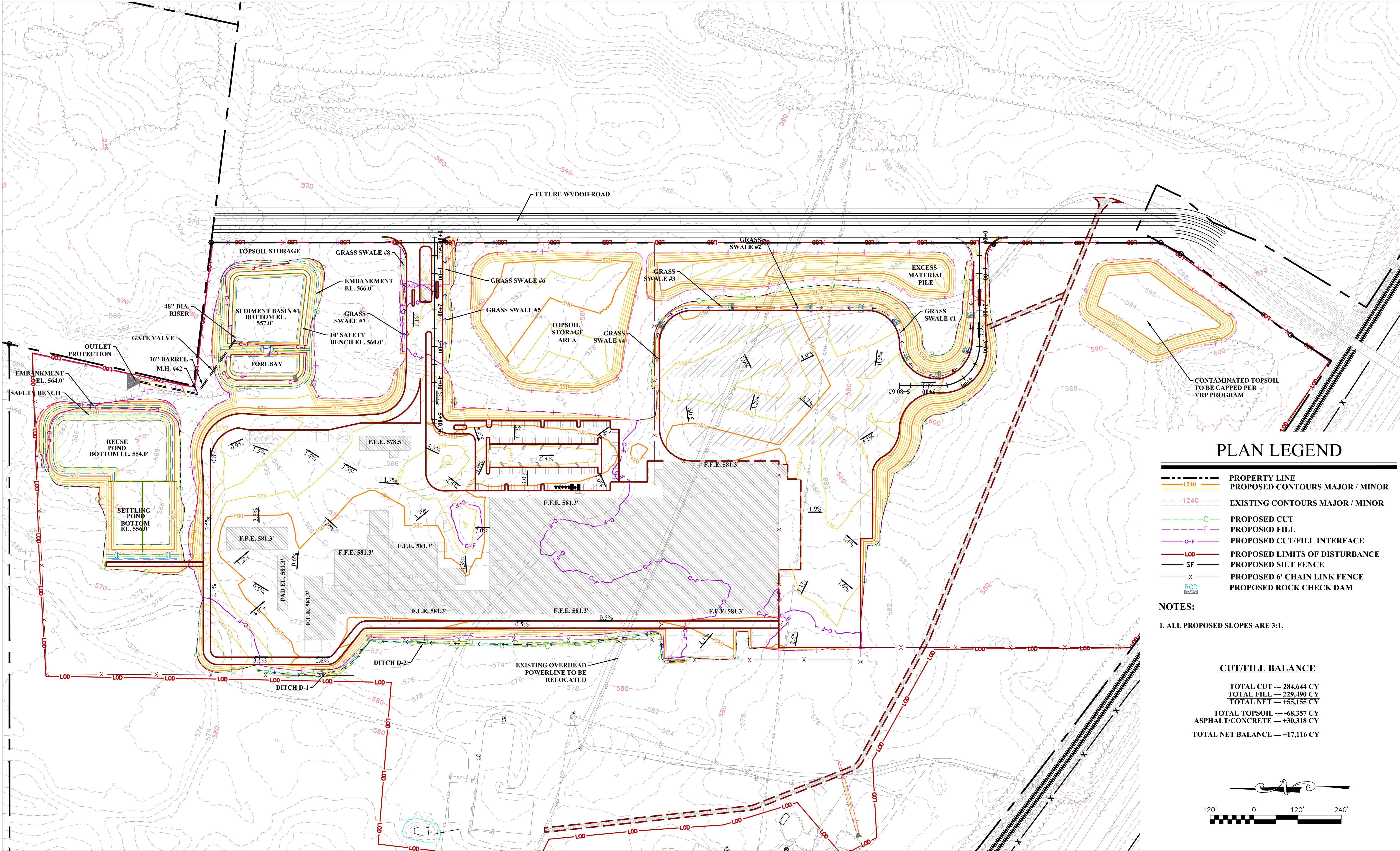




PLAN LEGEND

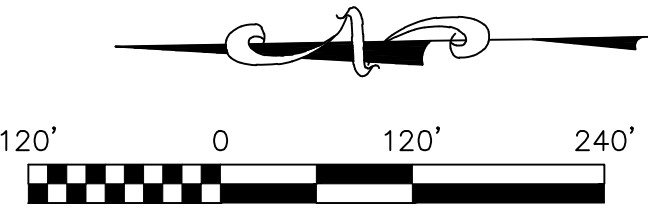
- PROPERTY LINE
- PROPOSED CONTOURS MAJOR / MINOR
- EXISTING CONTOURS MAJOR / MINOR
- PROPOSED CUT
- PROPOSED FILL
- PROPOSED CUT/FILL INTERFACE
- PROPOSED LIMITS OF DISTURBANCE
- PROPOSED SILT FENCE
- PROPOSED 6' CHAIN LINK FENCE
- PROPOSED ROCK CHECK DAM

NOTES:

1. ALL PROPOSED SLOPES ARE 3:1.

CUT/FILL BALANCE

TOTAL CUT — 284,644 CY
TOTAL FILL — 229,490 CY
TOTAL NET — +55,155 CY
TOTAL TOPSOIL — -68,357 CY
ASPHALT/CONCRETE — +30,318 CY
TOTAL NET BALANCE — +17,116 CY



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NO.	BY	DATE	DESCRIPTION



SCALE:	DATE: 8/8/17
DRAWN: WSH	CHECKED:
CHECKED:	DATE:
APPROVED:	DATE:
SURVEY DATE: 4/12/17	
SURVEY BY:	
FIELD BOOK No.:	

THRASHER
THE THRASHER GROUP INC.
CIVIL • ENVIRONMENTAL • CONSULTING • FIELD SERVICES
600 WHITE OAKS BOULEVARD, BRIDGEPORT, WV 26330
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PHASE No.
CONTRACT No.
PROJECT No.
101-030-3203

ROXUL USA INC.
CITY OF RANSON SITE PLAN APPLICATION
RAN 5 PROJECT
JEFFERSON COUNTY, WEST VIRGINIA
GRADING PLAN

SHEET No.
000-013

HYDROLOGY REPORT

RAN 5 PROJECT
JEFFERSON COUNTY, WEST VIRGINIA

PREPARED FOR

ROXUL USA INC.
4594 CAYCE ROAD,
BYHALIA, MS 38611

030-2302
SEPTEMBER 2017

PREPARED BY

THE THRASHER GROUP, INC.
600 WHITE OAKS BOULEVARD,
BRIDGEPORT, WV 26330

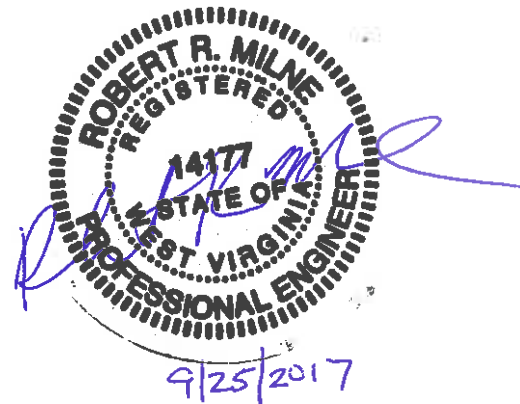


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- Basin Hydrology Calcs
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SECTION 1 – GENERAL

NARRATIVE

This project consists of the construction of a new Industrial Manufacturing Facility along Northport Avenue. The site is located within Jefferson County, WV. The project will include new buildings, asphalt employee parking lot, asphalt truck trailer storage area, asphalt drive lanes and concrete pavement. The design includes a concrete lined settling pond, a 60 mil HDPE lined reuse pond and a 60 mil HDPE lined stormwater detention pond. The stormwater management facilities for this site have been designed to satisfy the City of Ranson and WV MS4 requirements for water quality and quantity control.

The settling and reuse pond will be used to control 24.7 acres of the post-development area. The settling pond is split into 2 bays. Runoff will be directed into a trough with keyways that allow water to flow into the bays. The keyways will have a weir system that will allow a bay to be shut down in order to clean out debris that has settled out of the stormwater runoff. A concrete weir separates the settling pond from the reuse pond. Once runoff reaches an elevation of 562.0' in the settling pond, it flows into the reuse pond. Water that collects in the reuse pond will then be used as process water for the manufacturing facility. At no point will water be discharged from these ponds.

The Stormwater Detention Pond will be used to control 48.9 acres of the post-development area. It has been designed to minimize the post development runoff for the 2 year and 10 year storm events. It utilizes a 48" diameter riser structure with three 6" low flow orifices to control the varying storm frequencies. A 36" gate valve will be installed in the outlet pipe as a safety feature. In the event of an accidental discharge of toxic material into the basin, the gate valve will be used to prevent this material from leaving the site.

The following table lists the stormwater quality BMPs that will be used in each contributing drainage area.

	TARGET TREATMENT VOLUME	OBTAINED TREATMENT VOLUME
Level II Water Quality Swale	23,432 CF	23,432 CF
Level I Bioretention	6,534 CF	6,534 CF
Rainwater Harvesting	46,555 CF	46,555 CF

Contributing Drainage Area A will incorporate eight Level II water quality swales which will provide 58,300.2 cubic feet of storage and Level I bioretention areas which will provide 148,779.8 cubic feet of storage. The total target volume for this drainage area is 78,517 cubic feet. We have obtained a volume of 29,966 cubic feet leaving a deficit of 48,551 cubic feet (See WV MS4 Stormwater Compliance Spreadsheet Results in this report). Within this drainage area we are also using five Flexstorm Pure Filters (See manufacturer's information within this report) which will be filtering 7.4 acres of impervious and 5.9 acres of pervious surface. Flexstorm Pure Filters are rated for >80% removal efficiency of street sweep- size particles, 99% TSS removal of OK-110 US Silica Sand and 97% total petroleum hydrocarbon removal. We are requesting these filter bags be considered in the reduction in our treatment volume deficit.

Contributing Drainage Area B will incorporate rainwater harvesting as a means to satisfy stormwater reduction compliance. Water collected within this drainage area will be used as process water within the manufacturing facility. Roxul USA, Inc. intends to use 158,503 gallons per day for manufacturing purposes. The settling/reuse basin which receives the drainage from this drainage area has a storage capacity of 644,003 cubic feet. The total target volume for this drainage area is 54,686 cubic feet. We have obtained a volume of 46,555 cubic feet leaving a deficit of 8,131 cubic feet. Within this drainage area, two Zurn Z-1189 Oil/Water Separators will be used. One will treat water coming from a truck wash station and the other will treat runoff from the diesel fuel tank area.

Eight water quality swales will be used within Contributing Drainage Area A in order to help bring the site into MS4 compliance. The site will also utilize four ditches which will convey water to the stormwater and E&S facilities. Ditches D-1 and D-2 will be used to collect offsite water and direct it into the stormwater system of Contributing Drainage Area B. Ditches D-3 and D-4 are temporary ditches which will be used to direct water into Sediment Basin 1 during earthmoving activities. As soon as disturbed areas are fully stabilized, these ditches will be removed and Sediment Basin 1 will be converted into a stormwater basin. The following chart shows specifications for the swales and ditches used within this site.

SWALES AND DITCHES SPECIFICATIONS

	1" Rainfall V	10 Yr. V	10 Yr. Surface El.	25 Yr. Surface El.	Free board	Peak Flow	Bottom Width	Side	Depth	Slope
Swale 1	1.21 fps	4.27 fps	0.55'	0.61'	0.95'	15.6 cfs	5'	3:1	1.5'	2.4%
Swale 2	1.69 fps	3.58 fps	0.29'	0.31	1.21'	6.09 cfs	5'	3:1	1.5'	3.7%
Swale 3	1.21 fps	2.38 fps	0.43'	0.46	1.07'	6.44 cfs	5'	3:1	1.5'	1.0%
Swale 4	1.20 fps	2.43 fps	0.31'	0.34	1.19'	4.47 cfs	5'	3:1	1.5'	1.5%
Swale 5	0.79 fps	3.09 fps	0.48'	0.54	1.02'	9.54 cfs	5'	3:1	1.5'	1.4%
Swale 6	0.70 fps	1.81 fps	0.14'	0.15	1.36'	1.37 cfs	5'	3:1	1.5'	2.5%
Swale 7	0.96 fps	2.30 fps	0.30'	0.33	1.20'	4.08 cfs	5'	3:1	1.5'	1.4%
Swale 8	0.66 fps	1.24 fps	0.16'	0.17	1.34'	1.09 cfs	5'	3:1	1.5'	1.0%
Ditch D-1	0.54 fps	2.92 fps	0.54'	0.61	0.46'	4.86 cfs	2'	3:1	1'	1.3%
Ditch D-2	1.13 fps	4.73 fps	1.52'	1.68	0.48'	36.2 cfs	2'	3:1	2'	1.1%
Ditch D-3	3.63 fps	7.75 fps	1.96'	2.13	0.54'	120.3 cfs	2'	3:1	2.5'	1.9%
Ditch D-4	3.96 fps	8.85 fps	1.82'	1.98	0.59'	123.1 cfs	2'	3:1	2.5'	2.7%

STORMWATER MANAGEMENT BASIN SPECIFICATIONS

Sediment Basin #1

Drainage Area – 48.9 ac
 Required Storage Volume – 176,040 cf
 Wet Storage Volume – 108,479 cf
 Dry Storage Volume – 108,479 cf
 Total Storage Volume – 216,958 cf
 25 Year Elevation – 562.34'
 Cleanout Elevation – 558.20'
 Riser – 48", Barrel – 36"
 Bottom Elevation – 557.0'
 Embankment Elevation – 566.0'
 Riser Elevation – 561.0'
 Low Flow Orifice – (1) 7" Hole @ 559.2'
 Outfall Elevation – 555.65'

Sediment Basin #2

Drainage Area – 16.2 ac
Required Storage Volume – 58,320 cf
Wet Storage Volume – 71,461 cf
Dry Storage Volume – 71,461 cf
Total Storage Volume – 142,922 cf
25 Year Elevation – 576.30'
Cleanout Elevation – 573.7'
Riser – 36", Barrel – 24"
Bottom Elevation – 573.0'
Embankment Elevation – 577.0'
Riser Elevation – 576.0'
Low Flow Orifice – (1) 6" Hole @ 574.5'
Outfall Elevation – 571.34'

Stormwater Basin

Drainage Area – 48.9 ac
25 Year Elevation – 562.32'
Cleanout Elevation – 558.20'
Riser – 48", Barrel – 36"
Bottom Elevation – 557.0'
Embankment Elevation – 566.0'
Riser Elevation – 561.0'
Low Flow Orifice – (3) 6" Hole @ 559.2'
Outfall Elevation – 555.65'

Settling/Reuse Basin

Drainage Area – 24.7 ac
25 Year Elevation – 560.76'
Bottom Elevation – 554.0'
Embankment Elevation – 564.0'

Pre & Post Development Analysis

The majority of the proposed pre-developed site drains into the small valley north of the proposed Sediment Basin 1. We used this point when analyzing the pre-developed runoff in the chart below. There are two water quantity control structures that will be used to control the proposed site. A stormwater basin will be used in Contributing Drainage Area A which will discharge into our pre-developed analysis point. Contributing Drainage Area B will be control by use of the settling/reuse pond. Water

collected by this facility will at no times be discharged, but will be used as process water within the manufacturing facility.

The pre-developed analysis point has a contributing drainage area of 61.5 acres all of which is predominately covered in scrub brush and forested area. During post development, 48.9 acres of Drainage Area A will be routed through the stormwater basin and be discharged into our pre-developed analysis point. Drainage Area B contains 24.7 acres of drainage area which will be routed into the settling/reuse point which will in turn be used in the manufacturing facility. At no time will this basin discharge. The following table summarizes the pre and post development peak runoff rates for the proposed site. The project site is located in a known Karst area. Adjustment factors of 0.33 (2-yr storm), 0.43 (10-yr storm) and 0.50 (100-yr storm) have been used to determine the pre-developed Karst adjusted peak flow rates.

Storm Event	Pre-Dev Peak	Pre-Dev Karst Adjusted	Post-Dev Peak From Storm Basin	Post-Dev Peak Routed Thru Storm Basin	Post-Dev Peak Routed Thru Reuse Basin
2 year	115.72 cfs	38.19 cfs	1.564 cfs	89.79 cfs	72.65 cfs
10 year	255.37 cfs	109.81 cfs	3.646 cfs	162.44 cfs	129.74 cfs
100 year	419.20 cfs	209.60 cfs	41.07 cfs	244.01 cfs	194.22 cfs

Contributing Drainage Area Analysis

The following table shows a breakdown of the drainage areas for each contributing drainage area.

CONTRIBUTING DRAINAGE AREA A

Drainage Area	Total Area (AC)	Impervious (AC)	Pervious (AC)	CN	Adjusted CN
Swale 1	3.34	0.73	2.61	83	73
Swale 2	1.05	0.77	0.28	93	73
Swale 3	1.08	0.89	0.19	95	73
Swale 4	0.75	0.63	0.12	95	73
Swale 5	2.10	0.30	1.80	82	73
Swale 6	0.24	0.16	0.08	92	73
Swale 7	0.74	0.42	0.32	90	73
Swale 8	0.18	0.16	0.02	96	73
DI #4	0.77	0.61	0.16	94	73
DI #6	3.47	3.47	0.00	98	73
DI #7	1.11	0.66	0.45	90	73
DI #8	1.39	1.23	0.16	96	73
DI #9	1.74	1.49	0.25	95	73
DI #10	0.38	0.00	0.38	79	73
MH #11	6.85	0.00	6.85	79	73
DI #13	1.65	0.58	1.07	86	73
DI #14	1.62	1.40	0.22	95	73
DI #15	2.50	2.28	0.22	96	73
Bioretention	3.00	1.60	1.40	89	73

CONTRIBUTING DRAINAGE AREA B

Drainage Area	Total Area (AC)	Impervious (AC)	Pervious (AC)	CN	Adjusted CN
DI #22	1.33	1.28	0.05	97	81
DI #23	1.07	1.07	0.00	98	81
DI #24	0.85	0.85	0.00	98	81
DI #25	0.85	0.85	0.00	98	81
DI #26	0.55	0.55	0.00	98	81
DI #27	0.80	0.80	0.00	98	81
Ditch D-1	1.17	0.00	1.17	79	81
Ditch D-2	8.72	0.00	8.72	79	81
DI #29	1.01	1.01	0.00	98	81
DI #30	0.26	0.26	0.00	98	81
DI #31	0.89	0.89	0.00	98	81
DI #32	1.65	1.65	0.00	98	81
DI #33	0.53	0.53	0.00	98	81
DI #34	1.50	1.05	0.45	92	81
DI #35	0.45	0.45	0.00	98	81
DI #36	0.46	0.46	0.00	98	81
DI #38	0.57	0.57	0.00	98	81
DI #39	0.60	0.36	0.24	90	81
DI #40	1.39	0.88	0.51	91	81

Hydrology Assumptions

- Time of Concentration of 6 (min) was used to model the watershed.
- Runoff Coefficients – SCS Runoff Method
 - Pervious areas were analyzed utilizing a runoff coefficient (C) value of 79 for lawn areas.
 - Impervious areas were analyzed utilizing a runoff coefficient (C) value of 98.
- Determining Runoff
 - The SCS Runoff Method was used to determine the flows that enter the detention facilities.

Flexstorm Pure Filter Maintenance and Inspection

1. Inspection should occur following any rain event $> \frac{1}{2}$ ".
2. Post construction inspections should occur 4 times per year. In snowfall affected regions additional inspections should take place before and after snowfall season.
3. Industrial application site inspections (loading ramps, wash racks, maintenance facilities) should occur on a regularly scheduled basis no less than 3 times/year.

At 50% saturation the average 2'x2' Adsorb-it lined PC filter will retain approximately 75 oz (4.2 lbs) of oil and should be serviced. To recover the oils the filter can be centrifuged or passed through a wringer. Oil skimmer pouches start to turn black when saturated, indicating time for replacement. Each ClearTec Rubberizer pouch will absorb ~62oz (4 lbs) of oil before needing re-placement. Dispose of all oil contaminated products in accordance with EPA guidelines. ClearTec Rubberizer, since a solidifier, will not leach under pressure and can be disposed of in most landfills, recycled for industrial applications, or burned as fuel.



FLEXSTORM® PURE PERMANENT INLET PROTECTION

SPECIFY WITH CONFIDENCE

State DOTs and Municipalities across the country now have a universal structural BMP to address the issue of storm sewer inlet protection: FLEXSTORM PURE Inlet Filters.

The FLEXSTORM PURE system is the preferred choice for permanent inlet protection and storm water runoff control. Constructed of versatile stainless steel, FLEXSTORM PURE Inlet Filters will fit any drainage structure and are available with site-specific filter bags providing various levels of filtration. Whether you're the specifier or the user, it's clear to see how FLEXSTORM PURE Inlet Filters outperform the competition.

APPLICATIONS:

Car Washes	Gas Stations
Commercial	Parking Lots
Loading Ramps	Dock Drains
Industrial	Maintenance

FEATURES:

- Stainless Steel filter framing is custom configured to fit perfectly into any drainage structure, whether a standard design or obstructed inlet opening
- Filtered Flow Rates and Ultimate Bypass Rates are designed to meet your specific inlet requirements
- Multiple Filter Bags are available targeting site specific removal of trash, litter, leaves, or small particles, oil and grease
- Filters work below grade with an ultimate bypass allowing inlet area to drain with a full bag
- Units install in seconds and are easily maintained with the FLEXSTORM Universal Removal Tool (no heavy machinery required)

ADS Service: ADS representatives are committed to providing you with the answers to all your questions, including selecting the proper filter, specifications, installation and more. Also try the **ADS FLEXSTORM Online Product Configurator** at www.inletfilters.com



BENEFITS:

- Receive payback on your investment: durable stainless steel framing provides extended service life while replaceable filter bags handle loads with a safety factor of 5
- Meet stringent removal requirements:
 - FX filter bags are rated for > 80% removal efficiency of street sweep-size particles
 - PC/PC+ filter bags have been tested to 99% TSS removal of 0K-110 US Silica Sand and 97% TPH (total petroleum hydrocarbon) removal
- Help prevent fines: FLEXSTORM Inlet Filters comply with EPA NPDES initiatives as a temporary or permanent BMP
- Available through 5,000 ADS distributors nationwide
- If not in stock, orders up to 100 pcs can ship within 48 hours



FLEXSTORM PURE INLET FILTERS SPECIFICATION

IDENTIFICATION

The installer shall inspect the plans and/or worksite to determine the quantity of each drainage structure casting type. The foundry casting number, exact grate size and clear opening size, or other information will be necessary to finalize the FLEXSTORM part number and dimensions. The units are shipped to the field configured precisely to fit the identified drainage structure.

MATERIAL AND PERFORMANCE

The FLEXSTORM Inlet Filter system is comprised of a corrosion resistant steel frame and a replaceable geotextile filter bag attached to the frame with a stainless steel locking band. The filter bag hangs suspended at a distance below the grate that shall allow full water flow into the drainage structure if the bag is completely filled with sediment. The standard Woven Polypropylene FX filter bags are rated for 200 gpm/sqft with a removal efficiency of 82% when filtering a USDA Sandy Loam sediment load. The Post Construction PC filter bags are rated for 137 gpm/sqft and have been 3rd party tested at 99% TSS removal to 110 micron and 97% TPH removal of used motor oil hydrocarbon mix.

INSTALLATION

Remove the grate from the casting or concrete drainage structure. Clean the ledge (lip) of the casting frame or drain- age structure to ensure it is free of stone and dirt. Drop in the FLEXSTORM Inlet Filter through the clear opening and be sure the suspension hangers rest firmly on the inside ledge (lip) of the casting. Replace the grate and confirm it is elevated no more than 1/8", which is the thickness of the steel hangers. For wall mount units, follow instructions for attaching the stainless steel mounting brackets using the provided concrete fasteners.

INSPECTION FREQUENCY

Construction site inspection should occur following each 1/2" or more rain event. Post Construction inspections should occur three times per year (every four months) in areas with mild year round rainfall and four times per year (every three months Feb-Nov) in areas with summer rains before and after the winter snowfall season. Industrial application site inspections (loading ramps, wash racks, maintenance facilities) should occur on a regularly scheduled basis no less than three times per year.

MAINTENANCE GUIDELINES

Empty the filter bag if more than half filled with sediment and debris, or as directed by the Engineer. Remove the grate, engage the lifting bars or handles with the FLEXSTORM Removal Tool, and lift from the drainage structure. Dispose of the sediment or debris as directed by the Engineer or Maintenance Contract in accordance with EPA guidelines.

As an alternative, an industrial vacuum may be used to collect the accumulated sediment. Remove any caked on silt from the sediment bag and reverse flush the bag with medium spray for optimal filtration. Replace the bag if torn or punctured to 1/2" diameter or greater on the lower half of the bag. Post Construction PC/PC+ Bags should be maintained prior to 50% oil saturation. The average 2' x 2' PC filter bag will retain approx. 96 oz (5.4 lbs) of oil at which time it should be serviced or replaced. It can be centrifuged or passed through a wringer to recover the oils, and the fabric reused with 85% to 90% efficacy. It may also be recycled for its fuel value through waste to energy incineration. When utilizing the Cleartec Rubberizer Pouches in the + bags, note that these oil skimmers will gradually turn brown and solidify as they become saturated, indicating time for replacement. Each pouch will absorb approximately 62 oz (4 lbs) of oil before requiring replacement. The spent media may also be recycled for its fuel value through waste to energy incineration. Dispose of all oil contaminated products in accordance with EPA guidelines.

FILTER BAG REPLACEMENT

Remove the bag by loosening or cutting off the clamping band. Take the new filter bag, which is equipped with a stainless steel worm drive clamping band, and use a screw driver to tighten the bag around the frame channel. Ensure the bag is secure and that there is no slack around the perimeter of the band.

Lift Handles ease installation and maintenance



Replaceable Sediment Bag

1/8" thick steel hangers & channels; precision stampings **configured to fit each individual casting**



CAD drawings, work instructions and test reports on website: www.inletfilters.com



For more information on FLEXSTORM Inlet Filters and other ADS products, please contact our Customer Service Representatives at 1-800-821-6710 Try the **ADS FLEXSTORM Online Product Configurator** at www.inletfilters.com.

ADS "Terms and Conditions of Sale" are available on the ADS website, www.ads-pipe.com

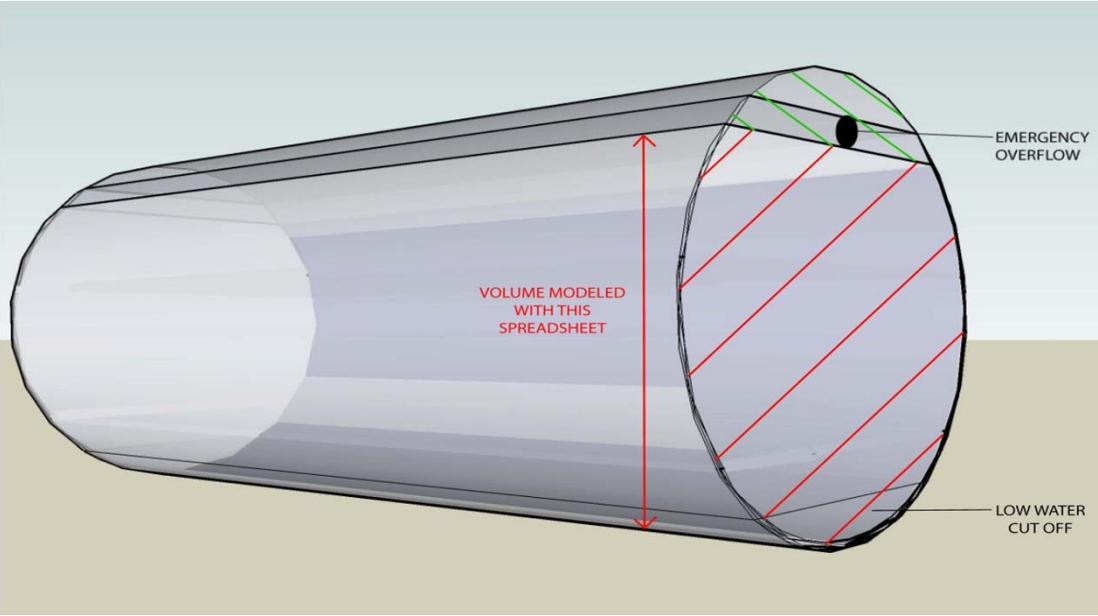
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RUNOFF REDUCTION VOLUME: RESULTS FOR PRECIP <=1"

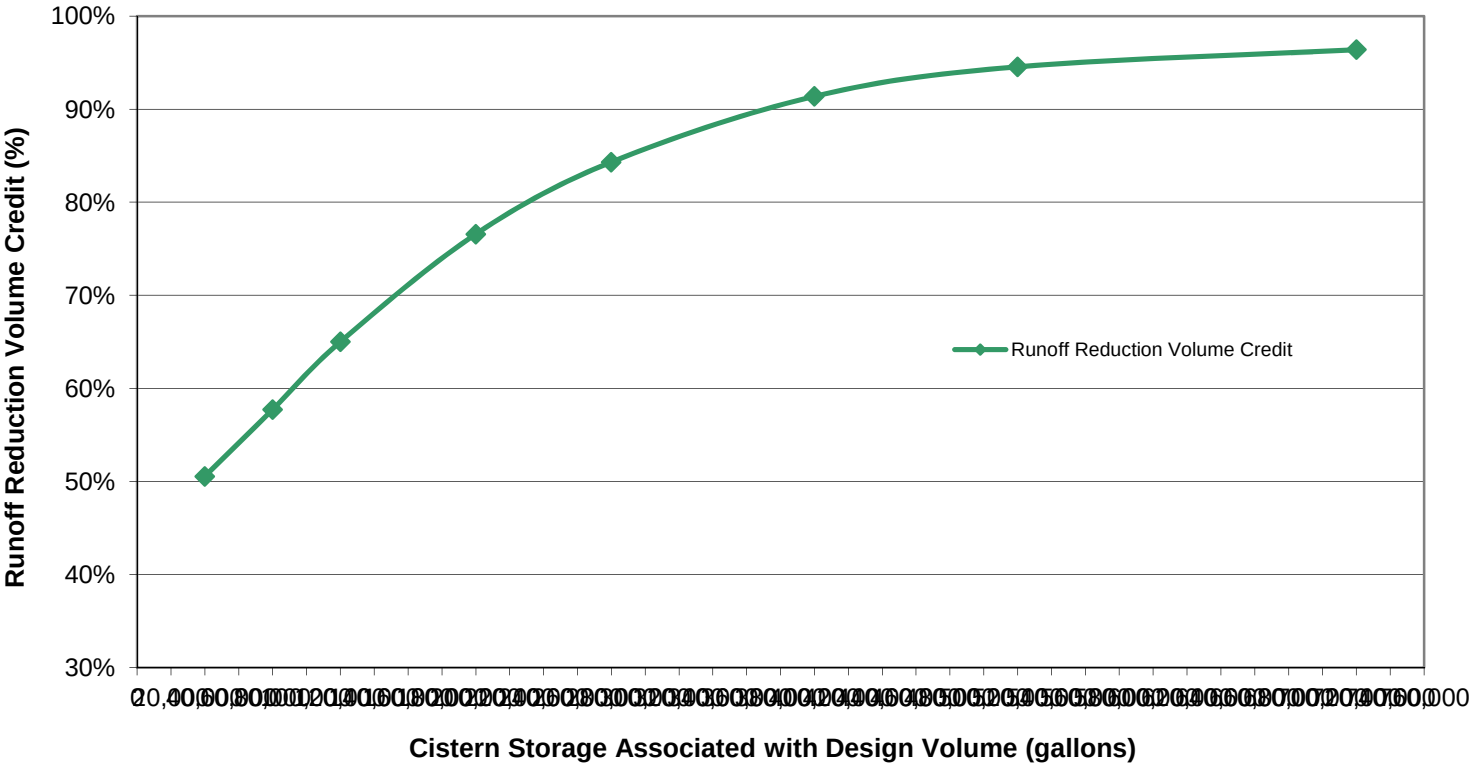
Cistern Storage Associated with Design Volume (gallons)	Average Annual Overflow days for storms <=1" (days/year)*	Average Annual Overflow Volume for storms <= 1" (1000's gal/year)*	Runoff Reduction Volume Credit
40,000	33	6,457	51%
80,000	34	5,521	58%
120,000	31	4,570	65%
200,000	23	3,058	77%
280,000	16	2,050	84%
400,000	9	1,125	91%
520,000	5	711	95%
720,000	3	471	96%

Total Annual Volume contributed to cistern inlet by storms <=1" (1000's gal/year) = 13058

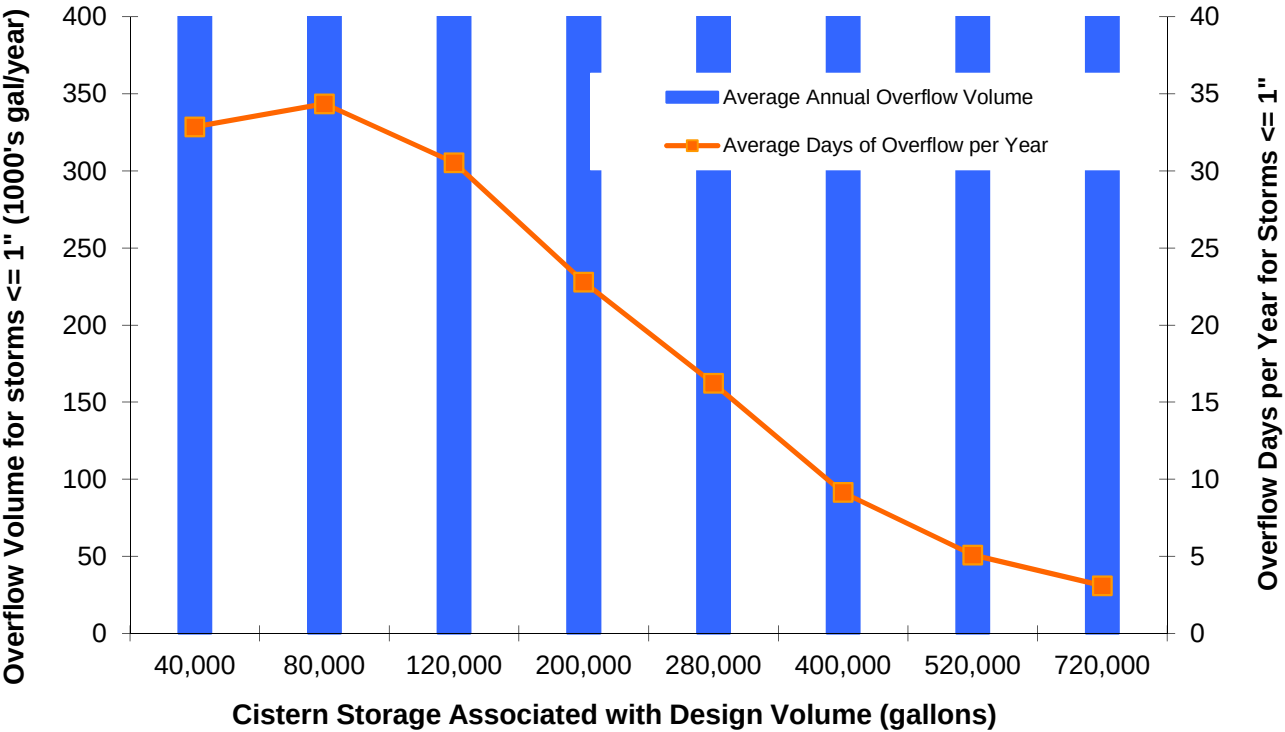
* Excludes overflow that occurs for storms > 1"



Runoff Reduction Volume Credit Chart



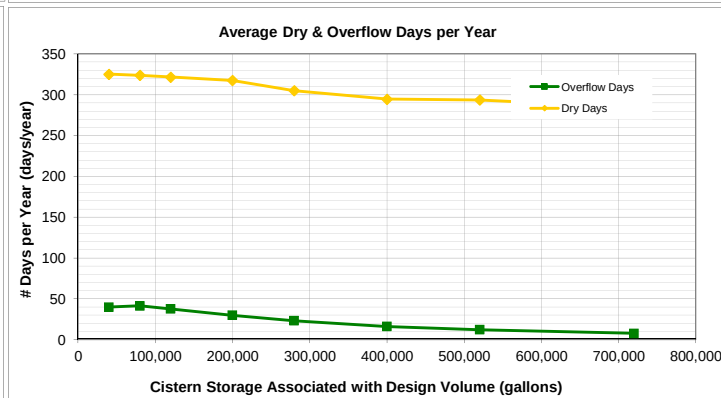
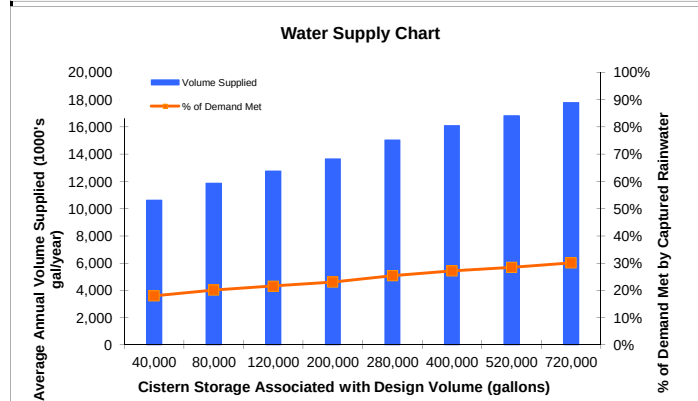
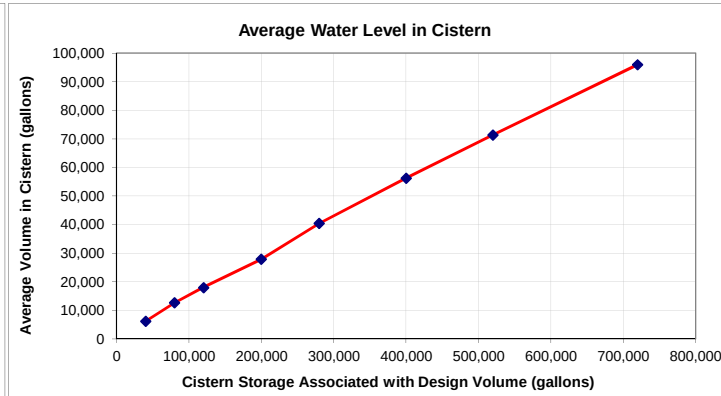
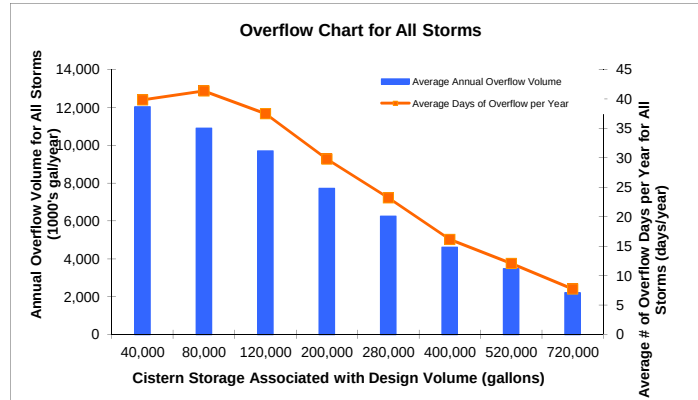
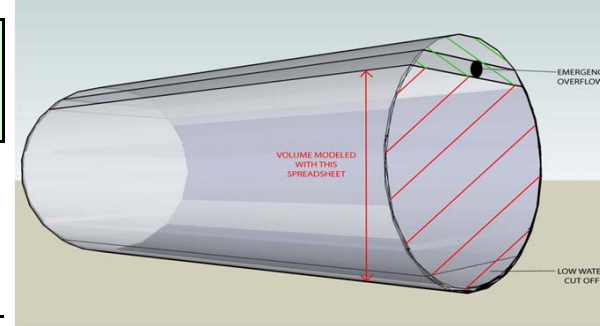
Overflow: Average Annual Volume & Days per Year for Storms <= 1"



RESULTS: USING PRECIPITATION DATA FROM ALL STORMS

Cistern Storage Associated with Design Volume (gallons)	Average Annual Overflow days for all storms (days/year)	Average Annual Overflow Volume for all storms (1000's gal/year)	Average Annual "Dry" days (days/year)	Average Cistern Volume	% of Demand Met by Captured Rainwater	Annual Volume Supplied, Demand Met (1000's gal/year)
40,000	40	12,034	325	6,150	18%	10,608
80,000	41	10,894	324	12,612	20%	11,870
120,000	38	9,705	322	17,950	22%	12,749
200,000	30	7,731	317	27,899	23%	13,643
280,000	23	6,244	305	40,374	25%	15,033
400,000	16	4,612	295	56,226	27%	16,079
520,000	12	3,484	294	71,270	28%	16,818
720,000	8	2,201	284	95,924	30%	17,788

NOTE: CALCULATIONS ON THIS SHEET INCLUDE ALL PRECIPITATION EVENTS



Site Data Summary

Site Land Cover Summary

	A Soils	B Soils	C Soils	D Soils	Total	% of Total
Forest (acres)	0.00	0.00	0.00	0.00	0.00	0.00
Turf (acres)	0.00	44.30	0.00	0.00	44.30	60.19
Impervious (acres)	0.00	29.30	0.00	0.00	29.30	39.81
					73.60	100.00

Site Rv	0.50
Post Development Treatment Volume (ft3)	133,203

Total Runoff Volume Reduction (ft3)	76,520
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Drainage Area Summary

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	Total
Forest (acres)	0.00	0.00	0.00	0.00	0.00	0.00
Turf (acres)	33.10	11.20	0.00	0.00	0.00	44.30
Impervious (acres)	15.80	13.50	0.00	0.00	0.00	29.30
						73.60

Drainage Area A Summary

Land Cover Summary

	A Soils	B Soils	C Soils	D Soils	Total	% of Total
Forest (acres)	0.00	0.00	0.00	0.00	0.00	0.00
Turf (acres)	0.00	33.10	0.00	0.00	33.10	67.69
Impervious (acres)	0.00	15.80	0.00	0.00	15.80	32.31
					48.90	

BMP Selections

Practice	Credit Area (acres)	Runoff Reduction (ft3)	Downstream Practice
Water Quality Swale, Level 2	16.00	23,432	
Bioretention, Level 1 or Urban Bioretention (4.2.3.B)	3.00	6,534	

Total Impervious Cover Treated (acres)	5.94
Total Turf Area Treated (acres)	13.06

Drainage Area B Summary

Land Cover Summary

	A Soils	B Soils	C Soils	D Soils	Total	% of Total
Forest (acres)	0.00	0.00	0.00	0.00	0.00	0.00
Turf (acres)	0.00	11.20	0.00	0.00	11.20	22.90
Impervious (acres)	0.00	13.50	0.00	0.00	13.50	27.61
					24.70	

BMP Selections

Practice	Credit Area (acres)	Runoff Reduction (ft3)	Downstream Practice
To Rainwater Harvesting (4.2.8)	13.50	46,555	

Total Impervious Cover Treated (acres)	13.50
Total Turf Area Treated (acres)	0.00

Channel and Flood Protection

	Weight ed CN	1-year storm Adjusted CN	2-year storm Adjust ed CN	10- year storm Adjust ed CN
Target Rainfall Event (in)		2.70	3.35	5.15
D.A. A CN	73	0	0	58
D.A. B CN	81	0	0	0
D.A. C CN	0	0	0	0
D.A. D CN	0	0	0	0
D.A. E CN	0	0	0	0

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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	5.274	3	717	12,001	-----	-----	-----	GRASS SWALE #1
2	SCS Runoff	2.742	3	717	6,358	-----	-----	-----	GRASS SWALE #2
3	SCS Runoff	3.036	3	717	7,216	-----	-----	-----	GRASS SWALE #3
4	SCS Runoff	2.109	3	717	5,011	-----	-----	-----	GRASS SWALE #4
5	SCS Runoff	3.119	3	717	7,132	-----	-----	-----	GRASS SWALE #5
6	SCS Runoff	0.601	3	717	1,383	-----	-----	-----	GRASS SWALE #6
7	SCS Runoff	1.696	3	717	3,855	-----	-----	-----	GRASS SWALE #7
8	SCS Runoff	0.522	3	717	1,263	-----	-----	-----	GRASS SWALE #8
9	SCS Runoff	2.089	3	717	4,899	-----	-----	-----	DI #4
10	SCS Runoff	10.58	3	717	26,815	-----	-----	-----	DI #6
11	SCS Runoff	2.544	3	717	5,783	-----	-----	-----	DI #7
12	SCS Runoff	4.035	3	717	9,751	-----	-----	-----	DI #8
13	SCS Runoff	4.892	3	717	11,625	-----	-----	-----	DI #9
14	SCS Runoff	0.471	3	720	1,083	-----	-----	-----	DI #10
15	SCS Runoff	8.481	3	720	19,522	-----	-----	-----	MH #11
16	SCS Runoff	3.091	3	717	6,982	-----	-----	-----	DI #13
17	SCS Runoff	4.555	3	717	10,824	-----	-----	-----	DI #14
18	SCS Runoff	7.256	3	717	17,537	-----	-----	-----	DI #15
21	SCS Runoff	3.968	3	717	9,793	-----	-----	-----	DI #22
22	SCS Runoff	3.263	3	717	8,269	-----	-----	-----	DI #23
23	SCS Runoff	2.592	3	717	6,568	-----	-----	-----	DI #24
24	SCS Runoff	2.592	3	717	6,568	-----	-----	-----	DI #25
25	SCS Runoff	1.677	3	717	4,250	-----	-----	-----	DI #26
26	SCS Runoff	2.440	3	717	6,182	-----	-----	-----	DI #27
27	SCS Runoff	1.449	3	720	3,334	-----	-----	-----	DITCH D-1
28	SCS Runoff	10.80	3	720	24,851	-----	-----	-----	DITCH D-2
29	SCS Runoff	3.080	3	717	7,805	-----	-----	-----	DI #29
30	SCS Runoff	0.793	3	717	2,009	-----	-----	-----	DI #30
31	SCS Runoff	2.714	3	717	6,878	-----	-----	-----	DI #31
32	SCS Runoff	5.032	3	717	12,751	-----	-----	-----	DI #32
33	SCS Runoff	1.616	3	717	4,096	-----	-----	-----	DI #33
34	SCS Runoff	3.759	3	717	8,643	-----	-----	-----	DI #34
35	SCS Runoff	1.372	3	717	3,477	-----	-----	-----	DI #35
TOTAL REVISED HYDROLOGY.gpw					Return Period: 1 Year			Friday, 07 / 28 / 2017	

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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
36	SCS Runoff	1.403	3	717	3,555	-----	-----	-----	DI #36
37	SCS Runoff	1.738	3	717	4,405	-----	-----	-----	DI #38
38	SCS Runoff	1.375	3	717	3,126	-----	-----	-----	DI #39
39	SCS Runoff	3.335	3	717	7,618	-----	-----	-----	DI #40
41	Combine	21.47	3	717	52,365	7, 8, 9, 10, 11, 12,	-----	-----	DI 4-8, SWALES 7-8
42	Combine	28.60	3	717	67,573	13, 14, 15, 16, 17, 18,	-----	-----	DI 9-15
43	Combine	16.88	3	717	39,101	1, 2, 3, 4, 5, 6,	-----	-----	GRASS SWALES 1-6
44	Combine	66.95	3	717	159,039	41, 42, 43	-----	-----	TOTAL CLEAN WATER SYSTEM
45	Reservoir	1.036	3	1110	52,096	44	559.59	128,820	STORMWATER POND
47	Combine	6.448	3	717	15,148	37, 38, 39,	-----	-----	DI 38-40
48	Combine	16.53	3	717	41,631	21, 22, 23, 24, 25, 26,	-----	-----	DI 22-27
49	Combine	23.67	3	717	57,627	27, 28, 29, 30, 31, 32,	-----	-----	DI 29-32 & DITCHES
50	Combine	8.150	3	717	19,771	33, 34, 35, 36,	-----	-----	DI 33-36
51	Combine	54.80	3	717	134,177	47, 48, 49, 50	-----	-----	TOTAL DIRTY WATER SYSTEM
53	SCS Runoff	112.09	3	717	254,772	-----	-----	-----	E&S RUNOFF BASIN 1
54	Reservoir	2.690	3	933	147,830	53	560.35	174,919	E&S BASIN #1
56	SCS Runoff	37.13	3	717	84,403	-----	-----	-----	E&S RUNOFF BASIN 2
57	Reservoir	0.269	3	1443	14,589	56	574.72	80,100	E&S BASIN #2
59	SCS Runoff	48.74	3	717	110,398	-----	-----	-----	DITCH D-3
60	SCS Runoff	48.46	3	717	109,541	-----	-----	-----	DITCH D-4
62	SCS Runoff	76.15	3	720	175,267	-----	-----	-----	PRE-DEVELOPMENT
63	Reservoir	1.036	3	1110	52,096	44	559.59	128,820	POST-DEVELOPMENT
TOTAL REVISED HYDROLOGY.gpw					Return Period: 1 Year			Friday, 07 / 28 / 2017	

Hydrograph Report

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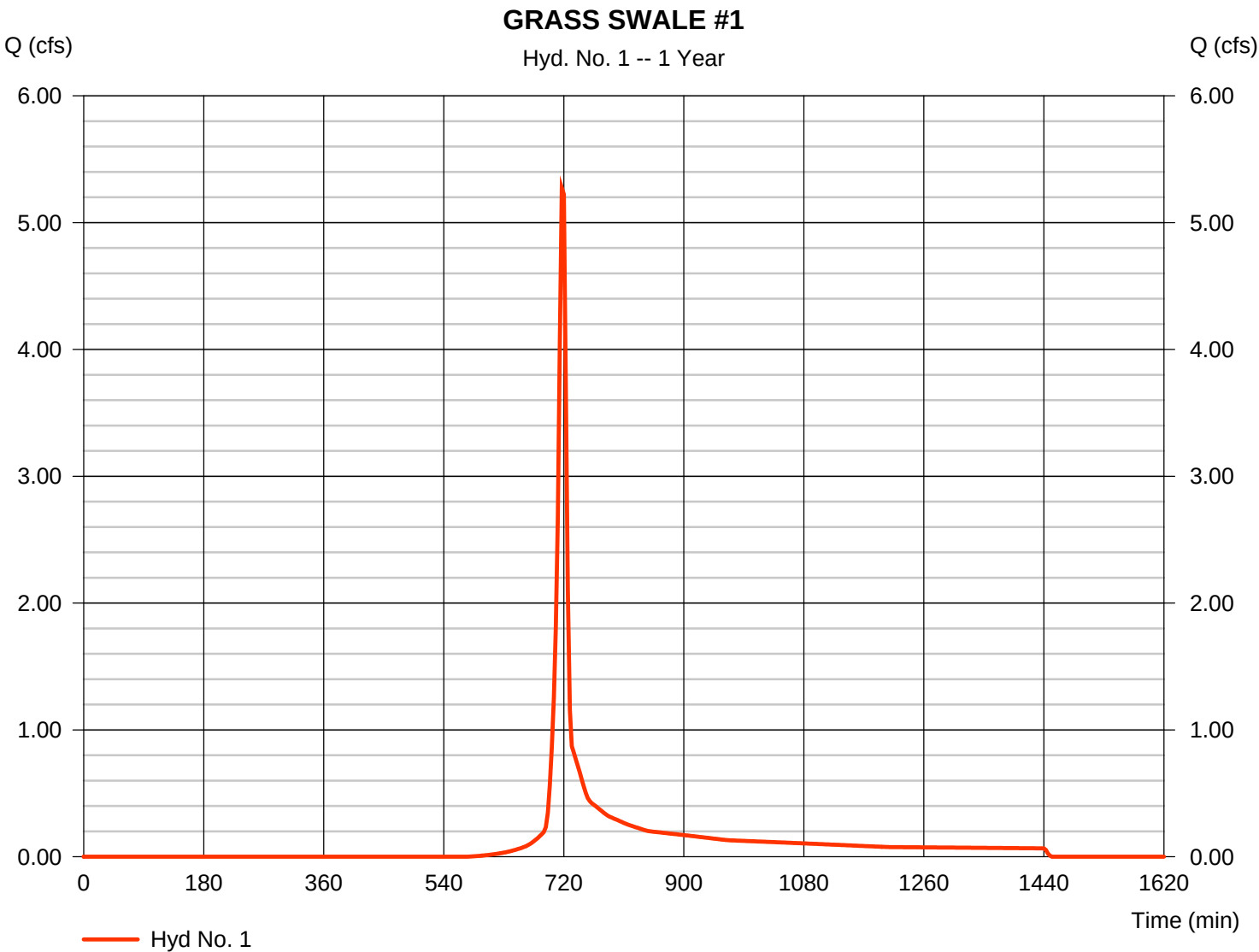
Friday, 07 / 28 / 2017

Hyd. No. 1

GRASS SWALE #1

Hydrograph type	=	SCS Runoff	Peak discharge	=	5.274 cfs
Storm frequency	=	1 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	12,001 cuft
Drainage area	=	3.340 ac	Curve number	=	83*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	2.50 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.730 x 98) + (2.610 x 79)] / 3.340



Hydrograph Report

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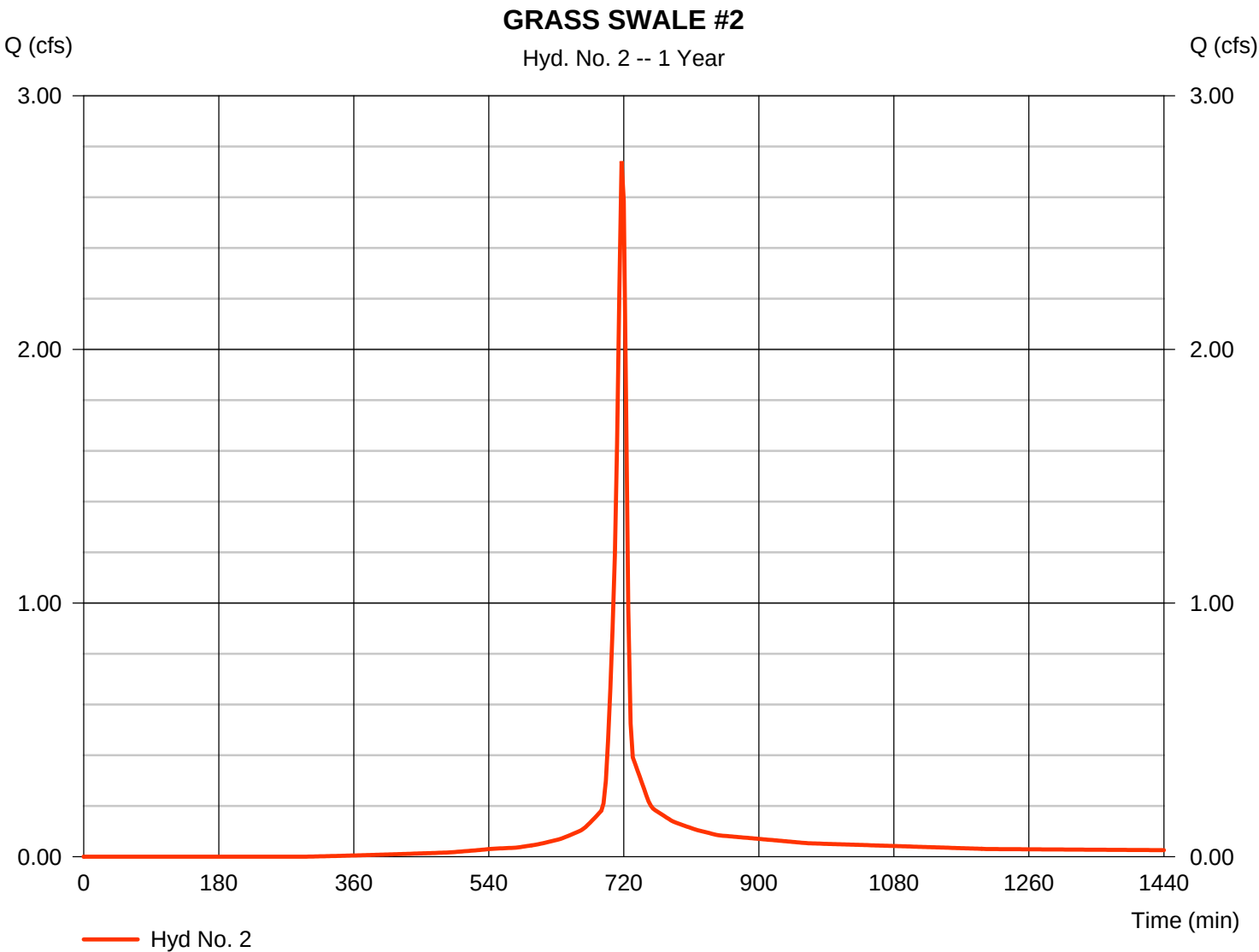
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Hyd. No. 2

GRASS SWALE #2

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.742 cfs
Storm frequency	=	1 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	6,358 cuft
Drainage area	=	1.050 ac	Curve number	=	93*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	2.50 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.770 x 98) + (0.280 x 79)] / 1.050



Hydrograph Report

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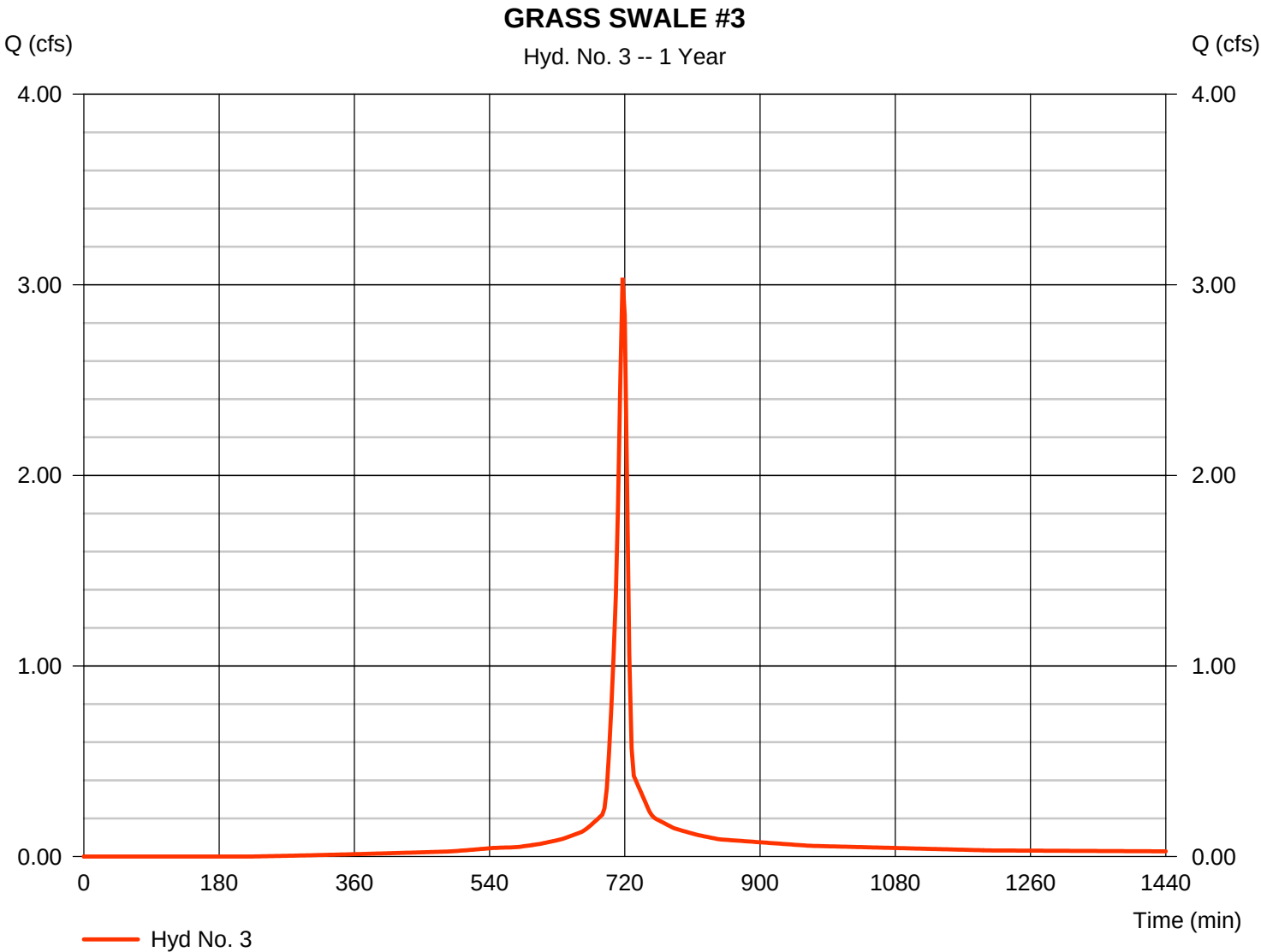
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Hyd. No. 3

GRASS SWALE #3

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.036 cfs
Storm frequency	=	1 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	7,216 cuft
Drainage area	=	1.080 ac	Curve number	=	95*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	2.50 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.890 x 98) + (0.190 x 79)] / 1.080



Hydrograph Report

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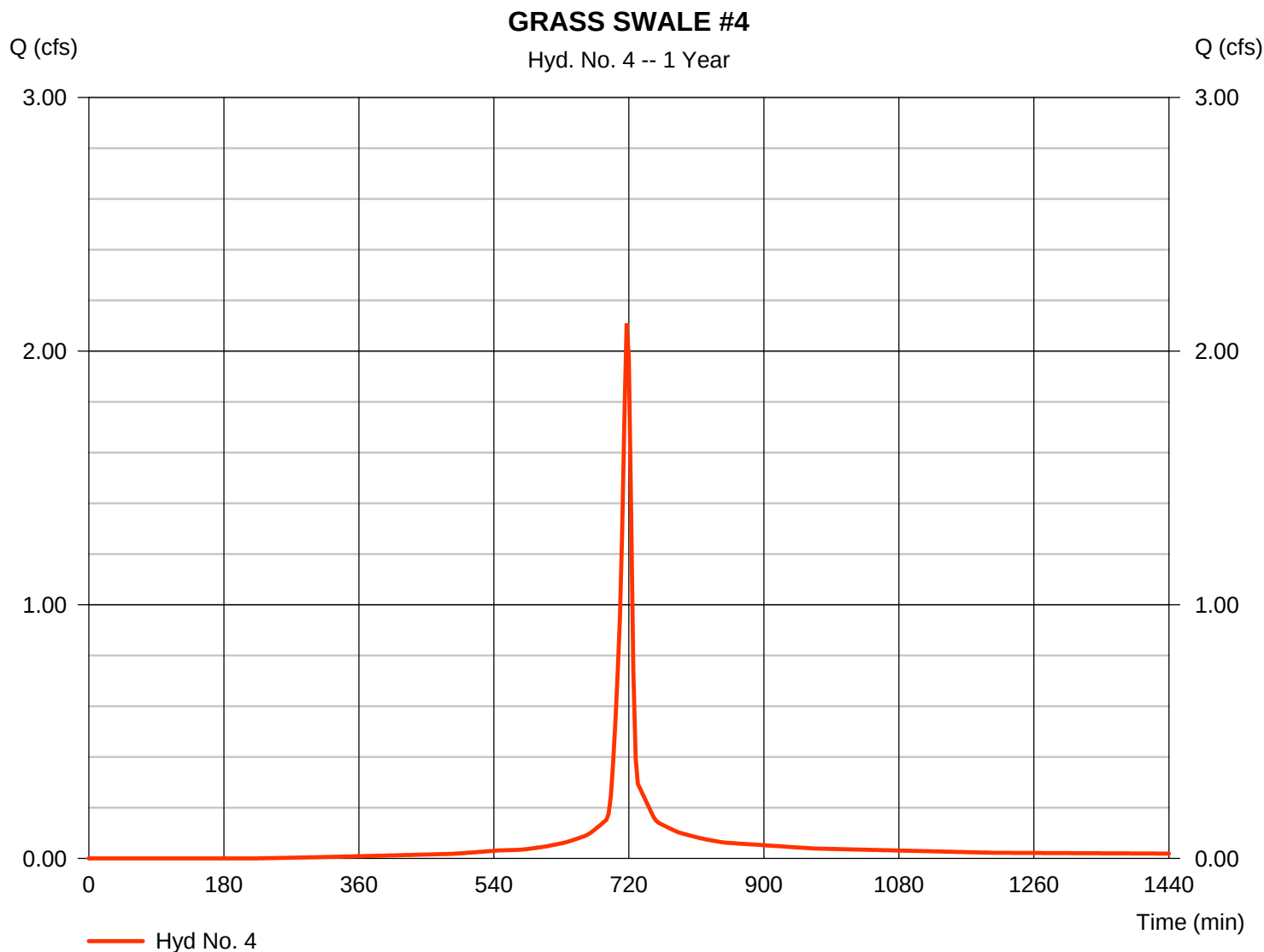
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Hyd. No. 4

GRASS SWALE #4

Hydrograph type	= SCS Runoff	Peak discharge	= 2.109 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 5,011 cuft
Drainage area	= 0.750 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.630 \times 98) + (0.120 \times 79)] / 0.750$



Hydrograph Report

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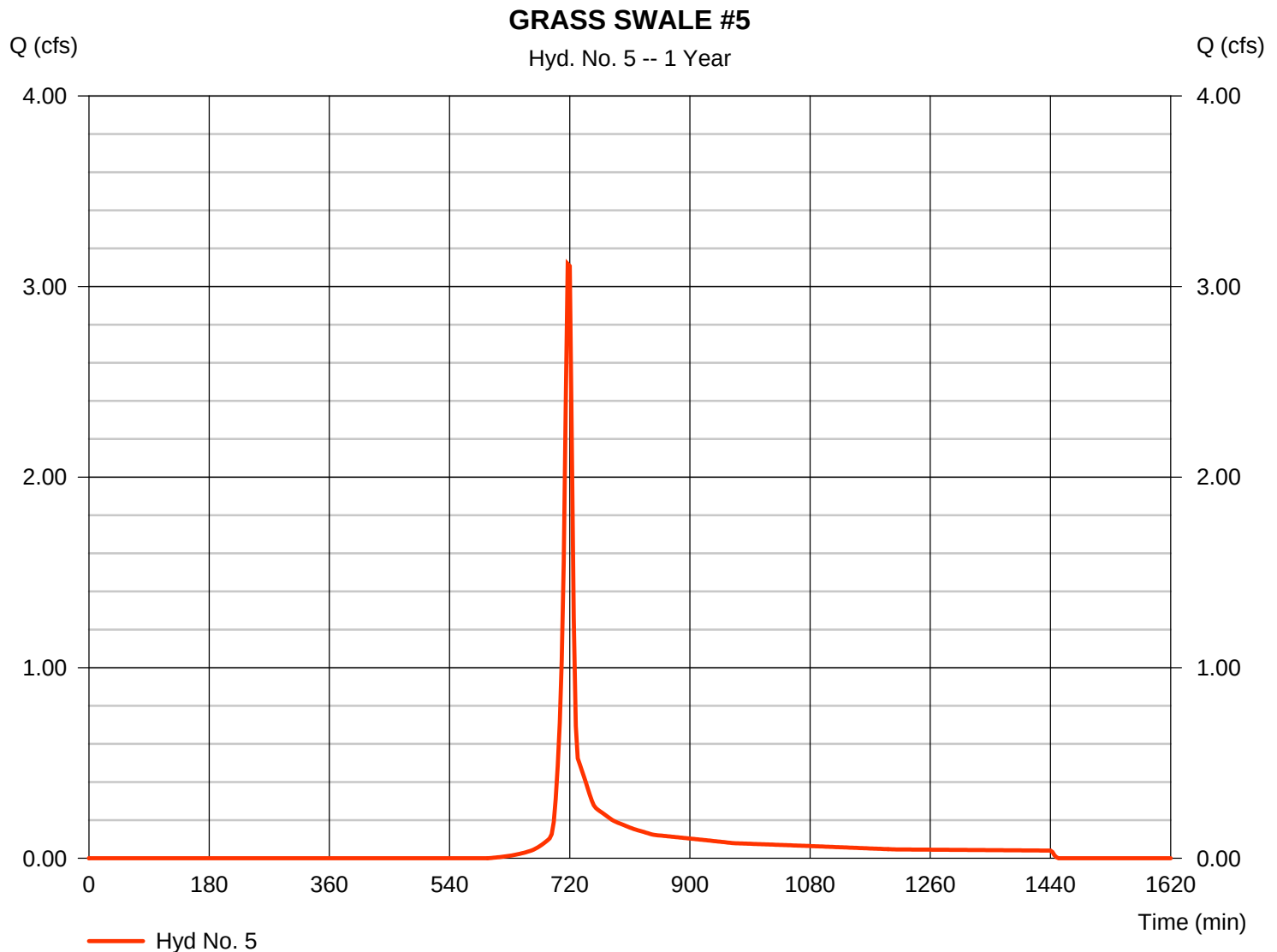
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Hyd. No. 5

GRASS SWALE #5

Hydrograph type	= SCS Runoff	Peak discharge	= 3.119 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 7,132 cuft
Drainage area	= 2.100 ac	Curve number	= 82*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.300 \times 98) + (1.800 \times 79)] / 2.100$



Hydrograph Report

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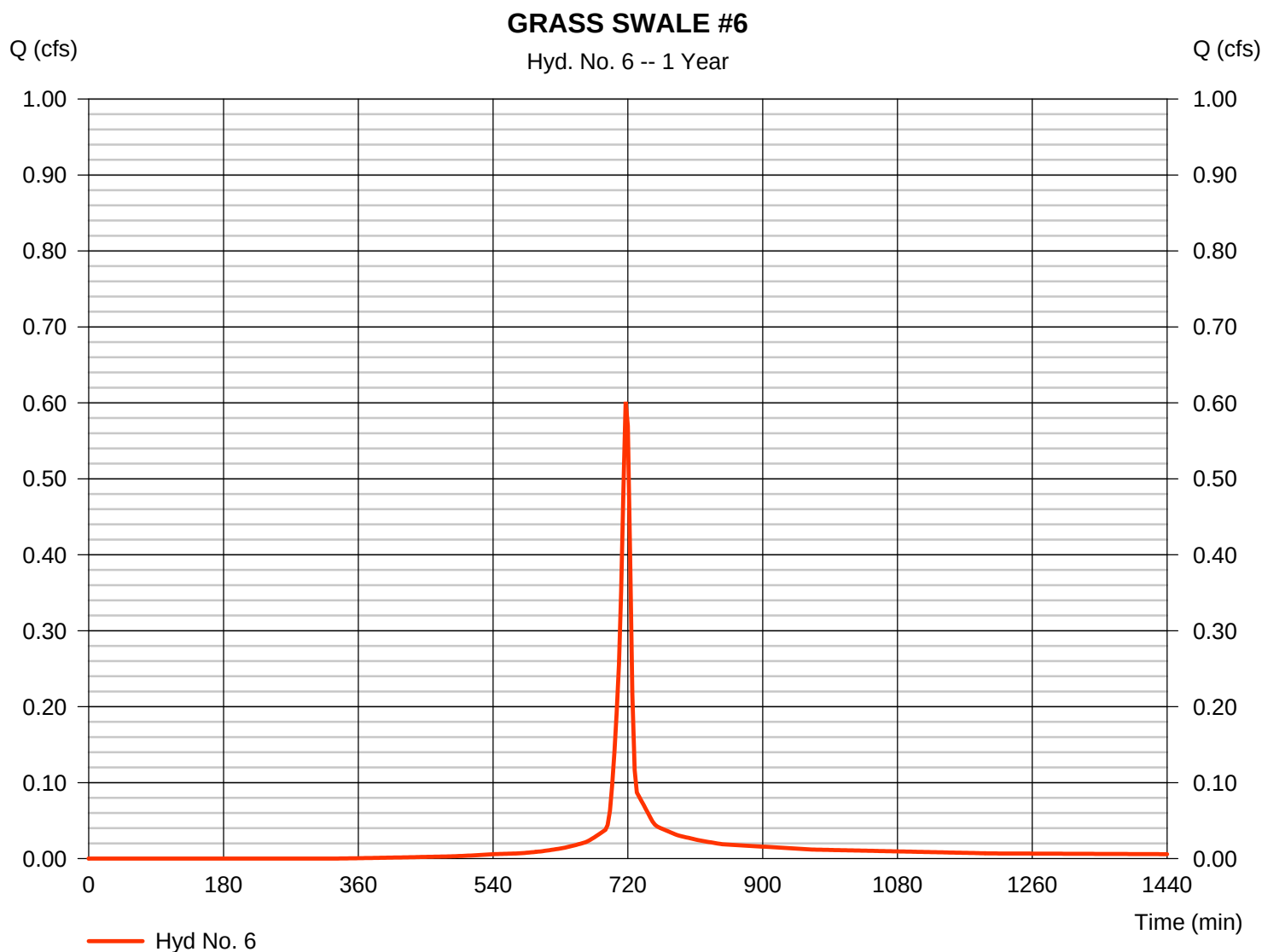
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Hyd. No. 6

GRASS SWALE #6

Hydrograph type	= SCS Runoff	Peak discharge	= 0.601 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 1,383 cuft
Drainage area	= 0.240 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.160 \times 98) + (0.080 \times 79)] / 0.240$



Hydrograph Report

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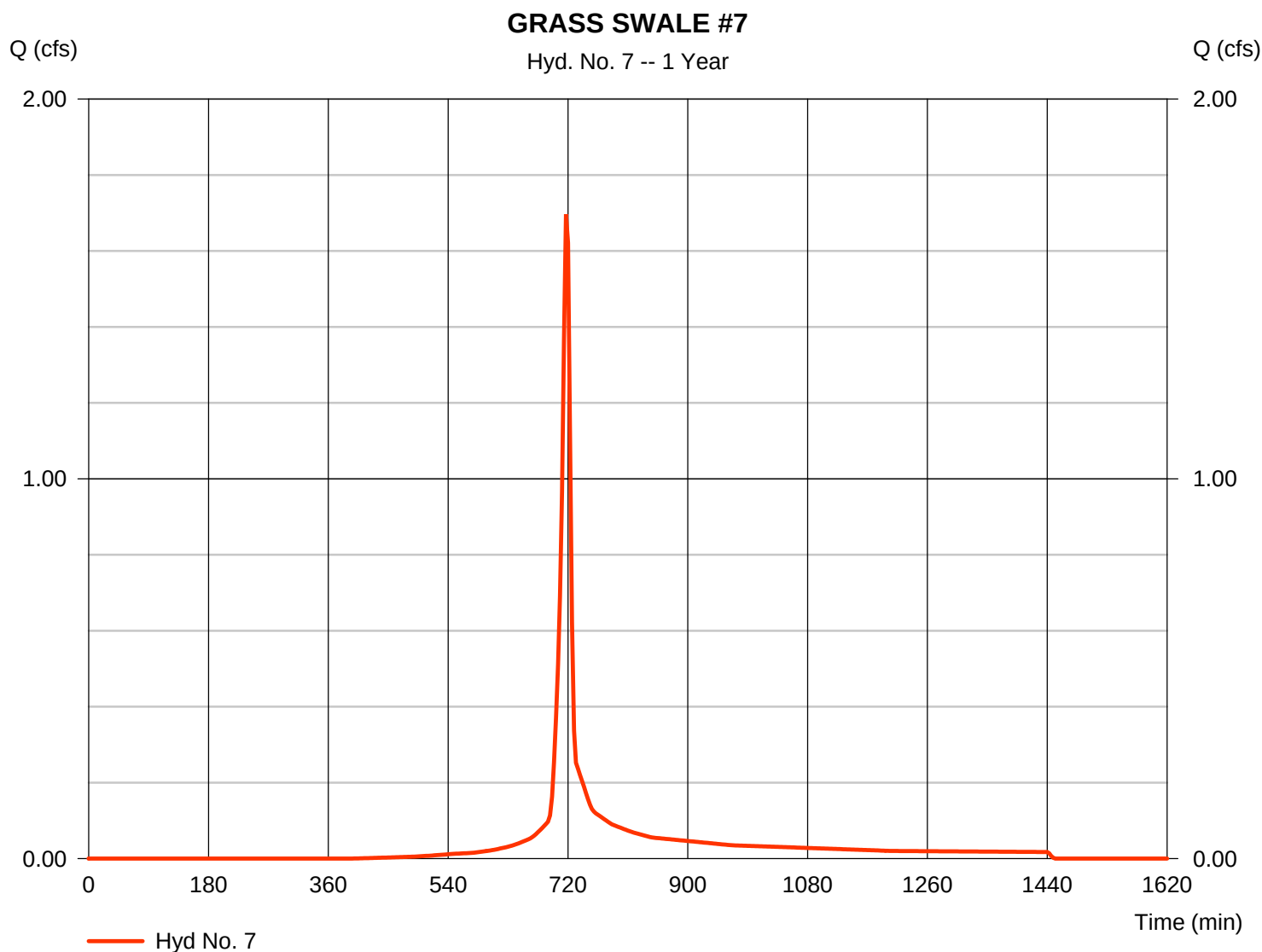
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Hyd. No. 7

GRASS SWALE #7

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.696 cfs
Storm frequency	=	1 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	3,855 cuft
Drainage area	=	0.740 ac	Curve number	=	90*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	2.50 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = $[(0.420 \times 98) + (0.320 \times 79)] / 0.740$



Hydrograph Report

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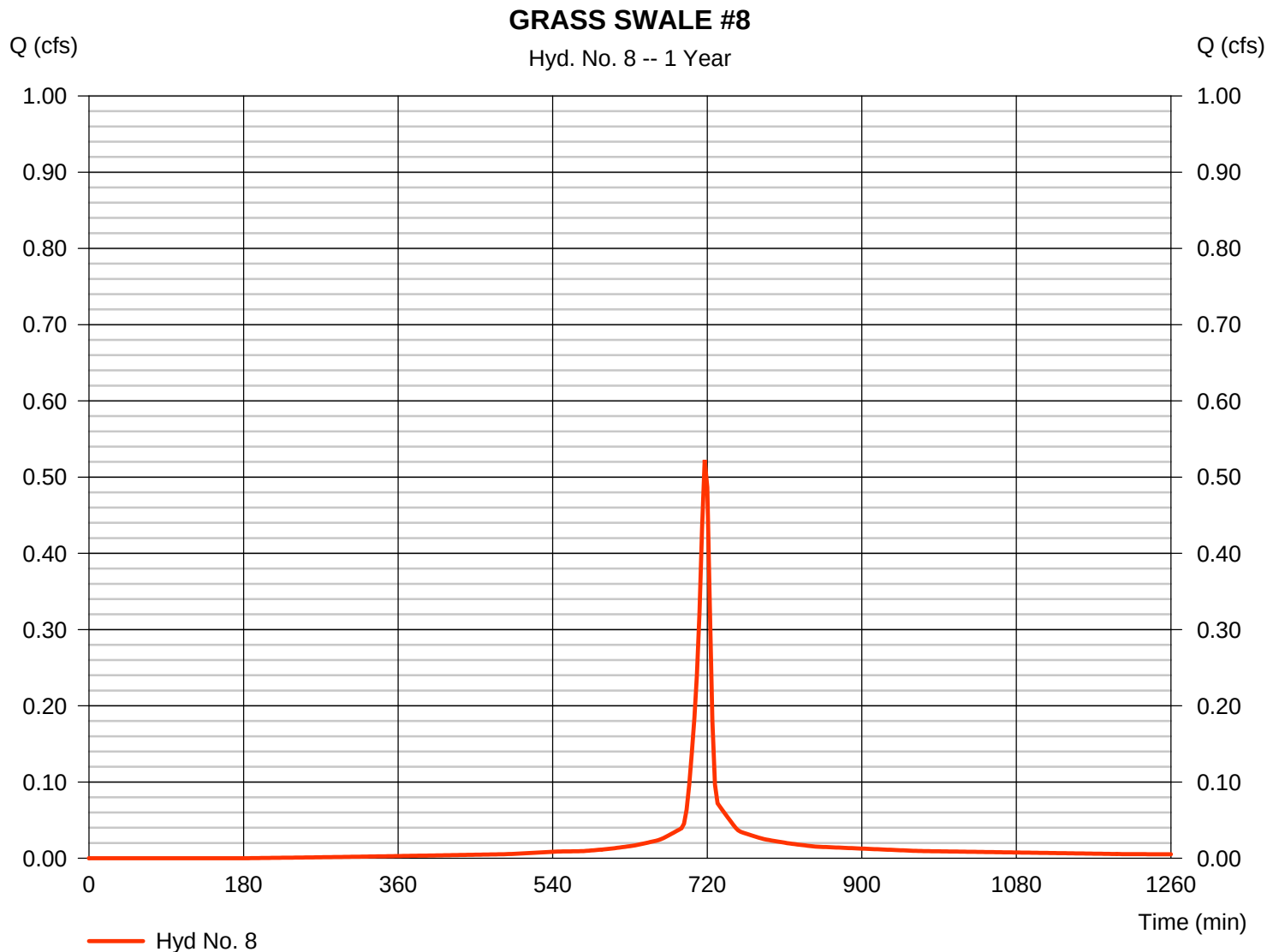
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Hyd. No. 8

GRASS SWALE #8

Hydrograph type	= SCS Runoff	Peak discharge	= 0.522 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 1,263 cuft
Drainage area	= 0.180 ac	Curve number	= 96*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.160 \times 98) + (0.020 \times 79)] / 0.180$



Hydrograph Report

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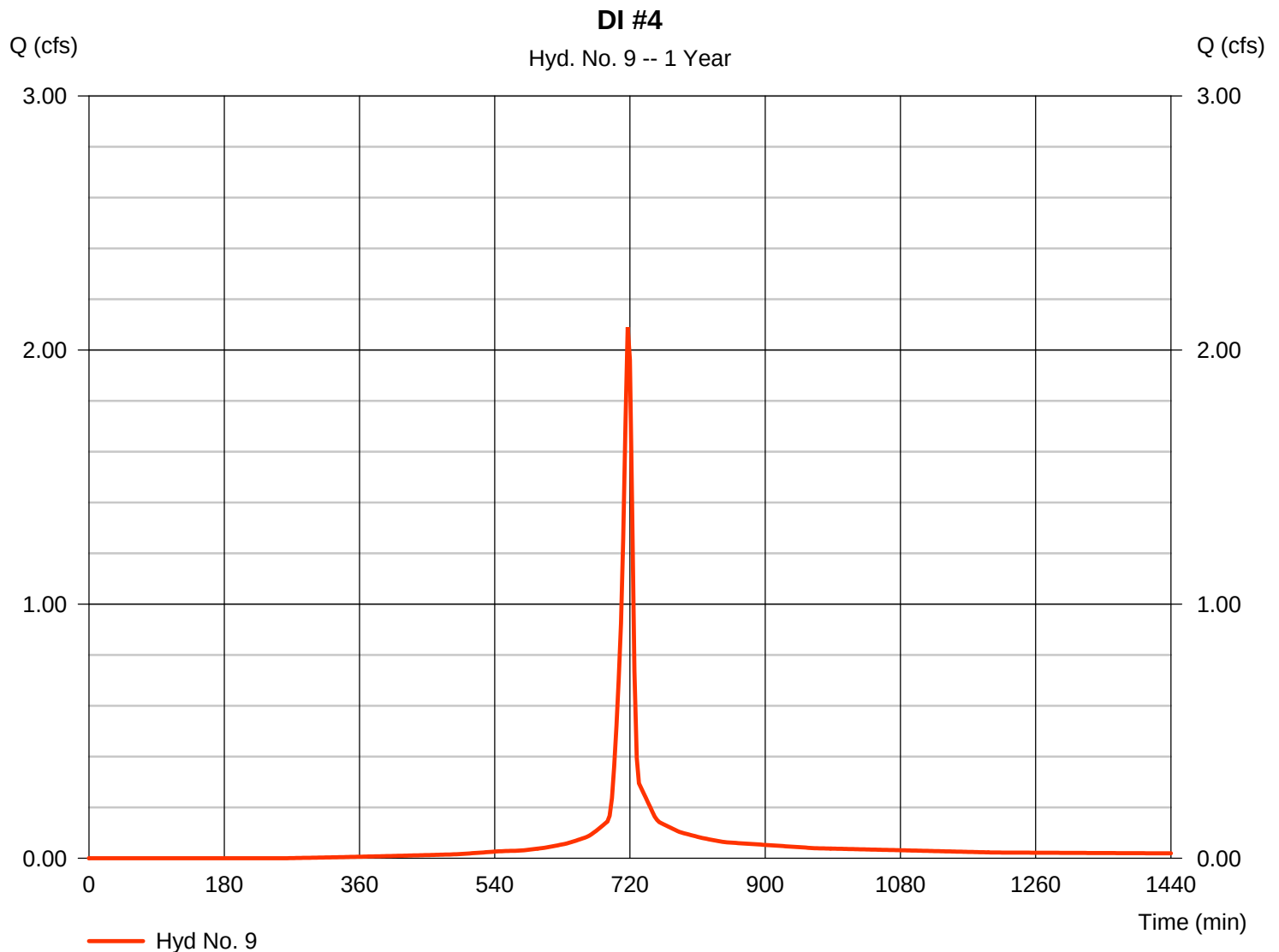
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Hyd. No. 9

DI #4

Hydrograph type	= SCS Runoff	Peak discharge	= 2.089 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 4,899 cuft
Drainage area	= 0.770 ac	Curve number	= 94*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.610 \times 98) + (0.160 \times 79)] / 0.770$



Hydrograph Report

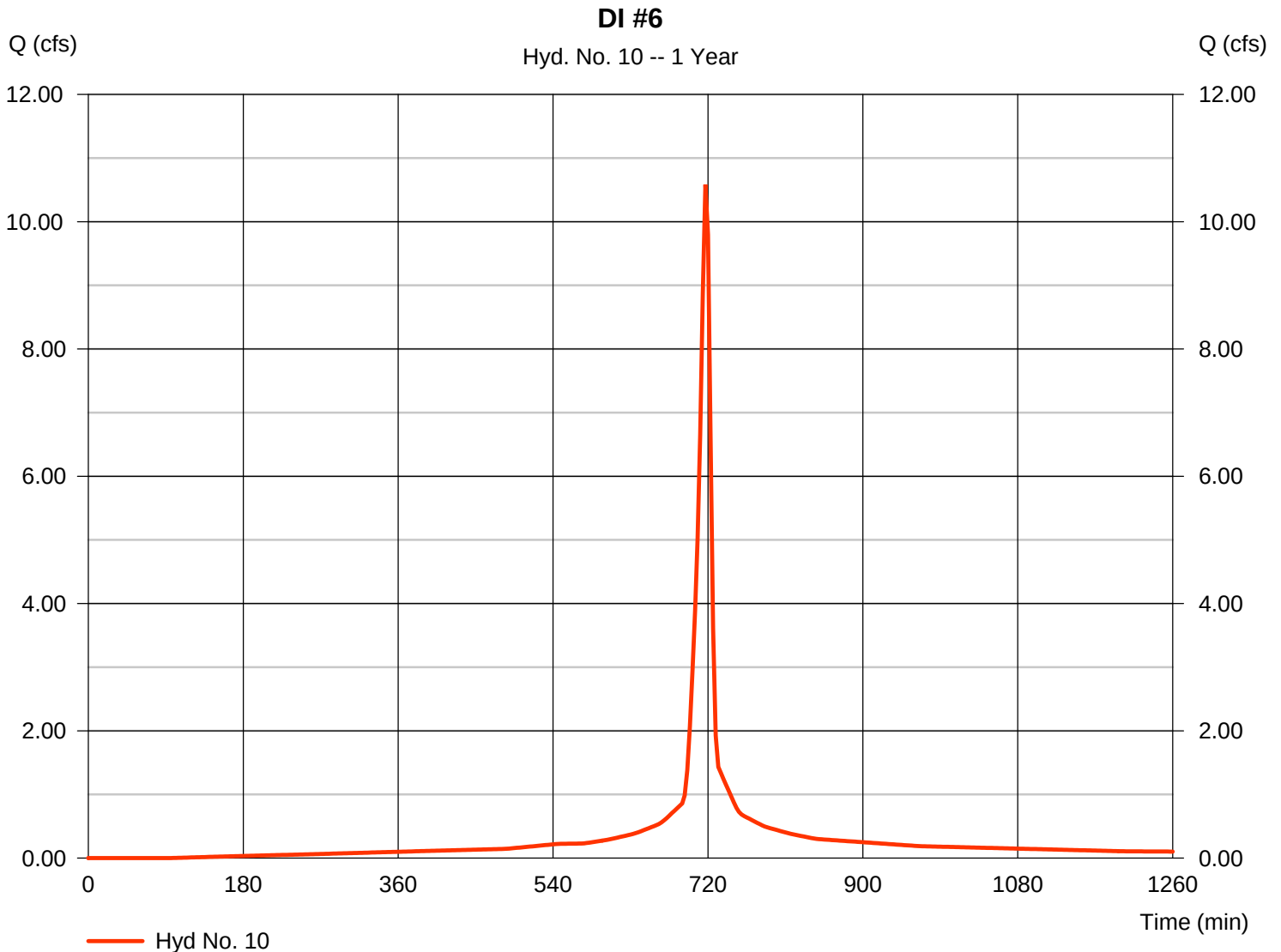
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Hyd. No. 10

DI #6

Hydrograph type	= SCS Runoff	Peak discharge	= 10.58 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 26,815 cuft
Drainage area	= 3.470 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

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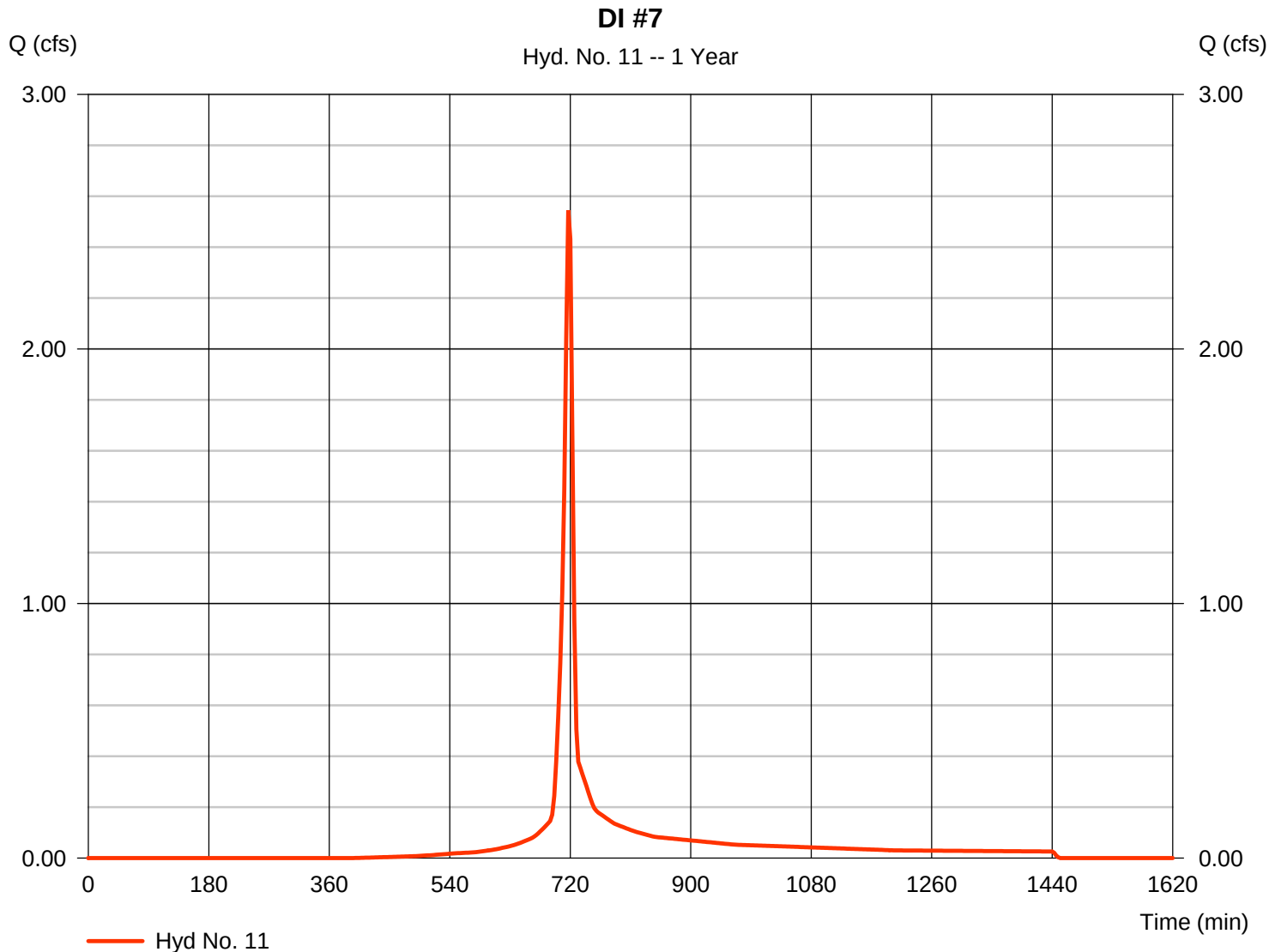
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Hyd. No. 11

DI #7

Hydrograph type	= SCS Runoff	Peak discharge	= 2.544 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 5,783 cuft
Drainage area	= 1.110 ac	Curve number	= 90*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.660 \times 98) + (0.450 \times 79)] / 1.110$



Hydrograph Report

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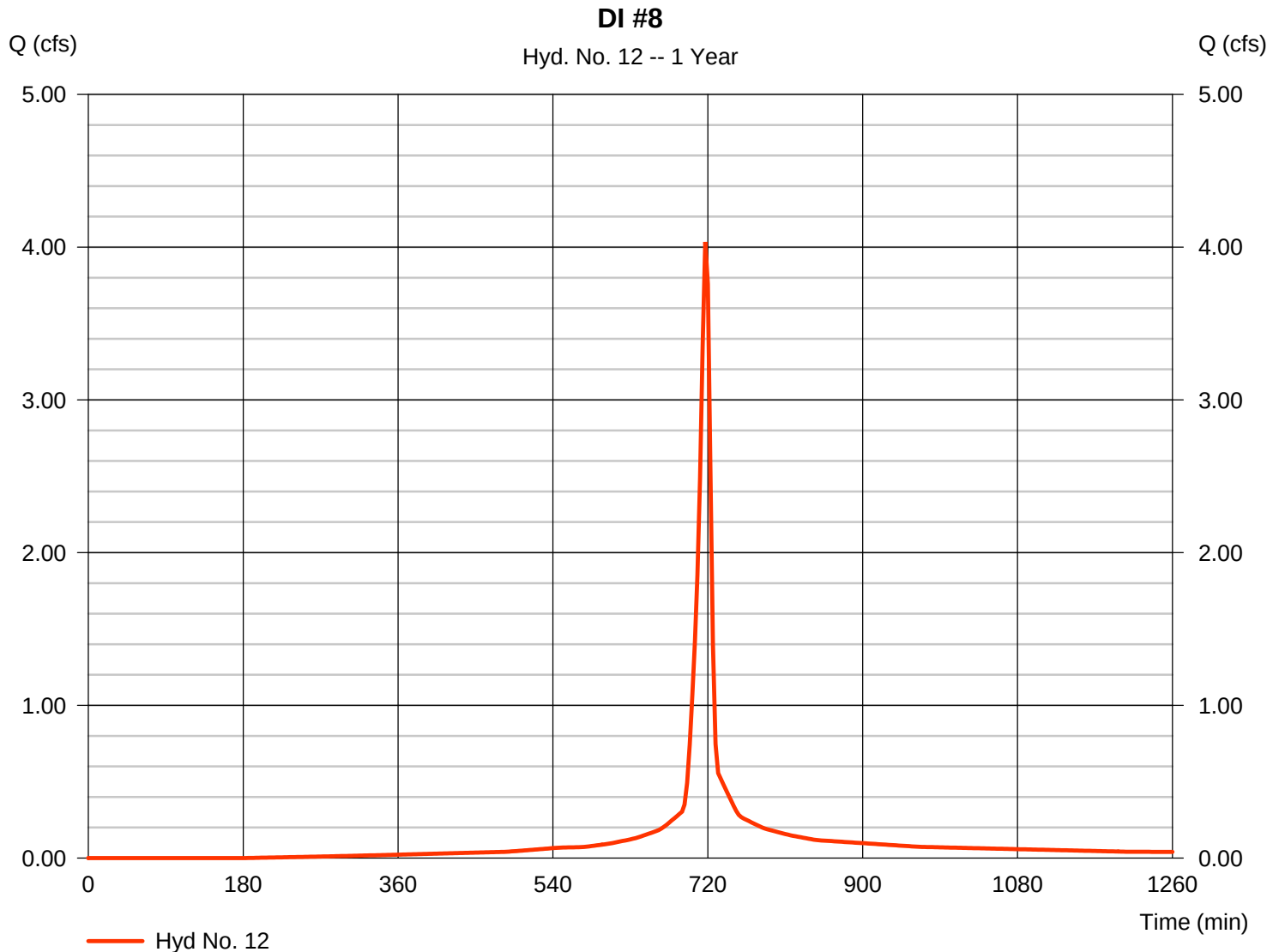
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Hyd. No. 12

DI #8

Hydrograph type	= SCS Runoff	Peak discharge	= 4.035 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 9,751 cuft
Drainage area	= 1.390 ac	Curve number	= 96*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.230 \times 98) + (0.160 \times 79)] / 1.390$



Hydrograph Report

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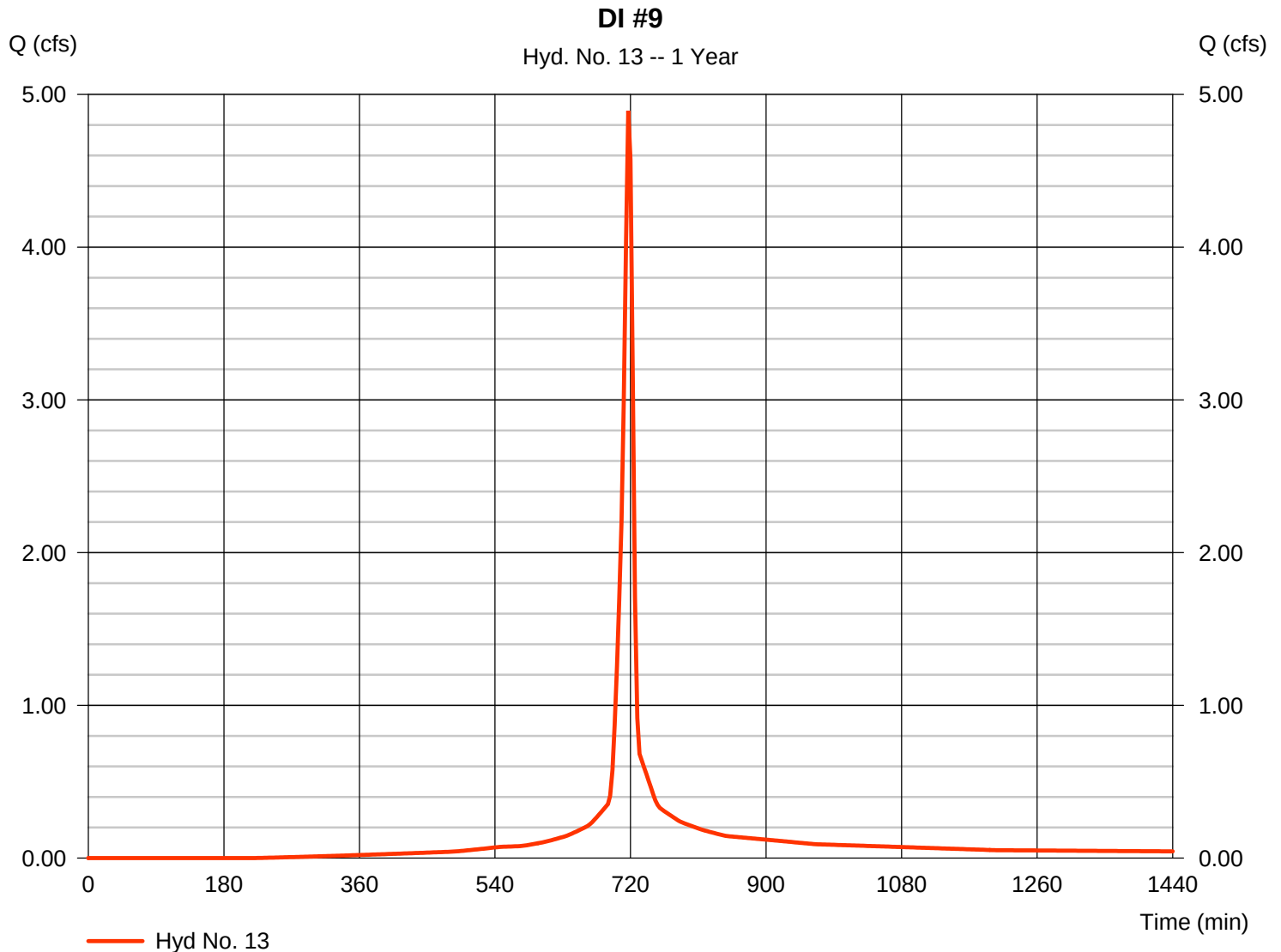
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Hyd. No. 13

DI #9

Hydrograph type	= SCS Runoff	Peak discharge	= 4.892 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 11,625 cuft
Drainage area	= 1.740 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.490 \times 98) + (0.250 \times 79)] / 1.740$



Hydrograph Report

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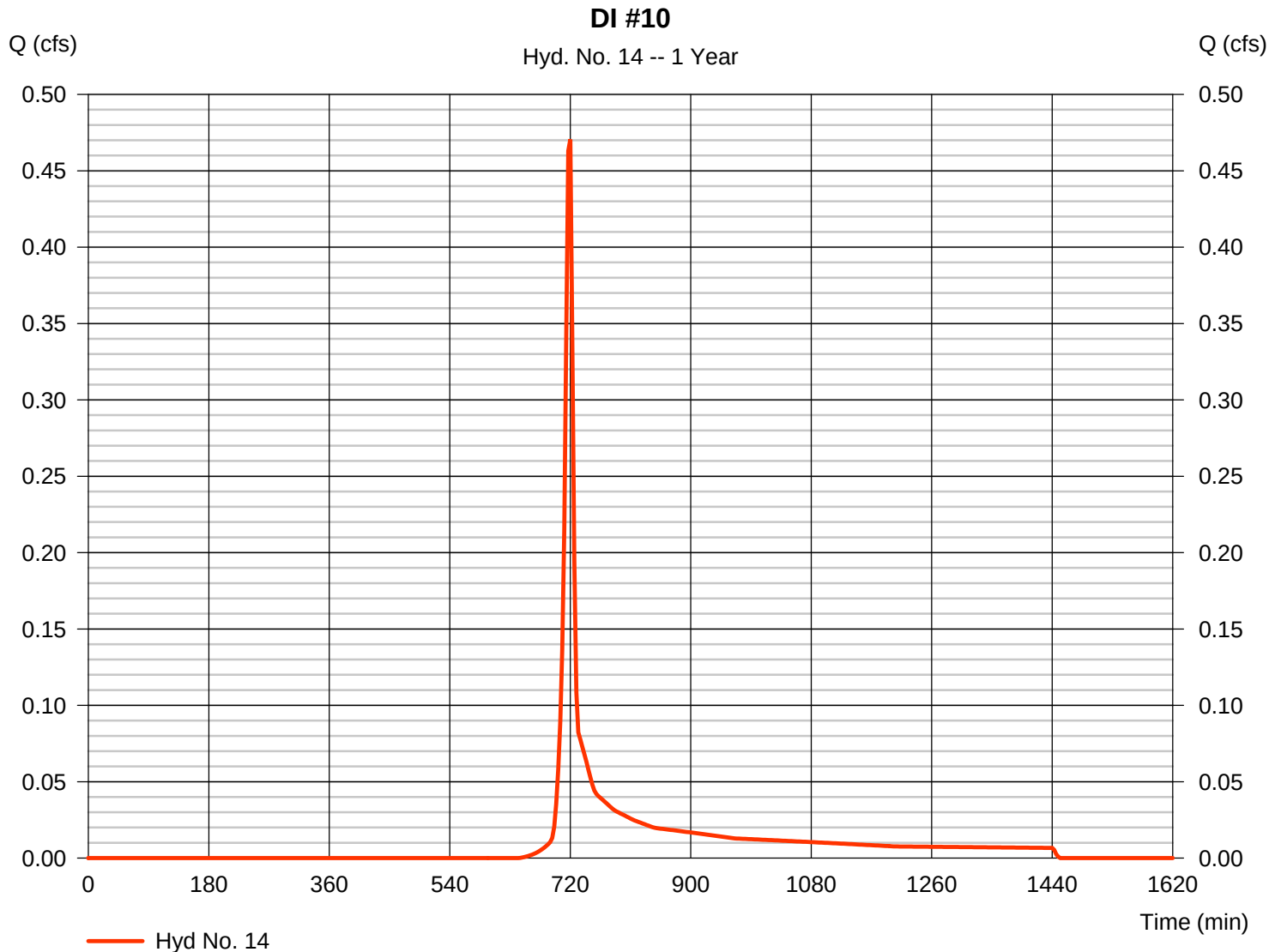
Friday, 07 / 28 / 2017

Hyd. No. 14

DI #10

Hydrograph type = SCS Runoff
 Storm frequency = 1 yrs
 Time interval = 3 min
 Drainage area = 0.380 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 2.50 in
 Storm duration = 24 hrs

Peak discharge = 0.471 cfs
 Time to peak = 720 min
 Hyd. volume = 1,083 cuft
 Curve number = 79
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484



Hydrograph Report

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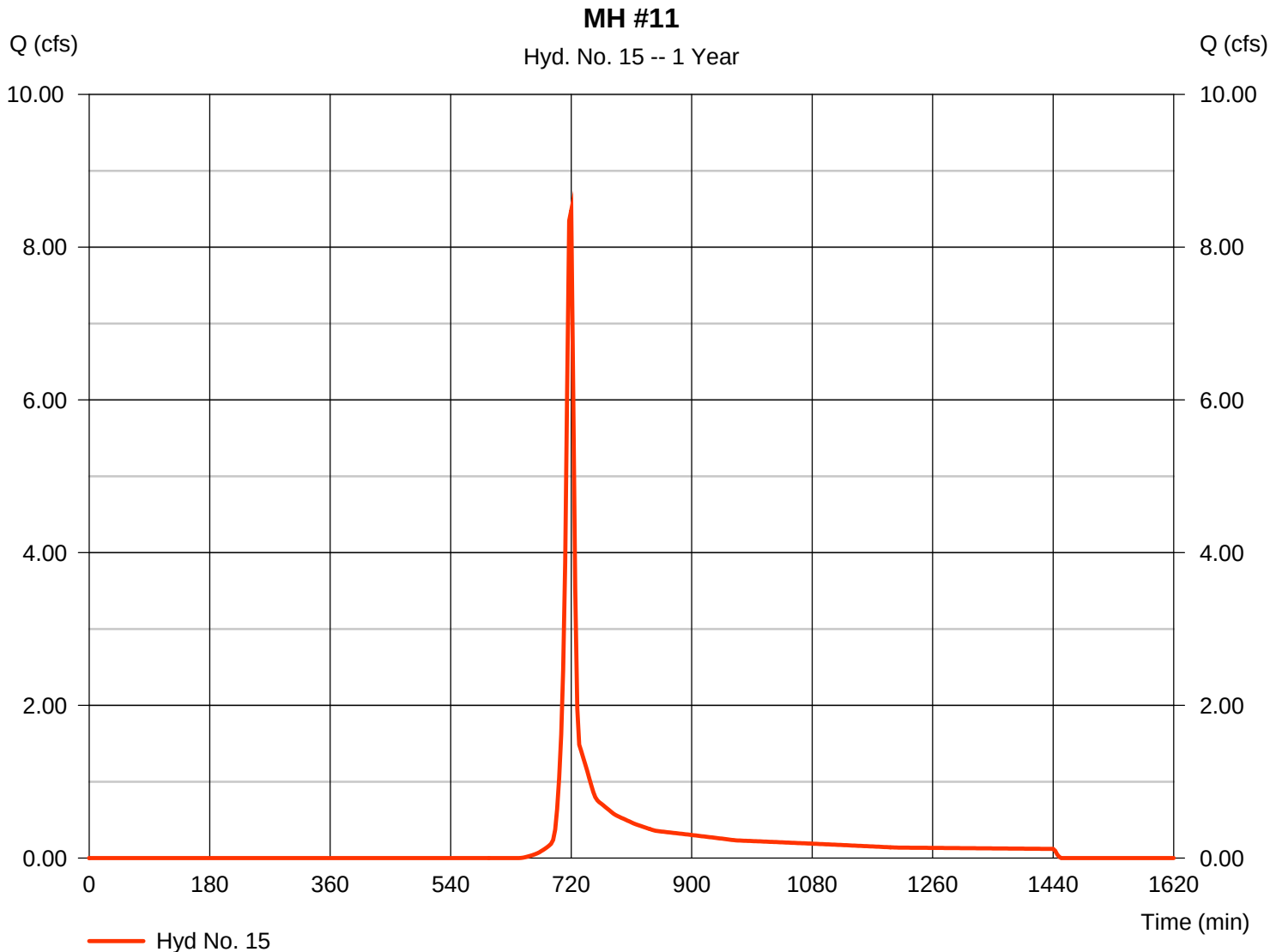
Friday, 07 / 28 / 2017

Hyd. No. 15

MH #11

Hydrograph type = SCS Runoff
 Storm frequency = 1 yrs
 Time interval = 3 min
 Drainage area = 6.850 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 2.50 in
 Storm duration = 24 hrs

Peak discharge = 8.481 cfs
 Time to peak = 720 min
 Hyd. volume = 19,522 cuft
 Curve number = 79
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

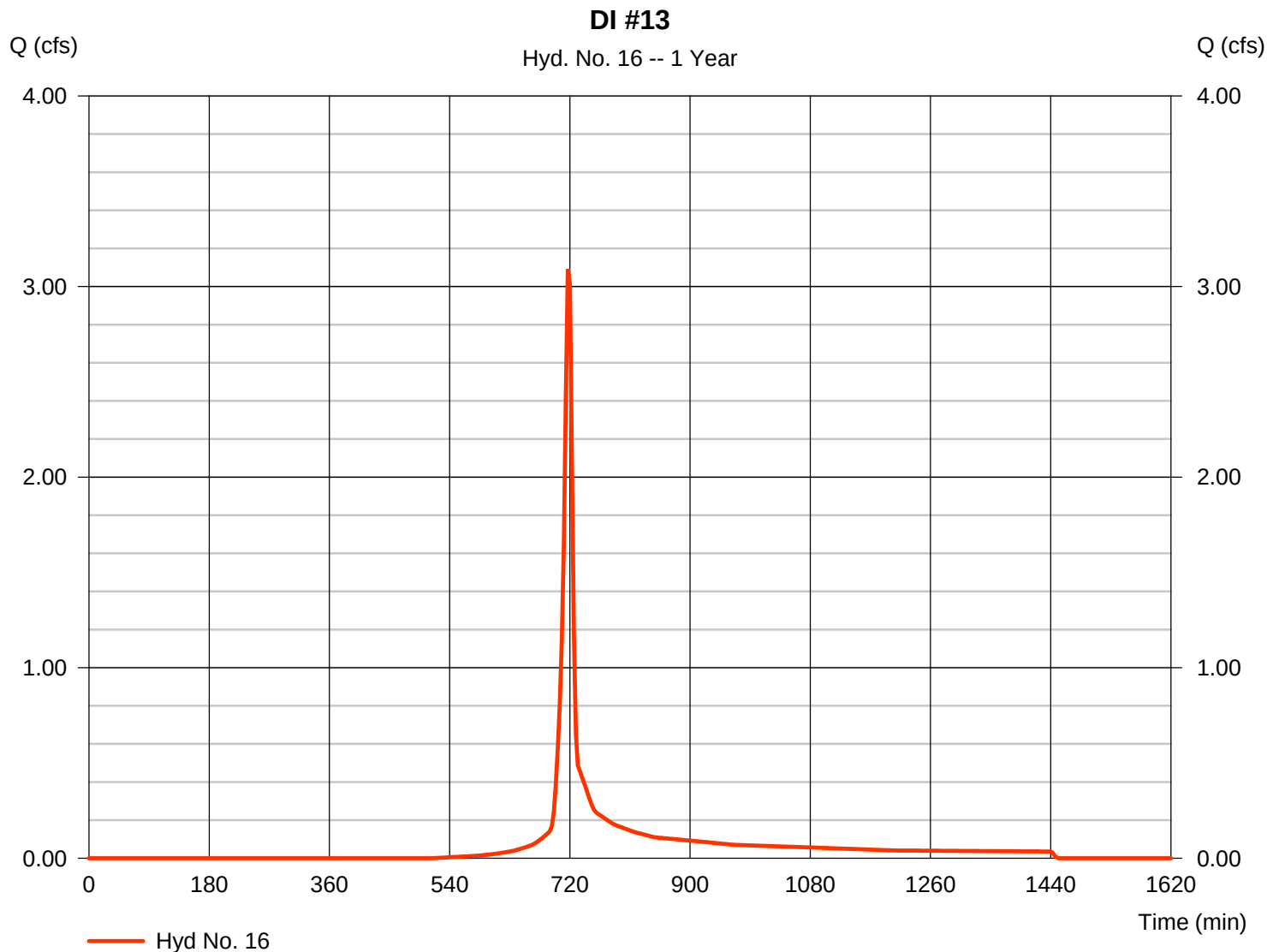
Friday, 07 / 28 / 2017

Hyd. No. 16

DI #13

Hydrograph type	= SCS Runoff	Peak discharge	= 3.091 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 6,982 cuft
Drainage area	= 1.650 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.580 \times 98) + (1.070 \times 79)] / 1.650$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

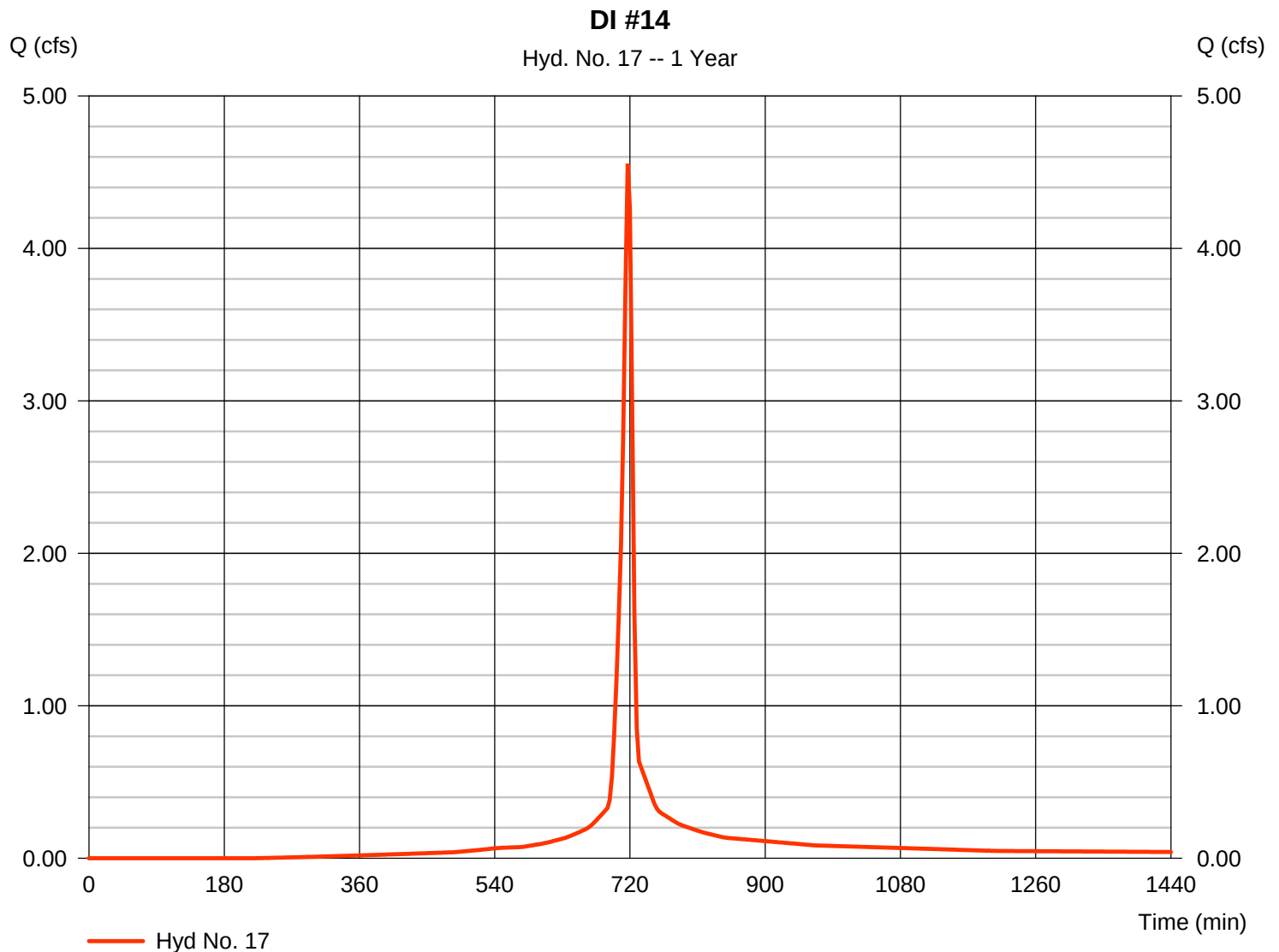
Friday, 07 / 28 / 2017

Hyd. No. 17

DI #14

Hydrograph type	= SCS Runoff	Peak discharge	= 4.555 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 10,824 cuft
Drainage area	= 1.620 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.400 \times 98) + (0.220 \times 79)] / 1.620$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

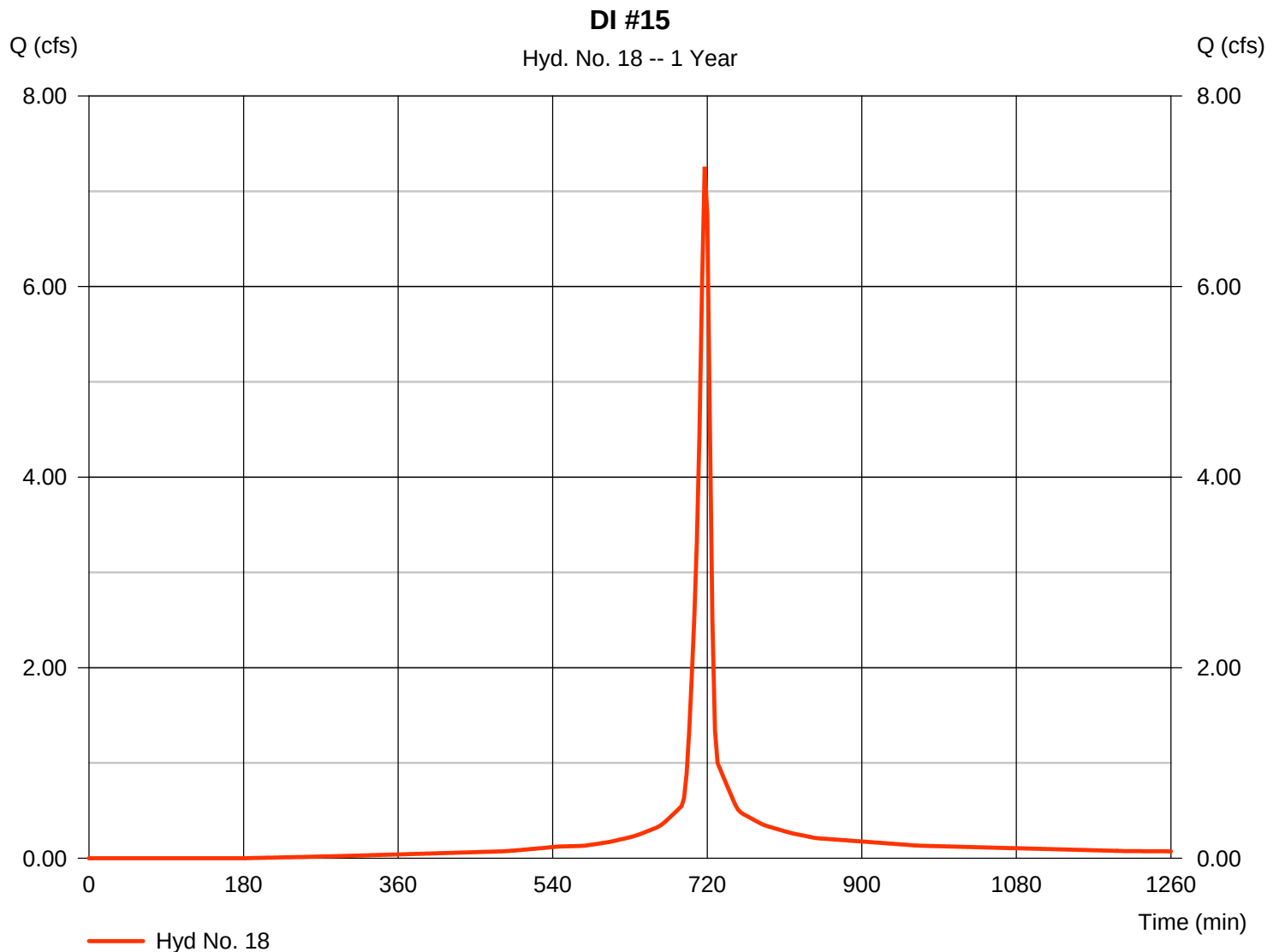
Friday, 07 / 28 / 2017

Hyd. No. 18

DI #15

Hydrograph type	= SCS Runoff	Peak discharge	= 7.256 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 17,537 cuft
Drainage area	= 2.500 ac	Curve number	= 96*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(2.280 \times 98) + (0.220 \times 79)] / 2.500$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

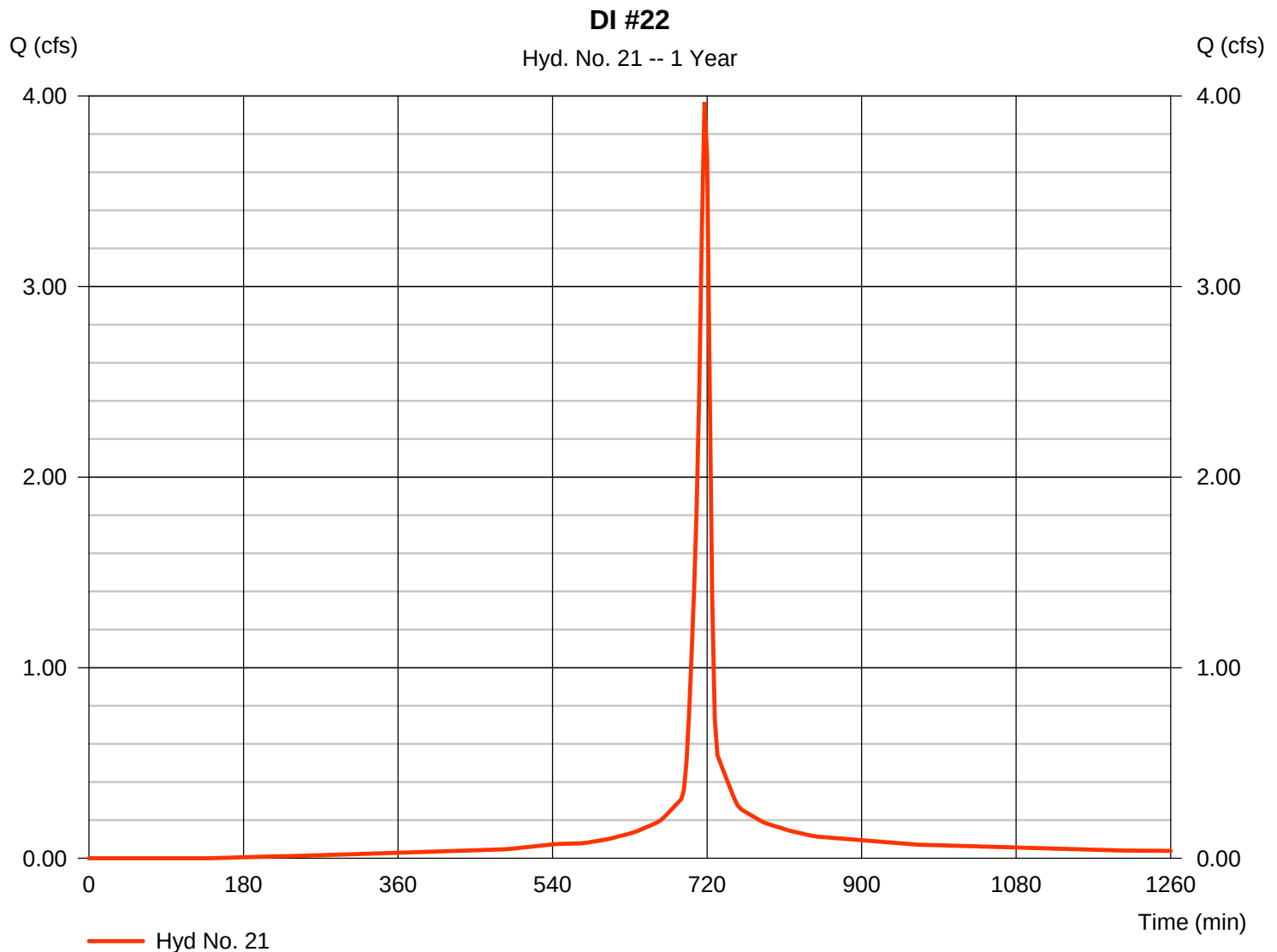
Friday, 07 / 28 / 2017

Hyd. No. 21

DI #22

Hydrograph type	= SCS Runoff	Peak discharge	= 3.968 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 9,793 cuft
Drainage area	= 1.330 ac	Curve number	= 97*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.280 \times 98) + (0.050 \times 79)] / 1.330$



Hydrograph Report

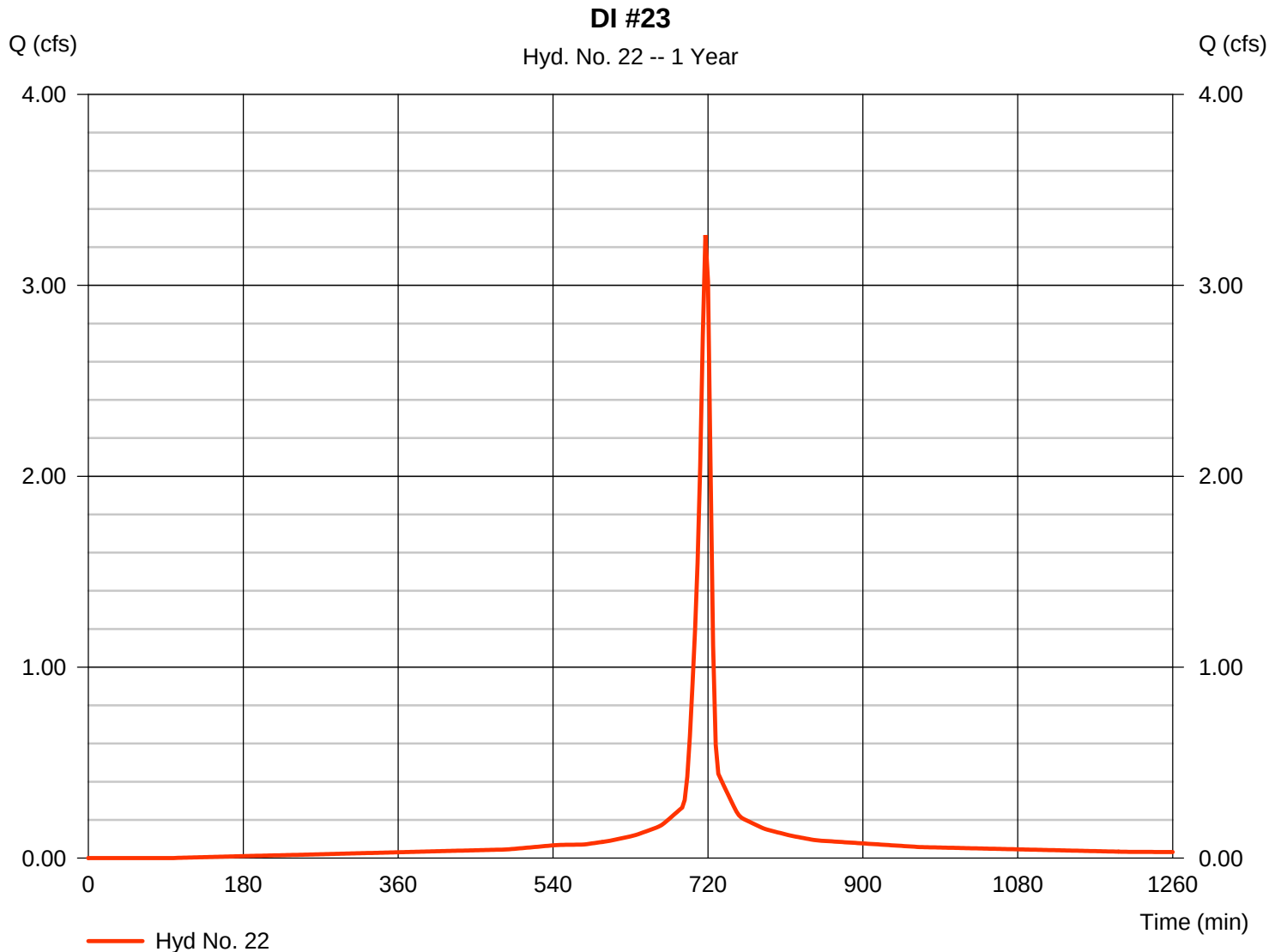
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Friday, 07 / 28 / 2017

Hyd. No. 22

DI #23

Hydrograph type	= SCS Runoff	Peak discharge	= 3.263 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 8,269 cuft
Drainage area	= 1.070 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

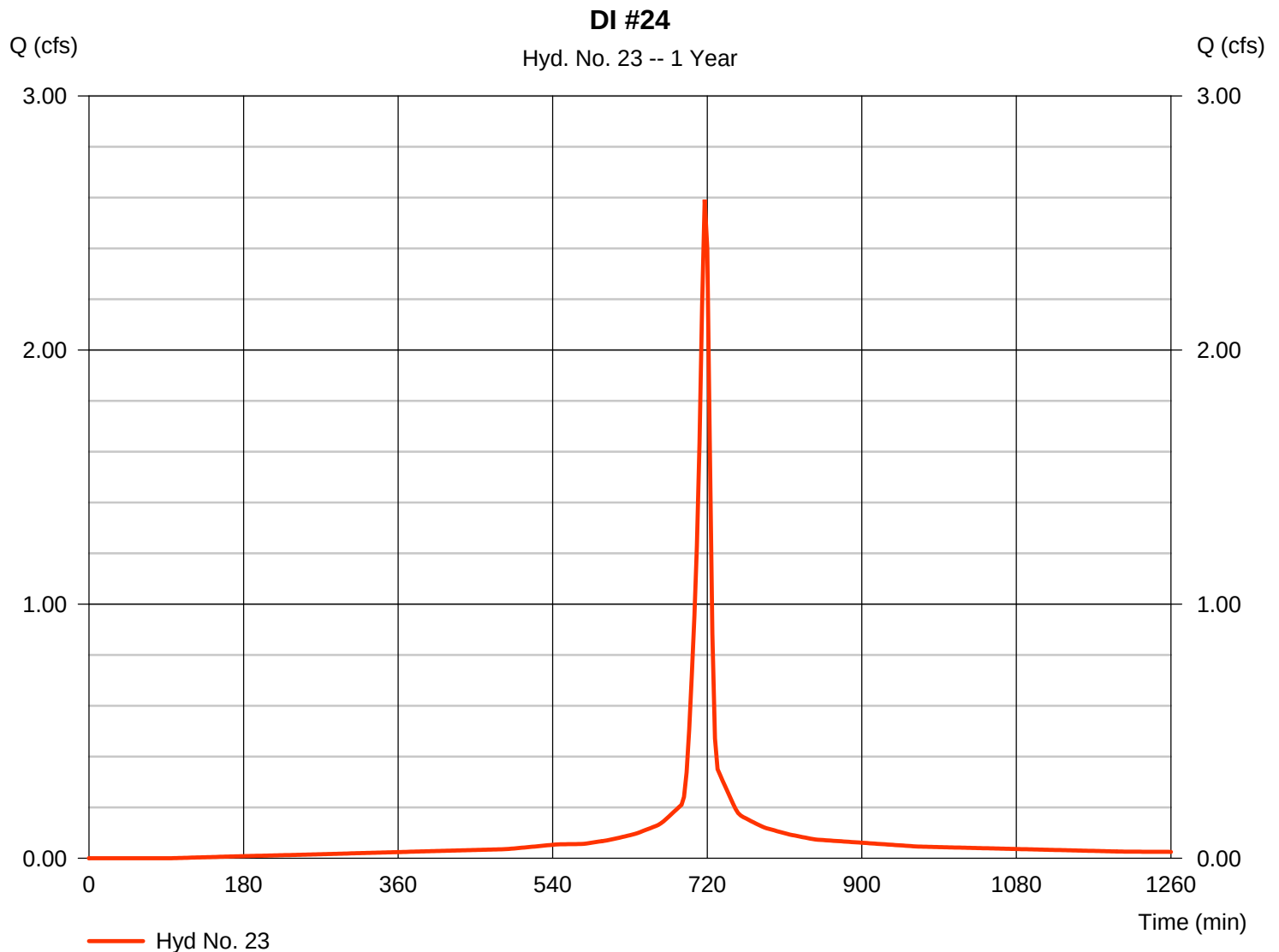
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Friday, 07 / 28 / 2017

Hyd. No. 23

DI #24

Hydrograph type	= SCS Runoff	Peak discharge	= 2.592 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 6,568 cuft
Drainage area	= 0.850 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

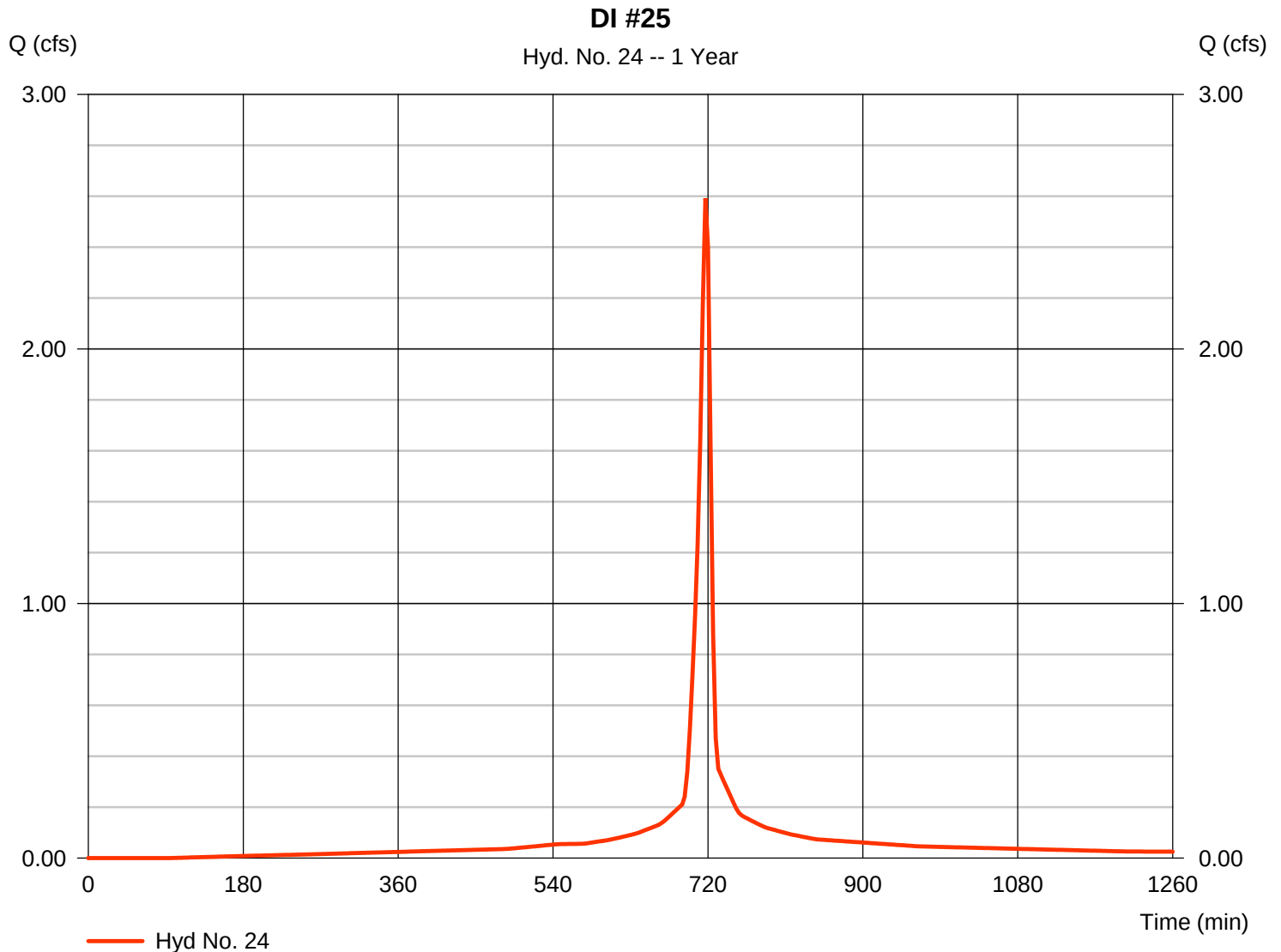
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 24

DI #25

Hydrograph type	= SCS Runoff	Peak discharge	= 2.592 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 6,568 cuft
Drainage area	= 0.850 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

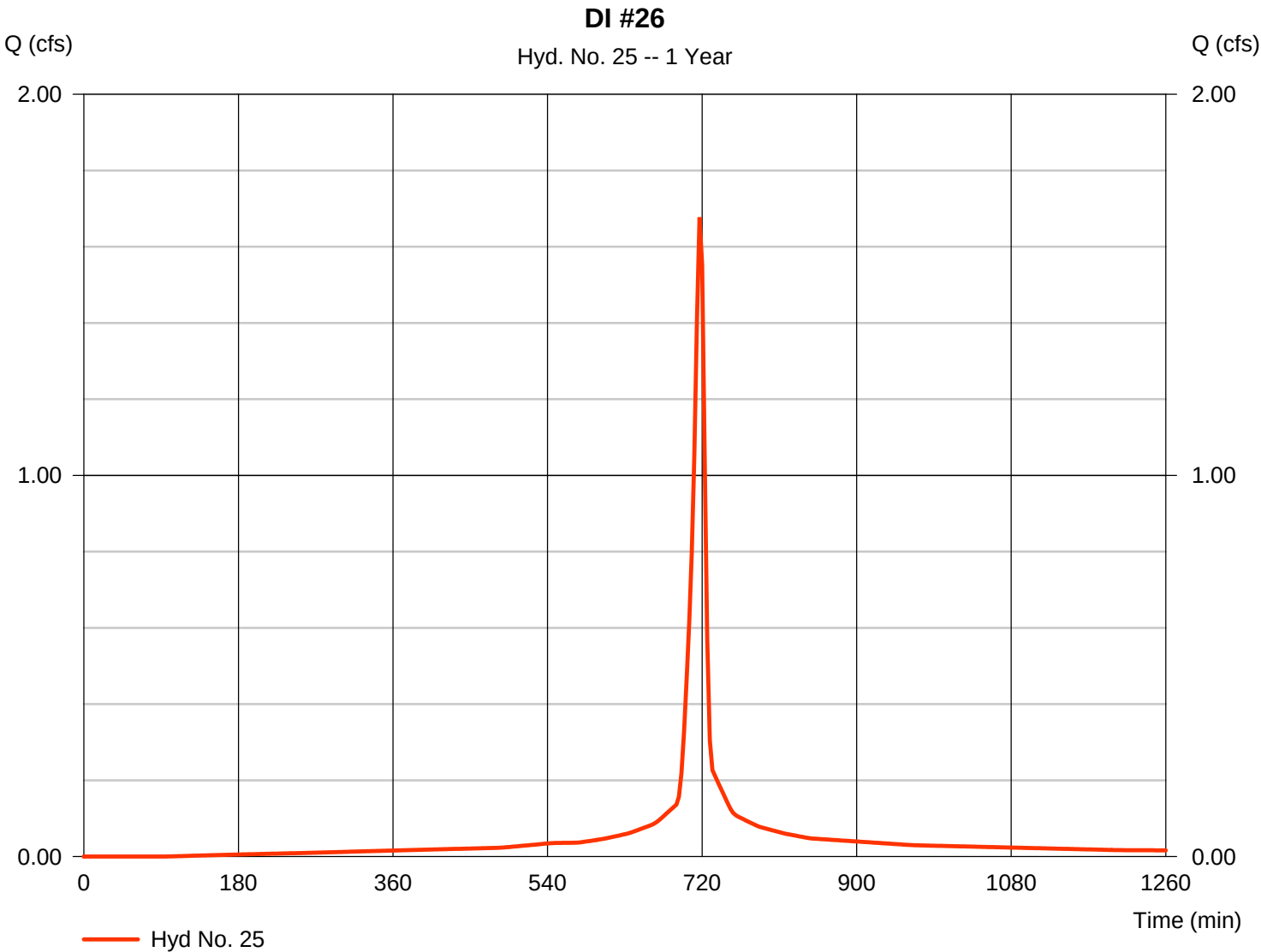
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Friday, 07 / 28 / 2017

Hyd. No. 25

DI #26

Hydrograph type	= SCS Runoff	Peak discharge	= 1.677 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 4,250 cuft
Drainage area	= 0.550 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

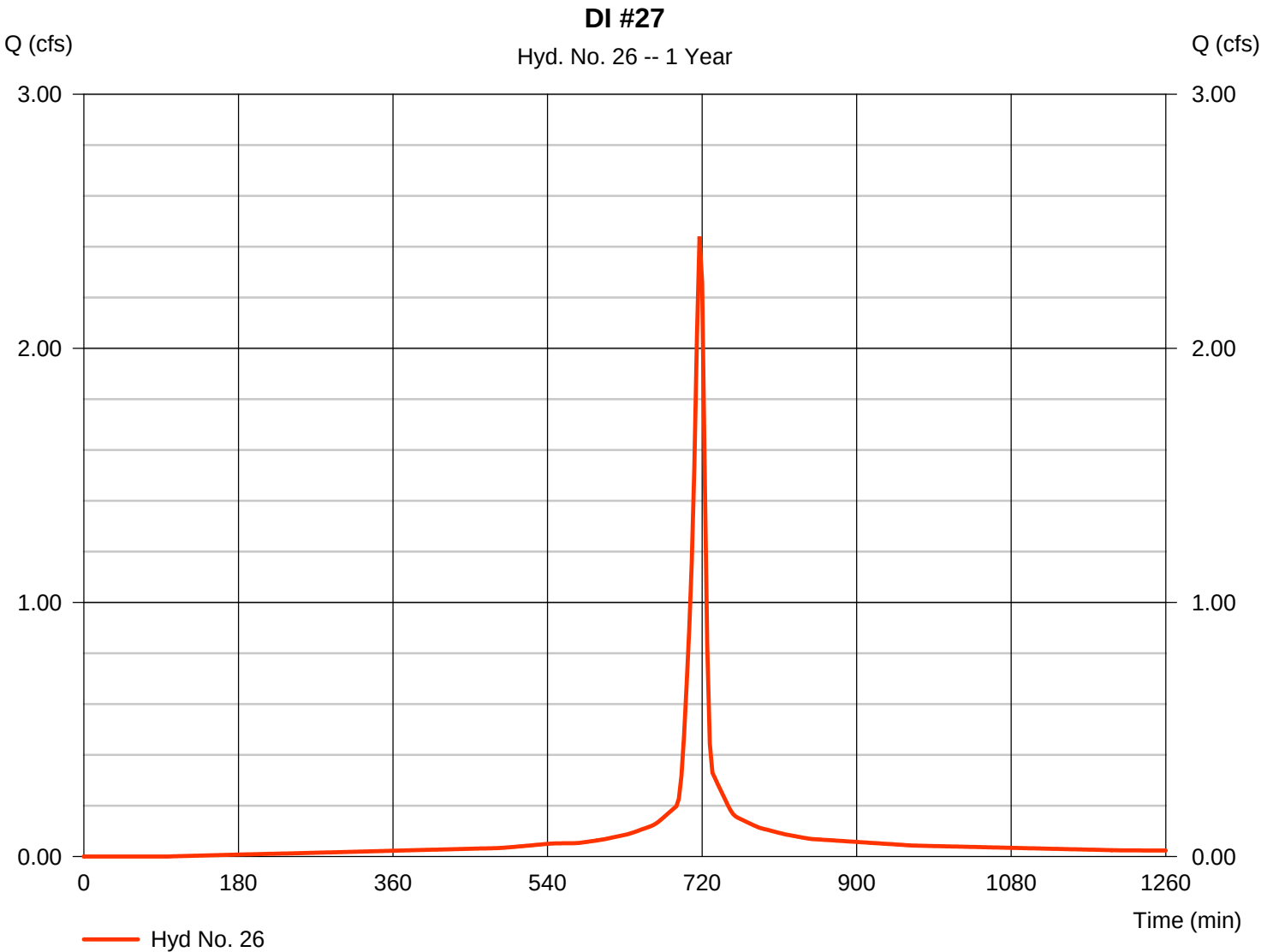
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Friday, 07 / 28 / 2017

Hyd. No. 26

DI #27

Hydrograph type	= SCS Runoff	Peak discharge	= 2.440 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 6,182 cuft
Drainage area	= 0.800 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

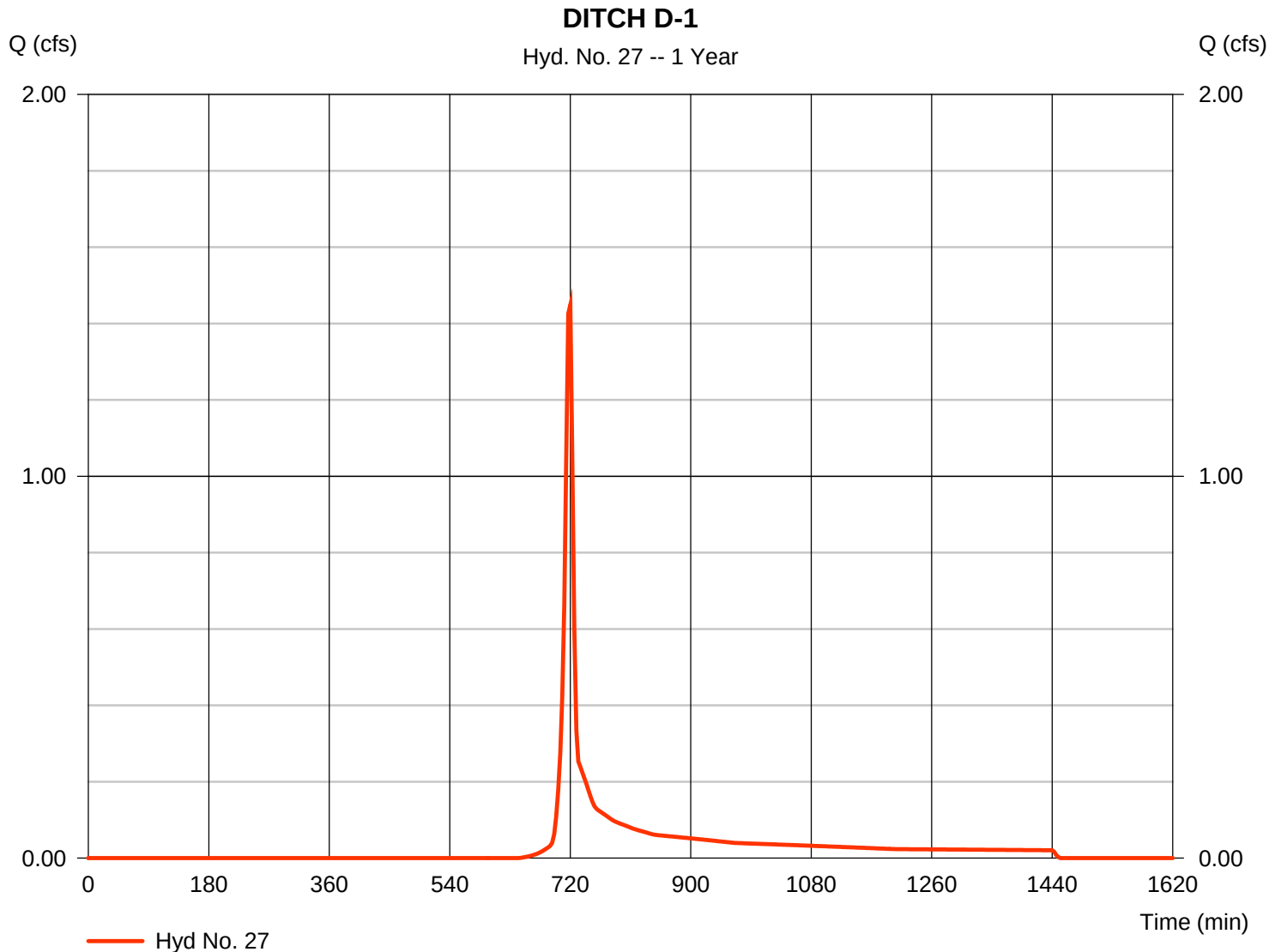
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Friday, 07 / 28 / 2017

Hyd. No. 27

DITCH D-1

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.449 cfs
Storm frequency	=	1 yrs	Time to peak	=	720 min
Time interval	=	3 min	Hyd. volume	=	3,334 cuft
Drainage area	=	1.170 ac	Curve number	=	79
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	2.50 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

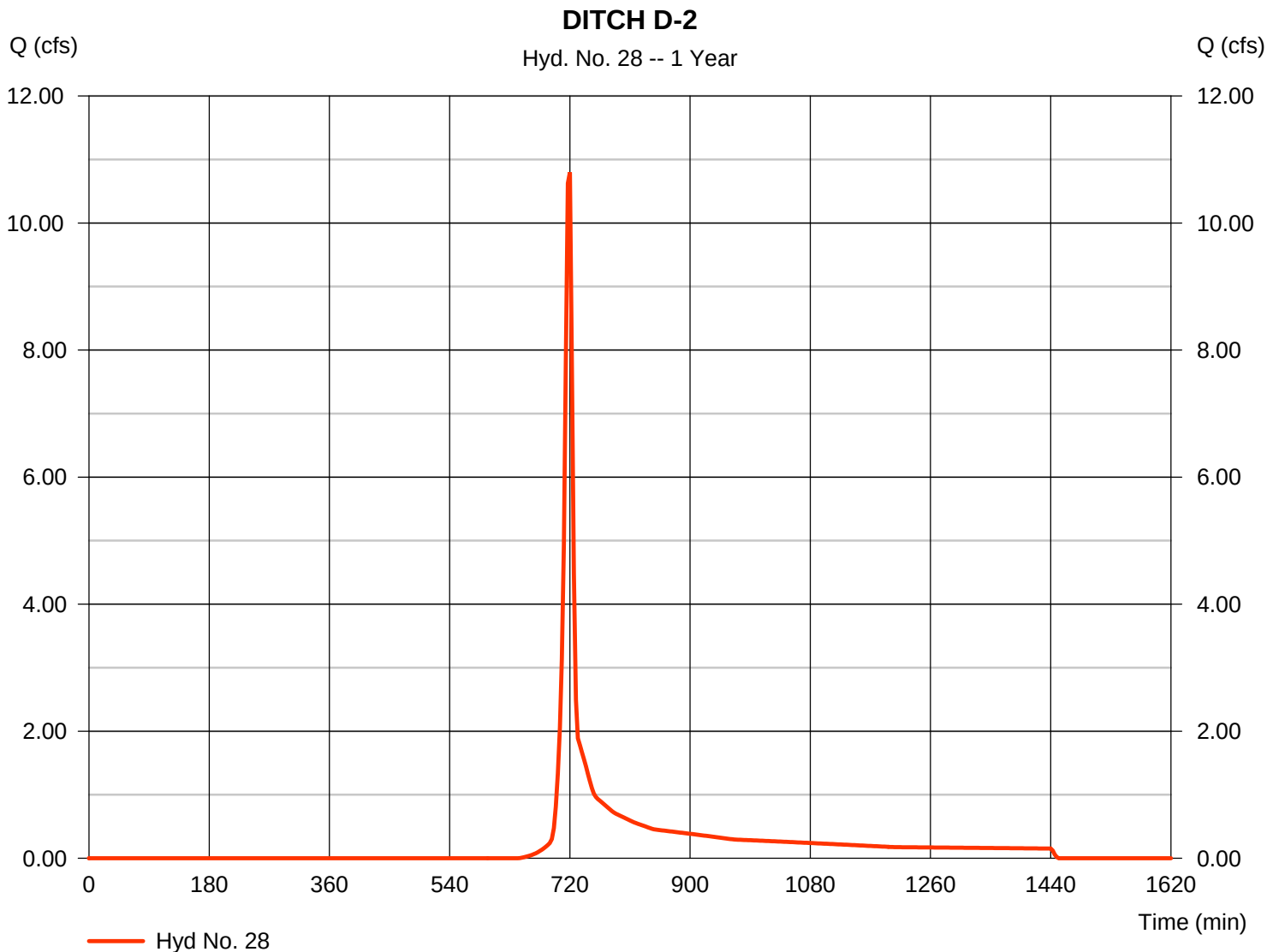
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Friday, 07 / 28 / 2017

Hyd. No. 28

DITCH D-2

Hydrograph type	= SCS Runoff	Peak discharge	= 10.80 cfs
Storm frequency	= 1 yrs	Time to peak	= 720 min
Time interval	= 3 min	Hyd. volume	= 24,851 cuft
Drainage area	= 8.720 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

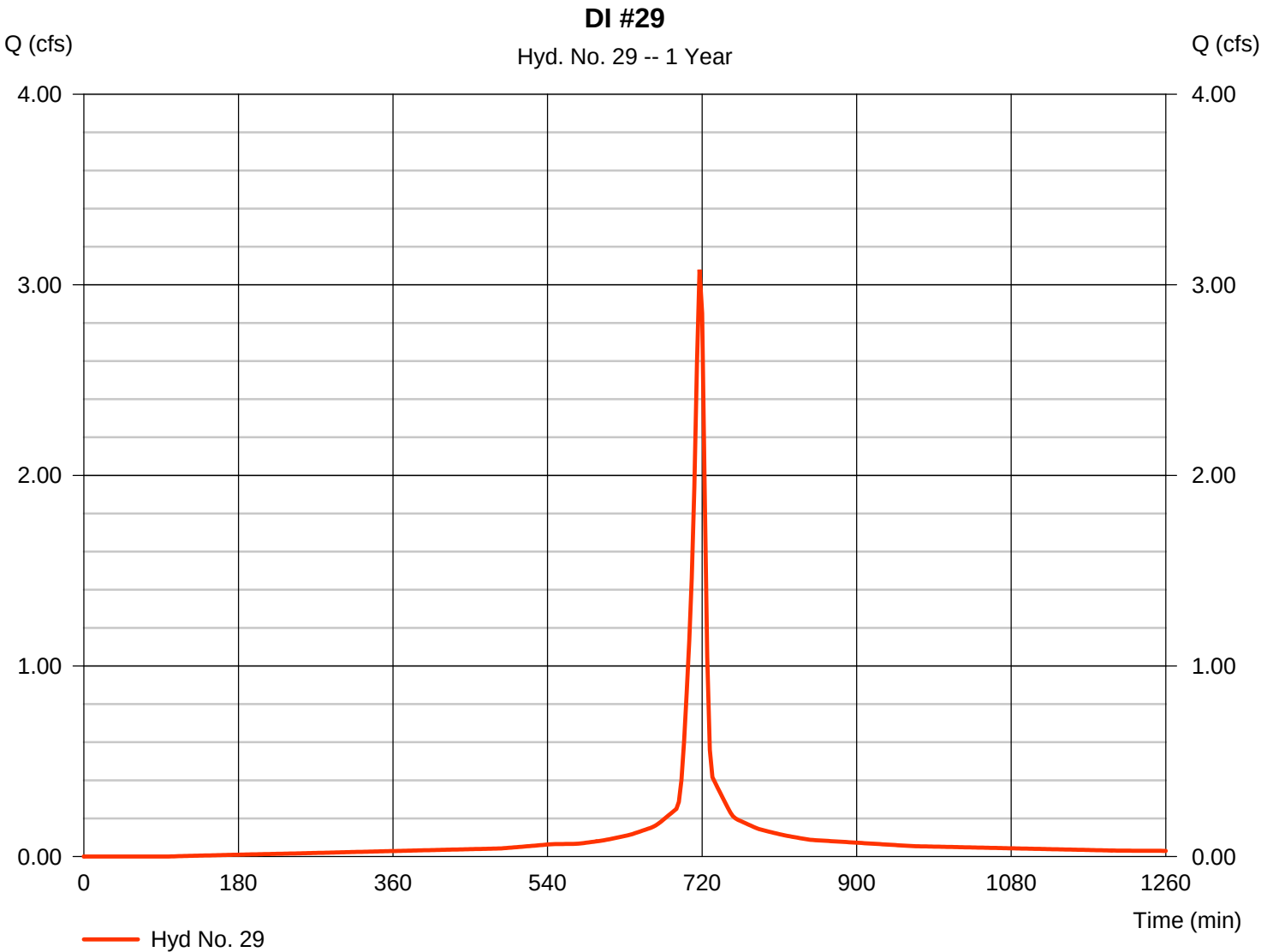
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Friday, 07 / 28 / 2017

Hyd. No. 29

DI #29

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.080 cfs
Storm frequency	=	1 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	7,805 cuft
Drainage area	=	1.010 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	2.50 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

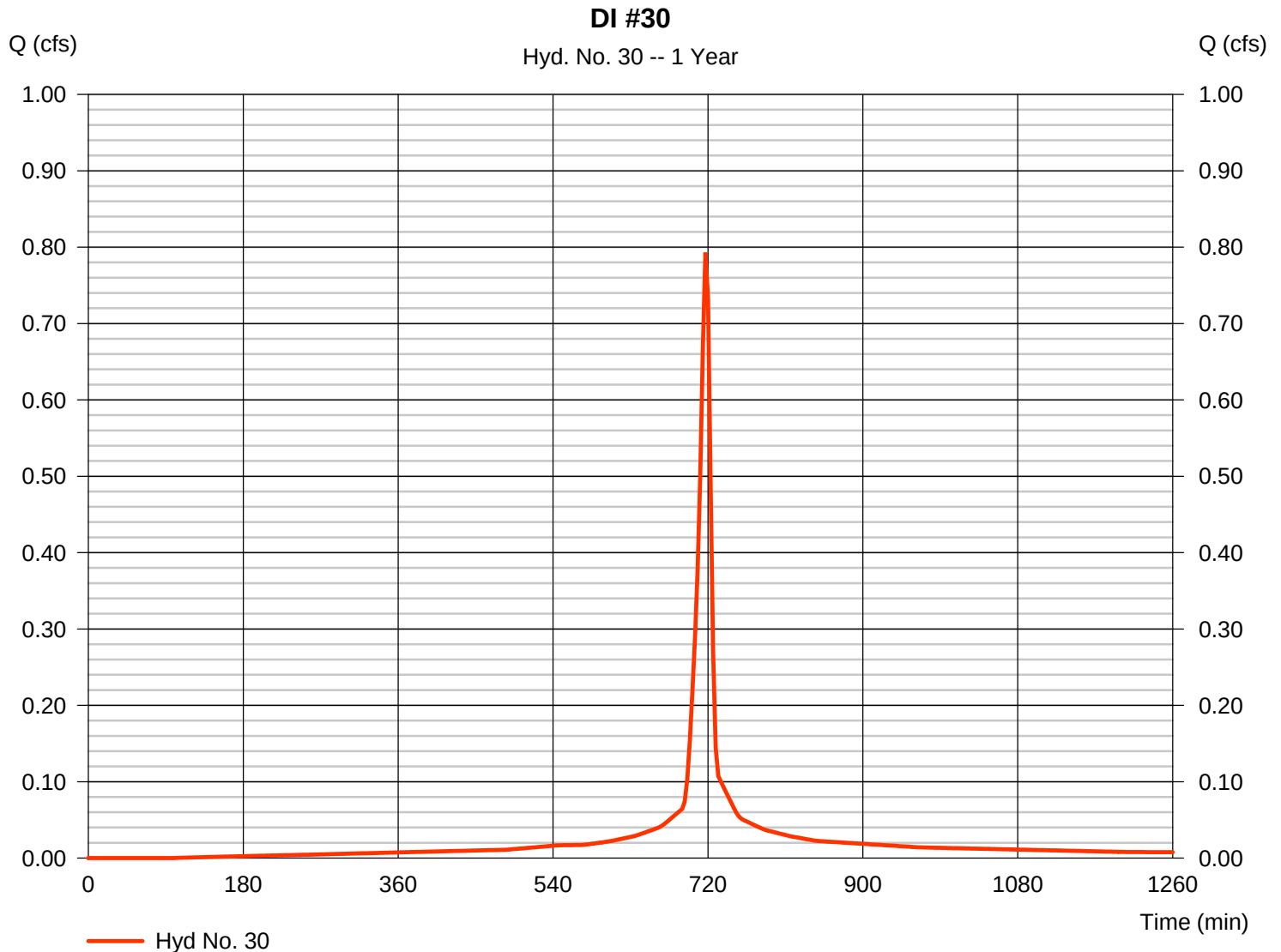
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Hyd. No. 30

DI #30

Hydrograph type	= SCS Runoff	Peak discharge	= 0.793 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 2,009 cuft
Drainage area	= 0.260 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

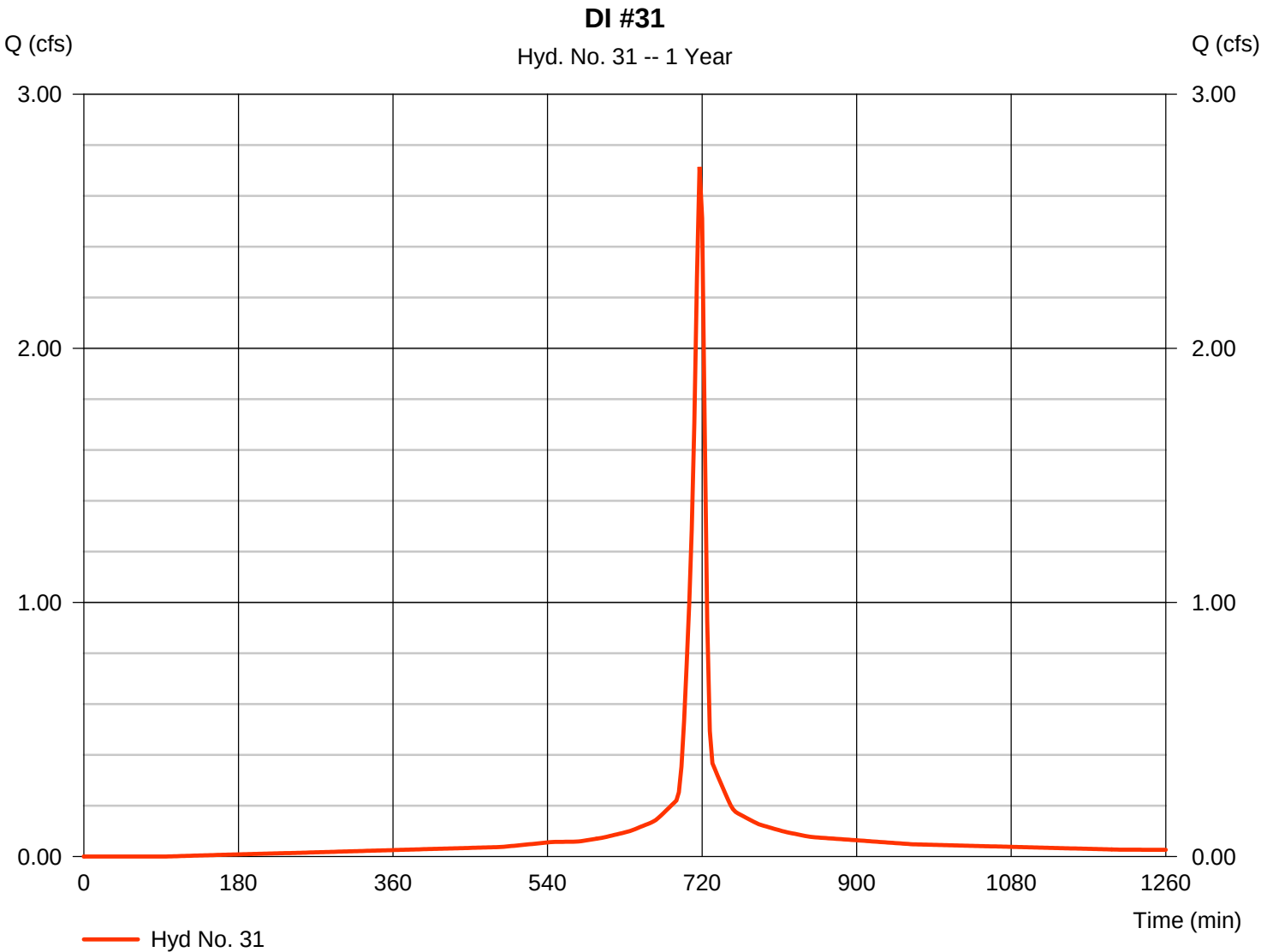
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Friday, 07 / 28 / 2017

Hyd. No. 31

DI #31

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.714 cfs
Storm frequency	=	1 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	6,878 cuft
Drainage area	=	0.890 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	2.50 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

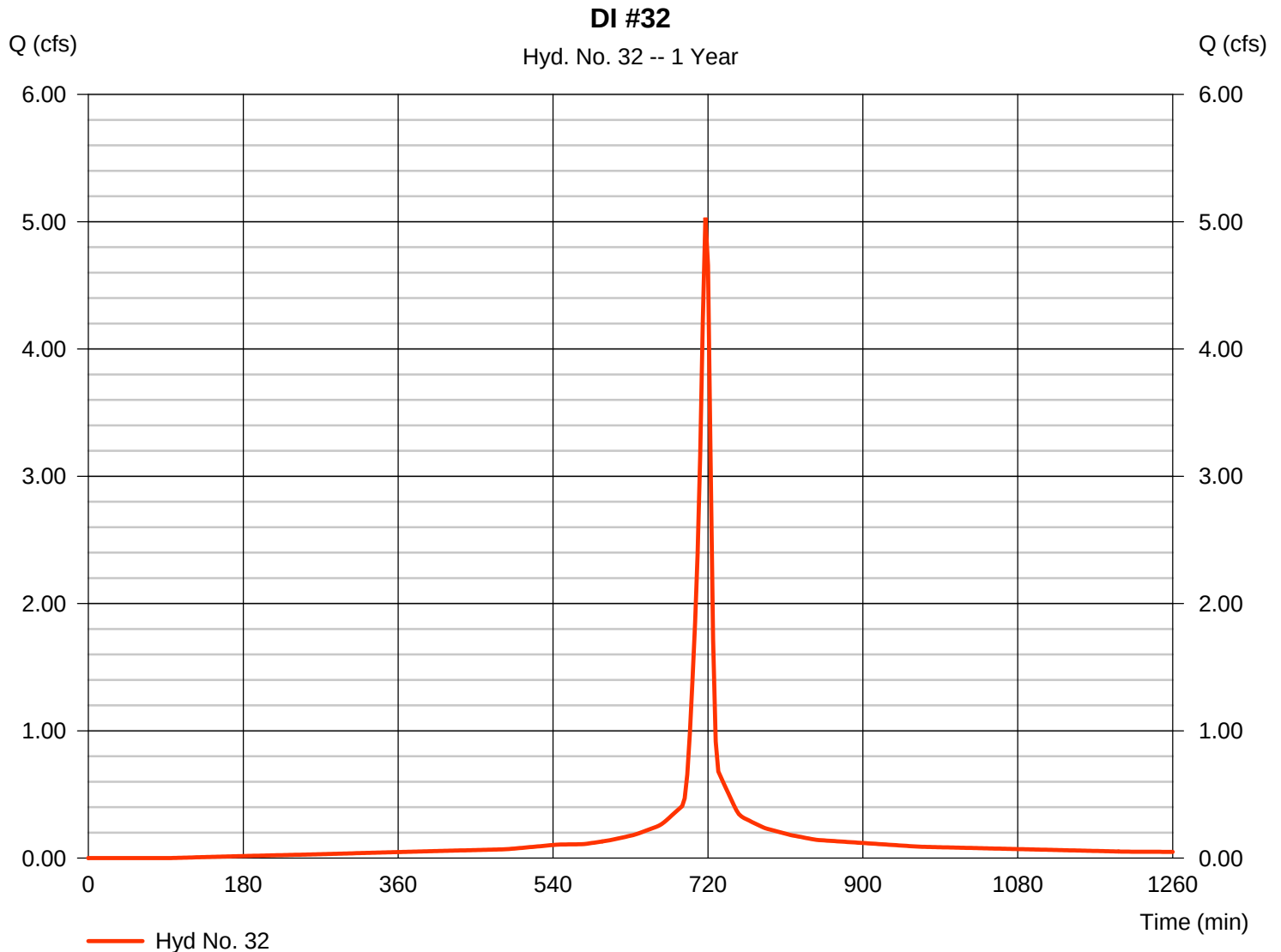
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Friday, 07 / 28 / 2017

Hyd. No. 32

DI #32

Hydrograph type	= SCS Runoff	Peak discharge	= 5.032 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 12,751 cuft
Drainage area	= 1.650 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

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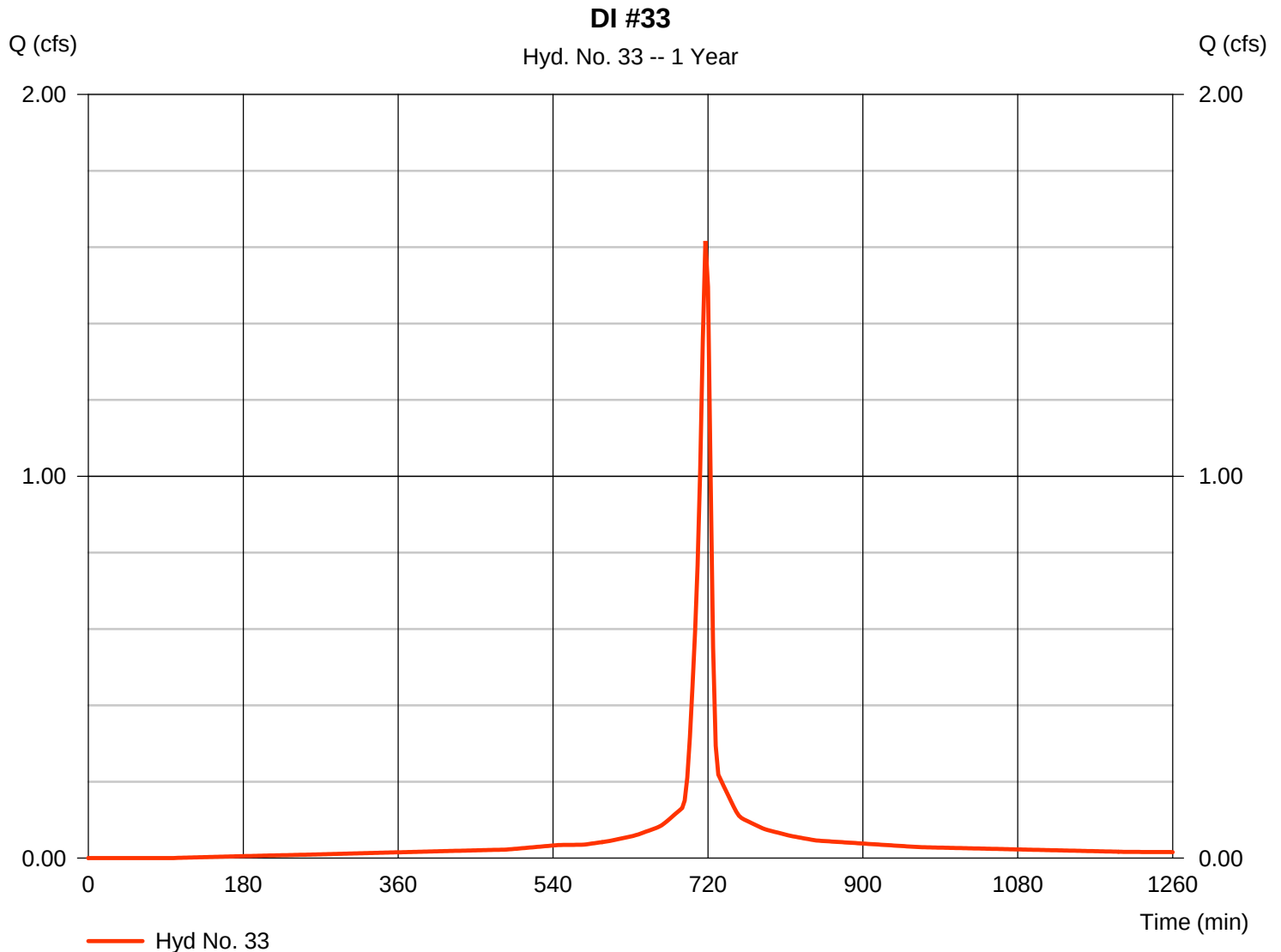
Friday, 07 / 28 / 2017

Hyd. No. 33

DI #33

Hydrograph type = SCS Runoff
 Storm frequency = 1 yrs
 Time interval = 3 min
 Drainage area = 0.530 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 2.50 in
 Storm duration = 24 hrs

Peak discharge = 1.616 cfs
 Time to peak = 717 min
 Hyd. volume = 4,096 cuft
 Curve number = 98
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

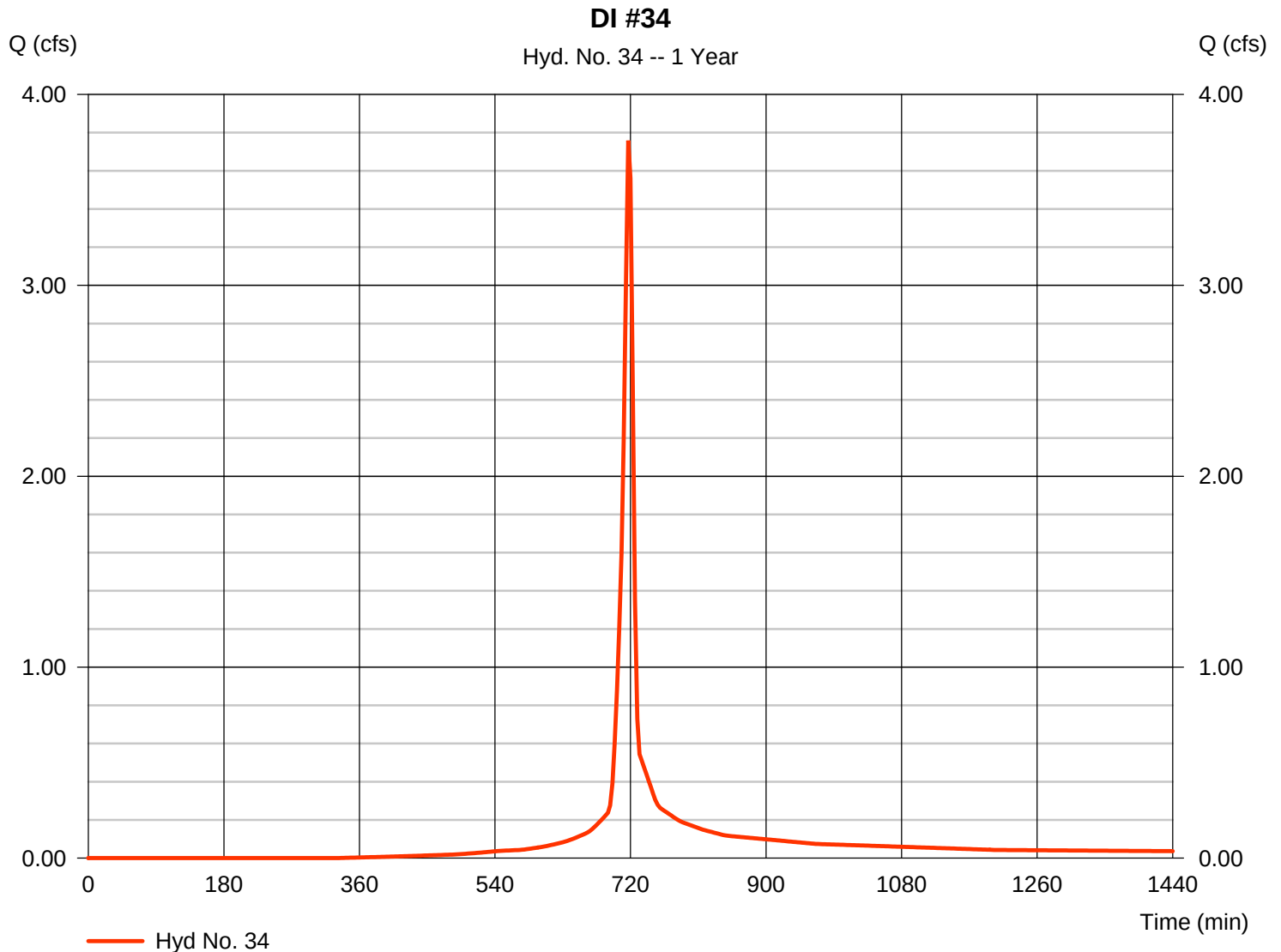
Friday, 07 / 28 / 2017

Hyd. No. 34

DI #34

Hydrograph type	= SCS Runoff	Peak discharge	= 3.759 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 8,643 cuft
Drainage area	= 1.500 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.050 \times 98) + (0.450 \times 79)] / 1.500$



Hydrograph Report

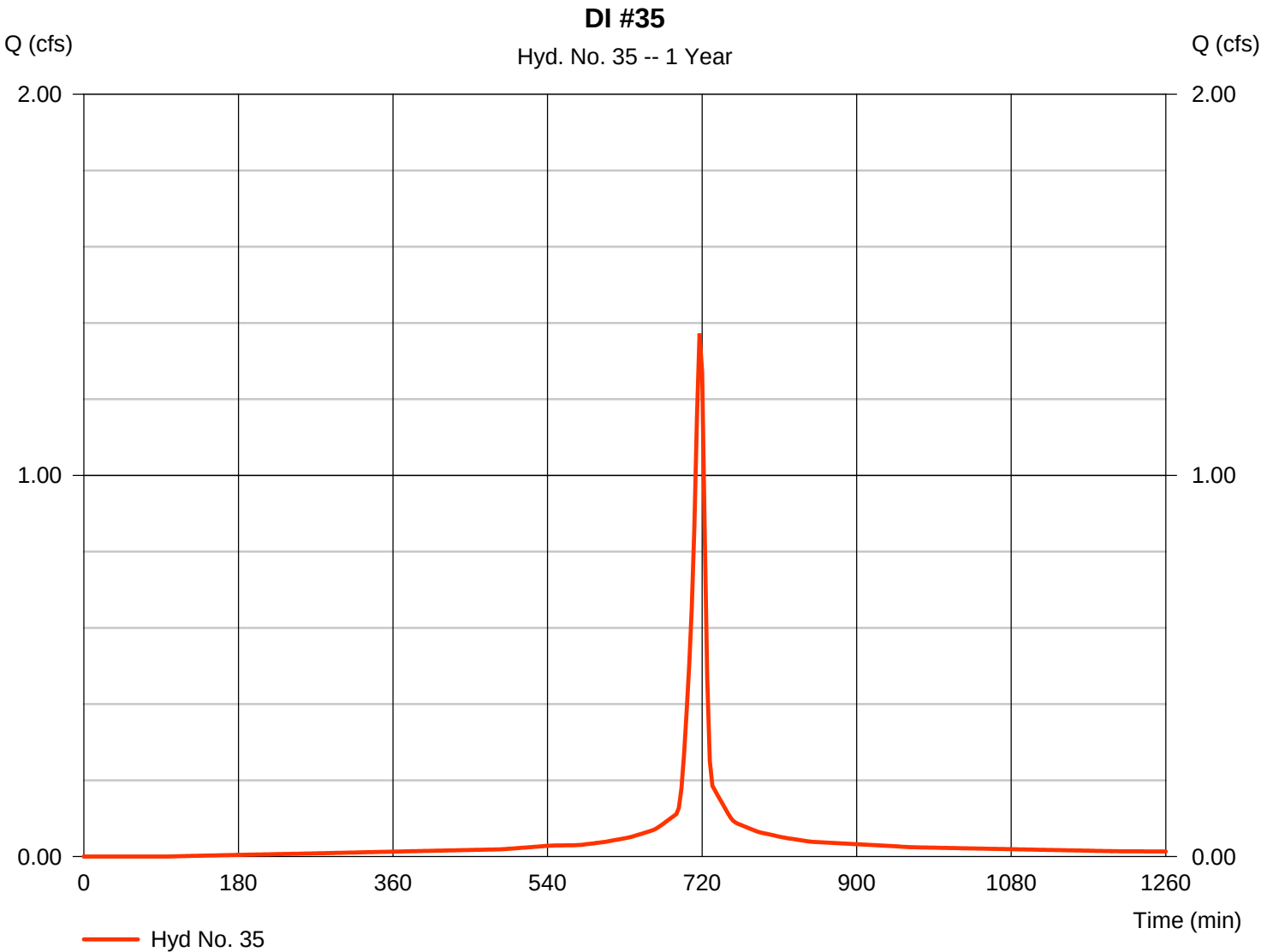
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Hyd. No. 35

DI #35

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.372 cfs
Storm frequency	=	1 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	3,477 cuft
Drainage area	=	0.450 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	2.50 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

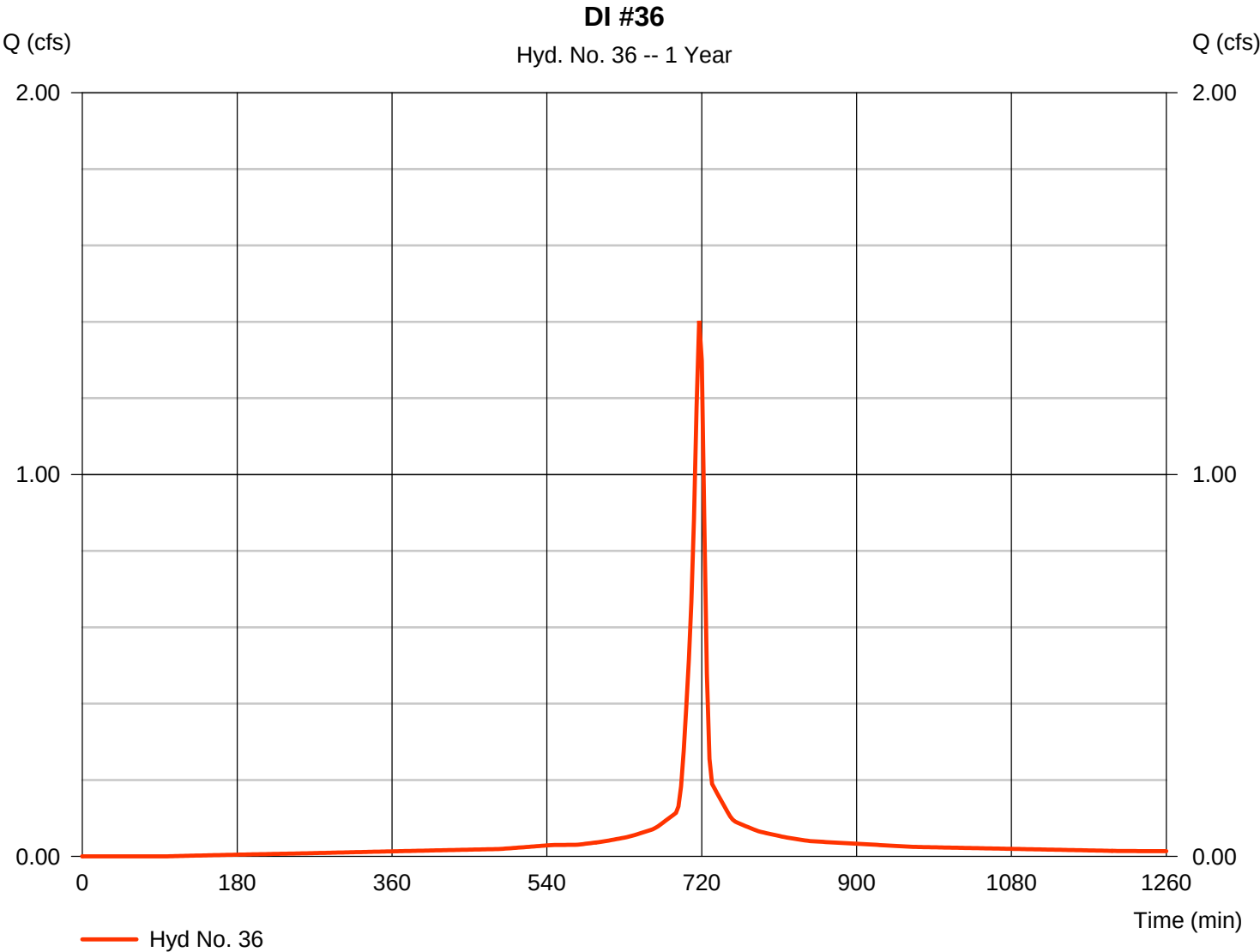
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Hyd. No. 36

DI #36

Hydrograph type	= SCS Runoff	Peak discharge	= 1.403 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 3,555 cuft
Drainage area	= 0.460 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

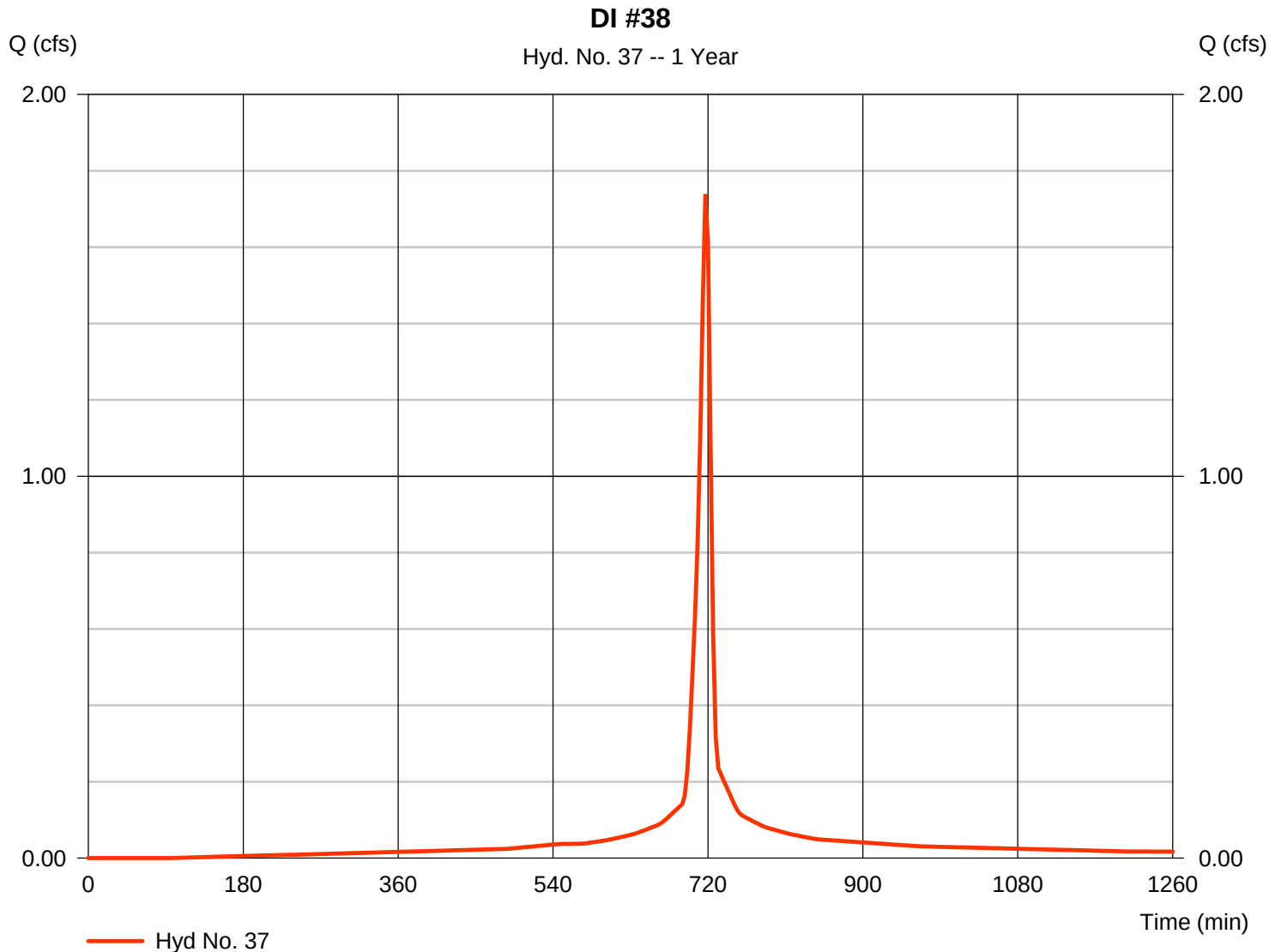
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Hyd. No. 37

DI #38

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.738 cfs
Storm frequency	=	1 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	4,405 cuft
Drainage area	=	0.570 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	2.50 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

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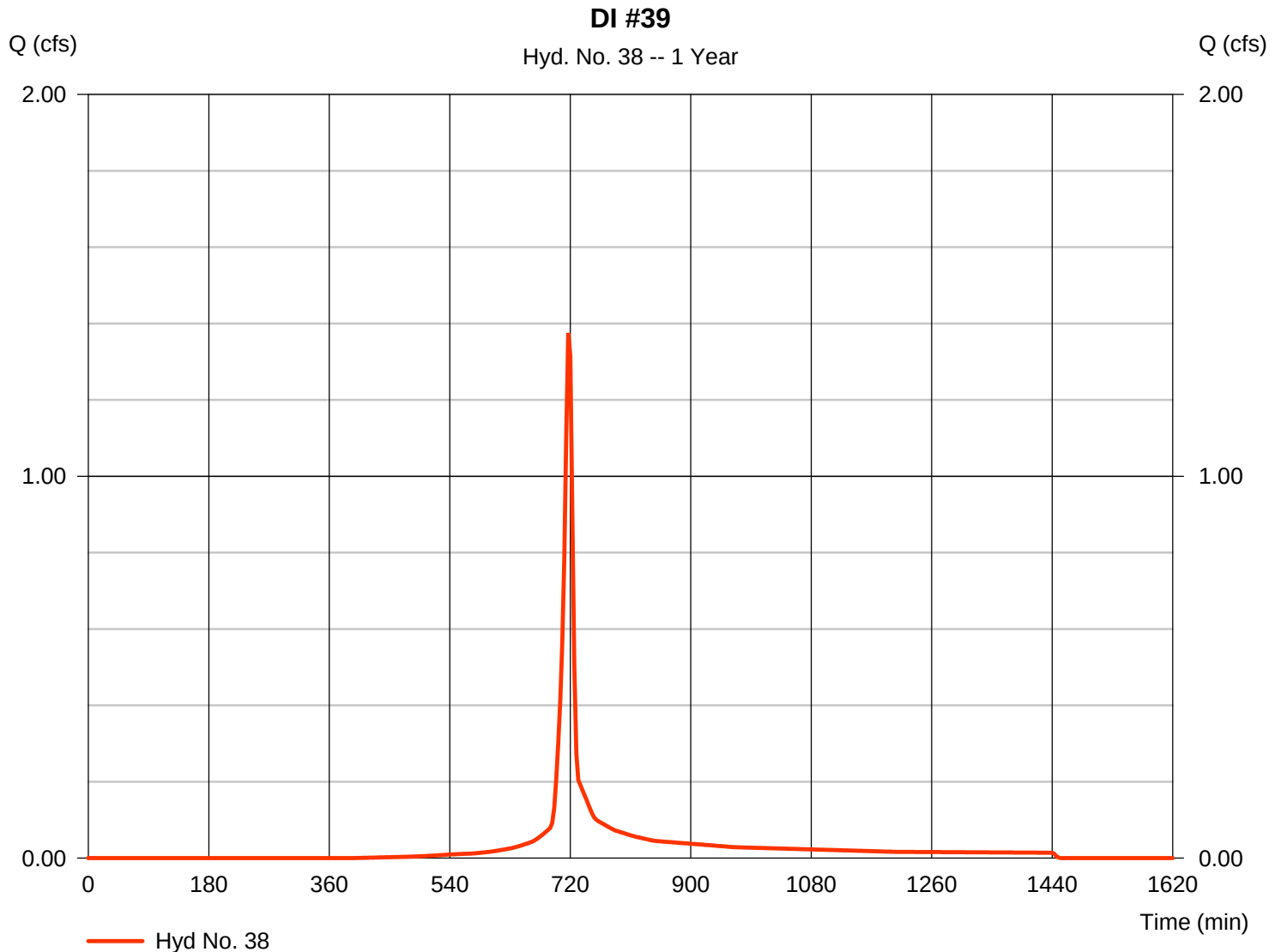
Friday, 07 / 28 / 2017

Hyd. No. 38

DI #39

Hydrograph type	= SCS Runoff	Peak discharge	= 1.375 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 3,126 cuft
Drainage area	= 0.600 ac	Curve number	= 90*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.360 \times 98) + (0.240 \times 79)] / 0.600$



Hydrograph Report

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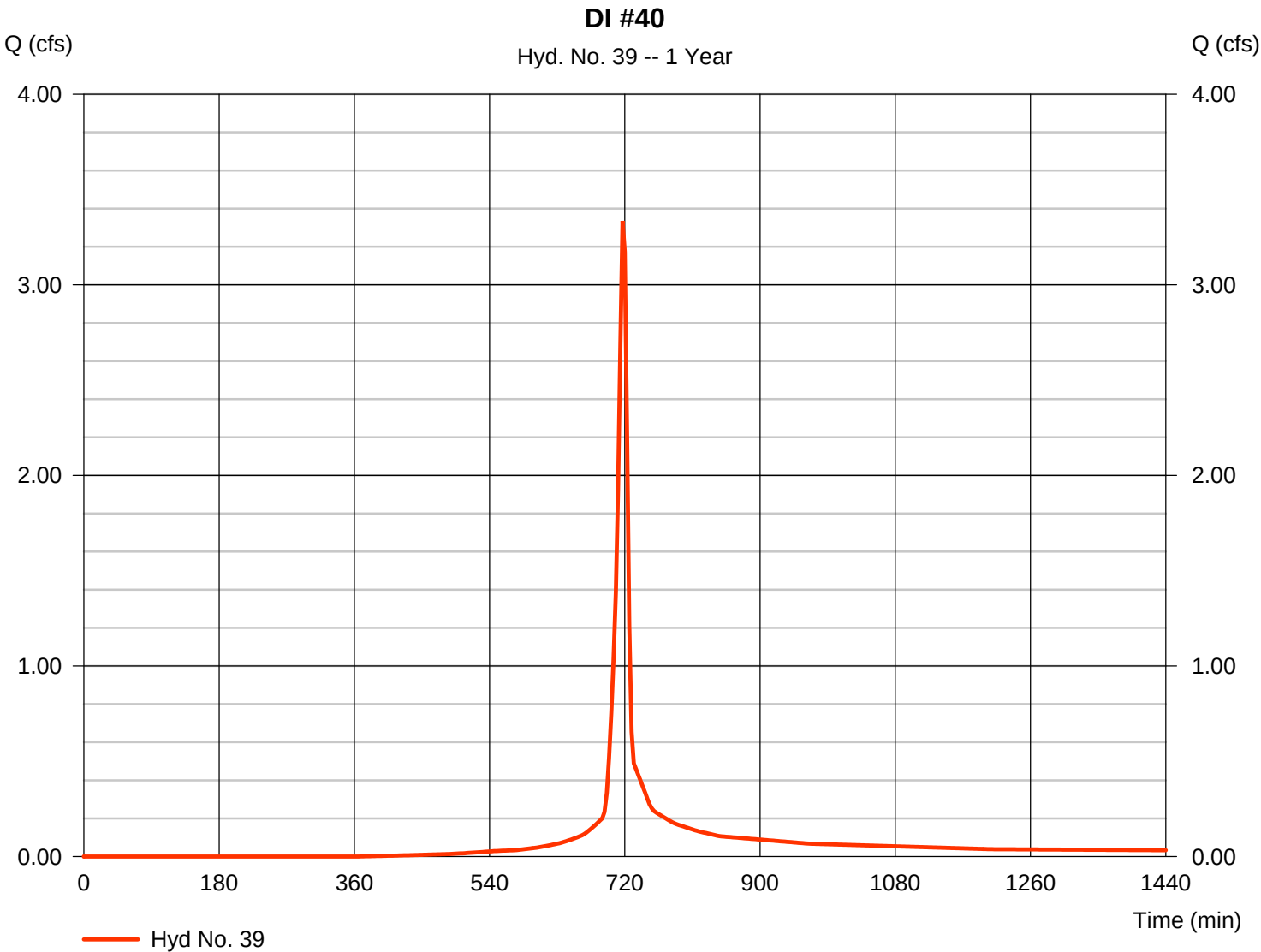
Friday, 07 / 28 / 2017

Hyd. No. 39

DI #40

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.335 cfs
Storm frequency	=	1 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	7,618 cuft
Drainage area	=	1.390 ac	Curve number	=	91*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	2.50 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.880 x 98) + (0.510 x 79)] / 1.390



Hydrograph Report

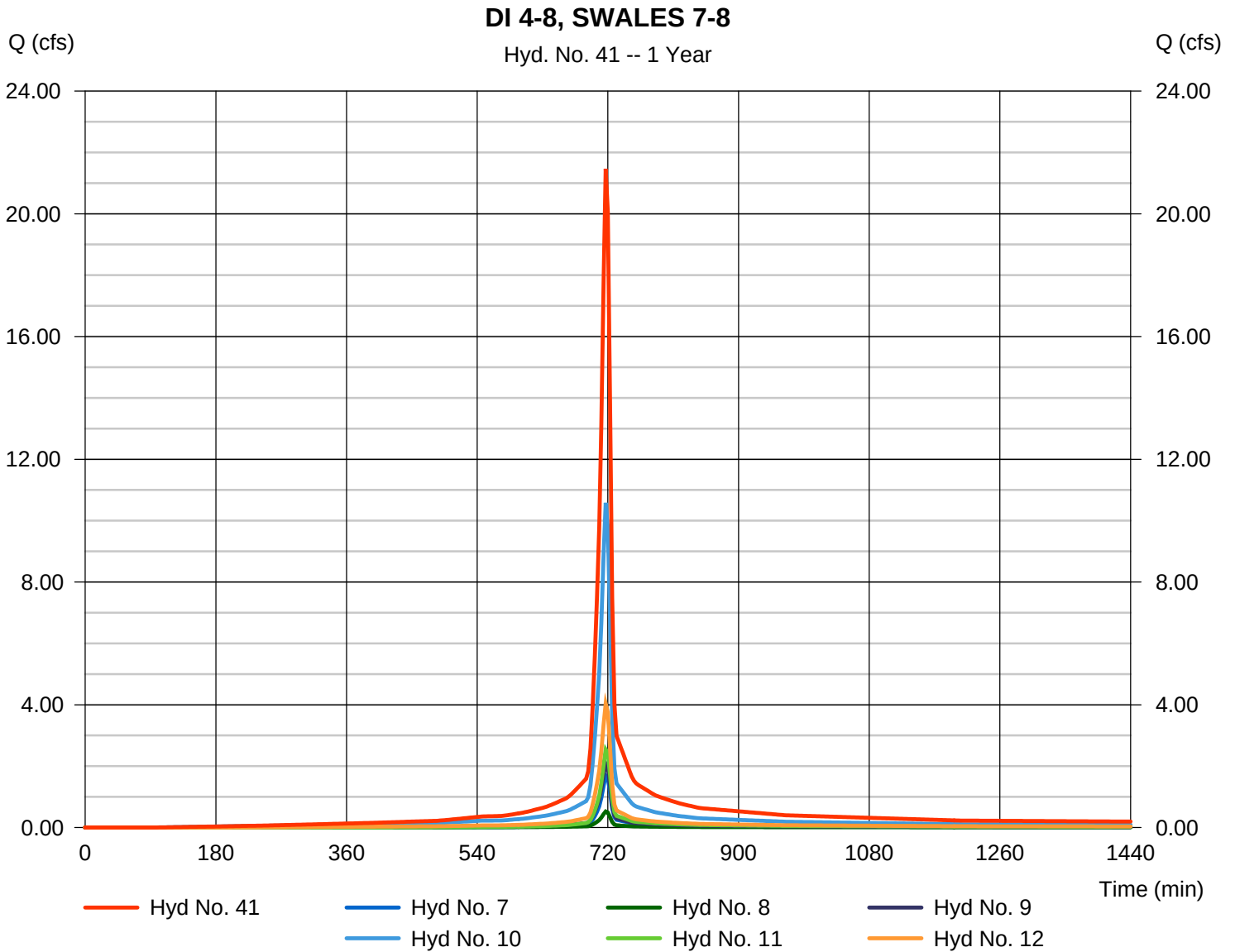
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Hyd. No. 41

DI 4-8, SWALES 7-8

Hydrograph type	= Combine	Peak discharge	= 21.47 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 52,365 cuft
Inflow hyds.	= 7, 8, 9, 10, 11, 12	Contrib. drain. area	= 7.660 ac



Hydrograph Report

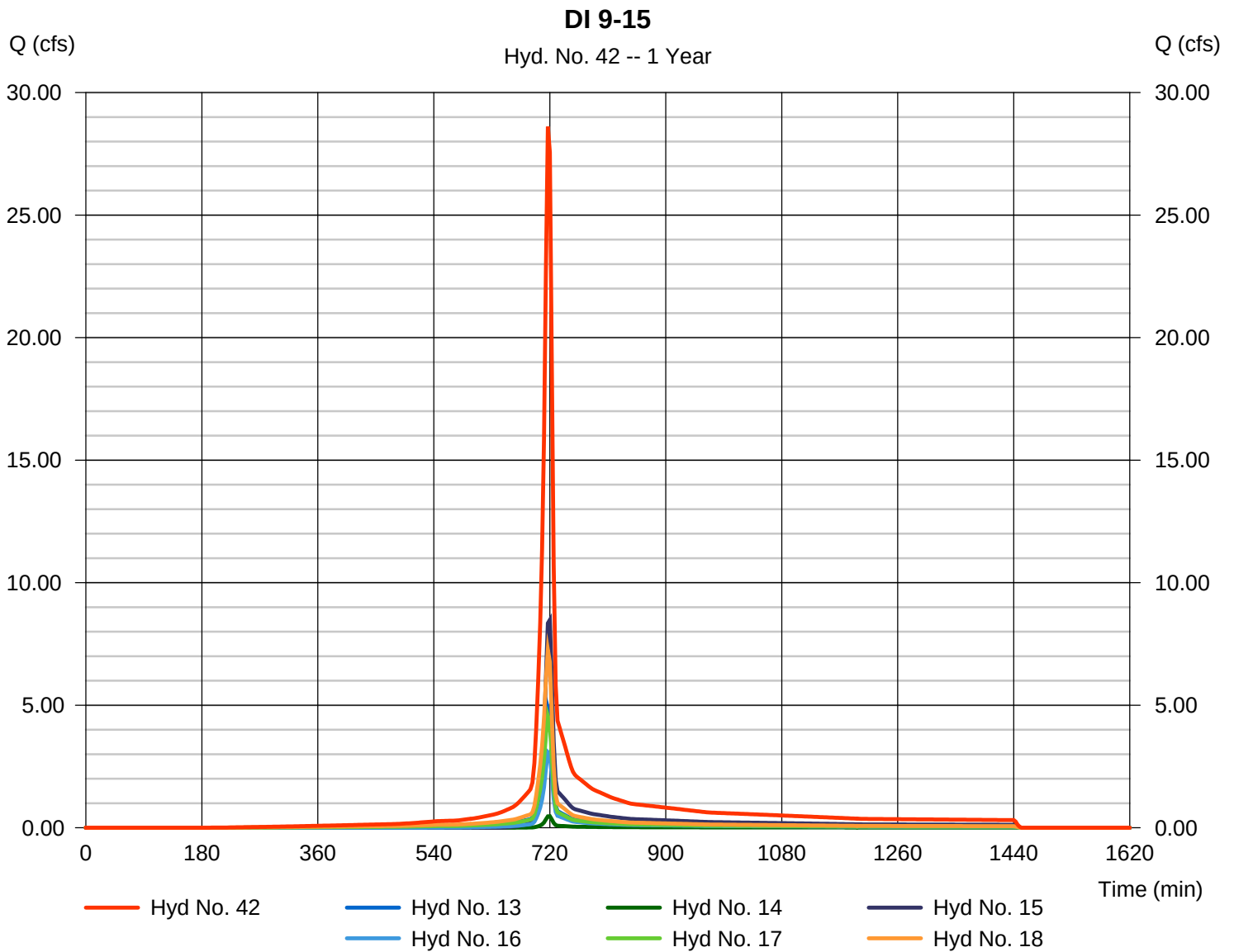
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Hyd. No. 42

DI 9-15

Hydrograph type	= Combine	Peak discharge	= 28.60 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 67,573 cuft
Inflow hyds.	= 13, 14, 15, 16, 17, 18	Contrib. drain. area	= 14.740 ac



Hydrograph Report

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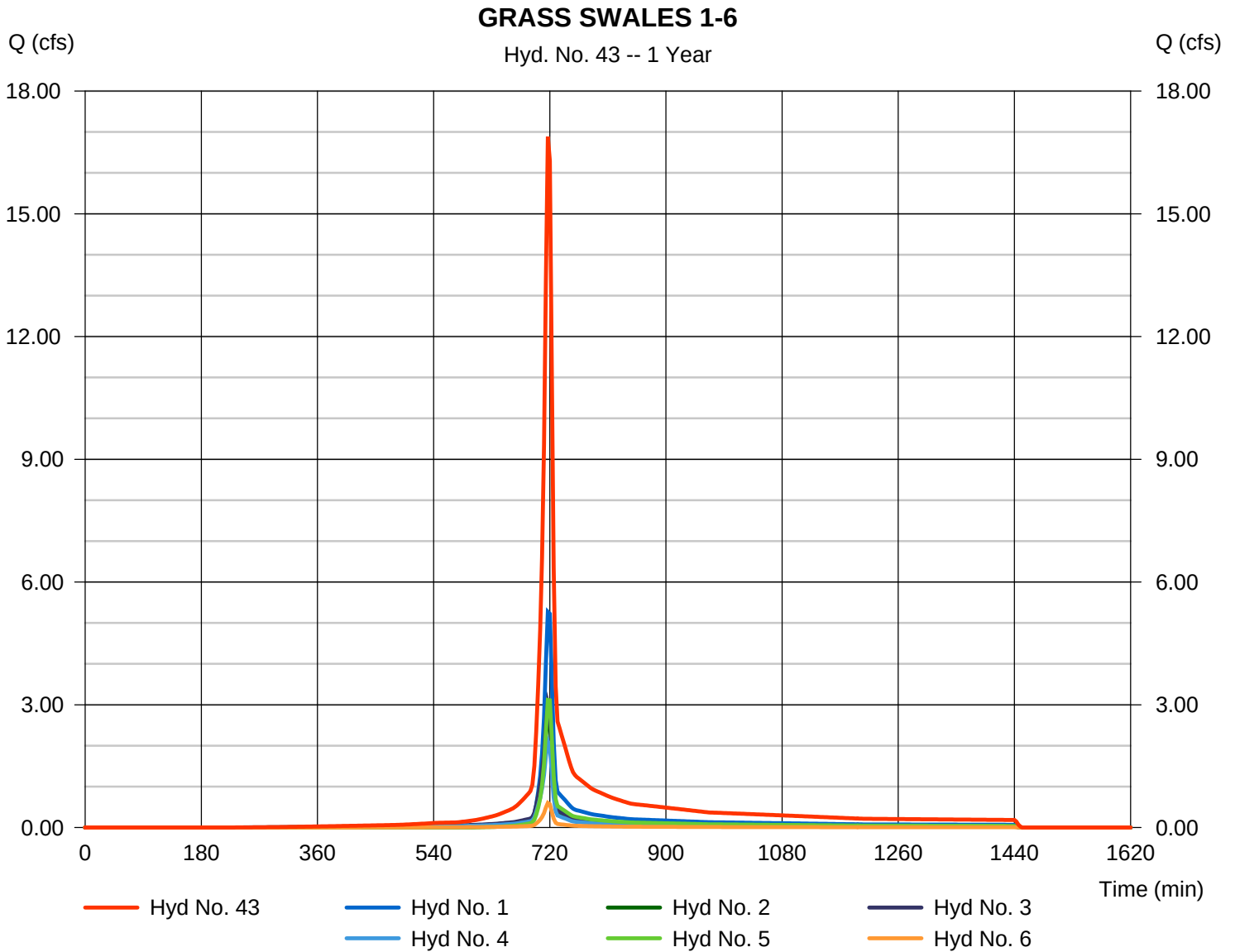
Friday, 07 / 28 / 2017

Hyd. No. 43

GRASS SWALES 1-6

Hydrograph type = Combine
 Storm frequency = 1 yrs
 Time interval = 3 min
 Inflow hyds. = 1, 2, 3, 4, 5, 6

Peak discharge = 16.88 cfs
 Time to peak = 717 min
 Hyd. volume = 39,101 cuft
 Contrib. drain. area = 8.560 ac



Hydrograph Report

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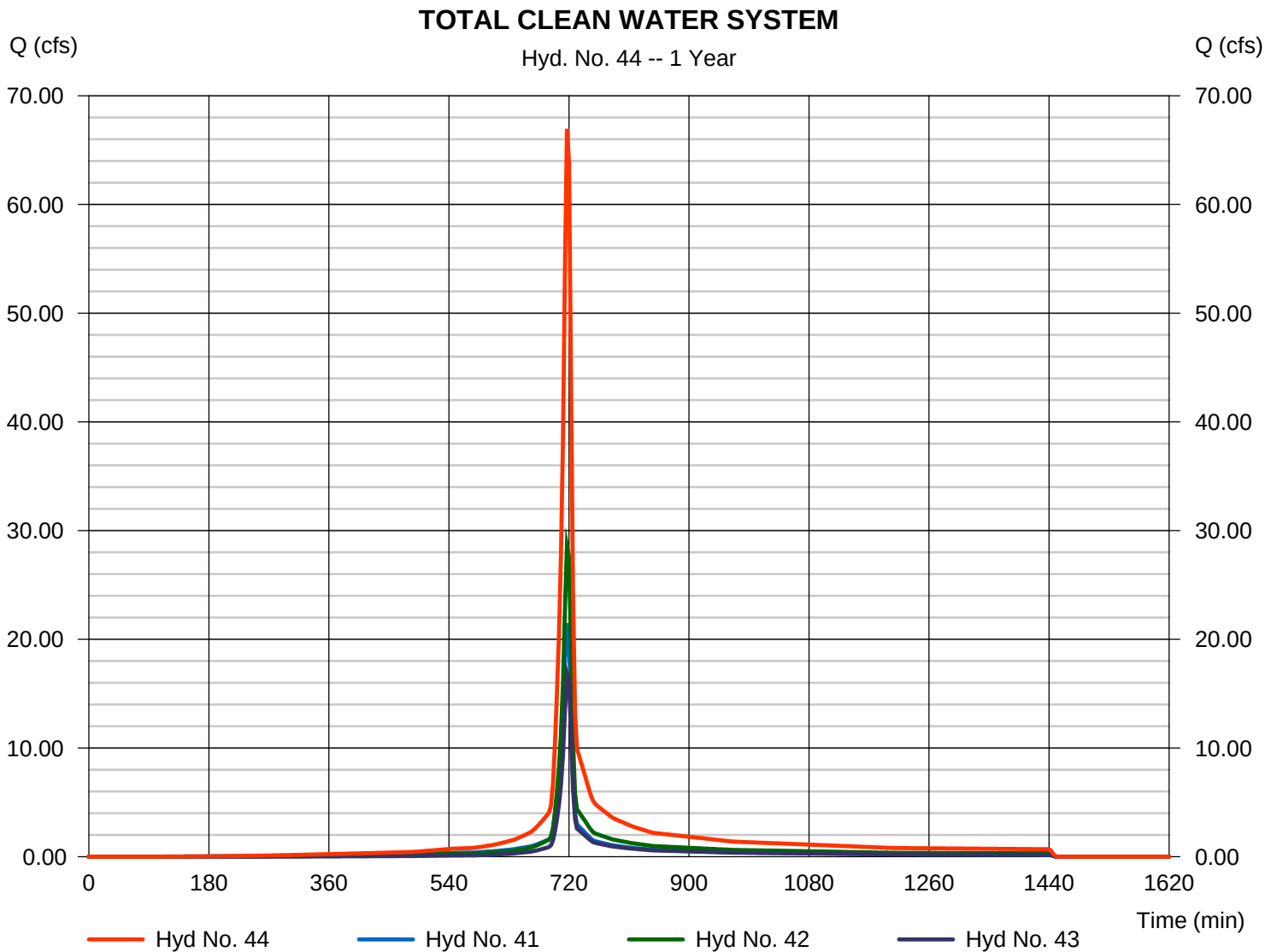
Friday, 07 / 28 / 2017

Hyd. No. 44

TOTAL CLEAN WATER SYSTEM

Hydrograph type = Combine
 Storm frequency = 1 yrs
 Time interval = 3 min
 Inflow hyds. = 41, 42, 43

Peak discharge = 66.95 cfs
 Time to peak = 717 min
 Hyd. volume = 159,039 cuft
 Contrib. drain. area = 0.000 ac



Hydrograph Report

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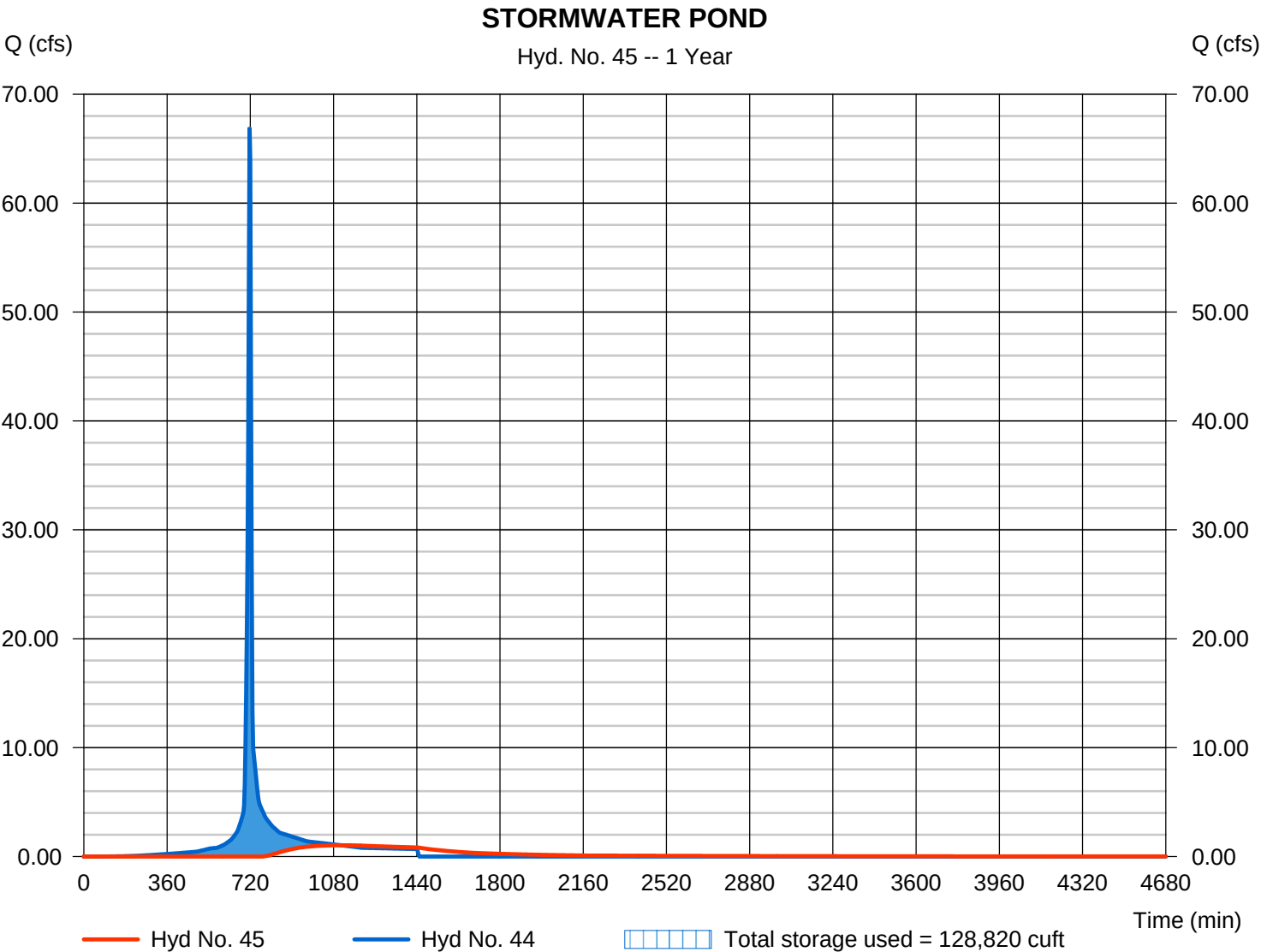
Friday, 07 / 28 / 2017

Hyd. No. 45

STORMWATER POND

Hydrograph type	= Reservoir	Peak discharge	= 1.036 cfs
Storm frequency	= 1 yrs	Time to peak	= 1110 min
Time interval	= 3 min	Hyd. volume	= 52,096 cuft
Inflow hyd. No.	= 44 - TOTAL CLEAN WATER STORAGE	Max. Elevation	= 559.59 ft
Reservoir name	= STORMWATER DETENTION POND	Max. Storage	= 128,820 cuft

Storage Indication method used.



