Preliminary
Stormwater Management Report
for
Daniell Dr. & Atlanta Rd
Self Storage Facility

Land Lot 444
17th District, 2nd Section
City of Smyrna
Cobb County, Georgia

prepared by:

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SMALL BUSINESS HALL OF FAME

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11/13/2020

OBJECTIVE

The objective of this preliminary study is to provide an overview of the hydrologic impact that will result from the construction of a self storage facility. In general, the primary hydrologic impact of development is an increase in peak storm water runoff rates from the site. This report provides an assessment of proposed on-site storm water management facilities.

SITE DESCRIPTION

The existing property is located at the corner of Atlanta Road and Daniell Drive in the City of Smyrna. The site is developed with a 20,000 sf warehouse and three single family homes. Currently, the majority runoff from the site, Basin A, flows northwest to an existing stormwater management facility, which is mostly filled with debris. Basin B is a small basin that sheet flows to the west offsite. Basins A and B converge approximately 200' downstream in a storm system on Daniell Drive. Basin C is a small basin that sheets flows to the southeast onto Atlanta Road.

Basins A, B, and C drains to storm systems that discharge into a tributary of Nickajack Creek, which confluences with Nickajack Creek approximately two miles downstream.

HYDROLOGIC EVALUATION

Hydrologic data for the evaluation was based on Cobb County GIS topography, USGS Quad Maps of the surrounding areas and the development plan for the tract. This data was used to compute peak storm water runoff rates for the 2, 5, 10, 25, 50, and 100 years events.

In this study, peak flow rates for all Study Points were determined using the SCS Method. Water quality storage volumes and Channel Protection Volumes were determined using the Georgia Stormwater Management Manual specifications.

Existing conditions were modeled at the Study Point as detailed in the basin maps. Proposed conditions were modeled looking at the same study point from the existing conditions. A summary of existing and proposed flows are provided later in this report.

DEVELOPMENT SUMMARY

The Post Developed Site will be redeveloped into a self storage facility. The onsite drainage areas will have three drainage basins, like the predeveloped condition. All proposed impervious area will be in post developed Basin A and will be directed to the proposed stormwater maintenance facility. Water quality will be provided by infiltration or a proprietary device.

Post developed Basins B and C will be reduced in area and impervious coverage, therefore, stormwater maintenance facilities will not be necessary since post developed peak flow rates will be less than pre-developed peak flow rates.

RECOMMENDATIONS & CONCLUSIONS

This preliminary study demonstrates there is adequate area to provide an onsite stormwater management system. Post developed peak flow rates will be detained to pre-developed existing conditions. Water quality will be met with infiltration practices or a proprietary device, per the Georgia Stormwater Management Manual and City of Smyrna requirements.

FLOOD PROTECTION SUMMARY TABLES

BASIN A			
Peak Flow Summary			
Storm (year)	Existing (cfs)	Proposed (cfs)	% Reduction
1	7.50	4.34	**42.2%**
2	10.44	6.34	**39.3%**
5	13.51	8.37	**38.0%**
10	16.64	10.69	**35.8%**
25	20.88	13.40	**35.8%**
50	24.08	14.86	**38.3%**
100	27.28	16.19	**40.7%**

BASIN B			
Peak Flow Summary			
Storm (year)	Existing (cfs)	Proposed (cfs)	% Reduction
1	0.041	0.041	**0.0%**
2	0.110	0.110	**0.0%**
5	0.19	0.19	**0.0%**
10	0.29	0.29	**0.0%**
25	0.42	0.42	**0.0%**
50	0.53	0.53	**0.0%**
100	0.65	0.65	**0.0%**

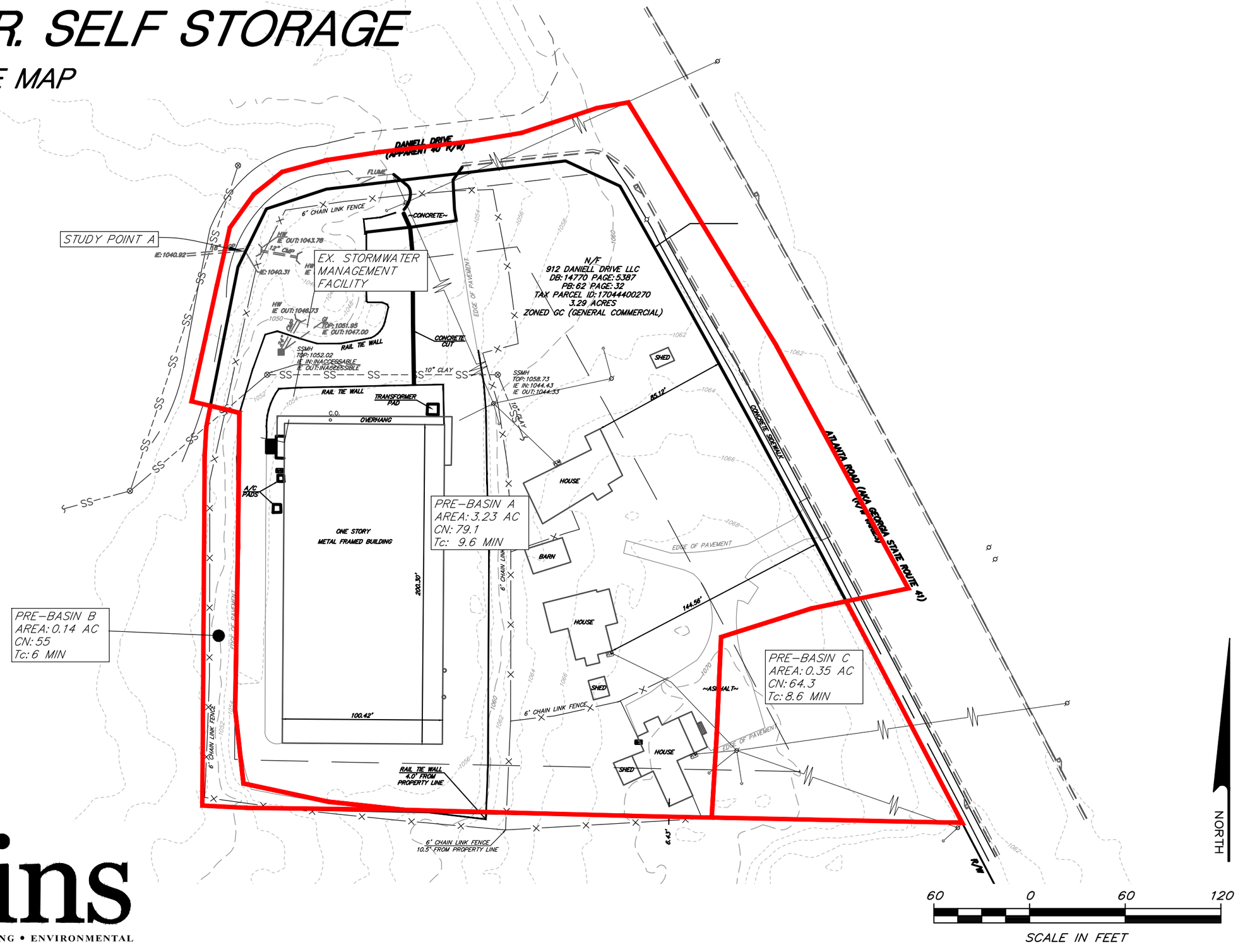
BASIN C			
Peak Flow Summary			
Storm (year)	Existing (cfs)	Proposed (cfs)	% Reduction
1	0.321	0.104	**67.6%**
2	0.550	0.198	**64.0%**
5	0.804	0.305	**62.1%**
10	1.078	0.422	**60.9%**
25	1.465	0.590	**59.7%**
50	1.768	0.722	**59.2%**
100	2.082	0.859	**58.7%**

Preliminary Pond Stage-Storage-Elevation			
Storm (year)	Water Elev. (ft)	Storage (cf)	Storage (ac-ft)
1	1,042.50	5,624	0.13
2	1,042.91	7,412	0.17
5	1,043.29	9,032	0.21
10	1,043.63	10,493	0.24
25	1,044.07	12,525	0.29
50	1,044.34	14,248	0.33
100	1,044.65	16,161	0.37
Top of Dam/Wall	1046.00	**Freeboard**	**1.3**

Basin Maps

DANIELL DR. SELF STORAGE

PRE DEV DRAINAGE MAP



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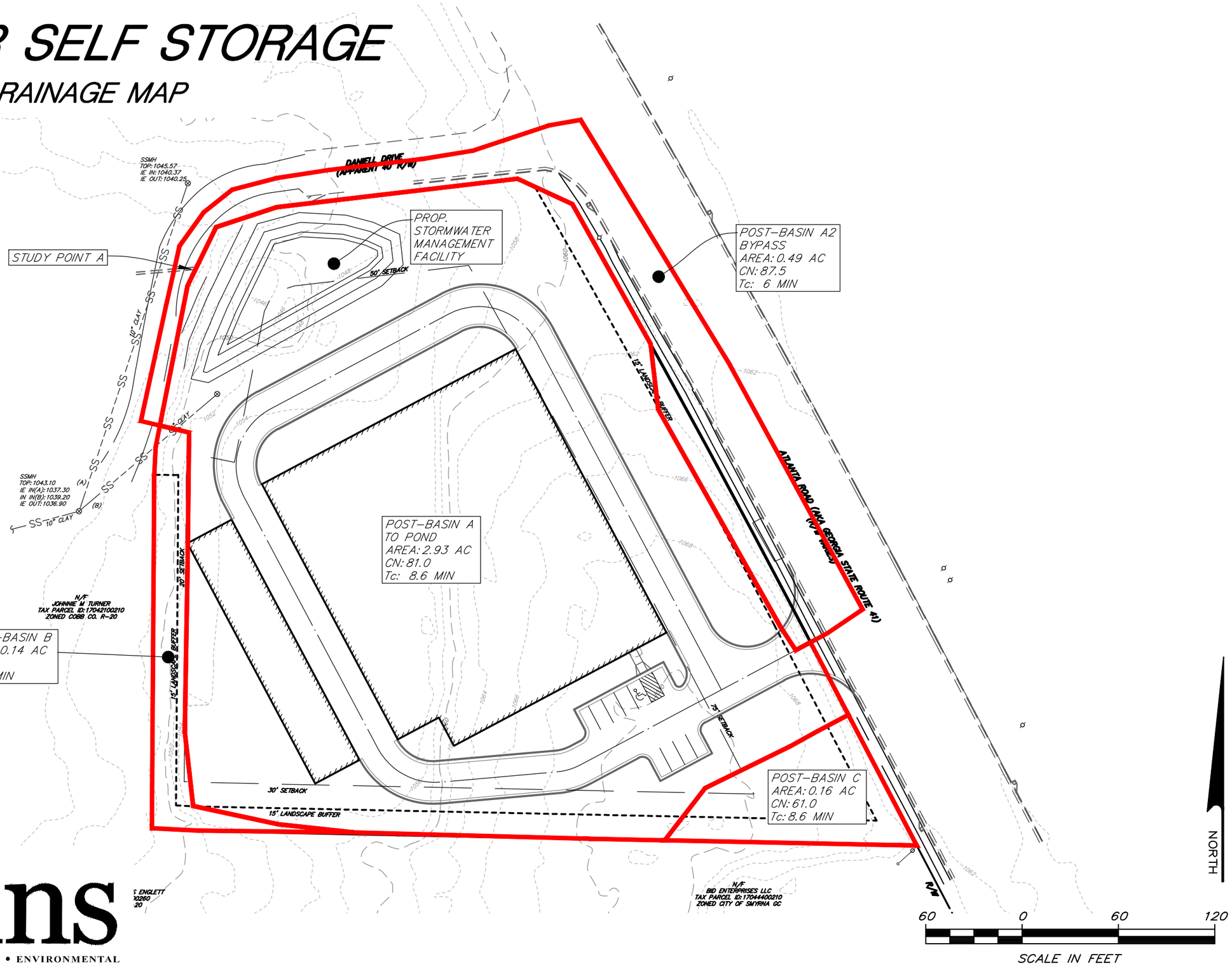
DANIELL DR SELF STORAGE

POST DEVELOPED DRAINAGE MAP



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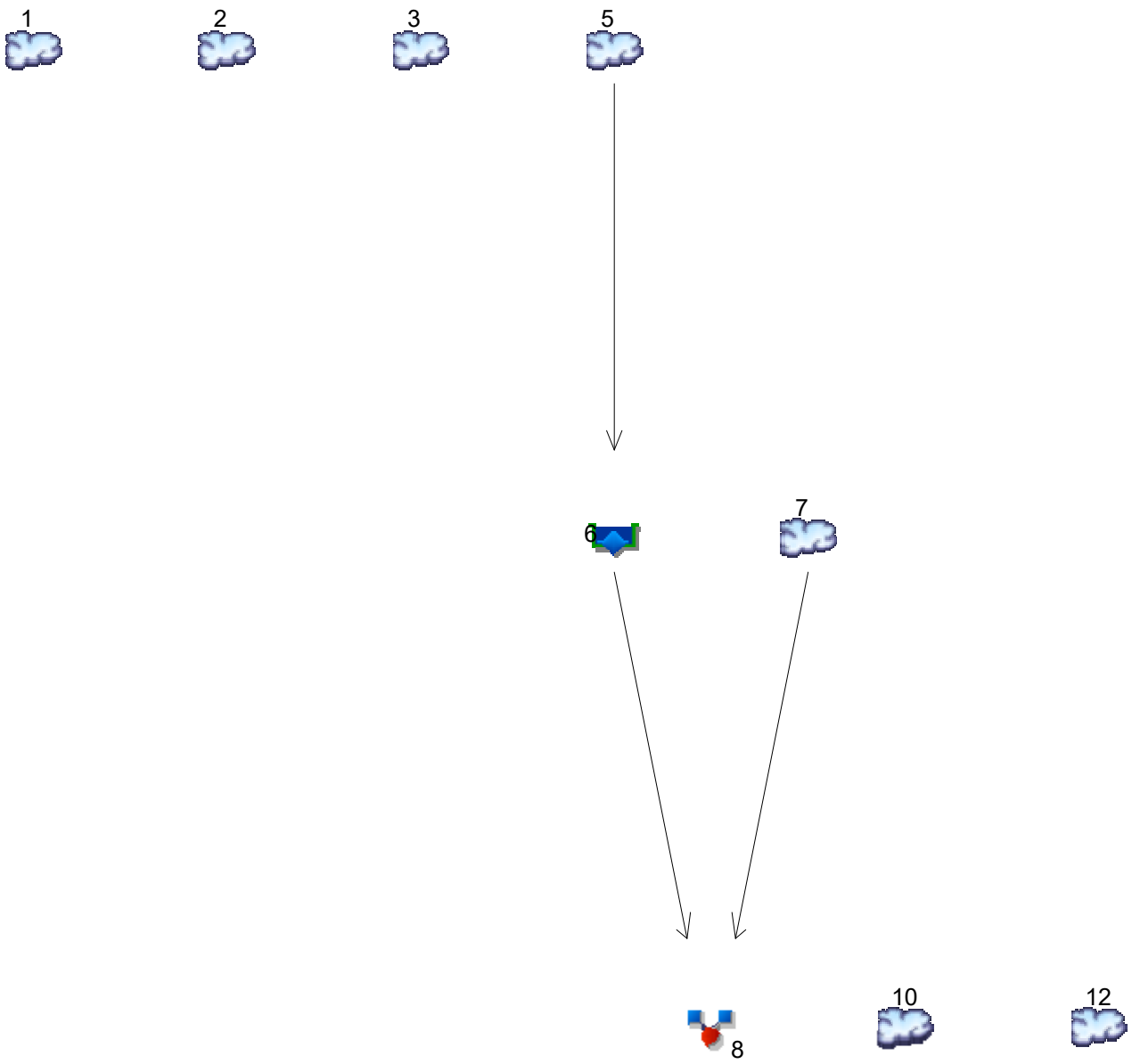
Hydraflow Table of Contents

Watershed Model Schematic



Legend

Hyd.	Origin	Description
1	SCS Runoff	BASIN A PRE
2	SCS Runoff	BAISN B PRE
3	SCS Runoff	BASIN C PRE
5	SCS Runoff	BASIN A1 POST TO POND
6	Reservoir	POND ROUTED
7	SCS Runoff	BASIN A2 OFFSITE POST
8	Combine	BASIN A POST
10	SCS Runoff	BASIN B POST
12	SCS Runoff	BASIN C POST

Hydrograph Return Period Recap

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	------	7.503	10.44	-------	13.51	16.64	20.88	24.08	27.28	BASIN A PRE
2	SCS Runoff	------	0.041	0.110	-------	0.193	0.287	0.424	0.534	0.650	BAISN B PRE
3	SCS Runoff	------	0.321	0.550	-------	0.804	1.078	1.465	1.768	2.082	BASIN C PRE
5	SCS Runoff	------	7.414	10.17	-------	13.00	15.88	19.75	22.65	25.57	BASIN A1 POST TO POND
6	Reservoir	5	3.824	5.182	-------	7.521	9.531	11.47	12.31	13.17	POND ROUTED
7	SCS Runoff	------	1.707	2.216	-------	2.725	3.234	3.910	4.414	4.917	BASIN A2 OFFSITE POST
8	Combine	6, 7	4.338	6.342	-------	8.370	10.69	13.40	14.86	16.19	BASIN A POST
10	SCS Runoff	------	0.041	0.110	-------	0.193	0.287	0.424	0.534	0.650	BASIN B POST
12	SCS Runoff	------	0.104	0.198	-------	0.305	0.422	0.590	0.722	0.859	BASIN C POST

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

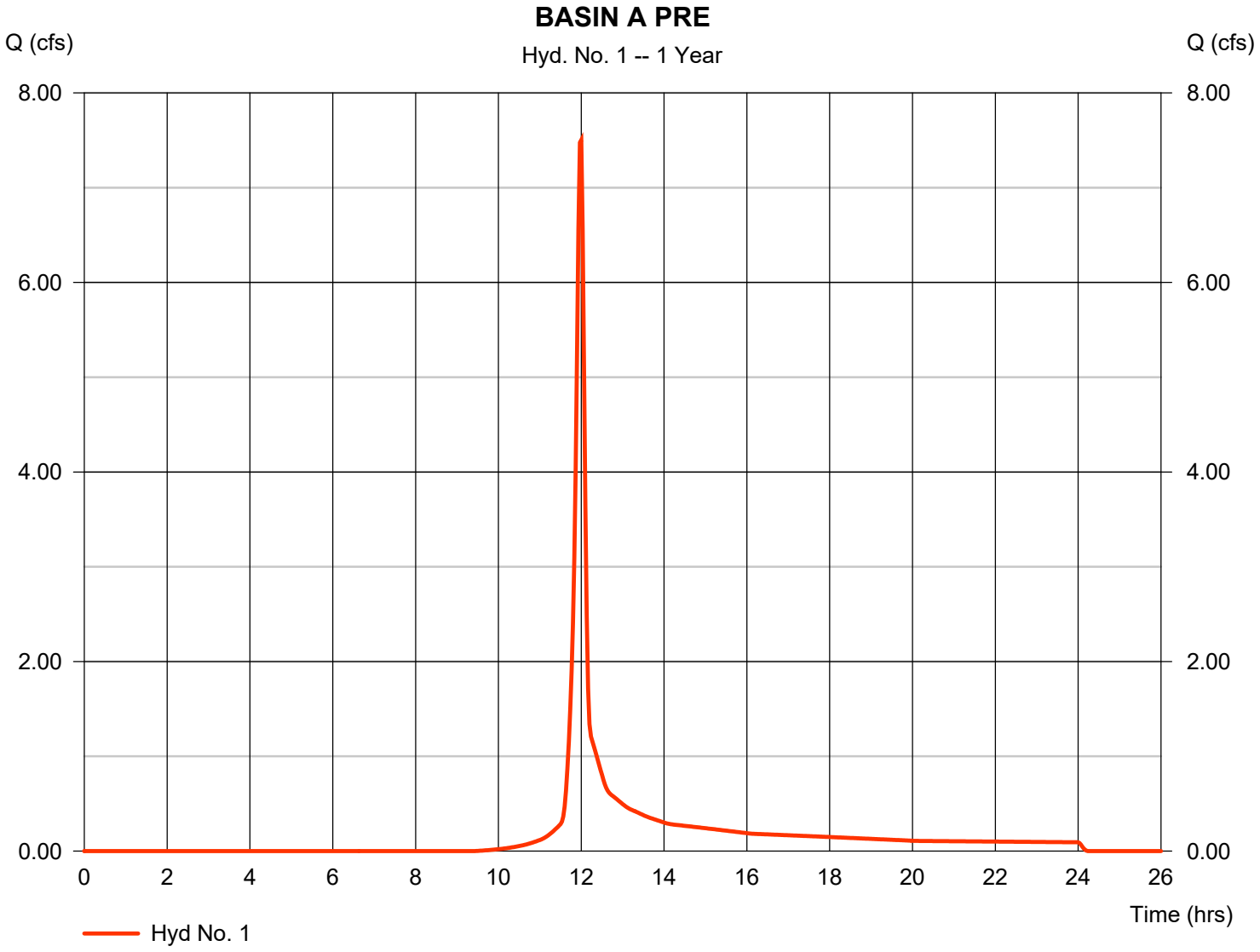
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	7.503	2	720	17,174	------	------	------	BASIN A PRE
2	SCS Runoff	0.041	2	720	143	------	------	------	BAISN B PRE
3	SCS Runoff	0.321	2	720	824	------	------	------	BASIN C PRE
5	SCS Runoff	7.414	2	718	16,974	------	------	------	BASIN A1 POST TO POND
6	Reservoir	3.824	2	726	15,010	5	1042.50	5,624	POND ROUTED
7	SCS Runoff	1.707	2	716	3,500	------	------	------	BASIN A2 OFFSITE POST
8	Combine	4.338	2	722	18,511	6, 7	------	------	BASIN A POST
10	SCS Runoff	0.041	2	720	143	------	------	------	BASIN B POST
12	SCS Runoff	0.104	2	720	297	------	------	------	BASIN C POST

Hydrograph Report

Hyd. No. 1

BASIN A PRE

Hydrograph type	=	SCS Runoff	Peak discharge	=	7.503 cfs
Storm frequency	=	1 yrs	Time to peak	=	12.00 hrs
Time interval	=	2 min	Hyd. volume	=	17,174 cuft
Drainage area	=	3.230 ac	Curve number	=	79.1
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	9.60 min
Total precip.	=	3.36 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

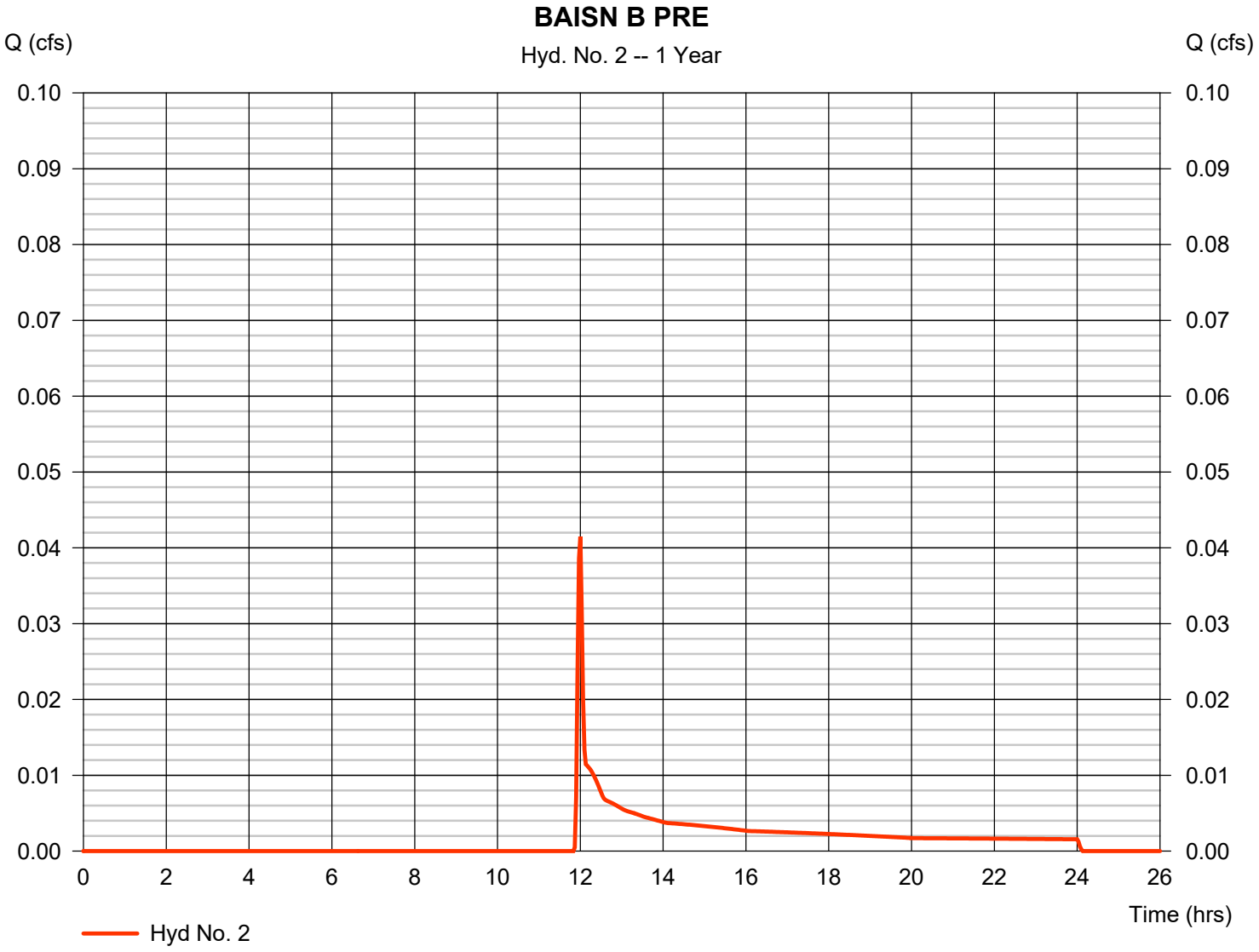


Hydrograph Report

Hyd. No. 2

BAISN B PRE

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.041 cfs
Storm frequency	=	1 yrs	Time to peak	=	12.00 hrs
Time interval	=	2 min	Hyd. volume	=	143 cuft
Drainage area	=	0.140 ac	Curve number	=	55
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.36 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

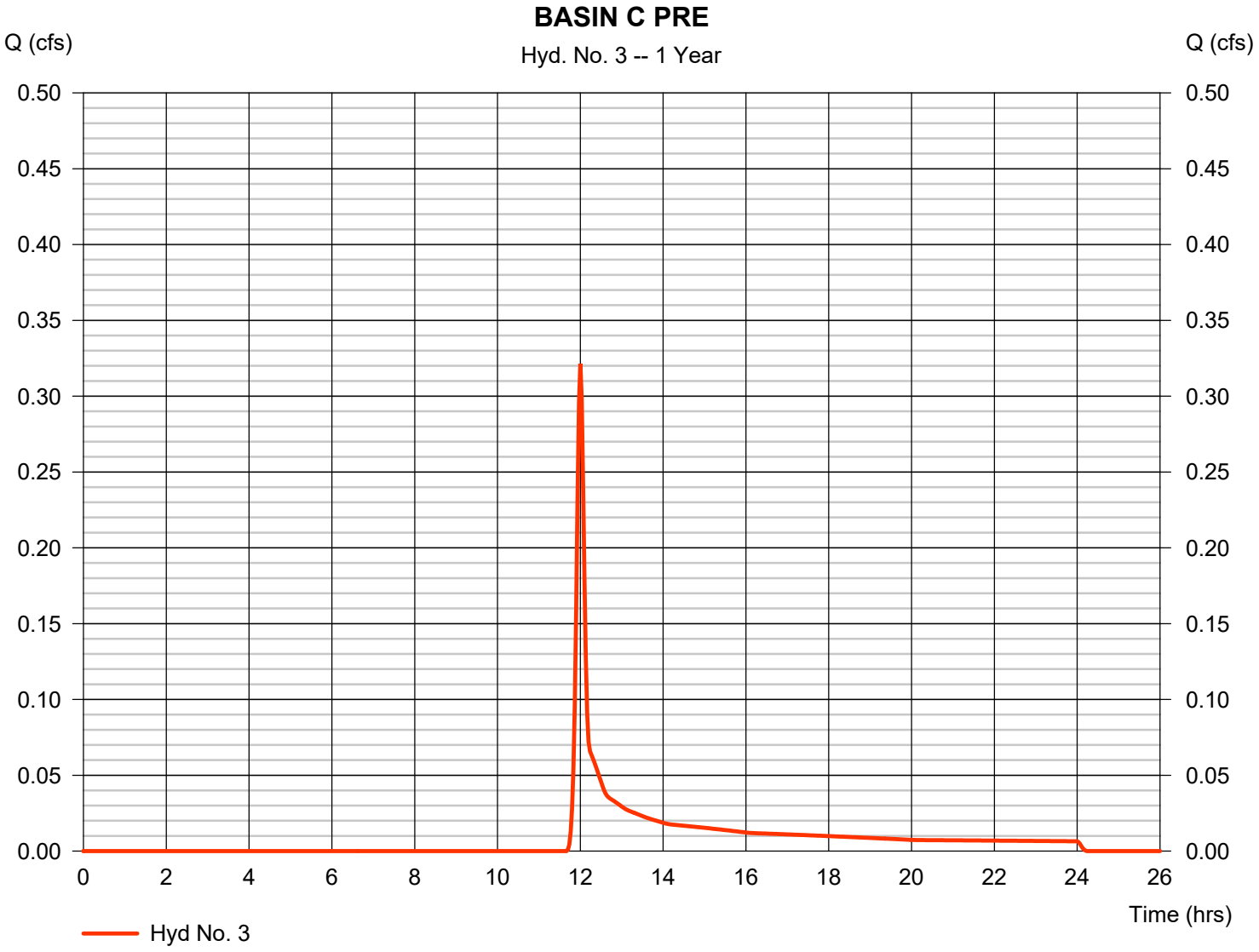


Hydrograph Report

Hyd. No. 3

BASIN C PRE

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.321 cfs
Storm frequency	=	1 yrs	Time to peak	=	12.00 hrs
Time interval	=	2 min	Hyd. volume	=	824 cuft
Drainage area	=	0.350 ac	Curve number	=	64.3
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	8.60 min
Total precip.	=	3.36 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

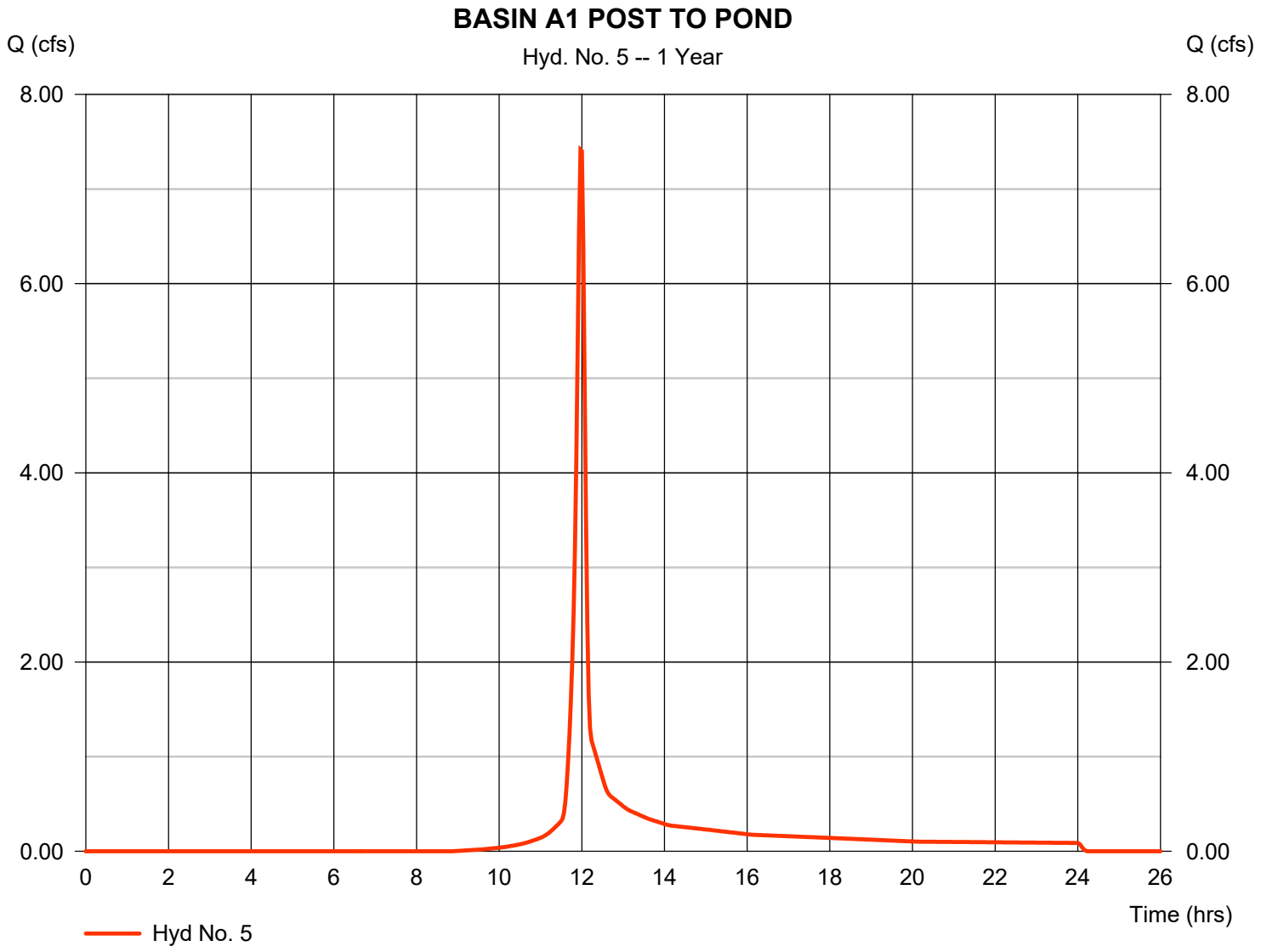


Hydrograph Report

Hyd. No. 5

BASIN A1 POST TO POND

Hydrograph type	= SCS Runoff	Peak discharge	= 7.414 cfs
Storm frequency	= 1 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 16,974 cuft
Drainage area	= 2.930 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.60 min
Total precip.	= 3.36 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



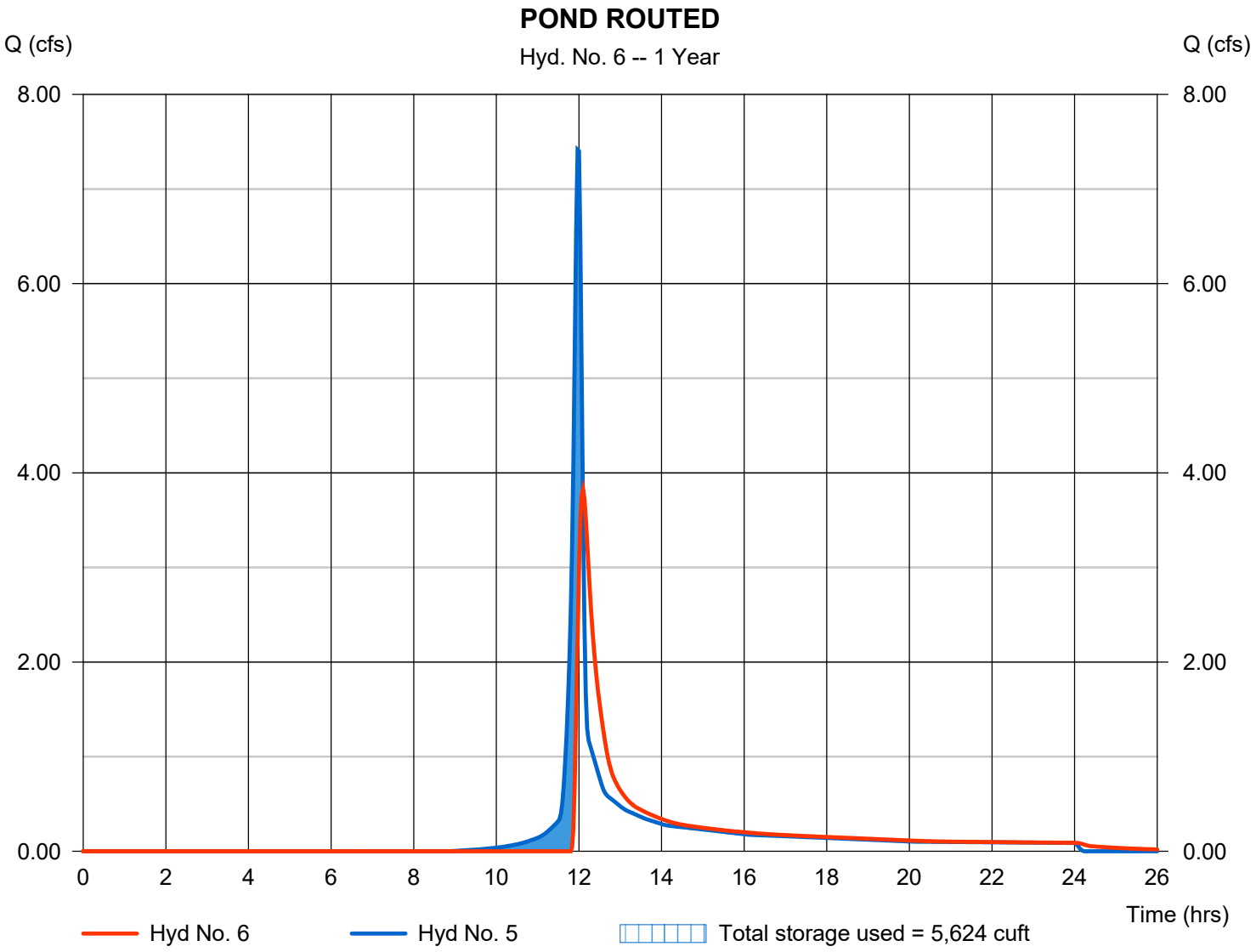
Hydrograph Report

Hyd. No. 6

POND ROUTED

Hydrograph type	=	Reservoir	Peak discharge	=	3.824 cfs
Storm frequency	=	1 yrs	Time to peak	=	12.10 hrs
Time interval	=	2 min	Hyd. volume	=	15,010 cuft
Inflow hyd. No.	=	5 - BASIN A1 POST TO POND	Max. Elevation	=	1042.50 ft
Reservoir name	=	PRELIM POND	Max. Storage	=	5,624 cuft

Storage Indication method used.



