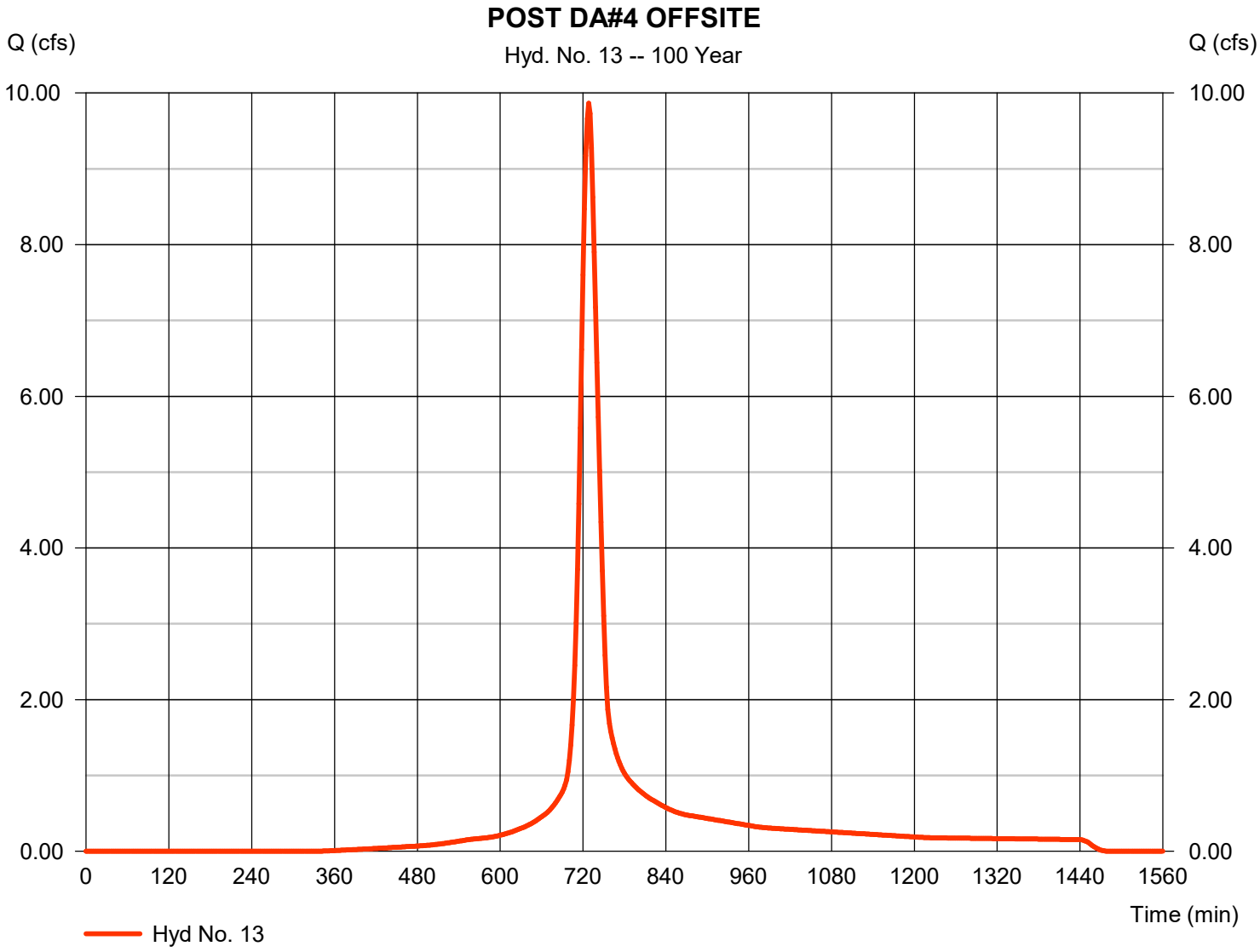


Hydrograph Report

Hyd. No. 13

POST DA#4 OFFSITE

Hydrograph type	= SCS Runoff	Peak discharge	= 9.865 cfs
Storm frequency	= 100 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 36,433 cuft
Drainage area	= 1.920 ac	Curve number	= 78.9
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 26.20 min
Total precip.	= 7.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



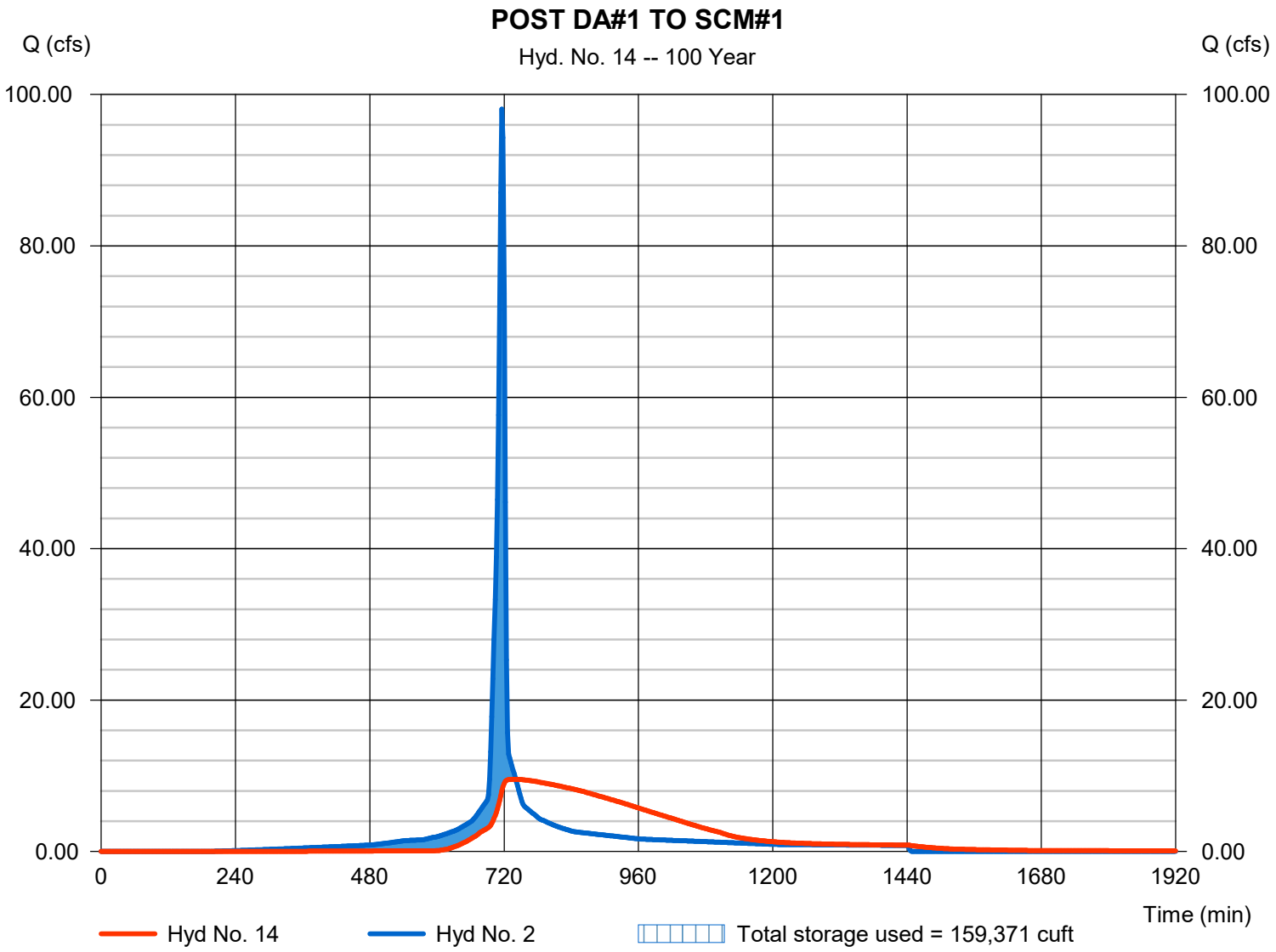
Hydrograph Report

Hyd. No. 14

POST DA#1 TO SCM#1

Hydrograph type	= Reservoir	Peak discharge	= 9.527 cfs
Storm frequency	= 100 yrs	Time to peak	= 740 min
Time interval	= 2 min	Hyd. volume	= 211,992 cuft
Inflow hyd. No.	= 2 - POST DA#1	Max. Elevation	= 267.15 ft
Reservoir name	= SCM#1	Max. Storage	= 159,371 cuft

Storage Indication method used. Wet pond routing start elevation = 262.00 ft.