Pond No. 1 - STORMWATER DETENTION POND

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Beginning Elevation = 557.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	557.00	45,157	0	0
1.00	558.00	47,767	46,451	46,451
2.00	559.00	50,433	49,089	95,540
3.00	560.00	63,233	56,707	152,248
4.00	561.00	66,213	64,711	216,958
5.00	562.00	69,249	67,718	284,677
6.00	563.00	72,342	70,782	355,459
7.00	564.00	75,491	73,903	429,362
8.00	565.00	78,697	77,080	506,442
9.00	566.00	81,959	80,314	586,757

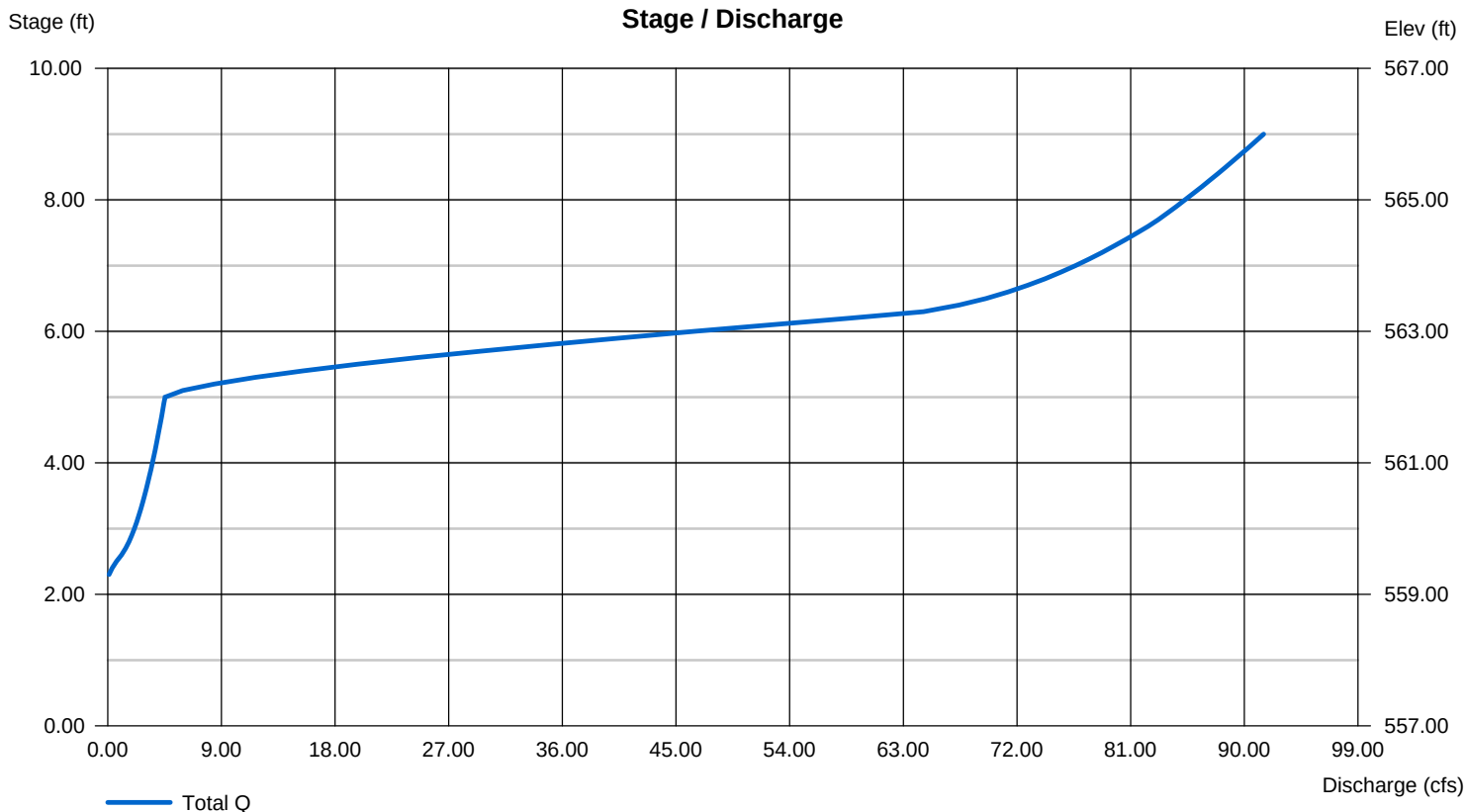
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 36.00	6.00	0.00	0.00
Span (in)	= 36.00	6.00	0.00	0.00
No. Barrels	= 1	3	0	0
Invert El. (ft)	= 557.00	559.20	0.00	0.00
Length (ft)	= 229.00	1.00	0.00	0.00
Slope (%)	= 1.00	1.00	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)	= 12.57	0.00	0.00	0.00
Crest El. (ft)	= 562.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	---	---	---
Multi-Stage	= Yes	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

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



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

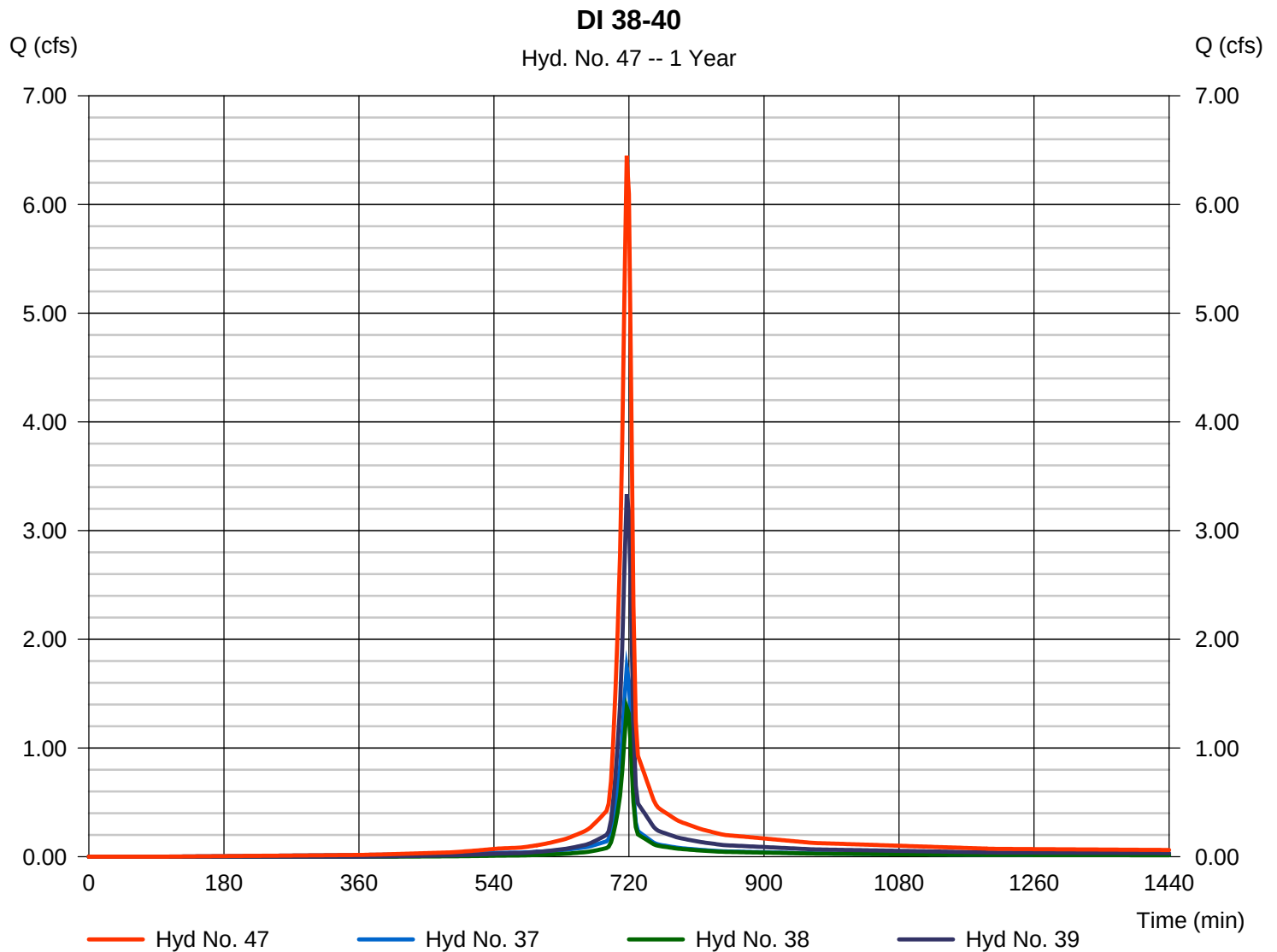
Friday, 07 / 28 / 2017

Hyd. No. 47

DI 38-40

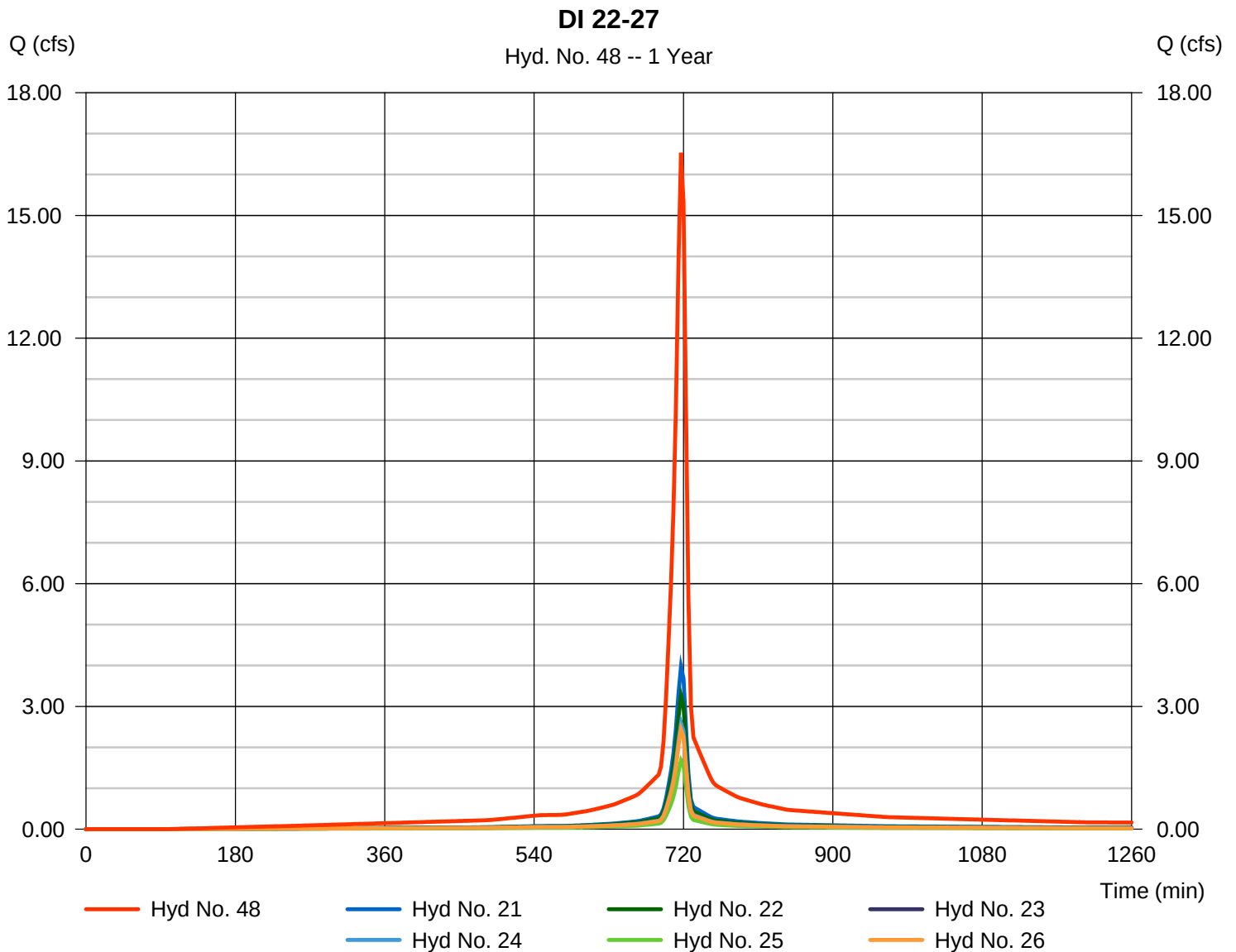
Hydrograph type = Combine
Storm frequency = 1 yrs
Time interval = 3 min
Inflow hyds. = 37, 38, 39

Peak discharge = 6.448 cfs
Time to peak = 717 min
Hyd. volume = 15,148 cuft
Contrib. drain. area = 2.560 ac



DI 22-27

Hydrograph type	= Combine	Peak discharge	= 16.53 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 41,631 cuft
Inflow hyds.	= 21, 22, 23, 24, 25, 26	Contrib. drain. area	= 5.450 ac



Hydrograph Report

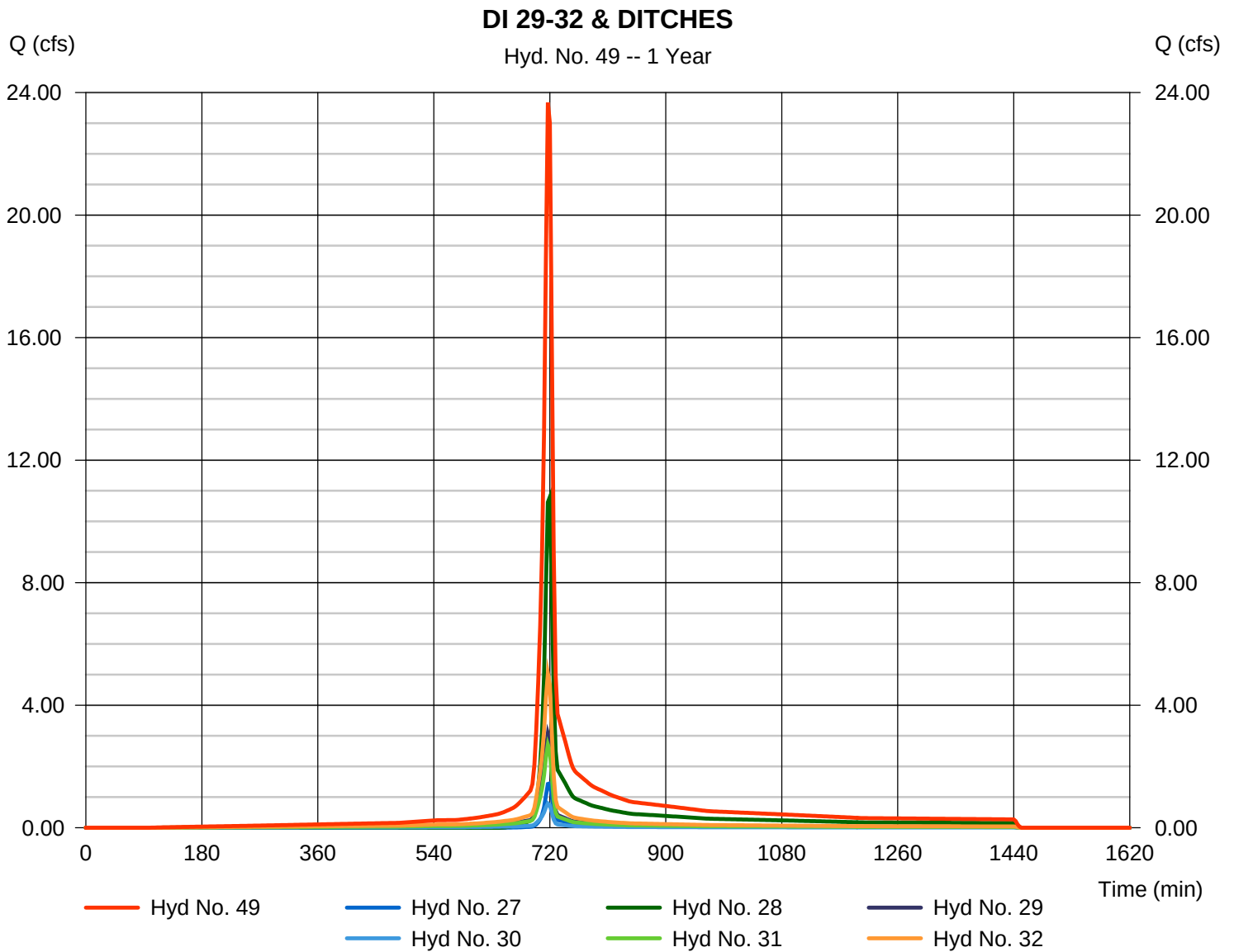
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 49

DI 29-32 & DITCHES

Hydrograph type	= Combine	Peak discharge	= 23.67 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 57,627 cuft
Inflow hyds.	= 27, 28, 29, 30, 31, 32	Contrib. drain. area	= 13.700 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

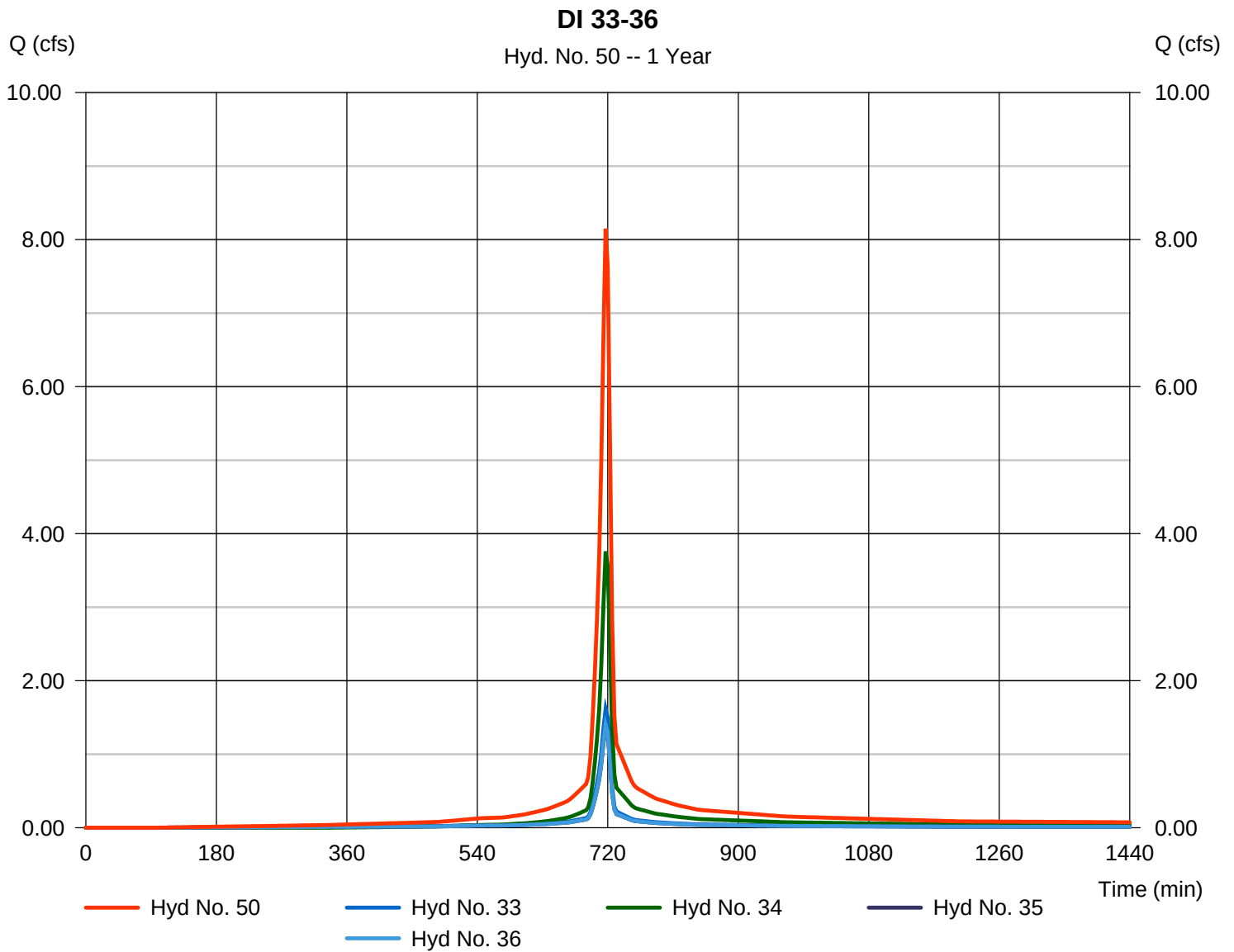
Friday, 07 / 28 / 2017

Hyd. No. 50

DI 33-36

Hydrograph type = Combine
 Storm frequency = 1 yrs
 Time interval = 3 min
 Inflow hyds. = 33, 34, 35, 36

Peak discharge = 8.150 cfs
 Time to peak = 717 min
 Hyd. volume = 19,771 cuft
 Contrib. drain. area = 2.940 ac



Hydrograph Report

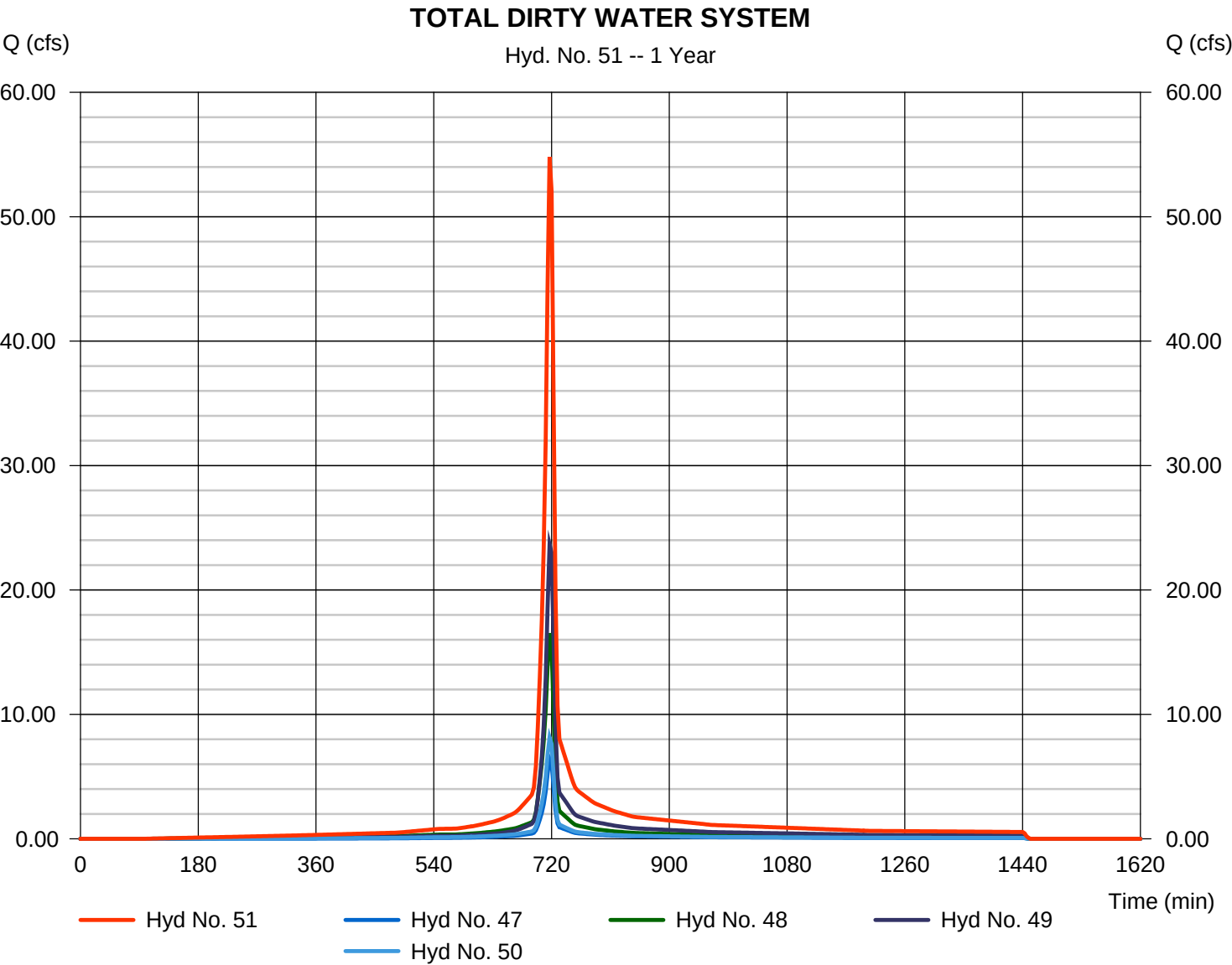
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 51

TOTAL DIRTY WATER SYSTEM

Hydrograph type	= Combine	Peak discharge	= 54.80 cfs
Storm frequency	= 1 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 134,177 cuft
Inflow hyds.	= 47, 48, 49, 50	Contrib. drain. area	= 0.000 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

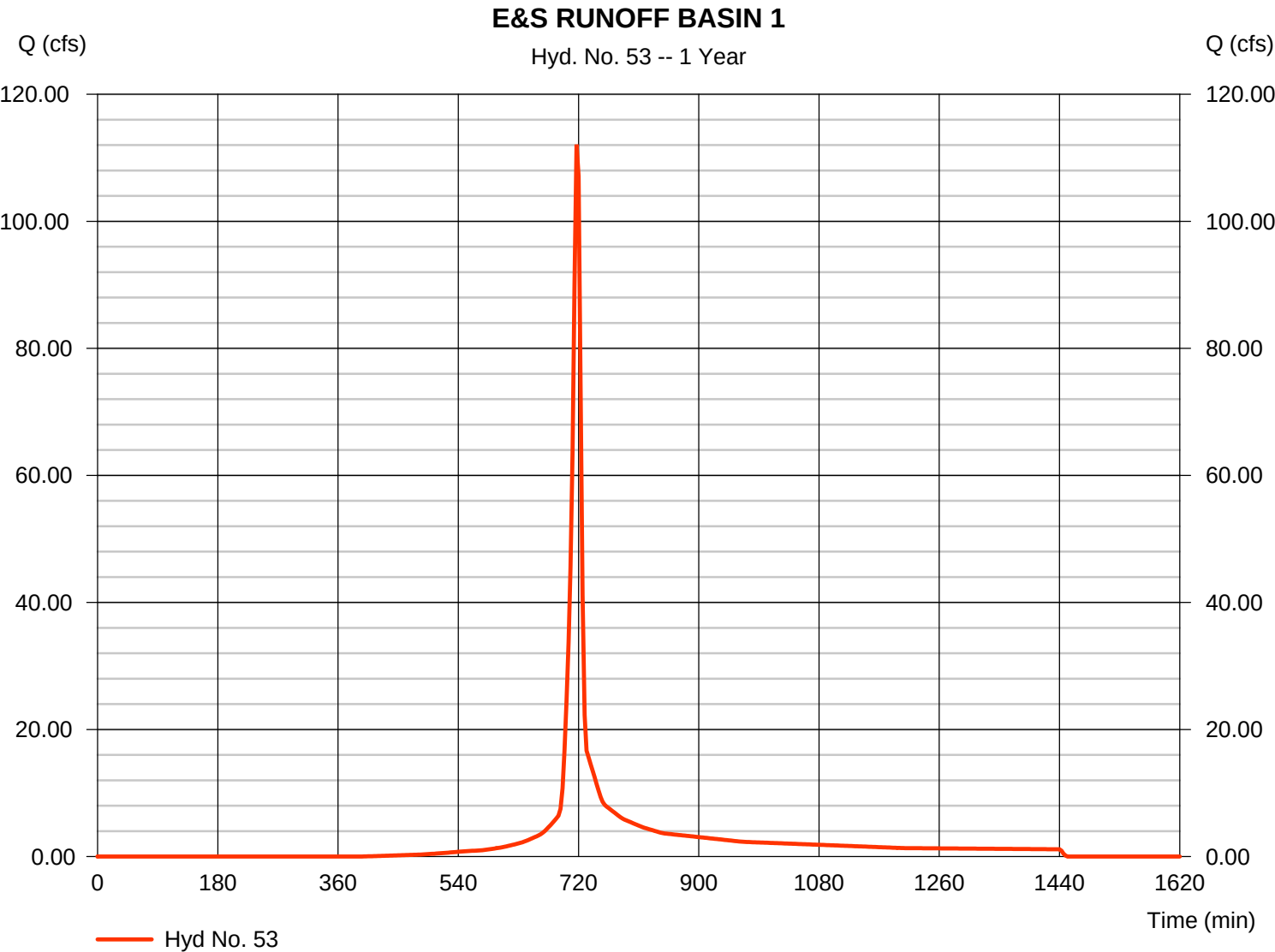
Friday, 07 / 28 / 2017

Hyd. No. 53

E&S RUNOFF BASIN 1

Hydrograph type	=	SCS Runoff	Peak discharge	=	112.09 cfs
Storm frequency	=	1 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	254,772 cuft
Drainage area	=	48.900 ac	Curve number	=	90*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	2.50 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(29.300 x 98) + (19.600 x 79)] / 48.900



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

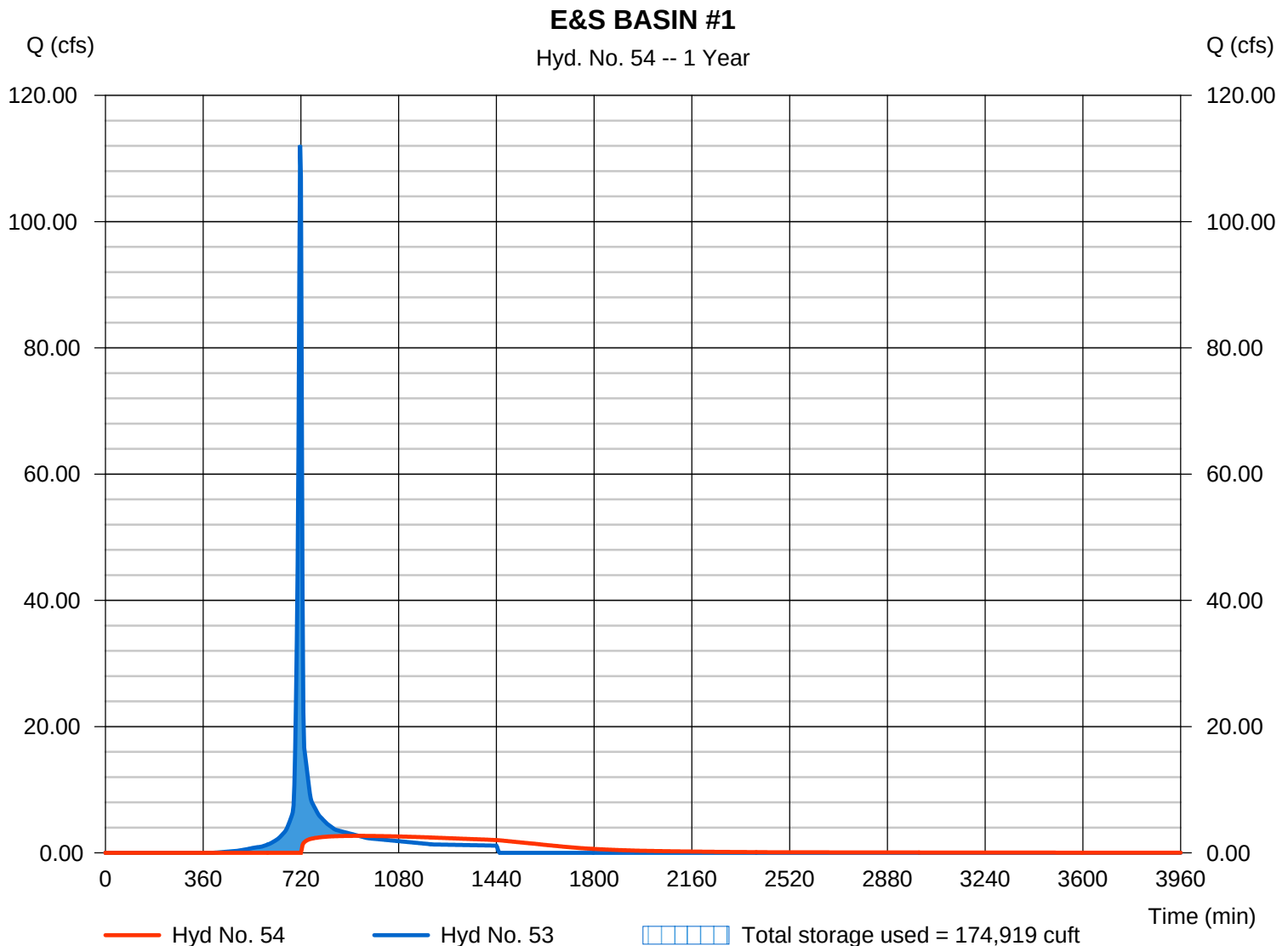
Friday, 07 / 28 / 2017

Hyd. No. 54

E&S BASIN #1

Hydrograph type	= Reservoir	Peak discharge	= 2.690 cfs
Storm frequency	= 1 yrs	Time to peak	= 933 min
Time interval	= 3 min	Hyd. volume	= 147,830 cuft
Inflow hyd. No.	= 53 - E&S RUNOFF BASIN 1	Max. Elevation	= 560.35 ft
Reservoir name	= E&S BASIN #1	Max. Storage	= 174,919 cuft

Storage Indication method used.



Pond Report

53

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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Pond No. 5 - E&S BASIN #1

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Beginning Elevation = 557.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	557.00	45,157	0	0
1.00	558.00	47,767	46,451	46,451
2.00	559.00	50,433	49,089	95,540
3.00	560.00	63,233	56,707	152,248
4.00	561.00	66,213	64,711	216,958
5.00	562.00	69,249	67,718	284,677
6.00	563.00	72,342	70,782	355,459
7.00	564.00	75,491	73,903	429,362
8.00	565.00	78,697	77,080	506,442
9.00	566.00	81,959	80,314	586,757

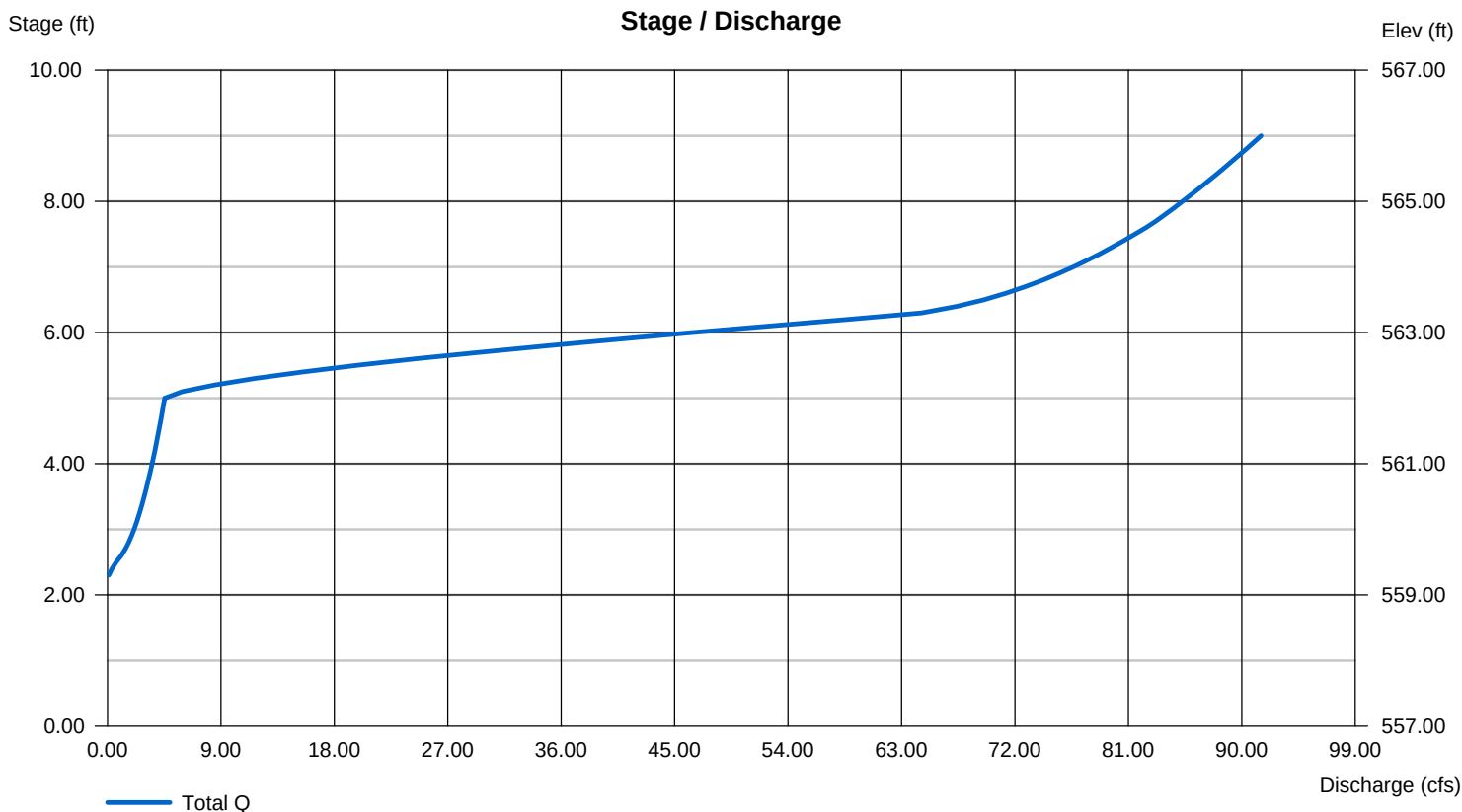
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 36.00	6.00	0.00	0.00
Span (in)	= 36.00	6.00	0.00	0.00
No. Barrels	= 1	3	0	0
Invert El. (ft)	= 557.00	559.20	0.00	0.00
Length (ft)	= 229.00	1.00	0.00	0.00
Slope (%)	= 1.00	1.00	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)	= 12.57	0.00	0.00	0.00
Crest El. (ft)	= 562.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	---	---	---
Multi-Stage	= Yes	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

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



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

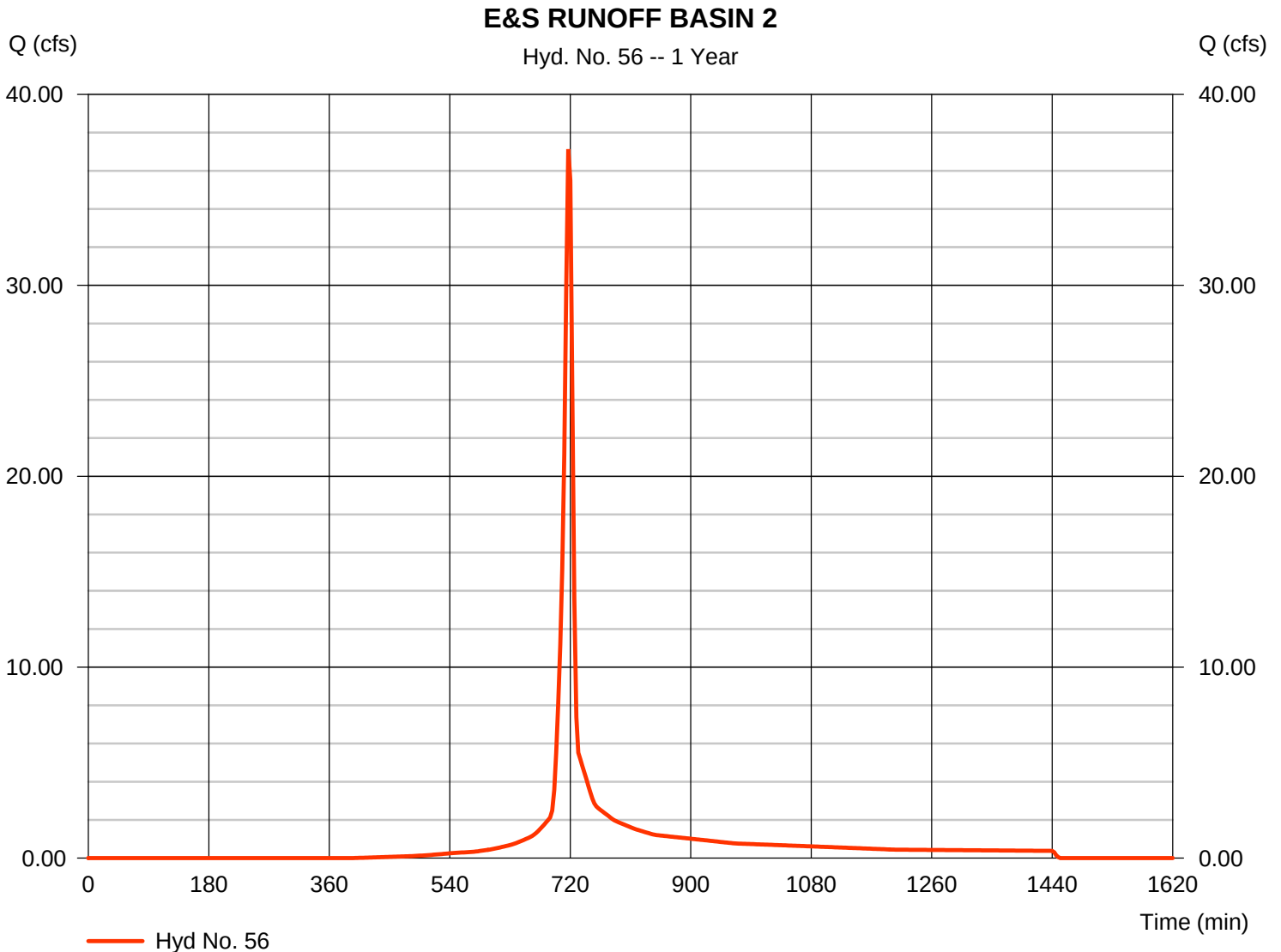
Friday, 07 / 28 / 2017

Hyd. No. 56

E&S RUNOFF BASIN 2

Hydrograph type	=	SCS Runoff	Peak discharge	=	37.13 cfs
Storm frequency	=	1 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	84,403 cuft
Drainage area	=	16.200 ac	Curve number	=	90*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	2.50 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = $[(9.720 \times 98) + (6.480 \times 79)] / 16.200$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

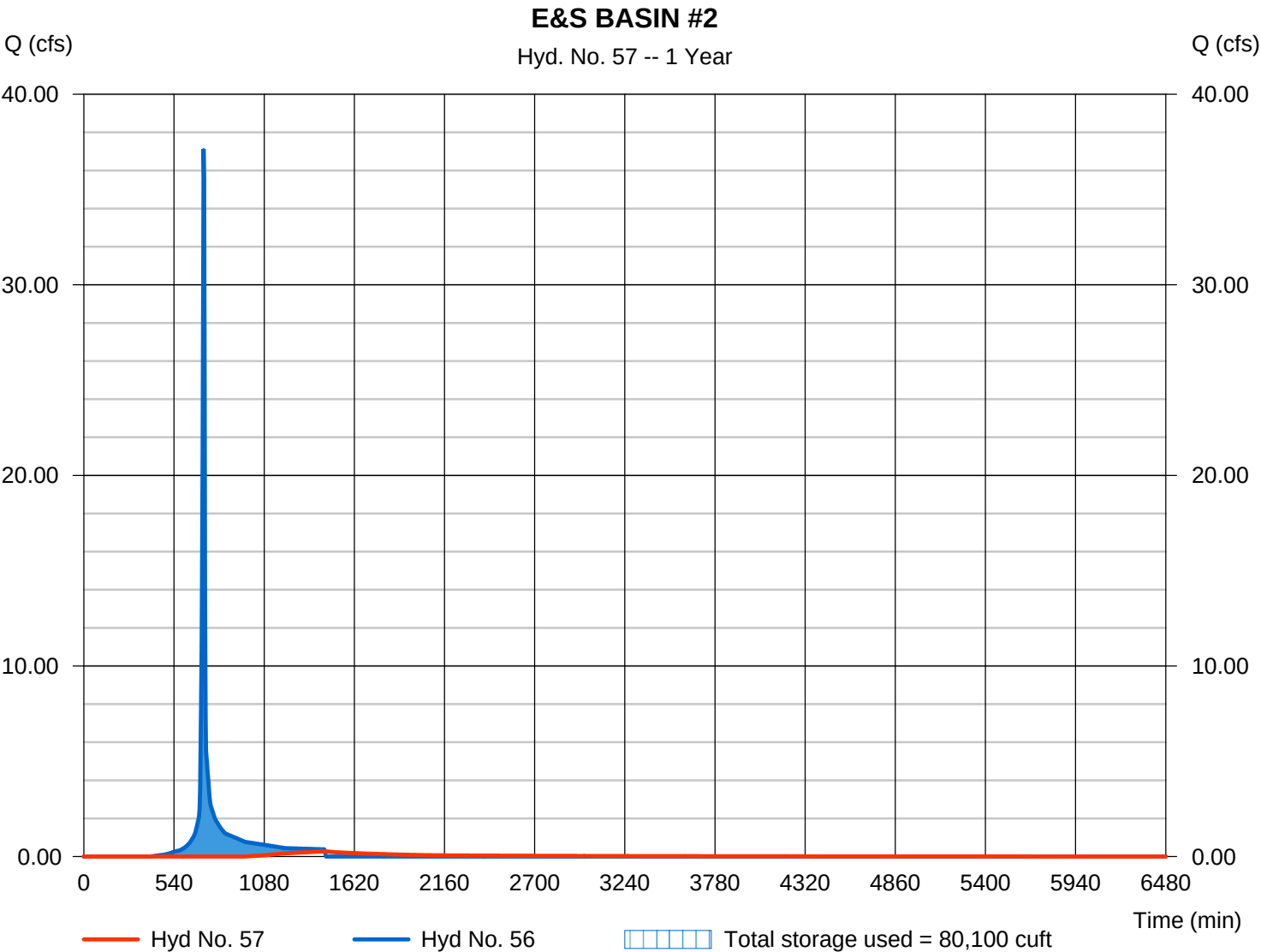
Friday, 07 / 28 / 2017

Hyd. No. 57

E&S BASIN #2

Hydrograph type	= Reservoir	Peak discharge	= 0.269 cfs
Storm frequency	= 1 yrs	Time to peak	= 1443 min
Time interval	= 3 min	Hyd. volume	= 14,589 cuft
Inflow hyd. No.	= 56 - E&S RUNOFF BASIN 2	Max. Elevation	= 574.72 ft
Reservoir name	= E&S BASIN #2	Max. Storage	= 80,100 cuft

Storage Indication method used.



Pond No. 6 - E&S BASIN #2

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Beginning Elevation = 573.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	573.00	45,081	0	0
1.00	574.00	46,778	45,922	45,922
2.00	575.00	48,501	47,632	93,555
3.00	576.00	50,248	49,367	142,922
4.00	577.00	52,021	51,127	194,049

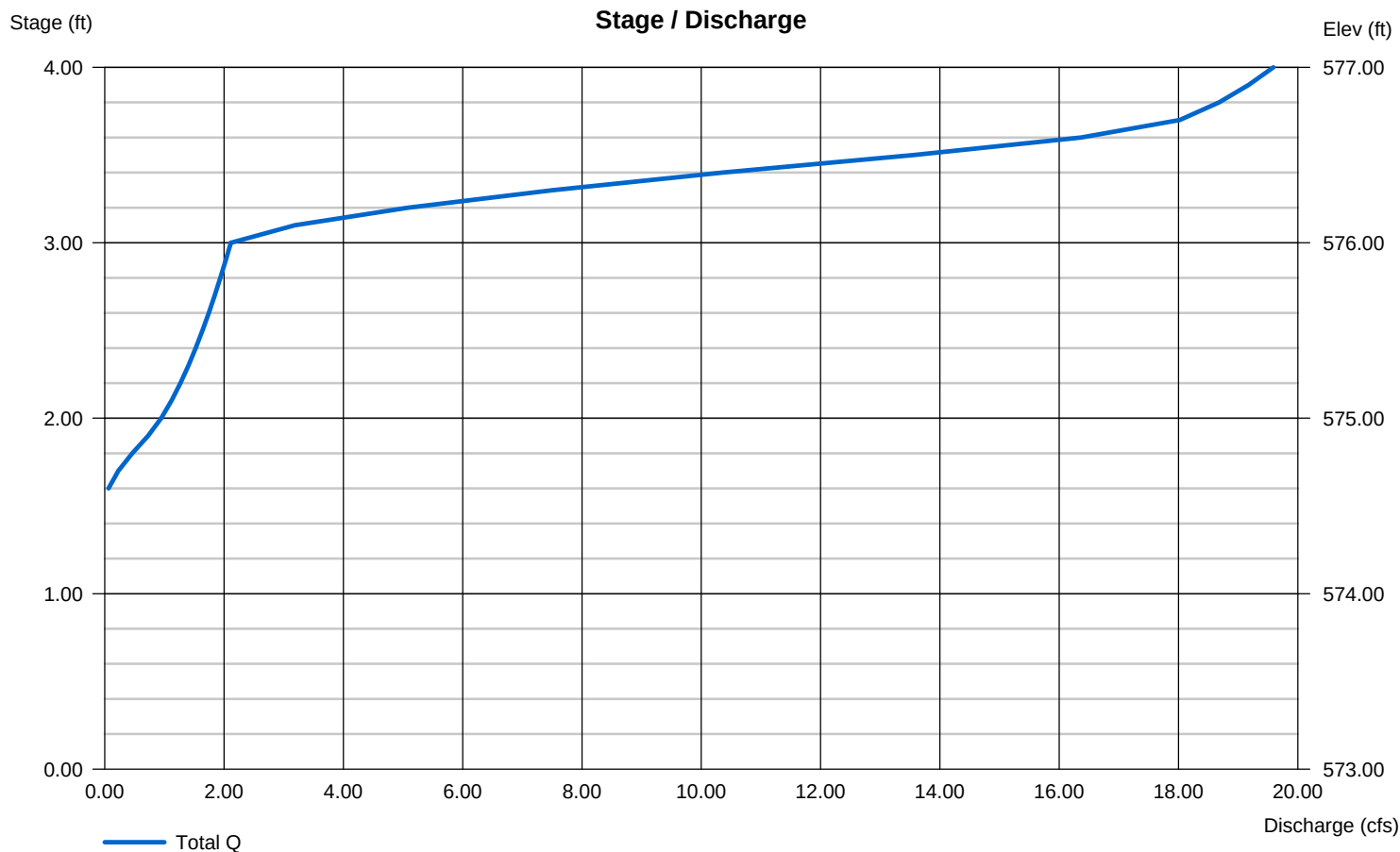
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	6.00	0.00	0.00
Span (in)	= 24.00	6.00	0.00	0.00
No. Barrels	= 1	2	0	0
Invert El. (ft)	= 573.00	574.50	0.00	0.00
Length (ft)	= 372.00	1.00	0.00	0.00
Slope (%)	= 0.50	1.00	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)	= 9.42	0.00	0.00	0.00
Crest El. (ft)	= 576.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	---	---	---
Multi-Stage	= Yes	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

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



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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Hyd. No. 59

DITCH D-3

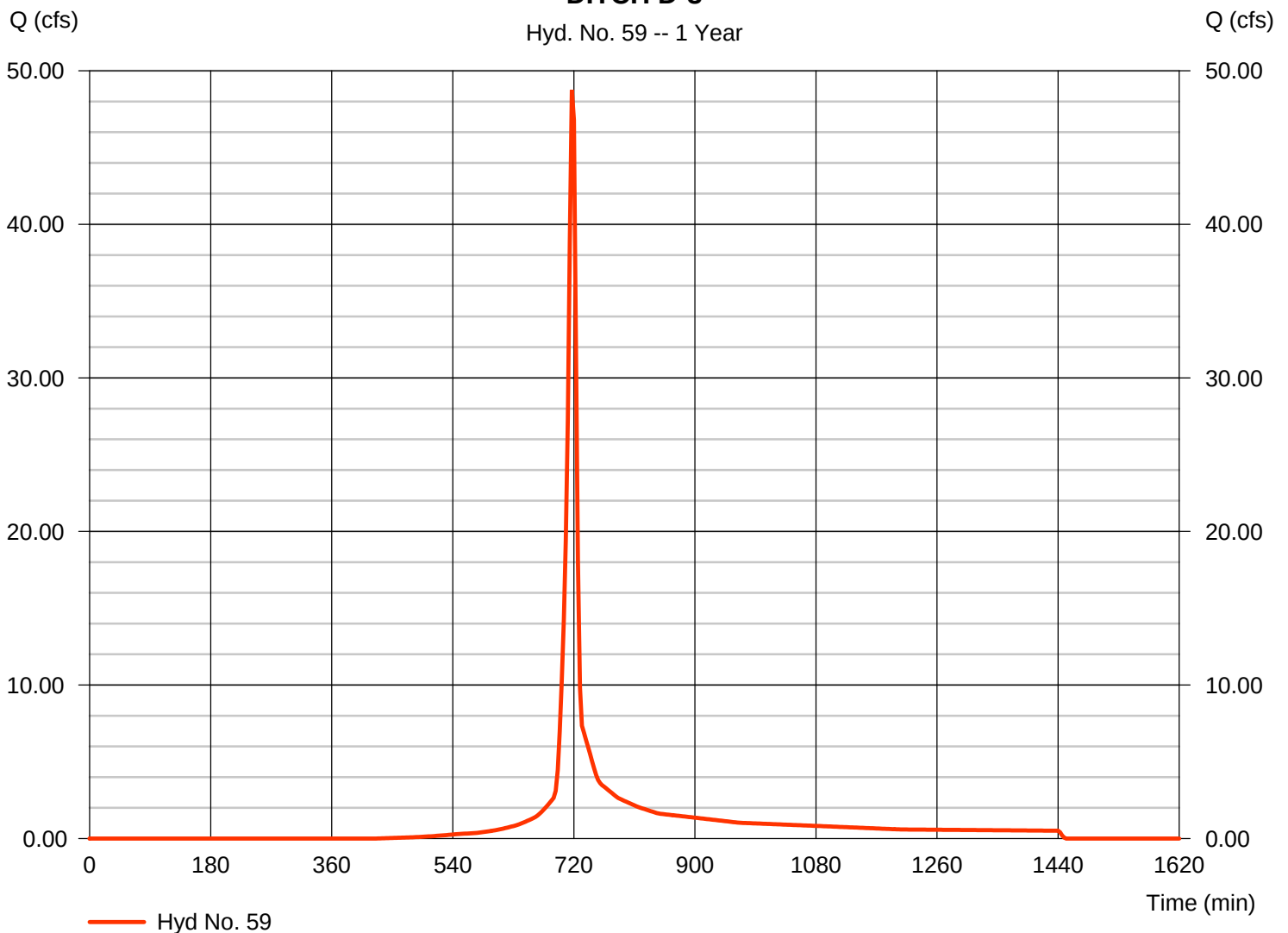
Hydrograph type = SCS Runoff
 Storm frequency = 1 yrs
 Time interval = 3 min
 Drainage area = 22.300 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 2.50 in
 Storm duration = 24 hrs

Peak discharge = 48.74 cfs
 Time to peak = 717 min
 Hyd. volume = 110,398 cuft
 Curve number = 89*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(12.200 \times 98) + (10.100 \times 79)] / 22.300$

DITCH D-3

Hyd. No. 59 -- 1 Year



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 60

DITCH D-4

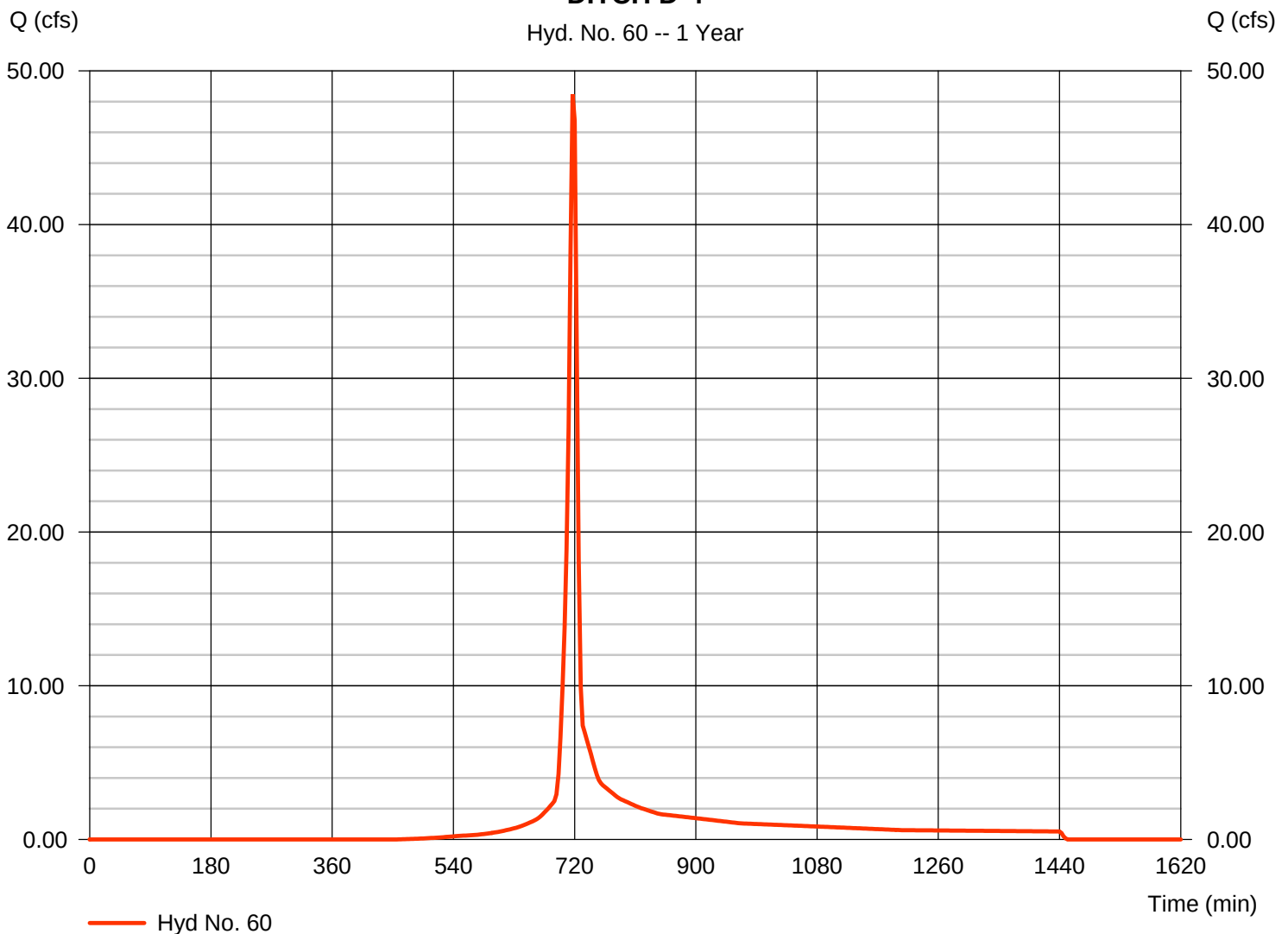
Hydrograph type = SCS Runoff
 Storm frequency = 1 yrs
 Time interval = 3 min
 Drainage area = 23.300 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 2.50 in
 Storm duration = 24 hrs

Peak discharge = 48.46 cfs
 Time to peak = 717 min
 Hyd. volume = 109,541 cuft
 Curve number = 88*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(11.500 \times 98) + (11.800 \times 79)] / 23.300$

DITCH D-4

Hyd. No. 60 -- 1 Year



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

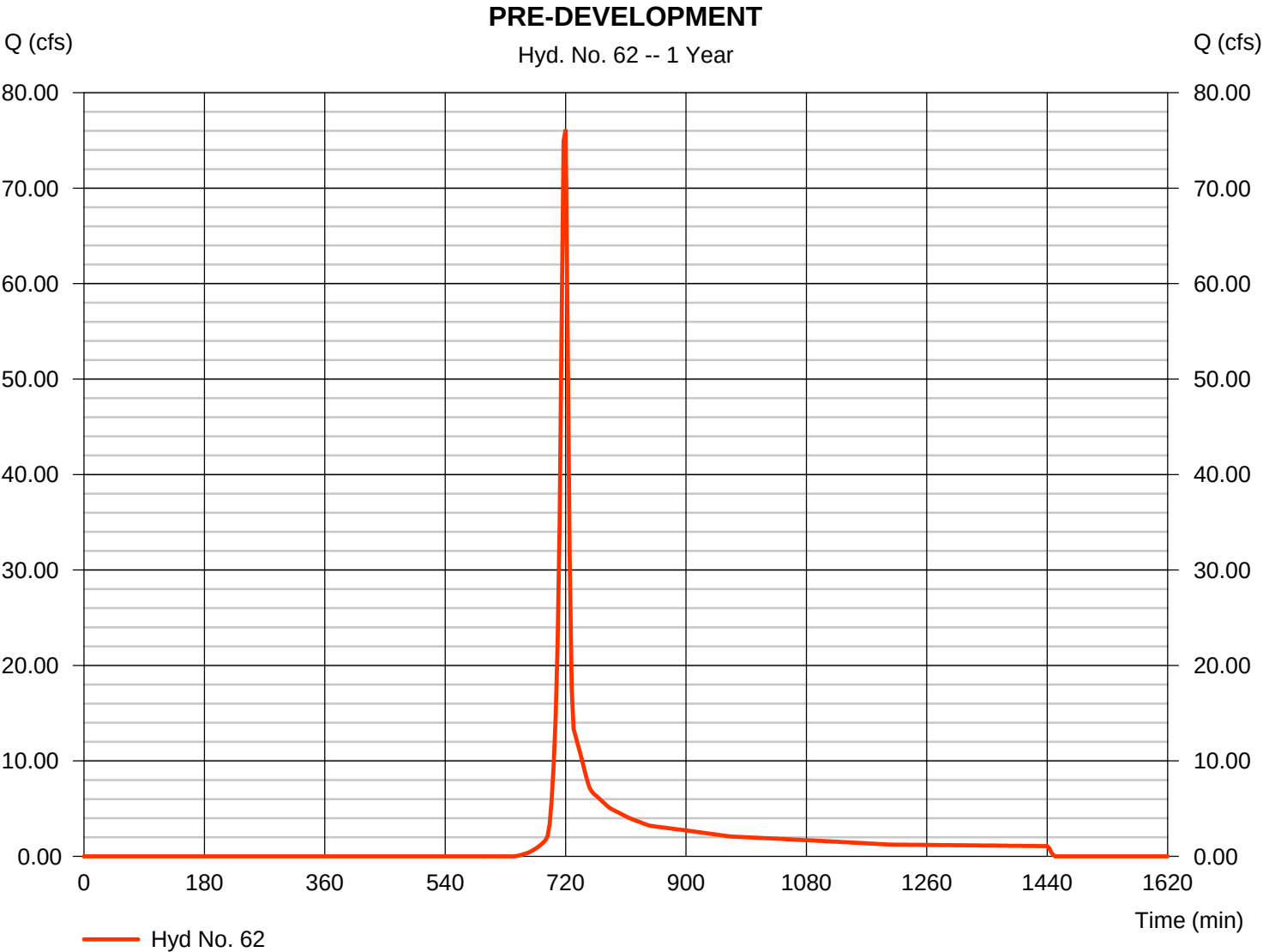
Friday, 07 / 28 / 2017

Hyd. No. 62

PRE-DEVELOPMENT

Hydrograph type	= SCS Runoff	Peak discharge	= 76.15 cfs
Storm frequency	= 1 yrs	Time to peak	= 720 min
Time interval	= 3 min	Hyd. volume	= 175,267 cuft
Drainage area	= 61.500 ac	Curve number	= 79*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(60.200 x 79) + (1.300 x 98)] / 61.500



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

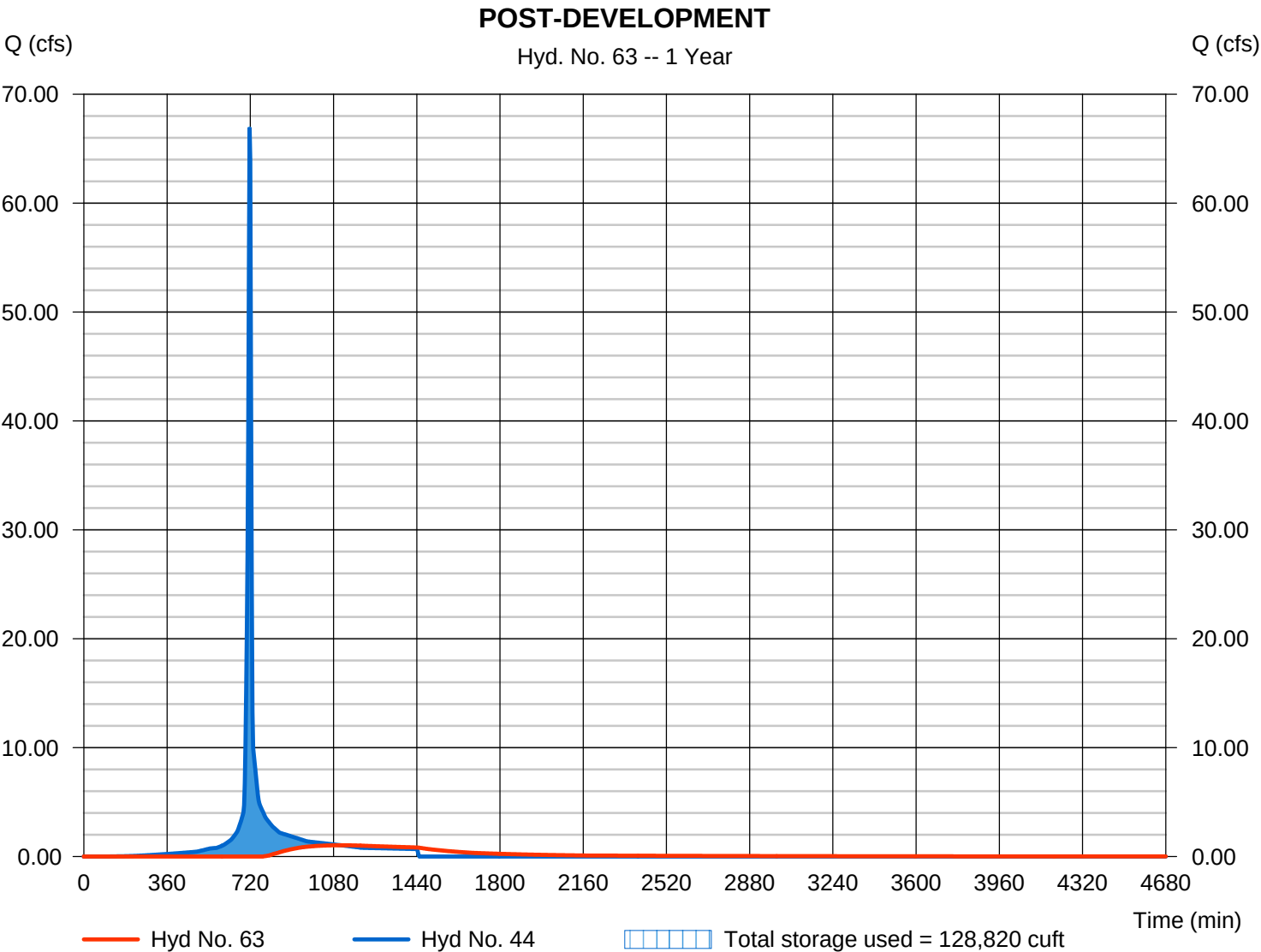
Friday, 07 / 28 / 2017

Hyd. No. 63

POST-DEVELOPMENT

Hydrograph type	= Reservoir	Peak discharge	= 1.036 cfs
Storm frequency	= 1 yrs	Time to peak	= 1110 min
Time interval	= 3 min	Hyd. volume	= 52,096 cuft
Inflow hyd. No.	= 44 - TOTAL CLEAN WATER STORAGE	Max. Elevation	= 559.59 ft
Reservoir name	= STORMWATER DETENTION POND	Max. Storage	= 128,820 cuft

Storage Indication method used.



Pond No. 1 - STORMWATER DETENTION POND

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Beginning Elevation = 557.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	557.00	45,157	0	0
1.00	558.00	47,767	46,451	46,451
2.00	559.00	50,433	49,089	95,540
3.00	560.00	63,233	56,707	152,248
4.00	561.00	66,213	64,711	216,958
5.00	562.00	69,249	67,718	284,677
6.00	563.00	72,342	70,782	355,459
7.00	564.00	75,491	73,903	429,362
8.00	565.00	78,697	77,080	506,442
9.00	566.00	81,959	80,314	586,757

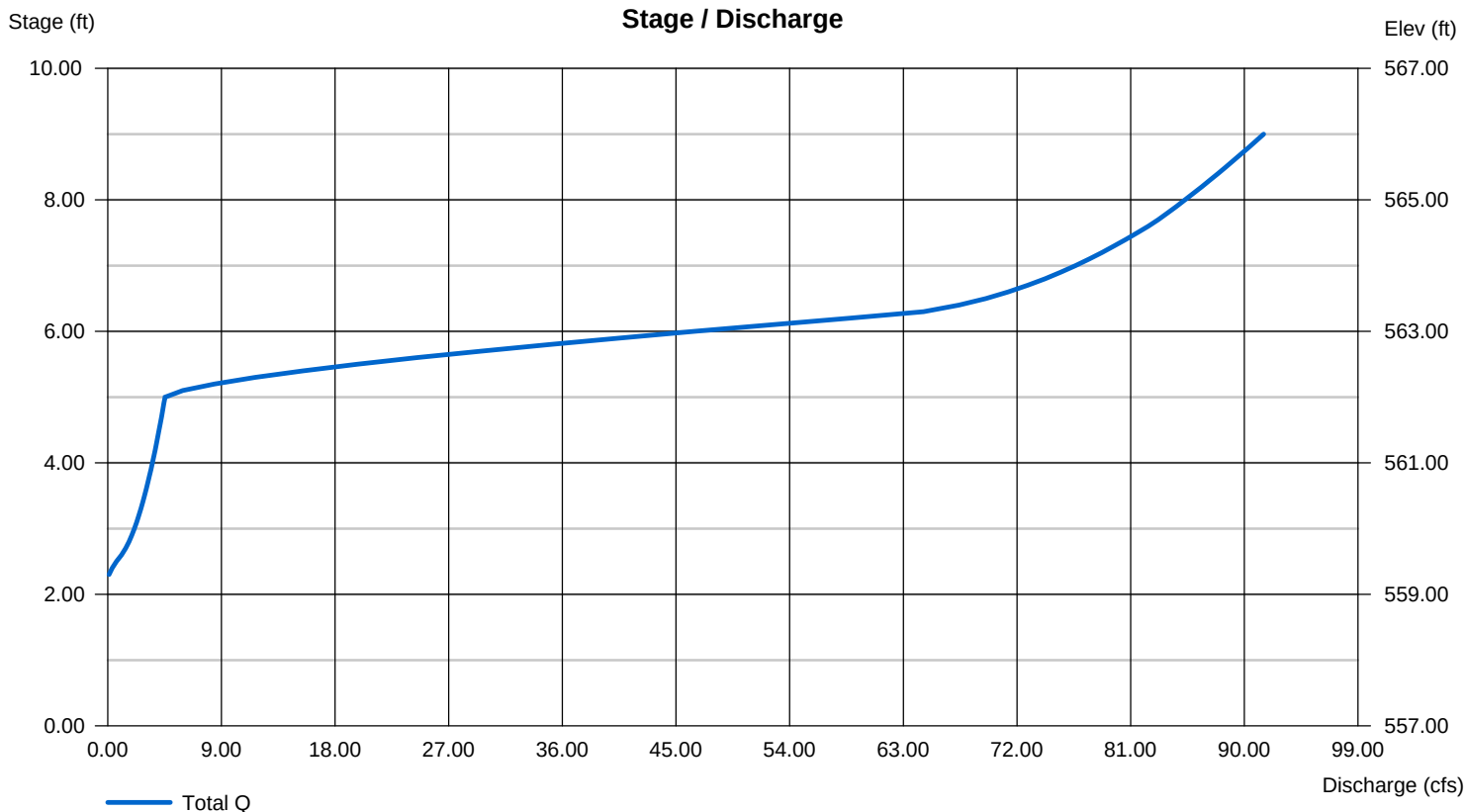
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 36.00	6.00	0.00	0.00
Span (in)	= 36.00	6.00	0.00	0.00
No. Barrels	= 1	3	0	0
Invert El. (ft)	= 557.00	559.20	0.00	0.00
Length (ft)	= 229.00	1.00	0.00	0.00
Slope (%)	= 1.00	1.00	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)	= 12.57	0.00	0.00	0.00
Crest El. (ft)	= 562.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	---	---	---
Multi-Stage	= Yes	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

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



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	7.685	3	717	17,362	-----	-----	-----	GRASS SWALE #1
2	SCS Runoff	3.569	3	717	8,397	-----	-----	-----	GRASS SWALE #2
3	SCS Runoff	3.879	3	717	9,362	-----	-----	-----	GRASS SWALE #3
4	SCS Runoff	2.694	3	717	6,501	-----	-----	-----	GRASS SWALE #4
5	SCS Runoff	4.607	3	717	10,421	-----	-----	-----	GRASS SWALE #5
6	SCS Runoff	0.791	3	717	1,842	-----	-----	-----	GRASS SWALE #6
7	SCS Runoff	2.278	3	717	5,228	-----	-----	-----	GRASS SWALE #7
8	SCS Runoff	0.662	3	717	1,624	-----	-----	-----	GRASS SWALE #8
9	SCS Runoff	2.694	3	717	6,412	-----	-----	-----	DI #4
10	SCS Runoff	13.21	3	717	33,866	-----	-----	-----	DI #6
11	SCS Runoff	3.416	3	717	7,843	-----	-----	-----	DI #7
12	SCS Runoff	5.109	3	717	12,538	-----	-----	-----	DI #8
13	SCS Runoff	6.249	3	717	15,082	-----	-----	-----	DI #9
14	SCS Runoff	0.715	3	717	1,632	-----	-----	-----	DI #10
15	SCS Runoff	12.89	3	717	29,421	-----	-----	-----	MH #11
16	SCS Runoff	4.341	3	717	9,818	-----	-----	-----	DI #13
17	SCS Runoff	5.818	3	717	14,042	-----	-----	-----	DI #14
18	SCS Runoff	9.189	3	717	22,551	-----	-----	-----	DI #15
21	SCS Runoff	4.985	3	717	12,481	-----	-----	-----	DI #22
22	SCS Runoff	4.073	3	717	10,443	-----	-----	-----	DI #23
23	SCS Runoff	3.236	3	717	8,296	-----	-----	-----	DI #24
24	SCS Runoff	3.236	3	717	8,296	-----	-----	-----	DI #25
25	SCS Runoff	2.094	3	717	5,368	-----	-----	-----	DI #26
26	SCS Runoff	3.045	3	717	7,808	-----	-----	-----	DI #27
27	SCS Runoff	2.202	3	717	5,025	-----	-----	-----	DITCH D-1
28	SCS Runoff	16.41	3	717	37,453	-----	-----	-----	DITCH D-2
29	SCS Runoff	3.845	3	717	9,857	-----	-----	-----	DI #29
30	SCS Runoff	0.990	3	717	2,538	-----	-----	-----	DI #30
31	SCS Runoff	3.388	3	717	8,686	-----	-----	-----	DI #31
32	SCS Runoff	6.281	3	717	16,104	-----	-----	-----	DI #32
33	SCS Runoff	2.017	3	717	5,173	-----	-----	-----	DI #33
34	SCS Runoff	4.943	3	717	11,515	-----	-----	-----	DI #34
35	SCS Runoff	1.713	3	717	4,392	-----	-----	-----	DI #35
TOTAL REVISED HYDROLOGY.gpw					Return Period: 2 Year			Friday, 07 / 28 / 2017	

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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
36	SCS Runoff	1.751	3	717	4,489	-----	-----	-----	DI #36
37	SCS Runoff	2.170	3	717	5,563	-----	-----	-----	DI #38
38	SCS Runoff	1.847	3	717	4,239	-----	-----	-----	DI #39
39	SCS Runoff	4.431	3	717	10,239	-----	-----	-----	DI #40
41	Combine	27.37	3	717	67,511	7, 8, 9, 10, 11, 12,	-----	-----	DI 4-8, SWALES 7-8
42	Combine	39.20	3	717	92,547	13, 14, 15, 16, 17, 18,	-----	-----	DI 9-15
43	Combine	23.22	3	717	53,884	1, 2, 3, 4, 5, 6,	-----	-----	GRASS SWALES 1-6
44	Combine	89.79	3	717	213,941	41, 42, 43	-----	-----	TOTAL CLEAN WATER SYSTEM
45	Reservoir	2.118	3	930	106,999	44	560.01	152,755	STORMWATER POND
47	Combine	8.447	3	717	20,041	37, 38, 39,	-----	-----	DI 38-40
48	Combine	20.67	3	717	52,691	21, 22, 23, 24, 25, 26,	-----	-----	DI 22-27
49	Combine	33.11	3	717	79,663	27, 28, 29, 30, 31, 32,	-----	-----	DI 29-32 & DITCHES
50	Combine	10.42	3	717	25,569	33, 34, 35, 36,	-----	-----	DI 33-36
51	Combine	72.65	3	717	177,963	47, 48, 49, 50	-----	-----	TOTAL DIRTY WATER SYSTEM
53	SCS Runoff	150.50	3	717	345,501	-----	-----	-----	E&S RUNOFF BASIN 1
54	Reservoir	3.833	3	909	238,559	53	561.28	235,735	E&S BASIN #1
56	SCS Runoff	49.86	3	717	114,461	-----	-----	-----	E&S RUNOFF BASIN 2
57	Reservoir	0.787	3	1080	44,646	56	574.93	90,139	E&S BASIN #2
59	SCS Runoff	66.15	3	717	151,055	-----	-----	-----	DITCH D-3
60	SCS Runoff	66.51	3	717	151,238	-----	-----	-----	DITCH D-4
62	SCS Runoff	115.72	3	717	264,147	-----	-----	-----	PRE-DEVELOPMENT
63	Reservoir	2.118	3	930	106,999	44	560.01	152,755	POST-DEVELOPMENT
TOTAL REVISED HYDROLOGY.gpw					Return Period: 2 Year			Friday, 07 / 28 / 2017	

Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

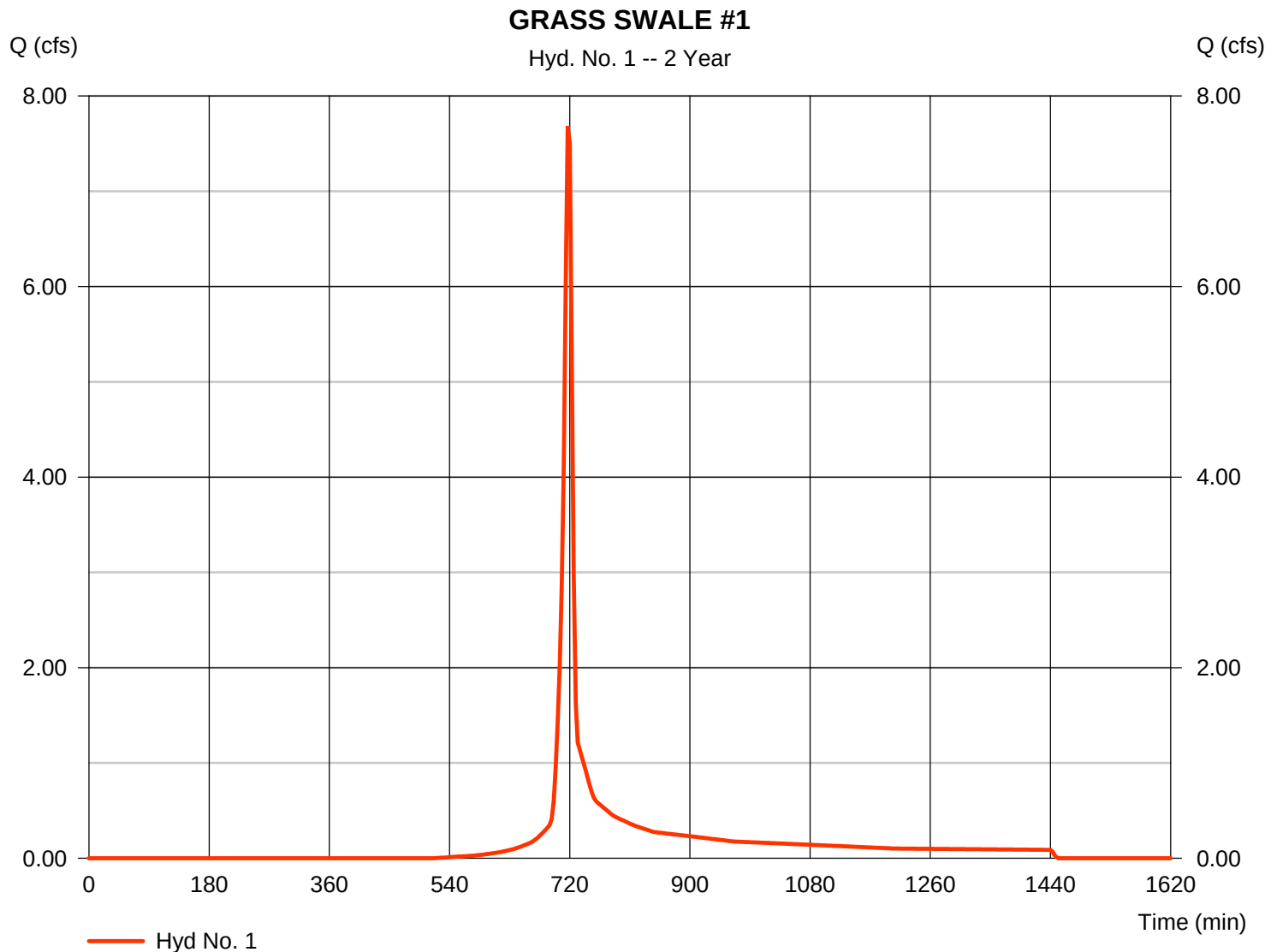
Friday, 07 / 28 / 2017

Hyd. No. 1

GRASS SWALE #1

Hydrograph type	= SCS Runoff	Peak discharge	= 7.685 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 17,362 cuft
Drainage area	= 3.340 ac	Curve number	= 83*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.730 \times 98) + (2.610 \times 79)] / 3.340$



Hydrograph Report

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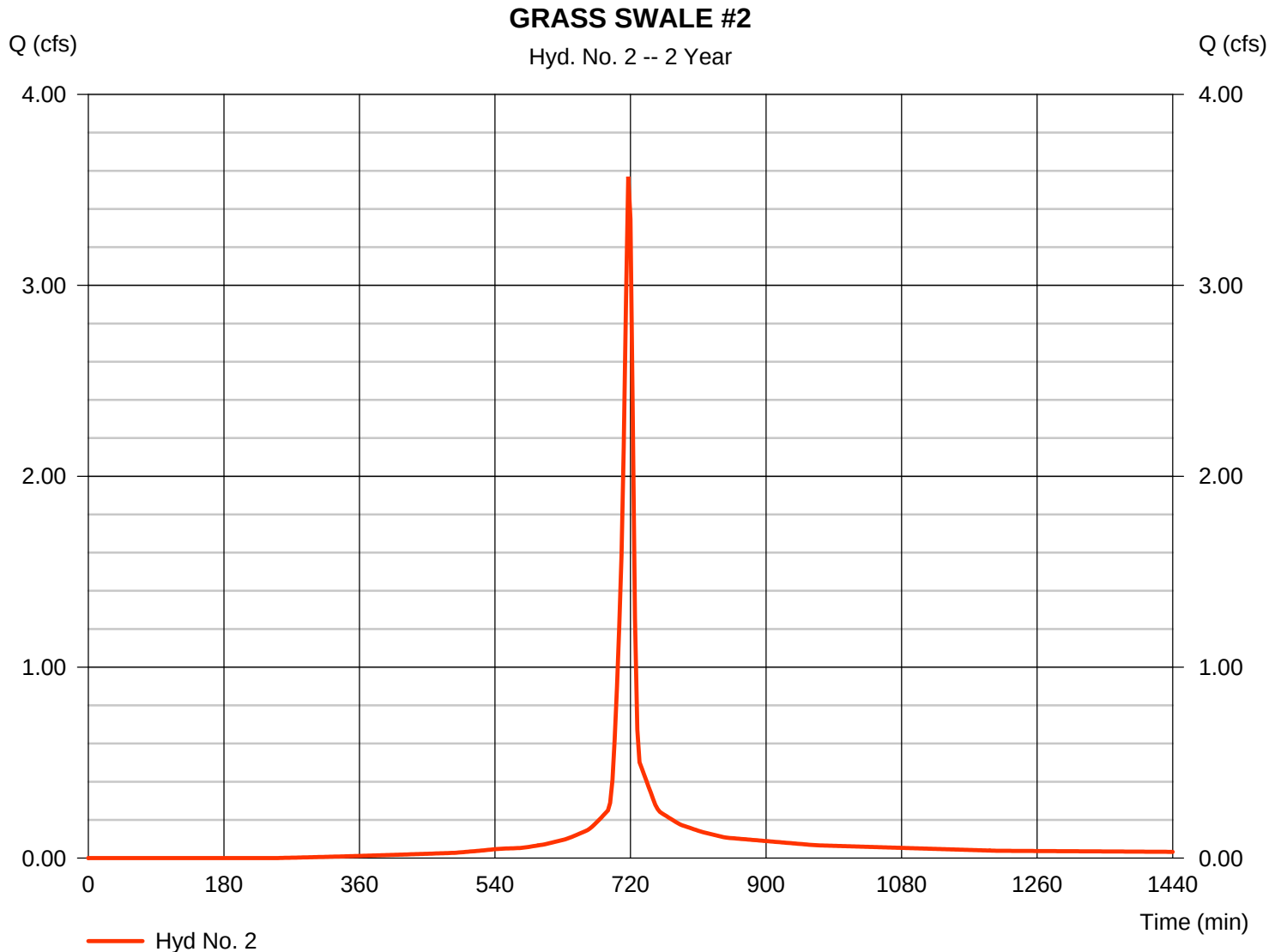
Friday, 07 / 28 / 2017

Hyd. No. 2

GRASS SWALE #2

Hydrograph type	= SCS Runoff	Peak discharge	= 3.569 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 8,397 cuft
Drainage area	= 1.050 ac	Curve number	= 93*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.770 \times 98) + (0.280 \times 79)] / 1.050$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

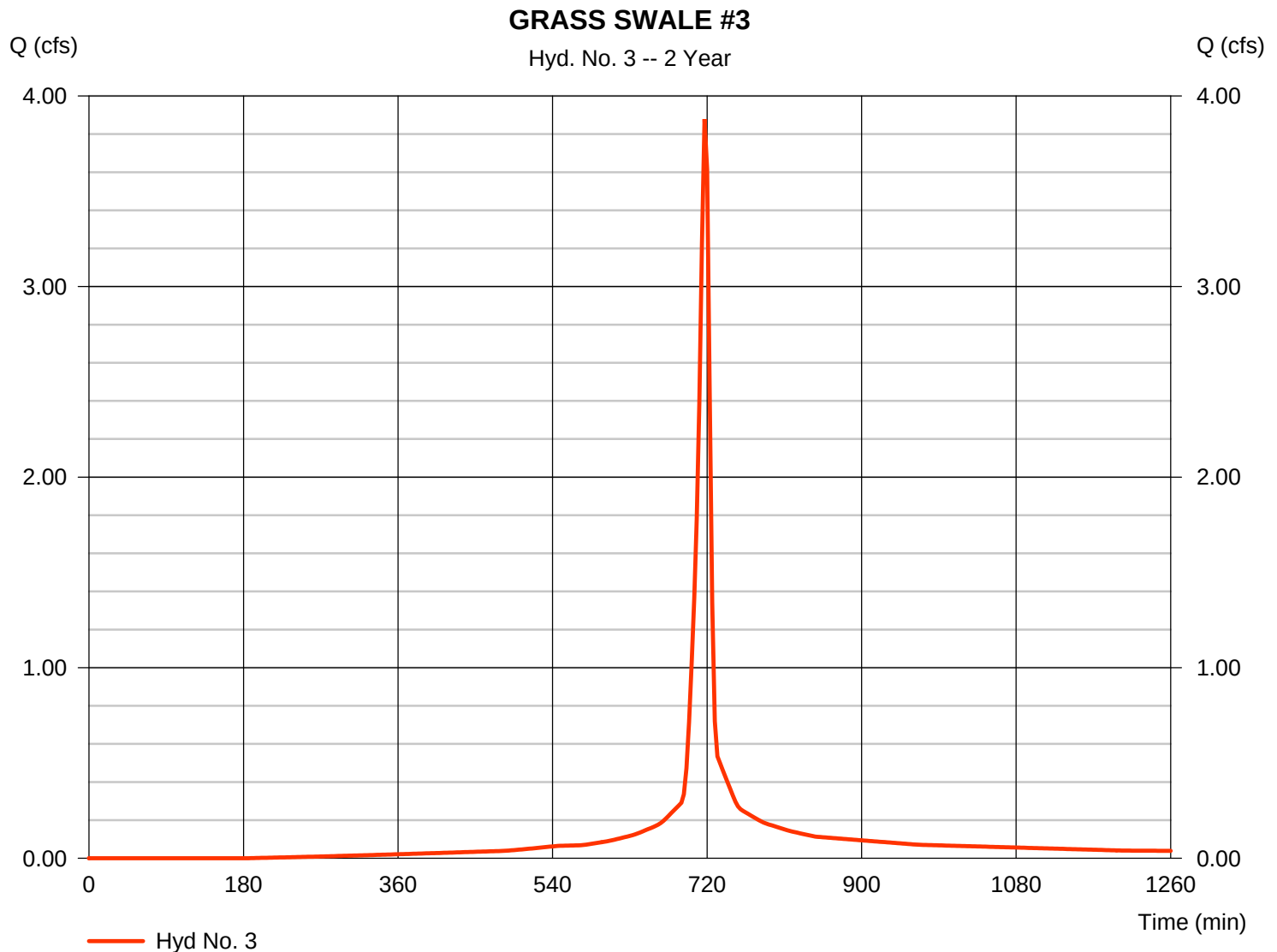
Friday, 07 / 28 / 2017

Hyd. No. 3

GRASS SWALE #3

Hydrograph type	= SCS Runoff	Peak discharge	= 3.879 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 9,362 cuft
Drainage area	= 1.080 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.890 \times 98) + (0.190 \times 79)] / 1.080$



Hydrograph Report

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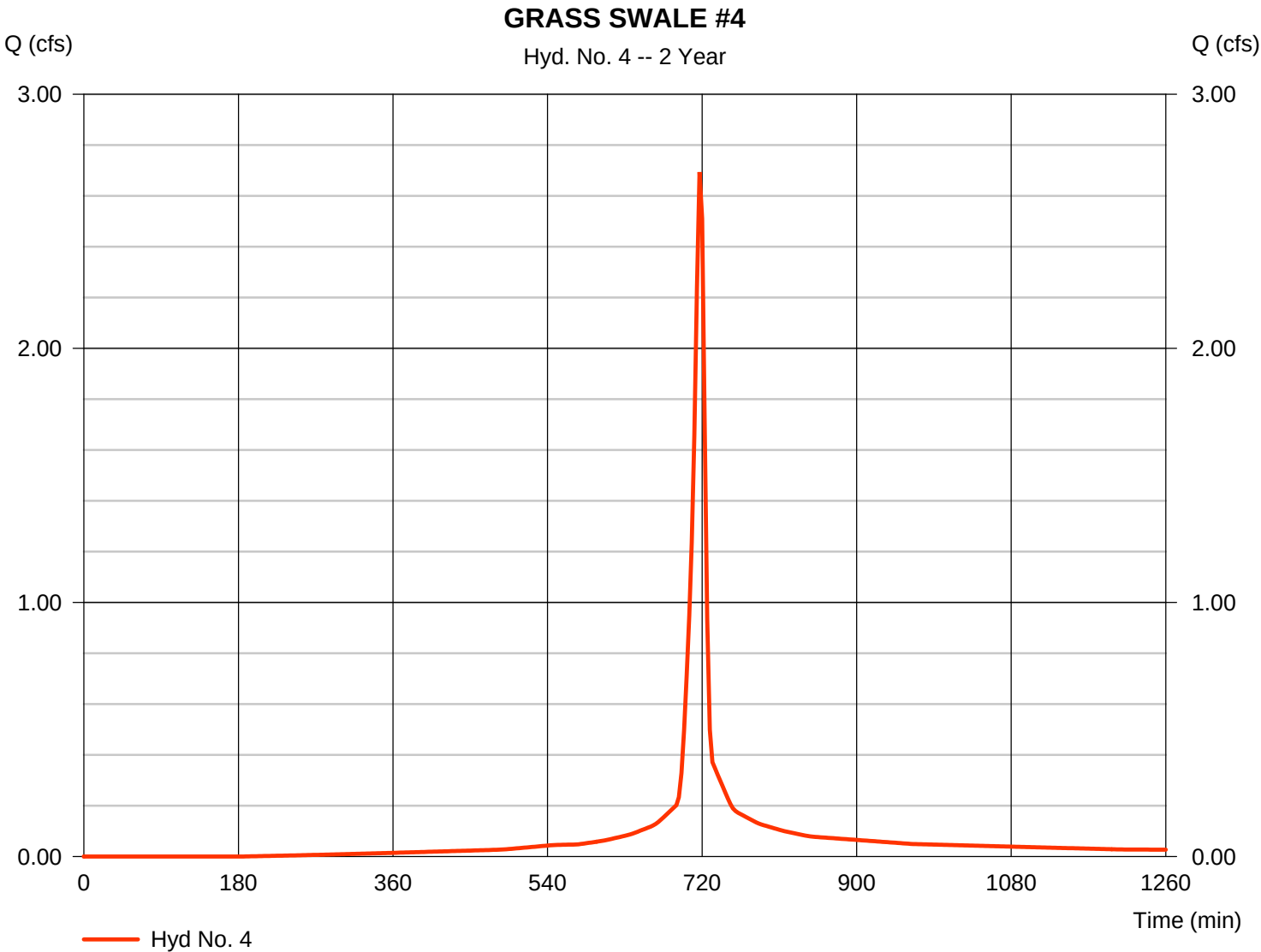
Friday, 07 / 28 / 2017

Hyd. No. 4

GRASS SWALE #4

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.694 cfs
Storm frequency	=	2 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	6,501 cuft
Drainage area	=	0.750 ac	Curve number	=	95*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.10 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.630 x 98) + (0.120 x 79)] / 0.750



Hydrograph Report

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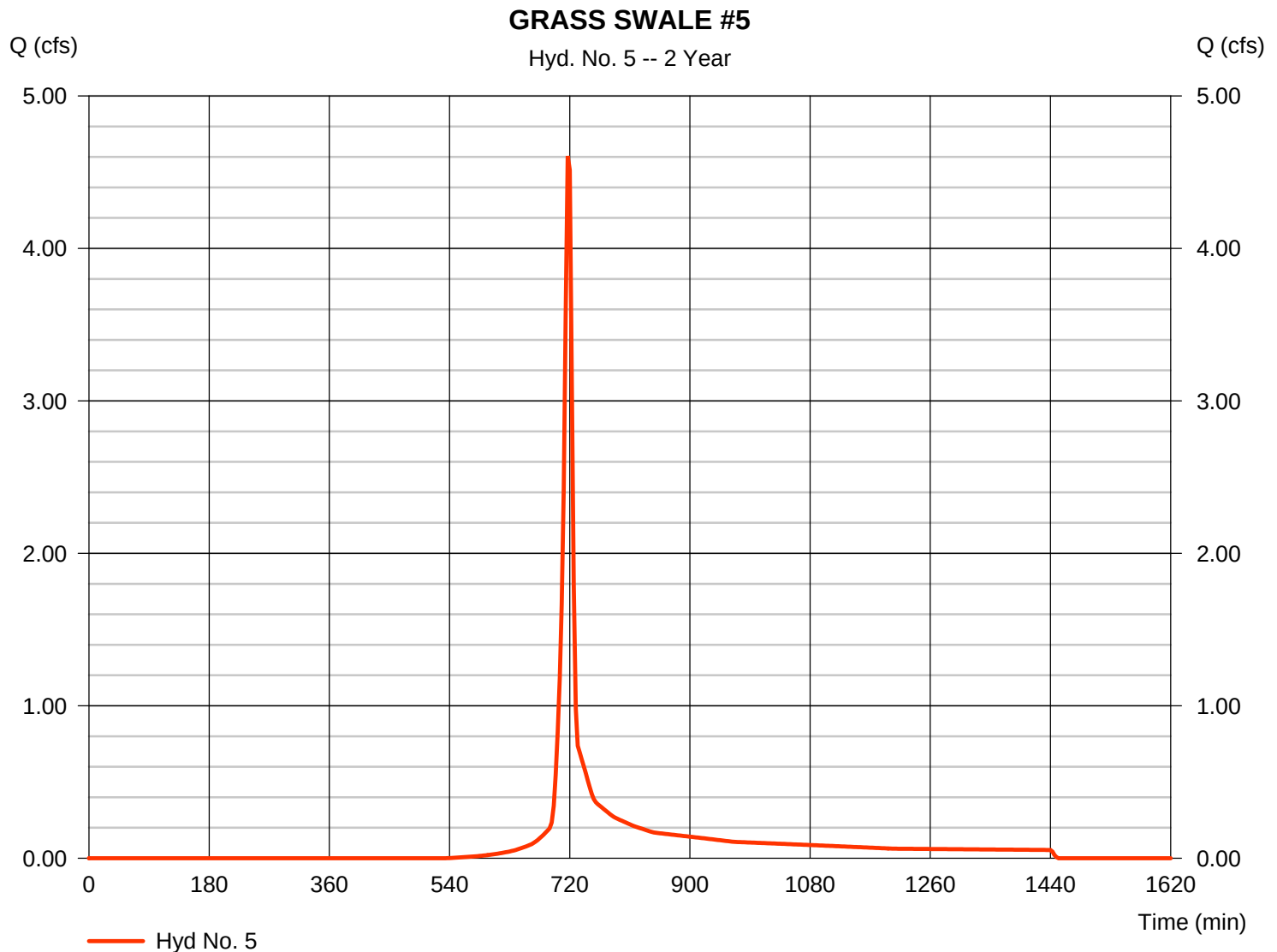
Friday, 07 / 28 / 2017

Hyd. No. 5

GRASS SWALE #5

Hydrograph type	= SCS Runoff	Peak discharge	= 4.607 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 10,421 cuft
Drainage area	= 2.100 ac	Curve number	= 82*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.300 \times 98) + (1.800 \times 79)] / 2.100$



Hydrograph Report

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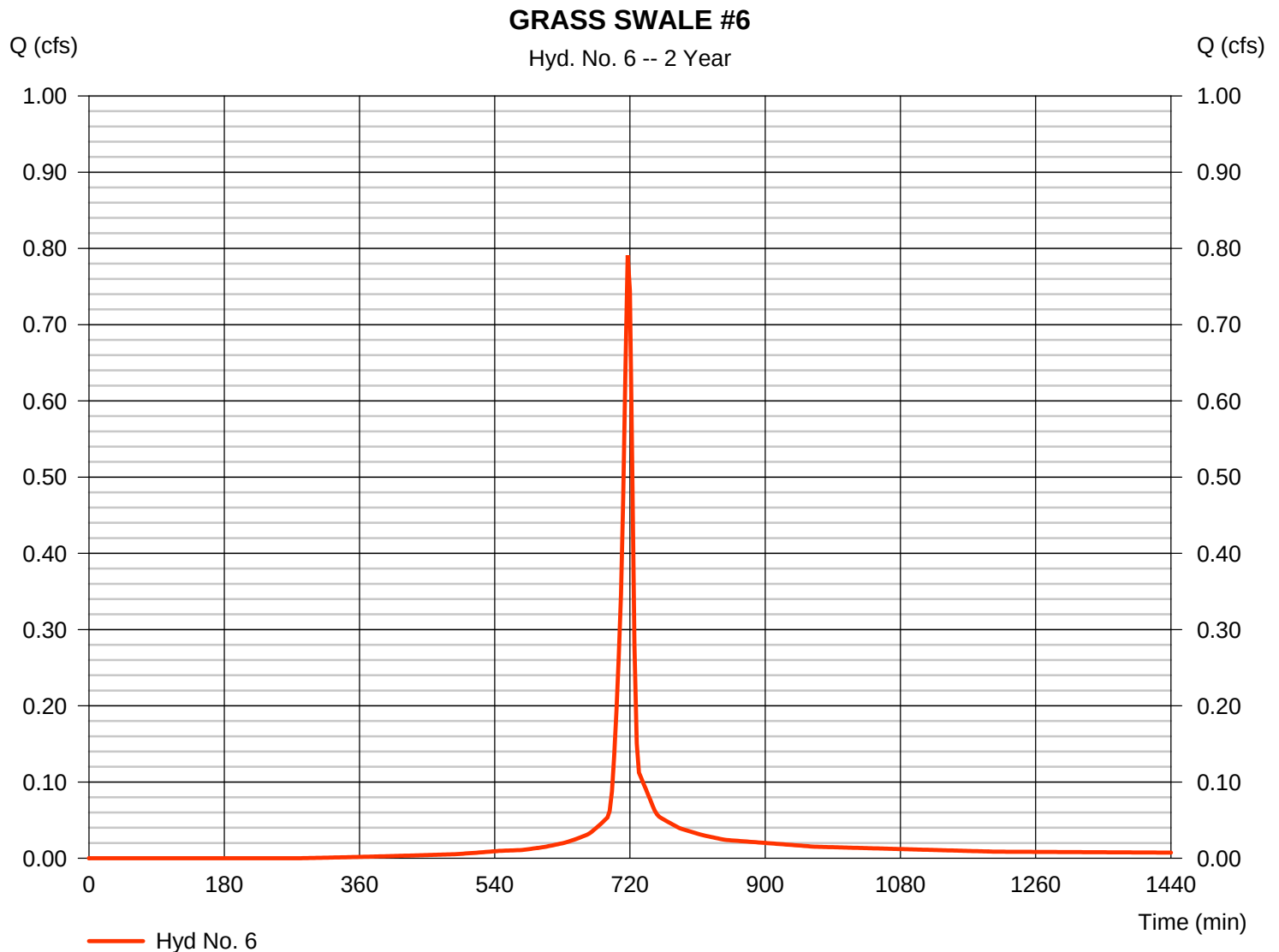
Friday, 07 / 28 / 2017

Hyd. No. 6

GRASS SWALE #6

Hydrograph type	= SCS Runoff	Peak discharge	= 0.791 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 1,842 cuft
Drainage area	= 0.240 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.160 \times 98) + (0.080 \times 79)] / 0.240$



Hydrograph Report

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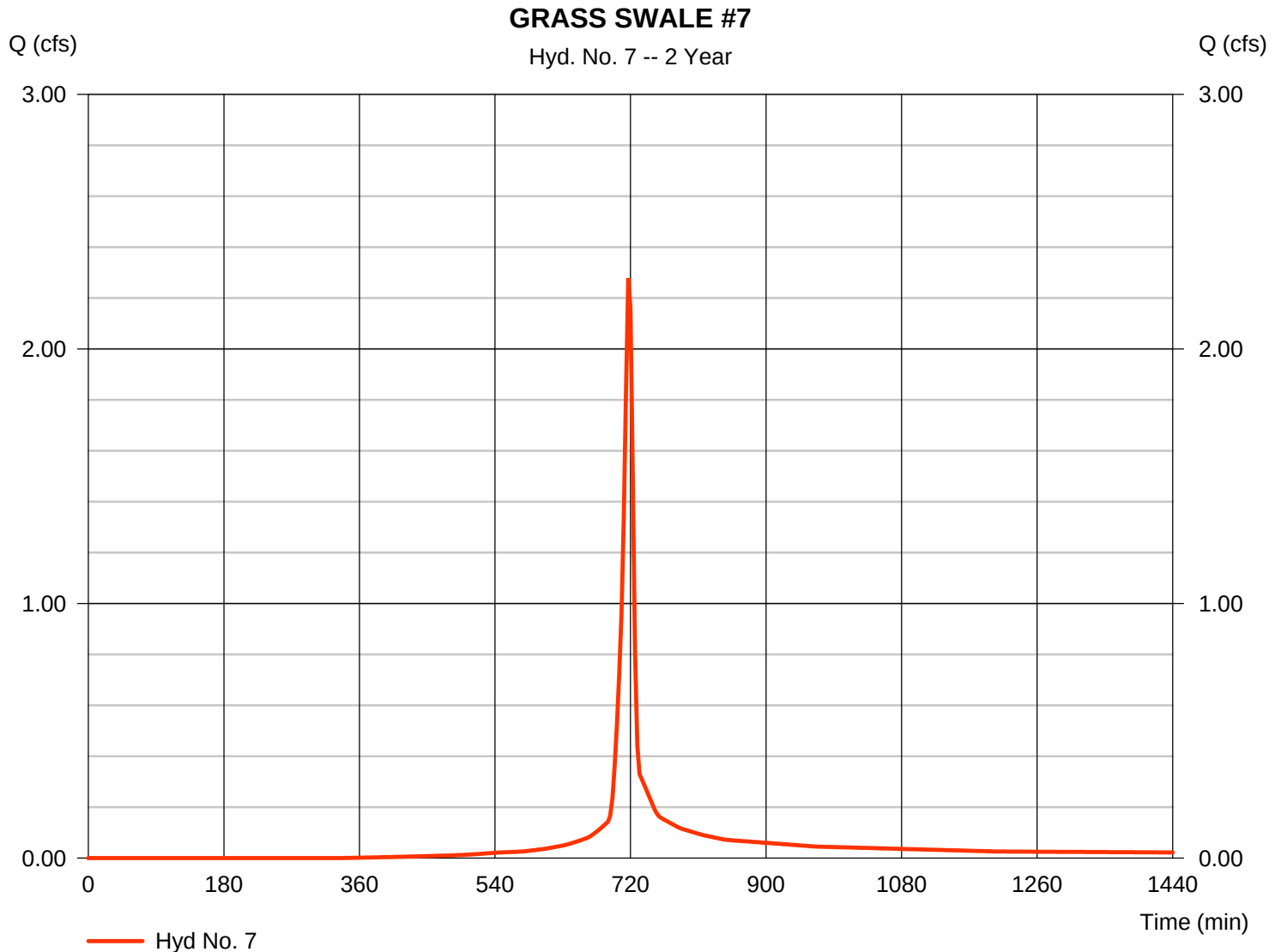
Friday, 07 / 28 / 2017

Hyd. No. 7

GRASS SWALE #7

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.278 cfs
Storm frequency	=	2 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	5,228 cuft
Drainage area	=	0.740 ac	Curve number	=	90*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.10 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = $[(0.420 \times 98) + (0.320 \times 79)] / 0.740$



Hydrograph Report

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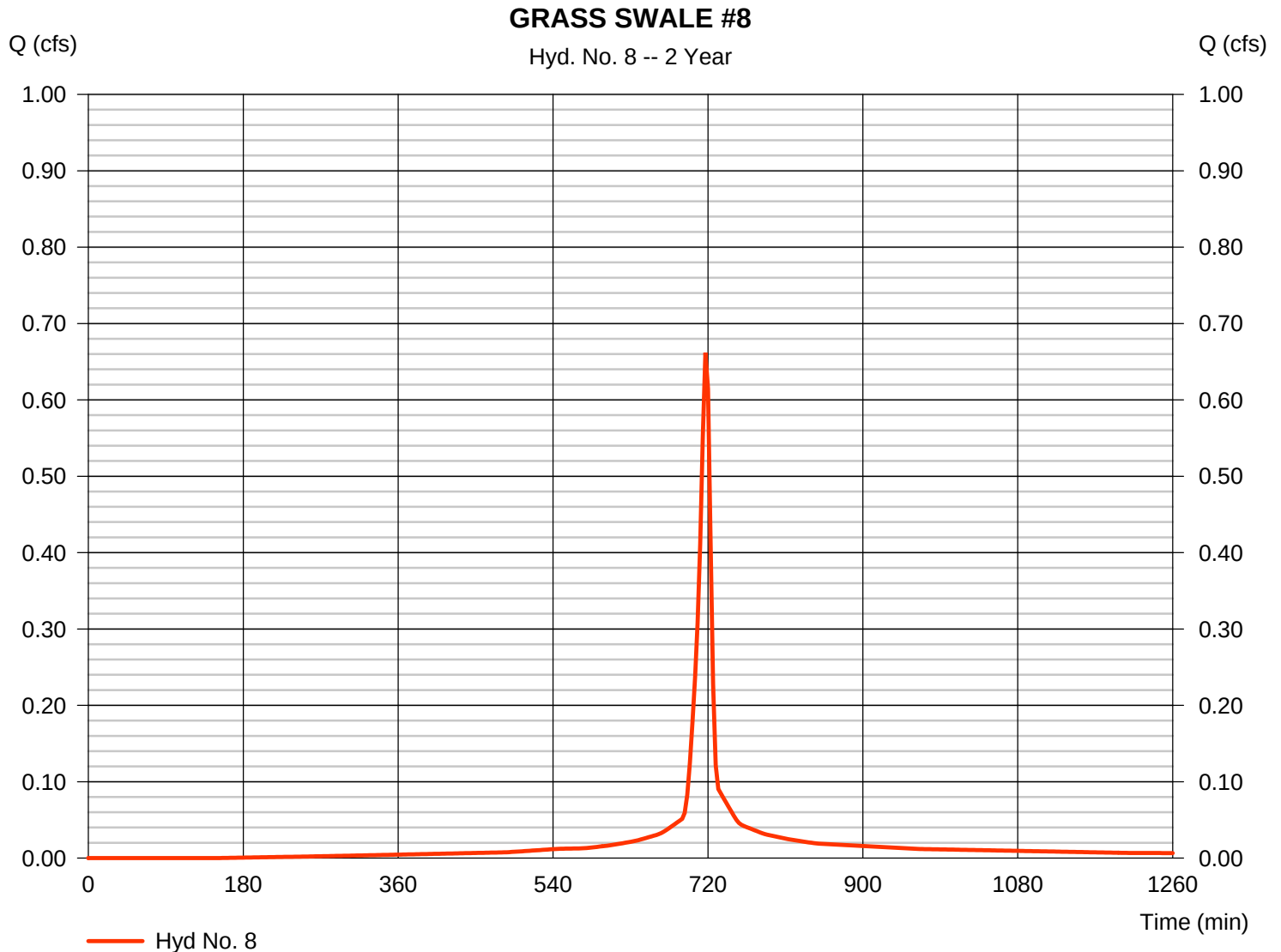
Friday, 07 / 28 / 2017

Hyd. No. 8

GRASS SWALE #8

Hydrograph type	= SCS Runoff	Peak discharge	= 0.662 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 1,624 cuft
Drainage area	= 0.180 ac	Curve number	= 96*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.160 \times 98) + (0.020 \times 79)] / 0.180$



Hydrograph Report

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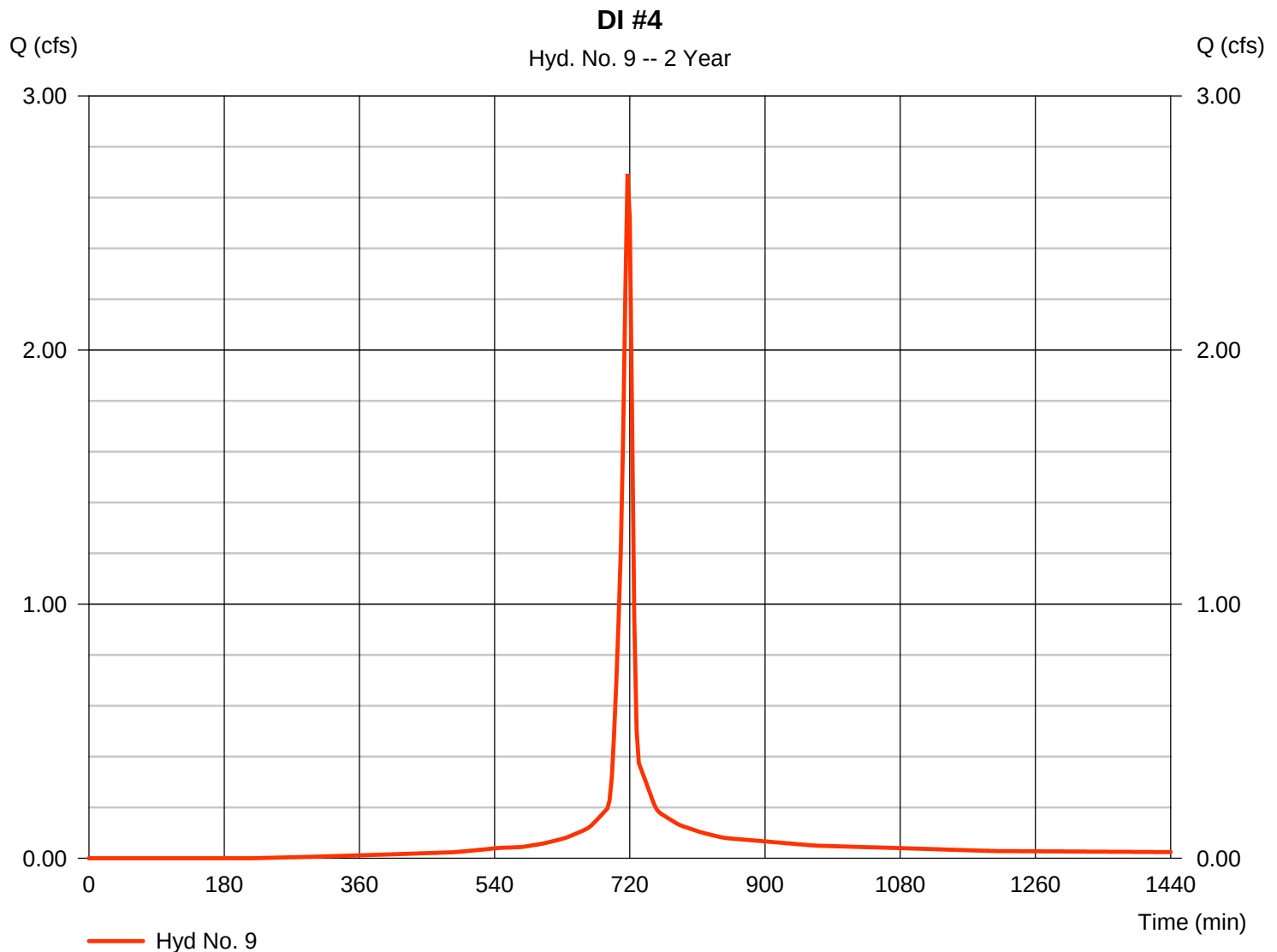
Friday, 07 / 28 / 2017

Hyd. No. 9

DI #4

Hydrograph type	= SCS Runoff	Peak discharge	= 2.694 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 6,412 cuft
Drainage area	= 0.770 ac	Curve number	= 94*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.610 \times 98) + (0.160 \times 79)] / 0.770$



Hydrograph Report

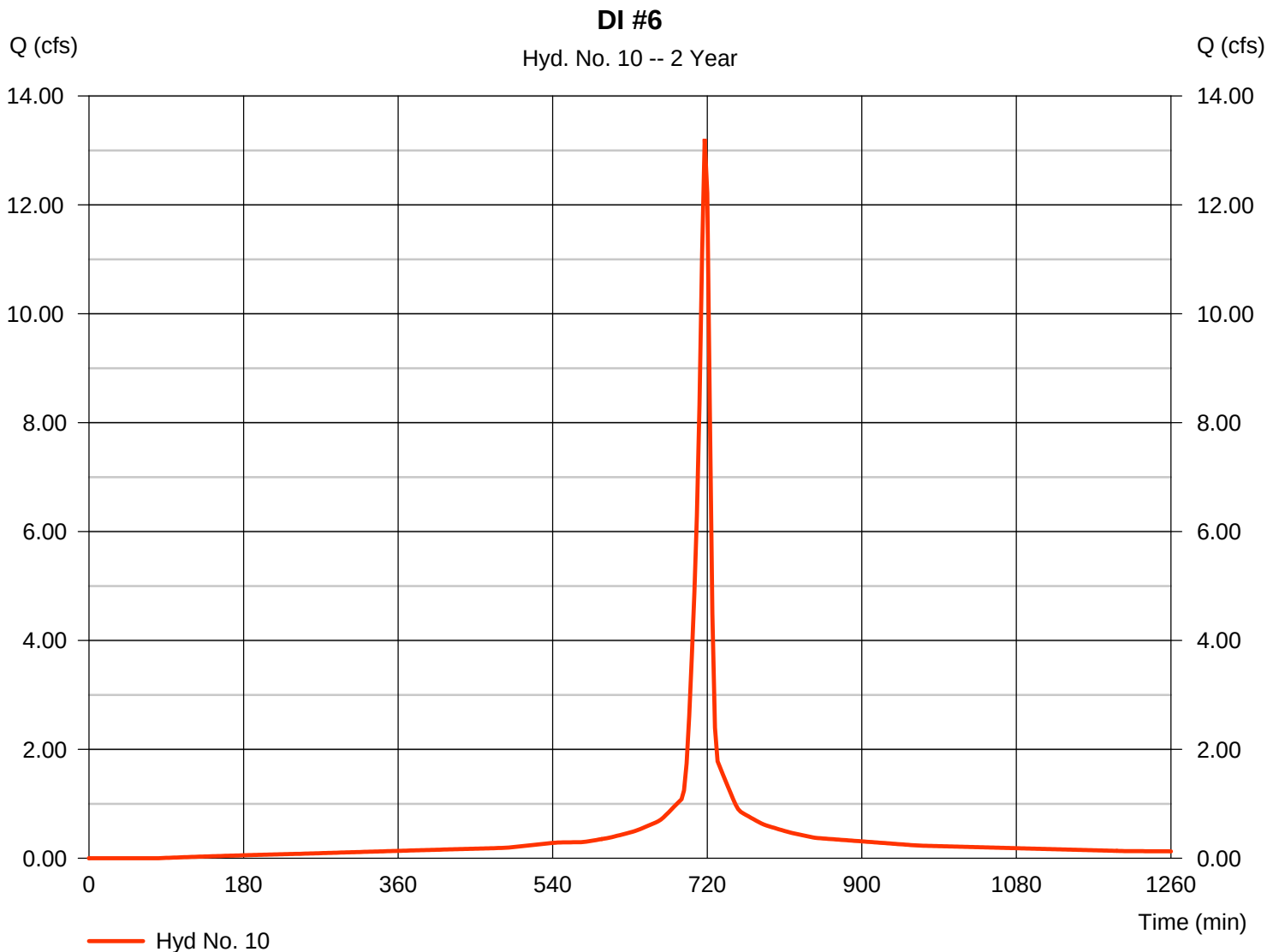
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Hyd. No. 10

DI #6

Hydrograph type	= SCS Runoff	Peak discharge	= 13.21 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 33,866 cuft
Drainage area	= 3.470 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

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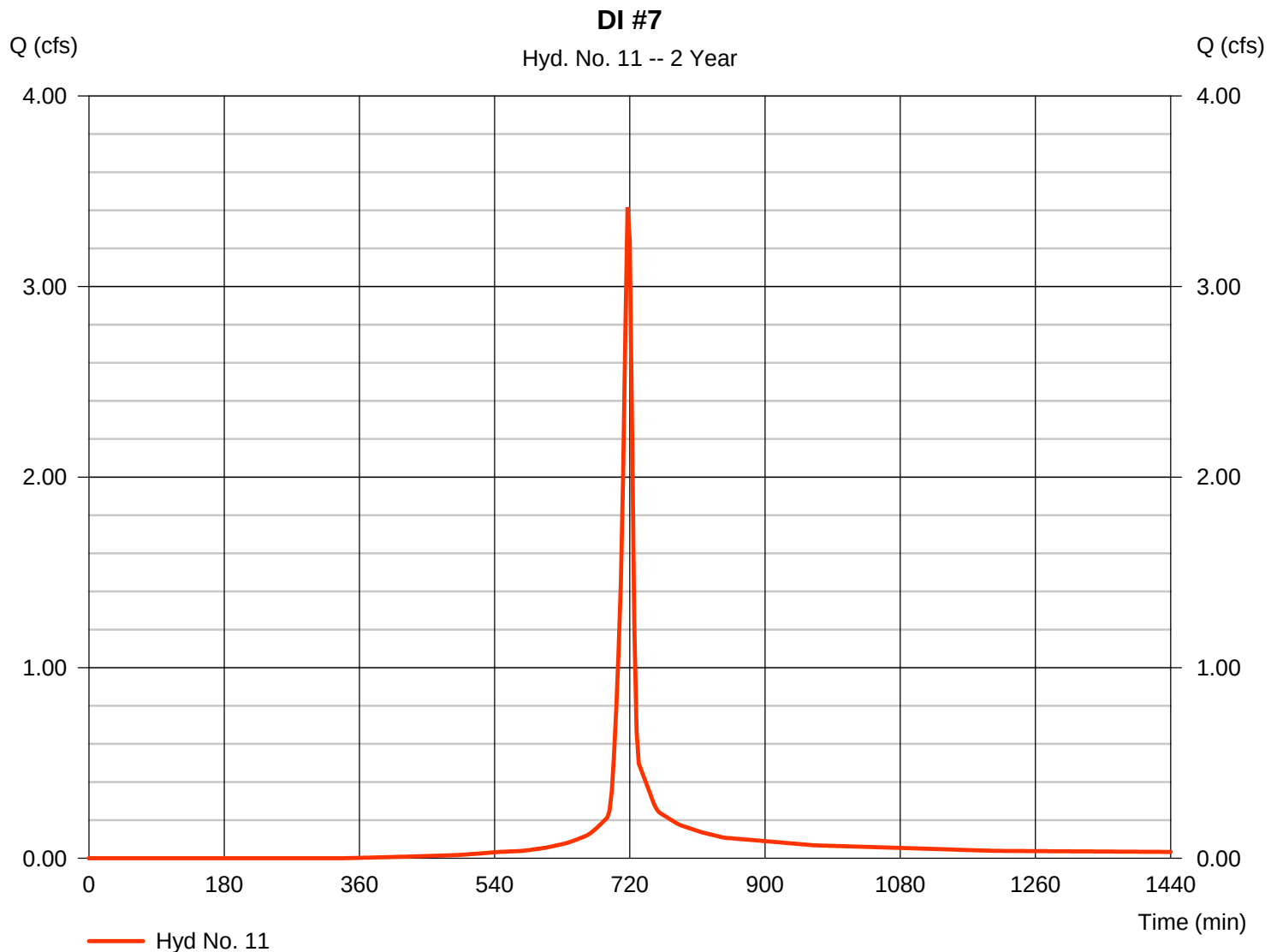
Friday, 07 / 28 / 2017

Hyd. No. 11

DI #7

Hydrograph type	= SCS Runoff	Peak discharge	= 3.416 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 7,843 cuft
Drainage area	= 1.110 ac	Curve number	= 90*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.660 \times 98) + (0.450 \times 79)] / 1.110$



Hydrograph Report

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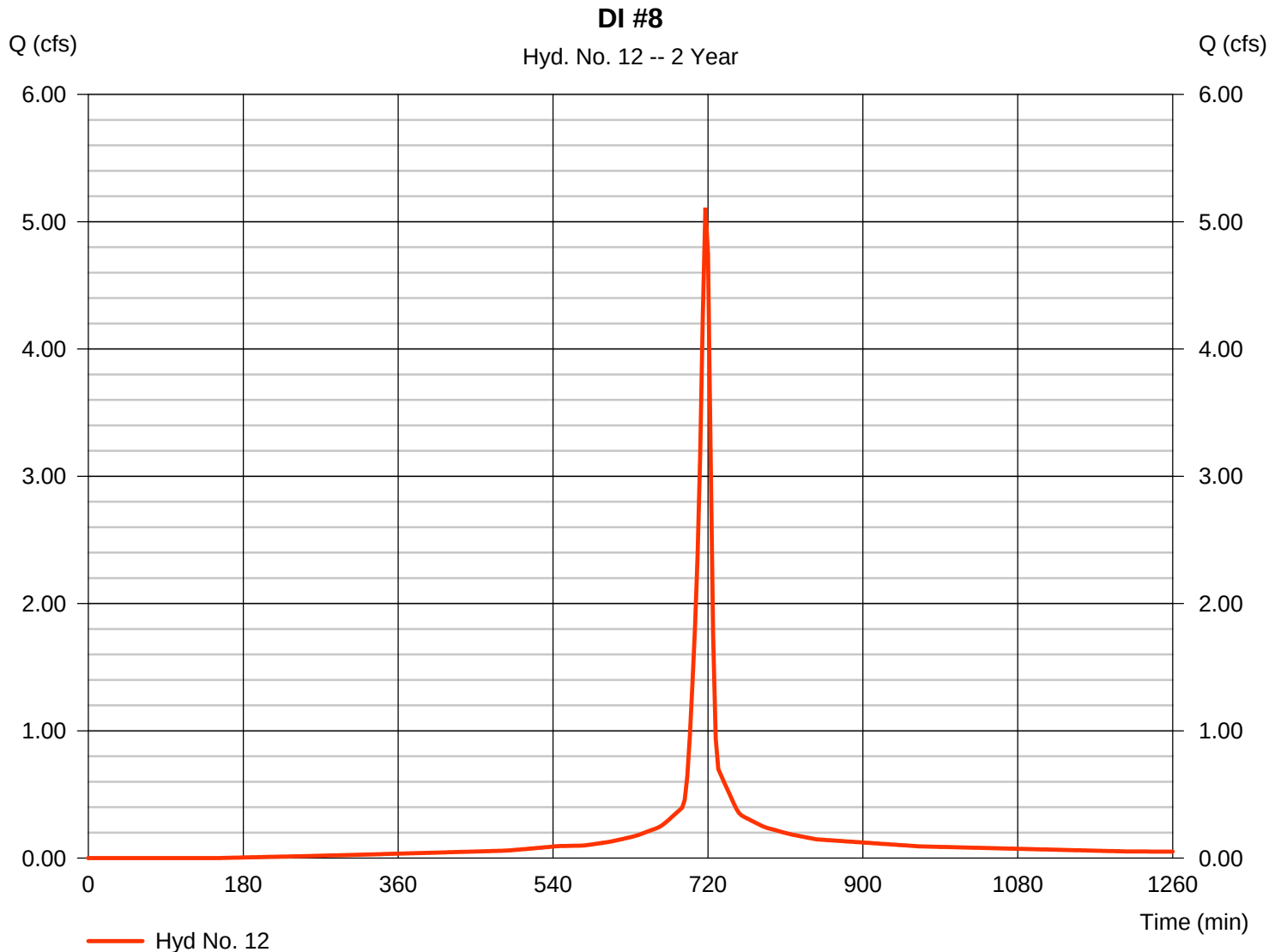
Friday, 07 / 28 / 2017

Hyd. No. 12

DI #8

Hydrograph type	= SCS Runoff	Peak discharge	= 5.109 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 12,538 cuft
Drainage area	= 1.390 ac	Curve number	= 96*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.230 \times 98) + (0.160 \times 79)] / 1.390$



Hydrograph Report

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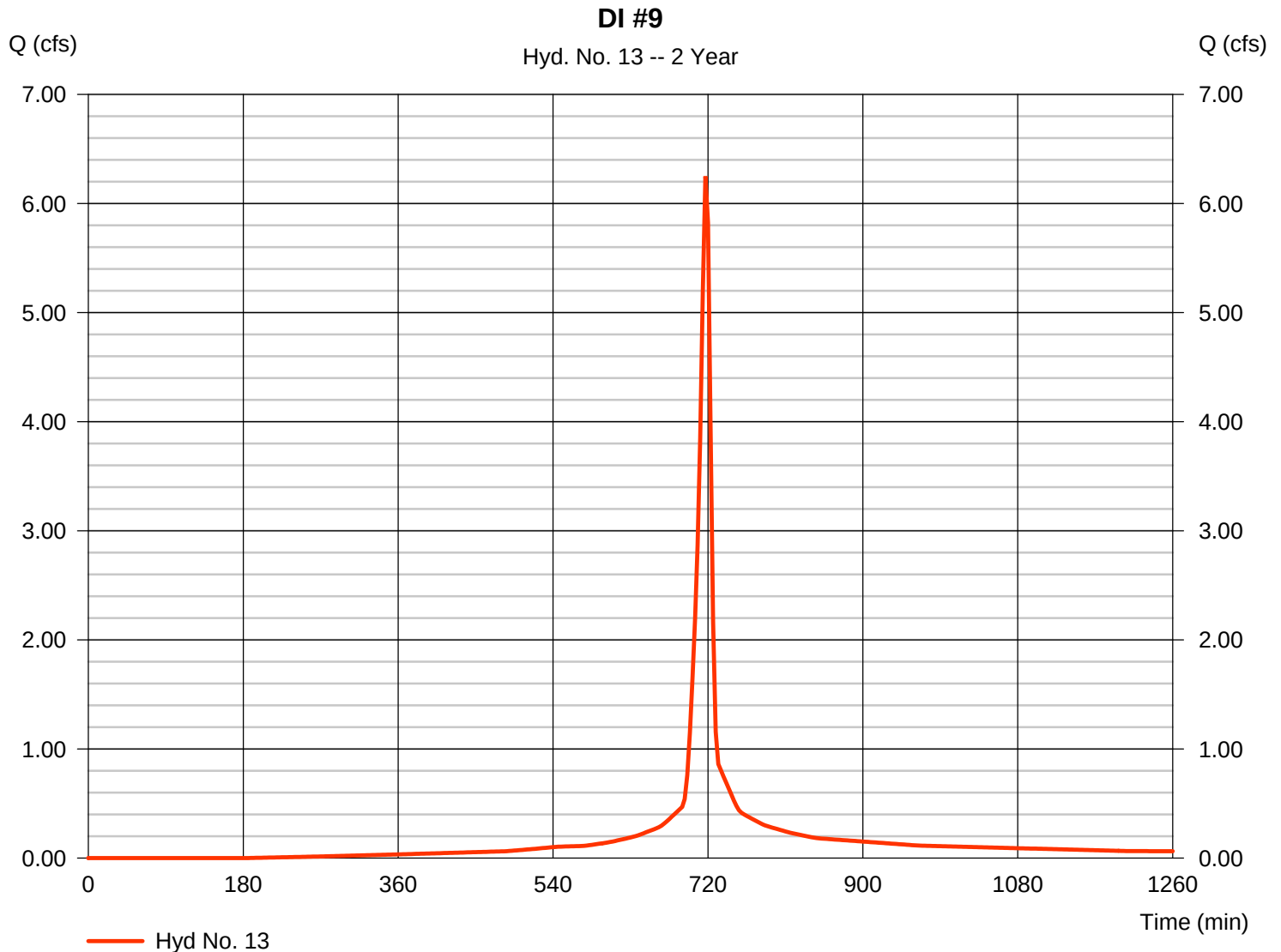
Friday, 07 / 28 / 2017

Hyd. No. 13

DI #9

Hydrograph type	= SCS Runoff	Peak discharge	= 6.249 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 15,082 cuft
Drainage area	= 1.740 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.490 \times 98) + (0.250 \times 79)] / 1.740$



Hydrograph Report

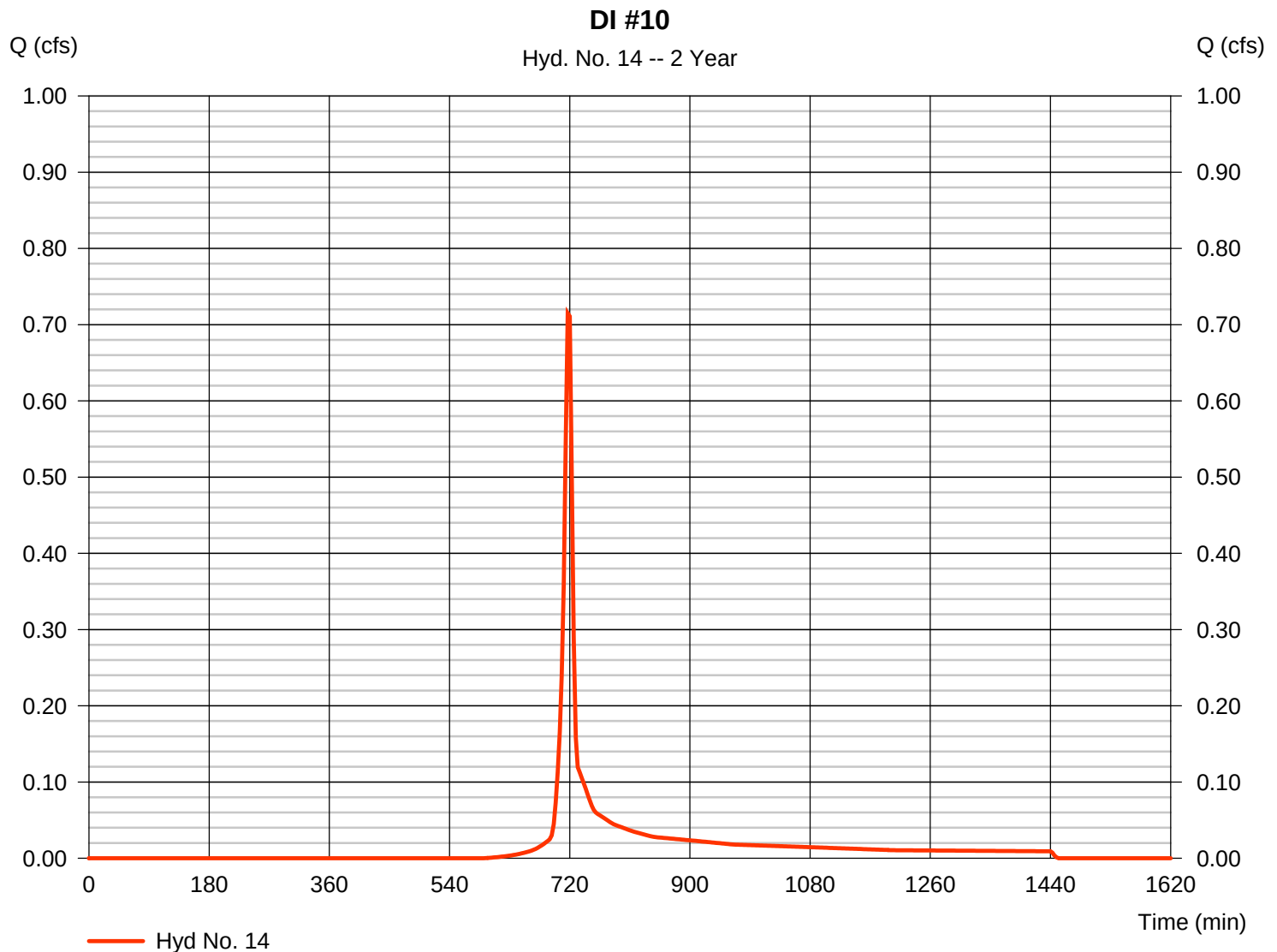
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Hyd. No. 14

DI #10

Hydrograph type	= SCS Runoff	Peak discharge	= 0.715 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 1,632 cuft
Drainage area	= 0.380 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

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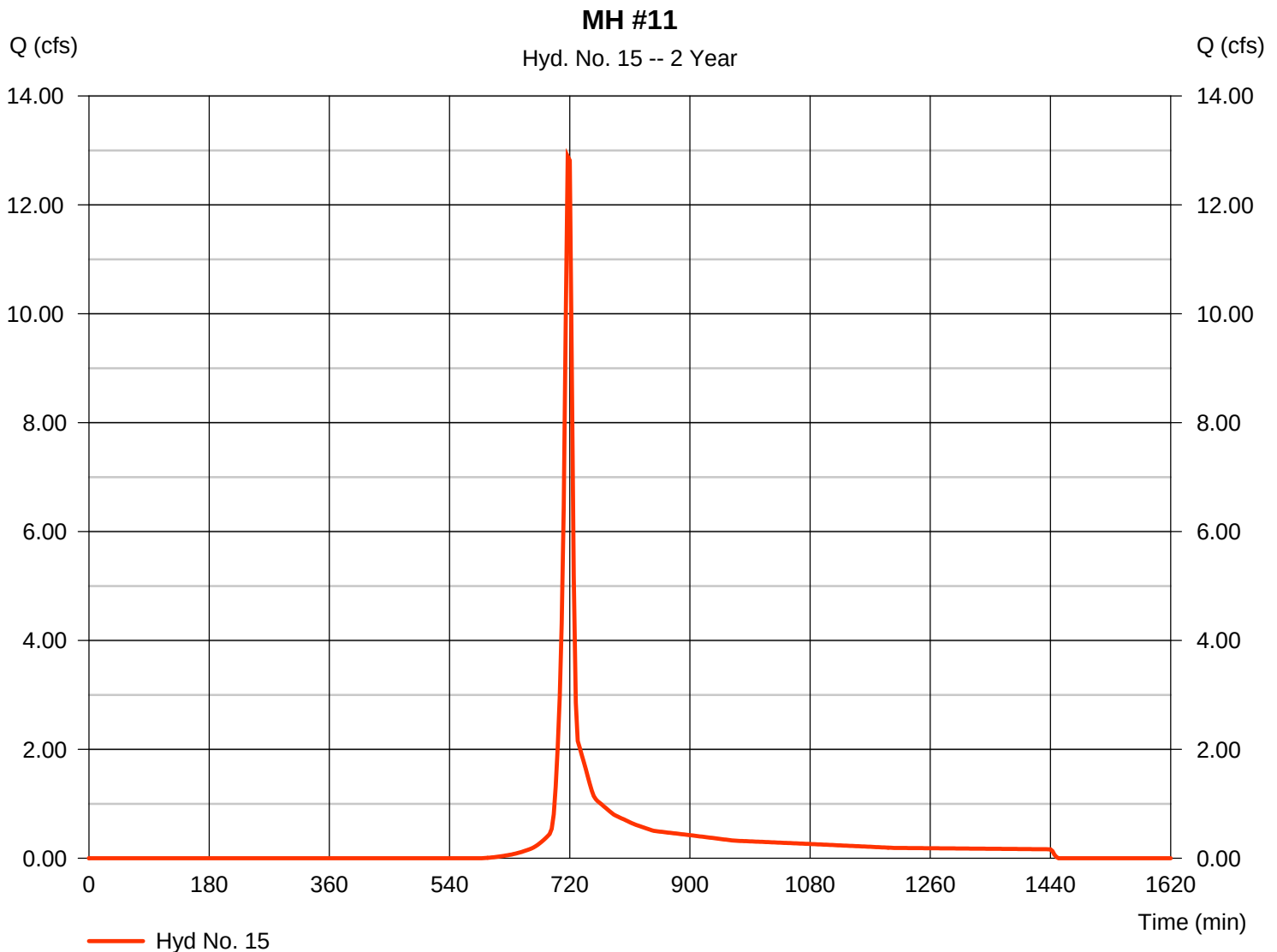
Friday, 07 / 28 / 2017

Hyd. No. 15

MH #11

Hydrograph type = SCS Runoff
 Storm frequency = 2 yrs
 Time interval = 3 min
 Drainage area = 6.850 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 3.10 in
 Storm duration = 24 hrs

Peak discharge = 12.89 cfs
 Time to peak = 717 min
 Hyd. volume = 29,421 cuft
 Curve number = 79
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484



Hydrograph Report

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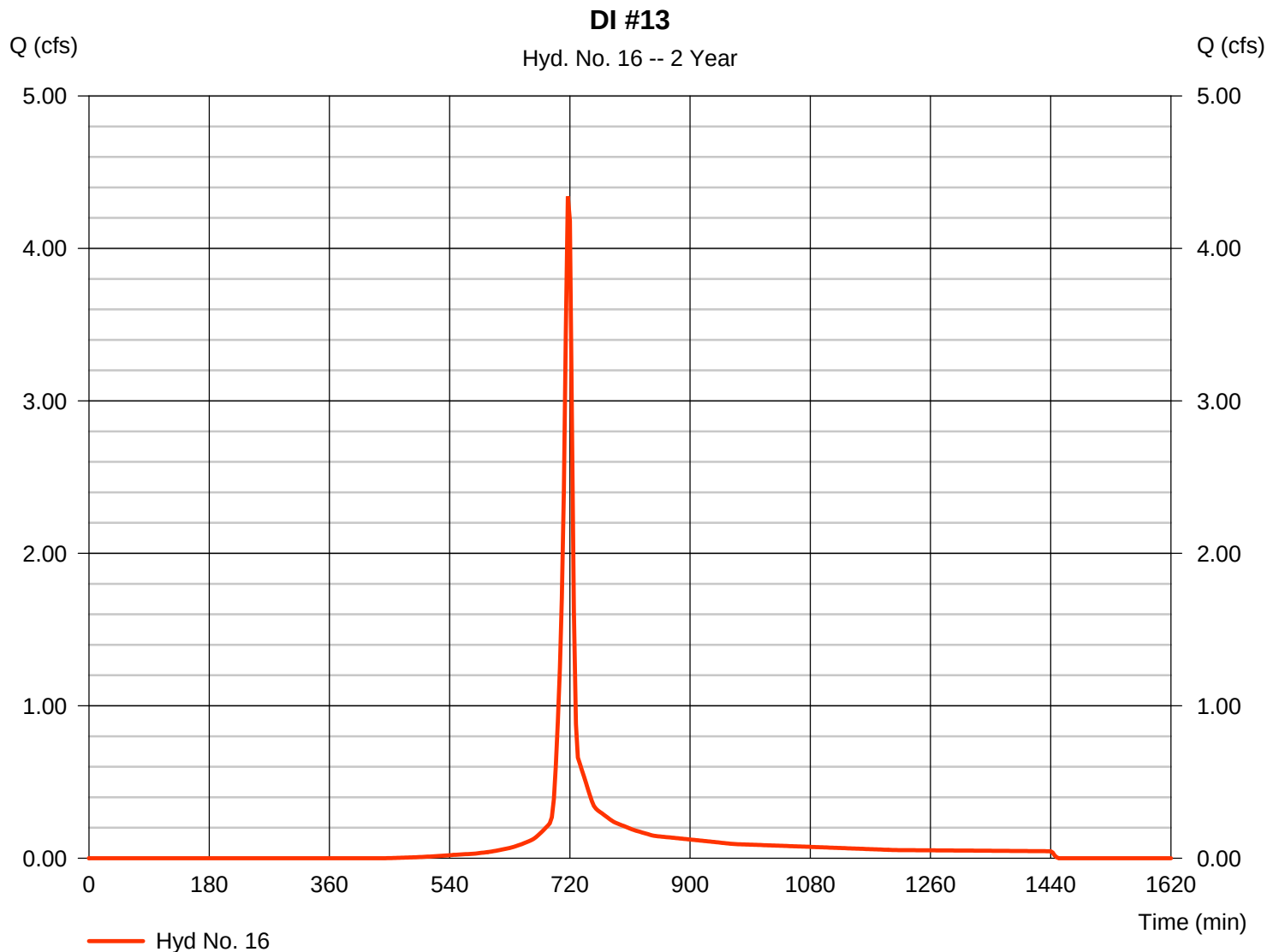
Friday, 07 / 28 / 2017

Hyd. No. 16

DI #13

Hydrograph type	= SCS Runoff	Peak discharge	= 4.341 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 9,818 cuft
Drainage area	= 1.650 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.580 \times 98) + (1.070 \times 79)] / 1.650$



Hydrograph Report

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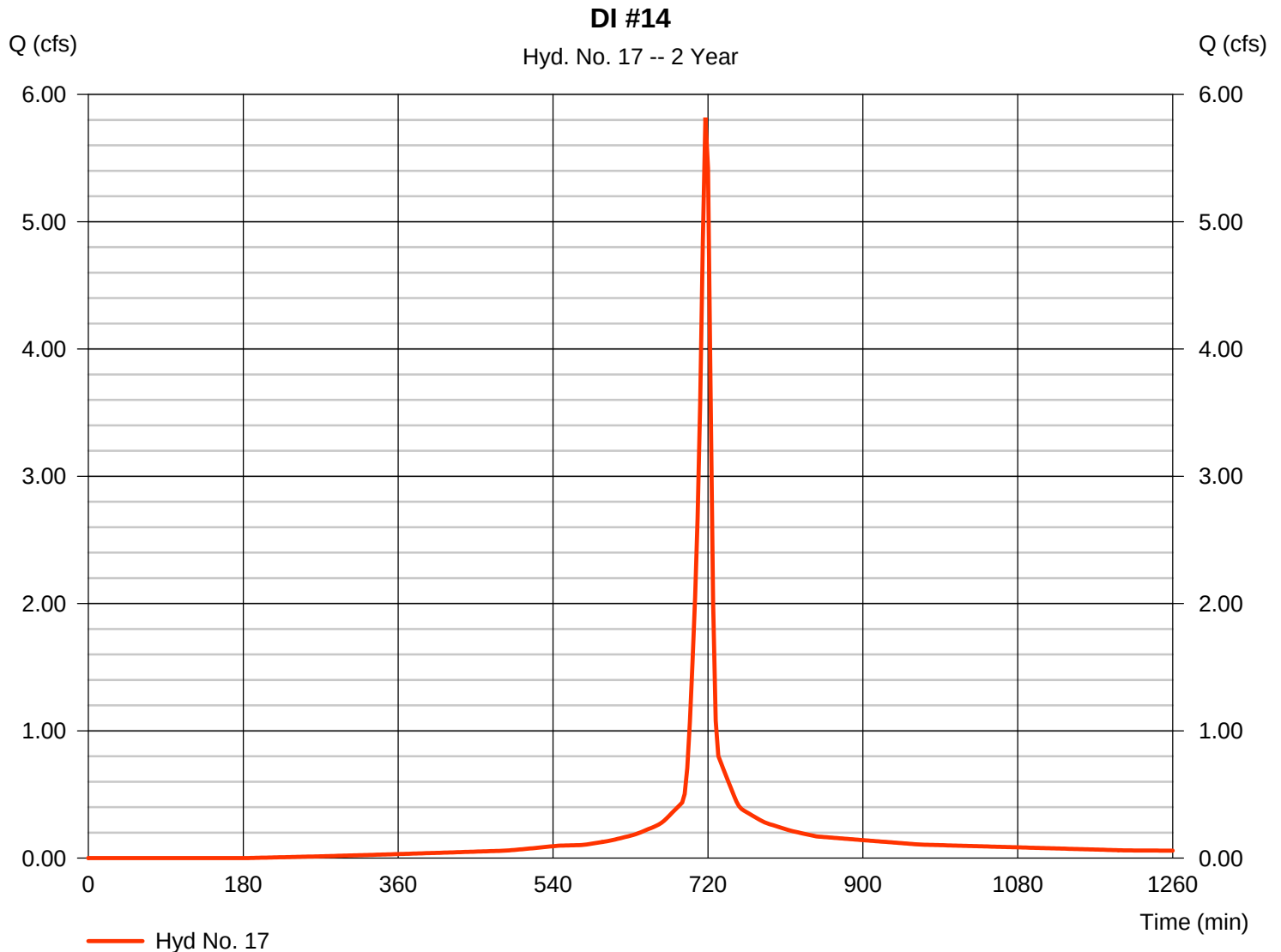
Friday, 07 / 28 / 2017

Hyd. No. 17

DI #14

Hydrograph type	= SCS Runoff	Peak discharge	= 5.818 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 14,042 cuft
Drainage area	= 1.620 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.400 \times 98) + (0.220 \times 79)] / 1.620$



Hydrograph Report

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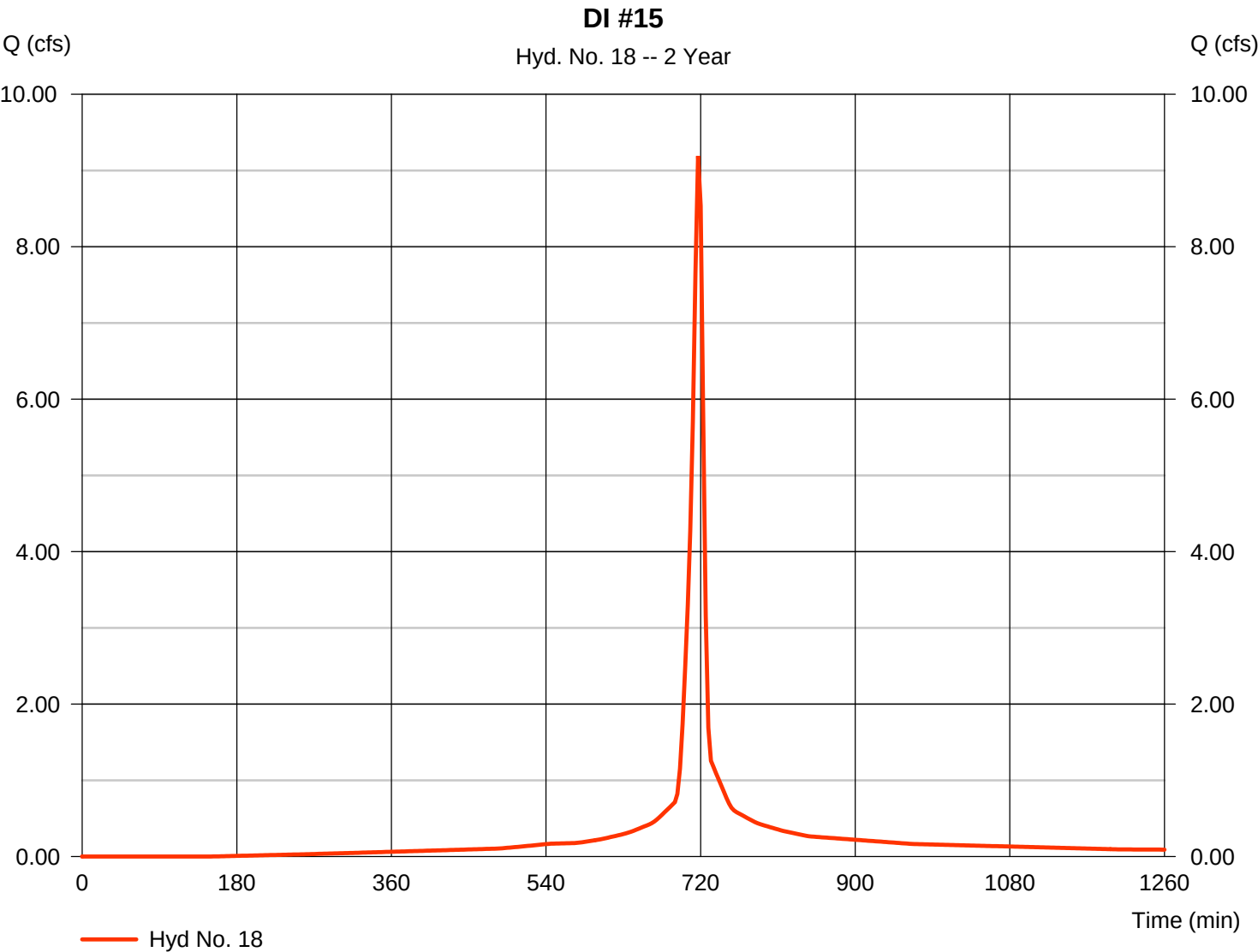
Friday, 07 / 28 / 2017

Hyd. No. 18

DI #15

Hydrograph type	=	SCS Runoff	Peak discharge	=	9.189 cfs
Storm frequency	=	2 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	22,551 cuft
Drainage area	=	2.500 ac	Curve number	=	96*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.10 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(2.280 x 98) + (0.220 x 79)] / 2.500



Hydrograph Report

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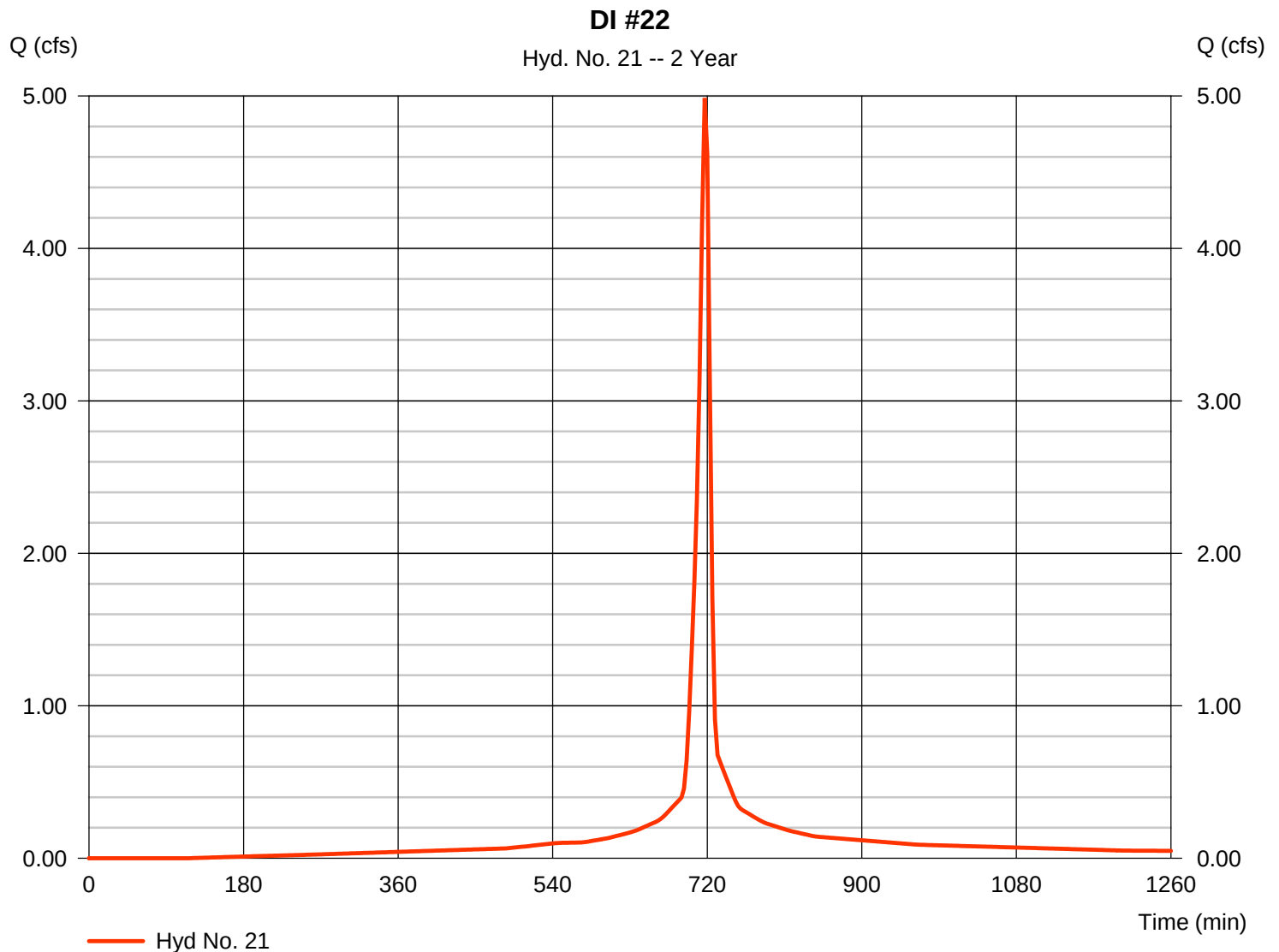
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Hyd. No. 21

DI #22

Hydrograph type	= SCS Runoff	Peak discharge	= 4.985 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 12,481 cuft
Drainage area	= 1.330 ac	Curve number	= 97*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.280 \times 98) + (0.050 \times 79)] / 1.330$



Hydrograph Report

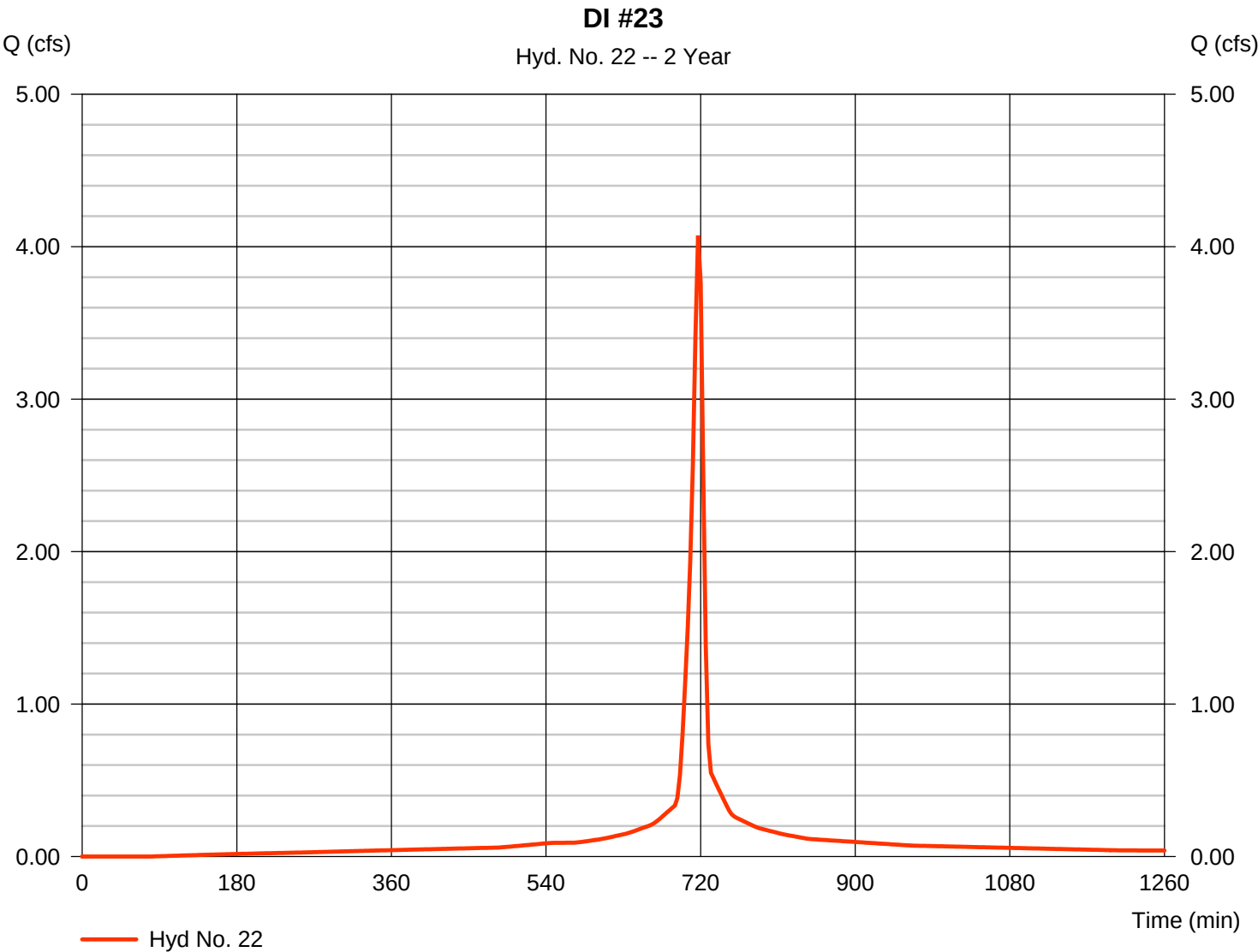
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Hyd. No. 22

DI #23

Hydrograph type	= SCS Runoff	Peak discharge	= 4.073 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 10,443 cuft
Drainage area	= 1.070 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

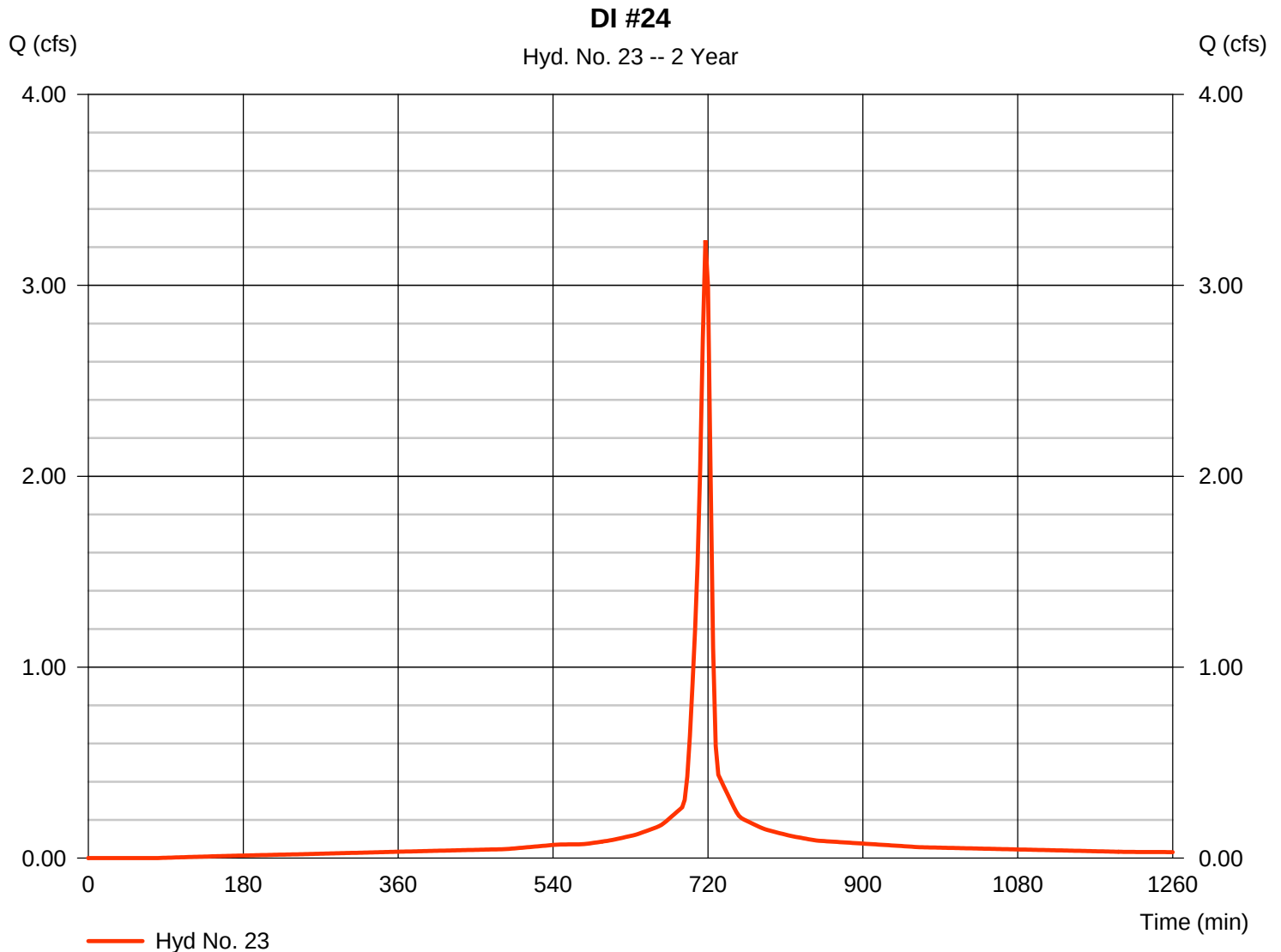
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Hyd. No. 23

DI #24

Hydrograph type	= SCS Runoff	Peak discharge	= 3.236 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 8,296 cuft
Drainage area	= 0.850 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

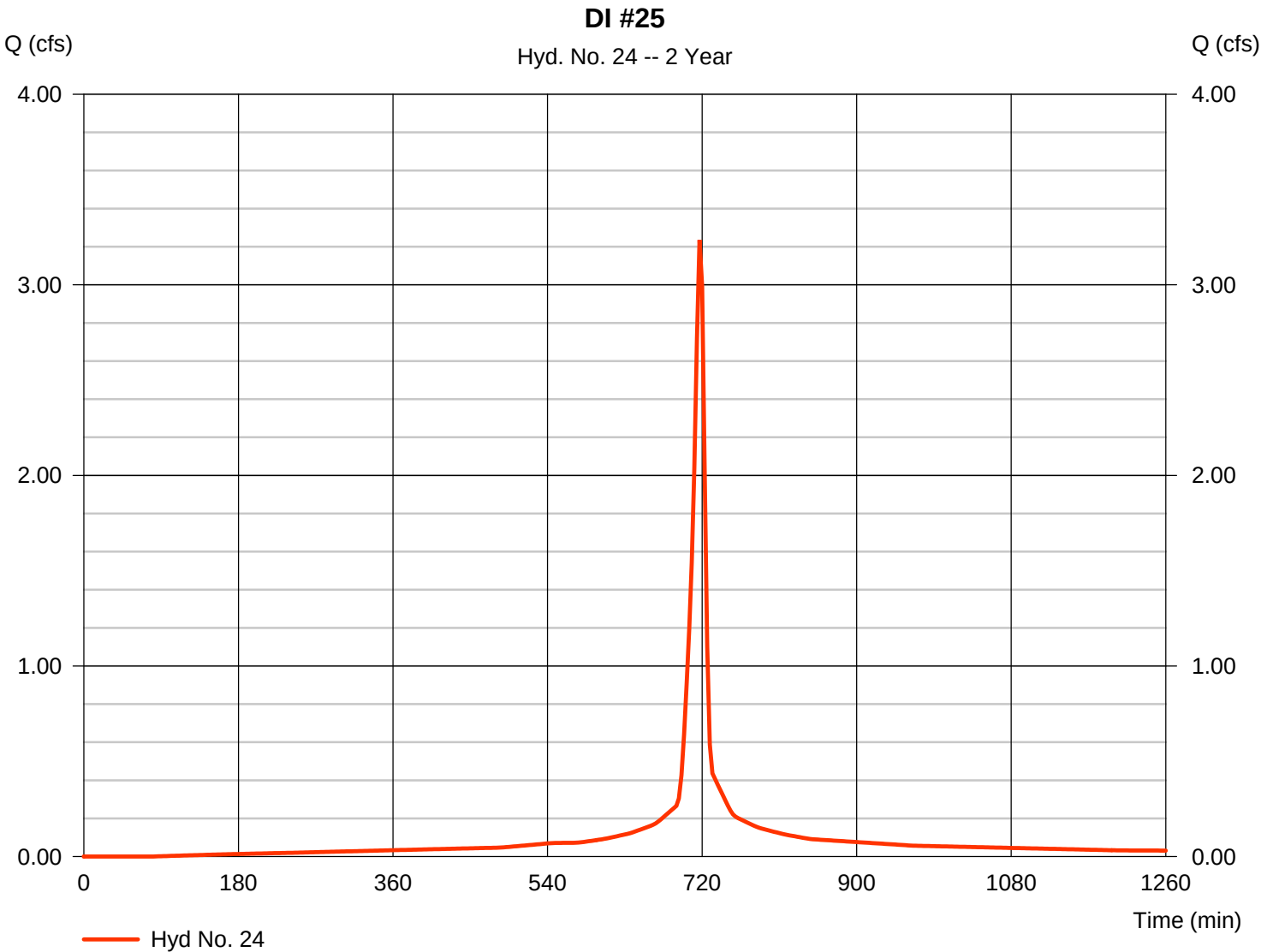
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Hyd. No. 24

DI #25

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.236 cfs
Storm frequency	=	2 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	8,296 cuft
Drainage area	=	0.850 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.10 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

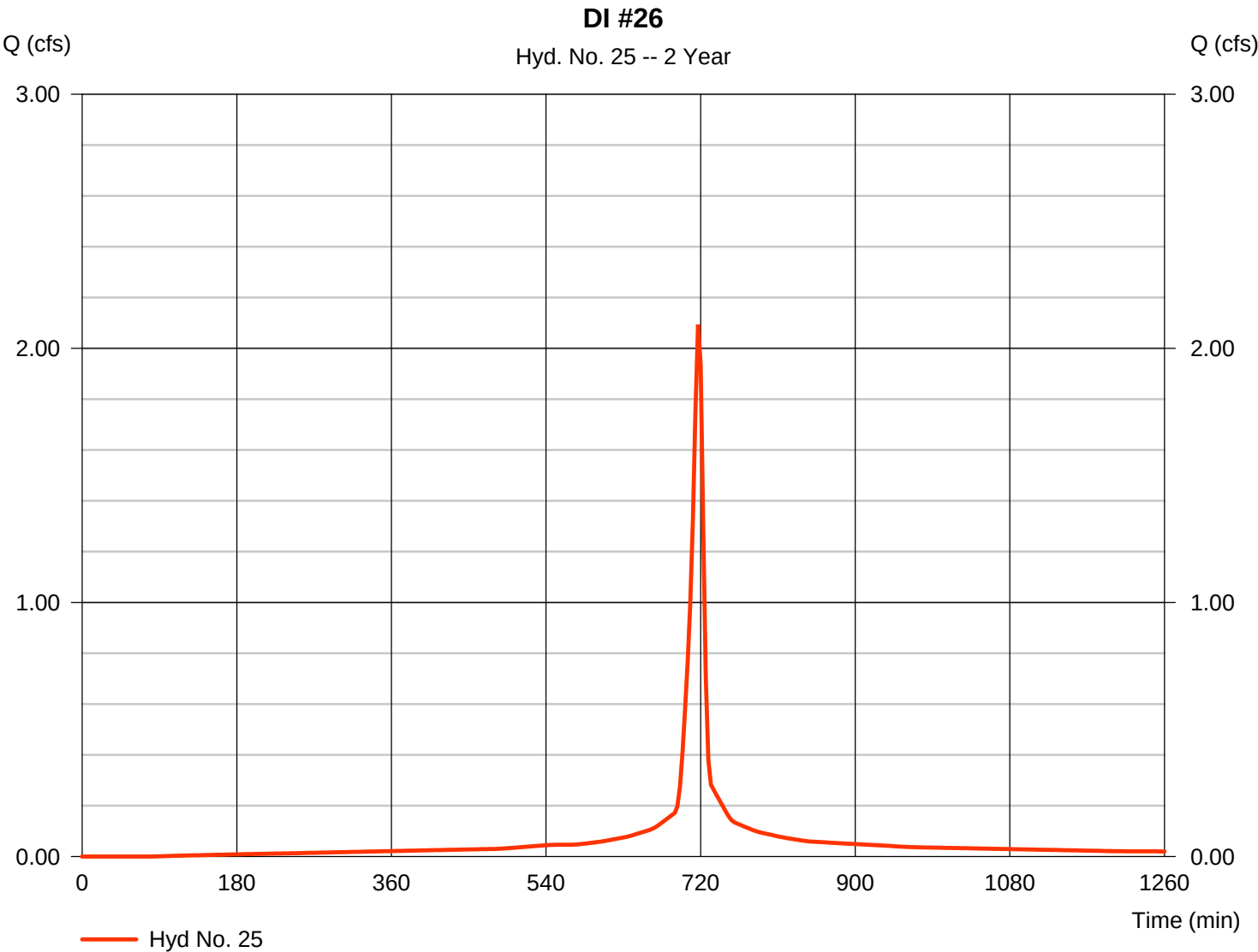
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Hyd. No. 25

DI #26

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.094 cfs
Storm frequency	=	2 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	5,368 cuft
Drainage area	=	0.550 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.10 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

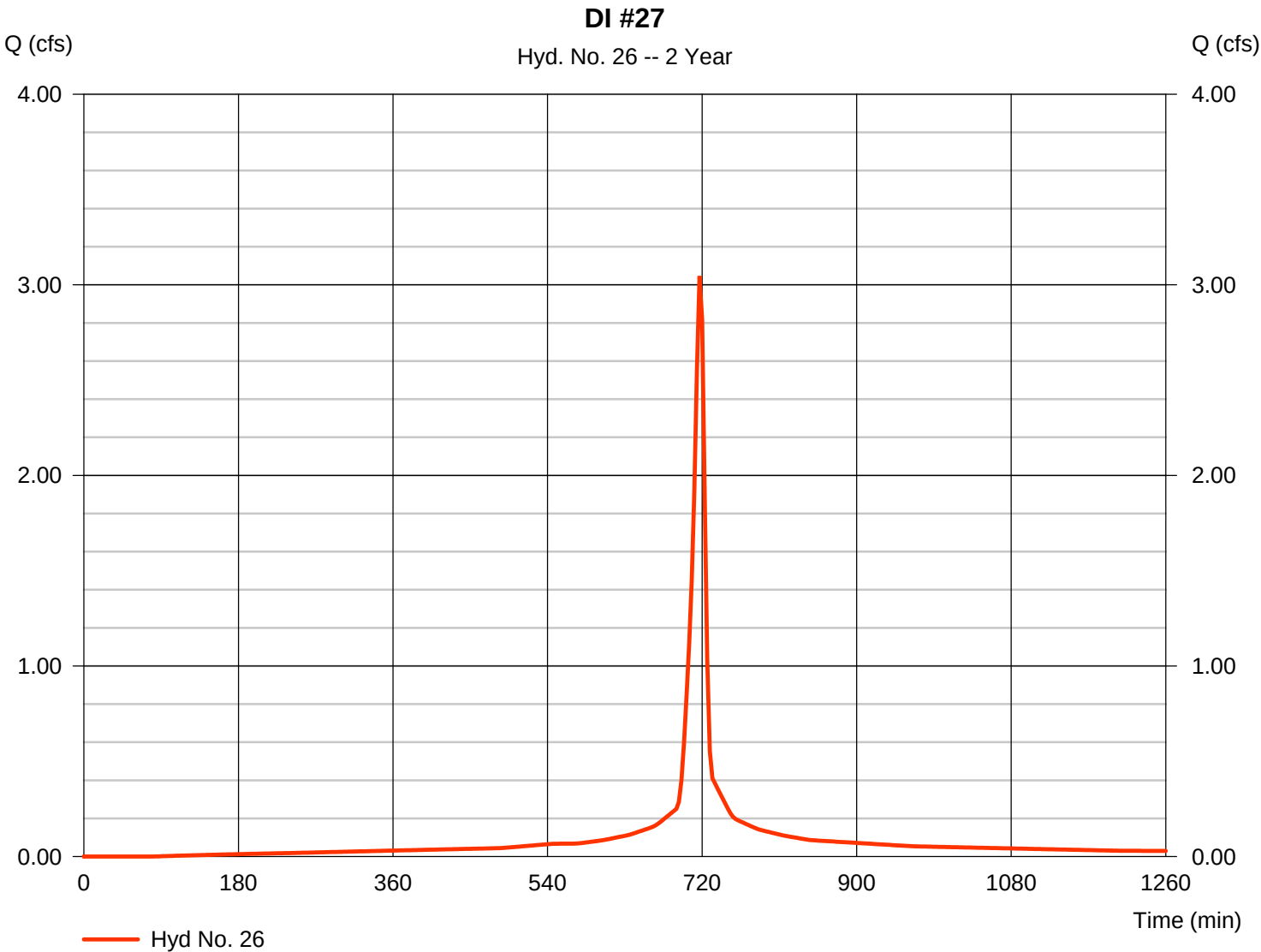
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Hyd. No. 26

DI #27

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.045 cfs
Storm frequency	=	2 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	7,808 cuft
Drainage area	=	0.800 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.10 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

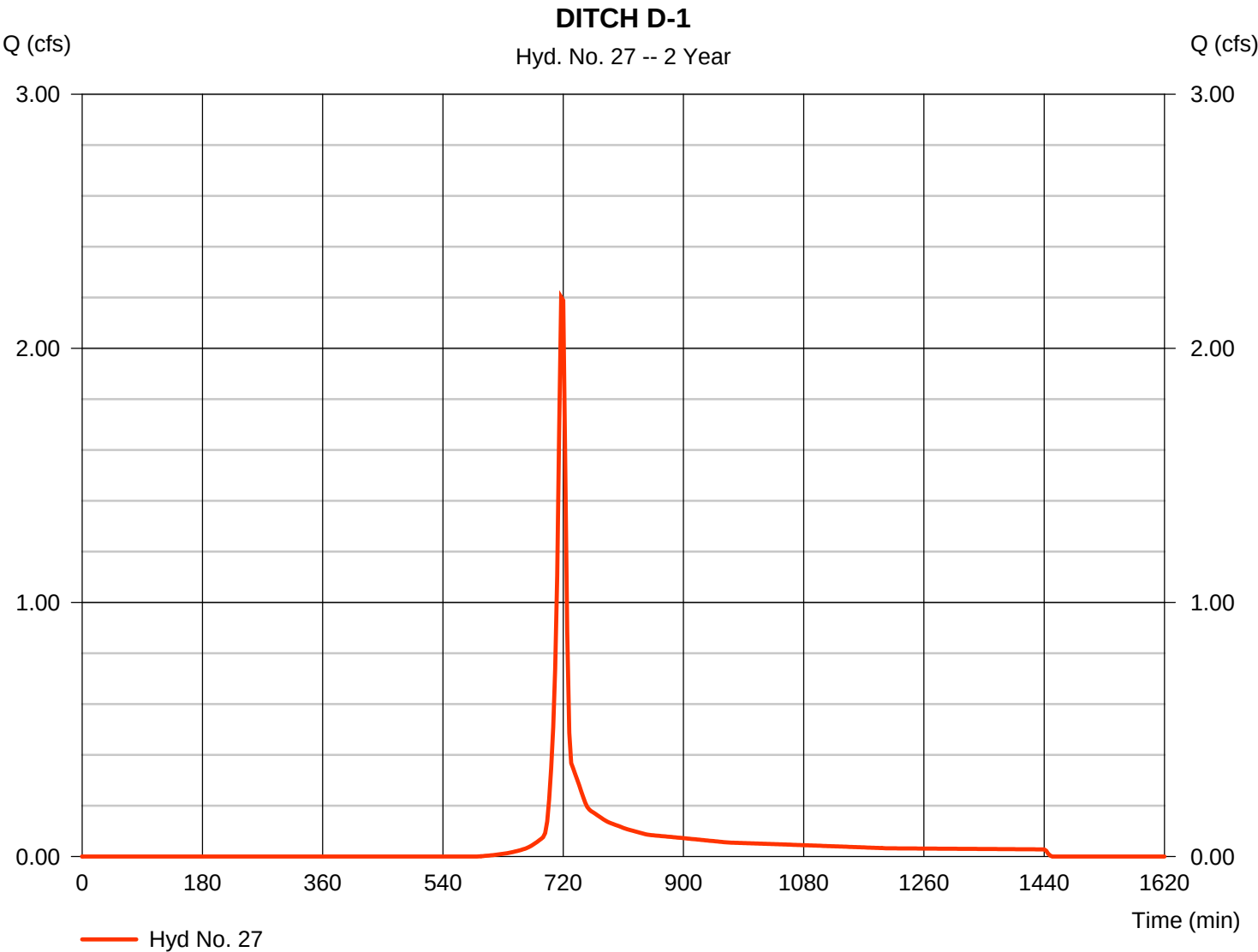
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Hyd. No. 27

DITCH D-1

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.202 cfs
Storm frequency	=	2 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	5,025 cuft
Drainage area	=	1.170 ac	Curve number	=	79
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.10 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

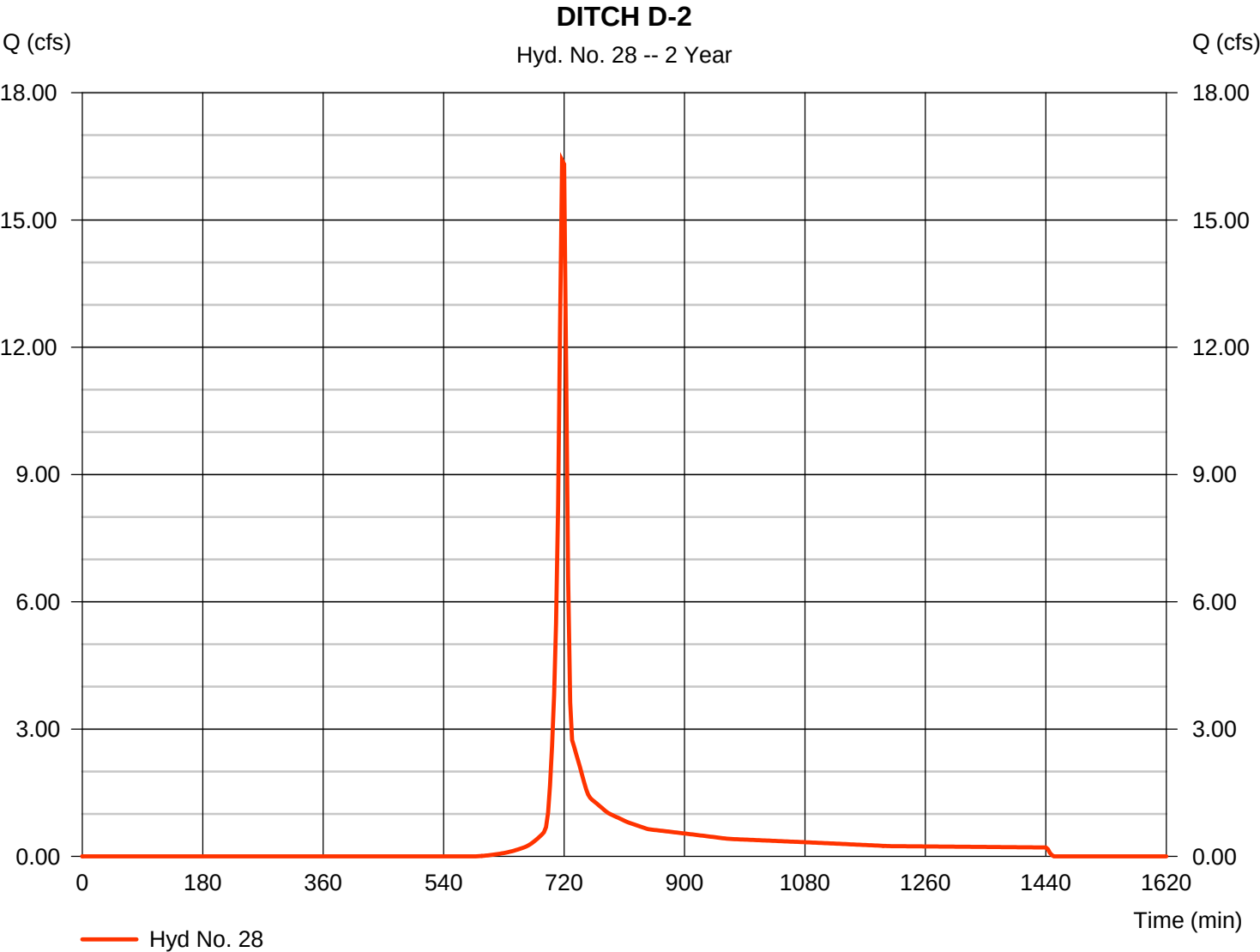
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Hyd. No. 28

DITCH D-2

Hydrograph type	=	SCS Runoff	Peak discharge	=	16.41 cfs
Storm frequency	=	2 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	37,453 cuft
Drainage area	=	8.720 ac	Curve number	=	79
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.10 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

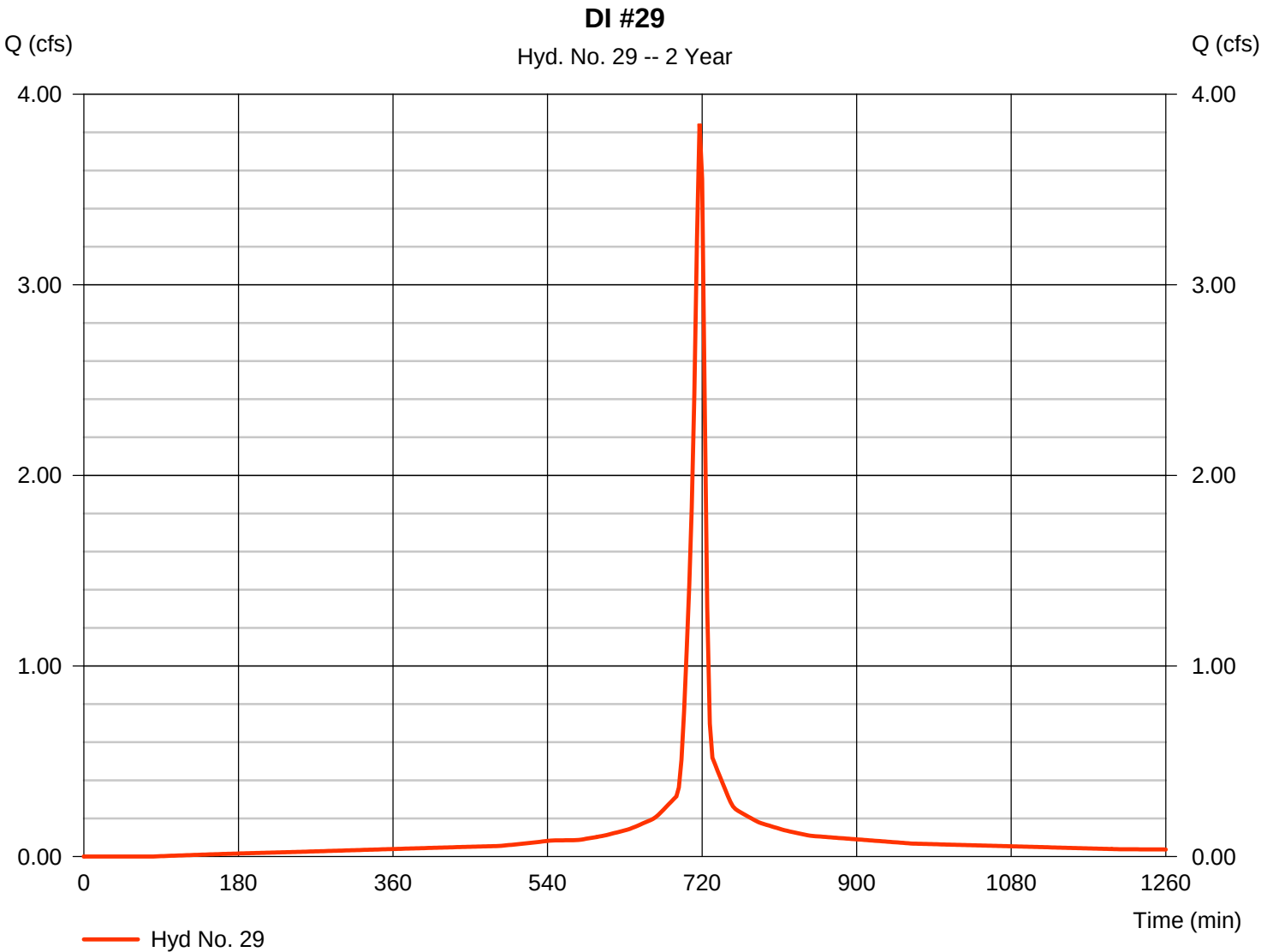
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 29

DI #29

Hydrograph type	= SCS Runoff	Peak discharge	= 3.845 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 9,857 cuft
Drainage area	= 1.010 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

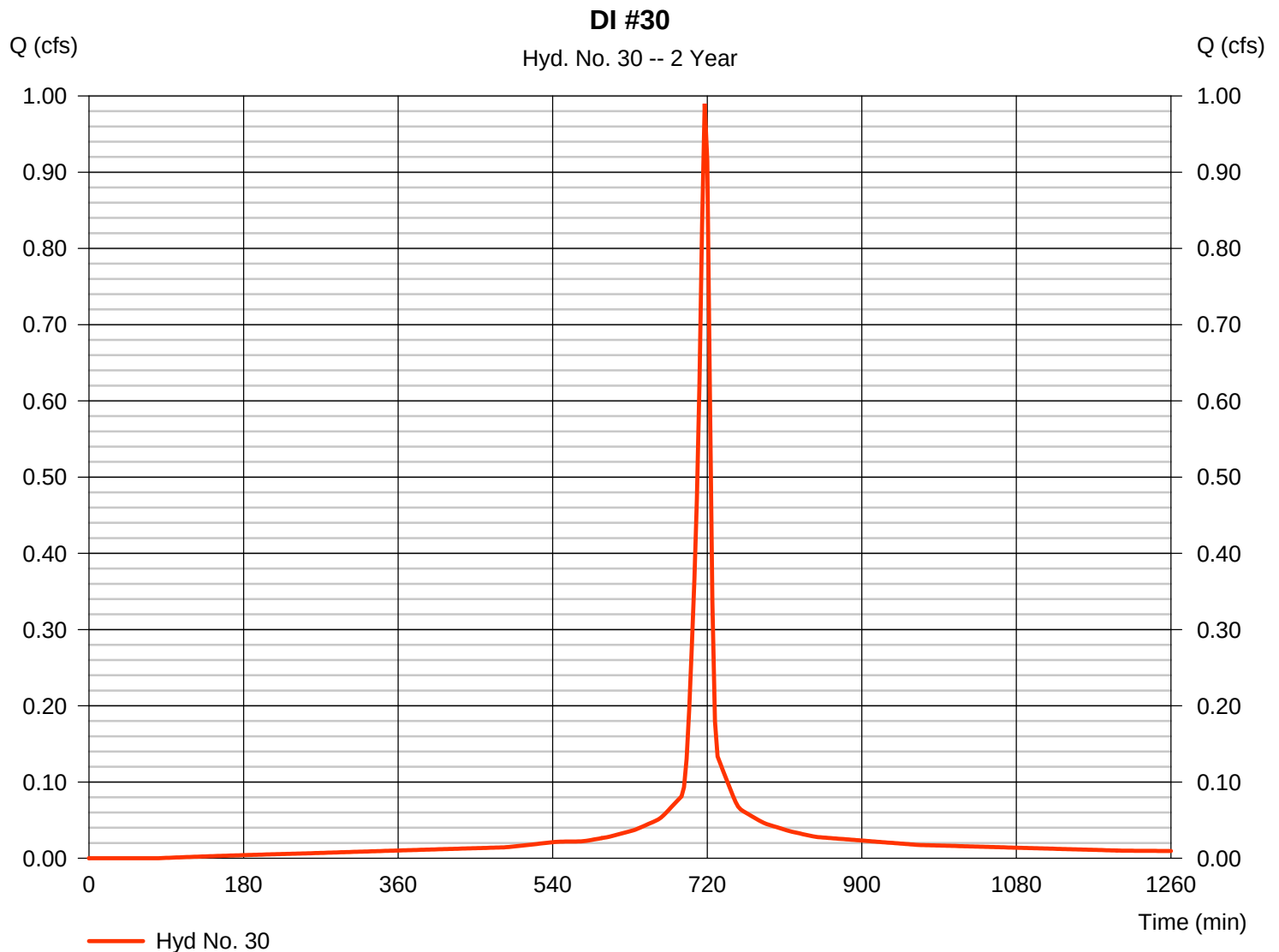
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 30

DI #30

Hydrograph type	= SCS Runoff	Peak discharge	= 0.990 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 2,538 cuft
Drainage area	= 0.260 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

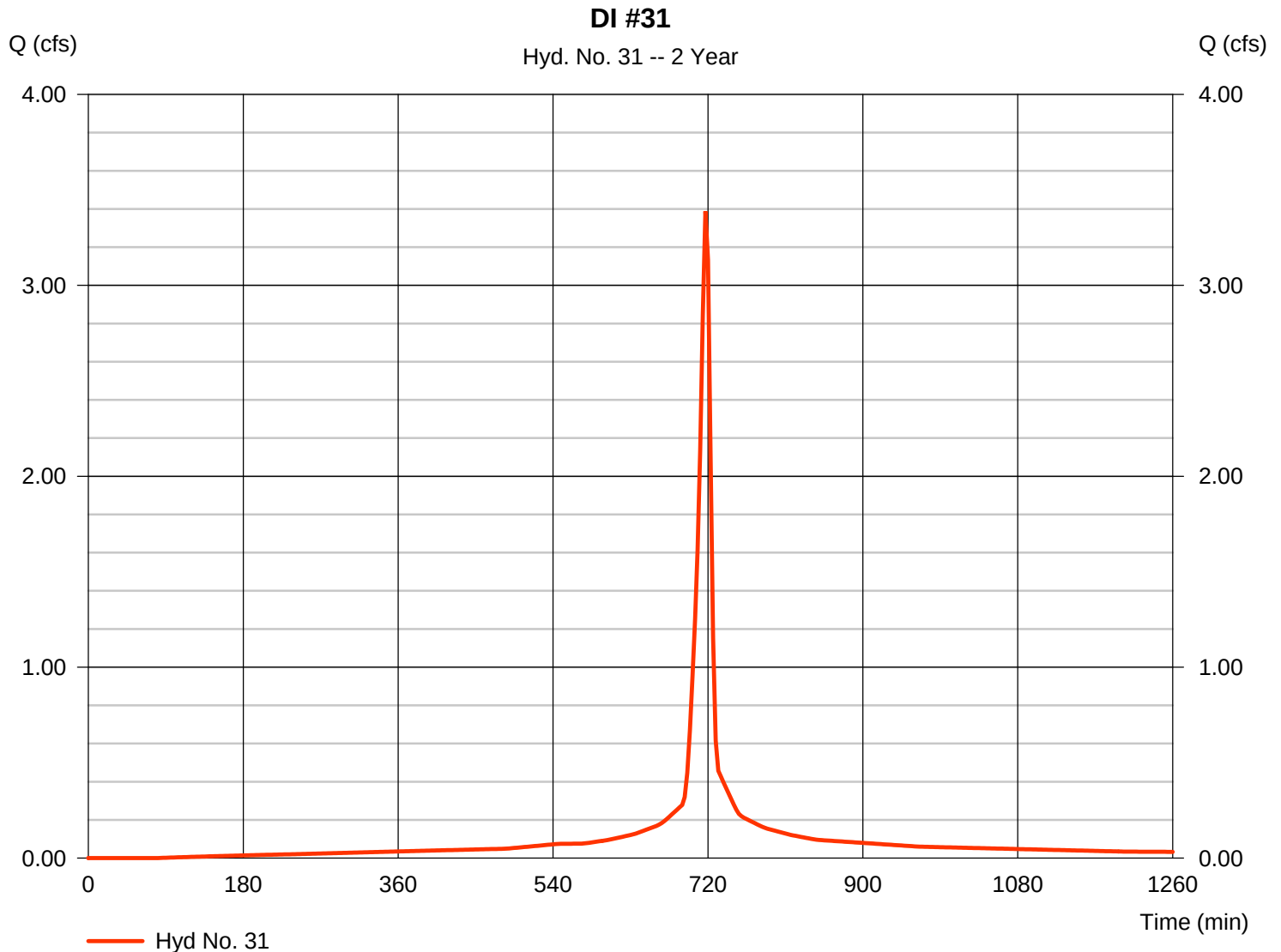
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 31

DI #31

Hydrograph type	= SCS Runoff	Peak discharge	= 3.388 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 8,686 cuft
Drainage area	= 0.890 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

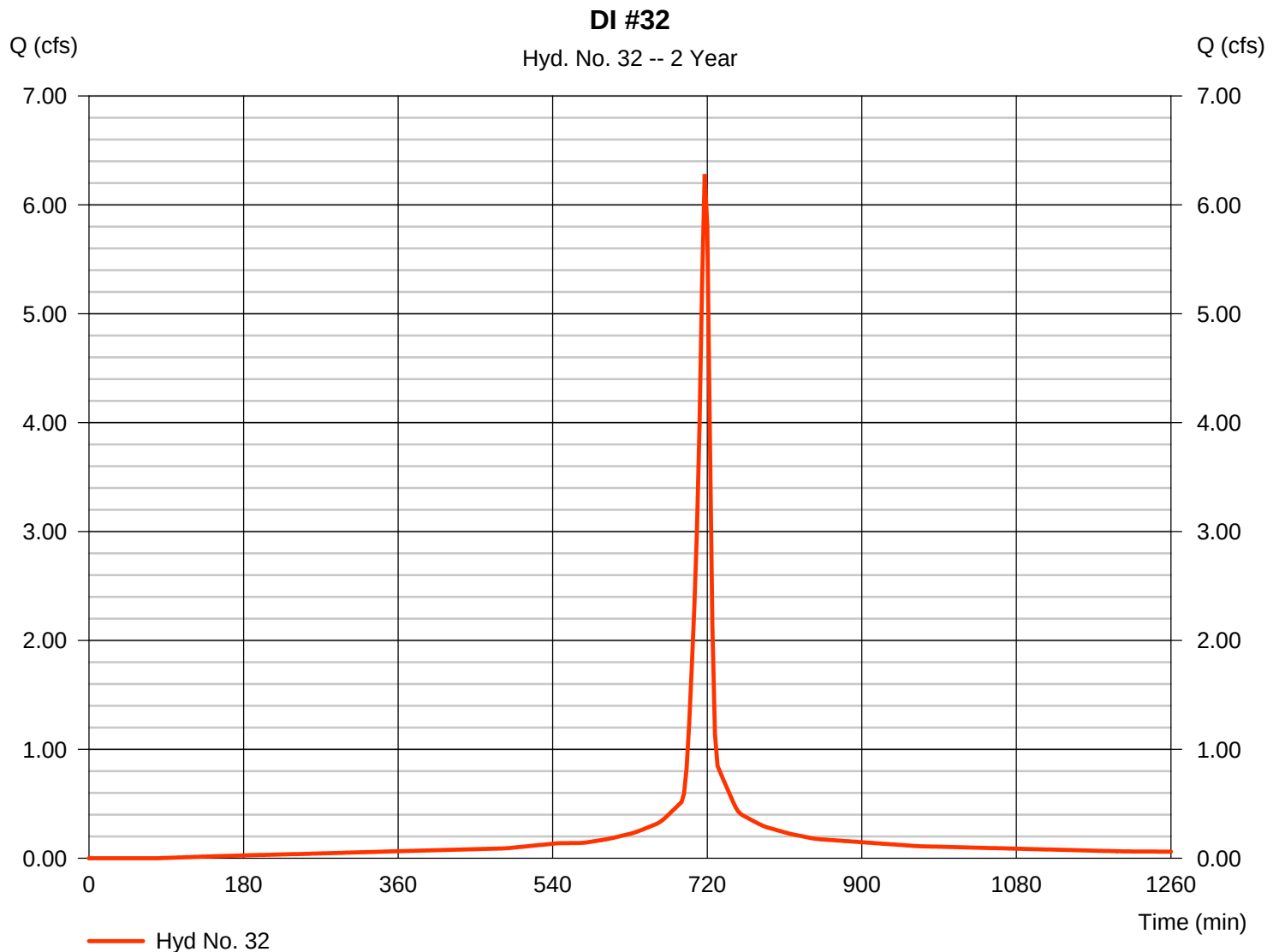
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 32

DI #32

Hydrograph type	= SCS Runoff	Peak discharge	= 6.281 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 16,104 cuft
Drainage area	= 1.650 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

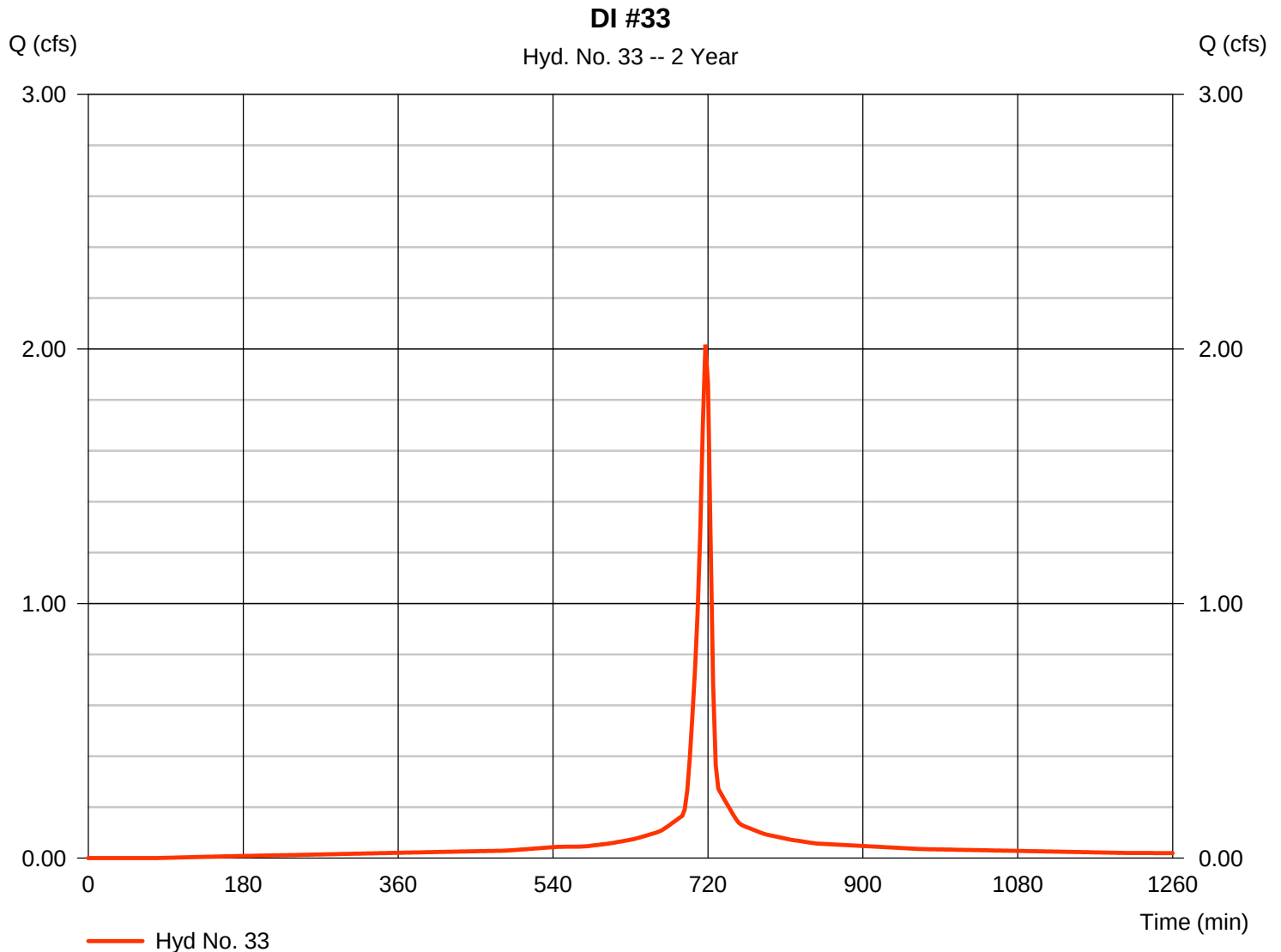
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Friday, 07 / 28 / 2017

Hyd. No. 33

DI #33

Hydrograph type	= SCS Runoff	Peak discharge	= 2.017 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 5,173 cuft
Drainage area	= 0.530 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

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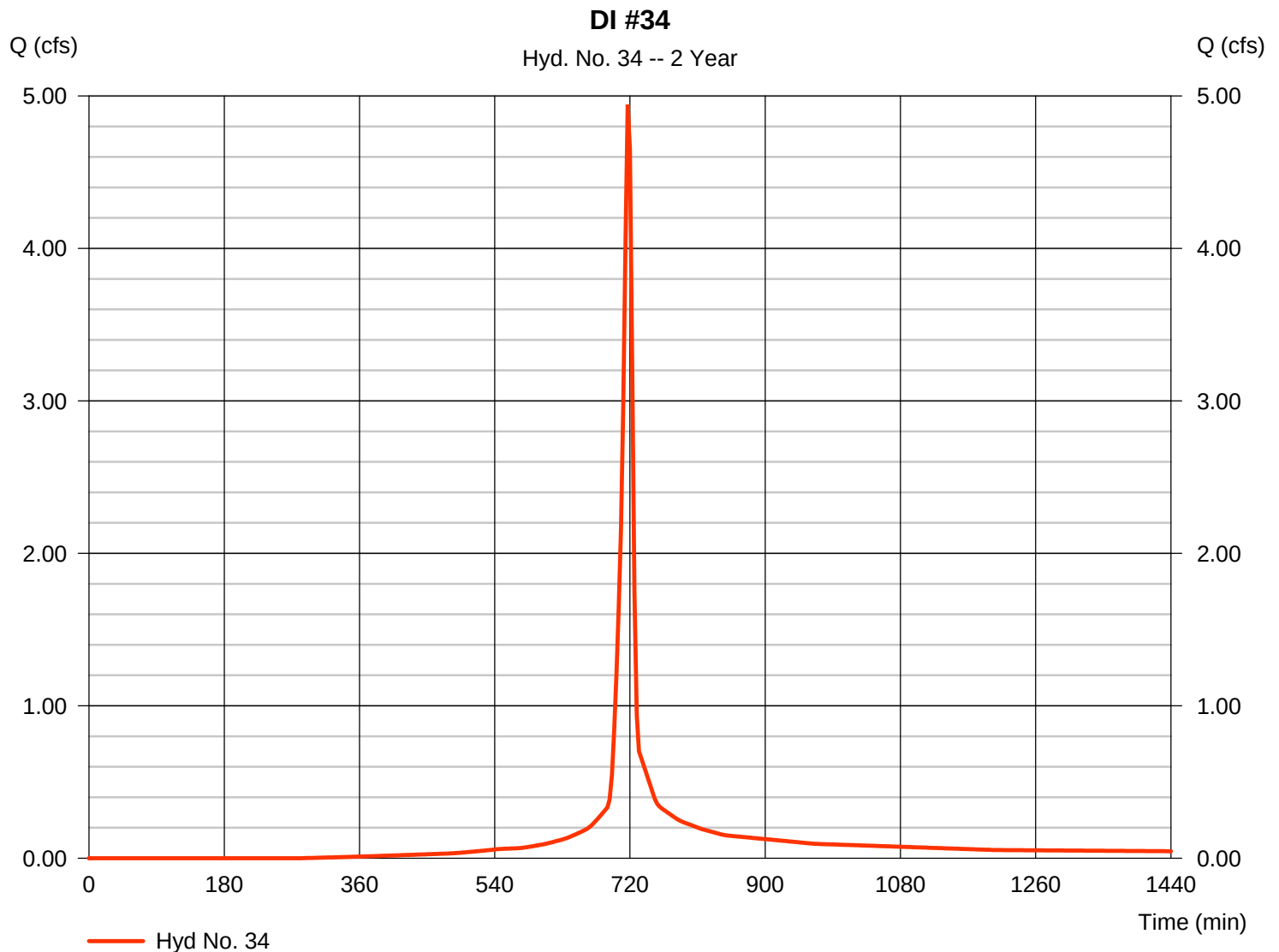
Friday, 07 / 28 / 2017

Hyd. No. 34

DI #34

Hydrograph type	= SCS Runoff	Peak discharge	= 4.943 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 11,515 cuft
Drainage area	= 1.500 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.050 \times 98) + (0.450 \times 79)] / 1.500$