Pond No. 1 - PRELIM POND

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 1040.50 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1040.50	00	0	0
0.50	1041.00	2,649	441	441
1.50	1042.00	3,435	3,033	3,475
3.50	1044.00	5,253	8,623	12,098
5.50	1046.00	7,344	12,537	24,635

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 18.00	0.00	0.00	0.00
Span (in)	= 18.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 1041.50	0.00	0.00	0.00
Length (ft)	= 28.00	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	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.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Contour)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	1040.50	0.00	---	---	---	---	---	---	---	---	---	0.000
0.05	44	1040.55	0.00	---	---	---	---	---	---	---	---	---	0.000
0.10	88	1040.60	0.00	---	---	---	---	---	---	---	---	---	0.000
0.15	132	1040.65	0.00	---	---	---	---	---	---	---	---	---	0.000
0.20	177	1040.70	0.00	---	---	---	---	---	---	---	---	---	0.000
0.25	221	1040.75	0.00	---	---	---	---	---	---	---	---	---	0.000
0.30	265	1040.80	0.00	---	---	---	---	---	---	---	---	---	0.000
0.35	309	1040.85	0.00	---	---	---	---	---	---	---	---	---	0.000
0.40	353	1040.90	0.00	---	---	---	---	---	---	---	---	---	0.000
0.45	397	1040.95	0.00	---	---	---	---	---	---	---	---	---	0.000
0.50	441	1041.00	0.00	---	---	---	---	---	---	---	---	---	0.000
0.60	745	1041.10	0.00	---	---	---	---	---	---	---	---	---	0.000
0.70	1,048	1041.20	0.00	---	---	---	---	---	---	---	---	---	0.000
0.80	1,351	1041.30	0.00	---	---	---	---	---	---	---	---	---	0.000
0.90	1,655	1041.40	0.00	---	---	---	---	---	---	---	---	---	0.000
1.00	1,958	1041.50	0.00	---	---	---	---	---	---	---	---	---	0.000
1.10	2,261	1041.60	0.05 ic	---	---	---	---	---	---	---	---	---	0.055
1.20	2,565	1041.70	0.21 ic	---	---	---	---	---	---	---	---	---	0.213
1.30	2,868	1041.80	0.47 ic	---	---	---	---	---	---	---	---	---	0.470
1.40	3,171	1041.90	0.81 ic	---	---	---	---	---	---	---	---	---	0.815
1.50	3,475	1042.00	1.24 ic	---	---	---	---	---	---	---	---	---	1.243
1.70	4,337	1042.20	2.31 ic	---	---	---	---	---	---	---	---	---	2.306
1.90	5,199	1042.40	3.38 oc	---	---	---	---	---	---	---	---	---	3.380
2.10	6,062	1042.60	4.28 oc	---	---	---	---	---	---	---	---	---	4.282
2.30	6,924	1042.80	5.02 oc	---	---	---	---	---	---	---	---	---	5.021
2.50	7,786	1043.00	5.31 oc	---	---	---	---	---	---	---	---	---	5.306
2.70	8,648	1043.20	6.93 oc	---	---	---	---	---	---	---	---	---	6.934
2.90	9,511	1043.40	8.25 oc	---	---	---	---	---	---	---	---	---	8.254
3.10	10,373	1043.60	9.39 oc	---	---	---	---	---	---	---	---	---	9.390
3.30	11,235	1043.80	10.40 oc	---	---	---	---	---	---	---	---	---	10.40
3.50	12,098	1044.00	11.25 ic	---	---	---	---	---	---	---	---	---	11.25
3.70	13,351	1044.20	11.88 ic	---	---	---	---	---	---	---	---	---	11.88
3.90	14,605	1044.40	12.47 ic	---	---	---	---	---	---	---	---	---	12.47
4.10	15,859	1044.60	13.04 ic	---	---	---	---	---	---	---	---	---	13.04
4.30	17,113	1044.80	13.59 ic	---	---	---	---	---	---	---	---	---	13.59
4.50	18,366	1045.00	14.11 ic	---	---	---	---	---	---	---	---	---	14.11
4.70	19,620	1045.20	14.61 ic	---	---	---	---	---	---	---	---	---	14.61
4.90	20,874	1045.40	15.10 ic	---	---	---	---	---	---	---	---	---	15.10

Continues on next page...

PRELIM POND

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
5.10	22,128	1045.60	15.57 ic	---	---	---	---	---	---	---	---	---	15.57
5.30	23,381	1045.80	16.03 ic	---	---	---	---	---	---	---	---	---	16.03
5.50	24,635	1046.00	16.48 ic	---	---	---	---	---	---	---	---	---	16.48

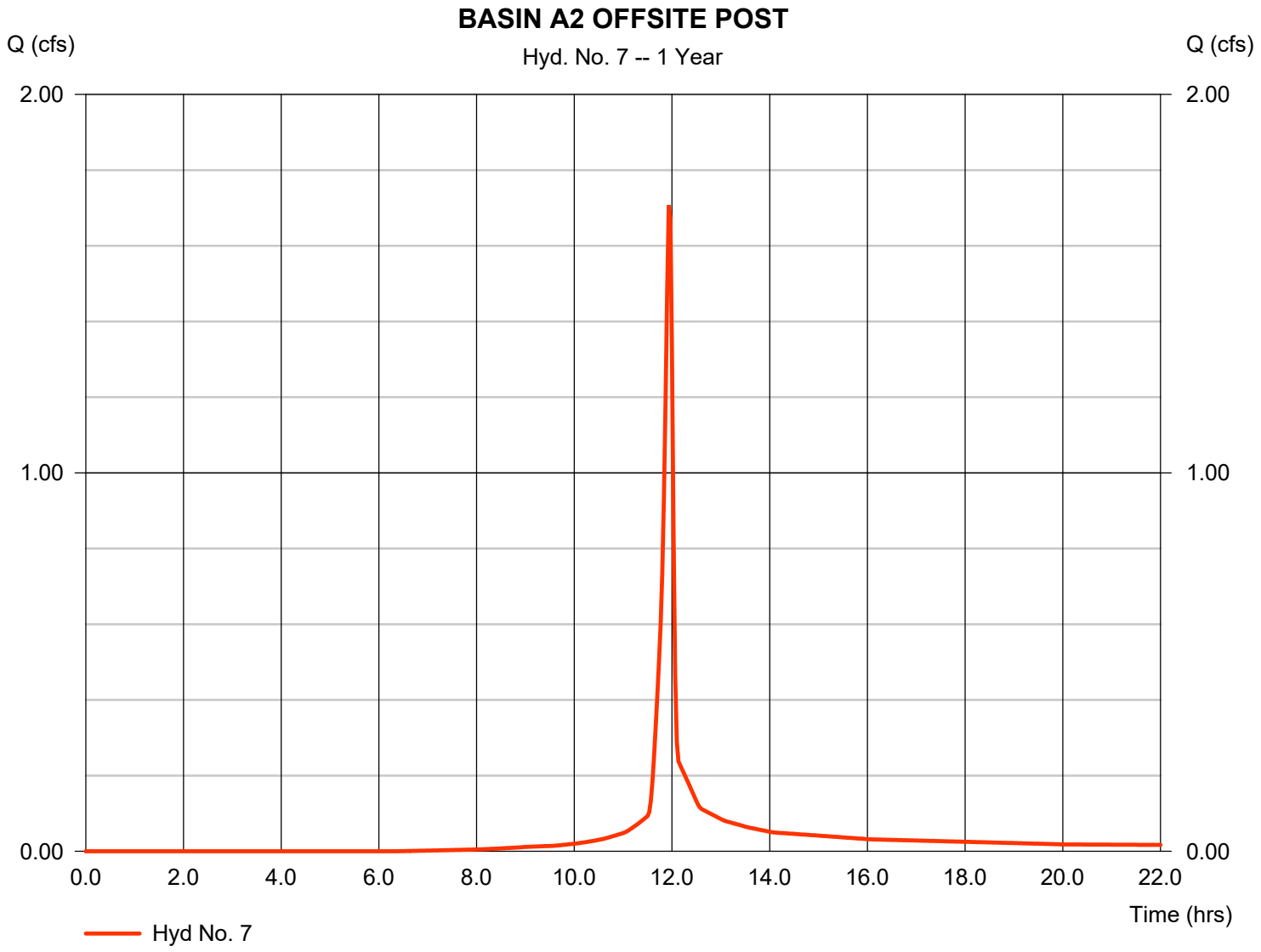
...End

Hydrograph Report

Hyd. No. 7

BASIN A2 OFFSITE POST

Hydrograph type	= SCS Runoff	Peak discharge	= 1.707 cfs
Storm frequency	= 1 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 3,500 cuft
Drainage area	= 0.490 ac	Curve number	= 87.5
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.36 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

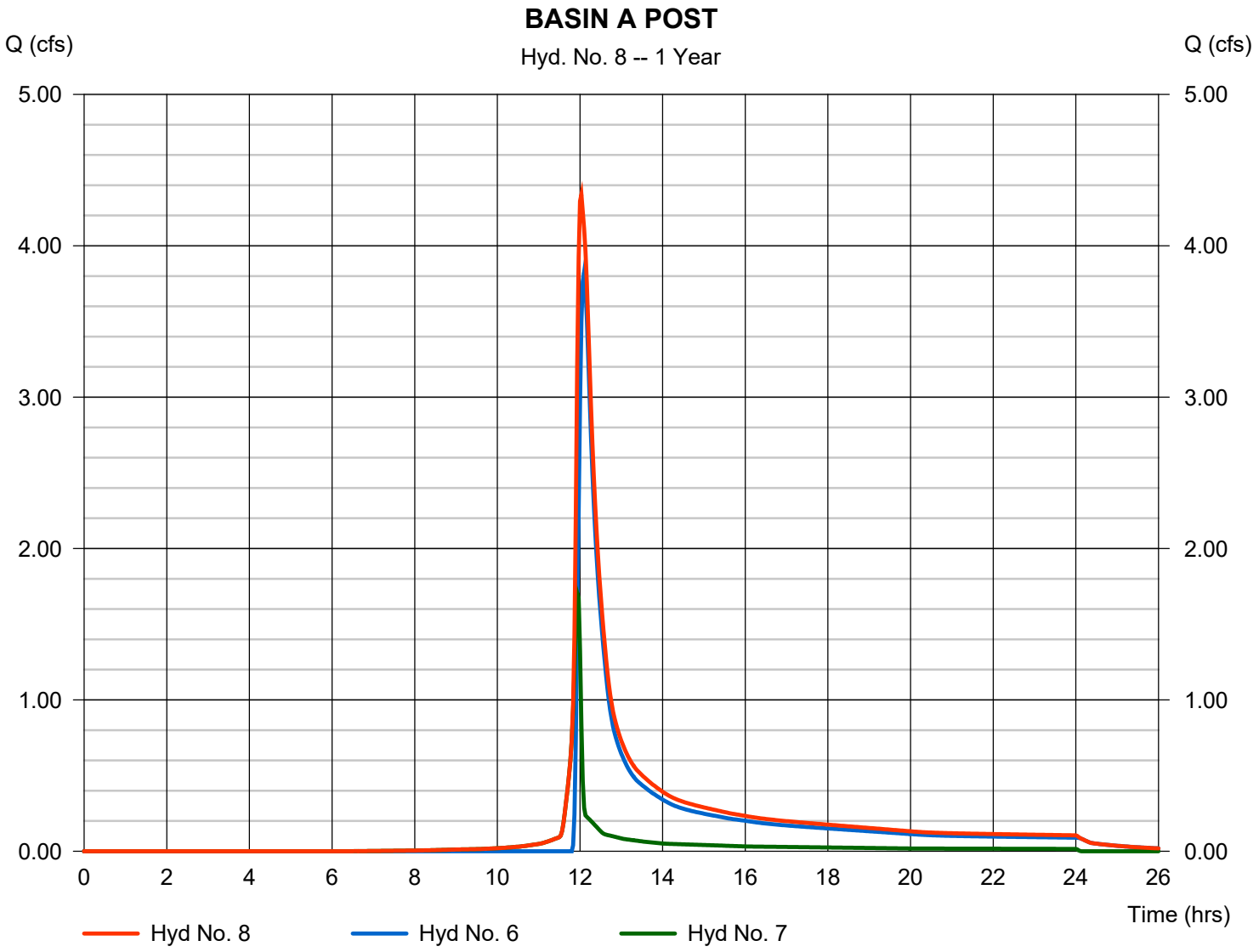


Hydrograph Report

Hyd. No. 8

BASIN A POST

Hydrograph type	=	Combine	Peak discharge	=	4.338 cfs
Storm frequency	=	1 yrs	Time to peak	=	12.03 hrs
Time interval	=	2 min	Hyd. volume	=	18,511 cuft
Inflow hyds.	=	6, 7	Contrib. drain. area	=	0.490 ac

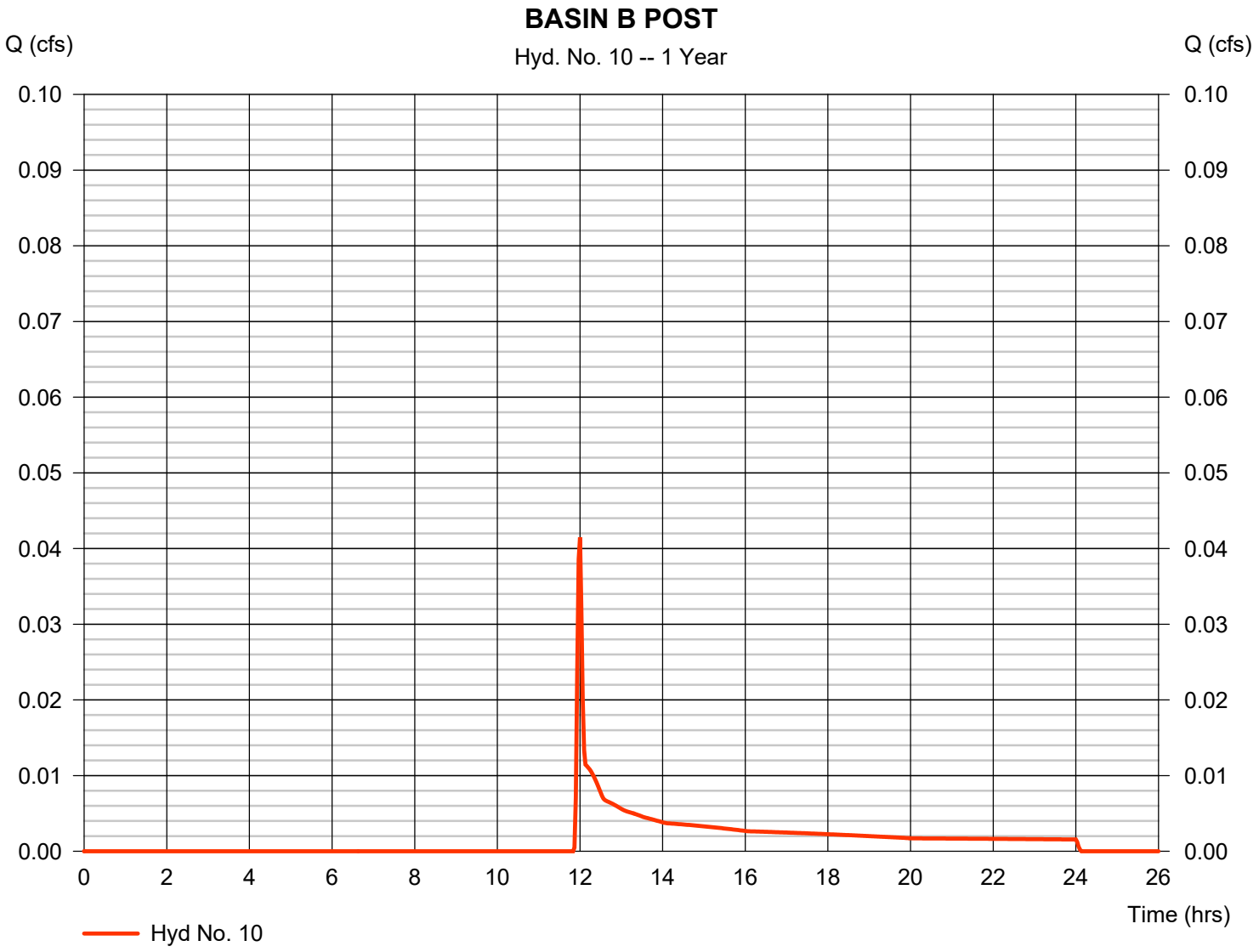


Hydrograph Report

Hyd. No. 10

BASIN B POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.041 cfs
Storm frequency	=	1 yrs	Time to peak	=	12.00 hrs
Time interval	=	2 min	Hyd. volume	=	143 cuft
Drainage area	=	0.140 ac	Curve number	=	55
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.36 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

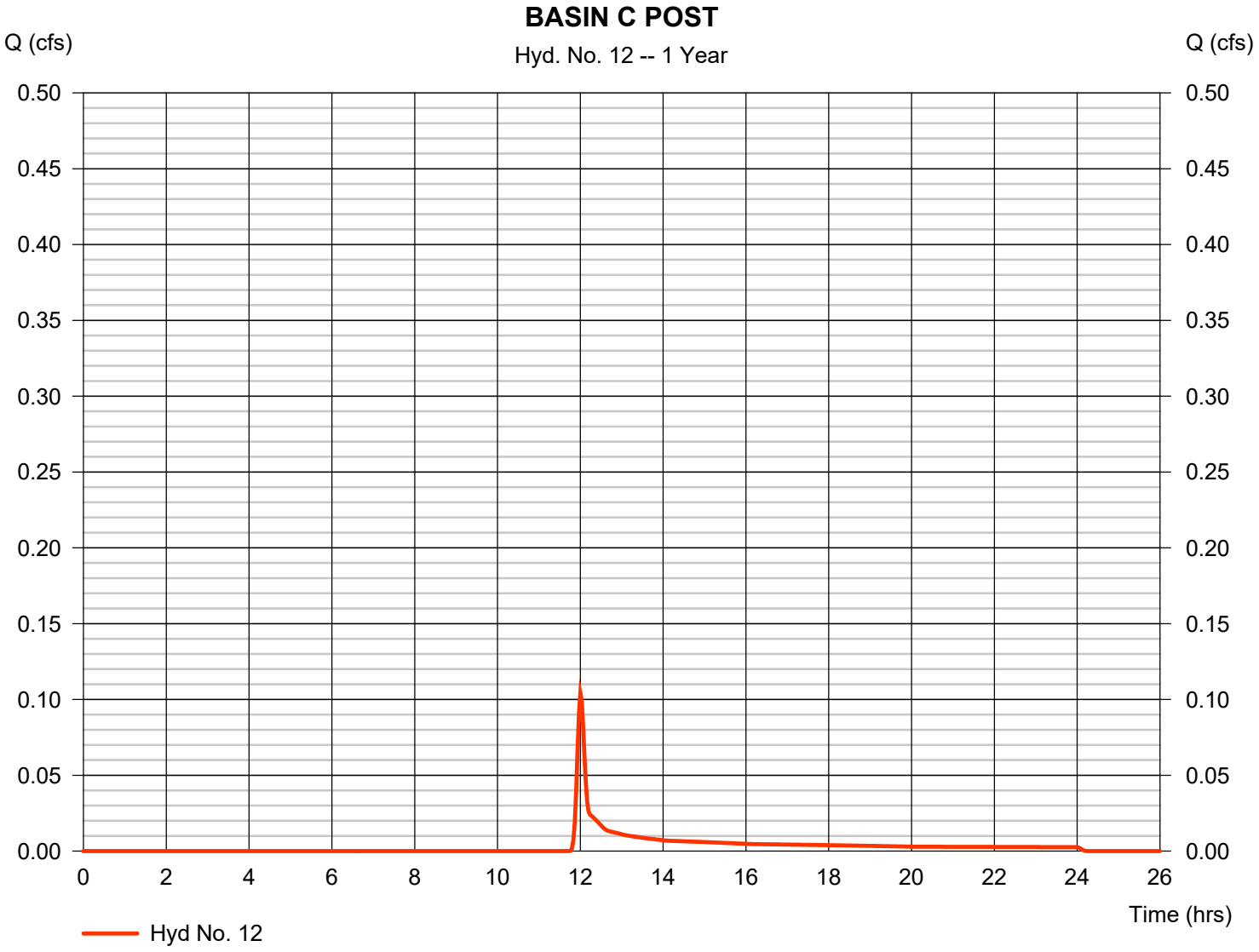


Hydrograph Report

Hyd. No. 12

BASIN C POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.104 cfs
Storm frequency	=	1 yrs	Time to peak	=	12.00 hrs
Time interval	=	2 min	Hyd. volume	=	297 cuft
Drainage area	=	0.160 ac	Curve number	=	61
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	8.60 min
Total precip.	=	3.36 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

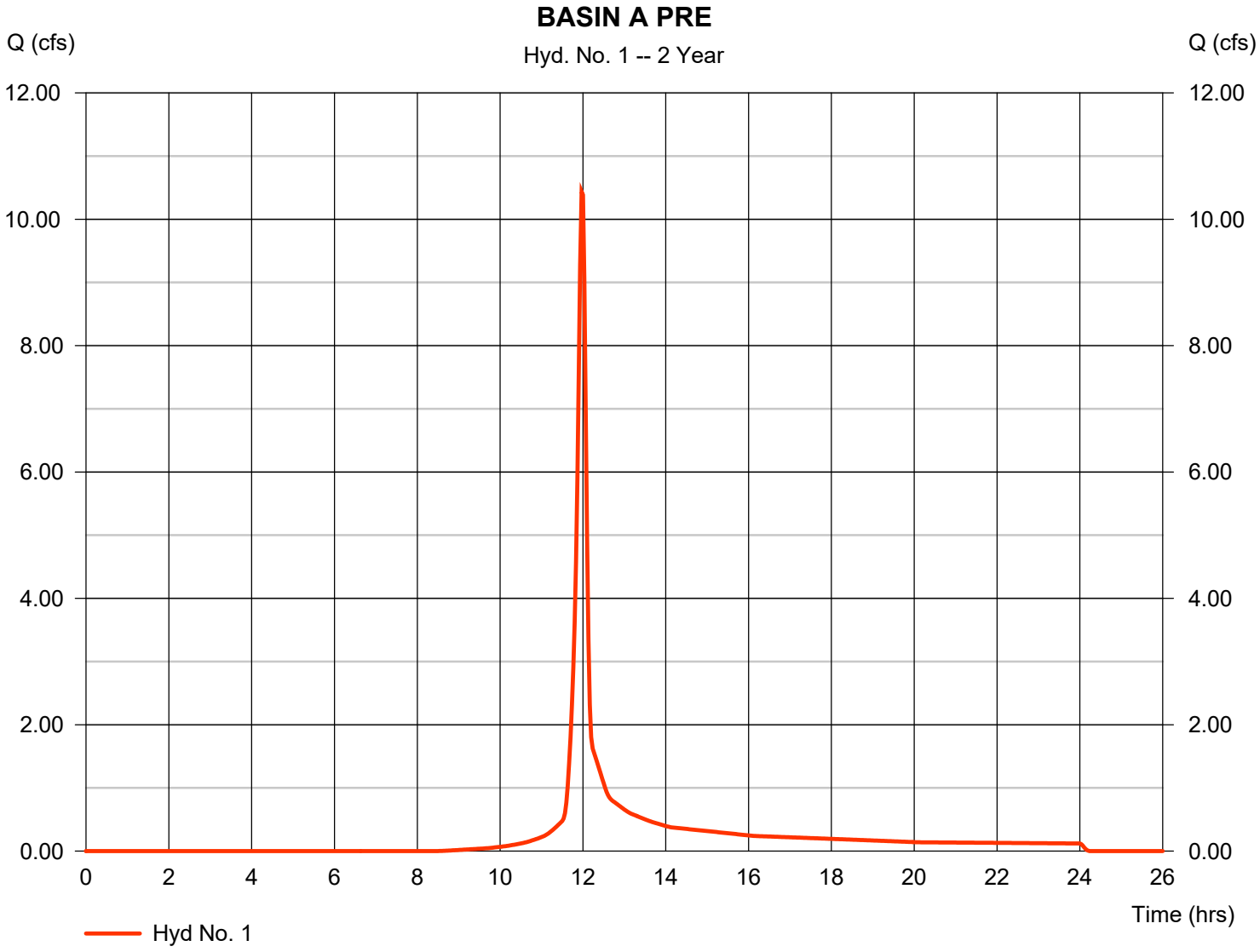
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	10.44	2	718	23,878	------	------	------	BASIN A PRE
2	SCS Runoff	0.110	2	718	268	------	------	------	BAISN B PRE
3	SCS Runoff	0.550	2	720	1,315	------	------	------	BASIN C PRE
5	SCS Runoff	10.17	2	718	23,281	------	------	------	BASIN A1 POST TO POND
6	Reservoir	5.182	2	726	21,317	5	1042.91	7,412	POND ROUTED
7	SCS Runoff	2.216	2	716	4,596	------	------	------	BASIN A2 OFFSITE POST
8	Combine	6.342	2	720	25,914	6, 7	------	------	BASIN A POST
10	SCS Runoff	0.110	2	718	268	------	------	------	BASIN B POST
12	SCS Runoff	0.198	2	720	496	------	------	------	BASIN C POST

Hydrograph Report

Hyd. No. 1

BASIN A PRE

Hydrograph type	= SCS Runoff	Peak discharge	= 10.44 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 23,878 cuft
Drainage area	= 3.230 ac	Curve number	= 79.1
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 9.60 min
Total precip.	= 4.08 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

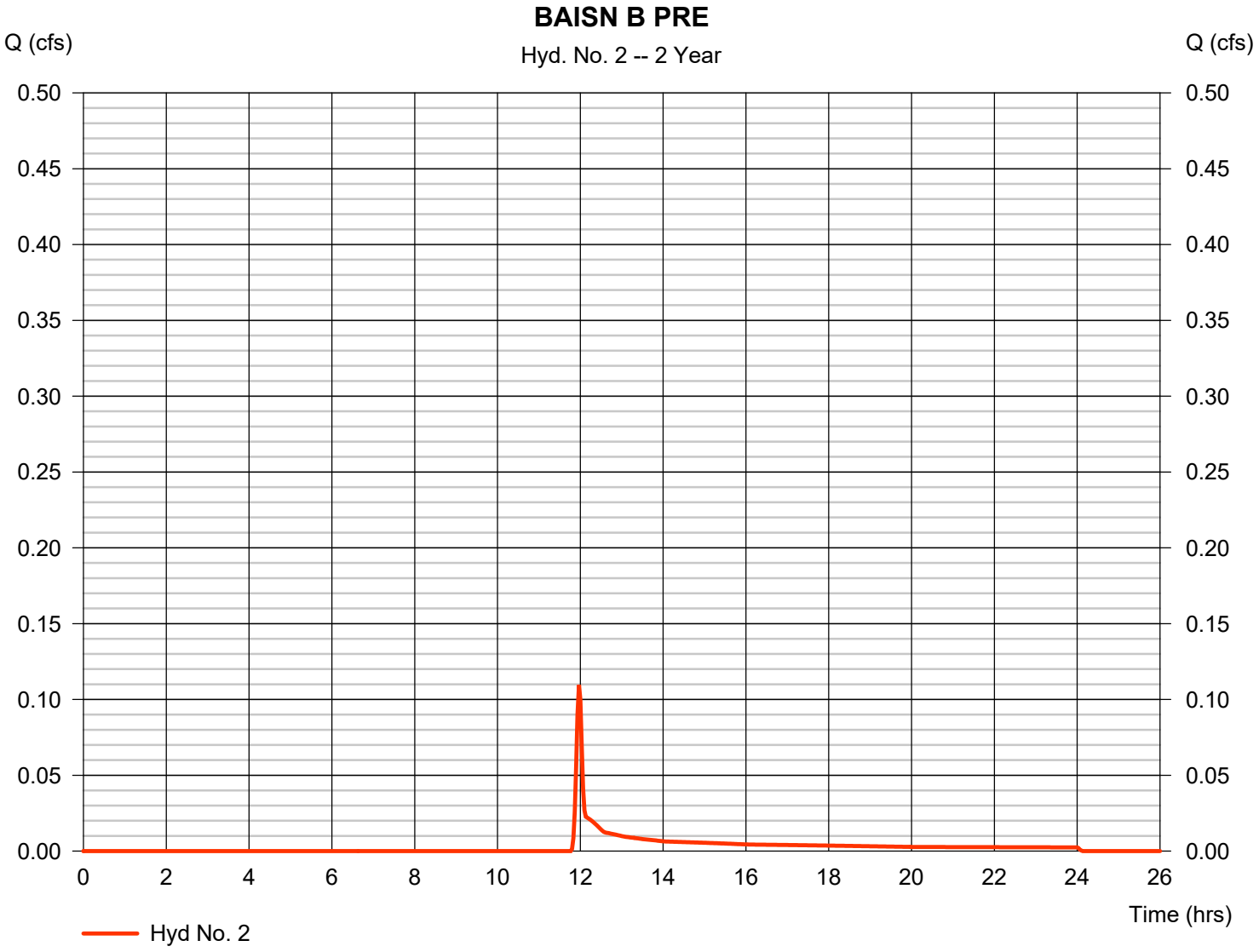


Hydrograph Report

Hyd. No. 2

BAISN B PRE

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.110 cfs
Storm frequency	=	2 yrs	Time to peak	=	11.97 hrs
Time interval	=	2 min	Hyd. volume	=	268 cuft
Drainage area	=	0.140 ac	Curve number	=	55
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	4.08 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

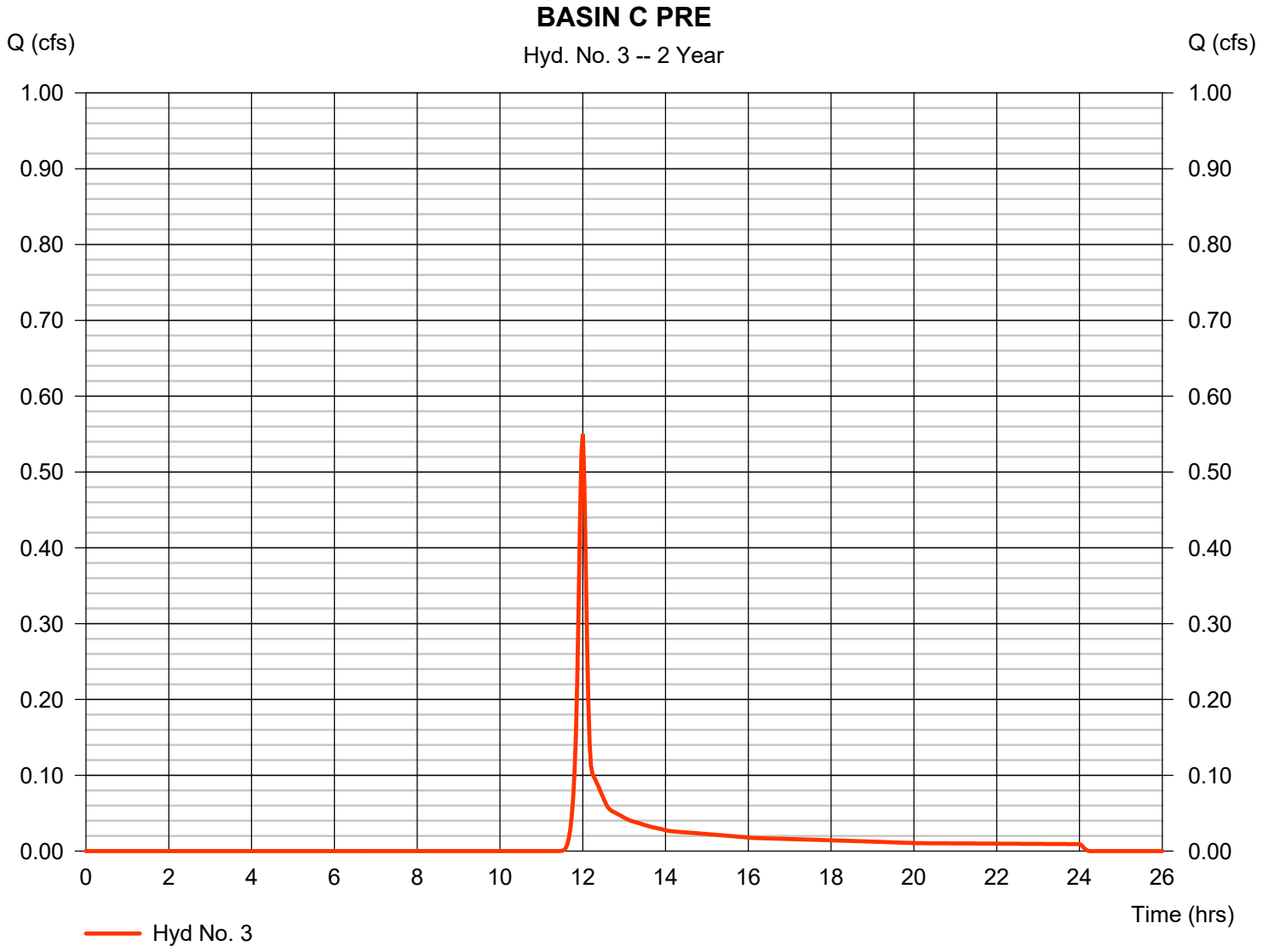


Hydrograph Report

Hyd. No. 3

BASIN C PRE

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.550 cfs
Storm frequency	=	2 yrs	Time to peak	=	12.00 hrs
Time interval	=	2 min	Hyd. volume	=	1,315 cuft
Drainage area	=	0.350 ac	Curve number	=	64.3
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	8.60 min
Total precip.	=	4.08 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

