STORMWATER MANAGEMENT REPORT FOR **BASEBALL FACILITIES AT BROOK RUN PARK**

CITY OF DUNWOODY
DEKALB COUNTY, GEORGIA

March 31, 2017
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EXECUTIVE SUMMARY

The objective of the following report is to provide an overview of the hydrologic impact that will result from developing the subject property located in the City of Dunwoody. In general, the primary hydrologic impact of development is an increase in peak storm water runoff rates from the site. Left unmitigated, this increase in peak runoff rates has the potential of increasing downstream flooding. This report provides an assessment of a proposed on-site storm water management facilities in a manner consistent with the current drainage policies and regulations of the City of Dunwoody's Post-Development Stormwater Management Ordinance.

SITE DESCRIPTION

PRE-DEVELOPED CONDITIONS

The Baseball Facilities at Brook Run Park project is located 4664 N Peachtree Road in Dunwoody, Georgia. The Baseball Facility for the park is located at the southwest corner of the intersection of North Peachtree Road and Barclay Drive and consists of approximately 7.5 acres. For the purpose of the following analysis this 7.5 acre tract is considered the "onsite" area and all other portions of the property is considered "offsite". Currently the 7.5 acre site contains an open grassed field with approximately 2.8 acres of wooded area and sloping terrain.

The majority of the 7.5 acre site, discharges into an existing 54" culvert under Barclay Drive into an unnamed tributary to Nancy Creek Tributary A. The inlet to the existing culvert is referred to as Study Point A in the following analysis. The following analysis divides the drainage areas combining at Study Point A into three sub-basins; A1, A2 and A3. Sub-basin A1 consists of 7 acres of the site which drains to Study Point A via existing storm drain bisecting the property. Sub-basin A2 consists of stormwater discharge from an existing detention facility for Peachtree Charter Middle School. The existing detention facility is modeled in the following analysis as per construction documents by Eberly & Associates. Discharge from the existing detention facility drains directly into the headwater pool at Study Point A. Sub-basin A3 consists of additional upstream offsite areas which also drain to Study Point A via existing storm drain bisecting the property.

Please refer to the Pre-Developed Drainage Basin Map.

POST-DEVELOPED CONDITIONS

Proposed land disturbance to the 7.5 acre site includes demolition of all existing storm drains as shown on the associated construction documents, construction of 2 baseball fields with artificial turf, accessory buildings and parking areas for the baseball facilities, installation of utilities, landscaped areas, and sidewalks. Additionally, the following analysis has included a future building addition to an existing school building which will include approximately 0.50 acres of disturbed area and 12,200 sf of impervious area. Stormwater Runoff from the addition will ultimately discharge into the proposed Stormwater Pond. The proposed Stormwater Pond is located just north of Study Point A to provide attenuation of all storm events at Study Point A before stormwater discharges the property.

Please refer to the Post-Developed Conditions Drainage Basin Map.

STORMWATER SIZING CRITERIA

WATER QUALITY PROTECTION

As stated in Section 2.2.4.1 of the 2016 Georgia Stormwater Manual the Water Quality goal can be accomplished either through runoff reduction or water quality treatment or some combination of the two. The attached Georgia Stormwater Management Manual Stormwater Quality Site Development Review Tool Spreadsheet calculates the water quality volume required (8,760 ft^3) to provide 80% TSS reduction with proposed improvements to the 7.5 acre site and the additional 0.5 acres of the future school addition's disturbed area.

Proposed improvements to the site will include a Vortech Stormwater treatment devices by Contech in proposed storm drain inlets to provide 7,407 ft^3 of volume. Please refer to the construction documents for design details and calculations.

Water quality volume beneath the five acres of proposed artificial turf is provided within the turf's gravel base. The minimum depth of gravel required to provide 1,089 ft^3 is 2 inches based on a 40% void ratio for the stone.

1,089 ft^3 / 0.40= 2723 ft^3
2723 ft^3 / (5.0 ac. * 43,560 ft^2/ac) = 0.13 ft= 1.56 inches

STREAM CHANNEL PROTECTION

Stream Channel Protection has been provided in the proposed Stormwater Pond as per Section 2.2.4.2 of the 2016 Georgia Stormwater Management Manual. Please refer to the attached calculations.

OVERBANK FLOODING PROTECTION

Overbank Flooding Protection requirements for the site has been met by attenuating the post-developed peak flows for the 1, 2, 5, 10 and 25 year storm events at Study Point A in the proposed Stormwater Pond.

EXTREME FLOODING PROTECTION

Extreme Flooding Protection requirements for the site has been met by attenuating the post-developed 100 year storm event at Study Point A in the proposed Stormwater Pond.

HYDROLOGIC METHODOLOGY

Hydrologic data of the following evaluation is based on field reconnaissance of the property, a watershed delineation of the existing topography utilizing field run surveys and the DeKalb County GIS website. This data is then used to compute peak storm water runoff rates for the city's required design recurrence intervals of 1,2, 5, 10, 25, 50 and 100 years. The SCS Hydrologic Methodology was applied using the Type II rainfall distribution for the 24 hour storm in Atlanta, Georgia and curve number values area based on GSMM Table 2.15-1 for type "B" soils.

Time of concentration values for pre-developed and post-developed conditions are calculated using the SCS TR-55 methodology. Analysis for all storm events was performed using Hydraflow Hydrographs Extension 2009, hydrology & hydraulics software program, version 6.066 by *Autodesk, Inc.*

SUMMARY OF RESULTS

As shown in the table below peak rates of flow and ponding elevations for all storm events have been reduced to meet pre-developed conditions with the design of the proposed Stormwater Pond.

Study Pt. A					
Storm Frequency (yr)	**Pre-Development Conditions Discharge Rate (cfs)**	**Pre-Development Ponding El. (ft)**	**Post-Development Conditions Discharge Rate (cfs)**	**Post-Development Ponding El. (ft)**	**Peak Rate of Flow Decrease**
1	25.44	970.49	24.43	970.46	4.0%
2	40.90	971.42	37.91	970.92	7.3%
5	58.02	971.53	52.59	971.37	9.4%
10	76.32	972.04	70.01	971.86	8.3%
25	105.91	972.91	100.29	972.72	5.3%
50	132.72	974.01	127.28	973.79	4.1%
100	158.40	975.30	157.07	975.23	0.8%

Proposed Stormwater Pond			
Storm Frequency (yr)	**Routed Discharge Rate (cfs)**	**Storage Volume (cf)**	**Ponding Elevation (ft)**
1	0.54	37,543	981.26
2	1.57	45,111	982.20
5	3.69	52,005	983.01
10	7.00	60,023	983.94
25	12.21	71,083	985.13
50	16.54	79,065	985.98
100	30.58	83,726	986.45

DOWNSTREAM ANALYSIS

As stated previously, stormwater from the 7.5 acres site discharges into an existing 54" culvert under Barclay Drive and into an unnamed tributary to Nancy Creek Tributary A. Stormwater then travels approximately 400 linear feet through Brook Run Park into an existing culvert under Georgia Way S. As shown on the table below, all peak rates of flow at this location are reduced with proposed improvements to the site.

Georgia Way S Study Pt.			
Storm Frequency (yr)	**Pre-Development Conditions Discharge Rate (cfs)**	**Post-Development Conditions Discharge Rate (cfs)**	**Peak Rate of Flow Decrease**
1	40.71	39.01	4.2%
2	67.18	62.49	7.0%
5	96.31	88.28	8.3%
10	127.85	116.00	9.3%
25	171.26	155.65	9.1%
50	205.95	187.86	8.8%
100	243.65	224.11	8.0%

Stormwater from the existing culvert under Georgia Way S then travels approximately 1120 linear feet to the Downstream Study Point for the project. The total drainage area at this location is approximately 79.8 acres; therefore the 7.5 acre site is approximately 9% of the total drainage area at this location. As shown on the table below, all peak rates of flow at this location are reduced with proposed improvements to the site.

Downstream Study Pt.			
Storm Frequency (yr)	**Pre-Development Conditions Discharge Rate (cfs)**	**Post-Development Conditions Discharge Rate (cfs)**	**Peak Rate of Flow Decrease**
1	45.83	44.04	3.9%
2	78.00	73.31	6.0%
5	114.53	106.42	7.1%
10	153.93	142.00	7.8%
25	208.88	192.97	7.6%
50	253.81	235.96	7.0%
100	299.36	282.80	5.5%

Georgia Stormwater Management Manual
Stormwater Quality Site Development Review Tool
Version 2.2

General Information

Name of Developer:		**Date Submitted:**	7/11/2017
Development Name:	Baseball Facilities at Brook Run Park	**Permit Number:**	
Site Location / Address:	9224 N Peachtree Road	**Developer Contact:**	
		Phone Number:	
		Name of Engineer(s):	Skyline City of Dunwoody
Development Type:	Institutional, Public & Semi Public	**Maintenance Responsibility:**	City of Dunwoody

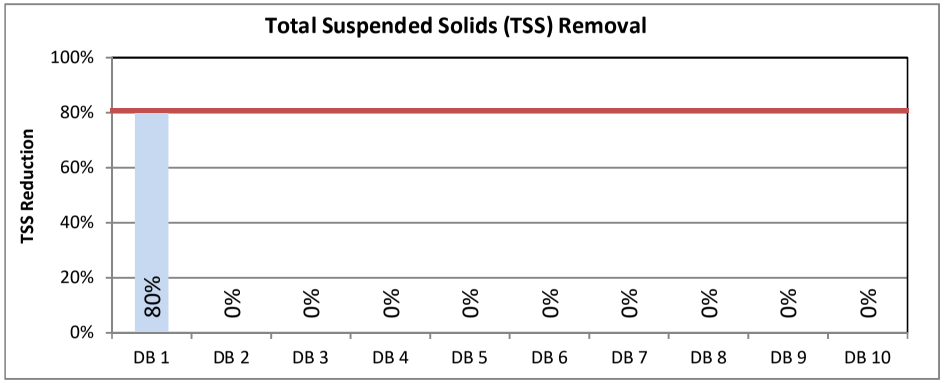
Site Summary

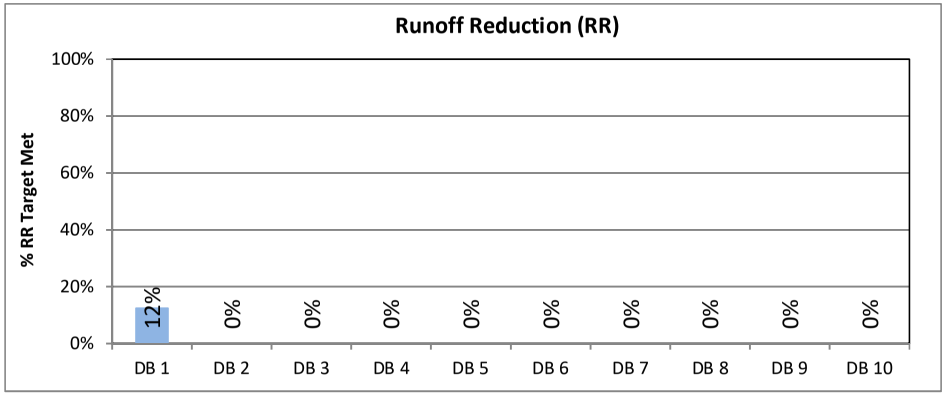
Total Pre-Development Area (ac):	**8.00**
Total Post-Development Area (ac):	**8.00**
Total Treated Area (ac):	**6.79**
Total Untreated Area (ac):	**1.21**

		I (ac)	P (ac)	CA (ac)
Drainage Basin 1	**DB 1**	1.79	6.21	0.00
Drainage Basin 2	**DB 2**	0.00	0.00	0.00
Drainage Basin 3	**DB 3**	0.00	0.00	0.00
Drainage Basin 4	**DB 4**	0.00	0.00	0.00
Drainage Basin 5	**DB 5**	0.00	0.00	0.00
Drainage Basin 6	**DB 6**	0.00	0.00	0.00
Drainage Basin 7	**DB 7**	0.00	0.00	0.00
Drainage Basin 8	**DB 8**	0.00	0.00	0.00
Drainage Basin 9	**DB 9**	0.00	0.00	0.00
Drainage Basin 10	**DB 10**	0.00	0.00	0.00
	TOTAL	**1.79**	**6.21**	**0.00**

I = Impervious Area, P = Pervious Area, CA = Conservation Area

Target Runoff Reduction Volume Achieved?	**No**
Target TSS Removal Achieved?	**Yes**
Total Target Runoff Reduction Volume (cf)	7,300
Runoff Reduction Volume Achieved (cf)	908
Total Target Water Quality Volume (cf)	8,760
% TSS Removal Achieved	80%





Official Use Only

Tracking #:		**Conditions of Approval:**	
Reviewed By:			
Date Approved:			

Georgia Stormwater Management Manual
Stormwater Quality Site Development Review Tool, v2.2

Development Name: Baseball Facilities at Brook Run Park
Drainage Basin Name:

data input cells
calculation cells
constant values

Site Data

Indicate Pre-Development Land Cover and Runoff Curve Numbers in the Site's Disturbed Area

Cover Type	HSG* A (acres)	CN	HSG B (acres)	CN	HSG C (acres)	CN	HSG D (acres)	CN	Total	% Cover
Open space - Good condition (grass cover > 75%)		39	4.70	61		74		80	4.70	59%
Woods - Good Condition		30	3.30	55		70		77	3.30	41%
Select a land cover type…		0		0		0		0	0.00	0%
Select a land cover type…		0		0		0		0	0.00	0%
Select a land cover type…		0		0		0		0	0.00	0%
Local Jurisdiction Input									0.00	0%
Other									0.00	0%
Total	0.00		8.00		0.00		0.00		8.00	100%

*HSG = hydrologic soil group

Impervious (ac)	0.00
Weighted CN	59
Potential Max Soil Retention, S_{pre} (in)	7.09

Indicate Post-Development Land Cover and Runoff Curve Numbers in the Site's Disturbed Area

Cover Type	HSG A (acres)	CN	HSG B (acres)	CN	HSG C (acres)	CN	HSG D (acres)	CN	Total	% Cover
Impervious		98	1.79	98		98		98	1.79	22%
Open space - Good condition (grass cover > 75%)		39	1.21	61		74		80	1.21	15%
Open space - Poor condition (grass cover < 50%)		68	5.00	79		86		89	5.00	63%
Select a land cover type…		0		0		0		0	0.00	0%
Select a land cover type…		0		0		0		0	0.00	0%
Local Jurisdiction Input									0.00	0%
Other									0.00	0%
Total	0.00		8.00		0.00		0.00		8.00	100%

Impervious (ac)	1.79
Rv	0.25
Weighted CN	81
Potential Max Soil Retention, S_{post} (in)	2.42

Conservation Area Credits

Scenario 1: Natural Conservation Area **See the GSMM Volume 2, Section 2.3.3.3 for more information.*

☐ Check the box if a portion of the post-developed area is protected by a conservation easement or equivalent form of protection.

Area (ac) of development protected by a conservation easement or equivalent form of protection.

Note: The green cell will unlock if the Scenario 1 box above is checked

Scenario 2: Site Reforestation/Revegetation **See the GSMM Volume 2, Section 4.22 for more information.*

☐ Check the box if a portion of the post-developed area employs site reforestation/revegetation and is protected by a conservation easement or equivalent form of protection.

Area (ac) of development reforested/revegetated and protected by a conservation easement or equivalent form of protection.

Note: The green cell will unlock if the Scenario 2 box above is checked

Scenario 3: Soil Restoration **See the GSMM Volume 2, Section 4.23 for more information.*

☐ Check the box if a portion of the post-developed area employs soil restoration and is protected by a conservation easement or equivalent form of protection.

Area (ac) of development with restored soils and protected by a conservation easement or equivalent form of protection.

Note: The green cell will unlock if the Scenario 3 box above is checked

Scenario 4: Site Reforestation/Revegetation & Soil Restoration **See the GSMM Volume 2, Section 4.22 and 4.23 for more information.*

☐ Check the box if the same portion of the post-developed area employs site reforestation/revegetation and soil restoration, and is protected by a conservation easement or equivalent form of protection.

Area (ac) with restored soils in a reforested & revegetated area and protected by a conservation easement or equivalent form of protection.

Note: The green cell will unlock if the Scenario 4 box above is checked

Total Conservation Area Credit (acres) **0.00**

Georgia Stormwater Management Manual
Stormwater Quality Site Development Review Tool, v2.2

Development Name: Baseball Facilities at Brook Run Park
Drainage Basin Name:

data input cells
calculation cells
constant values

Water Quality Goals

Target Runoff Reduction Storm (in)	1.00
Total Site Area for Water Quality Volume (acres)	8.00
Target Runoff Reduction Volume (cf)	7,300
Target Water Quality Volume (cf)	8,760

Select BMPs for Runoff Reduction and Water Quality

		Area Draining to Each BMP			Storage Volume Provided by BMP (cf)	RR Conveyance Volume Provided by BMP (cf)	Down-stream BMP	Runoff Reduction Calculations						WQ Calculations	
		On-site Pervious Area (acres)	On-site Impervious Area (acres)	Offsite Area (acres)				RR Volume from Direct Drainage (cf)	RR Volume from Upstream Practices (cf)	Total RR Volume Received by BMP (cf)	Runoff Reduction %	RR Achieved (cf)	Remaining RR Volume (cf)	WQ_v from Direct Drainage (cf)	Effective TSS Removal %
BMP 1	Proprietary System		1.79		7,407			6,173	0	6,173	0%	0	6,173	7,407	80%
BMP 2	Infiltration Trench	5.00			1,089			908	0	908	100%	908	0	1,089	100%
BMP 3	Select a BMP…							0	0	0	N/A	0	0	0	N/A
BMP 4	Select a BMP…							0	0	0	N/A	0	0	0	N/A
BMP 5	Select a BMP…							0	0	0	N/A	0	0	0	N/A
BMP 6	Select a BMP…							0	0	0	N/A	0	0	0	N/A
BMP 7	Select a BMP…							0	0	0	N/A	0	0	0	N/A
BMP 8	Select a BMP…							0	0	0	N/A	0	0	0	N/A
BMP 9	Select a BMP…							0	0	0	N/A	0	0	0	N/A
BMP 10	Select a BMP…							0	0	0	N/A	0	0	0	N/A
	TOTAL	5.00	1.79	0.00				7,080				908		8,496	
	UNTREATED AREA (acres)	1.21	0.00												

Target Runoff Reduction Volume (cf)	7,300
Target Achieved?	No
Remaining Runoff Reduction Volume (cf)	6,392

Target Water Quality Volume (cf)	8,760
% TSS Removal Achieved	80%
Target Achieved?	Yes!
Remaining TSS Removal %	0%

Channel and Flood Protection Calculations

CURVE NUMBER CALCULATIONS

PRE-DEVELOPMENT CONDITIONS

Basin A1- Site

Condition	*CN*	*Area (ac)*	*CN * Area*	
Site Grassed	61	4.20	256.20	
Site Wooded	55	2.80	154.00	
TOTAL		7.00	410.20	**59**

Basin A2- to Ex. Detention Pond

Condition	*CN*	*Area (ac)*	*CN * Area*	
Site Wooded	55	0.50	27.50	
Offsite Impervious	98	7.50	735.00	
Offsite Grassed	61	7.00	427.00	
Offsite Wooded	55	1.00	55.00	
TOTAL		16.00	1244.50	**78**

Basin A3- Bypass

Condition	*CN*	*Area (ac)*	*CN * Area*	
Offsite Impervious	98	0.50	49.00	
Offsite Grassed	61	2.50	152.50	
Offsite Wooded	55	0.30	16.50	
Adjacent Properties	70	20.20	1414.00	
TOTAL		23.50	1632.00	**69**

Offsite Basin 1

Condition	*CN*	*Area (ac)*	*CN * Area*	
Commercial	80	6.00	480.00	
Brook Run Park	60	11.80	708.00	
TOTAL		17.80	1188.00	**67**

Offsite Basin 2

Condition	*CN*	*Area (ac)*	*CN * Area*	
Brook Run Park	60	15.50	930.00	
TOTAL		15.50	930.00	**60**

CURVE NUMBER CALCULATIONS

POST-DEVELOPMENT CONDITIONS

Basin A1.1- to proposed pond

Condition	*CN*	*Area (ac)*	*CN * Area*	
Prop. Parking	98	0.34	33.32	
Prop. Plaza	98	1.17	114.52	
Prop. Artificial Turf	85	5.00	425.00	
Grassed	61	0.65	39.74	
Future School Addition	98	0.28	27.44	
Future School Addition	61	0.22	13.42	
Offsite Impervious	98	0.06	5.88	
Offsite Grassed	61	0.21	12.81	
TOTAL		7.93	672.13	**85**

Basin A1.2- to proposed pond

Condition	*CN*	*Area (ac)*	*CN * Area*	
Offsite Grassed	61	0.45	27.45	
TOTAL		0.45	27.45	**61**

Basin A2- to Ex. Detention Pond

Condition	*CN*	*Area (ac)*	*CN * Area*	
Site Grassed	61	0.03	1.83	
Offsite Impervious	98	7.50	735.00	
Offsite Grassed	61	5.65	344.65	
Offsite Wooded	55	0.55	30.25	
TOTAL		13.73	1111.73	**81**

Basin A3- Bypass

Condition	*CN*	*Area (ac)*	*CN * Area*	
Site Grassed	61	0.31	18.91	
Offsite Impervious	98	0.50	49.00	
Offsite Grassed	61	3.25	198.25	
Offsite Wooded	55	0.13	7.15	
Adjacent Properties	70	20.20	1414.00	
TOTAL		24.39	1687.31	**69**

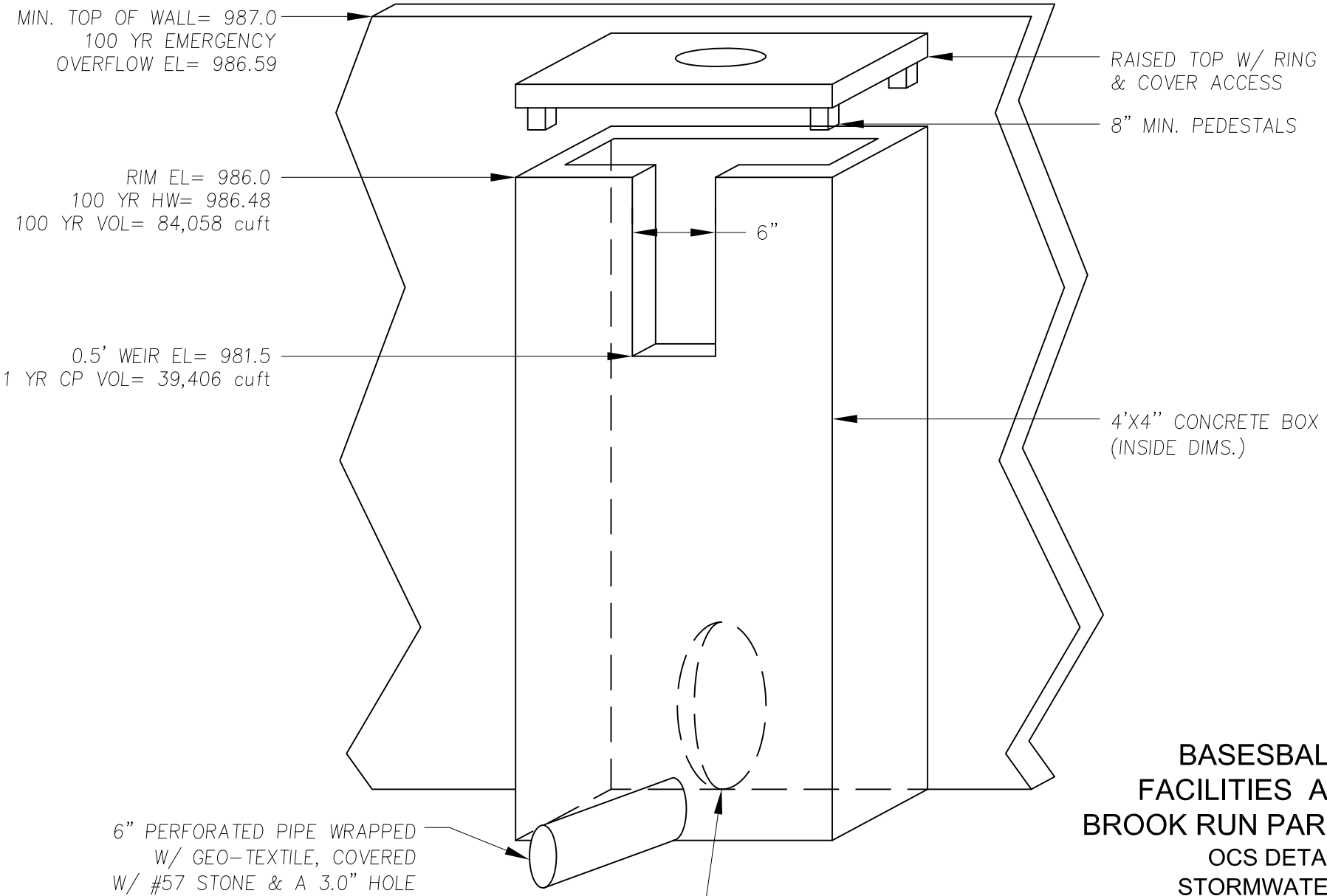
ONE YEAR CHANNEL PROTECTION CALCULATIONS

STORMWATER POND

Area	CN	
8.38	83	
P =	3.36	*Precipitation (in)*
S =	2.01	*((1000-P)/CN)-10*
Q =	1.76	$(P - 0.2S)^2 / (P + 0.8S)$
Ia =	0.40	*.2S*
Ia / P =	0.12	
qu =	990	*GSWMM fig 2.1.5-6*
qo/qi =	0.02	*GSWMM fig 2.2.5-1*
Vs/Vf =	0.65	$.682 - 1.43(q_o/q_i) + 1.64(q_o/q_i)^2 + .804(q_o/q_i)^3$
Vol Reqd =	35,065	*(Vs/Vf) * (Q/12) * (A/43560)*
Vol provided =	**39,406**	
1-yr CP el =	**981.50**	

The one yr channel protection orifice was calculated using the following equation:
$A = (V/ t) / (C \times (2g(H/2)^{0.5}))$

g =	32.2	ft/s/s
C =	0.6	
H =	5.50	ft
t =	86,400	sec
1 yr Channel Protection Vol =	39,406	cuft
Area required =	0.0571	sf
Diameter required =	3.2	in
Diameter provided=	**3.0**	**in**
Invert el=	**976.00**	**ft**



BASESBALL FACILITIES AT BROOK RUN PARK

OCS DETAIL STORMWATER POND

N.T.S.

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	------	31.28	44.13	-------	57.53	71.26	89.87	103.95	118.09	Pre Basin A2- to Ex. Detention Pond
2	Reservoir	1	2.812	3.429	-------	3.956	7.416	15.85	23.54	32.13	Pre Ex. Pond
3	SCS Runoff	------	2.906	6.173	-------	10.09	14.44	20.74	25.76	31.02	Pre Basin A1- site
4	SCS Runoff	------	20.44	32.72	-------	46.17	60.46	80.62	96.26	112.23	Pre Basin A3 - bypass
5	Combine	2, 3, 4	25.45	40.91	-------	58.01	76.36	106.07	133.27	161.43	Pre total to Study Pt. A
6	Reservoir	5	25.44	40.90	-------	58.02	76.32	105.91	132.72	158.40	Pre Study Pt. A
7	SCS Runoff	------	20.45	33.15	-------	47.09	61.94	82.75	99.03	115.75	Offsite Basin 1
8	Combine	6, 7	40.71	67.18	-------	96.31	127.85	171.26	205.95	243.65	Pre Georgia Way S
9	SCS Runoff	------	6.011	12.36	-------	19.97	28.43	40.67	50.41	60.65	Offsite Basin 2
10	Combine	8, 9	45.83	78.00	-------	114.53	153.93	208.88	253.81	299.36	Pre DS Study Pt.
12	SCS Runoff	------	30.98	42.49	-------	54.32	66.33	82.48	94.64	106.80	Post Basin A2 to Ex. Pond
13	Reservoir	12	2.835	3.397	-------	3.874	6.232	13.03	19.74	26.91	Post Ex. Pond
14	SCS Runoff	------	19.36	25.73	-------	32.18	38.66	47.31	53.79	60.25	Post Basin A1.1 - to prop. pond
15	SCS Runoff	------	0.354	0.660	-------	1.014	1.399	1.952	2.388	2.838	Post Basin A1.2 - to prop. pond
16	Combine	14, 15	19.58	26.10	-------	32.73	39.42	48.43	55.19	61.94	Post total to prop. pond
17	Reservoir	16	0.534	1.551	-------	3.692	7.055	12.41	17.47	32.10	Prop. pond
18	SCS Runoff	------	21.21	33.96	-------	47.92	62.75	83.67	99.91	116.48	Post Basin A3 - bypass
19	Combine	13, 17, 18	24.15	37.50	-------	51.97	69.21	99.53	126.62	160.18	Post total to Study Pt. A
20	Reservoir	19	24.16	37.48	-------	51.97	69.17	99.39	126.38	157.42	Post Study Pt. A
21	Combine	7, 20	39.01	62.49	-------	88.28	116.00	155.65	187.86	224.11	Post Georgia Way S
22	Combine	9, 21	44.04	73.31	-------	106.42	142.00	192.97	235.96	282.80	Post DS Study Pt.
24	Reservoir	16	0.517	1.552	-------	3.825	7.404	13.09	21.59	36.50	Emergency Overflow

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

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	31.28	1	721	79,574	------	------	------	Pre Basin A2- to Ex. Detention Pond
2	Reservoir	2.812	1	766	79,554	1	985.13	61,609	Pre Ex. Pond
3	SCS Runoff	2.906	1	724	10,885	------	------	------	Pre Basin A1- site
4	SCS Runoff	20.44	1	727	75,035	------	------	------	Pre Basin A3 - bypass
5	Combine	25.45	1	727	165,474	2, 3, 4	------	------	Pre total to Study Pt. A
6	Reservoir	25.44	1	727	165,474	5	970.49	173	Pre Study Pt. A
7	SCS Runoff	20.45	1	720	49,921	------	------	------	Offsite Basin 1
8	Combine	40.71	1	722	215,395	6, 7	------	------	Pre Georgia Way S
9	SCS Runoff	6.011	1	727	26,281	------	------	------	Offsite Basin 2
10	Combine	45.83	1	723	241,676	8, 9	------	------	Pre DS Study Pt.
12	SCS Runoff	30.98	1	721	78,298	------	------	------	Post Basin A2 to Ex. Pond
13	Reservoir	2.835	1	762	78,278	12	985.18	62,185	Post Ex. Pond
14	SCS Runoff	19.36	1	723	55,231	------	------	------	Post Basin A1.1 - to prop. pond
15	SCS Runoff	0.354	1	719	861	------	------	------	Post Basin A1.2 - to prop. pond
16	Combine	19.58	1	723	56,092	14, 15	------	------	Post total to prop. pond
17	Reservoir	0.534	1	977	52,337	16	981.22	37,232	Prop. pond
18	SCS Runoff	21.21	1	727	77,877	------	------	------	Post Basin A3 - bypass
19	Combine	24.15	1	727	208,491	13, 17, 18	------	------	Post total to Study Pt. A
20	Reservoir	24.16	1	728	208,487	19	970.45	160	Post Study Pt. A
21	Combine	39.01	1	722	258,408	7, 20	------	------	Post Georgia Way S
22	Combine	44.04	1	723	284,689	9, 21	------	------	Post DS Study Pt.
24	Reservoir	0.517	1	994	17,341	16	981.95	42,996	Emergency Overflow

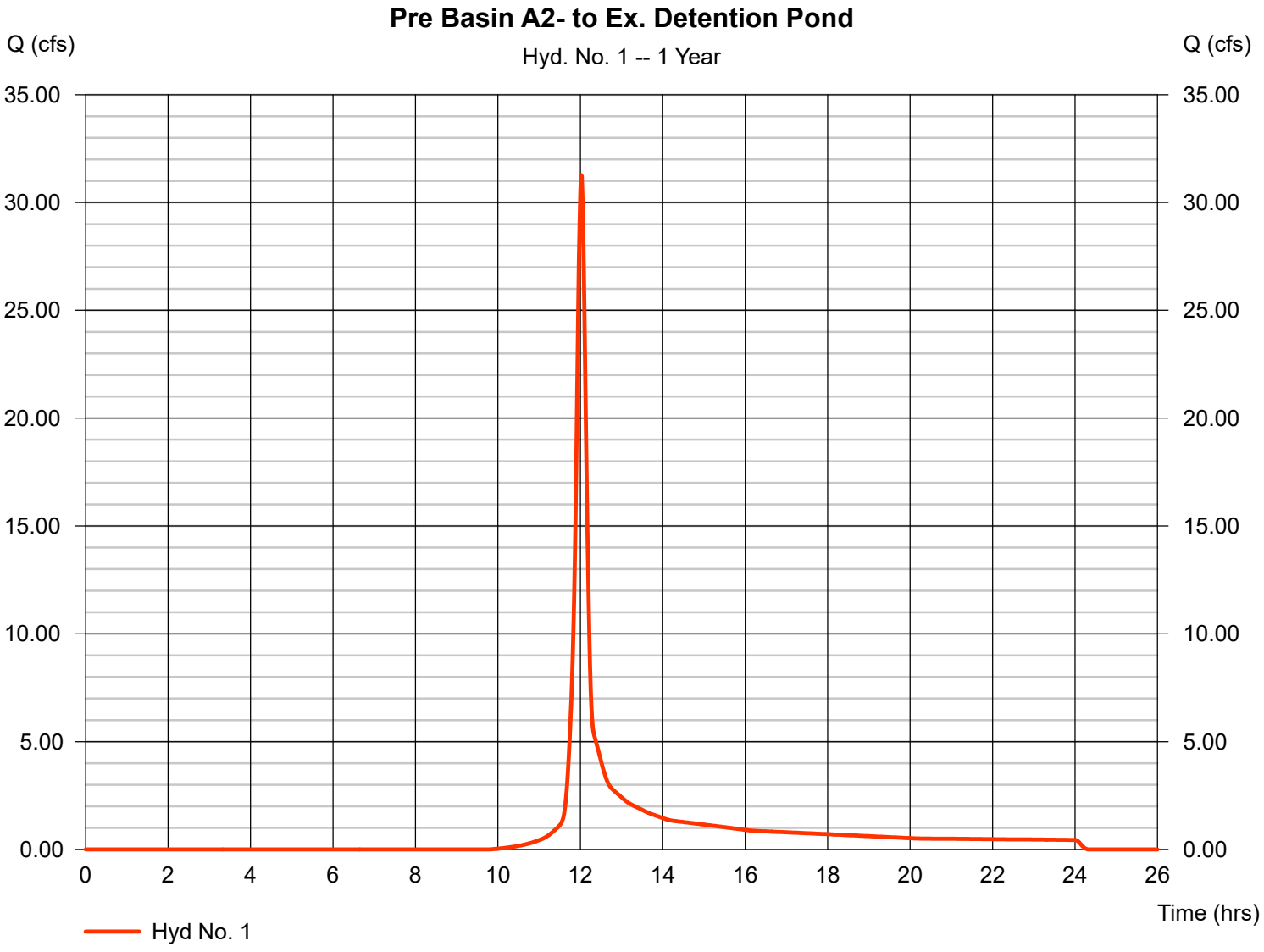
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 1

Pre Basin A2- to Ex. Detention Pond

Hydrograph type	=	SCS Runoff	Peak discharge	=	31.28 cfs
Storm frequency	=	1 yrs	Time to peak	=	12.02 hrs
Time interval	=	1 min	Hyd. volume	=	79,574 cuft
Drainage area	=	16.000 ac	Curve number	=	78
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.40 min
Total precip.	=	3.36 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hyd. No. 1

Pre Basin A2- to Ex. Detention Pond

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)	=	4.08		0.00		0.00		
Land slope (%)	=	3.50		0.00		0.00		
Travel Time (min)	**=**	**6.94**	**+**	**0.00**	**+**	**0.00**	**=**	**6.94**
Shallow Concentrated Flow								
Flow length (ft)	=	135.00		1125.00		0.00		
Watercourse slope (%)	=	7.00		3.50		0.00		
Surface description	=	Unpaved		Paved		Paved		
Average velocity (ft/s)	=	4.27		3.80		0.00		
Travel Time (min)	**=**	**0.53**	**+**	**4.93**	**+**	**0.00**	**=**	**5.46**
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		
Travel Time (min)	**=**	**0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 12.40 min

Hydrograph Report

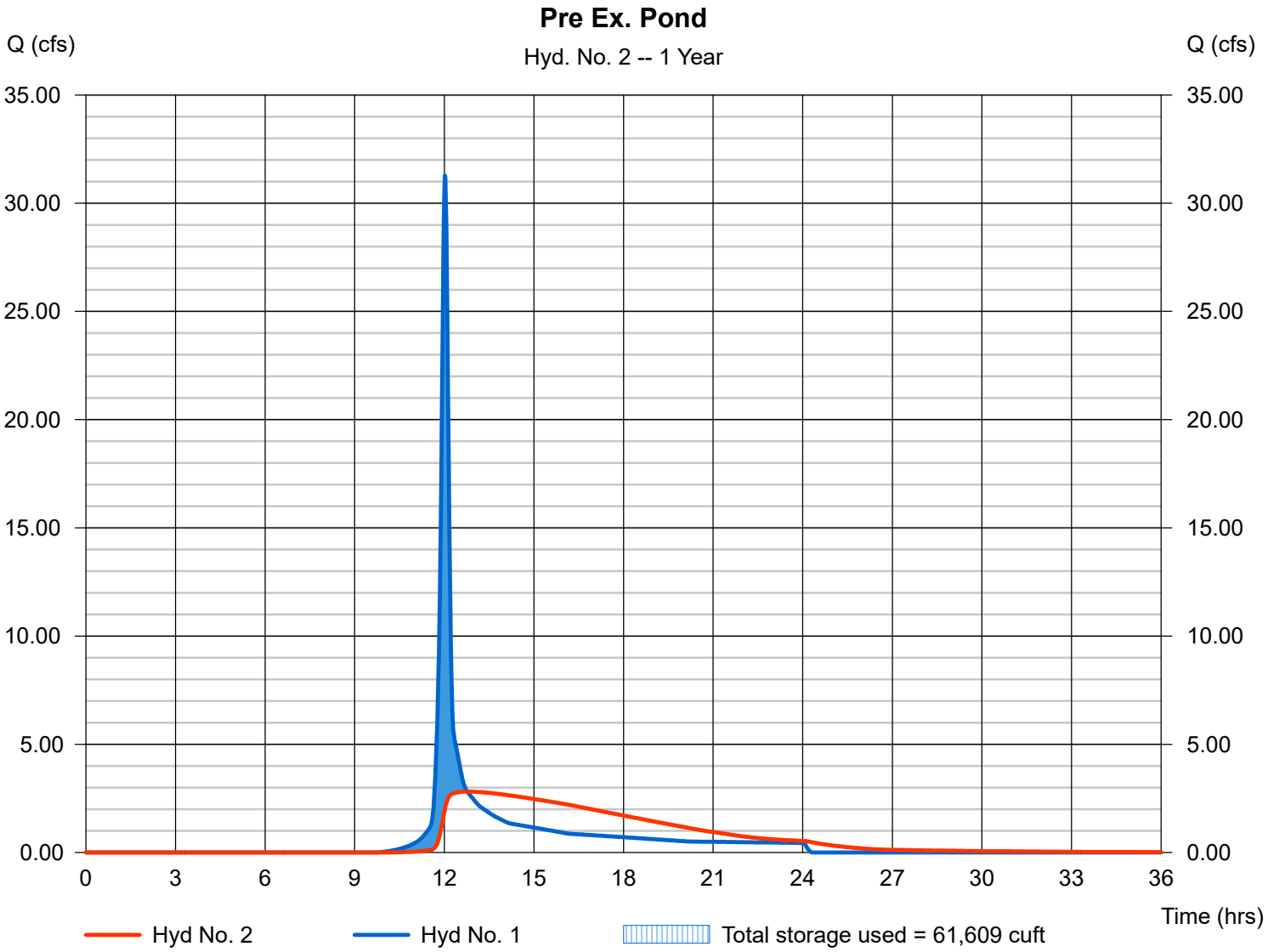
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 2

Pre Ex. Pond

Hydrograph type	=	Reservoir	Peak discharge	=	2.812 cfs
Storm frequency	=	1 yrs	Time to peak	=	12.77 hrs
Time interval	=	1 min	Hyd. volume	=	79,554 cuft
Inflow hyd. No.	=	1 - Pre Basin A2- to Ex. Detention Pond	Max. Elevation	=	985.13 ft
Reservoir name	=	Ex. Pond	Max. Storage	=	61,609 cuft

Storage Indication method used. Wet pond routing start elevation = 982.00 ft.



Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Pond No. 1 - Ex. Pond

Pond Data

Contours - User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 978.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	978.00	00	0	0
2.00	980.00	8,833	5,888	5,888
4.00	982.00	10,445	19,254	25,142
6.00	984.00	11,739	22,169	47,311
8.00	986.00	13,524	25,239	72,550
10.00	988.00	15,175	28,680	101,231
12.00	990.00	17,127	32,279	133,510
14.00	992.00	19,706	36,799	170,309
16.00	994.00	21,589	41,277	211,585

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 42.00	8.00	0.00	0.00
Span (in)	= 42.00	8.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 976.50	982.00	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	= .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)	= 16.75	1.25	0.00	0.00
Crest El. (ft)	= 992.30	988.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Riser	Rect	---	---
Multi-Stage	= Yes	Yes	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	978.00	0.00	0.00	---	---	0.00	0.00	---	---	---	---	0.000
2.00	5,888	980.00	16.47 ic	0.00	---	---	0.00	0.00	---	---	---	---	0.000
4.00	25,142	982.00	16.47 ic	0.00	---	---	0.00	0.00	---	---	---	---	0.000
6.00	47,311	984.00	16.47 ic	2.17 ic	---	---	0.00	0.00	---	---	---	---	2.170
8.00	72,550	986.00	16.47 ic	3.22 ic	---	---	0.00	0.00	---	---	---	---	3.218
10.00	101,231	988.00	16.47 ic	4.00 ic	---	---	0.00	0.00	---	---	---	---	4.000
12.00	133,510	990.00	16.47 ic	4.65 ic	---	---	0.00	11.77	---	---	---	---	16.43
14.00	170,309	992.00	38.64 ic	5.22 ic	---	---	0.00	33.30	---	---	---	---	38.52
16.00	211,585	994.00	171.52 ic	2.40 ic	---	---	123.63	45.49 s	---	---	---	---	171.52

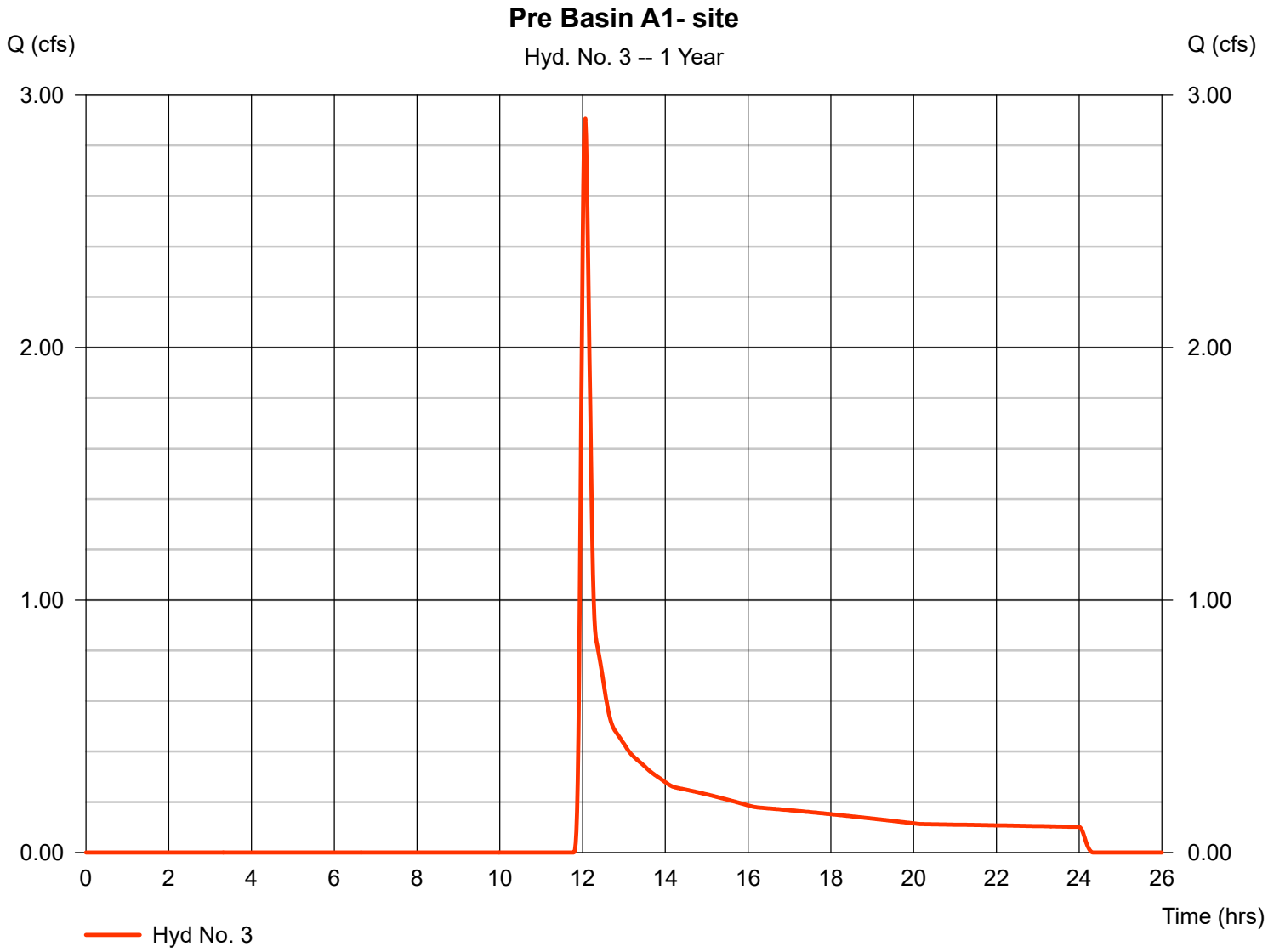
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 3

Pre Basin A1- site

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.906 cfs
Storm frequency	=	1 yrs	Time to peak	=	12.07 hrs
Time interval	=	1 min	Hyd. volume	=	10,885 cuft
Drainage area	=	7.000 ac	Curve number	=	59
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.80 min
Total precip.	=	3.36 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hyd. No. 3

Pre Basin A1- site

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)	=	4.08		0.00		0.00		
Land slope (%)	=	5.00		0.00		0.00		
Travel Time (min)	**=**	**6.01**	**+**	**0.00**	**+**	**0.00**	**=**	**6.01**
Shallow Concentrated Flow								
Flow length (ft)	=	630.00		700.00		0.00		
Watercourse slope (%)	=	3.30		3.30		0.00		
Surface description	=	Unpaved		Paved		Paved		
Average velocity (ft/s)	=	2.93		3.69		0.00		
Travel Time (min)	**=**	**3.58**	**+**	**3.16**	**+**	**0.00**	**=**	**6.74**
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		
Travel Time (min)	**=**	**0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 12.80 min

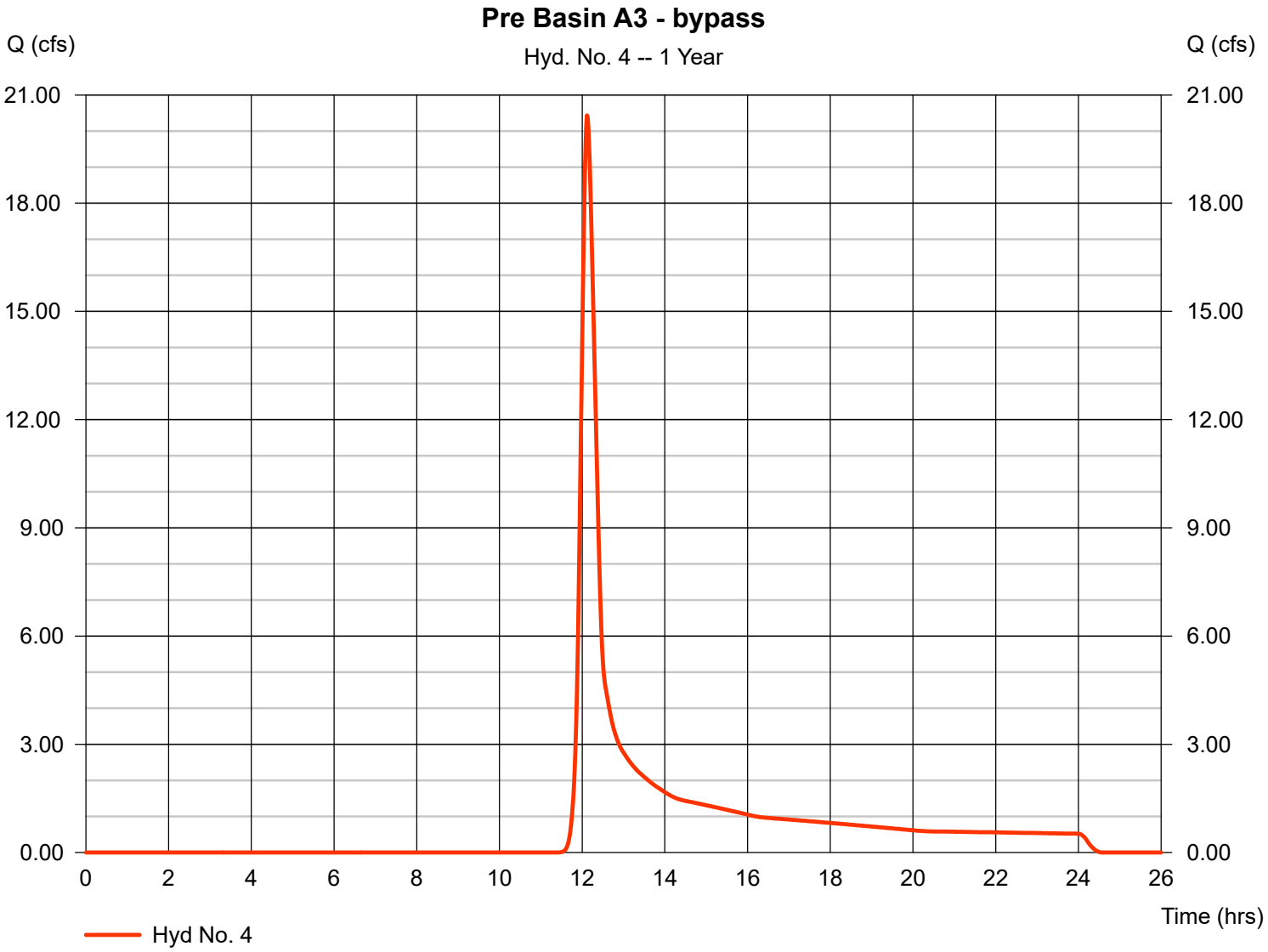
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 4

Pre Basin A3 - bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	20.44 cfs
Storm frequency	=	1 yrs	Time to peak	=	12.12 hrs
Time interval	=	1 min	Hyd. volume	=	75,035 cuft
Drainage area	=	23.500 ac	Curve number	=	69
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	21.80 min
Total precip.	=	3.36 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hyd. No. 4

Pre Basin A3 - bypass

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)	=	4.08		0.00		0.00		
Land slope (%)	=	2.00		0.00		0.00		
Travel Time (min)	**=**	**8.68**	**+**	**0.00**	**+**	**0.00**	**=**	**8.68**
Shallow Concentrated Flow								
Flow length (ft)	=	1265.00		1285.00		0.00		
Watercourse slope (%)	=	2.00		3.30		0.00		
Surface description	=	Paved		Paved		Paved		
Average velocity (ft/s)	=	2.87		3.69		0.00		
Travel Time (min)	**=**	**7.33**	**+**	**5.80**	**+**	**0.00**	**=**	**13.13**
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		
Travel Time (min)	**=**	**0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 21.80 min

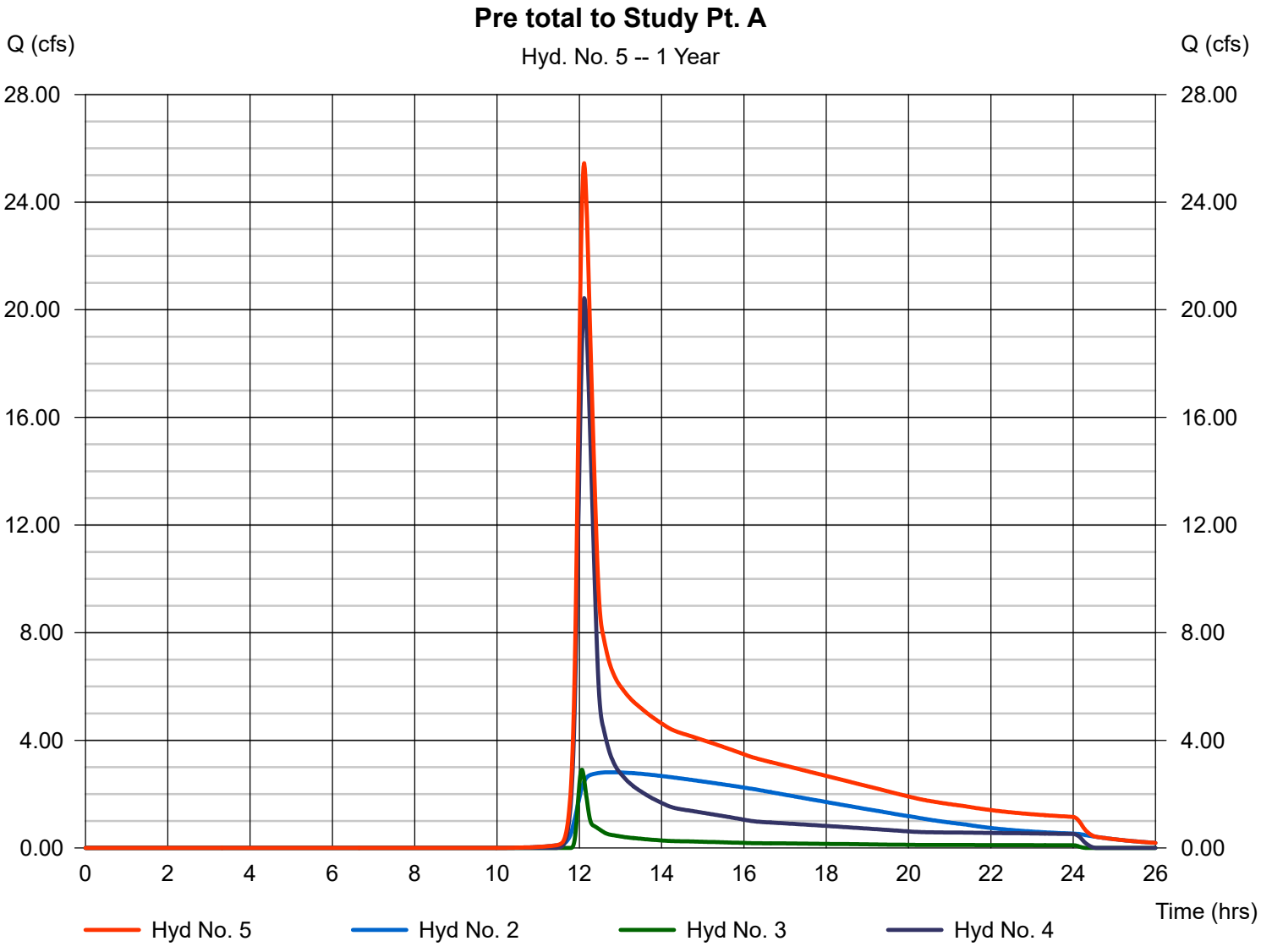
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 5

Pre total to Study Pt. A

Hydrograph type	= Combine	Peak discharge	= 25.45 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 165,474 cuft
Inflow hyds.	= 2, 3, 4	Contrib. drain. area	= 30.500 ac



Hydrograph Report

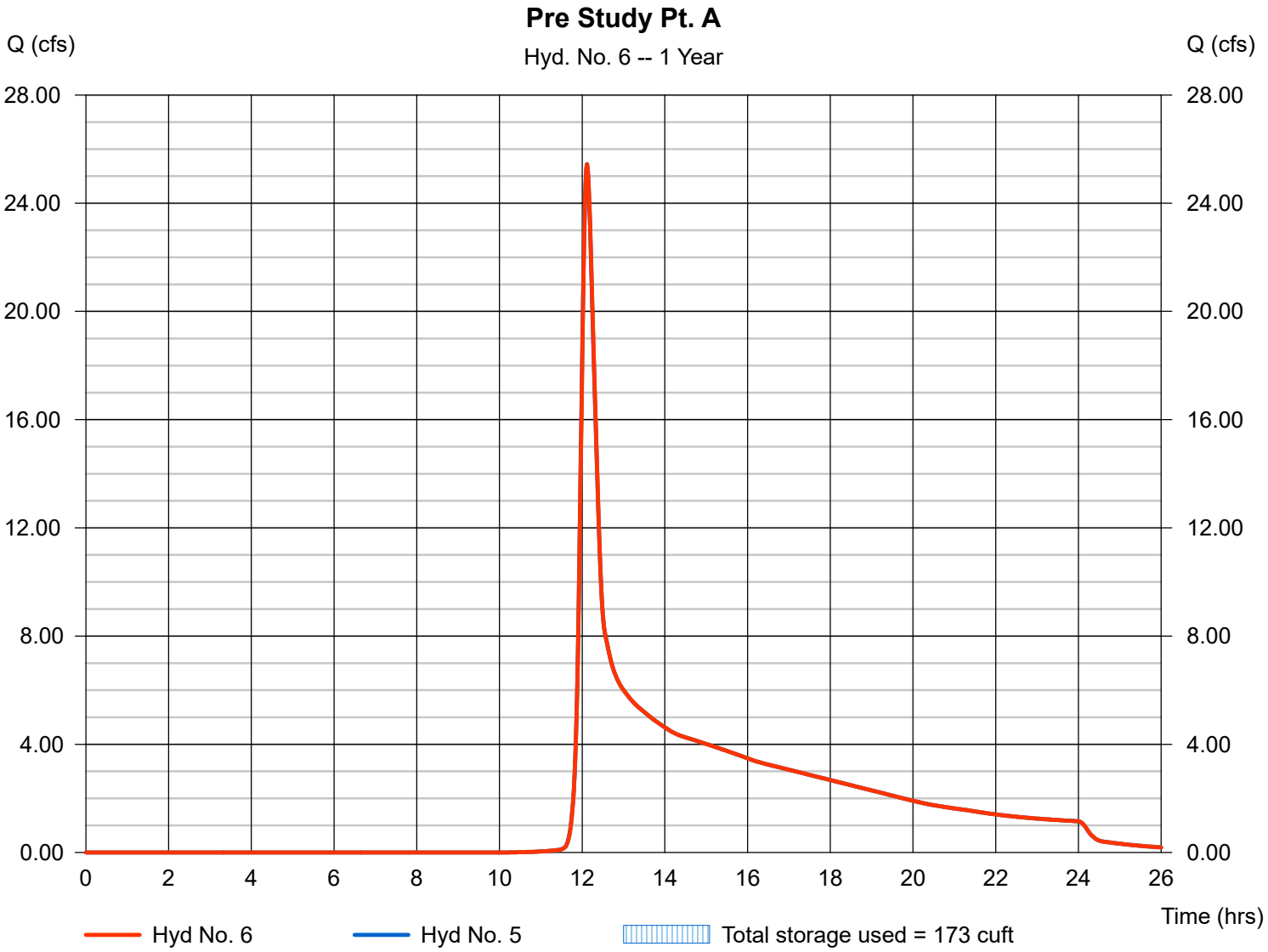
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 6

Pre Study Pt. A

Hydrograph type	=	Reservoir	Peak discharge	=	25.44 cfs
Storm frequency	=	1 yrs	Time to peak	=	12.12 hrs
Time interval	=	1 min	Hyd. volume	=	165,474 cuft
Inflow hyd. No.	=	5 - Pre total to Study Pt. A	Max. Elevation	=	970.49 ft
Reservoir name	=	Ex. DS Culvert at Barclay	Max. Storage	=	173 cuft

Storage Indication method used.



Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Pond No. 4 - Ex. DS Culvert at Barclay

Pond Data

Contours - User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 968.76 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	968.76	00	0	0
1.24	970.00	108	45	45
3.24	972.00	450	519	564
5.24	974.00	980	1,396	1,959
7.24	976.00	3,970	4,615	6,574
9.24	978.00	9,530	13,099	19,673
11.24	980.00	13,858	23,251	42,924
13.24	982.00	18,108	31,868	74,793

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 54.00	0.00	0.00	0.00
Span (in)	= 54.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 968.76	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	= .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 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	968.76	0.00	---	---	---	---	---	---	---	---	---	0.000
1.24	45	970.00	13.53 ic	---	---	---	---	---	---	---	---	---	13.53
3.24	564	972.00	75.20 ic	---	---	---	---	---	---	---	---	---	75.20
5.24	1,959	974.00	132.40 ic	---	---	---	---	---	---	---	---	---	132.40
7.24	6,574	976.00	171.04 ic	---	---	---	---	---	---	---	---	---	171.04
9.24	19,673	978.00	202.44 ic	---	---	---	---	---	---	---	---	---	202.44
11.24	42,924	980.00	229.58 ic	---	---	---	---	---	---	---	---	---	229.58
13.24	74,793	982.00	253.84 ic	---	---	---	---	---	---	---	---	---	253.84

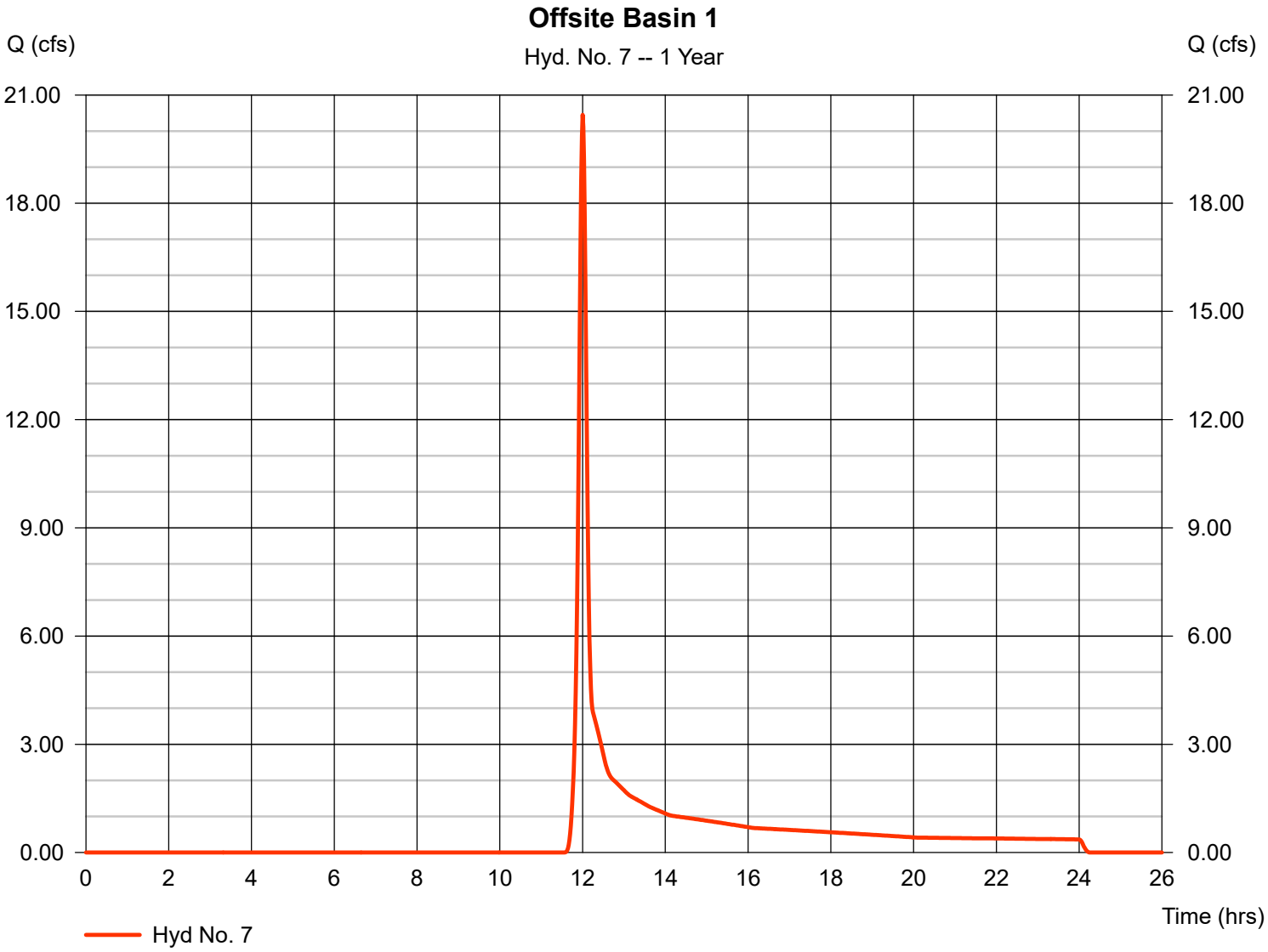
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 7

Offsite Basin 1

Hydrograph type	=	SCS Runoff	Peak discharge	=	20.45 cfs
Storm frequency	=	1 yrs	Time to peak	=	12.00 hrs
Time interval	=	1 min	Hyd. volume	=	49,921 cuft
Drainage area	=	17.800 ac	Curve number	=	67
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	8.80 min
Total precip.	=	3.36 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hyd. No. 7

Offsite Basin 1

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)	=	4.08		0.00		0.00		
Land slope (%)	=	16.00		0.00		0.00		
Travel Time (min)	**=**	**3.78**	**+**	**0.00**	**+**	**0.00**	**=**	**3.78**
Shallow Concentrated Flow								
Flow length (ft)	=	980.00		0.00		0.00		
Watercourse slope (%)	=	4.00		0.00		0.00		
Surface description	=	Unpaved		Paved		Paved		
Average velocity (ft/s)	=	3.23		0.00		0.00		
Travel Time (min)	**=**	**5.06**	**+**	**0.00**	**+**	**0.00**	**=**	**5.06**
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		
Travel Time (min)	**=**	**0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 8.80 min

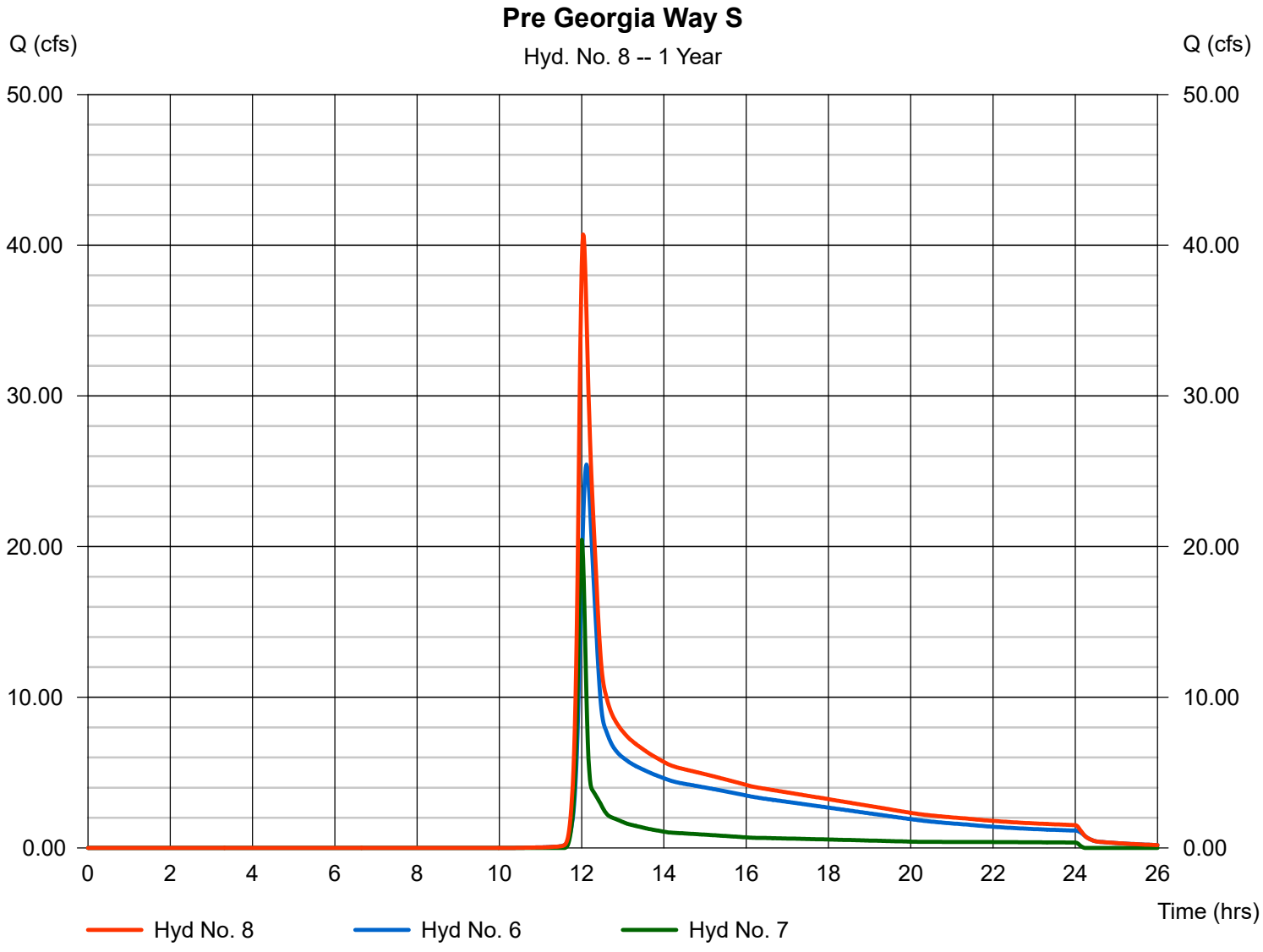
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 8

Pre Georgia Way S

Hydrograph type	= Combine	Peak discharge	= 40.71 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.03 hrs
Time interval	= 1 min	Hyd. volume	= 215,395 cuft
Inflow hyds.	= 6, 7	Contrib. drain. area	= 17.800 ac



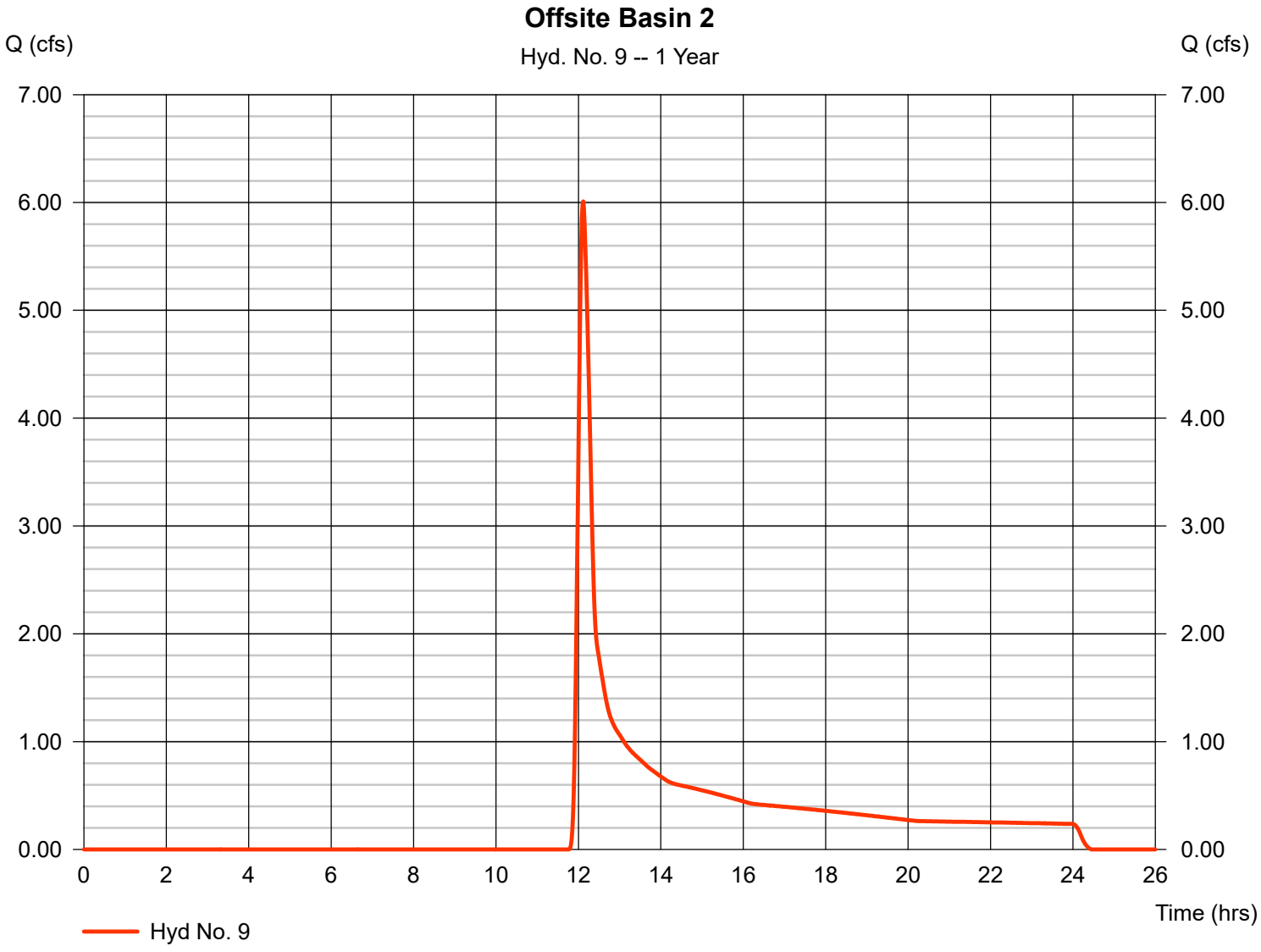
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 9

Offsite Basin 2

Hydrograph type	=	SCS Runoff	Peak discharge	=	6.011 cfs
Storm frequency	=	1 yrs	Time to peak	=	12.12 hrs
Time interval	=	1 min	Hyd. volume	=	26,281 cuft
Drainage area	=	15.500 ac	Curve number	=	60
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	17.30 min
Total precip.	=	3.36 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hyd. No. 9

Offsite Basin 2

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)	= 4.08		0.00		0.00		
Land slope (%)	= 2.00		0.00		0.00		
Travel Time (min)	**= 8.68**	**+**	**0.00**	**+**	**0.00**	**=**	**8.68**
Shallow Concentrated Flow							
Flow length (ft)	= 1445.00		0.00		0.00		
Watercourse slope (%)	= 3.00		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	= 2.79		0.00		0.00		
Travel Time (min)	**= 8.62**	**+**	**0.00**	**+**	**0.00**	**=**	**8.62**
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		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 17.30 min

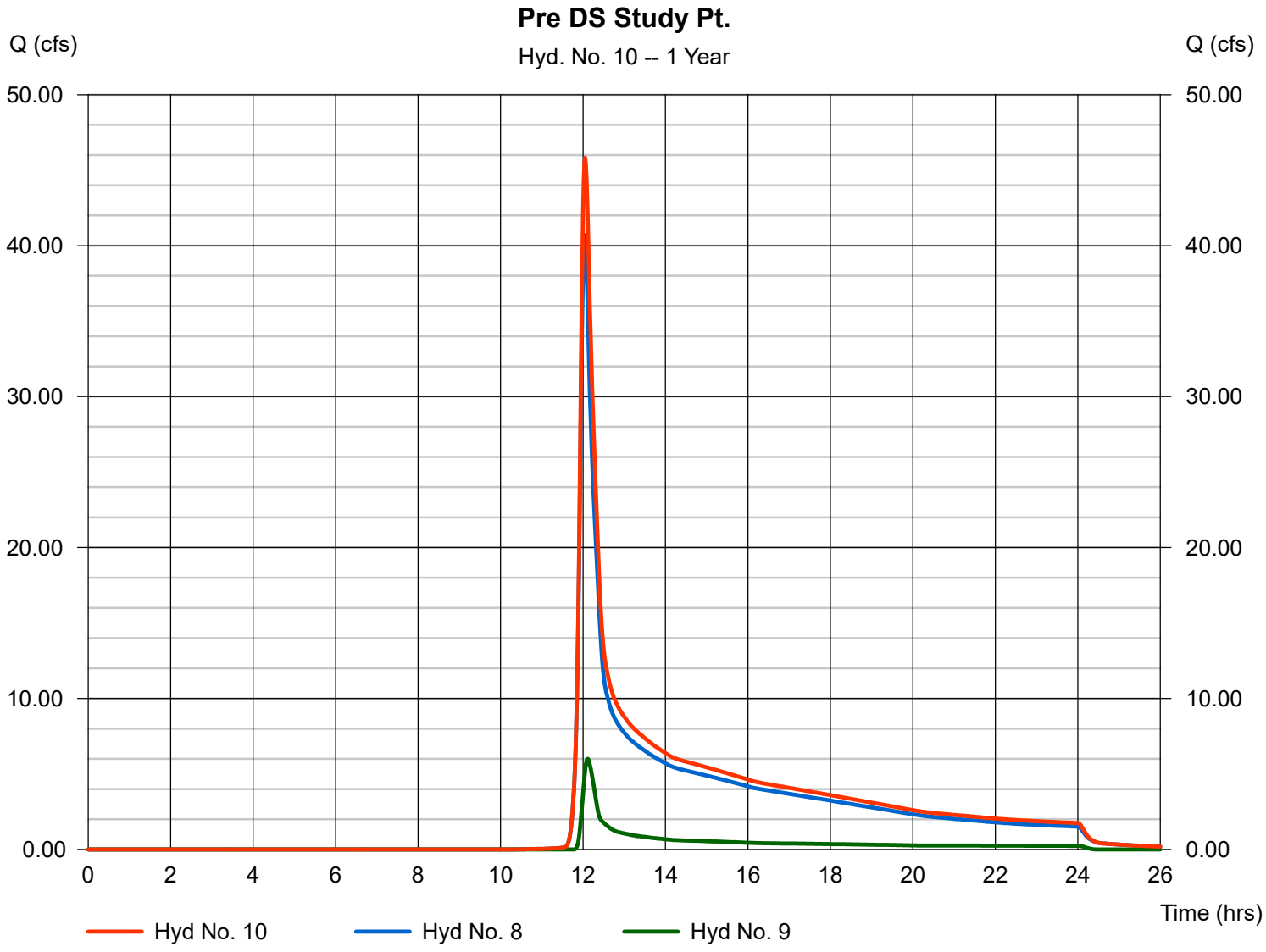
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 10

Pre DS Study Pt.

Hydrograph type	= Combine	Peak discharge	= 45.83 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.05 hrs
Time interval	= 1 min	Hyd. volume	= 241,676 cuft
Inflow hyds.	= 8, 9	Contrib. drain. area	= 15.500 ac



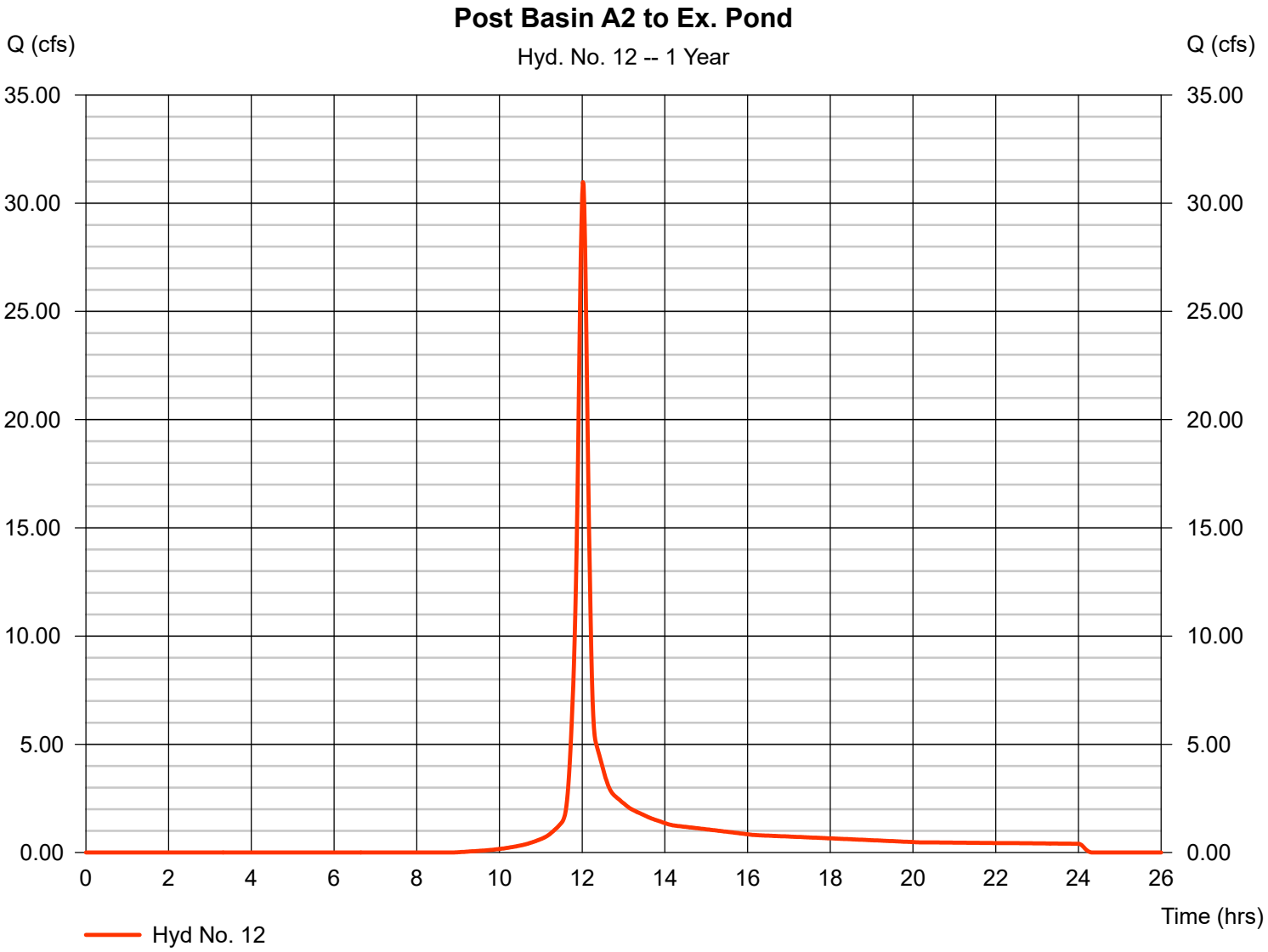
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 12

Post Basin A2 to Ex. Pond

Hydrograph type	=	SCS Runoff	Peak discharge	=	30.98 cfs
Storm frequency	=	1 yrs	Time to peak	=	12.02 hrs
Time interval	=	1 min	Hyd. volume	=	78,298 cuft
Drainage area	=	13.730 ac	Curve number	=	81
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.40 min
Total precip.	=	3.36 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hyd. No. 12

Post Basin A2 to Ex. Pond

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)	=	4.08		0.00		0.00		
Land slope (%)	=	3.50		0.00		0.00		
Travel Time (min)	**=**	**6.94**	**+**	**0.00**	**+**	**0.00**	**=**	**6.94**
Shallow Concentrated Flow								
Flow length (ft)	=	135.00		1125.00		0.00		
Watercourse slope (%)	=	7.00		3.50		0.00		
Surface description	=	Unpaved		Paved		Paved		
Average velocity (ft/s)	=	4.27		3.80		0.00		
Travel Time (min)	**=**	**0.53**	**+**	**4.93**	**+**	**0.00**	**=**	**5.46**
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		
Travel Time (min)	**=**	**0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 12.40 min

Hydrograph Report

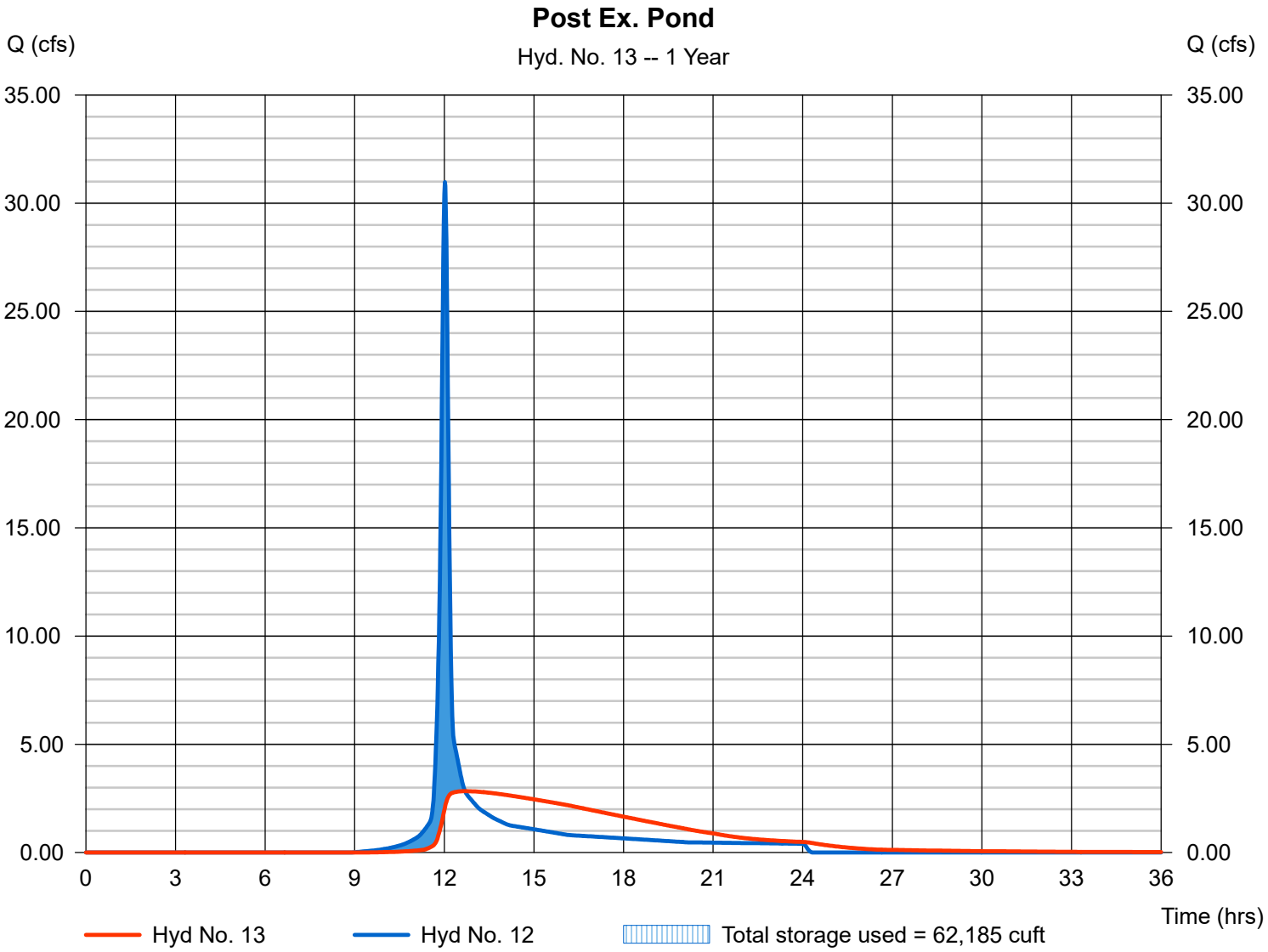
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 13

Post Ex. Pond

Hydrograph type	=	Reservoir	Peak discharge	=	2.835 cfs
Storm frequency	=	1 yrs	Time to peak	=	12.70 hrs
Time interval	=	1 min	Hyd. volume	=	78,278 cuft
Inflow hyd. No.	=	12 - Post Basin A2 to Ex. Pond	Max. Elevation	=	985.18 ft
Reservoir name	=	Ex. Pond	Max. Storage	=	62,185 cuft

Storage Indication method used. Wet pond routing start elevation = 982.00 ft.



Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Pond No. 1 - Ex. Pond

Pond Data

Contours - User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 978.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	978.00	00	0	0
2.00	980.00	8,833	5,888	5,888
4.00	982.00	10,445	19,254	25,142
6.00	984.00	11,739	22,169	47,311
8.00	986.00	13,524	25,239	72,550
10.00	988.00	15,175	28,680	101,231
12.00	990.00	17,127	32,279	133,510
14.00	992.00	19,706	36,799	170,309
16.00	994.00	21,589	41,277	211,585

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 42.00	8.00	0.00	0.00
Span (in)	= 42.00	8.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 976.50	982.00	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	= .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)	= 16.75	1.25	0.00	0.00
Crest El. (ft)	= 992.30	988.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Riser	Rect	---	---
Multi-Stage	= Yes	Yes	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	978.00	0.00	0.00	---	---	0.00	0.00	---	---	---	---	0.000
2.00	5,888	980.00	16.47 ic	0.00	---	---	0.00	0.00	---	---	---	---	0.000
4.00	25,142	982.00	16.47 ic	0.00	---	---	0.00	0.00	---	---	---	---	0.000
6.00	47,311	984.00	16.47 ic	2.17 ic	---	---	0.00	0.00	---	---	---	---	2.170
8.00	72,550	986.00	16.47 ic	3.22 ic	---	---	0.00	0.00	---	---	---	---	3.218
10.00	101,231	988.00	16.47 ic	4.00 ic	---	---	0.00	0.00	---	---	---	---	4.000
12.00	133,510	990.00	16.47 ic	4.65 ic	---	---	0.00	11.77	---	---	---	---	16.43
14.00	170,309	992.00	38.64 ic	5.22 ic	---	---	0.00	33.30	---	---	---	---	38.52
16.00	211,585	994.00	171.52 ic	2.40 ic	---	---	123.63	45.49 s	---	---	---	---	171.52

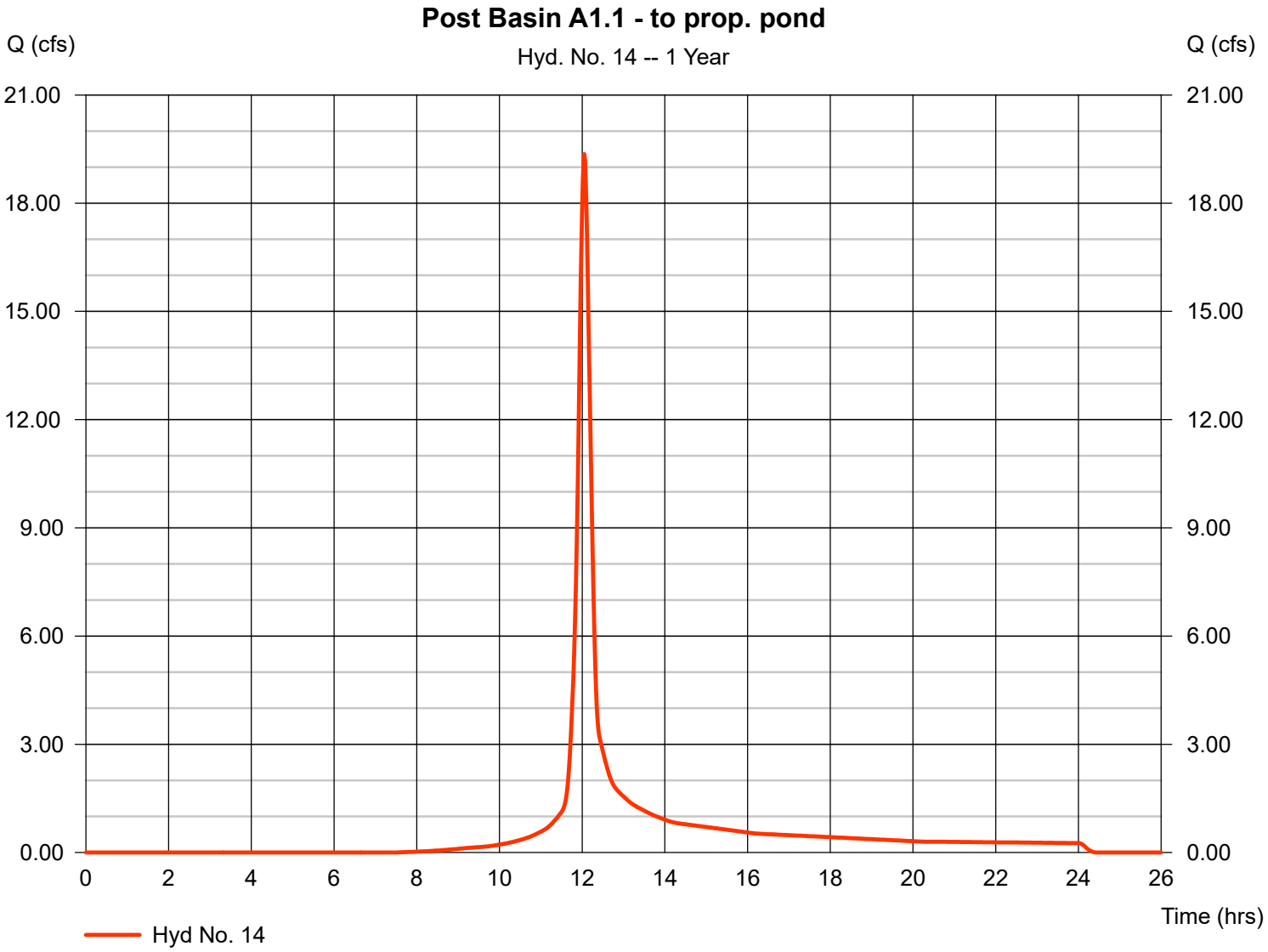
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 14

Post Basin A1.1 - to prop. pond

Hydrograph type	=	SCS Runoff	Peak discharge	=	19.36 cfs
Storm frequency	=	1 yrs	Time to peak	=	12.05 hrs
Time interval	=	1 min	Hyd. volume	=	55,231 cuft
Drainage area	=	7.930 ac	Curve number	=	85
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	16.30 min
Total precip.	=	3.36 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hyd. No. 14

Post Basin A1.1 - to prop. pond

Description		A		B		C		Totals
Sheet Flow								
Manning's n-value	=	0.011		0.011		0.011		
Flow length (ft)	=	100.0		0.0		0.0		
Two-year 24-hr precip. (in)	=	4.08		0.00		0.00		
Land slope (%)	=	1.00		0.00		0.00		
Travel Time (min)	**=**	**1.42**	**+**	**0.00**	**+**	**0.00**	**=**	**1.42**
Shallow Concentrated Flow								
Flow length (ft)	=	1815.00		0.00		0.00		
Watercourse slope (%)	=	1.00		0.00		0.00		
Surface description	=	Paved		Paved		Paved		
Average velocity (ft/s)	=	2.03		0.00		0.00		
Travel Time (min)	**=**	**14.88**	**+**	**0.00**	**+**	**0.00**	**=**	**14.88**
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		
Travel Time (min)	**=**	**0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 16.30 min

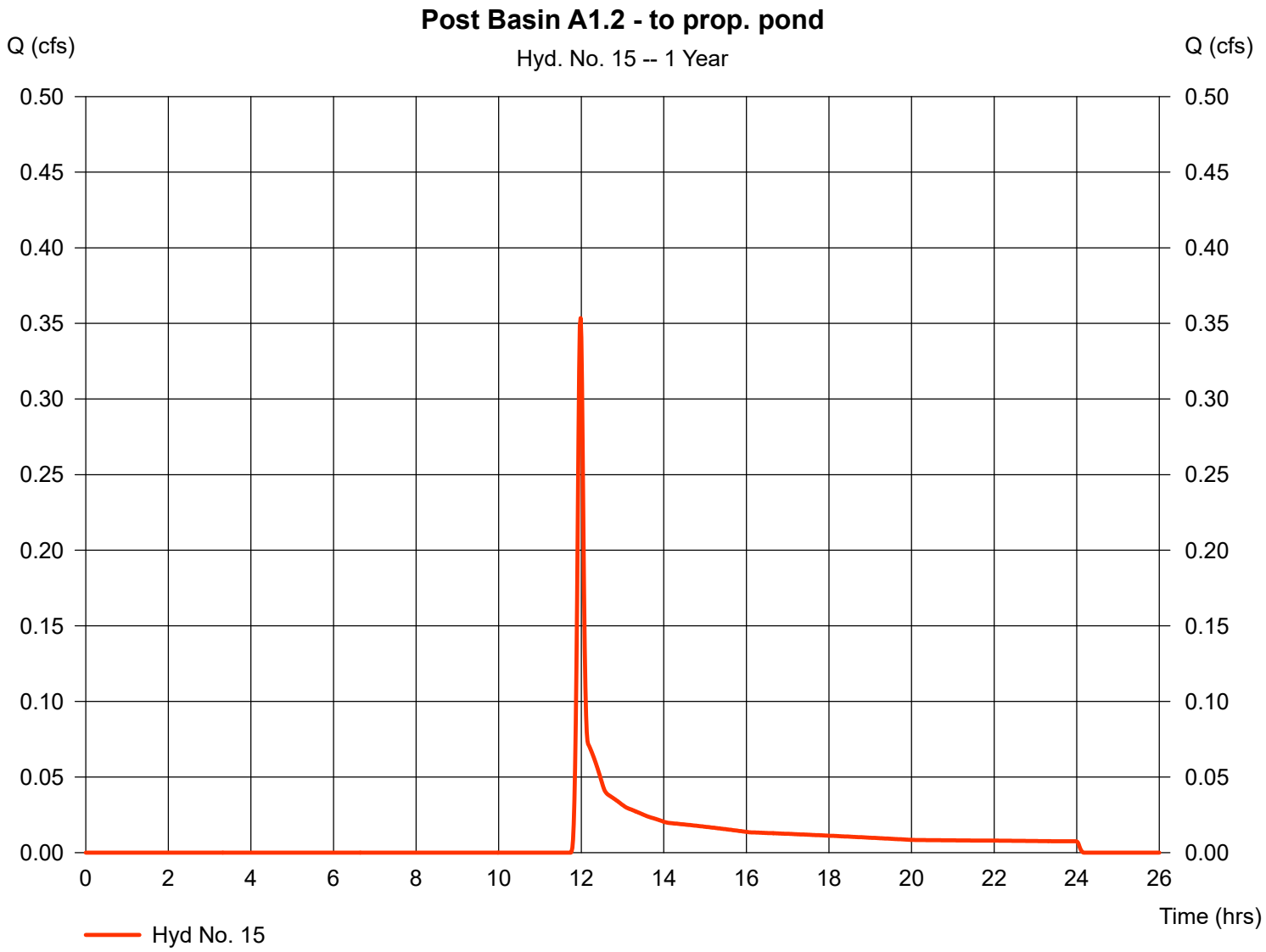
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 15

Post Basin A1.2 - to prop. pond

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.354 cfs
Storm frequency	=	1 yrs	Time to peak	=	11.98 hrs
Time interval	=	1 min	Hyd. volume	=	861 cuft
Drainage area	=	0.450 ac	Curve number	=	61
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	5.00 min
Total precip.	=	3.36 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



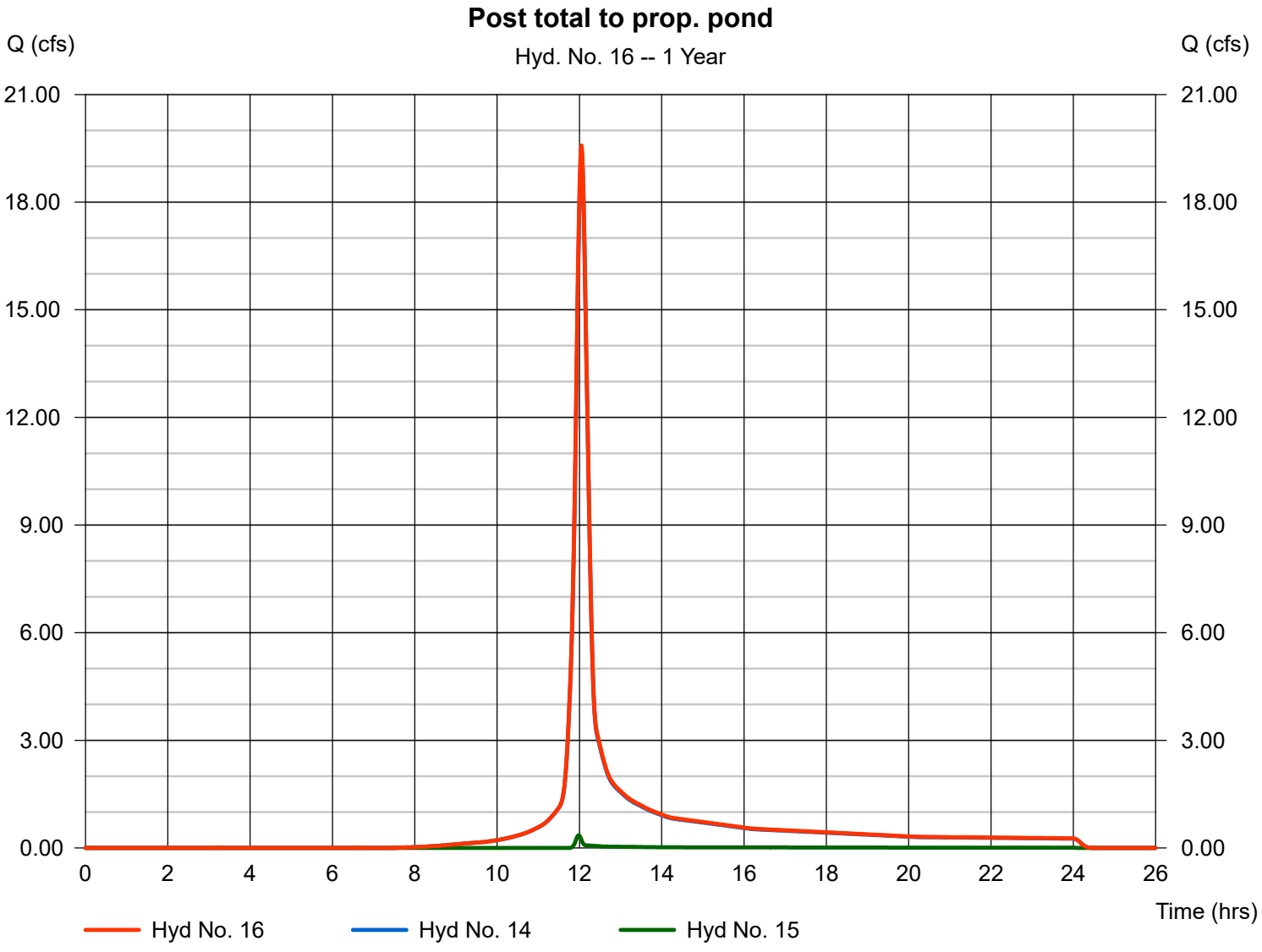
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 16

Post total to prop. pond

Hydrograph type	= Combine	Peak discharge	= 19.58 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.05 hrs
Time interval	= 1 min	Hyd. volume	= 56,092 cuft
Inflow hyds.	= 14, 15	Contrib. drain. area	= 8.380 ac



Hydrograph Report

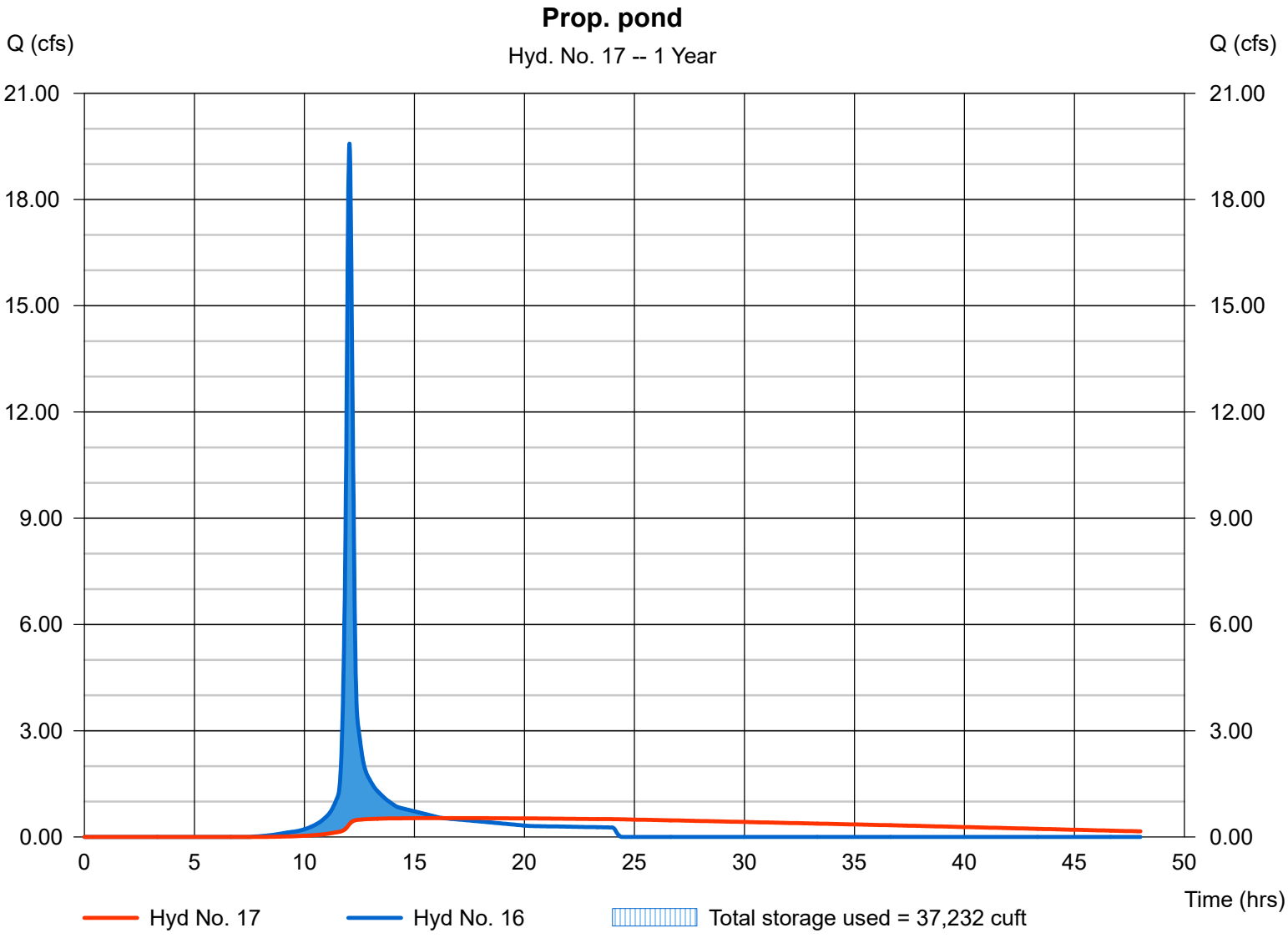
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 17

Prop. pond

Hydrograph type	=	Reservoir	Peak discharge	=	0.534 cfs
Storm frequency	=	1 yrs	Time to peak	=	16.28 hrs
Time interval	=	1 min	Hyd. volume	=	52,337 cuft
Inflow hyd. No.	=	16 - Post total to prop. pond	Max. Elevation	=	981.22 ft
Reservoir name	=	Stormwater Pond	Max. Storage	=	37,232 cuft

Storage Indication method used.



Pond Report

Pond No. 14 - Stormwater Pond

Pond Data

Contours - User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 976.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	976.00	6,240	0	0
2.00	978.00	6,887	13,120	13,120
4.00	980.00	7,555	14,435	27,556
6.00	982.00	8,252	15,800	43,356
8.00	984.00	8,968	17,213	60,569
10.00	986.00	9,708	18,669	79,239
12.00	988.00	10,475	20,176	99,415

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 30.00	3.00	0.00	0.00
Span (in)	= 30.00	3.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 976.00	976.00	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	= .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)	= 11.50	0.50	0.00	0.00
Crest El. (ft)	= 986.00	981.50	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Riser	Rect	---	---
Multi-Stage	= Yes	Yes	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	976.00	0.00	0.00	---	---	0.00	0.00	---	---	---	---	0.000
2.00	13,120	978.00	0.00	0.32 ic	---	---	0.00	0.00	---	---	---	---	0.324
4.00	27,556	980.00	0.00	0.47 ic	---	---	0.00	0.00	---	---	---	---	0.465
6.00	43,356	982.00	0.61 ic	0.57 ic	---	---	0.00	0.59	---	---	---	---	1.161
8.00	60,569	984.00	6.59 ic	0.66 ic	---	---	0.00	6.58	---	---	---	---	7.245
10.00	79,239	986.00	15.89 ic	0.74 ic	---	---	0.00	15.89	---	---	---	---	16.64
12.00	99,415	988.00	76.11 ic	0.81 ic	---	---	65.38 s	10.72 s	---	---	---	---	76.92

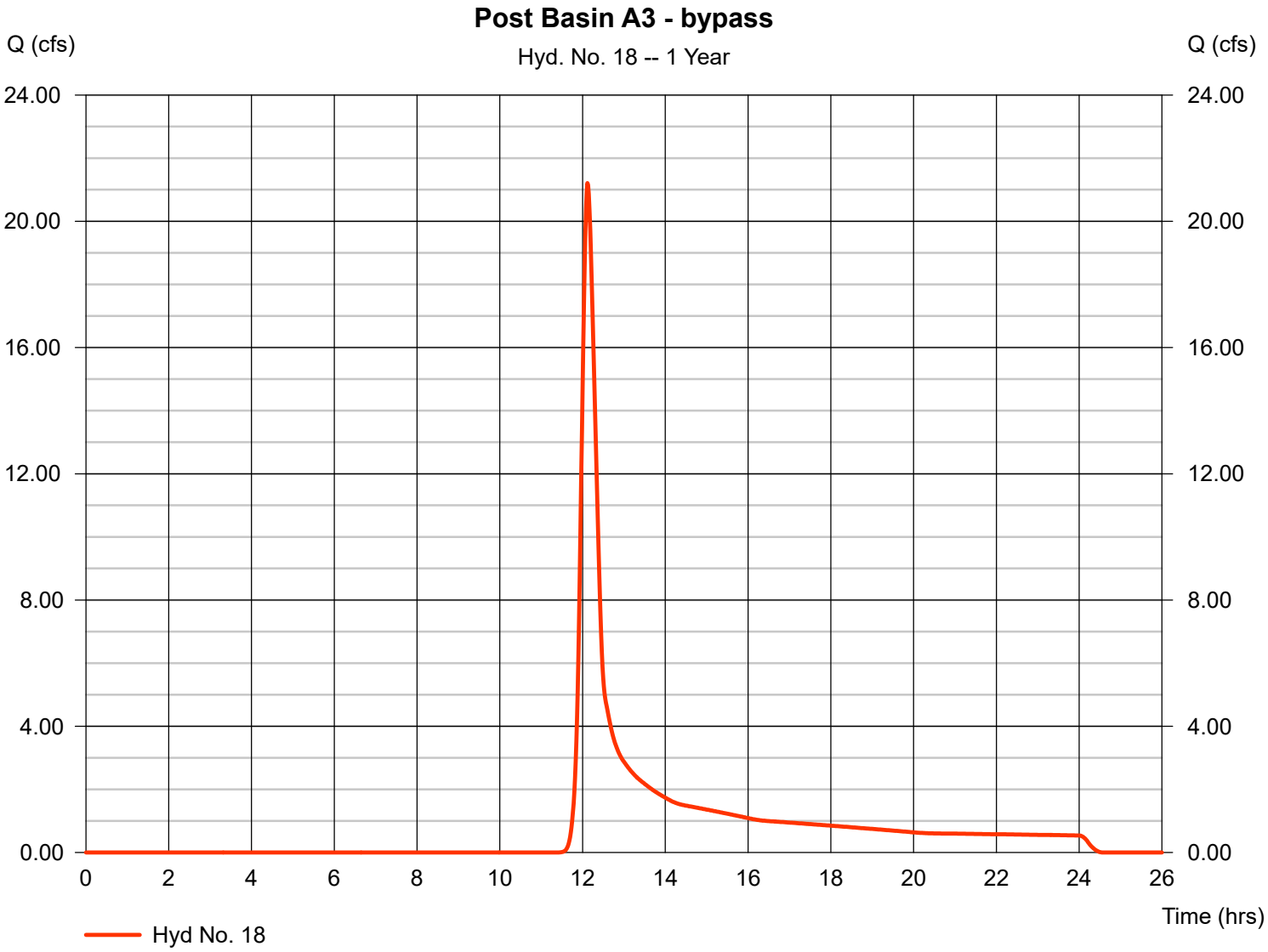
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 18

Post Basin A3 - bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	21.21 cfs
Storm frequency	=	1 yrs	Time to peak	=	12.12 hrs
Time interval	=	1 min	Hyd. volume	=	77,877 cuft
Drainage area	=	24.390 ac	Curve number	=	69
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	21.80 min
Total precip.	=	3.36 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



TR55 Tc Worksheet

Hyd. No. 18

Post Basin A3 - bypass

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)	=	4.08		0.00		0.00		
Land slope (%)	=	2.00		0.00		0.00		
Travel Time (min)	**=**	**8.68**	**+**	**0.00**	**+**	**0.00**	**=**	**8.68**
Shallow Concentrated Flow								
Flow length (ft)	=	1265.00		1285.00		0.00		
Watercourse slope (%)	=	2.00		3.30		0.00		
Surface description	=	Paved		Paved		Paved		
Average velocity (ft/s)	=	2.87		3.69		0.00		
Travel Time (min)	**=**	**7.33**	**+**	**5.80**	**+**	**0.00**	**=**	**13.13**
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		
Travel Time (min)	**=**	**0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 21.80 min

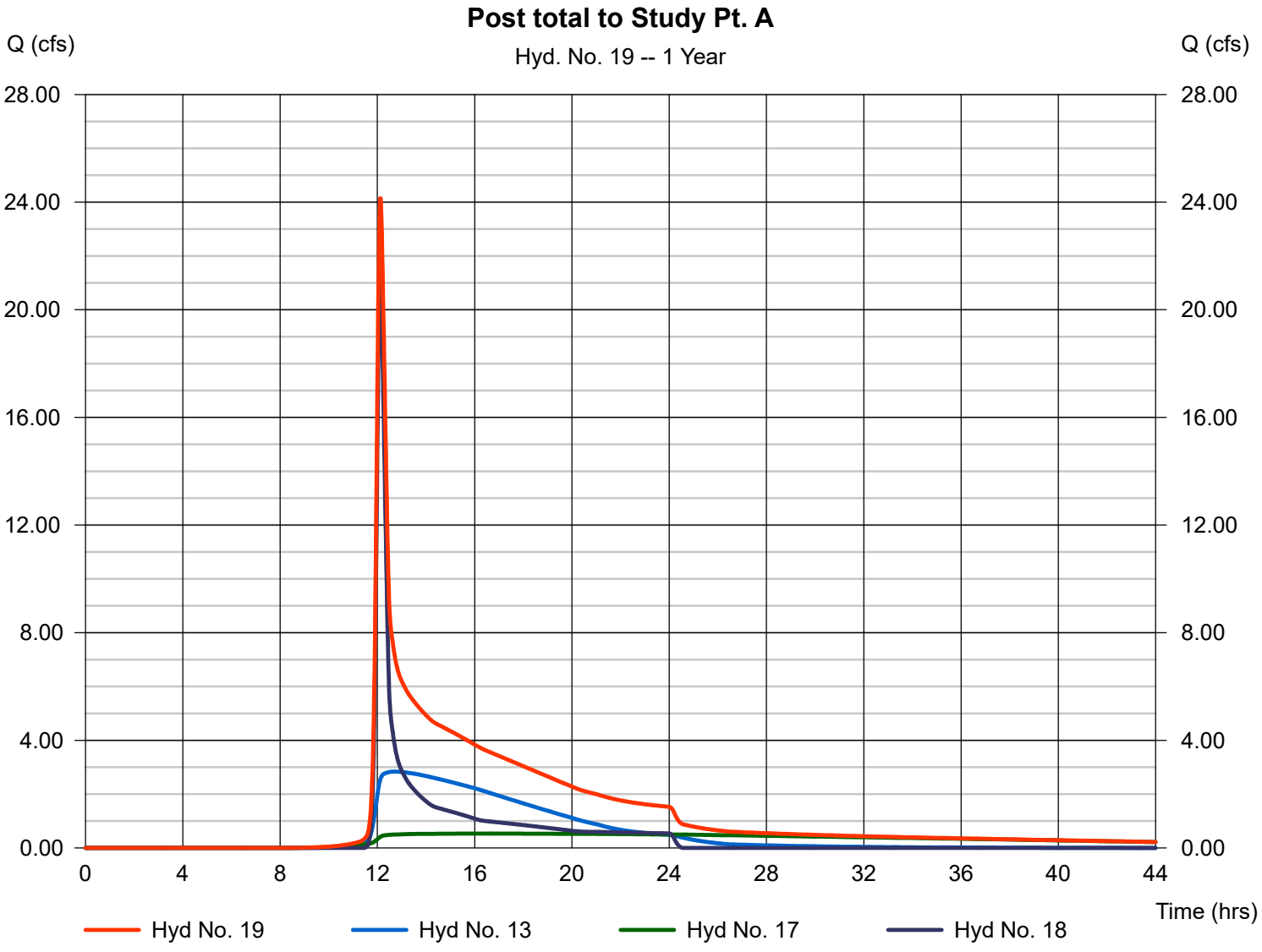
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 19

Post total to Study Pt. A

Hydrograph type	= Combine	Peak discharge	= 24.15 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 208,491 cuft
Inflow hyds.	= 13, 17, 18	Contrib. drain. area	= 24.390 ac



Hydrograph Report

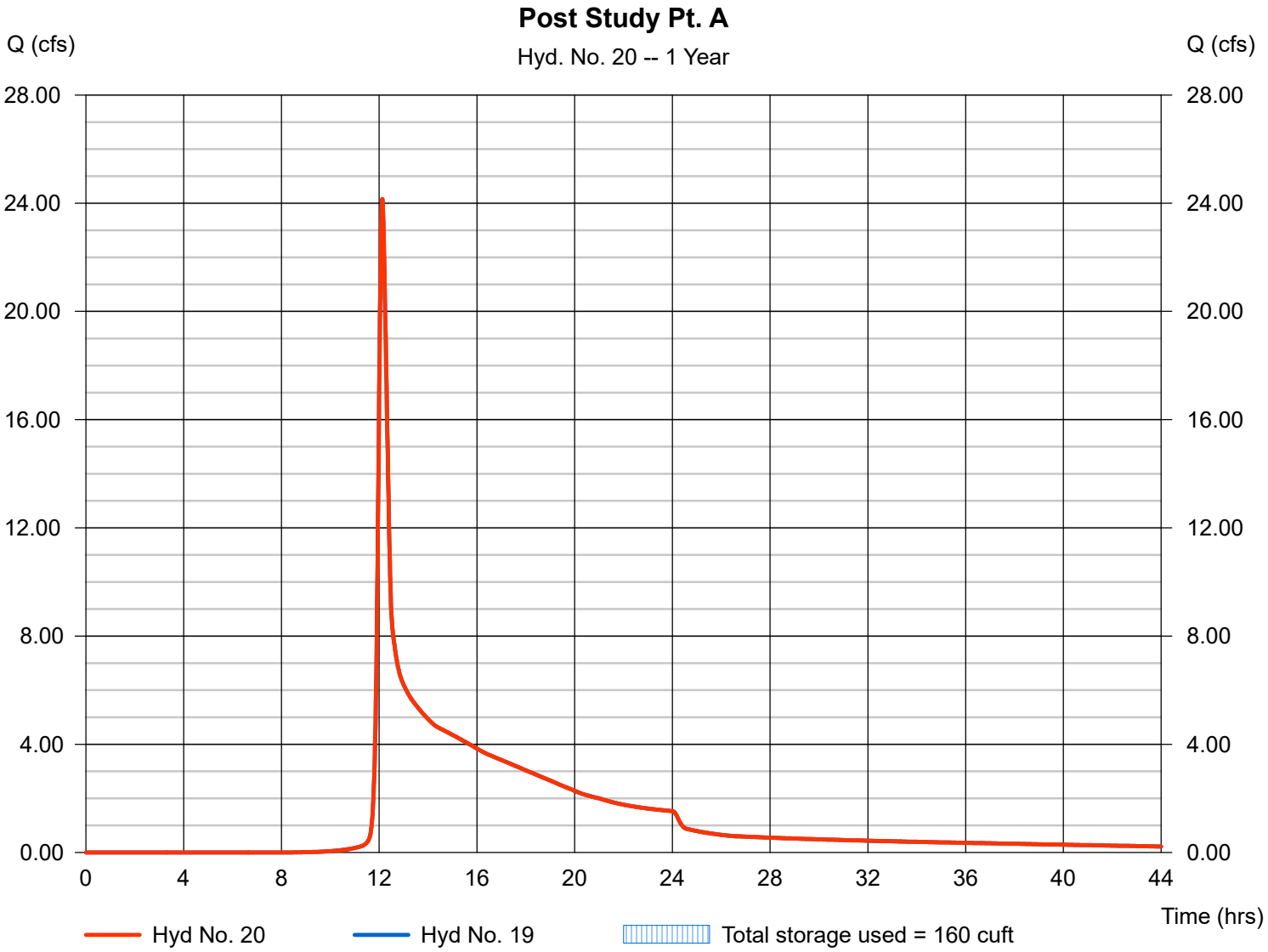
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 20

Post Study Pt. A

Hydrograph type	=	Reservoir	Peak discharge	=	24.16 cfs
Storm frequency	=	1 yrs	Time to peak	=	12.13 hrs
Time interval	=	1 min	Hyd. volume	=	208,487 cuft
Inflow hyd. No.	=	19 - Post total to Study Pt. A	Max. Elevation	=	970.45 ft
Reservoir name	=	Ex. DS Culvert at Barclay	Max. Storage	=	160 cuft

Storage Indication method used.



Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Pond No. 4 - Ex. DS Culvert at Barclay

Pond Data

Contours - User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 968.76 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	968.76	00	0	0
1.24	970.00	108	45	45
3.24	972.00	450	519	564
5.24	974.00	980	1,396	1,959
7.24	976.00	3,970	4,615	6,574
9.24	978.00	9,530	13,099	19,673
11.24	980.00	13,858	23,251	42,924
13.24	982.00	18,108	31,868	74,793

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 54.00	0.00	0.00	0.00
Span (in)	= 54.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 968.76	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	= .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 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	968.76	0.00	---	---	---	---	---	---	---	---	---	0.000
1.24	45	970.00	13.53 ic	---	---	---	---	---	---	---	---	---	13.53
3.24	564	972.00	75.20 ic	---	---	---	---	---	---	---	---	---	75.20
5.24	1,959	974.00	132.40 ic	---	---	---	---	---	---	---	---	---	132.40
7.24	6,574	976.00	171.04 ic	---	---	---	---	---	---	---	---	---	171.04
9.24	19,673	978.00	202.44 ic	---	---	---	---	---	---	---	---	---	202.44
11.24	42,924	980.00	229.58 ic	---	---	---	---	---	---	---	---	---	229.58
13.24	74,793	982.00	253.84 ic	---	---	---	---	---	---	---	---	---	253.84

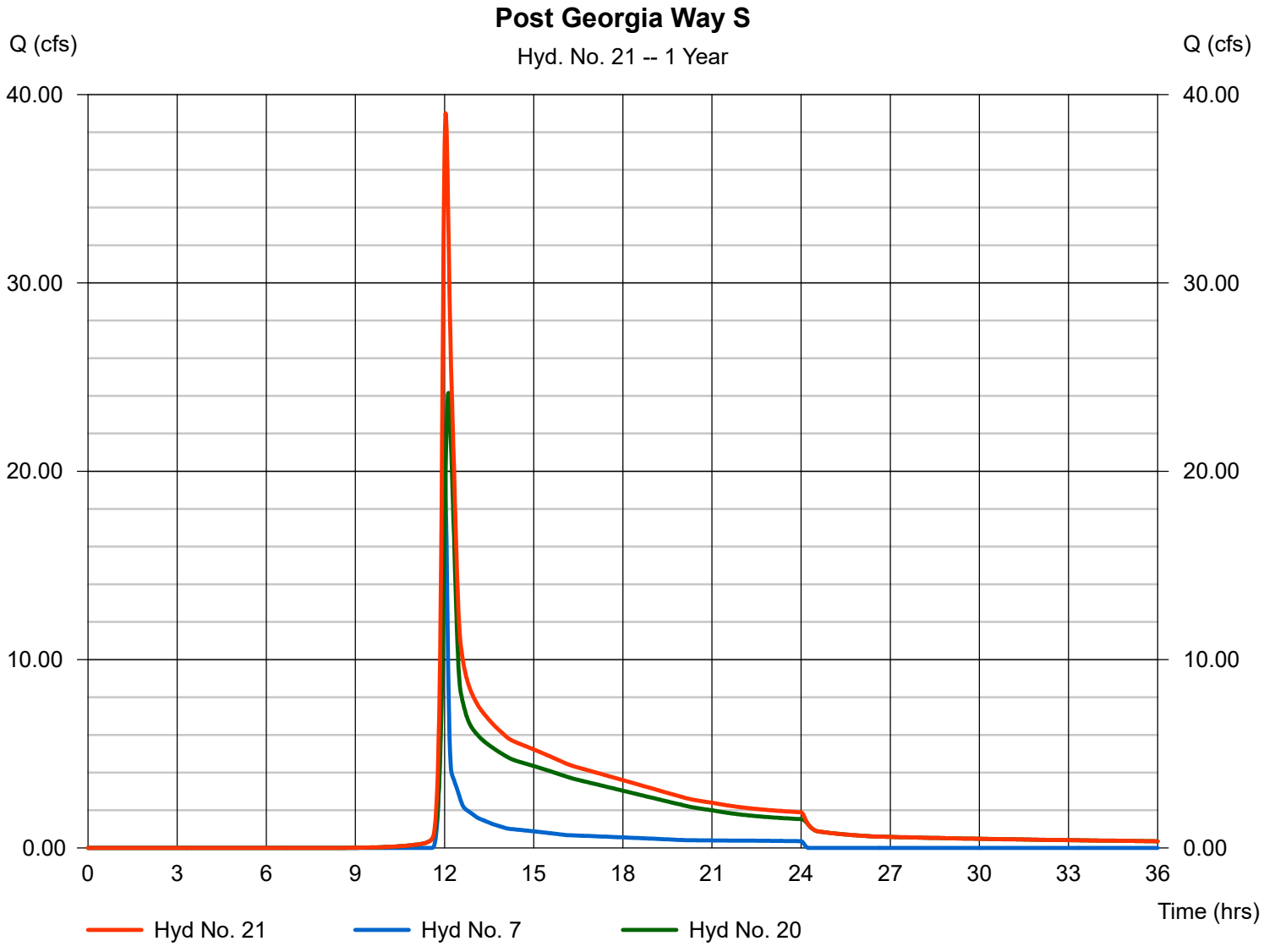
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 21

Post Georgia Way S

Hydrograph type	= Combine	Peak discharge	= 39.01 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.03 hrs
Time interval	= 1 min	Hyd. volume	= 258,408 cuft
Inflow hyds.	= 7, 20	Contrib. drain. area	= 17.800 ac



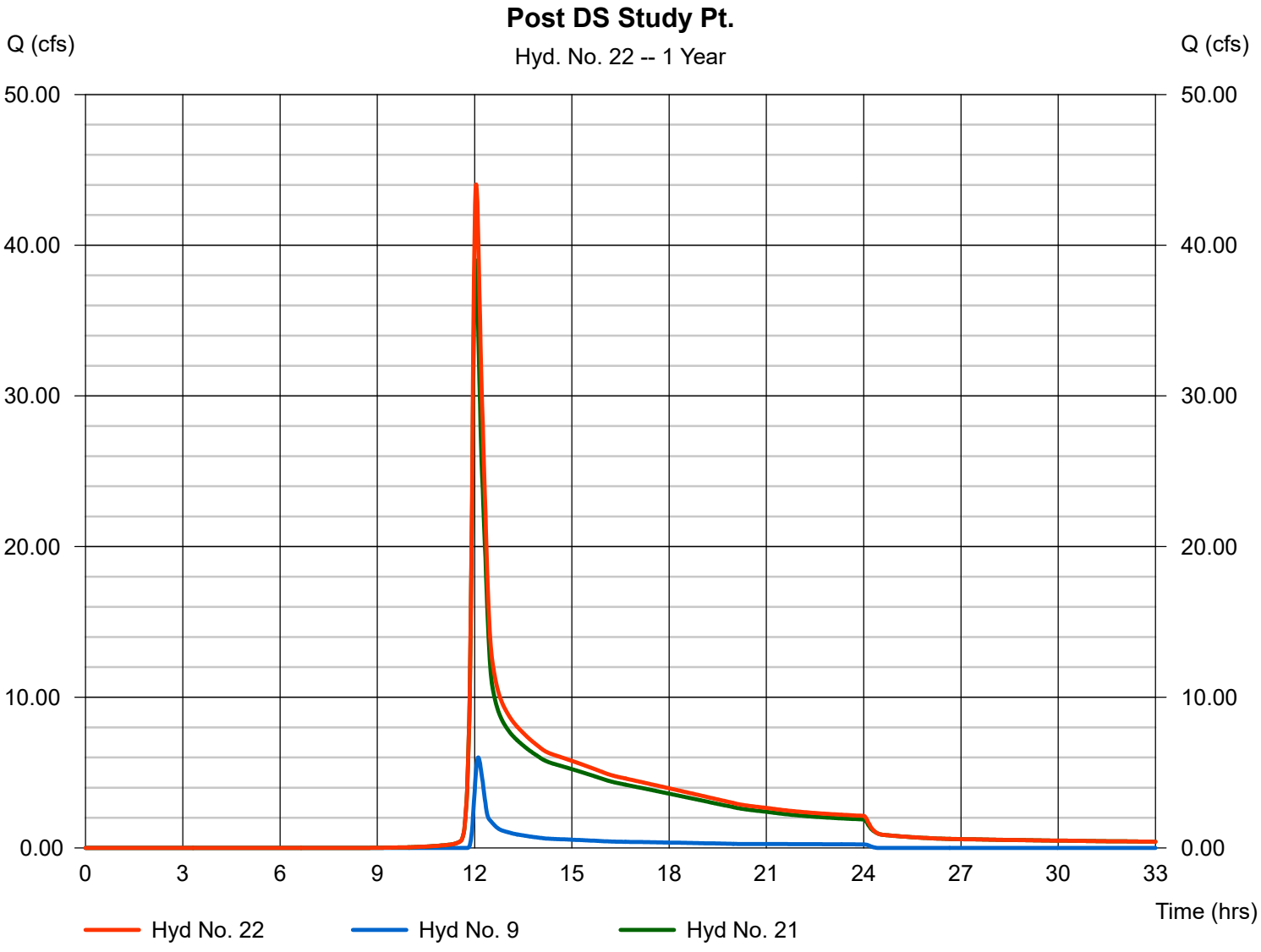
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 22

Post DS Study Pt.

Hydrograph type	= Combine	Peak discharge	= 44.04 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.05 hrs
Time interval	= 1 min	Hyd. volume	= 284,689 cuft
Inflow hyds.	= 9, 21	Contrib. drain. area	= 15.500 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

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	44.13	1	721	111,536	------	------	------	Pre Basin A2- to Ex. Detention Pond
2	Reservoir	3.429	1	775	111,512	1	986.50	79,666	Pre Ex. Pond
3	SCS Runoff	6.173	1	723	18,778	------	------	------	Pre Basin A1- site
4	SCS Runoff	32.72	1	727	113,592	------	------	------	Pre Basin A3 - bypass
5	Combine	40.91	1	726	243,882	2, 3, 4	------	------	Pre total to Study Pt. A
6	Reservoir	40.90	1	726	243,882	5	971.02	308	Pre Study Pt. A
7	SCS Runoff	33.15	1	720	77,168	------	------	------	Offsite Basin 1
8	Combine	67.18	1	722	321,049	6, 7	------	------	Pre Georgia Way S
9	SCS Runoff	12.36	1	726	44,580	------	------	------	Offsite Basin 2
10	Combine	78.00	1	722	365,630	8, 9	------	------	Pre DS Study Pt.
12	SCS Runoff	42.49	1	721	107,391	------	------	------	Post Basin A2 to Ex. Pond
13	Reservoir	3.397	1	768	107,367	12	986.42	78,560	Post Ex. Pond
14	SCS Runoff	25.73	1	723	73,722	------	------	------	Post Basin A1.1 - to prop. pond
15	SCS Runoff	0.660	1	718	1,438	------	------	------	Post Basin A1.2 - to prop. pond
16	Combine	26.10	1	723	75,159	14, 15	------	------	Post total to prop. pond
17	Reservoir	1.551	1	808	69,834	16	982.20	45,051	Prop. pond
18	SCS Runoff	33.96	1	727	117,894	------	------	------	Post Basin A3 - bypass
19	Combine	37.50	1	727	295,095	13, 17, 18	------	------	Post total to Study Pt. A
20	Reservoir	37.48	1	727	295,091	19	970.91	280	Post Study Pt. A
21	Combine	62.49	1	722	372,258	7, 20	------	------	Post Georgia Way S
22	Combine	73.31	1	722	416,839	9, 21	------	------	Post DS Study Pt.
24	Reservoir	1.552	1	808	36,403	16	982.45	47,248	Emergency Overflow

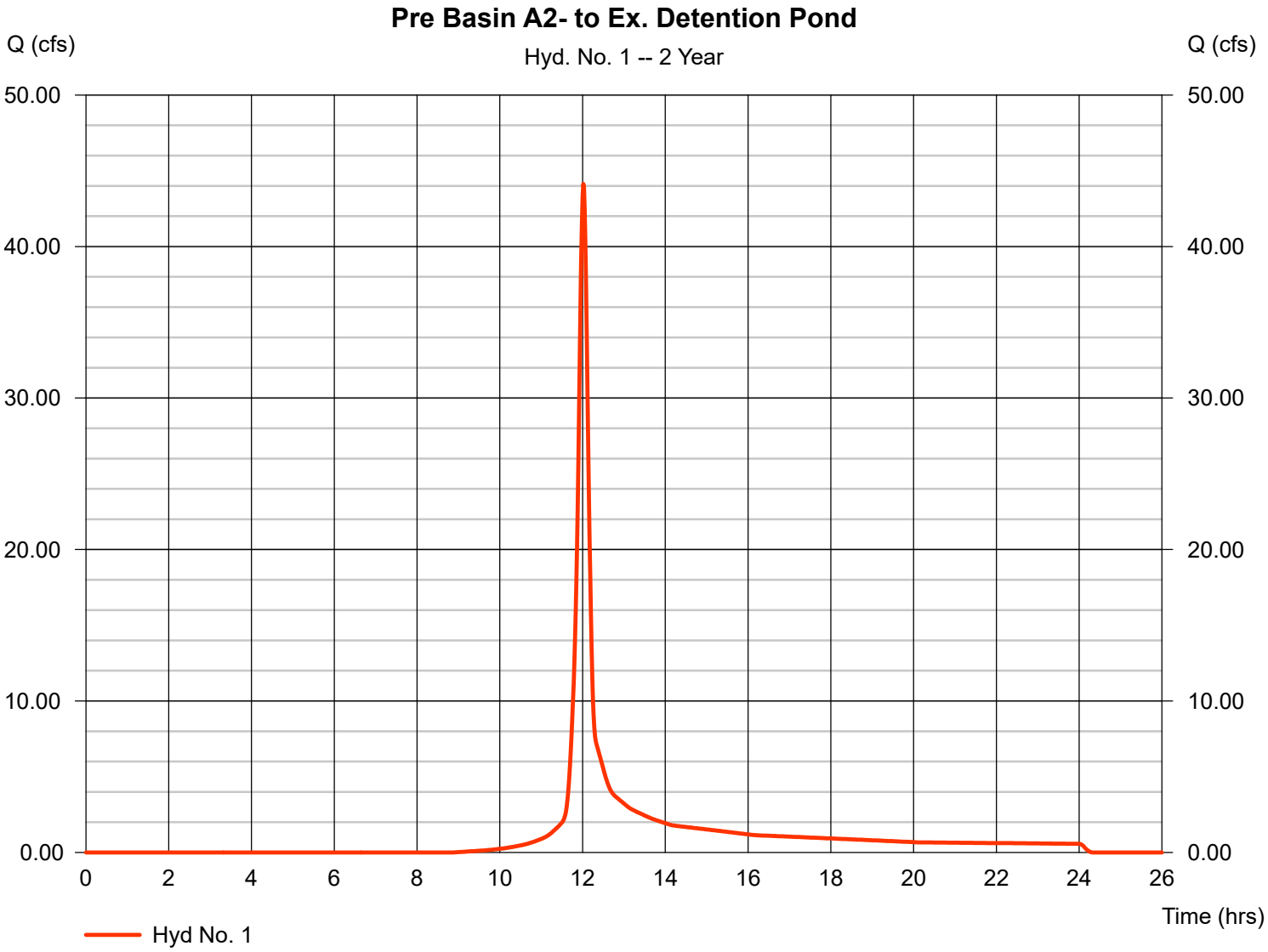
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 1

Pre Basin A2- to Ex. Detention Pond

Hydrograph type	=	SCS Runoff	Peak discharge	=	44.13 cfs
Storm frequency	=	2 yrs	Time to peak	=	12.02 hrs
Time interval	=	1 min	Hyd. volume	=	111,536 cuft
Drainage area	=	16.000 ac	Curve number	=	78
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.40 min
Total precip.	=	4.08 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

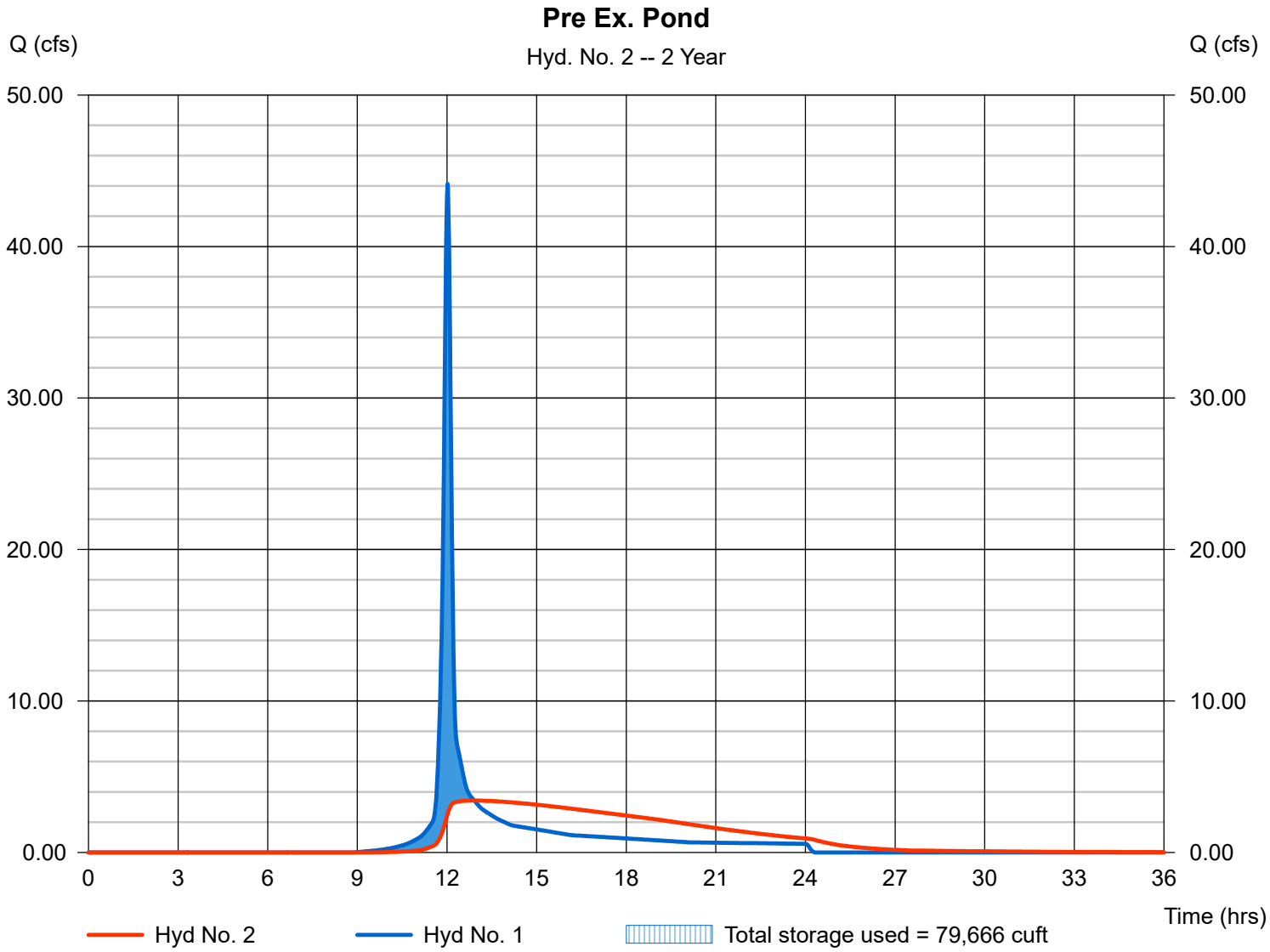
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 2

Pre Ex. Pond

Hydrograph type	=	Reservoir	Peak discharge	=	3.429 cfs
Storm frequency	=	2 yrs	Time to peak	=	12.92 hrs
Time interval	=	1 min	Hyd. volume	=	111,512 cuft
Inflow hyd. No.	=	1 - Pre Basin A2- to Ex. Detention Pond	Max. Elevation	=	986.50 ft
Reservoir name	=	Ex. Pond	Max. Storage	=	79,666 cuft

Storage Indication method used. Wet pond routing start elevation = 982.00 ft.



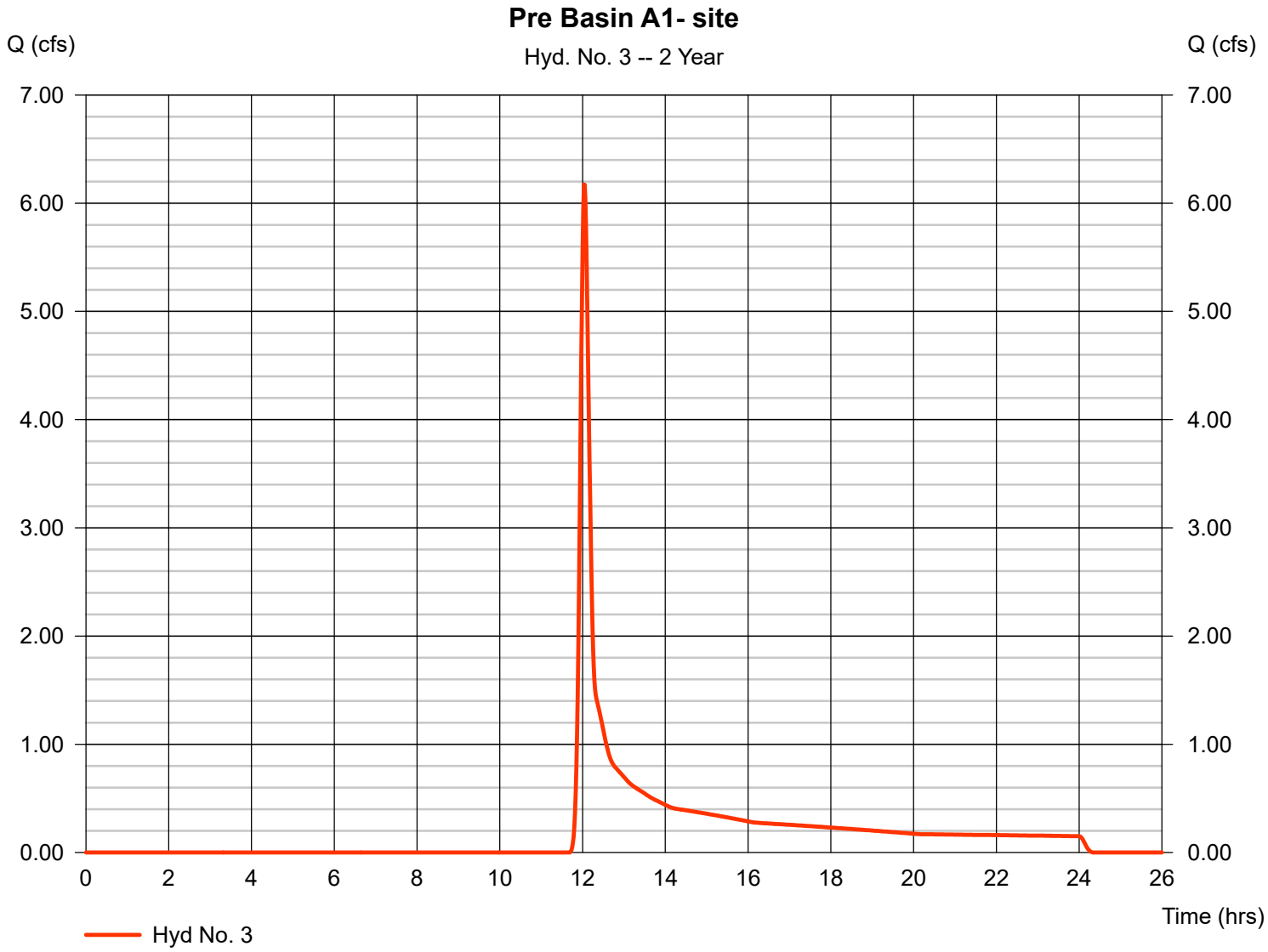
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 3

Pre Basin A1- site

Hydrograph type	=	SCS Runoff	Peak discharge	=	6.173 cfs
Storm frequency	=	2 yrs	Time to peak	=	12.05 hrs
Time interval	=	1 min	Hyd. volume	=	18,778 cuft
Drainage area	=	7.000 ac	Curve number	=	59
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.80 min
Total precip.	=	4.08 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



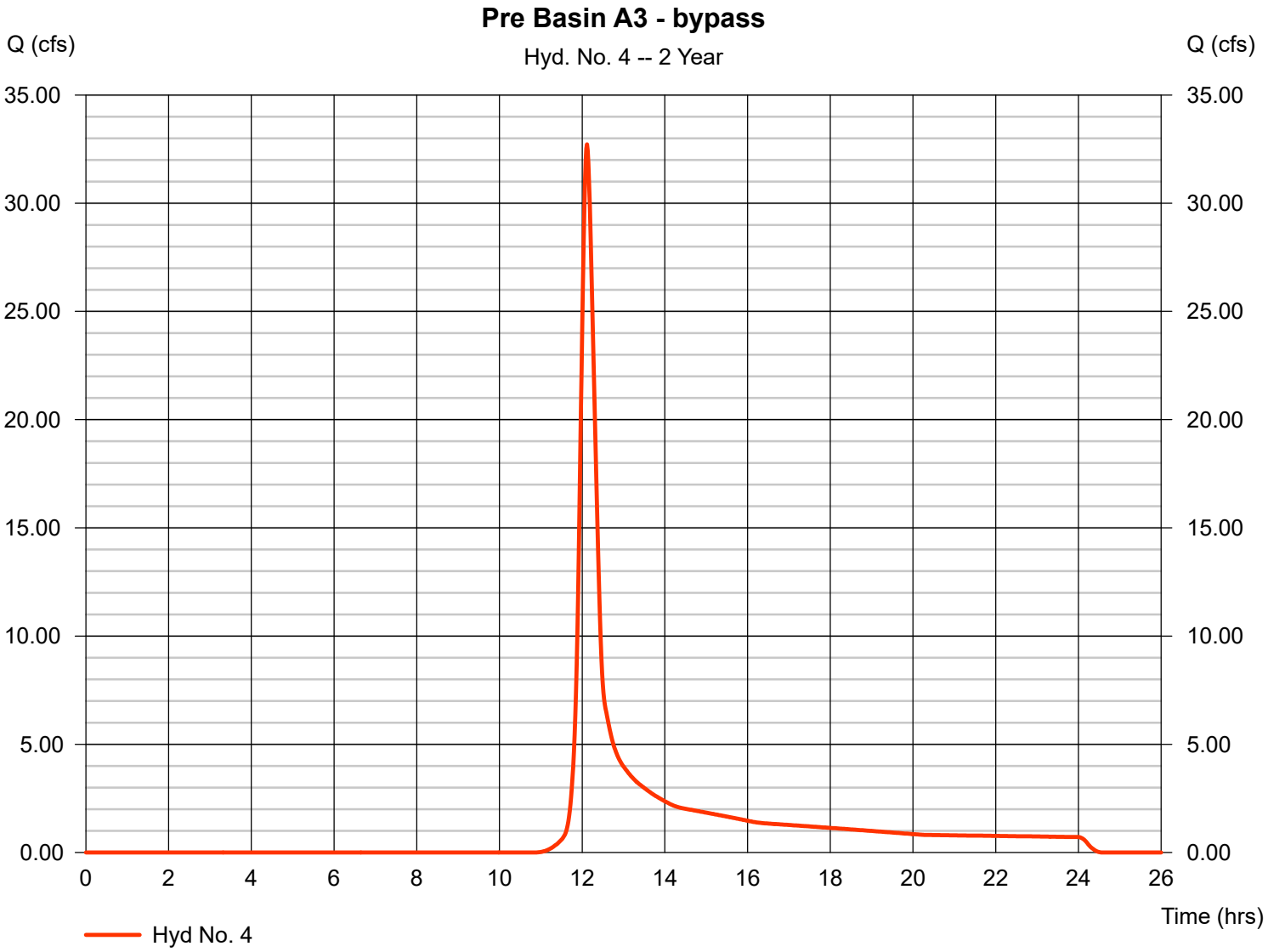
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 4

Pre Basin A3 - bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	32.72 cfs
Storm frequency	=	2 yrs	Time to peak	=	12.12 hrs
Time interval	=	1 min	Hyd. volume	=	113,592 cuft
Drainage area	=	23.500 ac	Curve number	=	69
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	21.80 min
Total precip.	=	4.08 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



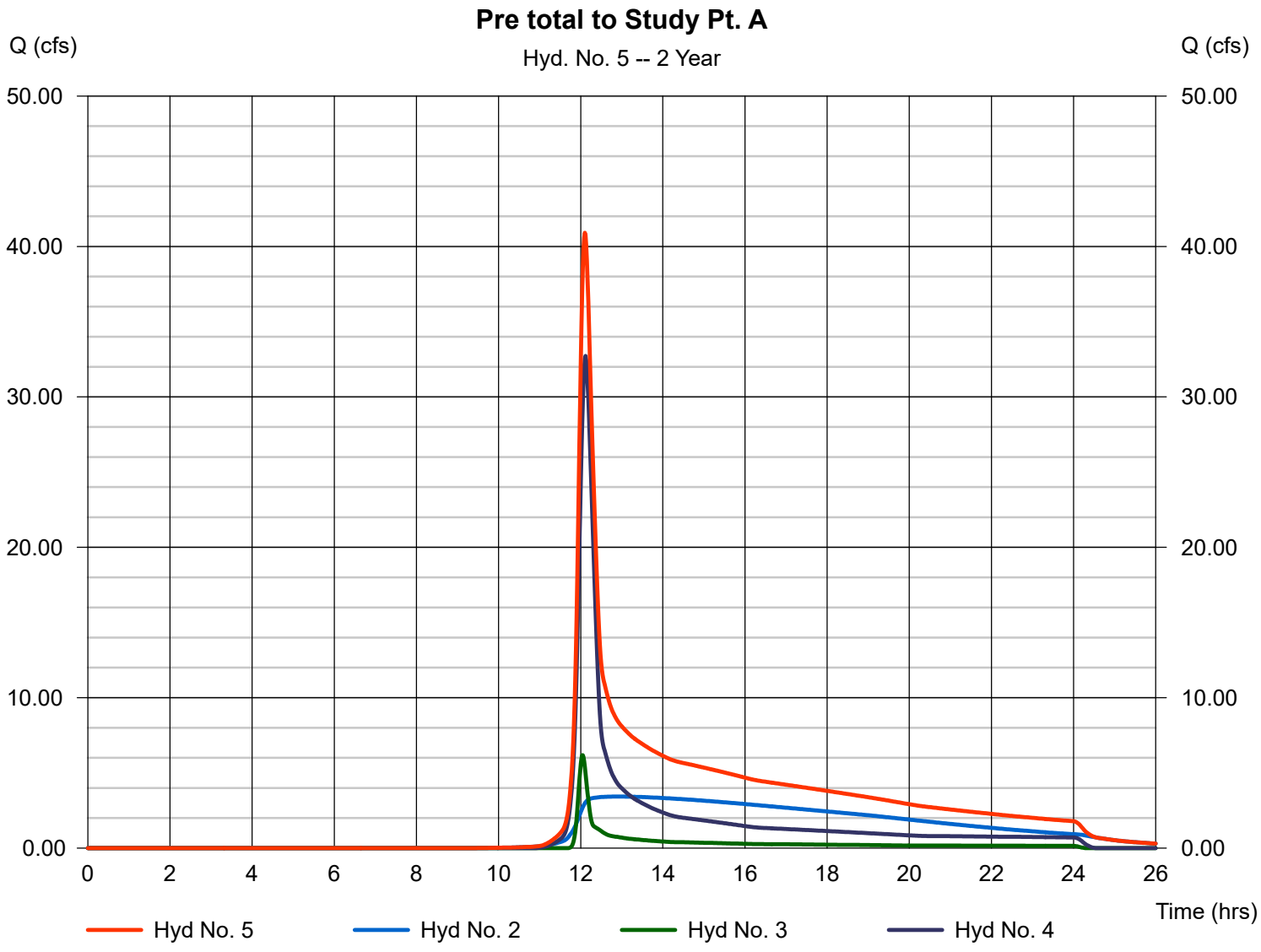
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 5

Pre total to Study Pt. A

Hydrograph type	= Combine	Peak discharge	= 40.91 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 1 min	Hyd. volume	= 243,882 cuft
Inflow hyds.	= 2, 3, 4	Contrib. drain. area	= 30.500 ac



Hydrograph Report

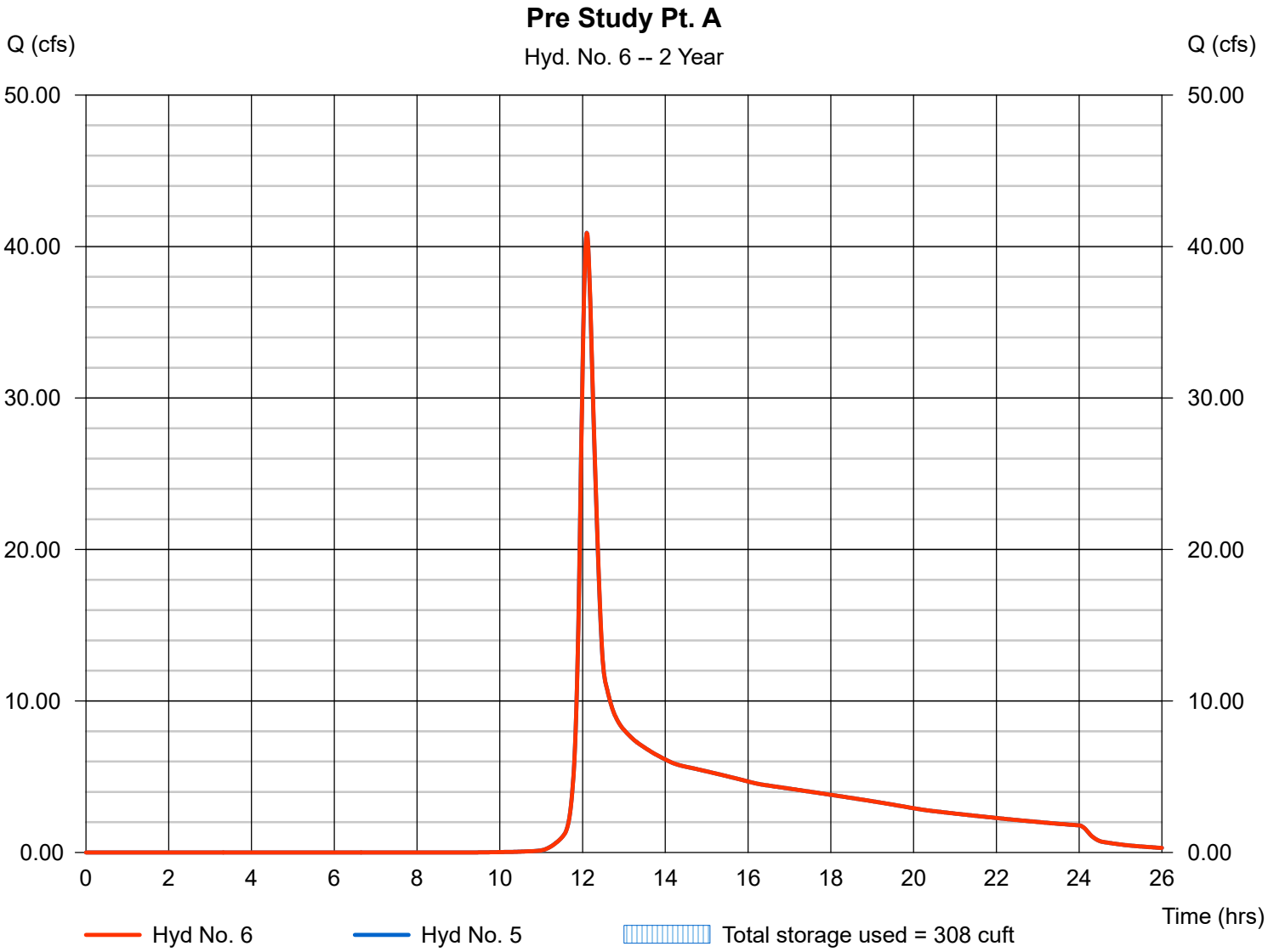
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 6

Pre Study Pt. A

Hydrograph type	=	Reservoir	Peak discharge	=	40.90 cfs
Storm frequency	=	2 yrs	Time to peak	=	12.10 hrs
Time interval	=	1 min	Hyd. volume	=	243,882 cuft
Inflow hyd. No.	=	5 - Pre total to Study Pt. A	Max. Elevation	=	971.02 ft
Reservoir name	=	Ex. DS Culvert at Barclay	Max. Storage	=	308 cuft

Storage Indication method used.



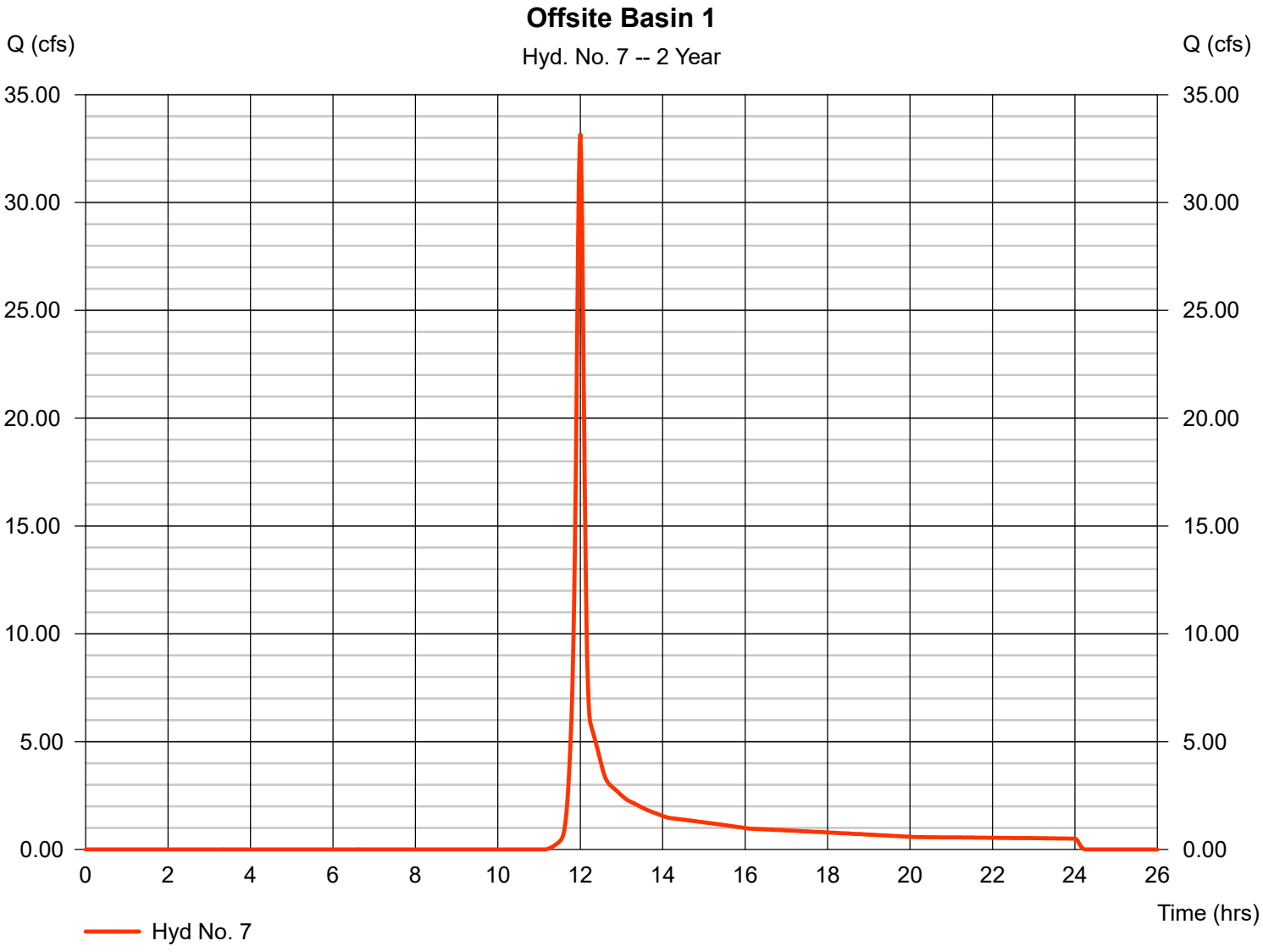
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 7

Offsite Basin 1

Hydrograph type	=	SCS Runoff	Peak discharge	=	33.15 cfs
Storm frequency	=	2 yrs	Time to peak	=	12.00 hrs
Time interval	=	1 min	Hyd. volume	=	77,168 cuft
Drainage area	=	17.800 ac	Curve number	=	67
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	8.80 min
Total precip.	=	4.08 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



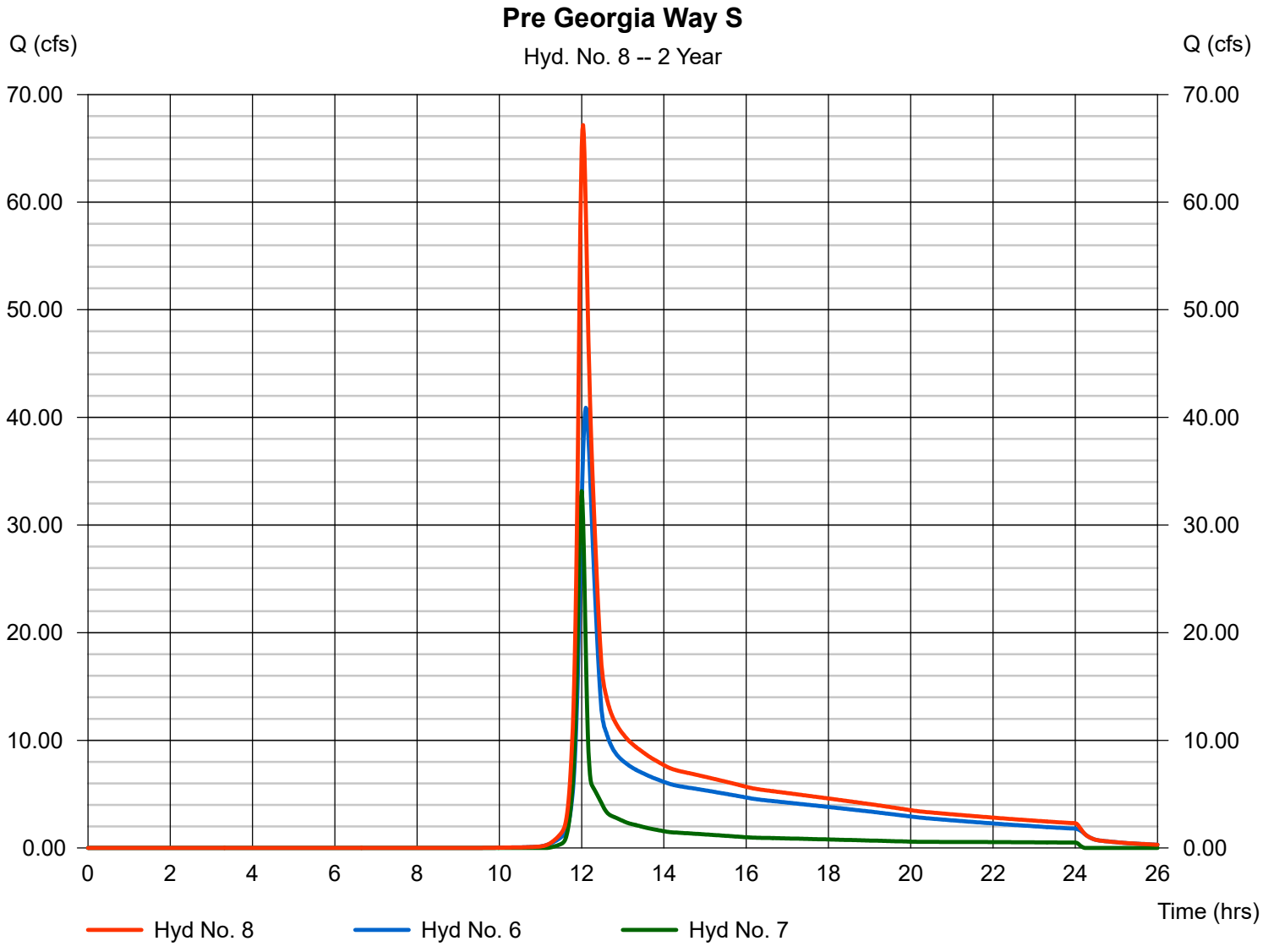
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 8

Pre Georgia Way S

Hydrograph type	= Combine	Peak discharge	= 67.18 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.03 hrs
Time interval	= 1 min	Hyd. volume	= 321,049 cuft
Inflow hyds.	= 6, 7	Contrib. drain. area	= 17.800 ac



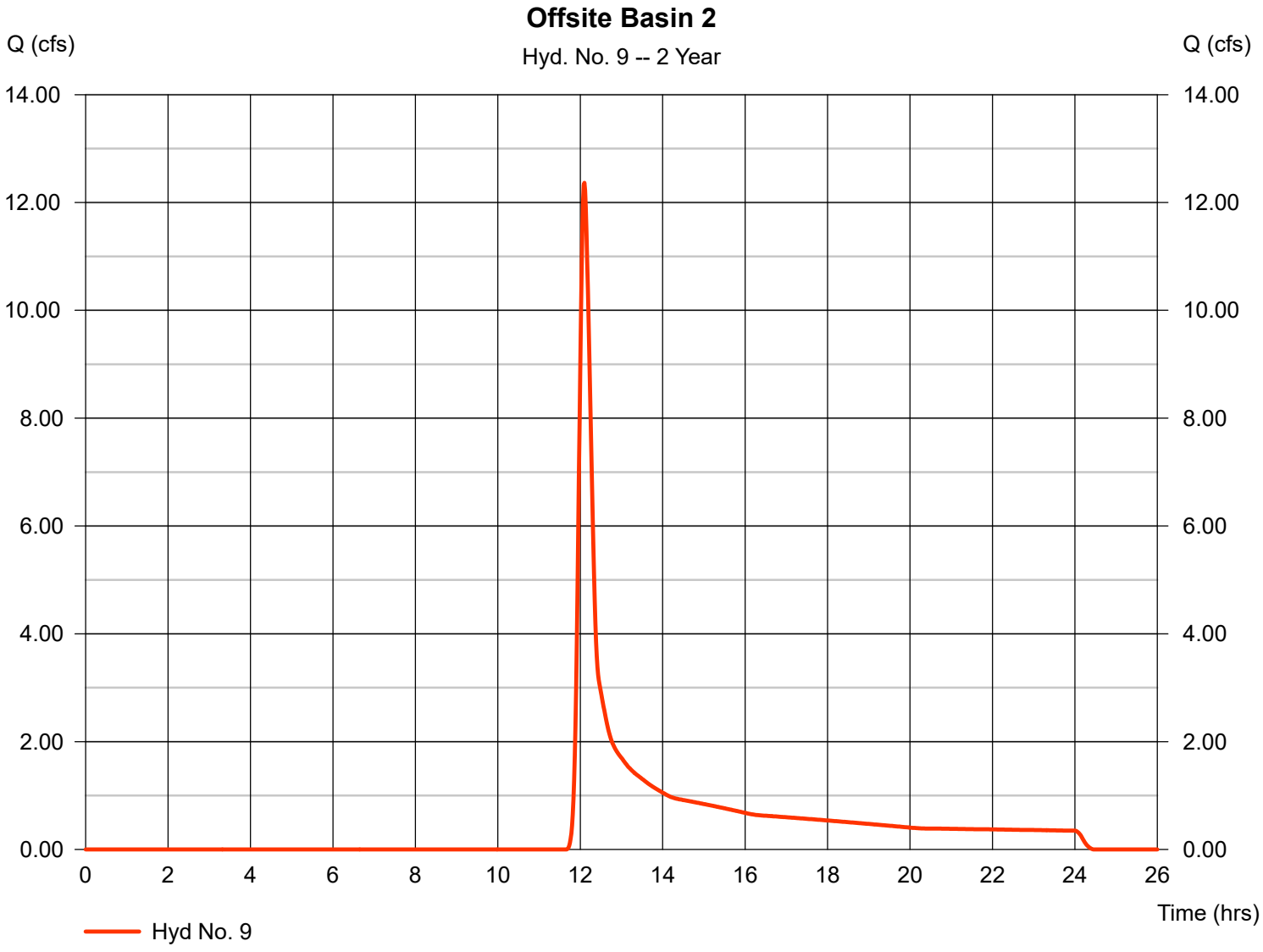
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 9

Offsite Basin 2

Hydrograph type	=	SCS Runoff	Peak discharge	=	12.36 cfs
Storm frequency	=	2 yrs	Time to peak	=	12.10 hrs
Time interval	=	1 min	Hyd. volume	=	44,580 cuft
Drainage area	=	15.500 ac	Curve number	=	60
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	17.30 min
Total precip.	=	4.08 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



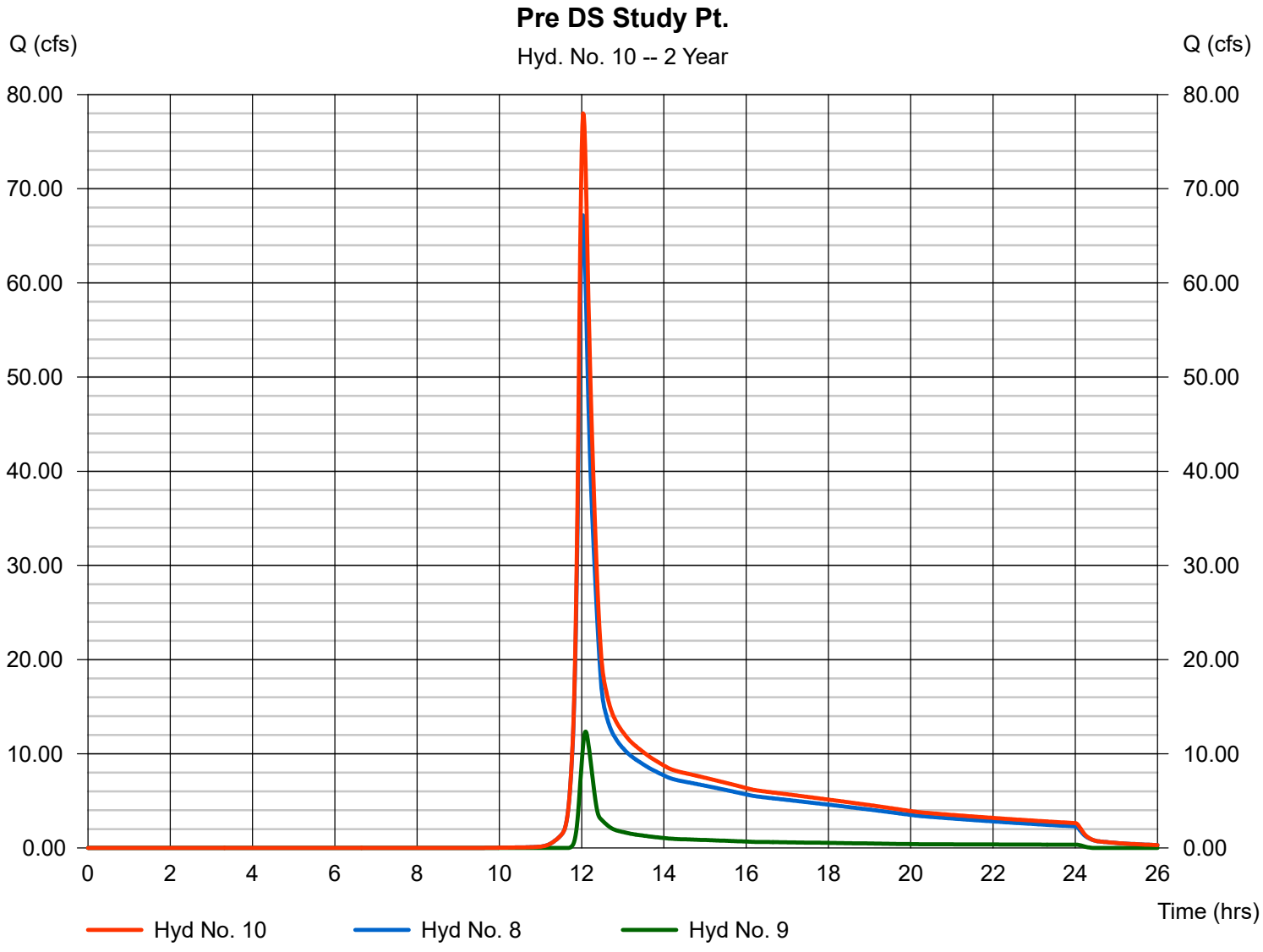
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 10

Pre DS Study Pt.