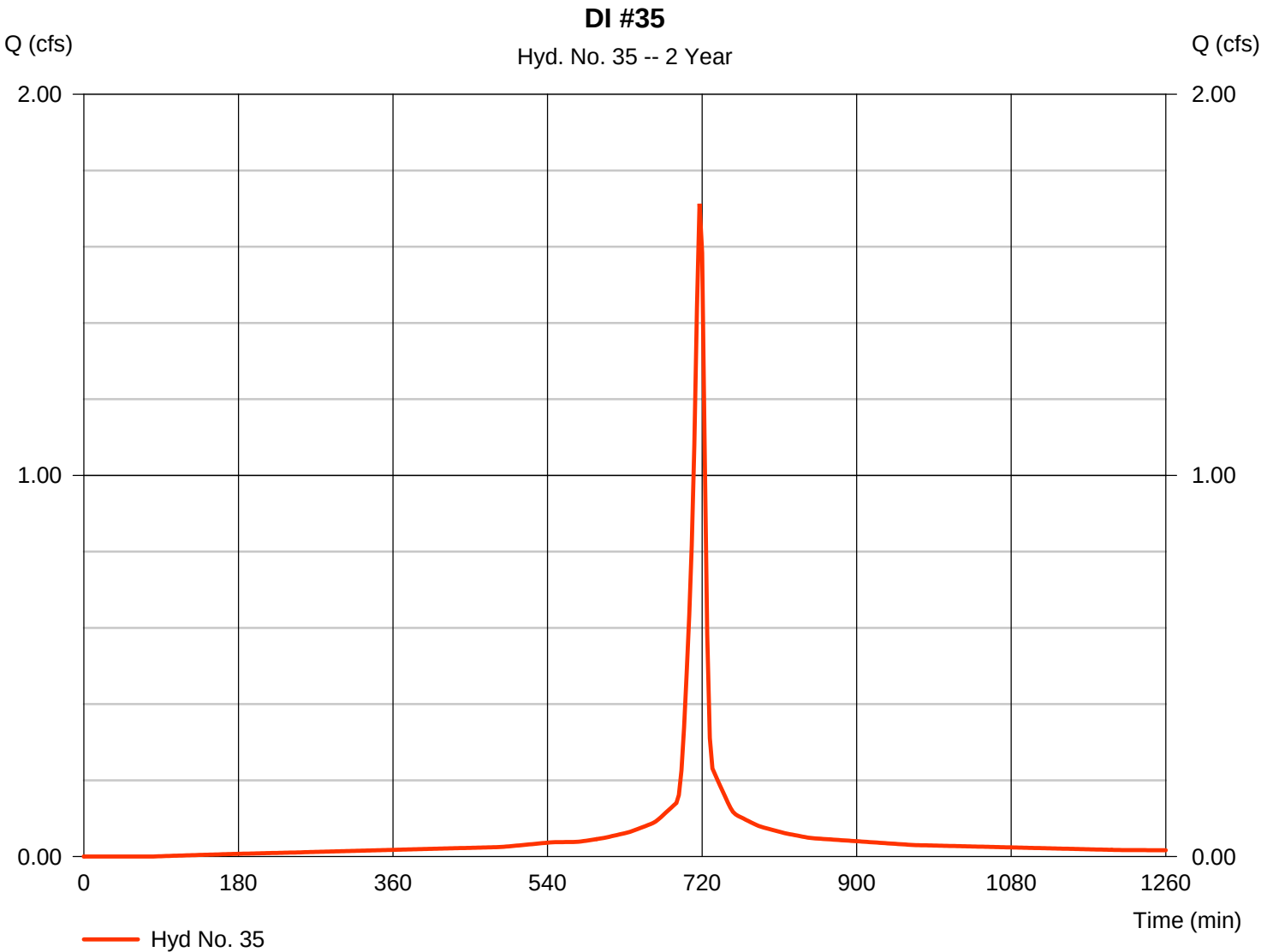


Hydrograph Report

Hyd. No. 35

DI #35

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.713 cfs
Storm frequency	=	2 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	4,392 cuft
Drainage area	=	0.450 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.10 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

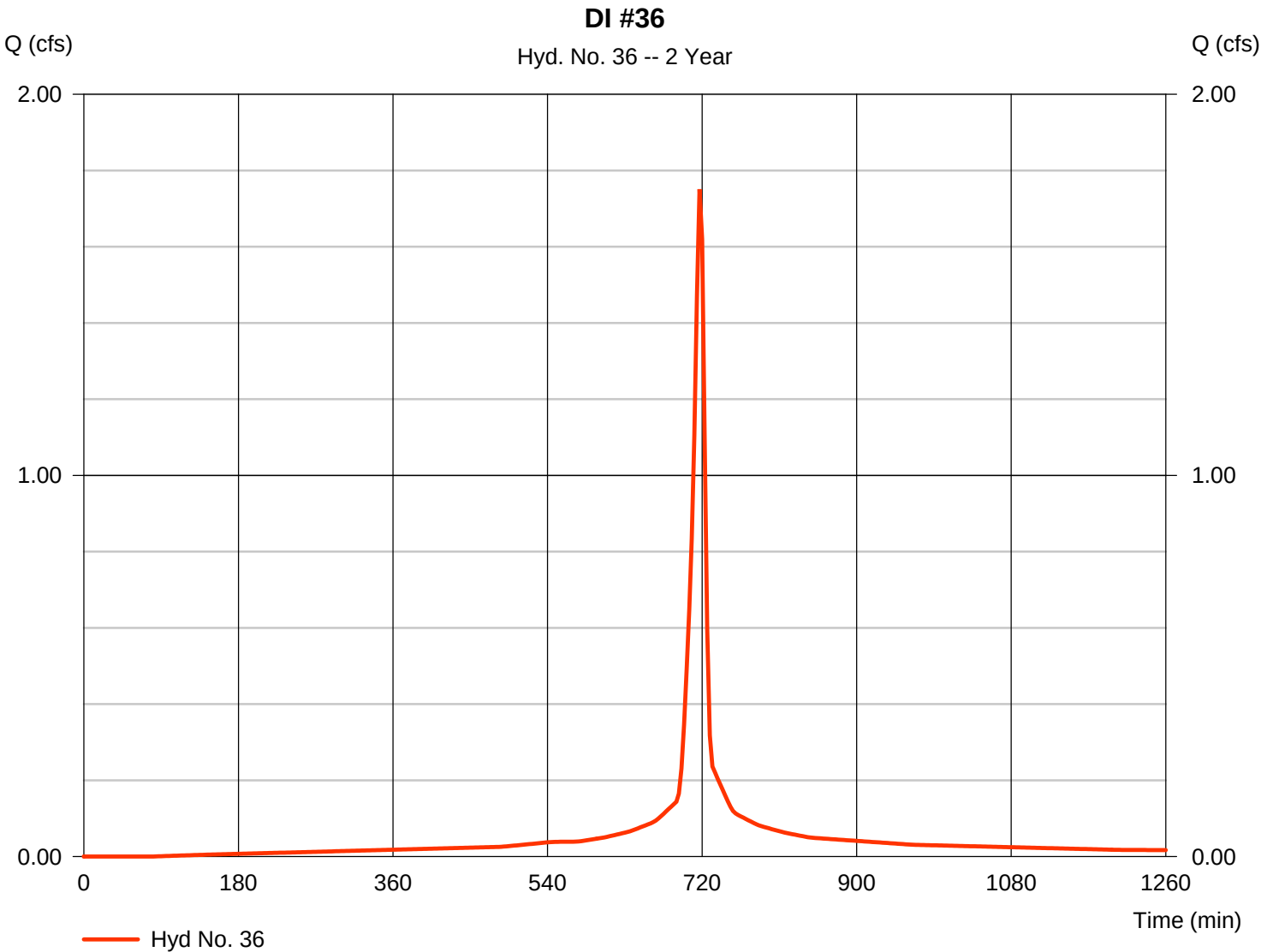
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Friday, 07 / 28 / 2017

Hyd. No. 36

DI #36

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.751 cfs
Storm frequency	=	2 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	4,489 cuft
Drainage area	=	0.460 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.10 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

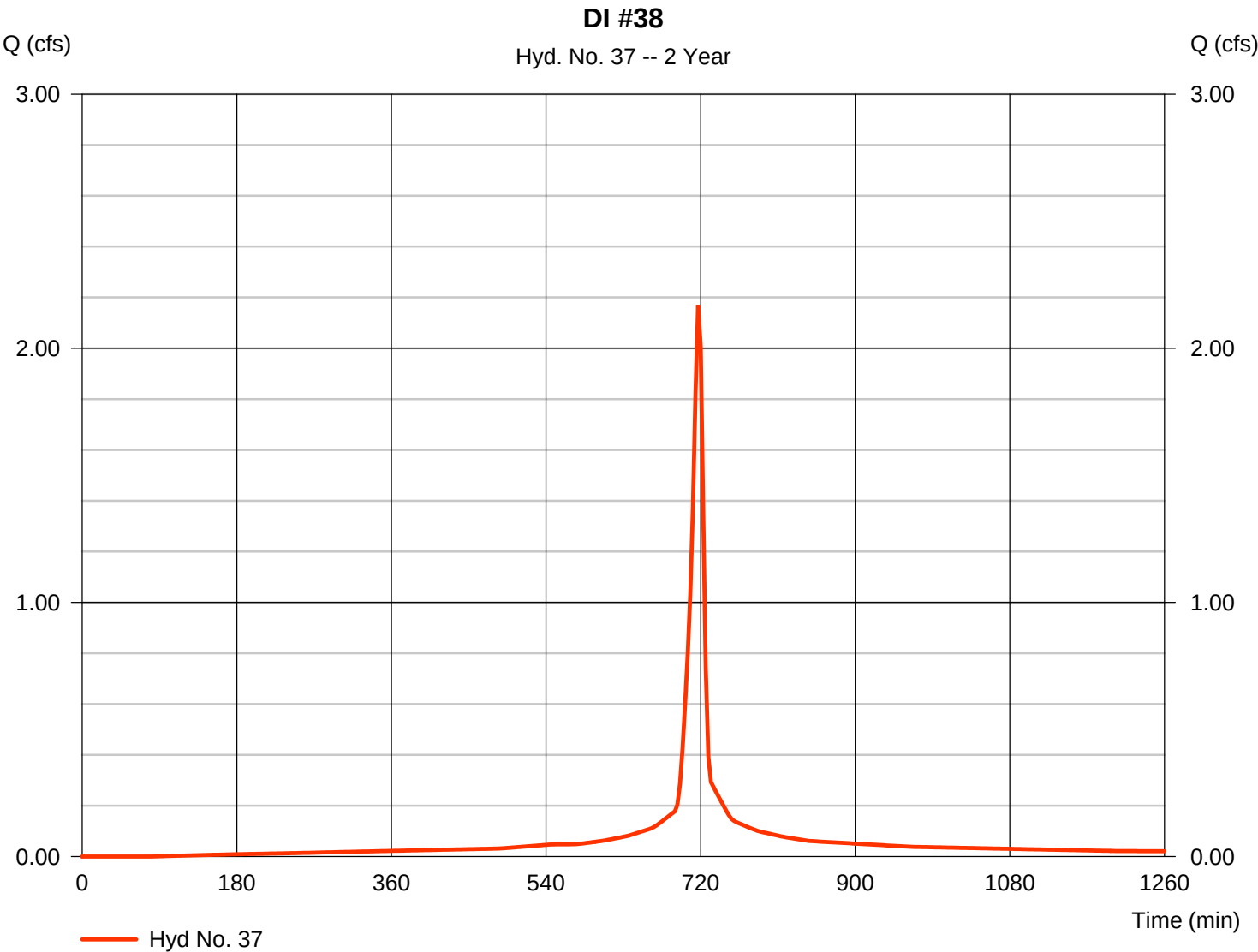
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Friday, 07 / 28 / 2017

Hyd. No. 37

DI #38

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.170 cfs
Storm frequency	=	2 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	5,563 cuft
Drainage area	=	0.570 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.10 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

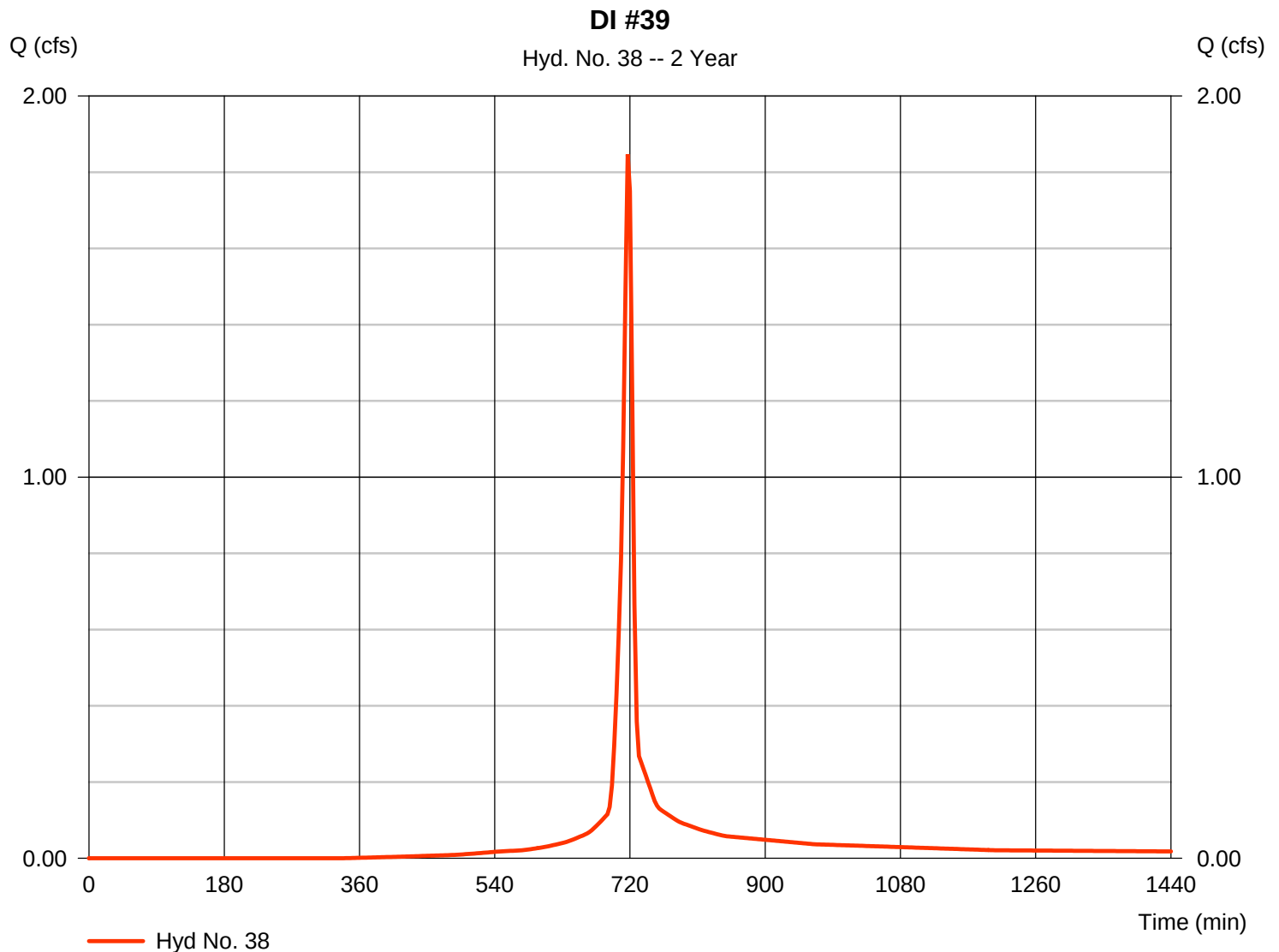
Friday, 07 / 28 / 2017

Hyd. No. 38

DI #39

Hydrograph type	= SCS Runoff	Peak discharge	= 1.847 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 4,239 cuft
Drainage area	= 0.600 ac	Curve number	= 90*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.360 \times 98) + (0.240 \times 79)] / 0.600$



Hydrograph Report

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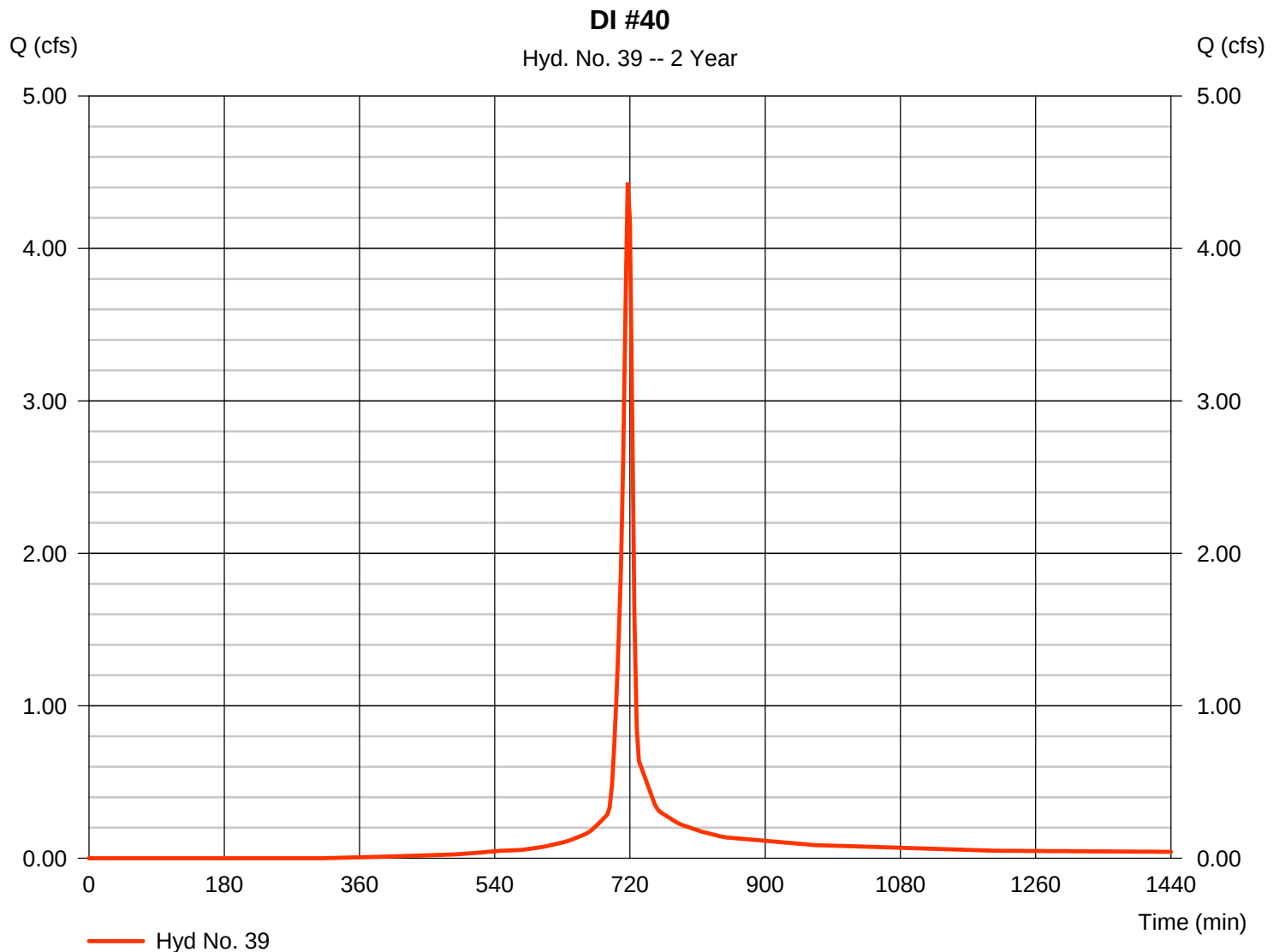
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Hyd. No. 39

DI #40

Hydrograph type	= SCS Runoff	Peak discharge	= 4.431 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 10,239 cuft
Drainage area	= 1.390 ac	Curve number	= 91*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.880 \times 98) + (0.510 \times 79)] / 1.390$



Hydrograph Report

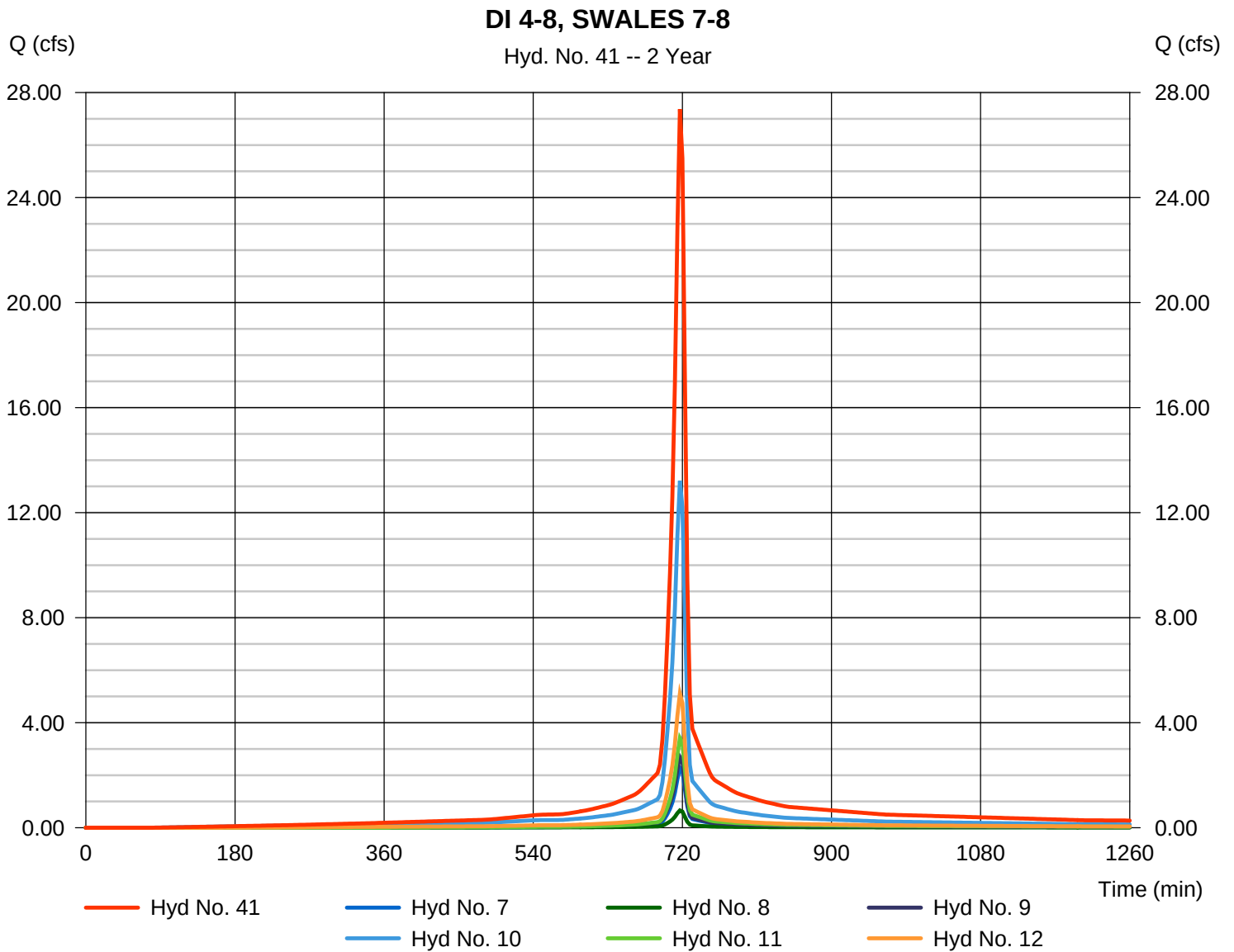
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Hyd. No. 41

DI 4-8, SWALES 7-8

Hydrograph type	= Combine	Peak discharge	= 27.37 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 67,511 cuft
Inflow hyds.	= 7, 8, 9, 10, 11, 12	Contrib. drain. area	= 7.660 ac



Hydrograph Report

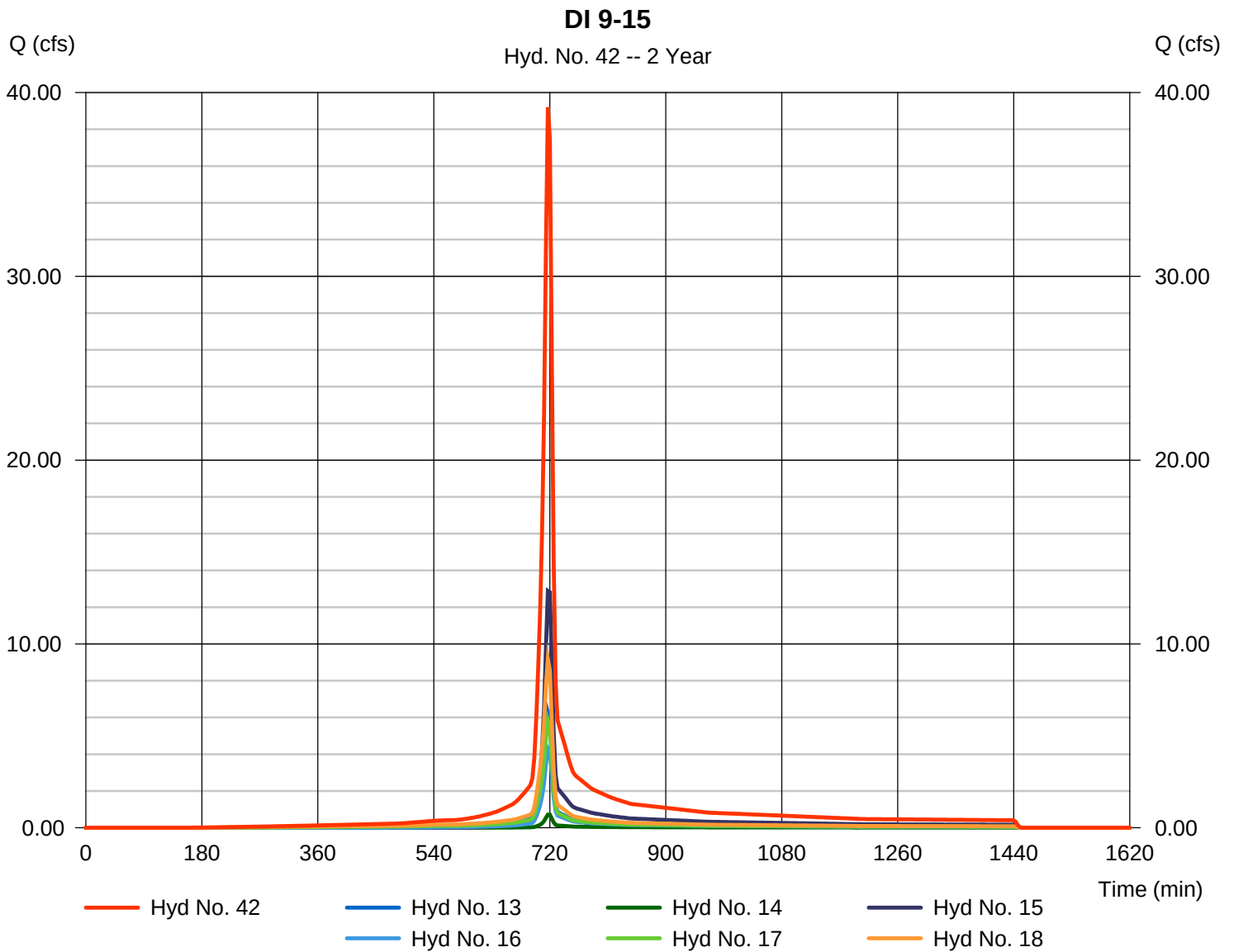
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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Hyd. No. 42

DI 9-15

Hydrograph type	= Combine	Peak discharge	= 39.20 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 92,547 cuft
Inflow hyds.	= 13, 14, 15, 16, 17, 18	Contrib. drain. area	= 14.740 ac



Hydrograph Report

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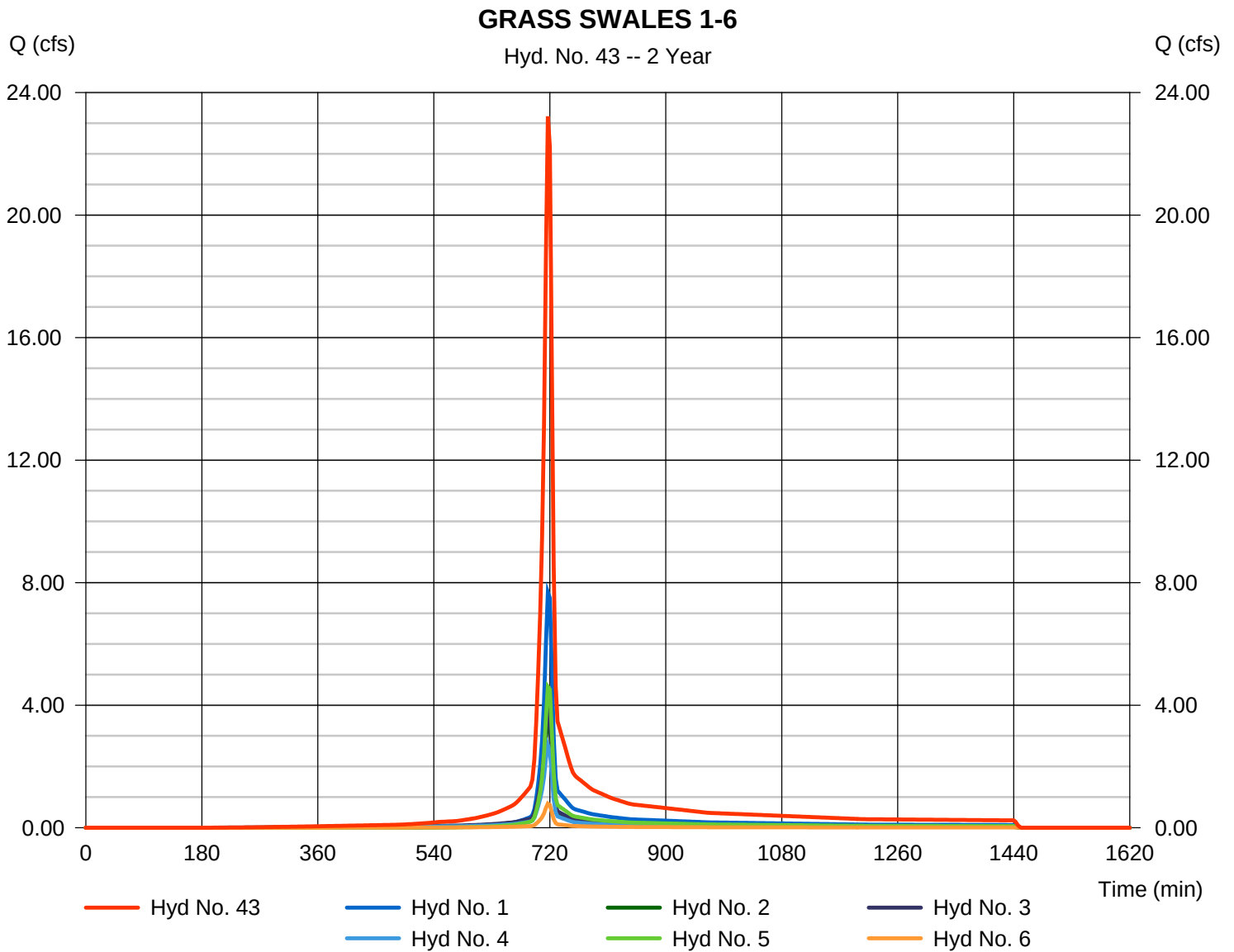
Friday, 07 / 28 / 2017

Hyd. No. 43

GRASS SWALES 1-6

Hydrograph type = Combine
Storm frequency = 2 yrs
Time interval = 3 min
Inflow hyds. = 1, 2, 3, 4, 5, 6

Peak discharge = 23.22 cfs
Time to peak = 717 min
Hyd. volume = 53,884 cuft
Contrib. drain. area = 8.560 ac



Hydrograph Report

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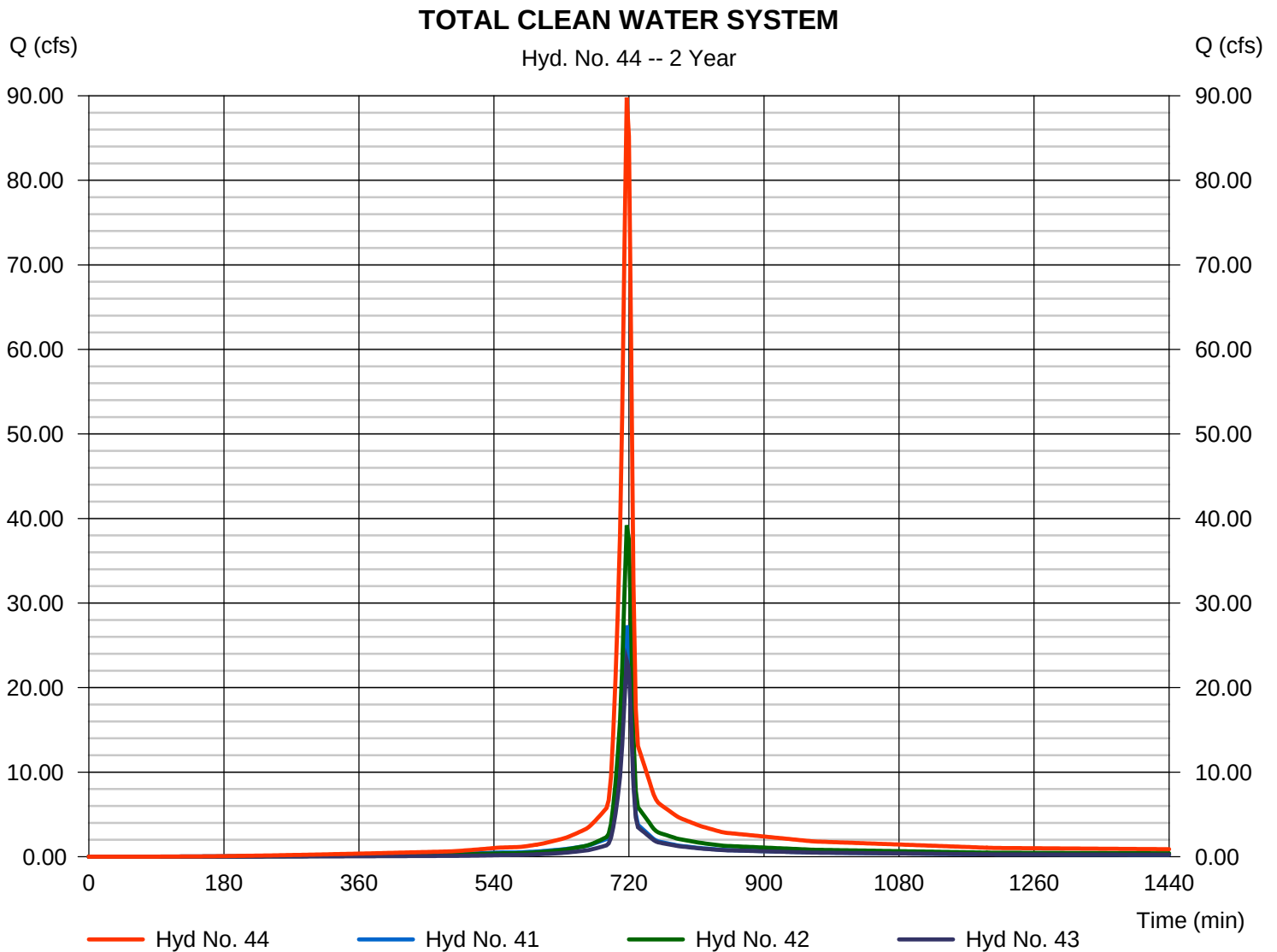
Friday, 07 / 28 / 2017

Hyd. No. 44

TOTAL CLEAN WATER SYSTEM

Hydrograph type = Combine
Storm frequency = 2 yrs
Time interval = 3 min
Inflow hyds. = 41, 42, 43

Peak discharge = 89.79 cfs
Time to peak = 717 min
Hyd. volume = 213,941 cuft
Contrib. drain. area = 0.000 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

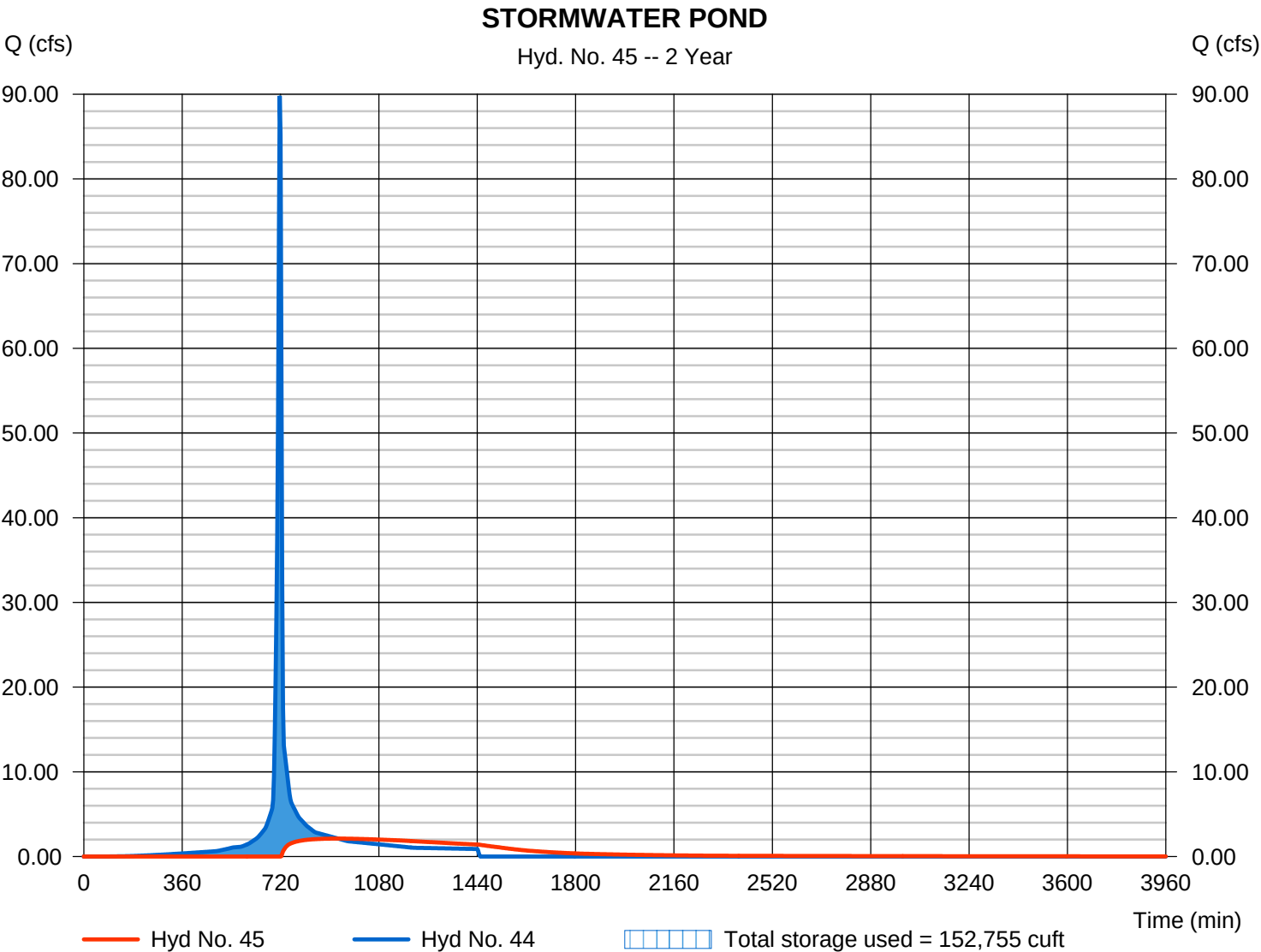
Friday, 07 / 28 / 2017

Hyd. No. 45

STORMWATER POND

Hydrograph type	= Reservoir	Peak discharge	= 2.118 cfs
Storm frequency	= 2 yrs	Time to peak	= 930 min
Time interval	= 3 min	Hyd. volume	= 106,999 cuft
Inflow hyd. No.	= 44 - TOTAL CLEAN WATER STORAGE	Max. Elevation	= 560.01 ft
Reservoir name	= STORMWATER DETENTION POND	Max. Storage	= 152,755 cuft

Storage Indication method used.



Hydrograph Report

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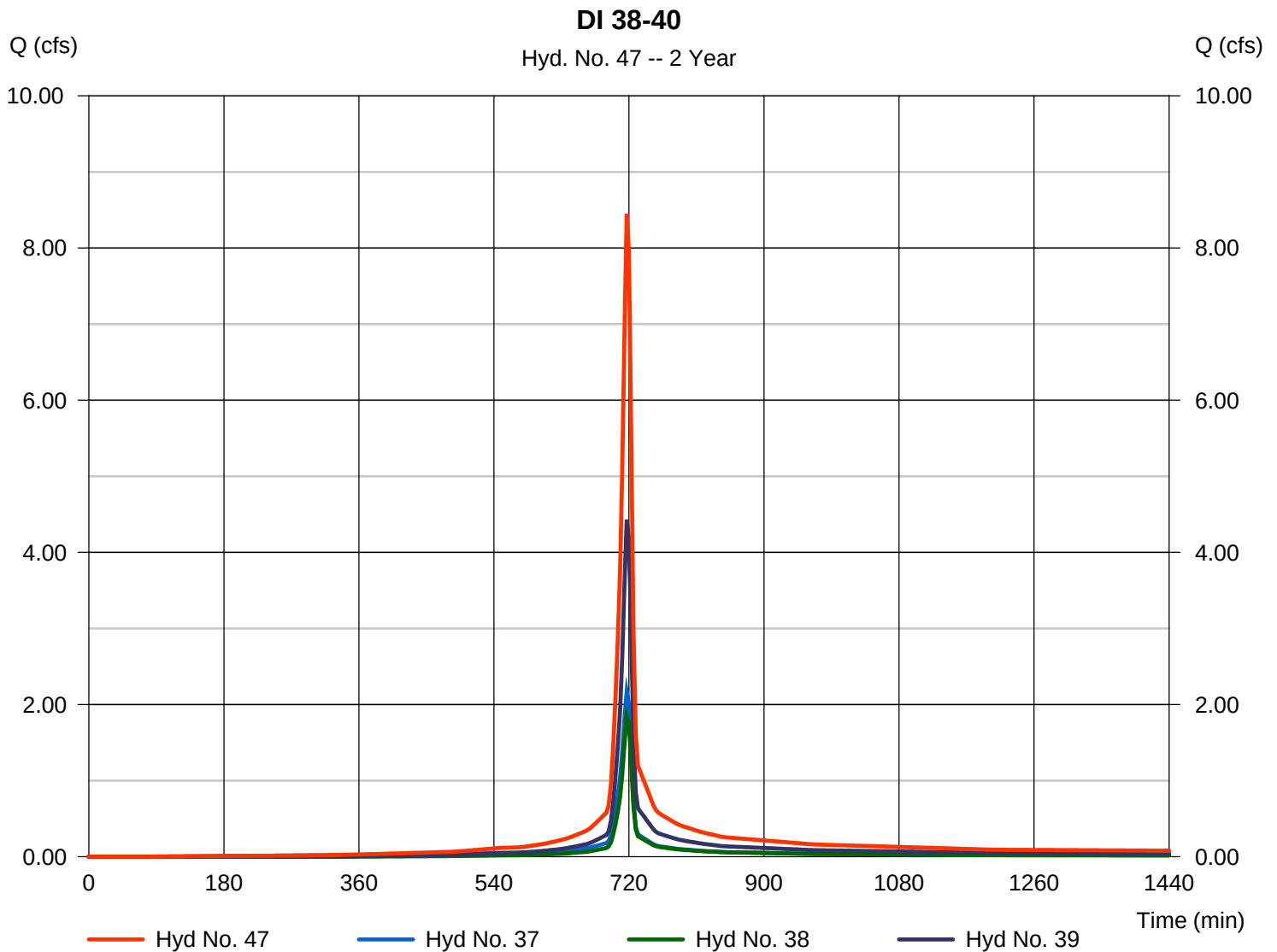
Friday, 07 / 28 / 2017

Hyd. No. 47

DI 38-40

Hydrograph type = Combine
Storm frequency = 2 yrs
Time interval = 3 min
Inflow hyds. = 37, 38, 39

Peak discharge = 8.447 cfs
Time to peak = 717 min
Hyd. volume = 20,041 cuft
Contrib. drain. area = 2.560 ac



Hydrograph Report

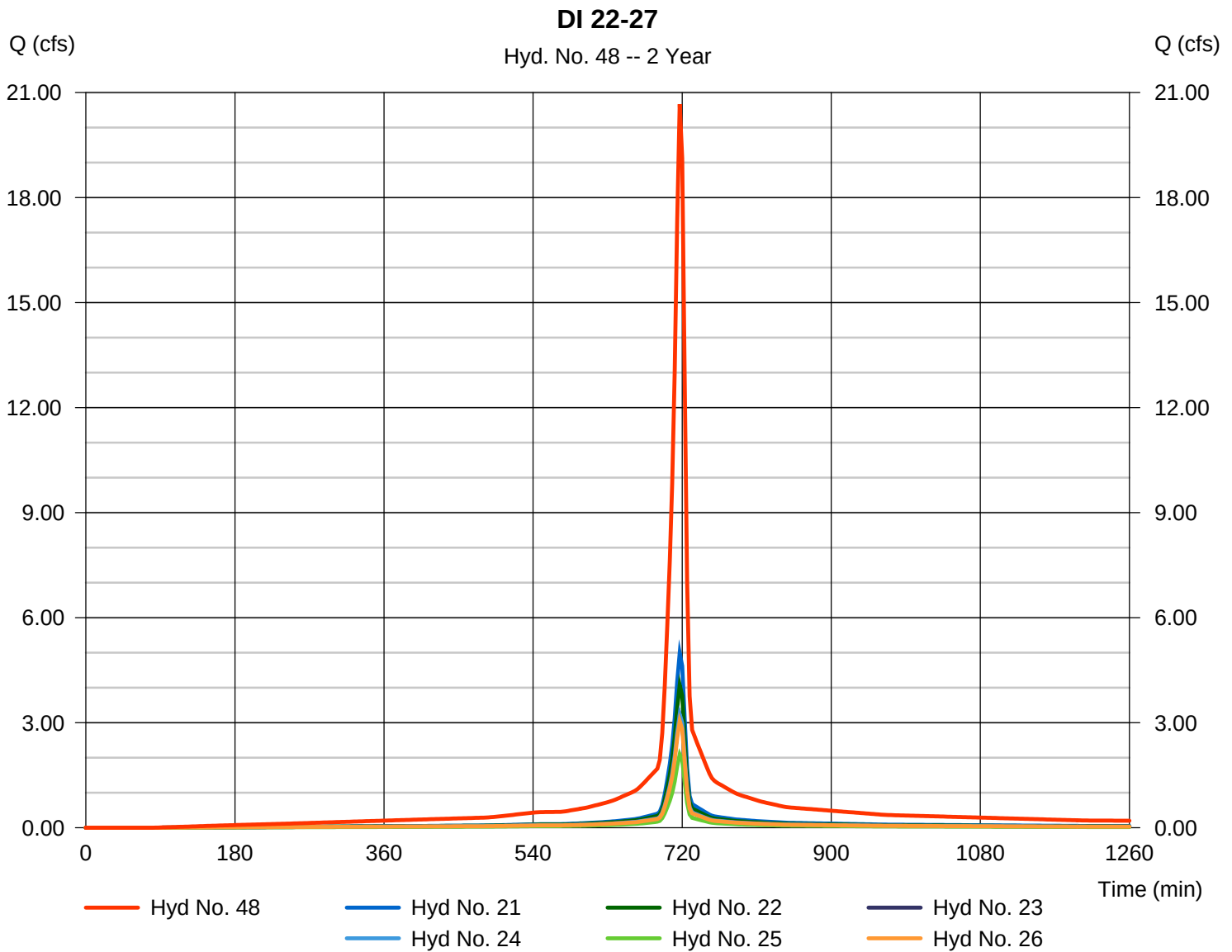
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Hyd. No. 48

DI 22-27

Hydrograph type	= Combine	Peak discharge	= 20.67 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 52,691 cuft
Inflow hyds.	= 21, 22, 23, 24, 25, 26	Contrib. drain. area	= 5.450 ac



Hydrograph Report

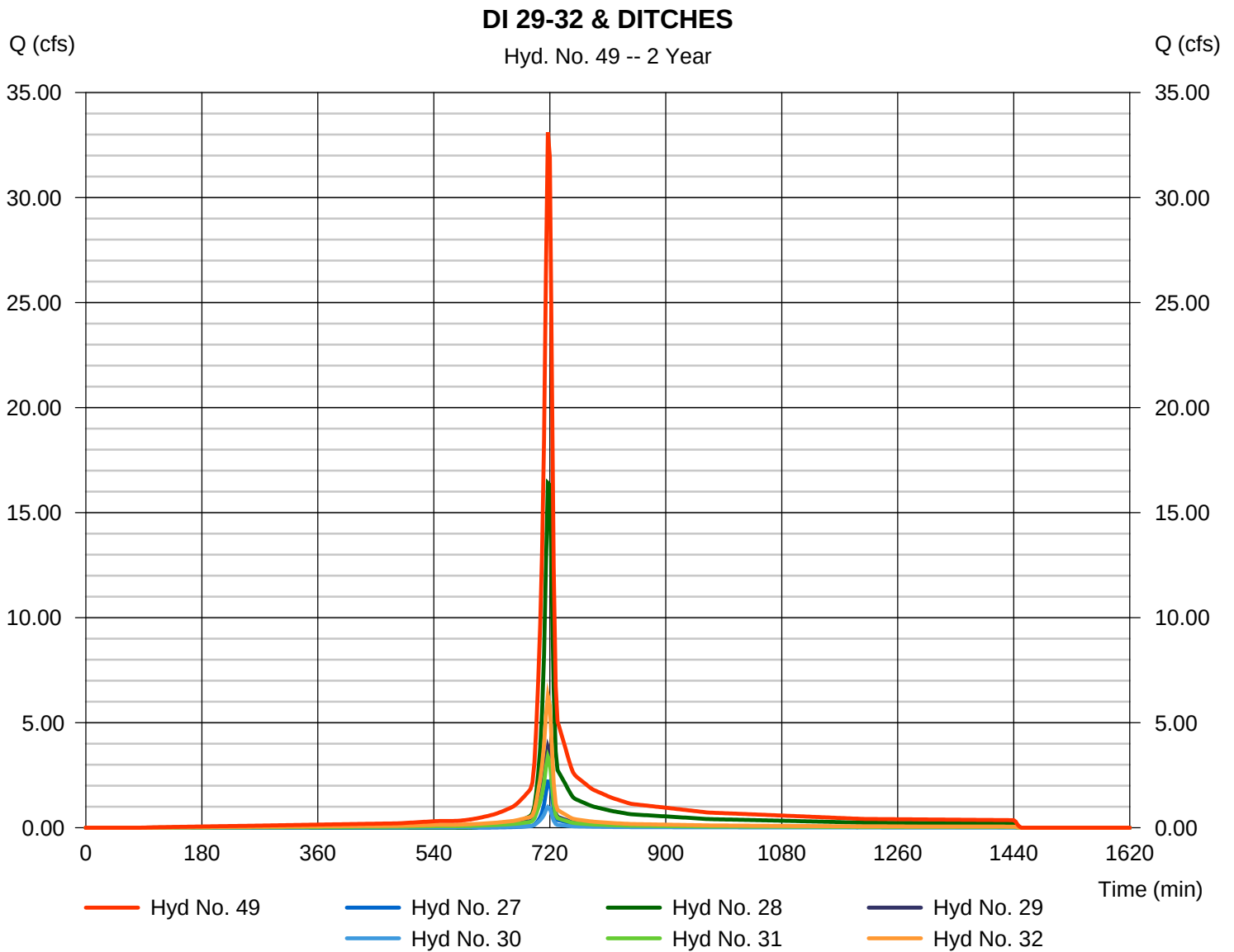
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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Hyd. No. 49

DI 29-32 & DITCHES

Hydrograph type	= Combine	Peak discharge	= 33.11 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 79,663 cuft
Inflow hyds.	= 27, 28, 29, 30, 31, 32	Contrib. drain. area	= 13.700 ac



Hydrograph Report

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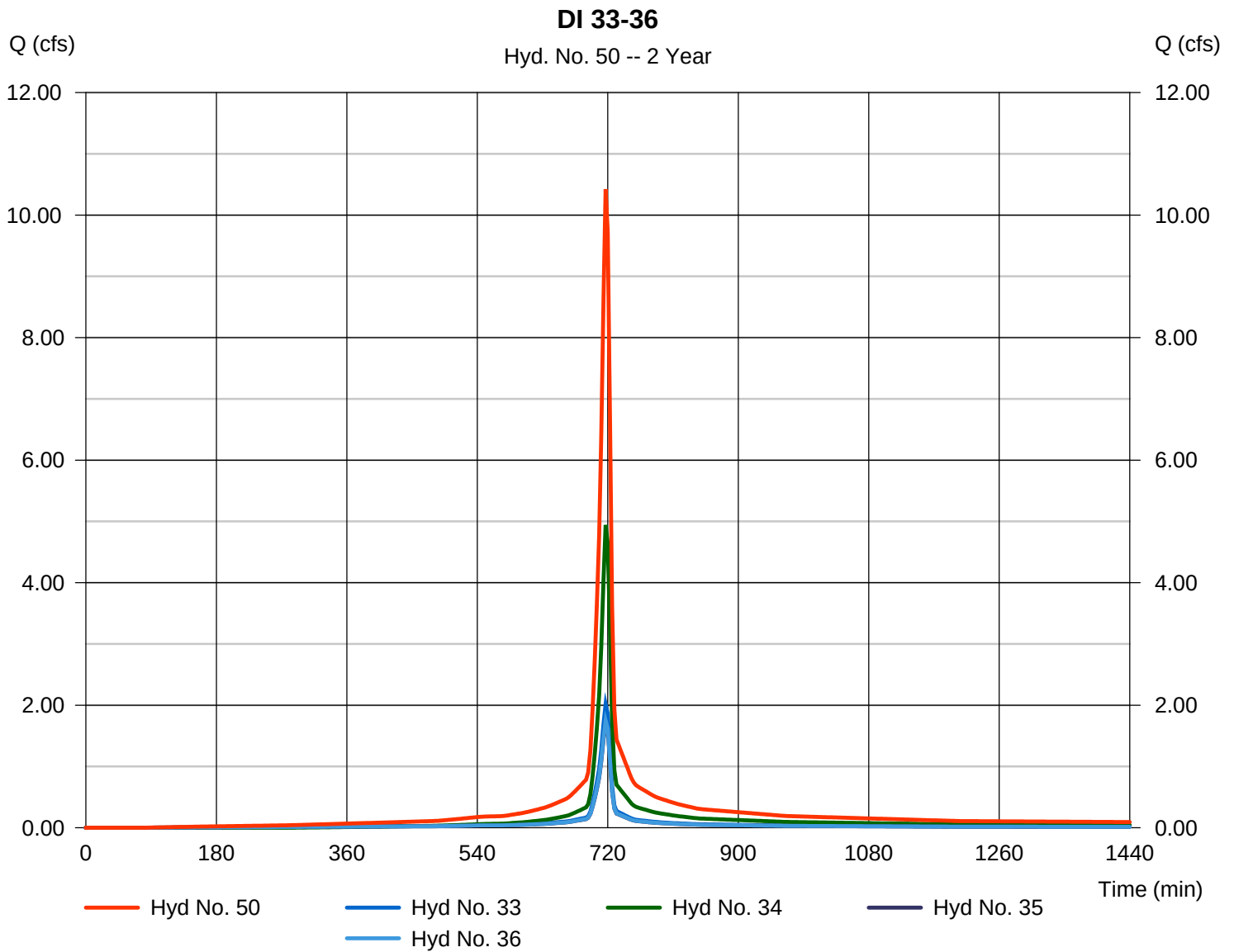
Friday, 07 / 28 / 2017

Hyd. No. 50

DI 33-36

Hydrograph type = Combine
Storm frequency = 2 yrs
Time interval = 3 min
Inflow hyds. = 33, 34, 35, 36

Peak discharge = 10.42 cfs
Time to peak = 717 min
Hyd. volume = 25,569 cuft
Contrib. drain. area = 2.940 ac



Hydrograph Report

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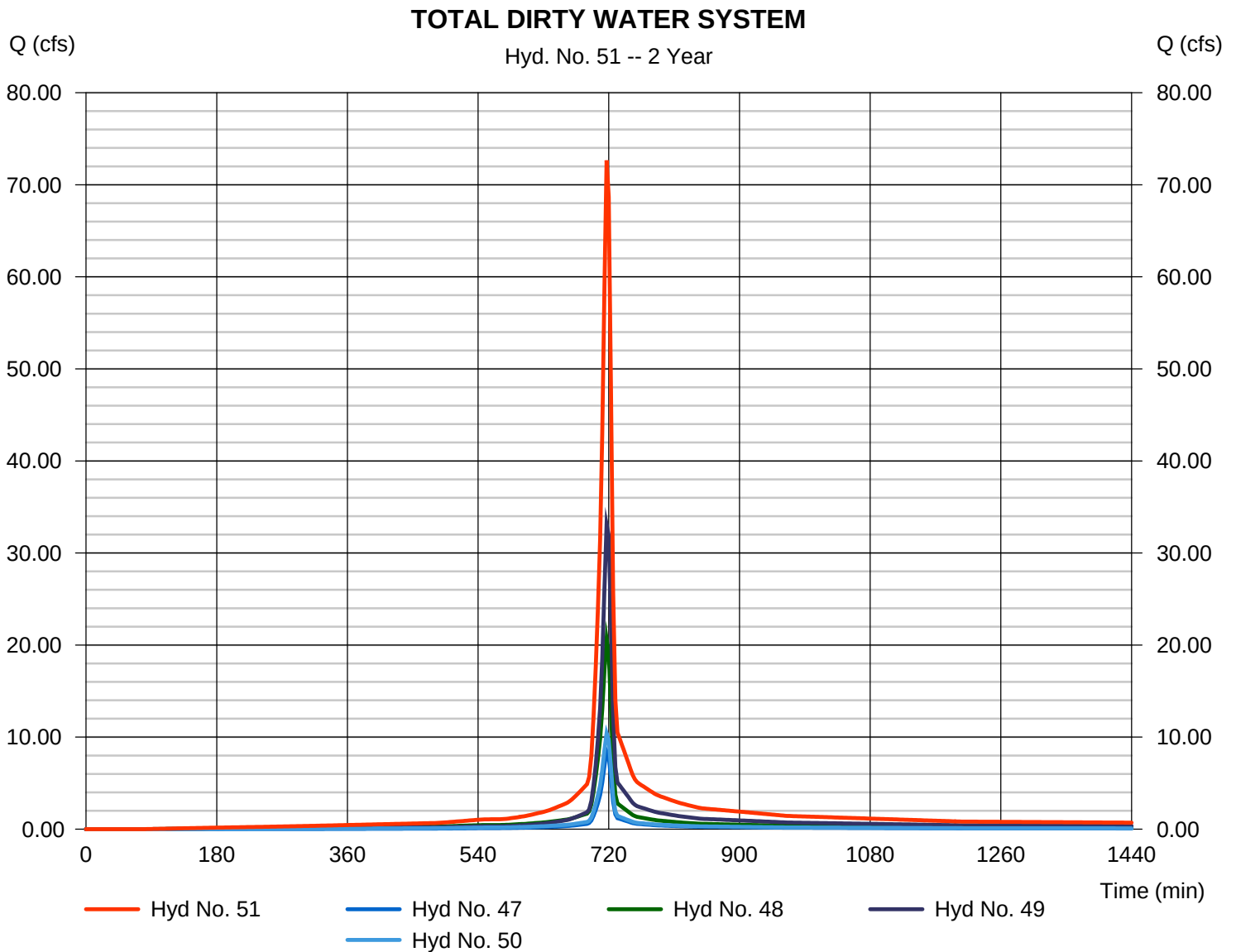
Friday, 07 / 28 / 2017

Hyd. No. 51

TOTAL DIRTY WATER SYSTEM

Hydrograph type = Combine
Storm frequency = 2 yrs
Time interval = 3 min
Inflow hyds. = 47, 48, 49, 50

Peak discharge = 72.65 cfs
Time to peak = 717 min
Hyd. volume = 177,963 cuft
Contrib. drain. area = 0.000 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

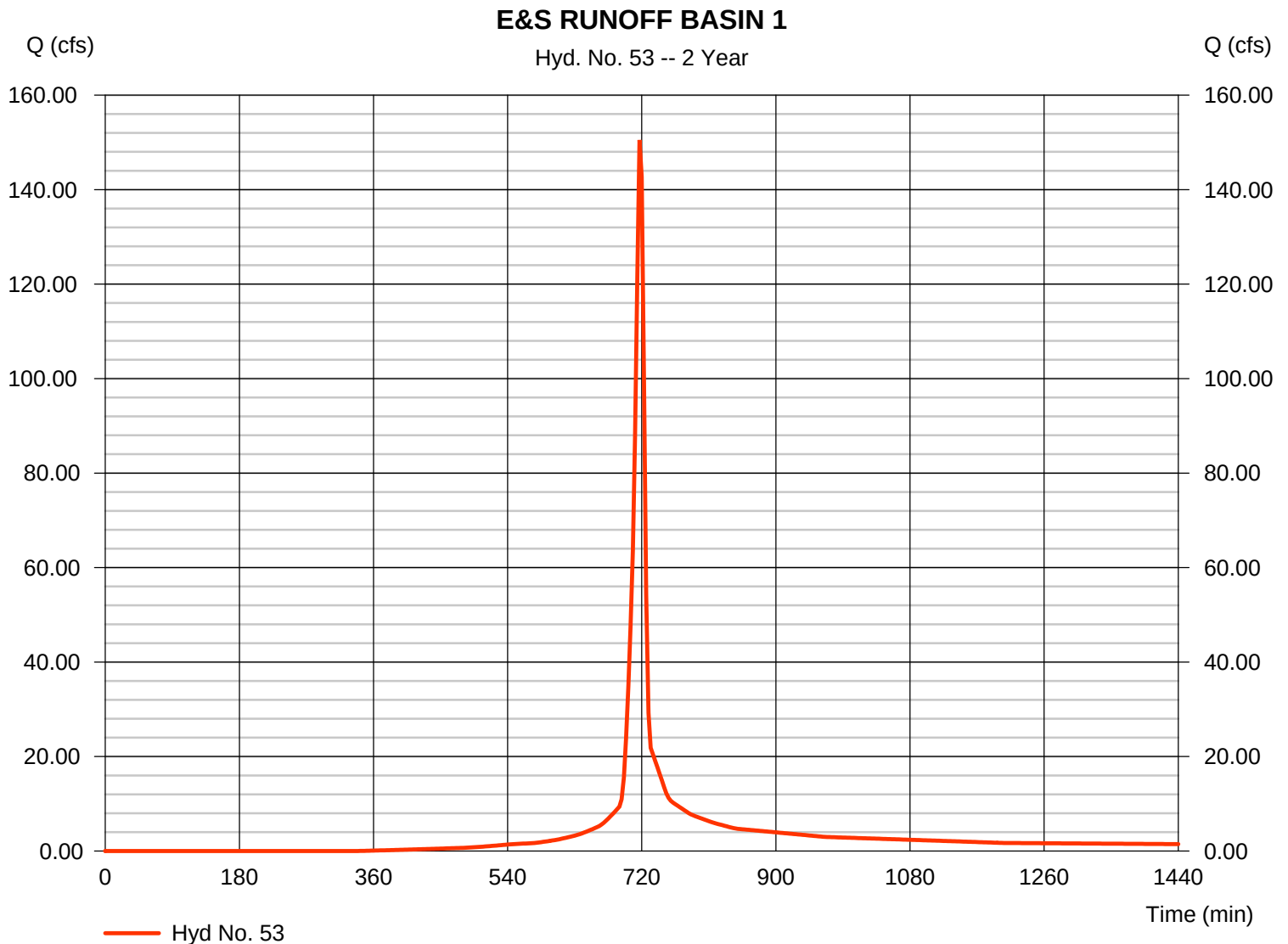
Hyd. No. 53

E&S RUNOFF BASIN 1

Hydrograph type = SCS Runoff
 Storm frequency = 2 yrs
 Time interval = 3 min
 Drainage area = 48.900 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 3.10 in
 Storm duration = 24 hrs

Peak discharge = 150.50 cfs
 Time to peak = 717 min
 Hyd. volume = 345,501 cuft
 Curve number = 90*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(29.300 \times 98) + (19.600 \times 79)] / 48.900$



Hydrograph Report

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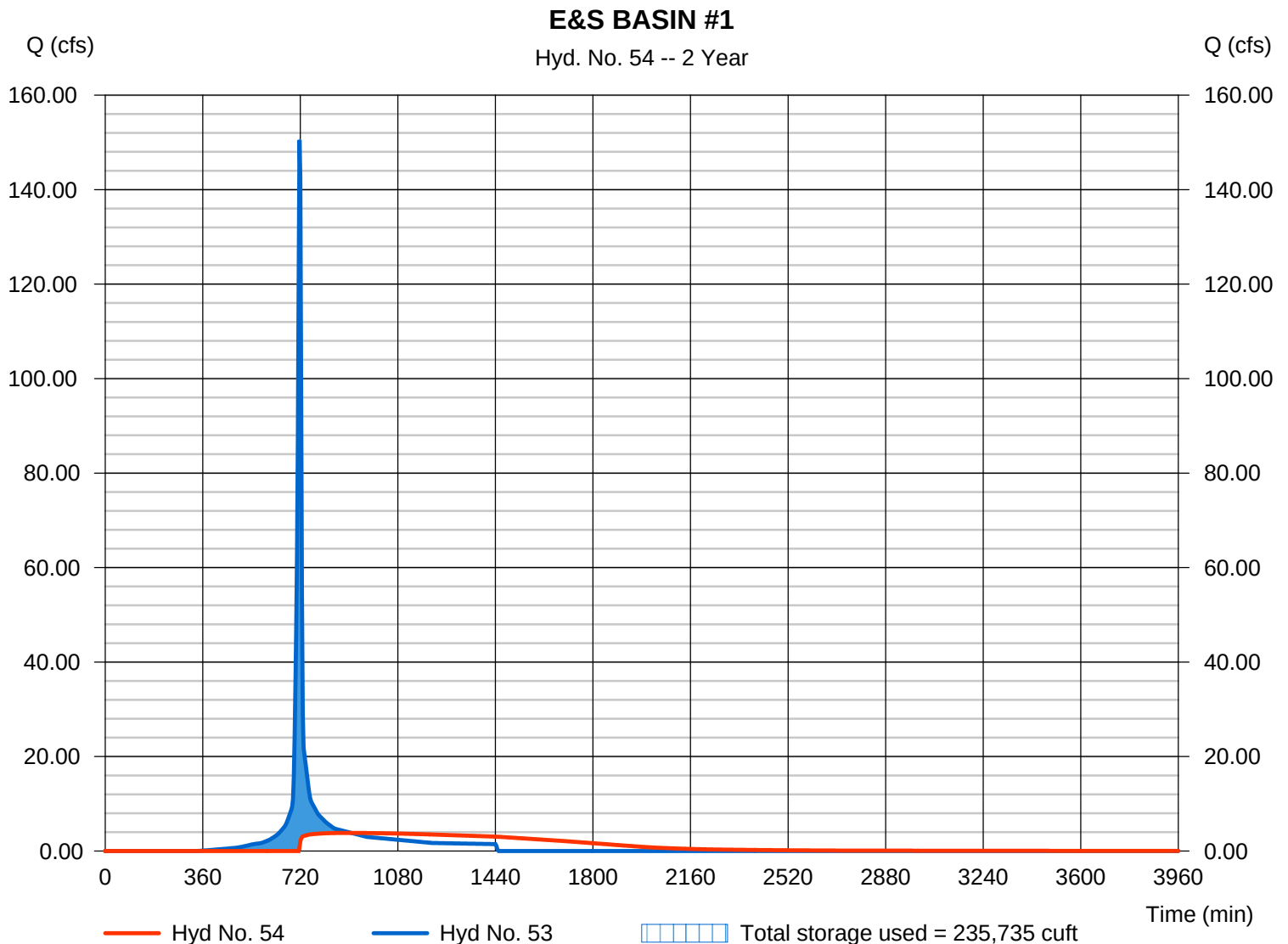
Friday, 07 / 28 / 2017

Hyd. No. 54

E&S BASIN #1

Hydrograph type	= Reservoir	Peak discharge	= 3.833 cfs
Storm frequency	= 2 yrs	Time to peak	= 909 min
Time interval	= 3 min	Hyd. volume	= 238,559 cuft
Inflow hyd. No.	= 53 - E&S RUNOFF BASIN 1	Max. Elevation	= 561.28 ft
Reservoir name	= E&S BASIN #1	Max. Storage	= 235,735 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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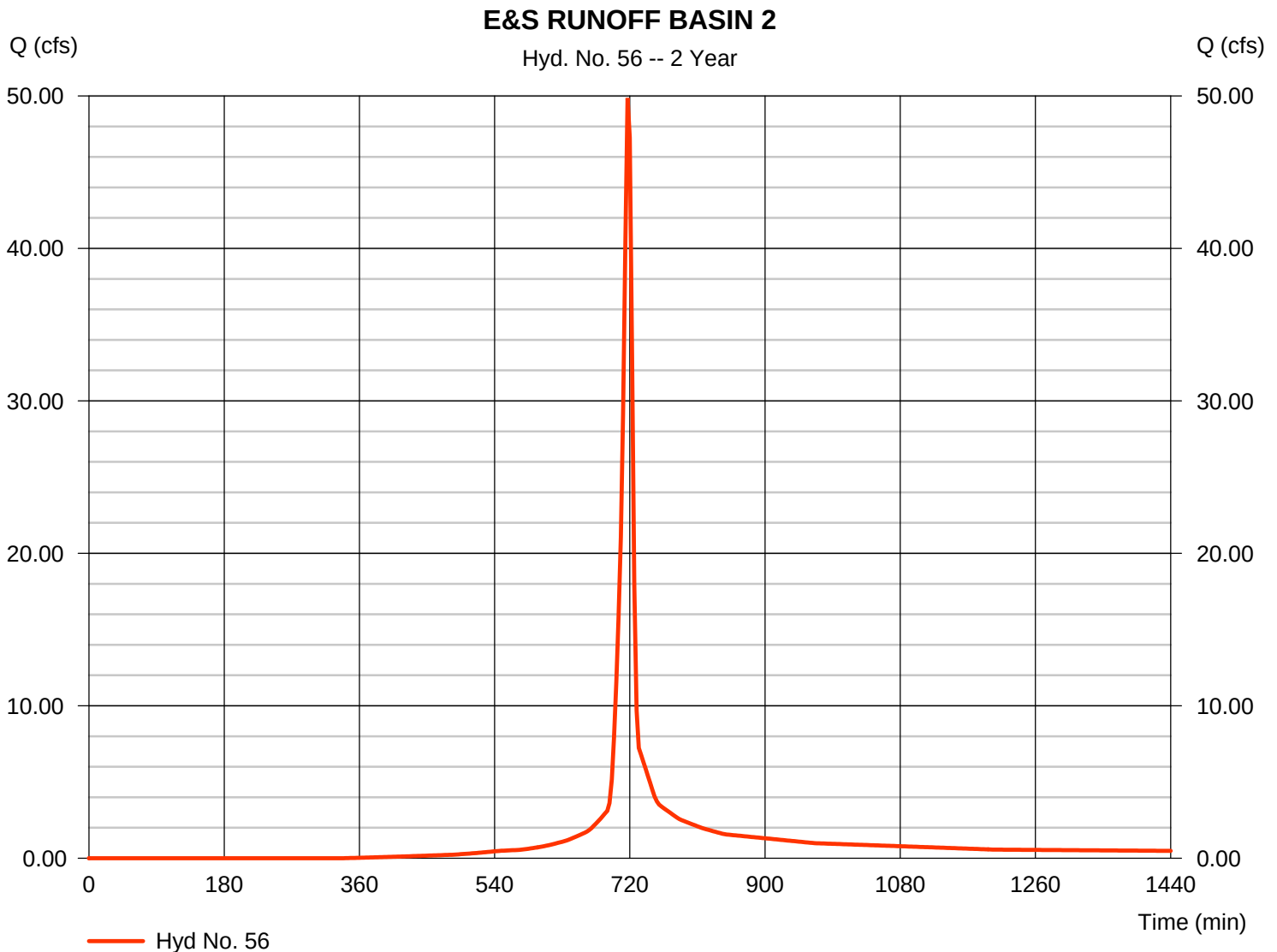
Hyd. No. 56

E&S RUNOFF BASIN 2

Hydrograph type = SCS Runoff
 Storm frequency = 2 yrs
 Time interval = 3 min
 Drainage area = 16.200 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 3.10 in
 Storm duration = 24 hrs

Peak discharge = 49.86 cfs
 Time to peak = 717 min
 Hyd. volume = 114,461 cuft
 Curve number = 90*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(9.720 \times 98) + (6.480 \times 79)] / 16.200$



Hydrograph Report

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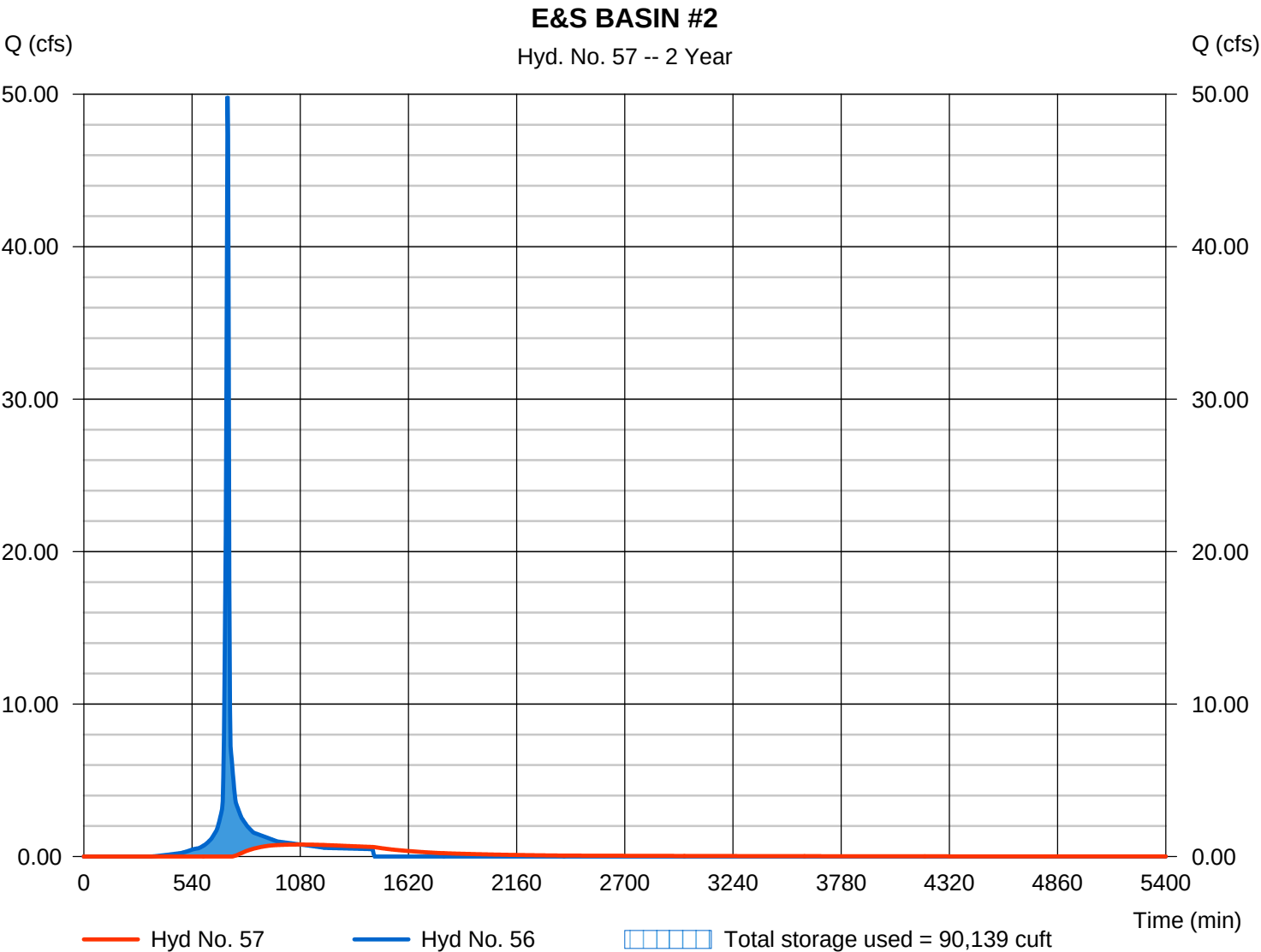
Friday, 07 / 28 / 2017

Hyd. No. 57

E&S BASIN #2

Hydrograph type	= Reservoir	Peak discharge	= 0.787 cfs
Storm frequency	= 2 yrs	Time to peak	= 1080 min
Time interval	= 3 min	Hyd. volume	= 44,646 cuft
Inflow hyd. No.	= 56 - E&S RUNOFF BASIN 2	Max. Elevation	= 574.93 ft
Reservoir name	= E&S BASIN #2	Max. Storage	= 90,139 cuft

Storage Indication method used.



Hydrograph Report

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Hyd. No. 59

DITCH D-3

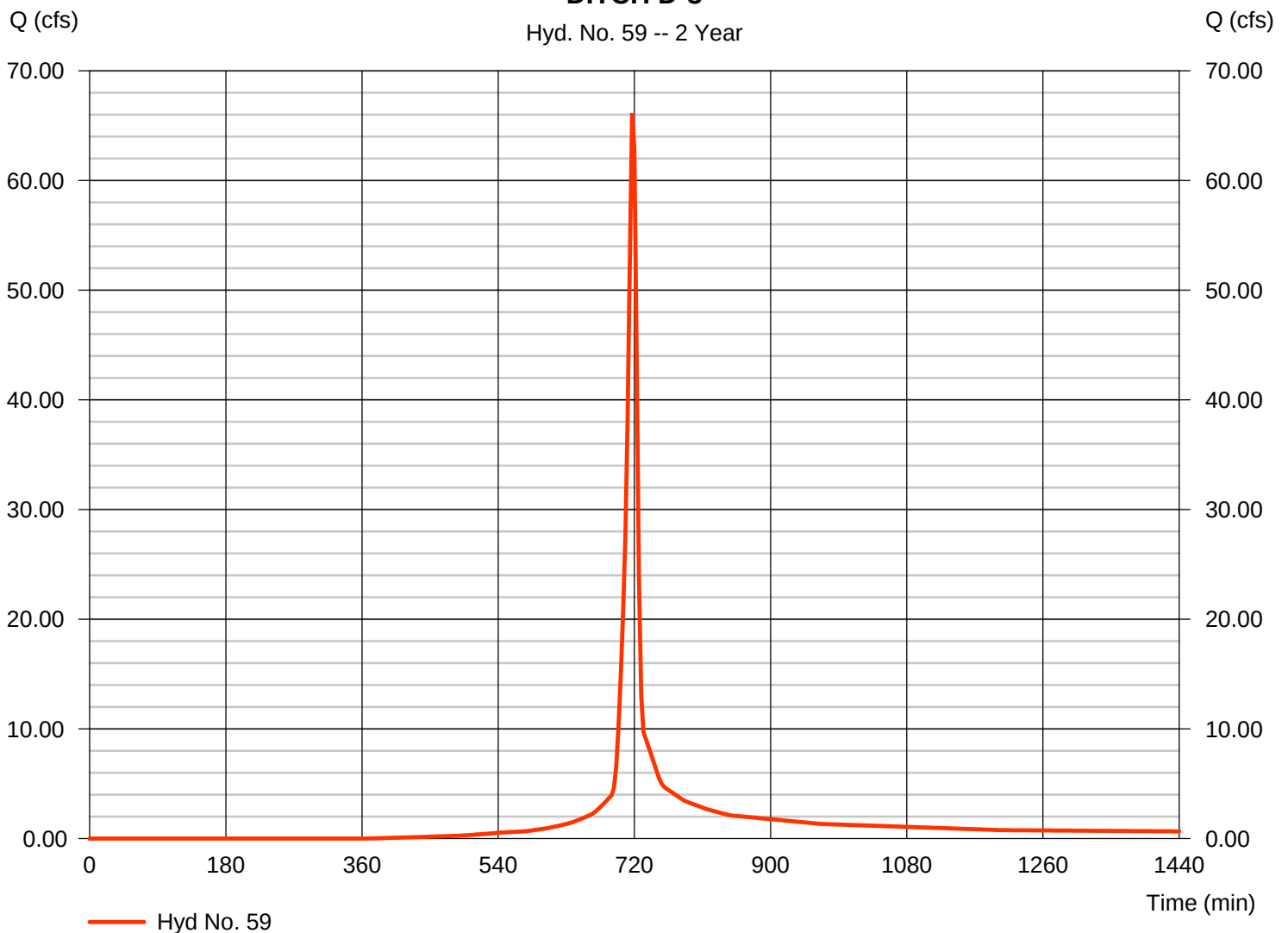
Hydrograph type = SCS Runoff
 Storm frequency = 2 yrs
 Time interval = 3 min
 Drainage area = 22.300 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 3.10 in
 Storm duration = 24 hrs

Peak discharge = 66.15 cfs
 Time to peak = 717 min
 Hyd. volume = 151,055 cuft
 Curve number = 89*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(12.200 \times 98) + (10.100 \times 79)] / 22.300$

DITCH D-3

Hyd. No. 59 -- 2 Year



Hydrograph Report

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Friday, 07 / 28 / 2017

Hyd. No. 60

DITCH D-4

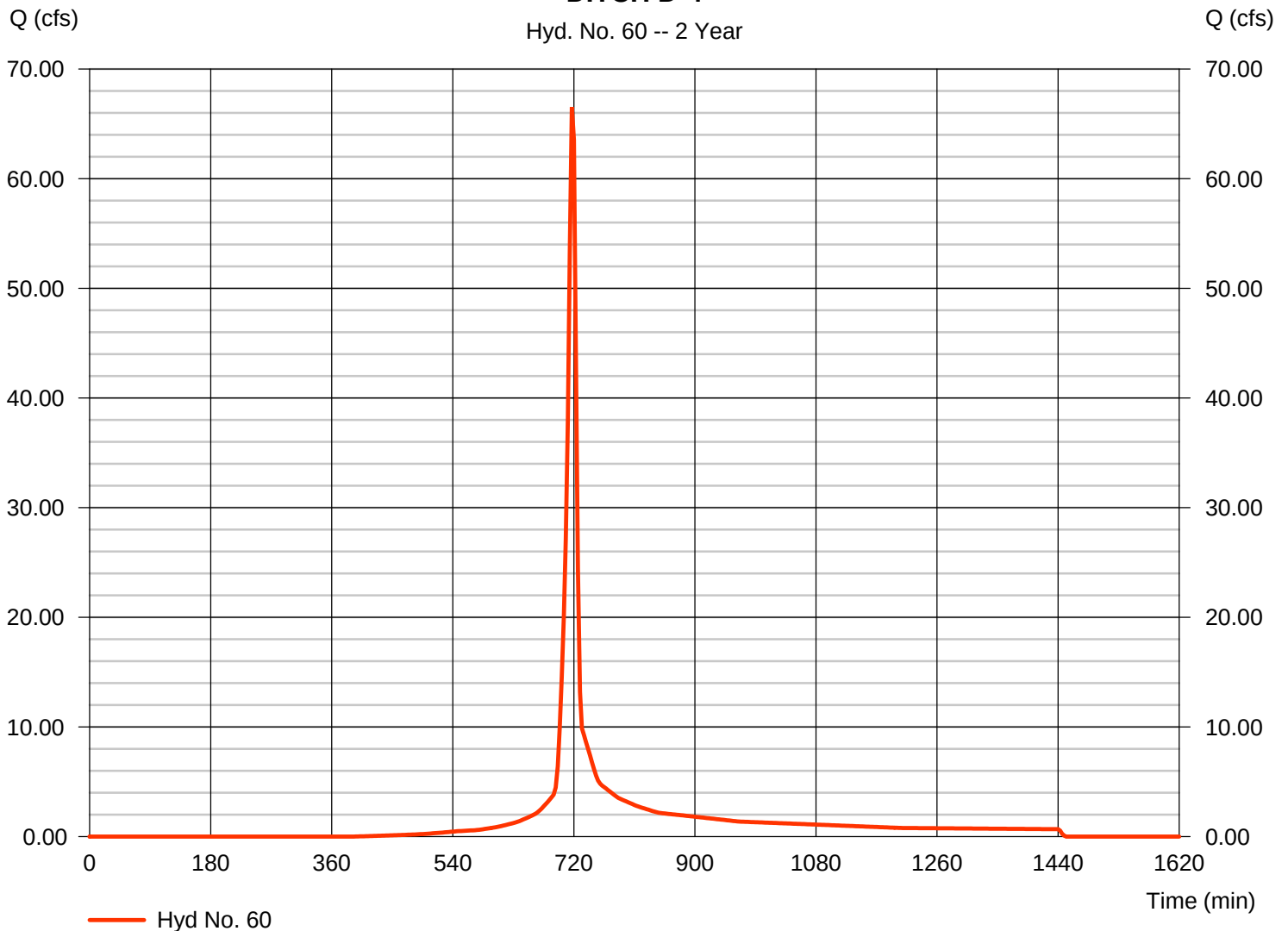
Hydrograph type = SCS Runoff
 Storm frequency = 2 yrs
 Time interval = 3 min
 Drainage area = 23.300 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 3.10 in
 Storm duration = 24 hrs

Peak discharge = 66.51 cfs
 Time to peak = 717 min
 Hyd. volume = 151,238 cuft
 Curve number = 88*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(11.500 \times 98) + (11.800 \times 79)] / 23.300$

DITCH D-4

Hyd. No. 60 -- 2 Year



Hydrograph Report

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Hyd. No. 62

PRE-DEVELOPMENT

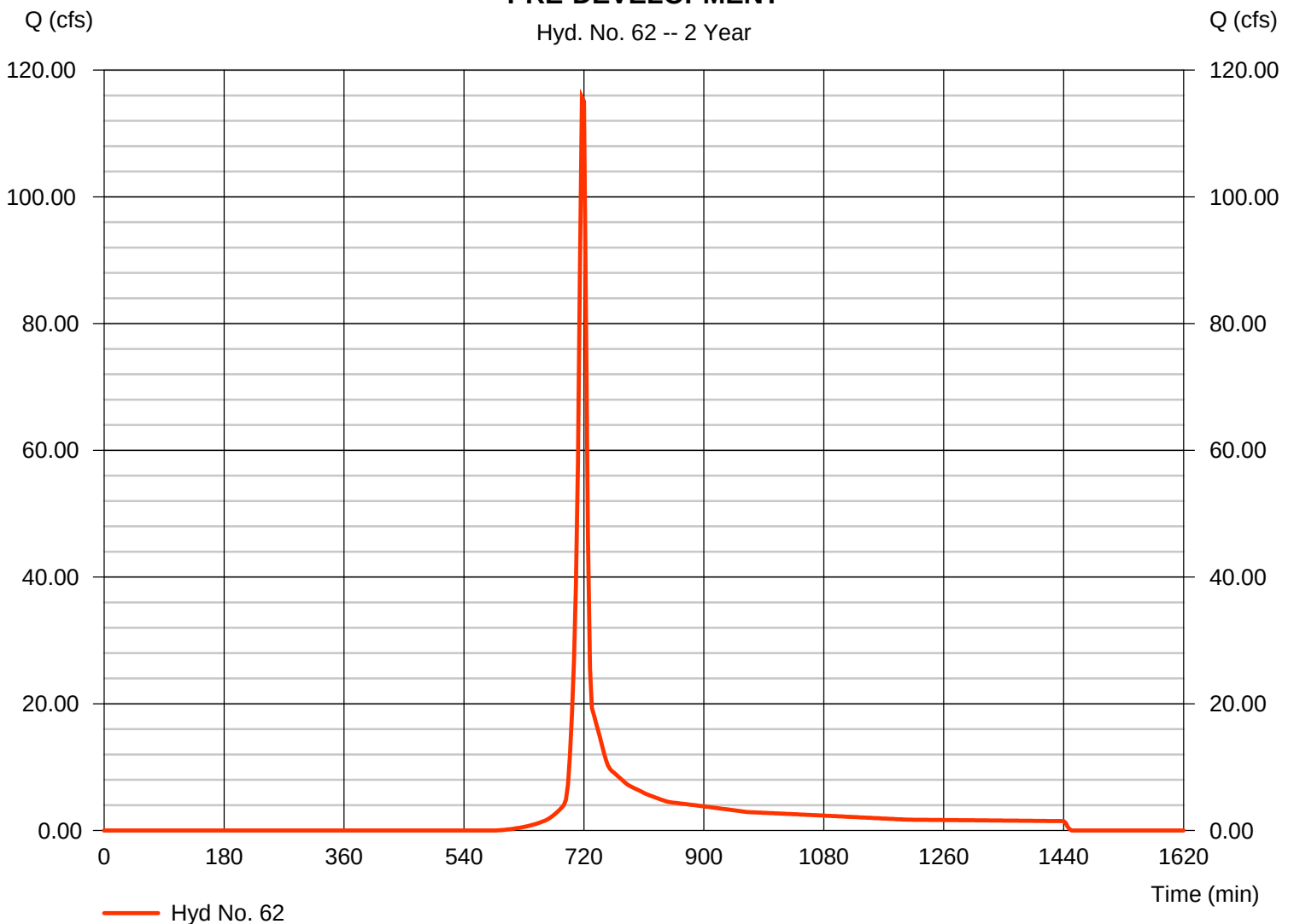
Hydrograph type = SCS Runoff
 Storm frequency = 2 yrs
 Time interval = 3 min
 Drainage area = 61.500 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 3.10 in
 Storm duration = 24 hrs

Peak discharge = 115.72 cfs
 Time to peak = 717 min
 Hyd. volume = 264,147 cuft
 Curve number = 79*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(60.200 \times 79) + (1.300 \times 98)] / 61.500$

PRE-DEVELOPMENT

Hyd. No. 62 -- 2 Year



Hydrograph Report

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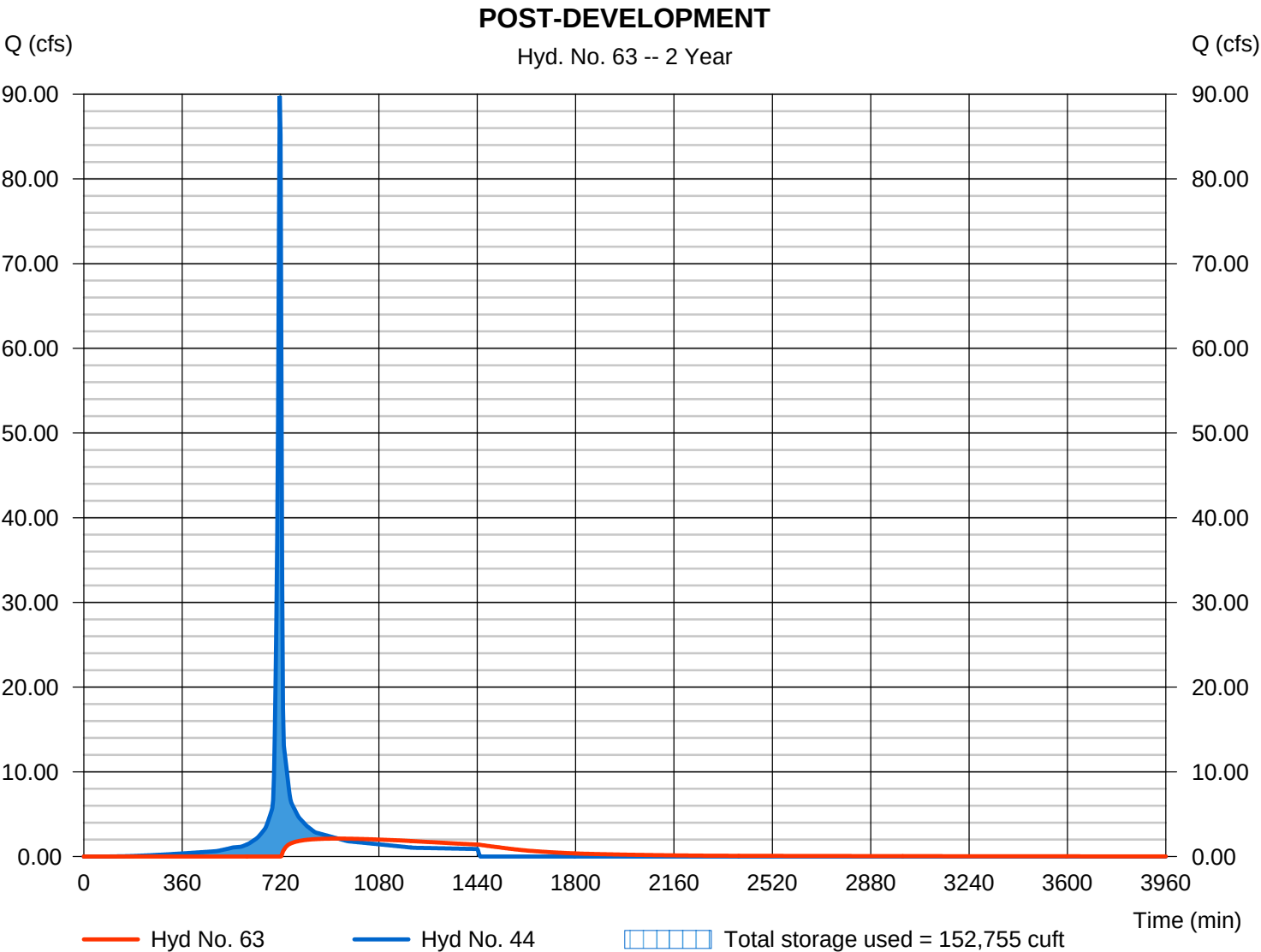
Friday, 07 / 28 / 2017

Hyd. No. 63

POST-DEVELOPMENT

Hydrograph type	= Reservoir	Peak discharge	= 2.118 cfs
Storm frequency	= 2 yrs	Time to peak	= 930 min
Time interval	= 3 min	Hyd. volume	= 106,999 cuft
Inflow hyd. No.	= 44 - TOTAL CLEAN WATER STORAGE	Max. Elevation	= 560.01 ft
Reservoir name	= STORMWATER DETENTION POND	Max. Storage	= 152,755 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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	12.34	3	717	27,969	-----	-----	-----	GRASS SWALE #1
2	SCS Runoff	5.075	3	717	12,202	-----	-----	-----	GRASS SWALE #2
3	SCS Runoff	5.408	3	717	13,336	-----	-----	-----	GRASS SWALE #3
4	SCS Runoff	3.755	3	717	9,261	-----	-----	-----	GRASS SWALE #4
5	SCS Runoff	7.503	3	717	16,972	-----	-----	-----	GRASS SWALE #5
6	SCS Runoff	1.137	3	717	2,704	-----	-----	-----	GRASS SWALE #6
7	SCS Runoff	3.348	3	717	7,830	-----	-----	-----	GRASS SWALE #7
8	SCS Runoff	0.914	3	717	2,290	-----	-----	-----	GRASS SWALE #8
9	SCS Runoff	3.792	3	717	9,225	-----	-----	-----	DI #4
10	SCS Runoff	18.00	3	717	46,818	-----	-----	-----	DI #6
11	SCS Runoff	5.022	3	717	11,745	-----	-----	-----	DI #7
12	SCS Runoff	7.061	3	717	17,683	-----	-----	-----	DI #8
13	SCS Runoff	8.713	3	717	21,485	-----	-----	-----	DI #9
14	SCS Runoff	1.218	3	717	2,751	-----	-----	-----	DI #10
15	SCS Runoff	21.96	3	717	49,584	-----	-----	-----	MH #11
16	SCS Runoff	6.700	3	717	15,319	-----	-----	-----	DI #13
17	SCS Runoff	8.112	3	717	20,003	-----	-----	-----	DI #14
18	SCS Runoff	12.70	3	717	31,805	-----	-----	-----	DI #15
21	SCS Runoff	6.838	3	717	17,427	-----	-----	-----	DI #22
22	SCS Runoff	5.551	3	717	14,437	-----	-----	-----	DI #23
23	SCS Runoff	4.410	3	717	11,468	-----	-----	-----	DI #24
24	SCS Runoff	4.410	3	717	11,468	-----	-----	-----	DI #25
25	SCS Runoff	2.854	3	717	7,421	-----	-----	-----	DI #26
26	SCS Runoff	4.151	3	717	10,794	-----	-----	-----	DI #27
27	SCS Runoff	3.750	3	717	8,469	-----	-----	-----	DITCH D-1
28	SCS Runoff	27.95	3	717	63,120	-----	-----	-----	DITCH D-2
29	SCS Runoff	5.240	3	717	13,627	-----	-----	-----	DI #29
30	SCS Runoff	1.349	3	717	3,508	-----	-----	-----	DI #30
31	SCS Runoff	4.617	3	717	12,008	-----	-----	-----	DI #31
32	SCS Runoff	8.561	3	717	22,262	-----	-----	-----	DI #32
33	SCS Runoff	2.750	3	717	7,151	-----	-----	-----	DI #33
34	SCS Runoff	7.104	3	717	16,901	-----	-----	-----	DI #34
35	SCS Runoff	2.335	3	717	6,071	-----	-----	-----	DI #35
TOTAL REVISED HYDROLOGY.gpw					Return Period: 5 Year			Friday, 07 / 28 / 2017	

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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
36	SCS Runoff	2.387	3	717	6,206	-----	-----	-----	DI #36
37	SCS Runoff	2.957	3	717	7,691	-----	-----	-----	DI #38
38	SCS Runoff	2.715	3	717	6,349	-----	-----	-----	DI #39
39	SCS Runoff	6.439	3	717	15,180	-----	-----	-----	DI #40
41	Combine	38.14	3	717	95,592	7, 8, 9, 10, 11, 12,	-----	-----	DI 4-8, SWALES 7-8
42	Combine	59.40	3	717	140,947	13, 14, 15, 16, 17, 18,	-----	-----	DI 9-15
43	Combine	35.22	3	717	82,444	1, 2, 3, 4, 5, 6,	-----	-----	GRASS SWALES 1-6
44	Combine	132.76	3	717	318,982	41, 42, 43	-----	-----	TOTAL CLEAN WATER SYSTEM
45	Reservoir	3.600	3	885	212,041	44	561.06	221,128	STORMWATER POND
47	Combine	12.11	3	717	29,220	37, 38, 39,	-----	-----	DI 38-40
48	Combine	28.21	3	717	73,015	21, 22, 23, 24, 25, 26,	-----	-----	DI 22-27
49	Combine	51.47	3	717	122,994	27, 28, 29, 30, 31, 32,	-----	-----	DI 29-32 & DITCHES
50	Combine	14.57	3	717	36,330	33, 34, 35, 36,	-----	-----	DI 33-36
51	Combine	106.37	3	717	261,560	47, 48, 49, 50	-----	-----	TOTAL DIRTY WATER SYSTEM
53	SCS Runoff	221.24	3	717	517,422	-----	-----	-----	E&S RUNOFF BASIN 1
54	Reservoir	17.09	3	753	410,479	53	562.44	315,691	E&S BASIN #1
56	SCS Runoff	73.29	3	717	171,416	-----	-----	-----	E&S RUNOFF BASIN 2
57	Reservoir	1.715	3	918	101,602	56	575.57	121,883	E&S BASIN #2
59	SCS Runoff	98.40	3	717	228,523	-----	-----	-----	DITCH D-3
60	SCS Runoff	100.13	3	717	231,146	-----	-----	-----	DITCH D-4
62	SCS Runoff	197.13	3	717	445,171	-----	-----	-----	PRE-DEVELOPMENT
63	Reservoir	3.600	3	885	212,041	44	561.06	221,128	POST-DEVELOPMENT
TOTAL REVISED HYDROLOGY.gpw					Return Period: 5 Year			Friday, 07 / 28 / 2017	

Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

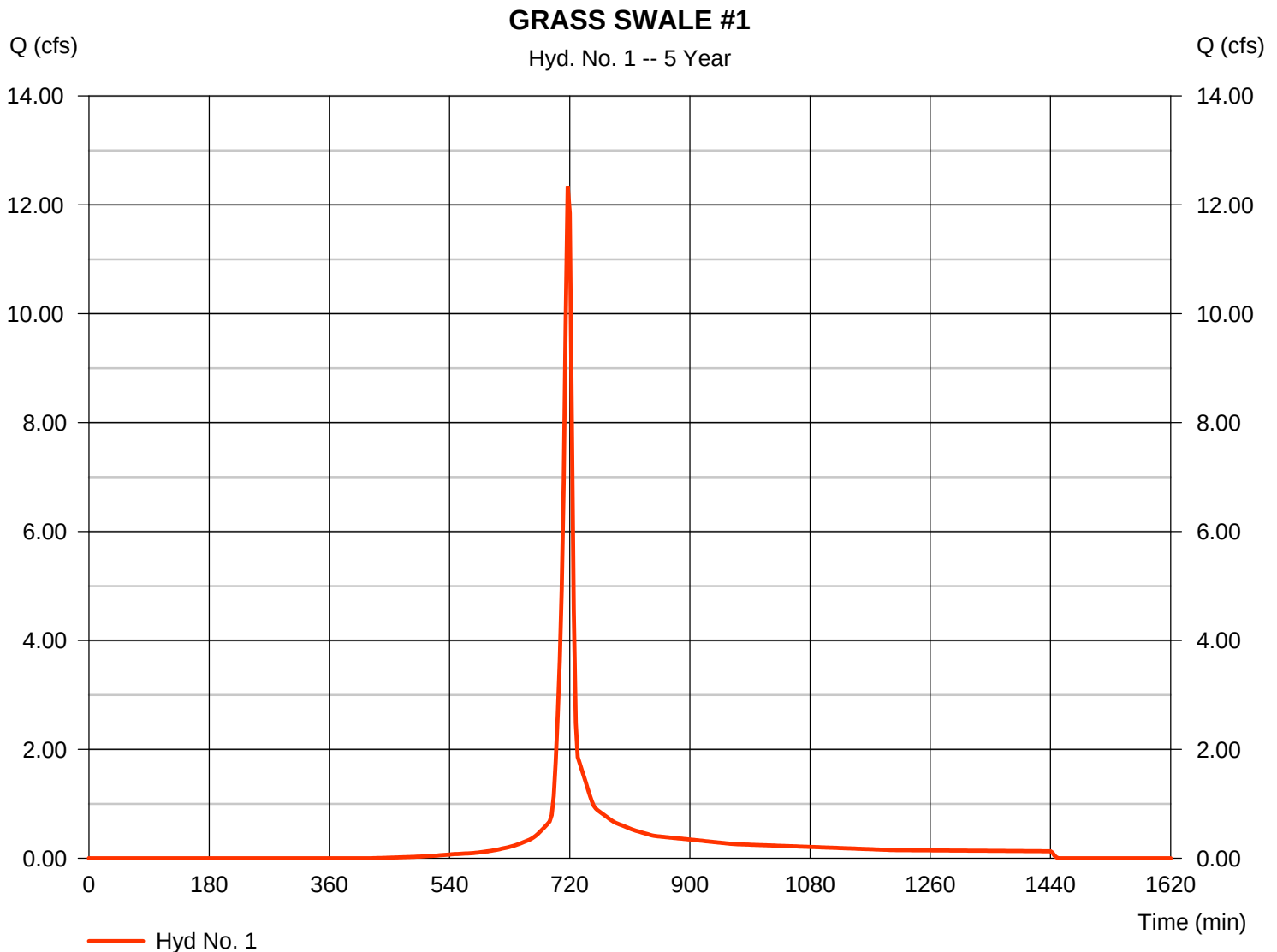
Friday, 07 / 28 / 2017

Hyd. No. 1

GRASS SWALE #1

Hydrograph type	= SCS Runoff	Peak discharge	= 12.34 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 27,969 cuft
Drainage area	= 3.340 ac	Curve number	= 83*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.730 \times 98) + (2.610 \times 79)] / 3.340$



Hydrograph Report

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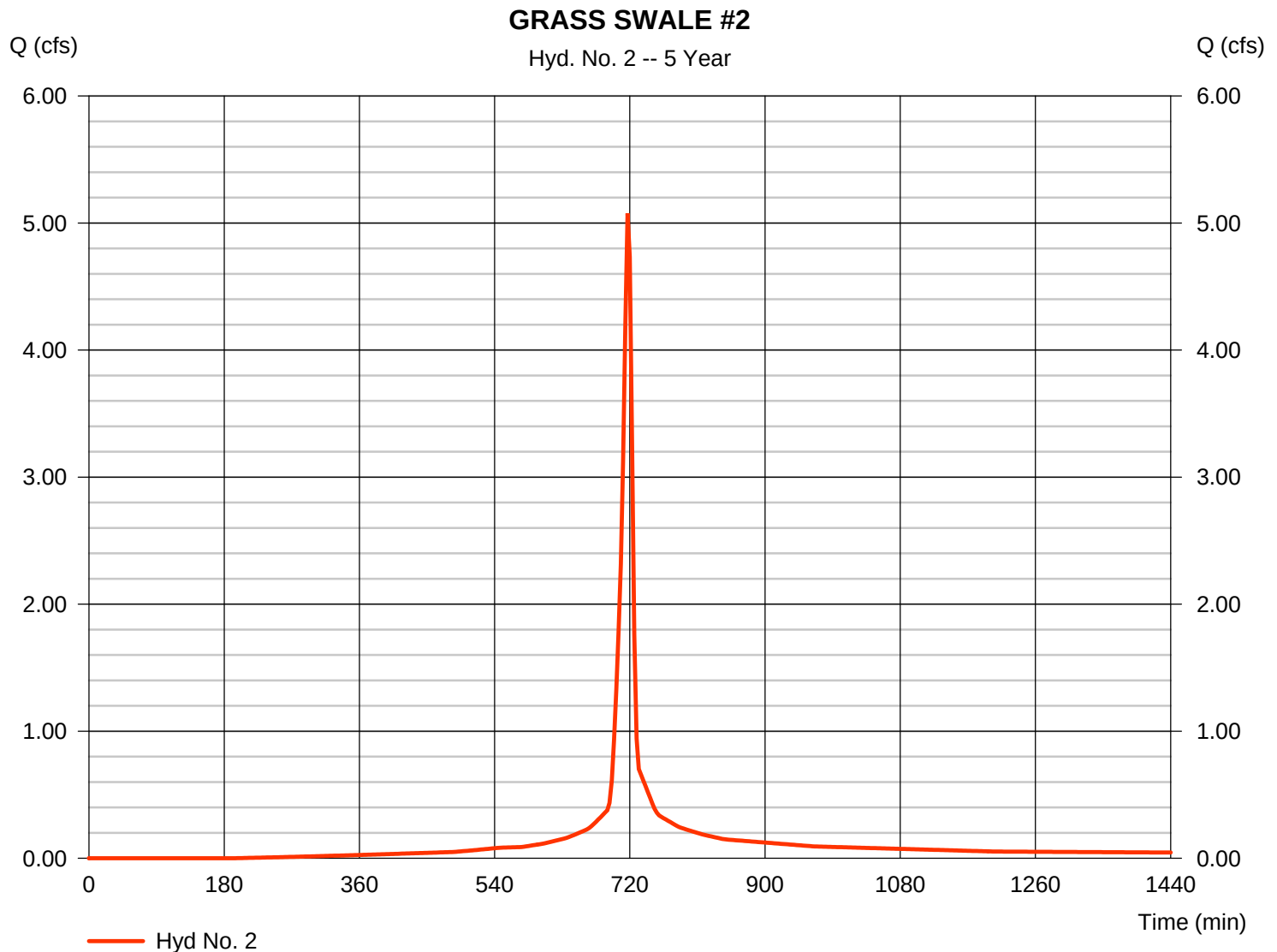
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Hyd. No. 2

GRASS SWALE #2

Hydrograph type	= SCS Runoff	Peak discharge	= 5.075 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 12,202 cuft
Drainage area	= 1.050 ac	Curve number	= 93*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.770 \times 98) + (0.280 \times 79)] / 1.050$



Hydrograph Report

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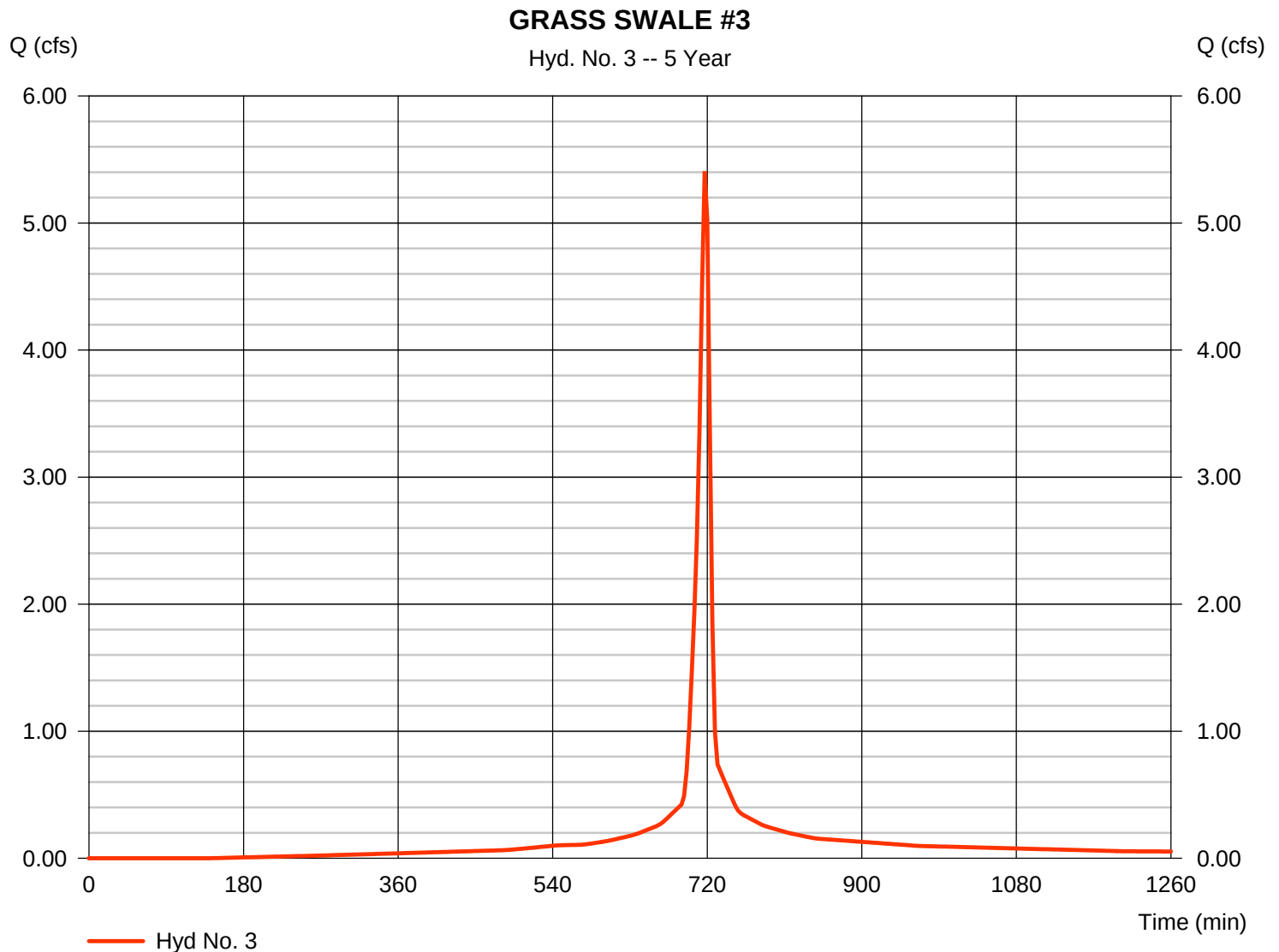
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Hyd. No. 3

GRASS SWALE #3

Hydrograph type	= SCS Runoff	Peak discharge	= 5.408 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 13,336 cuft
Drainage area	= 1.080 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.890 \times 98) + (0.190 \times 79)] / 1.080$



Hydrograph Report

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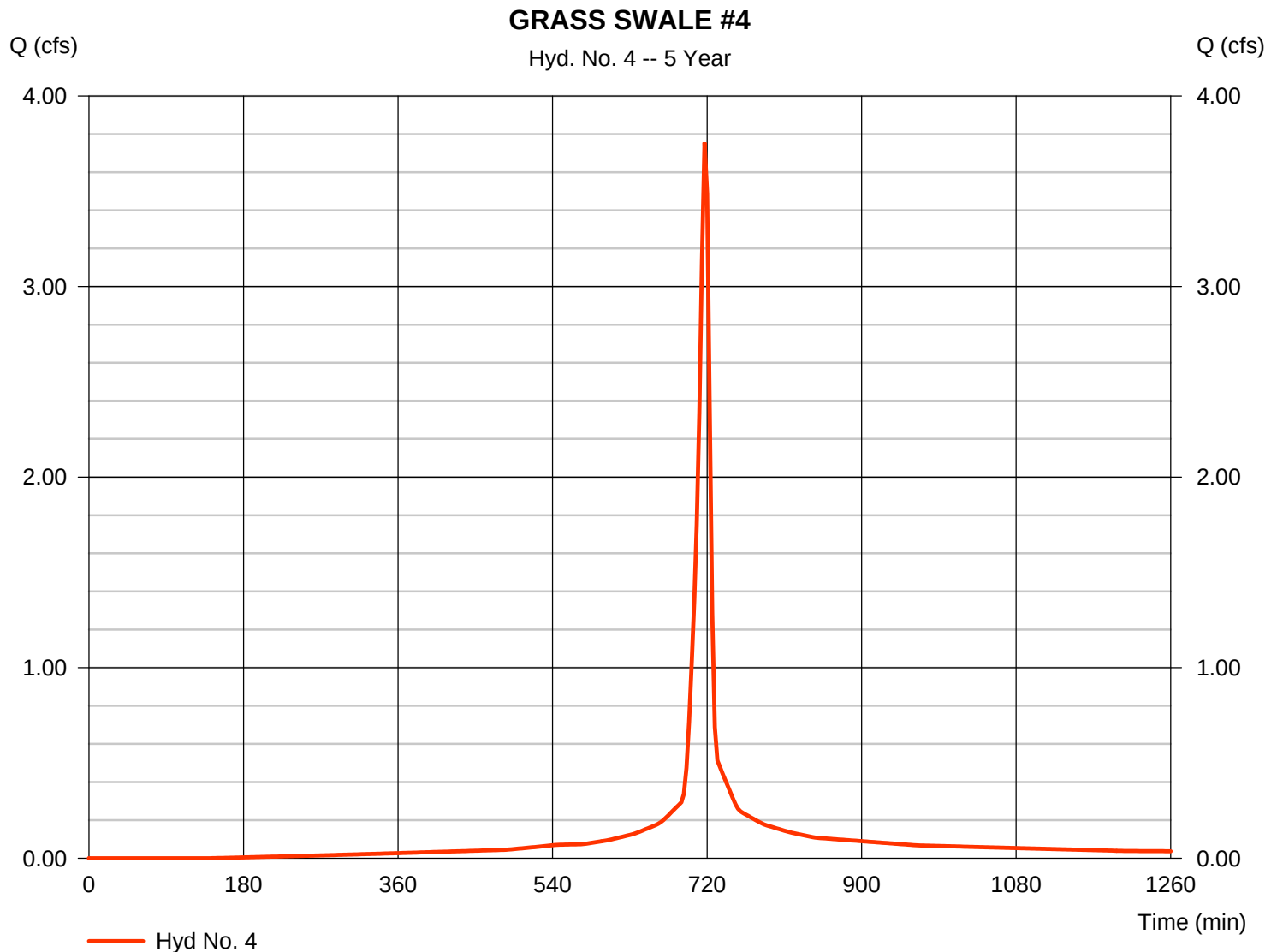
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Hyd. No. 4

GRASS SWALE #4

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.755 cfs
Storm frequency	=	5 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	9,261 cuft
Drainage area	=	0.750 ac	Curve number	=	95*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	4.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = $[(0.630 \times 98) + (0.120 \times 79)] / 0.750$



Hydrograph Report

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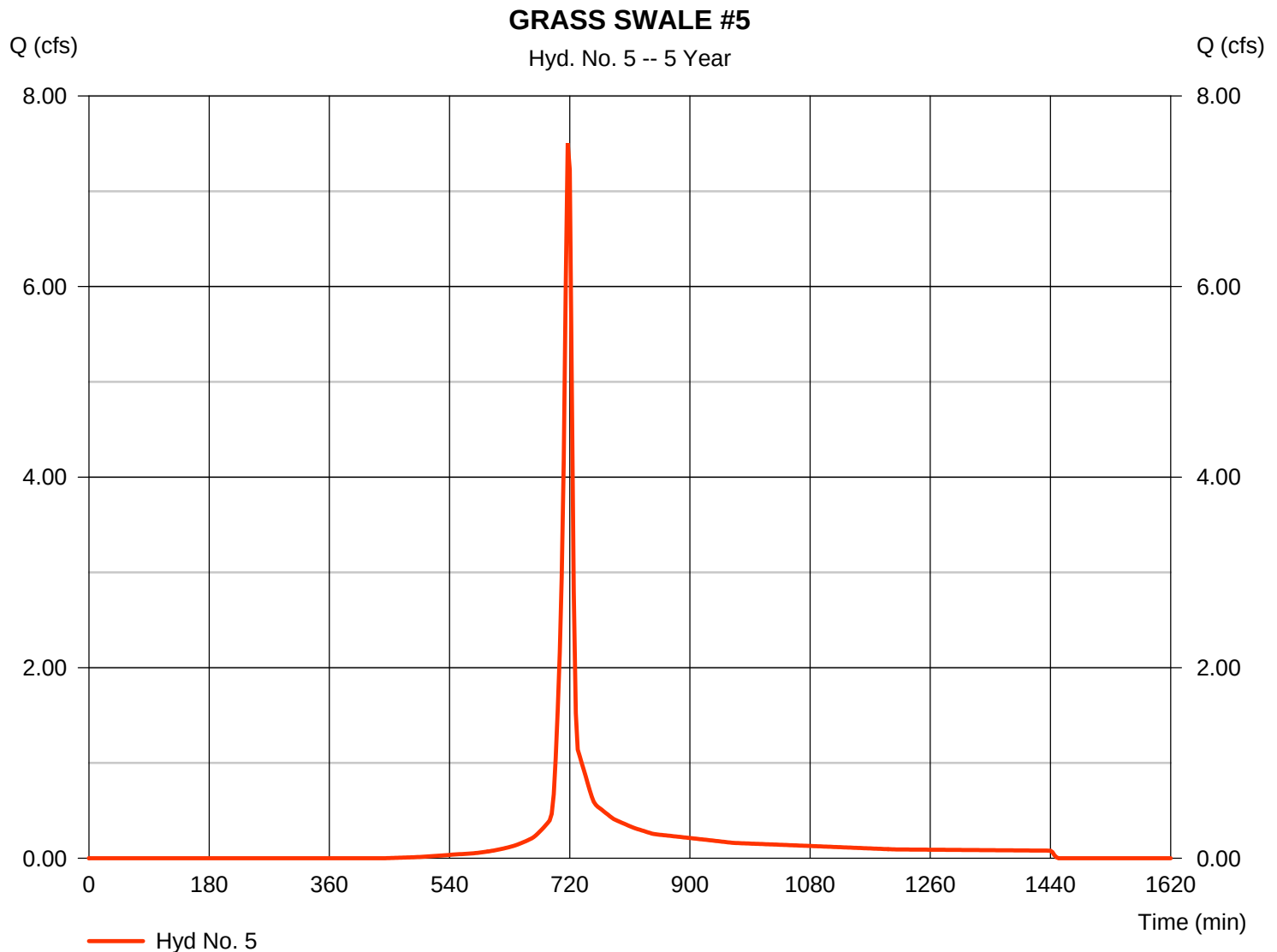
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Hyd. No. 5

GRASS SWALE #5

Hydrograph type	= SCS Runoff	Peak discharge	= 7.503 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 16,972 cuft
Drainage area	= 2.100 ac	Curve number	= 82*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.300 \times 98) + (1.800 \times 79)] / 2.100$



Hydrograph Report

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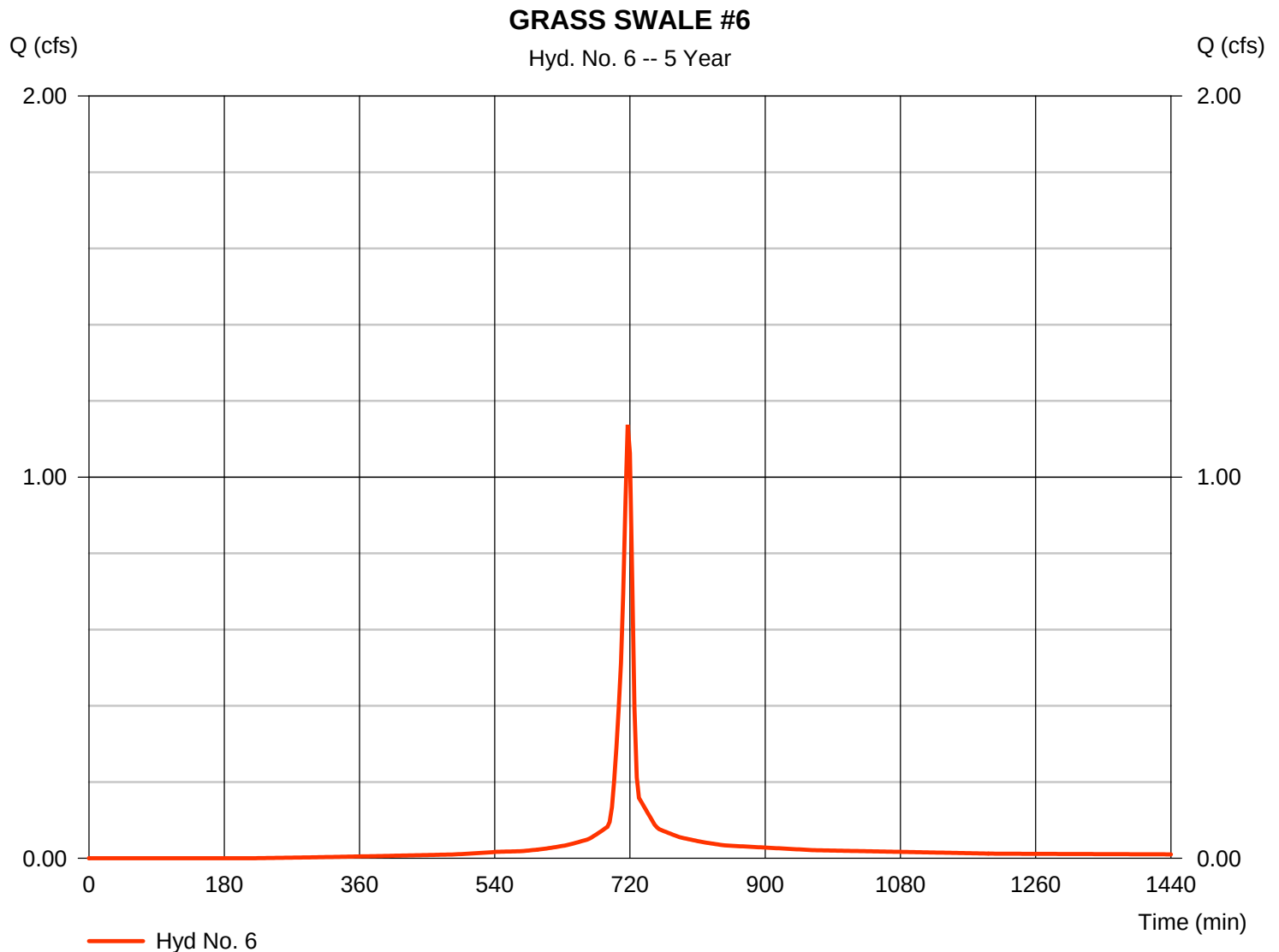
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Hyd. No. 6

GRASS SWALE #6

Hydrograph type	= SCS Runoff	Peak discharge	= 1.137 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 2,704 cuft
Drainage area	= 0.240 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.160 \times 98) + (0.080 \times 79)] / 0.240$



Hydrograph Report

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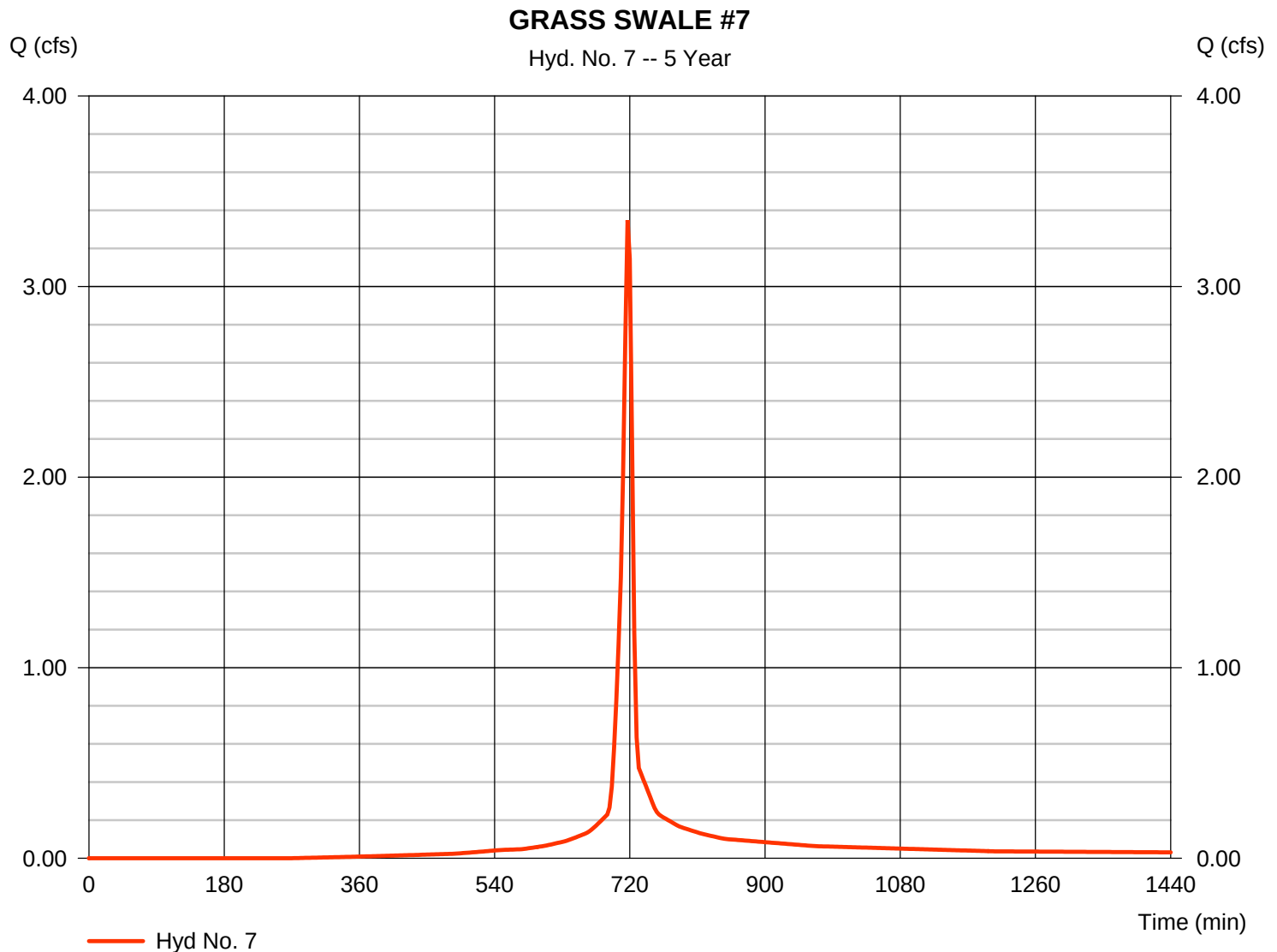
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Hyd. No. 7

GRASS SWALE #7

Hydrograph type	= SCS Runoff	Peak discharge	= 3.348 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 7,830 cuft
Drainage area	= 0.740 ac	Curve number	= 90*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.420 \times 98) + (0.320 \times 79)] / 0.740$



Hydrograph Report

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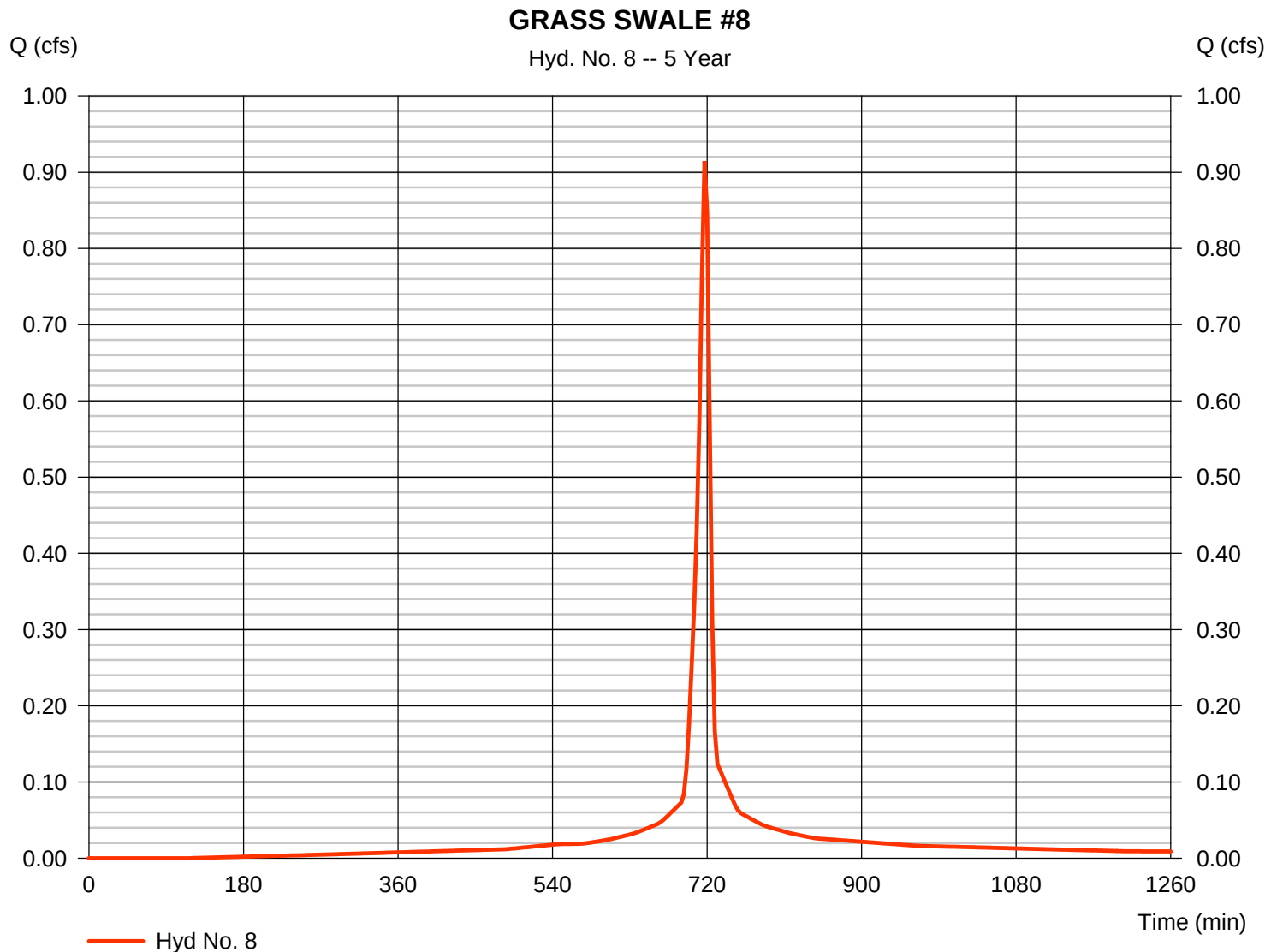
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Hyd. No. 8

GRASS SWALE #8

Hydrograph type	= SCS Runoff	Peak discharge	= 0.914 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 2,290 cuft
Drainage area	= 0.180 ac	Curve number	= 96*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.160 \times 98) + (0.020 \times 79)] / 0.180$



Hydrograph Report

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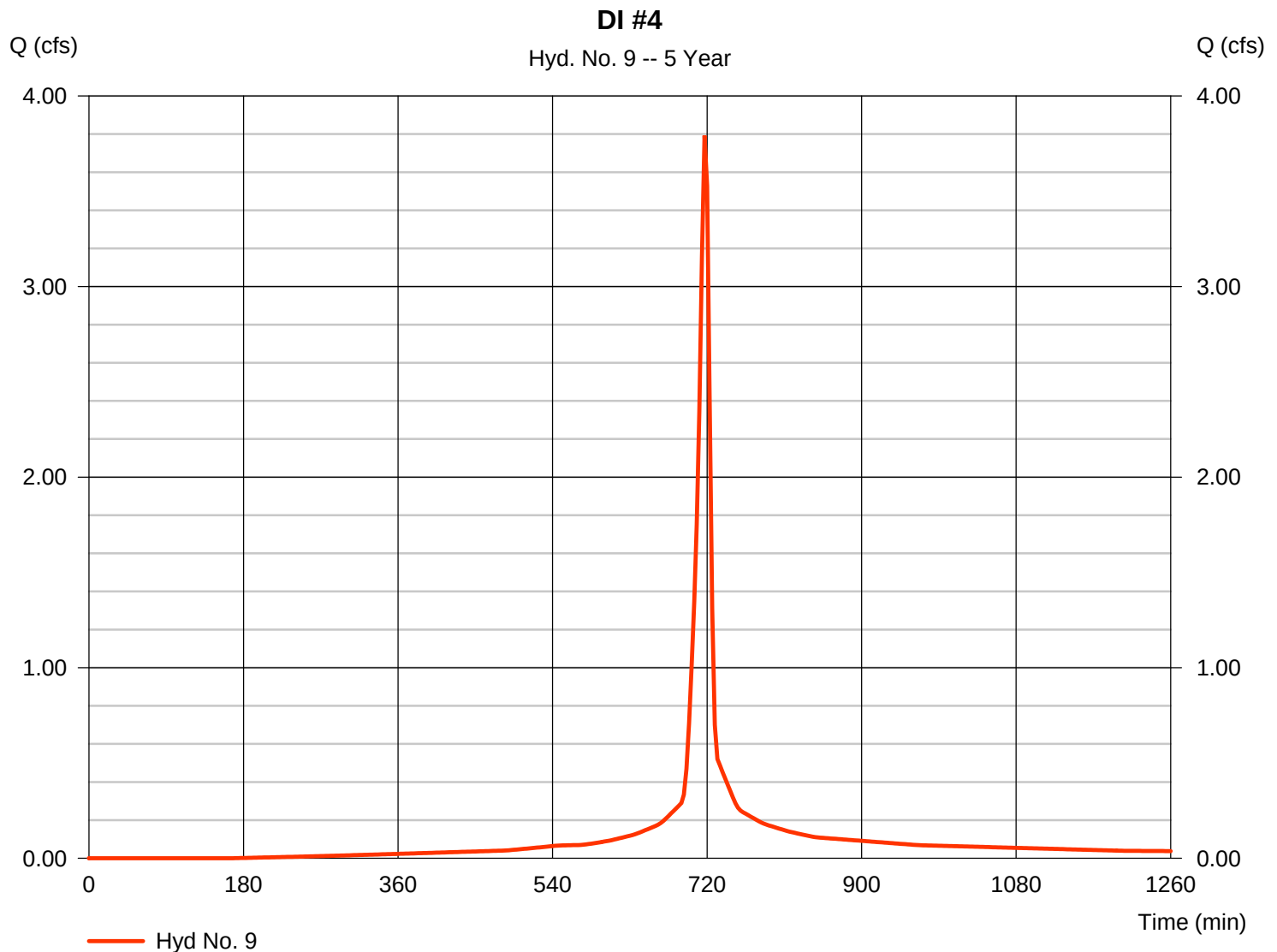
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Hyd. No. 9

DI #4

Hydrograph type	= SCS Runoff	Peak discharge	= 3.792 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 9,225 cuft
Drainage area	= 0.770 ac	Curve number	= 94*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.610 \times 98) + (0.160 \times 79)] / 0.770$



Hydrograph Report

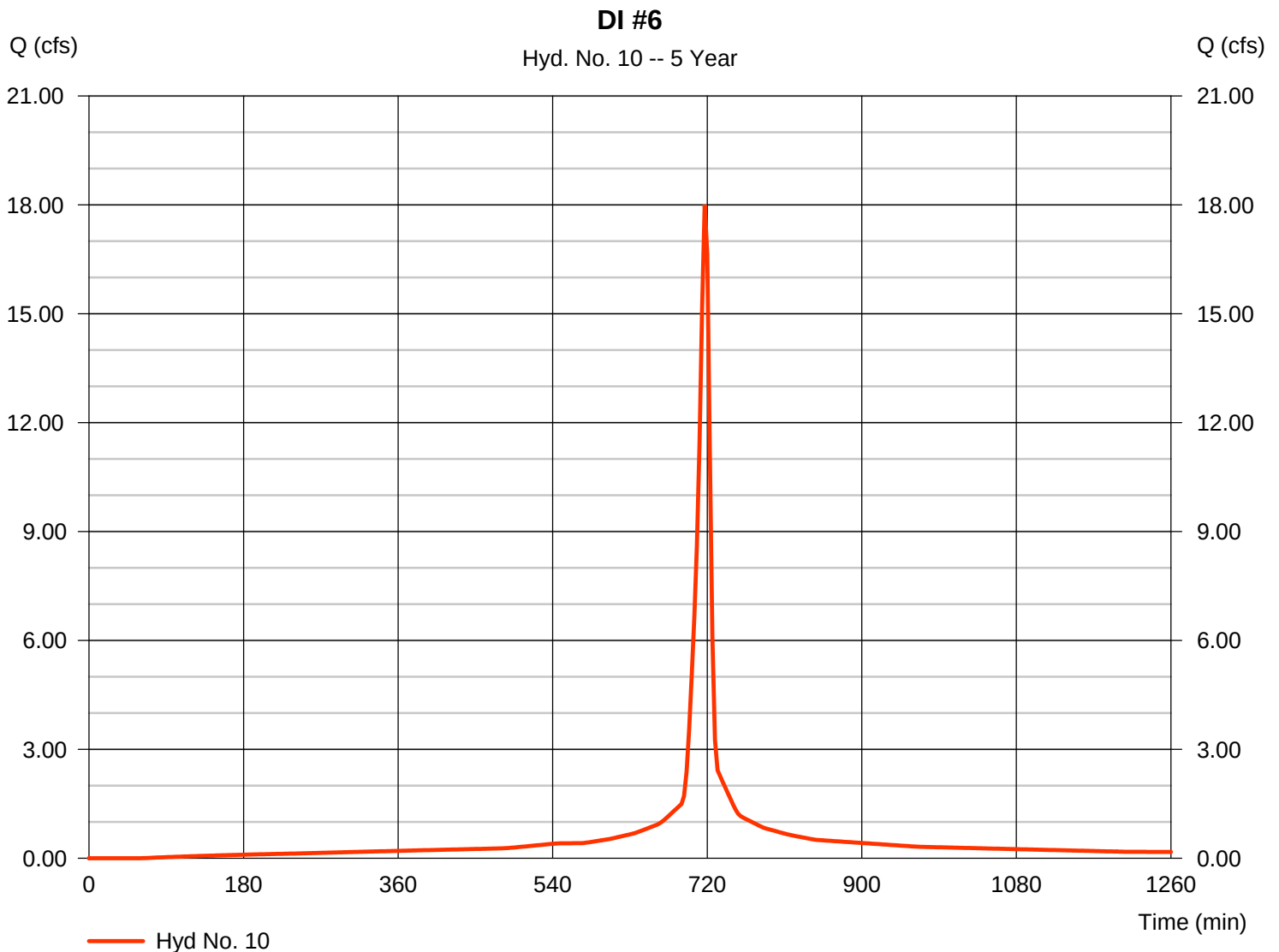
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Hyd. No. 10

DI #6

Hydrograph type	= SCS Runoff	Peak discharge	= 18.00 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 46,818 cuft
Drainage area	= 3.470 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

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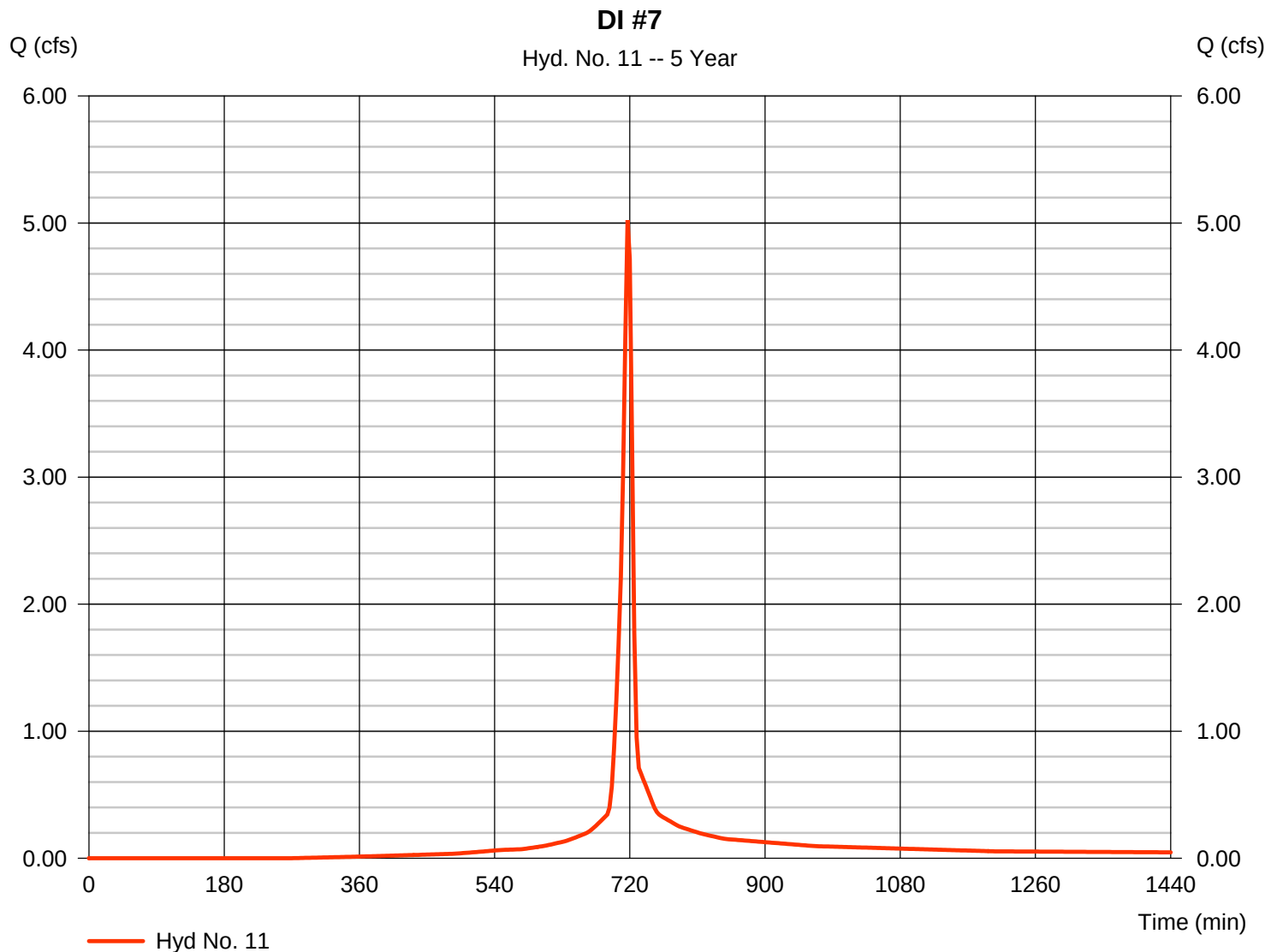
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Hyd. No. 11

DI #7

Hydrograph type	= SCS Runoff	Peak discharge	= 5.022 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 11,745 cuft
Drainage area	= 1.110 ac	Curve number	= 90*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.660 \times 98) + (0.450 \times 79)] / 1.110$



Hydrograph Report

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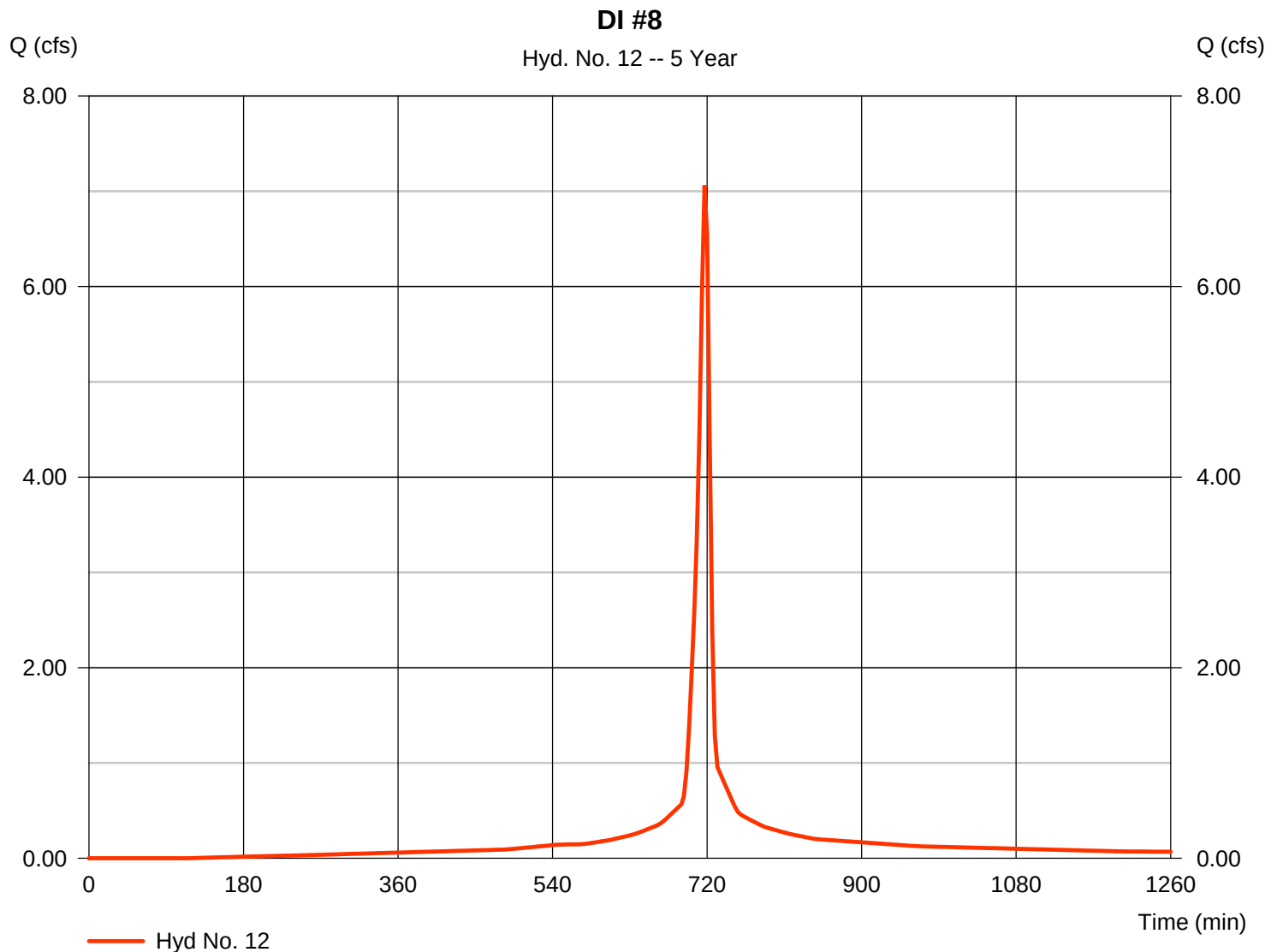
Friday, 07 / 28 / 2017

Hyd. No. 12

DI #8

Hydrograph type	= SCS Runoff	Peak discharge	= 7.061 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 17,683 cuft
Drainage area	= 1.390 ac	Curve number	= 96*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.230 \times 98) + (0.160 \times 79)] / 1.390$



Hydrograph Report

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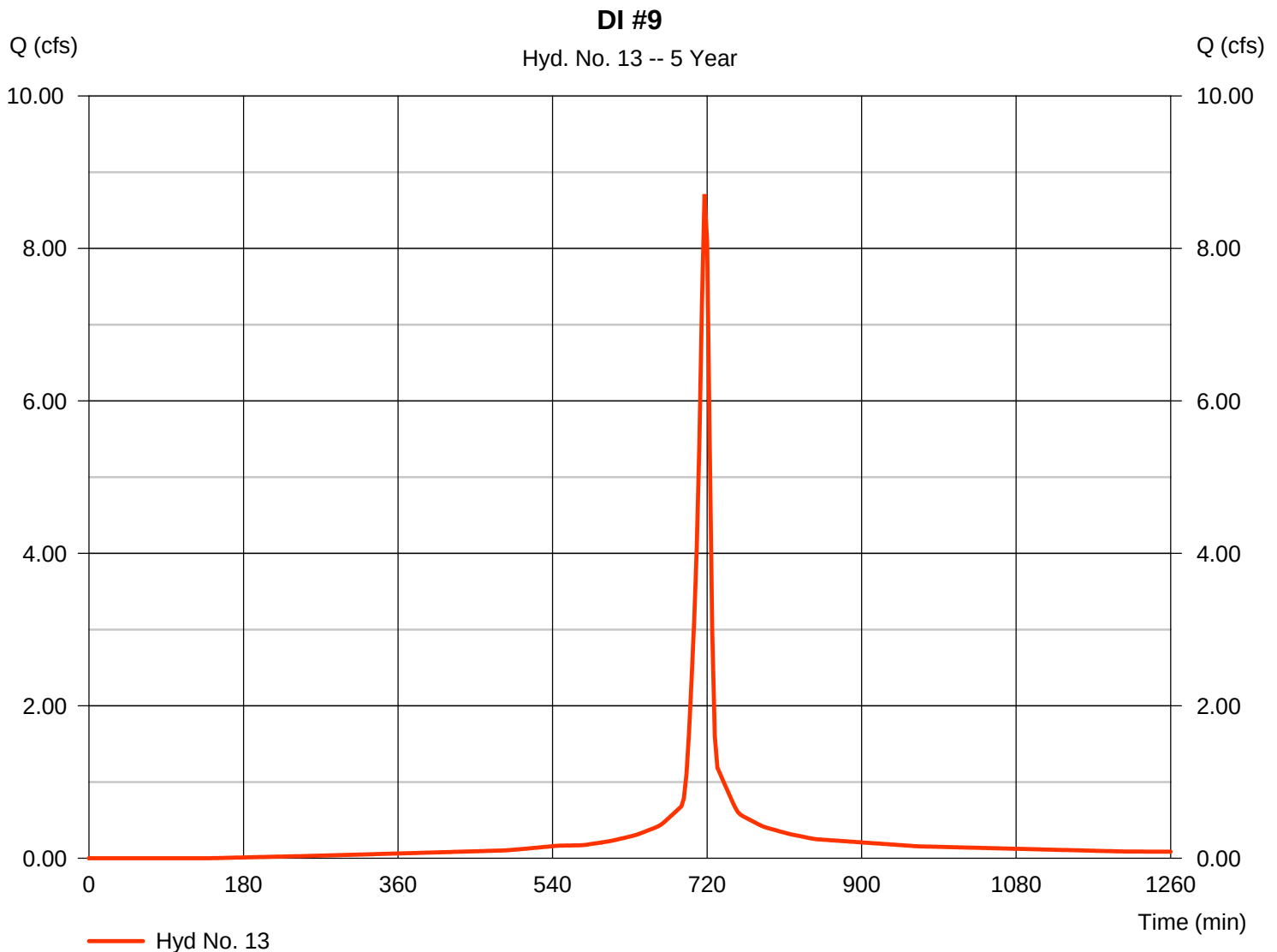
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Hyd. No. 13

DI #9

Hydrograph type	= SCS Runoff	Peak discharge	= 8.713 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 21,485 cuft
Drainage area	= 1.740 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.490 \times 98) + (0.250 \times 79)] / 1.740$



Hydrograph Report

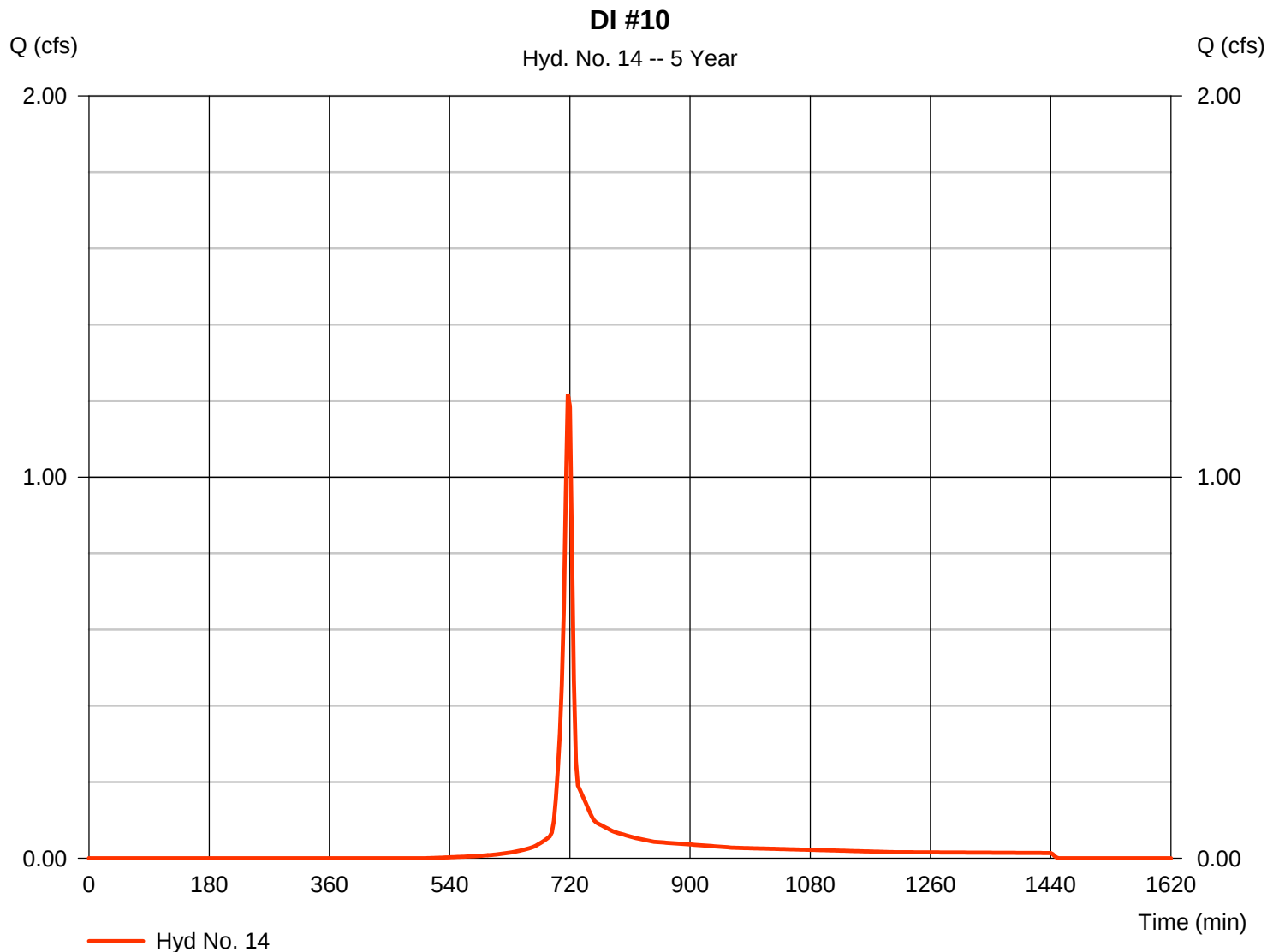
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Hyd. No. 14

DI #10

Hydrograph type	= SCS Runoff	Peak discharge	= 1.218 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 2,751 cuft
Drainage area	= 0.380 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

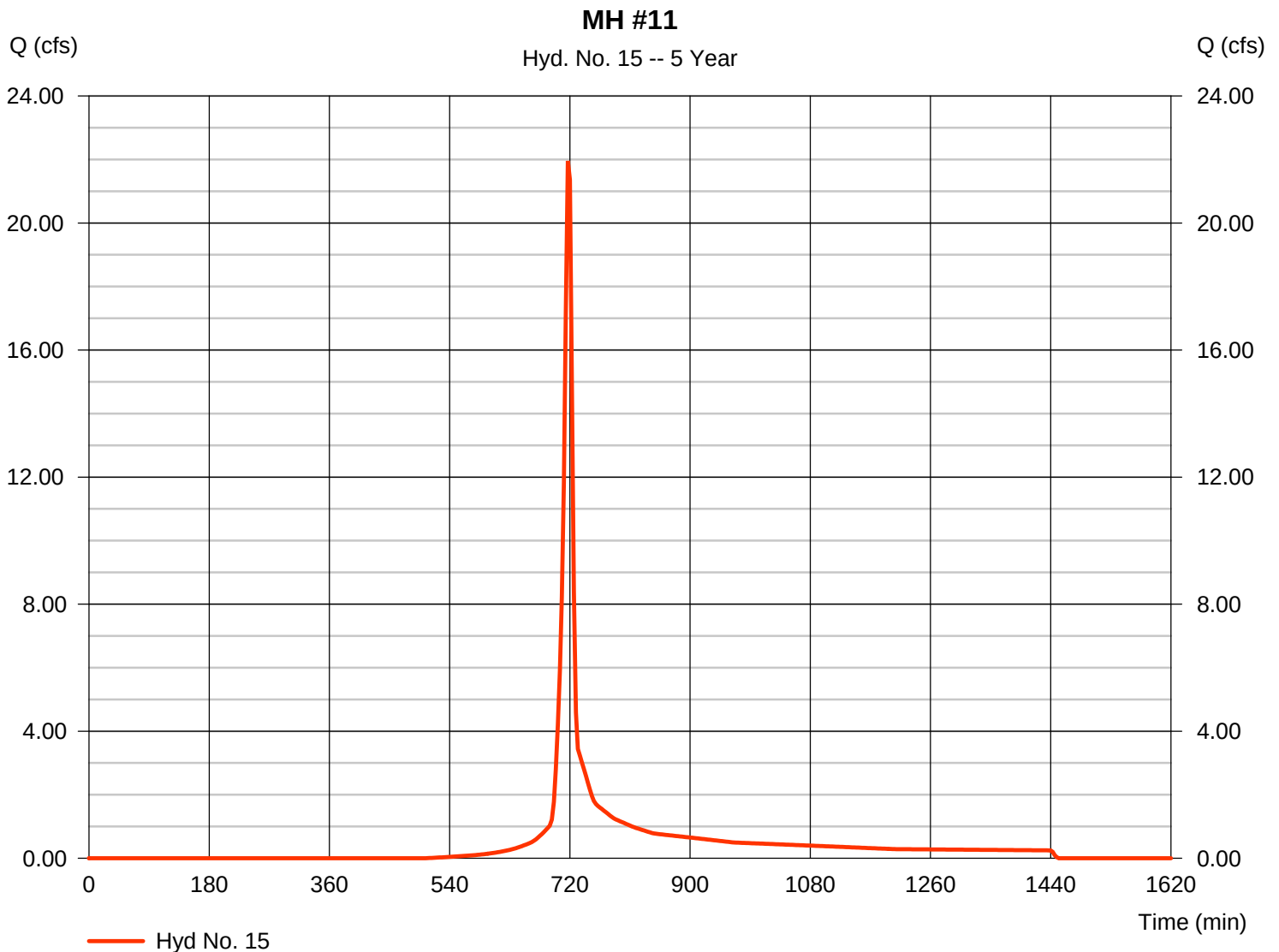
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Hyd. No. 15

MH #11

Hydrograph type	= SCS Runoff	Peak discharge	= 21.96 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 49,584 cuft
Drainage area	= 6.850 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

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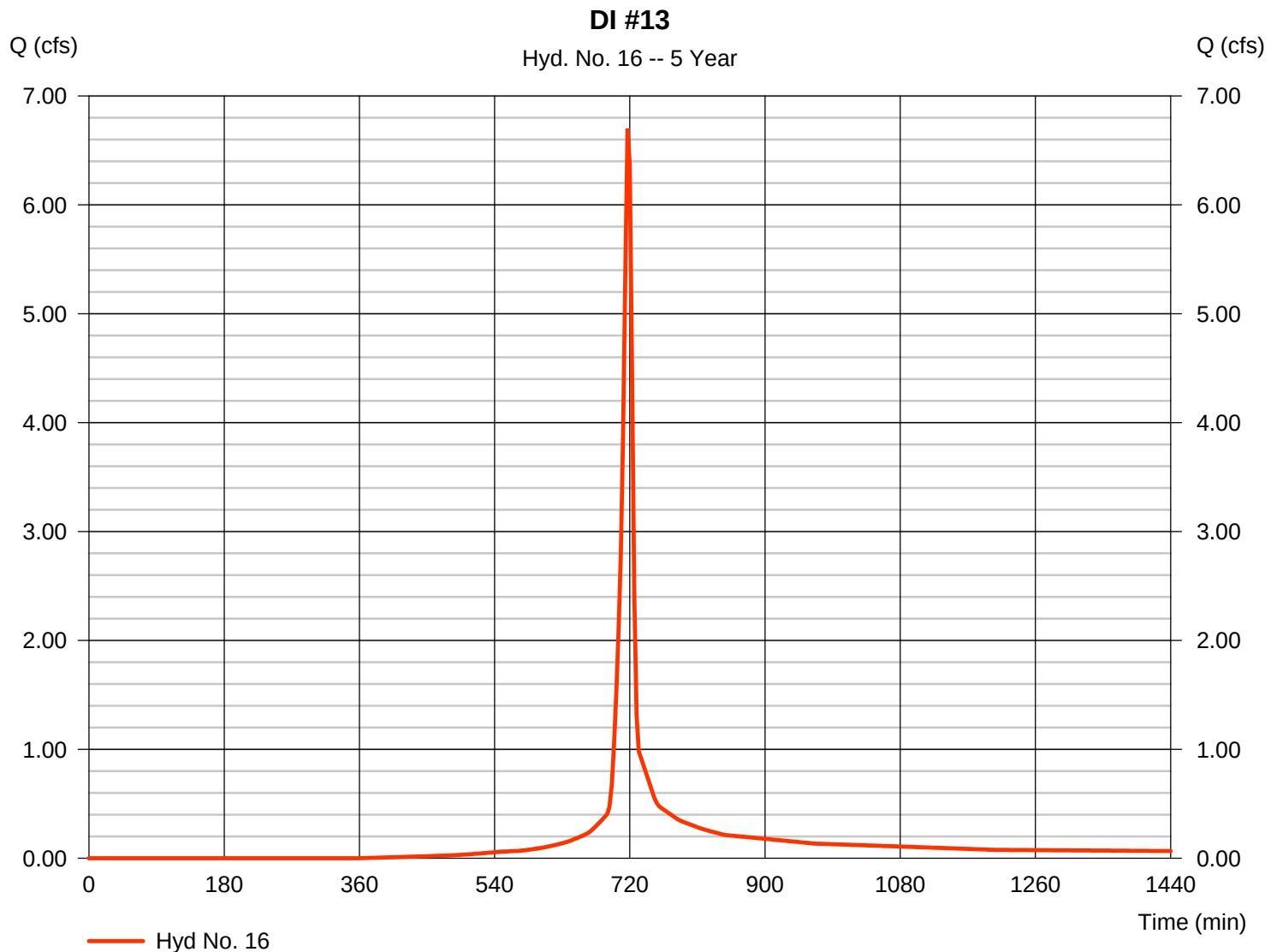
Friday, 07 / 28 / 2017

Hyd. No. 16

DI #13

Hydrograph type	= SCS Runoff	Peak discharge	= 6.700 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 15,319 cuft
Drainage area	= 1.650 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.580 \times 98) + (1.070 \times 79)] / 1.650$



Hydrograph Report

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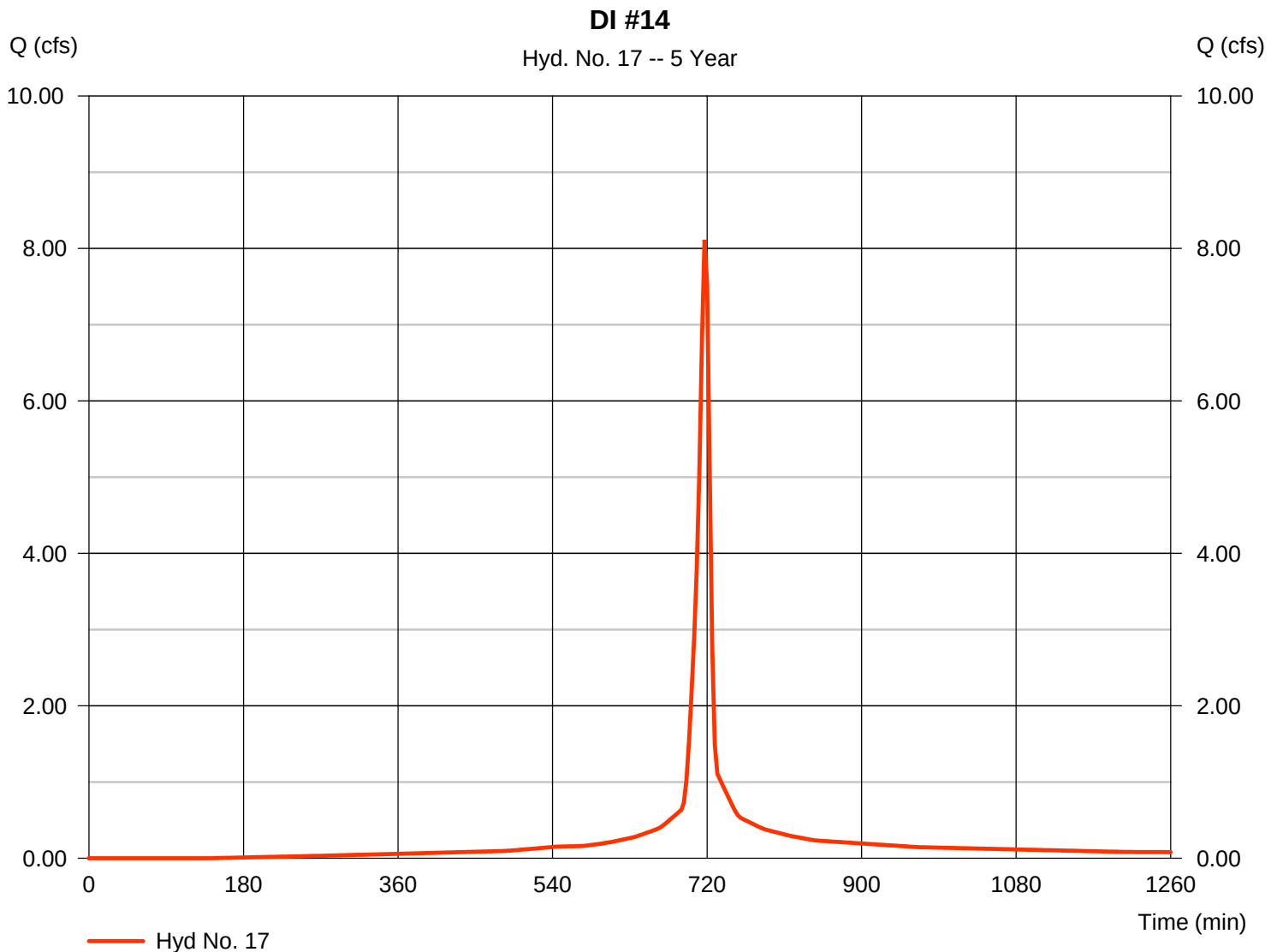
Friday, 07 / 28 / 2017

Hyd. No. 17

DI #14

Hydrograph type	= SCS Runoff	Peak discharge	= 8.112 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 20,003 cuft
Drainage area	= 1.620 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.400 \times 98) + (0.220 \times 79)] / 1.620$



Hydrograph Report

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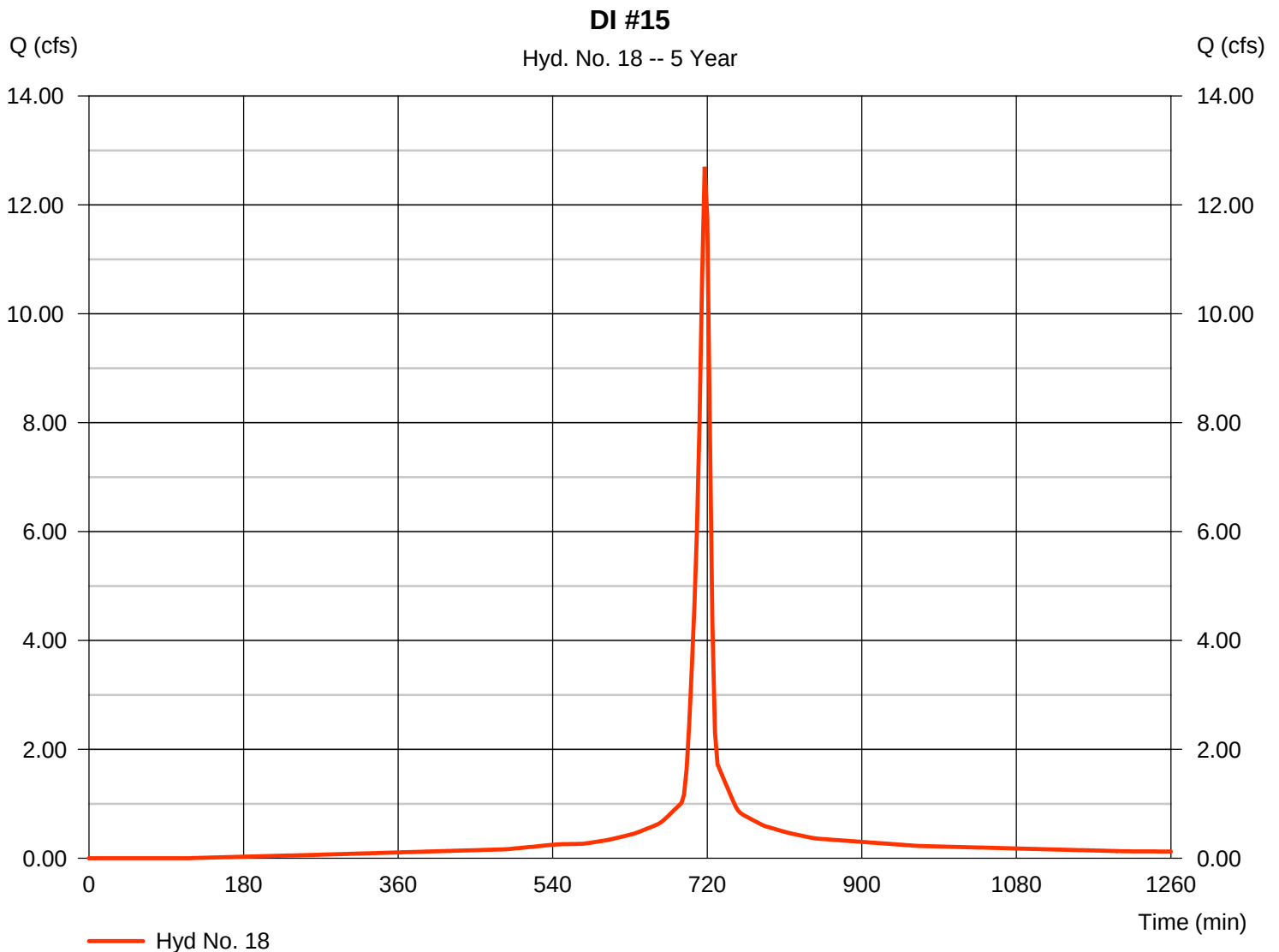
Friday, 07 / 28 / 2017

Hyd. No. 18

DI #15

Hydrograph type	= SCS Runoff	Peak discharge	= 12.70 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 31,805 cuft
Drainage area	= 2.500 ac	Curve number	= 96*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(2.280 \times 98) + (0.220 \times 79)] / 2.500$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

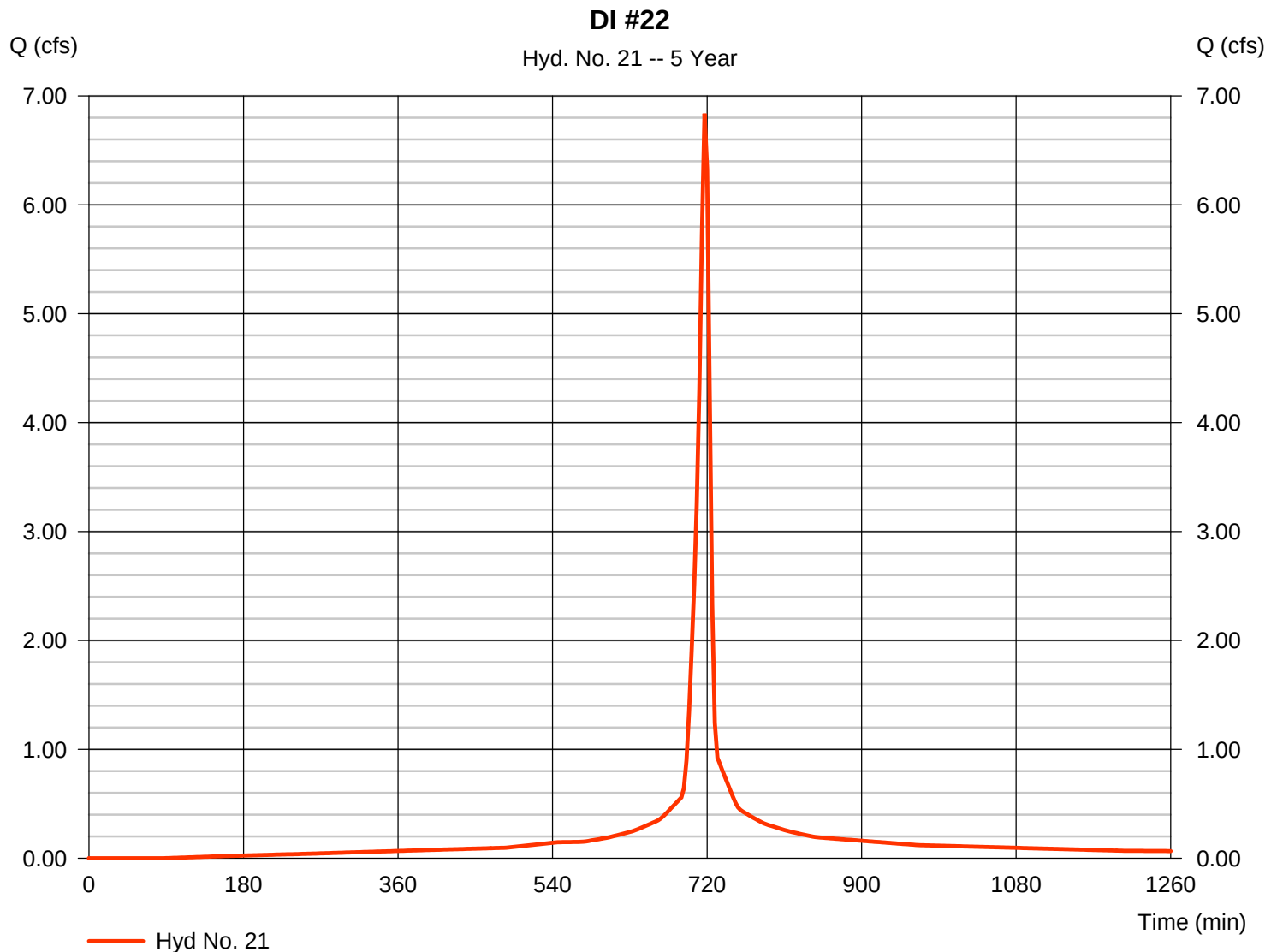
Friday, 07 / 28 / 2017

Hyd. No. 21

DI #22

Hydrograph type	= SCS Runoff	Peak discharge	= 6.838 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 17,427 cuft
Drainage area	= 1.330 ac	Curve number	= 97*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.280 \times 98) + (0.050 \times 79)] / 1.330$



Hydrograph Report

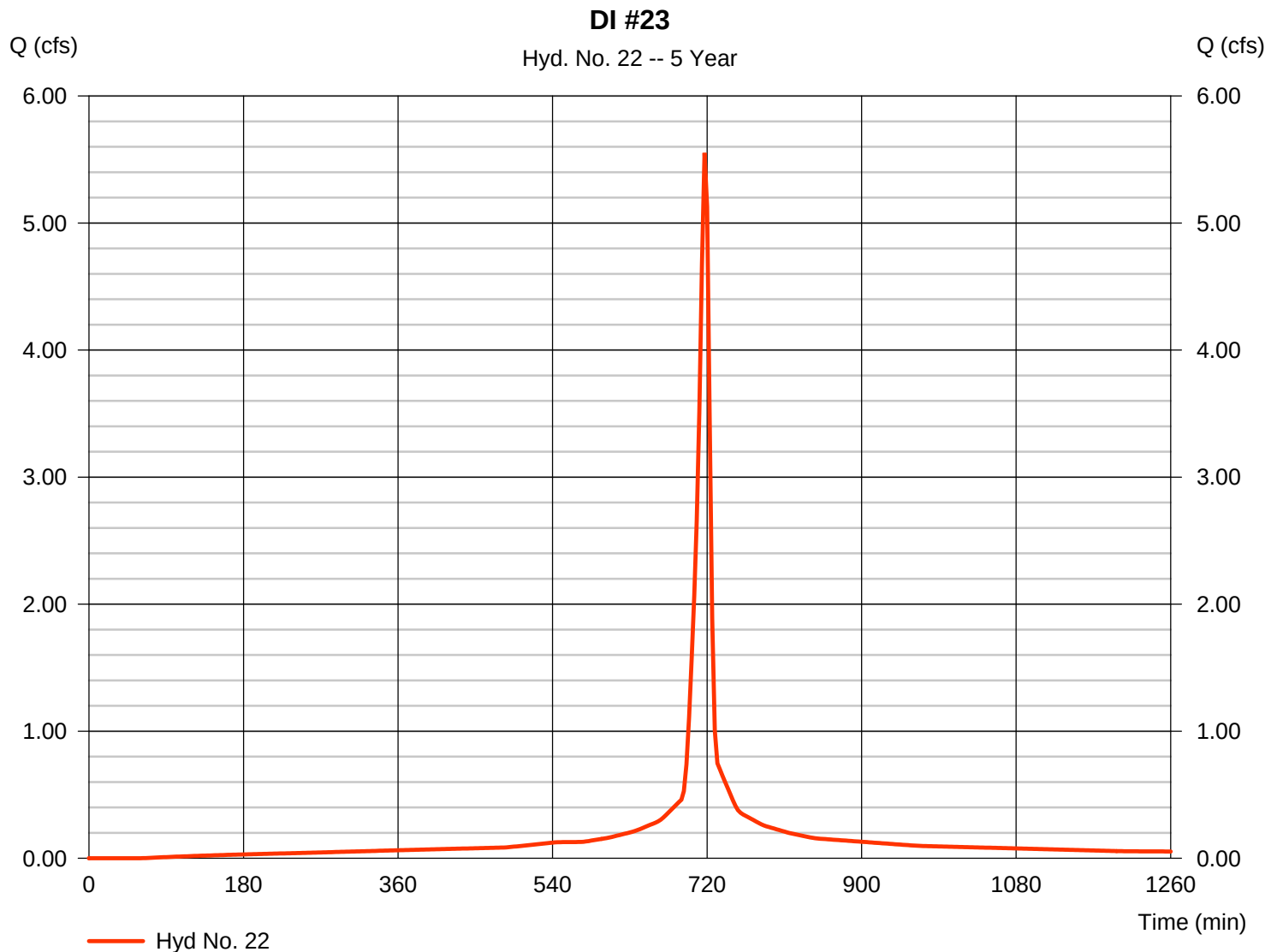
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Hyd. No. 22

DI #23

Hydrograph type	= SCS Runoff	Peak discharge	= 5.551 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 14,437 cuft
Drainage area	= 1.070 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

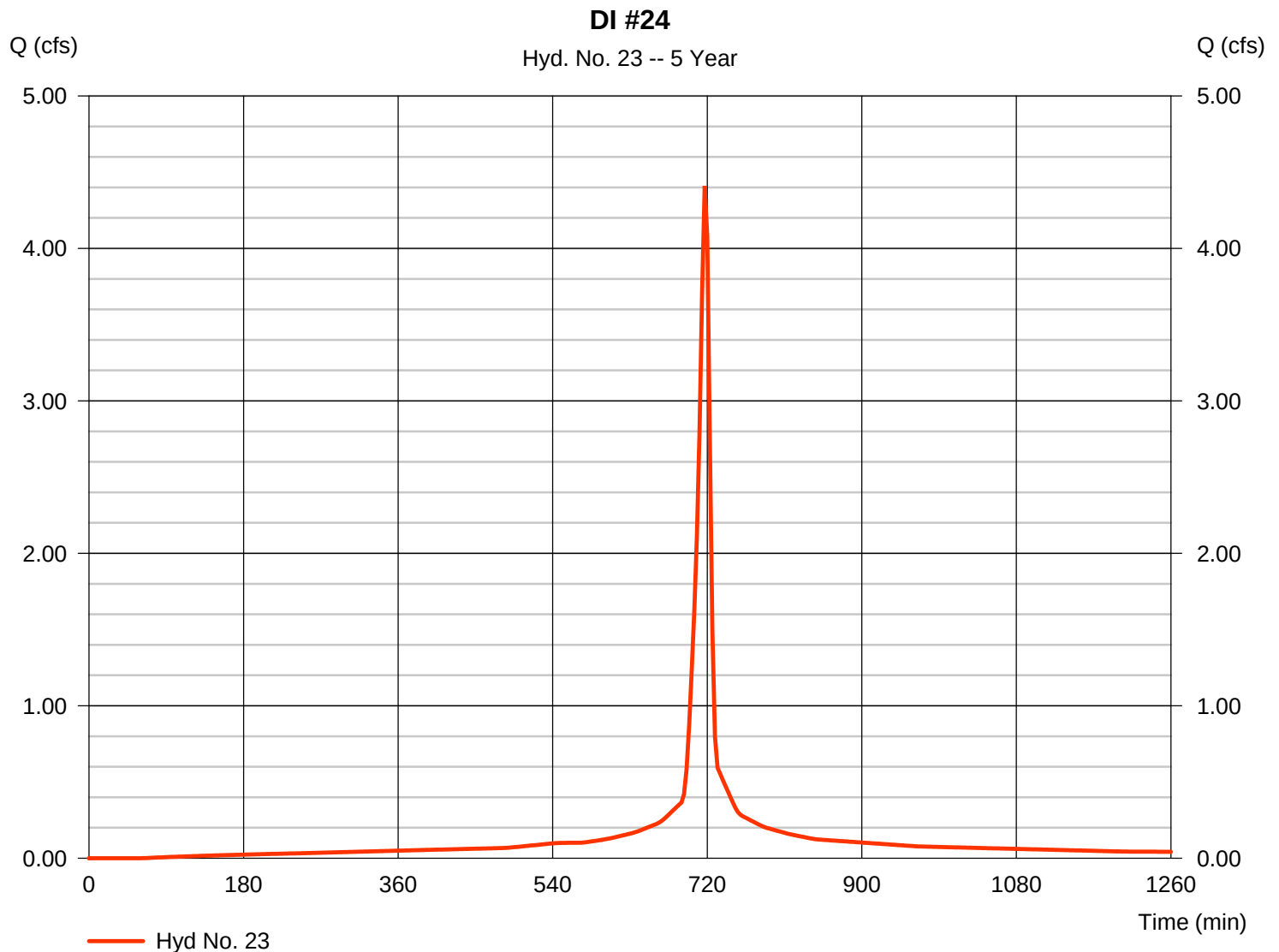
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Hyd. No. 23

DI #24

Hydrograph type	= SCS Runoff	Peak discharge	= 4.410 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 11,468 cuft
Drainage area	= 0.850 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

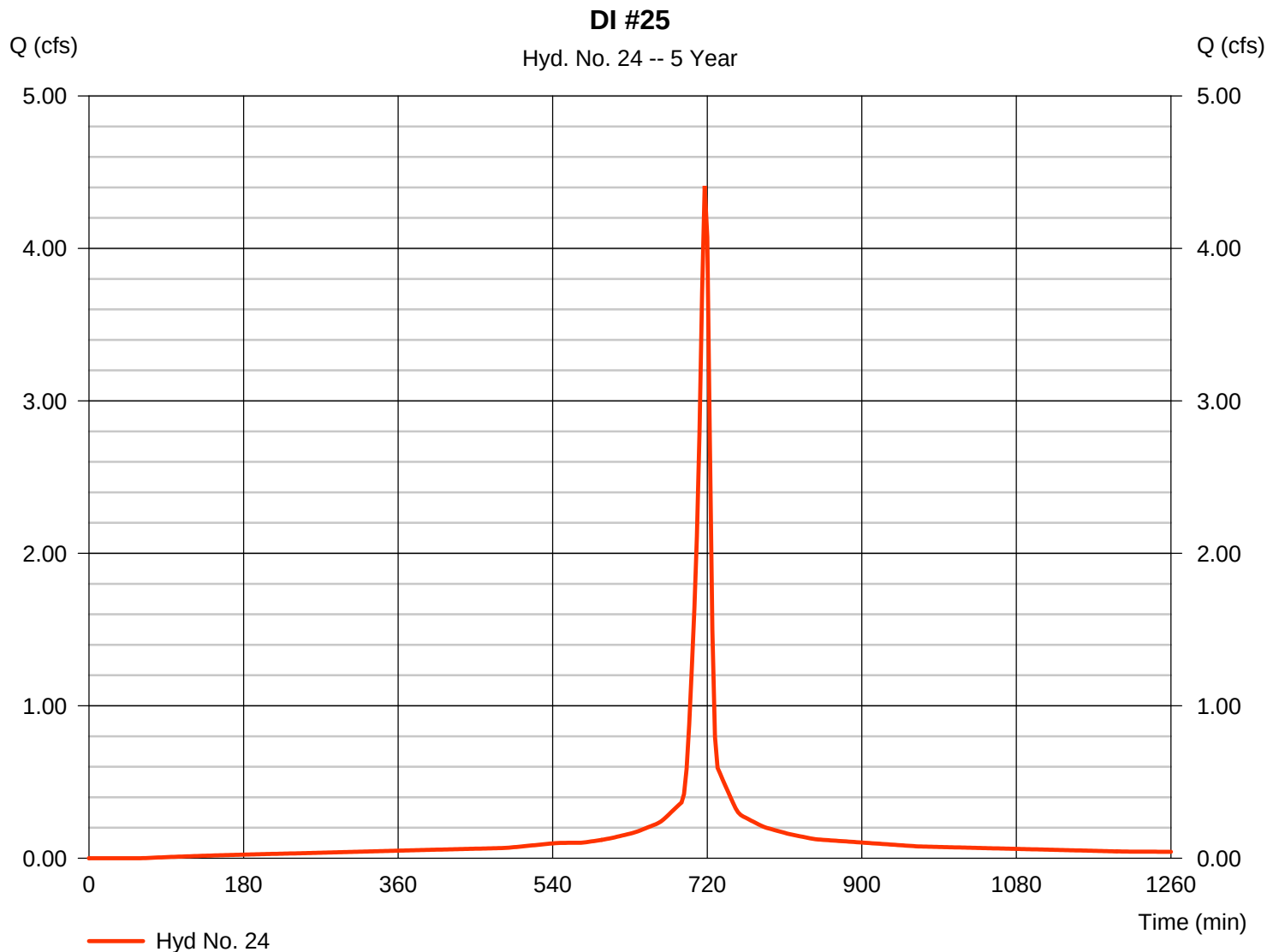
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Hyd. No. 24

DI #25

Hydrograph type	= SCS Runoff	Peak discharge	= 4.410 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 11,468 cuft
Drainage area	= 0.850 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

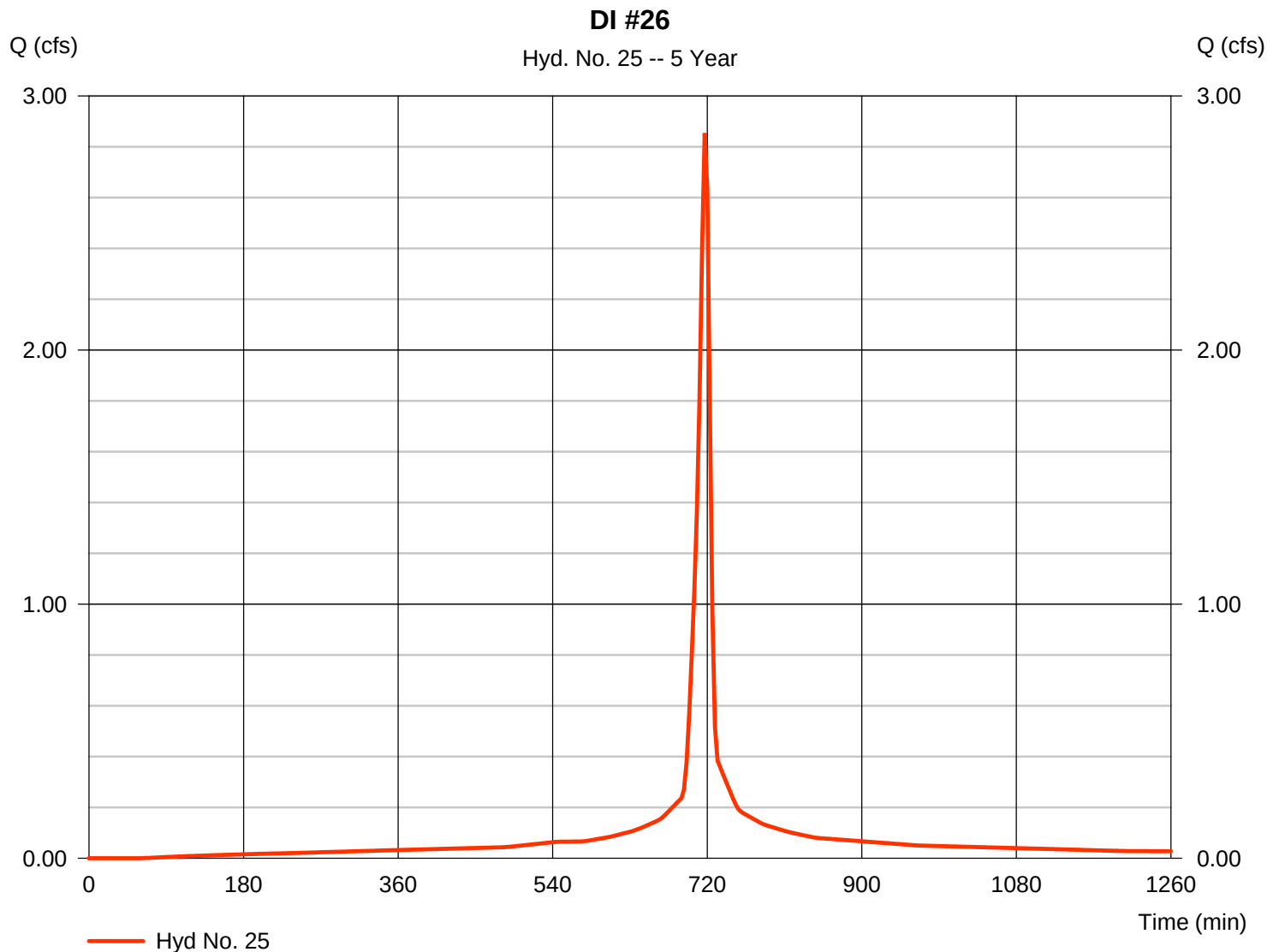
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Hyd. No. 25

DI #26

Hydrograph type	= SCS Runoff	Peak discharge	= 2.854 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 7,421 cuft
Drainage area	= 0.550 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

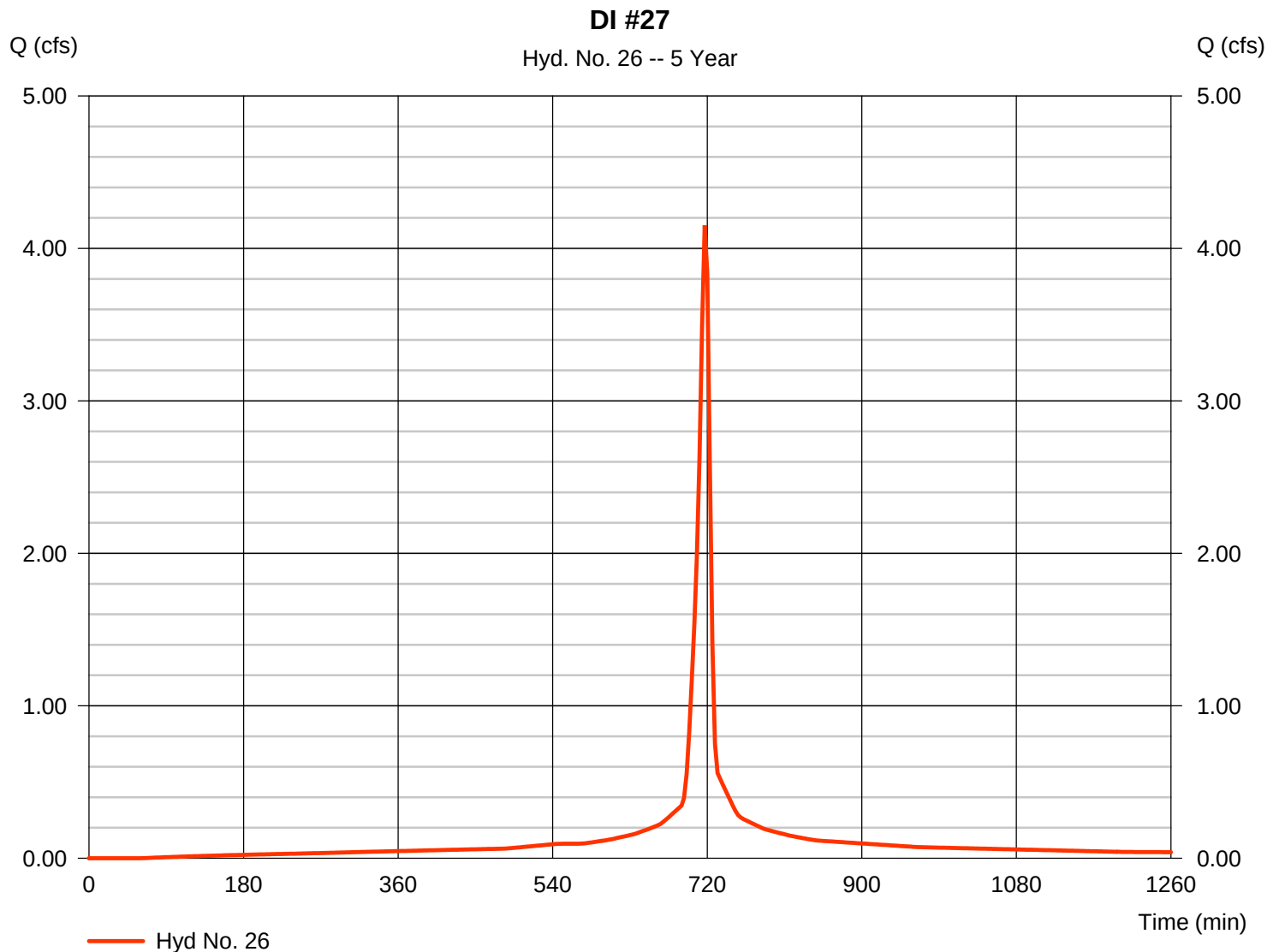
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Hyd. No. 26

DI #27

Hydrograph type	= SCS Runoff	Peak discharge	= 4.151 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 10,794 cuft
Drainage area	= 0.800 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

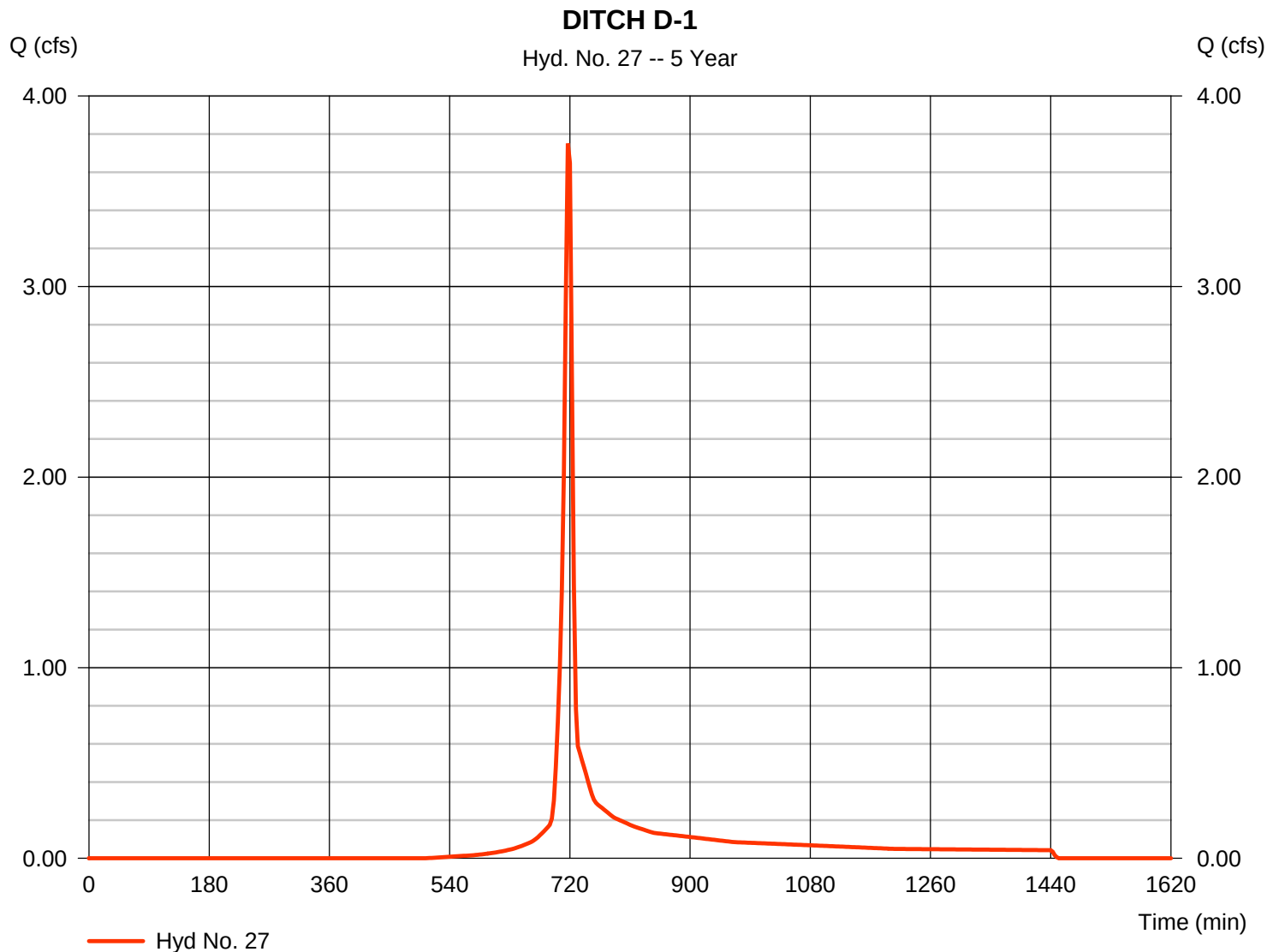
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Hyd. No. 27

DITCH D-1

Hydrograph type	= SCS Runoff	Peak discharge	= 3.750 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 8,469 cuft
Drainage area	= 1.170 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

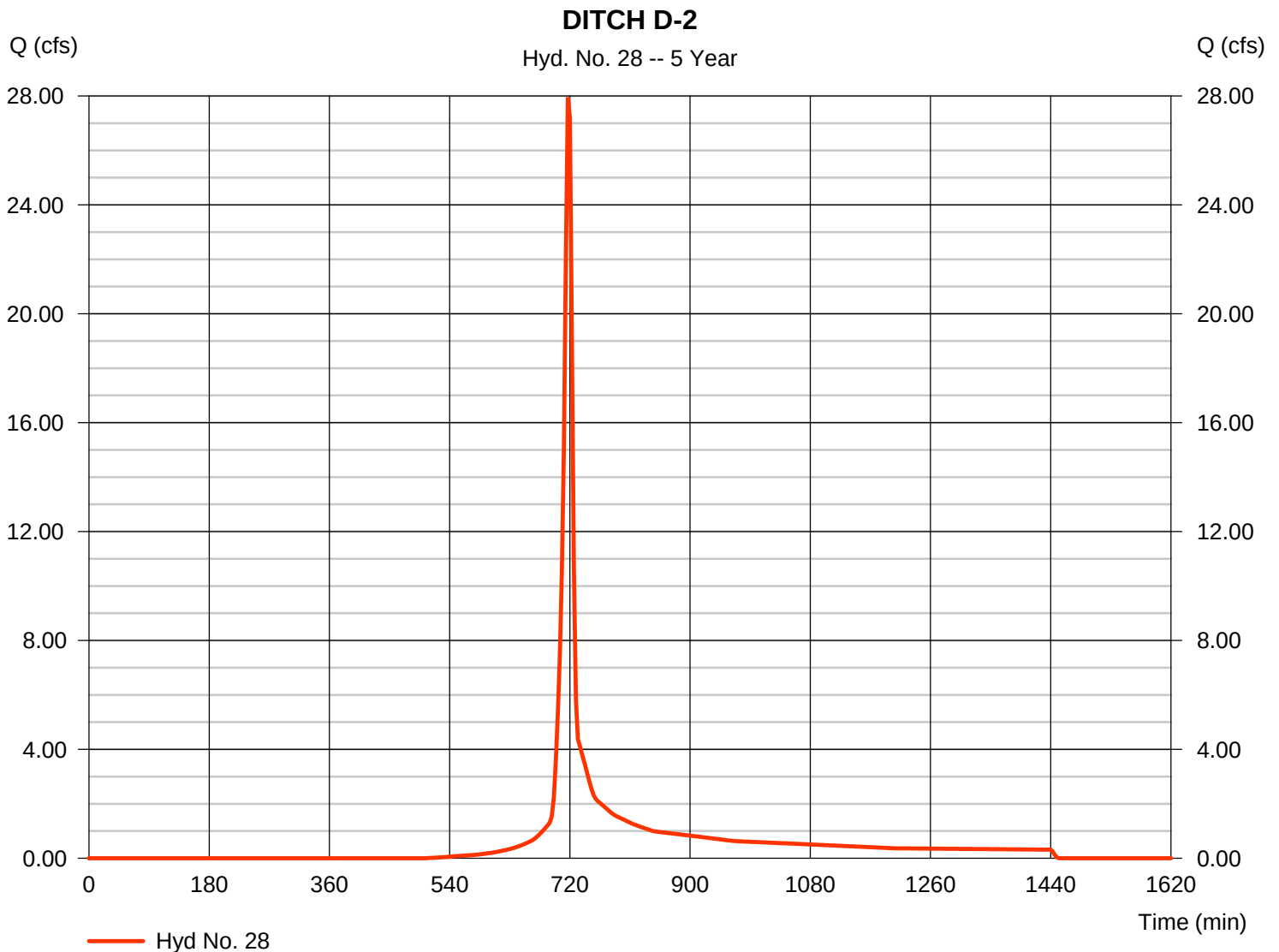
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Friday, 07 / 28 / 2017

Hyd. No. 28

DITCH D-2

Hydrograph type	=	SCS Runoff	Peak discharge	=	27.95 cfs
Storm frequency	=	5 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	63,120 cuft
Drainage area	=	8.720 ac	Curve number	=	79
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	4.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

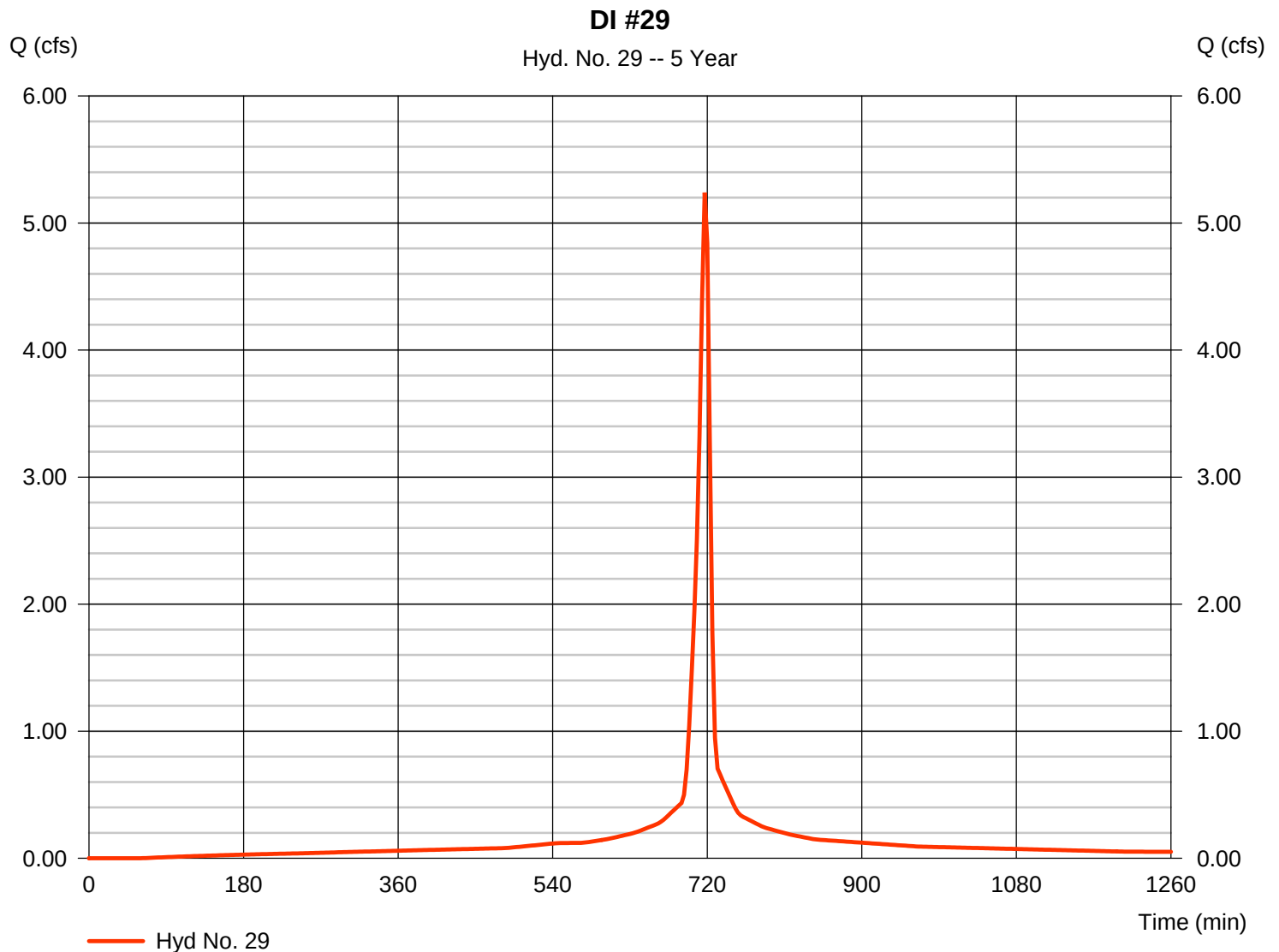
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Hyd. No. 29

DI #29

Hydrograph type	= SCS Runoff	Peak discharge	= 5.240 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 13,627 cuft
Drainage area	= 1.010 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

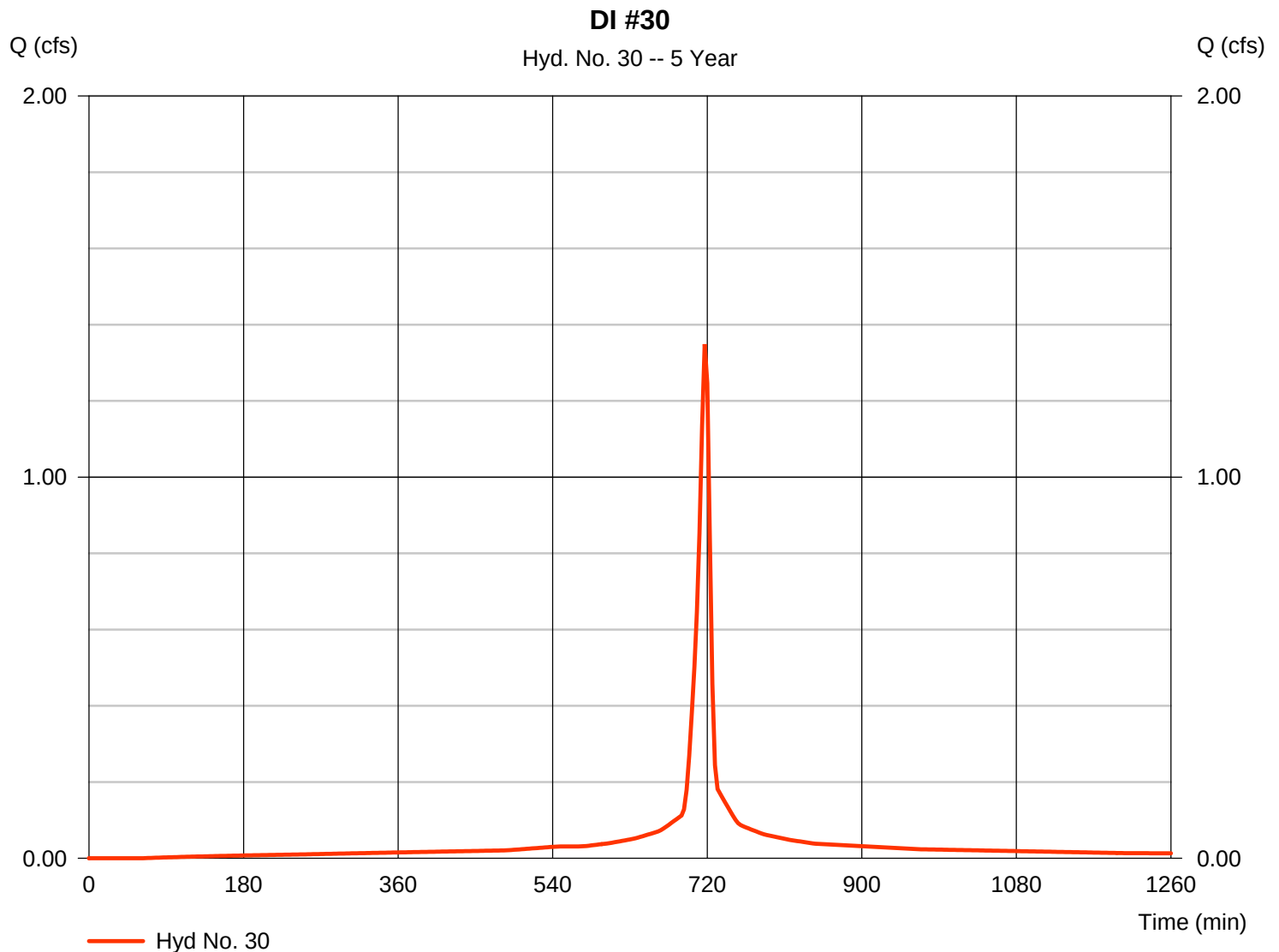
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Hyd. No. 30

DI #30

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.349 cfs
Storm frequency	=	5 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	3,508 cuft
Drainage area	=	0.260 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	4.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

