Drainage and Water Quality System Calculations

For

Southbend Crossings

Located on

South Cross Bridges Road

Mt. Pleasant, Tennessee

August 12, 2025
(Revised August 27, 2025)

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Southbend Crossings – South Cross Bridges Road – Mt. Pleasant, TN
Detention Summary

The subject property consists of ±58.71 acres of gently rolling terrain located at the southwest corner of the intersection of South Crossing Bridges Road and US Route 43 in Mt. Pleasant, TN. The project includes 43.83 acres disturbed for 16 townhome units with related appurtenances.

The existing drainage pattern of the site is directed primarily to the east across the site through a series of sheet flow and shallow drainage swales eventually entering Sugar Creek off-site. In its existing condition, the natural drainage patterns of the site are primarily directed towards the east by means of overland flow, and natural draws. The general soil information indicates the native soil is primarily Donerail silt loam (Hydrologic Soil Group C) and Mimosa silty clay loam (Hydrologic Soil Group C). For existing flow characteristics see Appendix 3, *Drainage Area Map.*

The SCS Method was used to calculate runoff hydrographs for pre- and post-development conditions for the 2, 5, 10, 25, 50 and 100-year rainfall events. Rainfall information for the basin was obtained from the Intensity-Duration-Frequency Curves and Depth-Duration Data Table (Figure 2-1 of the NOAA Atlas 14 point precipitation frequency events from Mount Pleasant 2 SW 40-6340 included in this report, see Figure 3). Times of concentration for the pre-development site for subbasins A, B, and C are 24.8, 23.8, and 12.9 minutes respectively. Post development site of 21.2, 25.0, and 8.1 minutes respectively were used for the design of the proposed detention facility. Calculations can be found in Appendix 2.

The pre-development curve number was calculated for subbasin area A, B, and C were 86, 81, and 73. The post development curve number has been calculated to be 86, 81, and 76 respectively for the proposed site. The existing development curve number has been established based on the existing conditions of wooded areas and row cropping. The proposed development curve number has been established based on the anticipation of the roadways, drives, and rooftop areas being 98% impervious and the transition of pervious surfaces to manicured lawns.

Stormwater management of this site will include two detention basins located as shown in the construction documents and as part of subbasin area A. The proposed detention system for Basin A includes 309,172 c.f. and for Basin B includes 95,040 in the detention basin as shown on the plans. The outlet control structures for the basin provides a controlled release of storm events while retaining smaller storms for water quality infiltration in the basins and reduction of the peak runoff of a given storm event as indicated in the summary charts below. Sediment is designed to drop and accumulate in the drainage basins and access for removal of sediment is allowed from the basin and the outlet structure. The drainage basins provide storage of the 100-year storm event at elevations indicated in the chart below (contains the 100-year storm event). Stormwater runoff flows overland across the proposed site, entering a surface drainage network that transfers the water to the detention basin. The detention basin discharge **below** the calculated pre-development rate through the design outlet structures, rectangular weirs, and outfalls into the existing ditch line as shown on the plan. The layout and configuration of the detention basin have been

included in the submitted construction documents and the detail of the proposed outlet structures for the Basins are included in this document (Appendix 2). The report that follows defines the characteristics of the proposed drainage network. Note that offsite drainage that comes onto the property is captured and directed through the existing drainage network as shown in the construction documents. A scenario of the proposed detention pond was looked at as if the low flow orifice was completely clogged. This would not allow for any discharge at the 2-yr and 5-y storm event accept from exfiltration in the detention pond. Based on this design scenario, the detention pond would still be able to handle the 100-yr event without overtopping the detention pond and an increase of 0.01 cfs from normal operating conditions. A summary of each of the rainfall events, the routed flows from post-development into the water quality facilities and their respective elevations numerically for 2, 5, 10, 25, 50, and 100 year storms are represented in the following tables:

Detention Basin:

Subbasin Area A:

Storm Event	***Rainfall***	***Rainfall***	***Post-Developed***	***Pre-Developed***	***Total Proposed Runoff***
(YR)	IN (24-HR)	IN (6-HR)	Flow (CFS)	Flow (CFS)	CFS
2	3.90	2.60	138.37	119.57	43.96
5	4.75	3.17	181.28	156.65	71.54
10	5.42	3.66	215.28	186.04	94.30
25	6.35	4.34	262.52	226.85	126.13
50	7.08	4.92	299.53	258.84	177.75
100	7.84	5.54	337.98	292.06	249.57

Subbasin Area B:

Storm Event	***Rainfall***	***Rainfall***	***Post-Developed***	***Pre-Developed***	***Total Proposed Runoff***
(YR)	IN (24-HR)	IN (6-HR)	Flow (CFS)	Flow (CFS)	CFS
2	3.90	2.60	13.95	23.51	13.95
5	4.75	3.17	18.99	32.00	18.99
10	5.42	3.66	23.05	38.84	23.05
25	6.35	4.34	28.74	48.44	28.74
50	7.08	4.92	33.24	56.02	33.24
100	7.84	5.54	37.94	63.93	37.94

Subbasin Area C:

Storm Event	*Rainfall*	*Rainfall*	*Post-Developed*	*Pre-Developed*	*Total Proposed Runoff*
(YR)	IN (24-HR)	IN (6-HR)	Flow (CFS)	Flow (CFS)	CFS
2	3.90	2.60	7.80	12.41	7.80
5	4.75	3.17	10.95	17.94	10.95
10	5.42	3.66	13.55	22.60	13.55
25	6.35	4.34	17.24	29.30	17.24
50	7.08	4.92	20.17	34.67	20.17
100	7.84	5.54	23.26	40.34	23.26

Total Site:

Storm Event	*Rainfall*	*Rainfall*	*Post-Developed*	*Pre-Developed*	*Total Proposed Runoff*
(YR)	IN (24-HR)	IN (6-HR)	Flow (CFS)	Flow (CFS)	CFS
2	3.90	2.60	169.10	151.09	60.51
5	4.75	3.17	222.01	200.01	95.26
10	5.42	3.66	264.12	238.97	123.16
25	6.35	4.34	322.81	293.28	160.75
50	7.08	4.92	368.94	335.95	207.20
100	7.84	5.54	416.94	380.35	286.01

Introduction

A hydrologic and hydraulic analysis was performed for the proposed property located on South Cross Bridges Road, Mt. Pleasant, Tennessee (See Fig. 1, Location Map).

This analysis outlines the calculations used to size the on-site drainage network and the system's detention basin.

The proposed drainage areas contributing storm water runoff to the proposed system is shown in appendix 3, *Drainage Area Map*. The system is designed to restrict the flow rate for the post-development site to improve the quality of the runoff as it exits the site (See Appendix 3, Drainage Area Map). The detention basin and

outlet structure was analyzed to satisfy these criteria. The 2-year, 5-year, 10-year, 25-year, 50-yr, and 100-yr design storm events were also modeled with the results included in this report.

The Hydroflow Hydrographs computer program was used in this analysis in order to appropriately size the outlet structure and route the design storm events through the proposed detention system.

Methods and Assumptions

The Hydroflow Hydrographs computer program, was used for the hydrologic analysis in this report.

Within the Hydroflow Hydrographs program, the drainage area was characterized by sub-basin(s) for the fully built-out post-development conditions for the tributary area to the detention system. Modified Rational Method hydrology was used within Hydroflow Hydrographs program to characterize the sub-basin using appropriate curve numbers and times of concentration (Tc). A design rainfall values were taken from the Intensity – Duration - Frequency curves established at the NOAA Atlas 14 point precipitation frequency events from Mount Pleasant 2 SW 40-6340, and shown in Figure 2, Mt. Pleasant IDF Curve.

The detention basin was modeled by entering a stage-storage-discharge relationship into Hydroflow Hydrographs. The stage-discharge-volume relationship was established based upon trial & error methods comparing the pre & post development flow values.

Sub-Basin Identification

Sub-basins were established based on hydrologic characteristics and by hydraulic junction locations. The drainage area on site was represented by two sub-basins: *pre-development & post-development.*

The *pre-development* sub-basin is the total area tributary to the system in the undeveloped condition.

The *post-development* sub-basin is the total area tributary to the system in the developed condition.

Hydraulic Characteristics

The stage – storage - discharge relationship for the detention system can be found in Figure 3. These hydraulic characteristics were used in the Hydroflow Hydrographs model to produce the results identified in this report.

Summary of Discharge

The Detention Calculation summary, located in Appendix 2, identifies the peak flow for the design storm events for the areas draining through the site at pre development and post development rates. The Sub-basin locations and various HEC-HMS model components can be identified in Appendix 1, Hydroflow Hydrographs Summary.

Outlet Condition

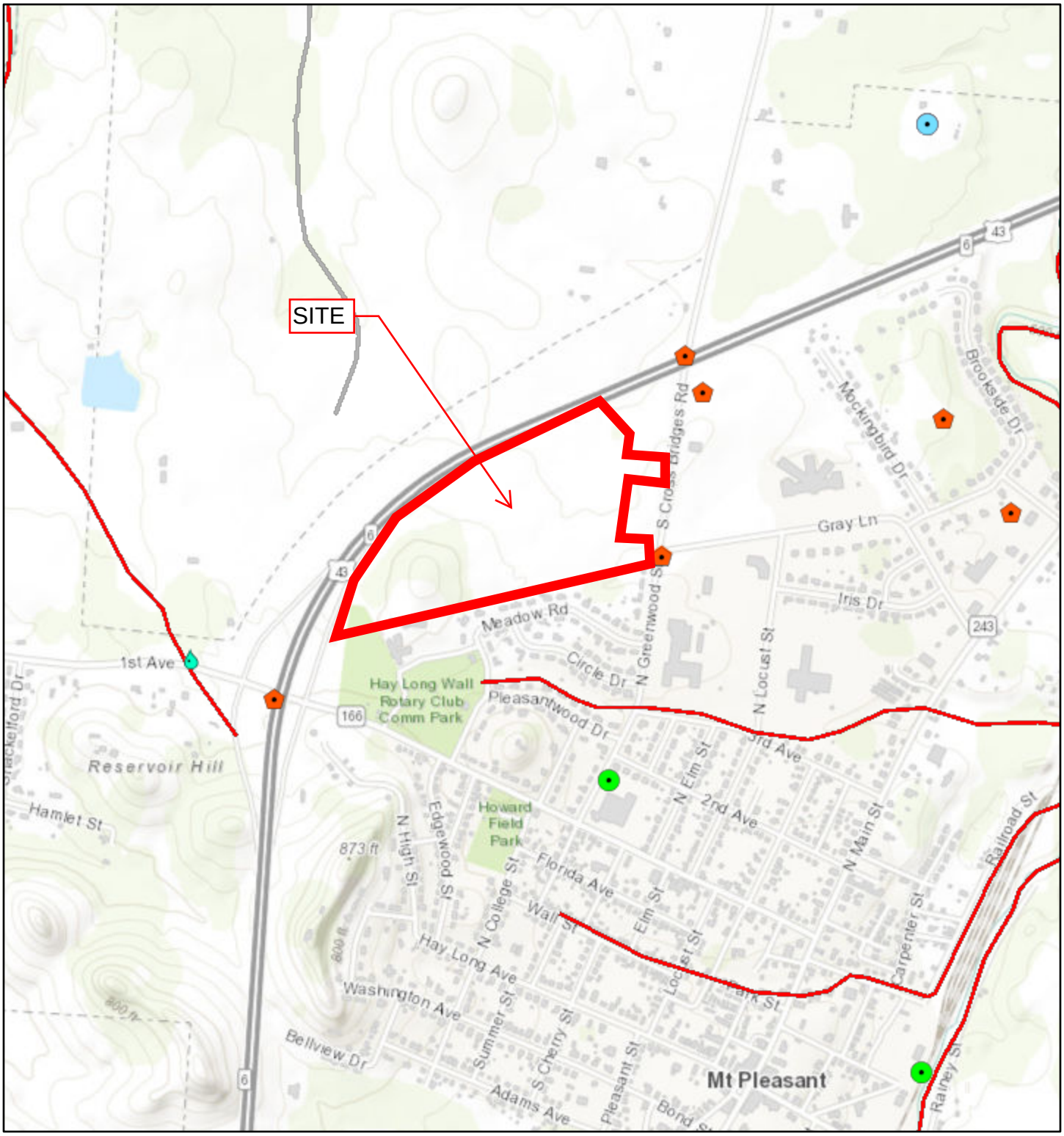
The Outlet Structure for the Detention Basin is designed to release the drainage at a rate below the pre-development rate. The structure restricts the storm water flow using a rectangular weir design with a drawdown orifice, restricting the flow until reaching the invert of the weir, then releasing the storm water runoff to an outlet pipe. The outlet structure will impede stormwater flow causing water to rise in the basins allowing suspended sediment to settle into the basins improving the quality of the runoff. Sediment is designed to drop and accumulate in the basins with access for removal of sediment from the surface. The system is designed to overflow across the emergency overflow for events in excess of the 100-year storm event and includes 1-foot of freeboard within the design. The top of the weir elevation of the outlet structure is greater than the design 100-year water surface elevation.

Conclusions

As can be seen in the summary, calculations and within Appendix 1, the drainage system provides the desired detention of the storm water runoff, using the design parameters in this report. Therefore, from the analysis presented in this report, the proposed system will improve the water quality of the runoff from the proposed development.

The post developed runoff from this site (100-year) has been ***reduced*** by **94.34** cfs by design.

ArcGIS Web Map



5/13/2025, 7:27:08 AM

1:18,056

0 0.13 0.25 0.5 mi

0 0.2 0.4 0.8 km

Counties

Water Quality Assessment Waterbodies

- Fully Supporting
- Not Assessed
- Not Supporting

Water Quality Assessment

- Fully Supporting
- Fully Supporting (Evaluated)
- Not Assessed
- Not Supporting
- Not Supporting (Evaluated)

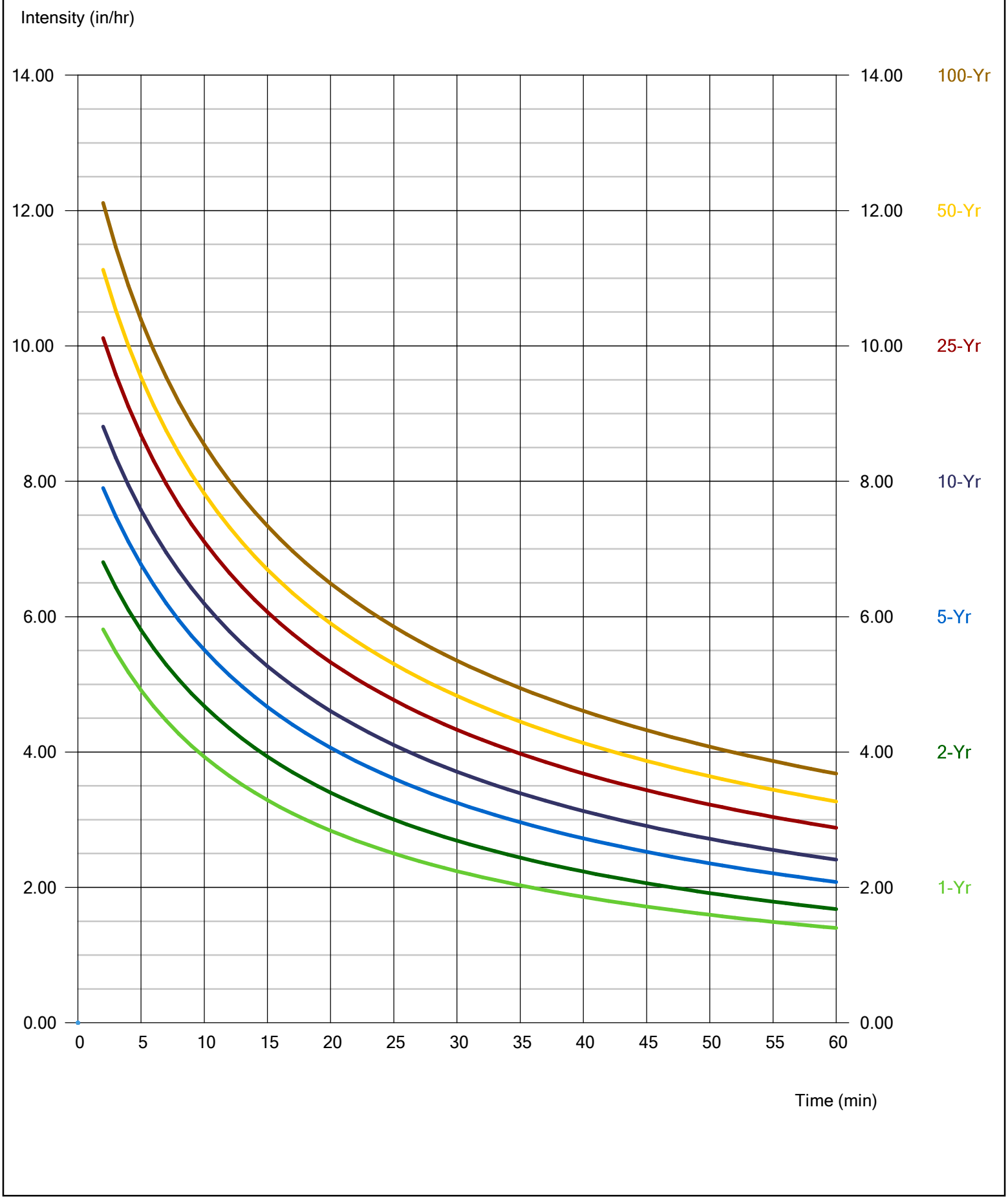
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community, Rich Cochran

ArcGIS Web AppBuilder

Rich Cochran | Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA |

Hydraflow IDF Curves

IDF file: Mt Pleasant.IDF



Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	------	92.02	119.57	-------	156.65	186.04	226.85	258.84	292.06	Existing Conditions Subbasin A
2	SCS Runoff	------	106.49	138.37	-------	181.28	215.28	262.52	299.53	337.98	Proposed Conditions Subbasin A
4	SCS Runoff	------	17.34	23.51	-------	32.00	38.84	48.44	56.02	63.93	Exsting Conditions Subbasin B
5	SCS Runoff	------	10.29	13.95	-------	18.99	23.05	28.74	33.24	37.94	Proposed Conditions Subbasin B
7	SCS Runoff	------	8.544	12.41	-------	17.94	22.60	29.30	34.67	40.34	Existing Conditions Subbasin C
8	SCS Runoff	------	5.587	7.804	-------	10.95	13.55	17.24	20.17	23.26	Proposed Conditions Subbasin C
11	SCS Runoff	------	59.02	73.88	-------	93.56	109.00	130.32	146.99	164.27	Stormsewer to Detention A
12	SCS Runoff	------	8.003	10.90	-------	14.90	18.12	22.65	26.22	29.96	Sheetflow to Detention A
13	Combine	11, 12	65.45	82.51	-------	105.43	123.53	148.58	168.19	188.54	Total to Detention A
14	Reservoir	13	2.137	4.783	-------	15.36	29.16	63.89	100.42	138.21	Outfall Detention A
16	SCS Runoff	------	19.54	24.74	-------	31.65	37.09	44.60	50.47	56.55	Stormsewer to Detention B
17	SCS Runoff	------	12.12	16.08	-------	21.46	25.76	31.75	36.47	41.37	Sheetflow to Detention B
18	Combine	16, 17	31.25	40.22	-------	52.27	61.87	75.24	85.72	96.61	Total to Detention B
19	Reservoir	18	4.654	13.87	-------	27.62	38.56	52.02	62.37	71.08	Outfall Detention B
21	SCS Runoff	------	24.67	33.69	-------	46.14	56.19	70.33	81.52	93.20	Bypass Subbasin A
23	Combine	14, 19, 21,	26.62	43.96	-------	71.54	94.30	126.13	177.75	249.57	Total Proposed Subbasin A
25	Combine	1, 4, 7,	115.01	151.09	-------	200.01	238.97	293.28	335.95	380.35	Total Existing Conditions
26	Combine	5, 8, 13,	129.99	169.10	-------	222.01	264.12	322.81	368.94	416.94	Total Proposed Conditions
27	Combine	18, 21, 5, 8, 23,	39.80	60.51	-------	95.26	123.16	160.75	207.20	286.01	Total Proposed Outfall

Pond Report

Pond No. 1 - Detention Pond A

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 646.84 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	646.84	10	0	0
0.16	647.00	2,676	152	152
1.16	648.00	37,731	16,817	16,969
2.16	649.00	48,940	43,210	60,179
3.16	650.00	51,729	50,323	110,502
4.16	651.00	54,574	53,140	163,641
5.16	652.00	57,476	56,013	219,655
6.16	653.00	60,420	58,936	278,591
6.66	653.50	61,920	30,581	309,172

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 48.00	6.50	0.00	0.00
Span (in)	= 48.00	6.50	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 646.74	646.84	0.00	0.00
Length (ft)	= 20.00	0.00	0.00	0.00
Slope (%)	= 0.75	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	No	No

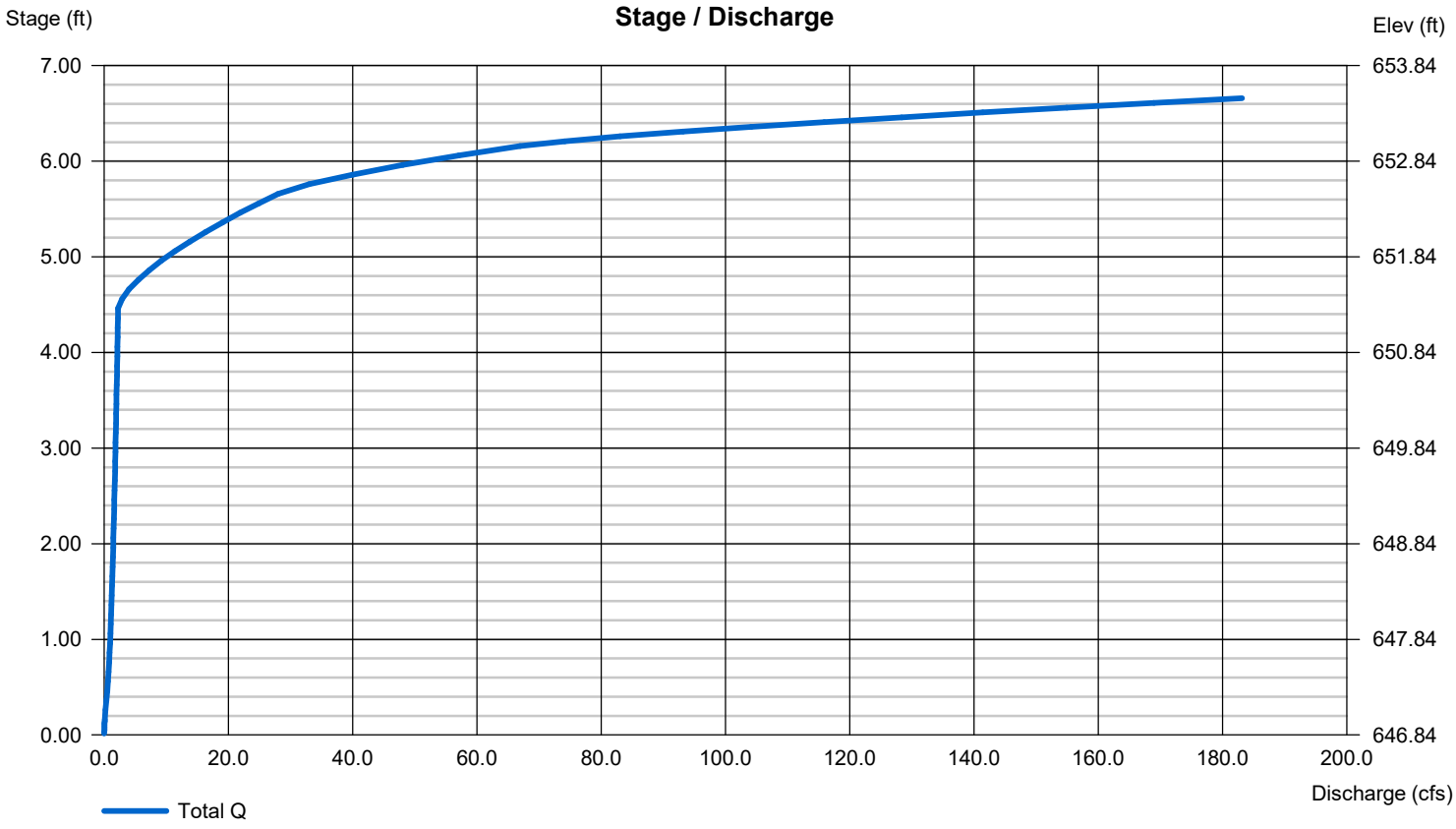
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 18.00	6.00	60.00	0.00
Crest El. (ft)	= 652.50	651.30	653.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	Rect	Ciplti	---
Multi-Stage	= Yes	Yes	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).



Pond Report

Pond No. 3 - Detention Pond B

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 655.50 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	655.50	10	0	0
0.50	656.00	5,463	951	951
1.50	657.00	9,304	7,298	8,249
2.50	658.00	12,507	10,865	19,114
3.50	659.00	14,408	13,445	32,559
4.50	660.00	16,367	15,376	47,935
5.50	661.00	18,228	17,287	65,222
6.50	662.00	20,454	19,328	84,550
7.00	662.50	21,511	10,489	95,040

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 36.00	3.00	0.00	0.00
Span (in)	= 36.00	3.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 655.40	655.50	0.00	0.00
Length (ft)	= 30.43	0.00	0.00	0.00
Slope (%)	= 0.99	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	No	No

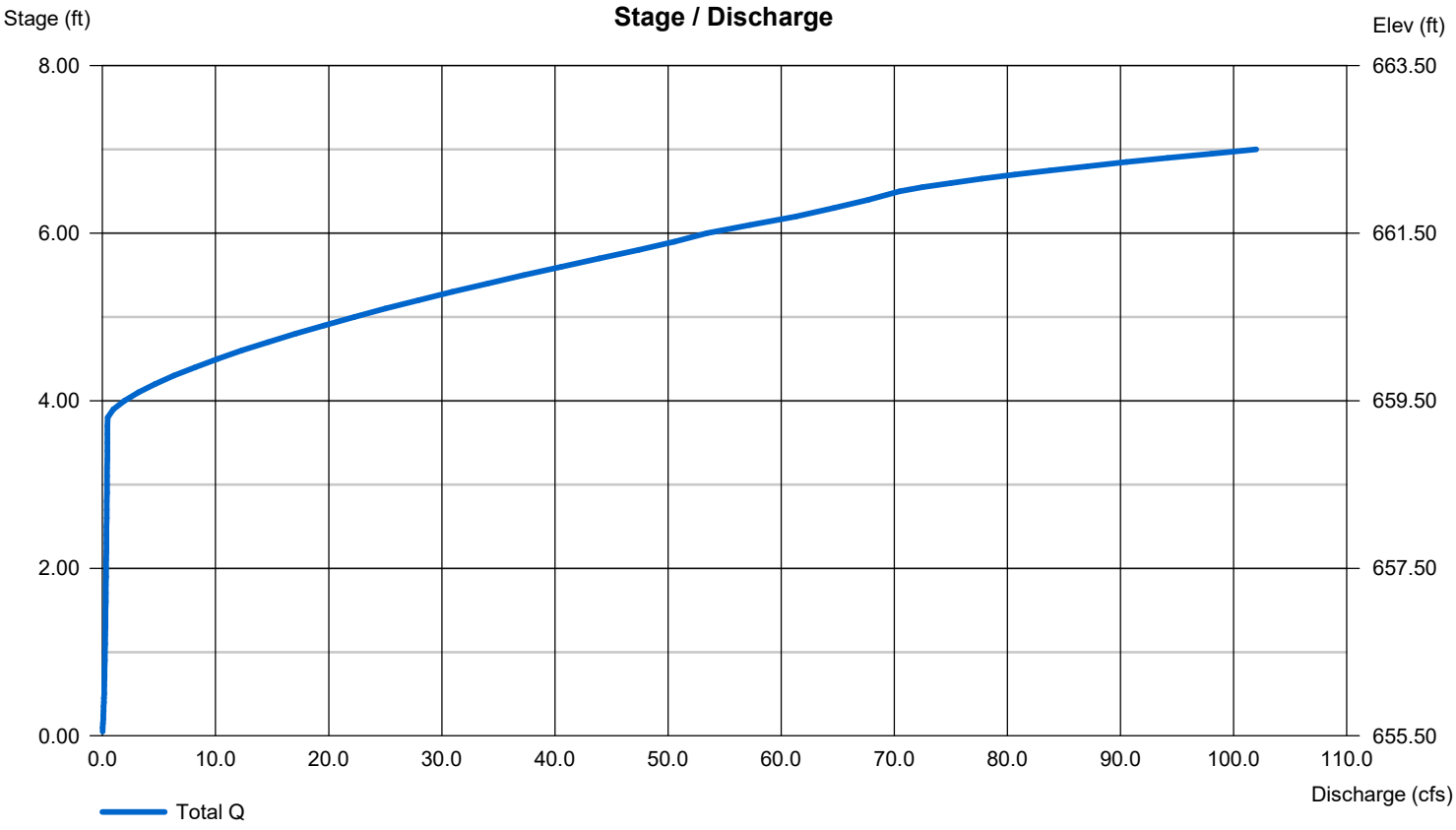
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 15.00	5.00	20.00	0.00
Crest El. (ft)	= 661.50	659.30	662.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	Rect	Ciplti	---
Multi-Stage	= Yes	Yes	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).

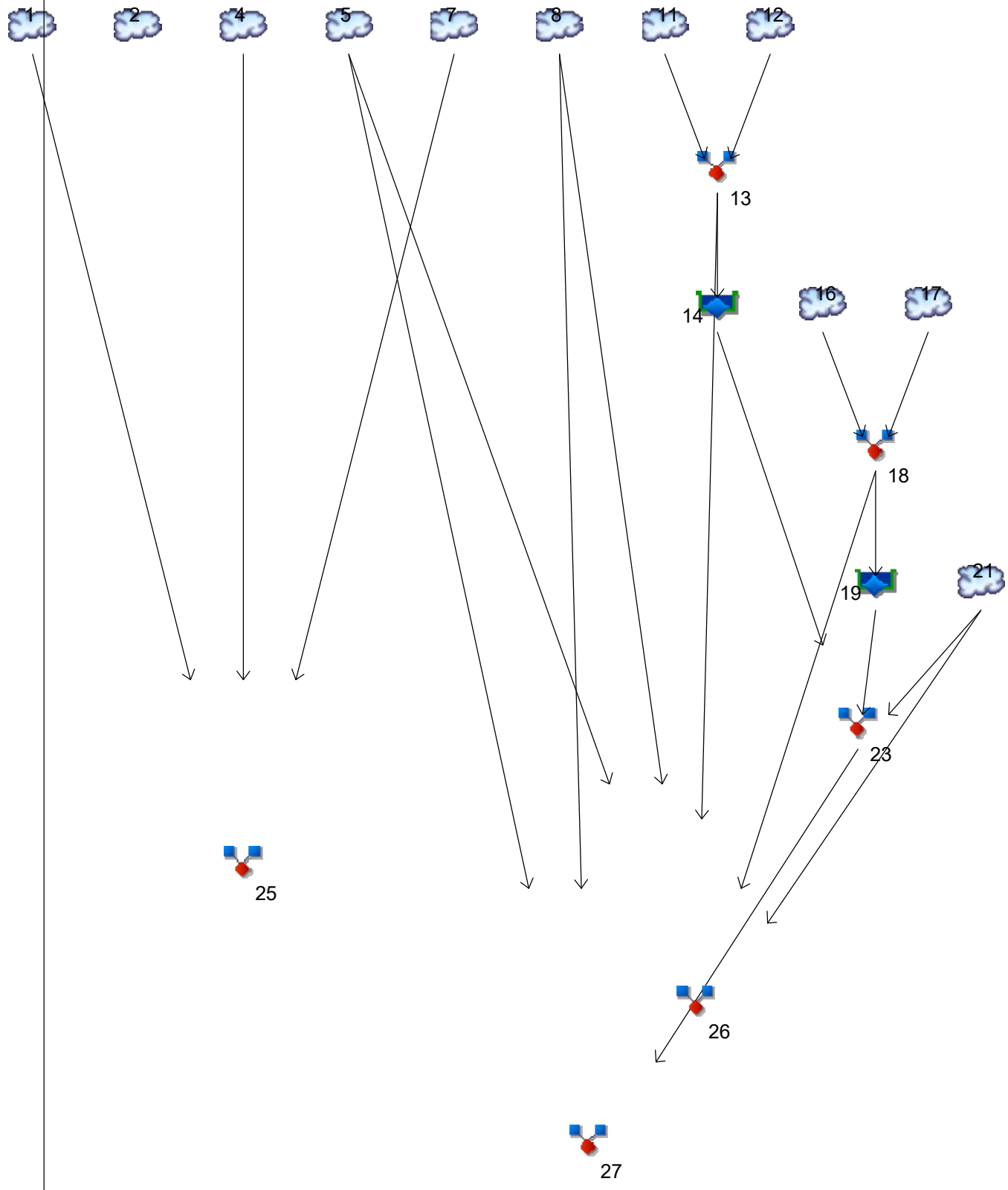


Appendix 1

Hydroflow Hydrographs
Model Output
Summary

Watershed Model Schematic

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	92.02	2	728	337,610	------	------	------	Existing Conditions Subbasin A
2	SCS Runoff	106.49	2	728	390,687	------	------	------	Proposed Conditions Subbasin A
4	SCS Runoff	17.34	2	728	64,371	------	------	------	Exsting Conditions Subbasin B
5	SCS Runoff	10.29	2	728	38,200	------	------	------	Proposed Conditions Subbasin B
7	SCS Runoff	8.544	2	722	22,940	------	------	------	Existing Conditions Subbasin C
8	SCS Runoff	5.587	2	720	12,829	------	------	------	Proposed Conditions Subbasin C
11	SCS Runoff	59.02	2	728	219,012	------	------	------	Stormsewer to Detention A
12	SCS Runoff	8.003	2	722	22,604	------	------	------	Sheetflow to Detention A
13	Combine	65.45	2	728	241,615	11, 12	------	------	Total to Detention A
14	Reservoir	2.137	2	972	241,600	13	650.96	161,334	Outfall Detention A
16	SCS Runoff	19.54	2	720	51,184	------	------	------	Stormsewer to Detention B
17	SCS Runoff	12.12	2	722	33,988	------	------	------	Sheetflow to Detention B
18	Combine	31.25	2	722	85,171	16, 17	------	------	Total to Detention B
19	Reservoir	4.654	2	744	85,154	18	659.70	43,324	Outfall Detention B
21	SCS Runoff	24.67	2	724	78,067	------	------	------	Bypass Subbasin A
23	Combine	26.62	2	724	404,820	14, 19, 21,	------	------	Total Proposed Subbasin A
25	Combine	115.01	2	728	424,922	1, 4, 7,	------	------	Total Existing Conditions
26	Combine	129.99	2	724	455,882	5, 8, 13,	------	------	Total Proposed Conditions
27	Combine	39.80	2	724	455,849	18, 21, 5, 8, 23,	------	------	Total Proposed Outfall

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	119.57	2	728	439,310	------	------	------	Existing Conditions Subbasin A
2	SCS Runoff	138.37	2	728	508,375	------	------	------	Proposed Conditions Subbasin A
4	SCS Runoff	23.51	2	728	86,501	------	------	------	Exsting Conditions Subbasin B
5	SCS Runoff	13.95	2	728	51,333	------	------	------	Proposed Conditions Subbasin B
7	SCS Runoff	12.41	2	722	32,705	------	------	------	Existing Conditions Subbasin C
8	SCS Runoff	7.804	2	720	17,861	------	------	------	Proposed Conditions Subbasin C
11	SCS Runoff	73.88	2	728	276,452	------	------	------	Stormsewer to Detention A
12	SCS Runoff	10.90	2	722	30,581	------	------	------	Sheetflow to Detention A
13	Combine	82.51	2	728	307,033	11, 12	------	------	Total to Detention A
14	Reservoir	4.783	2	838	307,017	13	651.55	194,622	Outfall Detention A
16	SCS Runoff	24.74	2	720	65,389	------	------	------	Stormsewer to Detention B
17	SCS Runoff	16.08	2	722	45,075	------	------	------	Sheetflow to Detention B
18	Combine	40.22	2	722	110,464	16, 17	------	------	Total to Detention B
19	Reservoir	13.87	2	734	110,447	18	660.17	50,817	Outfall Detention B
21	SCS Runoff	33.69	2	724	105,618	------	------	------	Bypass Subbasin A
23	Combine	43.96	2	728	523,082	14, 19, 21,	------	------	Total Proposed Subbasin A
25	Combine	151.09	2	728	558,516	1, 4, 7,	------	------	Total Existing Conditions
26	Combine	169.10	2	724	592,309	5, 8, 13,	------	------	Total Proposed Conditions
27	Combine	60.51	2	728	592,276	18, 21, 5, 8, 23,	------	------	Total Proposed Outfall

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	156.65	2	728	578,560	------	------	------	Existing Conditions Subbasin A
2	SCS Runoff	181.28	2	728	669,516	------	------	------	Proposed Conditions Subbasin A
4	SCS Runoff	32.00	2	728	117,398	------	------	------	Exsting Conditions Subbasin B
5	SCS Runoff	18.99	2	728	69,668	------	------	------	Proposed Conditions Subbasin B
7	SCS Runoff	17.94	2	720	46,857	------	------	------	Existing Conditions Subbasin C
8	SCS Runoff	10.95	2	718	25,047	------	------	------	Proposed Conditions Subbasin C
11	SCS Runoff	93.56	2	728	353,853	------	------	------	Stormsewer to Detention A
12	SCS Runoff	14.90	2	722	41,766	------	------	------	Sheetflow to Detention A
13	Combine	105.43	2	726	395,619	11, 12	------	------	Total to Detention A
14	Reservoir	15.36	2	762	395,603	13	652.06	223,348	Outfall Detention A
16	SCS Runoff	31.65	2	720	84,645	------	------	------	Stormsewer to Detention B
17	SCS Runoff	21.46	2	722	60,428	------	------	------	Sheetflow to Detention B
18	Combine	52.27	2	722	145,073	16, 17	------	------	Total to Detention B
19	Reservoir	27.62	2	730	145,056	18	660.69	59,852	Outfall Detention B
21	SCS Runoff	46.14	2	724	144,247	------	------	------	Bypass Subbasin A
23	Combine	71.54	2	726	684,905	14, 19, 21,	------	------	Total Proposed Subbasin A
25	Combine	200.01	2	728	742,815	1, 4, 7,	------	------	Total Existing Conditions
26	Combine	222.01	2	724	779,654	5, 8, 13,	------	------	Total Proposed Conditions
27	Combine	95.26	2	726	779,620	18, 21, 5, 8, 23,	------	------	Total Proposed Outfall

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	186.04	2	728	690,602	------	------	------	Existing Conditions Subbasin A
2	SCS Runoff	215.28	2	728	799,173	------	------	------	Proposed Conditions Subbasin A
4	SCS Runoff	38.84	2	728	142,603	------	------	------	Exsting Conditions Subbasin B
5	SCS Runoff	23.05	2	728	84,625	------	------	------	Proposed Conditions Subbasin B
7	SCS Runoff	22.60	2	720	58,719	------	------	------	Existing Conditions Subbasin C
8	SCS Runoff	13.55	2	718	31,004	------	------	------	Proposed Conditions Subbasin C
11	SCS Runoff	109.00	2	728	415,447	------	------	------	Stormsewer to Detention A
12	SCS Runoff	18.12	2	722	50,919	------	------	------	Sheetflow to Detention A
13	Combine	123.53	2	726	466,366	11, 12	------	------	Total to Detention A
14	Reservoir	29.16	2	752	466,349	13	652.52	250,507	Outfall Detention A
16	SCS Runoff	37.09	2	720	100,030	------	------	------	Stormsewer to Detention B
17	SCS Runoff	25.76	2	722	72,881	------	------	------	Sheetflow to Detention B
18	Combine	61.87	2	720	172,910	16, 17	------	------	Total to Detention B
19	Reservoir	38.56	2	728	172,893	18	661.04	65,990	Outfall Detention B
21	SCS Runoff	56.19	2	724	175,857	------	------	------	Bypass Subbasin A
23	Combine	94.30	2	726	815,099	14, 19, 21,	------	------	Total Proposed Subbasin A
25	Combine	238.97	2	728	891,923	1, 4, 7,	------	------	Total Existing Conditions
26	Combine	264.12	2	724	930,762	5, 8, 13,	------	------	Total Proposed Conditions
27	Combine	123.16	2	726	930,728	18, 21, 5, 8, 23,	------	------	Total Proposed Outfall

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	226.85	2	728	848,389	------	------	------	Existing Conditions Subbasin A
2	SCS Runoff	262.52	2	728	981,765	------	------	------	Proposed Conditions Subbasin A
4	SCS Runoff	48.44	2	728	178,463	------	------	------	Exsting Conditions Subbasin B
5	SCS Runoff	28.74	2	728	105,906	------	------	------	Proposed Conditions Subbasin B
7	SCS Runoff	29.30	2	720	75,944	------	------	------	Existing Conditions Subbasin C
8	SCS Runoff	17.24	2	718	39,584	------	------	------	Proposed Conditions Subbasin C
11	SCS Runoff	130.32	2	728	501,503	------	------	------	Stormsewer to Detention A
12	SCS Runoff	22.65	2	722	63,970	------	------	------	Sheetflow to Detention A
13	Combine	148.58	2	726	565,474	11, 12	------	------	Total to Detention A
14	Reservoir	63.89	2	744	565,458	13	652.97	276,777	Outfall Detention A
16	SCS Runoff	44.60	2	720	121,587	------	------	------	Stormsewer to Detention B
17	SCS Runoff	31.75	2	722	90,521	------	------	------	Sheetflow to Detention B
18	Combine	75.24	2	720	212,107	16, 17	------	------	Total to Detention B
19	Reservoir	52.02	2	728	212,090	18	661.45	73,929	Outfall Detention B
21	SCS Runoff	70.33	2	724	220,932	------	------	------	Bypass Subbasin A
23	Combine	126.13	2	728	998,481	14, 19, 21,	------	------	Total Proposed Subbasin A
25	Combine	293.28	2	728	1,102,796	1, 4, 7,	------	------	Total Existing Conditions
26	Combine	322.81	2	724	1,144,003	5, 8, 13,	------	------	Total Proposed Conditions
27	Combine	160.75	2	726	1,143,968	18, 21, 5, 8, 23,	------	------	Total Proposed Outfall

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	258.84	2	728	973,575	------	------	------	Existing Conditions Subbasin A
2	SCS Runoff	299.53	2	728	1,126,632	------	------	------	Proposed Conditions Subbasin A
4	SCS Runoff	56.02	2	728	207,138	------	------	------	Exsting Conditions Subbasin B
5	SCS Runoff	33.24	2	728	122,923	------	------	------	Proposed Conditions Subbasin B
7	SCS Runoff	34.67	2	720	89,940	------	------	------	Existing Conditions Subbasin C
8	SCS Runoff	20.17	2	718	46,510	------	------	------	Proposed Conditions Subbasin C
11	SCS Runoff	146.99	2	728	569,374	------	------	------	Stormsewer to Detention A
12	SCS Runoff	26.22	2	722	74,424	------	------	------	Sheetflow to Detention A
13	Combine	168.19	2	726	643,798	11, 12	------	------	Total to Detention A
14	Reservoir	100.42	2	740	643,782	13	653.18	289,787	Outfall Detention A
16	SCS Runoff	50.47	2	720	138,625	------	------	------	Stormsewer to Detention B
17	SCS Runoff	36.47	2	722	104,579	------	------	------	Sheetflow to Detention B
18	Combine	85.72	2	720	243,204	16, 17	------	------	Total to Detention B
19	Reservoir	62.37	2	728	243,187	18	661.73	79,366	Outfall Detention B
21	SCS Runoff	81.52	2	724	257,039	------	------	------	Bypass Subbasin A
23	Combine	177.75	2	736	1,144,008	14, 19, 21,	------	------	Total Proposed Subbasin A
25	Combine	335.95	2	728	1,270,653	1, 4, 7,	------	------	Total Existing Conditions
26	Combine	368.94	2	724	1,313,476	5, 8, 13,	------	------	Total Proposed Conditions
27	Combine	207.20	2	736	1,313,440	18, 21, 5, 8, 23,	------	------	Total Proposed Outfall

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	292.06	2	728	1,104,821	------	------	------	Existing Conditions Subbasin A
2	SCS Runoff	337.98	2	728	1,278,511	------	------	------	Proposed Conditions Subbasin A
4	SCS Runoff	63.93	2	728	237,361	------	------	------	Exsting Conditions Subbasin B
5	SCS Runoff	37.94	2	728	140,858	------	------	------	Proposed Conditions Subbasin B
7	SCS Runoff	40.34	2	720	104,856	------	------	------	Existing Conditions Subbasin C
8	SCS Runoff	23.26	2	718	53,858	------	------	------	Proposed Conditions Subbasin C
11	SCS Runoff	164.27	2	728	640,251	------	------	------	Stormsewer to Detention A
12	SCS Runoff	29.96	2	722	85,457	------	------	------	Sheetflow to Detention A
13	Combine	188.54	2	726	725,708	11, 12	------	------	Total to Detention A
14	Reservoir	138.21	2	736	725,692	13	653.34	299,251	Outfall Detention A
16	SCS Runoff	56.55	2	720	156,443	------	------	------	Stormsewer to Detention B
17	SCS Runoff	41.37	2	722	119,362	------	------	------	Sheetflow to Detention B
18	Combine	96.61	2	720	275,805	16, 17	------	------	Total to Detention B
19	Reservoir	71.08	2	726	275,788	18	662.01	84,860	Outfall Detention B
21	SCS Runoff	93.20	2	724	295,141	------	------	------	Bypass Subbasin A
23	Combine	249.57	2	734	1,296,621	14, 19, 21,	------	------	Total Proposed Subbasin A
25	Combine	380.35	2	728	1,447,038	1, 4, 7,	------	------	Total Existing Conditions
26	Combine	416.94	2	724	1,491,369	5, 8, 13,	------	------	Total Proposed Conditions
27	Combine	286.01	2	734	1,491,336	18, 21, 5, 8, 23,	------	------	Total Proposed Outfall

Hydrograph Report

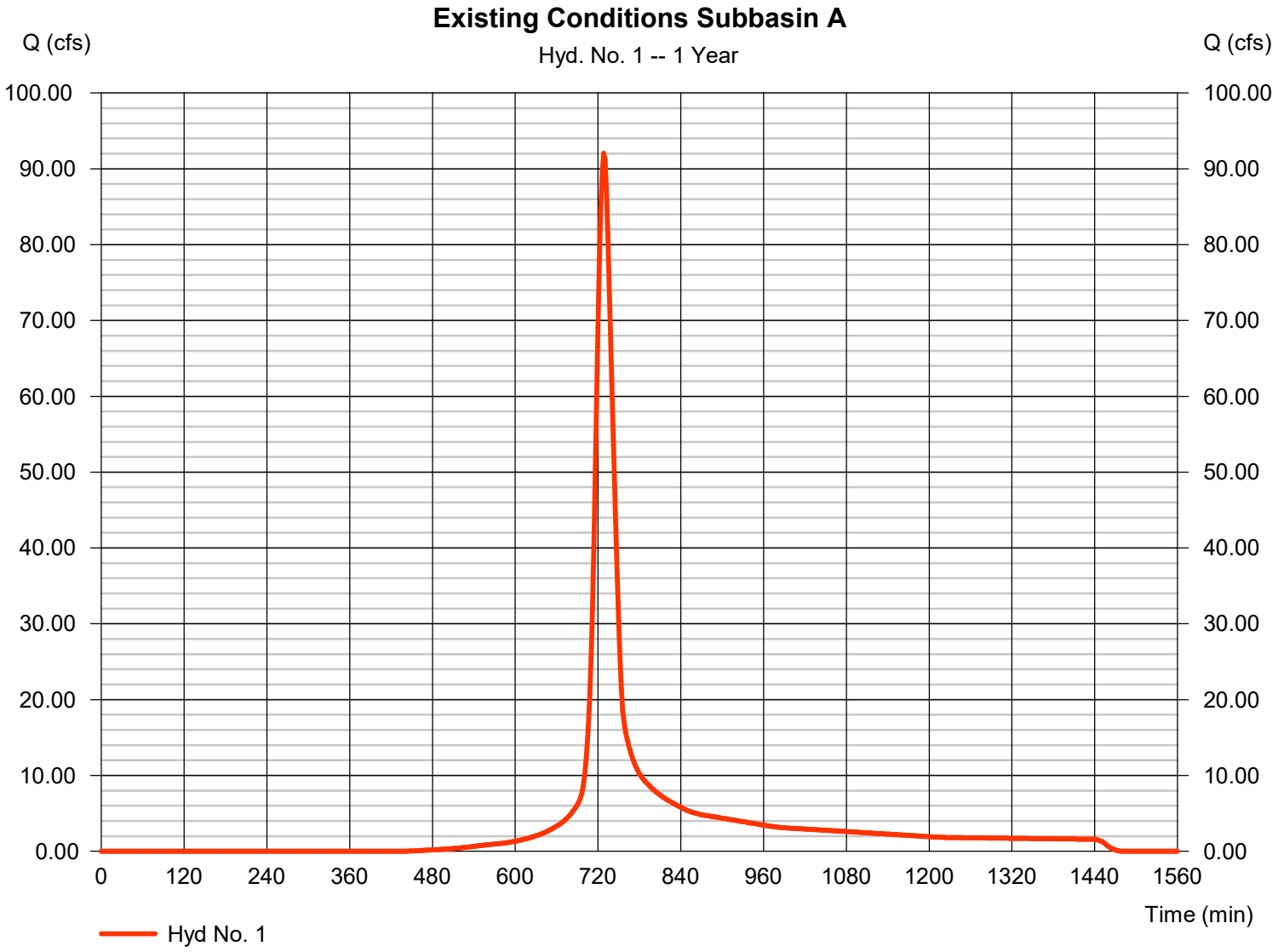
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Wednesday, 08 / 27 / 2025

Hyd. No. 1

Existing Conditions Subbasin A

Hydrograph type	= SCS Runoff	Peak discharge	= 92.02 cfs
Storm frequency	= 1 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 337,610 cuft
Drainage area	= 50.060 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 24.76 min
Total precip.	= 3.26 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(44.870 x 88) + (5.190 x 70)] / 50.060



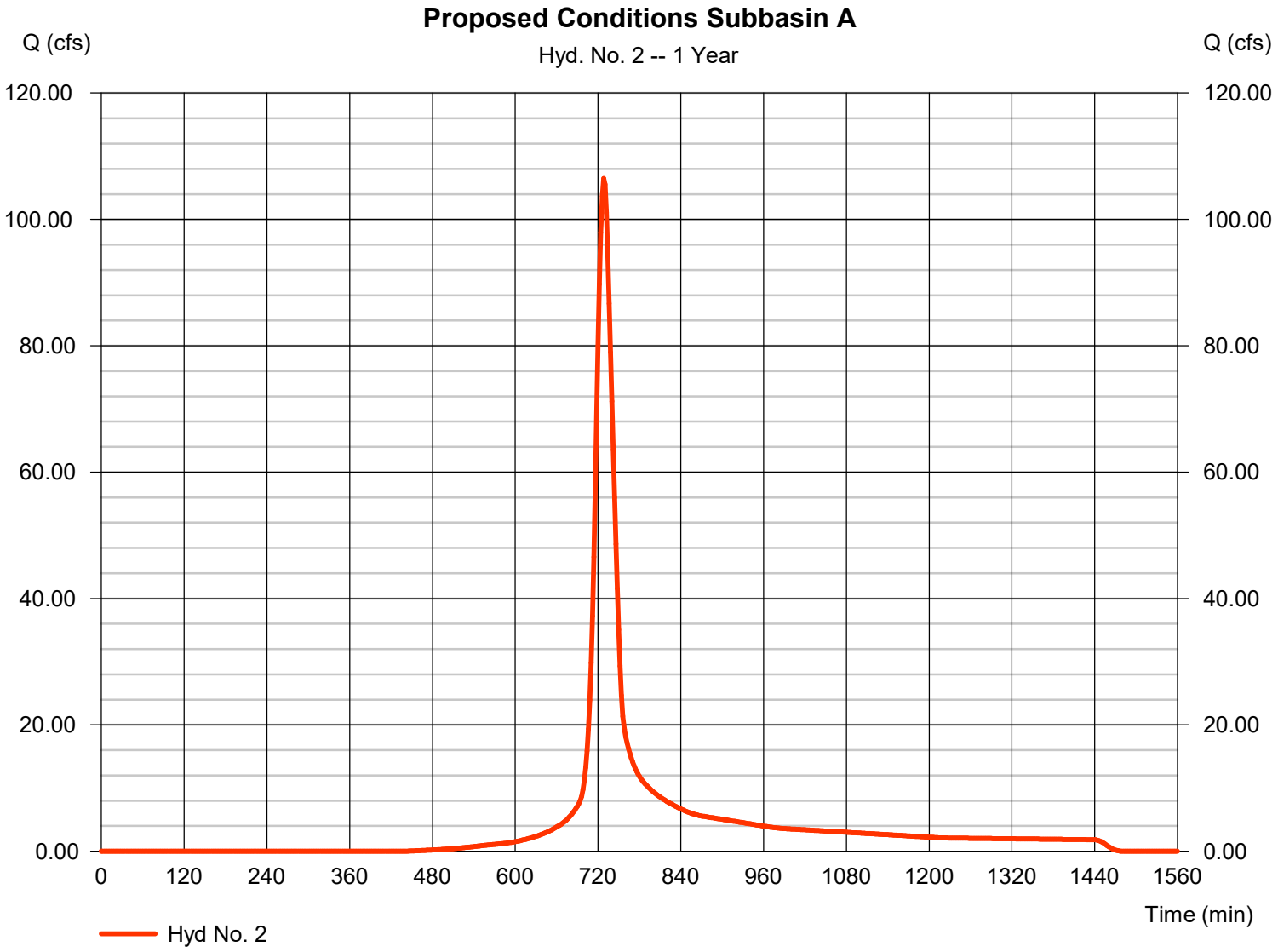
Hydrograph Report

Hyd. No. 2

Proposed Conditions Subbasin A

Hydrograph type	= SCS Runoff	Peak discharge	= 106.49 cfs
Storm frequency	= 1 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 390,687 cuft
Drainage area	= 57.930 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.70 min
Total precip.	= 3.26 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(23.640 x 98) + (34.290 x 78)] / 57.930



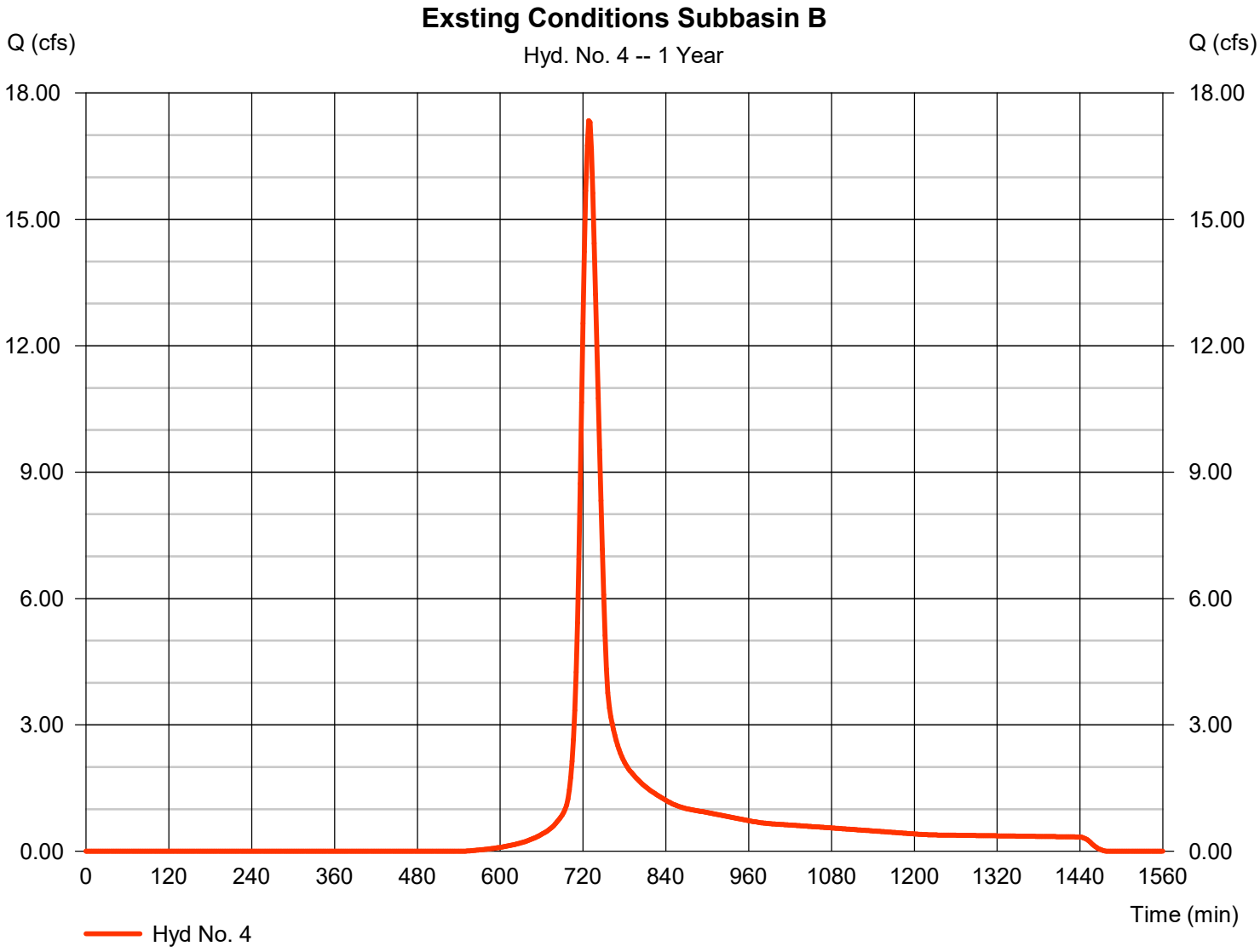
Hydrograph Report

Hyd. No. 4

Exsting Conditions Subbasin B

Hydrograph type	=	SCS Runoff	Peak discharge	=	17.34 cfs
Storm frequency	=	1 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	64,371 cuft
Drainage area	=	11.880 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	23.80 min
Total precip.	=	3.26 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(6.940 x 88) + (4.940 x 70)] / 11.880



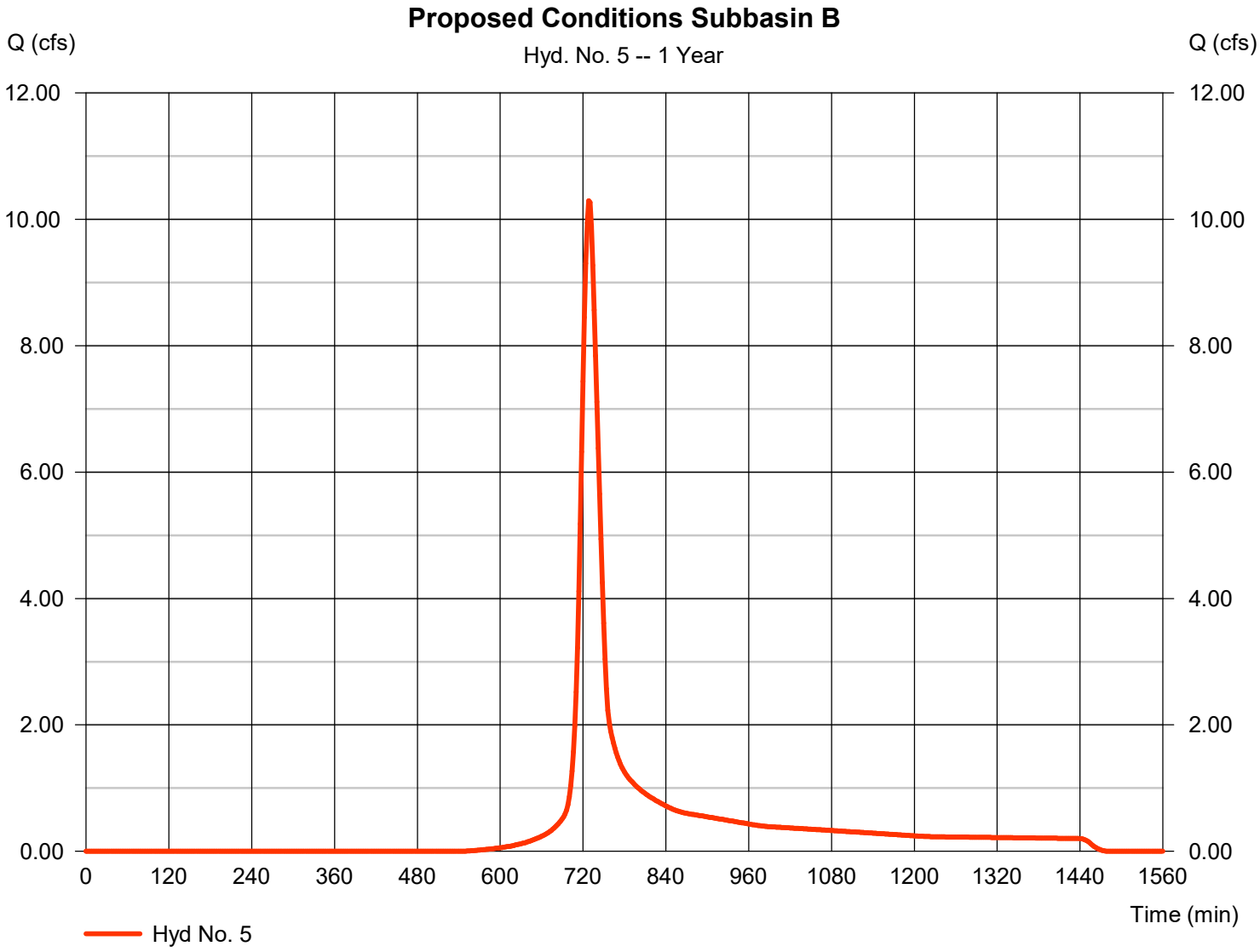
Hydrograph Report

Hyd. No. 5

Proposed Conditions Subbasin B

Hydrograph type	=	SCS Runoff	Peak discharge	=	10.29 cfs
Storm frequency	=	1 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	38,200 cuft
Drainage area	=	7.050 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	25.00 min
Total precip.	=	3.26 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.950 x 98) + (6.100 x 78)] / 7.050



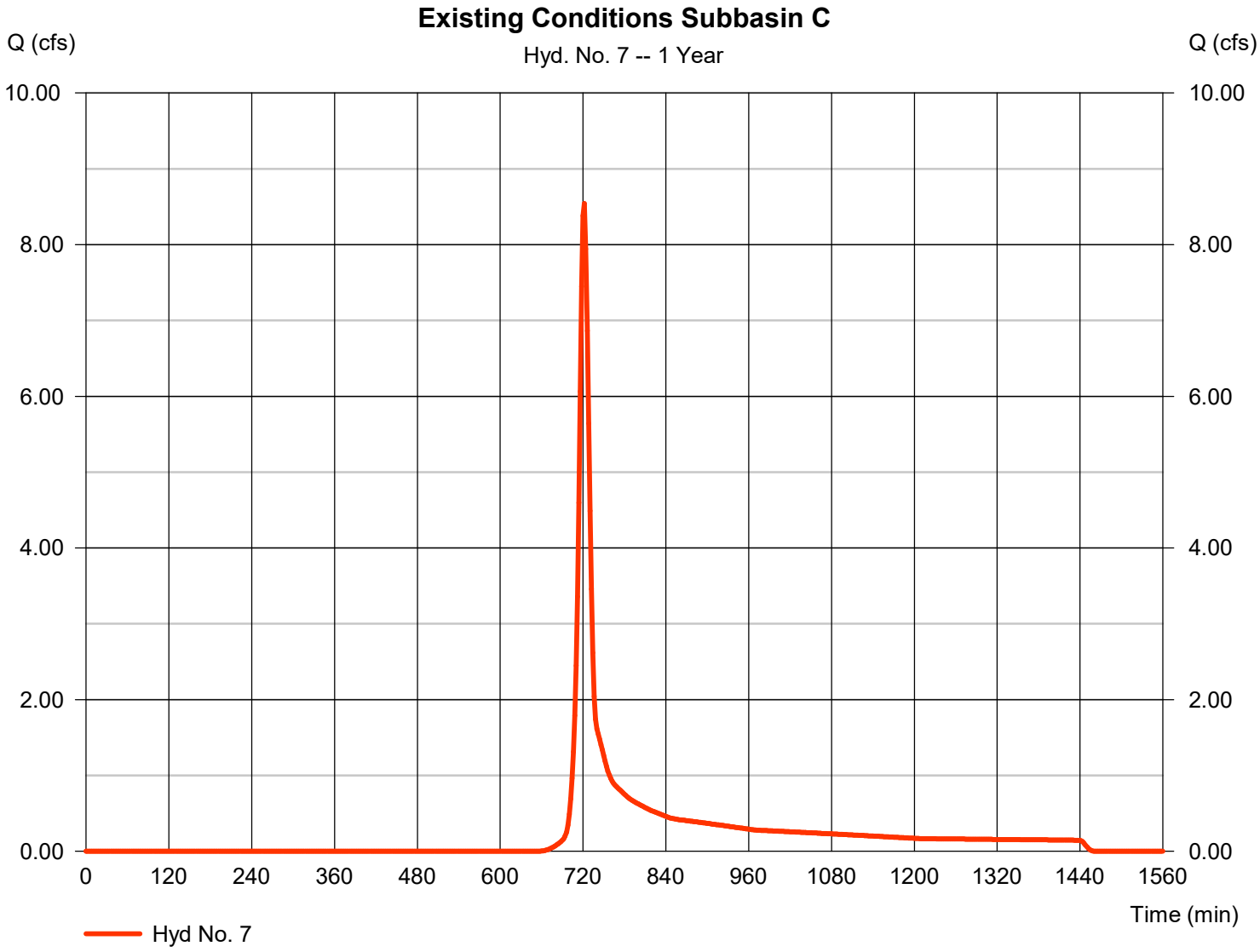
Hydrograph Report

Hyd. No. 7

Existing Conditions Subbasin C

Hydrograph type	= SCS Runoff	Peak discharge	= 8.544 cfs
Storm frequency	= 1 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 22,940 cuft
Drainage area	= 6.000 ac	Curve number	= 73*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 12.90 min
Total precip.	= 3.26 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.990 x 79) + (4.010 x 70)] / 6.000



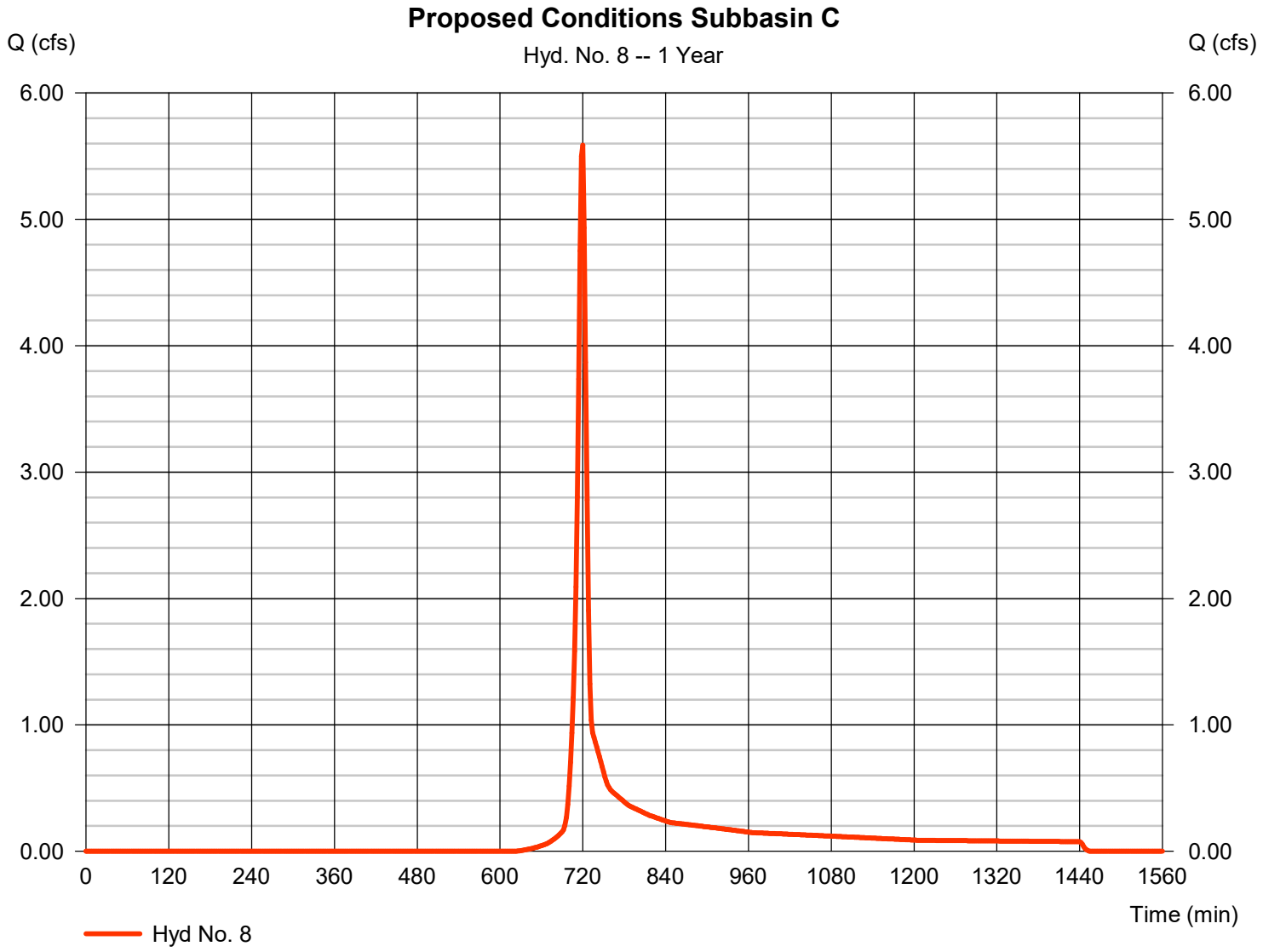
Hydrograph Report

Hyd. No. 8

Proposed Conditions Subbasin C

Hydrograph type	= SCS Runoff	Peak discharge	= 5.587 cfs
Storm frequency	= 1 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 12,829 cuft
Drainage area	= 2.960 ac	Curve number	= 76*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 8.08 min
Total precip.	= 3.26 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.820 x 79) + (1.140 x 70)] / 2.960



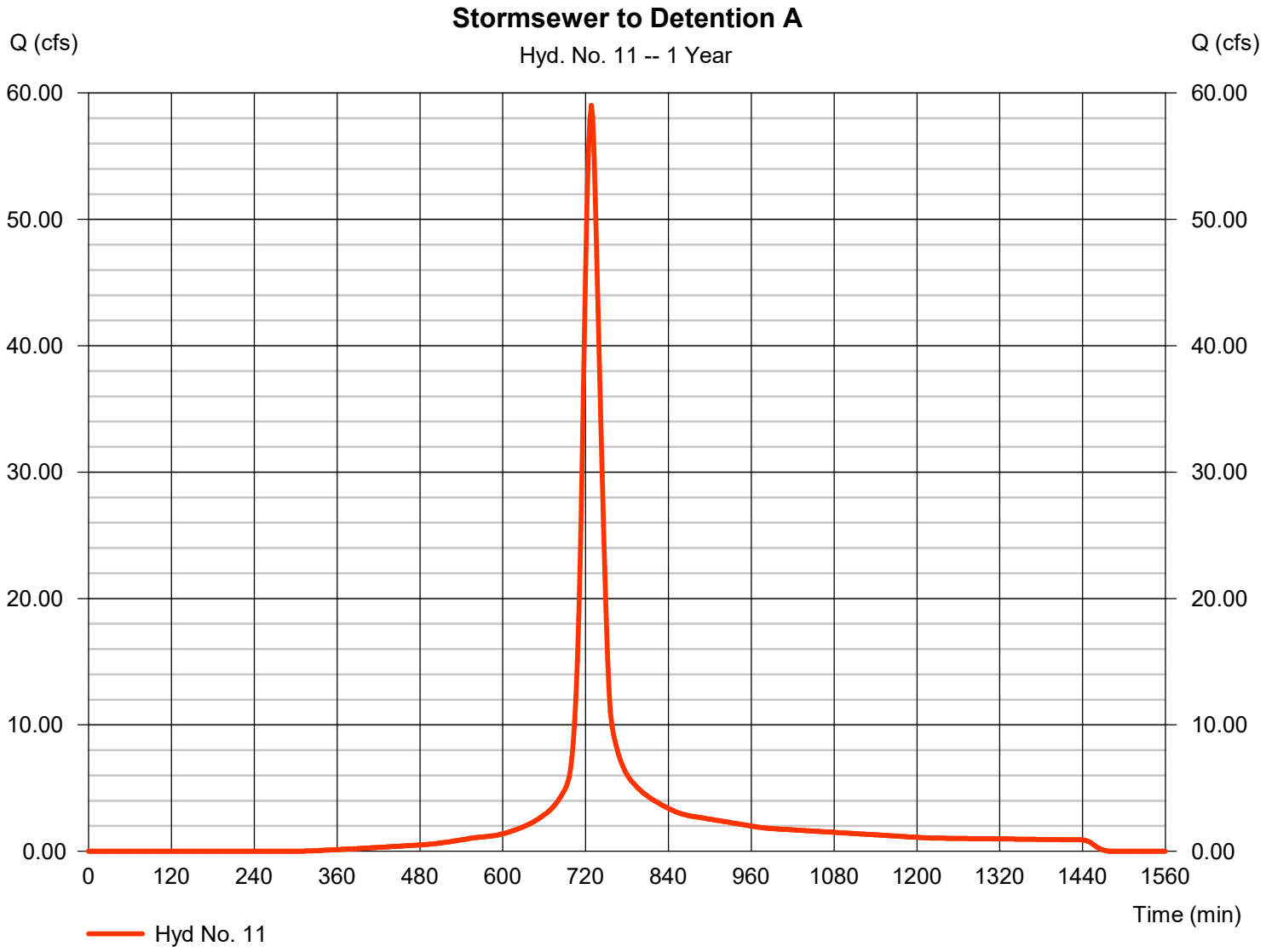
Hydrograph Report

Hyd. No. 11

Stormsewer to Detention A

Hydrograph type	=	SCS Runoff	Peak discharge	=	59.02 cfs
Storm frequency	=	1 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	219,012 cuft
Drainage area	=	26.480 ac	Curve number	=	91*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	23.70 min
Total precip.	=	3.26 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(17.100 x 98) + (9.380 x 78)] / 26.480



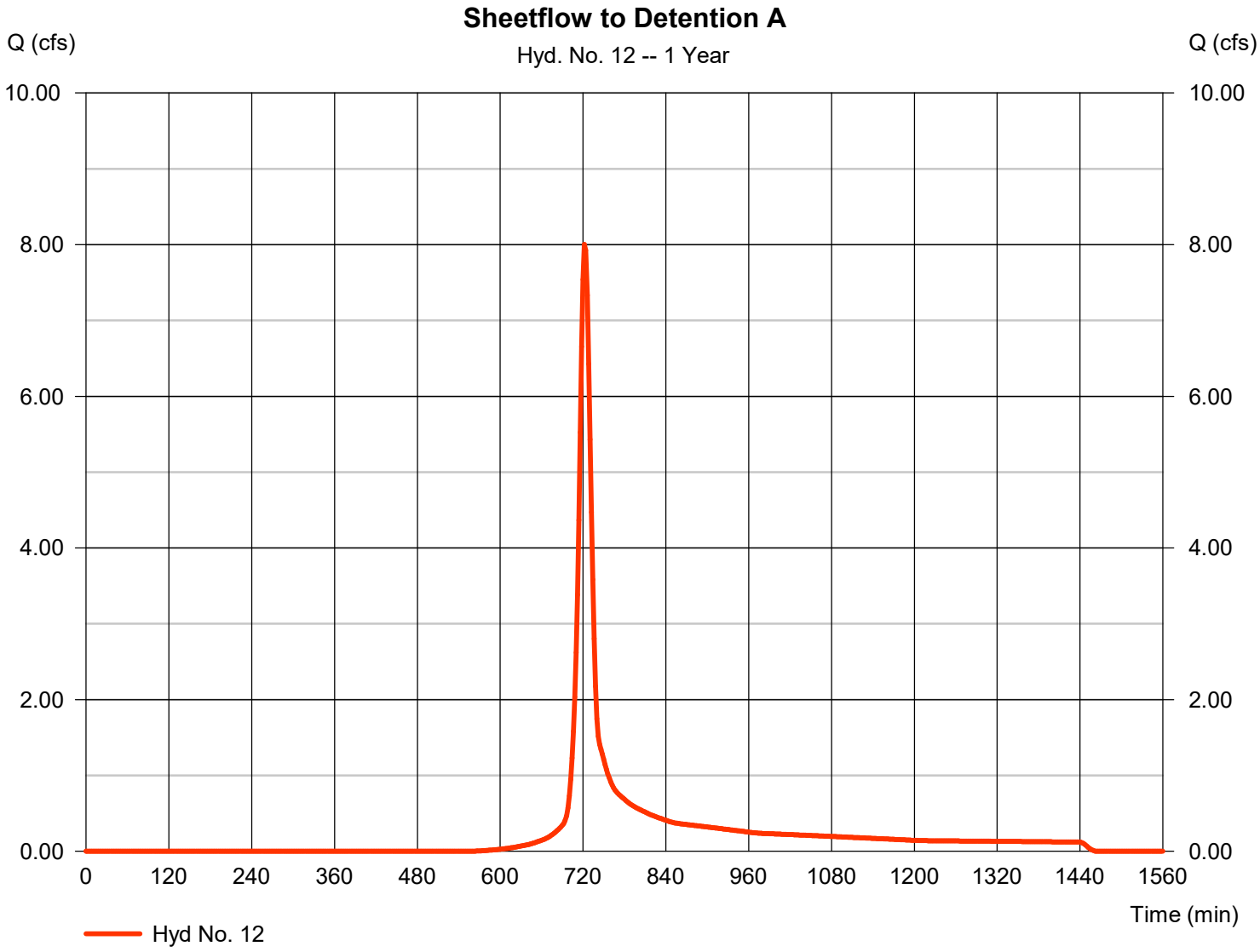
Hydrograph Report

Hyd. No. 12

Sheetflow to Detention A

Hydrograph type	=	SCS Runoff	Peak discharge	=	8.003 cfs
Storm frequency	=	1 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	22,604 cuft
Drainage area	=	4.410 ac	Curve number	=	80*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	14.90 min
Total precip.	=	3.26 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.380 x 98) + (4.030 x 78)] / 4.410

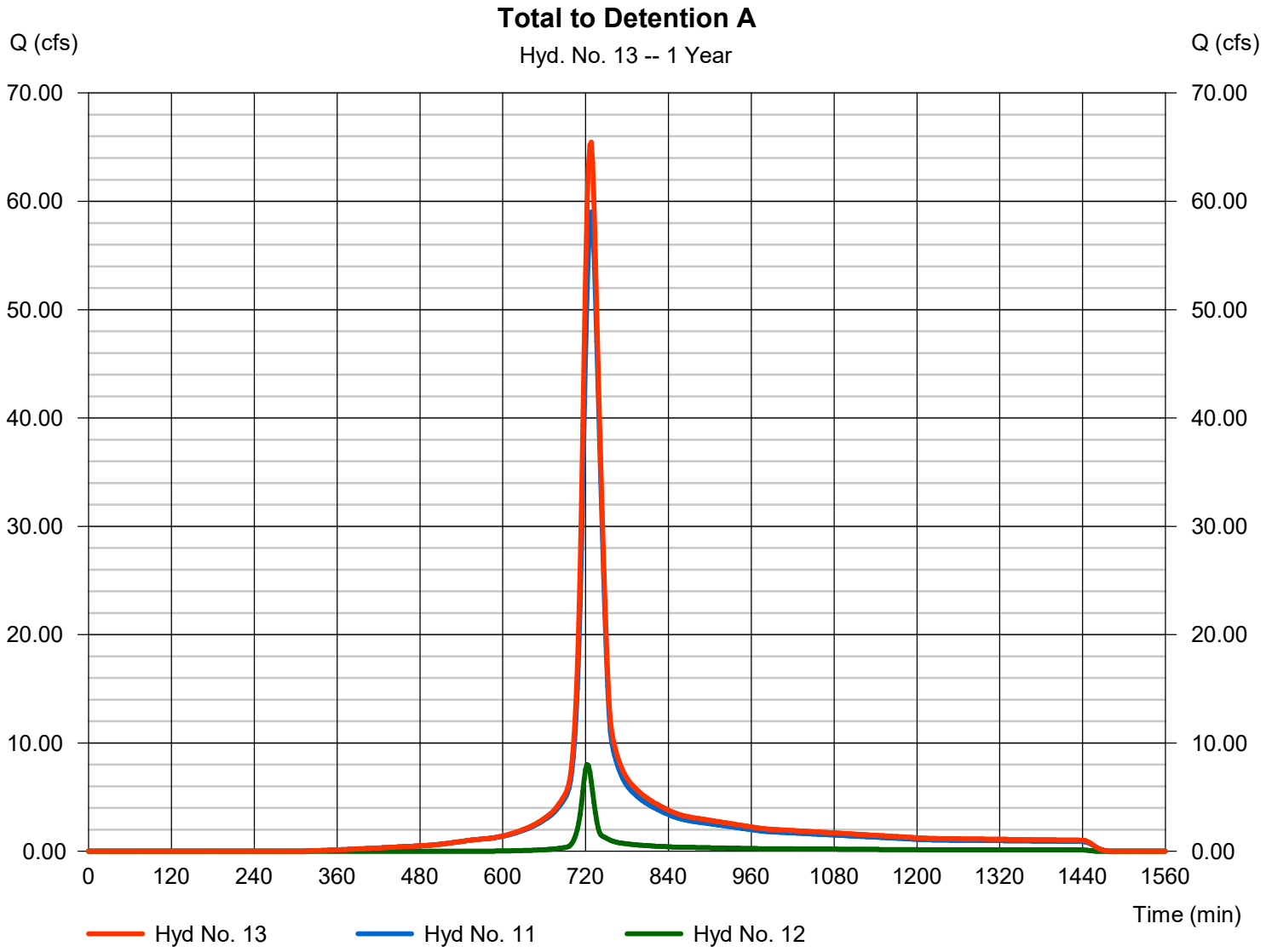


Hydrograph Report

Hyd. No. 13

Total to Detention A

Hydrograph type	= Combine	Peak discharge	= 65.45 cfs
Storm frequency	= 1 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 241,615 cuft
Inflow hyds.	= 11, 12	Contrib. drain. area	= 30.890 ac



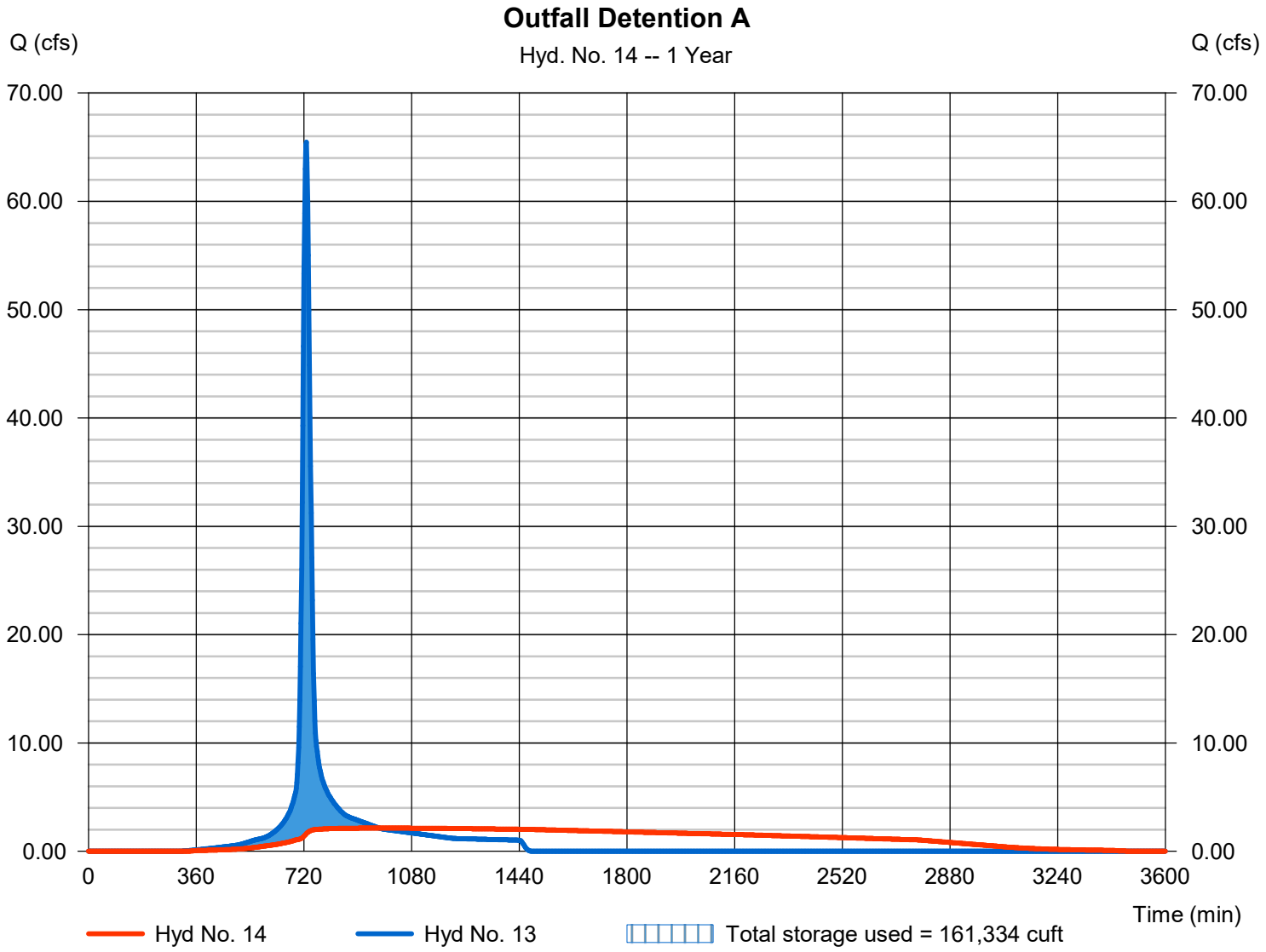
Hydrograph Report

Hyd. No. 14

Outfall Detention A

Hydrograph type	=	Reservoir	Peak discharge	=	2.137 cfs
Storm frequency	=	1 yrs	Time to peak	=	972 min
Time interval	=	2 min	Hyd. volume	=	241,600 cuft
Inflow hyd. No.	=	13 - Total to Detention A	Max. Elevation	=	650.96 ft
Reservoir name	=	Detention Pond A	Max. Storage	=	161,334 cuft

Storage Indication method used.



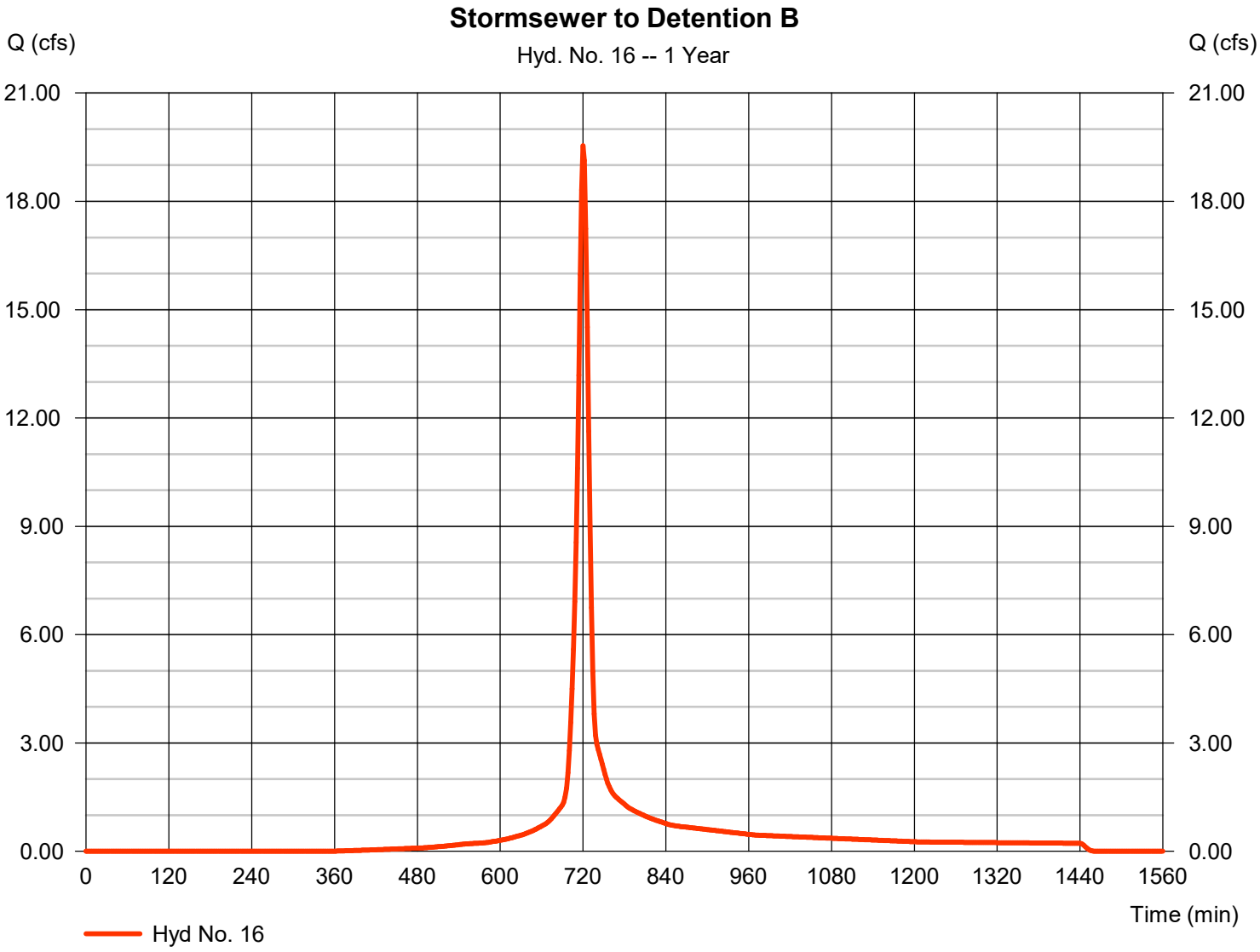
Hydrograph Report

Hyd. No. 16

Stormsewer to Detention B

Hydrograph type	=	SCS Runoff	Peak discharge	=	19.54 cfs
Storm frequency	=	1 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	51,184 cuft
Drainage area	=	6.400 ac	Curve number	=	89*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	11.20 min
Total precip.	=	3.26 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(3.630 x 98) + (2.770 x 78)] / 6.400



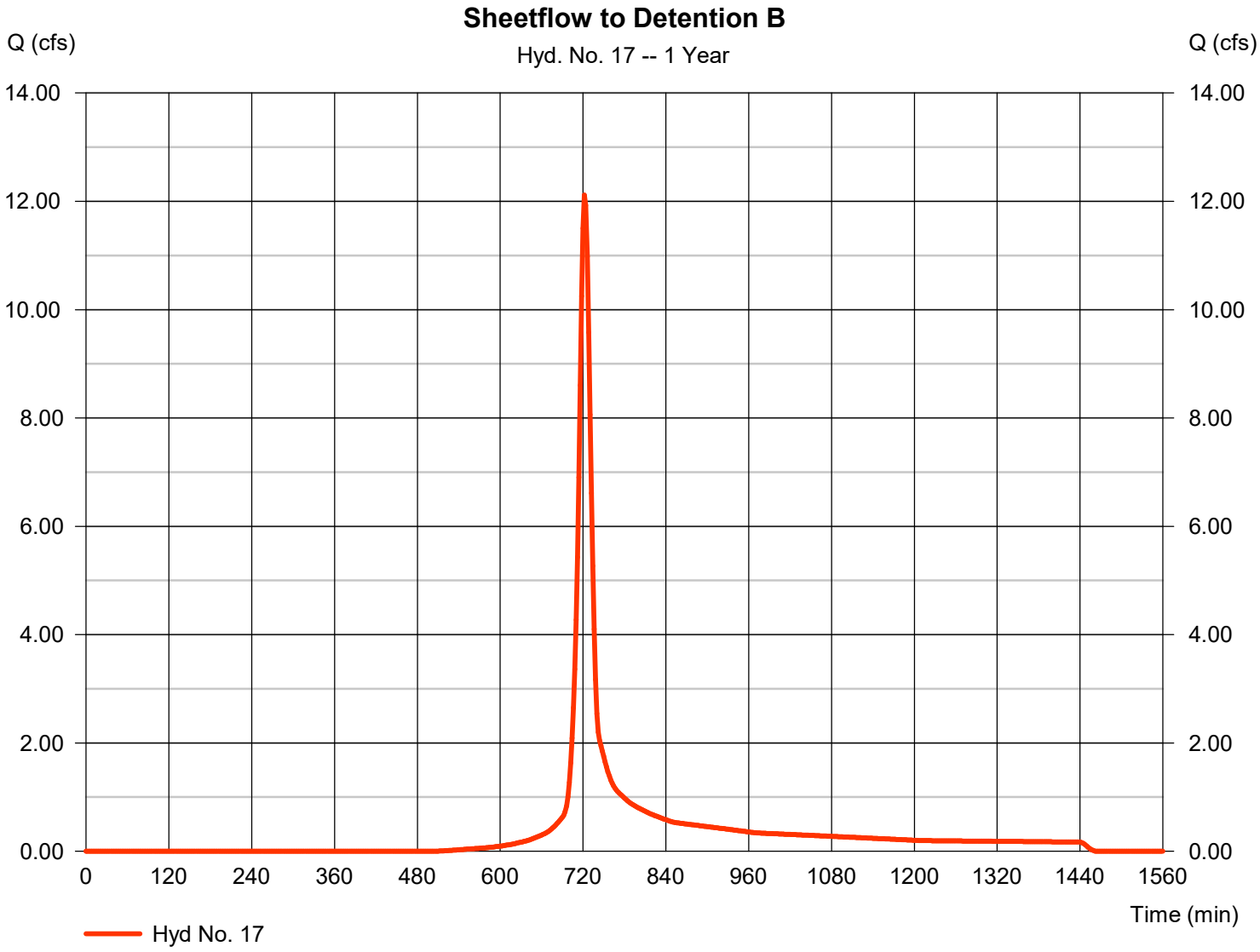
Hydrograph Report

Hyd. No. 17

Sheetflow to Detention B

Hydrograph type	=	SCS Runoff	Peak discharge	=	12.12 cfs
Storm frequency	=	1 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	33,988 cuft
Drainage area	=	5.790 ac	Curve number	=	83*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	13.80 min
Total precip.	=	3.26 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.390 x 98) + (4.400 x 78)] / 5.790

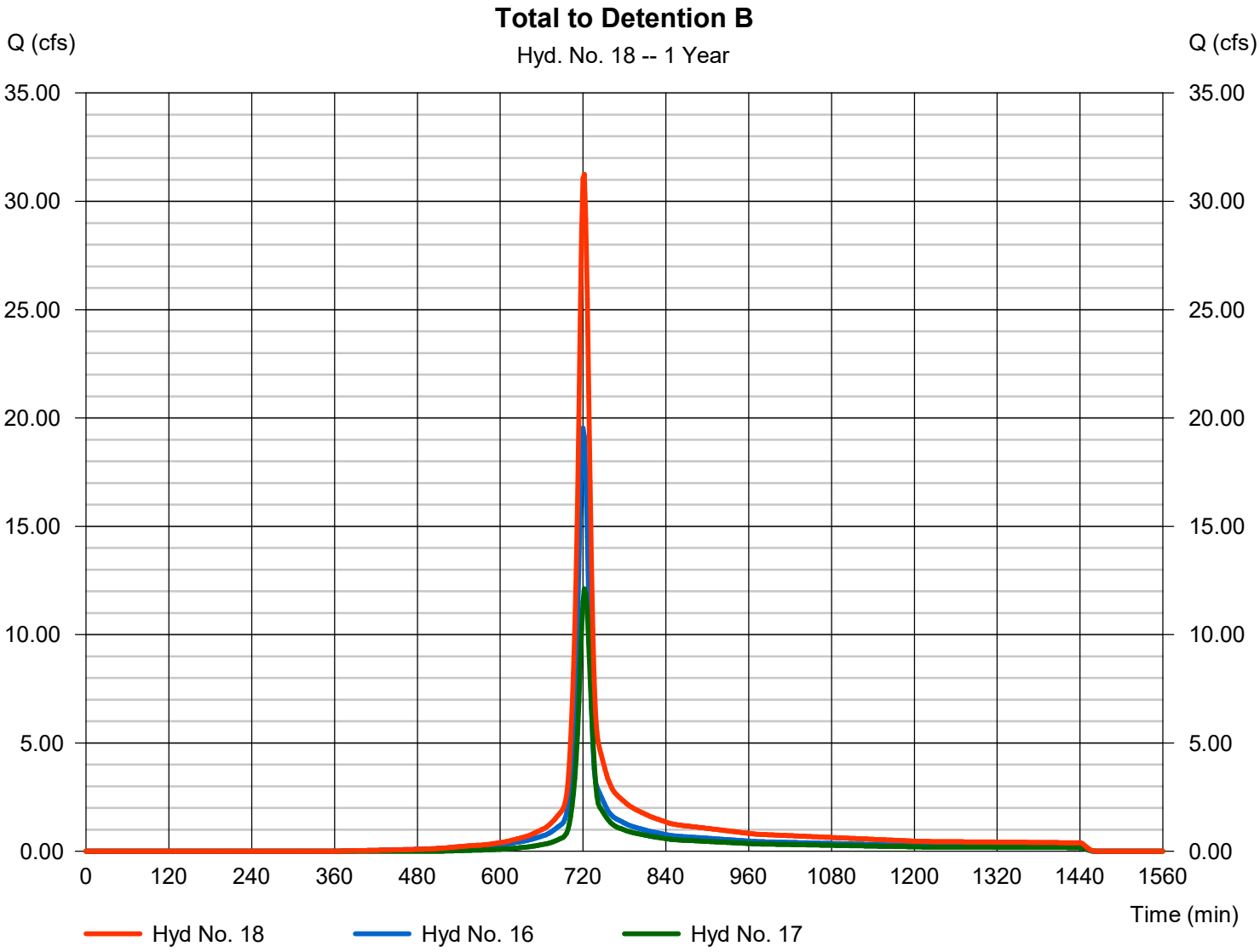


Hydrograph Report

Hyd. No. 18

Total to Detention B

Hydrograph type	= Combine	Peak discharge	= 31.25 cfs
Storm frequency	= 1 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 85,171 cuft
Inflow hyds.	= 16, 17	Contrib. drain. area	= 12.190 ac



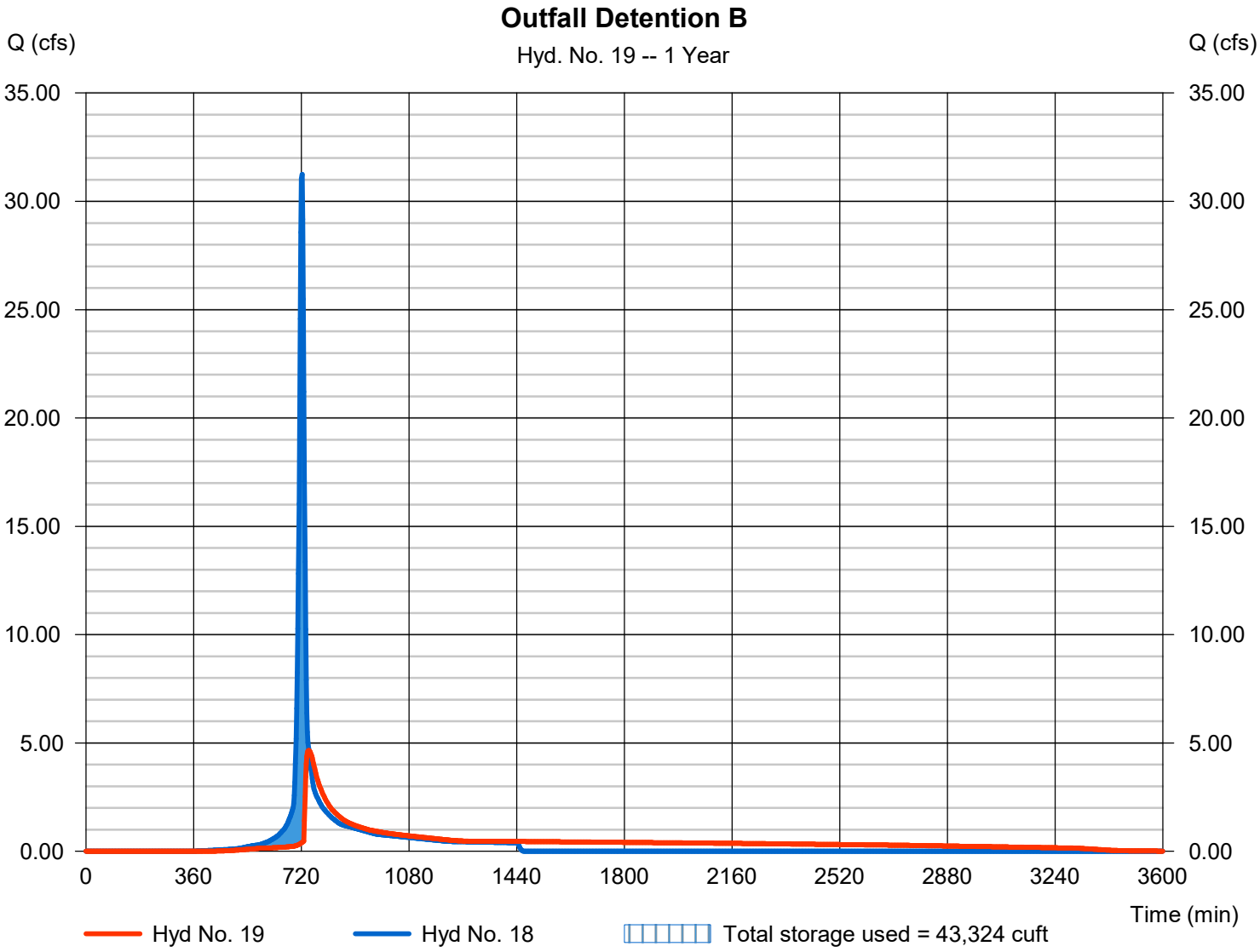
Hydrograph Report

Hyd. No. 19

Outfall Detention B

Hydrograph type	=	Reservoir	Peak discharge	=	4.654 cfs
Storm frequency	=	1 yrs	Time to peak	=	744 min
Time interval	=	2 min	Hyd. volume	=	85,154 cuft
Inflow hyd. No.	=	18 - Total to Detention B	Max. Elevation	=	659.70 ft
Reservoir name	=	Detention Pond B	Max. Storage	=	43,324 cuft

Storage Indication method used.