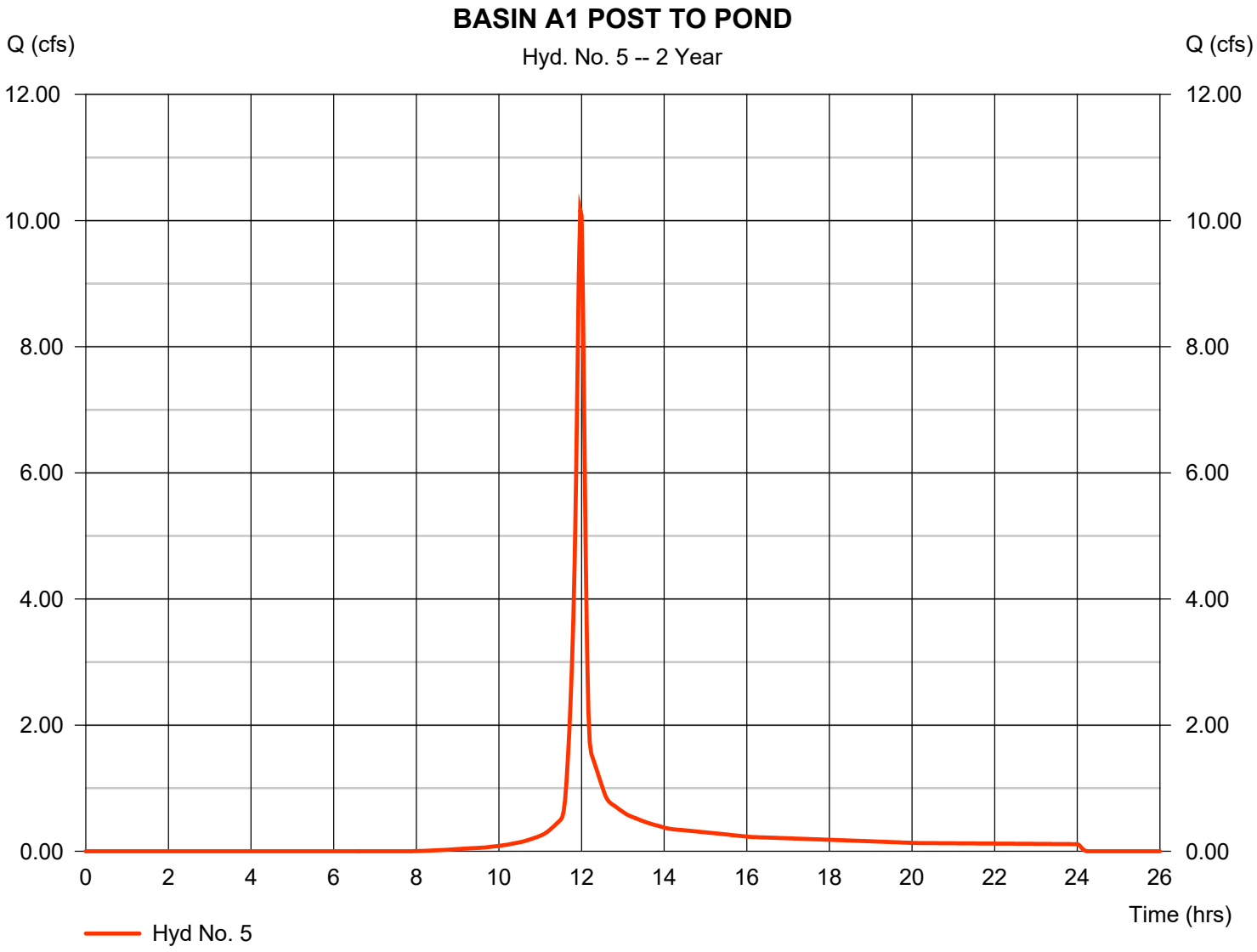


Hydrograph Report

Hyd. No. 5

BASIN A1 POST TO POND

Hydrograph type	= SCS Runoff	Peak discharge	= 10.17 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 23,281 cuft
Drainage area	= 2.930 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.60 min
Total precip.	= 4.08 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



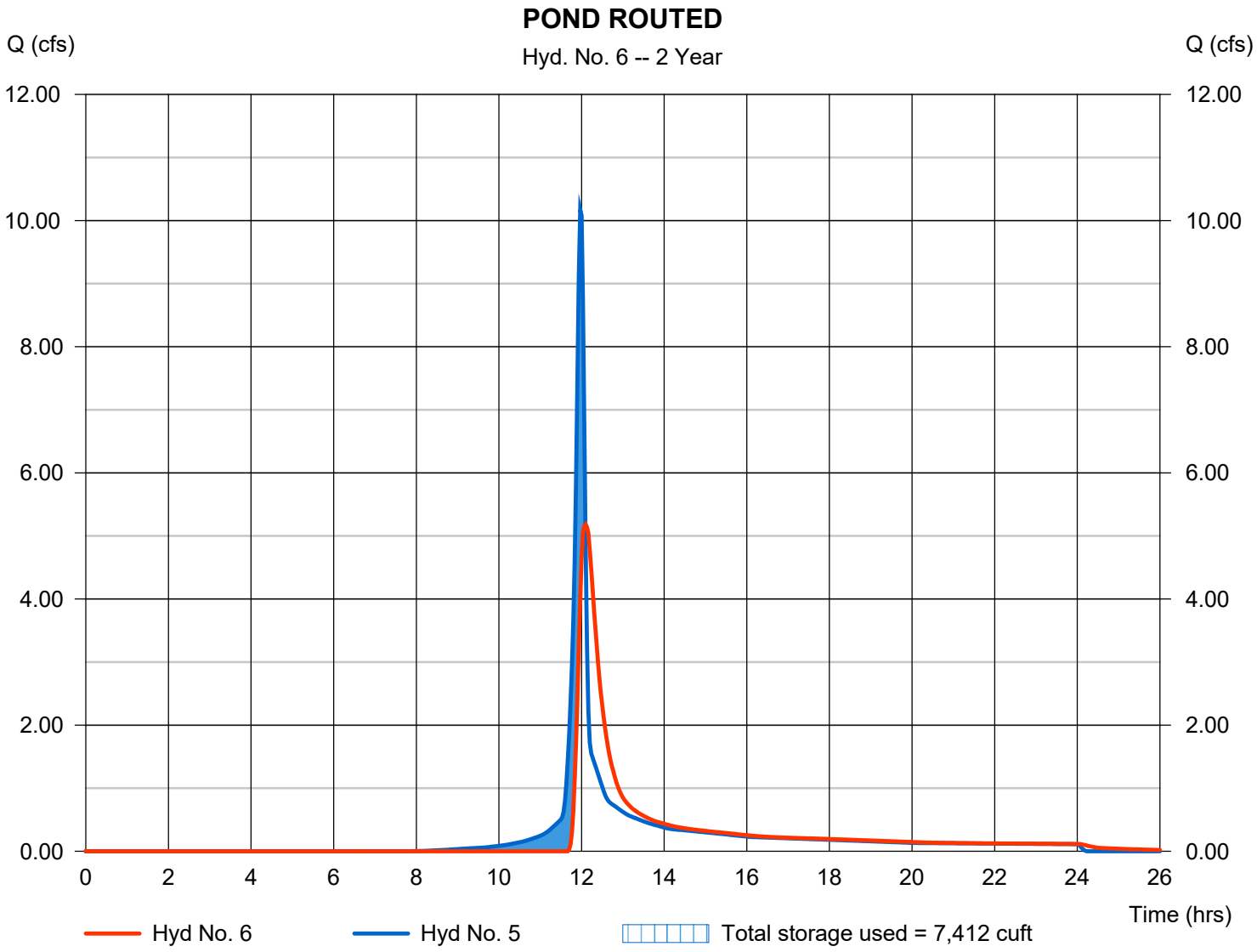
Hydrograph Report

Hyd. No. 6

POND ROUTED

Hydrograph type	=	Reservoir	Peak discharge	=	5.182 cfs
Storm frequency	=	2 yrs	Time to peak	=	12.10 hrs
Time interval	=	2 min	Hyd. volume	=	21,317 cuft
Inflow hyd. No.	=	5 - BASIN A1 POST TO POND	Max. Elevation	=	1042.91 ft
Reservoir name	=	PRELIM POND	Max. Storage	=	7,412 cuft

Storage Indication method used.

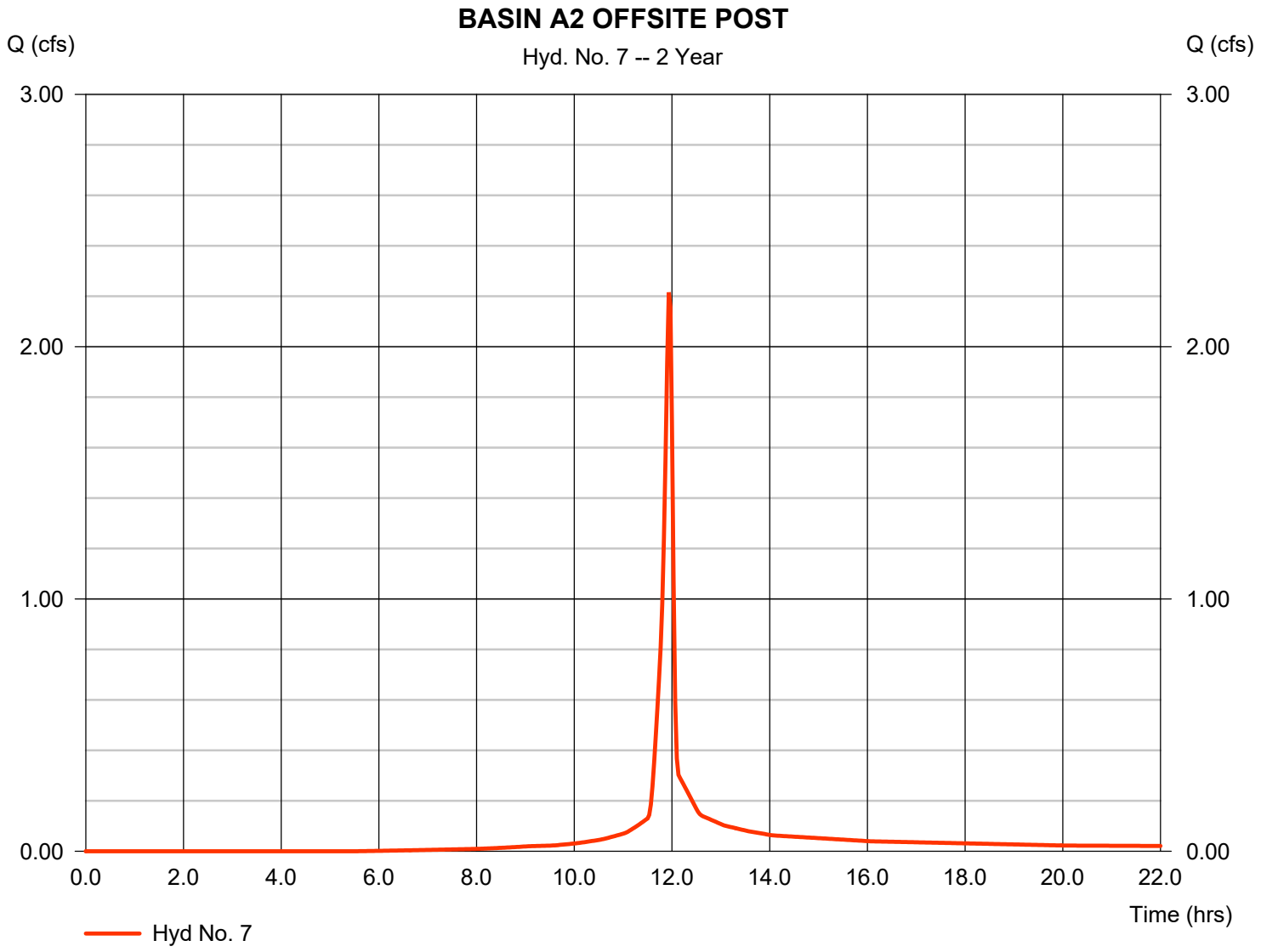


Hydrograph Report

Hyd. No. 7

BASIN A2 OFFSITE POST

Hydrograph type	= SCS Runoff	Peak discharge	= 2.216 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 4,596 cuft
Drainage area	= 0.490 ac	Curve number	= 87.5
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.08 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

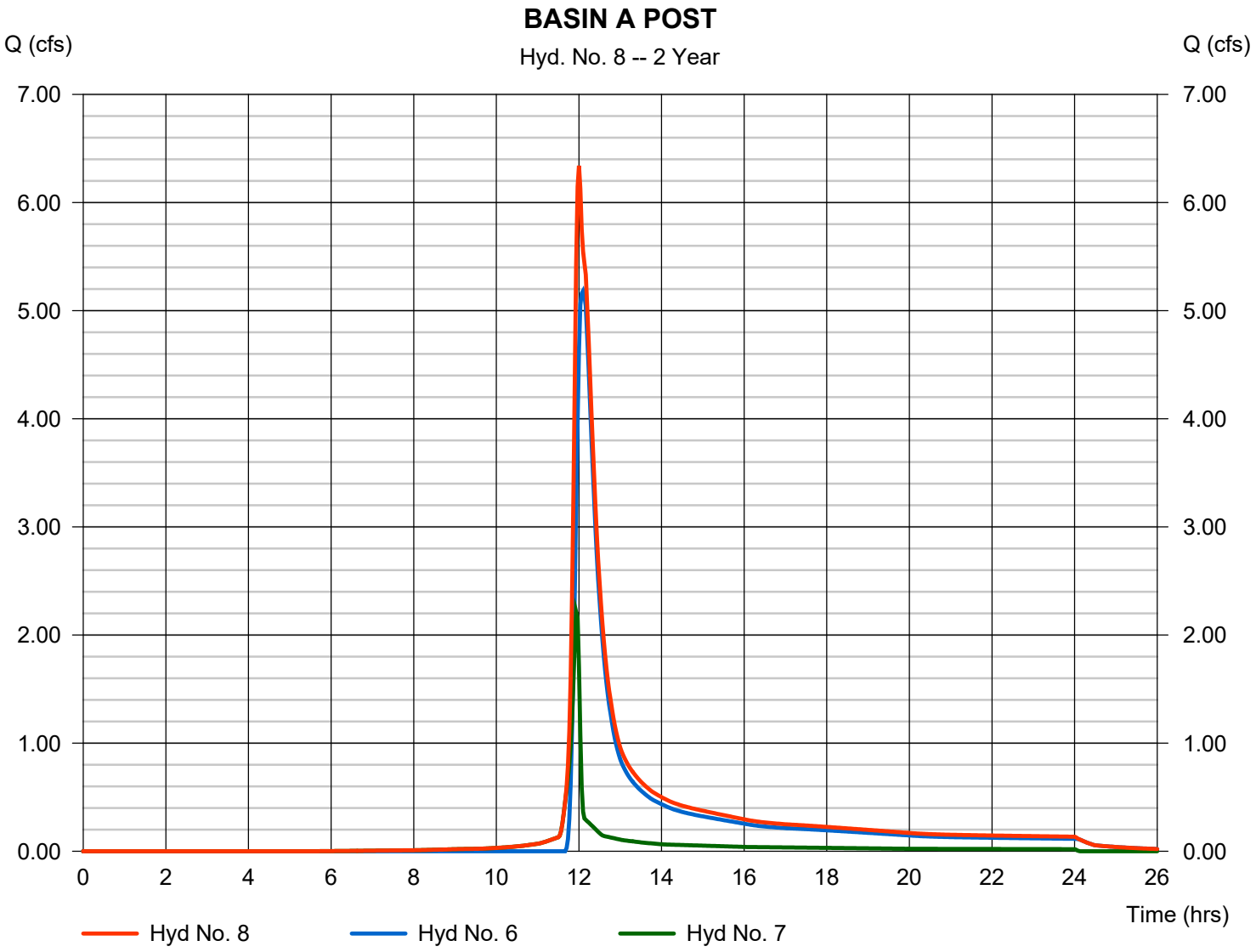


Hydrograph Report

Hyd. No. 8

BASIN A POST

Hydrograph type	=	Combine	Peak discharge	=	6.342 cfs
Storm frequency	=	2 yrs	Time to peak	=	12.00 hrs
Time interval	=	2 min	Hyd. volume	=	25,914 cuft
Inflow hyds.	=	6, 7	Contrib. drain. area	=	0.490 ac

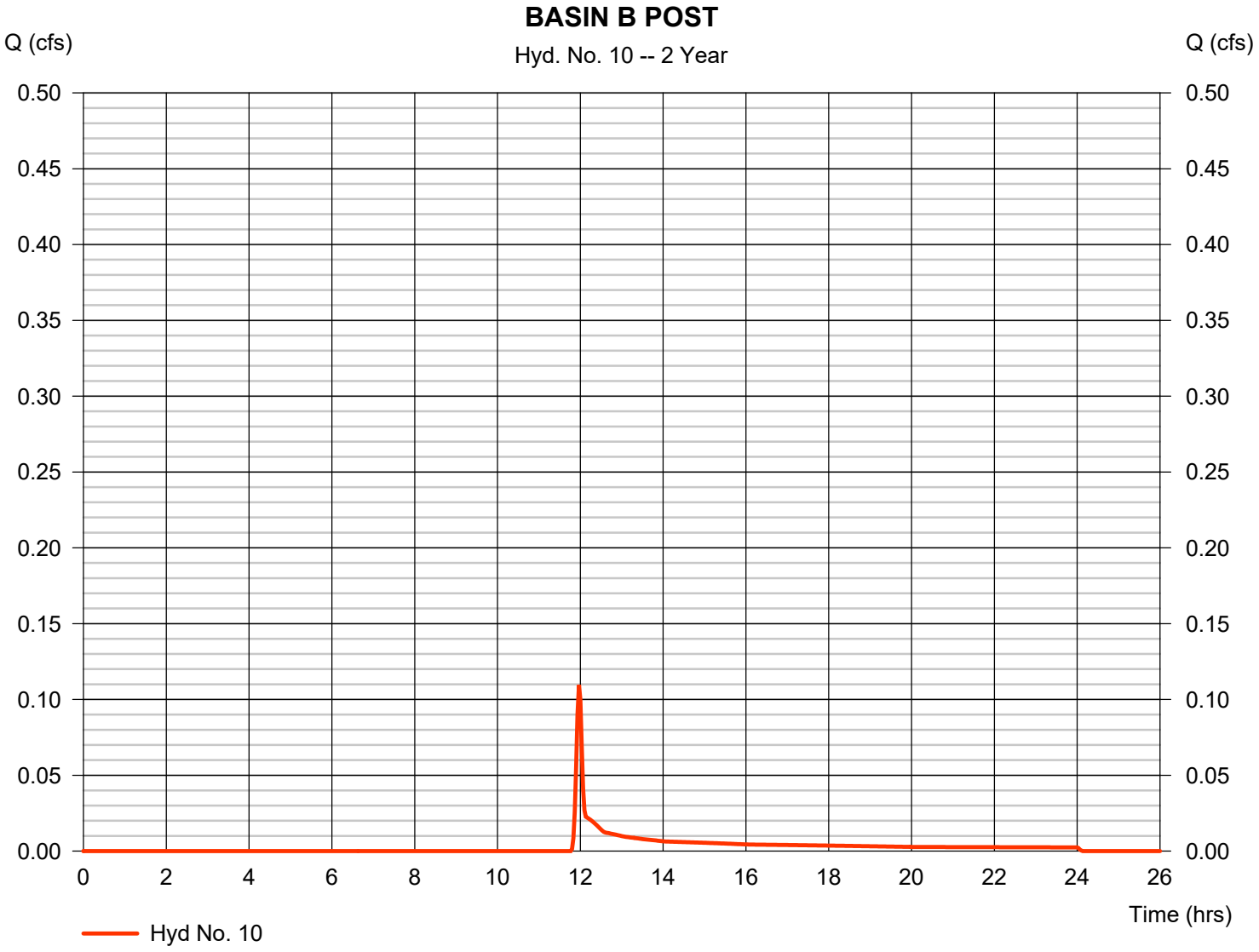


Hydrograph Report

Hyd. No. 10

BASIN B POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.110 cfs
Storm frequency	=	2 yrs	Time to peak	=	11.97 hrs
Time interval	=	2 min	Hyd. volume	=	268 cuft
Drainage area	=	0.140 ac	Curve number	=	55
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	4.08 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

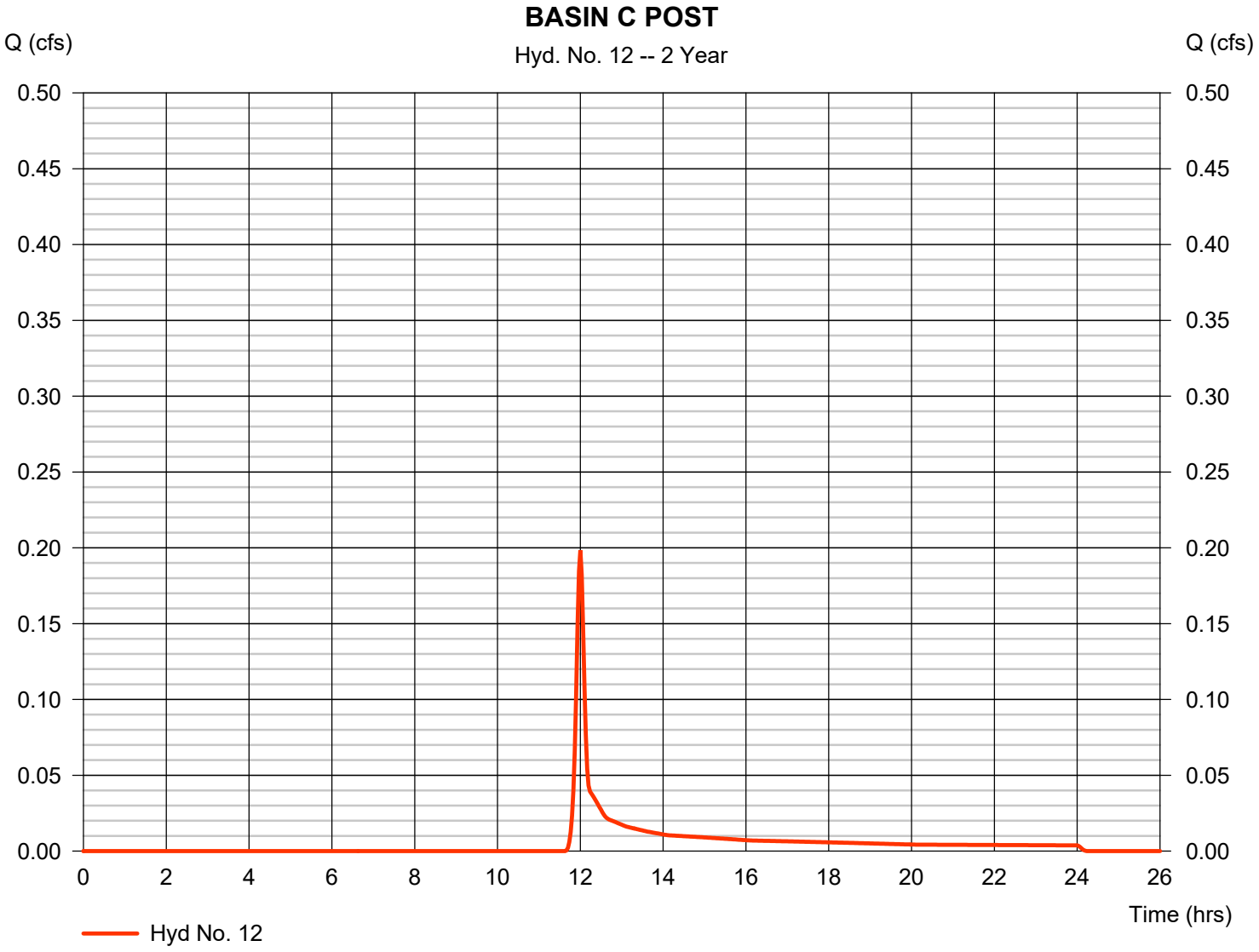


Hydrograph Report

Hyd. No. 12

BASIN C POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.198 cfs
Storm frequency	=	2 yrs	Time to peak	=	12.00 hrs
Time interval	=	2 min	Hyd. volume	=	496 cuft
Drainage area	=	0.160 ac	Curve number	=	61
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	8.60 min
Total precip.	=	4.08 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

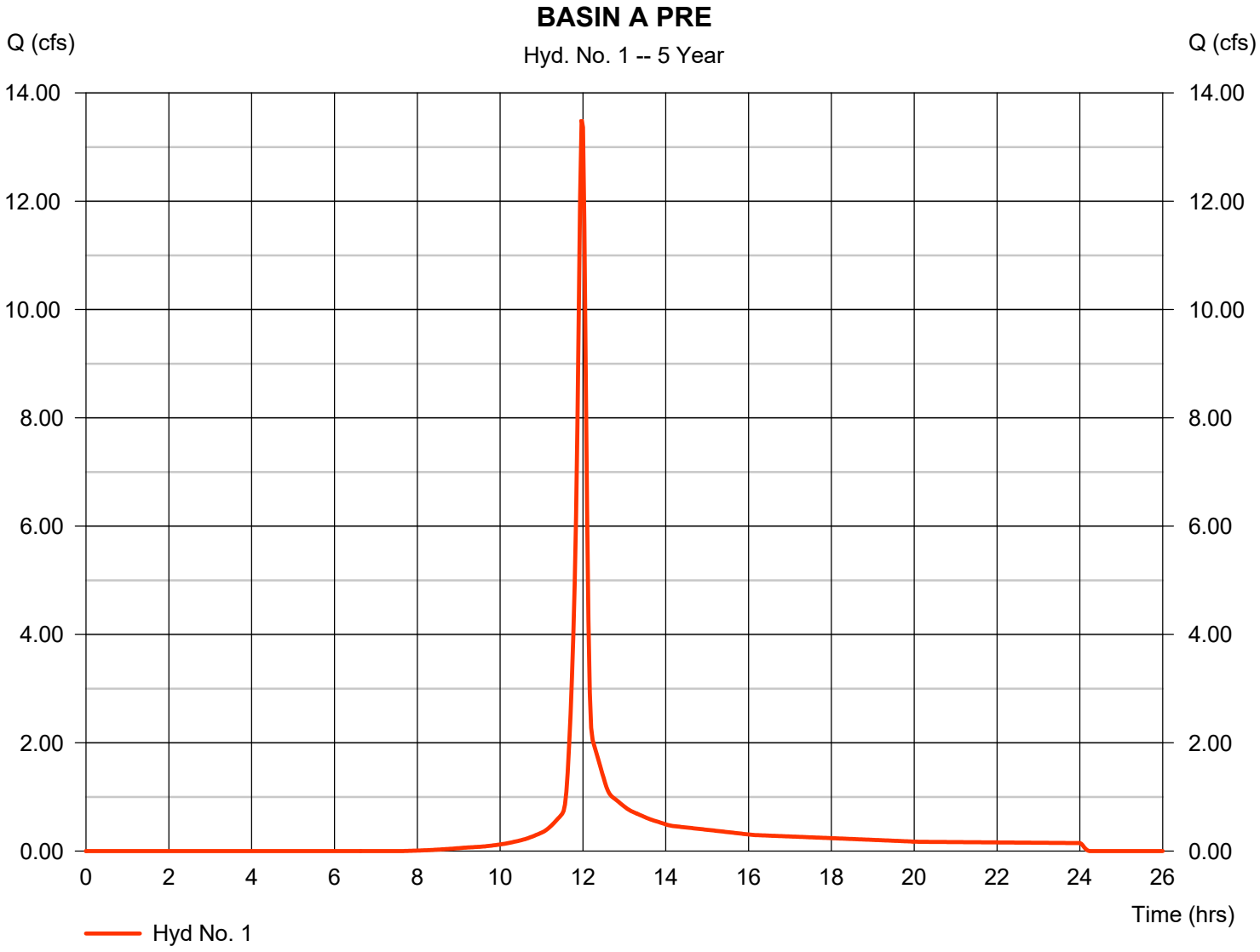
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	13.51	2	718	30,943	------	------	------	BASIN A PRE
2	SCS Runoff	0.193	2	718	420	------	------	------	BAISN B PRE
3	SCS Runoff	0.804	2	720	1,871	------	------	------	BASIN C PRE
5	SCS Runoff	13.00	2	718	29,879	------	------	------	BASIN A1 POST TO POND
6	Reservoir	7.521	2	724	27,916	5	1043.29	9,032	POND ROUTED
7	SCS Runoff	2.725	2	716	5,718	------	------	------	BASIN A2 OFFSITE POST
8	Combine	8.370	2	722	33,634	6, 7	------	------	BASIN A POST
10	SCS Runoff	0.193	2	718	420	------	------	------	BASIN B POST
12	SCS Runoff	0.305	2	720	726	------	------	------	BASIN C POST

Hydrograph Report

Hyd. No. 1

BASIN A PRE

Hydrograph type	= SCS Runoff	Peak discharge	= 13.51 cfs
Storm frequency	= 5 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 30,943 cuft
Drainage area	= 3.230 ac	Curve number	= 79.1
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 9.60 min
Total precip.	= 4.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

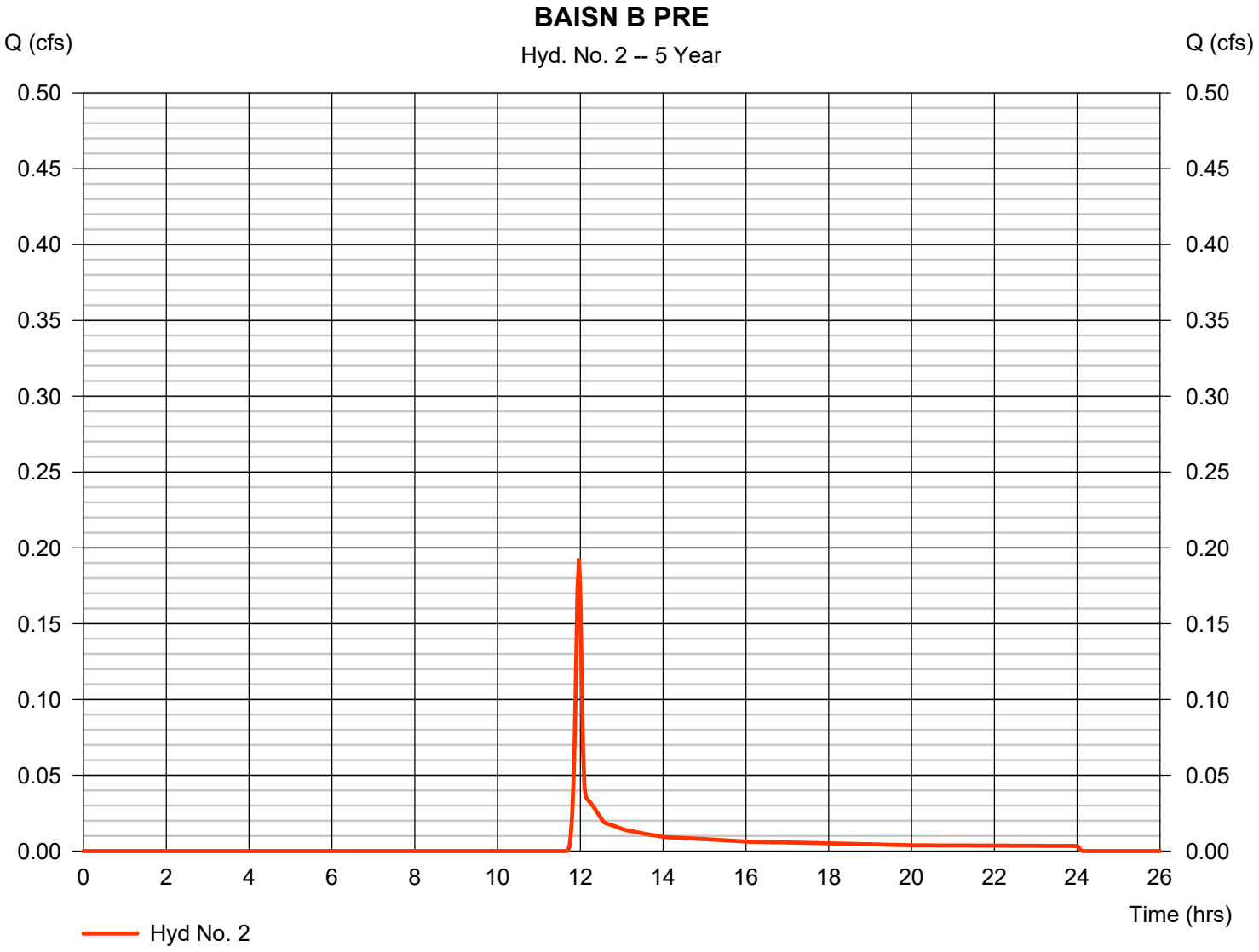


Hydrograph Report

Hyd. No. 2

BAISN B PRE

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.193 cfs
Storm frequency	=	5 yrs	Time to peak	=	11.97 hrs
Time interval	=	2 min	Hyd. volume	=	420 cuft
Drainage area	=	0.140 ac	Curve number	=	55
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	4.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