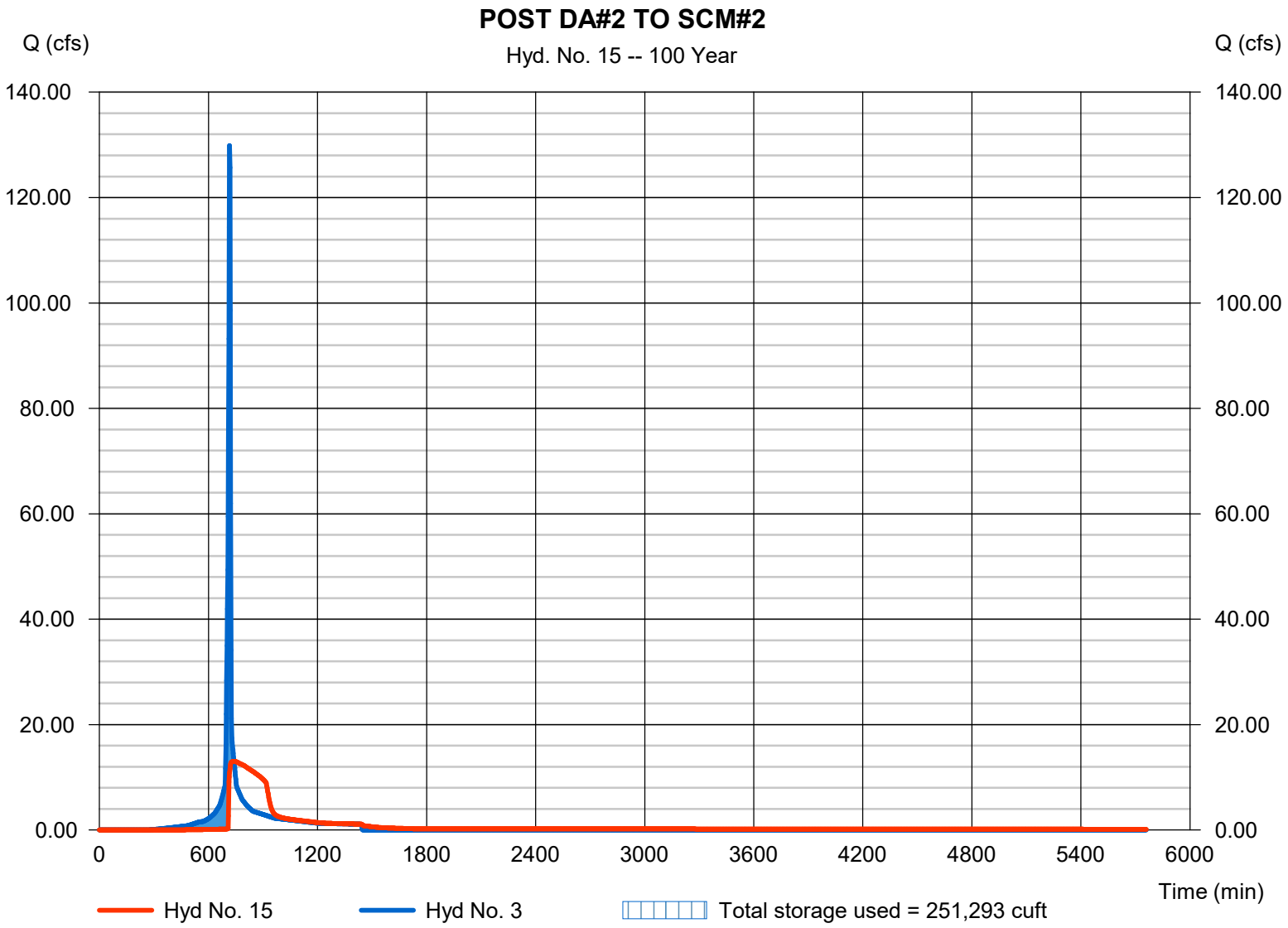
Hydrograph Report

Hyd. No. 15

POST DA#2 TO SCM#2

Hydrograph type	= Reservoir	Peak discharge	= 13.01 cfs
Storm frequency	= 100 yrs	Time to peak	= 740 min
Time interval	= 2 min	Hyd. volume	= 253,496 cuft
Inflow hyd. No.	= 3 - POST DA#2	Max. Elevation	= 268.28 ft
Reservoir name	= SCM#2	Max. Storage	= 251,293 cuft

Storage Indication method used. Wet pond routing start elevation = 264.00 ft.