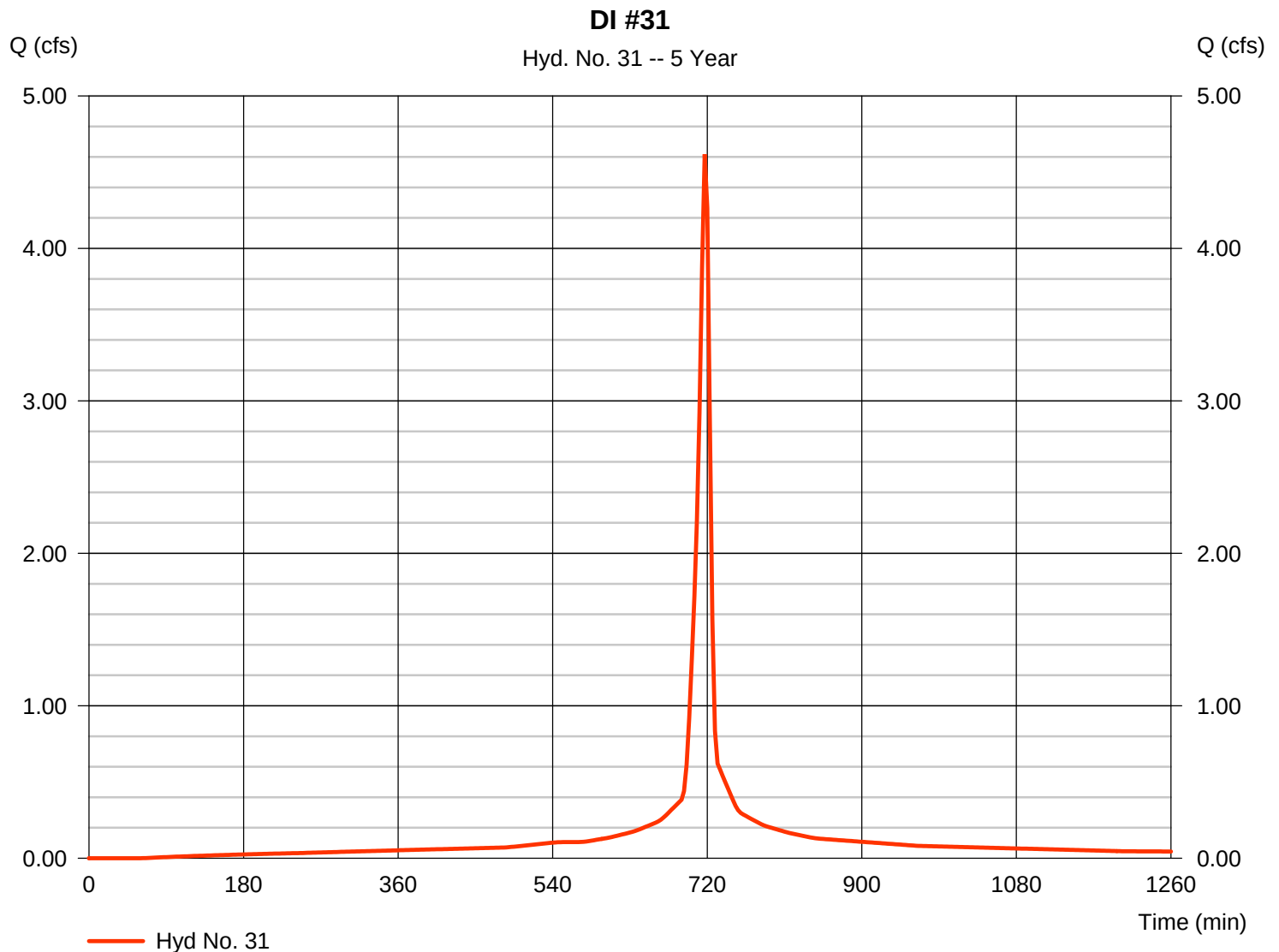
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Hyd. No. 31

DI #31

Hydrograph type	= SCS Runoff	Peak discharge	= 4.617 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 12,008 cuft
Drainage area	= 0.890 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

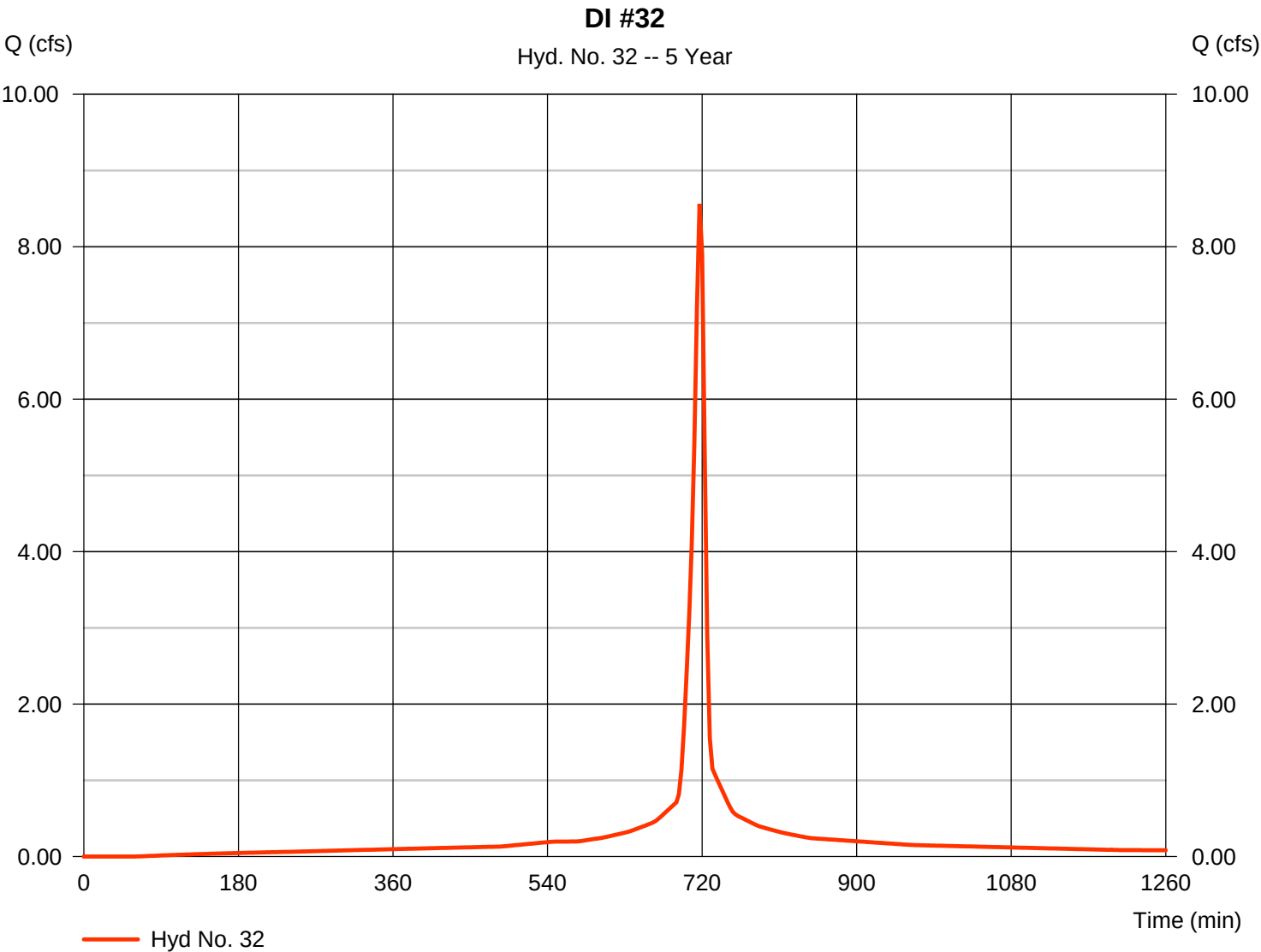
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Hyd. No. 32

DI #32

Hydrograph type	= SCS Runoff	Peak discharge	= 8.561 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 22,262 cuft
Drainage area	= 1.650 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

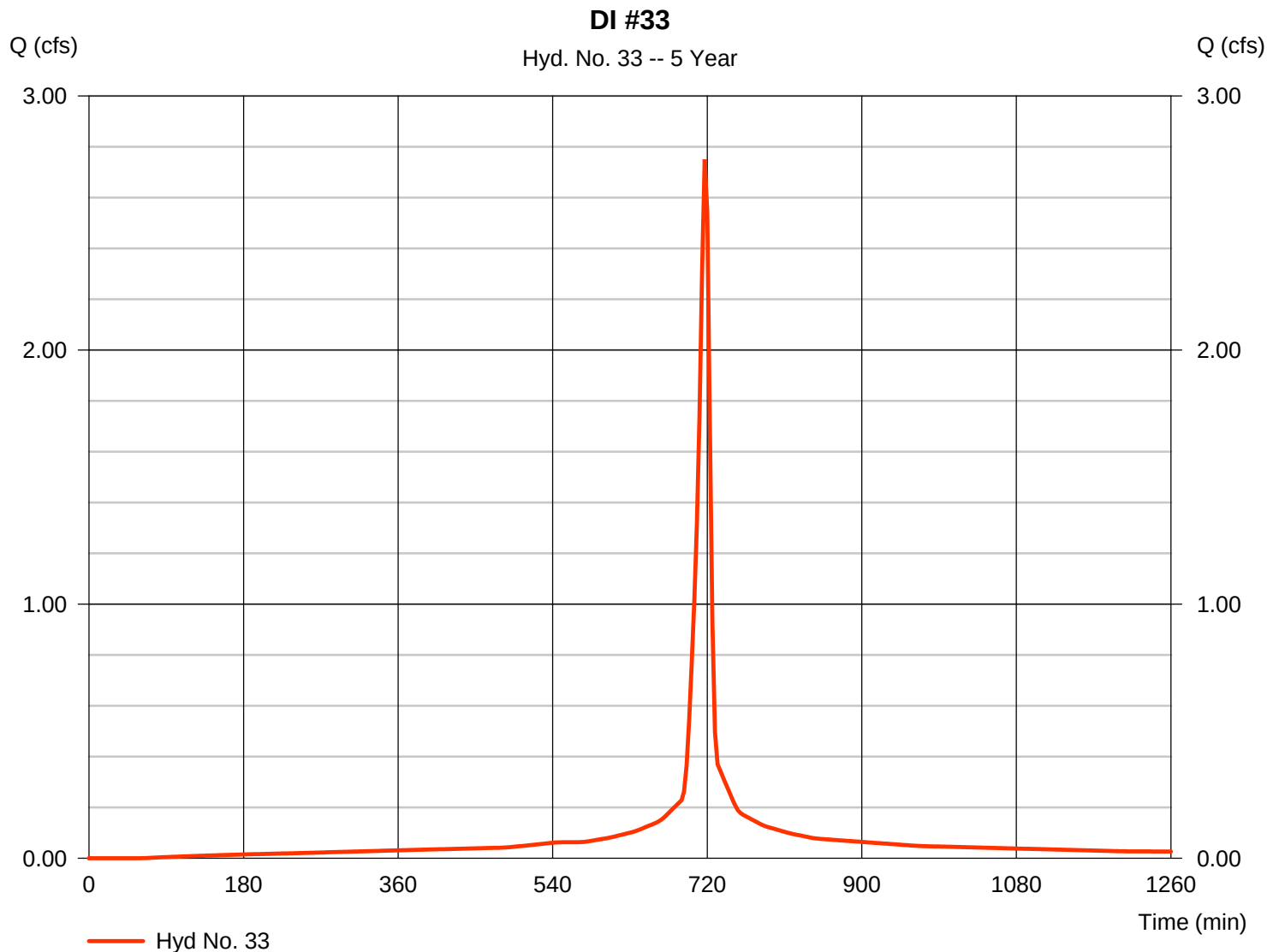
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Hyd. No. 33

DI #33

Hydrograph type	= SCS Runoff	Peak discharge	= 2.750 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 7,151 cuft
Drainage area	= 0.530 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

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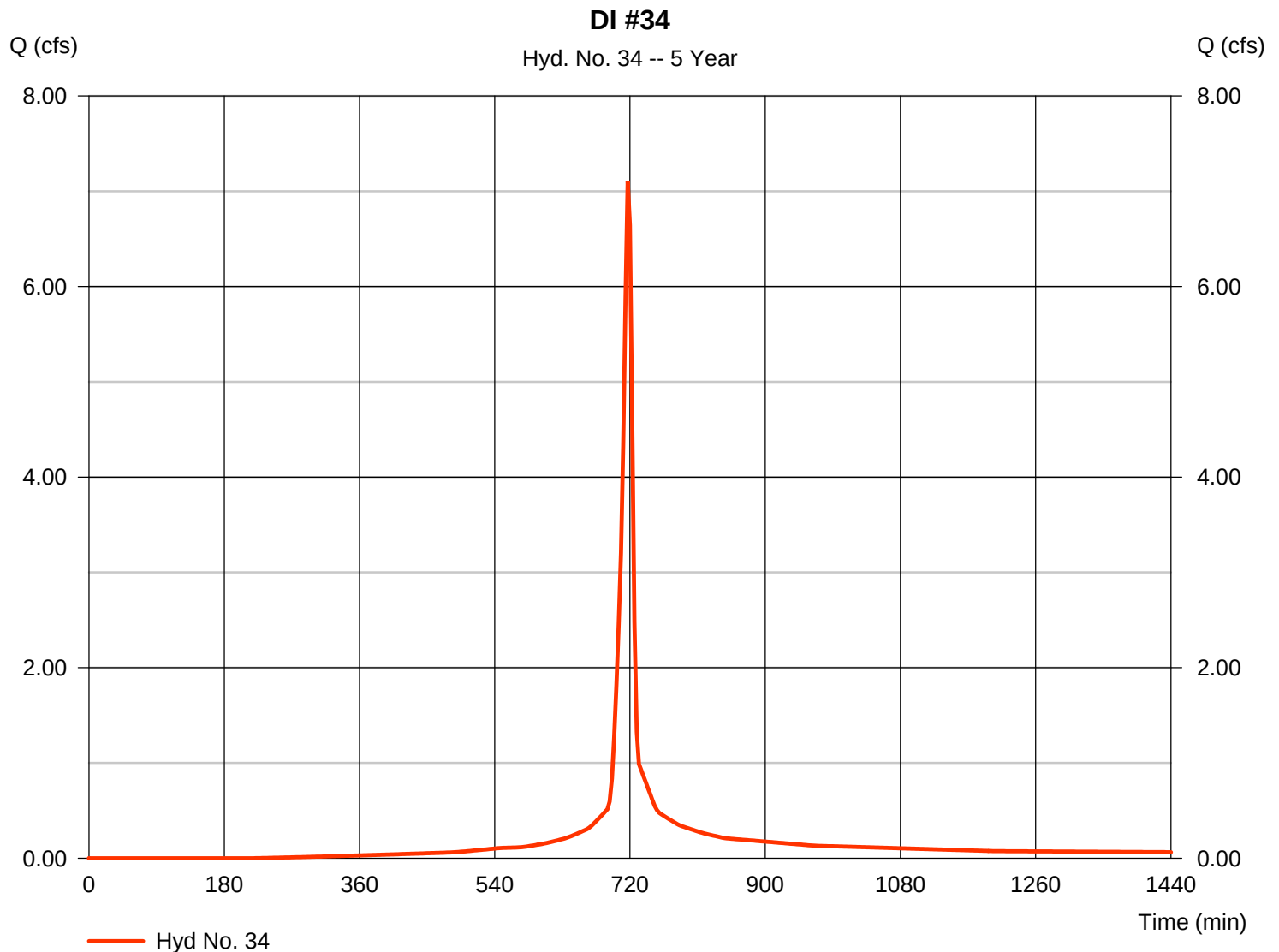
Friday, 07 / 28 / 2017

Hyd. No. 34

DI #34

Hydrograph type	= SCS Runoff	Peak discharge	= 7.104 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 16,901 cuft
Drainage area	= 1.500 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.050 \times 98) + (0.450 \times 79)] / 1.500$



Hydrograph Report

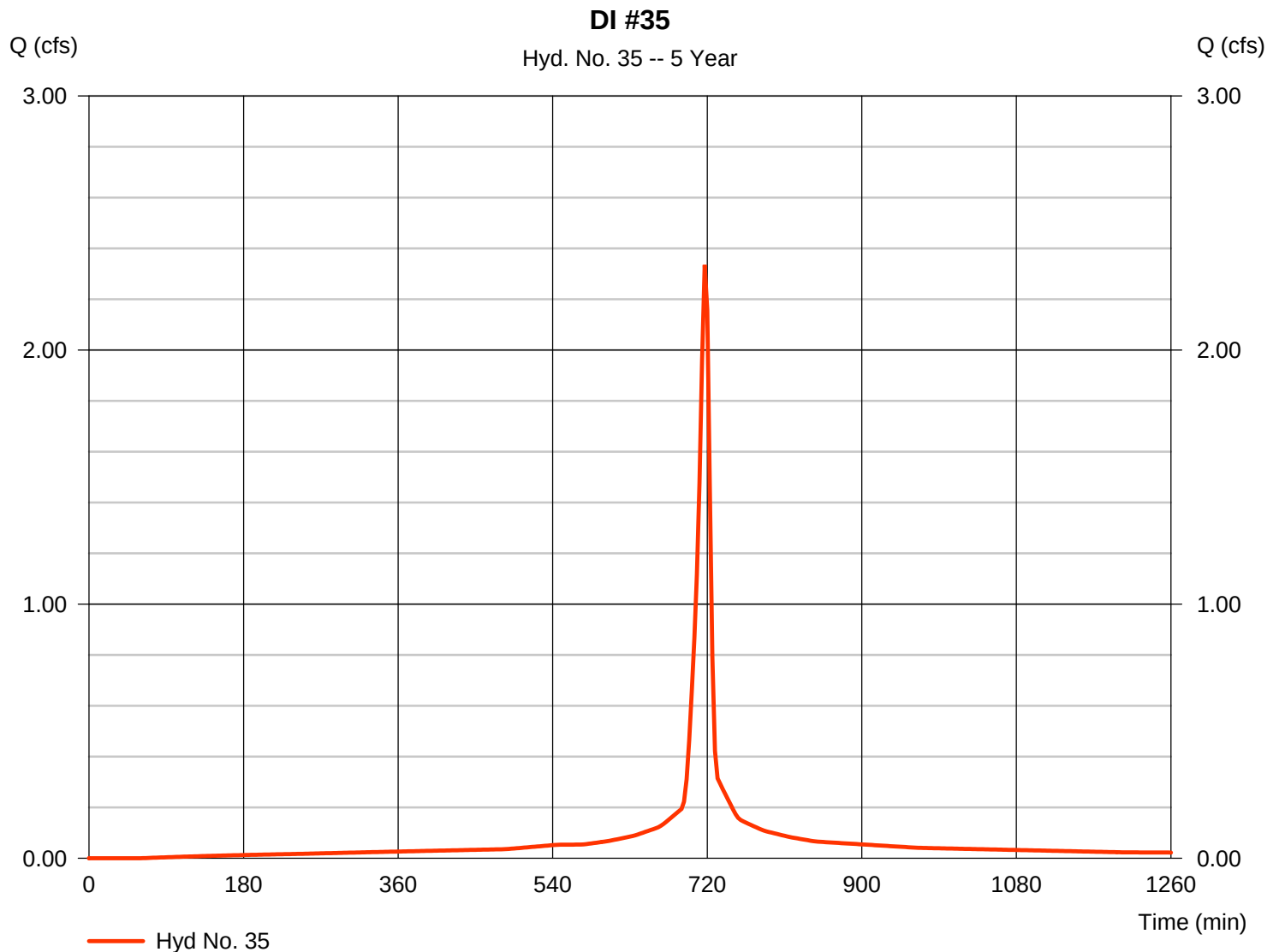
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Hyd. No. 35

DI #35

Hydrograph type	= SCS Runoff	Peak discharge	= 2.335 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 6,071 cuft
Drainage area	= 0.450 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

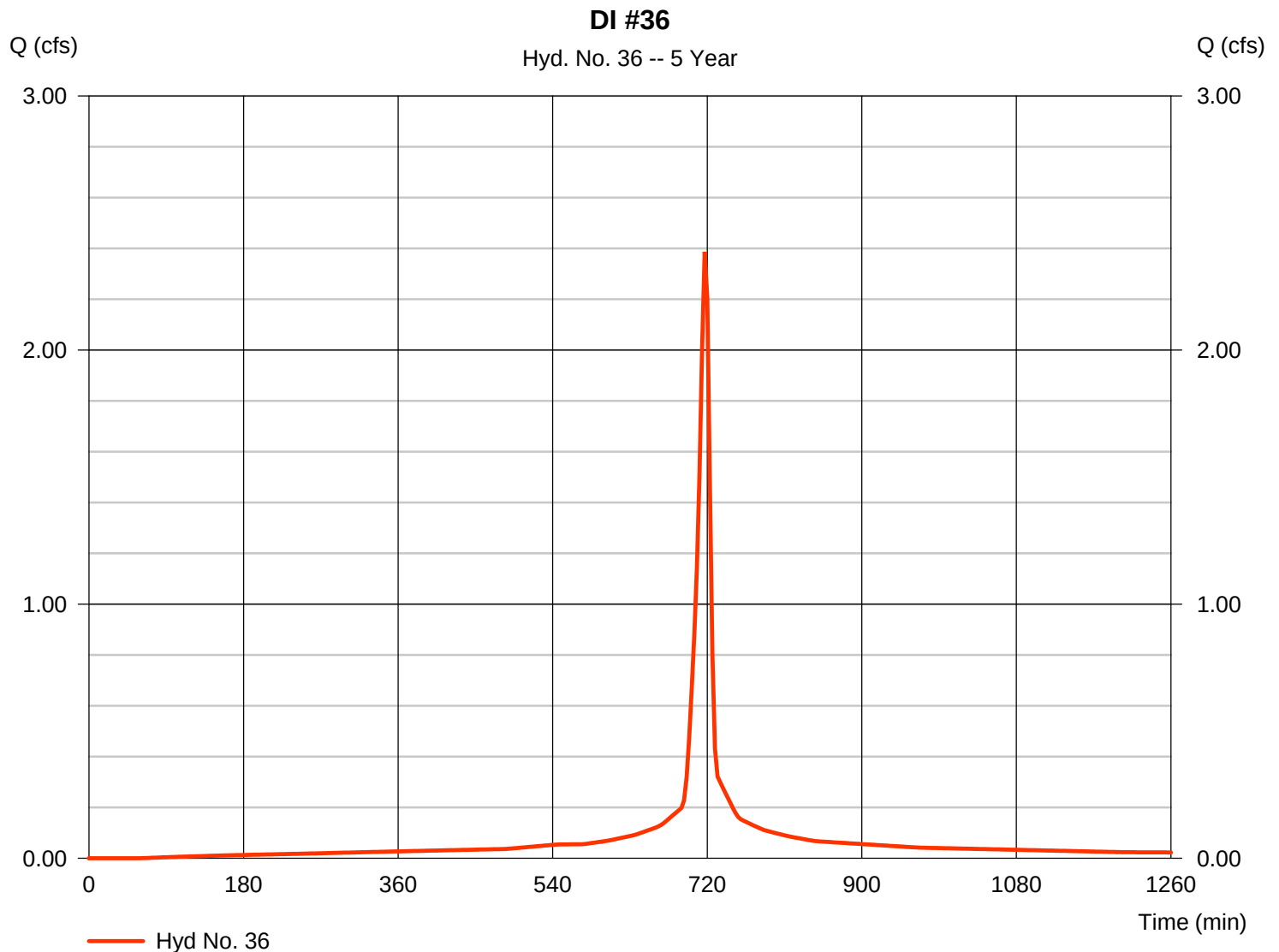
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Hyd. No. 36

DI #36

Hydrograph type	= SCS Runoff	Peak discharge	= 2.387 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 6,206 cuft
Drainage area	= 0.460 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

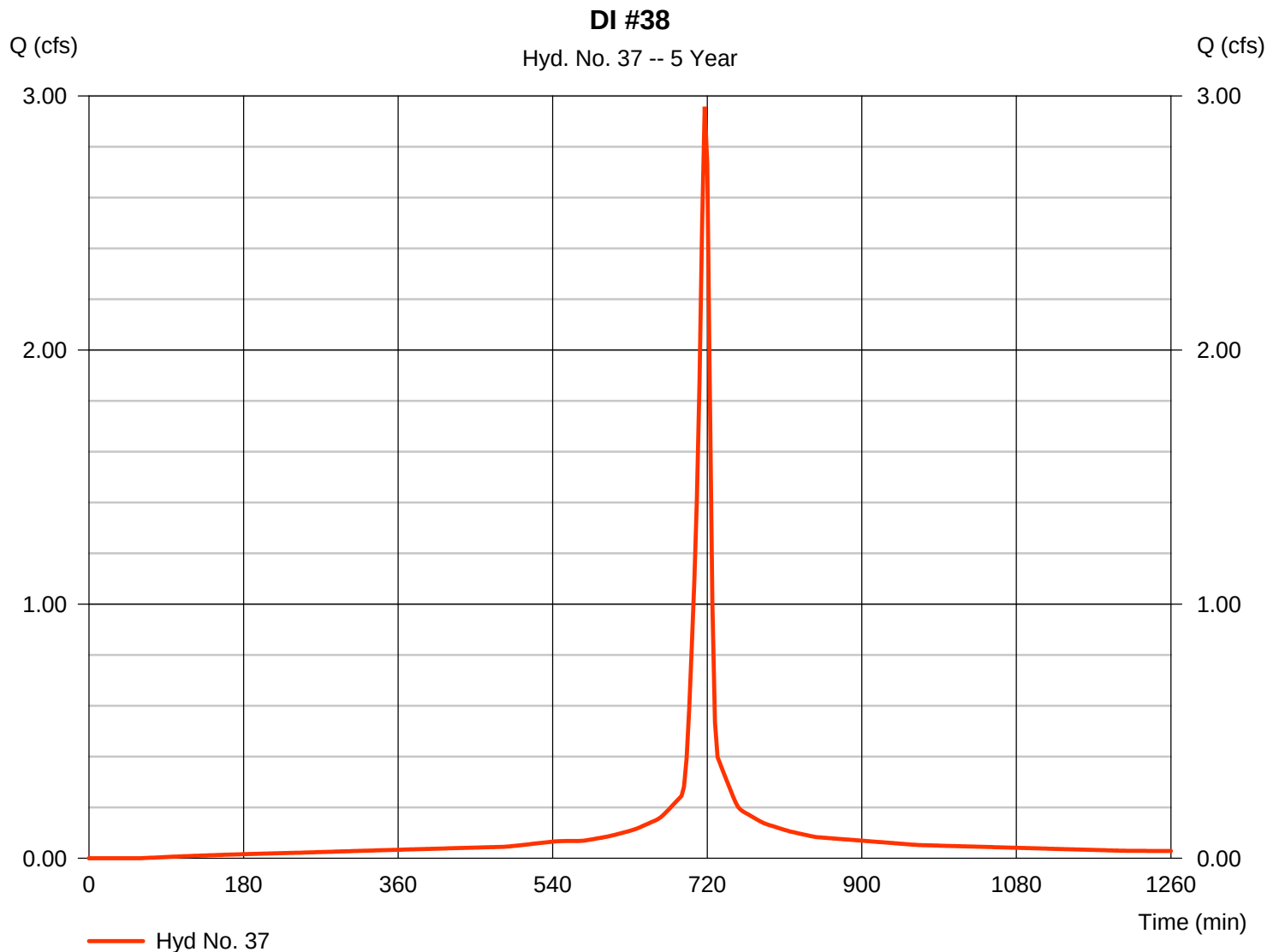
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Hyd. No. 37

DI #38

Hydrograph type	= SCS Runoff	Peak discharge	= 2.957 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 7,691 cuft
Drainage area	= 0.570 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

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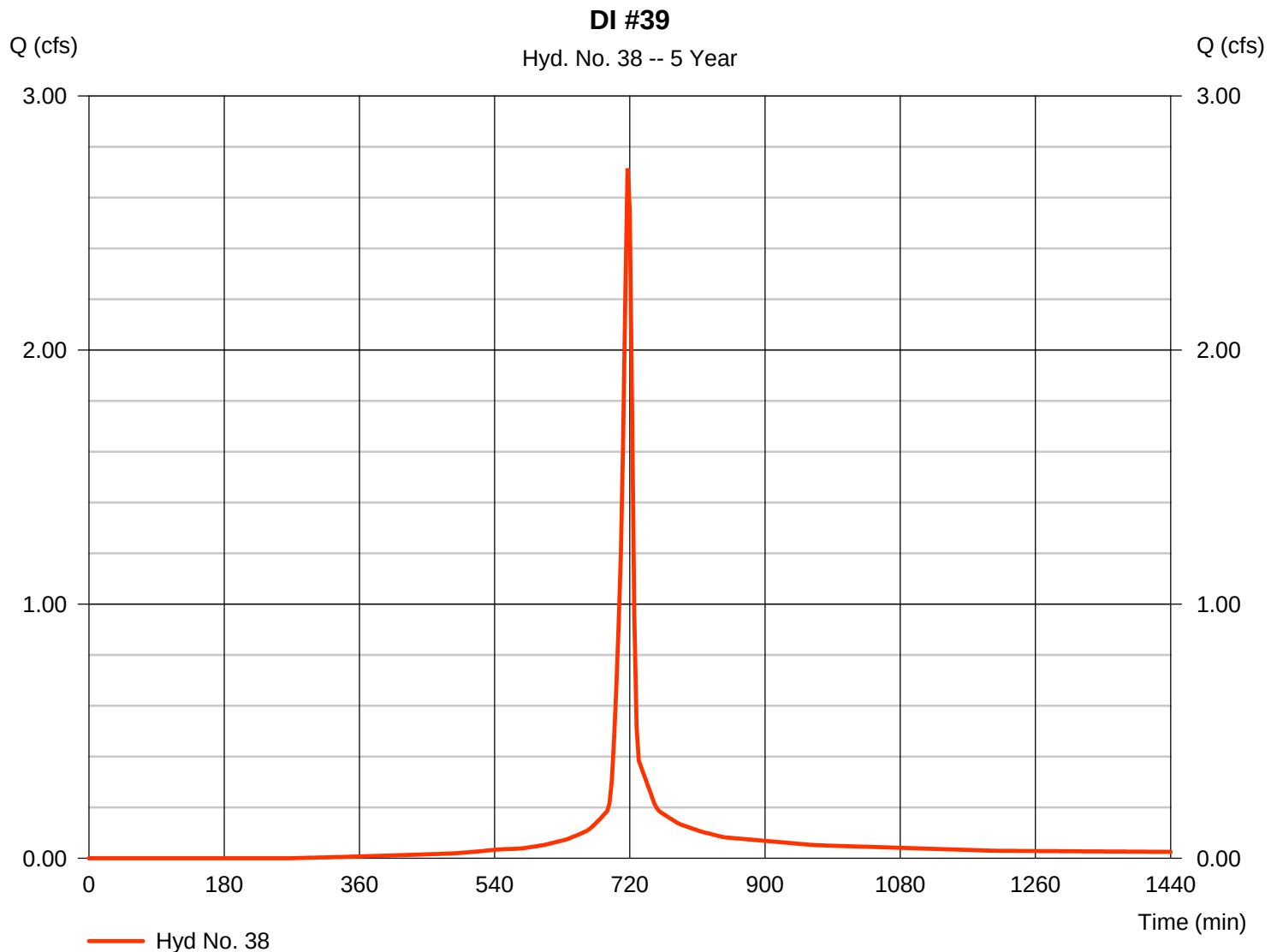
Friday, 07 / 28 / 2017

Hyd. No. 38

DI #39

Hydrograph type	= SCS Runoff	Peak discharge	= 2.715 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 6,349 cuft
Drainage area	= 0.600 ac	Curve number	= 90*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.360 \times 98) + (0.240 \times 79)] / 0.600$



Hydrograph Report

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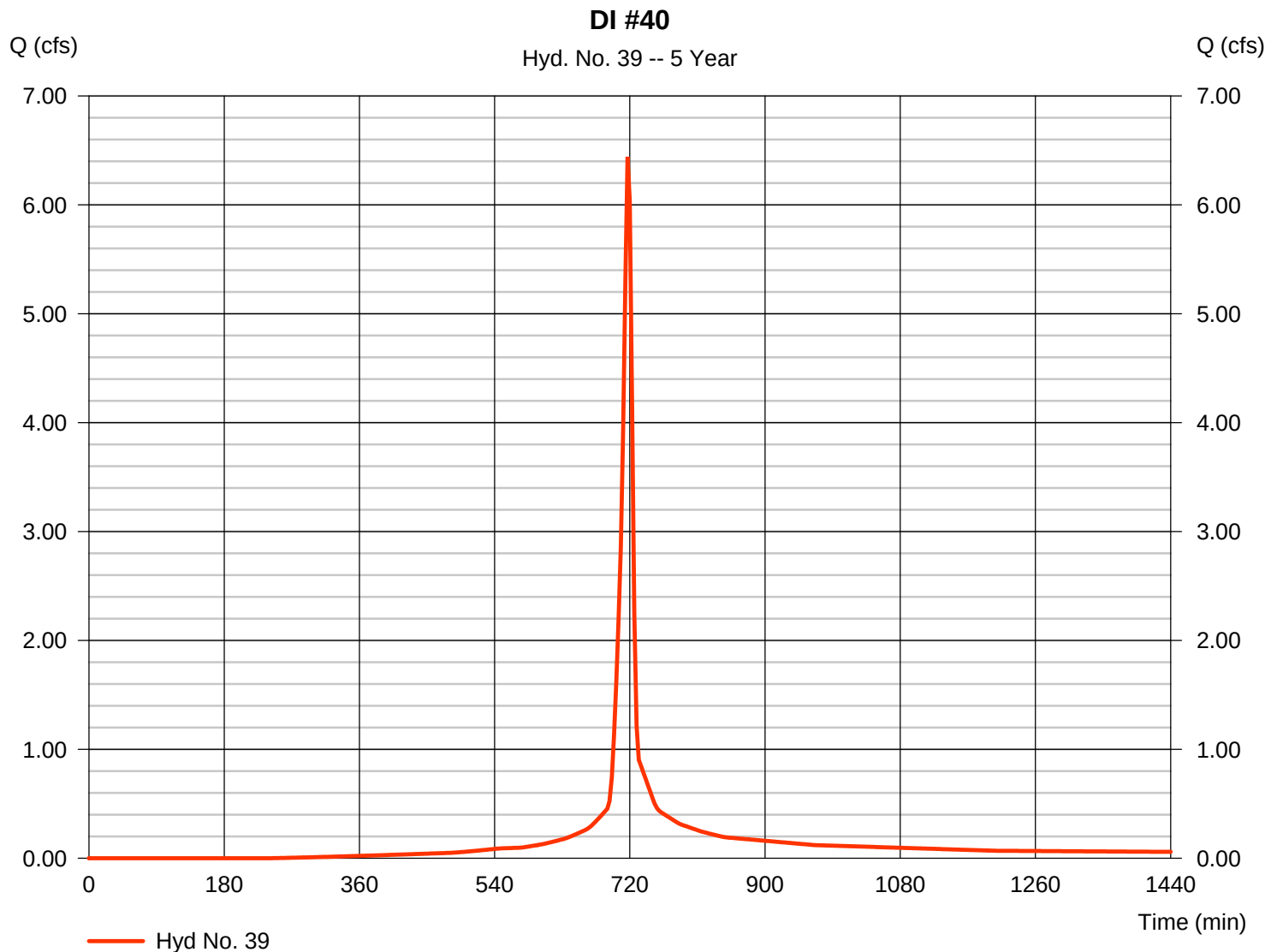
Friday, 07 / 28 / 2017

Hyd. No. 39

DI #40

Hydrograph type	= SCS Runoff	Peak discharge	= 6.439 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 15,180 cuft
Drainage area	= 1.390 ac	Curve number	= 91*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.880 \times 98) + (0.510 \times 79)] / 1.390$



Hydrograph Report

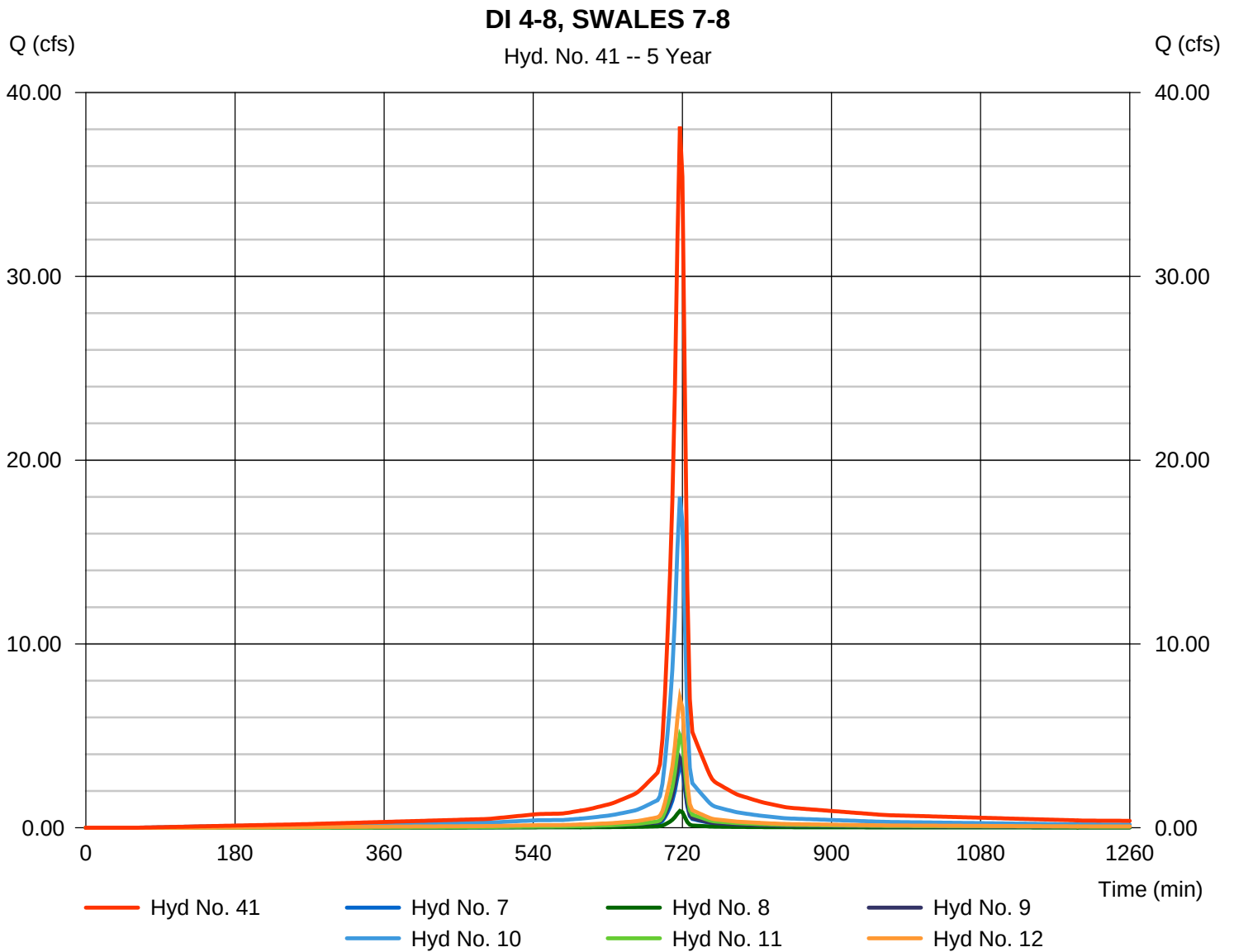
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Hyd. No. 41

DI 4-8, SWALES 7-8

Hydrograph type	= Combine	Peak discharge	= 38.14 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 95,592 cuft
Inflow hyds.	= 7, 8, 9, 10, 11, 12	Contrib. drain. area	= 7.660 ac



Hydrograph Report

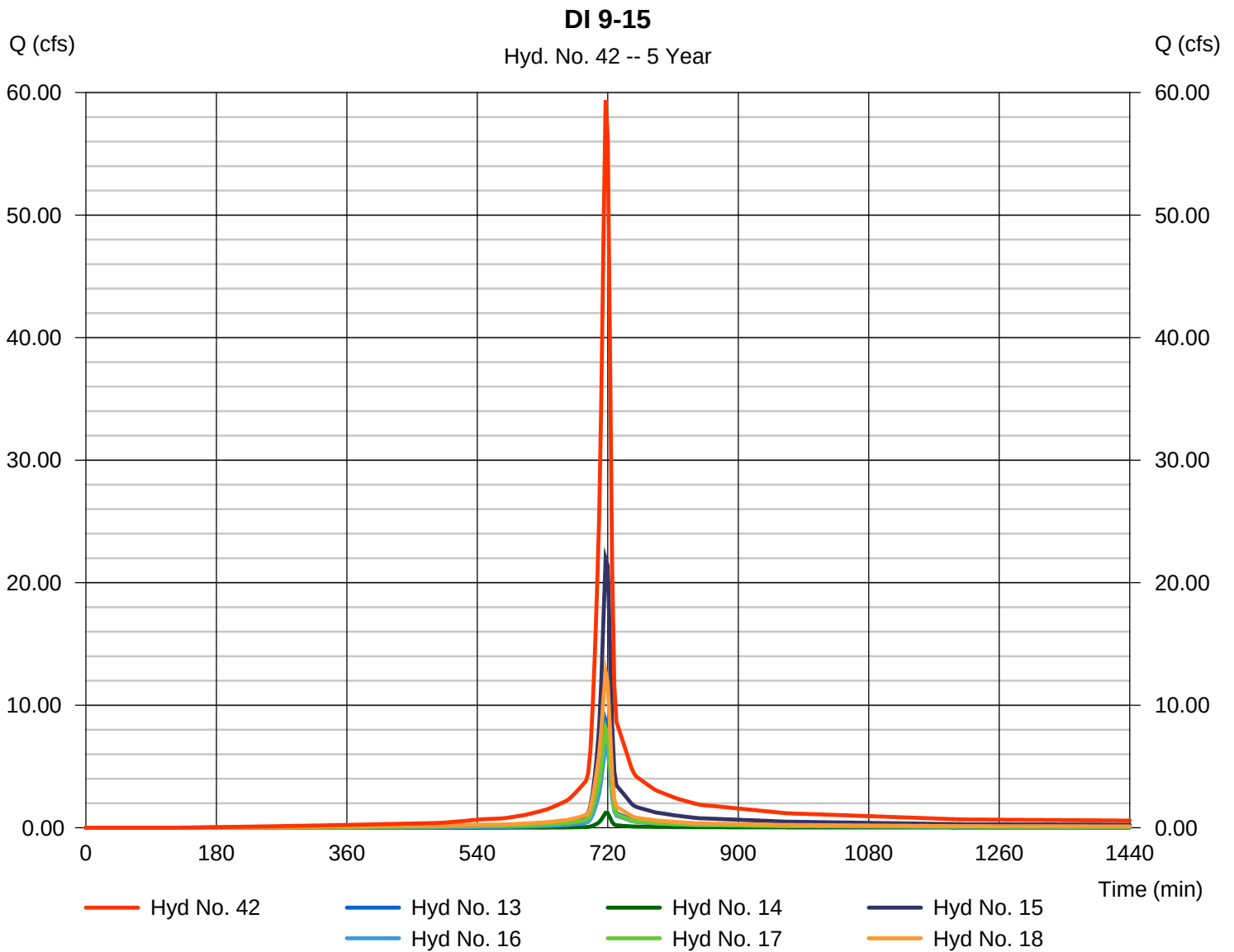
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Hyd. No. 42

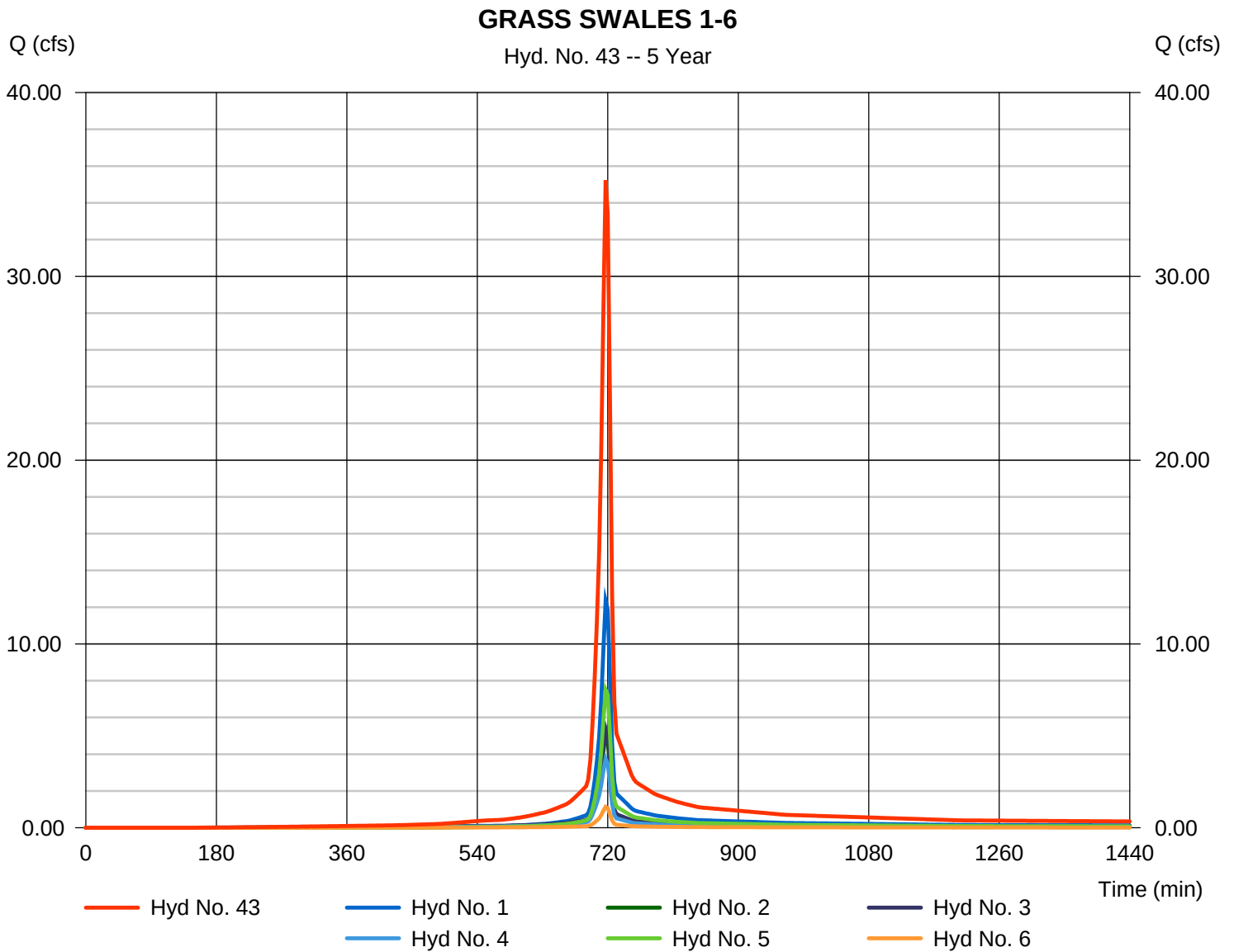
DI 9-15

Hydrograph type	= Combine	Peak discharge	= 59.40 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 140,947 cuft
Inflow hyds.	= 13, 14, 15, 16, 17, 18	Contrib. drain. area	= 14.740 ac



GRASS SWALES 1-6

Peak discharge = 35.22 cfs
Time to peak = 717 min
Hyd. volume = 82,444 cuft
Contrib. drain. area = 8.560 ac



Hydrograph Report

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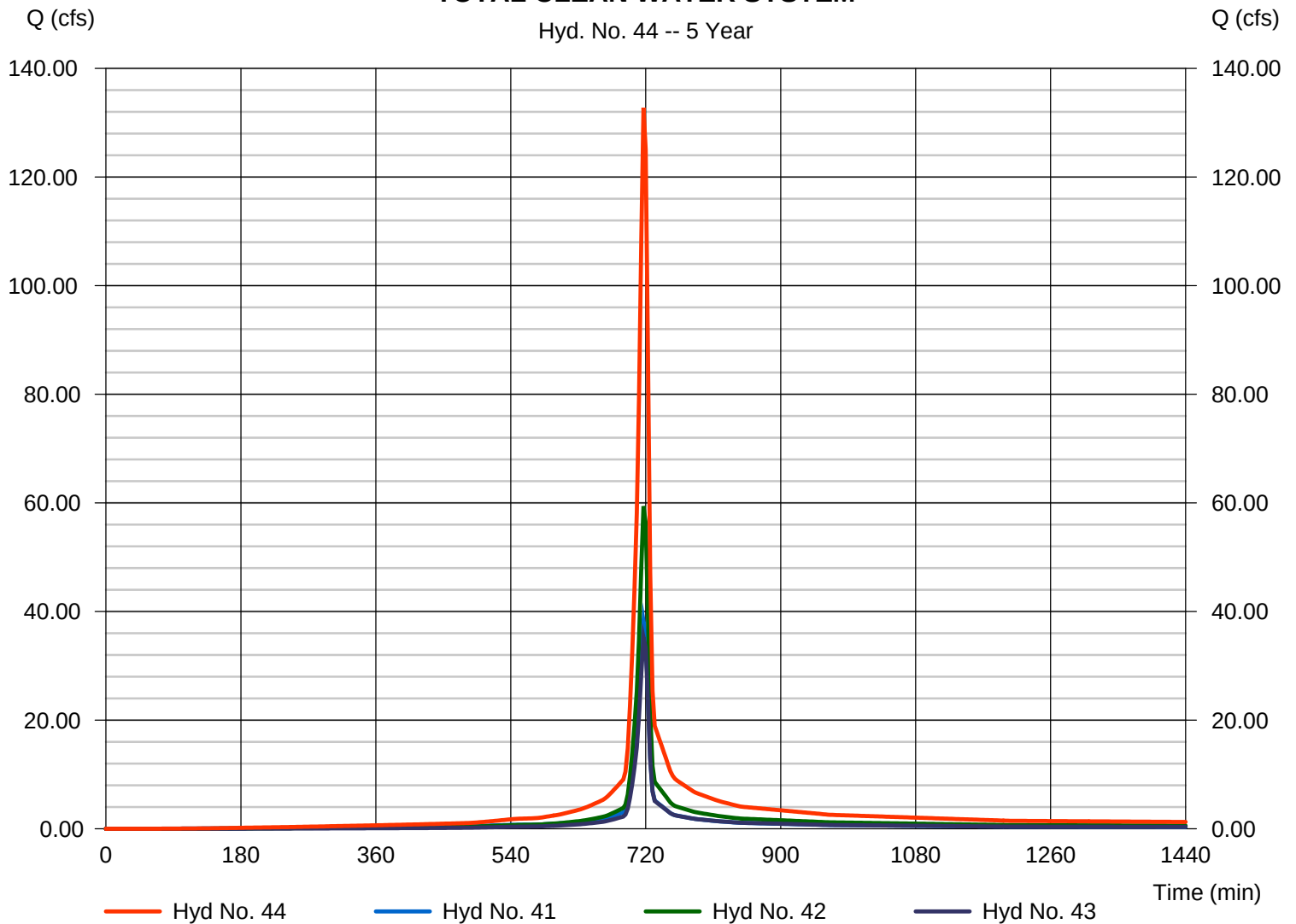
Hyd. No. 44

TOTAL CLEAN WATER SYSTEM

Hydrograph type = Combine
Storm frequency = 5 yrs
Time interval = 3 min
Inflow hyds. = 41, 42, 43

Peak discharge = 132.76 cfs
Time to peak = 717 min
Hyd. volume = 318,982 cuft
Contrib. drain. area = 0.000 ac

TOTAL CLEAN WATER SYSTEM



Hydrograph Report

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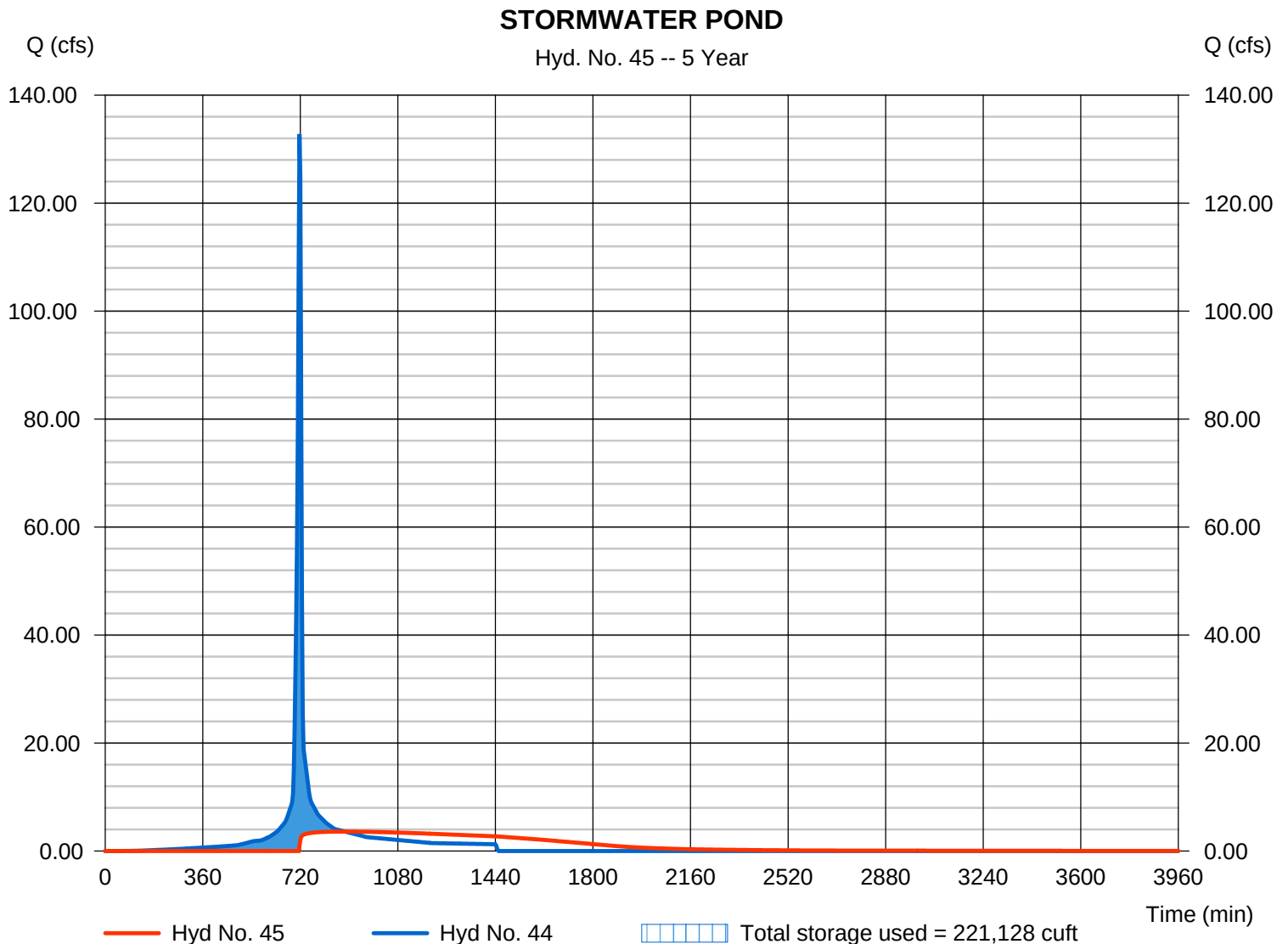
Friday, 07 / 28 / 2017

Hyd. No. 45

STORMWATER POND

Hydrograph type	= Reservoir	Peak discharge	= 3.600 cfs
Storm frequency	= 5 yrs	Time to peak	= 885 min
Time interval	= 3 min	Hyd. volume	= 212,041 cuft
Inflow hyd. No.	= 44 - TOTAL CLEAN WATER STORAGE	Max. Elevation	= 561.06 ft
Reservoir name	= STORMWATER DETENTION POND	Max. Storage	= 221,128 cuft

Storage Indication method used.



Hydrograph Report

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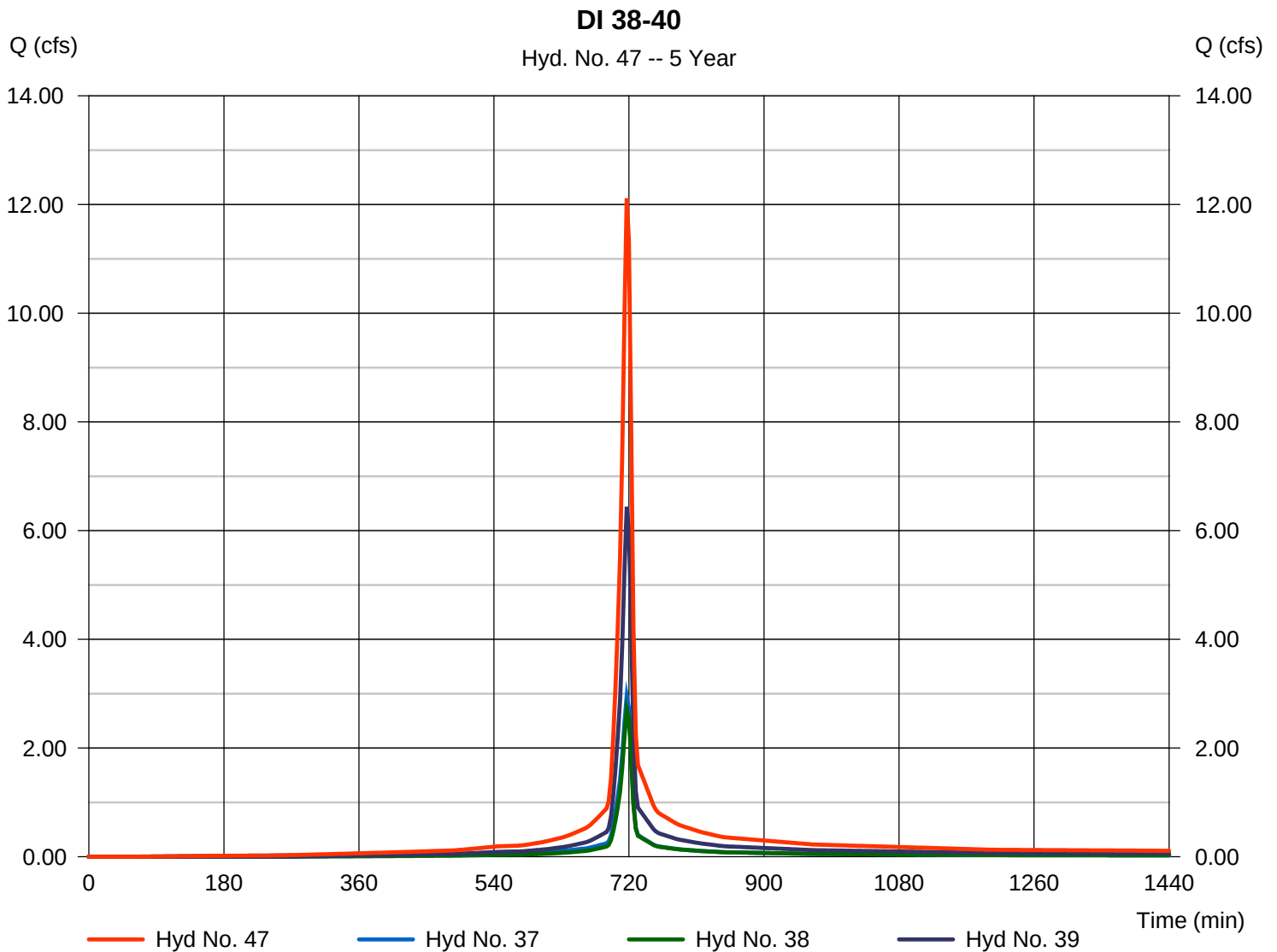
Friday, 07 / 28 / 2017

Hyd. No. 47

DI 38-40

Hydrograph type = Combine
Storm frequency = 5 yrs
Time interval = 3 min
Inflow hyds. = 37, 38, 39

Peak discharge = 12.11 cfs
Time to peak = 717 min
Hyd. volume = 29,220 cuft
Contrib. drain. area = 2.560 ac



Hydrograph Report

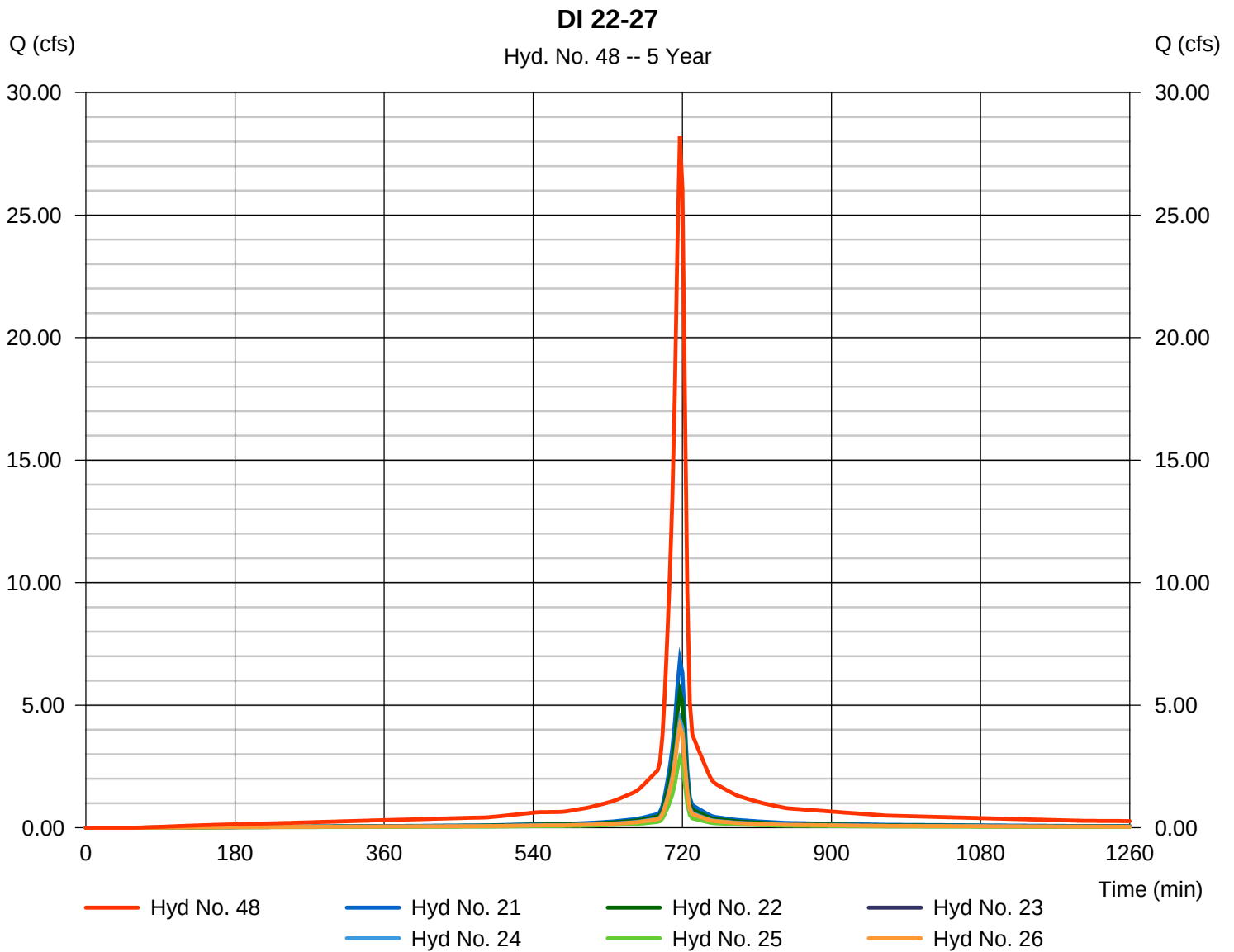
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Hyd. No. 48

DI 22-27

Hydrograph type	= Combine	Peak discharge	= 28.21 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 73,015 cuft
Inflow hyds.	= 21, 22, 23, 24, 25, 26	Contrib. drain. area	= 5.450 ac



Hydrograph Report

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Friday, 07 / 28 / 2017

Hyd. No. 49

DI 29-32 & DITCHES

Hydrograph type = Combine

Storm frequency = 5 yrs

Time interval = 3 min

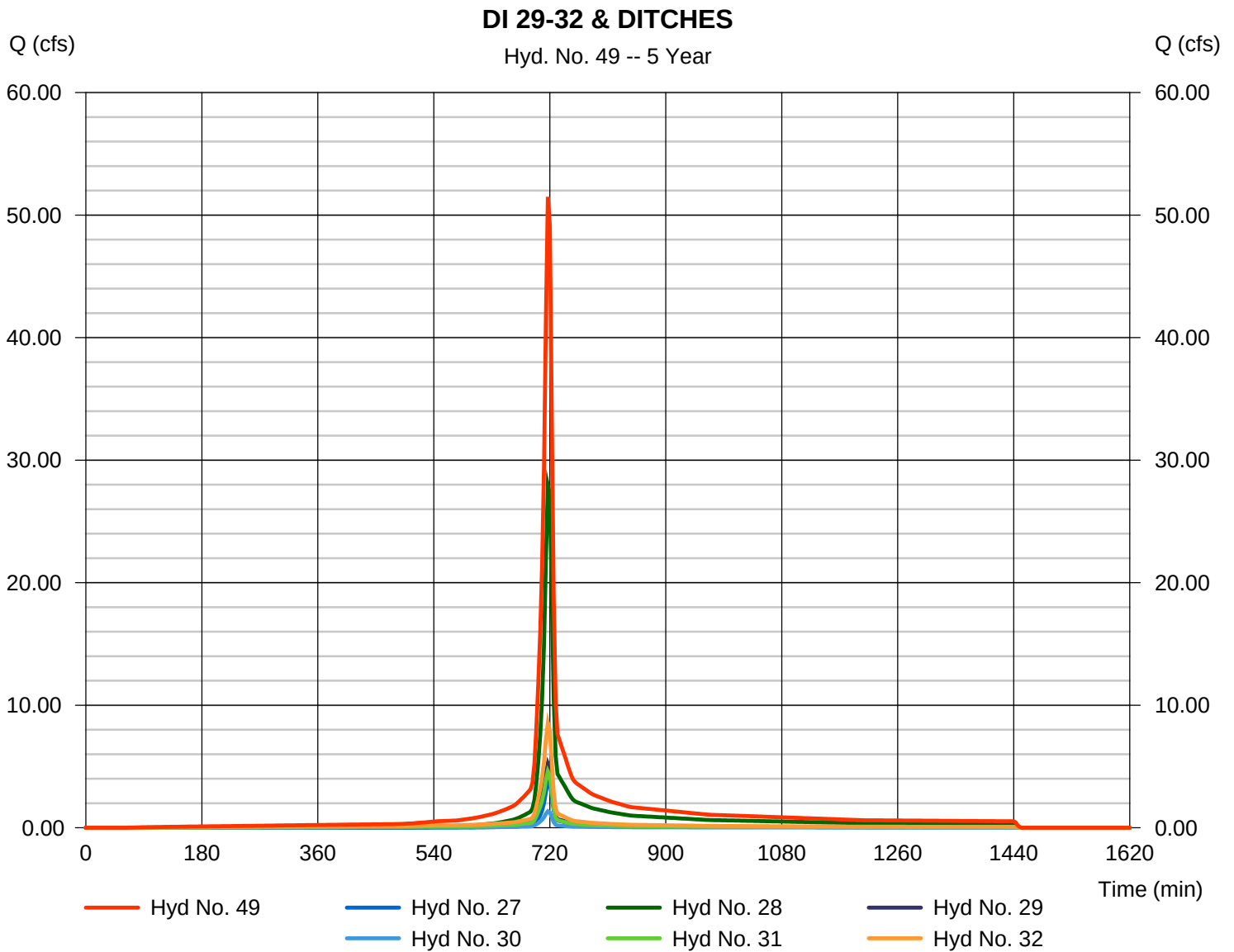
Inflow hyds. = 27, 28, 29, 30, 31, 32

Peak discharge = 51.47 cfs

Time to peak = 717 min

Hyd. volume = 122,994 cuft

Contrib. drain. area = 13.700 ac



Hydrograph Report

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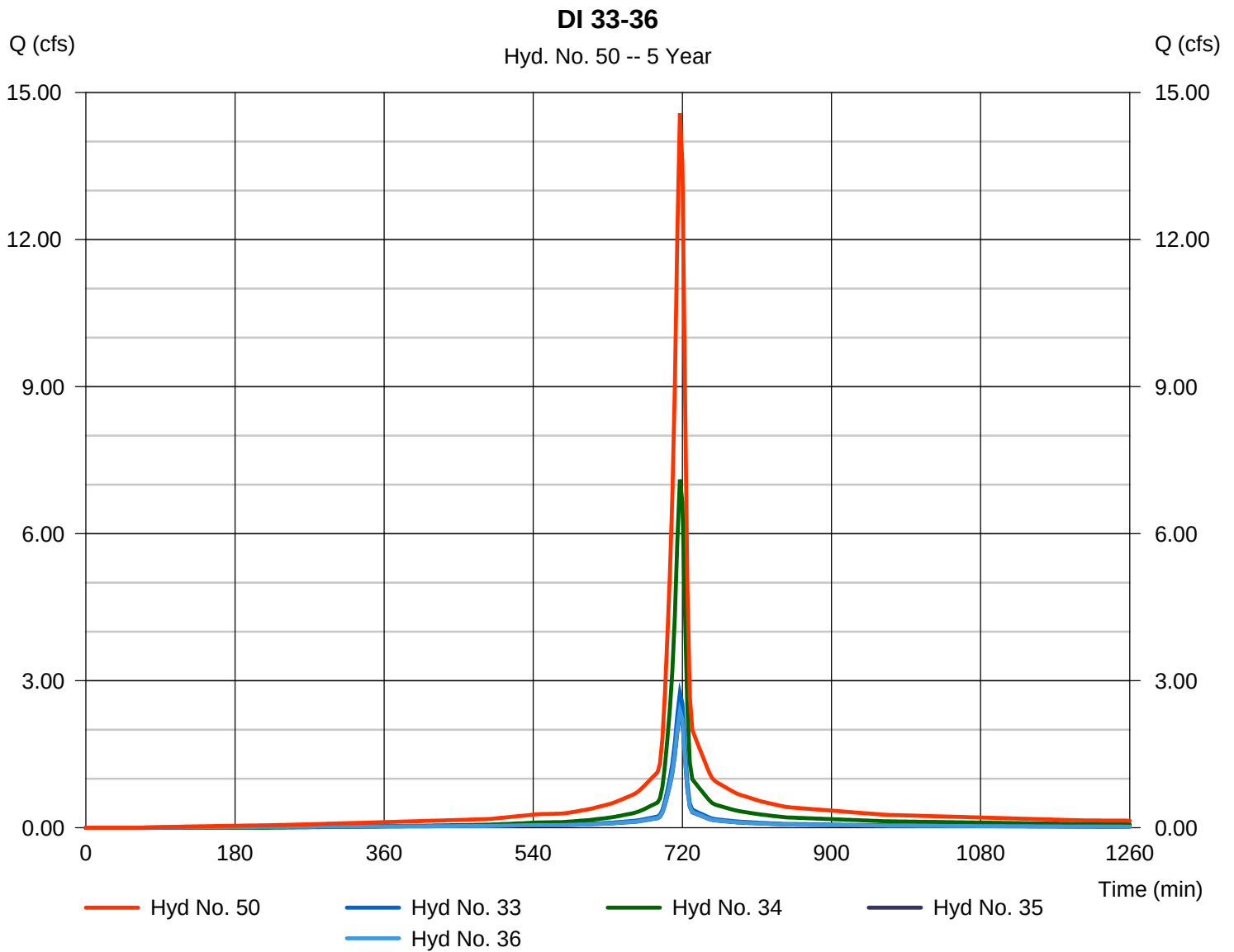
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Hyd. No. 50

DI 33-36

Hydrograph type = Combine
Storm frequency = 5 yrs
Time interval = 3 min
Inflow hyds. = 33, 34, 35, 36

Peak discharge = 14.57 cfs
Time to peak = 717 min
Hyd. volume = 36,330 cuft
Contrib. drain. area = 2.940 ac



Hydrograph Report

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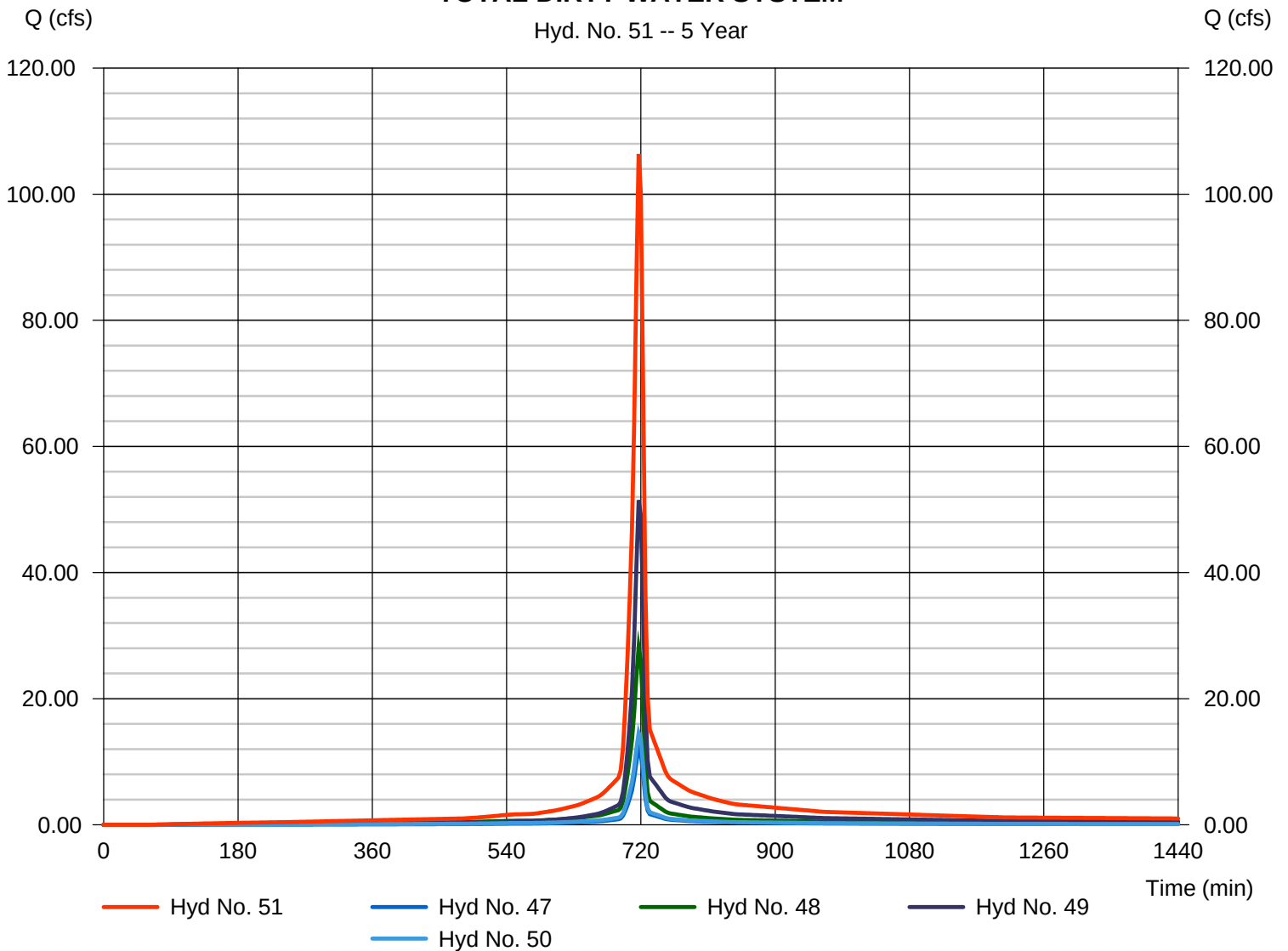
Hyd. No. 51

TOTAL DIRTY WATER SYSTEM

Hydrograph type = Combine
Storm frequency = 5 yrs
Time interval = 3 min
Inflow hyds. = 47, 48, 49, 50

Peak discharge = 106.37 cfs
Time to peak = 717 min
Hyd. volume = 261,560 cuft
Contrib. drain. area = 0.000 ac

TOTAL DIRTY WATER SYSTEM



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 53

E&S RUNOFF BASIN 1

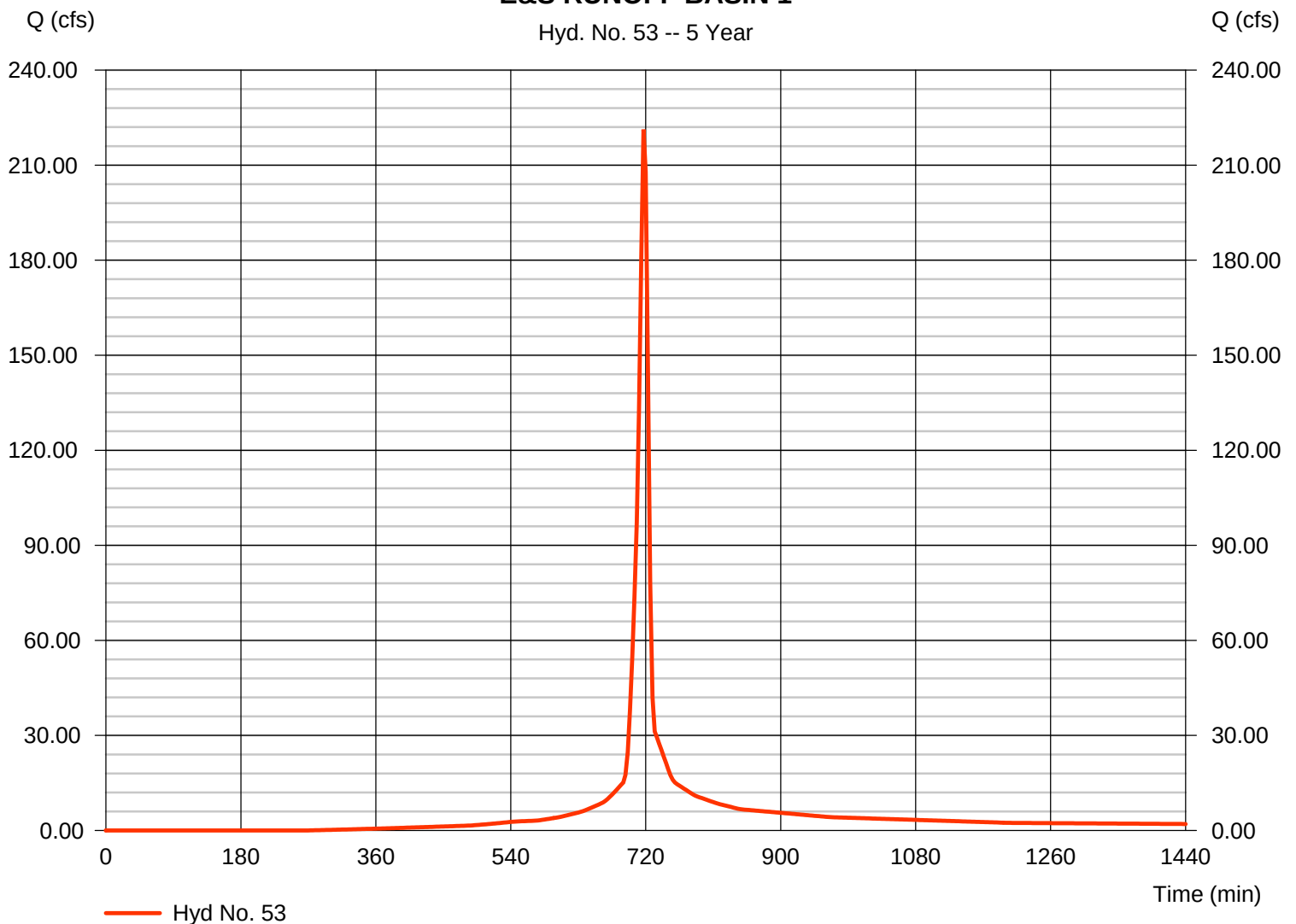
Hydrograph type = SCS Runoff
 Storm frequency = 5 yrs
 Time interval = 3 min
 Drainage area = 48.900 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 4.20 in
 Storm duration = 24 hrs

Peak discharge = 221.24 cfs
 Time to peak = 717 min
 Hyd. volume = 517,422 cuft
 Curve number = 90*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(29.300 \times 98) + (19.600 \times 79)] / 48.900$

E&S RUNOFF BASIN 1

Hyd. No. 53 -- 5 Year



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

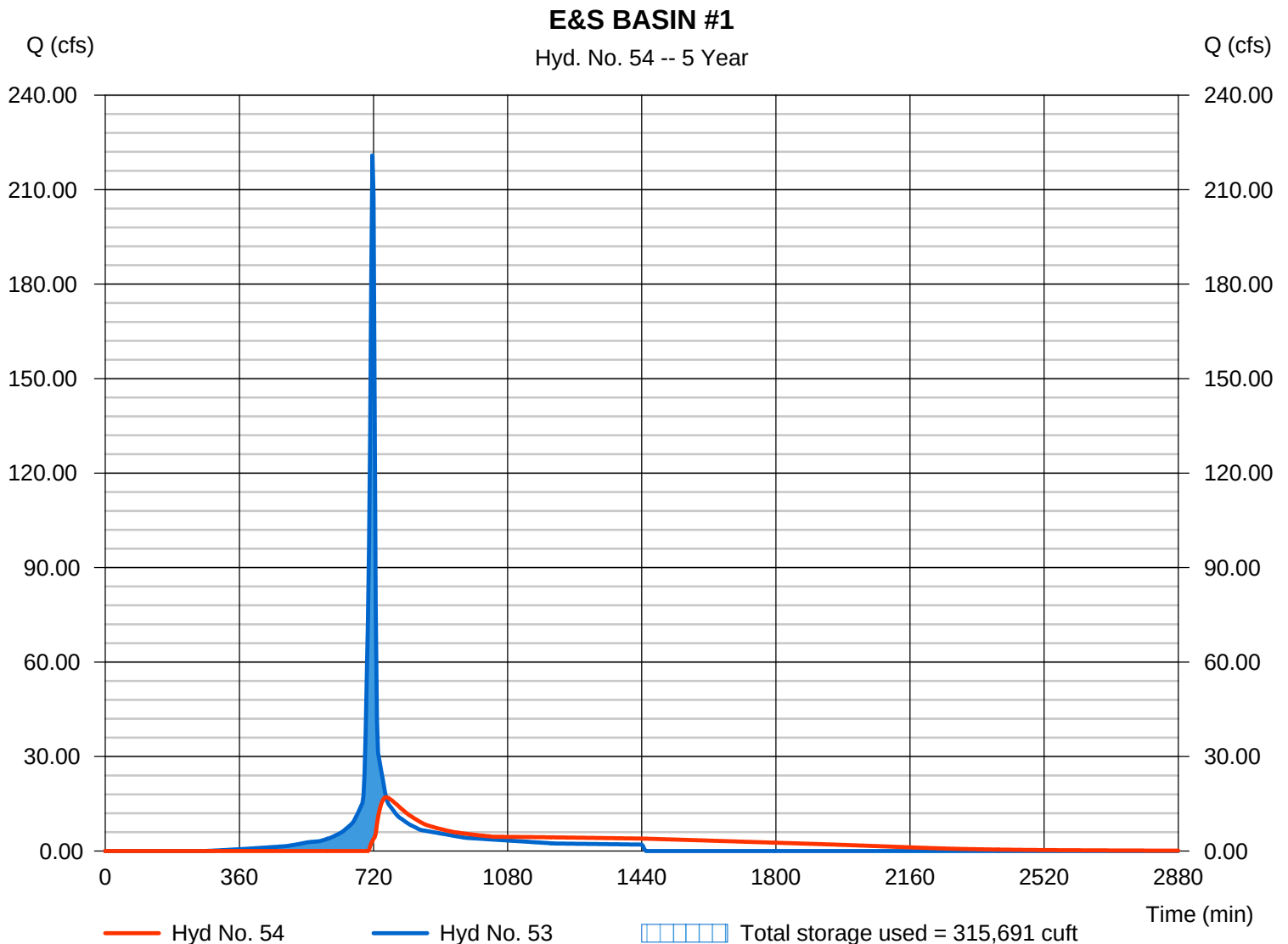
Friday, 07 / 28 / 2017

Hyd. No. 54

E&S BASIN #1

Hydrograph type	= Reservoir	Peak discharge	= 17.09 cfs
Storm frequency	= 5 yrs	Time to peak	= 753 min
Time interval	= 3 min	Hyd. volume	= 410,479 cuft
Inflow hyd. No.	= 53 - E&S RUNOFF BASIN 1	Max. Elevation	= 562.44 ft
Reservoir name	= E&S BASIN #1	Max. Storage	= 315,691 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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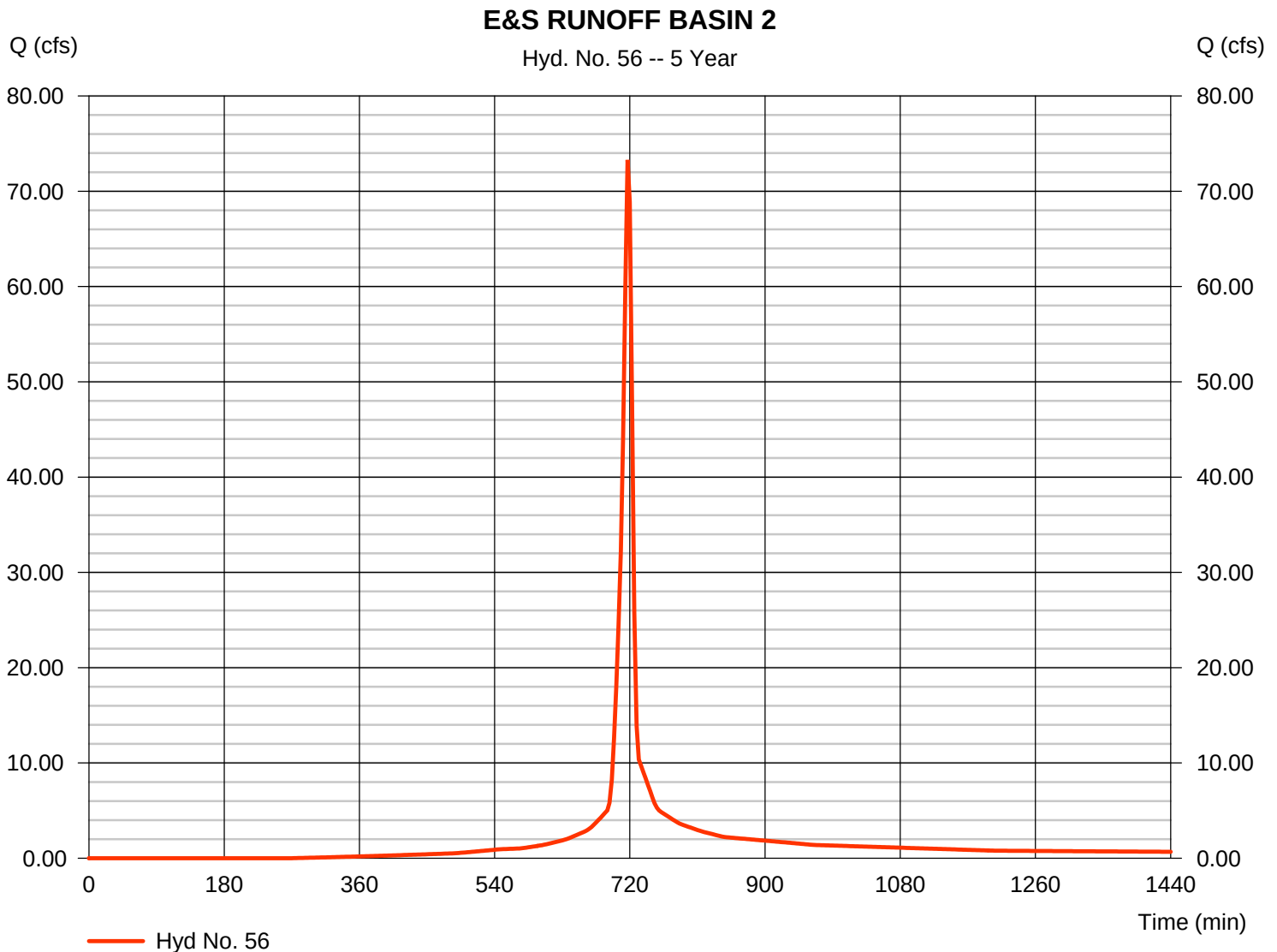
Hyd. No. 56

E&S RUNOFF BASIN 2

Hydrograph type = SCS Runoff
 Storm frequency = 5 yrs
 Time interval = 3 min
 Drainage area = 16.200 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 4.20 in
 Storm duration = 24 hrs

Peak discharge = 73.29 cfs
 Time to peak = 717 min
 Hyd. volume = 171,416 cuft
 Curve number = 90*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(9.720 \times 98) + (6.480 \times 79)] / 16.200$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

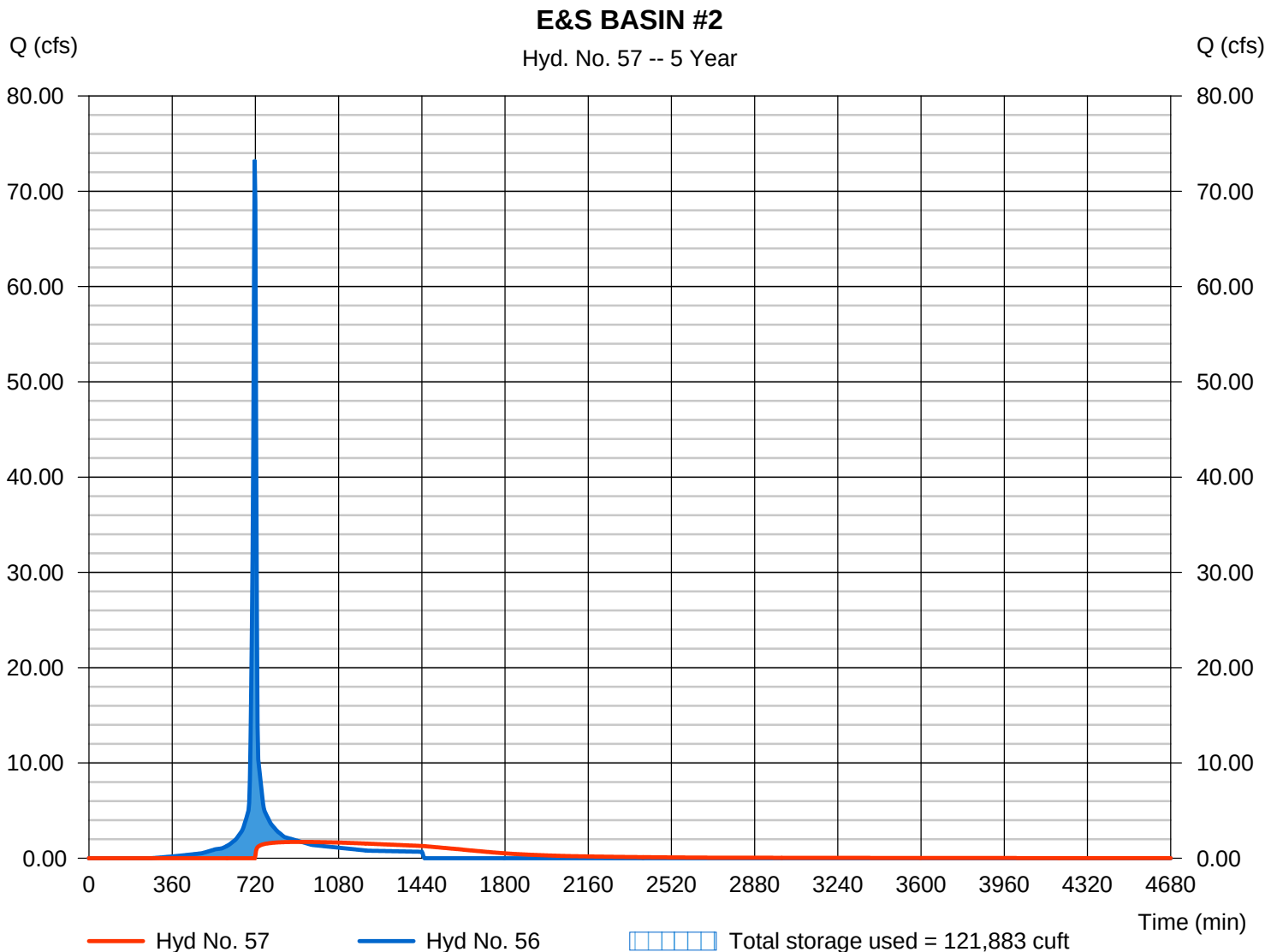
Friday, 07 / 28 / 2017

Hyd. No. 57

E&S BASIN #2

Hydrograph type	= Reservoir	Peak discharge	= 1.715 cfs
Storm frequency	= 5 yrs	Time to peak	= 918 min
Time interval	= 3 min	Hyd. volume	= 101,602 cuft
Inflow hyd. No.	= 56 - E&S RUNOFF BASIN 2	Max. Elevation	= 575.57 ft
Reservoir name	= E&S BASIN #2	Max. Storage	= 121,883 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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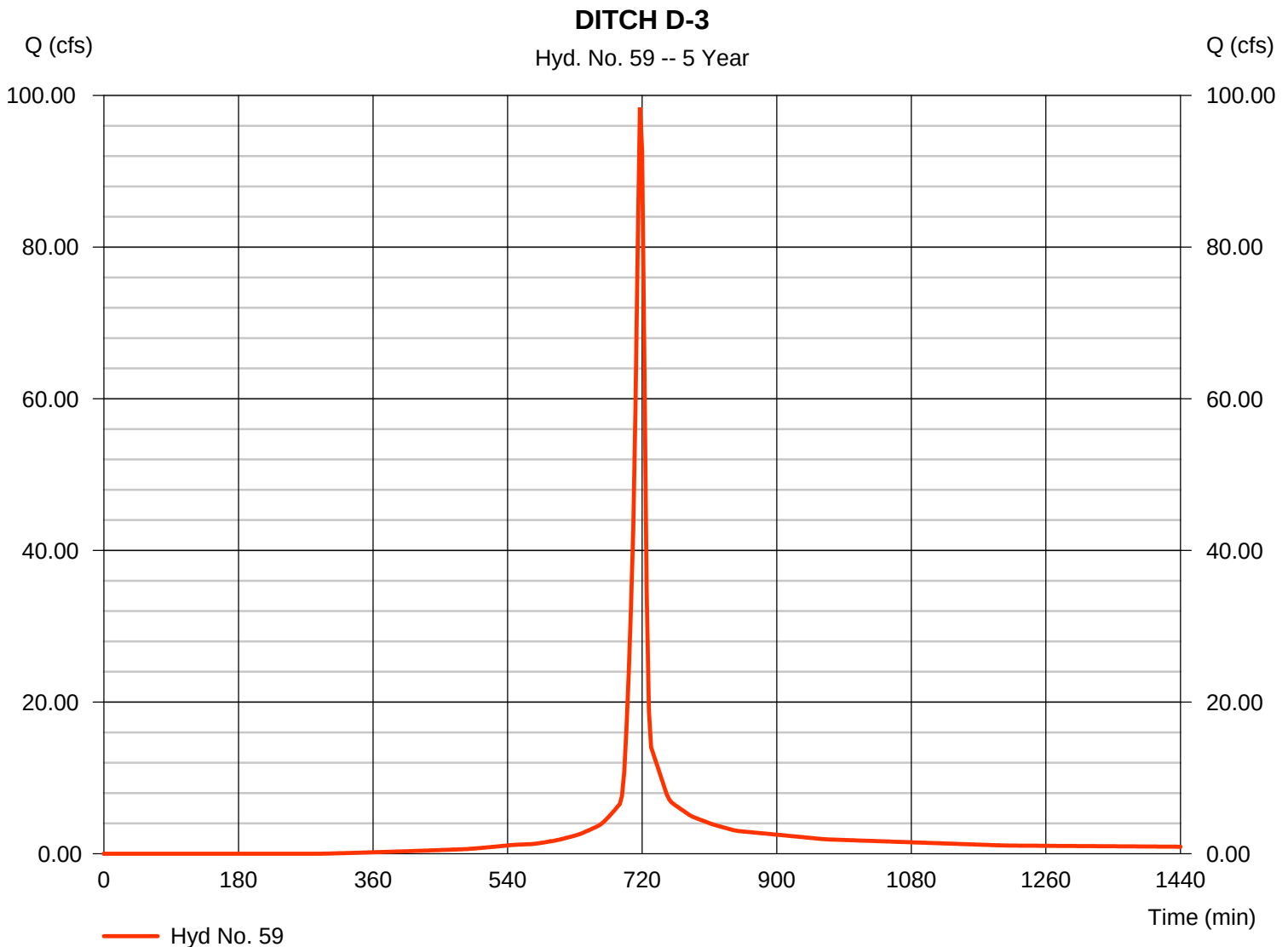
Hyd. No. 59

DITCH D-3

Hydrograph type = SCS Runoff
 Storm frequency = 5 yrs
 Time interval = 3 min
 Drainage area = 22.300 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 4.20 in
 Storm duration = 24 hrs

Peak discharge = 98.40 cfs
 Time to peak = 717 min
 Hyd. volume = 228,523 cuft
 Curve number = 89*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(12.200 \times 98) + (10.100 \times 79)] / 22.300$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

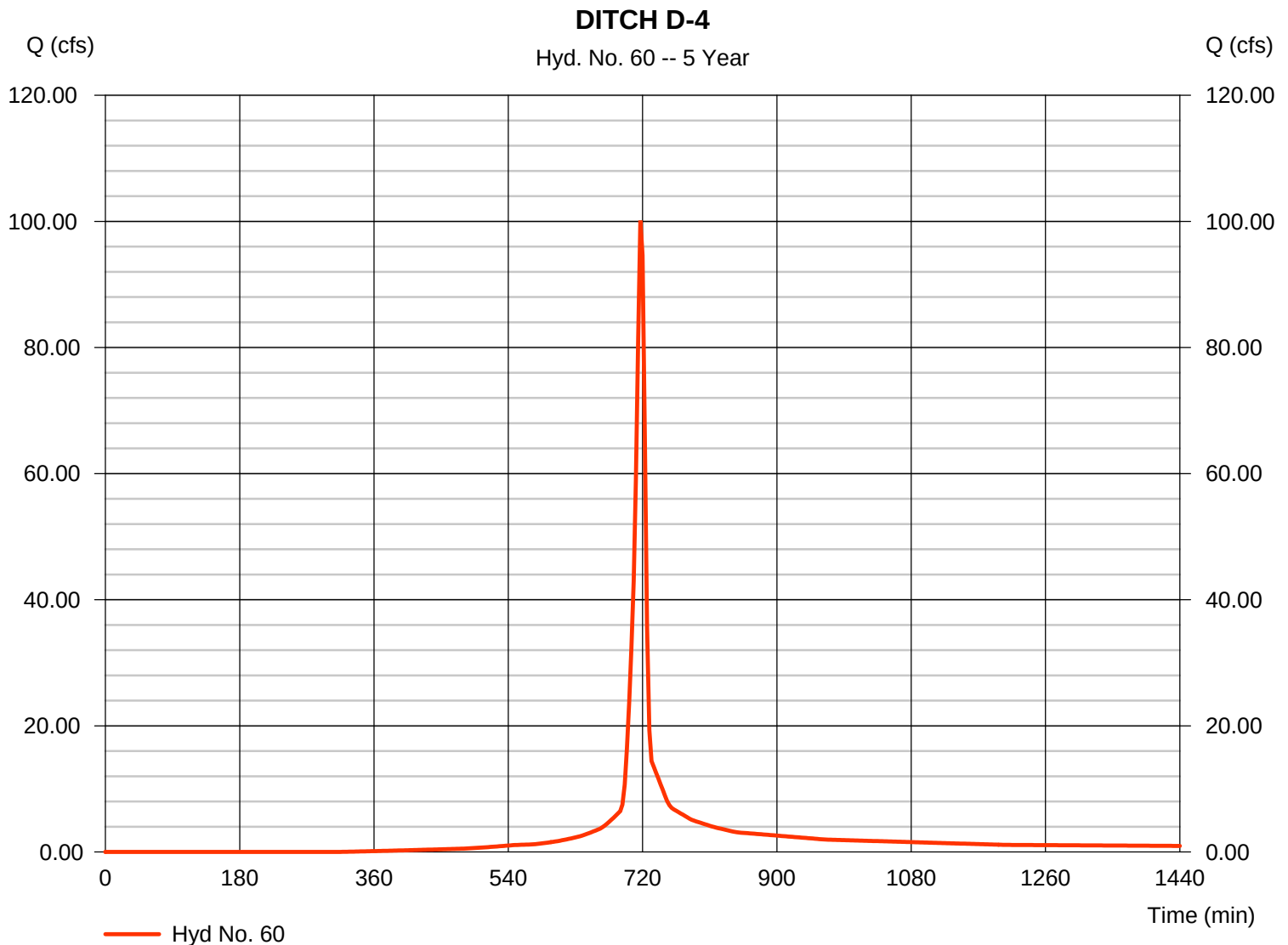
Hyd. No. 60

DITCH D-4

Hydrograph type = SCS Runoff
 Storm frequency = 5 yrs
 Time interval = 3 min
 Drainage area = 23.300 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 4.20 in
 Storm duration = 24 hrs

Peak discharge = 100.13 cfs
 Time to peak = 717 min
 Hyd. volume = 231,146 cuft
 Curve number = 88*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(11.500 \times 98) + (11.800 \times 79)] / 23.300$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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Hyd. No. 62

PRE-DEVELOPMENT

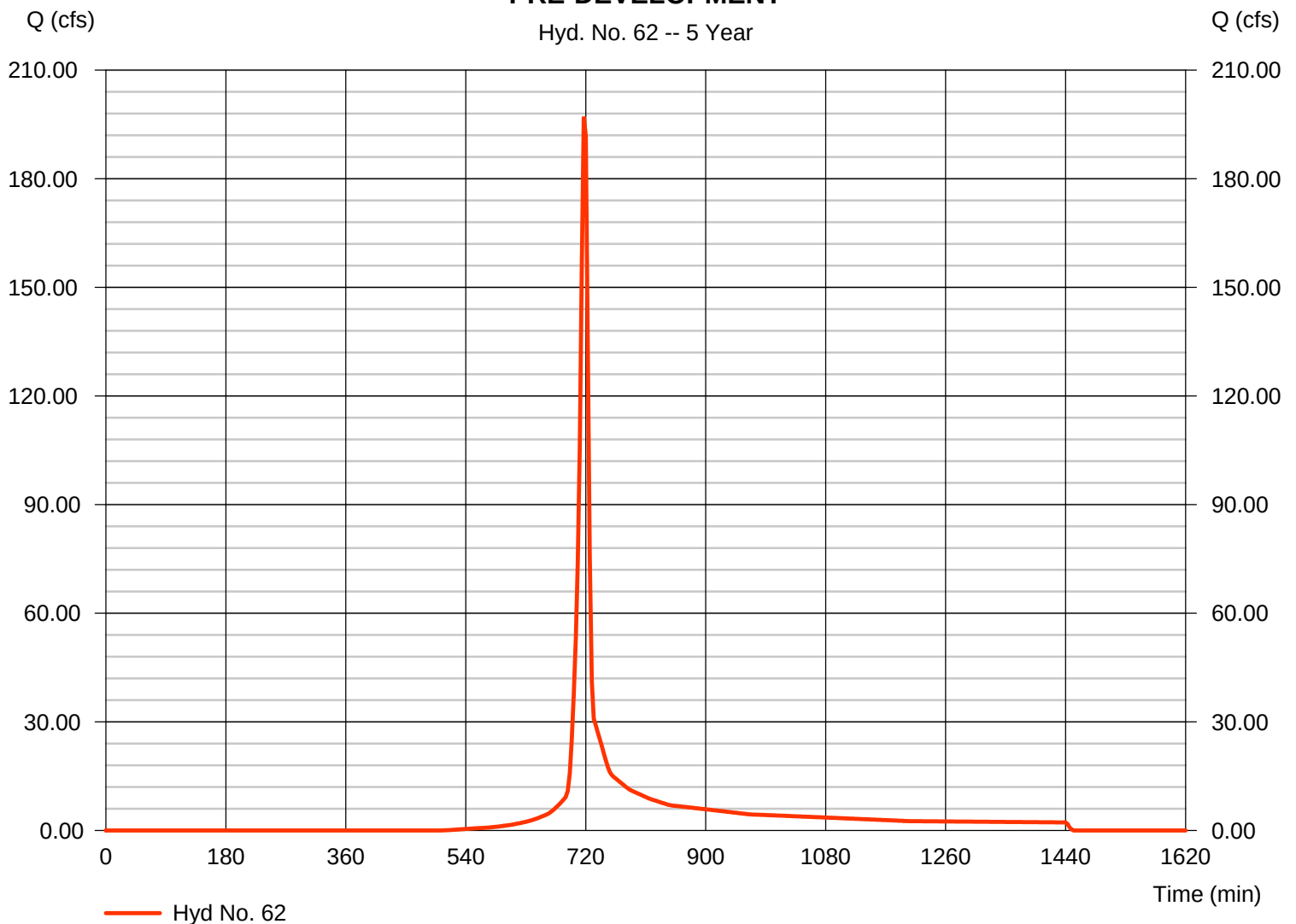
Hydrograph type = SCS Runoff
 Storm frequency = 5 yrs
 Time interval = 3 min
 Drainage area = 61.500 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 4.20 in
 Storm duration = 24 hrs

Peak discharge = 197.13 cfs
 Time to peak = 717 min
 Hyd. volume = 445,171 cuft
 Curve number = 79*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(60.200 \times 79) + (1.300 \times 98)] / 61.500$

PRE-DEVELOPMENT

Hyd. No. 62 -- 5 Year



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

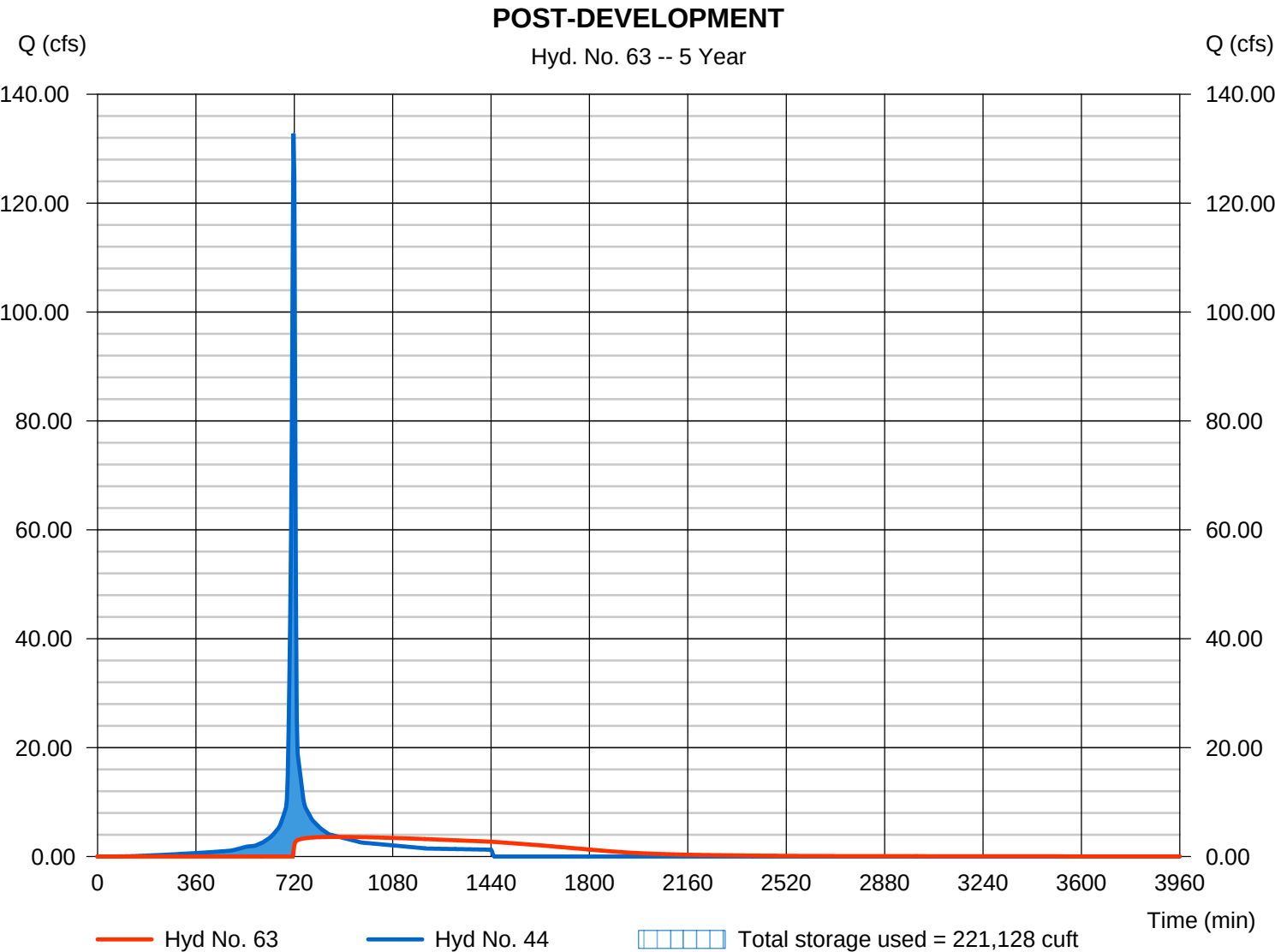
Friday, 07 / 28 / 2017

Hyd. No. 63

POST-DEVELOPMENT

Hydrograph type	= Reservoir	Peak discharge	= 3.600 cfs
Storm frequency	= 5 yrs	Time to peak	= 885 min
Time interval	= 3 min	Hyd. volume	= 212,041 cuft
Inflow hyd. No.	= 44 - TOTAL CLEAN WATER STORAGE	Max. Elevation	= 561.06 ft
Reservoir name	= STORMWATER DETENTION POND	Max. Storage	= 221,128 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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	15.60	3	717	35,564	-----	-----	-----	GRASS SWALE #1
2	SCS Runoff	6.094	3	717	14,825	-----	-----	-----	GRASS SWALE #2
3	SCS Runoff	6.442	3	717	16,061	-----	-----	-----	GRASS SWALE #3
4	SCS Runoff	4.474	3	717	11,154	-----	-----	-----	GRASS SWALE #4
5	SCS Runoff	9.540	3	717	21,685	-----	-----	-----	GRASS SWALE #5
6	SCS Runoff	1.371	3	717	3,300	-----	-----	-----	GRASS SWALE #6
7	SCS Runoff	4.075	3	717	9,640	-----	-----	-----	GRASS SWALE #7
8	SCS Runoff	1.086	3	717	2,746	-----	-----	-----	GRASS SWALE #8
9	SCS Runoff	4.534	3	717	11,159	-----	-----	-----	DI #4
10	SCS Runoff	21.26	3	717	55,658	-----	-----	-----	DI #6
11	SCS Runoff	6.113	3	717	14,461	-----	-----	-----	DI #7
12	SCS Runoff	8.383	3	717	21,205	-----	-----	-----	DI #8
13	SCS Runoff	10.38	3	717	25,877	-----	-----	-----	DI #9
14	SCS Runoff	1.578	3	717	3,567	-----	-----	-----	DI #10
15	SCS Runoff	28.44	3	717	64,308	-----	-----	-----	MH #11
16	SCS Runoff	8.326	3	717	19,206	-----	-----	-----	DI #13
17	SCS Runoff	9.663	3	717	24,092	-----	-----	-----	DI #14
18	SCS Runoff	15.08	3	717	38,139	-----	-----	-----	DI #15
21	SCS Runoff	8.094	3	717	20,808	-----	-----	-----	DI #22
22	SCS Runoff	6.557	3	717	17,163	-----	-----	-----	DI #23
23	SCS Runoff	5.208	3	717	13,634	-----	-----	-----	DI #24
24	SCS Runoff	5.208	3	717	13,634	-----	-----	-----	DI #25
25	SCS Runoff	3.370	3	717	8,822	-----	-----	-----	DI #26
26	SCS Runoff	4.902	3	717	12,832	-----	-----	-----	DI #27
27	SCS Runoff	4.858	3	717	10,984	-----	-----	-----	DITCH D-1
28	SCS Runoff	36.21	3	717	81,864	-----	-----	-----	DITCH D-2
29	SCS Runoff	6.189	3	717	16,200	-----	-----	-----	DI #29
30	SCS Runoff	1.593	3	717	4,170	-----	-----	-----	DI #30
31	SCS Runoff	5.454	3	717	14,275	-----	-----	-----	DI #31
32	SCS Runoff	10.11	3	717	26,466	-----	-----	-----	DI #32
33	SCS Runoff	3.248	3	717	8,501	-----	-----	-----	DI #33
34	SCS Runoff	8.567	3	717	20,625	-----	-----	-----	DI #34
35	SCS Runoff	2.757	3	717	7,218	-----	-----	-----	DI #35
TOTAL REVISED HYDROLOGY.gpw					Return Period: 10 Year			Friday, 07 / 28 / 2017	

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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
36	SCS Runoff	2.819	3	717	7,378	-----	-----	-----	DI #36
37	SCS Runoff	3.493	3	717	9,143	-----	-----	-----	DI #38
38	SCS Runoff	3.304	3	717	7,817	-----	-----	-----	DI #39
39	SCS Runoff	7.801	3	717	18,607	-----	-----	-----	DI #40
41	Combine	45.45	3	717	114,870	7, 8, 9,	-----	-----	DI 4-8, SWALES 7-8
42	Combine	73.47	3	717	175,190	10, 11, 12,	-----	-----	DI 9-15
43	Combine	43.52	3	717	102,590	13, 14, 15,	-----	-----	GRASS SWALES 1-6
44	Combine	162.44	3	717	392,649	16, 17, 18,	-----	-----	TOTAL CLEAN WATER SYSTEM
45	Reservoir	4.379	3	882	285,706	1, 2, 3,	-----	-----	STORMWATER POND
47	Combine	14.60	3	717	35,566	4, 5, 6,	-----	-----	
48	Combine	33.34	3	717	86,892	41, 42, 43	-----	-----	DI 38-40
49	Combine	64.41	3	717	153,959	44	561.84	273,518	DI 22-27
50	Combine	17.39	3	717	43,723	37, 38, 39,	-----	-----	DI 29-32 & DITCHES
51	Combine	129.74	3	717	320,140	21, 22, 23,	-----	-----	DI 33-36
53	SCS Runoff	269.31	3	717	637,045	24, 25, 26,	-----	-----	TOTAL DIRTY WATER SYSTEM
54	Reservoir	48.89	3	729	530,102	27, 28, 29,	-----	-----	E&S RUNOFF BASIN 1
56	SCS Runoff	89.22	3	717	211,046	30, 31, 32,	-----	-----	E&S BASIN #1
57	Reservoir	2.852	3	837	141,231	33, 34, 35,	56	576.07	E&S BASIN #2
59	SCS Runoff	120.37	3	717	282,619	36,	-----	-----	DITCH D-3
60	SCS Runoff	123.11	3	717	287,155	47, 48, 49,	-----	-----	DITCH D-4
62	SCS Runoff	255.37	3	717	577,365	50	-----	-----	PRE-DEVELOPMENT
63	Reservoir	4.379	3	882	285,706	44	561.84	273,518	POST-DEVELOPMENT
TOTAL REVISED HYDROLOGY.gpw					Return Period: 10 Year			Friday, 07 / 28 / 2017	

Hydrograph Report

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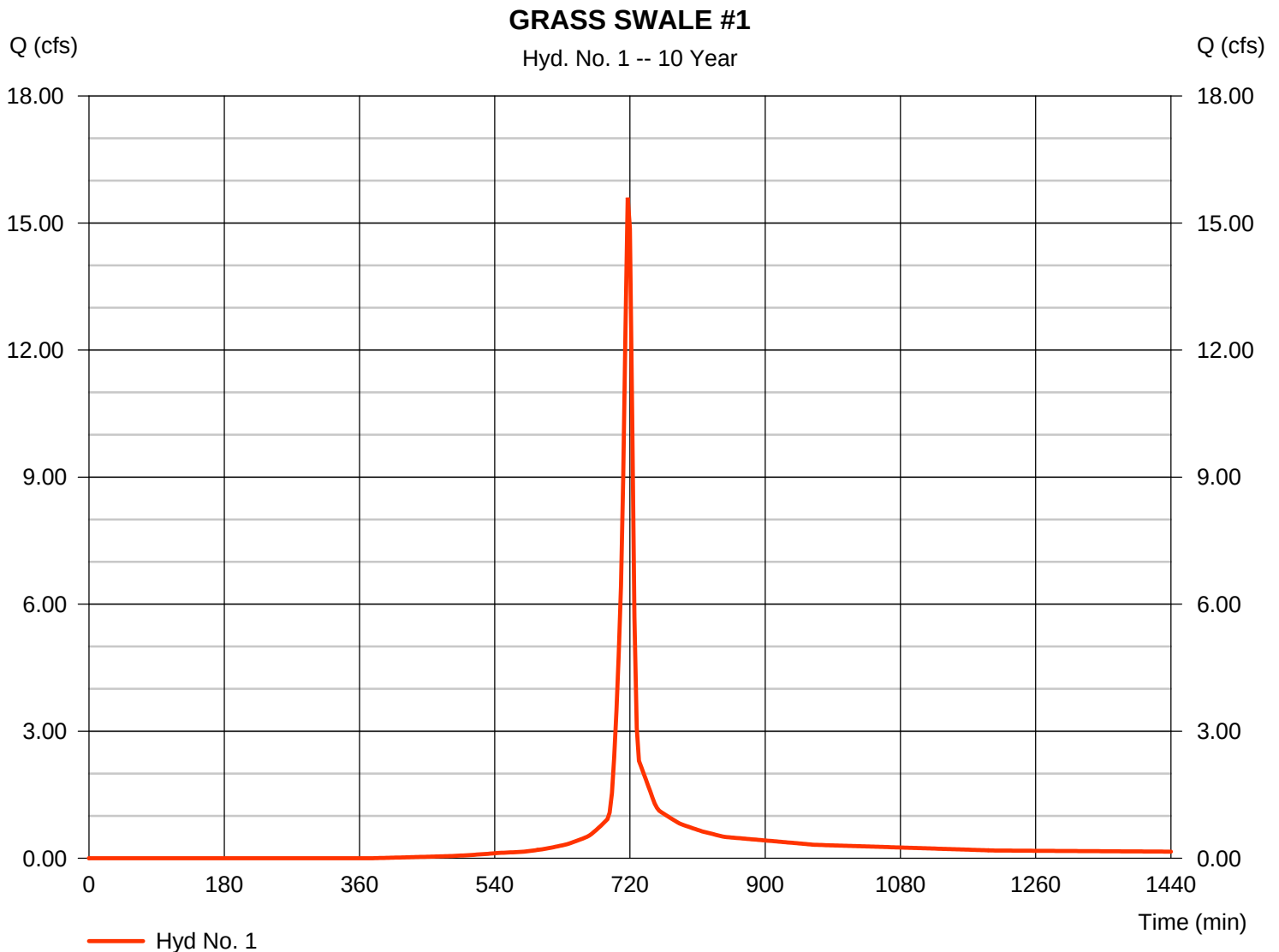
Friday, 07 / 28 / 2017

Hyd. No. 1

GRASS SWALE #1

Hydrograph type	= SCS Runoff	Peak discharge	= 15.60 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 35,564 cuft
Drainage area	= 3.340 ac	Curve number	= 83*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.730 \times 98) + (2.610 \times 79)] / 3.340$



Hydrograph Report

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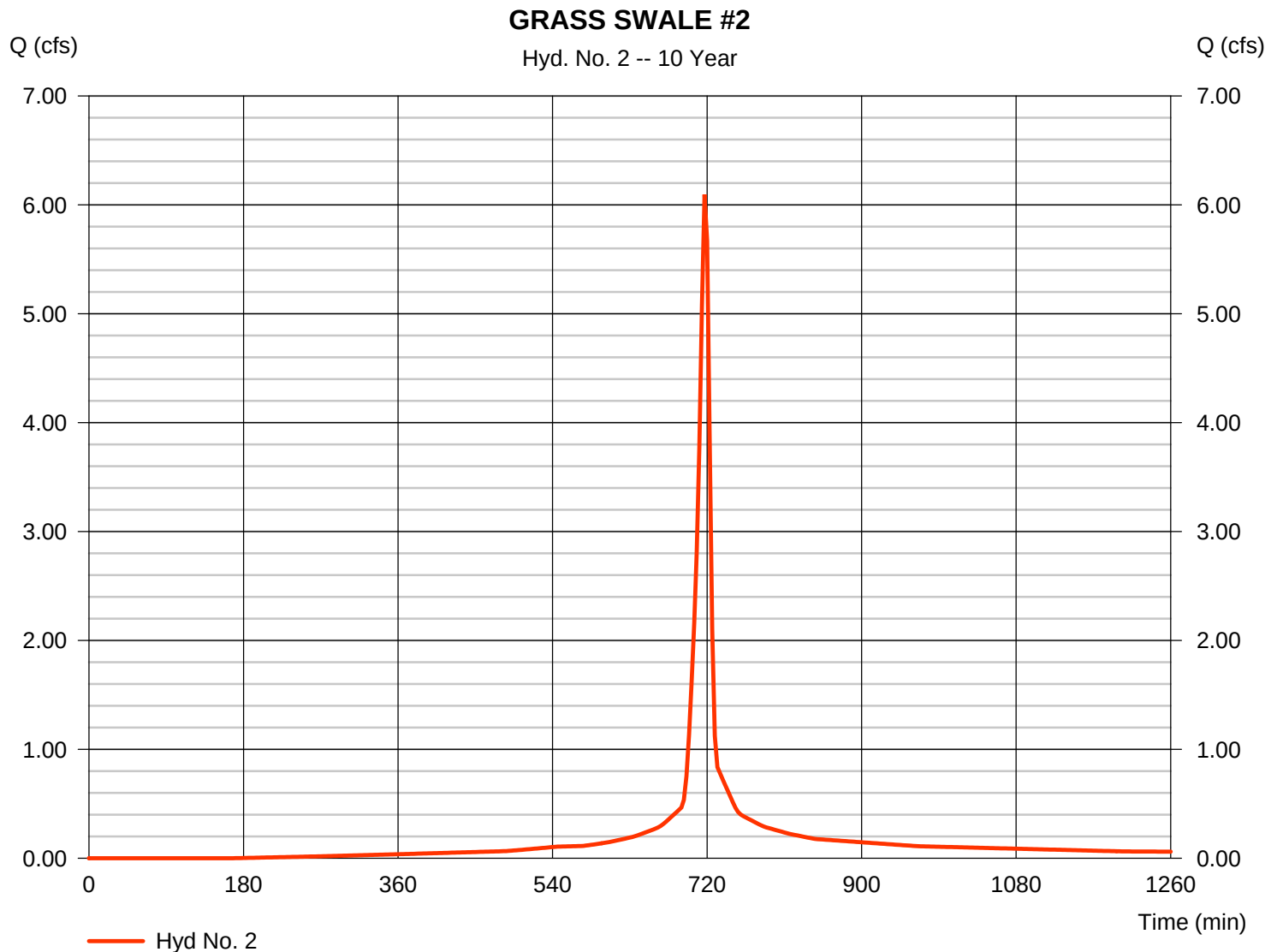
Friday, 07 / 28 / 2017

Hyd. No. 2

GRASS SWALE #2

Hydrograph type	=	SCS Runoff	Peak discharge	=	6.094 cfs
Storm frequency	=	10 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	14,825 cuft
Drainage area	=	1.050 ac	Curve number	=	93*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	4.95 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = $[(0.770 \times 98) + (0.280 \times 79)] / 1.050$



Hydrograph Report

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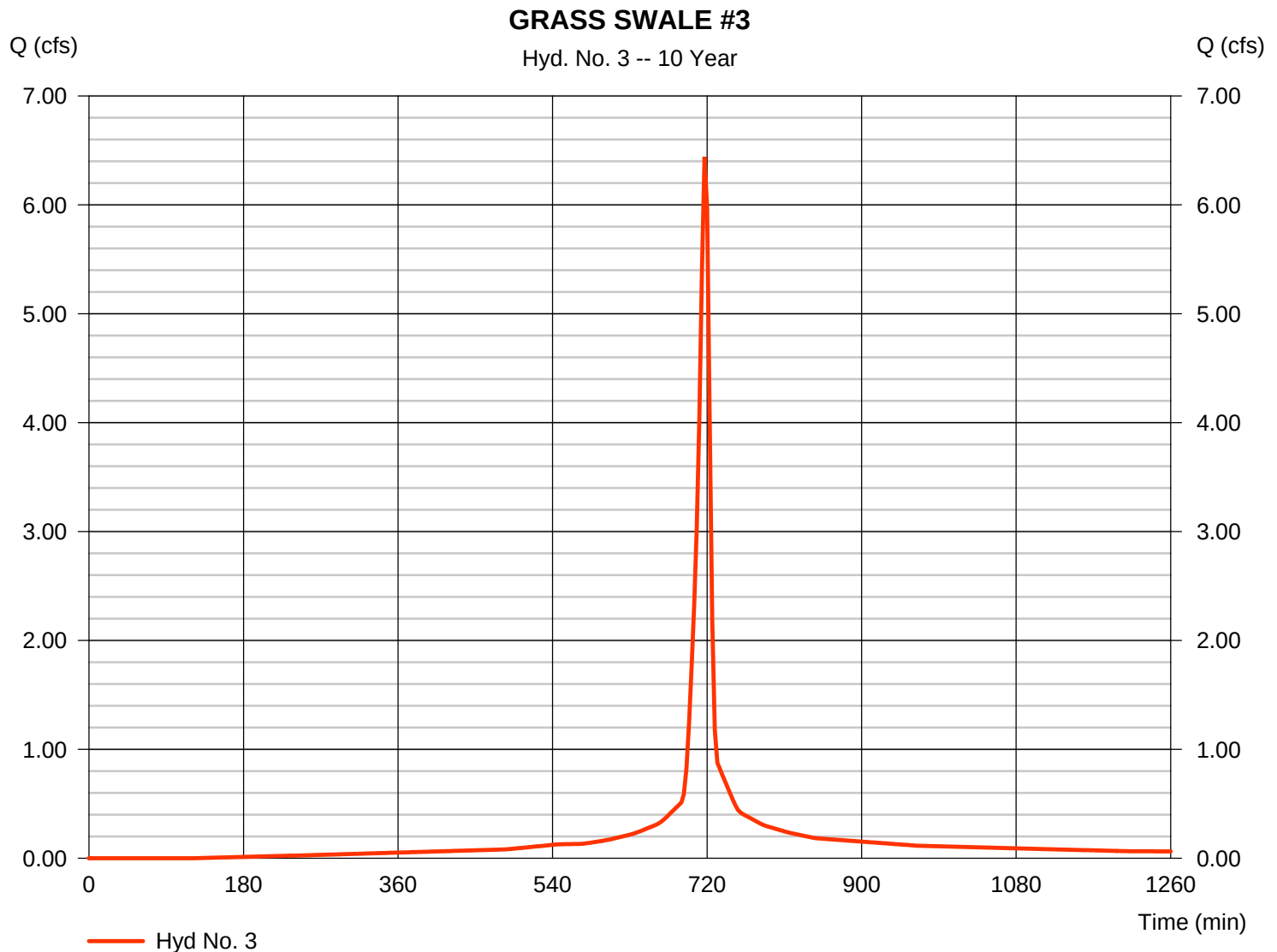
Friday, 07 / 28 / 2017

Hyd. No. 3

GRASS SWALE #3

Hydrograph type	= SCS Runoff	Peak discharge	= 6.442 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 16,061 cuft
Drainage area	= 1.080 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.890 \times 98) + (0.190 \times 79)] / 1.080$



Hydrograph Report

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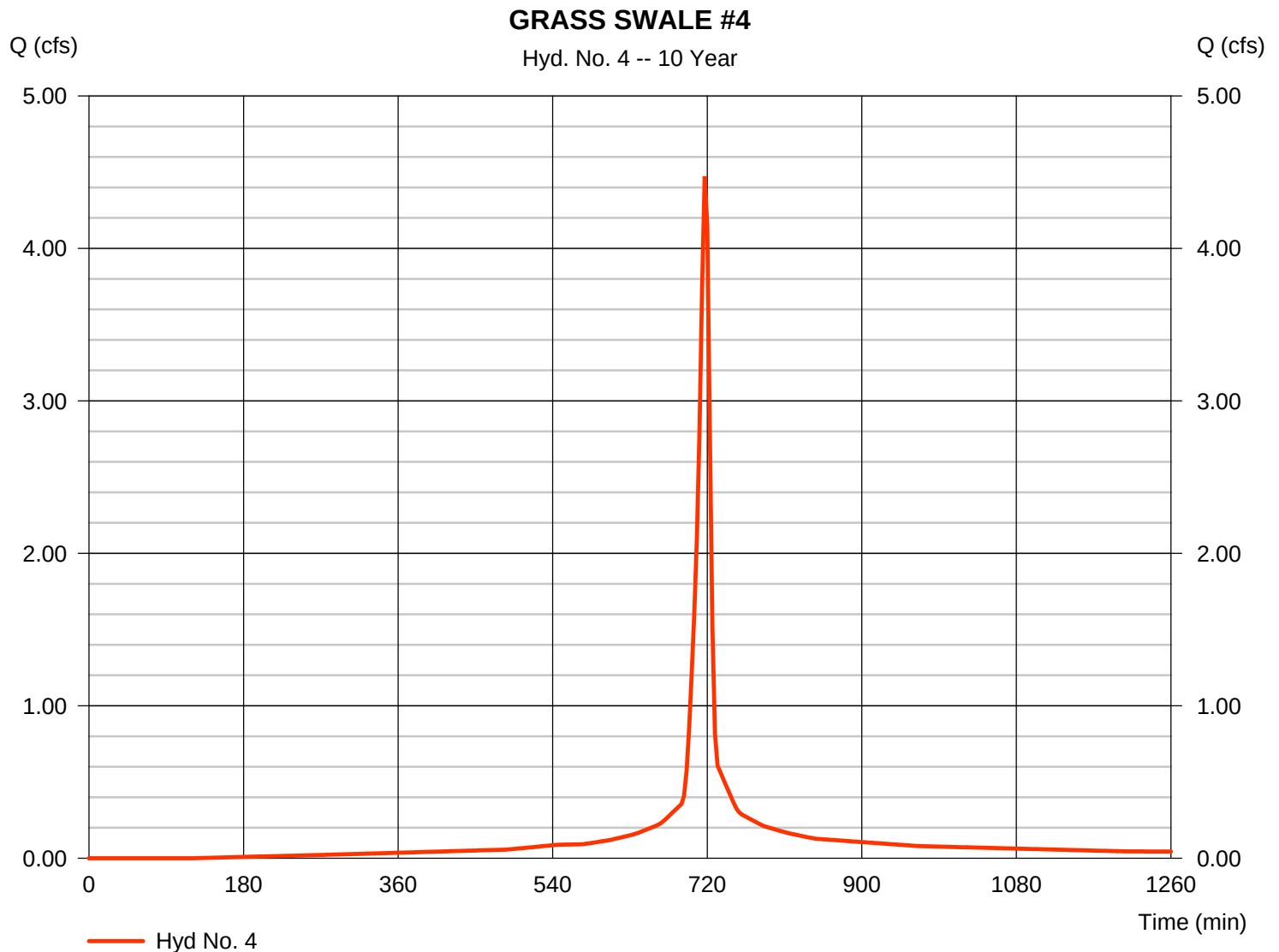
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Hyd. No. 4

GRASS SWALE #4

Hydrograph type	= SCS Runoff	Peak discharge	= 4.474 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 11,154 cuft
Drainage area	= 0.750 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.630 \times 98) + (0.120 \times 79)] / 0.750$



Hydrograph Report

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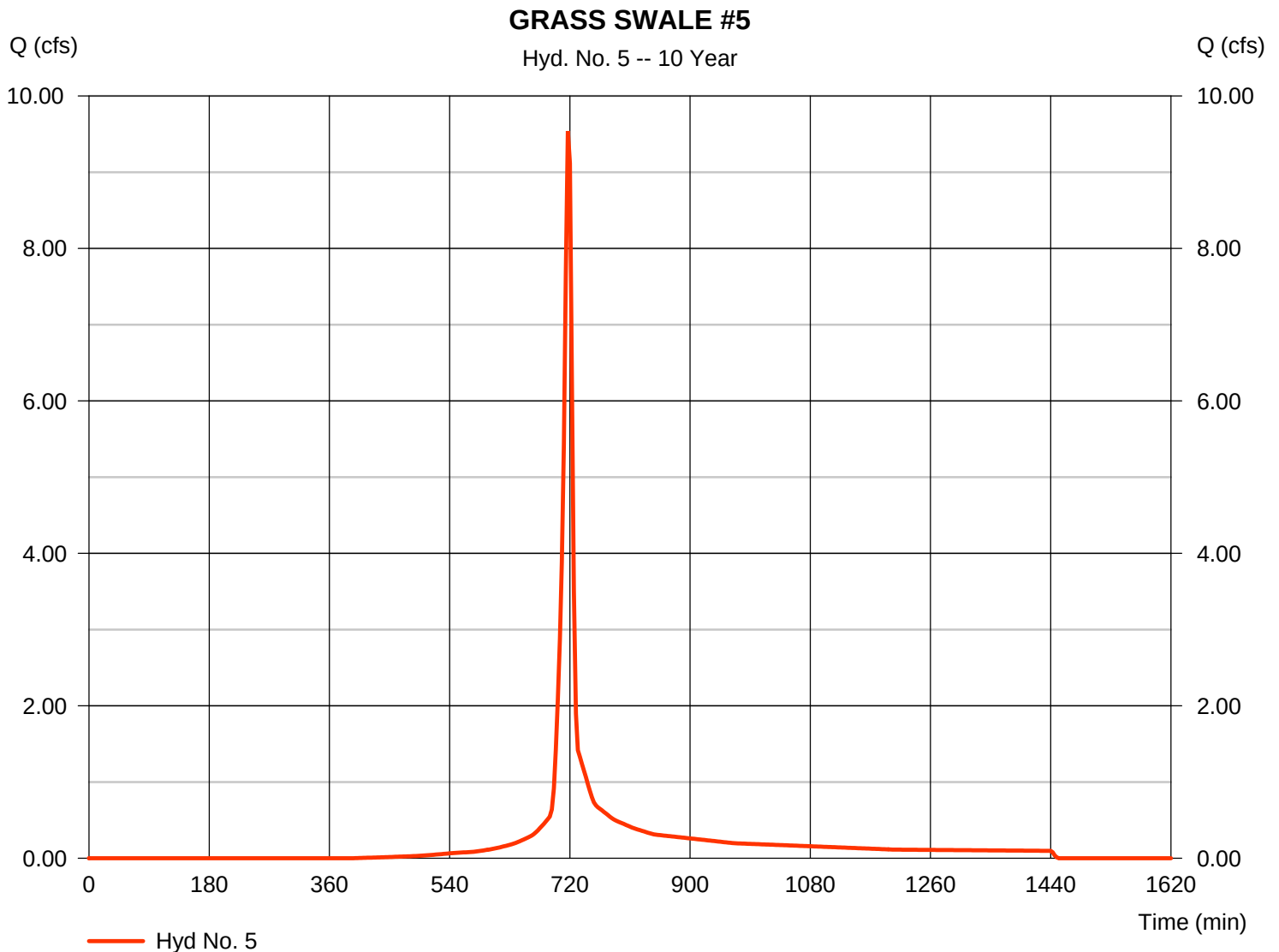
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Hyd. No. 5

GRASS SWALE #5

Hydrograph type	= SCS Runoff	Peak discharge	= 9.540 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 21,685 cuft
Drainage area	= 2.100 ac	Curve number	= 82*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.300 \times 98) + (1.800 \times 79)] / 2.100$



Hydrograph Report

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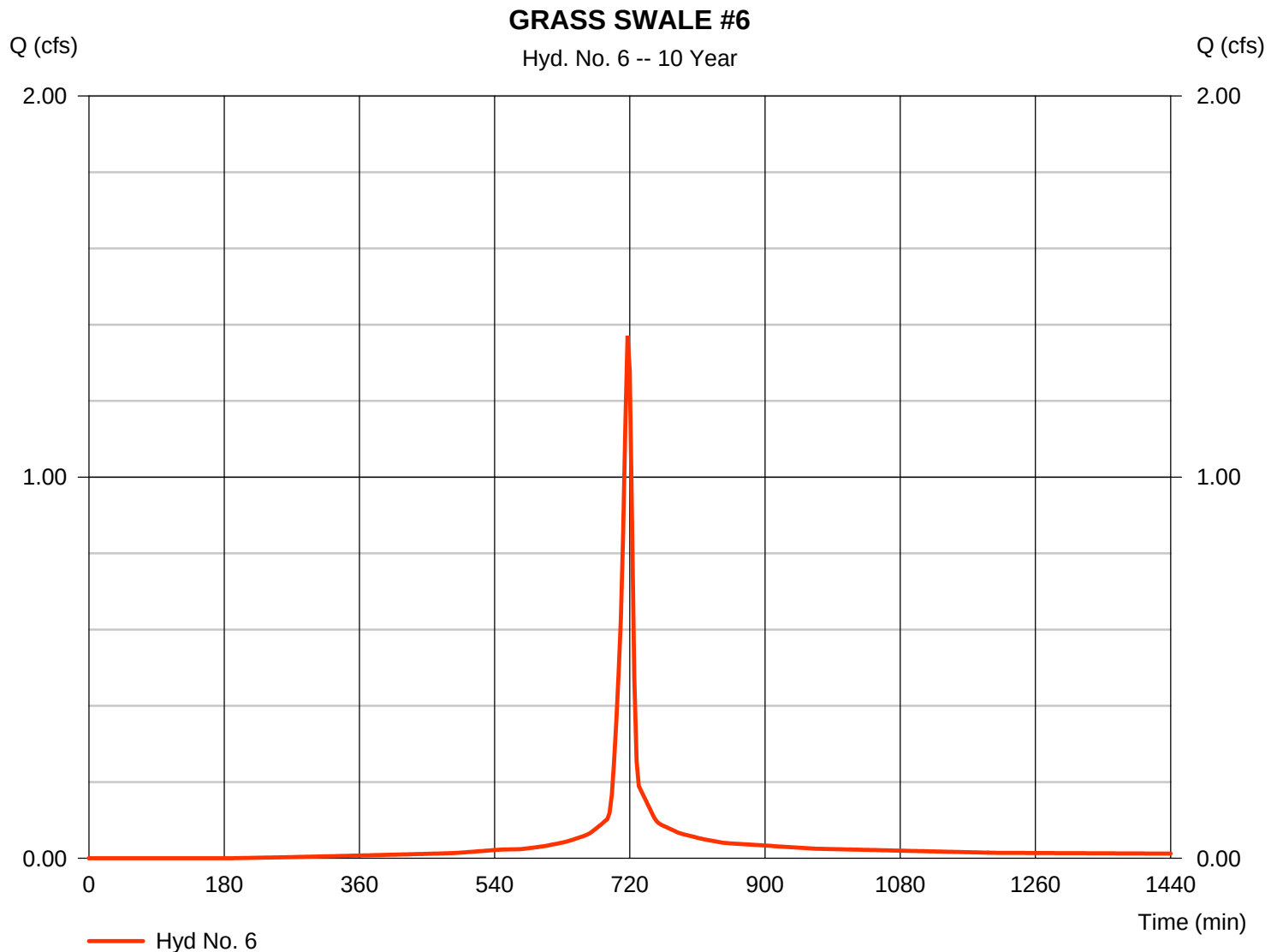
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Hyd. No. 6

GRASS SWALE #6

Hydrograph type	= SCS Runoff	Peak discharge	= 1.371 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 3,300 cuft
Drainage area	= 0.240 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.160 \times 98) + (0.080 \times 79)] / 0.240$



Hydrograph Report

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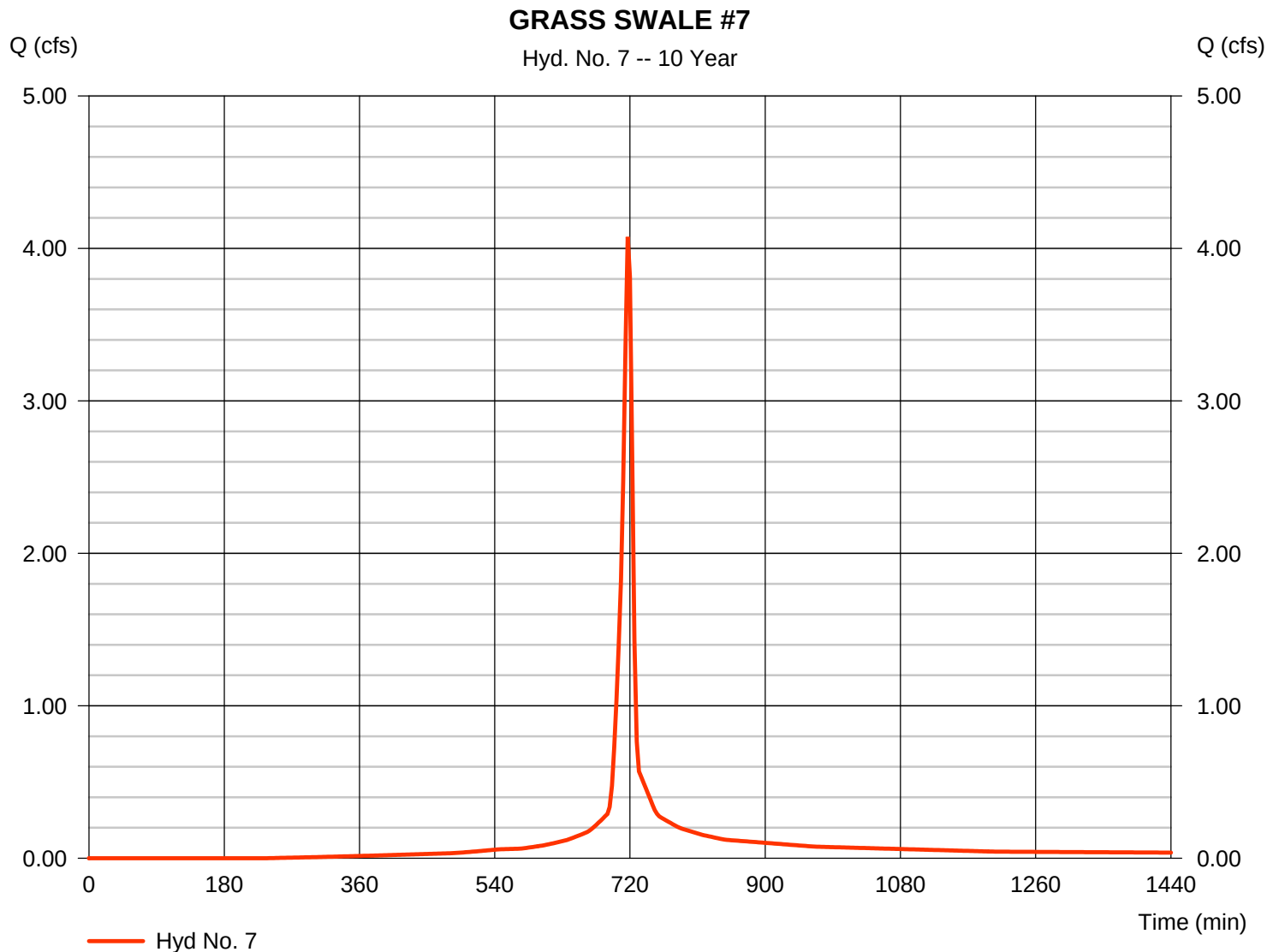
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Hyd. No. 7

GRASS SWALE #7

Hydrograph type	= SCS Runoff	Peak discharge	= 4.075 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 9,640 cuft
Drainage area	= 0.740 ac	Curve number	= 90*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.420 \times 98) + (0.320 \times 79)] / 0.740$



Hydrograph Report

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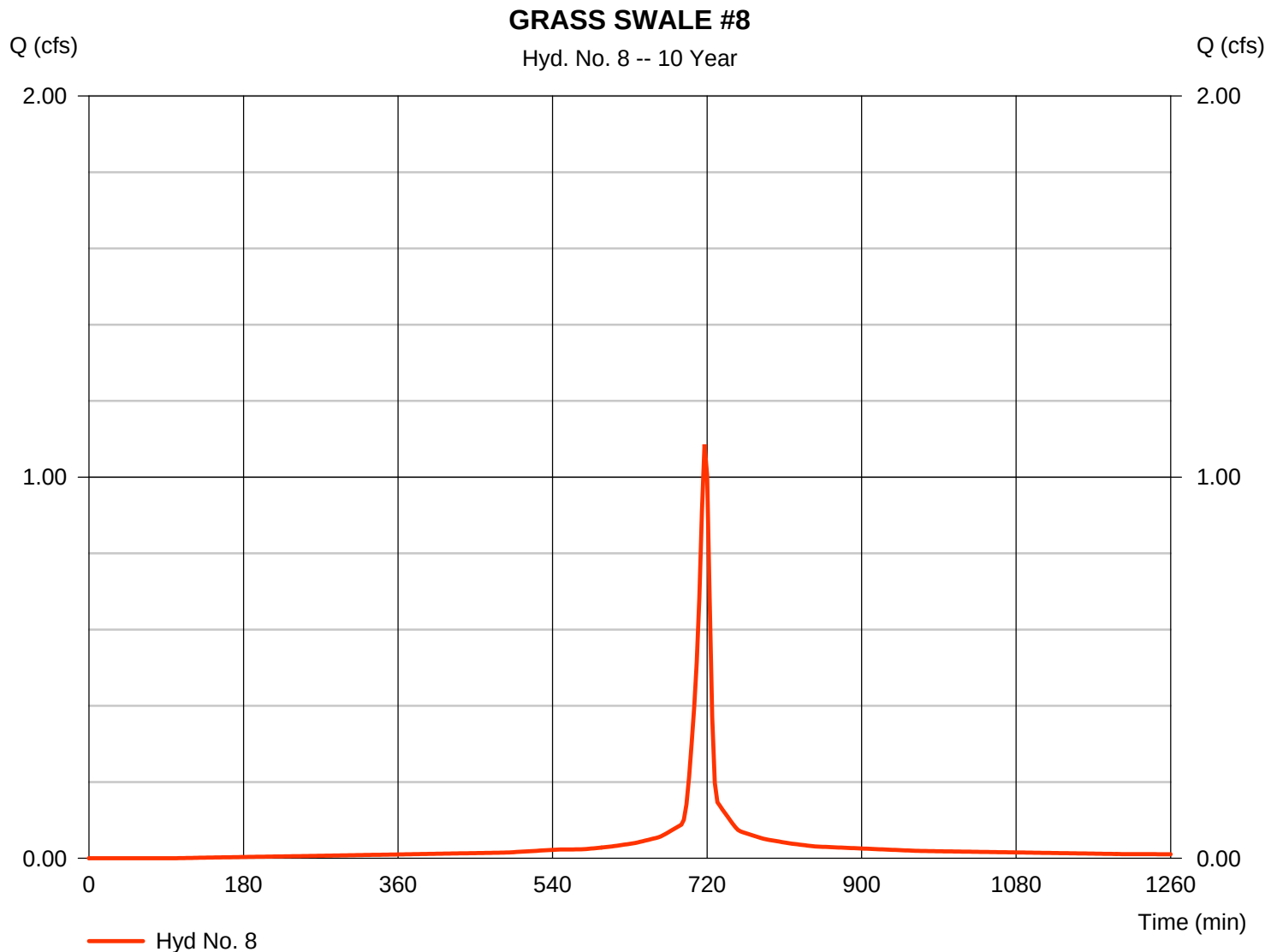
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Hyd. No. 8

GRASS SWALE #8

Hydrograph type	= SCS Runoff	Peak discharge	= 1.086 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 2,746 cuft
Drainage area	= 0.180 ac	Curve number	= 96*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.160 \times 98) + (0.020 \times 79)] / 0.180$



Hydrograph Report

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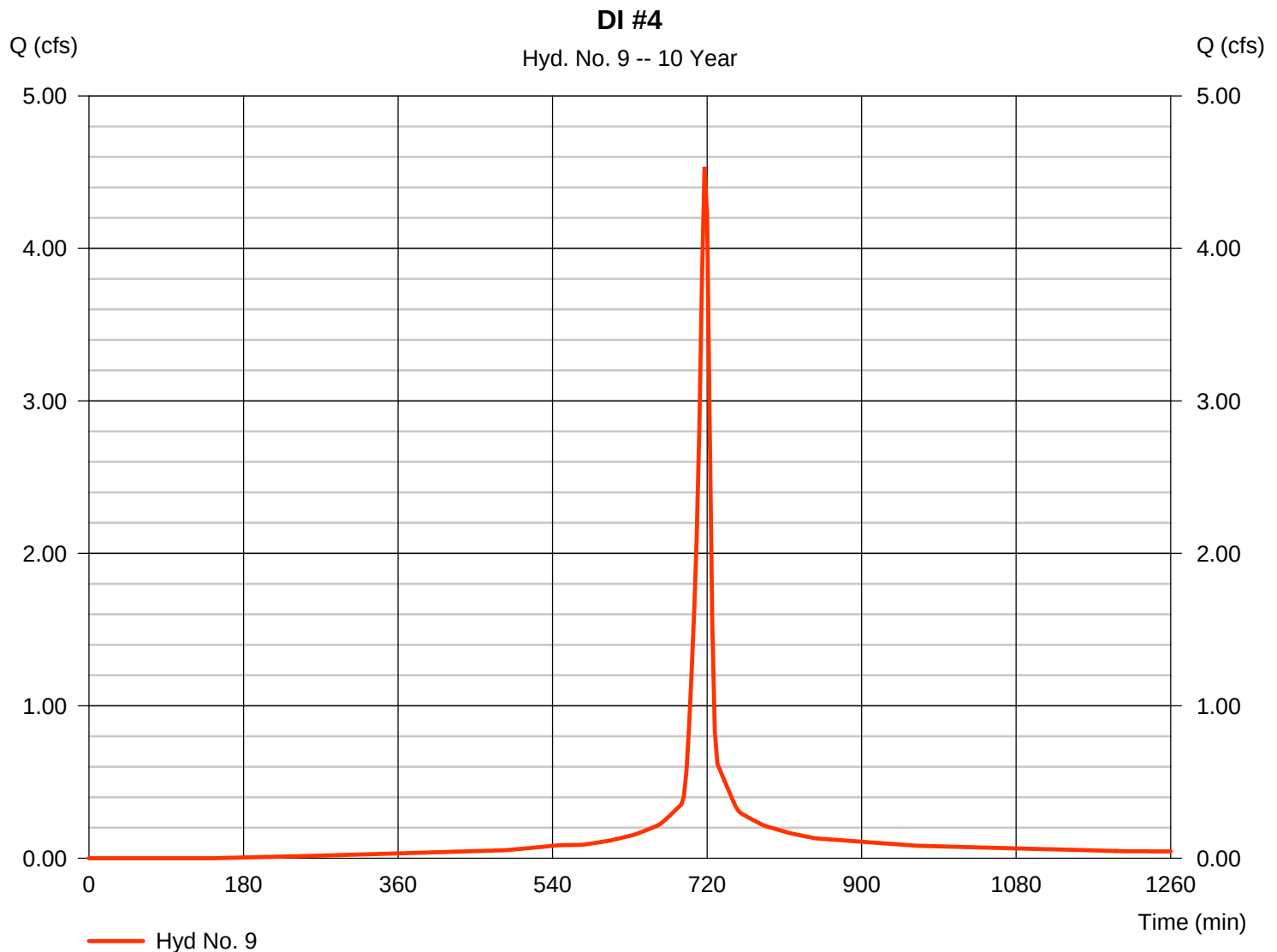
Friday, 07 / 28 / 2017

Hyd. No. 9

DI #4

Hydrograph type	= SCS Runoff	Peak discharge	= 4.534 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 11,159 cuft
Drainage area	= 0.770 ac	Curve number	= 94*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.610 \times 98) + (0.160 \times 79)] / 0.770$



Hydrograph Report

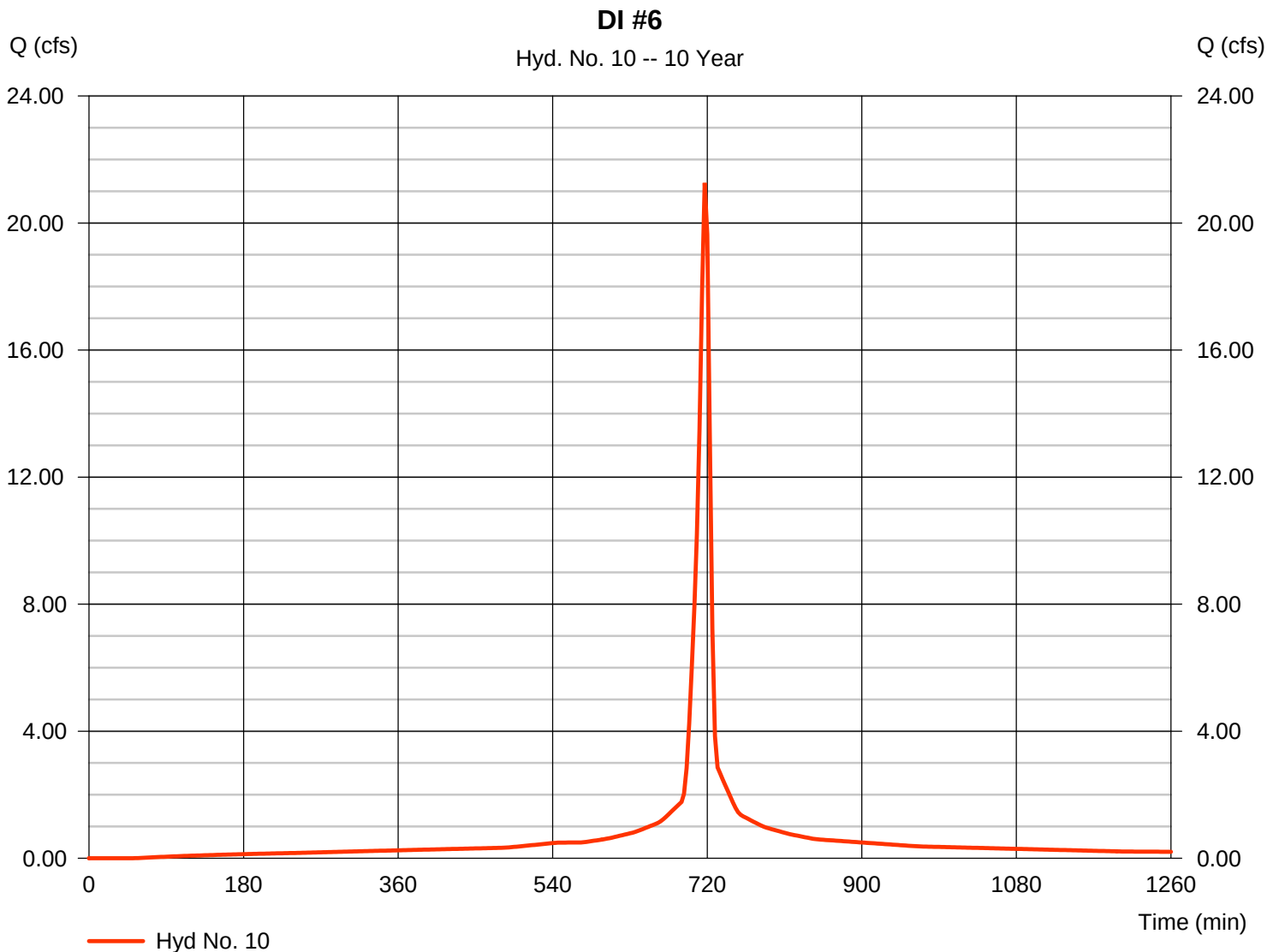
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Hyd. No. 10

DI #6

Hydrograph type	= SCS Runoff	Peak discharge	= 21.26 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 55,658 cuft
Drainage area	= 3.470 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

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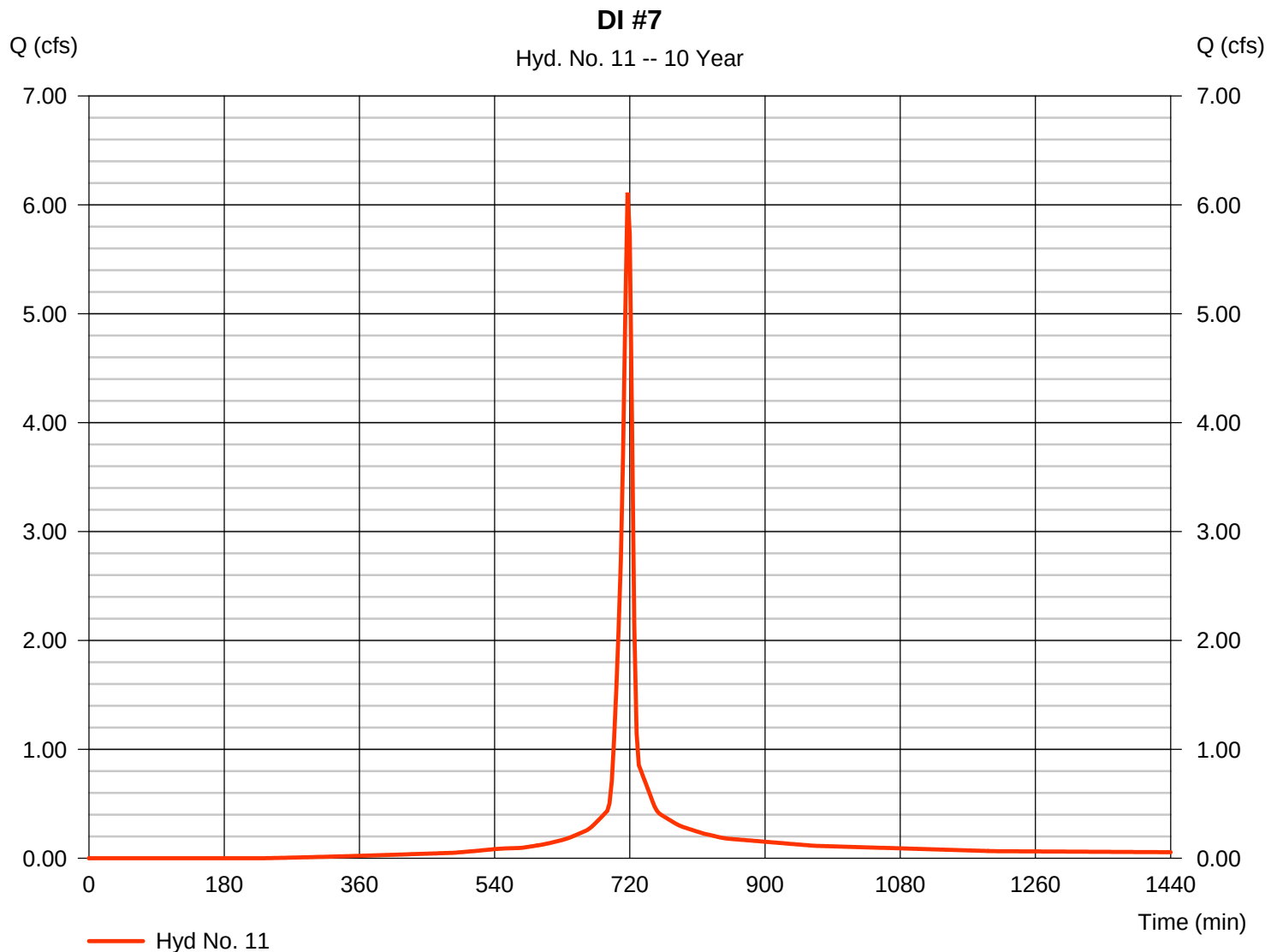
Friday, 07 / 28 / 2017

Hyd. No. 11

DI #7

Hydrograph type	= SCS Runoff	Peak discharge	= 6.113 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 14,461 cuft
Drainage area	= 1.110 ac	Curve number	= 90*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.660 \times 98) + (0.450 \times 79)] / 1.110$



Hydrograph Report

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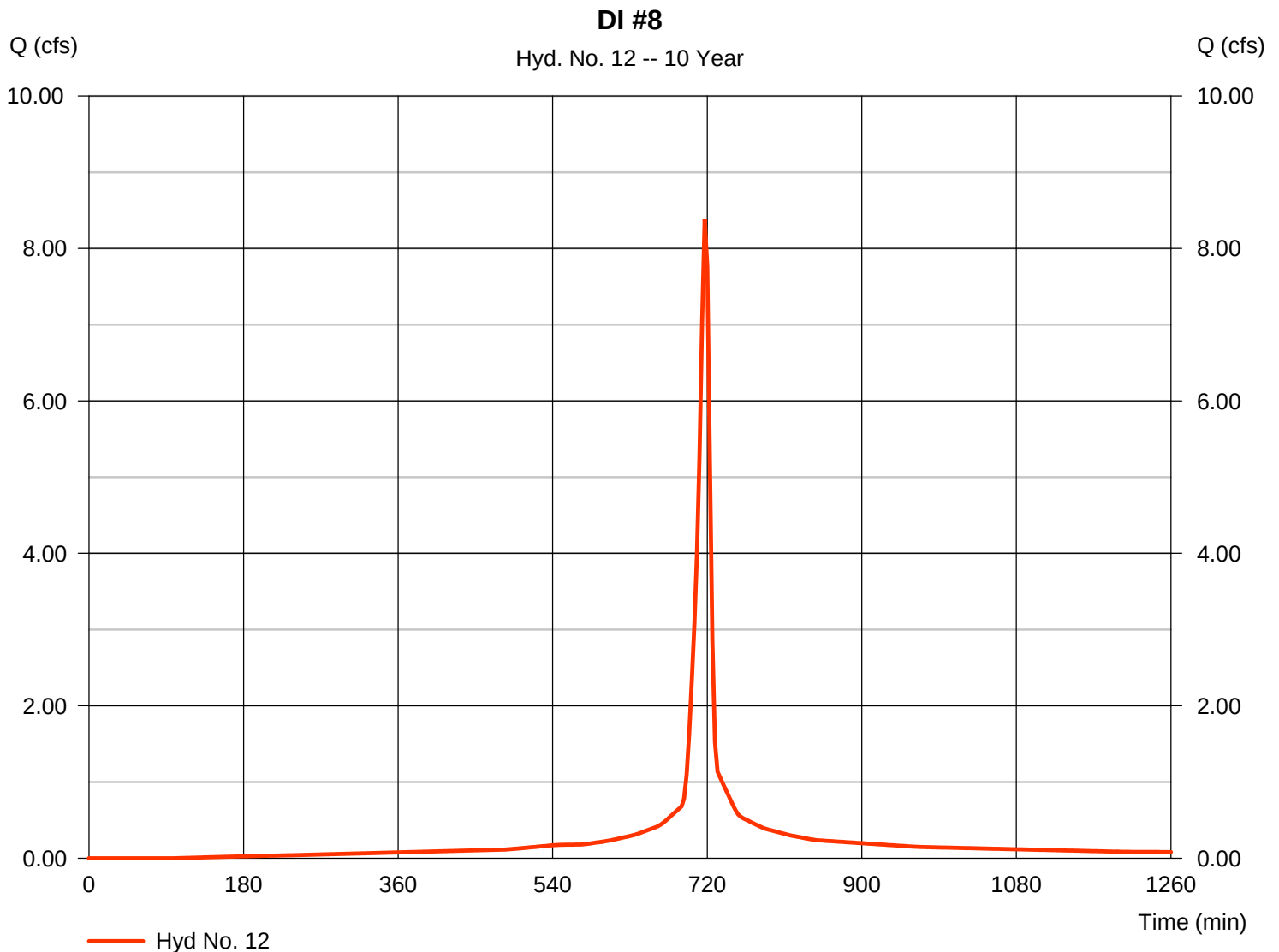
Friday, 07 / 28 / 2017

Hyd. No. 12

DI #8

Hydrograph type	= SCS Runoff	Peak discharge	= 8.383 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 21,205 cuft
Drainage area	= 1.390 ac	Curve number	= 96*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.230 \times 98) + (0.160 \times 79)] / 1.390$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

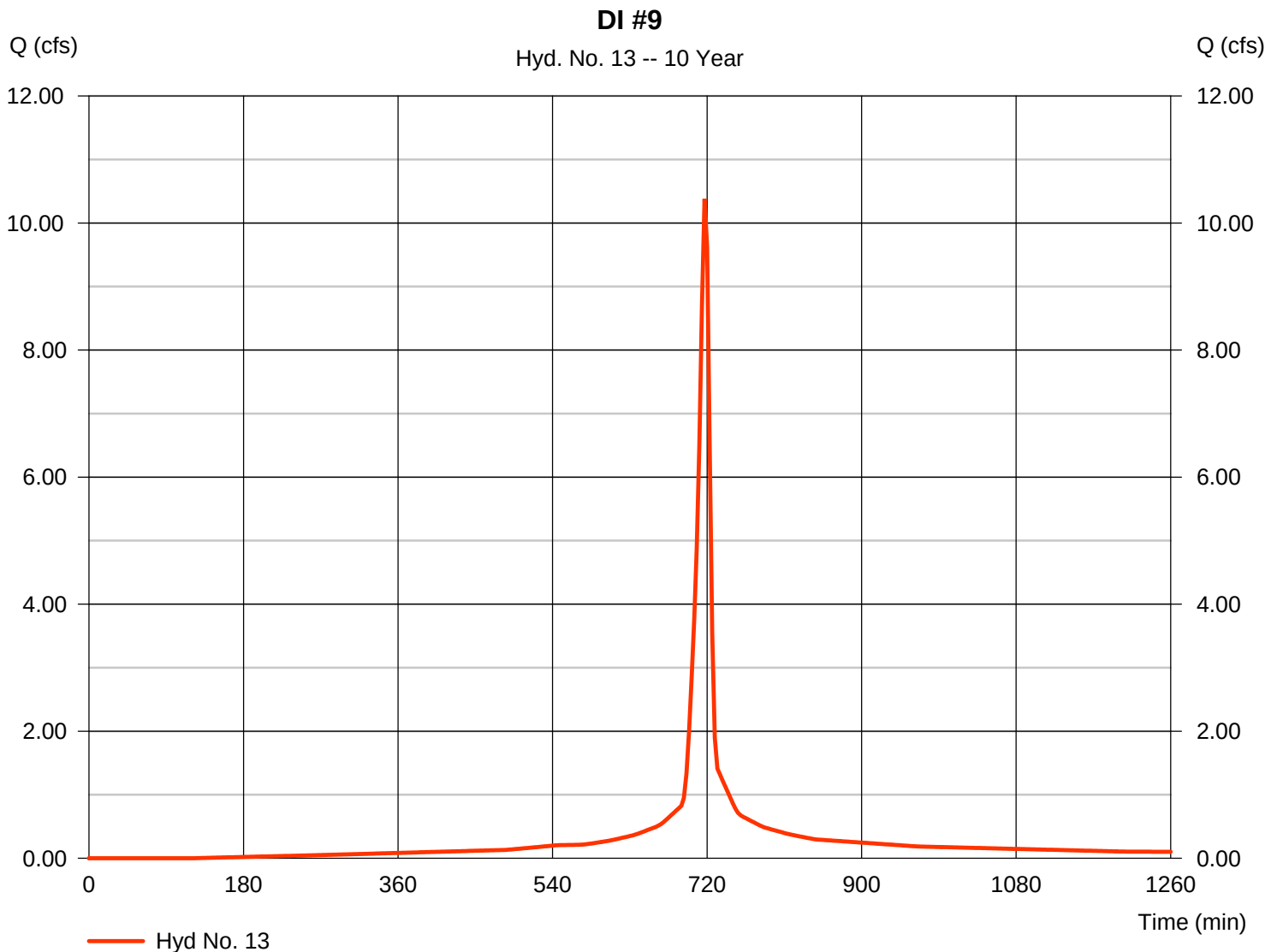
Friday, 07 / 28 / 2017

Hyd. No. 13

DI #9

Hydrograph type	= SCS Runoff	Peak discharge	= 10.38 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 25,877 cuft
Drainage area	= 1.740 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.490 \times 98) + (0.250 \times 79)] / 1.740$



Hydrograph Report

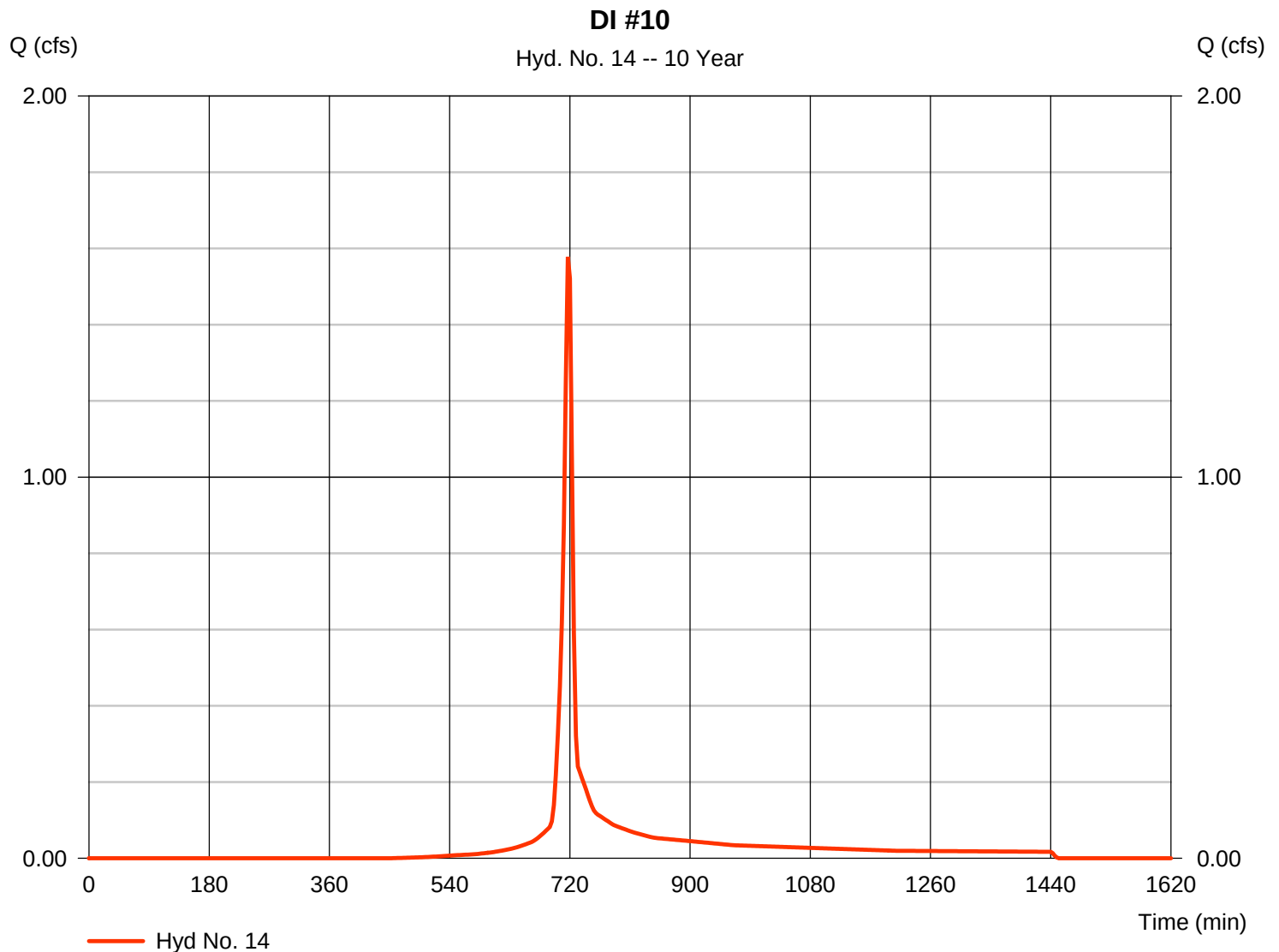
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 14

DI #10

Hydrograph type	= SCS Runoff	Peak discharge	= 1.578 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 3,567 cuft
Drainage area	= 0.380 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

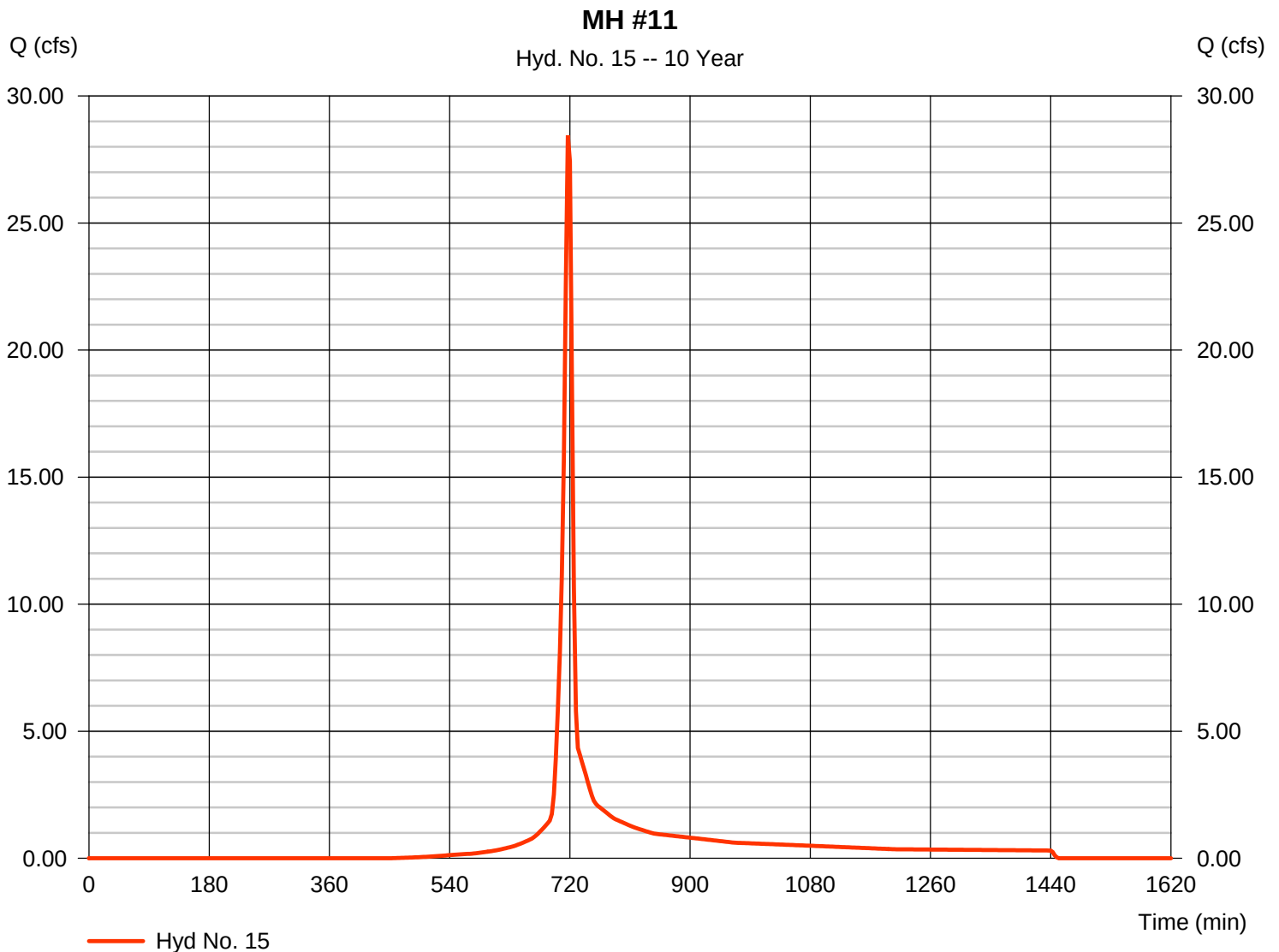
Friday, 07 / 28 / 2017

Hyd. No. 15

MH #11

Hydrograph type = SCS Runoff
Storm frequency = 10 yrs
Time interval = 3 min
Drainage area = 6.850 ac
Basin Slope = 0.0 %
Tc method = User
Total precip. = 4.95 in
Storm duration = 24 hrs

Peak discharge = 28.44 cfs
Time to peak = 717 min
Hyd. volume = 64,308 cuft
Curve number = 79
Hydraulic length = 0 ft
Time of conc. (Tc) = 6.00 min
Distribution = Type II
Shape factor = 484



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

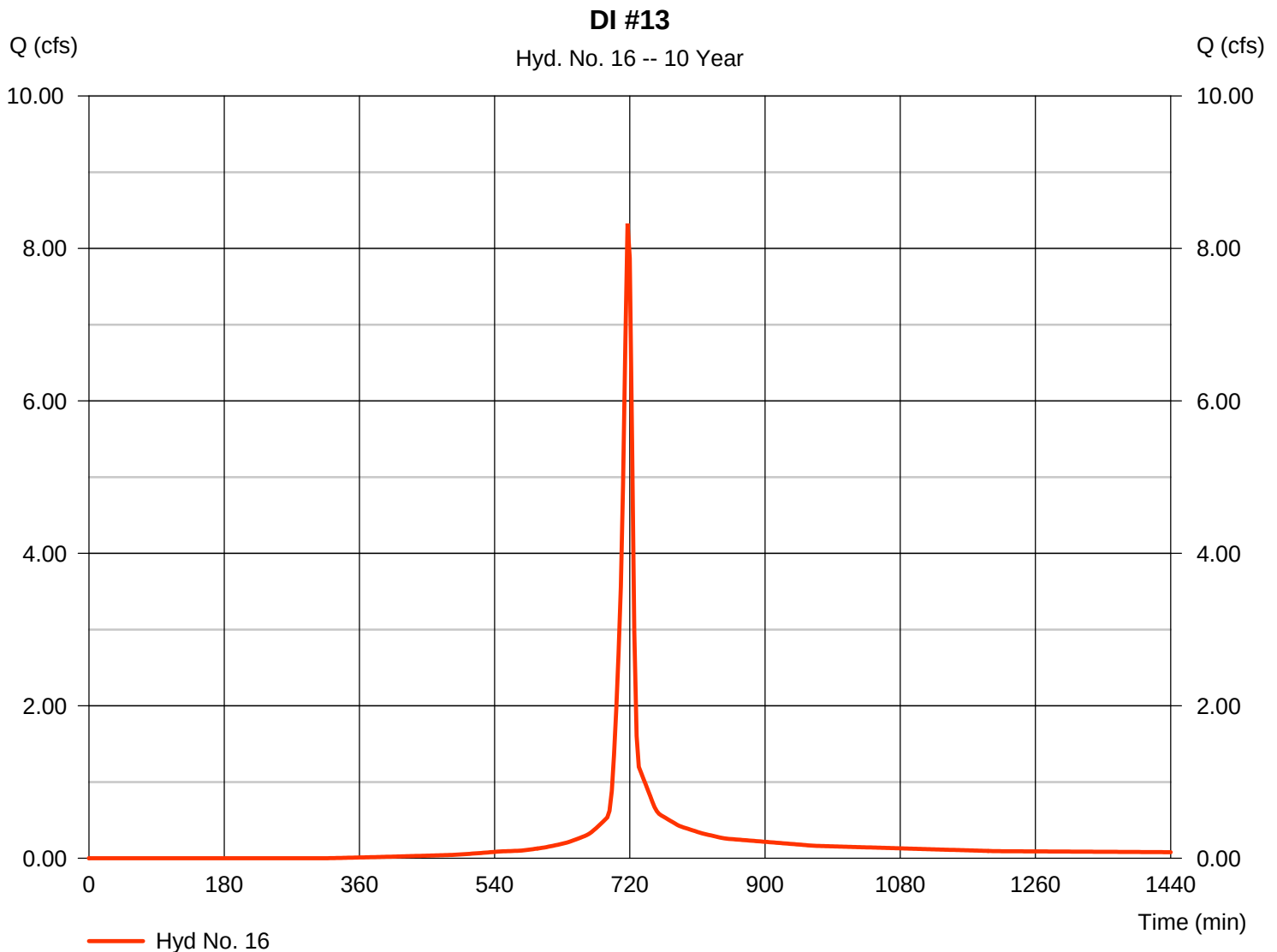
Friday, 07 / 28 / 2017

Hyd. No. 16

DI #13

Hydrograph type	= SCS Runoff	Peak discharge	= 8.326 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 19,206 cuft
Drainage area	= 1.650 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.580 \times 98) + (1.070 \times 79)] / 1.650$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

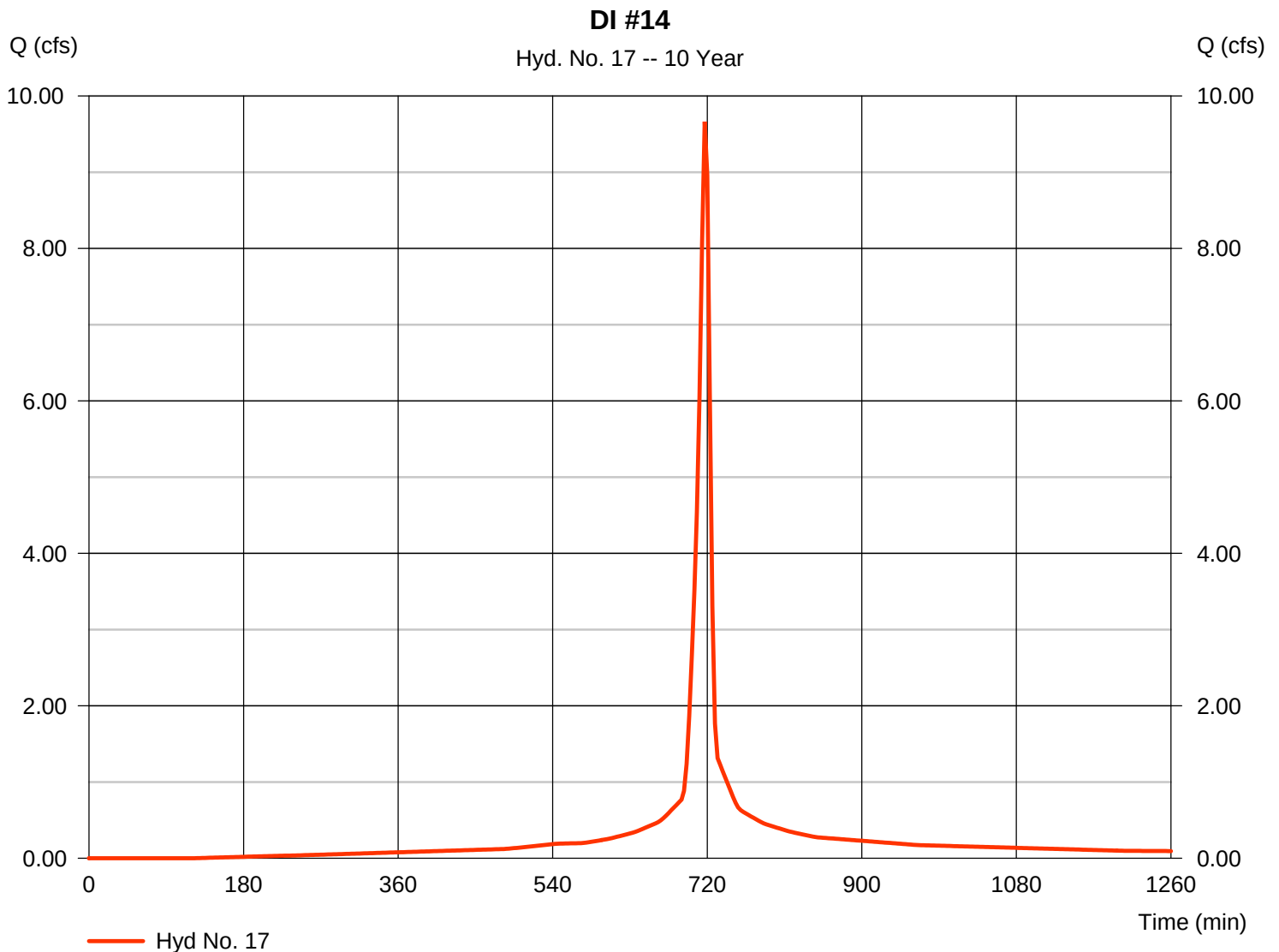
Friday, 07 / 28 / 2017

Hyd. No. 17

DI #14

Hydrograph type	= SCS Runoff	Peak discharge	= 9.663 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 24,092 cuft
Drainage area	= 1.620 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.400 \times 98) + (0.220 \times 79)] / 1.620$



Hydrograph Report

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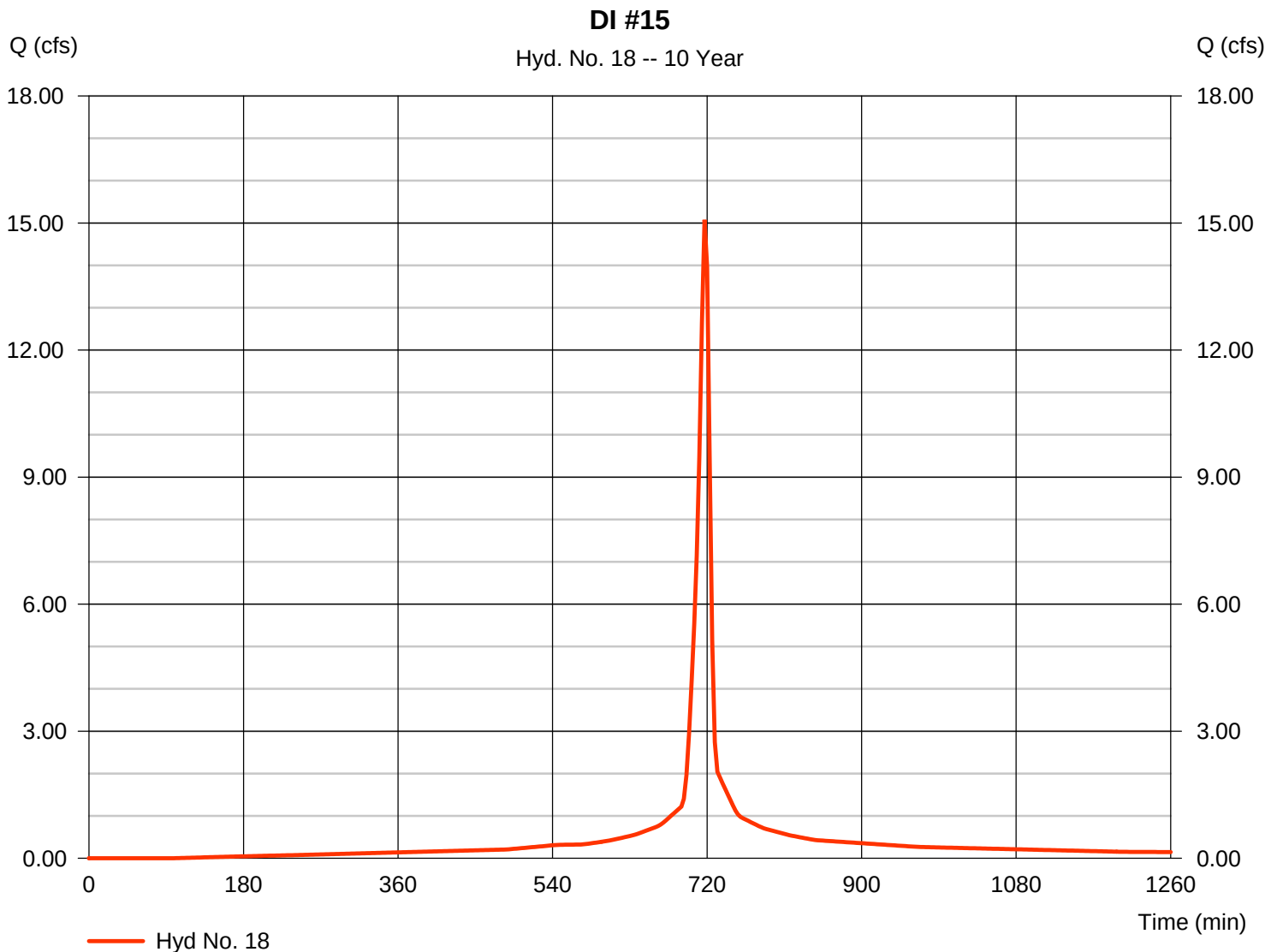
Friday, 07 / 28 / 2017

Hyd. No. 18

DI #15

Hydrograph type	= SCS Runoff	Peak discharge	= 15.08 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 38,139 cuft
Drainage area	= 2.500 ac	Curve number	= 96*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(2.280 \times 98) + (0.220 \times 79)] / 2.500$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

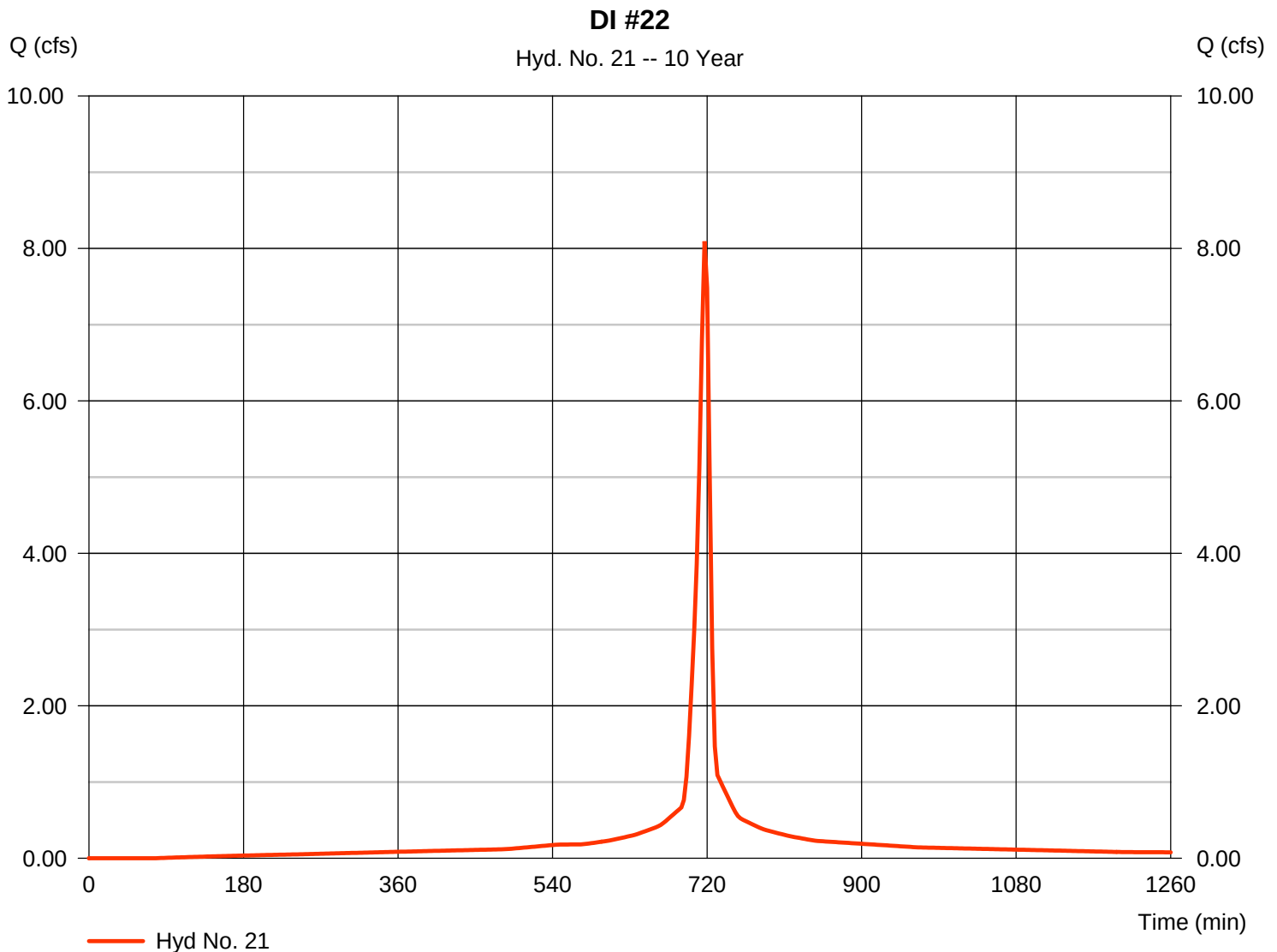
Friday, 07 / 28 / 2017

Hyd. No. 21

DI #22

Hydrograph type	= SCS Runoff	Peak discharge	= 8.094 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 20,808 cuft
Drainage area	= 1.330 ac	Curve number	= 97*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.280 \times 98) + (0.050 \times 79)] / 1.330$



Hydrograph Report

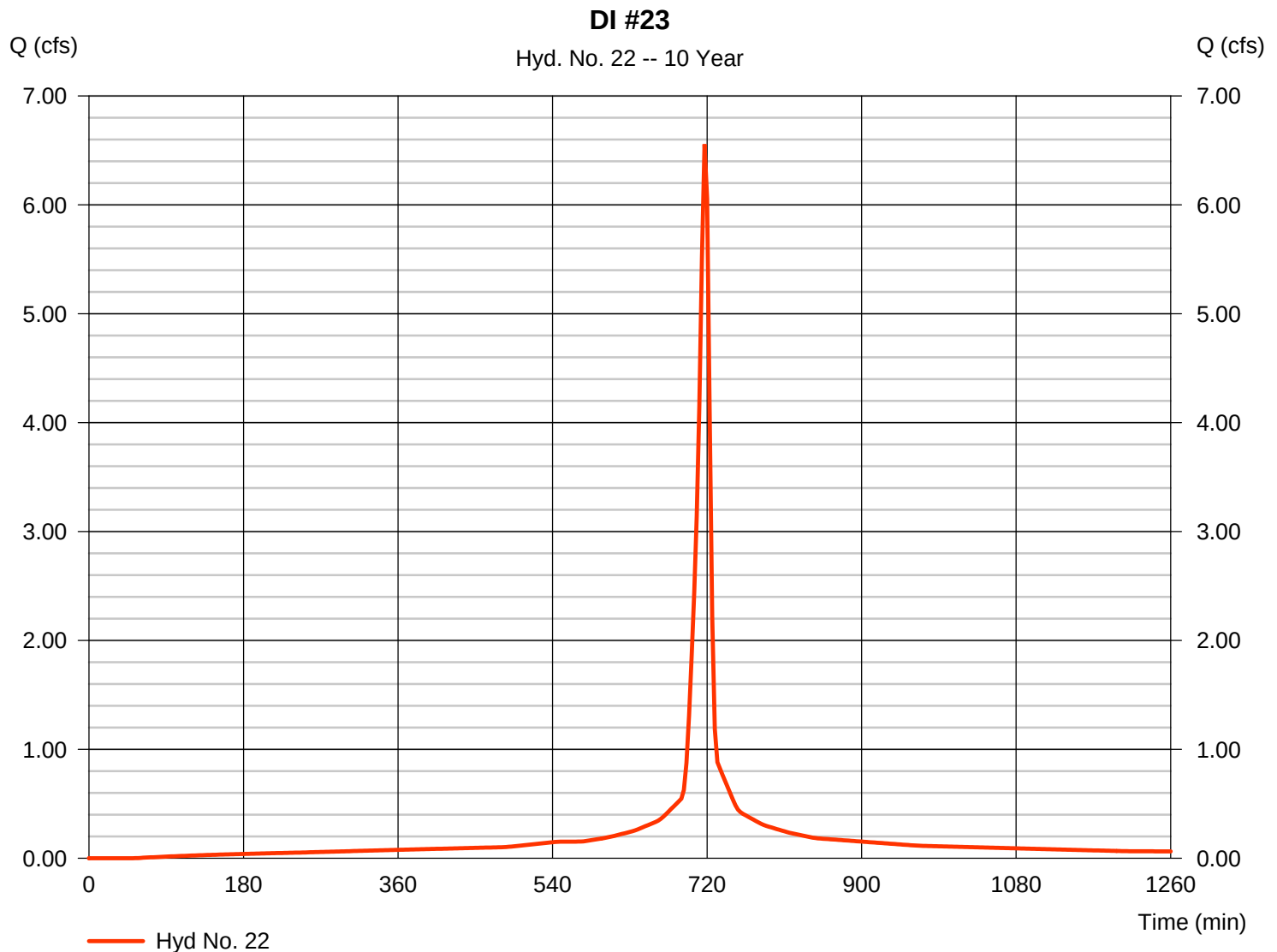
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Hyd. No. 22

DI #23

Hydrograph type	= SCS Runoff	Peak discharge	= 6.557 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 17,163 cuft
Drainage area	= 1.070 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

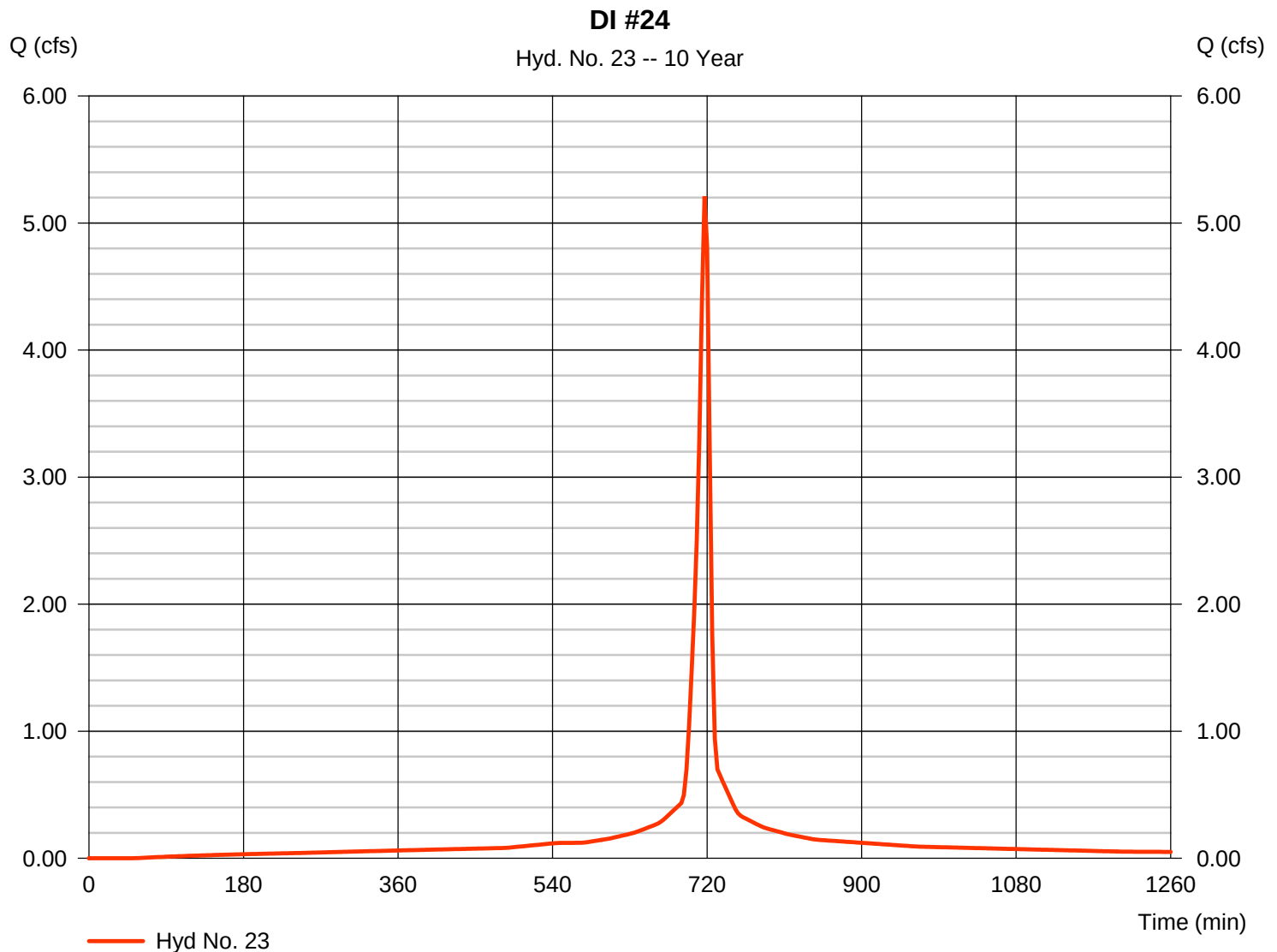
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Hyd. No. 23

DI #24

Hydrograph type	= SCS Runoff	Peak discharge	= 5.208 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 13,634 cuft
Drainage area	= 0.850 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

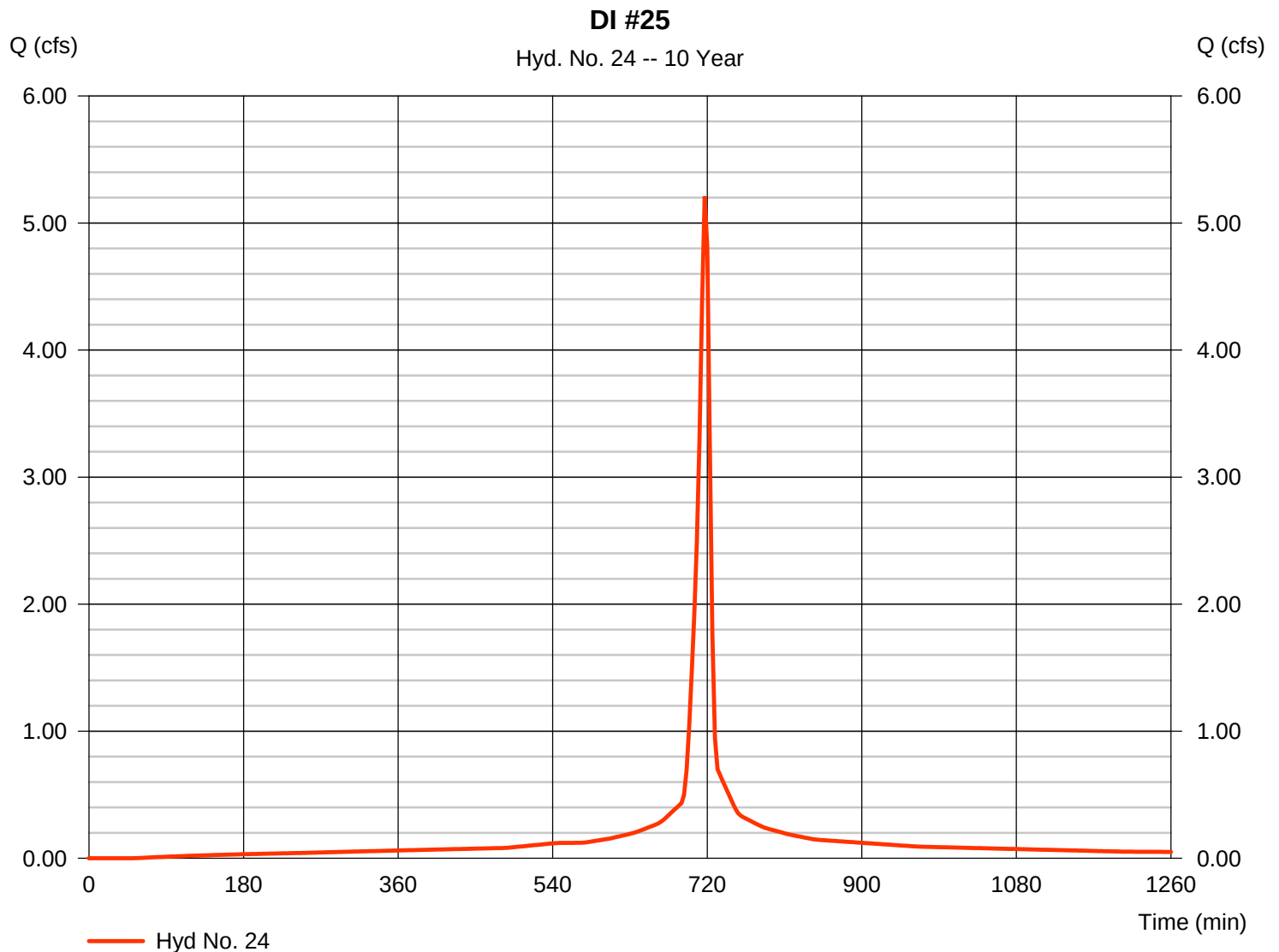
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Hyd. No. 24

DI #25

Hydrograph type	= SCS Runoff	Peak discharge	= 5.208 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 13,634 cuft
Drainage area	= 0.850 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

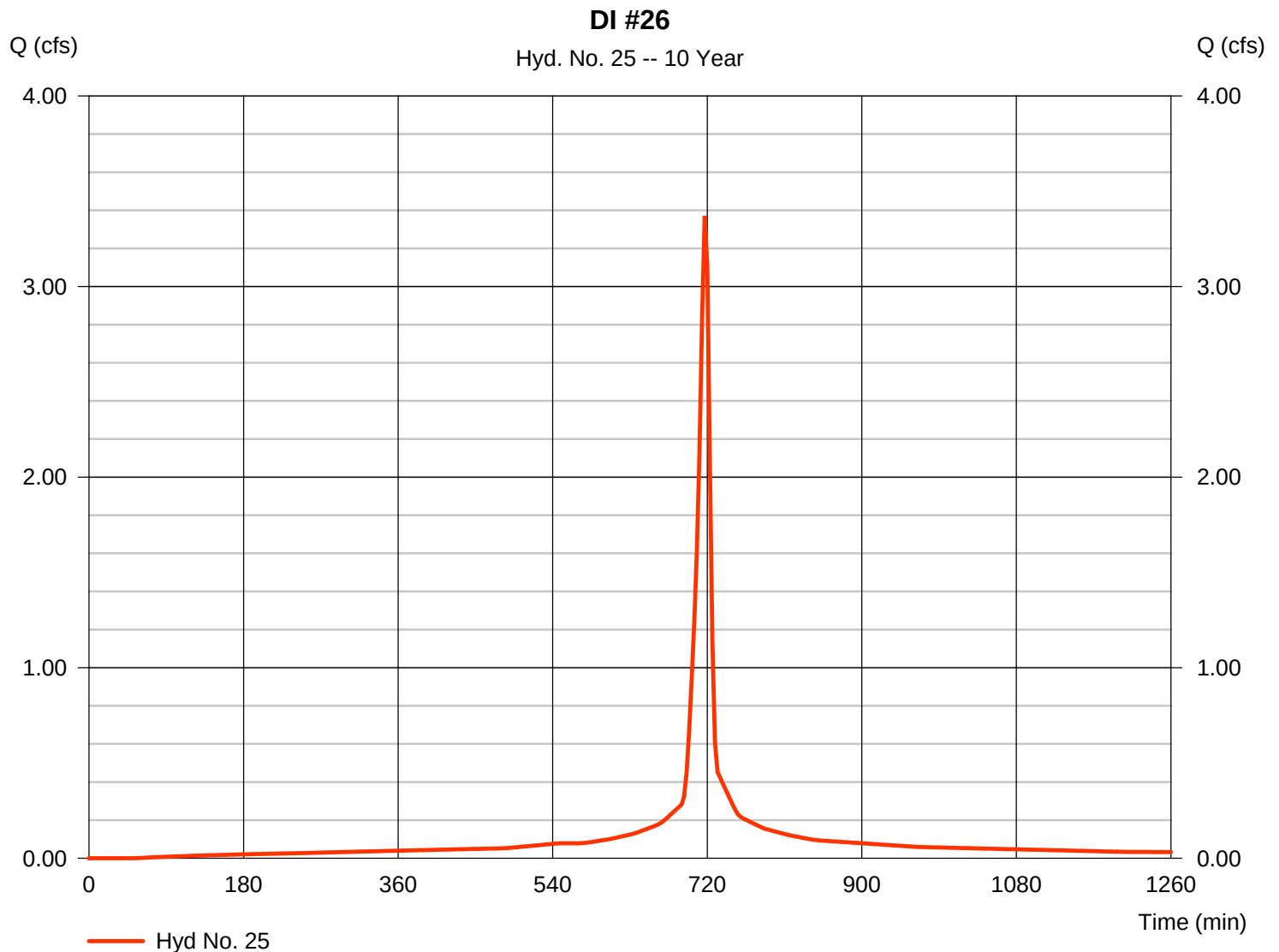
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Hyd. No. 25

DI #26

Hydrograph type	= SCS Runoff	Peak discharge	= 3.370 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 8,822 cuft
Drainage area	= 0.550 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

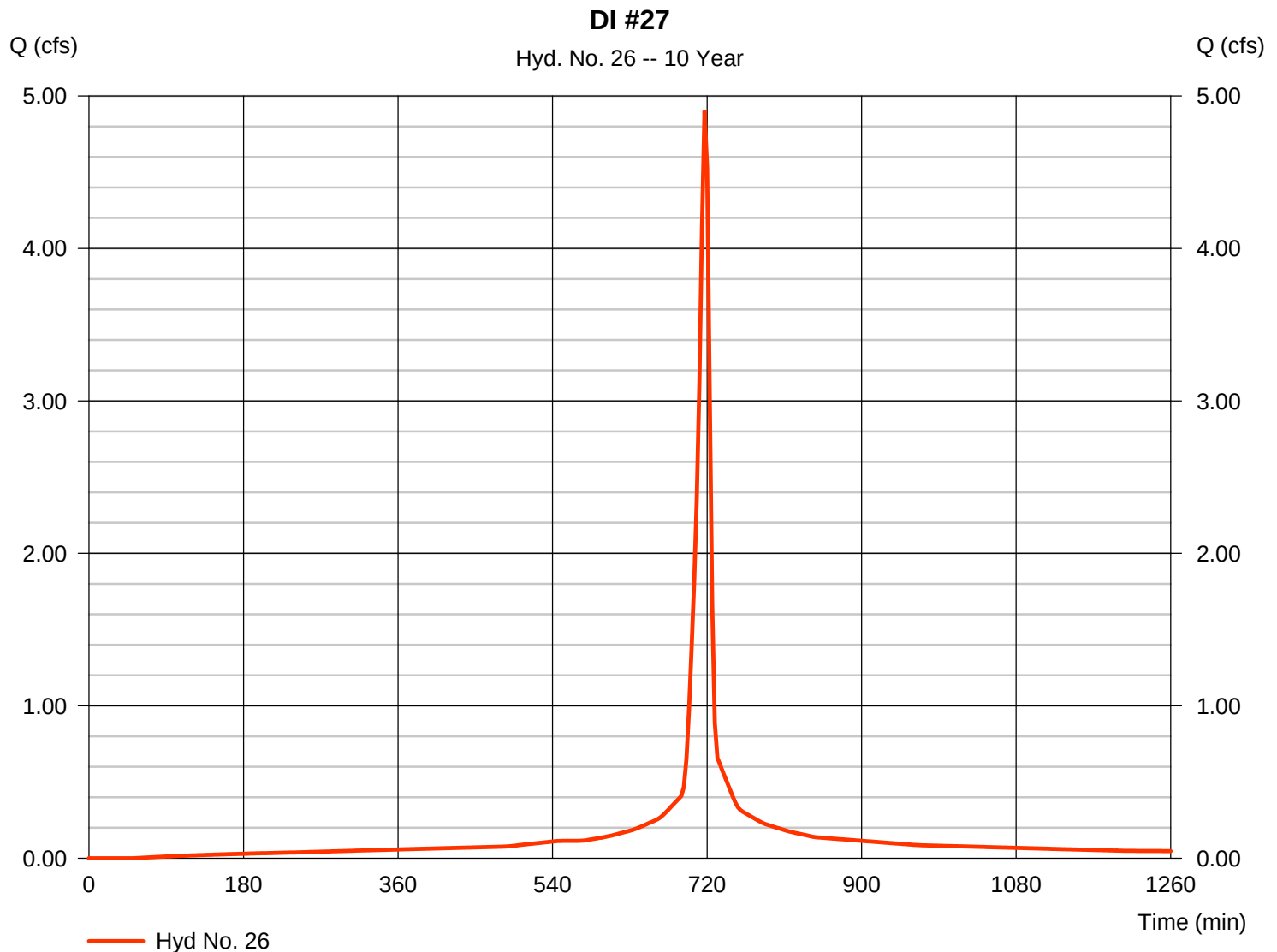
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Friday, 07 / 28 / 2017

Hyd. No. 26

DI #27

Hydrograph type	= SCS Runoff	Peak discharge	= 4.902 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 12,832 cuft
Drainage area	= 0.800 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