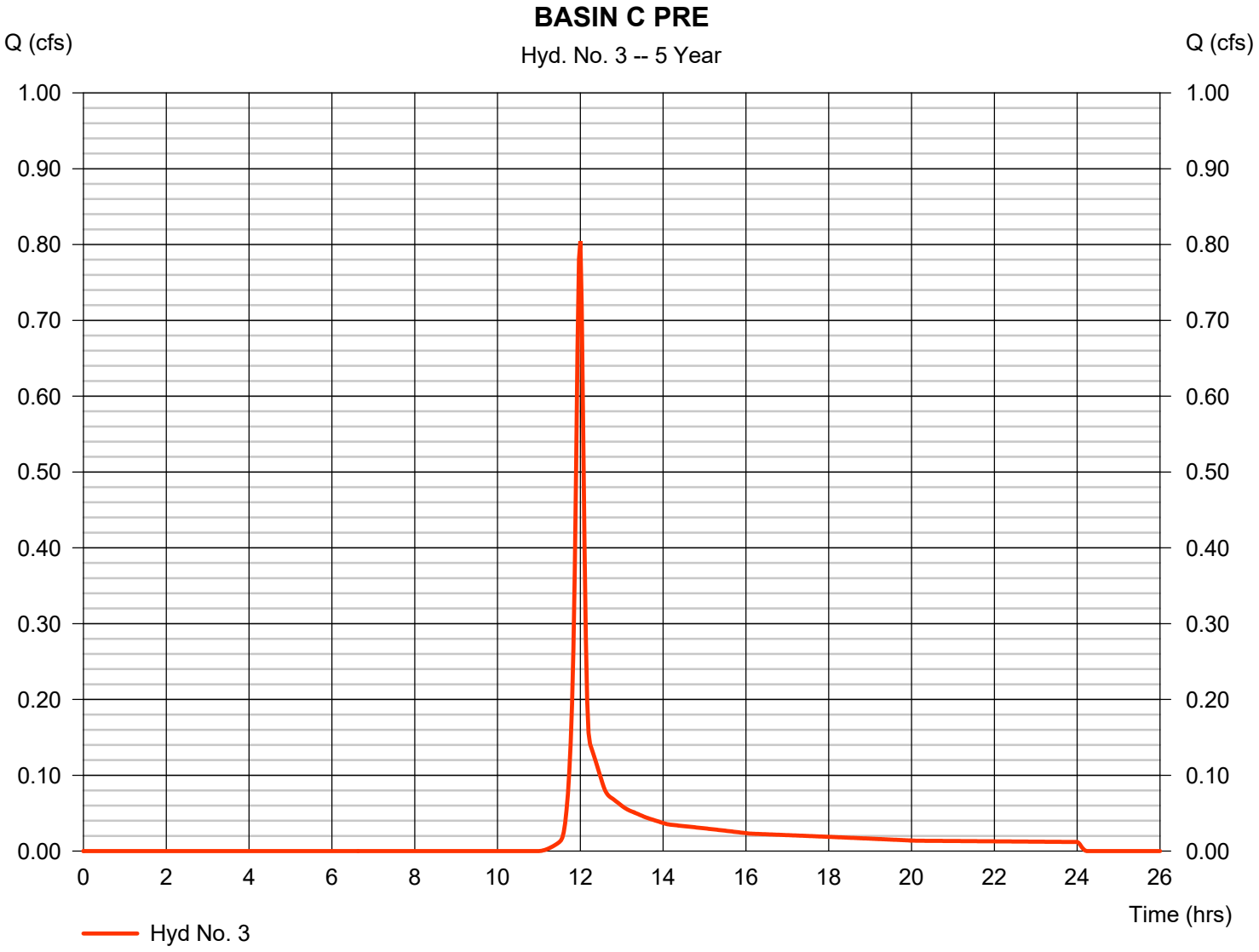


Hydrograph Report

Hyd. No. 3

BASIN C PRE

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.804 cfs
Storm frequency	=	5 yrs	Time to peak	=	12.00 hrs
Time interval	=	2 min	Hyd. volume	=	1,871 cuft
Drainage area	=	0.350 ac	Curve number	=	64.3
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	8.60 min
Total precip.	=	4.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

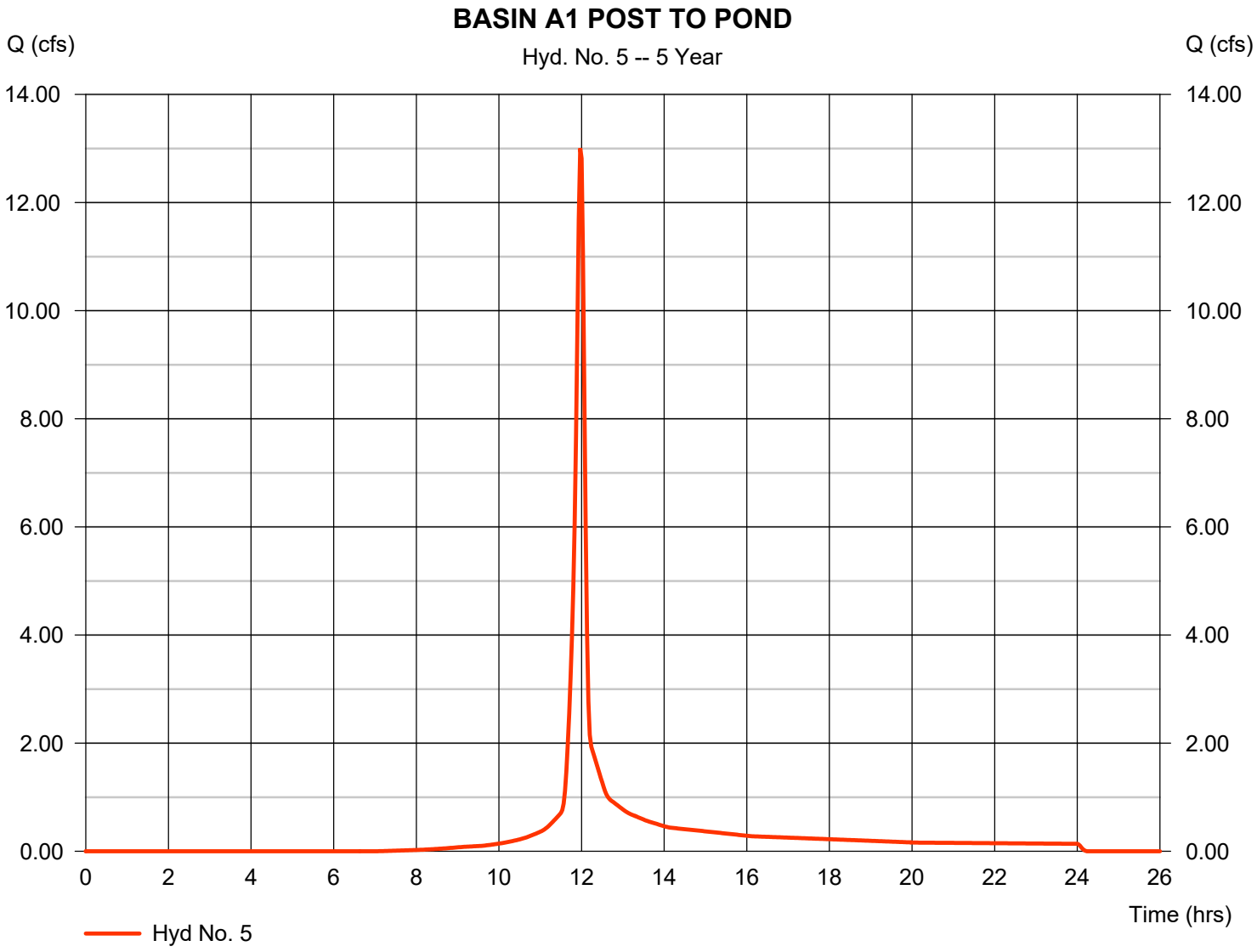


Hydrograph Report

Hyd. No. 5

BASIN A1 POST TO POND

Hydrograph type	= SCS Runoff	Peak discharge	= 13.00 cfs
Storm frequency	= 5 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 29,879 cuft
Drainage area	= 2.930 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.60 min
Total precip.	= 4.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



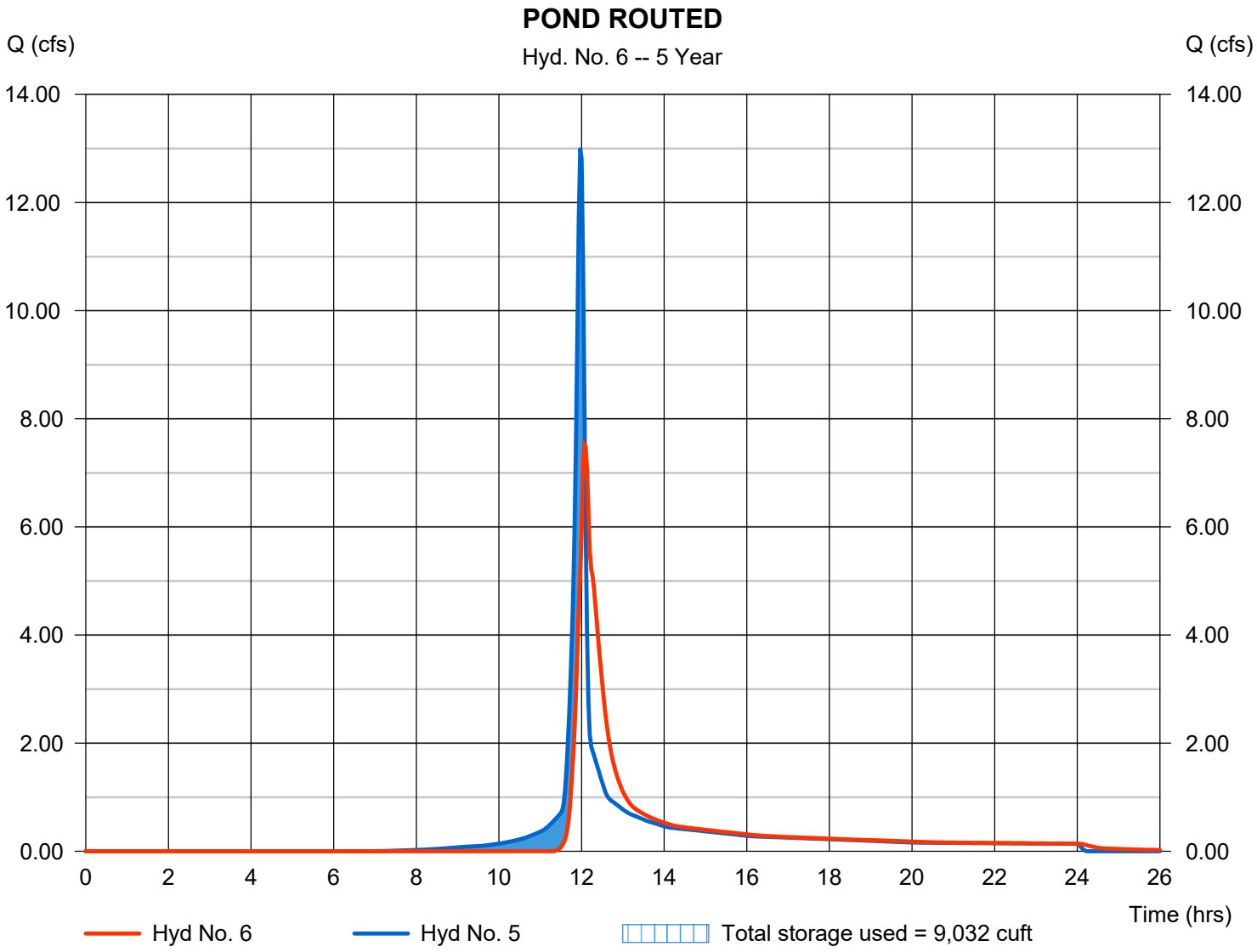
Hydrograph Report

Hyd. No. 6

POND ROUTED

Hydrograph type	=	Reservoir	Peak discharge	=	7.521 cfs
Storm frequency	=	5 yrs	Time to peak	=	12.07 hrs
Time interval	=	2 min	Hyd. volume	=	27,916 cuft
Inflow hyd. No.	=	5 - BASIN A1 POST TO POND	Max. Elevation	=	1043.29 ft
Reservoir name	=	PRELIM POND	Max. Storage	=	9,032 cuft

Storage Indication method used.

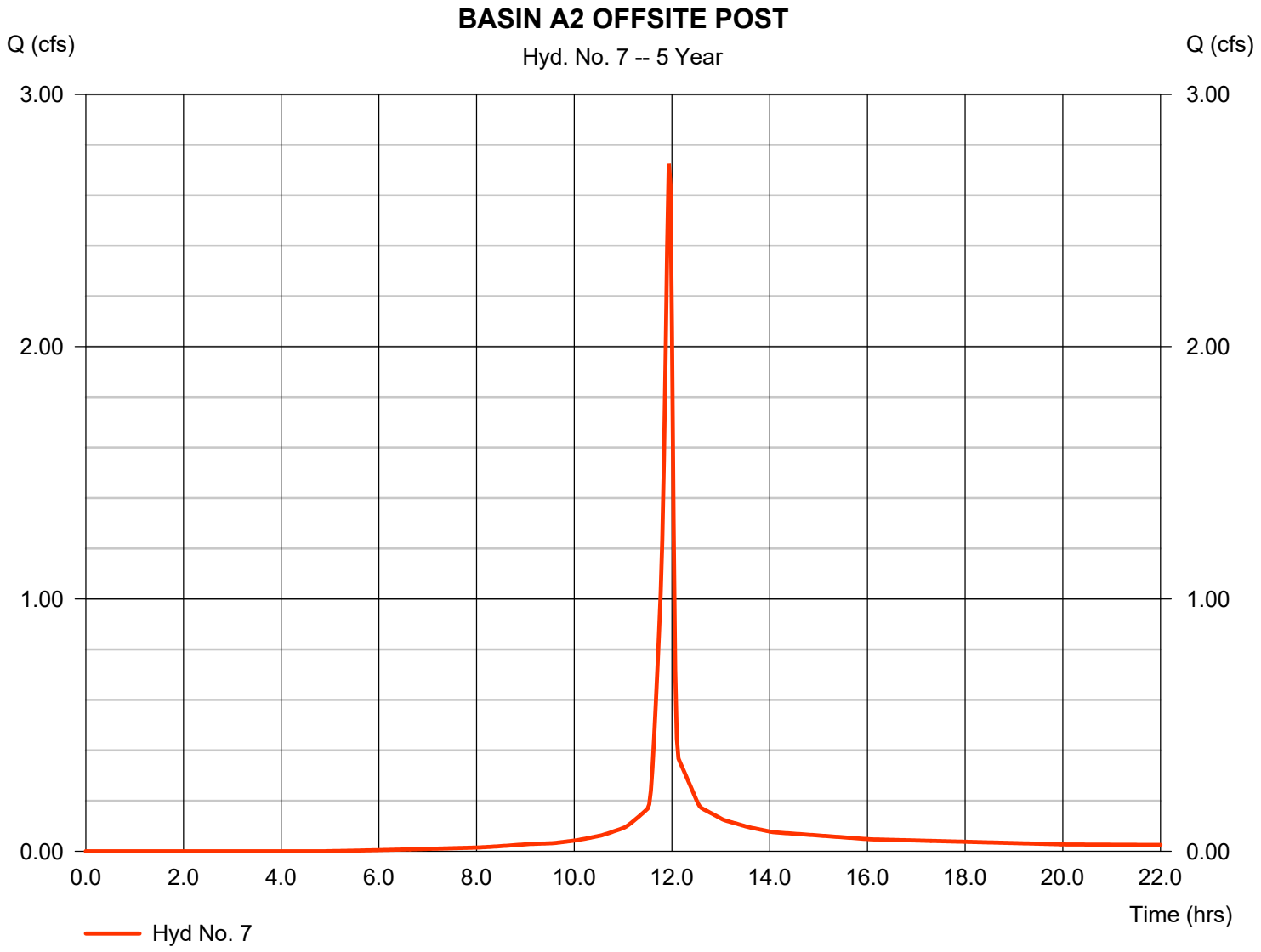


Hydrograph Report

Hyd. No. 7

BASIN A2 OFFSITE POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.725 cfs
Storm frequency	=	5 yrs	Time to peak	=	11.93 hrs
Time interval	=	2 min	Hyd. volume	=	5,718 cuft
Drainage area	=	0.490 ac	Curve number	=	87.5
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	4.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

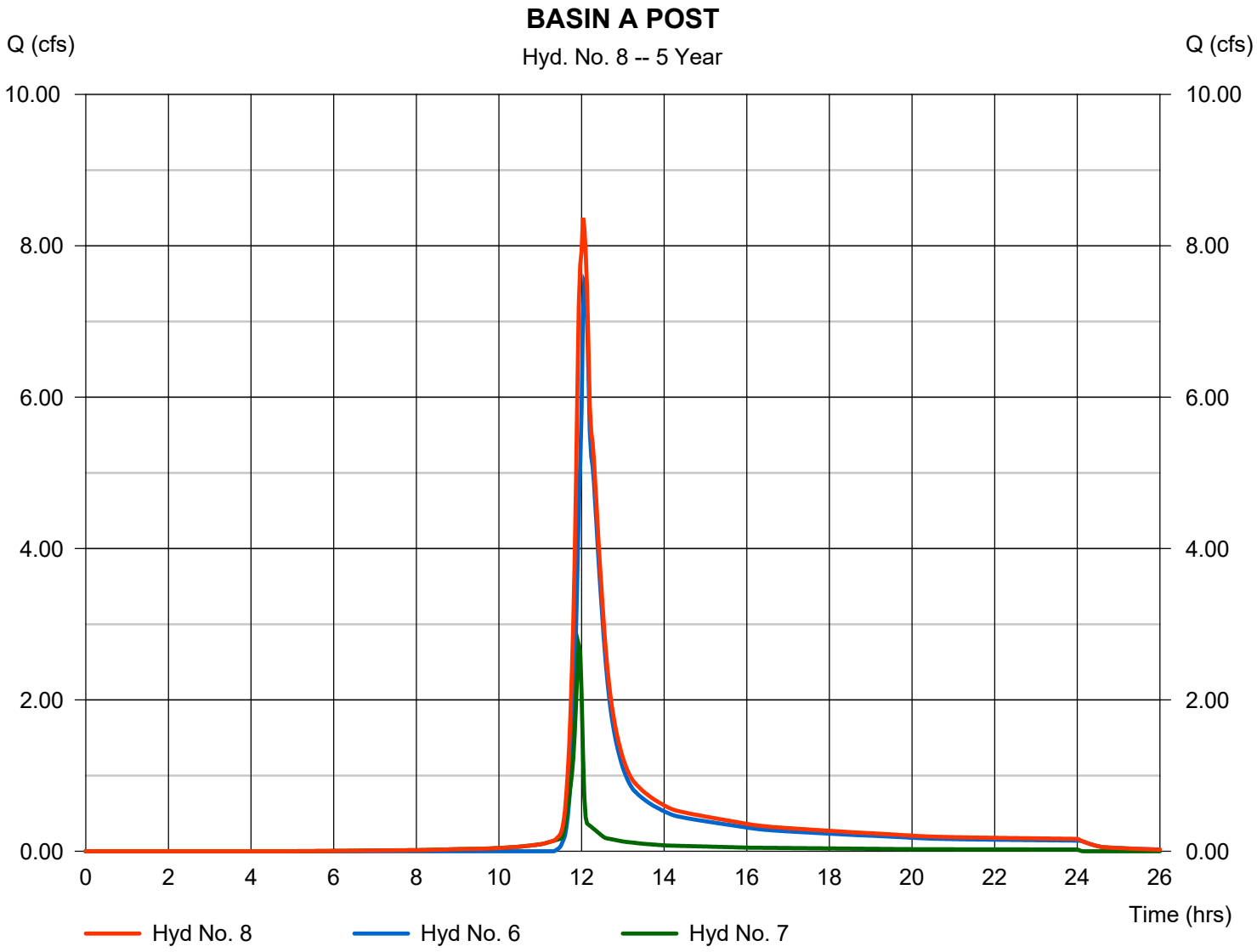


Hydrograph Report

Hyd. No. 8

BASIN A POST

Hydrograph type	=	Combine	Peak discharge	=	8.370 cfs
Storm frequency	=	5 yrs	Time to peak	=	12.03 hrs
Time interval	=	2 min	Hyd. volume	=	33,634 cuft
Inflow hyds.	=	6, 7	Contrib. drain. area	=	0.490 ac

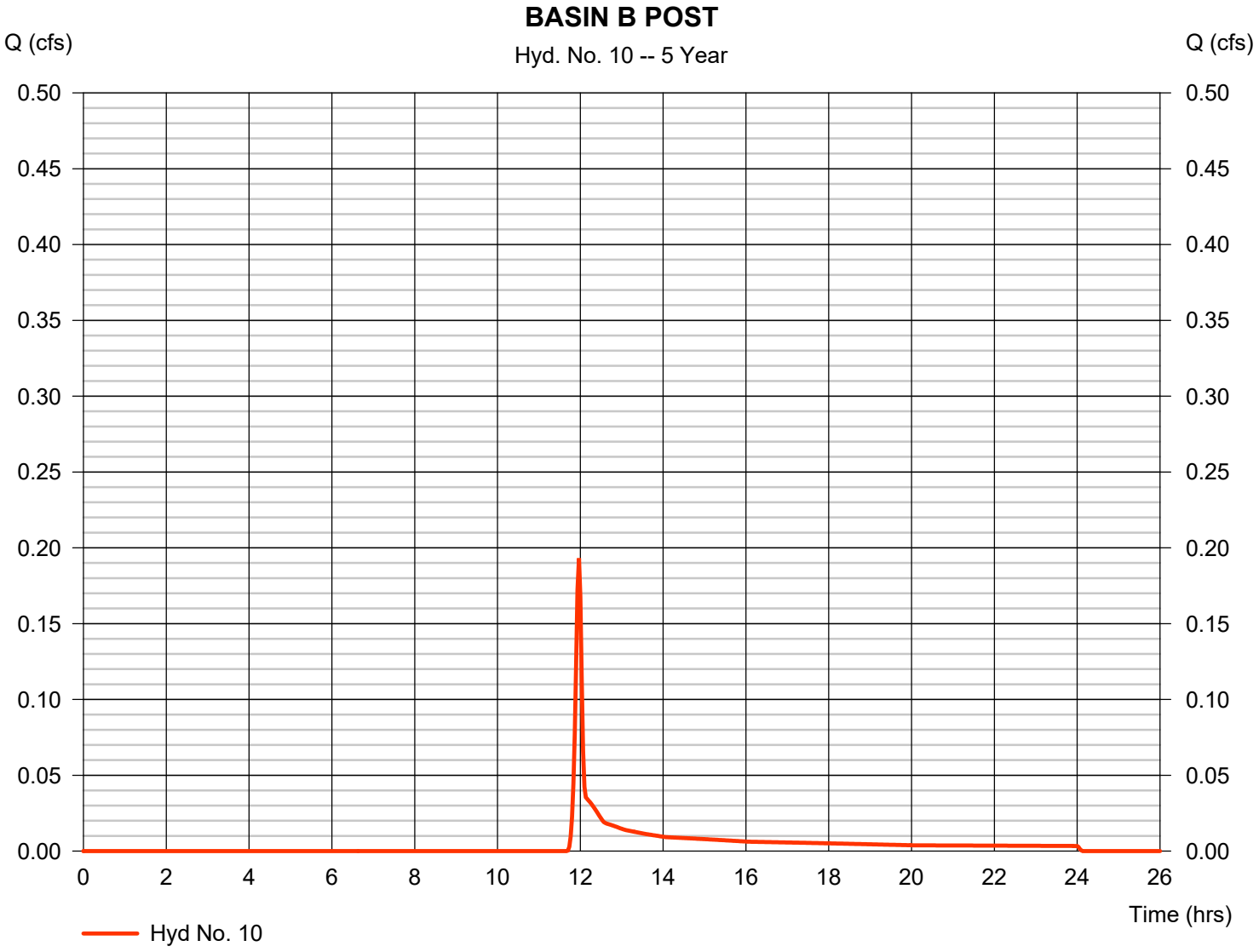


Hydrograph Report

Hyd. No. 10

BASIN B POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.193 cfs
Storm frequency	=	5 yrs	Time to peak	=	11.97 hrs
Time interval	=	2 min	Hyd. volume	=	420 cuft
Drainage area	=	0.140 ac	Curve number	=	55
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	4.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

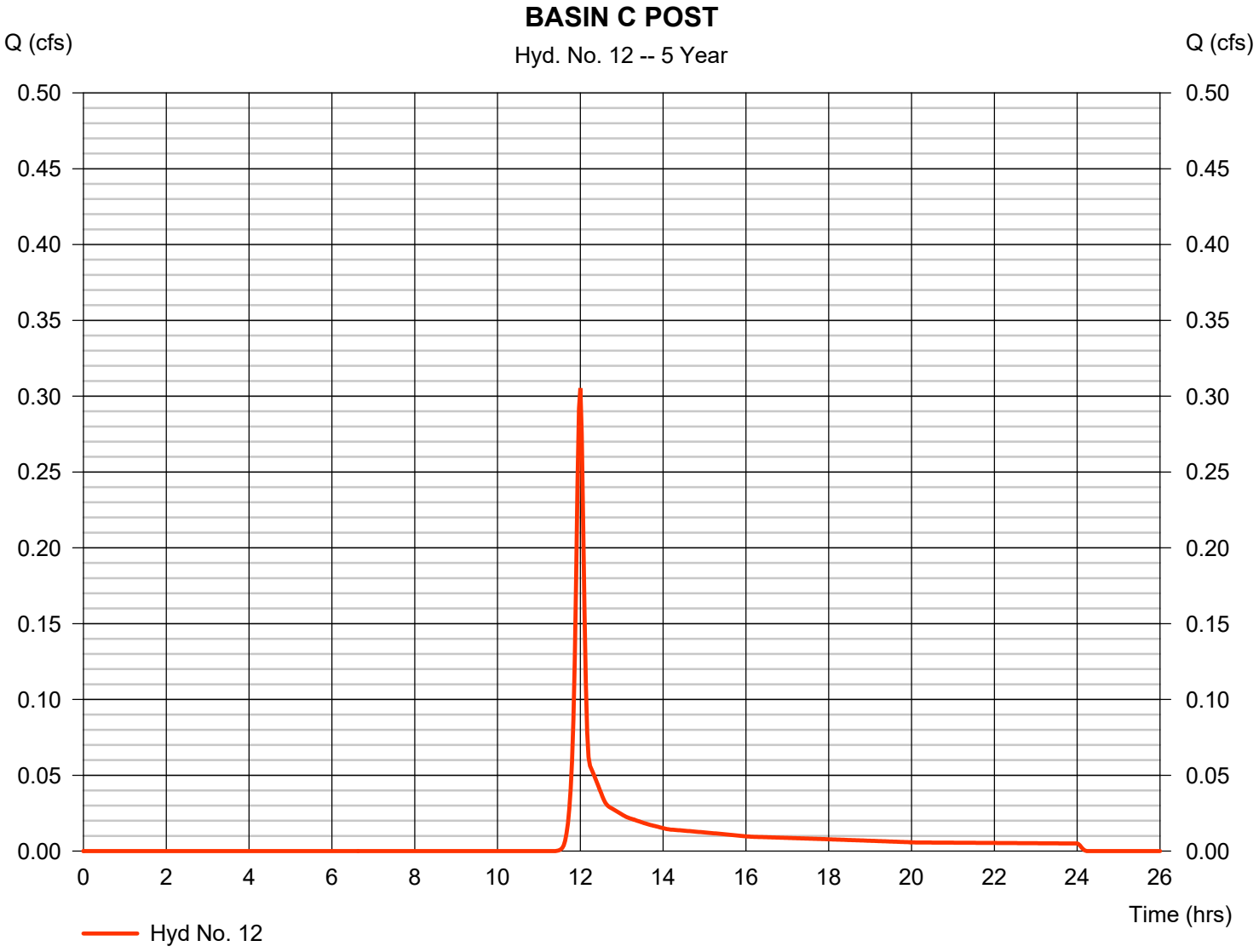


Hydrograph Report

Hyd. No. 12

BASIN C POST

Hydrograph type	= SCS Runoff	Peak discharge	= 0.305 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 726 cuft
Drainage area	= 0.160 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.60 min
Total precip.	= 4.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

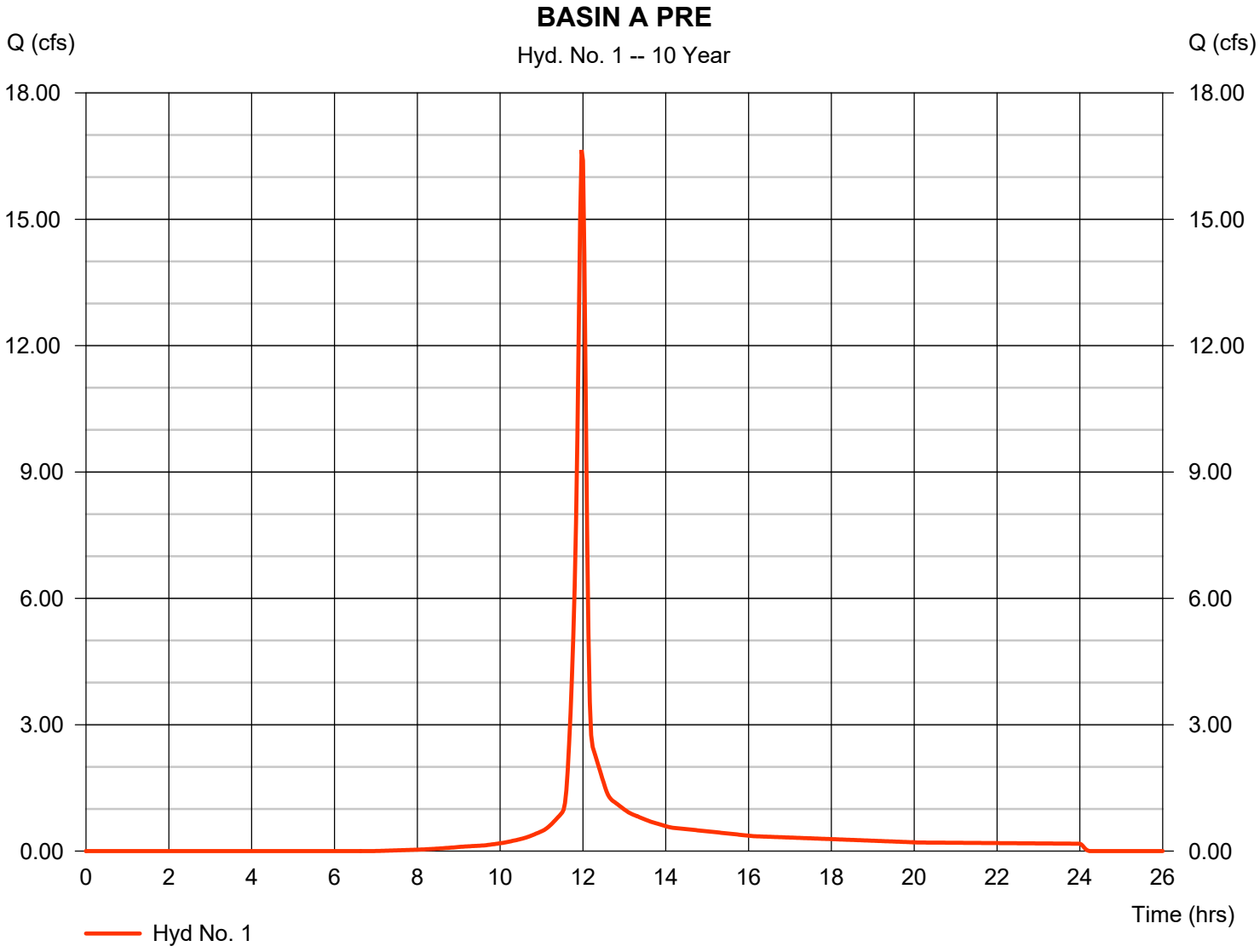
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	16.64	2	718	38,268	------	------	------	BASIN A PRE
2	SCS Runoff	0.287	2	718	596	------	------	------	BAISN B PRE
3	SCS Runoff	1.078	2	720	2,480	------	------	------	BASIN C PRE
5	SCS Runoff	15.88	2	718	36,684	------	------	------	BASIN A1 POST TO POND
6	Reservoir	9.531	2	724	34,720	5	1043.63	10,493	POND ROUTED
7	SCS Runoff	3.234	2	716	6,857	------	------	------	BASIN A2 OFFSITE POST
8	Combine	10.69	2	722	41,577	6, 7	------	------	BASIN A POST
10	SCS Runoff	0.287	2	718	596	------	------	------	BASIN B POST
12	SCS Runoff	0.422	2	720	982	------	------	------	BASIN C POST

Hydrograph Report

Hyd. No. 1

BASIN A PRE

Hydrograph type	=	SCS Runoff	Peak discharge	=	16.64 cfs
Storm frequency	=	10 yrs	Time to peak	=	11.97 hrs
Time interval	=	2 min	Hyd. volume	=	38,268 cuft
Drainage area	=	3.230 ac	Curve number	=	79.1
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	9.60 min
Total precip.	=	5.52 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

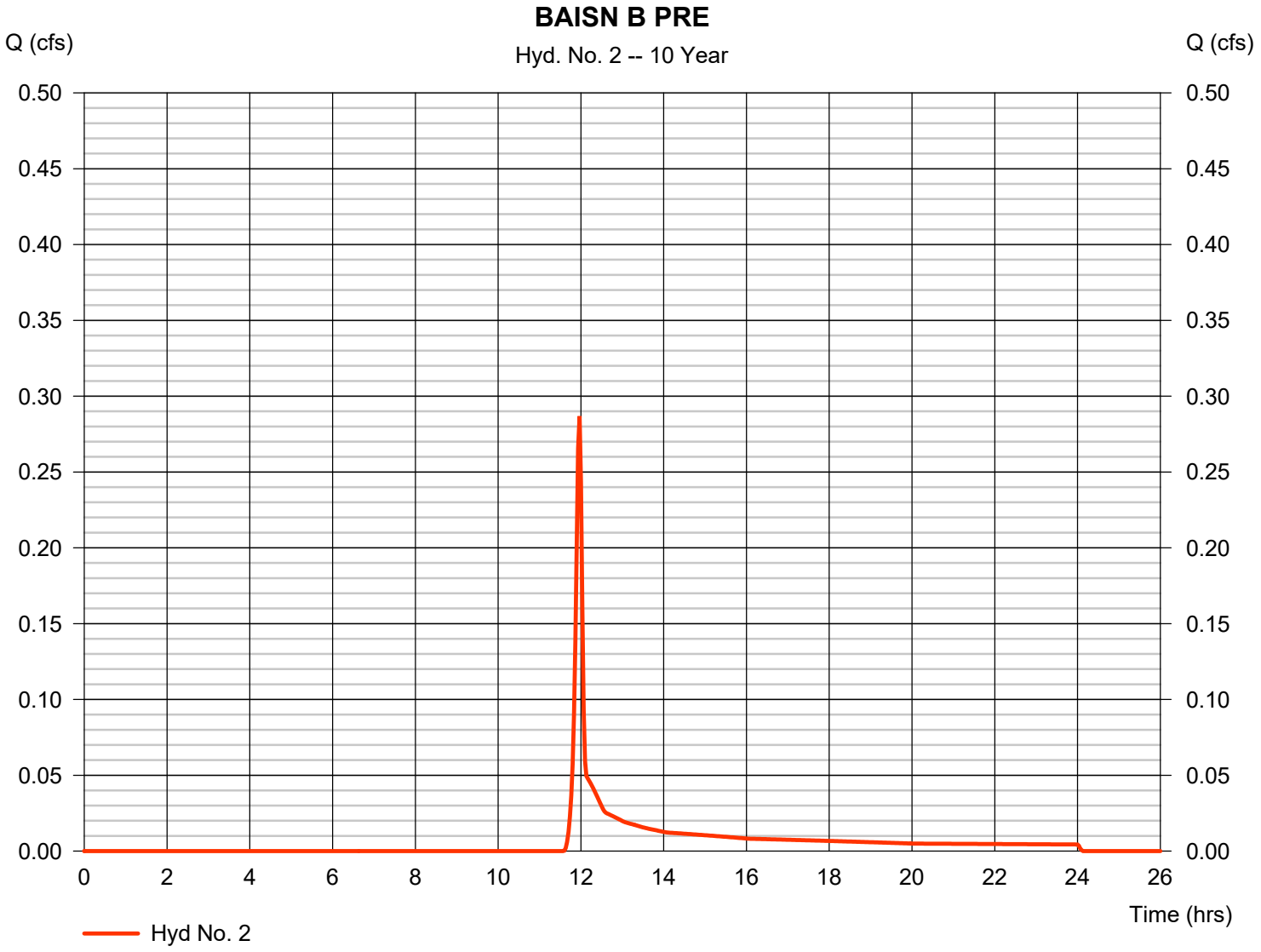


Hydrograph Report

Hyd. No. 2

BAISN B PRE

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.287 cfs
Storm frequency	=	10 yrs	Time to peak	=	11.97 hrs
Time interval	=	2 min	Hyd. volume	=	596 cuft
Drainage area	=	0.140 ac	Curve number	=	55
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	5.52 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