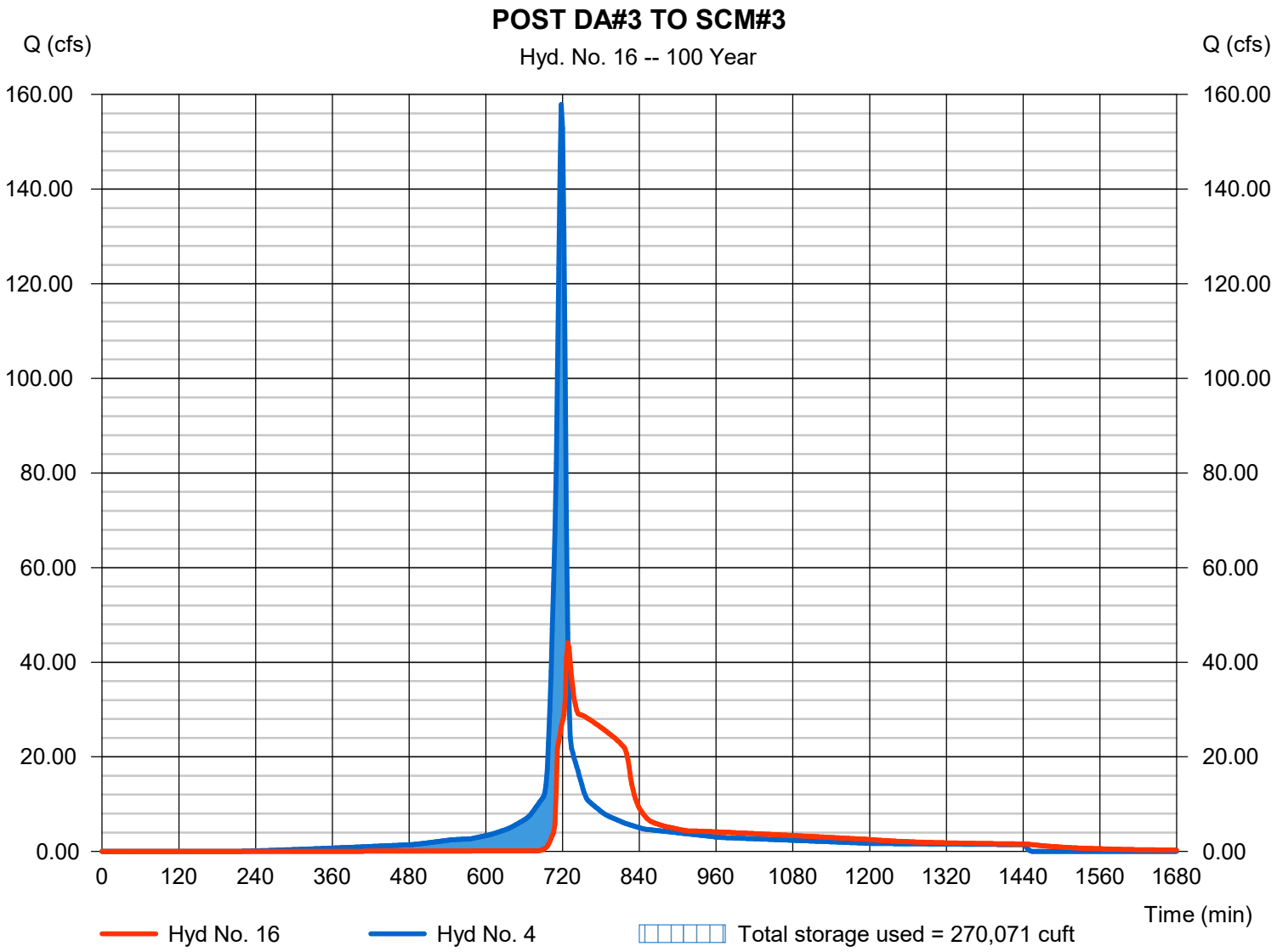
Hydrograph Report

Hyd. No. 16

POST DA#3 TO SCM#3

Hydrograph type	= Reservoir	Peak discharge	= 44.14 cfs
Storm frequency	= 100 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 357,872 cuft
Inflow hyd. No.	= 4 - POST DA #3	Max. Elevation	= 245.77 ft
Reservoir name	= SCM#3	Max. Storage	= 270,071 cuft

Storage Indication method used. Wet pond routing start elevation = 240.00 ft.



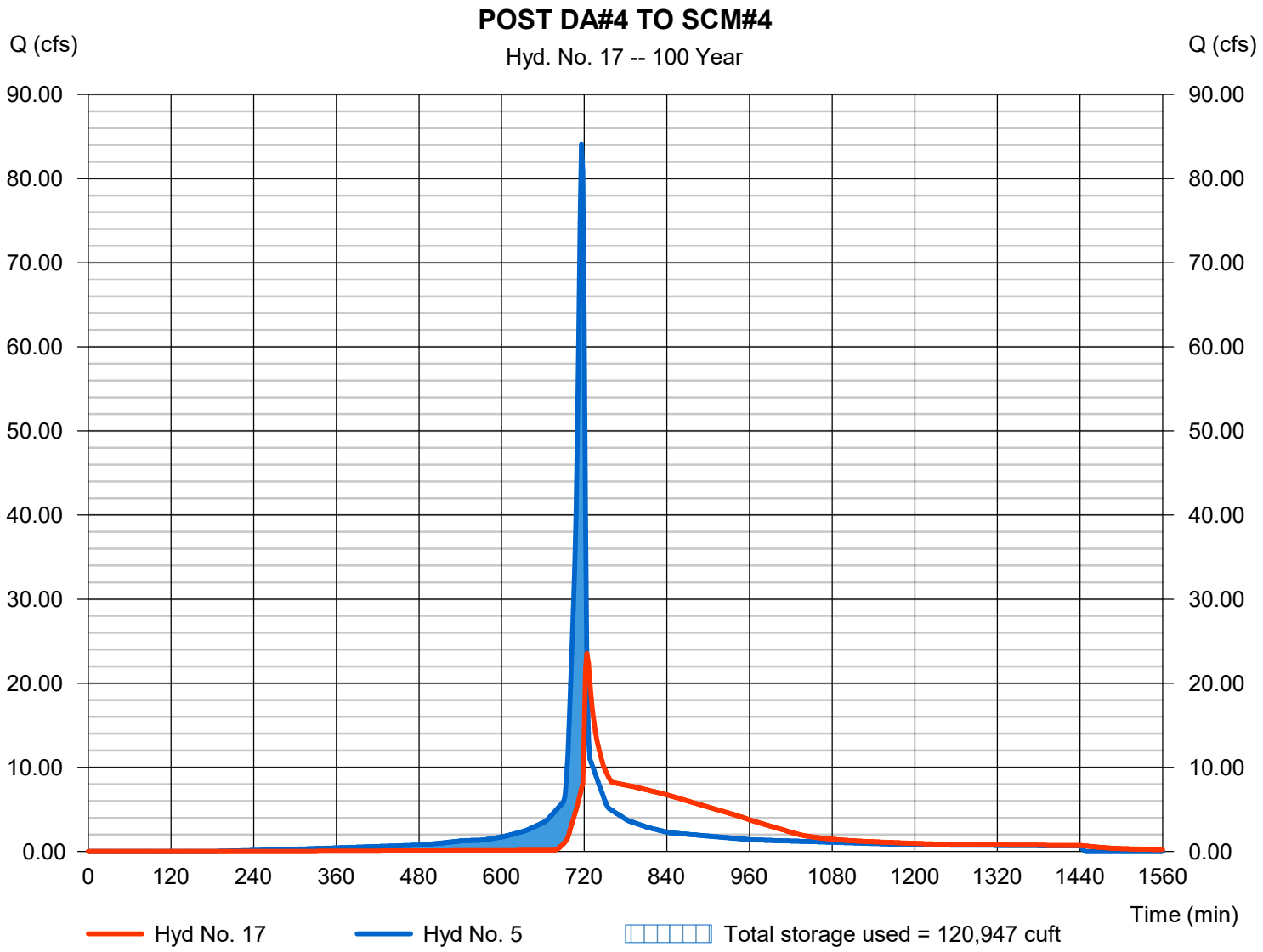
Hydrograph Report

Hyd. No. 17

POST DA#4 TO SCM#4

Hydrograph type	= Reservoir	Peak discharge	= 23.54 cfs
Storm frequency	= 100 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 182,193 cuft
Inflow hyd. No.	= 5 - POST DA#4	Max. Elevation	= 245.43 ft
Reservoir name	= SCM#4	Max. Storage	= 120,947 cuft

Storage Indication method used. Wet pond routing start elevation = 240.00 ft.