Hydrograph type	=	Combine	Peak discharge	=	78.00 cfs
Storm frequency	=	2 yrs	Time to peak	=	12.03 hrs
Time interval	=	1 min	Hyd. volume	=	365,630 cuft
Inflow hyds.	=	8, 9	Contrib. drain. area	=	15.500 ac



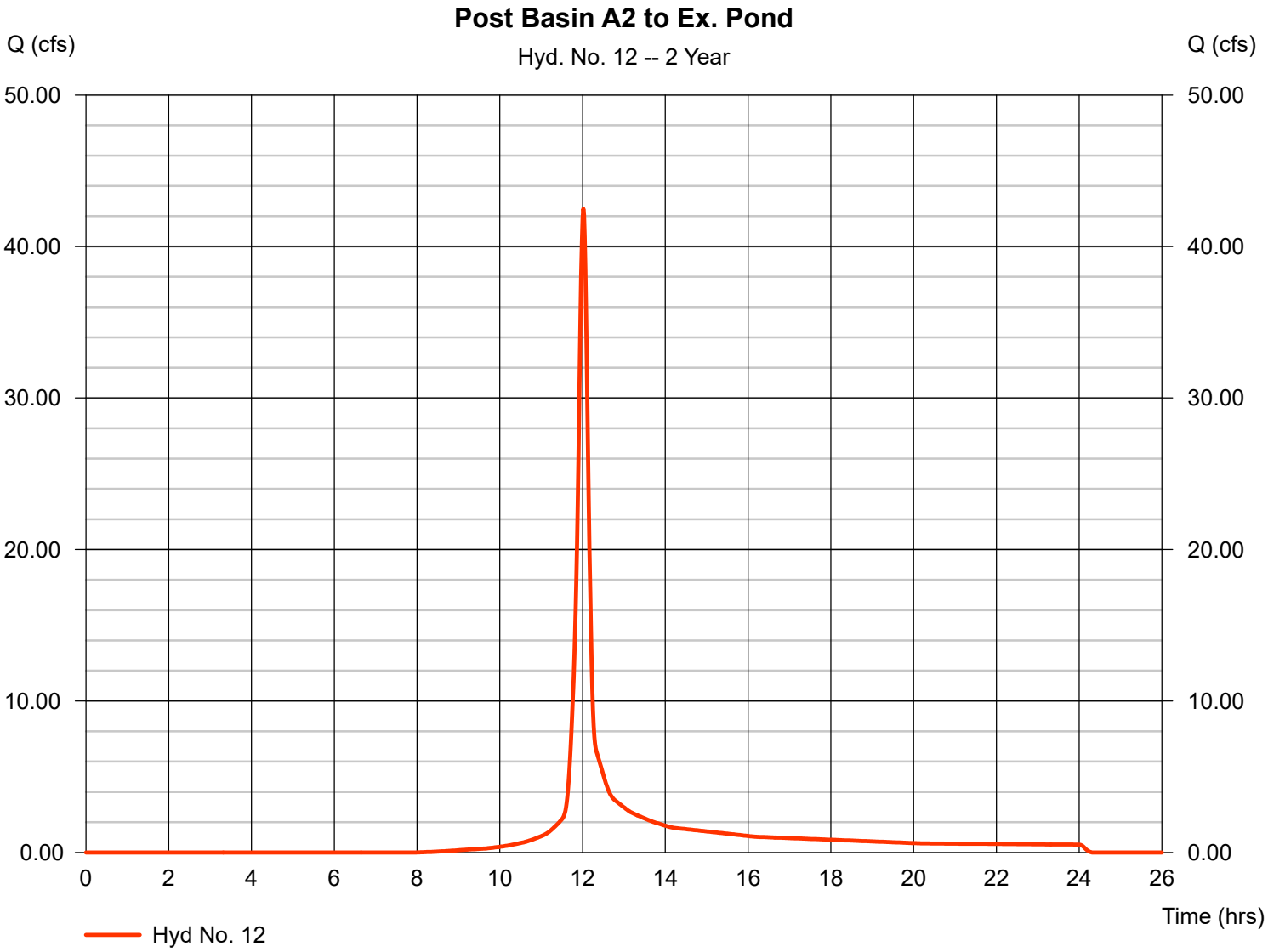
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 12

Post Basin A2 to Ex. Pond

Hydrograph type	= SCS Runoff	Peak discharge	= 42.49 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.02 hrs
Time interval	= 1 min	Hyd. volume	= 107,391 cuft
Drainage area	= 13.730 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 12.40 min
Total precip.	= 4.08 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

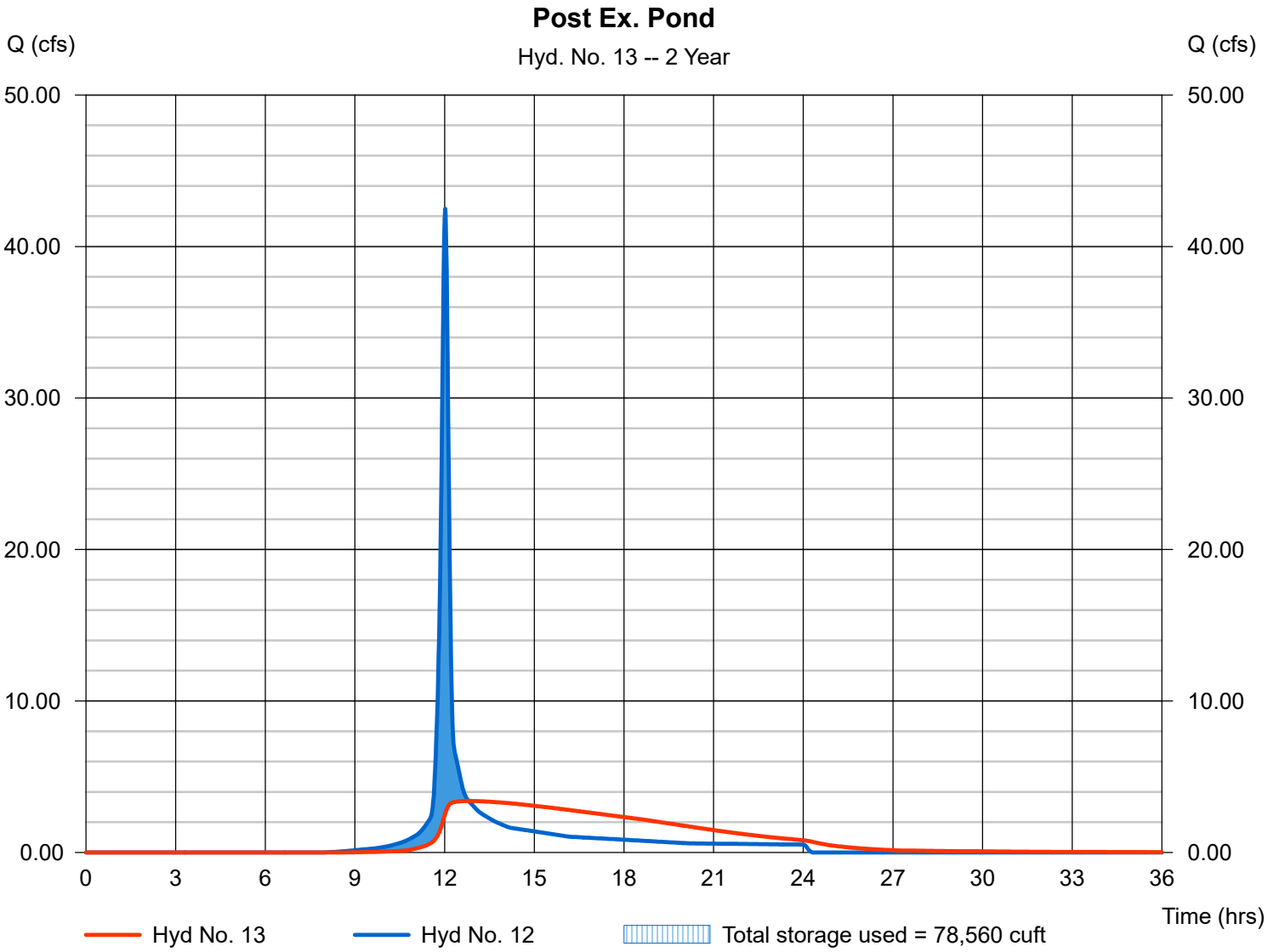
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 13

Post Ex. Pond

Hydrograph type	=	Reservoir	Peak discharge	=	3.397 cfs
Storm frequency	=	2 yrs	Time to peak	=	12.80 hrs
Time interval	=	1 min	Hyd. volume	=	107,367 cuft
Inflow hyd. No.	=	12 - Post Basin A2 to Ex. Pond	Max. Elevation	=	986.42 ft
Reservoir name	=	Ex. Pond	Max. Storage	=	78,560 cuft

Storage Indication method used. Wet pond routing start elevation = 982.00 ft.



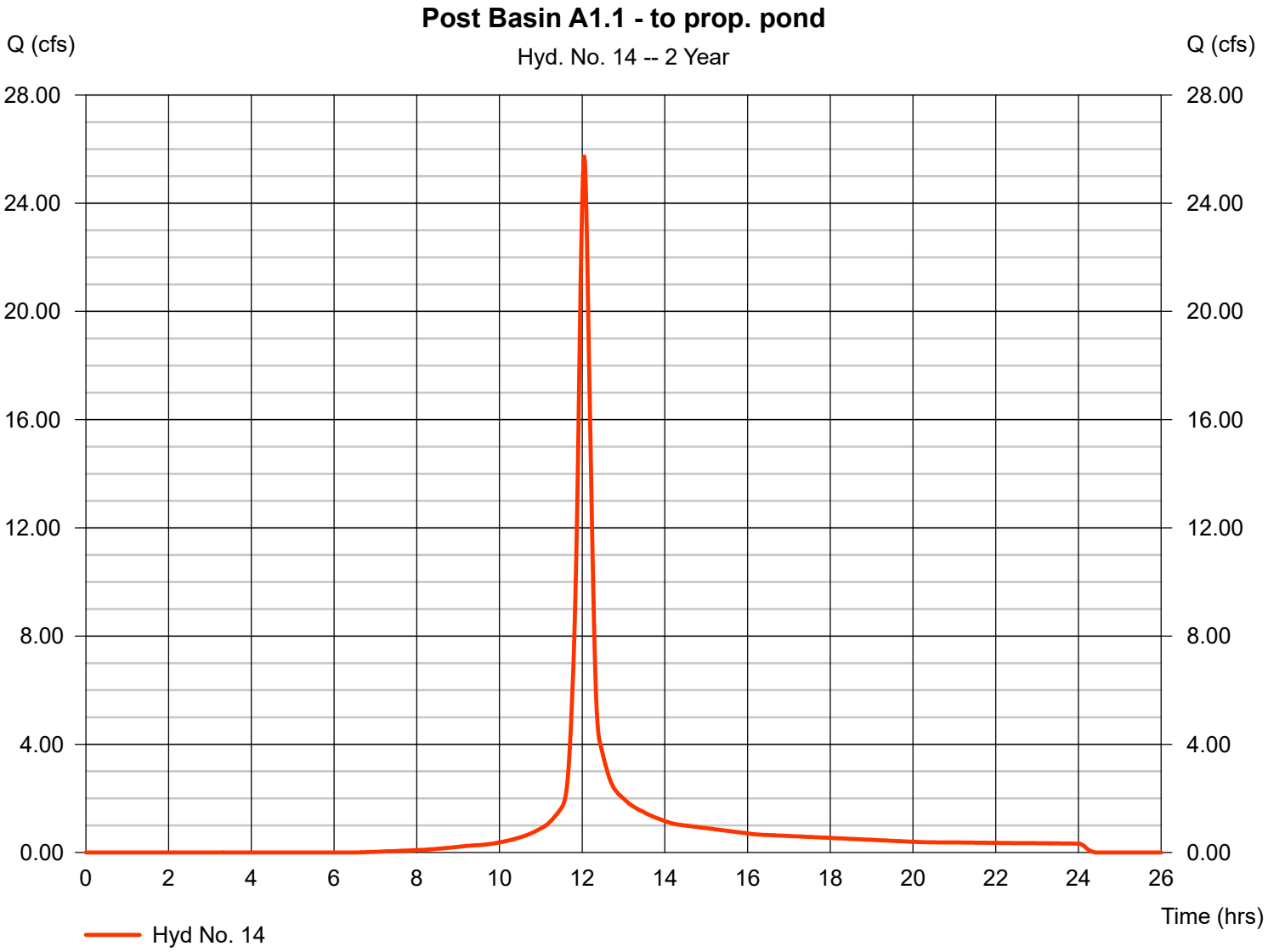
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 14

Post Basin A1.1 - to prop. pond

Hydrograph type	=	SCS Runoff	Peak discharge	=	25.73 cfs
Storm frequency	=	2 yrs	Time to peak	=	12.05 hrs
Time interval	=	1 min	Hyd. volume	=	73,722 cuft
Drainage area	=	7.930 ac	Curve number	=	85
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	16.30 min
Total precip.	=	4.08 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



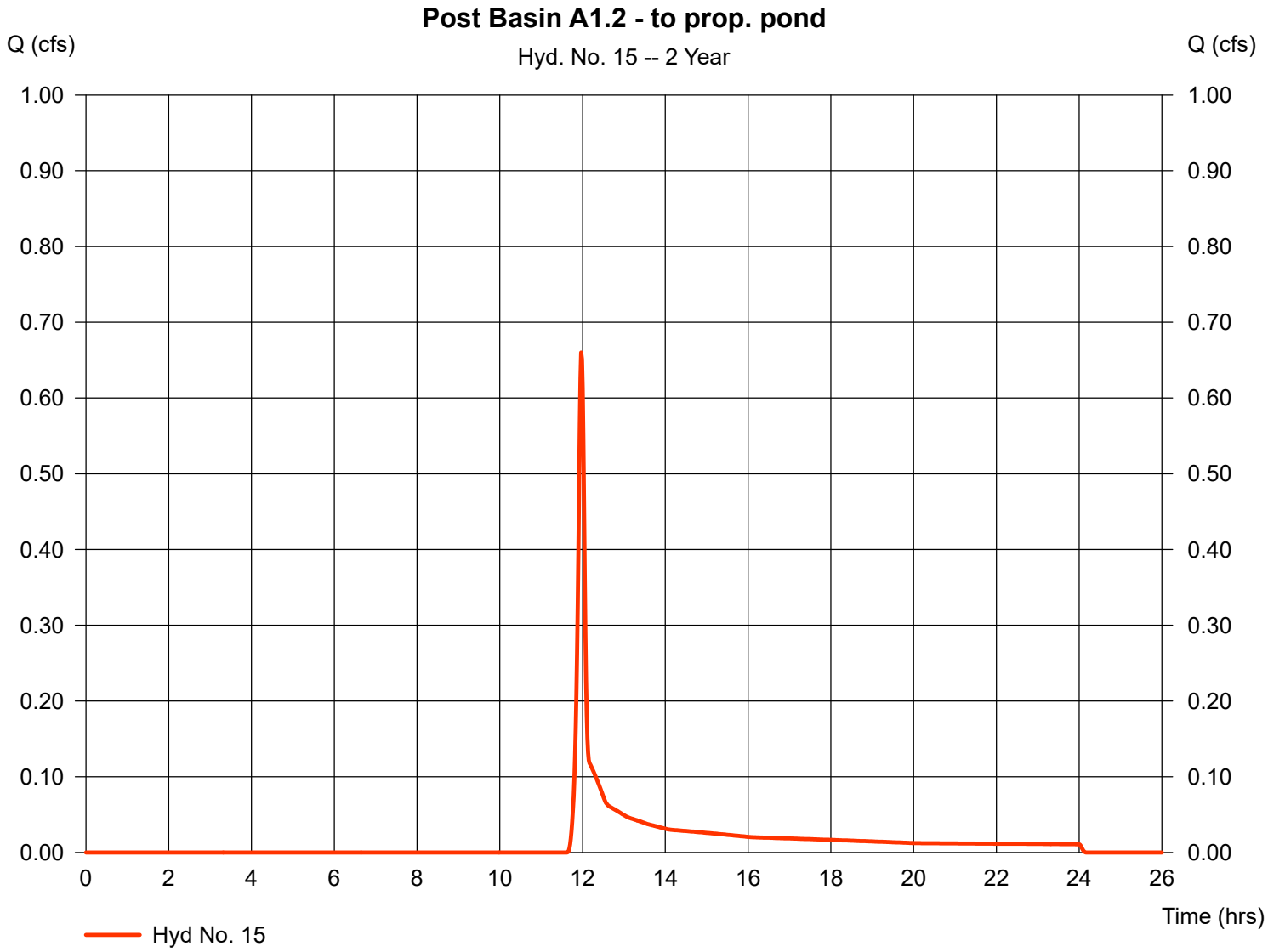
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 15

Post Basin A1.2 - to prop. pond

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.660 cfs
Storm frequency	=	2 yrs	Time to peak	=	11.97 hrs
Time interval	=	1 min	Hyd. volume	=	1,438 cuft
Drainage area	=	0.450 ac	Curve number	=	61
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	5.00 min
Total precip.	=	4.08 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



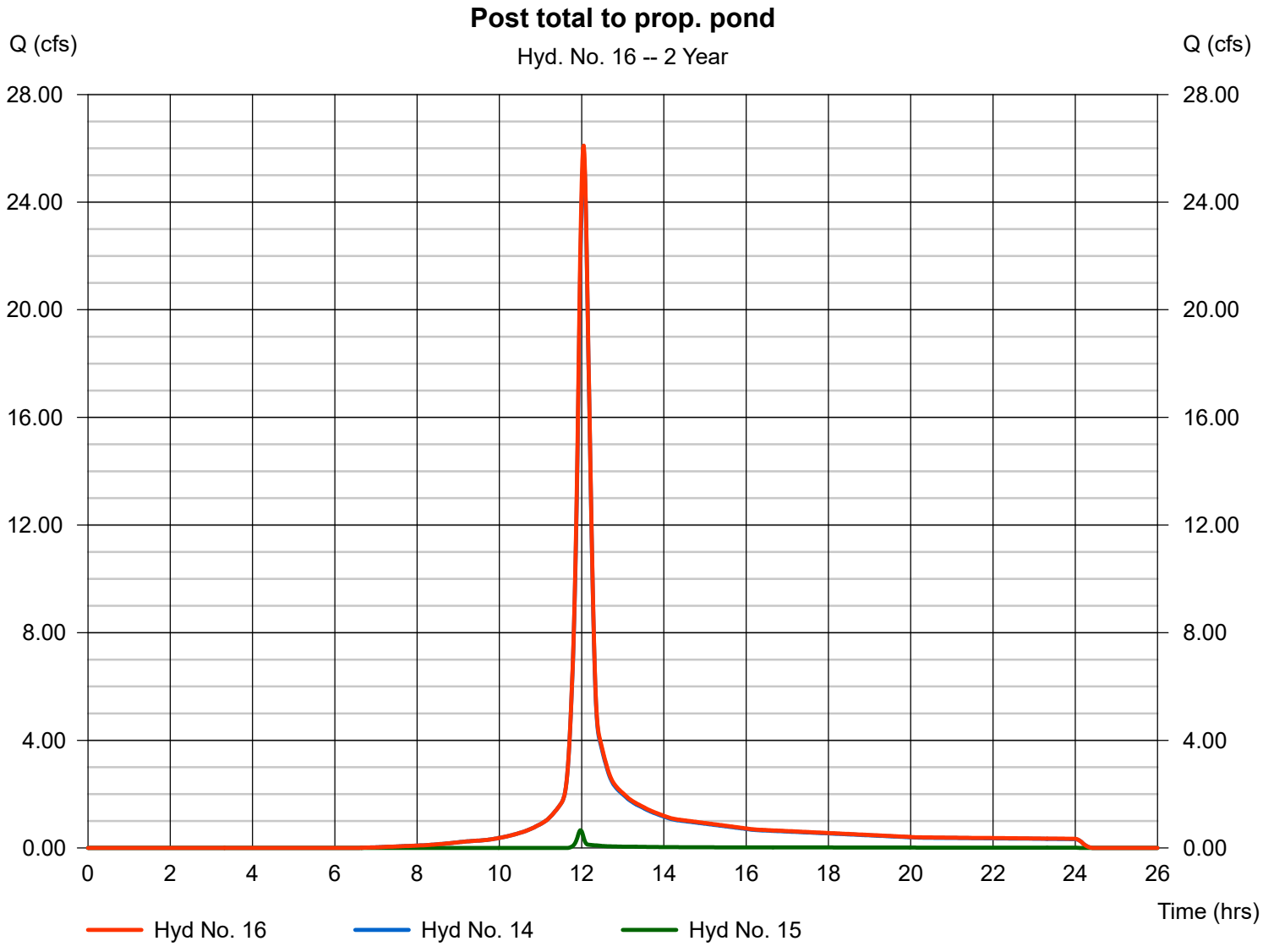
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 16

Post total to prop. pond

Hydrograph type	= Combine	Peak discharge	= 26.10 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.05 hrs
Time interval	= 1 min	Hyd. volume	= 75,159 cuft
Inflow hyds.	= 14, 15	Contrib. drain. area	= 8.380 ac



Hydrograph Report

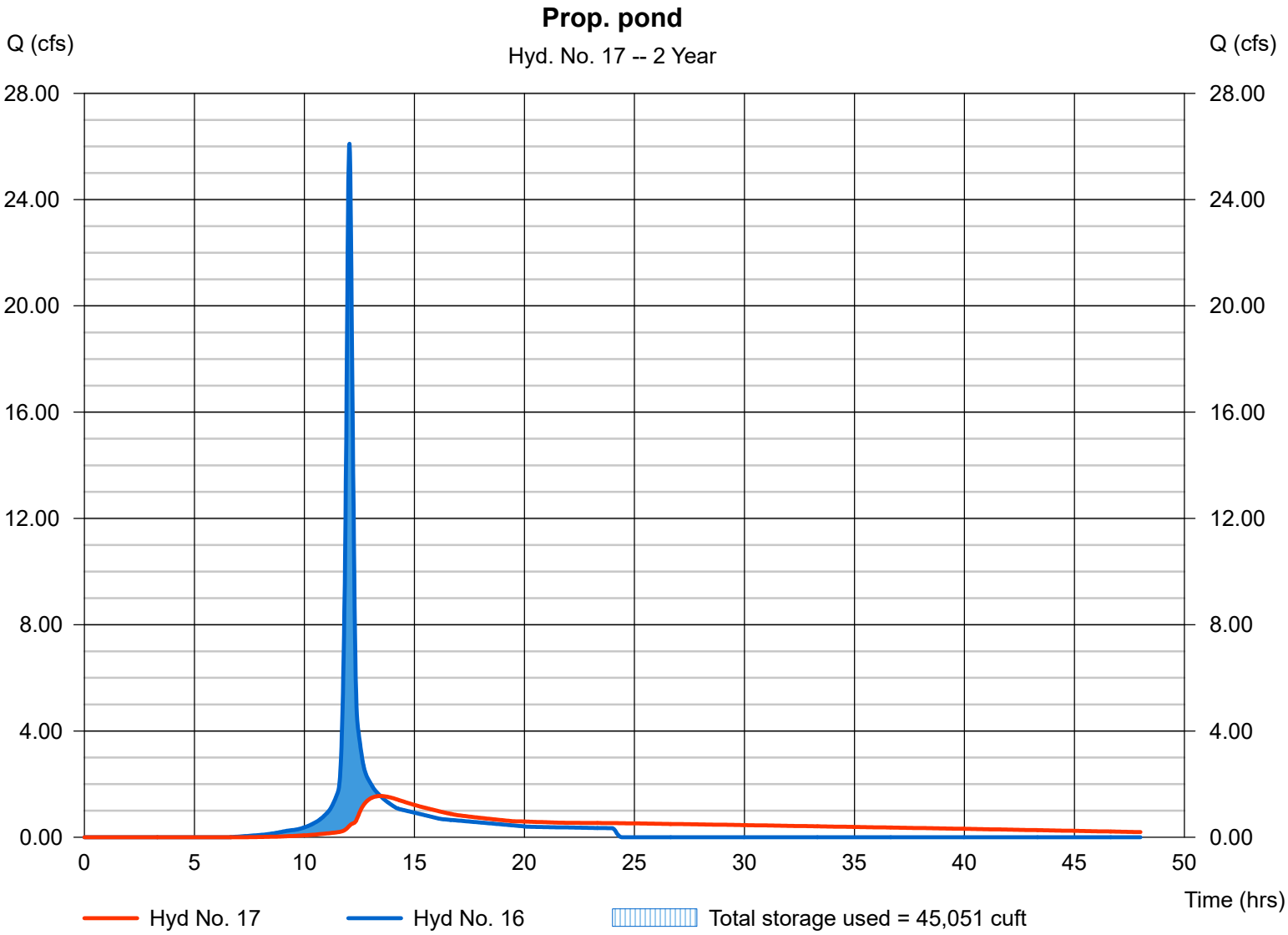
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 17

Prop. pond

Hydrograph type	=	Reservoir	Peak discharge	=	1.551 cfs
Storm frequency	=	2 yrs	Time to peak	=	13.47 hrs
Time interval	=	1 min	Hyd. volume	=	69,834 cuft
Inflow hyd. No.	=	16 - Post total to prop. pond	Max. Elevation	=	982.20 ft
Reservoir name	=	Stormwater Pond	Max. Storage	=	45,051 cuft

Storage Indication method used.



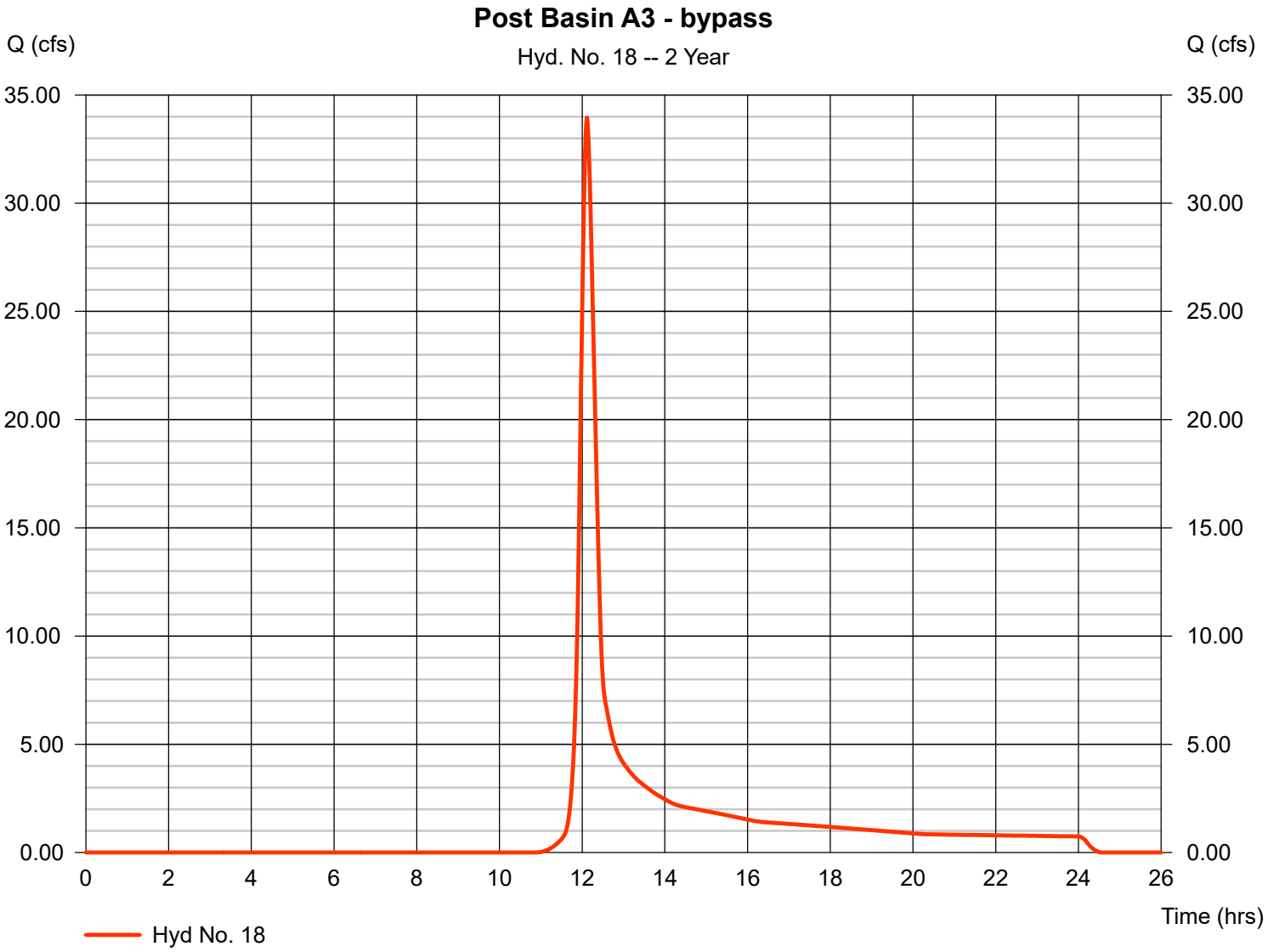
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 18

Post Basin A3 - bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	33.96 cfs
Storm frequency	=	2 yrs	Time to peak	=	12.12 hrs
Time interval	=	1 min	Hyd. volume	=	117,894 cuft
Drainage area	=	24.390 ac	Curve number	=	69
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	21.80 min
Total precip.	=	4.08 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



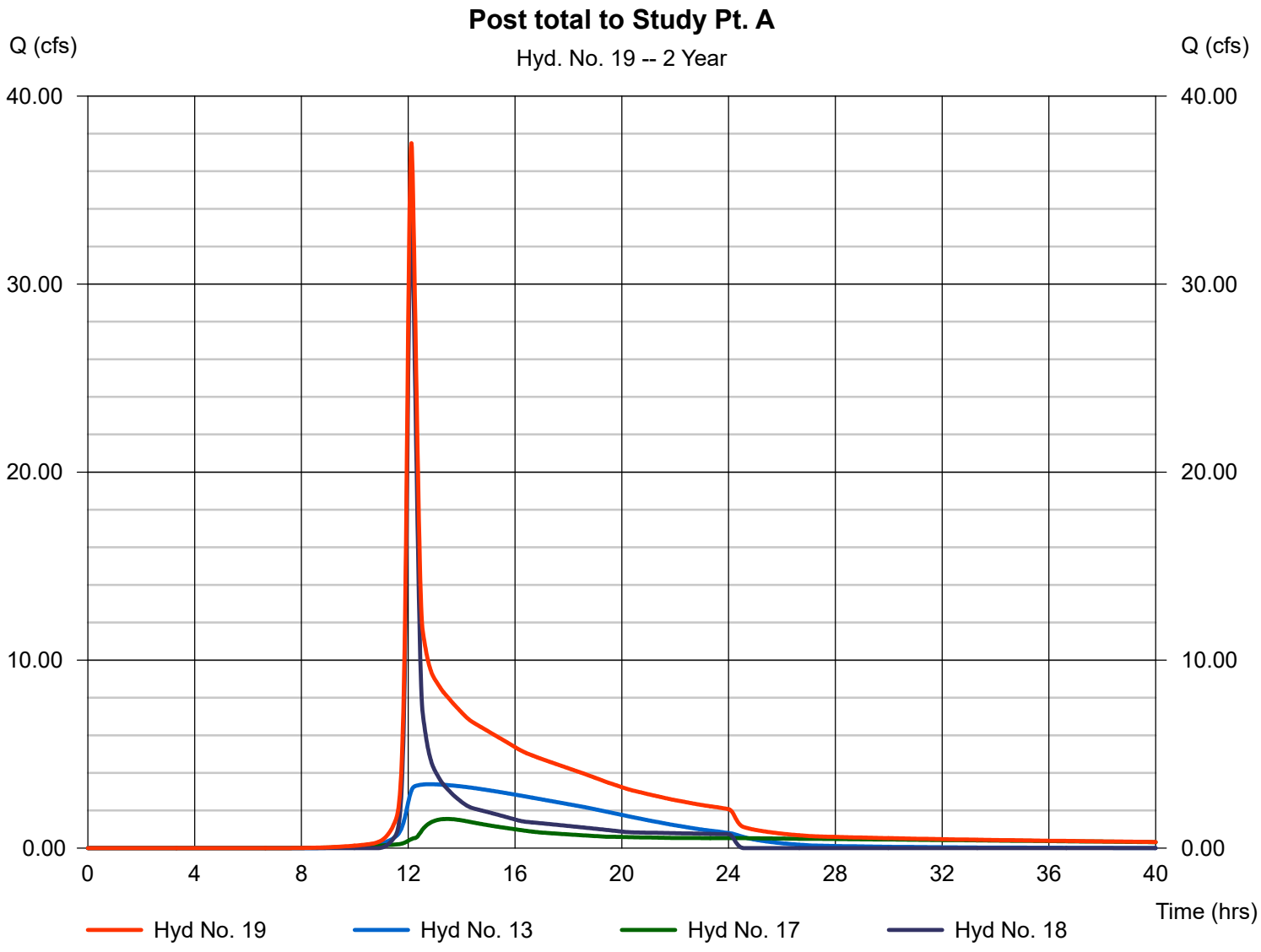
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 19

Post total to Study Pt. A

Hydrograph type	= Combine	Peak discharge	= 37.50 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 295,095 cuft
Inflow hyds.	= 13, 17, 18	Contrib. drain. area	= 24.390 ac



Hydrograph Report

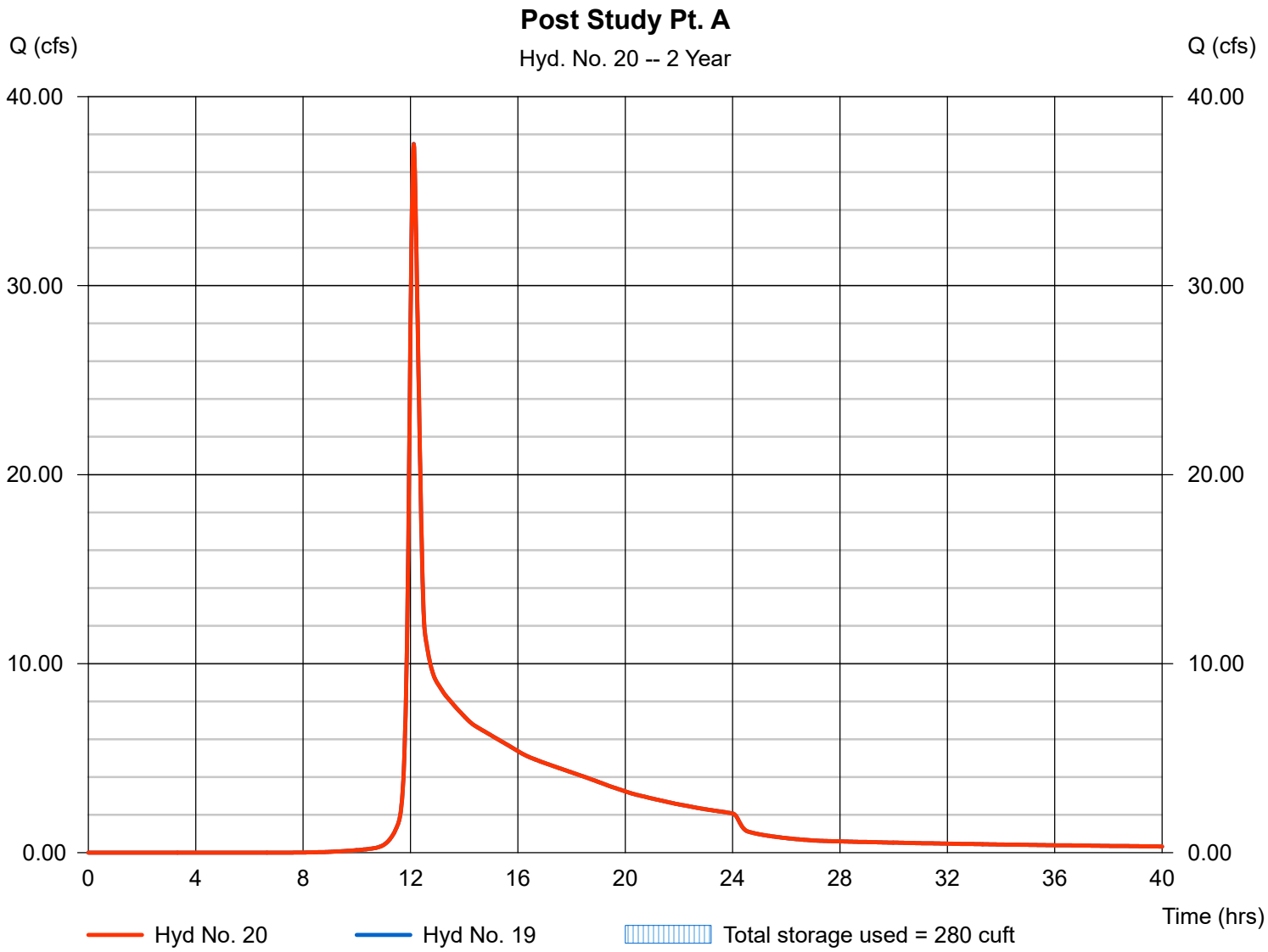
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 20

Post Study Pt. A

Hydrograph type	=	Reservoir	Peak discharge	=	37.48 cfs
Storm frequency	=	2 yrs	Time to peak	=	12.12 hrs
Time interval	=	1 min	Hyd. volume	=	295,091 cuft
Inflow hyd. No.	=	19 - Post total to Study Pt. A	Max. Elevation	=	970.91 ft
Reservoir name	=	Ex. DS Culvert at Barclay	Max. Storage	=	280 cuft

Storage Indication method used.



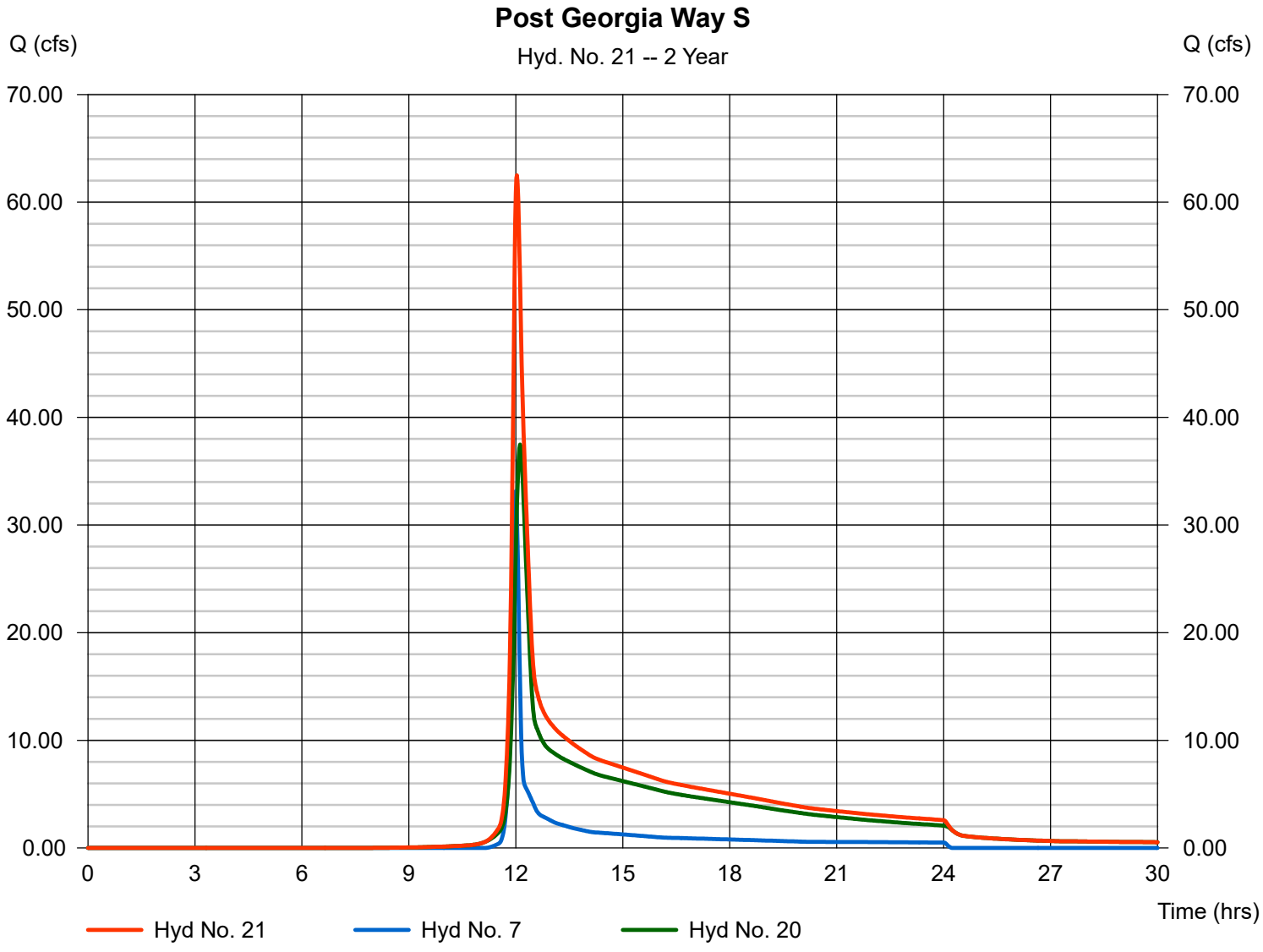
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 21

Post Georgia Way S

Hydrograph type	= Combine	Peak discharge	= 62.49 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.03 hrs
Time interval	= 1 min	Hyd. volume	= 372,258 cuft
Inflow hyds.	= 7, 20	Contrib. drain. area	= 17.800 ac



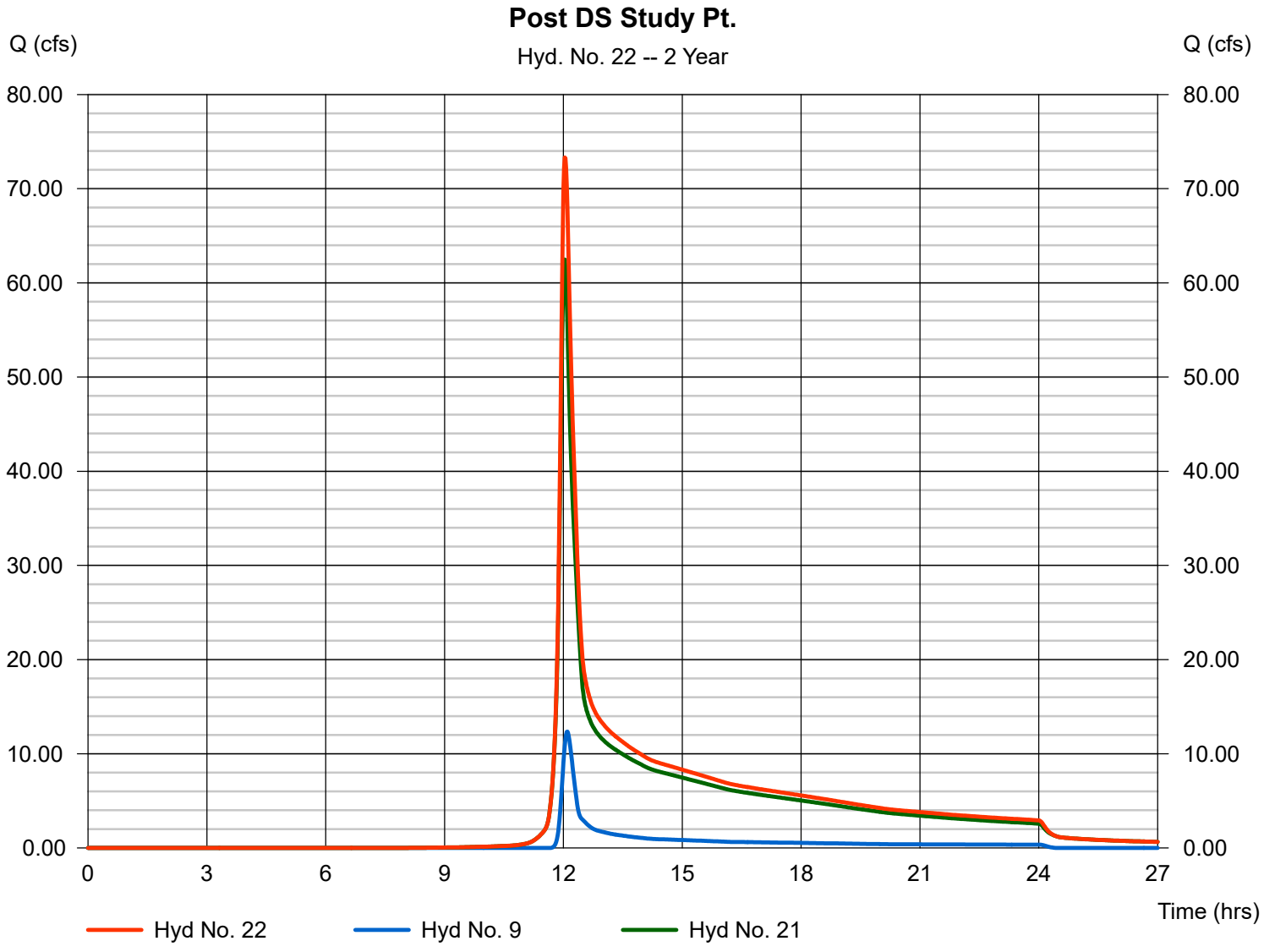
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 22

Post DS Study Pt.

Hydrograph type	= Combine	Peak discharge	= 73.31 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.03 hrs
Time interval	= 1 min	Hyd. volume	= 416,839 cuft
Inflow hyds.	= 9, 21	Contrib. drain. area	= 15.500 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

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	57.53	1	721	145,377	------	------	------	Pre Basin A2- to Ex. Detention Pond
2	Reservoir	3.956	1	782	145,345	1	987.87	99,427	Pre Ex. Pond
3	SCS Runoff	10.09	1	722	28,079	------	------	------	Pre Basin A1- site
4	SCS Runoff	46.17	1	727	156,172	------	------	------	Pre Basin A3 - bypass
5	Combine	58.01	1	726	329,596	2, 3, 4	------	------	Pre total to Study Pt. A
6	Reservoir	58.02	1	726	329,596	5	971.53	440	Pre Study Pt. A
7	SCS Runoff	47.09	1	720	107,590	------	------	------	Offsite Basin 1
8	Combine	96.31	1	722	437,186	6, 7	------	------	Pre Georgia Way S
9	SCS Runoff	19.97	1	725	65,970	------	------	------	Offsite Basin 2
10	Combine	114.53	1	722	503,156	8, 9	------	------	Pre DS Study Pt.
12	SCS Runoff	54.32	1	721	137,827	------	------	------	Post Basin A2 to Ex. Pond
13	Reservoir	3.874	1	776	137,798	12	987.65	96,159	Post Ex. Pond
14	SCS Runoff	32.18	1	723	92,791	------	------	------	Post Basin A1.1 - to prop. pond
15	SCS Runoff	1.014	1	718	2,107	------	------	------	Post Basin A1.2 - to prop. pond
16	Combine	32.73	1	723	94,898	14, 15	------	------	Post total to prop. pond
17	Reservoir	3.692	1	757	89,031	16	983.00	51,999	Prop. pond
18	SCS Runoff	47.92	1	727	162,087	------	------	------	Post Basin A3 - bypass
19	Combine	51.97	1	727	388,916	13, 17, 18	------	------	Post total to Study Pt. A
20	Reservoir	51.97	1	727	388,911	19	971.35	395	Post Study Pt. A
21	Combine	88.28	1	721	496,501	7, 20	------	------	Post Georgia Way S
22	Combine	106.42	1	722	562,472	9, 21	------	------	Post DS Study Pt.
24	Reservoir	3.825	1	756	56,137	16	983.24	54,029	Emergency Overflow

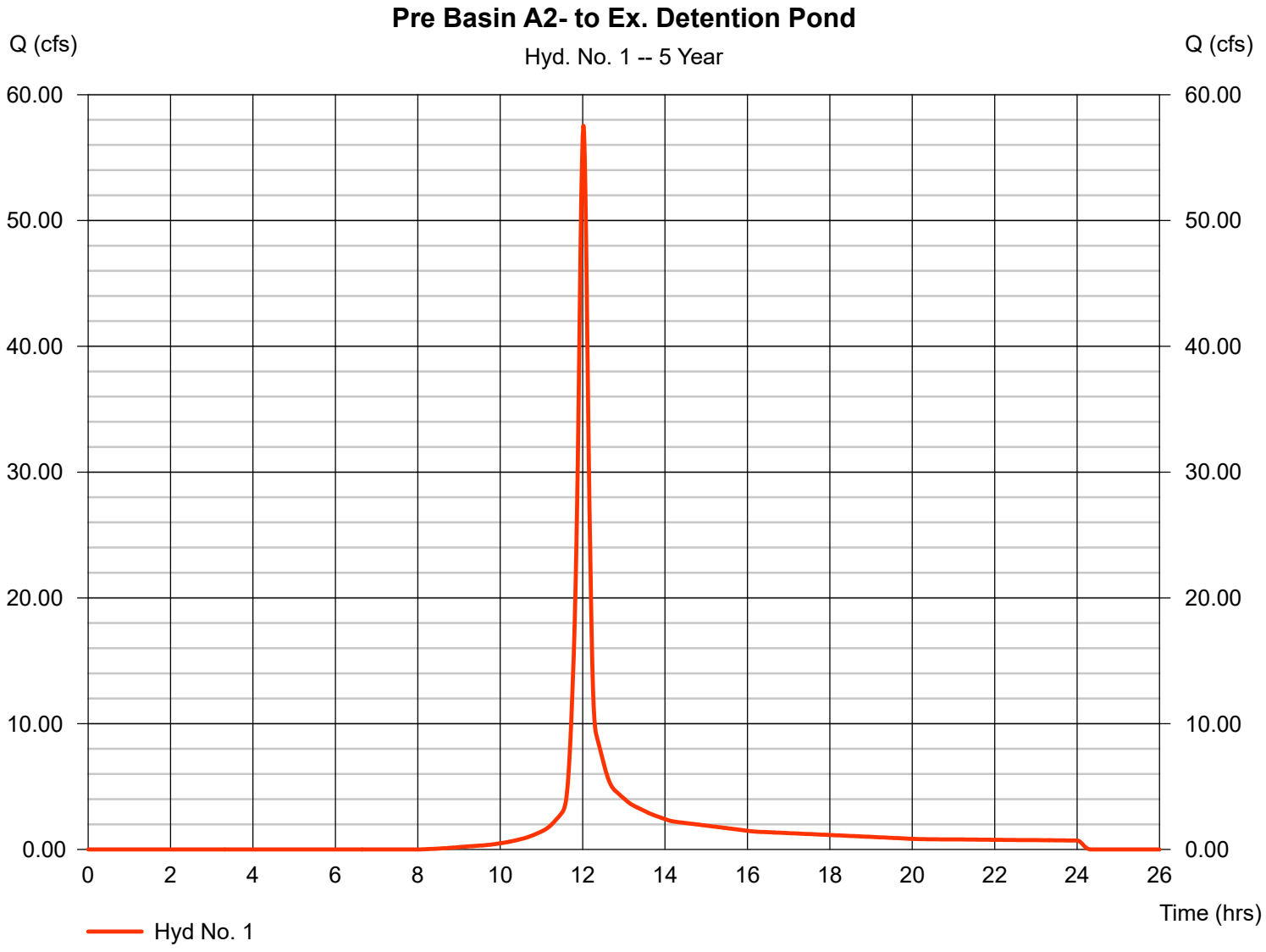
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 1

Pre Basin A2- to Ex. Detention Pond

Hydrograph type	=	SCS Runoff	Peak discharge	=	57.53 cfs
Storm frequency	=	5 yrs	Time to peak	=	12.02 hrs
Time interval	=	1 min	Hyd. volume	=	145,377 cuft
Drainage area	=	16.000 ac	Curve number	=	78
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.40 min
Total precip.	=	4.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

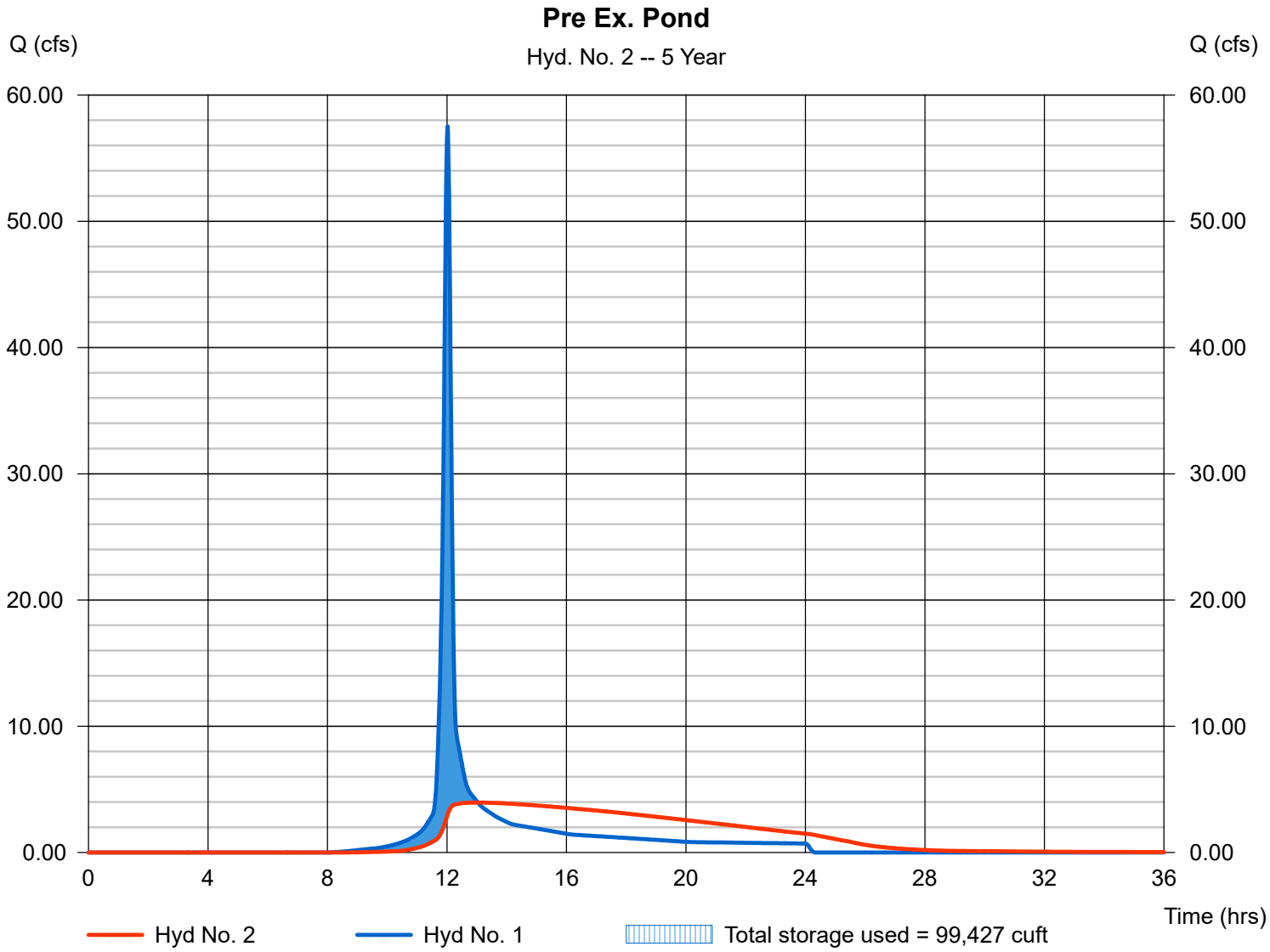
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 2

Pre Ex. Pond

Hydrograph type	=	Reservoir	Peak discharge	=	3.956 cfs
Storm frequency	=	5 yrs	Time to peak	=	13.03 hrs
Time interval	=	1 min	Hyd. volume	=	145,345 cuft
Inflow hyd. No.	=	1 - Pre Basin A2- to Ex. Detention Pond	Max. Elevation	=	987.87 ft
Reservoir name	=	Ex. Pond	Max. Storage	=	99,427 cuft

Storage Indication method used. Wet pond routing start elevation = 982.00 ft.



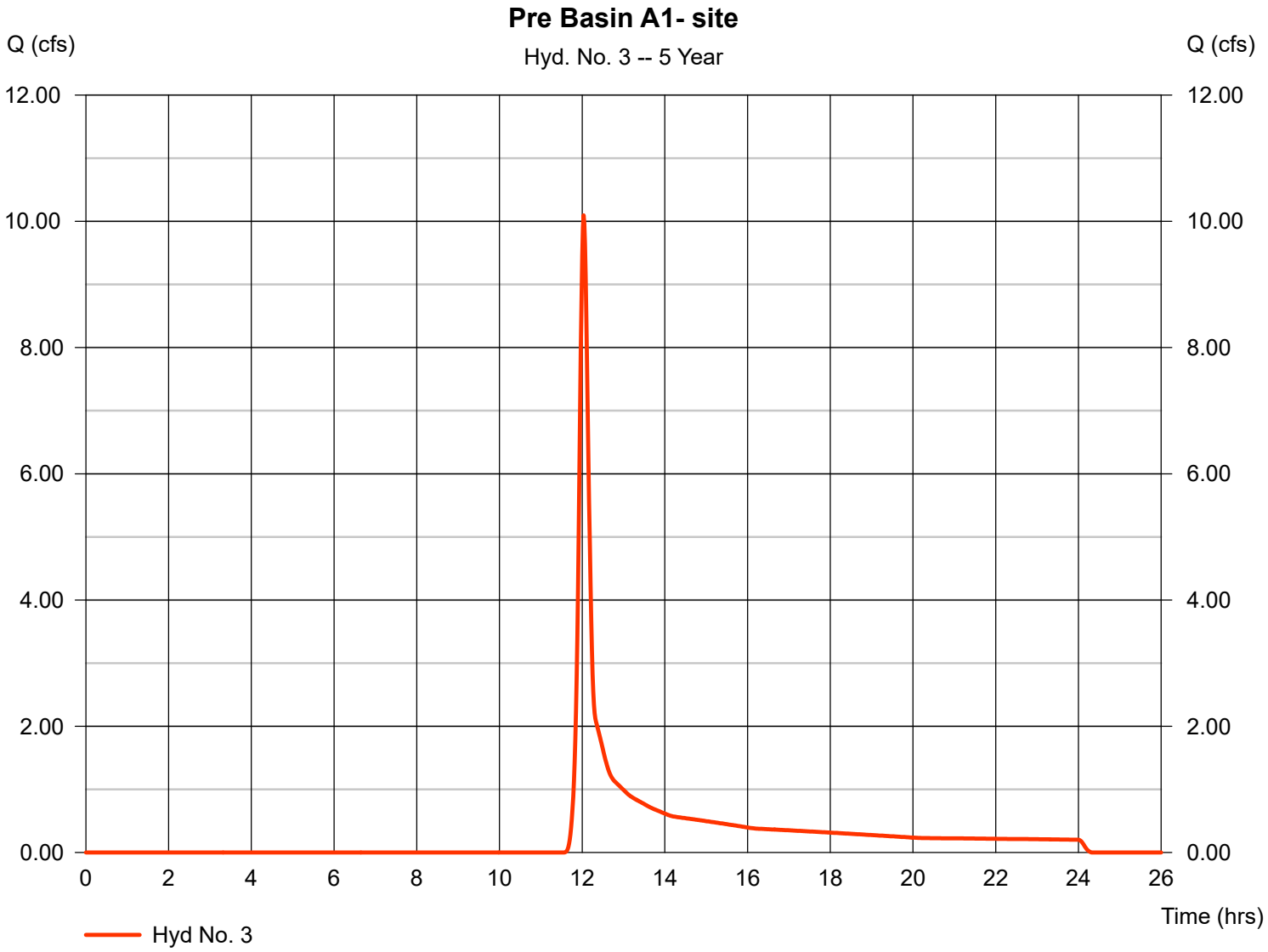
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 3

Pre Basin A1- site

Hydrograph type	=	SCS Runoff	Peak discharge	=	10.09 cfs
Storm frequency	=	5 yrs	Time to peak	=	12.03 hrs
Time interval	=	1 min	Hyd. volume	=	28,079 cuft
Drainage area	=	7.000 ac	Curve number	=	59
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.80 min
Total precip.	=	4.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



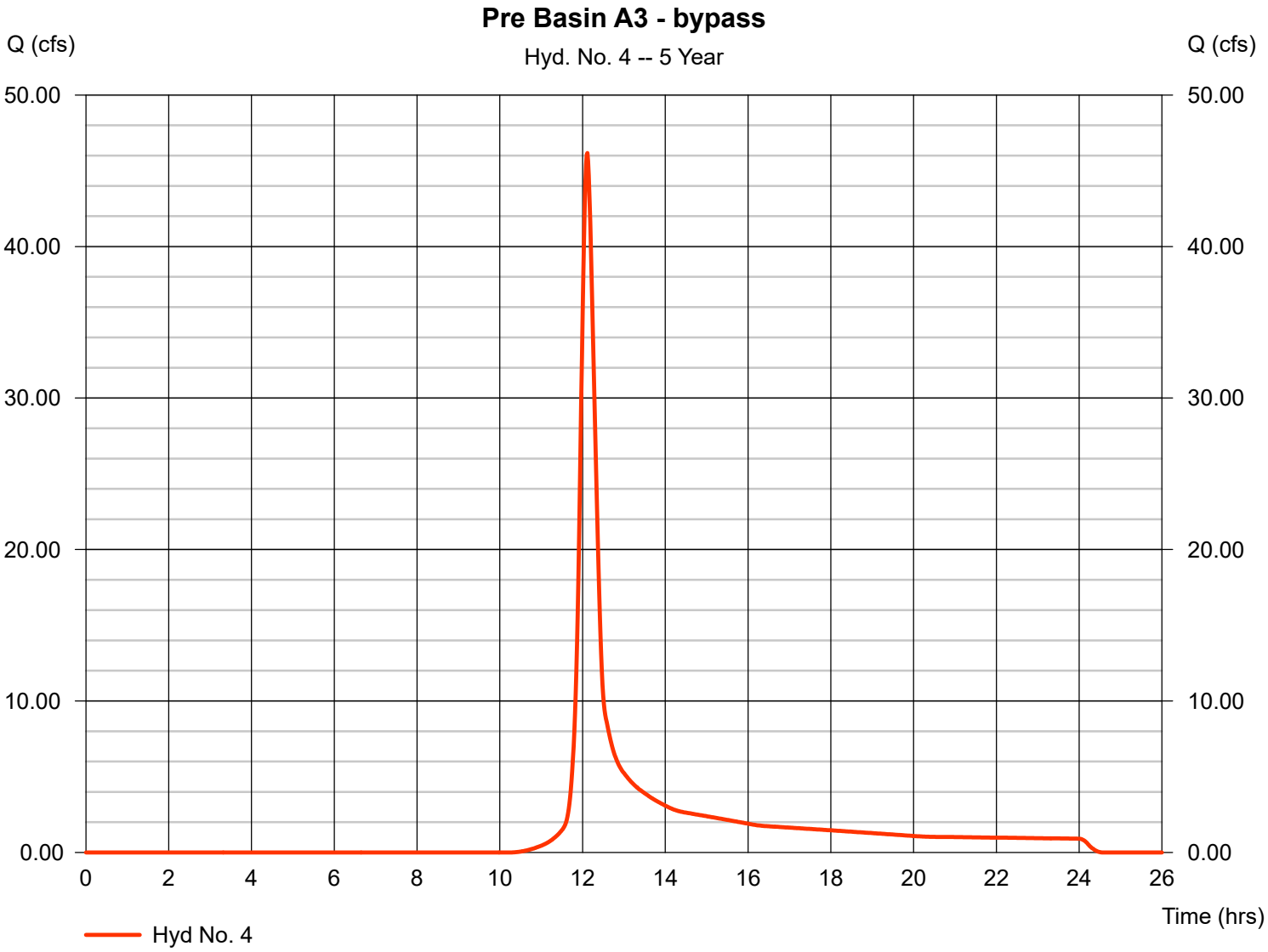
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 4

Pre Basin A3 - bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	46.17 cfs
Storm frequency	=	5 yrs	Time to peak	=	12.12 hrs
Time interval	=	1 min	Hyd. volume	=	156,172 cuft
Drainage area	=	23.500 ac	Curve number	=	69
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	21.80 min
Total precip.	=	4.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



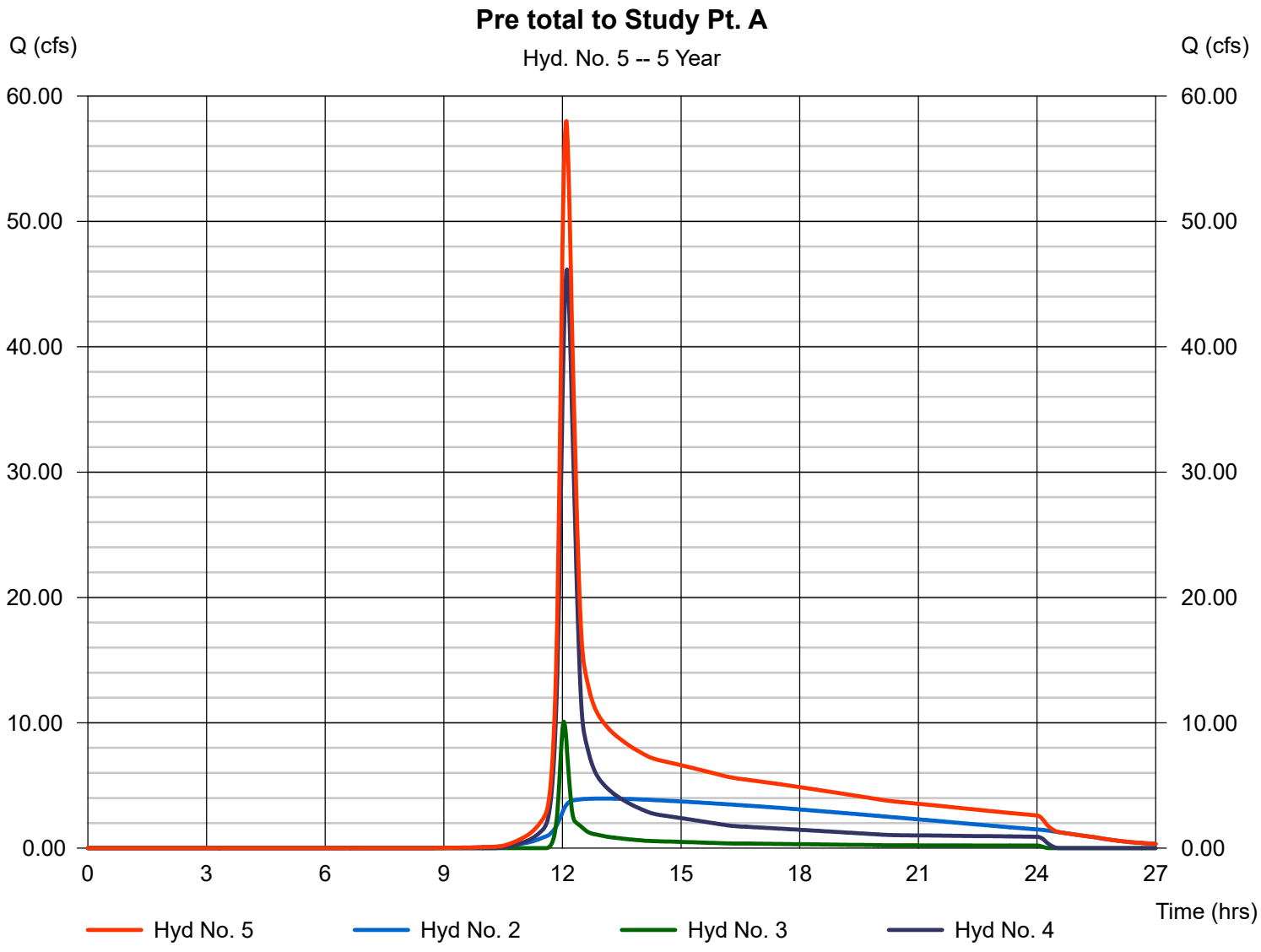
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 5

Pre total to Study Pt. A

Hydrograph type	= Combine	Peak discharge	= 58.01 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.10 hrs
Time interval	= 1 min	Hyd. volume	= 329,596 cuft
Inflow hyds.	= 2, 3, 4	Contrib. drain. area	= 30.500 ac



Hydrograph Report

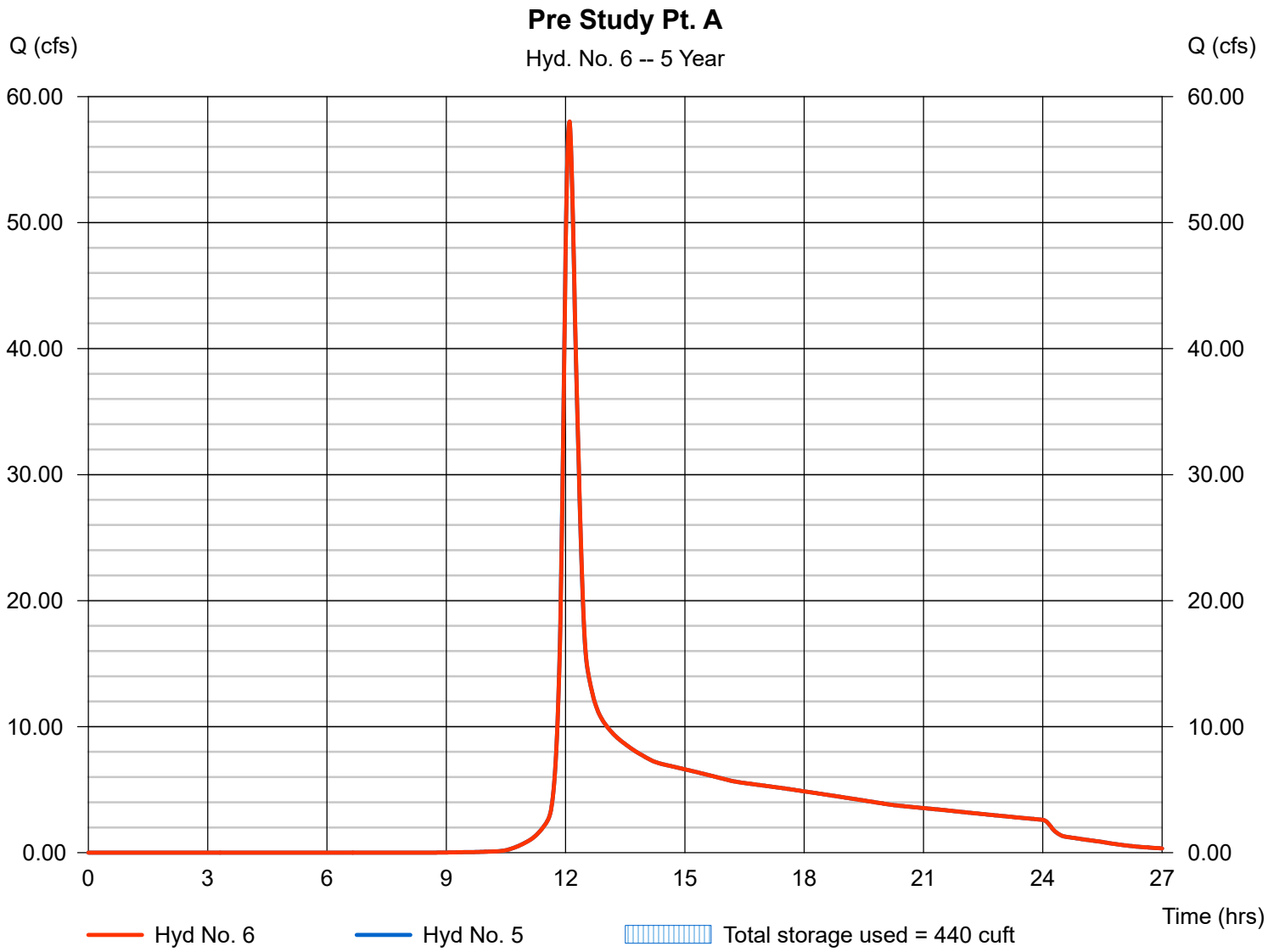
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 6

Pre Study Pt. A

Hydrograph type	=	Reservoir	Peak discharge	=	58.02 cfs
Storm frequency	=	5 yrs	Time to peak	=	12.10 hrs
Time interval	=	1 min	Hyd. volume	=	329,596 cuft
Inflow hyd. No.	=	5 - Pre total to Study Pt. A	Max. Elevation	=	971.53 ft
Reservoir name	=	Ex. DS Culvert at Barclay	Max. Storage	=	440 cuft

Storage Indication method used.