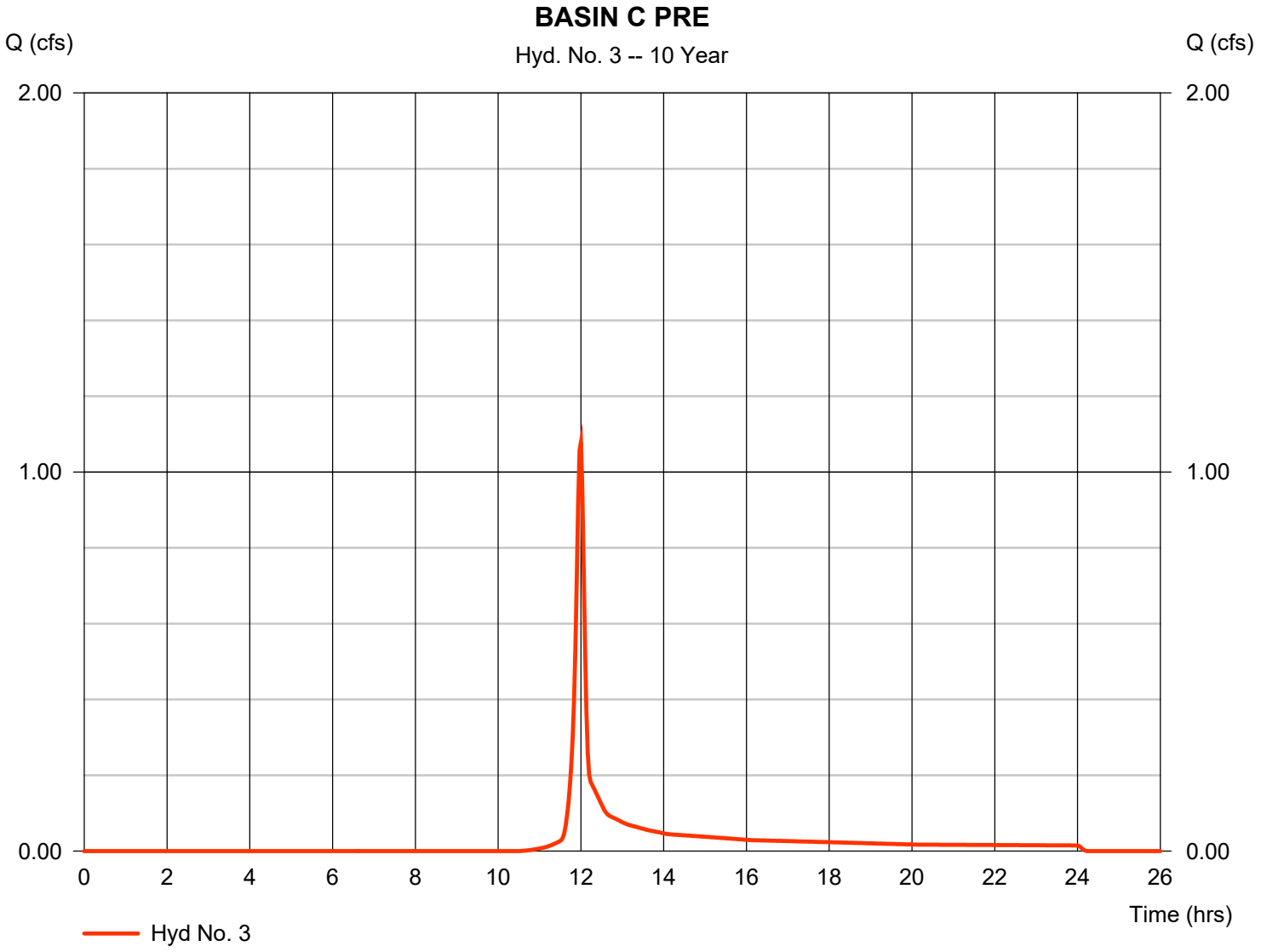


Hydrograph Report

Hyd. No. 3

BASIN C PRE

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.078 cfs
Storm frequency	=	10 yrs	Time to peak	=	12.00 hrs
Time interval	=	2 min	Hyd. volume	=	2,480 cuft
Drainage area	=	0.350 ac	Curve number	=	64.3
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	8.60 min
Total precip.	=	5.52 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

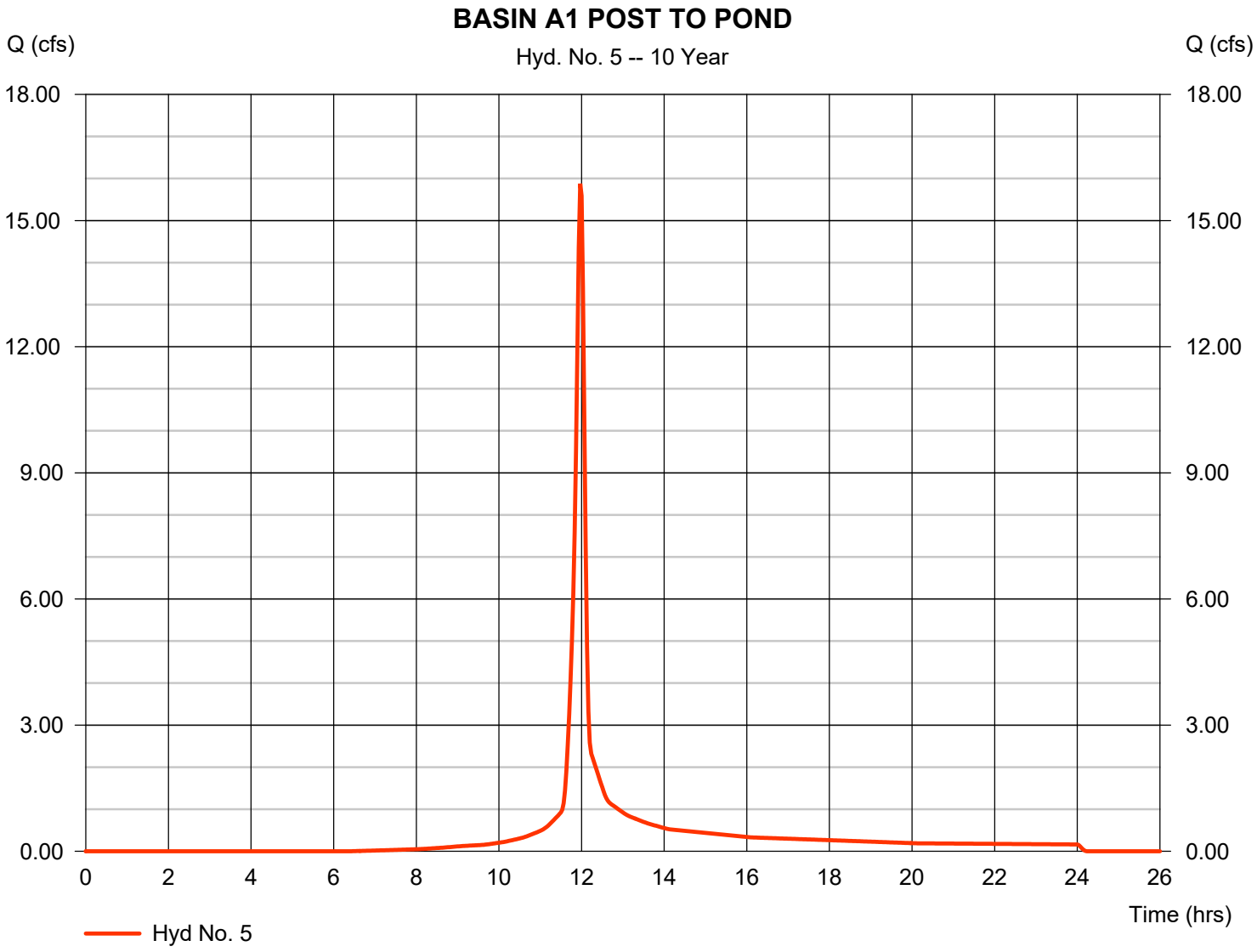


Hydrograph Report

Hyd. No. 5

BASIN A1 POST TO POND

Hydrograph type	=	SCS Runoff	Peak discharge	=	15.88 cfs
Storm frequency	=	10 yrs	Time to peak	=	11.97 hrs
Time interval	=	2 min	Hyd. volume	=	36,684 cuft
Drainage area	=	2.930 ac	Curve number	=	81
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	8.60 min
Total precip.	=	5.52 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



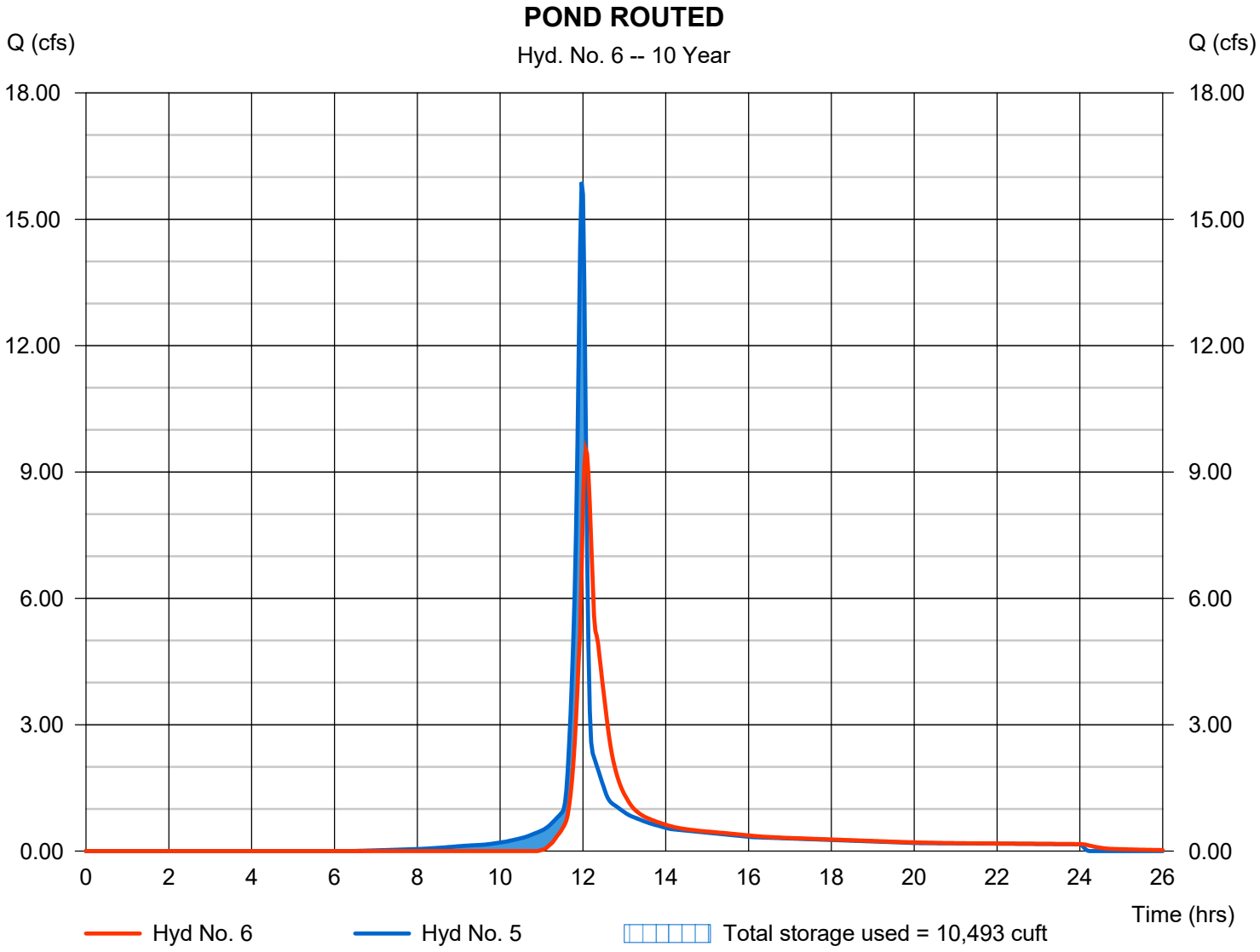
Hydrograph Report

Hyd. No. 6

POND ROUTED

Hydrograph type	=	Reservoir	Peak discharge	=	9.531 cfs
Storm frequency	=	10 yrs	Time to peak	=	12.07 hrs
Time interval	=	2 min	Hyd. volume	=	34,720 cuft
Inflow hyd. No.	=	5 - BASIN A1 POST TO POND	Max. Elevation	=	1043.63 ft
Reservoir name	=	PRELIM POND	Max. Storage	=	10,493 cuft

Storage Indication method used.

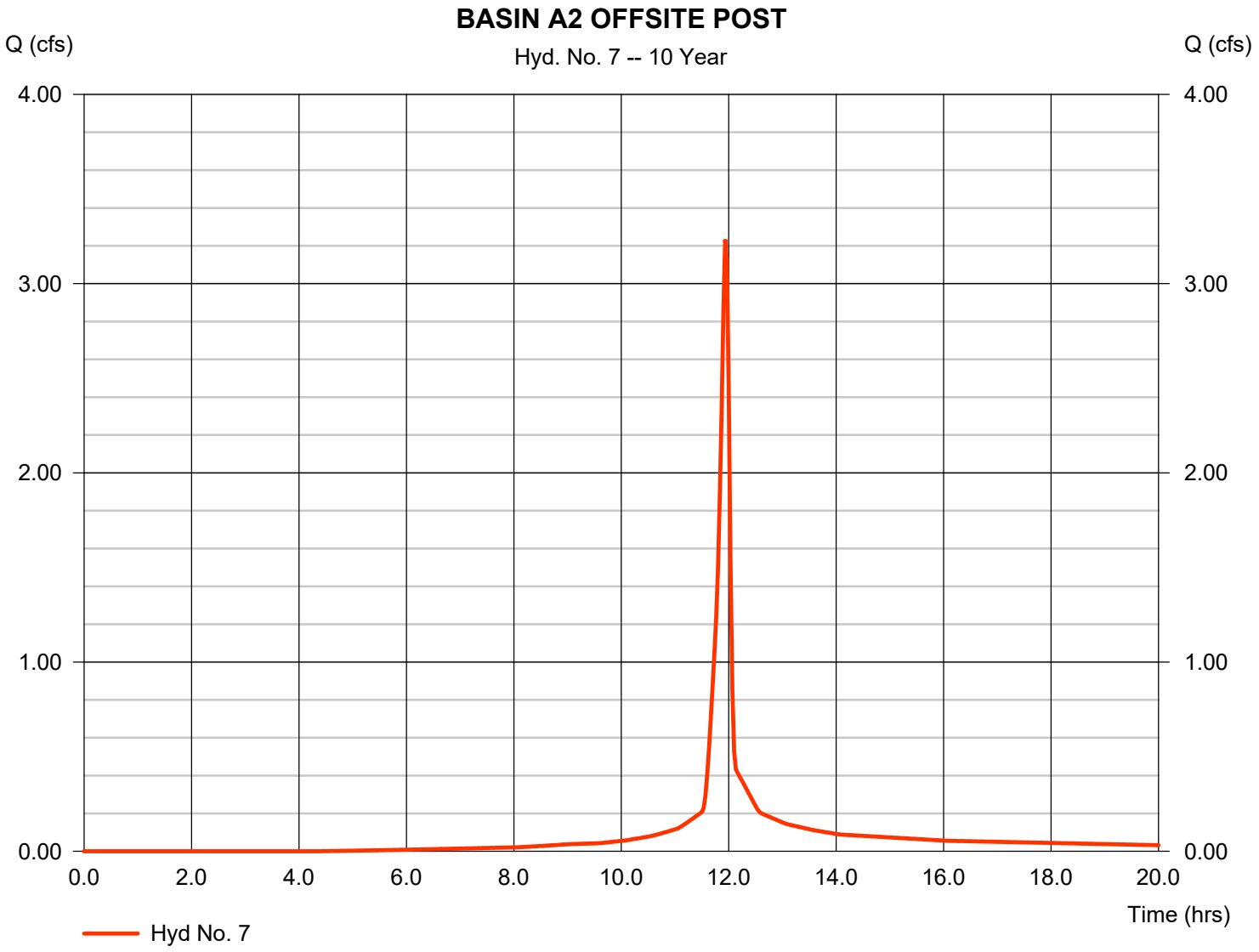


Hydrograph Report

Hyd. No. 7

BASIN A2 OFFSITE POST

Hydrograph type	= SCS Runoff	Peak discharge	= 3.234 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 6,857 cuft
Drainage area	= 0.490 ac	Curve number	= 87.5
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.52 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

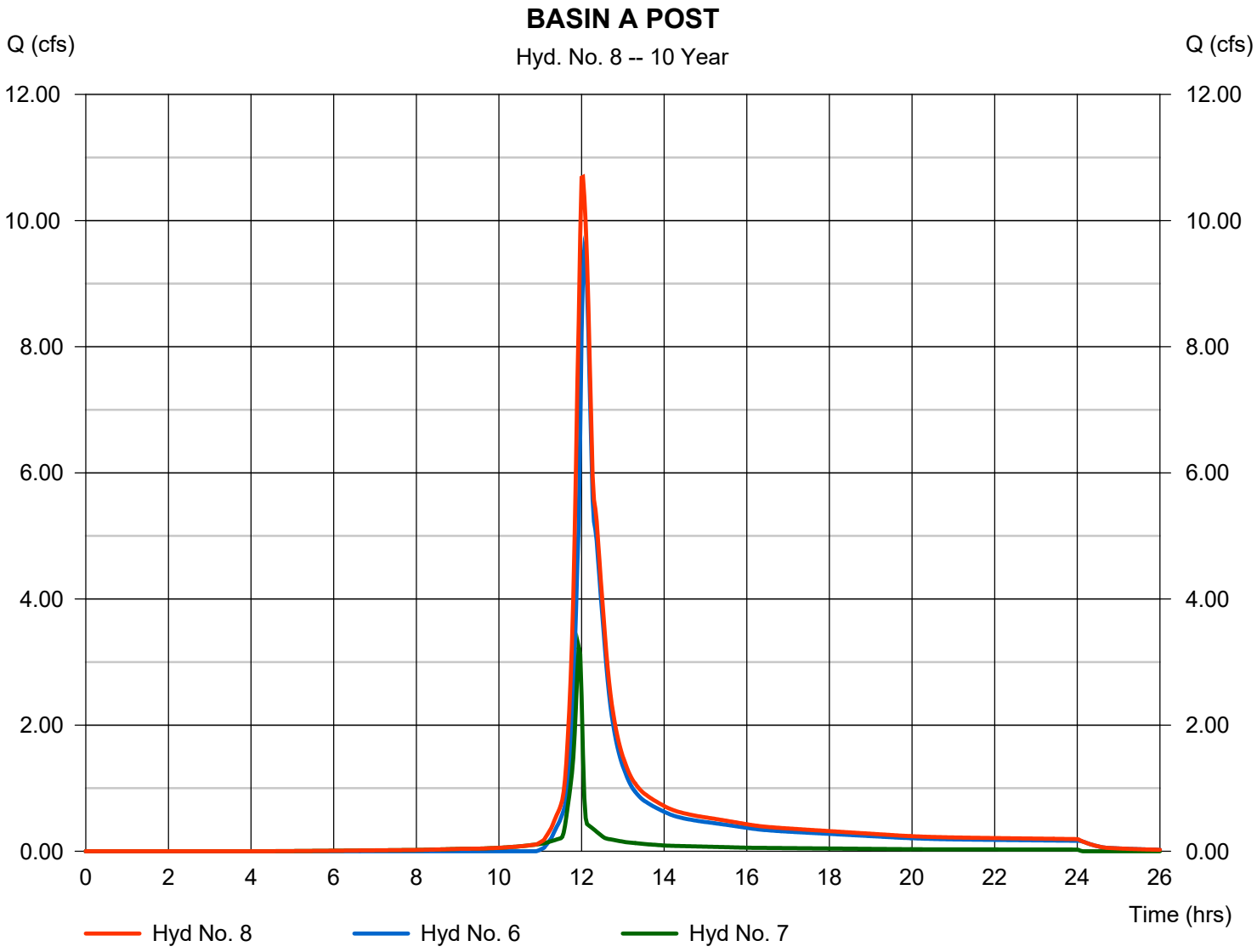


Hydrograph Report

Hyd. No. 8

BASIN A POST

Hydrograph type	= Combine	Peak discharge	= 10.69 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 41,577 cuft
Inflow hyds.	= 6, 7	Contrib. drain. area	= 0.490 ac

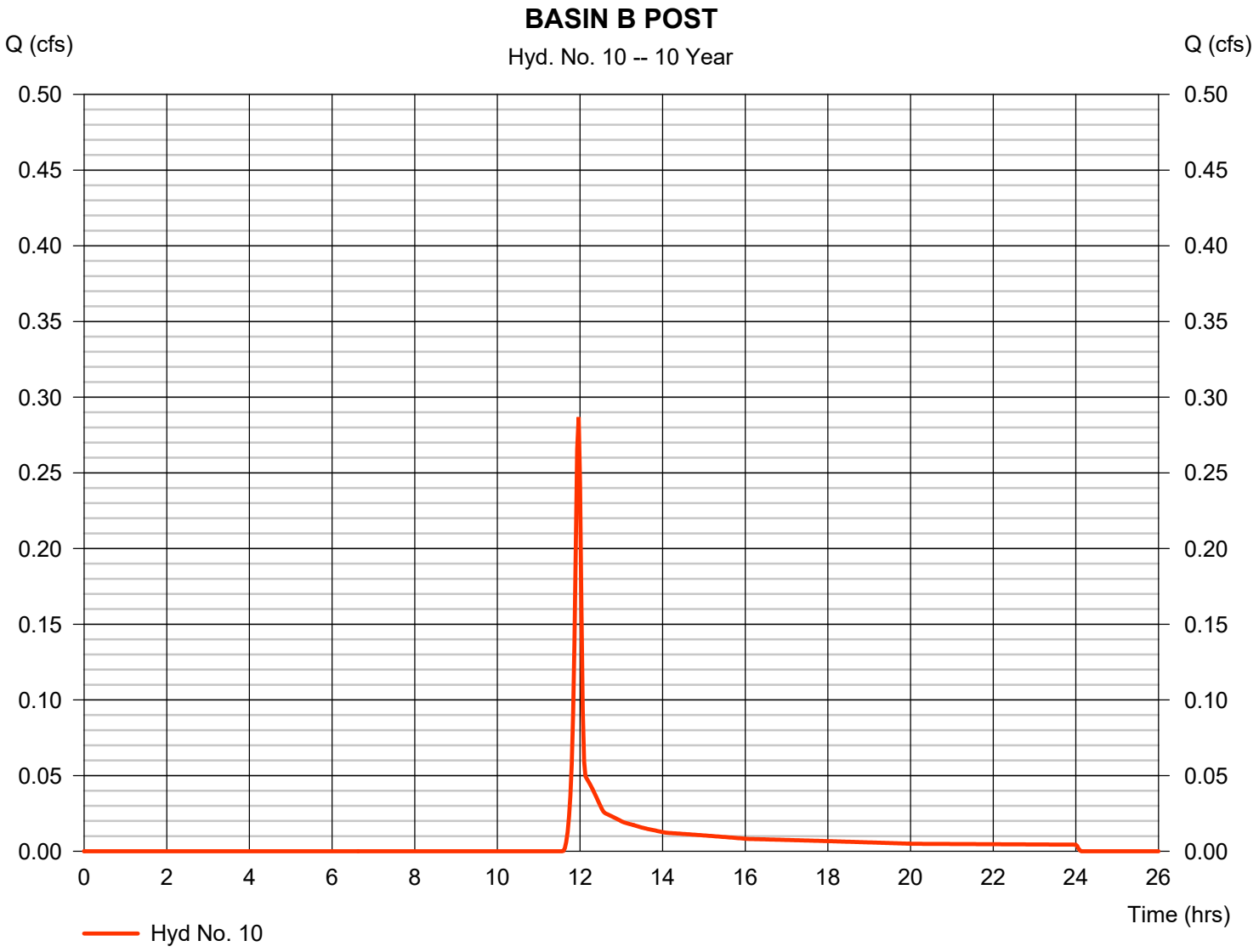


Hydrograph Report

Hyd. No. 10

BASIN B POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.287 cfs
Storm frequency	=	10 yrs	Time to peak	=	11.97 hrs
Time interval	=	2 min	Hyd. volume	=	596 cuft
Drainage area	=	0.140 ac	Curve number	=	55
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	5.52 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

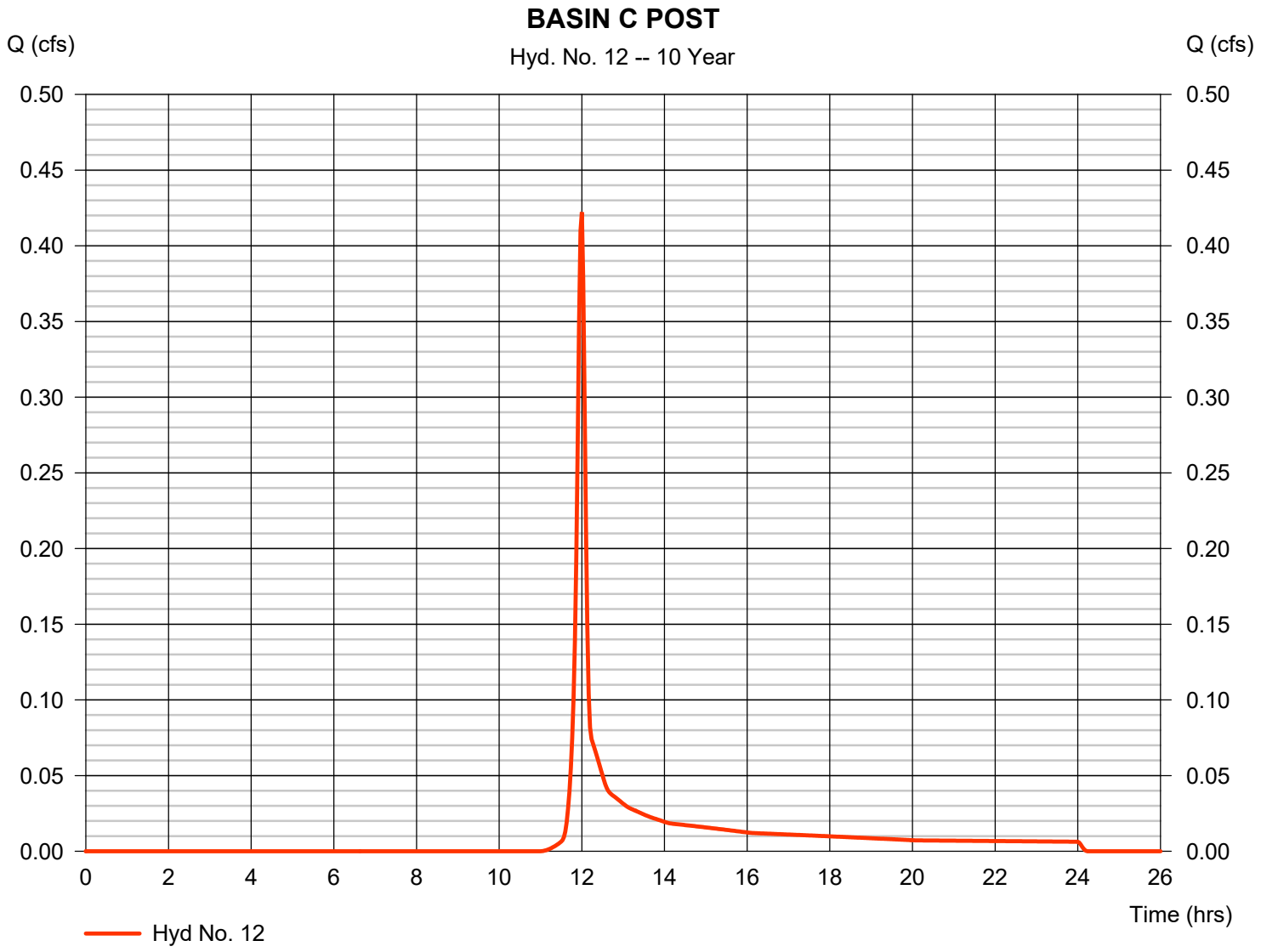


Hydrograph Report

Hyd. No. 12

BASIN C POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.422 cfs
Storm frequency	=	10 yrs	Time to peak	=	12.00 hrs
Time interval	=	2 min	Hyd. volume	=	982 cuft
Drainage area	=	0.160 ac	Curve number	=	61
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	8.60 min
Total precip.	=	5.52 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

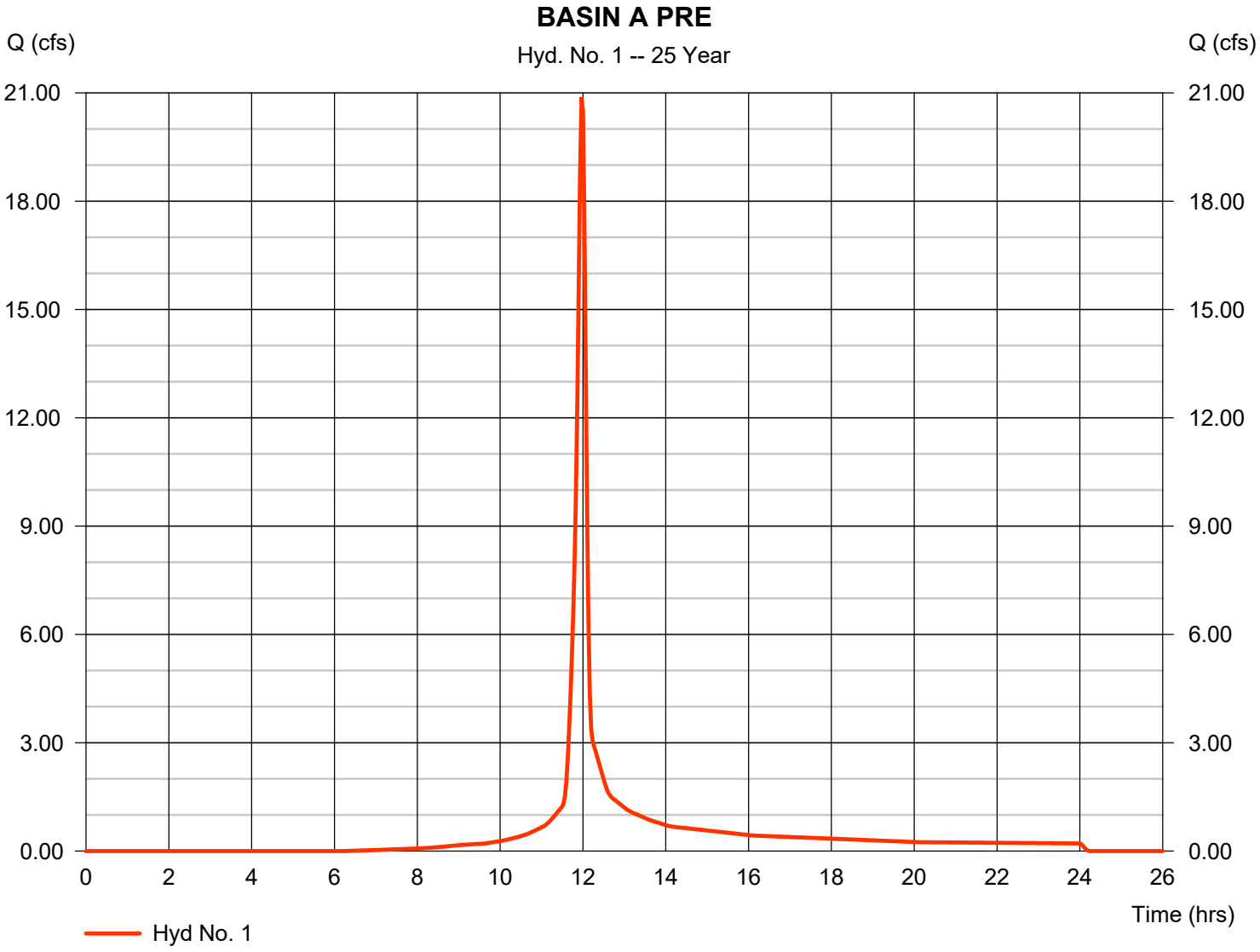
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	20.88	2	718	48,327	------	------	------	BASIN A PRE
2	SCS Runoff	0.424	2	718	858	------	------	------	BAISN B PRE
3	SCS Runoff	1.465	2	720	3,354	------	------	------	BASIN C PRE
5	SCS Runoff	19.75	2	718	45,986	------	------	------	BASIN A1 POST TO POND
6	Reservoir	11.47	2	724	44,022	5	1044.07	12,525	POND ROUTED
7	SCS Runoff	3.910	2	716	8,393	------	------	------	BASIN A2 OFFSITE POST
8	Combine	13.40	2	720	52,415	6, 7	------	------	BASIN A POST
10	SCS Runoff	0.424	2	718	858	------	------	------	BASIN B POST
12	SCS Runoff	0.590	2	720	1,355	------	------	------	BASIN C POST

Hydrograph Report

Hyd. No. 1

BASIN A PRE

Hydrograph type	=	SCS Runoff	Peak discharge	=	20.88 cfs
Storm frequency	=	25 yrs	Time to peak	=	11.97 hrs
Time interval	=	2 min	Hyd. volume	=	48,327 cuft
Drainage area	=	3.230 ac	Curve number	=	79.1
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	9.60 min
Total precip.	=	6.48 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