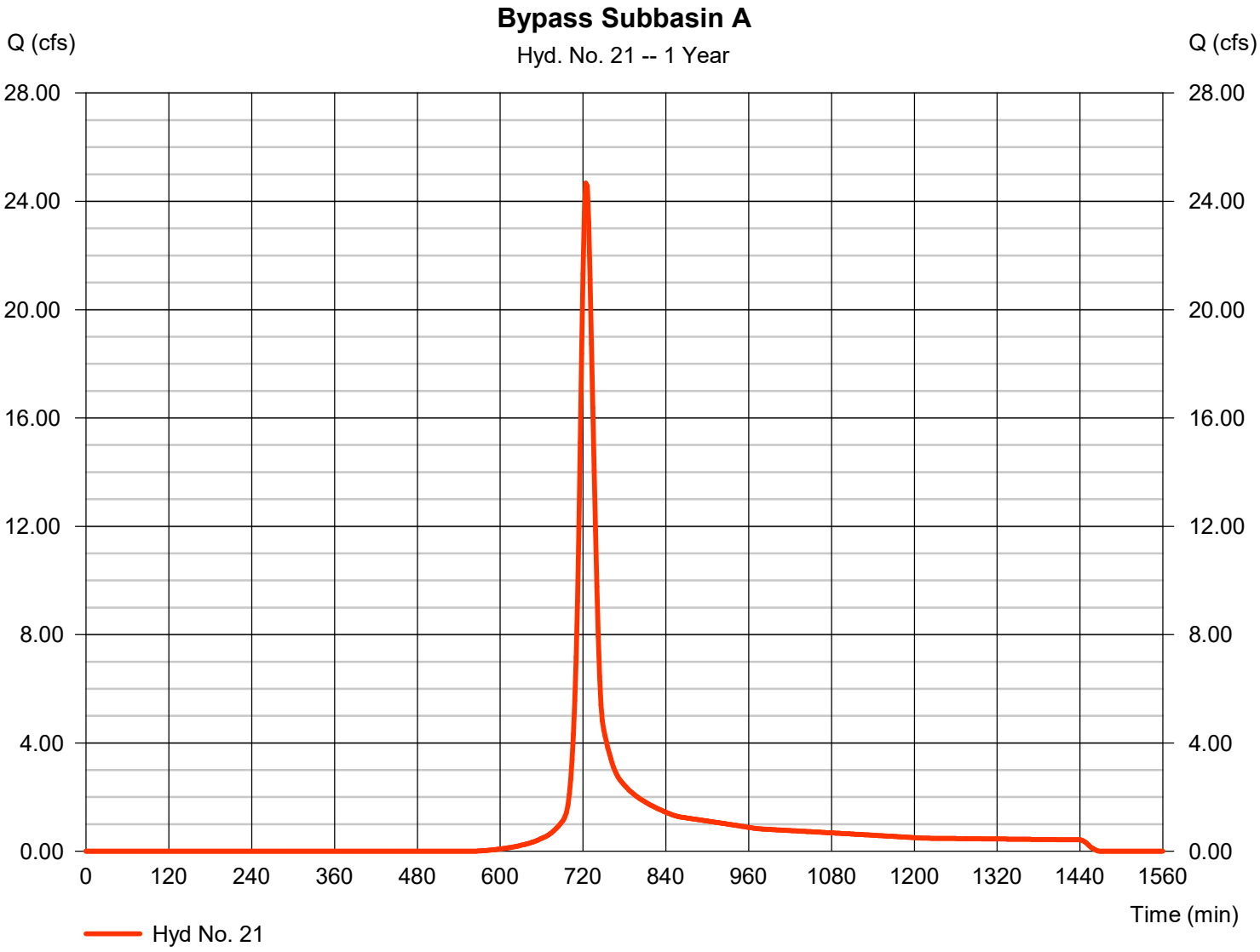
Hydrograph Report

Hyd. No. 21

Bypass Subbasin A

Hydrograph type	=	SCS Runoff	Peak discharge	=	24.67 cfs
Storm frequency	=	1 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	78,067 cuft
Drainage area	=	14.850 ac	Curve number	=	80*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	18.30 min
Total precip.	=	3.26 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.140 x 98) + (13.710 x 78)] / 14.850

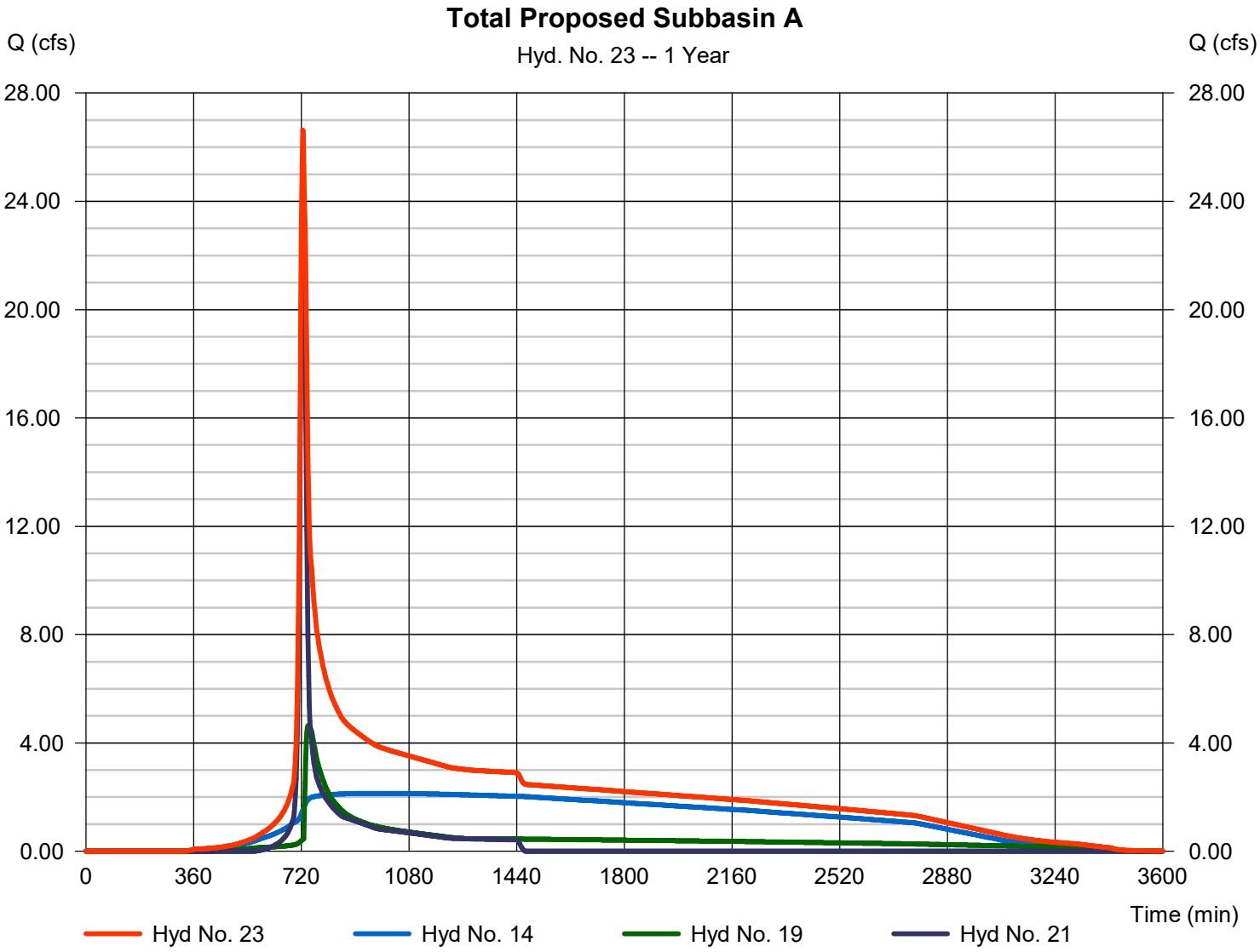


Hydrograph Report

Hyd. No. 23

Total Proposed Subbasin A

Hydrograph type	= Combine	Peak discharge	= 26.62 cfs
Storm frequency	= 1 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 404,820 cuft
Inflow hyds.	= 14, 19, 21	Contrib. drain. area	= 14.850 ac

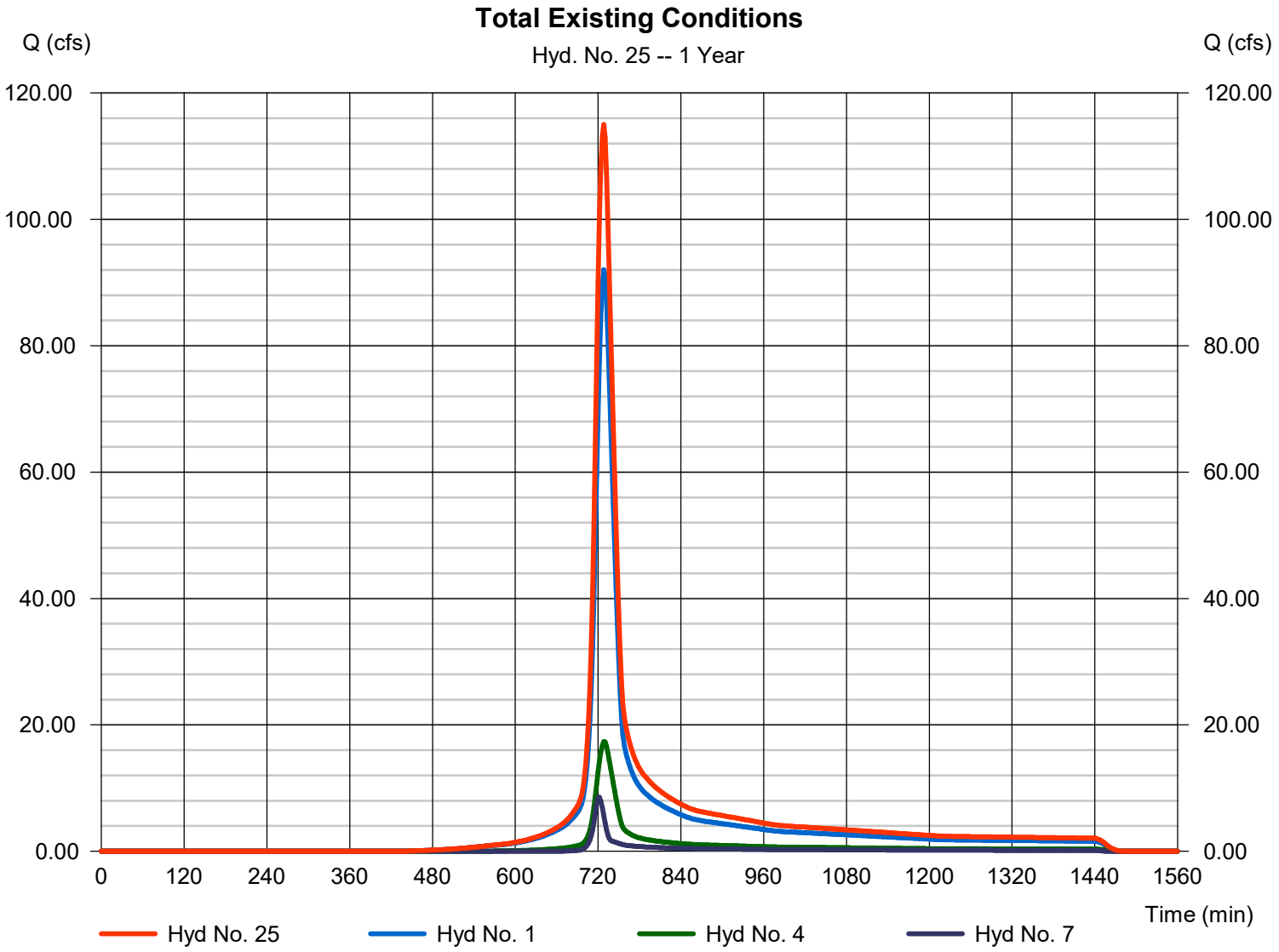


Hydrograph Report

Hyd. No. 25

Total Existing Conditions

Hydrograph type	= Combine	Peak discharge	= 115.01 cfs
Storm frequency	= 1 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 424,922 cuft
Inflow hyds.	= 1, 4, 7	Contrib. drain. area	= 67.940 ac

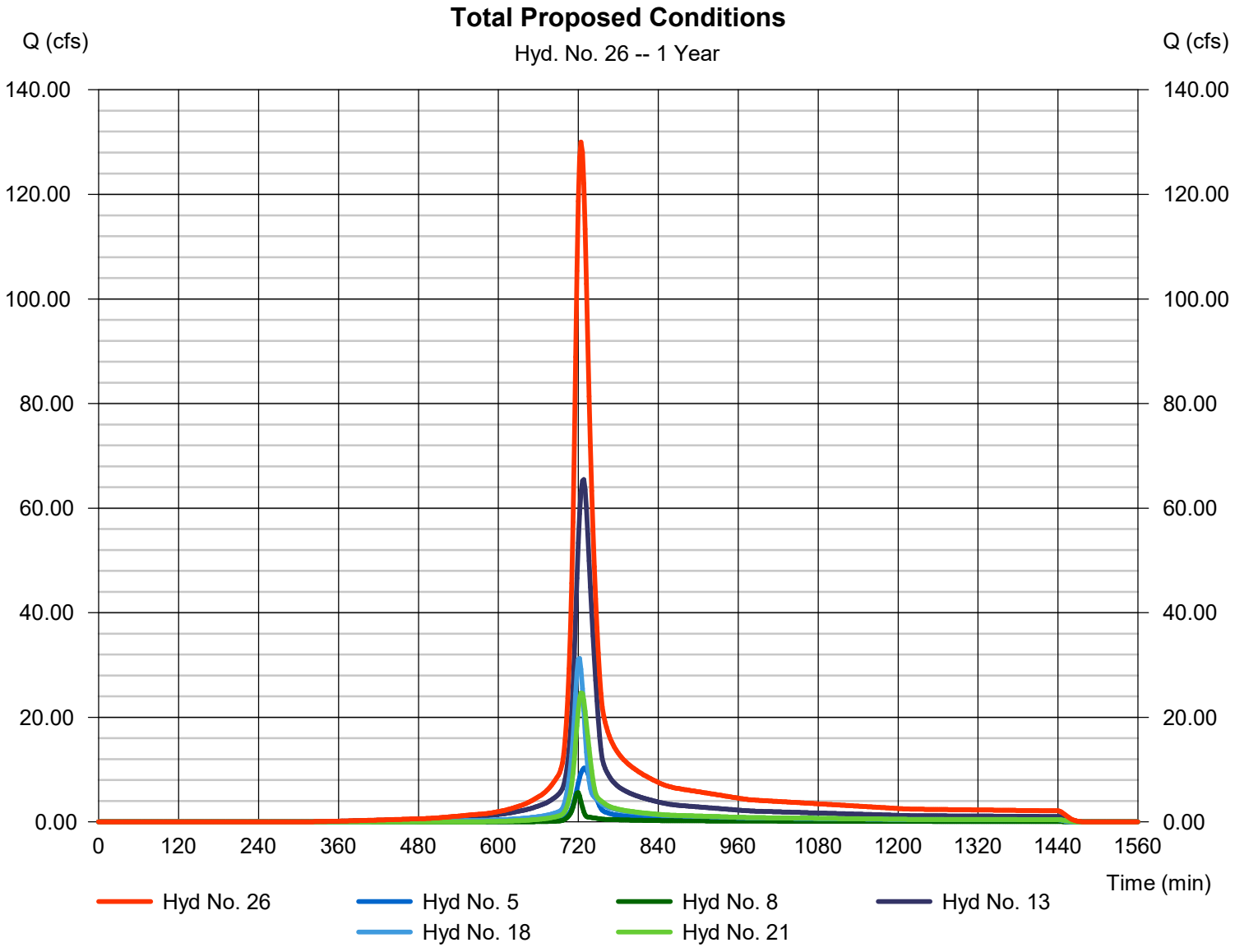


Hydrograph Report

Hyd. No. 26

Total Proposed Conditions

Hydrograph type	= Combine	Peak discharge	= 129.99 cfs
Storm frequency	= 1 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 455,882 cuft
Inflow hyds.	= 5, 8, 13, 18, 21	Contrib. drain. area	= 24.860 ac

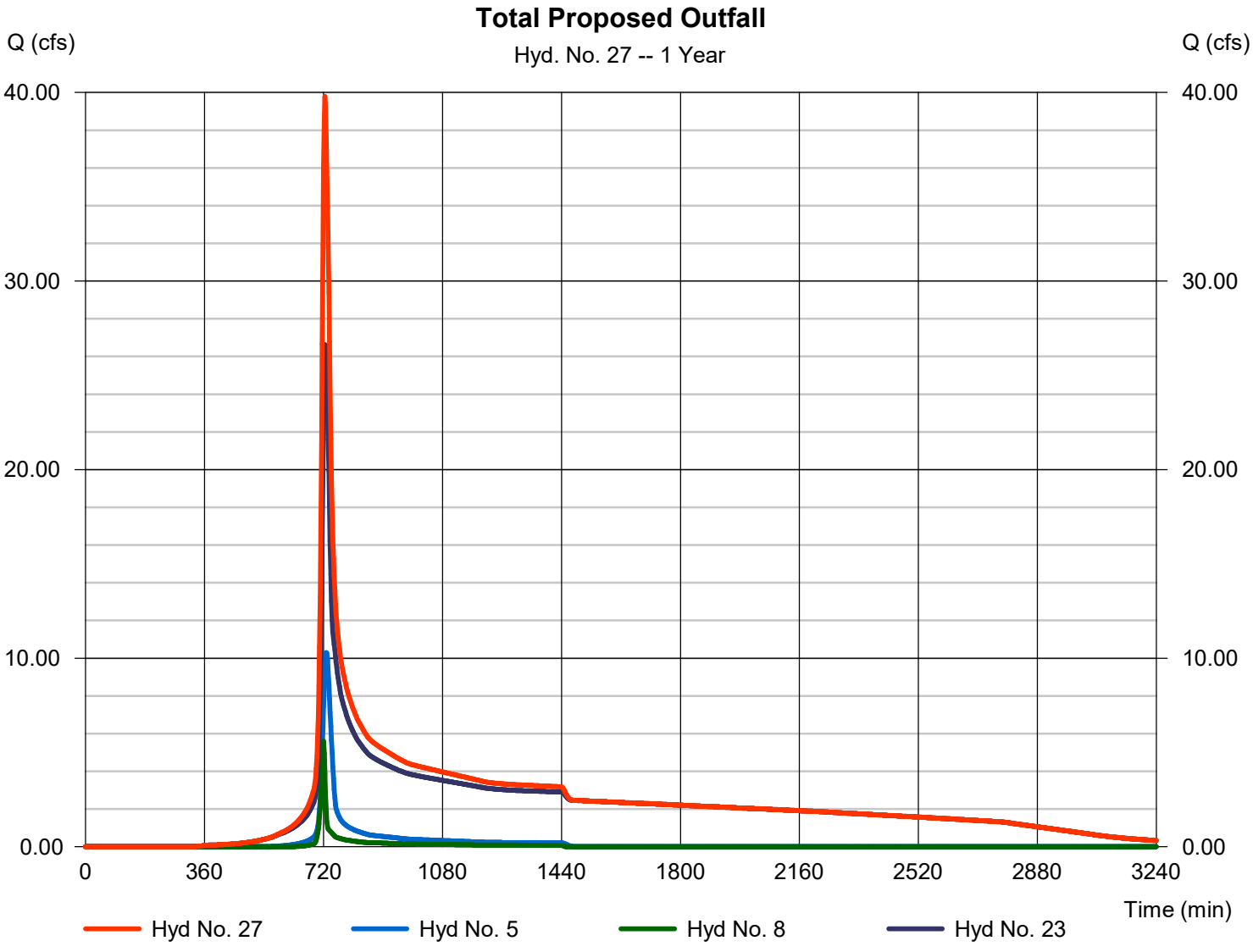


Hydrograph Report

Hyd. No. 27

Total Proposed Outfall

Hydrograph type	= Combine	Peak discharge	= 39.80 cfs
Storm frequency	= 1 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 455,849 cuft
Inflow hyds.	= 5, 8, 23	Contrib. drain. area	= 10.010 ac



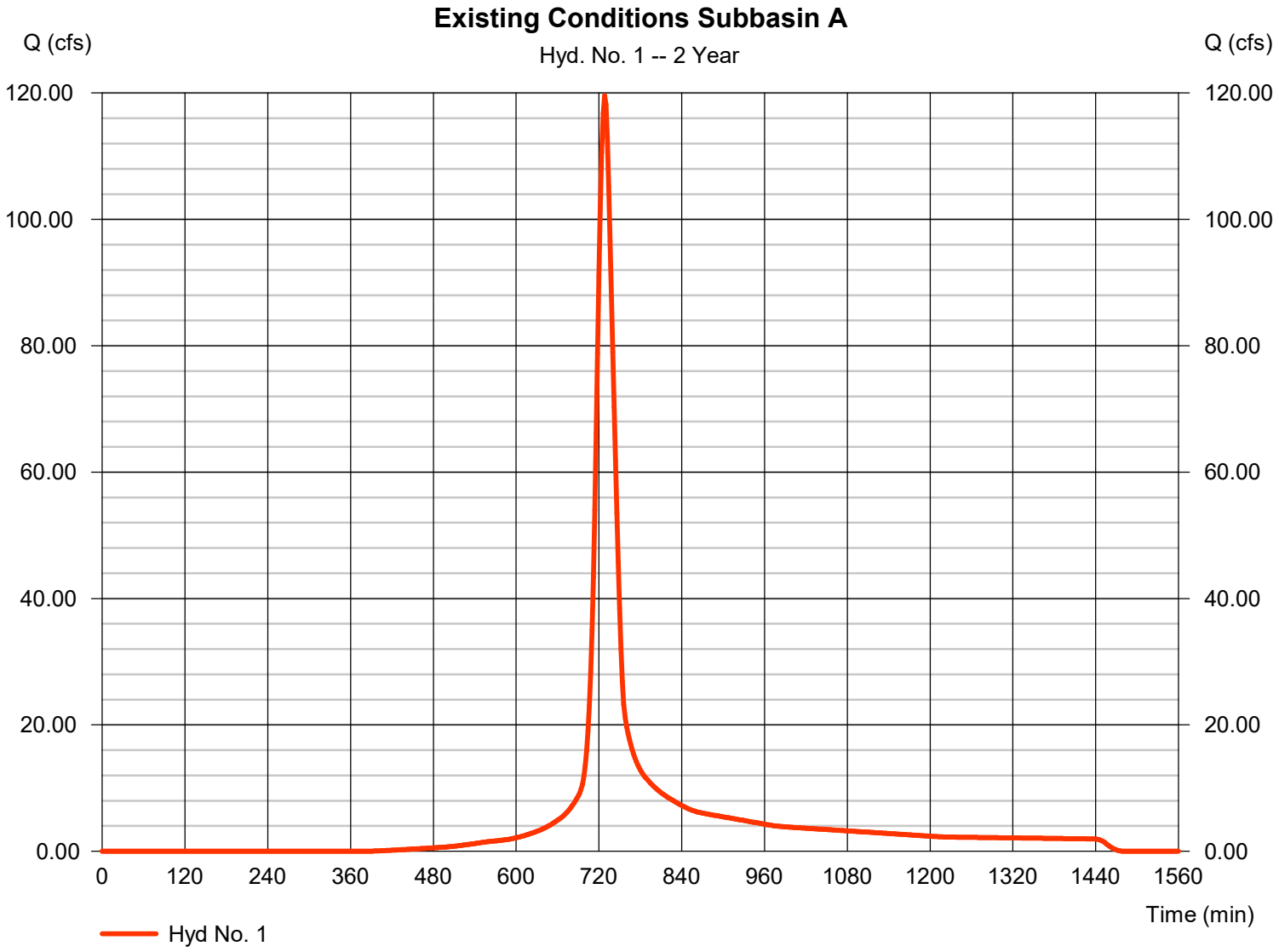
Hydrograph Report

Hyd. No. 1

Existing Conditions Subbasin A

Hydrograph type	= SCS Runoff	Peak discharge	= 119.57 cfs
Storm frequency	= 2 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 439,310 cuft
Drainage area	= 50.060 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 24.76 min
Total precip.	= 3.90 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(44.870 x 88) + (5.190 x 70)] / 50.060



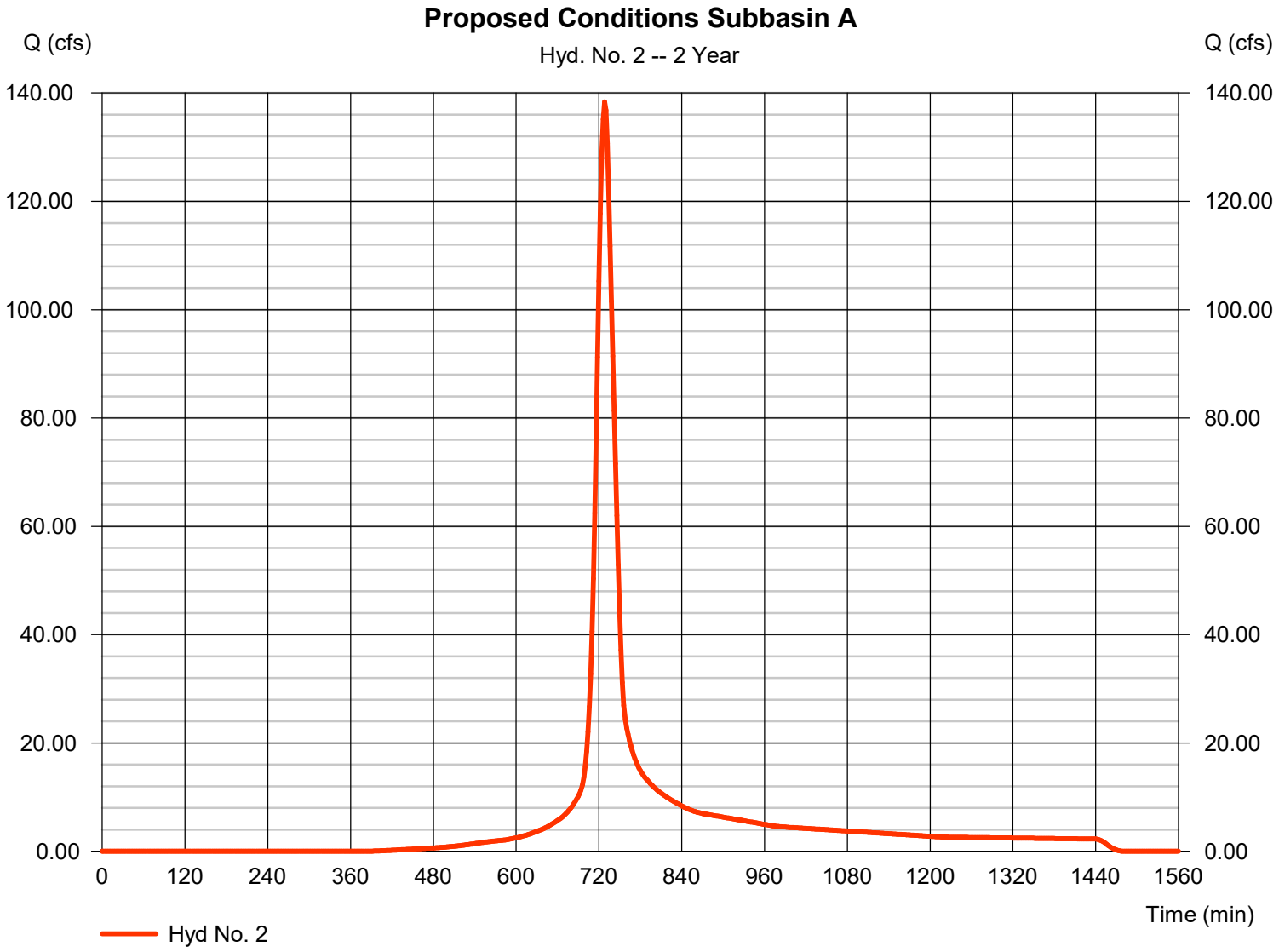
Hydrograph Report

Hyd. No. 2

Proposed Conditions Subbasin A

Hydrograph type	=	SCS Runoff	Peak discharge	=	138.37 cfs
Storm frequency	=	2 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	508,375 cuft
Drainage area	=	57.930 ac	Curve number	=	86*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	23.70 min
Total precip.	=	3.90 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(23.640 x 98) + (34.290 x 78)] / 57.930



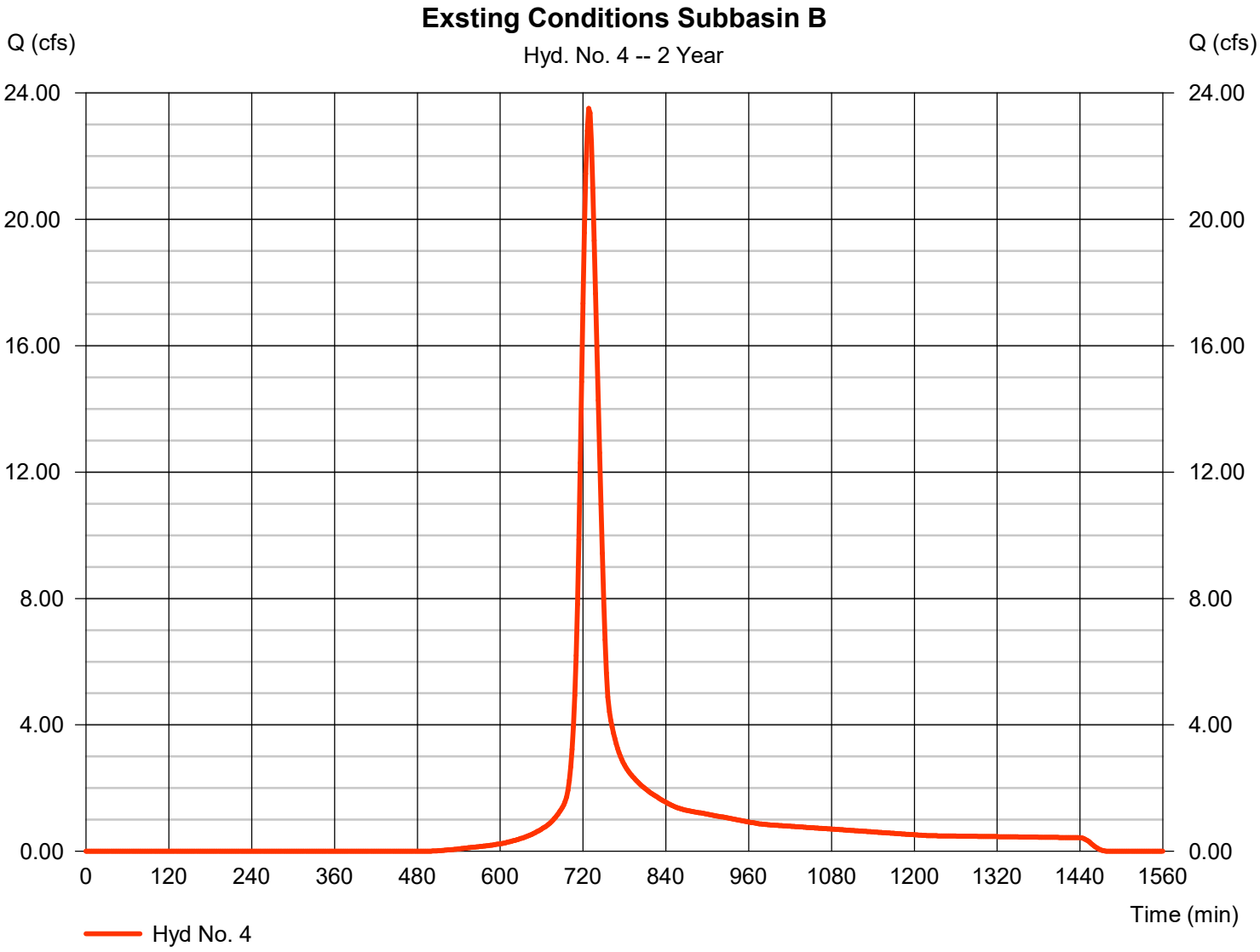
Hydrograph Report

Hyd. No. 4

Exsting Conditions Subbasin B

Hydrograph type	=	SCS Runoff	Peak discharge	=	23.51 cfs
Storm frequency	=	2 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	86,501 cuft
Drainage area	=	11.880 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	23.80 min
Total precip.	=	3.90 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(6.940 x 88) + (4.940 x 70)] / 11.880



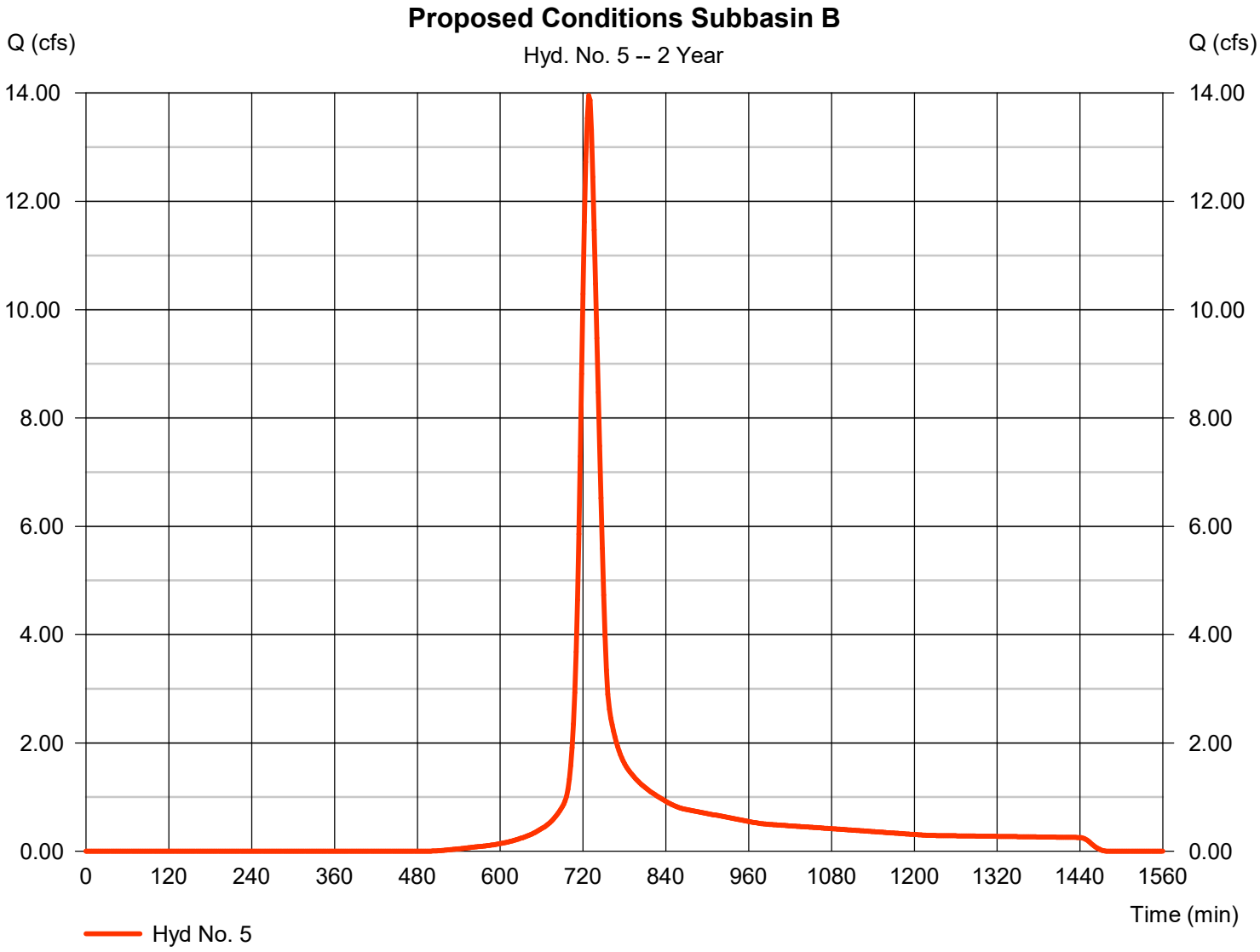
Hydrograph Report

Hyd. No. 5

Proposed Conditions Subbasin B

Hydrograph type	=	SCS Runoff	Peak discharge	=	13.95 cfs
Storm frequency	=	2 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	51,333 cuft
Drainage area	=	7.050 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	25.00 min
Total precip.	=	3.90 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.950 x 98) + (6.100 x 78)] / 7.050



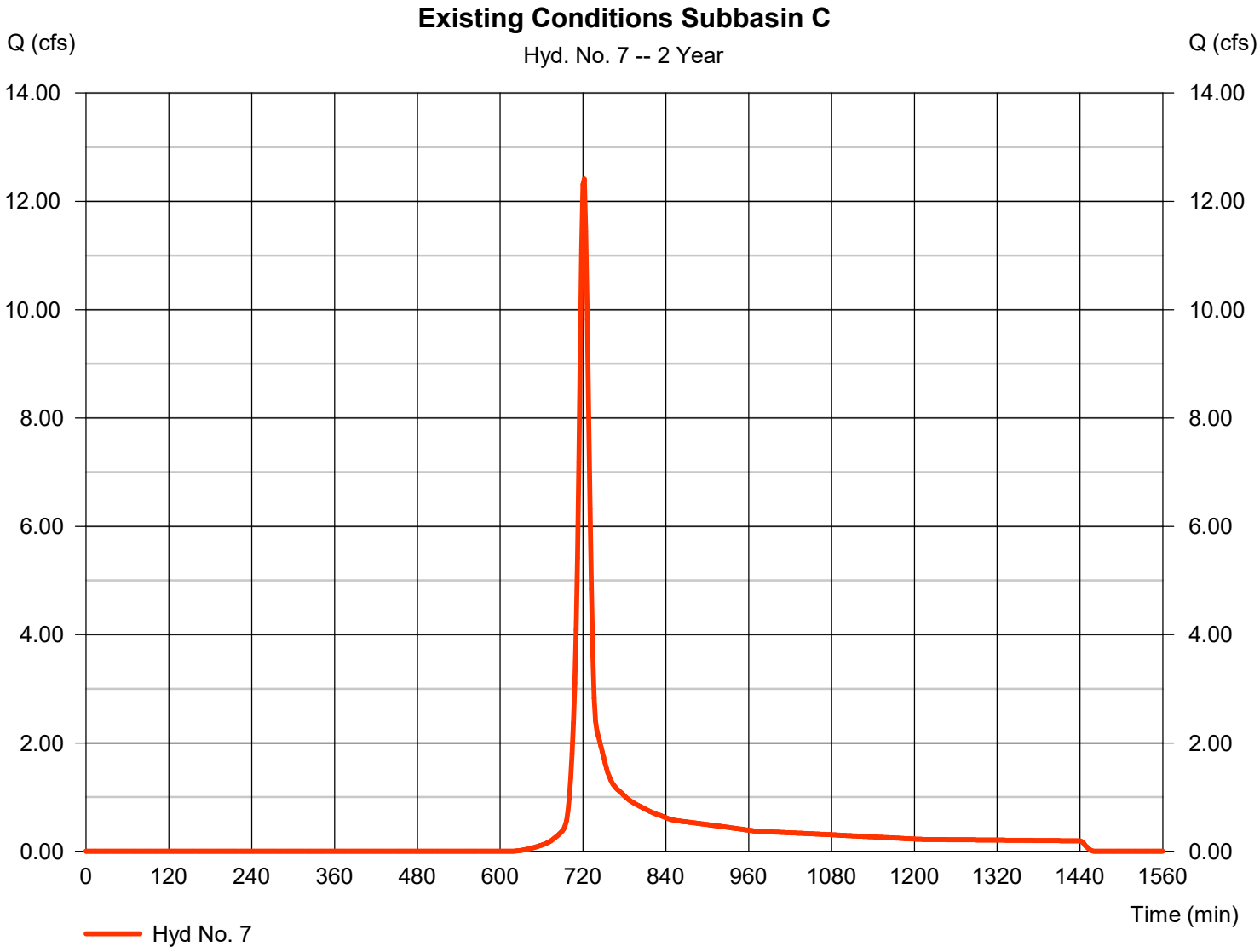
Hydrograph Report

Hyd. No. 7

Existing Conditions Subbasin C

Hydrograph type	=	SCS Runoff	Peak discharge	=	12.41 cfs
Storm frequency	=	2 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	32,705 cuft
Drainage area	=	6.000 ac	Curve number	=	73*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.90 min
Total precip.	=	3.90 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.990 x 79) + (4.010 x 70)] / 6.000



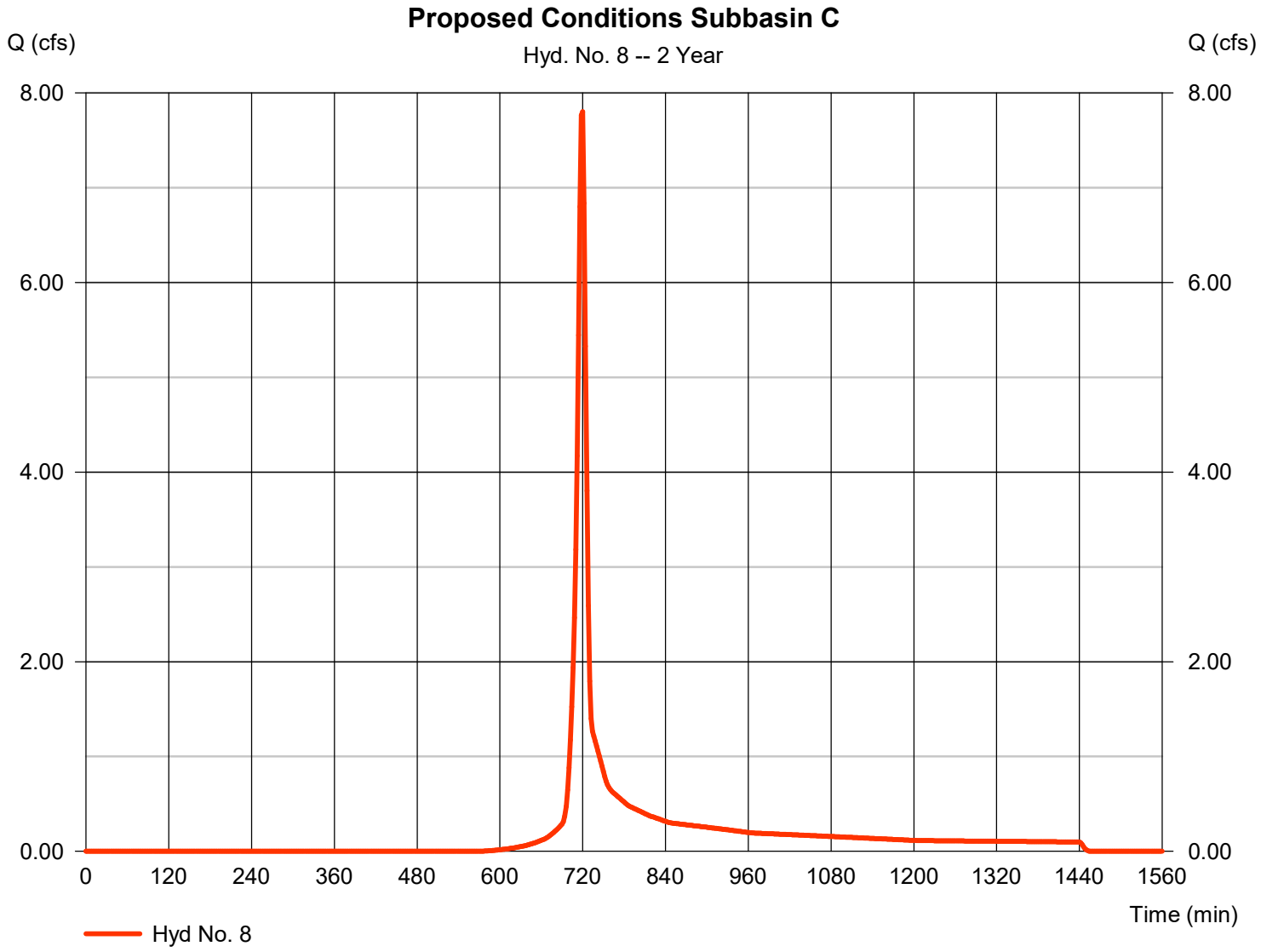
Hydrograph Report

Hyd. No. 8

Proposed Conditions Subbasin C

Hydrograph type	= SCS Runoff	Peak discharge	= 7.804 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 17,861 cuft
Drainage area	= 2.960 ac	Curve number	= 76*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 8.08 min
Total precip.	= 3.90 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.820 x 79) + (1.140 x 70)] / 2.960



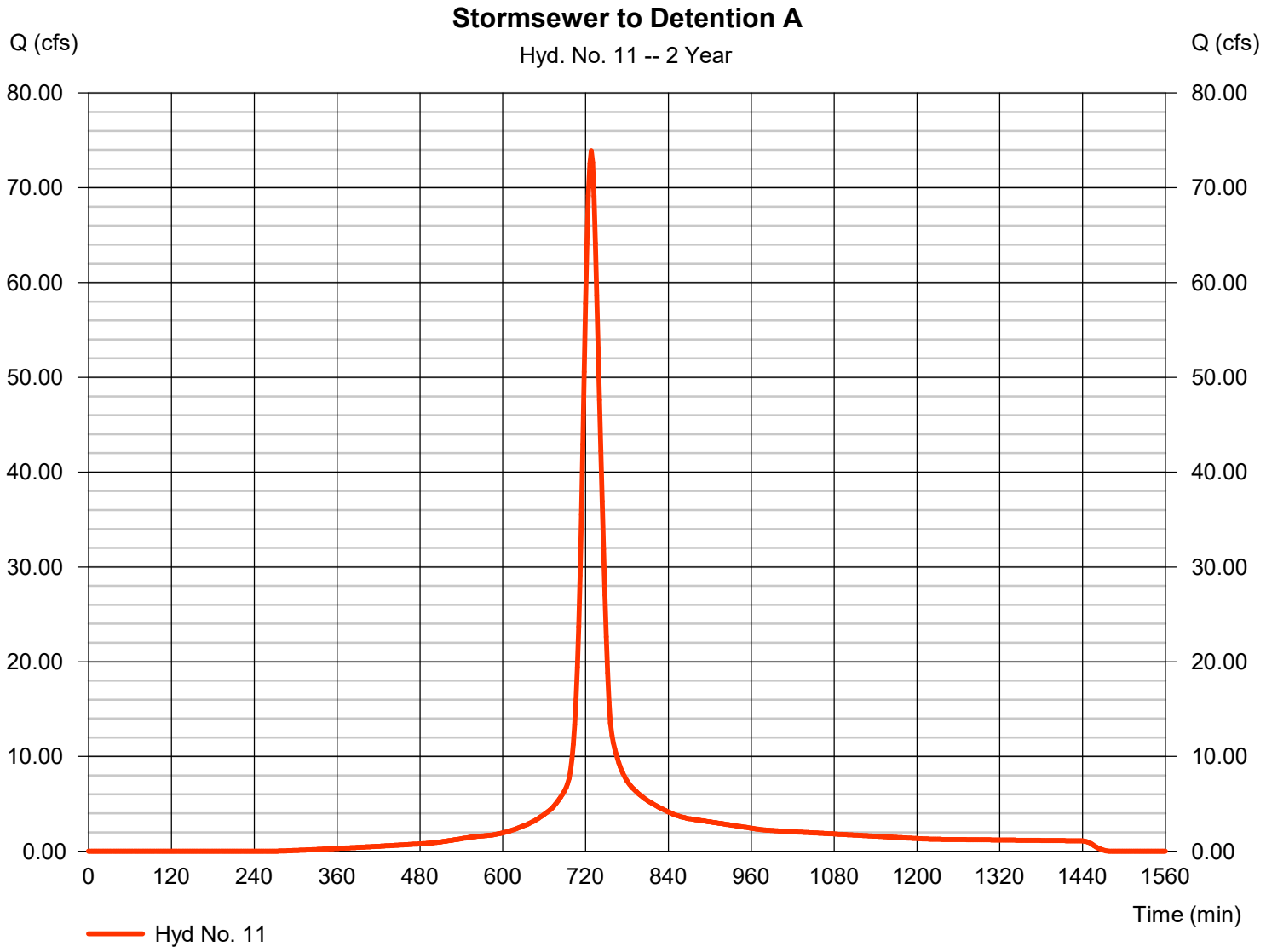
Hydrograph Report

Hyd. No. 11

Stormsewer to Detention A

Hydrograph type	=	SCS Runoff	Peak discharge	=	73.88 cfs
Storm frequency	=	2 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	276,452 cuft
Drainage area	=	26.480 ac	Curve number	=	91*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	23.70 min
Total precip.	=	3.90 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(17.100 x 98) + (9.380 x 78)] / 26.480



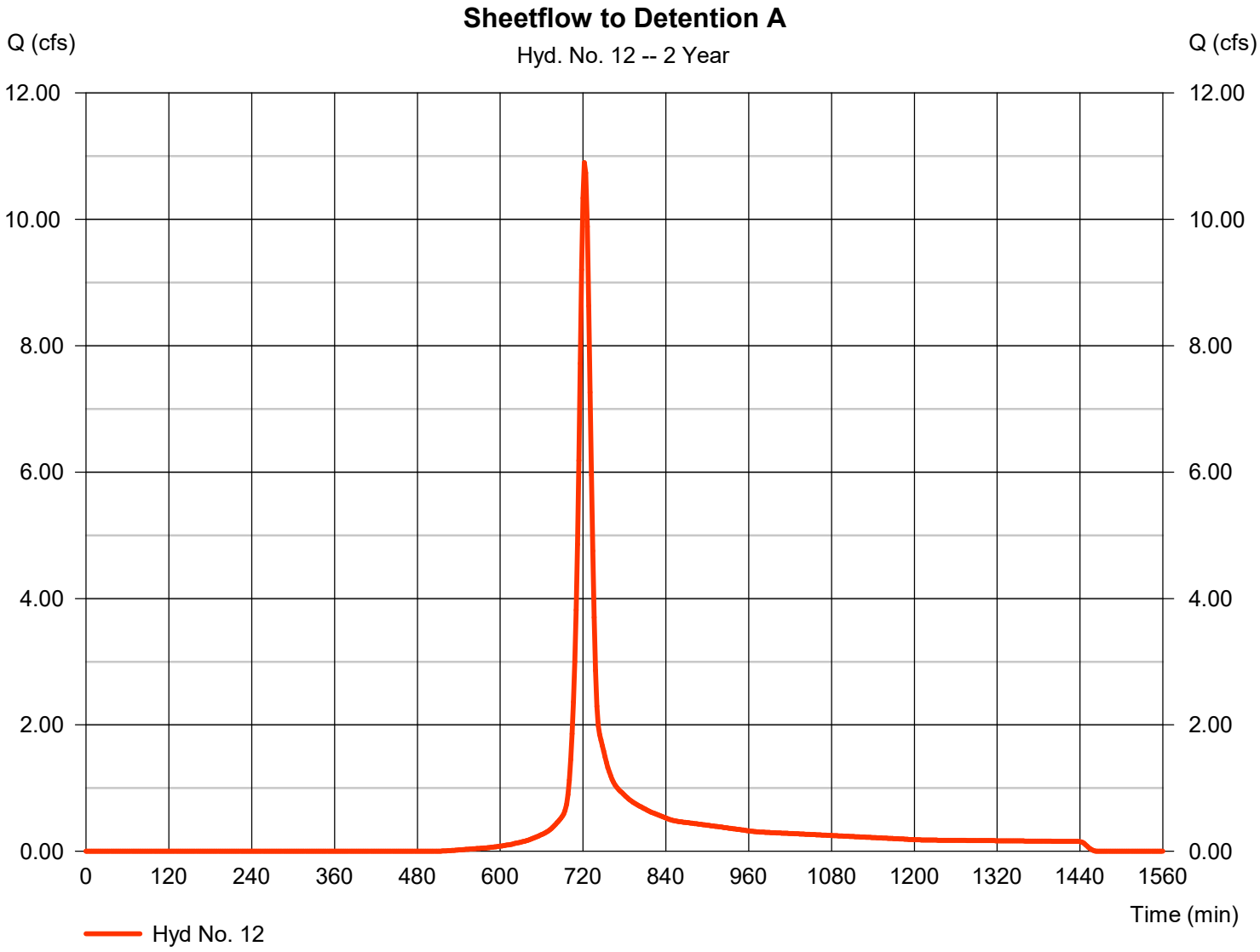
Hydrograph Report

Hyd. No. 12

Sheetflow to Detention A

Hydrograph type	=	SCS Runoff	Peak discharge	=	10.90 cfs
Storm frequency	=	2 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	30,581 cuft
Drainage area	=	4.410 ac	Curve number	=	80*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	14.90 min
Total precip.	=	3.90 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.380 x 98) + (4.030 x 78)] / 4.410

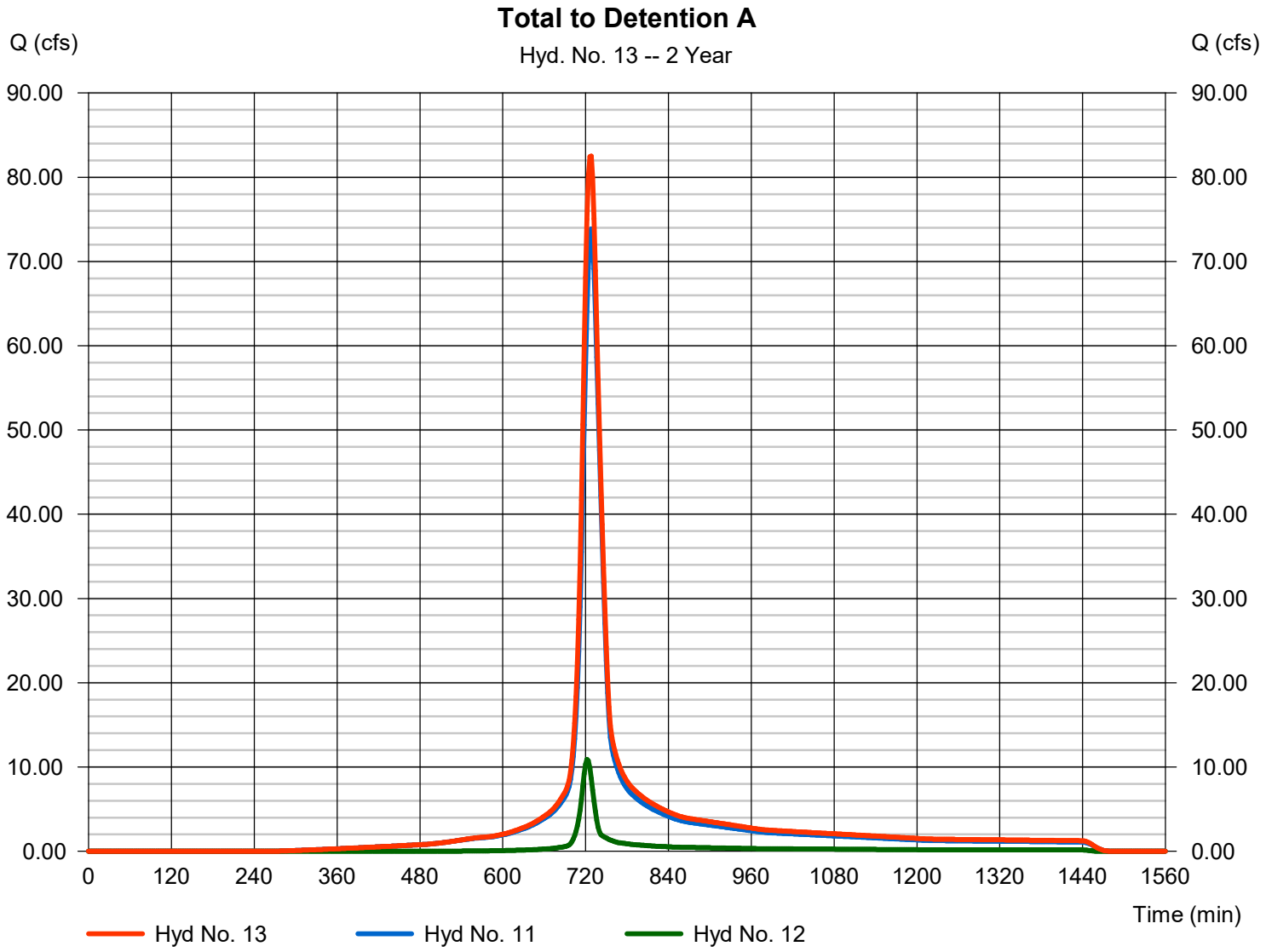


Hydrograph Report

Hyd. No. 13

Total to Detention A

Hydrograph type	=	Combine	Peak discharge	=	82.51 cfs
Storm frequency	=	2 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	307,033 cuft
Inflow hyds.	=	11, 12	Contrib. drain. area	=	30.890 ac



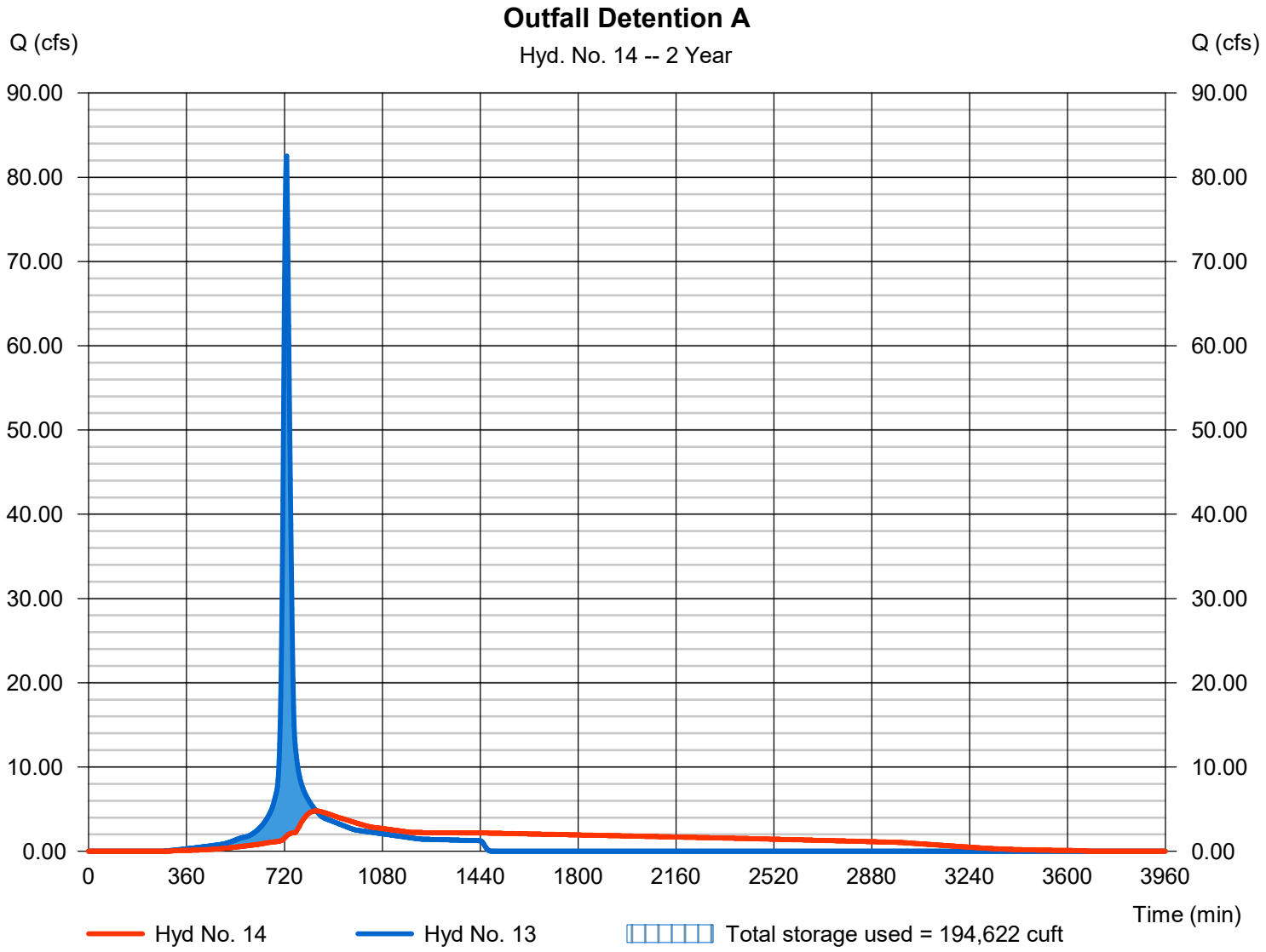
Hydrograph Report

Hyd. No. 14

Outfall Detention A

Hydrograph type	=	Reservoir	Peak discharge	=	4.783 cfs
Storm frequency	=	2 yrs	Time to peak	=	838 min
Time interval	=	2 min	Hyd. volume	=	307,017 cuft
Inflow hyd. No.	=	13 - Total to Detention A	Max. Elevation	=	651.55 ft
Reservoir name	=	Detention Pond A	Max. Storage	=	194,622 cuft

Storage Indication method used.



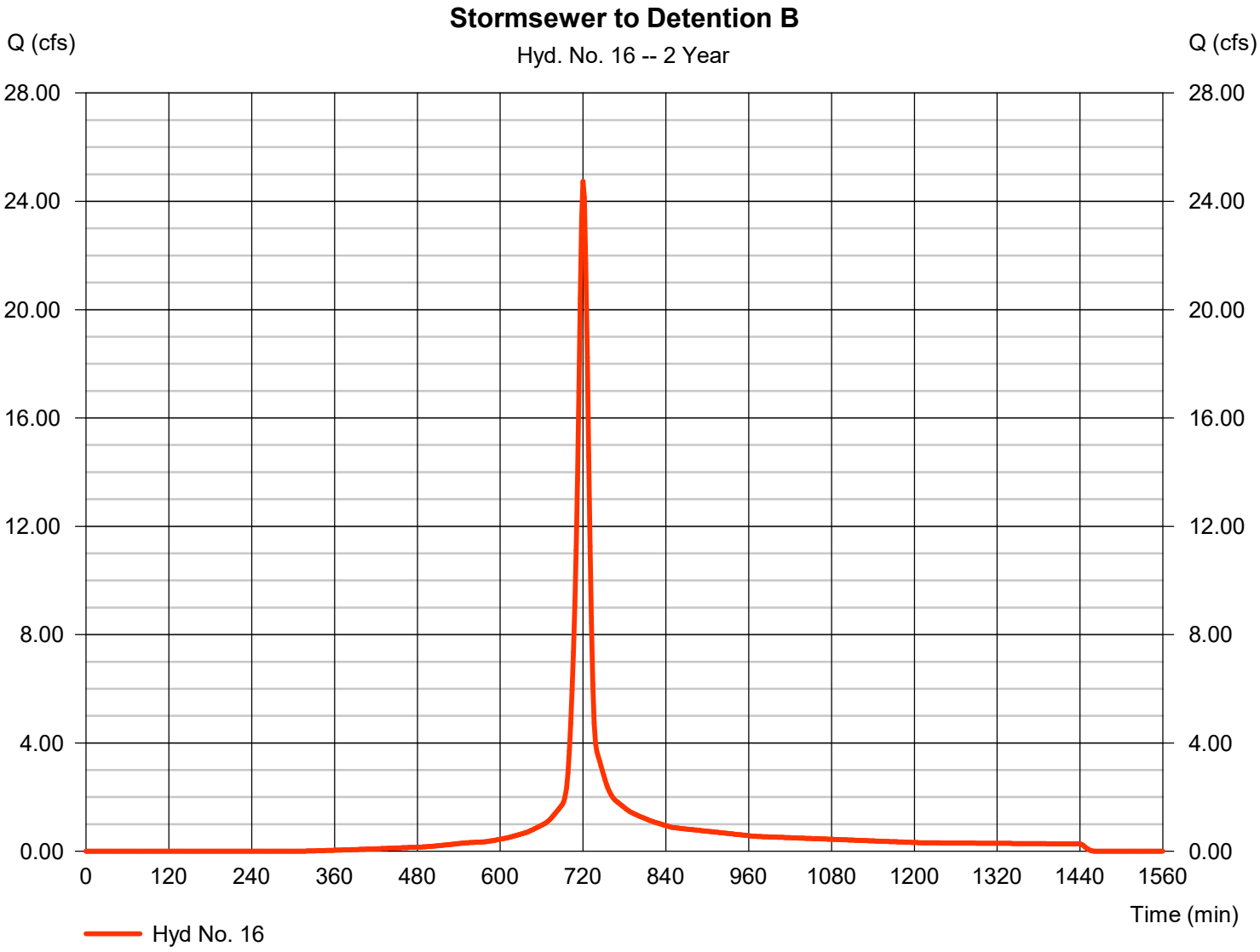
Hydrograph Report

Hyd. No. 16

Stormsewer to Detention B

Hydrograph type	=	SCS Runoff	Peak discharge	=	24.74 cfs
Storm frequency	=	2 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	65,389 cuft
Drainage area	=	6.400 ac	Curve number	=	89*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	11.20 min
Total precip.	=	3.90 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(3.630 x 98) + (2.770 x 78)] / 6.400



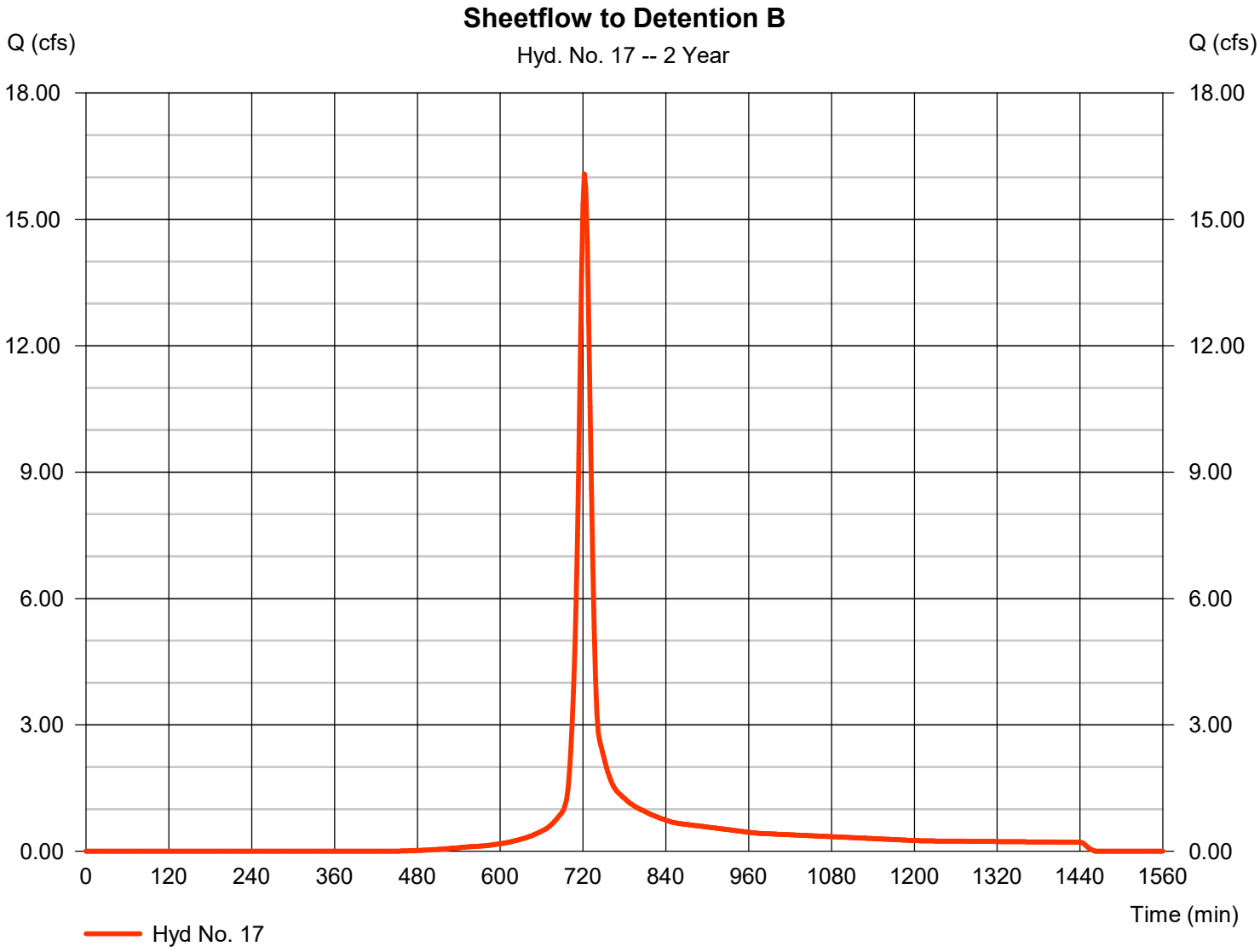
Hydrograph Report

Hyd. No. 17

Sheetflow to Detention B

Hydrograph type	=	SCS Runoff	Peak discharge	=	16.08 cfs
Storm frequency	=	2 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	45,075 cuft
Drainage area	=	5.790 ac	Curve number	=	83*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	13.80 min
Total precip.	=	3.90 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.390 x 98) + (4.400 x 78)] / 5.790

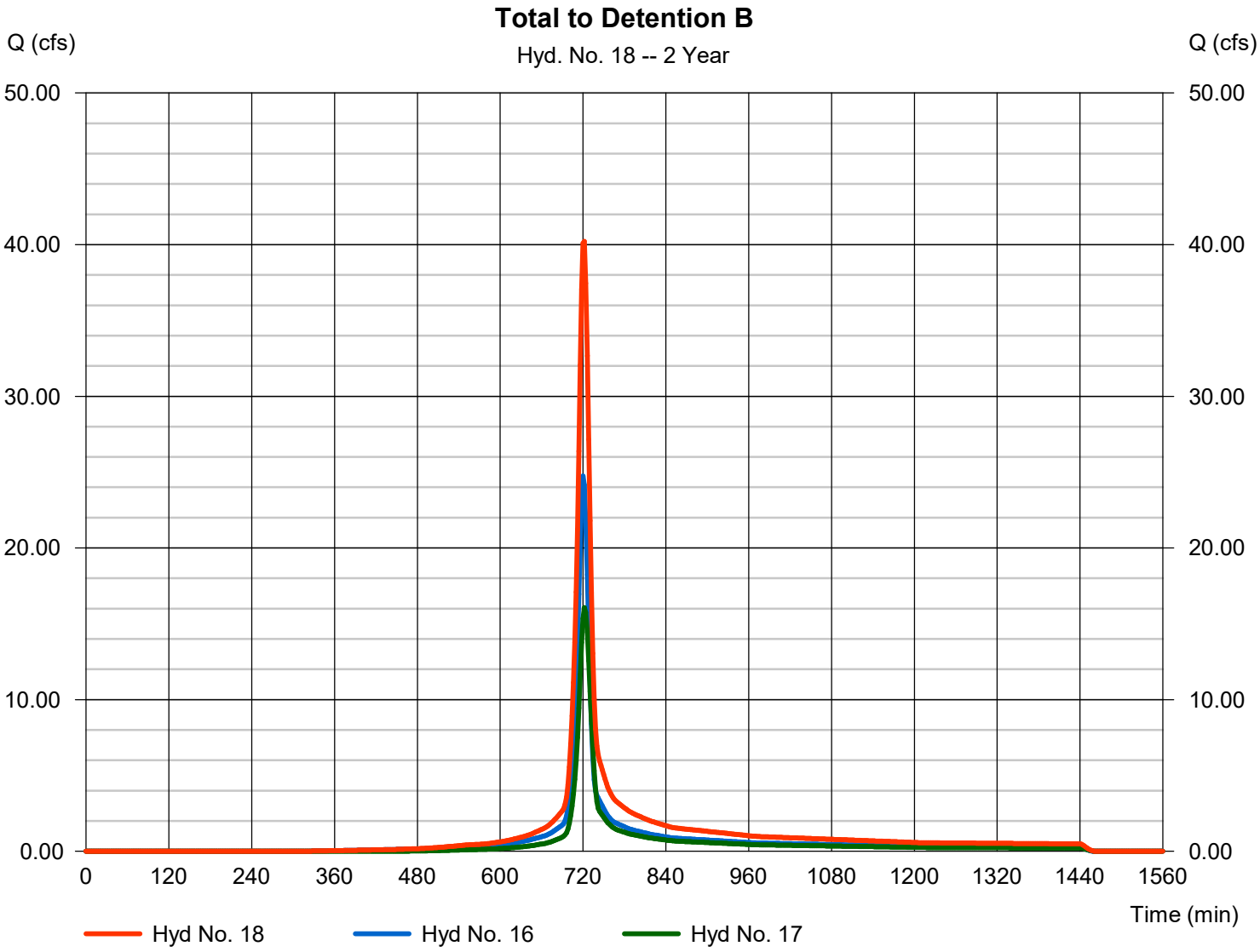


Hydrograph Report

Hyd. No. 18

Total to Detention B

Hydrograph type	= Combine	Peak discharge	= 40.22 cfs
Storm frequency	= 2 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 110,464 cuft
Inflow hyds.	= 16, 17	Contrib. drain. area	= 12.190 ac



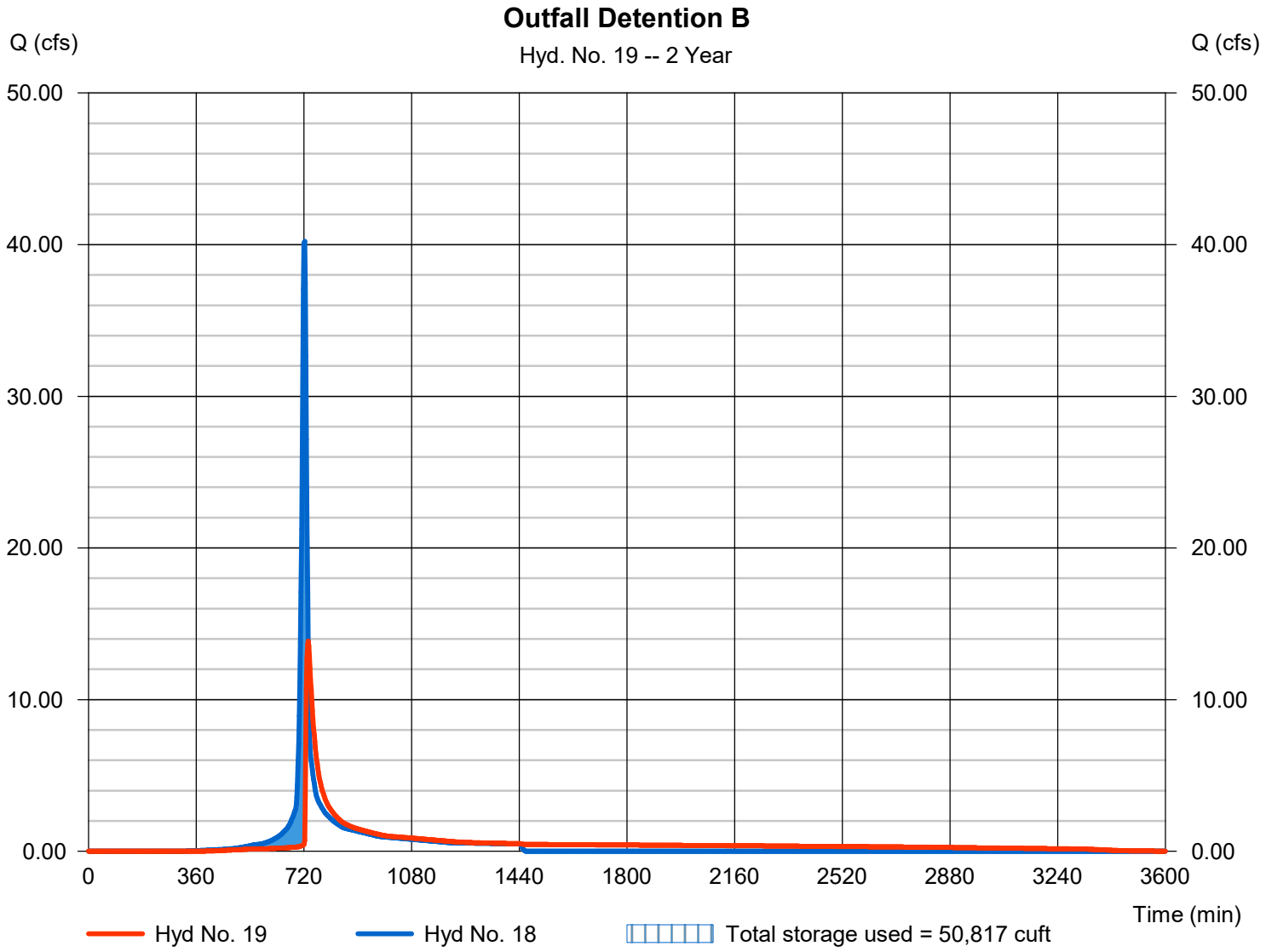
Hydrograph Report

Hyd. No. 19

Outfall Detention B

Hydrograph type	=	Reservoir	Peak discharge	=	13.87 cfs
Storm frequency	=	2 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	110,447 cuft
Inflow hyd. No.	=	18 - Total to Detention B	Max. Elevation	=	660.17 ft
Reservoir name	=	Detention Pond B	Max. Storage	=	50,817 cuft

Storage Indication method used.



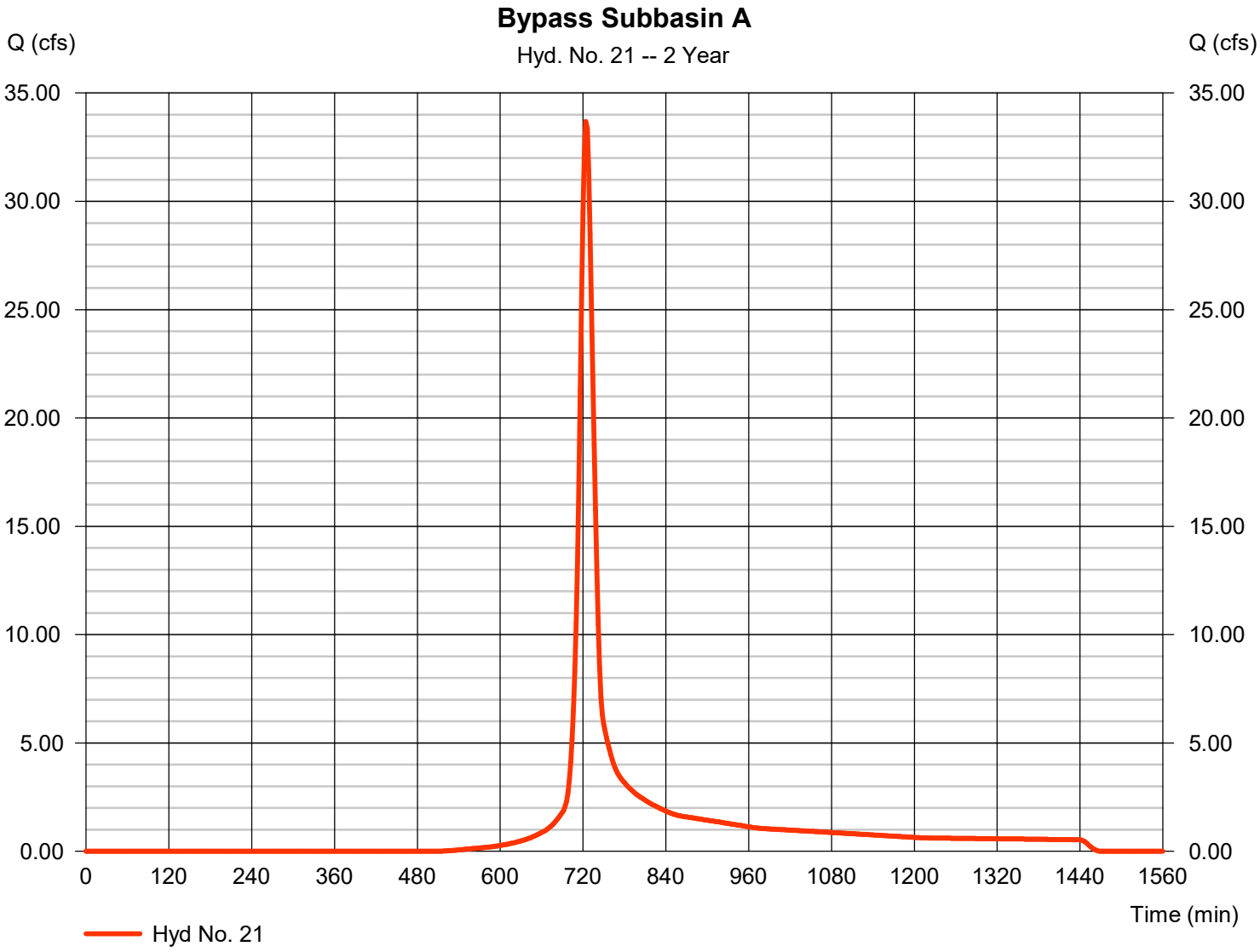
Hydrograph Report

Hyd. No. 21

Bypass Subbasin A

Hydrograph type	=	SCS Runoff	Peak discharge	=	33.69 cfs
Storm frequency	=	2 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	105,618 cuft
Drainage area	=	14.850 ac	Curve number	=	80*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	18.30 min
Total precip.	=	3.90 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.140 x 98) + (13.710 x 78)] / 14.850

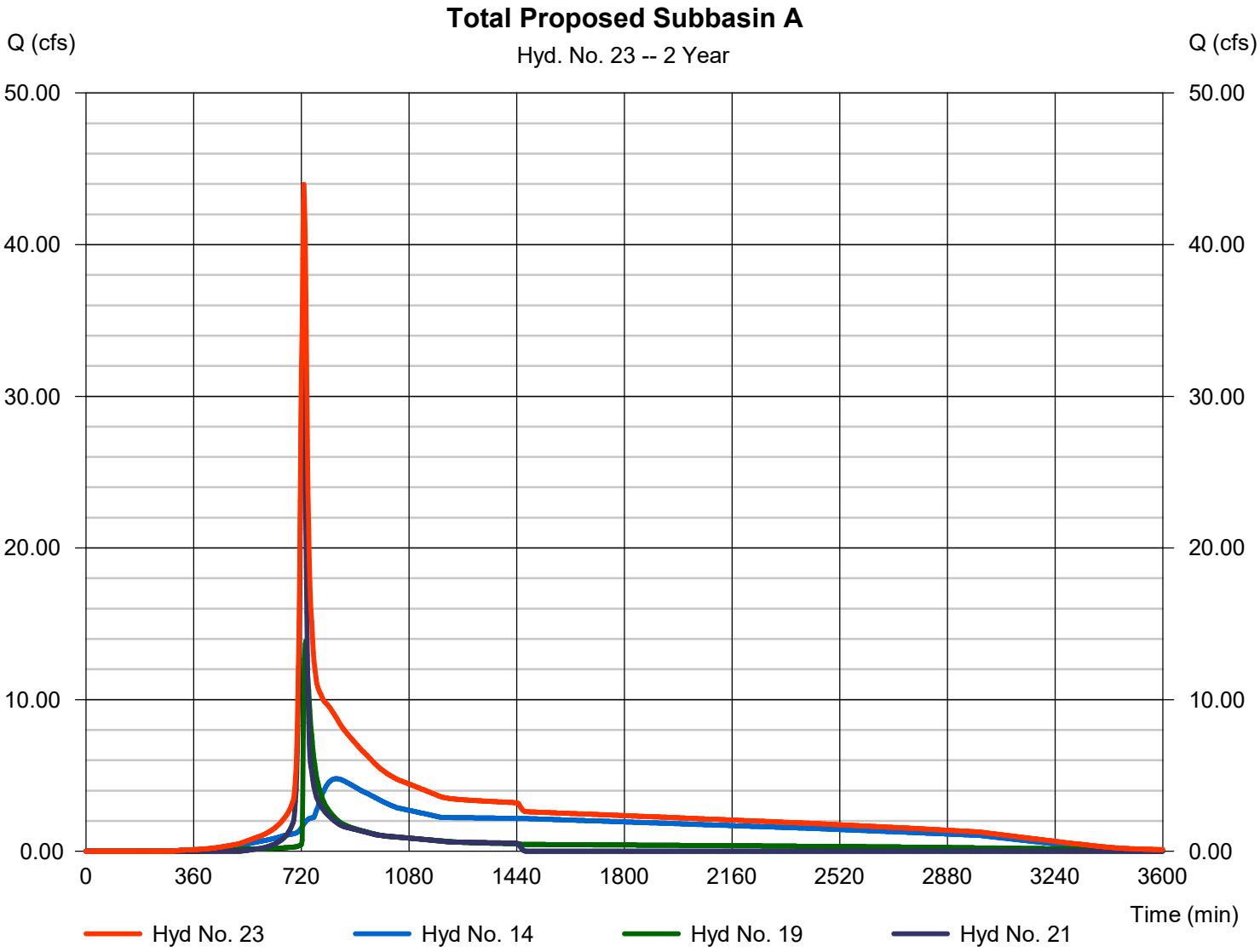


Hydrograph Report

Hyd. No. 23

Total Proposed Subbasin A

Hydrograph type	= Combine	Peak discharge	= 43.96 cfs
Storm frequency	= 2 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 523,082 cuft
Inflow hyds.	= 14, 19, 21	Contrib. drain. area	= 14.850 ac

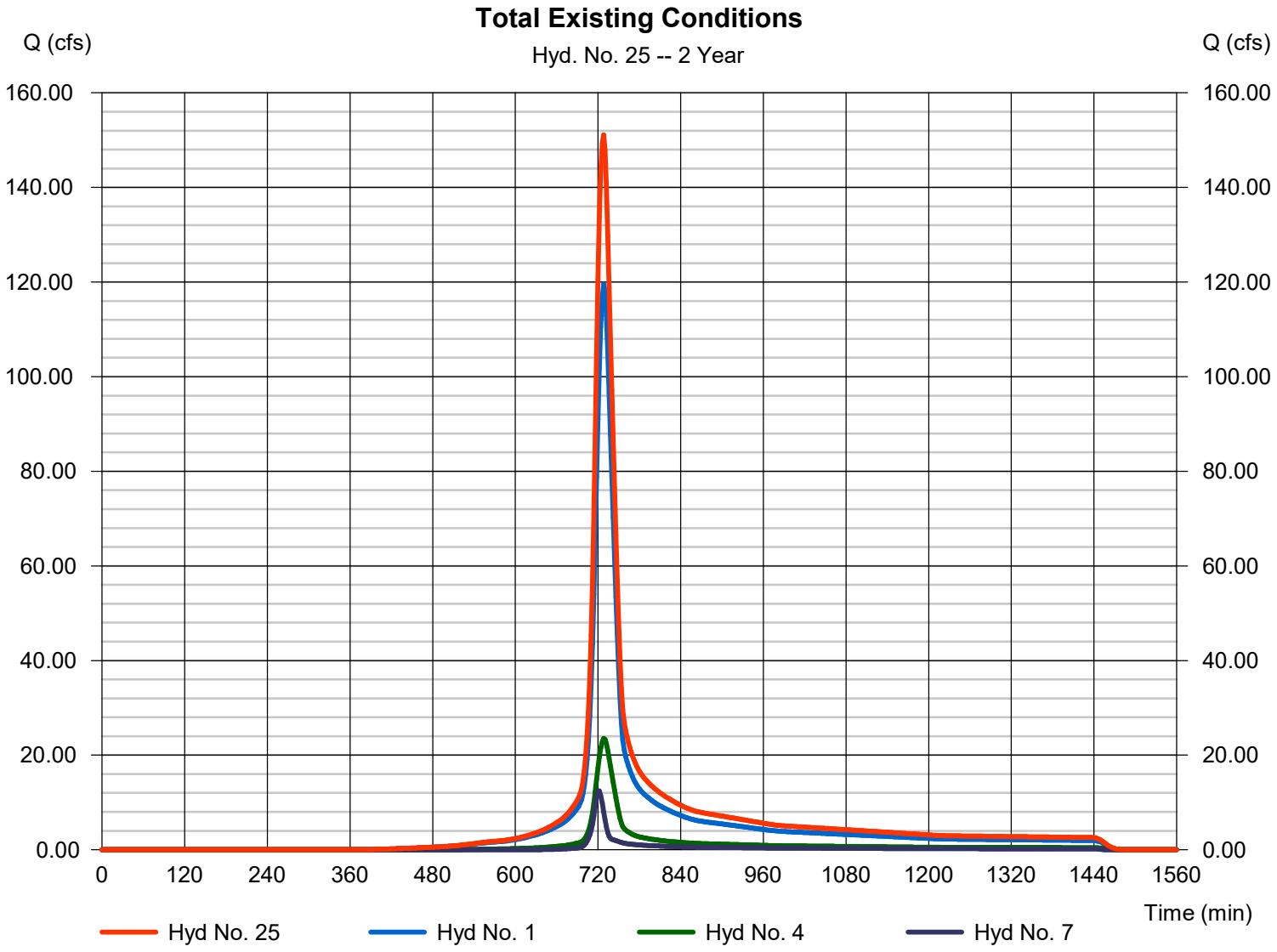


Hydrograph Report

Hyd. No. 25

Total Existing Conditions

Hydrograph type	= Combine	Peak discharge	= 151.09 cfs
Storm frequency	= 2 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 558,516 cuft
Inflow hyds.	= 1, 4, 7	Contrib. drain. area	= 67.940 ac

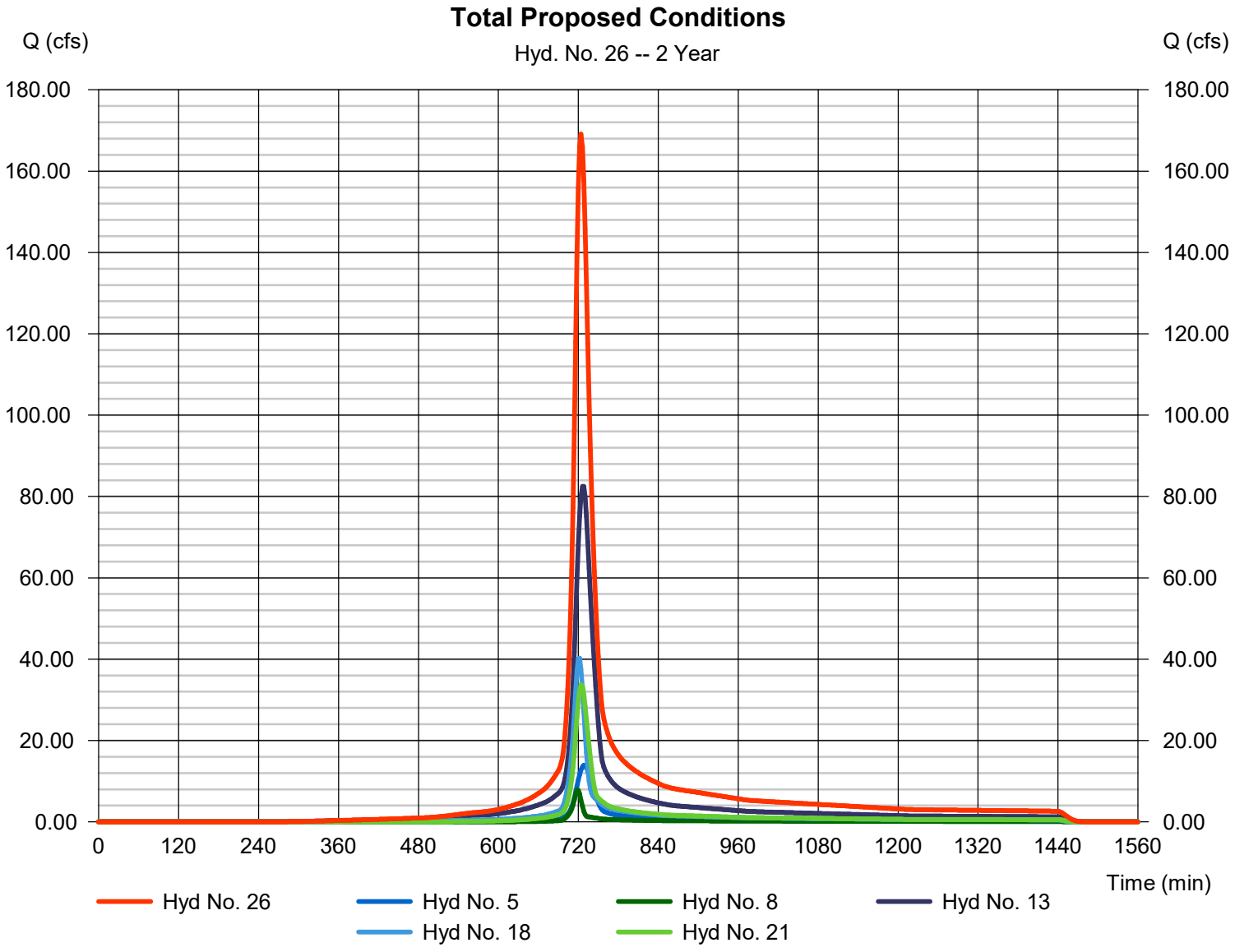


Hydrograph Report

Hyd. No. 26

Total Proposed Conditions

Hydrograph type	= Combine	Peak discharge	= 169.10 cfs
Storm frequency	= 2 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 592,309 cuft
Inflow hyds.	= 5, 8, 13, 18, 21	Contrib. drain. area	= 24.860 ac