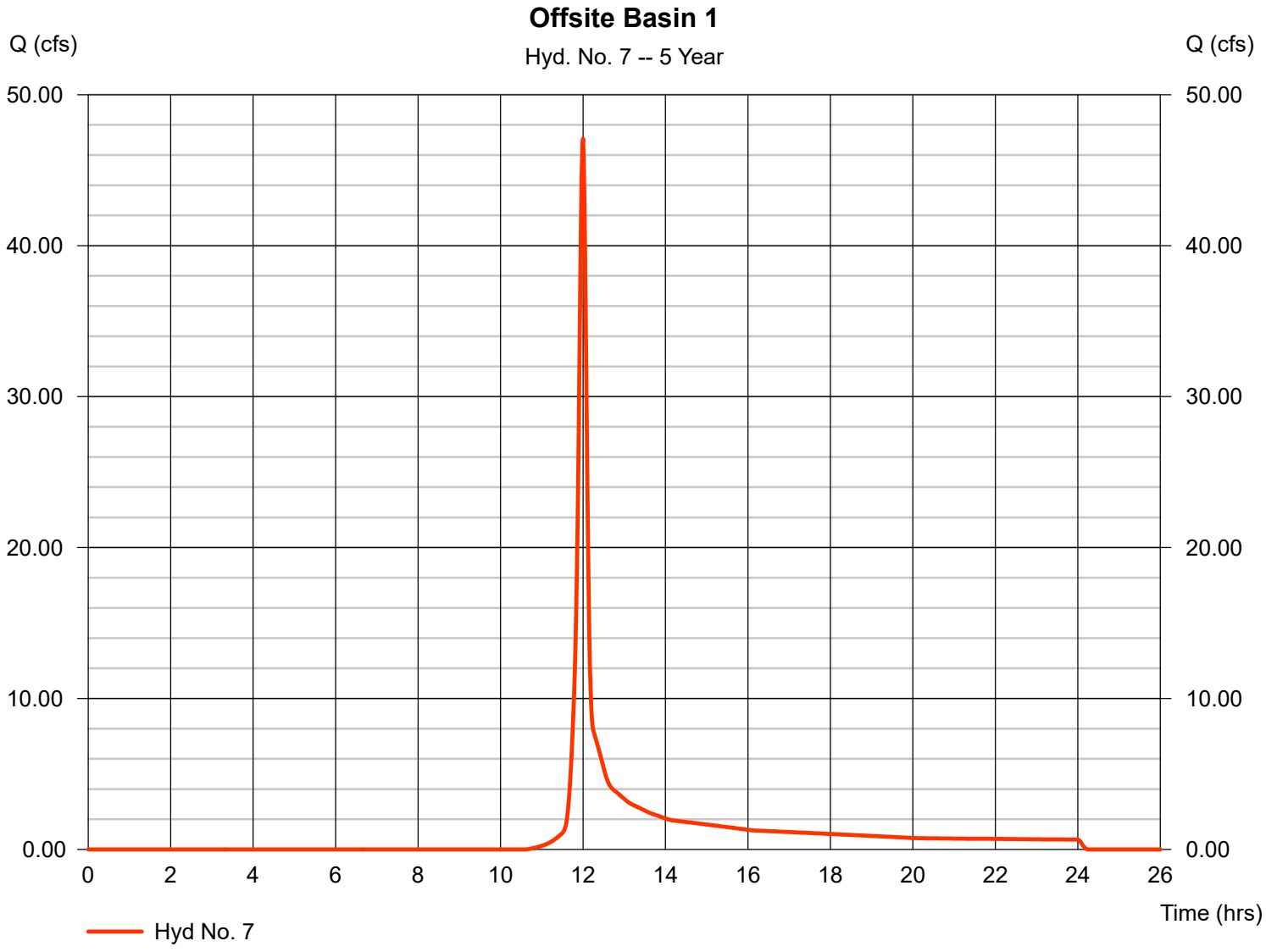
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 7

Offsite Basin 1

Hydrograph type	=	SCS Runoff	Peak discharge	=	47.09 cfs
Storm frequency	=	5 yrs	Time to peak	=	12.00 hrs
Time interval	=	1 min	Hyd. volume	=	107,590 cuft
Drainage area	=	17.800 ac	Curve number	=	67
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	8.80 min
Total precip.	=	4.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



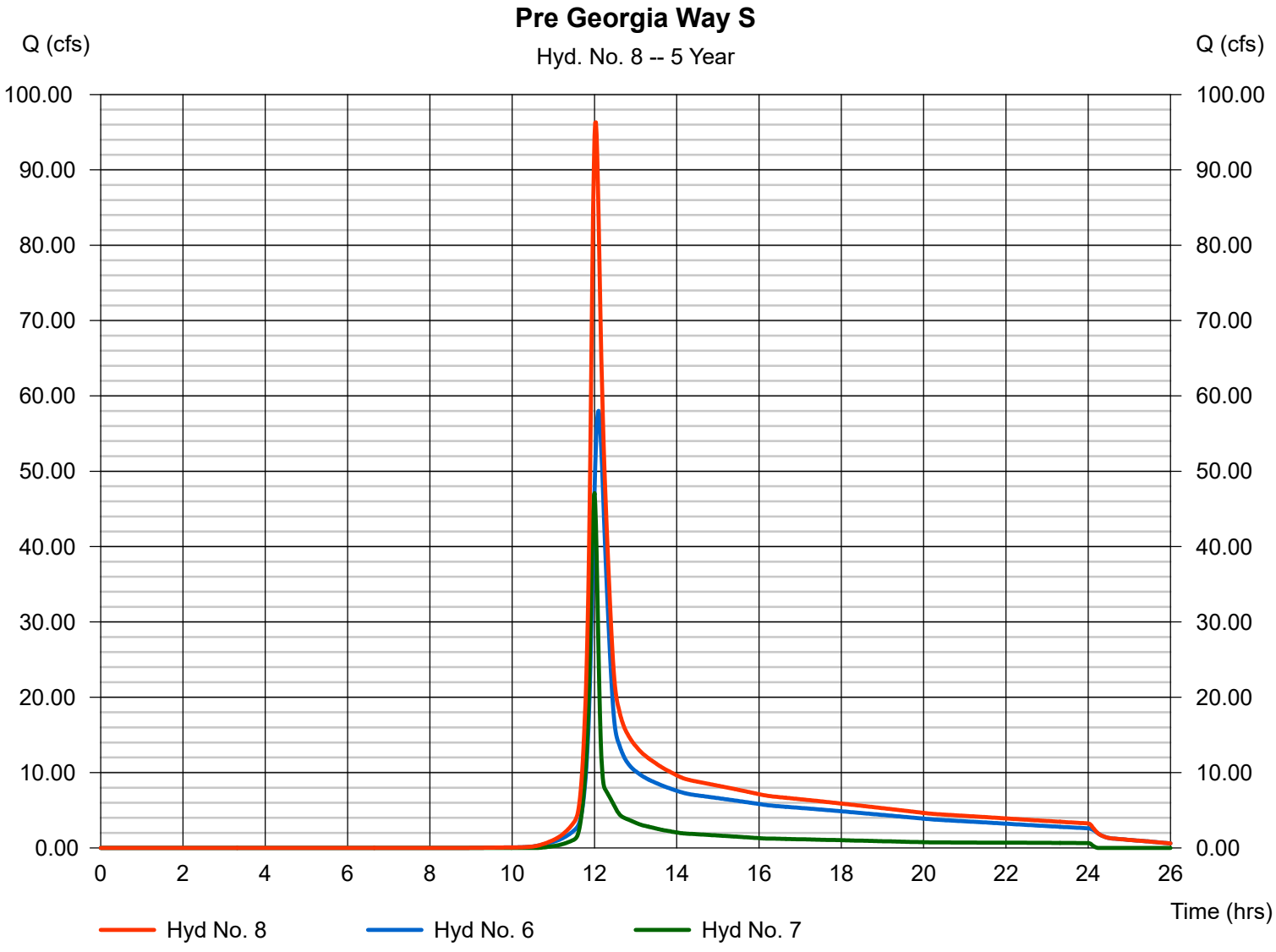
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 8

Pre Georgia Way S

Hydrograph type	= Combine	Peak discharge	= 96.31 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.03 hrs
Time interval	= 1 min	Hyd. volume	= 437,186 cuft
Inflow hyds.	= 6, 7	Contrib. drain. area	= 17.800 ac



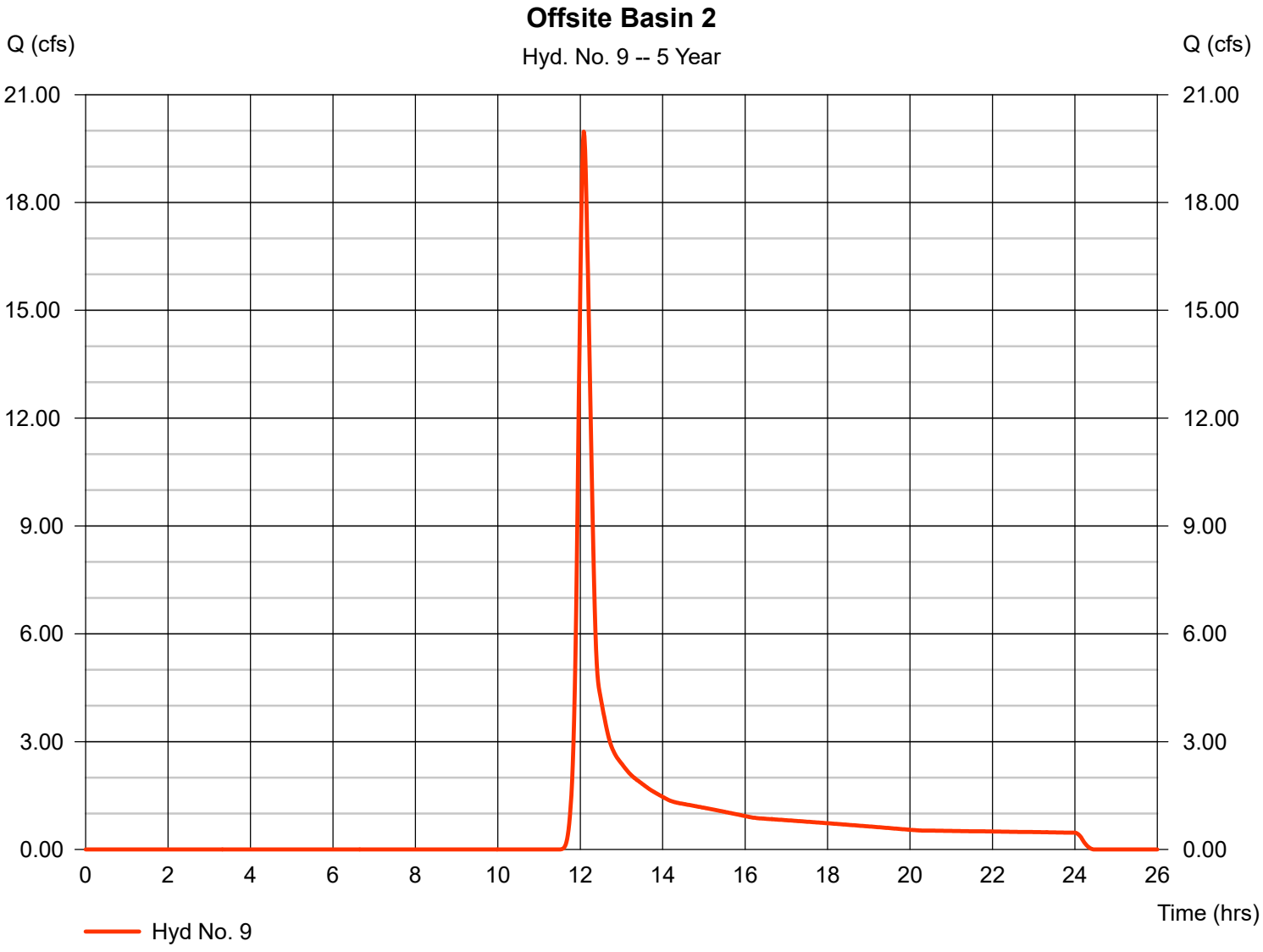
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 9

Offsite Basin 2

Hydrograph type	=	SCS Runoff	Peak discharge	=	19.97 cfs
Storm frequency	=	5 yrs	Time to peak	=	12.08 hrs
Time interval	=	1 min	Hyd. volume	=	65,970 cuft
Drainage area	=	15.500 ac	Curve number	=	60
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	17.30 min
Total precip.	=	4.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



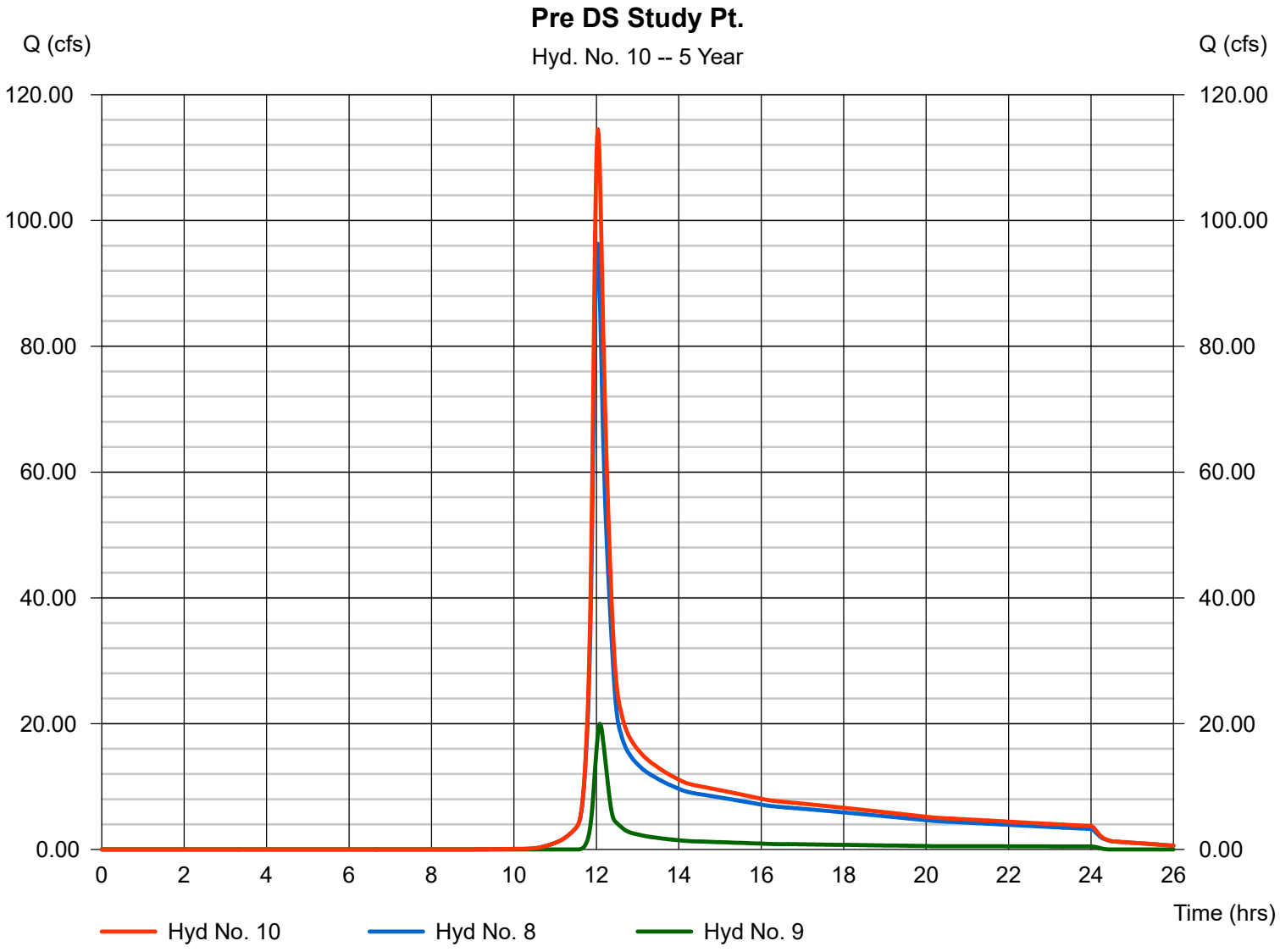
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 10

Pre DS Study Pt.

Hydrograph type	=	Combine	Peak discharge	=	114.53 cfs
Storm frequency	=	5 yrs	Time to peak	=	12.03 hrs
Time interval	=	1 min	Hyd. volume	=	503,156 cuft
Inflow hyds.	=	8, 9	Contrib. drain. area	=	15.500 ac



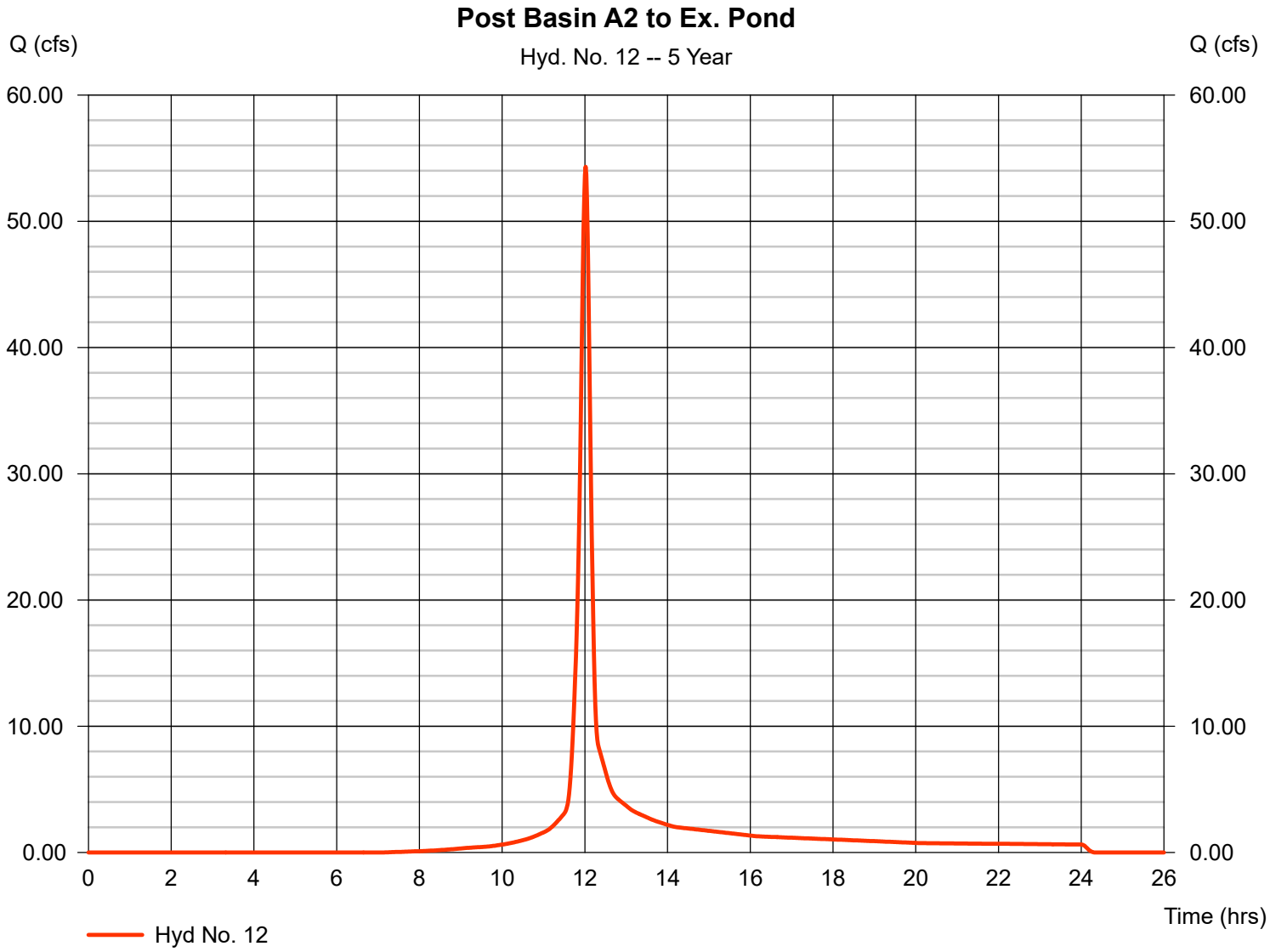
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 12

Post Basin A2 to Ex. Pond

Hydrograph type	= SCS Runoff	Peak discharge	= 54.32 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.02 hrs
Time interval	= 1 min	Hyd. volume	= 137,827 cuft
Drainage area	= 13.730 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 12.40 min
Total precip.	= 4.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

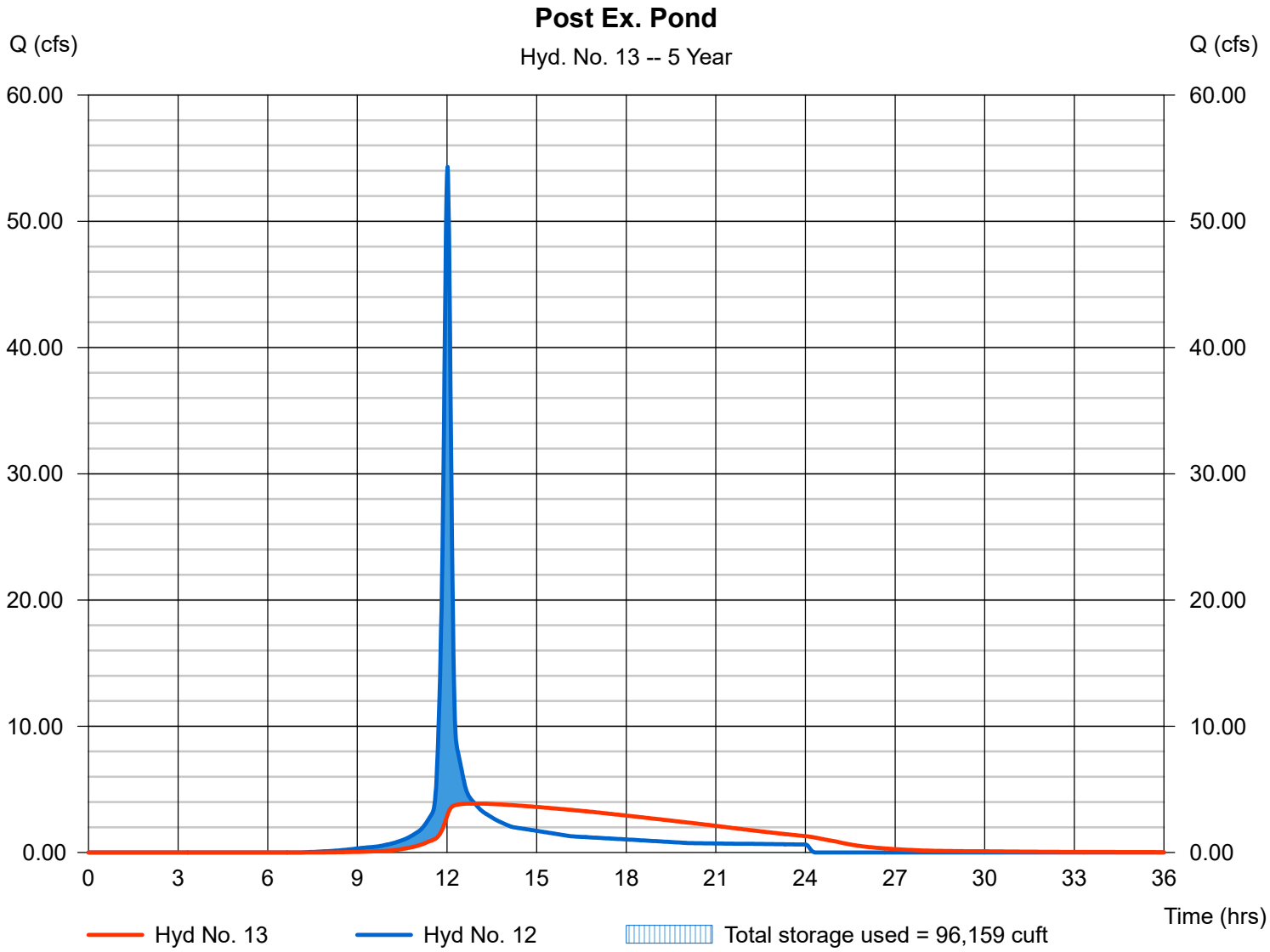
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 13

Post Ex. Pond

Hydrograph type	=	Reservoir	Peak discharge	=	3.874 cfs
Storm frequency	=	5 yrs	Time to peak	=	12.93 hrs
Time interval	=	1 min	Hyd. volume	=	137,798 cuft
Inflow hyd. No.	=	12 - Post Basin A2 to Ex. Pond	Max. Elevation	=	987.65 ft
Reservoir name	=	Ex. Pond	Max. Storage	=	96,159 cuft

Storage Indication method used. Wet pond routing start elevation = 982.00 ft.



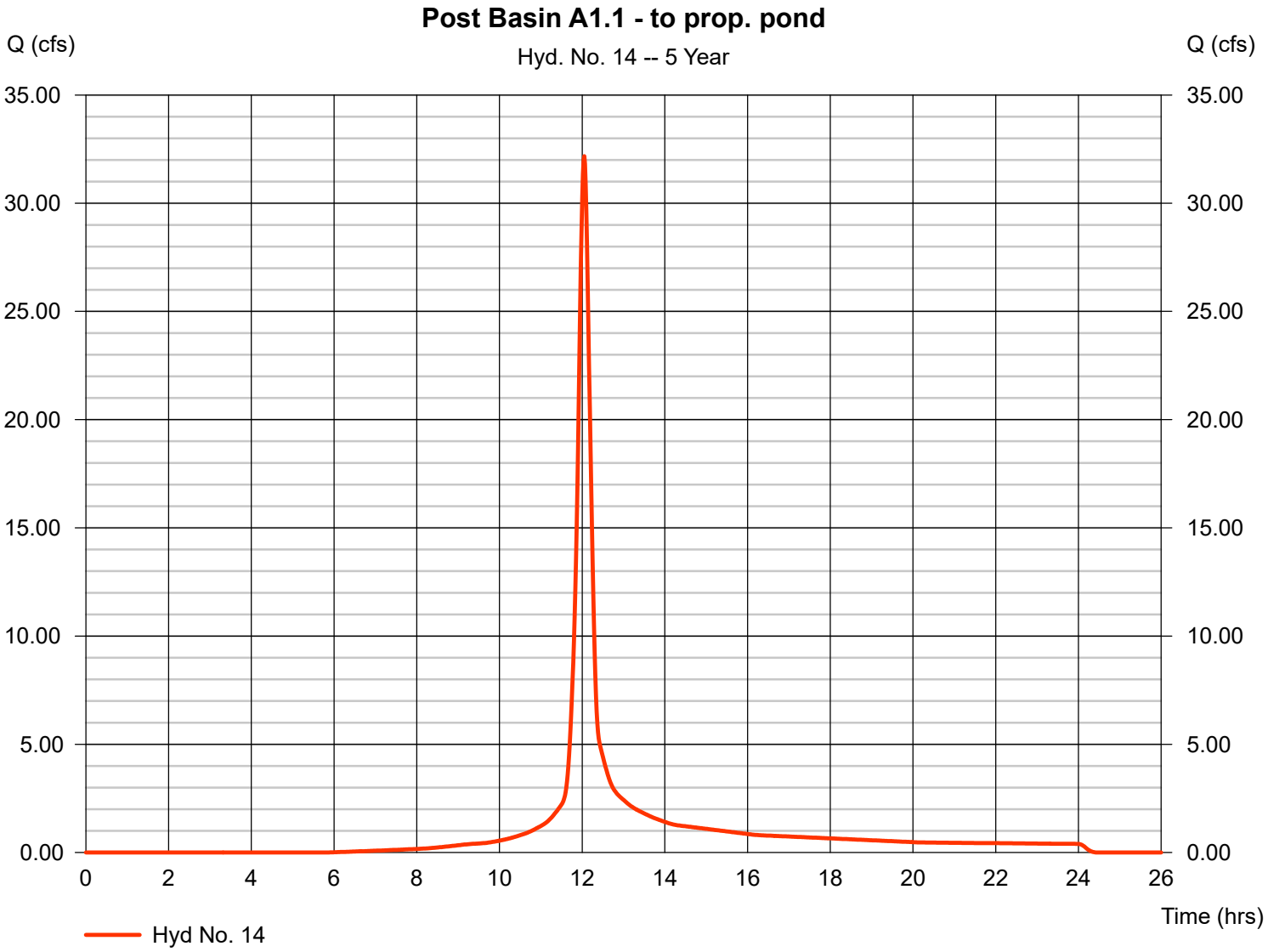
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 14

Post Basin A1.1 - to prop. pond

Hydrograph type	=	SCS Runoff	Peak discharge	=	32.18 cfs
Storm frequency	=	5 yrs	Time to peak	=	12.05 hrs
Time interval	=	1 min	Hyd. volume	=	92,791 cuft
Drainage area	=	7.930 ac	Curve number	=	85
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	16.30 min
Total precip.	=	4.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



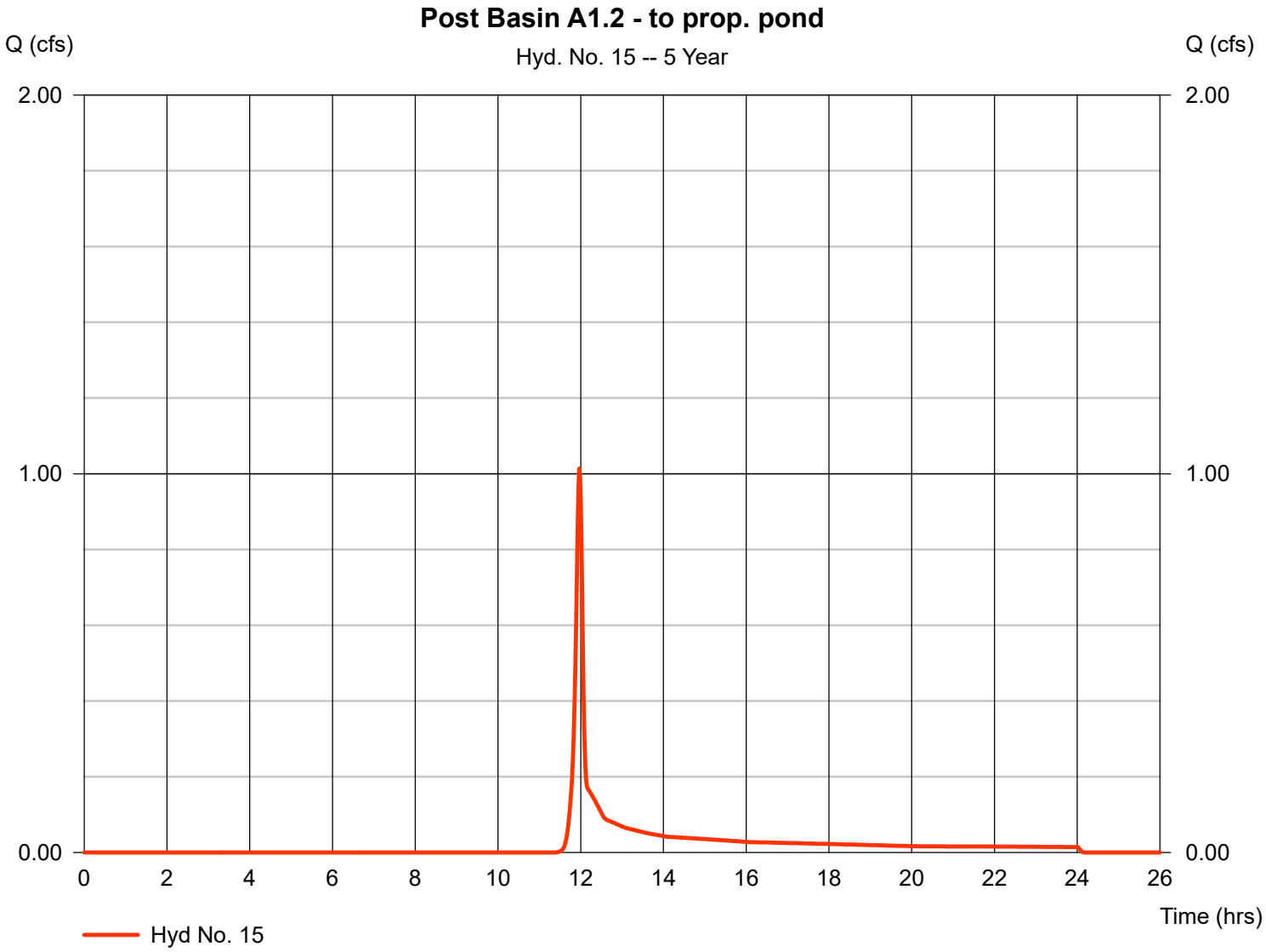
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 15

Post Basin A1.2 - to prop. pond

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.014 cfs
Storm frequency	=	5 yrs	Time to peak	=	11.97 hrs
Time interval	=	1 min	Hyd. volume	=	2,107 cuft
Drainage area	=	0.450 ac	Curve number	=	61
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	5.00 min
Total precip.	=	4.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



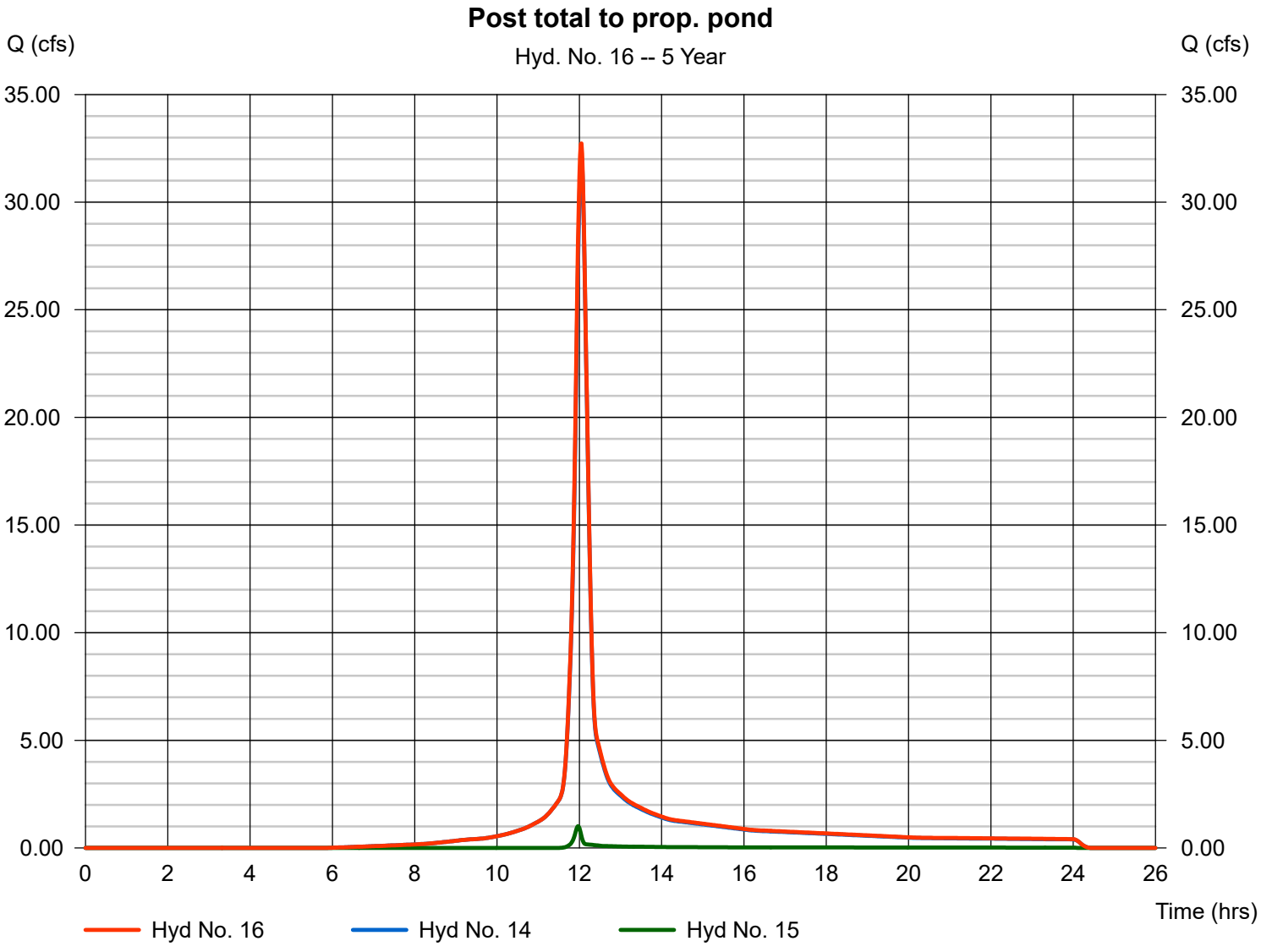
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 16

Post total to prop. pond

Hydrograph type	= Combine	Peak discharge	= 32.73 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.05 hrs
Time interval	= 1 min	Hyd. volume	= 94,898 cuft
Inflow hyds.	= 14, 15	Contrib. drain. area	= 8.380 ac



Hydrograph Report

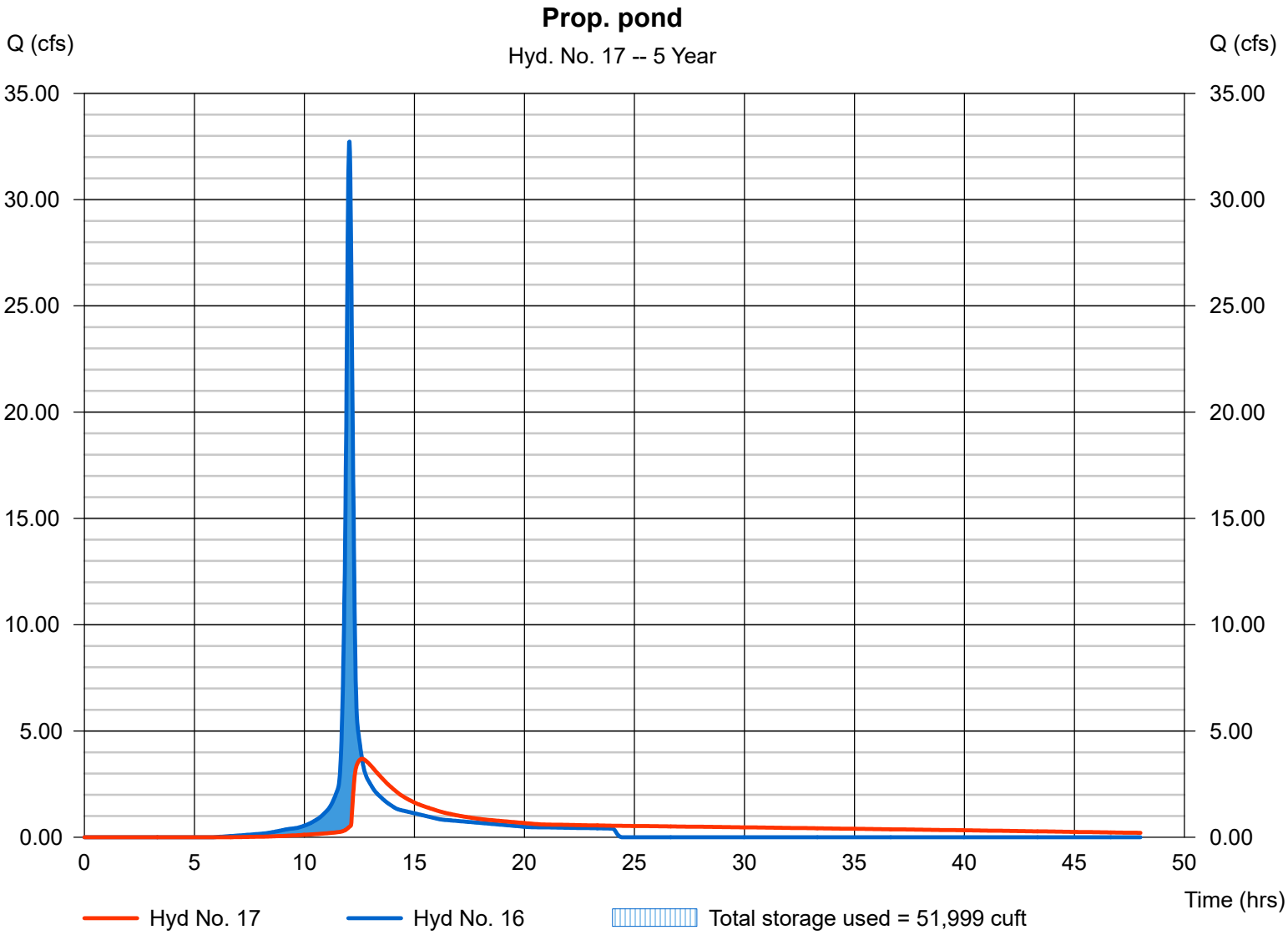
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 17

Prop. pond

Hydrograph type	=	Reservoir	Peak discharge	=	3.692 cfs
Storm frequency	=	5 yrs	Time to peak	=	12.62 hrs
Time interval	=	1 min	Hyd. volume	=	89,031 cuft
Inflow hyd. No.	=	16 - Post total to prop. pond	Max. Elevation	=	983.00 ft
Reservoir name	=	Stormwater Pond	Max. Storage	=	51,999 cuft

Storage Indication method used.



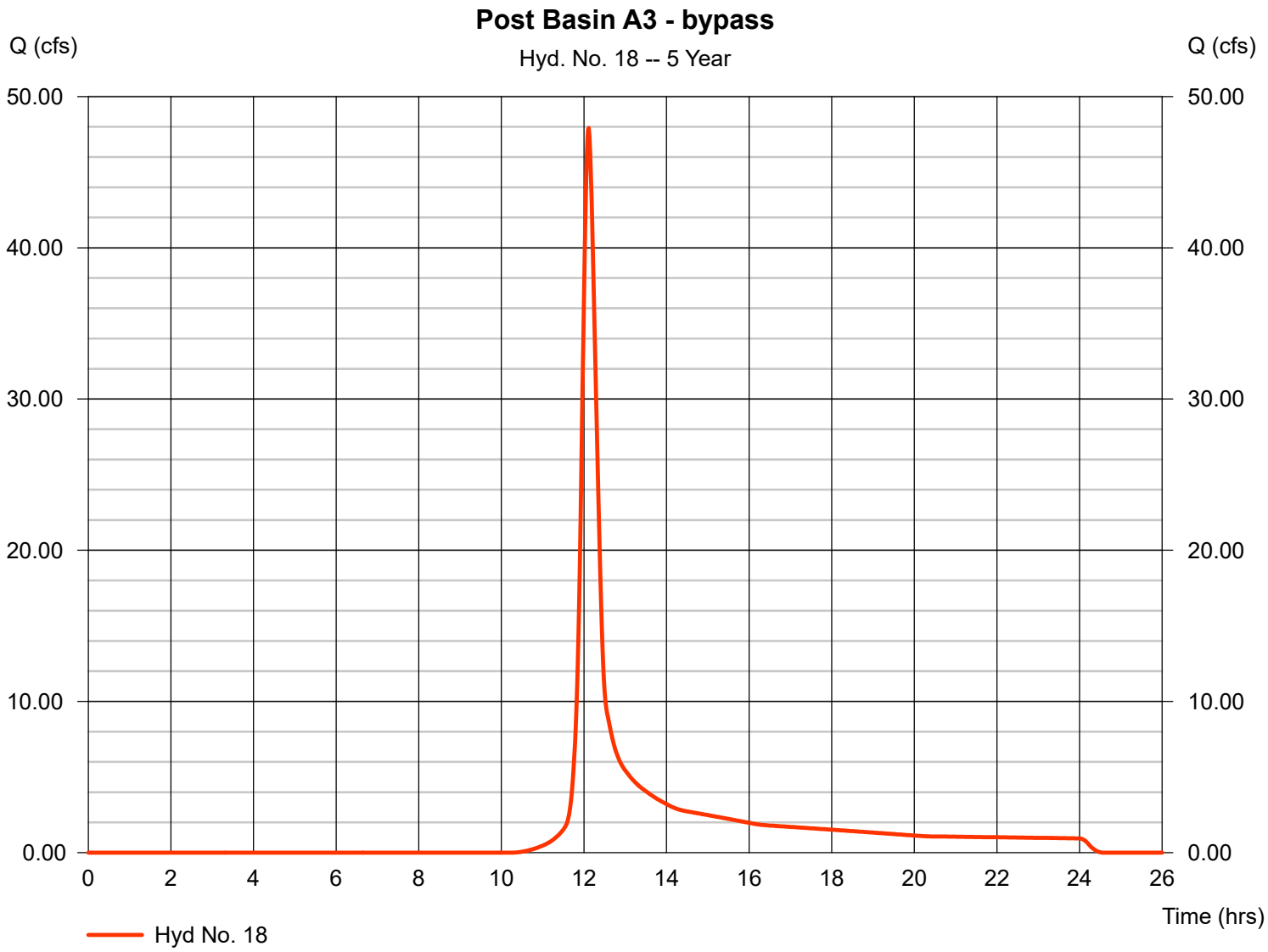
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 18

Post Basin A3 - bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	47.92 cfs
Storm frequency	=	5 yrs	Time to peak	=	12.12 hrs
Time interval	=	1 min	Hyd. volume	=	162,087 cuft
Drainage area	=	24.390 ac	Curve number	=	69
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	21.80 min
Total precip.	=	4.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



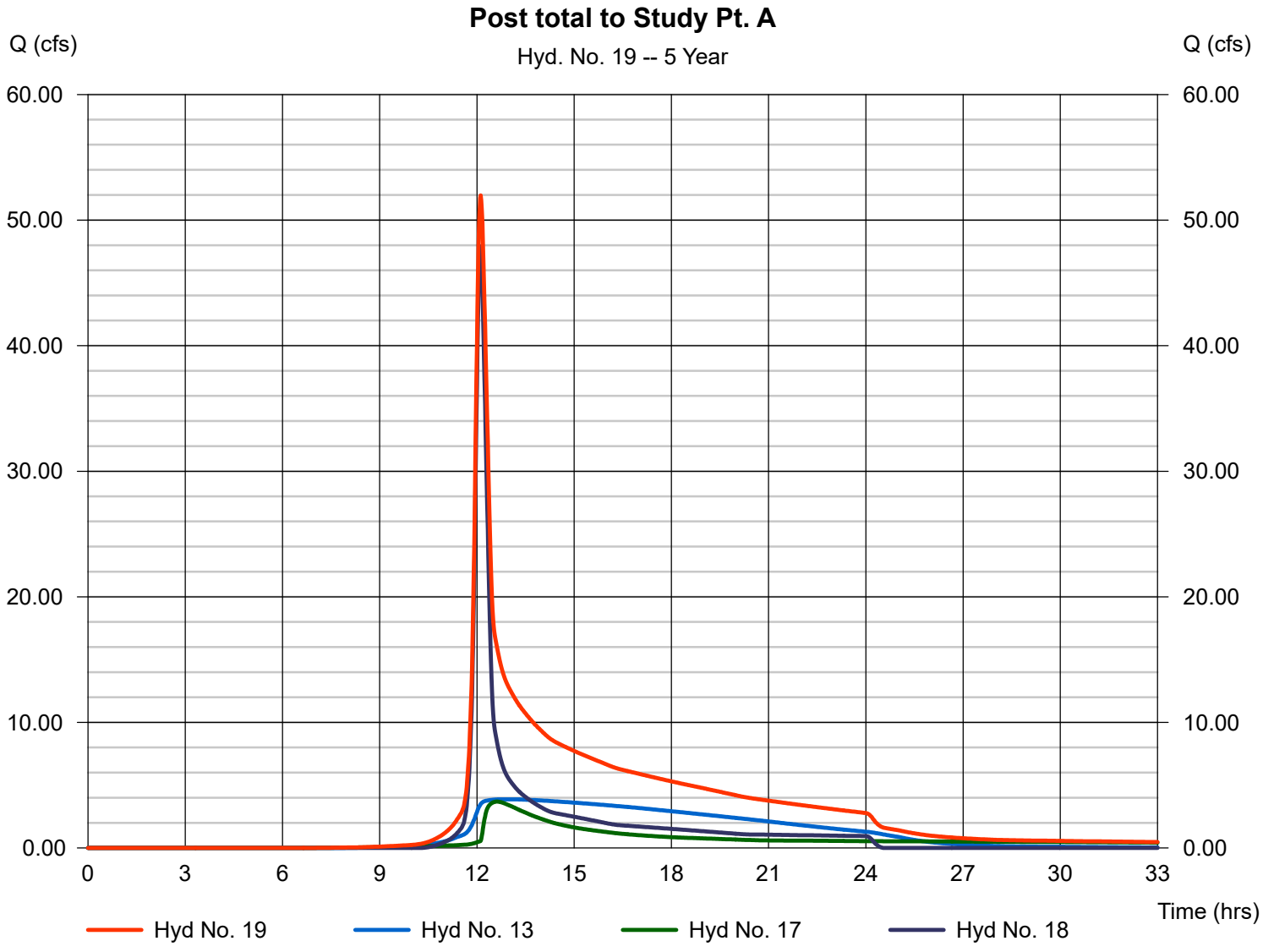
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 19

Post total to Study Pt. A

Hydrograph type	= Combine	Peak discharge	= 51.97 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 388,916 cuft
Inflow hyds.	= 13, 17, 18	Contrib. drain. area	= 24.390 ac



Hydrograph Report

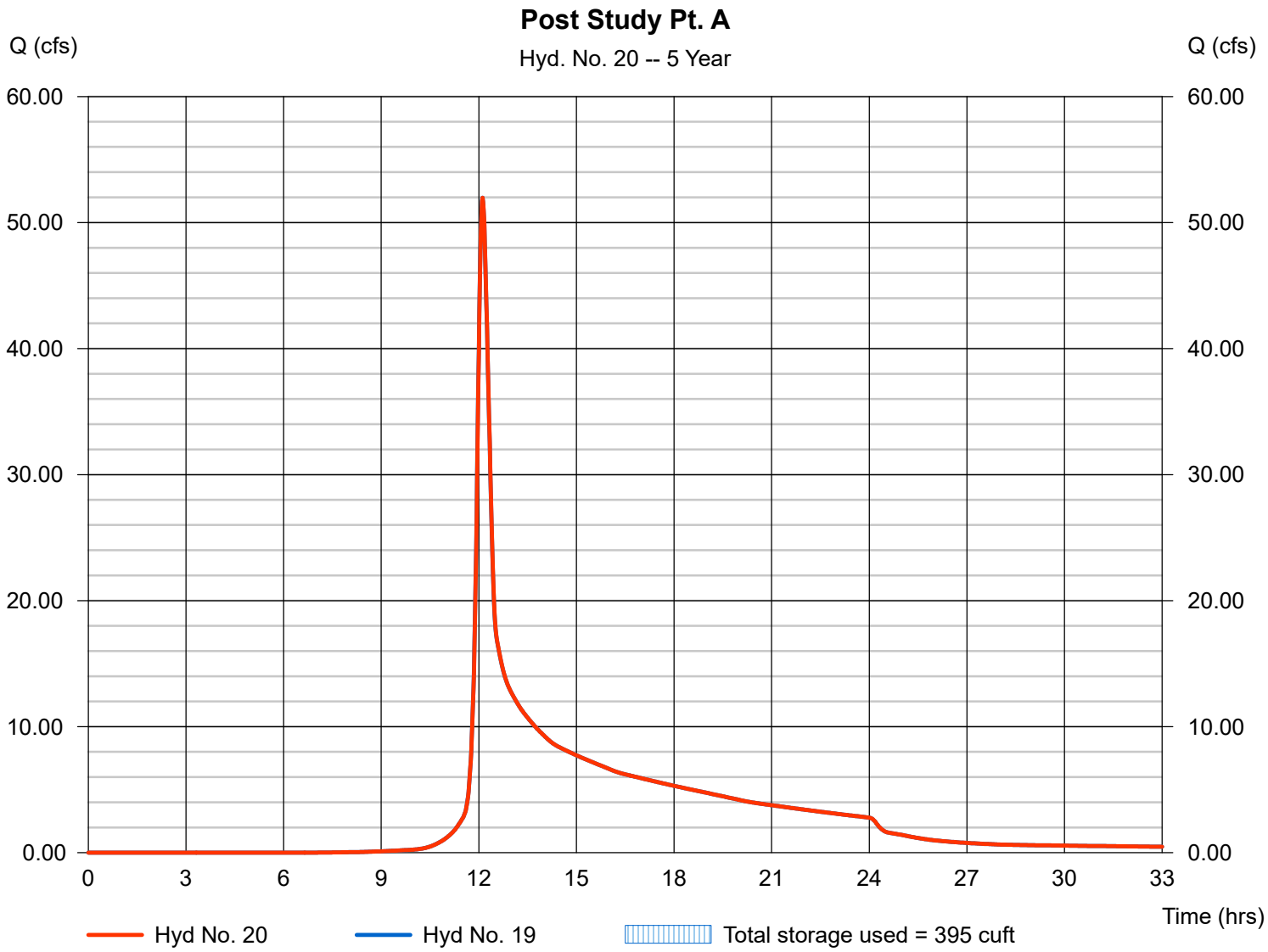
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 20

Post Study Pt. A

Hydrograph type	=	Reservoir	Peak discharge	=	51.97 cfs
Storm frequency	=	5 yrs	Time to peak	=	12.12 hrs
Time interval	=	1 min	Hyd. volume	=	388,911 cuft
Inflow hyd. No.	=	19 - Post total to Study Pt. A	Max. Elevation	=	971.35 ft
Reservoir name	=	Ex. DS Culvert at Barclay	Max. Storage	=	395 cuft

Storage Indication method used.



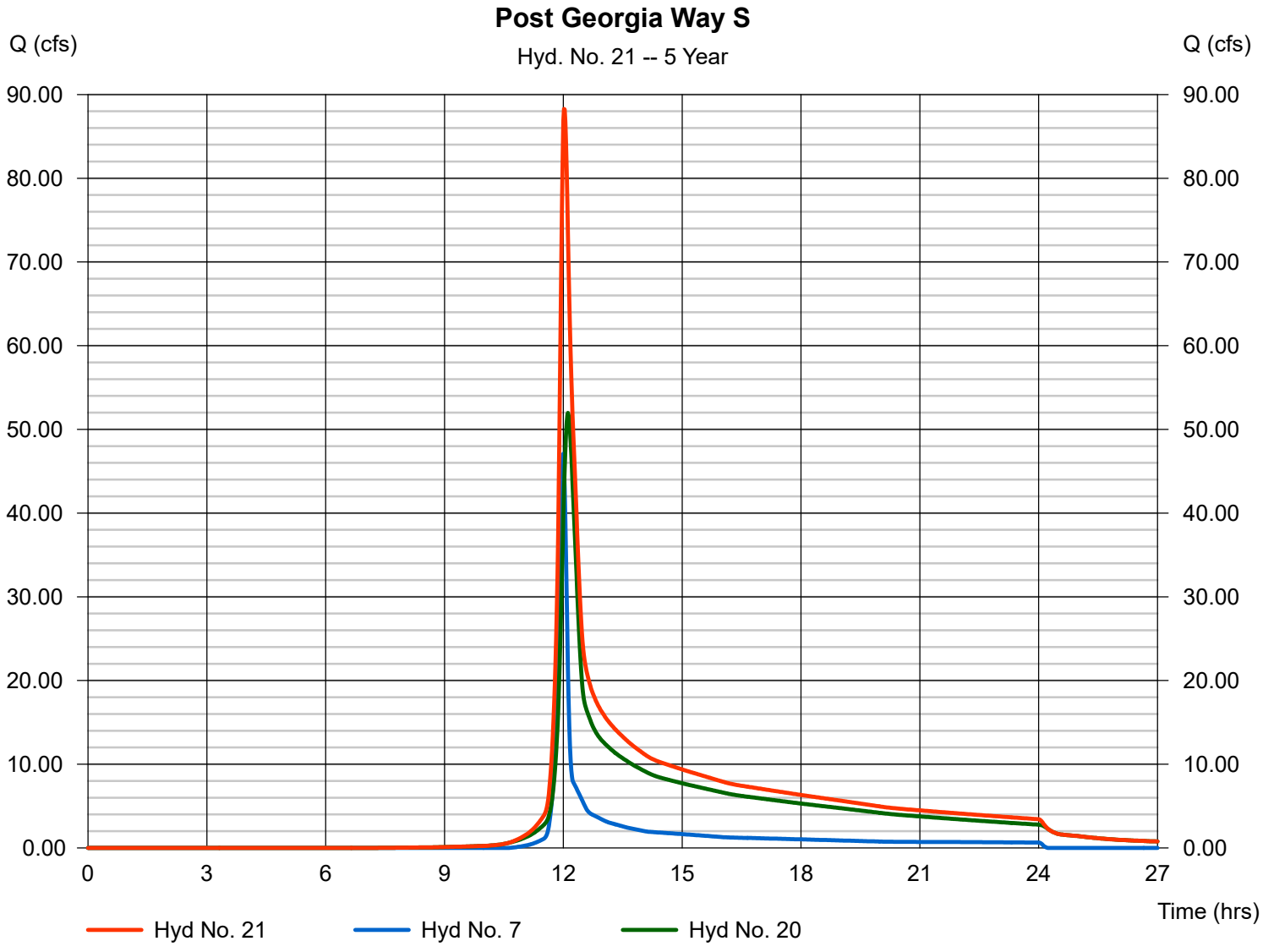
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 21

Post Georgia Way S

Hydrograph type	= Combine	Peak discharge	= 88.28 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.02 hrs
Time interval	= 1 min	Hyd. volume	= 496,501 cuft
Inflow hyds.	= 7, 20	Contrib. drain. area	= 17.800 ac



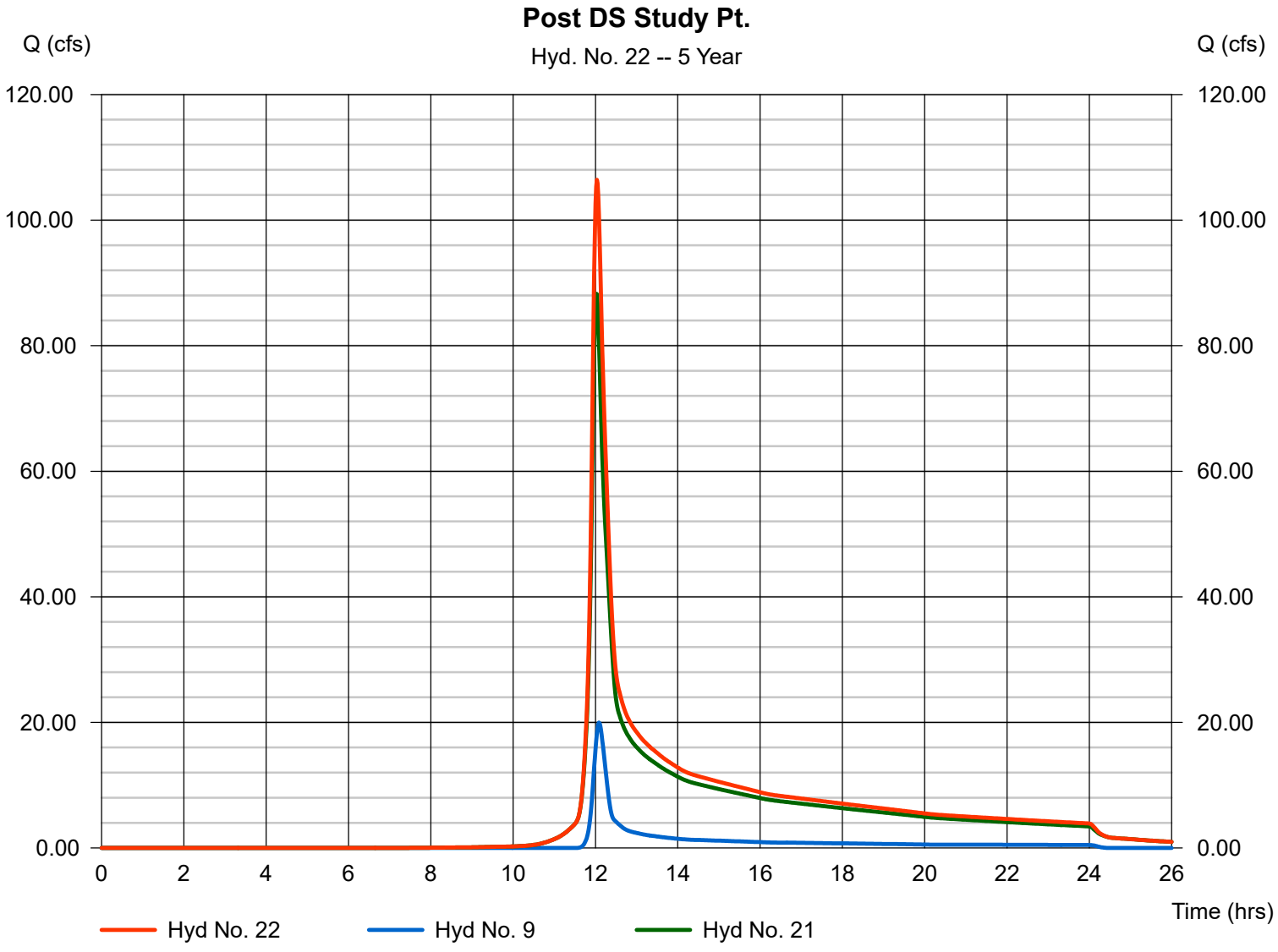
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 22

Post DS Study Pt.

Hydrograph type	=	Combine	Peak discharge	=	106.42 cfs
Storm frequency	=	5 yrs	Time to peak	=	12.03 hrs
Time interval	=	1 min	Hyd. volume	=	562,472 cuft
Inflow hyds.	=	9, 21	Contrib. drain. area	=	15.500 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

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	71.26	1	721	180,573	------	------	------	Pre Basin A2- to Ex. Detention Pond
2	Reservoir	7.416	1	754	180,534	1	988.83	114,566	Pre Ex. Pond
3	SCS Runoff	14.44	1	722	38,511	------	------	------	Pre Basin A1- site
4	SCS Runoff	60.46	1	726	201,822	------	------	------	Pre Basin A3 - bypass
5	Combine	76.36	1	725	420,868	2, 3, 4	------	------	Pre total to Study Pt. A
6	Reservoir	76.32	1	726	420,867	5	972.04	585	Pre Study Pt. A
7	SCS Runoff	61.94	1	720	140,463	------	------	------	Offsite Basin 1
8	Combine	127.85	1	721	561,331	6, 7	------	------	Pre Georgia Way S
9	SCS Runoff	28.43	1	725	89,836	------	------	------	Offsite Basin 2
10	Combine	153.93	1	722	651,166	8, 9	------	------	Pre DS Study Pt.
12	SCS Runoff	66.33	1	721	169,216	------	------	------	Post Basin A2 to Ex. Pond
13	Reservoir	6.232	1	757	169,180	12	988.62	111,178	Post Ex. Pond
14	SCS Runoff	38.66	1	723	112,258	------	------	------	Post Basin A1.1 - to prop. pond
15	SCS Runoff	1.399	1	718	2,849	------	------	------	Post Basin A1.2 - to prop. pond
16	Combine	39.42	1	722	115,108	14, 15	------	------	Post total to prop. pond
17	Reservoir	7.055	1	742	108,861	16	983.95	60,151	Prop. pond
18	SCS Runoff	62.75	1	726	209,465	------	------	------	Post Basin A3 - bypass
19	Combine	69.21	1	727	487,506	13, 17, 18	------	------	Post total to Study Pt. A
20	Reservoir	69.17	1	727	487,501	19	971.84	521	Post Study Pt. A
21	Combine	116.00	1	721	627,965	7, 20	------	------	Post Georgia Way S
22	Combine	142.00	1	722	717,801	9, 21	------	------	Post DS Study Pt.
24	Reservoir	7.404	1	742	76,343	16	984.20	62,474	Emergency Overflow

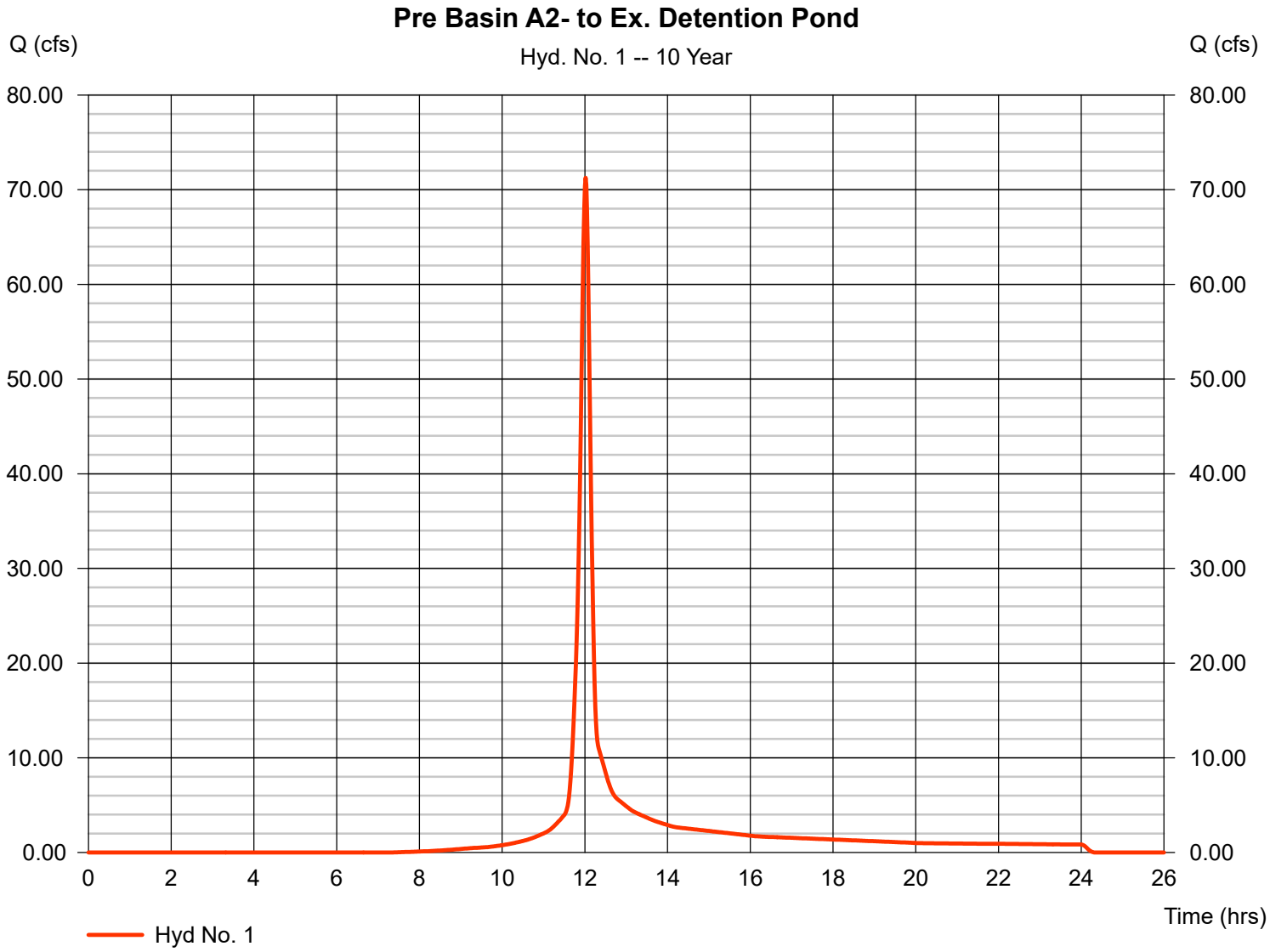
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 1

Pre Basin A2- to Ex. Detention Pond

Hydrograph type	=	SCS Runoff	Peak discharge	=	71.26 cfs
Storm frequency	=	10 yrs	Time to peak	=	12.02 hrs
Time interval	=	1 min	Hyd. volume	=	180,573 cuft
Drainage area	=	16.000 ac	Curve number	=	78
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.40 min
Total precip.	=	5.52 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

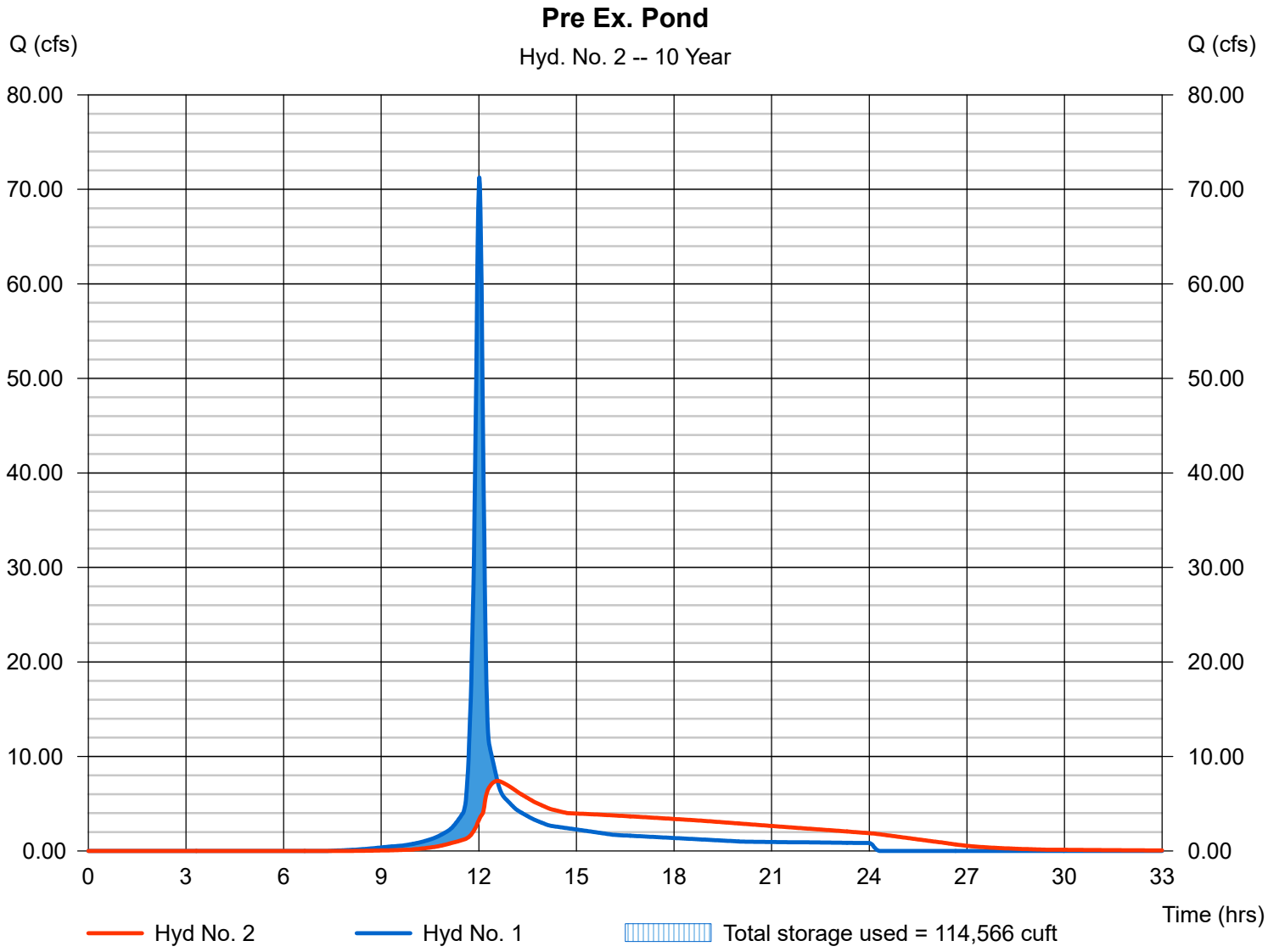
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 2

Pre Ex. Pond

Hydrograph type	=	Reservoir	Peak discharge	=	7.416 cfs
Storm frequency	=	10 yrs	Time to peak	=	12.57 hrs
Time interval	=	1 min	Hyd. volume	=	180,534 cuft
Inflow hyd. No.	=	1 - Pre Basin A2- to Ex. Detention Pond	Max. Elevation	=	988.83 ft
Reservoir name	=	Ex. Pond	Max. Storage	=	114,566 cuft

Storage Indication method used. Wet pond routing start elevation = 982.00 ft.



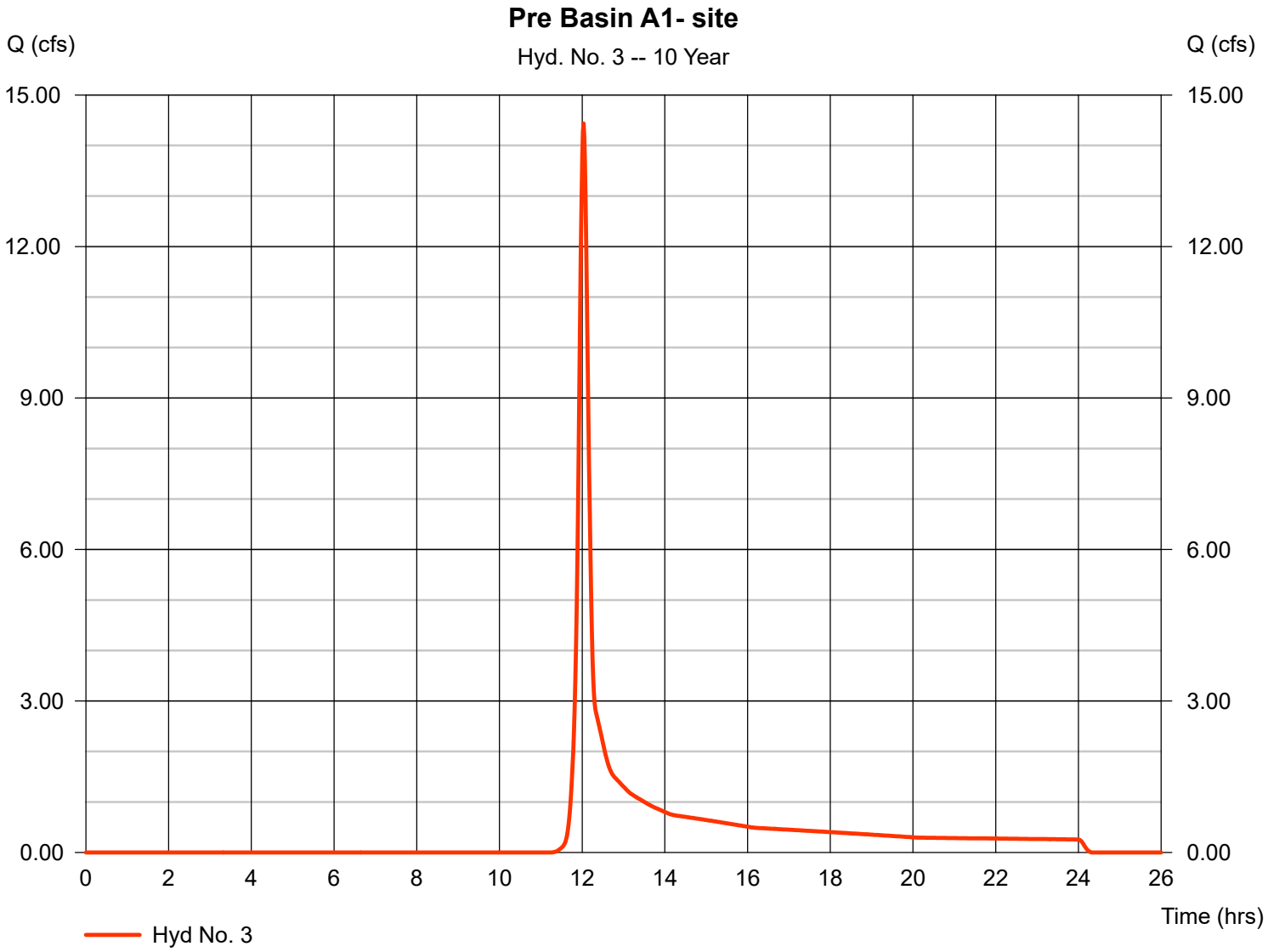
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 3

Pre Basin A1- site

Hydrograph type	=	SCS Runoff	Peak discharge	=	14.44 cfs
Storm frequency	=	10 yrs	Time to peak	=	12.03 hrs
Time interval	=	1 min	Hyd. volume	=	38,511 cuft
Drainage area	=	7.000 ac	Curve number	=	59
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.80 min
Total precip.	=	5.52 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



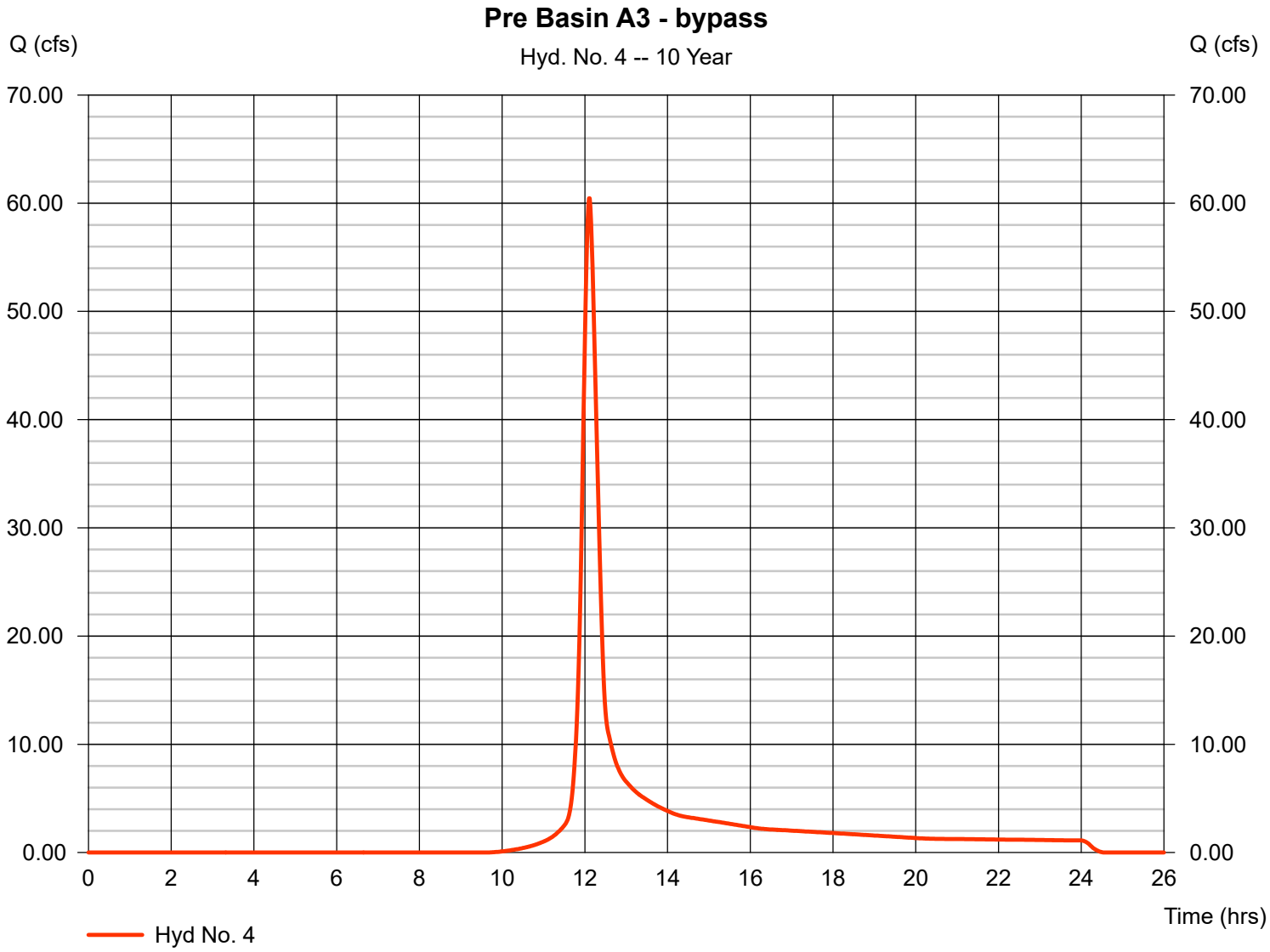
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 4

Pre Basin A3 - bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	60.46 cfs
Storm frequency	=	10 yrs	Time to peak	=	12.10 hrs
Time interval	=	1 min	Hyd. volume	=	201,822 cuft
Drainage area	=	23.500 ac	Curve number	=	69
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	21.80 min
Total precip.	=	5.52 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



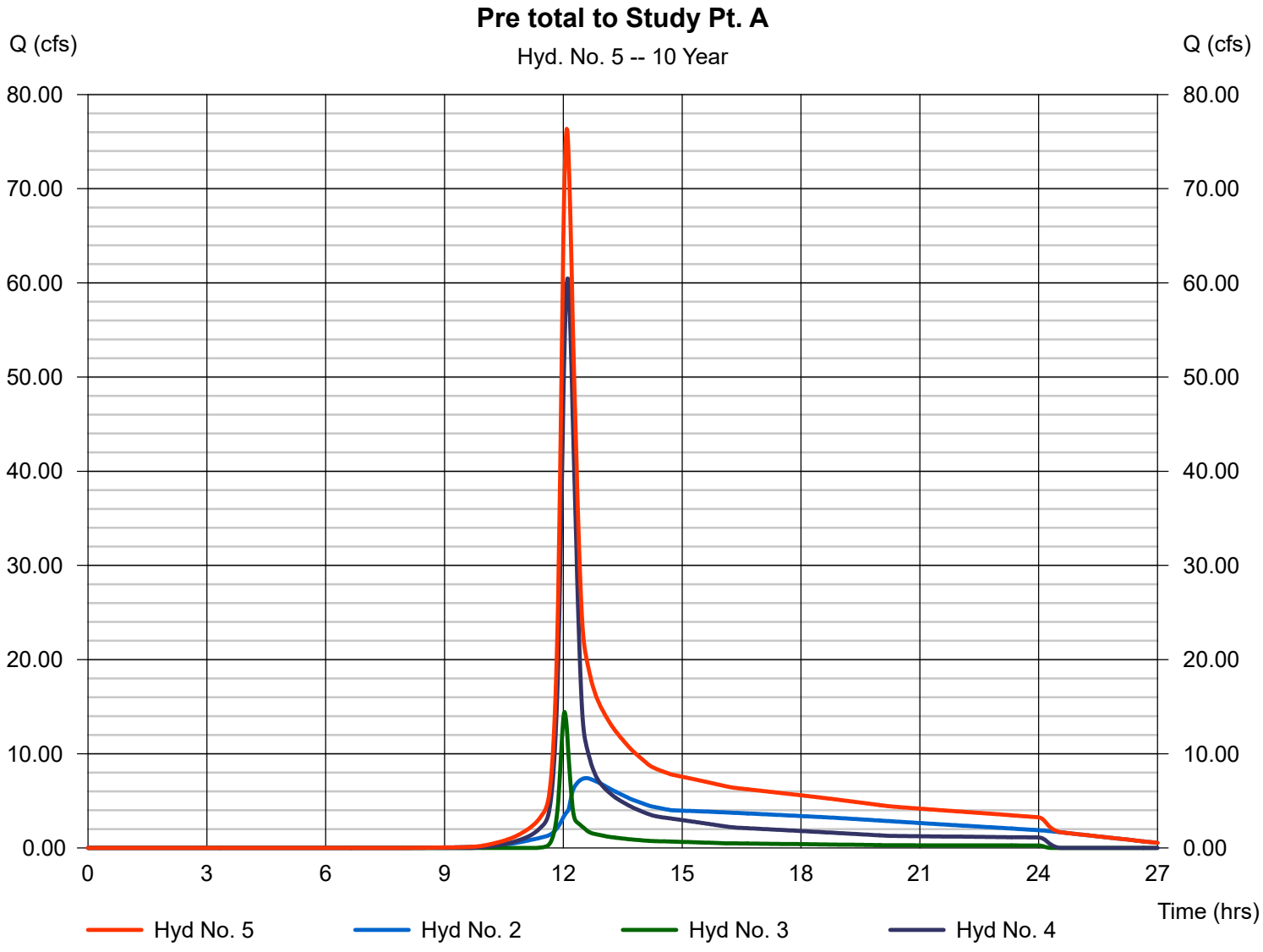
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 5

Pre total to Study Pt. A

Hydrograph type	= Combine	Peak discharge	= 76.36 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.08 hrs
Time interval	= 1 min	Hyd. volume	= 420,868 cuft
Inflow hyds.	= 2, 3, 4	Contrib. drain. area	= 30.500 ac



Hydrograph Report

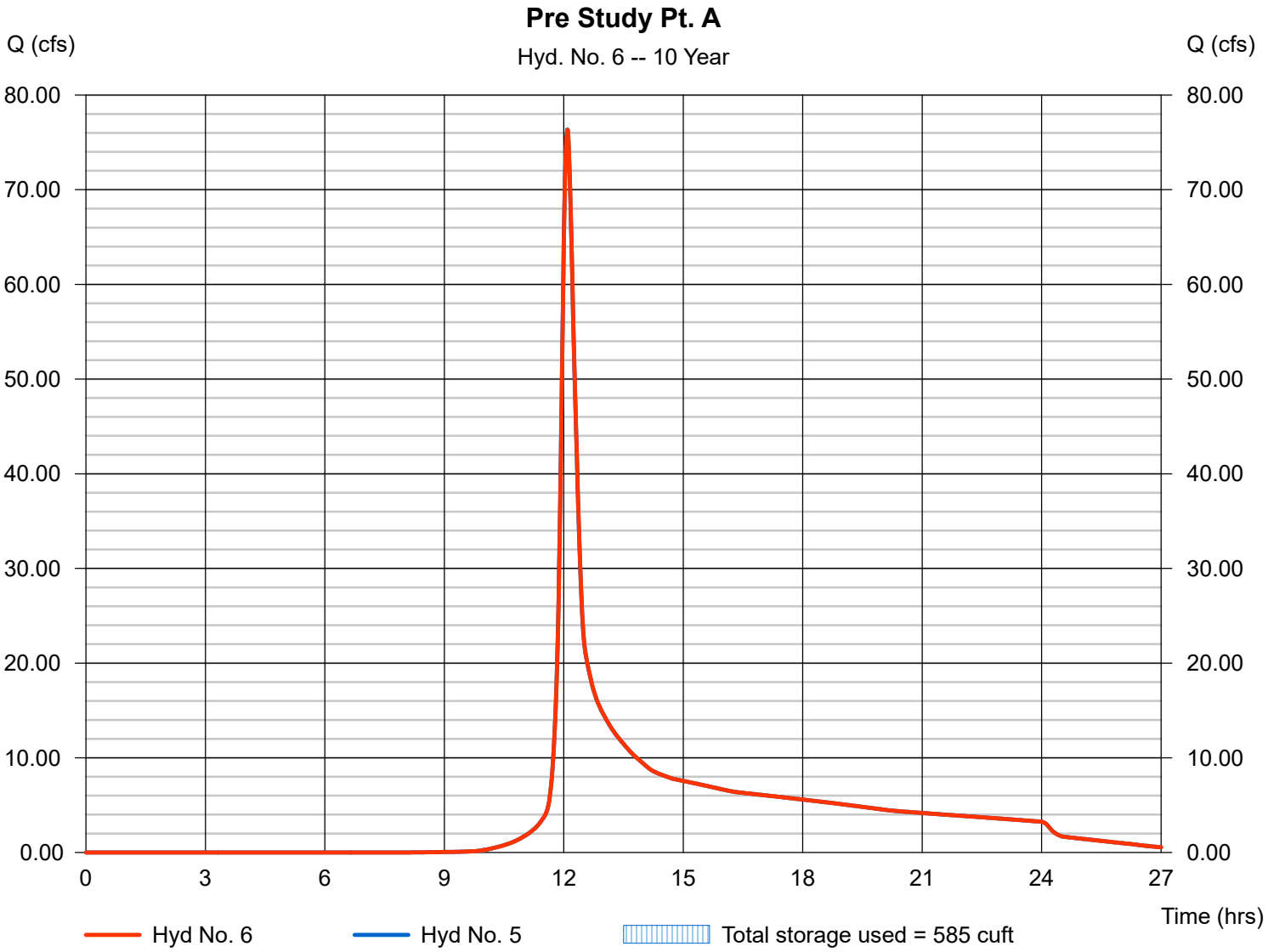
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 6

Pre Study Pt. A

Hydrograph type	=	Reservoir	Peak discharge	=	76.32 cfs
Storm frequency	=	10 yrs	Time to peak	=	12.10 hrs
Time interval	=	1 min	Hyd. volume	=	420,867 cuft
Inflow hyd. No.	=	5 - Pre total to Study Pt. A	Max. Elevation	=	972.04 ft
Reservoir name	=	Ex. DS Culvert at Barclay	Max. Storage	=	585 cuft

Storage Indication method used.