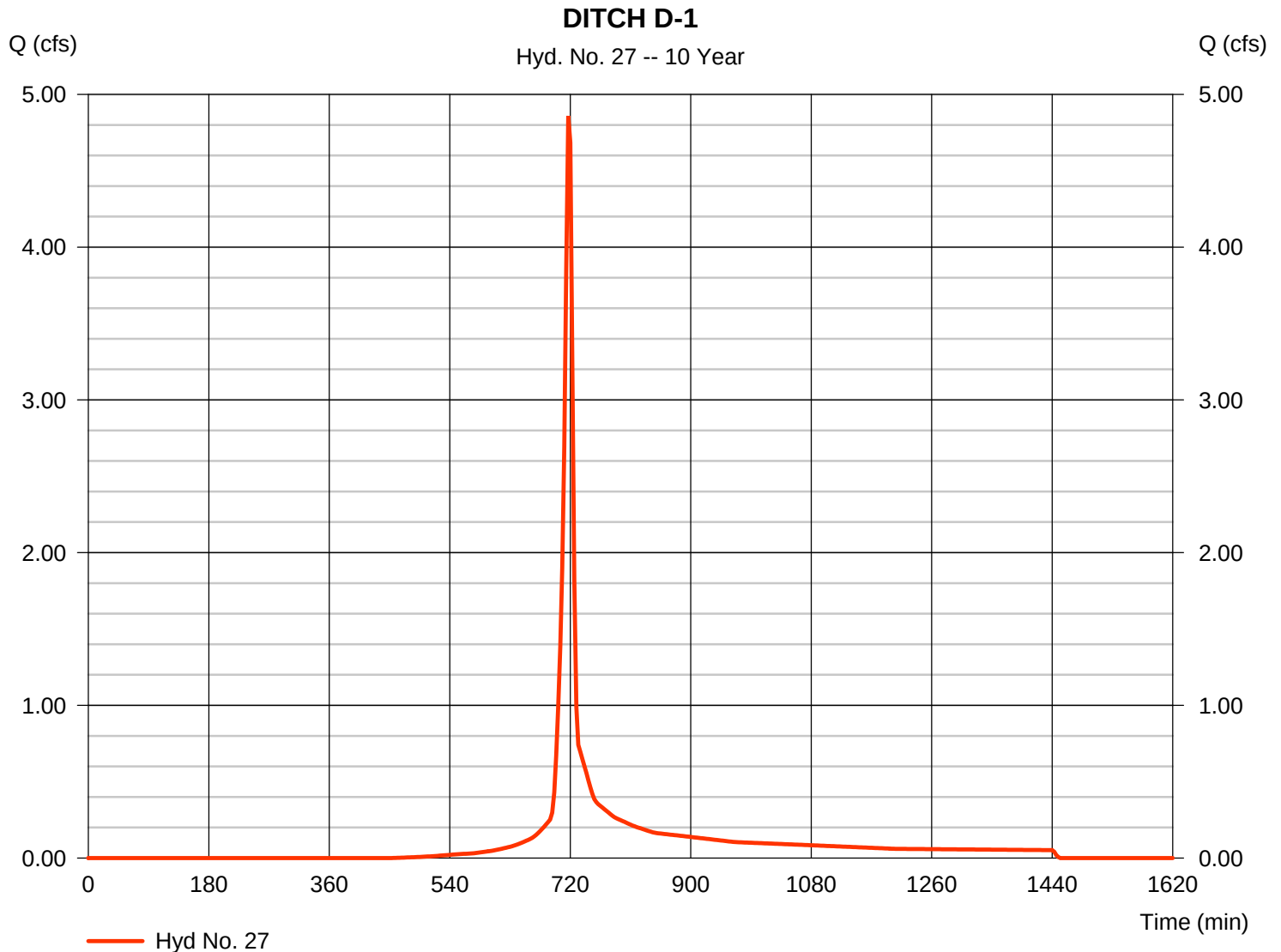
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 27

DITCH D-1

Hydrograph type	= SCS Runoff	Peak discharge	= 4.858 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 10,984 cuft
Drainage area	= 1.170 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

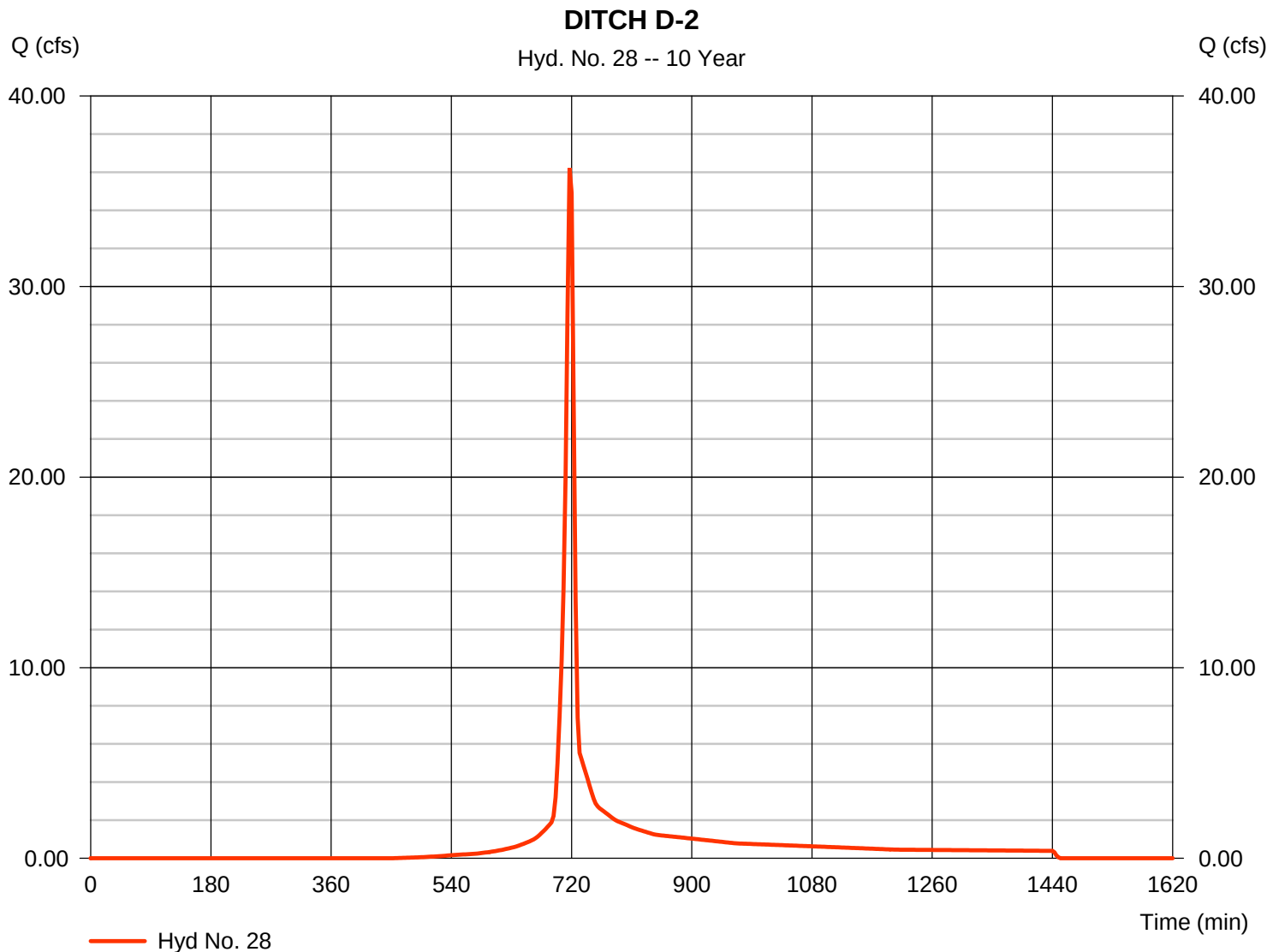
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Friday, 07 / 28 / 2017

Hyd. No. 28

DITCH D-2

Hydrograph type	= SCS Runoff	Peak discharge	= 36.21 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 81,864 cuft
Drainage area	= 8.720 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

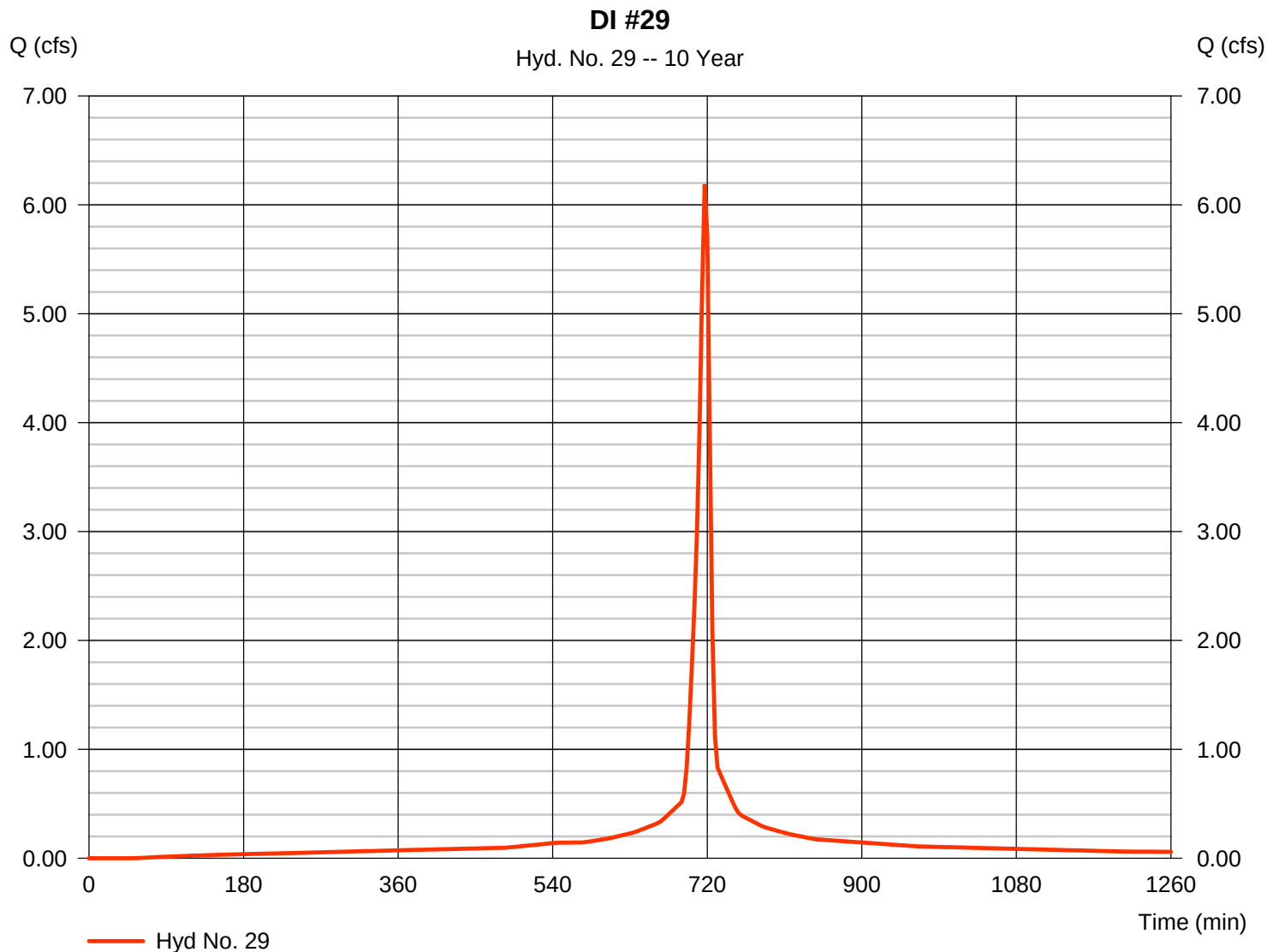
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Friday, 07 / 28 / 2017

Hyd. No. 29

DI #29

Hydrograph type	= SCS Runoff	Peak discharge	= 6.189 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 16,200 cuft
Drainage area	= 1.010 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

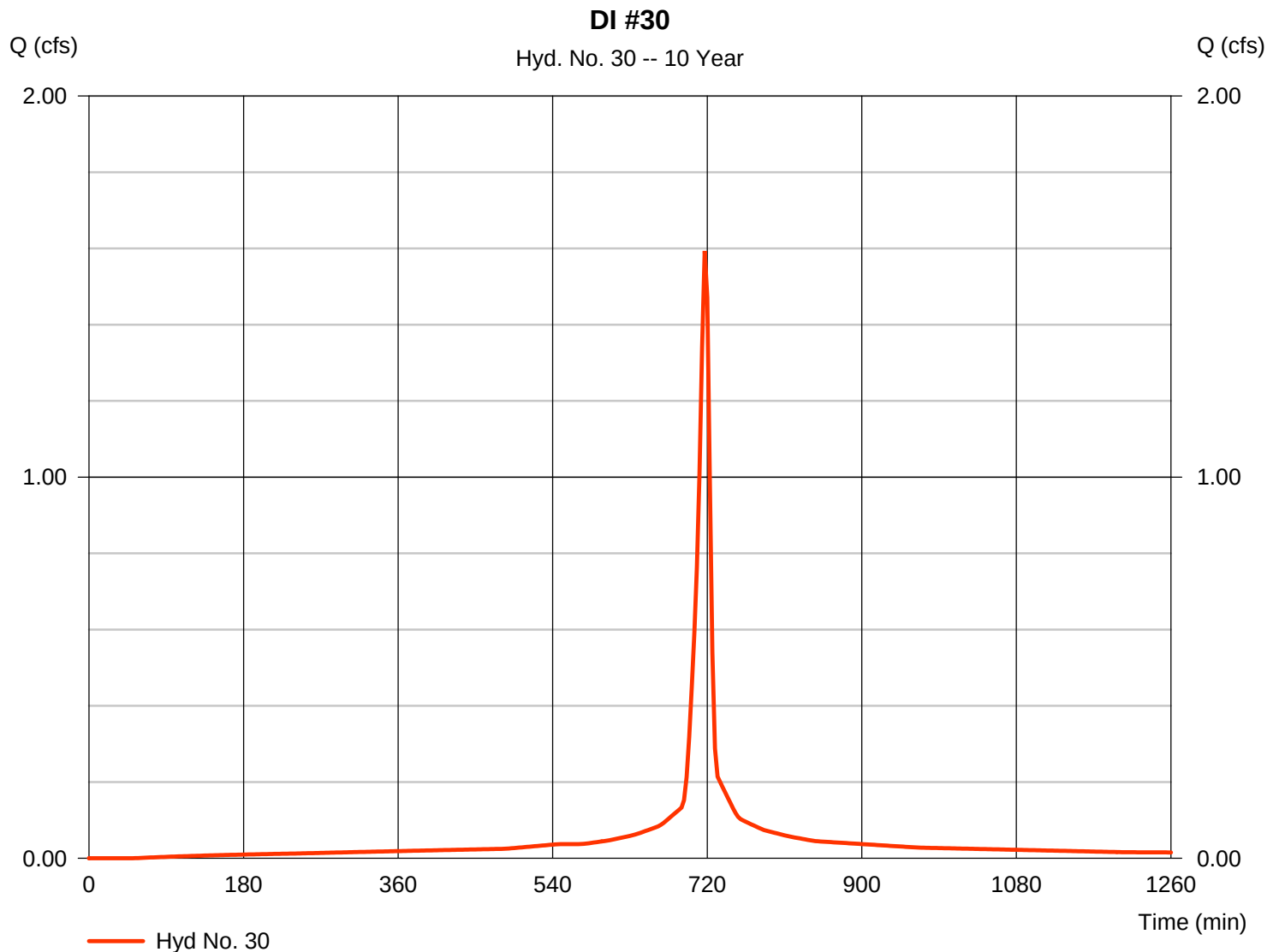
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Hyd. No. 30

DI #30

Hydrograph type	= SCS Runoff	Peak discharge	= 1.593 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 4,170 cuft
Drainage area	= 0.260 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

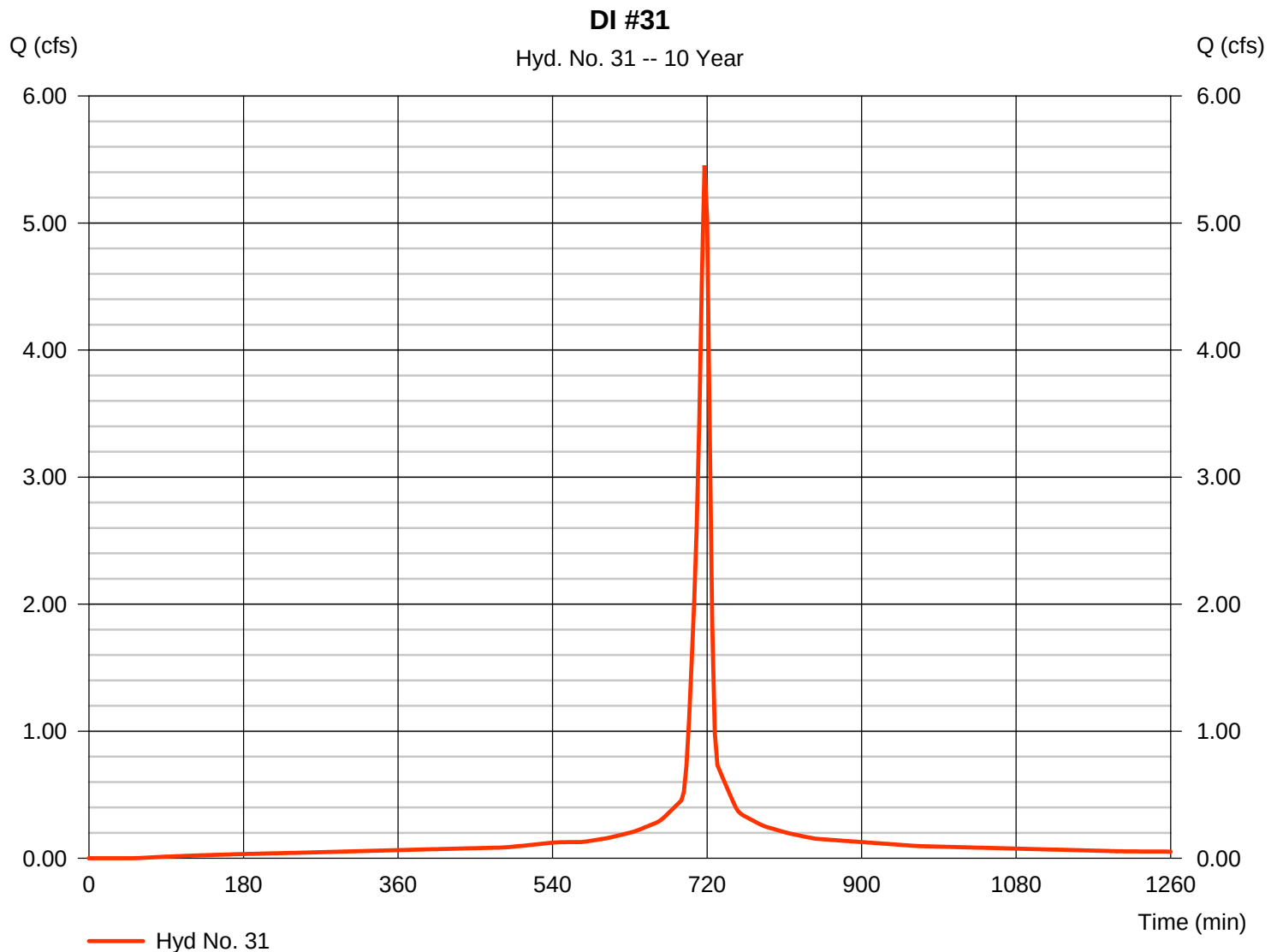
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Friday, 07 / 28 / 2017

Hyd. No. 31

DI #31

Hydrograph type	= SCS Runoff	Peak discharge	= 5.454 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 14,275 cuft
Drainage area	= 0.890 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

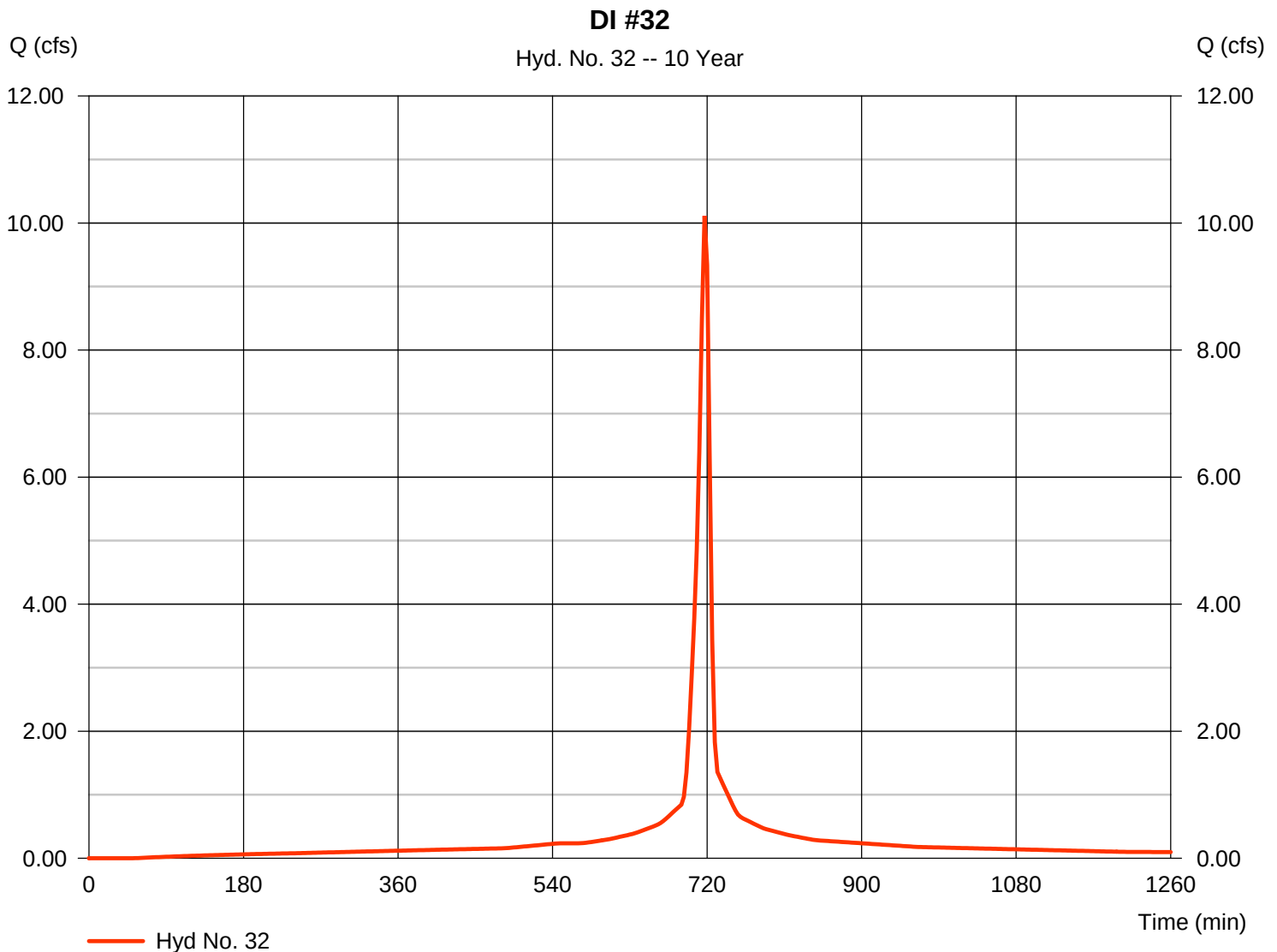
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Hyd. No. 32

DI #32

Hydrograph type	= SCS Runoff	Peak discharge	= 10.11 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 26,466 cuft
Drainage area	= 1.650 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

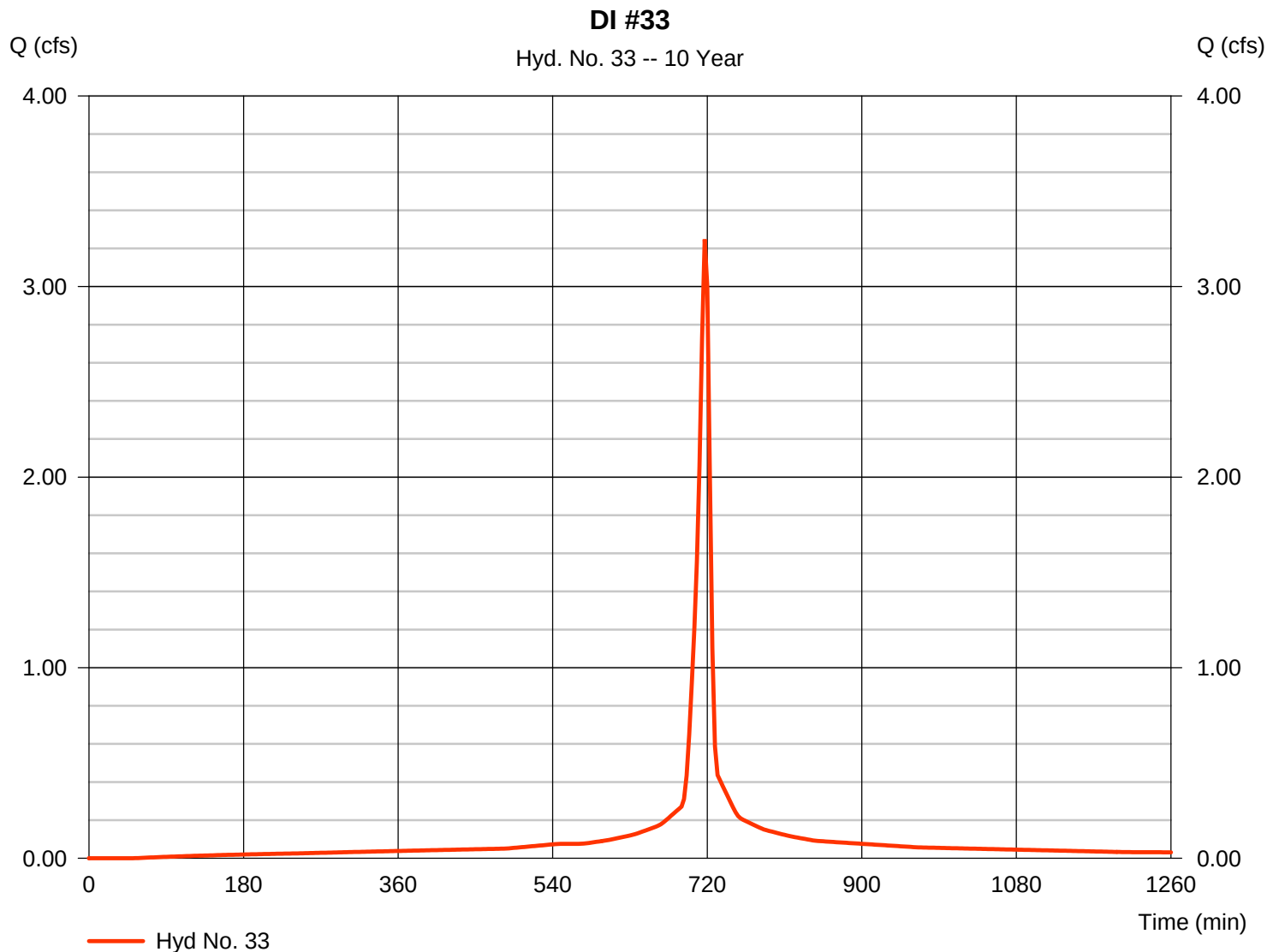
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Hyd. No. 33

DI #33

Hydrograph type	= SCS Runoff	Peak discharge	= 3.248 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 8,501 cuft
Drainage area	= 0.530 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

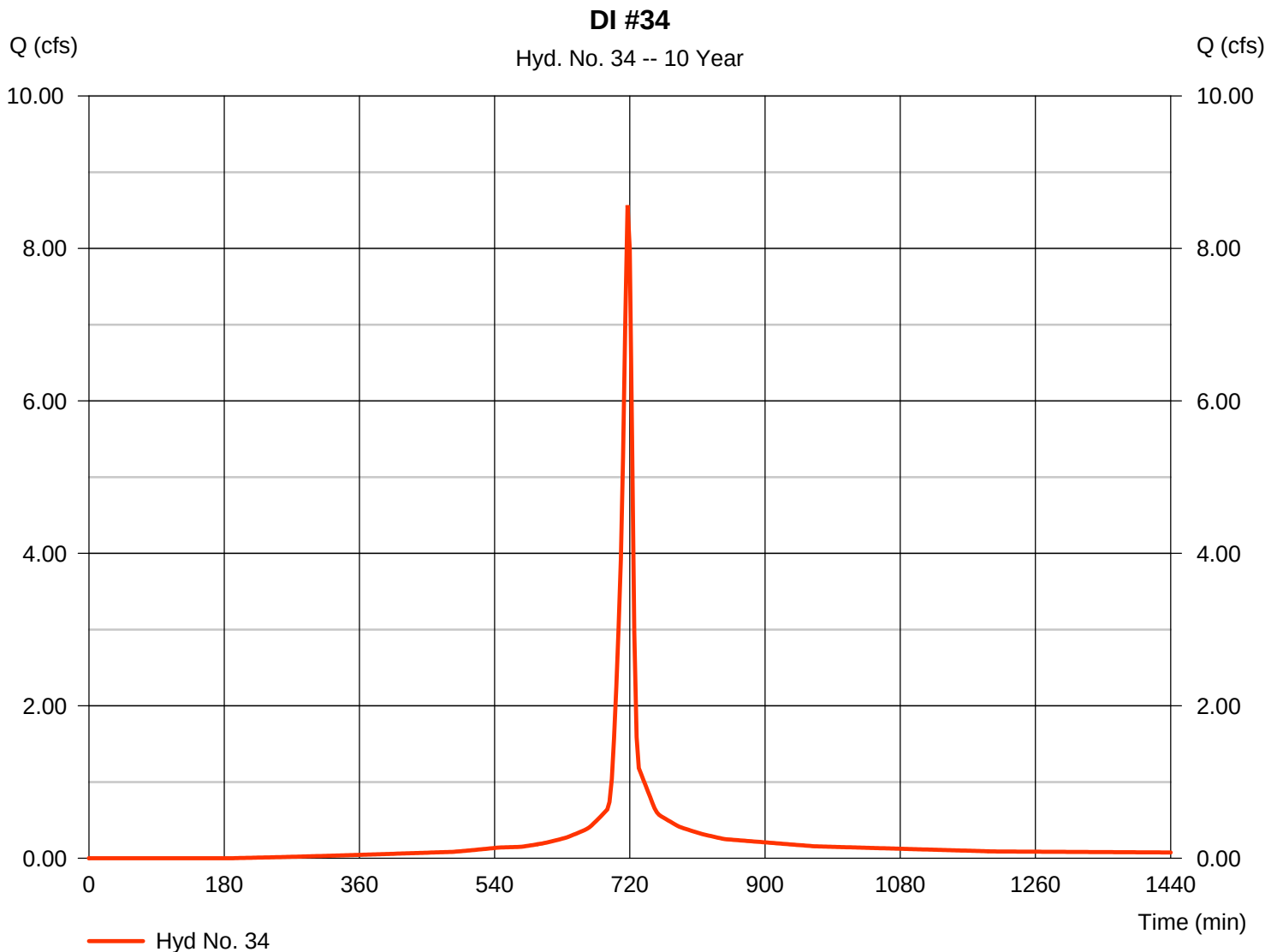
Friday, 07 / 28 / 2017

Hyd. No. 34

DI #34

Hydrograph type	= SCS Runoff	Peak discharge	= 8.567 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 20,625 cuft
Drainage area	= 1.500 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.050 \times 98) + (0.450 \times 79)] / 1.500$



Hydrograph Report

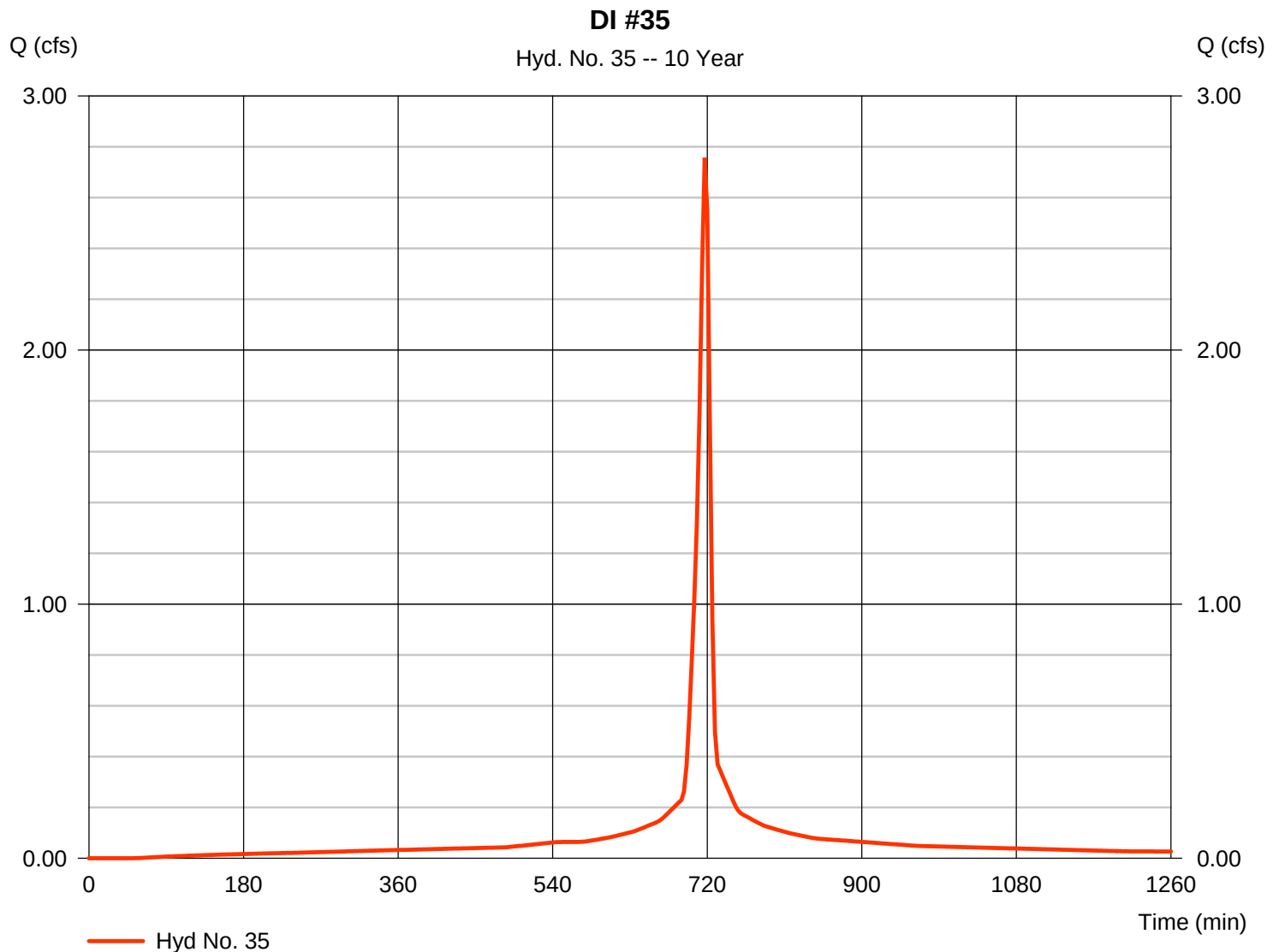
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Hyd. No. 35

DI #35

Hydrograph type	= SCS Runoff	Peak discharge	= 2.757 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 7,218 cuft
Drainage area	= 0.450 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

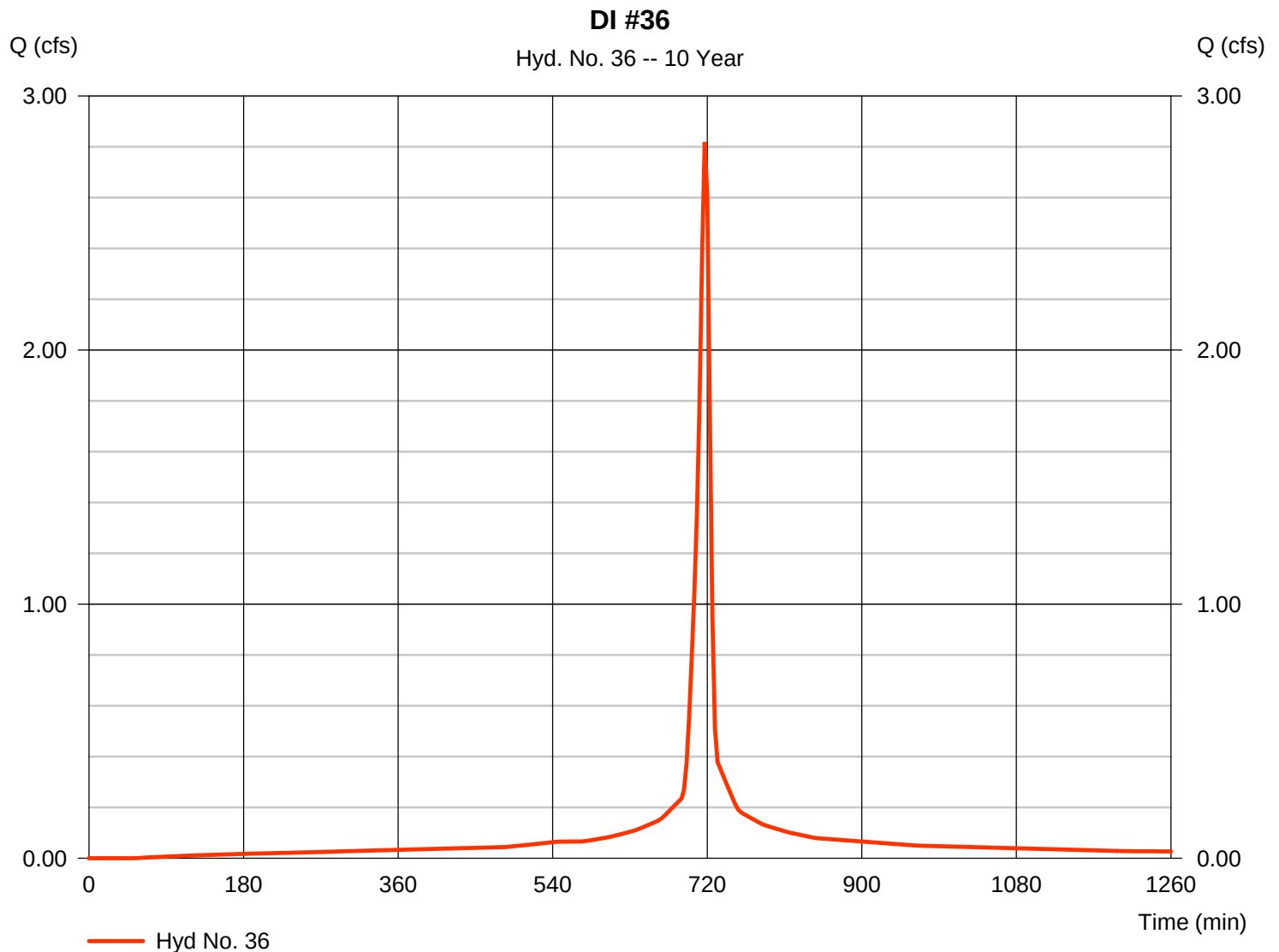
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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Hyd. No. 36

DI #36

Hydrograph type	= SCS Runoff	Peak discharge	= 2.819 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 7,378 cuft
Drainage area	= 0.460 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

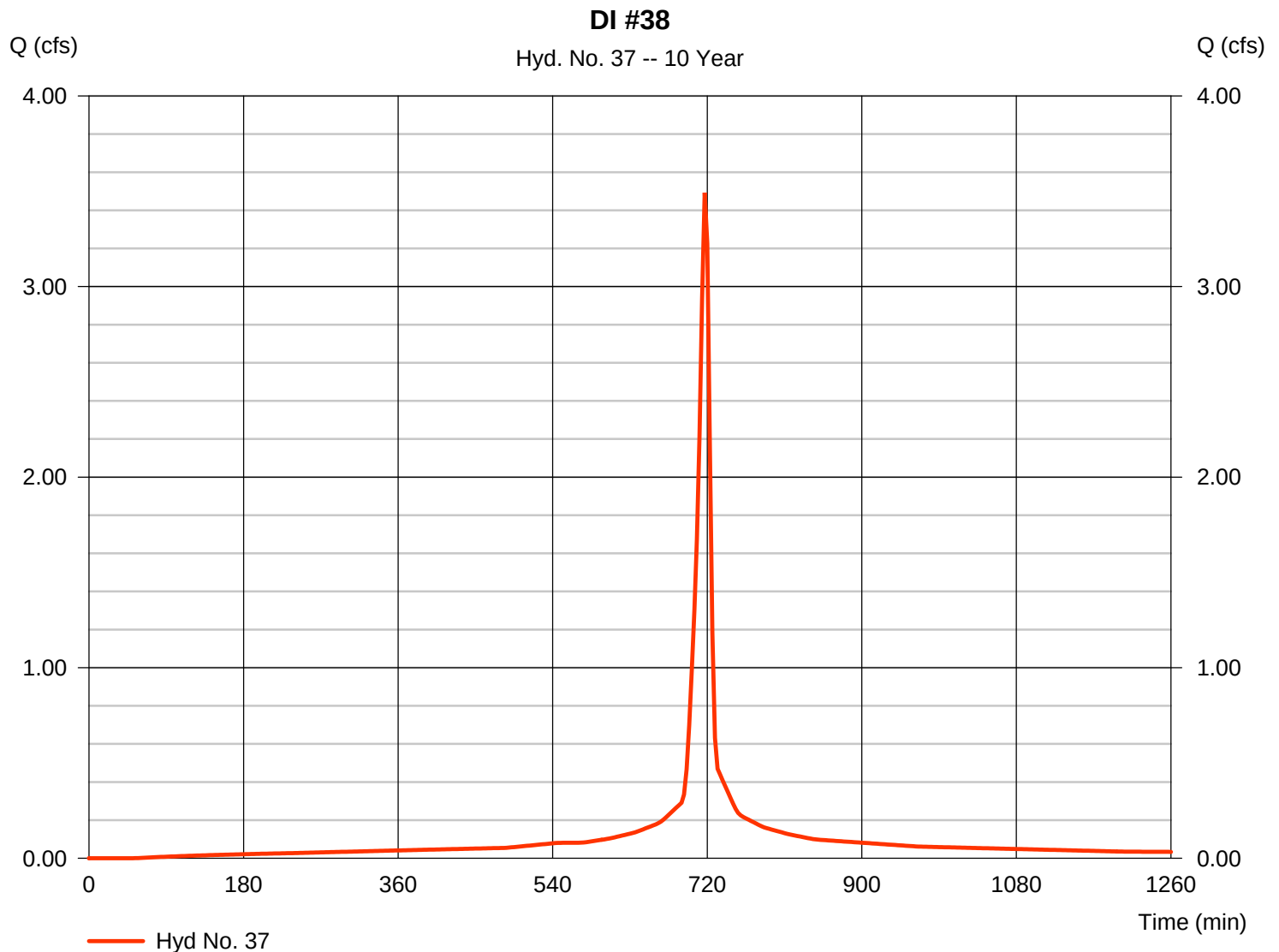
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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Hyd. No. 37

DI #38

Hydrograph type	= SCS Runoff	Peak discharge	= 3.493 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 9,143 cuft
Drainage area	= 0.570 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

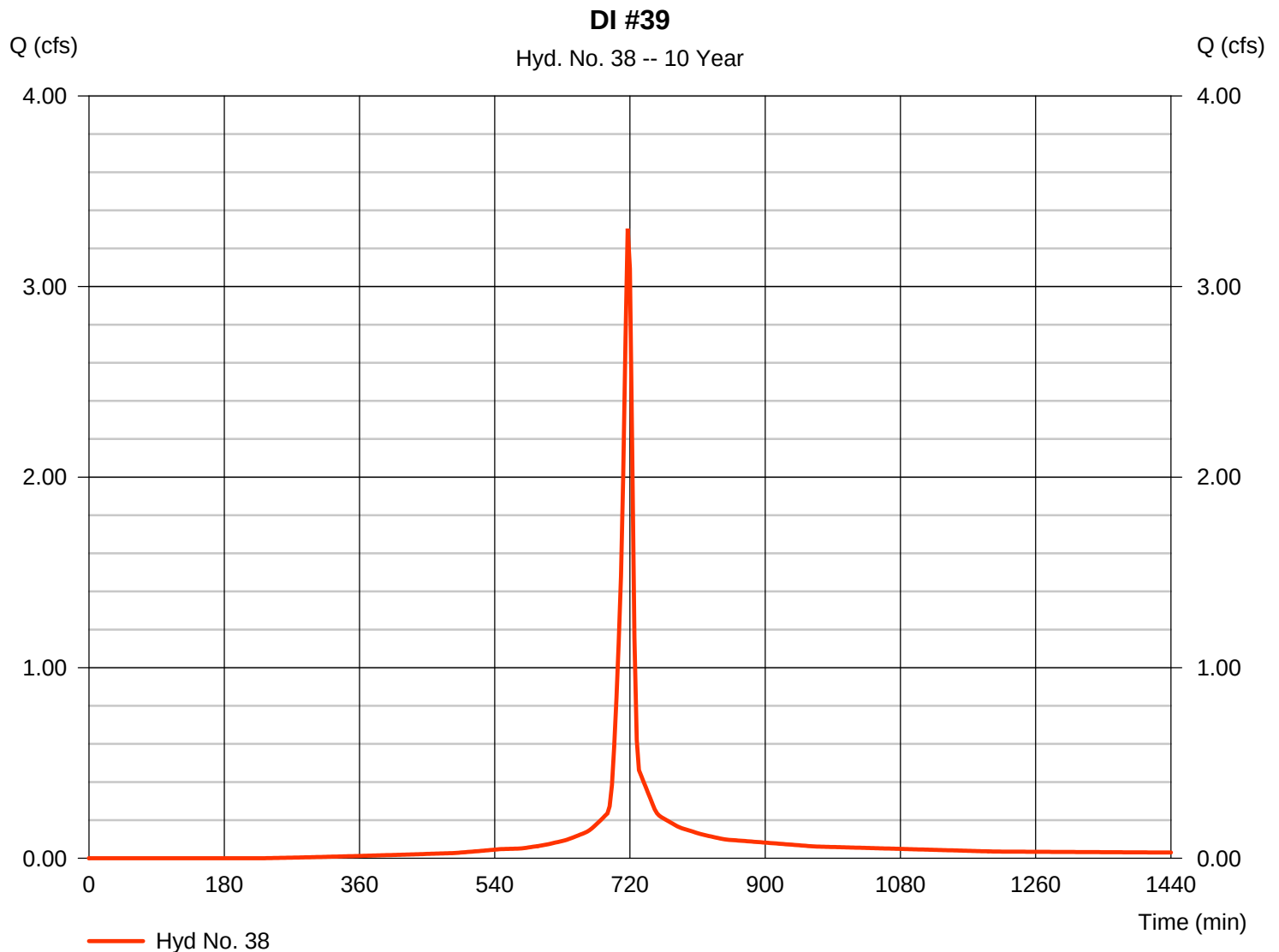
Hyd. No. 38

DI #39

Hydrograph type = SCS Runoff
 Storm frequency = 10 yrs
 Time interval = 3 min
 Drainage area = 0.600 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 4.95 in
 Storm duration = 24 hrs

Peak discharge = 3.304 cfs
 Time to peak = 717 min
 Hyd. volume = 7,817 cuft
 Curve number = 90*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(0.360 \times 98) + (0.240 \times 79)] / 0.600$



Hydrograph Report

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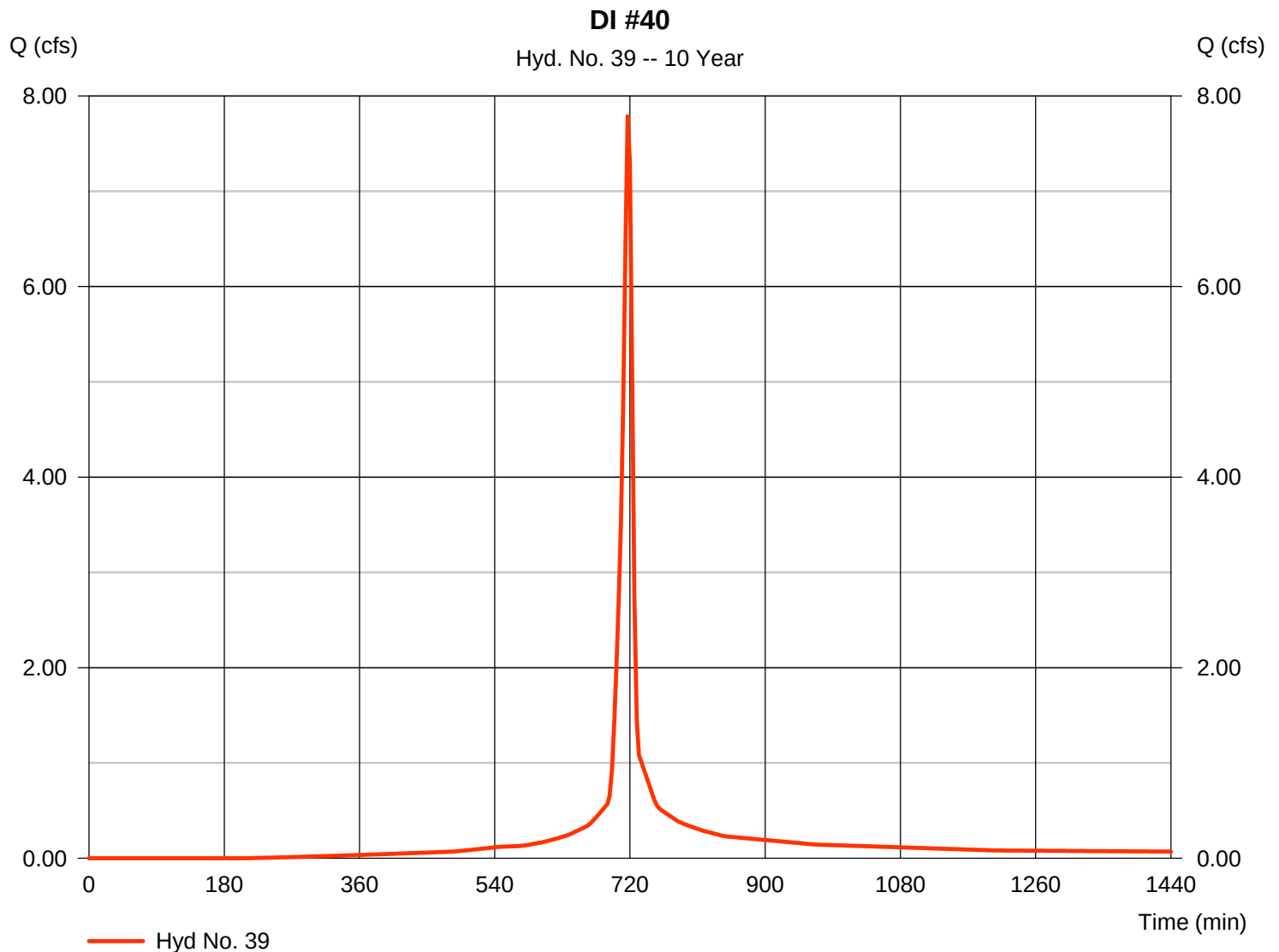
Friday, 07 / 28 / 2017

Hyd. No. 39

DI #40

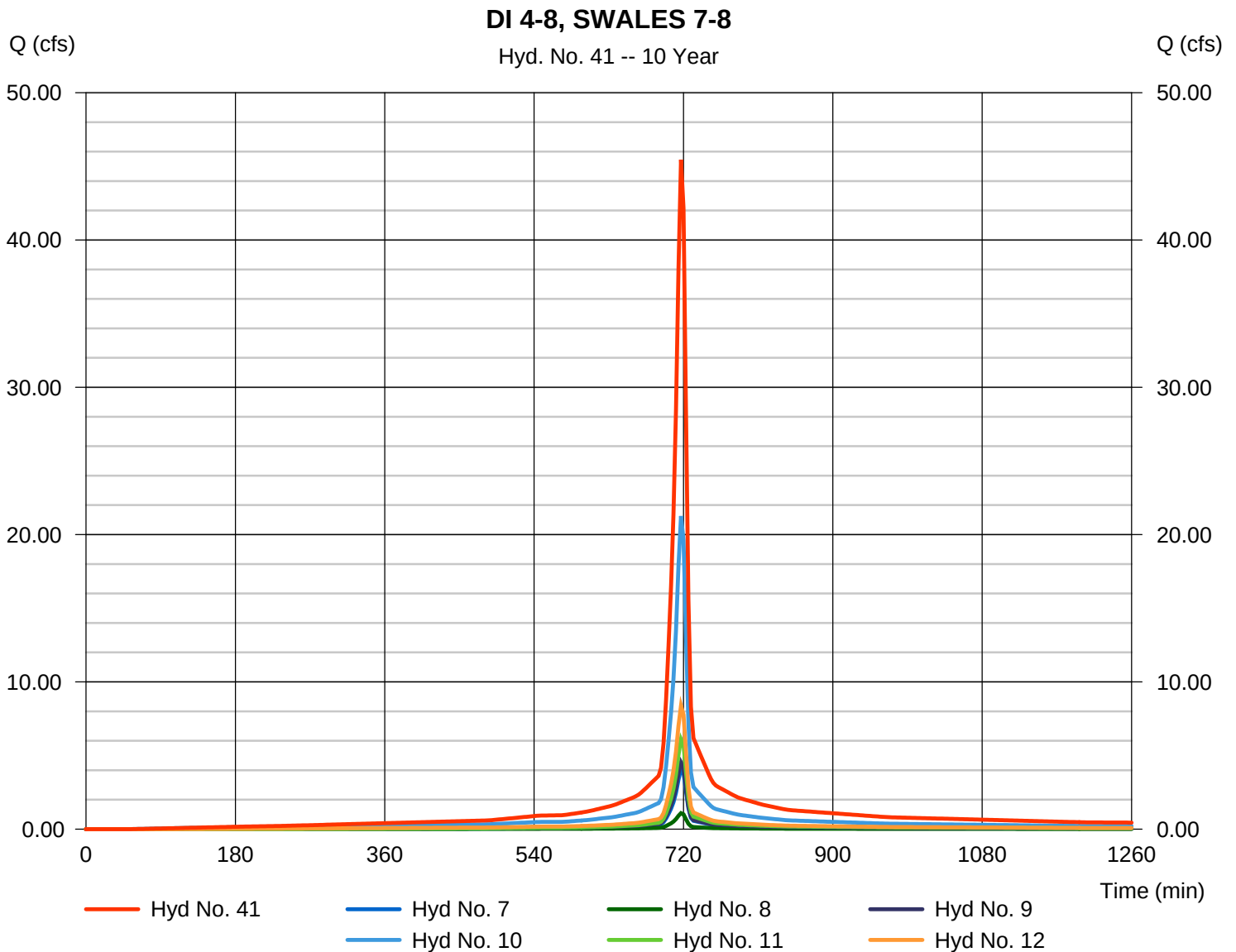
Hydrograph type	= SCS Runoff	Peak discharge	= 7.801 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 18,607 cuft
Drainage area	= 1.390 ac	Curve number	= 91*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.880 \times 98) + (0.510 \times 79)] / 1.390$



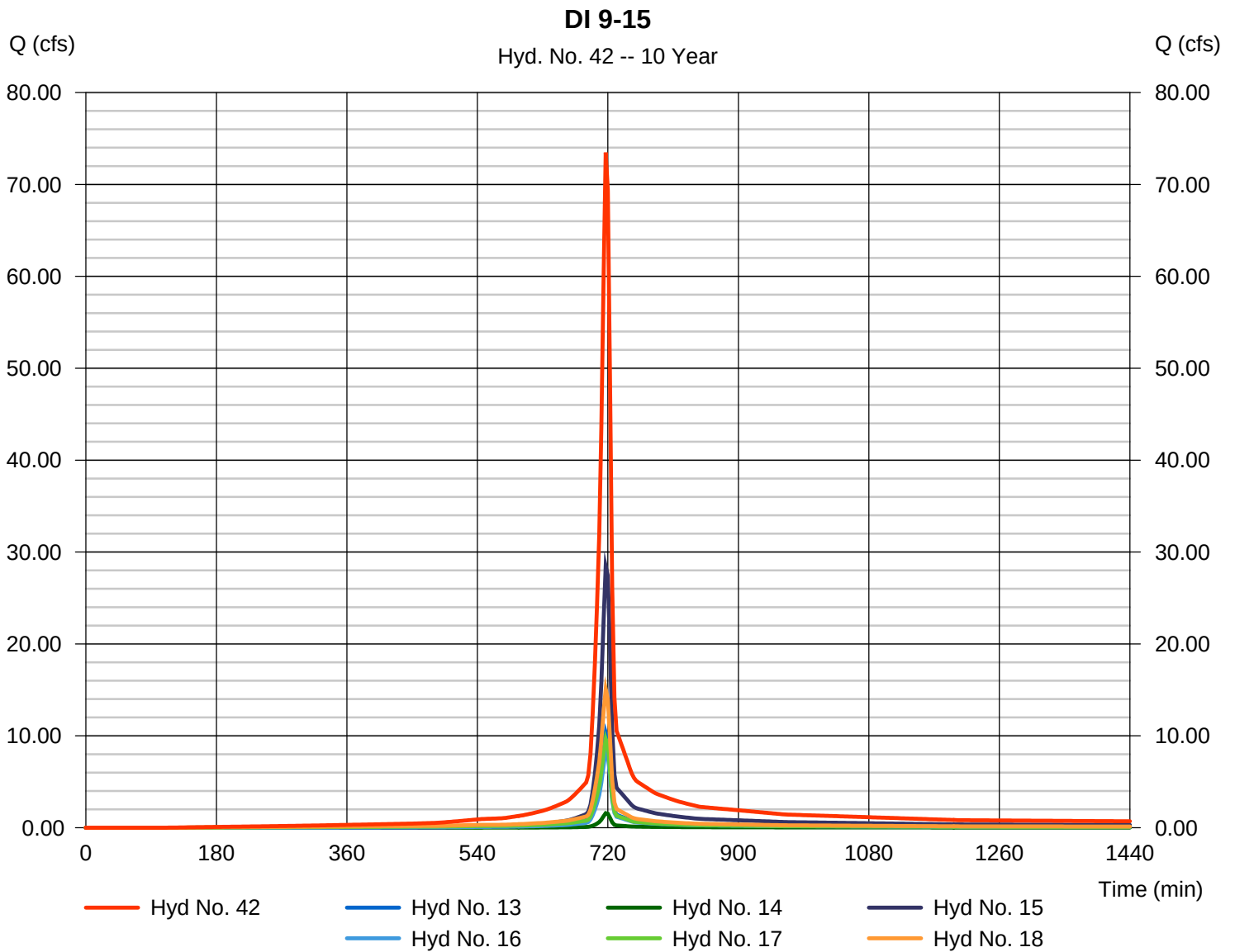
DI 4-8, SWALES 7-8

Peak discharge = 45.45 cfs
Time to peak = 717 min
Hyd. volume = 114,870 cuft
Contrib. drain. area = 7.660 ac



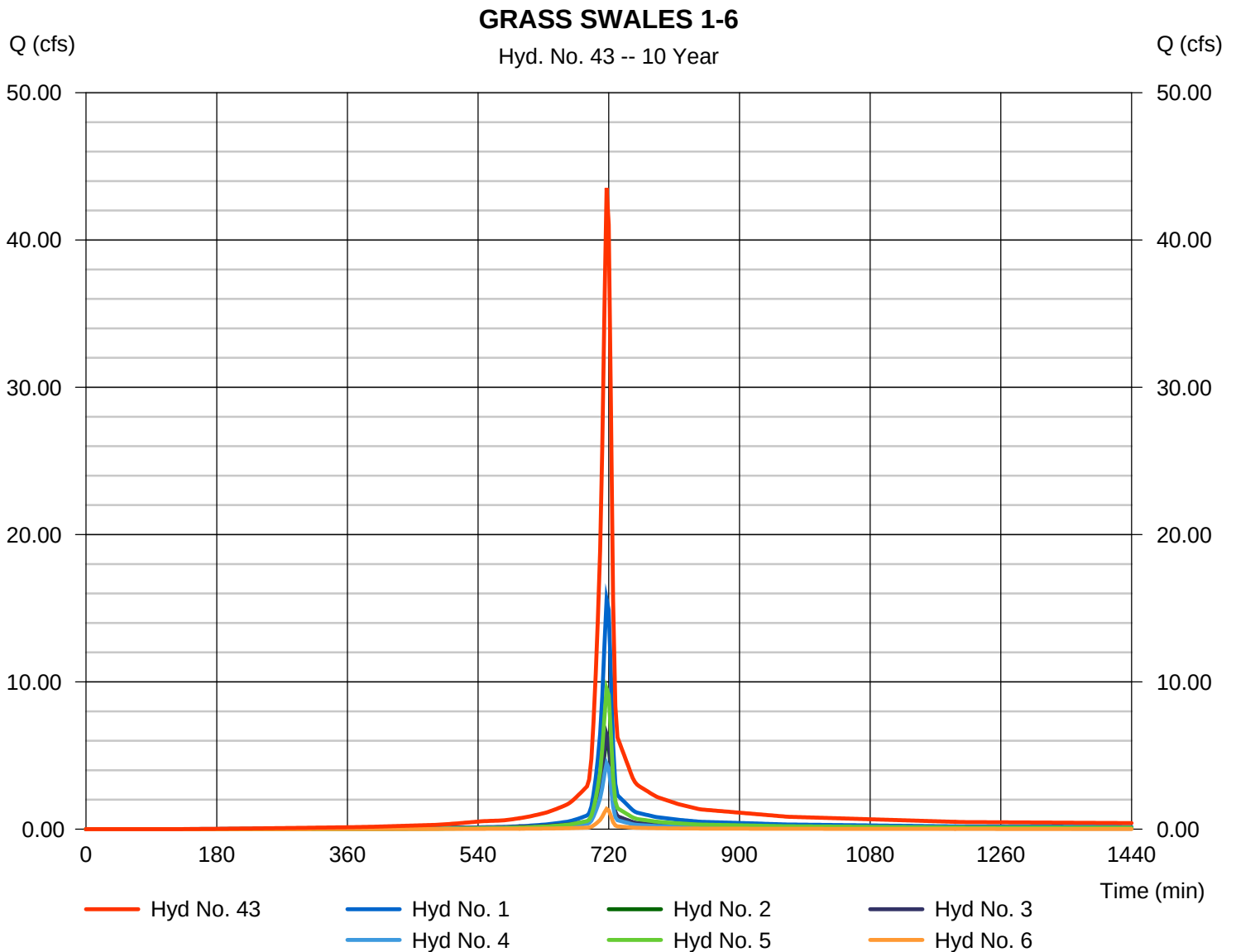
DI 9-15

Contrib. drain. area = 14.740 ac



GRASS SWALES 1-6

Peak discharge = 43.52 cfs
Time to peak = 717 min
Hyd. volume = 102,590 cuft
Contrib. drain. area = 8.560 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 44

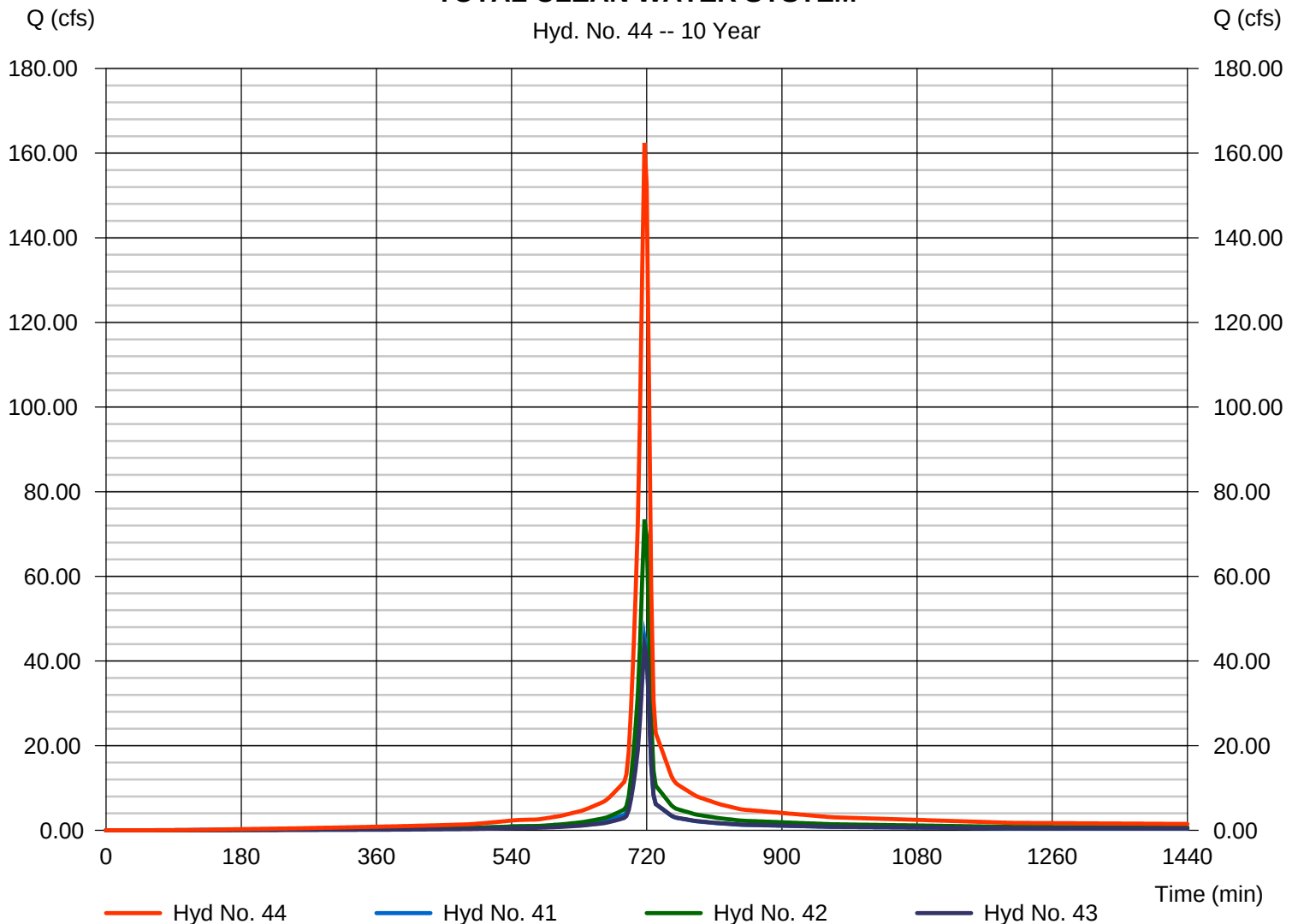
TOTAL CLEAN WATER SYSTEM

Hydrograph type = Combine
Storm frequency = 10 yrs
Time interval = 3 min
Inflow hyds. = 41, 42, 43

Peak discharge = 162.44 cfs
Time to peak = 717 min
Hyd. volume = 392,649 cuft
Contrib. drain. area = 0.000 ac

TOTAL CLEAN WATER SYSTEM

Hyd. No. 44 -- 10 Year



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

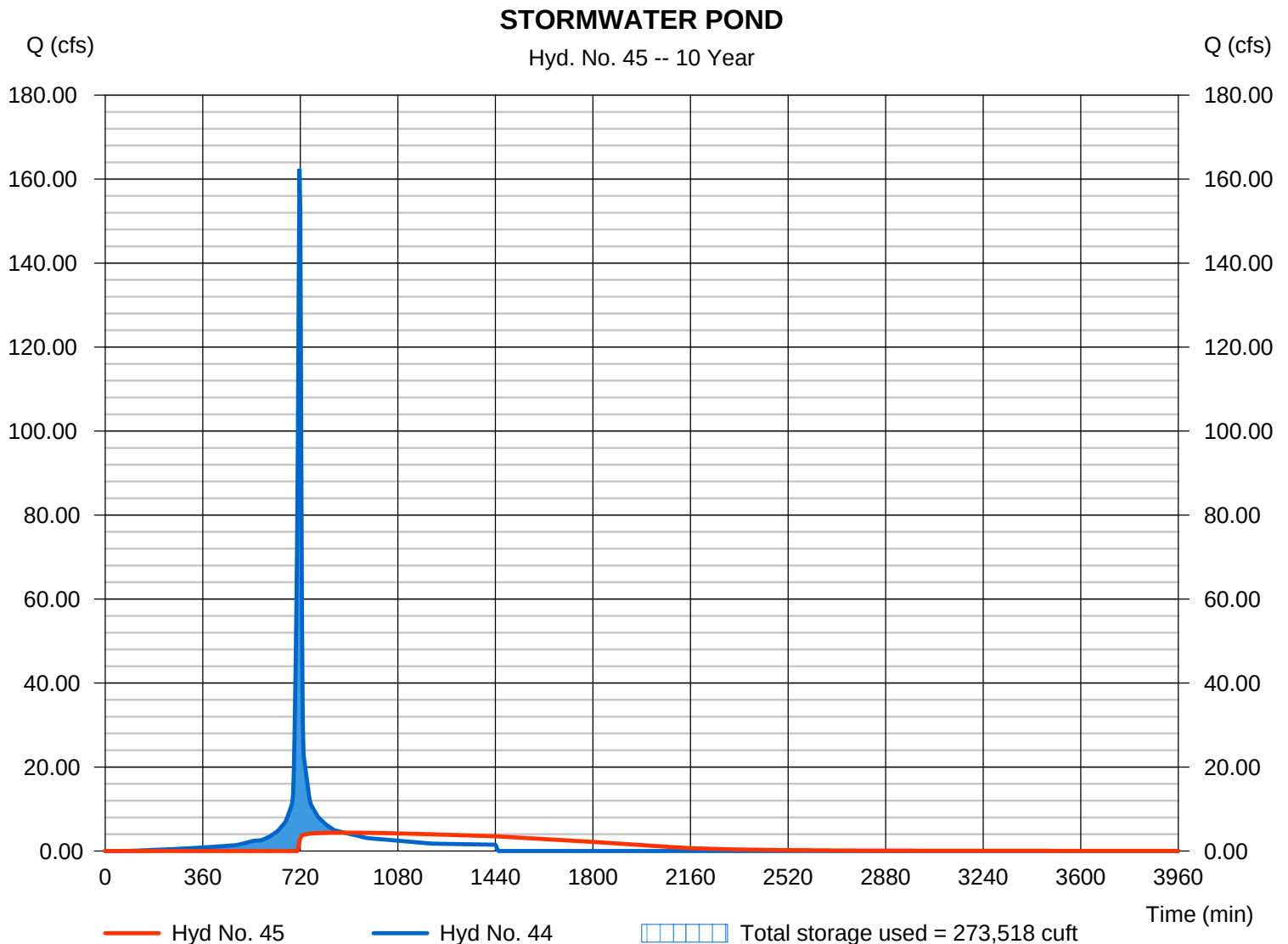
Friday, 07 / 28 / 2017

Hyd. No. 45

STORMWATER POND

Hydrograph type	= Reservoir	Peak discharge	= 4.379 cfs
Storm frequency	= 10 yrs	Time to peak	= 882 min
Time interval	= 3 min	Hyd. volume	= 285,706 cuft
Inflow hyd. No.	= 44 - TOTAL CLEAN WATER STORAGE	Max. Elevation	= 561.84 ft
Reservoir name	= STORMWATER DETENTION POND	Max. Storage	= 273,518 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

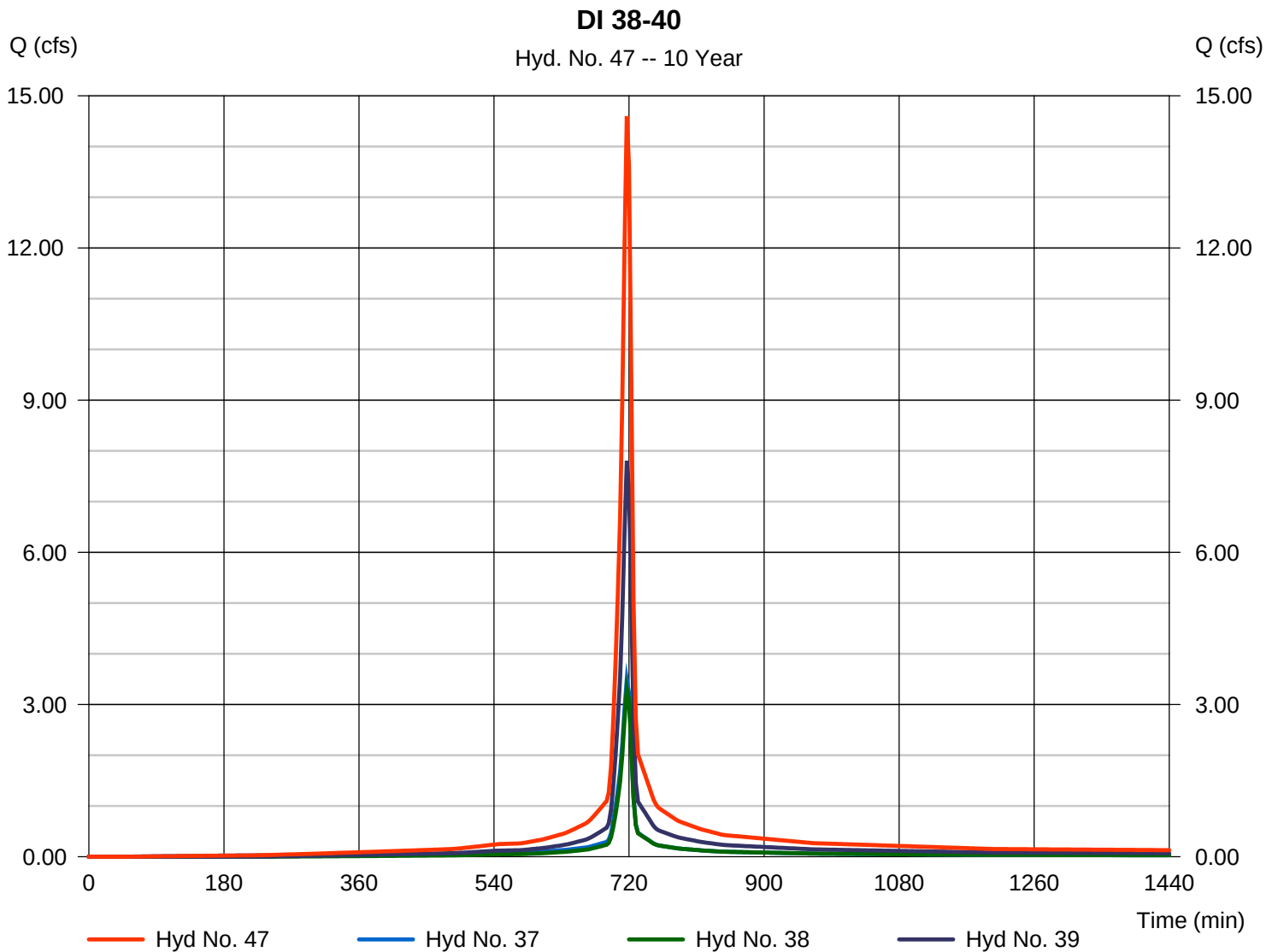
Friday, 07 / 28 / 2017

Hyd. No. 47

DI 38-40

Hydrograph type = Combine
Storm frequency = 10 yrs
Time interval = 3 min
Inflow hyds. = 37, 38, 39

Peak discharge = 14.60 cfs
Time to peak = 717 min
Hyd. volume = 35,566 cuft
Contrib. drain. area = 2.560 ac



Hydrograph Report

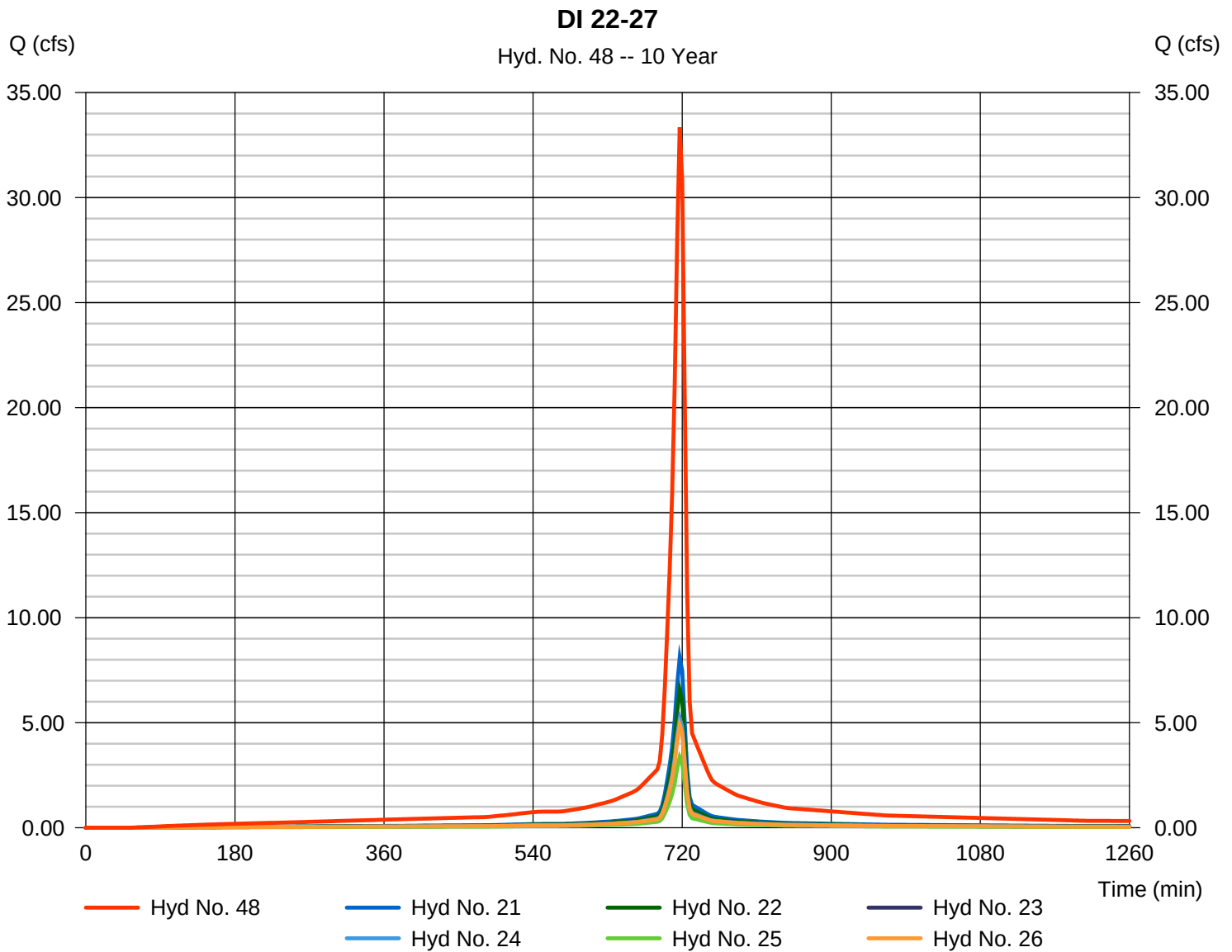
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 48

DI 22-27

Hydrograph type	= Combine	Peak discharge	= 33.34 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 86,892 cuft
Inflow hyds.	= 21, 22, 23, 24, 25, 26	Contrib. drain. area	= 5.450 ac



Hydrograph Report

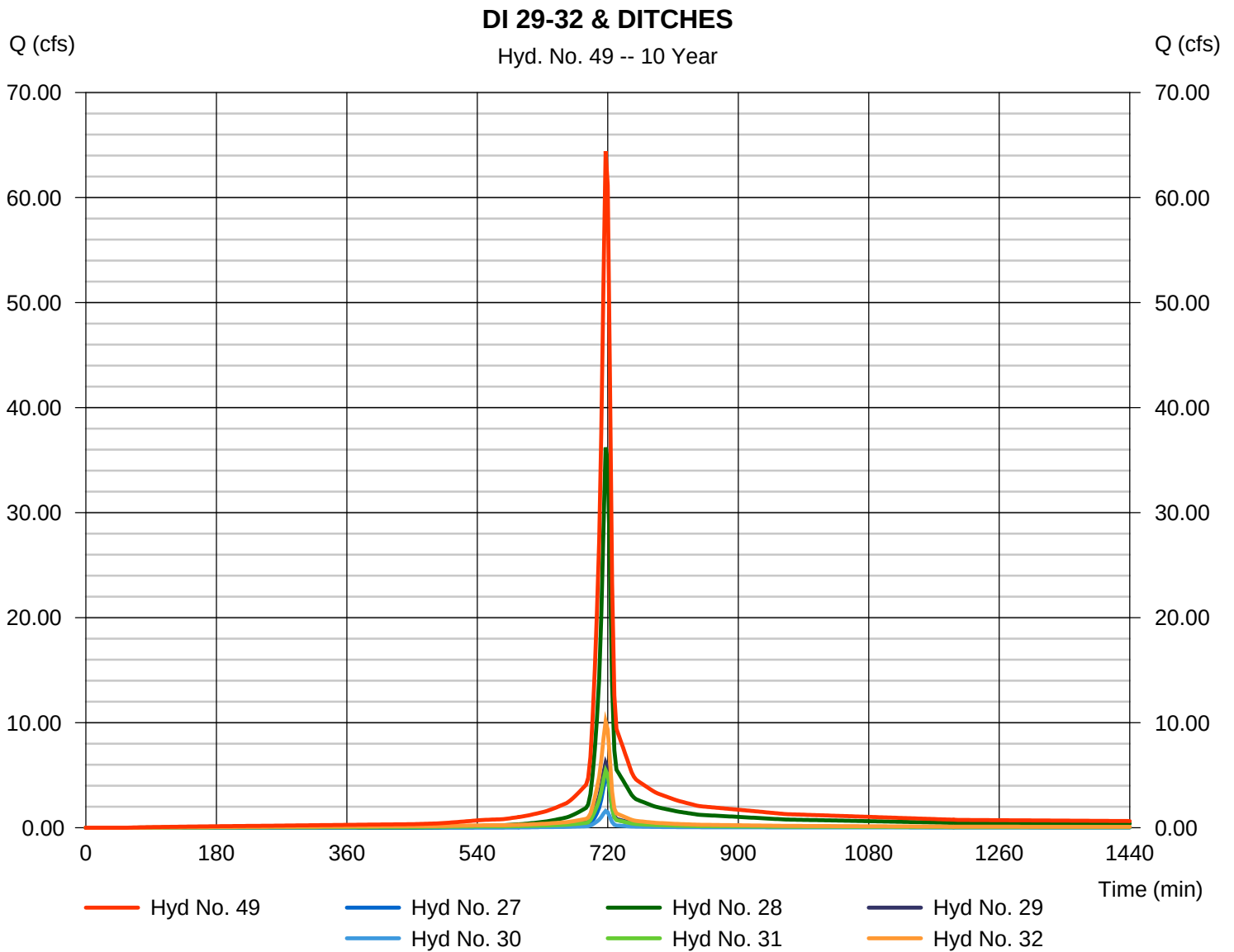
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 49

DI 29-32 & DITCHES

Hydrograph type	= Combine	Peak discharge	= 64.41 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 153,959 cuft
Inflow hyds.	= 27, 28, 29, 30, 31, 32	Contrib. drain. area	= 13.700 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

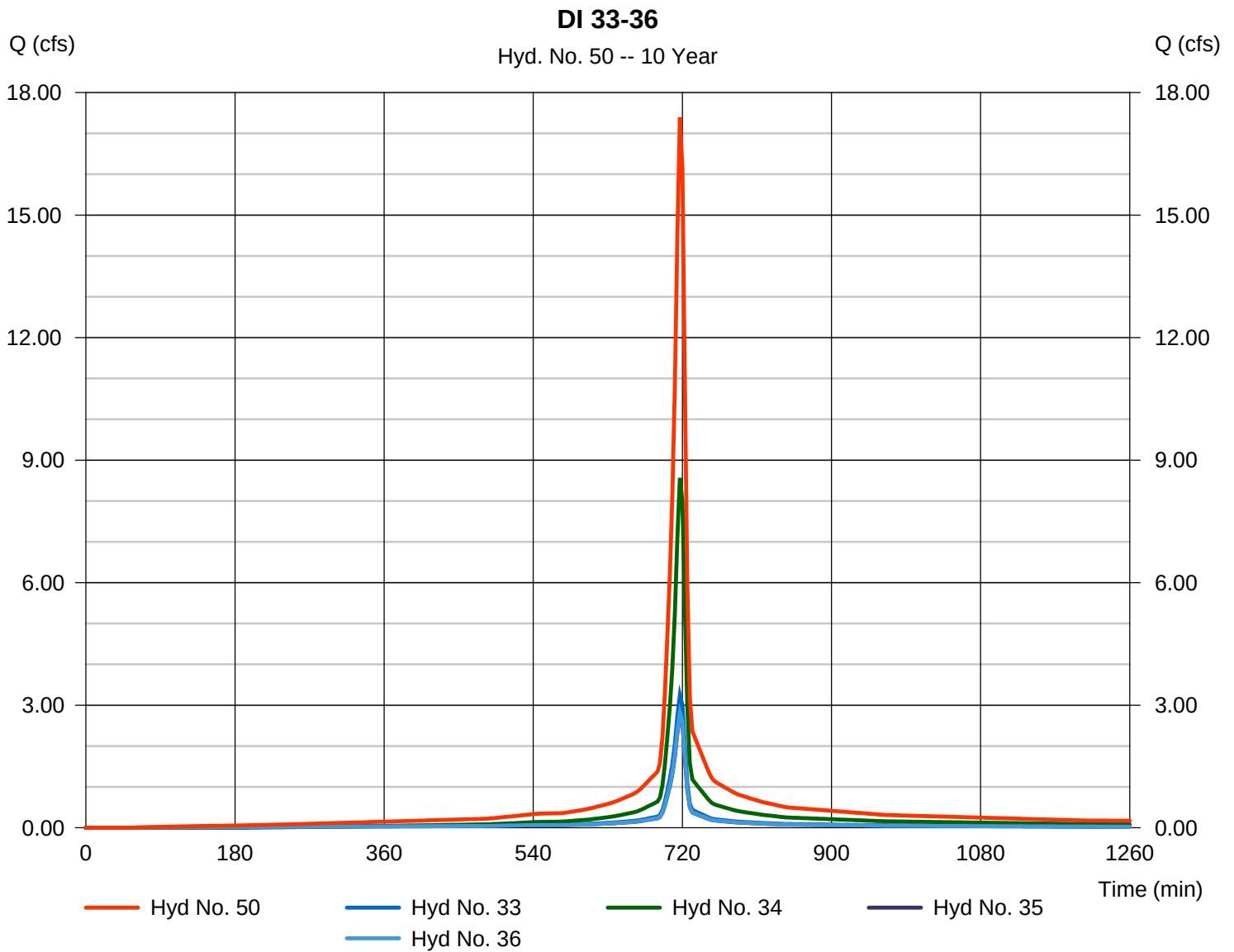
Friday, 07 / 28 / 2017

Hyd. No. 50

DI 33-36

Hydrograph type = Combine
Storm frequency = 10 yrs
Time interval = 3 min
Inflow hyds. = 33, 34, 35, 36

Peak discharge = 17.39 cfs
Time to peak = 717 min
Hyd. volume = 43,723 cuft
Contrib. drain. area = 2.940 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 51

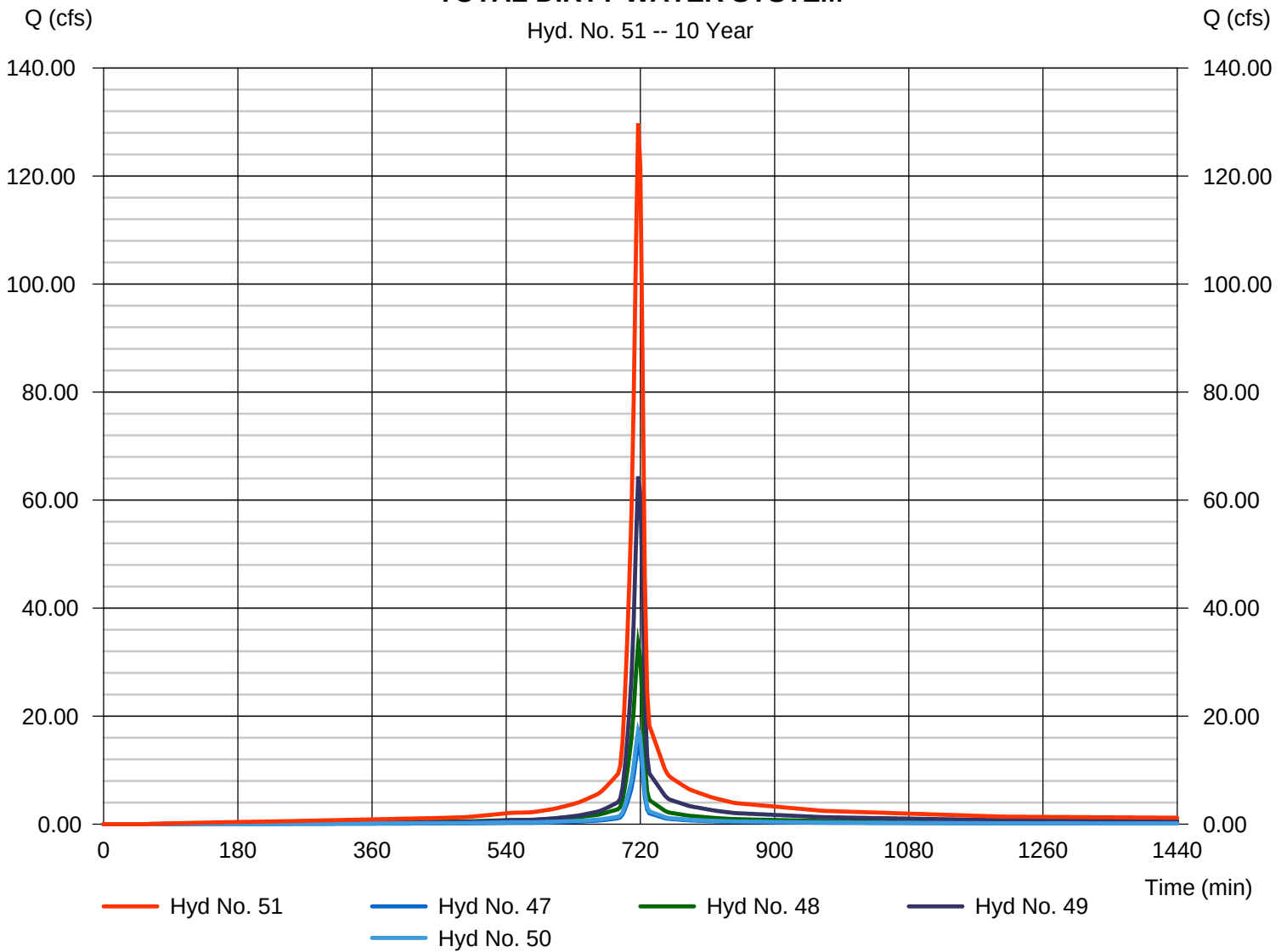
TOTAL DIRTY WATER SYSTEM

Hydrograph type = Combine
 Storm frequency = 10 yrs
 Time interval = 3 min
 Inflow hyds. = 47, 48, 49, 50

Peak discharge = 129.74 cfs
 Time to peak = 717 min
 Hyd. volume = 320,140 cuft
 Contrib. drain. area = 0.000 ac

TOTAL DIRTY WATER SYSTEM

Hyd. No. 51 -- 10 Year



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 53

E&S RUNOFF BASIN 1

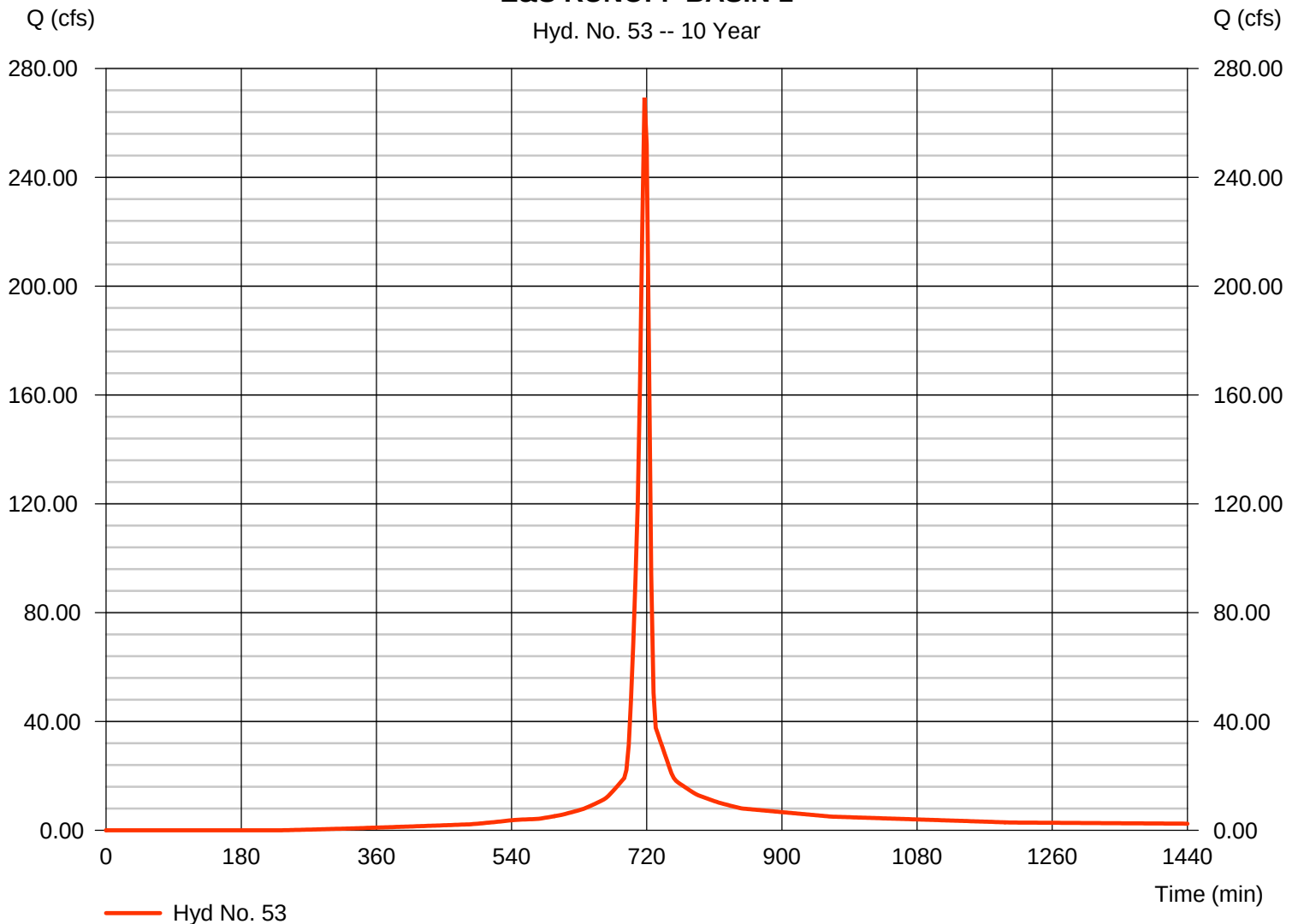
Hydrograph type = SCS Runoff
 Storm frequency = 10 yrs
 Time interval = 3 min
 Drainage area = 48.900 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 4.95 in
 Storm duration = 24 hrs

Peak discharge = 269.31 cfs
 Time to peak = 717 min
 Hyd. volume = 637,045 cuft
 Curve number = 90*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(29.300 \times 98) + (19.600 \times 79)] / 48.900$

E&S RUNOFF BASIN 1

Hyd. No. 53 -- 10 Year



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

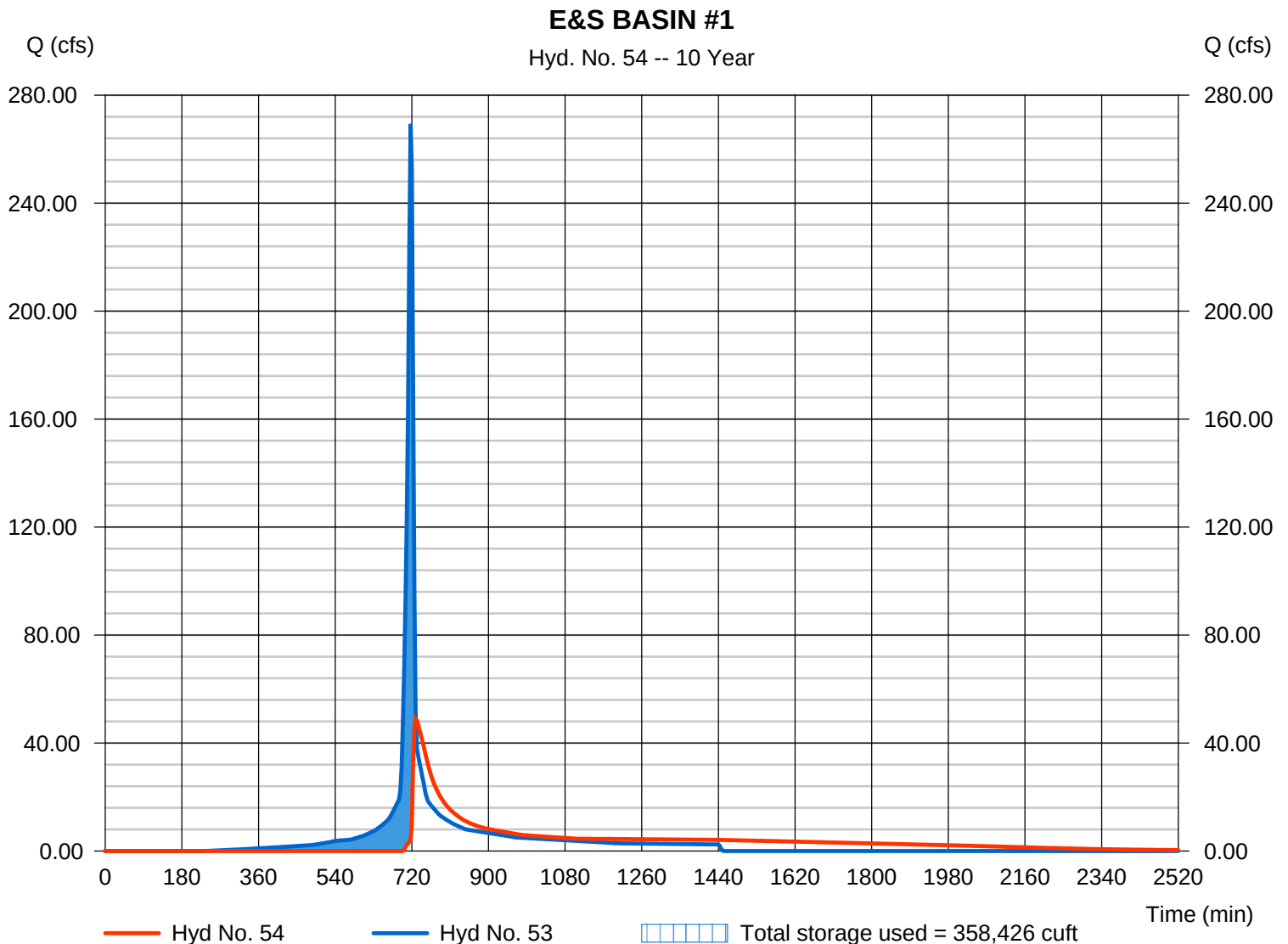
Friday, 07 / 28 / 2017

Hyd. No. 54

E&S BASIN #1

Hydrograph type	= Reservoir	Peak discharge	= 48.89 cfs
Storm frequency	= 10 yrs	Time to peak	= 729 min
Time interval	= 3 min	Hyd. volume	= 530,102 cuft
Inflow hyd. No.	= 53 - E&S RUNOFF BASIN 1	Max. Elevation	= 563.04 ft
Reservoir name	= E&S BASIN #1	Max. Storage	= 358,426 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

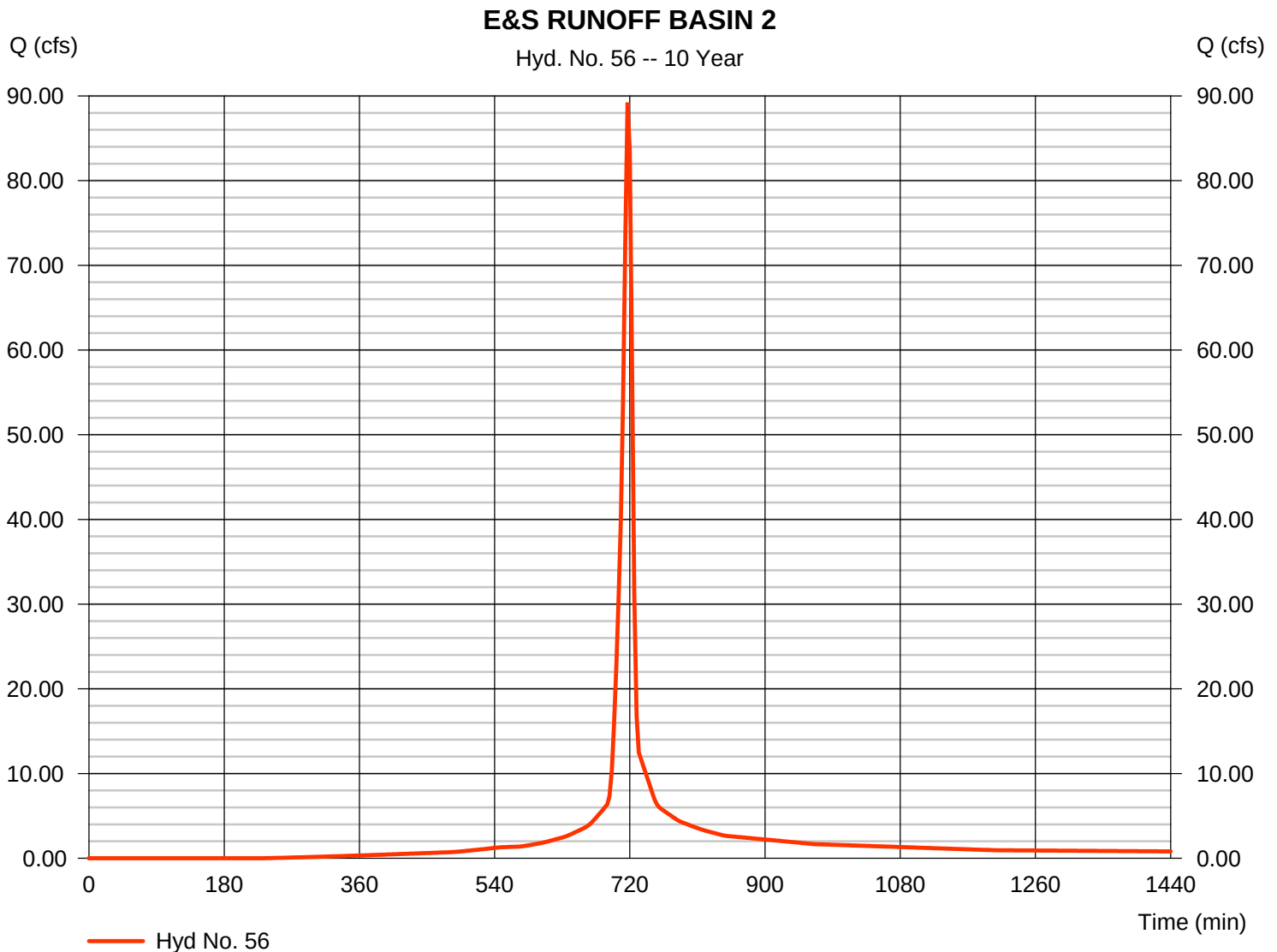
Hyd. No. 56

E&S RUNOFF BASIN 2

Hydrograph type = SCS Runoff
 Storm frequency = 10 yrs
 Time interval = 3 min
 Drainage area = 16.200 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 4.95 in
 Storm duration = 24 hrs

Peak discharge = 89.22 cfs
 Time to peak = 717 min
 Hyd. volume = 211,046 cuft
 Curve number = 90*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(9.720 \times 98) + (6.480 \times 79)] / 16.200$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

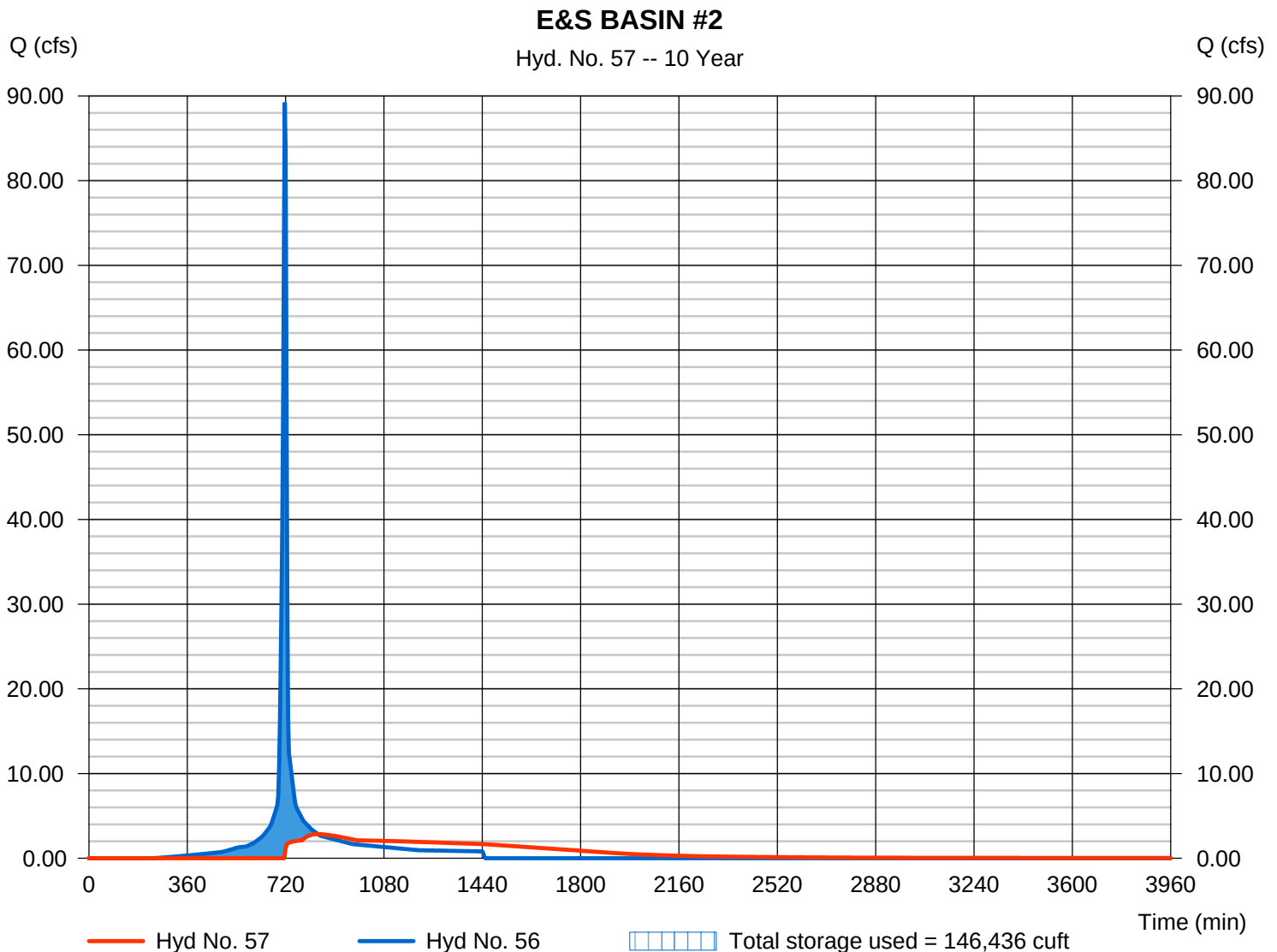
Friday, 07 / 28 / 2017

Hyd. No. 57

E&S BASIN #2

Hydrograph type	= Reservoir	Peak discharge	= 2.852 cfs
Storm frequency	= 10 yrs	Time to peak	= 837 min
Time interval	= 3 min	Hyd. volume	= 141,231 cuft
Inflow hyd. No.	= 56 - E&S RUNOFF BASIN 2	Max. Elevation	= 576.07 ft
Reservoir name	= E&S BASIN #2	Max. Storage	= 146,436 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

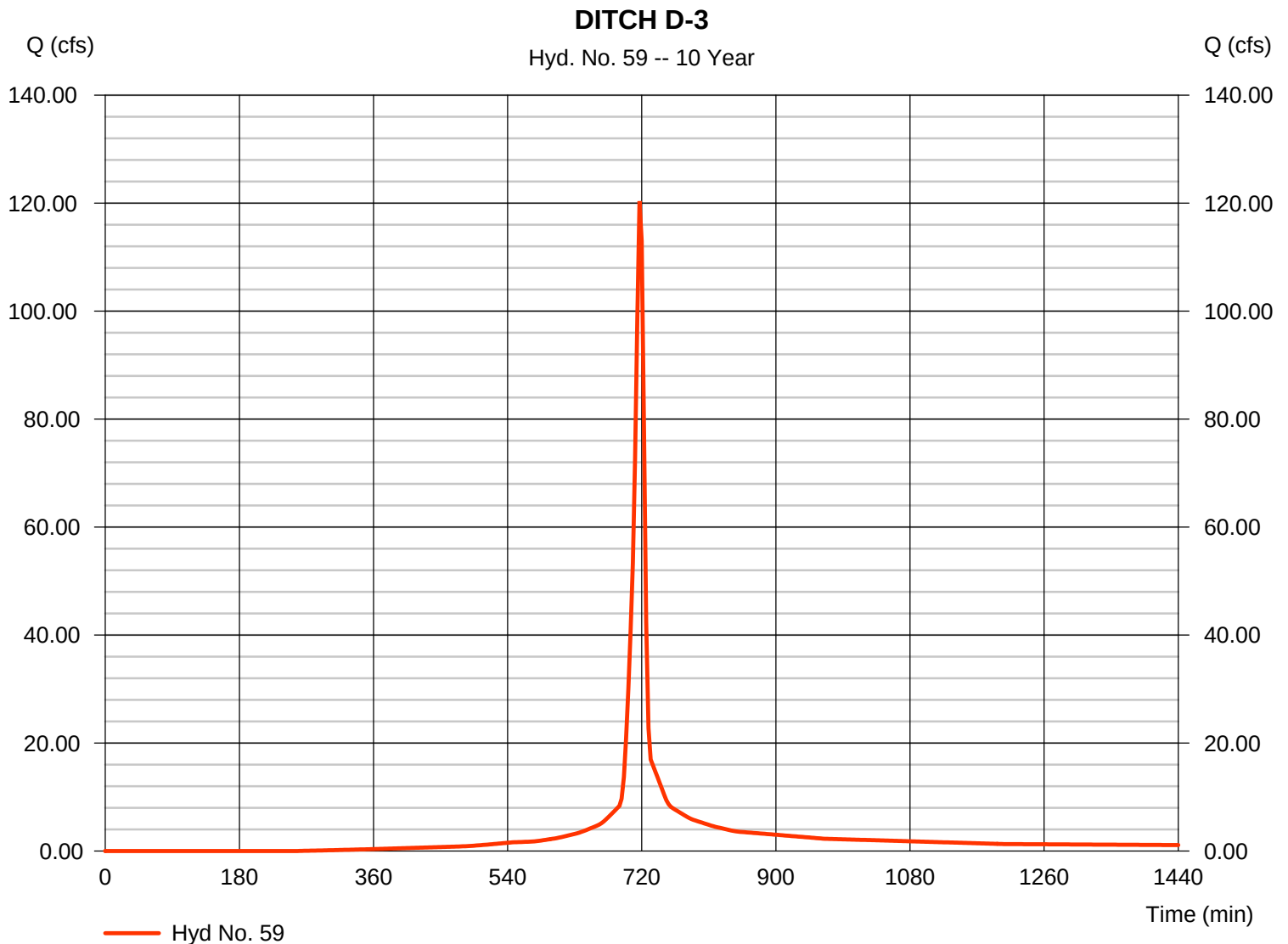
Hyd. No. 59

DITCH D-3

Hydrograph type = SCS Runoff
 Storm frequency = 10 yrs
 Time interval = 3 min
 Drainage area = 22.300 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 4.95 in
 Storm duration = 24 hrs

Peak discharge = 120.37 cfs
 Time to peak = 717 min
 Hyd. volume = 282,619 cuft
 Curve number = 89*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(12.200 \times 98) + (10.100 \times 79)] / 22.300$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

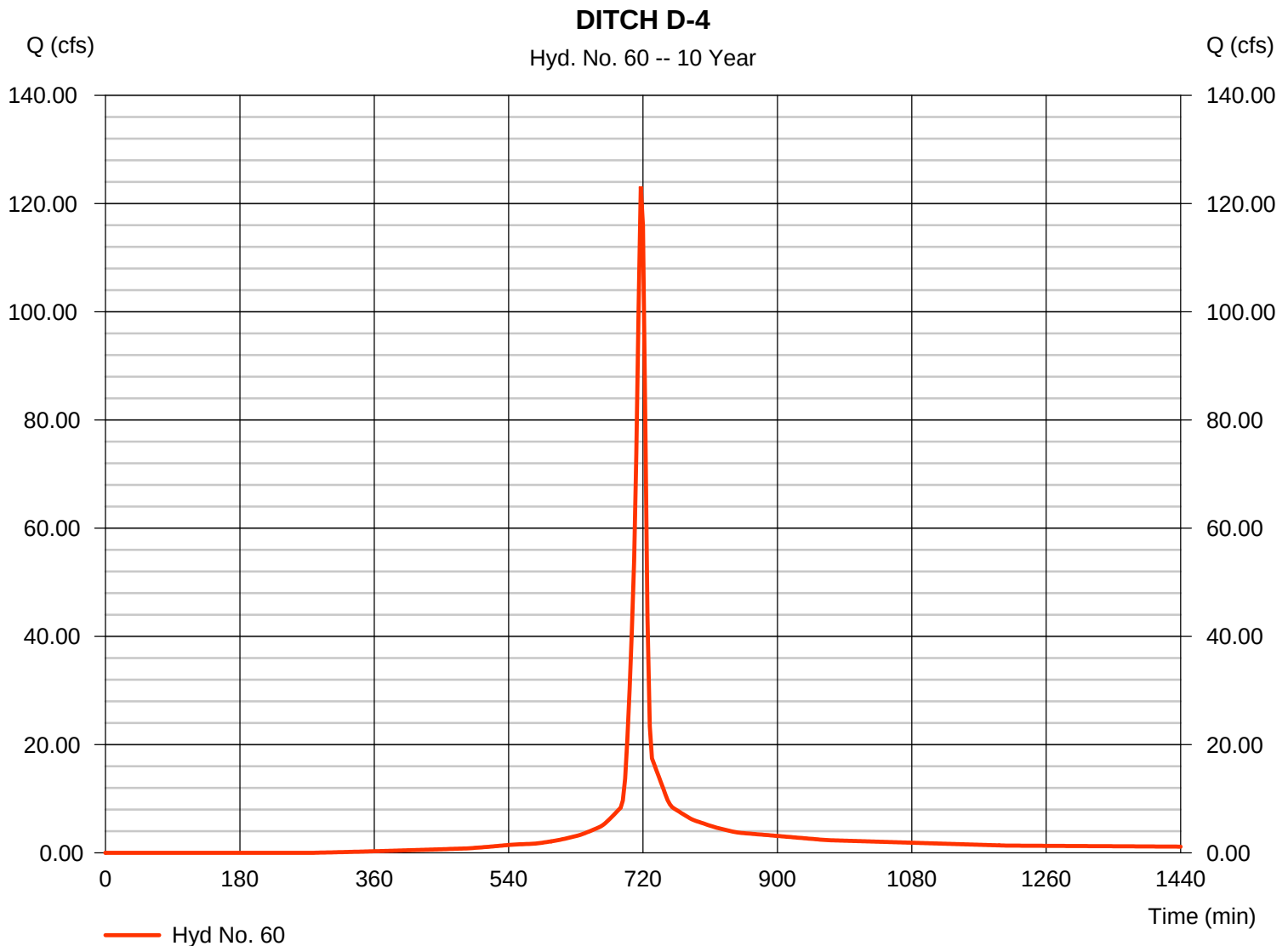
Hyd. No. 60

DITCH D-4

Hydrograph type = SCS Runoff
 Storm frequency = 10 yrs
 Time interval = 3 min
 Drainage area = 23.300 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 4.95 in
 Storm duration = 24 hrs

Peak discharge = 123.11 cfs
 Time to peak = 717 min
 Hyd. volume = 287,155 cuft
 Curve number = 88*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(11.500 \times 98) + (11.800 \times 79)] / 23.300$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 62

PRE-DEVELOPMENT

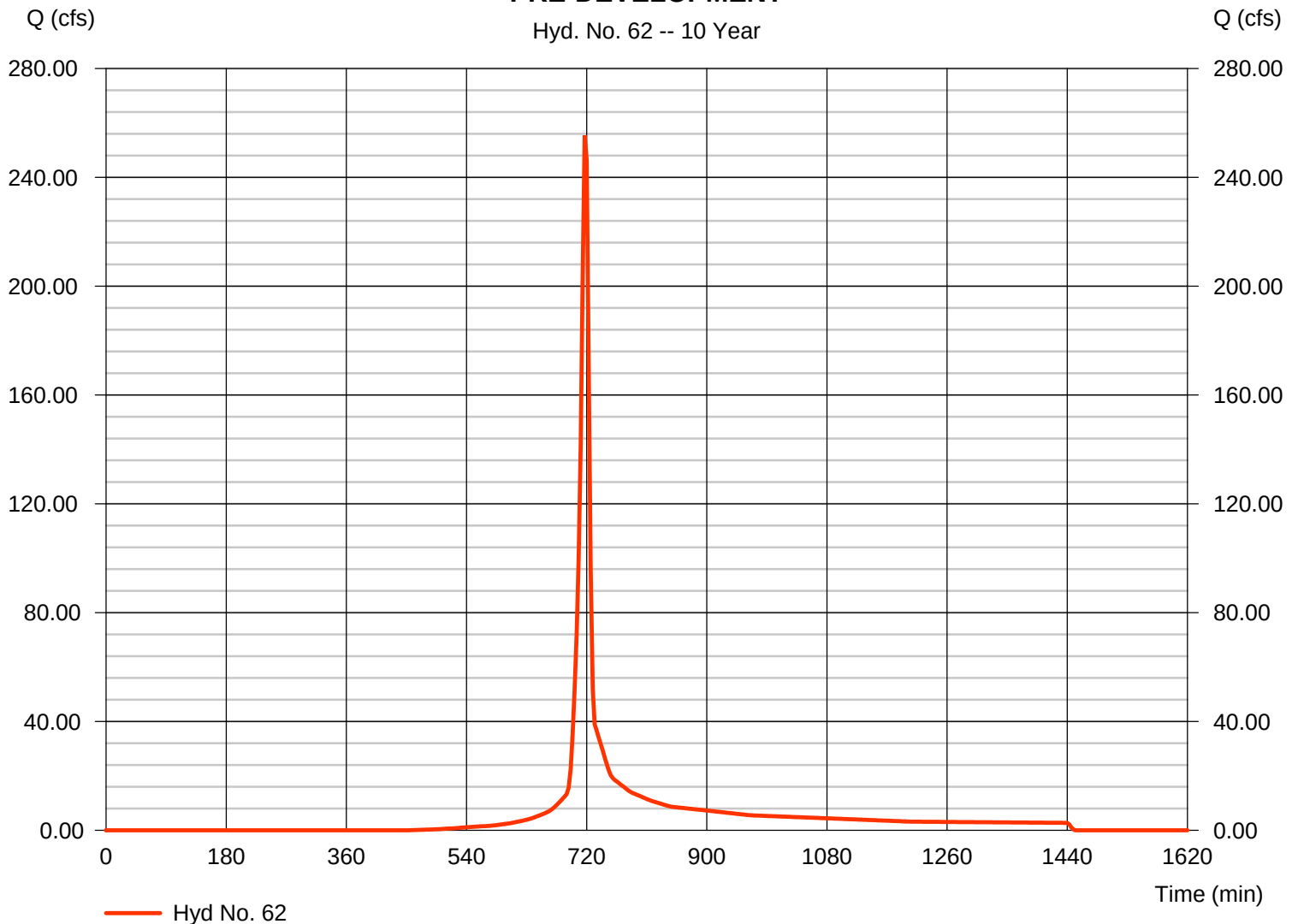
Hydrograph type = SCS Runoff
 Storm frequency = 10 yrs
 Time interval = 3 min
 Drainage area = 61.500 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 4.95 in
 Storm duration = 24 hrs

Peak discharge = 255.37 cfs
 Time to peak = 717 min
 Hyd. volume = 577,365 cuft
 Curve number = 79*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(60.200 \times 79) + (1.300 \times 98)] / 61.500$

PRE-DEVELOPMENT

Hyd. No. 62 -- 10 Year



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

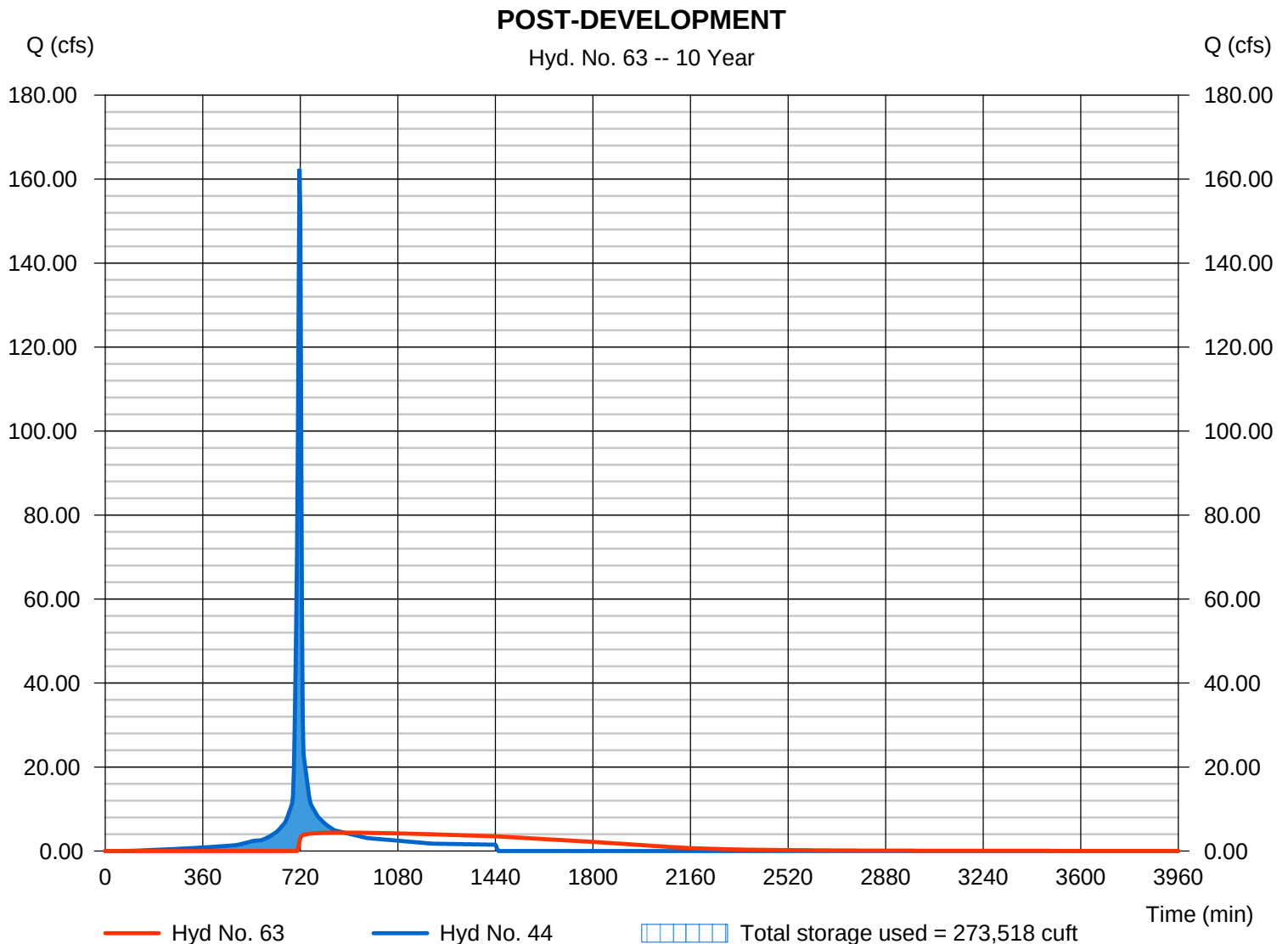
Friday, 07 / 28 / 2017

Hyd. No. 63

POST-DEVELOPMENT

Hydrograph type	= Reservoir	Peak discharge	= 4.379 cfs
Storm frequency	= 10 yrs	Time to peak	= 882 min
Time interval	= 3 min	Hyd. volume	= 285,706 cuft
Inflow hyd. No.	= 44 - TOTAL CLEAN WATER STORAGE	Max. Elevation	= 561.84 ft
Reservoir name	= STORMWATER DETENTION POND	Max. Storage	= 273,518 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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	18.89	3	717	43,350	-----	-----	-----	GRASS SWALE #1
2	SCS Runoff	7.107	3	717	17,461	-----	-----	-----	GRASS SWALE #2
3	SCS Runoff	7.472	3	717	18,795	-----	-----	-----	GRASS SWALE #3
4	SCS Runoff	5.189	3	717	13,052	-----	-----	-----	GRASS SWALE #4
5	SCS Runoff	11.60	3	717	26,529	-----	-----	-----	GRASS SWALE #5
6	SCS Runoff	1.603	3	717	3,900	-----	-----	-----	GRASS SWALE #6
7	SCS Runoff	4.799	3	717	11,468	-----	-----	-----	GRASS SWALE #7
8	SCS Runoff	1.256	3	717	3,203	-----	-----	-----	GRASS SWALE #8
9	SCS Runoff	5.273	3	717	13,101	-----	-----	-----	DI #4
10	SCS Runoff	24.52	3	717	64,502	-----	-----	-----	DI #6
11	SCS Runoff	7.199	3	717	17,203	-----	-----	-----	DI #7
12	SCS Runoff	9.700	3	717	24,734	-----	-----	-----	DI #8
13	SCS Runoff	12.04	3	717	30,280	-----	-----	-----	DI #9
14	SCS Runoff	1.945	3	717	4,414	-----	-----	-----	DI #10
15	SCS Runoff	35.06	3	717	79,561	-----	-----	-----	MH #11
16	SCS Runoff	9.954	3	717	23,162	-----	-----	-----	DI #13
17	SCS Runoff	11.21	3	717	28,192	-----	-----	-----	DI #14
18	SCS Runoff	17.45	3	717	44,485	-----	-----	-----	DI #15
21	SCS Runoff	9.348	3	717	24,192	-----	-----	-----	DI #22
22	SCS Runoff	7.560	3	717	19,890	-----	-----	-----	DI #23
23	SCS Runoff	6.006	3	717	15,800	-----	-----	-----	DI #24
24	SCS Runoff	6.006	3	717	15,800	-----	-----	-----	DI #25
25	SCS Runoff	3.886	3	717	10,224	-----	-----	-----	DI #26
26	SCS Runoff	5.653	3	717	14,871	-----	-----	-----	DI #27
27	SCS Runoff	5.989	3	717	13,589	-----	-----	-----	DITCH D-1
28	SCS Runoff	44.63	3	717	101,281	-----	-----	-----	DITCH D-2
29	SCS Runoff	7.136	3	717	18,774	-----	-----	-----	DI #29
30	SCS Runoff	1.837	3	717	4,833	-----	-----	-----	DI #30
31	SCS Runoff	6.288	3	717	16,544	-----	-----	-----	DI #31
32	SCS Runoff	11.66	3	717	30,671	-----	-----	-----	DI #32
33	SCS Runoff	3.745	3	717	9,852	-----	-----	-----	DI #33
34	SCS Runoff	10.02	3	717	24,374	-----	-----	-----	DI #34
35	SCS Runoff	3.180	3	717	8,365	-----	-----	-----	DI #35
TOTAL REVISED HYDROLOGY.gpw					Return Period: 25 Year			Friday, 07 / 28 / 2017	

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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
36	SCS Runoff	3.250	3	717	8,551	-----	-----	-----	DI #36
37	SCS Runoff	4.027	3	717	10,595	-----	-----	-----	DI #38
38	SCS Runoff	3.891	3	717	9,299	-----	-----	-----	DI #39
39	SCS Runoff	9.155	3	717	22,062	-----	-----	-----	DI #40
41	Combine	52.75	3	717	134,212	7, 8, 9,	-----	-----	DI 4-8, SWALES 7-8
42	Combine	87.65	3	717	210,095	10, 11, 12,	-----	-----	DI 9-15
43	Combine	51.85	3	717	123,086	13, 14, 15,	-----	-----	GRASS SWALES 1-6
44	Combine	192.25	3	717	467,393	16, 17, 18,	-----	-----	TOTAL CLEAN WATER SYSTEM
45	Reservoir	10.89	3	774	360,450	1, 2, 3,	-----	-----	STORMWATER POND
						4, 5, 6,	-----	-----	
						41, 42, 43	-----	-----	
47	Combine	17.07	3	717	41,956	44	562.28	304,216	
48	Combine	38.46	3	717	100,777	37, 38, 39,	-----	-----	DI 38-40
49	Combine	77.54	3	717	185,693	21, 22, 23,	-----	-----	DI 22-27
50	Combine	20.20	3	717	51,141	24, 25, 26,	-----	-----	DI 29-32 & DITCHES
51	Combine	153.27	3	717	379,566	27, 28, 29,	-----	-----	DI 33-36
						30, 31, 32,	-----	-----	
						33, 34, 35,	-----	-----	
						36,	-----	-----	
						47, 48, 49,	-----	-----	
						50	-----	-----	
53	SCS Runoff	317.15	3	717	757,850	-----	-----	-----	E&S RUNOFF BASIN 1
54	Reservoir	73.74	3	729	650,908	53	563.78	412,011	E&S BASIN #1
56	SCS Runoff	105.07	3	717	251,067	-----	-----	-----	E&S RUNOFF BASIN 2
57	Reservoir	7.648	3	756	181,252	56	576.31	158,514	E&S BASIN #2
59	SCS Runoff	142.26	3	717	337,348	-----	-----	-----	DITCH D-3
60	SCS Runoff	146.05	3	717	343,929	-----	-----	-----	DITCH D-4
62	SCS Runoff	314.79	3	717	714,308	-----	-----	-----	PRE-DEVELOPMENT
63	Reservoir	10.89	3	774	360,450	44	562.28	304,216	POST-DEVELOPMENT
TOTAL REVISED HYDROLOGY.gpw					Return Period: 25 Year			Friday, 07 / 28 / 2017	

Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

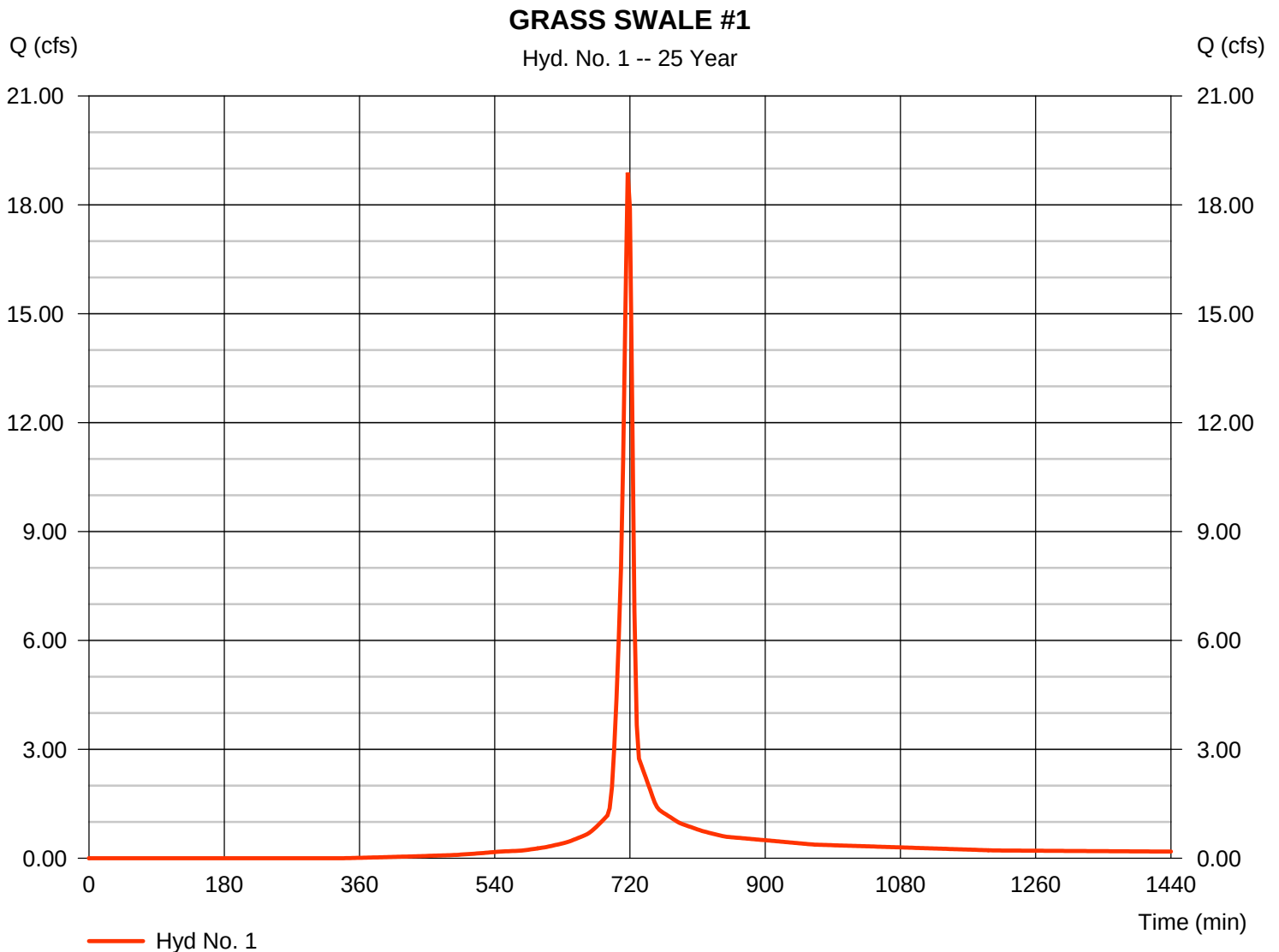
Friday, 07 / 28 / 2017

Hyd. No. 1

GRASS SWALE #1

Hydrograph type	= SCS Runoff	Peak discharge	= 18.89 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 43,350 cuft
Drainage area	= 3.340 ac	Curve number	= 83*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.730 \times 98) + (2.610 \times 79)] / 3.340$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

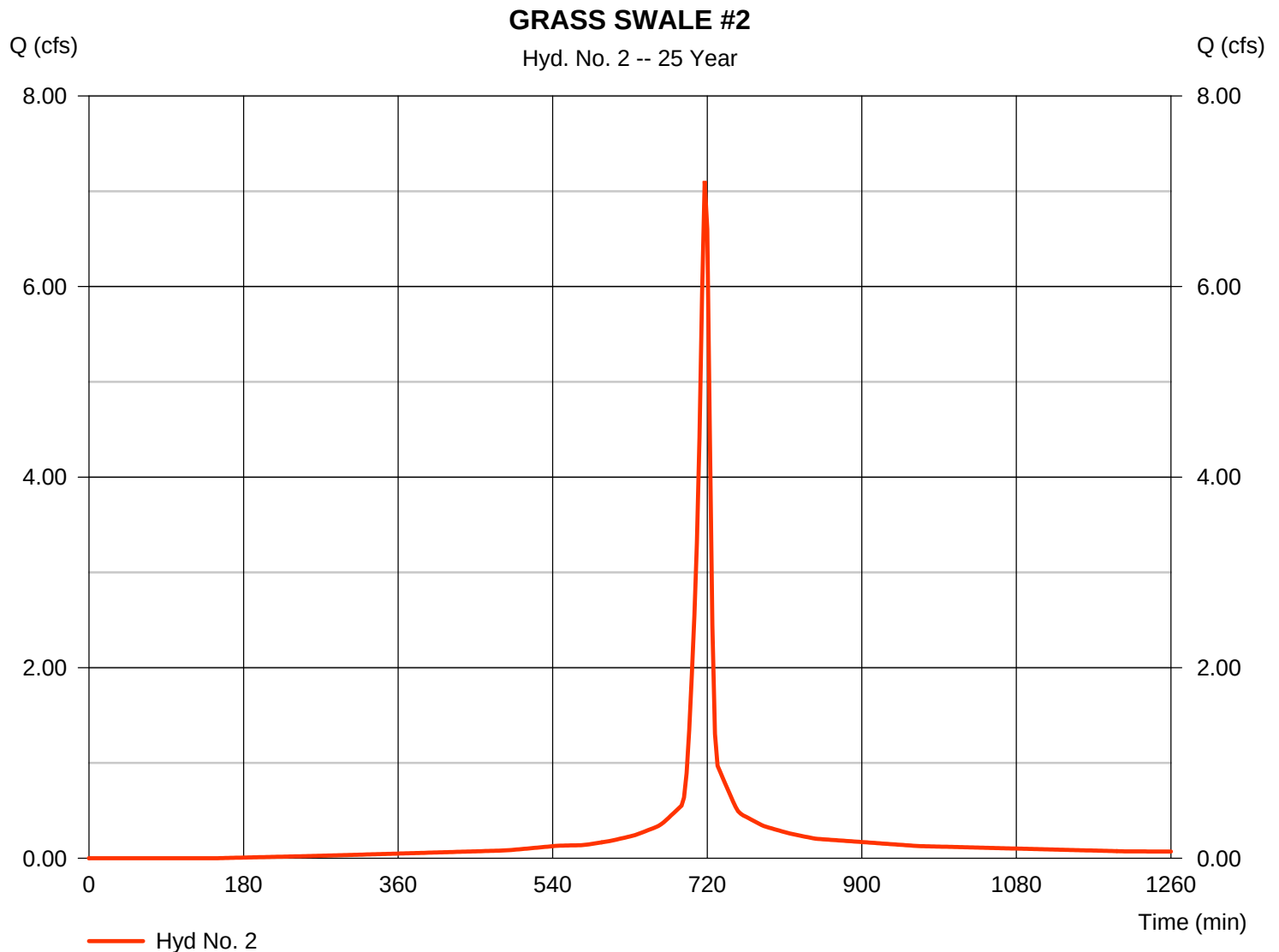
Friday, 07 / 28 / 2017

Hyd. No. 2

GRASS SWALE #2

Hydrograph type	=	SCS Runoff	Peak discharge	=	7.107 cfs
Storm frequency	=	25 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	17,461 cuft
Drainage area	=	1.050 ac	Curve number	=	93*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	5.70 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = $[(0.770 \times 98) + (0.280 \times 79)] / 1.050$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

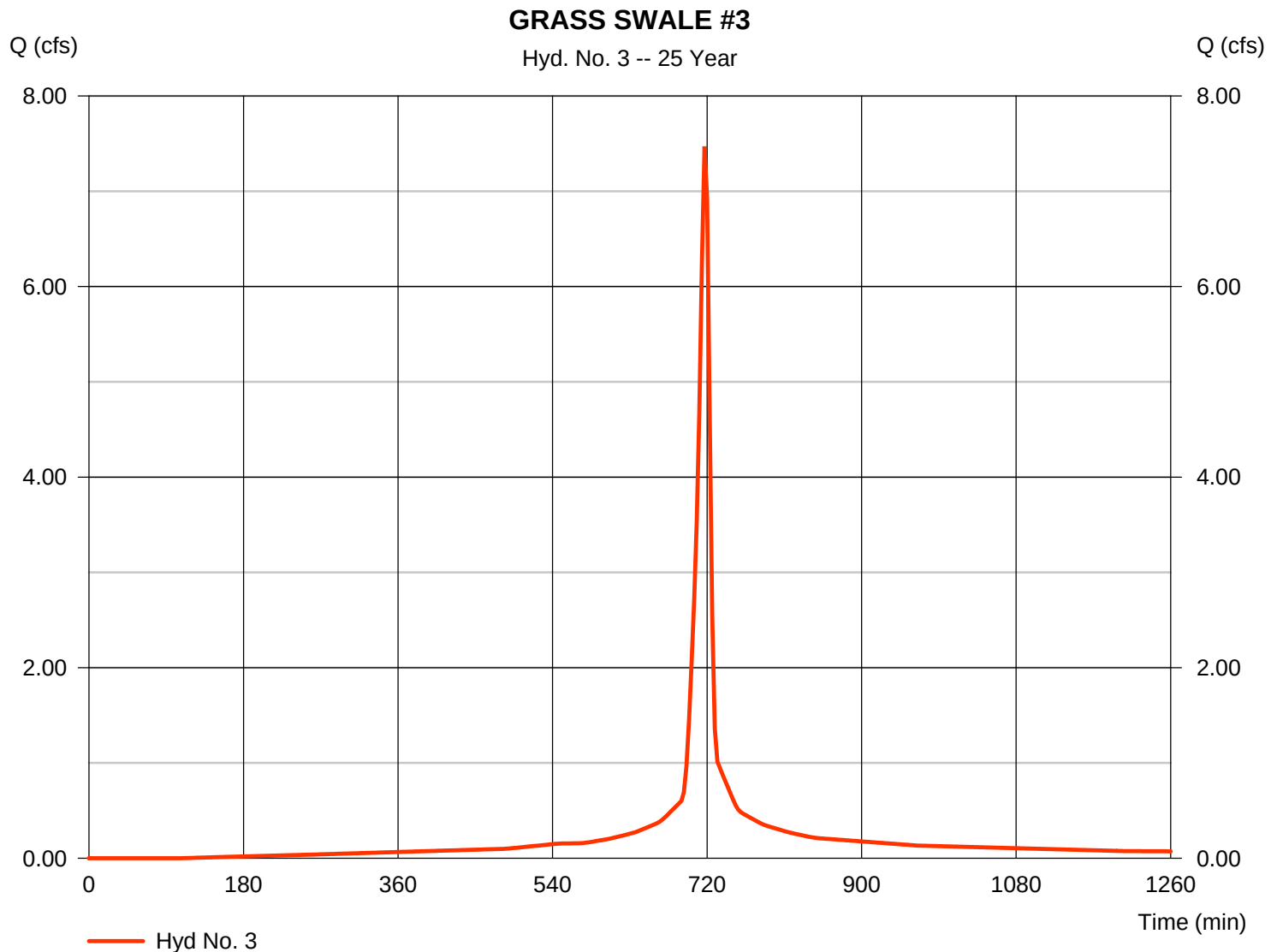
Friday, 07 / 28 / 2017

Hyd. No. 3

GRASS SWALE #3

Hydrograph type	= SCS Runoff	Peak discharge	= 7.472 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 18,795 cuft
Drainage area	= 1.080 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.890 \times 98) + (0.190 \times 79)] / 1.080$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

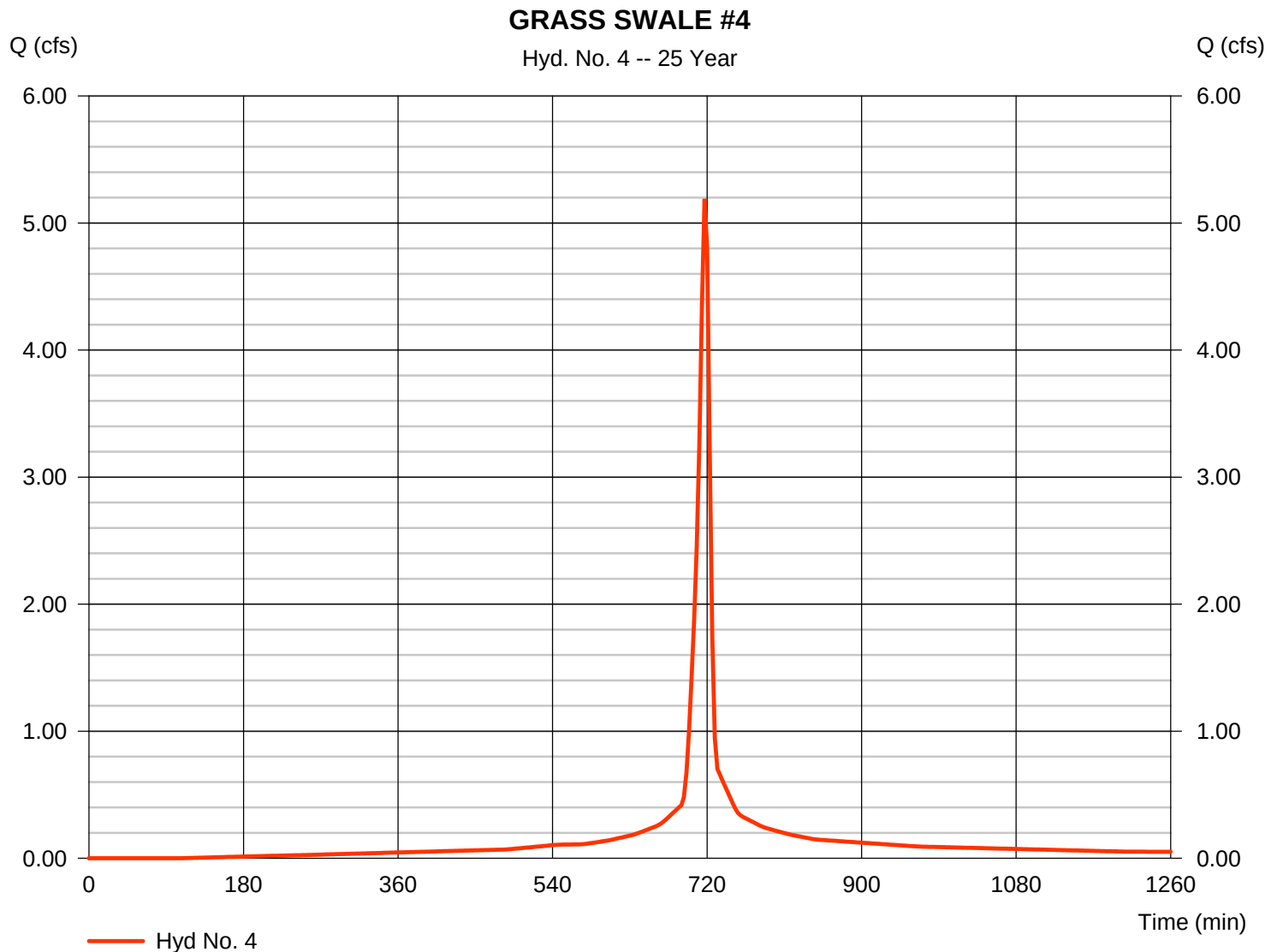
Friday, 07 / 28 / 2017

Hyd. No. 4

GRASS SWALE #4

Hydrograph type	= SCS Runoff	Peak discharge	= 5.189 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 13,052 cuft
Drainage area	= 0.750 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.630 \times 98) + (0.120 \times 79)] / 0.750$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

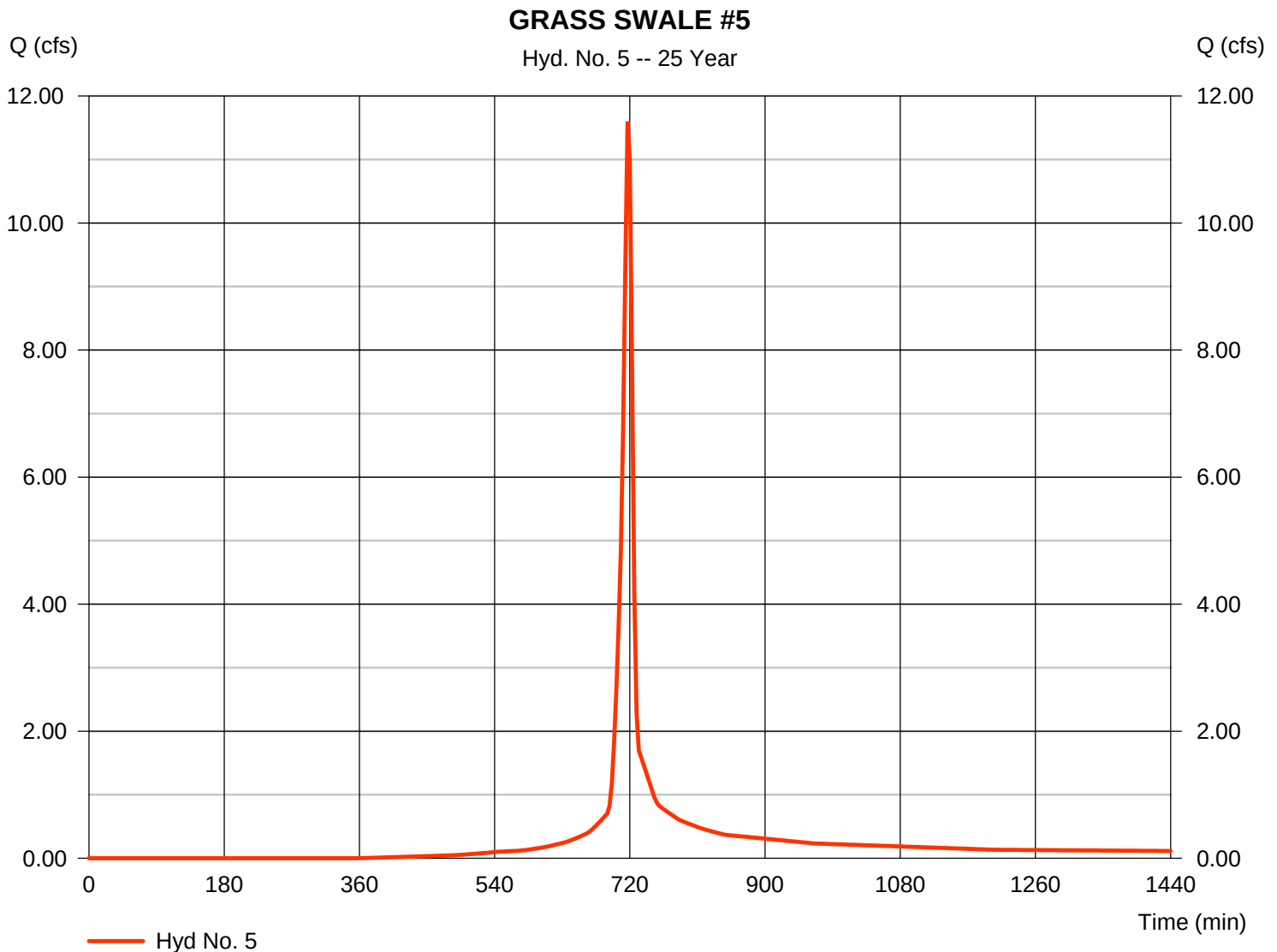
Friday, 07 / 28 / 2017

Hyd. No. 5

GRASS SWALE #5

Hydrograph type	= SCS Runoff	Peak discharge	= 11.60 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 26,529 cuft
Drainage area	= 2.100 ac	Curve number	= 82*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.300 \times 98) + (1.800 \times 79)] / 2.100$



Hydrograph Report

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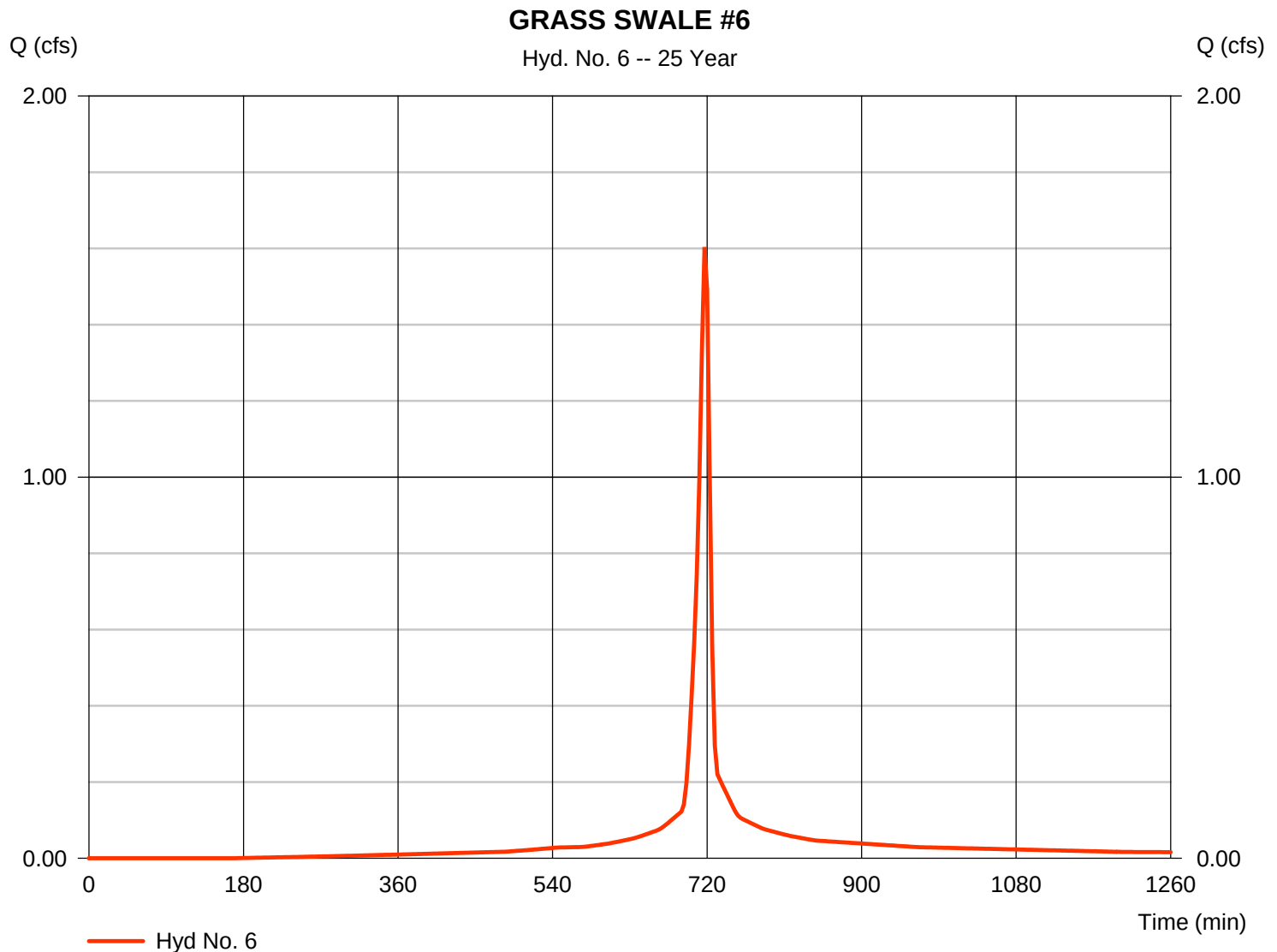
Friday, 07 / 28 / 2017

Hyd. No. 6

GRASS SWALE #6

Hydrograph type	= SCS Runoff	Peak discharge	= 1.603 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 3,900 cuft
Drainage area	= 0.240 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.160 \times 98) + (0.080 \times 79)] / 0.240$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

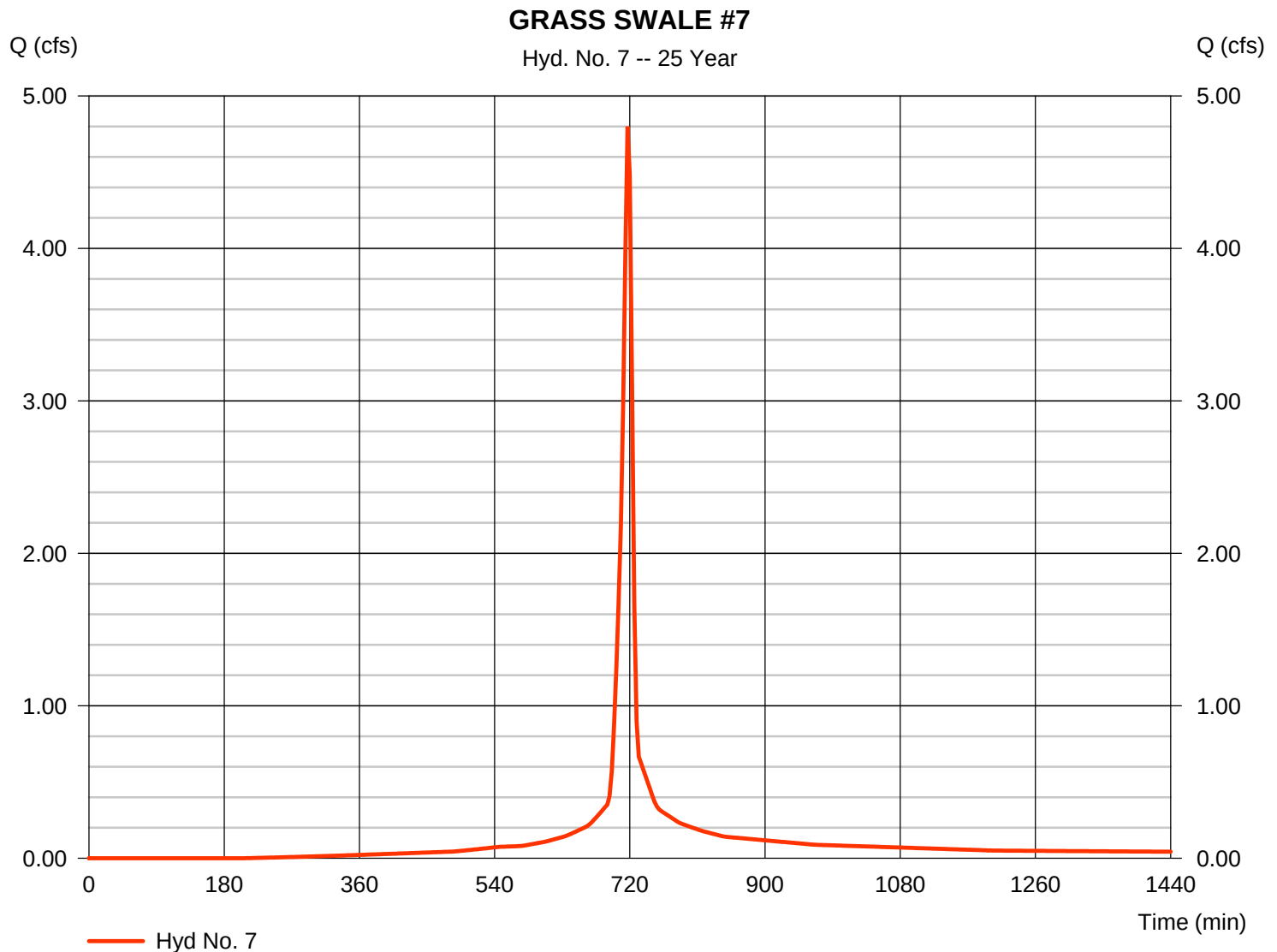
Friday, 07 / 28 / 2017

Hyd. No. 7

GRASS SWALE #7

Hydrograph type	= SCS Runoff	Peak discharge	= 4.799 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 11,468 cuft
Drainage area	= 0.740 ac	Curve number	= 90*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.420 \times 98) + (0.320 \times 79)] / 0.740$



Hydrograph Report

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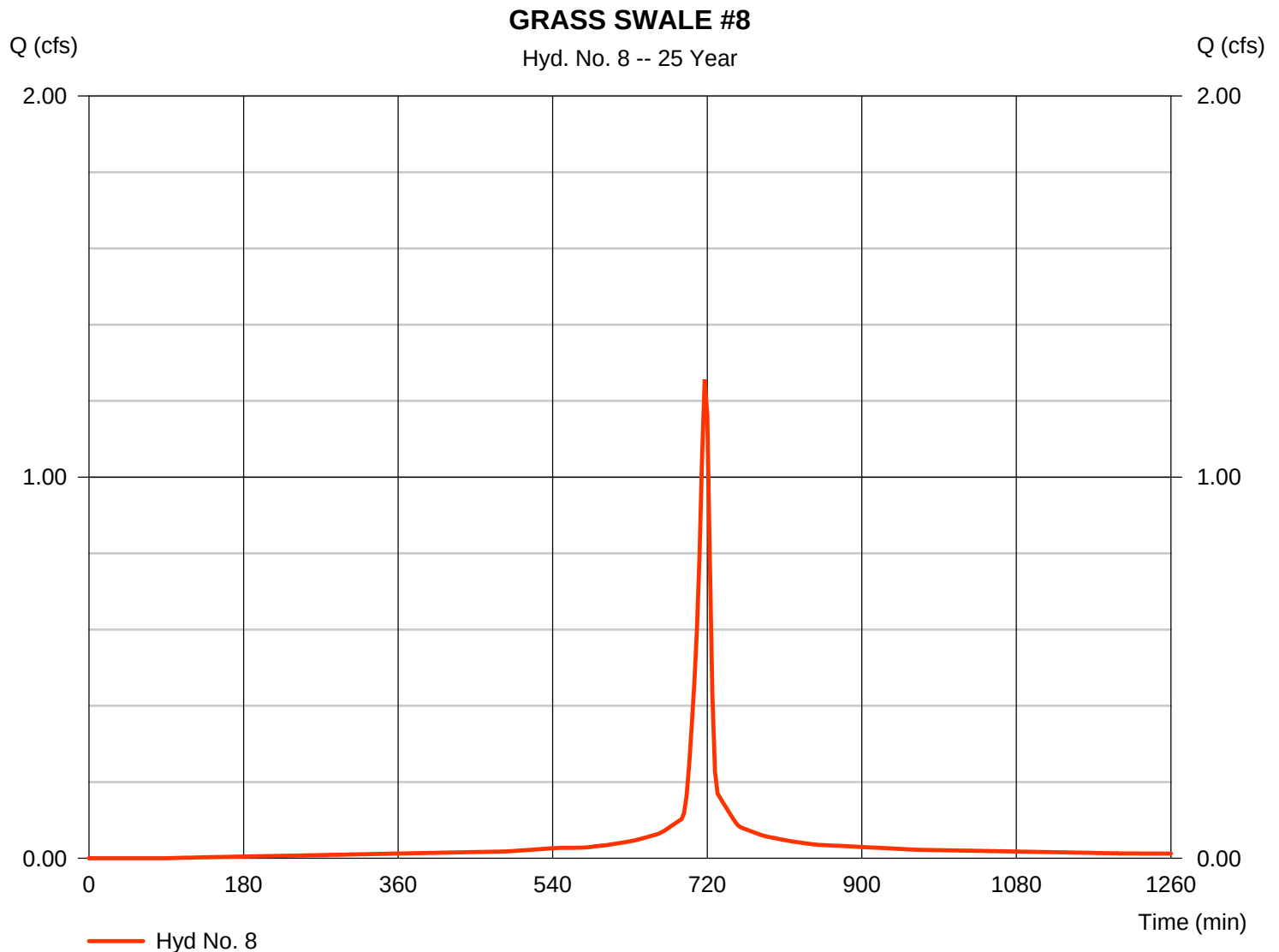
Friday, 07 / 28 / 2017

Hyd. No. 8

GRASS SWALE #8

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.256 cfs
Storm frequency	=	25 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	3,203 cuft
Drainage area	=	0.180 ac	Curve number	=	96*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	5.70 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = $[(0.160 \times 98) + (0.020 \times 79)] / 0.180$



Hydrograph Report

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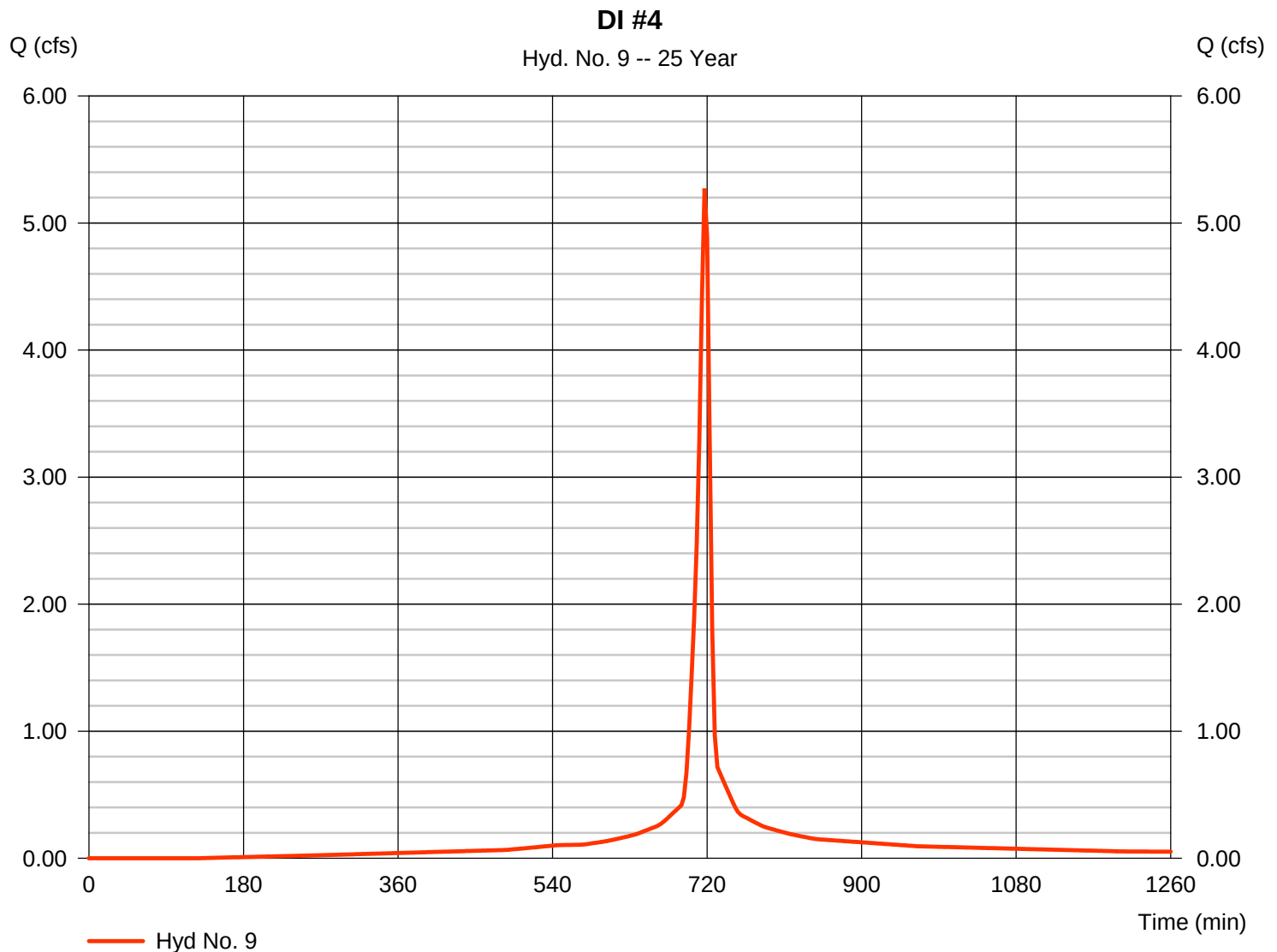
Friday, 07 / 28 / 2017

Hyd. No. 9

DI #4

Hydrograph type	= SCS Runoff	Peak discharge	= 5.273 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 13,101 cuft
Drainage area	= 0.770 ac	Curve number	= 94*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.610 \times 98) + (0.160 \times 79)] / 0.770$



Hydrograph Report

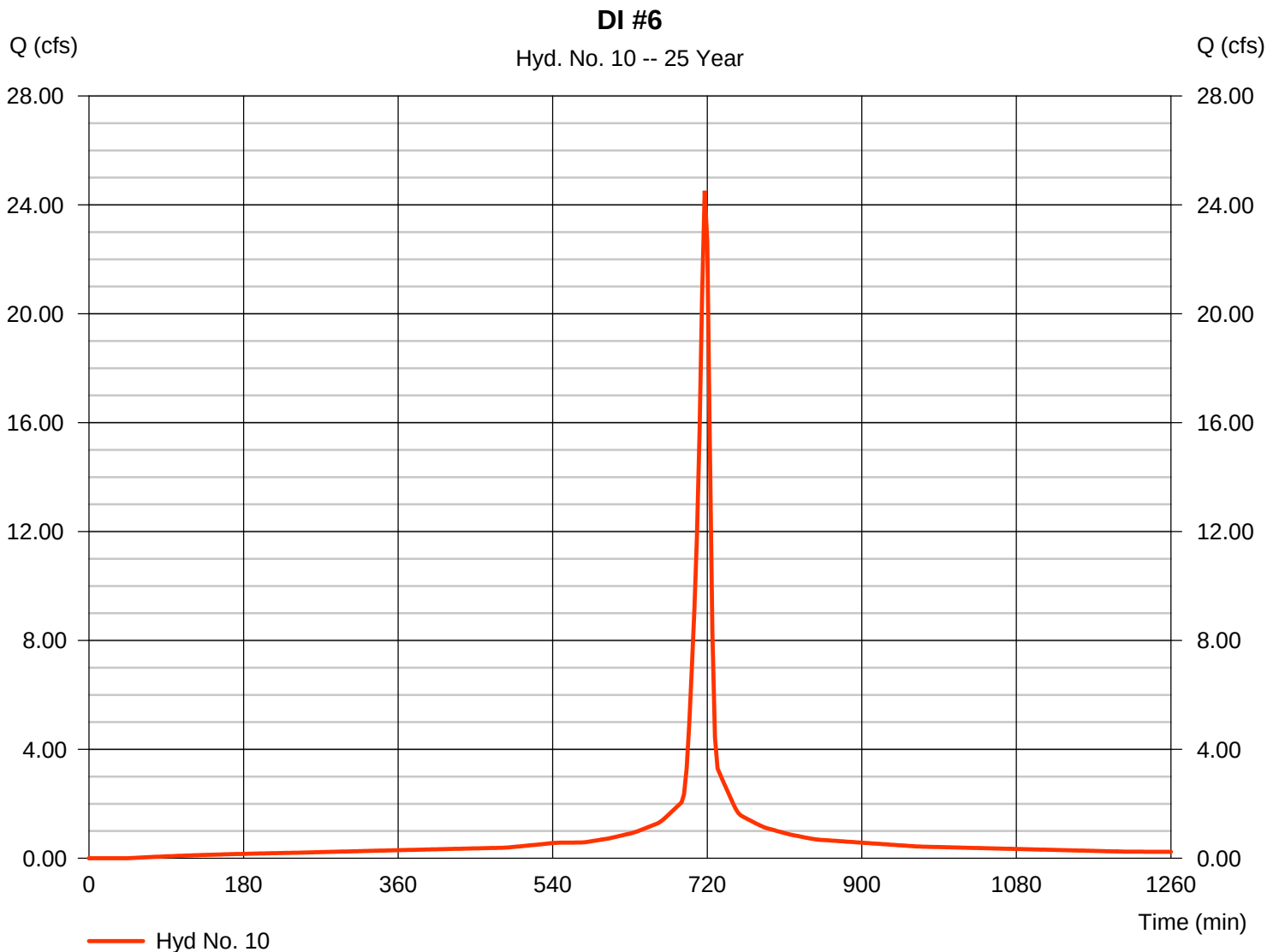
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Friday, 07 / 28 / 2017

Hyd. No. 10

DI #6

Hydrograph type	= SCS Runoff	Peak discharge	= 24.52 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 64,502 cuft
Drainage area	= 3.470 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

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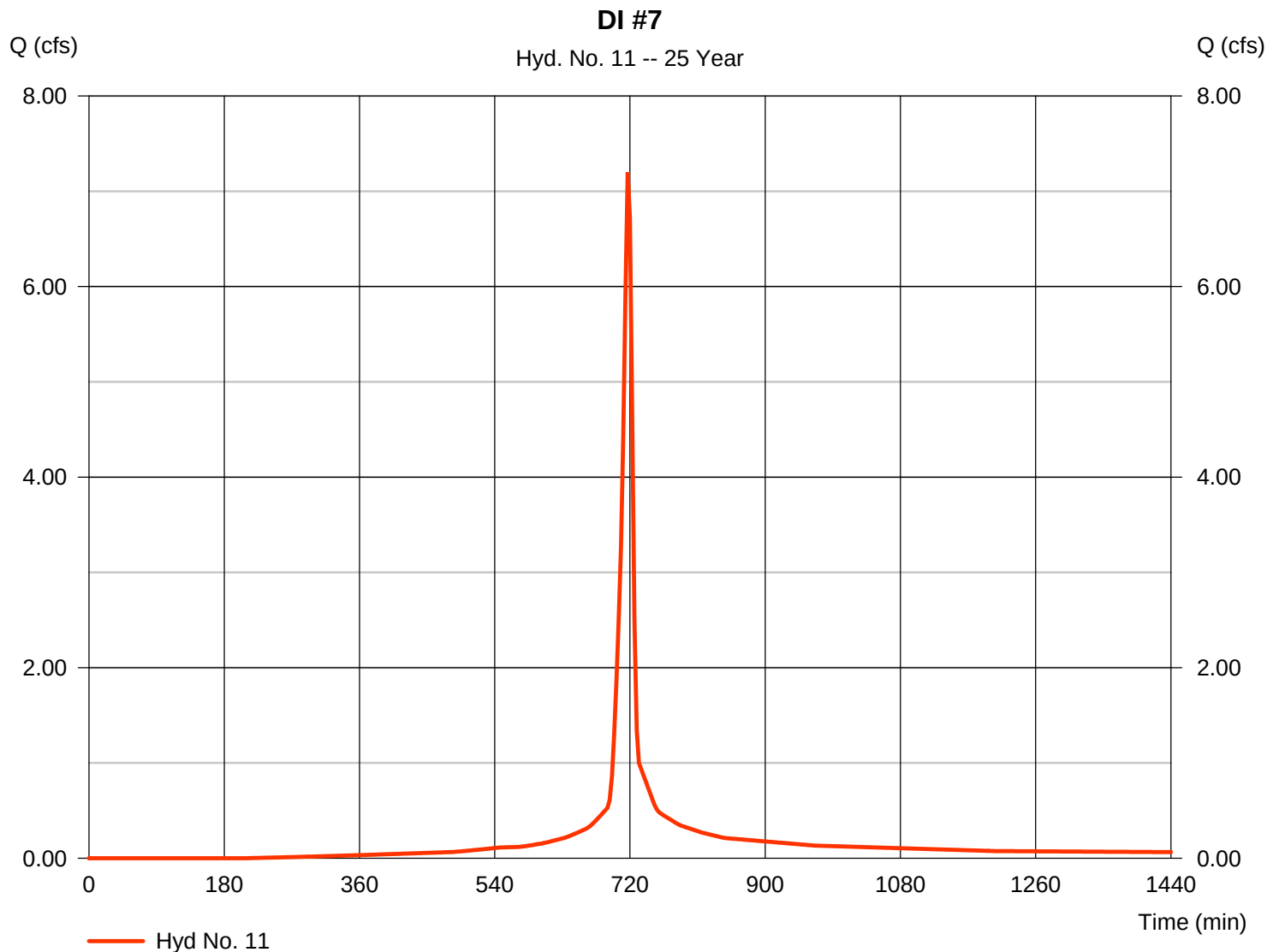
Friday, 07 / 28 / 2017

Hyd. No. 11

DI #7

Hydrograph type	= SCS Runoff	Peak discharge	= 7.199 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 17,203 cuft
Drainage area	= 1.110 ac	Curve number	= 90*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.660 \times 98) + (0.450 \times 79)] / 1.110$



Hydrograph Report

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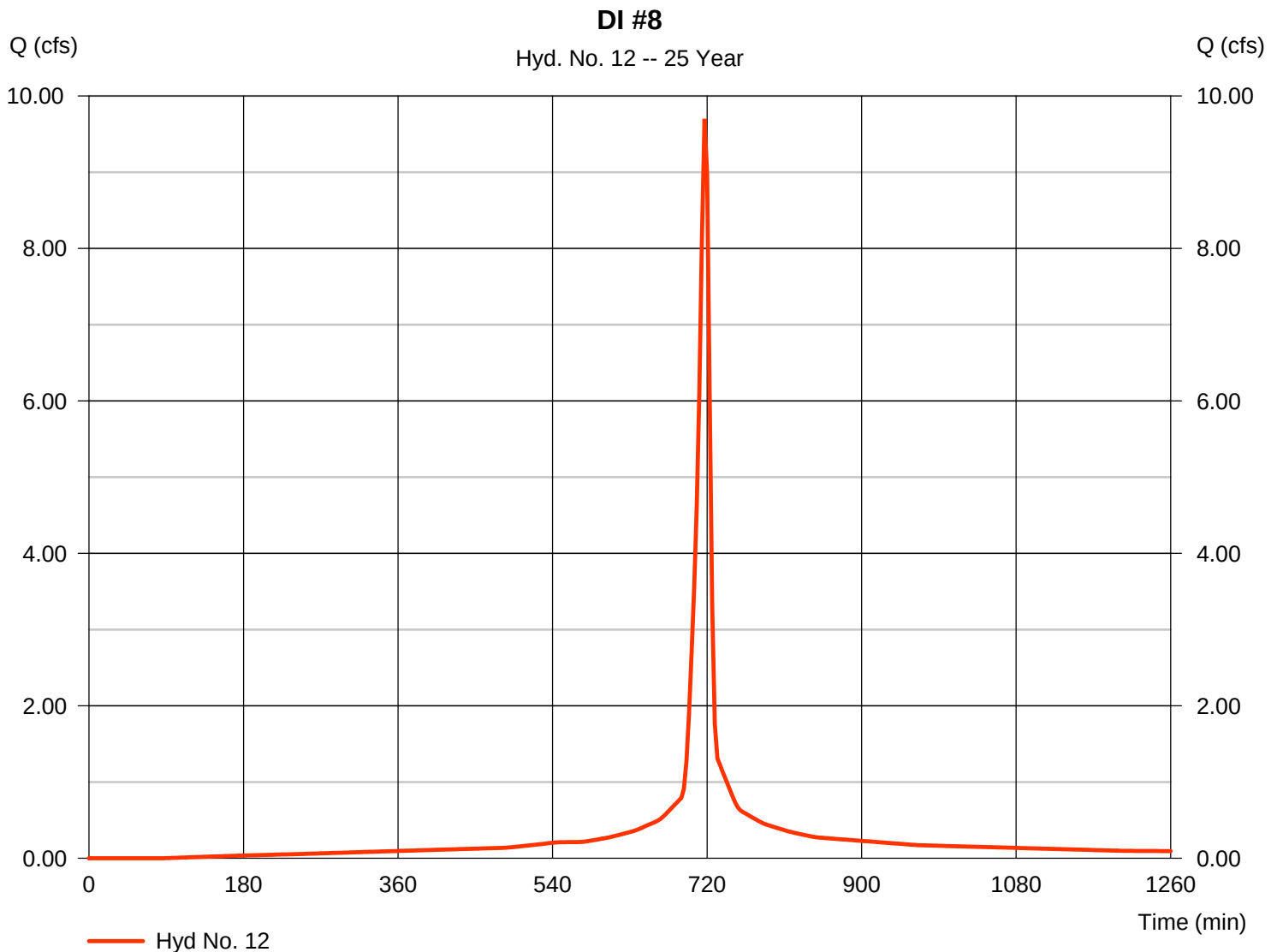
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Hyd. No. 12

DI #8

Hydrograph type	= SCS Runoff	Peak discharge	= 9.700 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 24,734 cuft
Drainage area	= 1.390 ac	Curve number	= 96*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.230 \times 98) + (0.160 \times 79)] / 1.390$



Hydrograph Report

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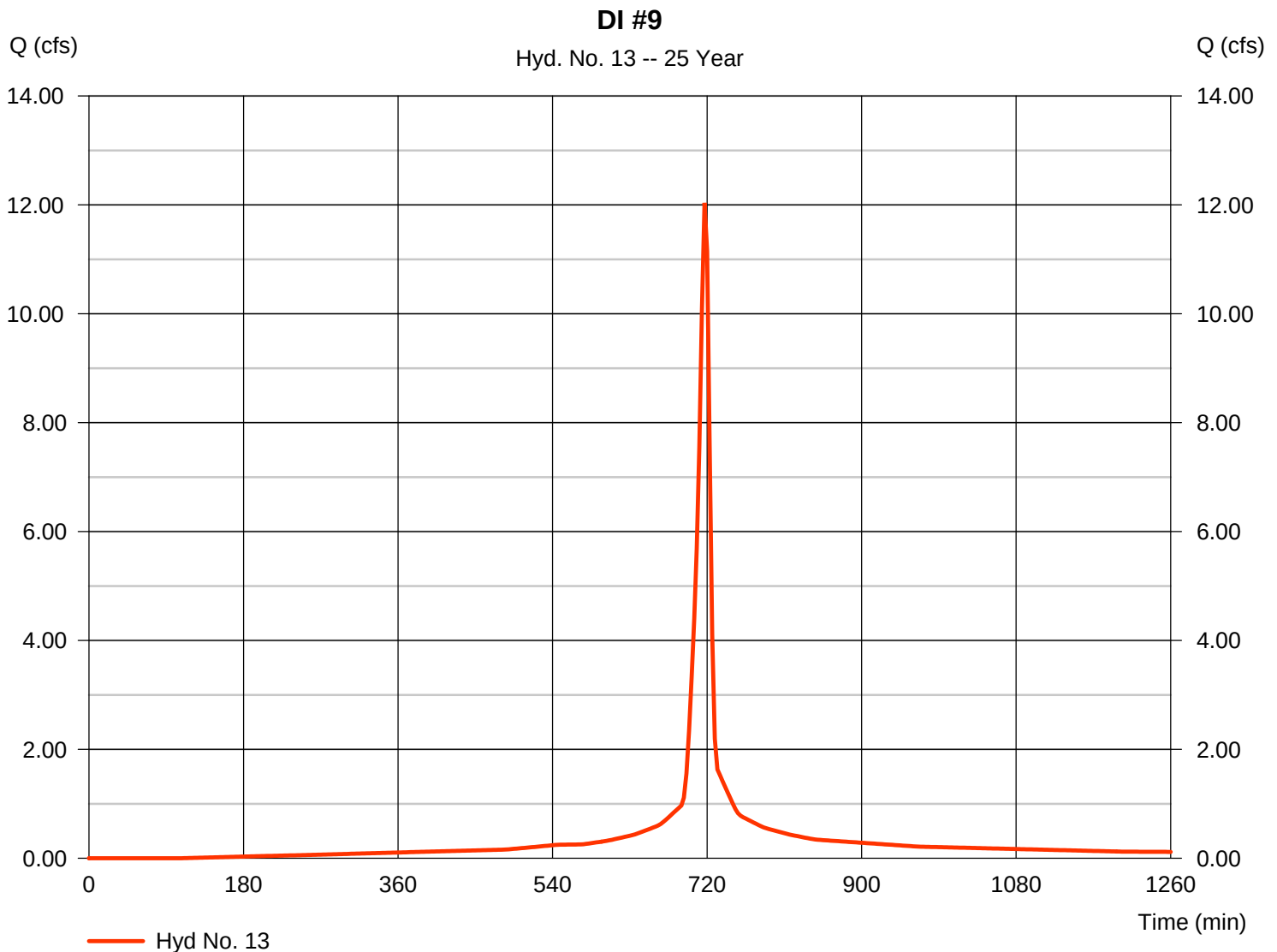
Friday, 07 / 28 / 2017

Hyd. No. 13

DI #9

Hydrograph type	= SCS Runoff	Peak discharge	= 12.04 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 30,280 cuft
Drainage area	= 1.740 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.490 \times 98) + (0.250 \times 79)] / 1.740$



Hydrograph Report

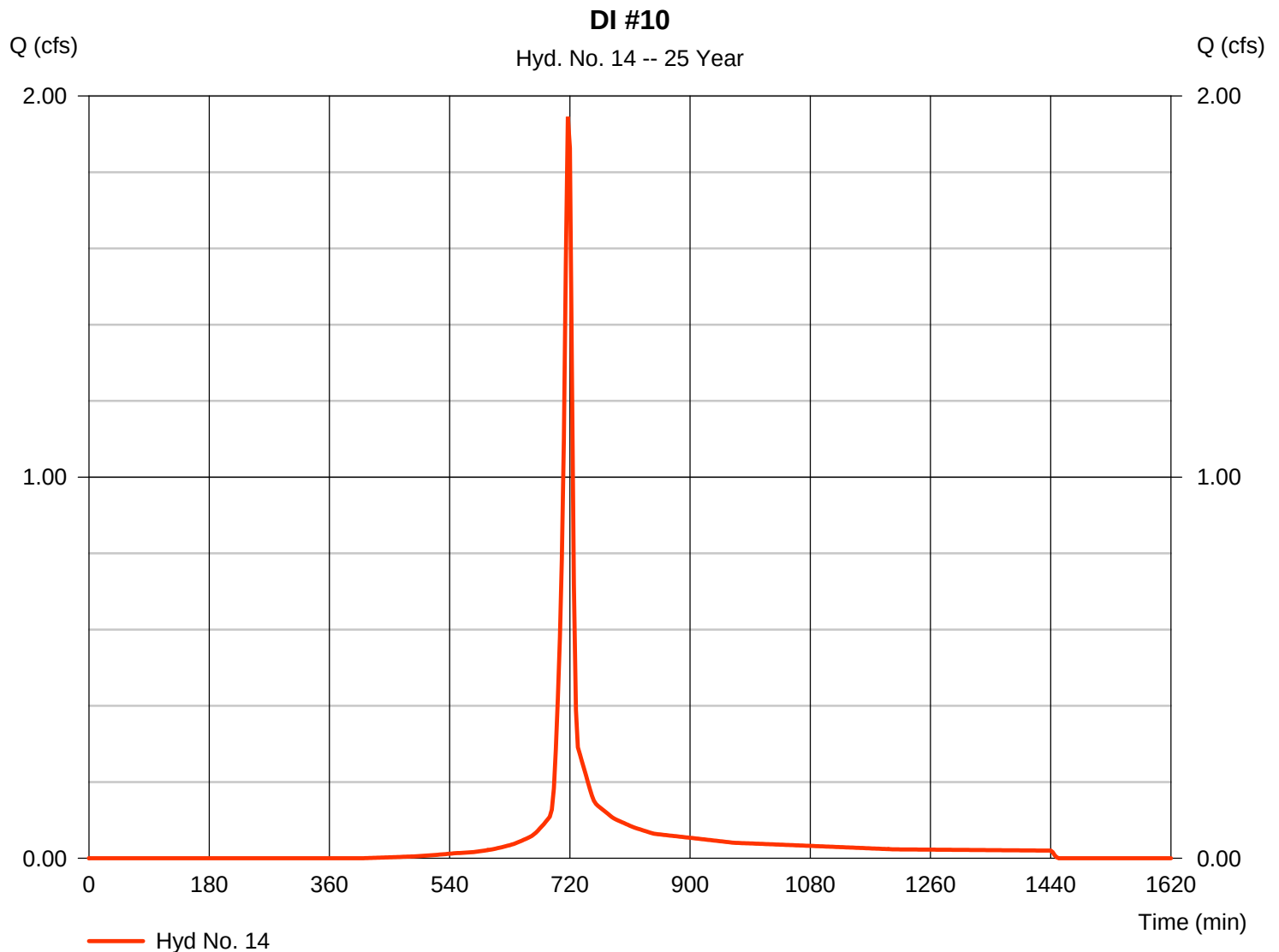
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Hyd. No. 14

DI #10

Hydrograph type	= SCS Runoff	Peak discharge	= 1.945 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 4,414 cuft
Drainage area	= 0.380 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

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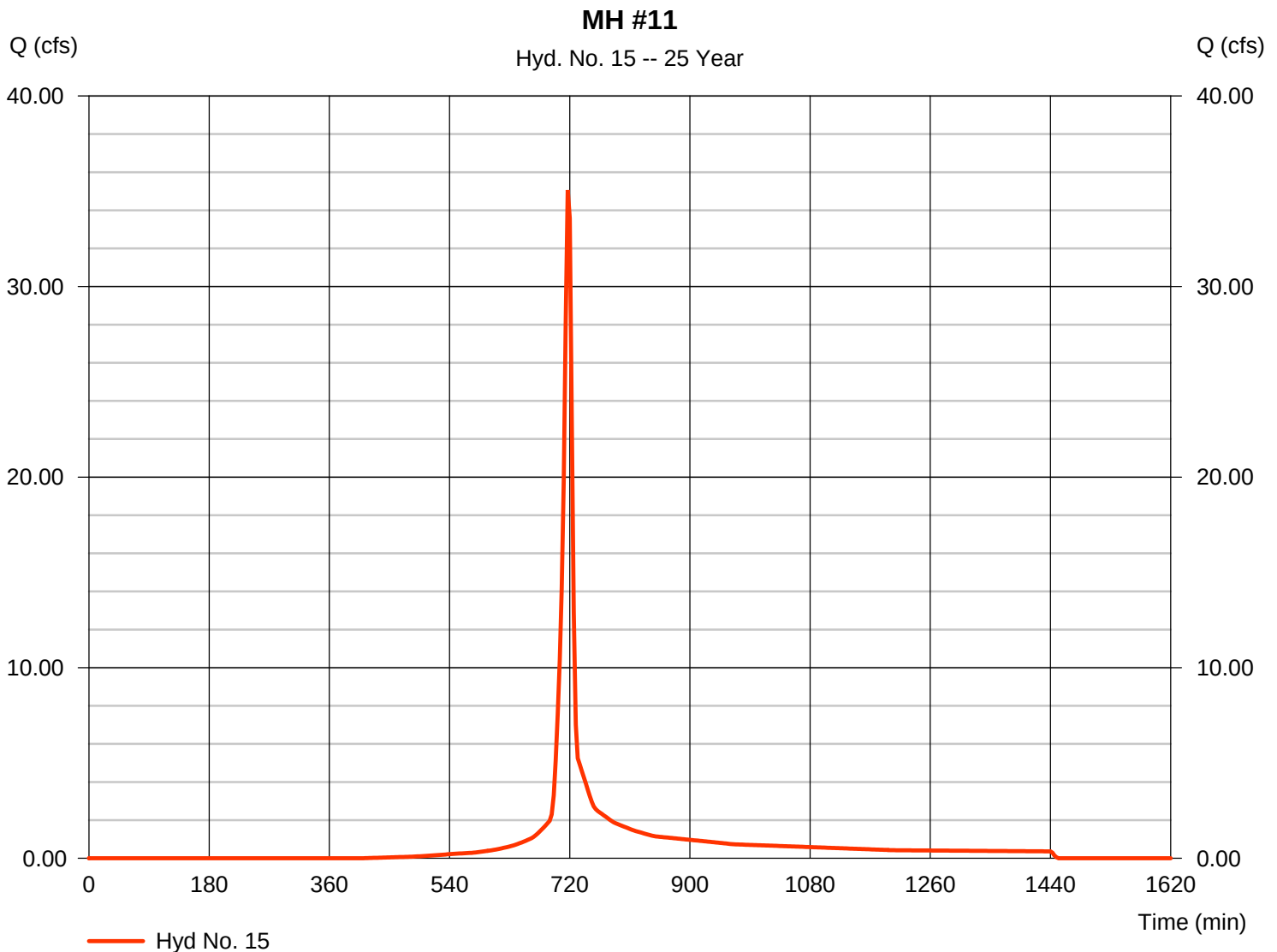
Friday, 07 / 28 / 2017

Hyd. No. 15

MH #11

Hydrograph type = SCS Runoff
Storm frequency = 25 yrs
Time interval = 3 min
Drainage area = 6.850 ac
Basin Slope = 0.0 %
Tc method = User
Total precip. = 5.70 in
Storm duration = 24 hrs

Peak discharge = 35.06 cfs
Time to peak = 717 min
Hyd. volume = 79,561 cuft
Curve number = 79
Hydraulic length = 0 ft
Time of conc. (Tc) = 6.00 min
Distribution = Type II
Shape factor = 484



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

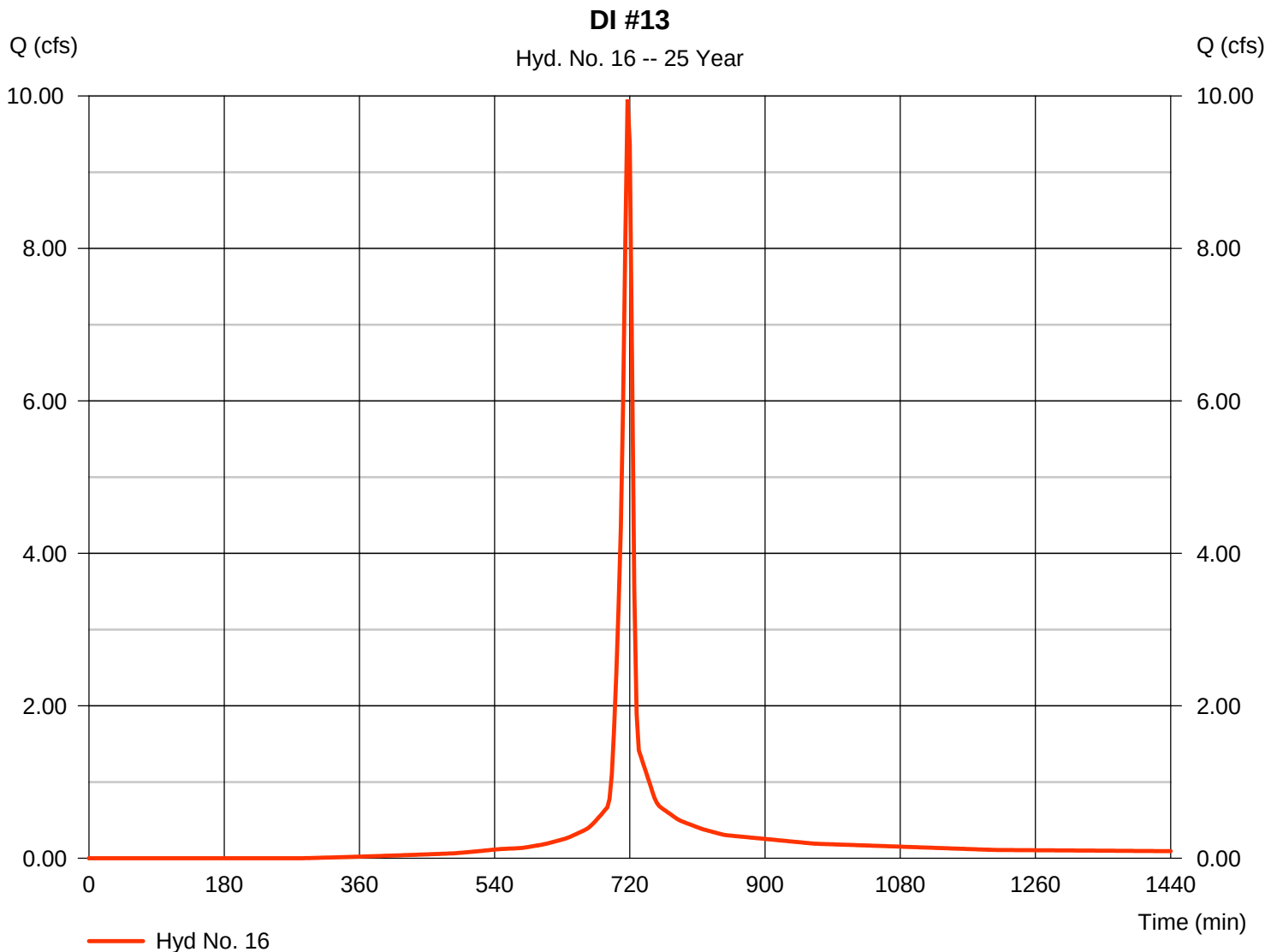
Friday, 07 / 28 / 2017

Hyd. No. 16

DI #13

Hydrograph type	= SCS Runoff	Peak discharge	= 9.954 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 23,162 cuft
Drainage area	= 1.650 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.580 \times 98) + (1.070 \times 79)] / 1.650$



Hydrograph Report

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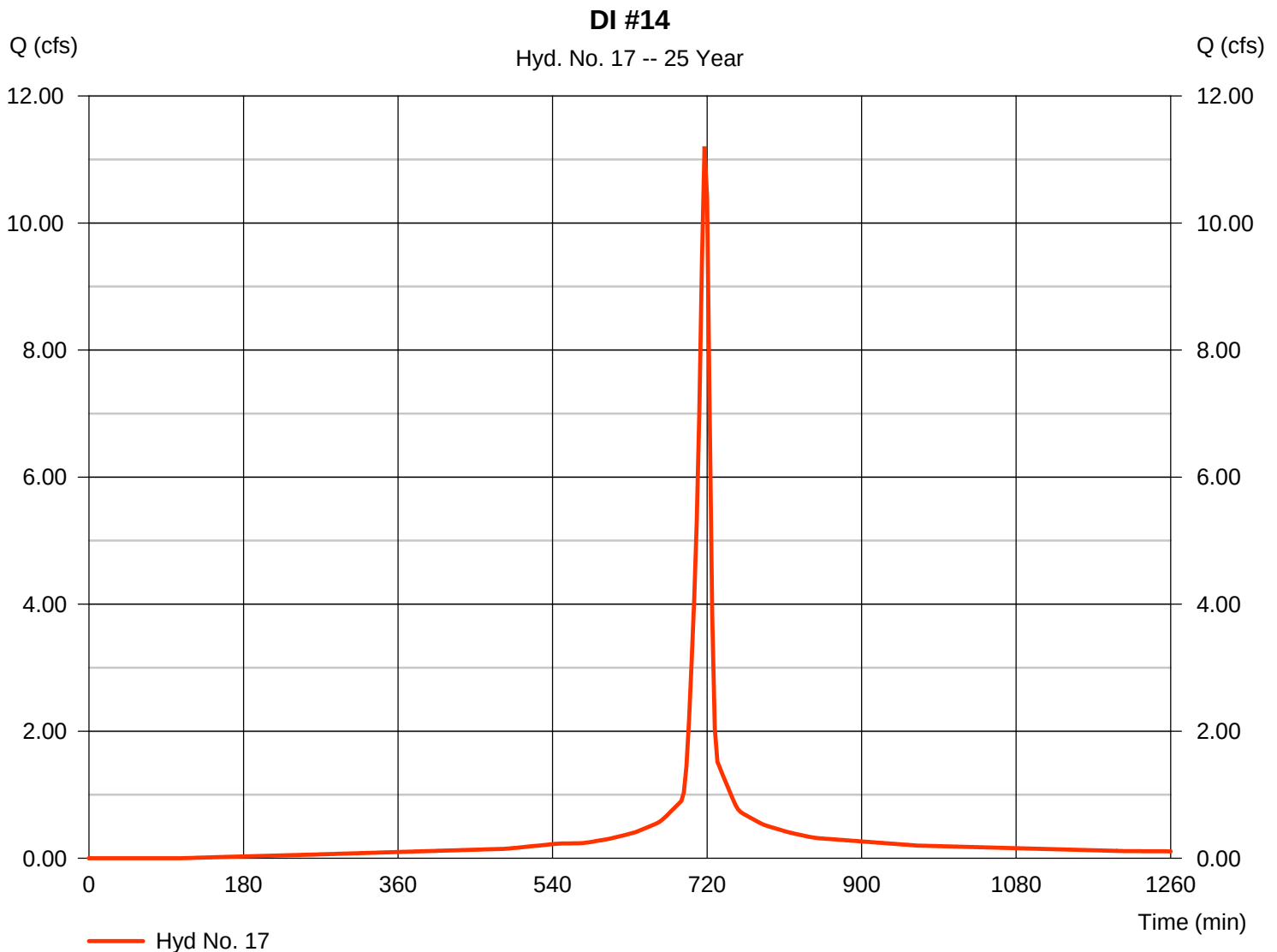
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Hyd. No. 17

DI #14

Hydrograph type	= SCS Runoff	Peak discharge	= 11.21 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 28,192 cuft
Drainage area	= 1.620 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.400 \times 98) + (0.220 \times 79)] / 1.620$



Hydrograph Report

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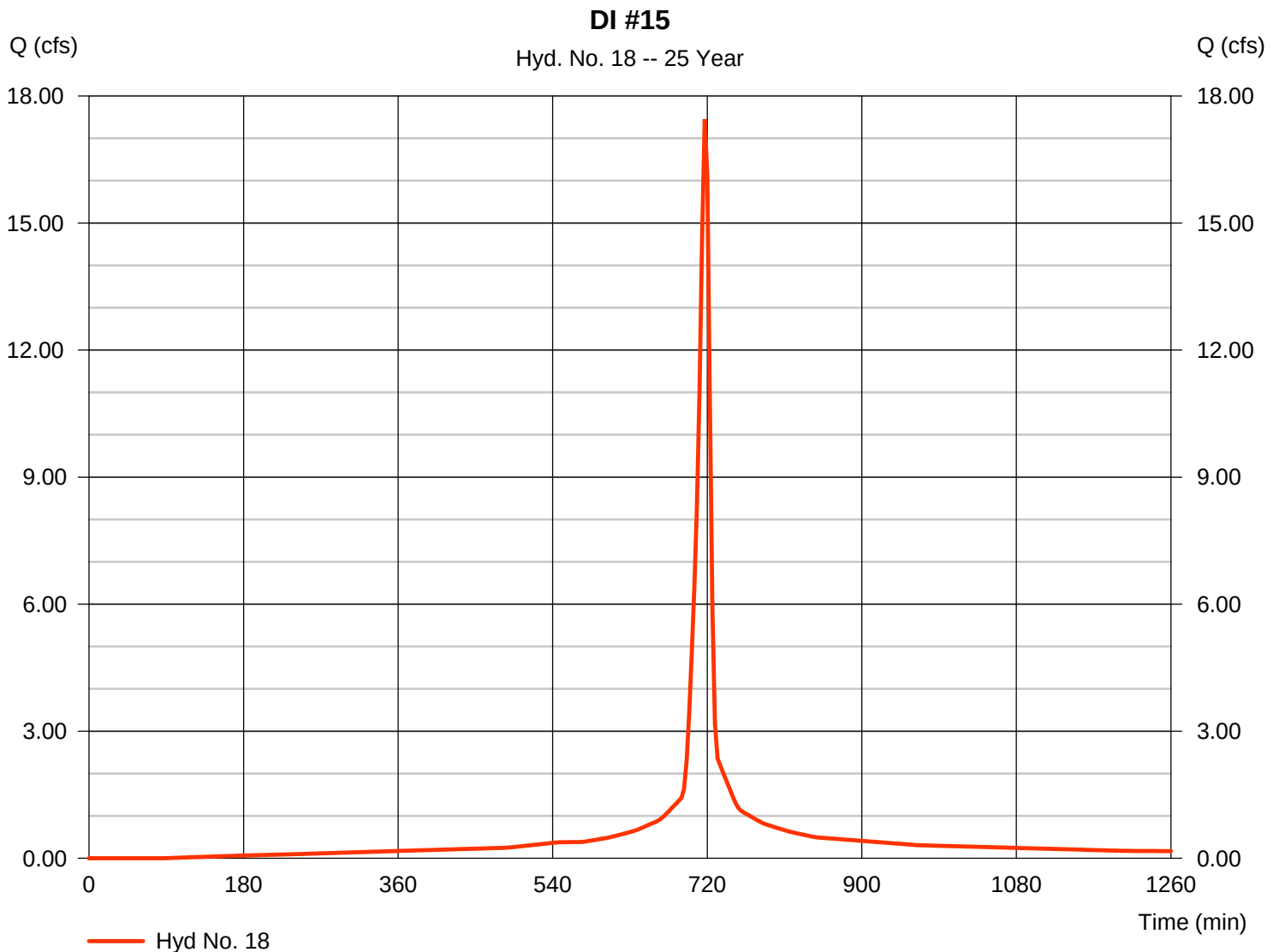
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Hyd. No. 18

DI #15

Hydrograph type	= SCS Runoff	Peak discharge	= 17.45 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 44,485 cuft
Drainage area	= 2.500 ac	Curve number	= 96*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(2.280 \times 98) + (0.220 \times 79)] / 2.500$



Hydrograph Report

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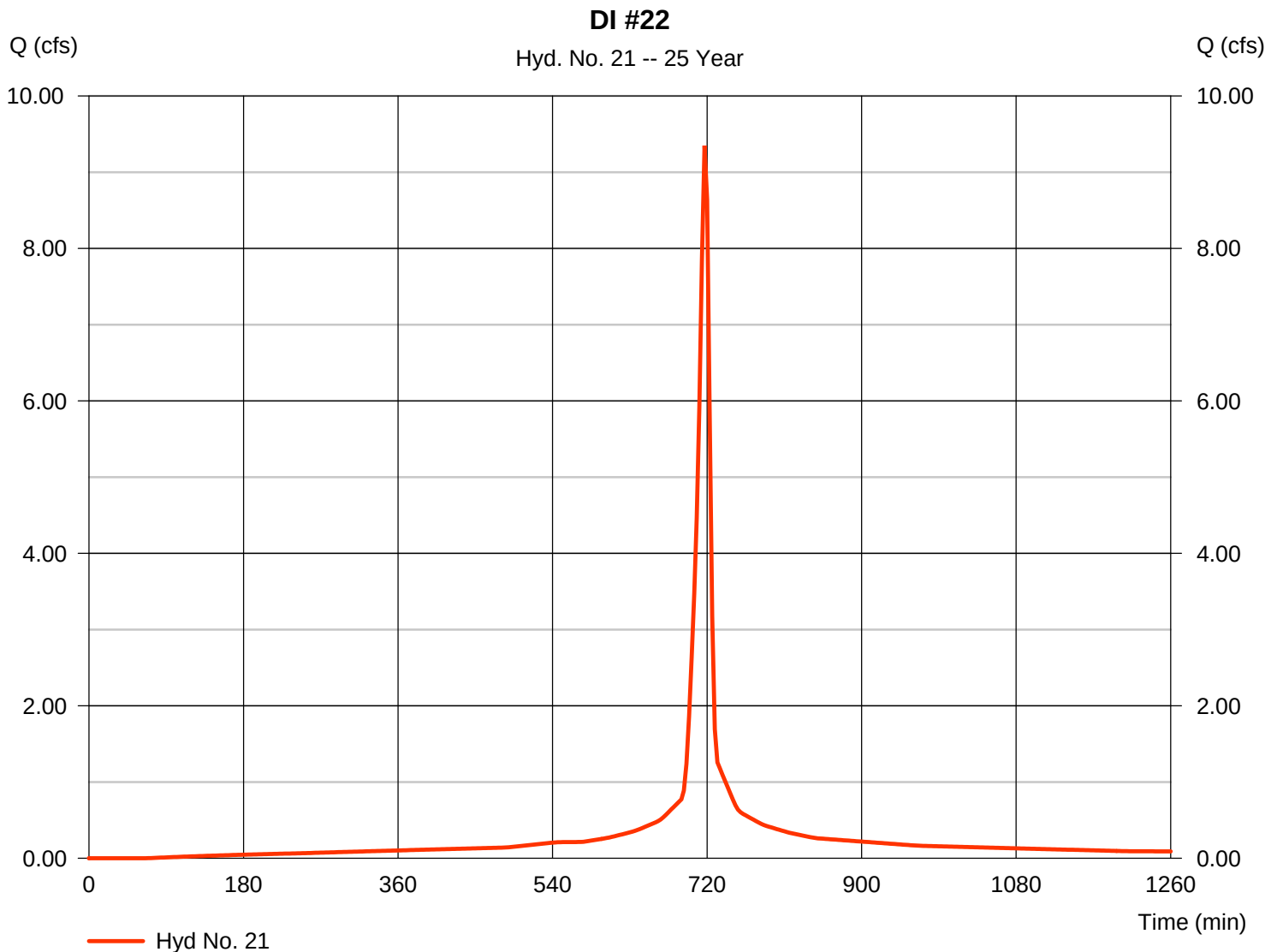
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Hyd. No. 21

DI #22

Hydrograph type	= SCS Runoff	Peak discharge	= 9.348 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 24,192 cuft
Drainage area	= 1.330 ac	Curve number	= 97*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.280 \times 98) + (0.050 \times 79)] / 1.330$



Hydrograph Report

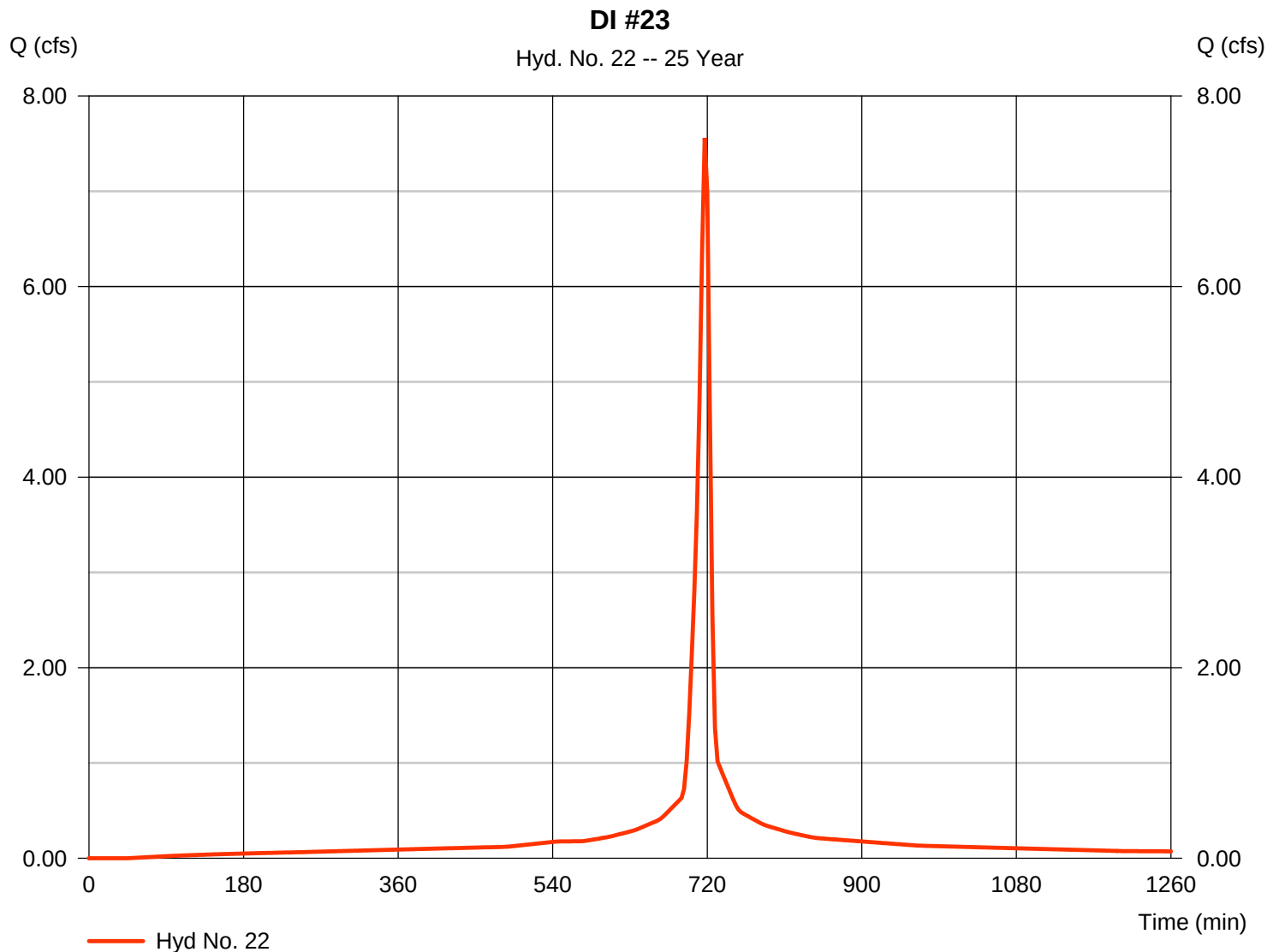
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Hyd. No. 22

DI #23

Hydrograph type	= SCS Runoff	Peak discharge	= 7.560 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 19,890 cuft
Drainage area	= 1.070 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