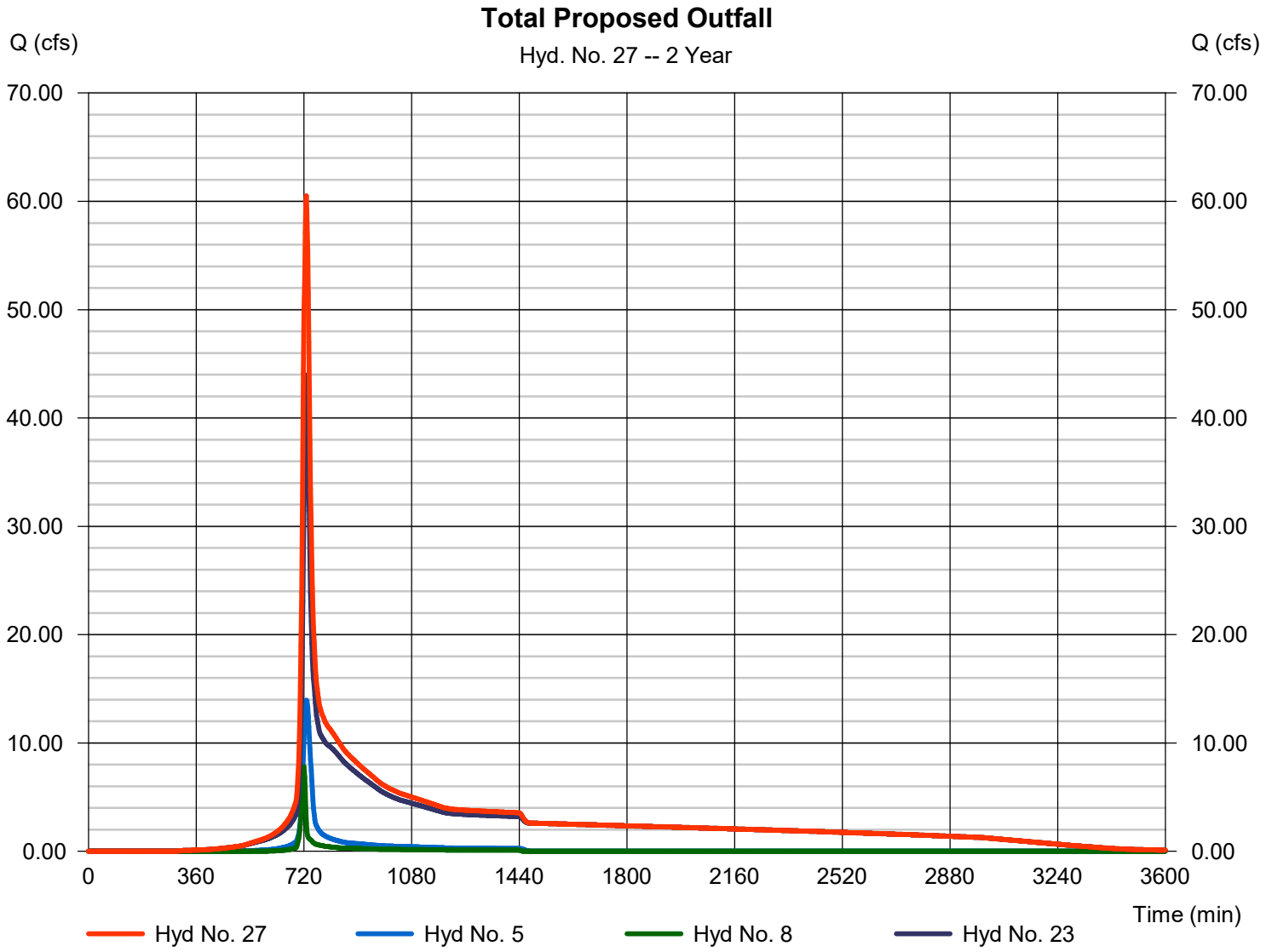


Hydrograph Report

Hyd. No. 27

Total Proposed Outfall

Hydrograph type	= Combine	Peak discharge	= 60.51 cfs
Storm frequency	= 2 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 592,276 cuft
Inflow hyds.	= 5, 8, 23	Contrib. drain. area	= 10.010 ac



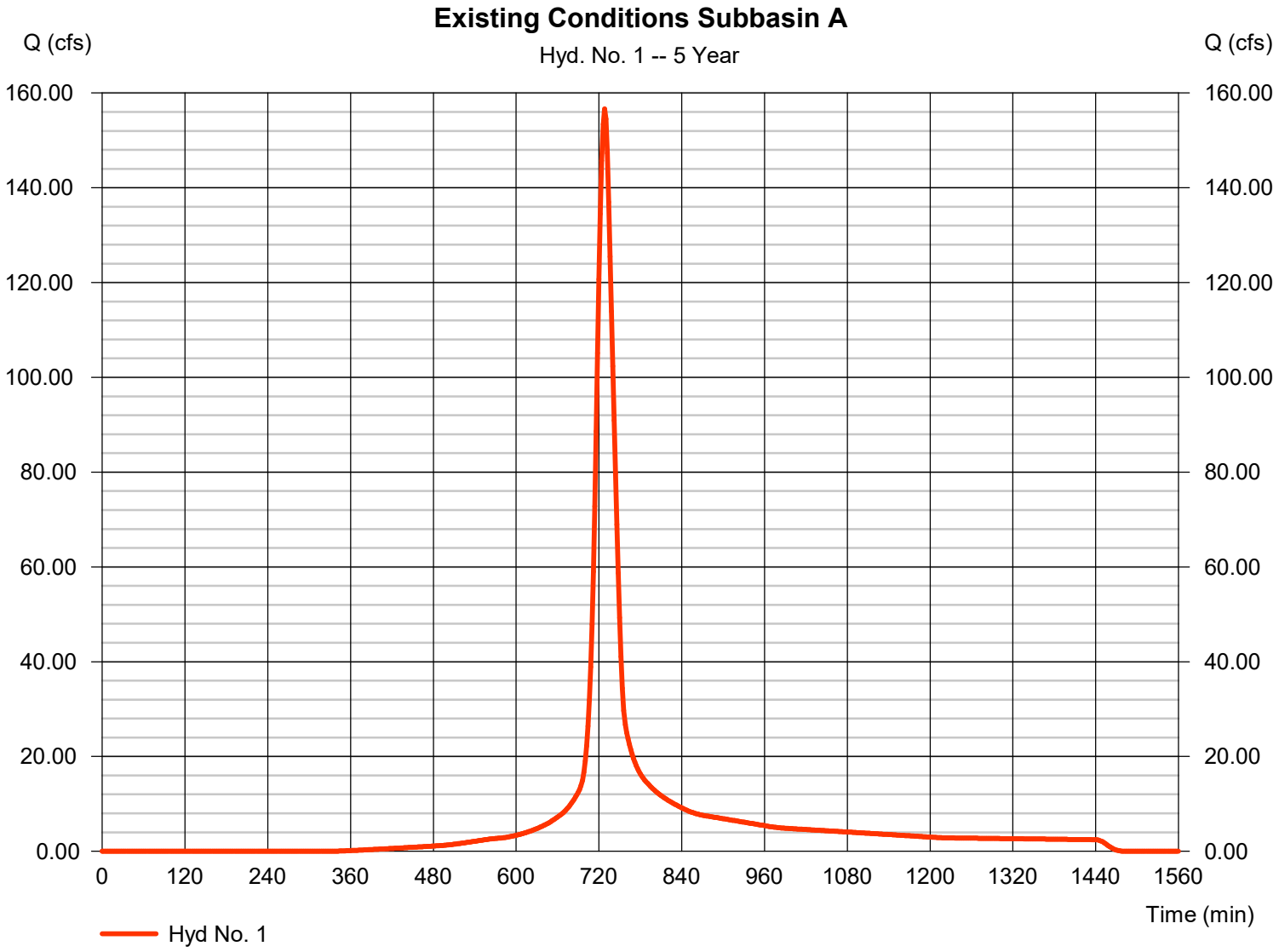
Hydrograph Report

Hyd. No. 1

Existing Conditions Subbasin A

Hydrograph type	= SCS Runoff	Peak discharge	= 156.65 cfs
Storm frequency	= 5 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 578,560 cuft
Drainage area	= 50.060 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 24.76 min
Total precip.	= 4.75 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(44.870 x 88) + (5.190 x 70)] / 50.060



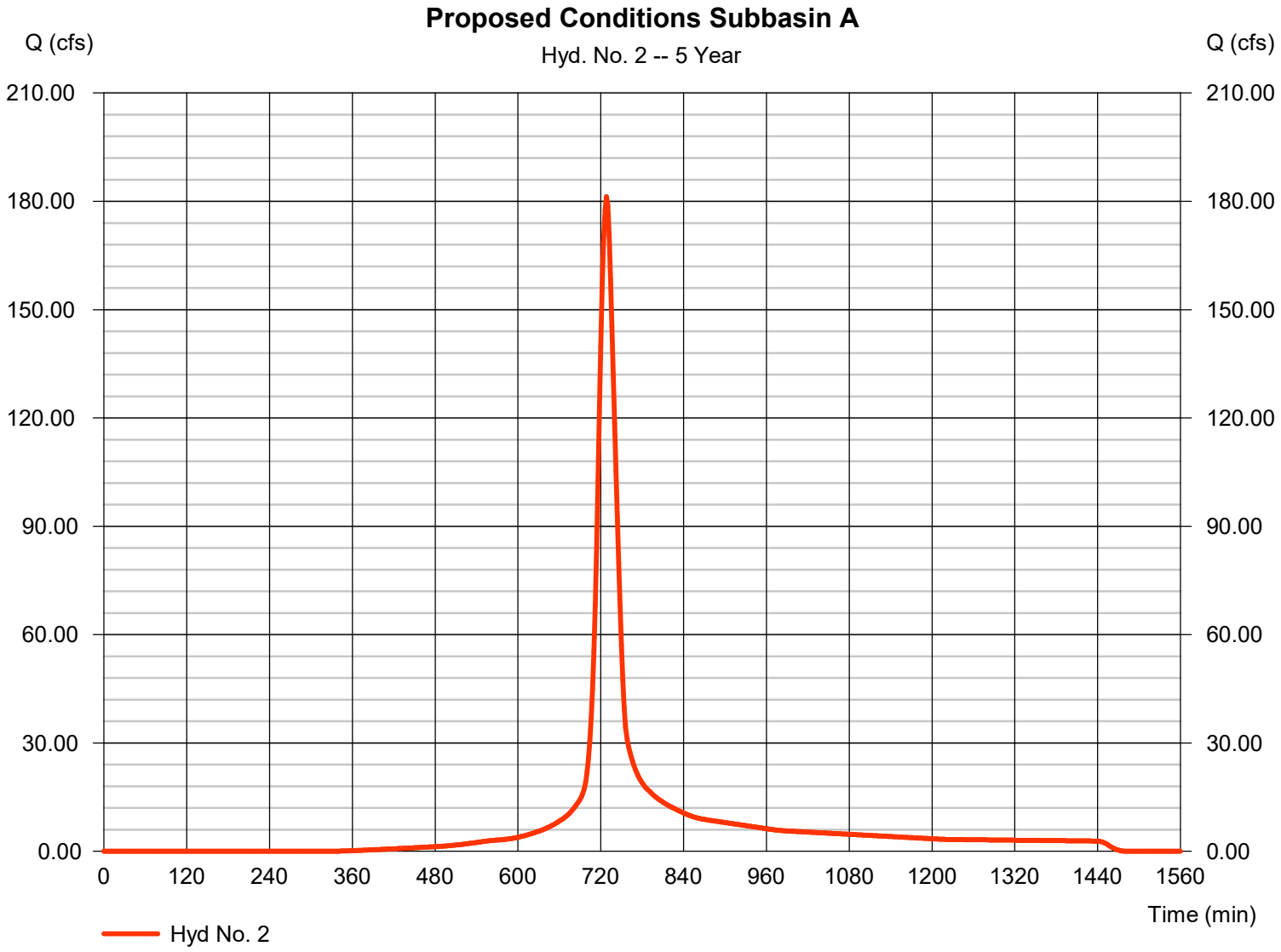
Hydrograph Report

Hyd. No. 2

Proposed Conditions Subbasin A

Hydrograph type	= SCS Runoff	Peak discharge	= 181.28 cfs
Storm frequency	= 5 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 669,516 cuft
Drainage area	= 57.930 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.70 min
Total precip.	= 4.75 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(23.640 x 98) + (34.290 x 78)] / 57.930



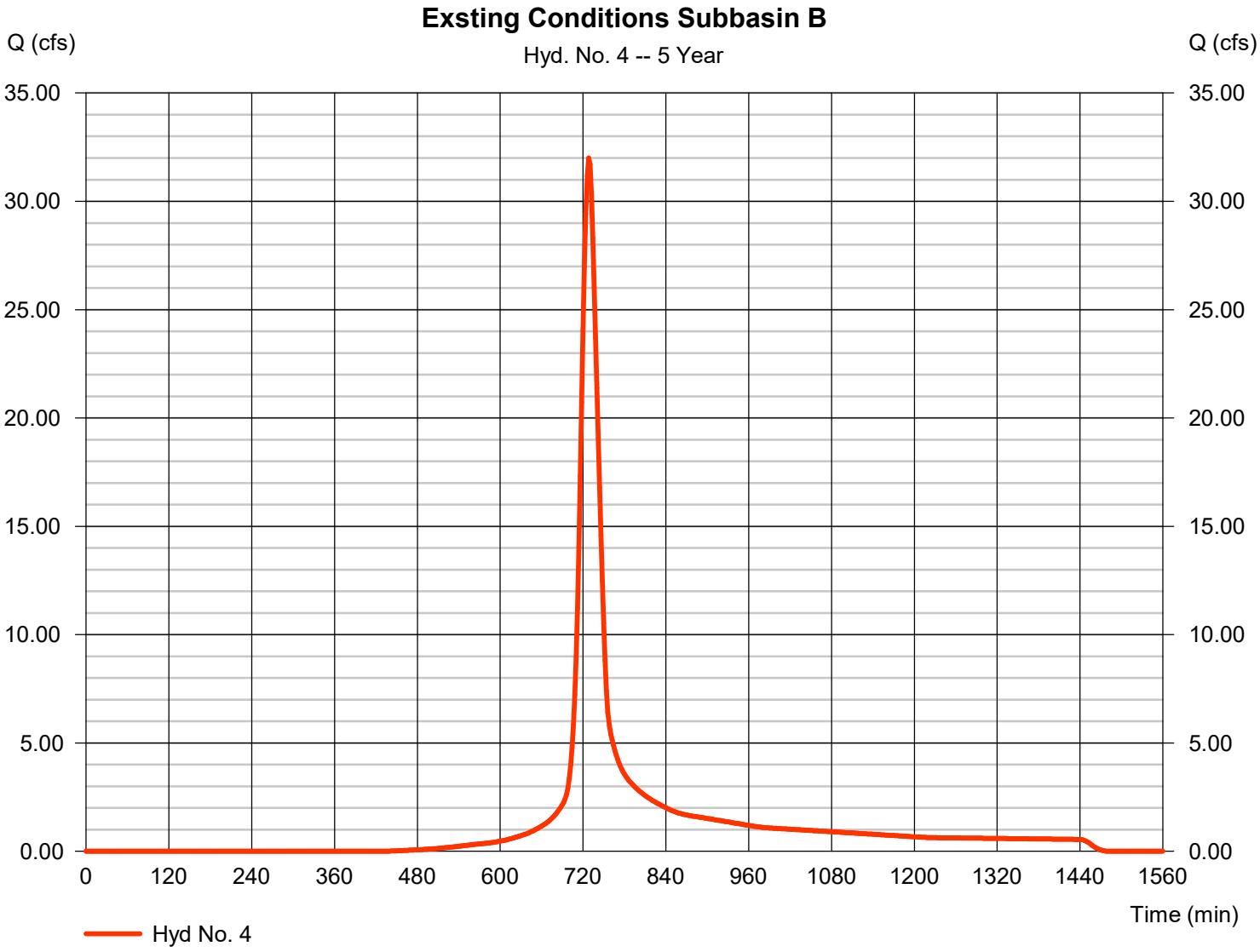
Hydrograph Report

Hyd. No. 4

Exsting Conditions Subbasin B

Hydrograph type	=	SCS Runoff	Peak discharge	=	32.00 cfs
Storm frequency	=	5 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	117,398 cuft
Drainage area	=	11.880 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	23.80 min
Total precip.	=	4.75 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(6.940 x 88) + (4.940 x 70)] / 11.880



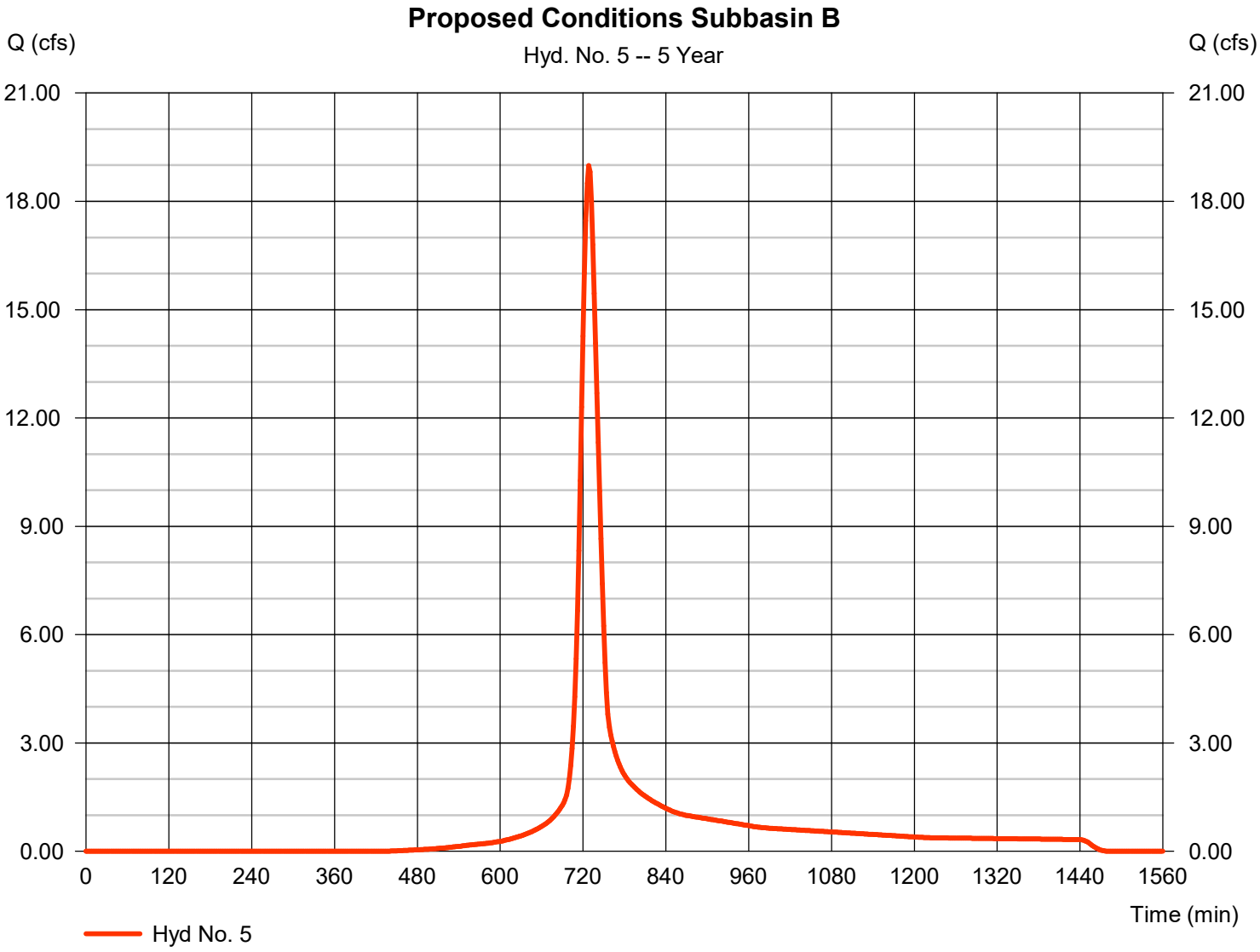
Hydrograph Report

Hyd. No. 5

Proposed Conditions Subbasin B

Hydrograph type	=	SCS Runoff	Peak discharge	=	18.99 cfs
Storm frequency	=	5 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	69,668 cuft
Drainage area	=	7.050 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	25.00 min
Total precip.	=	4.75 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.950 x 98) + (6.100 x 78)] / 7.050



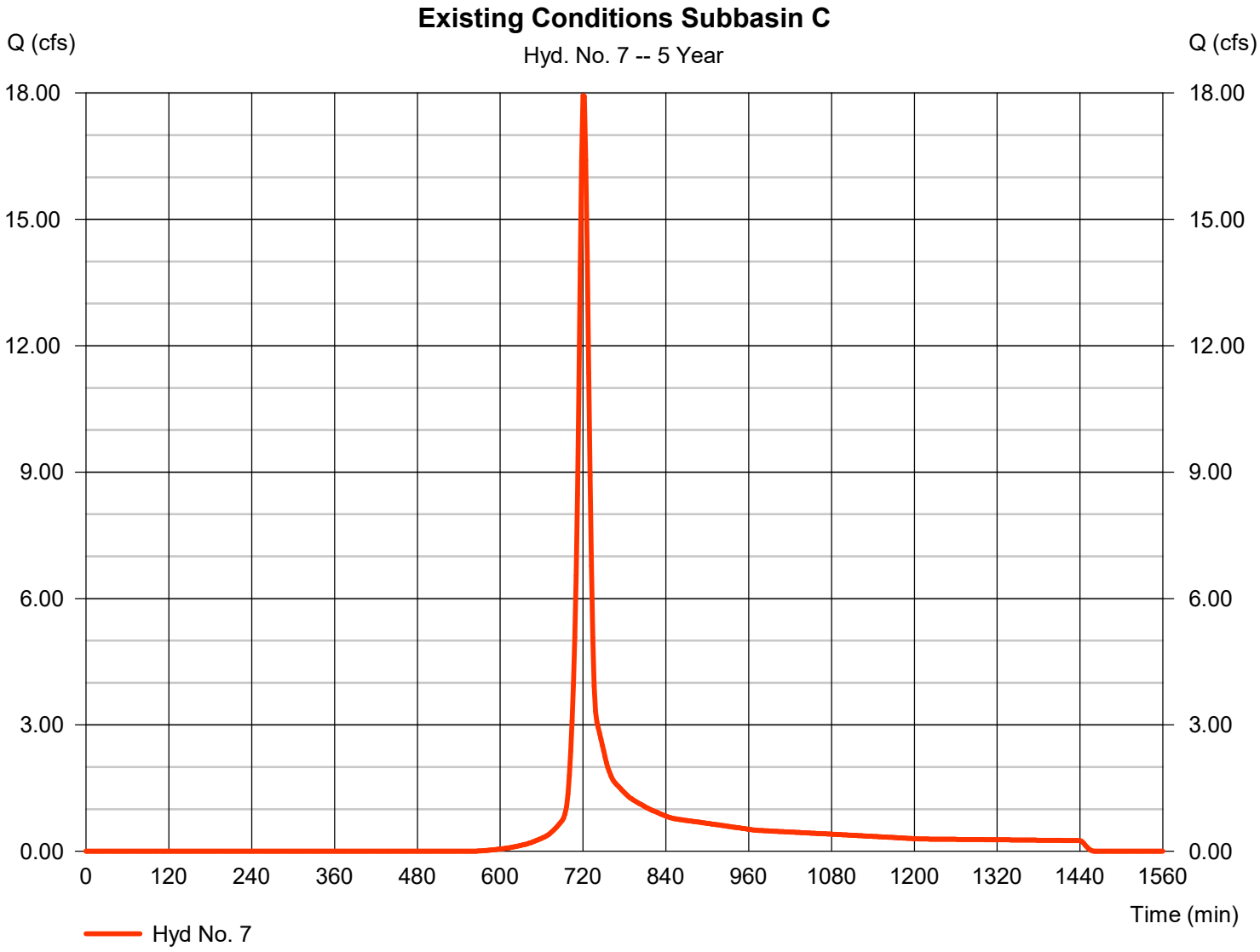
Hydrograph Report

Hyd. No. 7

Existing Conditions Subbasin C

Hydrograph type	=	SCS Runoff	Peak discharge	=	17.94 cfs
Storm frequency	=	5 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	46,857 cuft
Drainage area	=	6.000 ac	Curve number	=	73*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.90 min
Total precip.	=	4.75 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.990 x 79) + (4.010 x 70)] / 6.000



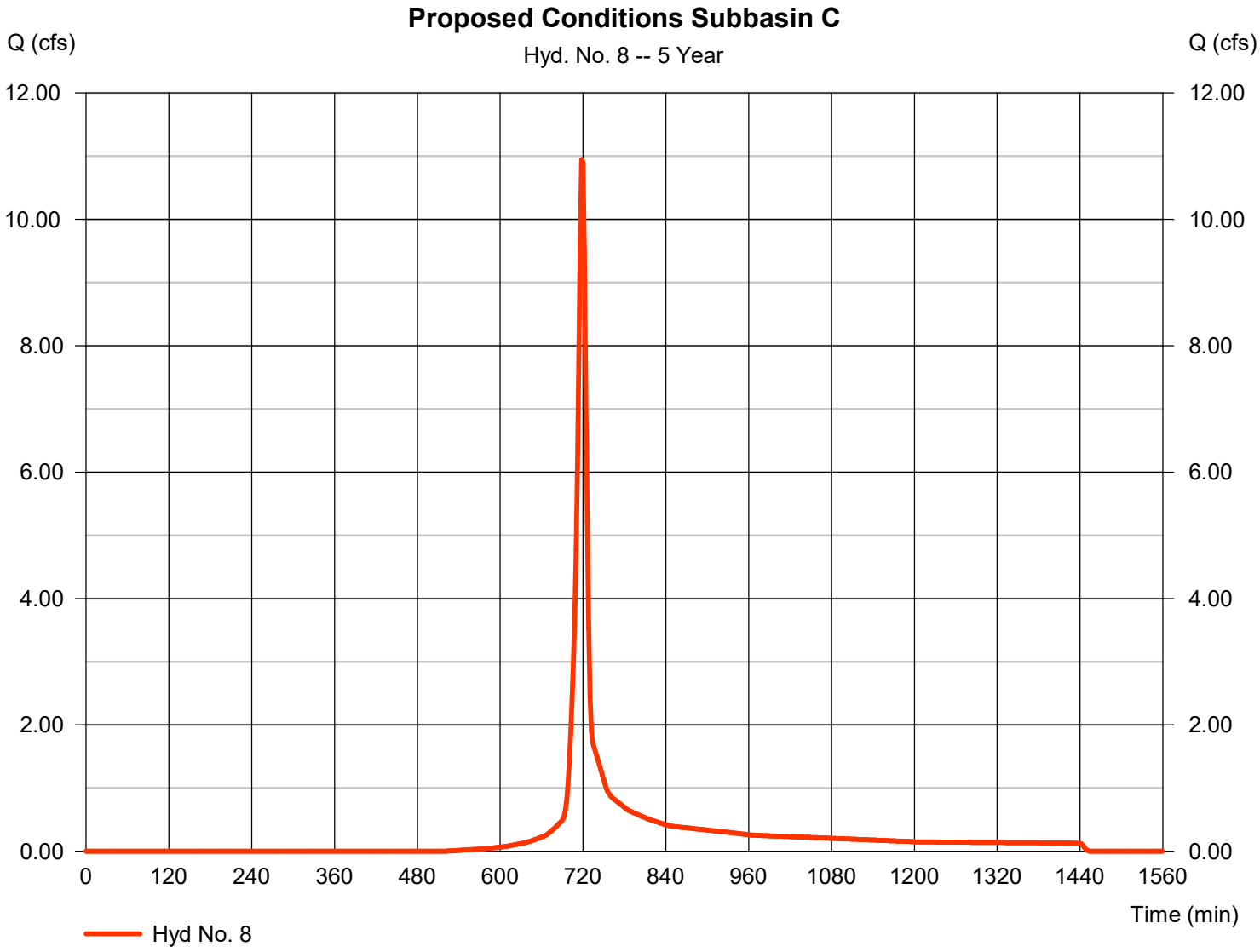
Hydrograph Report

Hyd. No. 8

Proposed Conditions Subbasin C

Hydrograph type	=	SCS Runoff	Peak discharge	=	10.95 cfs
Storm frequency	=	5 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	25,047 cuft
Drainage area	=	2.960 ac	Curve number	=	76*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	8.08 min
Total precip.	=	4.75 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.820 x 79) + (1.140 x 70)] / 2.960



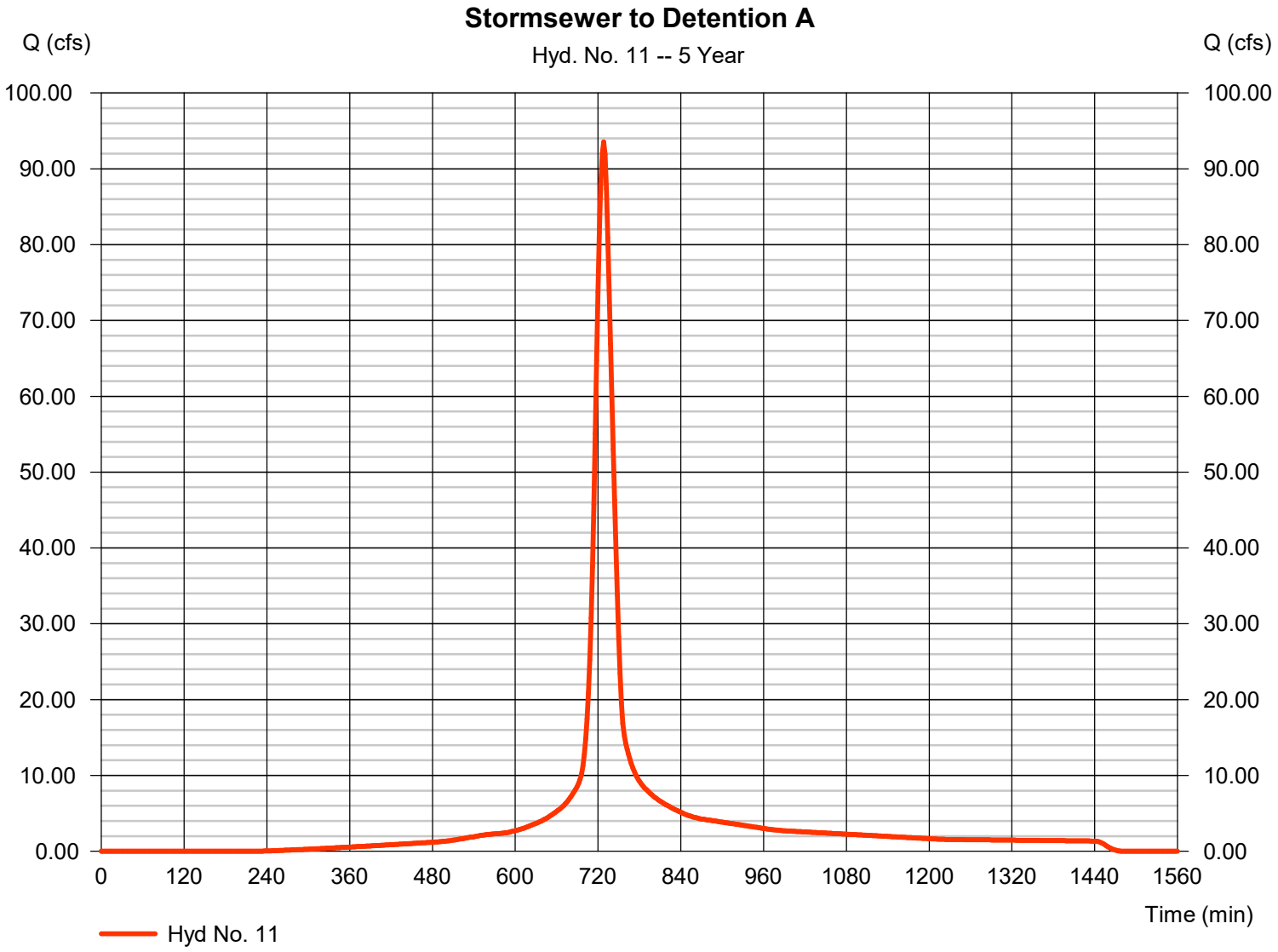
Hydrograph Report

Hyd. No. 11

Stormsewer to Detention A

Hydrograph type	=	SCS Runoff	Peak discharge	=	93.56 cfs
Storm frequency	=	5 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	353,853 cuft
Drainage area	=	26.480 ac	Curve number	=	91*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	23.70 min
Total precip.	=	4.75 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(17.100 x 98) + (9.380 x 78)] / 26.480



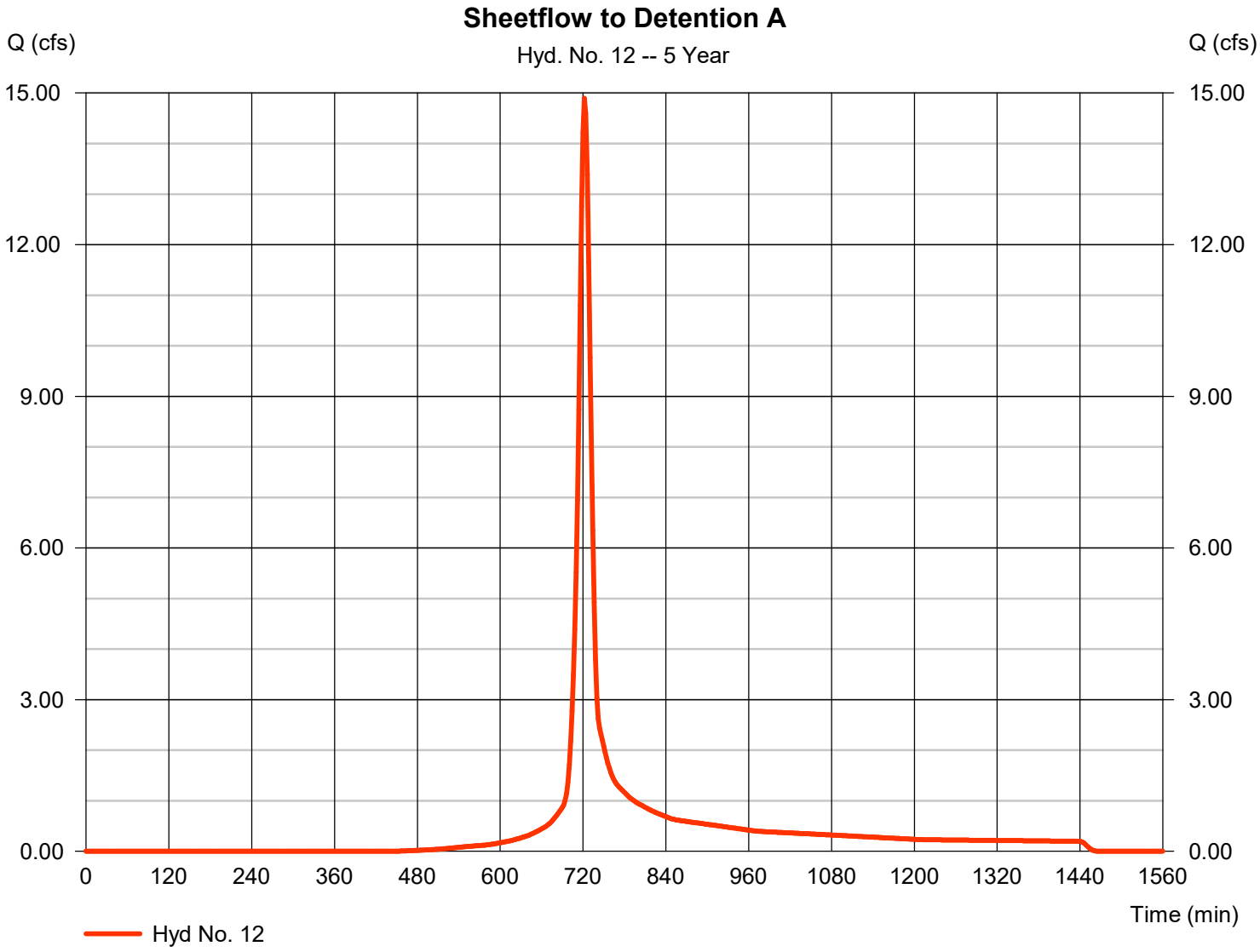
Hydrograph Report

Hyd. No. 12

Sheetflow to Detention A

Hydrograph type	=	SCS Runoff	Peak discharge	=	14.90 cfs
Storm frequency	=	5 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	41,766 cuft
Drainage area	=	4.410 ac	Curve number	=	80*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	14.90 min
Total precip.	=	4.75 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.380 x 98) + (4.030 x 78)] / 4.410

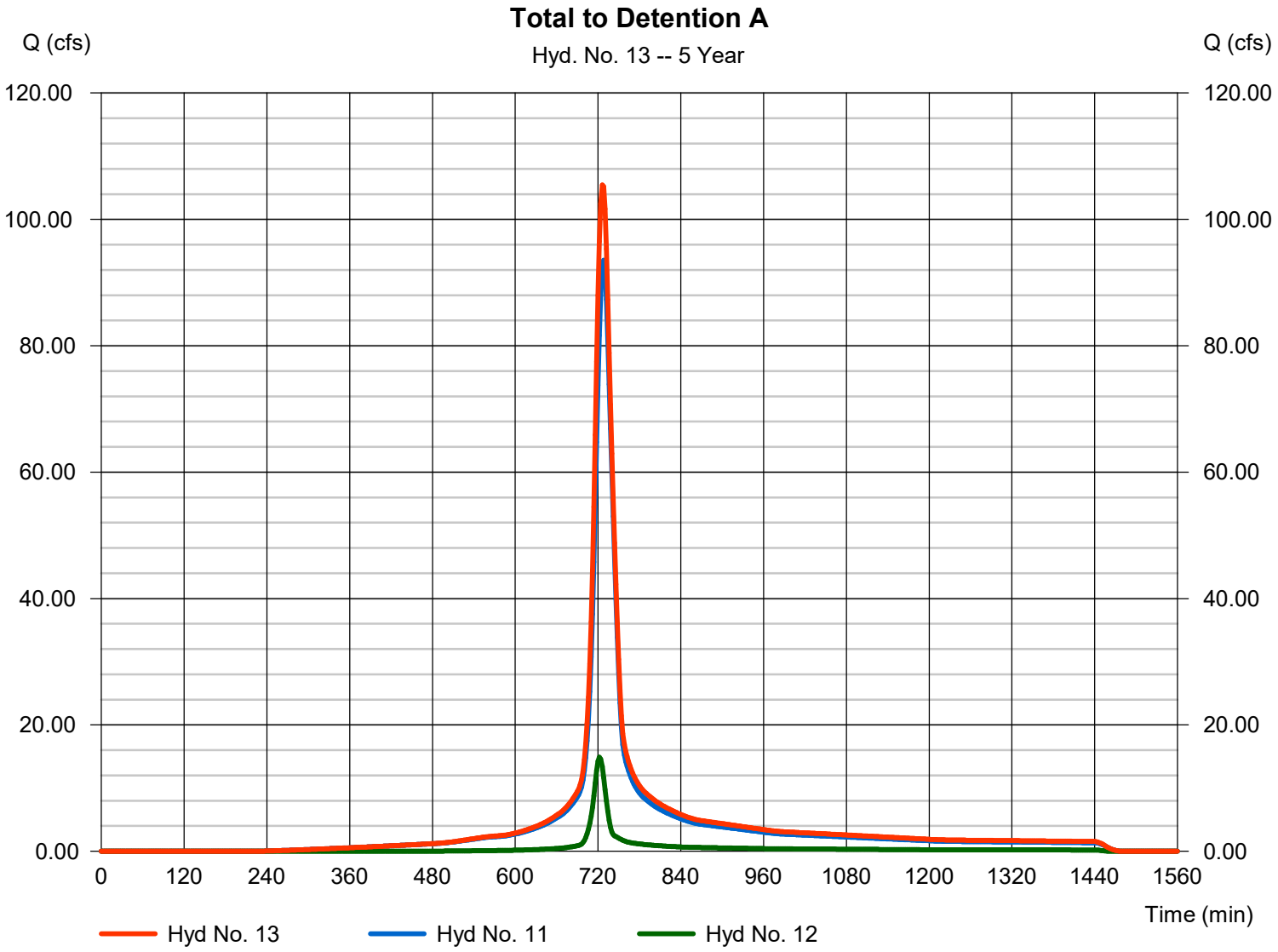


Hydrograph Report

Hyd. No. 13

Total to Detention A

Hydrograph type	= Combine	Peak discharge	= 105.43 cfs
Storm frequency	= 5 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 395,619 cuft
Inflow hyds.	= 11, 12	Contrib. drain. area	= 30.890 ac



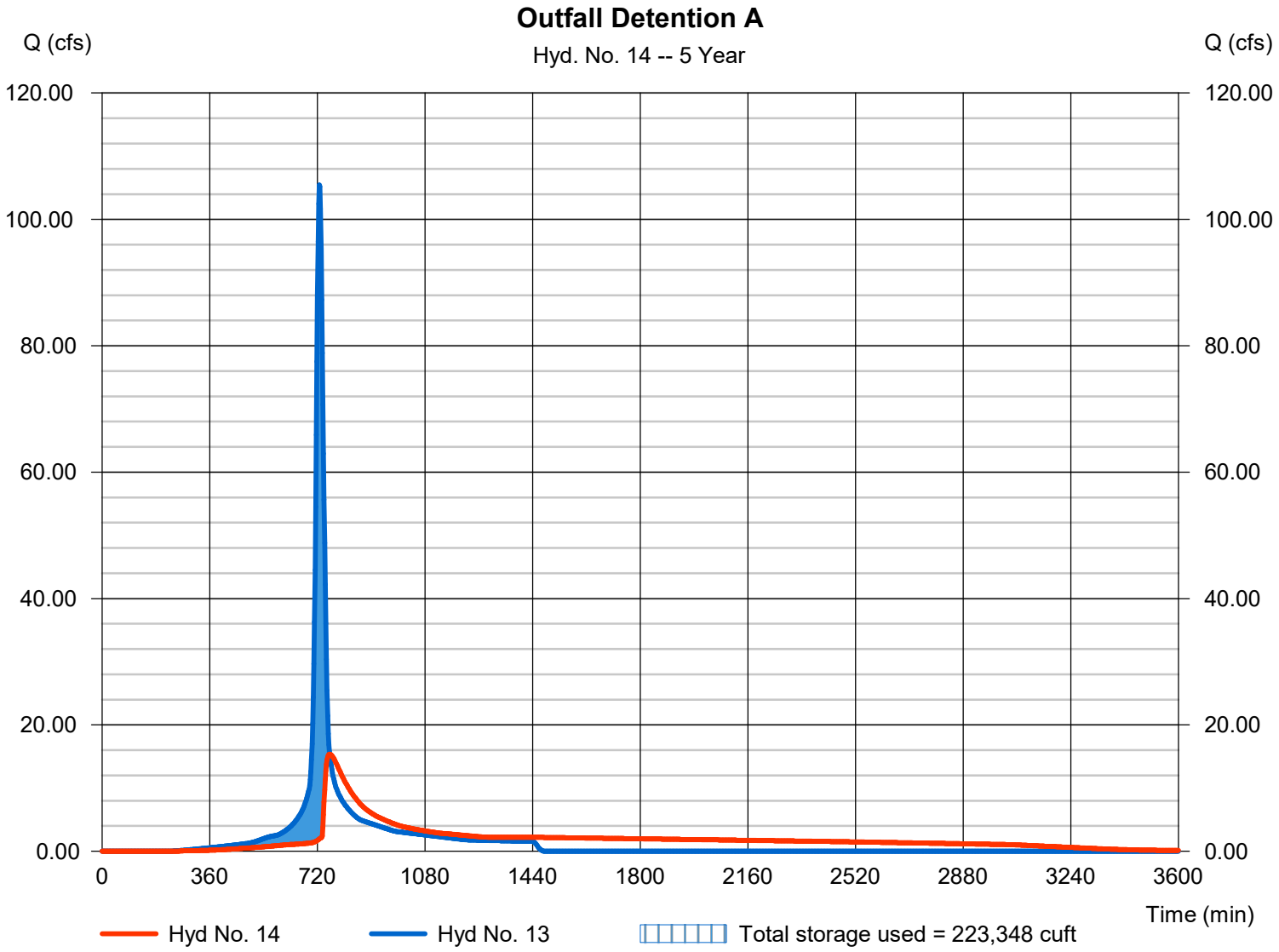
Hydrograph Report

Hyd. No. 14

Outfall Detention A

Hydrograph type	=	Reservoir	Peak discharge	=	15.36 cfs
Storm frequency	=	5 yrs	Time to peak	=	762 min
Time interval	=	2 min	Hyd. volume	=	395,603 cuft
Inflow hyd. No.	=	13 - Total to Detention A	Max. Elevation	=	652.06 ft
Reservoir name	=	Detention Pond A	Max. Storage	=	223,348 cuft

Storage Indication method used.



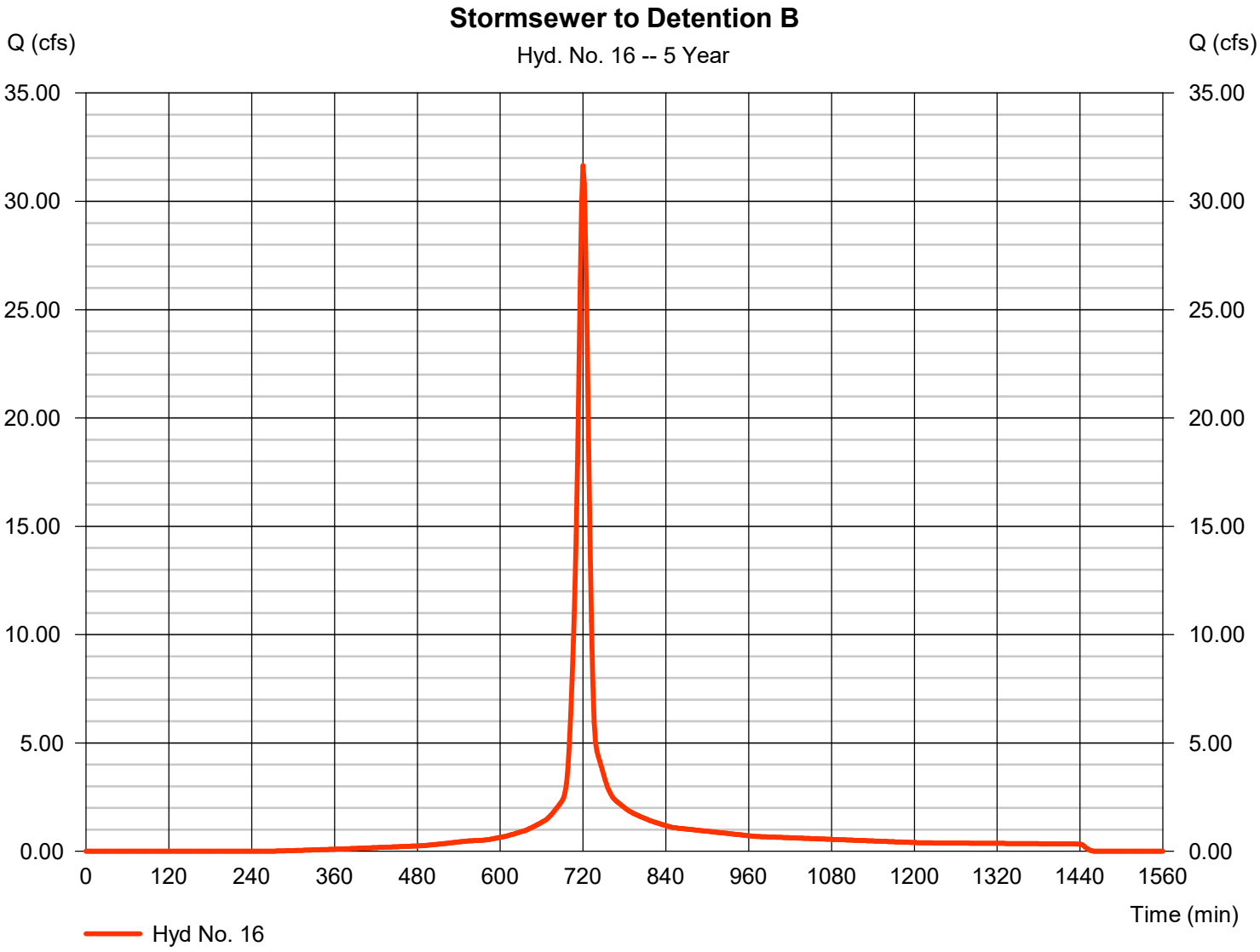
Hydrograph Report

Hyd. No. 16

Stormsewer to Detention B

Hydrograph type	=	SCS Runoff	Peak discharge	=	31.65 cfs
Storm frequency	=	5 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	84,645 cuft
Drainage area	=	6.400 ac	Curve number	=	89*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	11.20 min
Total precip.	=	4.75 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(3.630 x 98) + (2.770 x 78)] / 6.400



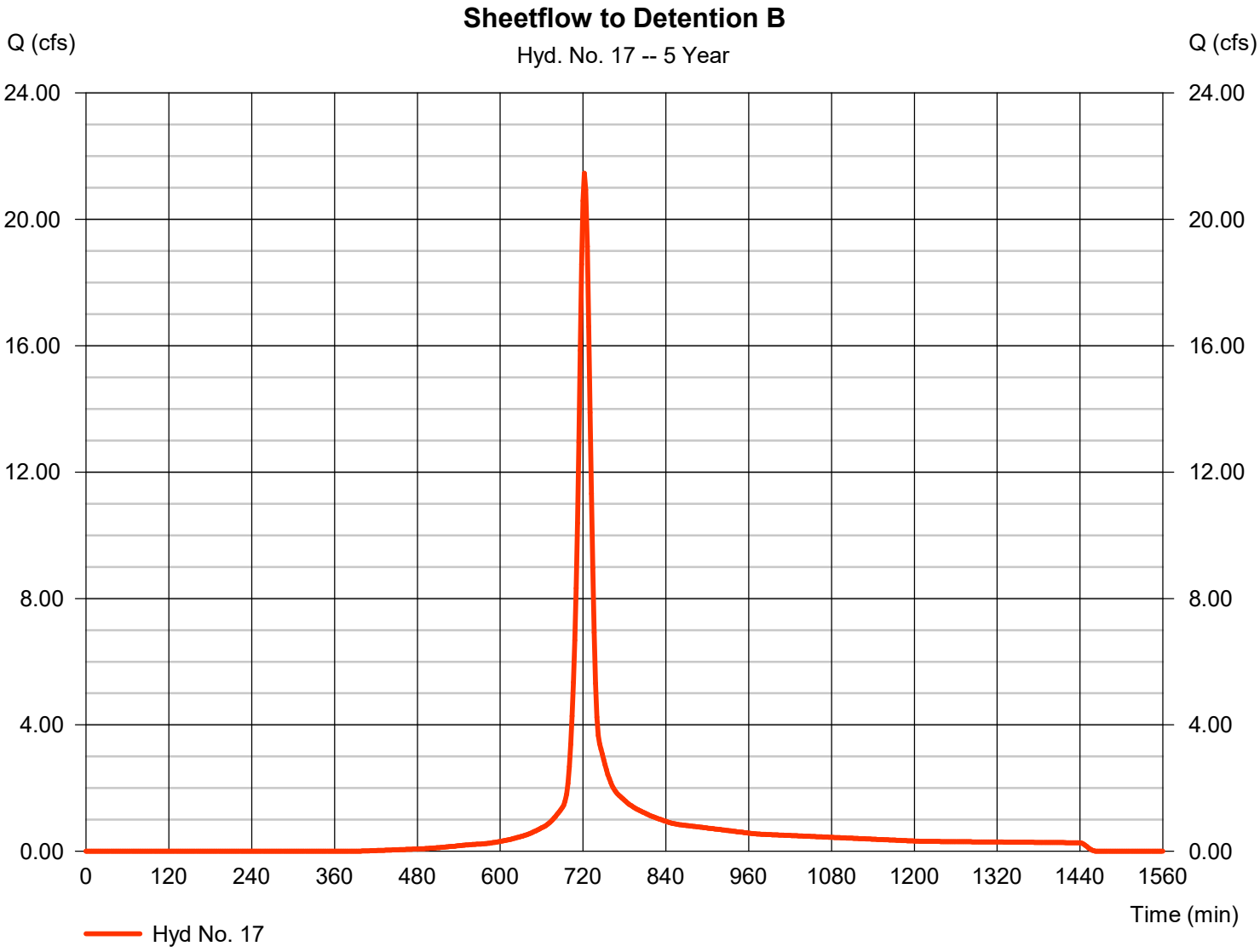
Hydrograph Report

Hyd. No. 17

Sheetflow to Detention B

Hydrograph type	=	SCS Runoff	Peak discharge	=	21.46 cfs
Storm frequency	=	5 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	60,428 cuft
Drainage area	=	5.790 ac	Curve number	=	83*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	13.80 min
Total precip.	=	4.75 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.390 x 98) + (4.400 x 78)] / 5.790

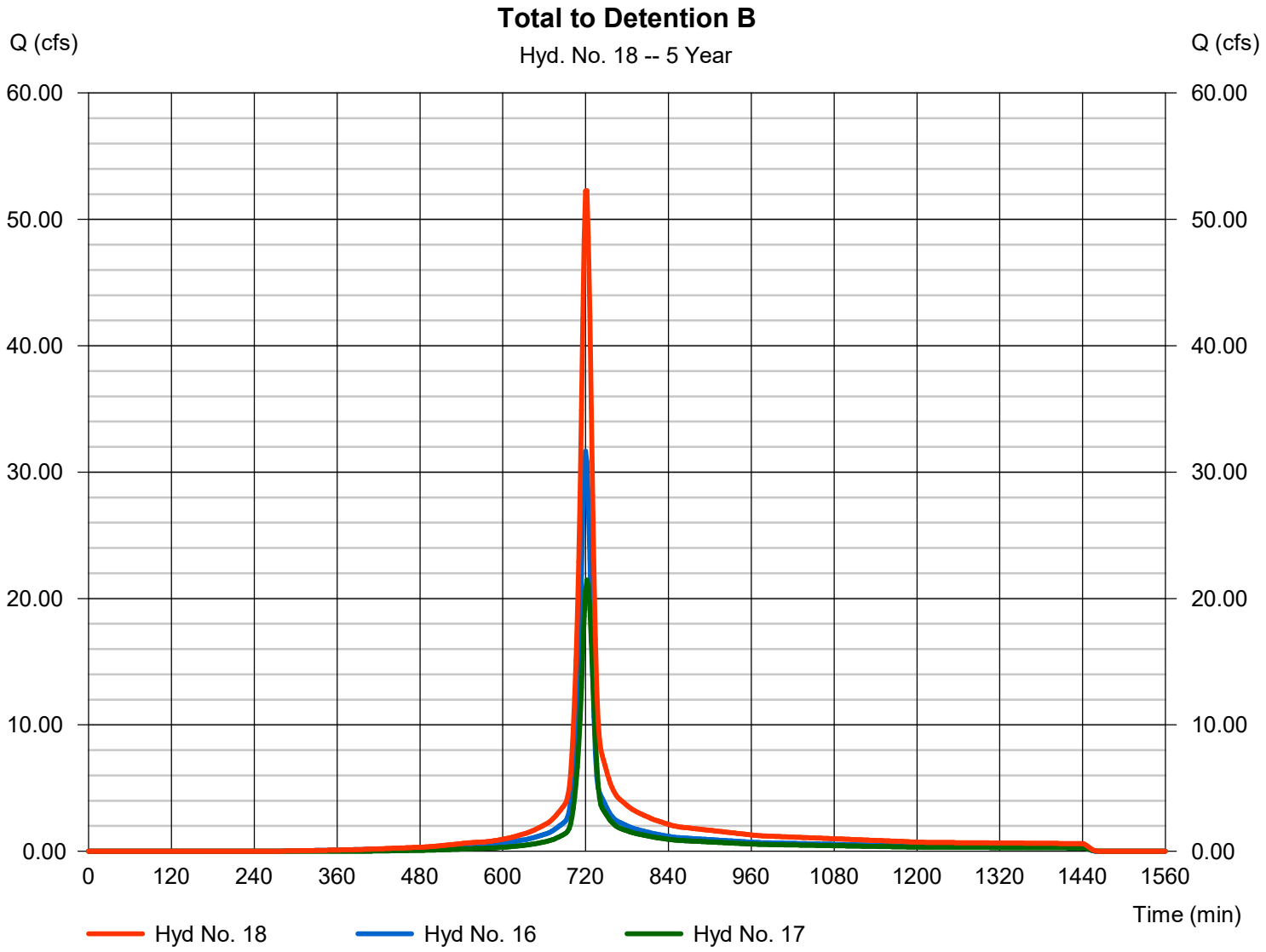


Hydrograph Report

Hyd. No. 18

Total to Detention B

Hydrograph type	=	Combine	Peak discharge	=	52.27 cfs
Storm frequency	=	5 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	145,073 cuft
Inflow hyds.	=	16, 17	Contrib. drain. area	=	12.190 ac



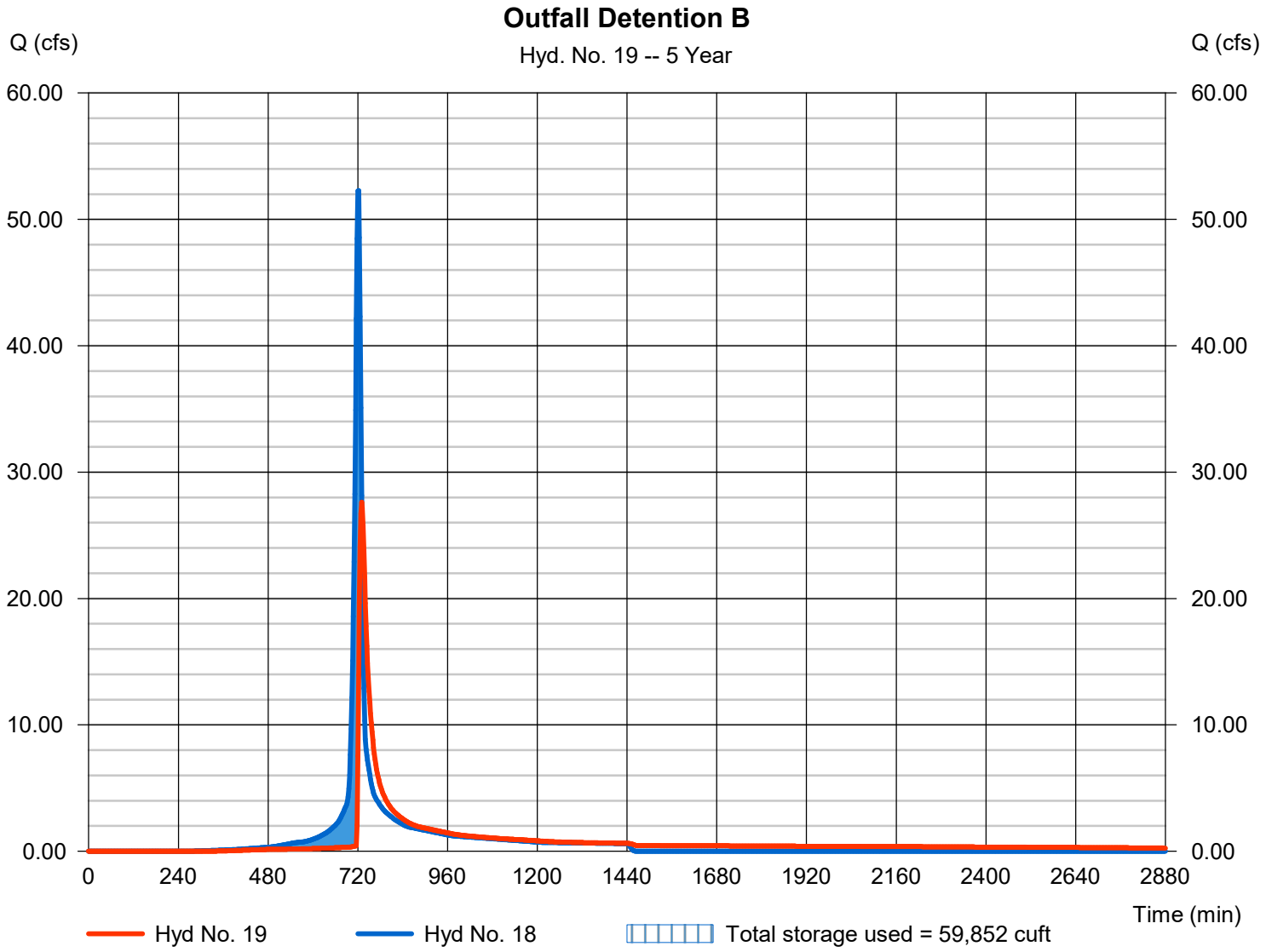
Hydrograph Report

Hyd. No. 19

Outfall Detention B

Hydrograph type	=	Reservoir	Peak discharge	=	27.62 cfs
Storm frequency	=	5 yrs	Time to peak	=	730 min
Time interval	=	2 min	Hyd. volume	=	145,056 cuft
Inflow hyd. No.	=	18 - Total to Detention B	Max. Elevation	=	660.69 ft
Reservoir name	=	Detention Pond B	Max. Storage	=	59,852 cuft

Storage Indication method used.



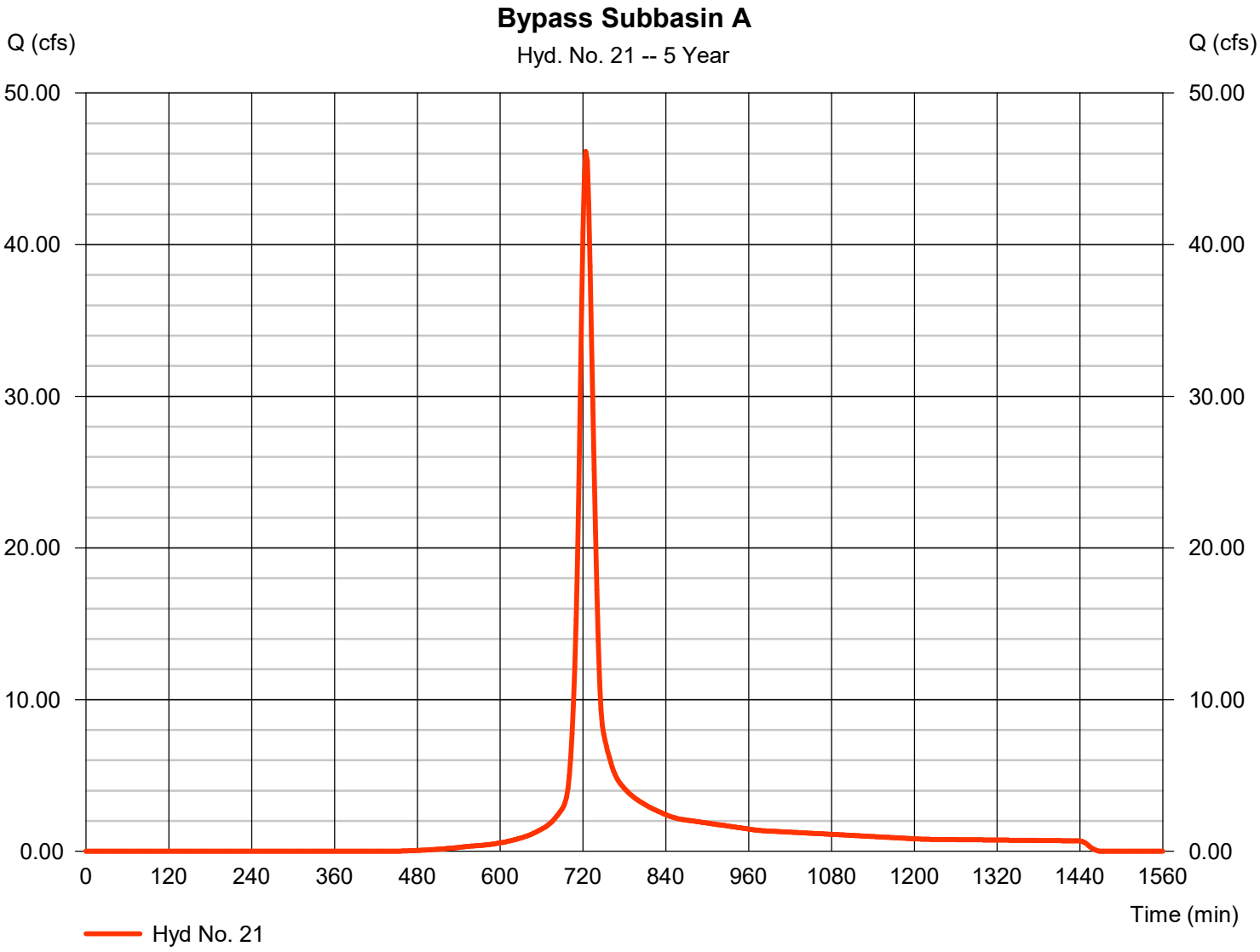
Hydrograph Report

Hyd. No. 21

Bypass Subbasin A

Hydrograph type	=	SCS Runoff	Peak discharge	=	46.14 cfs
Storm frequency	=	5 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	144,247 cuft
Drainage area	=	14.850 ac	Curve number	=	80*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	18.30 min
Total precip.	=	4.75 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.140 x 98) + (13.710 x 78)] / 14.850

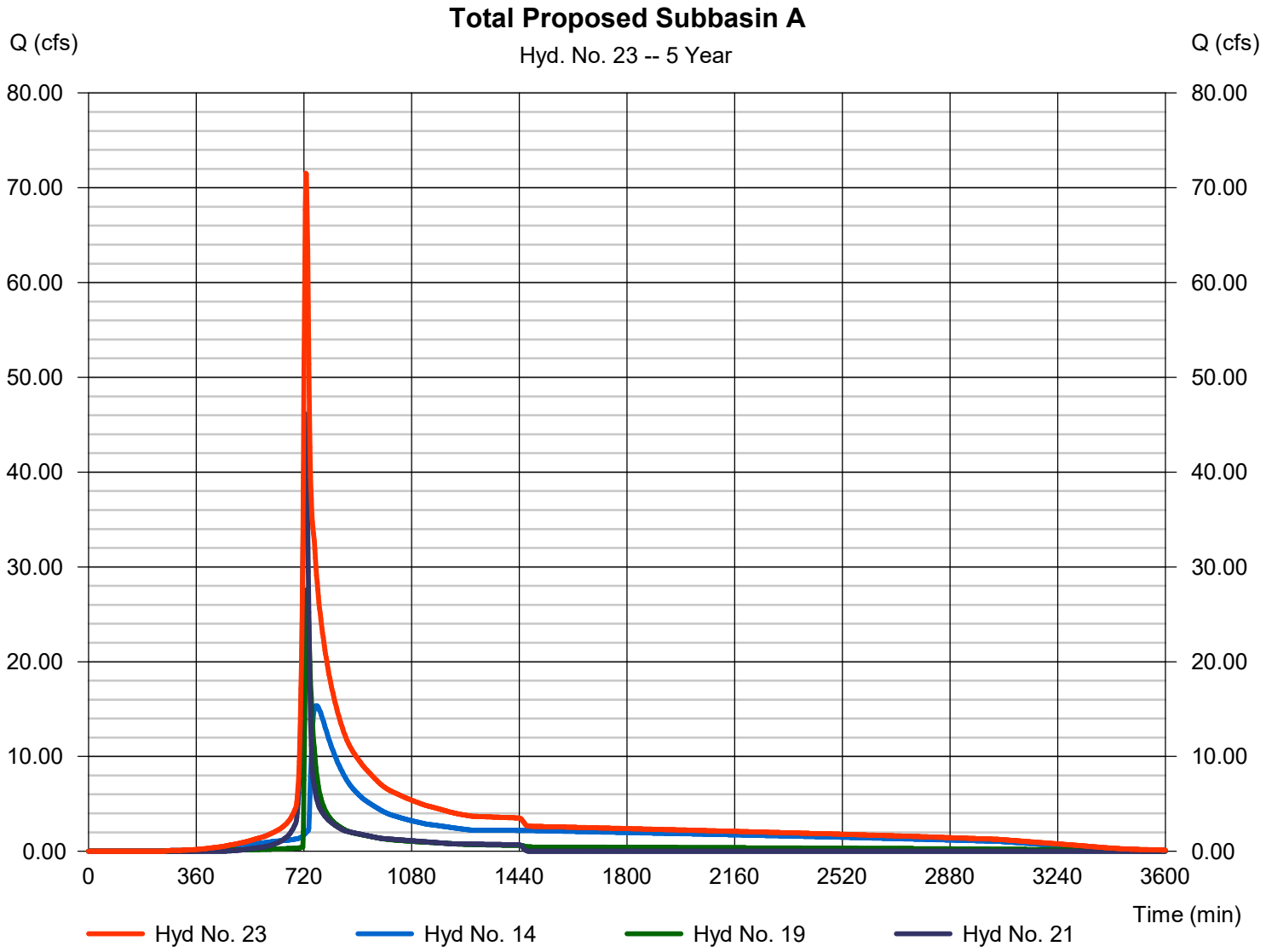


Hydrograph Report

Hyd. No. 23

Total Proposed Subbasin A

Hydrograph type	= Combine	Peak discharge	= 71.54 cfs
Storm frequency	= 5 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 684,905 cuft
Inflow hyds.	= 14, 19, 21	Contrib. drain. area	= 14.850 ac

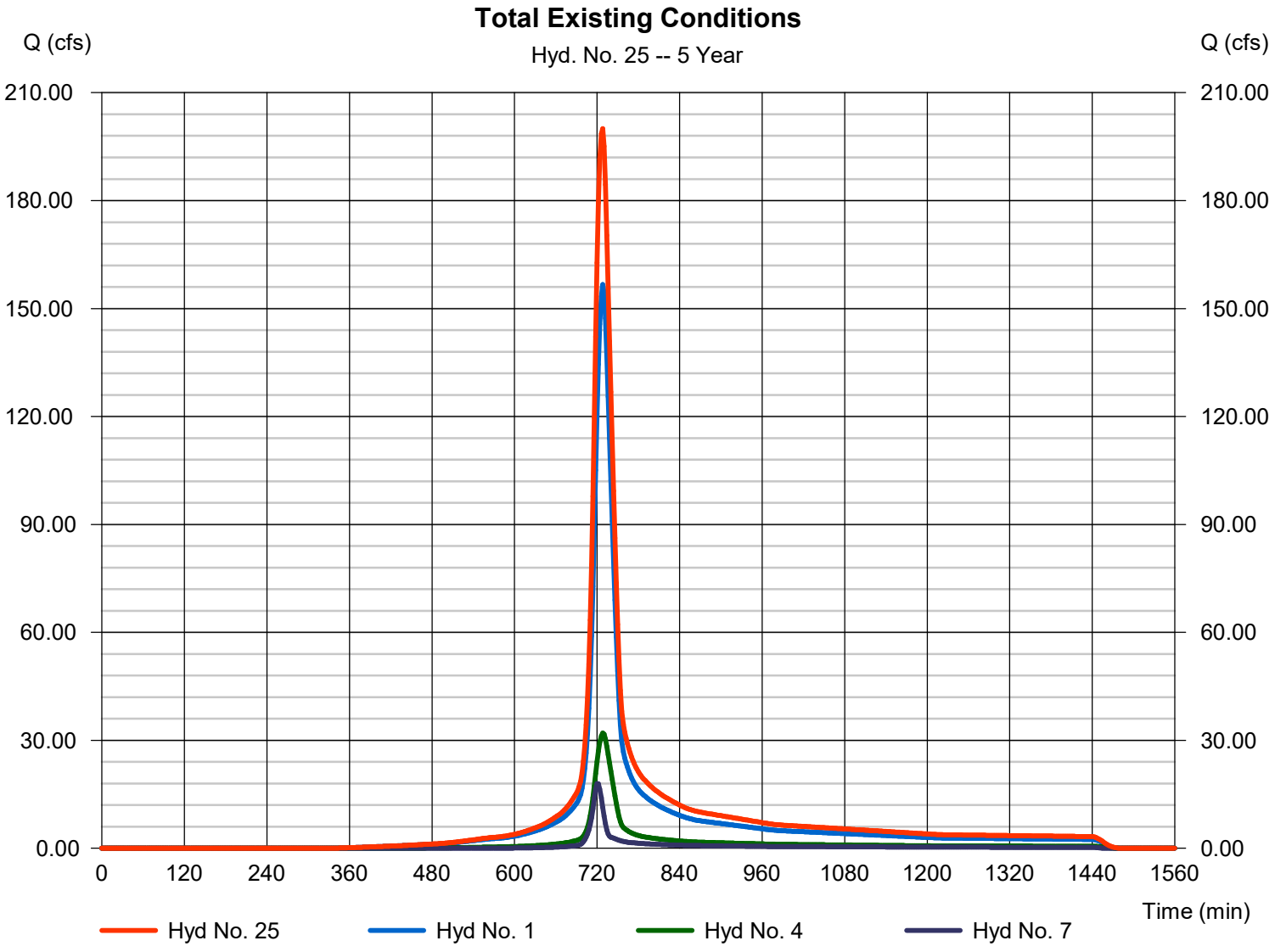


Hydrograph Report

Hyd. No. 25

Total Existing Conditions

Hydrograph type	= Combine	Peak discharge	= 200.01 cfs
Storm frequency	= 5 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 742,815 cuft
Inflow hyds.	= 1, 4, 7	Contrib. drain. area	= 67.940 ac

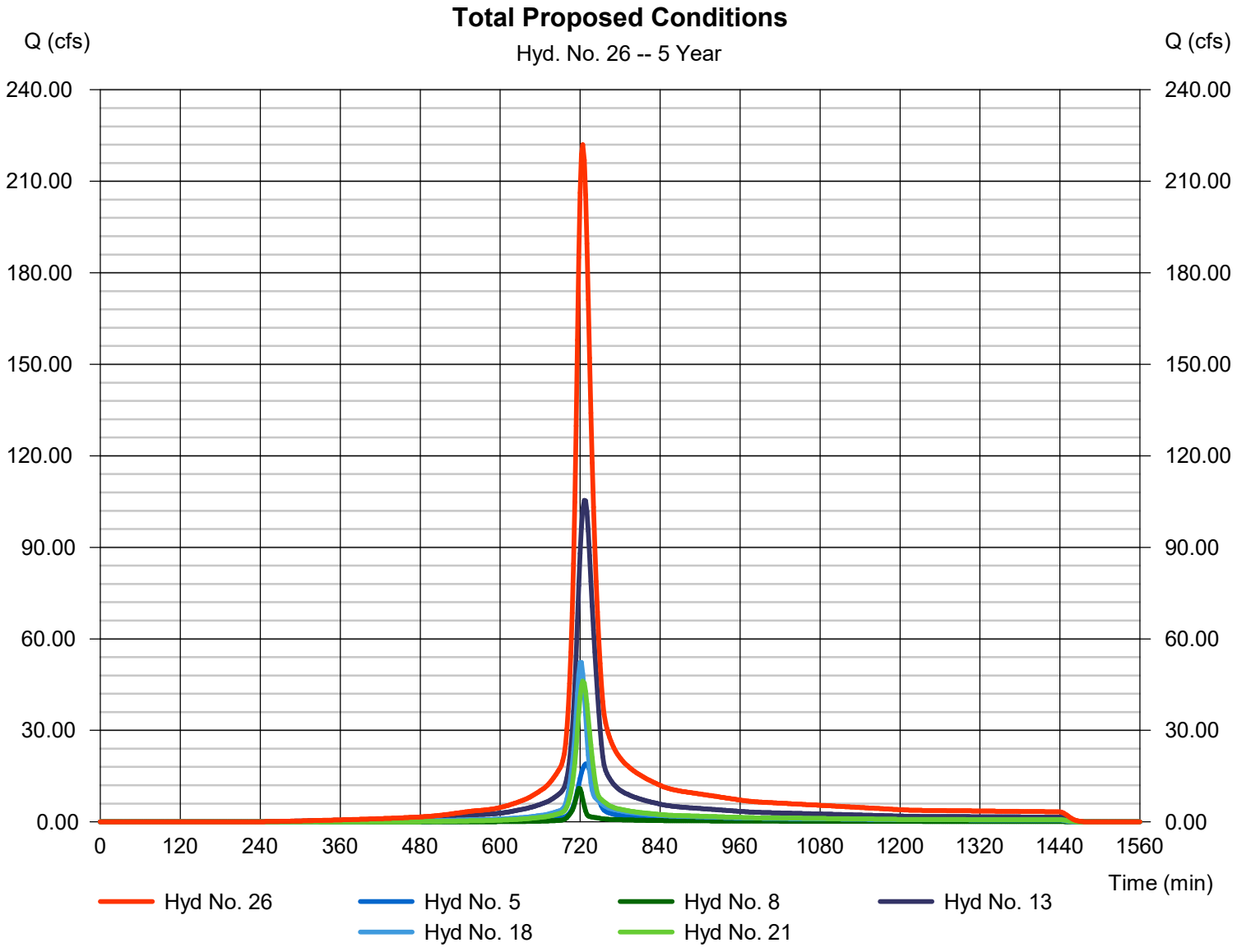


Hydrograph Report

Hyd. No. 26

Total Proposed Conditions

Hydrograph type	= Combine	Peak discharge	= 222.01 cfs
Storm frequency	= 5 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 779,654 cuft
Inflow hyds.	= 5, 8, 13, 18, 21	Contrib. drain. area	= 24.860 ac

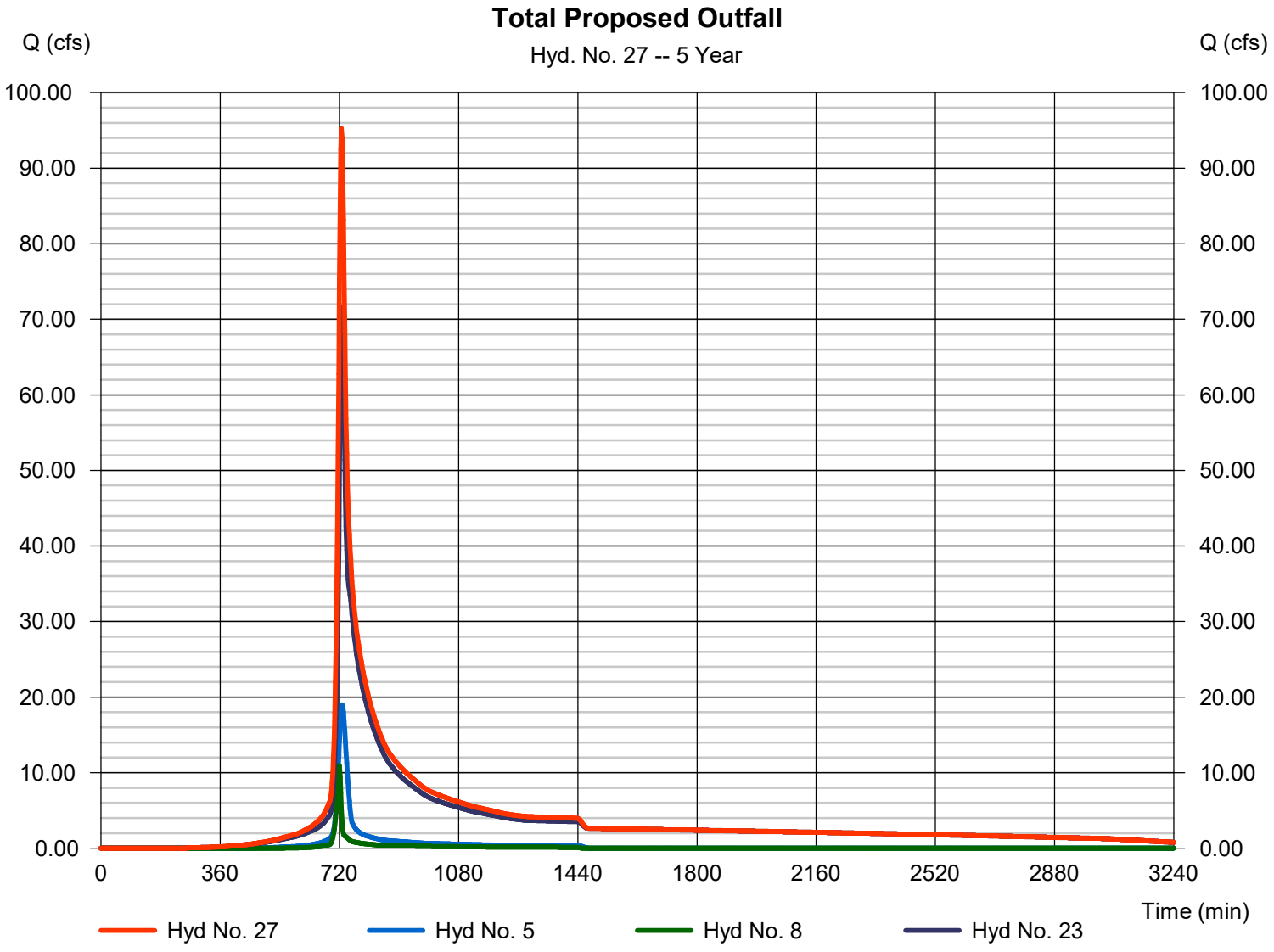


Hydrograph Report

Hyd. No. 27

Total Proposed Outfall

Hydrograph type	= Combine	Peak discharge	= 95.26 cfs
Storm frequency	= 5 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 779,620 cuft
Inflow hyds.	= 5, 8, 23	Contrib. drain. area	= 10.010 ac



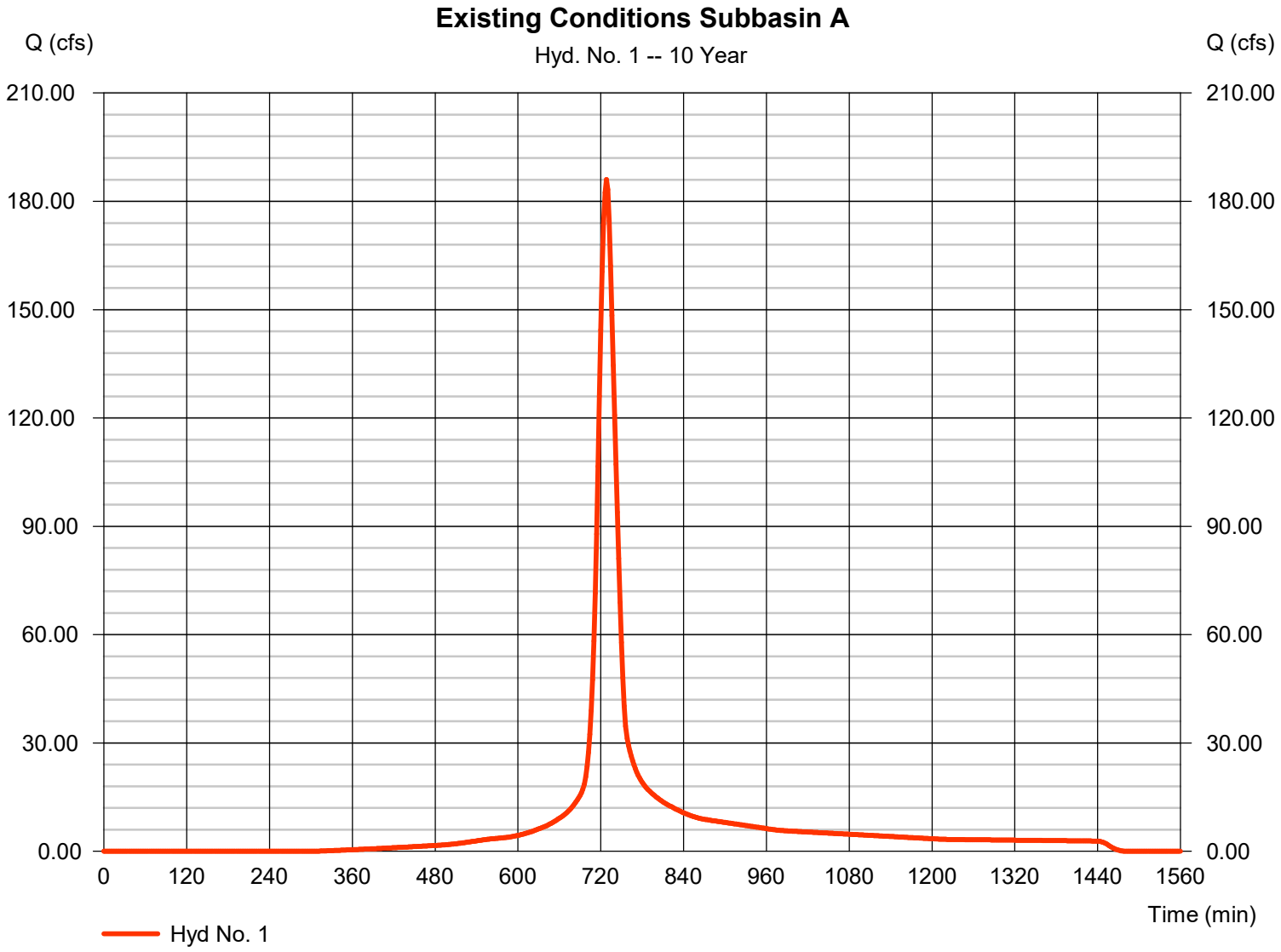
Hydrograph Report

Hyd. No. 1

Existing Conditions Subbasin A

Hydrograph type	= SCS Runoff	Peak discharge	= 186.04 cfs
Storm frequency	= 10 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 690,602 cuft
Drainage area	= 50.060 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 24.76 min
Total precip.	= 5.42 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(44.870 x 88) + (5.190 x 70)] / 50.060



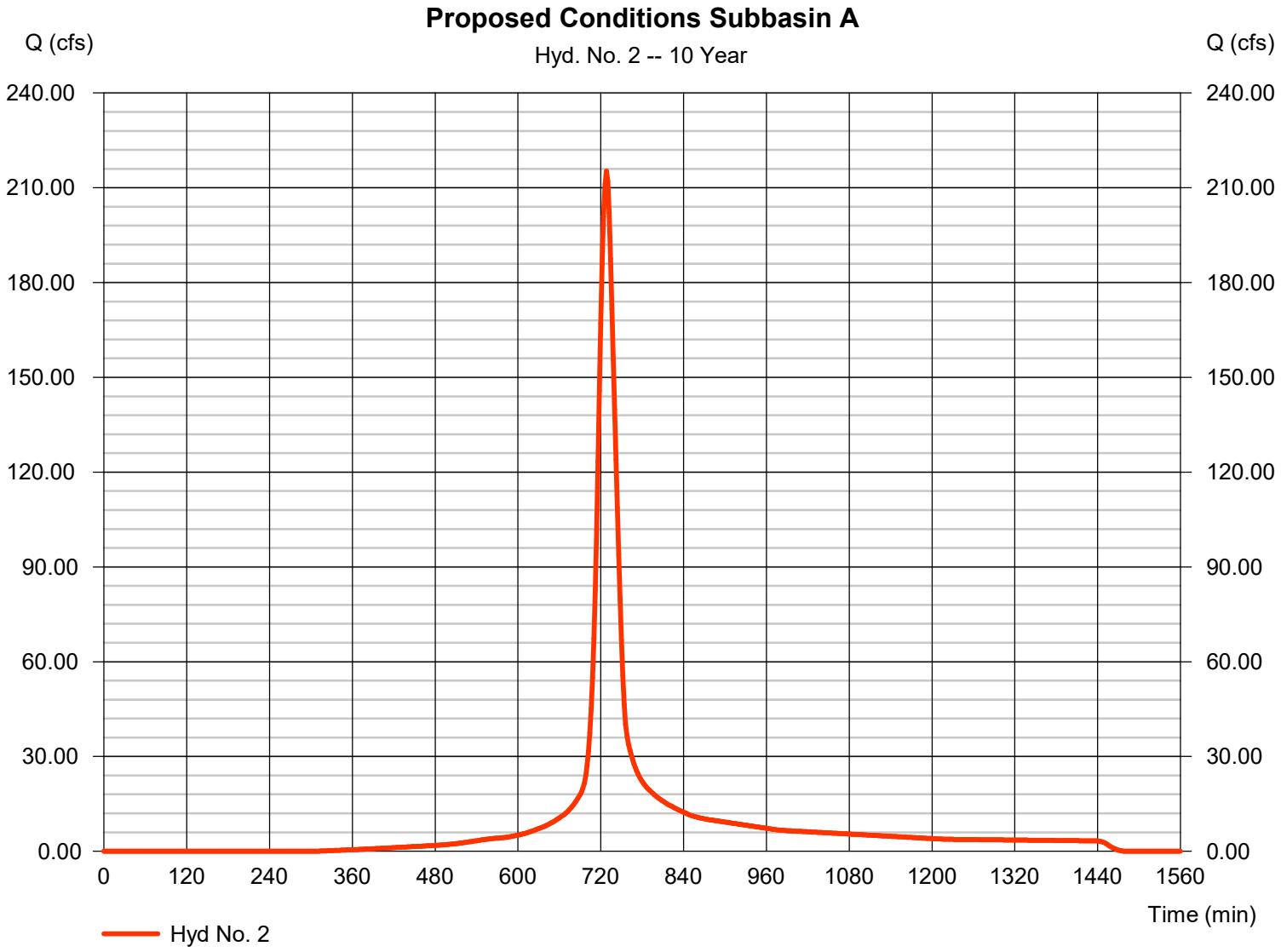
Hydrograph Report

Hyd. No. 2

Proposed Conditions Subbasin A

Hydrograph type	=	SCS Runoff	Peak discharge	=	215.28 cfs
Storm frequency	=	10 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	799,173 cuft
Drainage area	=	57.930 ac	Curve number	=	86*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	23.70 min
Total precip.	=	5.42 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(23.640 x 98) + (34.290 x 78)] / 57.930



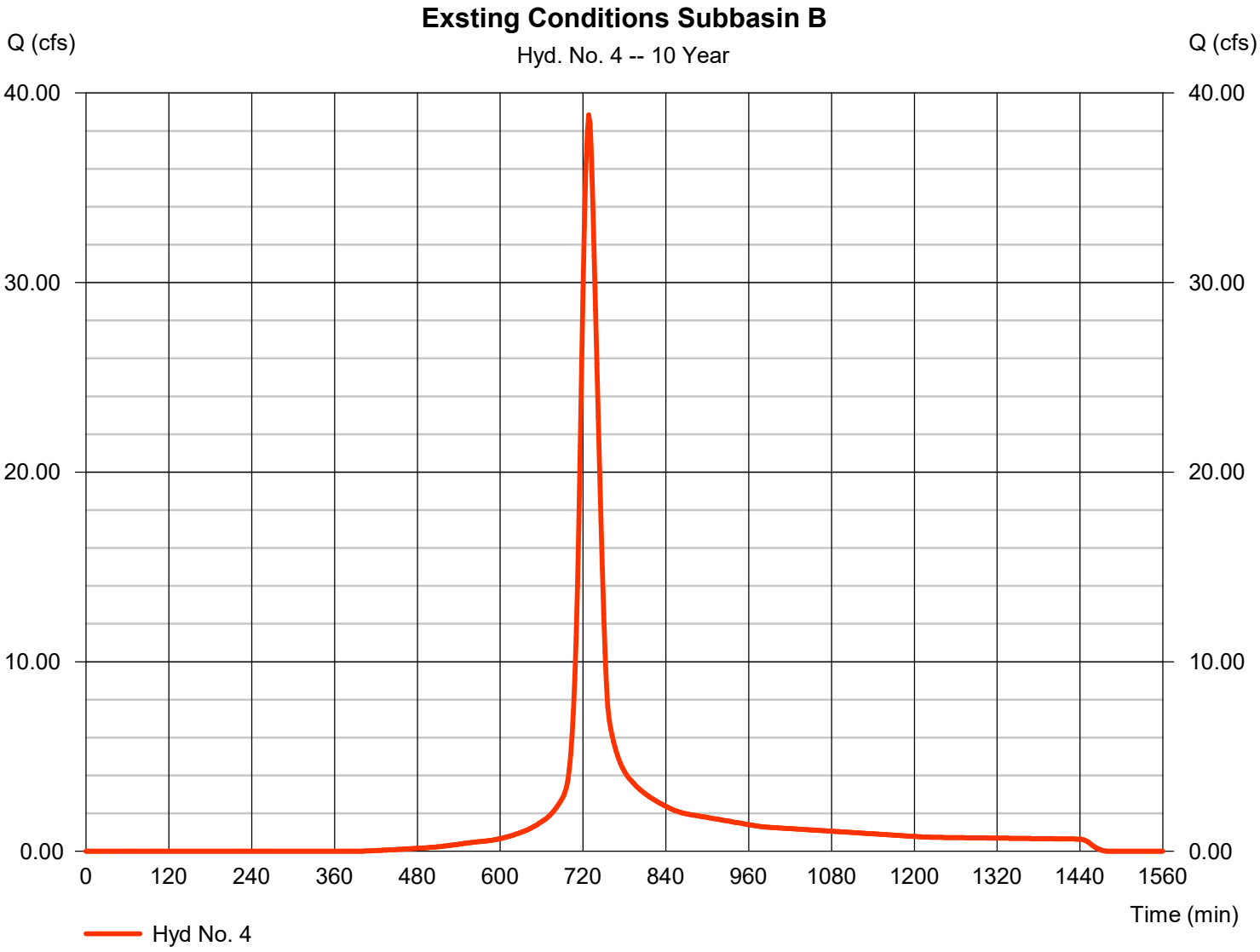
Hydrograph Report

Hyd. No. 4

Exsting Conditions Subbasin B

Hydrograph type	=	SCS Runoff	Peak discharge	=	38.84 cfs
Storm frequency	=	10 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	142,603 cuft
Drainage area	=	11.880 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	23.80 min
Total precip.	=	5.42 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(6.940 x 88) + (4.940 x 70)] / 11.880



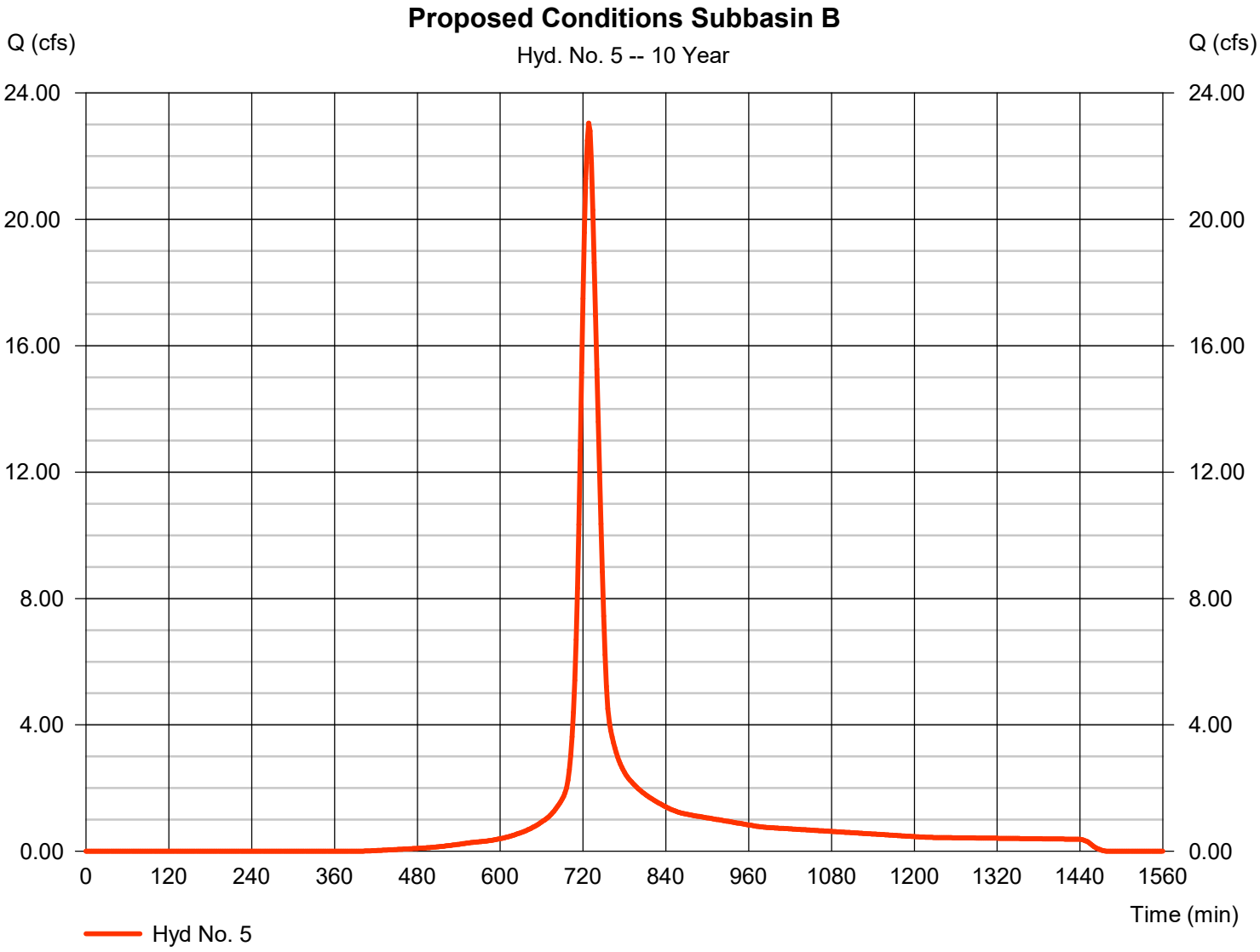
Hydrograph Report

Hyd. No. 5

Proposed Conditions Subbasin B

Hydrograph type	=	SCS Runoff	Peak discharge	=	23.05 cfs
Storm frequency	=	10 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	84,625 cuft
Drainage area	=	7.050 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	25.00 min
Total precip.	=	5.42 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.950 x 98) + (6.100 x 78)] / 7.050