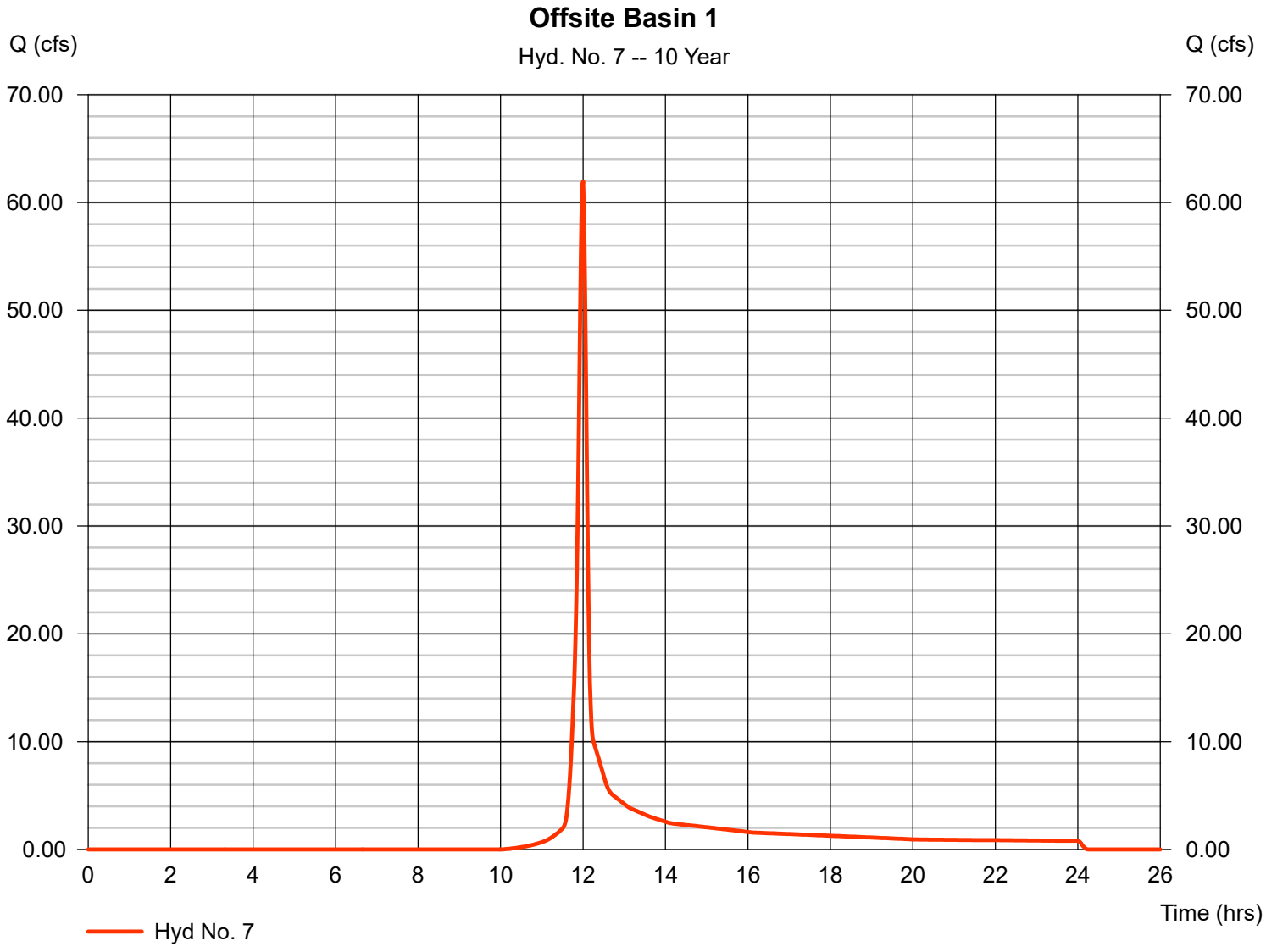
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 7

Offsite Basin 1

Hydrograph type	=	SCS Runoff	Peak discharge	=	61.94 cfs
Storm frequency	=	10 yrs	Time to peak	=	12.00 hrs
Time interval	=	1 min	Hyd. volume	=	140,463 cuft
Drainage area	=	17.800 ac	Curve number	=	67
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	8.80 min
Total precip.	=	5.52 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



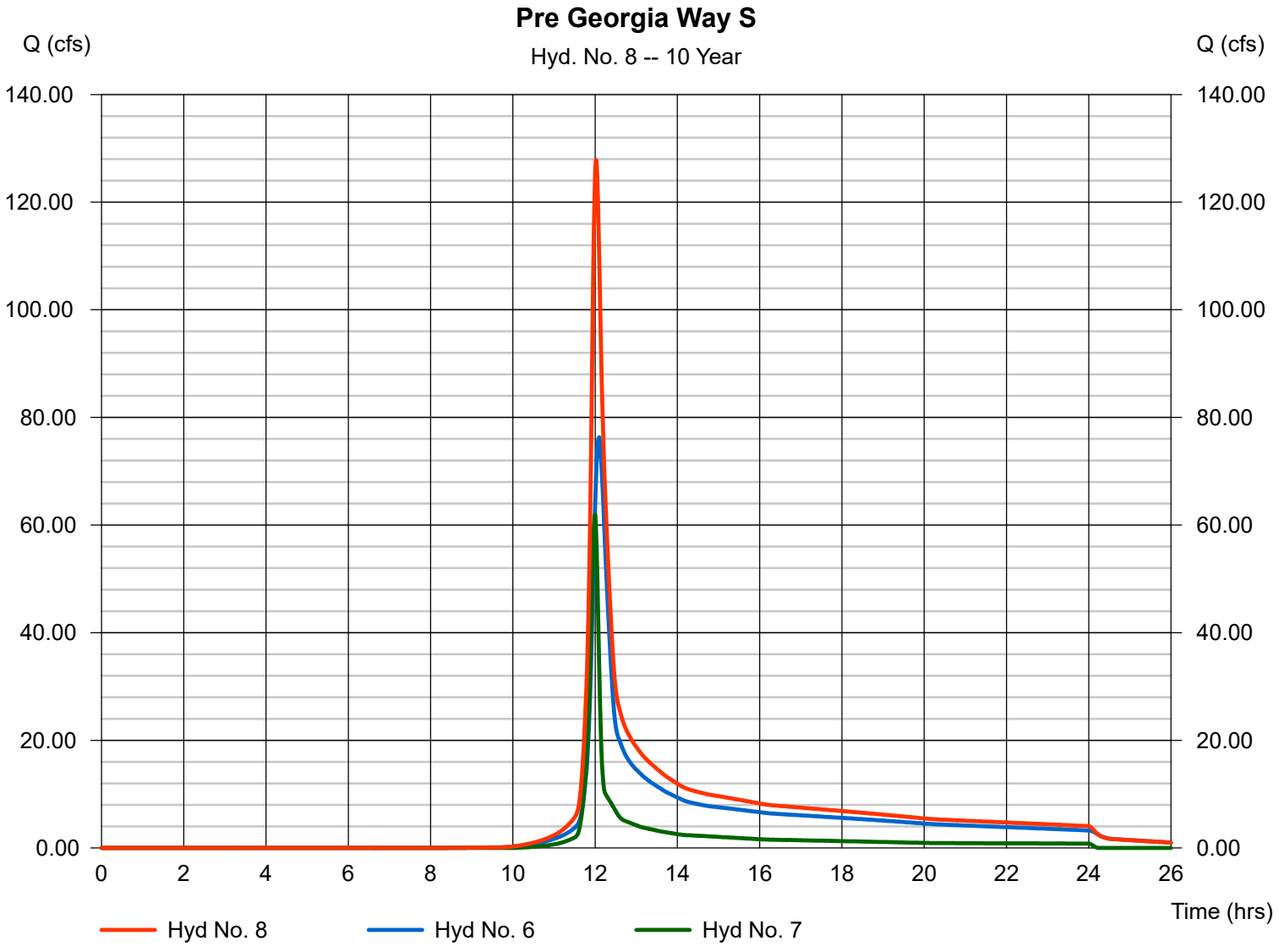
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 8

Pre Georgia Way S

Hydrograph type	= Combine	Peak discharge	= 127.85 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.02 hrs
Time interval	= 1 min	Hyd. volume	= 561,331 cuft
Inflow hyds.	= 6, 7	Contrib. drain. area	= 17.800 ac



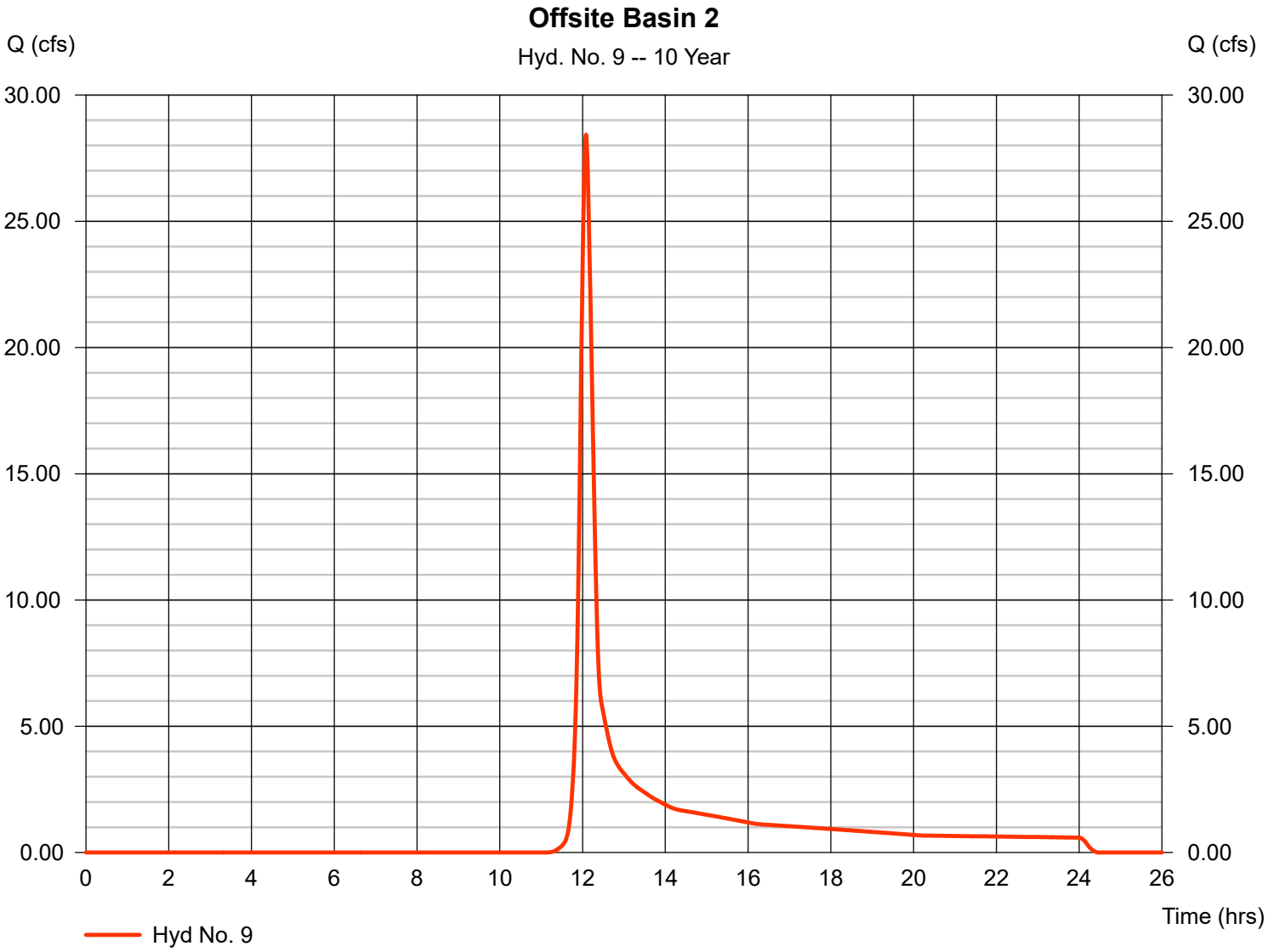
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 9

Offsite Basin 2

Hydrograph type	=	SCS Runoff	Peak discharge	=	28.43 cfs
Storm frequency	=	10 yrs	Time to peak	=	12.08 hrs
Time interval	=	1 min	Hyd. volume	=	89,836 cuft
Drainage area	=	15.500 ac	Curve number	=	60
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	17.30 min
Total precip.	=	5.52 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



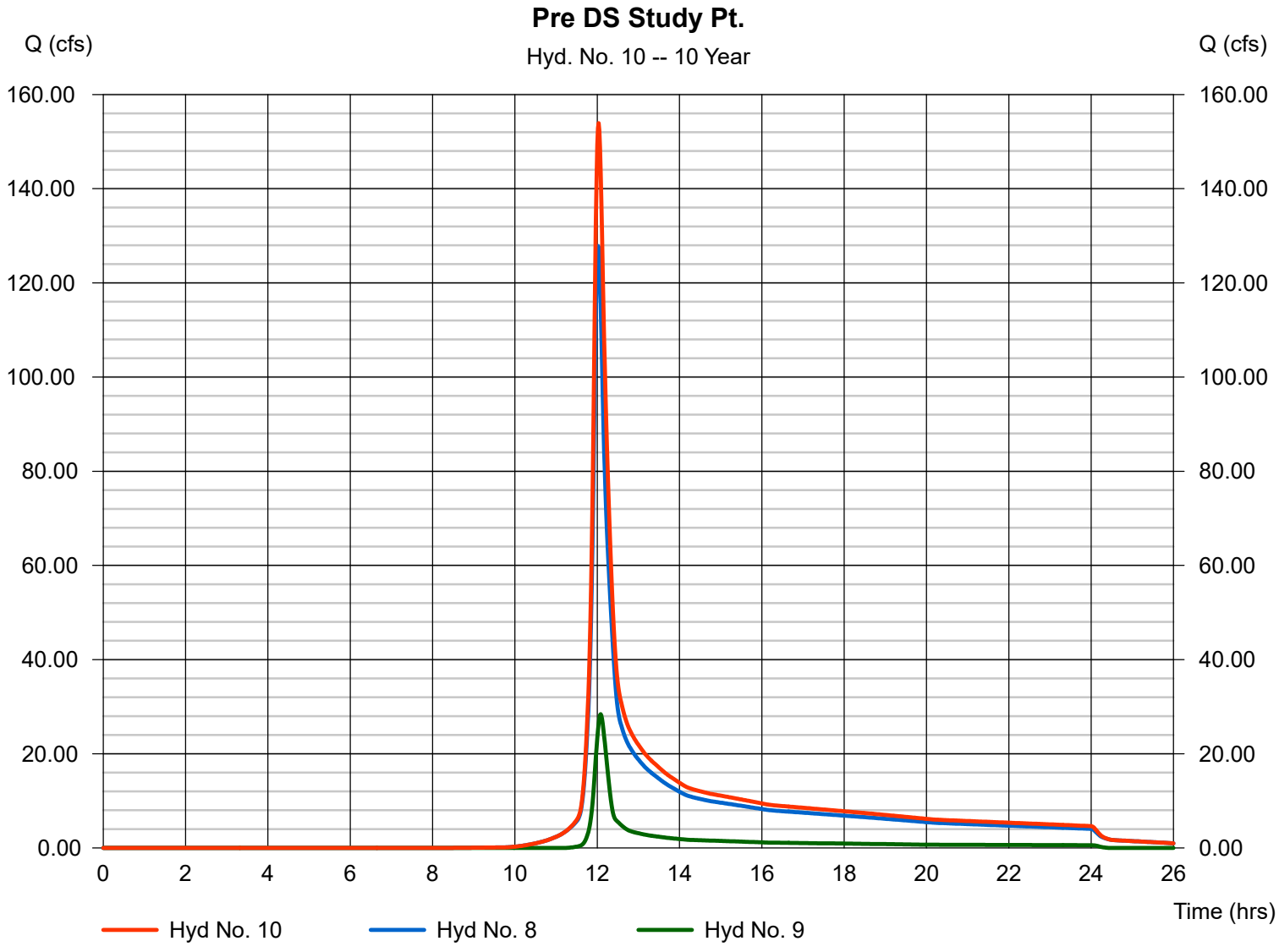
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 10

Pre DS Study Pt.

Hydrograph type	= Combine	Peak discharge	= 153.93 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.03 hrs
Time interval	= 1 min	Hyd. volume	= 651,166 cuft
Inflow hyds.	= 8, 9	Contrib. drain. area	= 15.500 ac



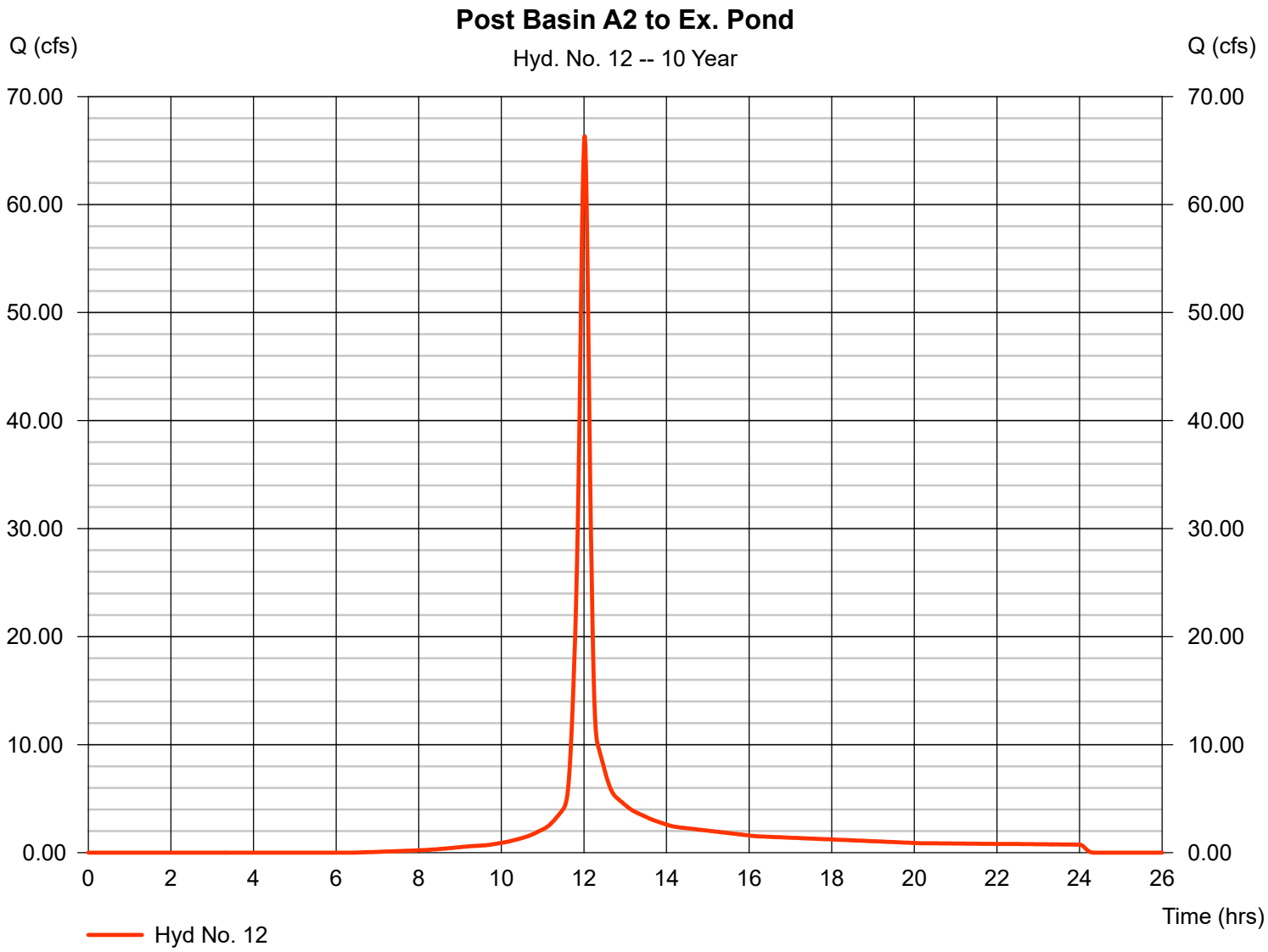
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 12

Post Basin A2 to Ex. Pond

Hydrograph type	=	SCS Runoff	Peak discharge	=	66.33 cfs
Storm frequency	=	10 yrs	Time to peak	=	12.02 hrs
Time interval	=	1 min	Hyd. volume	=	169,216 cuft
Drainage area	=	13.730 ac	Curve number	=	81
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.40 min
Total precip.	=	5.52 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

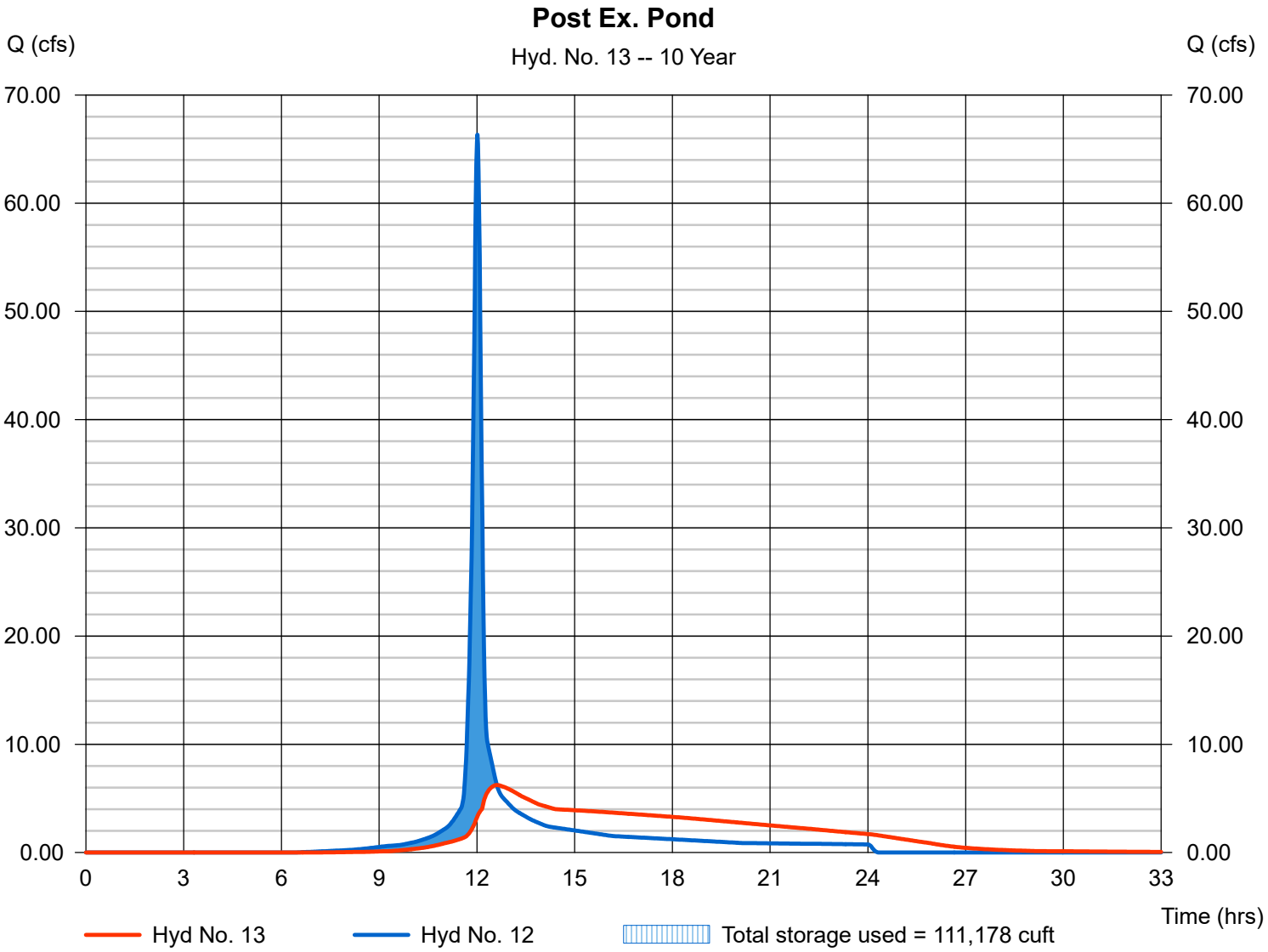
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 13

Post Ex. Pond

Hydrograph type	=	Reservoir	Peak discharge	=	6.232 cfs
Storm frequency	=	10 yrs	Time to peak	=	12.62 hrs
Time interval	=	1 min	Hyd. volume	=	169,180 cuft
Inflow hyd. No.	=	12 - Post Basin A2 to Ex. Pond	Max. Elevation	=	988.62 ft
Reservoir name	=	Ex. Pond	Max. Storage	=	111,178 cuft

Storage Indication method used. Wet pond routing start elevation = 982.00 ft.



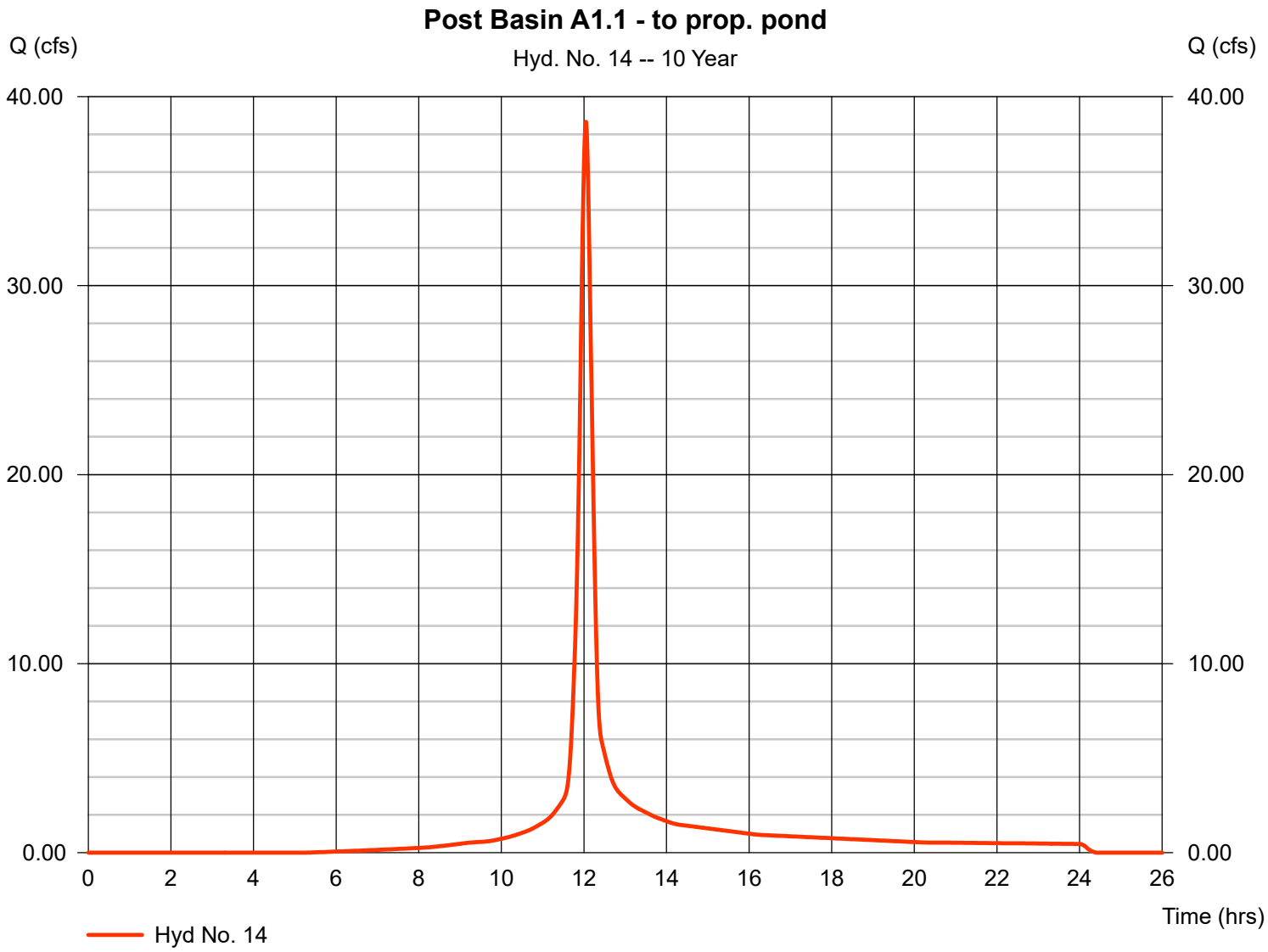
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 14

Post Basin A1.1 - to prop. pond

Hydrograph type	=	SCS Runoff	Peak discharge	=	38.66 cfs
Storm frequency	=	10 yrs	Time to peak	=	12.05 hrs
Time interval	=	1 min	Hyd. volume	=	112,258 cuft
Drainage area	=	7.930 ac	Curve number	=	85
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	16.30 min
Total precip.	=	5.52 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



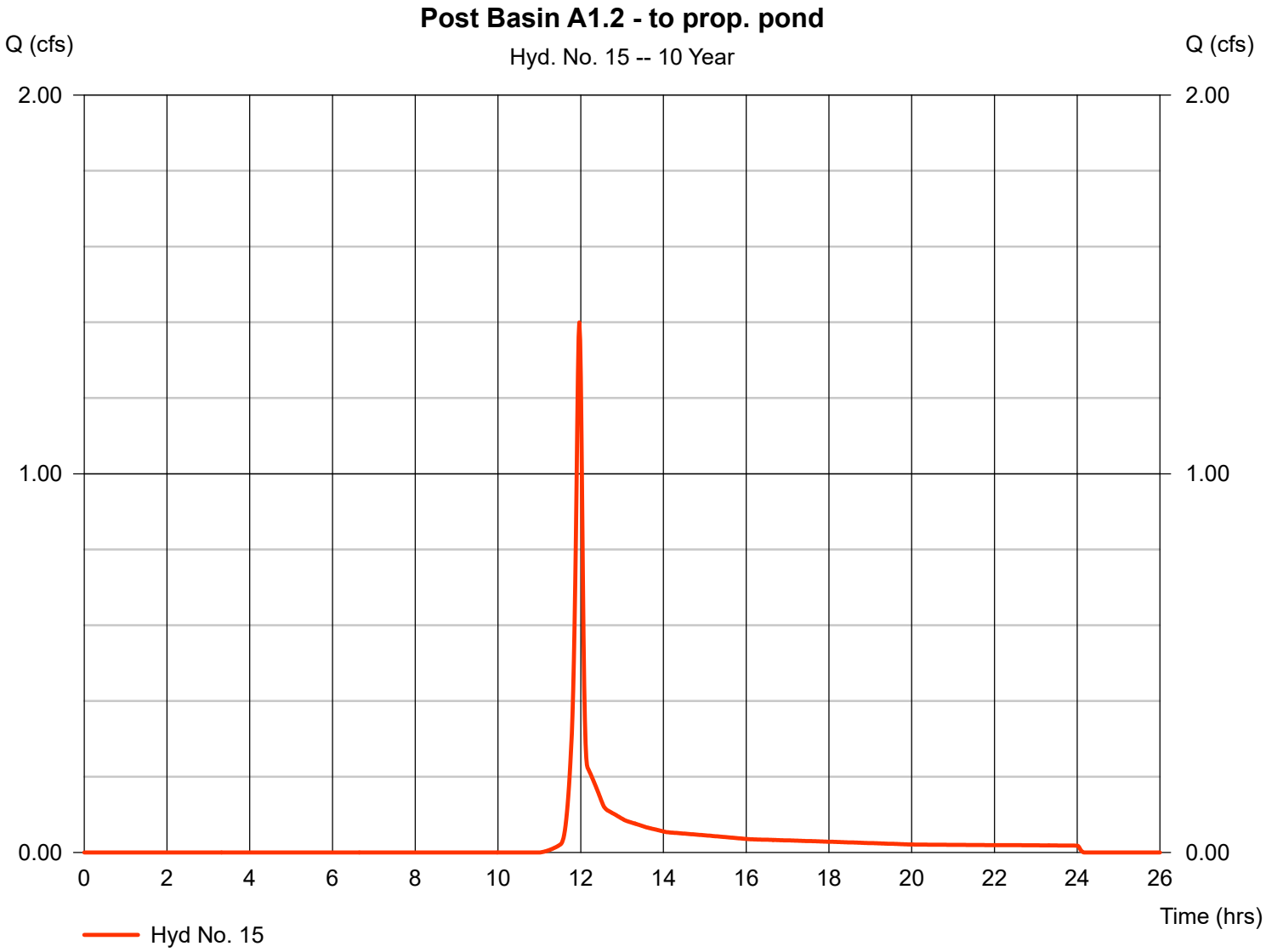
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 15

Post Basin A1.2 - to prop. pond

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.399 cfs
Storm frequency	=	10 yrs	Time to peak	=	11.97 hrs
Time interval	=	1 min	Hyd. volume	=	2,849 cuft
Drainage area	=	0.450 ac	Curve number	=	61
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	5.00 min
Total precip.	=	5.52 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



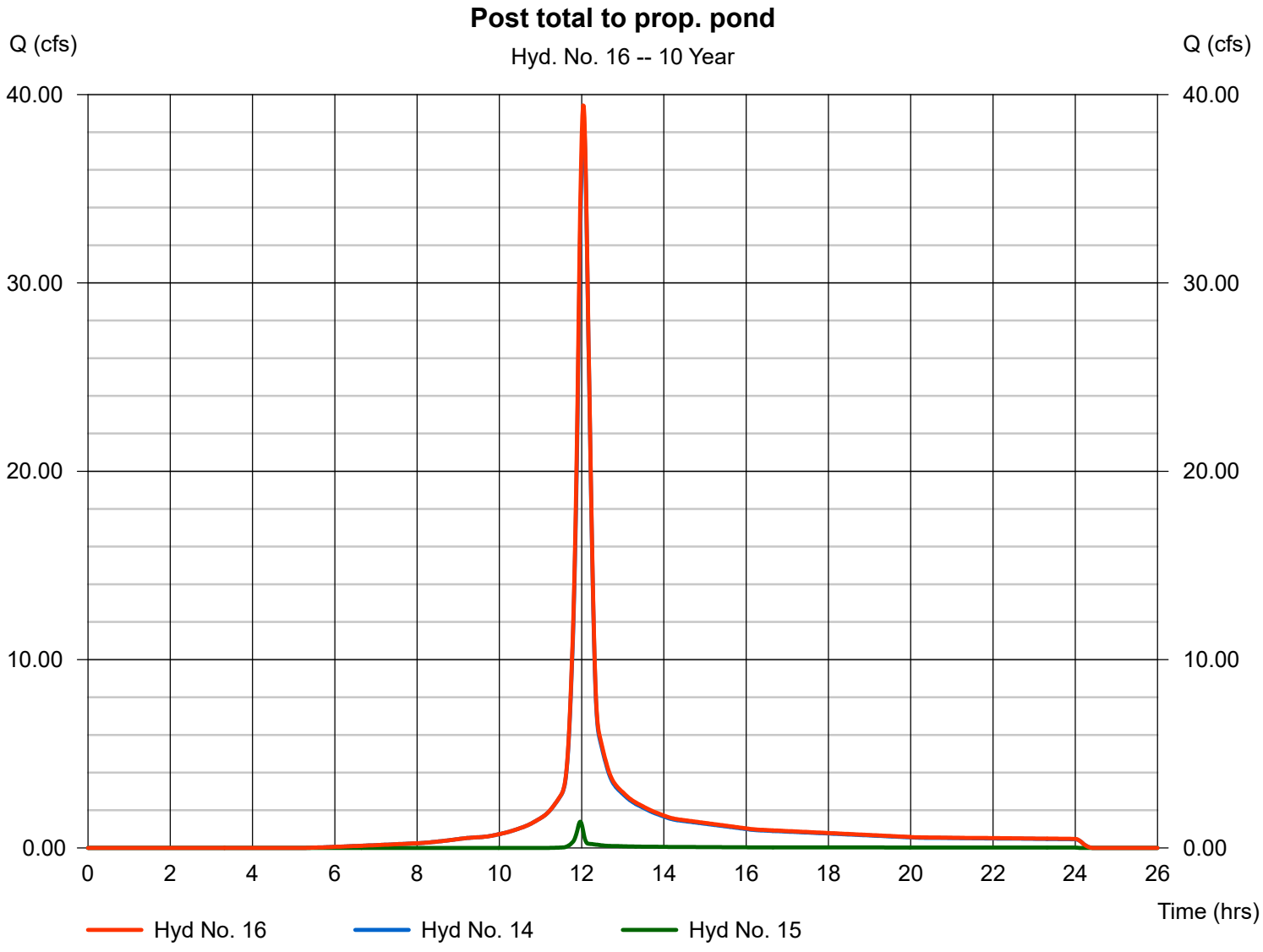
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 16

Post total to prop. pond

Hydrograph type	= Combine	Peak discharge	= 39.42 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.03 hrs
Time interval	= 1 min	Hyd. volume	= 115,108 cuft
Inflow hyds.	= 14, 15	Contrib. drain. area	= 8.380 ac



Hydrograph Report

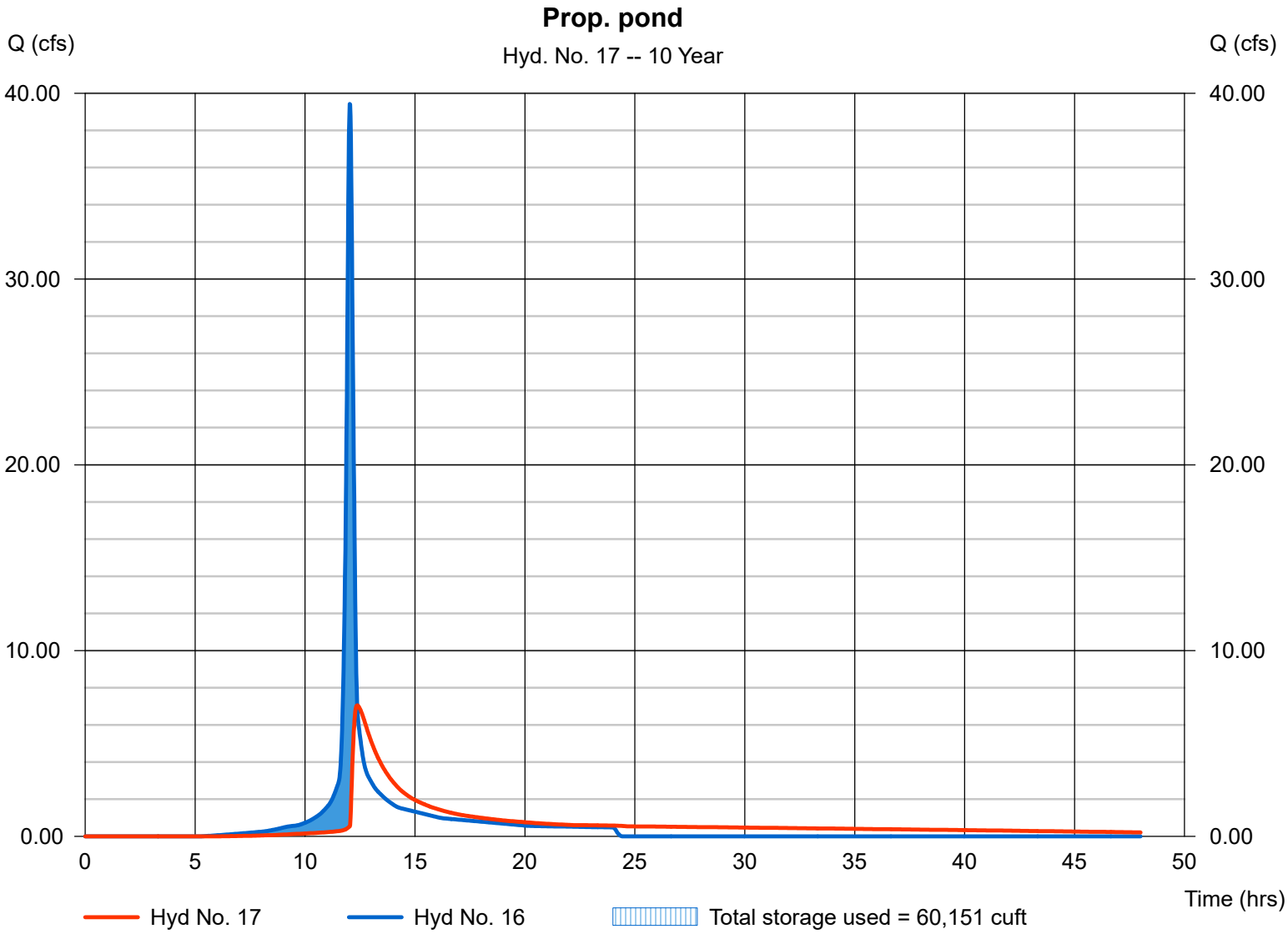
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 17

Prop. pond

Hydrograph type	=	Reservoir	Peak discharge	=	7.055 cfs
Storm frequency	=	10 yrs	Time to peak	=	12.37 hrs
Time interval	=	1 min	Hyd. volume	=	108,861 cuft
Inflow hyd. No.	=	16 - Post total to prop. pond	Max. Elevation	=	983.95 ft
Reservoir name	=	Stormwater Pond	Max. Storage	=	60,151 cuft

Storage Indication method used.



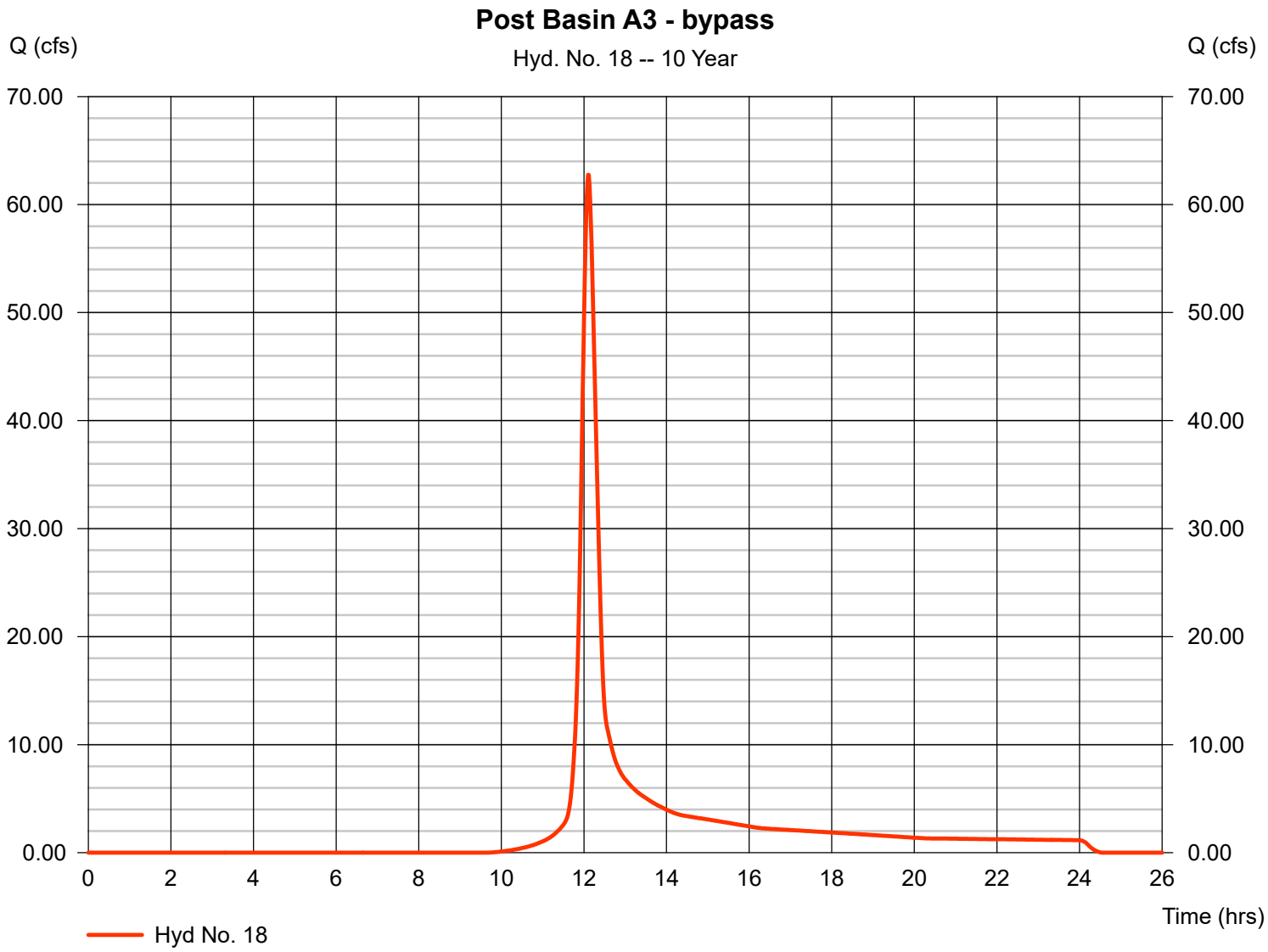
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 18

Post Basin A3 - bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	62.75 cfs
Storm frequency	=	10 yrs	Time to peak	=	12.10 hrs
Time interval	=	1 min	Hyd. volume	=	209,465 cuft
Drainage area	=	24.390 ac	Curve number	=	69
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	21.80 min
Total precip.	=	5.52 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



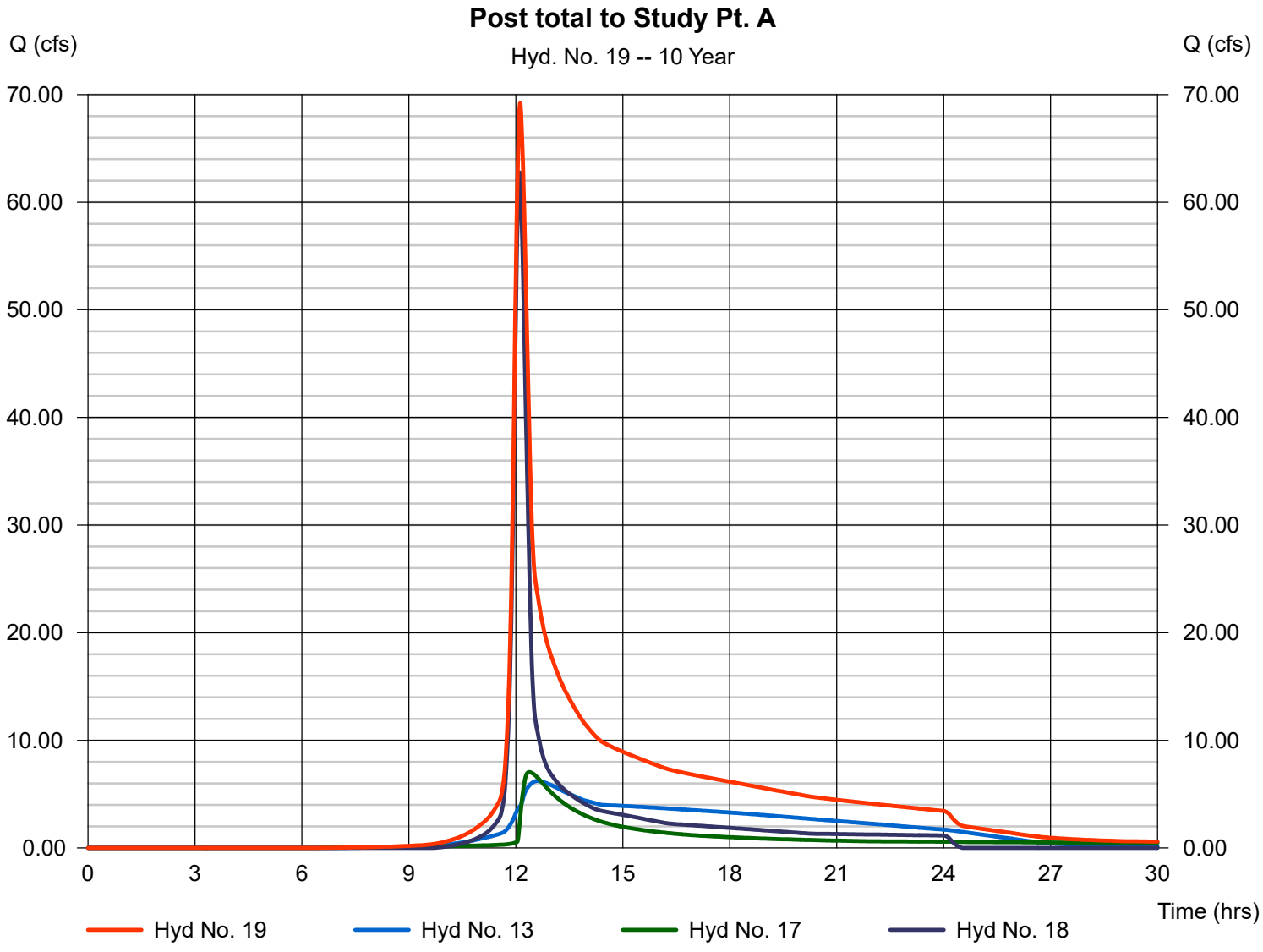
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 19

Post total to Study Pt. A

Hydrograph type	= Combine	Peak discharge	= 69.21 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.12 hrs
Time interval	= 1 min	Hyd. volume	= 487,506 cuft
Inflow hyds.	= 13, 17, 18	Contrib. drain. area	= 24.390 ac



Hydrograph Report

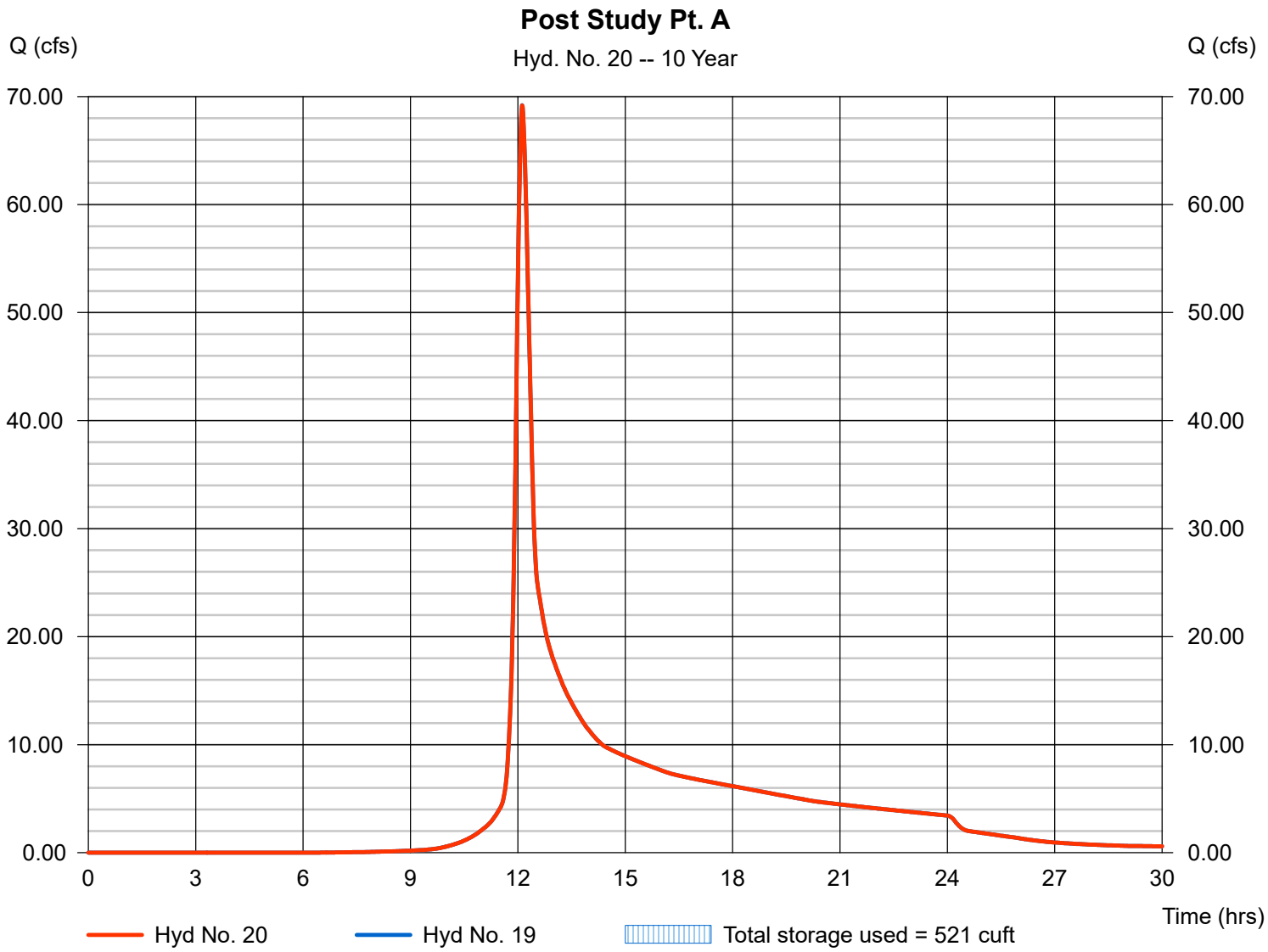
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 20

Post Study Pt. A

Hydrograph type	=	Reservoir	Peak discharge	=	69.17 cfs
Storm frequency	=	10 yrs	Time to peak	=	12.12 hrs
Time interval	=	1 min	Hyd. volume	=	487,501 cuft
Inflow hyd. No.	=	19 - Post total to Study Pt. A	Max. Elevation	=	971.84 ft
Reservoir name	=	Ex. DS Culvert at Barclay	Max. Storage	=	521 cuft

Storage Indication method used.



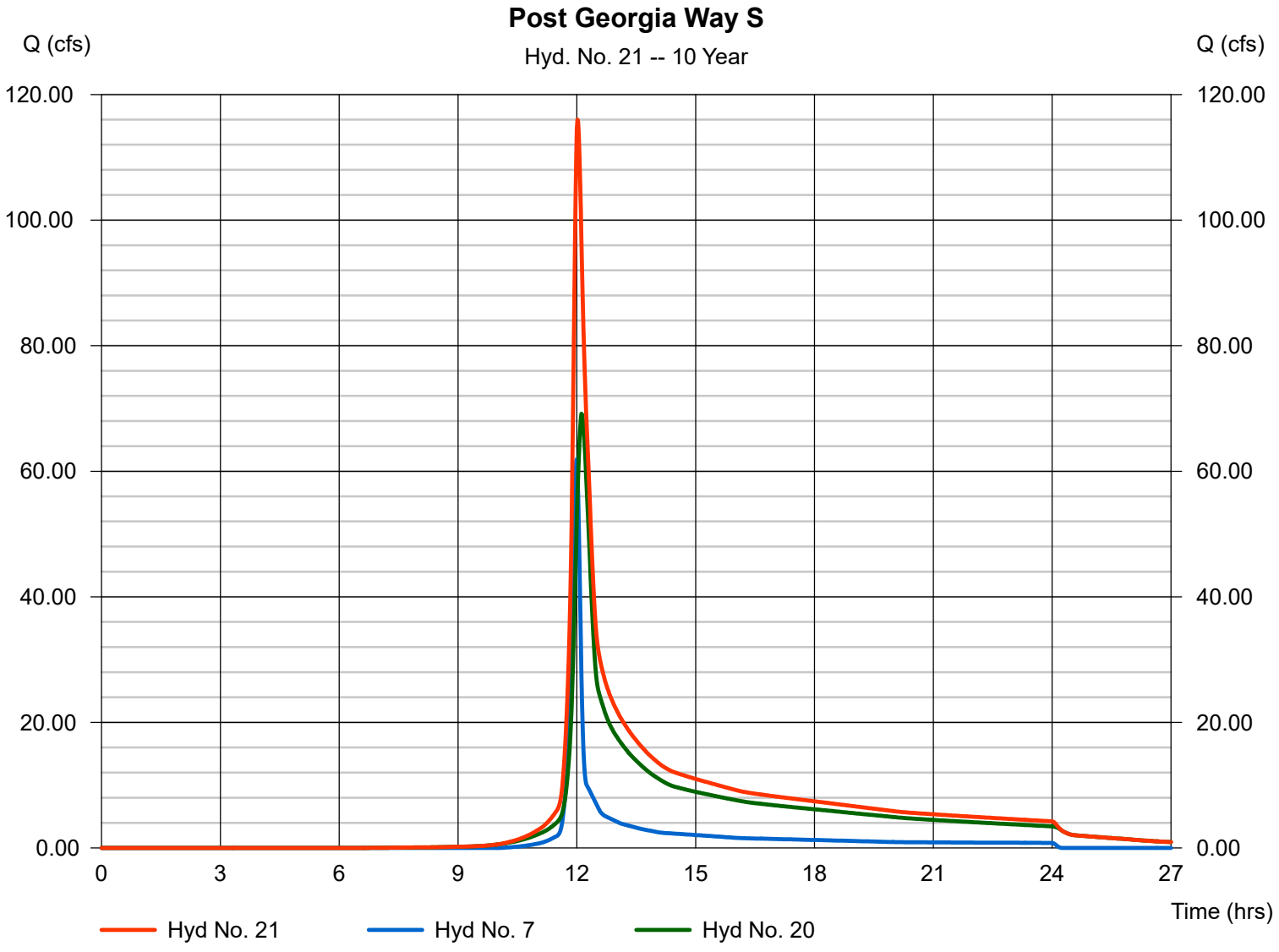
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 21

Post Georgia Way S

Hydrograph type	= Combine	Peak discharge	= 116.00 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.02 hrs
Time interval	= 1 min	Hyd. volume	= 627,965 cuft
Inflow hyds.	= 7, 20	Contrib. drain. area	= 17.800 ac



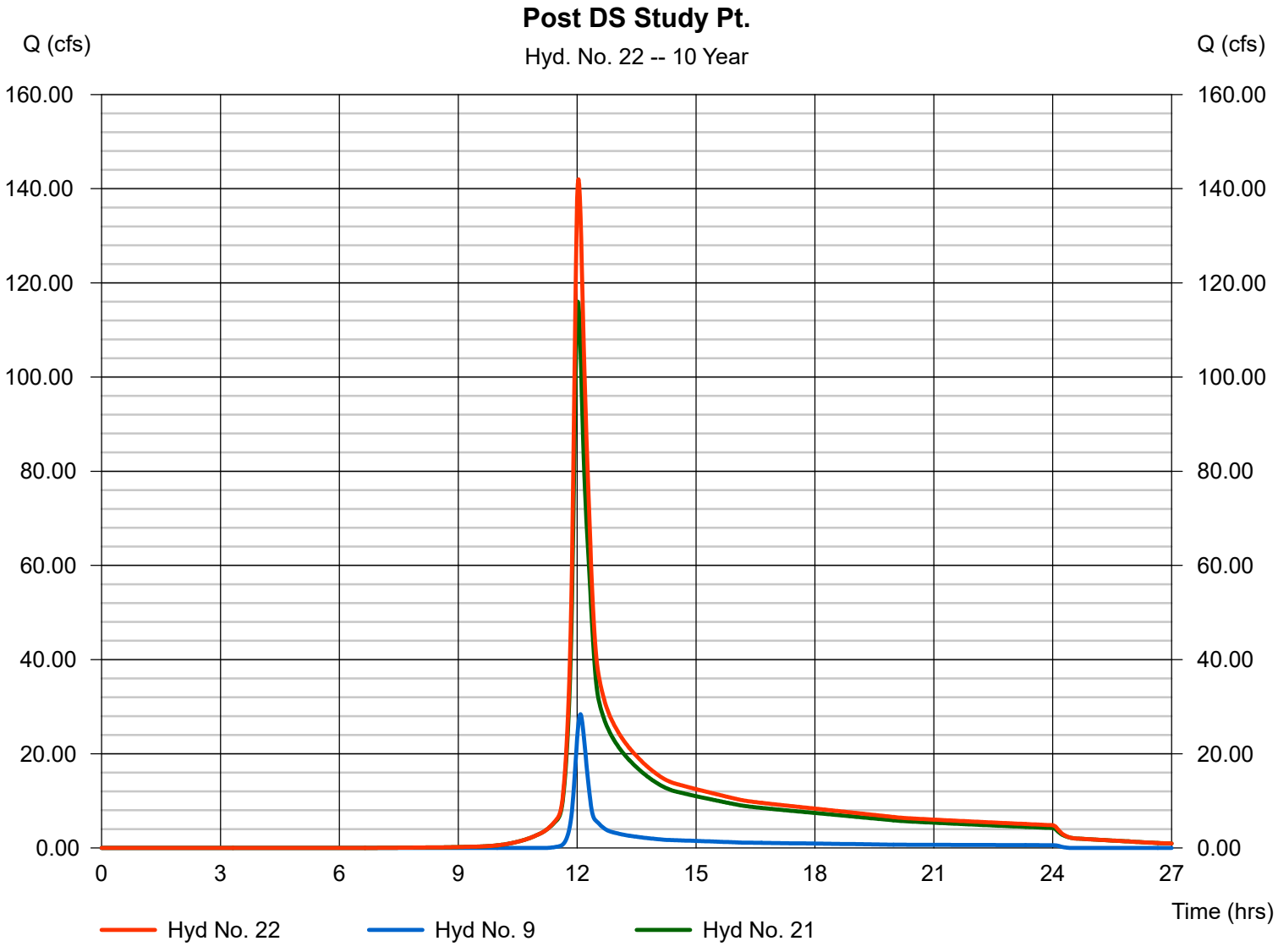
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 22

Post DS Study Pt.

Hydrograph type	= Combine	Peak discharge	= 142.00 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.03 hrs
Time interval	= 1 min	Hyd. volume	= 717,801 cuft
Inflow hyds.	= 9, 21	Contrib. drain. area	= 15.500 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

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	89.87	1	721	229,032	------	------	------	Pre Basin A2- to Ex. Detention Pond
2	Reservoir	15.85	1	737	228,987	1	989.94	132,465	Pre Ex. Pond
3	SCS Runoff	20.74	1	722	53,830	------	------	------	Pre Basin A1- site
4	SCS Runoff	80.62	1	726	266,326	------	------	------	Pre Basin A3 - bypass
5	Combine	106.07	1	726	549,143	2, 3, 4	------	------	Pre total to Study Pt. A
6	Reservoir	105.91	1	727	549,143	5	972.91	1,191	Pre Study Pt. A
7	SCS Runoff	82.75	1	720	187,228	------	------	------	Offsite Basin 1
8	Combine	171.26	1	721	736,371	6, 7	------	------	Pre Georgia Way S
9	SCS Runoff	40.67	1	725	124,725	------	------	------	Offsite Basin 2
10	Combine	208.88	1	722	861,097	8, 9	------	------	Pre DS Study Pt.
12	SCS Runoff	82.48	1	721	212,122	------	------	------	Post Basin A2 to Ex. Pond
13	Reservoir	13.03	1	738	212,080	12	989.61	127,201	Post Ex. Pond
14	SCS Runoff	47.31	1	723	138,645	------	------	------	Post Basin A1.1 - to prop. pond
15	SCS Runoff	1.952	1	718	3,930	------	------	------	Post Basin A1.2 - to prop. pond
16	Combine	48.43	1	722	142,576	14, 15	------	------	Post total to prop. pond
17	Reservoir	12.41	1	739	136,016	16	985.17	71,482	Prop. pond
18	SCS Runoff	83.67	1	726	276,412	------	------	------	Post Basin A3 - bypass
19	Combine	99.53	1	728	624,509	13, 17, 18	------	------	Post total to Study Pt. A
20	Reservoir	99.39	1	728	624,504	19	972.70	1,045	Post Study Pt. A
21	Combine	155.65	1	721	811,731	7, 20	------	------	Post Georgia Way S
22	Combine	192.97	1	722	936,456	9, 21	------	------	Post DS Study Pt.
24	Reservoir	13.09	1	738	103,807	16	985.45	74,133	Emergency Overflow

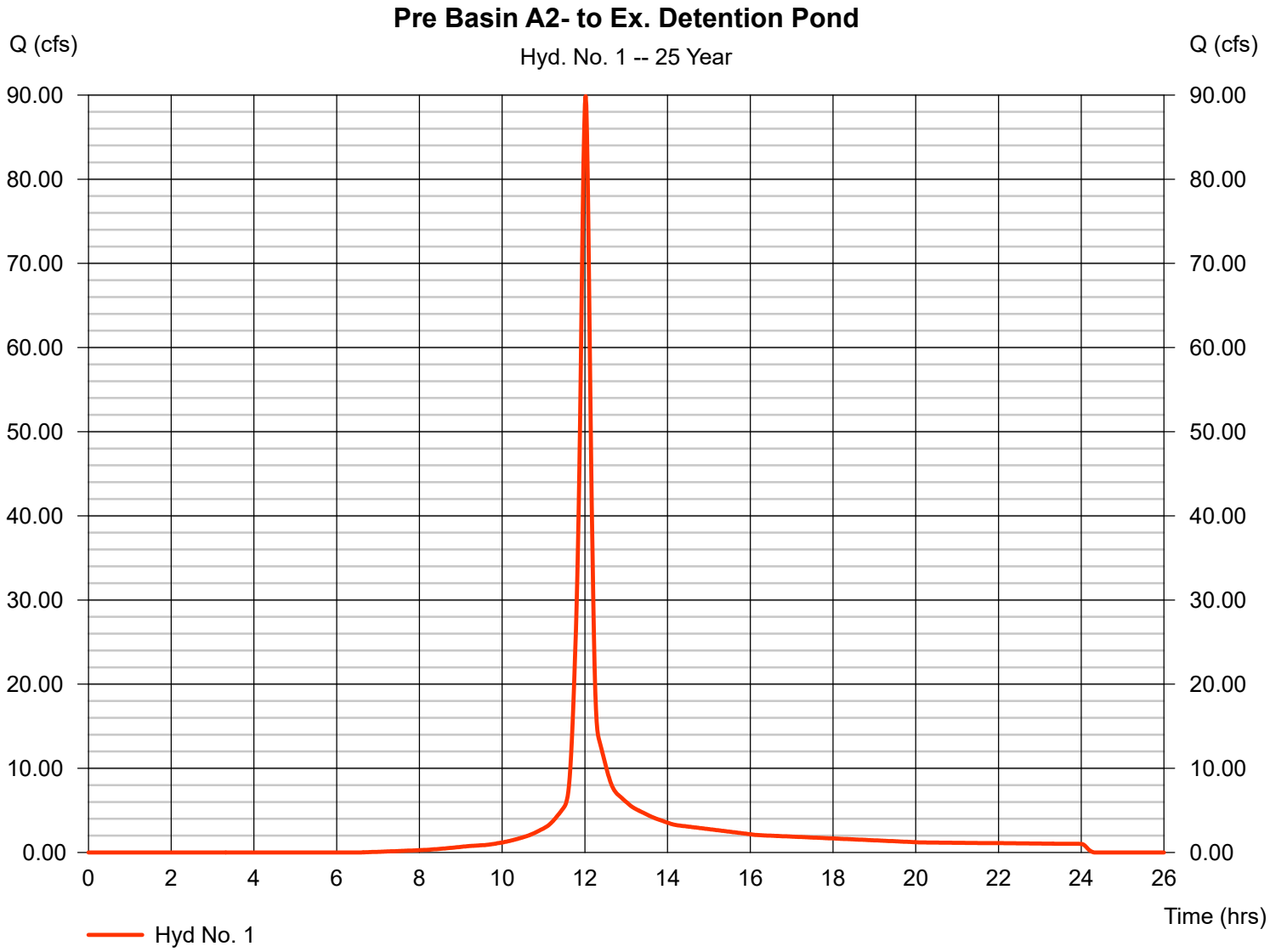
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 1

Pre Basin A2- to Ex. Detention Pond

Hydrograph type	=	SCS Runoff	Peak discharge	=	89.87 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.02 hrs
Time interval	=	1 min	Hyd. volume	=	229,032 cuft
Drainage area	=	16.000 ac	Curve number	=	78
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.40 min
Total precip.	=	6.48 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

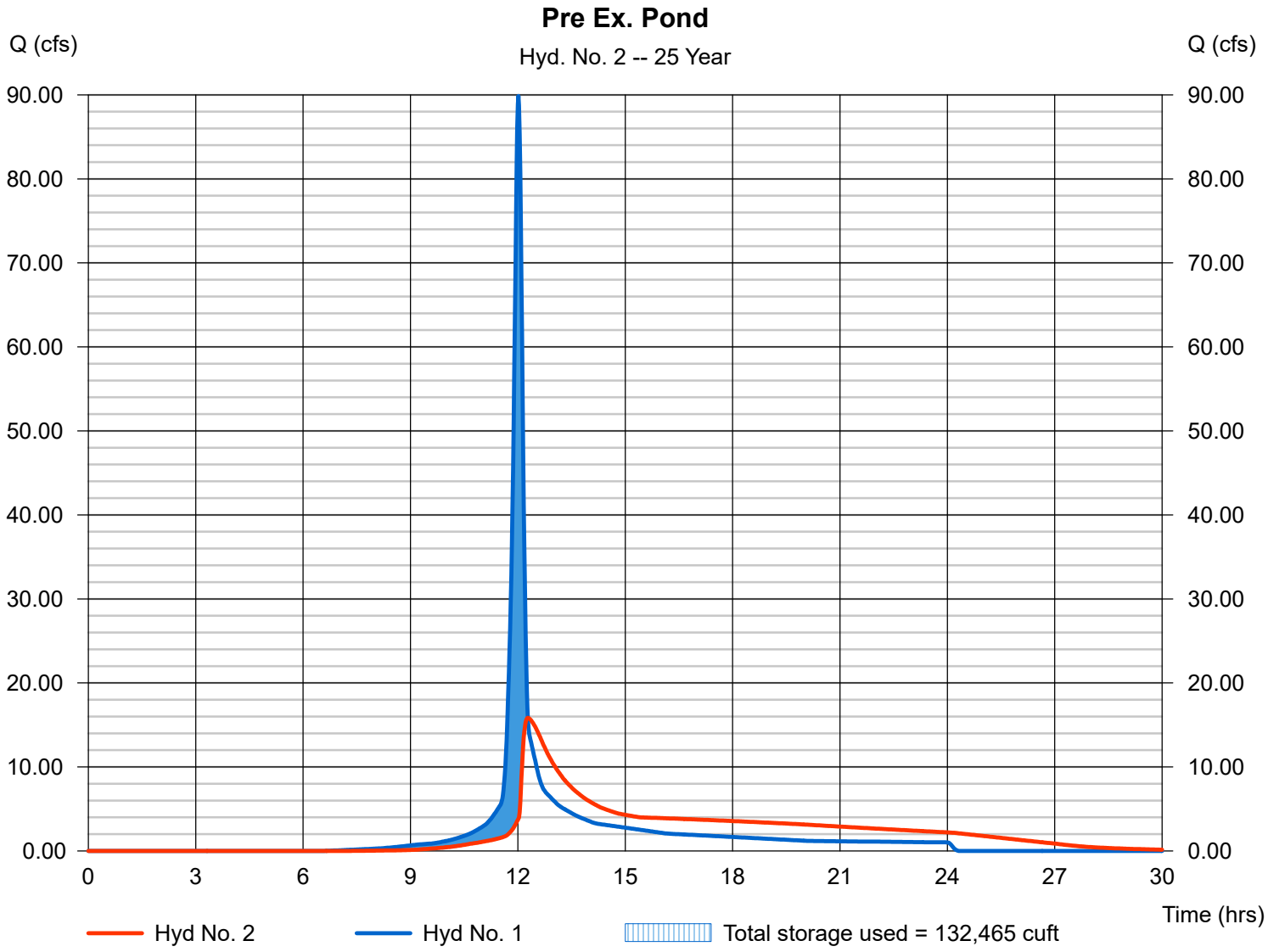
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 2

Pre Ex. Pond

Hydrograph type	=	Reservoir	Peak discharge	=	15.85 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.28 hrs
Time interval	=	1 min	Hyd. volume	=	228,987 cuft
Inflow hyd. No.	=	1 - Pre Basin A2- to Ex. Detention Pond	Max. Elevation	=	989.94 ft
Reservoir name	=	Ex. Pond	Max. Storage	=	132,465 cuft

Storage Indication method used. Wet pond routing start elevation = 982.00 ft.



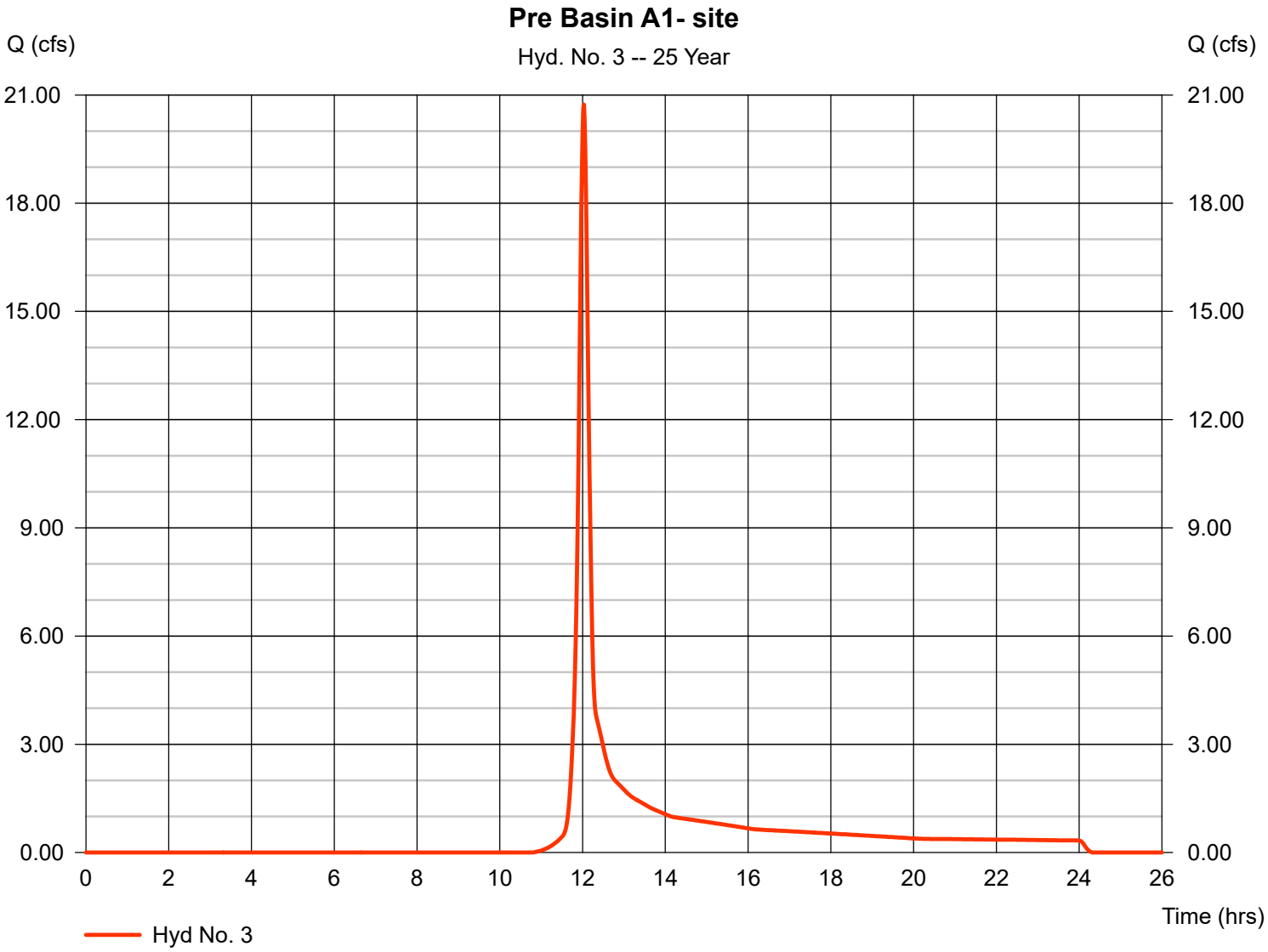
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 3

Pre Basin A1- site

Hydrograph type	=	SCS Runoff	Peak discharge	=	20.74 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.03 hrs
Time interval	=	1 min	Hyd. volume	=	53,830 cuft
Drainage area	=	7.000 ac	Curve number	=	59
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.80 min
Total precip.	=	6.48 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



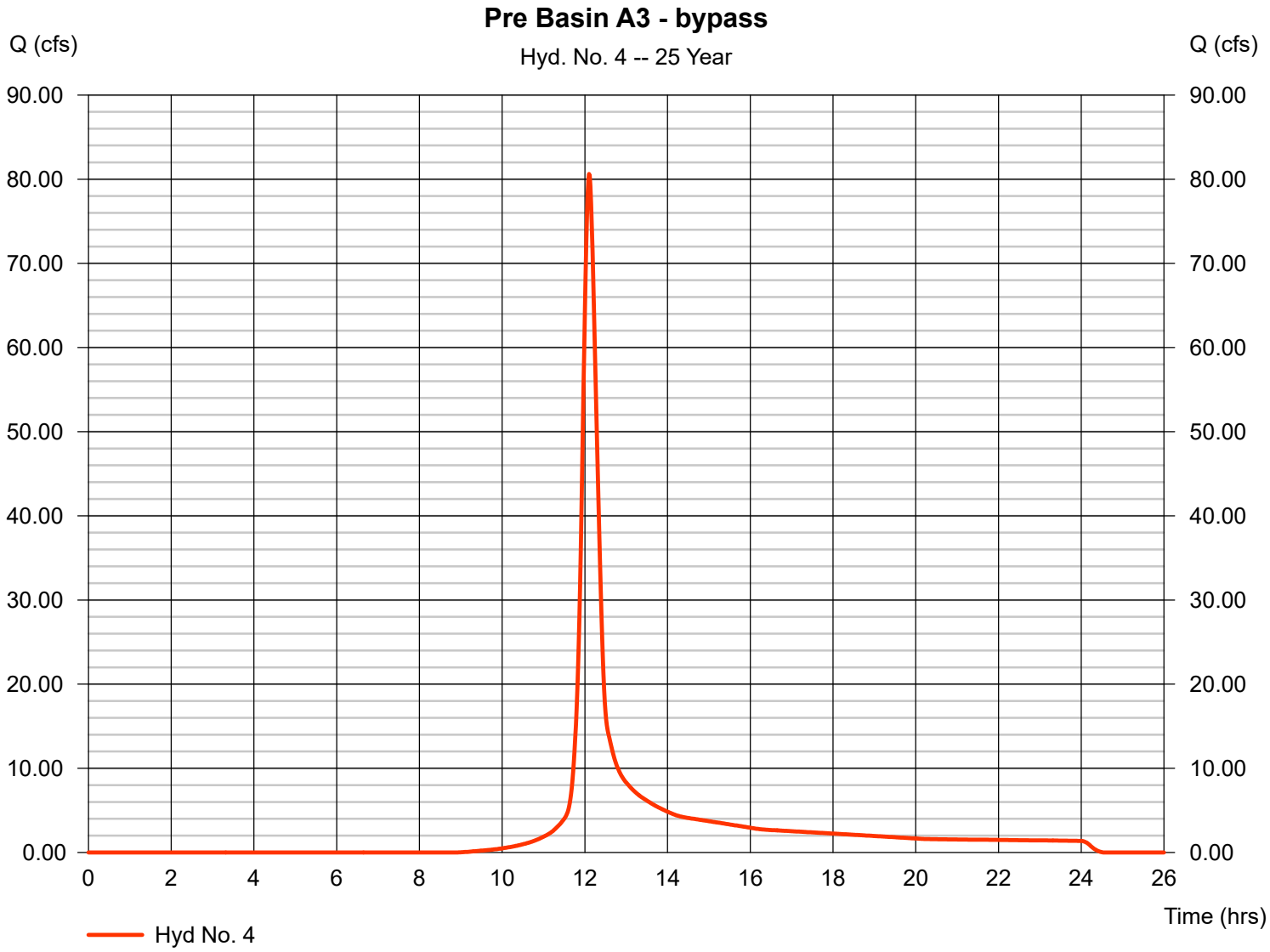
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 4

Pre Basin A3 - bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	80.62 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.10 hrs
Time interval	=	1 min	Hyd. volume	=	266,326 cuft
Drainage area	=	23.500 ac	Curve number	=	69
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	21.80 min
Total precip.	=	6.48 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



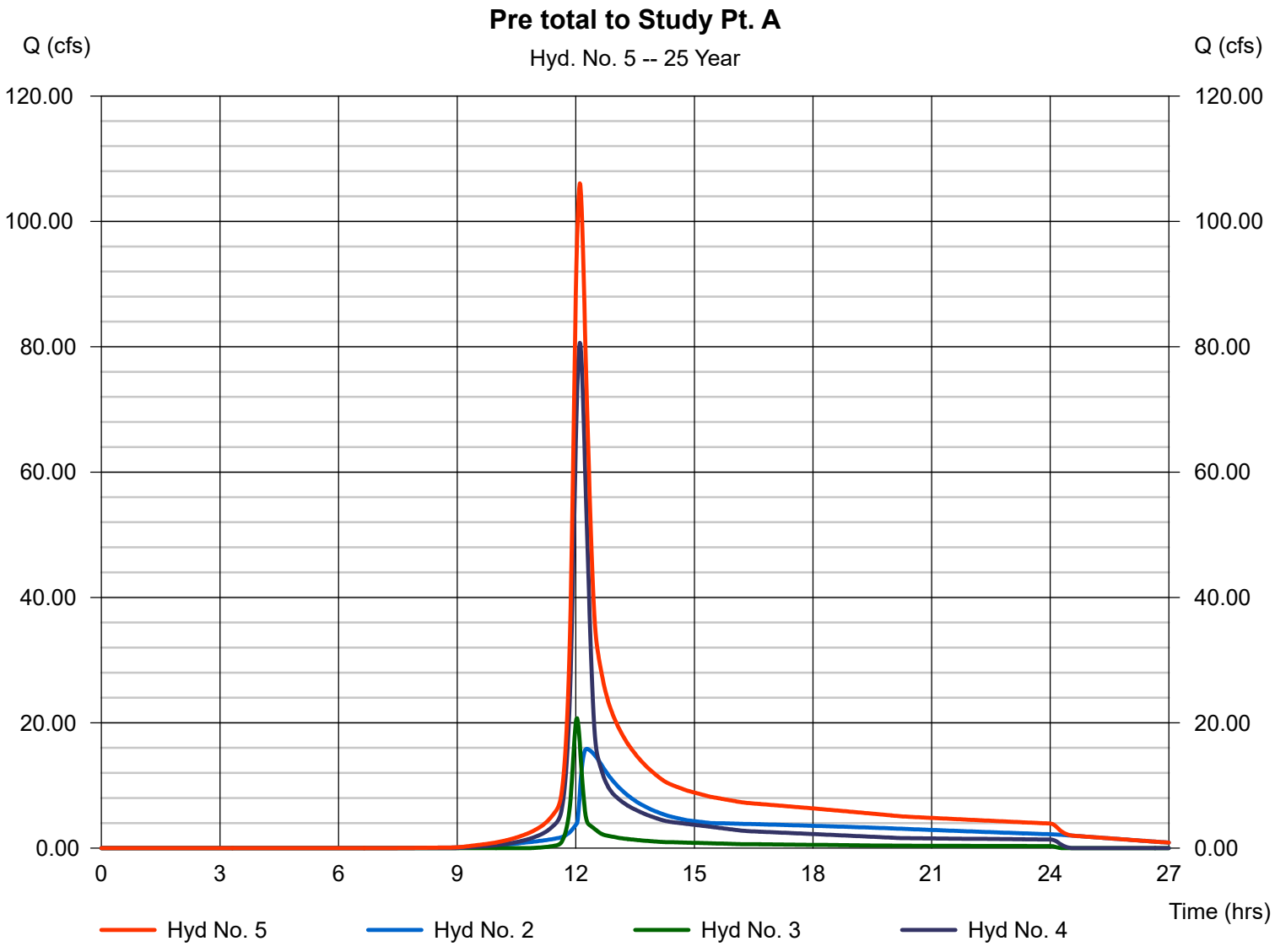
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 5

Pre total to Study Pt. A

Hydrograph type	= Combine	Peak discharge	= 106.07 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.10 hrs
Time interval	= 1 min	Hyd. volume	= 549,143 cuft
Inflow hyds.	= 2, 3, 4	Contrib. drain. area	= 30.500 ac



Hydrograph Report

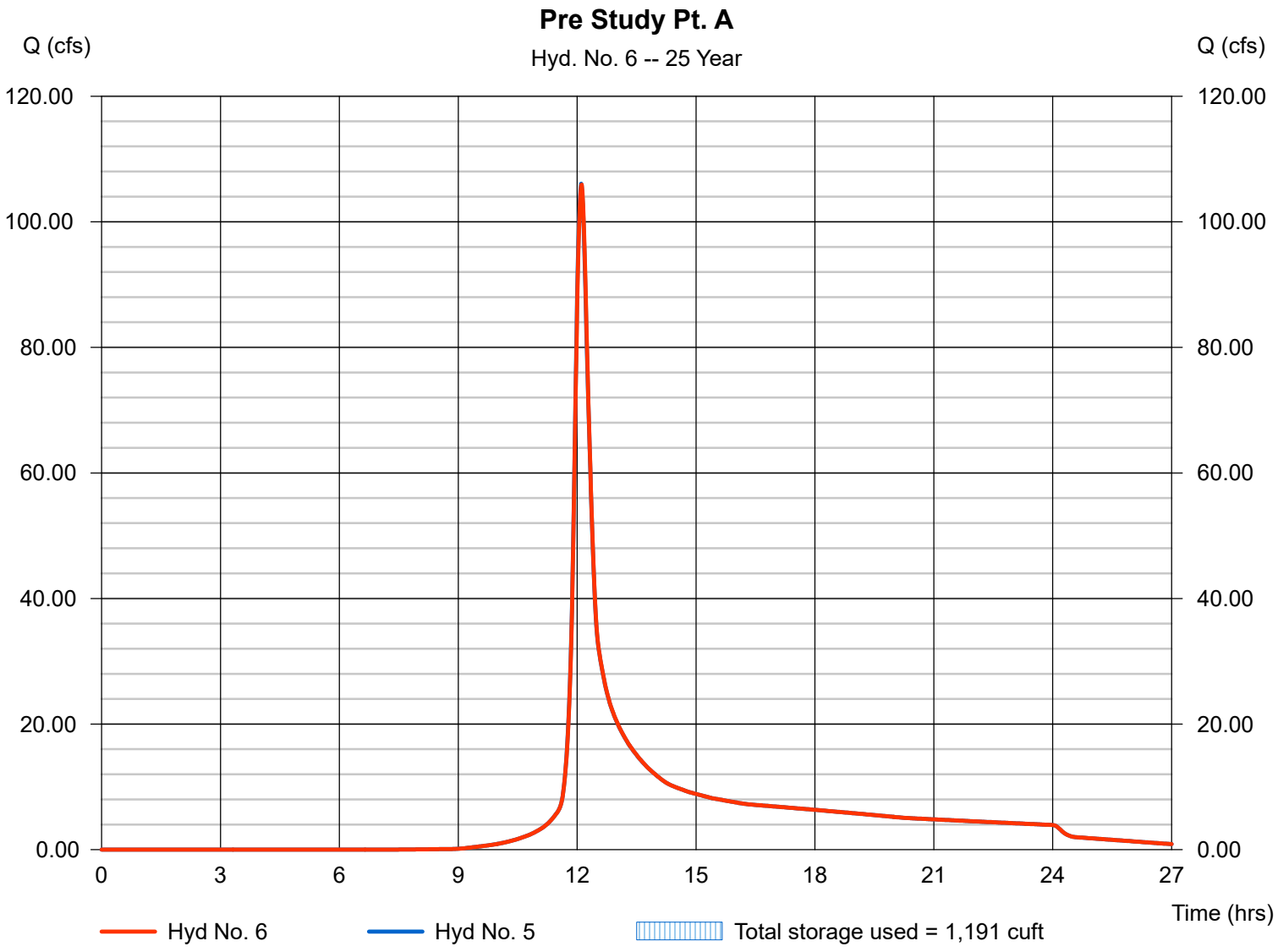
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 6

Pre Study Pt. A

Hydrograph type	=	Reservoir	Peak discharge	=	105.91 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.12 hrs
Time interval	=	1 min	Hyd. volume	=	549,143 cuft
Inflow hyd. No.	=	5 - Pre total to Study Pt. A	Max. Elevation	=	972.91 ft
Reservoir name	=	Ex. DS Culvert at Barclay	Max. Storage	=	1,191 cuft

Storage Indication method used.