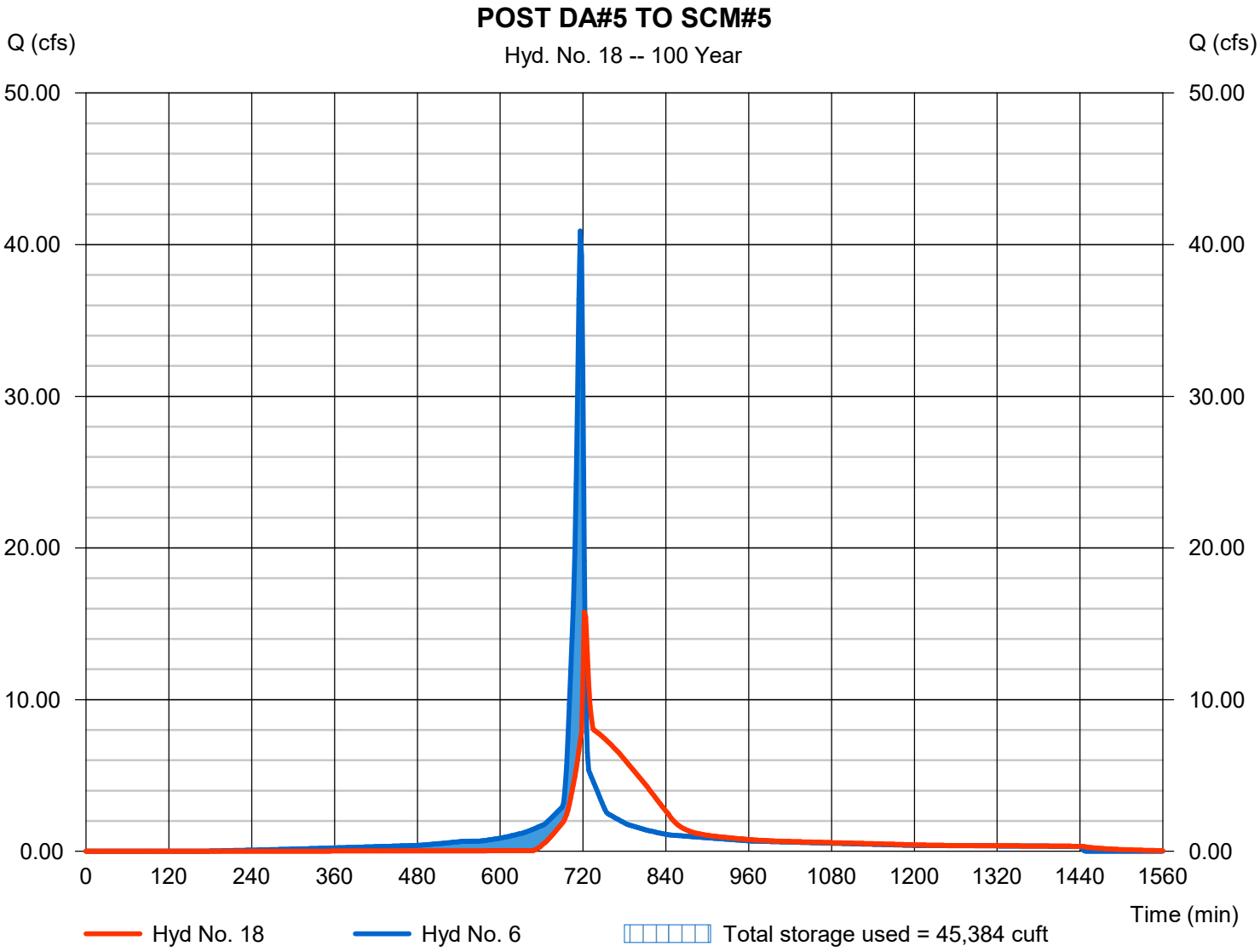
Hydrograph Report

Hyd. No. 18

POST DA#5 TO SCM#5

Hydrograph type	= Reservoir	Peak discharge	= 15.78 cfs
Storm frequency	= 100 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 87,190 cuft
Inflow hyd. No.	= 6 - POST DA#5	Max. Elevation	= 254.26 ft
Reservoir name	= SCM#5	Max. Storage	= 45,384 cuft

Storage Indication method used. Wet pond routing start elevation = 249.00 ft.



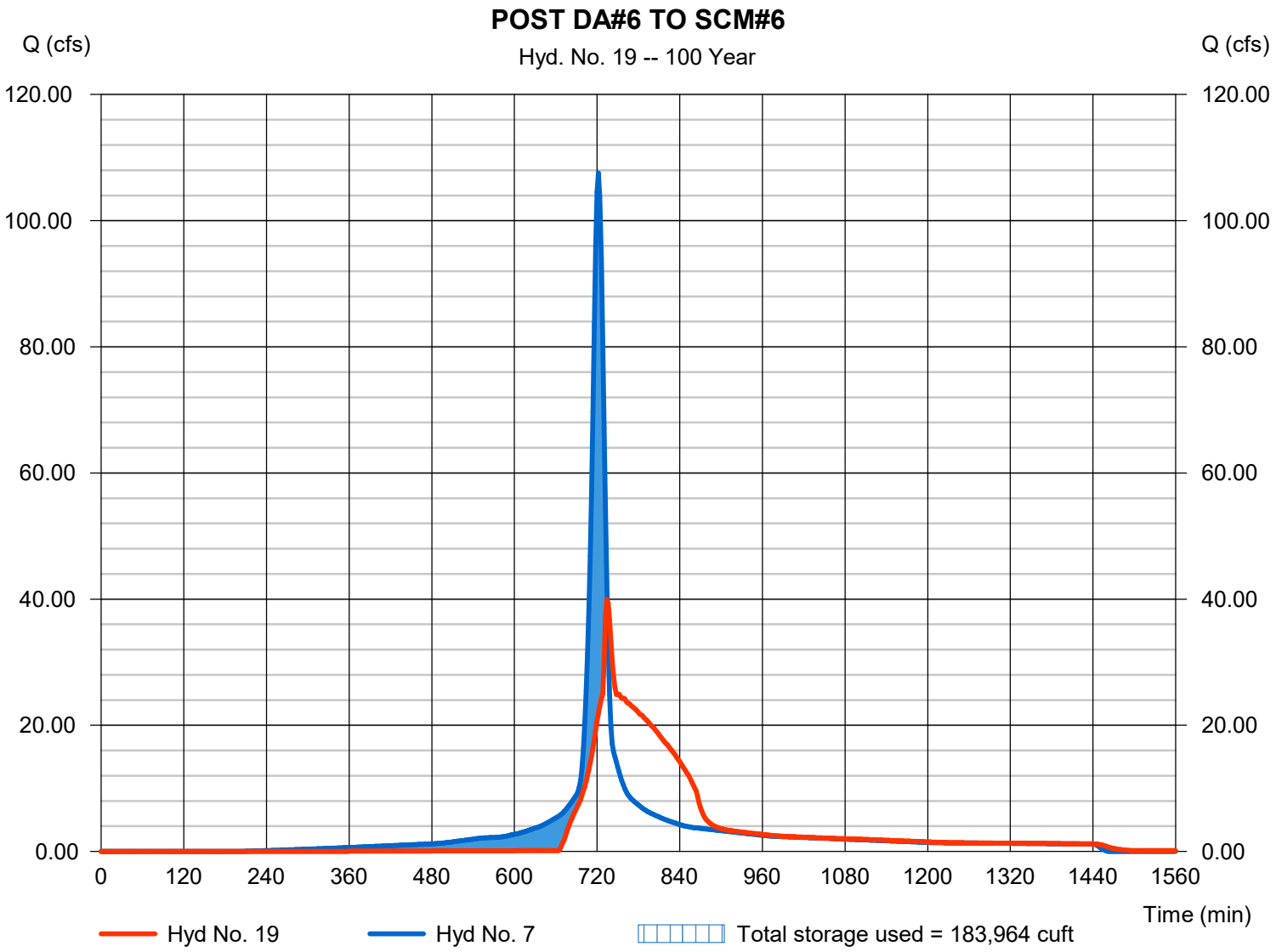
Hydrograph Report

Hyd. No. 19

POST DA#6 TO SCM#6

Hydrograph type	= Reservoir	Peak discharge	= 39.92 cfs
Storm frequency	= 100 yrs	Time to peak	= 734 min
Time interval	= 2 min	Hyd. volume	= 308,896 cuft
Inflow hyd. No.	= 7 - POST DA#6	Max. Elevation	= 242.77 ft
Reservoir name	= SCM#6	Max. Storage	= 183,964 cuft

Storage Indication method used. Wet pond routing start elevation = 237.00 ft.