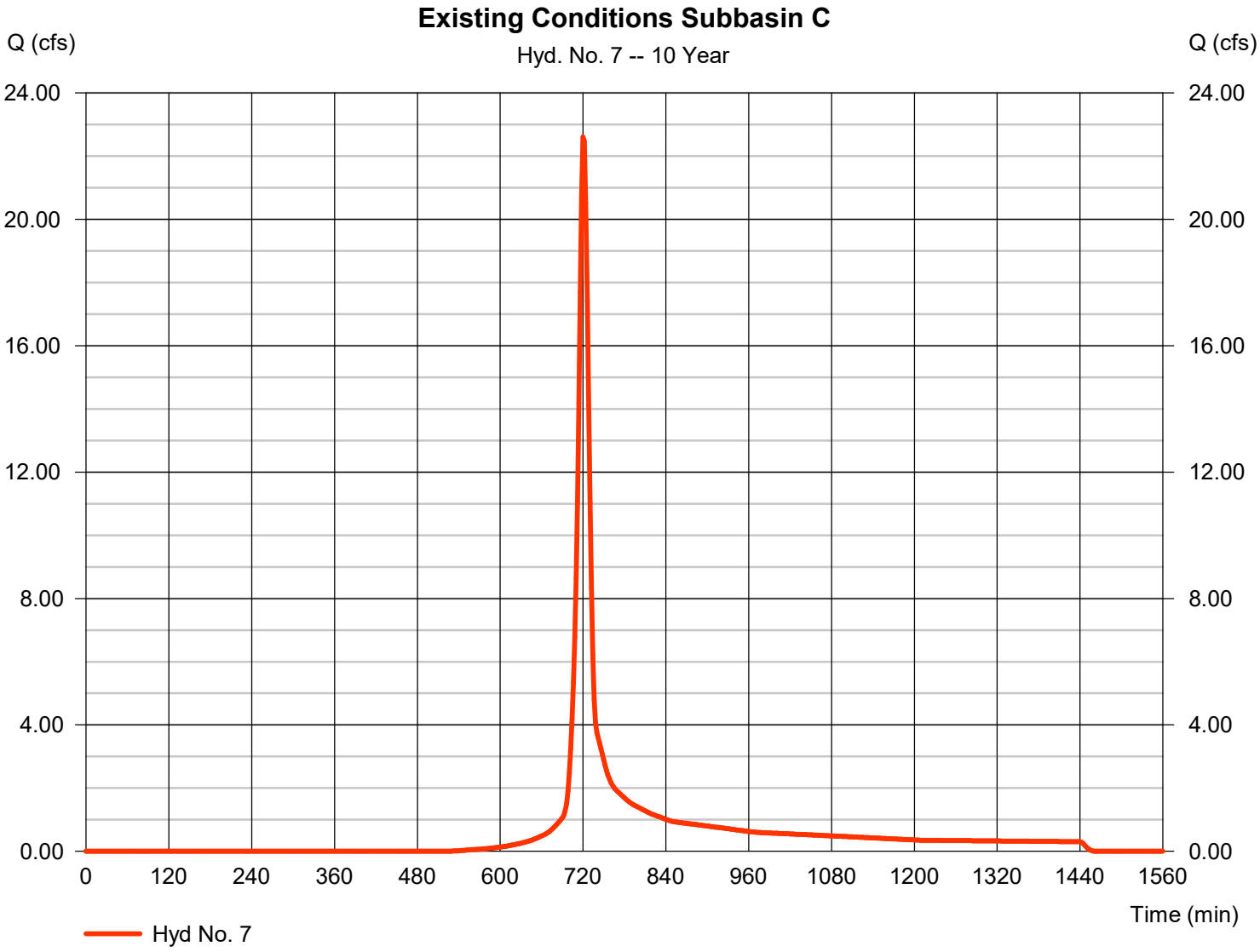
Hydrograph Report

Hyd. No. 7

Existing Conditions Subbasin C

Hydrograph type	=	SCS Runoff	Peak discharge	=	22.60 cfs
Storm frequency	=	10 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	58,719 cuft
Drainage area	=	6.000 ac	Curve number	=	73*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.90 min
Total precip.	=	5.42 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.990 x 79) + (4.010 x 70)] / 6.000



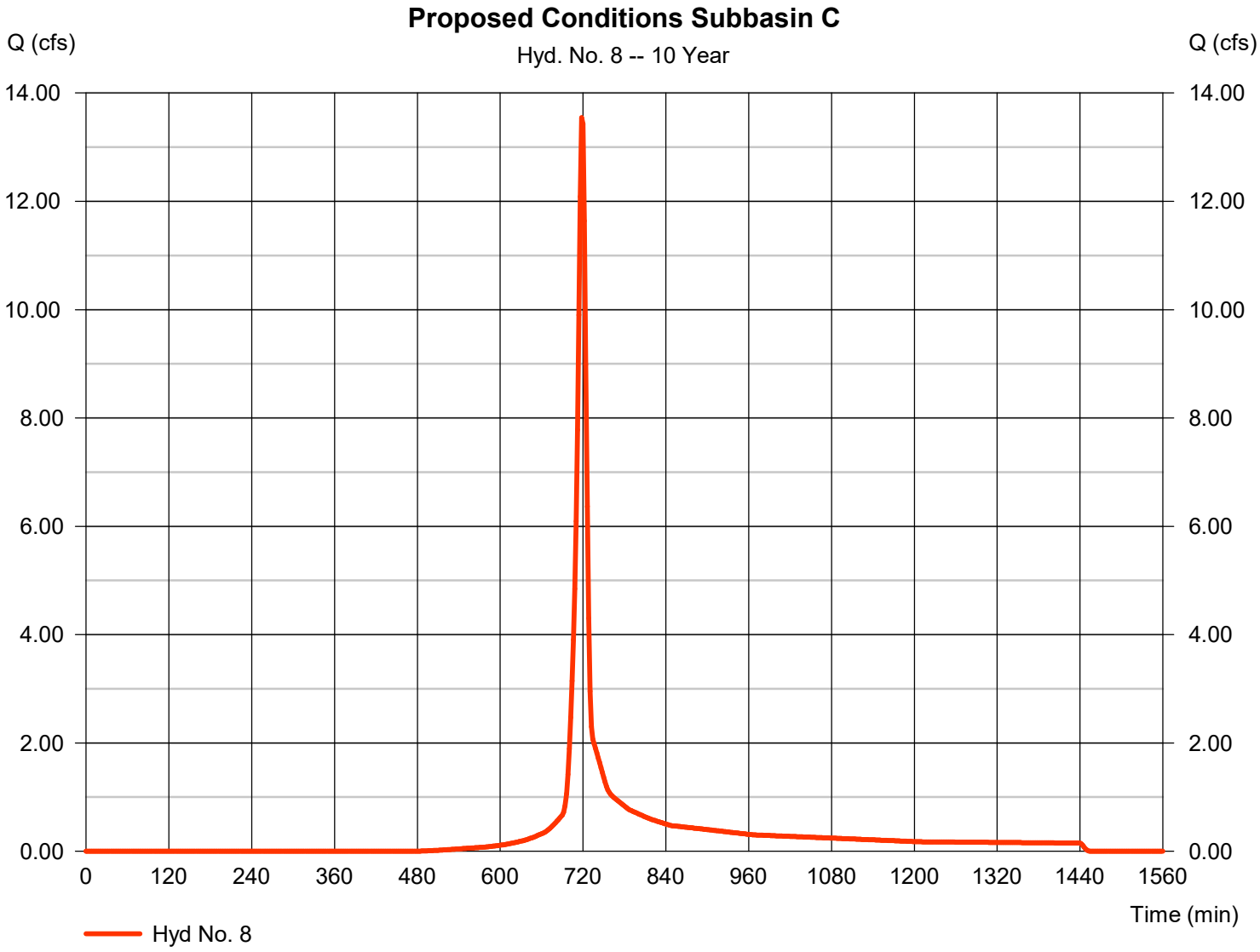
Hydrograph Report

Hyd. No. 8

Proposed Conditions Subbasin C

Hydrograph type	= SCS Runoff	Peak discharge	= 13.55 cfs
Storm frequency	= 10 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 31,004 cuft
Drainage area	= 2.960 ac	Curve number	= 76*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 8.08 min
Total precip.	= 5.42 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.820 x 79) + (1.140 x 70)] / 2.960



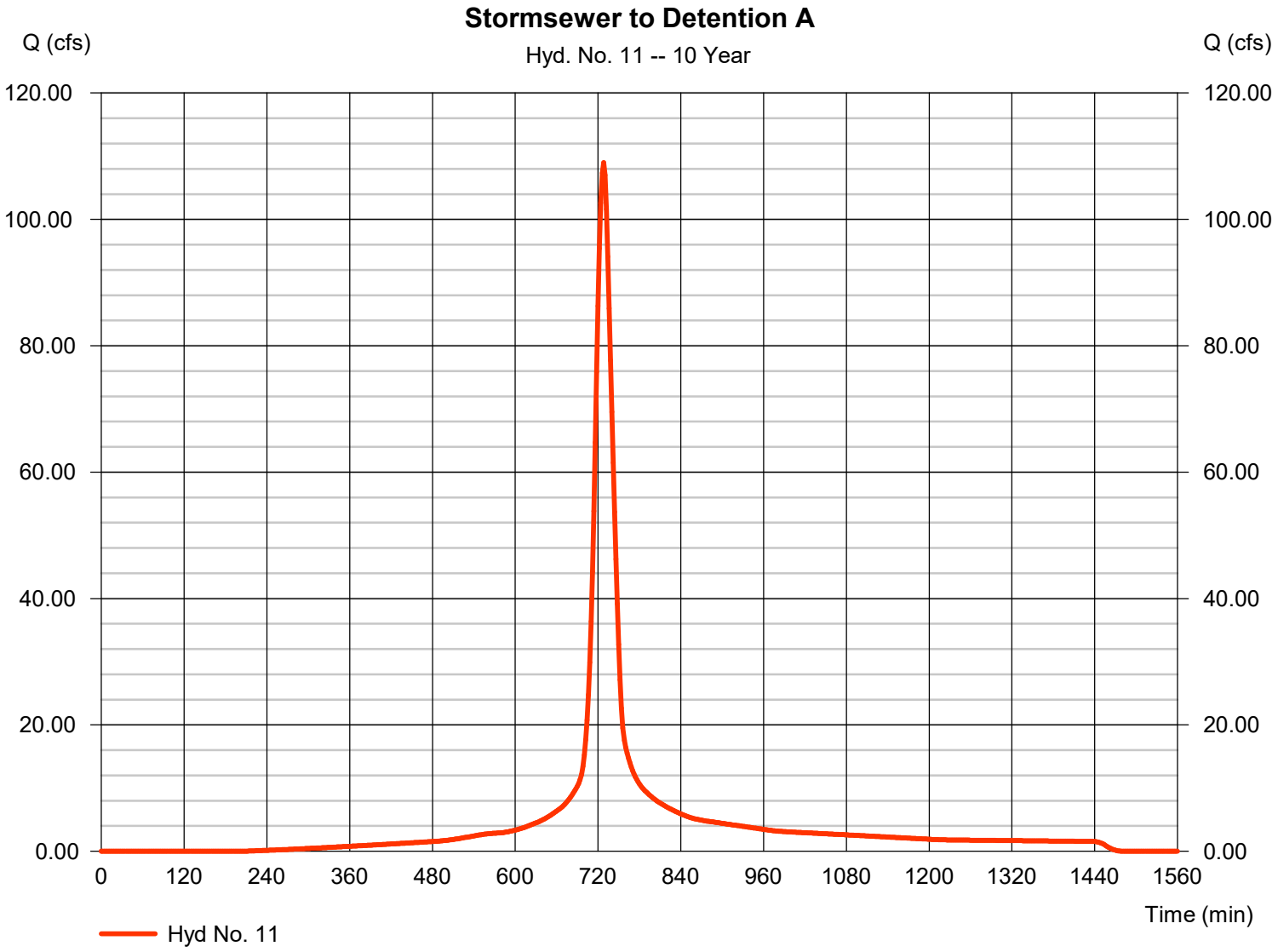
Hydrograph Report

Hyd. No. 11

Stormsewer to Detention A

Hydrograph type	=	SCS Runoff	Peak discharge	=	109.00 cfs
Storm frequency	=	10 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	415,447 cuft
Drainage area	=	26.480 ac	Curve number	=	91*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	23.70 min
Total precip.	=	5.42 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(17.100 x 98) + (9.380 x 78)] / 26.480



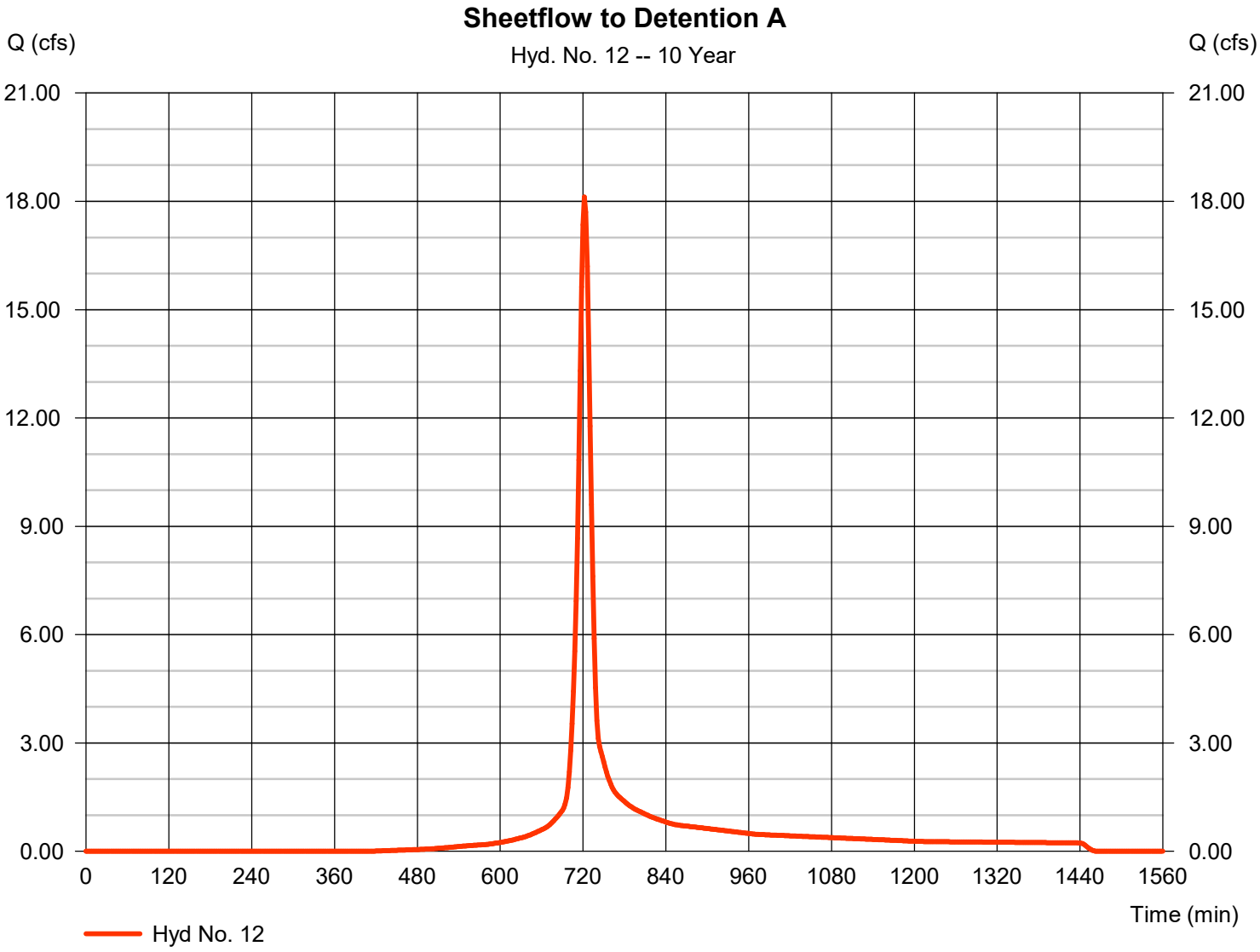
Hydrograph Report

Hyd. No. 12

Sheetflow to Detention A

Hydrograph type	=	SCS Runoff	Peak discharge	=	18.12 cfs
Storm frequency	=	10 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	50,919 cuft
Drainage area	=	4.410 ac	Curve number	=	80*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	14.90 min
Total precip.	=	5.42 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.380 x 98) + (4.030 x 78)] / 4.410

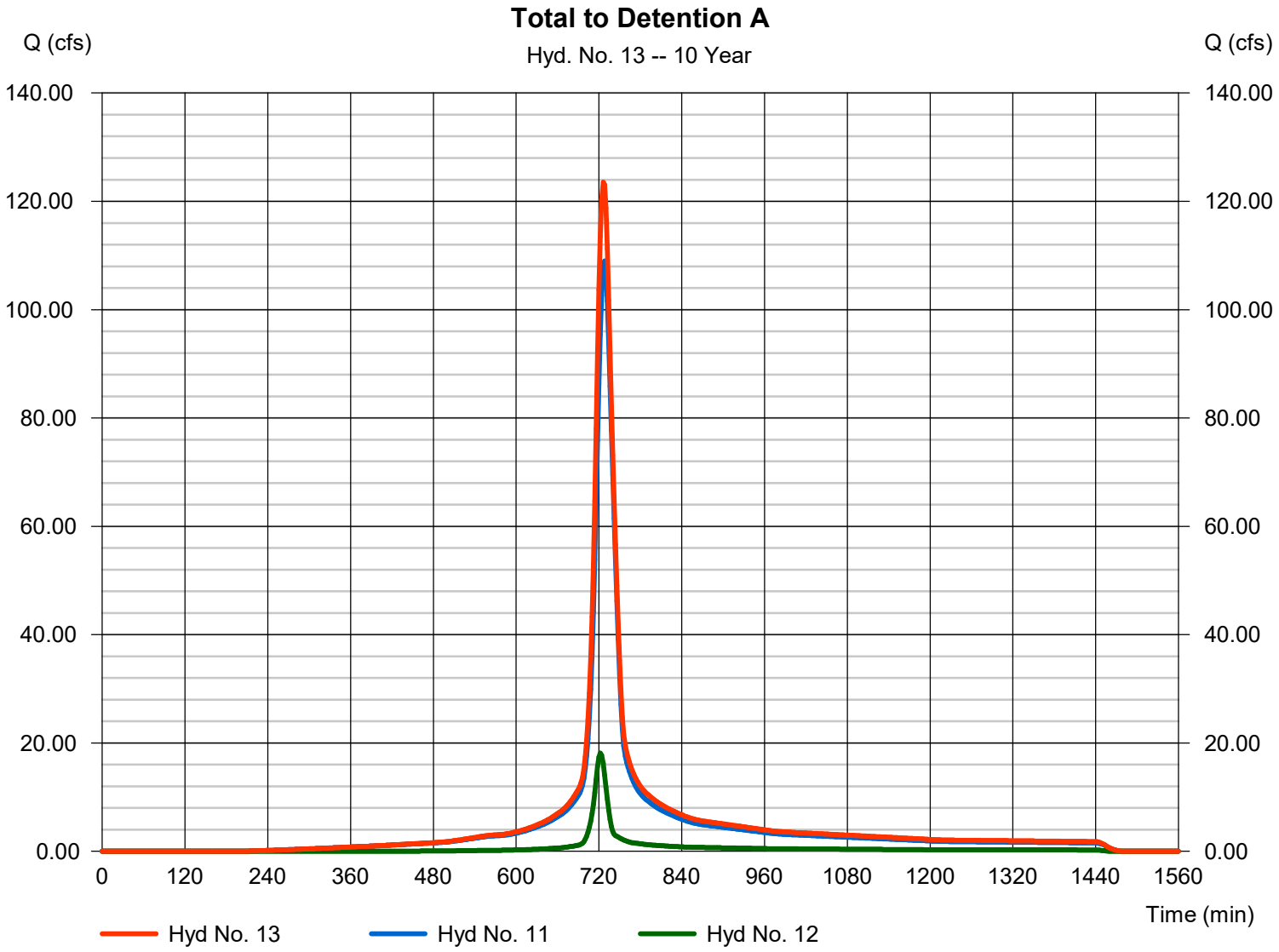


Hydrograph Report

Hyd. No. 13

Total to Detention A

Hydrograph type	=	Combine	Peak discharge	=	123.53 cfs
Storm frequency	=	10 yrs	Time to peak	=	726 min
Time interval	=	2 min	Hyd. volume	=	466,366 cuft
Inflow hyds.	=	11, 12	Contrib. drain. area	=	30.890 ac



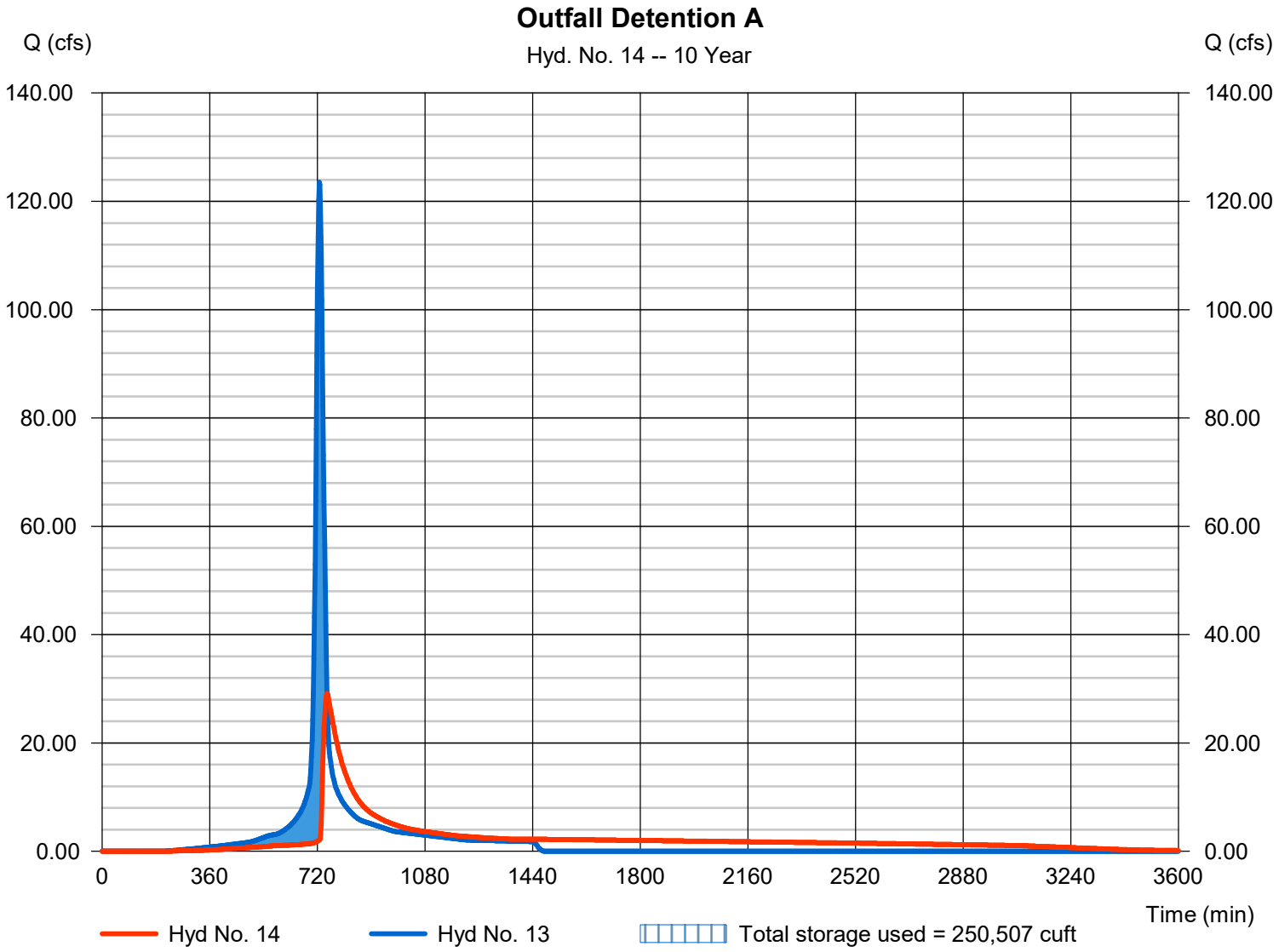
Hydrograph Report

Hyd. No. 14

Outfall Detention A

Hydrograph type	=	Reservoir	Peak discharge	=	29.16 cfs
Storm frequency	=	10 yrs	Time to peak	=	752 min
Time interval	=	2 min	Hyd. volume	=	466,349 cuft
Inflow hyd. No.	=	13 - Total to Detention A	Max. Elevation	=	652.52 ft
Reservoir name	=	Detention Pond A	Max. Storage	=	250,507 cuft

Storage Indication method used.



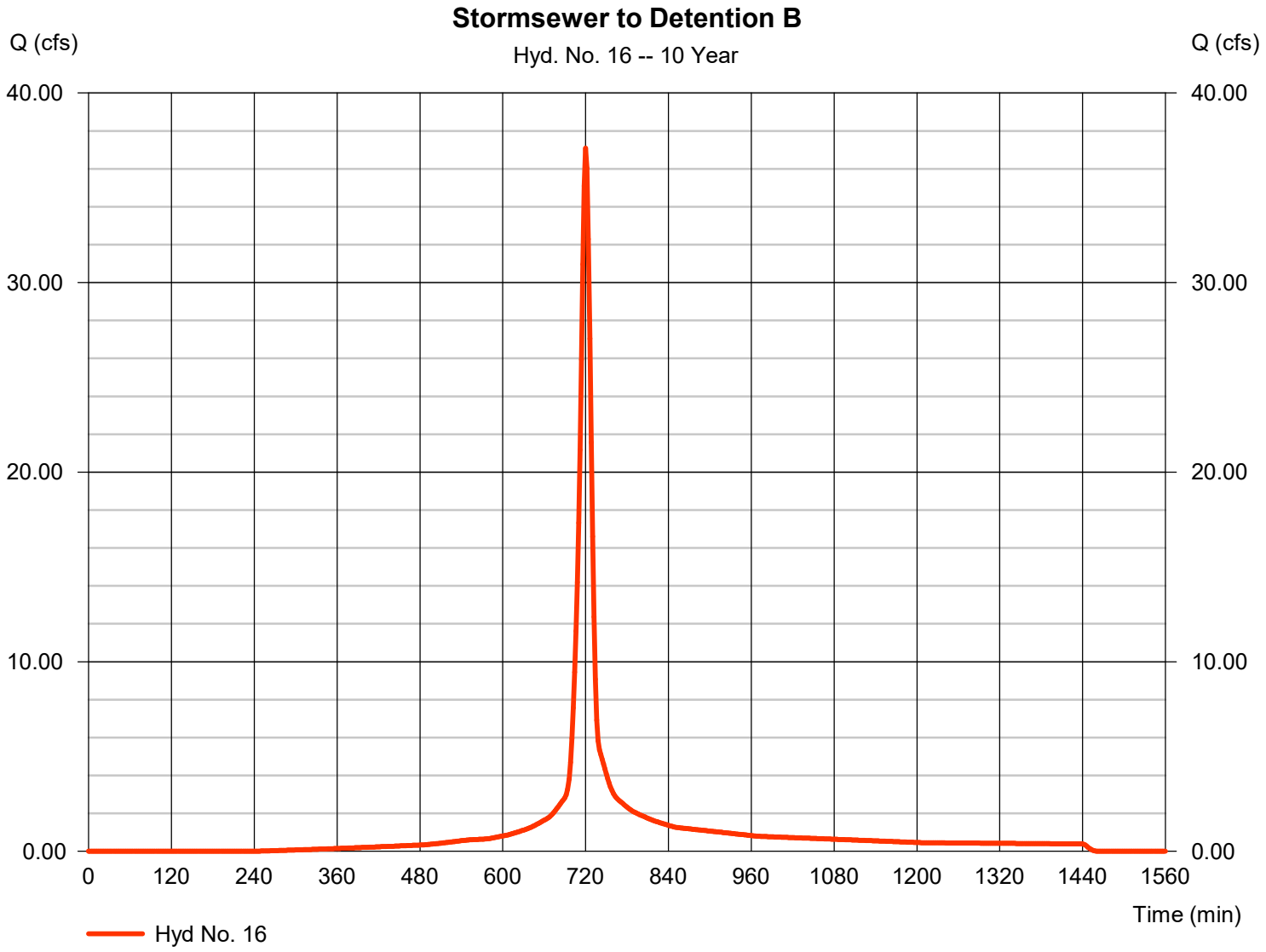
Hydrograph Report

Hyd. No. 16

Stormsewer to Detention B

Hydrograph type	=	SCS Runoff	Peak discharge	=	37.09 cfs
Storm frequency	=	10 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	100,030 cuft
Drainage area	=	6.400 ac	Curve number	=	89*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	11.20 min
Total precip.	=	5.42 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(3.630 x 98) + (2.770 x 78)] / 6.400



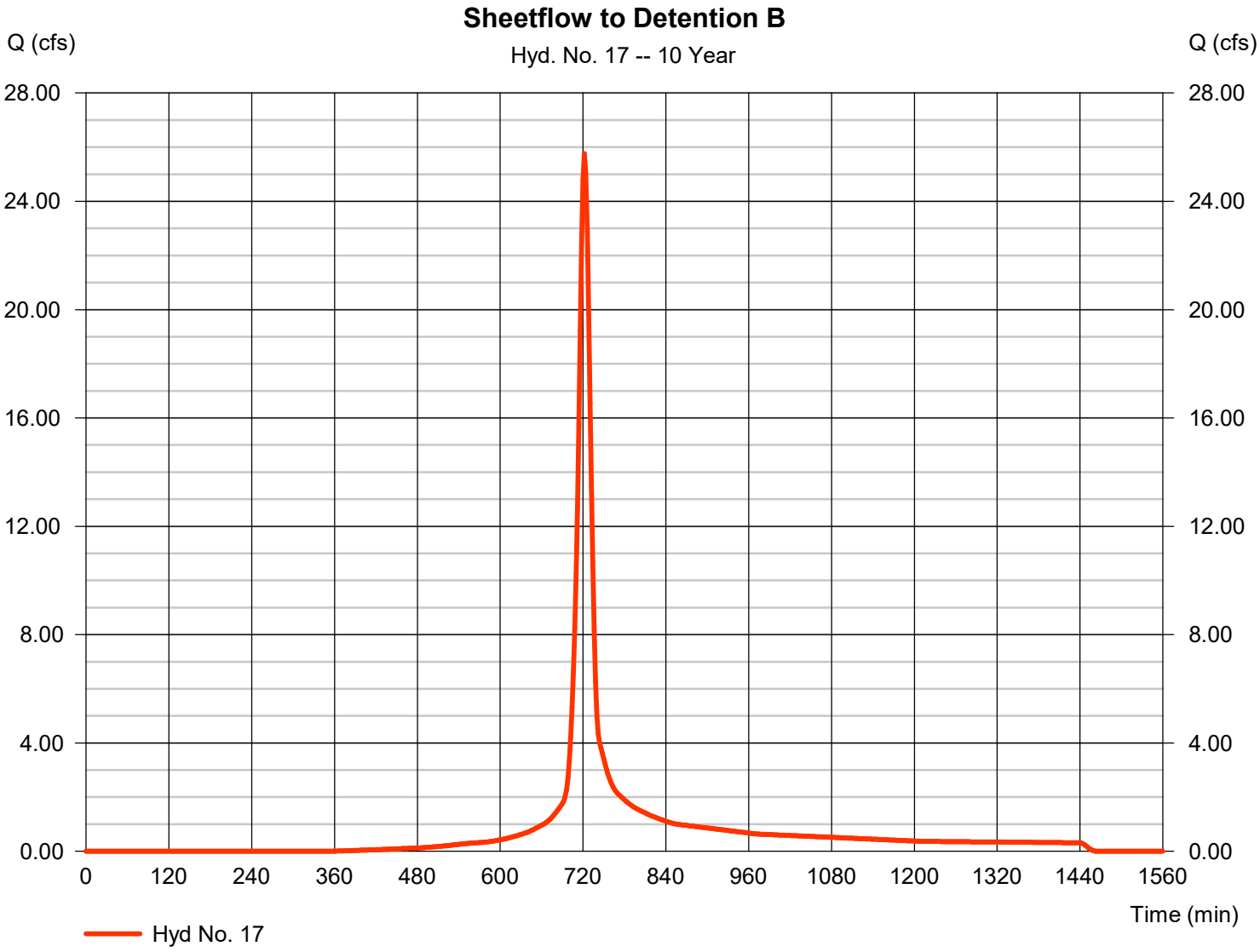
Hydrograph Report

Hyd. No. 17

Sheetflow to Detention B

Hydrograph type	=	SCS Runoff	Peak discharge	=	25.76 cfs
Storm frequency	=	10 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	72,881 cuft
Drainage area	=	5.790 ac	Curve number	=	83*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	13.80 min
Total precip.	=	5.42 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.390 x 98) + (4.400 x 78)] / 5.790

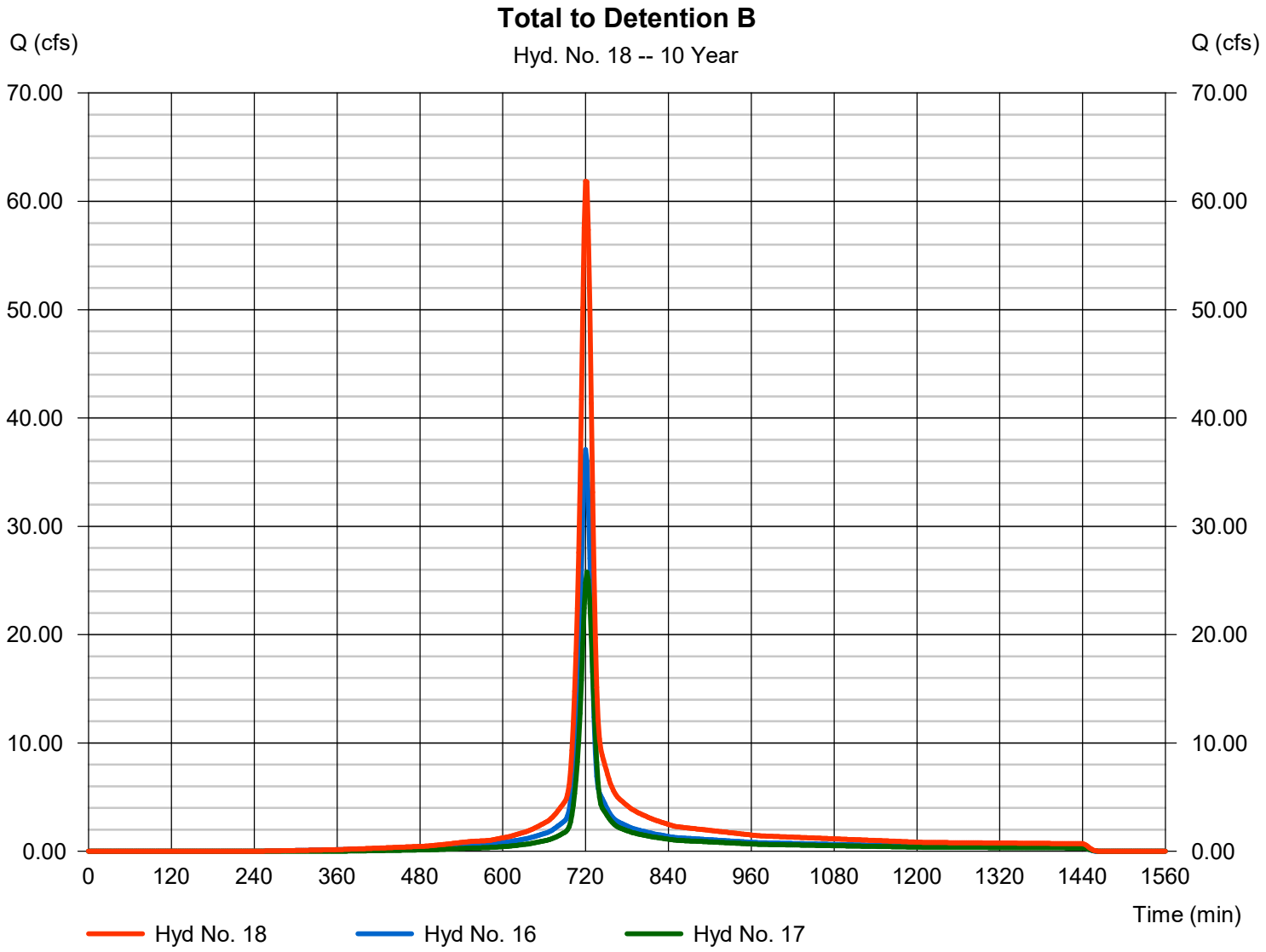


Hydrograph Report

Hyd. No. 18

Total to Detention B

Hydrograph type	= Combine	Peak discharge	= 61.87 cfs
Storm frequency	= 10 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 172,910 cuft
Inflow hyds.	= 16, 17	Contrib. drain. area	= 12.190 ac



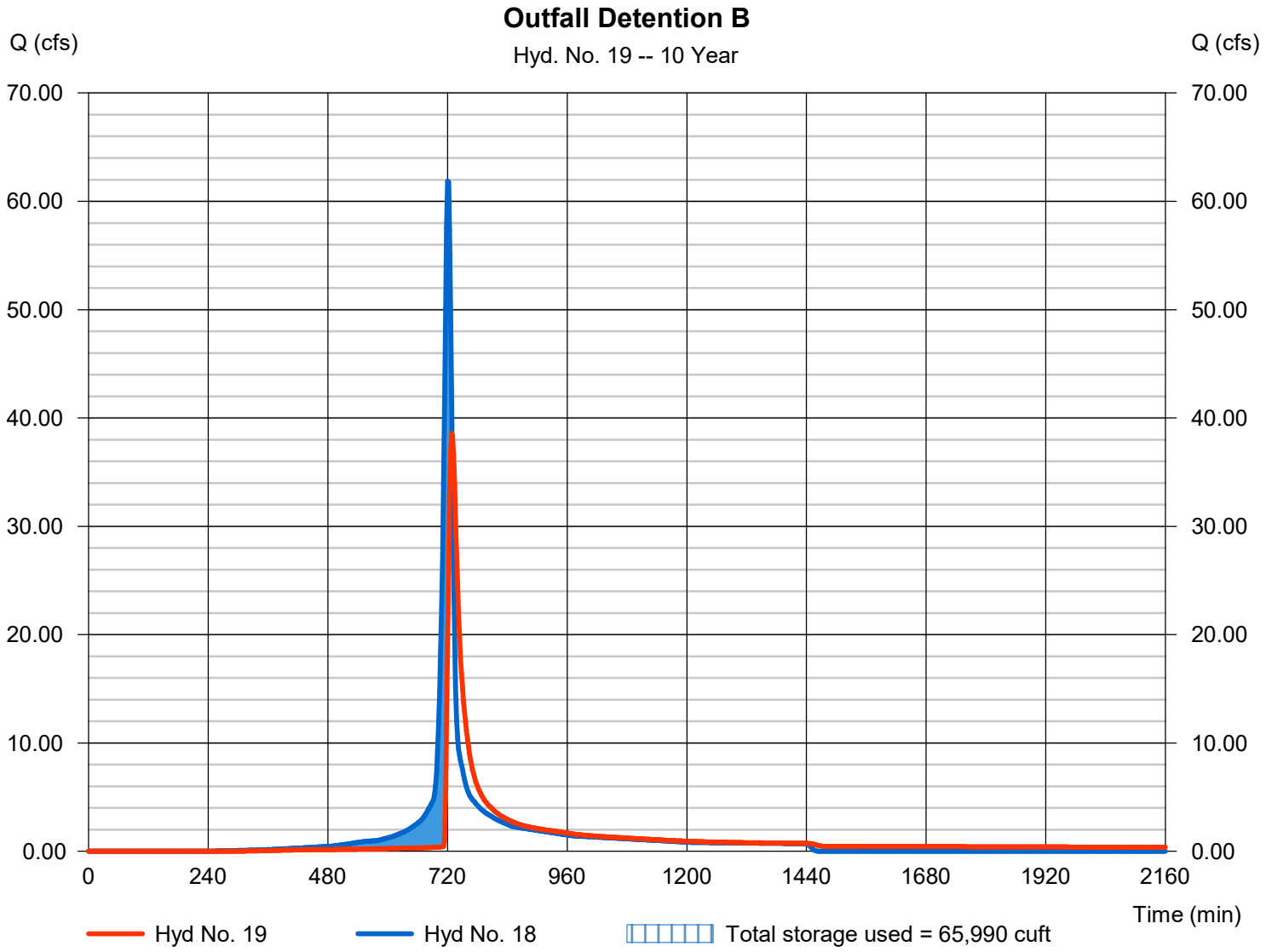
Hydrograph Report

Hyd. No. 19

Outfall Detention B

Hydrograph type	=	Reservoir	Peak discharge	=	38.56 cfs
Storm frequency	=	10 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	172,893 cuft
Inflow hyd. No.	=	18 - Total to Detention B	Max. Elevation	=	661.04 ft
Reservoir name	=	Detention Pond B	Max. Storage	=	65,990 cuft

Storage Indication method used.



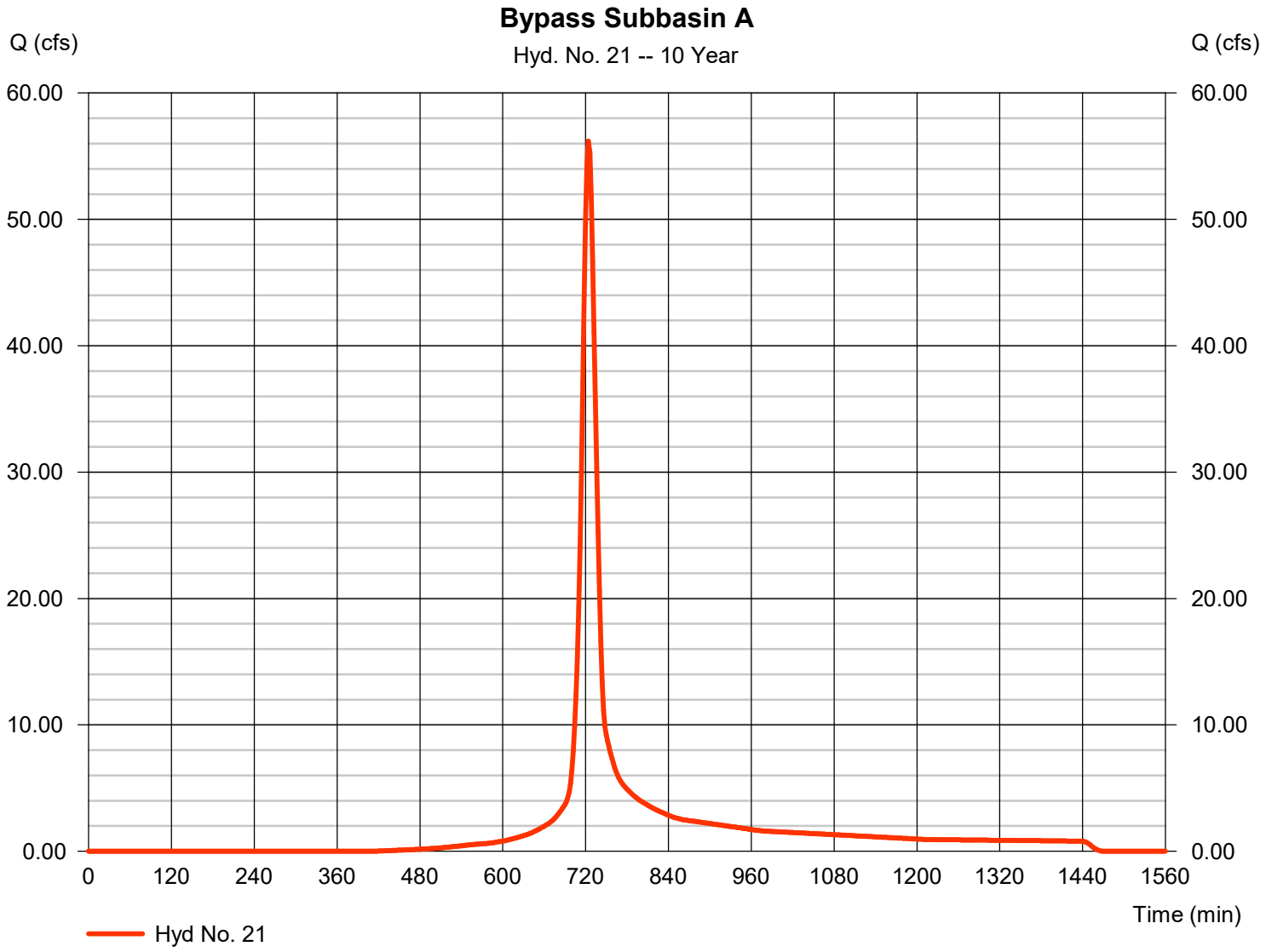
Hydrograph Report

Hyd. No. 21

Bypass Subbasin A

Hydrograph type	=	SCS Runoff	Peak discharge	=	56.19 cfs
Storm frequency	=	10 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	175,857 cuft
Drainage area	=	14.850 ac	Curve number	=	80*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	18.30 min
Total precip.	=	5.42 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.140 x 98) + (13.710 x 78)] / 14.850

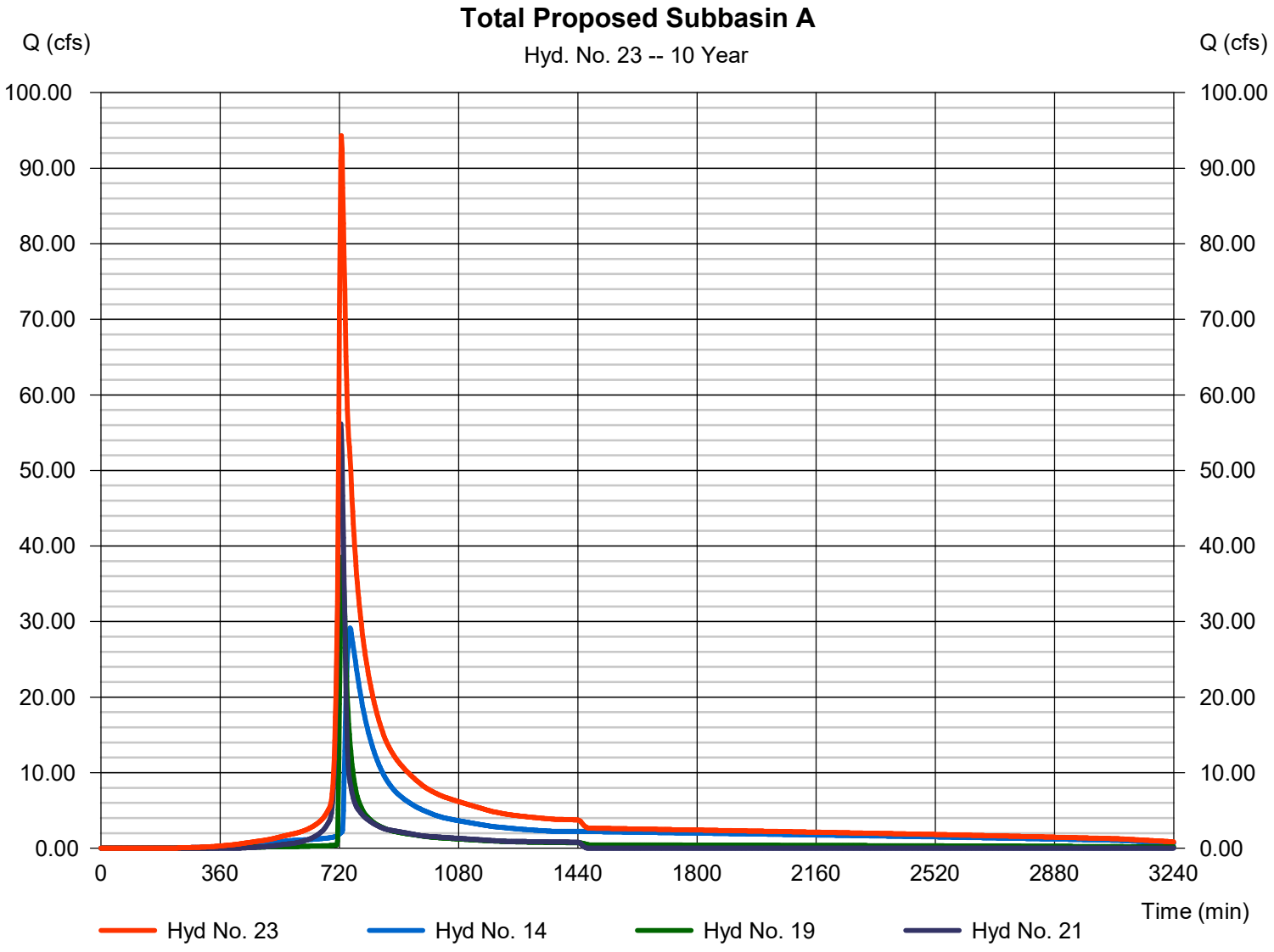


Hydrograph Report

Hyd. No. 23

Total Proposed Subbasin A

Hydrograph type	= Combine	Peak discharge	= 94.30 cfs
Storm frequency	= 10 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 815,099 cuft
Inflow hyds.	= 14, 19, 21	Contrib. drain. area	= 14.850 ac

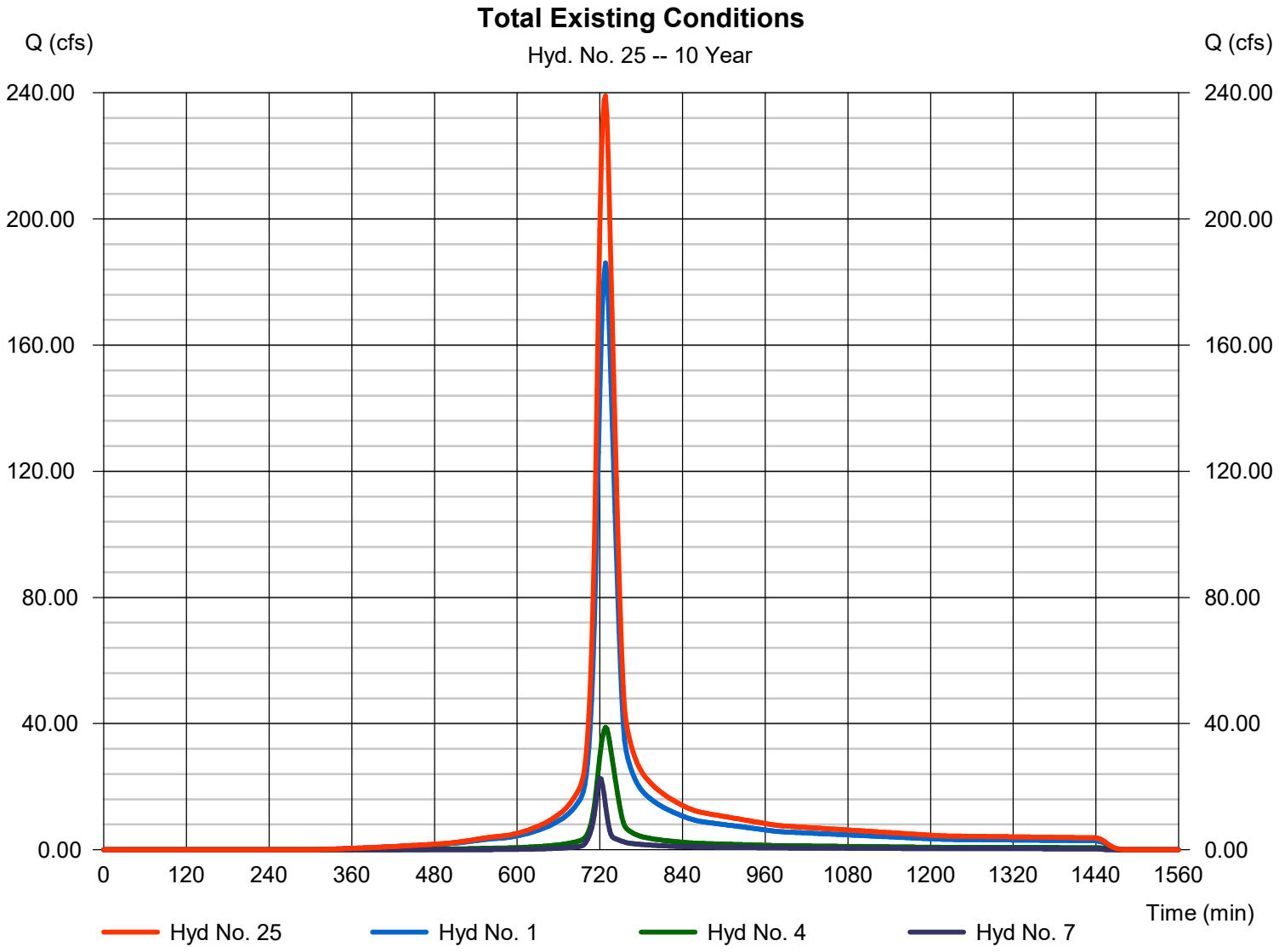


Hydrograph Report

Hyd. No. 25

Total Existing Conditions

Hydrograph type	= Combine	Peak discharge	= 238.97 cfs
Storm frequency	= 10 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 891,923 cuft
Inflow hyds.	= 1, 4, 7	Contrib. drain. area	= 67.940 ac

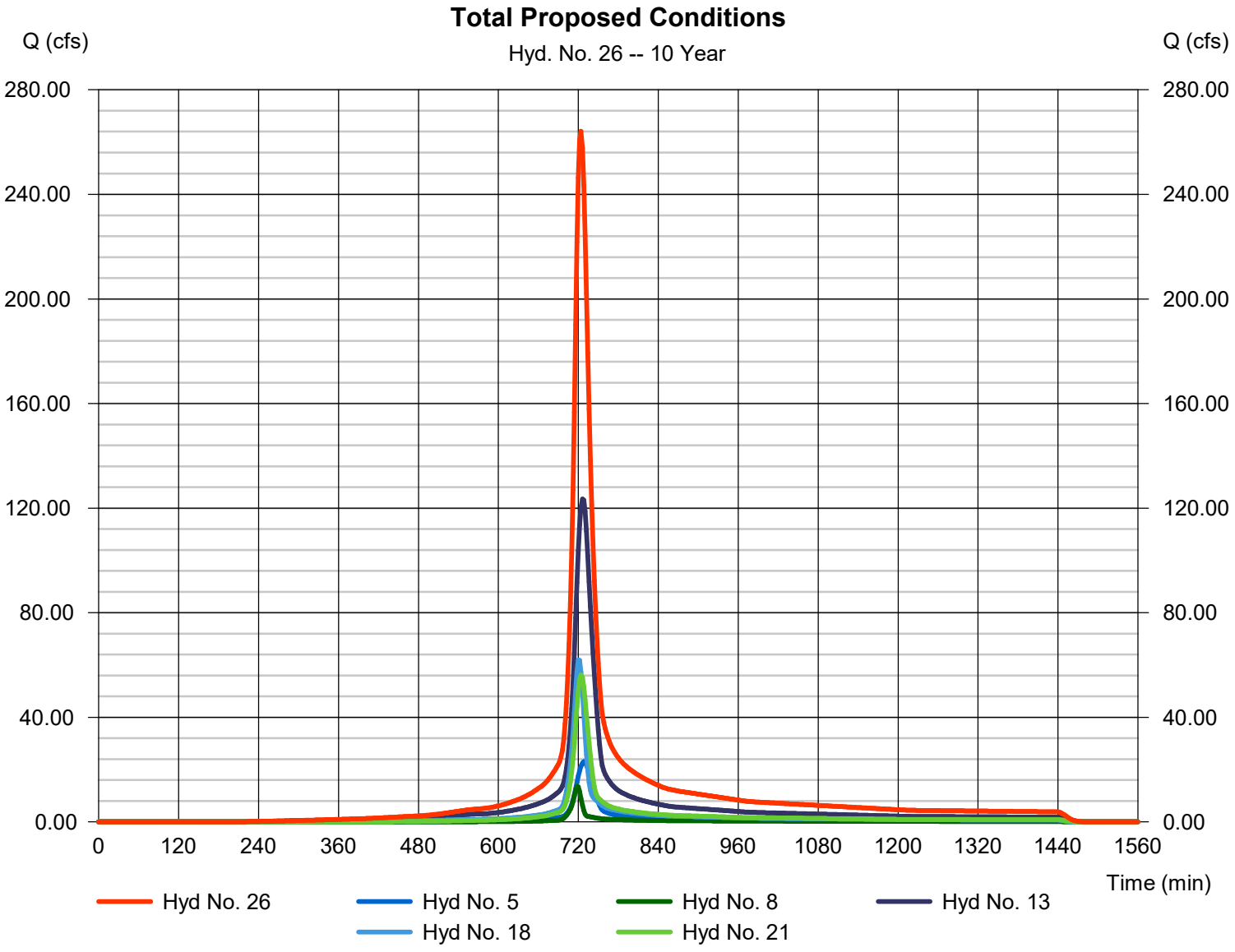


Hydrograph Report

Hyd. No. 26

Total Proposed Conditions

Hydrograph type	= Combine	Peak discharge	= 264.12 cfs
Storm frequency	= 10 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 930,762 cuft
Inflow hyds.	= 5, 8, 13, 18, 21	Contrib. drain. area	= 24.860 ac

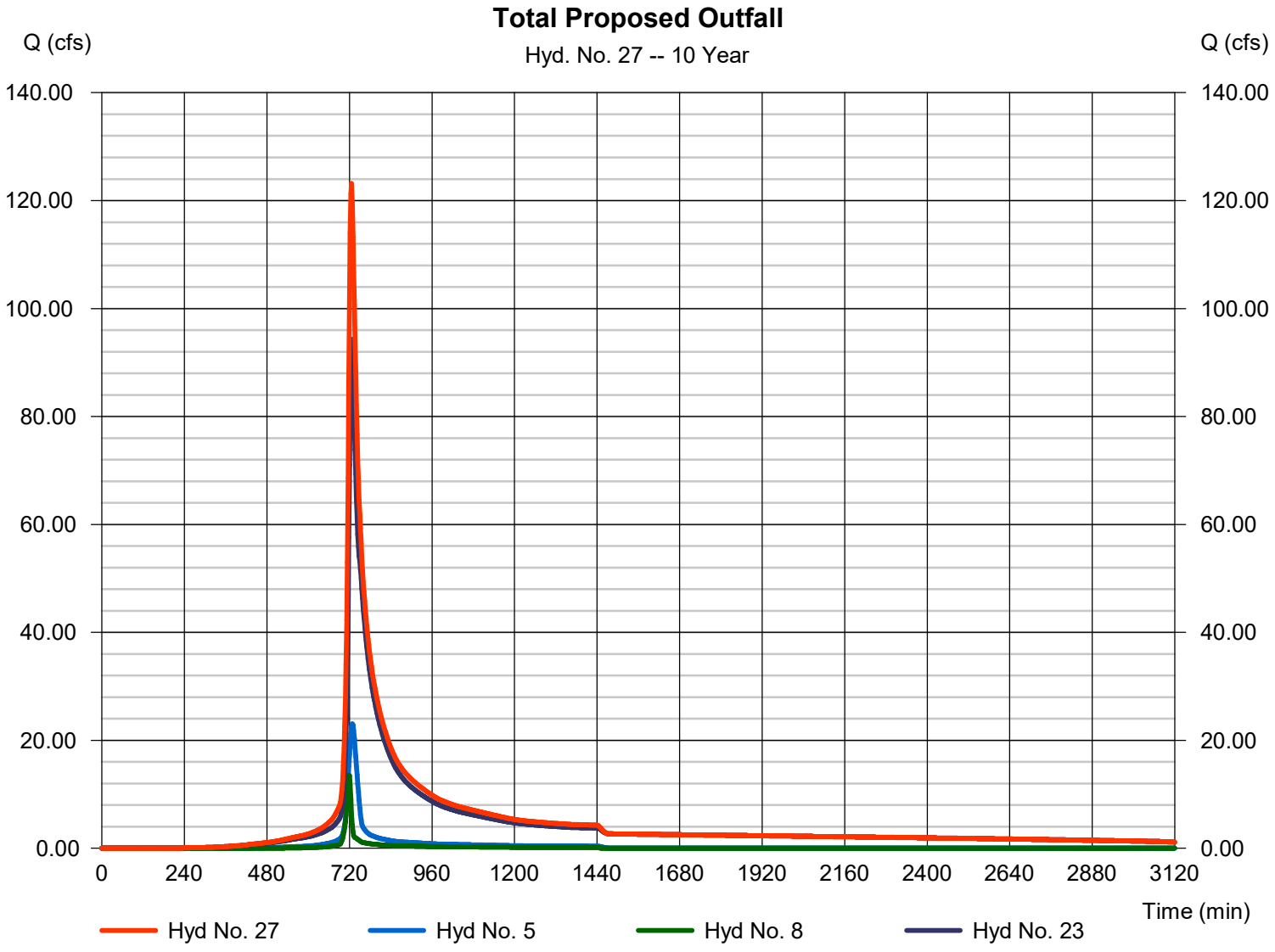


Hydrograph Report

Hyd. No. 27

Total Proposed Outfall

Hydrograph type	= Combine	Peak discharge	= 123.16 cfs
Storm frequency	= 10 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 930,728 cuft
Inflow hyds.	= 5, 8, 23	Contrib. drain. area	= 10.010 ac



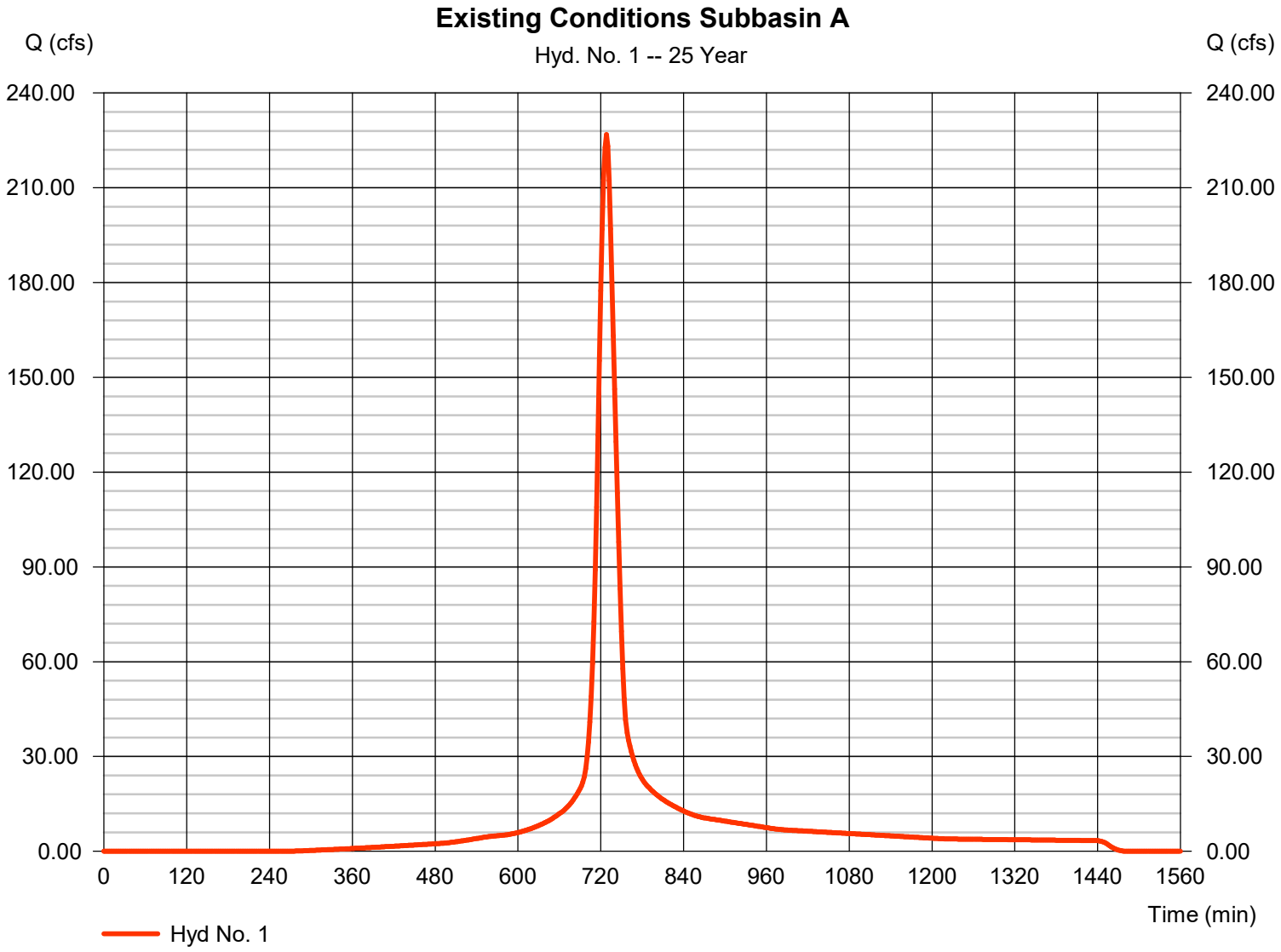
Hydrograph Report

Hyd. No. 1

Existing Conditions Subbasin A

Hydrograph type	=	SCS Runoff	Peak discharge	=	226.85 cfs
Storm frequency	=	25 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	848,389 cuft
Drainage area	=	50.060 ac	Curve number	=	86*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	24.76 min
Total precip.	=	6.35 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(44.870 x 88) + (5.190 x 70)] / 50.060



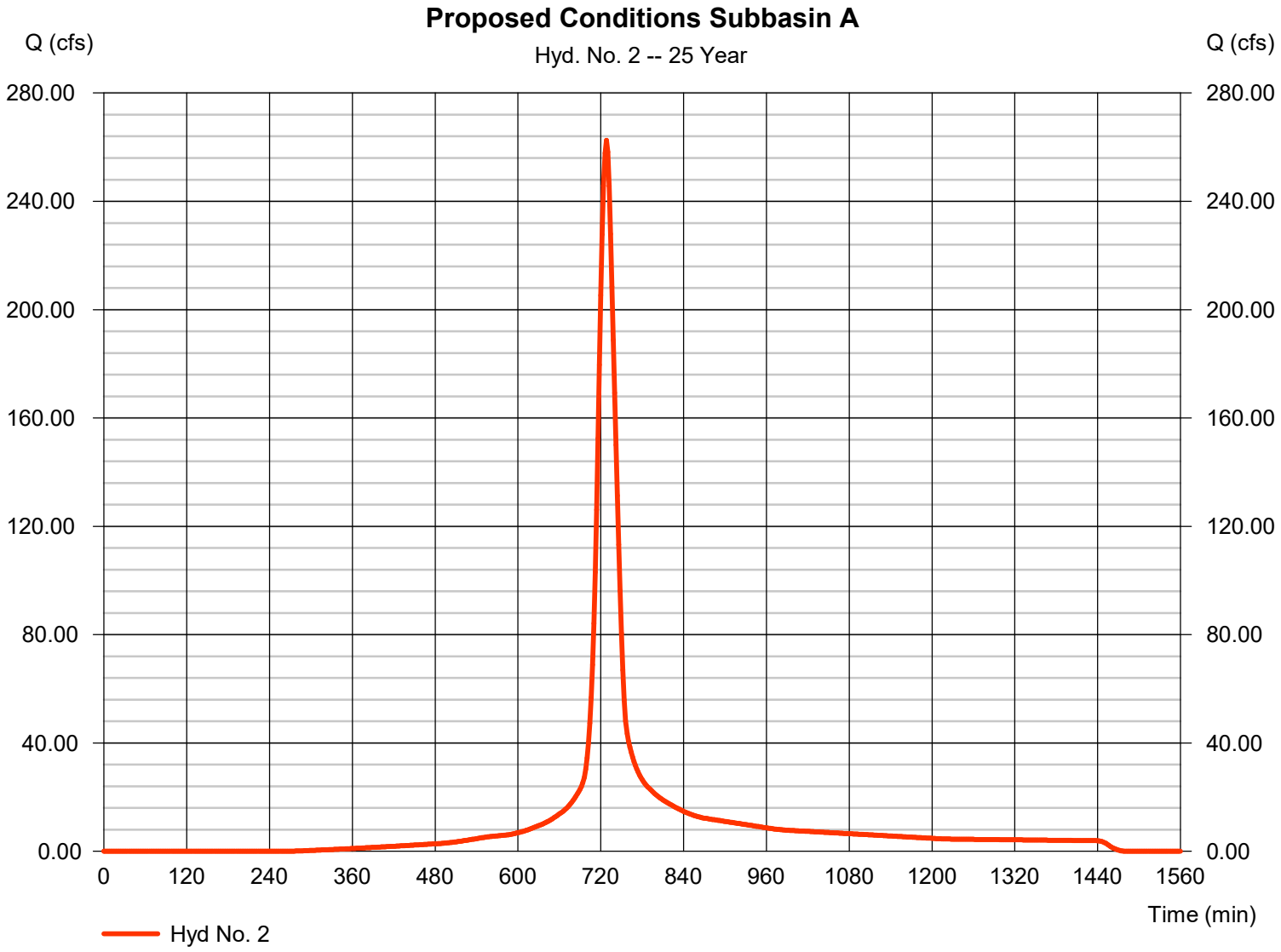
Hydrograph Report

Hyd. No. 2

Proposed Conditions Subbasin A

Hydrograph type	=	SCS Runoff	Peak discharge	=	262.52 cfs
Storm frequency	=	25 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	981,765 cuft
Drainage area	=	57.930 ac	Curve number	=	86*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	23.70 min
Total precip.	=	6.35 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(23.640 x 98) + (34.290 x 78)] / 57.930



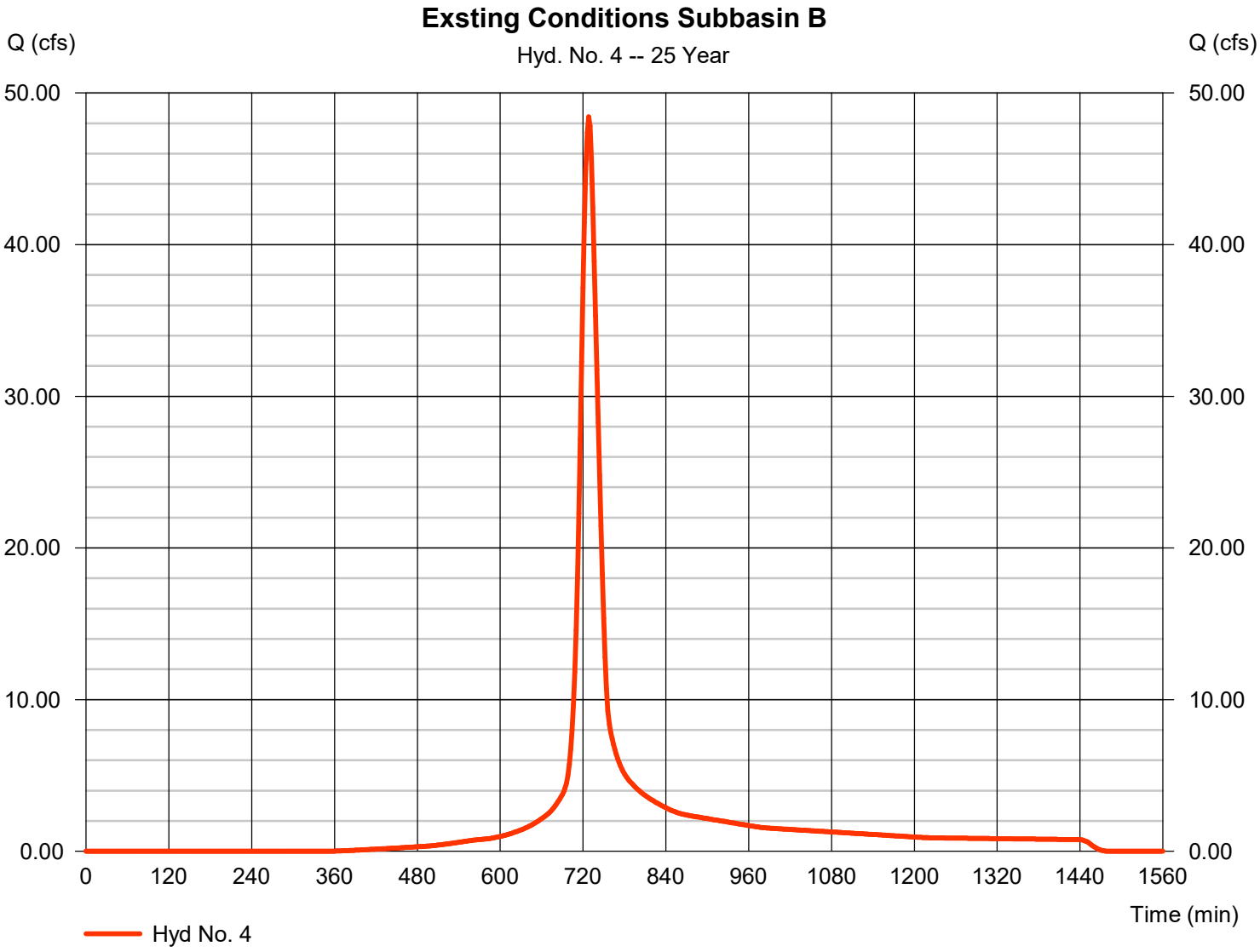
Hydrograph Report

Hyd. No. 4

Exsting Conditions Subbasin B

Hydrograph type	=	SCS Runoff	Peak discharge	=	48.44 cfs
Storm frequency	=	25 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	178,463 cuft
Drainage area	=	11.880 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	23.80 min
Total precip.	=	6.35 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(6.940 x 88) + (4.940 x 70)] / 11.880



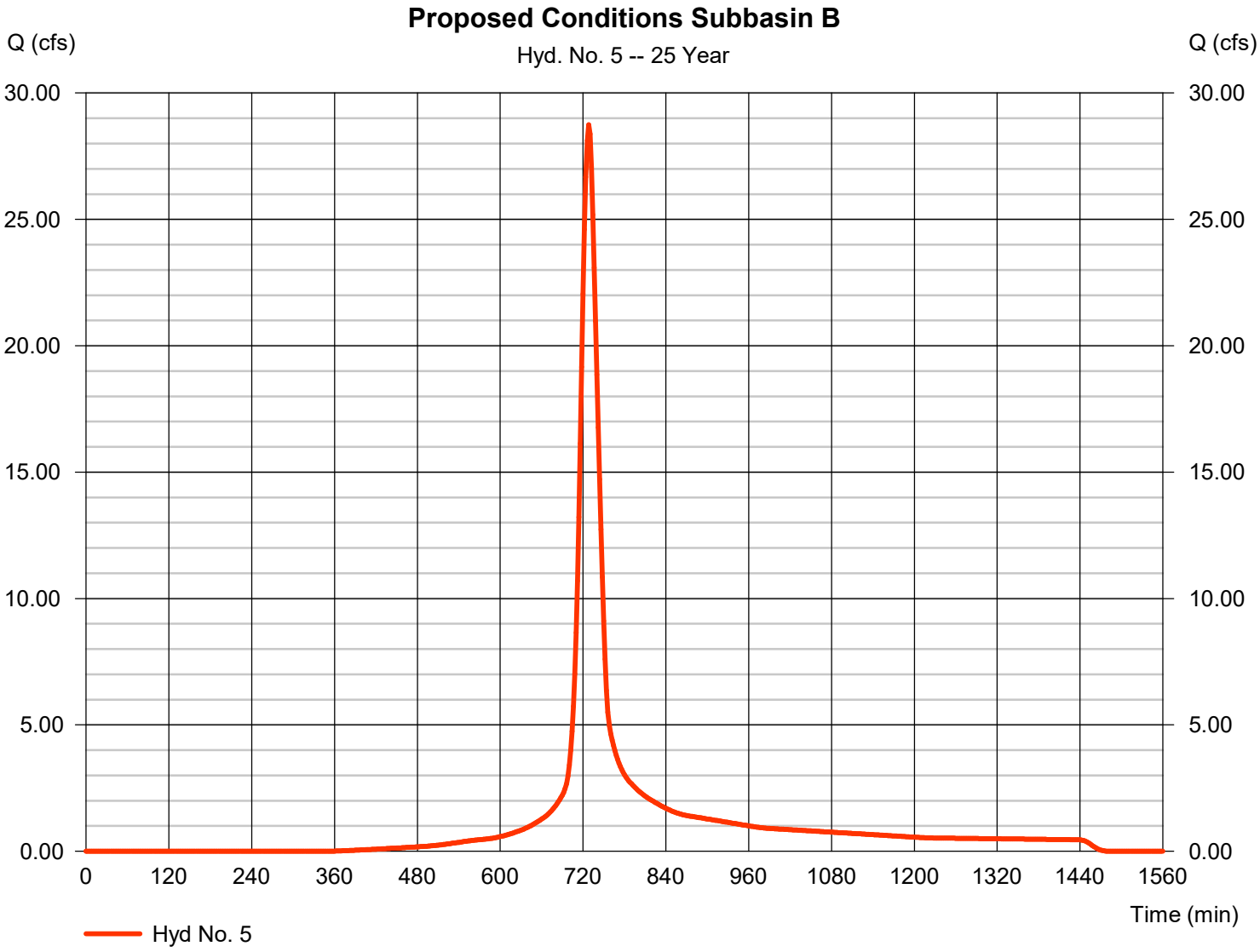
Hydrograph Report

Hyd. No. 5

Proposed Conditions Subbasin B

Hydrograph type	=	SCS Runoff	Peak discharge	=	28.74 cfs
Storm frequency	=	25 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	105,906 cuft
Drainage area	=	7.050 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	25.00 min
Total precip.	=	6.35 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.950 x 98) + (6.100 x 78)] / 7.050



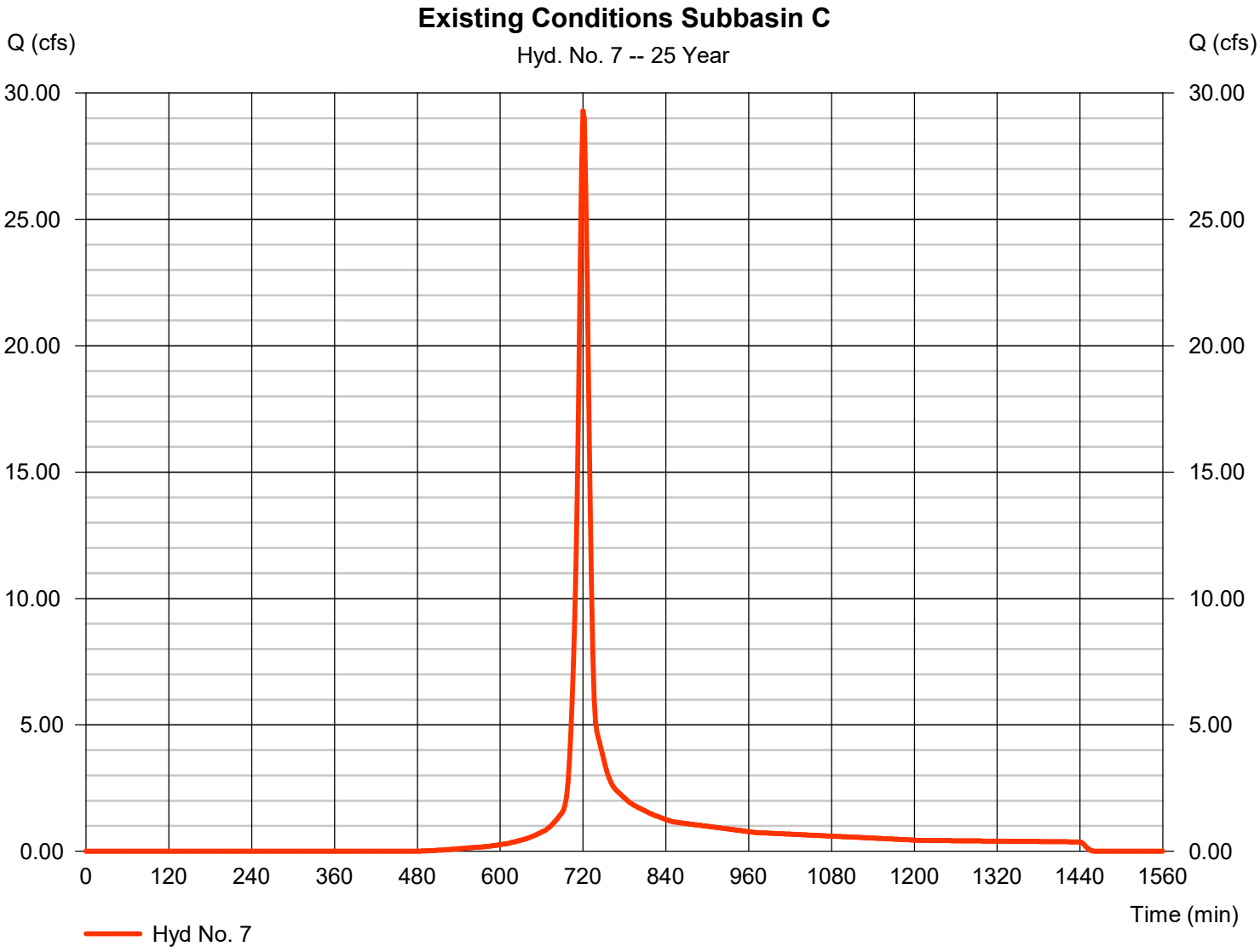
Hydrograph Report

Hyd. No. 7

Existing Conditions Subbasin C

Hydrograph type	=	SCS Runoff	Peak discharge	=	29.30 cfs
Storm frequency	=	25 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	75,944 cuft
Drainage area	=	6.000 ac	Curve number	=	73*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.90 min
Total precip.	=	6.35 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.990 x 79) + (4.010 x 70)] / 6.000



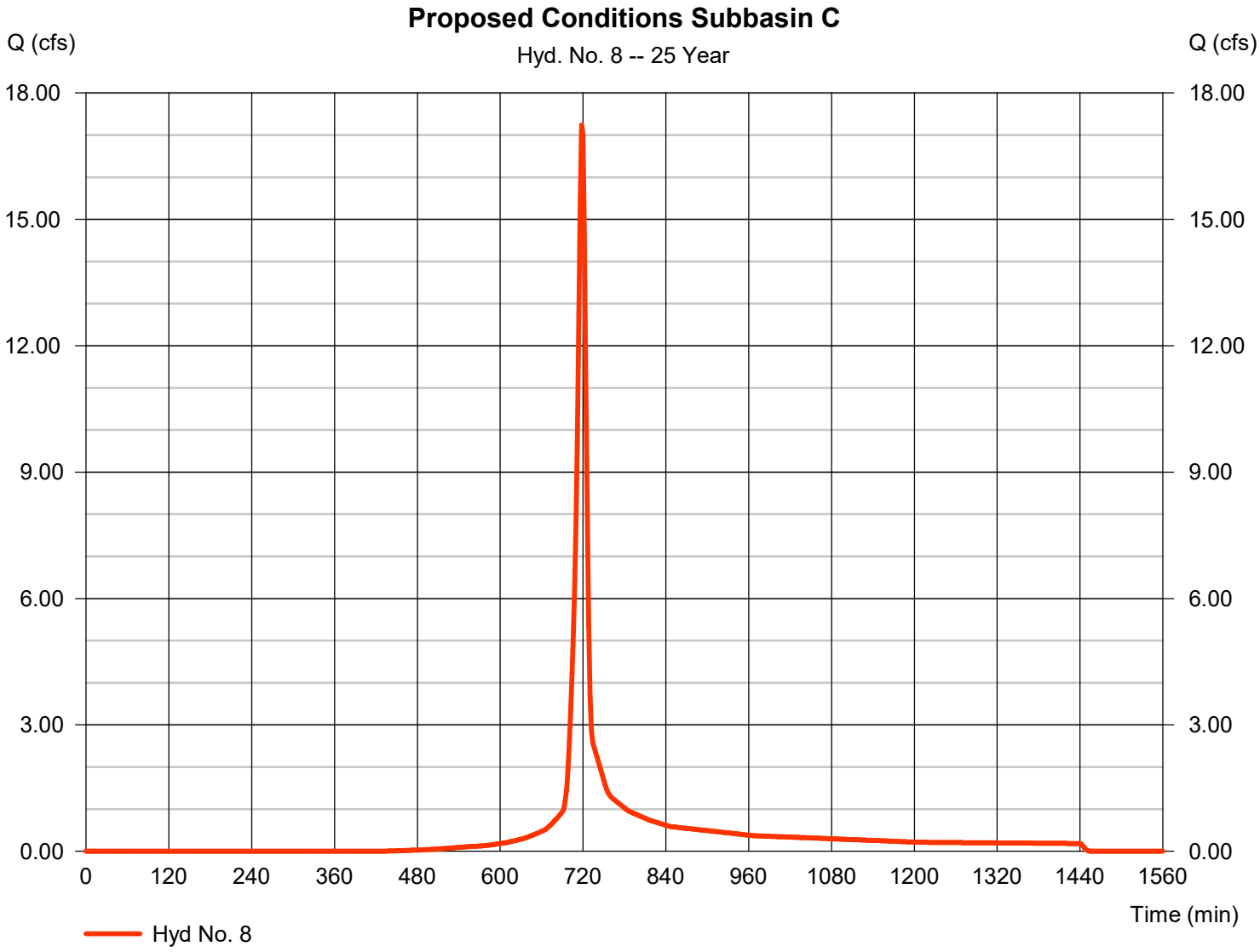
Hydrograph Report

Hyd. No. 8

Proposed Conditions Subbasin C

Hydrograph type	=	SCS Runoff	Peak discharge	=	17.24 cfs
Storm frequency	=	25 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	39,584 cuft
Drainage area	=	2.960 ac	Curve number	=	76*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	8.08 min
Total precip.	=	6.35 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.820 x 79) + (1.140 x 70)] / 2.960



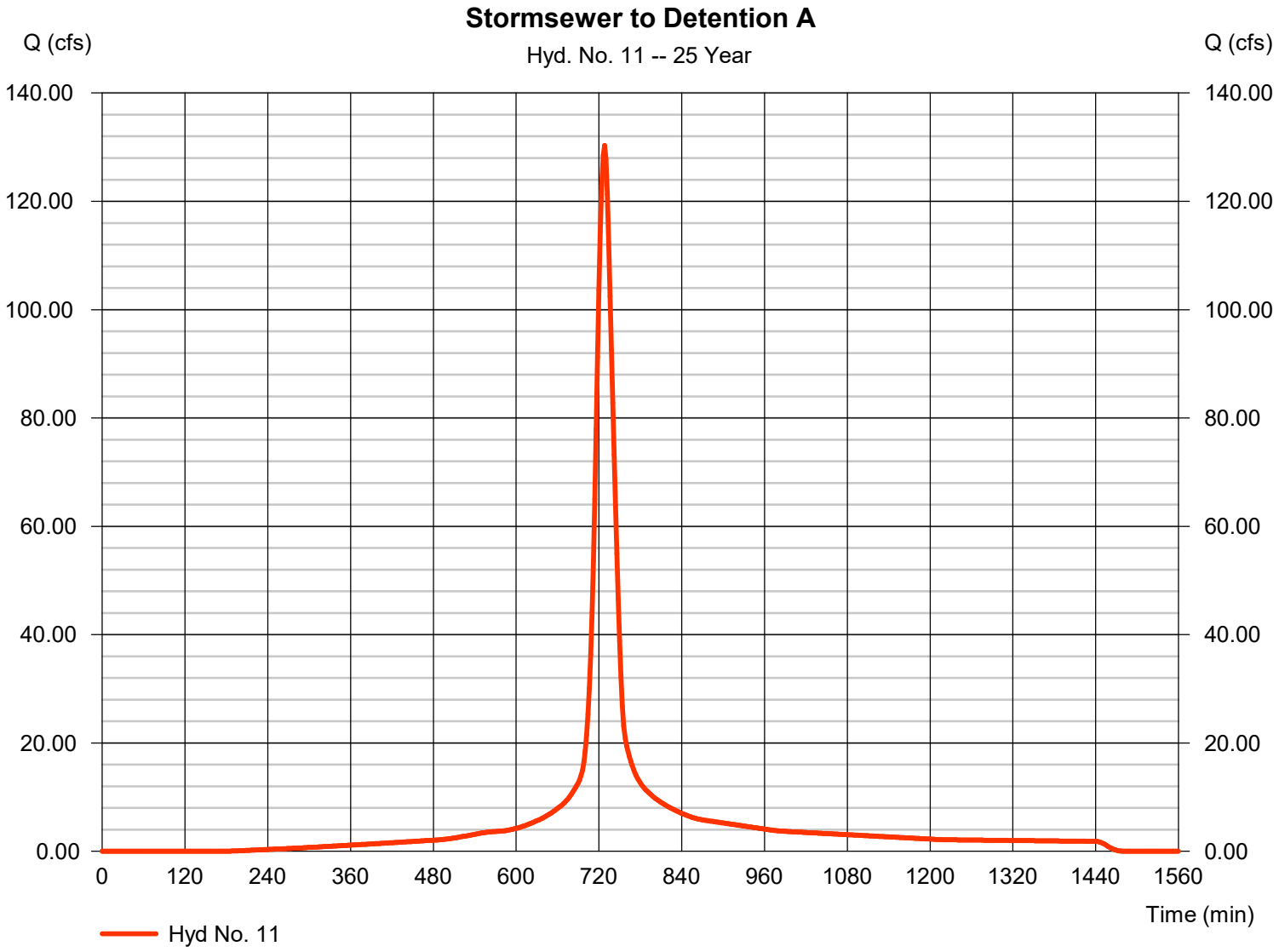
Hydrograph Report

Hyd. No. 11

Stormsewer to Detention A

Hydrograph type	=	SCS Runoff	Peak discharge	=	130.32 cfs
Storm frequency	=	25 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	501,503 cuft
Drainage area	=	26.480 ac	Curve number	=	91*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	23.70 min
Total precip.	=	6.35 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(17.100 x 98) + (9.380 x 78)] / 26.480



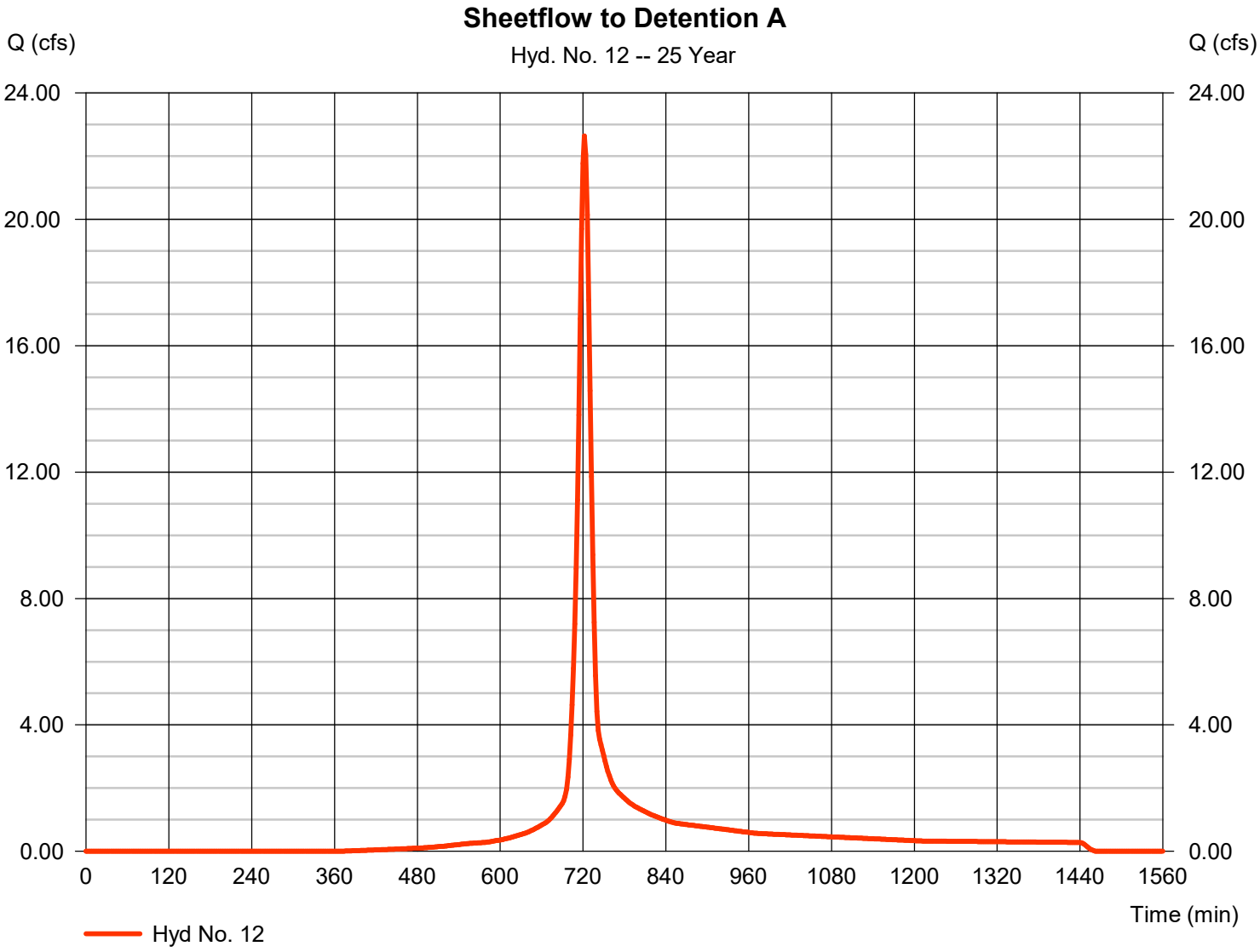
Hydrograph Report

Hyd. No. 12

Sheetflow to Detention A

Hydrograph type	=	SCS Runoff	Peak discharge	=	22.65 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	63,970 cuft
Drainage area	=	4.410 ac	Curve number	=	80*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	14.90 min
Total precip.	=	6.35 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.380 x 98) + (4.030 x 78)] / 4.410

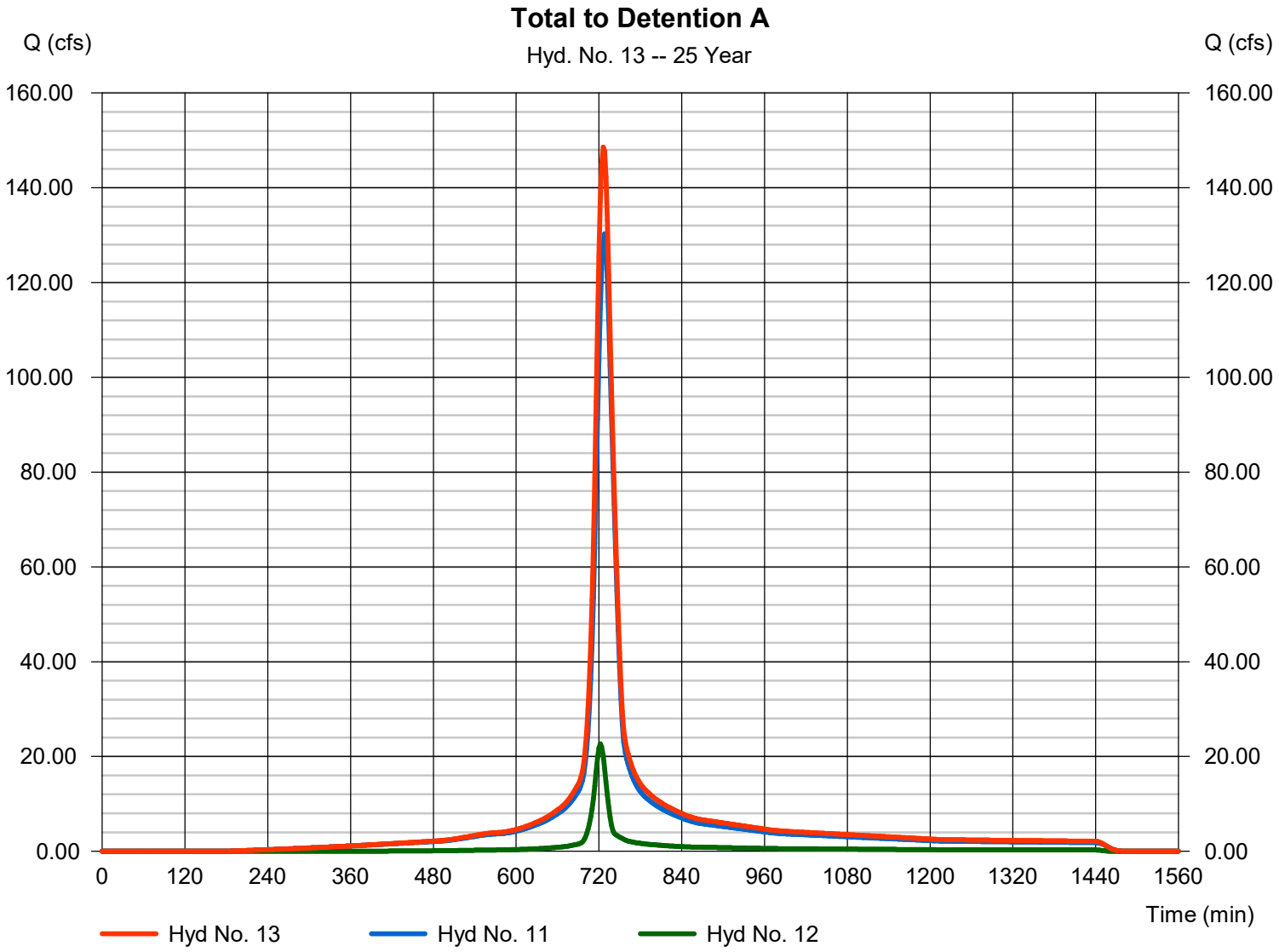


Hydrograph Report

Hyd. No. 13

Total to Detention A

Hydrograph type	=	Combine	Peak discharge	=	148.58 cfs
Storm frequency	=	25 yrs	Time to peak	=	726 min
Time interval	=	2 min	Hyd. volume	=	565,474 cuft
Inflow hyds.	=	11, 12	Contrib. drain. area	=	30.890 ac



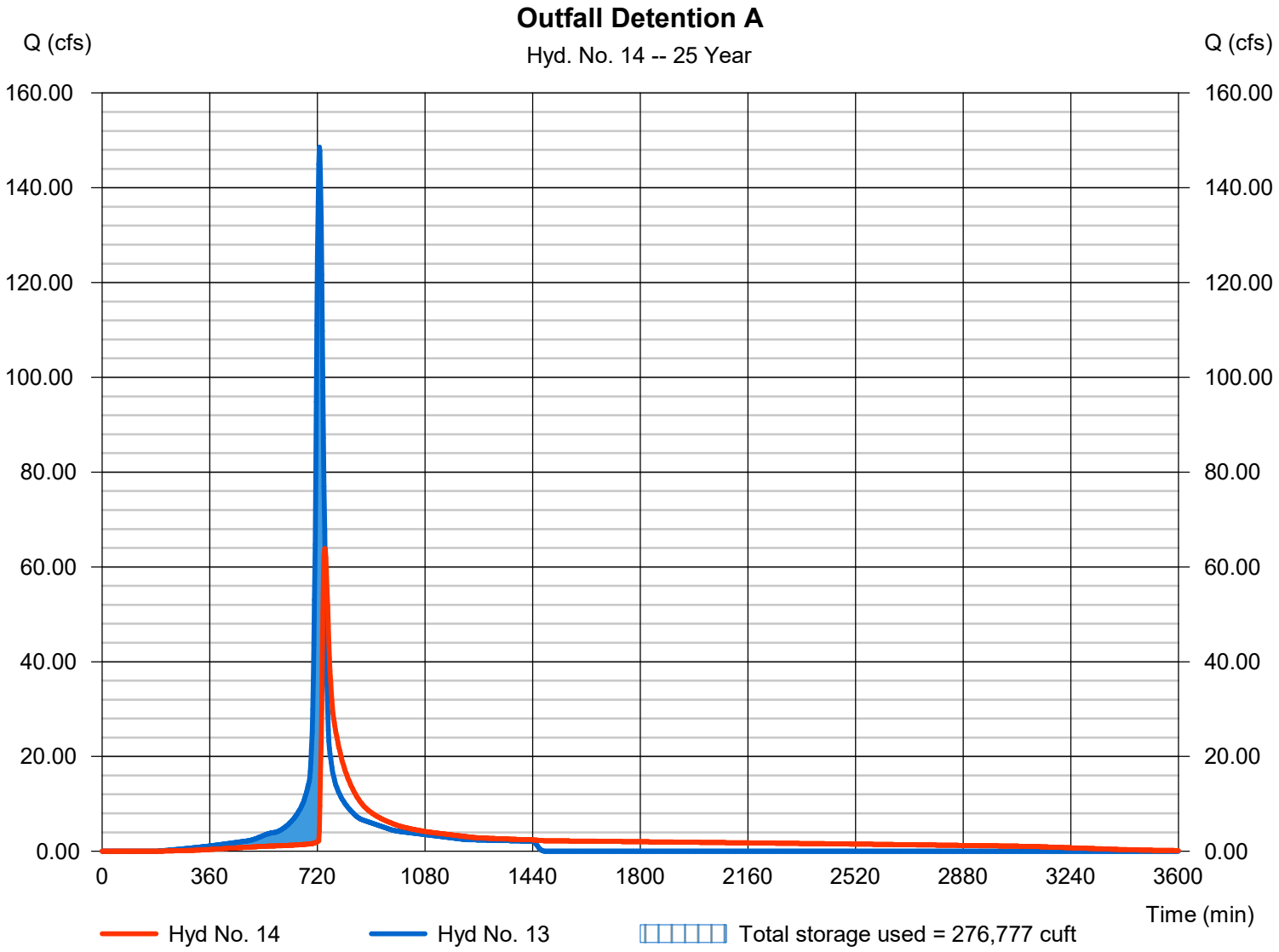
Hydrograph Report

Hyd. No. 14

Outfall Detention A

Hydrograph type	=	Reservoir	Peak discharge	=	63.89 cfs
Storm frequency	=	25 yrs	Time to peak	=	744 min
Time interval	=	2 min	Hyd. volume	=	565,458 cuft
Inflow hyd. No.	=	13 - Total to Detention A	Max. Elevation	=	652.97 ft
Reservoir name	=	Detention Pond A	Max. Storage	=	276,777 cuft

Storage Indication method used.