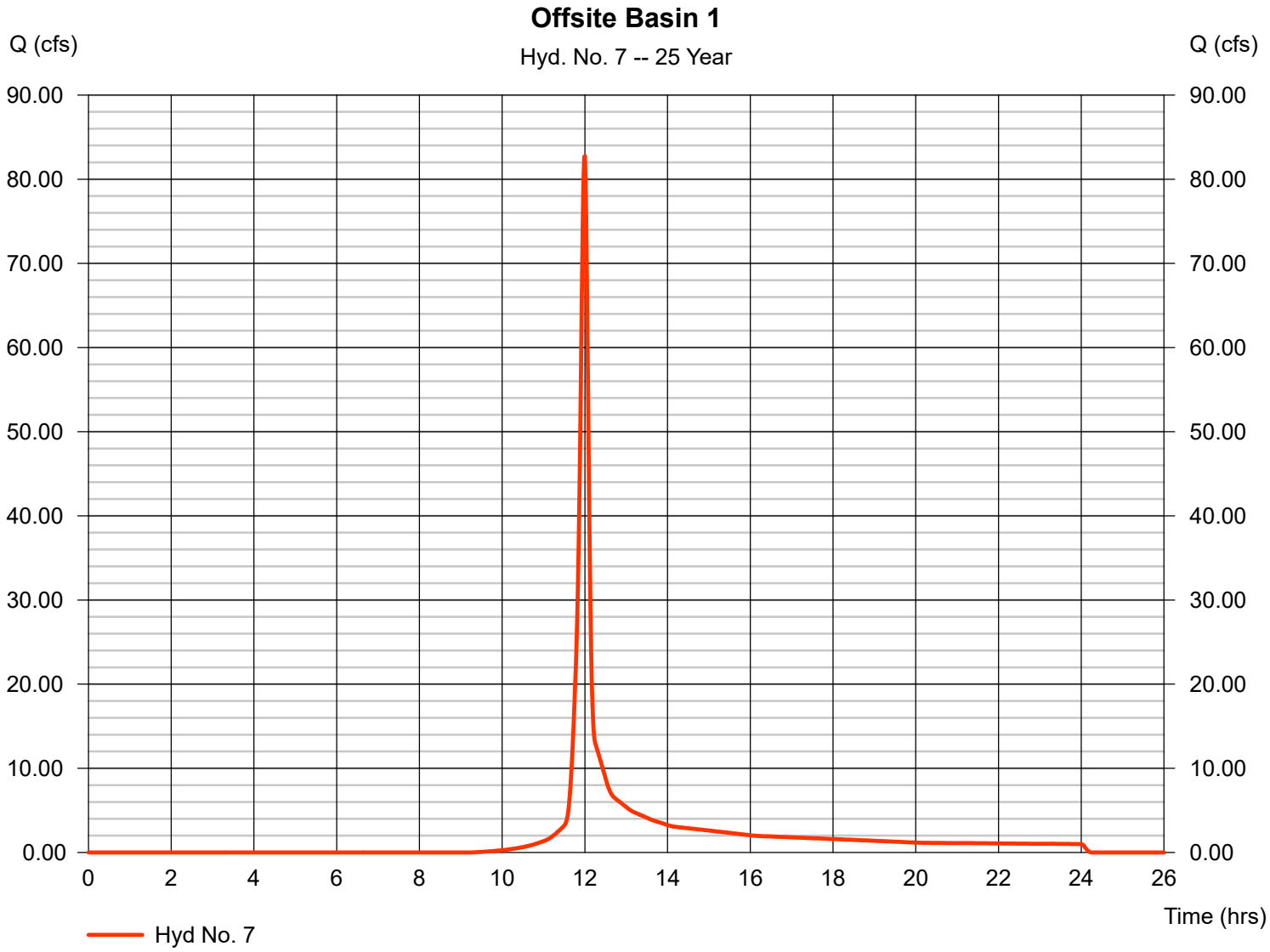
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 7

Offsite Basin 1

Hydrograph type	=	SCS Runoff	Peak discharge	=	82.75 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.00 hrs
Time interval	=	1 min	Hyd. volume	=	187,228 cuft
Drainage area	=	17.800 ac	Curve number	=	67
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	8.80 min
Total precip.	=	6.48 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



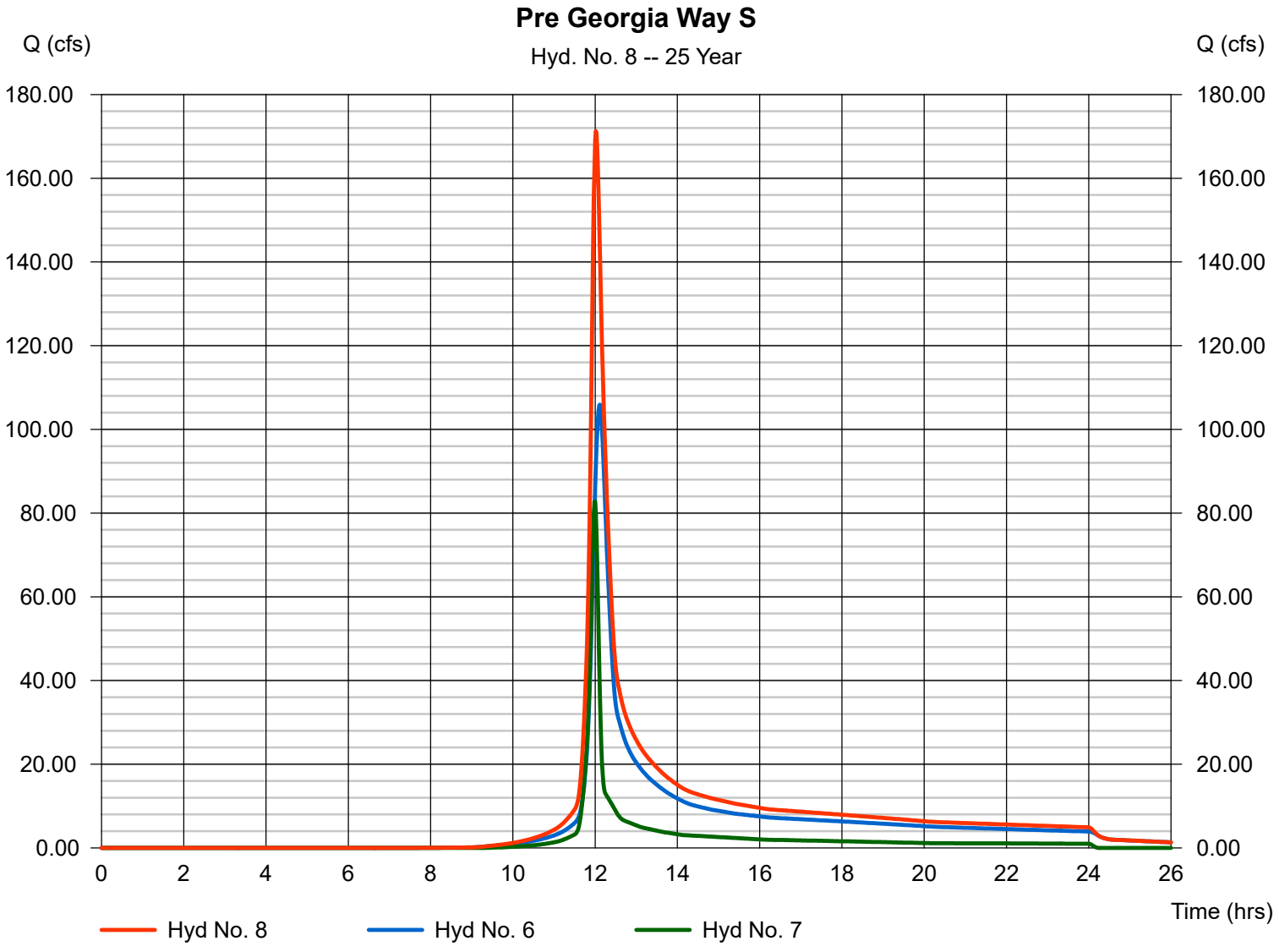
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 8

Pre Georgia Way S

Hydrograph type	=	Combine	Peak discharge	=	171.26 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.02 hrs
Time interval	=	1 min	Hyd. volume	=	736,371 cuft
Inflow hyds.	=	6, 7	Contrib. drain. area	=	17.800 ac



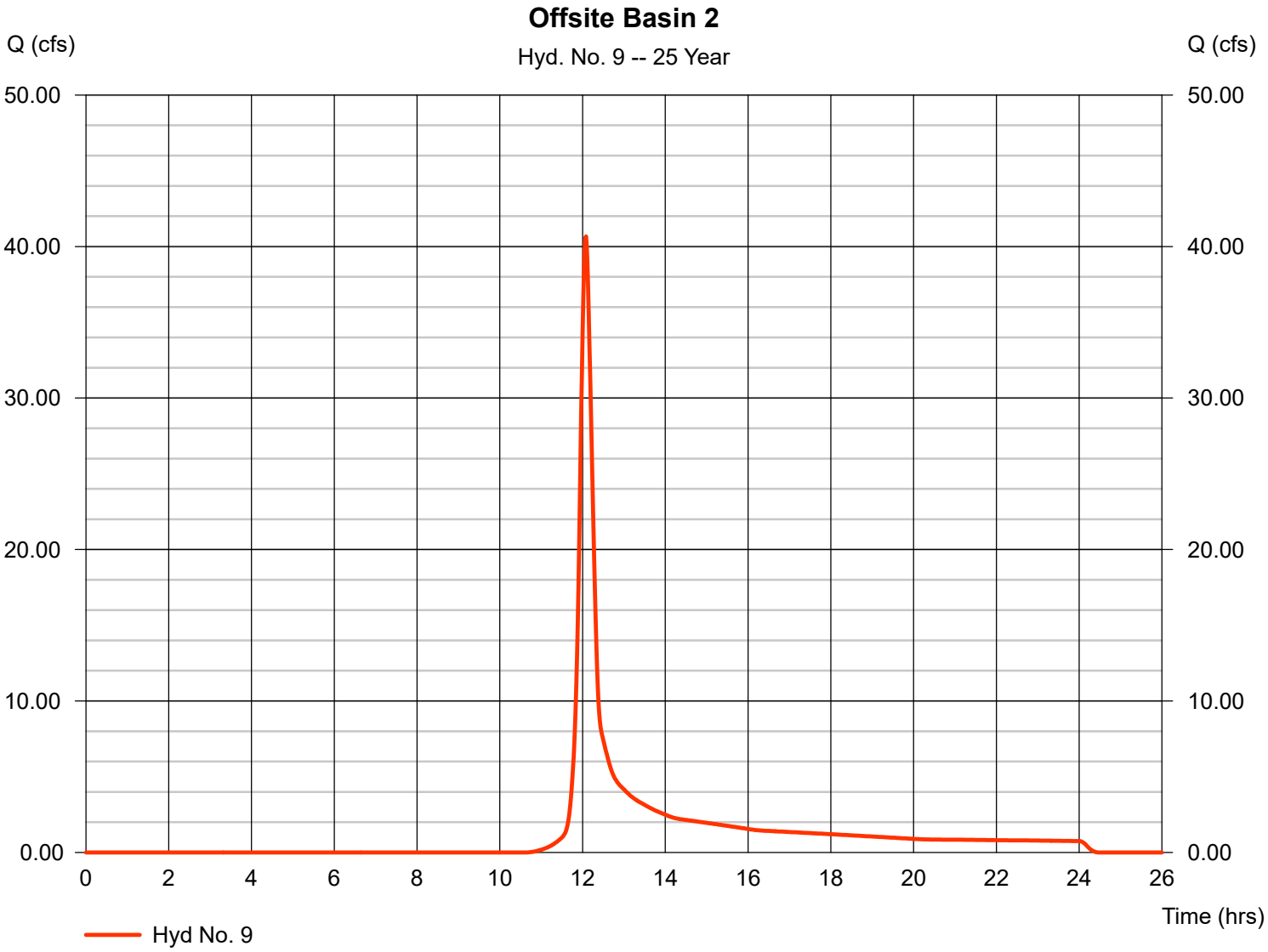
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 9

Offsite Basin 2

Hydrograph type	=	SCS Runoff	Peak discharge	=	40.67 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.08 hrs
Time interval	=	1 min	Hyd. volume	=	124,725 cuft
Drainage area	=	15.500 ac	Curve number	=	60
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	17.30 min
Total precip.	=	6.48 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



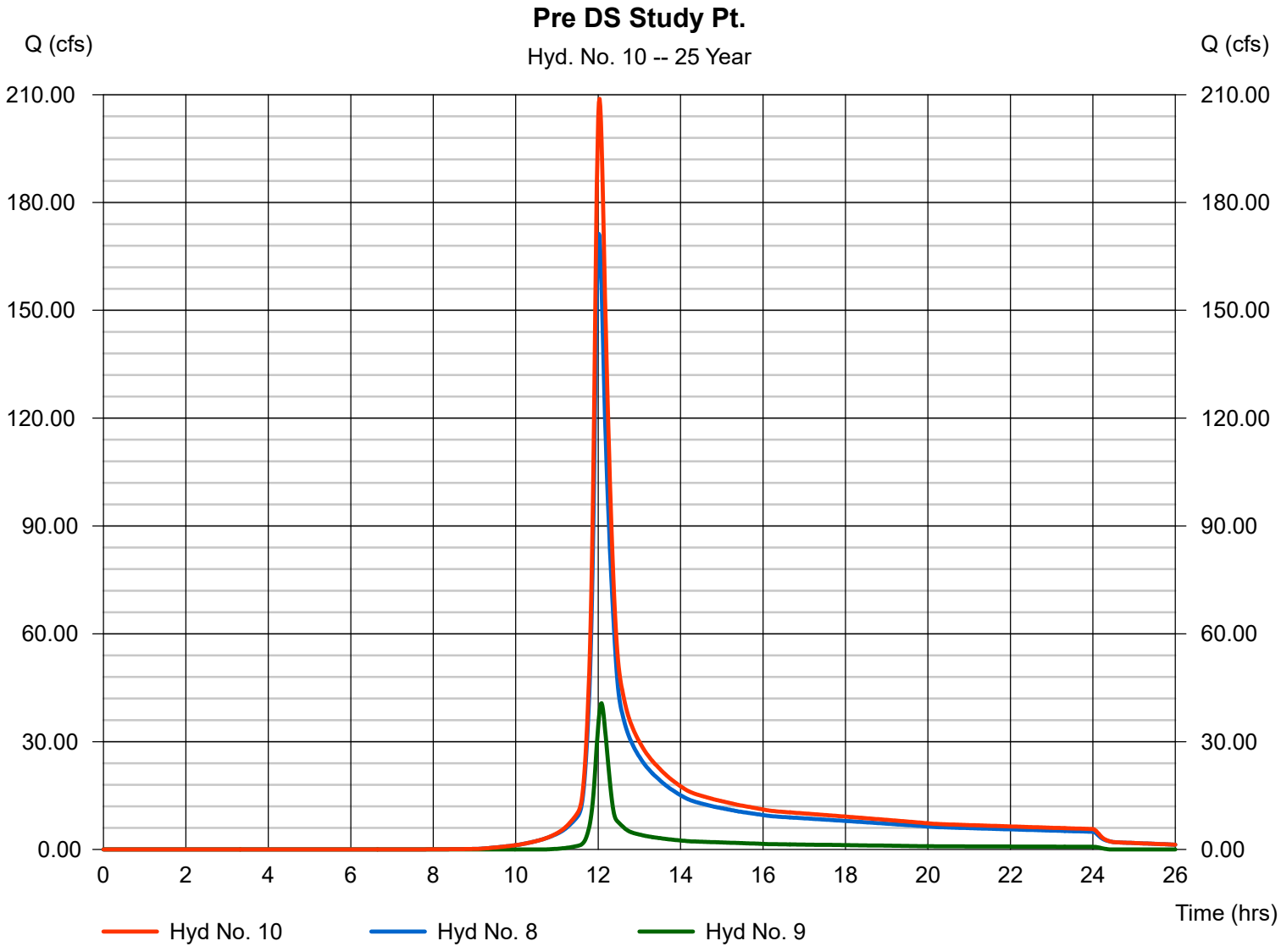
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 10

Pre DS Study Pt.

Hydrograph type	= Combine	Peak discharge	= 208.88 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.03 hrs
Time interval	= 1 min	Hyd. volume	= 861,097 cuft
Inflow hyds.	= 8, 9	Contrib. drain. area	= 15.500 ac



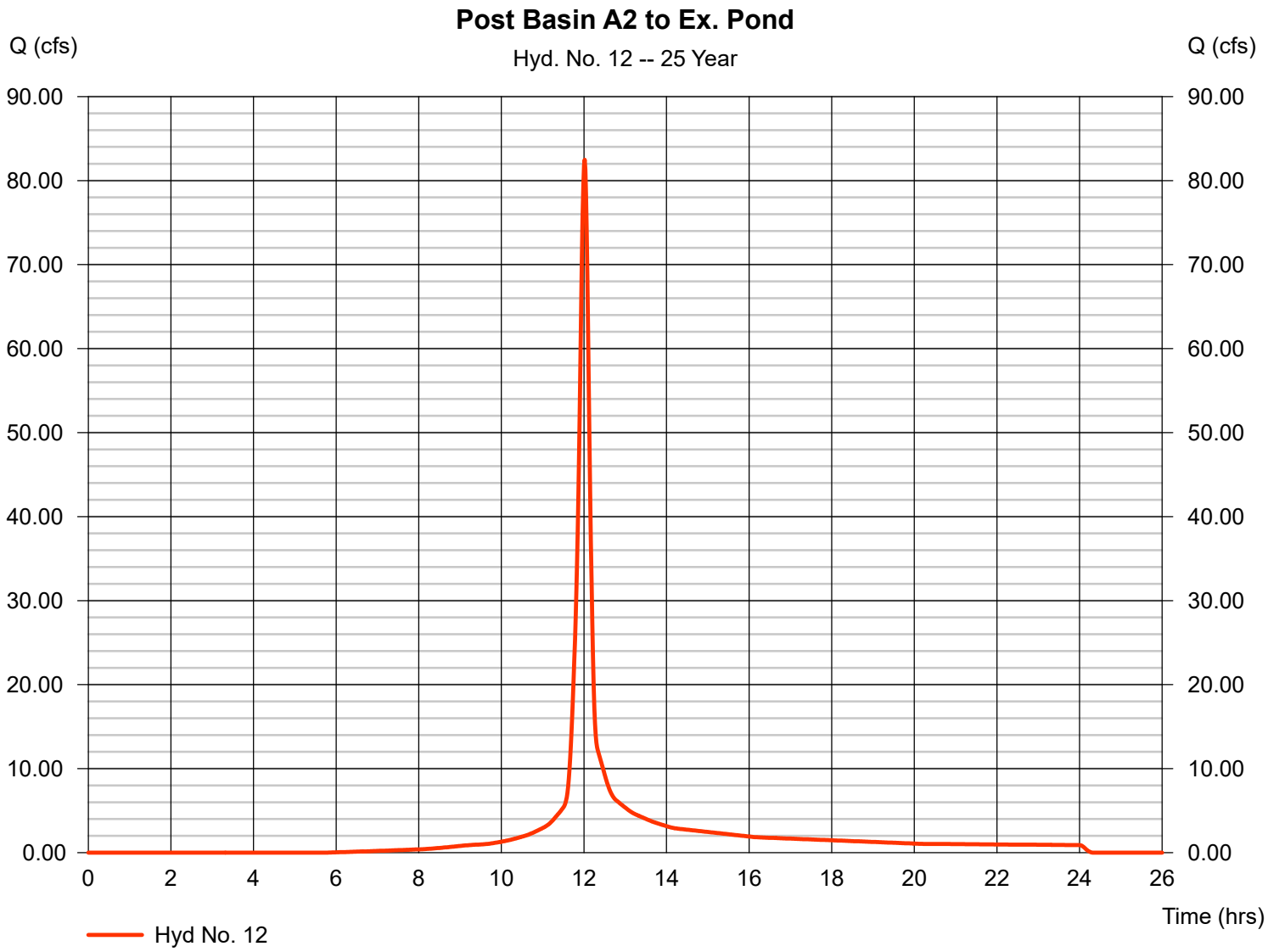
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 12

Post Basin A2 to Ex. Pond

Hydrograph type	=	SCS Runoff	Peak discharge	=	82.48 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.02 hrs
Time interval	=	1 min	Hyd. volume	=	212,122 cuft
Drainage area	=	13.730 ac	Curve number	=	81
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.40 min
Total precip.	=	6.48 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

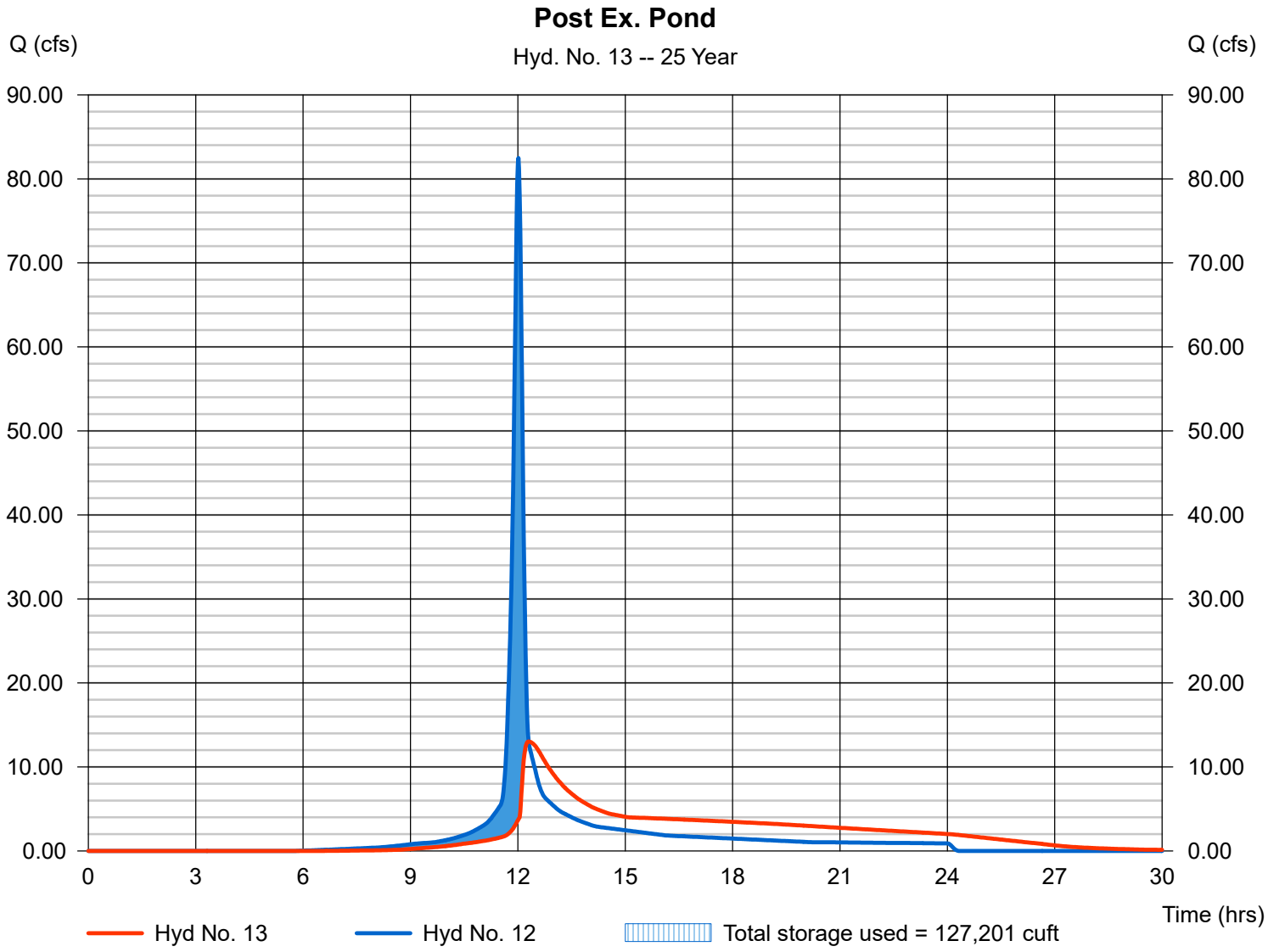
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 13

Post Ex. Pond

Hydrograph type	=	Reservoir	Peak discharge	=	13.03 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.30 hrs
Time interval	=	1 min	Hyd. volume	=	212,080 cuft
Inflow hyd. No.	=	12 - Post Basin A2 to Ex. Pond	Max. Elevation	=	989.61 ft
Reservoir name	=	Ex. Pond	Max. Storage	=	127,201 cuft

Storage Indication method used. Wet pond routing start elevation = 982.00 ft.



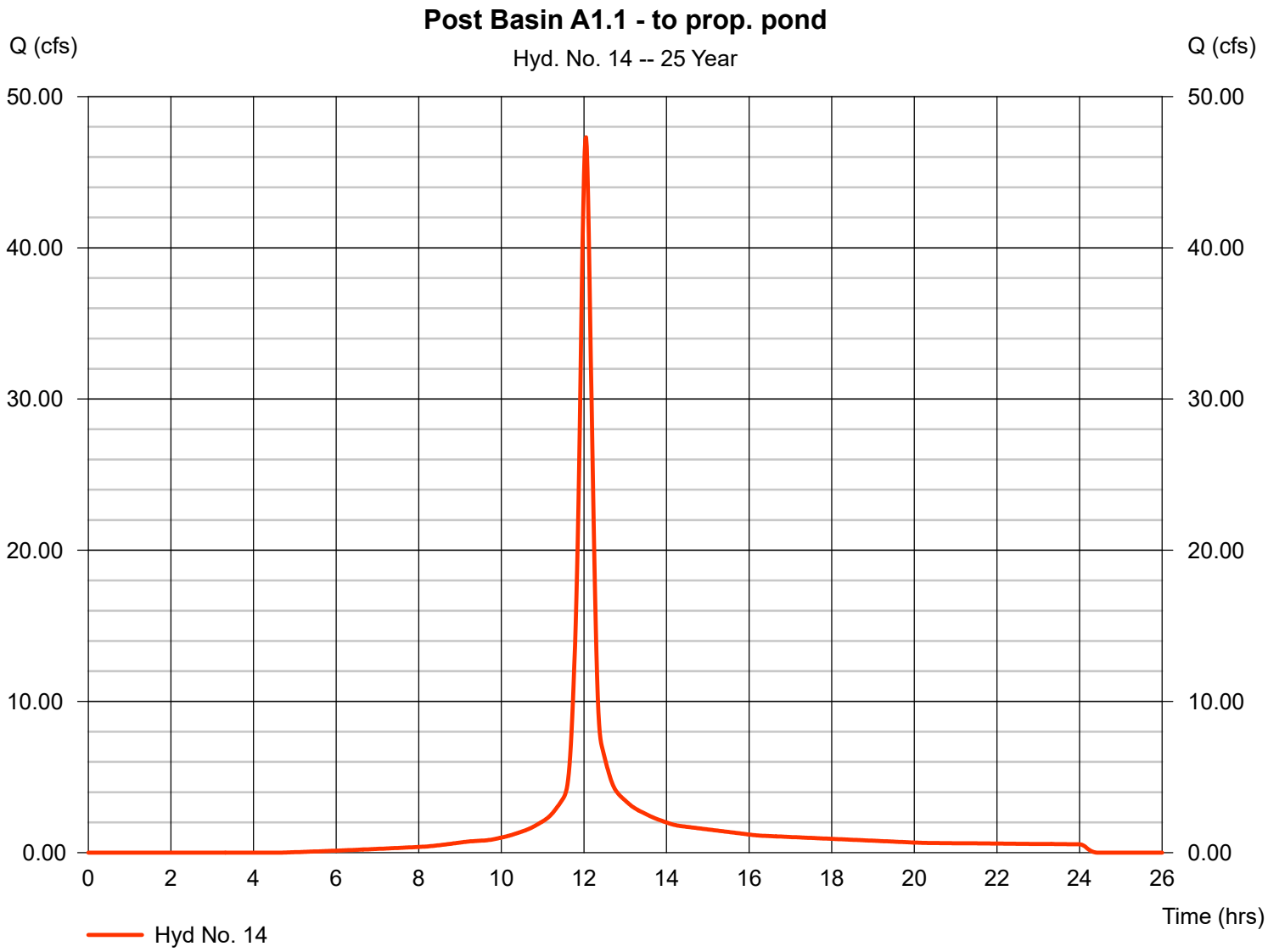
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 14

Post Basin A1.1 - to prop. pond

Hydrograph type	=	SCS Runoff	Peak discharge	=	47.31 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.05 hrs
Time interval	=	1 min	Hyd. volume	=	138,645 cuft
Drainage area	=	7.930 ac	Curve number	=	85
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	16.30 min
Total precip.	=	6.48 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



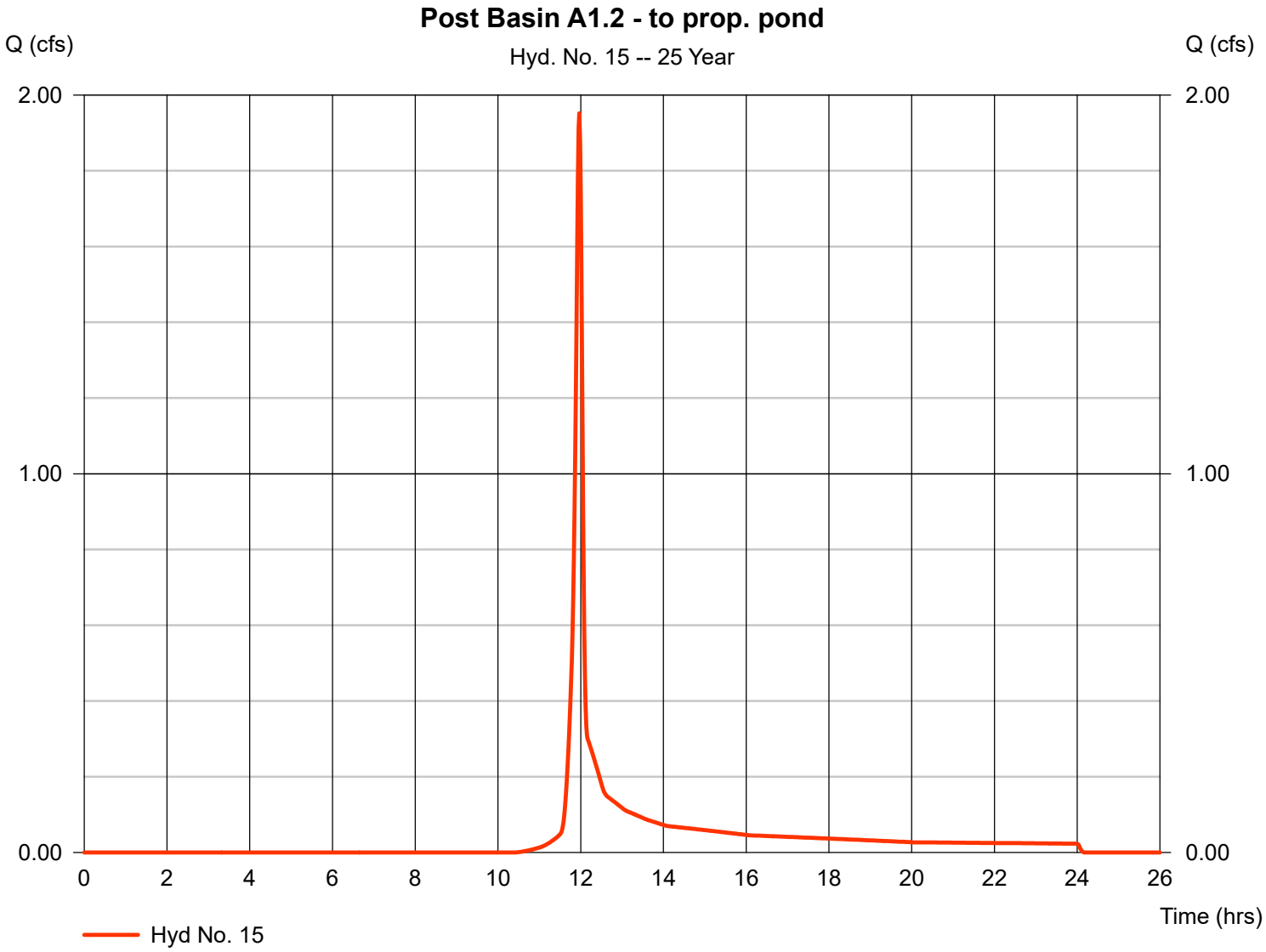
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 15

Post Basin A1.2 - to prop. pond

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.952 cfs
Storm frequency	=	25 yrs	Time to peak	=	11.97 hrs
Time interval	=	1 min	Hyd. volume	=	3,930 cuft
Drainage area	=	0.450 ac	Curve number	=	61
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	5.00 min
Total precip.	=	6.48 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



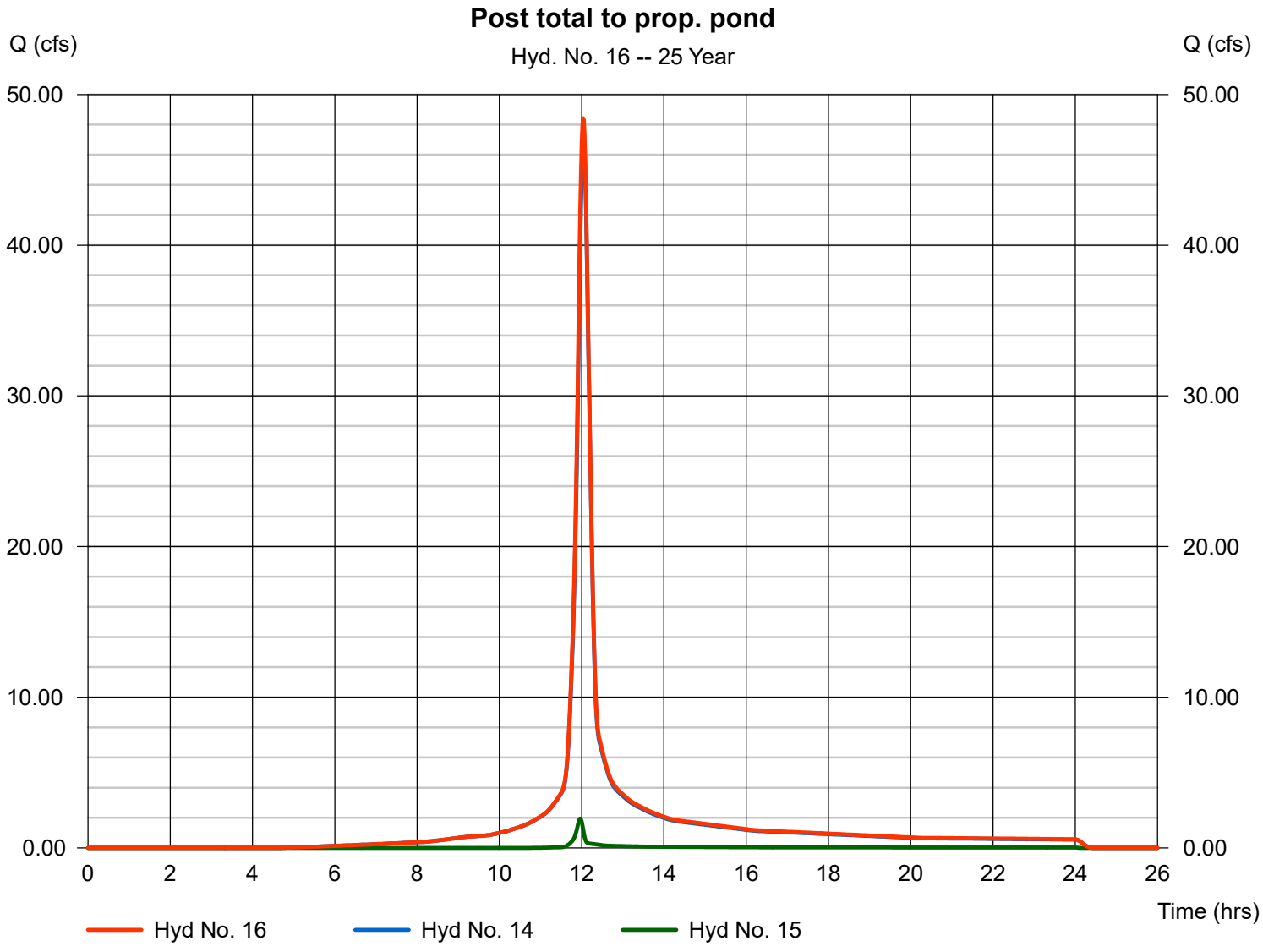
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 16

Post total to prop. pond

Hydrograph type	= Combine	Peak discharge	= 48.43 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.03 hrs
Time interval	= 1 min	Hyd. volume	= 142,576 cuft
Inflow hyds.	= 14, 15	Contrib. drain. area	= 8.380 ac



Hydrograph Report

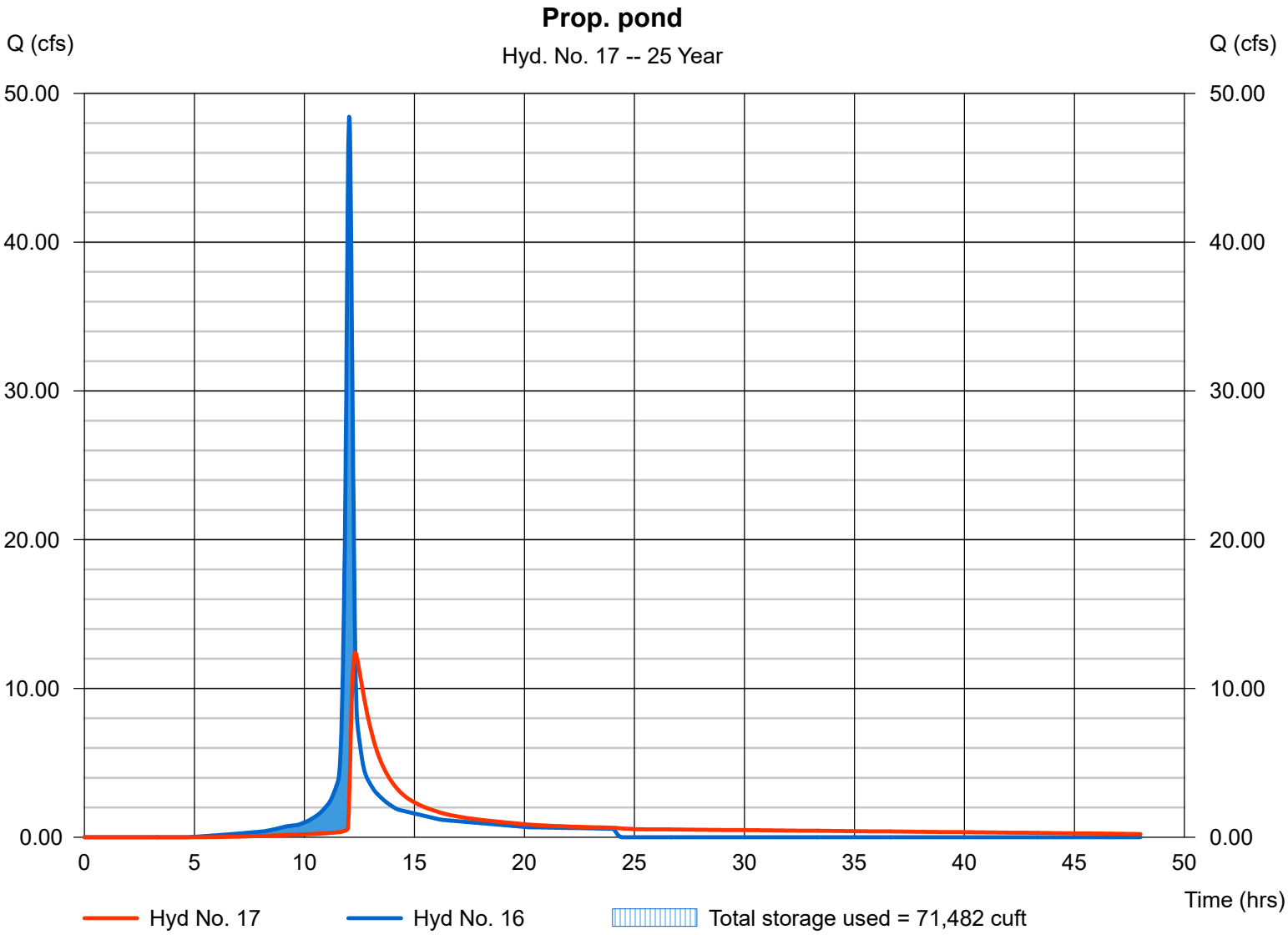
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 17

Prop. pond

Hydrograph type	=	Reservoir	Peak discharge	=	12.41 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.32 hrs
Time interval	=	1 min	Hyd. volume	=	136,016 cuft
Inflow hyd. No.	=	16 - Post total to prop. pond	Max. Elevation	=	985.17 ft
Reservoir name	=	Stormwater Pond	Max. Storage	=	71,482 cuft

Storage Indication method used.



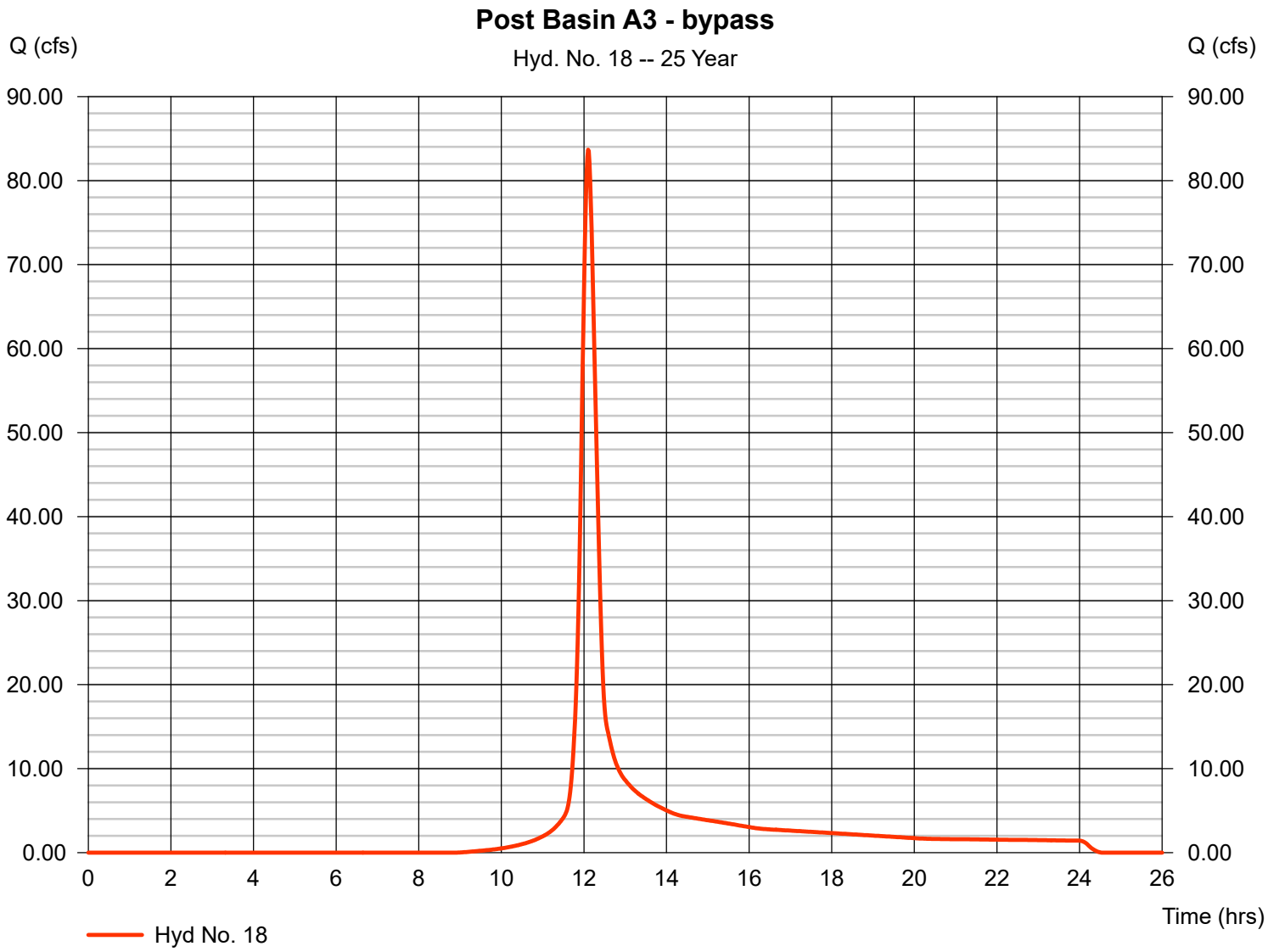
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 18

Post Basin A3 - bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	83.67 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.10 hrs
Time interval	=	1 min	Hyd. volume	=	276,412 cuft
Drainage area	=	24.390 ac	Curve number	=	69
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	21.80 min
Total precip.	=	6.48 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



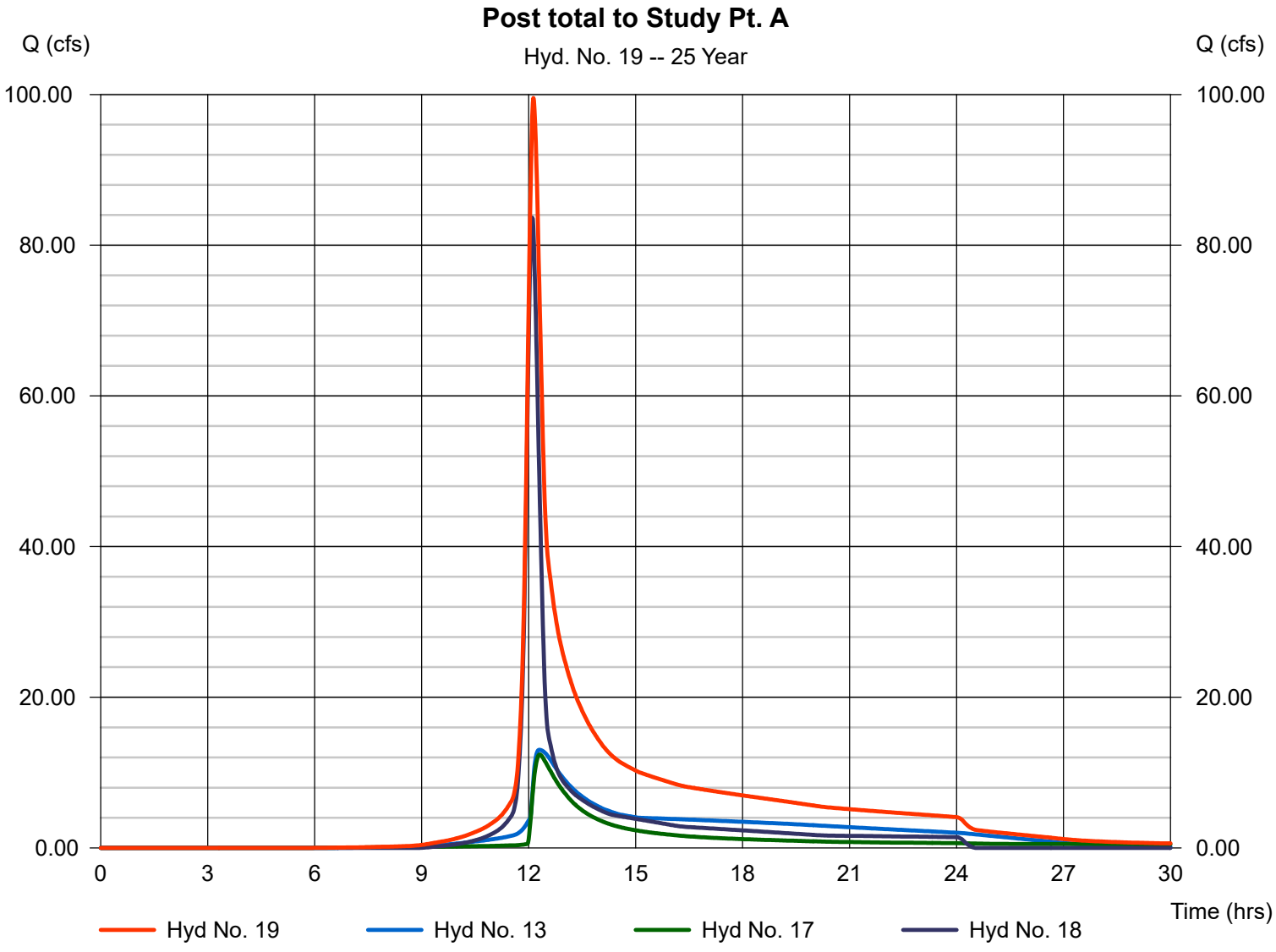
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 19

Post total to Study Pt. A

Hydrograph type	= Combine	Peak discharge	= 99.53 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.13 hrs
Time interval	= 1 min	Hyd. volume	= 624,509 cuft
Inflow hyds.	= 13, 17, 18	Contrib. drain. area	= 24.390 ac



Hydrograph Report

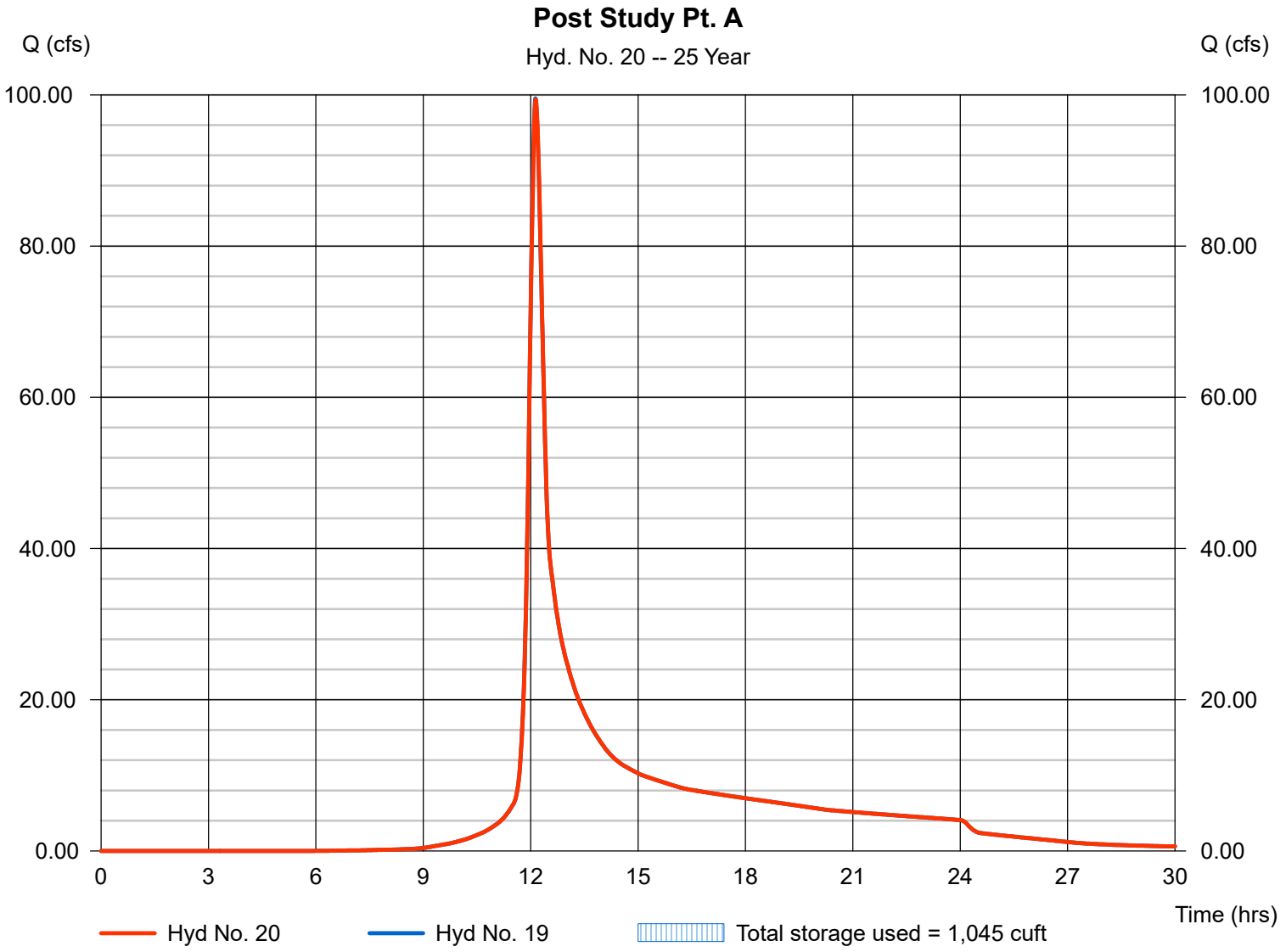
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 20

Post Study Pt. A

Hydrograph type	=	Reservoir	Peak discharge	=	99.39 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.13 hrs
Time interval	=	1 min	Hyd. volume	=	624,504 cuft
Inflow hyd. No.	=	19 - Post total to Study Pt. A	Max. Elevation	=	972.70 ft
Reservoir name	=	Ex. DS Culvert at Barclay	Max. Storage	=	1,045 cuft

Storage Indication method used.



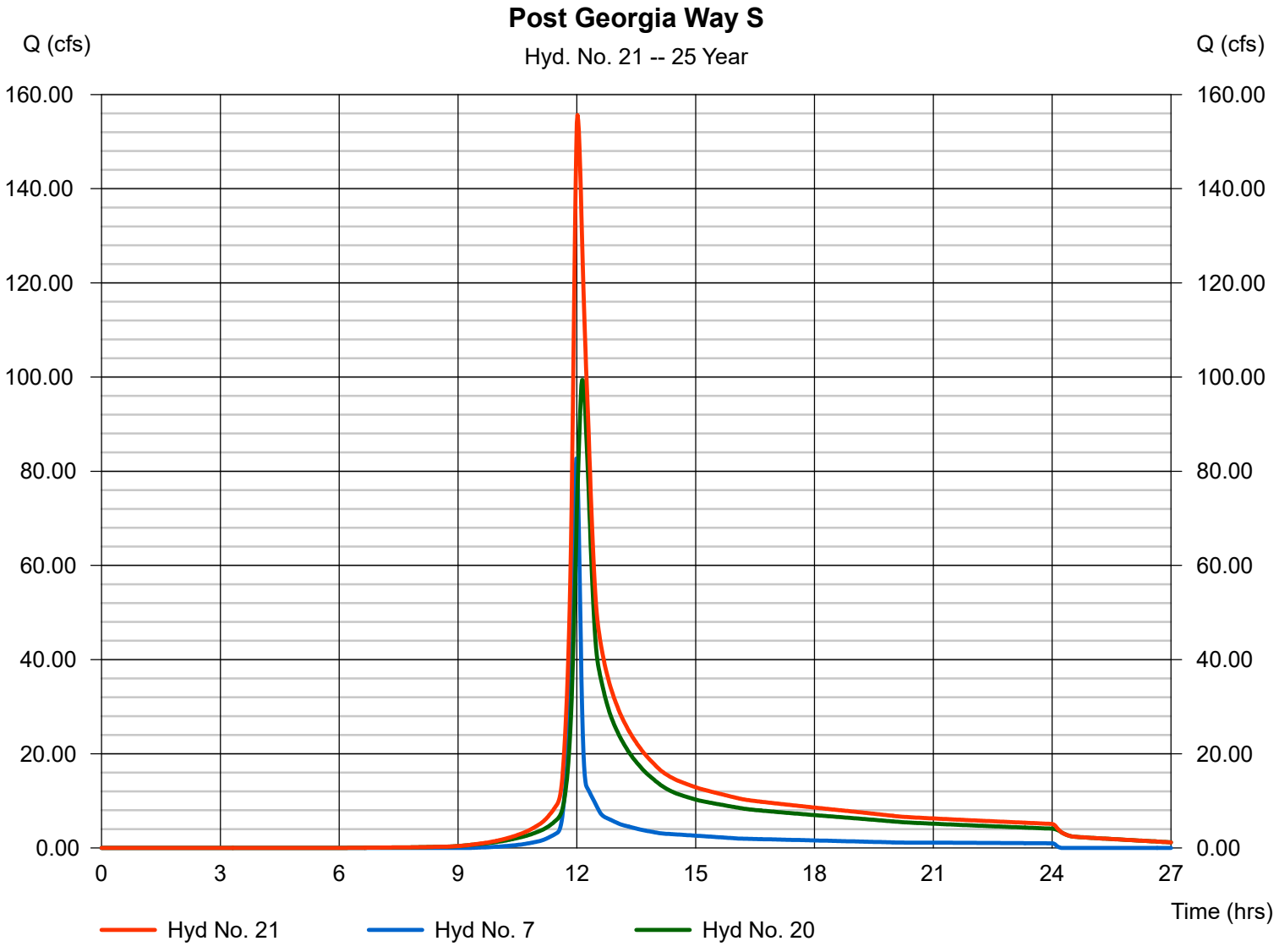
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 21

Post Georgia Way S

Hydrograph type	= Combine	Peak discharge	= 155.65 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.02 hrs
Time interval	= 1 min	Hyd. volume	= 811,731 cuft
Inflow hyds.	= 7, 20	Contrib. drain. area	= 17.800 ac



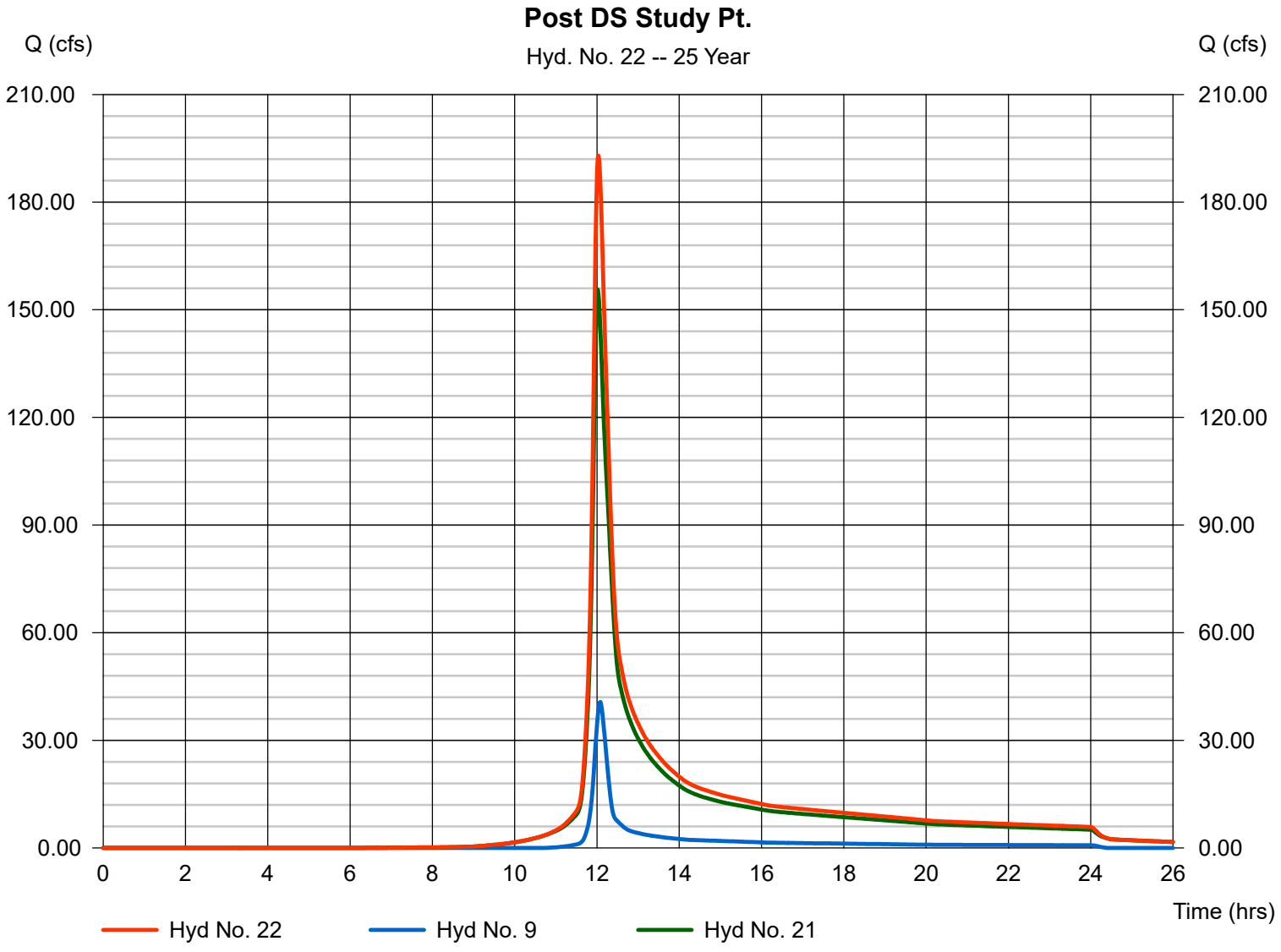
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 22

Post DS Study Pt.

Hydrograph type	= Combine	Peak discharge	= 192.97 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.03 hrs
Time interval	= 1 min	Hyd. volume	= 936,456 cuft
Inflow hyds.	= 9, 21	Contrib. drain. area	= 15.500 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

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	103.95	1	721	266,232	------	------	------	Pre Basin A2- to Ex. Detention Pond
2	Reservoir	23.54	1	735	266,182	1	990.72	146,748	Pre Ex. Pond
3	SCS Runoff	25.76	1	722	66,178	------	------	------	Pre Basin A1- site
4	SCS Runoff	96.26	1	726	316,826	------	------	------	Pre Basin A3 - bypass
5	Combine	133.27	1	726	649,186	2, 3, 4	------	------	Pre total to Study Pt. A
6	Reservoir	132.72	1	727	649,185	5	974.01	1,993	Pre Study Pt. A
7	SCS Runoff	99.03	1	719	224,028	------	------	------	Offsite Basin 1
8	Combine	205.95	1	721	873,214	6, 7	------	------	Pre Georgia Way S
9	SCS Runoff	50.41	1	725	152,754	------	------	------	Offsite Basin 2
10	Combine	253.81	1	722	1,025,967	8, 9	------	------	Pre DS Study Pt.
12	SCS Runoff	94.64	1	721	244,883	------	------	------	Post Basin A2 to Ex. Pond
13	Reservoir	19.74	1	735	244,838	12	990.35	139,918	Post Ex. Pond
14	SCS Runoff	53.79	1	723	158,668	------	------	------	Post Basin A1.1 - to prop. pond
15	SCS Runoff	2.388	1	718	4,796	------	------	------	Post Basin A1.2 - to prop. pond
16	Combine	55.19	1	722	163,465	14, 15	------	------	Post total to prop. pond
17	Reservoir	17.47	1	737	156,740	16	986.04	79,614	Prop. pond
18	SCS Runoff	99.91	1	726	328,825	------	------	------	Post Basin A3 - bypass
19	Combine	126.62	1	728	730,403	13, 17, 18	------	------	Post total to Study Pt. A
20	Reservoir	126.38	1	729	730,397	19	973.75	1,775	Post Study Pt. A
21	Combine	187.86	1	722	954,425	7, 20	------	------	Post Georgia Way S
22	Combine	235.96	1	722	1,107,179	9, 21	------	------	Post DS Study Pt.
24	Reservoir	21.59	1	735	124,693	16	986.23	81,585	Emergency Overflow

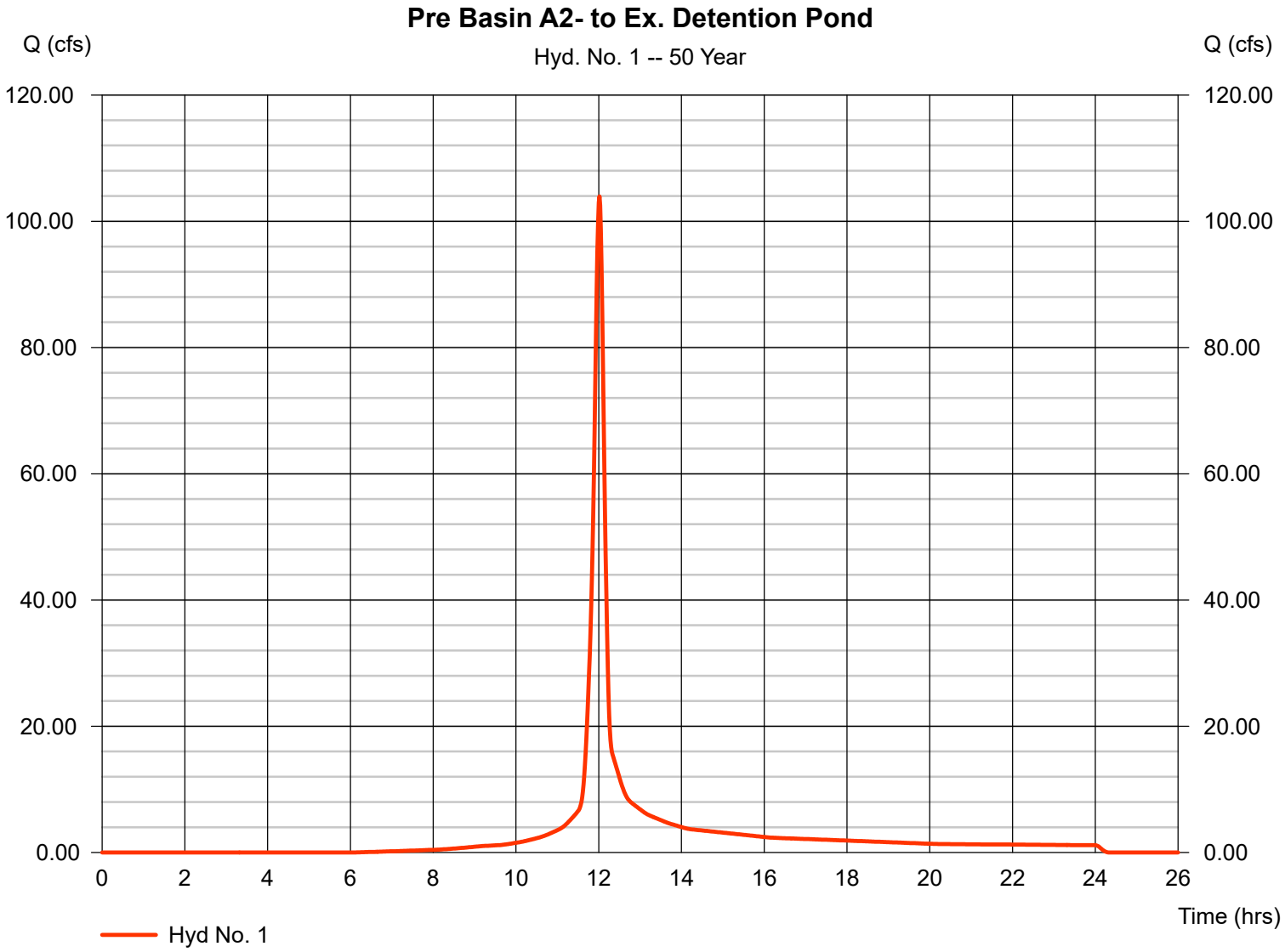
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 1

Pre Basin A2- to Ex. Detention Pond

Hydrograph type	=	SCS Runoff	Peak discharge	=	103.95 cfs
Storm frequency	=	50 yrs	Time to peak	=	12.02 hrs
Time interval	=	1 min	Hyd. volume	=	266,232 cuft
Drainage area	=	16.000 ac	Curve number	=	78
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.40 min
Total precip.	=	7.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

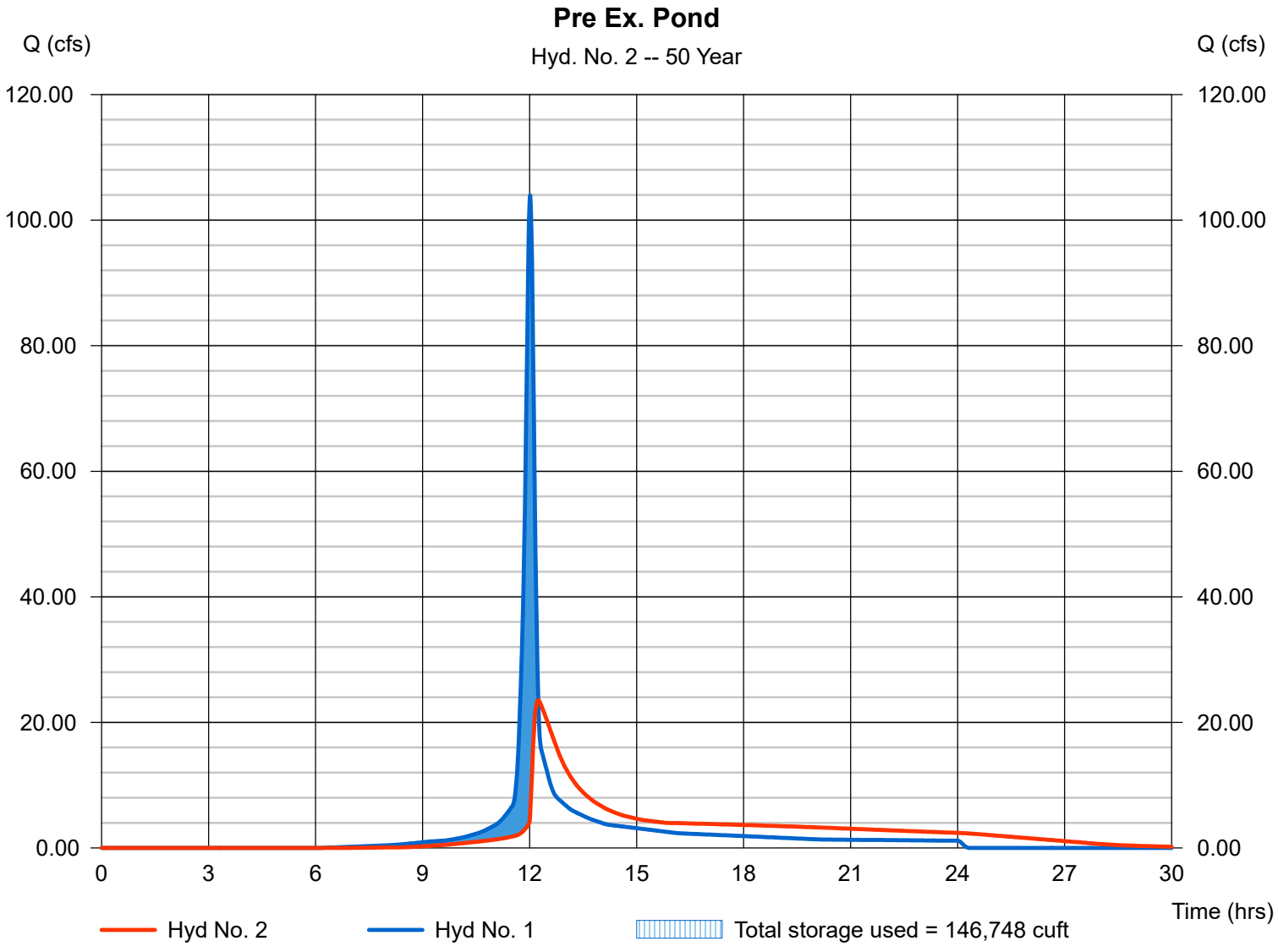
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 2

Pre Ex. Pond

Hydrograph type	=	Reservoir	Peak discharge	=	23.54 cfs
Storm frequency	=	50 yrs	Time to peak	=	12.25 hrs
Time interval	=	1 min	Hyd. volume	=	266,182 cuft
Inflow hyd. No.	=	1 - Pre Basin A2- to Ex. Detention Pond	Max. Elevation	=	990.72 ft
Reservoir name	=	Ex. Pond	Max. Storage	=	146,748 cuft

Storage Indication method used. Wet pond routing start elevation = 982.00 ft.



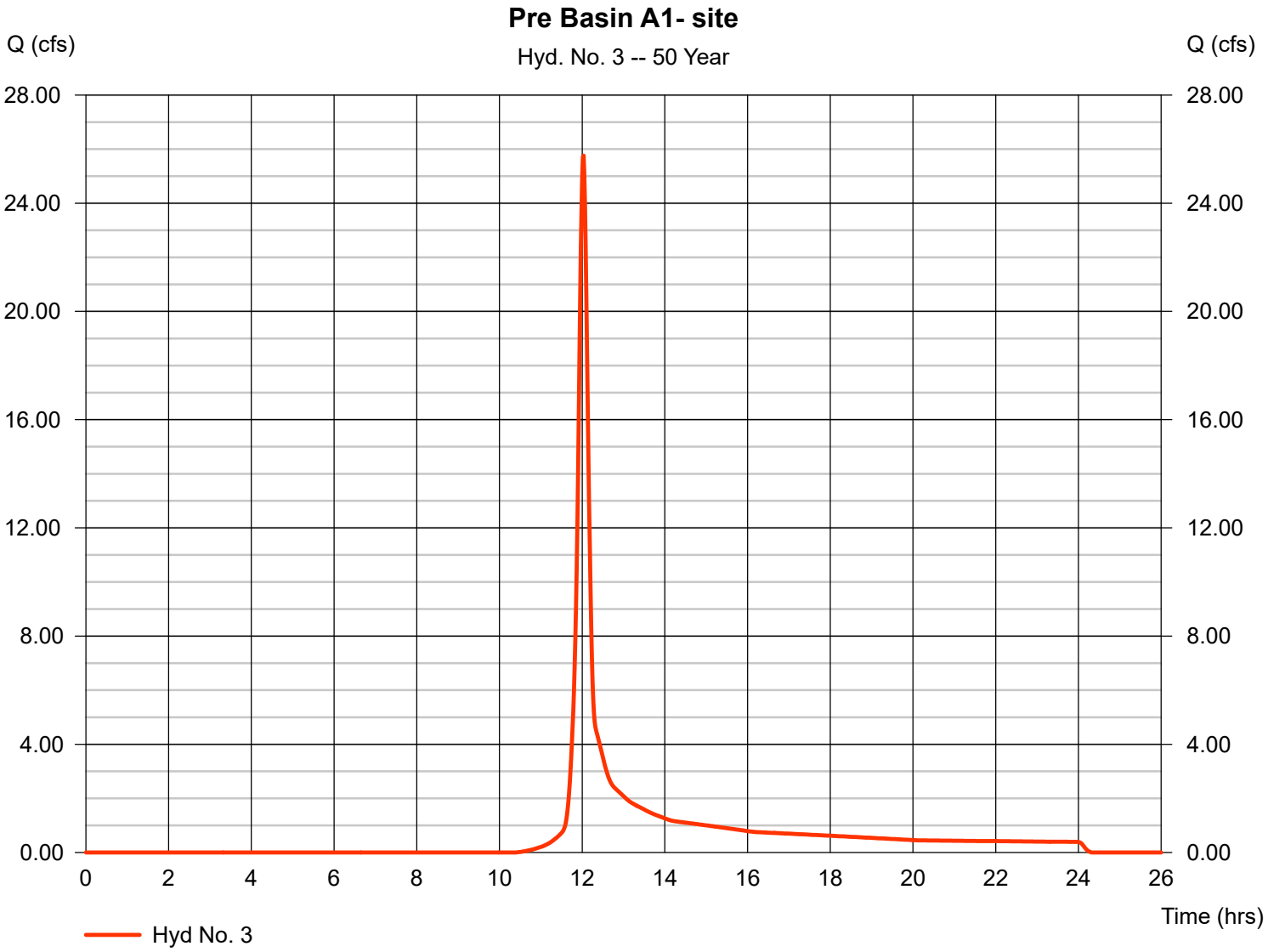
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 3

Pre Basin A1- site

Hydrograph type	=	SCS Runoff	Peak discharge	=	25.76 cfs
Storm frequency	=	50 yrs	Time to peak	=	12.03 hrs
Time interval	=	1 min	Hyd. volume	=	66,178 cuft
Drainage area	=	7.000 ac	Curve number	=	59
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.80 min
Total precip.	=	7.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



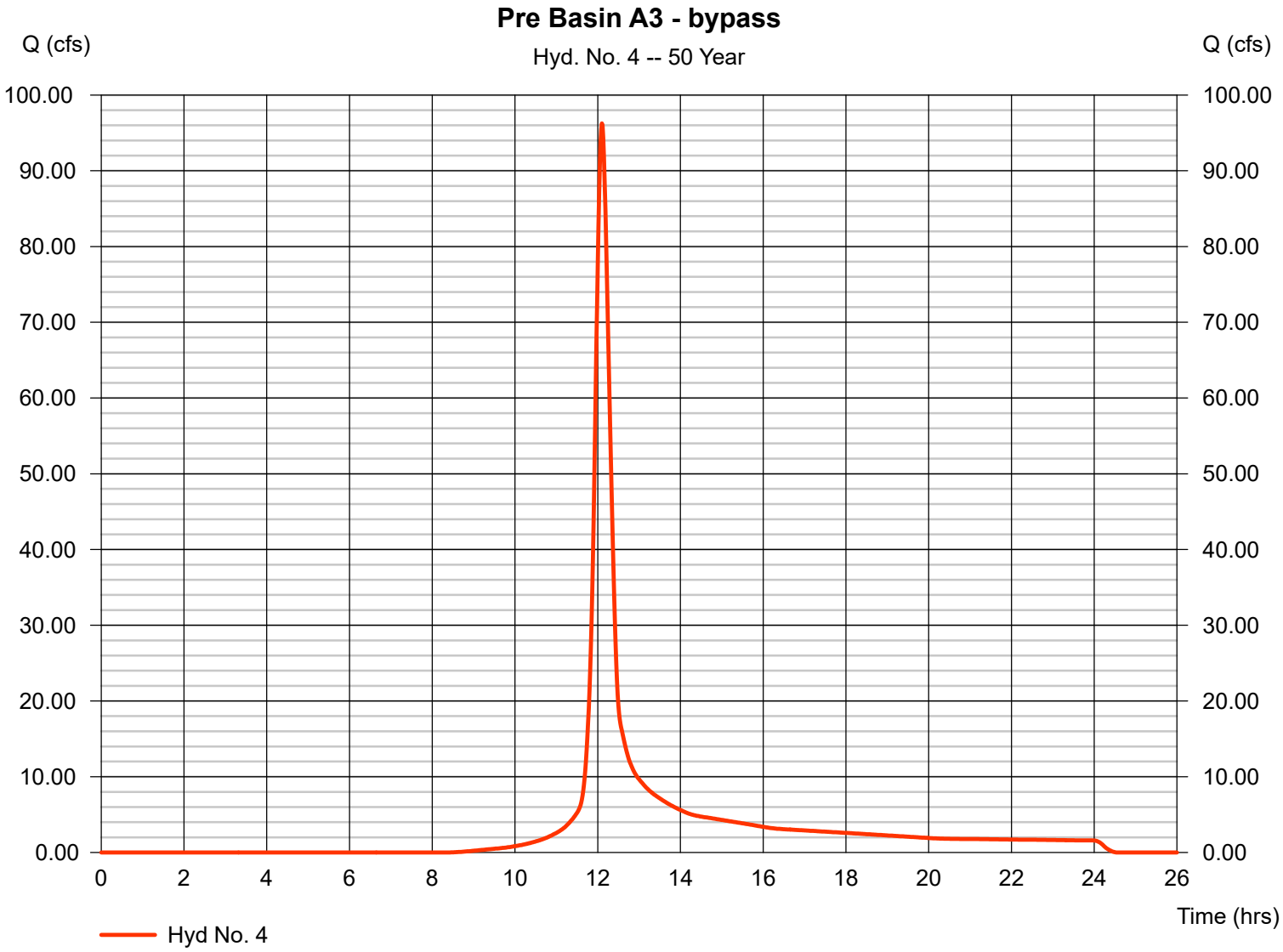
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 4

Pre Basin A3 - bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	96.26 cfs
Storm frequency	=	50 yrs	Time to peak	=	12.10 hrs
Time interval	=	1 min	Hyd. volume	=	316,826 cuft
Drainage area	=	23.500 ac	Curve number	=	69
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	21.80 min
Total precip.	=	7.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



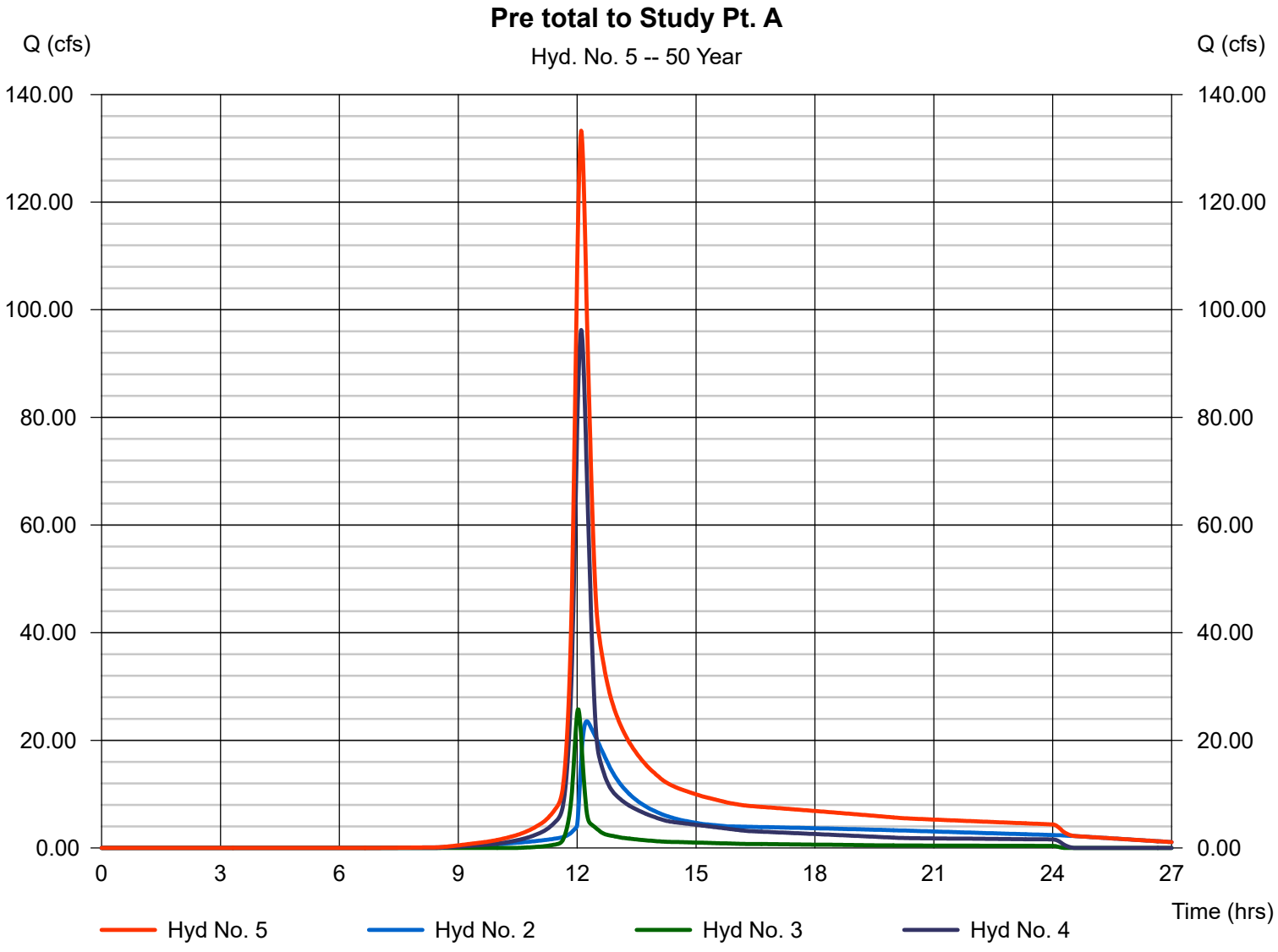
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 5

Pre total to Study Pt. A

Hydrograph type	=	Combine	Peak discharge	=	133.27 cfs
Storm frequency	=	50 yrs	Time to peak	=	12.10 hrs
Time interval	=	1 min	Hyd. volume	=	649,186 cuft
Inflow hyds.	=	2, 3, 4	Contrib. drain. area	=	30.500 ac



Hydrograph Report

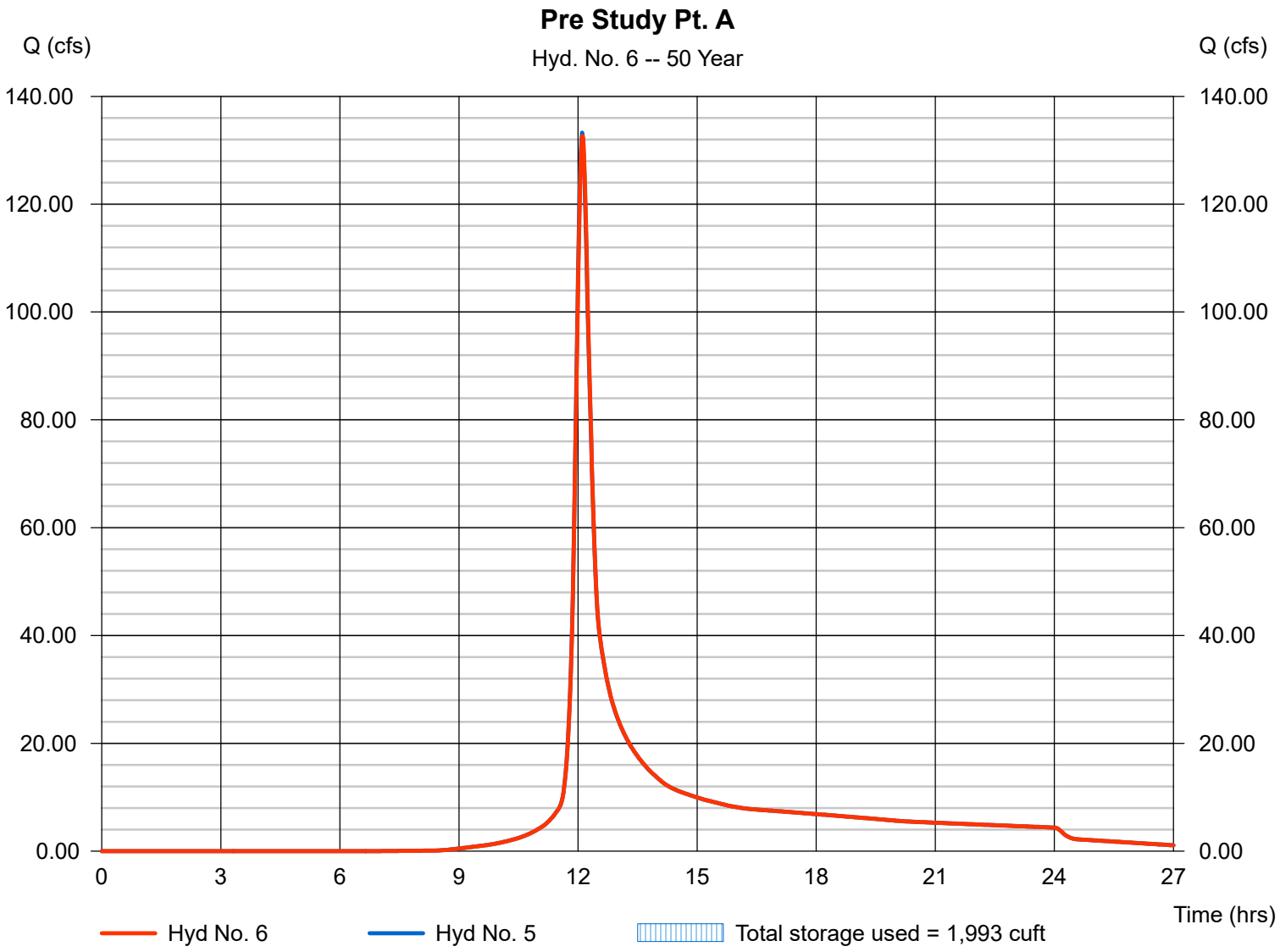
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 6

Pre Study Pt. A

Hydrograph type	=	Reservoir	Peak discharge	=	132.72 cfs
Storm frequency	=	50 yrs	Time to peak	=	12.12 hrs
Time interval	=	1 min	Hyd. volume	=	649,185 cuft
Inflow hyd. No.	=	5 - Pre total to Study Pt. A	Max. Elevation	=	974.01 ft
Reservoir name	=	Ex. DS Culvert at Barclay	Max. Storage	=	1,993 cuft

Storage Indication method used.