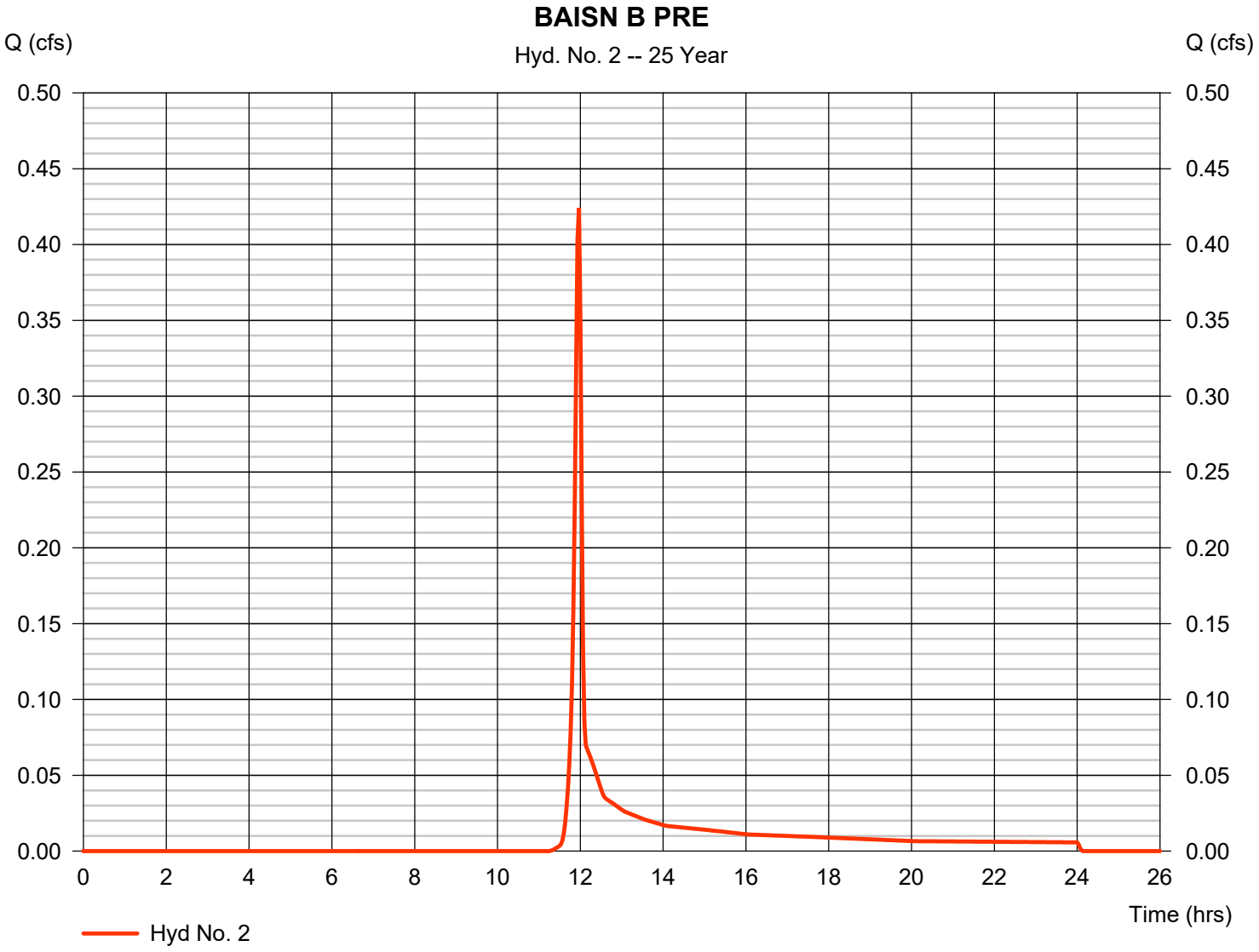


Hydrograph Report

Hyd. No. 2

BAISN B PRE

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.424 cfs
Storm frequency	=	25 yrs	Time to peak	=	11.97 hrs
Time interval	=	2 min	Hyd. volume	=	858 cuft
Drainage area	=	0.140 ac	Curve number	=	55
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	6.48 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

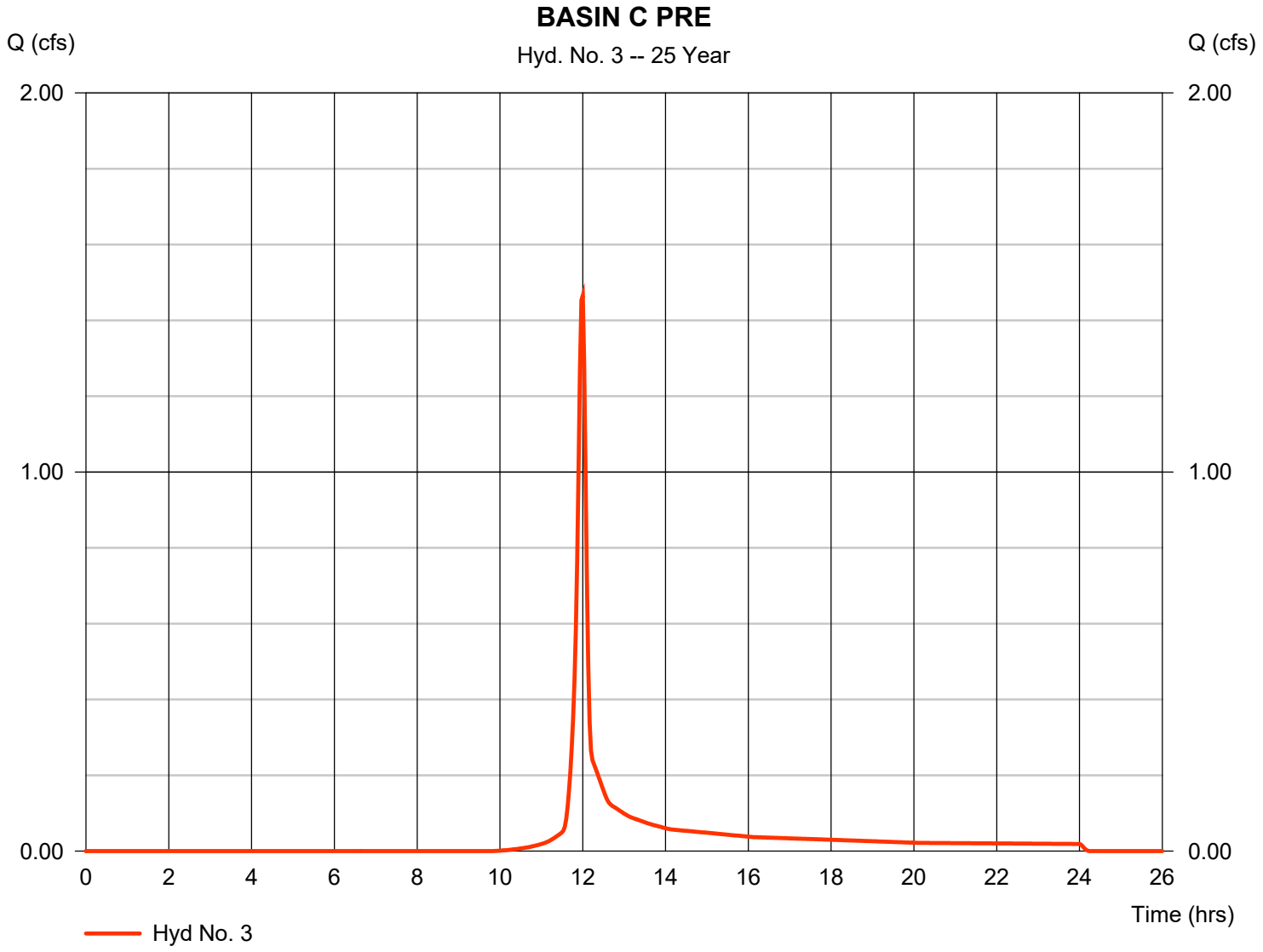


Hydrograph Report

Hyd. No. 3

BASIN C PRE

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.465 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.00 hrs
Time interval	=	2 min	Hyd. volume	=	3,354 cuft
Drainage area	=	0.350 ac	Curve number	=	64.3
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	8.60 min
Total precip.	=	6.48 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

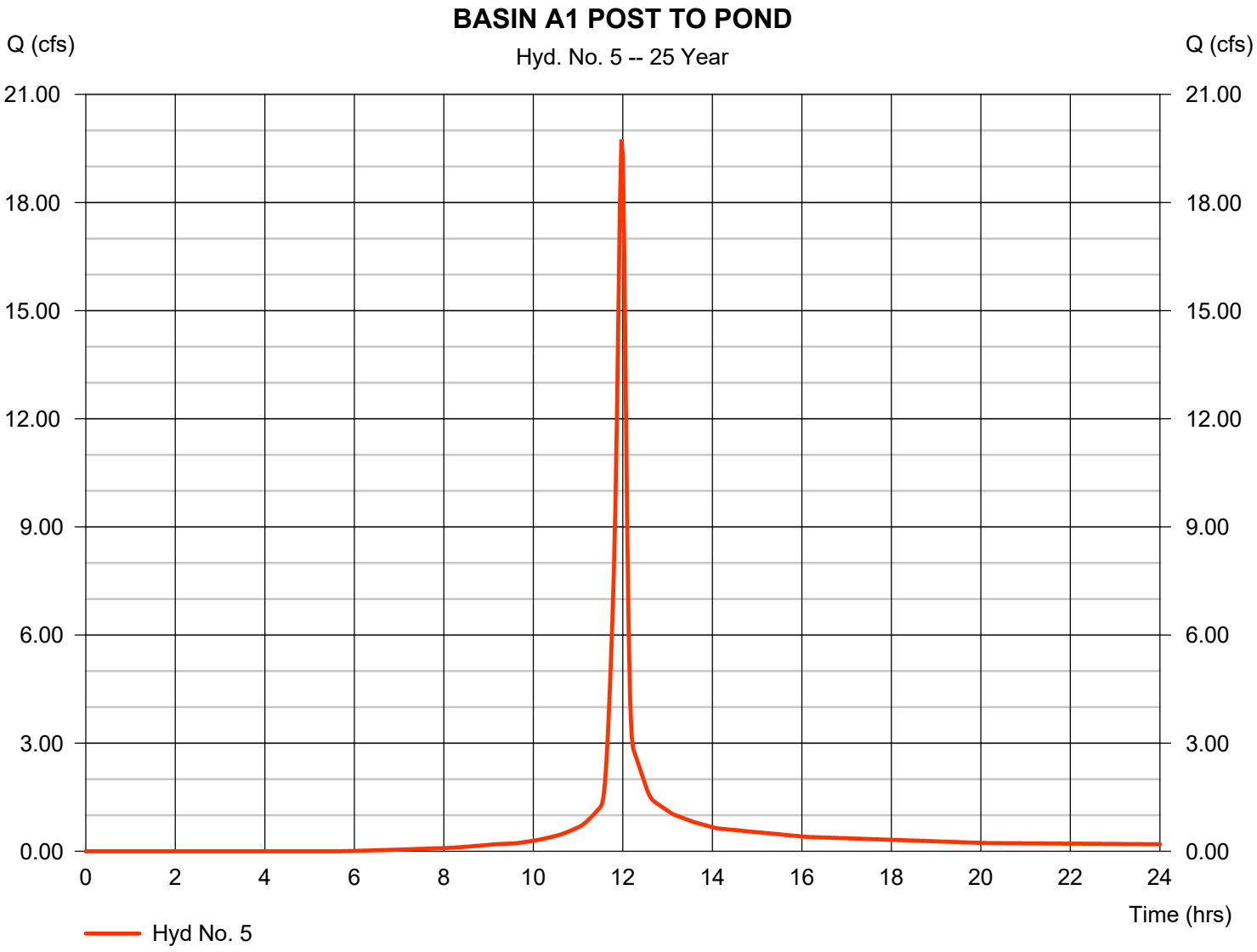


Hydrograph Report

Hyd. No. 5

BASIN A1 POST TO POND

Hydrograph type	= SCS Runoff	Peak discharge	= 19.75 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 45,986 cuft
Drainage area	= 2.930 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.60 min
Total precip.	= 6.48 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



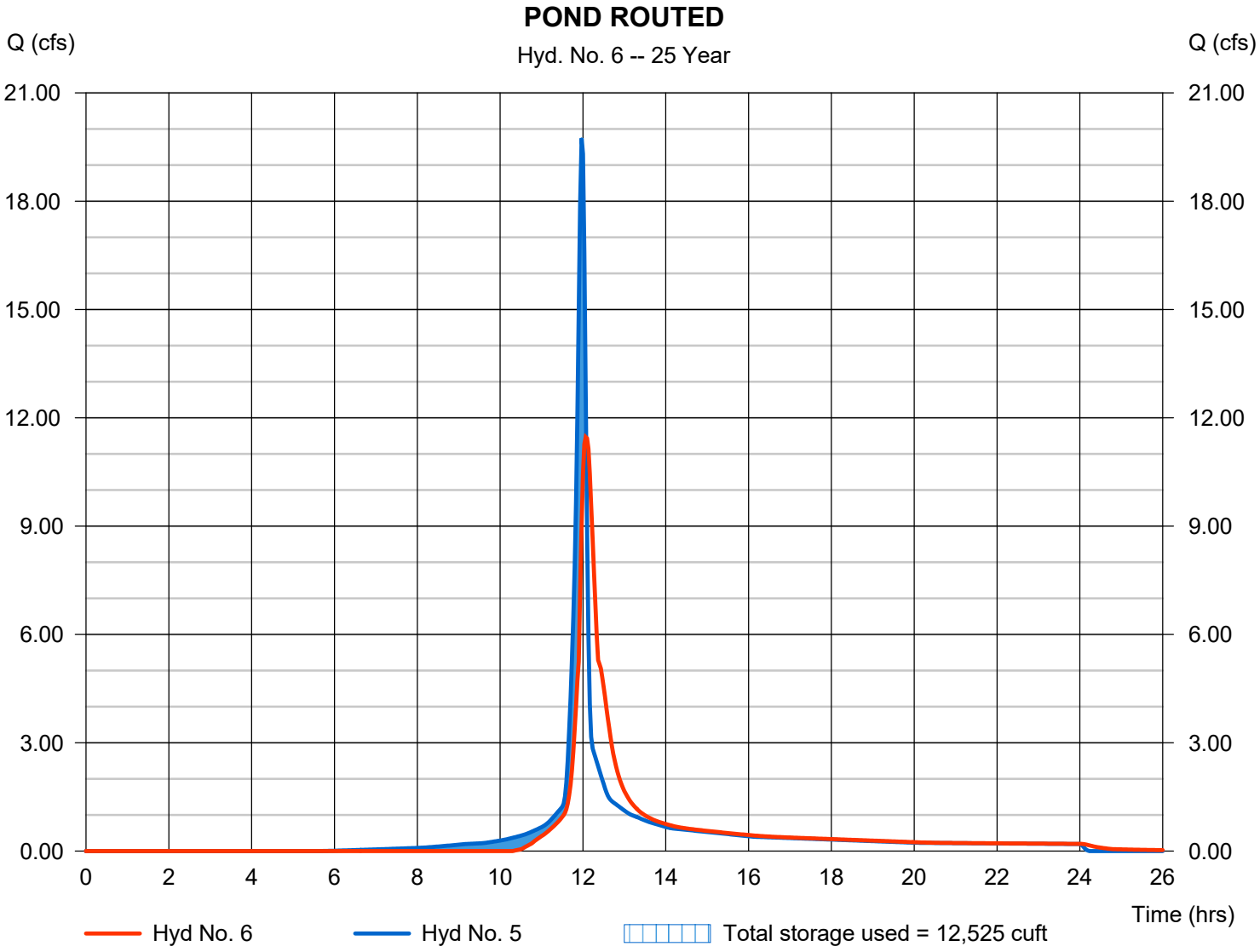
Hydrograph Report

Hyd. No. 6

POND ROUTED

Hydrograph type	=	Reservoir	Peak discharge	=	11.47 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.07 hrs
Time interval	=	2 min	Hyd. volume	=	44,022 cuft
Inflow hyd. No.	=	5 - BASIN A1 POST TO POND	Max. Elevation	=	1044.07 ft
Reservoir name	=	PRELIM POND	Max. Storage	=	12,525 cuft

Storage Indication method used.

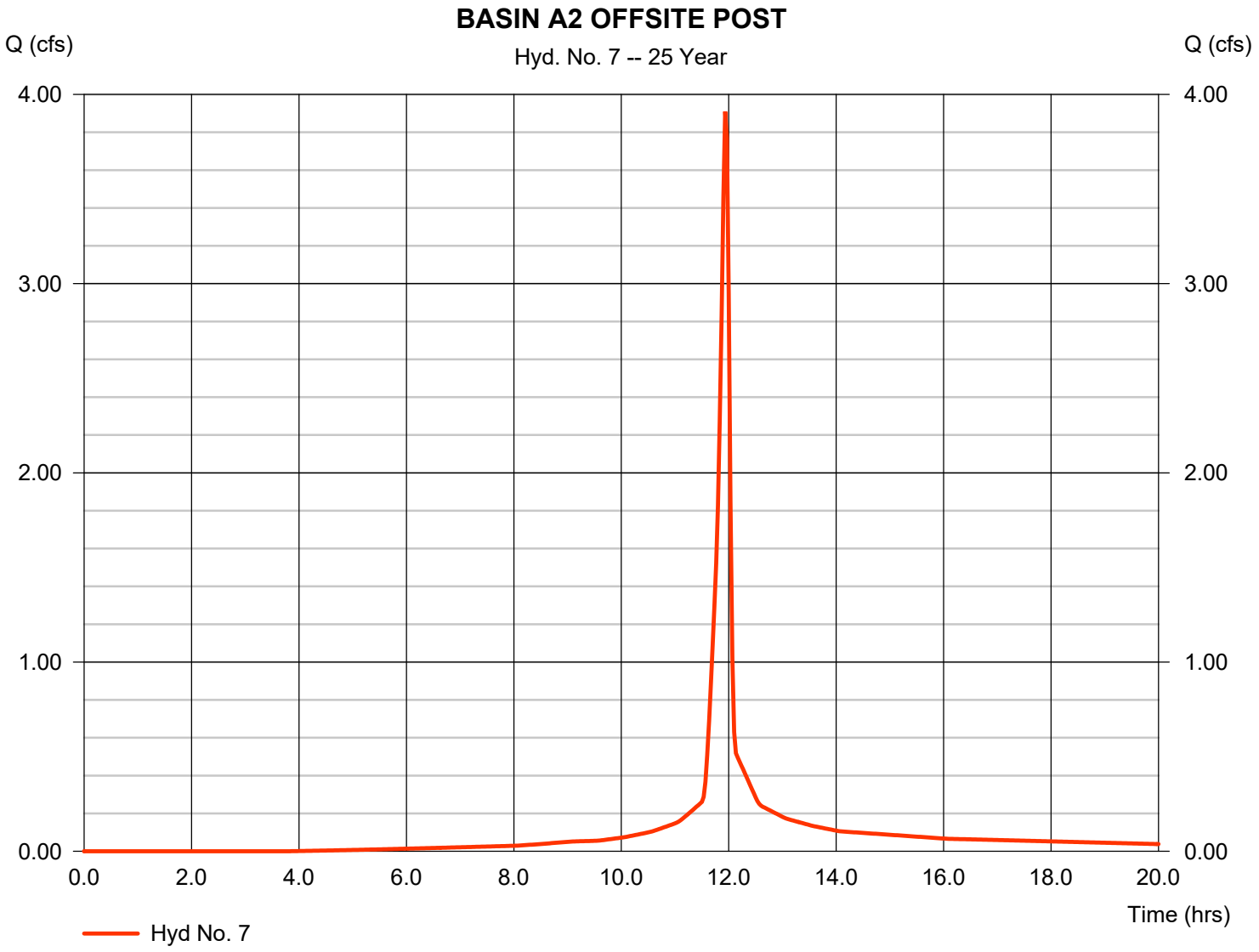


Hydrograph Report

Hyd. No. 7

BASIN A2 OFFSITE POST

Hydrograph type	= SCS Runoff	Peak discharge	= 3.910 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 8,393 cuft
Drainage area	= 0.490 ac	Curve number	= 87.5
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.48 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

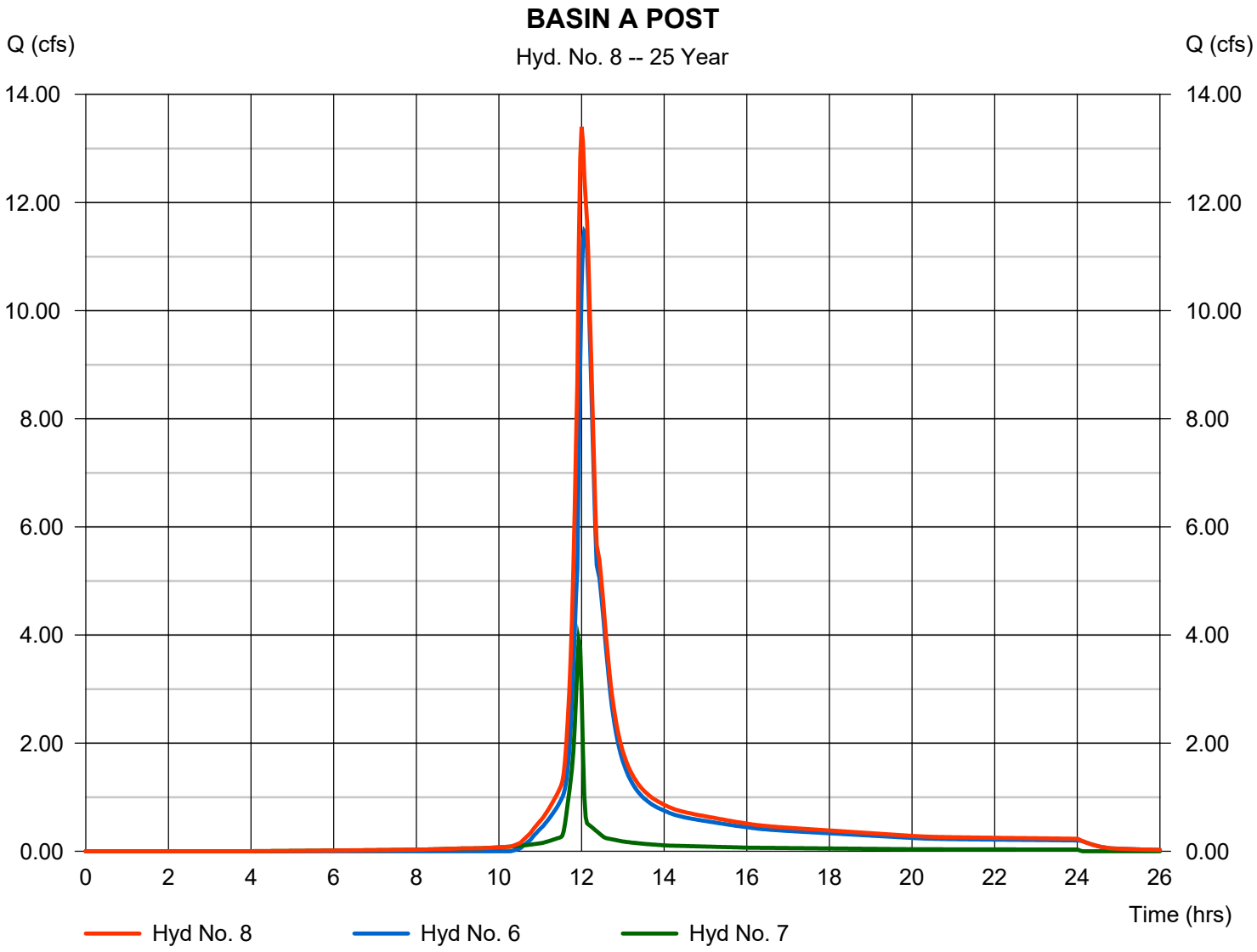


Hydrograph Report

Hyd. No. 8

BASIN A POST

Hydrograph type	=	Combine	Peak discharge	=	13.40 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.00 hrs
Time interval	=	2 min	Hyd. volume	=	52,415 cuft
Inflow hyds.	=	6, 7	Contrib. drain. area	=	0.490 ac

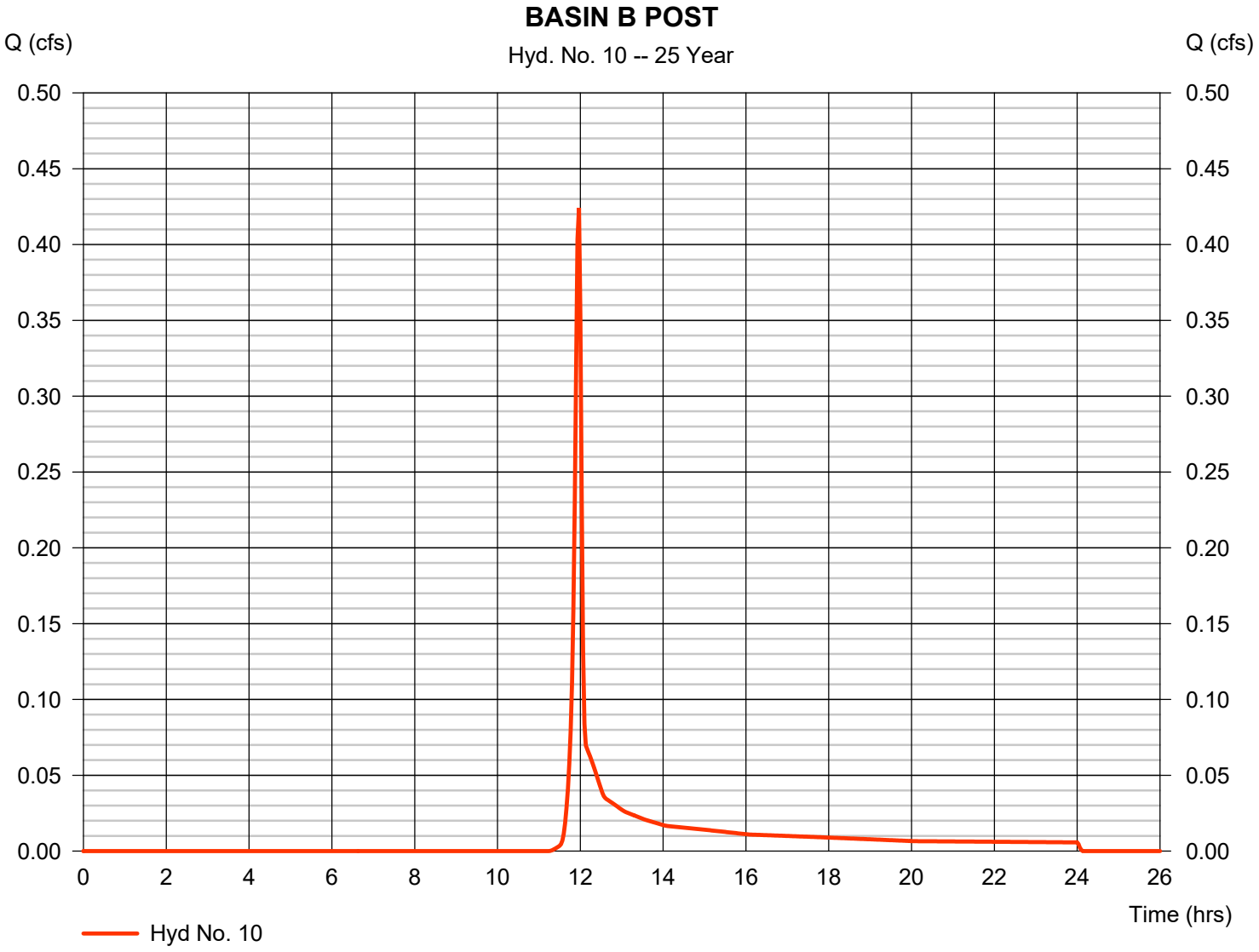


Hydrograph Report

Hyd. No. 10

BASIN B POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.424 cfs
Storm frequency	=	25 yrs	Time to peak	=	11.97 hrs
Time interval	=	2 min	Hyd. volume	=	858 cuft
Drainage area	=	0.140 ac	Curve number	=	55
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	6.48 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

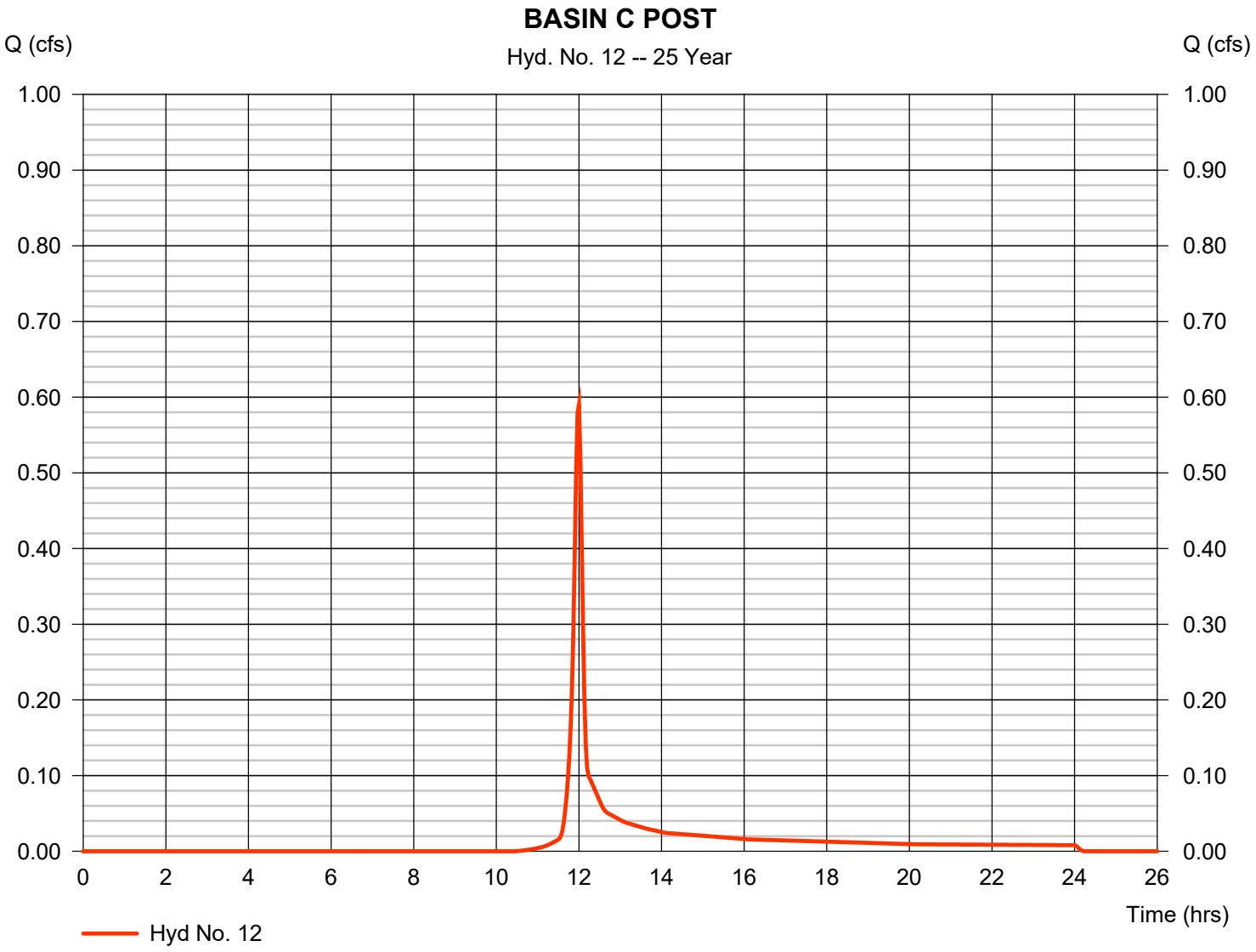


Hydrograph Report

Hyd. No. 12

BASIN C POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.590 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.00 hrs
Time interval	=	2 min	Hyd. volume	=	1,355 cuft
Drainage area	=	0.160 ac	Curve number	=	61
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	8.60 min
Total precip.	=	6.48 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

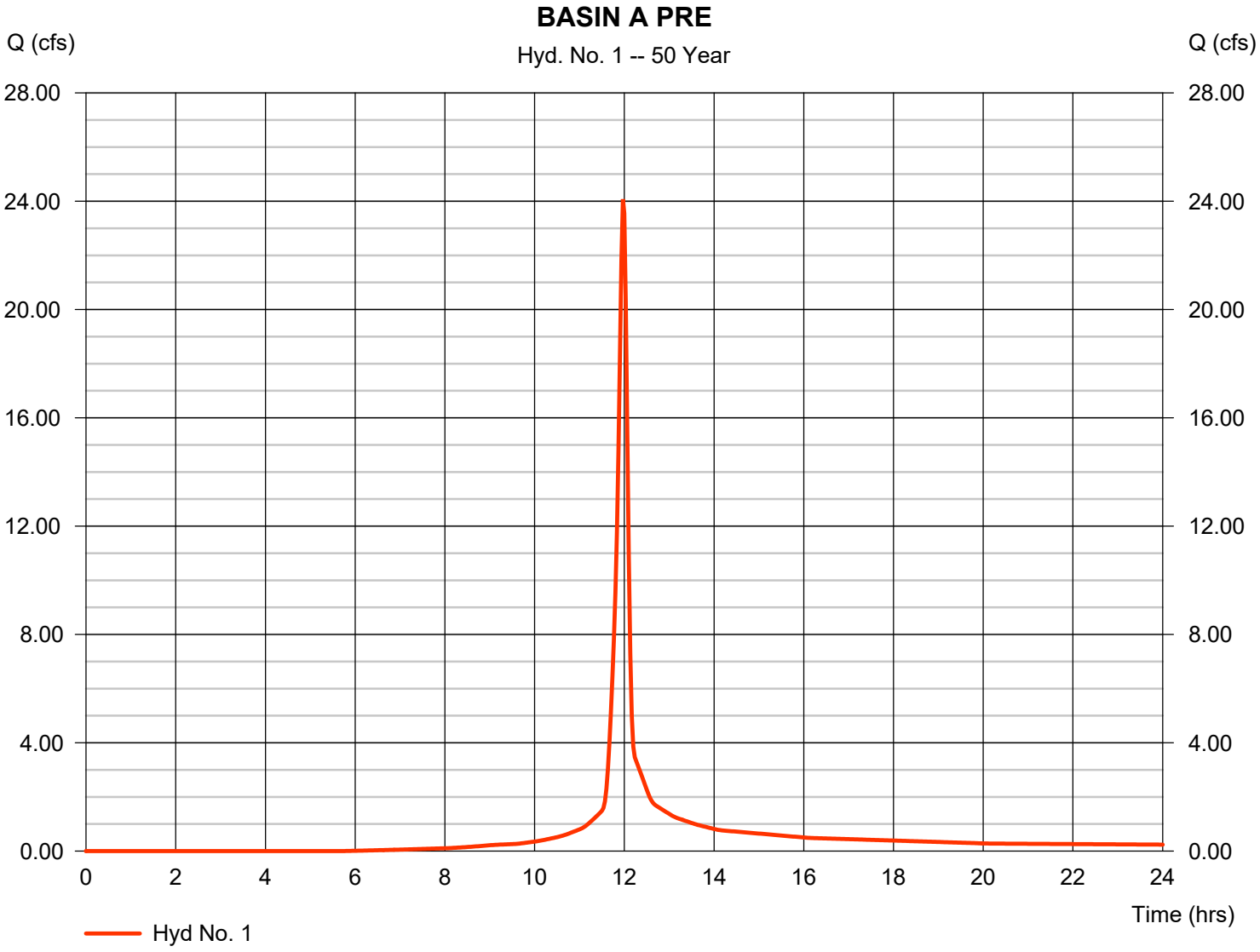
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	24.08	2	718	56,032	------	------	------	BASIN A PRE
2	SCS Runoff	0.534	2	718	1,073	------	------	------	BAISN B PRE
3	SCS Runoff	1.768	2	720	4,047	------	------	------	BASIN C PRE
5	SCS Runoff	22.65	2	718	53,088	------	------	------	BASIN A1 POST TO POND
6	Reservoir	12.31	2	726	51,124	5	1044.34	14,248	POND ROUTED
7	SCS Runoff	4.414	2	716	9,556	------	------	------	BASIN A2 OFFSITE POST
8	Combine	14.86	2	720	60,680	6, 7	------	------	BASIN A POST
10	SCS Runoff	0.534	2	718	1,073	------	------	------	BASIN B POST
12	SCS Runoff	0.722	2	720	1,654	------	------	------	BASIN C POST

Hydrograph Report

Hyd. No. 1

BASIN A PRE

Hydrograph type	= SCS Runoff	Peak discharge	= 24.08 cfs
Storm frequency	= 50 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 56,032 cuft
Drainage area	= 3.230 ac	Curve number	= 79.1
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 9.60 min
Total precip.	= 7.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