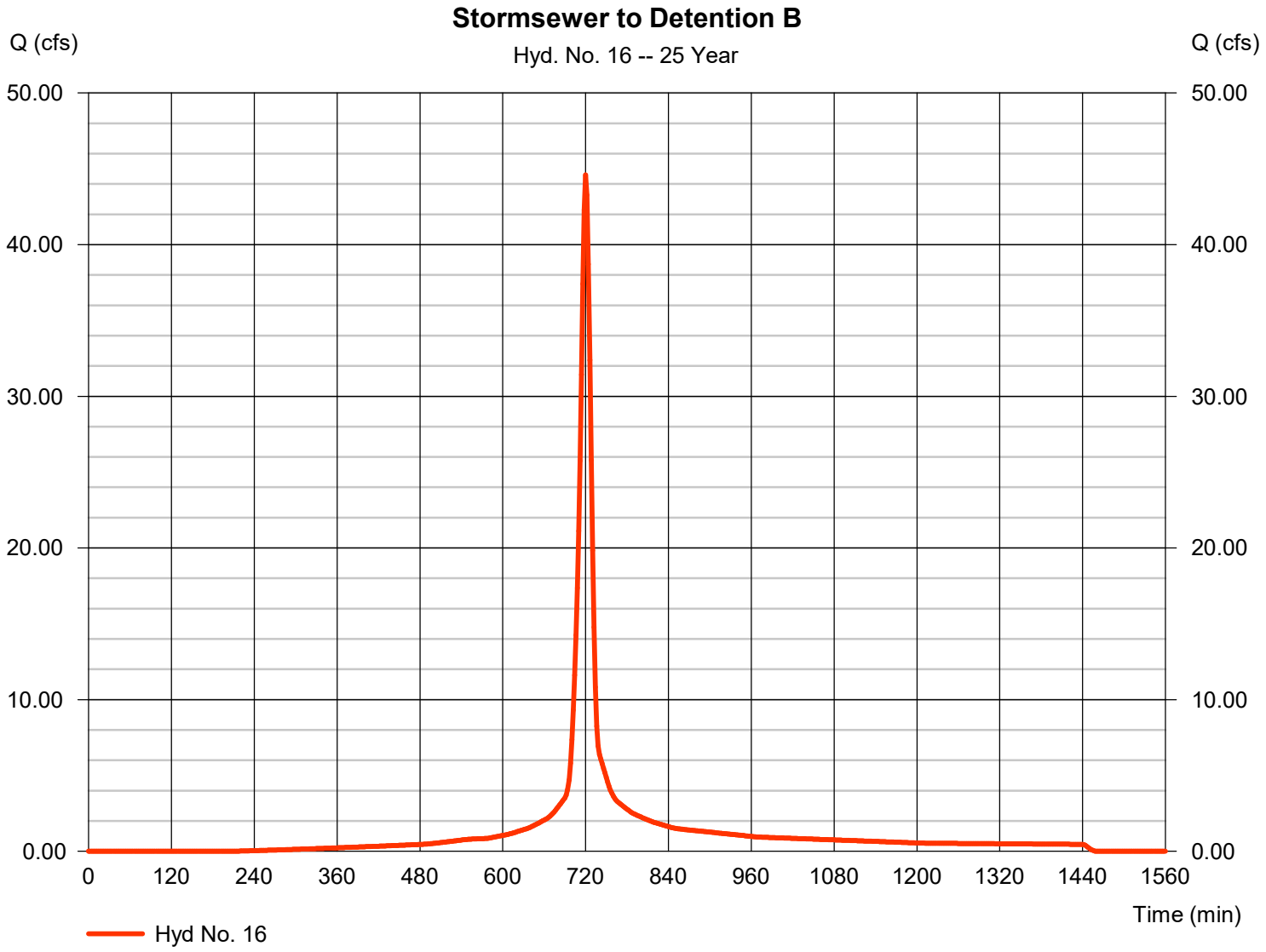
Hydrograph Report

Hyd. No. 16

Stormsewer to Detention B

Hydrograph type	=	SCS Runoff	Peak discharge	=	44.60 cfs
Storm frequency	=	25 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	121,587 cuft
Drainage area	=	6.400 ac	Curve number	=	89*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	11.20 min
Total precip.	=	6.35 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(3.630 x 98) + (2.770 x 78)] / 6.400



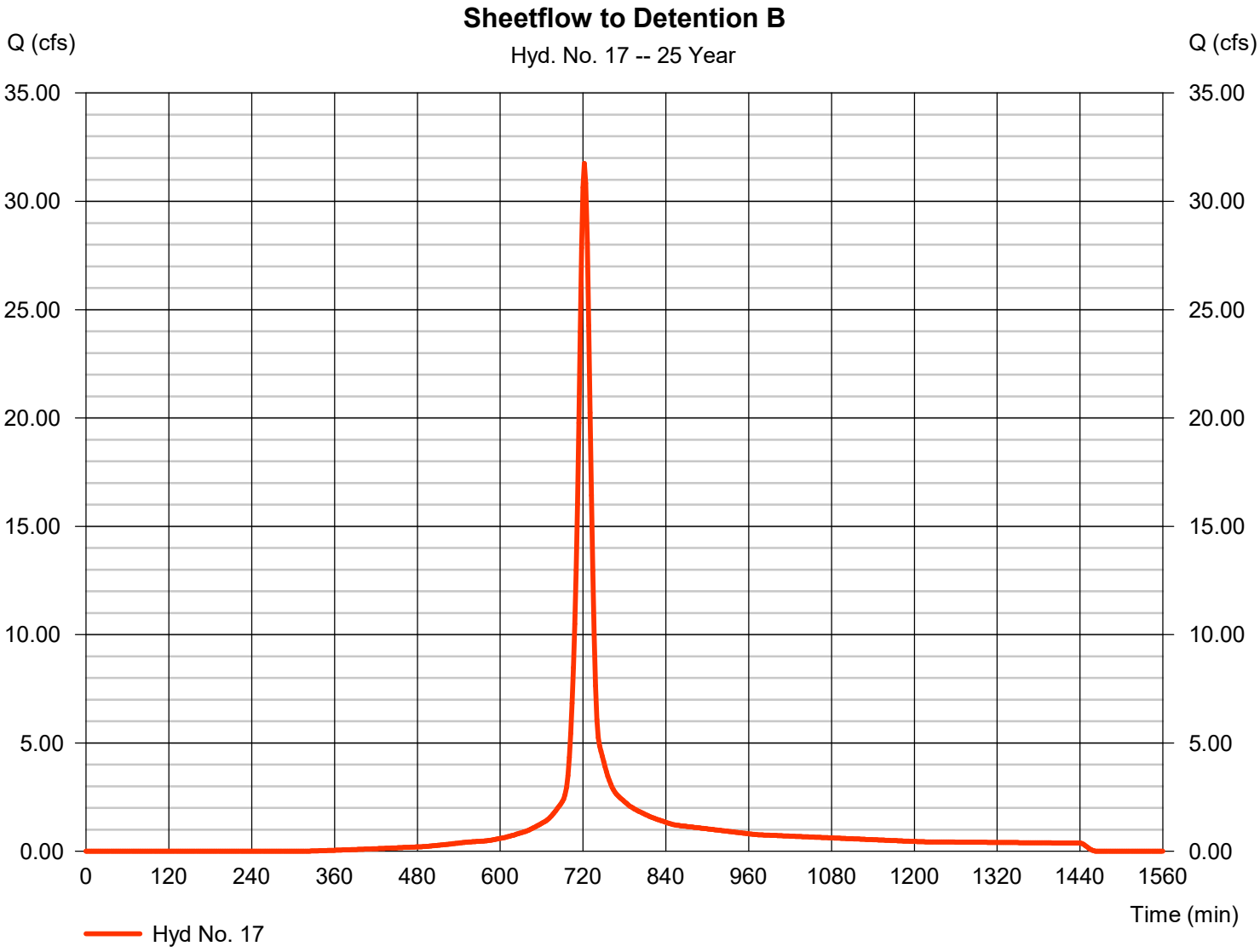
Hydrograph Report

Hyd. No. 17

Sheetflow to Detention B

Hydrograph type	=	SCS Runoff	Peak discharge	=	31.75 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	90,521 cuft
Drainage area	=	5.790 ac	Curve number	=	83*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	13.80 min
Total precip.	=	6.35 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.390 x 98) + (4.400 x 78)] / 5.790

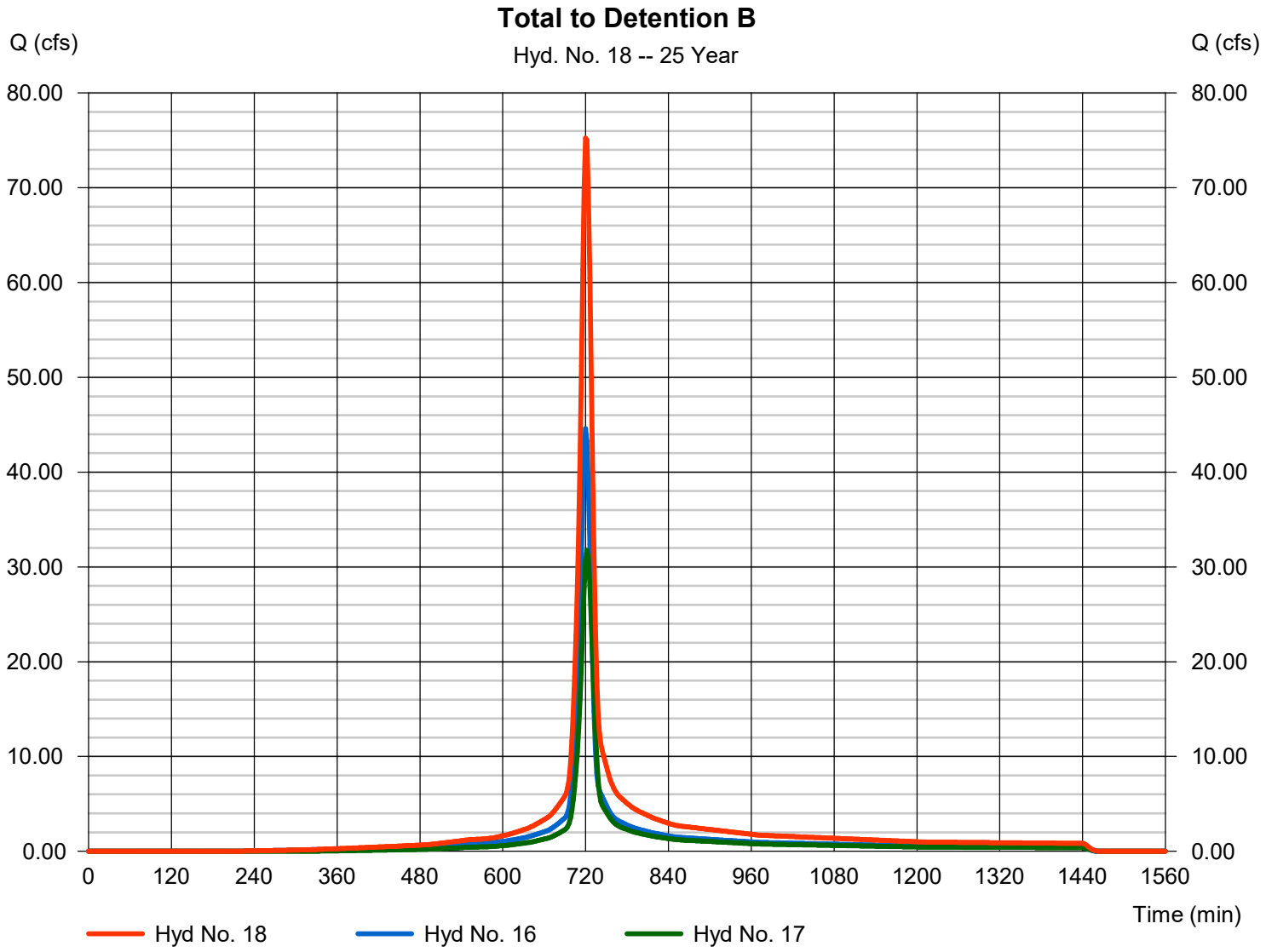


Hydrograph Report

Hyd. No. 18

Total to Detention B

Hydrograph type	= Combine	Peak discharge	= 75.24 cfs
Storm frequency	= 25 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 212,107 cuft
Inflow hyds.	= 16, 17	Contrib. drain. area	= 12.190 ac



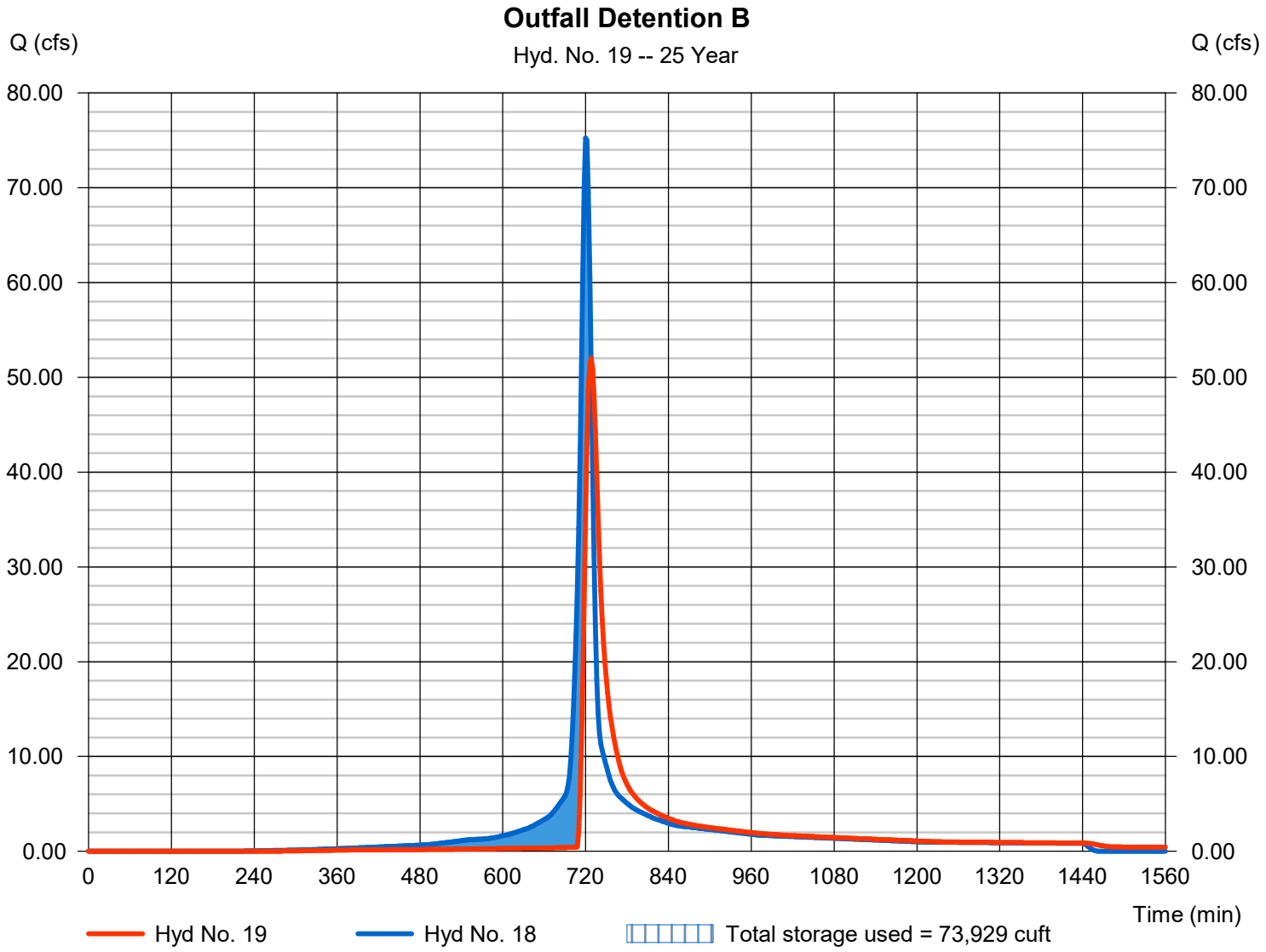
Hydrograph Report

Hyd. No. 19

Outfall Detention B

Hydrograph type	=	Reservoir	Peak discharge	=	52.02 cfs
Storm frequency	=	25 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	212,090 cuft
Inflow hyd. No.	=	18 - Total to Detention B	Max. Elevation	=	661.45 ft
Reservoir name	=	Detention Pond B	Max. Storage	=	73,929 cuft

Storage Indication method used.



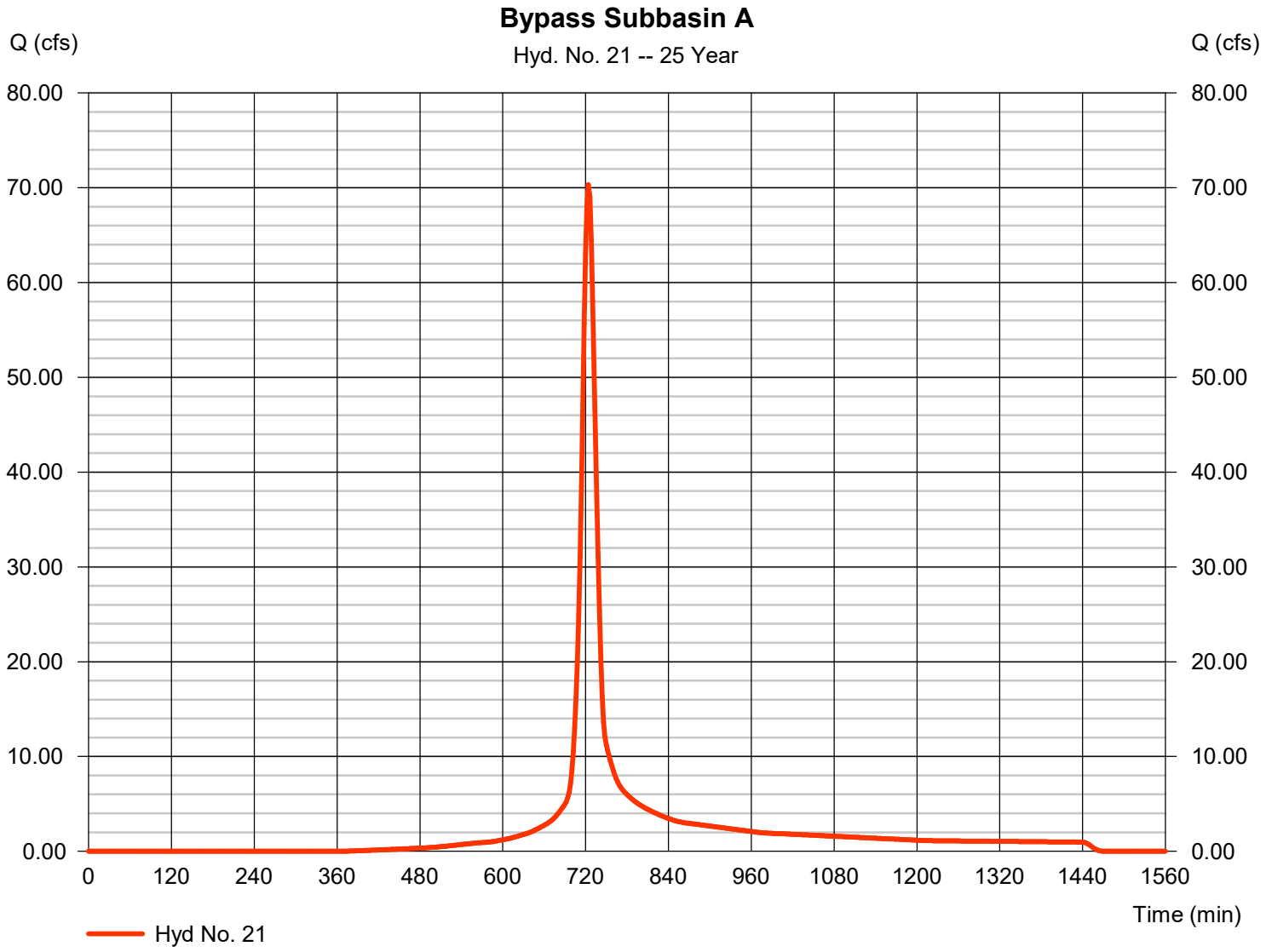
Hydrograph Report

Hyd. No. 21

Bypass Subbasin A

Hydrograph type	=	SCS Runoff	Peak discharge	=	70.33 cfs
Storm frequency	=	25 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	220,932 cuft
Drainage area	=	14.850 ac	Curve number	=	80*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	18.30 min
Total precip.	=	6.35 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.140 x 98) + (13.710 x 78)] / 14.850

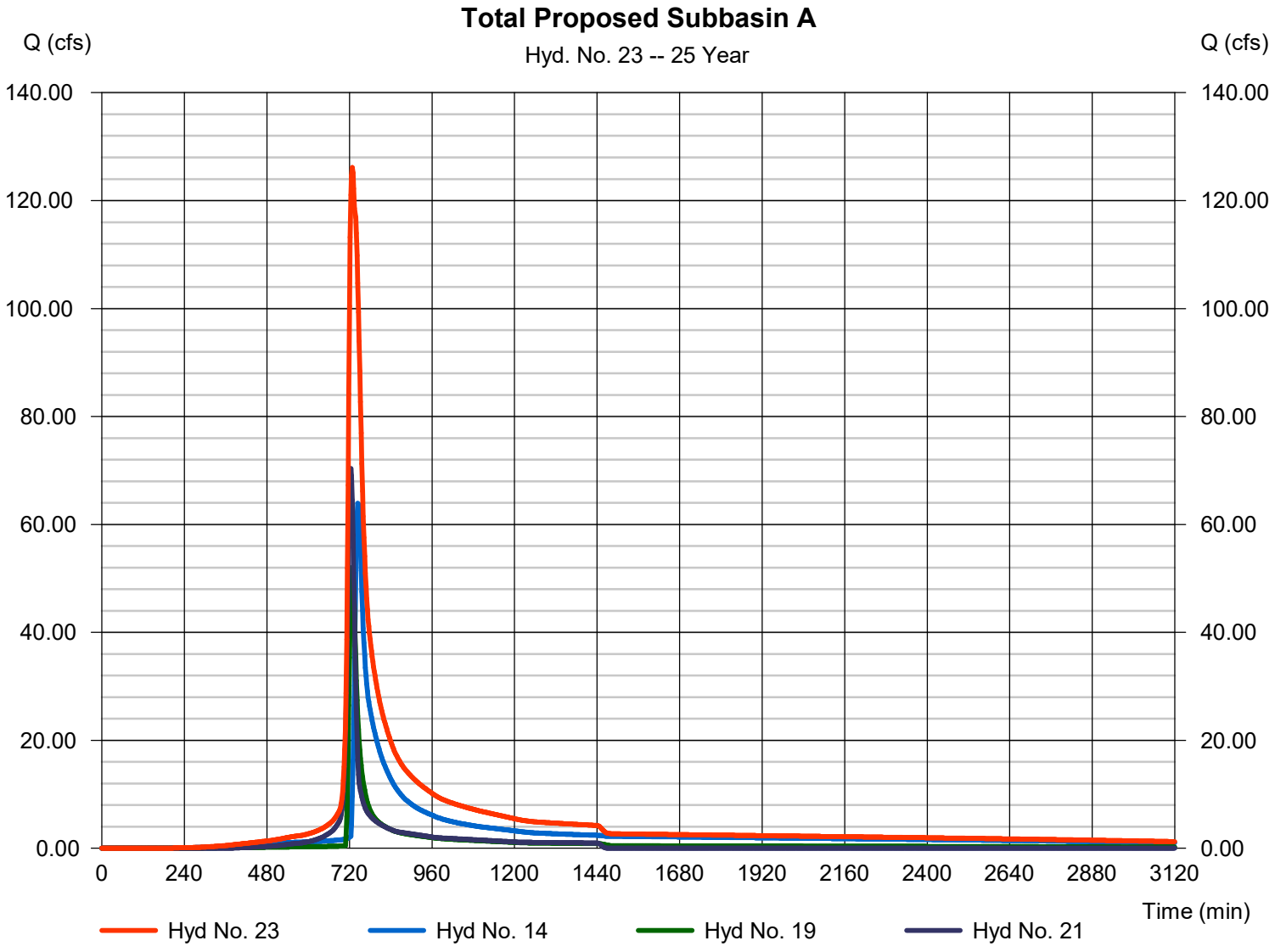


Hydrograph Report

Hyd. No. 23

Total Proposed Subbasin A

Hydrograph type	=	Combine	Peak discharge	=	126.13 cfs
Storm frequency	=	25 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	998,481 cuft
Inflow hyds.	=	14, 19, 21	Contrib. drain. area	=	14.850 ac

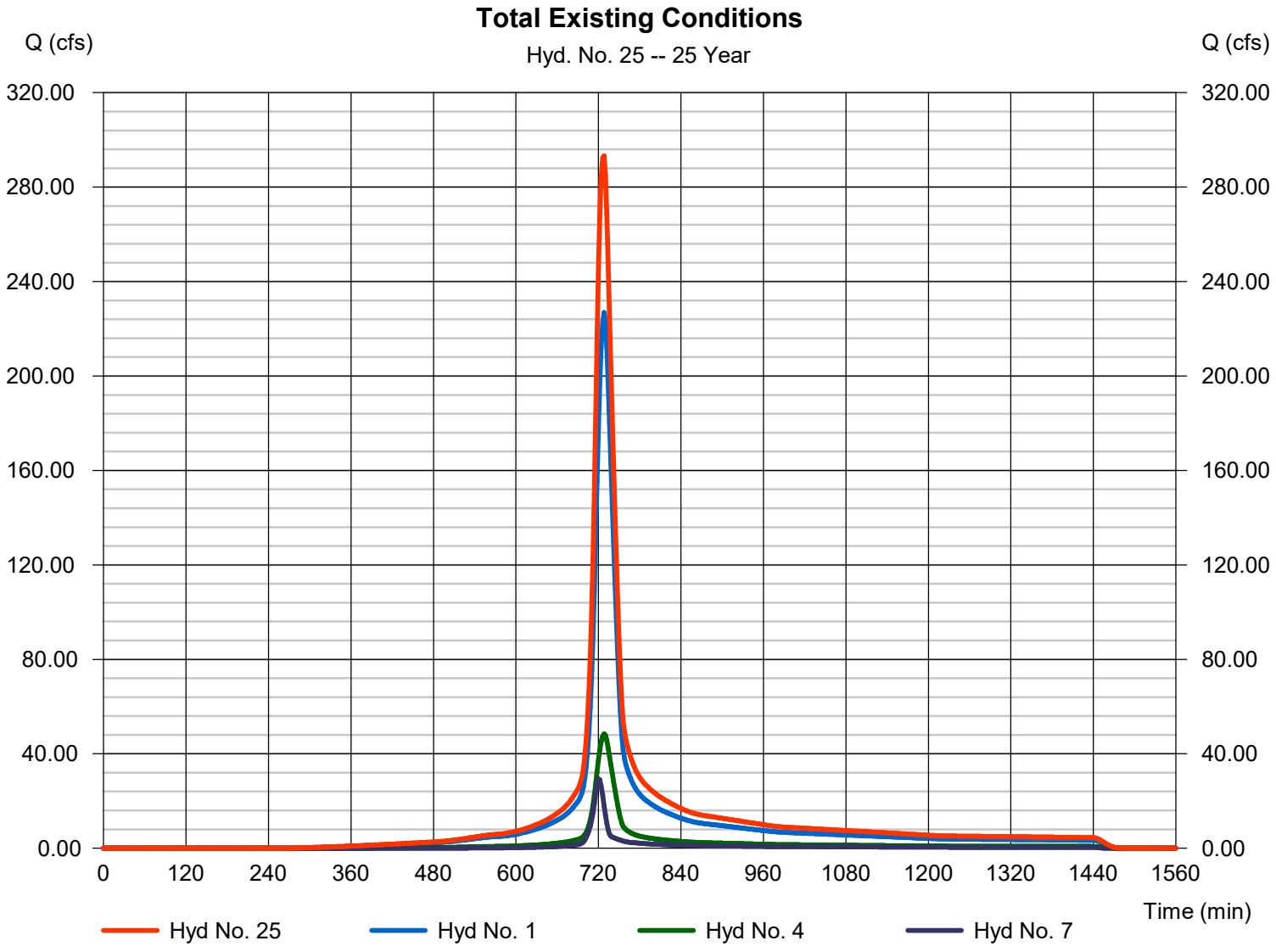


Hydrograph Report

Hyd. No. 25

Total Existing Conditions

Hydrograph type	= Combine	Peak discharge	= 293.28 cfs
Storm frequency	= 25 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 1,102,796 cuft
Inflow hyds.	= 1, 4, 7	Contrib. drain. area	= 67.940 ac

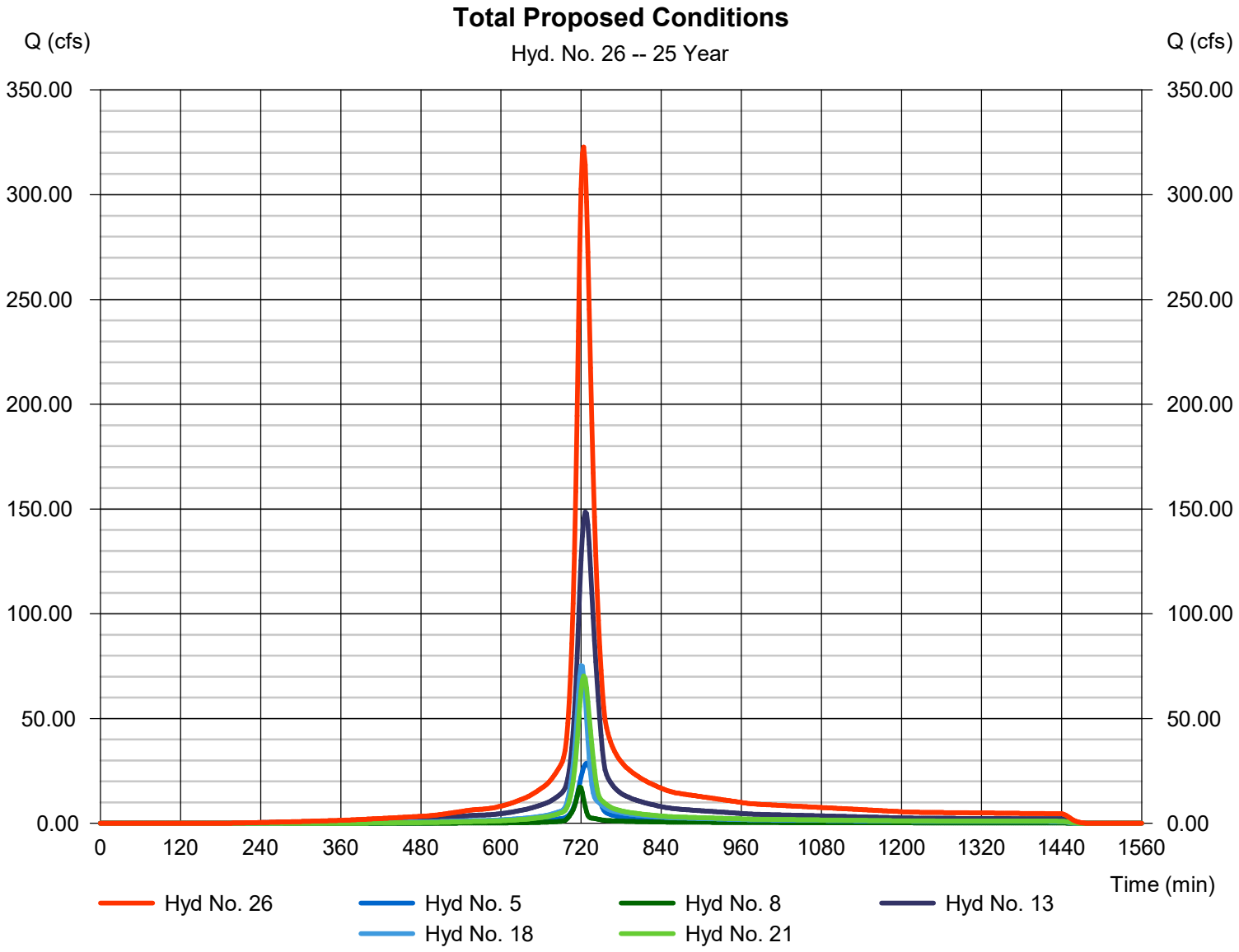


Hydrograph Report

Hyd. No. 26

Total Proposed Conditions

Hydrograph type	=	Combine	Peak discharge	=	322.81 cfs
Storm frequency	=	25 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	1,144,003 cuft
Inflow hyds.	=	5, 8, 13, 18, 21	Contrib. drain. area	=	24.860 ac

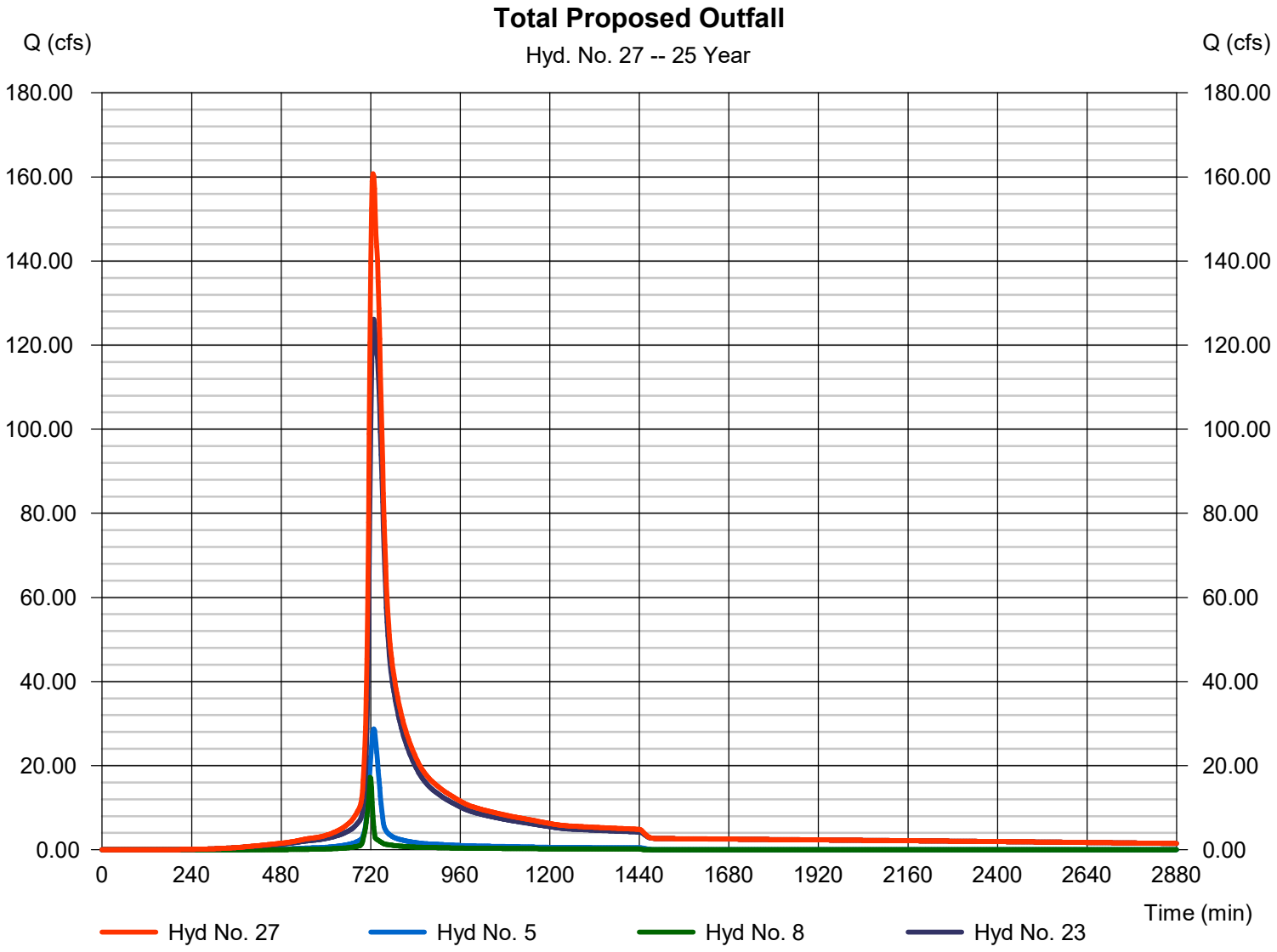


Hydrograph Report

Hyd. No. 27

Total Proposed Outfall

Hydrograph type	=	Combine	Peak discharge	=	160.75 cfs
Storm frequency	=	25 yrs	Time to peak	=	726 min
Time interval	=	2 min	Hyd. volume	=	1,143,968 cuft
Inflow hyds.	=	5, 8, 23	Contrib. drain. area	=	10.010 ac



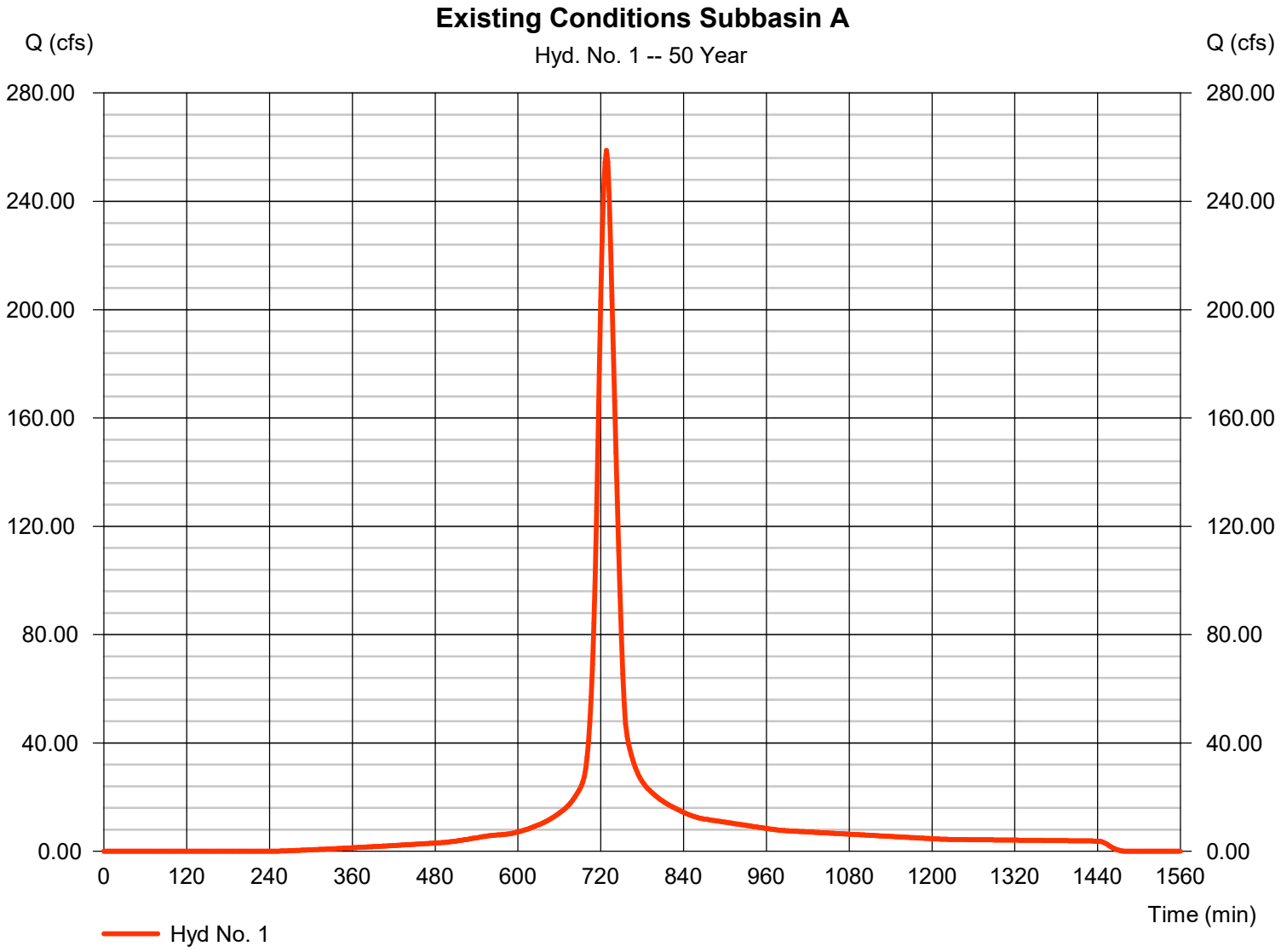
Hydrograph Report

Hyd. No. 1

Existing Conditions Subbasin A

Hydrograph type	= SCS Runoff	Peak discharge	= 258.84 cfs
Storm frequency	= 50 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 973,575 cuft
Drainage area	= 50.060 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 24.76 min
Total precip.	= 7.08 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(44.870 x 88) + (5.190 x 70)] / 50.060



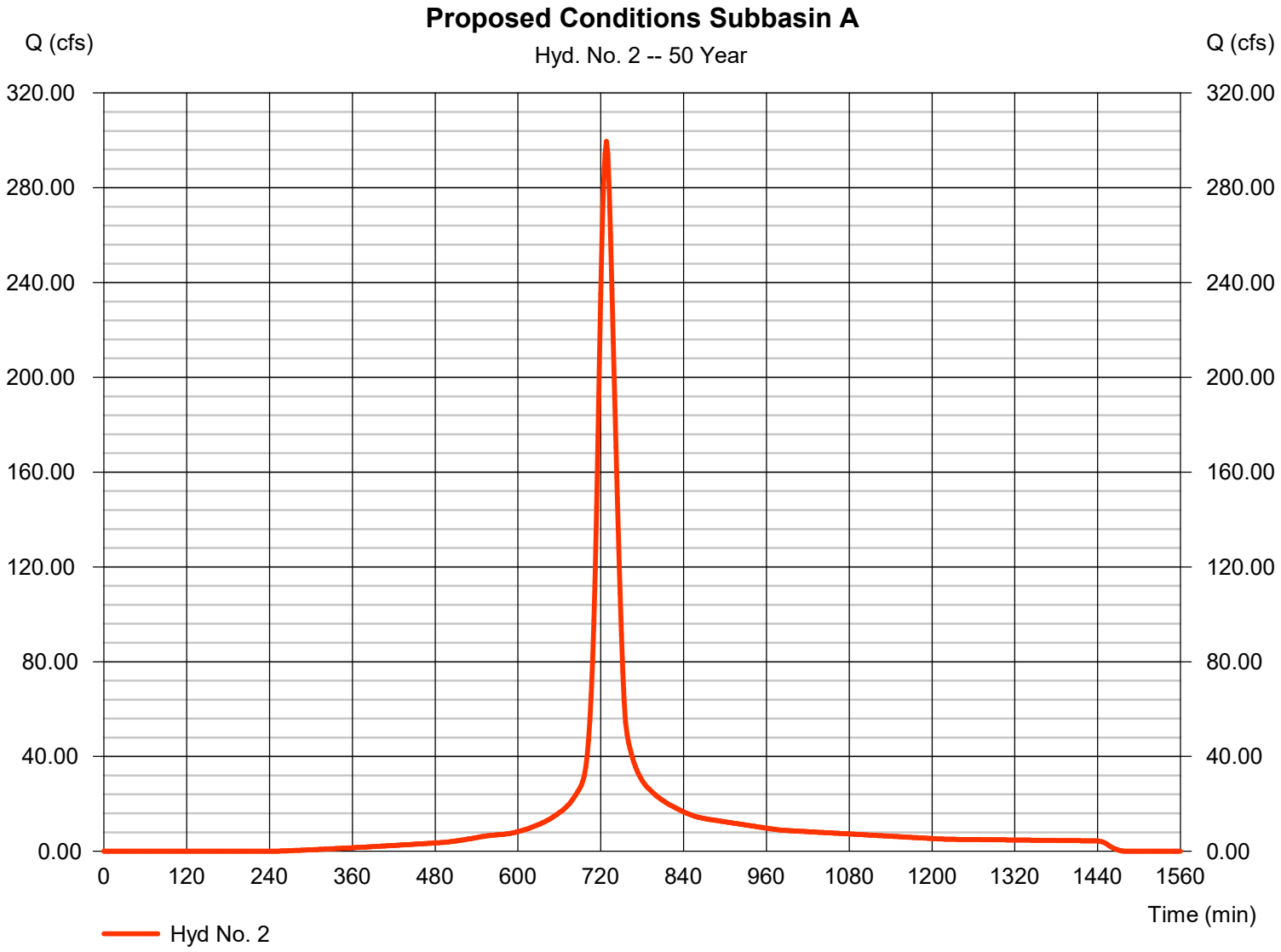
Hydrograph Report

Hyd. No. 2

Proposed Conditions Subbasin A

Hydrograph type	=	SCS Runoff	Peak discharge	=	299.53 cfs
Storm frequency	=	50 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	1,126,632 cuft
Drainage area	=	57.930 ac	Curve number	=	86*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	23.70 min
Total precip.	=	7.08 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(23.640 x 98) + (34.290 x 78)] / 57.930



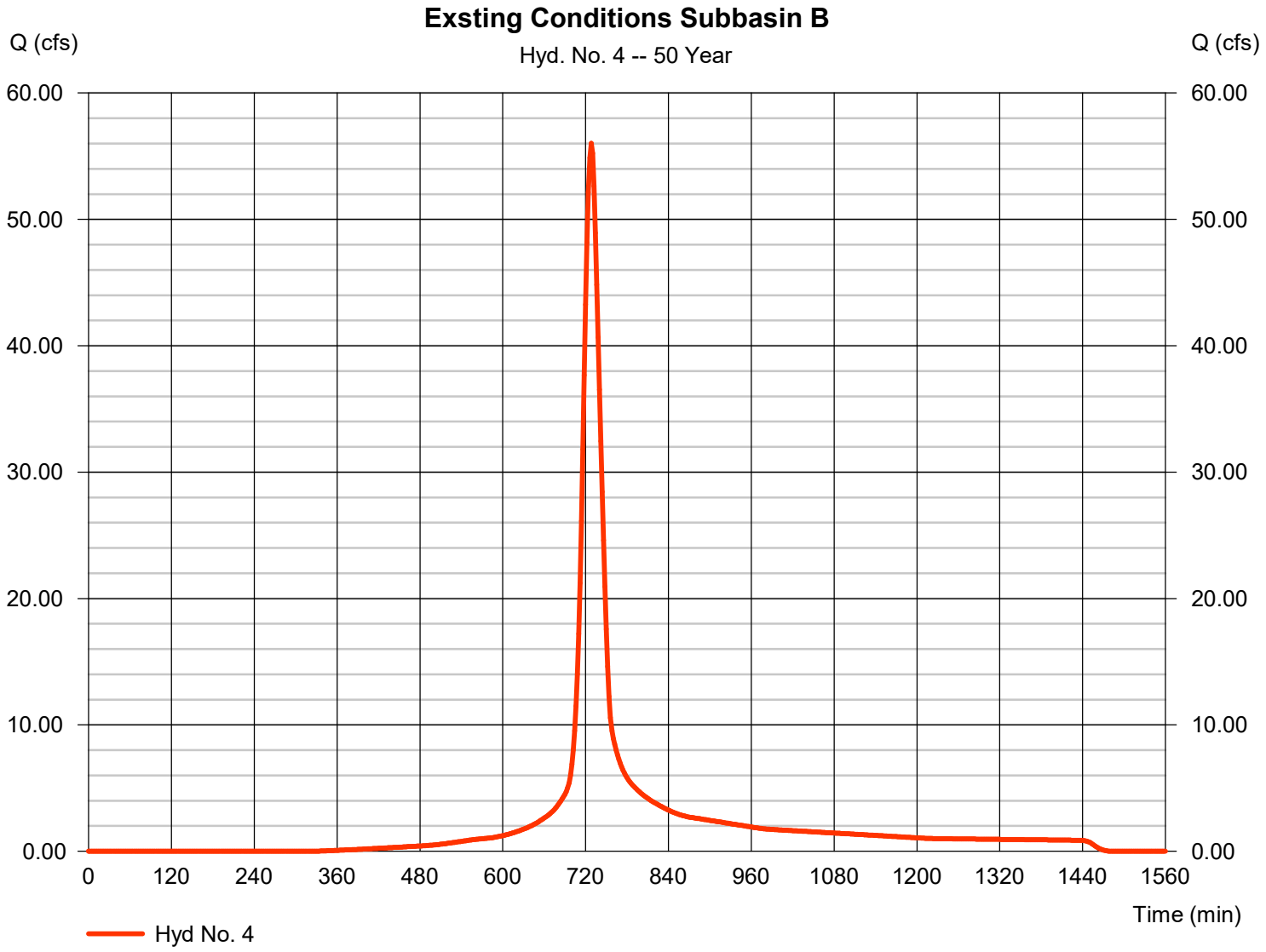
Hydrograph Report

Hyd. No. 4

Exsting Conditions Subbasin B

Hydrograph type	= SCS Runoff	Peak discharge	= 56.02 cfs
Storm frequency	= 50 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 207,138 cuft
Drainage area	= 11.880 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.80 min
Total precip.	= 7.08 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(6.940 x 88) + (4.940 x 70)] / 11.880



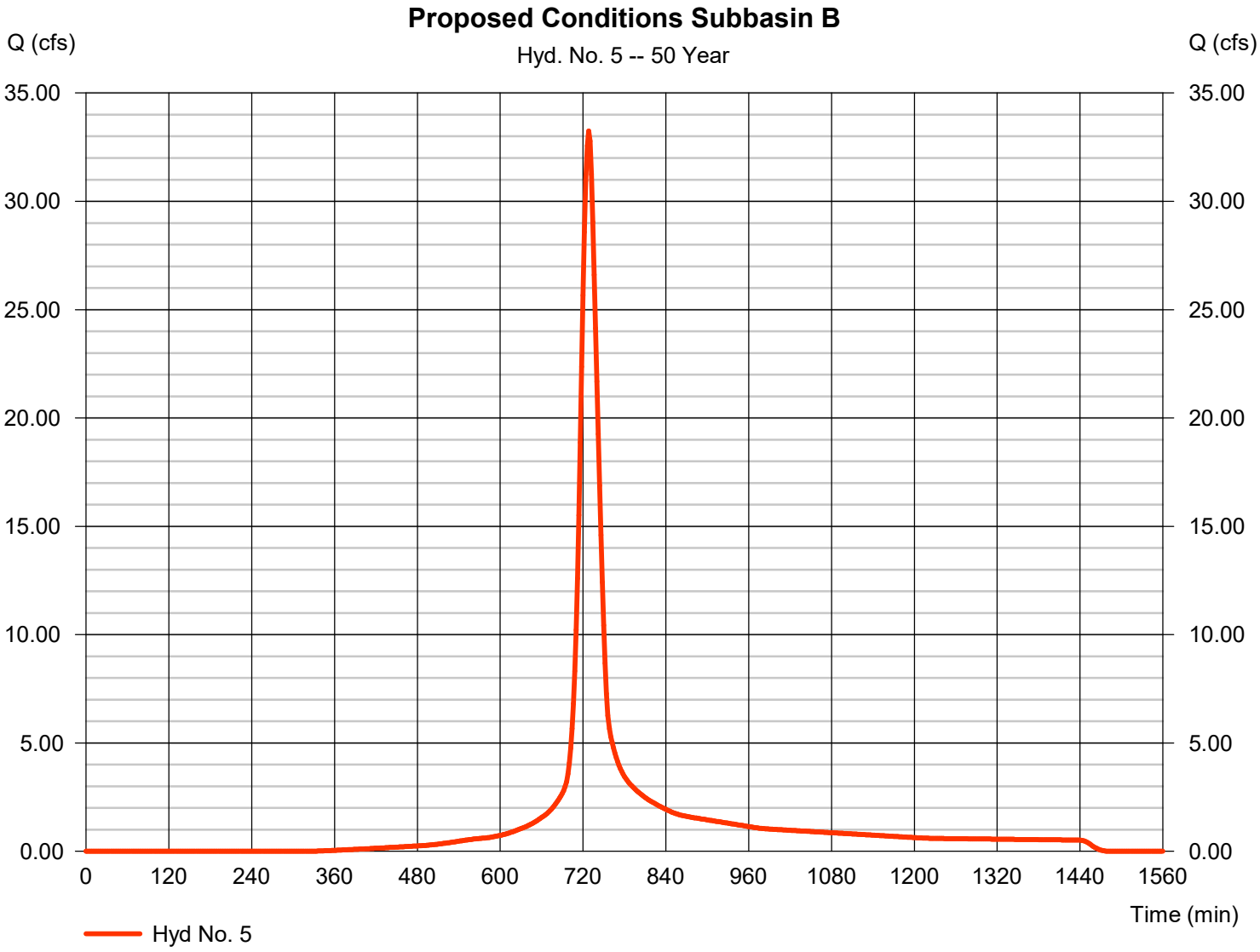
Hydrograph Report

Hyd. No. 5

Proposed Conditions Subbasin B

Hydrograph type	=	SCS Runoff	Peak discharge	=	33.24 cfs
Storm frequency	=	50 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	122,923 cuft
Drainage area	=	7.050 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	25.00 min
Total precip.	=	7.08 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.950 x 98) + (6.100 x 78)] / 7.050



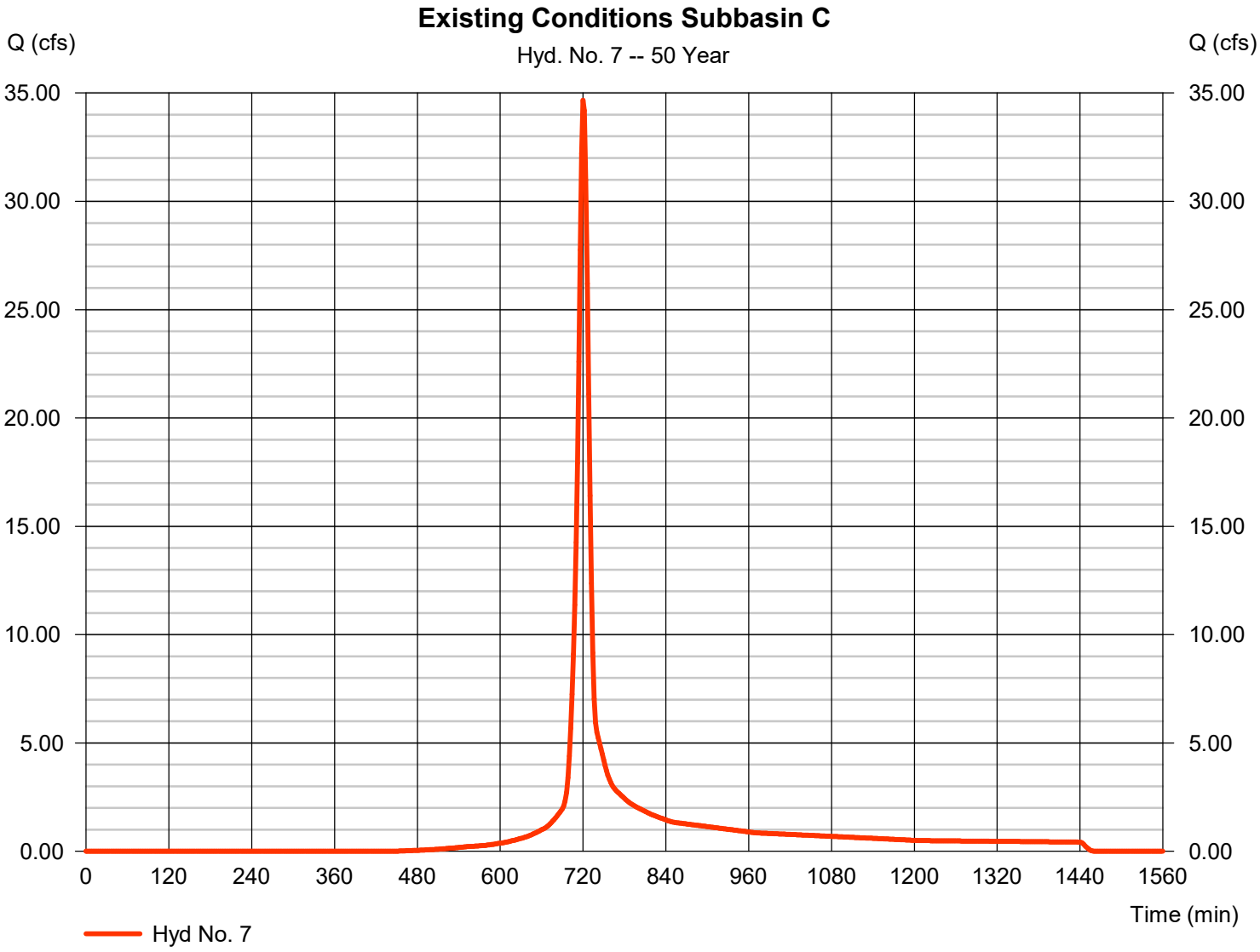
Hydrograph Report

Hyd. No. 7

Existing Conditions Subbasin C

Hydrograph type	=	SCS Runoff	Peak discharge	=	34.67 cfs
Storm frequency	=	50 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	89,940 cuft
Drainage area	=	6.000 ac	Curve number	=	73*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.90 min
Total precip.	=	7.08 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.990 x 79) + (4.010 x 70)] / 6.000



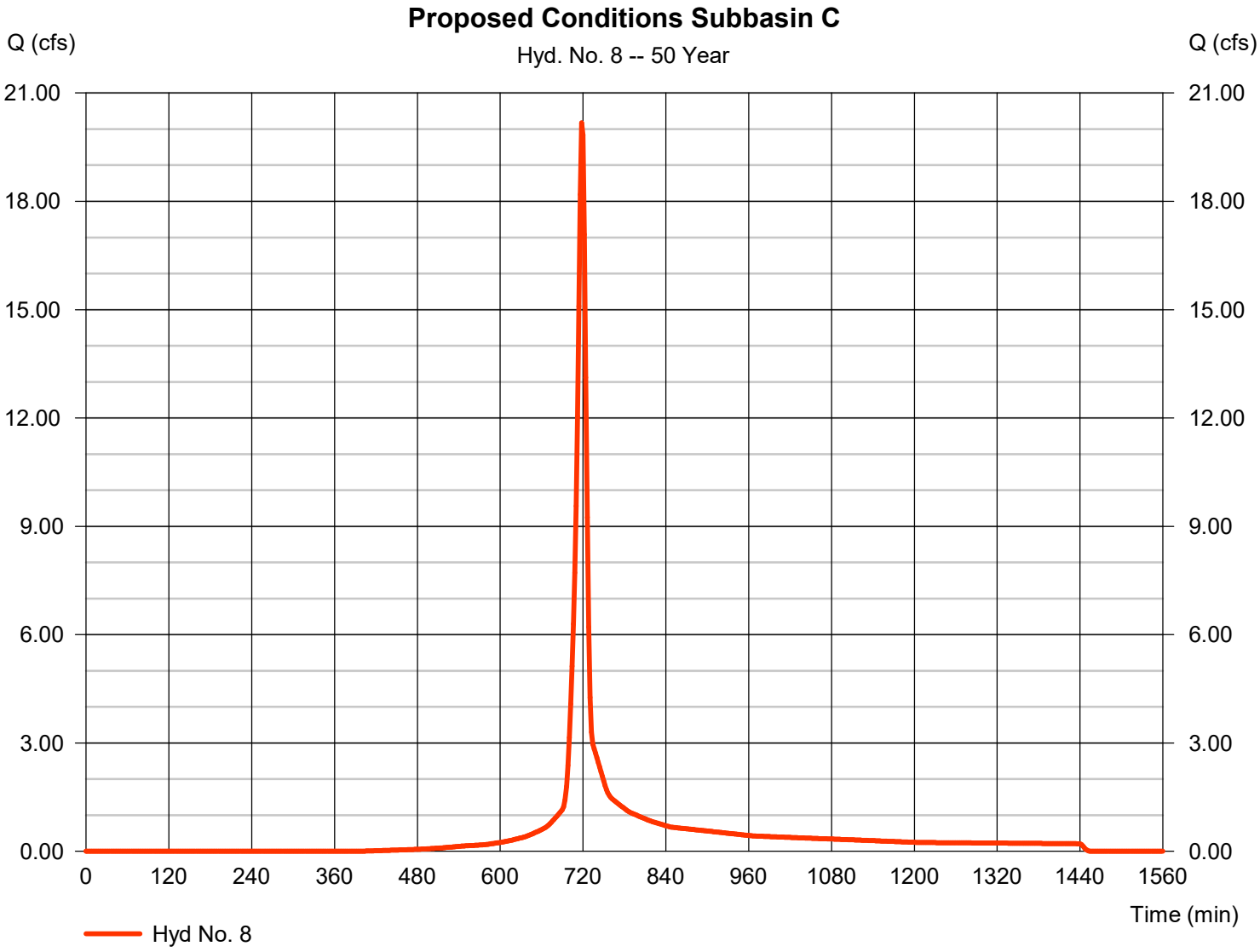
Hydrograph Report

Hyd. No. 8

Proposed Conditions Subbasin C

Hydrograph type	=	SCS Runoff	Peak discharge	=	20.17 cfs
Storm frequency	=	50 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	46,510 cuft
Drainage area	=	2.960 ac	Curve number	=	76*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	8.08 min
Total precip.	=	7.08 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.820 x 79) + (1.140 x 70)] / 2.960



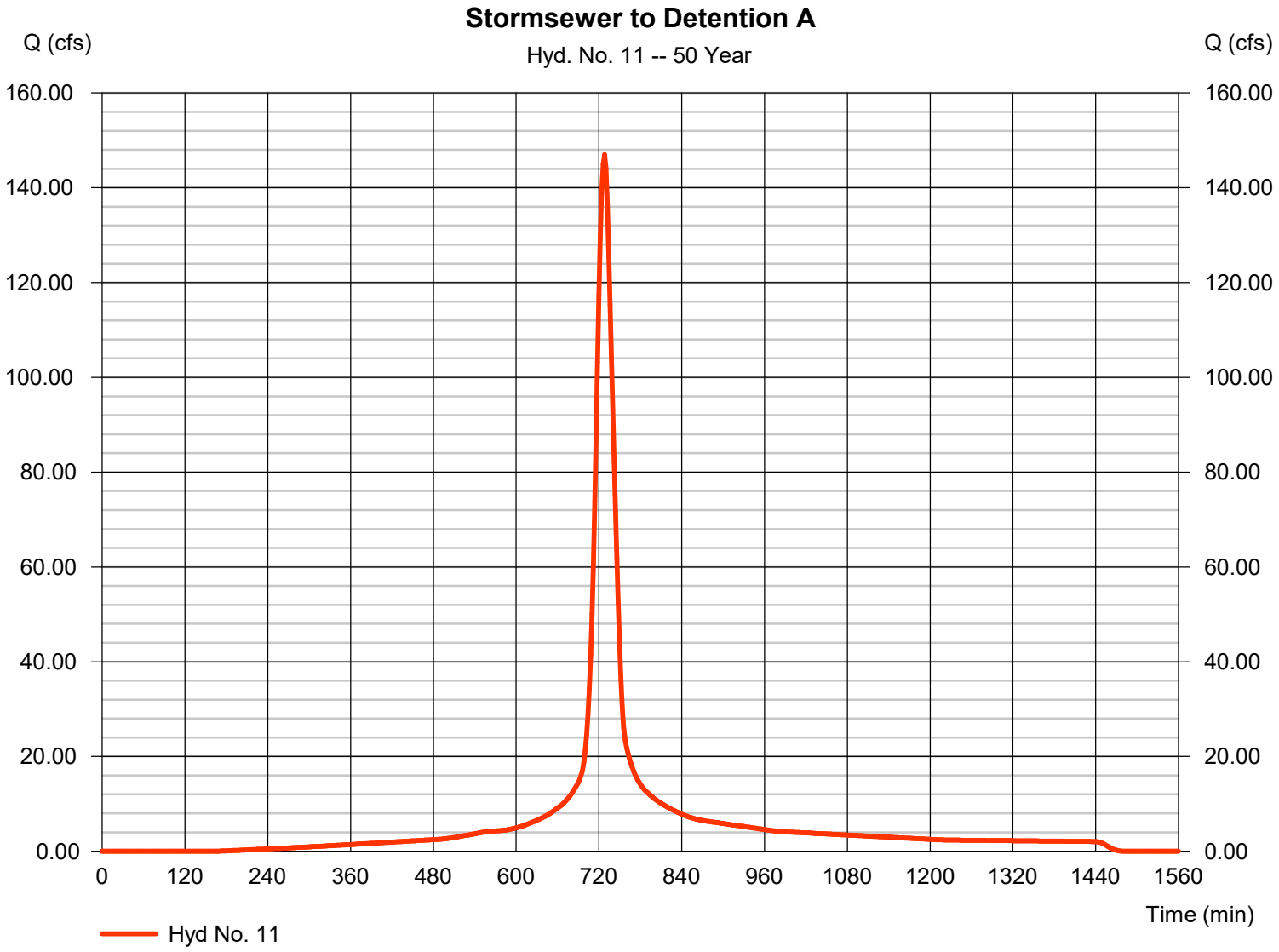
Hydrograph Report

Hyd. No. 11

Stormsewer to Detention A

Hydrograph type	=	SCS Runoff	Peak discharge	=	146.99 cfs
Storm frequency	=	50 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	569,374 cuft
Drainage area	=	26.480 ac	Curve number	=	91*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	23.70 min
Total precip.	=	7.08 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(17.100 x 98) + (9.380 x 78)] / 26.480



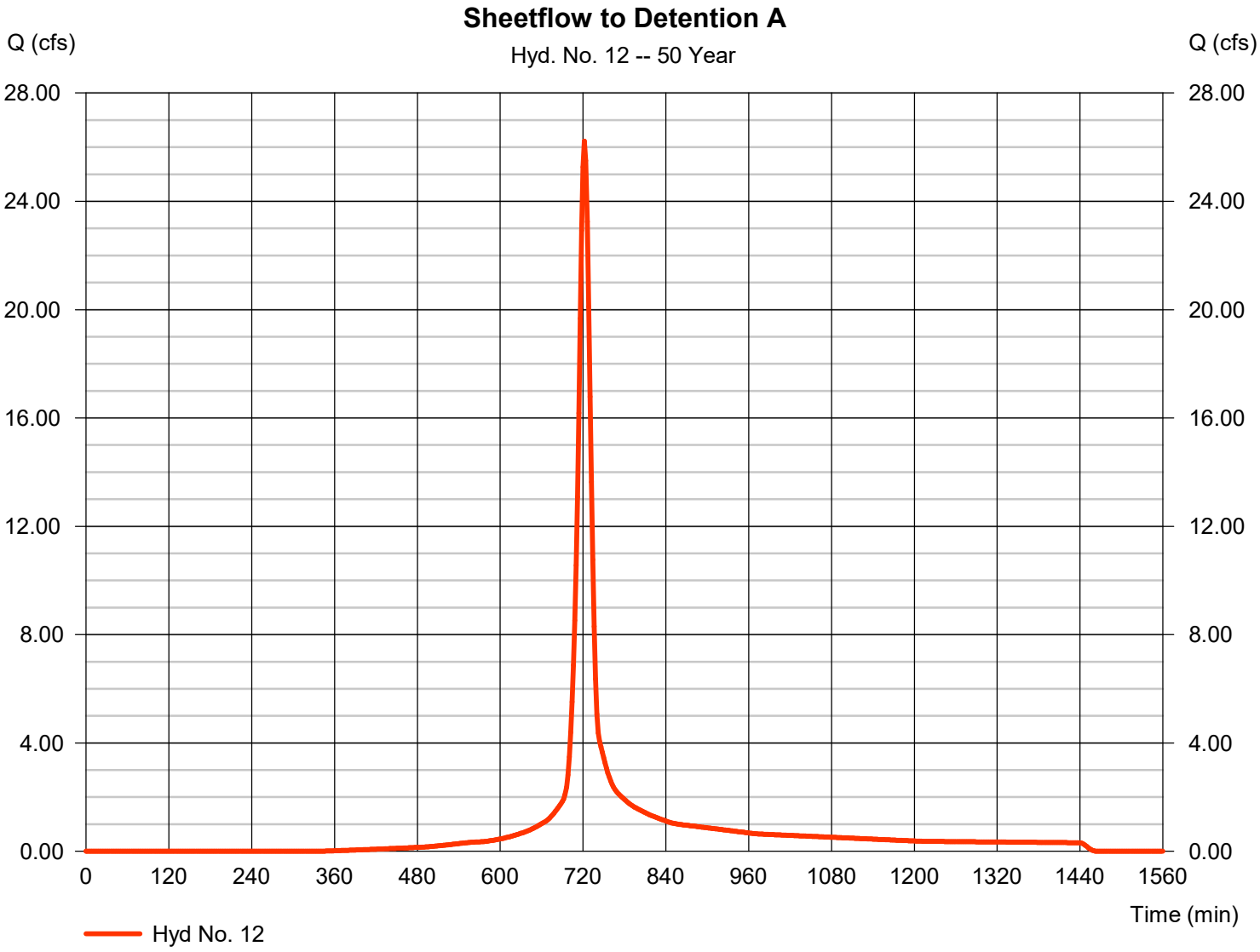
Hydrograph Report

Hyd. No. 12

Sheetflow to Detention A

Hydrograph type	=	SCS Runoff	Peak discharge	=	26.22 cfs
Storm frequency	=	50 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	74,424 cuft
Drainage area	=	4.410 ac	Curve number	=	80*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	14.90 min
Total precip.	=	7.08 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.380 x 98) + (4.030 x 78)] / 4.410

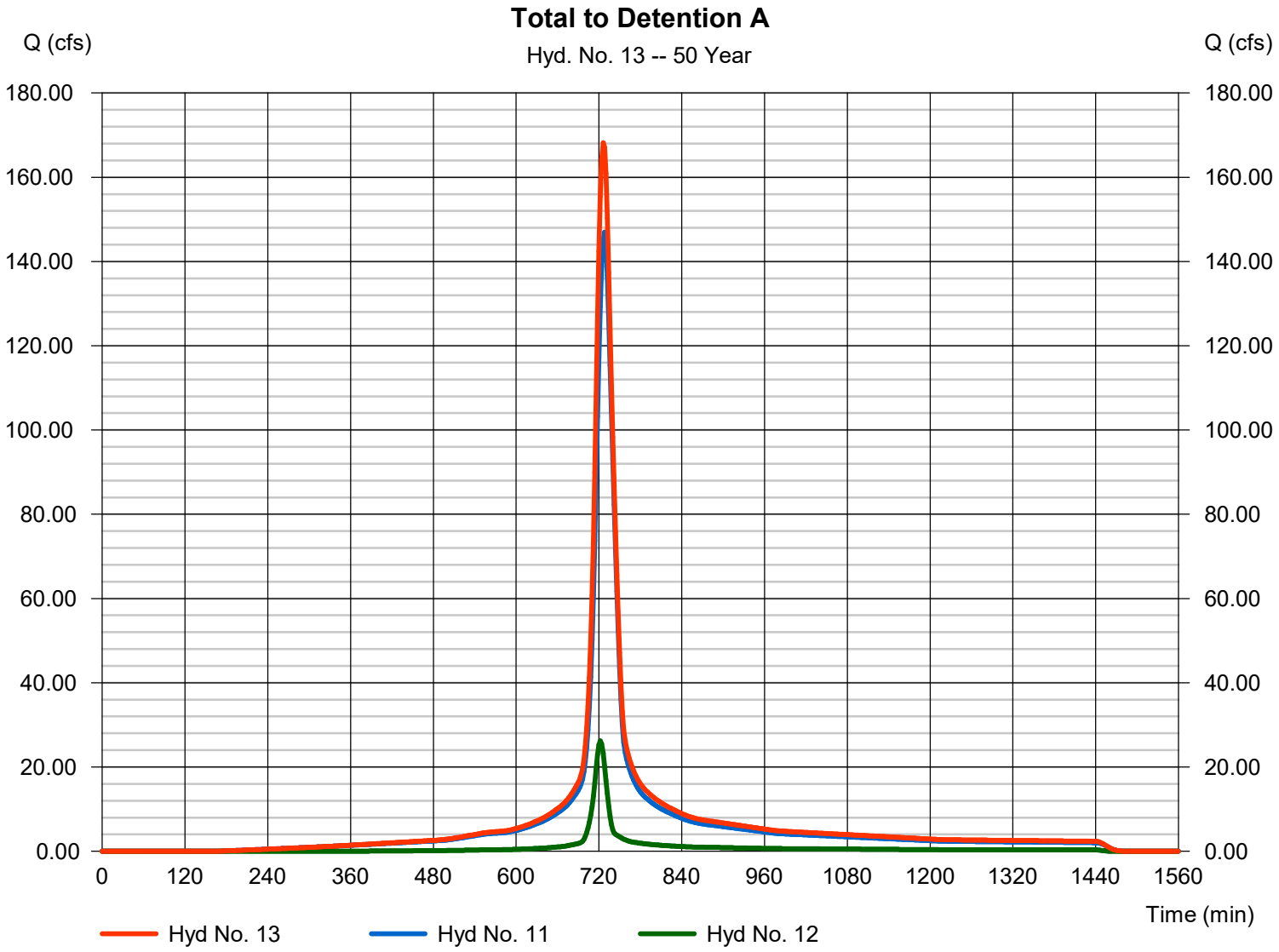


Hydrograph Report

Hyd. No. 13

Total to Detention A

Hydrograph type	=	Combine	Peak discharge	=	168.19 cfs
Storm frequency	=	50 yrs	Time to peak	=	726 min
Time interval	=	2 min	Hyd. volume	=	643,798 cuft
Inflow hyds.	=	11, 12	Contrib. drain. area	=	30.890 ac



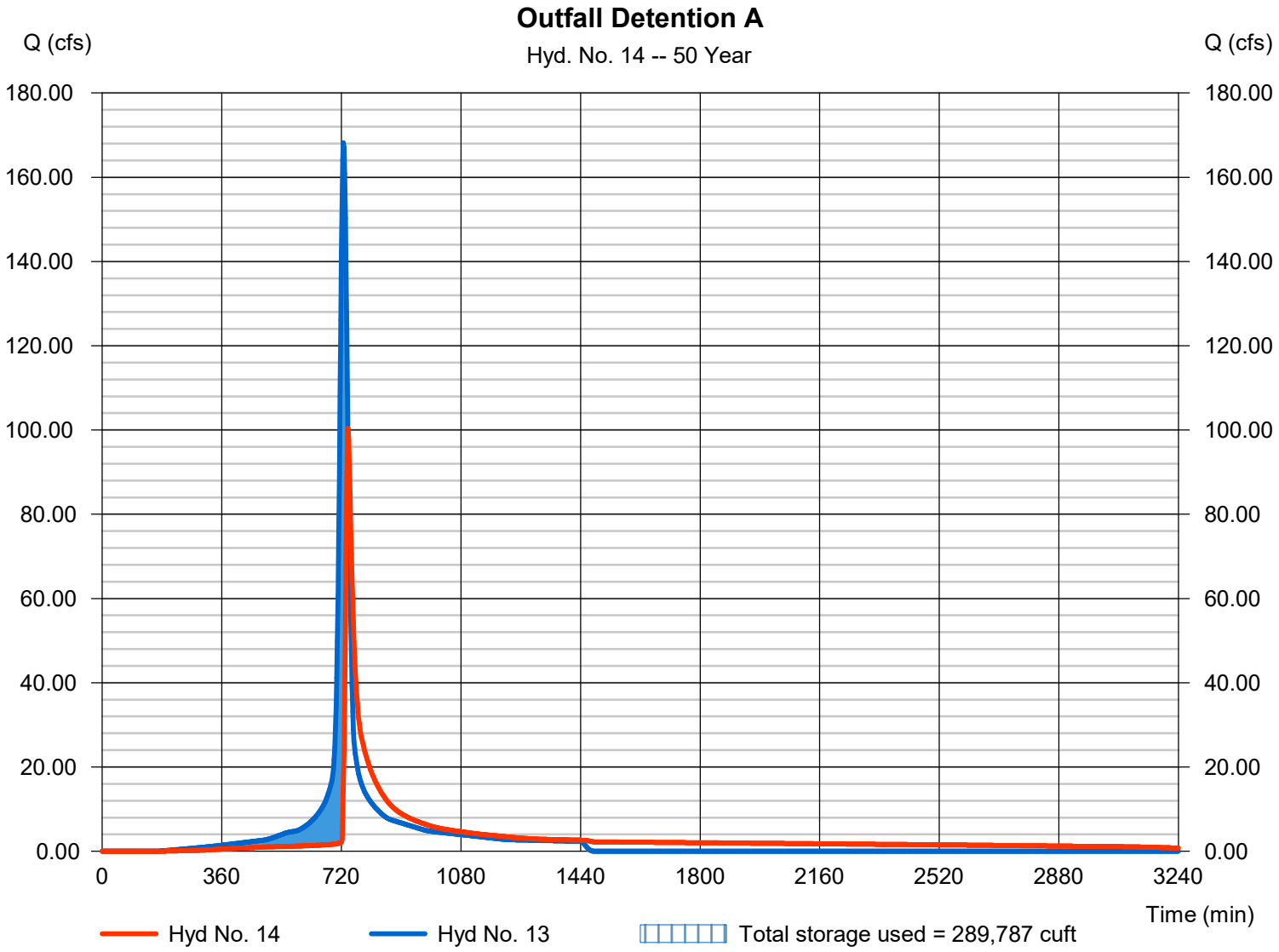
Hydrograph Report

Hyd. No. 14

Outfall Detention A

Hydrograph type	=	Reservoir	Peak discharge	=	100.42 cfs
Storm frequency	=	50 yrs	Time to peak	=	740 min
Time interval	=	2 min	Hyd. volume	=	643,782 cuft
Inflow hyd. No.	=	13 - Total to Detention A	Max. Elevation	=	653.18 ft
Reservoir name	=	Detention Pond A	Max. Storage	=	289,787 cuft

Storage Indication method used.



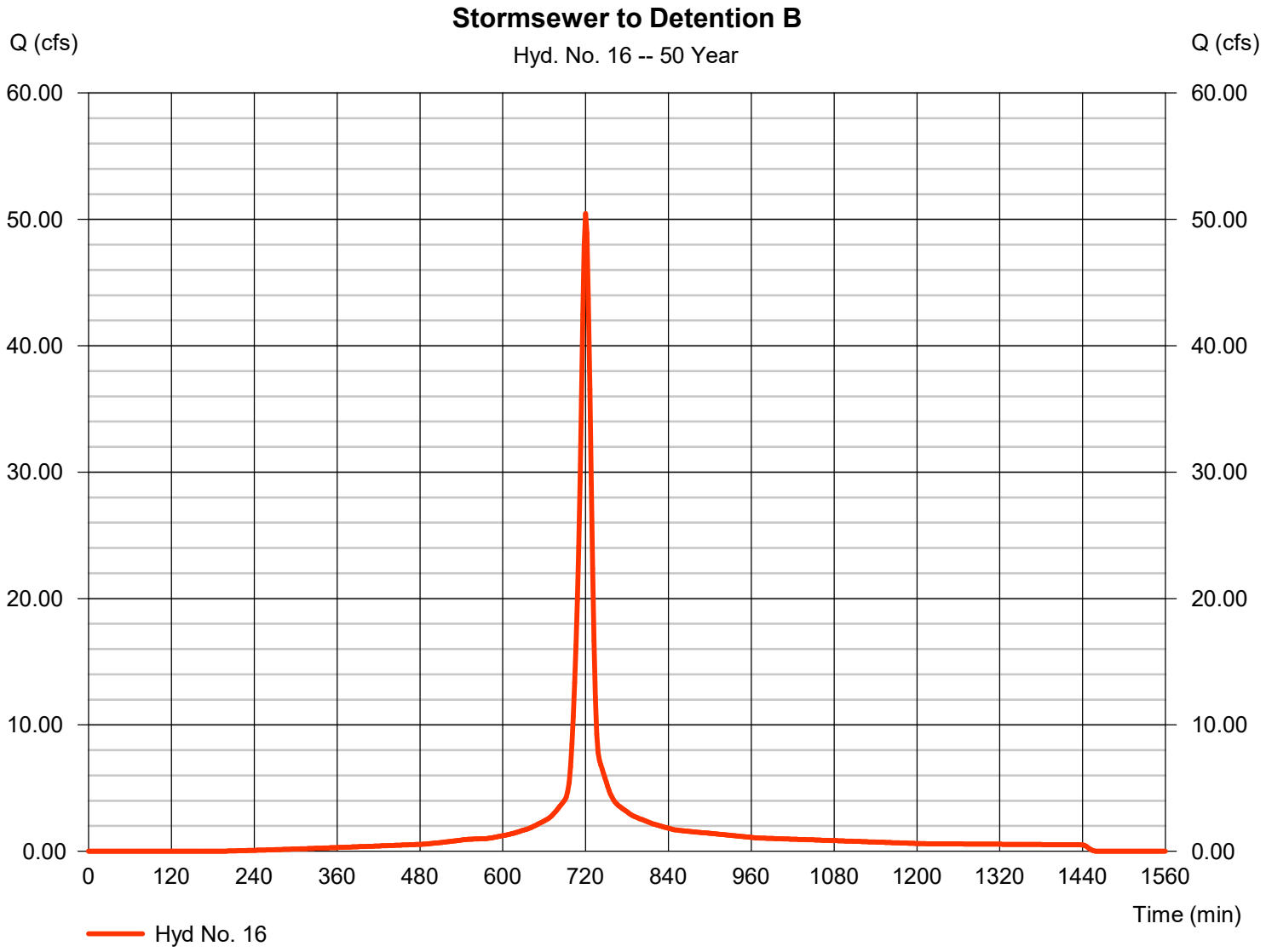
Hydrograph Report

Hyd. No. 16

Stormsewer to Detention B

Hydrograph type	=	SCS Runoff	Peak discharge	=	50.47 cfs
Storm frequency	=	50 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	138,625 cuft
Drainage area	=	6.400 ac	Curve number	=	89*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	11.20 min
Total precip.	=	7.08 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(3.630 x 98) + (2.770 x 78)] / 6.400



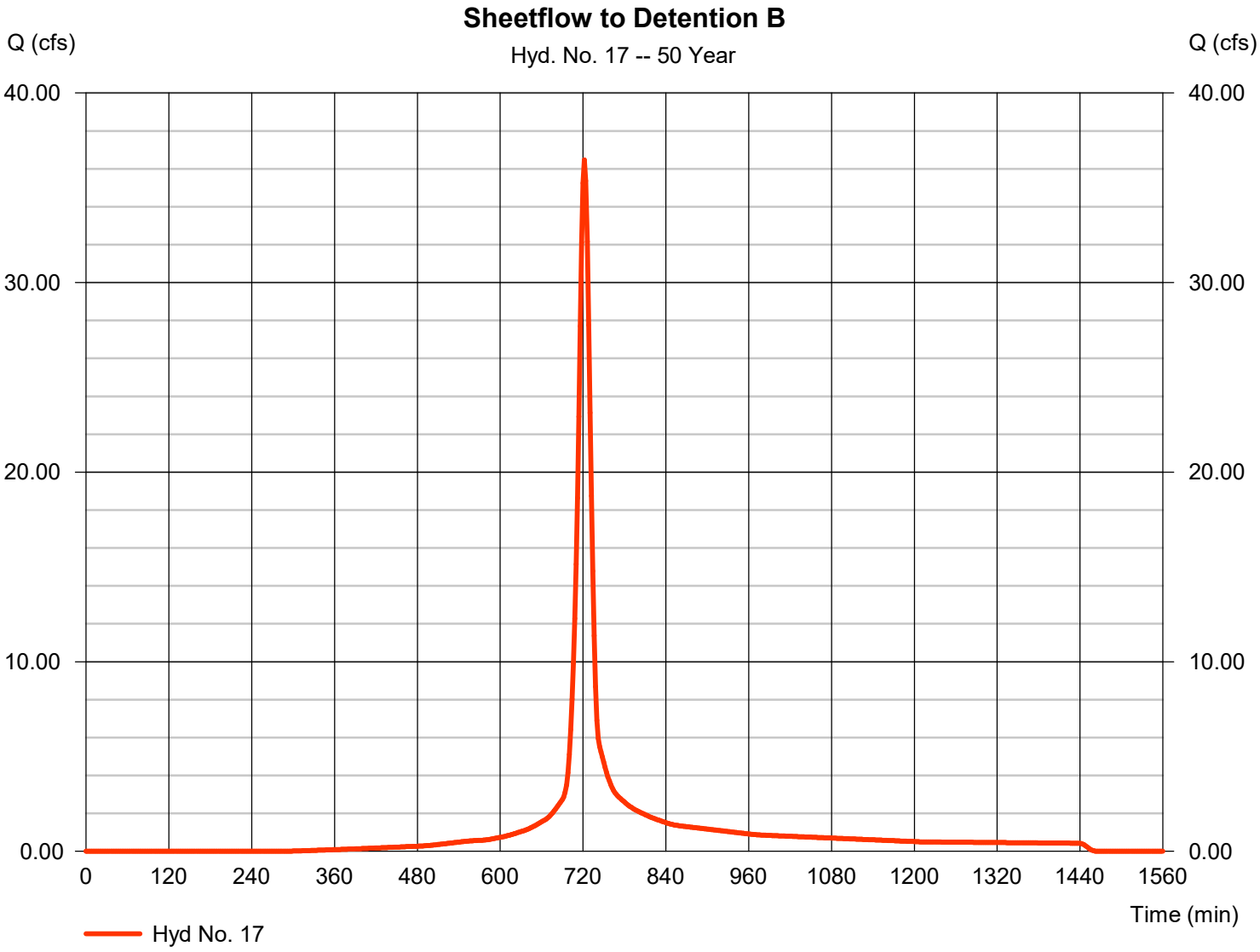
Hydrograph Report

Hyd. No. 17

Sheetflow to Detention B

Hydrograph type	=	SCS Runoff	Peak discharge	=	36.47 cfs
Storm frequency	=	50 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	104,579 cuft
Drainage area	=	5.790 ac	Curve number	=	83*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	13.80 min
Total precip.	=	7.08 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.390 x 98) + (4.400 x 78)] / 5.790

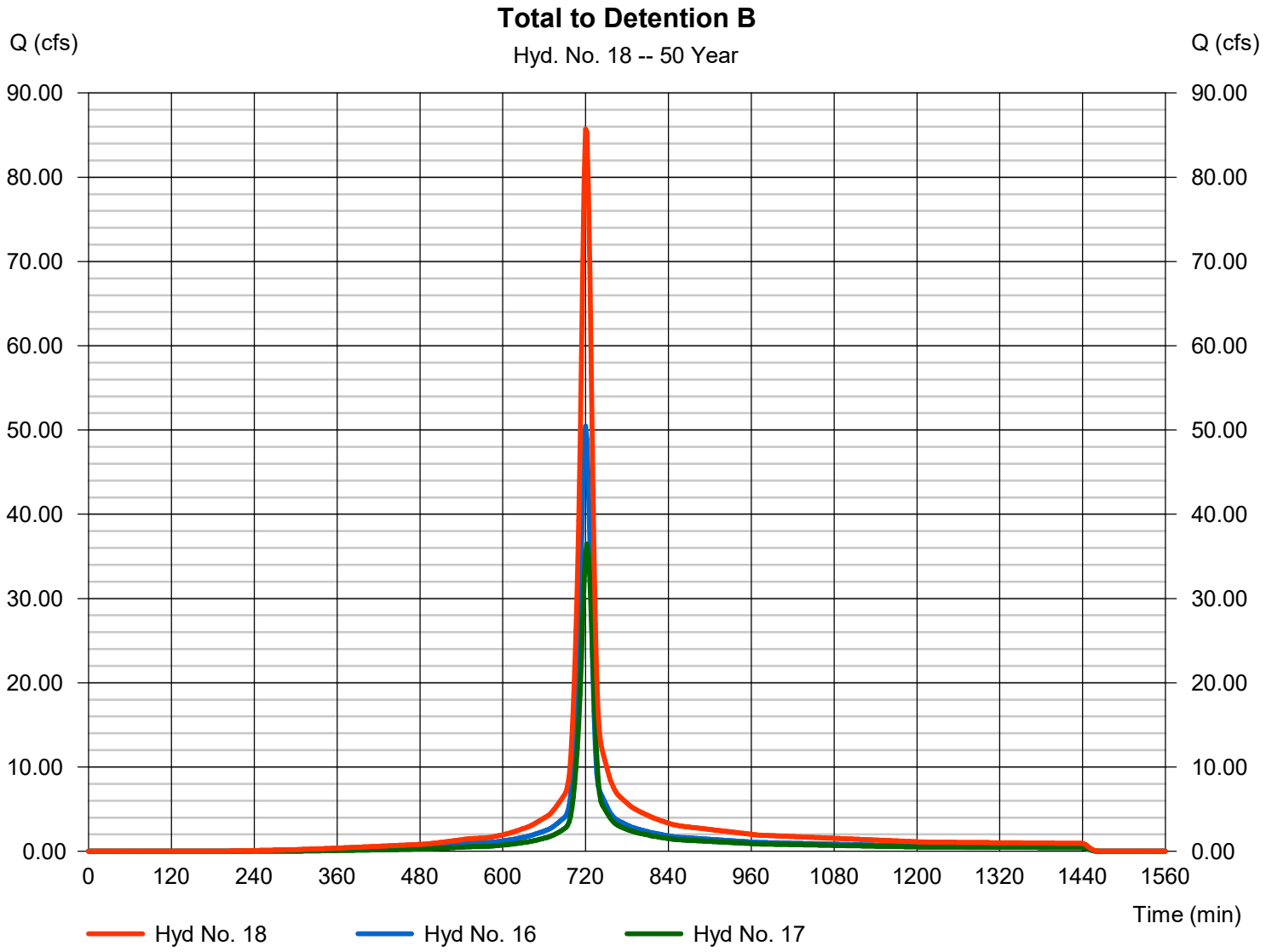


Hydrograph Report

Hyd. No. 18

Total to Detention B

Hydrograph type	= Combine	Peak discharge	= 85.72 cfs
Storm frequency	= 50 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 243,204 cuft
Inflow hyds.	= 16, 17	Contrib. drain. area	= 12.190 ac



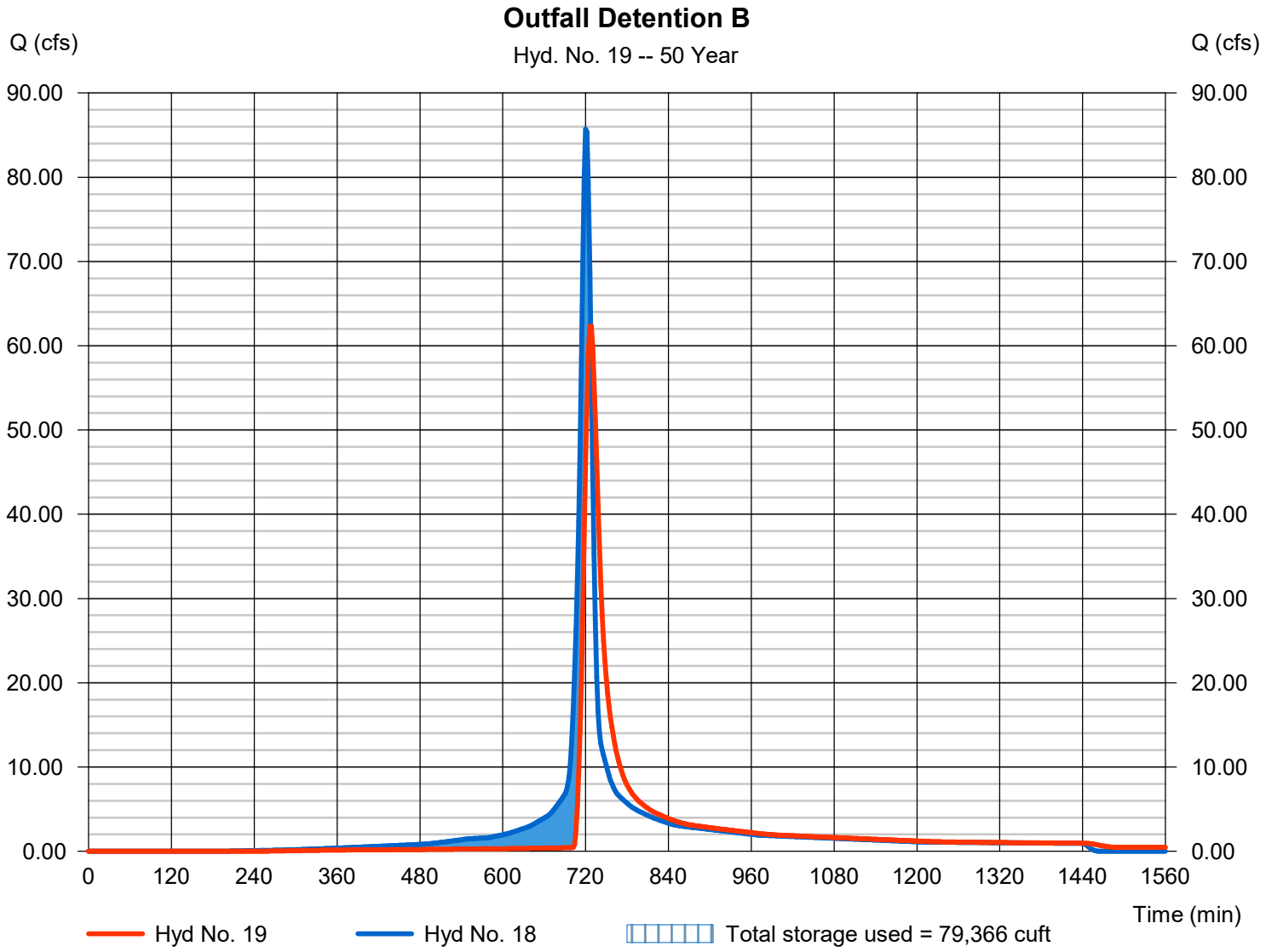
Hydrograph Report

Hyd. No. 19

Outfall Detention B

Hydrograph type	=	Reservoir	Peak discharge	=	62.37 cfs
Storm frequency	=	50 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	243,187 cuft
Inflow hyd. No.	=	18 - Total to Detention B	Max. Elevation	=	661.73 ft
Reservoir name	=	Detention Pond B	Max. Storage	=	79,366 cuft

Storage Indication method used.