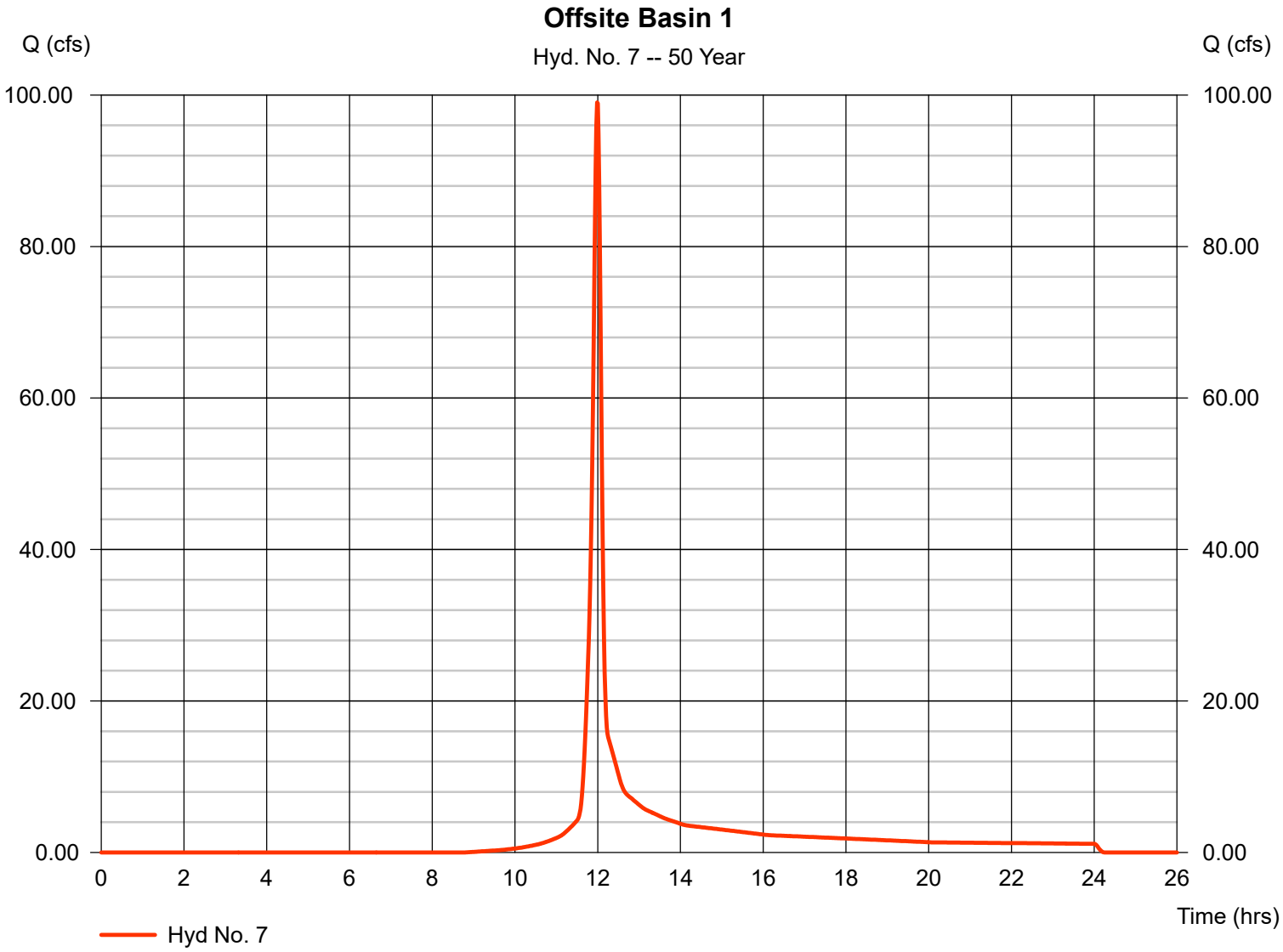
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 7

Offsite Basin 1

Hydrograph type	=	SCS Runoff	Peak discharge	=	99.03 cfs
Storm frequency	=	50 yrs	Time to peak	=	11.98 hrs
Time interval	=	1 min	Hyd. volume	=	224,028 cuft
Drainage area	=	17.800 ac	Curve number	=	67
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	8.80 min
Total precip.	=	7.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



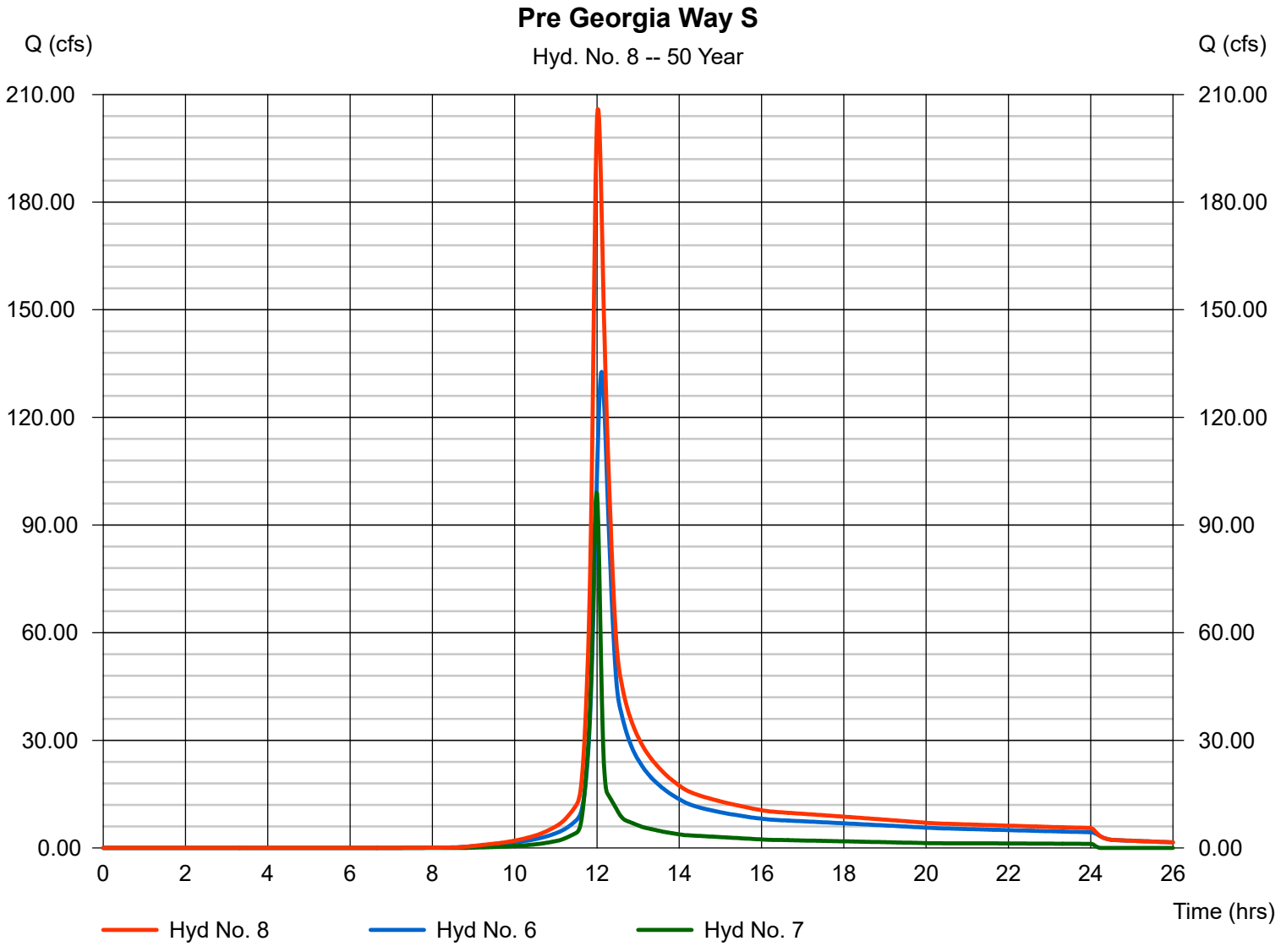
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 8

Pre Georgia Way S

Hydrograph type	=	Combine	Peak discharge	=	205.95 cfs
Storm frequency	=	50 yrs	Time to peak	=	12.02 hrs
Time interval	=	1 min	Hyd. volume	=	873,214 cuft
Inflow hyds.	=	6, 7	Contrib. drain. area	=	17.800 ac



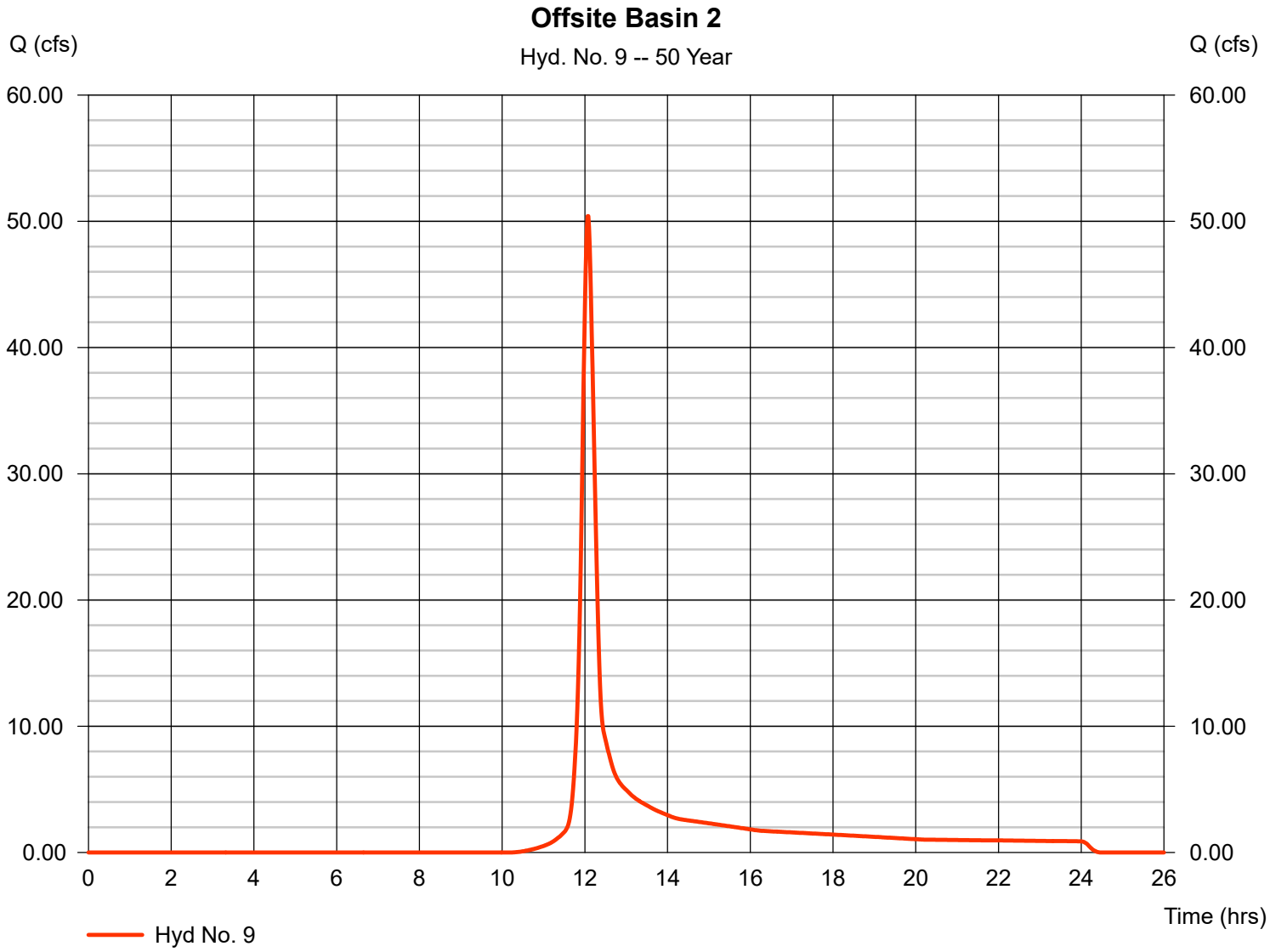
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 9

Offsite Basin 2

Hydrograph type	=	SCS Runoff	Peak discharge	=	50.41 cfs
Storm frequency	=	50 yrs	Time to peak	=	12.08 hrs
Time interval	=	1 min	Hyd. volume	=	152,754 cuft
Drainage area	=	15.500 ac	Curve number	=	60
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	17.30 min
Total precip.	=	7.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



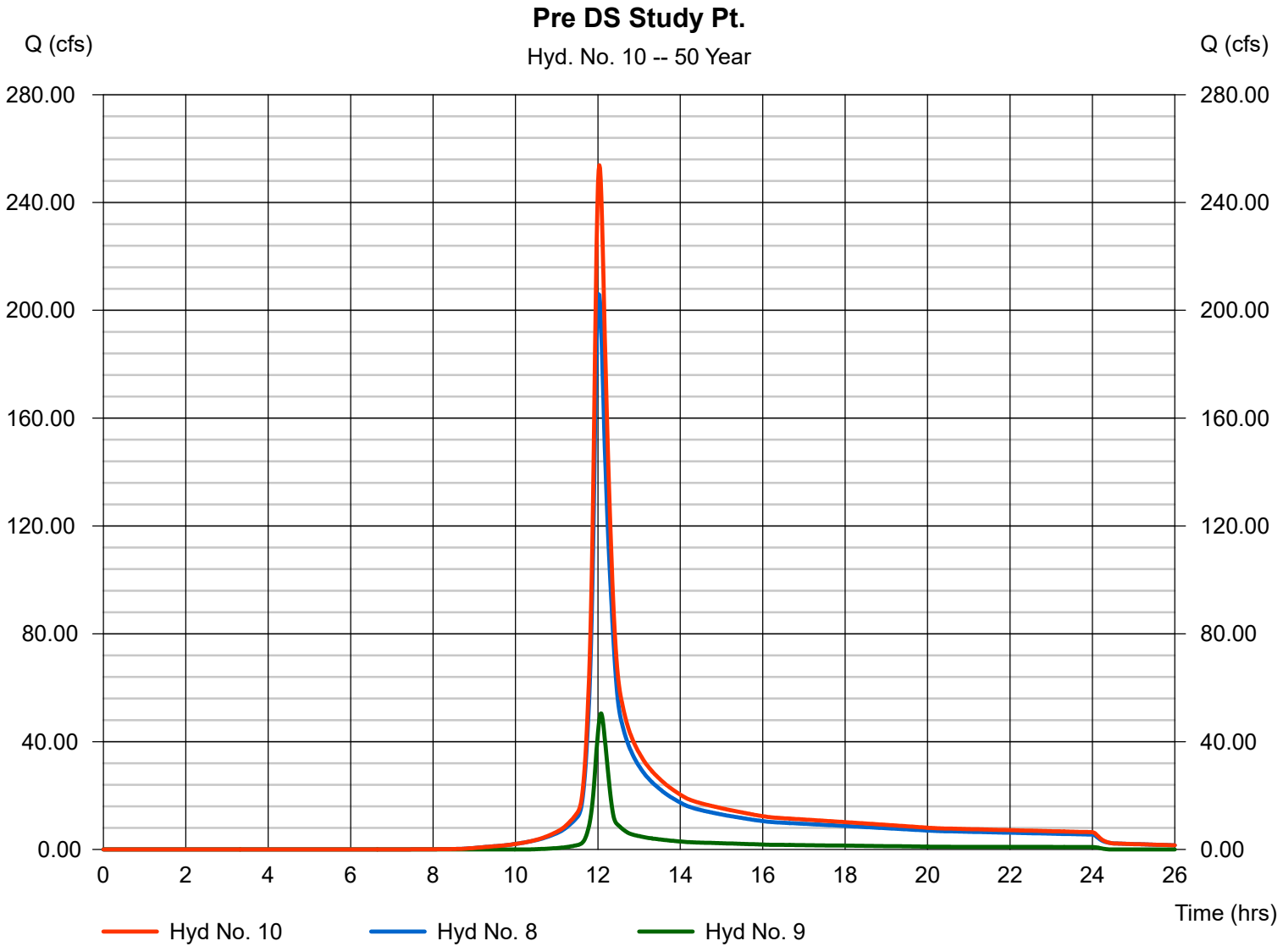
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 10

Pre DS Study Pt.

Hydrograph type	=	Combine	Peak discharge	=	253.81 cfs
Storm frequency	=	50 yrs	Time to peak	=	12.03 hrs
Time interval	=	1 min	Hyd. volume	=	1,025,967 cuft
Inflow hyds.	=	8, 9	Contrib. drain. area	=	15.500 ac



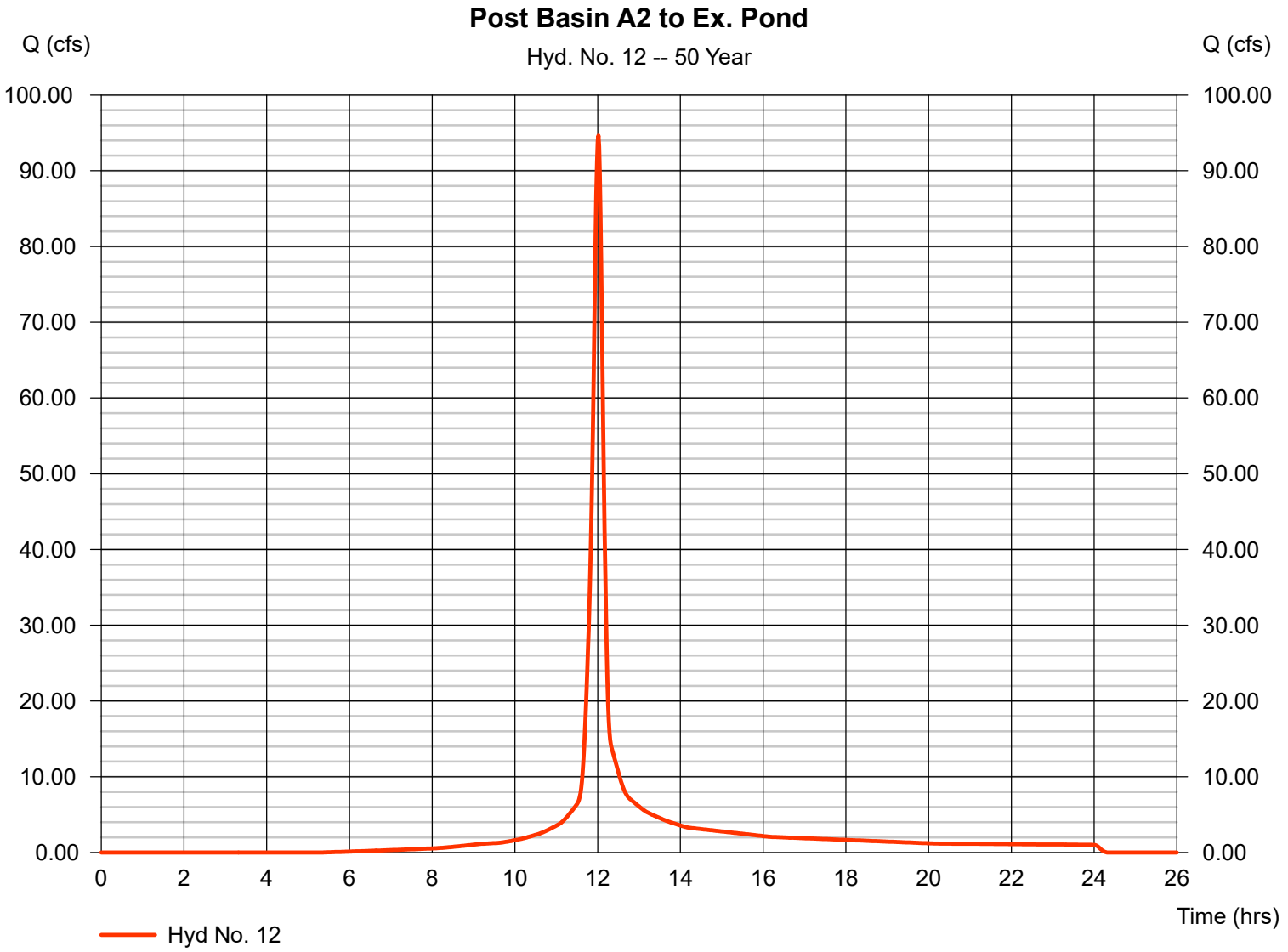
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 12

Post Basin A2 to Ex. Pond

Hydrograph type	= SCS Runoff	Peak discharge	= 94.64 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.02 hrs
Time interval	= 1 min	Hyd. volume	= 244,883 cuft
Drainage area	= 13.730 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 12.40 min
Total precip.	= 7.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

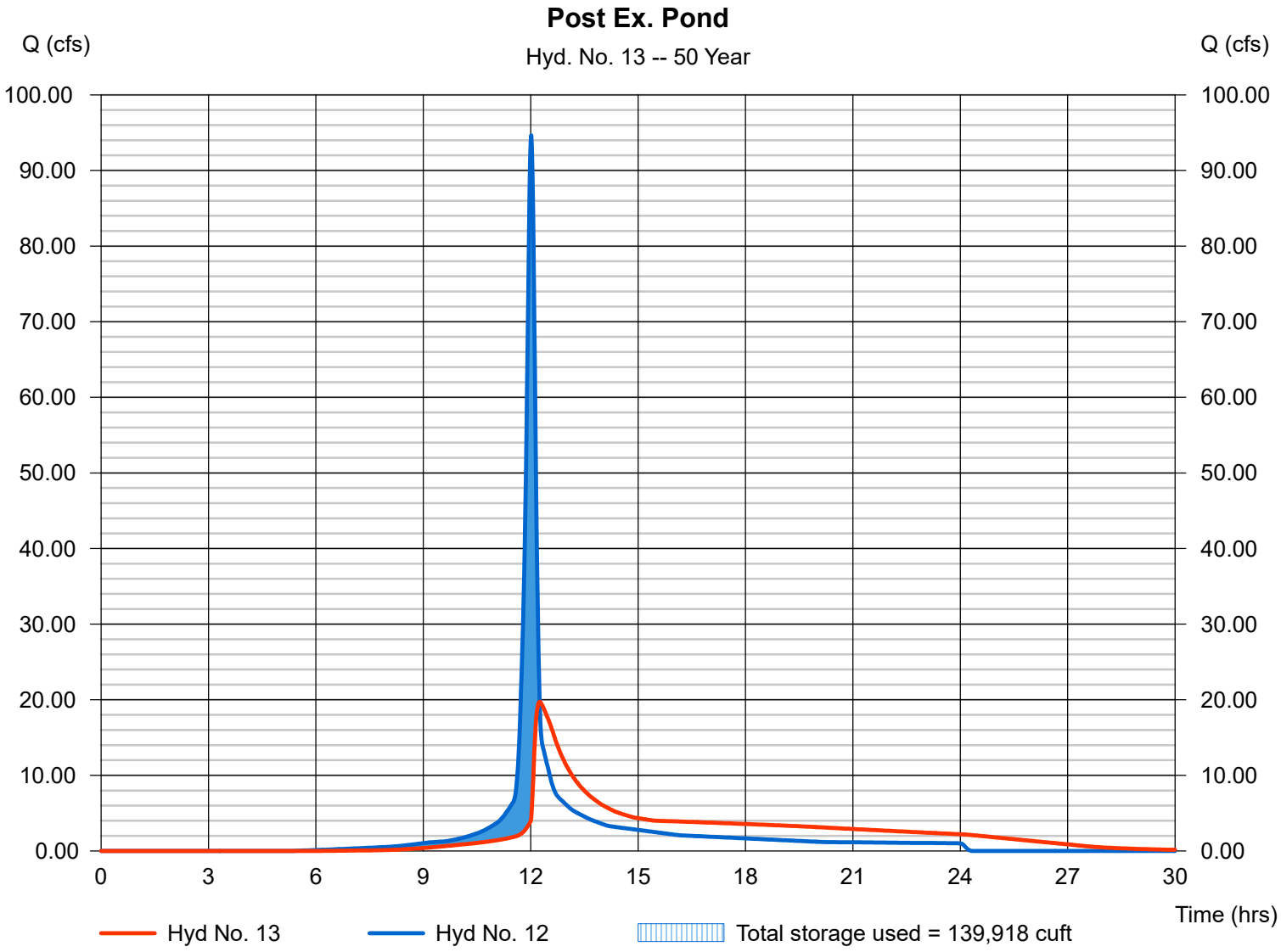
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 13

Post Ex. Pond

Hydrograph type	=	Reservoir	Peak discharge	=	19.74 cfs
Storm frequency	=	50 yrs	Time to peak	=	12.25 hrs
Time interval	=	1 min	Hyd. volume	=	244,838 cuft
Inflow hyd. No.	=	12 - Post Basin A2 to Ex. Pond	Max. Elevation	=	990.35 ft
Reservoir name	=	Ex. Pond	Max. Storage	=	139,918 cuft

Storage Indication method used. Wet pond routing start elevation = 982.00 ft.



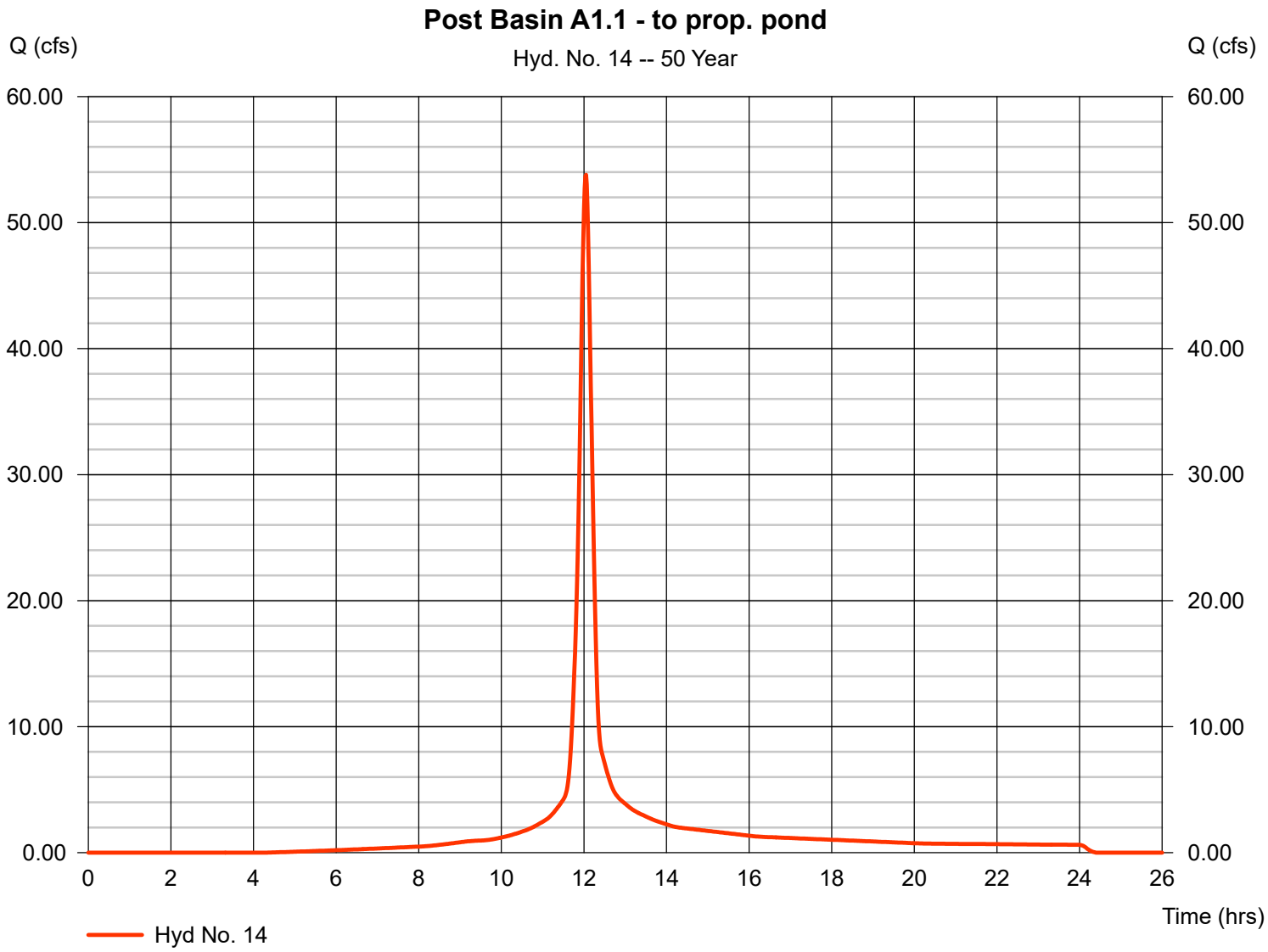
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 14

Post Basin A1.1 - to prop. pond

Hydrograph type	=	SCS Runoff	Peak discharge	=	53.79 cfs
Storm frequency	=	50 yrs	Time to peak	=	12.05 hrs
Time interval	=	1 min	Hyd. volume	=	158,668 cuft
Drainage area	=	7.930 ac	Curve number	=	85
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	16.30 min
Total precip.	=	7.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



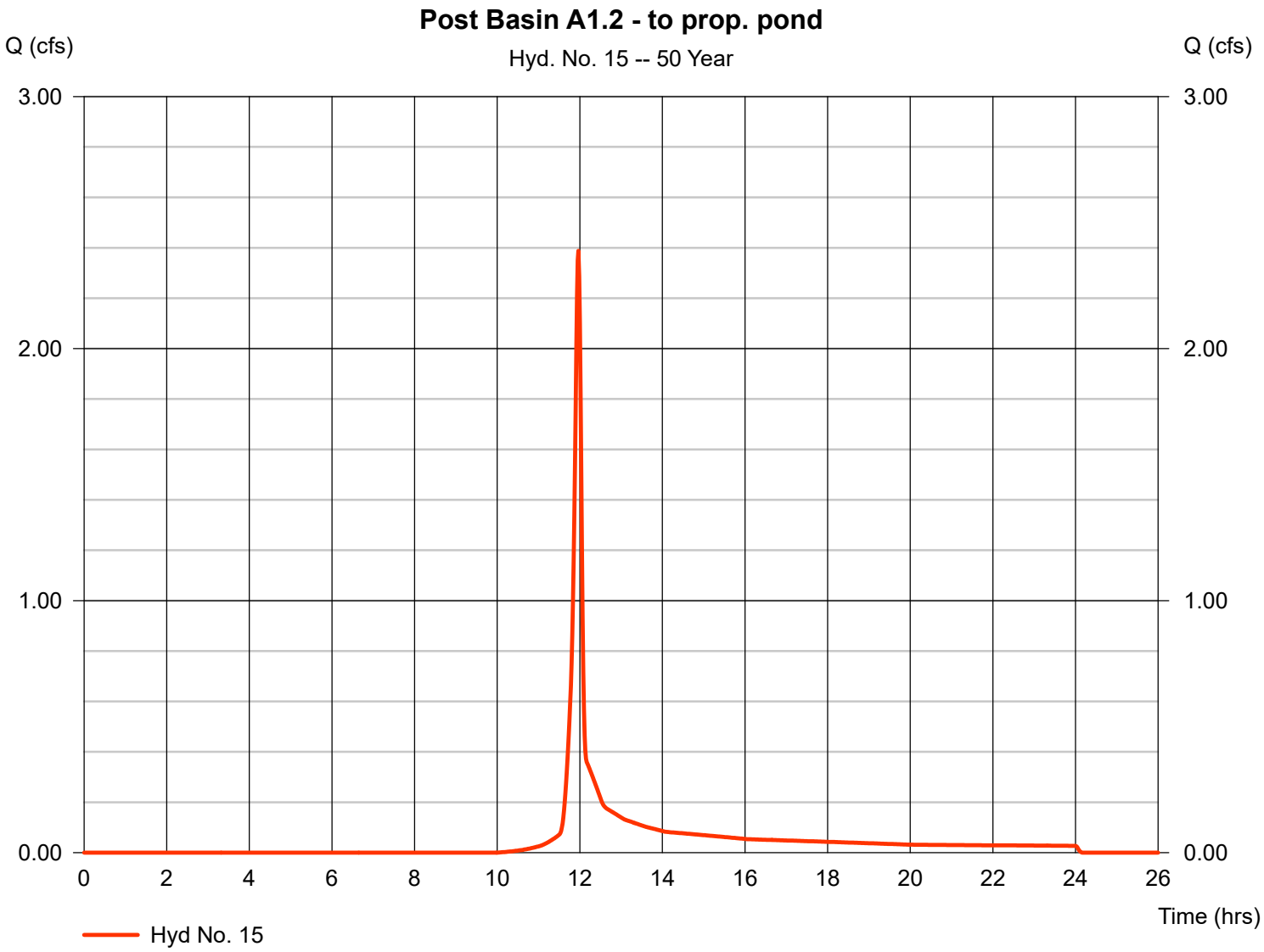
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 15

Post Basin A1.2 - to prop. pond

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.388 cfs
Storm frequency	=	50 yrs	Time to peak	=	11.97 hrs
Time interval	=	1 min	Hyd. volume	=	4,796 cuft
Drainage area	=	0.450 ac	Curve number	=	61
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	5.00 min
Total precip.	=	7.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



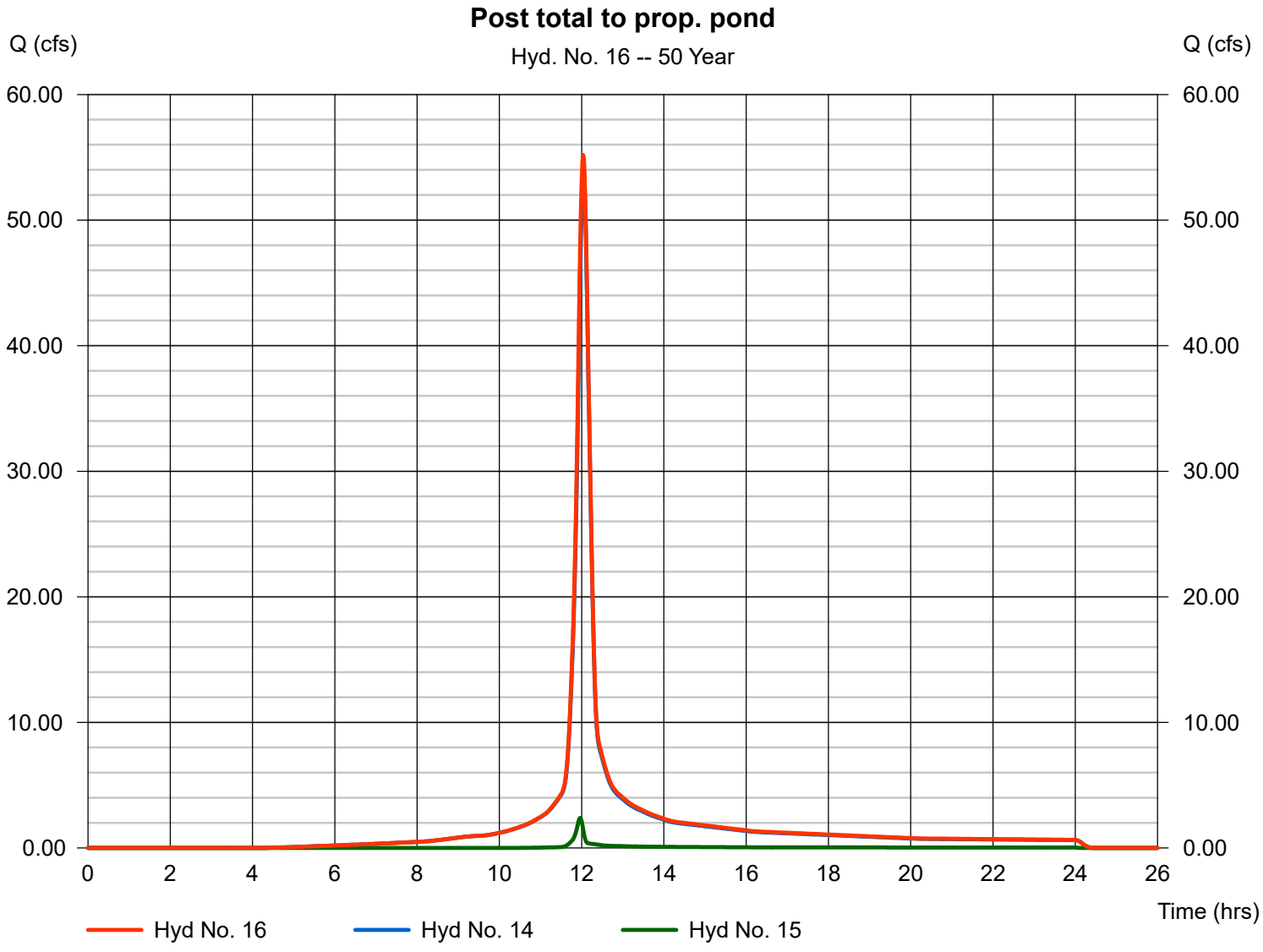
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 16

Post total to prop. pond

Hydrograph type	= Combine	Peak discharge	= 55.19 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.03 hrs
Time interval	= 1 min	Hyd. volume	= 163,465 cuft
Inflow hyds.	= 14, 15	Contrib. drain. area	= 8.380 ac



Hydrograph Report

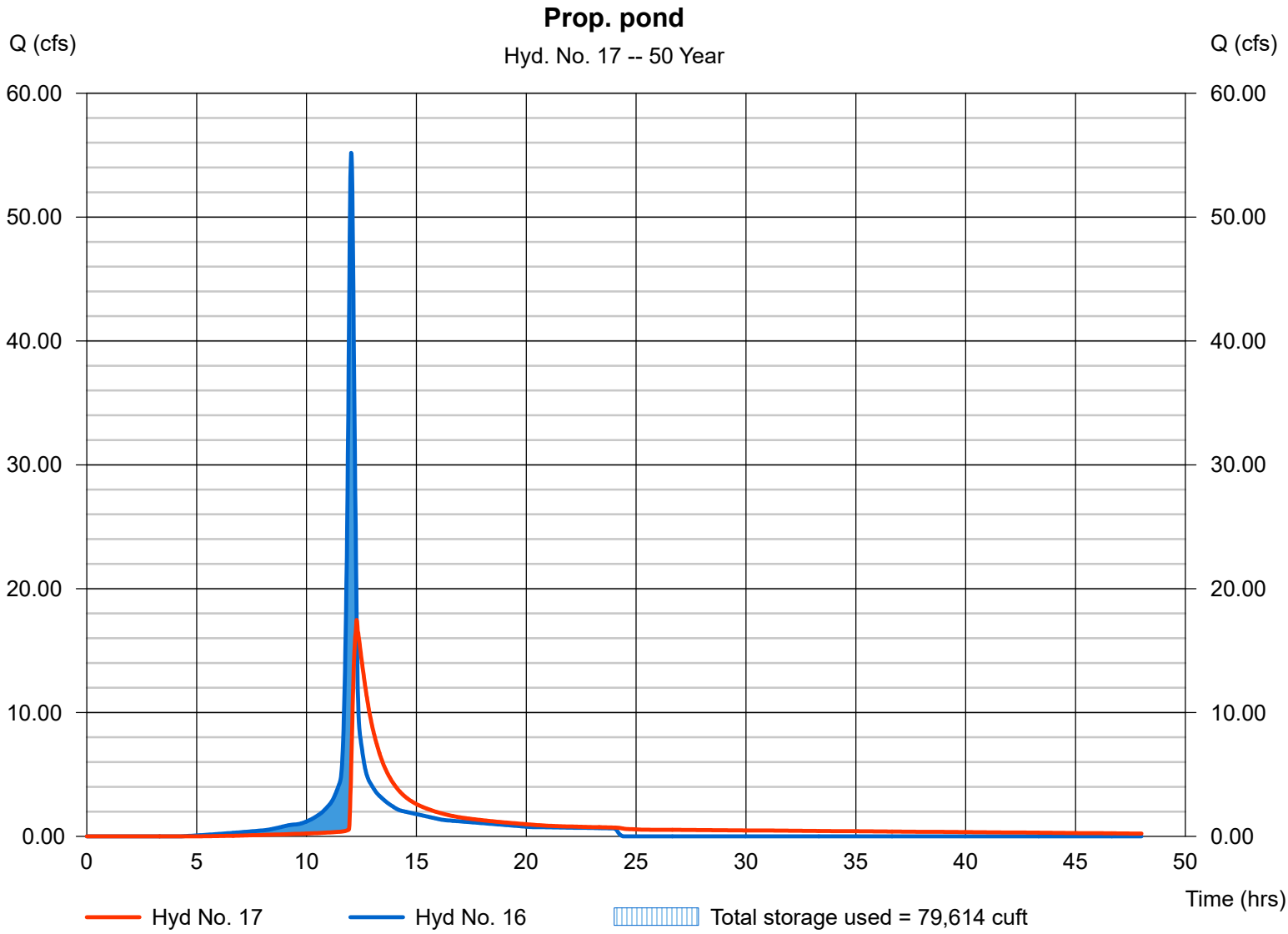
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 17

Prop. pond

Hydrograph type	=	Reservoir	Peak discharge	=	17.47 cfs
Storm frequency	=	50 yrs	Time to peak	=	12.28 hrs
Time interval	=	1 min	Hyd. volume	=	156,740 cuft
Inflow hyd. No.	=	16 - Post total to prop. pond	Max. Elevation	=	986.04 ft
Reservoir name	=	Stormwater Pond	Max. Storage	=	79,614 cuft

Storage Indication method used.



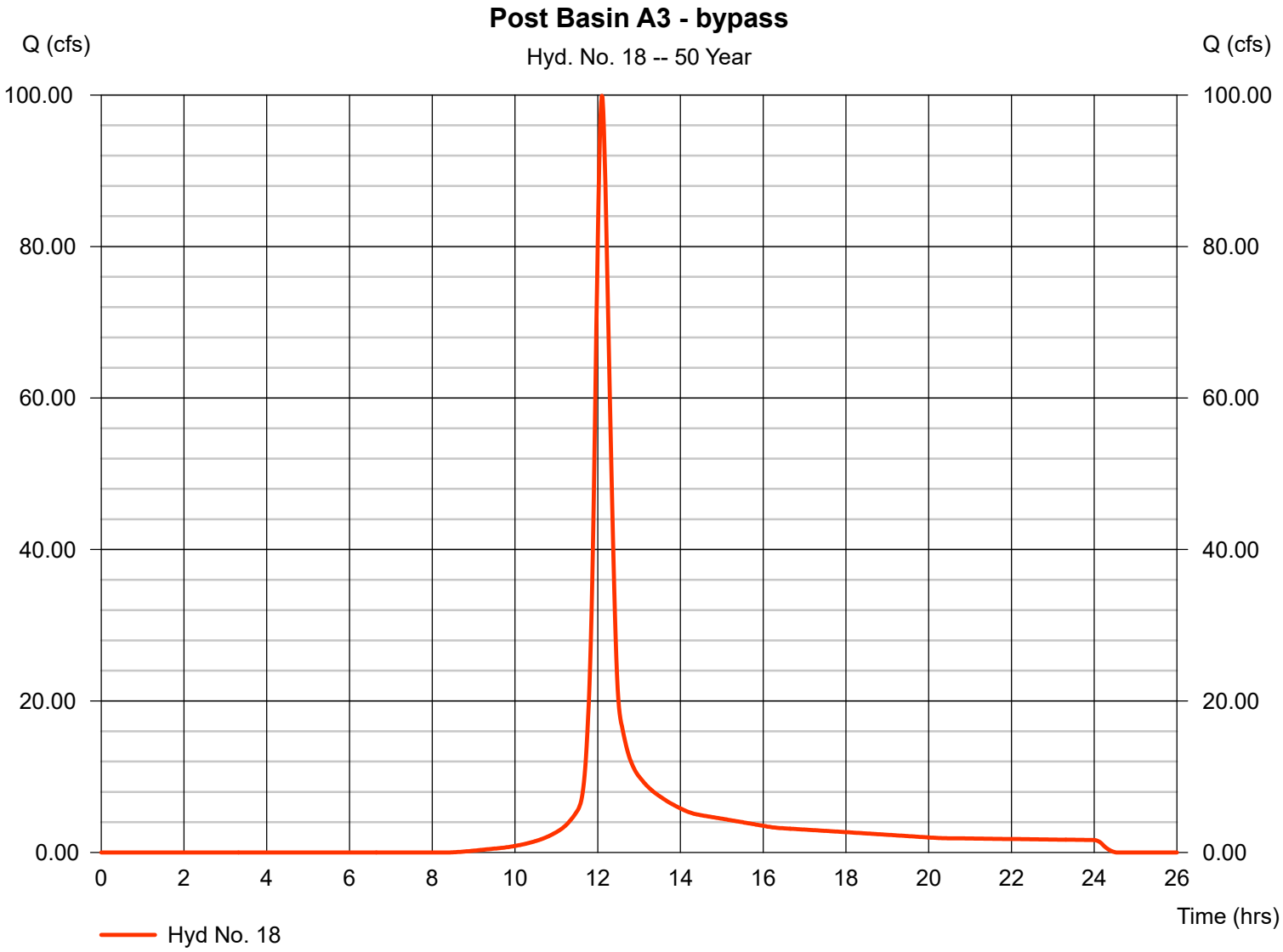
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 18

Post Basin A3 - bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	99.91 cfs
Storm frequency	=	50 yrs	Time to peak	=	12.10 hrs
Time interval	=	1 min	Hyd. volume	=	328,825 cuft
Drainage area	=	24.390 ac	Curve number	=	69
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	21.80 min
Total precip.	=	7.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



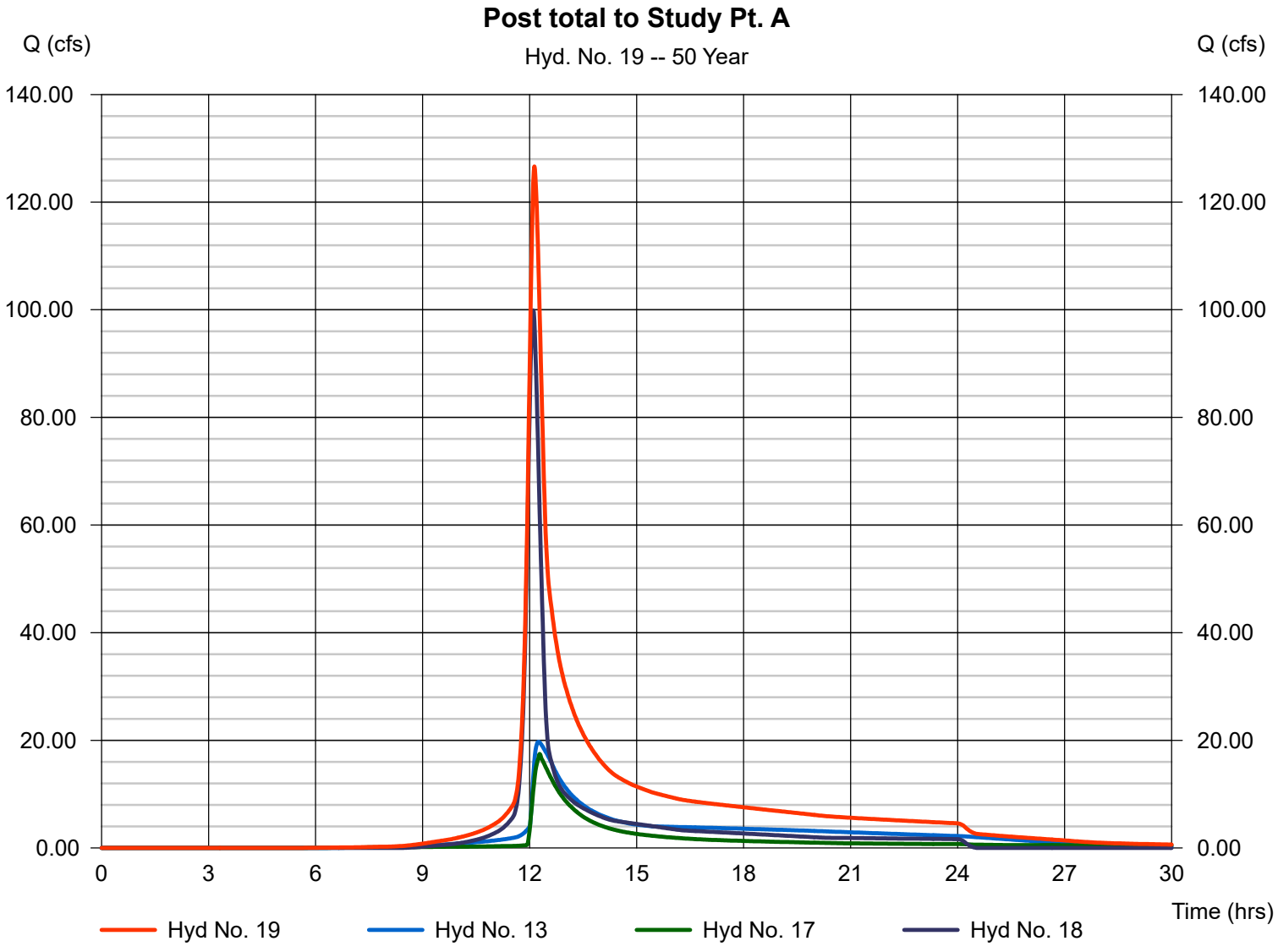
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 19

Post total to Study Pt. A

Hydrograph type	= Combine	Peak discharge	= 126.62 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.13 hrs
Time interval	= 1 min	Hyd. volume	= 730,403 cuft
Inflow hyds.	= 13, 17, 18	Contrib. drain. area	= 24.390 ac



Hydrograph Report

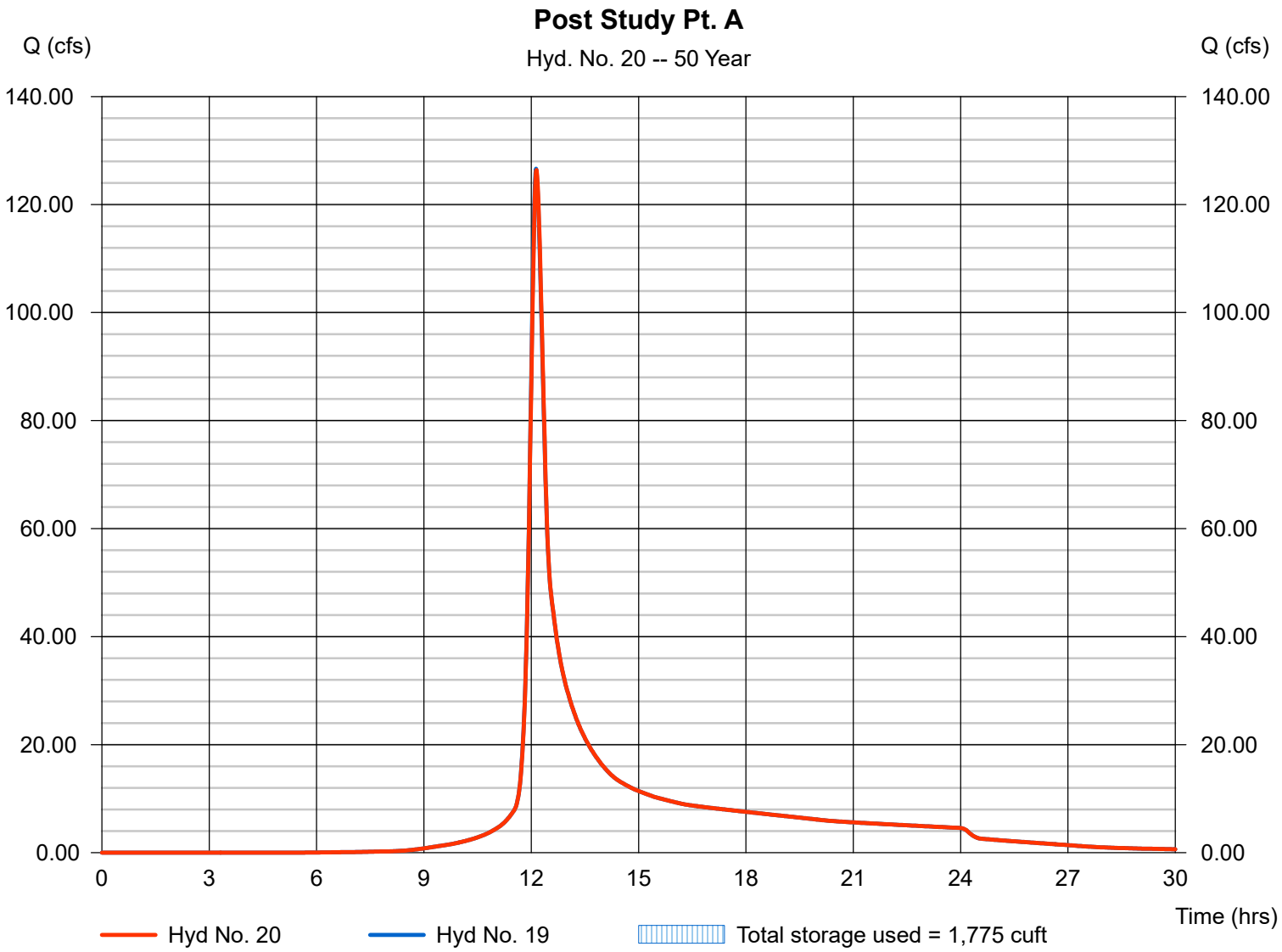
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 20

Post Study Pt. A

Hydrograph type	=	Reservoir	Peak discharge	=	126.38 cfs
Storm frequency	=	50 yrs	Time to peak	=	12.15 hrs
Time interval	=	1 min	Hyd. volume	=	730,397 cuft
Inflow hyd. No.	=	19 - Post total to Study Pt. A	Max. Elevation	=	973.75 ft
Reservoir name	=	Ex. DS Culvert at Barclay	Max. Storage	=	1,775 cuft

Storage Indication method used.



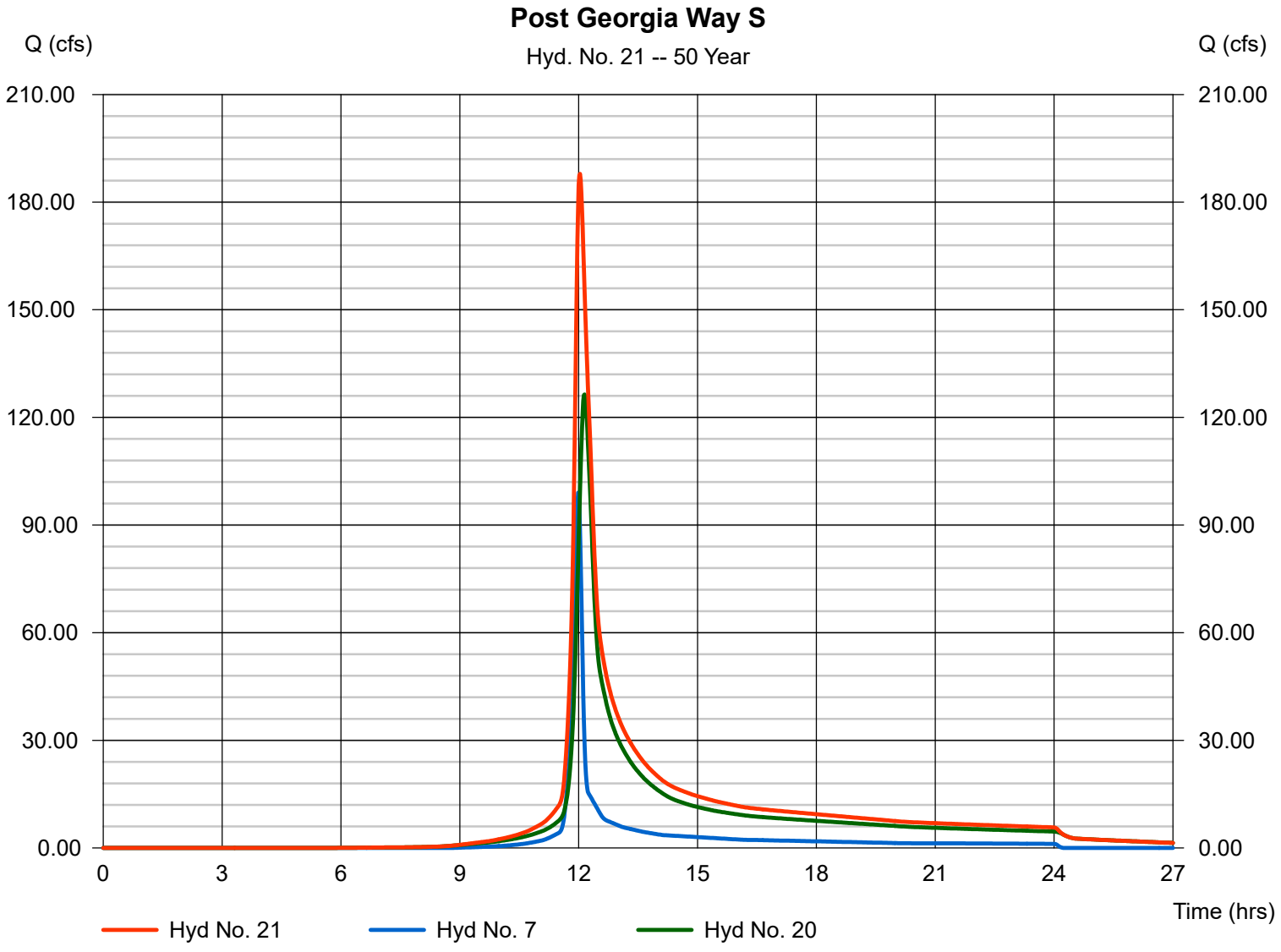
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 21

Post Georgia Way S

Hydrograph type	= Combine	Peak discharge	= 187.86 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.03 hrs
Time interval	= 1 min	Hyd. volume	= 954,425 cuft
Inflow hyds.	= 7, 20	Contrib. drain. area	= 17.800 ac



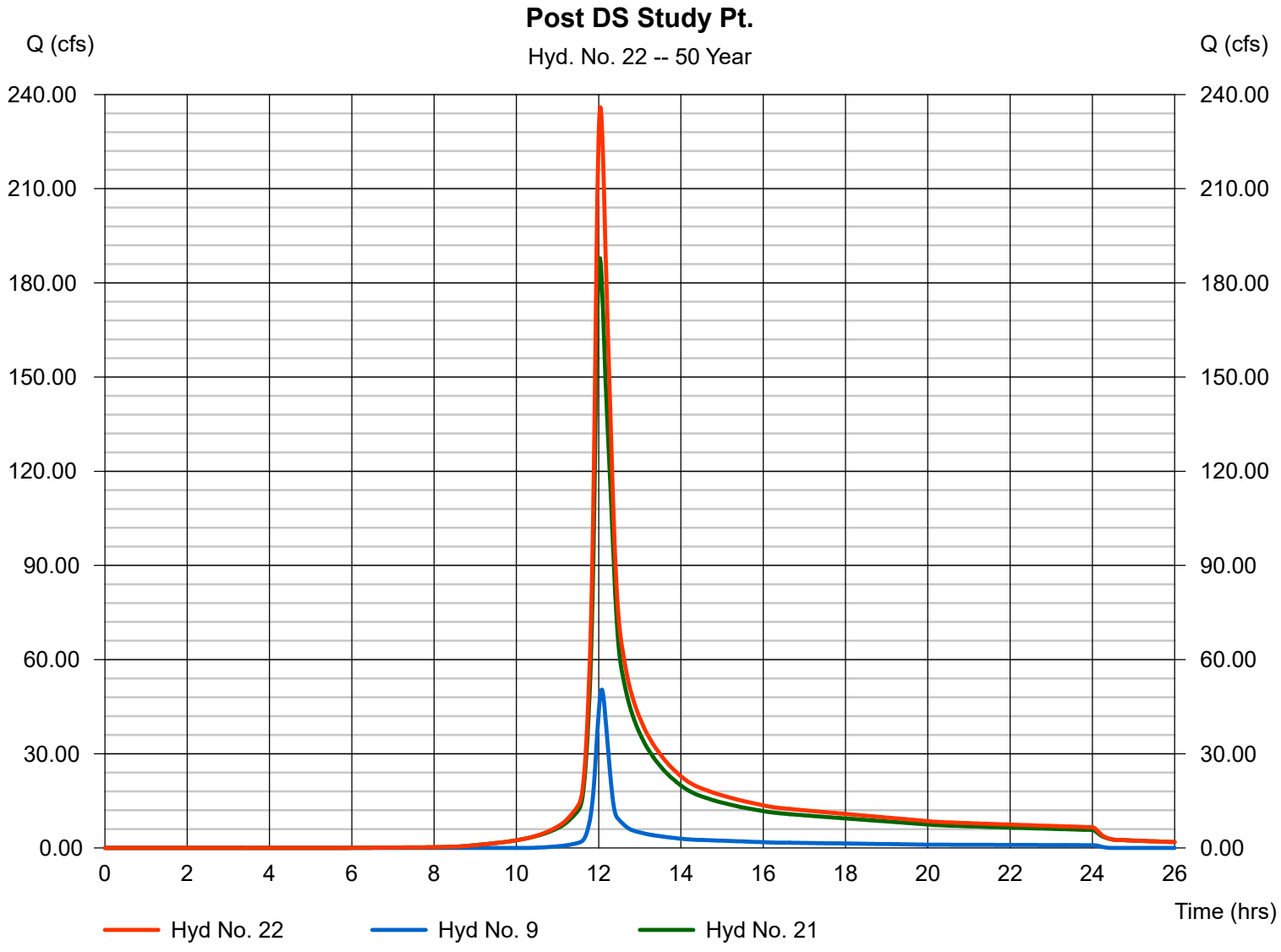
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 22

Post DS Study Pt.

Hydrograph type	=	Combine	Peak discharge	=	235.96 cfs
Storm frequency	=	50 yrs	Time to peak	=	12.03 hrs
Time interval	=	1 min	Hyd. volume	=	1,107,179 cuft
Inflow hyds.	=	9, 21	Contrib. drain. area	=	15.500 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

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	118.09	1	721	303,993	------	------	------	Pre Basin A2- to Ex. Detention Pond
2	Reservoir	32.13	1	733	303,939	1	991.48	160,769	Pre Ex. Pond
3	SCS Runoff	31.02	1	721	79,131	------	------	------	Pre Basin A1- site
4	SCS Runoff	112.23	1	726	368,765	------	------	------	Pre Basin A3 - bypass
5	Combine	161.43	1	726	751,834	2, 3, 4	------	------	Pre total to Study Pt. A
6	Reservoir	158.40	1	728	751,834	5	975.30	4,936	Pre Study Pt. A
7	SCS Runoff	115.75	1	719	262,008	------	------	------	Offsite Basin 1
8	Combine	243.65	1	721	1,013,843	6, 7	------	------	Pre Georgia Way S
9	SCS Runoff	60.65	1	724	182,088	------	------	------	Offsite Basin 2
10	Combine	299.36	1	721	1,195,931	8, 9	------	------	Pre DS Study Pt.
12	SCS Runoff	106.80	1	721	278,021	------	------	------	Post Basin A2 to Ex. Pond
13	Reservoir	26.91	1	734	277,972	12	991.03	152,458	Post Ex. Pond
14	SCS Runoff	60.25	1	723	178,840	------	------	------	Post Basin A1.1 - to prop. pond
15	SCS Runoff	2.838	1	718	5,700	------	------	------	Post Basin A1.2 - to prop. pond
16	Combine	61.94	1	722	184,540	14, 15	------	------	Post total to prop. pond
17	Reservoir	32.10	1	733	177,673	16	986.48	84,058	Prop. pond
18	SCS Runoff	116.48	1	726	382,731	------	------	------	Post Basin A3 - bypass
19	Combine	160.18	1	730	838,376	13, 17, 18	------	------	Post total to Study Pt. A
20	Reservoir	157.42	1	732	838,371	19	975.26	4,814	Post Study Pt. A
21	Combine	224.11	1	722	1,100,378	7, 20	------	------	Post Georgia Way S
22	Combine	282.80	1	723	1,282,466	9, 21	------	------	Post DS Study Pt.
24	Reservoir	36.50	1	731	145,767	16	986.59	85,189	Emergency Overflow

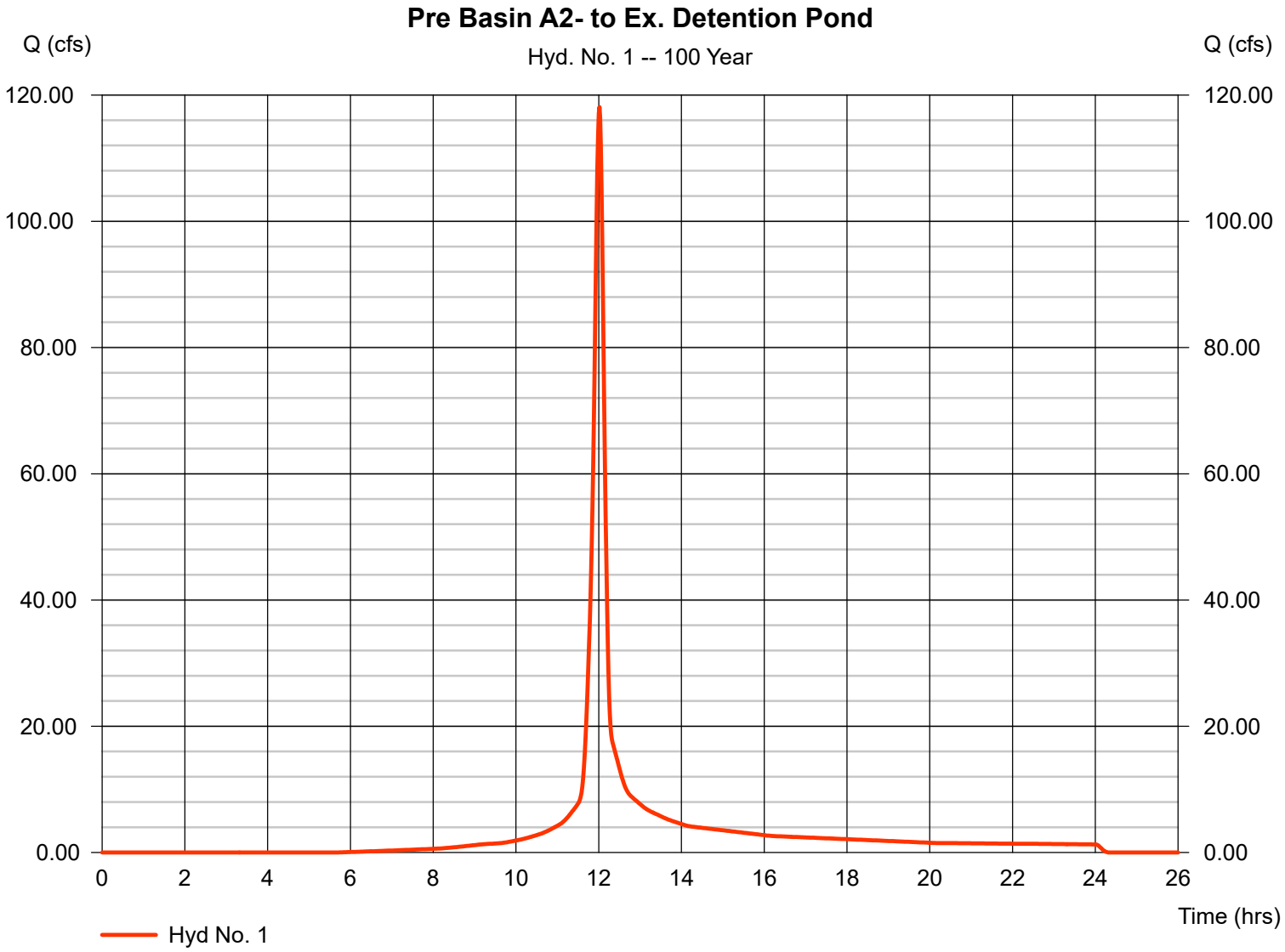
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 1

Pre Basin A2- to Ex. Detention Pond

Hydrograph type	=	SCS Runoff	Peak discharge	=	118.09 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.02 hrs
Time interval	=	1 min	Hyd. volume	=	303,993 cuft
Drainage area	=	16.000 ac	Curve number	=	78
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.40 min
Total precip.	=	7.92 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

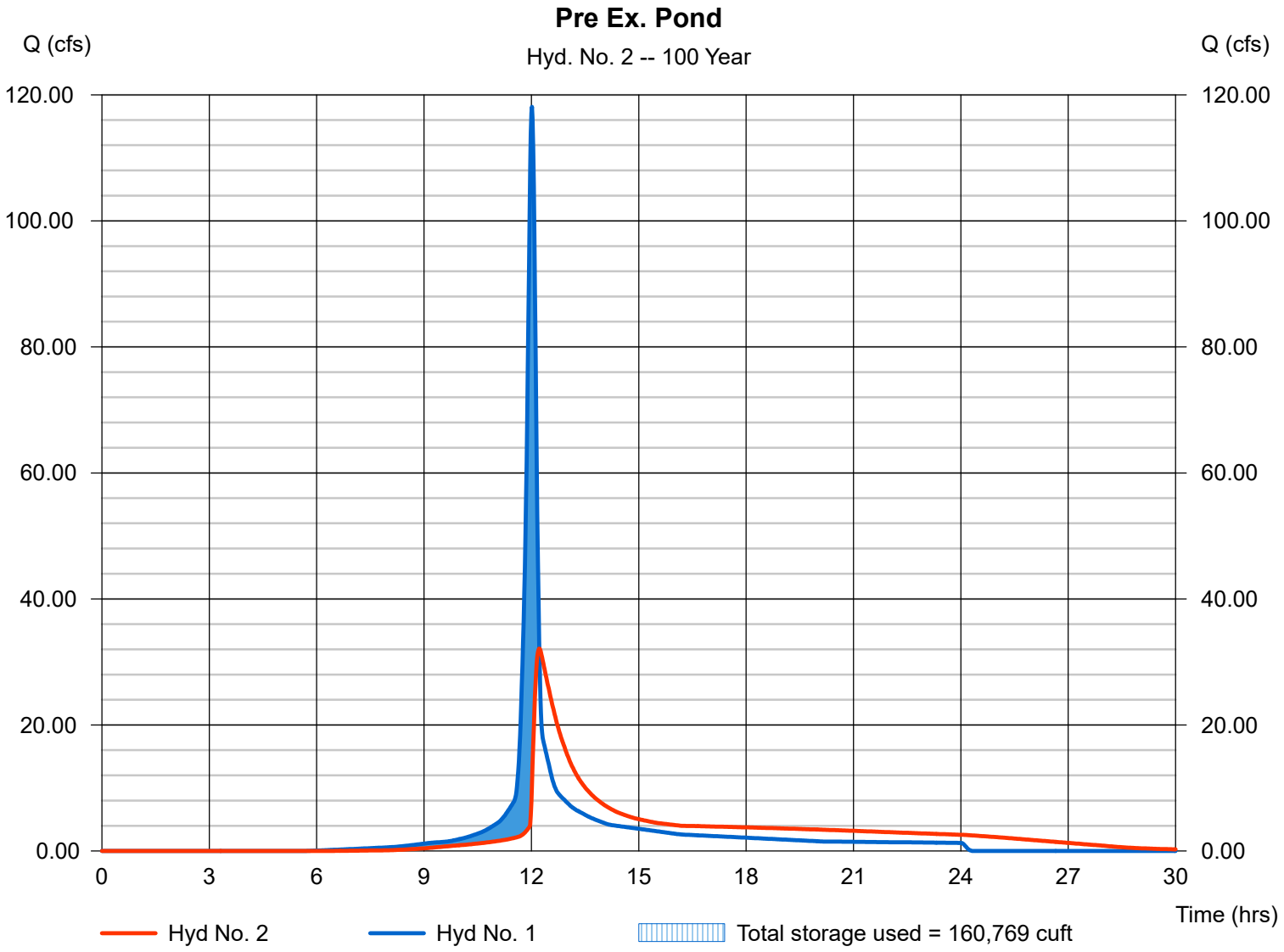
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 2

Pre Ex. Pond

Hydrograph type	=	Reservoir	Peak discharge	=	32.13 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.22 hrs
Time interval	=	1 min	Hyd. volume	=	303,939 cuft
Inflow hyd. No.	=	1 - Pre Basin A2- to Ex. Detention Pond	Max. Elevation	=	991.48 ft
Reservoir name	=	Ex. Pond	Max. Storage	=	160,769 cuft

Storage Indication method used. Wet pond routing start elevation = 982.00 ft.