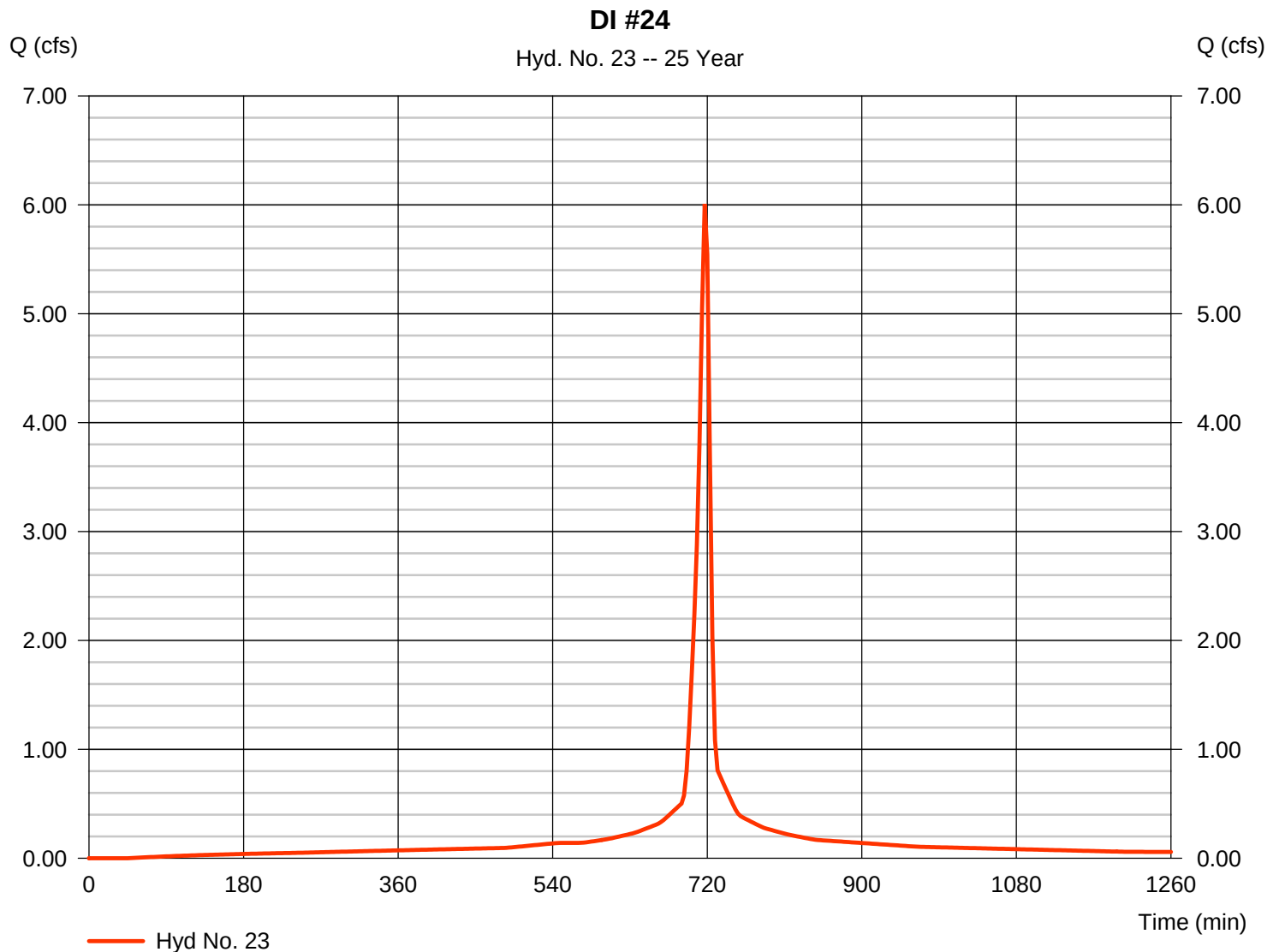
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Hyd. No. 23

DI #24

Hydrograph type	= SCS Runoff	Peak discharge	= 6.006 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 15,800 cuft
Drainage area	= 0.850 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

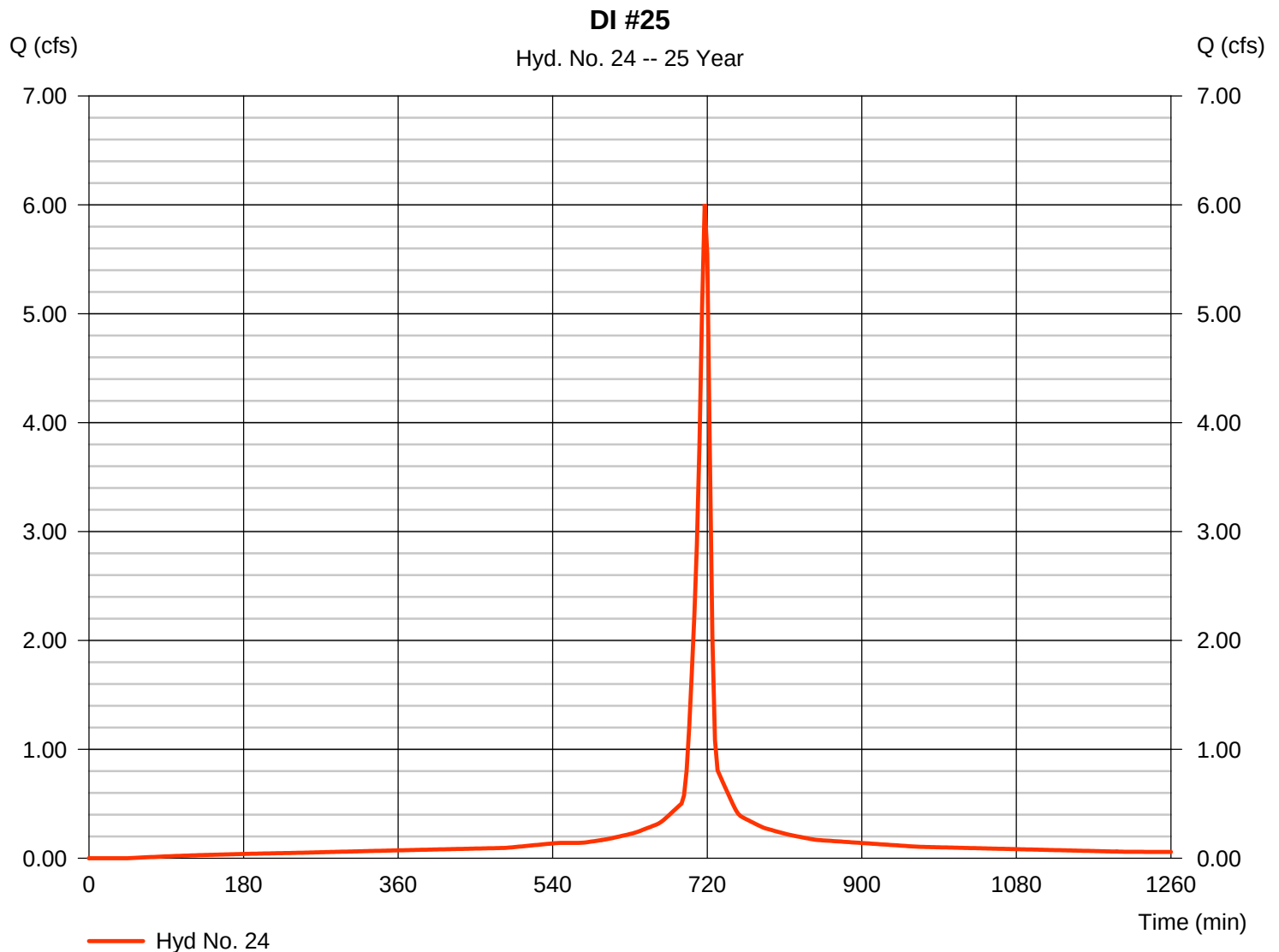
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Hyd. No. 24

DI #25

Hydrograph type	= SCS Runoff	Peak discharge	= 6.006 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 15,800 cuft
Drainage area	= 0.850 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

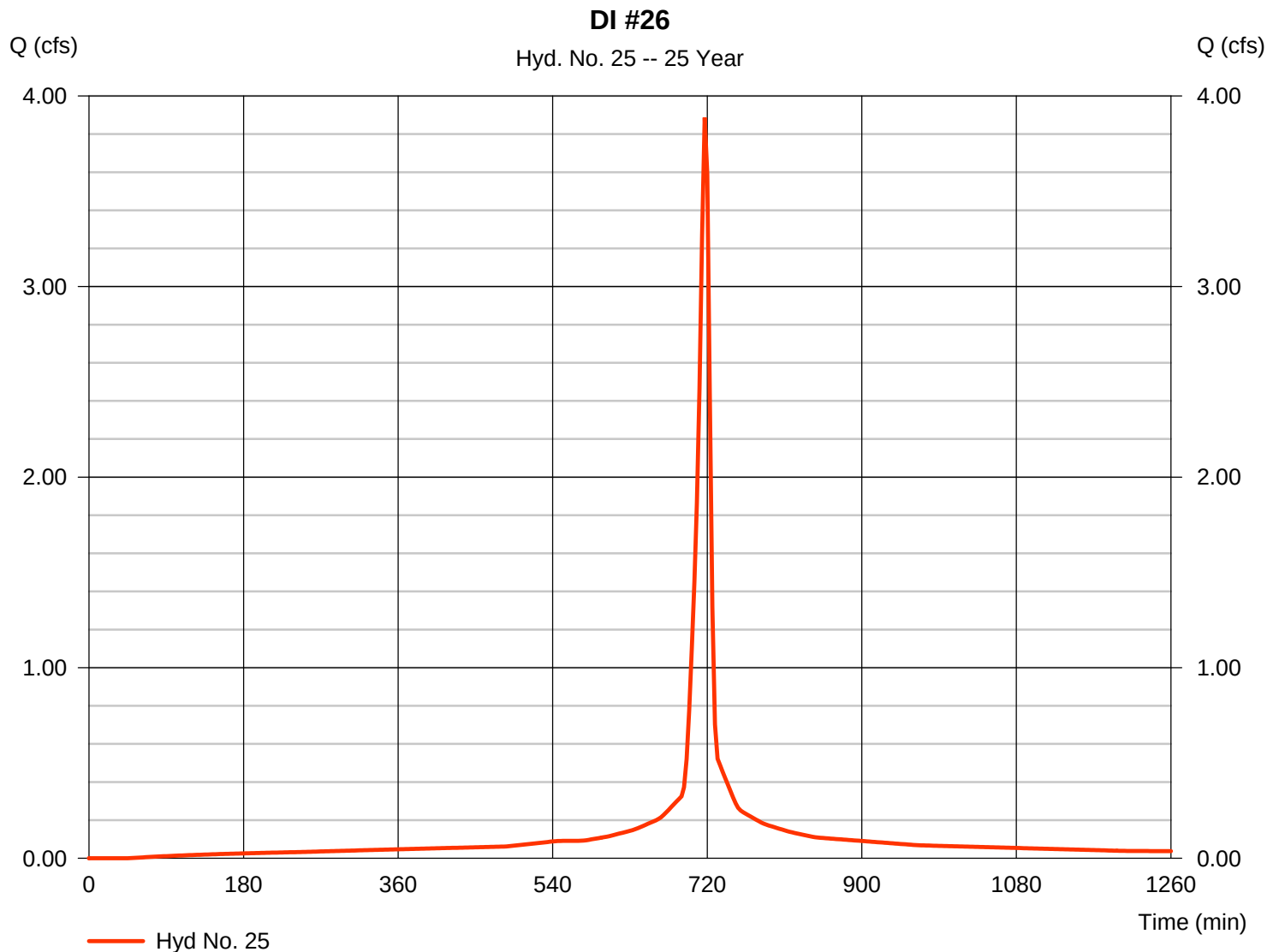
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Hyd. No. 25

DI #26

Hydrograph type	= SCS Runoff	Peak discharge	= 3.886 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 10,224 cuft
Drainage area	= 0.550 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

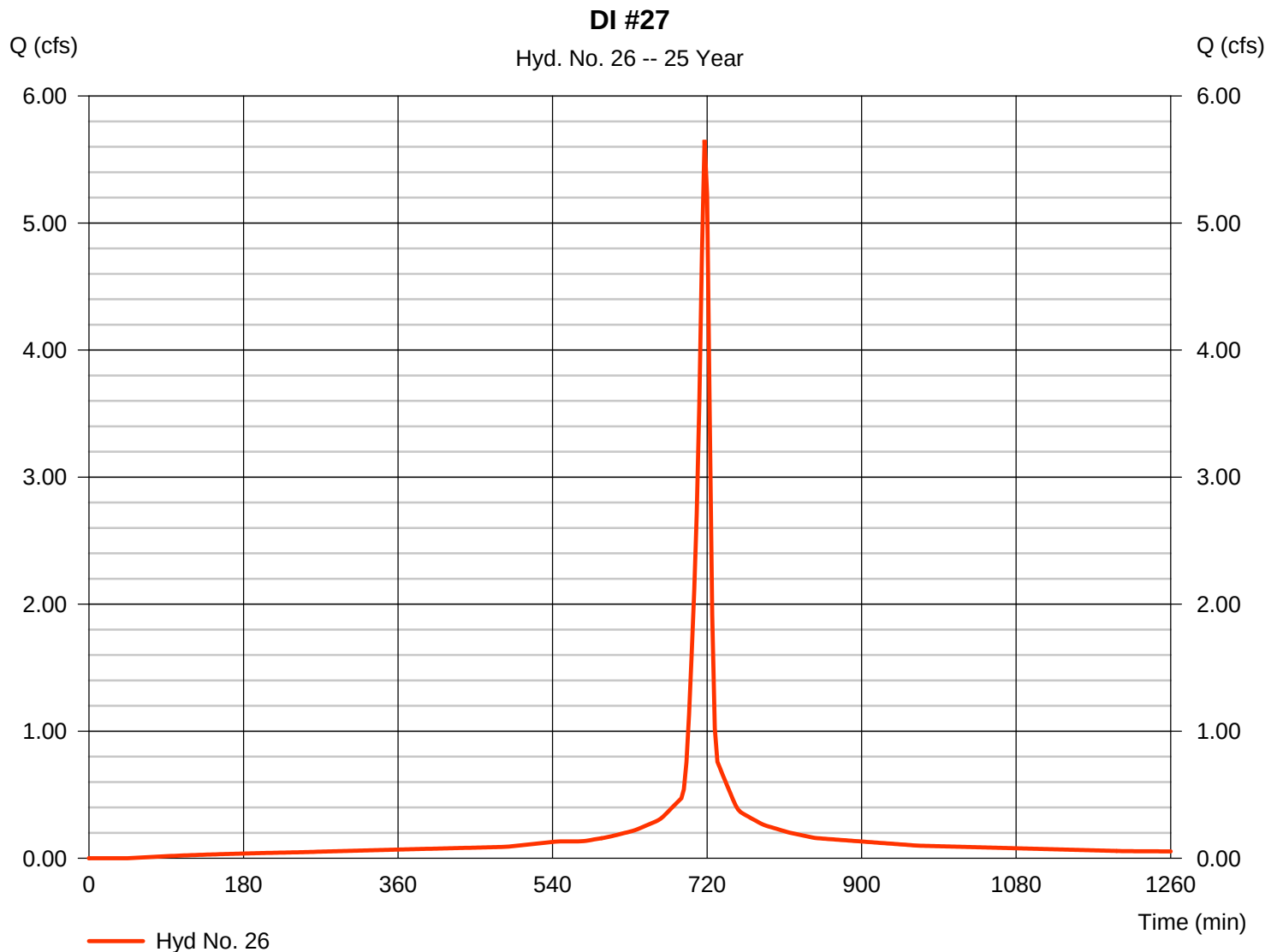
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Hyd. No. 26

DI #27

Hydrograph type	= SCS Runoff	Peak discharge	= 5.653 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 14,871 cuft
Drainage area	= 0.800 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

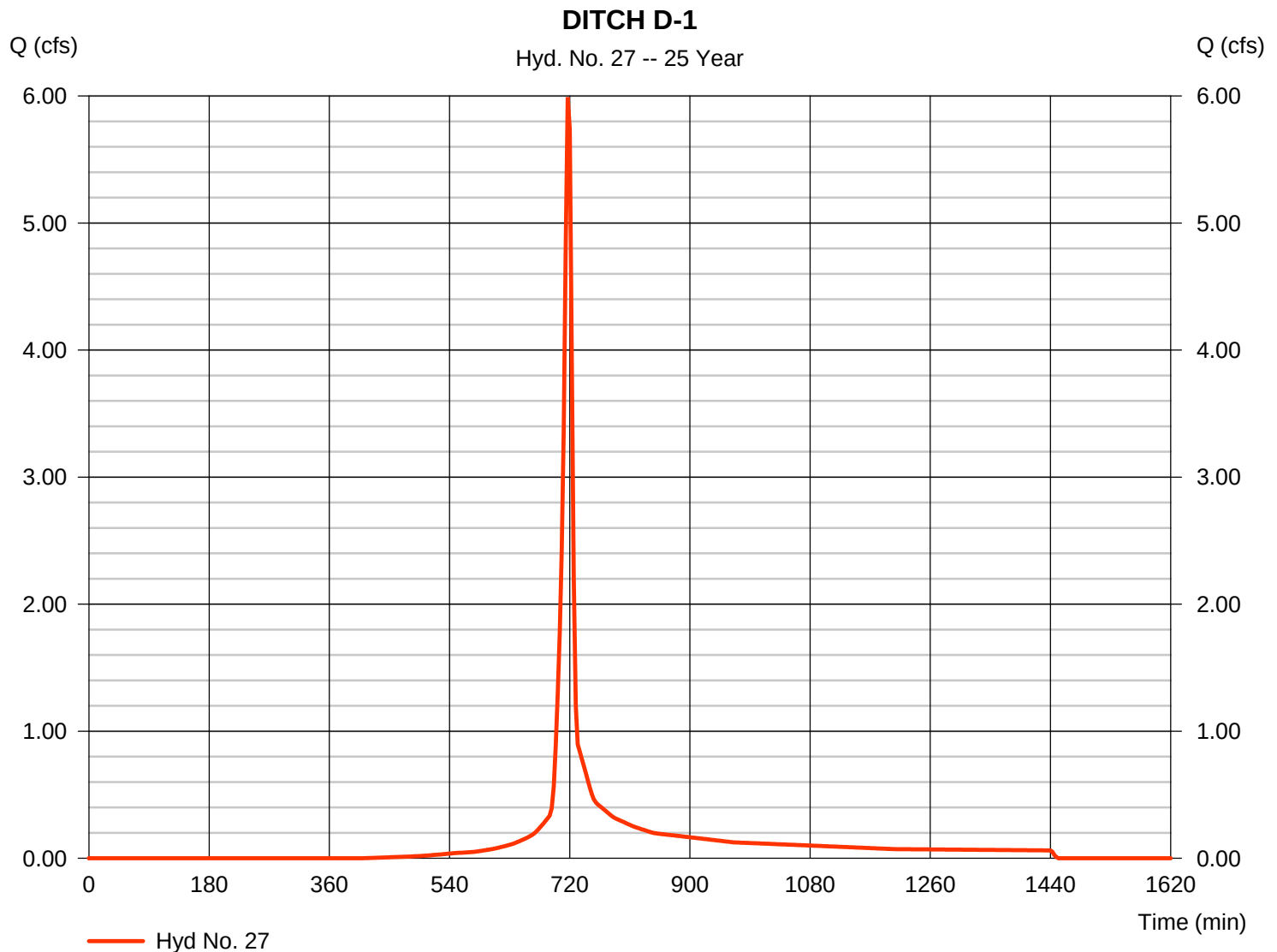
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Hyd. No. 27

DITCH D-1

Hydrograph type	= SCS Runoff	Peak discharge	= 5.989 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 13,589 cuft
Drainage area	= 1.170 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

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Hyd. No. 28

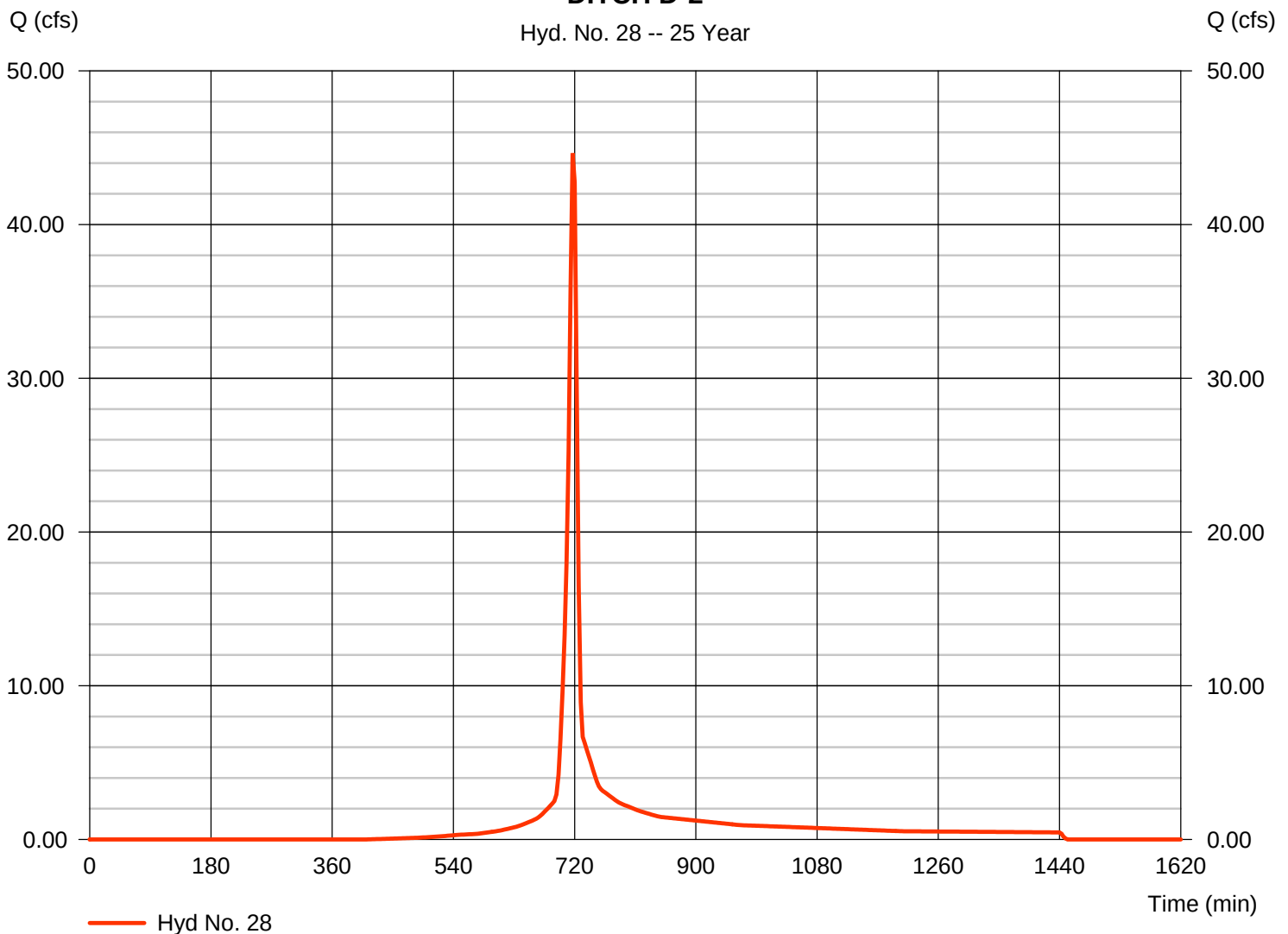
DITCH D-2

Hydrograph type = SCS Runoff
 Storm frequency = 25 yrs
 Time interval = 3 min
 Drainage area = 8.720 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 5.70 in
 Storm duration = 24 hrs

Peak discharge = 44.63 cfs
 Time to peak = 717 min
 Hyd. volume = 101,281 cuft
 Curve number = 79
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

DITCH D-2

Hyd. No. 28 -- 25 Year



Hydrograph Report

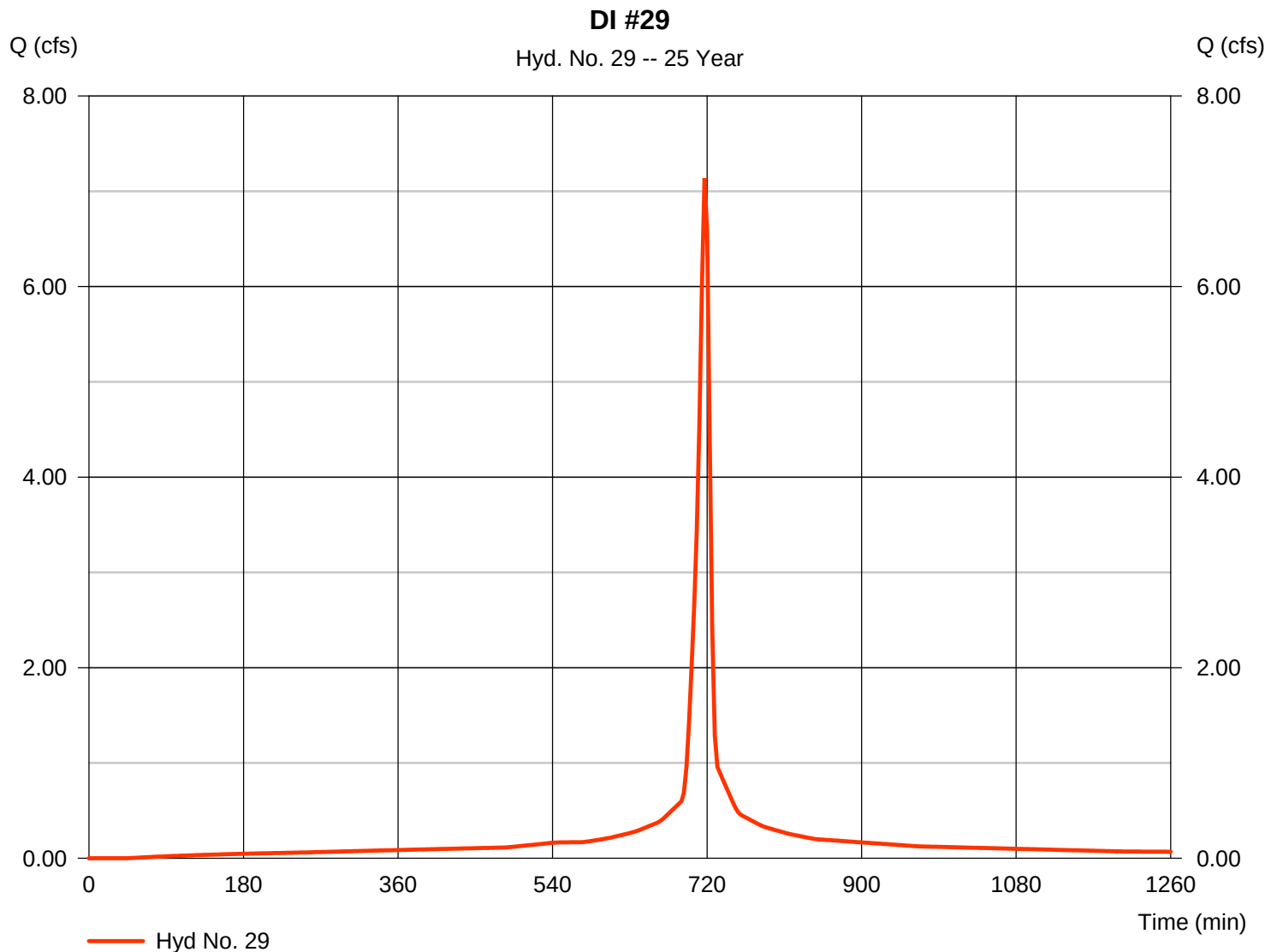
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Hyd. No. 29

DI #29

Hydrograph type	= SCS Runoff	Peak discharge	= 7.136 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 18,774 cuft
Drainage area	= 1.010 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

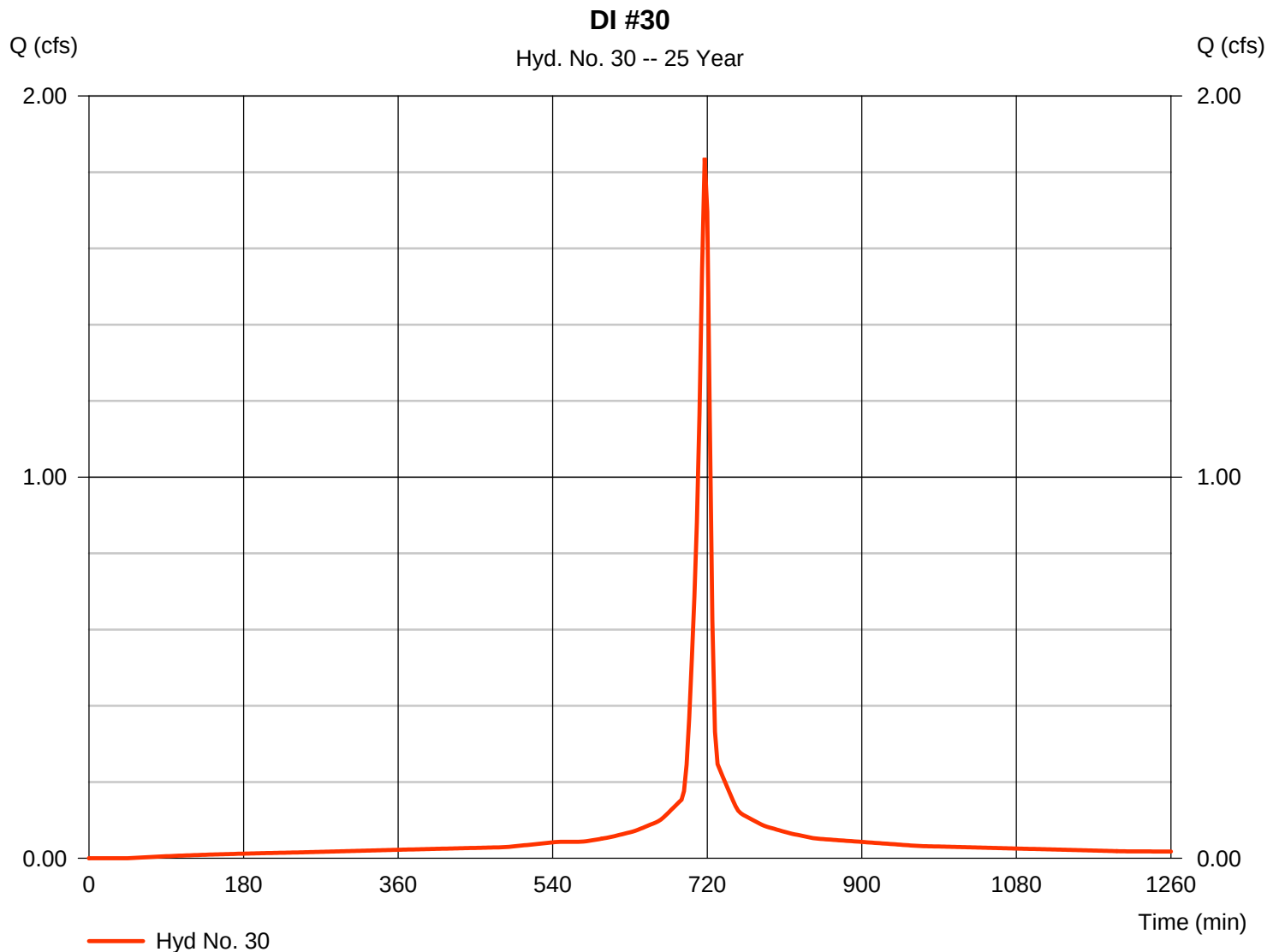
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Hyd. No. 30

DI #30

Hydrograph type	= SCS Runoff	Peak discharge	= 1.837 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 4,833 cuft
Drainage area	= 0.260 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

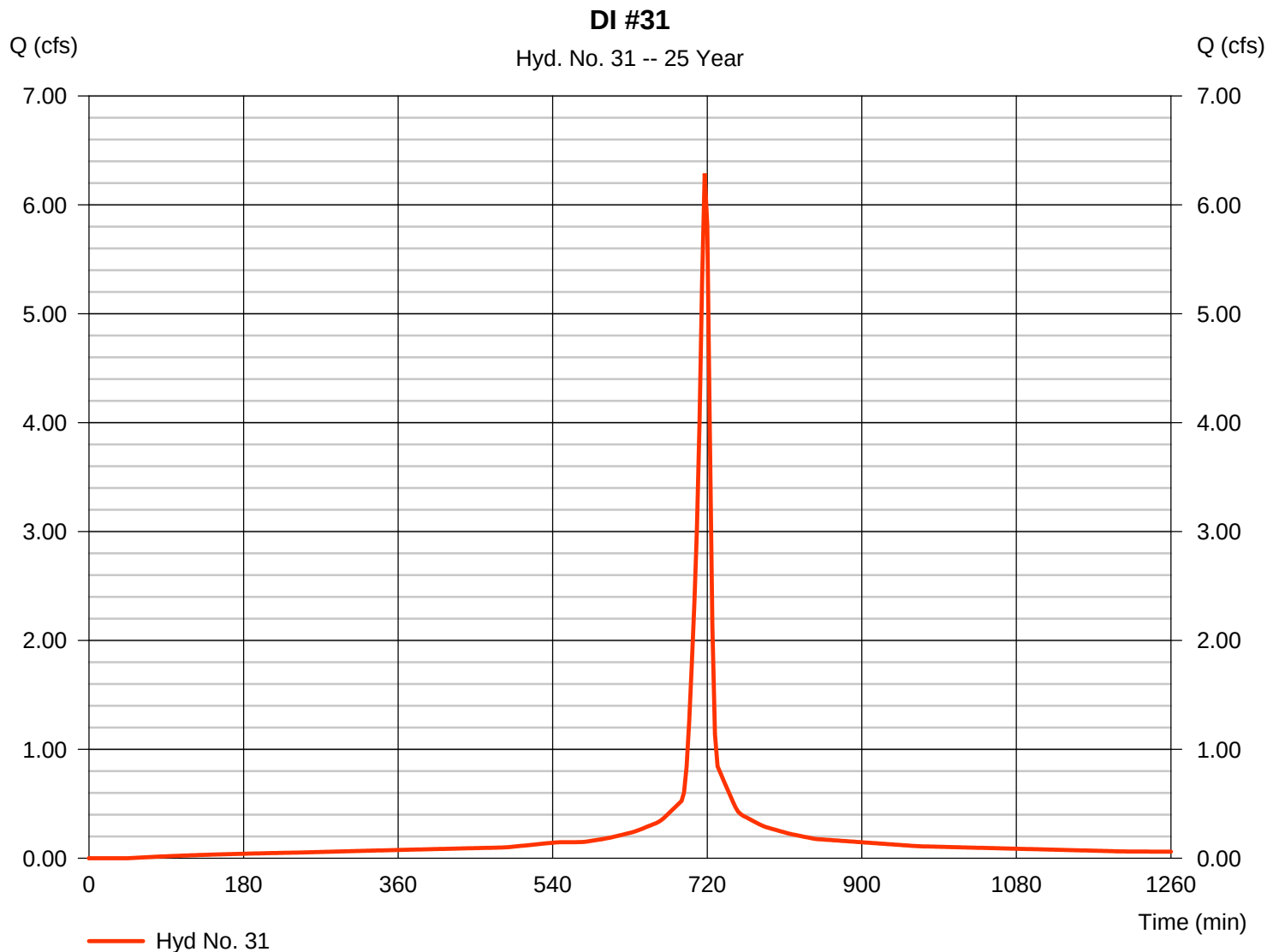
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Hyd. No. 31

DI #31

Hydrograph type	= SCS Runoff	Peak discharge	= 6.288 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 16,544 cuft
Drainage area	= 0.890 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

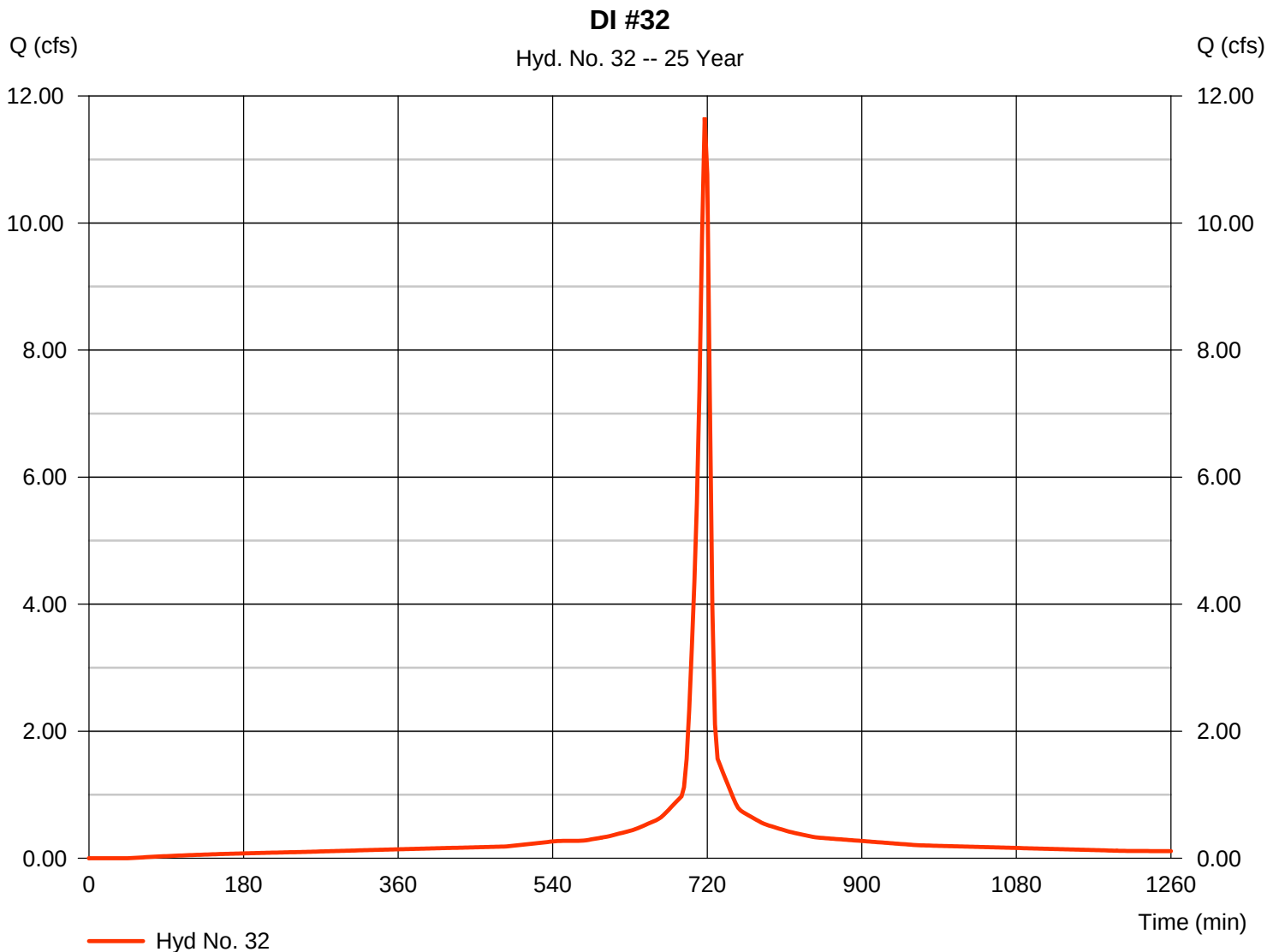
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Hyd. No. 32

DI #32

Hydrograph type	= SCS Runoff	Peak discharge	= 11.66 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 30,671 cuft
Drainage area	= 1.650 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

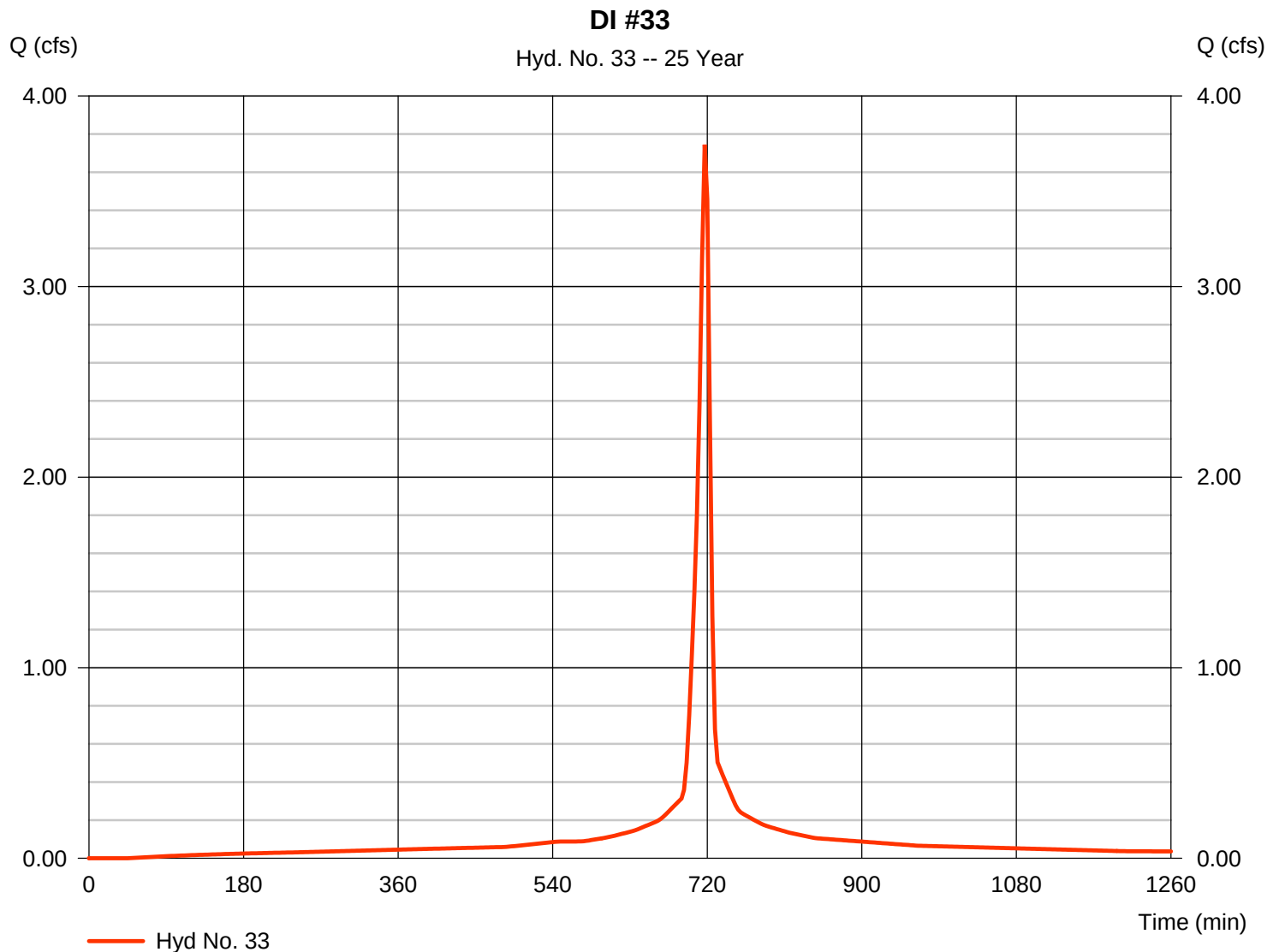
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Hyd. No. 33

DI #33

Hydrograph type	= SCS Runoff	Peak discharge	= 3.745 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 9,852 cuft
Drainage area	= 0.530 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

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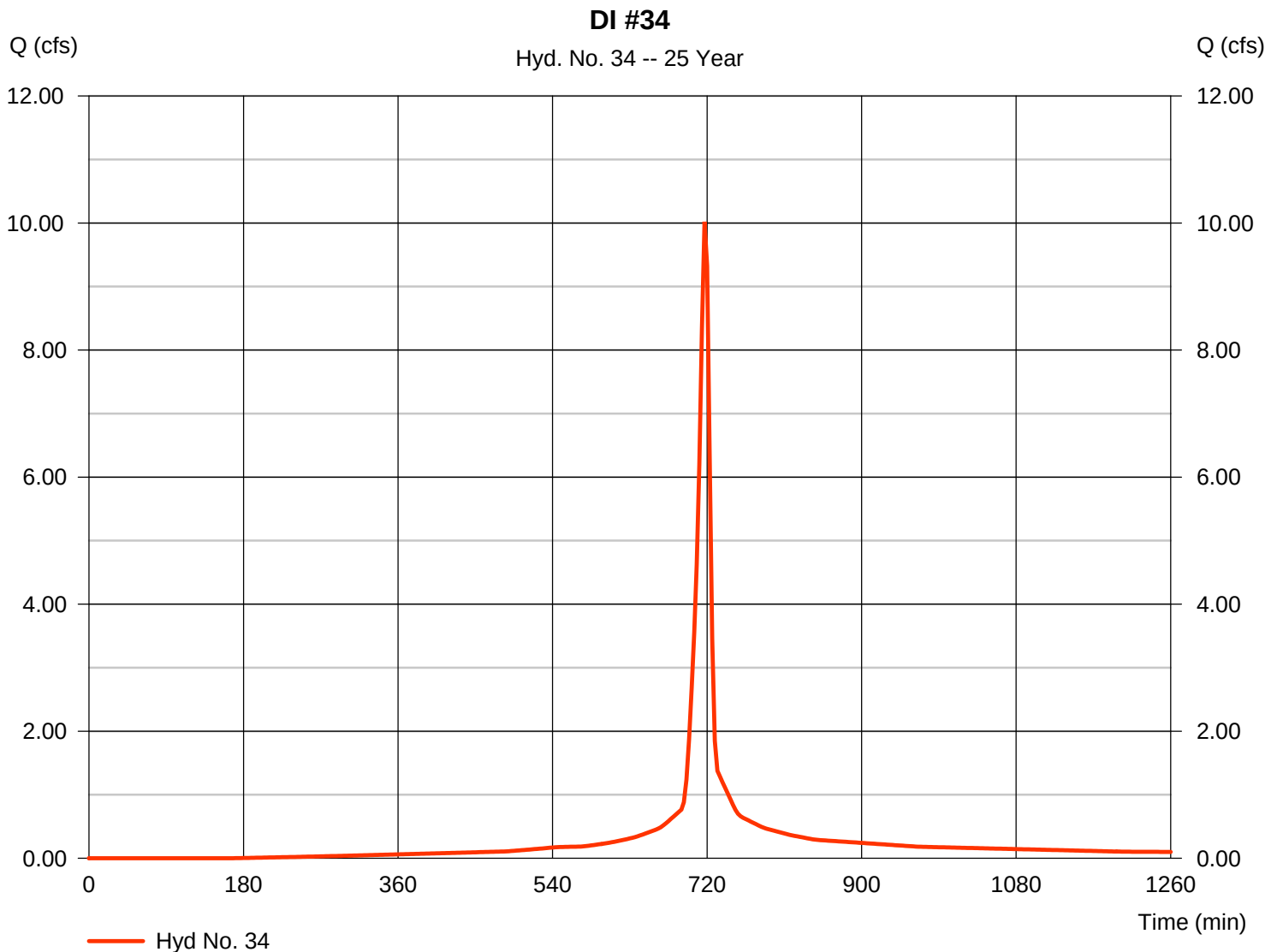
Friday, 07 / 28 / 2017

Hyd. No. 34

DI #34

Hydrograph type	= SCS Runoff	Peak discharge	= 10.02 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 24,374 cuft
Drainage area	= 1.500 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.050 \times 98) + (0.450 \times 79)] / 1.500$



Hydrograph Report

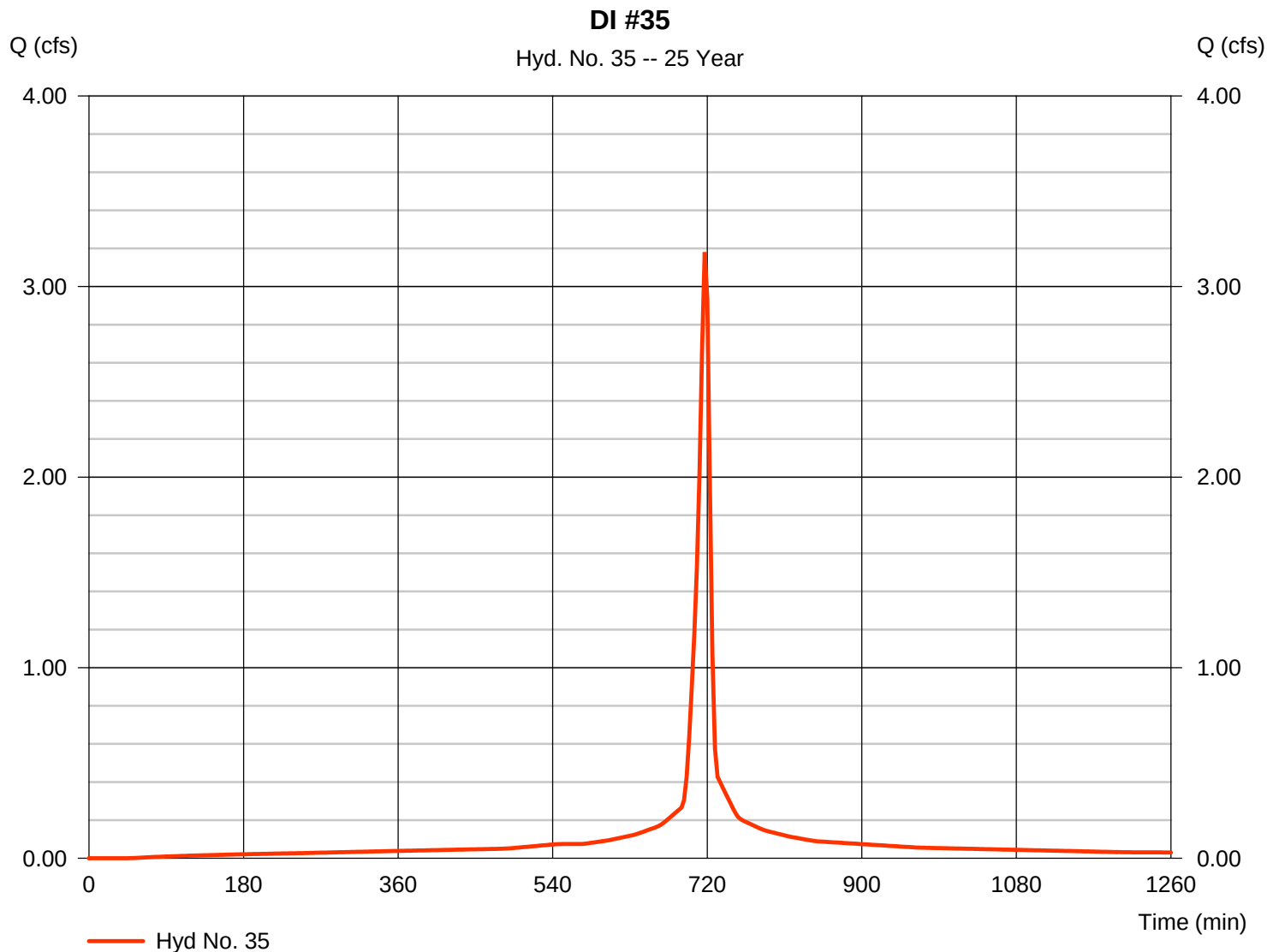
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Hyd. No. 35

DI #35

Hydrograph type	= SCS Runoff	Peak discharge	= 3.180 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 8,365 cuft
Drainage area	= 0.450 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

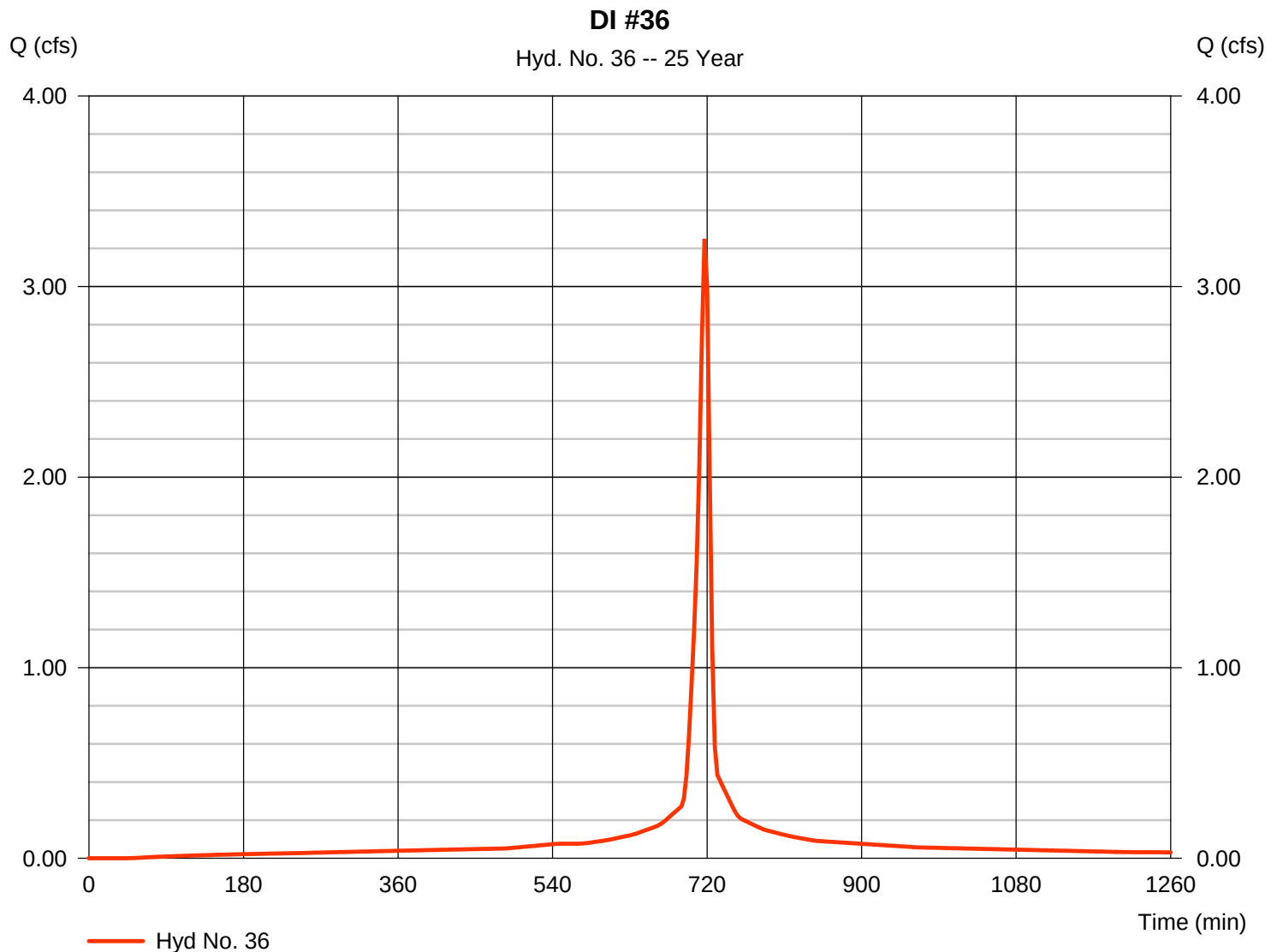
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 36

DI #36

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.250 cfs
Storm frequency	=	25 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	8,551 cuft
Drainage area	=	0.460 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	5.70 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

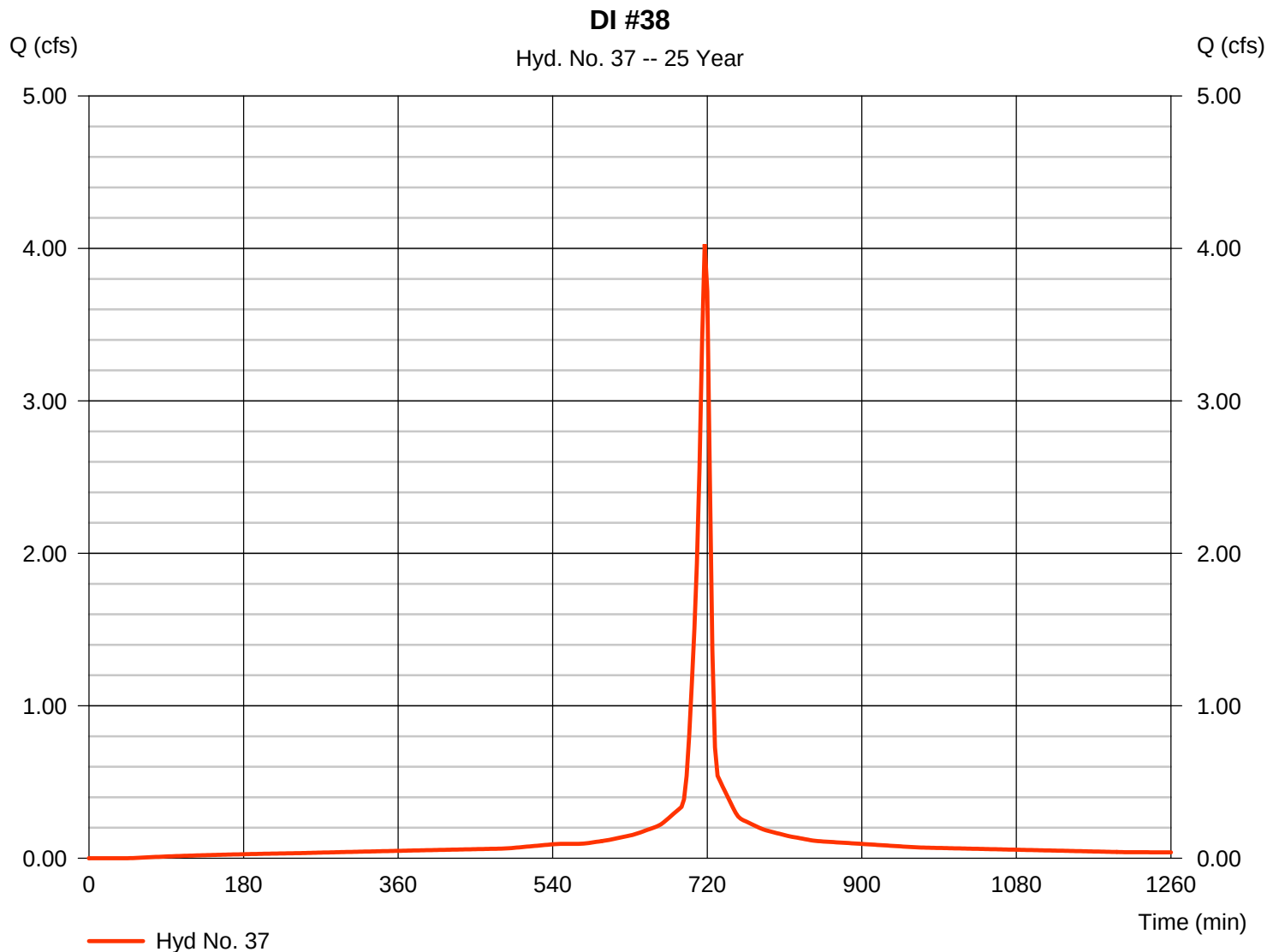
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 37

DI #38

Hydrograph type	= SCS Runoff	Peak discharge	= 4.027 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 10,595 cuft
Drainage area	= 0.570 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

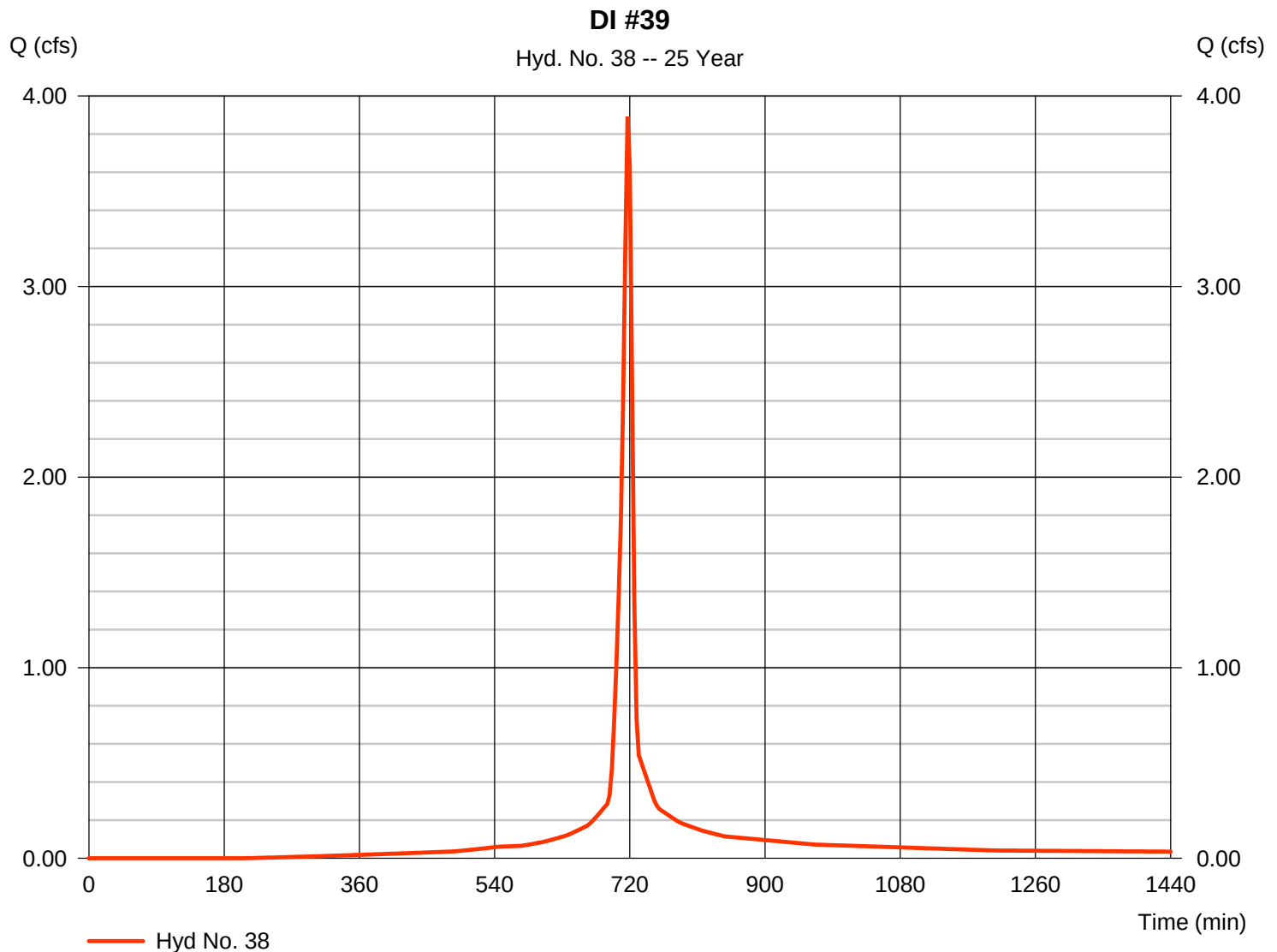
Friday, 07 / 28 / 2017

Hyd. No. 38

DI #39

Hydrograph type	= SCS Runoff	Peak discharge	= 3.891 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 9,299 cuft
Drainage area	= 0.600 ac	Curve number	= 90*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.360 \times 98) + (0.240 \times 79)] / 0.600$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

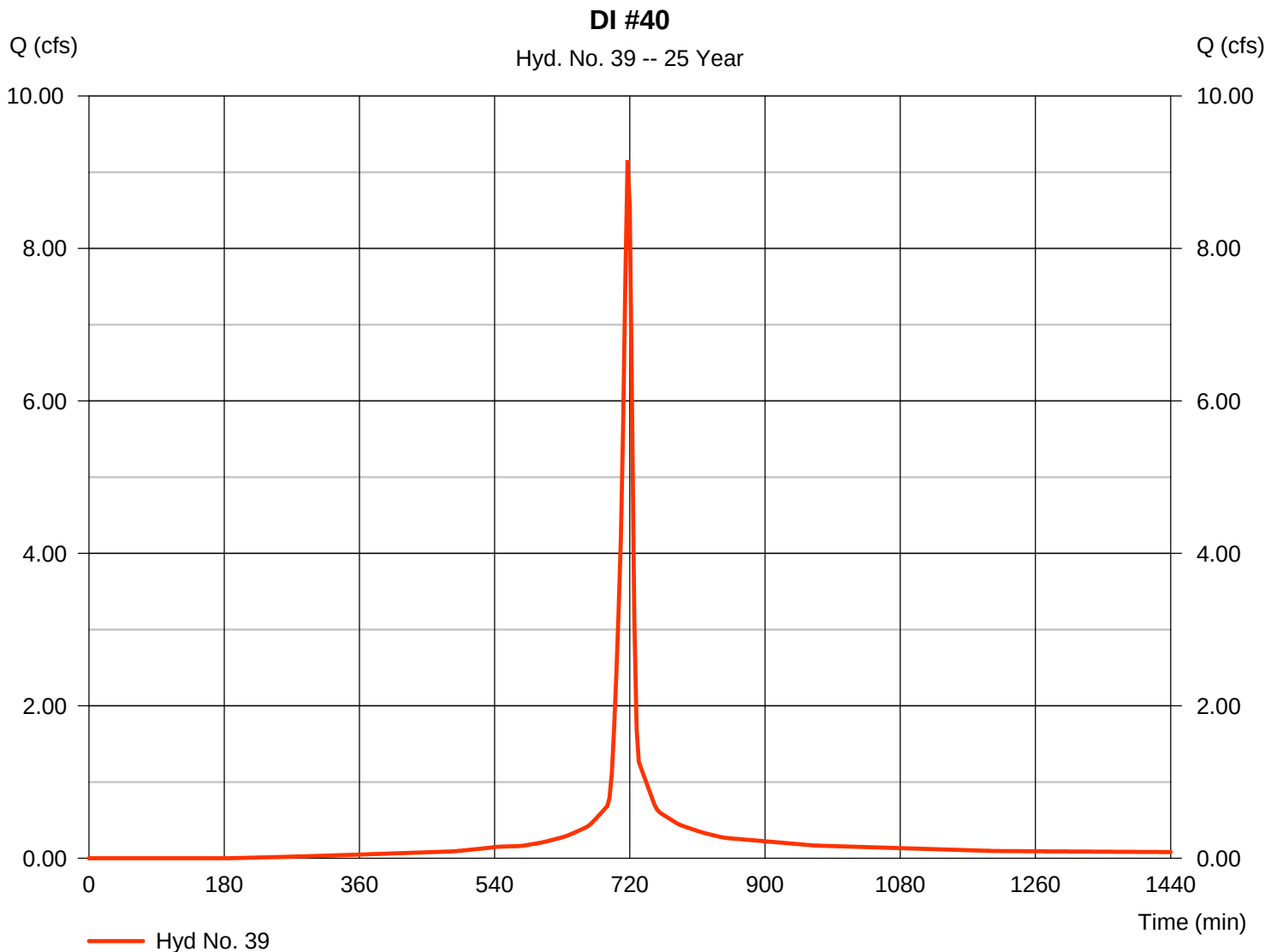
Friday, 07 / 28 / 2017

Hyd. No. 39

DI #40

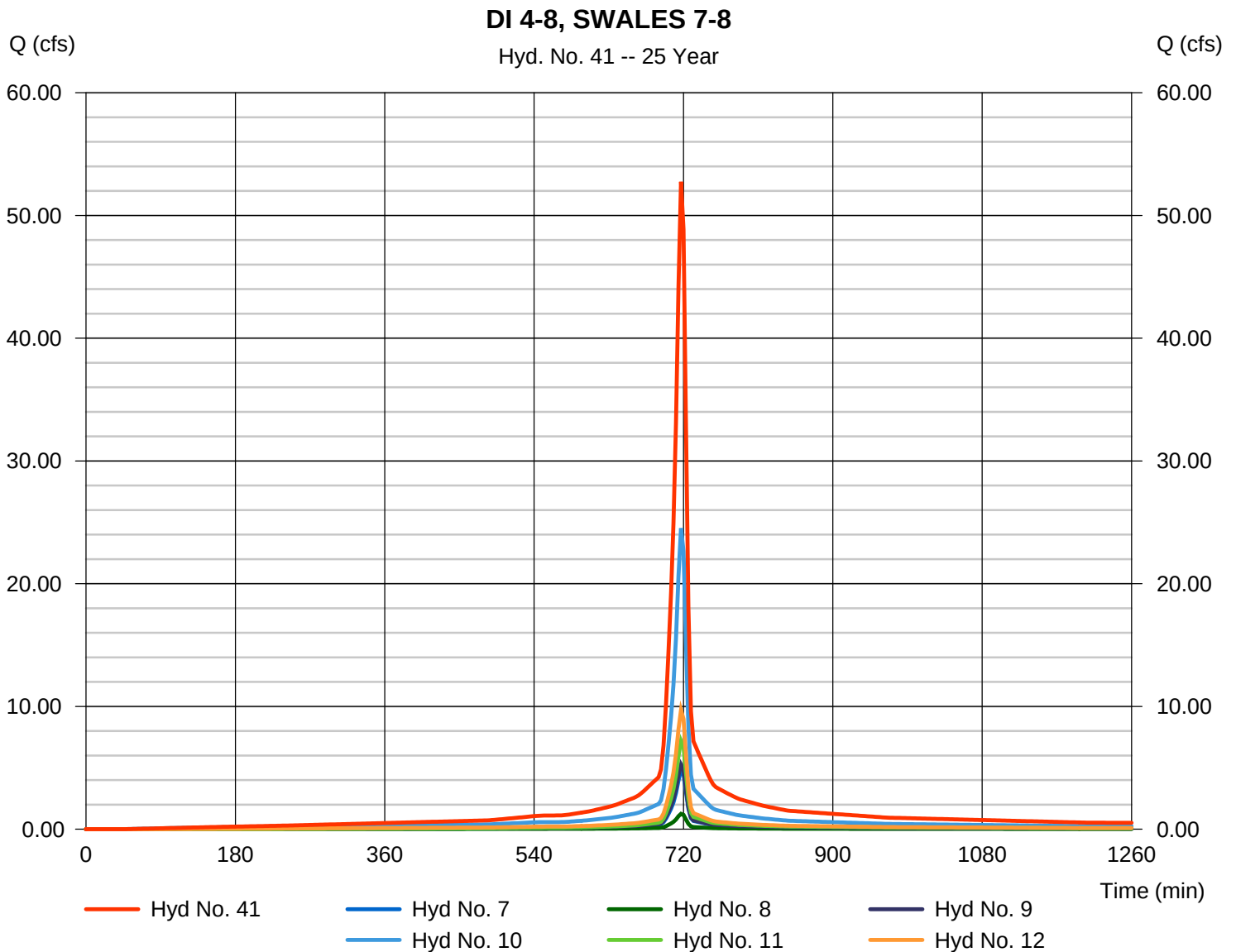
Hydrograph type	= SCS Runoff	Peak discharge	= 9.155 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 22,062 cuft
Drainage area	= 1.390 ac	Curve number	= 91*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.880 \times 98) + (0.510 \times 79)] / 1.390$



DI 4-8, SWALES 7-8

Peak discharge = 52.75 cfs
Time to peak = 717 min
Hyd. volume = 134,212 cuft
Contrib. drain. area = 7.660 ac



Hydrograph Report

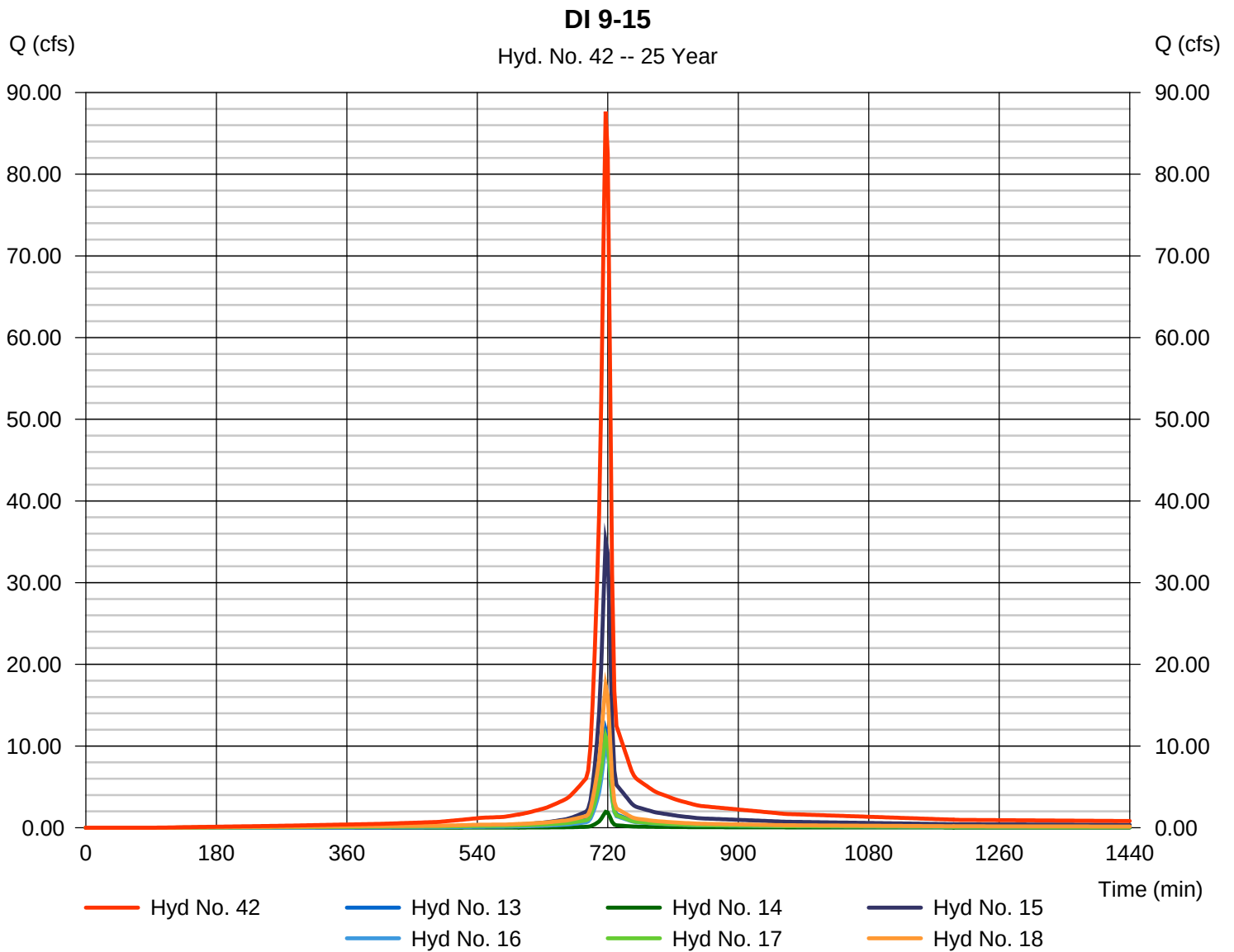
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Friday, 07 / 28 / 2017

Hyd. No. 42

DI 9-15

Hydrograph type	= Combine	Peak discharge	= 87.65 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 210,095 cuft
Inflow hyds.	= 13, 14, 15, 16, 17, 18	Contrib. drain. area	= 14.740 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

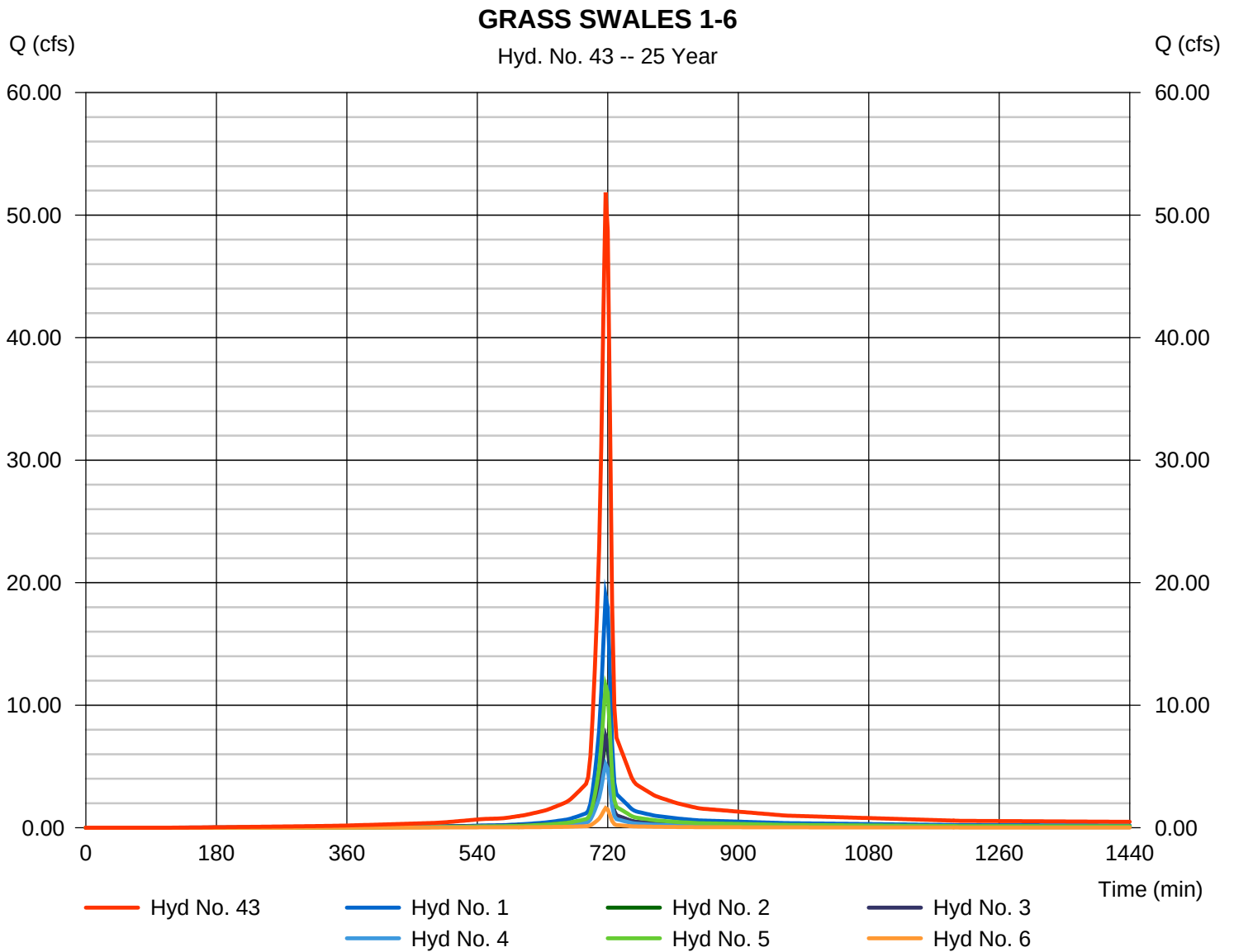
Friday, 07 / 28 / 2017

Hyd. No. 43

GRASS SWALES 1-6

Hydrograph type = Combine
Storm frequency = 25 yrs
Time interval = 3 min
Inflow hyds. = 1, 2, 3, 4, 5, 6

Peak discharge = 51.85 cfs
Time to peak = 717 min
Hyd. volume = 123,086 cuft
Contrib. drain. area = 8.560 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 44

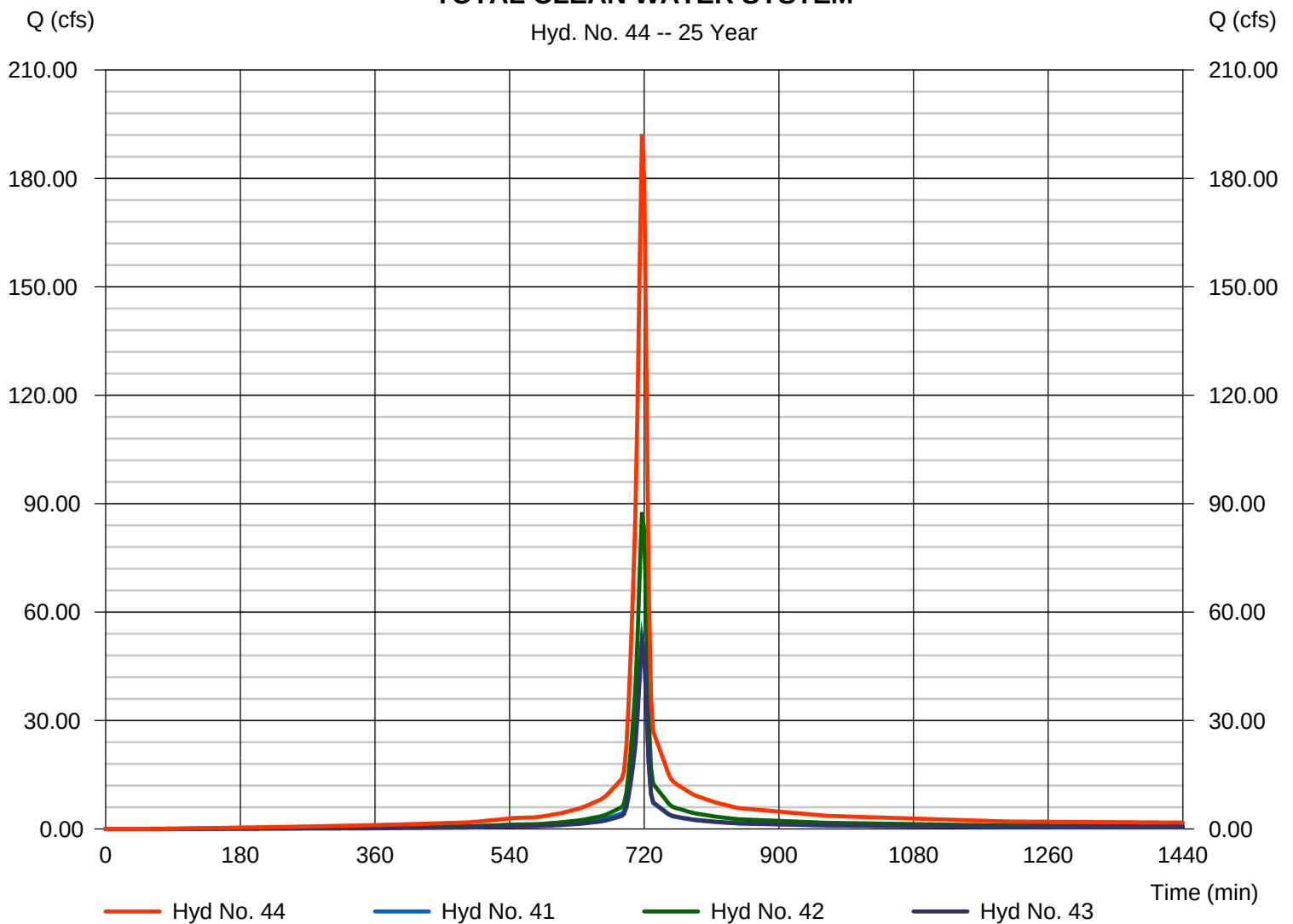
TOTAL CLEAN WATER SYSTEM

Hydrograph type = Combine
Storm frequency = 25 yrs
Time interval = 3 min
Inflow hyds. = 41, 42, 43

Peak discharge = 192.25 cfs
Time to peak = 717 min
Hyd. volume = 467,393 cuft
Contrib. drain. area = 0.000 ac

TOTAL CLEAN WATER SYSTEM

Hyd. No. 44 -- 25 Year



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 45

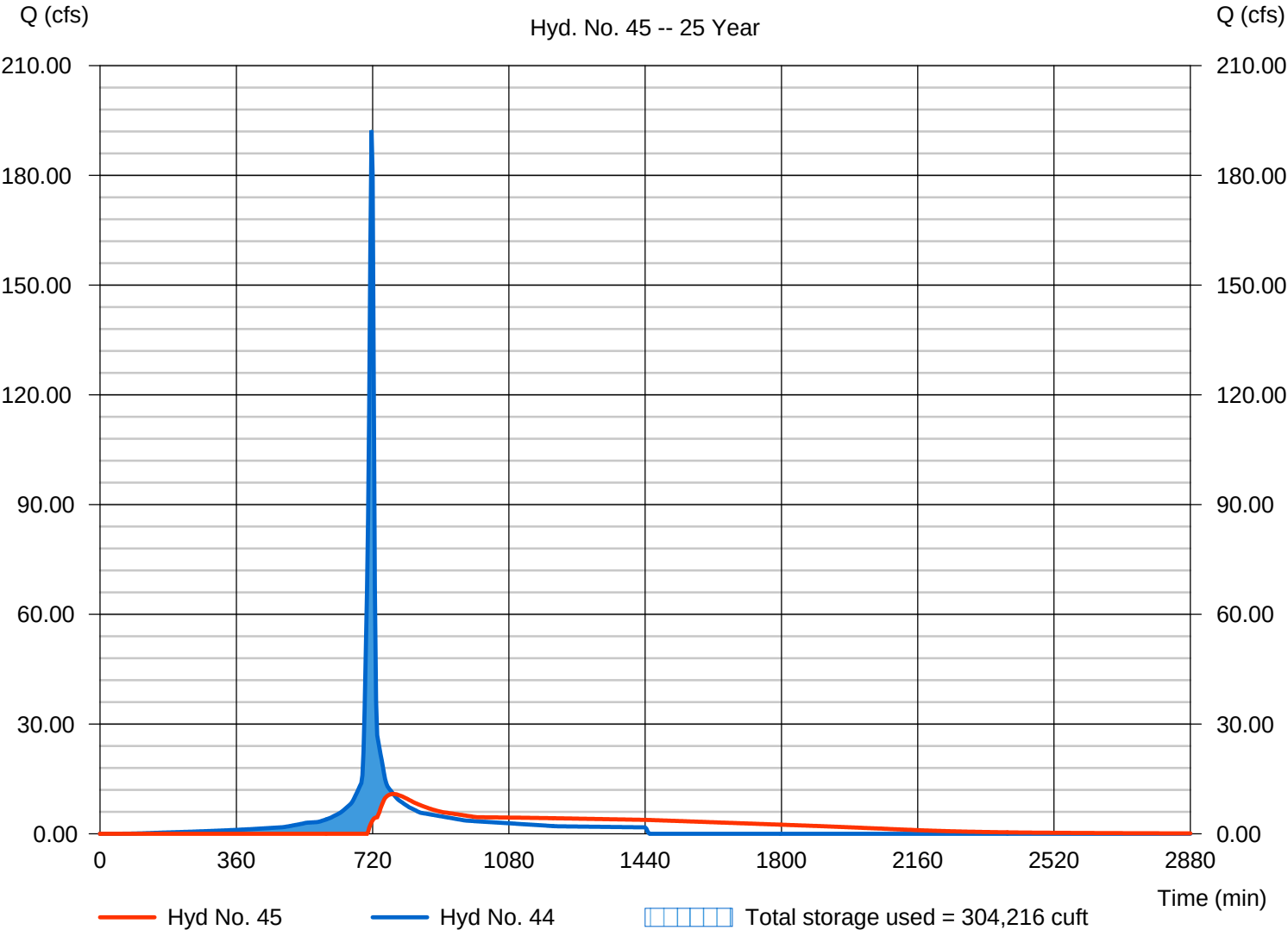
STORMWATER POND

Hydrograph type	= Reservoir	Peak discharge	= 10.89 cfs
Storm frequency	= 25 yrs	Time to peak	= 774 min
Time interval	= 3 min	Hyd. volume	= 360,450 cuft
Inflow hyd. No.	= 44 - TOTAL CLEAN WATER STORAGE	Max. Elevation	= 562.28 ft
Reservoir name	= STORMWATER DETENTION POND	Max. Storage	= 304,216 cuft

Storage Indication method used.

STORMWATER POND

Hyd. No. 45 -- 25 Year



Hydrograph Report

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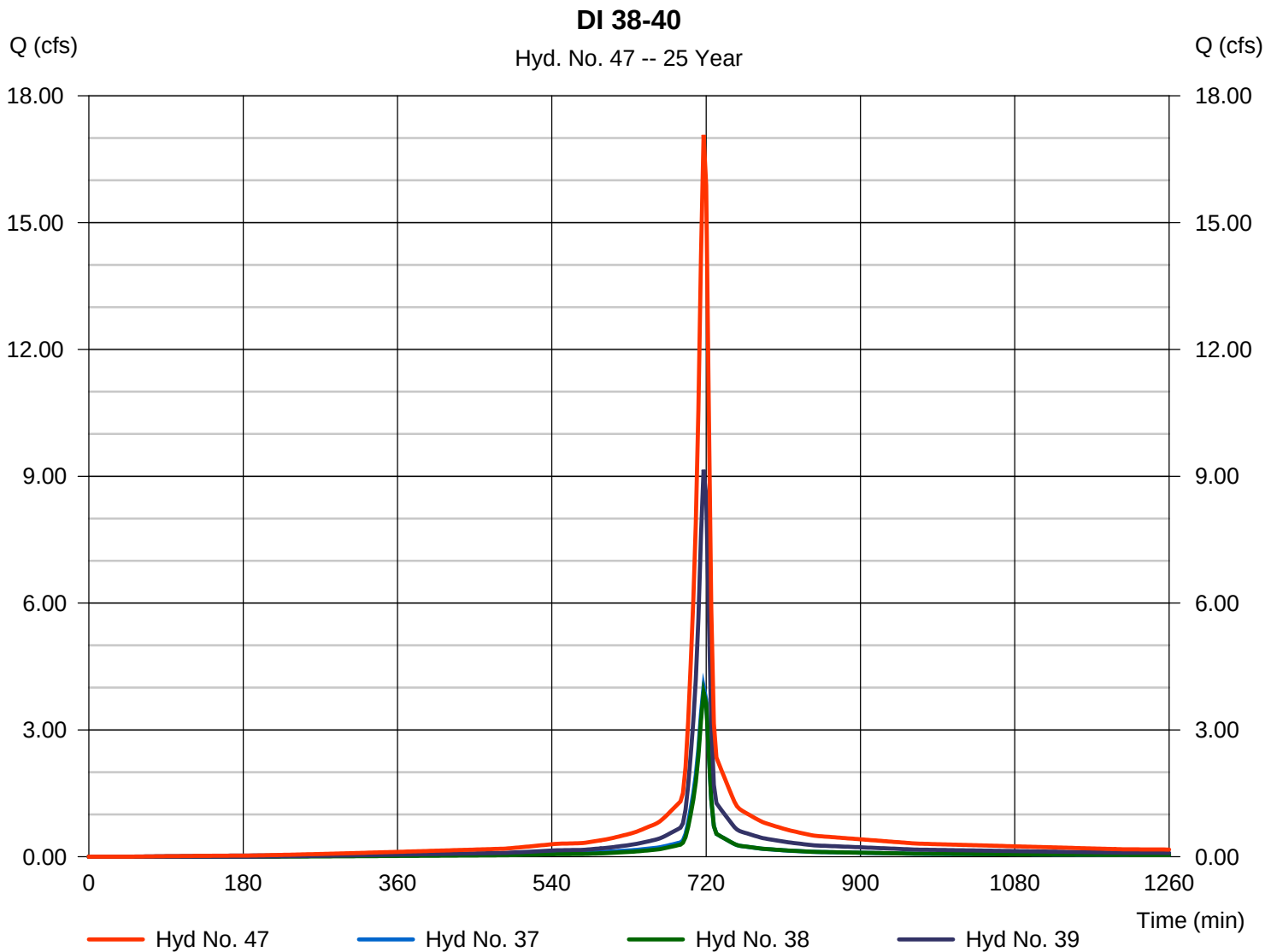
Friday, 07 / 28 / 2017

Hyd. No. 47

DI 38-40

Hydrograph type = Combine
Storm frequency = 25 yrs
Time interval = 3 min
Inflow hyds. = 37, 38, 39

Peak discharge = 17.07 cfs
Time to peak = 717 min
Hyd. volume = 41,956 cuft
Contrib. drain. area = 2.560 ac



Hydrograph Report

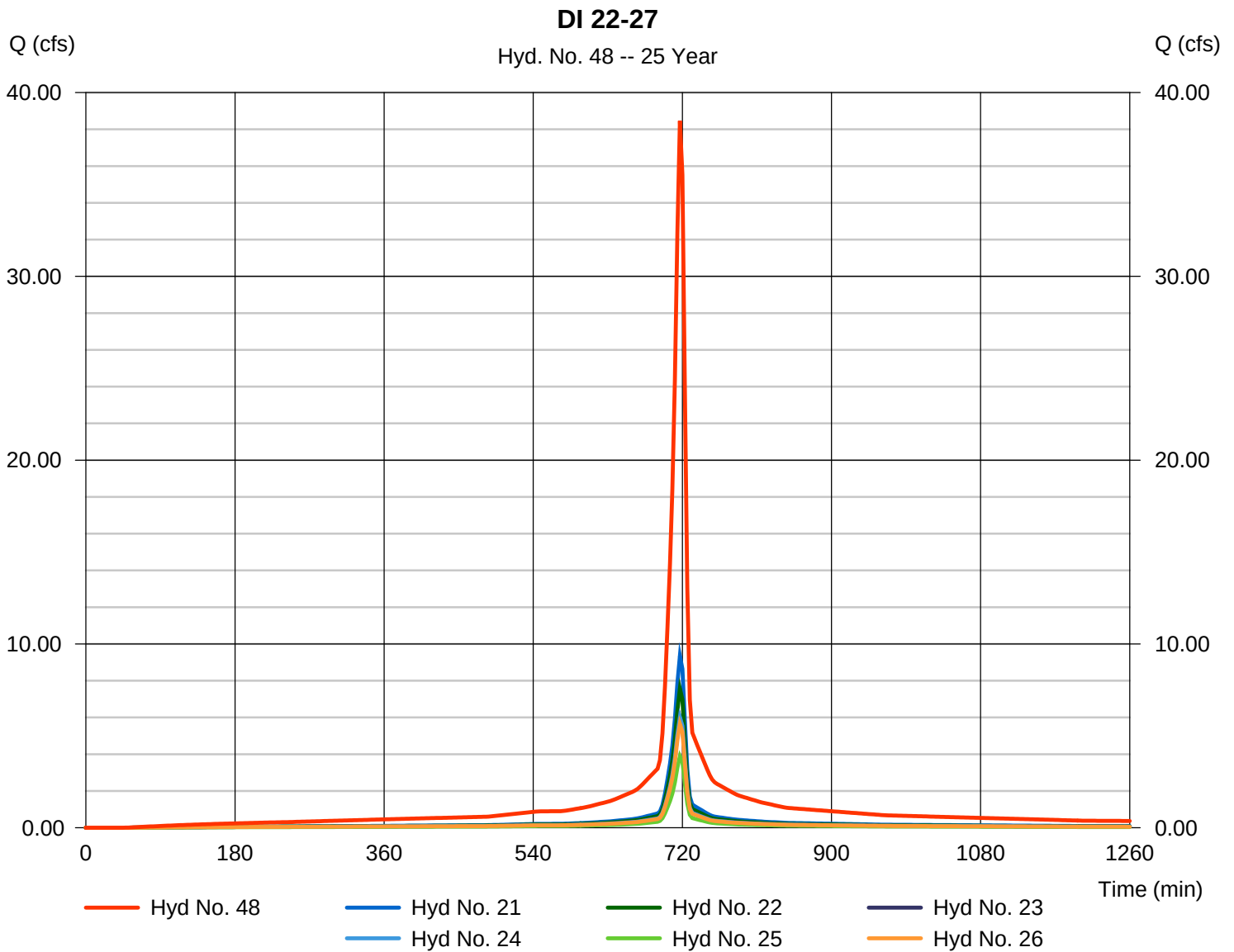
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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Hyd. No. 48

DI 22-27

Hydrograph type	= Combine	Peak discharge	= 38.46 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 100,777 cuft
Inflow hyds.	= 21, 22, 23, 24, 25, 26	Contrib. drain. area	= 5.450 ac



Hydrograph Report

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Hyd. No. 49

DI 29-32 & DITCHES

Hydrograph type = Combine

Storm frequency = 25 yrs

Time interval = 3 min

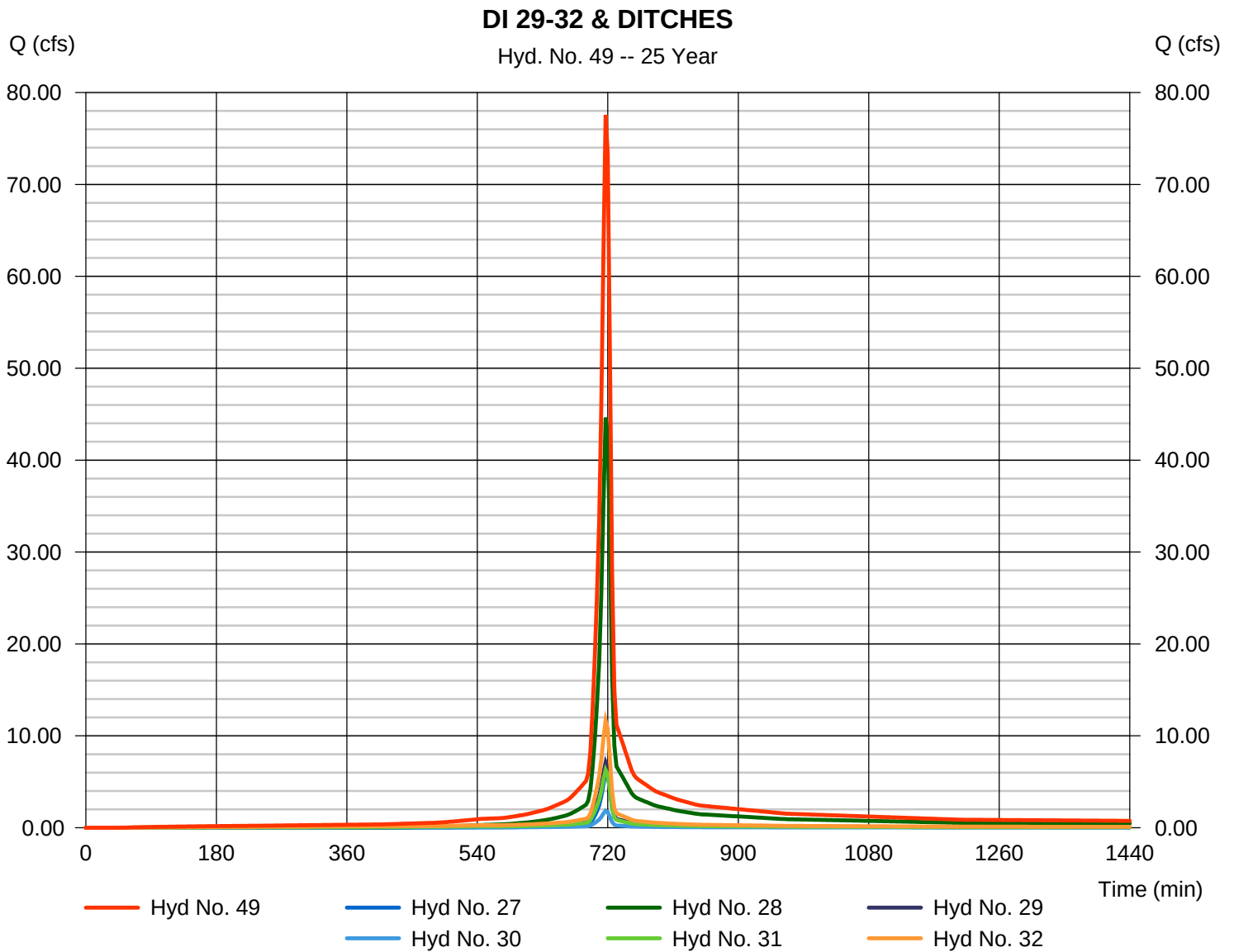
Inflow hyds. = 27, 28, 29, 30, 31, 32

Peak discharge = 77.54 cfs

Time to peak = 717 min

Hyd. volume = 185,693 cuft

Contrib. drain. area = 13.700 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

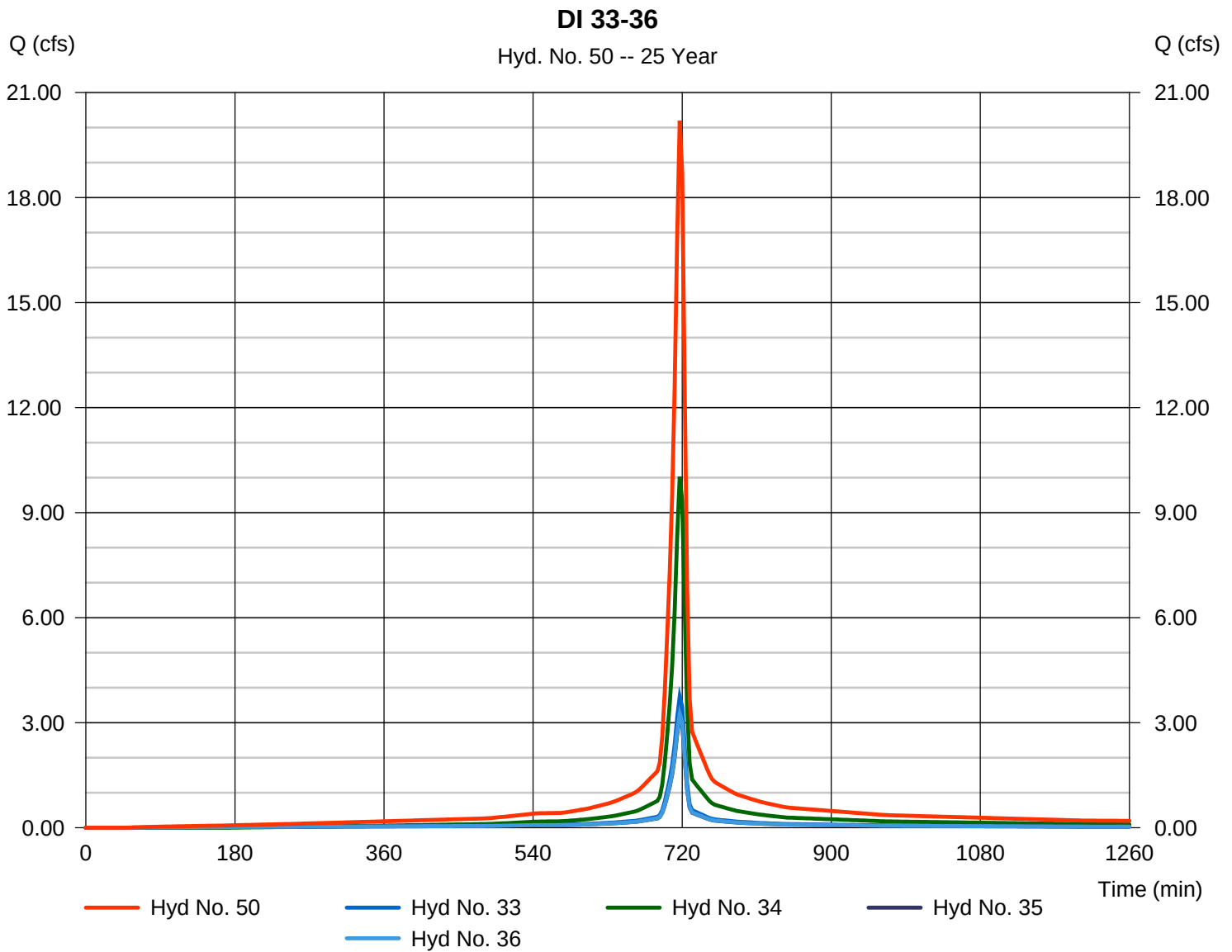
Friday, 07 / 28 / 2017

Hyd. No. 50

DI 33-36

Hydrograph type = Combine
Storm frequency = 25 yrs
Time interval = 3 min
Inflow hyds. = 33, 34, 35, 36

Peak discharge = 20.20 cfs
Time to peak = 717 min
Hyd. volume = 51,141 cuft
Contrib. drain. area = 2.940 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 51

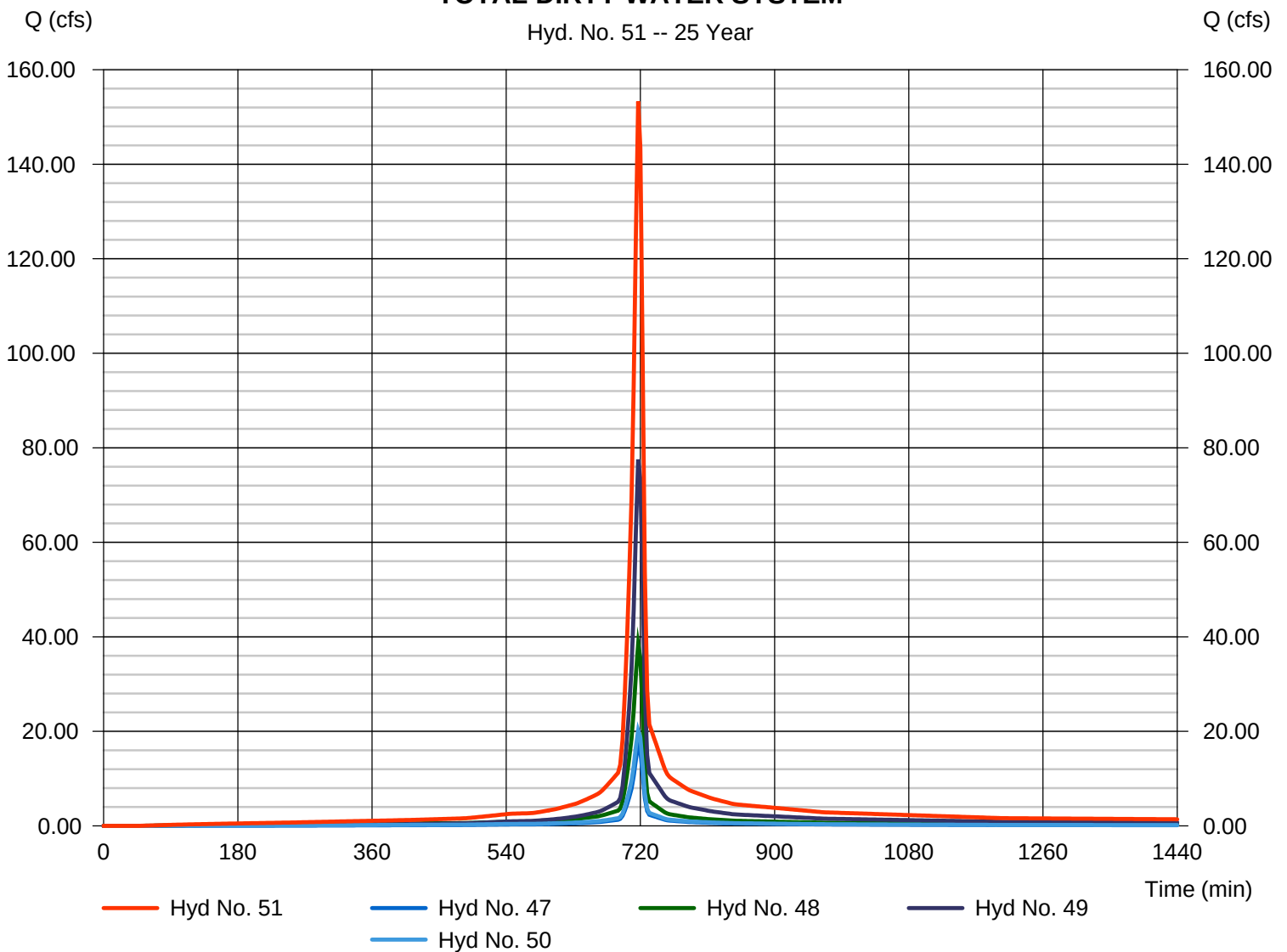
TOTAL DIRTY WATER SYSTEM

Hydrograph type = Combine
Storm frequency = 25 yrs
Time interval = 3 min
Inflow hyds. = 47, 48, 49, 50

Peak discharge = 153.27 cfs
Time to peak = 717 min
Hyd. volume = 379,566 cuft
Contrib. drain. area = 0.000 ac

TOTAL DIRTY WATER SYSTEM

Hyd. No. 51 -- 25 Year



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 53

E&S RUNOFF BASIN 1

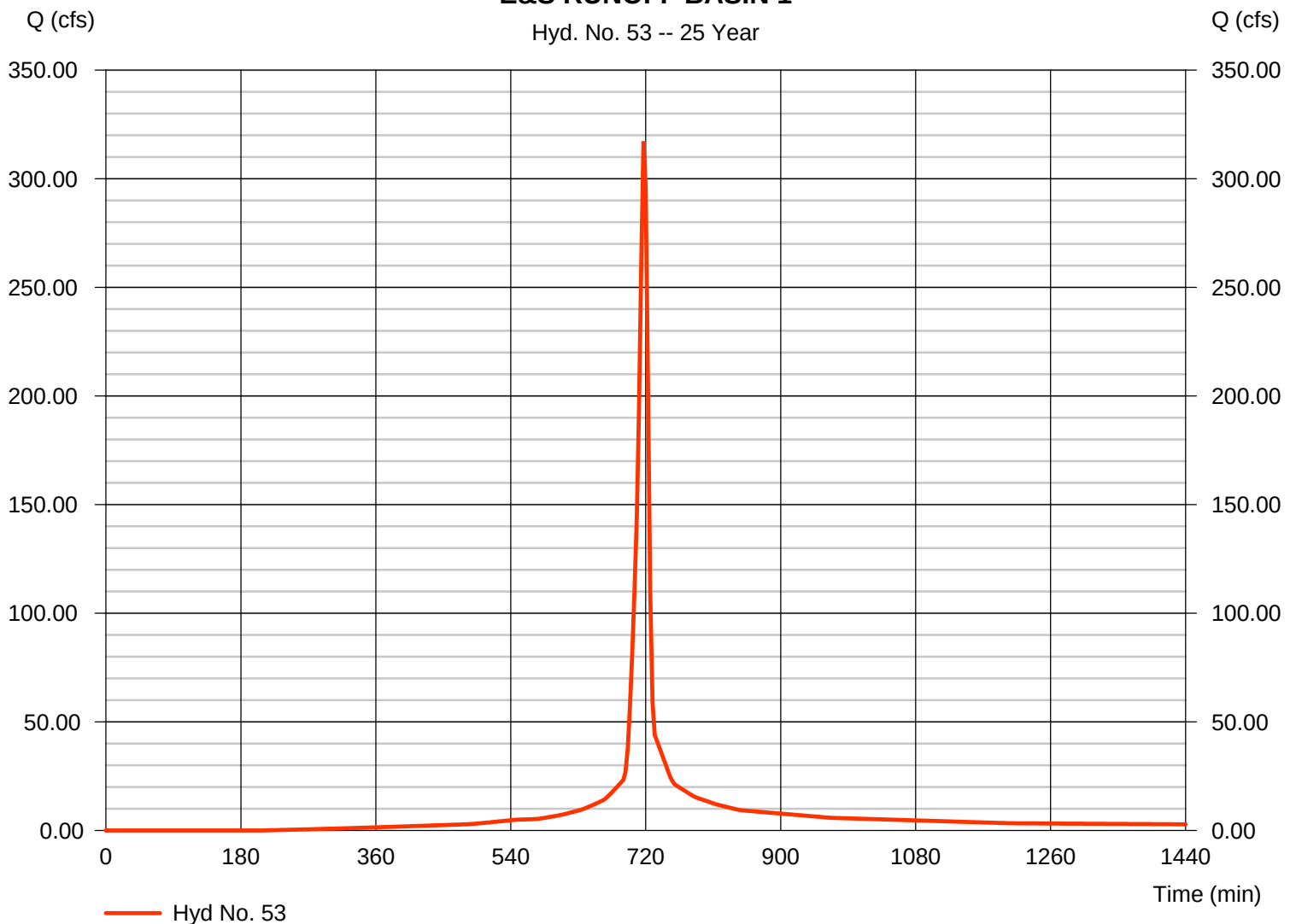
Hydrograph type = SCS Runoff
 Storm frequency = 25 yrs
 Time interval = 3 min
 Drainage area = 48.900 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 5.70 in
 Storm duration = 24 hrs

Peak discharge = 317.15 cfs
 Time to peak = 717 min
 Hyd. volume = 757,850 cuft
 Curve number = 90*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(29.300 \times 98) + (19.600 \times 79)] / 48.900$

E&S RUNOFF BASIN 1

Hyd. No. 53 -- 25 Year



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

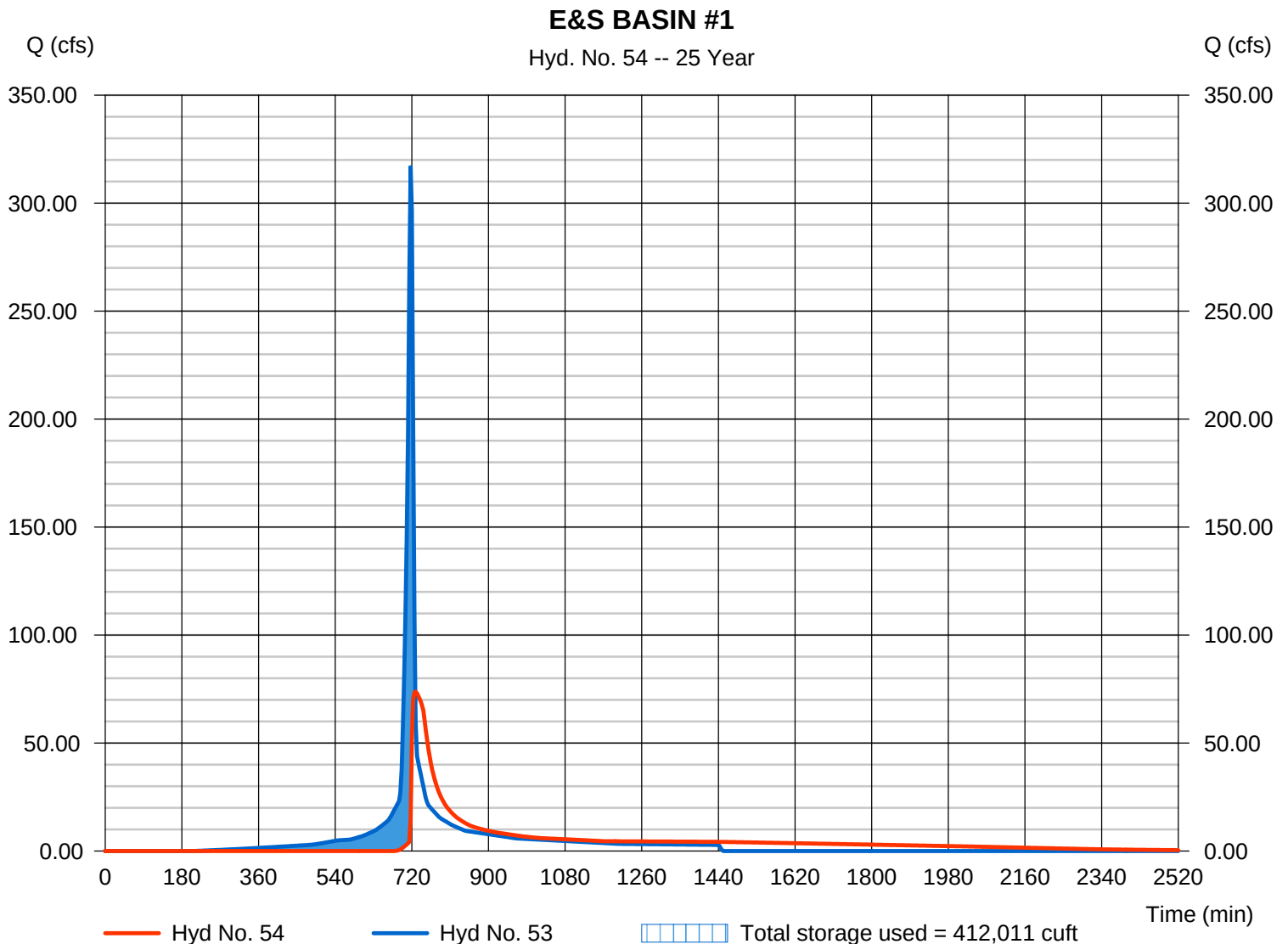
Friday, 07 / 28 / 2017

Hyd. No. 54

E&S BASIN #1

Hydrograph type	= Reservoir	Peak discharge	= 73.74 cfs
Storm frequency	= 25 yrs	Time to peak	= 729 min
Time interval	= 3 min	Hyd. volume	= 650,908 cuft
Inflow hyd. No.	= 53 - E&S RUNOFF BASIN 1	Max. Elevation	= 563.78 ft
Reservoir name	= E&S BASIN #1	Max. Storage	= 412,011 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

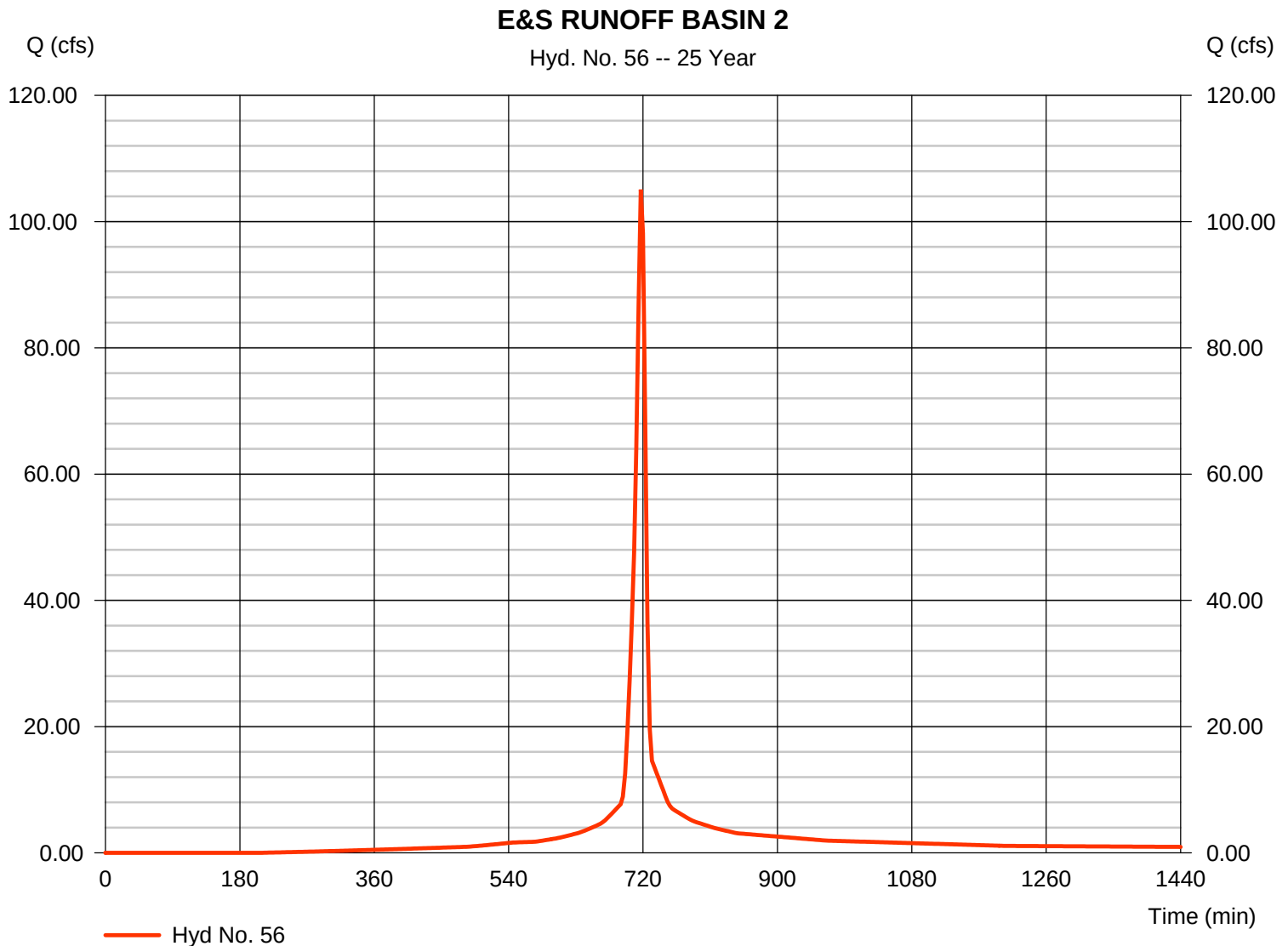
Hyd. No. 56

E&S RUNOFF BASIN 2

Hydrograph type = SCS Runoff
 Storm frequency = 25 yrs
 Time interval = 3 min
 Drainage area = 16.200 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 5.70 in
 Storm duration = 24 hrs

Peak discharge = 105.07 cfs
 Time to peak = 717 min
 Hyd. volume = 251,067 cuft
 Curve number = 90*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(9.720 \times 98) + (6.480 \times 79)] / 16.200$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

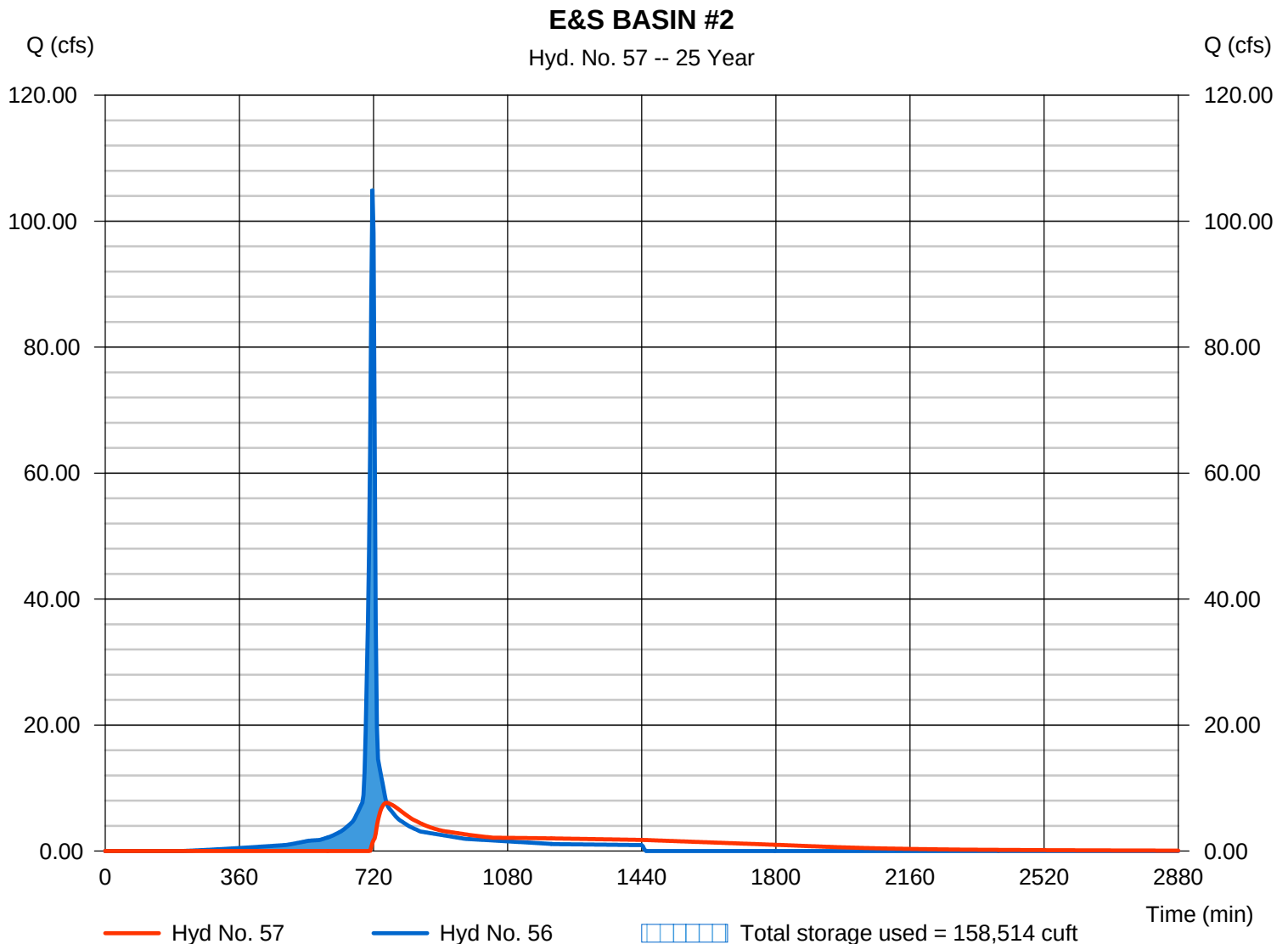
Friday, 07 / 28 / 2017

Hyd. No. 57

E&S BASIN #2

Hydrograph type	= Reservoir	Peak discharge	= 7.648 cfs
Storm frequency	= 25 yrs	Time to peak	= 756 min
Time interval	= 3 min	Hyd. volume	= 181,252 cuft
Inflow hyd. No.	= 56 - E&S RUNOFF BASIN 2	Max. Elevation	= 576.31 ft
Reservoir name	= E&S BASIN #2	Max. Storage	= 158,514 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

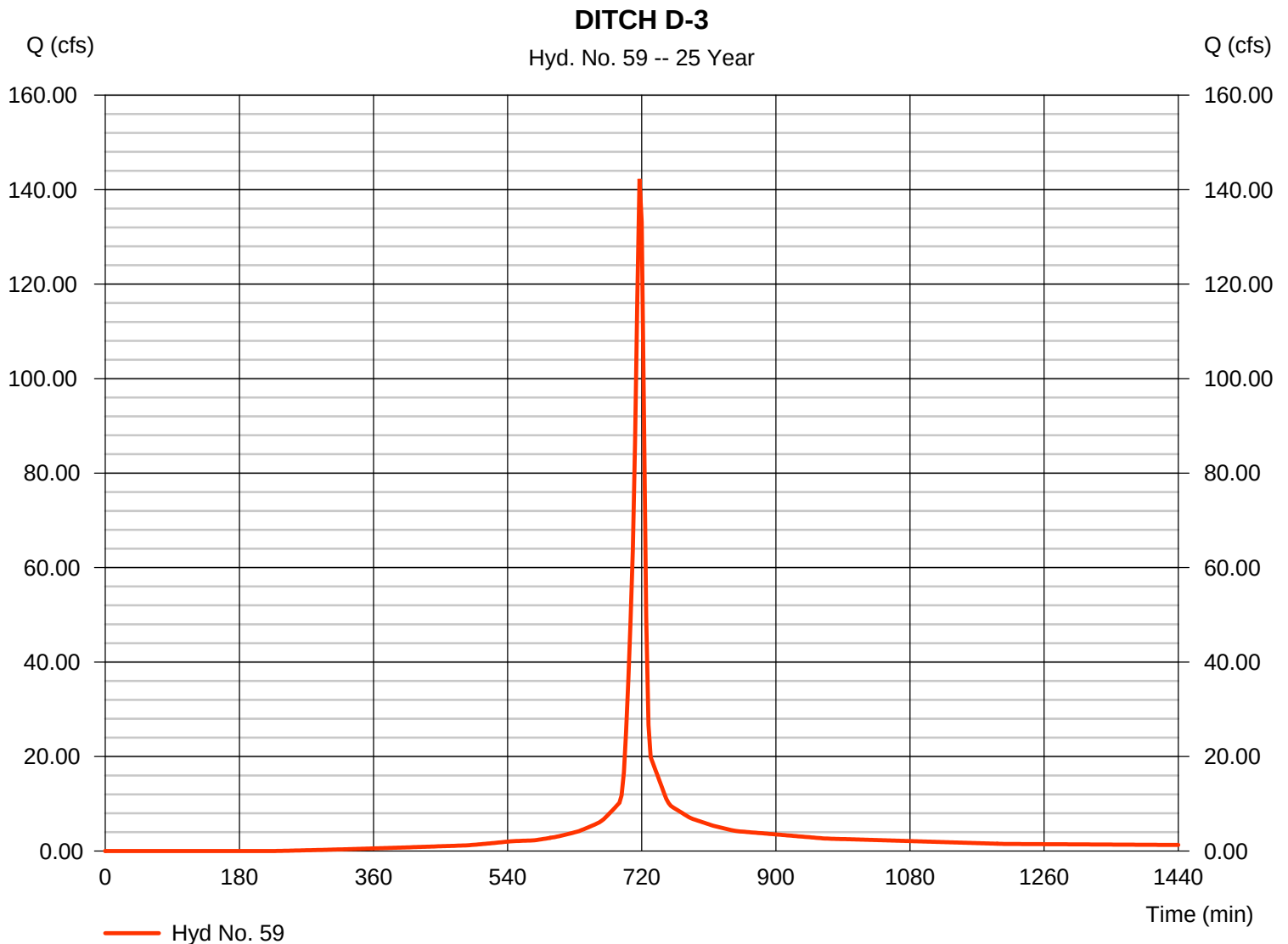
Hyd. No. 59

DITCH D-3

Hydrograph type = SCS Runoff
 Storm frequency = 25 yrs
 Time interval = 3 min
 Drainage area = 22.300 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 5.70 in
 Storm duration = 24 hrs

Peak discharge = 142.26 cfs
 Time to peak = 717 min
 Hyd. volume = 337,348 cuft
 Curve number = 89*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(12.200 \times 98) + (10.100 \times 79)] / 22.300$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

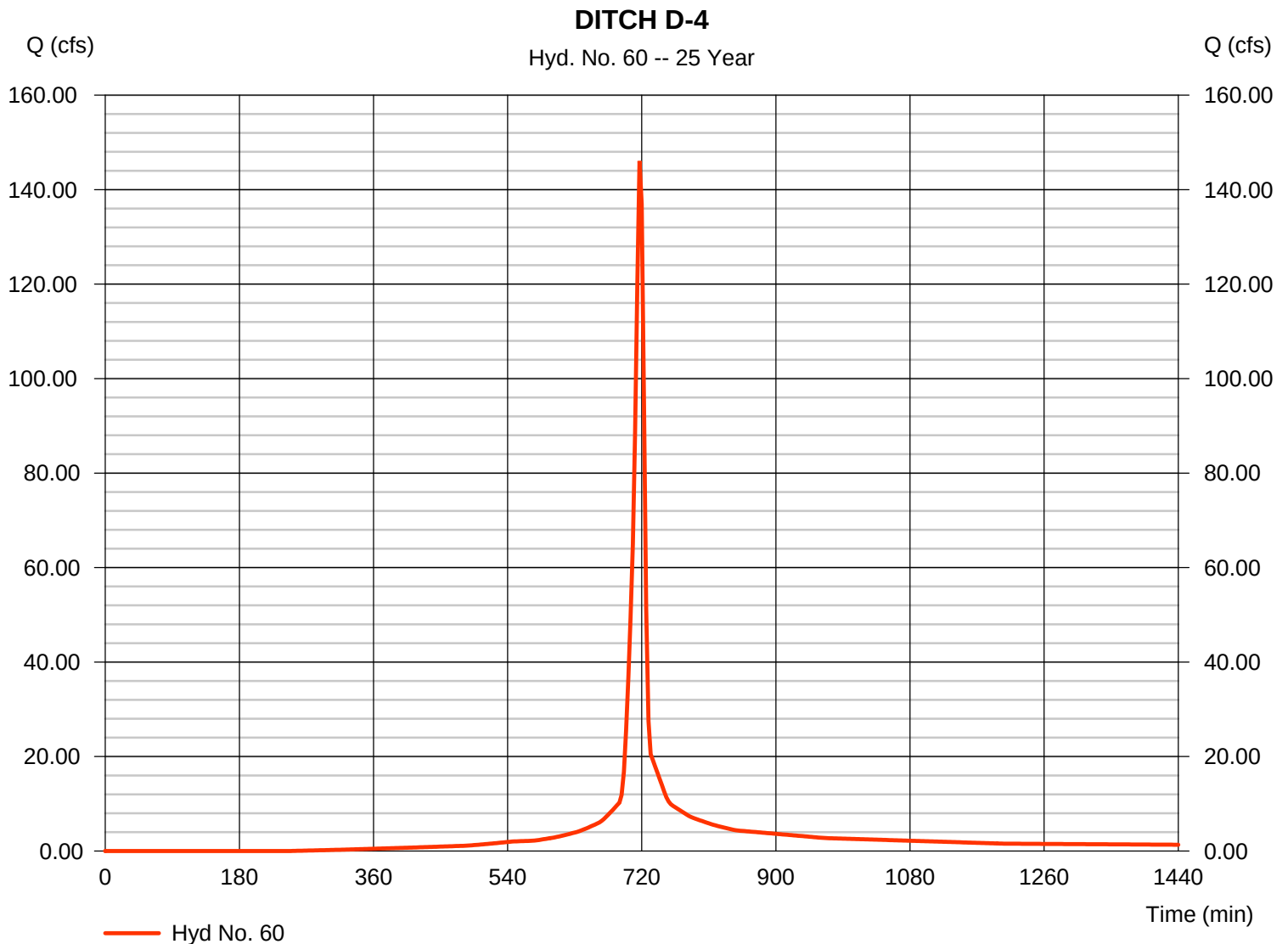
Hyd. No. 60

DITCH D-4

Hydrograph type = SCS Runoff
 Storm frequency = 25 yrs
 Time interval = 3 min
 Drainage area = 23.300 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 5.70 in
 Storm duration = 24 hrs

Peak discharge = 146.05 cfs
 Time to peak = 717 min
 Hyd. volume = 343,929 cuft
 Curve number = 88*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(11.500 \times 98) + (11.800 \times 79)] / 23.300$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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Hyd. No. 62

PRE-DEVELOPMENT

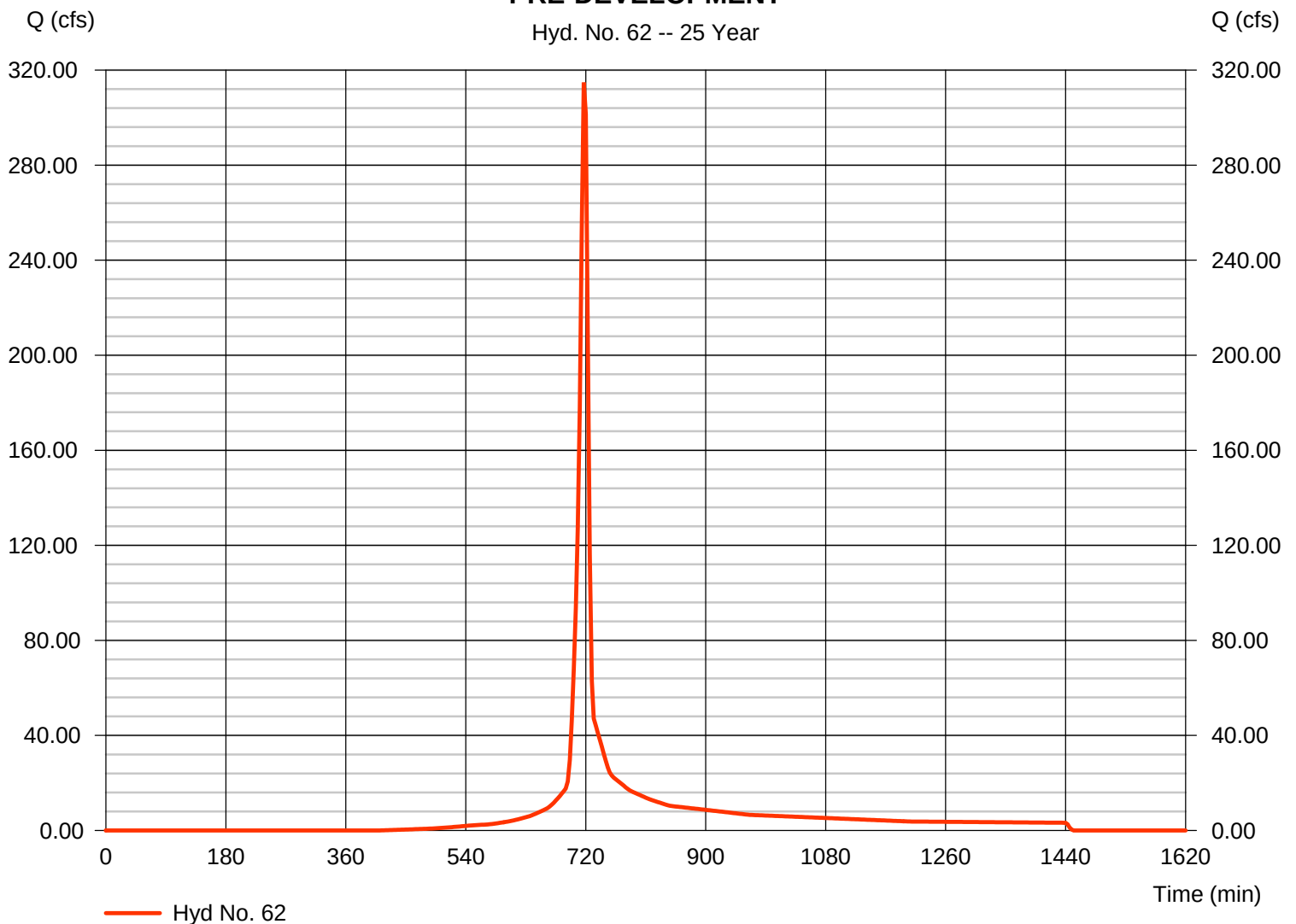
Hydrograph type = SCS Runoff
 Storm frequency = 25 yrs
 Time interval = 3 min
 Drainage area = 61.500 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 5.70 in
 Storm duration = 24 hrs

Peak discharge = 314.79 cfs
 Time to peak = 717 min
 Hyd. volume = 714,308 cuft
 Curve number = 79*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(60.200 \times 79) + (1.300 \times 98)] / 61.500$

PRE-DEVELOPMENT

Hyd. No. 62 -- 25 Year



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

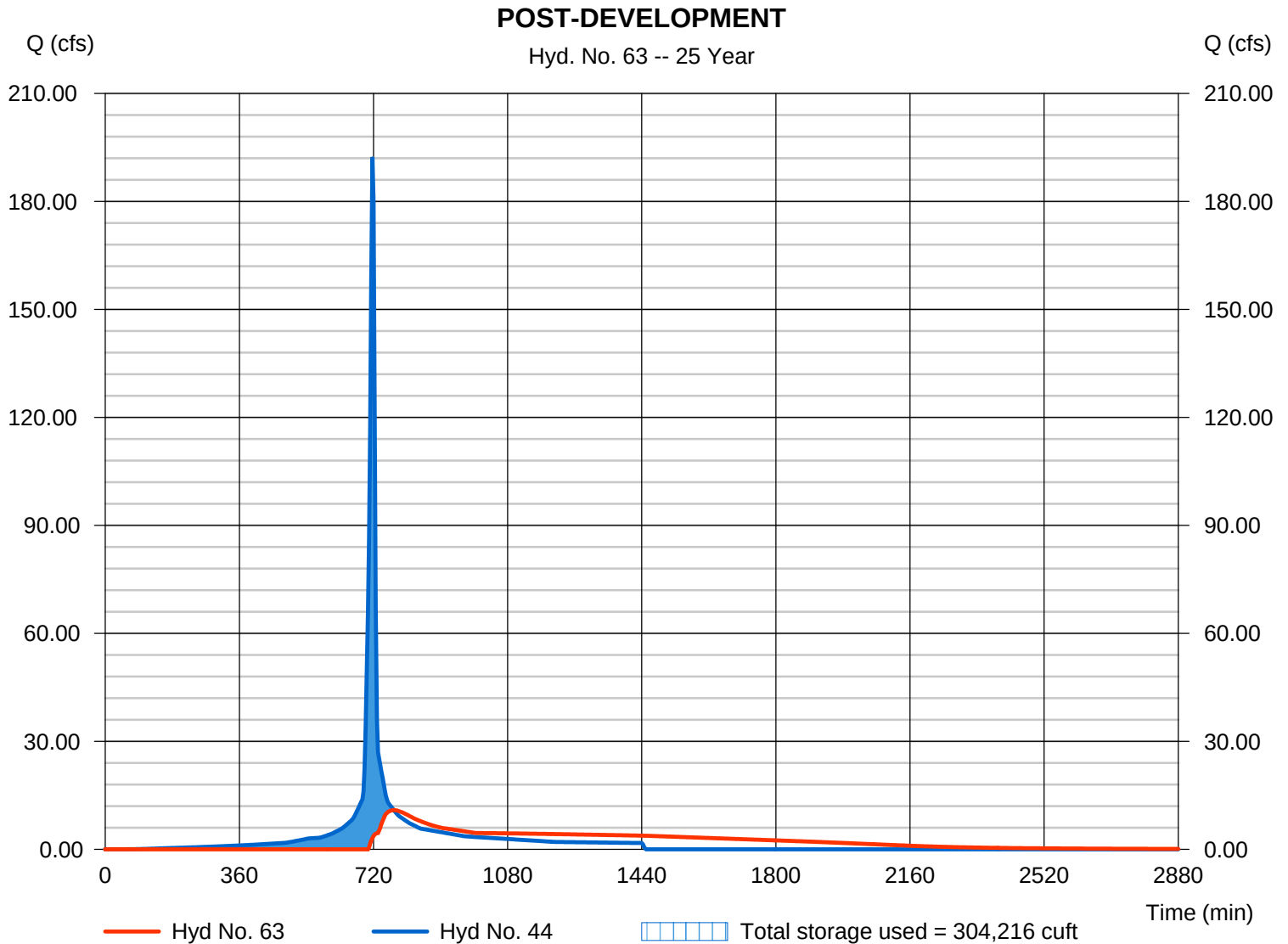
Friday, 07 / 28 / 2017

Hyd. No. 63

POST-DEVELOPMENT

Hydrograph type	= Reservoir	Peak discharge	= 10.89 cfs
Storm frequency	= 25 yrs	Time to peak	= 774 min
Time interval	= 3 min	Hyd. volume	= 360,450 cuft
Inflow hyd. No.	= 44 - TOTAL CLEAN WATER STORAGE	Max. Elevation	= 562.28 ft
Reservoir name	= STORMWATER DETENTION POND	Max. Storage	= 304,216 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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	22.84	3	717	52,870	-----	-----	-----	GRASS SWALE #1
2	SCS Runoff	8.316	3	717	20,637	-----	-----	-----	GRASS SWALE #2
3	SCS Runoff	8.702	3	717	22,081	-----	-----	-----	GRASS SWALE #3
4	SCS Runoff	6.043	3	717	15,334	-----	-----	-----	GRASS SWALE #4
5	SCS Runoff	14.08	3	717	32,463	-----	-----	-----	GRASS SWALE #5
6	SCS Runoff	1.881	3	717	4,623	-----	-----	-----	GRASS SWALE #6
7	SCS Runoff	5.664	3	717	13,678	-----	-----	-----	GRASS SWALE #7
8	SCS Runoff	1.460	3	717	3,752	-----	-----	-----	GRASS SWALE #8
9	SCS Runoff	6.155	3	717	15,438	-----	-----	-----	DI #4
10	SCS Runoff	28.42	3	717	75,119	-----	-----	-----	DI #6
11	SCS Runoff	8.496	3	717	20,517	-----	-----	-----	DI #7
12	SCS Runoff	11.28	3	717	28,974	-----	-----	-----	DI #8
13	SCS Runoff	14.02	3	717	35,575	-----	-----	-----	DI #9
14	SCS Runoff	2.391	3	717	5,457	-----	-----	-----	DI #10
15	SCS Runoff	43.10	3	717	98,371	-----	-----	-----	MH #11
16	SCS Runoff	11.90	3	717	27,974	-----	-----	-----	DI #13
17	SCS Runoff	13.05	3	717	33,122	-----	-----	-----	DI #14
18	SCS Runoff	20.28	3	717	52,111	-----	-----	-----	DI #15
21	SCS Runoff	10.85	3	717	28,256	-----	-----	-----	DI #22
22	SCS Runoff	8.764	3	717	23,164	-----	-----	-----	DI #23
23	SCS Runoff	6.962	3	717	18,401	-----	-----	-----	DI #24
24	SCS Runoff	6.962	3	717	18,401	-----	-----	-----	DI #25
25	SCS Runoff	4.505	3	717	11,907	-----	-----	-----	DI #26
26	SCS Runoff	6.552	3	717	17,319	-----	-----	-----	DI #27
27	SCS Runoff	7.362	3	717	16,802	-----	-----	-----	DITCH D-1
28	SCS Runoff	54.87	3	717	125,225	-----	-----	-----	DITCH D-2
29	SCS Runoff	8.272	3	717	21,865	-----	-----	-----	DI #29
30	SCS Runoff	2.129	3	717	5,629	-----	-----	-----	DI #30
31	SCS Runoff	7.289	3	717	19,267	-----	-----	-----	DI #31
32	SCS Runoff	13.51	3	717	35,719	-----	-----	-----	DI #32
33	SCS Runoff	4.341	3	717	11,474	-----	-----	-----	DI #33
34	SCS Runoff	11.76	3	717	28,893	-----	-----	-----	DI #34
35	SCS Runoff	3.686	3	717	9,742	-----	-----	-----	DI #35
TOTAL REVISED HYDROLOGY.gpw					Return Period: 50 Year			Friday, 07 / 28 / 2017	

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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
36	SCS Runoff	3.768	3	717	9,958	-----	-----	-----	DI #36
37	SCS Runoff	4.668	3	717	12,339	-----	-----	-----	DI #38
38	SCS Runoff	4.592	3	717	11,090	-----	-----	-----	DI #39
39	SCS Runoff	10.77	3	717	26,232	-----	-----	-----	DI #40
41	Combine	61.47	3	717	157,478	7, 8, 9,	-----	-----	DI 4-8, SWALES 7-8
42	Combine	104.75	3	717	252,609	10, 11, 12,	-----	-----	DI 9-15
43	Combine	61.86	3	717	148,008	13, 14, 15,	-----	-----	GRASS SWALES 1-6
44	Combine	228.09	3	717	558,095	16, 17, 18,	-----	-----	TOTAL CLEAN WATER SYSTEM
45	Reservoir	28.54	3	738	451,154	1, 2, 3,	-----	-----	STORMWATER POND
						4, 5, 6,			
						41, 42, 43			
47	Combine	20.03	3	717	49,662	44	562.68	332,740	DI 38-40
48	Combine	44.59	3	717	117,447	37, 38, 39,	-----	-----	DI 22-27
49	Combine	93.43	3	717	224,507	21, 22, 23,	-----	-----	DI 29-32 & DITCHES
50	Combine	23.55	3	717	60,067	24, 25, 26,	-----	-----	DI 33-36
51	Combine	181.61	3	717	451,682	27, 28, 29,	-----	-----	TOTAL DIRTY WATER SYSTEM
						30, 31, 32,			
						33, 34, 35,			
						36,			
						47, 48, 49,			
						50			
53	SCS Runoff	374.27	3	717	903,874	-----	-----	-----	E&S RUNOFF BASIN 1
54	Reservoir	83.33	3	729	796,934	53	564.73	484,679	E&S BASIN #1
56	SCS Runoff	123.99	3	717	299,443	-----	-----	-----	E&S RUNOFF BASIN 2
57	Reservoir	17.37	3	732	229,629	56	576.66	176,689	E&S BASIN #2
59	SCS Runoff	168.41	3	717	403,592	-----	-----	-----	DITCH D-3
60	SCS Runoff	173.46	3	717	412,752	-----	-----	-----	DITCH D-4
62	SCS Runoff	386.96	3	717	883,183	-----	-----	-----	PRE-DEVELOPMENT
63	Reservoir	28.54	3	738	451,154	44	562.68	332,740	POST-DEVELOPMENT
TOTAL REVISED HYDROLOGY.gpw					Return Period: 50 Year			Friday, 07 / 28 / 2017	

Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

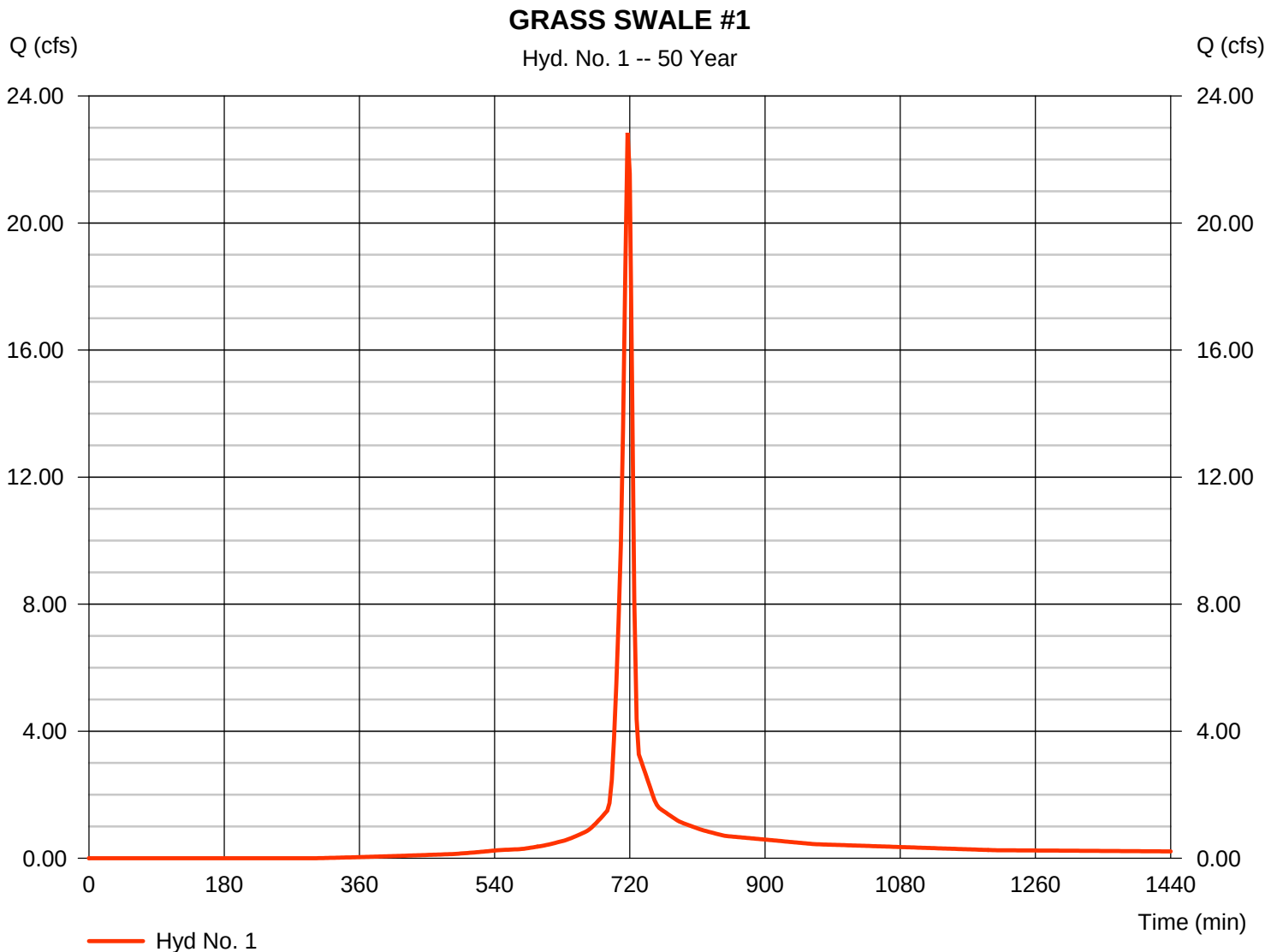
Friday, 07 / 28 / 2017

Hyd. No. 1

GRASS SWALE #1

Hydrograph type	= SCS Runoff	Peak discharge	= 22.84 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 52,870 cuft
Drainage area	= 3.340 ac	Curve number	= 83*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.730 \times 98) + (2.610 \times 79)] / 3.340$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

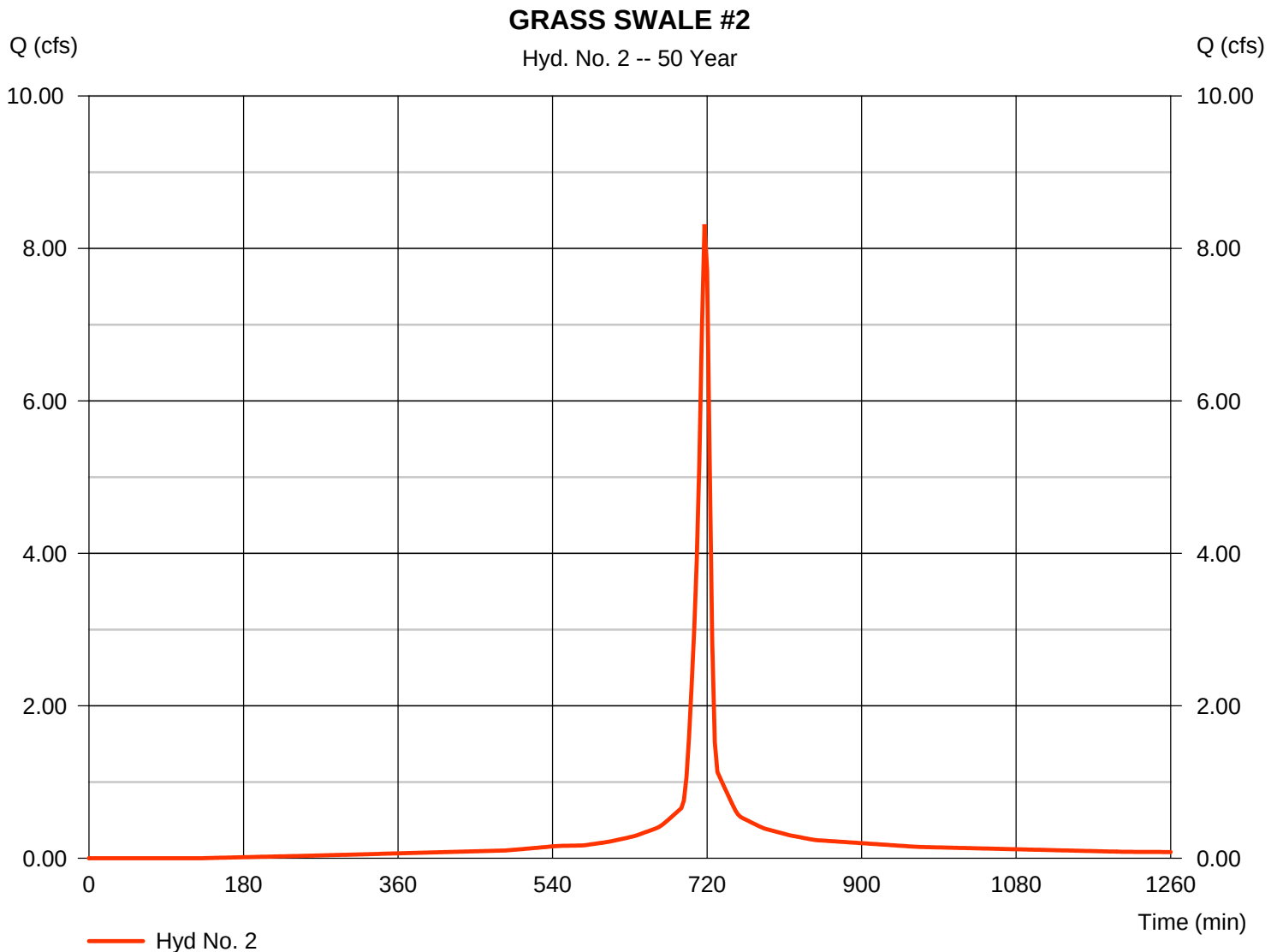
Friday, 07 / 28 / 2017

Hyd. No. 2

GRASS SWALE #2

Hydrograph type	=	SCS Runoff	Peak discharge	=	8.316 cfs
Storm frequency	=	50 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	20,637 cuft
Drainage area	=	1.050 ac	Curve number	=	93*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	6.60 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = $[(0.770 \times 98) + (0.280 \times 79)] / 1.050$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

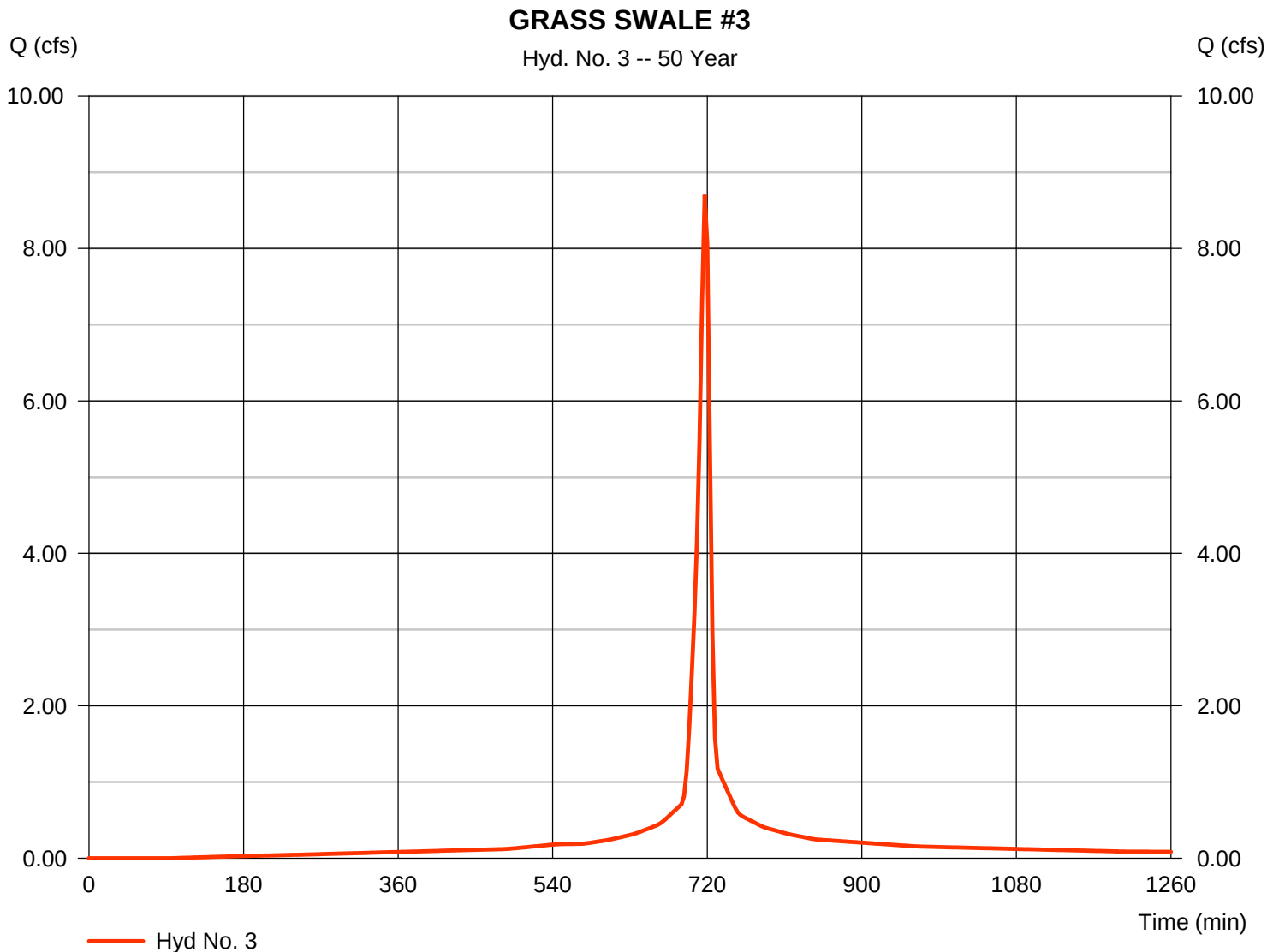
Friday, 07 / 28 / 2017

Hyd. No. 3

GRASS SWALE #3

Hydrograph type	= SCS Runoff	Peak discharge	= 8.702 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 22,081 cuft
Drainage area	= 1.080 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.890 \times 98) + (0.190 \times 79)] / 1.080$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

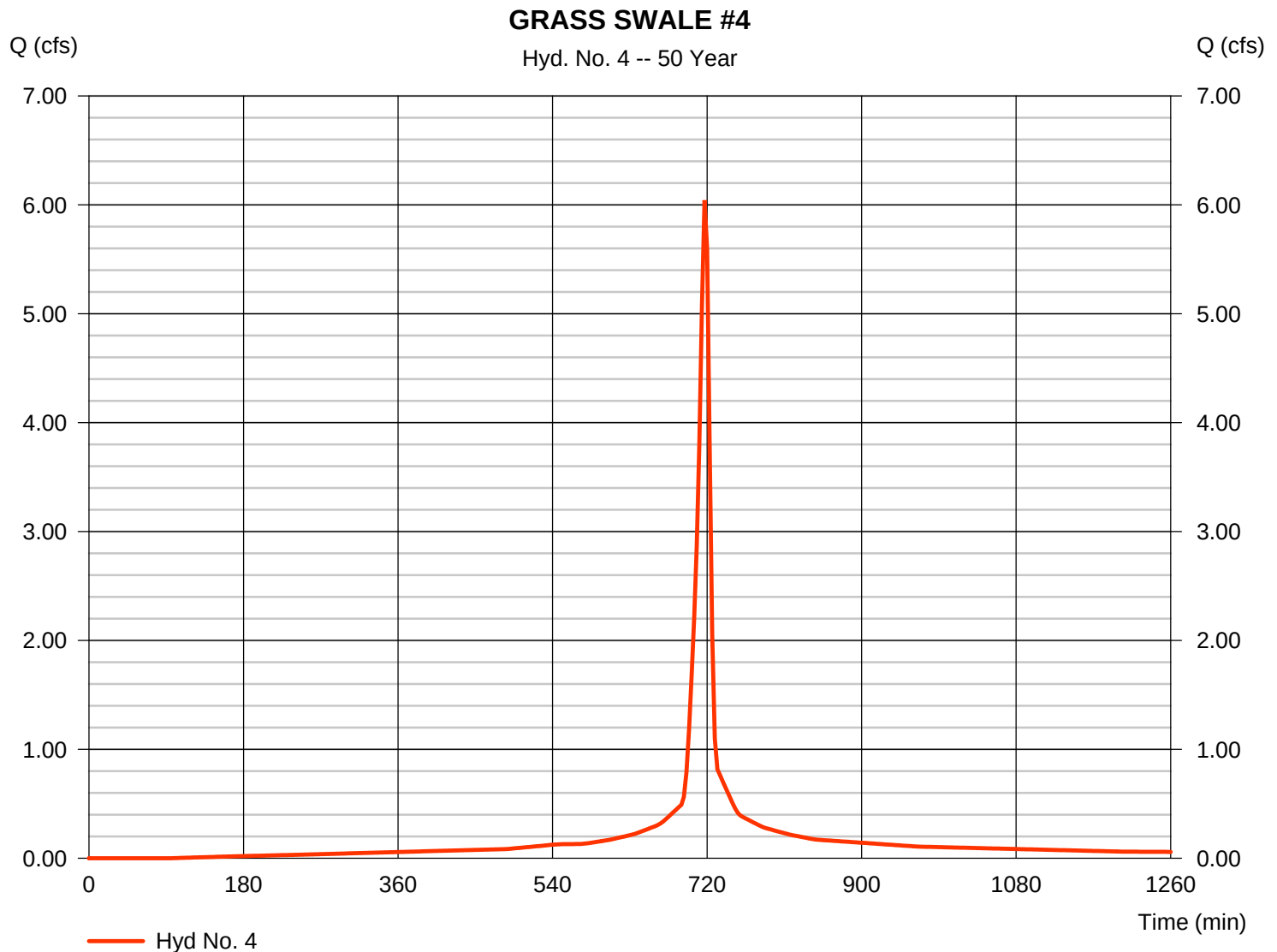
Friday, 07 / 28 / 2017

Hyd. No. 4

GRASS SWALE #4

Hydrograph type	= SCS Runoff	Peak discharge	= 6.043 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 15,334 cuft
Drainage area	= 0.750 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.630 \times 98) + (0.120 \times 79)] / 0.750$



Hydrograph Report

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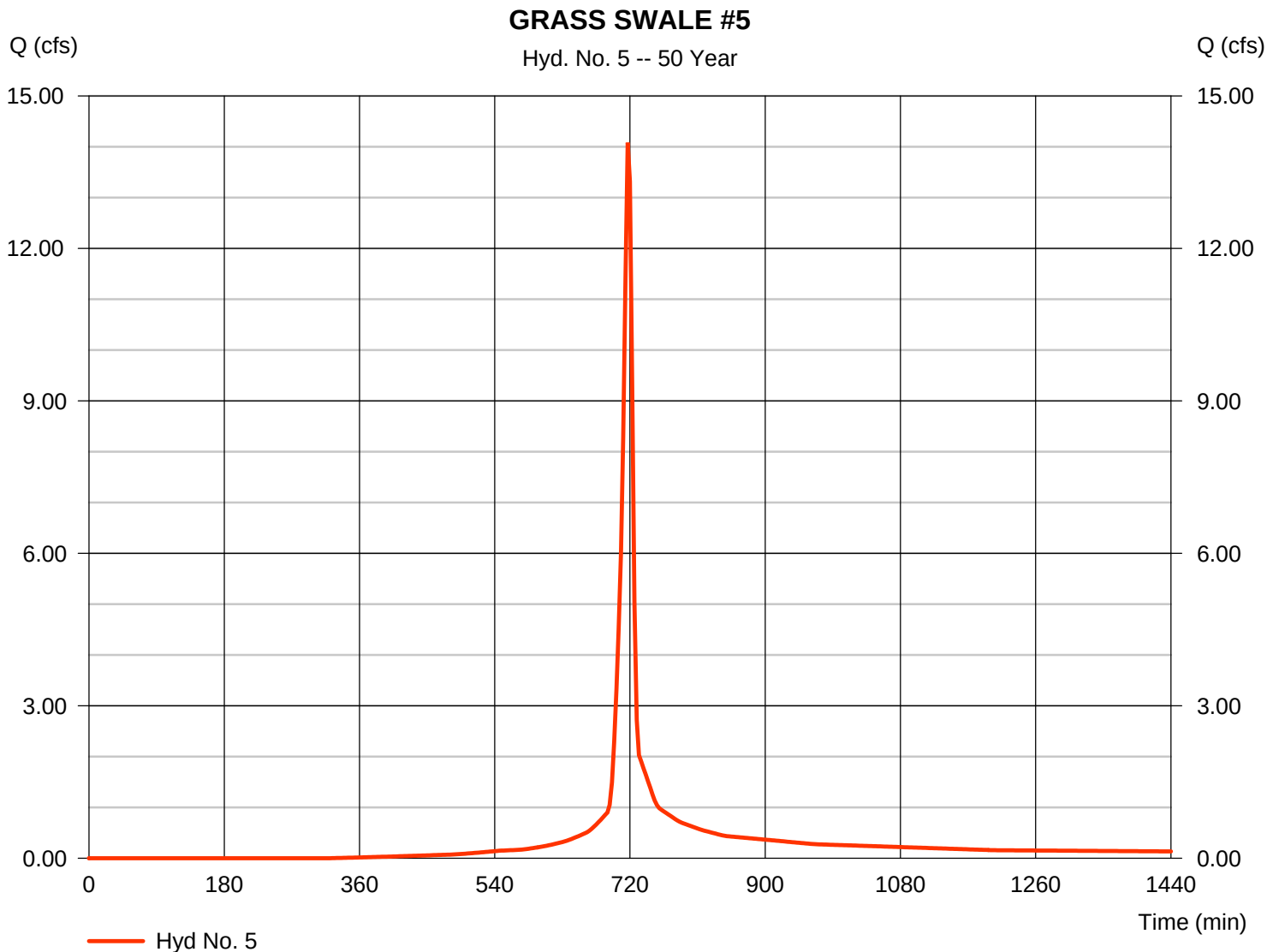
Friday, 07 / 28 / 2017

Hyd. No. 5

GRASS SWALE #5

Hydrograph type	= SCS Runoff	Peak discharge	= 14.08 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 32,463 cuft
Drainage area	= 2.100 ac	Curve number	= 82*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.300 \times 98) + (1.800 \times 79)] / 2.100$



Hydrograph Report

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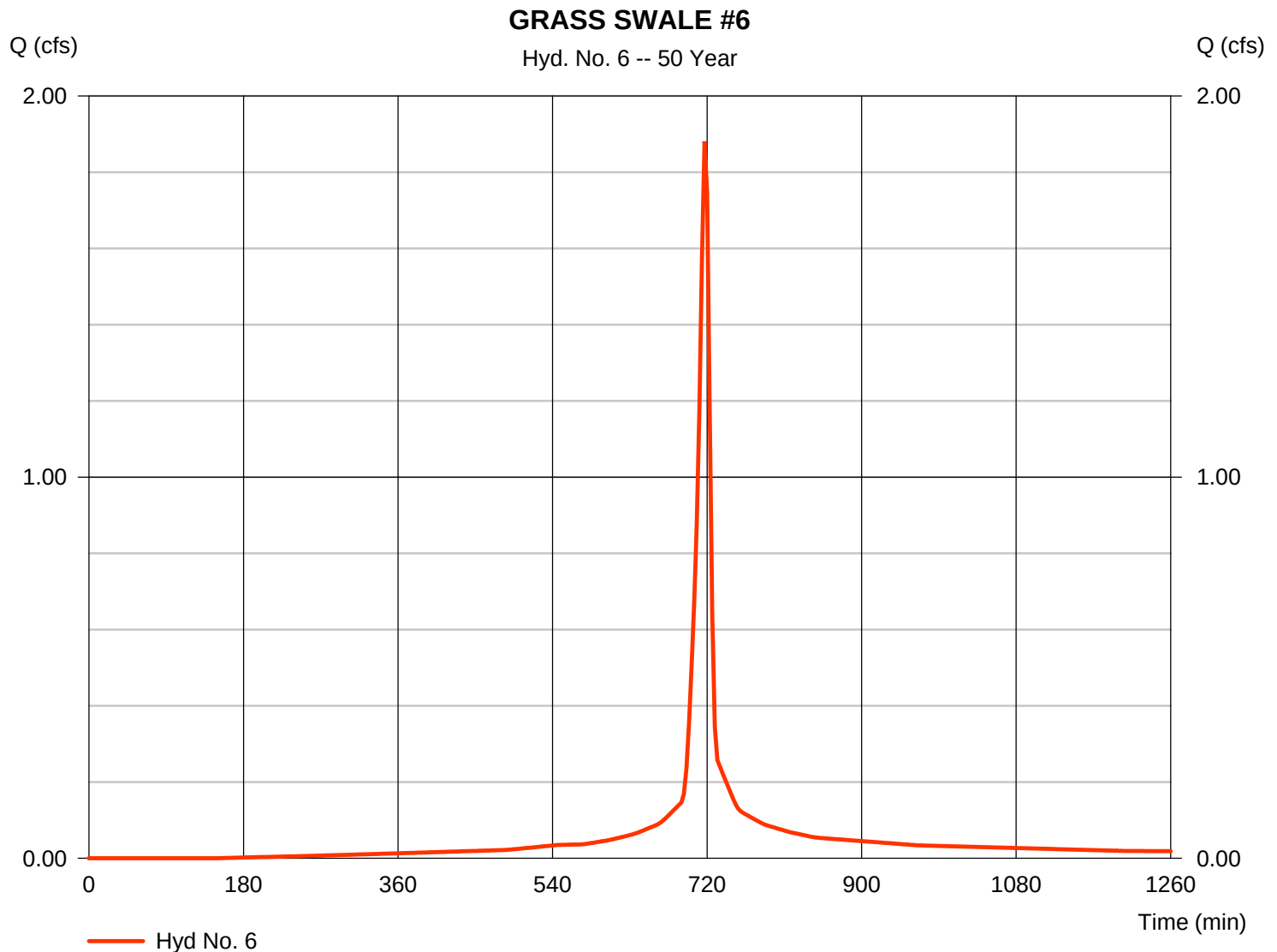
Friday, 07 / 28 / 2017

Hyd. No. 6

GRASS SWALE #6

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.881 cfs
Storm frequency	=	50 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	4,623 cuft
Drainage area	=	0.240 ac	Curve number	=	92*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	6.60 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = $[(0.160 \times 98) + (0.080 \times 79)] / 0.240$



Hydrograph Report

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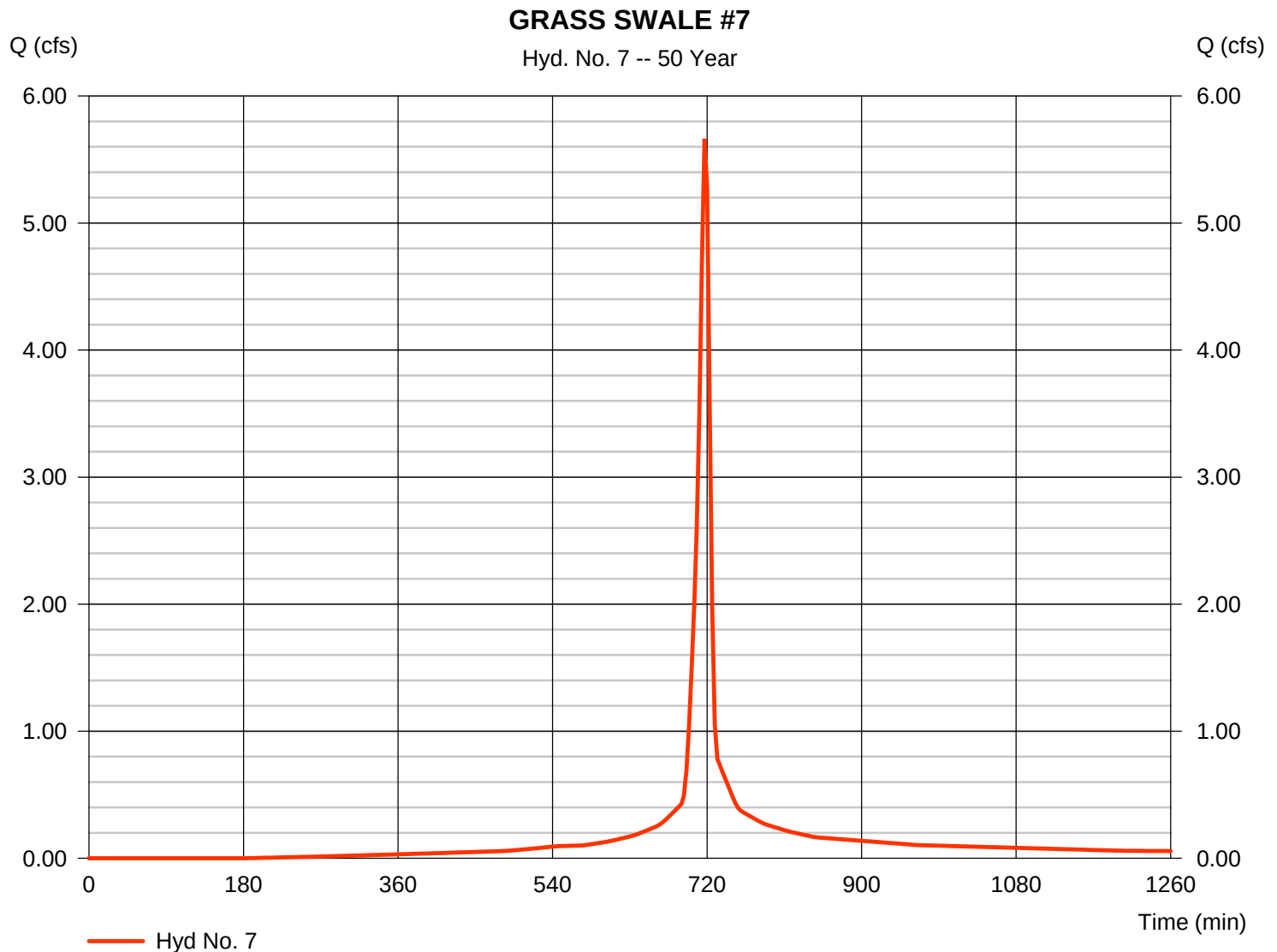
Friday, 07 / 28 / 2017

Hyd. No. 7

GRASS SWALE #7

Hydrograph type	= SCS Runoff	Peak discharge	= 5.664 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 13,678 cuft
Drainage area	= 0.740 ac	Curve number	= 90*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.420 \times 98) + (0.320 \times 79)] / 0.740$



Hydrograph Report

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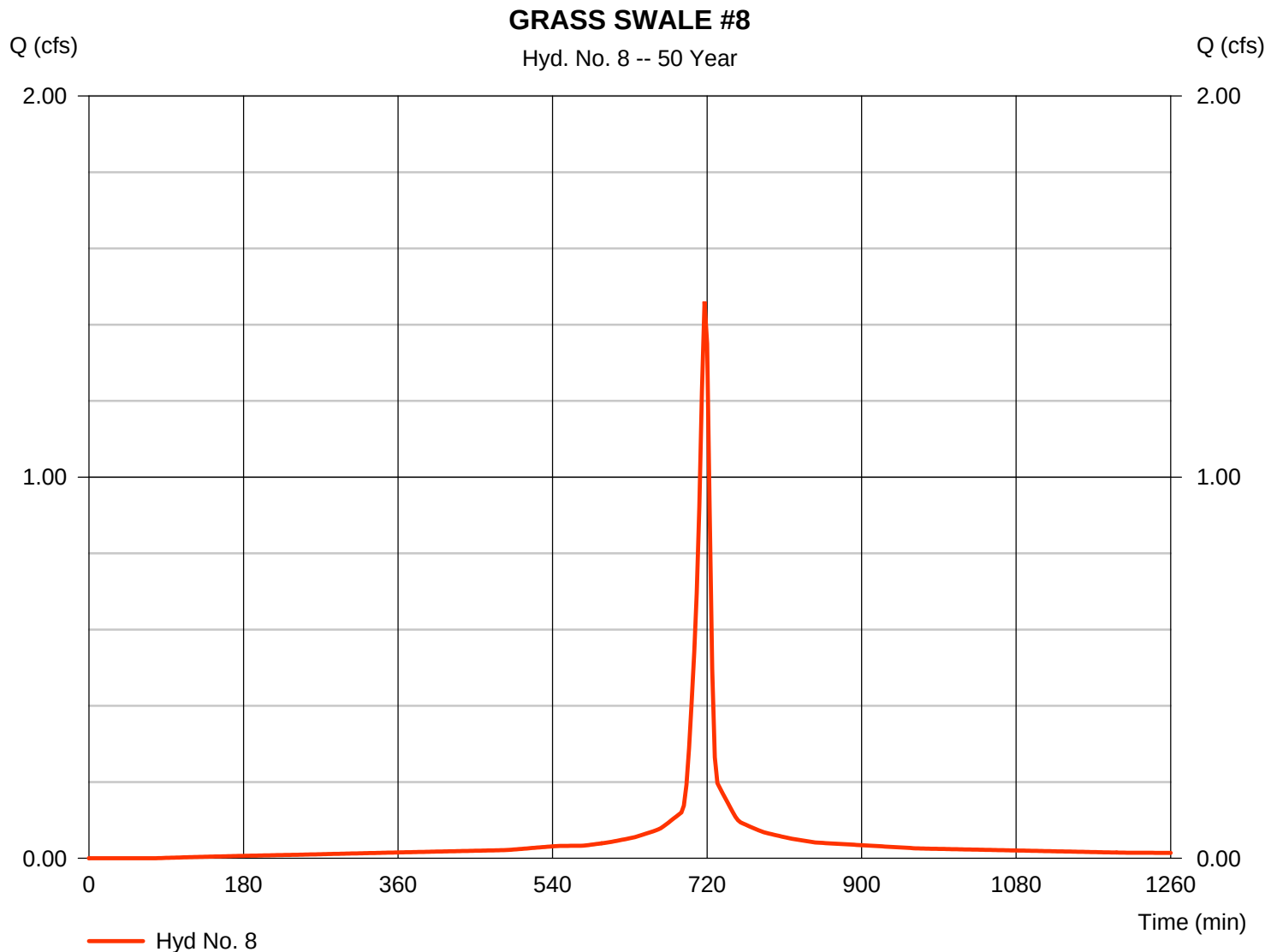
Friday, 07 / 28 / 2017

Hyd. No. 8

GRASS SWALE #8

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.460 cfs
Storm frequency	=	50 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	3,752 cuft
Drainage area	=	0.180 ac	Curve number	=	96*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	6.60 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = $[(0.160 \times 98) + (0.020 \times 79)] / 0.180$



Hydrograph Report

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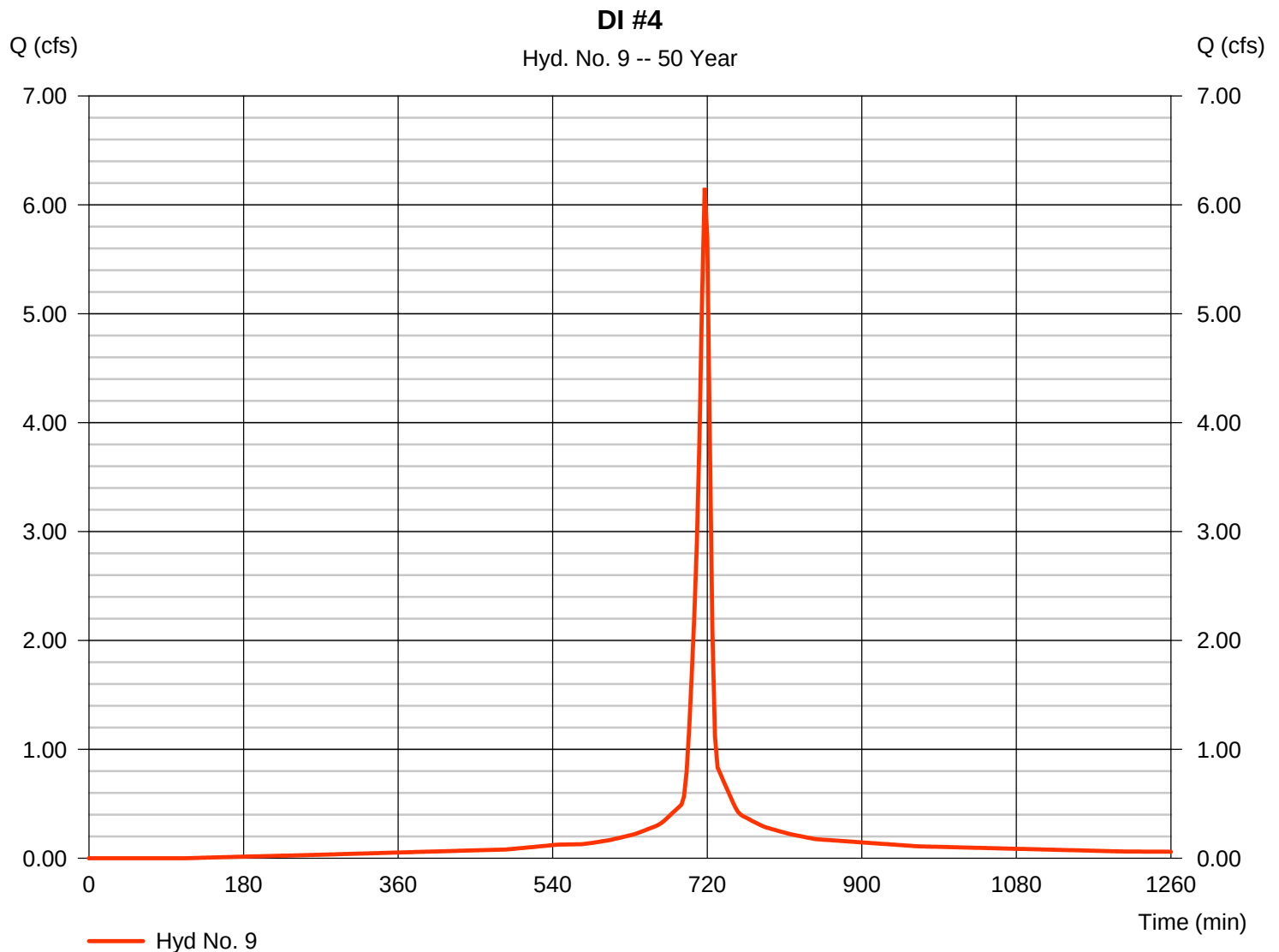
Friday, 07 / 28 / 2017

Hyd. No. 9

DI #4

Hydrograph type	= SCS Runoff	Peak discharge	= 6.155 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 15,438 cuft
Drainage area	= 0.770 ac	Curve number	= 94*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.610 \times 98) + (0.160 \times 79)] / 0.770$



Hydrograph Report

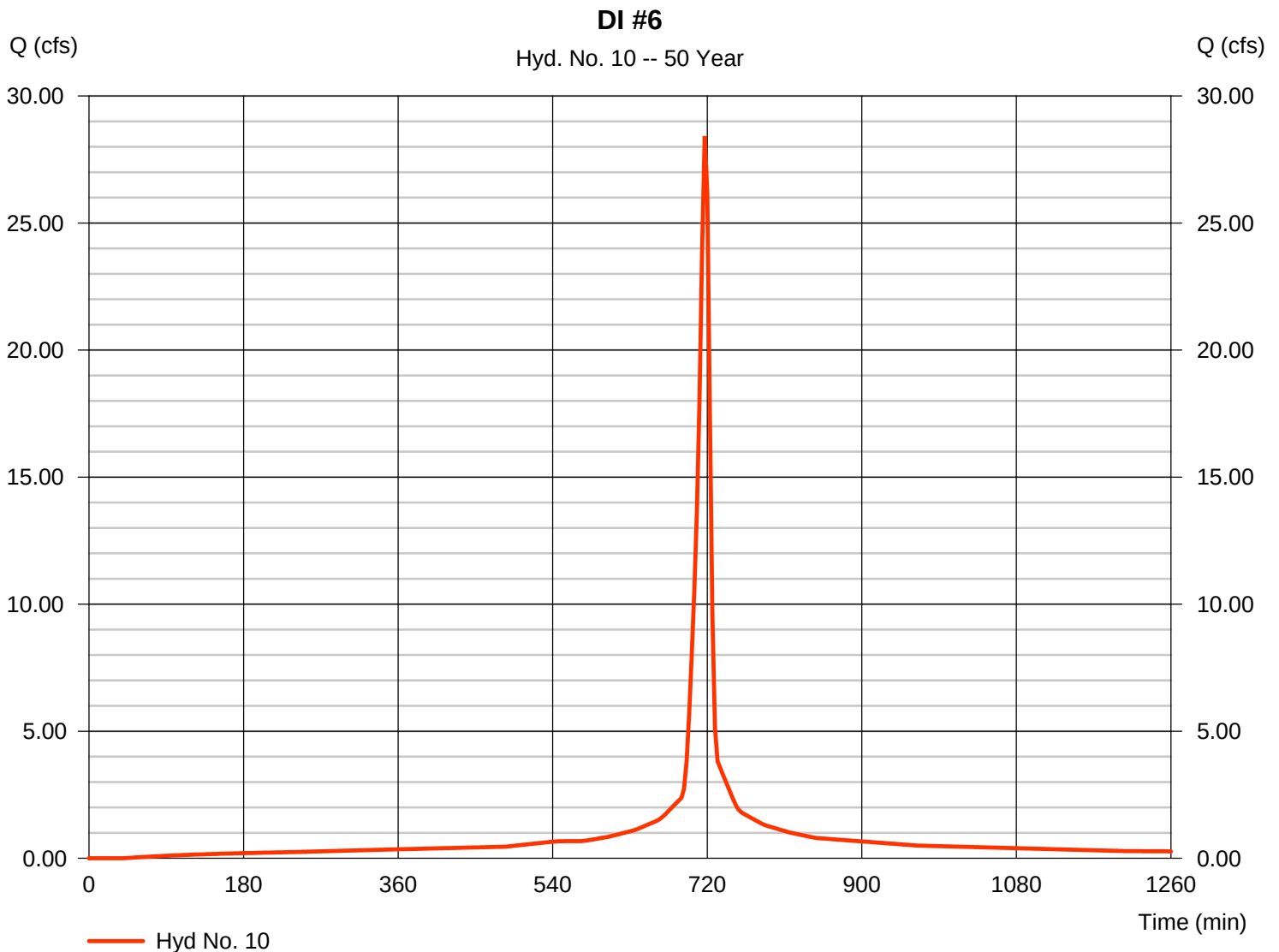
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Hyd. No. 10

DI #6

Hydrograph type	= SCS Runoff	Peak discharge	= 28.42 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 75,119 cuft
Drainage area	= 3.470 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

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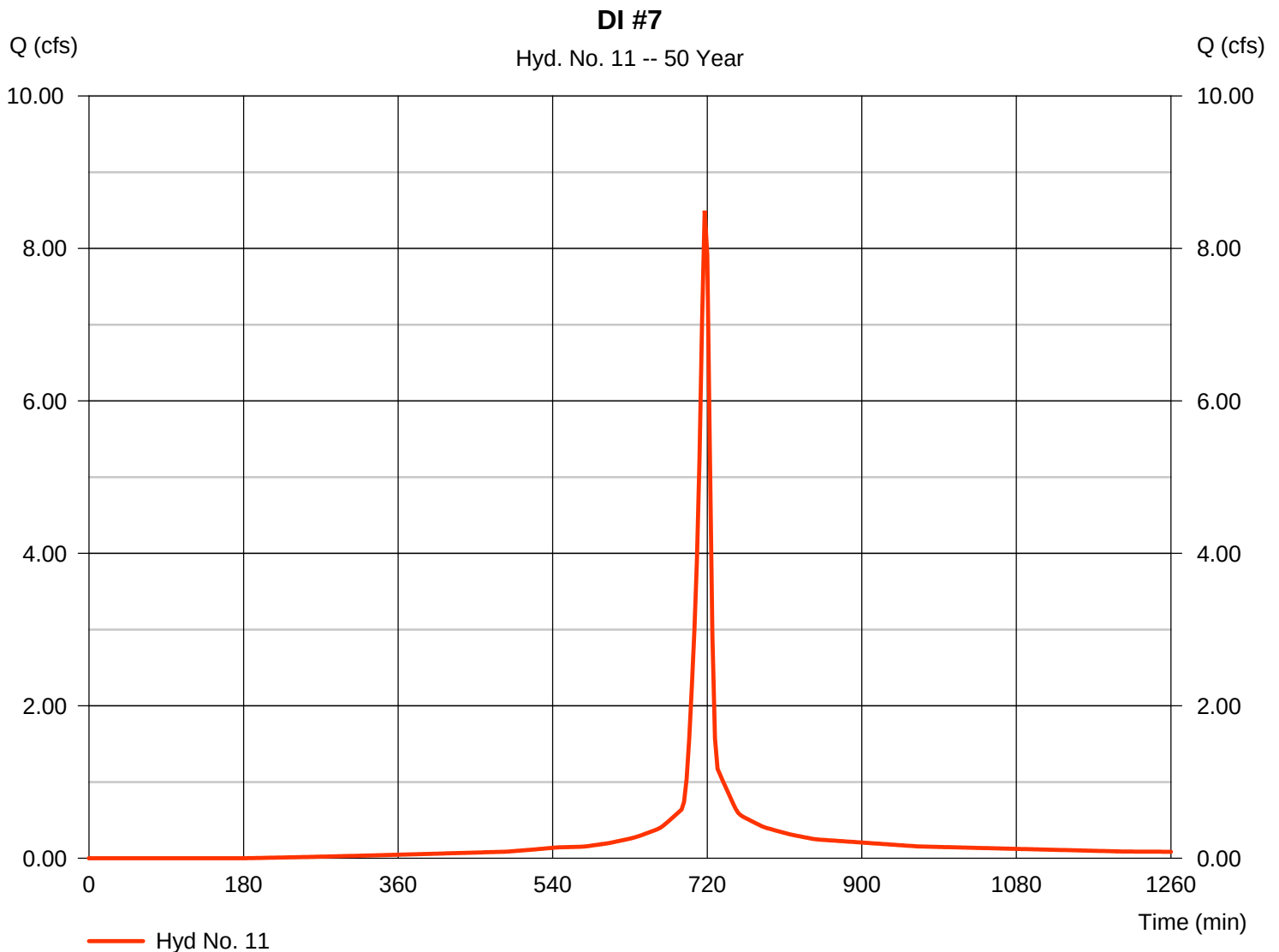
Friday, 07 / 28 / 2017

Hyd. No. 11

DI #7

Hydrograph type	= SCS Runoff	Peak discharge	= 8.496 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 20,517 cuft
Drainage area	= 1.110 ac	Curve number	= 90*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.660 \times 98) + (0.450 \times 79)] / 1.110$



Hydrograph Report

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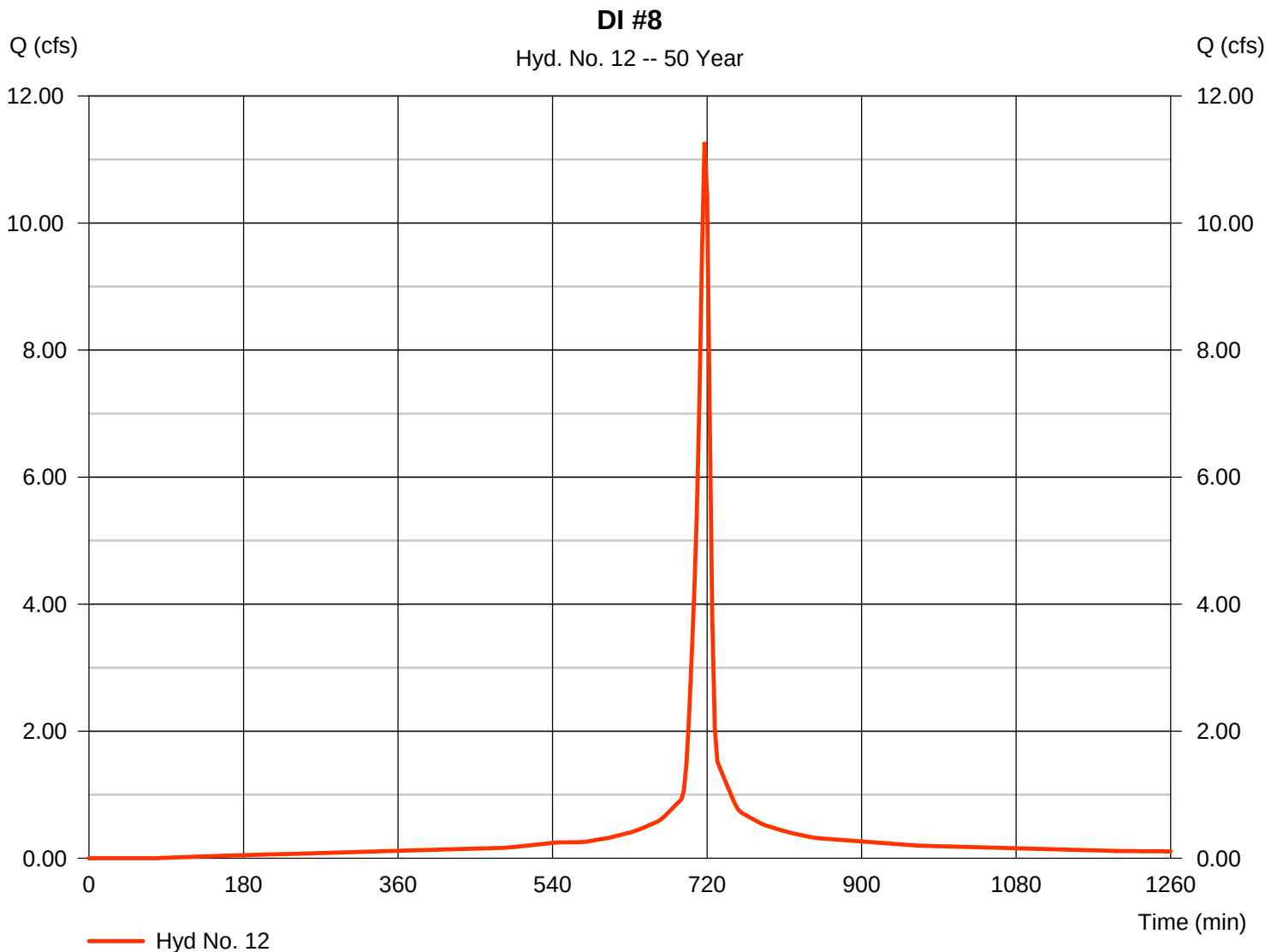
Friday, 07 / 28 / 2017

Hyd. No. 12

DI #8

Hydrograph type	= SCS Runoff	Peak discharge	= 11.28 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 28,974 cuft
Drainage area	= 1.390 ac	Curve number	= 96*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.230 \times 98) + (0.160 \times 79)] / 1.390$



Hydrograph Report

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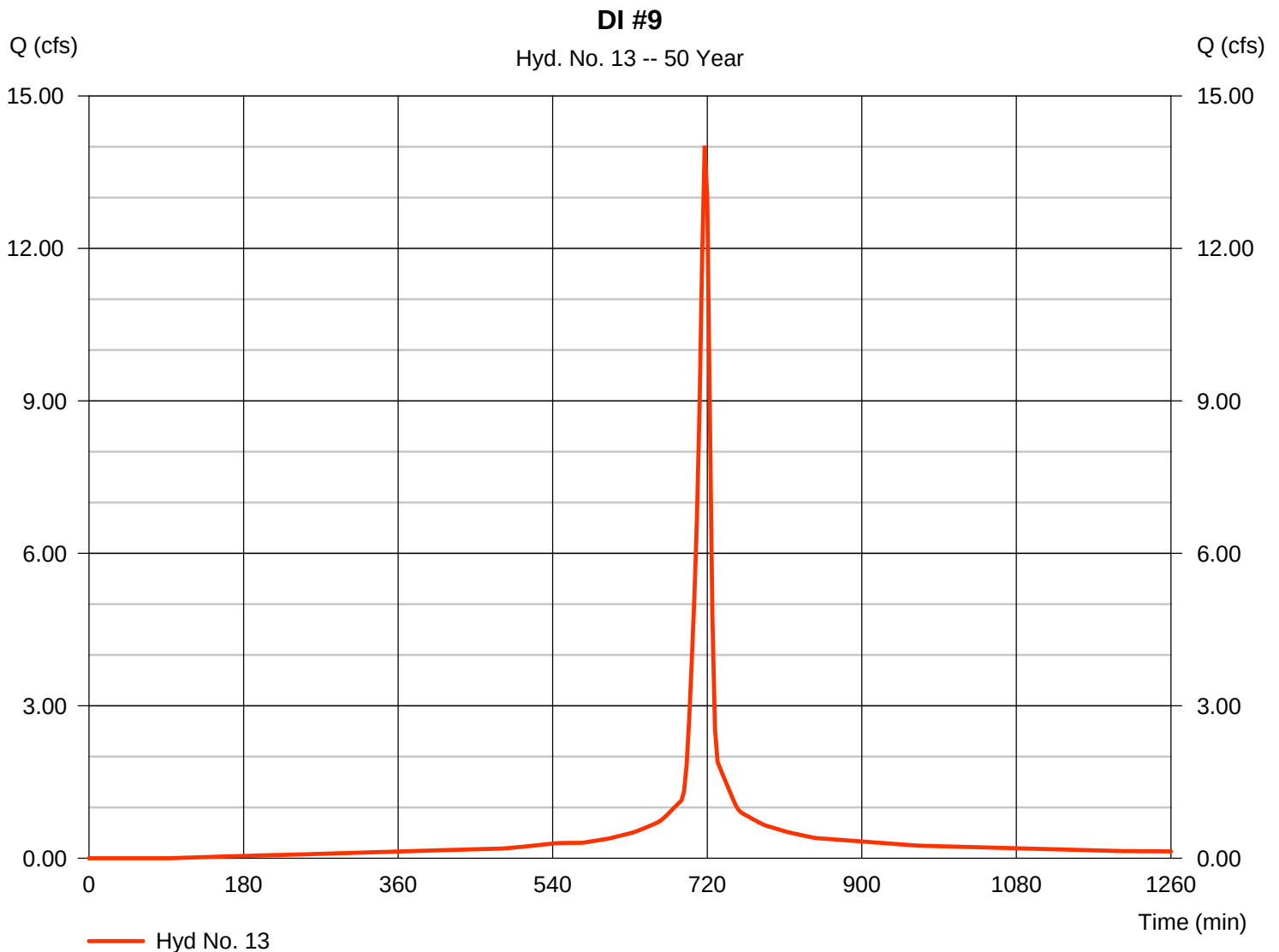
Friday, 07 / 28 / 2017

Hyd. No. 13

DI #9

Hydrograph type	= SCS Runoff	Peak discharge	= 14.02 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 35,575 cuft
Drainage area	= 1.740 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.490 \times 98) + (0.250 \times 79)] / 1.740$



Hydrograph Report

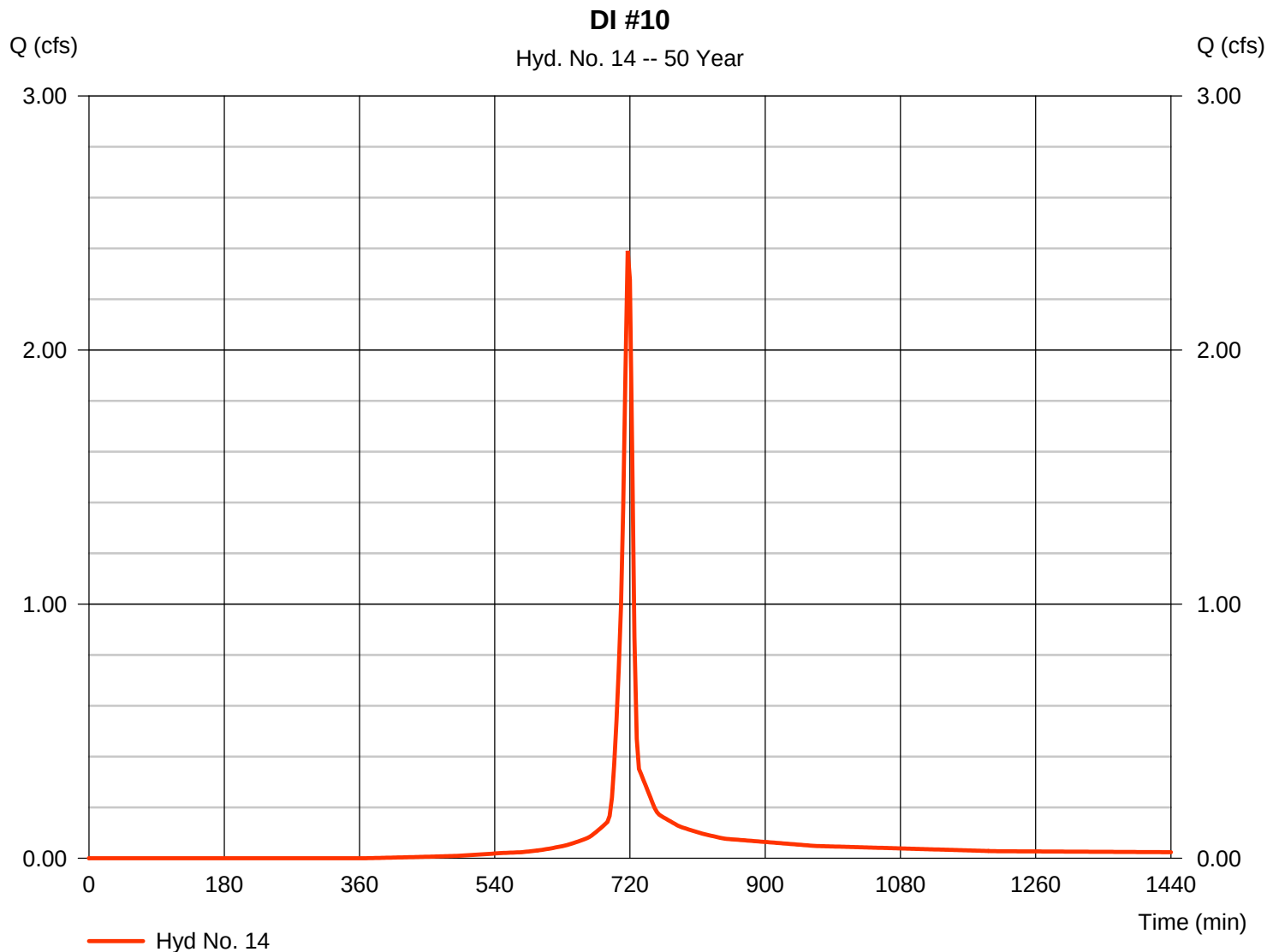
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Hyd. No. 14

DI #10

Hydrograph type	= SCS Runoff	Peak discharge	= 2.391 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 5,457 cuft
Drainage area	= 0.380 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

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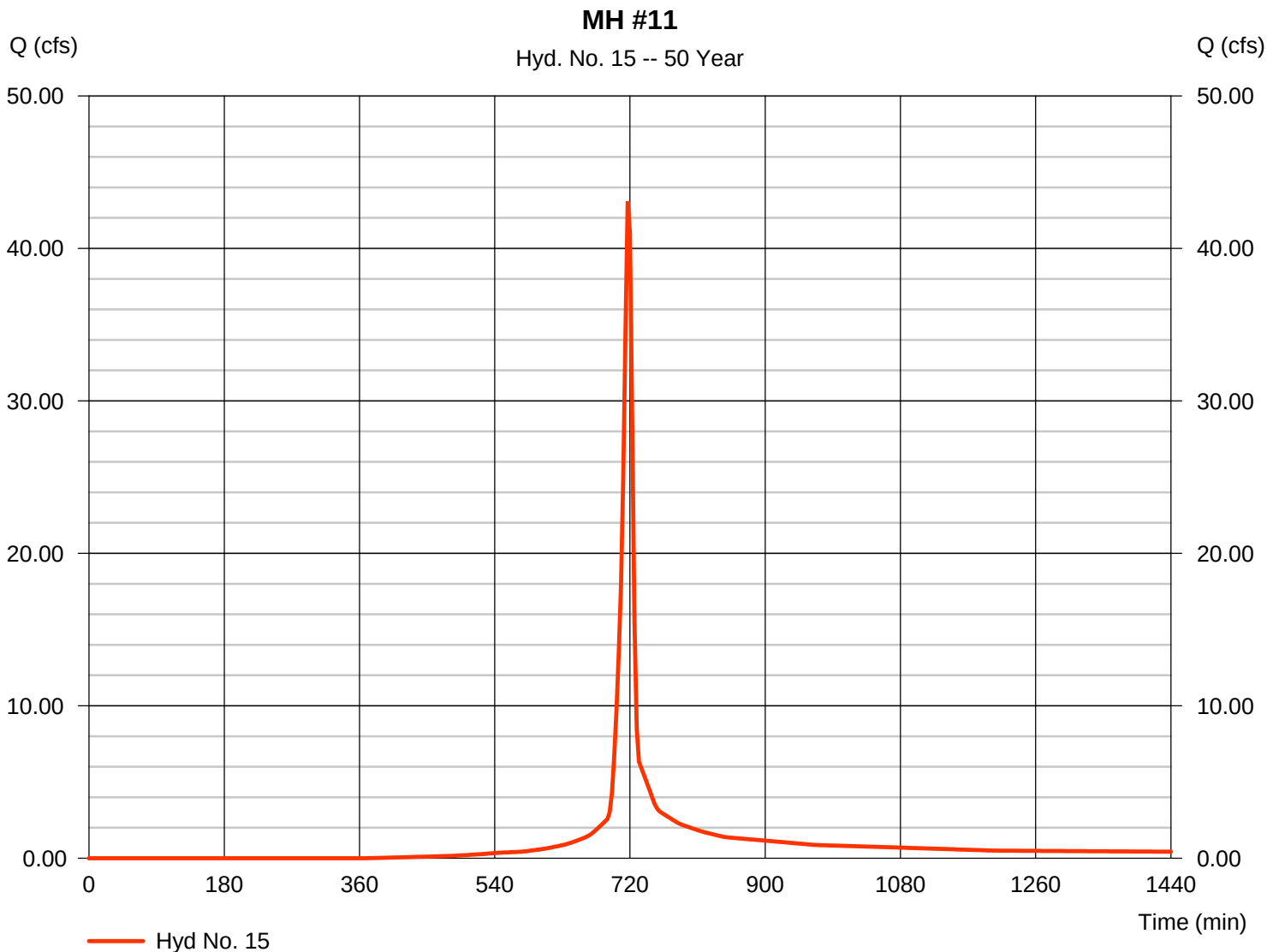
Friday, 07 / 28 / 2017

Hyd. No. 15

MH #11

Hydrograph type = SCS Runoff
 Storm frequency = 50 yrs
 Time interval = 3 min
 Drainage area = 6.850 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 6.60 in
 Storm duration = 24 hrs

Peak discharge = 43.10 cfs
 Time to peak = 717 min
 Hyd. volume = 98,371 cuft
 Curve number = 79
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

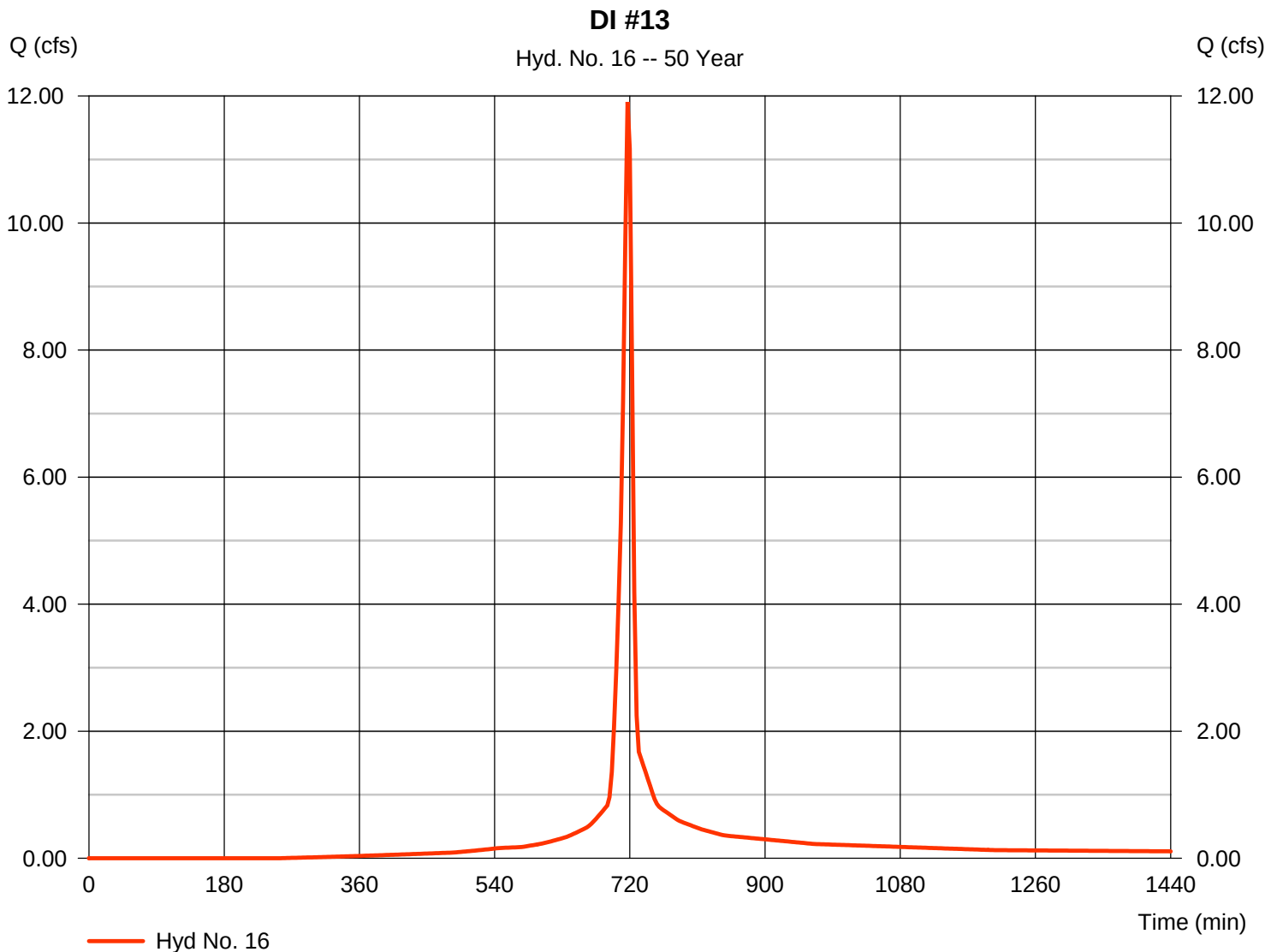
Friday, 07 / 28 / 2017

Hyd. No. 16

DI #13

Hydrograph type	= SCS Runoff	Peak discharge	= 11.90 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 27,974 cuft
Drainage area	= 1.650 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.580 \times 98) + (1.070 \times 79)] / 1.650$