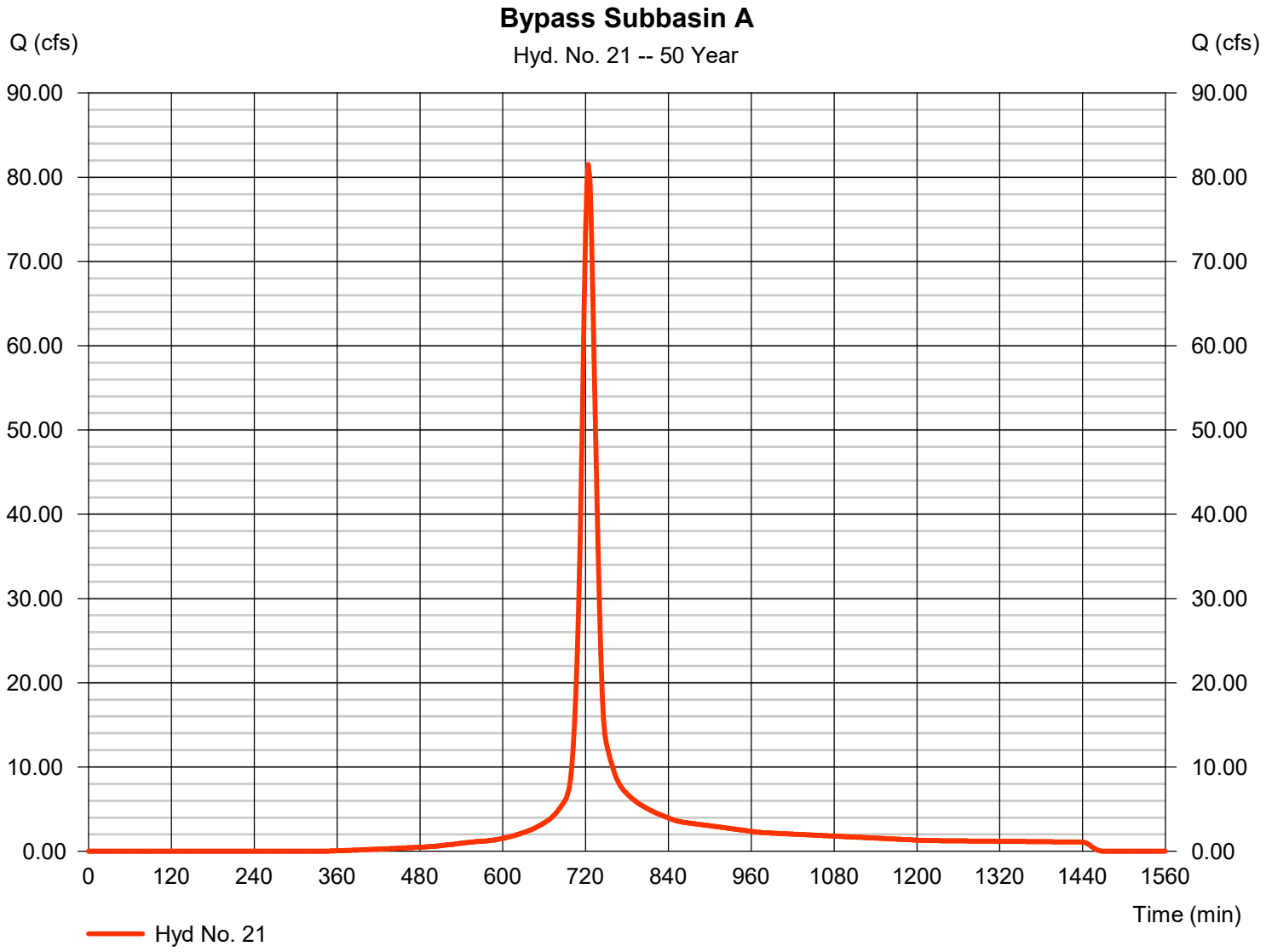
Hydrograph Report

Hyd. No. 21

Bypass Subbasin A

Hydrograph type	=	SCS Runoff	Peak discharge	=	81.52 cfs
Storm frequency	=	50 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	257,039 cuft
Drainage area	=	14.850 ac	Curve number	=	80*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	18.30 min
Total precip.	=	7.08 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.140 x 98) + (13.710 x 78)] / 14.850

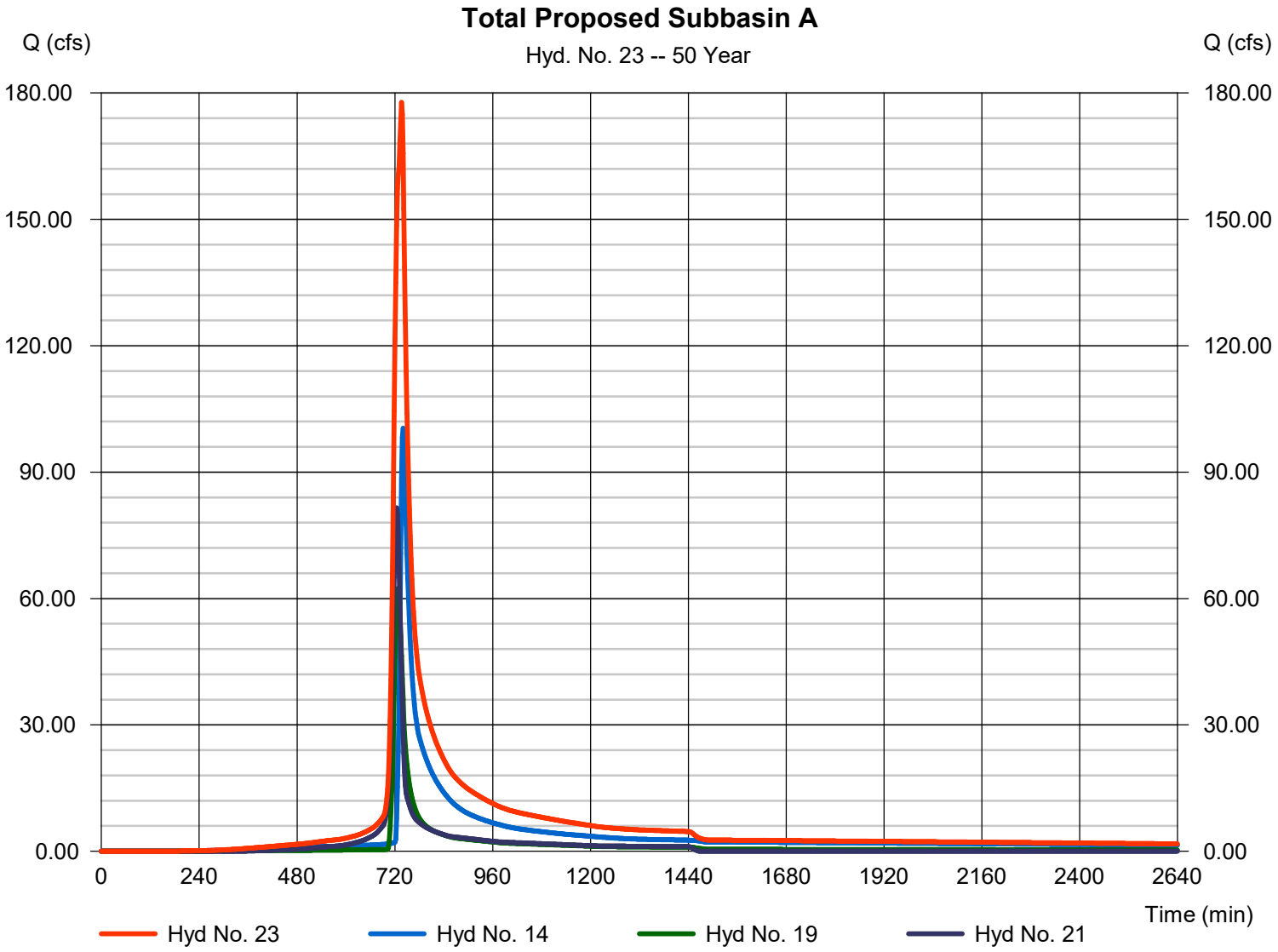


Hydrograph Report

Hyd. No. 23

Total Proposed Subbasin A

Hydrograph type	=	Combine	Peak discharge	=	177.75 cfs
Storm frequency	=	50 yrs	Time to peak	=	736 min
Time interval	=	2 min	Hyd. volume	=	1,144,008 cuft
Inflow hyds.	=	14, 19, 21	Contrib. drain. area	=	14.850 ac

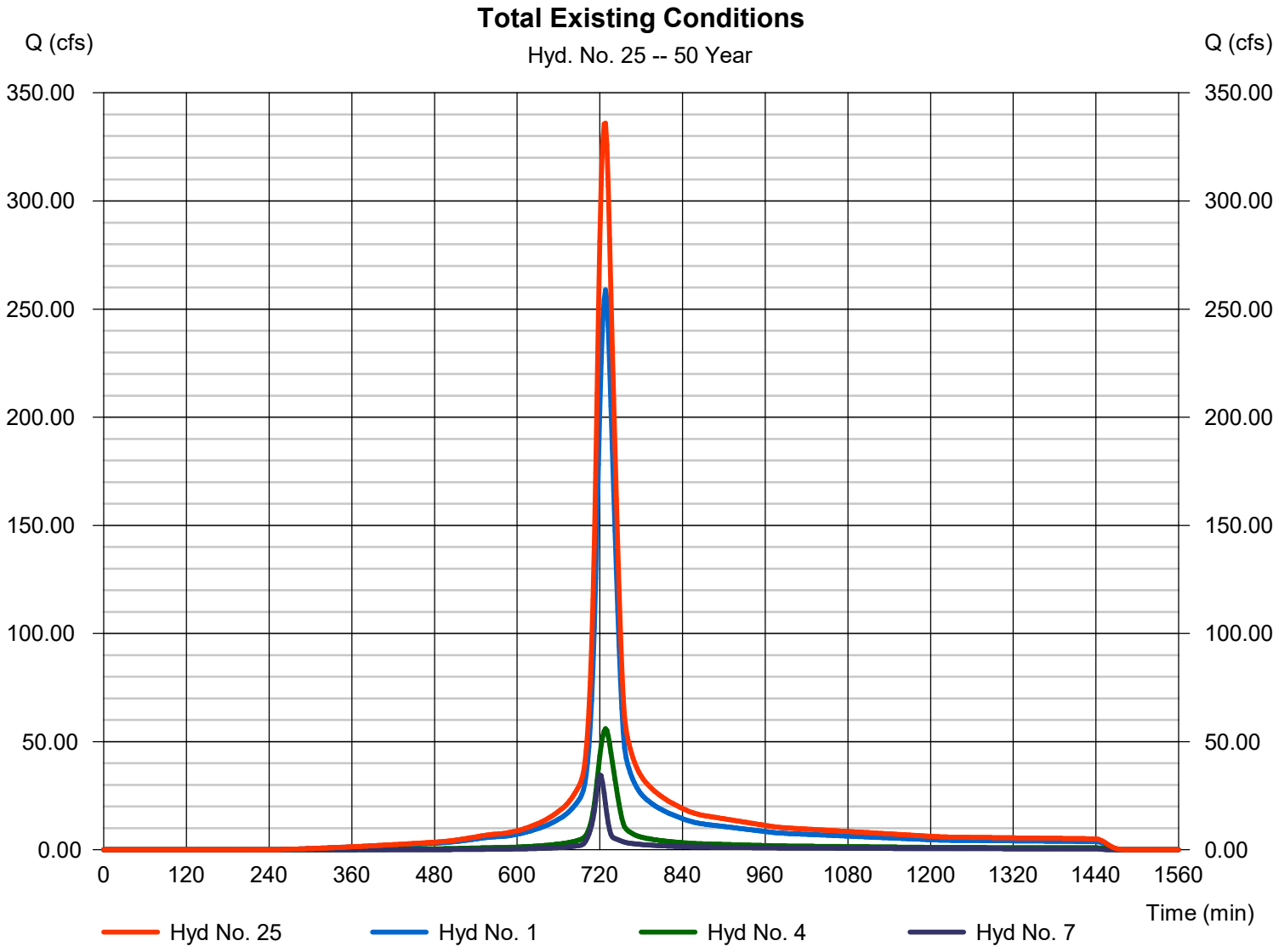


Hydrograph Report

Hyd. No. 25

Total Existing Conditions

Hydrograph type	= Combine	Peak discharge	= 335.95 cfs
Storm frequency	= 50 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 1,270,653 cuft
Inflow hyds.	= 1, 4, 7	Contrib. drain. area	= 67.940 ac

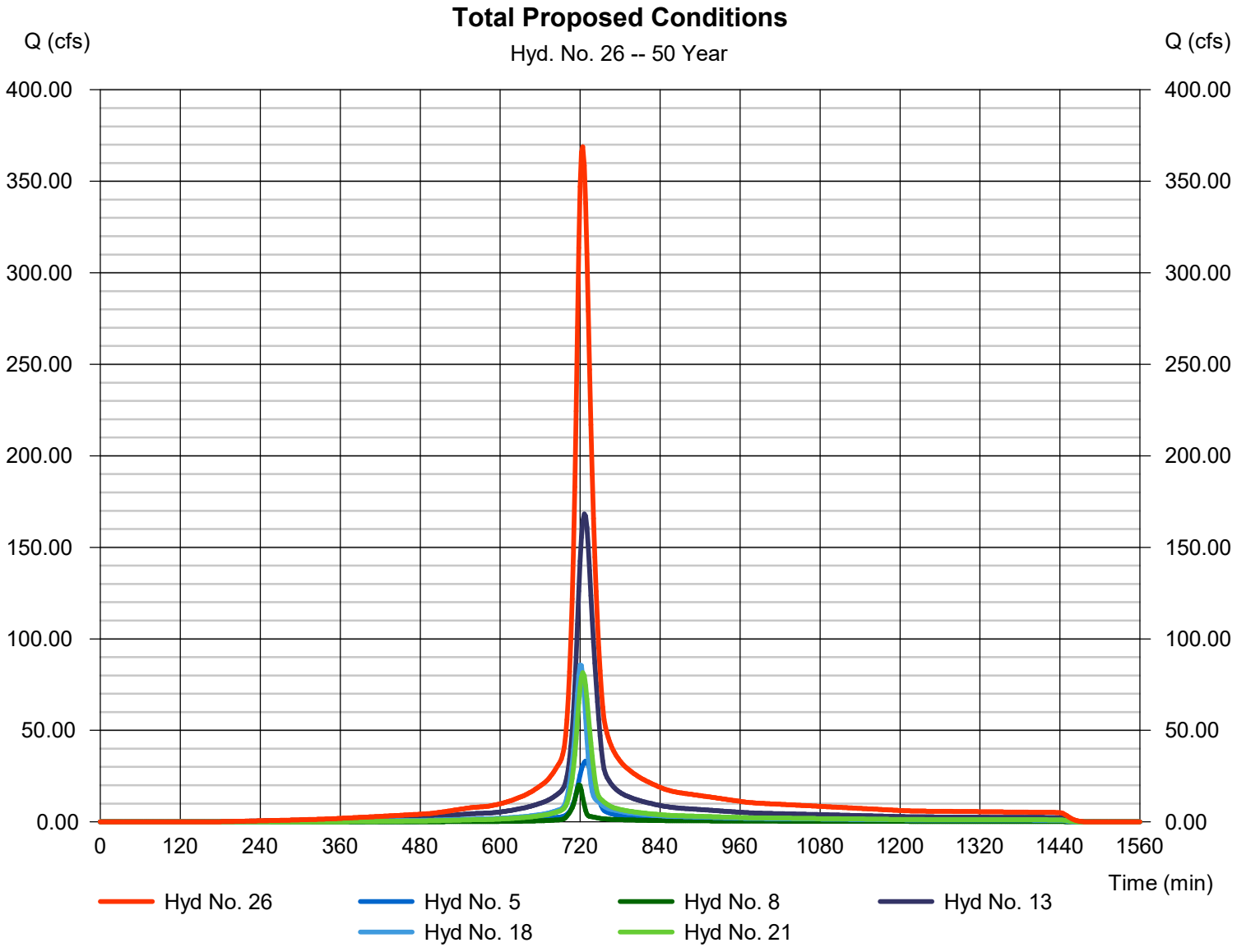


Hydrograph Report

Hyd. No. 26

Total Proposed Conditions

Hydrograph type	=	Combine	Peak discharge	=	368.94 cfs
Storm frequency	=	50 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	1,313,476 cuft
Inflow hyds.	=	5, 8, 13, 18, 21	Contrib. drain. area	=	24.860 ac

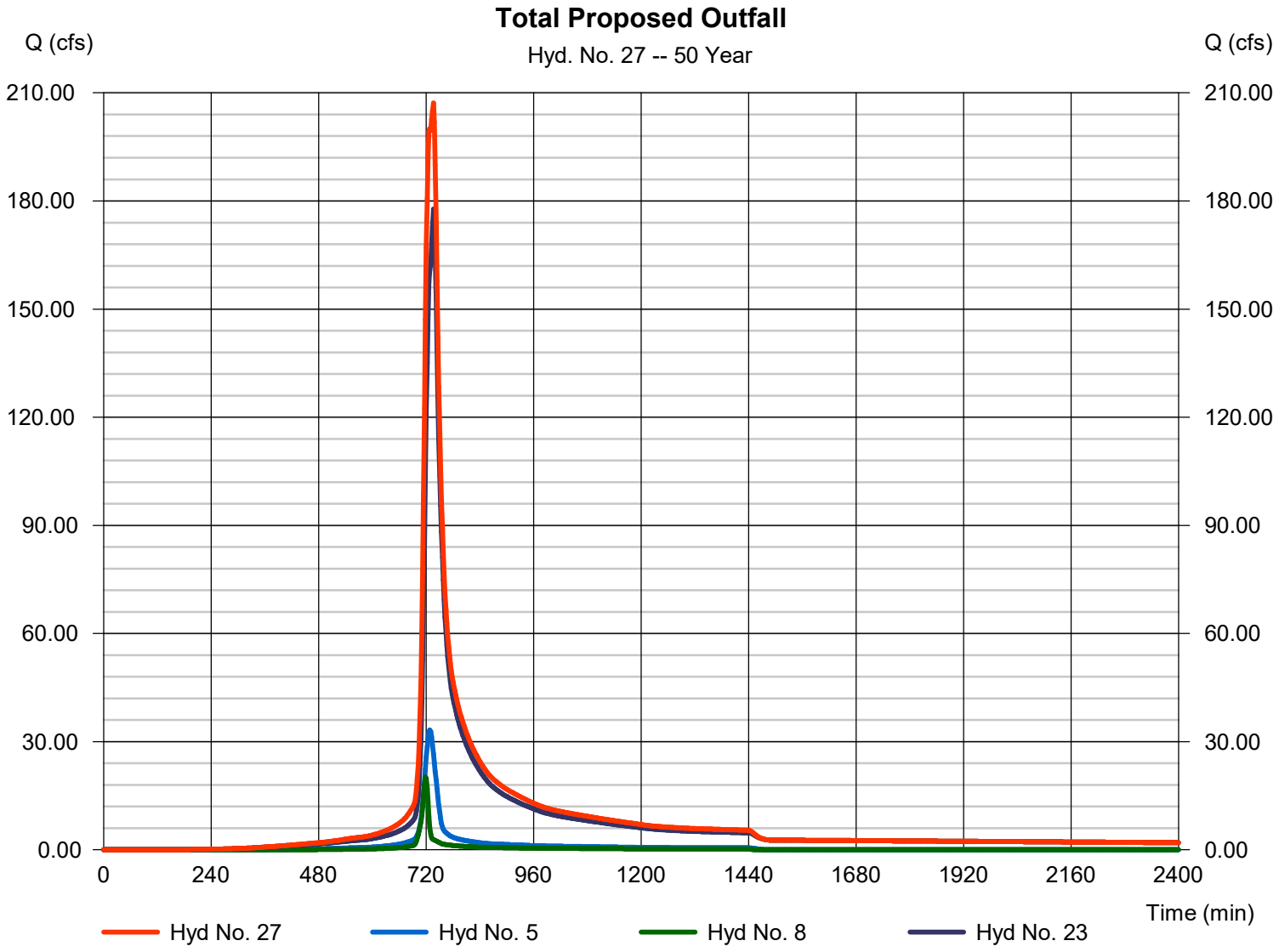


Hydrograph Report

Hyd. No. 27

Total Proposed Outfall

Hydrograph type	=	Combine	Peak discharge	=	207.20 cfs
Storm frequency	=	50 yrs	Time to peak	=	736 min
Time interval	=	2 min	Hyd. volume	=	1,313,440 cuft
Inflow hyds.	=	5, 8, 23	Contrib. drain. area	=	10.010 ac



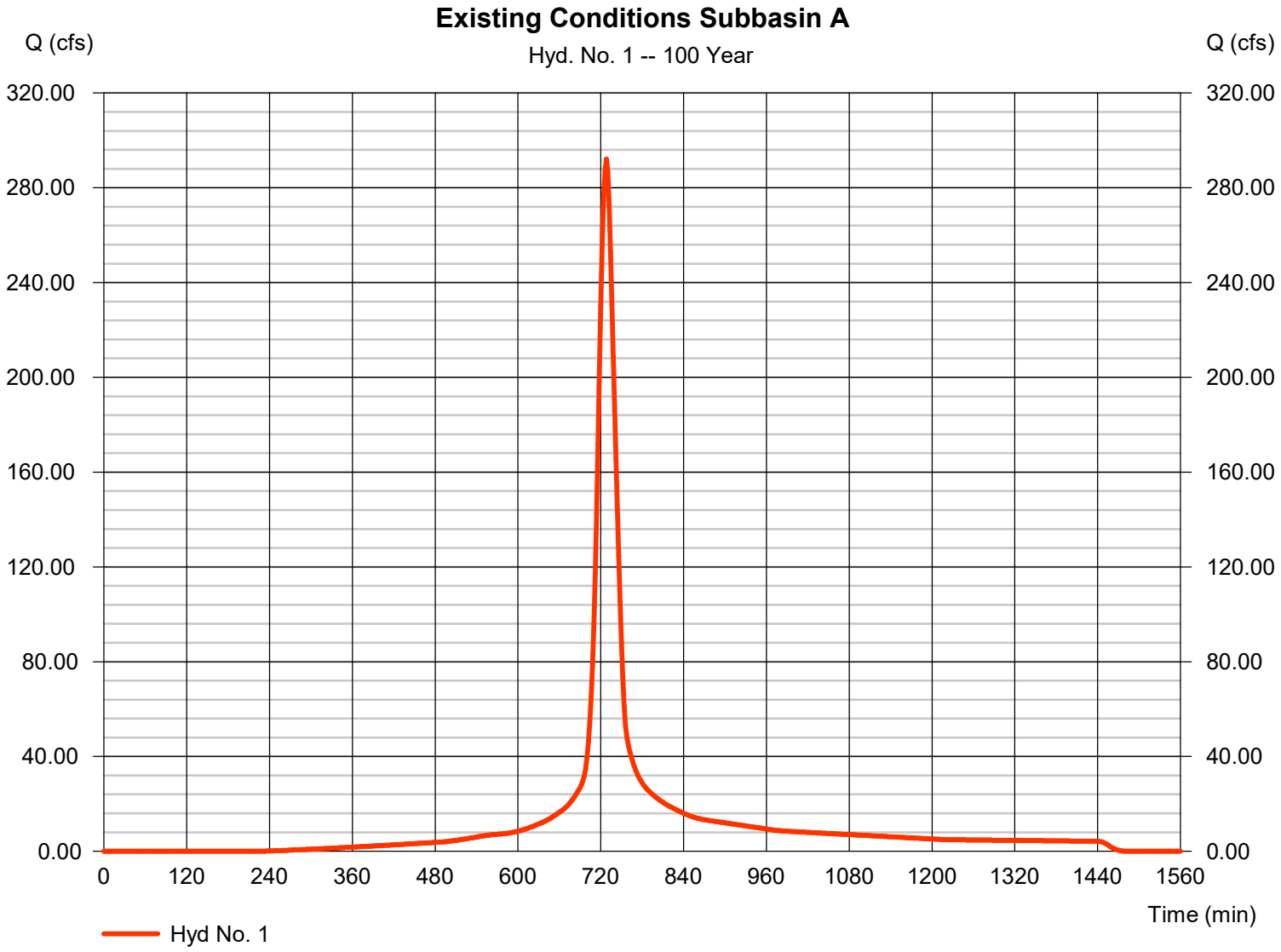
Hydrograph Report

Hyd. No. 1

Existing Conditions Subbasin A

Hydrograph type	=	SCS Runoff	Peak discharge	=	292.06 cfs
Storm frequency	=	100 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	1,104,821 cuft
Drainage area	=	50.060 ac	Curve number	=	86*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	24.76 min
Total precip.	=	7.84 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(44.870 x 88) + (5.190 x 70)] / 50.060



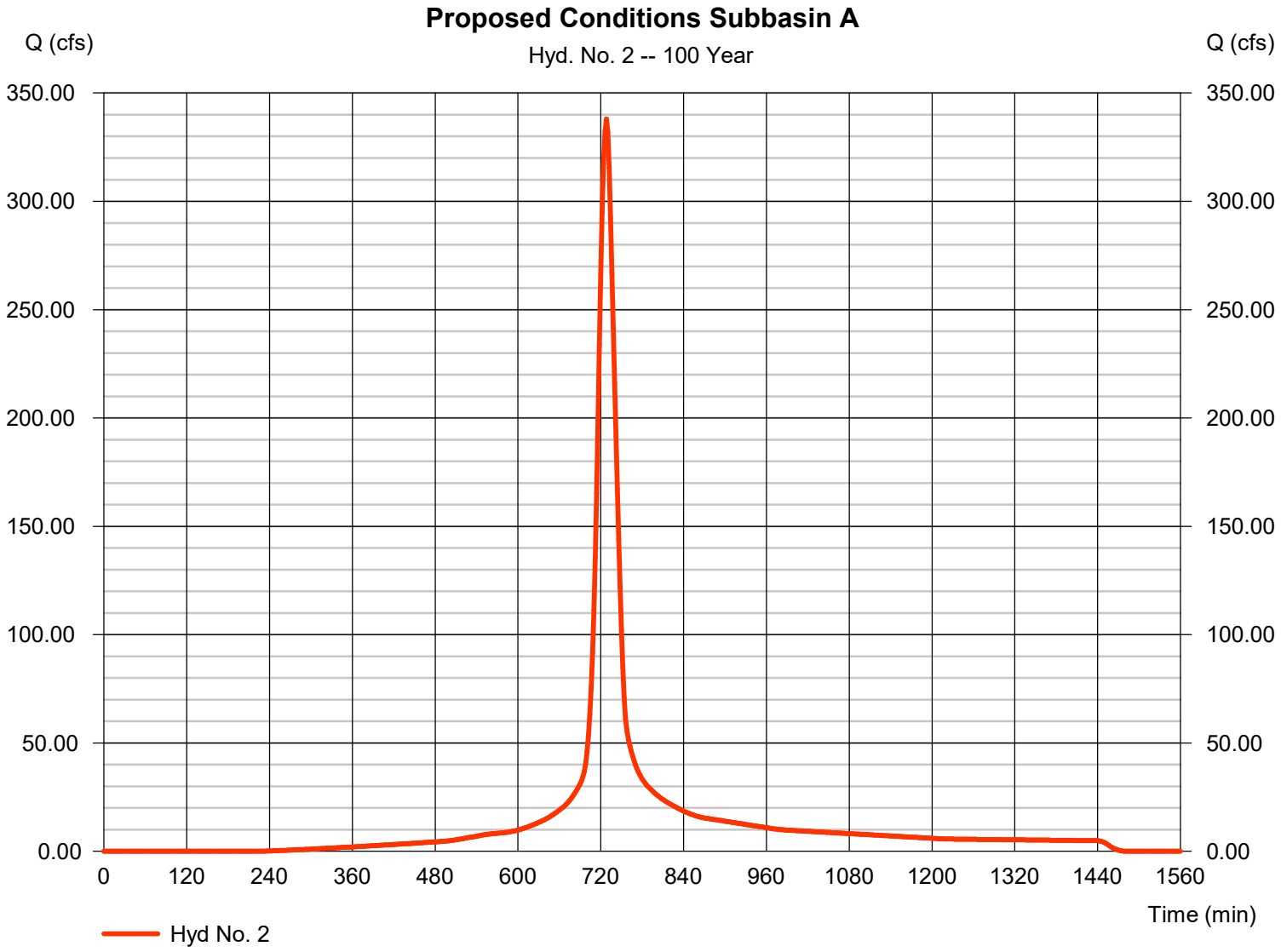
Hydrograph Report

Hyd. No. 2

Proposed Conditions Subbasin A

Hydrograph type	= SCS Runoff	Peak discharge	= 337.98 cfs
Storm frequency	= 100 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 1,278,511 cuft
Drainage area	= 57.930 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.70 min
Total precip.	= 7.84 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(23.640 x 98) + (34.290 x 78)] / 57.930



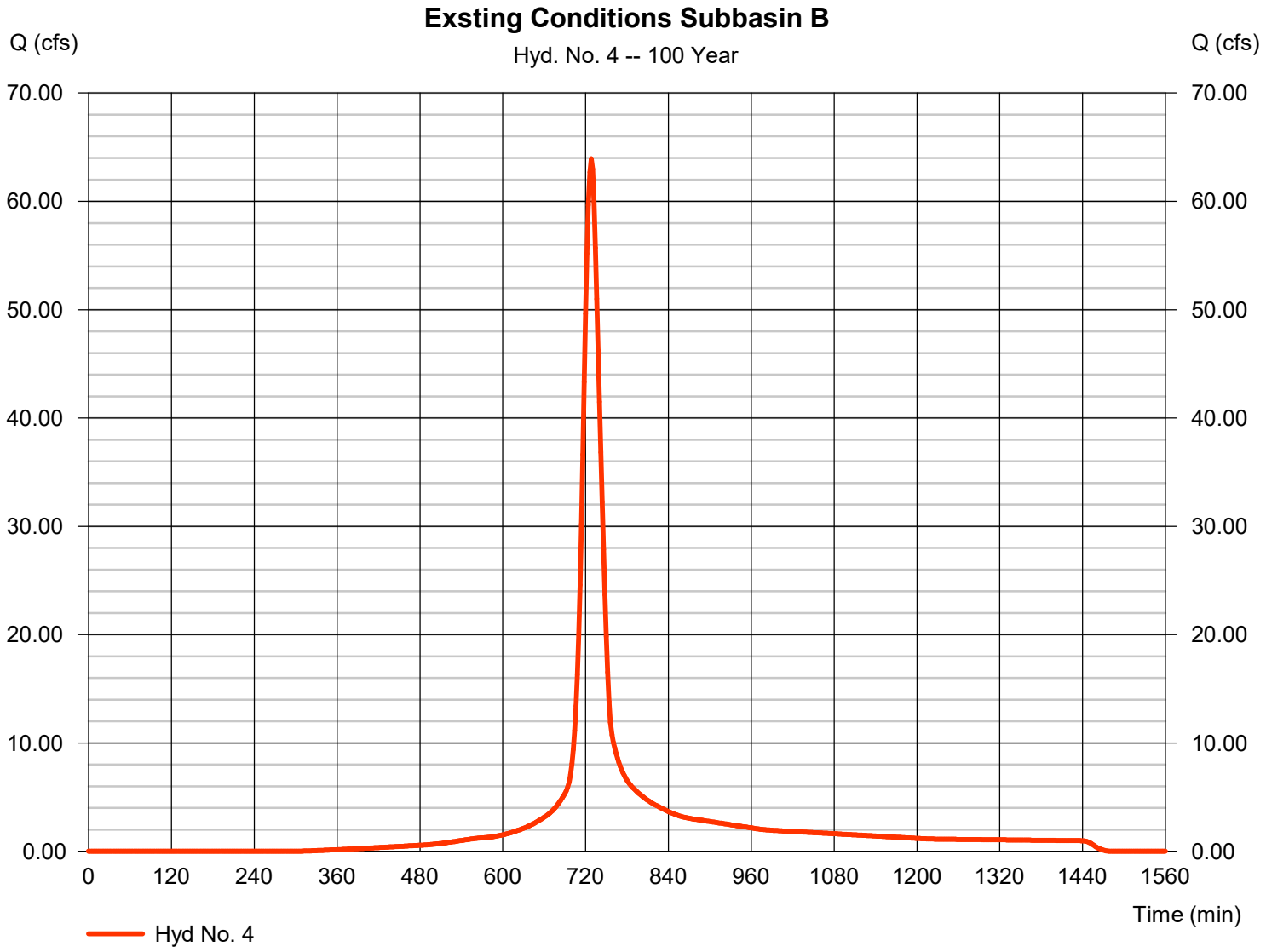
Hydrograph Report

Hyd. No. 4

Exsting Conditions Subbasin B

Hydrograph type	=	SCS Runoff	Peak discharge	=	63.93 cfs
Storm frequency	=	100 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	237,361 cuft
Drainage area	=	11.880 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	23.80 min
Total precip.	=	7.84 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(6.940 x 88) + (4.940 x 70)] / 11.880



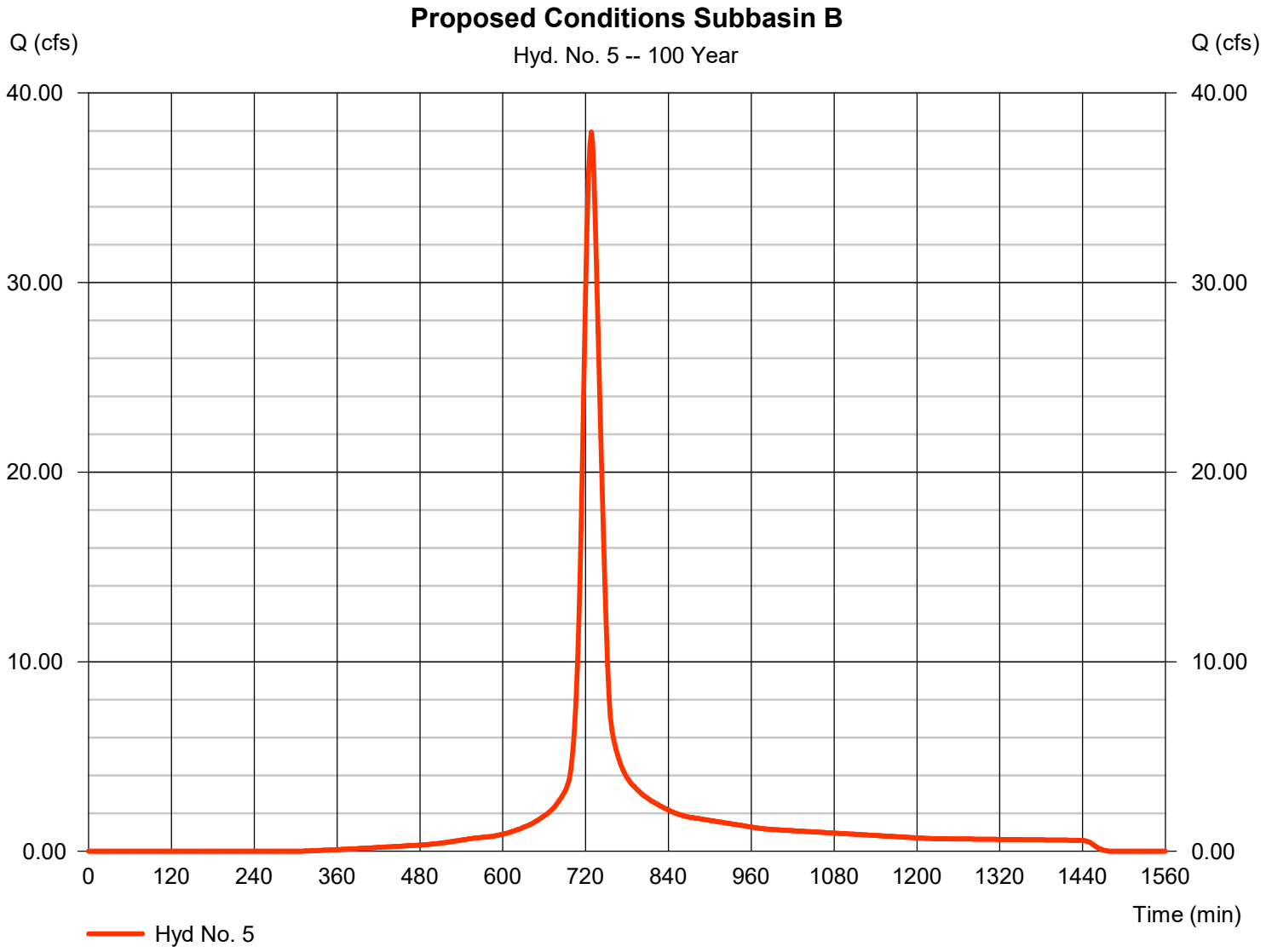
Hydrograph Report

Hyd. No. 5

Proposed Conditions Subbasin B

Hydrograph type	=	SCS Runoff	Peak discharge	=	37.94 cfs
Storm frequency	=	100 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	140,858 cuft
Drainage area	=	7.050 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	25.00 min
Total precip.	=	7.84 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.950 x 98) + (6.100 x 78)] / 7.050



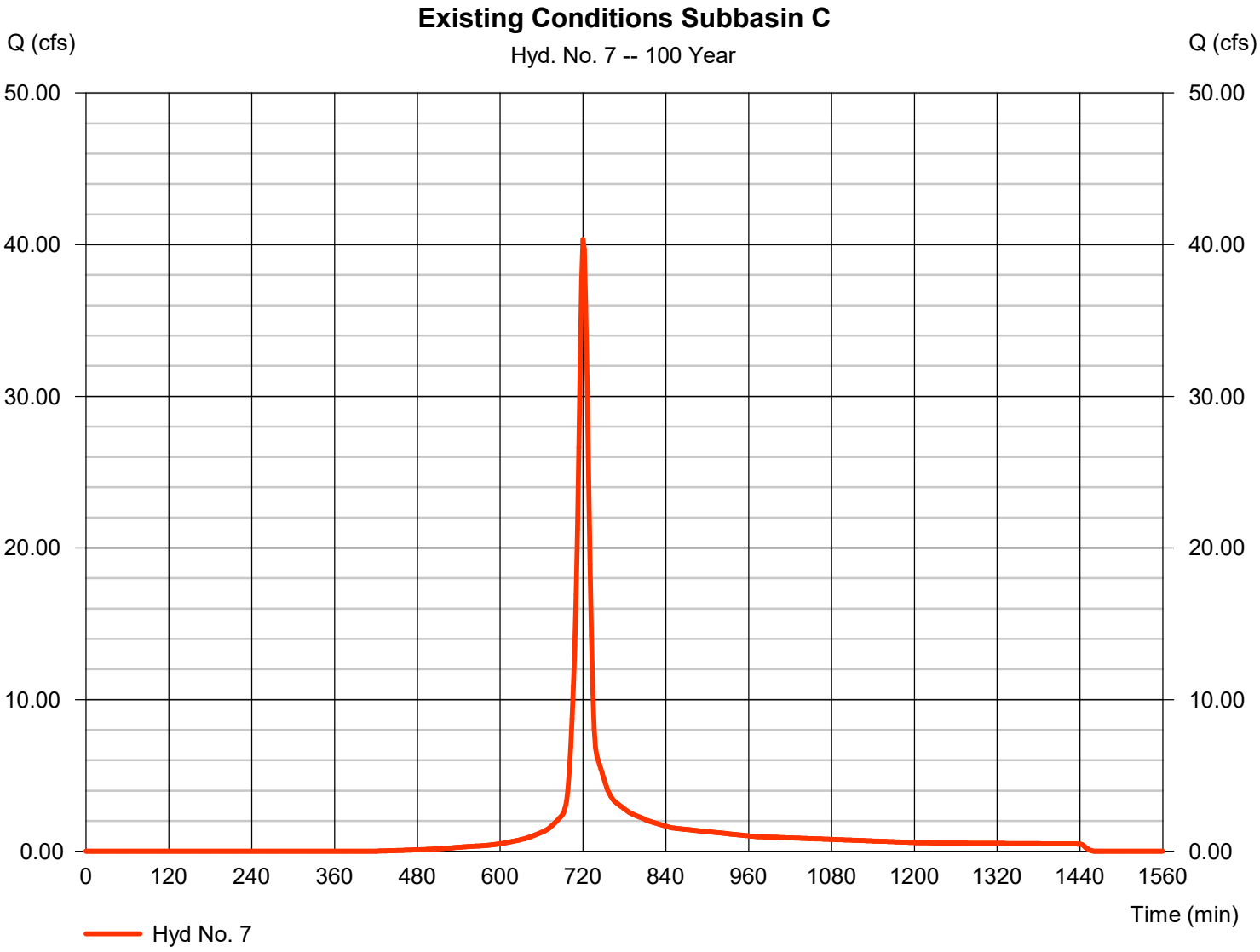
Hydrograph Report

Hyd. No. 7

Existing Conditions Subbasin C

Hydrograph type	=	SCS Runoff	Peak discharge	=	40.34 cfs
Storm frequency	=	100 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	104,856 cuft
Drainage area	=	6.000 ac	Curve number	=	73*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.90 min
Total precip.	=	7.84 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.990 x 79) + (4.010 x 70)] / 6.000



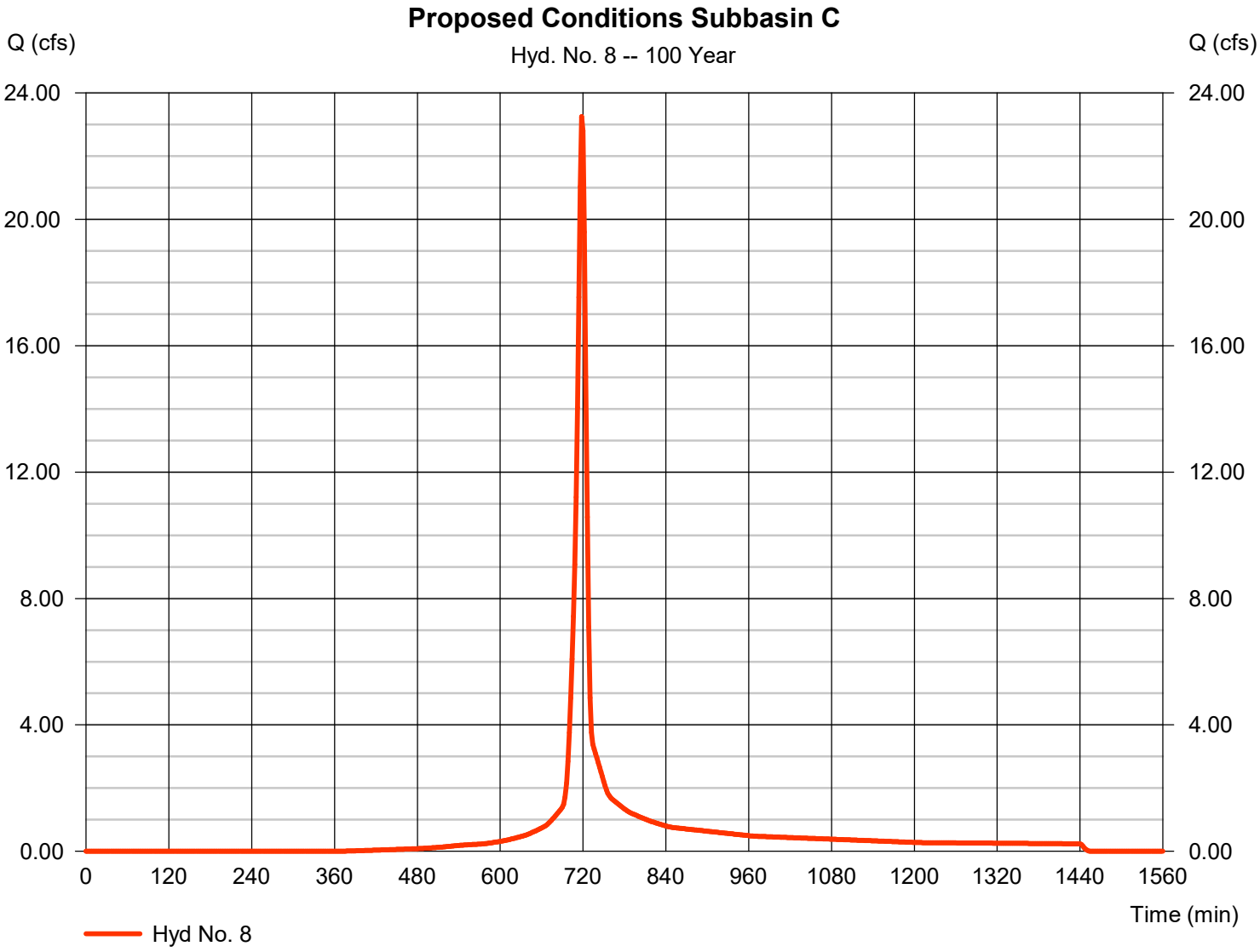
Hydrograph Report

Hyd. No. 8

Proposed Conditions Subbasin C

Hydrograph type	=	SCS Runoff	Peak discharge	=	23.26 cfs
Storm frequency	=	100 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	53,858 cuft
Drainage area	=	2.960 ac	Curve number	=	76*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	8.08 min
Total precip.	=	7.84 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.820 x 79) + (1.140 x 70)] / 2.960



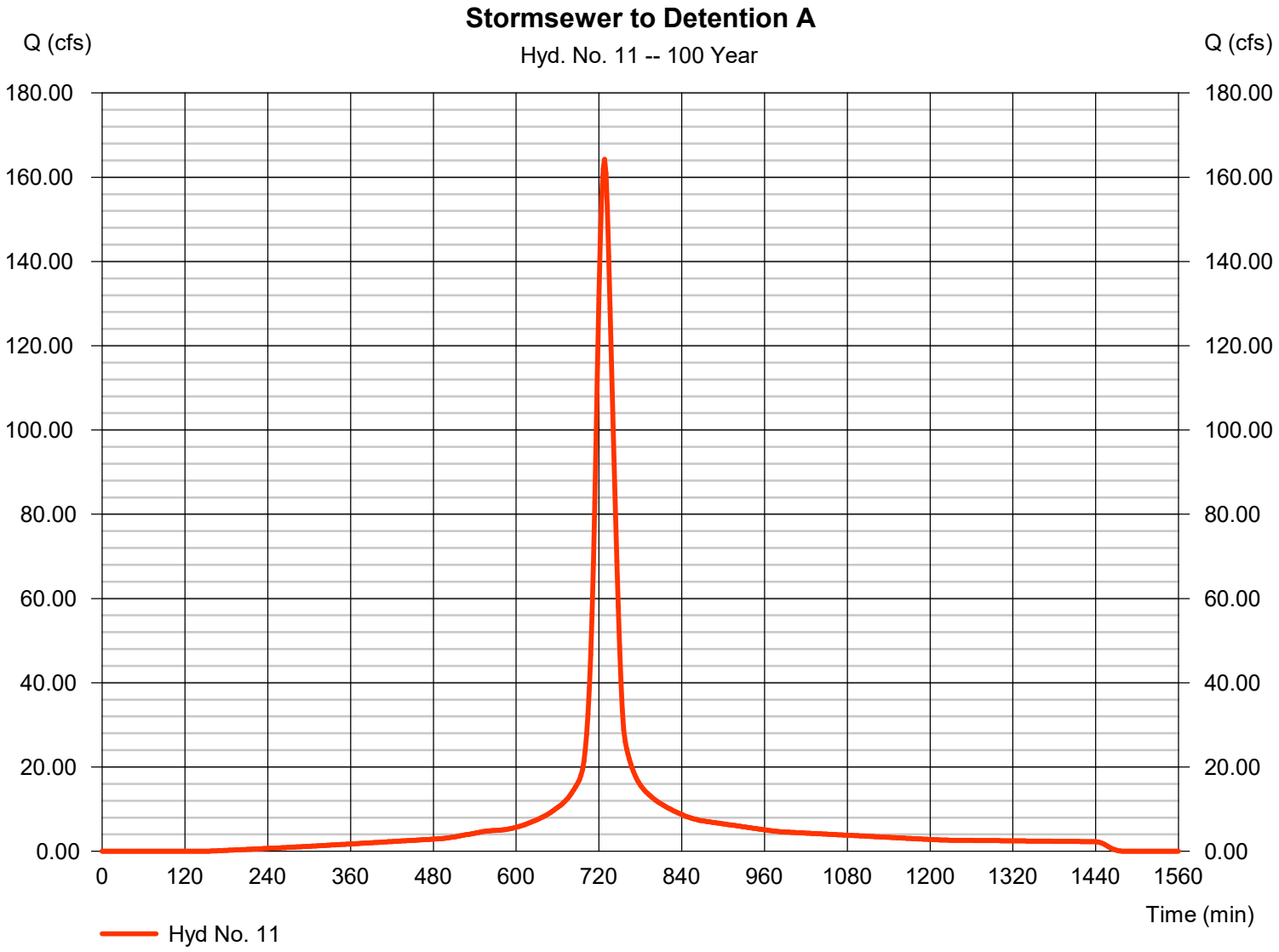
Hydrograph Report

Hyd. No. 11

Stormsewer to Detention A

Hydrograph type	=	SCS Runoff	Peak discharge	=	164.27 cfs
Storm frequency	=	100 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	640,251 cuft
Drainage area	=	26.480 ac	Curve number	=	91*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	23.70 min
Total precip.	=	7.84 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(17.100 x 98) + (9.380 x 78)] / 26.480



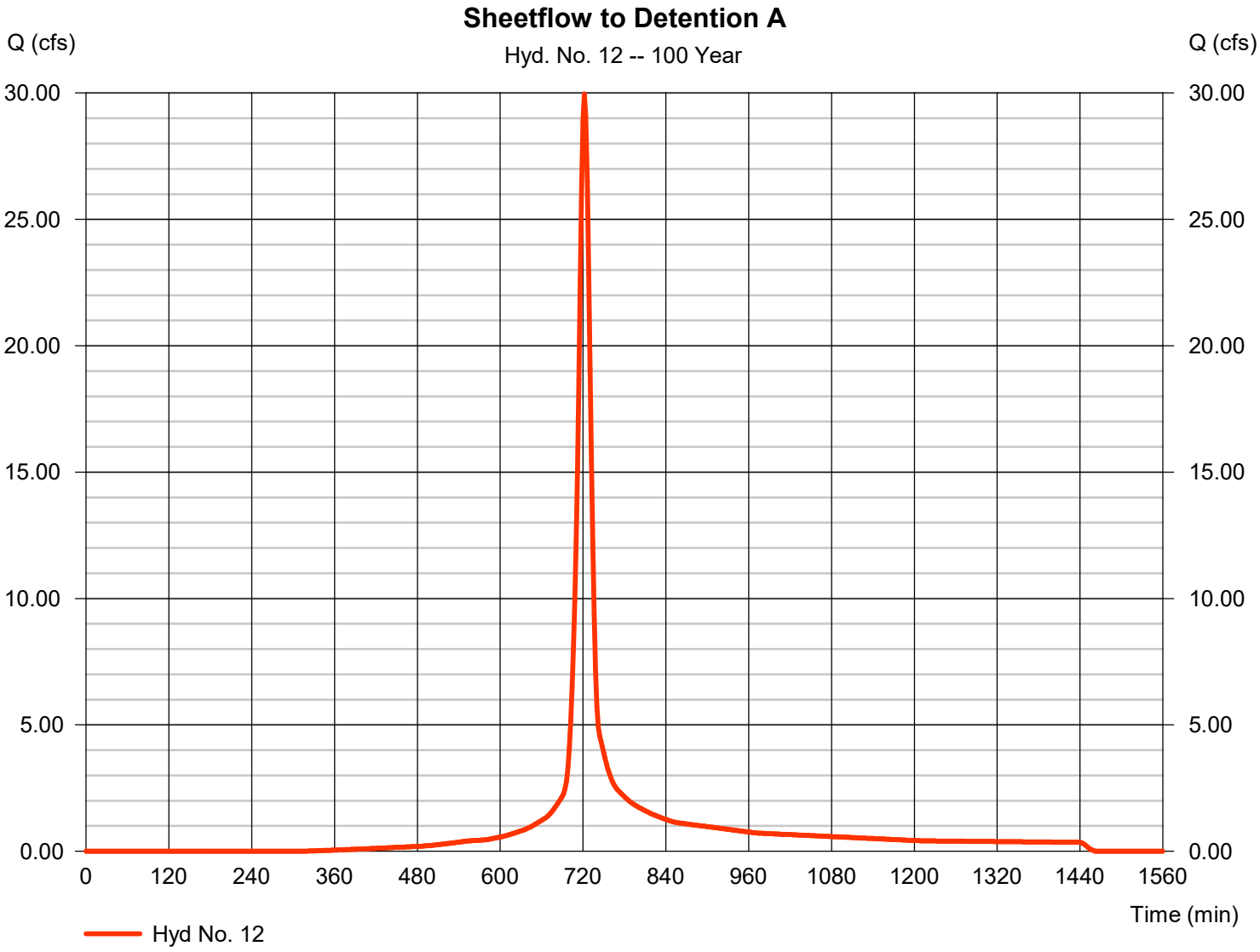
Hydrograph Report

Hyd. No. 12

Sheetflow to Detention A

Hydrograph type	=	SCS Runoff	Peak discharge	=	29.96 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	85,457 cuft
Drainage area	=	4.410 ac	Curve number	=	80*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	14.90 min
Total precip.	=	7.84 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.380 x 98) + (4.030 x 78)] / 4.410

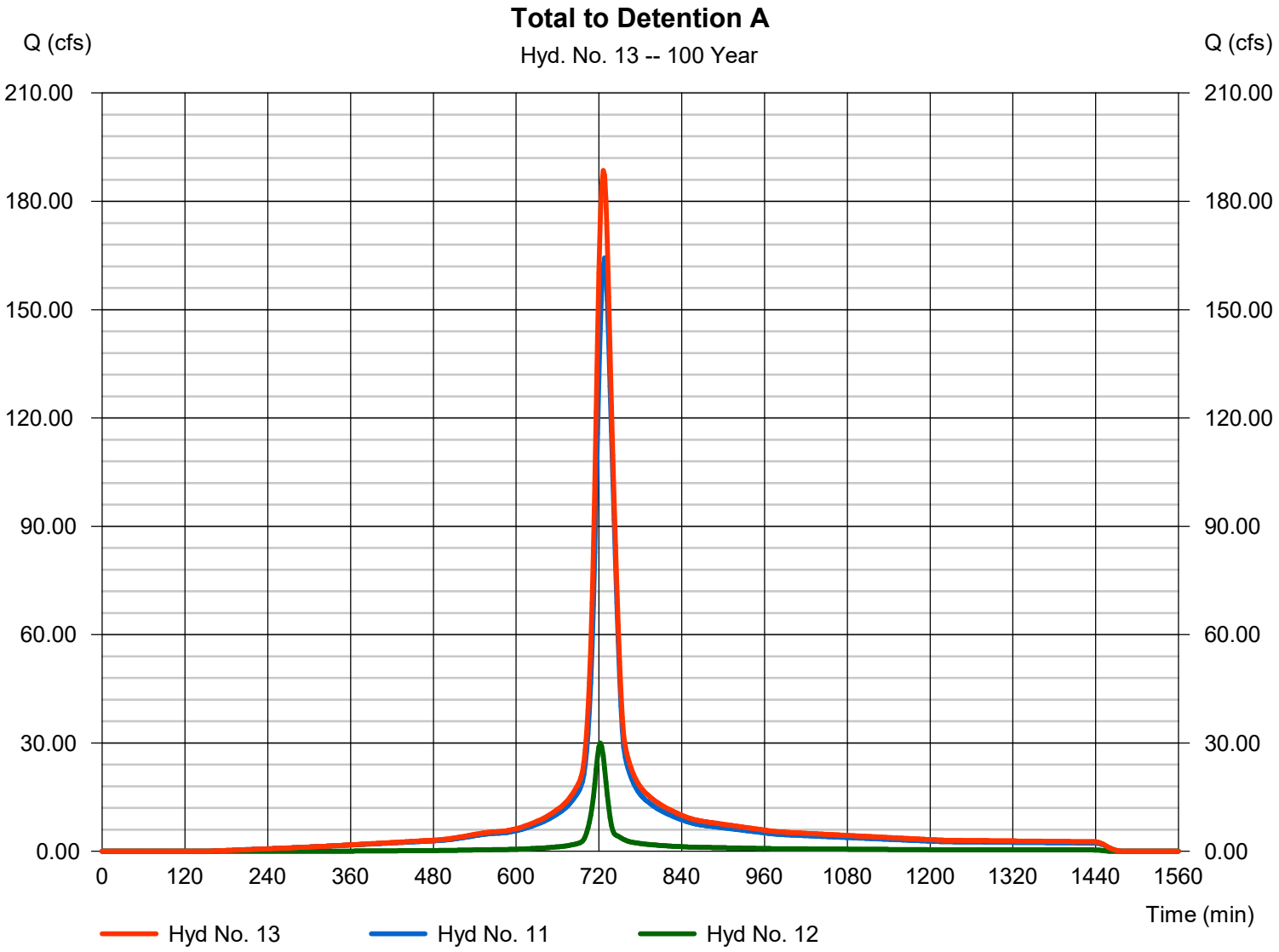


Hydrograph Report

Hyd. No. 13

Total to Detention A

Hydrograph type	= Combine	Peak discharge	= 188.54 cfs
Storm frequency	= 100 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 725,708 cuft
Inflow hyds.	= 11, 12	Contrib. drain. area	= 30.890 ac



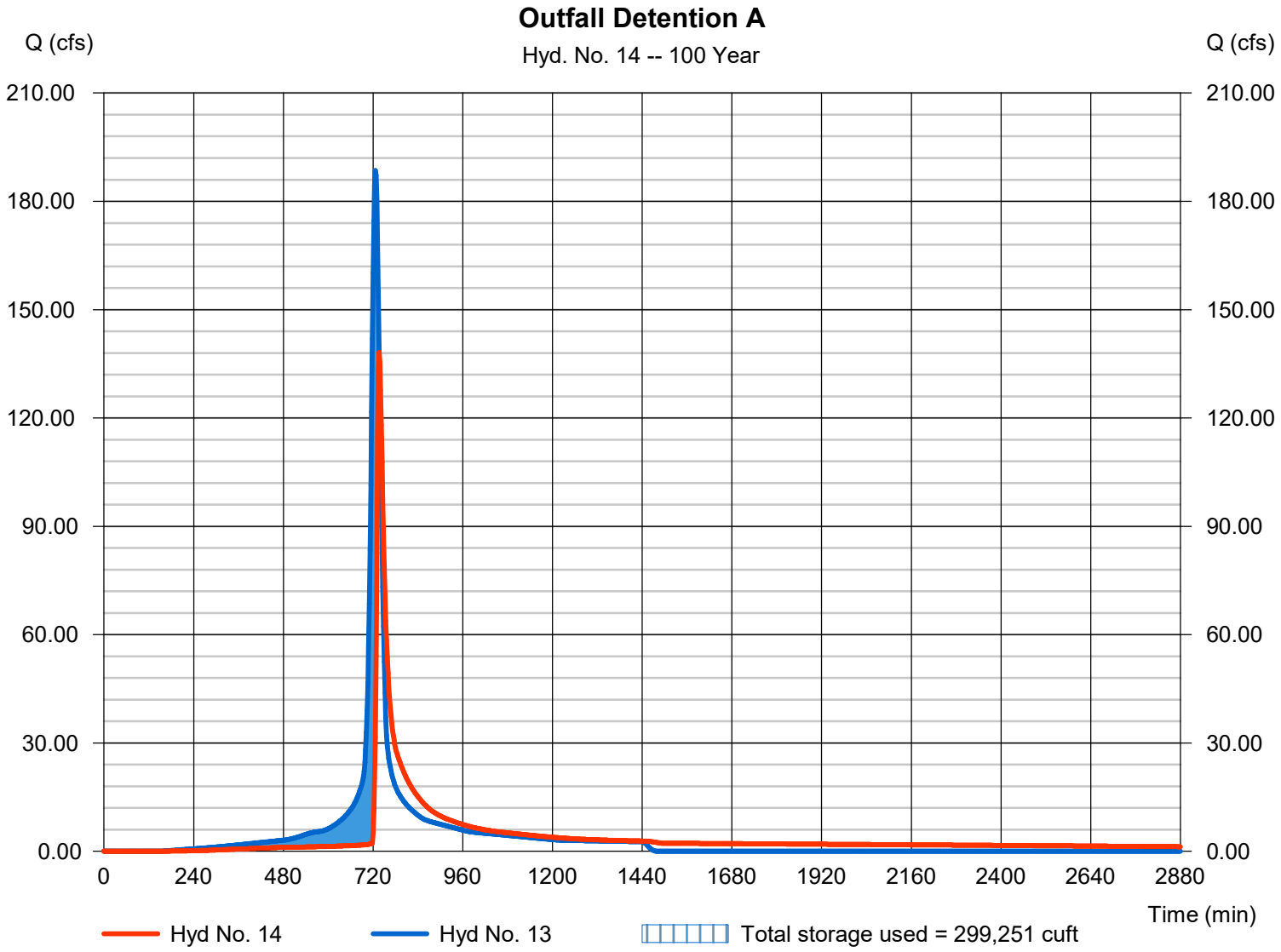
Hydrograph Report

Hyd. No. 14

Outfall Detention A

Hydrograph type	=	Reservoir	Peak discharge	=	138.21 cfs
Storm frequency	=	100 yrs	Time to peak	=	736 min
Time interval	=	2 min	Hyd. volume	=	725,692 cuft
Inflow hyd. No.	=	13 - Total to Detention A	Max. Elevation	=	653.34 ft
Reservoir name	=	Detention Pond A	Max. Storage	=	299,251 cuft

Storage Indication method used.



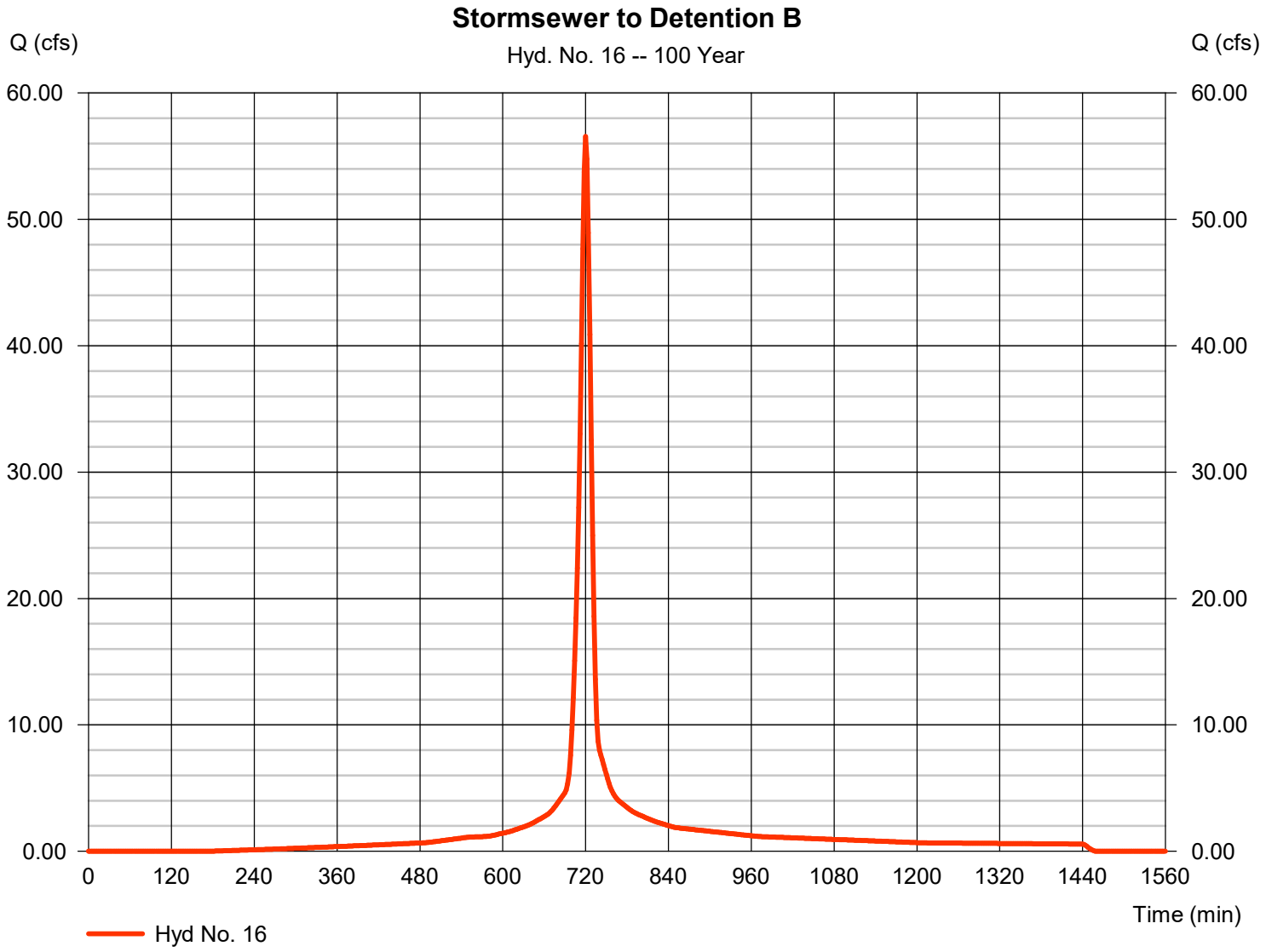
Hydrograph Report

Hyd. No. 16

Stormsewer to Detention B

Hydrograph type	=	SCS Runoff	Peak discharge	=	56.55 cfs
Storm frequency	=	100 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	156,443 cuft
Drainage area	=	6.400 ac	Curve number	=	89*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	11.20 min
Total precip.	=	7.84 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(3.630 x 98) + (2.770 x 78)] / 6.400



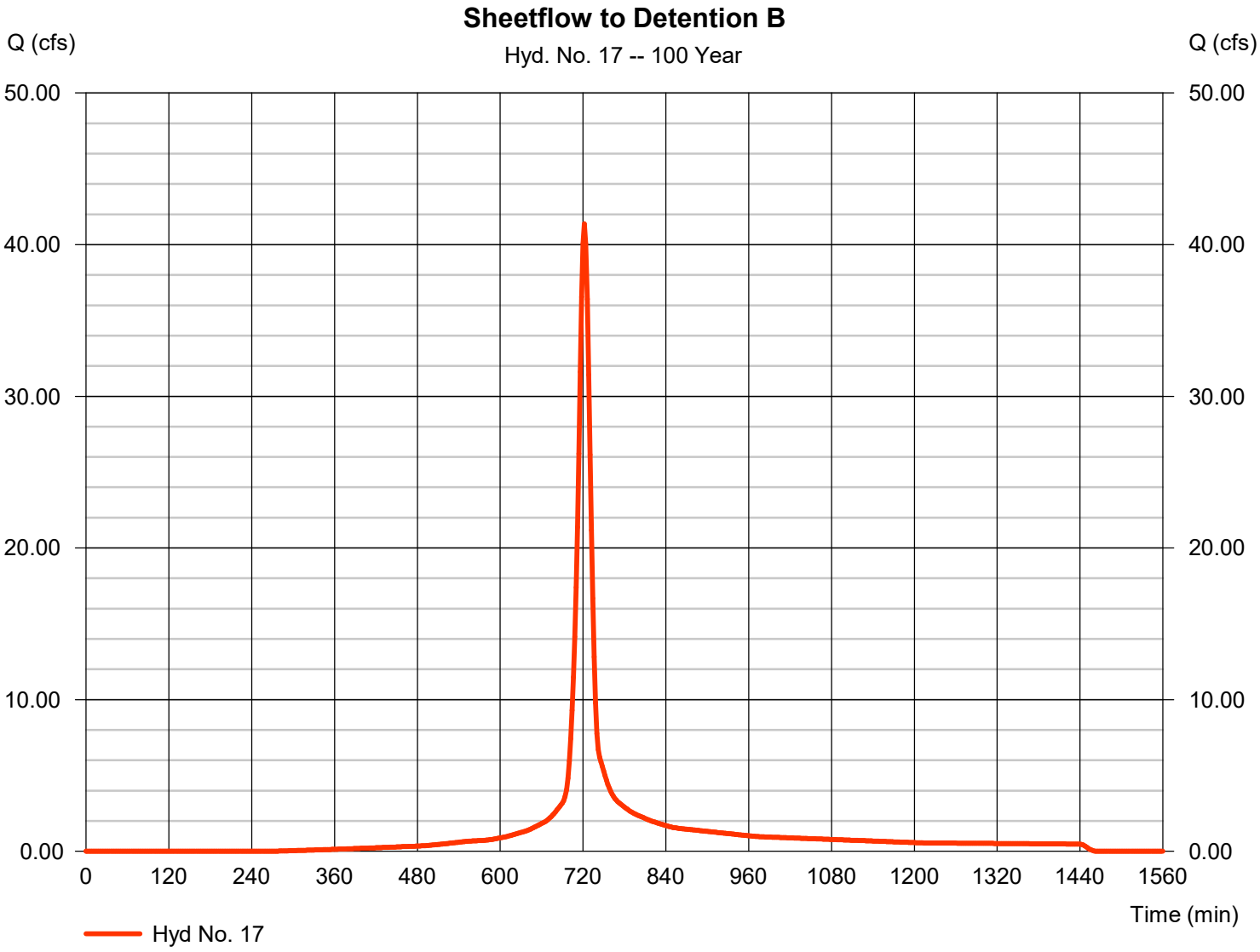
Hydrograph Report

Hyd. No. 17

Sheetflow to Detention B

Hydrograph type	=	SCS Runoff	Peak discharge	=	41.37 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	119,362 cuft
Drainage area	=	5.790 ac	Curve number	=	83*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	13.80 min
Total precip.	=	7.84 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.390 x 98) + (4.400 x 78)] / 5.790

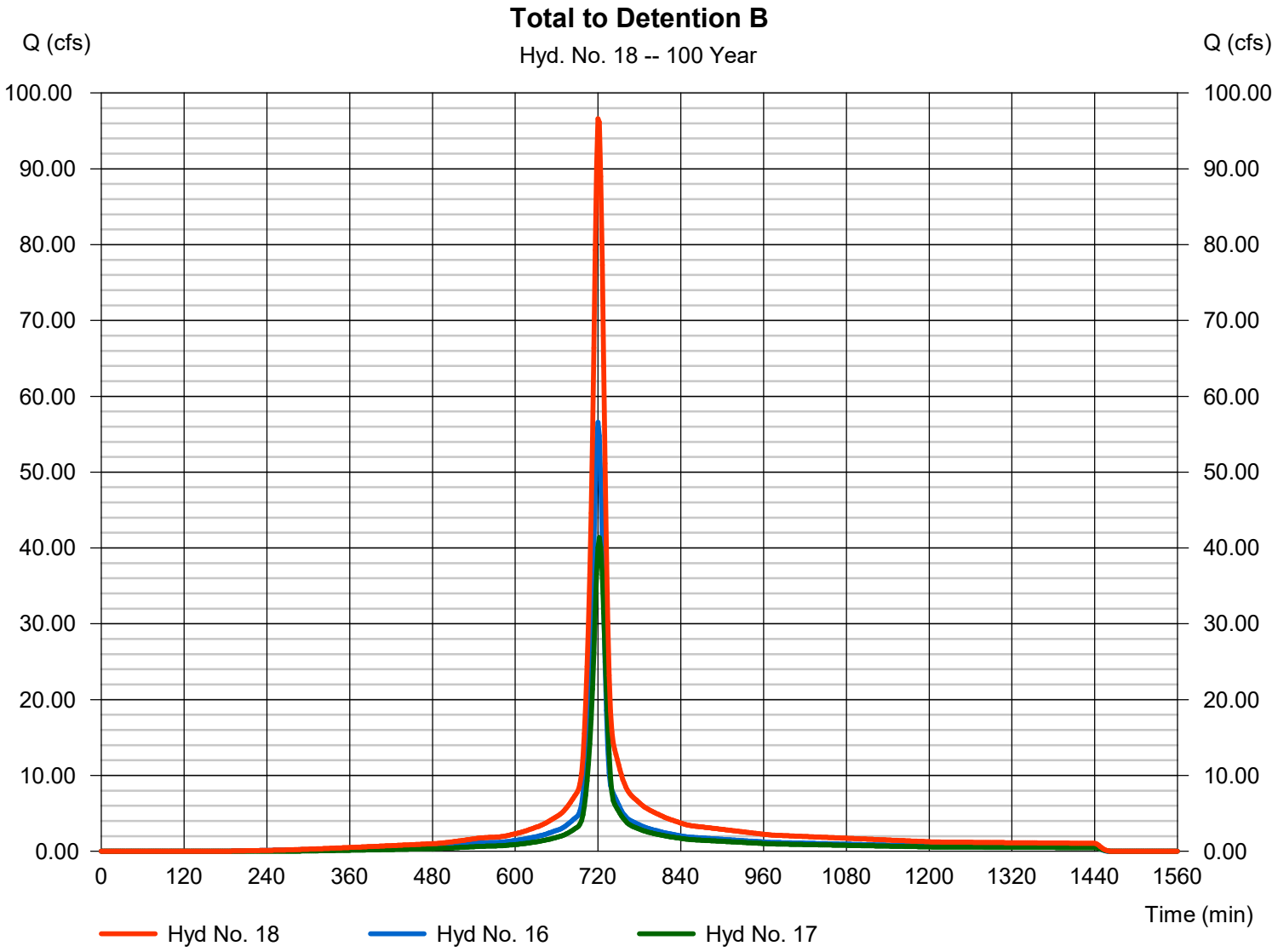


Hydrograph Report

Hyd. No. 18

Total to Detention B

Hydrograph type	= Combine	Peak discharge	= 96.61 cfs
Storm frequency	= 100 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 275,805 cuft
Inflow hyds.	= 16, 17	Contrib. drain. area	= 12.190 ac



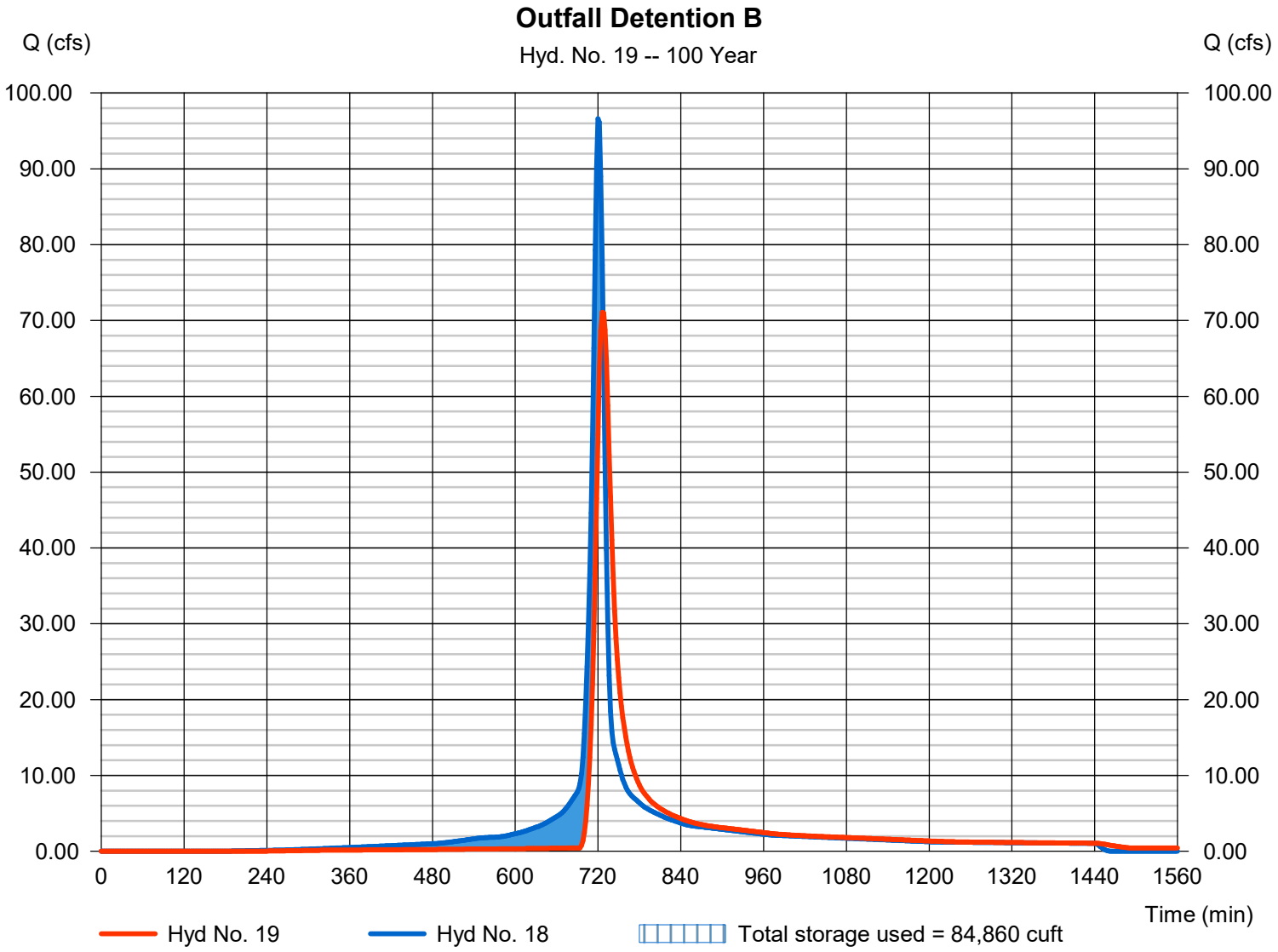
Hydrograph Report

Hyd. No. 19

Outfall Detention B

Hydrograph type	=	Reservoir	Peak discharge	=	71.08 cfs
Storm frequency	=	100 yrs	Time to peak	=	726 min
Time interval	=	2 min	Hyd. volume	=	275,788 cuft
Inflow hyd. No.	=	18 - Total to Detention B	Max. Elevation	=	662.01 ft
Reservoir name	=	Detention Pond B	Max. Storage	=	84,860 cuft

Storage Indication method used.



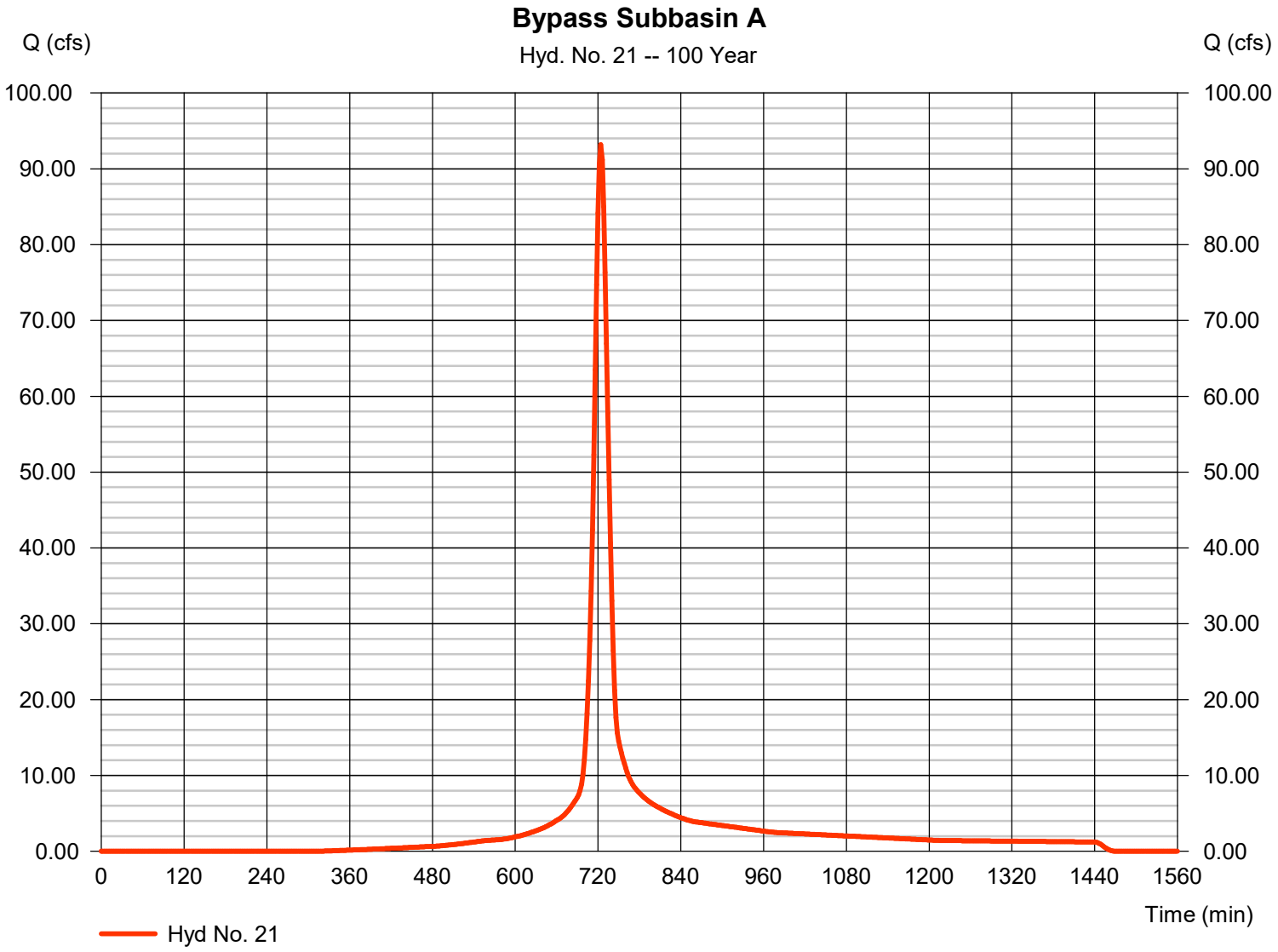
Hydrograph Report

Hyd. No. 21

Bypass Subbasin A

Hydrograph type	=	SCS Runoff	Peak discharge	=	93.20 cfs
Storm frequency	=	100 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	295,141 cuft
Drainage area	=	14.850 ac	Curve number	=	80*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	18.30 min
Total precip.	=	7.84 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.140 x 98) + (13.710 x 78)] / 14.850

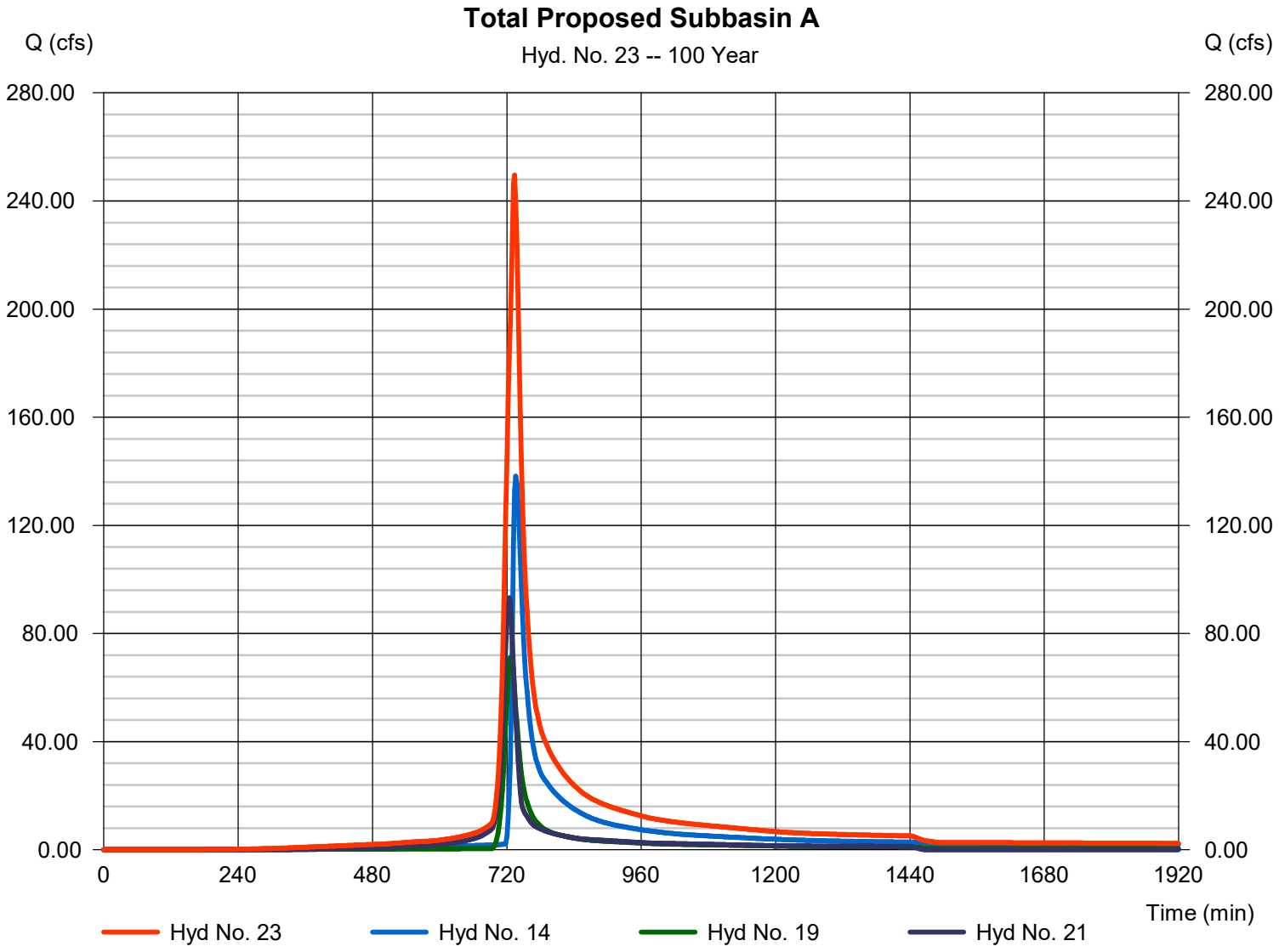


Hydrograph Report

Hyd. No. 23

Total Proposed Subbasin A

Hydrograph type	=	Combine	Peak discharge	=	249.57 cfs
Storm frequency	=	100 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	1,296,621 cuft
Inflow hyds.	=	14, 19, 21	Contrib. drain. area	=	14.850 ac

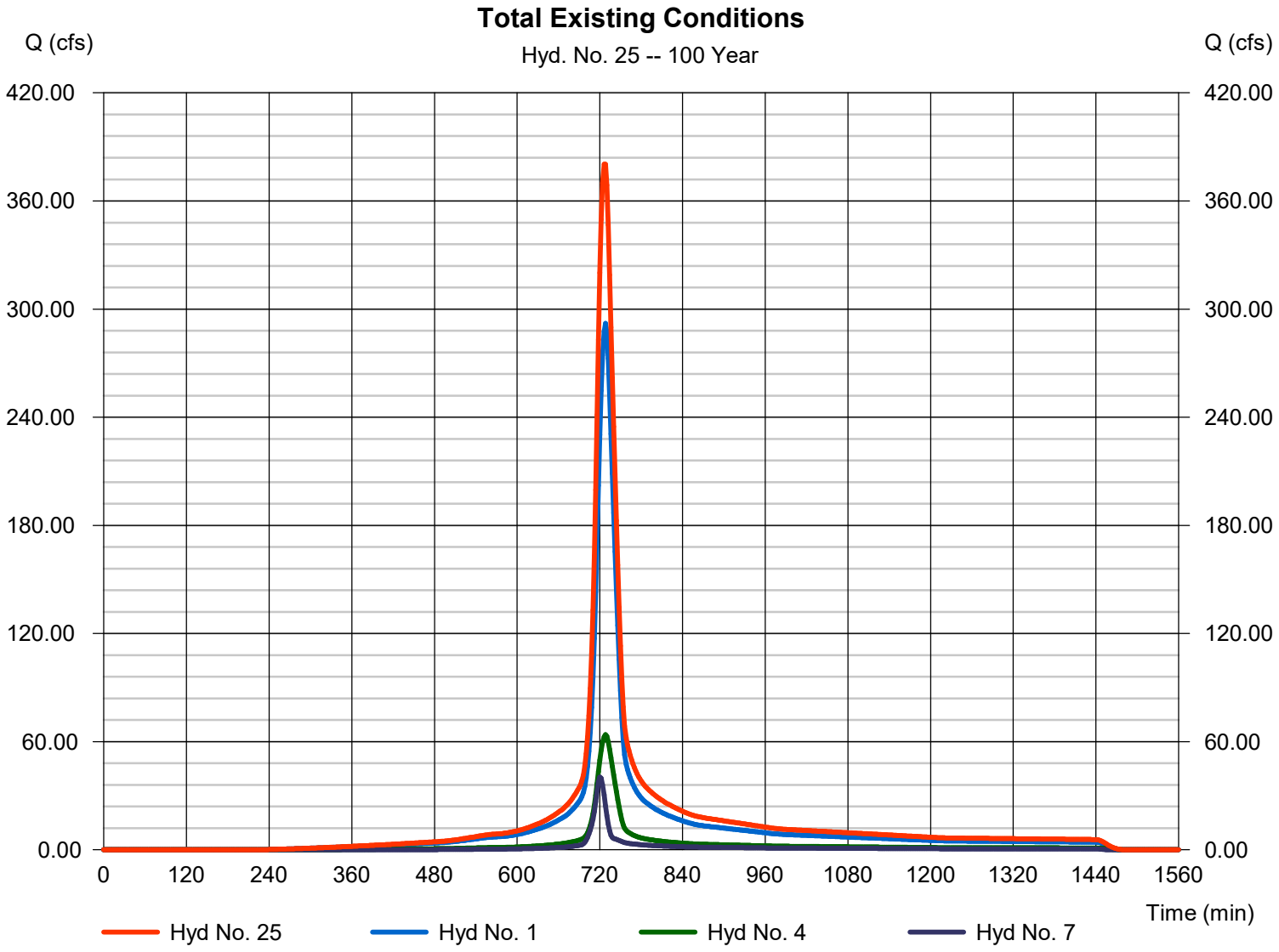


Hydrograph Report

Hyd. No. 25

Total Existing Conditions

Hydrograph type	= Combine	Peak discharge	= 380.35 cfs
Storm frequency	= 100 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 1,447,038 cuft
Inflow hyds.	= 1, 4, 7	Contrib. drain. area	= 67.940 ac

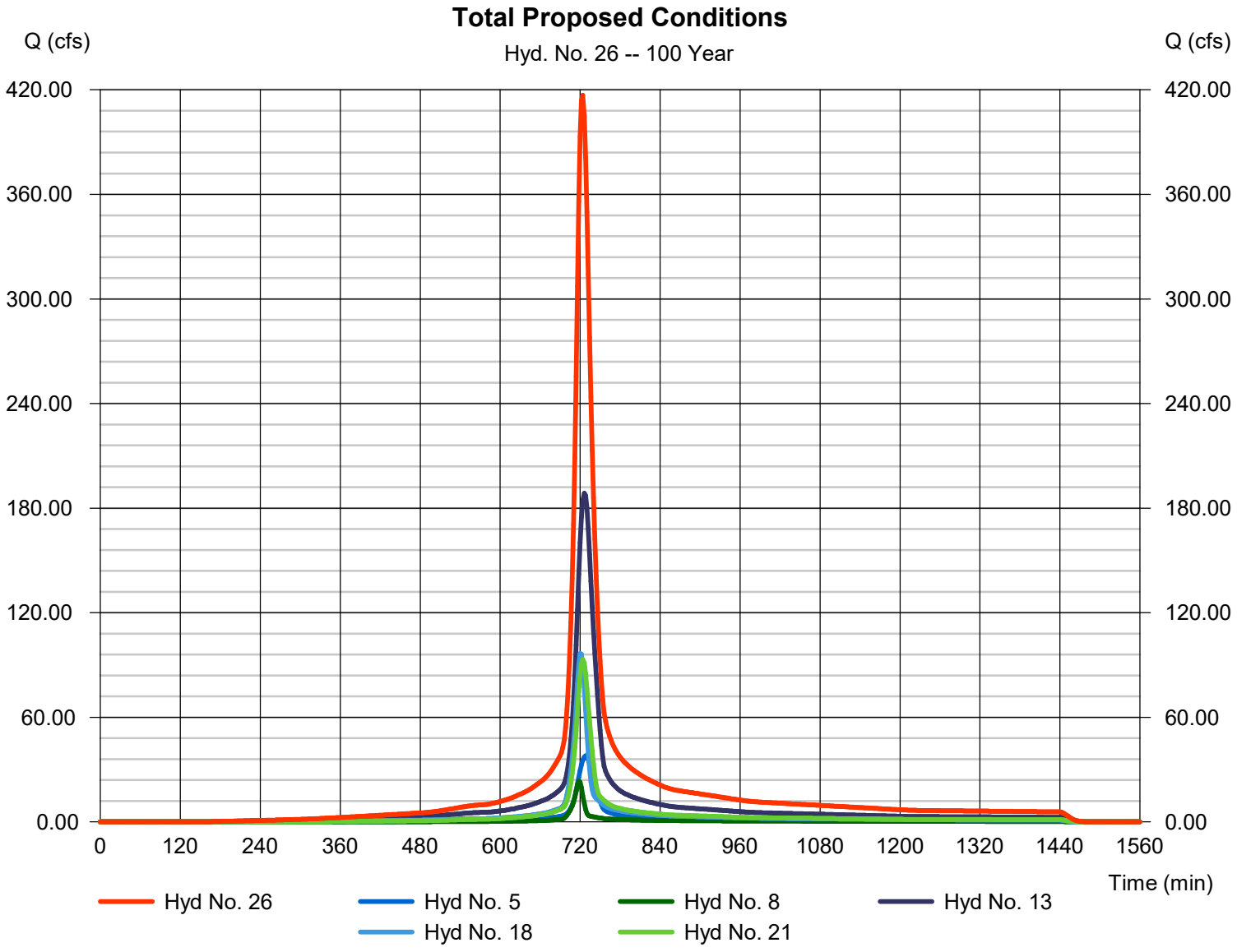


Hydrograph Report

Hyd. No. 26

Total Proposed Conditions

Hydrograph type	= Combine	Peak discharge	= 416.94 cfs
Storm frequency	= 100 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 1,491,369 cuft
Inflow hyds.	= 5, 8, 13, 18, 21	Contrib. drain. area	= 24.860 ac

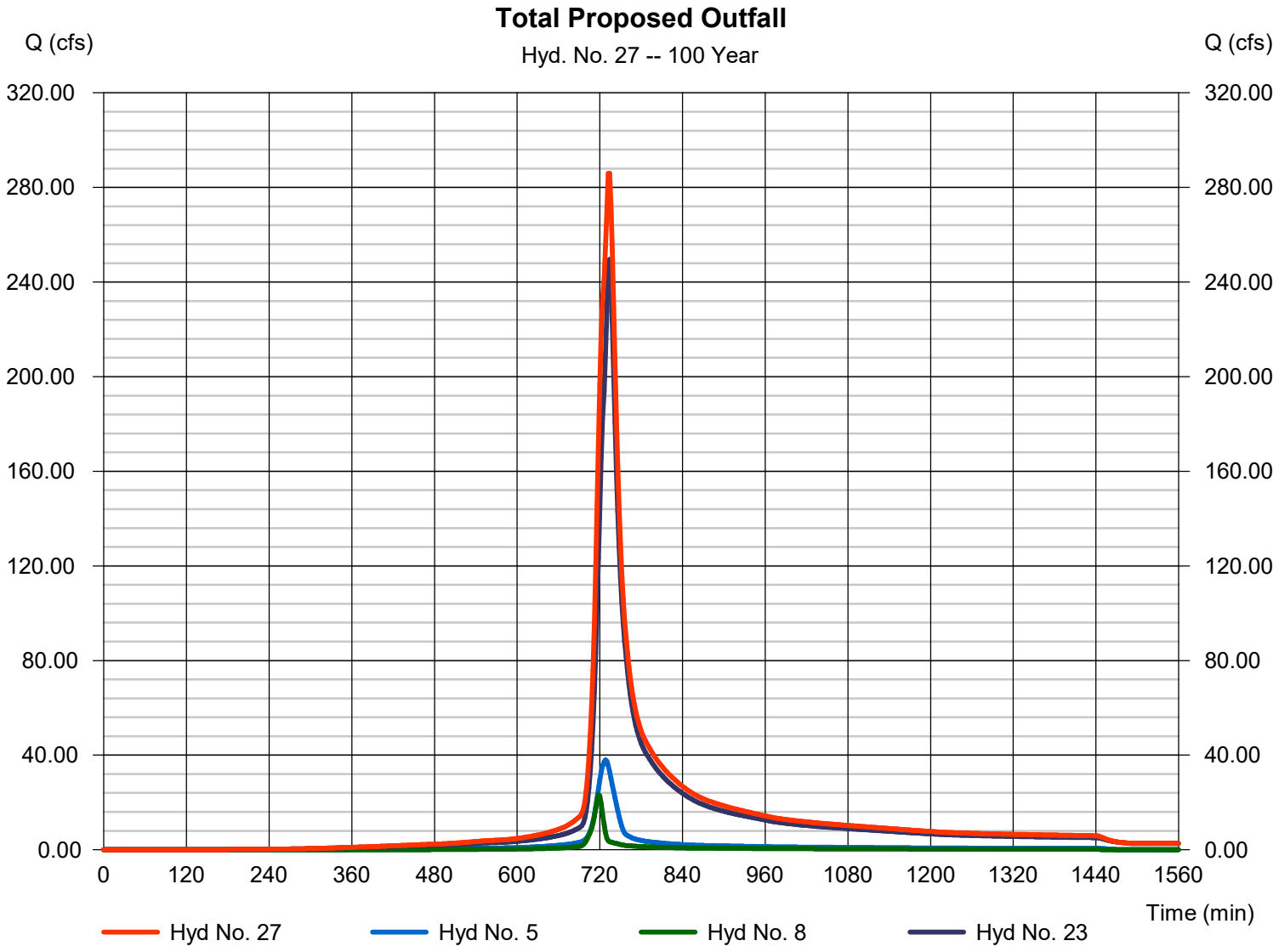


Hydrograph Report

Hyd. No. 27

Total Proposed Outfall

Hydrograph type	= Combine	Peak discharge	= 286.01 cfs
Storm frequency	= 100 yrs	Time to peak	= 734 min
Time interval	= 2 min	Hyd. volume	= 1,491,336 cuft
Inflow hyds.	= 5, 8, 23	Contrib. drain. area	= 10.010 ac



Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	------	48.42	66.74	-------	92.35	113.12	142.44	165.69	190.02	Sub. A To Sed. A
2	Reservoir	1	1.478	2.085	-------	2.745	6.403	26.05	69.45	116.47	Outfall Sed. Basin A
4	SCS Runoff	------	11.86	16.37	-------	22.66	27.76	34.96	40.67	46.65	Sub. A to Sed. B
5	Reservoir	4	0.415	0.469	-------	0.531	0.736	3.314	9.706	20.25	Outfall Sed. Basin B

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	48.42	2	728	170,439	------	------	------	Sub. A To Sed. A
2	Reservoir	1.478	2	1094	105,314	1	650.16	118,852	Outfall Sed. Basin A
4	SCS Runoff	11.86	2	730	44,442	------	------	------	Sub. A to Sed. B
5	Reservoir	0.415	2	1060	44,425	4	658.72	28,732	Outfall Sed. Basin B

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	66.74	2	726	232,190	------	------	------	Sub. A To Sed. A
2	Reservoir	2.085	2	1048	166,855	1	650.92	159,538	Outfall Sed. Basin A
4	SCS Runoff	16.37	2	728	60,544	------	------	------	Sub. A to Sed. B
5	Reservoir	0.469	2	1120	60,527	4	659.58	41,546	Outfall Sed. Basin B

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	92.35	2	726	319,149	------	------	------	Sub. A To Sed. A
2	Reservoir	2.745	2	1040	253,468	1	652.05	222,652	Outfall Sed. Basin A
4	SCS Runoff	22.66	2	728	83,219	------	------	------	Sub. A to Sed. B
5	Reservoir	0.531	2	1172	83,202	4	660.71	60,243	Outfall Sed. Basin B

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	113.12	2	726	390,530	------	------	------	Sub. A To Sed. A
2	Reservoir	6.403	2	844	324,667	1	652.62	256,109	Outfall Sed. Basin A
4	SCS Runoff	27.76	2	728	101,832	------	------	------	Sub. A to Sed. B
5	Reservoir	0.736	2	1106	101,815	4	661.51	75,207	Outfall Sed. Basin B

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	142.44	2	726	492,560	------	------	------	Sub. A To Sed. A
2	Reservoir	26.05	2	754	426,645	1	652.93	274,730	Outfall Sed. Basin A
4	SCS Runoff	34.96	2	728	128,437	------	------	------	Sub. A to Sed. B
5	Reservoir	3.314	2	790	128,420	4	661.64	77,735	Outfall Sed. Basin B

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	165.69	2	726	574,441	------	------	------	Sub. A To Sed. A
2	Reservoir	69.45	2	744	508,493	1	653.21	291,386	Outfall Sed. Basin A
4	SCS Runoff	40.67	2	728	149,787	------	------	------	Sub. A to Sed. B
5	Reservoir	9.706	2	754	149,771	4	661.82	81,250	Outfall Sed. Basin B

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	190.02	2	726	660,956	------	------	------	Sub. A To Sed. A
2	Reservoir	116.47	2	738	594,986	1	653.38	302,079	Outfall Sed. Basin A
4	SCS Runoff	46.65	2	728	172,347	------	------	------	Sub. A to Sed. B
5	Reservoir	20.25	2	746	172,330	4	662.03	85,343	Outfall Sed. Basin B

Pond Report

Pond No. 1 - Sediment Pond A

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 646.84 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	646.84	10	0	0
0.16	647.00	2,676	152	152
1.16	648.00	37,731	16,817	16,969
2.16	649.00	48,940	43,210	60,179
3.16	650.00	51,729	50,323	110,502
4.16	651.00	54,574	53,140	163,641
5.16	652.00	57,476	56,013	219,655
6.16	653.00	60,420	58,936	278,591
6.66	653.50	61,920	30,581	309,172

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 48.00	8.00	0.00	0.00
Span (in)	= 48.00	8.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 646.74	649.05	0.00	0.00
Length (ft)	= 20.00	0.00	0.00	0.00
Slope (%)	= 1.00	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	Yes	No	No

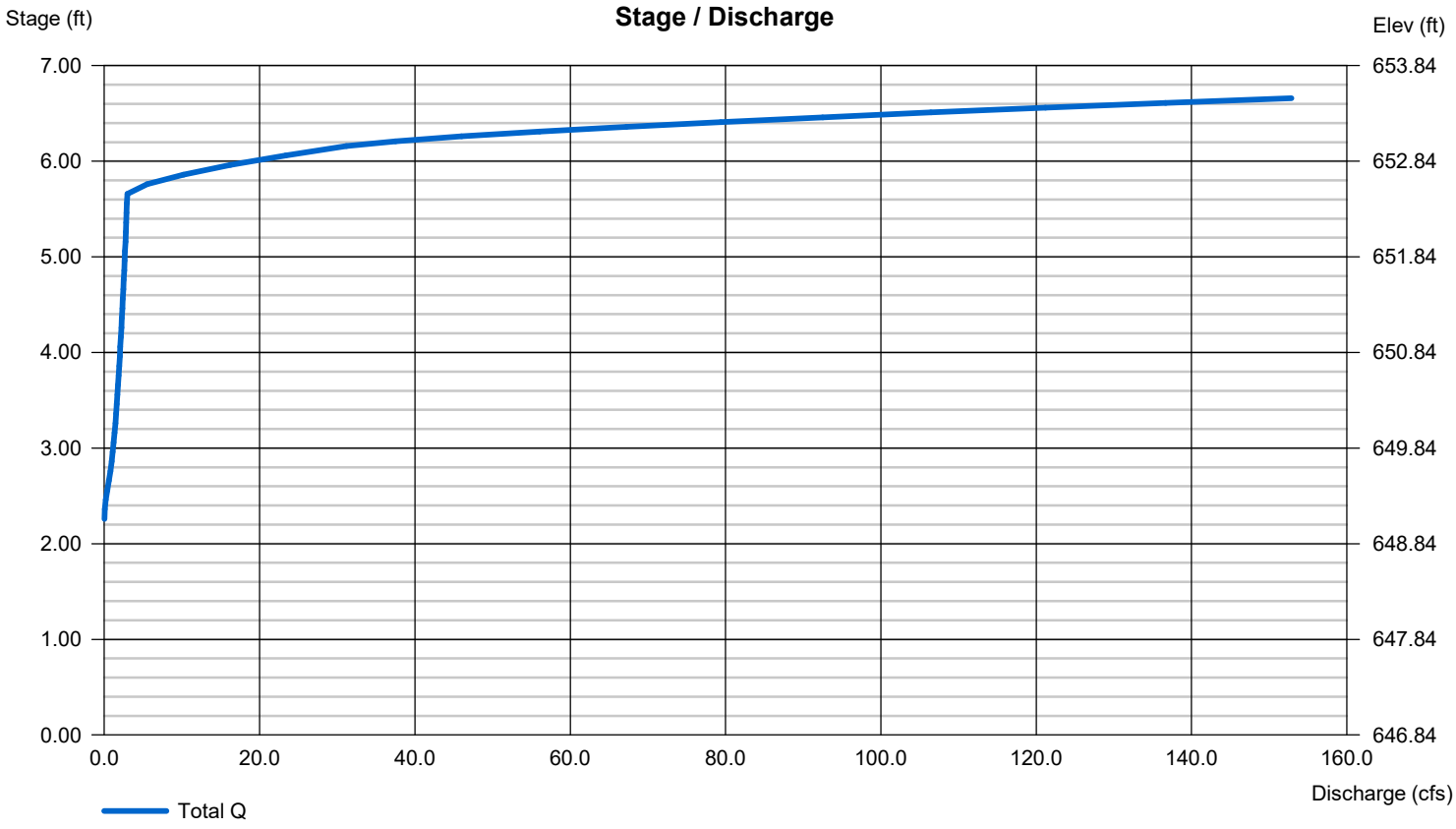
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 24.00	0.00	60.00	0.00
Crest El. (ft)	= 652.50	0.00	653.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	---	Ciplti	---
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).