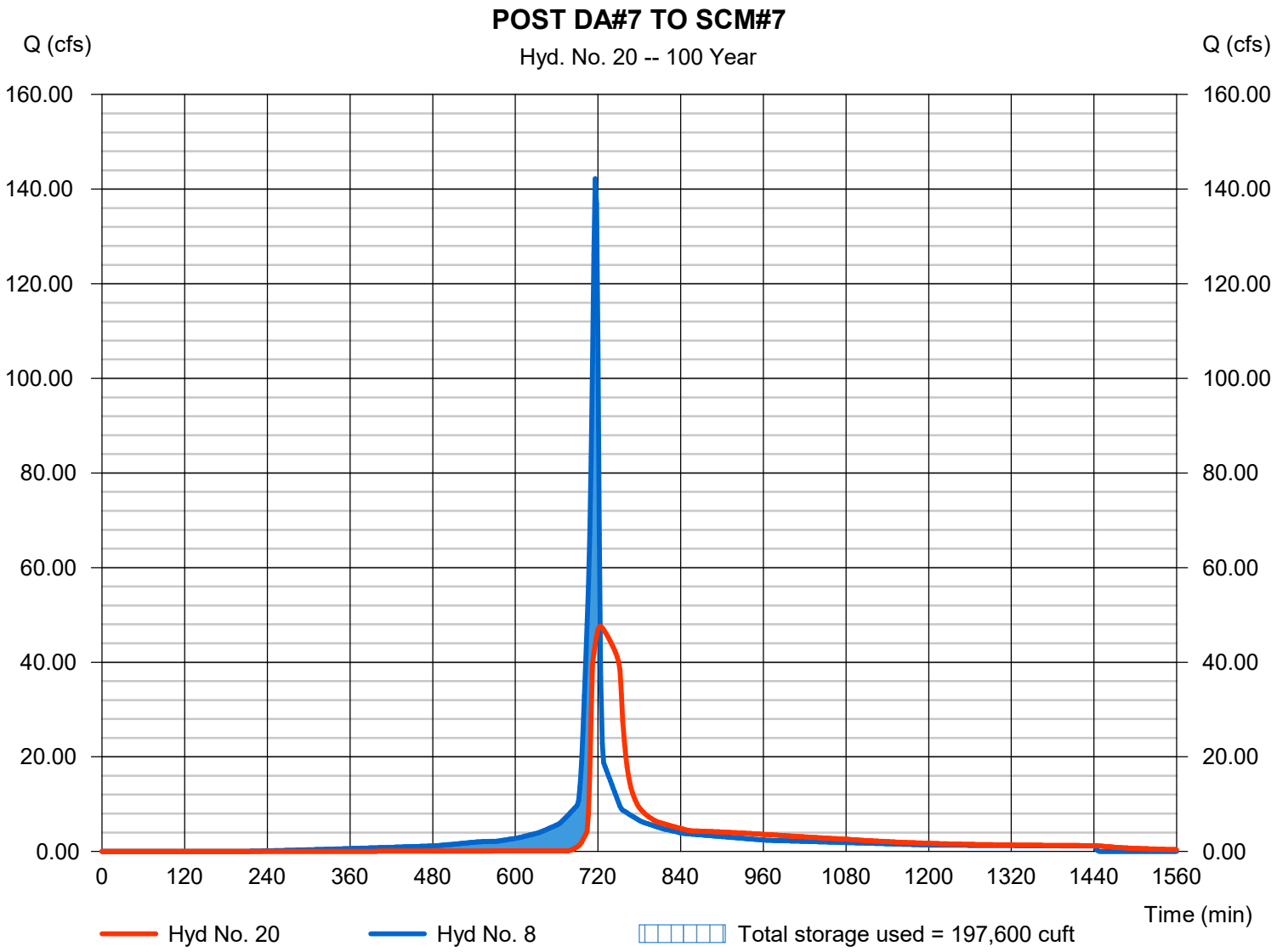
Hydrograph Report

Hyd. No. 20

POST DA#7 TO SCM#7

Hydrograph type	= Reservoir	Peak discharge	= 47.54 cfs
Storm frequency	= 100 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 294,688 cuft
Inflow hyd. No.	= 8 - POST DA#7	Max. Elevation	= 244.26 ft
Reservoir name	= SCM#7	Max. Storage	= 197,600 cuft

Storage Indication method used. Wet pond routing start elevation = 239.00 ft.



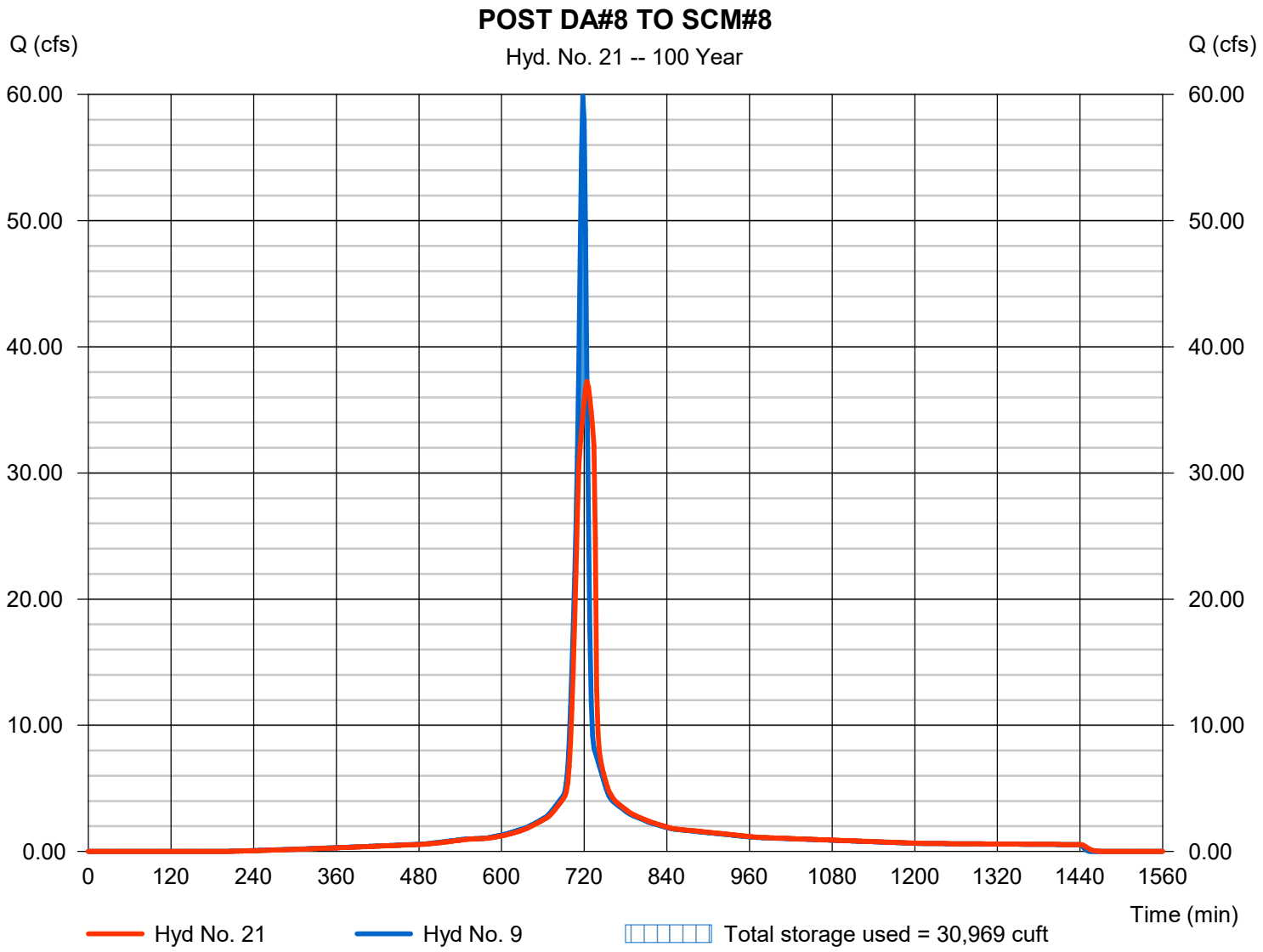
Hydrograph Report

Hyd. No. 21

POST DA#8 TO SCM#8

Hydrograph type	= Reservoir	Peak discharge	= 37.26 cfs
Storm frequency	= 100 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 145,997 cuft
Inflow hyd. No.	= 9 - POST DA#8	Max. Elevation	= 242.20 ft
Reservoir name	= SCM#8	Max. Storage	= 30,969 cuft

Storage Indication method used. Wet pond routing start elevation = 240.00 ft.