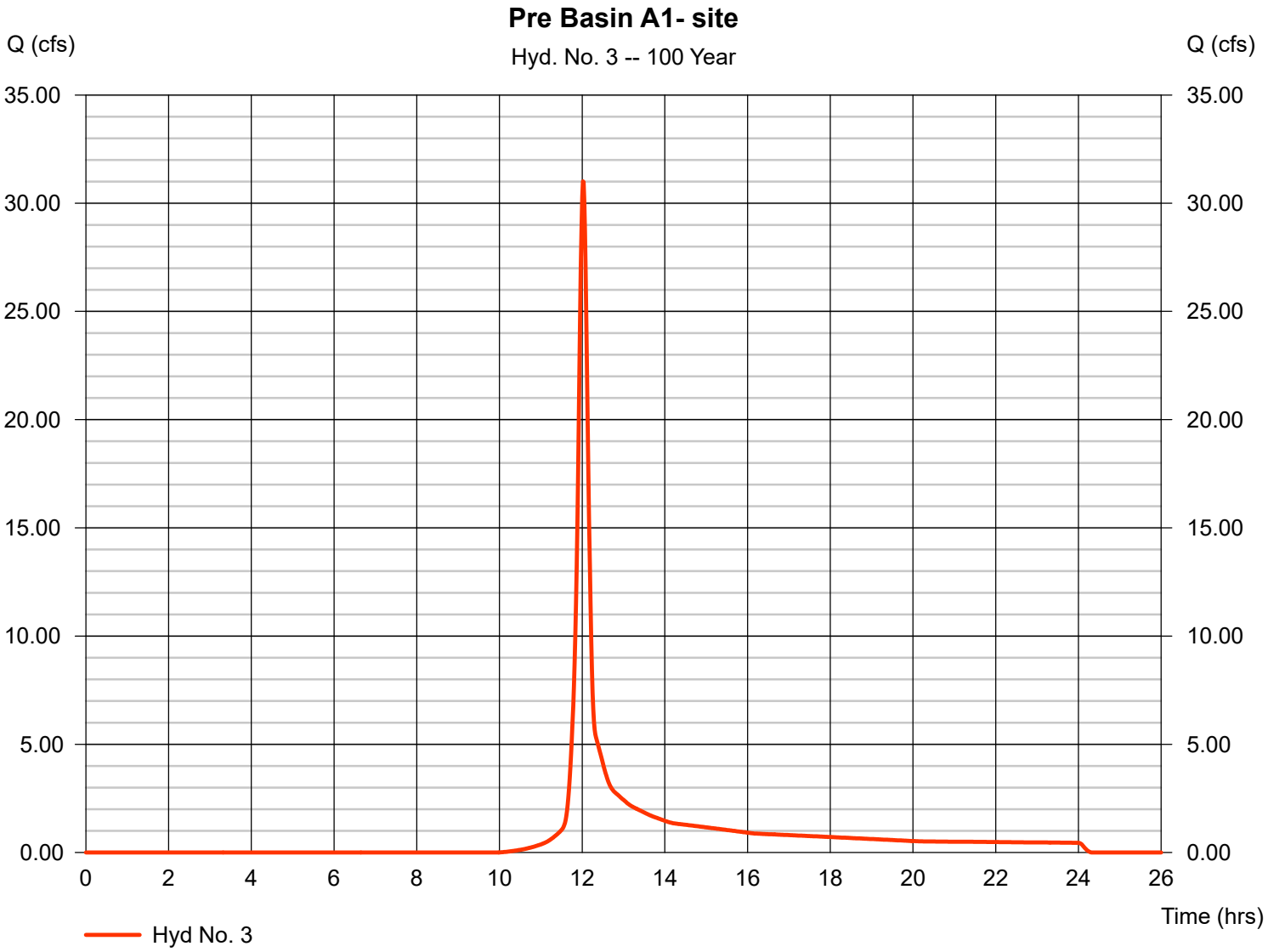
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 3

Pre Basin A1- site

Hydrograph type	=	SCS Runoff	Peak discharge	=	31.02 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.02 hrs
Time interval	=	1 min	Hyd. volume	=	79,131 cuft
Drainage area	=	7.000 ac	Curve number	=	59
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.80 min
Total precip.	=	7.92 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



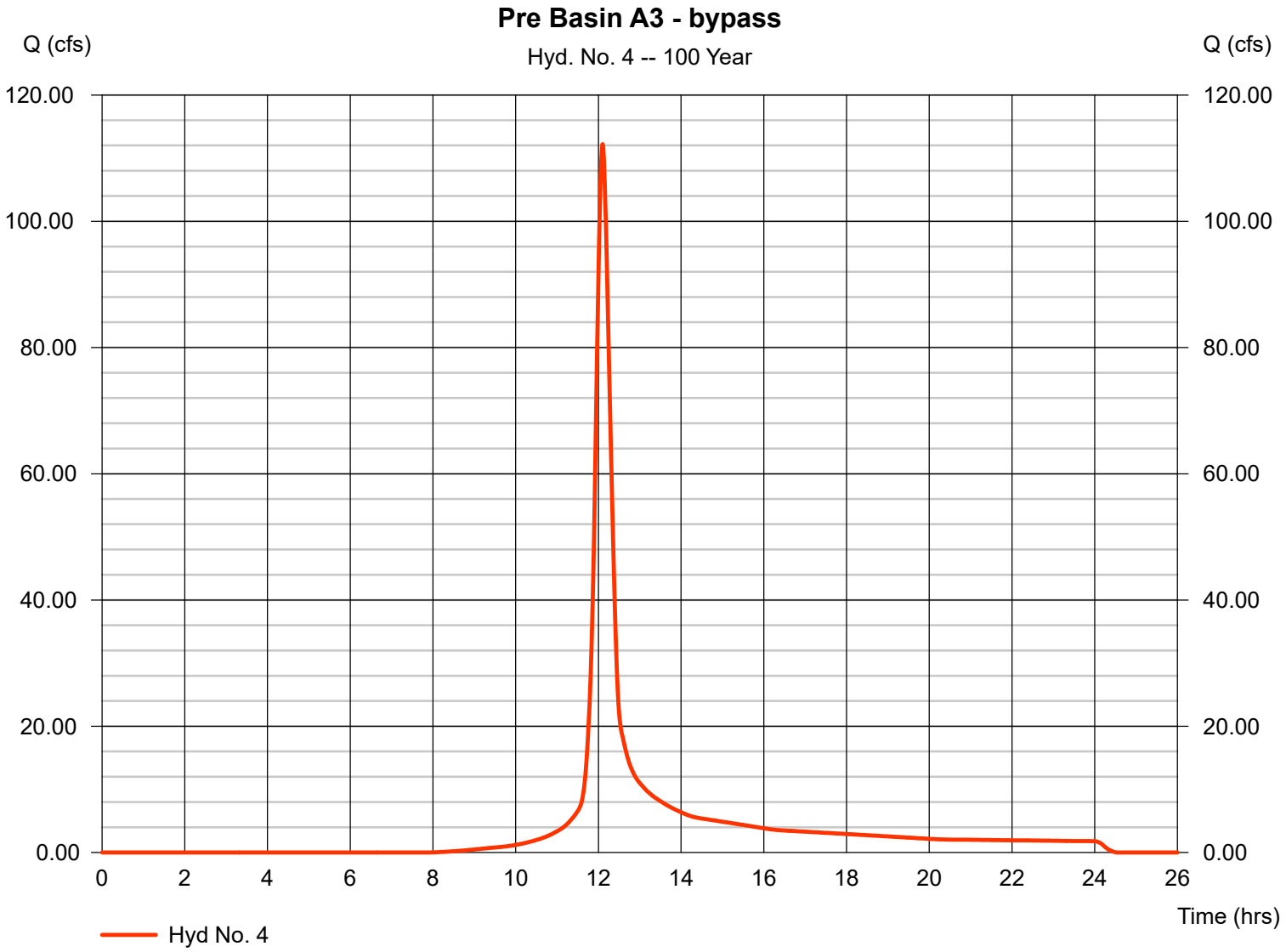
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 4

Pre Basin A3 - bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	112.23 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.10 hrs
Time interval	=	1 min	Hyd. volume	=	368,765 cuft
Drainage area	=	23.500 ac	Curve number	=	69
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	21.80 min
Total precip.	=	7.92 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



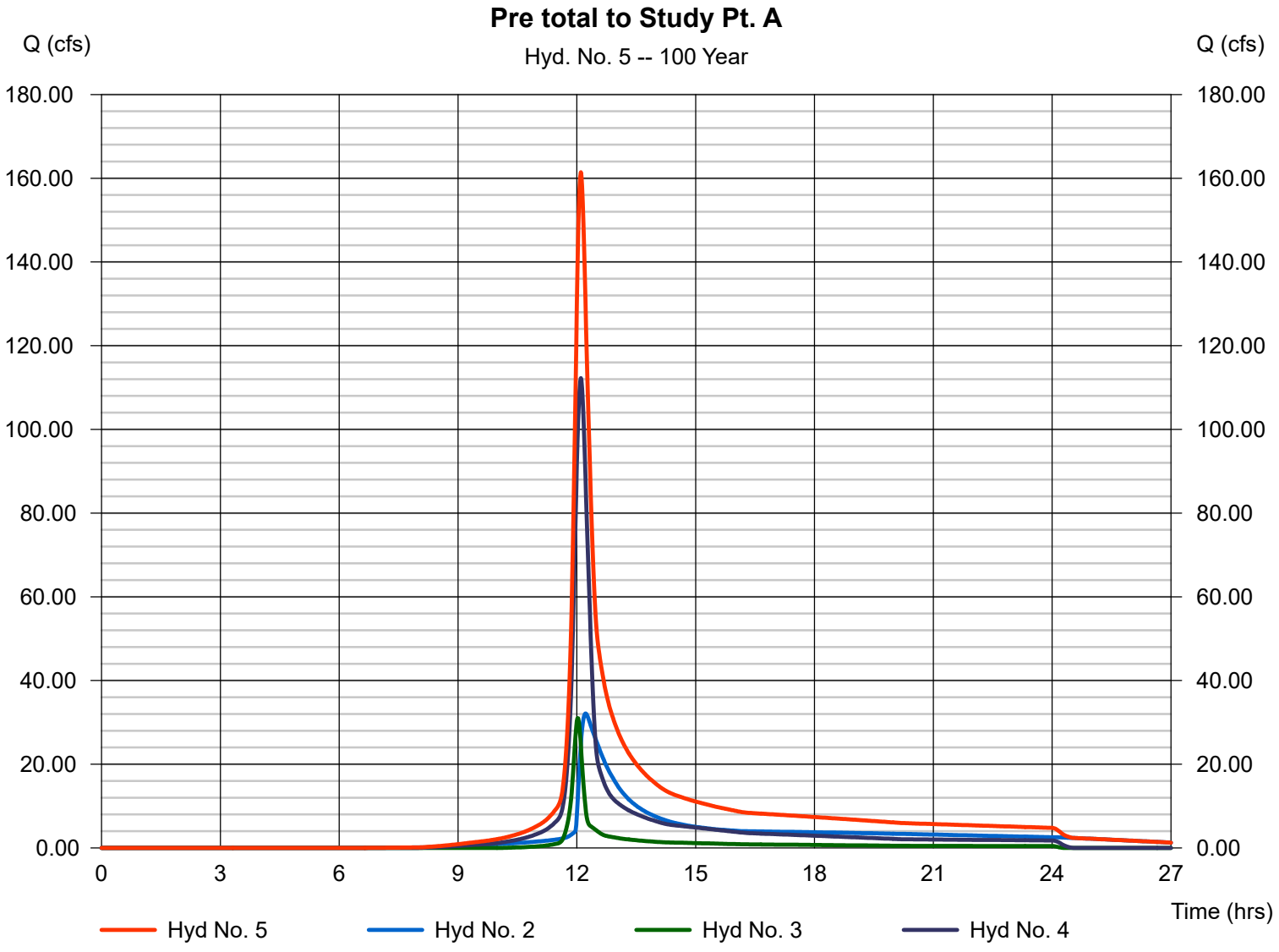
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 5

Pre total to Study Pt. A

Hydrograph type	= Combine	Peak discharge	= 161.43 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 1 min	Hyd. volume	= 751,834 cuft
Inflow hyds.	= 2, 3, 4	Contrib. drain. area	= 30.500 ac



Hydrograph Report

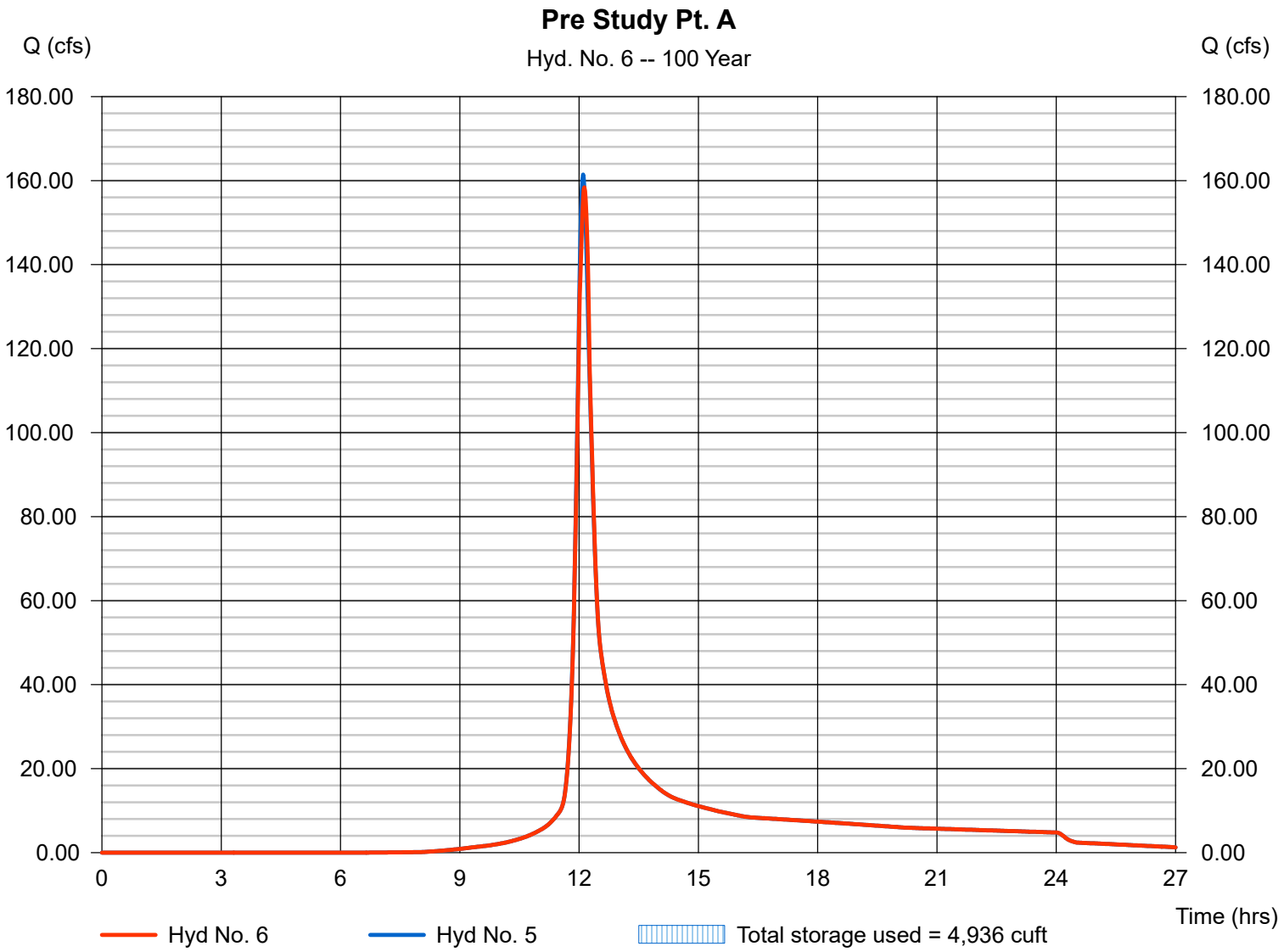
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 6

Pre Study Pt. A

Hydrograph type	=	Reservoir	Peak discharge	=	158.40 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.13 hrs
Time interval	=	1 min	Hyd. volume	=	751,834 cuft
Inflow hyd. No.	=	5 - Pre total to Study Pt. A	Max. Elevation	=	975.30 ft
Reservoir name	=	Ex. DS Culvert at Barclay	Max. Storage	=	4,936 cuft

Storage Indication method used.



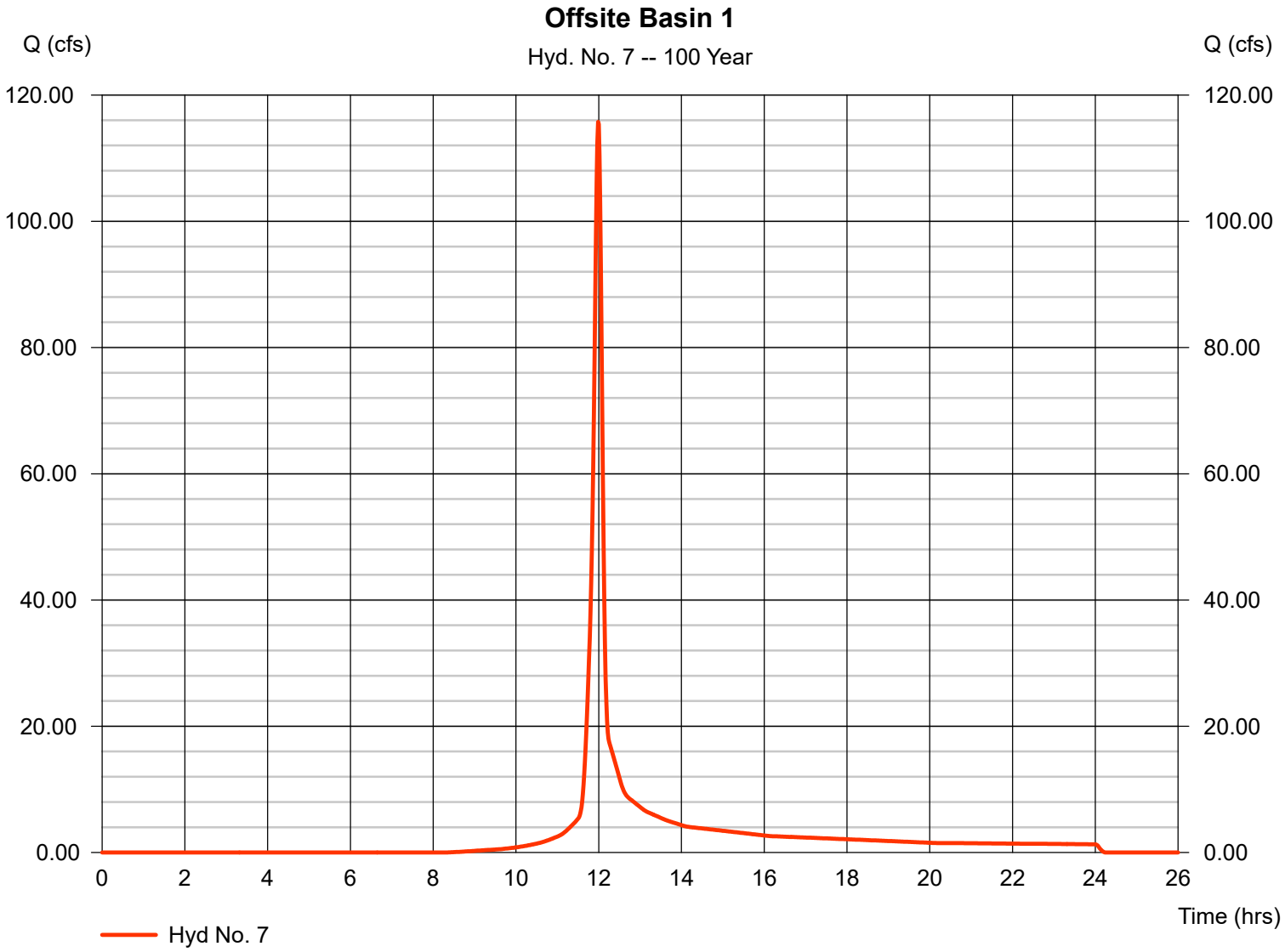
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 7

Offsite Basin 1

Hydrograph type	=	SCS Runoff	Peak discharge	=	115.75 cfs
Storm frequency	=	100 yrs	Time to peak	=	11.98 hrs
Time interval	=	1 min	Hyd. volume	=	262,008 cuft
Drainage area	=	17.800 ac	Curve number	=	67
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	8.80 min
Total precip.	=	7.92 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



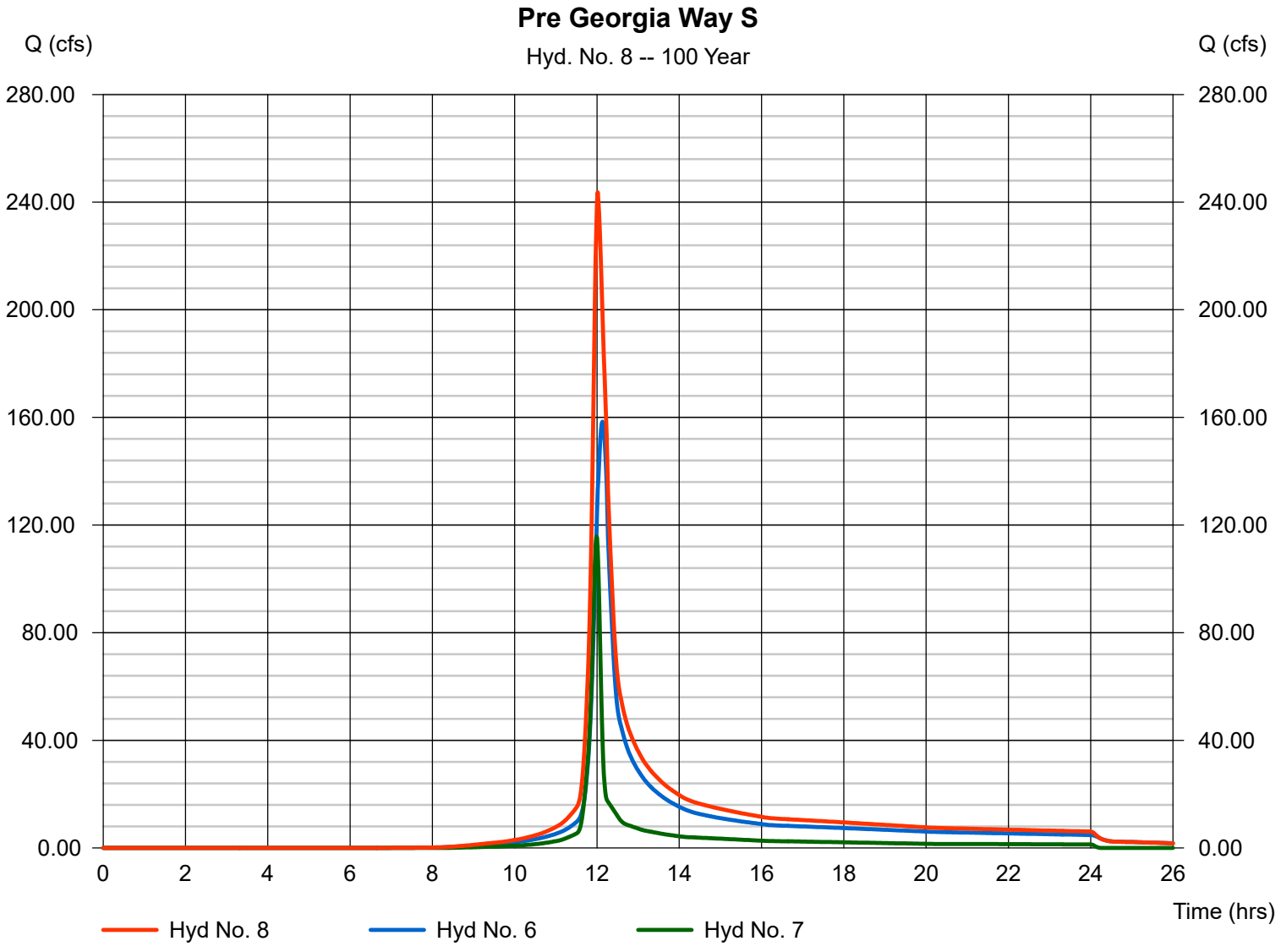
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 8

Pre Georgia Way S

Hydrograph type	=	Combine	Peak discharge	=	243.65 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.02 hrs
Time interval	=	1 min	Hyd. volume	=	1,013,843 cuft
Inflow hyds.	=	6, 7	Contrib. drain. area	=	17.800 ac



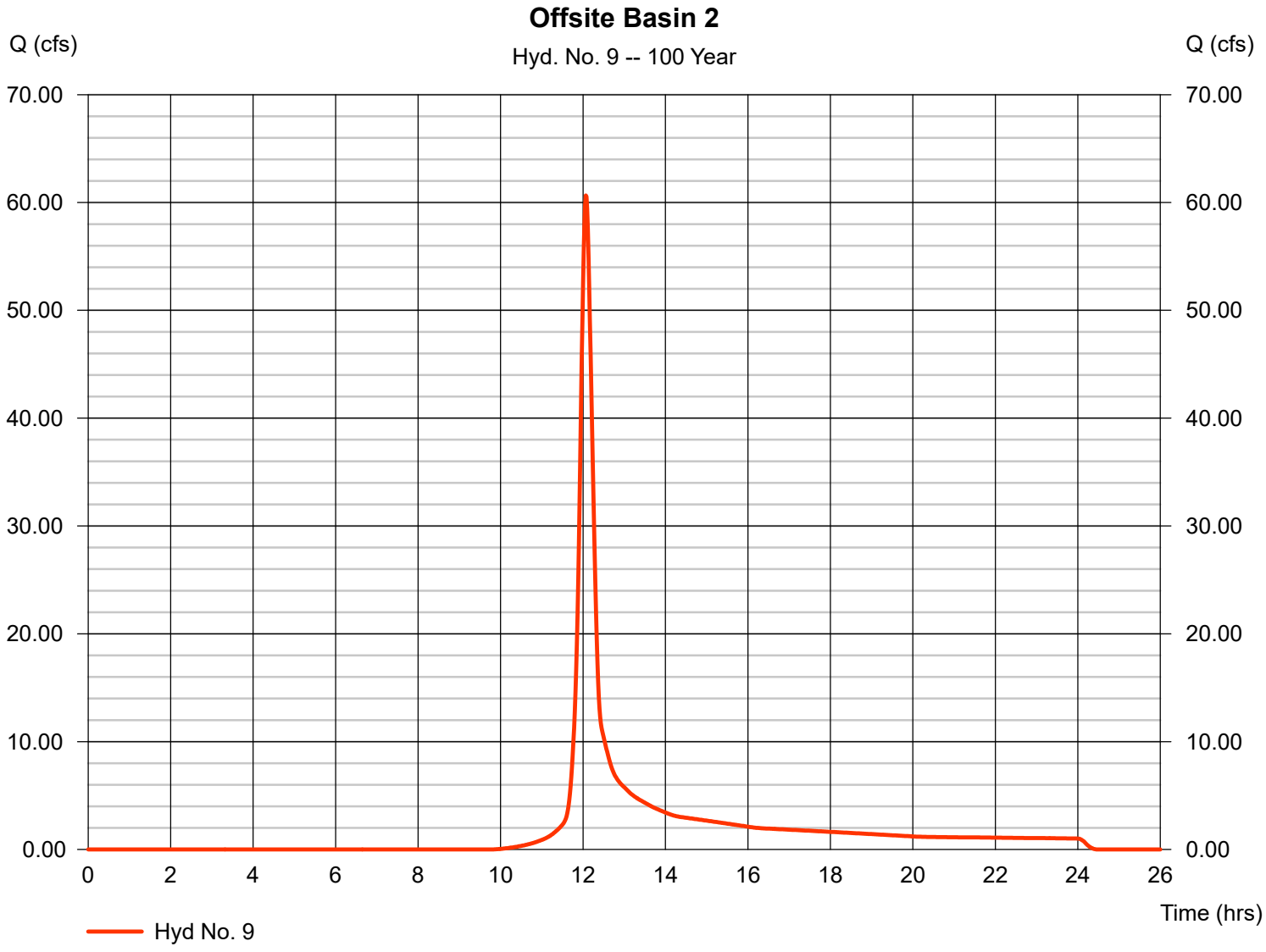
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 9

Offsite Basin 2

Hydrograph type	=	SCS Runoff	Peak discharge	=	60.65 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.07 hrs
Time interval	=	1 min	Hyd. volume	=	182,088 cuft
Drainage area	=	15.500 ac	Curve number	=	60
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	17.30 min
Total precip.	=	7.92 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



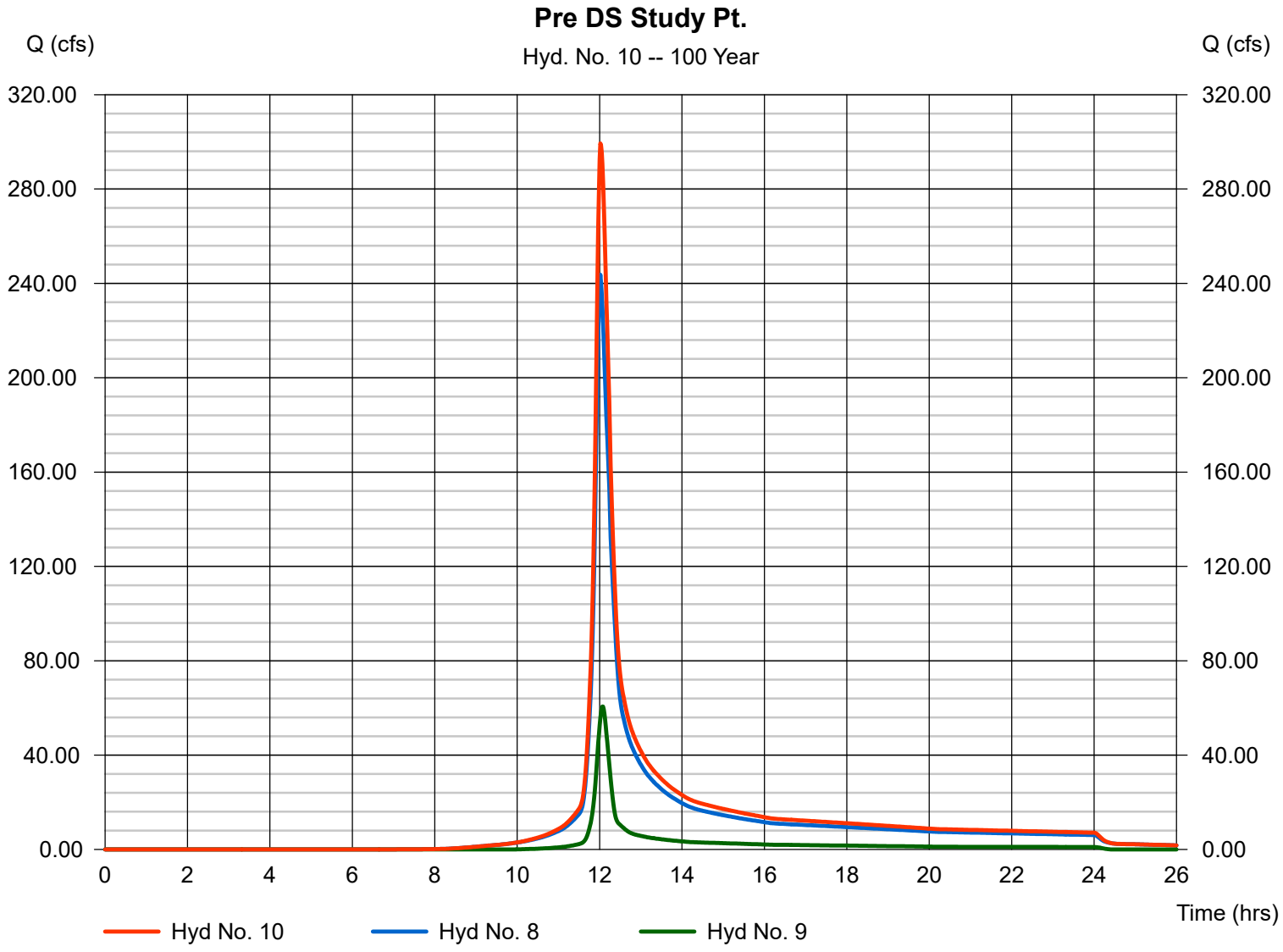
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 10

Pre DS Study Pt.

Hydrograph type	= Combine	Peak discharge	= 299.36 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.02 hrs
Time interval	= 1 min	Hyd. volume	= 1,195,931 cuft
Inflow hyds.	= 8, 9	Contrib. drain. area	= 15.500 ac



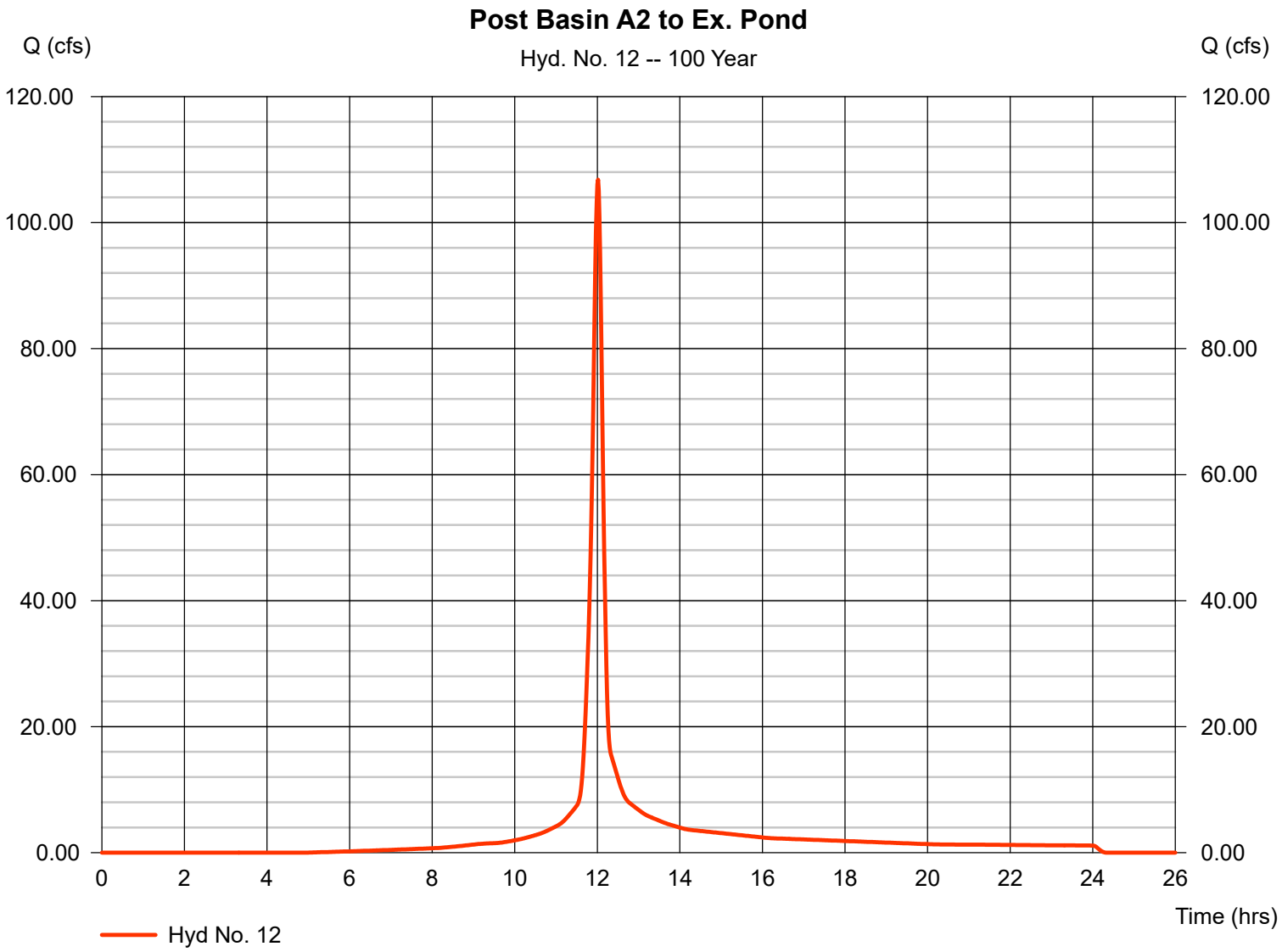
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 12

Post Basin A2 to Ex. Pond

Hydrograph type	=	SCS Runoff	Peak discharge	=	106.80 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.02 hrs
Time interval	=	1 min	Hyd. volume	=	278,021 cuft
Drainage area	=	13.730 ac	Curve number	=	81
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.40 min
Total precip.	=	7.92 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

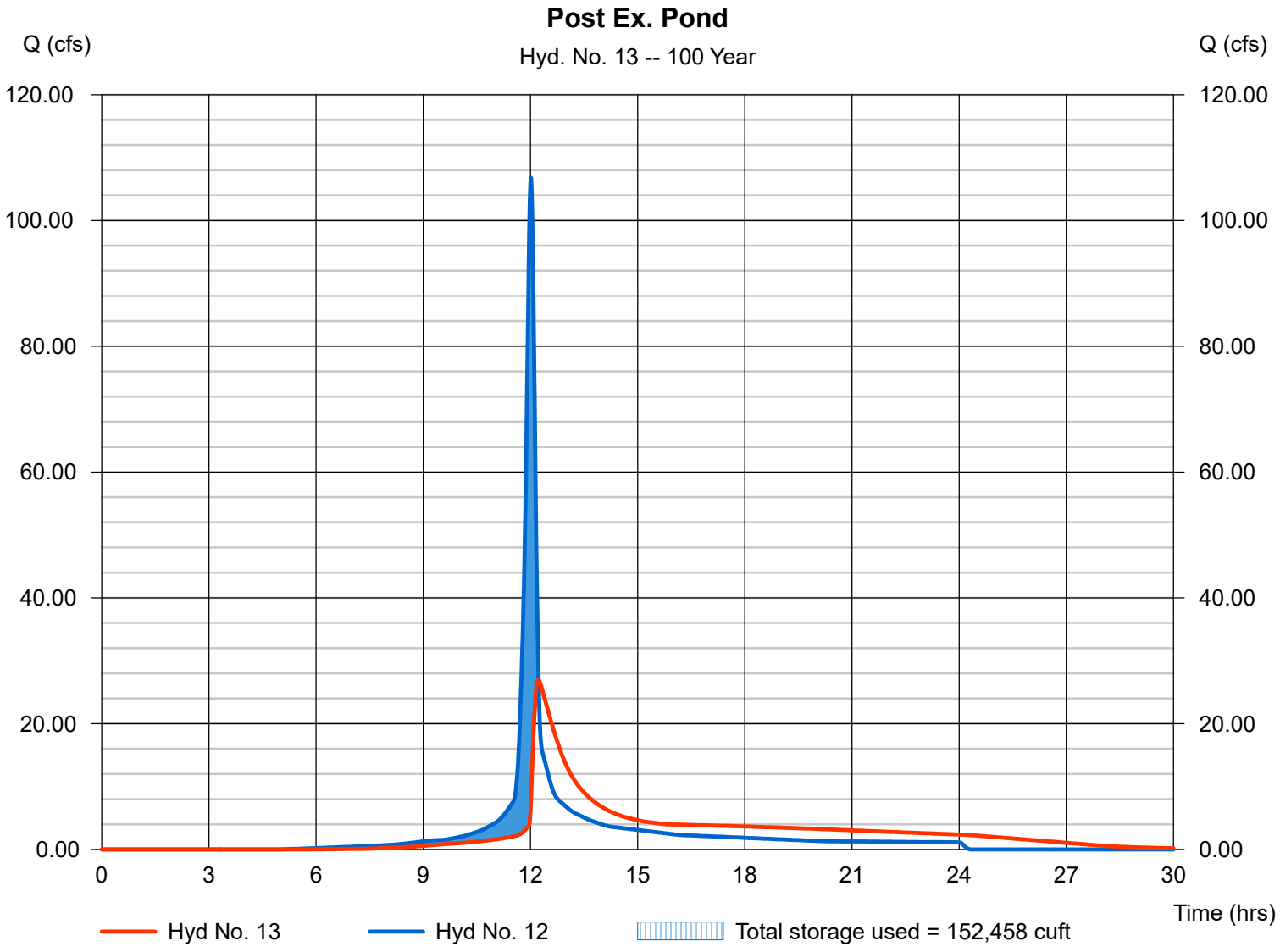
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 13

Post Ex. Pond

Hydrograph type	=	Reservoir	Peak discharge	=	26.91 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.23 hrs
Time interval	=	1 min	Hyd. volume	=	277,972 cuft
Inflow hyd. No.	=	12 - Post Basin A2 to Ex. Pond	Max. Elevation	=	991.03 ft
Reservoir name	=	Ex. Pond	Max. Storage	=	152,458 cuft

Storage Indication method used. Wet pond routing start elevation = 982.00 ft.



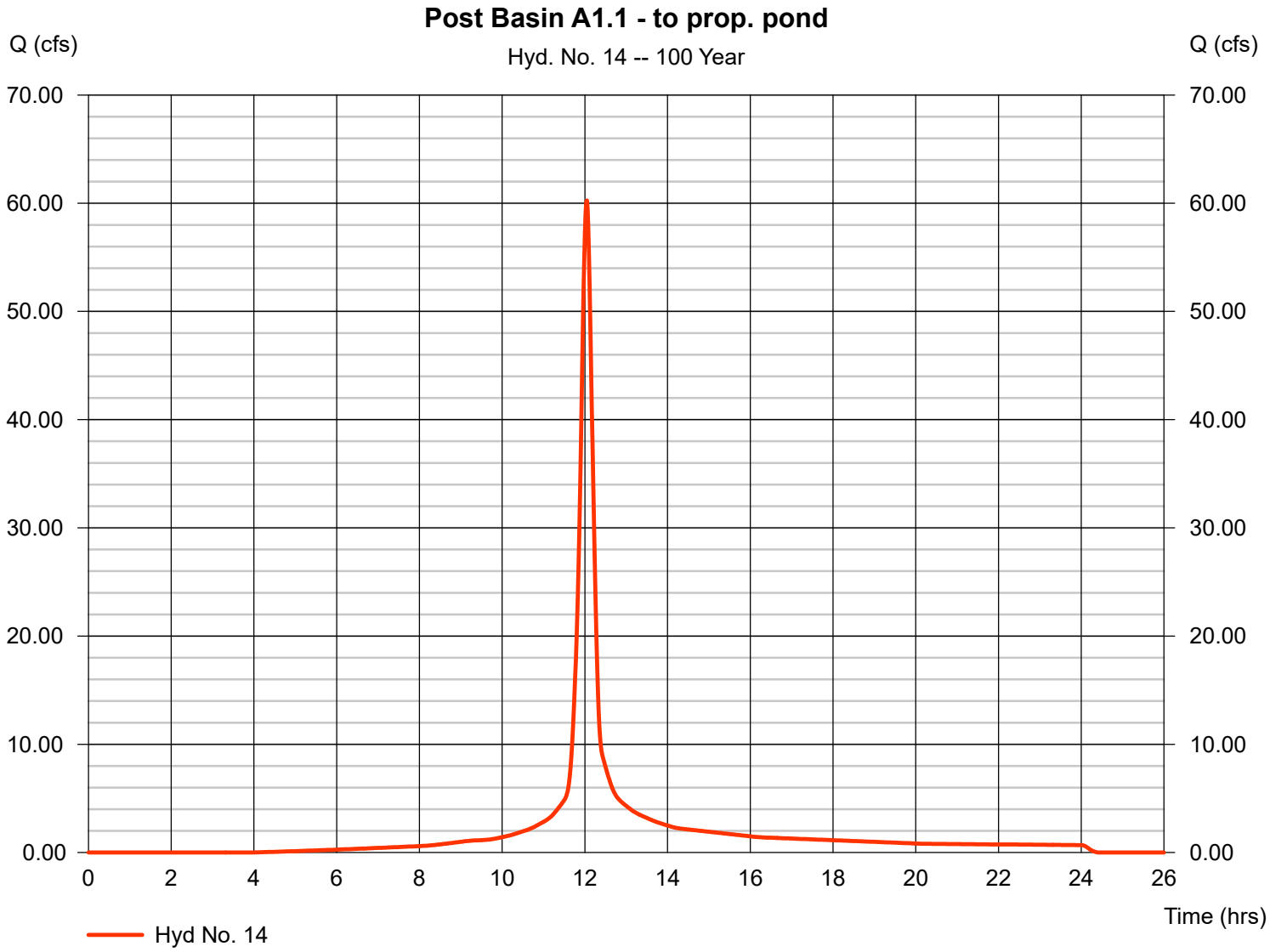
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 14

Post Basin A1.1 - to prop. pond

Hydrograph type	=	SCS Runoff	Peak discharge	=	60.25 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.05 hrs
Time interval	=	1 min	Hyd. volume	=	178,840 cuft
Drainage area	=	7.930 ac	Curve number	=	85
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	16.30 min
Total precip.	=	7.92 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



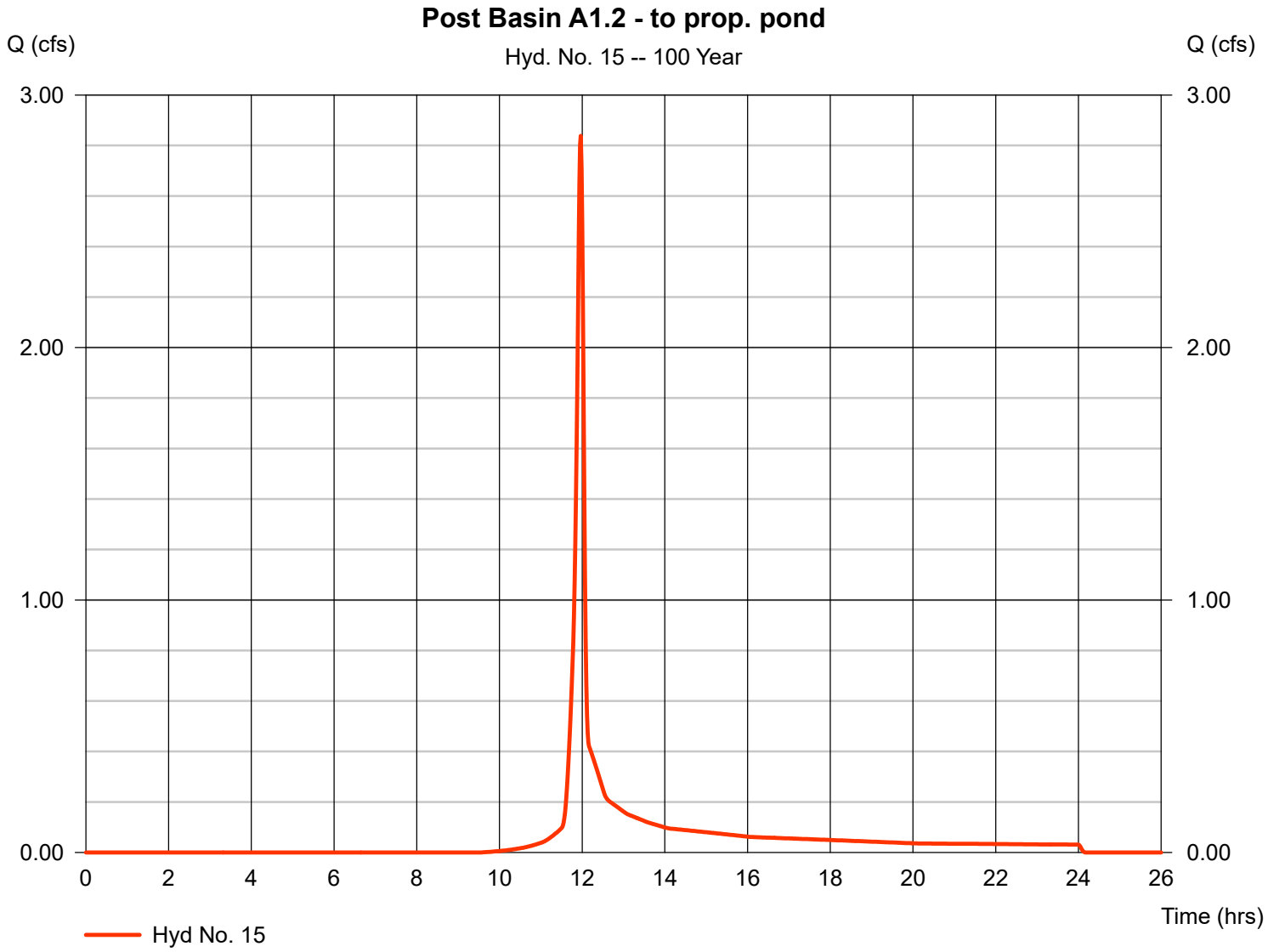
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 15

Post Basin A1.2 - to prop. pond

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.838 cfs
Storm frequency	=	100 yrs	Time to peak	=	11.97 hrs
Time interval	=	1 min	Hyd. volume	=	5,700 cuft
Drainage area	=	0.450 ac	Curve number	=	61
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	5.00 min
Total precip.	=	7.92 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



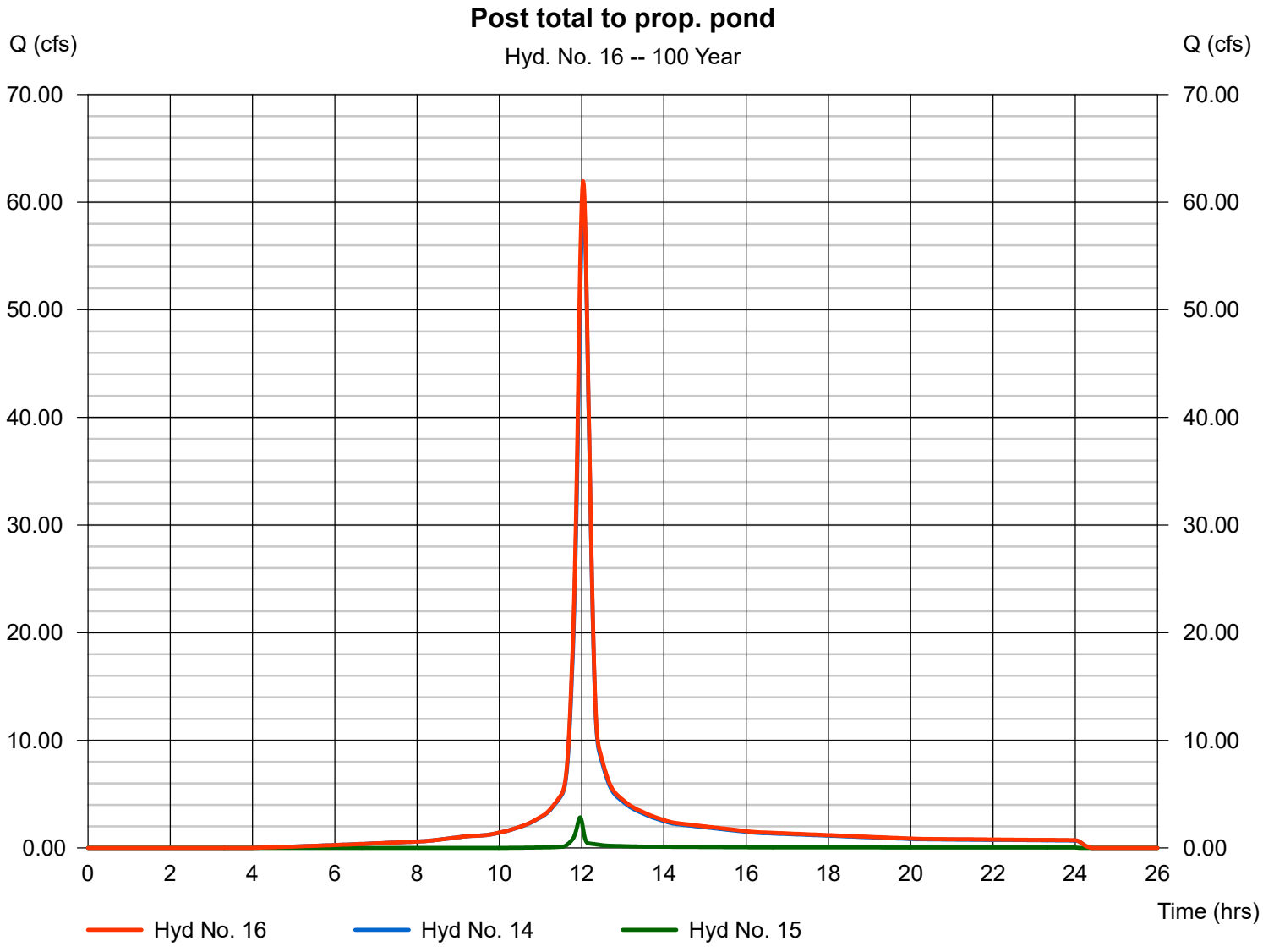
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 16

Post total to prop. pond

Hydrograph type	= Combine	Peak discharge	= 61.94 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.03 hrs
Time interval	= 1 min	Hyd. volume	= 184,540 cuft
Inflow hyds.	= 14, 15	Contrib. drain. area	= 8.380 ac



Hydrograph Report

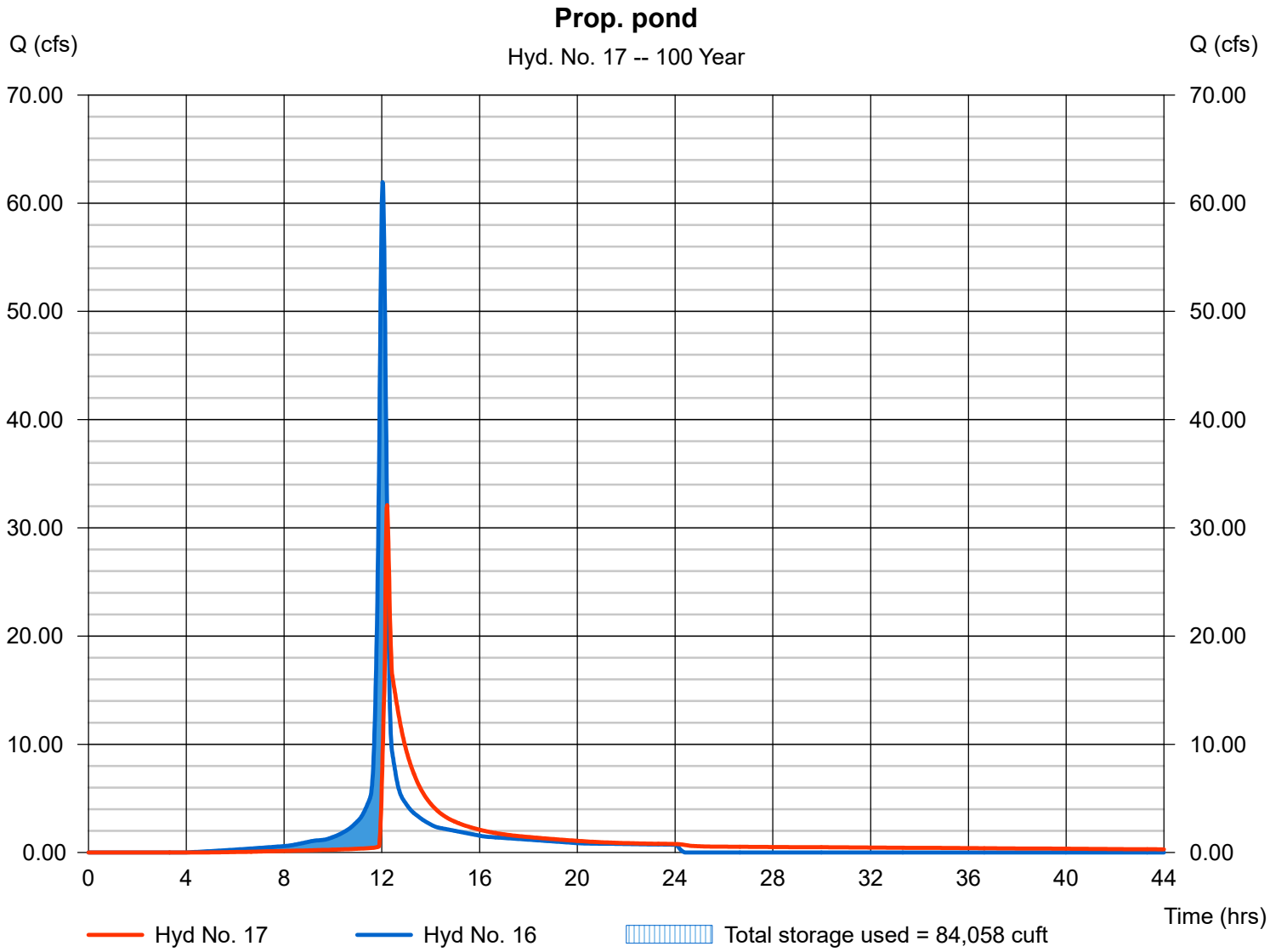
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 17

Prop. pond

Hydrograph type	=	Reservoir	Peak discharge	=	32.10 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.22 hrs
Time interval	=	1 min	Hyd. volume	=	177,673 cuft
Inflow hyd. No.	=	16 - Post total to prop. pond	Max. Elevation	=	986.48 ft
Reservoir name	=	Stormwater Pond	Max. Storage	=	84,058 cuft

Storage Indication method used.



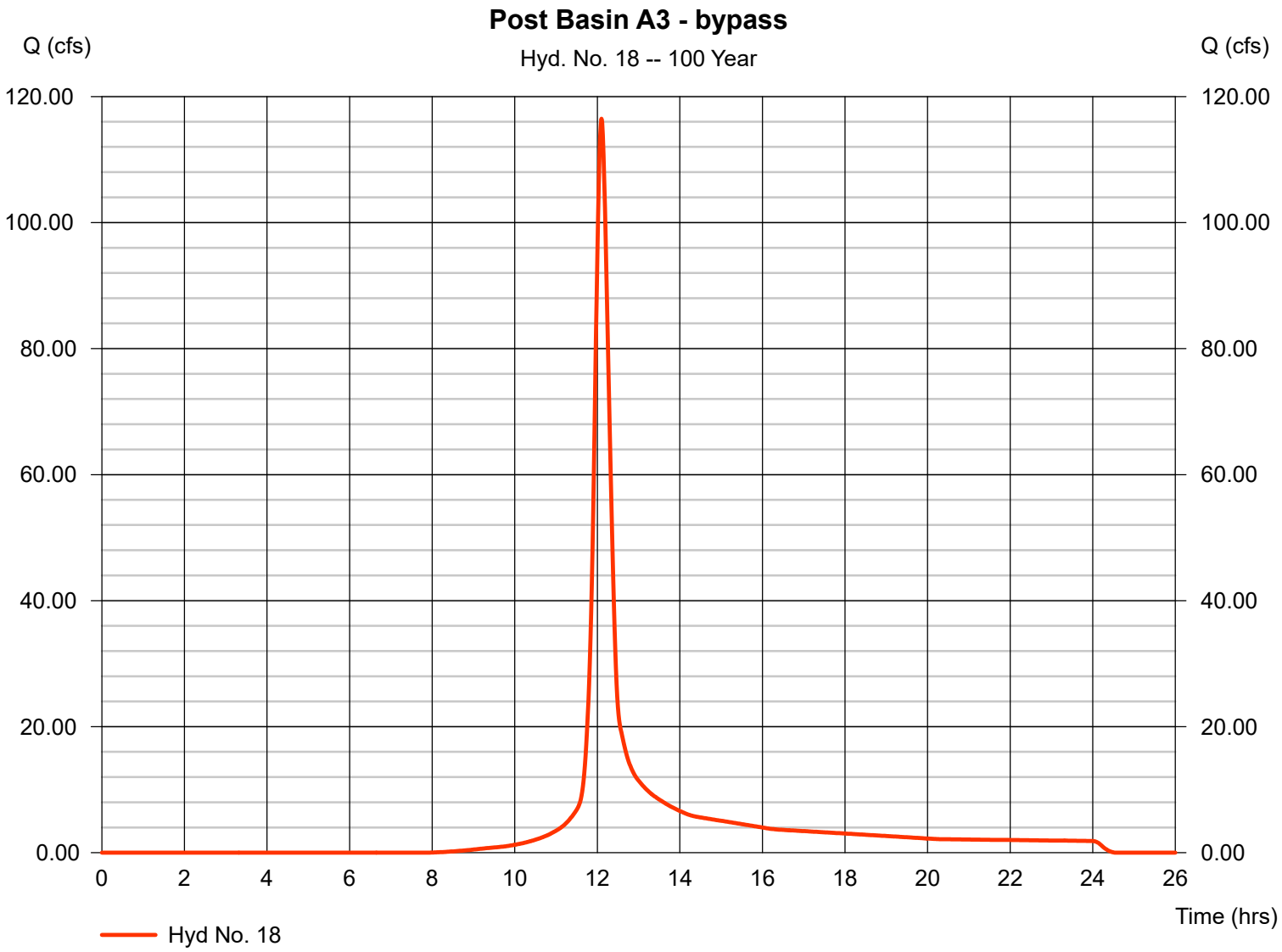
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 18

Post Basin A3 - bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	116.48 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.10 hrs
Time interval	=	1 min	Hyd. volume	=	382,731 cuft
Drainage area	=	24.390 ac	Curve number	=	69
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	21.80 min
Total precip.	=	7.92 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



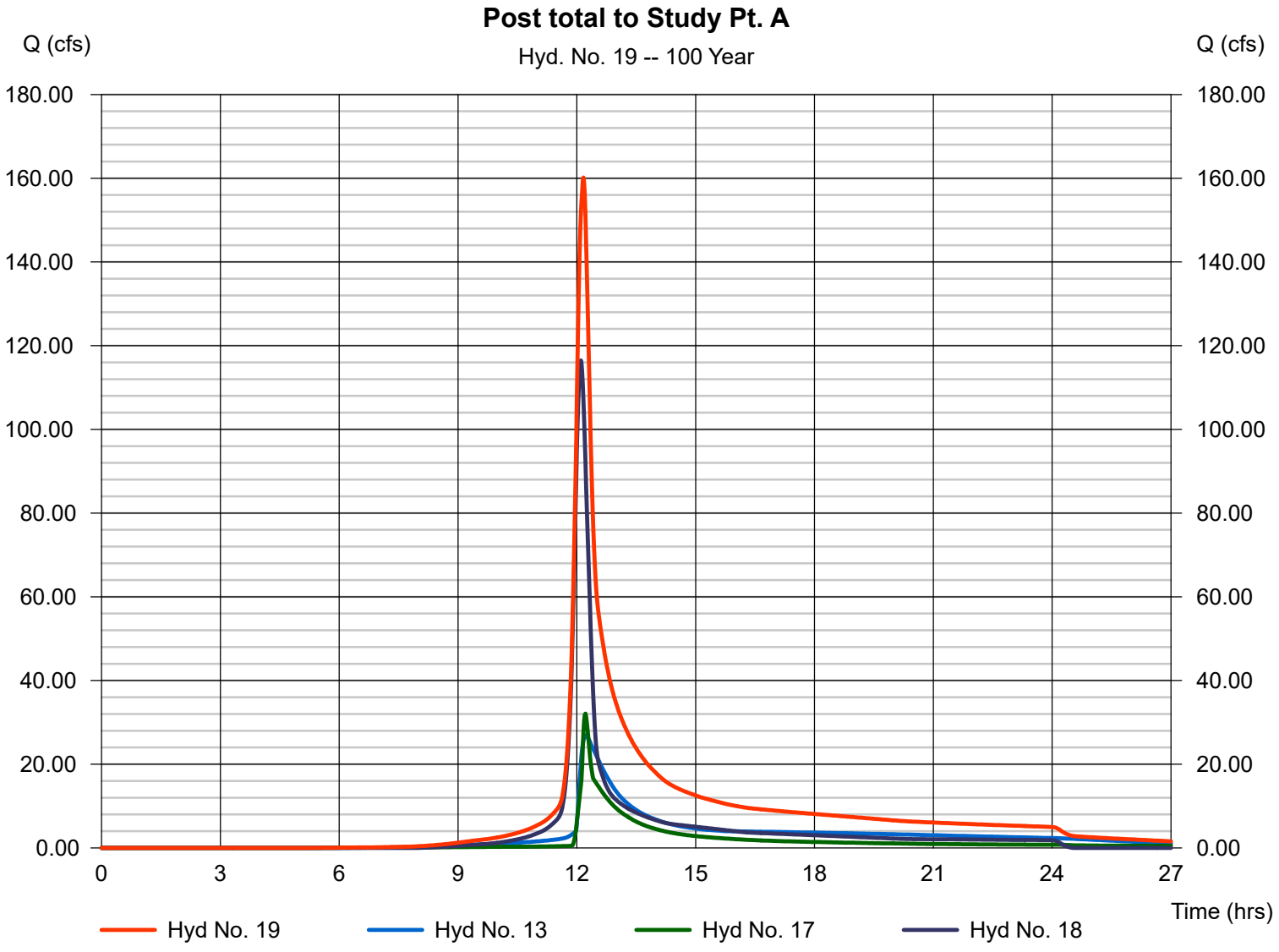
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 19

Post total to Study Pt. A

Hydrograph type	= Combine	Peak discharge	= 160.18 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.17 hrs
Time interval	= 1 min	Hyd. volume	= 838,376 cuft
Inflow hyds.	= 13, 17, 18	Contrib. drain. area	= 24.390 ac



Hydrograph Report

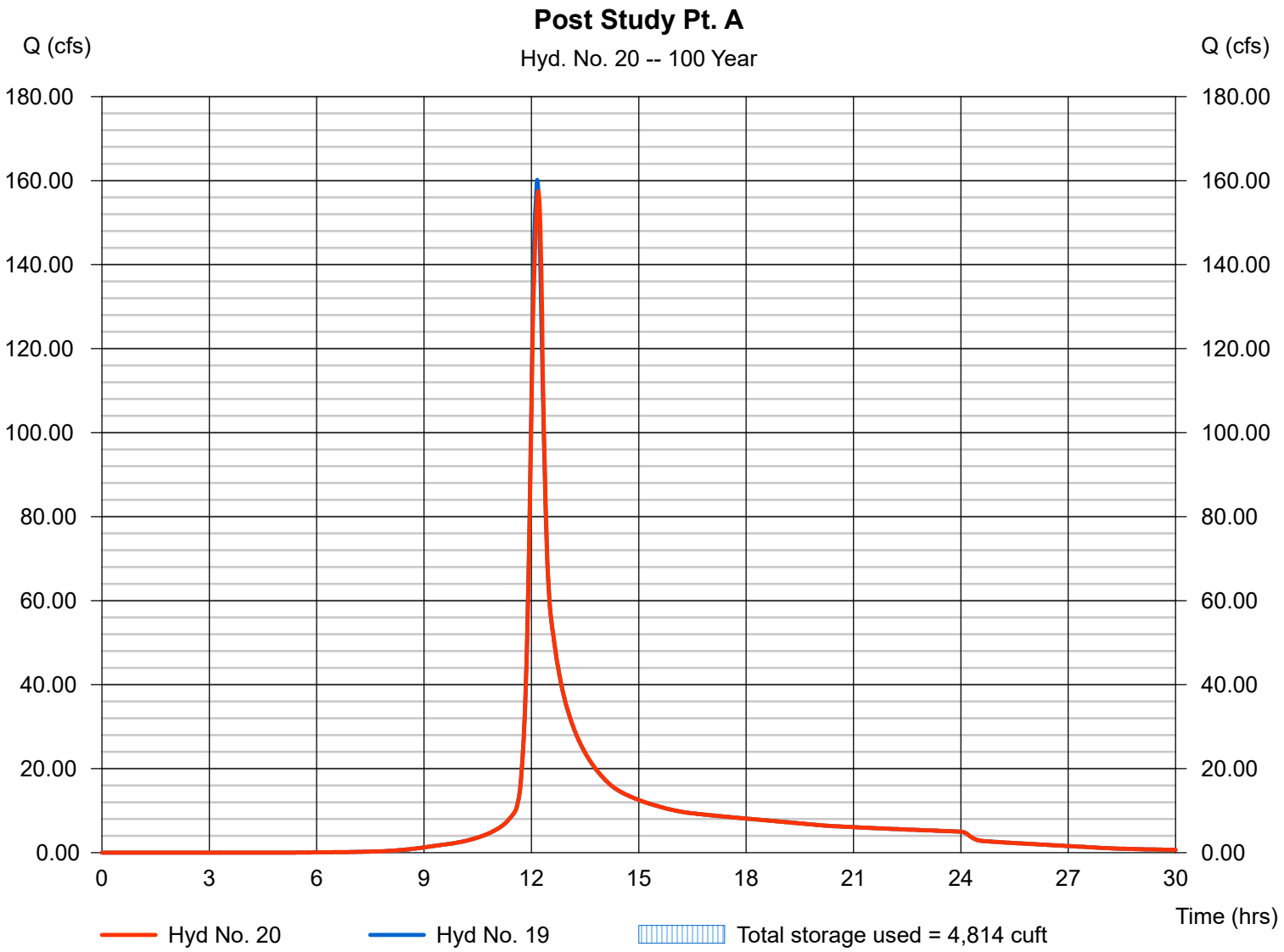
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 20

Post Study Pt. A

Hydrograph type	=	Reservoir	Peak discharge	=	157.42 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.20 hrs
Time interval	=	1 min	Hyd. volume	=	838,371 cuft
Inflow hyd. No.	=	19 - Post total to Study Pt. A	Max. Elevation	=	975.26 ft
Reservoir name	=	Ex. DS Culvert at Barclay	Max. Storage	=	4,814 cuft

Storage Indication method used.



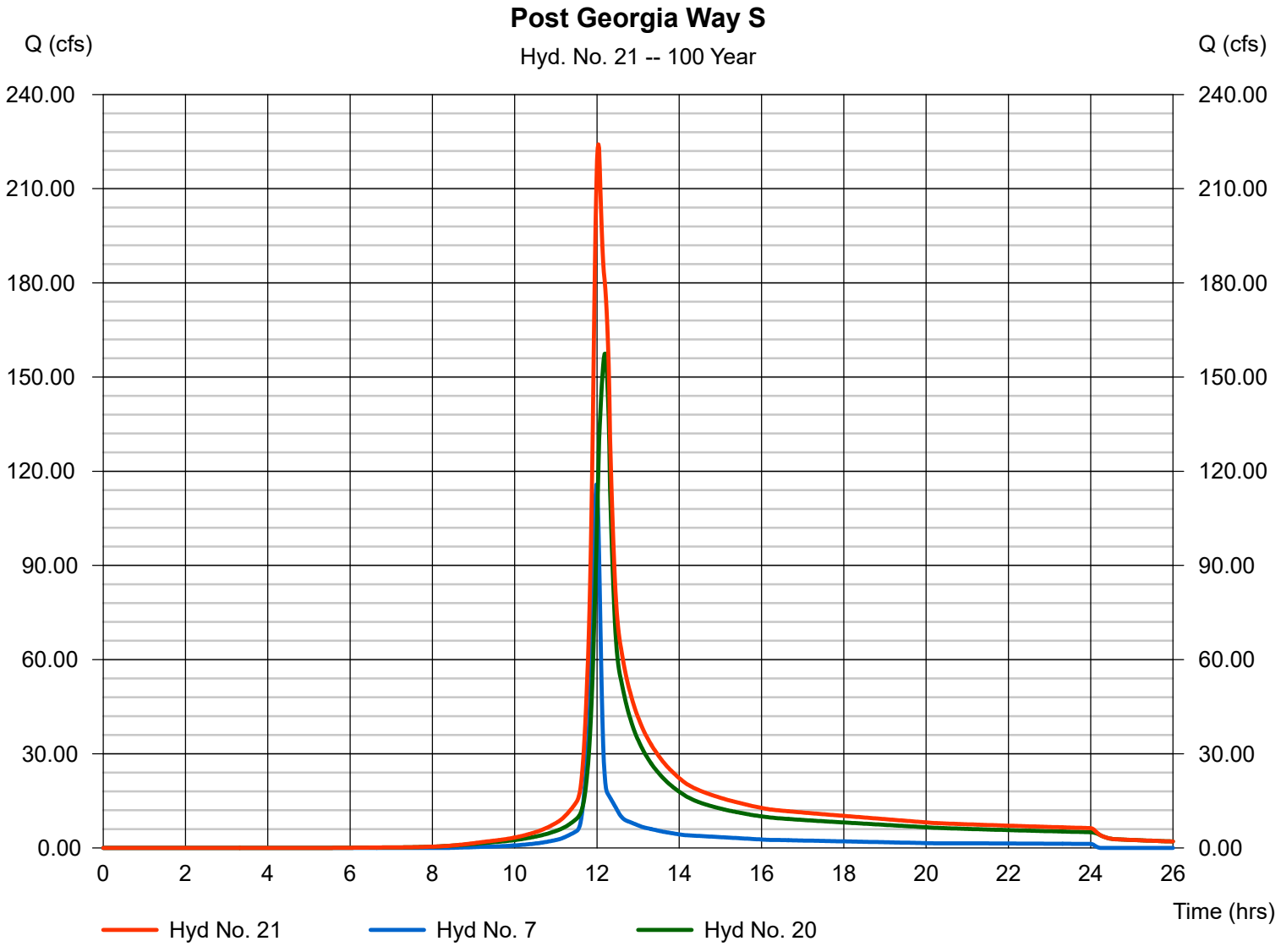
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 21

Post Georgia Way S

Hydrograph type	= Combine	Peak discharge	= 224.11 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.03 hrs
Time interval	= 1 min	Hyd. volume	= 1,100,378 cuft
Inflow hyds.	= 7, 20	Contrib. drain. area	= 17.800 ac



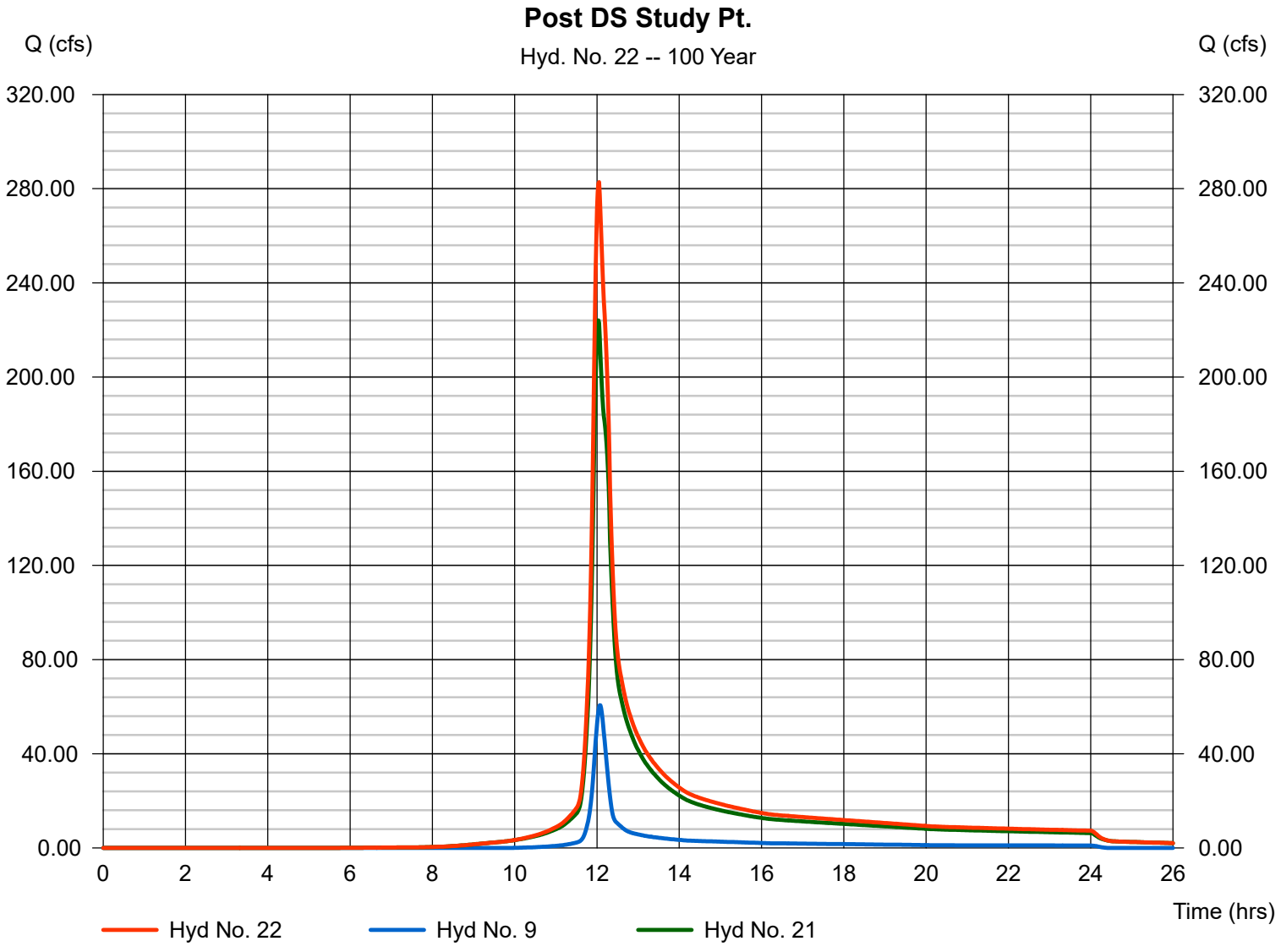
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 22

Post DS Study Pt.

Hydrograph type	= Combine	Peak discharge	= 282.80 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.05 hrs
Time interval	= 1 min	Hyd. volume	= 1,282,466 cuft
Inflow hyds.	= 9, 21	Contrib. drain. area	= 15.500 ac



Hydrograph Report

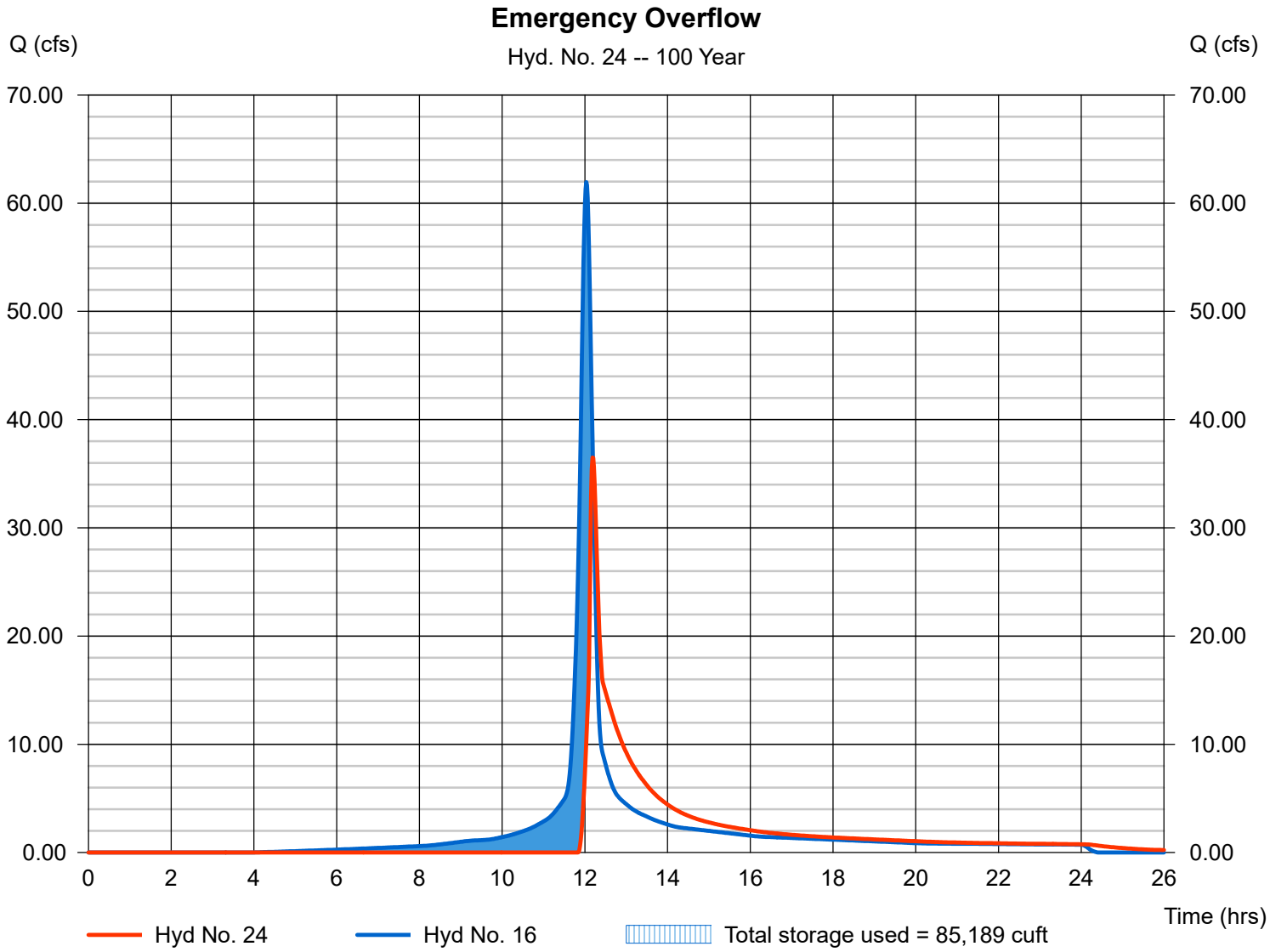
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Jul 10, 2017

Hyd. No. 24

Emergency Overflow

Hydrograph type	=	Reservoir	Peak discharge	=	36.50 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.18 hrs
Time interval	=	1 min	Hyd. volume	=	145,767 cuft
Inflow hyd. No.	=	16 - Post total to prop. pond	Max. Elevation	=	986.59 ft
Reservoir name	=	Prop. Pond EO	Max. Storage	=	85,189 cuft

Storage Indication method used.



Pond Report

Pond No. 16 - Prop. Pond EO

Pond Data

Contours - User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 976.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	976.00	6,240	0	0
2.00	978.00	6,887	13,120	13,120
4.00	980.00	7,555	14,435	27,556
6.00	982.00	8,252	15,800	43,356
8.00	984.00	8,968	17,213	60,569
10.00	986.00	9,708	18,669	79,239
12.00	988.00	10,475	20,176	99,415

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 30.00	0.00	0.00	0.00
Span (in)	= 30.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 976.00	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	= .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)	= 11.50	0.50	0.00	0.00
Crest El. (ft)	= 986.00	981.50	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Riser	Rect	---	---
Multi-Stage	= Yes	Yes	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).

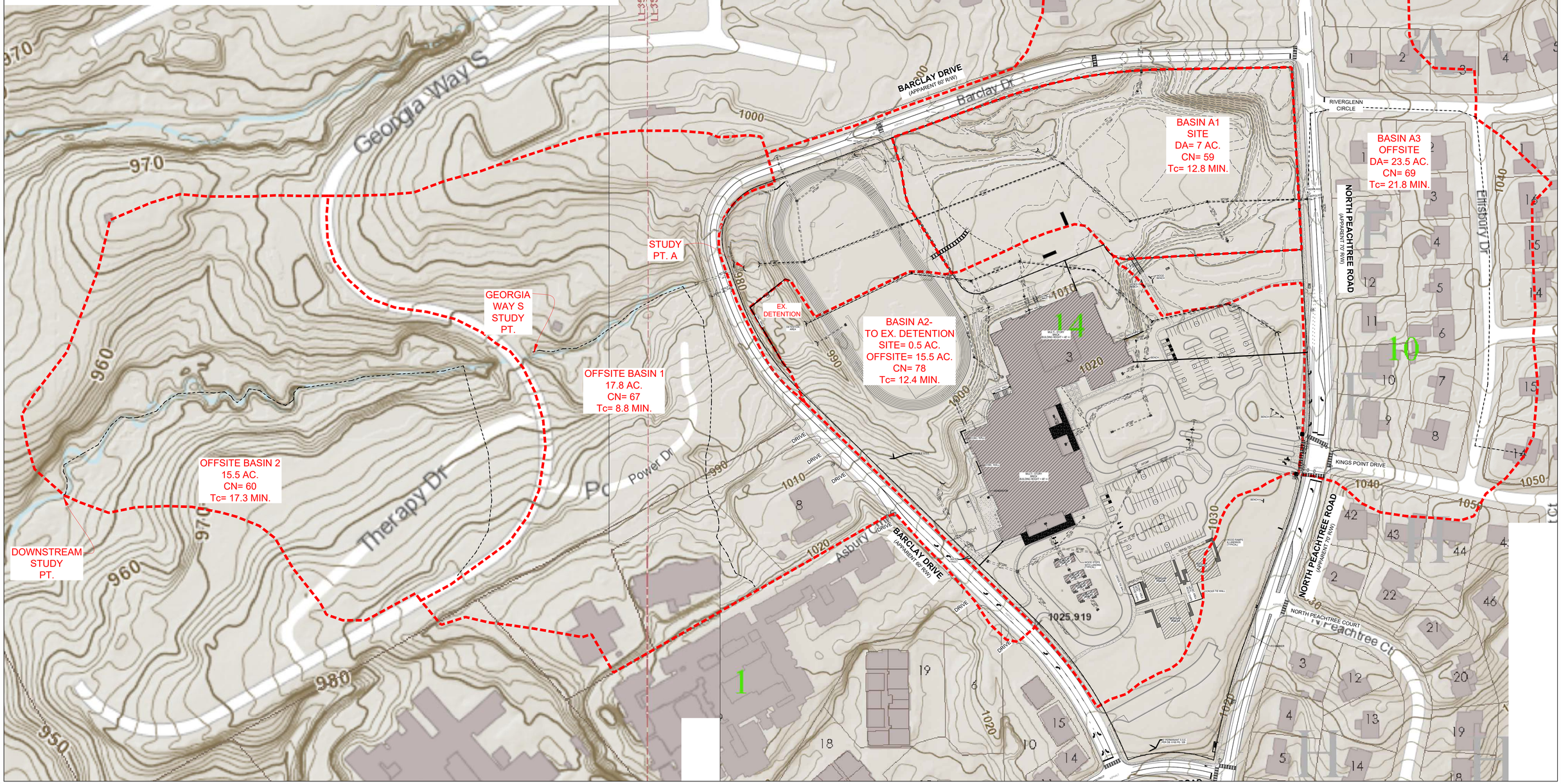
Stage / Storage / Discharge Table

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	976.00	0.00	---	---	---	0.00	0.00	---	---	---	---	0.000
2.00	13,120	978.00	0.00	---	---	---	0.00	0.00	---	---	---	---	0.000
4.00	27,556	980.00	0.00	---	---	---	0.00	0.00	---	---	---	---	0.000
6.00	43,356	982.00	0.61 ic	---	---	---	0.00	0.59	---	---	---	---	0.589
8.00	60,569	984.00	6.59 ic	---	---	---	0.00	6.58	---	---	---	---	6.581
10.00	79,239	986.00	15.89 ic	---	---	---	0.00	15.89	---	---	---	---	15.89
12.00	99,415	988.00	76.11 ic	---	---	---	65.38 s	10.72 s	---	---	---	---	76.11

BASESBALL FACILITIES AT BROOK RUN PARK

PRE-DEVELOPMENT DRAINAGE BASIN MAP

SCALE: 1"=100'



BASESBALL FACILITIES AT BROOK RUN PARK

POST-DEVELOPMENT DRAINAGE BASIN MAP

SCALE: 1"=100'

BASIN A1.2
OFFSITE= 0.45
CN= 61
Tc= 5 MIN.

PROPOSED POND
POND IE= 976
100 YR HW EL= 986.48
MIN. TOP OF WALL= 987.00

STUDY PT. A

GEORGIA WAY S STUDY PT.

OFFSITE BASIN 1
17.8 AC.
CN= 67
Tc= 8.8 MIN.

OFFSITE BASIN 2
15.5 AC.
CN= 60
Tc= 17.3 MIN.

DOWNSTREAM STUDY PT.

EX. DETENTION

BASIN A2
TO EX. DETENTION
SITE= 0.03 AC.
OFFSITE= 13.70 AC.
CN= 81
Tc= 12.4 MIN.

FUTURE SCHOOL ADDITION

BASIN A3
SITE= 0.31 AC.
OFFSITE= 24.08 AC.
CN= 69
Tc= 21.8 MIN.

BASIN A1.1
SITE= 7.66 AC.
OFFSITE= 0.27 AC.
CN= 85
Tc= 12.8 MIN.

BARCLAY DRIVE (APPARENT 60' R/W)

NORTH PEACHTREE ROAD (APPARENT 70' R/W)

RIVERGLENN CIRCLE

KINGS POINT DRIVE

NORTH PEACHTREE COURT

Georgia Way S

Therapy Dr

Power Dr

Asbury Ct

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