Hydrograph Report

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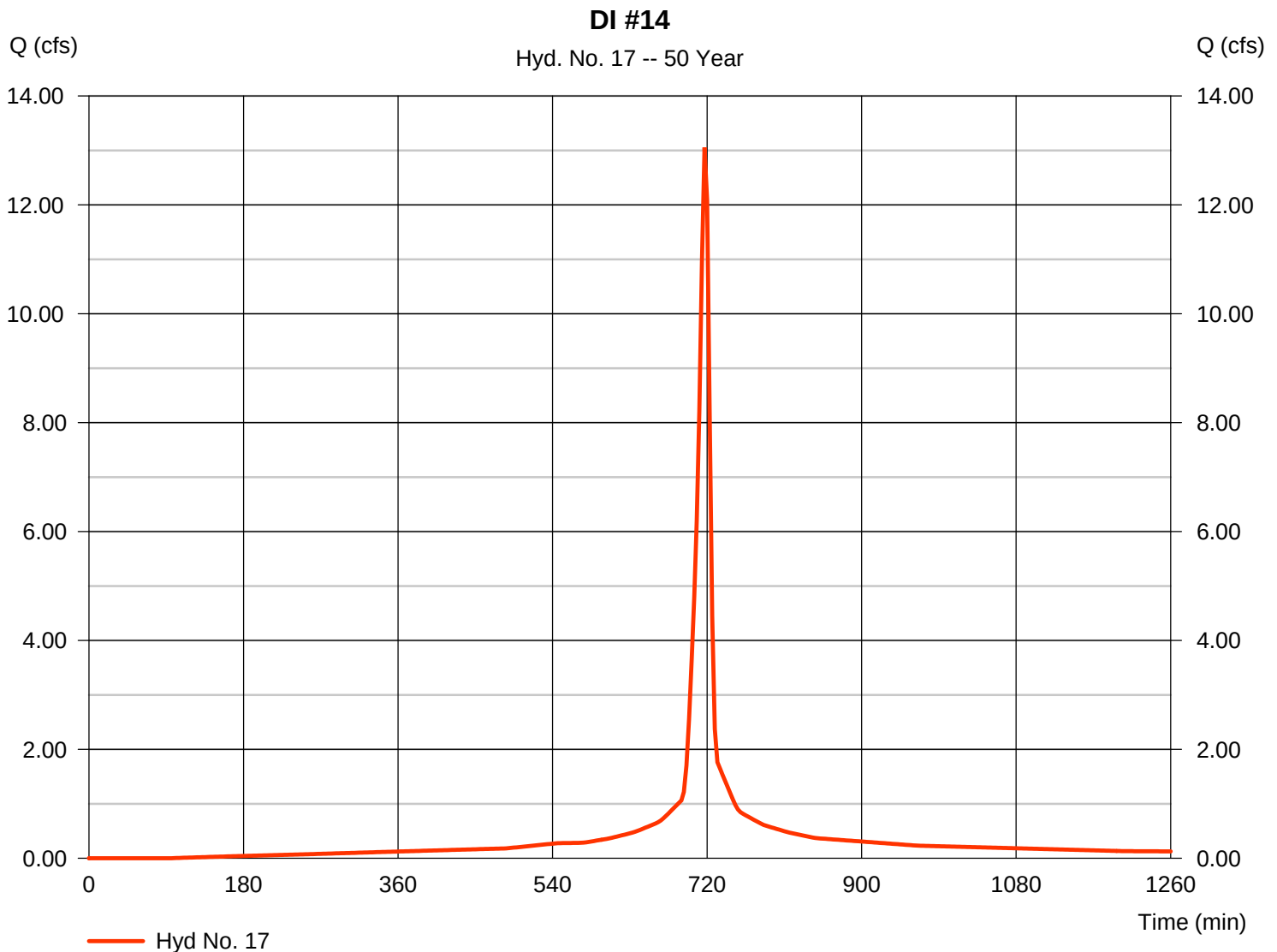
Friday, 07 / 28 / 2017

Hyd. No. 17

DI #14

Hydrograph type	= SCS Runoff	Peak discharge	= 13.05 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 33,122 cuft
Drainage area	= 1.620 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.400 \times 98) + (0.220 \times 79)] / 1.620$



Hydrograph Report

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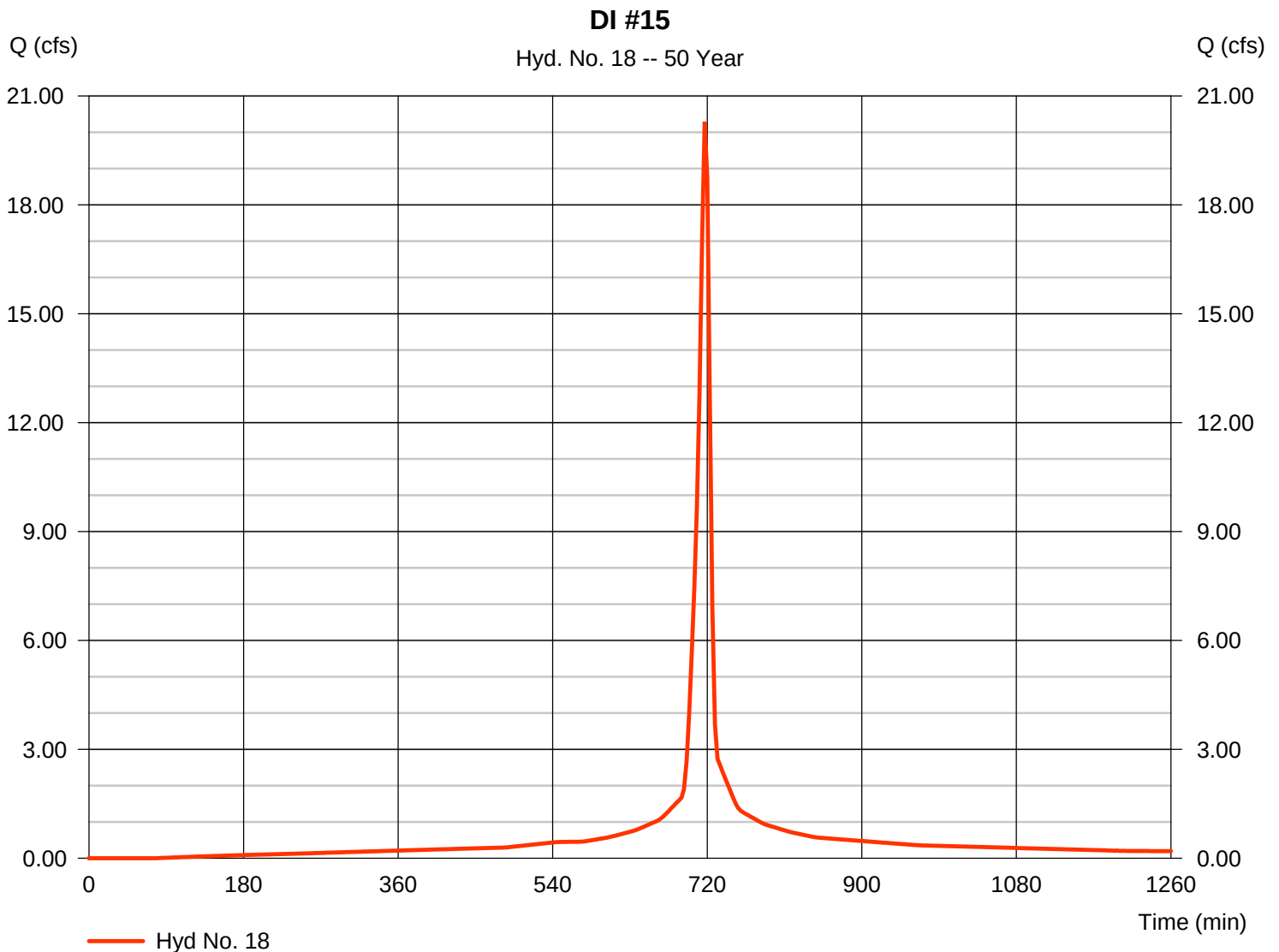
Friday, 07 / 28 / 2017

Hyd. No. 18

DI #15

Hydrograph type	= SCS Runoff	Peak discharge	= 20.28 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 52,111 cuft
Drainage area	= 2.500 ac	Curve number	= 96*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(2.280 \times 98) + (0.220 \times 79)] / 2.500$



Hydrograph Report

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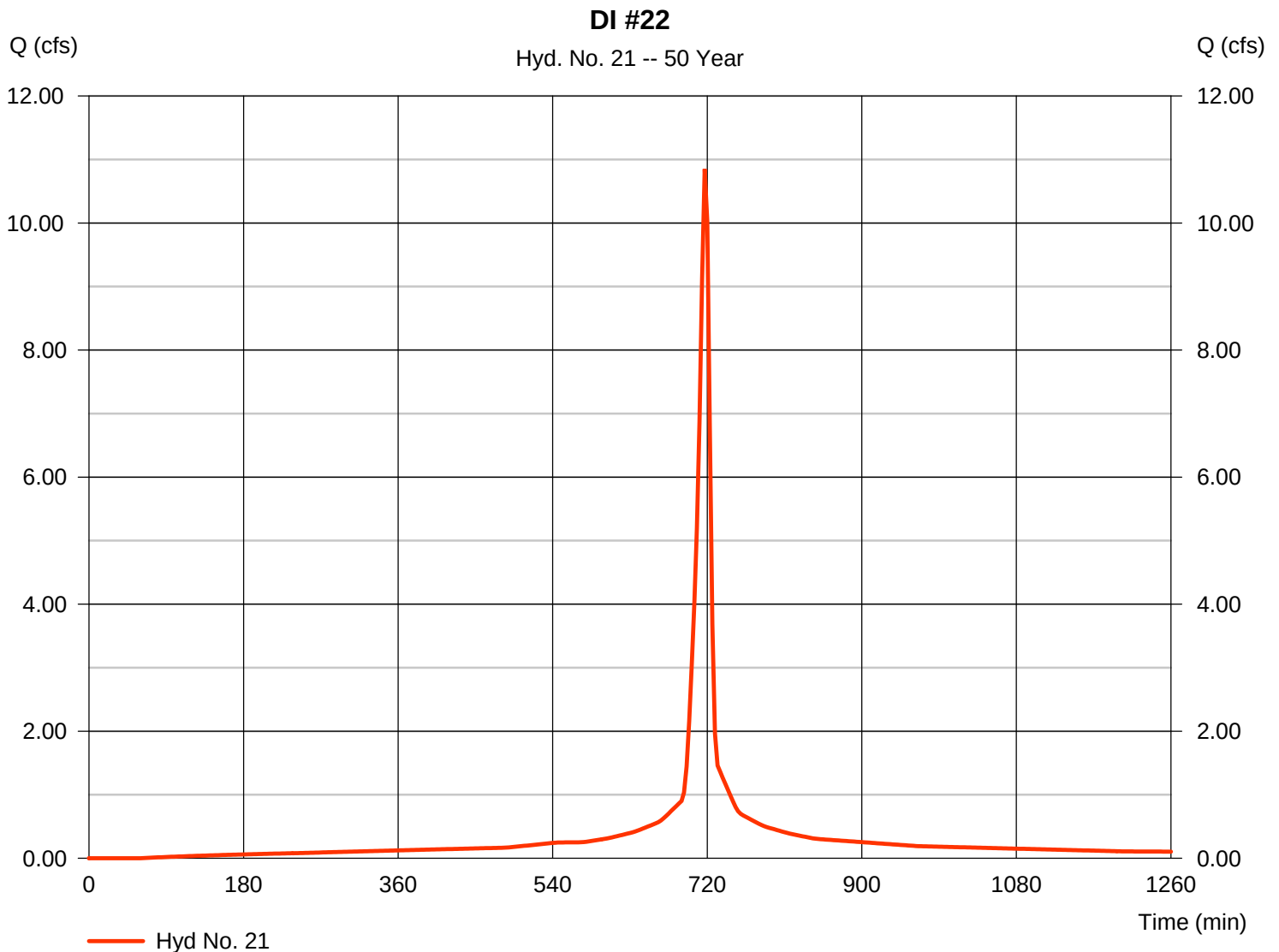
Friday, 07 / 28 / 2017

Hyd. No. 21

DI #22

Hydrograph type	= SCS Runoff	Peak discharge	= 10.85 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 28,256 cuft
Drainage area	= 1.330 ac	Curve number	= 97*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.280 \times 98) + (0.050 \times 79)] / 1.330$



Hydrograph Report

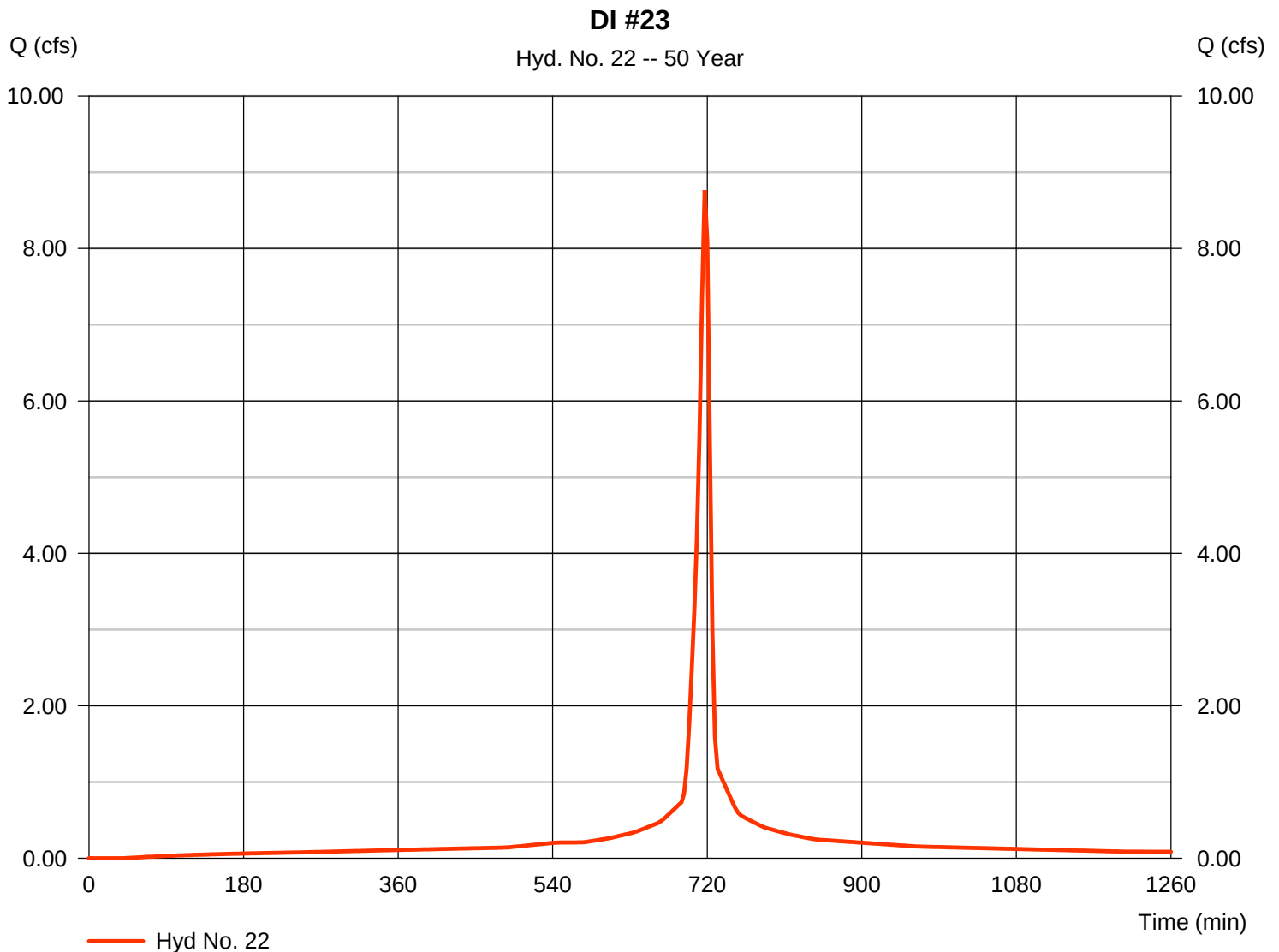
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Hyd. No. 22

DI #23

Hydrograph type	= SCS Runoff	Peak discharge	= 8.764 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 23,164 cuft
Drainage area	= 1.070 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

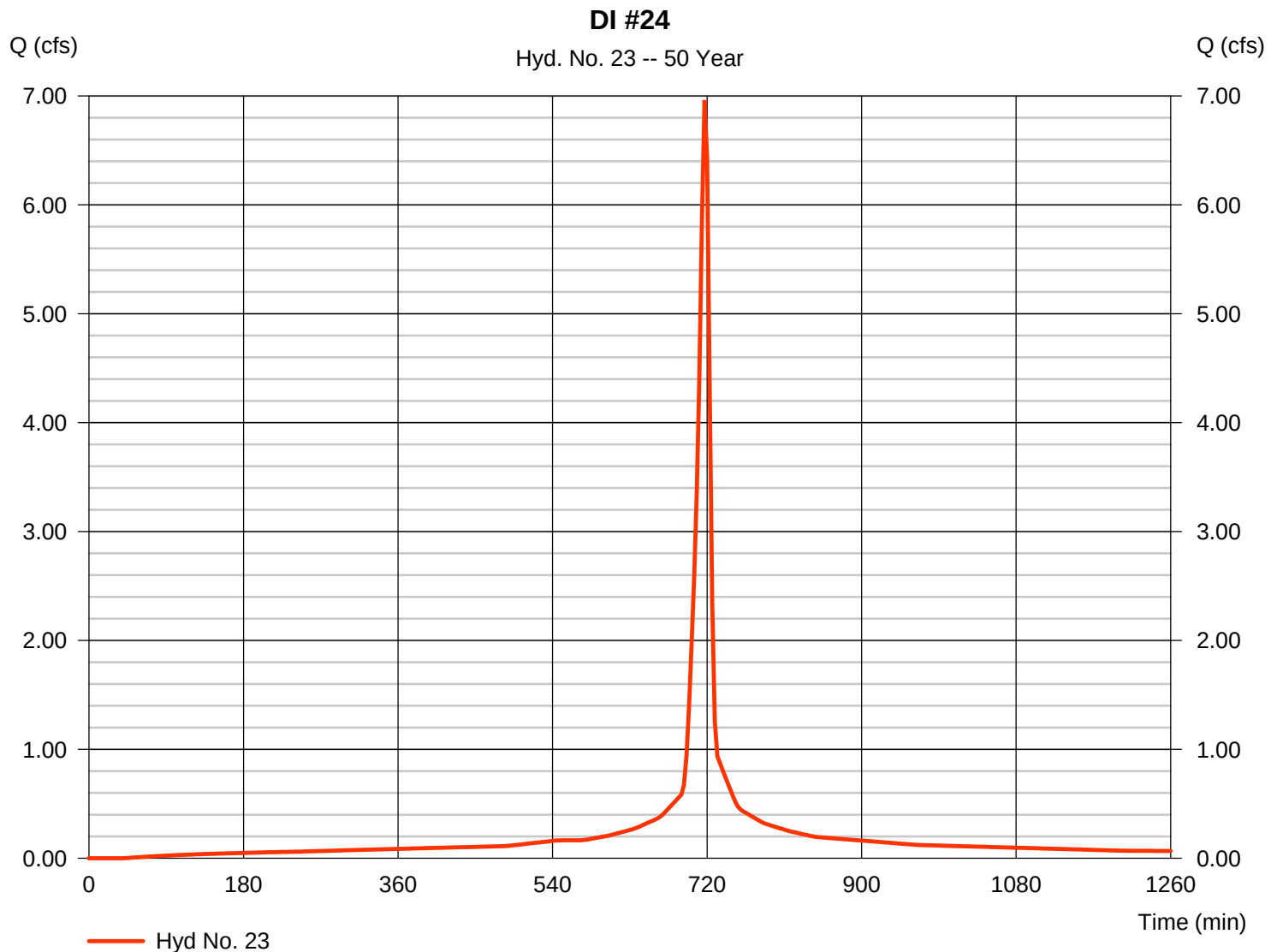
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Hyd. No. 23

DI #24

Hydrograph type	= SCS Runoff	Peak discharge	= 6.962 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 18,401 cuft
Drainage area	= 0.850 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

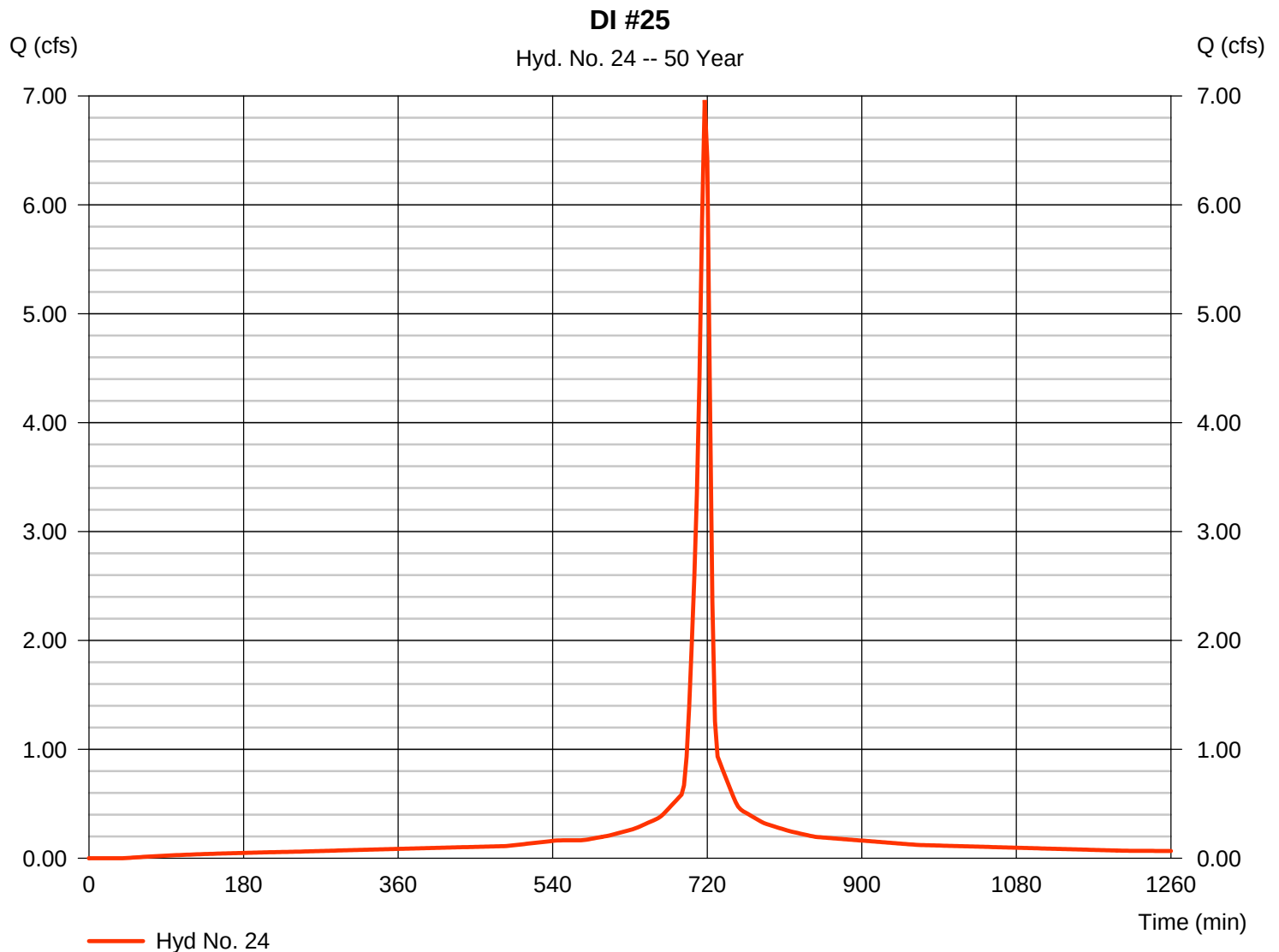
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Hyd. No. 24

DI #25

Hydrograph type	= SCS Runoff	Peak discharge	= 6.962 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 18,401 cuft
Drainage area	= 0.850 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

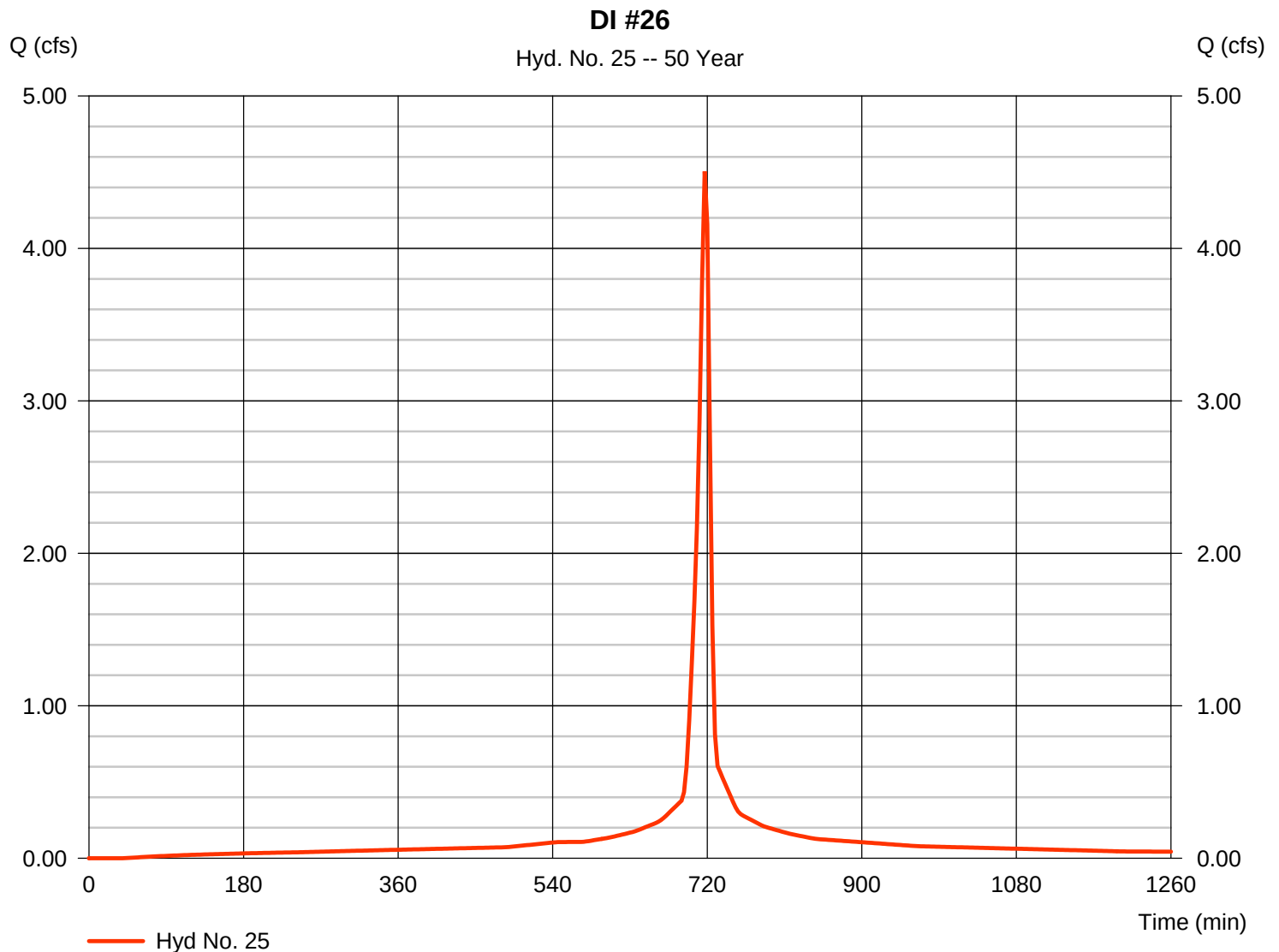
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Friday, 07 / 28 / 2017

Hyd. No. 25

DI #26

Hydrograph type	= SCS Runoff	Peak discharge	= 4.505 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 11,907 cuft
Drainage area	= 0.550 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

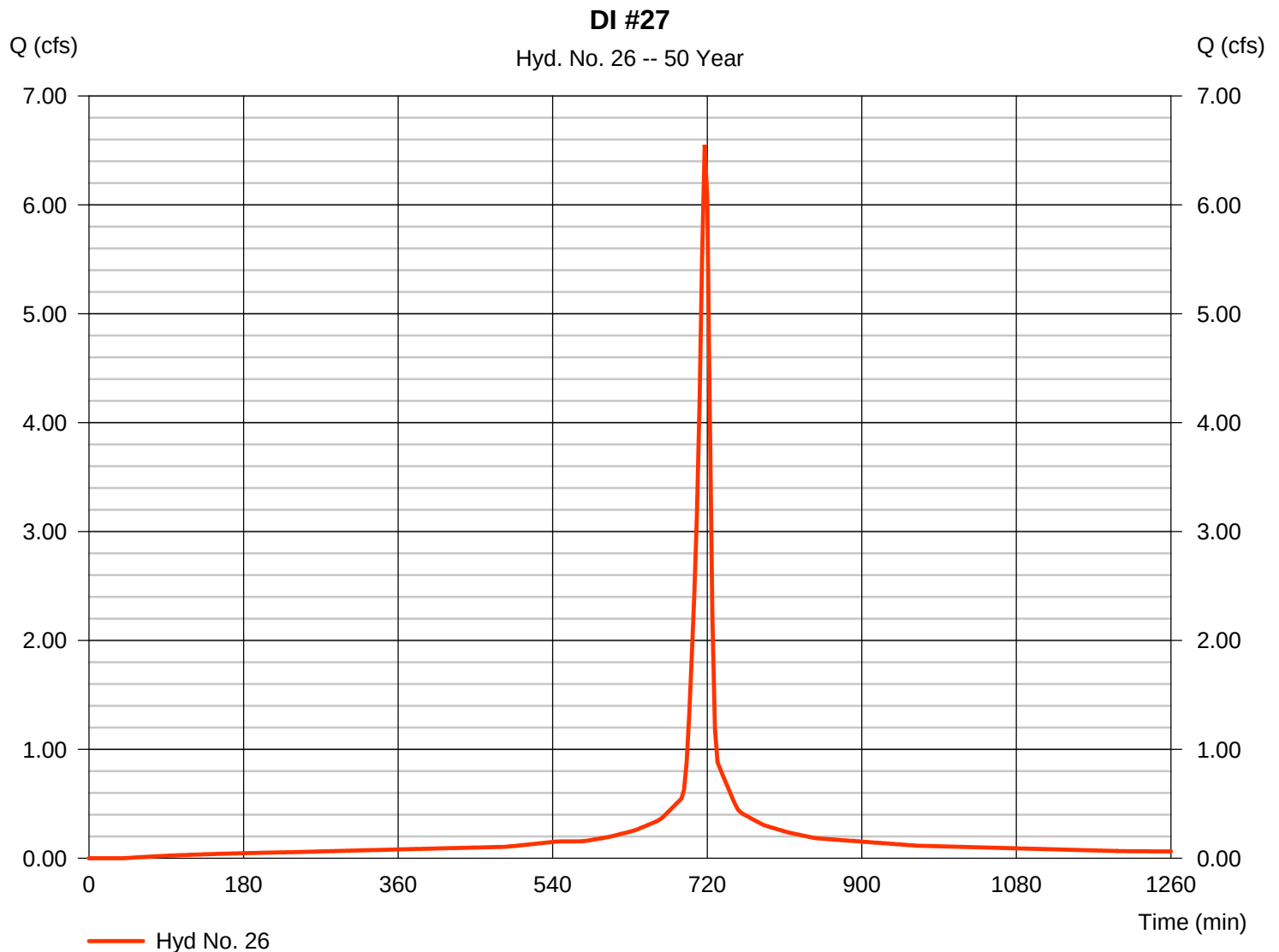
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Friday, 07 / 28 / 2017

Hyd. No. 26

DI #27

Hydrograph type	= SCS Runoff	Peak discharge	= 6.552 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 17,319 cuft
Drainage area	= 0.800 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

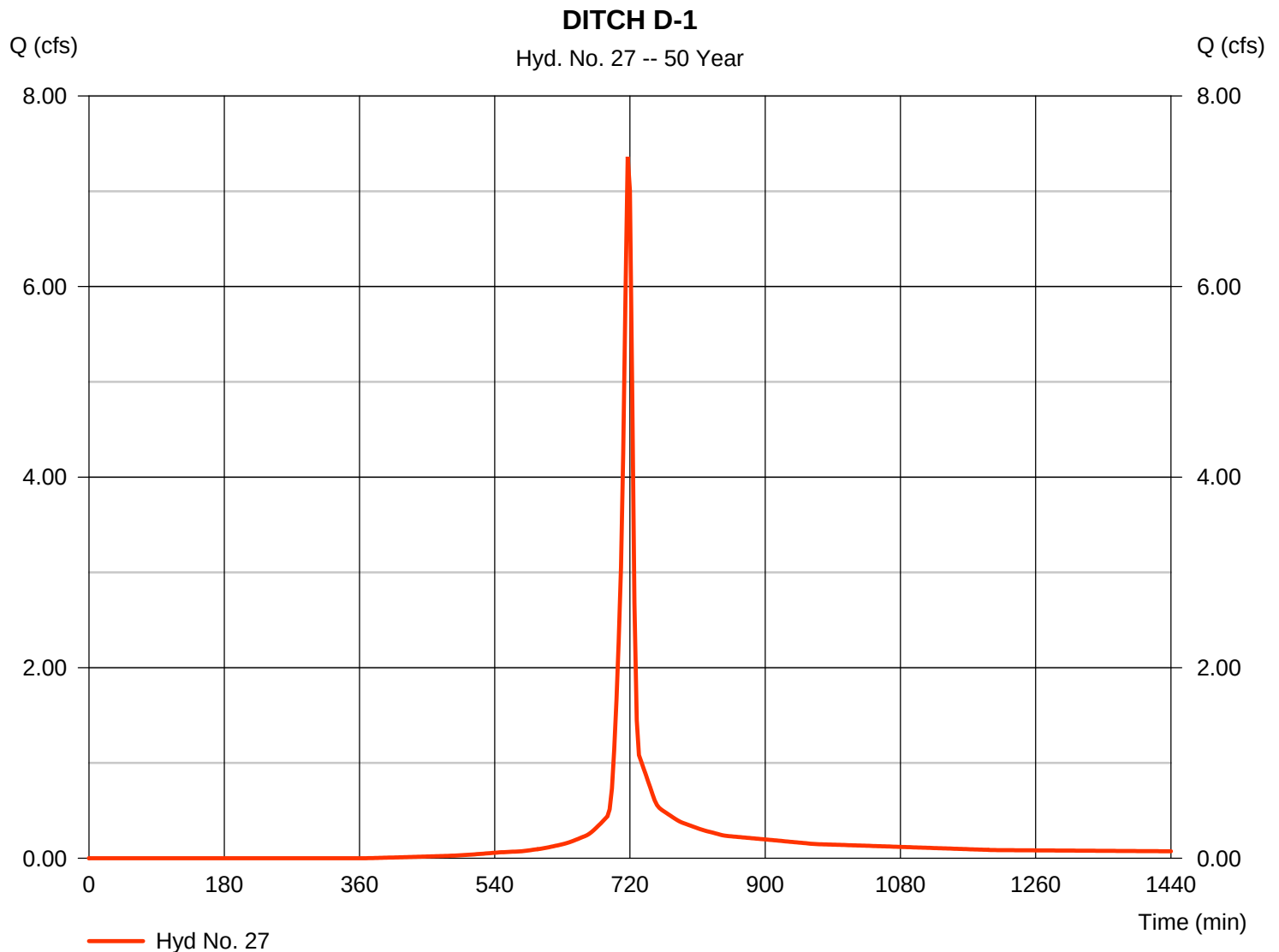
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Friday, 07 / 28 / 2017

Hyd. No. 27

DITCH D-1

Hydrograph type	= SCS Runoff	Peak discharge	= 7.362 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 16,802 cuft
Drainage area	= 1.170 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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Hyd. No. 28

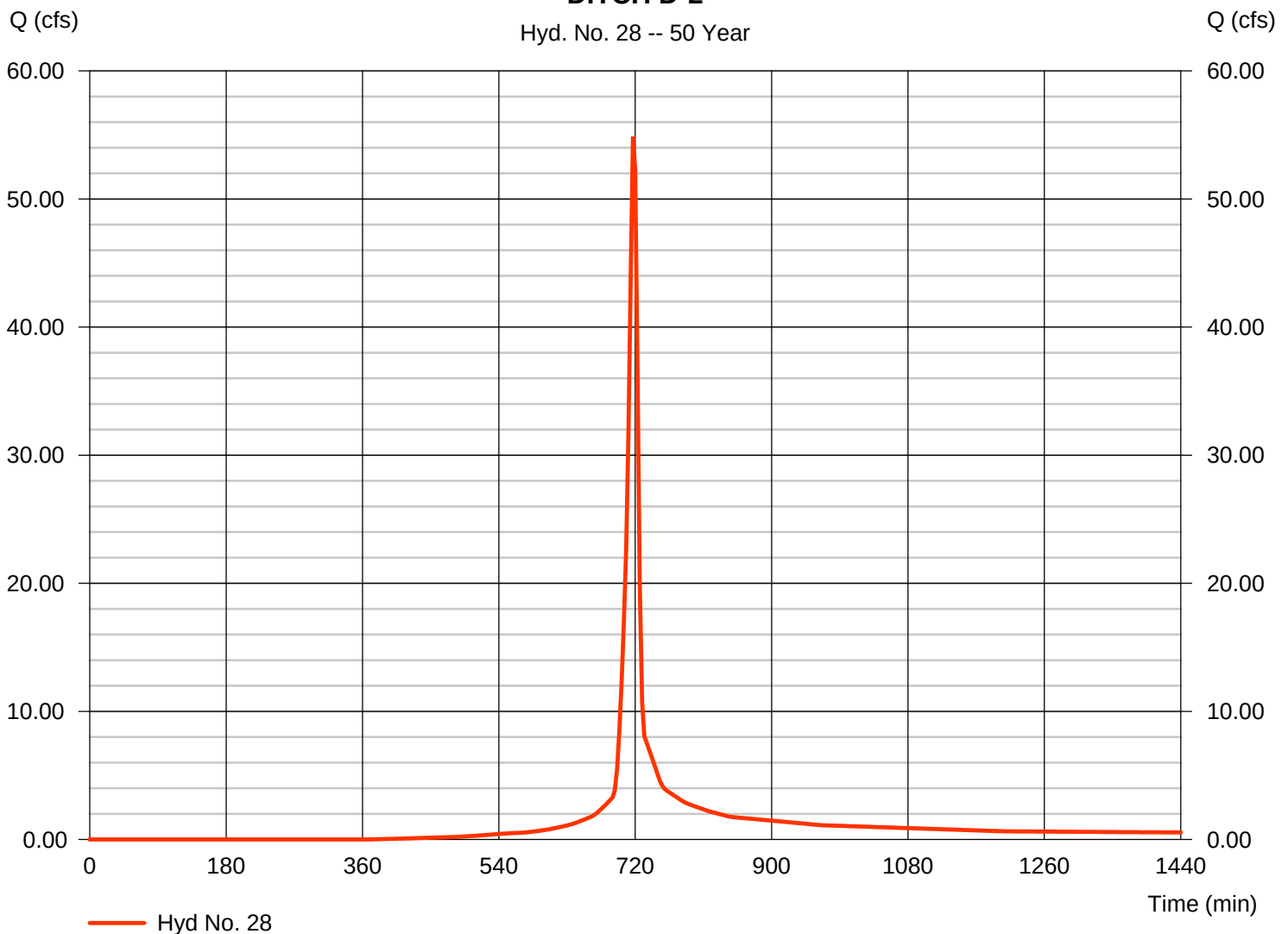
DITCH D-2

Hydrograph type = SCS Runoff
Storm frequency = 50 yrs
Time interval = 3 min
Drainage area = 8.720 ac
Basin Slope = 0.0 %
Tc method = User
Total precip. = 6.60 in
Storm duration = 24 hrs

Peak discharge = 54.87 cfs
Time to peak = 717 min
Hyd. volume = 125,225 cuft
Curve number = 79
Hydraulic length = 0 ft
Time of conc. (Tc) = 6.00 min
Distribution = Type II
Shape factor = 484

DITCH D-2

Hyd. No. 28 -- 50 Year



Hydrograph Report

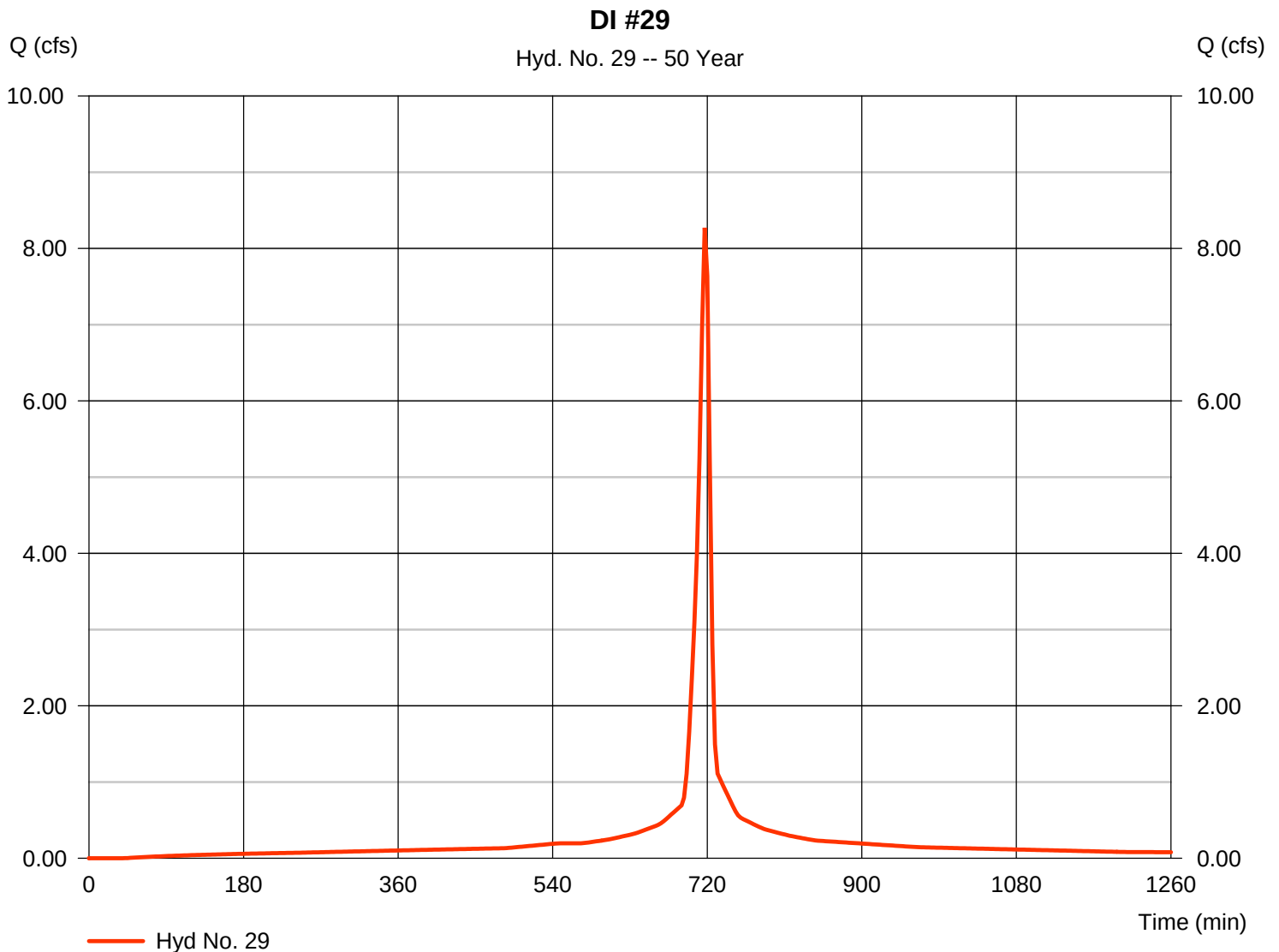
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 29

DI #29

Hydrograph type	= SCS Runoff	Peak discharge	= 8.272 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 21,865 cuft
Drainage area	= 1.010 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

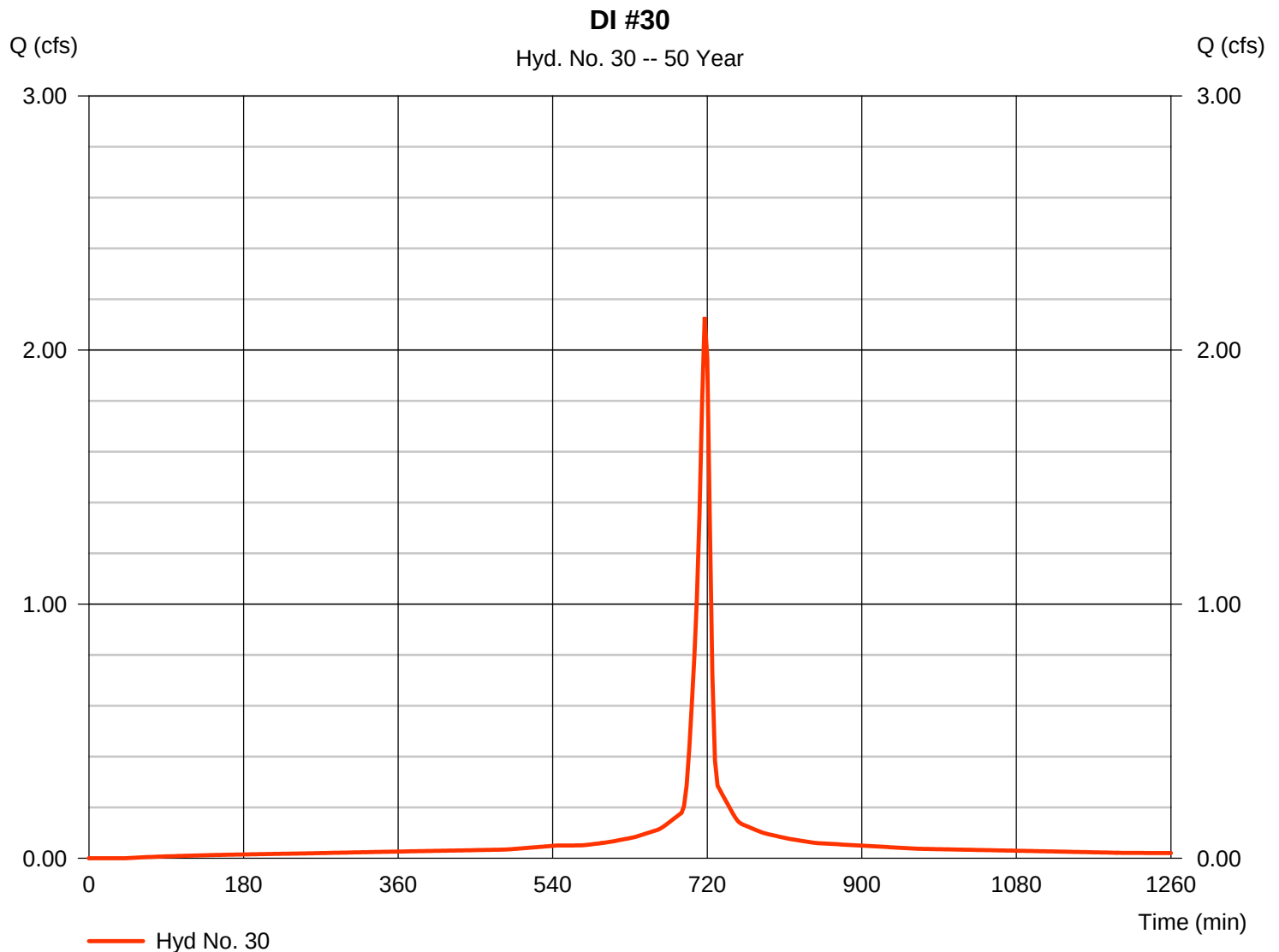
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 30

DI #30

Hydrograph type	= SCS Runoff	Peak discharge	= 2.129 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 5,629 cuft
Drainage area	= 0.260 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

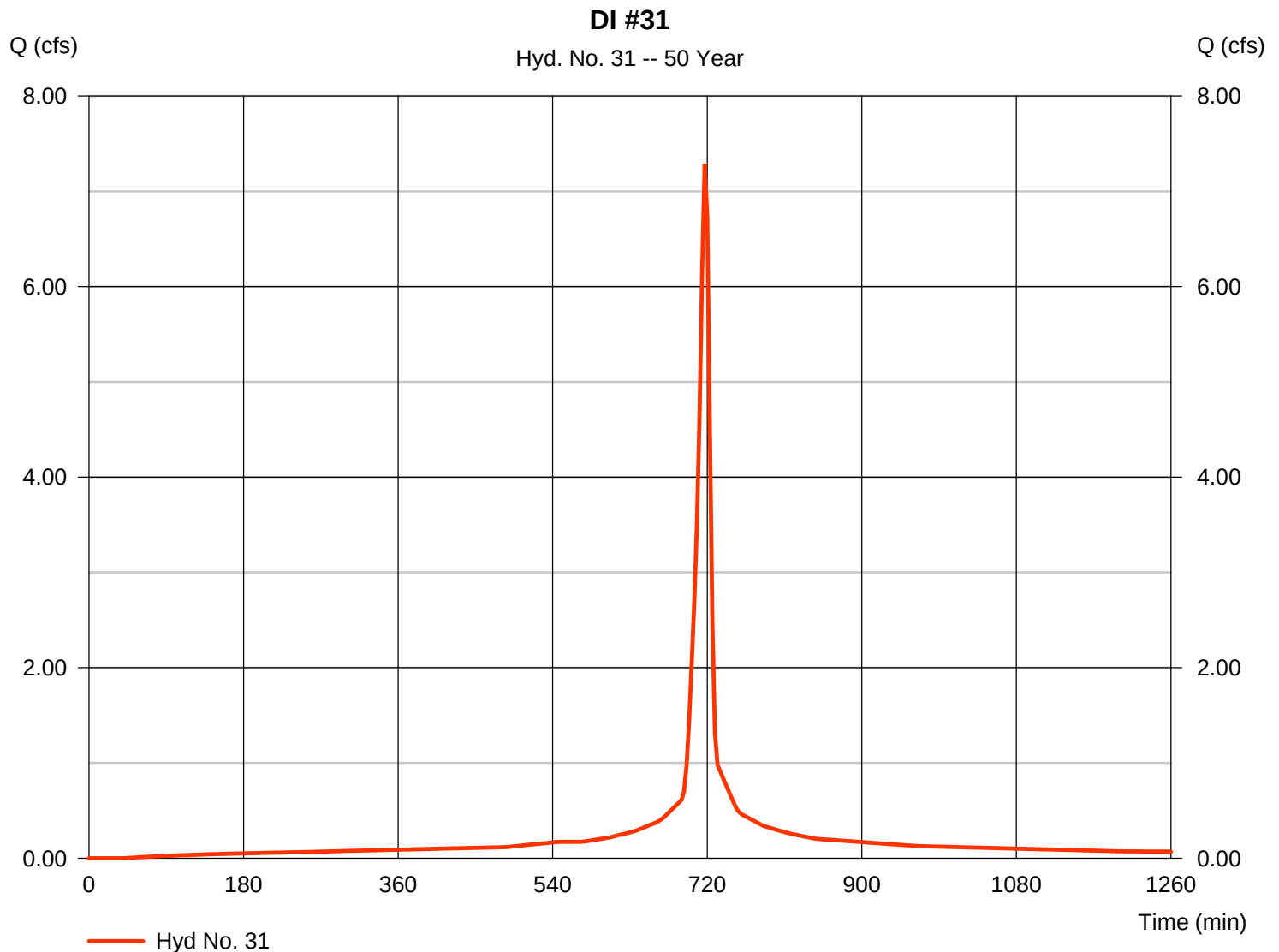
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 31

DI #31

Hydrograph type	= SCS Runoff	Peak discharge	= 7.289 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 19,267 cuft
Drainage area	= 0.890 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

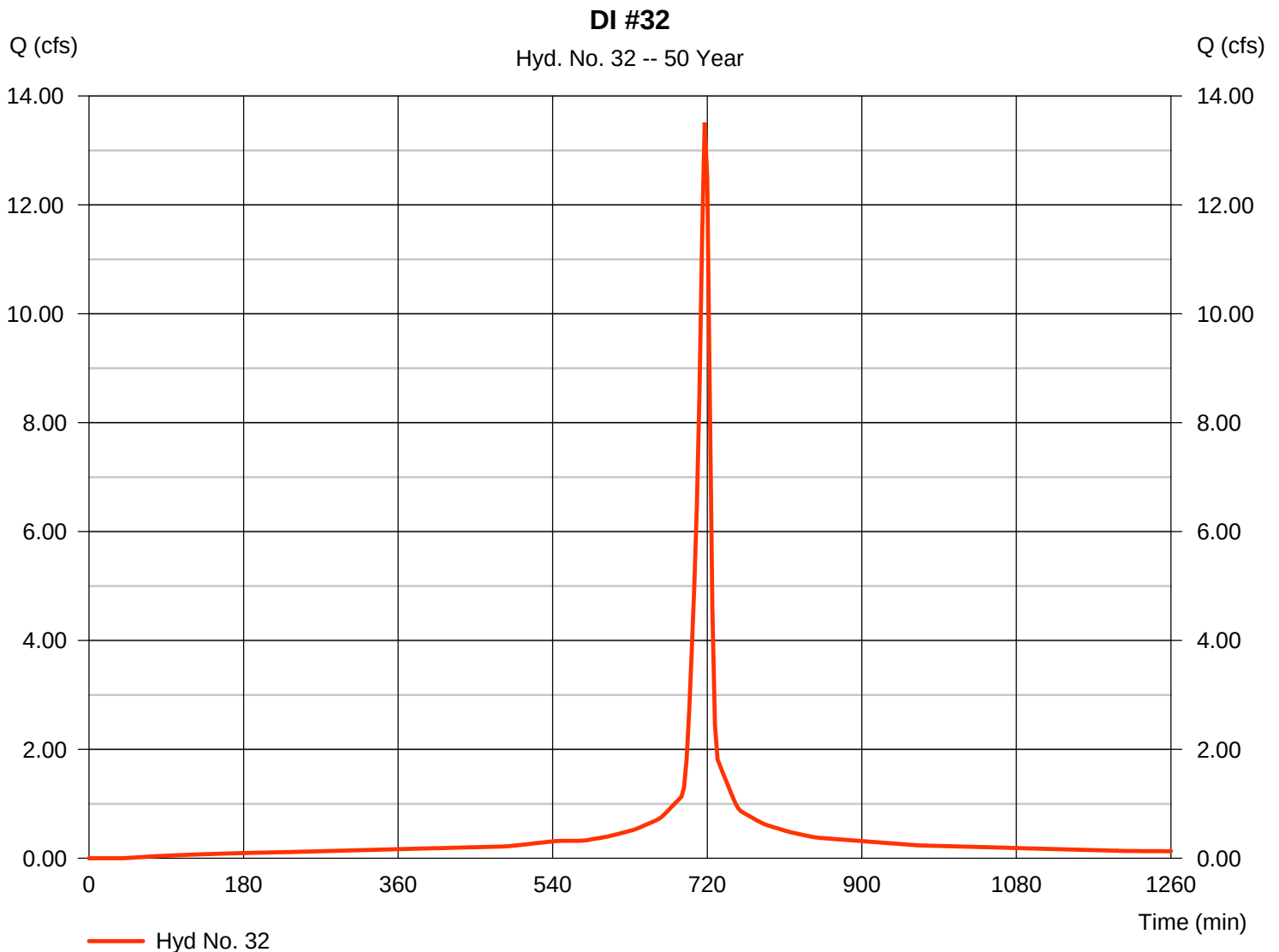
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 32

DI #32

Hydrograph type	= SCS Runoff	Peak discharge	= 13.51 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 35,719 cuft
Drainage area	= 1.650 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

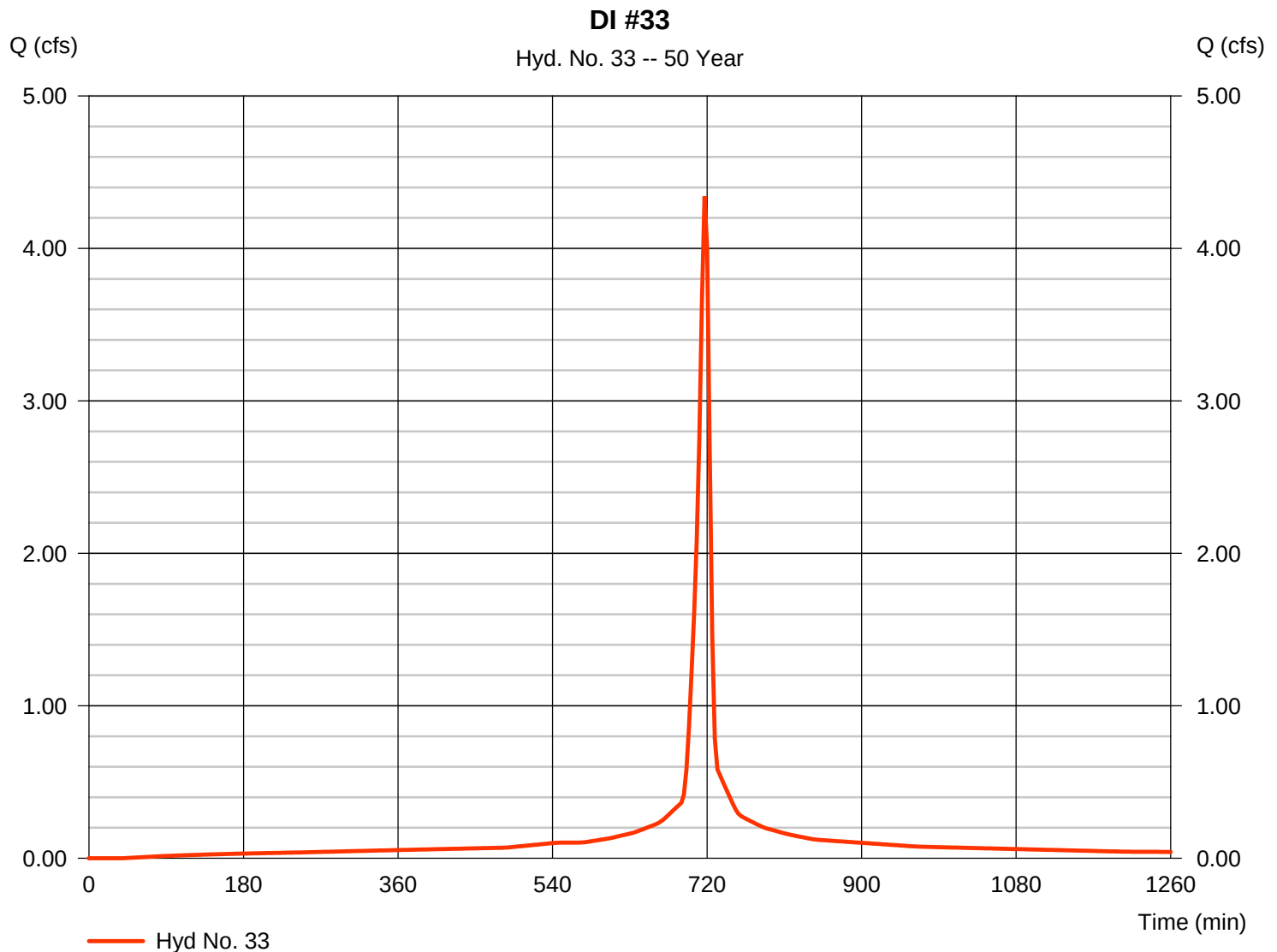
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 33

DI #33

Hydrograph type	= SCS Runoff	Peak discharge	= 4.341 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 11,474 cuft
Drainage area	= 0.530 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

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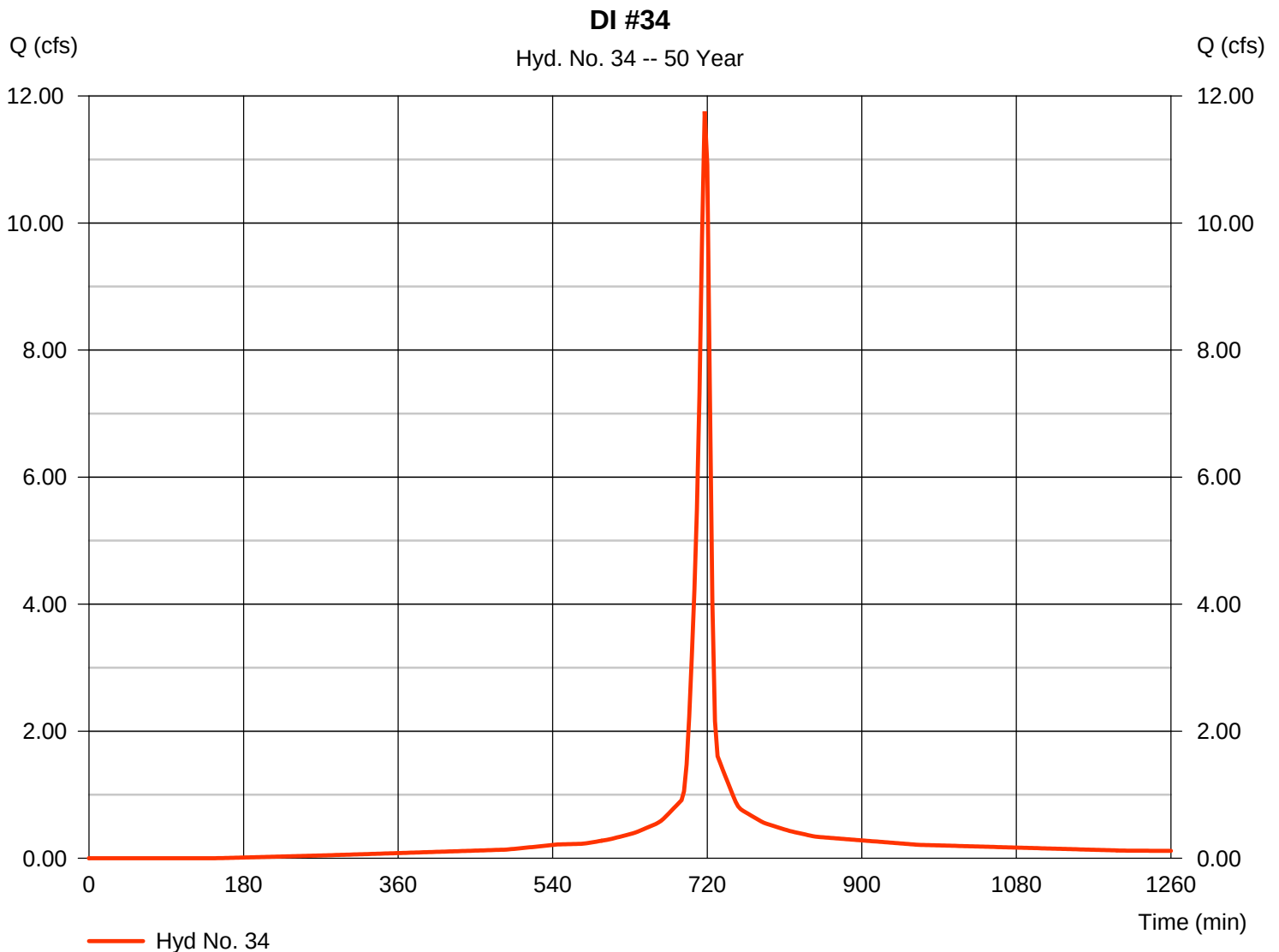
Friday, 07 / 28 / 2017

Hyd. No. 34

DI #34

Hydrograph type	= SCS Runoff	Peak discharge	= 11.76 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 28,893 cuft
Drainage area	= 1.500 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.050 \times 98) + (0.450 \times 79)] / 1.500$



Hydrograph Report

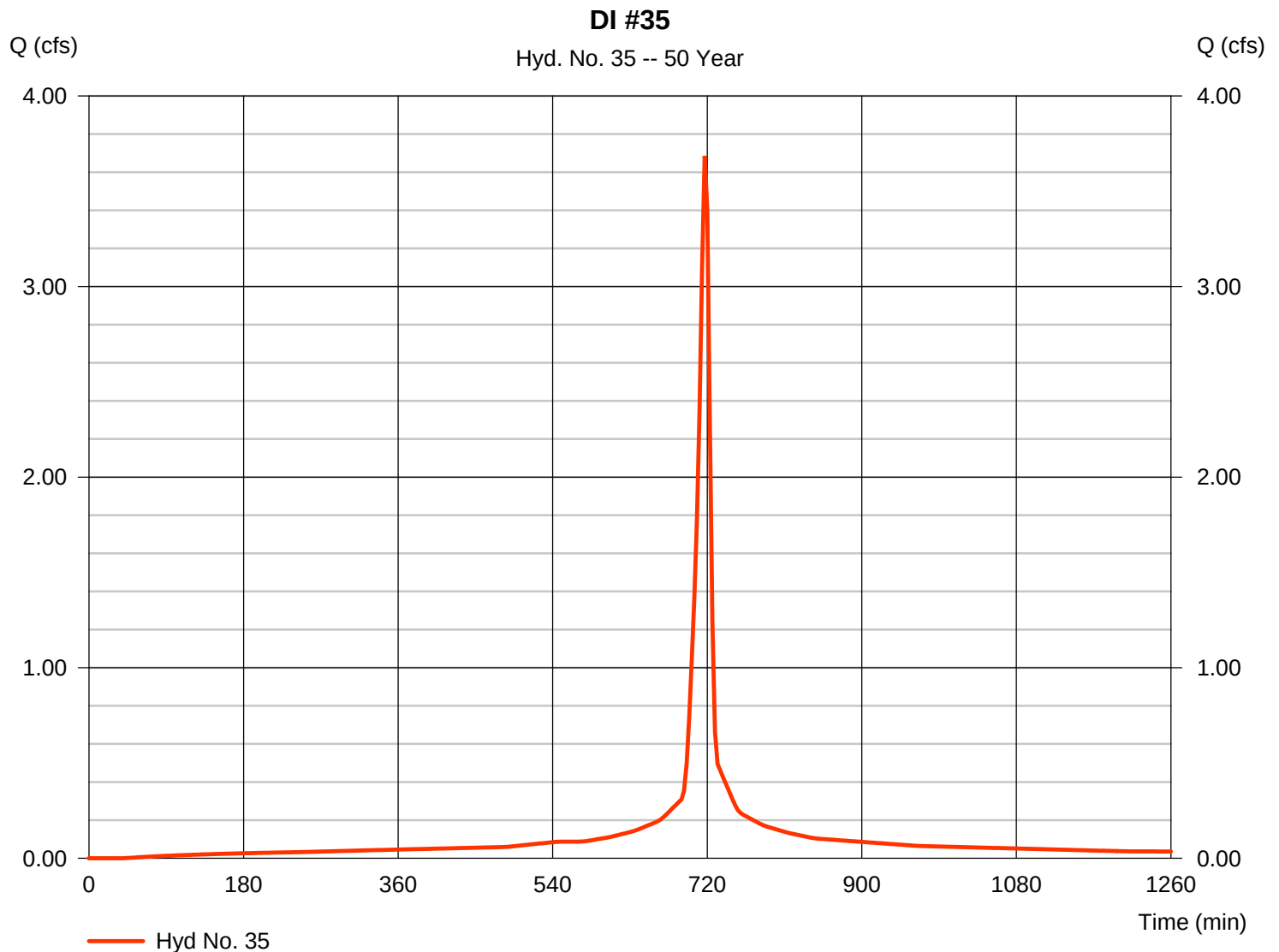
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Friday, 07 / 28 / 2017

Hyd. No. 35

DI #35

Hydrograph type	= SCS Runoff	Peak discharge	= 3.686 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 9,742 cuft
Drainage area	= 0.450 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

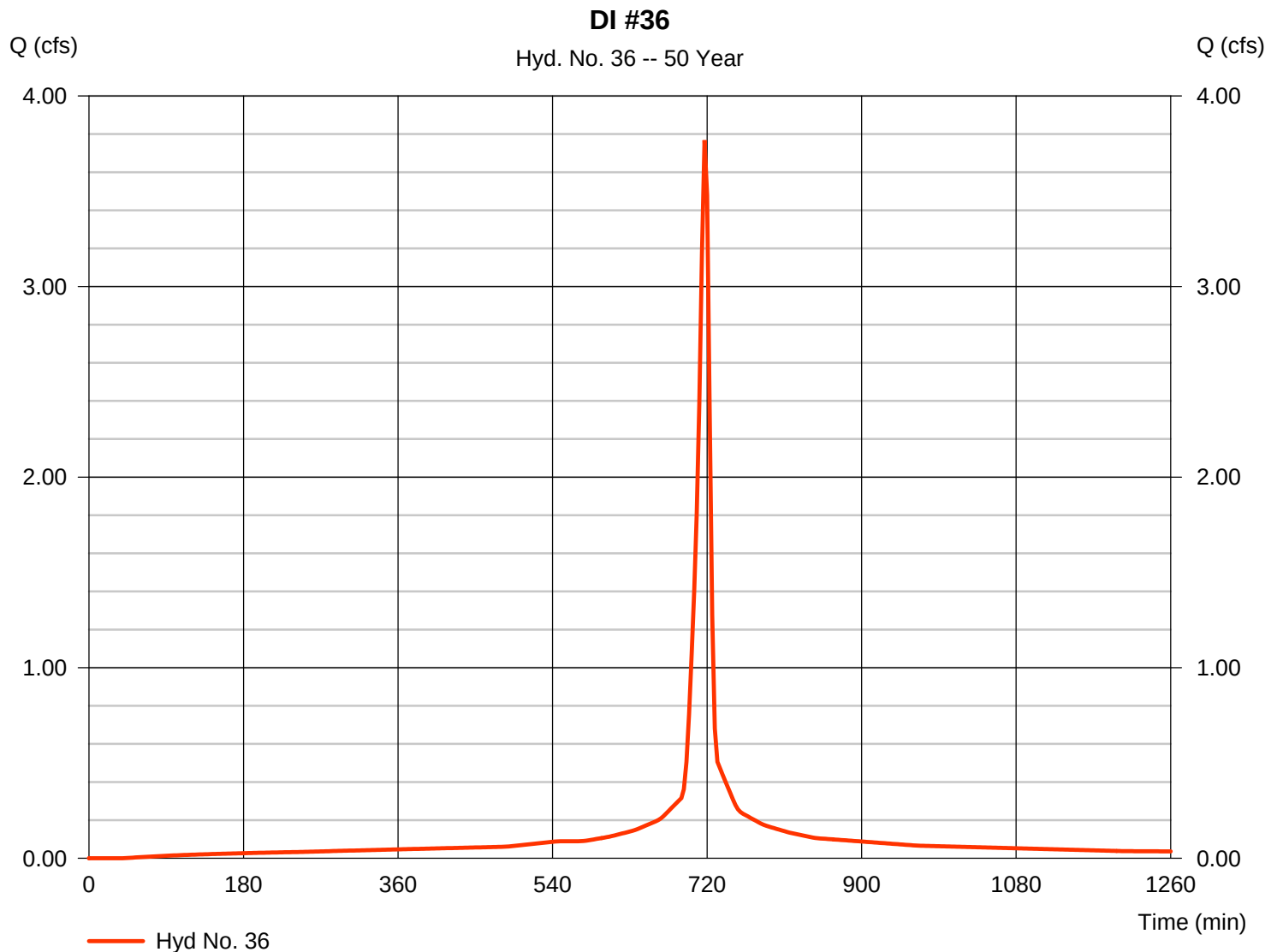
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Friday, 07 / 28 / 2017

Hyd. No. 36

DI #36

Hydrograph type	= SCS Runoff	Peak discharge	= 3.768 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 9,958 cuft
Drainage area	= 0.460 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

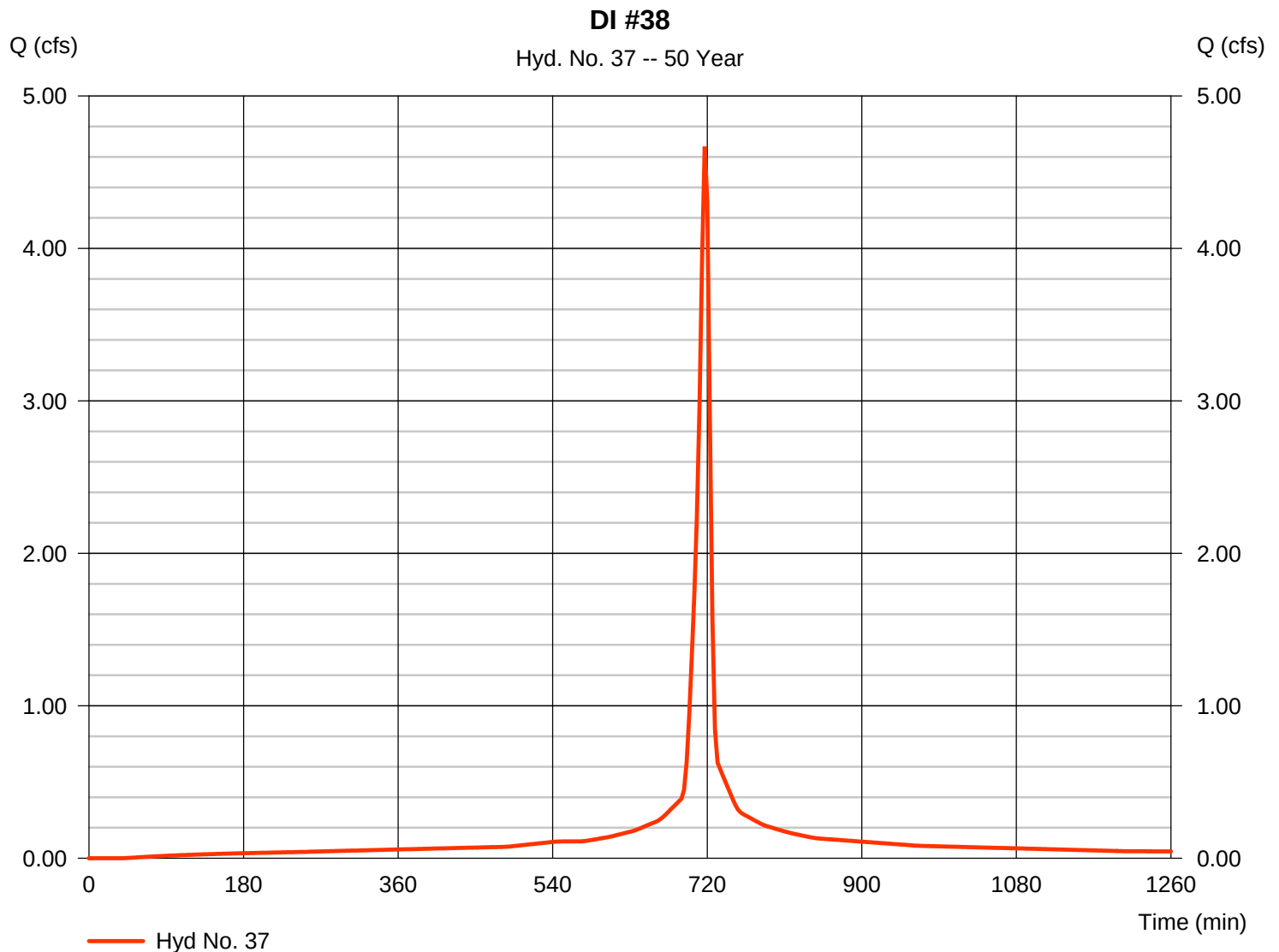
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Friday, 07 / 28 / 2017

Hyd. No. 37

DI #38

Hydrograph type	= SCS Runoff	Peak discharge	= 4.668 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 12,339 cuft
Drainage area	= 0.570 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

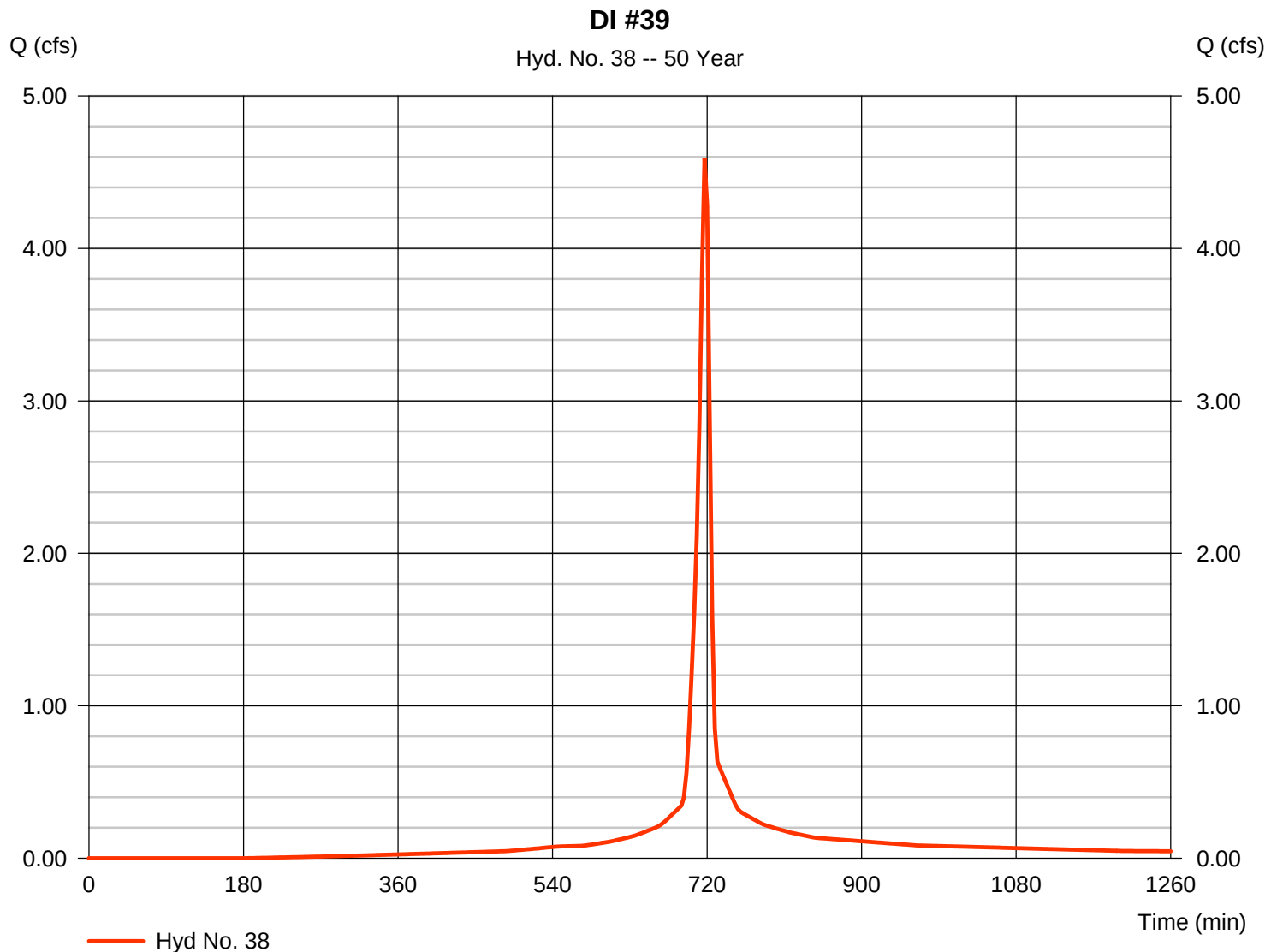
Friday, 07 / 28 / 2017

Hyd. No. 38

DI #39

Hydrograph type	= SCS Runoff	Peak discharge	= 4.592 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 11,090 cuft
Drainage area	= 0.600 ac	Curve number	= 90*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.360 \times 98) + (0.240 \times 79)] / 0.600$



Hydrograph Report

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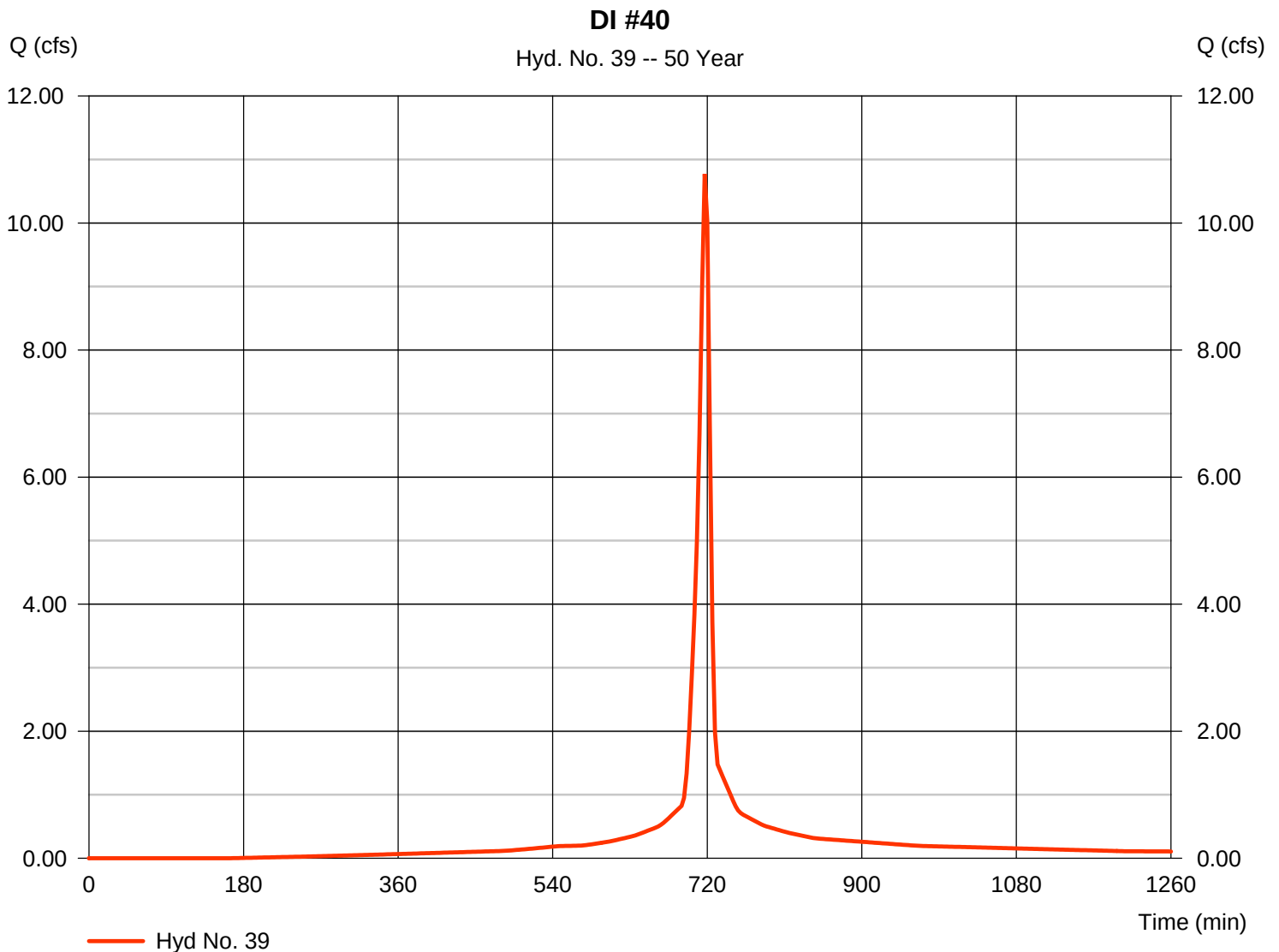
Friday, 07 / 28 / 2017

Hyd. No. 39

DI #40

Hydrograph type	= SCS Runoff	Peak discharge	= 10.77 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 26,232 cuft
Drainage area	= 1.390 ac	Curve number	= 91*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.60 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.880 \times 98) + (0.510 \times 79)] / 1.390$



Hydrograph Report

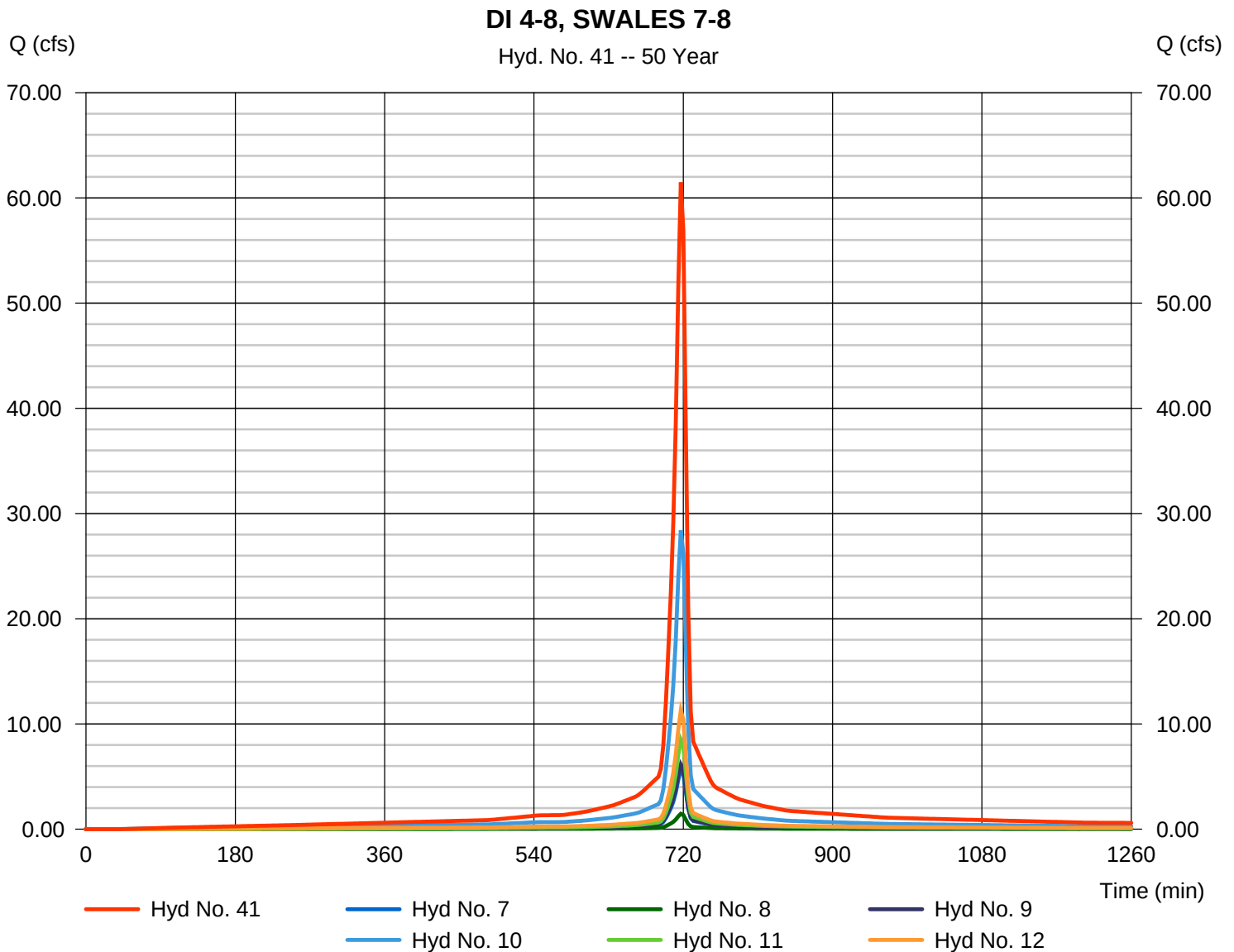
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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Hyd. No. 41

DI 4-8, SWALES 7-8

Hydrograph type	= Combine	Peak discharge	= 61.47 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 157,478 cuft
Inflow hyds.	= 7, 8, 9, 10, 11, 12	Contrib. drain. area	= 7.660 ac



Hydrograph Report

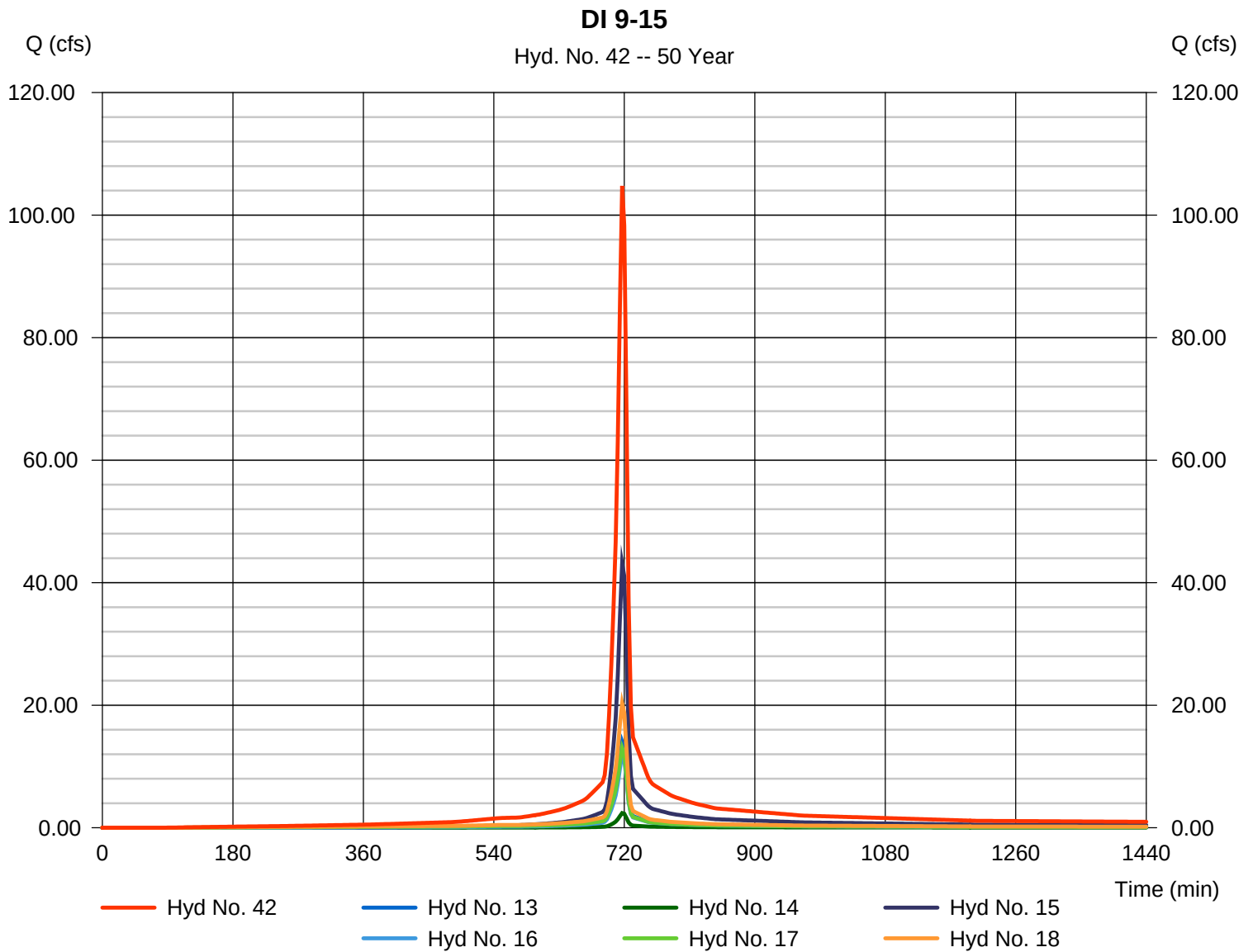
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Friday, 07 / 28 / 2017

Hyd. No. 42

DI 9-15

Hydrograph type	= Combine	Peak discharge	= 104.75 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 252,609 cuft
Inflow hyds.	= 13, 14, 15, 16, 17, 18	Contrib. drain. area	= 14.740 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

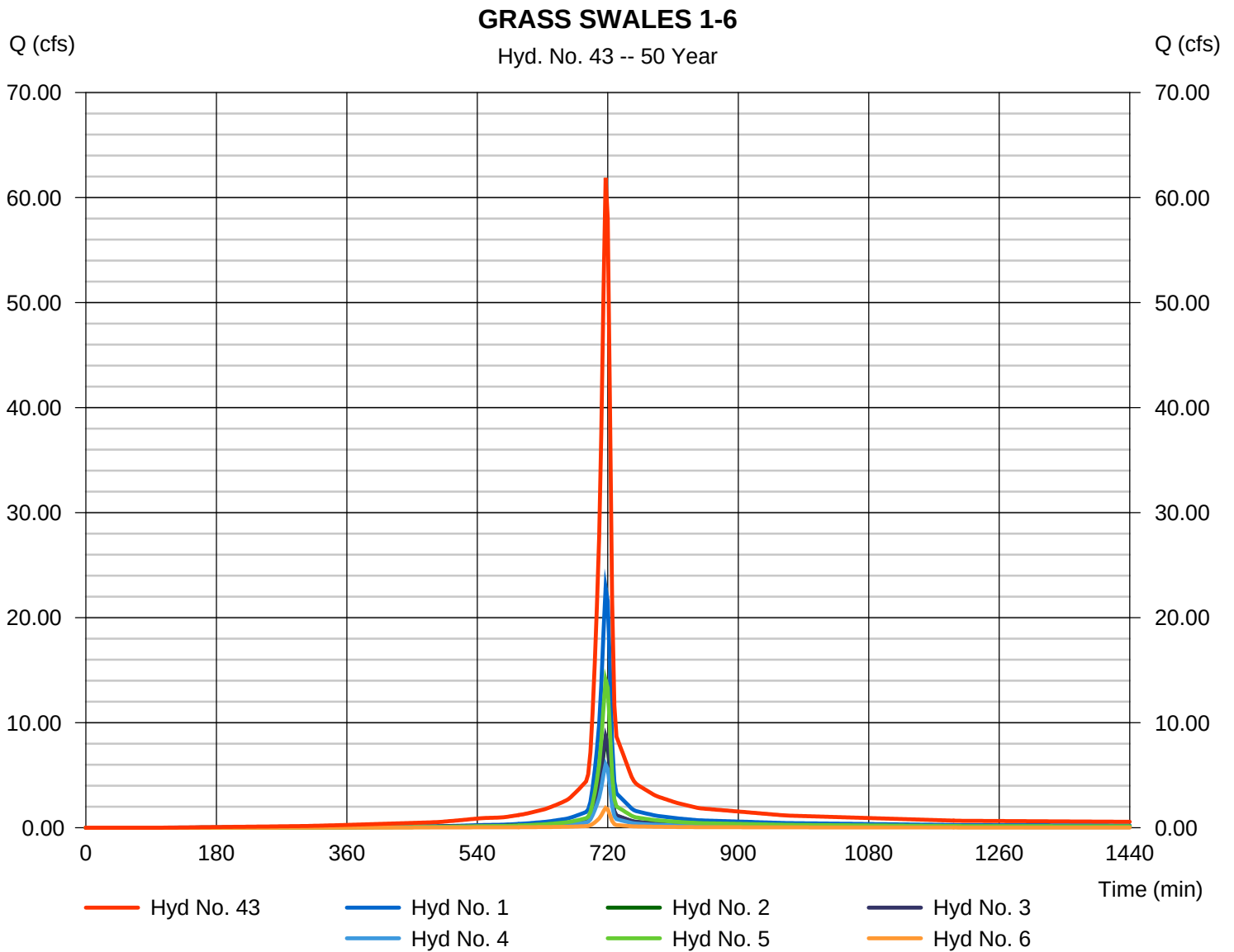
Friday, 07 / 28 / 2017

Hyd. No. 43

GRASS SWALES 1-6

Hydrograph type = Combine
 Storm frequency = 50 yrs
 Time interval = 3 min
 Inflow hyds. = 1, 2, 3, 4, 5, 6

Peak discharge = 61.86 cfs
 Time to peak = 717 min
 Hyd. volume = 148,008 cuft
 Contrib. drain. area = 8.560 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 44

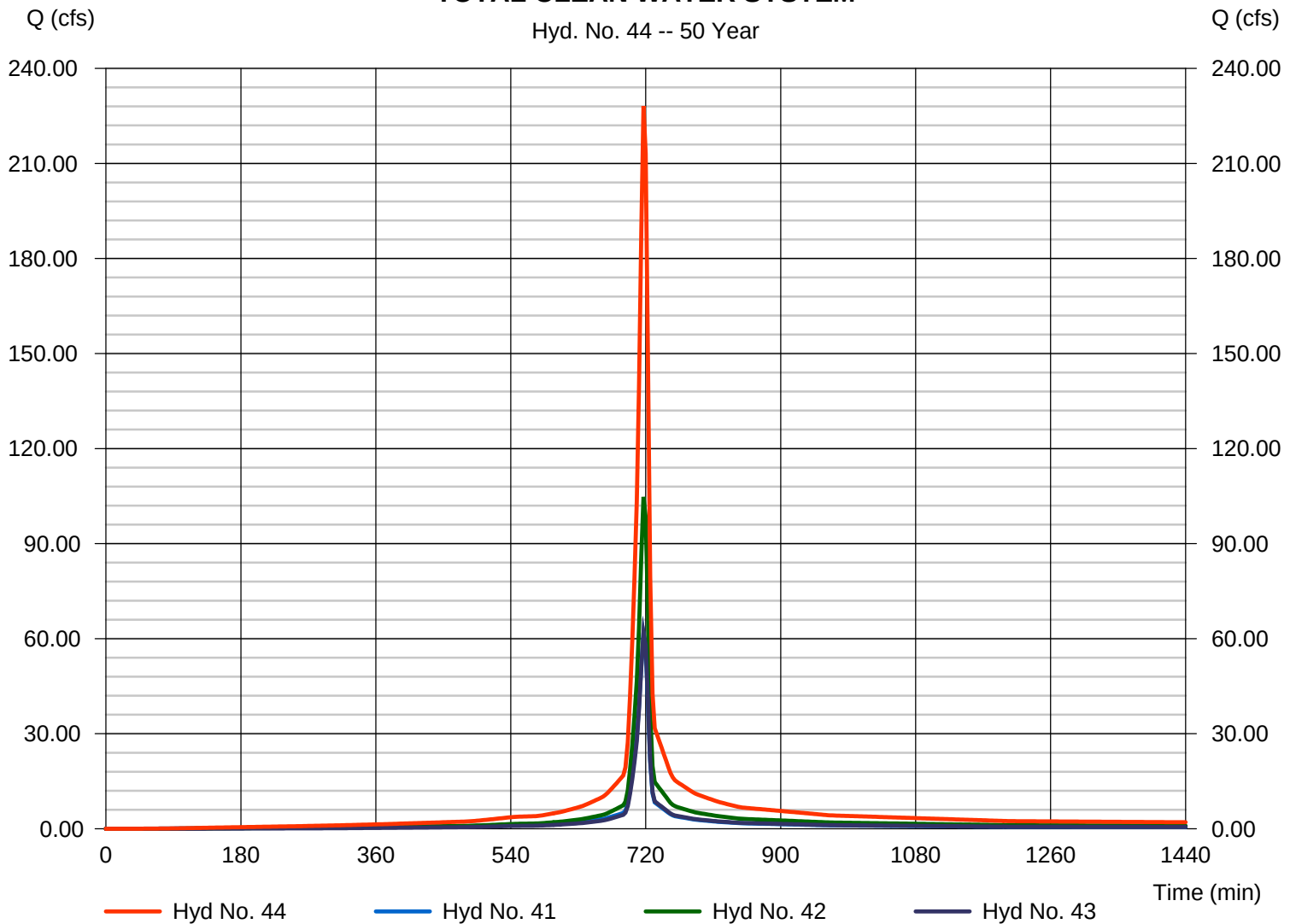
TOTAL CLEAN WATER SYSTEM

Hydrograph type = Combine
Storm frequency = 50 yrs
Time interval = 3 min
Inflow hyds. = 41, 42, 43

Peak discharge = 228.09 cfs
Time to peak = 717 min
Hyd. volume = 558,095 cuft
Contrib. drain. area = 0.000 ac

TOTAL CLEAN WATER SYSTEM

Hyd. No. 44 -- 50 Year



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

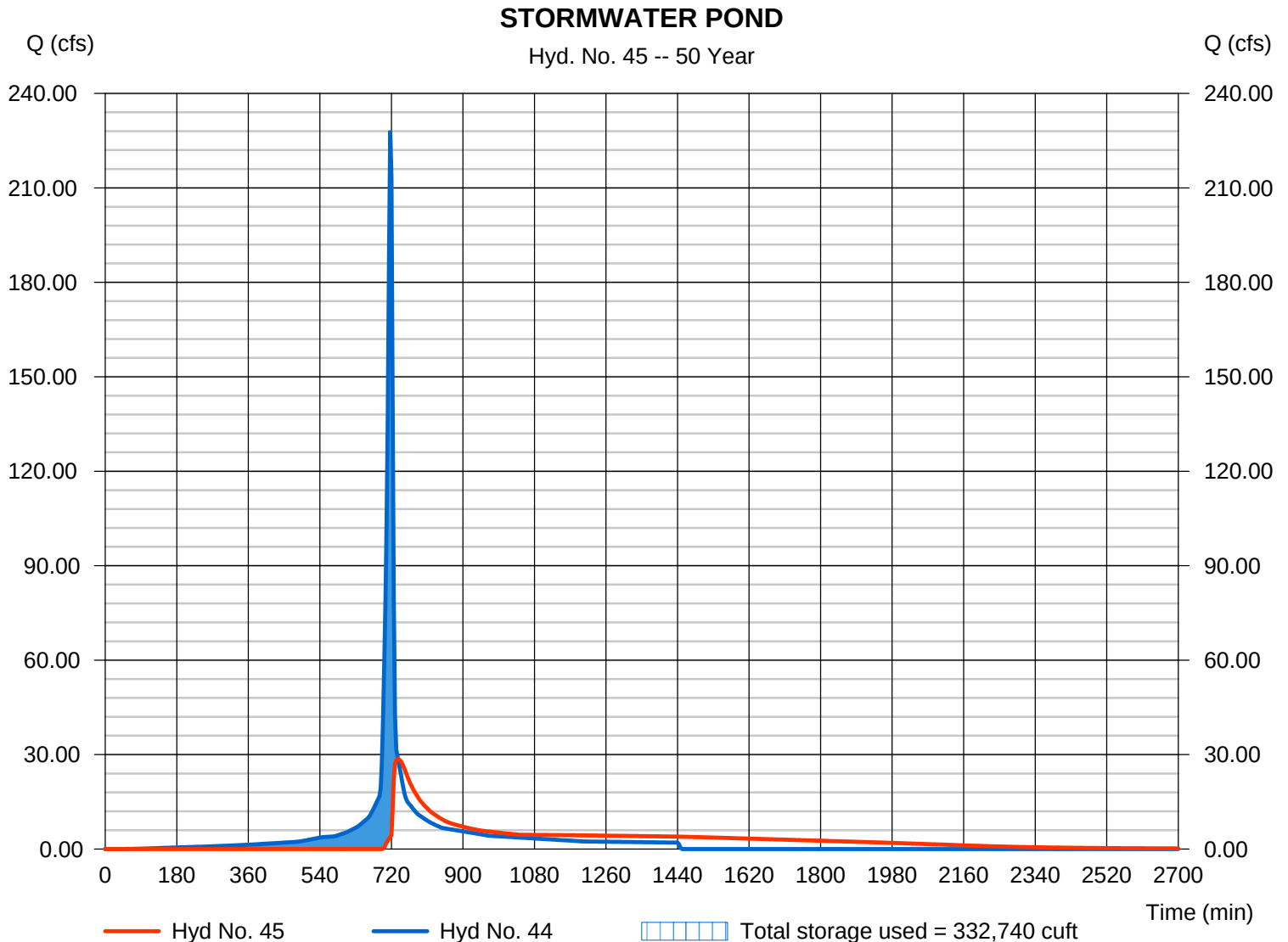
Friday, 07 / 28 / 2017

Hyd. No. 45

STORMWATER POND

Hydrograph type	= Reservoir	Peak discharge	= 28.54 cfs
Storm frequency	= 50 yrs	Time to peak	= 738 min
Time interval	= 3 min	Hyd. volume	= 451,154 cuft
Inflow hyd. No.	= 44 - TOTAL CLEAN WATER STORAGE	Max. Elevation	= 562.68 ft
Reservoir name	= STORMWATER DETENTION POND	Max. Storage	= 332,740 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

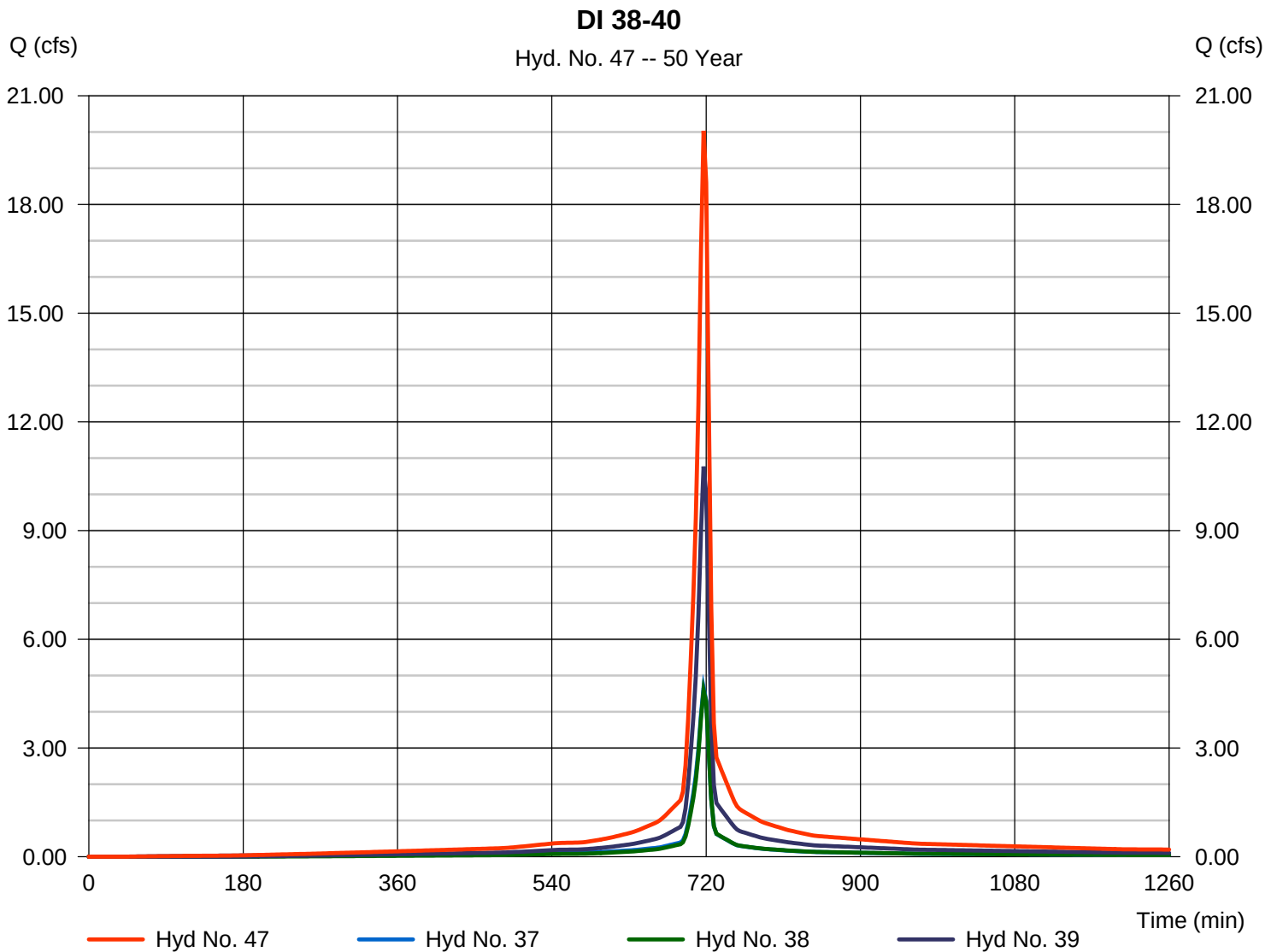
Friday, 07 / 28 / 2017

Hyd. No. 47

DI 38-40

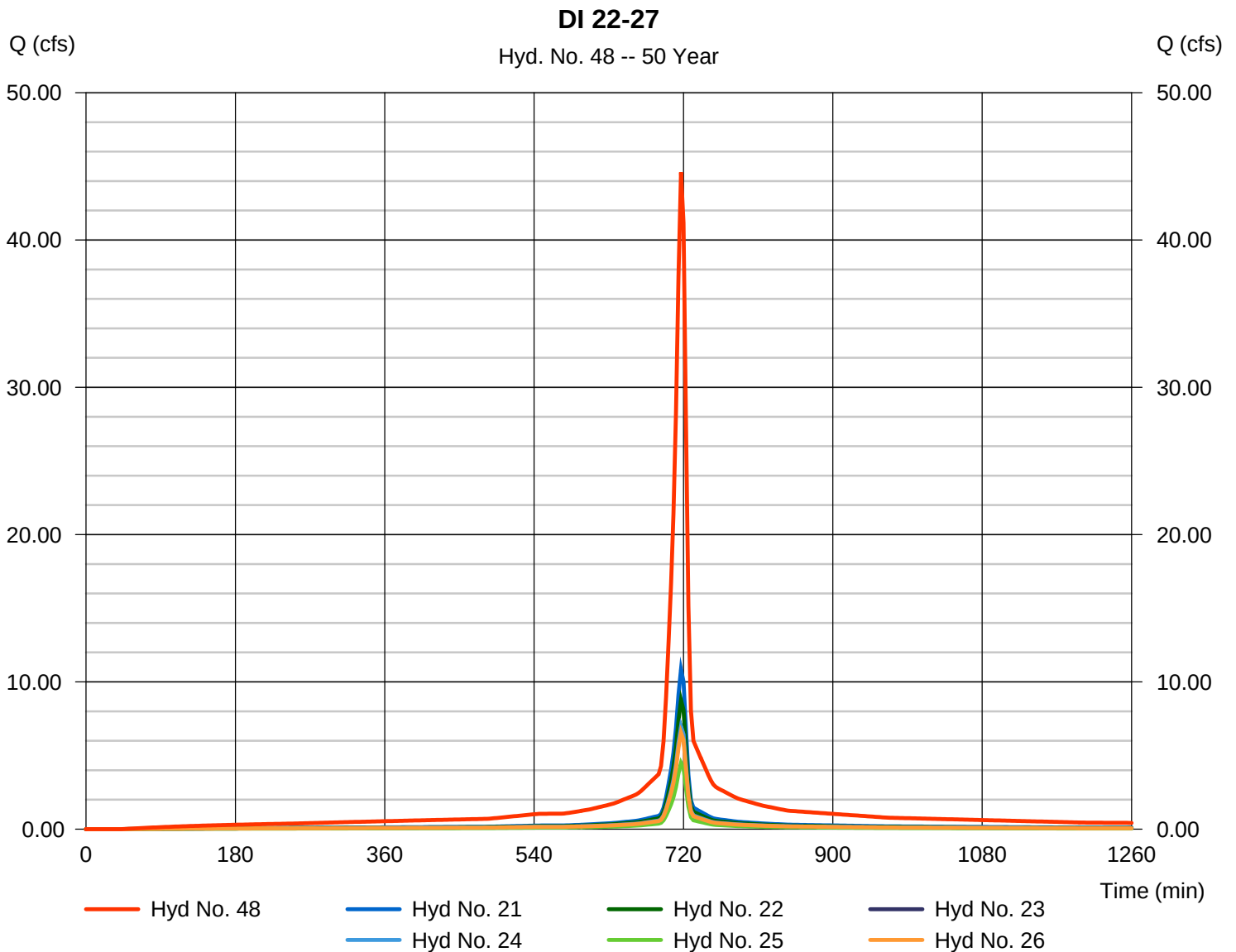
Hydrograph type = Combine
Storm frequency = 50 yrs
Time interval = 3 min
Inflow hyds. = 37, 38, 39

Peak discharge = 20.03 cfs
Time to peak = 717 min
Hyd. volume = 49,662 cuft
Contrib. drain. area = 2.560 ac



DI 22-27

Hydrograph type	= Combine	Peak discharge	= 44.59 cfs
Storm frequency	= 50 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 117,447 cuft
Inflow hyds.	= 21, 22, 23, 24, 25, 26	Contrib. drain. area	= 5.450 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 49

DI 29-32 & DITCHES

Hydrograph type = Combine

Storm frequency = 50 yrs

Time interval = 3 min

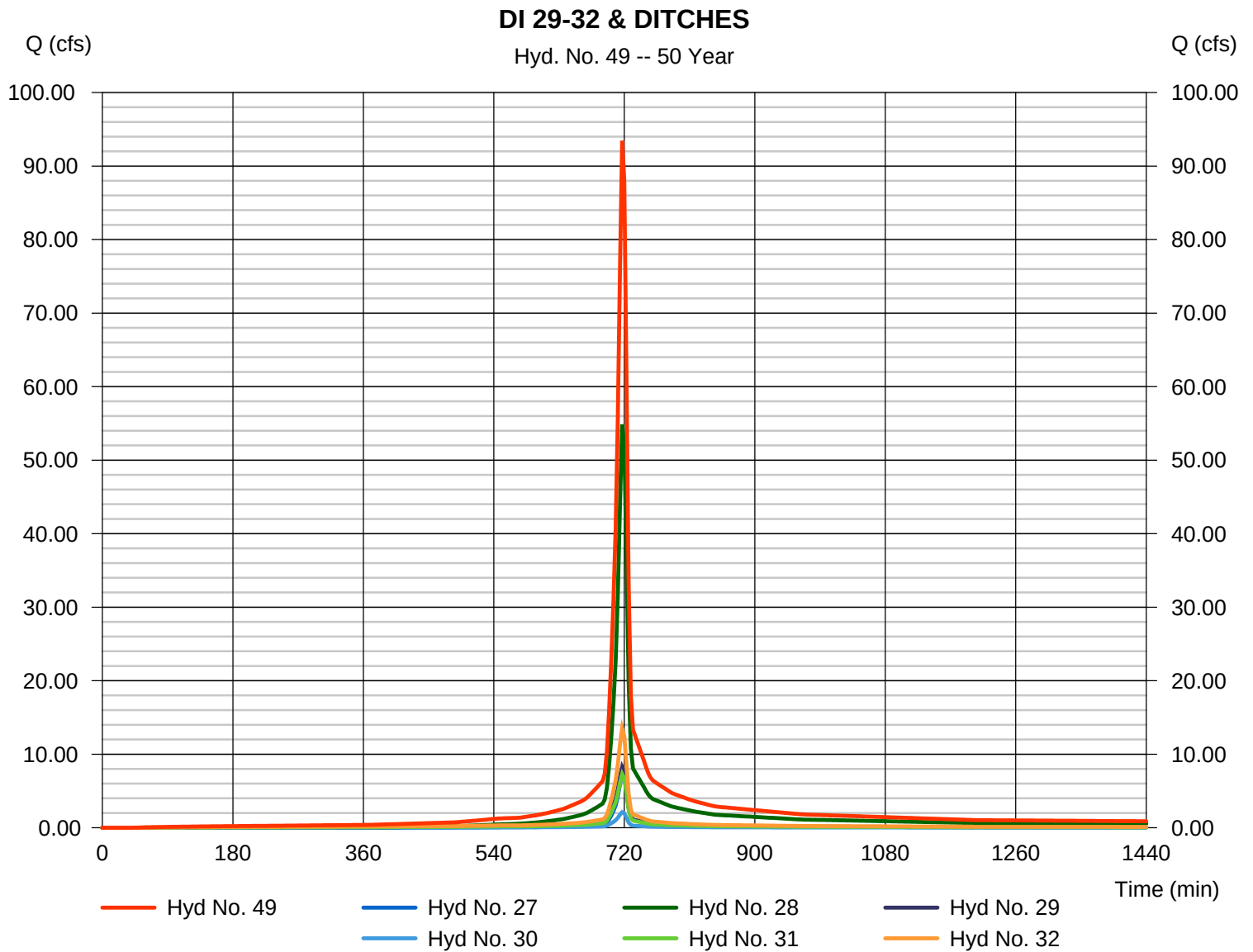
Inflow hyds. = 27, 28, 29, 30, 31, 32

Peak discharge = 93.43 cfs

Time to peak = 717 min

Hyd. volume = 224,507 cuft

Contrib. drain. area = 13.700 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

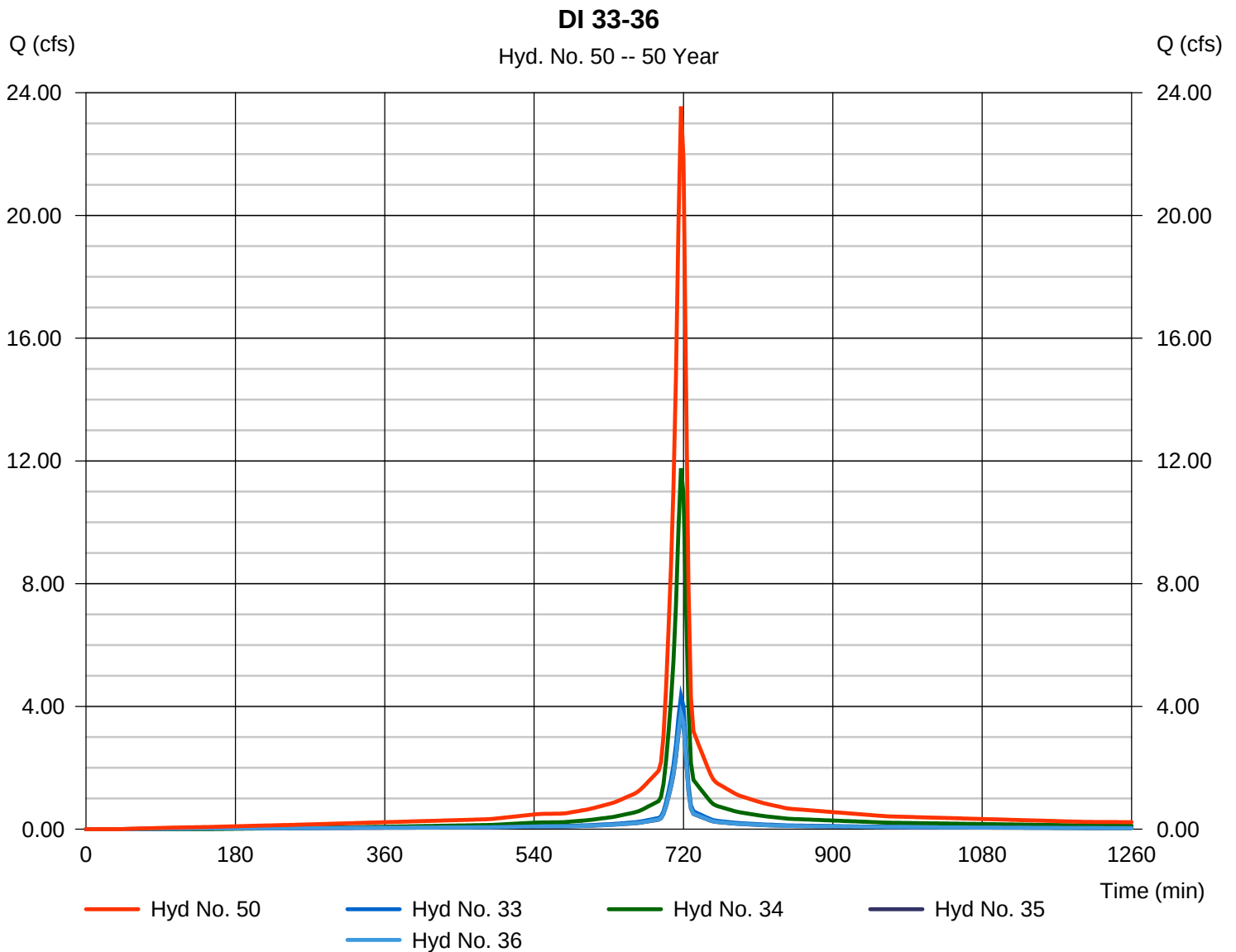
Friday, 07 / 28 / 2017

Hyd. No. 50

DI 33-36

Hydrograph type = Combine
Storm frequency = 50 yrs
Time interval = 3 min
Inflow hyds. = 33, 34, 35, 36

Peak discharge = 23.55 cfs
Time to peak = 717 min
Hyd. volume = 60,067 cuft
Contrib. drain. area = 2.940 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 51

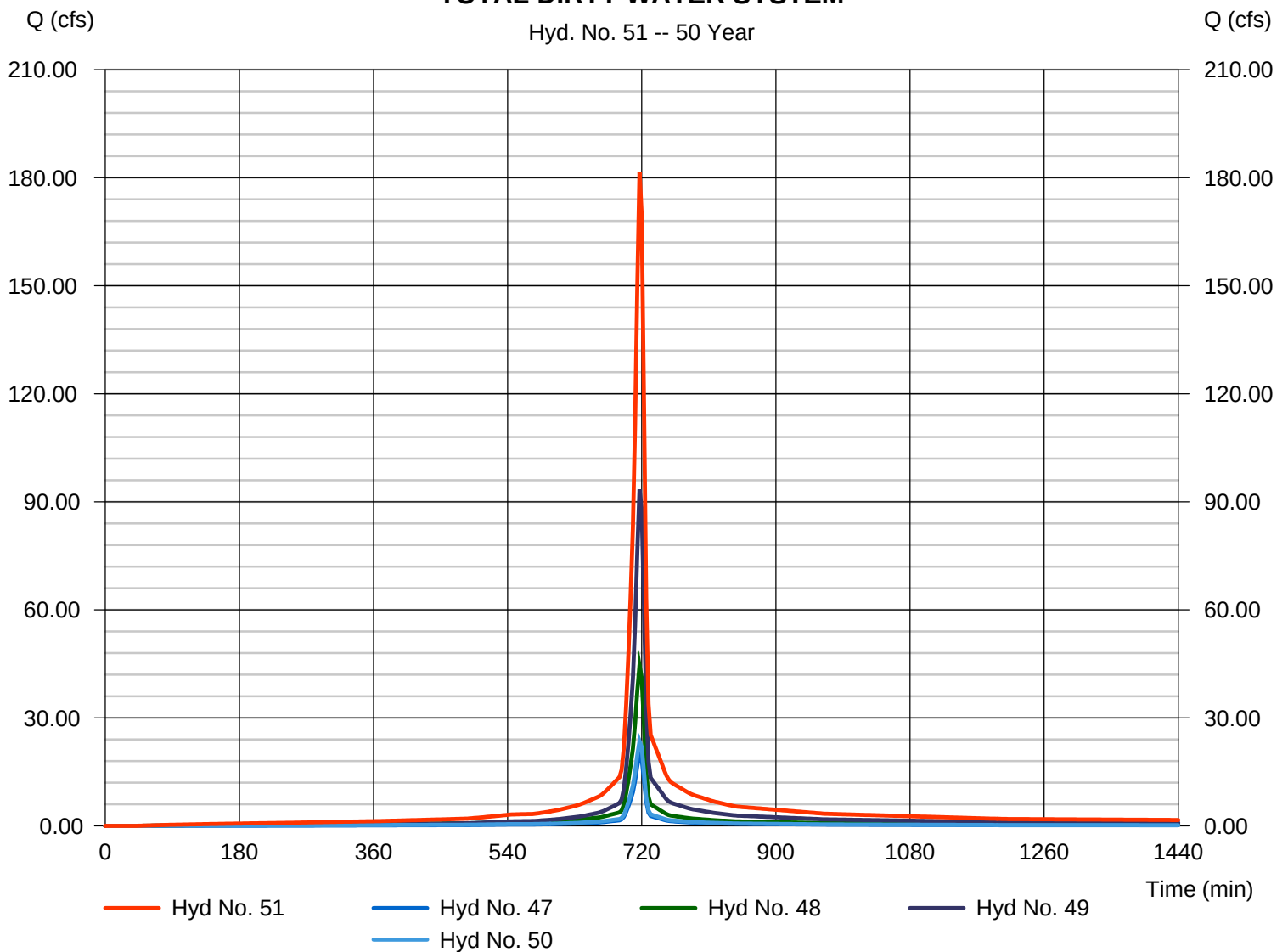
TOTAL DIRTY WATER SYSTEM

Hydrograph type = Combine
 Storm frequency = 50 yrs
 Time interval = 3 min
 Inflow hyds. = 47, 48, 49, 50

Peak discharge = 181.61 cfs
 Time to peak = 717 min
 Hyd. volume = 451,682 cuft
 Contrib. drain. area = 0.000 ac

TOTAL DIRTY WATER SYSTEM

Hyd. No. 51 -- 50 Year



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 53

E&S RUNOFF BASIN 1

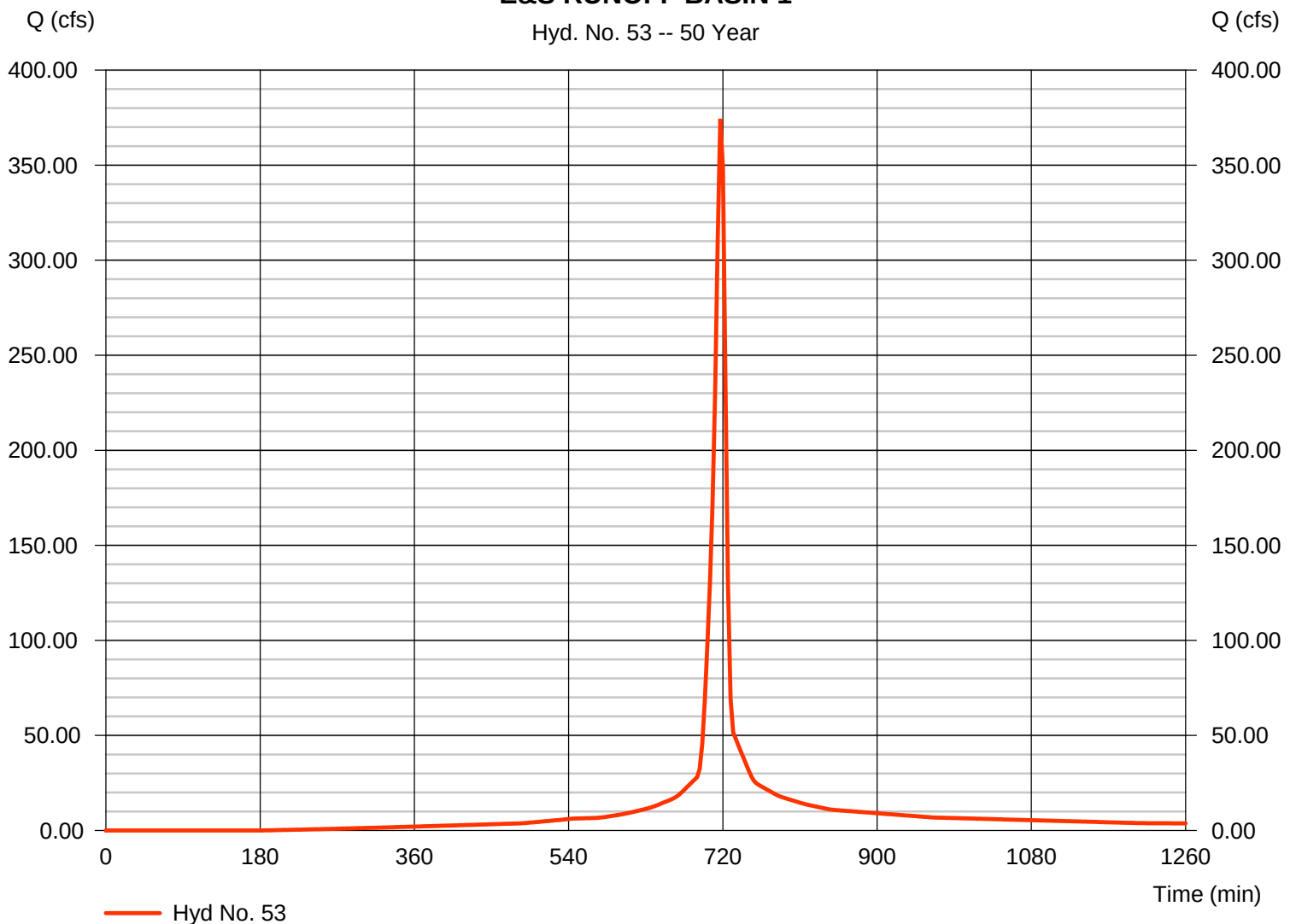
Hydrograph type = SCS Runoff
 Storm frequency = 50 yrs
 Time interval = 3 min
 Drainage area = 48.900 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 6.60 in
 Storm duration = 24 hrs

Peak discharge = 374.27 cfs
 Time to peak = 717 min
 Hyd. volume = 903,874 cuft
 Curve number = 90*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(29.300 \times 98) + (19.600 \times 79)] / 48.900$

E&S RUNOFF BASIN 1

Hyd. No. 53 -- 50 Year



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

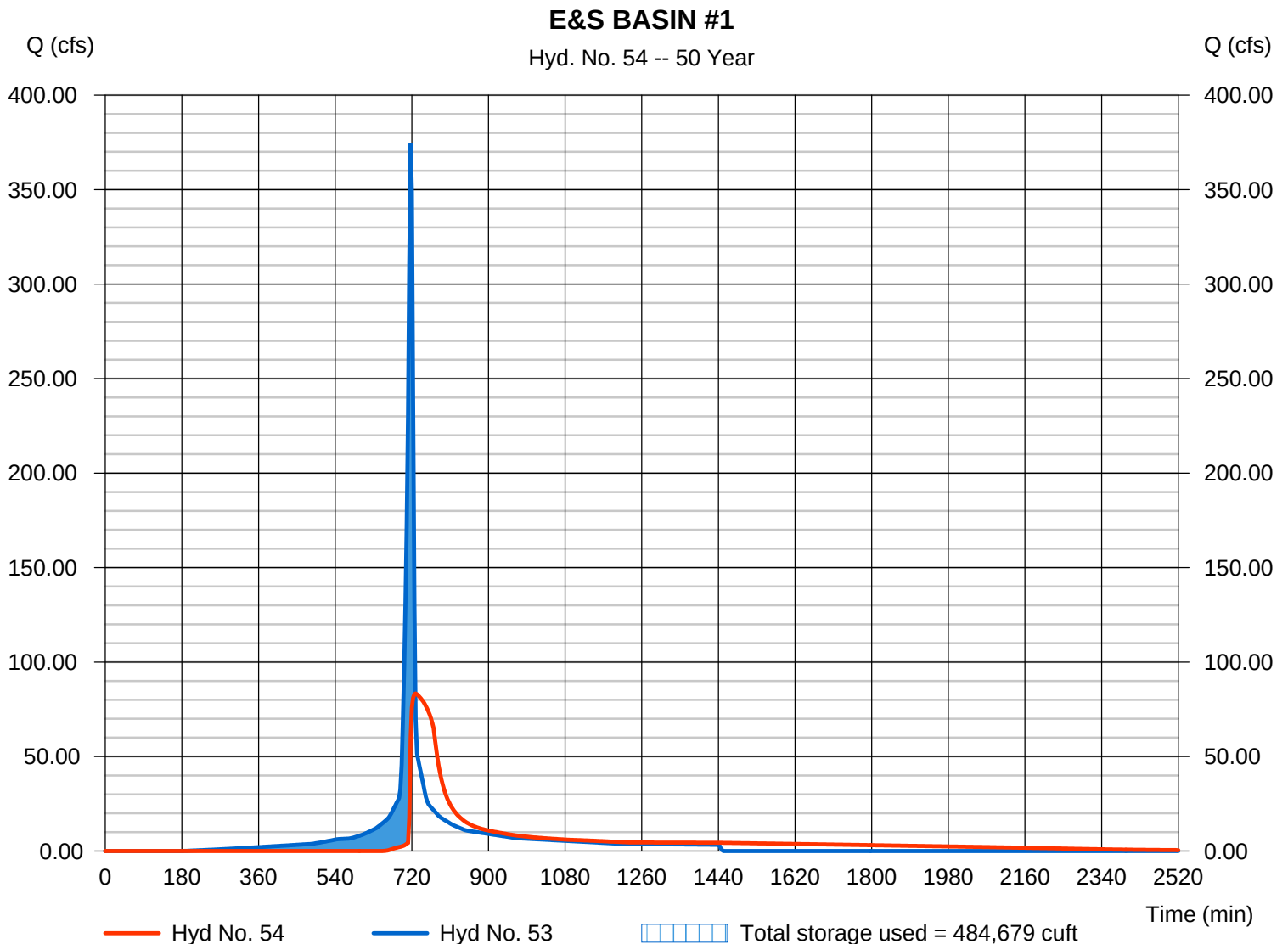
Friday, 07 / 28 / 2017

Hyd. No. 54

E&S BASIN #1

Hydrograph type	= Reservoir	Peak discharge	= 83.33 cfs
Storm frequency	= 50 yrs	Time to peak	= 729 min
Time interval	= 3 min	Hyd. volume	= 796,934 cuft
Inflow hyd. No.	= 53 - E&S RUNOFF BASIN 1	Max. Elevation	= 564.73 ft
Reservoir name	= E&S BASIN #1	Max. Storage	= 484,679 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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Hyd. No. 56

E&S RUNOFF BASIN 2

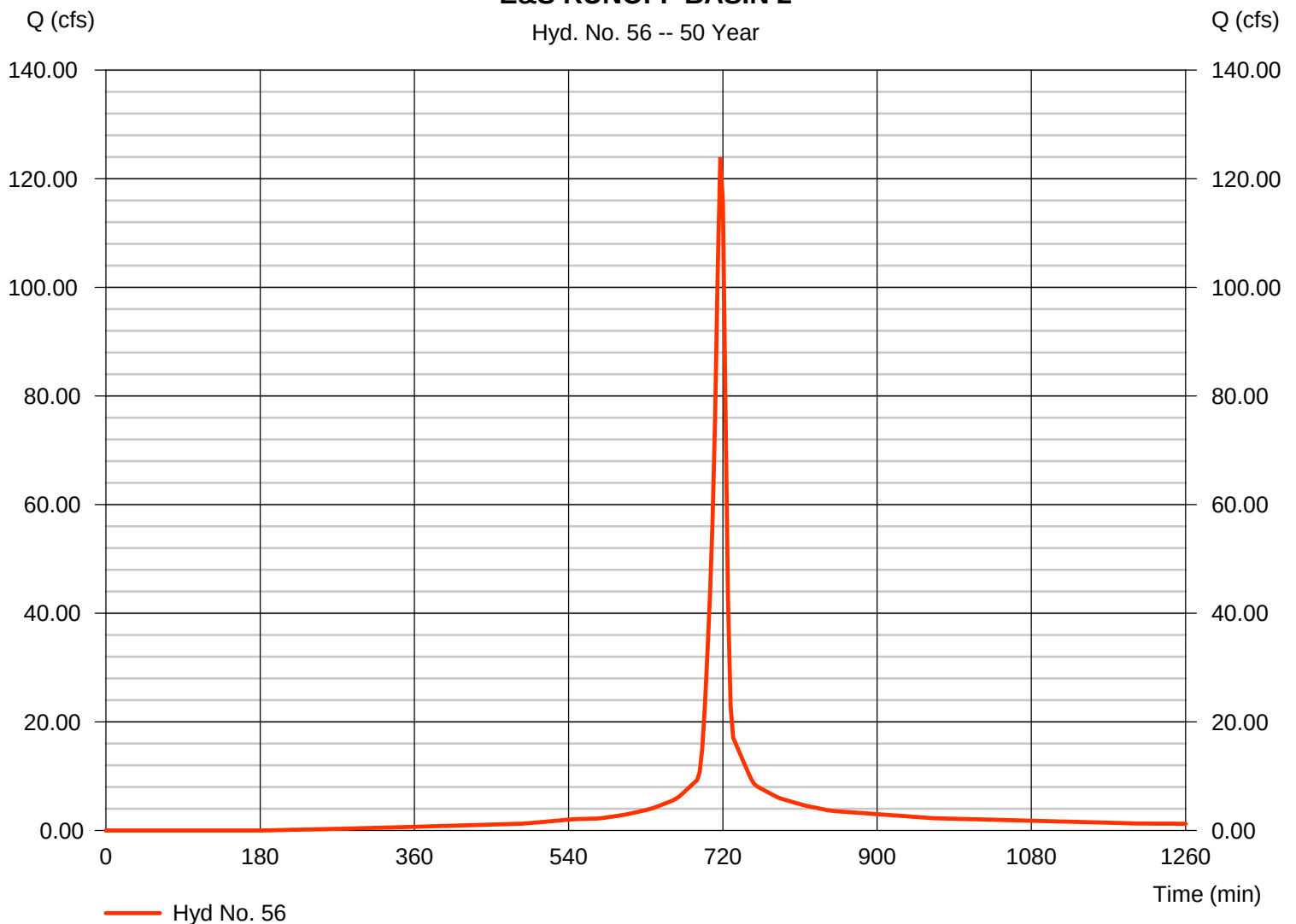
Hydrograph type = SCS Runoff
 Storm frequency = 50 yrs
 Time interval = 3 min
 Drainage area = 16.200 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 6.60 in
 Storm duration = 24 hrs

Peak discharge = 123.99 cfs
 Time to peak = 717 min
 Hyd. volume = 299,443 cuft
 Curve number = 90*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(9.720 \times 98) + (6.480 \times 79)] / 16.200$

E&S RUNOFF BASIN 2

Hyd. No. 56 -- 50 Year



Hydrograph Report

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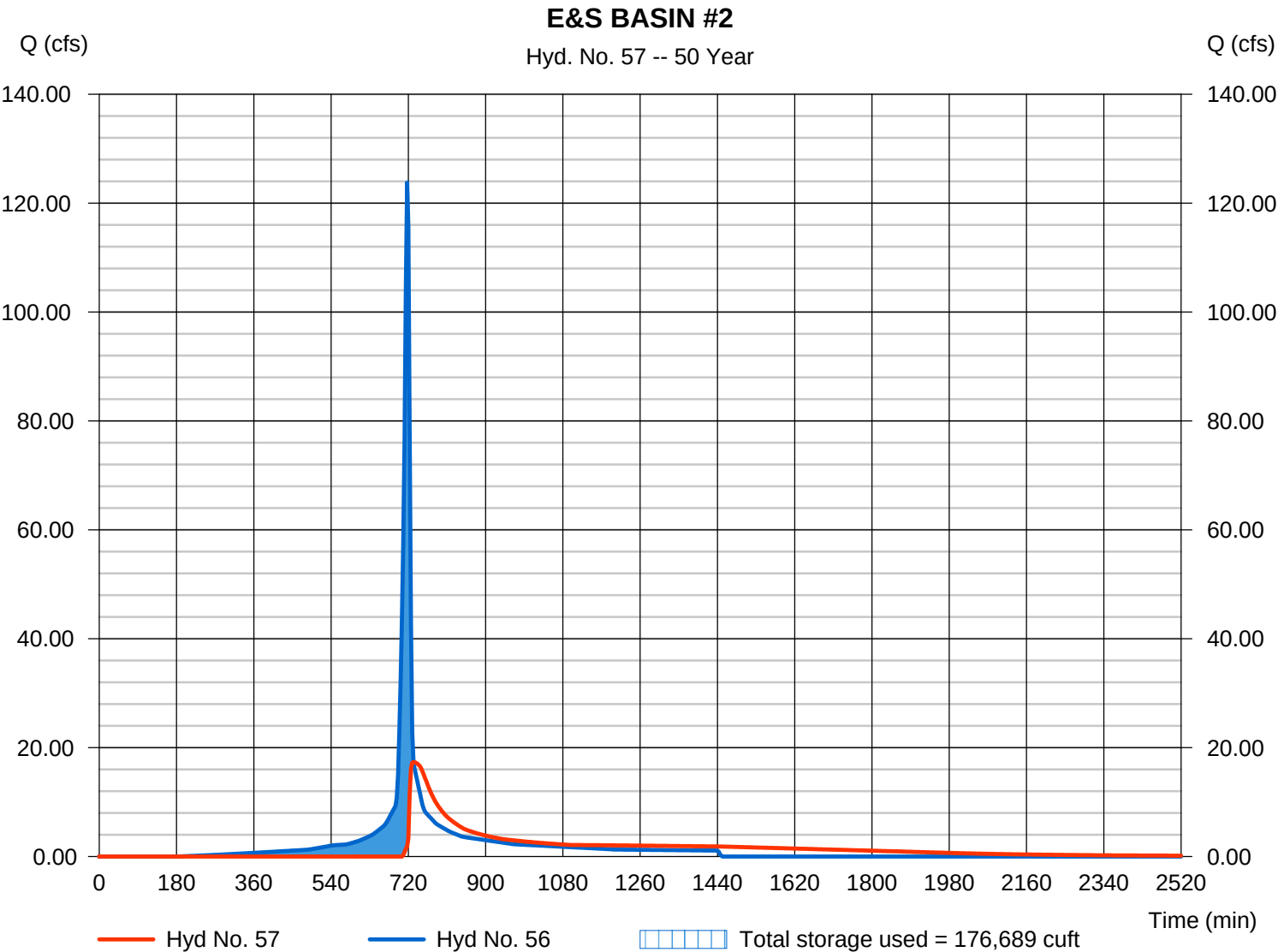
Friday, 07 / 28 / 2017

Hyd. No. 57

E&S BASIN #2

Hydrograph type	= Reservoir	Peak discharge	= 17.37 cfs
Storm frequency	= 50 yrs	Time to peak	= 732 min
Time interval	= 3 min	Hyd. volume	= 229,629 cuft
Inflow hyd. No.	= 56 - E&S RUNOFF BASIN 2	Max. Elevation	= 576.66 ft
Reservoir name	= E&S BASIN #2	Max. Storage	= 176,689 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

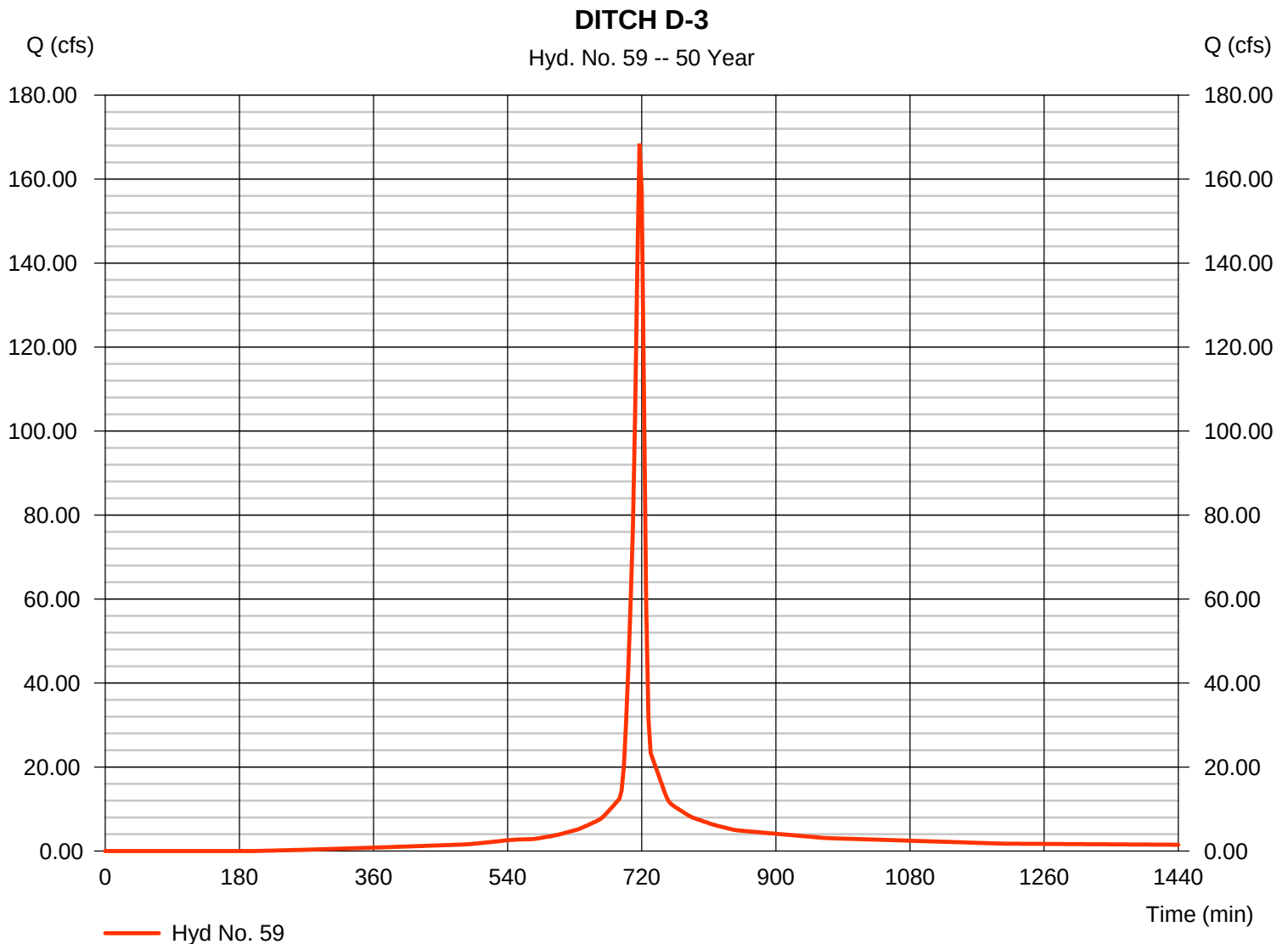
Hyd. No. 59

DITCH D-3

Hydrograph type = SCS Runoff
 Storm frequency = 50 yrs
 Time interval = 3 min
 Drainage area = 22.300 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 6.60 in
 Storm duration = 24 hrs

Peak discharge = 168.41 cfs
 Time to peak = 717 min
 Hyd. volume = 403,592 cuft
 Curve number = 89*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(12.200 \times 98) + (10.100 \times 79)] / 22.300$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

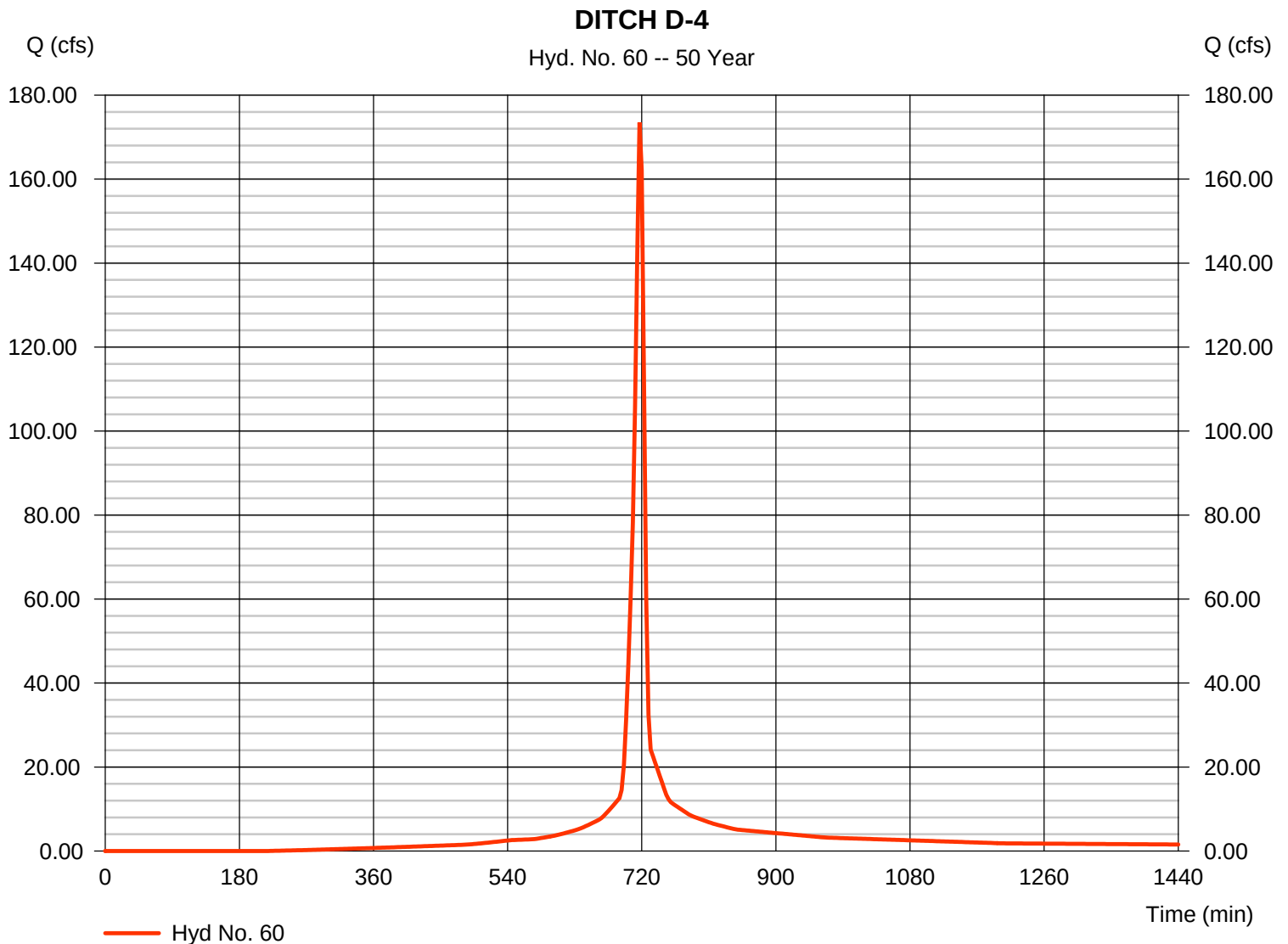
Hyd. No. 60

DITCH D-4

Hydrograph type = SCS Runoff
 Storm frequency = 50 yrs
 Time interval = 3 min
 Drainage area = 23.300 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 6.60 in
 Storm duration = 24 hrs

Peak discharge = 173.46 cfs
 Time to peak = 717 min
 Hyd. volume = 412,752 cuft
 Curve number = 88*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(11.500 \times 98) + (11.800 \times 79)] / 23.300$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 62

PRE-DEVELOPMENT

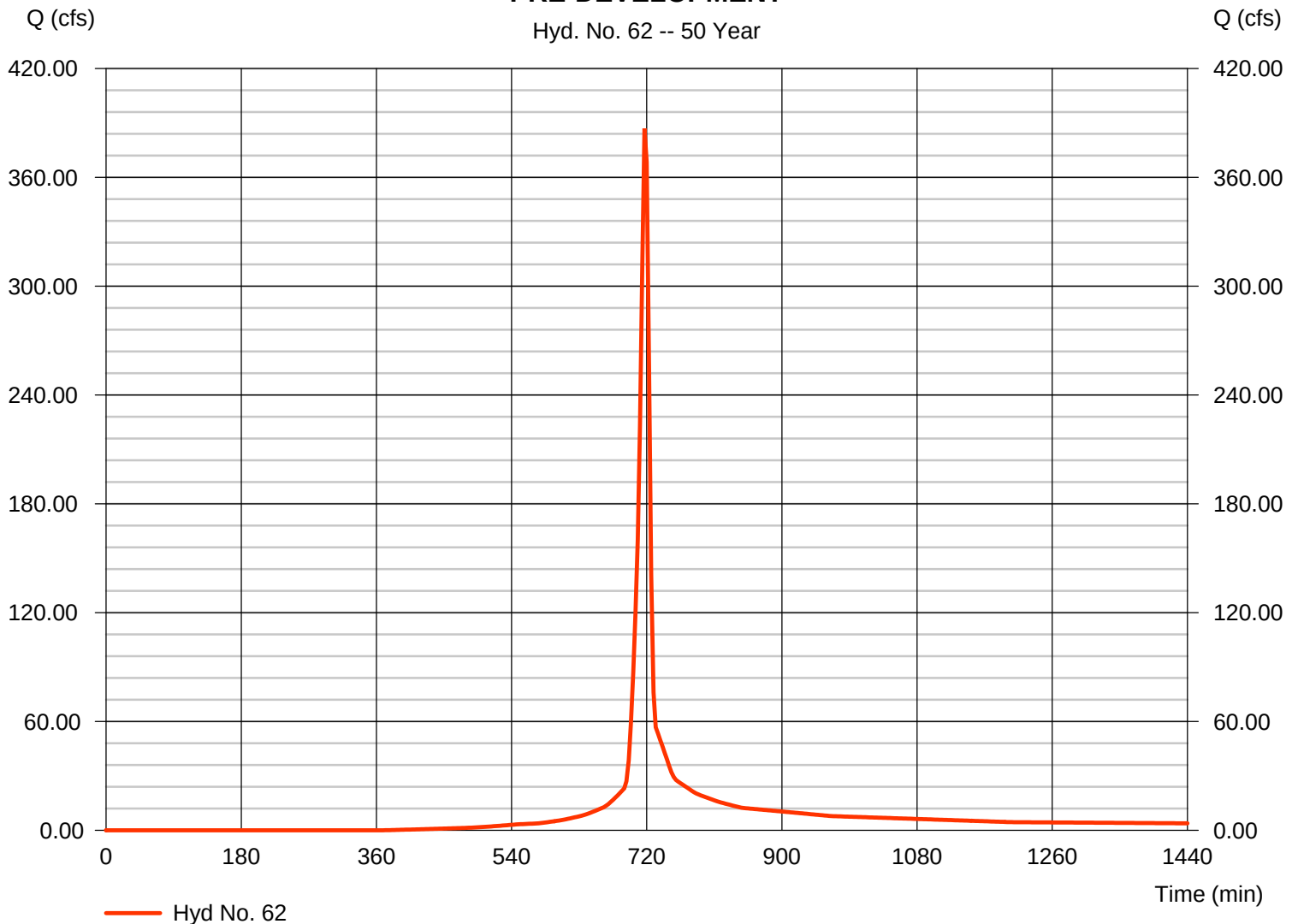
Hydrograph type = SCS Runoff
 Storm frequency = 50 yrs
 Time interval = 3 min
 Drainage area = 61.500 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 6.60 in
 Storm duration = 24 hrs

Peak discharge = 386.96 cfs
 Time to peak = 717 min
 Hyd. volume = 883,183 cuft
 Curve number = 79*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(60.200 \times 79) + (1.300 \times 98)] / 61.500$

PRE-DEVELOPMENT

Hyd. No. 62 -- 50 Year



Hydrograph Report

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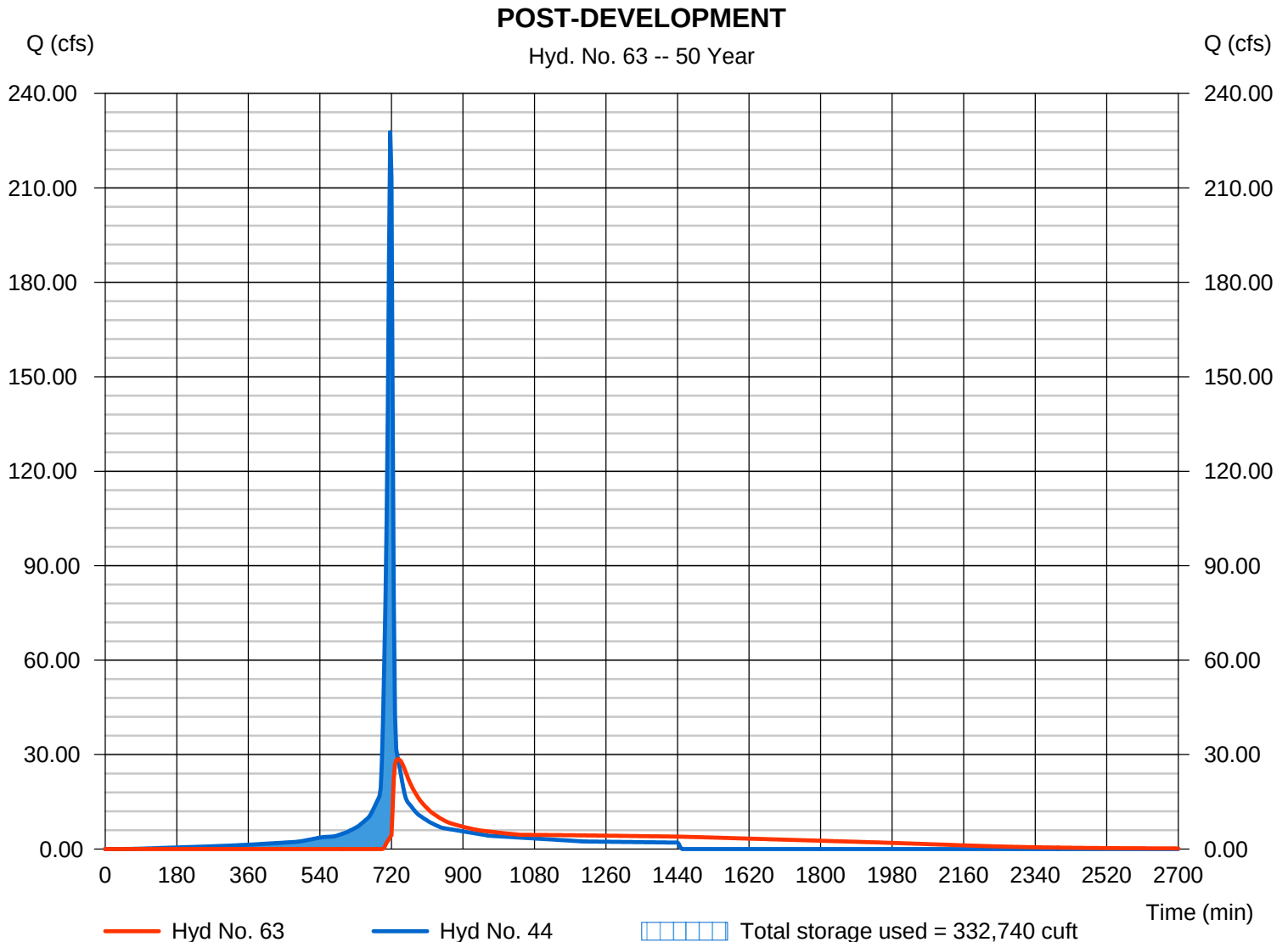
Friday, 07 / 28 / 2017

Hyd. No. 63

POST-DEVELOPMENT

Hydrograph type	= Reservoir	Peak discharge	= 28.54 cfs
Storm frequency	= 50 yrs	Time to peak	= 738 min
Time interval	= 3 min	Hyd. volume	= 451,154 cuft
Inflow hyd. No.	= 44 - TOTAL CLEAN WATER STORAGE	Max. Elevation	= 562.68 ft
Reservoir name	= STORMWATER DETENTION POND	Max. Storage	= 332,740 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	24.60	3	717	57,148	-----	-----	-----	GRASS SWALE #1
2	SCS Runoff	8.851	3	717	22,052	-----	-----	-----	GRASS SWALE #2
3	SCS Runoff	9.248	3	717	23,544	-----	-----	-----	GRASS SWALE #3
4	SCS Runoff	6.422	3	717	16,350	-----	-----	-----	GRASS SWALE #4
5	SCS Runoff	15.19	3	717	35,134	-----	-----	-----	GRASS SWALE #5
6	SCS Runoff	2.004	3	717	4,945	-----	-----	-----	GRASS SWALE #6
7	SCS Runoff	6.047	3	717	14,665	-----	-----	-----	GRASS SWALE #7
8	SCS Runoff	1.551	3	717	3,996	-----	-----	-----	GRASS SWALE #8
9	SCS Runoff	6.545	3	717	16,478	-----	-----	-----	DI #4
10	SCS Runoff	30.15	3	717	79,838	-----	-----	-----	DI #6
11	SCS Runoff	9.070	3	717	21,997	-----	-----	-----	DI #7
12	SCS Runoff	11.98	3	717	30,859	-----	-----	-----	DI #8
13	SCS Runoff	14.90	3	717	37,931	-----	-----	-----	DI #9
14	SCS Runoff	2.590	3	717	5,928	-----	-----	-----	DI #10
15	SCS Runoff	46.69	3	717	106,868	-----	-----	-----	MH #11
16	SCS Runoff	12.77	3	717	30,129	-----	-----	-----	DI #13
17	SCS Runoff	13.87	3	717	35,315	-----	-----	-----	DI #14
18	SCS Runoff	21.54	3	717	55,502	-----	-----	-----	DI #15
21	SCS Runoff	11.52	3	717	30,063	-----	-----	-----	DI #22
22	SCS Runoff	9.298	3	717	24,619	-----	-----	-----	DI #23
23	SCS Runoff	7.386	3	717	19,557	-----	-----	-----	DI #24
24	SCS Runoff	7.386	3	717	19,557	-----	-----	-----	DI #25
25	SCS Runoff	4.779	3	717	12,655	-----	-----	-----	DI #26
26	SCS Runoff	6.952	3	717	18,407	-----	-----	-----	DI #27
27	SCS Runoff	7.975	3	717	18,253	-----	-----	-----	DITCH D-1
28	SCS Runoff	59.44	3	717	136,042	-----	-----	-----	DITCH D-2
29	SCS Runoff	8.777	3	717	23,238	-----	-----	-----	DI #29
30	SCS Runoff	2.259	3	717	5,982	-----	-----	-----	DI #30
31	SCS Runoff	7.734	3	717	20,477	-----	-----	-----	DI #31
32	SCS Runoff	14.34	3	717	37,964	-----	-----	-----	DI #32
33	SCS Runoff	4.606	3	717	12,194	-----	-----	-----	DI #33
34	SCS Runoff	12.53	3	717	30,908	-----	-----	-----	DI #34
35	SCS Runoff	3.910	3	717	10,354	-----	-----	-----	DI #35
TOTAL REVISED HYDROLOGY.gpw					Return Period: 100 Year			Friday, 07 / 28 / 2017	

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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
36	SCS Runoff	3.997	3	717	10,584	-----	-----	-----	DI #36
37	SCS Runoff	4.953	3	717	13,115	-----	-----	-----	DI #38
38	SCS Runoff	4.903	3	717	11,890	-----	-----	-----	DI #39
39	SCS Runoff	11.49	3	717	28,092	-----	-----	-----	DI #40
41	Combine	65.34	3	717	167,833	7, 8, 9, 10, 11, 12,	-----	-----	DI 4-8, SWALES 7-8
42	Combine	112.36	3	717	271,674	13, 14, 15, 16, 17, 18,	-----	-----	DI 9-15
43	Combine	66.31	3	717	159,172	1, 2, 3, 4, 5, 6,	-----	-----	GRASS SWALES 1-6
44	Combine	244.01	3	717	598,680	41, 42, 43	-----	-----	TOTAL CLEAN WATER SYSTEM
45	Reservoir	41.40	3	729	491,737	44	562.92	349,309	STORMWATER POND
47	Combine	21.34	3	717	53,097	37, 38, 39,	-----	-----	DI 38-40
48	Combine	47.32	3	717	124,857	21, 22, 23, 24, 25, 26,	-----	-----	DI 22-27
49	Combine	100.52	3	717	241,957	27, 28, 29, 30, 31, 32,	-----	-----	DI 29-32 & DITCHES
50	Combine	25.04	3	717	64,040	33, 34, 35, 36,	-----	-----	DI 33-36
51	Combine	194.22	3	717	483,951	47, 48, 49, 50	-----	-----	TOTAL DIRTY WATER SYSTEM
53	SCS Runoff	399.56	3	717	969,048	-----	-----	-----	E&S RUNOFF BASIN 1
54	Reservoir	86.30	3	729	862,106	53	565.16	518,384	E&S BASIN #1
56	SCS Runoff	132.37	3	717	321,035	-----	-----	-----	E&S RUNOFF BASIN 2
57	Reservoir	19.09	3	732	251,220	56	576.88	188,000	E&S BASIN #2
59	SCS Runoff	179.99	3	717	433,184	-----	-----	-----	DITCH D-3
60	SCS Runoff	185.60	3	717	443,522	-----	-----	-----	DITCH D-4
62	SCS Runoff	419.20	3	717	959,472	-----	-----	-----	PRE-DEVELOPMENT
63	Reservoir	41.40	3	729	491,737	44	562.92	349,309	POST-DEVELOPMENT
TOTAL REVISED HYDROLOGY.gpw					Return Period: 100 Year			Friday, 07 / 28 / 2017	

Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

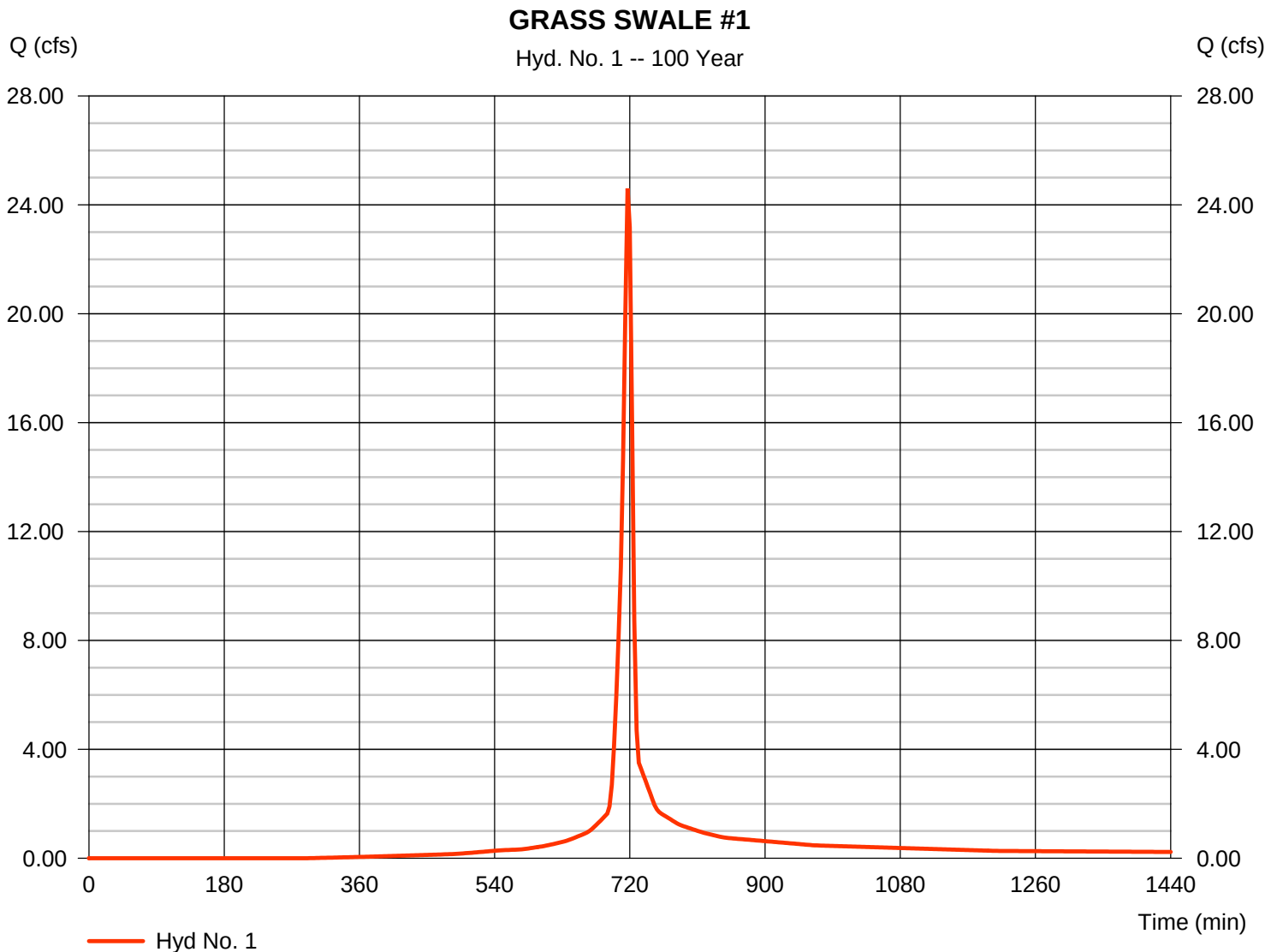
Friday, 07 / 28 / 2017

Hyd. No. 1

GRASS SWALE #1

Hydrograph type	= SCS Runoff	Peak discharge	= 24.60 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 57,148 cuft
Drainage area	= 3.340 ac	Curve number	= 83*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.730 \times 98) + (2.610 \times 79)] / 3.340$



Hydrograph Report

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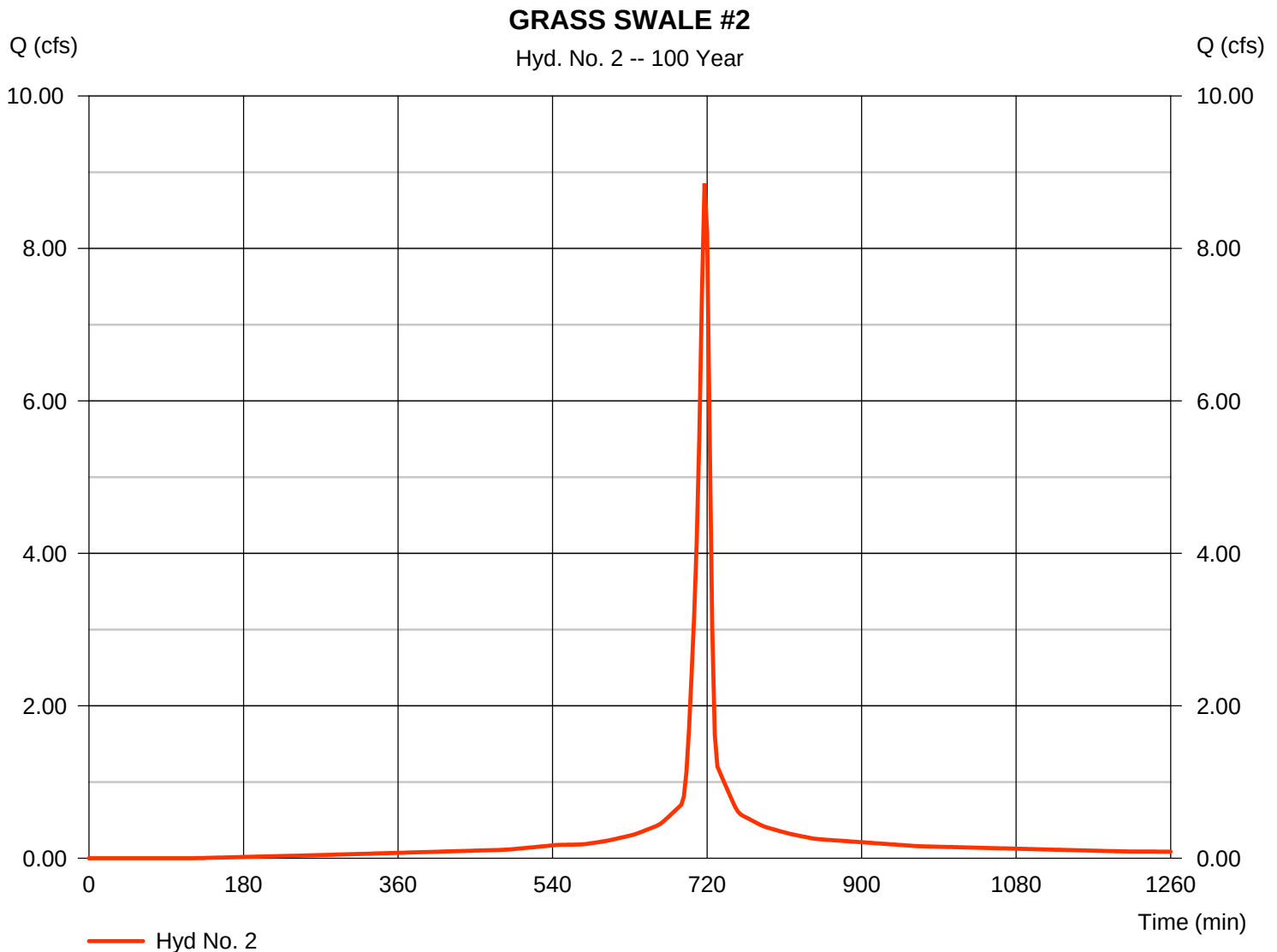
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Hyd. No. 2

GRASS SWALE #2

Hydrograph type	= SCS Runoff	Peak discharge	= 8.851 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 22,052 cuft
Drainage area	= 1.050 ac	Curve number	= 93*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.770 \times 98) + (0.280 \times 79)] / 1.050$



Hydrograph Report

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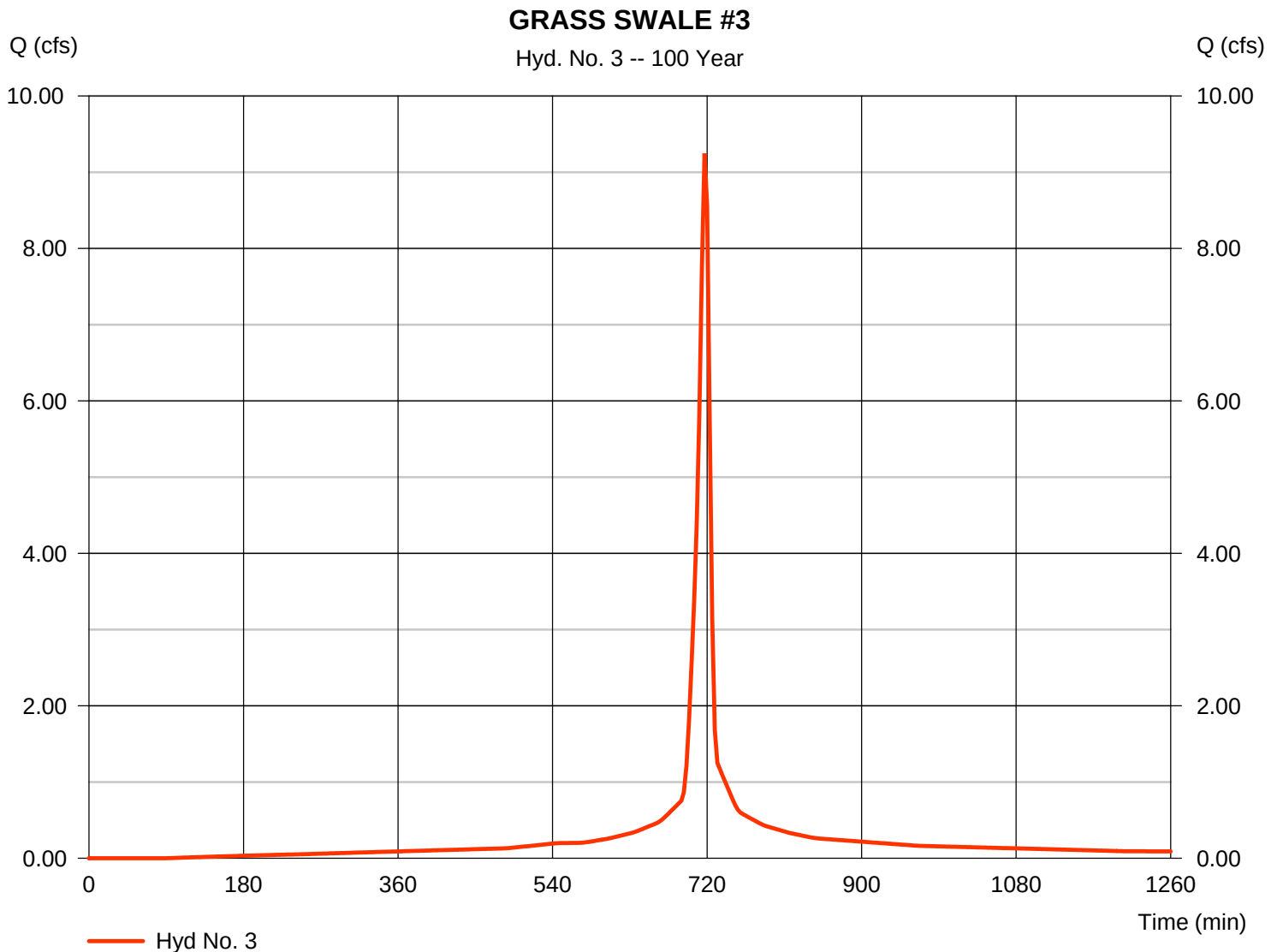
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Hyd. No. 3

GRASS SWALE #3

Hydrograph type	= SCS Runoff	Peak discharge	= 9.248 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 23,544 cuft
Drainage area	= 1.080 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.890 \times 98) + (0.190 \times 79)] / 1.080$



Hydrograph Report

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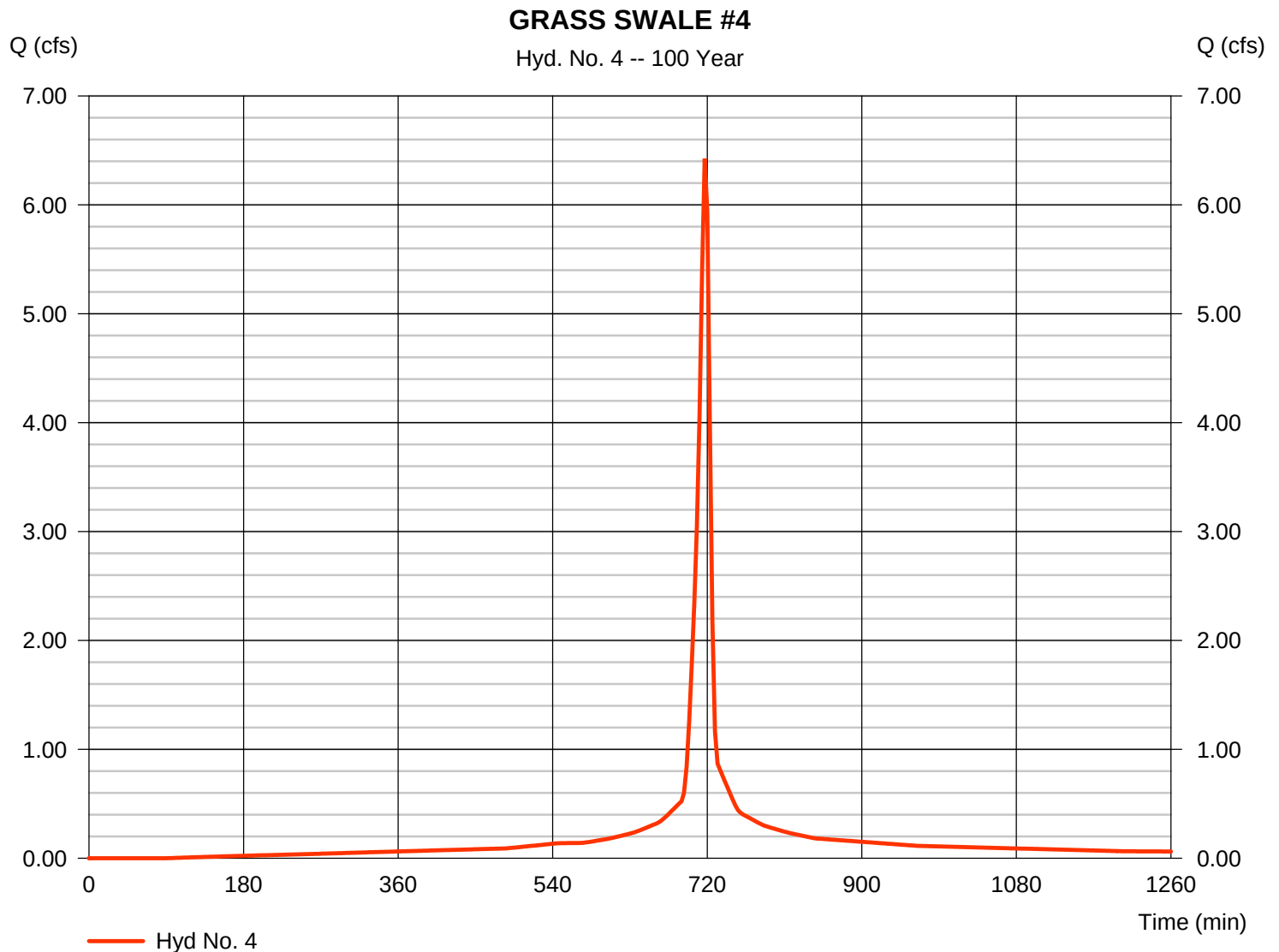
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Hyd. No. 4

GRASS SWALE #4

Hydrograph type	= SCS Runoff	Peak discharge	= 6.422 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 16,350 cuft
Drainage area	= 0.750 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.630 \times 98) + (0.120 \times 79)] / 0.750$



Hydrograph Report

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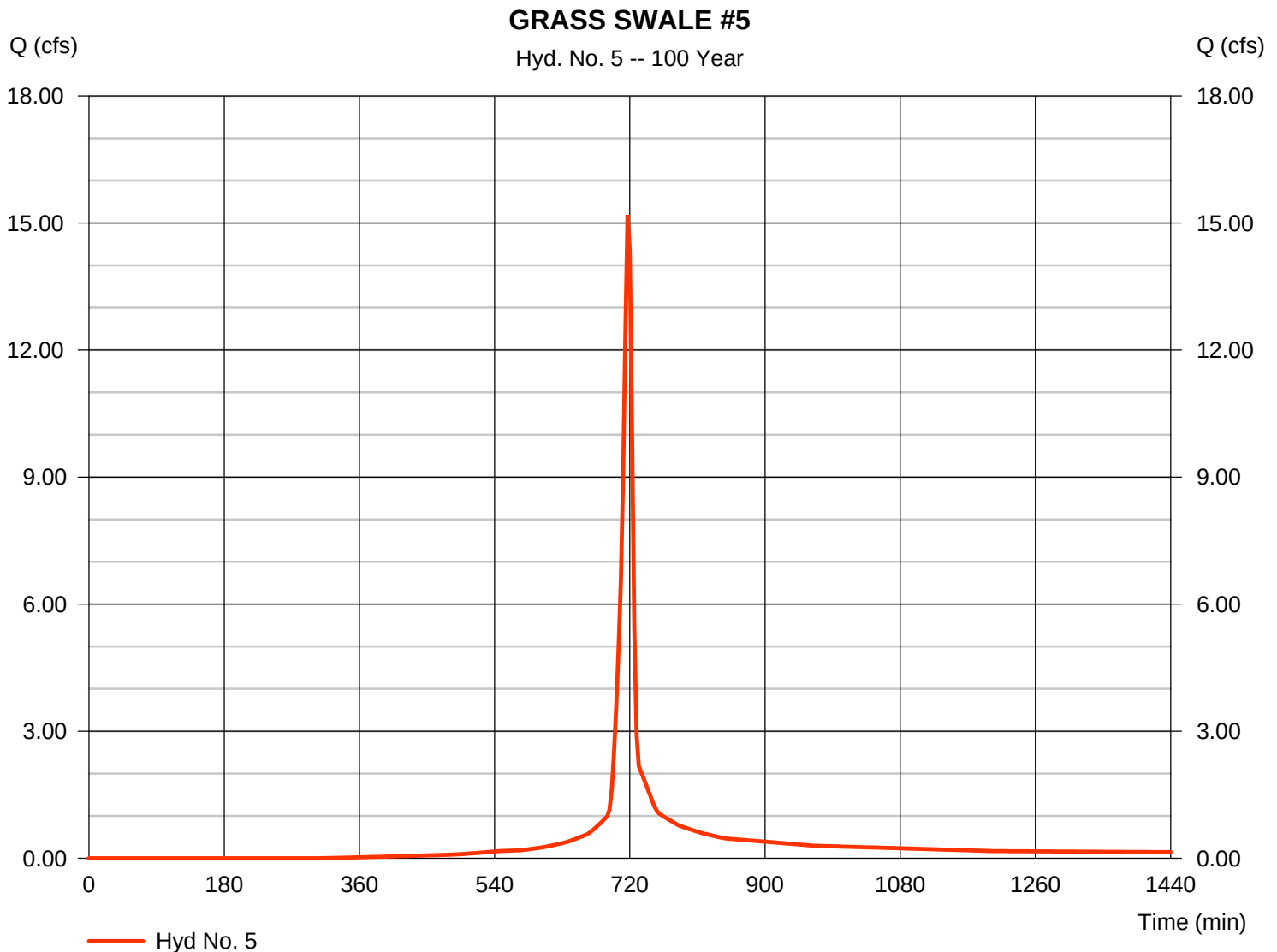
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Hyd. No. 5

GRASS SWALE #5

Hydrograph type	= SCS Runoff	Peak discharge	= 15.19 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 35,134 cuft
Drainage area	= 2.100 ac	Curve number	= 82*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.300 \times 98) + (1.800 \times 79)] / 2.100$



Hydrograph Report

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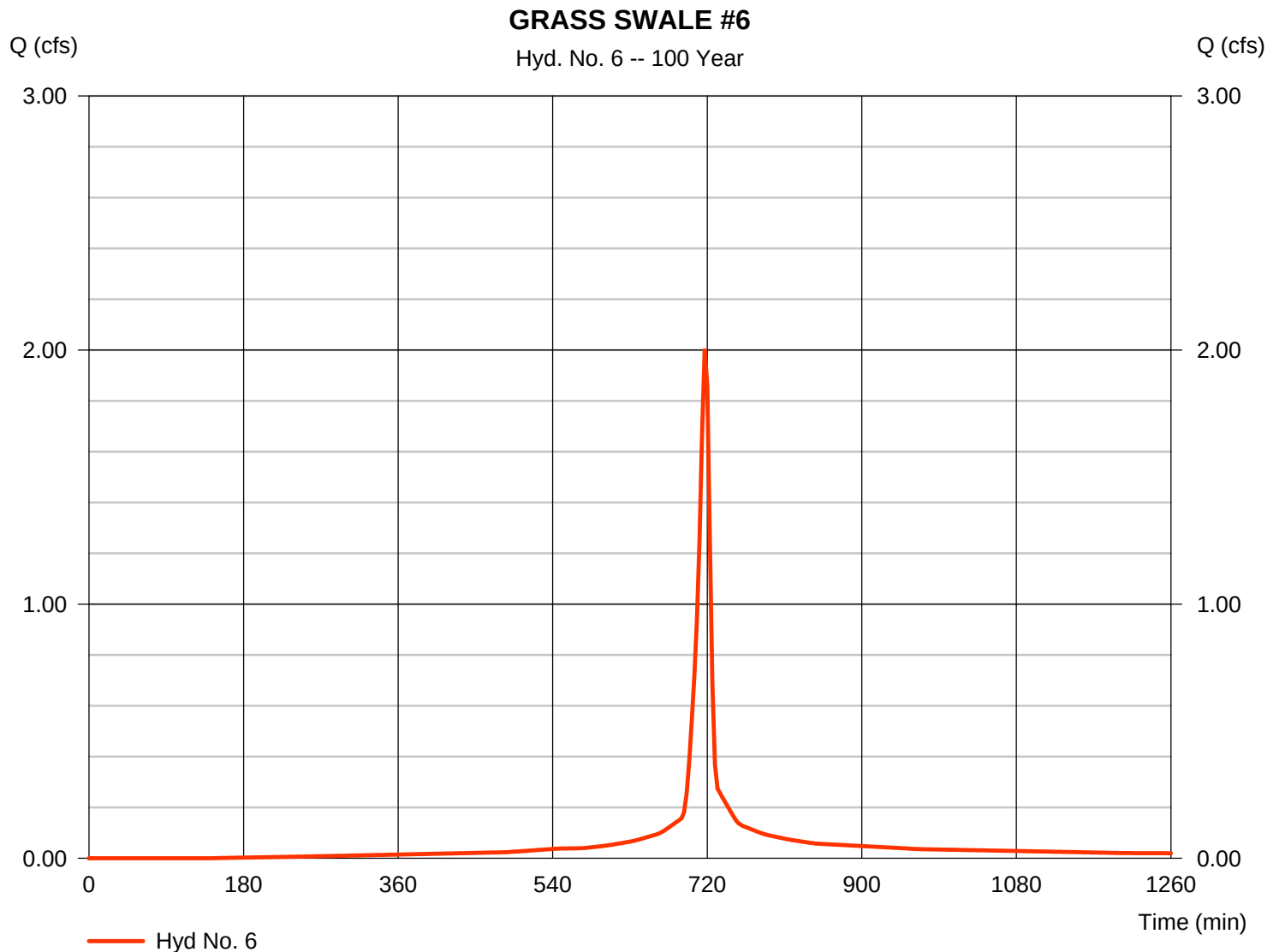
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Hyd. No. 6

GRASS SWALE #6

Hydrograph type	= SCS Runoff	Peak discharge	= 2.004 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 4,945 cuft
Drainage area	= 0.240 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.160 \times 98) + (0.080 \times 79)] / 0.240$



Hydrograph Report

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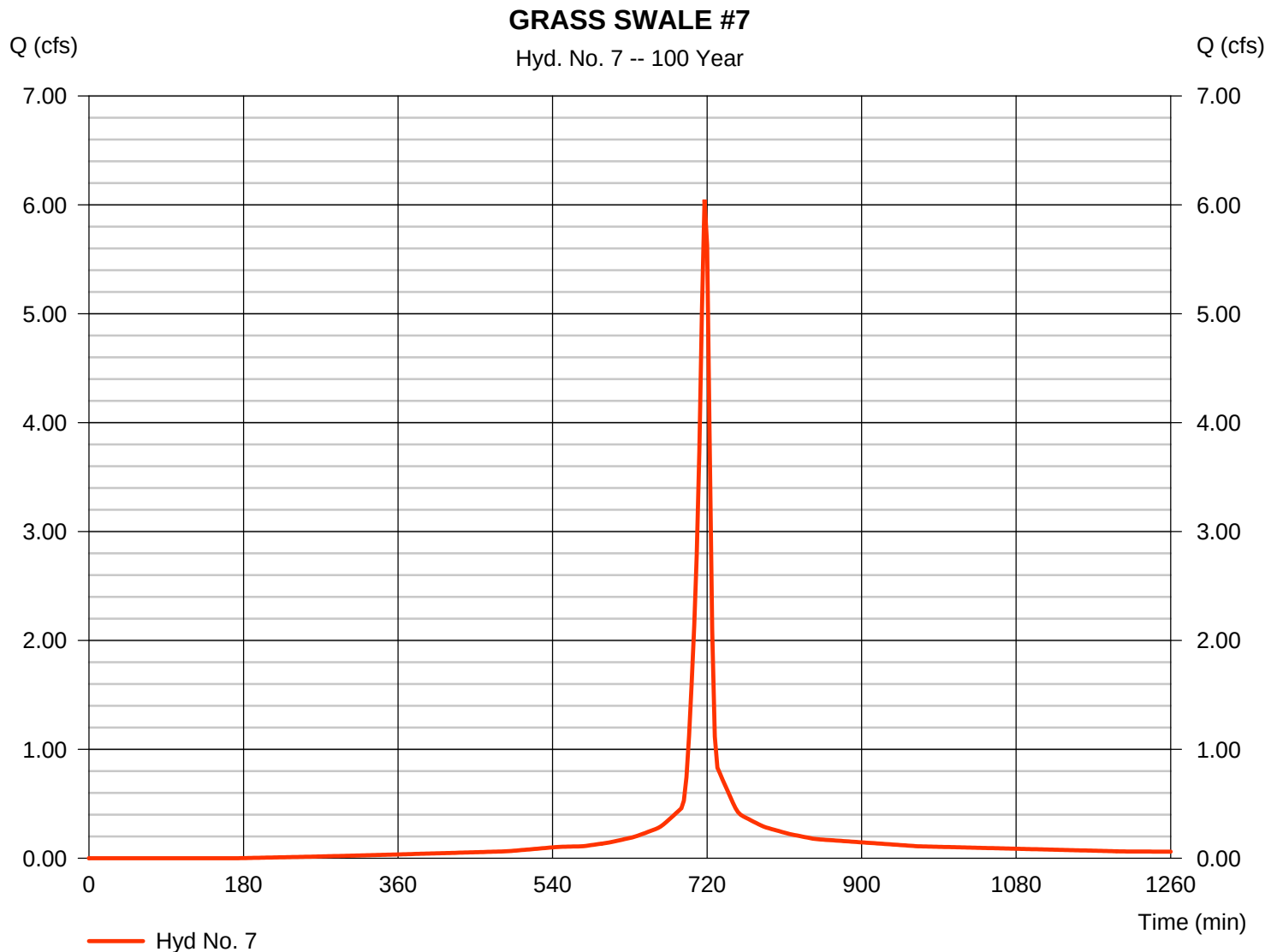
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Hyd. No. 7

GRASS SWALE #7

Hydrograph type	= SCS Runoff	Peak discharge	= 6.047 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 14,665 cuft
Drainage area	= 0.740 ac	Curve number	= 90*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.420 \times 98) + (0.320 \times 79)] / 0.740$



Hydrograph Report

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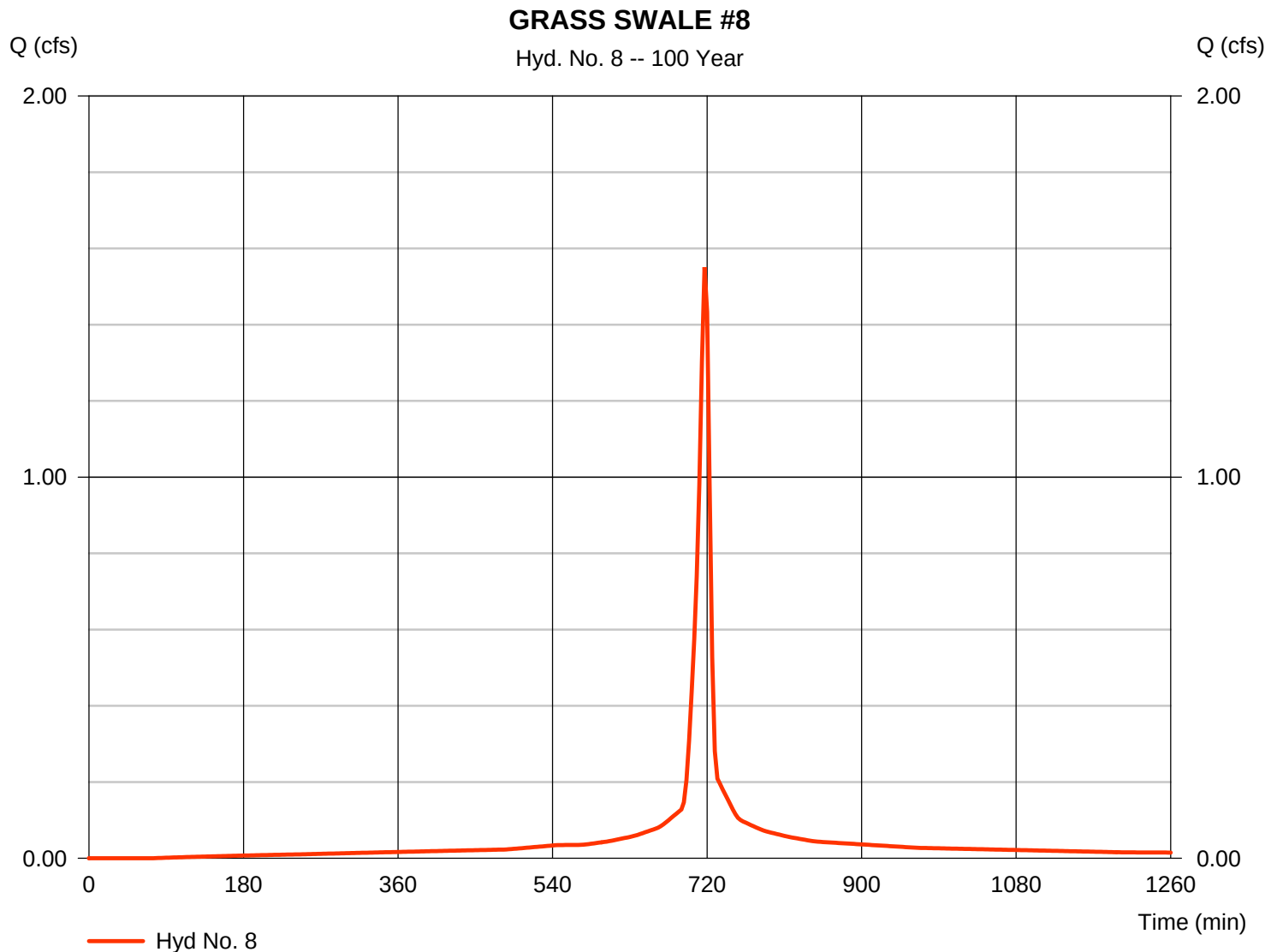
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Hyd. No. 8

GRASS SWALE #8

Hydrograph type	= SCS Runoff	Peak discharge	= 1.551 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 3,996 cuft
Drainage area	= 0.180 ac	Curve number	= 96*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.160 \times 98) + (0.020 \times 79)] / 0.180$



Hydrograph Report

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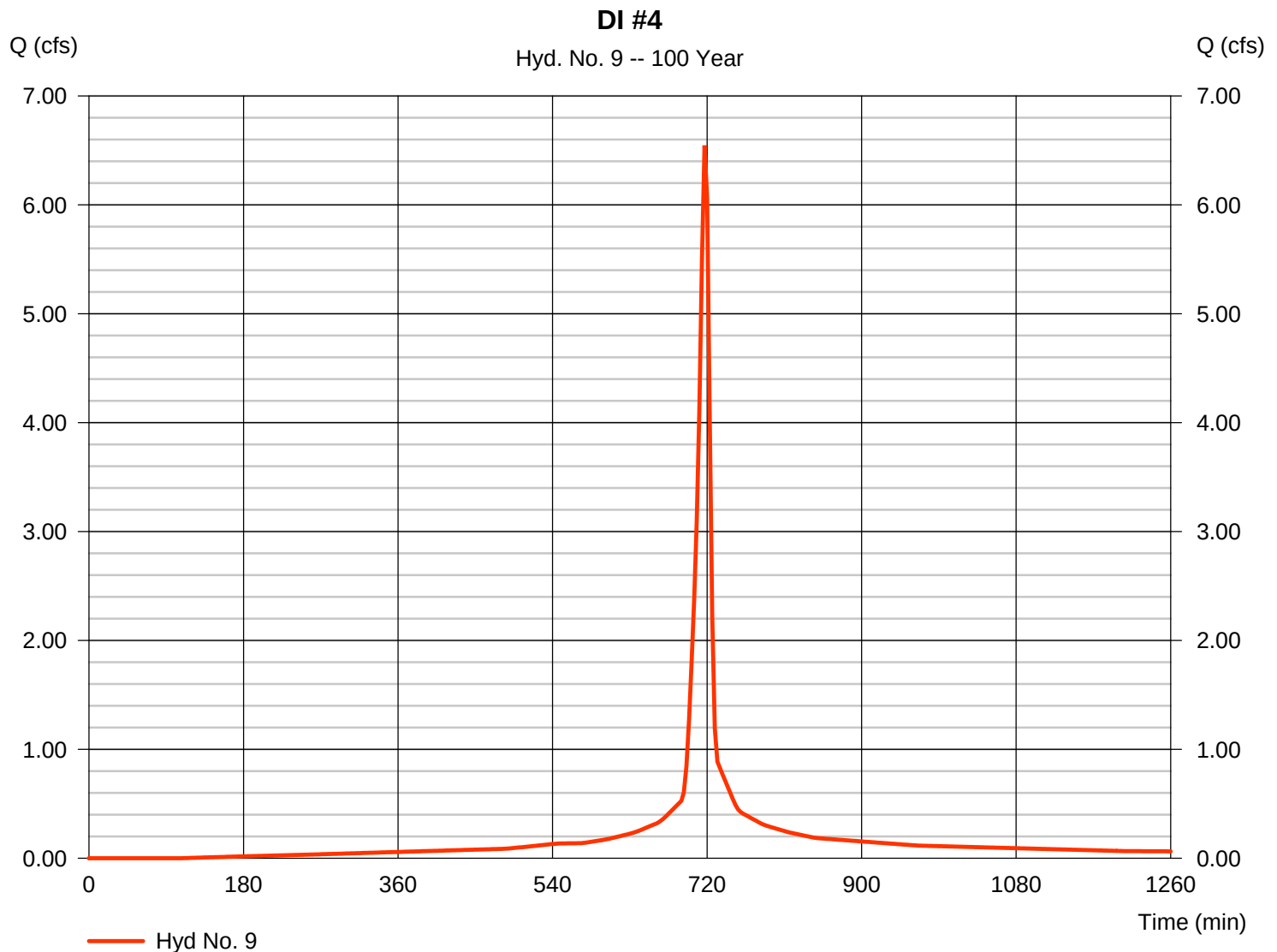
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Hyd. No. 9

DI #4

Hydrograph type	= SCS Runoff	Peak discharge	= 6.545 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 16,478 cuft
Drainage area	= 0.770 ac	Curve number	= 94*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.610 \times 98) + (0.160 \times 79)] / 0.770$



Hydrograph Report

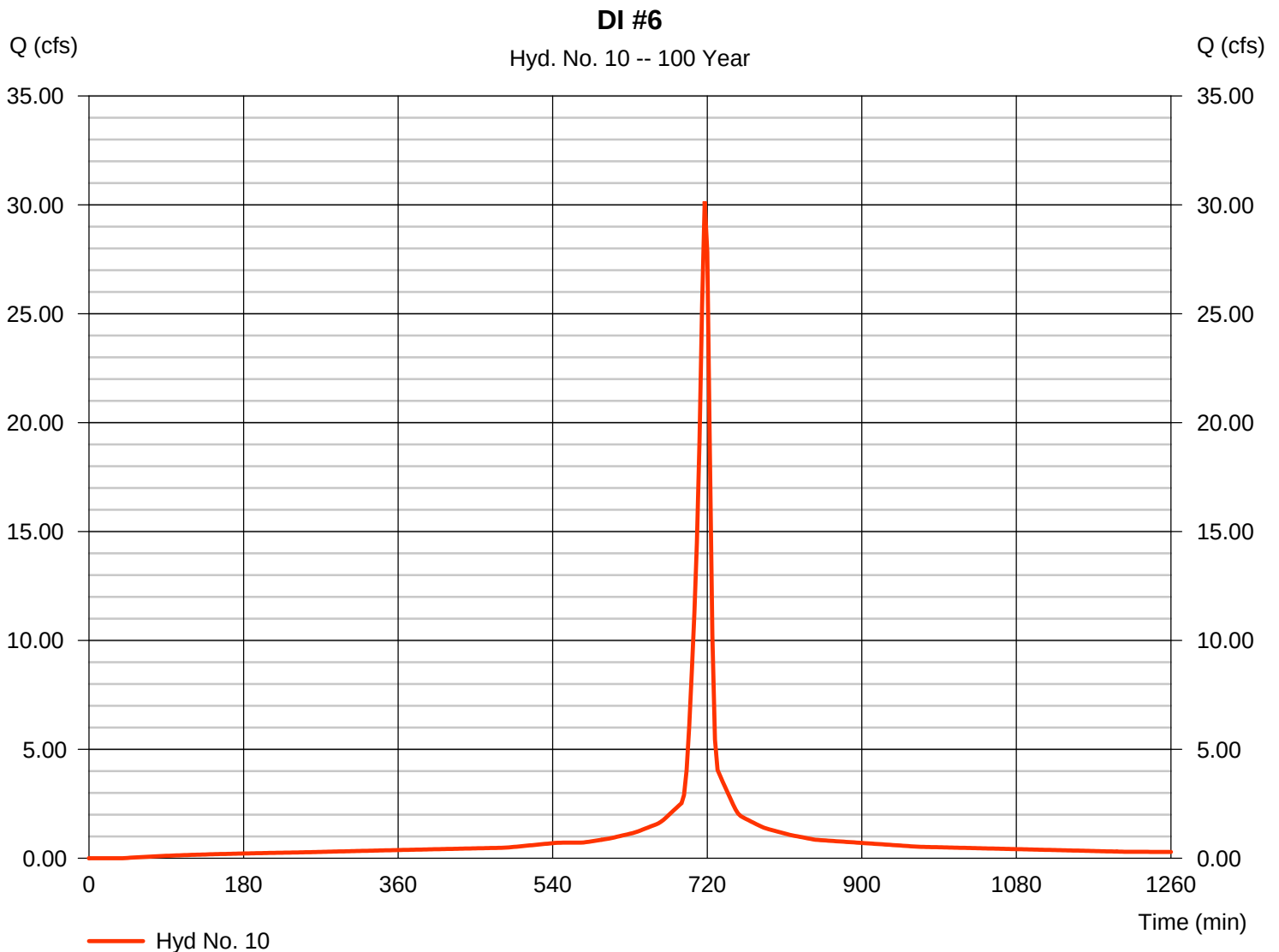
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Hyd. No. 10

DI #6

Hydrograph type	= SCS Runoff	Peak discharge	= 30.15 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 79,838 cuft
Drainage area	= 3.470 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

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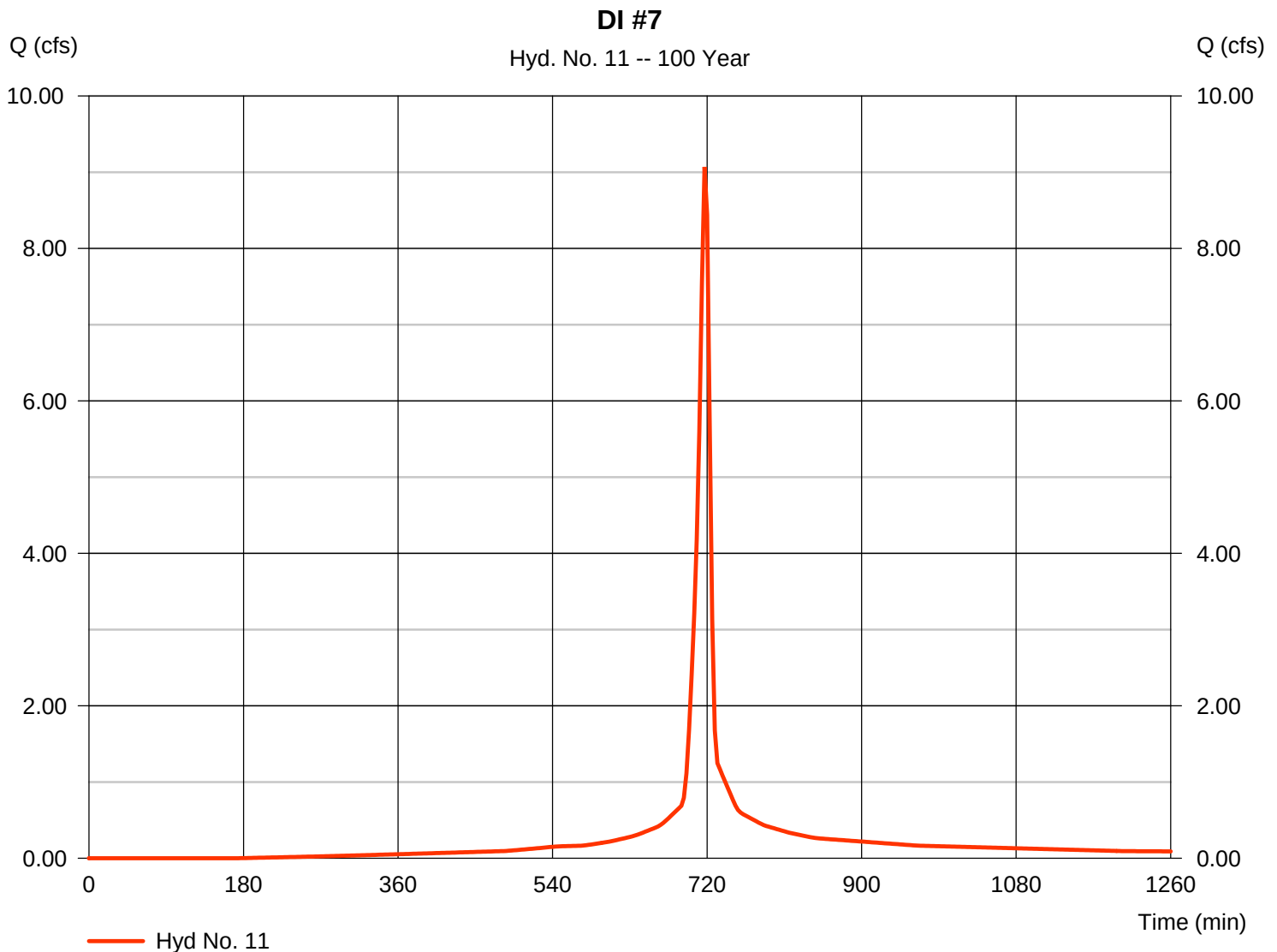
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Hyd. No. 11

DI #7

Hydrograph type	= SCS Runoff	Peak discharge	= 9.070 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 21,997 cuft
Drainage area	= 1.110 ac	Curve number	= 90*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.660 \times 98) + (0.450 \times 79)] / 1.110$



Hydrograph Report

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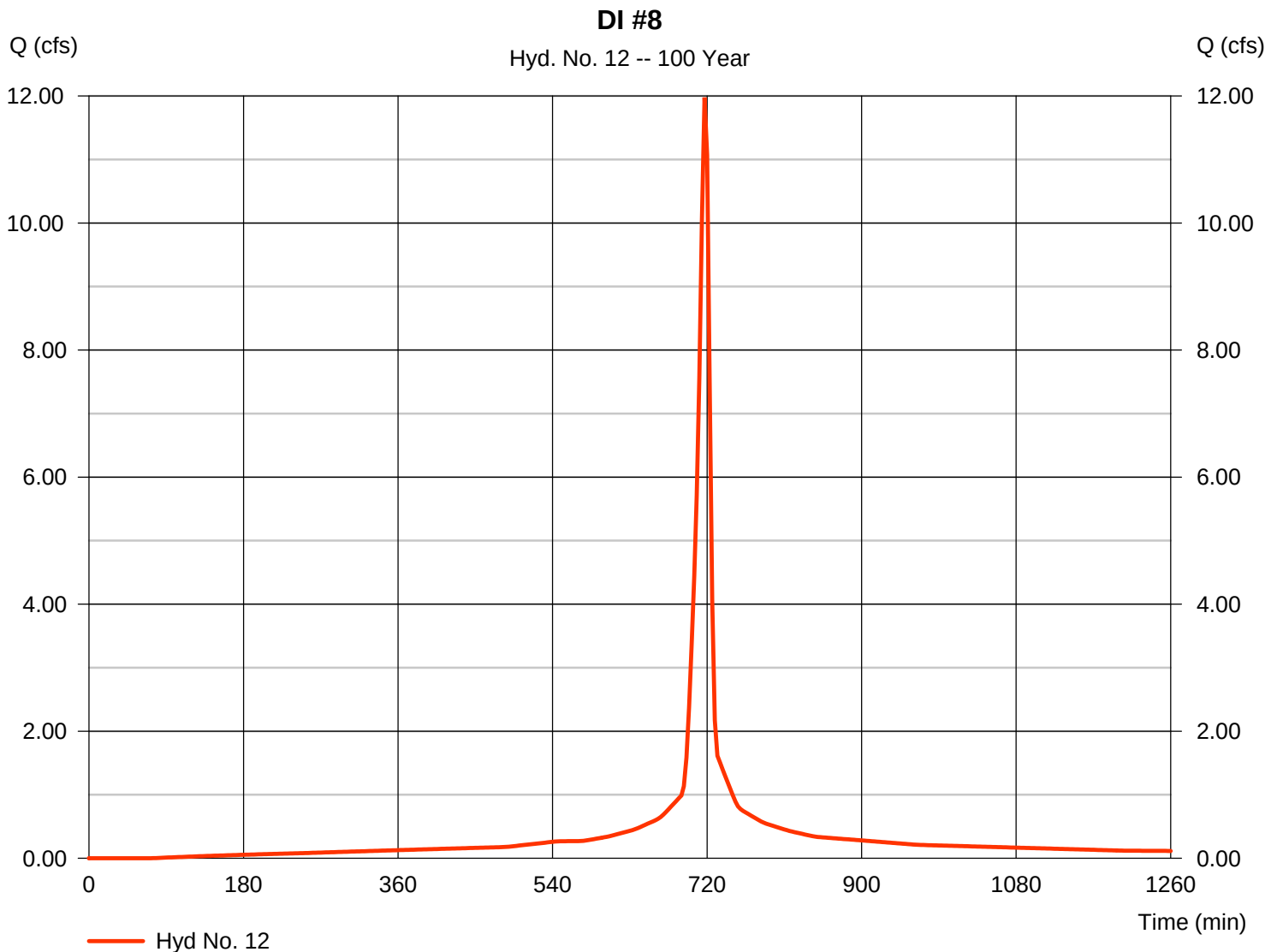
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Hyd. No. 12

DI #8

Hydrograph type	= SCS Runoff	Peak discharge	= 11.98 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 30,859 cuft
Drainage area	= 1.390 ac	Curve number	= 96*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.230 \times 98) + (0.160 \times 79)] / 1.390$