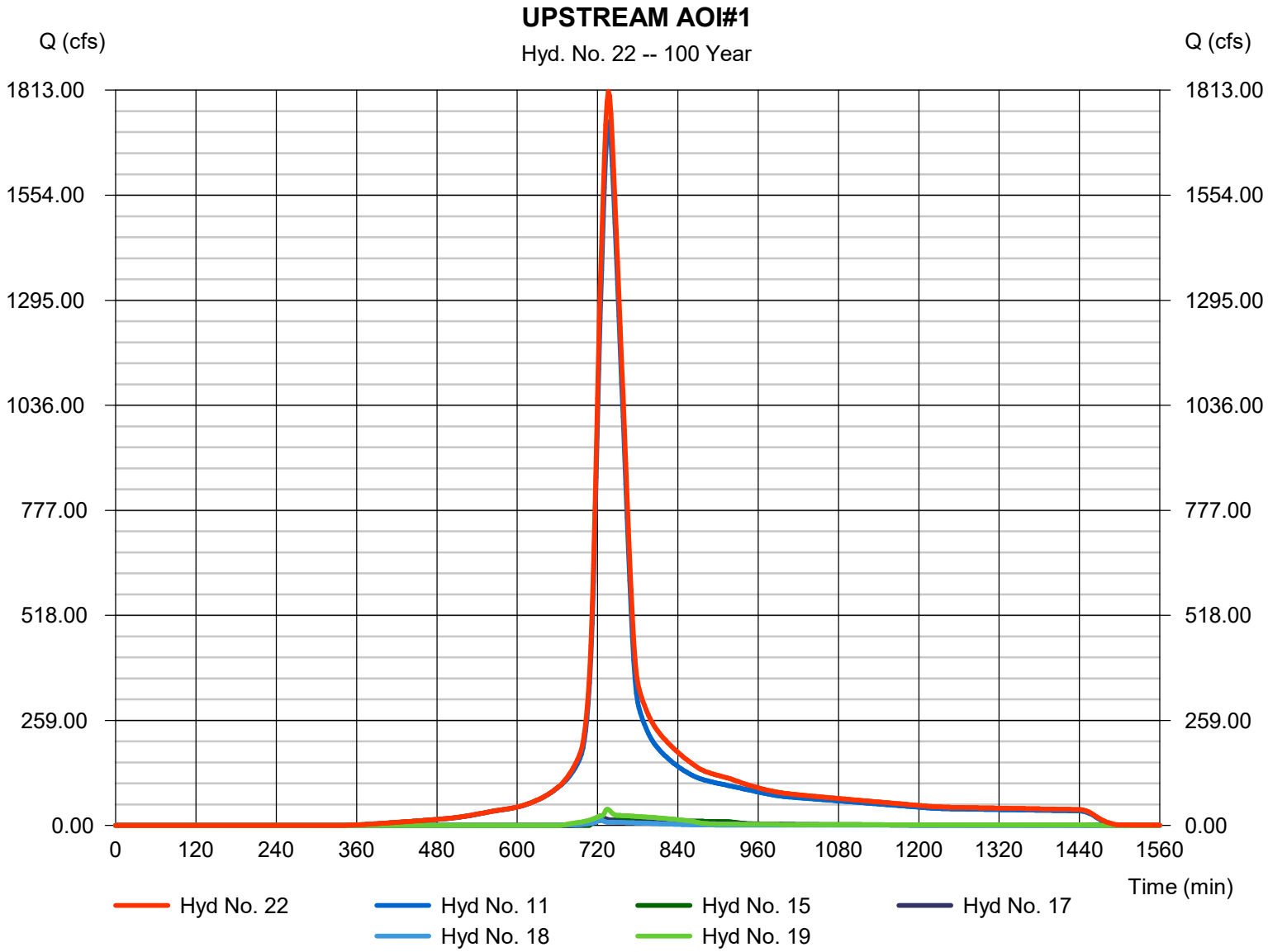


Hydrograph Report

Hyd. No. 22

UPSTREAM AOI#1

Hydrograph type	= Combine	Peak discharge	= 1809.76 cfs
Storm frequency	= 100 yrs	Time to peak	= 736 min
Time interval	= 2 min	Hyd. volume	= 9,268,062 cuft
Inflow hyds.	= 11, 15, 17, 18, 19	Contrib. drain. area	= 437.640 ac