Pond No. 3 - Sediment Pond B

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 655.50 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	655.50	10	0	0
0.50	656.00	5,463	951	951
1.50	657.00	9,304	7,298	8,249
2.50	658.00	12,507	10,865	19,114
3.50	659.00	14,408	13,445	32,559
4.50	660.00	16,367	15,376	47,935
5.50	661.00	18,383	17,364	65,298
6.50	662.00	20,454	19,407	84,705
7.00	662.50	21,511	10,489	95,195

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 36.00	3.00	0.00	0.00
Span (in)	= 36.00	3.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 655.40	655.50	0.00	0.00
Length (ft)	= 30.43	0.00	0.00	0.00
Slope (%)	= 0.99	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	No	No

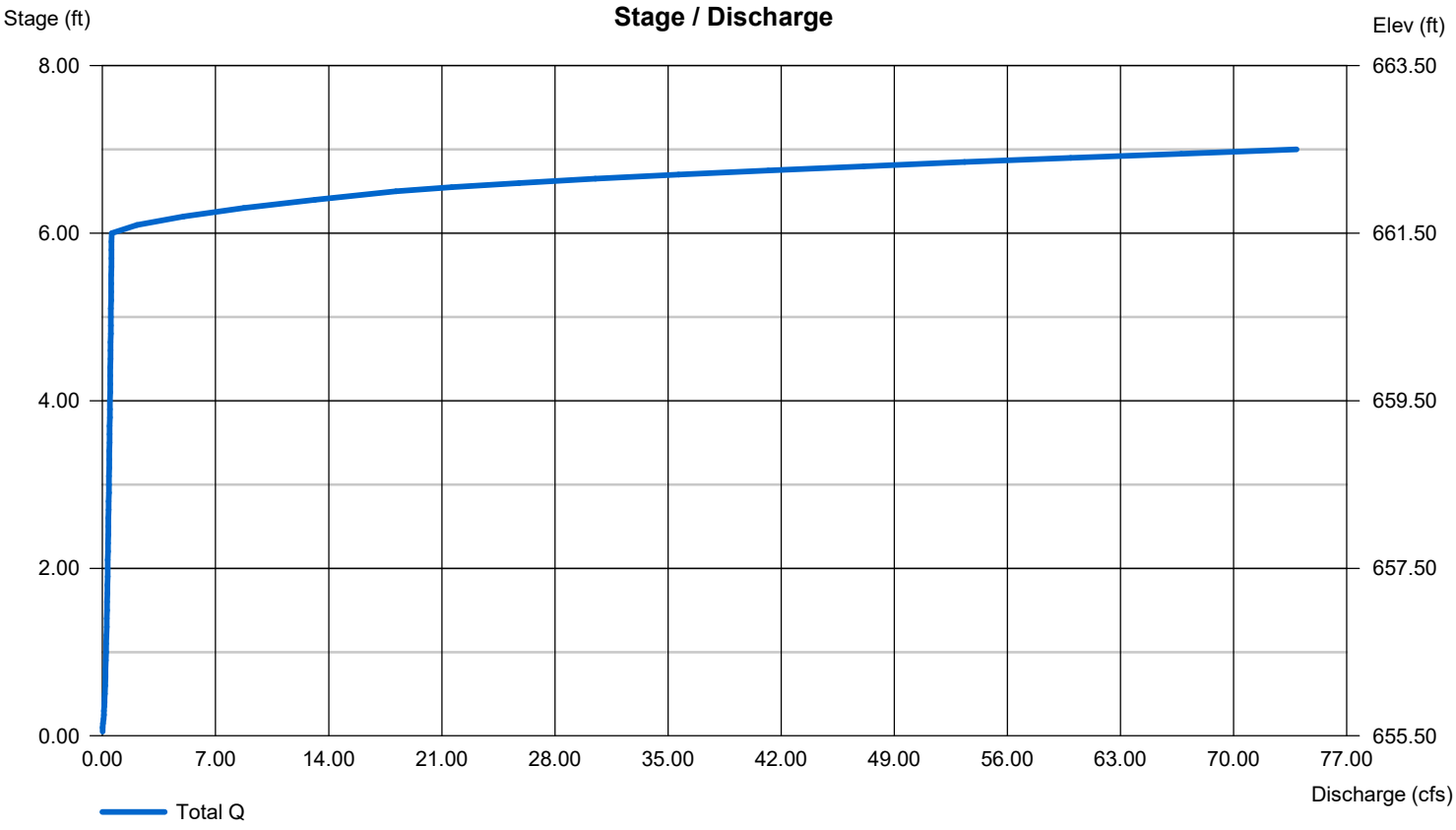
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 15.00	20.00	0.00	0.00
Crest El. (ft)	= 661.50	662.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	Ciplti	---	---
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).



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Wednesday, 08 / 27 / 2025

Pond No. 9 - Forebay A Dry

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 649.05 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	649.05	19,308	0	0
0.95	650.00	20,628	18,964	18,964
1.95	651.00	21,980	21,298	40,263
2.95	652.00	23,364	22,666	62,929
3.05	652.10	23,505	2,343	65,272

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .000	.000	.000	n/a
Orifice Coeff.	= 0.00	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 0.00	0.00	0.00	0.00
Weir Type	= ---	---	---	---
Multi-Stage	= No	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	649.05	---	---	---	---	---	---	---	---	---	---	0.000
0.95	18,964	650.00	---	---	---	---	---	---	---	---	---	---	0.000
1.95	40,263	651.00	---	---	---	---	---	---	---	---	---	---	0.000
2.95	62,929	652.00	---	---	---	---	---	---	---	---	---	---	0.000
3.05	65,272	652.10	---	---	---	---	---	---	---	---	---	---	0.000

Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Wednesday, 08 / 27 / 2025

Pond No. 11 - Forebay B Dry

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 657.75 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	657.75	6,538	0	0
0.25	658.00	7,850	1,796	1,796
1.25	659.00	9,146	8,489	10,285
2.25	660.00	10,471	9,800	20,085
3.00	660.75	11,483	8,229	28,314

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .000	.000	.000	n/a
Orifice Coeff.	= 0.00	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 0.00	0.00	0.00	0.00
Weir Type	= ---	---	---	---
Multi-Stage	= No	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	657.75	---	---	---	---	---	---	---	---	---	---	0.000
0.25	1,796	658.00	---	---	---	---	---	---	---	---	---	---	0.000
1.25	10,285	659.00	---	---	---	---	---	---	---	---	---	---	0.000
2.25	20,085	660.00	---	---	---	---	---	---	---	---	---	---	0.000
3.00	28,314	660.75	---	---	---	---	---	---	---	---	---	---	0.000

Southbend Crossings Hand Calculations

Low Flow Orifice Calculation

Detention Basin A

$$WQ_v = A * D$$

Where: $WQ_v = Water\ Quality\ Volume$

$A = impervious\ area\ (SQ.FT.)$

$D = first\ flush\ depth\ (2.5\ in\ or\ 0.083\ ft)$

$$WQ_v = 17.10\ Acres * \frac{43{,}560\ Sq.Ft.}{Acre} * 0.208 = 155{,}182.5\ cuft$$

$$Q_{avg} = \frac{WQ_V}{t * (\frac{3600sec}{hr})}$$

Where: $Q_{avg} = average\ flow\ rate\ (cfs)$

$t = draw\ down\ time\ (24 - hr)$

$$Q_{avg} = \frac{155{,}182.5}{24hr * (\frac{3600sec}{hr})} = 1.796\ cfs$$

$$a = \frac{Q_{avg}}{C\sqrt{2 * g * h_{avg}}}$$

Where: $a = orifice\ area\ (SQ.FT.)$

$C = orifice\ coefficient$

$g = gravitational\ acceleration\ \left(32.2\frac{ft}{sec^2}\right)$

$$h_{avg} = head\ (ft)$$

And: $h_{avg} = \frac{h}{2}$

Where: $h = height\ of\ pond\ in\ relation\ to\ water\ quality\ treatment\ volume$

$$h_{avg} = \frac{4.41}{2} = 2.205\ ft$$

As provided in stormwater package tabulation for detention pond

$$a = \frac{1.796}{0.60\sqrt{2 * 32.2 * 2.205}} = 0.251\ SQ.FT.$$

$$d = \sqrt{\frac{4a}{\pi}}$$

Where: $d = diameter\ of\ orifice\ (in)$

$$d = \sqrt{\frac{4 * 0.251}{\pi}} = 0.566\ ft\ or\ 6.8\ in$$

For design considerations, an orifice sized at 6.5 in for low-flow orifice was used increasing drawdown time duration.

Southbend Crossings Hand Calculations

Low Flow Orifice Calculation

Detention Basin B

$$WQ_v = A * D$$

$Where$: $WQ_v = Water\ Quality\ Volume$

$A = impervious\ area\ (SQ.FT.)$

$D = first\ flush\ depth\ (2.5\ in\ or\ 0.083\ ft)$

$$WQ_v = 3.63\ Acres * \frac{43{,}560\ Sq.Ft.}{Acre} * 0.208 = 32{,}942.25\ cuft$$

$$Q_{avg} = \frac{WQ_V}{t * (\frac{3600sec}{hr})}$$

$Where$: $Q_{avg} = average\ flow\ rate\ (cfs)$

$t = draw\ down\ time\ (24 - hr)$

$$Q_{avg} = \frac{32{,}942.25}{24hr * (\frac{3600sec}{hr})} = 0.381\ cfs$$

$$a = \frac{Q_{avg}}{C\sqrt{2 * g * h_{avg}}}$$

$Where$: $a = orifice\ area\ (SQ.FT.)$

$C = orifice\ coefficient$

$g = gravitational\ acceleration\ \left(32.2\frac{ft}{sec^2}\right)$

$h_{avg} = head\ (ft)$

And: $h_{avg} = \frac{h}{2}$

$Where$: $h = height\ of\ pond\ in\ relation\ to\ water\ quality\ treatment\ volume$

$$h_{avg} = \frac{3.80}{2} = 1.90\ ft$$

As provided in stormwater package tabulation for detention pond

$$a = \frac{0.381}{0.60\sqrt{2 * 32.2 * 1.90}} = 0.057\ SQ.FT.$$

$$d = \sqrt{\frac{4a}{\pi}}$$

$Where$: $d = diameter\ of\ orifice\ (in)$

$$d = \sqrt{\frac{4 * 0.057}{\pi}} = 0.269\ ft\ or\ 3.23\ in$$

For design considerations, an orifice sized at 3.00 in for low-flow orifice was used increasing drawdown time duration.

Forebay Size Calculation

Sediment Pond A

Dry Storage Volume = 60,384 cu. ft. (provided in sediment basin calculations)

Forebay A Volume = 81,068 cu. ft. (provided in pond report located in stormwater report)

Then:

$$\frac{Forebay}{Dry\ Storage\ Volume} = Precentage\ of\ forebay\ volume$$

Where:

$$\frac{65{,}272}{60{,}384} = 1.081\ or\ 108.1\%$$

Sediment Pond B

Dry Storage Volume = 16,281 cu. ft. (provided in sediment basin calculations)

Forebay B Volume = 36,594 cu. ft. (provided in pond report located in stormwater report)

Then:

$$\frac{Forebay}{Dry\ Storage\ Volume} = Precentage\ of\ forebay\ volume$$

Where:

$$\frac{28{,}314}{16{,}281} = 1.739\ or\ 173.9\%$$

Appendix 2

Stormwater Calculations
Summary and Outlet Detail

PROPOSED STORM SEWER STRUCTURE SCHEDULE

STR. NO.	PIPE	TYPE	RIM ELEV.	INV. IN	INV. OUT	LENGTH	SLOPE	NOTES
R-1		HEADWALL OUTLET	---	---	648.31	---	---	---
	R2-R1	42" PIPE	---	648.44	648.31	18.58	0.70	---
R-2		CURB INLET [3]	654.28	648.94	648.44	---	---	TRIPLE INLET
	R3-R2	18" PIPE	---	651.03	648.94	24.00	8.71	---
R-3		CURB INLET [3]	654.28	--	651.03	---	---	TRIPLE INLET
	R4-R2	42" PIPE	---	650.08	648.94	152.82	0.75	---
R-4		CURB INLET	655.17	650.28	650.08	---	---	TRIPLE INLET
	R5-R4	18" PIPE	---	651.92	650.28	24.00	6.83	---
R-5		CURB INLET	655.17	--	651.92	---	---	TRIPLE INLET
	R6-R4	42" PIPE	---	651.51	650.28	145.51	0.67	---
R-6		CURB INLET	656.60	651.71	651.51	---	---	DOUBLE INLET
	R6A-R6	42" PIPE	---	652.26	651.71	105.63	0.52	---
R-6A		CURB INLET	657.81	652.46	652.26	---	---	DOUBLE INLET
	R6B-R6A	18" PIPE	---	654.06	652.46	24.00	6.67	---
R-6B		CURB INLET	657.81	---	654.06	---	---	DOUBLE INLET
	R7-R6	18" PIPE	---	653.35	651.71	24.00	6.83	---
R-7		CURB INLET	656.60	--	653.35	---	---	DOUBLE INLET
	R8-R6A	42" PIPE	---	652.98	652.46	87.20	0.60	---
R-8		CURB INLET	659.68	653.18	652.98	---	---	DOUBLE INLET
	R9-R8	18" PIPE	---	655.73	653.18	24.00	10.67	---
R-9		CURB INLET	659.68	655.93	655.73	---	---	DOUBLE INLET
	R10-R9	18" PIPE	---	656.53	655.93	41.01	1.46	---
R-10		CURB INLET	660.72	656.73	656.53	---	---	DOUBLE INLET
	R11-R10	18" PIPE	---	656.97	656.73	24.00	1.00	---
R-11		CURB INLET	660.72	--	656.97	---	---	DOUBLE INLET
	R12-R10	18" PIPE	---	657.74	656.73	105.99	0.95	---
R-12		CURB INLET	661.93	657.94	657.74	---	---	DOUBLE INLET
	R13-R12	18" PIPE	---	658.18	657.94	24.00	1.00	---
R-13		CURB INLET	661.93	--	658.18	---	---	DOUBLE INLET
	R12A-R12	18" PIPE	---	658.97	657.94	107.48	0.96	---
R-12A		CURB INLET	663.16	659.17	658.97	---	---	DOUBLE INLET
	R12B-R12A	18" PIPE	---	659.41	659.17	24.00	1.00	---
R-12B		CURB INLET	663.16	--	659.41	---	---	DOUBLE INLET
	R14-R8	36" PIPE	---	654.54	654.18	41.01	0.88	---
R-14		CURB INLET	660.68	654.74	654.54	---	---	DOUBLE INLET
	R15-R14	36" PIPE	---	654.98	654.74	24.00	1.00	---
R-15		CURB INLET	660.68	655.18	654.98	---	---	DOUBLE INLET
	R16-R15	36" PIPE	---	655.82	655.18	41.01	1.56	---
R-16		CURB INLET	661.58	656.02	655.18	---	---	DOUBLE INLET
	R17-R16	18" PIPE	---	656.26	656.02	24.00	1.00	---
R-17		CURB INLET	661.58	656.46	656.26	---	---	DOUBLE INLET
	R17A-R17	18" PIPE	---	657.25	656.46	78.45	1.01	---
R-17A		AREA DRAIN	660.00	---	657.25	---	---	---
	R18-R16	36" PIPE	---	659.68	656.02	164.51	2.22	---
R-18		CURB INLET	665.38	661.88	659.68	---	---	DOUBLE INLET
	R19-R18	18" PIPE	---	661.43	661.88	24.00	6.46	---
R-19		CURB INLET	665.38	661.63	661.43	---	---	DOUBLE INLET
	R20-R19	18" PIPE	---	662.32	661.63	43.55	1.58	---
R-20		CURB INLET	666.51	662.52	662.32	---	---	DOUBLE INLET
	R20A-R20	18" PIPE	---	663.54	662.52	103.42	0.99	---
R-20A		CURB INLET	667.73	663.74	663.54	---	---	DOUBLE INLET
	R20B-R20A	18" PIPE	---	663.98	663.74	24.00	1.00	---
R-20B		CURB INLET	667.73	--	663.98	---	---	DOUBLE INLET
	R21-R20	18" PIPE	---	662.76	662.52	24.00	1.00	---
R-21		CURB INLET	666.51	--	662.76	---	---	DOUBLE INLET
	R22-R20A	18" PIPE	---	664.62	663.74	93.43	0.94	---
R-22		CURB INLET	668.81	664.82	664.62	---	---	TRIPLE INLET
	R23-R22	18" PIPE	---	665.06	664.82	24.00	1.00	---
R-23		CURB INLET	668.81	--	665.06	---	---	DOUBLE INLET
	R24-R18	36" PIPE	---	661.41	659.88	85.49	1.79	---
R-24		CURB INLET	667.36	661.61	661.41	---	---	DOUBLE INLET
	R25-R24	18" PIPE	---	661.85	661.61	24.00	1.00	---
R-25		CURB INLET	667.36	662.05	661.85	---	---	DOUBLE INLET

1. PIPE MATERIAL SHALL BE RCP CLASS III
2. STANDARD TYPE "V" GRATE TO BE INSTALLED – JOHN BOUCHARD NO. 3300-V OR APPROVED EQUAL ON ALL CURB INLETS EXCEPT WHERE NOTED.
3. STANDARD TYPE "K" GRATE TO BE INSTALLED – JOHN BOUCHARD NO. 3300 OR APPROVED EQUAL.
4. STANDARD TYPE "K" GRATE TO BE INSTALLED – JOHN BOUCHARD NO. 4310 OR APPROVED EQUAL.

PROPOSED STORM SEWER STRUCTURE SCHEDULE

STR. NO.	PIPE	TYPE	RIM ELEV.	INV. IN	INV. OUT	LENGTH	SLOPE	NOTES
	R25A–R25	18" PIPE	---	662.85	662.05	80.49	1.00	---
R-25A		CURB INLET	665.60	--	662.85	---	---	---
	R26–R24	36" PIPE	---	665.44	661.61	163.00	2.35	---
R-26		CURB INLET	671.14	666.64	665.44	---	---	DOUBLE INLET
	R27–R26	18" PIPE	---	667.19	666.64	24.00	6.46	---
R-27		CURB INLET	671.14	667.39	667.19	---	---	SINGLE INLET
	R28–R27	18" PIPE	---	668.10	667.39	44.69	1.59	---
R-28		CURB INLET	672.29	668.30	668.10	---	---	DOUBLE INLET
	R28A–R28	18" PIPE	---	669.22	668.30	91.50	1.01	---
R-28A		CURB INLET	672.29	669.42	669.22	---	---	DOUBLE INLET
	R29–R28	18" PIPE	---	668.54	668.30	24.00	1.00	---
R-29		CURB INLET	672.29	--	668.54	---	---	TRIPLE INLET
	R30–R28A	18" PIPE	---	669.98	669.42	76.46	0.73	---
R-30		CURB INLET	674.17	670.18	669.98	---	---	DOUBLE INLET
	R31–R30	18" PIPE	---	670.42	670.18	24.00	1.00	---
R-31		HEADWALL INLET	674.17	--	670.42	---	---	TRIPLE INLET
	R32–R26	36" PIPE	---	666.81	665.64	87.00	1.34	---
R-32		CURB INLET	673.15	667.01	666.81	---	---	DOUBLE INLET
	R33–R32	18" PIPE	---	667.25	667.01	24.00	1.00	---
R-33		CURB INLET	673.15	667.45	667.25	---	---	DOUBLE INLET
	R33A–R33	18" PIPE	---	668.25	667.45	79.90	1.00	---
R-33A		CURB INLET	671.00	--	668.25	---	---	---
	R34–R32	36" PIPE	---	671.73	667.01	163.00	2.90	---
R-34		CURB INLET	676.93	671.93	671.73	---	---	SINGLE INLET
	R35–R34	18" PIPE	---	672.98	671.93	24.00	4.38	---
R-35		CURB INLET	676.93	673.18	672.98	---	---	DOUBLE INLET
	R36–R35	18" PIPE	---	673.98	673.18	44.69	1.79	---
R-36		CURB INLET	678.17	674.18	673.98	---	---	DOUBLE INLET
	R36A–R36	18" PIPE	---	676.20	674.18	122.10	1.65	---
R-36A		CURB INLET	679.95	--	676.20	---	---	SINGLE INLET
	R37–R36	18" PIPE	---	674.42	674.18	24.00	1.00	---
R-37		CURB INLET	678.17	--	674.42	---	---	DOUBLE INLET
	R38–R34	24" PIPE	---	674.49	671.93	87.00	2.94	---
R-38		CURB INLET	678.94	674.69	674.49	---	---	DOUBLE INLET
	R39–R38	18" PIPE	---	675.19	674.69	24.00	2.08	---
R-39		CURB INLET	678.94	--	675.19	---	---	SINGLE INLET
	R40–R38	24" PIPE	---	676.82	674.69	162.51	1.31	---
R-40		CURB INLET	682.71	677.02	676.82	---	---	DOUBLE INLET
	R41–R40	24" PIPE	---	677.26	677.02	24.00	1.00	---
R-41		CURB INLET	682.71	677.46	677.26	---	---	DOUBLE INLET
	R42–R41	24" PIPE	---	679.29	677.46	45.06	4.06	---
R-42		CURB INLET	683.96	679.49	679.29	---	---	TRIPLE INLET
	R43–R42	18" PIPE	---	679.73	679.49	24.00	1.00	---
R-43		CURB INLET	683.96	679.93	679.73	---	---	DOUBLE INLET
	R44–R43	18" PIPE	---	680.34	679.93	41.01	1.00	---
R-44		CURB INLET	684.73	680.54	680.34	---	---	DOUBLE INLET
	R45–R44	18" PIPE	---	680.78	680.54	24.00	1.00	---
R-45		CURB INLET	684.73	680.98	680.78	---	---	SINGLE INLET
	R46–R45	18" PIPE	---	684.94	680.98	190.84	2.08	---
R-46		CURB INLET	689.13	685.14	684.94	---	---	SINGLE INLET
	R47–R46	18" PIPE	---	685.38	685.14	24.00	1.00	---
R-47		CURB INLET	689.13	--	685.38	---	---	SINGLE INLET
R-48		HEADWALL OUTLET	---	--	648.31	---	---	---
	R49–R48	36" PIPE	---	649.00	648.31	72.21	0.96	---
R-49		CURB INLET	654.46	649.20	649.00	---	---	TRIPLE INLET
	R49A–R49	36" PIPE	---	649.99	649.20	100.57	0.79	---
R-49A		CURB INLET	655.49	650.19	649.99	---	---	DOUBLE INLET
	R49B–R49A	18" PIPE	---	651.74	650.19	24.00	6.46	---
R-49B		CURB INLET	655.49	--	651.74	---	---	DOUBLE INLET
	R50–R49	18" PIPE	---	651.21	650.00	24.00	5.04	---

1. PIPE MATERIAL SHALL BE RCP CLASS III
2. STANDARD TYPE "V" GRATE TO BE INSTALLED – JOHN BOUCHARD NO. 3300–V OR APPROVED EQUAL ON ALL CURB INLETS EXCEPT WHERE NOTED.
3. STANDARD TYPE "K" GRATE TO BE INSTALLED – JOHN BOUCHARD NO. 3300 OR APPROVED EQUAL.
4. STANDARD TYPE "K" GRATE TO BE INSTALLED – JOHN BOUCHARD NO. 4310 OR APPROVED EQUAL.

PROPOSED STORM SEWER STRUCTURE SCHEDULE

STR. NO.	PIPE	TYPE	RIM ELEV.	INV. IN	INV. OUT	LENGTH	SLOPE	NOTES
R-50		CURB INLET	654.46	--	651.21	---	---	TRIPLE INLET
	R51-R49A	36" PIPE	---	651.21	650.19	100.57	1.01	---
R-51		CURB INLET	656.52	651.41	651.21	---	---	SINGLE INLET
	R51A-R51	36" PIPE	---	651.78	651.41	50.00	0.74	---
R-51A		CURB INLET	657.03	651.98	651.78	---	---	SINGLE INLET
	R51B-R51A	18" PIPE	---	653.28	651.98	24.00	5.42	---
R-51B		CURB INLET	657.03	--	653.28	---	---	SINGLE INLET
	R52-R51A	18" PIPE	---	652.77	651.41	24.00	5.67	---
R-52		CURB INLET	656.52	--	652.77	---	---	SINGLE INLET
	R53-R51A	36" PIPE	---	652.55	651.98	100.00	0.57	---
R-53		CURB INLET	658.05	652.75	652.55	---	---	DOUBLE INLET
	R54-R53	36" PIPE	---	652.92	652.75	24.00	0.71	---
R-54		CURB INLET	658.05	653.12	652.92	---	---	DOUBLE INLET
	R55-R54	36" PIPE	---	654.25	653.12	151.38	0.75	---
R-55		CURB INLET	659.60	654.45	654.25	---	---	DOUBLE INLET
	R56-R55	18" PIPE	---	655.85	655.25	24.00	2.50	---
R-56		CURB INLET	659.60	656.05	655.85	---	---	DOUBLE INLET
	R56A-R56	18" PIPE	---	657.04	656.05	98.62	1.00	---
R-56A		CURB INLET	660.61	--	657.04	---	---	SINGLE INLET
	R57-R55	36" PIPE	---	655.77	654.45	176.11	0.75	---
R-57		CURB INLET	661.37	655.97	655.77	---	---	DOUBLE INLET
	R58-R57	36" PIPE	---	656.34	655.97	48.93	0.76	---
R-58		CURB INLET	662.64	656.54	656.34	---	---	SINGLE INLET
	R59-R58	18" PIPE	---	658.89	658.54	24.00	1.46	---
R-59		CURB INLET	662.64	--	658.89	---	---	DOUBLE INLET
	R60-R58	36" PIPE	---	657.39	656.54	70.82	1.20	---
R-60		CURB INLET	663.69	657.59	657.39	---	---	SINGLE INLET
	R61-R60	36" PIPE	---	658.05	657.59	38.18	1.20	---
R-61		CURB INLET	664.31	658.25	658.05	---	---	SINGLE INLET
	R62-R61	36" PIPE	---	658.53	658.25	24.00	1.17	---
R-62		CURB INLET	664.31	658.73	658.53	---	---	SINGLE INLET
	R63-R62	36" PIPE	---	659.19	658.73	38.18	1.20	---
R-63		CURB INLET	664.86	659.36	659.19	---	---	SINGLE INLET
	R64-R63	18" PIPE	---	661.11	660.19	24.00	3.83	---
R-64		CURB INLET	664.86	661.31	661.11	---	---	DOUBLE INLET
	R64A-R64	18" PIPE	---	662.61	661.31	86.00	1.51	---
R-64A		CURB INLET	666.36	--	662.61	---	---	DOUBLE INLET
	R65-R63	36" PIPE	---	660.09	659.36	56.62	1.29	---
R-65		CURB INLET	665.79	660.29	660.09	---	---	SINGLE INLET
	R67-R65	36" PIPE	---	662.32	660.29	115.38	1.76	---
R-67		CURB INLET	668.26	662.52	662.32	---	---	SINGLE INLET
	R68-R67	18" PIPE	---	664.76	664.32	24.00	1.83	---
R-68		CURB INLET	668.26	--	664.76	---	---	DOUBLE INLET
	R69-R67	36" PIPE	---	663.03	662.52	38.18	1.34	---
R-69		CURB INLET	669.17	663.23	663.03	---	---	SINGLE INLET
	R70-R69	36" PIPE	---	663.47	663.23	24.00	1.00	---
R-70		CURB INLET	669.17	663.67	663.47	---	---	SINGLE INLET
	R71-R70	36" PIPE	---	664.32	663.67	38.18	1.70	---
R-71		CURB INLET	670.02	664.52	664.32	---	---	SINGLE INLET
	R72-R71	36" PIPE	---	667.62	664.52	172.00	1.80	---
R-72		CURB INLET	673.88	667.82	667.62	---	---	SINGLE INLET
	R73-R72	18" PIPE	---	670.13	667.82	24.00	9.62	---
R-73		CURB INLET	673.88	670.33	670.13	---	---	DOUBLE INLET
	R73A-R73	18" PIPE	---	673.38	670.33	144.36	2.11	---
R-73A		CURB INLET	677.13	--	673.38	---	---	DOUBLE INLET
	R74-R72	36" PIPE	---	668.20	667.82	38.18	1.00	---
R-74		CURB INLET	674.79	668.40	668.20	---	---	SINGLE INLET

1. PIPE MATERIAL SHALL BE RCP CLASS III
2. STANDARD TYPE "V" GRATE TO BE INSTALLED – JOHN BOUCHARD NO. 3300-V OR APPROVED EQUAL ON ALL CURB INLETS EXCEPT WHERE NOTED.
3. STANDARD TYPE "K" GRATE TO BE INSTALLED – JOHN BOUCHARD NO. 3300 OR APPROVED EQUAL.
4. STANDARD TYPE "K" GRATE TO BE INSTALLED – JOHN BOUCHARD NO. 4310 OR APPROVED EQUAL.

PROPOSED STORM SEWER STRUCTURE SCHEDULE

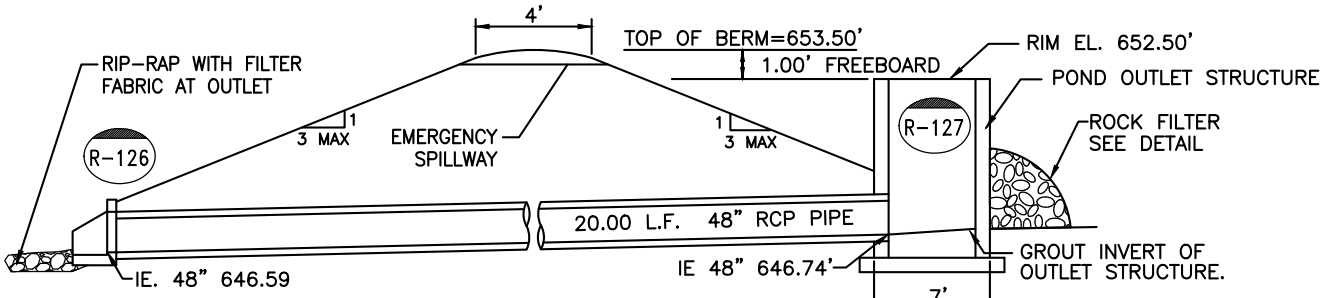
STR. NO.	PIPE	TYPE	RIM ELEV.	INV. IN	INV. OUT	LENGTH	SLOPE	NOTES
	R75–R74	36" PIPE	---	668.64	668.40	24.00	1.00	---
R-75		CURB INLET	674.79	668.84	668.64	---	---	SINGLE INLET
	R76–R75	36" PIPE	---	669.22	698.84	38.18	1.00	---
R-76		CURB INLET	675.64	669.42	669.22	---	---	SINGLE INLET
	R76A–R76	36" PIPE	---	670.25	669.42	82.30	1.00	---
R-76A		AREA DRAIN	673.00	---	670.25	---	---	---
	R77–R76	36" PIPE	---	673.81	670.14	172.00	2.13	---
R-77		CURB INLET	679.51	674.01	673.81	---	---	SINGLE INLET
	R78–R77	18" PIPE	---	675.76	675.31	24.00	1.88	---
R-78		CURB INLET	679.51	675.96	675.76	---	---	DOUBLE INLET
	R78A–R78	18" PIPE	---	678.54	675.96	124.00	2.08	---
R-78A		CURB INLET	682.29	---	678.54	---	---	SINGLE INLET
	R79–R77	24" PIPE	---	675.52	674.01	38.18	3.95	---
R-79		CURB INLET	680.41	675.72	675.52	---	---	SINGLE INLET
	R80–R79	24" PIPE	---	675.96	675.72	24.00	1.00	---
R-80		CURB INLET	680.41	676.16	675.96	---	---	SINGLE INLET
	R81–R80	24" PIPE	---	676.96	676.16	43.12	1.86	---
R-81		HEADWALL INLET	681.41	677.16	676.96	---	---	SINGLE INLET
	R82–R81	24" PIPE	---	680.39	677.16	163.38	1.98	---
R-82		CURB INLET	685.08	680.59	680.39	---	---	SINGLE INLET
	R83–R82	18" PIPE	---	681.33	680.59	24.00	3.08	---
R-83		CURB INLET	685.08	---	681.33	---	---	SINGLE INLET
	R84–R82	24" PIPE	---	681.14	680.59	39.62	1.39	---
R-84		CURB INLET	686.03	681.34	681.14	---	---	SINGLE INLET
	R85–R84	24" PIPE	---	681.58	681.34	24.00	1.00	---
R-85		CURB INLET	686.03	681.78	681.58	---	---	SINGLE INLET
	R86–R85	24" PIPE	---	682.47	681.78	39.62	1.74	---
R-86		CURB INLET	686.92	682.67	682.67	---	---	SINGLE INLET
	R87–R86	18" PIPE	---	683.17	682.67	24.00	2.08	---
R-87		CURB INLET	686.92	---	683.17	---	---	DOUBLE INLET
	R88–R86	24" PIPE	---	686.21	682.67	154.62	2.29	---
R-88		CURB INLET	690.40	686.41	686.21	---	---	SINGLE INLET
	R89–R88	18" PIPE	---	686.65	686.41	24.00	1.00	---
R-89		CURB INLET	690.40	---	686.65	---	---	DOUBLE INLET
	R90–R88	18" PIPE	---	690.10	686.41	198.15	1.86	---
R-90		CURB INLET	694.89	690.30	690.10	---	---	SINGLE INLET
	R91–R90	18" PIPE	---	690.72	690.30	42.20	1.00	---
R-91		CURB INLET	694.91	690.92	690.72	---	---	SINGLE INLET
	R92–R91	18" PIPE	---	691.16	690.92	24.00	1.00	---
R-92		CURB INLET	694.91	---	691.16	---	---	SINGLE INLET
	R93–R90	18" PIPE	---	691.14	690.30	25.49	3.30	---
R-93		CURB INLET	695.09	691.34	691.14	---	---	DOUBLE INLET
	R94–R93	18" PIPE	---	694.60	691.34	176.22	1.85	---
R-94		CURB INLET	698.99	694.80	694.60	---	---	DOUBLE INLET
	R95–R94	18" PIPE	---	695.04	694.80	24.00	1.00	---
R-95		CURB INLET	698.99	---	695.04	---	---	SINGLE INLET
	R96–R94	18" PIPE	---	698.56	695.24	168.55	1.97	---
R-96		CURB INLET	702.78	698.76	698.56	---	---	SINGLE INLET
	R97–R96	18" PIPE	---	699.00	698.76	24.00	1.00	---
R-97		CURB INLET	702.78	---	699.00	---	---	SINGLE INLET
R-98		HEADWALL OUTLET	---	---	---	---	---	---
	R99–R98	36" PIPE	---	658.07	657.50	20.24	2.82	---
R-99		CURB INLET	663.77	---	658.27	---	---	SINGLE INLET
	R100–R99	36" PIPE	---	660.02	658.27	24.00	7.29	---
R-100		CURB INLET	663.77	---	660.02	---	---	DOUBLE INLET
	R101–R99	36" PIPE	---	658.71	658.27	106.43	0.41	---
R-101		HEADWALL OUTLET	664.84	658.91	658.71	---	---	DOUBLE INLET
	R102–R101	18" PIPE	---	661.09	658.91	24.00	9.08	---
R-102		CURB INLET	664.84	661.29	661.09	---	---	DOUBLE INLET
	R102A–R102	18" PIPE	---	661.90	661.29	81.44	0.75	---
R-102A		CURB INLET	665.65	---	661.90	---	---	DOUBLE INLET
	R103–R101	36" PIPE	---	660.85	658.91	193.51	1.00	---
R-103		CURB INLET	666.79	661.05	660.85	---	---	DOUBLE INLET

1. PIPE MATERIAL SHALL BE RCP CLASS III
2. STANDARD TYPE "V" GRATE TO BE INSTALLED – JOHN BOUCHARD NO. 3300–V OR APPROVED EQUAL ON ALL CURB INLETS EXCEPT WHERE NOTED.
3. STANDARD TYPE "K" GRATE TO BE INSTALLED – JOHN BOUCHARD NO. 3300 OR APPROVED EQUAL.
4. STANDARD TYPE "K" GRATE TO BE INSTALLED – JOHN BOUCHARD NO. 4310 OR APPROVED EQUAL.

PROPOSED STORM SEWER STRUCTURE SCHEDULE

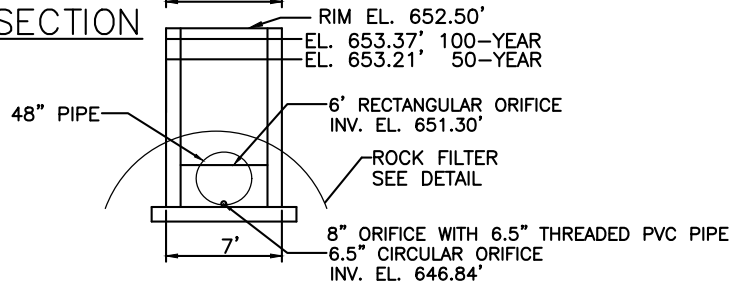
STR. NO.	PIPE	TYPE	RIM ELEV.	INV. IN	INV. OUT	LENGTH	SLOPE	NOTES
	R104-R103	18" PIPE	---	661.29	661.05	24.00	1.00	---
R-104		CURB INLET	666.79	661.49	661.29	---	---	DOUBLE INLET
	R104A-R104	18" PIPE	---	663.86	661.49	82.33	1.00	---
R-104A		CURB INLET	667.61	--	663.86	---	---	DOUBLE INLET
	R105-R103	36" PIPE	---	663.65	661.05	202.63	1.28	---
R-105		CURB INLET	669.35	663.85	663.65	---	---	DOUBLE INLET
	R105A-R105	36" PIPE	---	665.89	663.85	106.15	1.92	---
R-105A		CURB INLET	671.49	666.09	665.89	---	---	DOUBLE INLET
	R105B-R105A	18" PIPE	---	668.18	666.09	33.32	6.27	---
R-105B		CURB INLET	671.96	---	668.18	---	---	DOUBLE INLET
	R106-R105	18" PIPE	---	665.60	663.85	24.00	7.29	---
R-106		HEADWALL INLET	669.35	--	665.60	---	---	DOUBLE INLET
	R107-R105A	36" PIPE	---	668.16	666.09	117.03	1.77	---
R-107		CURB INLET	673.86	668.36	668.16	---	---	DOUBLE INLET
	R107A-R107	24" PIPE	---	671.08	668.36	82.97	3.28	---
R-107A		CURB INLET	675.53	671.28	671.08	---	---	DOUBLE INLET
	R107B-R107A	18" PIPE	---	672.25	671.28	33.32	2.91	---
R-107B		CURB INLET	676.00	---	672.25	---	---	DOUBLE INLET
	R108-R107	18" PIPE	---	670.30	668.36	25.75	7.53	---
R-108		CURB INLET	674.05	--	670.30	---	---	DOUBLE INLET
	R109-R107A	24" PIPE	---	672.80	671.28	118.37	1.28	---
R-109		CURB INLET	677.93	673.00	672.80	---	---	DOUBLE INLET
	R109A-R109	24" PIPE	---	675.26	673.00	2.71	1.28	---
R-109A		CURB INLET	679.63	675.46	675.26	---	---	DOUBLE INLET
	R109B-R109A	18" PIPE	---	675.77	675.46	30.55	1.01	---
R-109B		CURB INLET	680.02	---	675.77	---	---	DOUBLE INLET
	R110-R109	18" PIPE	---	674.41	673.00	26.57	5.31	---
R-110		CURB INLET	678.16	--	674.41	---	---	DOUBLE INLET
	R111-R109A	24" PIPE	---	676.92	675.46	83.65	1.74	---
R-111		CURB INLET	681.37	677.12	676.92	---	---	DOUBLE INLET
	R112-R111	18" PIPE	---	677.87	677.12	24.00	3.13	---
R-112		CURB INLET	681.37	--	677.87	---	---	DOUBLE INLET
	R113-R111	18" PIPE	---	679.88	677.12	109.77	2.51	---
R-113		CURB INLET	683.82	680.08	679.88	---	---	DOUBLE INLET
	R114-R113	18" PIPE	---	680.32	680.08	24.00	1.00	---
R-114		CURB INLET	683.82	680.52	680.32	---	---	DOUBLE INLET
	R114A-R114	18" PIPE	---	681.78	680.52	89.10	1.41	---
R-114A		CURB INLET	685.53	--	681.78	---	---	DOUBLE INLET
	R115-R113	18" PIPE	---	683.27	680.08	150.00	2.13	---
R-115		CURB INLET	687.21	683.47	683.27	---	---	DOUBLE INLET
	R116-R115	18" PIPE	---	683.71	683.47	24.00	1.00	---
R-116		CURB INLET	687.21	683.91	683.71	---	---	DOUBLE INLET
	R116A-R116	18" PIPE	---	684.78	683.91	65.17	1.33	---
R-116A		CURB INLET	688.53	--	684.78	---	---	SINGLE INLET
	R117-R115	18" PIPE	---	686.15	683.47	132.54	2.02	---
R-117		CURB INLET	689.85	686.35	686.15	---	---	DOUBLE INLET
	R118-R117	18" PIPE	---	687.61	686.35	41.77	3.02	---
R-118		CURB INLET	691.55	687.81	687.61	---	---	DOUBLE INLET
	R119-R118	18" PIPE	---	688.05	687.81	24.00	1.00	---
R-119		CURB INLET	691.55	--	688.05	---	---	SINGLE INLET
R-120		HEADWALL	655.00	--	654.27	---	---	---
	R121-R120	36" PIPE	---	654.62	654.27	35.02	1.00	---
R-121		CURB INLET	661.85	654.72	654.62	---	---	SINGLE INLET
	R122-R121	36" PIPE	---	655.00	654.72	27.65	1.01	---
R-122		CURB INLET	661.96	655.10	655.00	---	---	SINGLE INLET
	R123-R122	36" PIPE	---	655.40	655.10	30.43	0.99	---
R-123		RISER	---	--	655.40	---	---	---
R-124		HEADWALL	---	654.39	654.19	---	---	---
	R125-R124	18" PIPE	---	650.95	650.00	64.97	1.46	---
R-125		HEADWALL	---	--	--	---	---	---

DETENTION BASIN A DETAILS



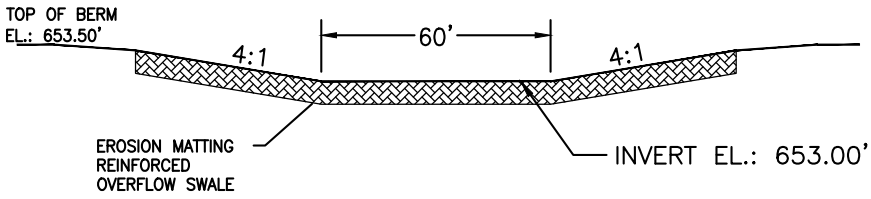
BASIN A – BERM/OUTLET DRAINAGE SECTION

NOT TO SCALE



OUTLET STRUCTURE NOTES:

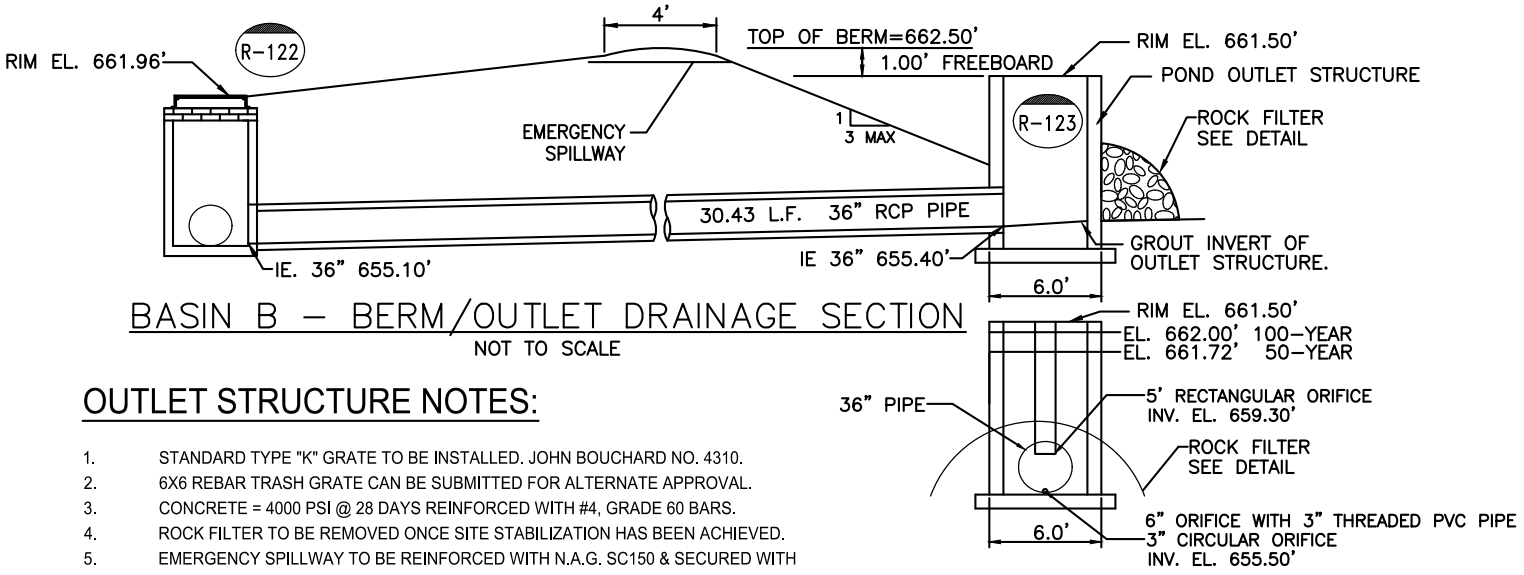
1. STANDARD TYPE "K" GRATE TO BE INSTALLED. JOHN BOUCHARD NO. 4310.
2. CONCRETE = 4000 PSI @ 28 DAYS REINFORCED WITH #4, GRADE 60 BARS.
3. ROCK FILTER TO BE REMOVED ONCE SITE STABILIZATION HAS BEEN ACHIEVED.
4. EMERGENCY SPILLWAY TO BE REINFORCED WITH N.A.G. SC150 & SECURED WITH STAPLES.



EMERGENCY SPILLWAY

NOT TO SCALE

DETENTION BASIN B DETAILS

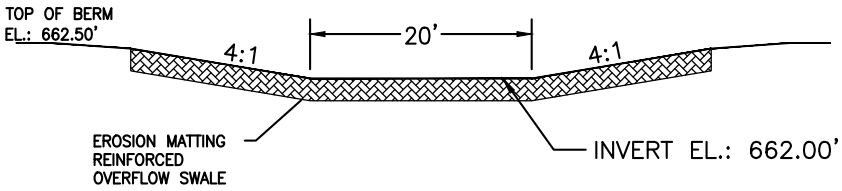


BASIN B – BERM/OUTLET DRAINAGE SECTION

NOT TO SCALE

OUTLET STRUCTURE NOTES:

1. STANDARD TYPE "K" GRATE TO BE INSTALLED. JOHN BOUCHARD NO. 4310.
2. 6X6 REBAR TRASH GRATE CAN BE SUBMITTED FOR ALTERNATE APPROVAL.
3. CONCRETE = 4000 PSI @ 28 DAYS REINFORCED WITH #4, GRADE 60 BARS.
4. ROCK FILTER TO BE REMOVED ONCE SITE STABILIZATION HAS BEEN ACHIEVED.
5. EMERGENCY SPILLWAY TO BE REINFORCED WITH N.A.G. SC150 & SECURED WITH STAPLES.



EMERGENCY SPILLWAY

NOT TO SCALE

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
1	R-99	Combination	663.77	Cir	4.00	4.00	36	Cir	658.07	18 36	Cir Cir	658.27 658.27
2	R-100	Combination	663.77	Cir	4.00	4.00	18	Cir	660.02			
3	R-101	Combination	664.84	Cir	4.00	4.00	36	Cir	658.71	18 36	Cir Cir	658.91 658.91
4	R-102	Combination	664.84	Cir	4.00	4.00	18	Cir	661.09	18	Cir	661.29
5	R-103	Combination	666.79	Cir	4.00	4.00	36	Cir	660.85	18 36	Cir Cir	661.05 661.05
6	R-104	Combination	666.79	Cir	4.00	4.00	18	Cir	661.29	18	Cir	661.49
7	R-105	Combination	669.35	Cir	4.00	4.00	36	Cir	663.65	18 36	Cir Cir	663.85 663.85
8	R-106	Combination	669.35	Cir	4.00	4.00	18	Cir	665.60			
9	R-105A	Combination	671.49	Cir	4.00	4.00	36	Cir	665.89	36 18	Cir Cir	666.09 666.09
10	R-107	Combination	673.86	Cir	4.00	4.00	36	Cir	668.16	18 24	Cir Cir	668.36 668.36
11	R-108	Combination	674.05	Cir	4.00	4.00	18	Cir	670.30			
12	R-107A	Combination	675.53	Cir	4.00	4.00	24	Cir	671.08	24 18	Cir Cir	671.28 671.28
13	R-109	Combination	677.93	Cir	4.00	4.00	24	Cir	672.80	18 24	Cir Cir	673.00 673.00
14	R-110	Combination	678.16	Cir	4.00	4.00	18	Cir	674.41			
15	R-109A	Combination	679.63	Cir	4.00	4.00	24	Cir	675.26	24 18	Cir Cir	675.46 675.46
16	R-111	Combination	681.37	Cir	4.00	4.00	24	Cir	676.92	18 18	Cir Cir	677.12 677.12
17	R-112	Combination	681.37	Cir	4.00	4.00	18	Cir	677.87			
18	R-113	Combination	683.82	Cir	4.00	4.00	18	Cir	679.88	18 18	Cir Cir	680.08 680.08

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
19	R-114	Combination	683.82	Cir	4.00	4.00	18	Cir	680.32	18	Cir	680.52
20	R-115	Combination	687.21	Cir	4.00	4.00	18	Cir	683.27	18 18	Cir Cir	683.47 683.47
21	R-116	Combination	687.21	Cir	4.00	4.00	18	Cir	683.71	18	Cir	683.91
22	R-117	Combination	689.85	Cir	4.00	4.00	18	Cir	686.15	18	Cir	686.35
23	R-118	Combination	691.55	Cir	4.00	4.00	18	Cir	687.61	18	Cir	687.81
24	R-119	Combination	691.55	Cir	4.00	4.00	18	Cir	688.05			
25	R-114A	Combination	685.53	Cir	4.00	4.00	18	Cir	681.78			
26	R-116A	Combination	688.53	Cir	4.00	4.00	18	Cir	684.78			
27	R-109B	Combination	680.02	Cir	4.00	4.00	18	Cir	675.77			
28	R-107B	Combination	676.00	Cir	4.00	4.00	18	Cir	672.25			
29	R-105B	Combination	671.96	Cir	4.00	4.00	18	Cir	668.18			
30	R-104A	Combination	667.61	Cir	4.00	4.00	18	Cir	663.86			
31	R-102A	Combination	665.65	Cir	4.00	4.00	18	Cir	661.90			
32	R-121	Combination	661.85	Cir	4.00	4.00	36	Cir	654.62	36	Cir	654.72
33	R-122	Combination	661.96	Cir	4.00	4.00	36	Cir	655.00	36	Cir	655.10
34	R-123	Manhole	660.50	Cir	4.00	4.00	36	Cir	655.40			
35	R-49	Combination	654.46	Cir	4.00	4.00	36	Cir	649.00	18 36	Cir Cir	650.00 649.20
36	R-50	Combination	654.46	Cir	4.00	4.00	18	Cir	651.21			
37	R-49A	Combination	655.49	Cir	4.00	4.00	36	Cir	649.99	36 18	Cir Cir	650.19 650.19
38	R-51	Combination	656.52	Cir	4.00	4.00	36	Cir	651.21	18 36	Cir Cir	651.41 651.41
39	R-52	Combination	656.52	Cir	4.00	4.00	18	Cir	652.77			

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
40	R-51A	Combination	657.03	Cir	4.00	4.00	36	Cir	651.78	36 18	Cir Cir	651.98 651.98
41	R-53	Combination	658.05	Cir	4.00	4.00	36	Cir	652.55	36	Cir	652.75
42	R-54	Combination	658.05	Cir	4.00	4.00	36	Cir	652.92	36	Cir	653.12
43	R-55	Combination	659.60	Cir	4.00	4.00	36	Cir	654.25	18 36	Cir Cir	655.25 654.45
44	R-56	Combination	659.60	Cir	4.00	4.00	18	Cir	655.85	18	Cir	656.05
45	R-57	Combination	661.37	Cir	4.00	4.00	36	Cir	655.77	36	Cir	655.97
46	R-58	Combination	662.64	Cir	4.00	4.00	36	Cir	656.34	18 36	Cir Cir	658.54 656.54
47	R-59	Combination	662.64	Cir	4.00	4.00	18	Cir	658.89			
48	R-60	Combination	663.69	Cir	4.00	4.00	36	Cir	657.39	36	Cir	657.59
49	R-61	Combination	664.31	Cir	4.00	4.00	36	Cir	658.05	36	Cir	658.25
50	R-62	Combination	664.31	Cir	4.00	4.00	36	Cir	658.53	36	Cir	658.73
51	R-63	Combination	664.86	Cir	4.00	4.00	36	Cir	659.19	18 36	Cir Cir	660.19 659.36
52	R-64	Combination	664.86	Cir	4.00	4.00	18	Cir	661.11	18	Cir	661.31
53	R-65	Combination	665.79	Cir	4.00	4.00	36	Cir	660.09	36	Cir	660.29
54	R-67	Combination	669.17	Cir	4.00	4.00	36	Cir	662.32	18 36	Cir Cir	664.32 662.52
55	R-68	Combination	668.26	Cir	4.00	4.00	18	Cir	664.76			
56	R-69	Combination	669.17	Cir	4.00	4.00	36	Cir	663.03	36	Cir	663.23
57	R-70	Combination	669.17	Cir	4.00	4.00	36	Cir	663.47	36	Cir	663.67
58	R-71	Combination	670.02	Cir	4.00	4.00	36	Cir	664.32	36	Cir	664.52
59	R-72	Combination	673.88	Cir	4.00	4.00	36	Cir	667.62	18 36	Cir Cir	667.82 667.82

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
60	R-73	Combination	673.88	Cir	4.00	4.00	18	Cir	670.13	18	Cir	670.33
61	R-74	Combination	674.79	Cir	4.00	4.00	36	Cir	668.20	36	Cir	668.40
62	R-75	Combination	674.79	Cir	4.00	4.00	36	Cir	668.64	36	Cir	668.84
63	R-76	Combination	675.64	Cir	4.00	4.00	36	Cir	669.22	36 18	Cir Cir	670.14 669.42
64	R-77	Combination	679.51	Cir	4.00	4.00	36	Cir	673.81	18 24	Cir Cir	675.31 674.01
65	R-78	Combination	679.51	Cir	4.00	4.00	18	Cir	675.76	18	Cir	675.96
66	R-79	Combination	680.41	Cir	4.00	4.00	24	Cir	675.52	24	Cir	675.72
67	R-80	Combination	680.41	Cir	4.00	4.00	24	Cir	675.96	24	Cir	676.16
68	R-81	Combination	681.41	Cir	4.00	4.00	24	Cir	676.96	24	Cir	677.16
69	R-82	Combination	685.08	Cir	4.00	4.00	24	Cir	680.39	18 24	Cir Cir	680.59 680.59
70	R-83	Combination	685.08	Cir	4.00	4.00	18	Cir	681.33			
71	R-84	Combination	686.03	Cir	4.00	4.00	24	Cir	681.14	24	Cir	681.34
72	R-85	Combination	686.03	Cir	4.00	4.00	24	Cir	681.58	24	Cir	681.78
73	R-86	Combination	686.92	Cir	4.00	4.00	24	Cir	682.47	18 18	Cir Cir	682.67 682.67
74	R-87	Combination	686.92	Cir	4.00	4.00	18	Cir	683.17			
75	R-88	Combination	690.40	Cir	4.00	4.00	18	Cir	686.21	18 18	Cir Cir	686.41 686.41
76	R-89	Combination	690.40	Cir	4.00	4.00	18	Cir	686.65			
77	R-90	Combination	694.89	Cir	4.00	4.00	18	Cir	690.10	18 18	Cir Cir	690.30 690.30
78	R-91	Combination	698.99	Cir	4.00	4.00	18	Cir	690.72	18	Cir	690.92
79	R-92	Combination	694.91	Cir	4.00	4.00	18	Cir	691.16			

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
80	R-93	Combination	695.09	Cir	4.00	4.00	18	Cir	691.14	18	Cir	691.34
81	R-94	Combination	698.99	Cir	4.00	4.00	18	Cir	694.60	18 18	Cir Cir	694.80 695.24
82	R-95	Combination	698.99	Cir	4.00	4.00	18	Cir	695.04			
83	R-96	Combination	702.78	Cir	4.00	4.00	18	Cir	698.56	18	Cir	698.76
84	R-97	Combination	702.78	Cir	4.00	4.00	18	Cir	699.00			
85	R-76A	DropGrate	673.00	Cir	4.00	4.00	18	Cir	670.25			
86	R-49B	Combination	655.49	Cir	4.00	4.00	18	Cir	651.74			
87	R-51B	Combination	657.03	Cir	4.00	4.00	18	Cir	653.28			
88	R-56A	Combination	660.61	Cir	4.00	4.00	18	Cir	657.04			
89	R-64A	Combination	666.36	Cir	4.00	4.00	18	Cir	662.61			
90	R-73A	Combination	677.13	Cir	4.00	4.00	18	Cir	673.38			
91	R-78A	Combination	682.29	Cir	4.00	4.00	18	Cir	678.54			
92	R-2	Combination	654.28	Cir	4.00	4.00	42	Cir	648.44	18 42	Cir Cir	648.94 648.94
93	R-3	Combination	654.28	Cir	4.00	4.00	18	Cir	651.03			
94	R-4	Combination	655.17	Cir	4.00	4.00	42	Cir	650.08	18 42	Cir Cir	650.28 650.28
95	R-5	Combination	655.17	Cir	4.00	4.00	18	Cir	651.92			
96	R-6	Combination	656.60	Cir	4.00	4.00	42	Cir	651.51	18 42	Cir Cir	651.71 651.71
97	R-7	Combination	656.60	Cir	4.00	4.00	18	Cir	653.35			
98	R-6A	Combination	657.81	Cir	4.00	4.00	42	Cir	652.26	42 18	Cir Cir	652.46 652.46
99	R-8	Combination	659.68	Cir	4.00	4.00	42	Cir	652.98	18 36	Cir Cir	653.18 654.18

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
100	R-9	Combination	659.68	Cir	4.00	4.00	18	Cir	655.73	18	Cir	655.93
101	R-10	Combination	660.72	Cir	4.00	4.00	18	Cir	656.53	18 18	Cir Cir	656.73 656.73
102	R-11	Combination	660.72	Cir	4.00	4.00	18	Cir	656.97			
103	R-14	Combination	660.68	Cir	4.00	4.00	36	Cir	654.54	36	Cir	654.74
104	R-12	Combination	661.93	Cir	4.00	4.00	18	Cir	657.74	18 18	Cir Cir	657.94 657.94
105	R-15	Combination	660.68	Cir	4.00	4.00	36	Cir	654.98	36	Cir	655.18
106	R-13	Combination	661.93	Cir	4.00	4.00	18	Cir	658.18			
107	R-16	Combination	661.58	Cir	4.00	4.00	36	Cir	655.82	18 36	Cir Cir	656.02 656.02
108	R-17	Combination	661.58	Cir	4.00	4.00	18	Cir	656.26	18	Cir	656.46
109	R-18	Combination	665.38	Cir	4.00	4.00	36	Cir	659.68	18 36	Cir Cir	659.88 659.88
110	R-19	Combination	665.38	Cir	4.00	4.00	18	Cir	661.43	18	Cir	661.63
111	R-20	Combination	666.51	Cir	4.00	4.00	18	Cir	662.32	18 18	Cir Cir	662.52 662.52
112	R-21	Combination	666.51	Cir	4.00	4.00	18	Cir	662.76			
113	R-24	Combination	667.36	Cir	4.00	4.00	36	Cir	661.41	18 36	Cir Cir	661.61 661.61
114	R-20A	Combination	667.73	Cir	4.00	4.00	18	Cir	663.54	18 18	Cir Cir	663.74 663.74
115	R-22	Combination	668.81	Cir	4.00	4.00	18	Cir	664.62	18	Cir	664.82
116	R-25	Combination	667.36	Cir	4.00	4.00	18	Cir	661.85	18	Cir	662.05
117	R-23	Combination	667.36	Cir	4.00	4.00	18	Cir	665.06			
118	R-26	Combination	671.14	Cir	4.00	4.00	36	Cir	665.44	18 36	Cir Cir	665.64 665.64

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
119	R-27	Combination	671.14	Cir	4.00	4.00	18	Cir	667.19	18	Cir	667.39
120	R-28	Combination	672.29	Cir	4.00	4.00	18	Cir	668.10	18 18	Cir Cir	668.30 668.30
121	R-29	Combination	0.00	Cir	4.00	4.00	18	Cir	668.54			
122	R-32	Combination	673.15	Cir	4.00	4.00	36	Cir	666.81	18 36	Cir Cir	667.01 667.01
123	R-28A	Combination	673.31	Cir	4.00	4.00	18	Cir	669.22	18	Cir	669.42
124	R-30	Combination	674.17	Cir	4.00	4.00	18	Cir	669.98	18	Cir	670.18
125	R-33	Combination	673.15	Cir	4.00	4.00	18	Cir	667.25	18	Cir	667.45
126	R-31	Combination	674.17	Cir	4.00	4.00	18	Cir	670.42			
127	R-34	Combination	676.93	Cir	4.00	4.00	36	Cir	671.73	18 24	Cir Cir	671.93 671.93
128	R-35	Combination	676.93	Cir	4.00	4.00	18	Cir	672.98	18	Cir	673.18
129	R-36	Combination	678.17	Cir	4.00	4.00	18	Cir	673.98	18 18	Cir Cir	674.18 674.18
130	R-37	Combination	678.17	Cir	4.00	4.00	18	Cir	674.42			
131	R-38	Combination	678.94	Cir	4.00	4.00	24	Cir	674.49	18 24	Cir Cir	674.69 674.69
132	R-39	Combination	678.94	Cir	4.00	4.00	18	Cir	675.19			
133	R-40	Combination	682.71	Cir	4.00	4.00	24	Cir	676.82	24	Cir	677.02
134	R-41	Combination	682.71	Cir	4.00	4.00	24	Cir	677.26	24	Cir	677.46
135	R-42	Combination	683.96	Cir	4.00	4.00	24	Cir	679.29	18	Cir	679.49
136	R-43	Combination	683.96	Cir	4.00	4.00	18	Cir	679.73	18	Cir	679.93
137	R-44	Combination	684.73	Cir	4.00	4.00	18	Cir	680.34	18	Cir	680.54
138	R-45	Combination	684.73	Cir	4.00	4.00	18	Cir	680.78	18	Cir	680.98

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
139	R-46	Combination	689.13	Cir	4.00	4.00	18	Cir	684.94	18	Cir	685.14
140	R-47	Combination	689.13	Cir	4.00	4.00	18	Cir	685.38			
141	R-17A	DropGrate	660.00	Cir	4.00	4.00	18	Cir	657.25			
142	R-25A	DropGrate	665.60	Cir	4.00	4.00	18	Cir	662.85			
143	R-33A	DropGrate	671.00	Cir	4.00	4.00	18	Cir	668.25			
144	R-36A	Combination	679.95	Cir	4.00	4.00	18	Cir	676.20			
145	R-20B	Combination	667.73	Cir	4.00	4.00	18	Cir	663.98			
146	R-12A	Combination	663.16	Cir	4.00	4.00	18	Cir	658.97	18	Cir	659.17
147	R-12B	Combination	663.16	Cir	4.00	4.00	18	Cir	659.41			
148	R-6B	Combination	657.81	Cir	4.00	4.00	18	Cir	654.06			
149	R-125	OpenHeadwall	652.00	n/a	n/a	n/a	18	Cir	650.95			

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1	R98-R99	22.13	36	Cir	20.272	657.50	658.07	2.812	659.76	659.58	n/a	659.58 j	End	Combination
2	R99-R100	1.28	18	Cir	23.972	658.27	660.02	7.300	659.58	660.44	n/a	660.44 j	1	Combination
3	R99-R101	21.41	36	Cir	106.371	658.27	658.71	0.414	659.77	660.21	1.06	661.27	1	Combination
4	R101-R102	1.99	18	Cir	24.001	658.91	661.09	9.083	661.27	661.62	n/a	661.62 j	3	Combination
5	R101-R103	20.18	36	Cir	193.585	658.91	660.85	1.002	661.27	662.29	n/a	662.29 j	3	Combination
6	R103-R104	2.05	18	Cir	23.946	661.05	661.29	1.002	662.29	661.83	n/a	661.83	5	Combination
7	R103-R105	18.86	36	Cir	202.611	661.05	663.65	1.283	662.29	665.04	n/a	665.04	5	Combination
8	R105-R106	1.35	18	Cir	24.023	663.85	665.60	7.285	665.04	666.03	n/a	666.03 j	7	Combination
9	R105-R105A	17.47	36	Cir	105.765	663.85	665.89	1.929	665.04	667.23	0.58	667.23	7	Combination
10	R105-R107(2)	16.00	36	Cir	117.445	666.09	668.16	1.762	667.23	669.44	n/a	669.44	9	Combination
11	R107-R108	0.92	18	Cir	25.688	668.36	670.30	7.552	669.44	670.66	n/a	670.66 j	10	Combination
12	R107-R107A	14.20	24	Cir	82.775	668.36	671.08	3.286	669.44	672.44	n/a	672.44	10	Combination
13	R107-R109(2)	12.37	24	Cir	118.535	671.28	672.80	1.282	672.44	674.06	n/a	674.06	12	Combination
14	R109-R110	1.21	18	Cir	26.583	673.00	674.41	5.304	674.06	674.82	n/a	674.82 j	13	Combination
15	R109-R109A	10.61	24	Cir	83.450	673.00	675.26	2.708	674.06	676.43	n/a	676.43	13	Combination
16	R109A-R111	9.24	24	Cir	83.680	675.46	676.92	1.745	676.43	678.00	0.67	678.00	15	Combination
17	R111-R112	1.48	18	Cir	23.980	677.12	677.87	3.128	678.00	678.33	n/a	678.33 j	16	Combination
18	R111-R113	6.88	18	Cir	109.800	677.12	679.88	2.514	678.00	680.89	0.86	680.89	16	Combination
19	R113-R114	1.98	18	Cir	23.891	680.08	680.32	1.005	680.89	680.85	n/a	680.85 j	18	Combination
20	R113-R115	4.83	18	Cir	150.041	680.08	683.27	2.126	680.89	684.11	n/a	684.11	18	Combination
21	R115-R116	2.14	18	Cir	24.200	683.47	683.71	0.992	684.11	684.26	n/a	684.26 j	20	Combination
22	R115-R117	2.39	18	Cir	132.521	683.47	686.15	2.022	684.11	686.74	n/a	686.74 j	20	Combination
23	R117-R118	2.29	18	Cir	41.773	686.35	687.61	3.016	686.74	688.18	n/a	688.18	22	Combination
24	R118-R119	0.78	18	Cir	24.069	687.81	688.05	0.997	688.18	688.38	n/a	688.38 j	23	Combination

22529-2 - Southbend Crossings | Number of lines: 149 | Run Date: 8/27/2025

NOTES: Return period = 10 Yrs. ; j - Line contains hyd. jump.

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
25	R114-R114A	0.64	18	Cir	89.000	680.52	681.78	1.416	680.85	682.08	n/a	682.08 j	19	Combination
26	R116-R116A	1.15	18	Cir	65.030	683.91	684.78	1.338	684.26	685.18	n/a	685.18	21	Combination
27	R109A-R109B	0.70	18	Cir	31.000	675.46	675.77	1.000	676.43	676.08	0.11	676.08	15	Combination
28	R107A-R107B	1.35	18	Cir	28.352	671.28	672.25	3.421	672.44	672.68	n/a	672.68 j	12	Combination
29	R105A-R105B	1.23	18	Cir	33.520	666.09	668.18	6.235	667.23	668.59	n/a	668.59 j	9	Combination
30		1.24	18	Cir	82.330	661.49	663.86	2.879	661.83	664.28	n/a	664.28	6	Combination
31	R102-R102A	1.27	18	Cir	81.490	661.29	661.90	0.749	661.67	662.32	n/a	662.32	4	Combination
32	R120-R121	1.81	36	Cir	35.034	654.27	654.62	0.999	655.98	655.04	n/a	655.04	End	Combination
33	R121-R122	1.43	36	Cir	27.667	654.72	655.00	1.012	655.04	655.37	n/a	655.37	32	Combination
34	R122-R123	1.02	36	Cir	30.380	655.10	655.40	0.988	655.37	655.71	n/a	655.71	33	Manhole
35	R48-R49	34.24	36	Cir	72.199	648.31	649.00	0.956	650.76	650.90	n/a	650.90 j	End	Combination
36	R49-R50	0.93	18	Cir	24.020	650.00	651.21	5.037	650.90	651.57	n/a	651.57 j	35	Combination
37	R49-R49A	33.31	36	Cir	100.575	649.20	649.99	0.785	650.90	651.86	1.20	651.86	35	Combination
38	R49A-R51	32.38	36	Cir	101.000	650.19	651.21	1.010	651.86	653.05	1.29	653.05	37	Combination
39	R51-R52	0.65	18	Cir	24.025	651.41	652.77	5.661	653.05	653.07	0.11	653.07	38	Combination
40	R51-R51A	31.74	36	Cir	49.579	651.41	651.78	0.746	653.05	653.61	n/a	653.61	38	Combination
41	R51-R53(2)	30.84	36	Cir	100.419	651.98	652.55	0.568	653.68	654.35	1.13	654.35	40	Combination
42	R53-R54	30.05	36	Cir	24.025	652.75	652.92	0.708	654.35	654.69	1.11	654.69	41	Combination
43	R54-R55	29.53	36	Cir	151.376	653.12	654.25	0.746	654.69	656.01	1.29	656.01	42	Combination
44	R55-R56	1.48	18	Cir	23.901	655.25	655.85	2.510	656.01	656.31	n/a	656.31 j	43	Combination
45	R55-R57	28.57	36	Cir	176.130	654.45	655.77	0.749	656.01	657.50	n/a	657.50	43	Combination
46	R57-R58	28.57	36	Cir	48.902	655.97	656.34	0.757	657.50	658.07	n/a	658.07	45	Combination
47	R58-R59	1.27	18	Cir	23.985	658.54	658.89	1.459	658.86	659.31	n/a	659.31	46	Combination
48	R58-R60	27.67	36	Cir	70.881	656.54	657.39	1.199	658.07	659.09	n/a	659.09	46	Combination

22529-2 - Southbend Crossings | Number of lines: 149 | Run Date: 8/27/2025

NOTES: Return period = 10 Yrs. ; j - Line contains hyd. jump.

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
49	R60-R61	27.54	36	Cir	38.132	657.59	658.05	1.206	659.09	659.75	n/a	659.75	48	Combination
50	R61-R62	26.66	36	Cir	23.988	658.25	658.53	1.167	659.75	660.20	0.76	660.20	49	Combination
51	R62-R63	25.81	36	Cir	38.234	658.73	659.19	1.203	660.20	660.83	n/a	660.83	50	Combination
52	R63-R64	1.21	18	Cir	23.981	660.19	661.11	3.836	660.83	661.52	n/a	661.52 j	51	Combination
53	R63-R65	24.83	36	Cir	56.610	659.36	660.09	1.290	660.83	661.70	n/a	661.70	51	Combination
54	R65-R67	24.80	36	Cir	115.410	660.29	662.32	1.759	661.70	663.93	n/a	663.93	53	Combination
55	R67-R68	2.09	18	Cir	24.042	664.32	664.76	1.830	664.71	665.31	0.20	665.31	54	Combination
56	R67-R69	23.30	36	Cir	38.132	662.52	663.03	1.337	663.93	664.58	n/a	664.58	54	Combination
57	R69-R70	22.38	36	Cir	23.988	663.23	663.47	1.000	664.58	664.99	n/a	664.99	56	Combination
58	R70-R71	21.51	36	Cir	38.169	663.67	664.32	1.703	664.99	665.81	n/a	665.81	57	Combination
59	R71-R72	21.41	36	Cir	172.019	664.52	667.62	1.802	665.81	669.11	0.99	669.11	58	Combination
60	R72-R73	1.86	18	Cir	24.011	667.82	670.13	9.621	669.11	670.64	n/a	670.64 j	59	Combination
61	R72-R74	19.78	36	Cir	38.239	667.82	668.20	0.994	669.11	669.63	0.62	669.63	59	Combination
62	R74-R75	19.03	36	Cir	23.988	668.40	668.64	1.000	669.63	670.04	n/a	670.04	61	Combination
63	R75-R76	18.32	36	Cir	38.169	668.84	669.22	0.995	670.04	670.59	0.72	670.59	62	Combination
64	R76-R77	16.35	36	Cir	172.019	670.14	673.81	2.133	670.97	675.10	n/a	675.10	63	Combination
65	R77-R78	1.81	18	Cir	24.011	675.31	675.76	1.874	675.67	676.27	n/a	676.27	64	Combination
66	R77-R79	14.64	24	Cir	38.132	674.01	675.52	3.960	675.10	676.90	0.71	676.90	64	Combination
67	R79-R80	13.78	24	Cir	24.000	675.72	675.96	1.000	676.90	677.30	n/a	677.30	66	Combination
68	R80-R81	12.95	24	Cir	43.125	676.16	676.96	1.855	677.30	678.25	0.57	678.25	67	Combination
69	R81-R82	12.52	24	Cir	163.387	677.16	680.39	1.977	678.25	681.66	0.90	681.66	68	Combination
70	R82-R83	1.07	18	Cir	24.011	680.59	681.33	3.082	681.66	681.72	n/a	681.72 j	69	Combination
71	R82-R84	11.51	24	Cir	39.620	680.59	681.14	1.388	681.66	682.36	n/a	682.36	69	Combination
72	R84-R85	11.06	24	Cir	23.981	681.34	681.58	1.001	682.36	682.77	n/a	682.77	71	Combination

22529-2 - Southbend Crossings | Number of lines: 149 | Run Date: 8/27/2025

NOTES: Return period = 10 Yrs. ; j - Line contains hyd. jump.

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
73	R85-R86	10.57	24	Cir	39.648	681.78	682.47	1.740	682.77	683.63	0.79	683.63	72	Combination
74	R86-R87	1.34	18	Cir	24.000	682.67	683.17	2.083	683.63	683.60	n/a	683.60 j	73	Combination
75	R86-R88	8.66	18	Cir	154.617	682.67	686.21	2.290	683.63	687.35	n/a	687.35	73	Combination
76	R88-R89	1.80	18	Cir	23.981	686.41	686.65	1.001	687.35	687.15	0.19	687.15	75	Combination
77	R88-R90	5.94	18	Cir	198.099	686.41	690.10	1.863	687.35	691.04	n/a	691.04	75	Combination
78	R90-R91	0.84	18	Cir	42.180	690.30	690.72	0.996	691.04	691.06	n/a	691.06 j	77	Combination
79	R91-R92	0.76	18	Cir	24.043	690.92	691.16	0.998	691.19	691.48	n/a	691.48	78	Combination
80	R90-R93	5.17	18	Cir	25.503	690.30	691.14	3.294	691.04	692.01	0.53	692.01	77	Combination
81	R93-R94	4.11	18	Cir	176.250	691.34	694.60	1.850	692.01	695.38	0.49	695.38	80	Combination
82	R94-R95	1.95	18	Cir	23.988	694.80	695.04	1.000	695.38	695.57	n/a	695.57 j	81	Combination
83	R94-R96	1.14	18	Cir	168.529	695.24	698.56	1.970	695.52	698.96	n/a	698.96	81	Combination
84	R96-R97	0.62	18	Cir	24.019	698.76	699.00	0.999	699.01	699.29	n/a	699.29	83	Combination
85	R76-R76A	2.42	18	Cir	82.250	669.42	670.25	1.009	670.59	670.84	n/a	670.84 j	63	DropGrate
86	R49A-R49B	0.93	18	Cir	24.000	650.19	651.74	6.458	651.86	652.10	n/a	652.10 j	37	Combination
87	R51A-R51B	0.98	18	Cir	23.980	651.98	653.28	5.421	653.61	653.65	0.13	653.65	40	Combination
88	R56-R56A	0.64	18	Cir	98.200	656.05	657.04	1.008	656.31	657.34	0.10	657.34	44	Combination
89	R64-R64A	0.72	18	Cir	85.730	661.31	662.61	1.516	661.55	662.93	n/a	662.93	52	Combination
90	R73-R73A	1.09	18	Cir	144.260	670.33	673.38	2.114	670.64	673.77	0.14	673.77	60	Combination
91	R78-R78A	1.05	18	Cir	123.770	675.96	678.54	2.084	676.27	678.92	0.14	678.92	65	Combination
92	R1-R2	52.54	42	Cir	18.580	648.31	648.44	0.700	651.19	650.70	n/a	650.70	End	Combination
93	R2-R3	2.58	18	Cir	24.025	648.94	651.03	8.699	650.70	651.64	n/a	651.64 j	92	Combination
94	R2-R4	50.38	42	Cir	153.000	648.94	650.08	0.745	650.85	652.30	n/a	652.30	92	Combination
95	R4-R5	1.31	18	Cir	24.007	650.28	651.92	6.831	652.30	652.35	0.15	652.35	94	Combination
96	R4-R6	49.28	42	Cir	145.471	650.28	651.51	0.846	652.30	653.70	1.55	653.70	94	Combination

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NOTES: Return period = 10 Yrs. ; j - Line contains hyd. jump.

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
97	R6-R7	0.89	18	Cir	23.996	651.71	653.35	6.834	653.70	653.70	0.12	653.70	96	Combination
98	R6-R6A	48.36	42	Cir	99.693	651.71	652.26	0.552	653.76	654.43	1.39	654.43	96	Combination
99	R6-R8(2)	47.40	42	Cir	93.014	652.46	652.98	0.559	654.48	655.13	n/a	655.13	98	Combination
100	R8-R9	7.80	18	Cir	24.034	653.18	655.73	10.610	655.13	656.81	n/a	656.81 j	99	Combination
101	R9-R10	7.49	18	Cir	41.030	655.93	656.53	1.462	656.81	657.59	0.55	657.59	100	Combination
102	R10-R11	1.20	18	Cir	23.998	656.73	656.97	1.000	657.59	657.38	n/a	657.38	101	Combination
103	R8-R14	41.32	36	Cir	40.983	654.18	654.54	0.878	655.96	656.63	n/a	656.63	99	Combination
104	R10-R12	5.31	18	Cir	106.070	656.73	657.74	0.952	657.59	658.63	n/a	658.63	101	Combination
105	R14-R15	41.19	36	Cir	23.998	654.74	654.98	1.000	656.63	657.07	1.08	657.07	103	Combination
106	R12-R13	1.54	18	Cir	24.000	657.94	658.18	1.000	658.63	658.65	n/a	658.65 j	104	Combination
107	R15-R16	40.90	36	Cir	41.008	655.18	655.82	1.561	657.07	657.90	n/a	657.90	105	Combination
108	R16-R17	7.72	18	Cir	23.963	656.02	656.26	1.002	657.90*	658.03*	0.43	658.46	107	Combination
109	R16-R18	34.70	36	Cir	164.589	656.02	659.68	2.224	657.90	661.59	n/a	661.59	107	Combination
110	R18-R19	7.36	18	Cir	24.034	659.88	661.43	6.449	661.59	662.48	n/a	662.48 j	109	Combination
111	R19-R20	7.07	18	Cir	43.541	661.63	662.32	1.585	662.48	663.35	n/a	663.35	110	Combination
112	R20-R21	1.08	18	Cir	23.998	662.52	662.76	1.000	663.35	663.15	n/a	663.15	111	Combination
113	R18-R24	28.70	36	Cir	85.451	659.88	661.41	1.790	661.59	663.14	n/a	663.14	109	Combination
114	R20-R20A	5.26	18	Cir	103.423	662.52	663.54	0.986	663.35	664.42	0.55	664.42	111	Combination
115	R20-R22(2)	3.46	18	Cir	93.577	663.74	664.62	0.940	664.42	665.33	0.41	665.33	114	Combination
116	R24-R25	6.63	18	Cir	24.034	661.61	661.85	0.999	663.14	663.21	0.34	663.55	113	Combination
117	R22-R23	1.72	18	Cir	23.946	664.82	665.06	1.002	665.33	665.55	n/a	665.55 j	115	Combination
118	R24-R26	23.03	36	Cir	162.961	661.61	665.44	2.350	663.14	666.98	1.09	666.98	113	Combination
119	R26-R27	6.15	18	Cir	23.963	665.64	667.19	6.468	666.98	668.15	n/a	668.15 j	118	Combination
120	R27-R28	5.82	18	Cir	44.688	667.39	668.10	1.589	668.15	669.03	0.48	669.03	119	Combination

22529-2 - Southbend Crossings | Number of lines: 149 | Run Date: 8/27/2025

NOTES: Return period = 10 Yrs. ; *Surcharged (HGL above crown). ; j - Line contains hyd. jump.

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
121	R28-R29	1.52	18	Cir	23.998	668.30	668.54	1.000	669.03	669.00	n/a	669.00 j	120	Combination
122	R26-R32	17.76	36	Cir	87.079	665.64	666.81	1.344	666.98	668.16	n/a	668.16	118	Combination
123	R28-R28A	3.71	18	Cir	91.611	668.30	669.22	1.004	669.03	669.95	n/a	669.95	120	Combination
124	R28A-R30	3.01	18	Cir	76.415	669.42	669.98	0.733	670.02	670.64	0.38	670.64	123	Combination
125	R32-R33	2.98	18	Cir	24.034	667.01	667.25	0.999	668.16	667.91	n/a	667.91	122	Combination
126	R30-R31	1.40	18	Cir	23.998	670.18	670.42	1.000	670.64	670.86	n/a	670.86 j	124	Combination
127	R32-R34	14.56	36	Cir	162.961	667.01	671.73	2.896	668.16	672.94	n/a	672.94	122	Combination
128	R34-R35	4.05	18	Cir	24.034	671.93	672.98	4.369	672.94	673.75	n/a	673.75 j	127	Combination
129	R35-R36	3.74	18	Cir	44.688	673.18	673.98	1.790	673.75	674.72	0.35	674.72	128	Combination
130	R36-R37	1.93	18	Cir	23.998	674.18	674.42	1.000	674.72	674.94	n/a	674.94 j	129	Combination
131	R34-R38	10.43	24	Cir	86.995	671.93	674.49	2.943	672.94	675.65	n/a	675.65	127	Combination
132	R38-R39	0.94	18	Cir	23.963	674.69	675.19	2.087	675.65	675.55	0.13	675.55	131	Combination
133	R38-R40	8.49	24	Cir	162.000	674.69	676.82	1.315	675.65	677.86	n/a	677.86	131	Combination
134	R40-R41	7.79	24	Cir	23.963	677.02	677.26	1.002	677.86	678.25	0.47	678.25	133	Combination
135	R41-R42	7.53	24	Cir	45.055	677.46	679.29	4.062	678.25	680.26	n/a	680.26	134	Combination
136	R42-R43	6.11	18	Cir	23.998	679.49	679.73	1.000	680.31	680.68	0.47	680.68	135	Combination
137	R43-R44	4.85	18	Cir	40.983	679.93	680.34	1.001	680.68	681.19	0.39	681.19	136	Combination
138	R44-R45	3.09	18	Cir	24.034	680.54	680.78	0.999	681.19	681.45	0.38	681.45	137	Combination
139	R45-R46	1.45	18	Cir	190.793	680.98	684.94	2.076	681.45	685.39	n/a	685.39 j	138	Combination
140	R46-R47	0.84	18	Cir	24.041	685.14	685.38	0.998	685.43	685.72	0.12	685.72	139	Combination
141	R17-R17A	6.85	18	Cir	78.460	656.46	657.25	1.007	658.46	658.75	0.23	658.98	108	DropGrate
142	R25-R25A	5.77	18	Cir	79.820	662.05	662.85	1.002	663.55	663.78	n/a	663.78 j	116	DropGrate
143	R33-R33A	2.20	18	Cir	80.000	667.45	668.25	1.000	667.92	668.81	0.21	668.81	125	DropGrate
144	R36-R36A	1.17	18	Cir	122.180	674.18	676.20	1.653	674.72	676.60	n/a	676.60 j	129	Combination

22529-2 - Southbend Crossings | Number of lines: 149 | Run Date: 8/27/2025

NOTES: Return period = 10 Yrs. ; *Surcharged (HGL above crown). ; j - Line contains hyd. jump.

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
145	R20A-R20B	1.02	18	Cir	23.660	663.74	663.98	1.014	664.42	664.36	n/a	664.36	114	Combination
146	R12-1212A	2.78	18	Cir	107.530	657.94	658.97	0.958	658.63	659.60	n/a	659.60 j	104	Combination
147	R12A-R12B	1.54	18	Cir	24.000	659.17	659.41	1.000	659.60	659.88	0.17	659.88	146	Combination
148	R6A-R6B	0.89	18	Cir	24.000	652.46	654.06	6.667	654.43	654.41	0.12	654.54	98	Combination
149	R124-R125	8.72	18	Cir	65.001	650.00	650.95	1.462	651.32	652.09	n/a	652.09 j	End	OpenHeadwall

22529-2 - Southbend Crossings | Number of lines: 149 | Run Date: 8/27/2025

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Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
1	R-99	0.26	0.07	0.28	0.04	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.09	4.37	0.17	2.05	1.5	33
2	R-100	1.28	0.19	1.20	0.28	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.15	7.72	0.21	4.12	1.5	32
3	R-101	0.52	0.11	0.57	0.07	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.11	5.62	0.17	2.40	1.5	1
4	R-102	0.89	0.29	0.98	0.19	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.14	7.09	0.20	3.59	1.5	2
5	R-103	0.55	0.30	0.74	0.11	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.13	6.28	0.18	2.93	1.5	3
6	R-104	0.99	0.32	1.09	0.23	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.15	7.40	0.20	3.85	1.5	31
7	R-105	1.02	0.41	1.13	0.30	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.13	6.70	0.20	3.73	1.5	5
8	R-106	1.35	0.32	1.29	0.38	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.14	7.10	0.21	4.09	1.5	30
9	R-105A	1.27	0.47	1.34	0.41	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.14	7.22	0.21	4.20	1.5	7
10	R-107	1.58	0.34	1.44	0.47	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.15	7.47	0.21	4.43	1.5	9
11	R-108	0.92	0.38	1.04	0.25	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.13	6.46	0.20	3.51	1.5	29
12	R-107A	1.23	0.32	1.21	0.34	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.14	6.90	0.20	3.91	1.5	10
13	R-109	1.17	0.33	1.17	0.32	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.14	6.81	0.20	3.83	1.5	12
14	R-110	1.21	0.22	1.13	0.30	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.13	6.70	0.20	3.73	1.5	28
15	R-109A	1.17	0.35	1.19	0.33	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.14	6.85	0.20	3.86	1.5	13
16	R-111	1.53	0.04	1.22	0.35	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.14	6.94	0.20	3.94	1.5	15
17	R-112	1.48	0.46	1.45	0.48	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.15	7.50	0.21	4.46	1.5	27
18	R-113	0.42	0.07	0.45	0.04	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.09	4.48	0.16	1.81	1.5	16
19	R-114	1.71	0.16	1.41	0.46	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.15	7.40	0.21	4.37	1.5	17
20	R-115	0.63	0.00	0.56	0.07	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.10	4.93	0.17	2.18	1.5	18
21	R-116	1.15	0.40	1.21	0.34	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.14	6.90	0.20	3.91	1.5	25
22	R-117	0.16	0.58	0.65	0.10	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.11	5.26	0.17	2.46	1.5	26
23	R-118	1.61	0.56	1.59	0.58	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.15	7.63	0.22	4.67	1.5	22

22529-2 - Southbend Crossings | Number of lines: 149 | Run Date: 8/27/2025

NOTES: Inlet N-Values = 0.016; Intensity = 77.83 / (Inlet time + 12.70) ^ 0.81; Return period = 10 Yrs. ; * Indicates Known Q added. All curb inlets are Horiz throat.

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
24	R-119	0.78	0.00	0.59	0.18	Comb	6.0	2.90	0.00	2.90	1.92	0.023	1.92	0.020	0.020	0.013	0.10	5.20	0.19	3.03	1.5	140
25	R-114A	0.64	0.34	0.82	0.16	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.12	5.81	0.18	2.93	1.5	19
26	R-116A	1.15	0.10	0.85	0.40	Comb	6.0	2.90	0.00	2.90	1.92	0.020	1.92	0.020	0.020	0.013	0.13	6.37	0.21	4.14	1.5	21
27	R-109B	0.70	0.48	0.96	0.22	Comb	6.0	5.80	0.00	5.80	1.92	0.020	2.00	0.020	0.020	0.013	0.12	6.24	0.19	3.32	1.5	14
28	R-107B	1.35	0.30	1.27	0.38	Comb	6.0	5.80	0.00	5.80	1.92	0.020	2.00	0.020	0.020	0.013	0.14	7.07	0.21	4.07	1.5	11
29	R-105B	1.23	0.25	1.16	0.32	Comb	6.0	5.80	0.00	5.80	1.92	0.020	2.00	0.020	0.020	0.013	0.14	6.79	0.20	3.81	1.5	8
30	R-104A	1.24	0.38	1.30	0.32	Comb	6.0	5.80	0.00	5.80	1.92	0.010	2.00	0.020	0.020	0.013	0.16	8.00	0.21	4.37	1.5	6
31	R-102A	1.27	0.23	1.22	0.29	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.16	7.77	0.21	4.17	1.5	4
32	R-121	0.52	0.28	0.59	0.21	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.12	6.12	0.20	3.70	1.5	103
33	R-122	0.48	0.04	0.42	0.10	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.10	5.22	0.18	2.85	1.5	105
34	R-123	1.02*	0.00	0.00	1.02	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
35	R-49	1.11	0.27	1.25	0.13	Comb	6.0	8.70	0.00	8.70	1.92	0.010	1.92	0.020	0.020	0.013	0.15	7.52	0.19	3.09	1.5	93
36	R-50	0.93	0.22	1.06	0.09	Comb	6.0	8.70	0.00	8.70	1.92	0.010	1.92	0.020	0.020	0.013	0.14	7.03	0.18	2.75	1.5	93
37	R-49A	1.11	0.34	1.18	0.27	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.15	7.67	0.21	4.08	1.5	35
38	R-51	0.65	0.44	0.75	0.34	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.14	6.90	0.21	4.46	1.5	37
39	R-52	0.65	0.44	0.75	0.34	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.14	6.89	0.21	4.44	1.5	86
40	R-51A	0.98	0.33	0.86	0.44	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.15	7.37	0.10	4.91	0.0	38
41	R-53	1.42	0.22	1.31	0.33	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.16	8.03	0.21	4.39	1.5	40
42	R-54	1.55	0.06	1.29	0.32	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.16	7.98	0.21	4.34	1.5	87
43	R-55	0.58	0.05	0.56	0.06	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.11	5.61	0.17	2.39	1.5	42
44	R-56	1.15	0.15	1.07	0.22	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.15	7.34	0.20	3.80	1.5	41
45	R-57	0.23	0.33	0.51	0.05	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.11	5.39	0.17	2.22	1.5	43
46	R-58	0.46	0.63	0.76	0.33	Comb	6.0	2.90	0.00	2.90	1.92	0.015	1.92	0.020	0.020	0.013	0.13	6.40	0.21	4.10	1.5	45

22529-2 - Southbend Crossings | Number of lines: 149 | Run Date: 8/27/2025

NOTES: Inlet N-Values = 0.016; Intensity = 77.83 / (Inlet time + 12.70) ^ 0.81; Return period = 10 Yrs. ; * Indicates Known Q added. All curb inlets are Horiz throat.