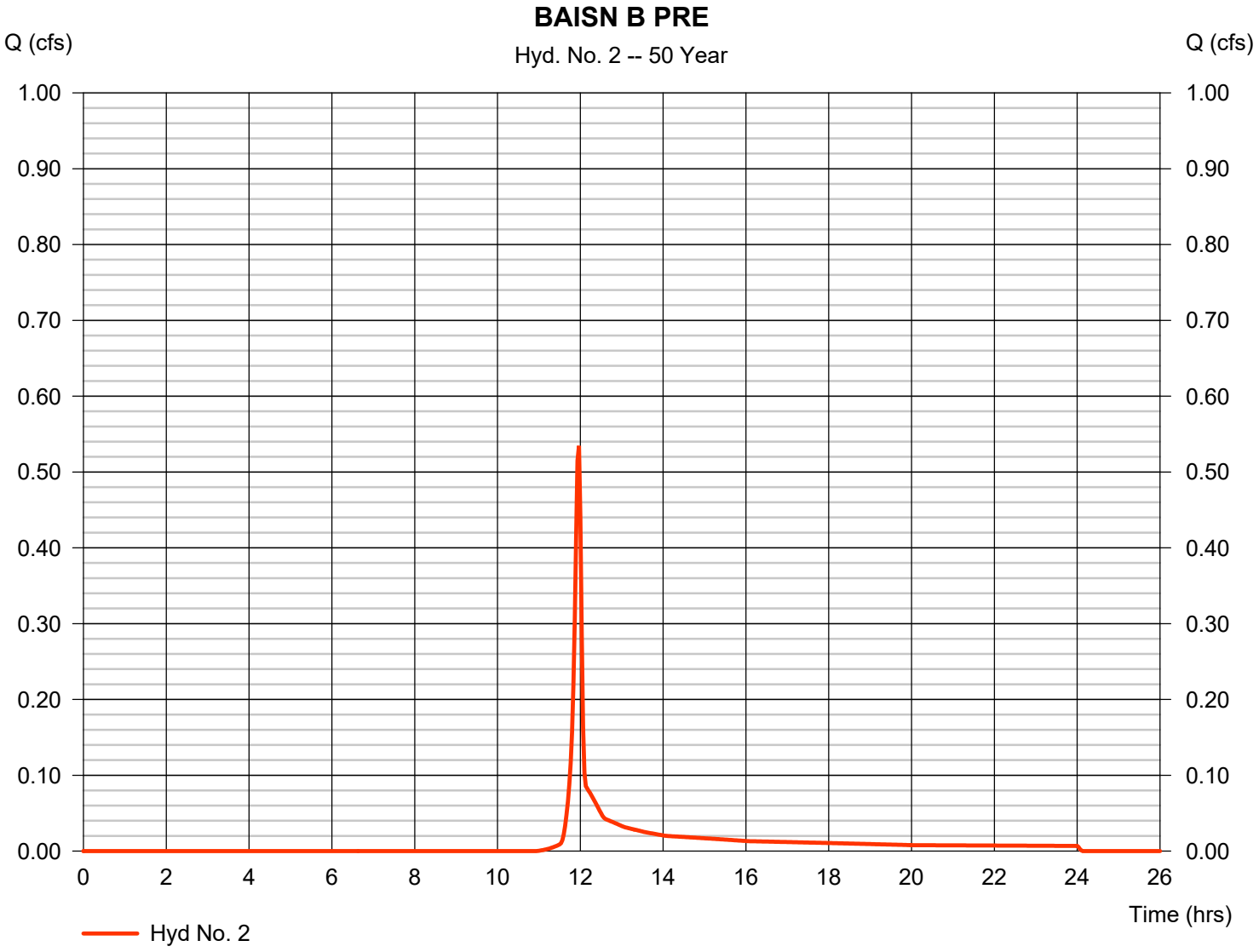


Hydrograph Report

Hyd. No. 2

BAISN B PRE

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.534 cfs
Storm frequency	=	50 yrs	Time to peak	=	11.97 hrs
Time interval	=	2 min	Hyd. volume	=	1,073 cuft
Drainage area	=	0.140 ac	Curve number	=	55
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	7.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

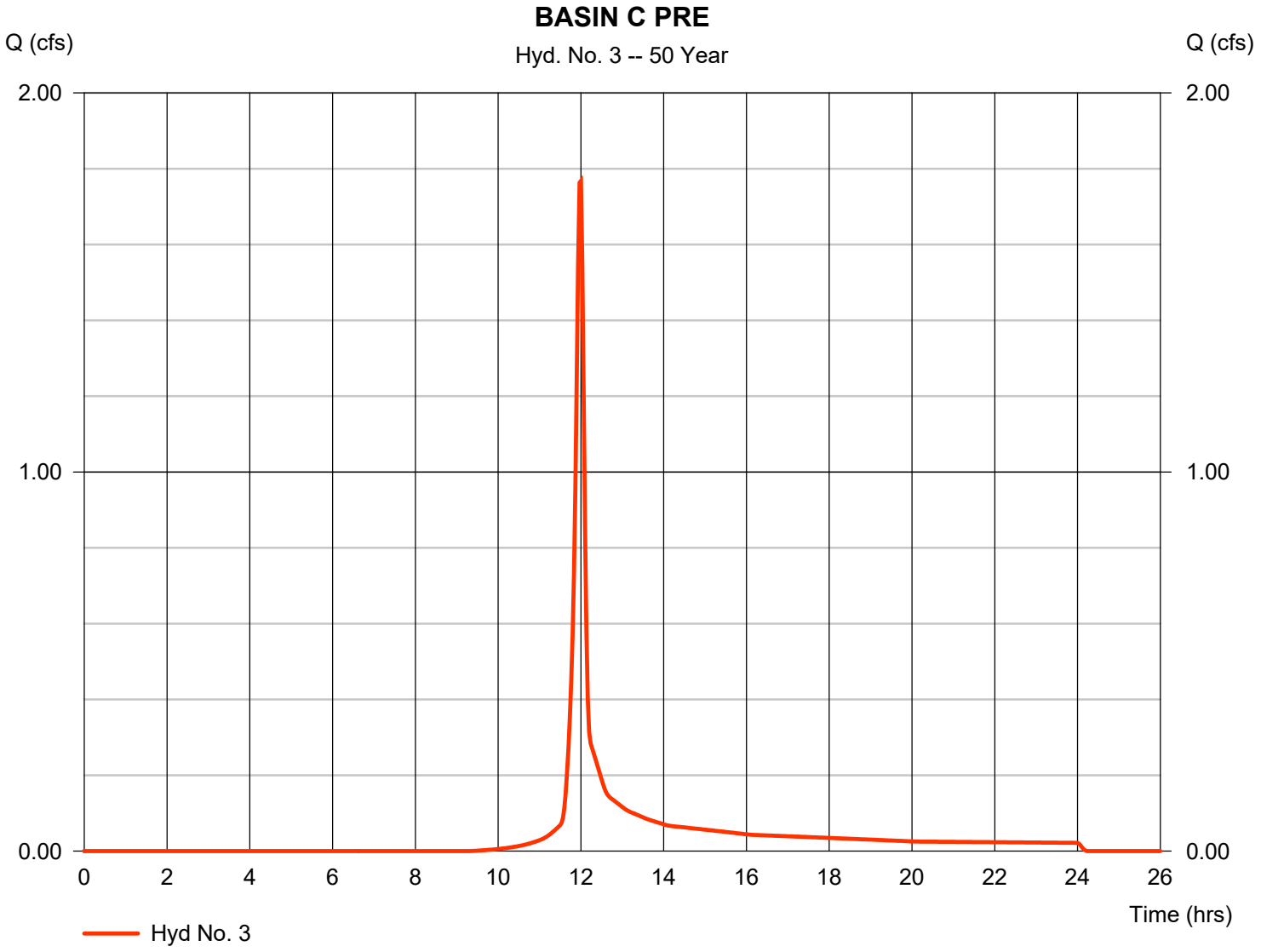


Hydrograph Report

Hyd. No. 3

BASIN C PRE

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.768 cfs
Storm frequency	=	50 yrs	Time to peak	=	12.00 hrs
Time interval	=	2 min	Hyd. volume	=	4,047 cuft
Drainage area	=	0.350 ac	Curve number	=	64.3
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	8.60 min
Total precip.	=	7.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

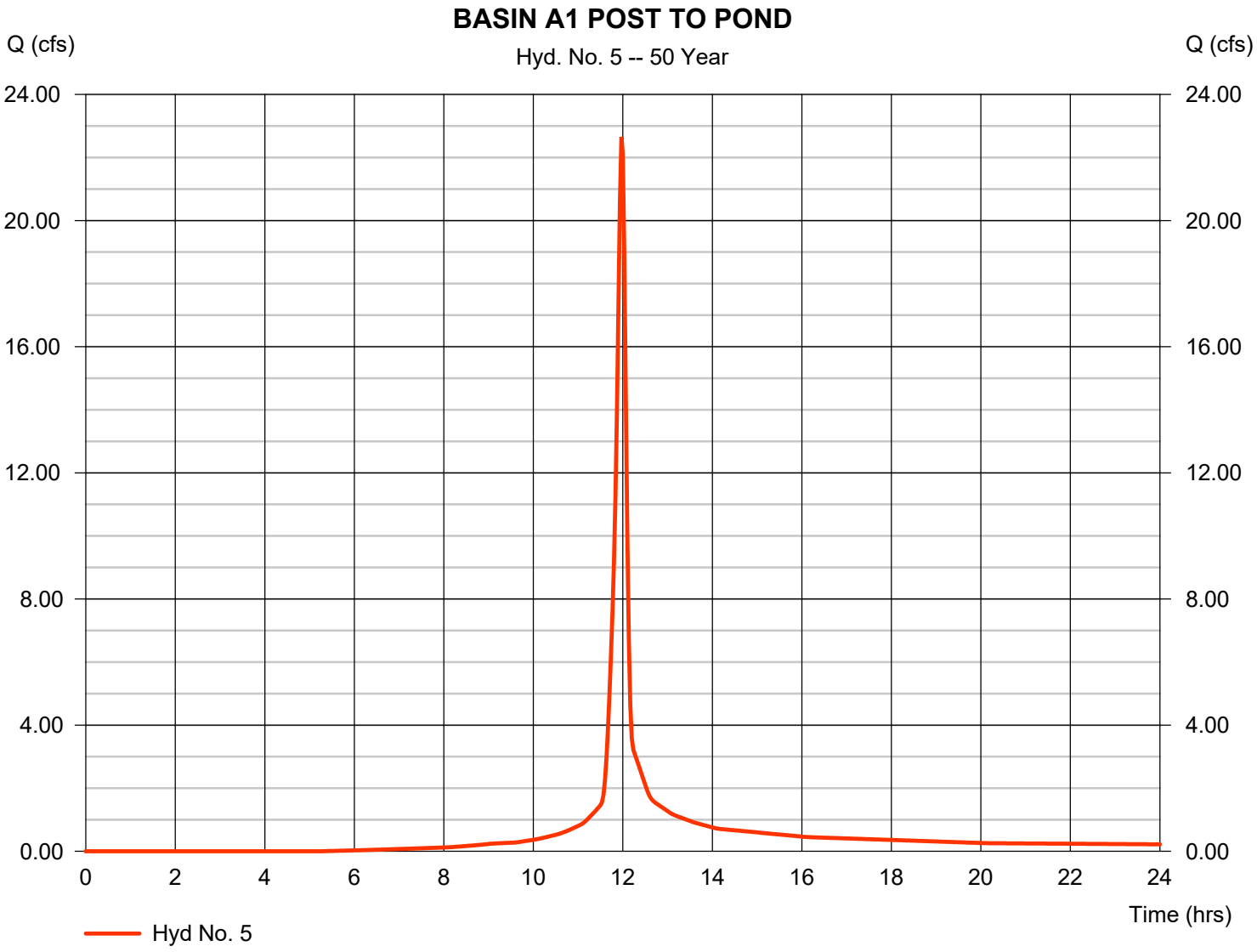


Hydrograph Report

Hyd. No. 5

BASIN A1 POST TO POND

Hydrograph type	= SCS Runoff	Peak discharge	= 22.65 cfs
Storm frequency	= 50 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 53,088 cuft
Drainage area	= 2.930 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.60 min
Total precip.	= 7.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



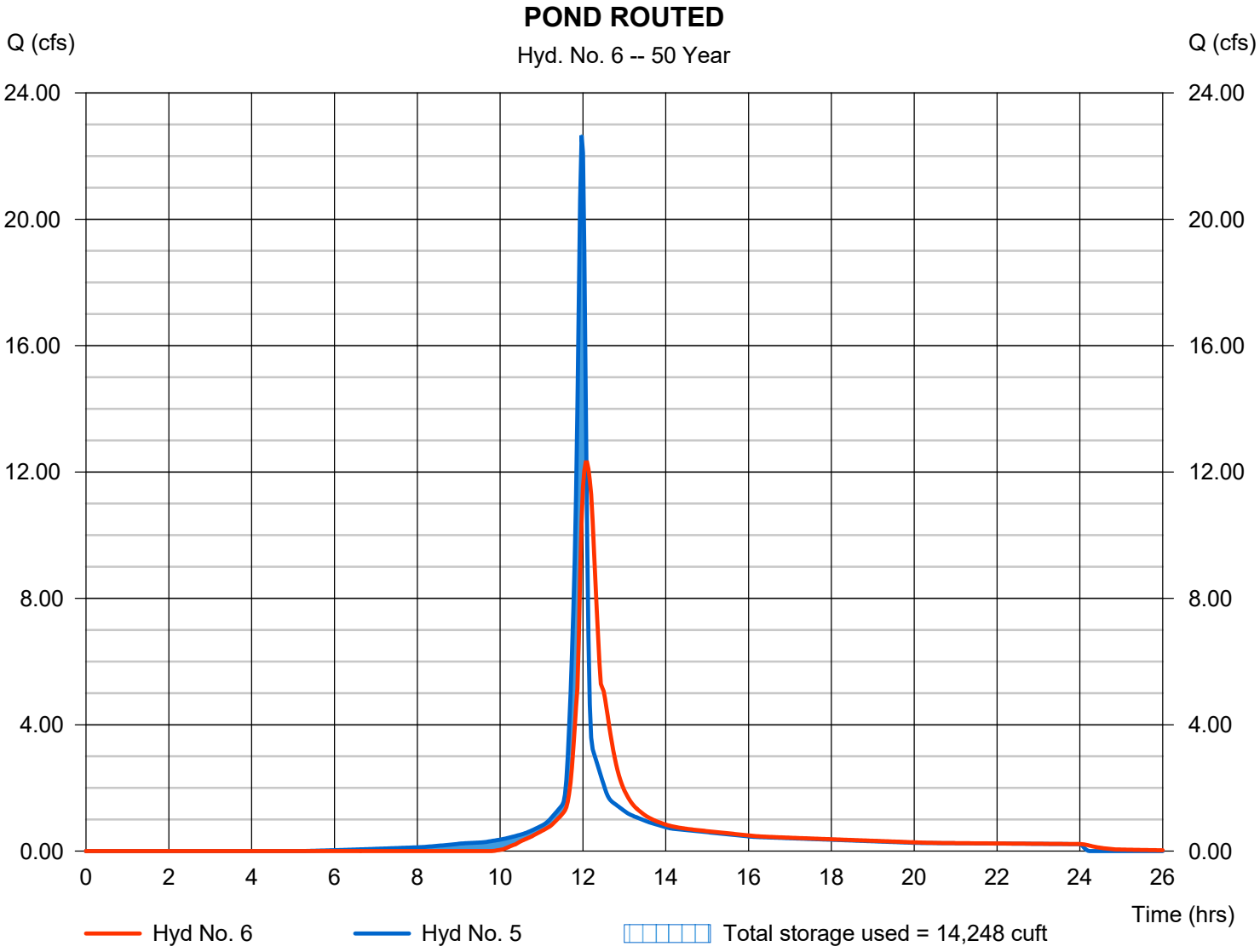
Hydrograph Report

Hyd. No. 6

POND ROUTED

Hydrograph type	=	Reservoir	Peak discharge	=	12.31 cfs
Storm frequency	=	50 yrs	Time to peak	=	12.10 hrs
Time interval	=	2 min	Hyd. volume	=	51,124 cuft
Inflow hyd. No.	=	5 - BASIN A1 POST TO POND	Max. Elevation	=	1044.34 ft
Reservoir name	=	PRELIM POND	Max. Storage	=	14,248 cuft

Storage Indication method used.

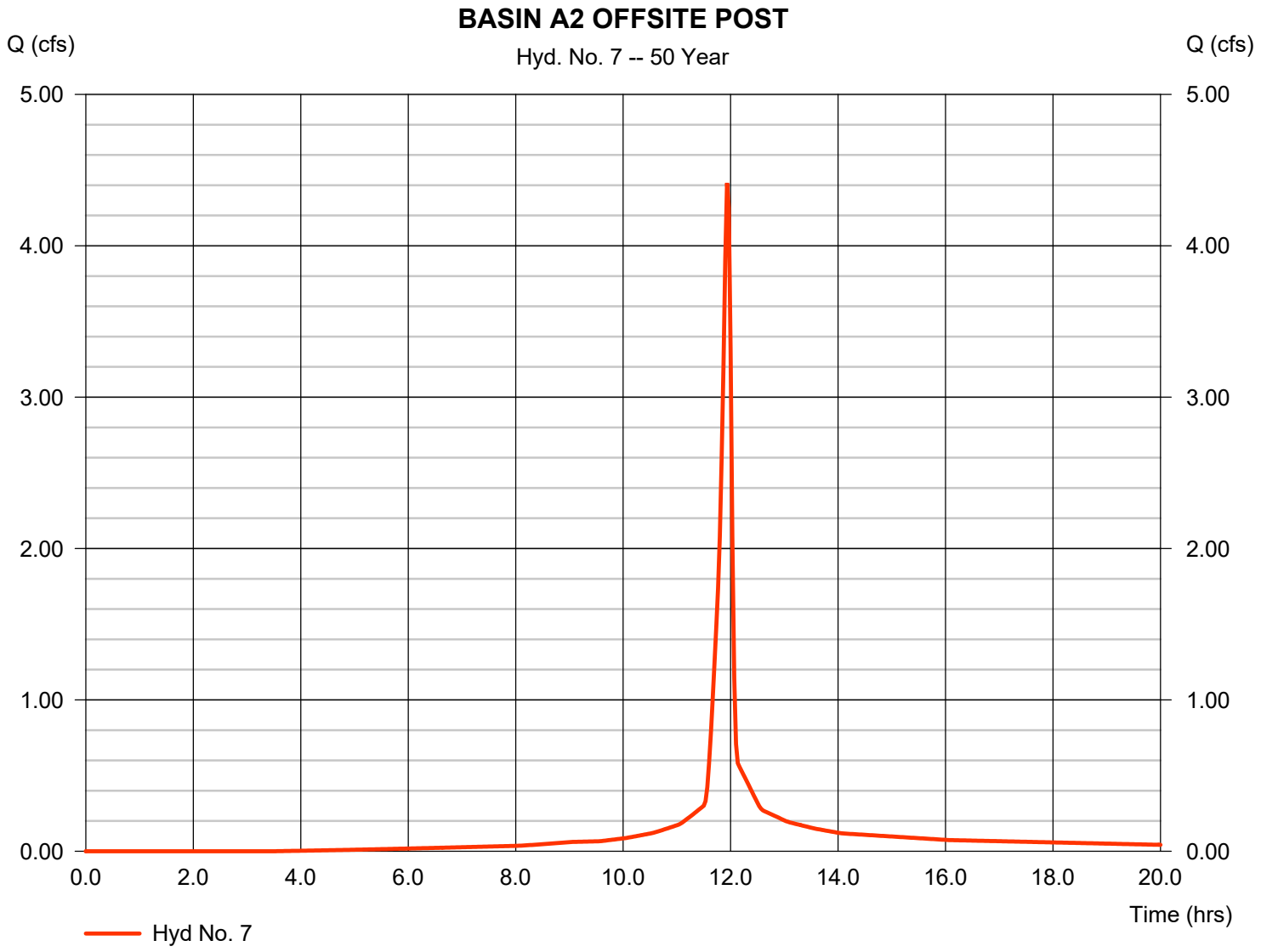


Hydrograph Report

Hyd. No. 7

BASIN A2 OFFSITE POST

Hydrograph type	= SCS Runoff	Peak discharge	= 4.414 cfs
Storm frequency	= 50 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 9,556 cuft
Drainage area	= 0.490 ac	Curve number	= 87.5
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

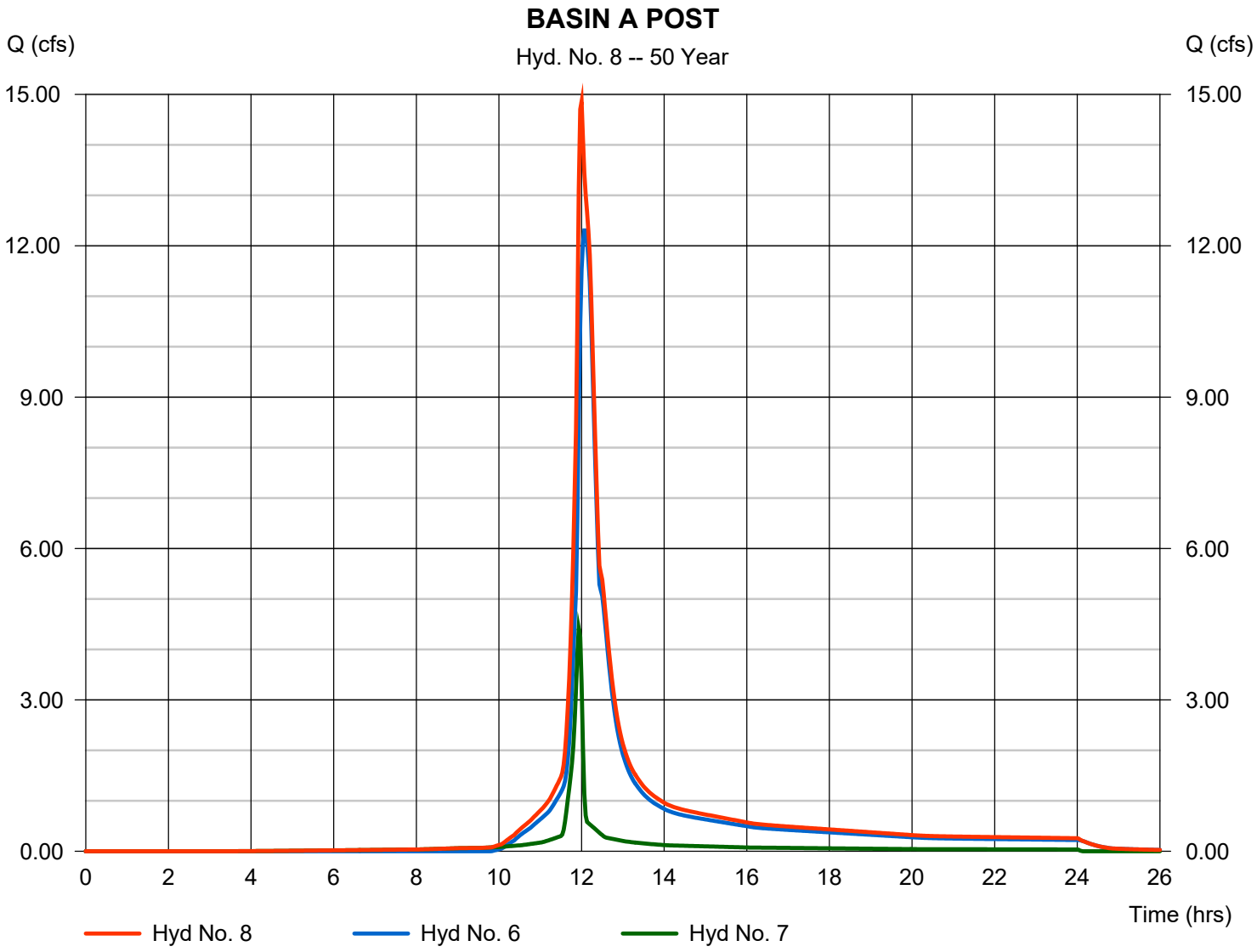


Hydrograph Report

Hyd. No. 8

BASIN A POST

Hydrograph type	=	Combine	Peak discharge	=	14.86 cfs
Storm frequency	=	50 yrs	Time to peak	=	12.00 hrs
Time interval	=	2 min	Hyd. volume	=	60,680 cuft
Inflow hyds.	=	6, 7	Contrib. drain. area	=	0.490 ac

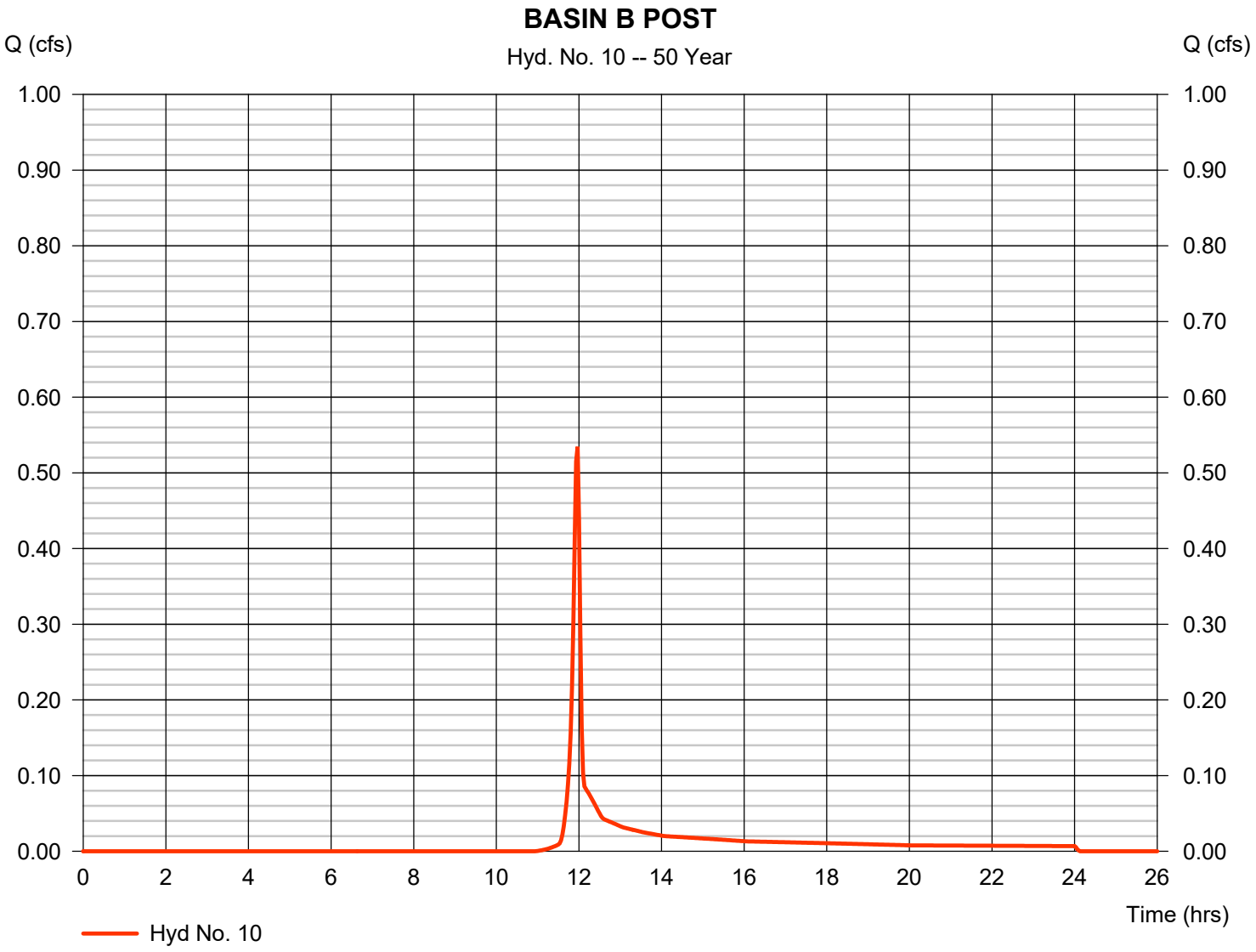


Hydrograph Report

Hyd. No. 10

BASIN B POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.534 cfs
Storm frequency	=	50 yrs	Time to peak	=	11.97 hrs
Time interval	=	2 min	Hyd. volume	=	1,073 cuft
Drainage area	=	0.140 ac	Curve number	=	55
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	7.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

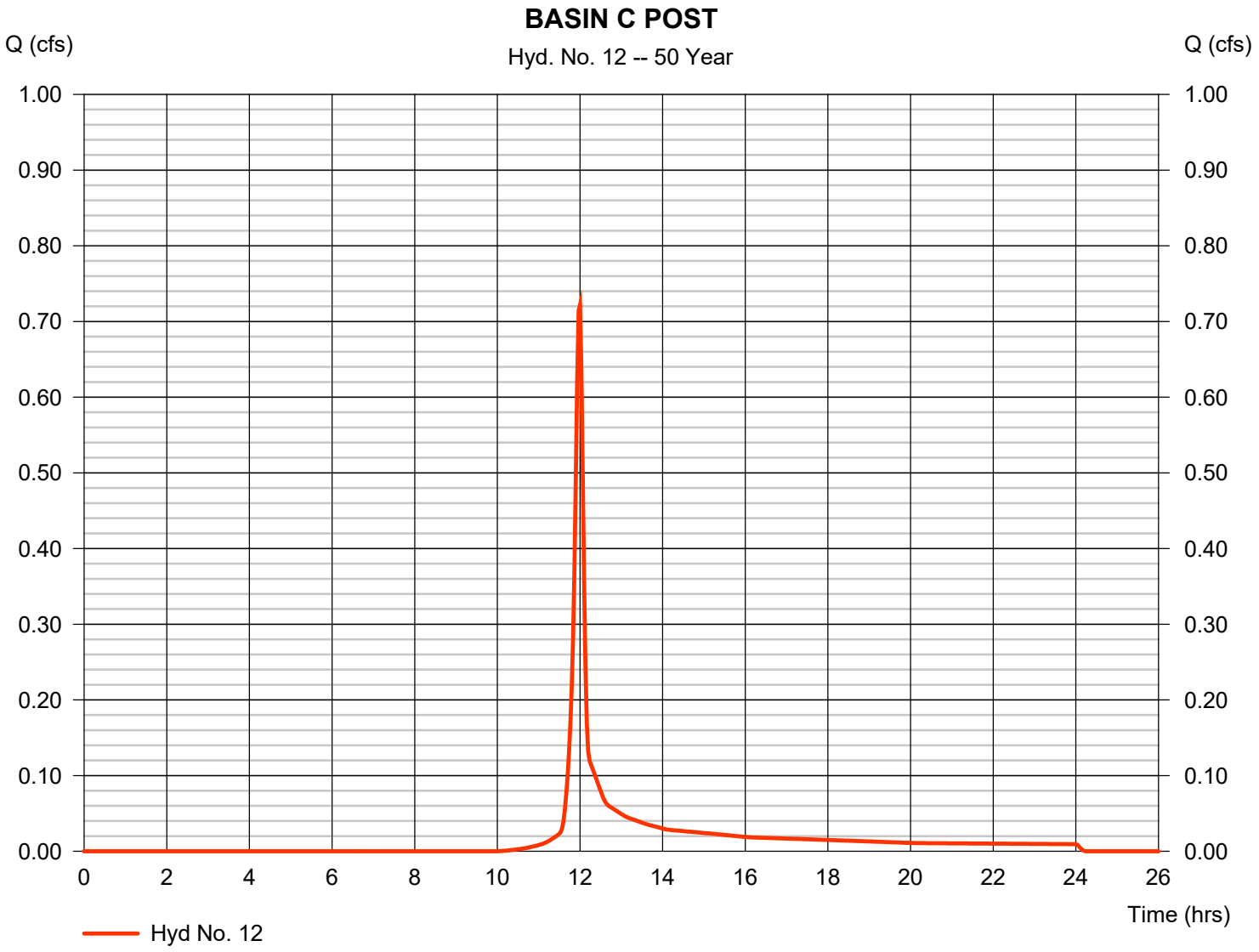


Hydrograph Report

Hyd. No. 12

BASIN C POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.722 cfs
Storm frequency	=	50 yrs	Time to peak	=	12.00 hrs
Time interval	=	2 min	Hyd. volume	=	1,654 cuft
Drainage area	=	0.160 ac	Curve number	=	61
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	8.60 min
Total precip.	=	7.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

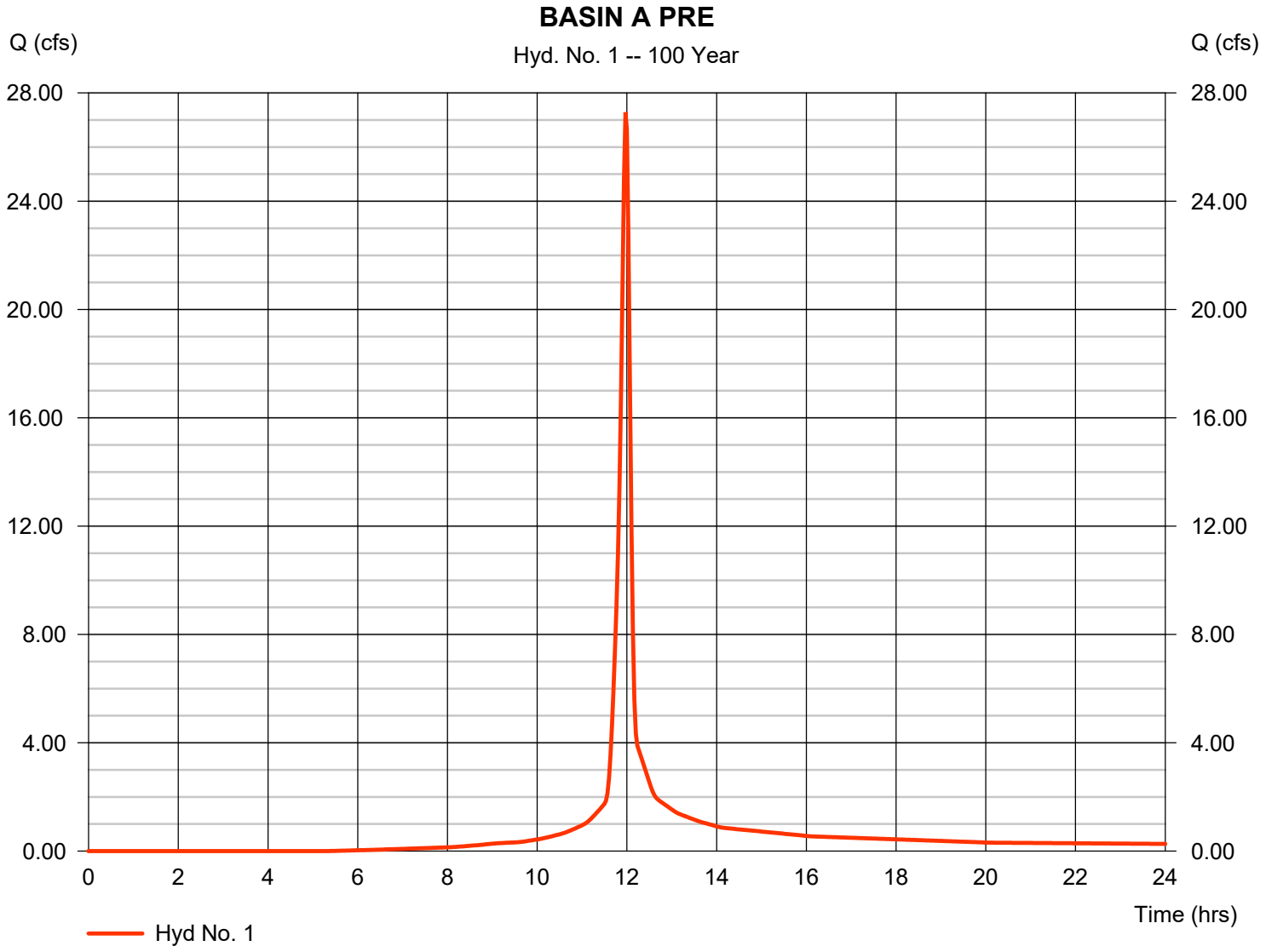
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	27.28	2	718	63,843	------	------	------	BASIN A PRE
2	SCS Runoff	0.650	2	718	1,300	------	------	------	BAISN B PRE
3	SCS Runoff	2.082	2	718	4,766	------	------	------	BASIN C PRE
5	SCS Runoff	25.57	2	718	60,272	------	------	------	BASIN A1 POST TO POND
6	Reservoir	13.17	2	726	58,308	5	1044.65	16,161	POND ROUTED
7	SCS Runoff	4.917	2	716	10,724	------	------	------	BASIN A2 OFFSITE POST
8	Combine	16.19	2	718	69,032	6, 7	------	------	BASIN A POST
10	SCS Runoff	0.650	2	718	1,300	------	------	------	BASIN B POST
12	SCS Runoff	0.859	2	720	1,965	------	------	------	BASIN C POST