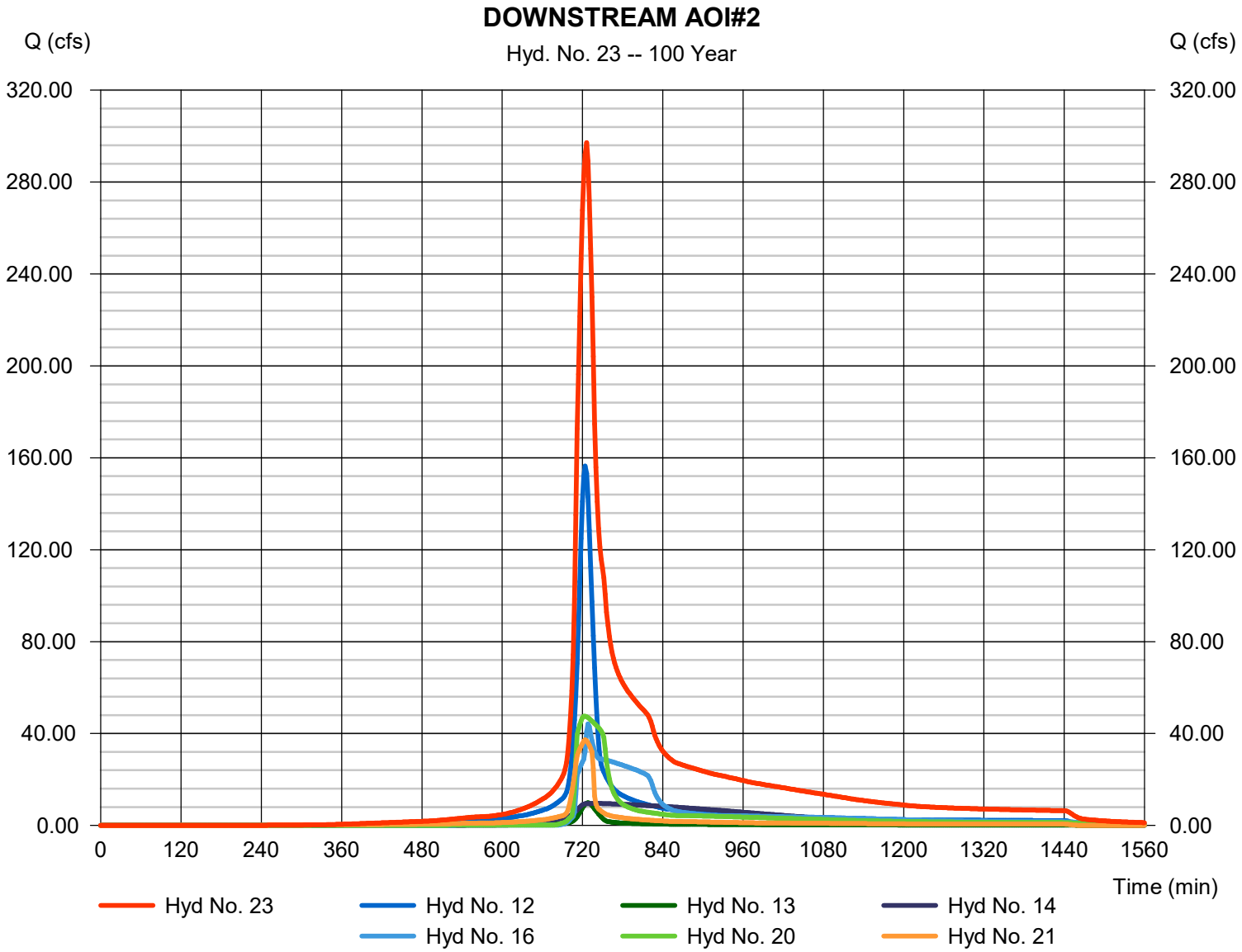


Hydrograph Report

Hyd. No. 23

DOWNSTREAM AOI#2

Hydrograph type	= Combine	Peak discharge	= 297.14 cfs
Storm frequency	= 100 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 1,540,854 cuft
Inflow hyds.	= 12, 13, 14, 16, 20, 21	Contrib. drain. area	= 27.540 ac

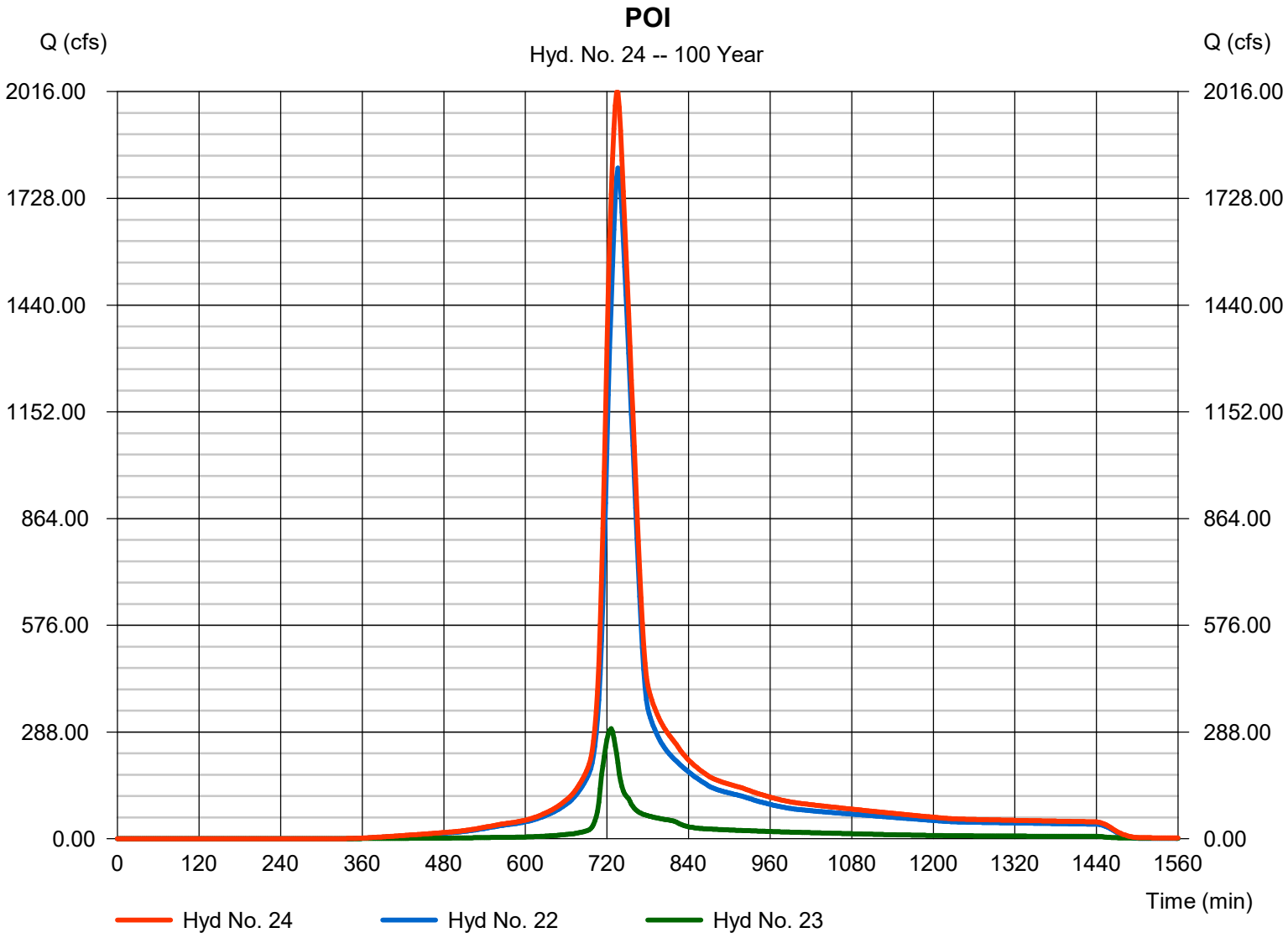


Hydrograph Report

Hyd. No. 24

POI

Hydrograph type	=	Combine	Peak discharge	=	2014.04 cfs
Storm frequency	=	100 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	10,808,910 cuft
Inflow hyds.	=	22, 23	Contrib. drain. area	=	0.000 ac