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
47	R-59	1.27	0.15	1.14	0.28	Comb	6.0	5.80	0.00	5.80	1.92	0.015	1.92	0.020	0.020	0.013	0.14	7.05	0.20	3.85	1.5	Off
48	R-60	0.39	1.30	1.06	0.63	Comb	6.0	2.90	0.00	2.90	1.92	0.015	1.92	0.020	0.020	0.013	0.15	7.53	0.23	5.21	1.5	46
49	R-61	1.50	0.00	0.96	0.54	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.16	7.76	0.23	5.29	1.5	48
50	R-62	1.50	0.00	0.96	0.54	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.16	7.76	0.23	5.29	1.5	48
51	R-63	0.39	0.46	0.62	0.22	Comb	6.0	2.90	0.00	2.90	1.92	0.015	1.92	0.020	0.020	0.013	0.12	5.81	0.20	3.53	1.5	48
52	R-64	0.68	0.28	0.81	0.15	Comb	6.0	5.80	0.00	5.80	1.92	0.015	1.92	0.020	0.020	0.013	0.12	6.09	0.19	3.01	1.5	47
53	R-65	0.56	0.81	0.91	0.46	Comb	6.0	2.90	0.00	2.90	1.92	0.019	1.92	0.020	0.020	0.013	0.13	6.66	0.21	4.42	1.5	51
54	R-67	0.39	1.67	1.24	0.81	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.15	7.54	0.23	5.33	1.5	53
55	R-68	2.09	0.25	1.69	0.65	Comb	6.0	5.80	0.00	5.80	1.92	0.022	1.92	0.020	0.020	0.013	0.16	7.92	0.22	4.91	1.5	89
56	R-69	1.50	0.00	0.96	0.54	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.16	7.76	0.23	5.29	1.5	54
57	R-70	1.50	0.00	0.96	0.54	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.16	7.76	0.23	5.29	1.5	54
58	R-71	0.93	0.72	1.05	0.59	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.14	6.94	0.22	4.73	1.5	54
59	R-72	0.39	1.49	1.16	0.72	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.15	7.29	0.23	5.08	1.5	58
60	R-73	1.09	0.19	1.03	0.25	Comb	6.0	5.80	0.00	5.80	1.92	0.022	1.92	0.020	0.020	0.013	0.13	6.31	0.19	3.43	1.5	55
61	R-74	1.21	0.00	0.82	0.40	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.14	7.17	0.22	4.72	1.5	59
62	R-75	1.21	0.00	0.82	0.40	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.14	7.17	0.22	4.72	1.5	59
63	R-76	1.21	0.63	1.15	0.70	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.14	7.25	0.23	5.04	1.5	59
64	R-77	0.39	1.34	1.09	0.63	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.14	7.06	0.22	4.85	1.5	63
65	R-78	1.05	0.82	1.40	0.46	Comb	6.0	5.80	0.00	5.80	1.92	0.022	1.92	0.020	0.020	0.013	0.15	7.27	0.21	4.31	1.5	91
66	R-79	1.24	0.00	0.83	0.41	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.14	7.24	0.22	4.78	1.5	64
67	R-80	1.24	0.00	0.83	0.41	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.14	7.24	0.22	4.78	1.5	64
68	R-81	0.93	0.57	0.98	0.52	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.13	6.71	0.21	4.50	1.5	64
69	R-82	0.39	1.23	1.04	0.57	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.14	6.89	0.22	4.68	1.5	68

22529-2 - Southbend Crossings | Number of lines: 149 | Run Date: 8/27/2025

NOTES: Inlet N-Values = 0.016; Intensity = 77.83 / (Inlet time + 12.70) ^ 0.81; Return period = 10 Yrs. ; * Indicates Known Q added. All curb inlets are Horiz throat.

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
70	R-83	1.07	0.51	1.02	0.56	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.14	6.83	0.22	4.63	1.5	91
71	R-84	0.66	0.00	0.51	0.15	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.11	5.71	0.19	3.31	1.5	69
72	R-85	0.73	0.00	0.55	0.18	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.12	5.94	0.20	3.53	1.5	69
73	R-86	1.40	0.79	1.30	0.89	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.15	7.72	0.24	5.51	1.5	69
74	R-87	1.34	0.65	1.48	0.51	Comb	6.0	5.80	0.00	5.80	1.92	0.022	1.92	0.020	0.020	0.013	0.15	7.46	0.21	4.48	1.5	70
75	R-88	2.01	0.00	1.22	0.79	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.15	7.49	0.23	5.27	1.5	73
76	R-89	1.80	0.55	1.69	0.65	Comb	6.0	5.80	0.00	5.80	1.92	0.022	1.92	0.020	0.020	0.013	0.16	7.93	0.22	4.91	1.5	74
77	R-90	0.15	0.00	0.15	0.00	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.06	2.83	0.14	0.77	1.5	75
78	R-91	0.11	0.00	0.11	0.00	Comb	6.0	2.90	0.00	2.90	1.92	0.023	1.92	0.020	0.020	0.013	0.05	2.50	0.13	0.47	1.5	24
79	R-92	0.76	0.82	1.03	0.56	Comb	6.0	2.90	0.00	2.90	1.92	0.023	1.92	0.020	0.020	0.013	0.14	6.79	0.22	4.60	1.5	23
80	R-93	1.55	0.53	1.54	0.55	Comb	6.0	5.80	0.00	5.80	1.92	0.022	1.92	0.020	0.020	0.013	0.15	7.58	0.22	4.59	1.5	76
81	R-94	1.93	0.11	1.51	0.53	Comb	6.0	5.80	0.00	5.80	1.92	0.022	1.92	0.020	0.020	0.013	0.15	7.52	0.22	4.54	1.5	80
82	R-95	1.95	0.13	1.25	0.82	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.15	7.57	0.23	5.36	1.5	79
83	R-96	0.58	0.00	0.47	0.11	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.09	4.69	0.18	2.53	1.5	81
84	R-97	0.62	0.00	0.50	0.13	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.10	4.82	0.18	2.65	1.5	82
85	R-76A	2.42	0.00	2.42	0.00	DrGrt	0.0	0.00	3.06	2.93	2.93	Sag	10.00	0.020	0.020	0.000	0.17	26.79	0.17	26.79	0.0	Off
86	R-49B	0.93	0.34	1.05	0.22	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.15	7.30	0.20	3.77	1.5	36
87	R-51B	0.98	0.32	0.86	0.44	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.15	7.35	0.22	4.89	1.5	39
88	R-56A	0.64	0.00	0.49	0.15	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.11	5.63	0.19	3.24	1.5	44
89	R-64A	0.72	0.65	1.09	0.28	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.13	6.60	0.20	3.63	1.5	52
90	R-73A	1.09	0.00	0.90	0.19	Comb	6.0	5.90	0.00	5.90	1.92	0.022	1.92	0.020	0.020	0.013	0.12	5.95	0.19	3.08	1.5	60
91	R-78A	1.05	1.02	1.25	0.82	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.15	7.55	0.23	5.34	1.5	65
92	R-2	1.67	0.14	1.82	0.00	Comb	6.0	8.70	3.96	8.70	1.92	Sag	1.92	0.020	0.020	0.000	0.09	4.47	0.21	4.47	1.5	Off

22529-2 - Southbend Crossings | Number of lines: 149 | Run Date: 8/27/2025

NOTES: Inlet N-Values = 0.016; Intensity = 77.83 / (Inlet time + 12.70) ^ 0.81; Return period = 10 Yrs. ; * Indicates Known Q added. All curb inlets are Horiz throat.

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
93	R-3	2.58	0.37	2.94	0.00	Comb	6.0	8.70	1.98	8.70	1.92	Sag	1.92	0.020	0.020	0.000	0.14	6.99	0.26	6.99	1.5	Off
94	R-4	1.24	0.24	1.33	0.14	Comb	6.0	8.70	0.00	8.70	1.92	0.010	1.92	0.020	0.020	0.013	0.15	7.73	0.19	3.24	1.5	92
95	R-5	1.31	0.17	1.33	0.14	Comb	6.0	8.70	0.00	8.70	1.92	0.010	1.92	0.020	0.020	0.013	0.15	7.73	0.19	3.23	1.5	93
96	R-6	1.09	0.25	1.10	0.24	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.15	7.45	0.20	3.89	1.5	94
97	R-7	0.89	0.20	0.92	0.17	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.14	6.90	0.19	3.43	1.5	95
98	R-6A	1.09	0.19	1.04	0.25	Comb	6.0	5.80	0.00	5.80	1.92	0.017	1.92	0.020	0.020	0.013	0.13	6.66	0.20	3.58	1.5	96
99	R-8	0.39	0.70	0.90	0.19	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.12	5.91	0.19	3.09	1.5	98
100	R-9	0.40	0.87	1.02	0.25	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.12	6.25	0.19	3.40	1.5	148
101	R-10	1.33	0.31	1.30	0.33	Comb	6.0	5.80	0.00	5.80	1.92	0.011	1.92	0.020	0.020	0.013	0.16	7.88	0.21	4.34	1.5	100
102	R-11	1.20	0.40	1.28	0.32	Comb	6.0	5.80	0.00	5.80	1.92	0.011	1.92	0.020	0.020	0.013	0.16	7.82	0.21	4.28	1.5	100
103	R-14	0.30	0.21	0.46	0.04	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.10	5.15	0.17	2.04	1.5	99
104	R-12	1.32	0.23	1.24	0.31	Comb	6.0	5.80	0.00	5.80	1.92	0.011	1.92	0.020	0.020	0.013	0.15	7.72	0.21	4.20	1.5	101
105	R-15	0.61	0.10	0.63	0.08	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.12	5.87	0.18	2.60	1.5	99
106	R-13	1.54	0.30	1.44	0.40	Comb	6.0	5.80	0.00	5.80	1.92	0.011	1.92	0.020	0.020	0.013	0.16	8.24	0.22	4.65	1.5	102
107	R-16	1.82	0.33	1.57	0.58	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.15	7.61	0.22	4.65	1.5	99
108	R-17	0.98	0.19	0.96	0.22	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.12	6.06	0.19	3.23	1.5	100
109	R-18	0.89	0.63	1.18	0.33	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.13	6.68	0.20	3.79	1.5	107
110	R-19	0.37	0.71	0.89	0.19	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.12	5.87	0.19	3.06	1.5	108
111	R-20	1.01	0.21	1.01	0.21	Comb	6.0	5.80	0.00	5.80	1.92	0.012	1.92	0.020	0.020	0.013	0.14	6.94	0.20	3.60	1.5	110
112	R-21	1.08	0.26	1.10	0.25	Comb	6.0	5.80	0.00	5.80	1.92	0.012	1.92	0.020	0.020	0.013	0.14	7.20	0.20	3.82	1.5	110
113	R-24	1.93	0.35	1.65	0.63	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.16	7.78	0.22	4.81	1.5	109
114	R-20A	1.01	0.22	1.01	0.21	Comb	6.0	5.80	0.00	5.80	1.92	0.012	1.92	0.020	0.020	0.013	0.14	6.95	0.20	3.61	1.5	111
115	R-22	1.81	0.00	1.59	0.22	Comb	6.0	8.70	0.00	8.70	1.92	0.012	1.92	0.020	0.020	0.013	0.16	8.05	0.20	3.63	1.5	114

22529-2 - Southbend Crossings | Number of lines: 149 | Run Date: 8/27/2025

NOTES: Inlet N-Values = 0.016; Intensity = 77.83 / (Inlet time + 12.70) ^ 0.81; Return period = 10 Yrs. ; * Indicates Known Q added. All curb inlets are Horiz throat.

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
116	R-25	0.98	0.29	1.03	0.25	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.13	6.26	0.19	3.41	1.5	110
117	R-23	1.72	0.00	1.35	0.37	Comb	6.0	5.80	0.00	5.80	1.92	0.012	1.92	0.020	0.020	0.013	0.16	7.90	0.21	4.43	1.5	145
118	R-26	0.88	0.70	1.22	0.35	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.14	6.76	0.20	3.87	1.5	113
119	R-27	0.42	0.62	0.74	0.29	Comb	6.0	2.90	0.00	2.90	1.92	0.023	1.92	0.020	0.020	0.013	0.12	5.78	0.20	3.61	1.5	116
120	R-28	0.90	0.20	0.92	0.17	Comb	6.0	5.80	0.00	5.80	1.92	0.011	1.92	0.020	0.020	0.013	0.14	6.79	0.19	3.41	1.5	119
121	R-29	1.52	0.14	1.47	0.18	Comb	6.0	8.70	0.00	8.70	1.92	0.011	1.92	0.020	0.020	0.013	0.16	7.91	0.19	3.45	1.5	119
122	R-32	1.93	0.51	1.74	0.70	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.16	7.97	0.22	4.99	1.5	118
123	R-28A	0.84	0.35	0.99	0.20	Comb	6.0	5.80	0.00	5.80	1.92	0.011	1.92	0.020	0.020	0.013	0.14	6.98	0.20	3.57	1.5	120
124	R-30	1.68	0.00	1.33	0.35	Comb	6.0	5.80	0.00	5.80	1.92	0.011	1.92	0.020	0.020	0.013	0.16	7.96	0.21	4.41	1.5	123
125	R-33	0.93	0.38	1.05	0.26	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.13	6.32	0.19	3.46	1.5	119
126	R-31	1.40	0.00	1.26	0.14	Comb	6.0	8.70	0.00	8.70	1.92	0.011	1.92	0.020	0.020	0.013	0.15	7.44	0.19	3.11	1.5	121
127	R-34	0.88	0.61	0.98	0.51	Comb	6.0	2.90	0.00	2.90	1.92	0.023	1.92	0.020	0.020	0.013	0.13	6.62	0.21	4.42	1.5	122
128	R-35	0.42	1.23	1.27	0.38	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.14	6.89	0.20	3.98	1.5	125
129	R-36	1.17	0.37	1.21	0.32	Comb	6.0	5.80	0.00	5.80	1.92	0.015	1.92	0.020	0.020	0.013	0.15	7.26	0.21	4.04	1.5	128
130	R-37	1.93	0.00	1.44	0.48	Comb	6.0	5.80	0.00	3.80	1.92	0.015	1.92	0.020	0.020	0.013	0.16	7.91	0.22	4.70	1.5	128
131	R-38	1.87	0.36	1.62	0.61	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.15	7.71	0.22	4.74	1.5	127
132	R-39	0.94	0.39	0.90	0.43	Comb	6.0	2.90	0.00	2.90	1.92	0.023	1.92	0.020	0.020	0.013	0.13	6.36	0.21	4.17	1.5	128
133	R-40	0.92	0.67	1.23	0.36	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.14	6.79	0.20	3.89	1.5	131
134	R-41	0.42	1.26	1.28	0.39	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.14	6.92	0.21	4.02	1.5	132
135	R-42	1.77	0.00	1.55	0.22	Comb	6.0	8.70	0.00	8.70	1.92	0.014	1.92	0.020	0.020	0.013	0.16	7.76	0.20	3.56	1.5	134
136	R-43	1.58	0.00	1.25	0.33	Comb	6.0	5.80	0.00	5.80	1.92	0.014	1.92	0.020	0.020	0.013	0.15	7.44	0.21	4.14	1.5	134
137	R-44	2.17	0.29	1.75	0.70	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.16	7.99	0.23	5.00	1.5	134
138	R-45	2.23	0.14	1.70	0.67	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.16	7.89	0.22	4.91	1.5	133

22529-2 - Southbend Crossings | Number of lines: 149 | Run Date: 8/27/2025

NOTES: Inlet N-Values = 0.016; Intensity = 77.83 / (Inlet time + 12.70) ^ 0.81; Return period = 10 Yrs. ; * Indicates Known Q added. All curb inlets are Horiz throat.

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
139	R-46	0.67	0.00	0.52	0.14	Comb	6.0	2.90	0.00	2.90	1.92	0.023	1.92	0.020	0.020	0.013	0.10	4.90	0.18	2.75	1.5	138
140	R-47	0.84	0.18	0.73	0.29	Comb	6.0	2.90	0.00	2.90	1.92	0.023	1.92	0.020	0.020	0.013	0.12	5.75	0.20	3.58	1.5	137
141	R-17A	6.85	0.00	6.85	0.00	DrGrt	0.0	0.00	3.06	2.93	2.93	Sag	10.00	0.020	0.020	0.000	0.34	43.60	0.34	43.60	0.0	Off
142	R-25A	5.77	0.00	5.77	0.00	DrGrt	0.0	0.00	3.06	2.93	2.93	Sag	10.00	0.020	0.020	0.000	0.30	39.96	0.30	39.96	0.0	Off
143	R-33A	2.20	0.00	2.20	0.00	DrGrt	0.0	0.00	3.06	2.93	2.93	Sag	10.00	0.020	0.020	0.000	0.16	25.75	0.16	25.75	0.0	Off
144	R-36A	1.17	0.00	0.80	0.37	Comb	6.0	2.90	0.00	2.90	1.92	0.015	1.92	0.020	0.020	0.013	0.13	6.55	0.21	4.25	1.5	129
145	R-20B	1.02	0.37	1.13	0.26	Comb	6.0	5.80	0.00	5.80	1.92	0.012	1.92	0.020	0.020	0.013	0.15	7.29	0.20	3.89	1.5	112
146	R-12A	1.30	0.00	1.07	0.23	Comb	6.0	5.80	0.00	5.80	1.92	0.011	1.92	0.020	0.020	0.013	0.14	7.23	0.20	3.78	1.5	104
147	R-12B	1.54	0.00	1.23	0.30	Comb	6.0	5.80	0.00	5.80	1.92	0.011	1.92	0.020	0.020	0.013	0.15	7.70	0.21	4.19	1.5	106
148	R-6B	0.89	0.25	0.94	0.20	Comb	6.0	5.80	0.00	5.80	1.92	0.017	1.92	0.020	0.020	0.013	0.13	6.36	0.19	3.32	1.5	97
149	R-125	8.72	0.00	8.72	0.00	Hdwl	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off

22529-2 - Southbend Crossings | Number of lines: 149 | Run Date: 8/27/2025

NOTES: Inlet N-Values = 0.016; Intensity = 77.83 / (Inlet time + 12.70) ^ 0.81; Return period = 10 Yrs. ; * Indicates Known Q added. All curb inlets are Horiz throat.

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
1	R-99	Combination	663.77	Cir	4.00	4.00	36	Cir	658.07	18 36	Cir Cir	658.27 658.27
2	R-100	Combination	663.77	Cir	4.00	4.00	18	Cir	660.02			
3	R-101	Combination	664.84	Cir	4.00	4.00	36	Cir	658.71	18 36	Cir Cir	658.91 658.91
4	R-102	Combination	664.84	Cir	4.00	4.00	18	Cir	661.09			
5	R-103	Combination	666.79	Cir	4.00	4.00	36	Cir	660.85	18 36	Cir Cir	661.05 661.05
6	R-104	Combination	666.79	Cir	4.00	4.00	18	Cir	661.29			
7	R-105	Combination	669.35	Cir	4.00	4.00	36	Cir	663.65	18 36	Cir Cir	663.85 663.85
8	R-106	Combination	669.35	Cir	4.00	4.00	18	Cir	665.60			
9	R-107	Combination	673.86	Cir	4.00	4.00	36	Cir	668.16	18 24	Cir Cir	668.36 668.36
10	R-108	Combination	674.05	Cir	4.00	4.00	18	Cir	670.30			
11	R-109	Combination	677.93	Cir	4.00	4.00	24	Cir	672.80	18 24	Cir Cir	673.00 673.00
12	R-110	Combination	678.16	Cir	4.00	4.00	18	Cir	674.41			
13	R-111	Combination	681.37	Cir	4.00	4.00	24	Cir	676.92	18 18	Cir Cir	677.12 677.12
14	R-112	Combination	681.37	Cir	4.00	4.00	18	Cir	677.87			
15	R-113	Combination	683.82	Cir	4.00	4.00	18	Cir	679.88	18 18	Cir Cir	680.08 680.08
16	R-114	Combination	683.82	Cir	4.00	4.00	18	Cir	680.32	12	Cir	680.82
17	R-115	Combination	687.21	Cir	4.00	4.00	18	Cir	683.27	18 18	Cir Cir	683.47 683.47
18	R-116	Combination	687.21	Cir	4.00	4.00	18	Cir	683.71			

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
19	R-117	Combination	689.85	Cir	4.00	4.00	18	Cir	686.15	18	Cir	686.35
20	R-118	Combination	691.55	Cir	4.00	4.00	18	Cir	687.61	18	Cir	687.81
21	R-119	Combination	691.55	Cir	4.00	4.00	18	Cir	688.05			
22	R-114A	Combination	685.53	Cir	4.00	4.00	12	Cir	681.21			
23	R-121	Combination	661.85	Cir	4.00	4.00	24	Cir	654.85	24	Cir	655.05
24	R-122	Combination	661.96	Cir	4.00	4.00	24	Cir	655.33	24	Cir	655.53
25	R-123	Manhole	660.50	Cir	4.00	4.00	24	Cir	655.83			
26	R-49	Combination	654.46	Cir	4.00	4.00	36	Cir	649.00	18 36	Cir Cir	650.00 649.20
27	R-50	Combination	654.46	Cir	4.00	4.00	18	Cir	651.21			
28	R-51	Combination	656.52	Cir	4.00	4.00	36	Cir	651.21	18 36	Cir Cir	651.41 651.41
29	R-52	Combination	656.52	Cir	4.00	4.00	18	Cir	652.77			
30	R-53	Combination	658.05	Cir	4.00	4.00	36	Cir	652.55	36	Cir	652.75
31	R-54	Combination	658.05	Cir	4.00	4.00	36	Cir	652.92	36	Cir	653.12
32	R-55	Combination	659.60	Cir	4.00	4.00	36	Cir	654.25	18 36	Cir Cir	655.25 654.45
33	R-56	Combination	659.60	Cir	4.00	4.00	18	Cir	655.85			
34	R-57	Combination	661.37	Cir	4.00	4.00	36	Cir	655.77	36	Cir	655.97
35	R-58	Combination	662.64	Cir	4.00	4.00	36	Cir	656.34	18 36	Cir Cir	658.54 656.54
36	R-59	Combination	662.64	Cir	4.00	4.00	18	Cir	658.89			
37	R-60	Combination	663.69	Cir	4.00	4.00	36	Cir	657.39	36	Cir	657.59
38	R-61	Combination	664.31	Cir	4.00	4.00	36	Cir	658.05	36	Cir	658.25
39	R-62	Combination	664.31	Cir	4.00	4.00	36	Cir	658.53	36	Cir	658.73

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
40	R-63	Combination	664.86	Cir	4.00	4.00	36	Cir	659.19	18 36	Cir Cir	660.19 659.36
41	R-64	Combination	664.86	Cir	4.00	4.00	18	Cir	661.11			
42	R-65	Combination	665.79	Cir	4.00	4.00	36	Cir	660.09	18 36	Cir Cir	660.29 660.29
43	R-66	DropGrate	664.50	Cir	4.00	4.00	18	Cir	661.75			
44	R-67	Combination	669.17	Cir	4.00	4.00	36	Cir	662.32	18 36	Cir Cir	664.32 662.52
45	R-68	Combination	668.26	Cir	4.00	4.00	18	Cir	664.76			
46	R-69	Combination	669.17	Cir	4.00	4.00	36	Cir	663.03	36	Cir	663.23
47	R-70	Combination	669.17	Cir	4.00	4.00	36	Cir	663.47	36	Cir	663.67
48	R-71	Combination	670.02	Cir	4.00	4.00	36	Cir	664.32	36	Cir	664.52
49	R-72	Combination	673.88	Cir	4.00	4.00	36	Cir	667.62	18 36	Cir Cir	667.82 667.82
50	R-73	Combination	673.88	Cir	4.00	4.00	18	Cir	670.13			
51	R-74	Combination	674.79	Cir	4.00	4.00	36	Cir	668.20	36	Cir	668.40
52	R-75	Combination	674.79	Cir	4.00	4.00	36	Cir	668.64	36	Cir	668.84
53	R-76	Combination	675.64	Cir	4.00	4.00	36	Cir	669.22	36 18	Cir Cir	670.14 669.42
54	R-77	Combination	679.51	Cir	4.00	4.00	36	Cir	673.81	18 24	Cir Cir	675.31 674.01
55	R-78	Combination	679.51	Cir	4.00	4.00	18	Cir	675.76			
56	R-79	Combination	680.41	Cir	4.00	4.00	24	Cir	675.52	24	Cir	675.72
57	R-80	Combination	680.41	Cir	4.00	4.00	24	Cir	675.96	24	Cir	676.16
58	R-81	Combination	681.41	Cir	4.00	4.00	24	Cir	676.96	24	Cir	677.16
59	R-82	Combination	685.08	Cir	4.00	4.00	24	Cir	680.39	18 24	Cir Cir	680.59 680.59

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
60	R-83	Combination	685.08	Cir	4.00	4.00	18	Cir	681.33			
61	R-84	Combination	686.03	Cir	4.00	4.00	24	Cir	681.14	24	Cir	681.34
62	R-85	Combination	686.03	Cir	4.00	4.00	24	Cir	681.58	24	Cir	681.78
63	R-86	Combination	686.92	Cir	4.00	4.00	24	Cir	682.47	18 18	Cir Cir	682.67 682.67
64	R-87	Combination	686.92	Cir	4.00	4.00	18	Cir	683.17			
65	R-88	Combination	690.40	Cir	4.00	4.00	18	Cir	686.21	18 18	Cir Cir	686.41 686.41
66	R-89	Combination	690.40	Cir	4.00	4.00	18	Cir	686.65			
67	R-90	Combination	694.89	Cir	4.00	4.00	18	Cir	690.10	18 18	Cir Cir	690.30 690.30
68	R-91	Combination	698.99	Cir	4.00	4.00	18	Cir	690.72	18	Cir	690.92
69	R-92	Combination	694.91	Cir	4.00	4.00	18	Cir	691.16			
70	R-93	Combination	695.09	Cir	4.00	4.00	18	Cir	691.14	18	Cir	691.34
71	R-94	Combination	698.99	Cir	4.00	4.00	18	Cir	694.60	18 18	Cir Cir	694.80 695.24
72	R-95	Combination	698.99	Cir	4.00	4.00	18	Cir	695.04			
73	R-96	Combination	702.78	Cir	4.00	4.00	18	Cir	698.56	18	Cir	698.76
74	R-97	Combination	702.78	Cir	4.00	4.00	18	Cir	699.00			
75	R-76A	DropGrate	673.00	Cir	4.00	4.00	18	Cir	670.25			
76	R-2	Combination	654.28	Cir	4.00	4.00	42	Cir	648.44	18 42	Cir Cir	648.94 648.94
77	R-3	Combination	654.28	Cir	4.00	4.00	18	Cir	651.03			
78	R-4	Combination	655.17	Cir	4.00	4.00	42	Cir	650.08	18 42	Cir Cir	650.28 650.28
79	R-5	Combination	655.17	Cir	4.00	4.00	18	Cir	651.92			

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
80	R-6	Combination	656.60	Cir	4.00	4.00	42	Cir	651.51	18 42	Cir Cir	651.71 651.04
81	R-7	Combination	656.60	Cir	4.00	4.00	18	Cir	653.35			
82	R-8	Combination	659.68	Cir	4.00	4.00	42	Cir	652.98	18 36	Cir Cir	653.18 654.18
83	R-9	Combination	659.68	Cir	4.00	4.00	18	Cir	655.73	18	Cir	655.93
84	R-10	Combination	660.72	Cir	4.00	4.00	18	Cir	656.53	18 18	Cir Cir	656.73 656.73
85	R-11	Combination	660.72	Cir	4.00	4.00	18	Cir	656.97			
86	R-14	Combination	660.68	Cir	4.00	4.00	36	Cir	654.54	36	Cir	654.74
87	R-12	Combination	662.98	Cir	4.00	4.00	18	Cir	658.79	18	Cir	658.99
88	R-15	Combination	660.68	Cir	4.00	4.00	36	Cir	654.98	36	Cir	655.18
89	R-13	Combination	662.98	Cir	4.00	4.00	18	Cir	659.23			
90	R-16	Combination	661.58	Cir	4.00	4.00	36	Cir	655.82	18 36	Cir Cir	656.02 656.02
91	R-17	Combination	661.58	Cir	4.00	4.00	18	Cir	656.26	18	Cir	656.46
92	R-18	Combination	665.38	Cir	4.00	4.00	36	Cir	659.68	18 36	Cir Cir	659.88 659.88
93	R-19	Combination	665.38	Cir	4.00	4.00	18	Cir	661.43	18	Cir	661.63
94	R-20	Combination	666.51	Cir	4.00	4.00	18	Cir	662.32	18 18	Cir Cir	662.52 662.52
95	R-21	Combination	666.51	Cir	4.00	4.00	18	Cir	662.76			
96	R-24	Combination	667.36	Cir	4.00	4.00	36	Cir	661.41	18 36	Cir Cir	661.61 661.61
97	R-22	Combination	668.81	Cir	4.00	4.00	18	Cir	664.62	18	Cir	664.82
98	R-25	Combination	667.36	Cir	4.00	4.00	18	Cir	661.85	18	Cir	662.05

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
99	R-23	Combination	667.36	Cir	4.00	4.00	18	Cir	665.06			
100	R-26	Combination	671.14	Cir	4.00	4.00	36	Cir	665.44	18 36	Cir Cir	665.64 665.64
101	R-27	Combination	671.14	Cir	4.00	4.00	18	Cir	667.19	18	Cir	667.39
102	R-28	Combination	672.29	Cir	4.00	4.00	18	Cir	668.10	18 18	Cir Cir	668.30 668.30
103	R-29	Combination	0.00	Cir	4.00	4.00	18	Cir	668.54			
104	R-32	Combination	673.15	Cir	4.00	4.00	36	Cir	666.81	18 36	Cir Cir	667.01 667.01
105	R-30	Combination	674.17	Cir	4.00	4.00	18	Cir	669.98	18	Cir	670.18
106	R-33	Combination	673.15	Cir	4.00	4.00	18	Cir	667.25	18	Cir	667.45
107	R-31	Combination	674.17	Cir	4.00	4.00	18	Cir	670.42			
108	R-34	Combination	676.93	Cir	4.00	4.00	36	Cir	671.73	18 24	Cir Cir	671.93 671.93
109	R-35	Combination	676.93	Cir	4.00	4.00	18	Cir	672.98	18	Cir	673.18
110	R-36	Combination	678.17	Cir	4.00	4.00	18	Cir	673.98	18	Cir	674.18
111	R-37	Combination	678.17	Cir	4.00	4.00	18	Cir	674.42			
112	R-38	Combination	678.94	Cir	4.00	4.00	24	Cir	674.49	18 24	Cir Cir	674.69 674.69
113	R-39	Combination	678.94	Cir	4.00	4.00	18	Cir	675.19			
114	R-40	Combination	682.71	Cir	4.00	4.00	24	Cir	676.82	24	Cir	677.02
115	R-41	Combination	682.71	Cir	4.00	4.00	24	Cir	677.26	24	Cir	677.46
116	R-42	Combination	683.96	Cir	4.00	4.00	24	Cir	679.29	18	Cir	679.49
117	R-43	Combination	683.96	Cir	4.00	4.00	18	Cir	679.73	18	Cir	679.93
118	R-44	Combination	684.73	Cir	4.00	4.00	18	Cir	680.34	18	Cir	680.54

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
119	R-45	Combination	684.73	Cir	4.00	4.00	18	Cir	680.78	18	Cir	680.98
120	R-46	Combination	689.13	Cir	4.00	4.00	18	Cir	684.94	18	Cir	685.14
121	R-47	Combination	689.13	Cir	4.00	4.00	18	Cir	685.38			
122	R-17A	DropGrate	660.00	Cir	4.00	4.00	18	Cir	657.25			
123	R-25A	DropGrate	665.60	Cir	4.00	4.00	18	Cir	662.85			
124	R-33A	DropGrate	671.00	Cir	4.00	4.00	18	Cir	668.25			
125	R-125	OpenHeadwall	652.00	n/a	n/a	n/a	18	Cir	650.95			

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1	R98-R99	26.76	36	Cir	20.272	657.50	658.07	2.812	659.02	659.74	1.01	659.74	End	Combination
2	R99-R100	1.47	18	Cir	23.972	658.27	660.02	7.300	659.74	660.47	n/a	660.47 j	1	Combination
3	R99-R101	25.85	36	Cir	106.371	658.27	658.71	0.414	659.95	660.39	1.17	661.56	1	Combination
4	R101-R102	2.48	18	Cir	24.001	658.91	661.09	9.083	661.56	661.69	0.22	661.69	3	Combination
5	R101-R103	24.28	36	Cir	193.585	658.91	660.85	1.002	661.56	662.44	n/a	662.44 j	3	Combination
6	R103-R104	2.56	18	Cir	23.946	661.05	661.29	1.002	662.44	661.90	n/a	661.90	5	Combination
7	R103-R105	22.61	36	Cir	202.611	661.05	663.65	1.283	662.44	665.18	n/a	665.18	5	Combination
8	R105-R106	2.95	18	Cir	24.023	663.85	665.60	7.285	665.18	666.25	n/a	666.25 j	7	Combination
9	R105-R107	19.13	36	Cir	223.209	663.85	668.16	1.931	665.18	669.56	n/a	669.56	7	Combination
10	R107-R108	2.60	18	Cir	25.688	668.36	670.30	7.552	669.56	670.91	n/a	670.91 j	9	Combination
11	R107-R109	14.76	24	Cir	201.310	668.36	672.80	2.206	669.56	674.18	1.19	674.18	9	Combination
12	R109-R110	2.19	18	Cir	26.583	673.00	674.41	5.304	674.18	674.97	n/a	674.97 j	11	Combination
13	R109-R111	11.05	24	Cir	166.695	673.00	676.92	2.352	674.18	678.11	n/a	678.11	11	Combination
14	R111-R112	1.69	18	Cir	23.983	677.12	677.87	3.127	678.11	678.36	n/a	678.36 j	13	Combination
15	R111-R113	8.21	18	Cir	109.801	677.12	679.88	2.514	678.11	680.99	n/a	680.99	13	Combination
16	R113-R114	2.51	18	Cir	23.891	680.08	680.32	1.005	680.99	680.92	n/a	680.92 j	15	Combination
17	R113-R115	5.62	18	Cir	150.041	680.08	683.27	2.126	680.99	684.18	0.68	684.18	15	Combination
18	R115-R116	2.63	18	Cir	23.993	683.47	683.71	1.001	684.18	684.32	n/a	684.32 j	17	Combination
19	R115-R117	2.77	18	Cir	132.521	683.47	686.15	2.022	684.18	686.78	n/a	686.78 j	17	Combination
20	R117-R118	2.64	18	Cir	41.773	686.35	687.61	3.016	686.78	688.23	n/a	688.23	19	Combination
21	R118-R119	0.89	18	Cir	24.069	687.81	688.05	0.997	688.23	688.40	n/a	688.40 j	20	Combination
22	R114-R114A	0.73	12	Cir	89.000	680.82	681.21	0.438	681.20	681.59	0.11	681.70	16	Combination
23	R120-R121	2.05	24	Cir	35.034	654.50	654.85	0.999	655.39	655.35	n/a	655.35 j	End	Combination
24	R121-R122	1.54	24	Cir	27.667	655.05	655.33	1.012	655.40	655.76	0.08	655.76	23	Combination

22529-2 - Southbend Crossings | Number of lines: 125 | Run Date: 8/10/2025

NOTES: Return period = 25 Yrs. ; j - Line contains hyd. jump.

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
25	R122-R123	1.03	24	Cir	30.380	655.53	655.83	0.987	655.82	656.18	n/a	656.18	24	Manhole
26	R48-R49	0.88	36	Cir	72.199	648.31	649.00	0.956	650.94	649.29	0.16	649.29	End	Combination
27	R49-R50	2.14	18	Cir	24.020	650.00	651.21	5.037	650.31	651.76	n/a	651.76	26	Combination
28	R49-R51	0.82	36	Cir	201.150	649.20	651.21	0.999	649.43	651.49	0.16	651.49	26	Combination
29	R51-R52	1.87	18	Cir	24.025	651.41	652.77	5.661	651.69	653.28	0.19	653.28	28	Combination
30	R51-R53	0.77	36	Cir	149.997	651.41	652.55	0.760	651.65	652.82	n/a	652.82	28	Combination
31	R53-R54	0.74	36	Cir	24.025	652.75	652.92	0.708	652.99	653.19	n/a	653.19	30	Combination
32	R54-R55	0.72	36	Cir	151.376	653.12	654.25	0.746	653.35	654.51	0.16	654.51	31	Combination
33	R55-R56	2.04	18	Cir	23.901	655.25	655.85	2.510	655.60	656.39	0.20	656.39	32	Combination
34	R55-R57	0.68	36	Cir	176.130	654.45	655.77	0.749	654.68	656.02	n/a	656.02	32	Combination
35	R57-R58	0.68	36	Cir	48.902	655.97	656.34	0.757	656.20	656.59	0.12	656.59	34	Combination
36	R58-R59	1.46	18	Cir	23.985	658.54	658.89	1.459	658.88	659.34	0.16	659.34	35	Combination
37	R58-R60	0.65	36	Cir	70.881	656.54	657.39	1.199	656.74	657.64	n/a	657.64	35	Combination
38	R60-R61	0.65	36	Cir	38.132	657.59	658.05	1.206	657.79	658.30	0.10	658.30	37	Combination
39	R61-R62	0.62	36	Cir	23.988	658.25	658.53	1.167	658.45	658.77	n/a	658.77	38	Combination
40	R62-R63	0.60	36	Cir	38.234	658.73	659.19	1.203	658.92	659.43	0.14	659.43	39	Combination
41	R63-R64	1.60	18	Cir	23.981	660.19	661.11	3.836	660.47	661.59	0.17	661.59	40	Combination
42	R63-R65	0.57	36	Cir	56.610	659.36	660.09	1.290	659.55	660.32	n/a	660.32	40	Combination
43	R65-R66	0.00	18	Cir	157.000	660.29	661.75	0.930	660.32	663.25	0.00	663.25	42	DropGrate
44	R65-R67	29.04	36	Cir	115.410	660.29	662.32	1.759	661.47	664.06	n/a	664.06	42	Combination
45	R67-R68	2.50	18	Cir	24.042	664.32	664.76	1.830	664.75	665.36	0.22	665.36	44	Combination
46	R67-R69	27.14	36	Cir	38.132	662.52	663.03	1.337	664.06	664.71	n/a	664.71	44	Combination
47	R69-R70	26.04	36	Cir	23.988	663.23	663.47	1.000	664.71	665.12	0.75	665.12	46	Combination
48	R70-R71	24.98	36	Cir	38.169	663.67	664.32	1.703	665.12	665.93	n/a	665.93	47	Combination

22529-2 - Southbend Crossings | Number of lines: 125 | Run Date: 8/10/2025

NOTES: Return period = 25 Yrs. ; j - Line contains hyd. jump.

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
49	R71-R72	24.79	36	Cir	172.019	664.52	667.62	1.802	665.93	669.22	1.09	669.22	48	Combination
50	R72-R73	2.50	18	Cir	24.011	667.82	670.13	9.621	669.22	670.73	n/a	670.73 j	49	Combination
51	R72-R74	22.83	36	Cir	38.239	667.82	668.20	0.994	669.22	669.74	n/a	669.74	49	Combination
52	R74-R75	21.92	36	Cir	23.988	668.40	668.64	1.000	669.74	670.14	0.67	670.14	51	Combination
53	R75-R76	21.05	36	Cir	38.169	668.84	669.22	0.995	670.14	670.69	0.79	670.69	52	Combination
54	R76-R77	18.63	36	Cir	172.019	670.14	673.81	2.133	671.03	675.19	0.90	675.19	53	Combination
55	R77-R78	2.45	18	Cir	24.011	675.31	675.76	1.874	675.73	676.35	0.22	676.35	54	Combination
56	R77-R79	16.54	24	Cir	38.132	674.01	675.52	3.960	675.19	676.99	0.79	676.99	54	Combination
57	R79-R80	15.77	24	Cir	24.000	675.72	675.96	1.000	676.99	677.39	0.68	677.39	56	Combination
58	R80-R81	15.03	24	Cir	43.125	676.16	676.96	1.855	677.39	678.36	0.65	678.36	57	Combination
59	R81-R82	14.48	24	Cir	163.387	677.16	680.39	1.977	678.36	681.76	n/a	681.76	58	Combination
60	R82-R83	1.22	18	Cir	24.011	680.59	681.33	3.082	681.76	681.74	n/a	681.74 j	59	Combination
61	R82-R84	13.28	24	Cir	39.620	680.59	681.14	1.388	681.76	682.45	n/a	682.45	59	Combination
62	R84-R85	12.96	24	Cir	23.981	681.34	681.58	1.001	682.45	682.87	0.62	682.87	61	Combination
63	R85-R86	12.54	24	Cir	39.648	681.78	682.47	1.740	682.87	683.74	n/a	683.74	62	Combination
64	R86-R87	1.54	18	Cir	24.000	682.67	683.17	2.083	683.74	683.64	0.17	683.64	63	Combination
65	R86-R88	10.26	18	Cir	154.617	682.67	686.21	2.290	683.74	687.44	1.32	687.44	63	Combination
66	R88-R89	2.06	18	Cir	23.981	686.41	686.65	1.001	687.44	687.19	0.20	687.19	65	Combination
67	R88-R90	7.02	18	Cir	198.099	686.41	690.10	1.863	687.44	691.12	n/a	691.12 j	65	Combination
68	R90-R91	0.97	18	Cir	42.180	690.30	690.72	0.996	691.12	691.09	n/a	691.09 j	67	Combination
69	R91-R92	0.88	18	Cir	24.043	690.92	691.16	0.998	691.21	691.51	0.12	691.51	68	Combination
70	R90-R93	6.10	18	Cir	25.503	690.30	691.14	3.294	691.12	692.09	0.61	692.09	67	Combination
71	R93-R94	4.83	18	Cir	176.250	691.34	694.60	1.850	692.09	695.44	n/a	695.44	70	Combination
72	R94-R95	2.23	18	Cir	23.988	694.80	695.04	1.000	695.44	695.60	n/a	695.60 j	71	Combination

22529-2 - Southbend Crossings | Number of lines: 125 | Run Date: 8/10/2025

NOTES: Return period = 25 Yrs. ; j - Line contains hyd. jump.

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
73	R94-R96	1.32	18	Cir	168.529	695.24	698.56	1.970	695.54	698.99	n/a	698.99	71	Combination
74	R96-R97	0.71	18	Cir	24.019	698.76	699.00	0.999	699.02	699.31	n/a	699.31	73	Combination
75	R76-R76A	2.78	18	Cir	82.250	669.42	670.25	1.009	670.69	670.88	n/a	670.88 j	53	DropGrate
76	R1-R2	64.87	42	Cir	18.580	648.31	648.44	0.700	651.11	650.96	1.77	650.96	End	Combination
77	R2-R3	2.95	18	Cir	24.025	648.94	651.03	8.699	650.96	651.68	n/a	651.68 j	76	Combination
78	R2-R4	62.17	42	Cir	153.000	648.94	650.08	0.745	651.13	652.55	1.95	652.55	76	Combination
79	R4-R5	1.50	18	Cir	24.007	650.28	651.92	6.831	652.55	652.50	0.09	652.59	78	Combination
80	R4-R6	60.77	42	Cir	145.471	650.28	651.51	0.846	652.55	653.95	n/a	653.95	78	Combination
81	R6-R7	2.04	18	Cir	23.996	651.71	653.35	6.834	653.95	653.89	0.20	653.89	80	Combination
82	R6-R8	58.40	42	Cir	192.708	651.04	652.98	1.007	653.95	655.37	n/a	655.37	80	Combination
83	R8-R9	9.97	18	Cir	24.034	653.18	655.73	10.610	655.37	656.95	n/a	656.95 j	82	Combination
84	R9-R10	9.59	18	Cir	41.030	655.93	656.53	1.462	656.95	657.72	n/a	657.72	83	Combination
85	R10-R11	2.00	18	Cir	23.998	656.73	656.97	1.000	657.72	657.50	0.20	657.50	84	Combination
86	R8-R14	50.57	36	Cir	40.983	654.18	654.54	0.878	656.23	656.85	1.32	656.85	82	Combination
87	R10-R12	6.08	18	Cir	198.577	656.73	658.79	1.037	657.72	659.74	n/a	659.74 j	84	Combination
88	R14-R15	50.40	36	Cir	23.998	654.74	654.98	1.000	656.85	657.29	n/a	657.29	86	Combination
89	R12-R13	2.84	18	Cir	23.939	658.99	659.23	1.002	659.74	659.87	n/a	659.87 j	87	Combination
90	R15-R16	50.03	36	Cir	41.008	655.18	655.82	1.561	657.29	658.12	n/a	658.12	88	Combination
91	R16-R17	8.86	18	Cir	23.963	656.02	656.26	1.002	658.12*	658.29*	0.57	658.86	90	Combination
92	R16-R18	42.52	36	Cir	164.589	656.02	659.68	2.224	658.12	661.80	n/a	661.80	90	Combination
93	R18-R19	8.29	18	Cir	24.034	659.88	661.43	6.449	661.80	662.54	n/a	662.54 j	92	Combination
94	R19-R20	7.96	18	Cir	43.541	661.63	662.32	1.585	662.54	663.41	0.61	663.41	93	Combination
95	R20-R21	2.26	18	Cir	23.998	662.52	662.76	1.000	663.41	663.33	0.21	663.33	94	Combination
96	R18-R24	35.39	36	Cir	85.451	659.88	661.41	1.790	661.80	663.34	n/a	663.34	92	Combination

22529-2 - Southbend Crossings | Number of lines: 125 | Run Date: 8/10/2025

NOTES: Return period = 25 Yrs. ; *Surcharged (HGL above crown). ; j - Line contains hyd. jump.

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
97	R20-R22	3.98	18	Cir	197.000	662.52	664.62	1.066	663.41	665.38	n/a	665.38 j	94	Combination
98	R24-R25	7.62	18	Cir	24.034	661.61	661.85	0.999	663.34*	663.47*	0.41	663.88	96	Combination
99	R22-R23	1.97	18	Cir	23.946	664.82	665.06	1.002	665.38	665.59	n/a	665.59 j	97	Combination
100	R24-R26	28.53	36	Cir	162.961	661.61	665.44	2.350	663.34	667.17	n/a	667.17 j	96	Combination
101	R26-R27	7.14	18	Cir	23.963	665.64	667.19	6.468	667.17	668.22	n/a	668.22 j	100	Combination
102	R27-R28	6.76	18	Cir	44.688	667.39	668.10	1.589	668.22	669.11	0.54	669.11	101	Combination
103	R28-R29	1.81	18	Cir	23.998	668.30	668.54	1.000	669.11	669.05	n/a	669.05 j	102	Combination
104	R26-R32	22.15	36	Cir	87.079	665.64	666.81	1.344	667.17	668.32	n/a	668.32 j	100	Combination
105	R28-R30	3.46	18	Cir	168.025	668.30	669.98	1.000	669.11	670.69	n/a	670.69 j	102	Combination
106	R32-R33	3.44	18	Cir	24.034	667.01	667.25	0.999	668.32	667.96	0.39	667.96	104	Combination
107	R30-R31	1.60	18	Cir	23.998	670.18	670.42	1.000	670.69	670.90	n/a	670.90 j	105	Combination
108	R32-R34	18.26	36	Cir	162.961	667.01	671.73	2.896	668.32	673.10	n/a	673.10	104	Combination
109	R34-R35	5.90	18	Cir	24.034	671.93	672.98	4.369	673.10	673.92	n/a	673.92 j	108	Combination
110	R35-R36	5.49	18	Cir	44.688	673.18	673.98	1.790	673.92	674.88	n/a	674.88	109	Combination
111	R36-R37	2.54	18	Cir	23.998	674.18	674.42	1.000	674.88	675.02	n/a	675.02 j	110	Combination
112	R34-R38	12.81	24	Cir	86.995	671.93	674.49	2.943	673.10	675.78	0.84	675.78	108	Combination
113	R38-R39	1.08	18	Cir	23.963	674.69	675.19	2.087	675.78	675.58	n/a	675.58	112	Combination
114	R38-R40	10.48	24	Cir	162.000	674.69	676.82	1.315	675.78	677.98	0.72	677.98	112	Combination
115	R40-R41	9.66	24	Cir	23.963	677.02	677.26	1.002	677.98	678.37	n/a	678.37	114	Combination
116	R41-R42	9.33	24	Cir	45.055	677.46	679.29	4.062	678.37	680.38	0.46	680.38	115	Combination
117	R42-R43	7.38	18	Cir	23.998	679.49	679.73	1.000	680.42	680.78	n/a	680.78	116	Combination
118	R43-R44	5.69	18	Cir	40.983	679.93	680.34	1.001	680.78	681.26	n/a	681.26	117	Combination
119	R44-R45	3.62	18	Cir	24.034	680.54	680.78	0.999	681.26	681.51	n/a	681.51	118	Combination
120	R45-R46	1.67	18	Cir	190.793	680.98	684.94	2.076	681.51	685.42	n/a	685.42 j	119	Combination

22529-2 - Southbend Crossings | Number of lines: 125 | Run Date: 8/10/2025

NOTES: Return period = 25 Yrs. ; *Surcharged (HGL above crown). ; j - Line contains hyd. jump.

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
121	R46-R47	0.96	18	Cir	24.041	685.14	685.38	0.998	685.45	685.74	0.13	685.74	120	Combination
122	R17-R17A	7.85	18	Cir	78.460	656.46	657.25	1.007	658.86*	659.30*	0.31	659.60	91	DropGrate
123	R25-R25A	6.61	18	Cir	79.820	662.05	662.85	1.002	663.88	664.14	0.26	664.40	98	DropGrate
124	R33-R33A	2.52	18	Cir	80.000	667.45	668.25	1.000	667.96	668.85	n/a	668.85	106	DropGrate
125	R124-R125	10.00	18	Cir	65.001	650.00	650.95	1.462	651.14	652.17	0.66	652.17	End	OpenHeadwall

22529-2 - Southbend Crossings | Number of lines: 125 | Run Date: 8/10/2025

NOTES: Return period = 25 Yrs. ; *Surcharged (HGL above crown). ; j - Line contains hyd. jump.

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
1	R-99	0.30	0.14	0.36	0.07	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.10	4.88	0.18	2.53	1.5	24
2	R-100	1.47	1.08	1.90	0.64	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.19	9.47	0.24	5.66	1.5	23
3	R-101	0.60	0.37	0.83	0.14	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.13	6.60	0.19	3.18	1.5	1
4	R-102	2.48	1.14	2.54	1.08	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.22	10.81	0.26	6.86	1.5	2
5	R-103	0.63	1.14	1.41	0.37	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.17	8.28	0.22	4.60	1.5	3
6	R-104	2.56	1.19	2.62	1.14	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.22	10.96	0.27	7.01	1.5	4
7	R-105	2.63	0.83	2.31	1.14	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.19	9.32	0.25	6.16	1.5	5
8	R-106	2.95	0.61	2.37	1.19	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.19	9.44	0.25	6.26	1.5	6
9	R-107	3.21	0.59	2.97	0.83	Comb	6.0	8.70	0.00	8.70	1.92	0.020	1.92	0.020	0.020	0.013	0.19	9.66	0.23	5.46	1.5	7
10	R-108	2.60	0.52	2.51	0.61	Comb	6.0	8.70	0.00	8.70	1.92	0.020	1.92	0.020	0.020	0.013	0.18	8.98	0.22	4.87	1.5	8
11	R-109	2.62	0.43	2.46	0.59	Comb	6.0	8.70	0.00	8.70	1.92	0.020	1.92	0.020	0.020	0.013	0.18	8.90	0.22	4.81	1.5	9
12	R-110	2.19	0.62	2.29	0.52	Comb	6.0	8.70	0.00	8.70	1.92	0.020	1.92	0.020	0.020	0.013	0.17	8.63	0.22	4.58	1.5	10
13	R-111	1.75	0.06	1.37	0.43	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.15	7.32	0.21	4.29	1.5	11
14	R-112	1.69	0.58	1.66	0.62	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.16	7.98	0.22	4.90	1.5	12
15	R-113	0.48	0.09	0.51	0.06	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.10	4.75	0.17	2.03	1.5	13
16	R-114	1.96	0.24	1.61	0.58	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.16	7.87	0.22	4.79	1.5	14
17	R-115	0.72	0.00	0.63	0.09	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.10	5.19	0.17	2.40	1.5	15
18	R-116	2.63	0.15	2.27	0.51	Comb	6.0	8.70	0.00	8.70	1.92	0.020	1.92	0.020	0.020	0.013	0.17	8.60	0.22	4.55	1.5	22
19	R-117	0.19	0.75	0.79	0.15	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.11	5.72	0.18	2.86	1.5	18
20	R-118	1.84	0.72	1.81	0.75	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.16	8.12	0.23	5.13	1.5	19
21	R-119	0.89	0.00	0.66	0.23	Comb	6.0	2.90	0.00	2.90	1.92	0.023	1.92	0.020	0.020	0.013	0.11	5.47	0.19	3.30	1.5	121
22	R-114A	0.73	0.51	1.00	0.24	Comb	6.0	5.80	0.00	5.80	1.92	0.020	1.92	0.020	0.020	0.013	0.13	6.35	0.19	3.41	1.5	16
23	R-121	0.59	0.64	0.83	0.41	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.14	7.22	0.22	4.77	1.5	86

22529-2 - Southbend Crossings | Number of lines: 125 | Run Date: 8/10/2025

NOTES: Inlet N-Values = 0.016; Intensity = 69.22 / (Inlet time + 11.20) ^ 0.75; Return period = 25 Yrs. ; * Indicates Known Q added.All curb inlets are Horiz throat.

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
24	R-122	0.55	0.07	0.48	0.14	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.11	5.59	0.19	3.19	1.5	88
25	R-123	1.03*	0.00	0.00	1.03	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
26	R-49	2.54	0.57	2.24	0.87	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.20	10.21	0.25	6.32	1.5	77
27	R-50	2.14	0.55	1.99	0.70	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.19	9.67	0.24	5.83	1.5	77
28	R-51	1.87	0.49	1.78	0.57	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.18	9.20	0.23	5.41	1.5	26
29	R-52	1.87	0.43	1.74	0.55	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.18	9.11	0.23	5.33	1.5	27
30	R-53	1.87	0.25	1.63	0.49	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.18	8.83	0.23	5.09	1.5	28
31	R-54	1.85	0.09	1.52	0.43	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.17	8.56	0.22	4.85	1.5	29
32	R-55	0.66	0.09	0.66	0.09	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.12	5.98	0.18	2.68	1.5	31
33	R-56	2.04	0.00	1.80	0.25	Comb	6.0	8.70	0.00	8.70	1.92	0.010	1.92	0.020	0.020	0.013	0.17	8.72	0.20	3.95	1.5	30
34	R-57	0.26	0.47	0.65	0.09	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.12	5.95	0.18	2.66	1.5	32
35	R-58	0.53	0.85	0.91	0.47	Comb	6.0	2.90	0.00	2.90	1.92	0.015	1.92	0.020	0.020	0.013	0.14	6.98	0.22	4.67	1.5	34
36	R-59	1.46	0.79	1.67	0.58	Comb	6.0	5.80	0.00	5.80	1.92	0.015	1.92	0.020	0.020	0.013	0.17	8.38	0.23	5.05	1.5	Off
37	R-60	0.44	1.64	1.23	0.85	Comb	6.0	2.90	0.00	2.90	1.92	0.015	1.92	0.020	0.020	0.013	0.16	8.14	0.24	5.81	1.5	35
38	R-61	1.71	0.00	1.06	0.65	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.16	8.17	0.24	5.69	1.5	37
39	R-62	1.71	0.00	1.06	0.65	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.16	8.17	0.24	5.69	1.5	37
40	R-63	0.44	0.64	0.75	0.33	Comb	6.0	2.90	0.00	2.90	1.92	0.015	1.92	0.020	0.020	0.013	0.13	6.37	0.21	4.07	1.5	37
41	R-64	1.60	1.17	1.98	0.79	Comb	6.0	5.80	0.00	5.80	1.92	0.015	1.92	0.020	0.020	0.013	0.18	9.06	0.24	5.67	1.5	36
42	R-65	0.64	1.08	1.08	0.64	Comb	6.0	2.90	0.00	2.90	1.92	0.019	1.92	0.020	0.020	0.013	0.14	7.24	0.22	5.00	1.5	40
43	R-66	0.00	0.00	0.00	0.00	DrGrt	0.0	0.00	3.06	2.63	2.63	Sag	10.00	0.020	0.020	0.013	0.00	10.09	0.00	10.09	0.0	Off
44	R-67	0.44	2.07	1.44	1.08	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.16	8.13	0.24	5.92	1.5	42
45	R-68	2.50	0.97	2.31	1.17	Comb	6.0	5.80	0.00	5.80	1.92	0.022	1.92	0.020	0.020	0.013	0.18	9.18	0.25	6.10	1.5	41
46	R-69	1.71	0.00	1.06	0.65	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.16	8.17	0.24	5.69	1.5	44

22529-2 - Southbend Crossings | Number of lines: 125 | Run Date: 8/10/2025

NOTES: Inlet N-Values = 0.016; Intensity = 69.22 / (Inlet time + 11.20) ^ 0.75; Return period = 25 Yrs. ; * Indicates Known Q added.All curb inlets are Horiz throat.

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
47	R-70	1.71	0.00	1.06	0.65	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.16	8.17	0.24	5.69	1.5	44
48	R-71	1.06	0.90	1.20	0.76	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.15	7.42	0.23	5.20	1.5	44
49	R-72	0.44	1.77	1.31	0.90	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.16	7.76	0.24	5.54	1.5	48
50	R-73	2.50	0.57	2.09	0.97	Comb	6.0	5.80	0.00	5.80	1.92	0.022	1.92	0.020	0.020	0.013	0.18	8.76	0.24	5.70	1.5	45
51	R-74	1.39	0.00	0.90	0.48	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.15	7.55	0.23	5.09	1.5	49
52	R-75	1.39	0.00	0.90	0.48	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.15	7.55	0.23	5.09	1.5	49
53	R-76	1.39	0.65	1.23	0.80	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.15	7.52	0.23	5.30	1.5	49
54	R-77	0.44	1.30	1.10	0.65	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.14	7.09	0.22	4.89	1.5	53
55	R-78	2.45	0.47	2.35	0.57	Comb	6.0	8.70	0.00	8.70	1.92	0.022	1.92	0.020	0.020	0.013	0.17	8.60	0.22	4.65	1.5	50
56	R-79	1.08	0.00	0.75	0.34	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.14	6.88	0.21	4.43	1.5	54
57	R-80	1.08	0.00	0.75	0.34	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.14	6.88	0.21	4.43	1.5	54
58	R-81	1.06	0.66	1.09	0.63	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.14	7.06	0.22	4.85	1.5	54
59	R-82	0.44	1.33	1.11	0.66	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.14	7.13	0.22	4.92	1.5	58
60	R-83	1.22	0.67	1.42	0.47	Comb	6.0	5.80	0.00	5.80	1.92	0.022	1.92	0.020	0.020	0.013	0.15	7.30	0.21	4.34	1.5	55
61	R-84	0.47	0.00	0.38	0.08	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.10	5.01	0.18	2.65	1.5	59
62	R-85	0.62	0.00	0.48	0.14	Comb	6.0	2.90	0.00	2.90	1.92	0.010	1.92	0.020	0.020	0.013	0.11	5.58	0.19	3.19	1.5	59
63	R-86	1.60	0.96	1.46	1.10	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.16	8.19	0.24	5.97	1.5	59
64	R-87	1.54	0.83	1.70	0.67	Comb	6.0	5.80	0.00	5.80	1.92	0.022	1.92	0.020	0.020	0.013	0.16	7.95	0.22	4.94	1.5	60
65	R-88	2.31	0.01	1.35	0.96	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.16	7.88	0.24	5.66	1.5	63
66	R-89	2.06	0.69	1.92	0.83	Comb	6.0	5.80	0.00	5.80	1.92	0.022	1.92	0.020	0.020	0.013	0.17	8.42	0.23	5.38	1.5	64
67	R-90	0.17	0.00	0.16	0.01	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.06	2.98	0.14	0.90	1.5	65
68	R-91	0.13	0.00	0.12	0.00	Comb	6.0	2.90	0.00	2.90	1.92	0.023	1.92	0.020	0.020	0.013	0.05	2.63	0.14	0.60	1.5	21
69	R-92	0.88	1.01	1.17	0.72	Comb	6.0	2.90	0.00	2.90	1.92	0.023	1.92	0.020	0.020	0.013	0.14	7.23	0.23	5.04	1.5	20

22529-2 - Southbend Crossings | Number of lines: 125 | Run Date: 8/10/2025

NOTES: Inlet N-Values = 0.016; Intensity = 69.22 / (Inlet time + 11.20) ^ 0.75; Return period = 25 Yrs. ; * Indicates Known Q added.All curb inlets are Horiz throat.

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
70	R-93	1.78	0.66	1.74	0.69	Comb	6.0	5.80	0.00	5.80	1.92	0.022	1.92	0.020	0.020	0.013	0.16	8.04	0.23	5.02	1.5	66
71	R-94	2.21	0.14	1.70	0.66	Comb	6.0	5.80	0.00	5.80	1.92	0.022	1.92	0.020	0.020	0.013	0.16	7.94	0.22	4.92	1.5	70
72	R-95	2.23	0.16	1.39	1.01	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.16	7.98	0.24	5.77	1.5	69
73	R-96	0.66	0.00	0.52	0.14	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.10	4.94	0.18	2.77	1.5	71
74	R-97	0.71	0.00	0.55	0.16	Comb	6.0	2.90	0.00	2.90	1.92	0.022	1.92	0.020	0.020	0.013	0.10	5.07	0.18	2.90	1.5	72
75	R-76A	2.78	0.00	2.78	0.00	DrGrt	0.0	0.00	3.06	2.93	2.93	Sag	10.00	0.020	0.020	0.013	0.18	28.38	0.18	28.38	0.0	53
76	R-2	1.92	0.21	2.12	0.00	Comb	6.0	8.70	3.96	8.70	1.92	Sag	1.92	0.020	0.020	0.000	0.10	5.20	0.23	5.20	1.5	Off
77	R-3	2.95	1.78	4.73	0.00	Comb	6.0	8.70	1.98	8.70	1.92	Sag	1.92	0.020	0.020	0.013	0.21	10.39	0.33	10.39	1.5	Off
78	R-4	1.42	0.41	1.63	0.21	Comb	6.0	8.70	0.00	8.70	1.92	0.010	1.92	0.020	0.020	0.013	0.17	8.37	0.20	3.70	1.5	76
79	R-5	1.50	0.37	1.65	0.21	Comb	6.0	8.70	0.00	8.70	1.92	0.010	1.92	0.020	0.020	0.013	0.17	8.43	0.20	3.74	1.5	77
80	R-6	2.51	0.29	2.39	0.41	Comb	6.0	8.70	0.00	8.70	1.92	0.010	1.92	0.020	0.020	0.013	0.20	9.81	0.22	4.77	1.5	78
81	R-7	2.04	0.57	2.25	0.37	Comb	6.0	8.70	0.00	8.70	1.92	0.010	1.92	0.020	0.020	0.013	0.19	9.56	0.22	4.58	1.5	79
82	R-8	0.45	0.93	1.10	0.29	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.13	6.45	0.20	3.58	1.5	80
83	R-9	0.46	1.68	1.57	0.57	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.15	7.59	0.22	4.62	1.5	81
84	R-10	1.96	0.55	1.87	0.64	Comb	6.0	5.80	0.00	5.80	1.92	0.011	1.92	0.020	0.020	0.013	0.19	9.26	0.24	5.56	1.5	83
85	R-11	2.00	0.43	1.82	0.61	Comb	6.0	5.80	0.00	5.80	1.92	0.011	1.92	0.020	0.020	0.013	0.18	9.15	0.23	5.46	1.5	83
86	R-14	0.34	0.41	0.66	0.09	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.12	5.98	0.18	2.68	1.5	82
87	R-12	3.31	0.00	2.76	0.55	Comb	6.0	8.70	0.00	8.70	1.92	0.011	1.92	0.020	0.020	0.013	0.21	10.26	0.23	5.24	1.5	84
88	R-15	0.70	0.14	0.73	0.11	Comb	6.0	5.80	0.00	5.80	1.92	0.010	1.92	0.020	0.020	0.013	0.12	6.24	0.18	2.89	1.5	82
89	R-13	2.84	0.00	2.41	0.43	Comb	6.0	8.70	0.00	8.70	1.92	0.011	1.92	0.020	0.020	0.013	0.19	9.70	0.22	4.80	1.5	85
90	R-16	2.08	0.45	1.79	0.74	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.16	8.09	0.23	5.09	1.5	82
91	R-17	1.13	0.62	1.33	0.42	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.14	7.03	0.21	4.11	1.5	83
92	R-18	1.02	0.81	1.38	0.45	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.14	7.15	0.21	4.22	1.5	90

22529-2 - Southbend Crossings | Number of lines: 125 | Run Date: 8/10/2025

NOTES: Inlet N-Values = 0.016; Intensity = 69.22 / (Inlet time + 11.20) ^ 0.75; Return period = 25 Yrs. ; * Indicates Known Q added.All curb inlets are Horiz throat.

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
93	R-19	0.42	1.83	1.63	0.62	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.15	7.73	0.22	4.76	1.5	91
94	R-20	2.31	0.27	1.89	0.68	Comb	6.0	5.80	0.00	5.80	1.92	0.012	1.92	0.020	0.020	0.013	0.18	9.19	0.24	5.59	1.5	93
95	R-21	2.26	0.45	1.98	0.74	Comb	6.0	5.80	0.00	5.80	1.92	0.012	1.92	0.020	0.020	0.013	0.19	9.38	0.24	5.75	1.5	93
96	R-24	2.21	0.48	1.89	0.81	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.17	8.28	0.23	5.27	1.5	92
97	R-22	2.07	0.00	1.80	0.27	Comb	6.0	8.70	0.00	8.70	1.92	0.012	1.92	0.020	0.020	0.013	0.17	8.47	0.20	3.95	1.5	94
98	R-25	1.13	0.59	1.31	0.41	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.14	6.99	0.21	4.07	1.5	93
99	R-23	1.97	0.00	1.52	0.45	Comb	6.0	5.80	0.00	5.80	1.92	0.012	1.92	0.020	0.020	0.013	0.17	8.31	0.22	4.80	1.5	95
100	R-26	1.00	0.91	1.43	0.48	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.15	7.27	0.21	4.34	1.5	96
101	R-27	0.48	1.16	1.05	0.59	Comb	6.0	2.90	0.00	2.90	1.92	0.023	1.92	0.020	0.020	0.013	0.14	6.87	0.22	4.67	1.5	98
102	R-28	1.99	0.77	2.35	0.41	Comb	6.0	8.70	0.00	8.70	1.92	0.011	1.92	0.020	0.020	0.013	0.19	9.59	0.22	4.71	1.5	101
103	R-29	1.81	0.59	2.07	0.33	Comb	6.0	8.70	0.00	8.70	1.92	0.011	1.92	0.020	0.020	0.013	0.18	9.10	0.21	4.34	1.5	101
104	R-32	2.21	0.69	2.00	0.91	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.17	8.52	0.23	5.50	1.5	100
105	R-30	1.92	0.00	1.16	0.77	Comb	6.0	2.90	0.00	2.90	1.92	0.011	1.92	0.020	0.020	0.013	0.17	8.37	0.24	5.93	1.5	102
106	R-33	1.06	0.67	1.32	0.41	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.14	7.02	0.21	4.10	1.5	101
107	R-31	1.60	0.00	1.01	0.59	Comb	6.0	2.90	0.00	2.90	1.92	0.011	1.92	0.020	0.020	0.013	0.16	7.83	0.23	5.39	1.5	103
108	R-34	1.00	0.84	1.15	0.69	Comb	6.0	2.90	0.00	2.90	1.92	0.023	1.92	0.020	0.020	0.013	0.14	7.18	0.22	4.98	1.5	104
109	R-35	0.48	1.90	1.71	0.67	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.16	7.90	0.22	4.91	1.5	106
110	R-36	3.02	0.00	2.49	0.53	Comb	6.0	8.70	0.00	8.70	1.92	0.015	1.92	0.020	0.020	0.013	0.19	9.36	0.22	4.89	1.5	109
111	R-37	2.54	0.00	1.79	0.76	Comb	6.0	5.80	0.00	3.80	1.92	0.015	1.92	0.020	0.020	0.013	0.18	8.77	0.24	5.57	1.5	109
112	R-38	2.14	0.62	1.92	0.84	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.17	8.35	0.23	5.35	1.5	108
113	R-39	1.08	0.60	1.07	0.61	Comb	6.0	2.90	0.00	2.90	1.92	0.023	1.92	0.020	0.020	0.013	0.14	6.94	0.22	4.74	1.5	109
114	R-40	1.06	1.20	1.64	0.62	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.15	7.74	0.22	4.77	1.5	112
115	R-41	0.48	1.73	1.61	0.60	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.15	7.69	0.22	4.72	1.5	113

22529-2 - Southbend Crossings | Number of lines: 125 | Run Date: 8/10/2025

NOTES: Inlet N-Values = 0.016; Intensity = 69.22 / (Inlet time + 11.20) ^ 0.75; Return period = 25 Yrs. ; * Indicates Known Q added.All curb inlets are Horiz throat.

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
116	R-42	2.37	0.00	2.02	0.35	Comb	6.0	8.70	0.00	8.70	1.92	0.014	1.92	0.020	0.020	0.013	0.17	8.66	0.21	4.25	1.5	115
117	R-43	2.06	0.00	1.56	0.50	Comb	6.0	5.80	0.00	5.80	1.92	0.014	1.92	0.020	0.020	0.013	0.16	8.22	0.22	4.84	1.5	115
118	R-44	2.48	0.36	1.97	0.88	Comb	6.0	5.80	0.00	5.80	1.92	0.023	1.92	0.020	0.020	0.013	0.17	8.45	0.23	5.44	1.5	115
119	R-45	2.55	0.18	1.53	1.20	Comb	6.0	2.90	0.00	2.90	1.92	0.023	1.92	0.020	0.020	0.013	0.17	8.32	0.25	6.11	1.5	114
120	R-46	0.76	0.00	0.59	0.18	Comb	6.0	2.90	0.00	2.90	1.92	0.023	1.92	0.020	0.020	0.013	0.10	5.16	0.18	2.99	1.5	119
121	R-47	0.96	0.23	0.83	0.36	Comb	6.0	2.90	0.00	2.90	1.92	0.023	1.92	0.020	0.020	0.013	0.12	6.09	0.20	3.91	1.5	118
122	R-17A	7.85	0.00	7.85	0.00	DrGrt	0.0	0.00	3.06	2.93	2.93	Sag	10.00	0.020	0.020	0.013	0.37	46.80	0.37	46.80	0.0	91
123	R-25A	6.61	0.00	6.61	0.00	DrGrt	0.0	0.00	3.06	2.93	2.93	Sag	10.00	0.020	0.020	0.013	0.33	42.81	0.33	42.81	0.0	98
124	R-33A	2.52	0.00	2.52	0.00	DrGrt	0.0	0.00	3.06	2.93	2.93	Sag	10.00	0.020	0.020	0.013	0.17	27.25	0.17	27.25	0.0	106
125	R-125	10.00	0.00	10.00	0.00	Hdwl	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.013	0.00	0.00	0.00	0.00	0.0	Off

22529-2 - Southbend Crossings | Number of lines: 125 | Run Date: 8/10/2025

NOTES: Inlet N-Values = 0.016; Intensity = 69.22 / (Inlet time + 11.20) ^ 0.75; Return period = 25 Yrs. ; * Indicates Known Q added.All curb inlets are Horiz throat.

Storm Sewer Inlet Time Tabulation

Line No.	Line ID	Tc Method	Sheet Flow					Shallow Concentrated Flow					Channel Flow							Total Travel Time (min)
			n-Value	flow Length (ft)	2-yr 24h P (in)	Land Slope (%)	Travel Time (min)	flow Length (ft)	Water Slope (%)	Surf Descr	Ave Vel (ft/s)	Travel Time (min)	X-sec Area (sqft)	Wetted Perim (ft)	Chan Slope (%)	n-Value	Vel	flow Length (ft)	Travel Time (min)	
1	R98-R99	User																		5.00
2	R99-R100	User																		5.00
3	R99-R101	User																		5.00
4	R101-R102	User																		5.00
5	R101-R103	User																		5.00
6	R103-R104	User																		5.00
7	R103-R105	User																		5.00
8	R105-R106	User																		5.00
9	R105-R107	User																		5.00
10	R107-R108	User																		5.00
11	R107-R109	User																		5.00
12	R109-R110	User																		5.00
13	R109-R111	User																		5.00
14	R111-R112	User																		5.00
15	R111-R113	User																		5.00
16	R113-R114	User																		5.00
17	R113-R115	User																		5.00
18	R115-R116	User																		5.00
19	R115-R117	User																		5.00
20	R117-R118	User																		5.00
21	R118-R119	User																		5.00
22	R114-R114A	User																		5.00
23	R120-R121	User																		5.00
24	R121-R122	User																		5.00

22529-2 - Southbend Crossings | Min. Tc used for intensity calculations = 5 min | Number of lines: 125 | Date: 8/10/2025

Storm Sewer Inlet Time Tabulation

Line No.	Line ID	Tc Method	Sheet Flow					Shallow Concentrated Flow					Channel Flow							Total Travel Time (min)
			n-Value	flow Length (ft)	2-yr 24h P (in)	Land Slope (%)	Travel Time (min)	flow Length (ft)	Water Slope (%)	Surf Descr	Ave Vel (ft/s)	Travel Time (min)	X-sec Area (sqft)	Wetted Perim (ft)	Chan Slope (%)	n-Value	Vel	flow Length (ft)	Travel Time (min)	
25	R122-R123	User																		5.00
26	R48-R49	User																		5.00
27	R49-R50	User																		5.00
28	R49-R51	User																		5.00
29	R51-R52	User																		5.00
30	R51-R53	User																		5.00
31	R53-R54	User																		5.00
32	R54-R55	User																		5.00
33	R55-R56	User																		5.00
34	R55-R57	User																		5.00
35	R57-R58	User																		5.00
36	R58-R59	User																		5.00
37	R58-R60	User																		5.00
38	R60-R61	User																		5.00
39	R61-R62	User																		5.00
40	R62-R63	User																		5.00
41	R63-R64	User																		5.00
42	R63-R65	User																		5.00
43	R65-R66	User																		5.00
44	R65-R67	User																		5.00
45	R67-R68	User																		5.00
46	R67-R69	User																		5.00
47	R69-R70	User																		5.00
48	R70-R71	User																		5.00

22529-2 - Southbend Crossings | Min. Tc used for intensity calculations = 5 min | Number of lines: 125 | Date: 8/10/2025

Storm Sewer Inlet Time Tabulation

Line No.	Line ID	Tc Method	Sheet Flow					Shallow Concentrated Flow					Channel Flow							Total Travel Time (min)
			n-Value	flow Length (ft)	2-yr 24h P (in)	Land Slope (%)	Travel Time (min)	flow Length (ft)	Water Slope (%)	Surf Descr	Ave Vel (ft/s)	Travel Time (min)	X-sec Area (sqft)	Wetted Perim (ft)	Chan Slope (%)	n-Value	Vel	flow Length (ft)	Travel Time (min)	
49	R71-R72	User																		5.00
50	R72-R73	User																		5.00
51	R72-R74	User																		5.00
52	R74-R75	User																		5.00
53	R75-R76	User																		5.00
54	R76-R77	User																		5.00
55	R77-R78	User																		5.00
56	R77-R79	User																		5.00
57	R79-R80	User																		5.00
58	R80-R81	User																		5.00
59	R81-R82	User																		5.00
60	R82-R83	User																		5.00
61	R82-R84	User																		5.00
62	R84-R85	User																		5.00
63	R85-R86	User																		5.00
64	R86-R87	User																		5.00
65	R86-R88	User																		5.00
66	R88-R89	User																		5.00
67	R88-R90	User																		5.00
68	R90-R91	User																		5.00
69	R91-R92	User																		5.00
70	R90-R93	User																		5.00
71	R93-R94	User																		5.00
72	R94-R95	User																		5.00

22529-2 - Southbend Crossings | Min. Tc used for intensity calculations = 5 min | Number of lines: 125 | Date: 8/10/2025

Storm Sewer Inlet Time Tabulation

Line No.	Line ID	Tc Method	Sheet Flow					Shallow Concentrated Flow					Channel Flow							Total Travel Time (min)
			n-Value	flow Length (ft)	2-yr 24h P (in)	Land Slope (%)	Travel Time (min)	flow Length (ft)	Water Slope (%)	Surf Descr	Ave Vel (ft/s)	Travel Time (min)	X-sec Area (sqft)	Wetted Perim (ft)	Chan Slope (%)	n-Value	Vel	flow Length (ft)	Travel Time (min)	
73	R94-R96	User																		5.00
74	R96-R97	User																		5.00
75	R76-R76A	User																		5.00
76	R1-R2	User																		5.00
77	R2-R3	User																		5.00
78	R2-R4	User																		5.00
79	R4-R5	User																		5.00
80	R4-R6	User																		5.00
81	R6-R7	User																		5.00
82	R6-R8	User																		5.00
83	R8-R9	User																		5.00
84	R9-R10	User																		5.00
85	R10-R11	User																		5.00
86	R8-R14	User																		5.00
87	R10-R12	User																		5.00
88	R14-R15	User																		5.00
89	R12-R13	User																		5.00
90	R15-R16	User																		5.00
91	R16-R17	User																		5.00
92	R16-R18	User																		5.00
93	R18-R19	User																		5.00
94	R19-R20	User																		5.00
95	R20-R21	User																		5.00
96	R18-R24	User																		5.00

22529-2 - Southbend Crossings | Min. Tc used for intensity calculations = 5 min | Number of lines: 125 | Date: 8/10/2025

Storm Sewer Inlet Time Tabulation

Line No.	Line ID	Tc Method	Sheet Flow					Shallow Concentrated Flow					Channel Flow							Total Travel Time (min)
			n-Value	flow Length (ft)	2-yr 24h P (in)	Land Slope (%)	Travel Time (min)	flow Length (ft)	Water Slope (%)	Surf Descr	Ave Vel (ft/s)	Travel Time (min)	X-sec Area (sqft)	Wetted Perim (ft)	Chan Slope (%)	n-Value	Vel	flow Length (ft)	Travel Time (min)	
97	R20-R22	User																		5.00
98	R24-R25	User																		5.00
99	R22-R23	User																		5.00
100	R24-R26	User																		5.00
101	R26-R27	User																		5.00
102	R27-R28	User																		5.00
103	R28-R29	User																		5.00
104	R26-R32	User																		5.00
105	R28-R30	User																		5.00
106	R32-R33	User																		5.00
107	R30-R31	User																		5.00
108	R32-R34	User																		5.00
109	R34-R35	User																		5.00
110	R35-R36	User																		5.00
111	R36-R37	User																		5.00
112	R34-R38	User																		5.00
113	R38-R39	User																		5.00
114	R38-R40	User																		5.00
115	R40-R41	User																		5.00
116	R41-R42	User																		5.00
117	R42-R43	User																		5.00
118	R43-R44	User																		5.00
119	R44-R45	User																		5.00
120	R45-R46	User																		5.00

22529-2 - Southbend Crossings | Min. Tc used for intensity calculations = 5 min | Number of lines: 125 | Date: 8/10/2025

Storm Sewer Inlet Time Tabulation

Line No.	Line ID	Tc Method	Sheet Flow					Shallow Concentrated Flow					Channel Flow							Total Travel Time (min)
			n-Value	flow Length (ft)	2-yr 24h P (in)	Land Slope (%)	Travel Time (min)	flow Length (ft)	Water Slope (%)	Surf Descr	Ave Vel (ft/s)	Travel Time (min)	X-sec Area (sqft)	Wetted Perim (ft)	Chan Slope (%)	n-Value	Vel	flow Length (ft)	Travel Time (min)	
121	R46-R47	User																		5.00
122	R17-R17A	User																		5.00
123	R25-R25A	User																		5.00
124	R33-R33A	User																		5.00
125	R124-R125	User																		5.00

22529-2 - Southbend Crossings | Min. Tc used for intensity calculations = 5 min | Number of lines: 125 | Date: 8/10/2025

TR55 Tc Worksheet

Hyd. No. 1

Existing Conditions Subbasin A

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.400		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.90		0.00		0.00		
Land slope (%)	= 10.25		0.00		0.00		
Travel Time (min)	**= 10.12**	**+**	**0.00**	**+**	**0.00**	**=**	**10.12**
Shallow Concentrated Flow							
Flow length (ft)	= 311.41		1614.86		464.48		
Watercourse slope (%)	= 10.30		2.51		1.50		
Surface description	= Unpaved		Unpaved		Paved		
Average velocity (ft/s)	=5.18		2.56		2.49		
Travel Time (min)	**= 1.00**	**+**	**10.53**	**+**	**3.11**	**=**	**14.64**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 24.76 min

TR55 Tc Worksheet

Hyd. No. 2

Proposed Conditions Subbasin A

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.150		0.011		0.011		
Flow length (ft)	= 57.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.90		0.00		0.00		
Land slope (%)	= 2.20		0.00		0.00		
Travel Time (min)	**= 5.45**	**+**	**0.00**	**+**	**0.00**	**=**	**5.45**
Shallow Concentrated Flow							
Flow length (ft)	= 42.30		0.00		0.00		
Watercourse slope (%)	= 4.70		0.00		0.00		
Surface description	= Unpaved		Unpaved		Unpaved		
Average velocity (ft/s)	=3.50		0.00		0.00		
Travel Time (min)	**= 0.20**	**+**	**0.00**	**+**	**0.00**	**=**	**0.20**
Channel Flow							
X sectional flow area (sqft)	= 0.44		0.53		0.61		
Wetted perimeter (ft)	= 6.73		7.40		7.96		
Channel slope (%)	= 2.50		1.50		1.00		
Manning's n-value	= 0.013		0.015		0.013		
Velocity (ft/s)	=2.90		2.07		2.05		
Flow length (ft)	({0})1627.0		250.1		816.6		
Travel Time (min)	**= 9.36**	**+**	**2.01**	**+**	**6.65**	**=**	**18.03**

Total Travel Time, Tc ..... 23.68 min

TR55 Tc Worksheet

Hyd. No. 4

Exsting Conditions Subbasin B

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.400		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.90		0.00		0.00		
Land slope (%)	= 8.14		0.00		0.00		
Travel Time (min)	**= 11.09**	**+**	**0.00**	**+**	**0.00**	**=**	**11.09**
Shallow Concentrated Flow							
Flow length (ft)	= 328.69		996.60		711.12		
Watercourse slope (%)	= 8.02		3.20		1.63		
Surface description	= Unpaved		Unpaved		Unpaved		
Average velocity (ft/s)	=4.57		2.89		2.06		
Travel Time (min)	**= 1.20**	**+**	**5.75**	**+**	**5.75**	**=**	**12.71**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 23.80 min

TR55 Tc Worksheet

Hyd. No. 5

Proposed Conditions Subbasin B

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.150		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.90		0.00		0.00		
Land slope (%)	= 1.82		0.00		0.00		
Travel Time (min)	**= 9.22**	**+**	**0.00**	**+**	**0.00**	**=**	**9.22**
Shallow Concentrated Flow							
Flow length (ft)	= 1475.70		362.37		396.57		
Watercourse slope (%)	= 2.15		1.81		2.47		
Surface description	= Unpaved		Unpaved		Unpaved		
Average velocity (ft/s)	=2.37		2.17		2.54		
Travel Time (min)	**= 10.40**	**+**	**2.78**	**+**	**2.61**	**=**	**15.78**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 25.00 min

TR55 Tc Worksheet

Hyd. No. 7

Existing Conditions Subbasin C

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.400		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.90		0.00		0.00		
Land slope (%)	= 8.86		0.00		0.00		
Travel Time (min)	**= 10.72**	**+**	**0.00**	**+**	**0.00**	**=**	**10.72**
Shallow Concentrated Flow							
Flow length (ft)	= 188.91		168.38		191.50		
Watercourse slope (%)	= 10.18		7.82		4.44		
Surface description	= Unpaved		Unpaved		Unpaved		
Average velocity (ft/s)	=5.15		4.51		3.40		
Travel Time (min)	**= 0.61**	**+**	**0.62**	**+**	**0.94**	**=**	**2.17**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 12.90 min

TR55 Tc Worksheet

Hyd. No. 8

Proposed Conditions Subbasin C

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.150		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.90		0.00		0.00		
Land slope (%)	= 4.87		0.00		0.00		
Travel Time (min)	**= 6.22**	**+**	**0.00**	**+**	**0.00**	**=**	**6.22**
Shallow Concentrated Flow							
Flow length (ft)	= 150.68		238.71		0.00		
Watercourse slope (%)	= 5.42		4.26		0.00		
Surface description	= Unpaved		Unpaved		Paved		
Average velocity (ft/s)	=3.76		3.33		0.00		
Travel Time (min)	**= 0.67**	**+**	**1.19**	**+**	**0.00**	**=**	**1.86**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 8.08 min

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Maury County, Tennessee

May 6, 2025

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:4,650 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

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

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

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

Soil Survey Area: Maury County, Tennessee
Survey Area Data: Version 19, Sep 12, 2024

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

Date(s) aerial images were photographed: Mar 20, 2021—Jun 14, 2021

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ae	Armour silt loam, eroded gently sloping phase	4.5	7.5%
Ag	Armour silt loam, 5 to 12 percent slopes	3.2	5.4%
Bm	Burgin silt loam, phosphatic phase (Eagleville)	0.0	0.0%
Df	Donerail silt loam, gently sloping phase	21.4	36.2%
Ga	Godwin silt loam	13.5	22.8%
Mb	Maury silt loam, eroded gently sloping phase	0.2	0.3%
Me	Maury silty clay loam, eroded sloping phase	0.2	0.4%
Mo	Mimosa silty clay loam, 5 to 12 percent slopes, eroded	8.4	14.2%
Rd	Rockland, Mimosa and Inman materials, sloping	7.9	13.3%
Totals for Area of Interest		**59.2**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the

scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Maury County, Tennessee

Ae—Armour silt loam, eroded gently sloping phase

Map Unit Setting

National map unit symbol: kq4h
Elevation: 450 to 700 feet
Mean annual precipitation: 46 to 60 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 190 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Armour and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Armour

Setting

Landform: Hillslopes
Landform position (three-dimensional): Base slope
Parent material: Silty alluvium and/or loamy alluvium over clayey residuum weathered from phosphatic limestone

Typical profile

H1 - 0 to 14 inches: silt loam
H2 - 14 to 40 inches: silty clay loam
H3 - 40 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F123XY004TN - Deep Loamy Terraces And Depressions
Hydric soil rating: No

Ag—Armour silt loam, 5 to 12 percent slopes

Map Unit Setting

National map unit symbol: 2td32

Elevation: 500 to 850 feet
Mean annual precipitation: 48 to 58 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 190 to 230 days
Farmland classification: Not prime farmland

Map Unit Composition

Armour and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Armour

Setting

Landform: Stream terraces
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Concave, convex
Across-slope shape: Linear, convex
Parent material: Silty alluvium over clayey residuum weathered from phosphatic limestone

Typical profile

A - 0 to 19 inches: silt loam
Bt - 19 to 58 inches: silty clay loam
BC - 58 to 79 inches: clay

Properties and qualities

Slope: 5 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.6 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: F123XY004TN - Deep Loamy Terraces And Depressions
Hydric soil rating: No

Minor Components

Byler

Percent of map unit: 4 percent
Landform: Stream terraces
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Concave, convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Dellrose

Percent of map unit: 4 percent
Landform: Hillsides
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Mimosa

Percent of map unit: 2 percent
Landform: Escarpments
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Bm—Burgin silt loam, phosphatic phase (Eagleville)

Map Unit Setting

National map unit symbol: kq51
Elevation: 610 to 2,090 feet
Mean annual precipitation: 48 to 63 inches
Mean annual air temperature: 45 to 72 degrees F
Frost-free period: 154 to 189 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Eagleville and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eagleville

Setting

Landform: Flood plains
Landform position (three-dimensional): Tread
Parent material: Clayey alluvium derived from limestone

Typical profile

H1 - 0 to 14 inches: silt loam
H2 - 14 to 35 inches: clay
R - 35 to 45 inches: bedrock

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Somewhat poorly drained
Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 12 to 18 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D
Ecological site: F123XY005TN - Floodplains
Hydric soil rating: No

Df—Donerail silt loam, gently sloping phase

Map Unit Setting

National map unit symbol: kq5l
Elevation: 610 to 820 feet
Mean annual precipitation: 46 to 60 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 190 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Donerail and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Donerail

Setting

Landform: Hillslopes
Landform position (three-dimensional): Crest
Parent material: Clayey alluvium derived from limestone

Typical profile

H1 - 0 to 10 inches: silt loam
H2 - 10 to 20 inches: silty clay loam
H3 - 20 to 40 inches: silty clay
H4 - 40 to 60 inches: silty clay

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F123XY004TN - Deep Loamy Terraces And Depressions
Hydric soil rating: No

Ga—Godwin silt loam

Map Unit Setting

National map unit symbol: kq66
Elevation: 600 to 1,000 feet
Mean annual precipitation: 46 to 54 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 190 to 220 days
Farmland classification: Prime farmland if protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Godwin and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Godwin

Setting

Landform: Hillslopes
Landform position (three-dimensional): Base slope
Parent material: Clayey alluvium derived from limestone

Typical profile

H1 - 0 to 18 inches: silt loam
H2 - 18 to 30 inches: silty clay loam
H3 - 30 to 60 inches: clay

Properties and qualities

Slope: 0 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Ecological site: F123XY005TN - Floodplains
Hydric soil rating: No

Mb—Maury silt loam, eroded gently sloping phase

Map Unit Setting

National map unit symbol: kq72
Elevation: 540 to 930 feet
Mean annual precipitation: 46 to 60 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 190 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Maury and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Maury

Setting

Landform: Hillslopes
Landform position (three-dimensional): Crest
Parent material: Loess over clayey residuum and/or alluvium derived from limestone

Typical profile

H1 - 0 to 14 inches: silt loam
H2 - 14 to 26 inches: silty clay loam
H3 - 26 to 40 inches: silty clay
H4 - 40 to 60 inches: clay

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 11.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Ecological site: F123XY001TN - Limestone Uplands
Hydric soil rating: No

Me—Maury silty clay loam, eroded sloping phase

Map Unit Setting

National map unit symbol: kq75
Elevation: 560 to 890 feet
Mean annual precipitation: 46 to 60 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 190 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Maury and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Maury

Setting

Landform: Hillslopes
Landform position (three-dimensional): Side slope
Parent material: Loess over clayey residuum and/or alluvium derived from limestone

Typical profile

H1 - 0 to 16 inches: silty clay loam
H2 - 16 to 40 inches: silty clay
H3 - 40 to 60 inches: clay

Properties and qualities

Slope: 5 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: F123XY001TN - Limestone Uplands
Hydric soil rating: No

Mo—Mimosa silty clay loam, 5 to 12 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2v640
Elevation: 460 to 1,160 feet
Mean annual precipitation: 48 to 58 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 190 to 230 days
Farmland classification: Not prime farmland

Map Unit Composition

Mimosa and similar soils: 78 percent
Minor components: 22 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mimosa

Setting

Landform: Escarpments
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Clayey residuum weathered from limestone

Typical profile

Ap - 0 to 6 inches: silty clay loam
Bt - 6 to 50 inches: clay
C - 50 to 55 inches: clay
R - 55 to 65 inches: bedrock

Properties and qualities

Slope: 5 to 12 percent
Depth to restrictive feature: 39 to 59 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: F123XY001TN - Limestone Uplands
Hydric soil rating: No

Minor Components

Dellrose

Percent of map unit: 8 percent
Landform: Hillsides
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Armour

Percent of map unit: 7 percent
Landform: Stream terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Gladdice

Percent of map unit: 4 percent
Landform: Escarpments
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Ashwood

Percent of map unit: 3 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Rd—Rockland, Mimosa and Inman materials, sloping

Map Unit Setting

National map unit symbol: kq7v
Elevation: 500 to 1,100 feet
Mean annual precipitation: 48 to 54 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 190 to 205 days
Farmland classification: Not prime farmland

Map Unit Composition

Rock outcrop: 40 percent

Mimosa and similar soils: 30 percent
Inman and similar soils: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rock Outcrop

Typical profile
R - 0 to 10 inches: bedrock

Description of Mimosa

Setting
Landform: Hillslopes
Landform position (three-dimensional): Crest
Parent material: Clayey residuum weathered from limestone

Typical profile
H1 - 0 to 6 inches: silt loam
H2 - 6 to 20 inches: clay
H3 - 20 to 55 inches: clay
R - 55 to 65 inches: bedrock

Properties and qualities
Slope: 3 to 12 percent
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.5 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: F123XY001TN - Limestone Uplands
Hydric soil rating: No

Description of Inman

Setting
Landform: Hillslopes
Landform position (three-dimensional): Crest
Parent material: Clayey residuum weathered from limestone and shale

Typical profile
H1 - 0 to 6 inches: flaggy silty clay loam
H2 - 6 to 32 inches: flaggy clay
Cr - 32 to 42 inches: bedrock

Properties and qualities
Slope: 3 to 12 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: F123XY001TN - Limestone Uplands
Hydric soil rating: No

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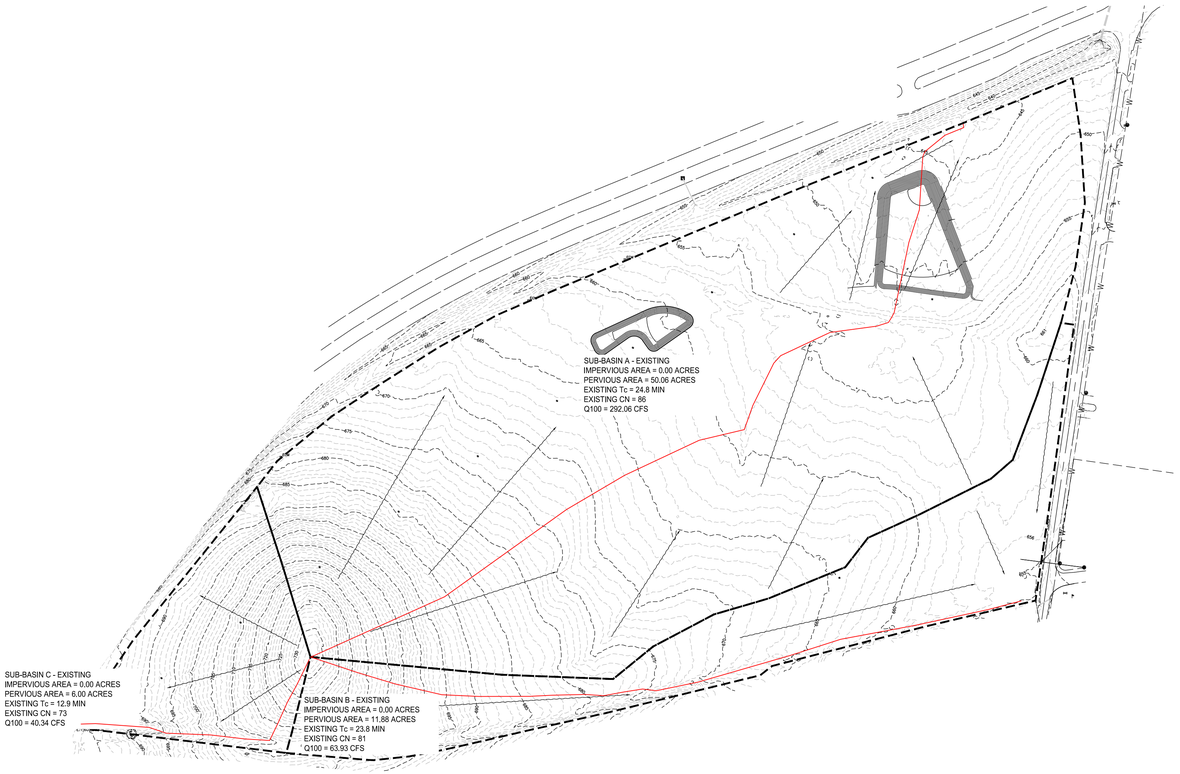
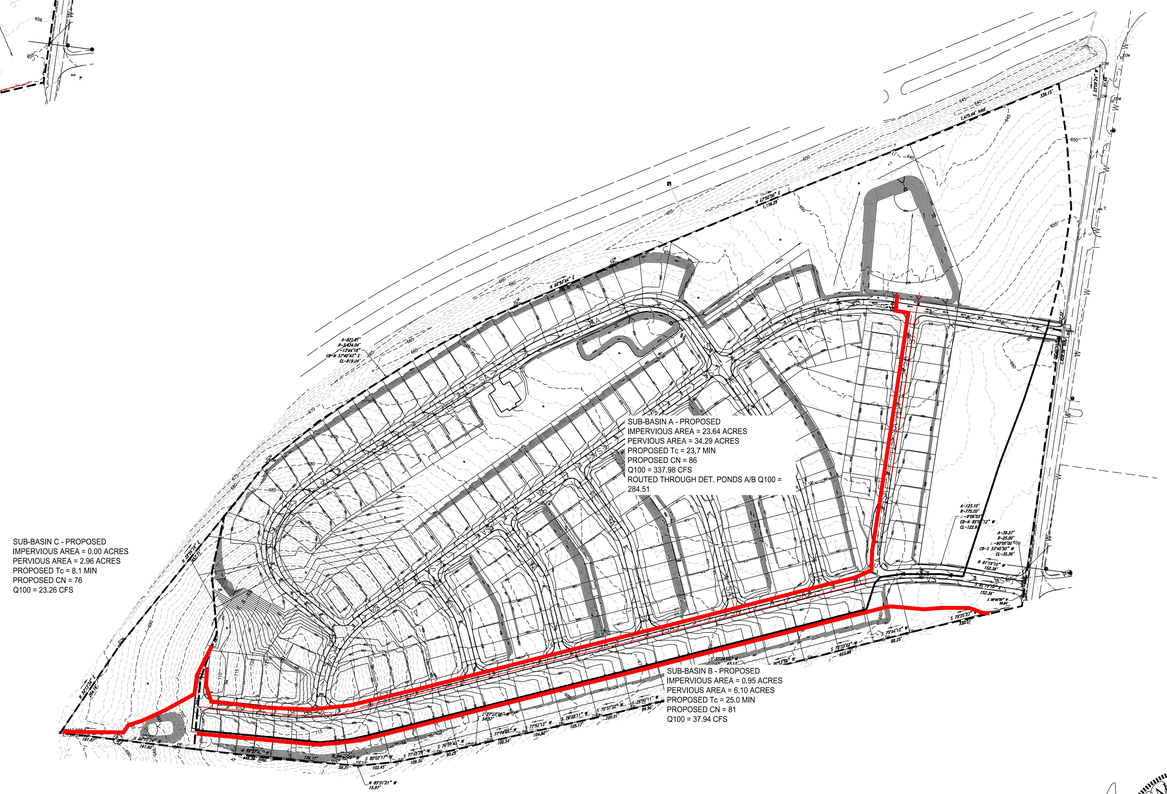
Appendix 3

Drainage Map

DRAINAGE MAP



EXISTING CONDITIONS



PROPOSED CONDITIONS

GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

TN GRID NORTH

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REVISIONS
DATE

Southbend Crossings
SOUTH CROSS BRIDGES - BYPASS PROPERTY
MT. PLEASANT, MAURY COUNTY, TENNESSEE
DRAINAGE AREA MAP

Drawn: BG
Checked: JC
Approved: GV
Date: 08/12/2025

Job. no. 22529-3
Scale: Vertical: SEE PLAN
Horizontal:

MP-1

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FILE: J:\WES_Engineers_Surveyors 2022\22529 - Camelot - King Property Mt Pleasant - McBroom\22529-2 - Southbend - Brightland\Dwg\Engineering\22529-2 Base.dwg