Hydrograph Report

Hyd. No. 1

BASIN A PRE

Hydrograph type	= SCS Runoff	Peak discharge	= 27.28 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 63,843 cuft
Drainage area	= 3.230 ac	Curve number	= 79.1
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 9.60 min
Total precip.	= 7.92 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

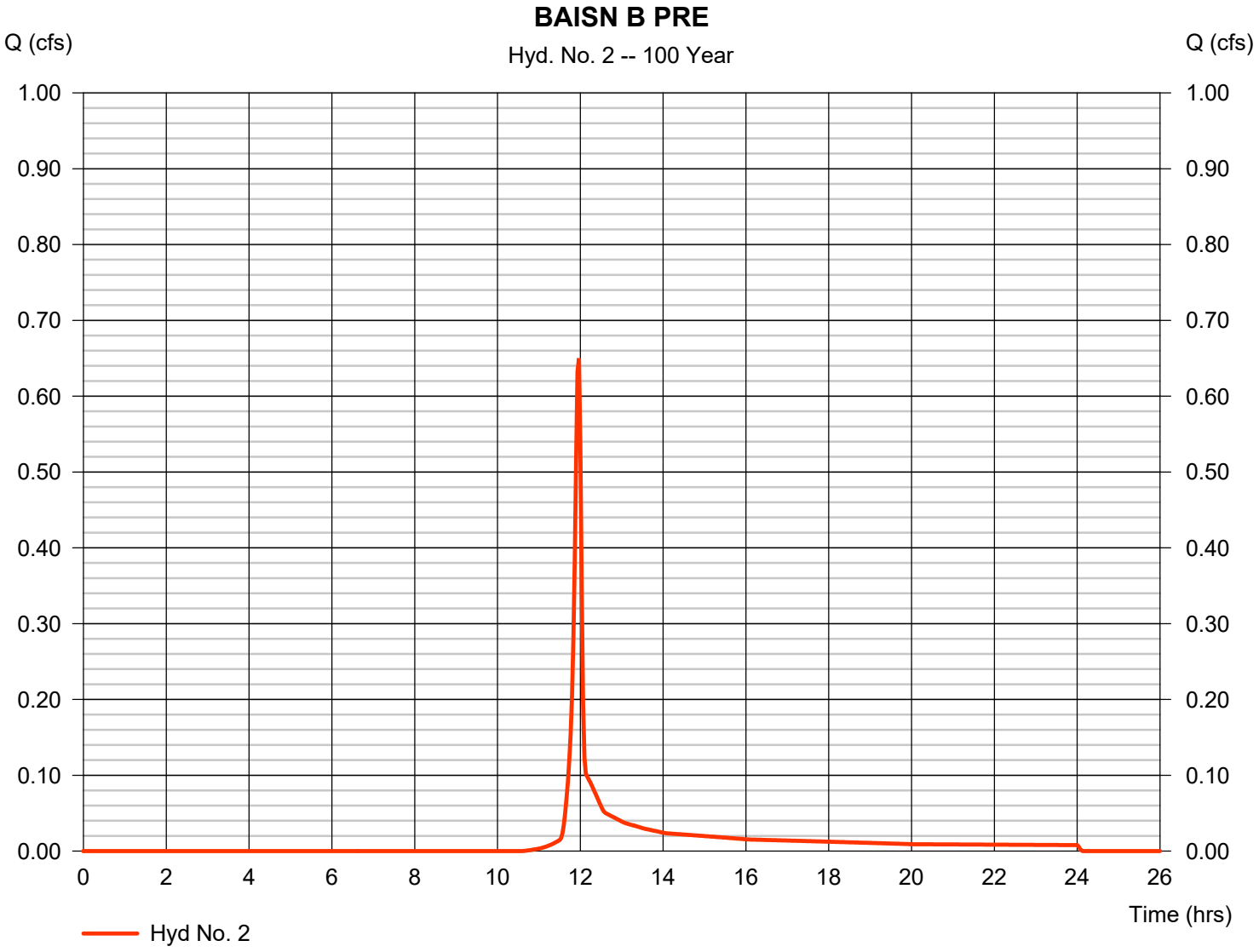


Hydrograph Report

Hyd. No. 2

BAISN B PRE

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.650 cfs
Storm frequency	=	100 yrs	Time to peak	=	11.97 hrs
Time interval	=	2 min	Hyd. volume	=	1,300 cuft
Drainage area	=	0.140 ac	Curve number	=	55
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	7.92 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

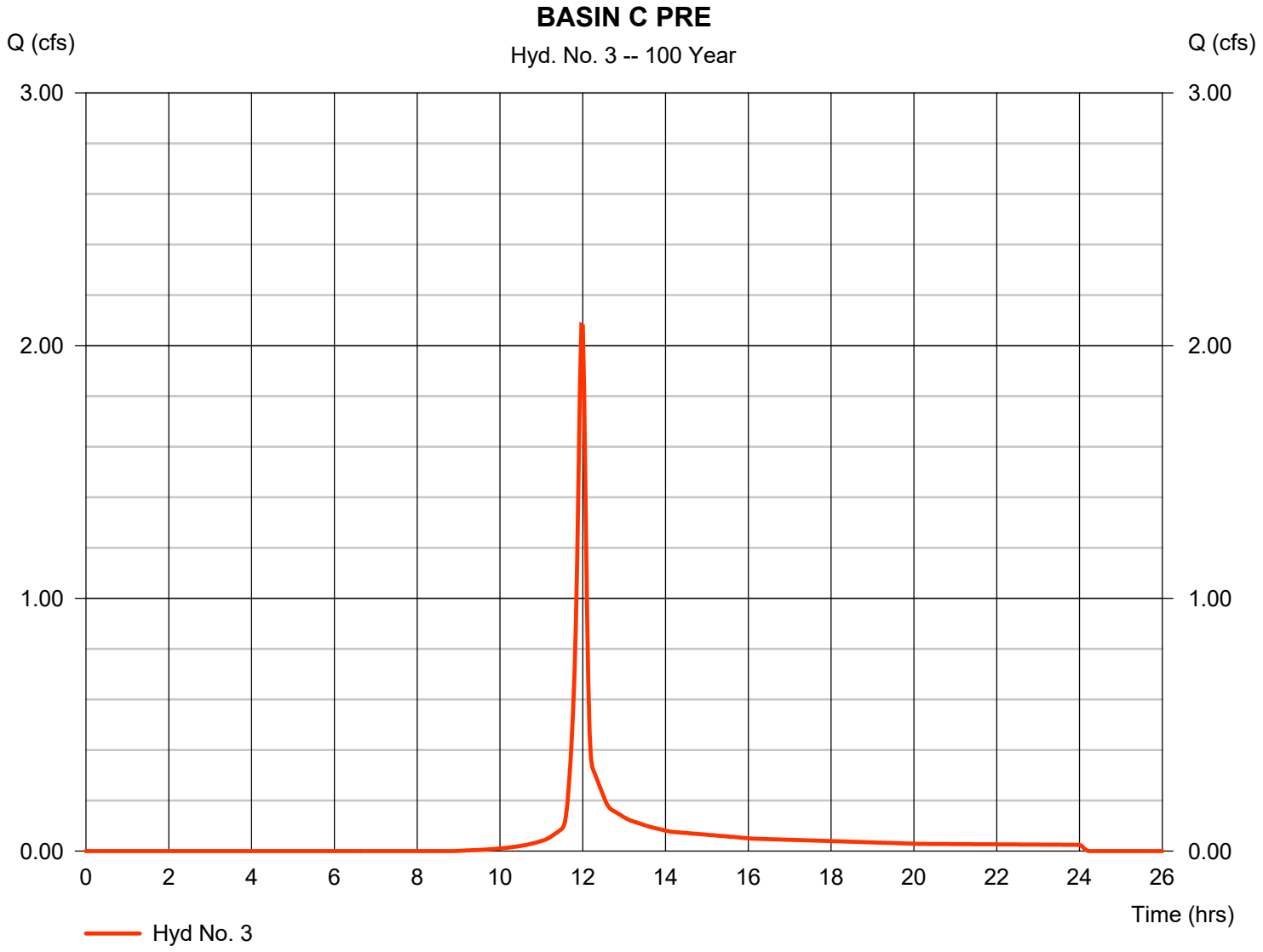


Hydrograph Report

Hyd. No. 3

BASIN C PRE

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.082 cfs
Storm frequency	=	100 yrs	Time to peak	=	11.97 hrs
Time interval	=	2 min	Hyd. volume	=	4,766 cuft
Drainage area	=	0.350 ac	Curve number	=	64.3
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	8.60 min
Total precip.	=	7.92 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

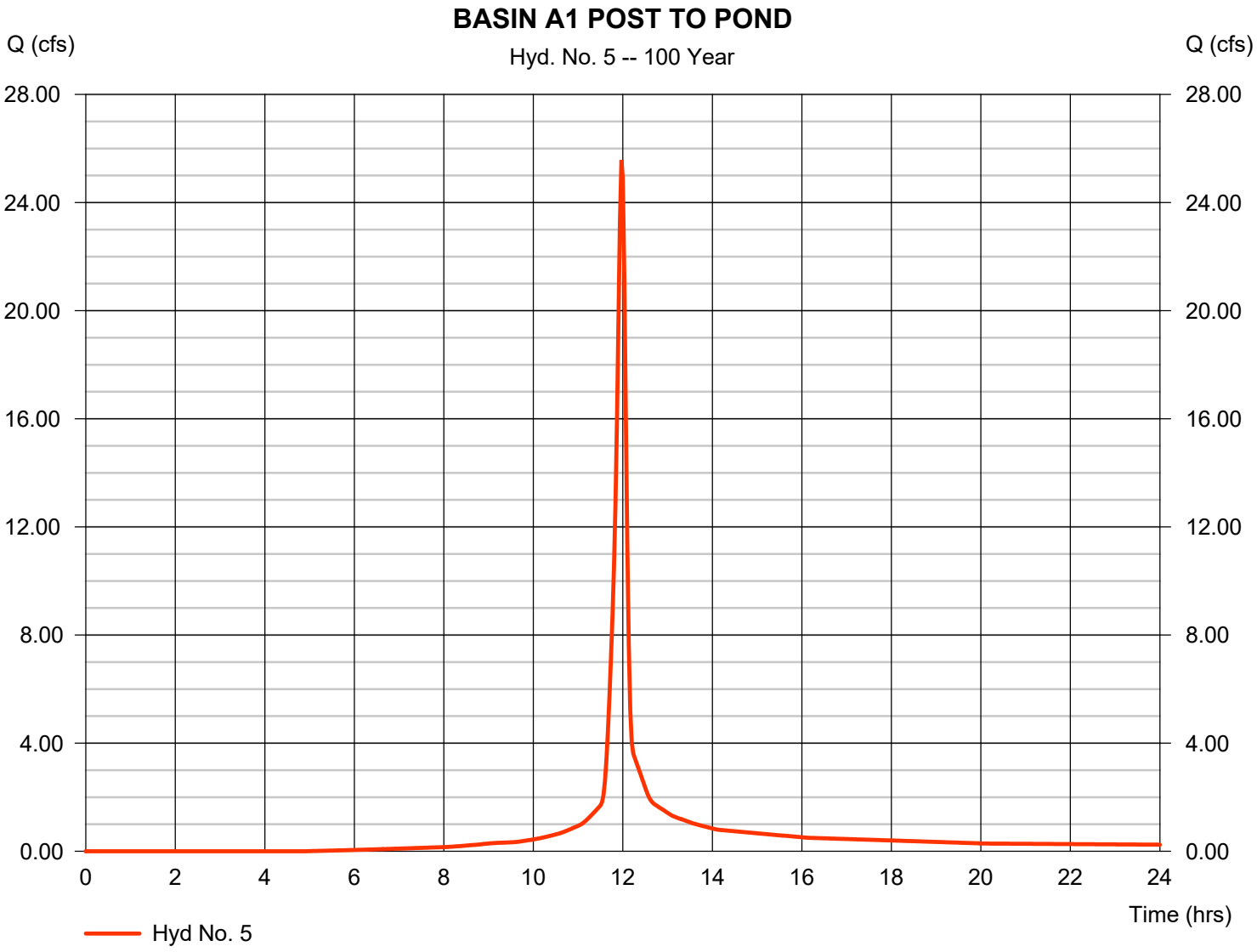


Hydrograph Report

Hyd. No. 5

BASIN A1 POST TO POND

Hydrograph type	= SCS Runoff	Peak discharge	= 25.57 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 60,272 cuft
Drainage area	= 2.930 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 8.60 min
Total precip.	= 7.92 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



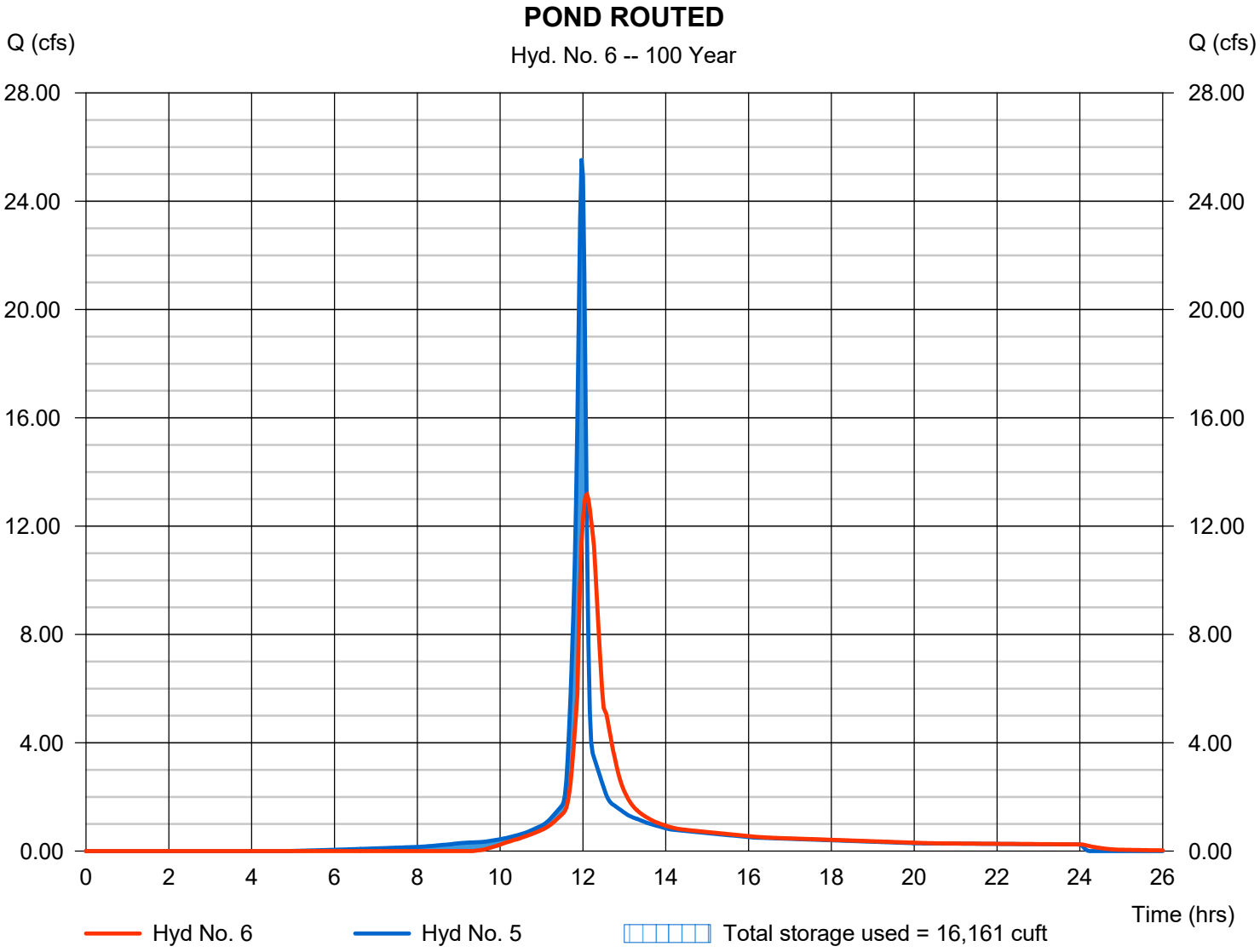
Hydrograph Report

Hyd. No. 6

POND ROUTED

Hydrograph type	=	Reservoir	Peak discharge	=	13.17 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.10 hrs
Time interval	=	2 min	Hyd. volume	=	58,308 cuft
Inflow hyd. No.	=	5 - BASIN A1 POST TO POND	Max. Elevation	=	1044.65 ft
Reservoir name	=	PRELIM POND	Max. Storage	=	16,161 cuft

Storage Indication method used.

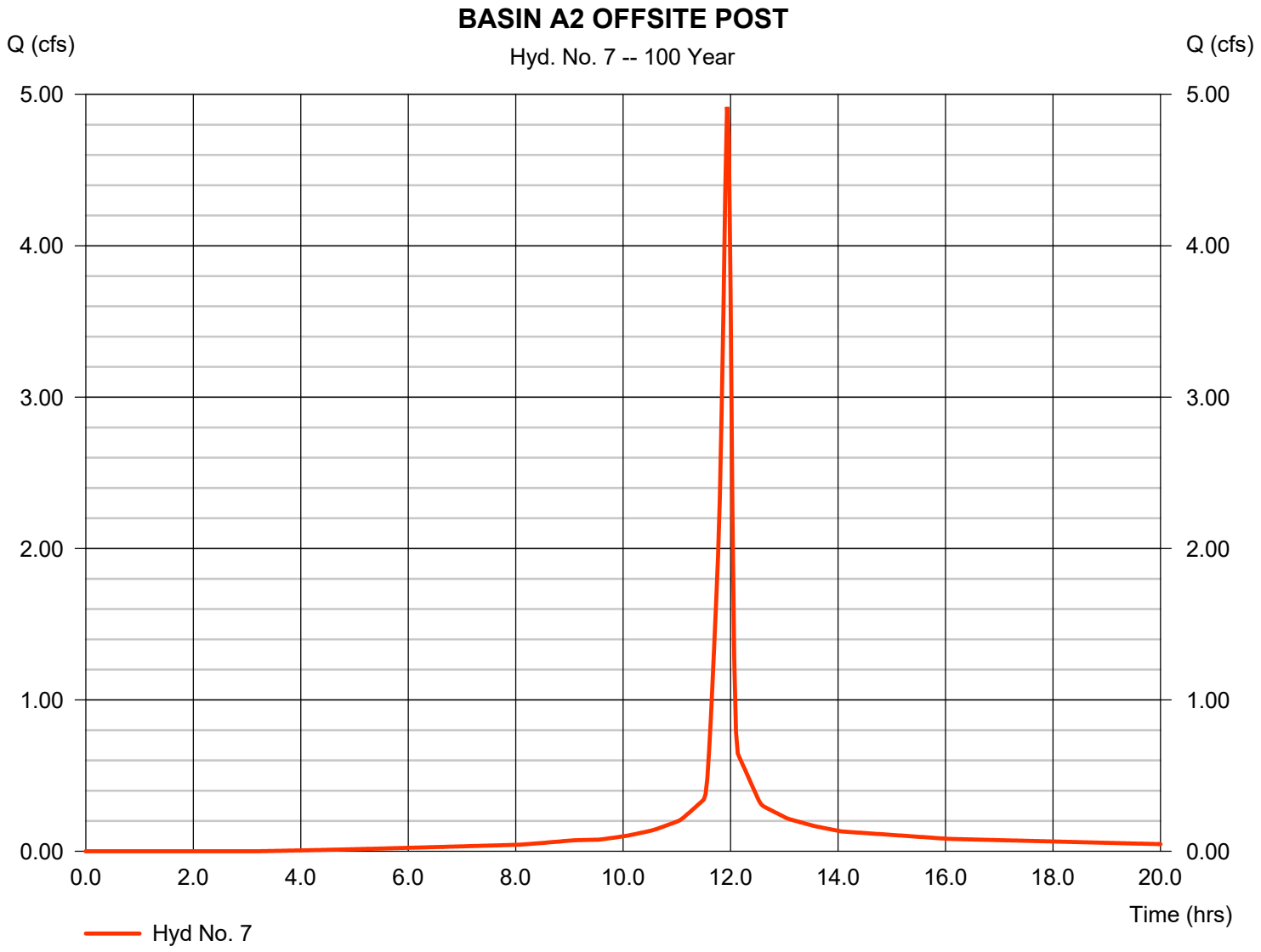


Hydrograph Report

Hyd. No. 7

BASIN A2 OFFSITE POST

Hydrograph type	= SCS Runoff	Peak discharge	= 4.917 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 10,724 cuft
Drainage area	= 0.490 ac	Curve number	= 87.5
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.92 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

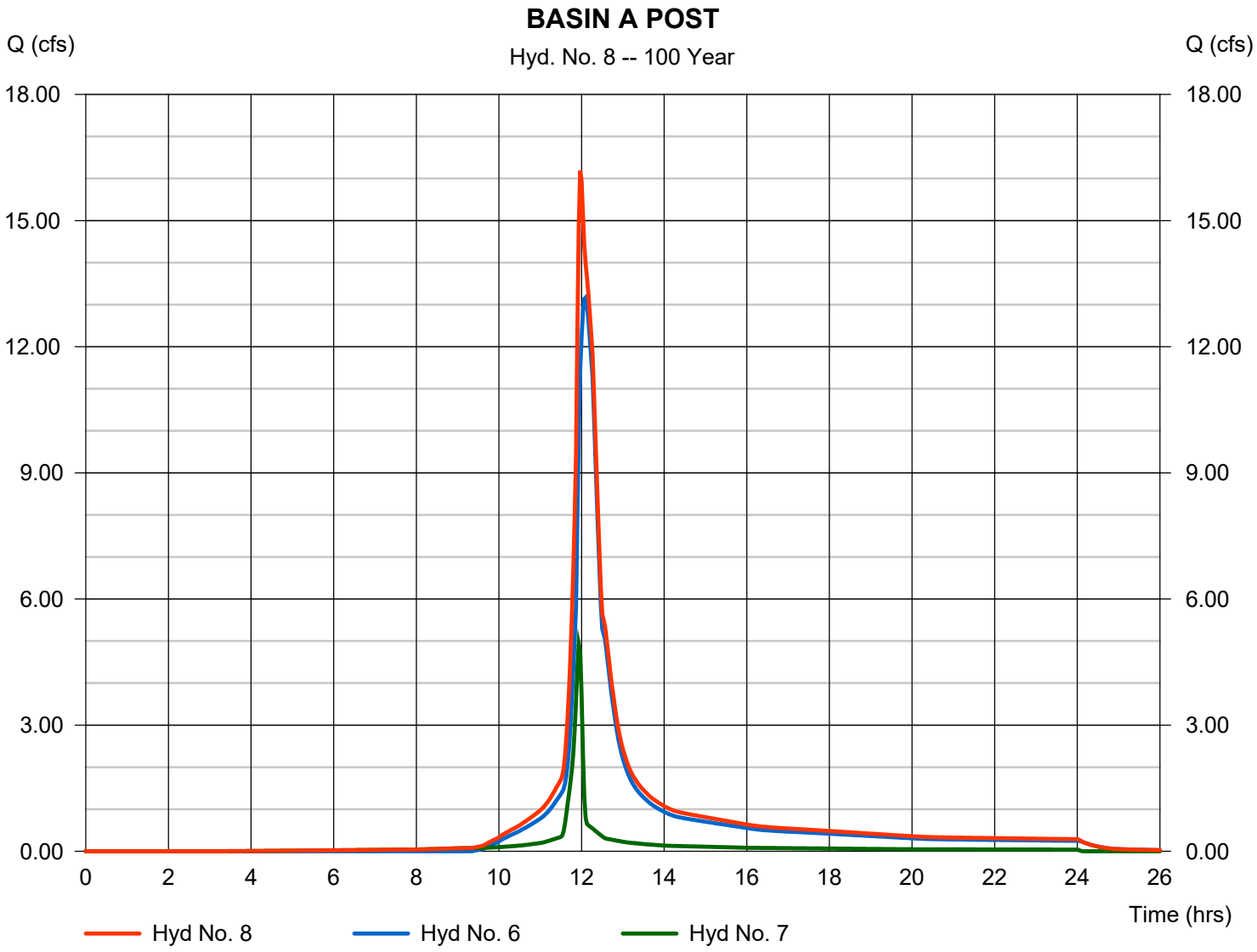


Hydrograph Report

Hyd. No. 8

BASIN A POST

Hydrograph type	= Combine	Peak discharge	= 16.19 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 69,032 cuft
Inflow hyds.	= 6, 7	Contrib. drain. area	= 0.490 ac

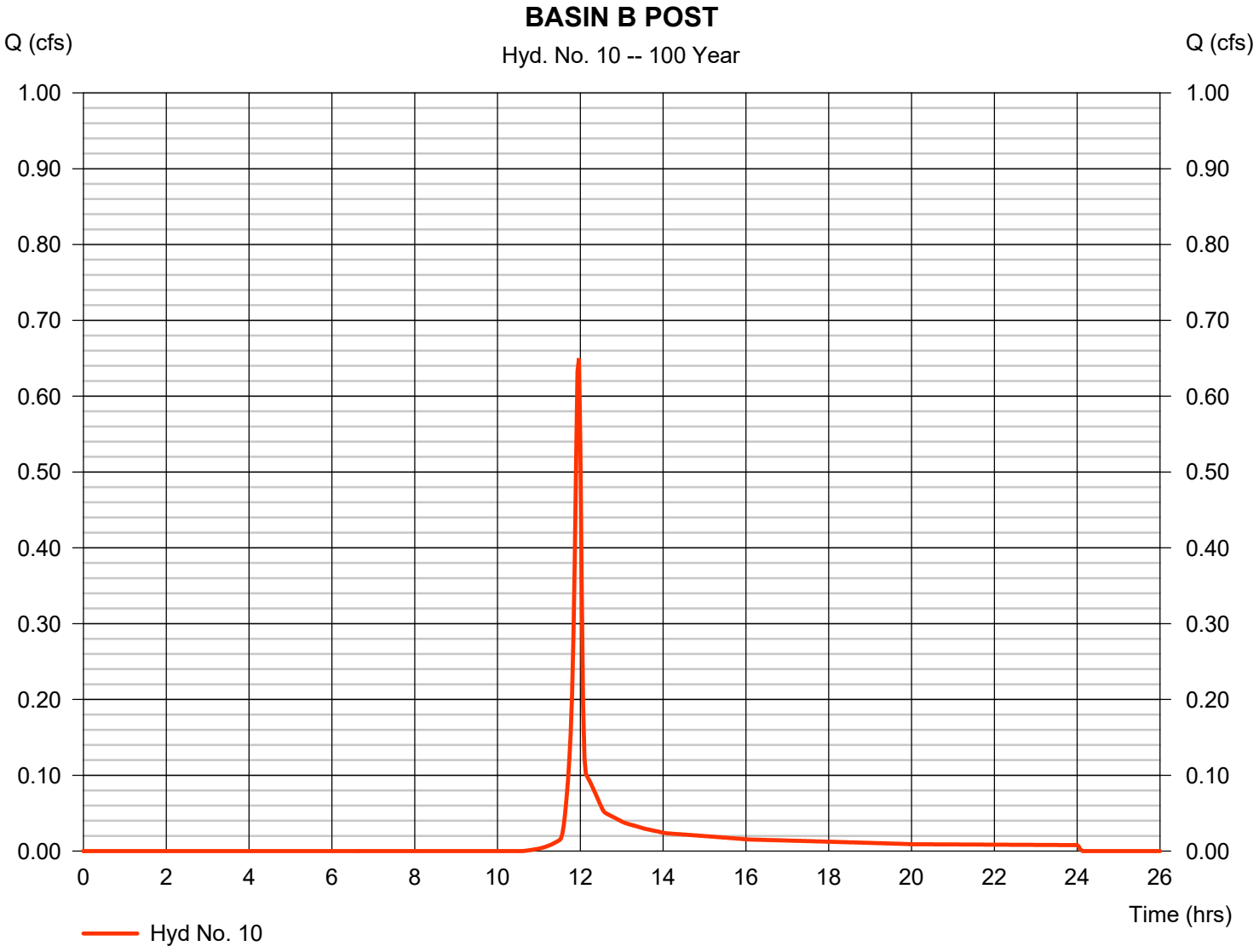


Hydrograph Report

Hyd. No. 10

BASIN B POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.650 cfs
Storm frequency	=	100 yrs	Time to peak	=	11.97 hrs
Time interval	=	2 min	Hyd. volume	=	1,300 cuft
Drainage area	=	0.140 ac	Curve number	=	55
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	7.92 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

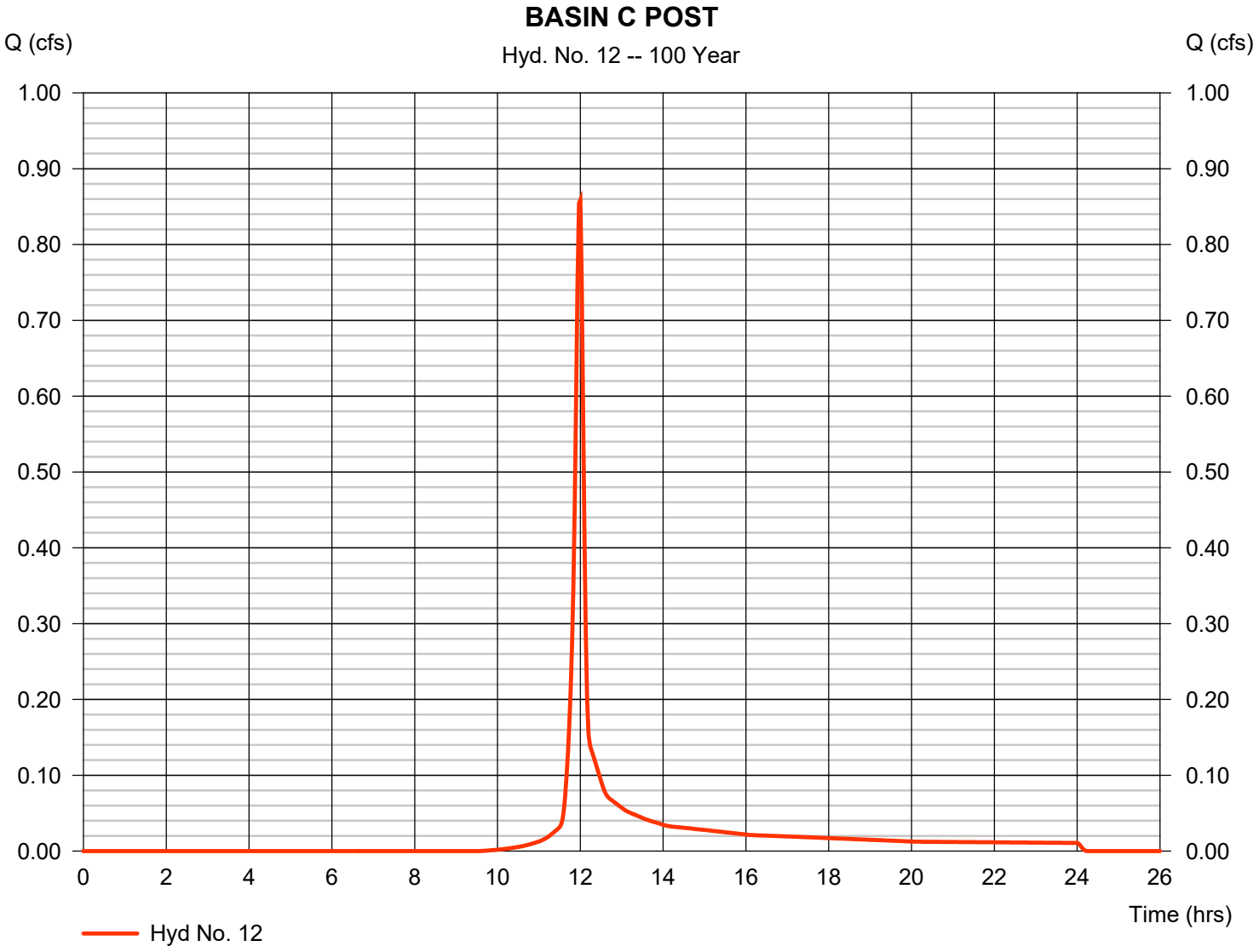


Hydrograph Report

Hyd. No. 12

BASIN C POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.859 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.00 hrs
Time interval	=	2 min	Hyd. volume	=	1,965 cuft
Drainage area	=	0.160 ac	Curve number	=	61
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	8.60 min
Total precip.	=	7.92 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydraflow Rainfall Report

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	35.1100	7.0000	0.7510	--------
2	66.2000	12.0000	0.8542	--------
3	0.0000	0.0000	0.0000	--------
5	62.2800	12.0000	0.7846	--------
10	69.7400	13.0000	0.7768	--------
25	72.7900	13.0000	0.7475	--------
50	83.8300	14.0000	0.7519	--------
100	87.3600	14.0000	0.7378	--------

File name: atlanta.IDF

Intensity = B / (Tc + D)^E

Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	5.43	4.18	3.45	2.95	2.60	2.33	2.12	1.95	1.81	1.69	1.58	1.49
2	5.89	4.72	3.96	3.43	3.03	2.72	2.47	2.26	2.09	1.95	1.82	1.72
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	6.74	5.51	4.69	4.11	3.66	3.32	3.04	2.81	2.61	2.44	2.30	2.17
10	7.39	6.11	5.24	4.61	4.13	3.75	3.45	3.19	2.98	2.79	2.63	2.49
25	8.39	6.99	6.03	5.33	4.80	4.38	4.03	3.74	3.50	3.29	3.11	2.95
50	9.16	7.68	6.67	5.91	5.33	4.87	4.49	4.18	3.91	3.68	3.47	3.30
100	9.95	8.38	7.28	6.48	5.85	5.36	4.95	4.60	4.31	4.06	3.84	3.65

Tc = time in minutes. Values may exceed 60.

Precip. file name: Atlanta.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	3.36	4.08	1.20	4.80	5.52	6.48	7.20	7.92
SCS 6-Hr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-1st	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hydrology Calculations