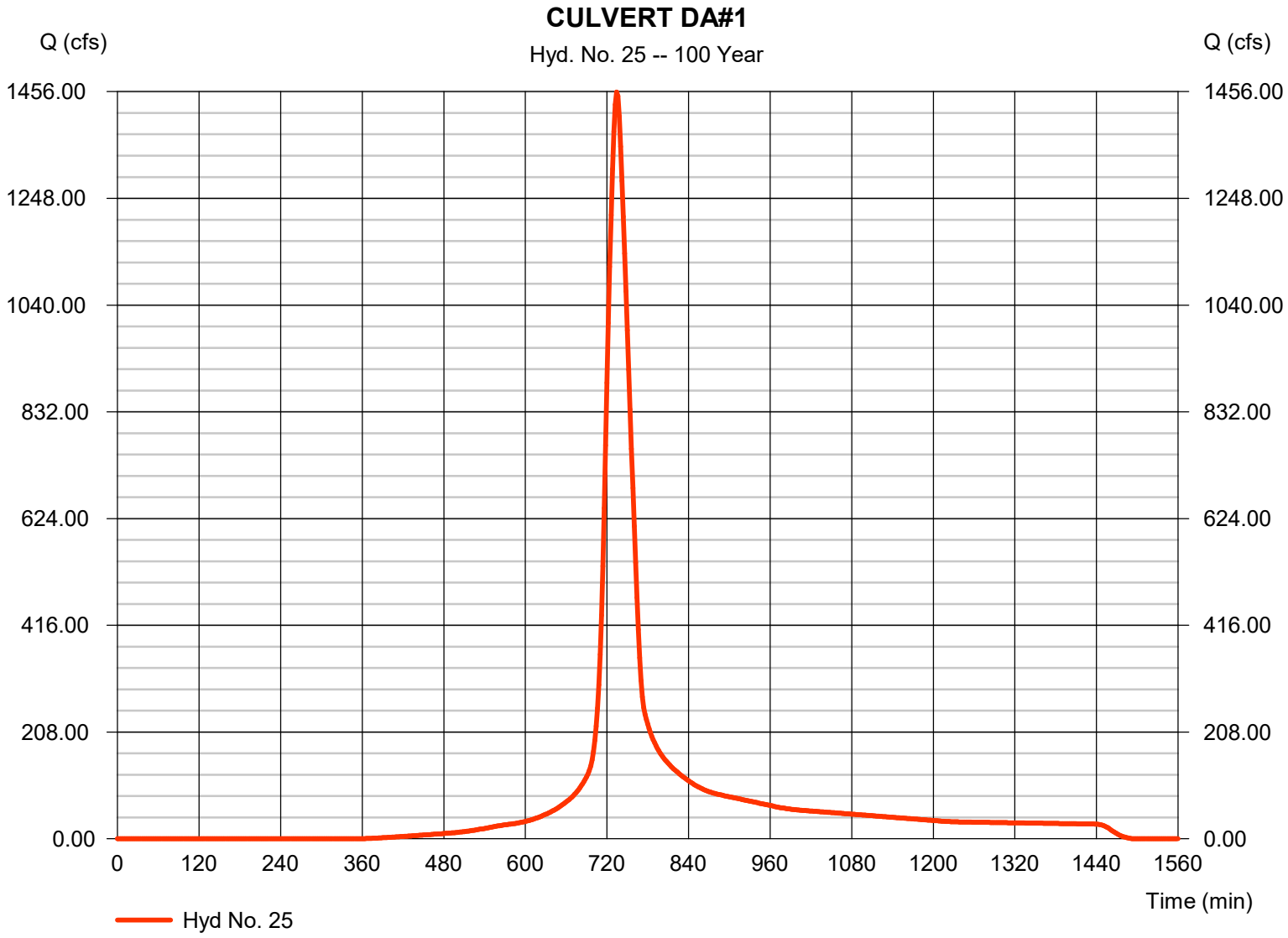


Hydrograph Report

Hyd. No. 25

CULVERT DA#1

Hydrograph type	=	SCS Runoff	Peak discharge	=	1455.45 cfs
Storm frequency	=	100 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	6,606,502 cuft
Drainage area	=	356.740 ac	Curve number	=	77.6
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	34.90 min
Total precip.	=	7.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

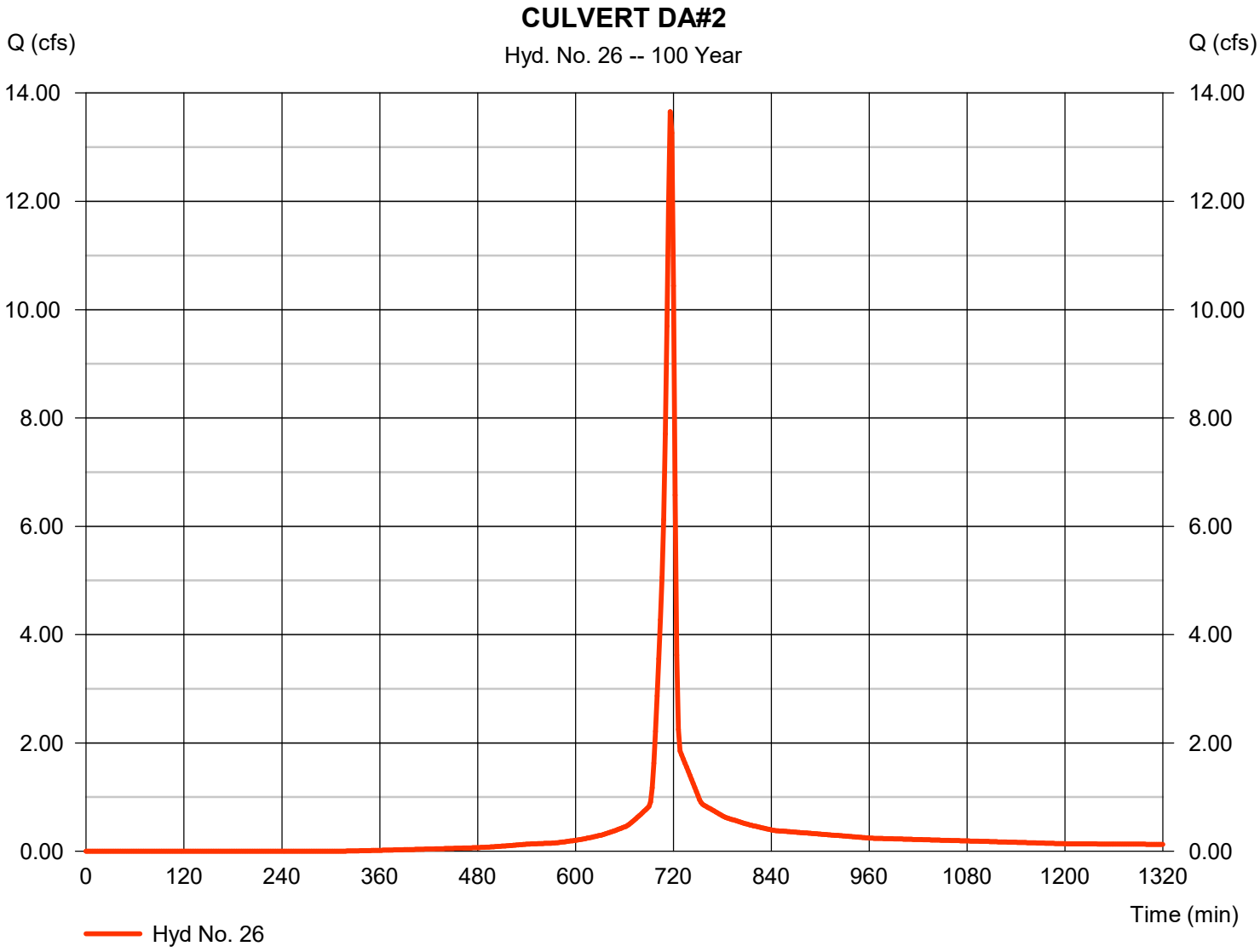


Hydrograph Report

Hyd. No. 26

CULVERT DA#2

Hydrograph type	=	SCS Runoff	Peak discharge	=	13.65 cfs
Storm frequency	=	100 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	28,498 cuft
Drainage area	=	1.540 ac	Curve number	=	80
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	7.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydraflow Rainfall Report

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	62.6038	12.7000	0.8883	--------
2	71.6708	12.9000	0.8793	--------
3	0.0000	0.0000	0.0000	--------
5	74.8360	13.1000	0.8451	--------
10	71.4402	12.3000	0.8016	--------
25	62.3903	11.0000	0.7384	--------
50	57.7988	10.1000	0.6977	--------
100	52.8915	9.2000	0.6569	--------

File name: Reserve at Mitchell Mill.IDF

Intensity = B / (Tc + D)^E

Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	4.88	3.91	3.28	2.83	2.49	2.23	2.02	1.85	1.71	1.59	1.48	1.39
2	5.67	4.57	3.84	3.32	2.93	2.63	2.39	2.19	2.02	1.88	1.76	1.65
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	6.47	5.27	4.46	3.89	3.45	3.11	2.83	2.61	2.42	2.25	2.11	1.99
10	7.27	5.93	5.04	4.41	3.93	3.55	3.25	2.99	2.78	2.60	2.45	2.31
25	8.05	6.59	5.63	4.94	4.43	4.02	3.69	3.42	3.19	3.00	2.83	2.68
50	8.70	7.12	6.10	5.37	4.83	4.40	4.05	3.77	3.53	3.32	3.14	2.98
100	9.26	7.59	6.52	5.76	5.20	4.75	4.39	4.09	3.84	3.62	3.44	3.27

Tc = time in minutes. Values may exceed 60.

Active Projects\Hopper-Rolesville-Reserve at Mitchell Mill\3. Engineering\Design\HGH\SIA\Reserve at Mitchell Mill.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	2.89	3.49	0.00	0.00	5.14	6.15	6.96	7.80
SCS 6-Hr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-1st	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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