Hydrograph Report

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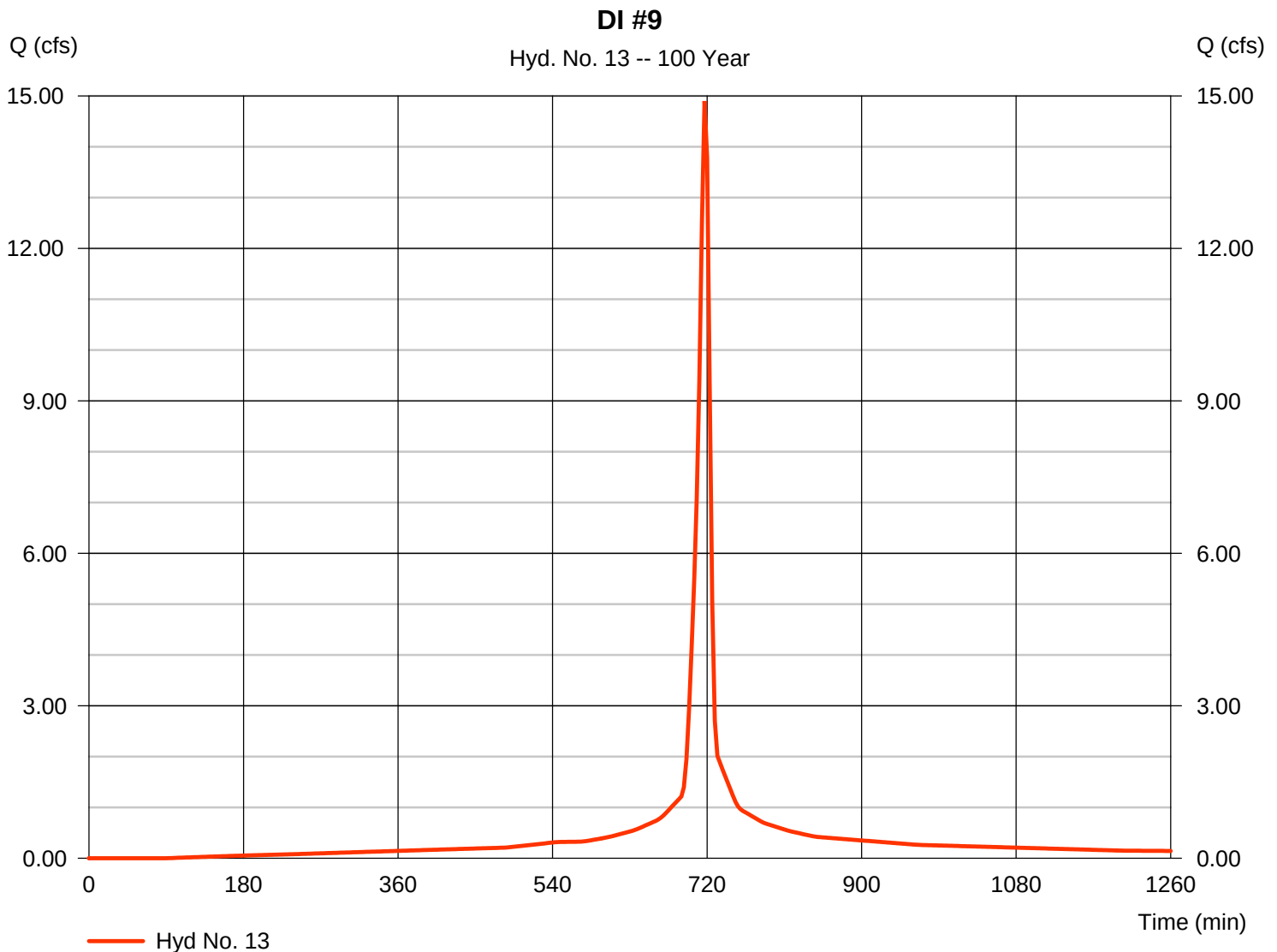
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Hyd. No. 13

DI #9

Hydrograph type	= SCS Runoff	Peak discharge	= 14.90 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 37,931 cuft
Drainage area	= 1.740 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.490 \times 98) + (0.250 \times 79)] / 1.740$



Hydrograph Report

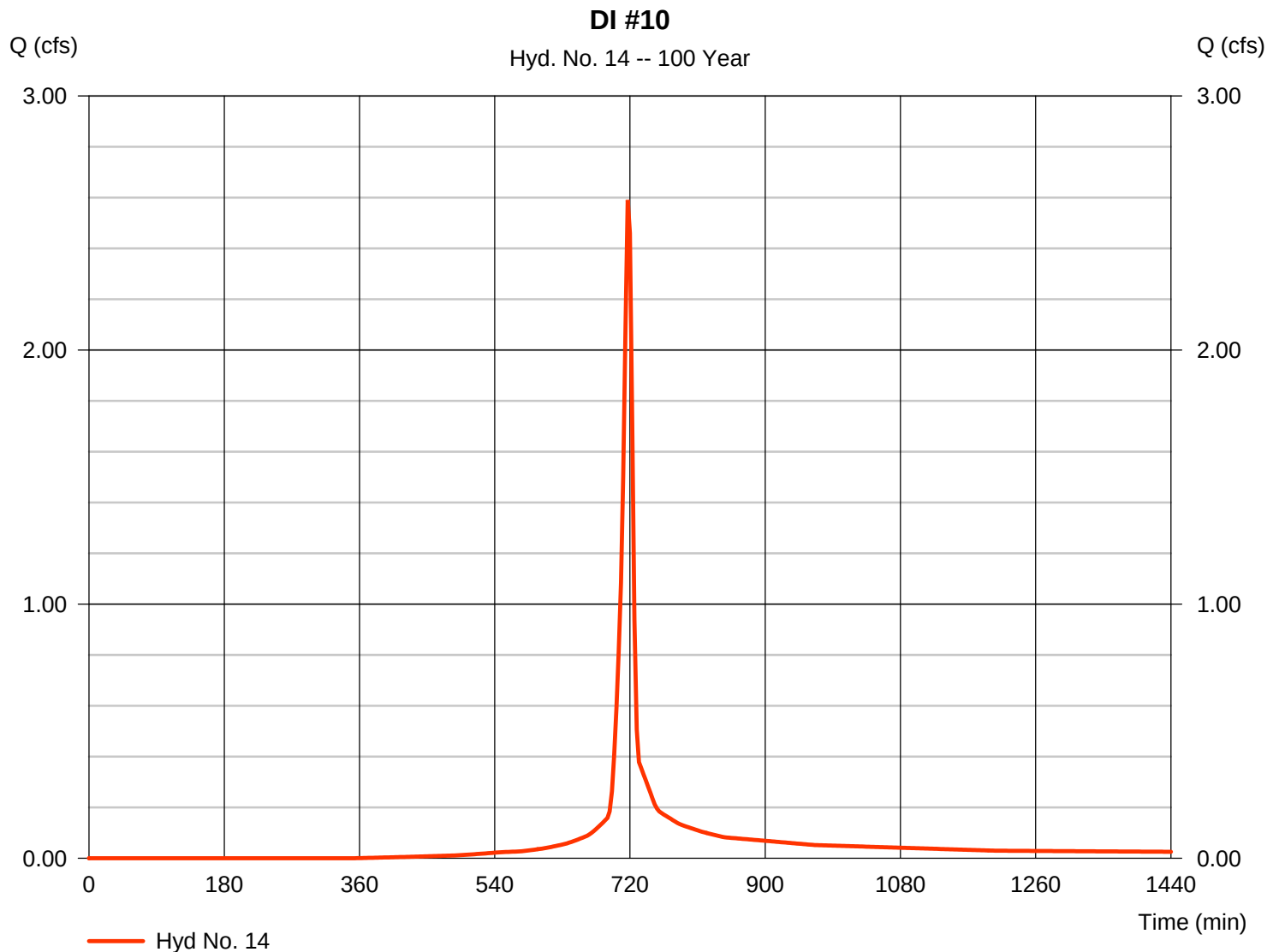
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Hyd. No. 14

DI #10

Hydrograph type	= SCS Runoff	Peak discharge	= 2.590 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 5,928 cuft
Drainage area	= 0.380 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

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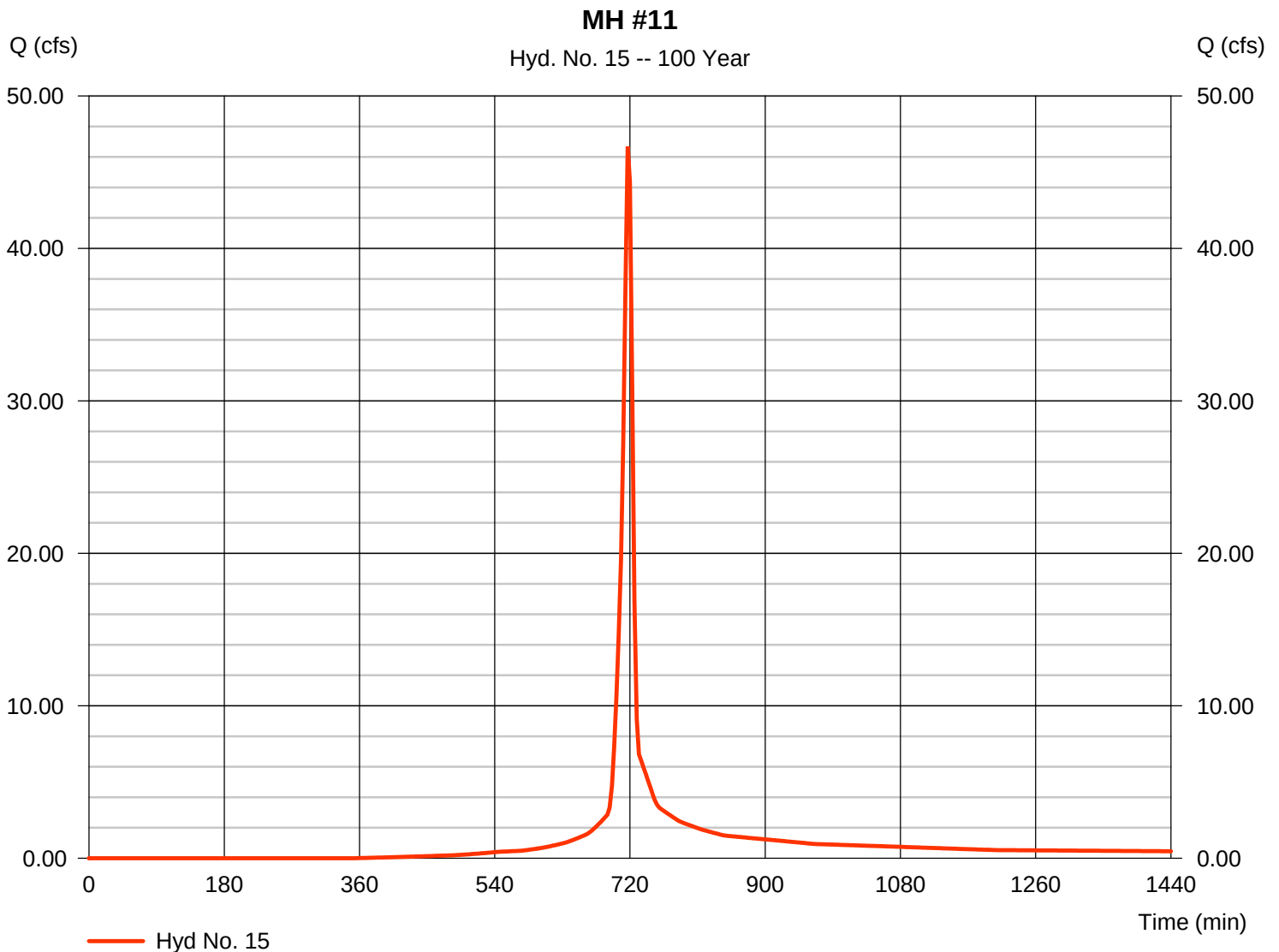
Friday, 07 / 28 / 2017

Hyd. No. 15

MH #11

Hydrograph type = SCS Runoff
 Storm frequency = 100 yrs
 Time interval = 3 min
 Drainage area = 6.850 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 7.00 in
 Storm duration = 24 hrs

Peak discharge = 46.69 cfs
 Time to peak = 717 min
 Hyd. volume = 106,868 cuft
 Curve number = 79
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484



Hydrograph Report

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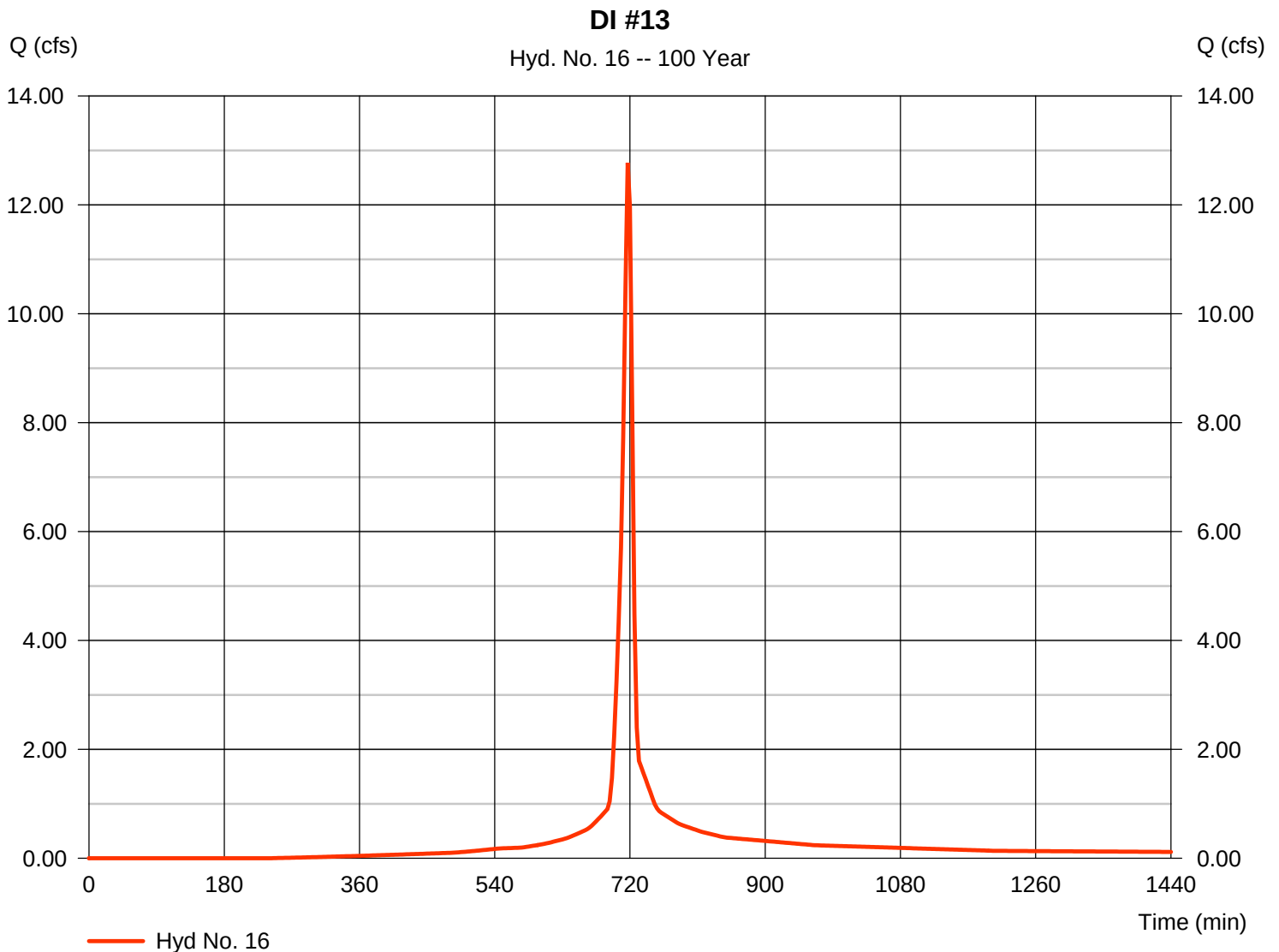
Friday, 07 / 28 / 2017

Hyd. No. 16

DI #13

Hydrograph type	= SCS Runoff	Peak discharge	= 12.77 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 30,129 cuft
Drainage area	= 1.650 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.580 \times 98) + (1.070 \times 79)] / 1.650$



Hydrograph Report

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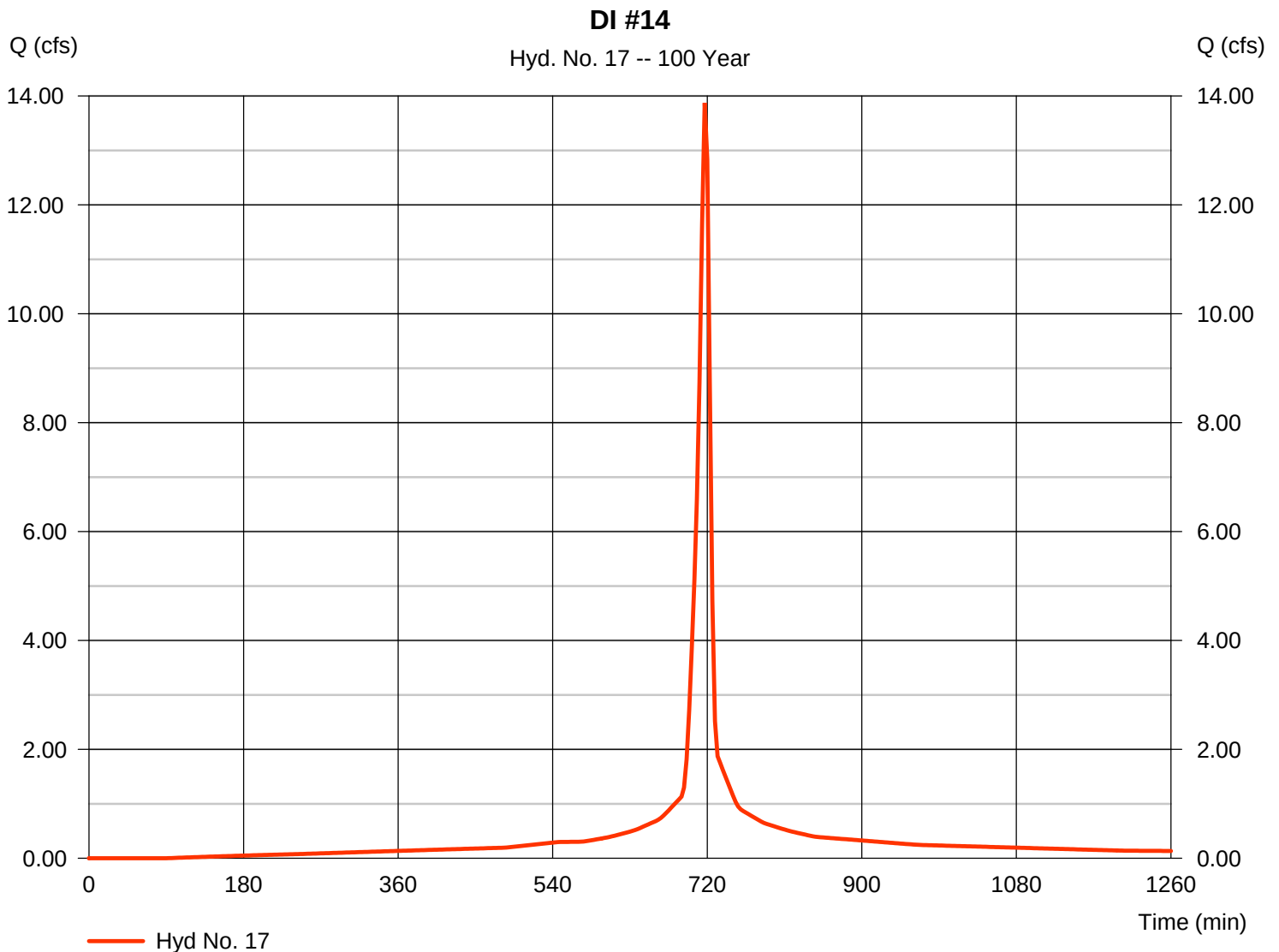
Friday, 07 / 28 / 2017

Hyd. No. 17

DI #14

Hydrograph type	= SCS Runoff	Peak discharge	= 13.87 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 35,315 cuft
Drainage area	= 1.620 ac	Curve number	= 95*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.400 \times 98) + (0.220 \times 79)] / 1.620$



Hydrograph Report

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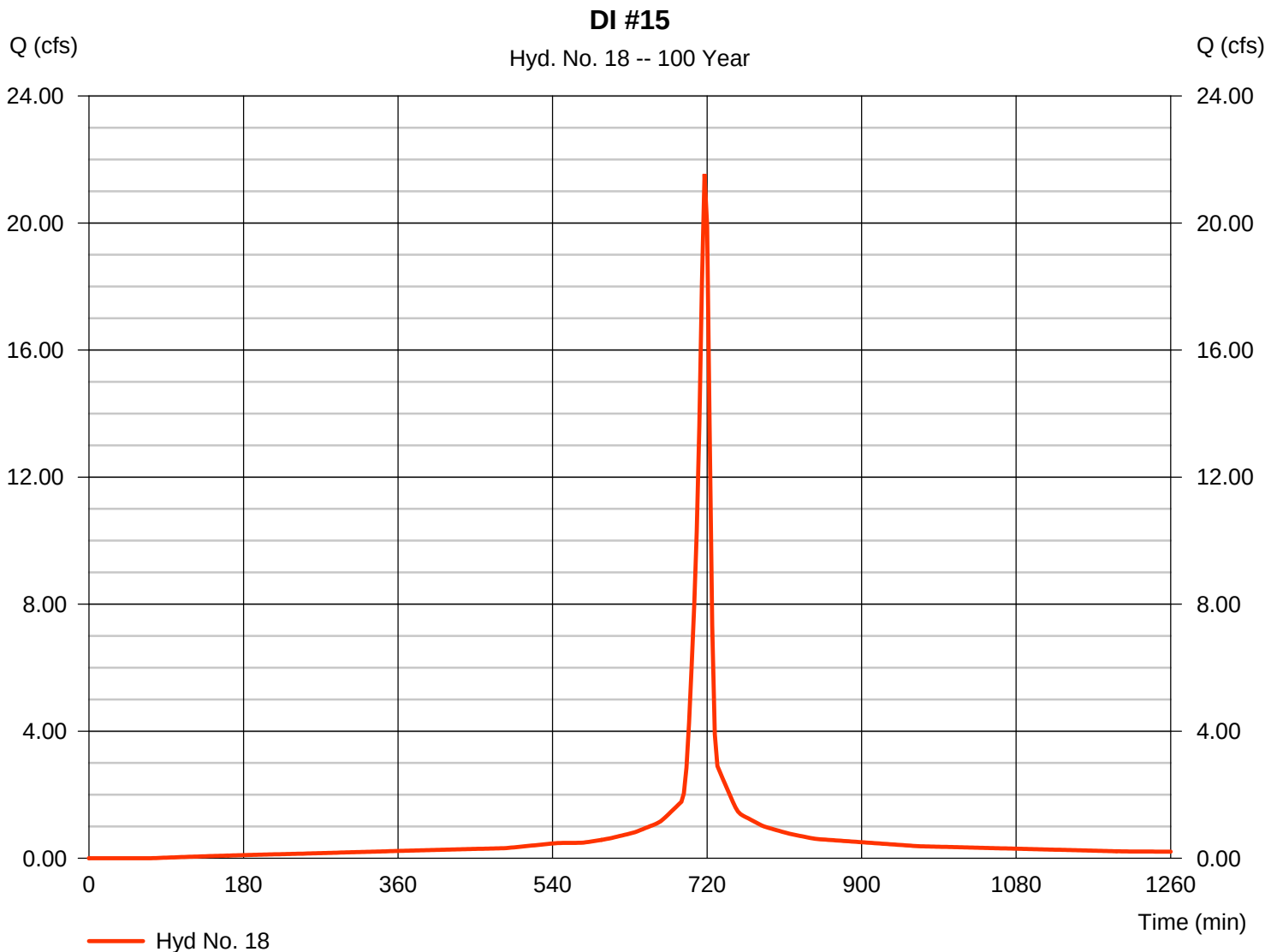
Friday, 07 / 28 / 2017

Hyd. No. 18

DI #15

Hydrograph type	= SCS Runoff	Peak discharge	= 21.54 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 55,502 cuft
Drainage area	= 2.500 ac	Curve number	= 96*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(2.280 \times 98) + (0.220 \times 79)] / 2.500$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

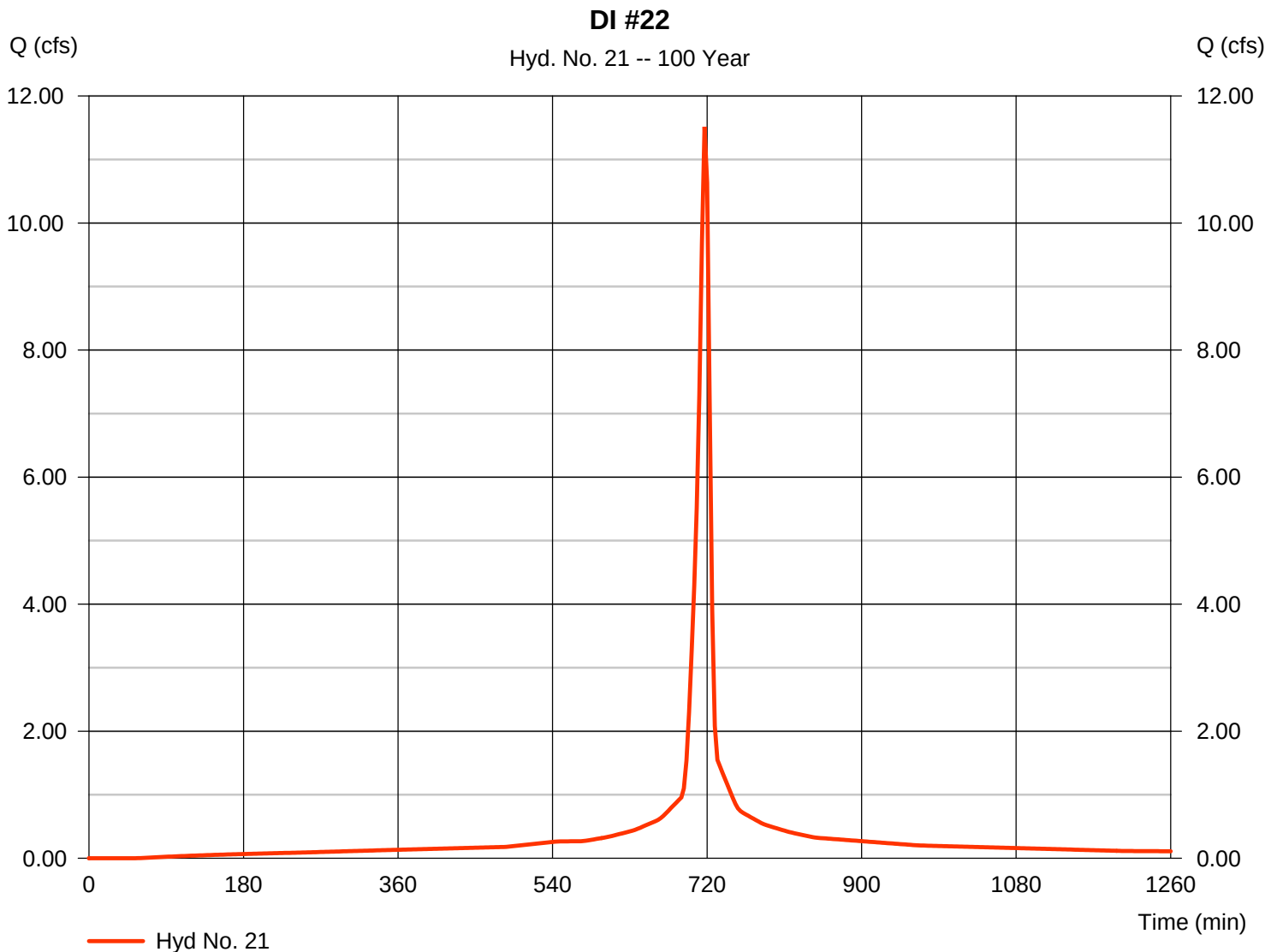
Friday, 07 / 28 / 2017

Hyd. No. 21

DI #22

Hydrograph type	= SCS Runoff	Peak discharge	= 11.52 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 30,063 cuft
Drainage area	= 1.330 ac	Curve number	= 97*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.280 \times 98) + (0.050 \times 79)] / 1.330$



Hydrograph Report

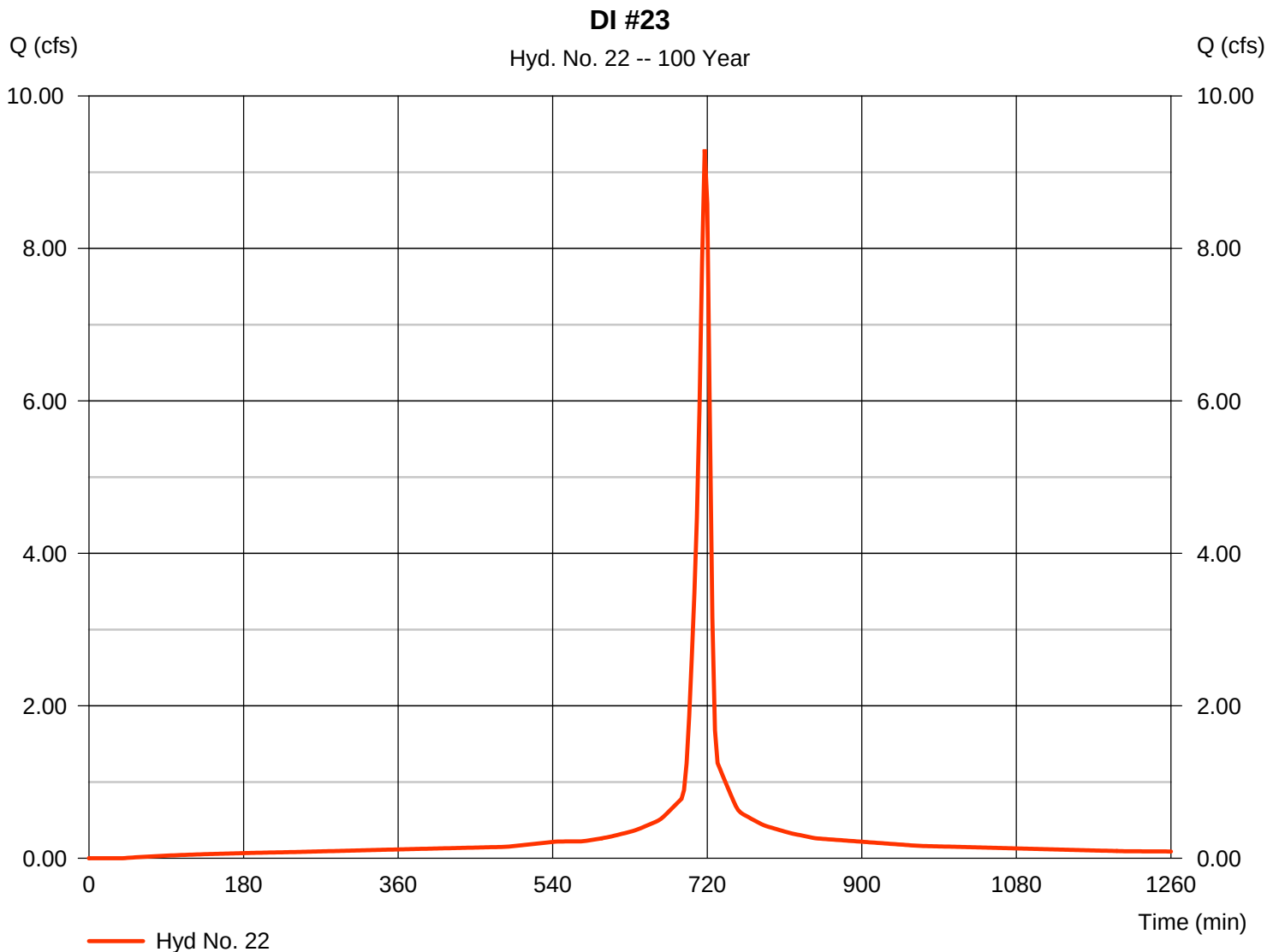
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 22

DI #23

Hydrograph type	= SCS Runoff	Peak discharge	= 9.298 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 24,619 cuft
Drainage area	= 1.070 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

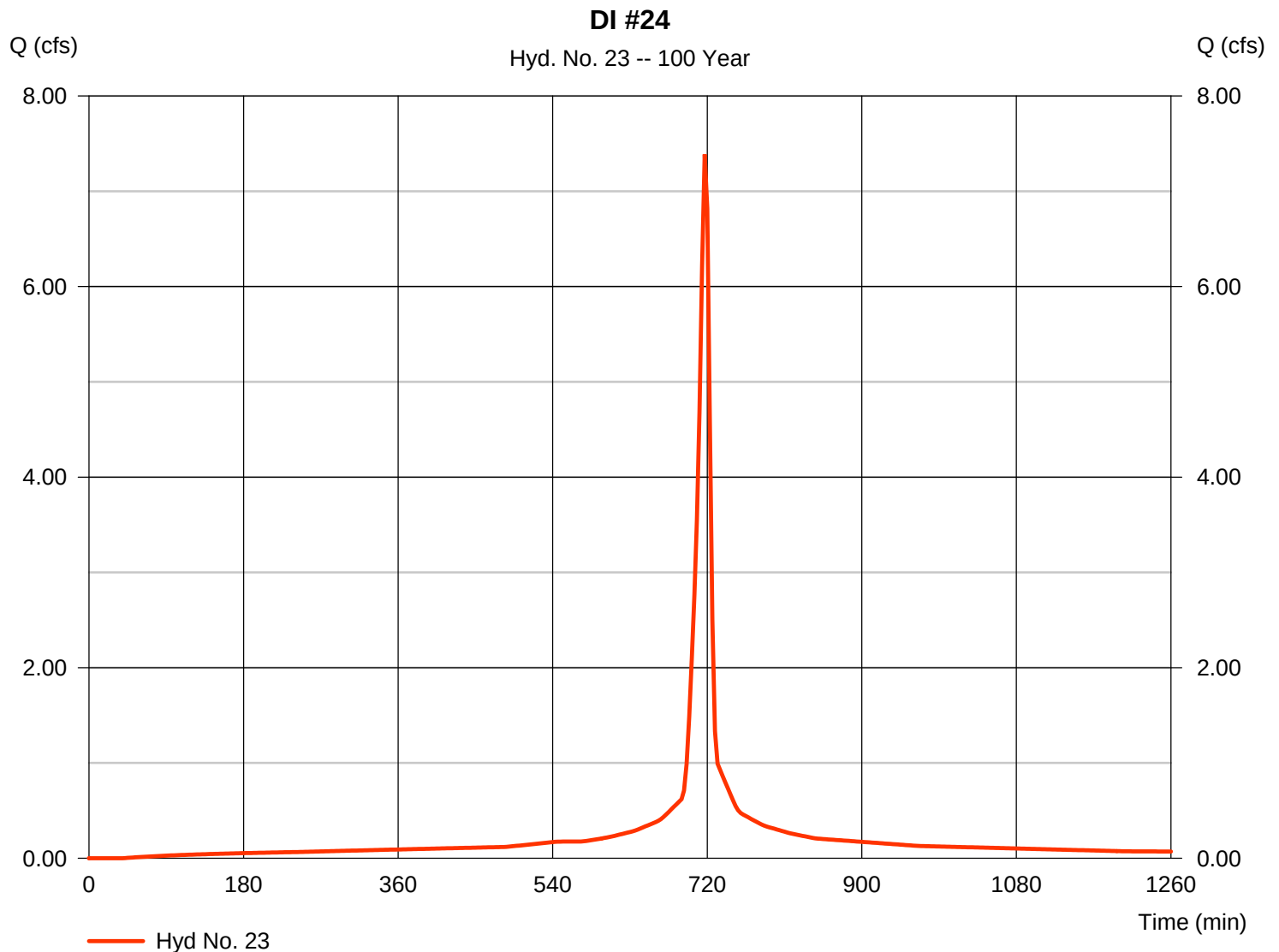
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 23

DI #24

Hydrograph type	= SCS Runoff	Peak discharge	= 7.386 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 19,557 cuft
Drainage area	= 0.850 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

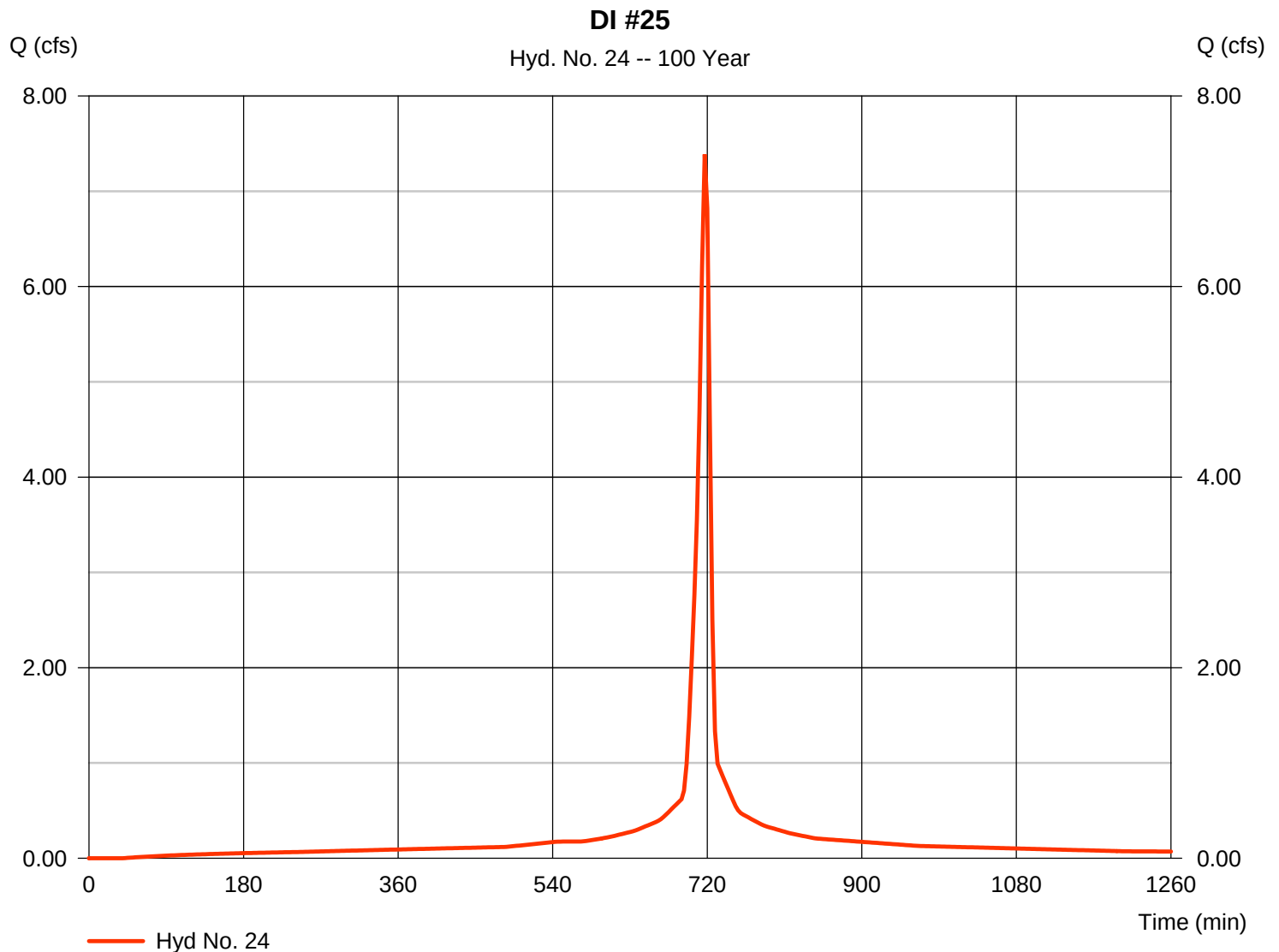
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 24

DI #25

Hydrograph type	= SCS Runoff	Peak discharge	= 7.386 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 19,557 cuft
Drainage area	= 0.850 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

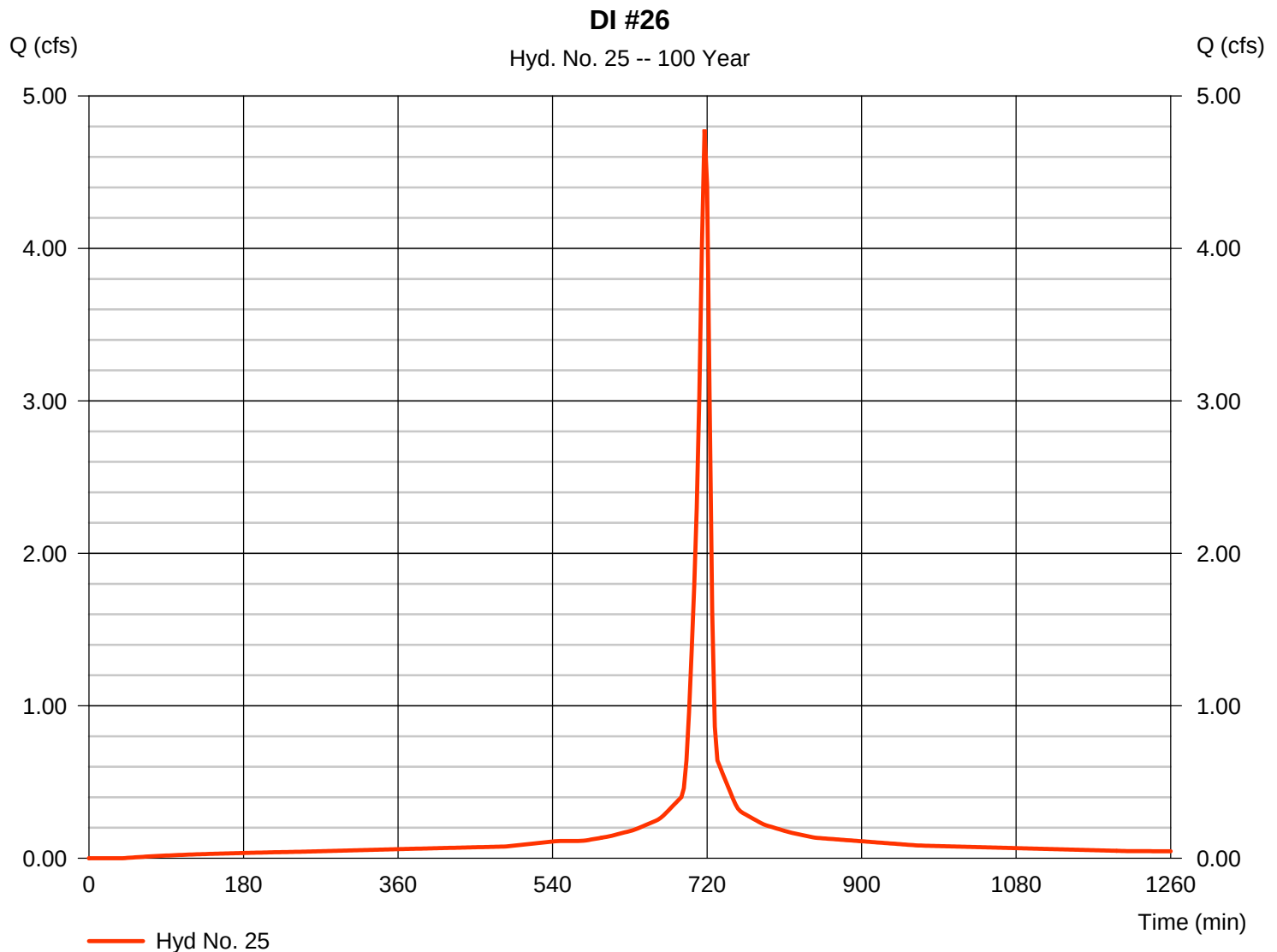
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

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Hyd. No. 25

DI #26

Hydrograph type	=	SCS Runoff	Peak discharge	=	4.779 cfs
Storm frequency	=	100 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	12,655 cuft
Drainage area	=	0.550 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	7.00 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

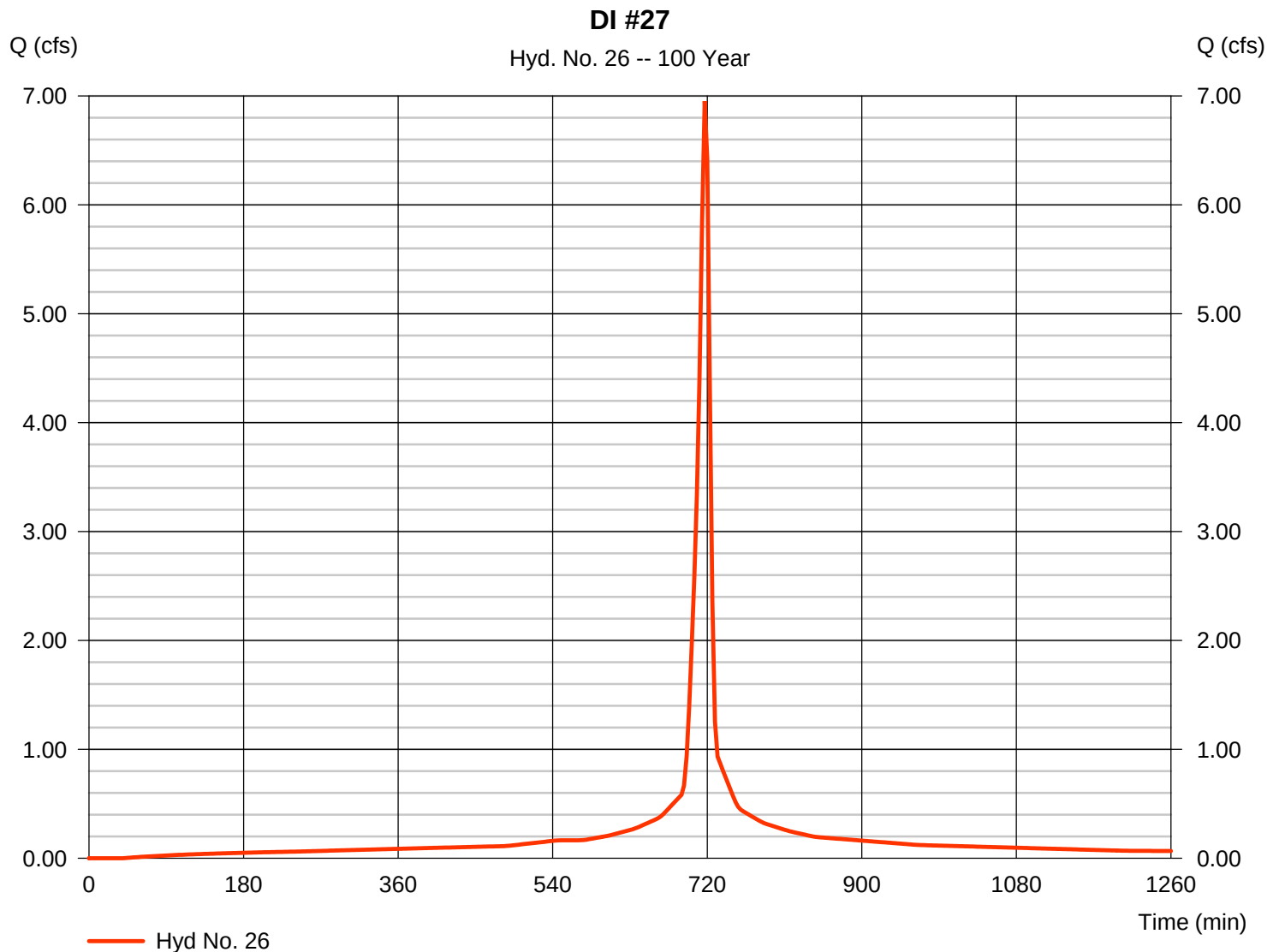
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Hyd. No. 26

DI #27

Hydrograph type	= SCS Runoff	Peak discharge	= 6.952 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 18,407 cuft
Drainage area	= 0.800 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

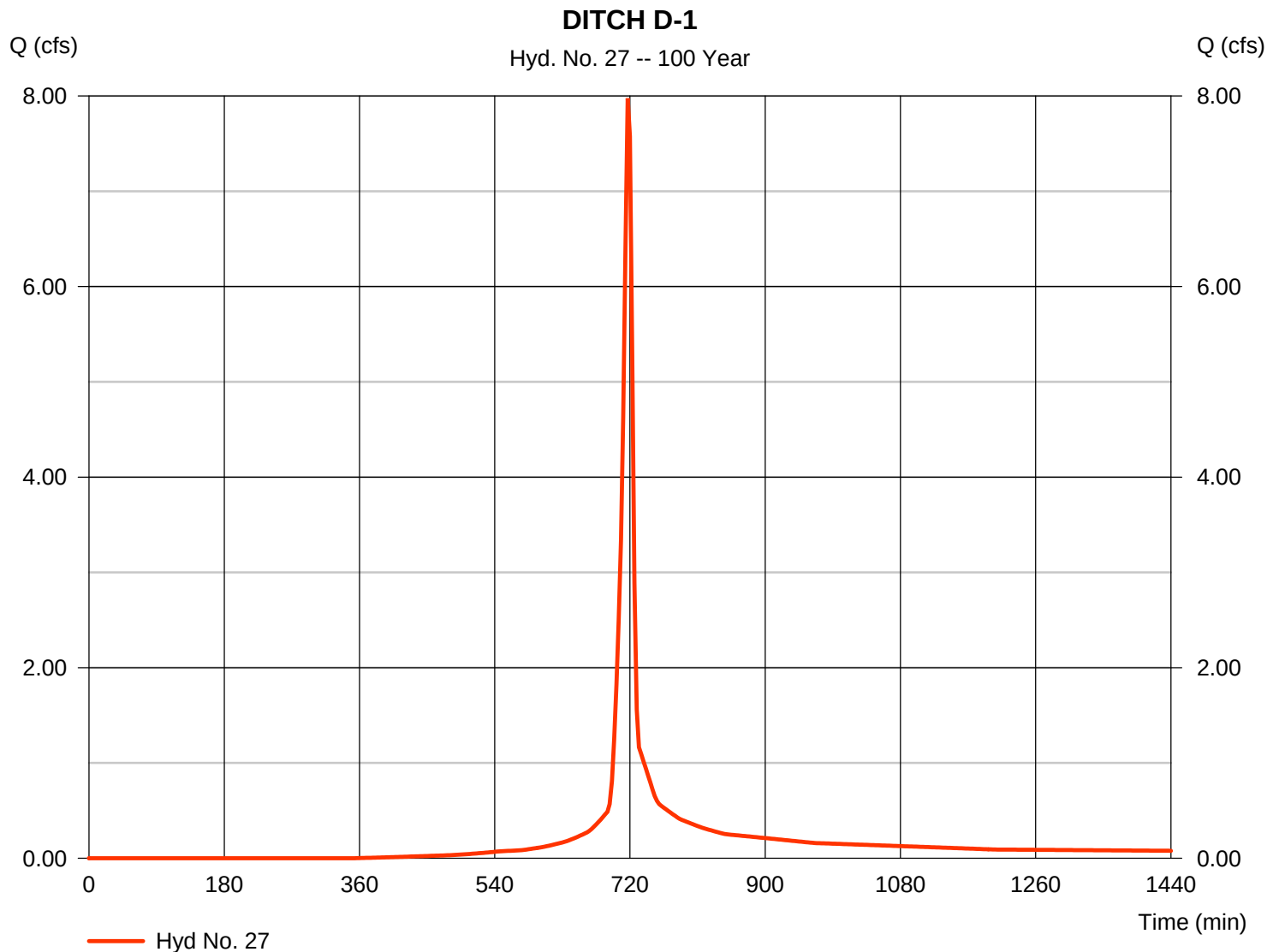
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Friday, 07 / 28 / 2017

Hyd. No. 27

DITCH D-1

Hydrograph type	= SCS Runoff	Peak discharge	= 7.975 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 18,253 cuft
Drainage area	= 1.170 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

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Friday, 07 / 28 / 2017

Hyd. No. 28

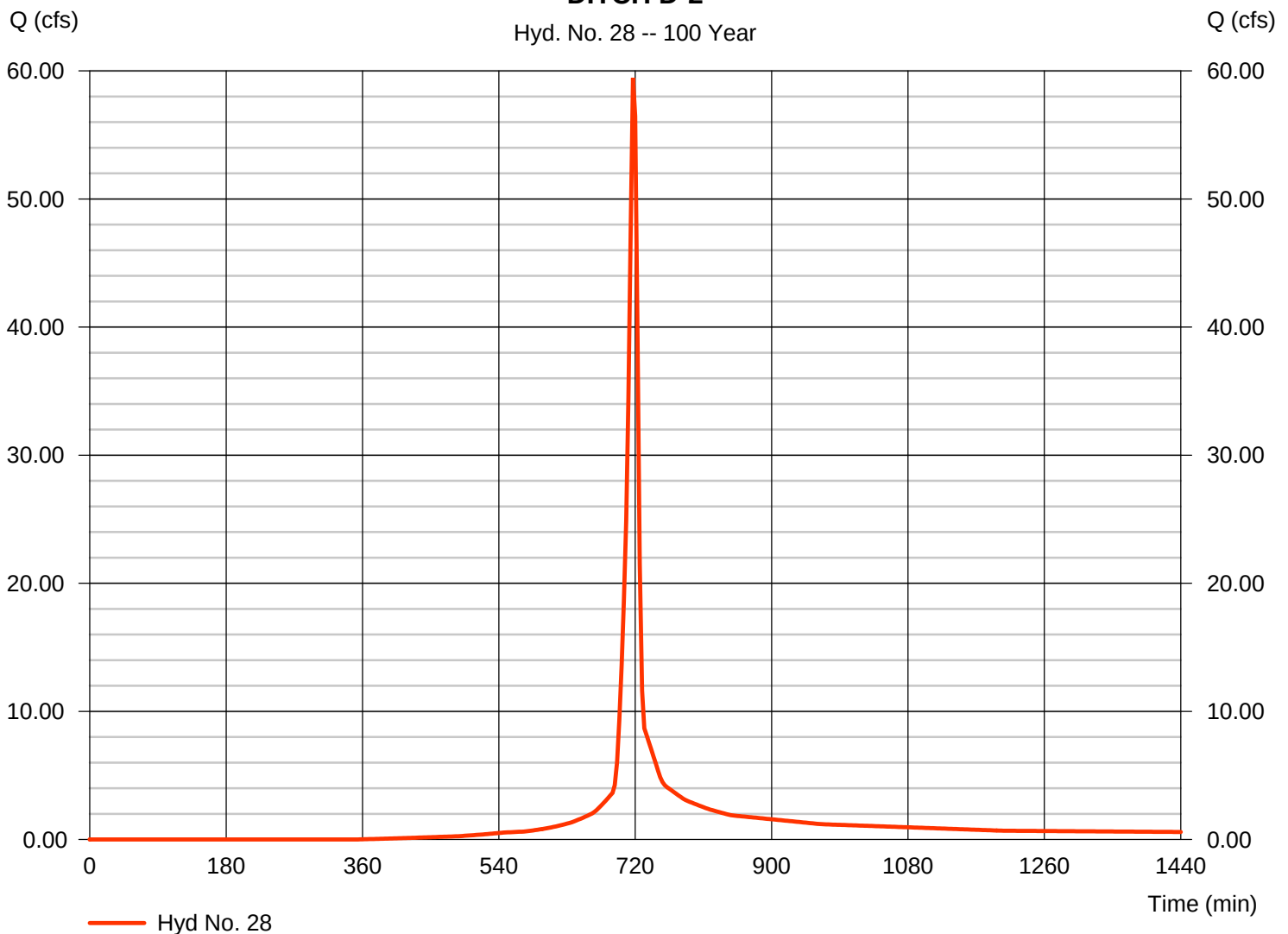
DITCH D-2

Hydrograph type = SCS Runoff
 Storm frequency = 100 yrs
 Time interval = 3 min
 Drainage area = 8.720 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 7.00 in
 Storm duration = 24 hrs

Peak discharge = 59.44 cfs
 Time to peak = 717 min
 Hyd. volume = 136,042 cuft
 Curve number = 79
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

DITCH D-2

Hyd. No. 28 -- 100 Year



Hydrograph Report

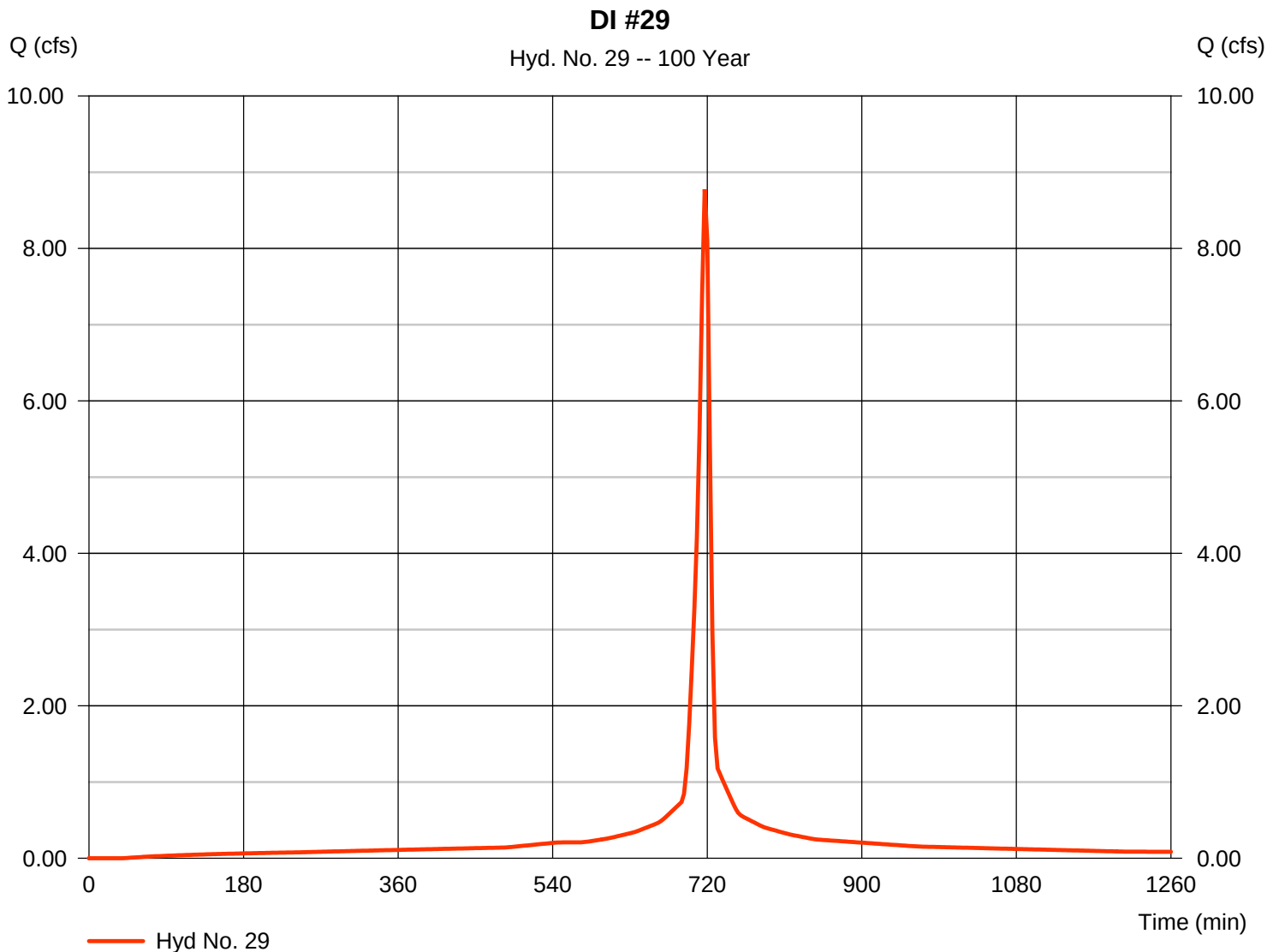
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Friday, 07 / 28 / 2017

Hyd. No. 29

DI #29

Hydrograph type	= SCS Runoff	Peak discharge	= 8.777 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 23,238 cuft
Drainage area	= 1.010 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

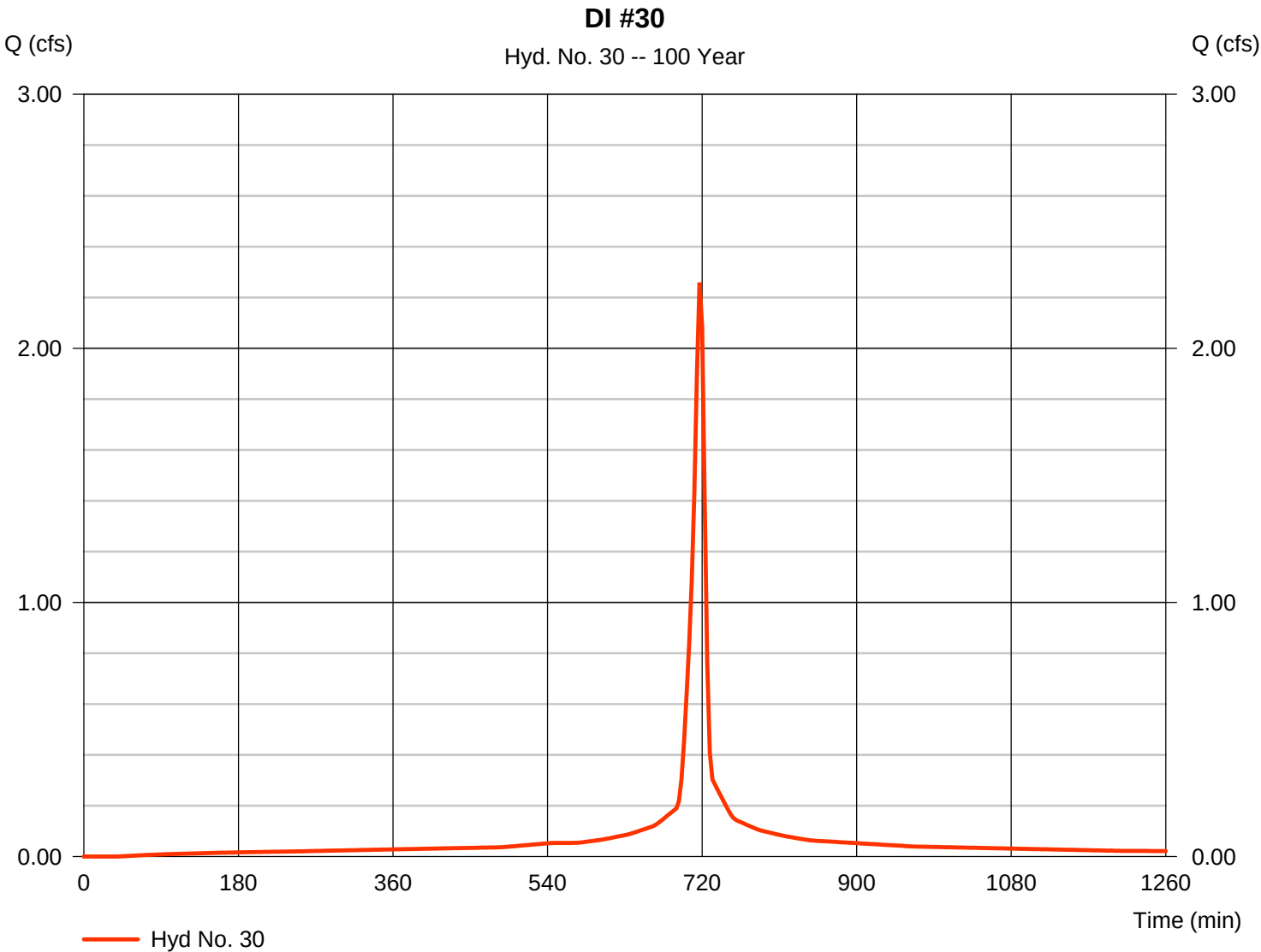
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Friday, 07 / 28 / 2017

Hyd. No. 30

DI #30

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.259 cfs
Storm frequency	=	100 yrs	Time to peak	=	717 min
Time interval	=	3 min	Hyd. volume	=	5,982 cuft
Drainage area	=	0.260 ac	Curve number	=	98
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	7.00 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

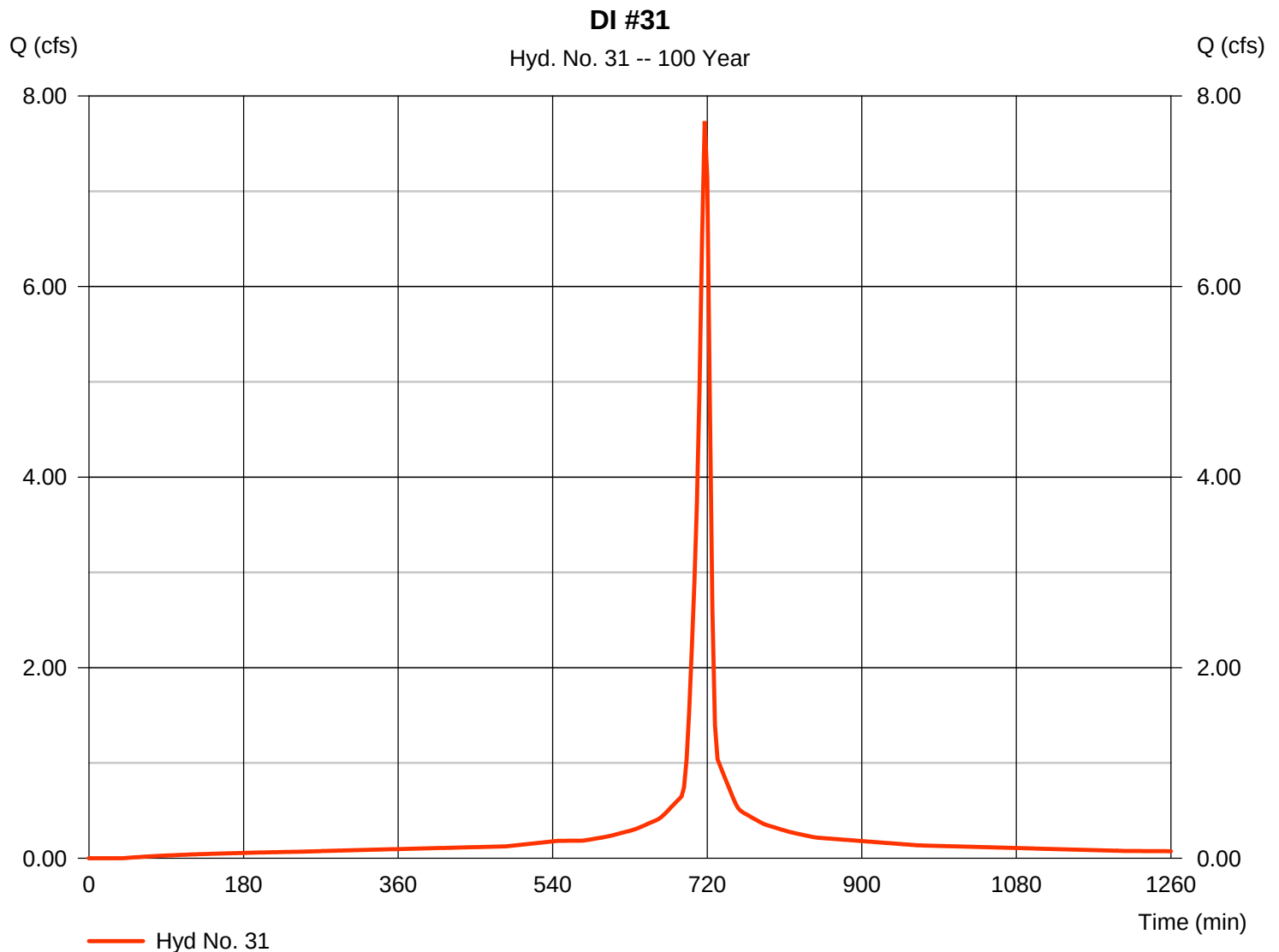
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Hyd. No. 31

DI #31

Hydrograph type	= SCS Runoff	Peak discharge	= 7.734 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 20,477 cuft
Drainage area	= 0.890 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

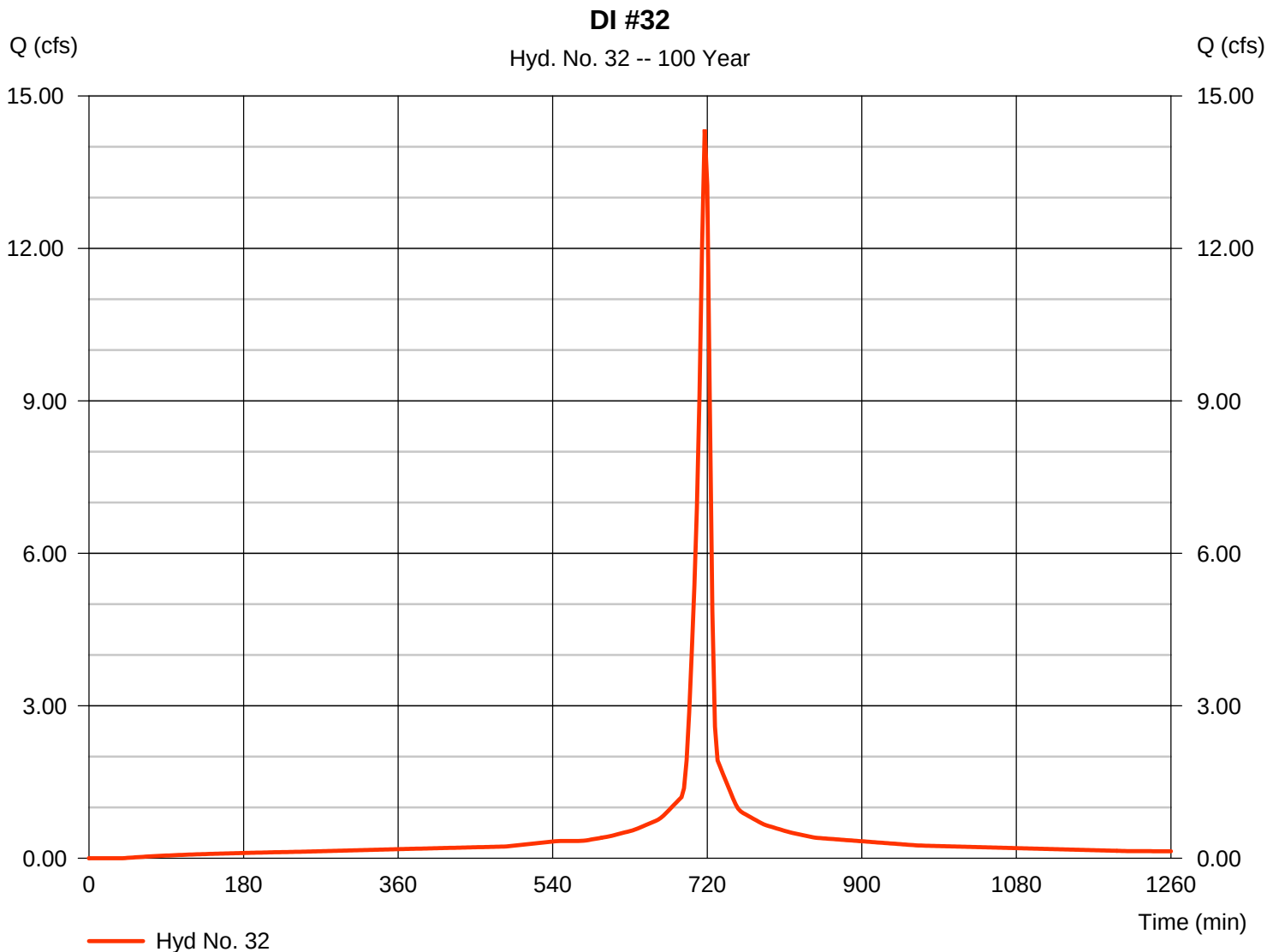
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Friday, 07 / 28 / 2017

Hyd. No. 32

DI #32

Hydrograph type	= SCS Runoff	Peak discharge	= 14.34 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 37,964 cuft
Drainage area	= 1.650 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

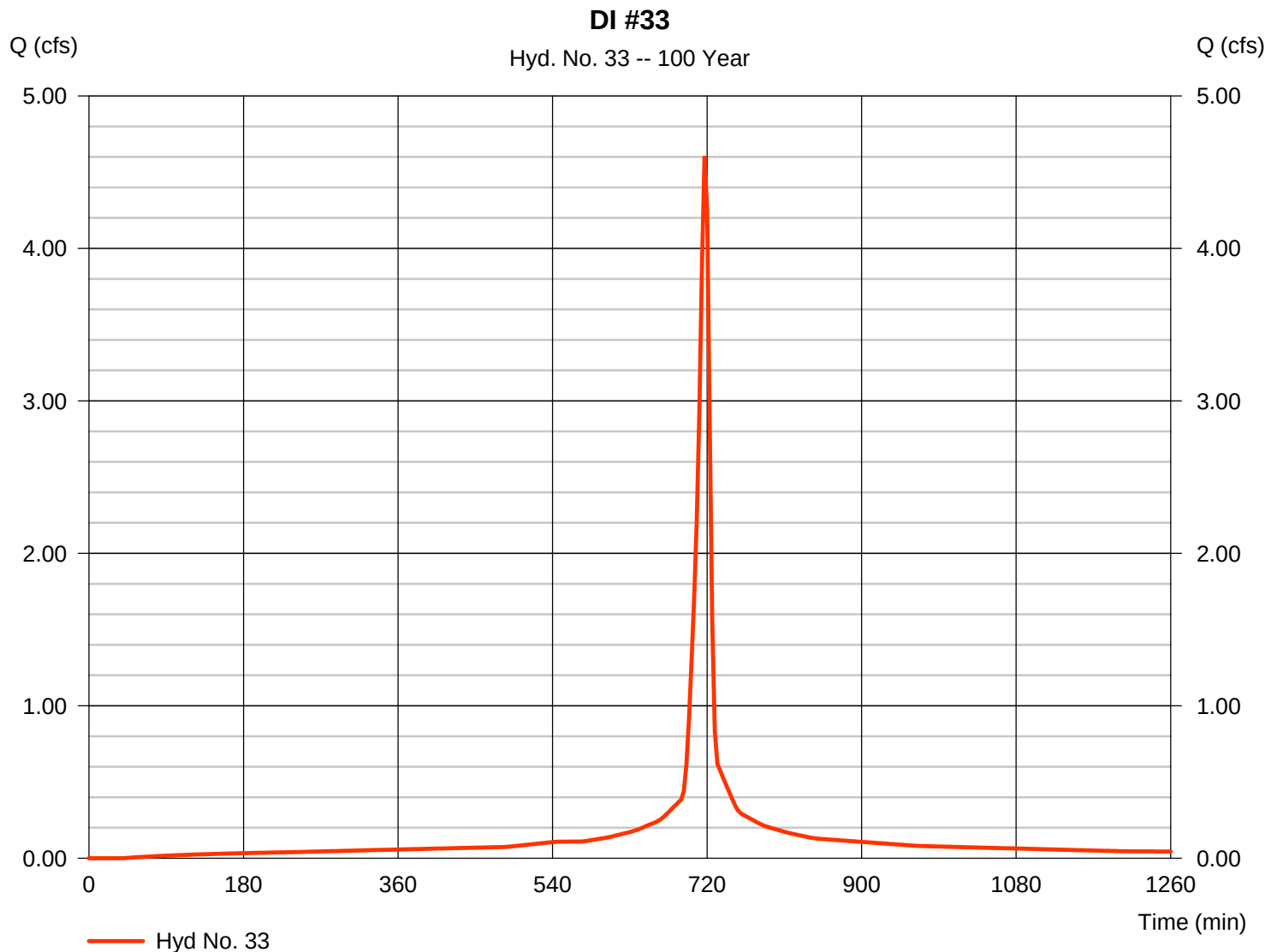
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Hyd. No. 33

DI #33

Hydrograph type	= SCS Runoff	Peak discharge	= 4.606 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 12,194 cuft
Drainage area	= 0.530 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

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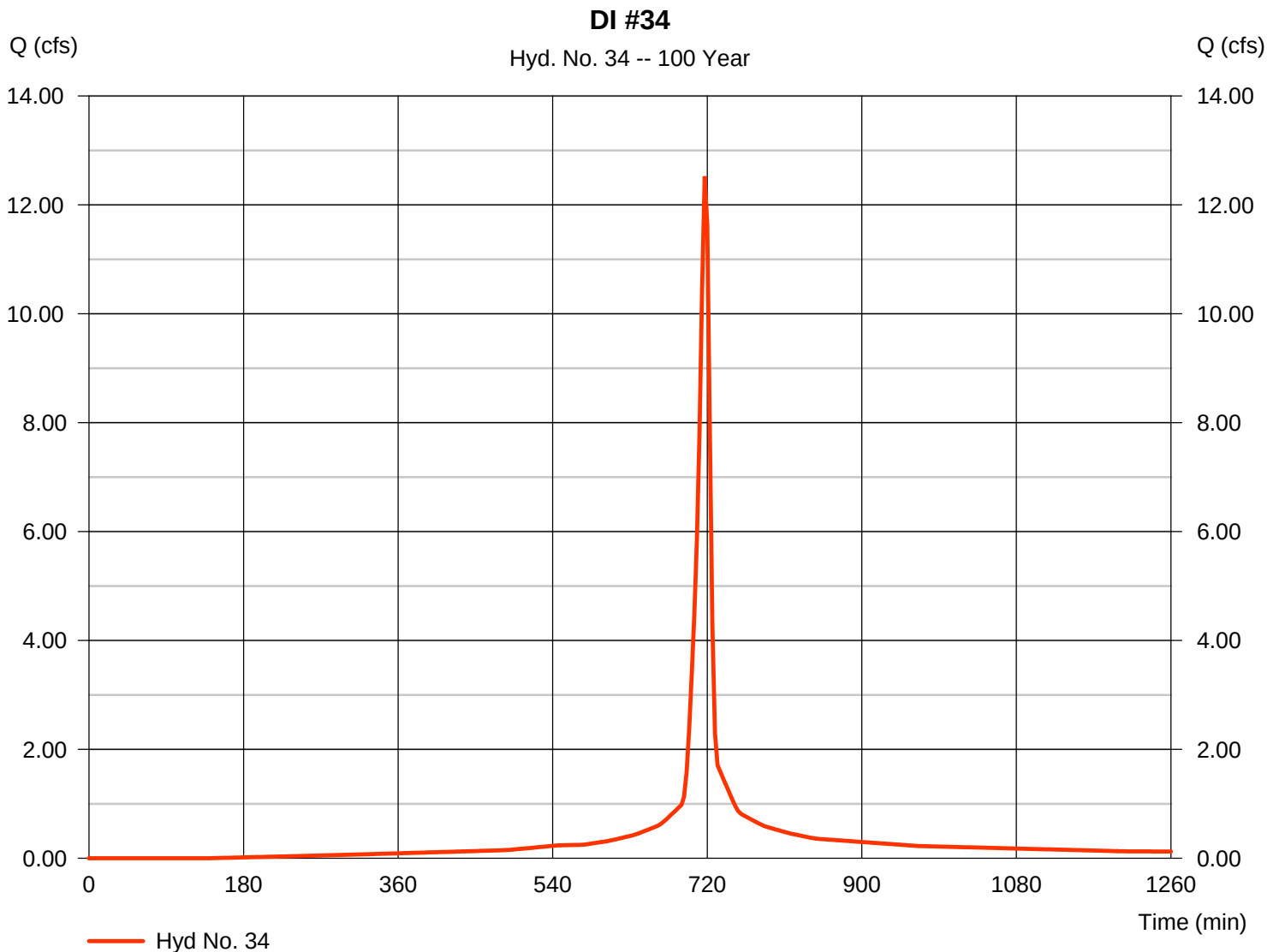
Friday, 07 / 28 / 2017

Hyd. No. 34

DI #34

Hydrograph type	= SCS Runoff	Peak discharge	= 12.53 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 30,908 cuft
Drainage area	= 1.500 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(1.050 \times 98) + (0.450 \times 79)] / 1.500$



Hydrograph Report

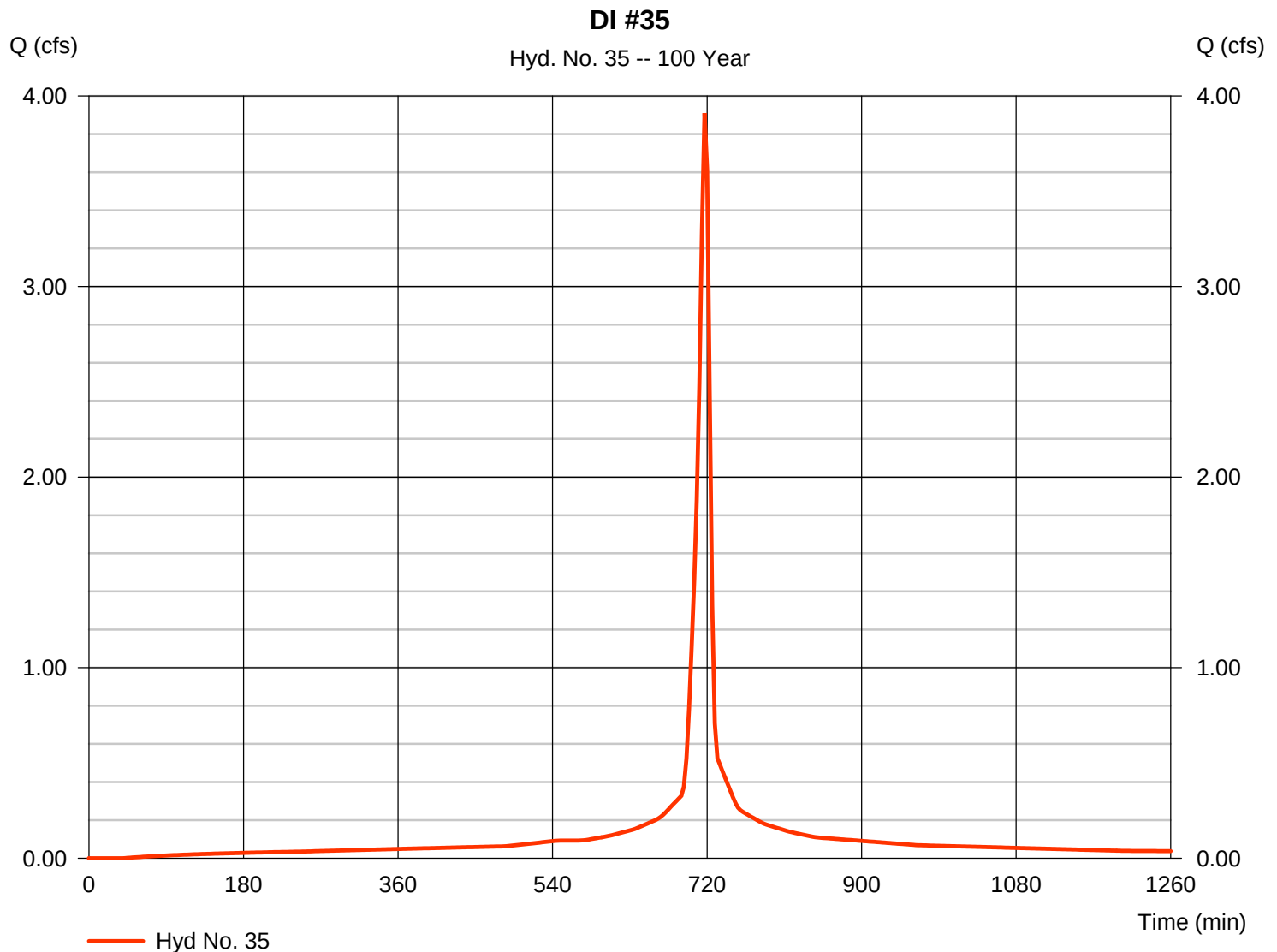
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Hyd. No. 35

DI #35

Hydrograph type	= SCS Runoff	Peak discharge	= 3.910 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 10,354 cuft
Drainage area	= 0.450 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

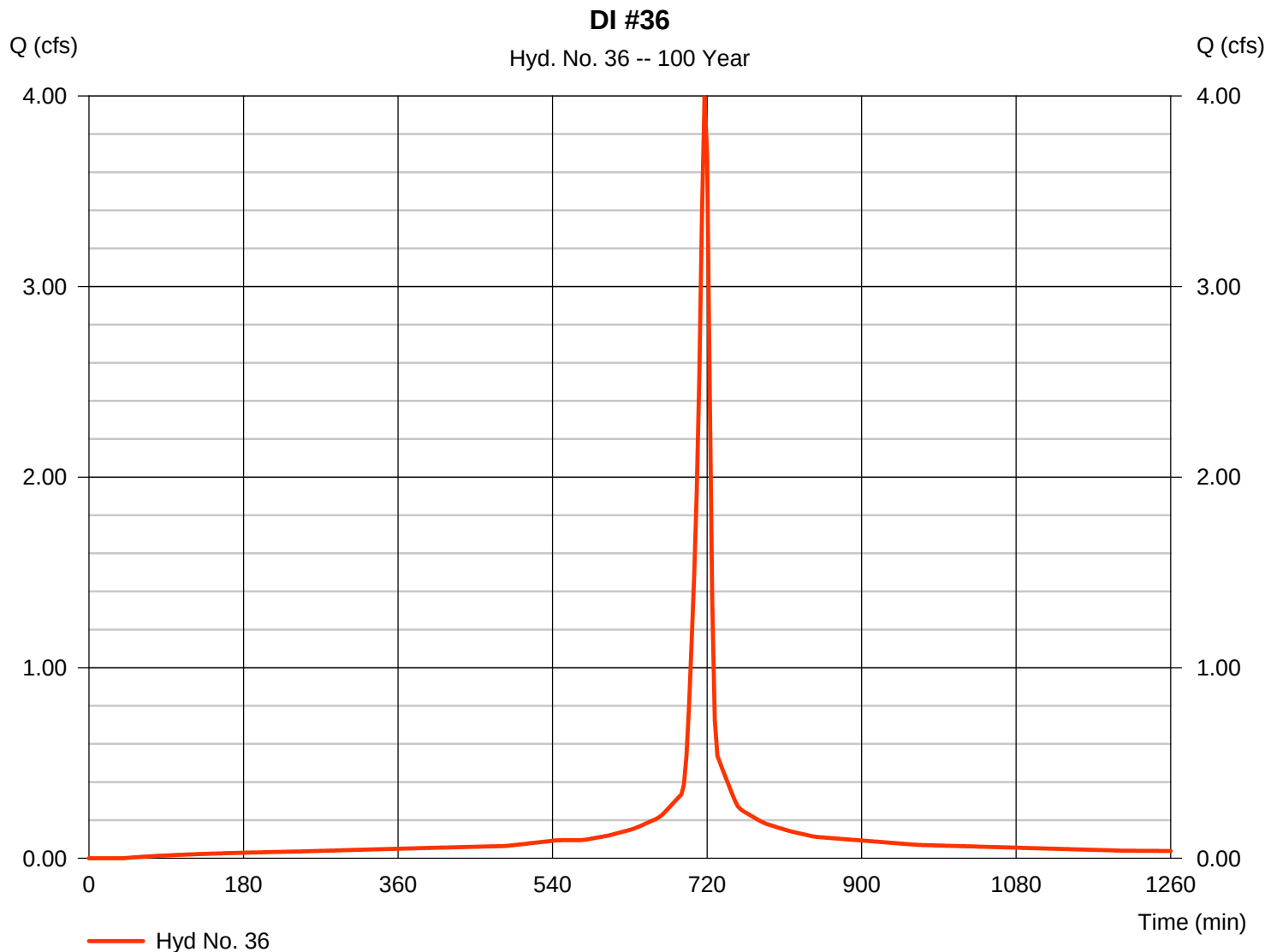
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Hyd. No. 36

DI #36

Hydrograph type	= SCS Runoff	Peak discharge	= 3.997 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 10,584 cuft
Drainage area	= 0.460 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

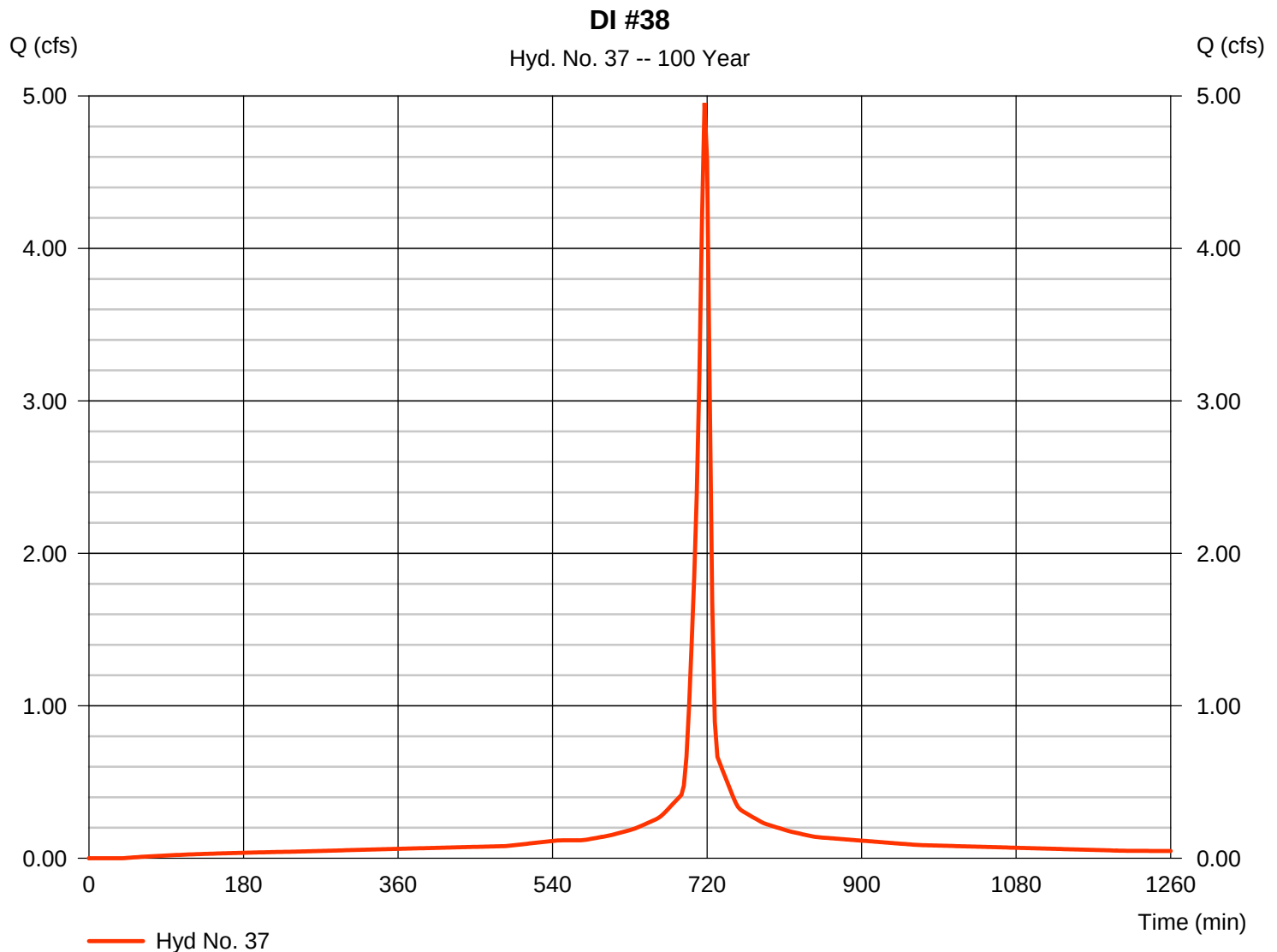
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Hyd. No. 37

DI #38

Hydrograph type	= SCS Runoff	Peak discharge	= 4.953 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 13,115 cuft
Drainage area	= 0.570 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

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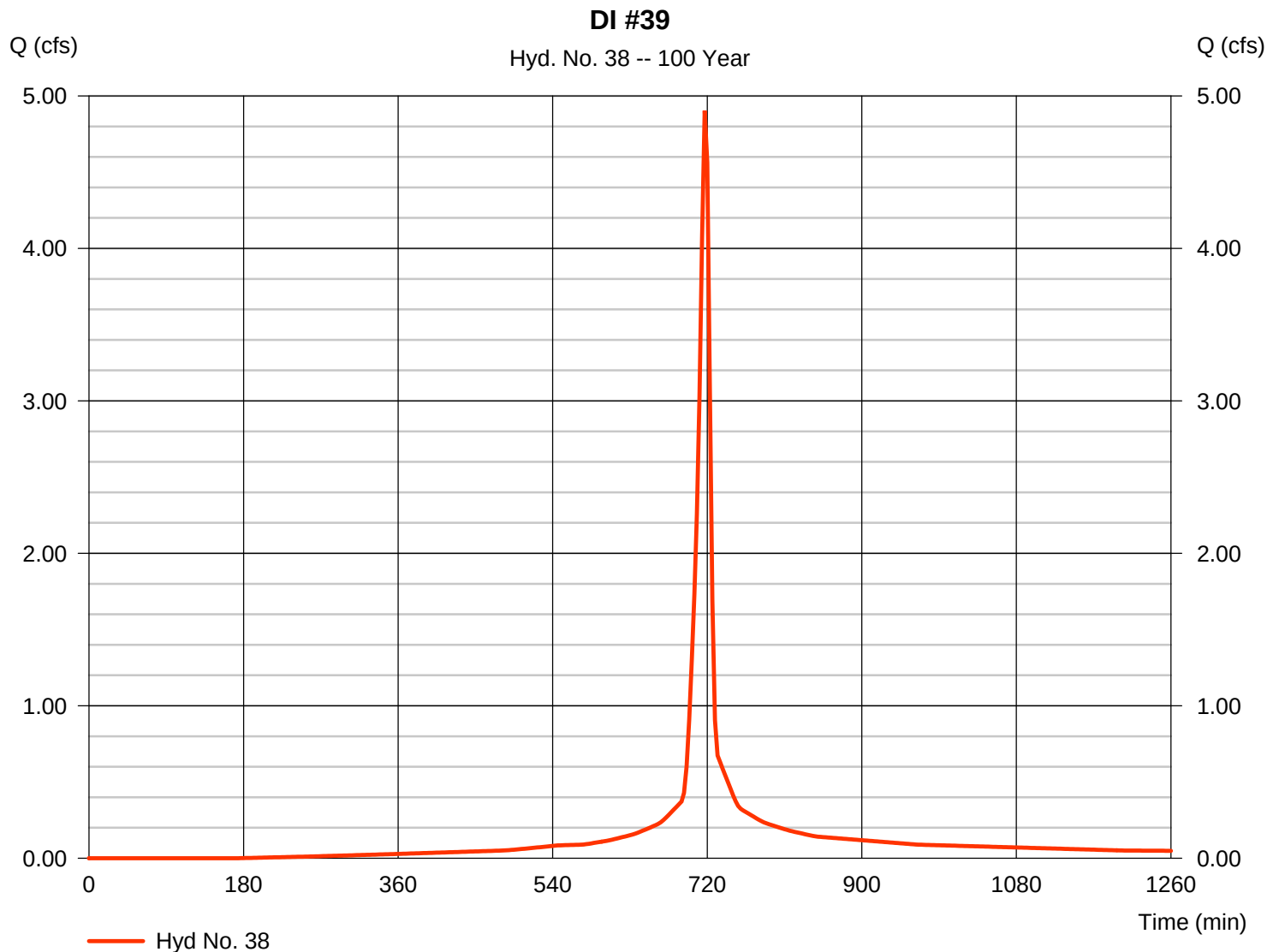
Friday, 07 / 28 / 2017

Hyd. No. 38

DI #39

Hydrograph type	= SCS Runoff	Peak discharge	= 4.903 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 11,890 cuft
Drainage area	= 0.600 ac	Curve number	= 90*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.360 \times 98) + (0.240 \times 79)] / 0.600$



Hydrograph Report

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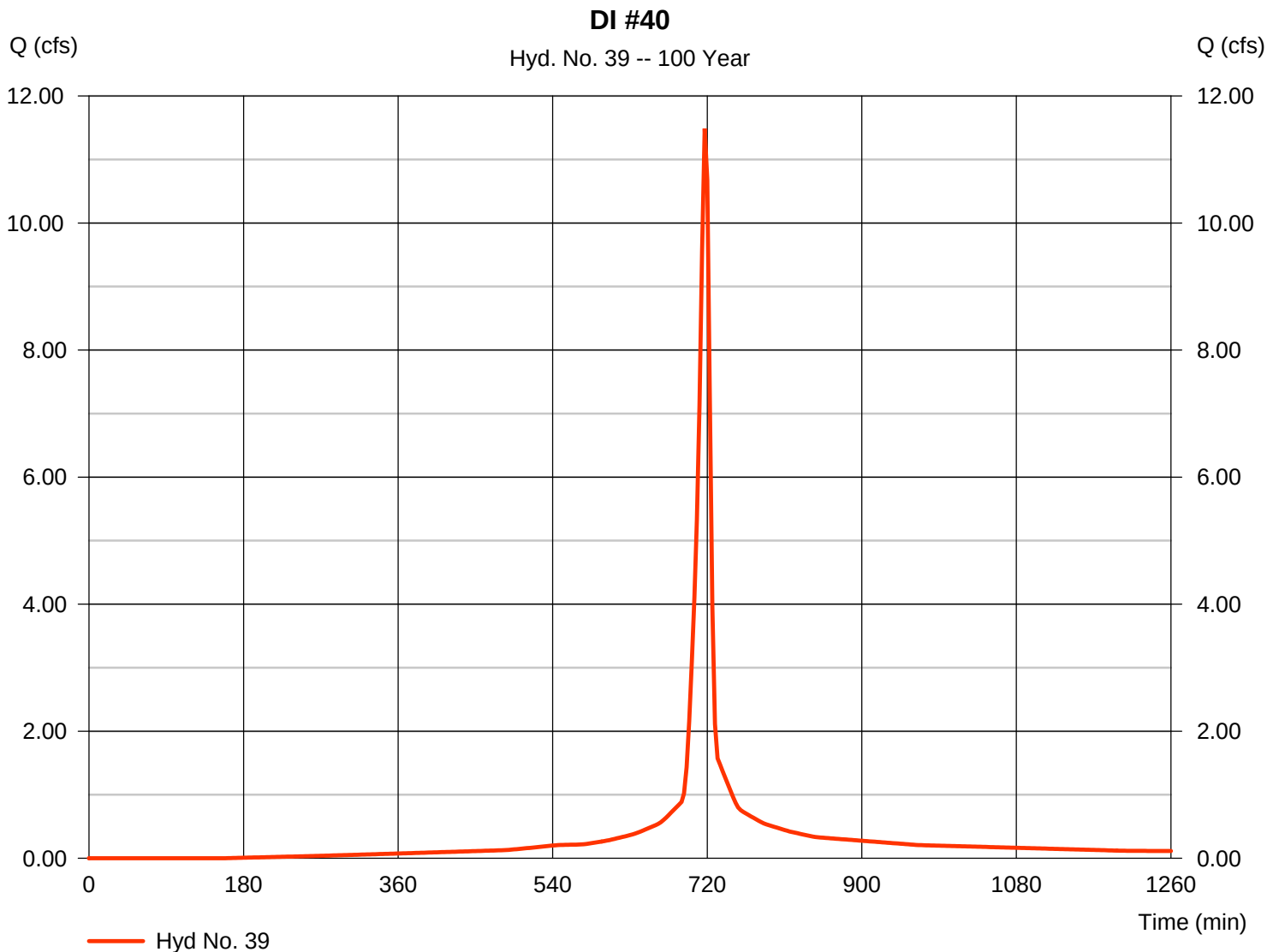
Friday, 07 / 28 / 2017

Hyd. No. 39

DI #40

Hydrograph type	= SCS Runoff	Peak discharge	= 11.49 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 28,092 cuft
Drainage area	= 1.390 ac	Curve number	= 91*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 7.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.880 \times 98) + (0.510 \times 79)] / 1.390$



Hydrograph Report

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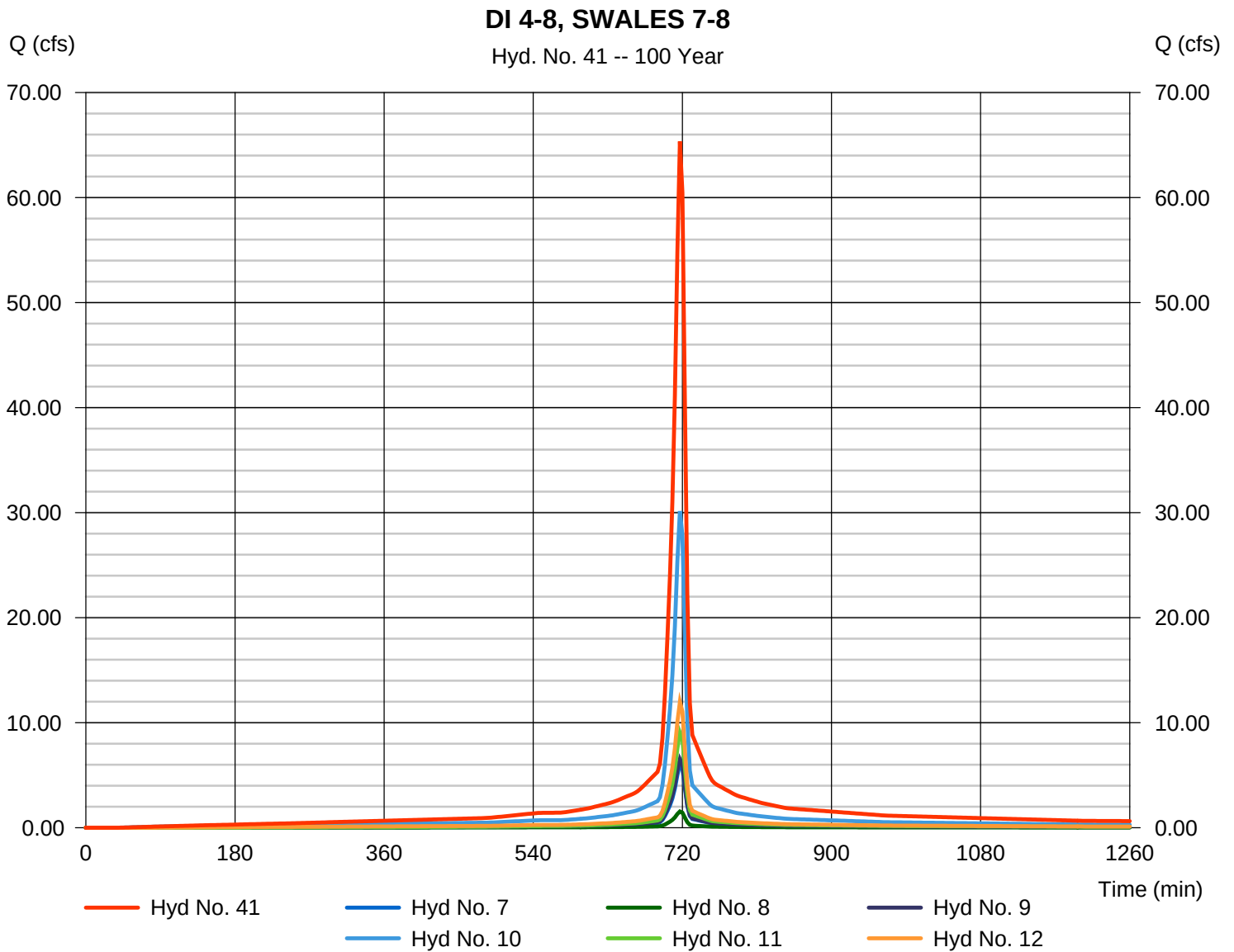
Friday, 07 / 28 / 2017

Hyd. No. 41

DI 4-8, SWALES 7-8

Hydrograph type = Combine
Storm frequency = 100 yrs
Time interval = 3 min
Inflow hyds. = 7, 8, 9, 10, 11, 12

Peak discharge = 65.34 cfs
Time to peak = 717 min
Hyd. volume = 167,833 cuft
Contrib. drain. area = 7.660 ac



Hydrograph Report

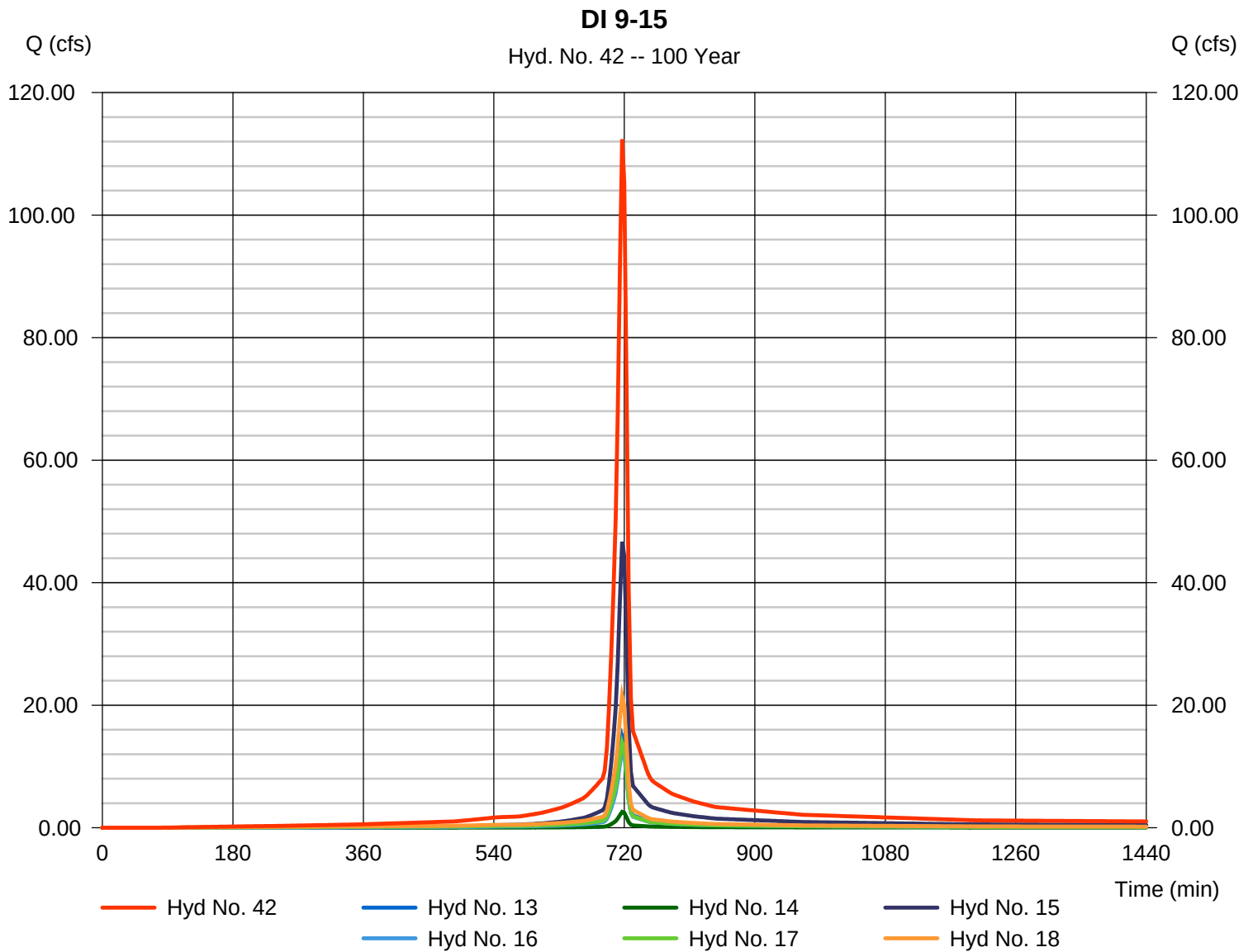
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Hyd. No. 42

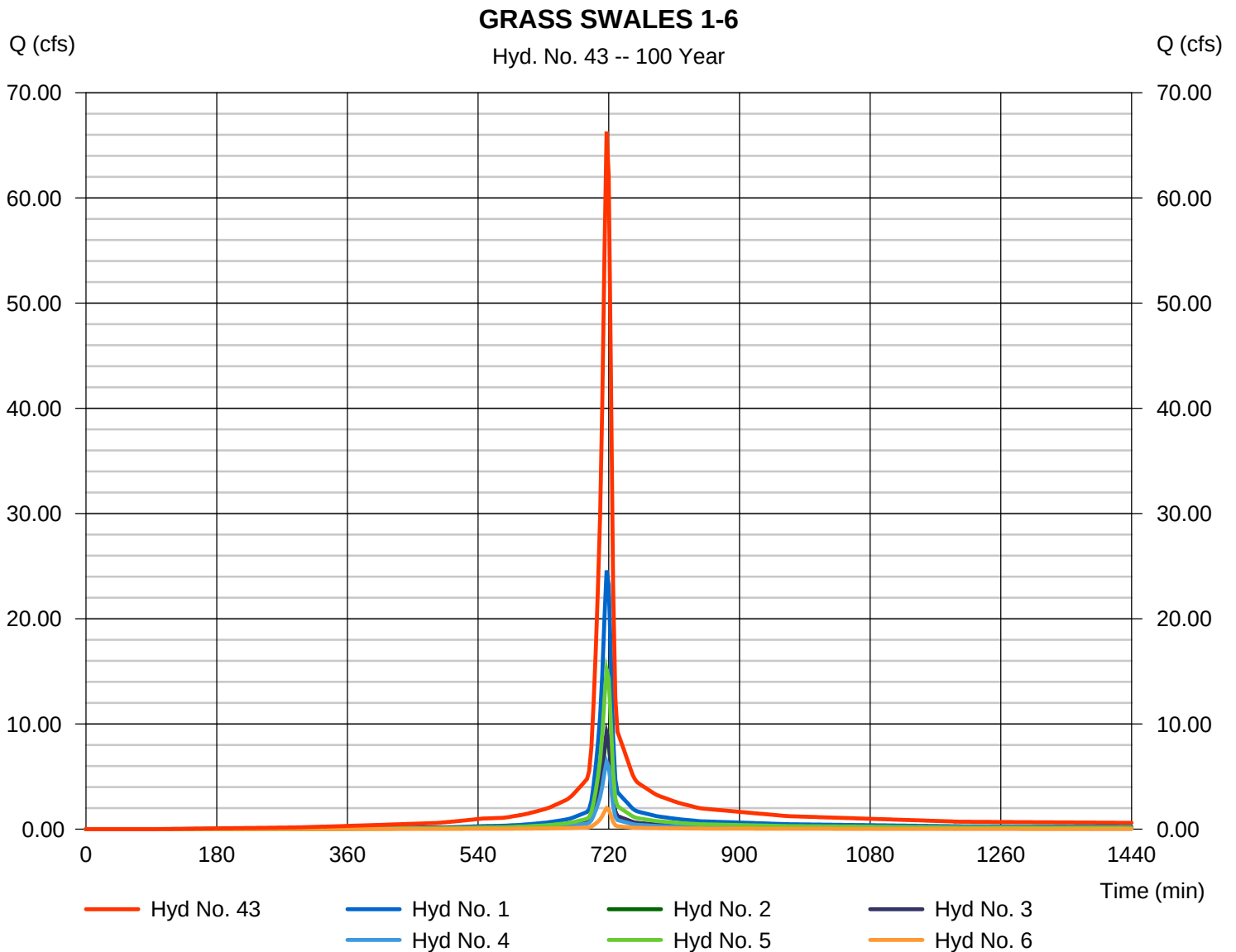
DI 9-15

Hydrograph type	= Combine	Peak discharge	= 112.36 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 271,674 cuft
Inflow hyds.	= 13, 14, 15, 16, 17, 18	Contrib. drain. area	= 14.740 ac



GRASS SWALES 1-6

Peak discharge = 66.31 cfs
Time to peak = 717 min
Hyd. volume = 159,172 cuft
Contrib. drain. area = 8.560 ac



Hydrograph Report

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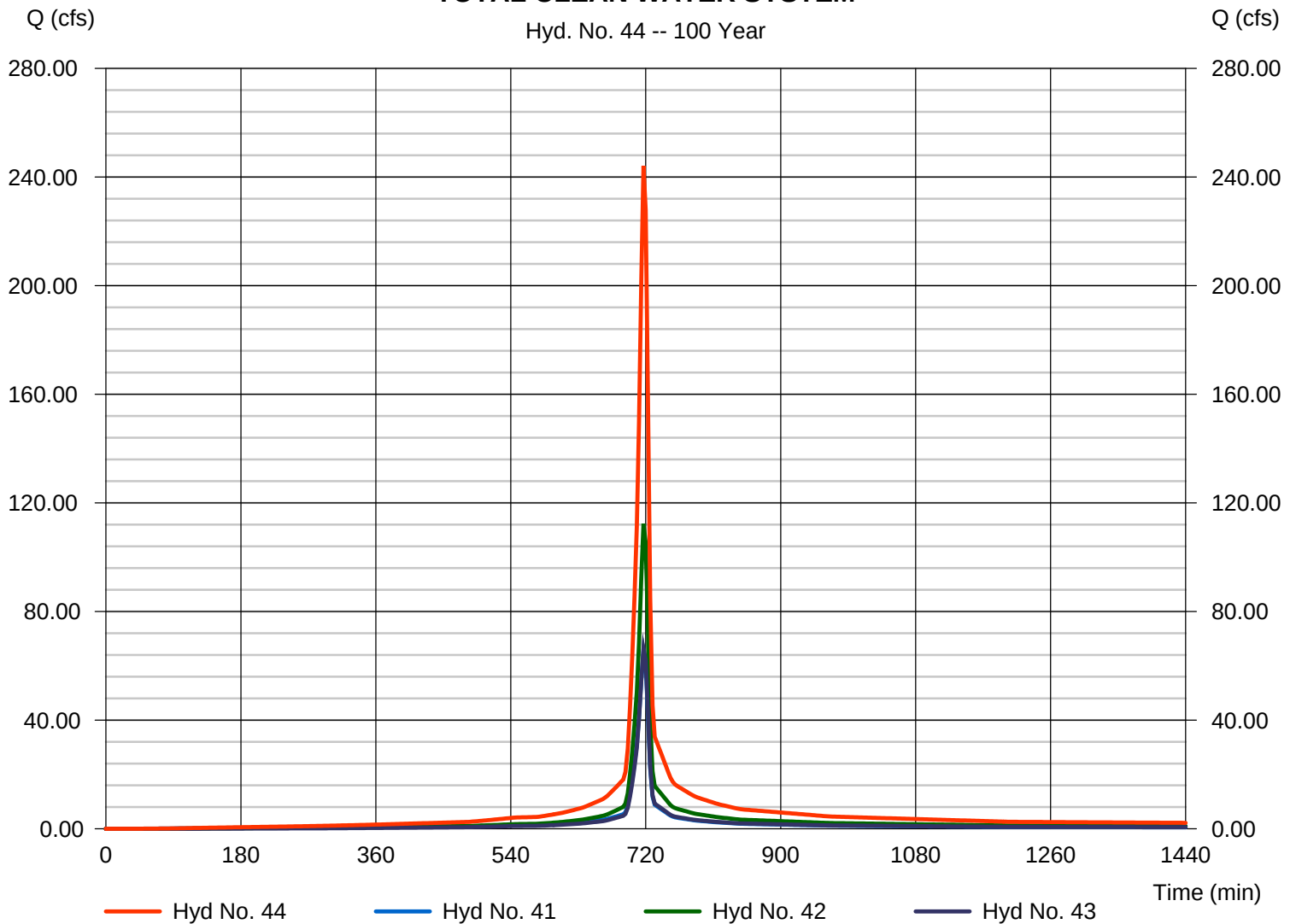
Hyd. No. 44

TOTAL CLEAN WATER SYSTEM

Hydrograph type = Combine
Storm frequency = 100 yrs
Time interval = 3 min
Inflow hyds. = 41, 42, 43

Peak discharge = 244.01 cfs
Time to peak = 717 min
Hyd. volume = 598,680 cuft
Contrib. drain. area = 0.000 ac

TOTAL CLEAN WATER SYSTEM



Hydrograph Report

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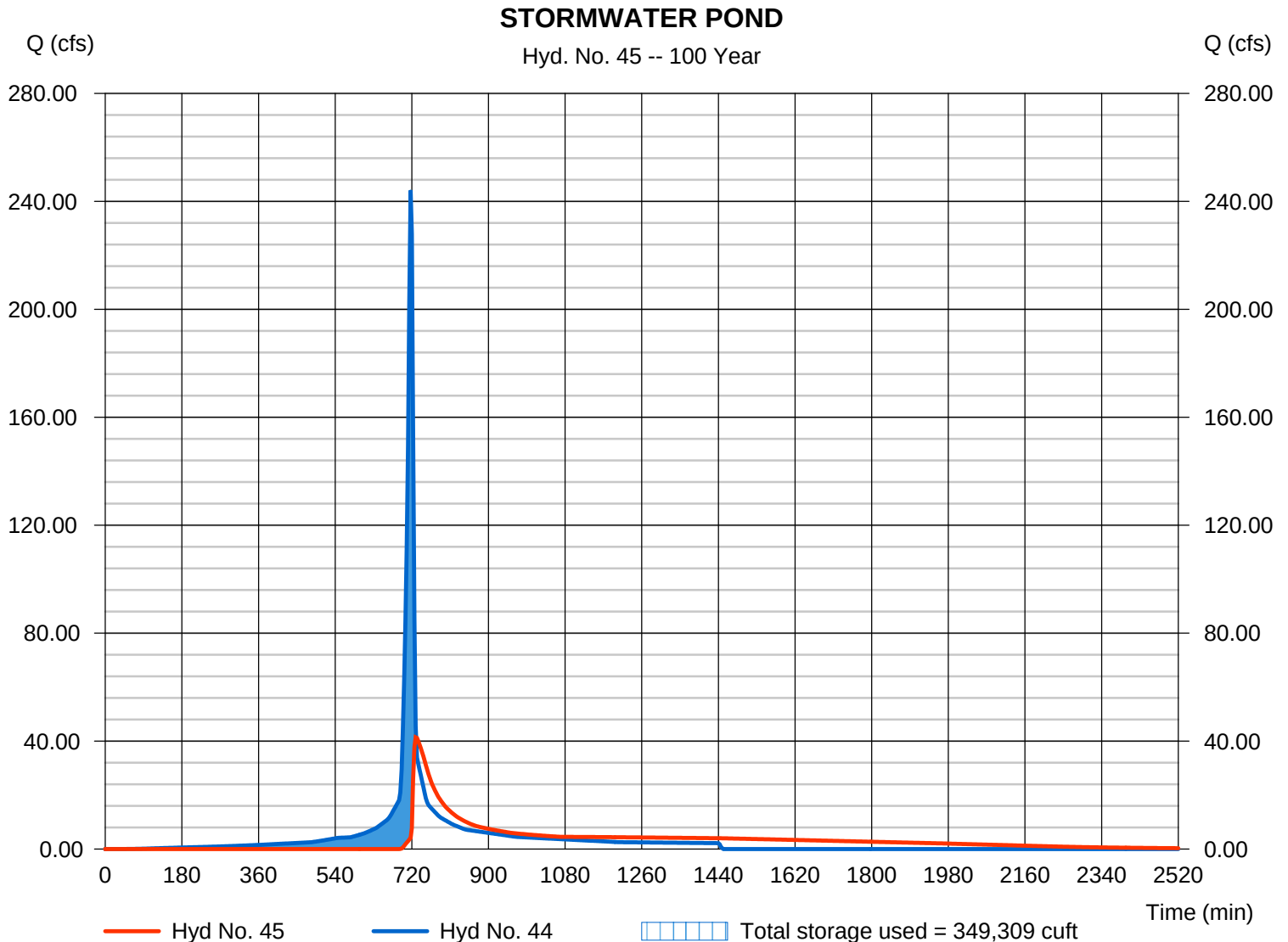
Friday, 07 / 28 / 2017

Hyd. No. 45

STORMWATER POND

Hydrograph type	= Reservoir	Peak discharge	= 41.40 cfs
Storm frequency	= 100 yrs	Time to peak	= 729 min
Time interval	= 3 min	Hyd. volume	= 491,737 cuft
Inflow hyd. No.	= 44 - TOTAL CLEAN WATER STORAGE	Max. Elevation	= 562.92 ft
Reservoir name	= STORMWATER DETENTION POND	Max. Storage	= 349,309 cuft

Storage Indication method used.



Hydrograph Report

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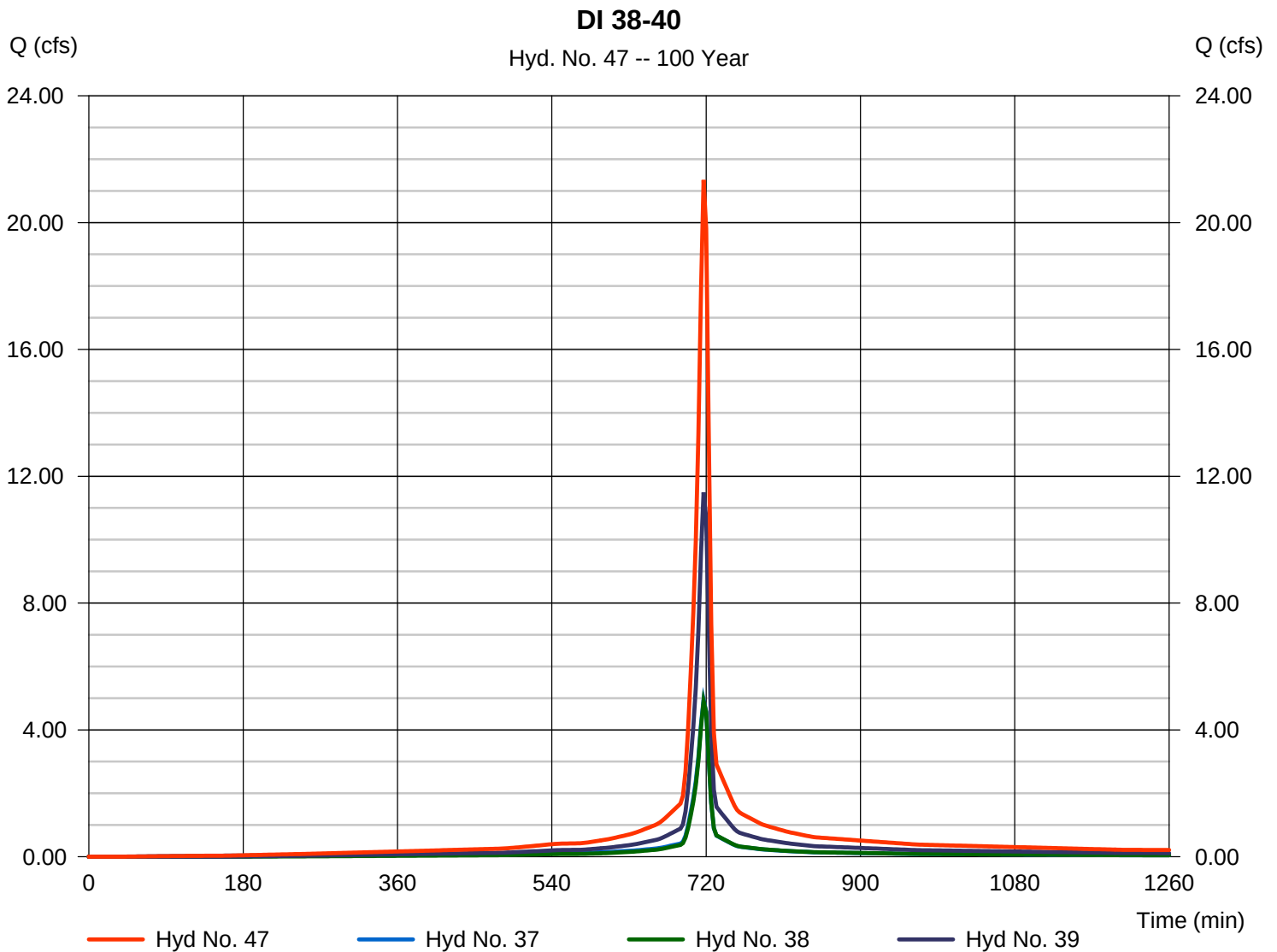
Friday, 07 / 28 / 2017

Hyd. No. 47

DI 38-40

Hydrograph type = Combine
Storm frequency = 100 yrs
Time interval = 3 min
Inflow hyds. = 37, 38, 39

Peak discharge = 21.34 cfs
Time to peak = 717 min
Hyd. volume = 53,097 cuft
Contrib. drain. area = 2.560 ac



Hydrograph Report

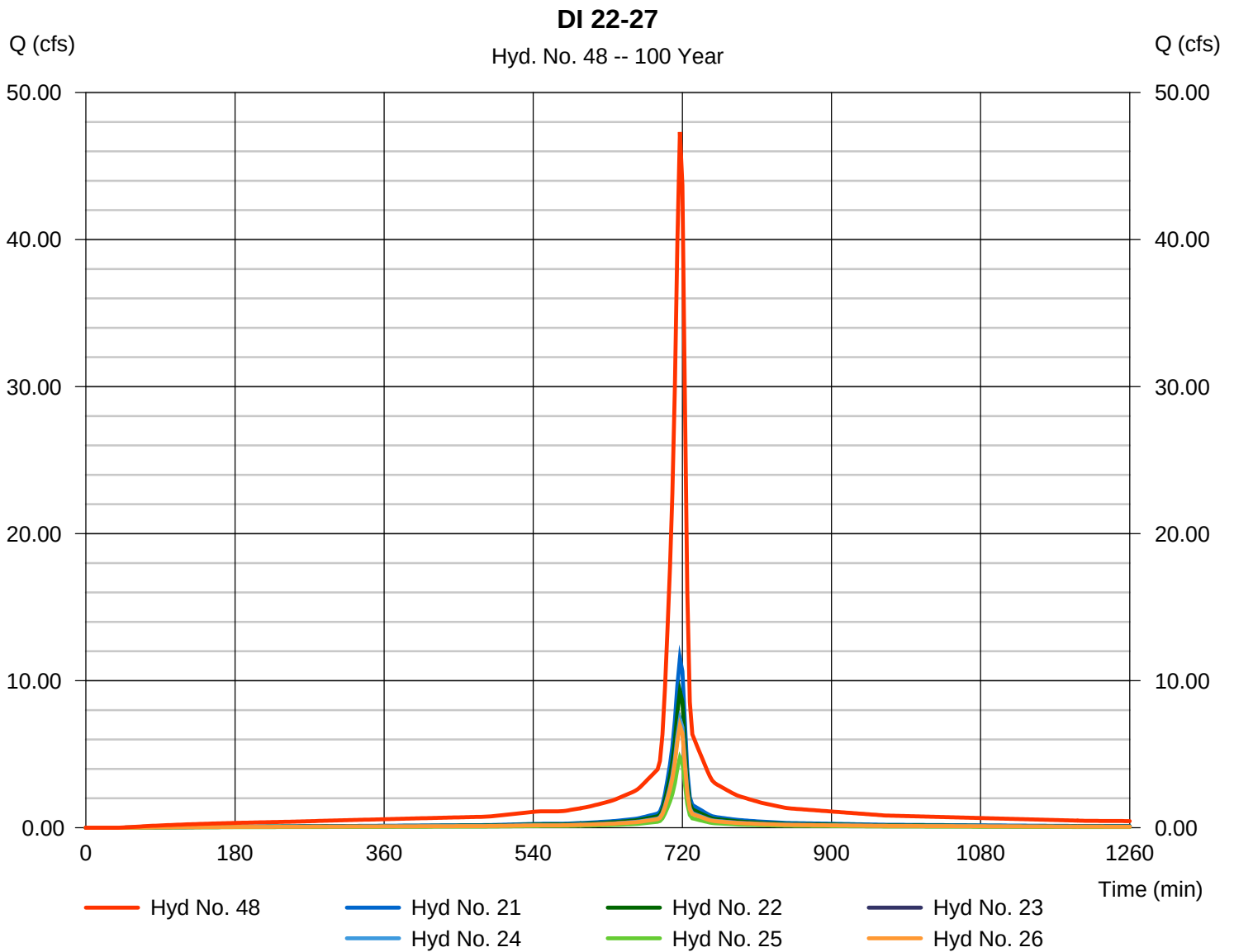
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Friday, 07 / 28 / 2017

Hyd. No. 48

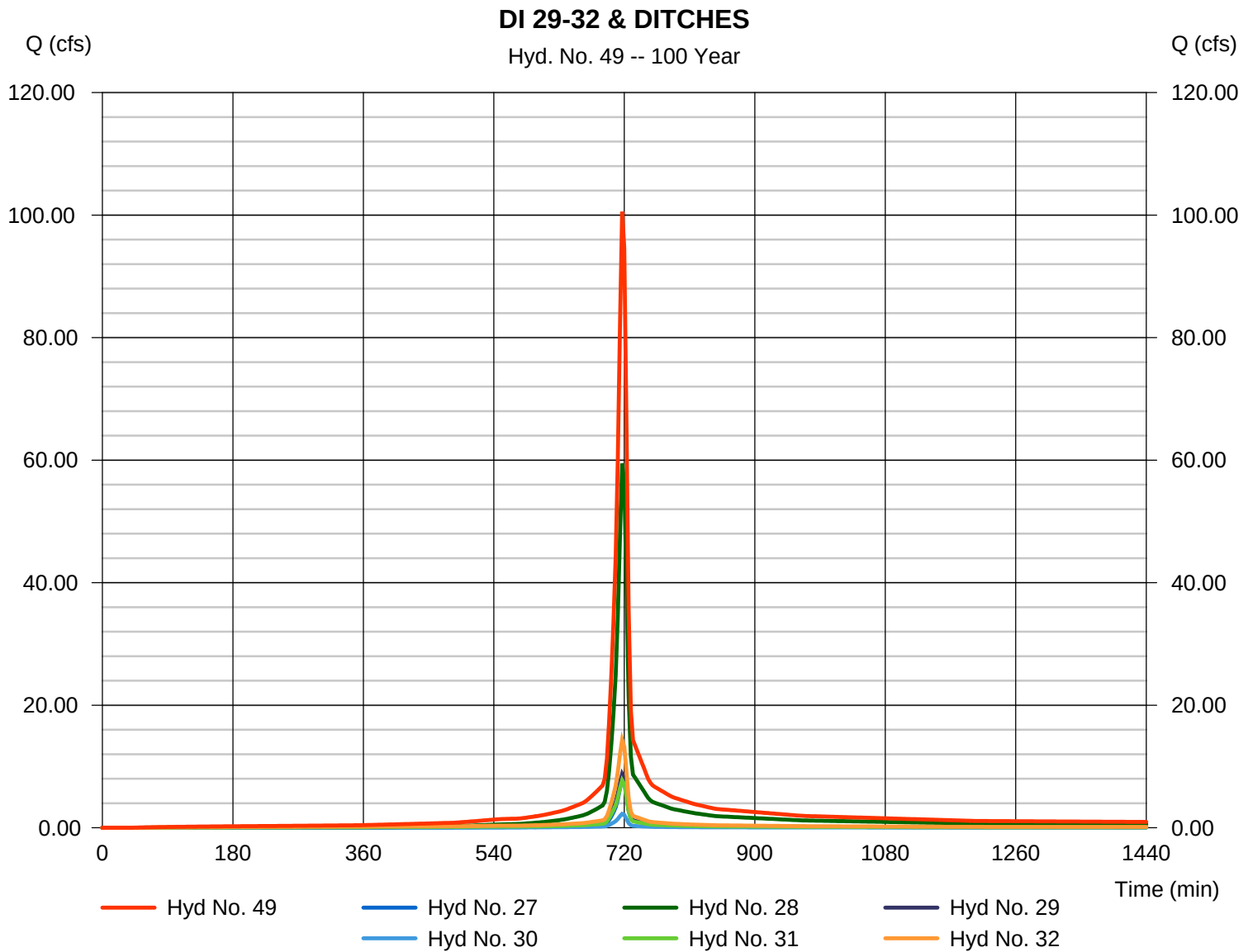
DI 22-27

Hydrograph type	= Combine	Peak discharge	= 47.32 cfs
Storm frequency	= 100 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 124,857 cuft
Inflow hyds.	= 21, 22, 23, 24, 25, 26	Contrib. drain. area	= 5.450 ac



DI 29-32 & DITCHES

Contrib. drain. area = 13.700 ac



Hydrograph Report

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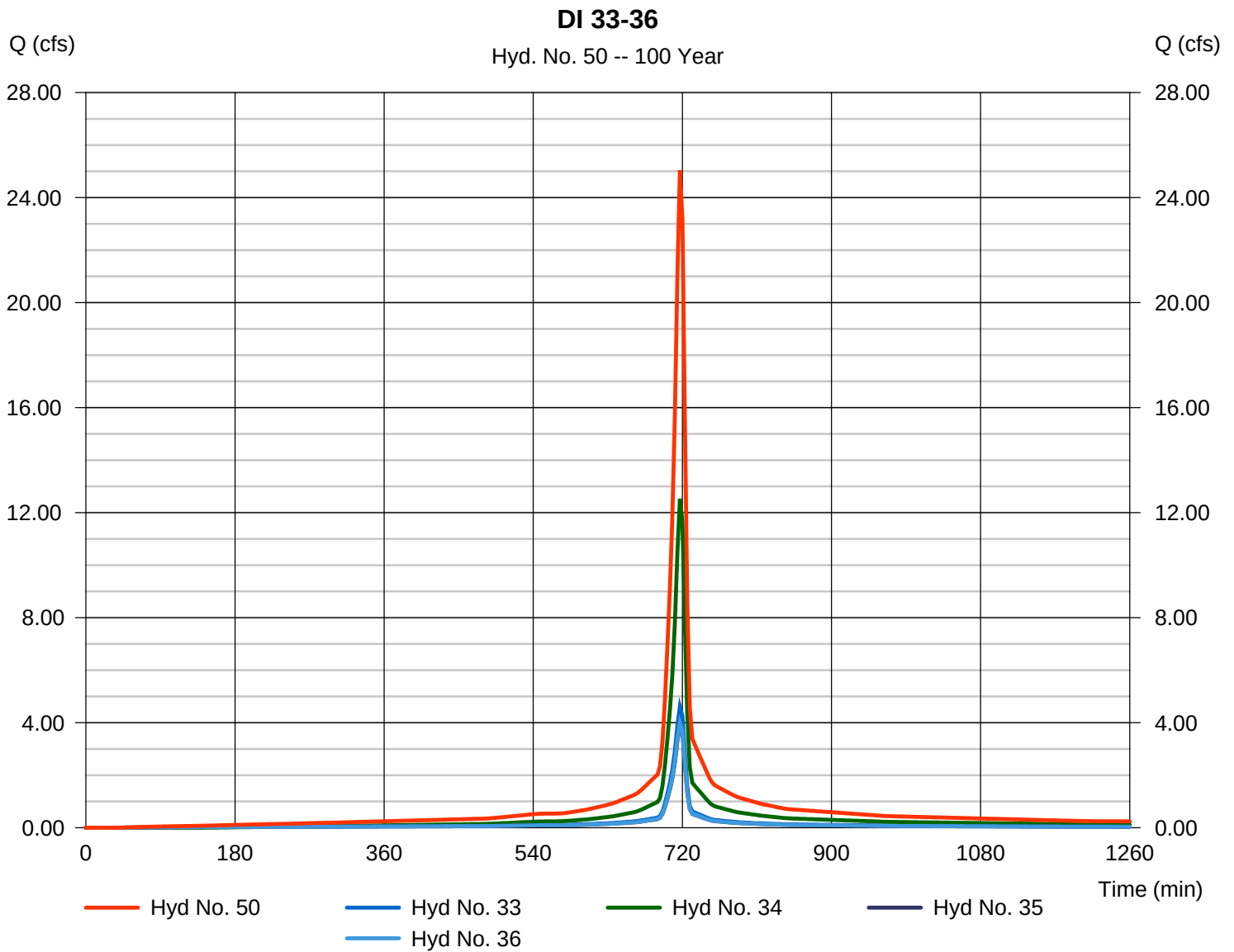
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Hyd. No. 50

DI 33-36

Hydrograph type = Combine
Storm frequency = 100 yrs
Time interval = 3 min
Inflow hyds. = 33, 34, 35, 36

Peak discharge = 25.04 cfs
Time to peak = 717 min
Hyd. volume = 64,040 cuft
Contrib. drain. area = 2.940 ac



Hydrograph Report

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Friday, 07 / 28 / 2017

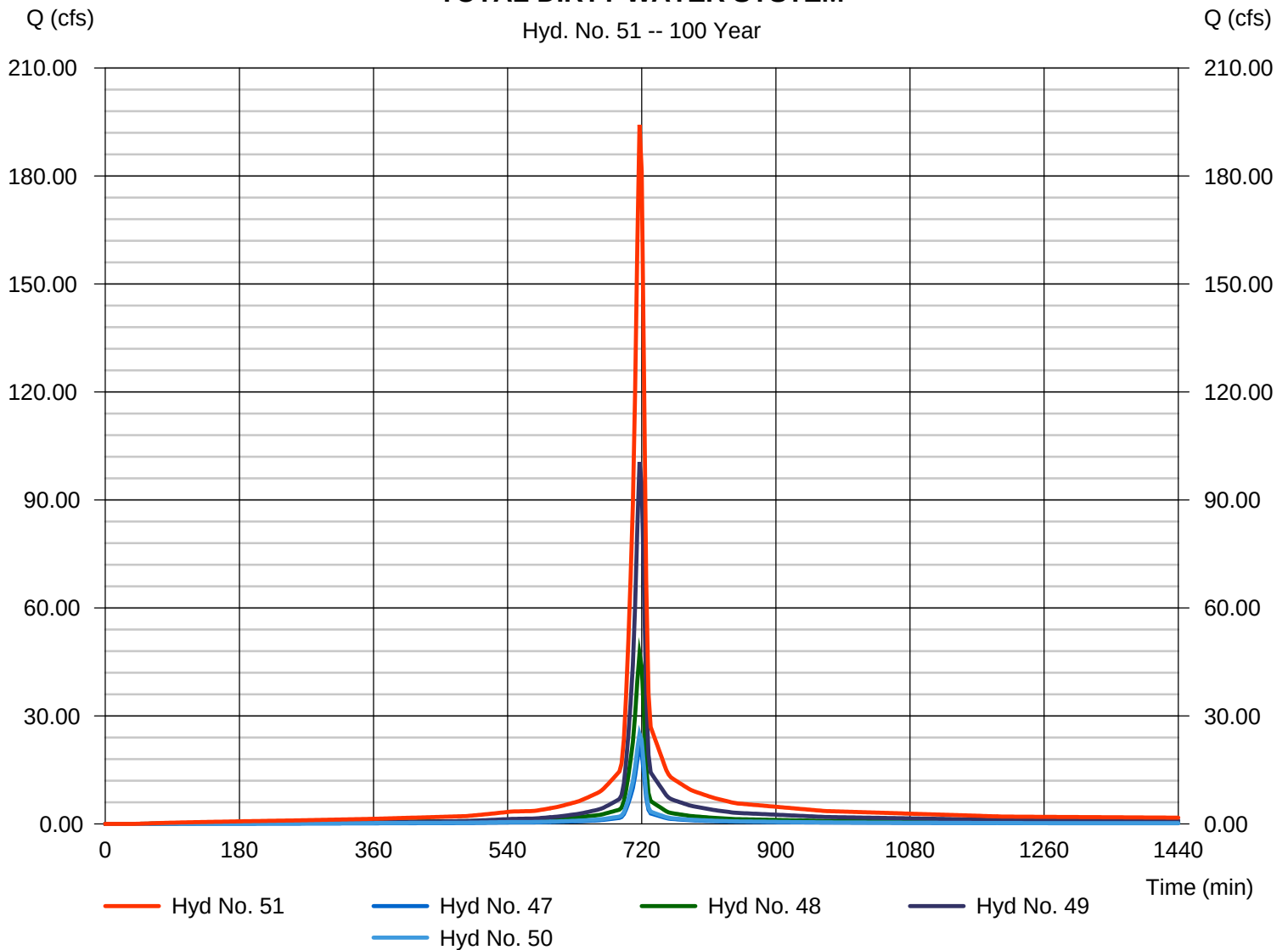
Hyd. No. 51

TOTAL DIRTY WATER SYSTEM

Hydrograph type = Combine
Storm frequency = 100 yrs
Time interval = 3 min
Inflow hyds. = 47, 48, 49, 50

Peak discharge = 194.22 cfs
Time to peak = 717 min
Hyd. volume = 483,951 cuft
Contrib. drain. area = 0.000 ac

TOTAL DIRTY WATER SYSTEM



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 53

E&S RUNOFF BASIN 1

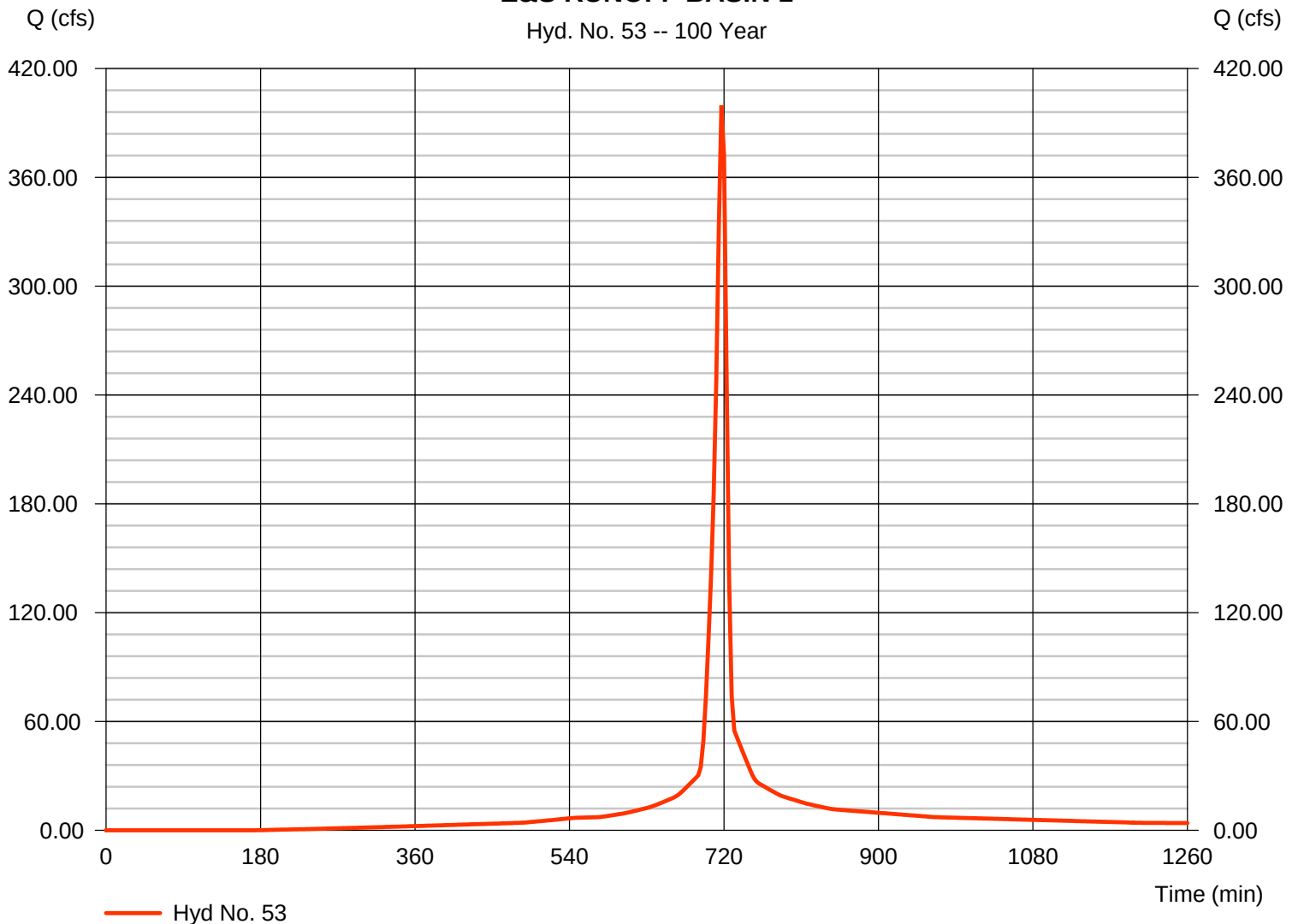
Hydrograph type = SCS Runoff
 Storm frequency = 100 yrs
 Time interval = 3 min
 Drainage area = 48.900 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 7.00 in
 Storm duration = 24 hrs

Peak discharge = 399.56 cfs
 Time to peak = 717 min
 Hyd. volume = 969,048 cuft
 Curve number = 90*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(29.300 \times 98) + (19.600 \times 79)] / 48.900$

E&S RUNOFF BASIN 1

Hyd. No. 53 -- 100 Year



Hydrograph Report

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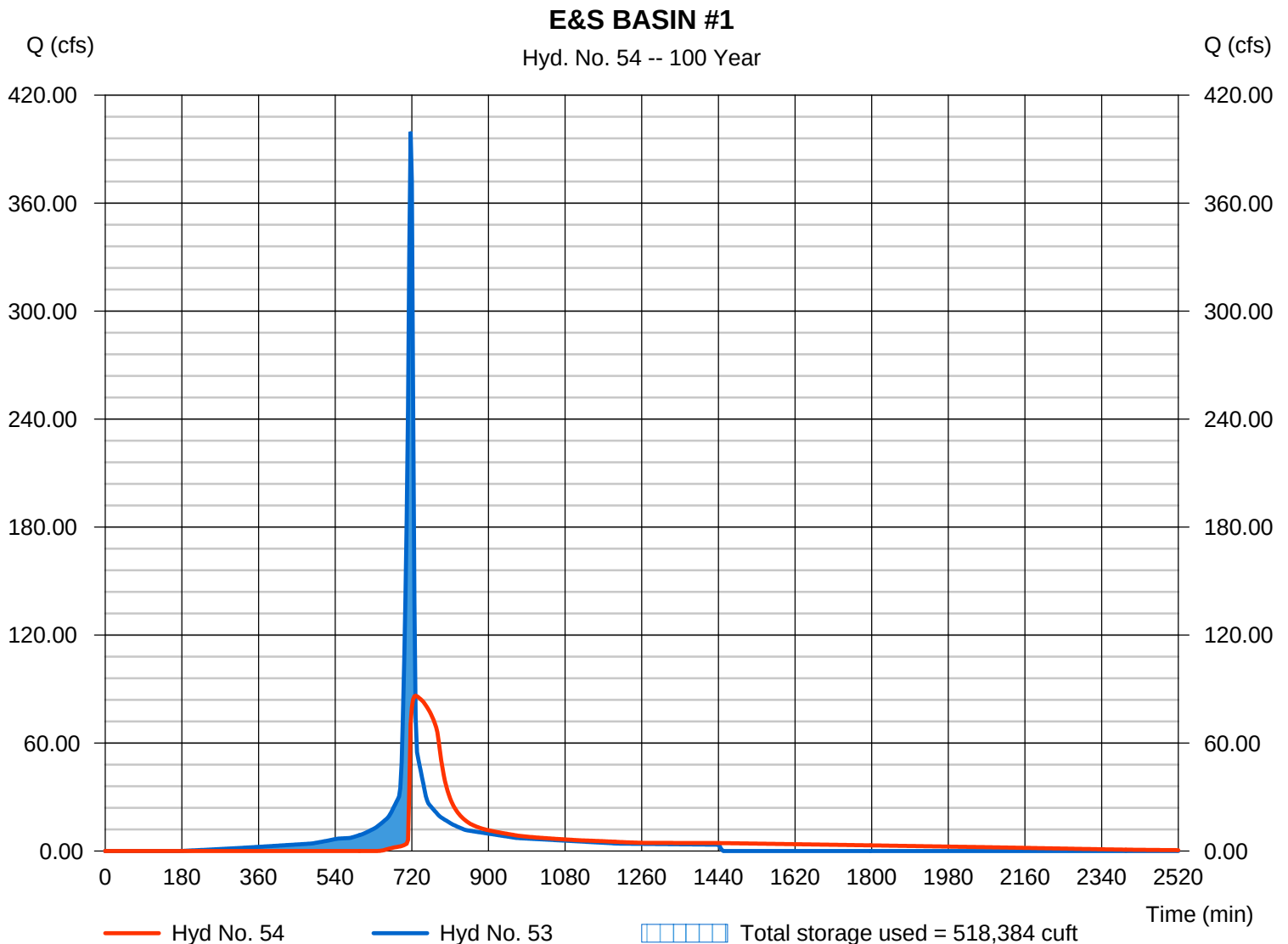
Friday, 07 / 28 / 2017

Hyd. No. 54

E&S BASIN #1

Hydrograph type	= Reservoir	Peak discharge	= 86.30 cfs
Storm frequency	= 100 yrs	Time to peak	= 729 min
Time interval	= 3 min	Hyd. volume	= 862,106 cuft
Inflow hyd. No.	= 53 - E&S RUNOFF BASIN 1	Max. Elevation	= 565.16 ft
Reservoir name	= E&S BASIN #1	Max. Storage	= 518,384 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

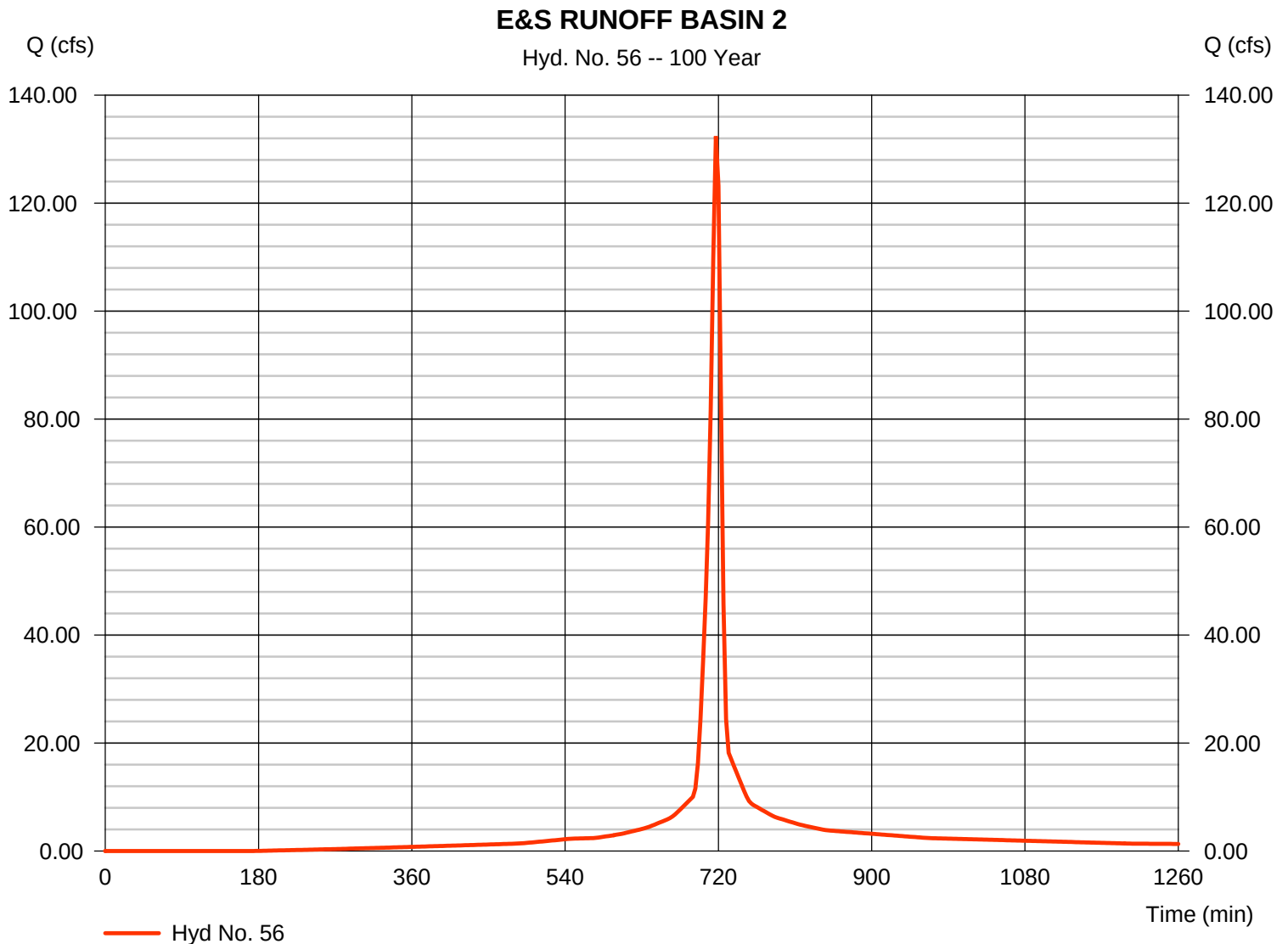
Hyd. No. 56

E&S RUNOFF BASIN 2

Hydrograph type = SCS Runoff
 Storm frequency = 100 yrs
 Time interval = 3 min
 Drainage area = 16.200 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 7.00 in
 Storm duration = 24 hrs

Peak discharge = 132.37 cfs
 Time to peak = 717 min
 Hyd. volume = 321,035 cuft
 Curve number = 90*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(9.720 \times 98) + (6.480 \times 79)] / 16.200$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

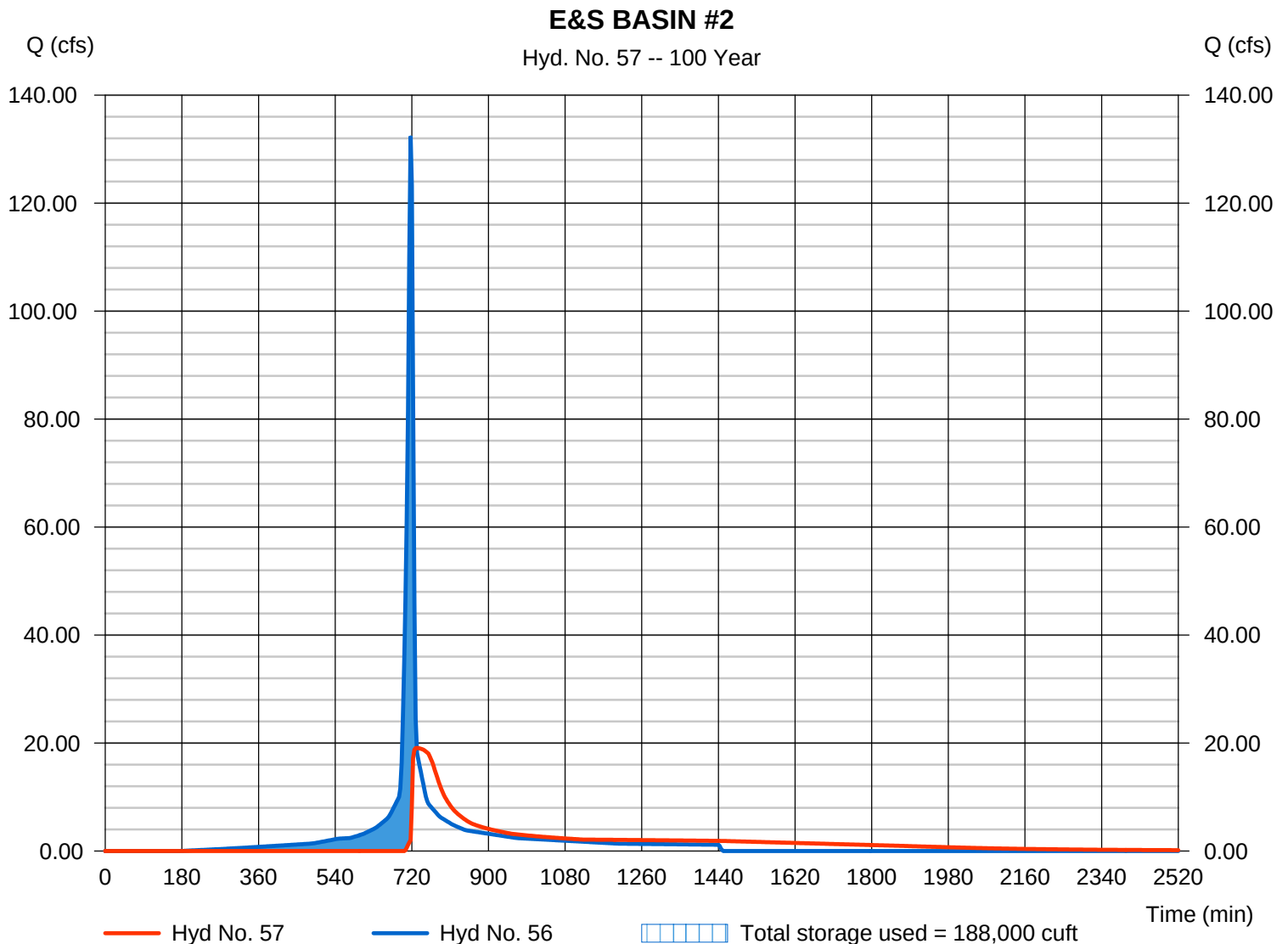
Friday, 07 / 28 / 2017

Hyd. No. 57

E&S BASIN #2

Hydrograph type	= Reservoir	Peak discharge	= 19.09 cfs
Storm frequency	= 100 yrs	Time to peak	= 732 min
Time interval	= 3 min	Hyd. volume	= 251,220 cuft
Inflow hyd. No.	= 56 - E&S RUNOFF BASIN 2	Max. Elevation	= 576.88 ft
Reservoir name	= E&S BASIN #2	Max. Storage	= 188,000 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

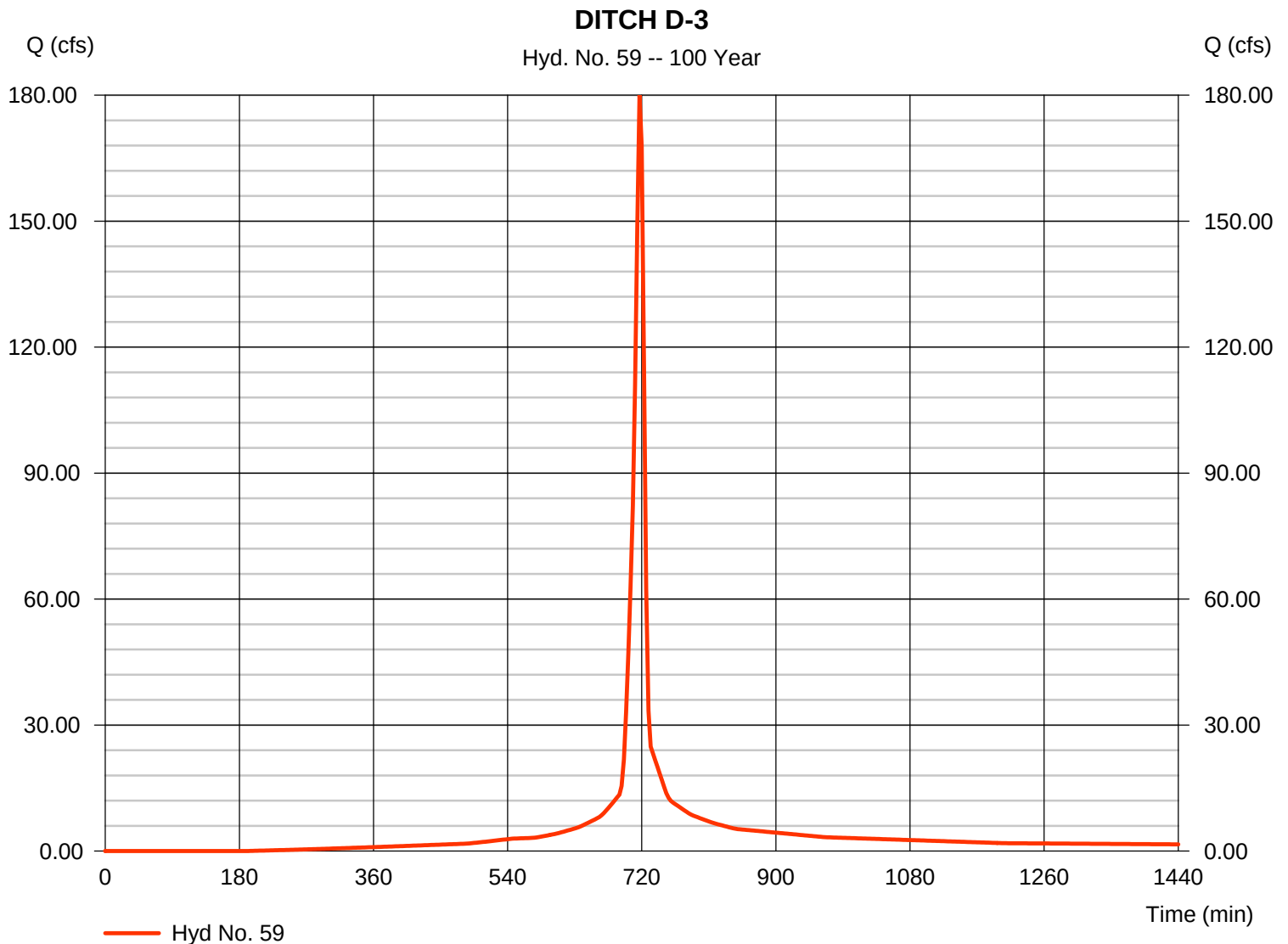
Hyd. No. 59

DITCH D-3

Hydrograph type = SCS Runoff
 Storm frequency = 100 yrs
 Time interval = 3 min
 Drainage area = 22.300 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 7.00 in
 Storm duration = 24 hrs

Peak discharge = 179.99 cfs
 Time to peak = 717 min
 Hyd. volume = 433,184 cuft
 Curve number = 89*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(12.200 \times 98) + (10.100 \times 79)] / 22.300$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

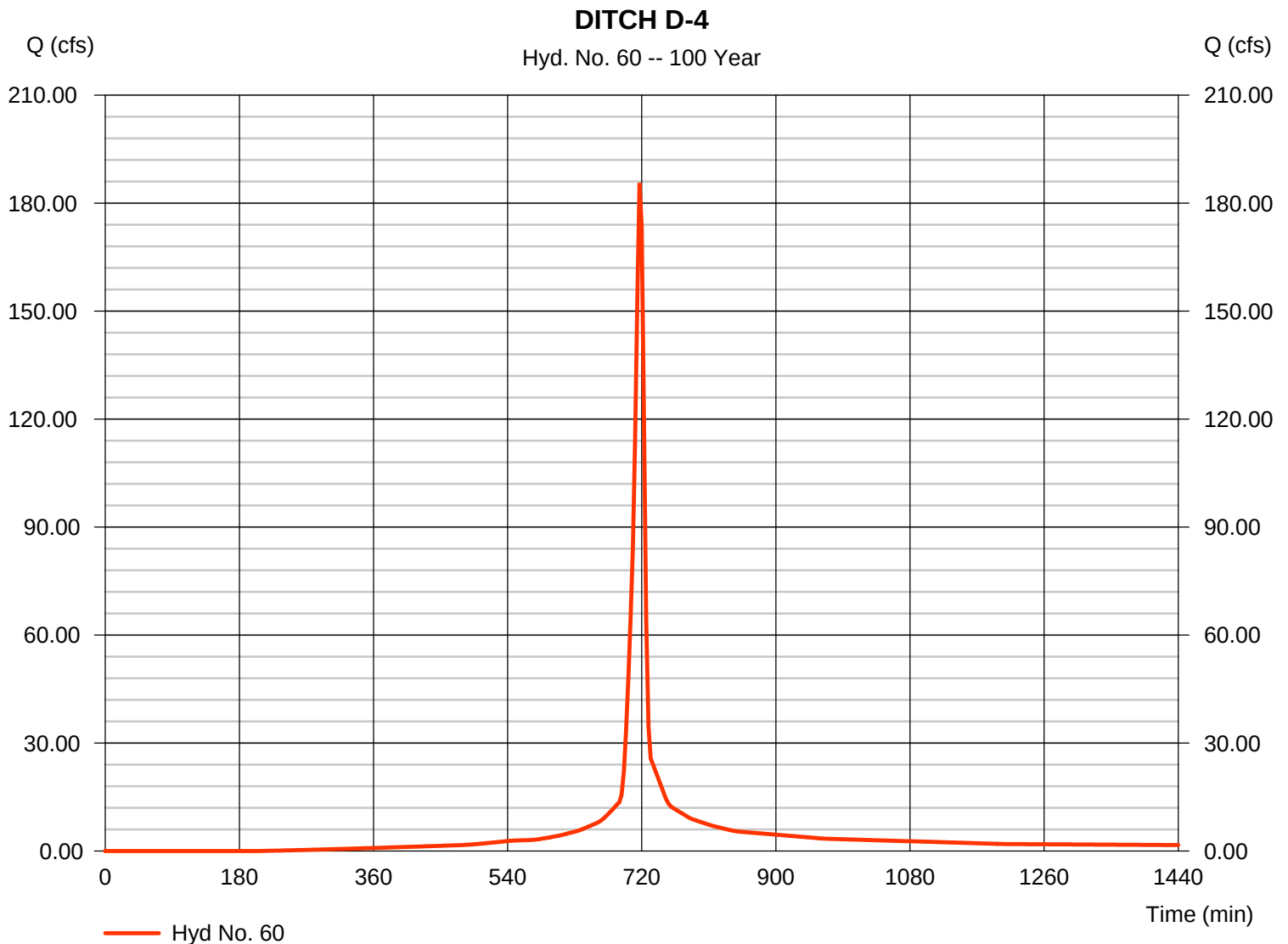
Hyd. No. 60

DITCH D-4

Hydrograph type = SCS Runoff
 Storm frequency = 100 yrs
 Time interval = 3 min
 Drainage area = 23.300 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 7.00 in
 Storm duration = 24 hrs

Peak discharge = 185.60 cfs
 Time to peak = 717 min
 Hyd. volume = 443,522 cuft
 Curve number = 88*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(11.500 \times 98) + (11.800 \times 79)] / 23.300$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Friday, 07 / 28 / 2017

Hyd. No. 62

PRE-DEVELOPMENT

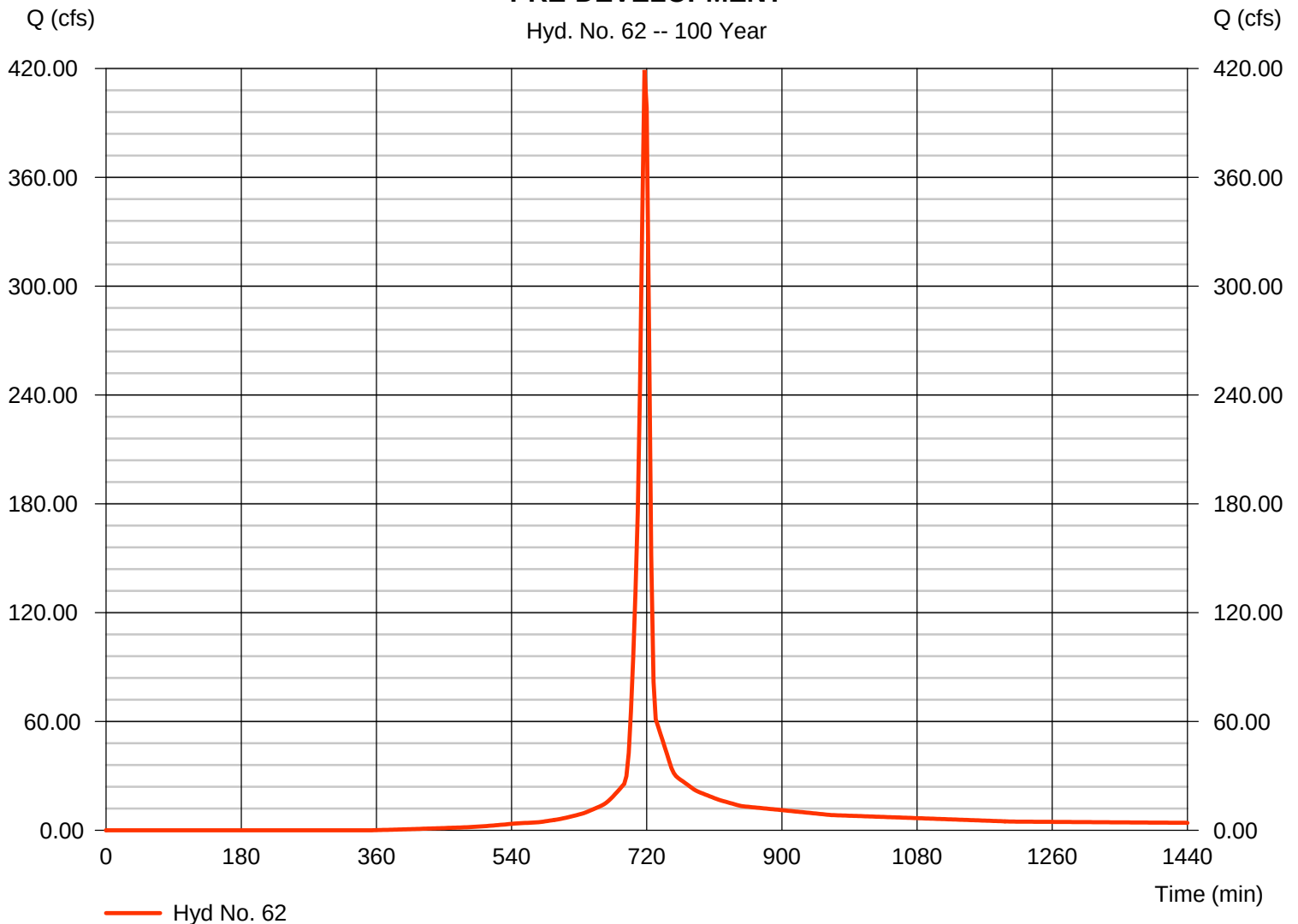
Hydrograph type = SCS Runoff
 Storm frequency = 100 yrs
 Time interval = 3 min
 Drainage area = 61.500 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 7.00 in
 Storm duration = 24 hrs

Peak discharge = 419.20 cfs
 Time to peak = 717 min
 Hyd. volume = 959,472 cuft
 Curve number = 79*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(60.200 \times 79) + (1.300 \times 98)] / 61.500$

PRE-DEVELOPMENT

Hyd. No. 62 -- 100 Year



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

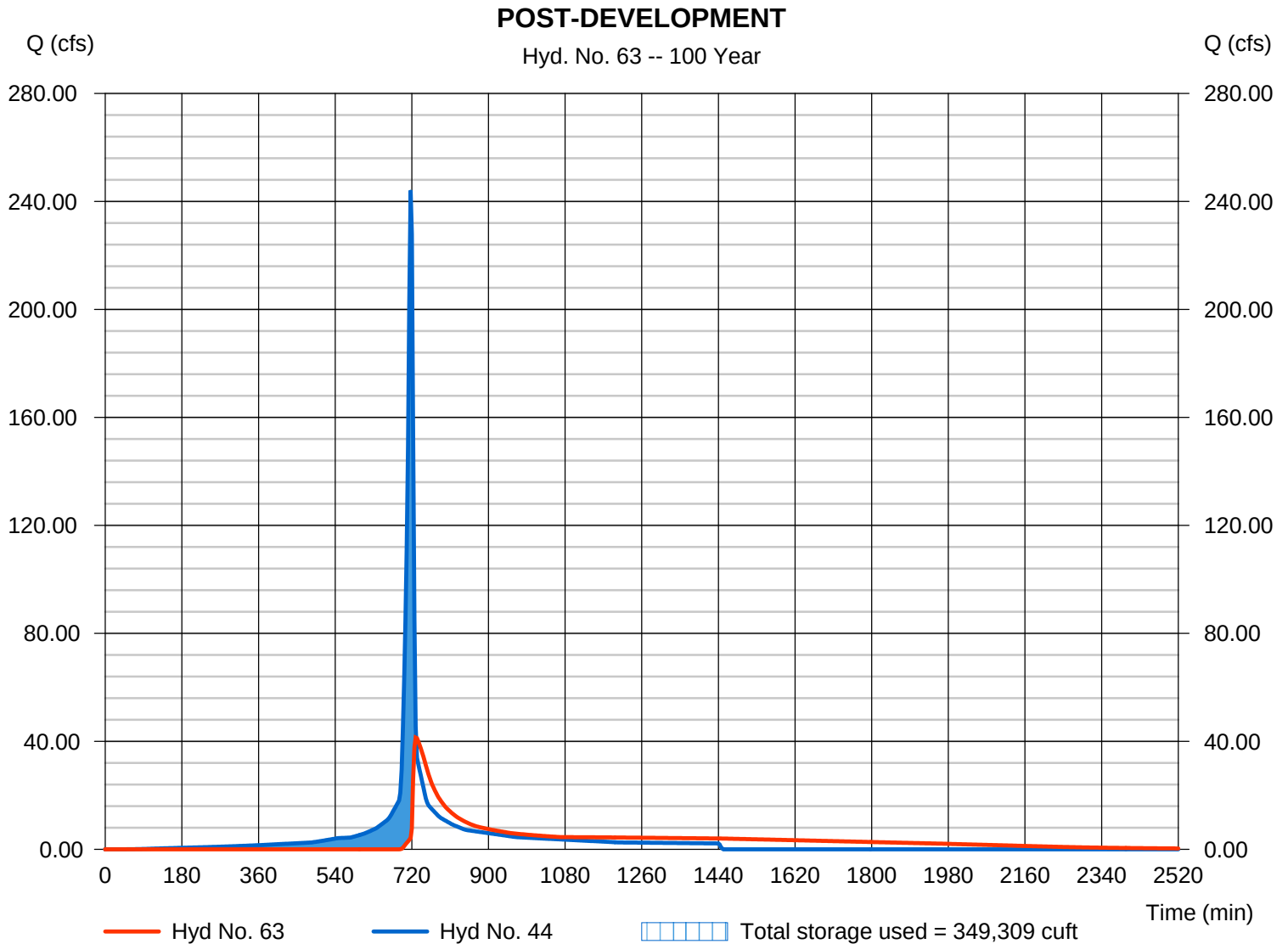
Friday, 07 / 28 / 2017

Hyd. No. 63

POST-DEVELOPMENT

Hydrograph type	= Reservoir	Peak discharge	= 41.40 cfs
Storm frequency	= 100 yrs	Time to peak	= 729 min
Time interval	= 3 min	Hyd. volume	= 491,737 cuft
Inflow hyd. No.	= 44 - TOTAL CLEAN WATER STORAGE	Max. Elevation	= 562.92 ft
Reservoir name	= STORMWATER DETENTION POND	Max. Storage	= 349,309 cuft

Storage Indication method used.



Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc.

Wednesday, Jul 5 2017

DITCH D-1

Trapezoidal

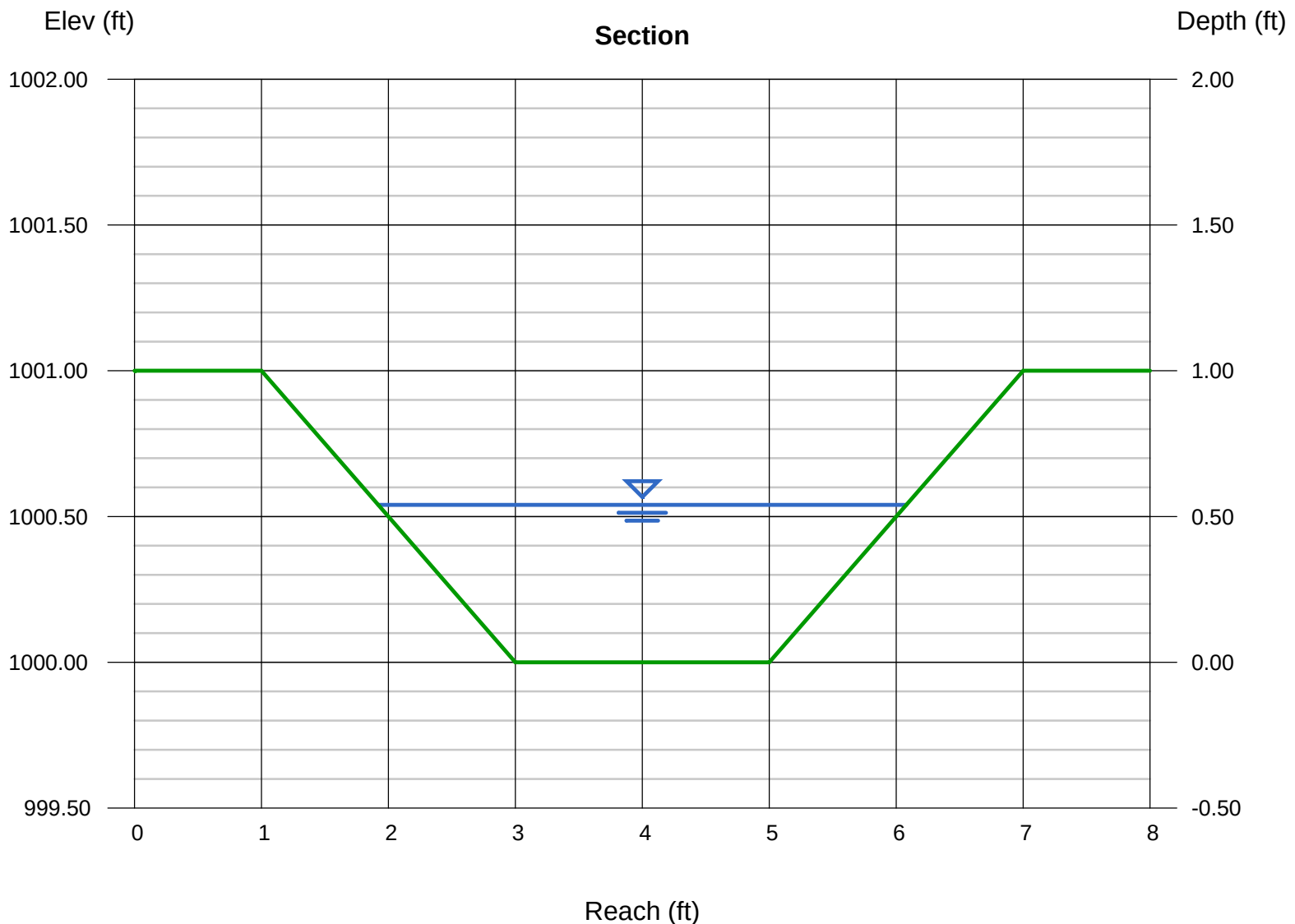
Bottom Width (ft) = 2.00
Side Slopes (z:1) = 2.00, 2.00
Total Depth (ft) = 1.00
Invert Elev (ft) = 1000.00
Slope (%) = 1.30
N-Value = 0.030

Calculations

Compute by: Known Q
Known Q (cfs) = 4.86

Highlighted

Depth (ft) = 0.54
Q (cfs) = 4.860
Area (sqft) = 1.66
Velocity (ft/s) = 2.92
Wetted Perim (ft) = 4.41
Crit Depth, Yc (ft) = 0.49
Top Width (ft) = 4.16
EGL (ft) = 0.67



Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc.

Wednesday, Jul 5 2017

DITCH D-2

Trapezoidal

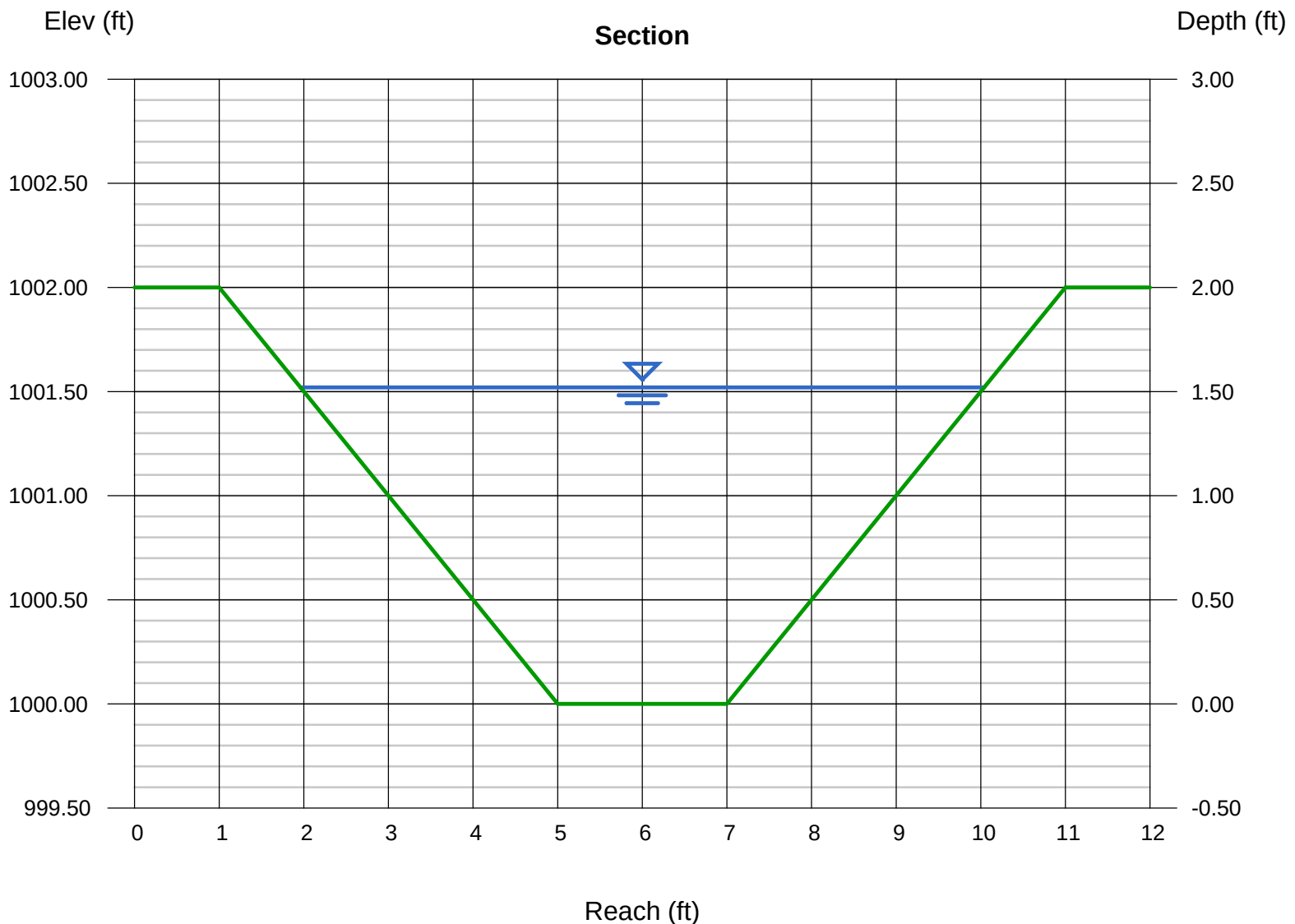
Bottom Width (ft) = 2.00
Side Slopes (z:1) = 2.00, 2.00
Total Depth (ft) = 2.00
Invert Elev (ft) = 1000.00
Slope (%) = 1.10
N-Value = 0.030

Calculations

Compute by: Known Q
Known Q (cfs) = 36.21

Highlighted

Depth (ft) = 1.52
Q (cfs) = 36.21
Area (sqft) = 7.66
Velocity (ft/s) = 4.73
Wetted Perim (ft) = 8.80
Crit Depth, Yc (ft) = 1.41
Top Width (ft) = 8.08
EGL (ft) = 1.87



Channel Report

DITCH D-3

Trapezoidal

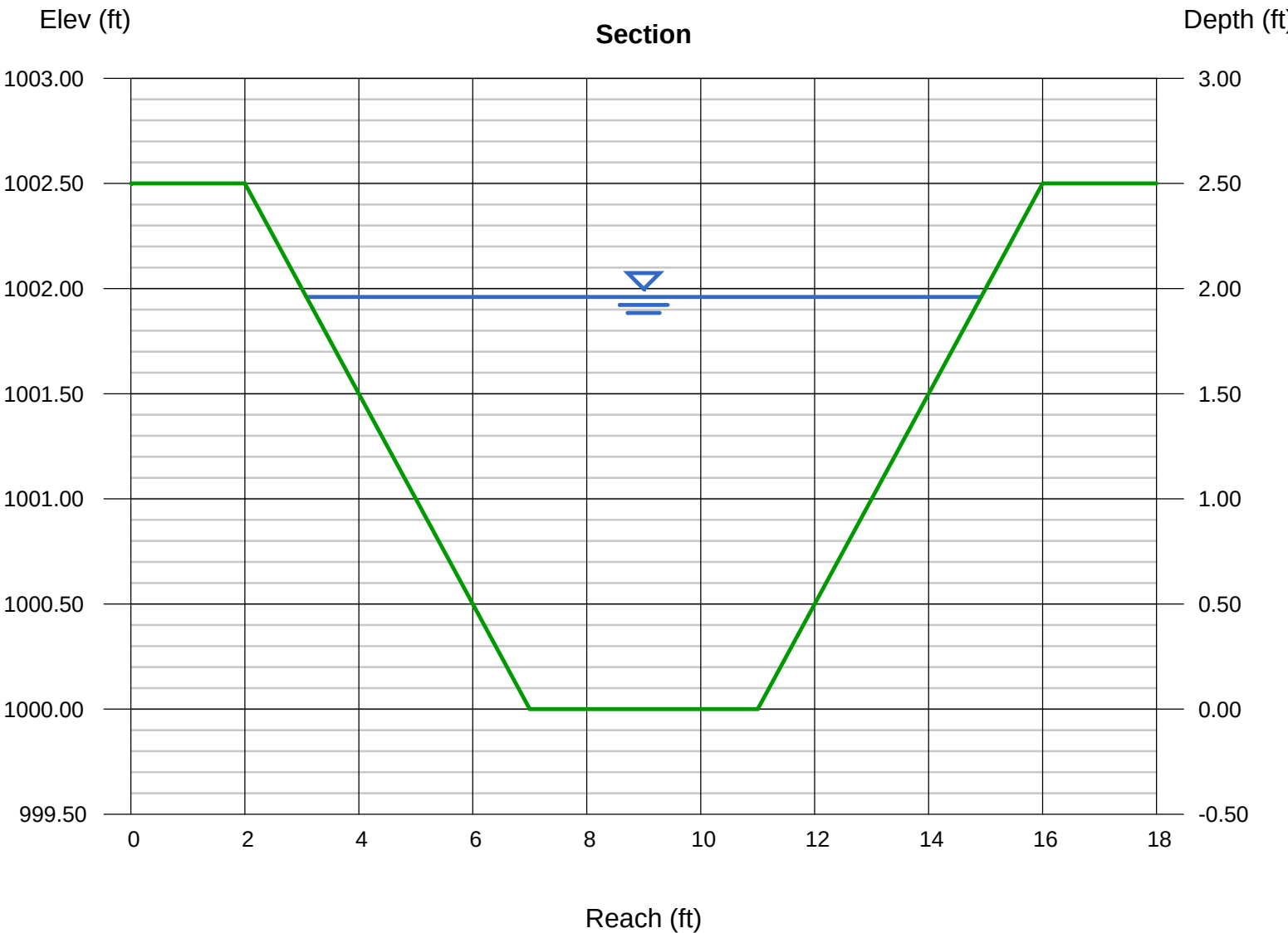
Bottom Width (ft) = 4.00
Side Slopes (z:1) = 2.00, 2.00
Total Depth (ft) = 2.50
Invert Elev (ft) = 1000.00
Slope (%) = 1.90
N-Value = 0.030

Calculations

Compute by: Known Q
Known Q (cfs) = 120.37

Highlighted

Depth (ft) = 1.96
Q (cfs) = 120.37
Area (sqft) = 15.52
Velocity (ft/s) = 7.75
Wetted Perim (ft) = 12.77
Crit Depth, Yc (ft) = 2.15
Top Width (ft) = 11.84
EGL (ft) = 2.89



Channel Report

DITCH D-4

Trapezoidal

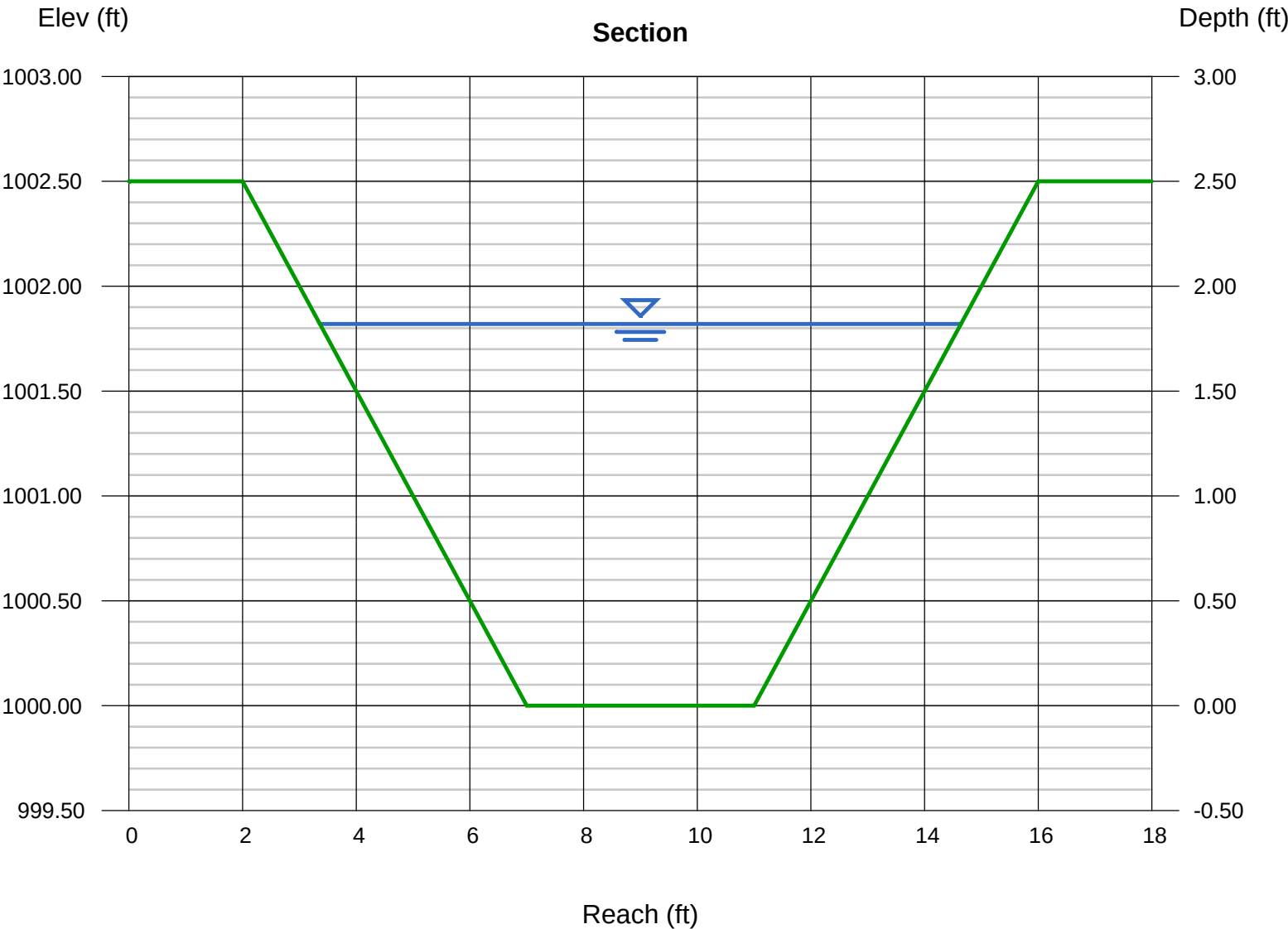
Bottom Width (ft) = 4.00
Side Slopes (z:1) = 2.00, 2.00
Total Depth (ft) = 2.50
Invert Elev (ft) = 1000.00
Slope (%) = 2.70
N-Value = 0.030

Calculations

Compute by: Known Q
Known Q (cfs) = 123.11

Highlighted

Depth (ft) = 1.82
Q (cfs) = 123.11
Area (sqft) = 13.90
Velocity (ft/s) = 8.85
Wetted Perim (ft) = 12.14
Crit Depth, Yc (ft) = 2.18
Top Width (ft) = 11.28
EGL (ft) = 3.04



Channel Report

GRASS SWALE #1

Trapezoidal

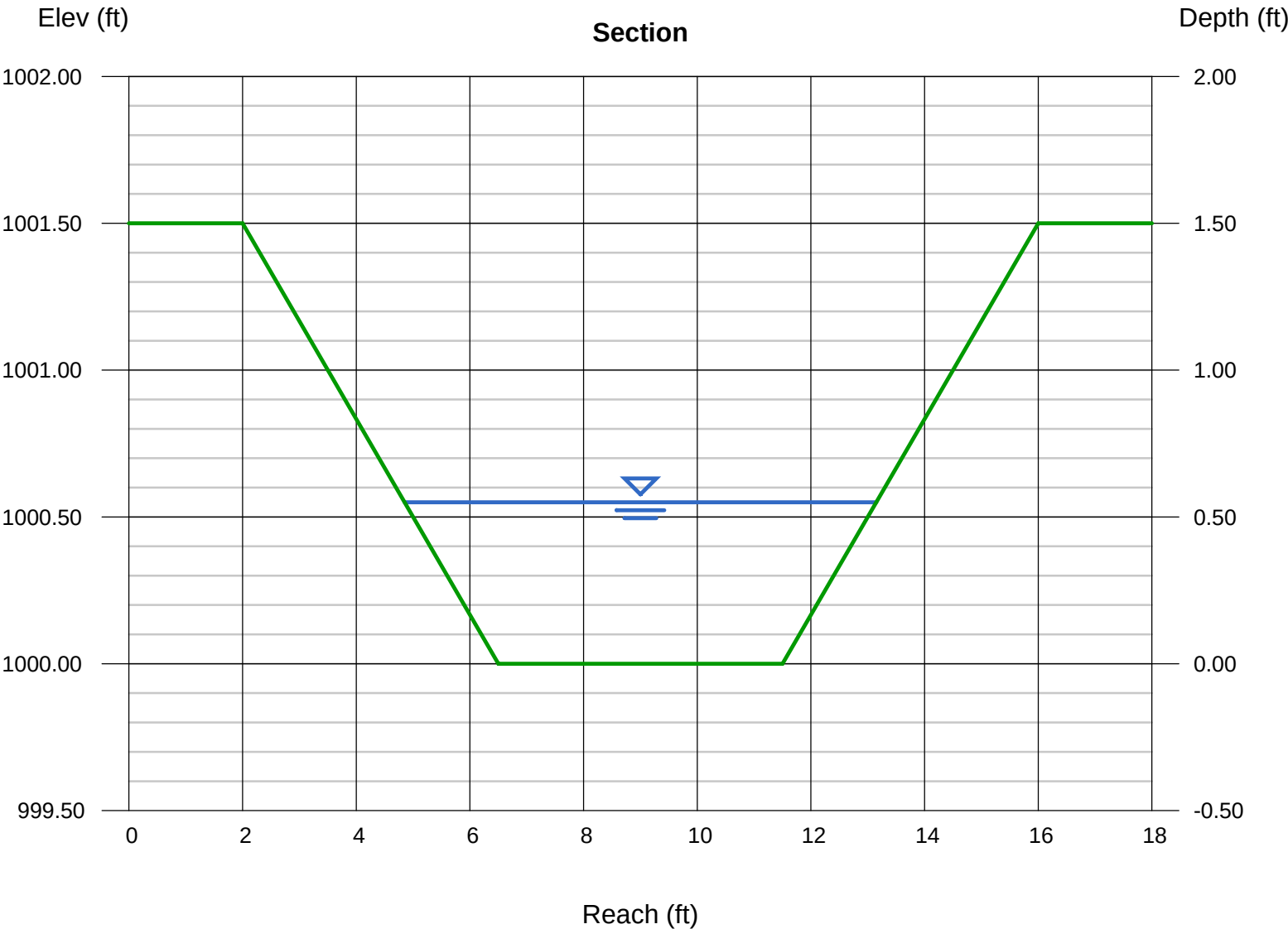
Bottom Width (ft)	= 5.00
Side Slopes (z:1)	= 3.00, 3.00
Total Depth (ft)	= 1.50
Invert Elev (ft)	= 1000.00
Slope (%)	= 2.40
N-Value	= 0.030

Highlighted

Depth (ft)	= 0.55
Q (cfs)	= 15.60
Area (sqft)	= 3.66
Velocity (ft/s)	= 4.27
Wetted Perim (ft)	= 8.48
Crit Depth, Yc (ft)	= 0.60
Top Width (ft)	= 8.30
EGL (ft)	= 0.83

Calculations

Compute by:	Known Q
Known Q (cfs)	= 15.60



Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc.

Wednesday, Jul 5 2017

GRASS SWALE #2

Trapezoidal

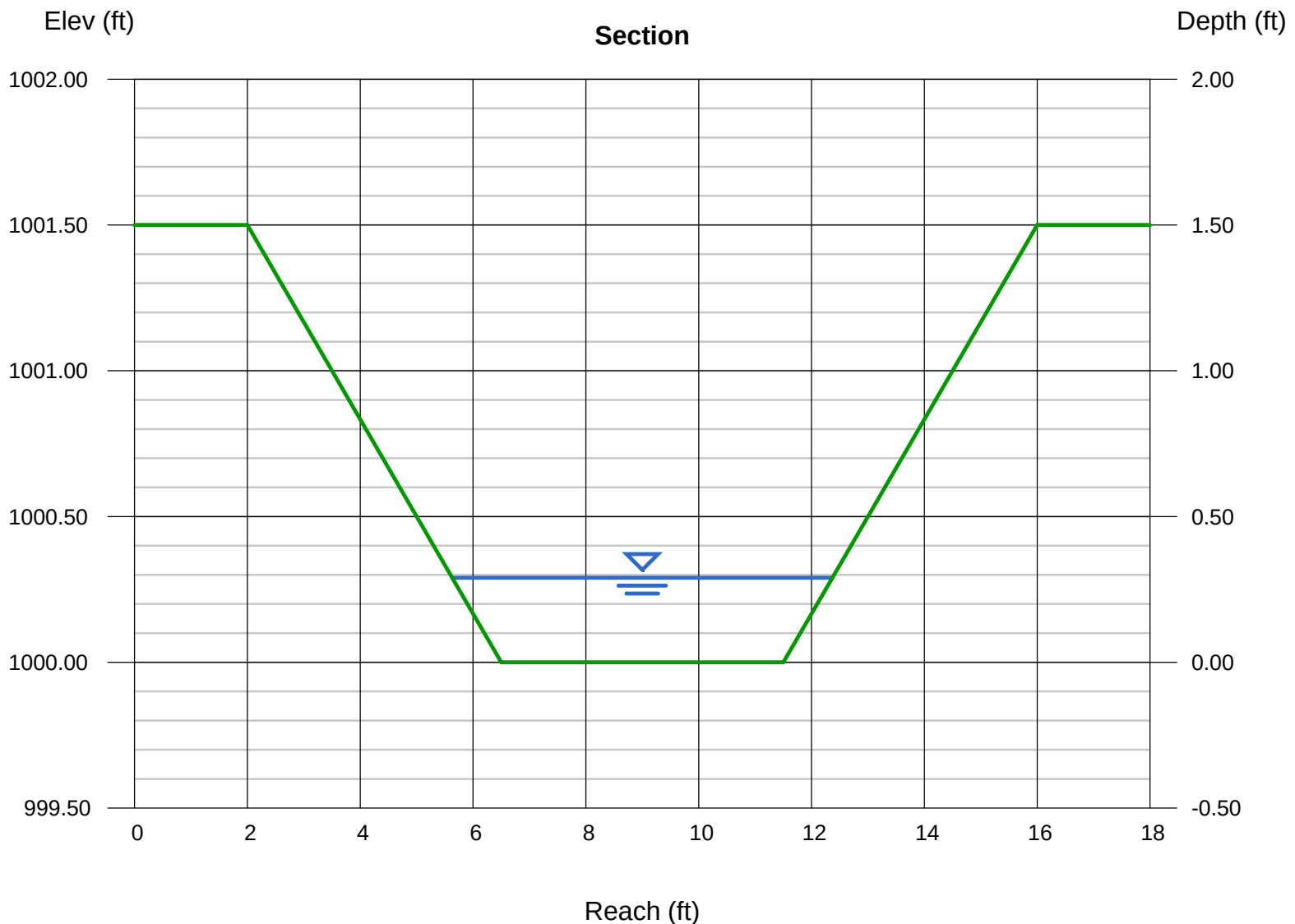
Bottom Width (ft) = 5.00
Side Slopes (z:1) = 3.00, 3.00
Total Depth (ft) = 1.50
Invert Elev (ft) = 1000.00
Slope (%) = 3.70
N-Value = 0.030

Calculations

Compute by: Known Q
Known Q (cfs) = 6.09

Highlighted

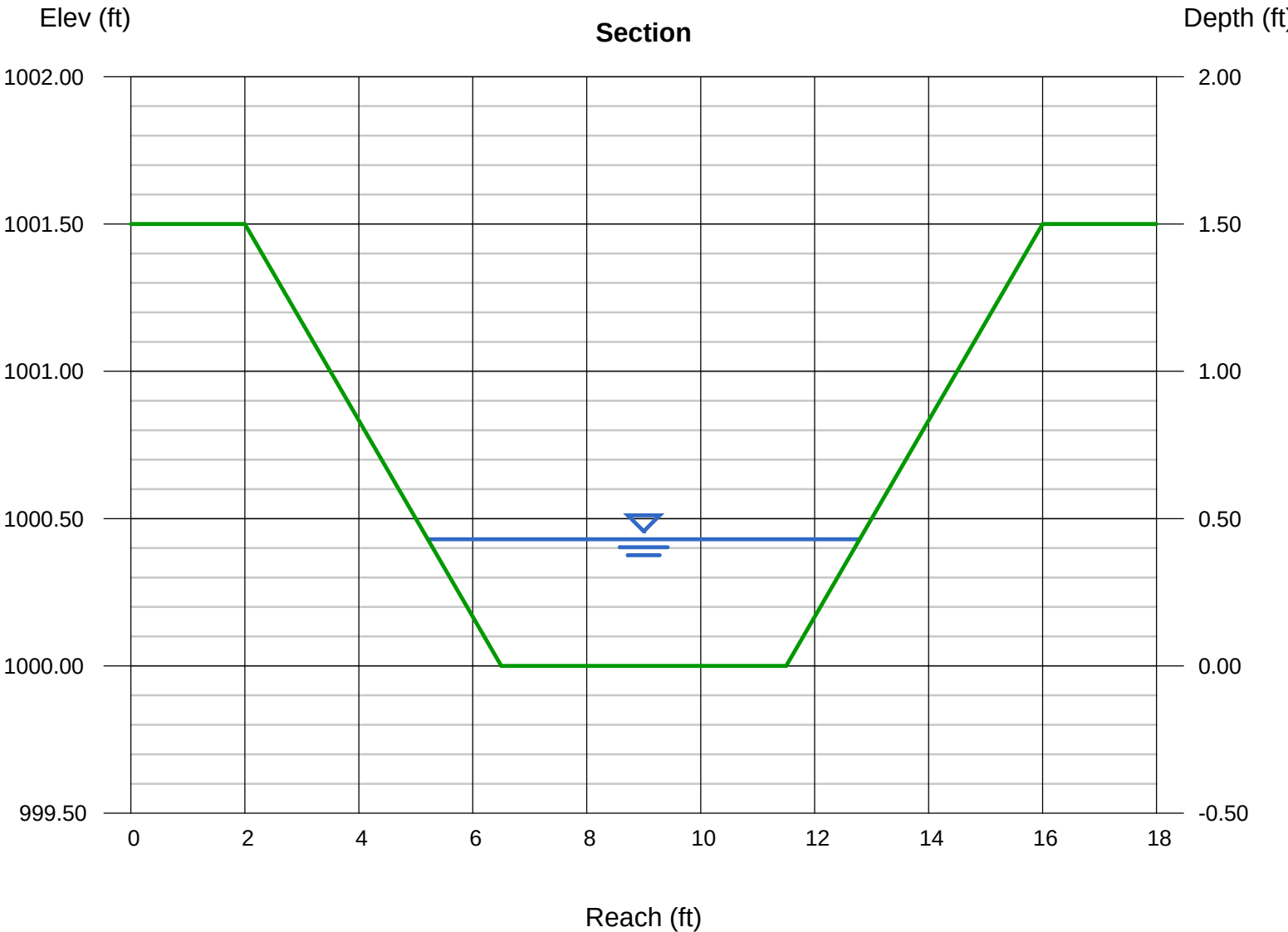
Depth (ft) = 0.29
Q (cfs) = 6.094
Area (sqft) = 1.70
Velocity (ft/s) = 3.58
Wetted Perim (ft) = 6.83
Crit Depth, Yc (ft) = 0.34
Top Width (ft) = 6.74
EGL (ft) = 0.49



Channel Report

GRASS SWALE #3

Trapezoidal		Highlighted	
Bottom Width (ft)	= 5.00	Depth (ft)	= 0.43
Side Slopes (z:1)	= 3.00, 3.00	Q (cfs)	= 6.442
Total Depth (ft)	= 1.50	Area (sqft)	= 2.70
Invert Elev (ft)	= 1000.00	Velocity (ft/s)	= 2.38
Slope (%)	= 1.00	Wetted Perim (ft)	= 7.72
N-Value	= 0.030	Crit Depth, Yc (ft)	= 0.35
Calculations		Top Width (ft)	= 7.58
Compute by:		EGL (ft)	= 0.52
Known Q	= 6.44		



Channel Report

GRASS SWALE #4

Trapezoidal

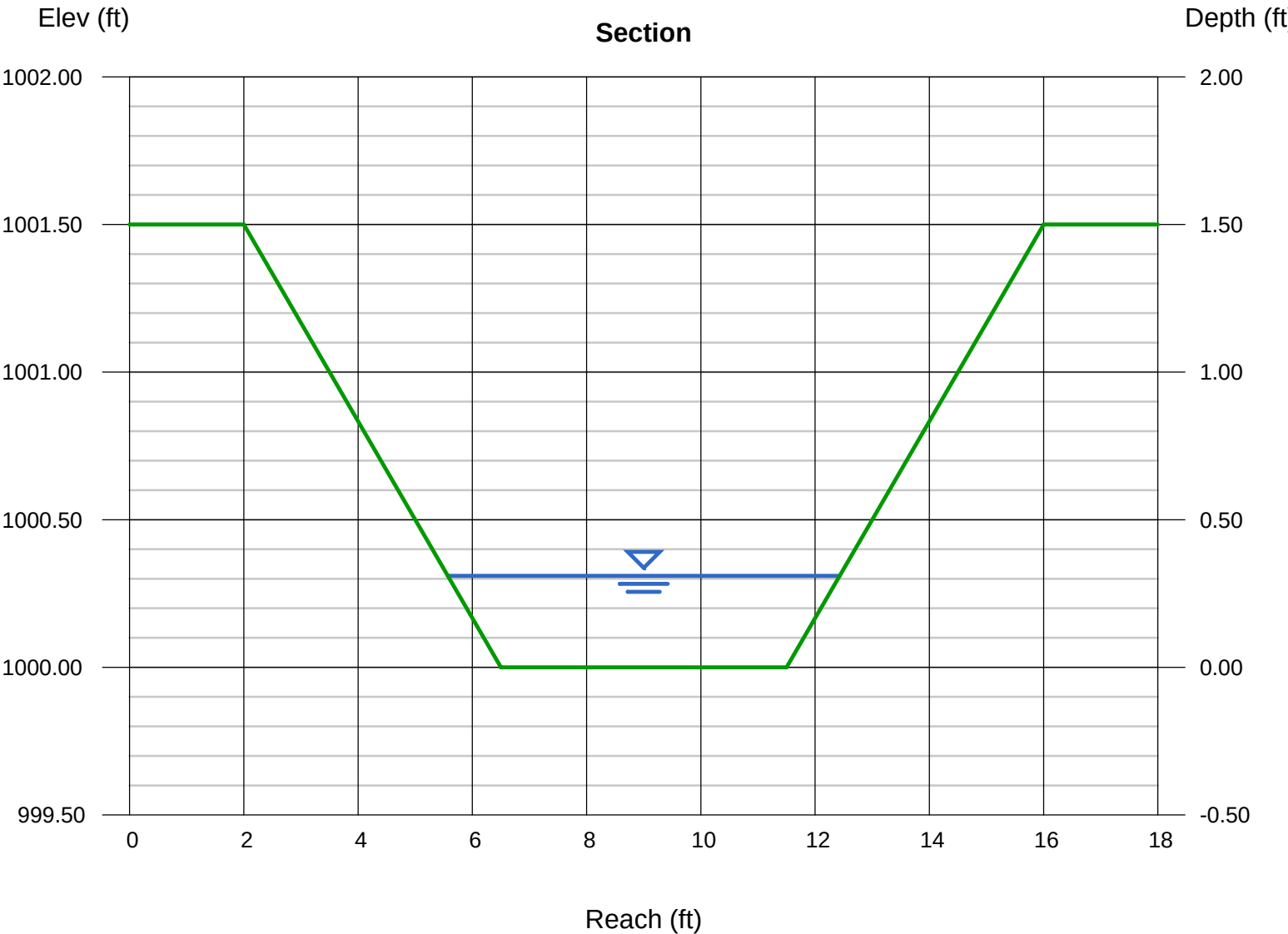
Bottom Width (ft) = 5.00
Side Slopes (z:1) = 3.00, 3.00
Total Depth (ft) = 1.50
Invert Elev (ft) = 1000.00
Slope (%) = 1.50
N-Value = 0.030

Calculations

Compute by: Known Q
Known Q (cfs) = 4.47

Highlighted

Depth (ft) = 0.31
Q (cfs) = 4.474
Area (sqft) = 1.84
Velocity (ft/s) = 2.43
Wetted Perim (ft) = 6.96
Crit Depth, Yc (ft) = 0.28
Top Width (ft) = 6.86
EGL (ft) = 0.40



Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc.

Wednesday, Jul 5 2017

GRASS SWALE #5

Trapezoidal

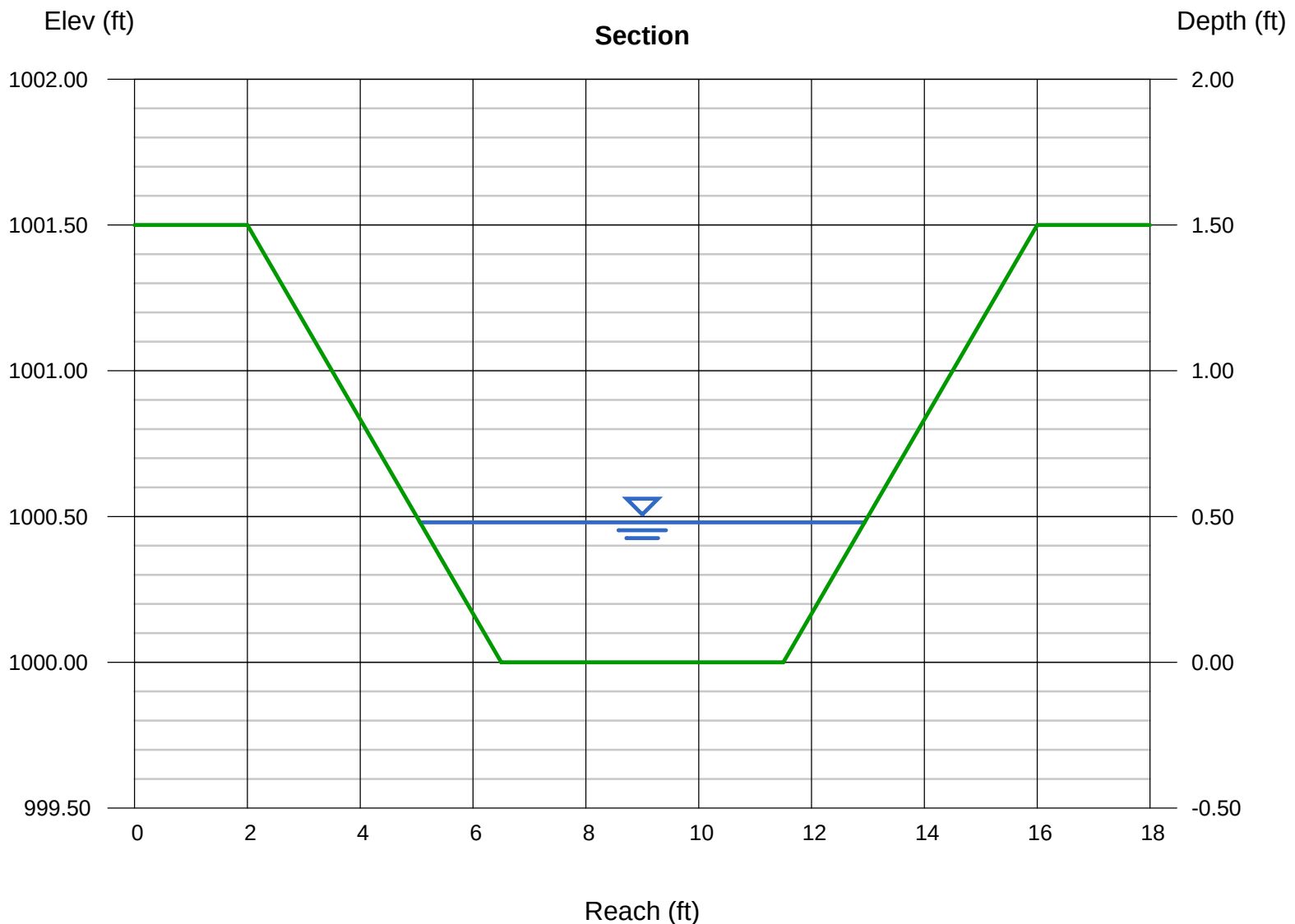
Bottom Width (ft) = 5.00
Side Slopes (z:1) = 3.00, 3.00
Total Depth (ft) = 1.50
Invert Elev (ft) = 1000.00
Slope (%) = 1.40
N-Value = 0.030

Calculations

Compute by: Known Q
Known Q (cfs) = 9.54

Highlighted

Depth (ft) = 0.48
Q (cfs) = 9.540
Area (sqft) = 3.09
Velocity (ft/s) = 3.09
Wetted Perim (ft) = 8.04
Crit Depth, Yc (ft) = 0.45
Top Width (ft) = 7.88
EGL (ft) = 0.63



Channel Report

GRASS SWALE #6

Trapezoidal

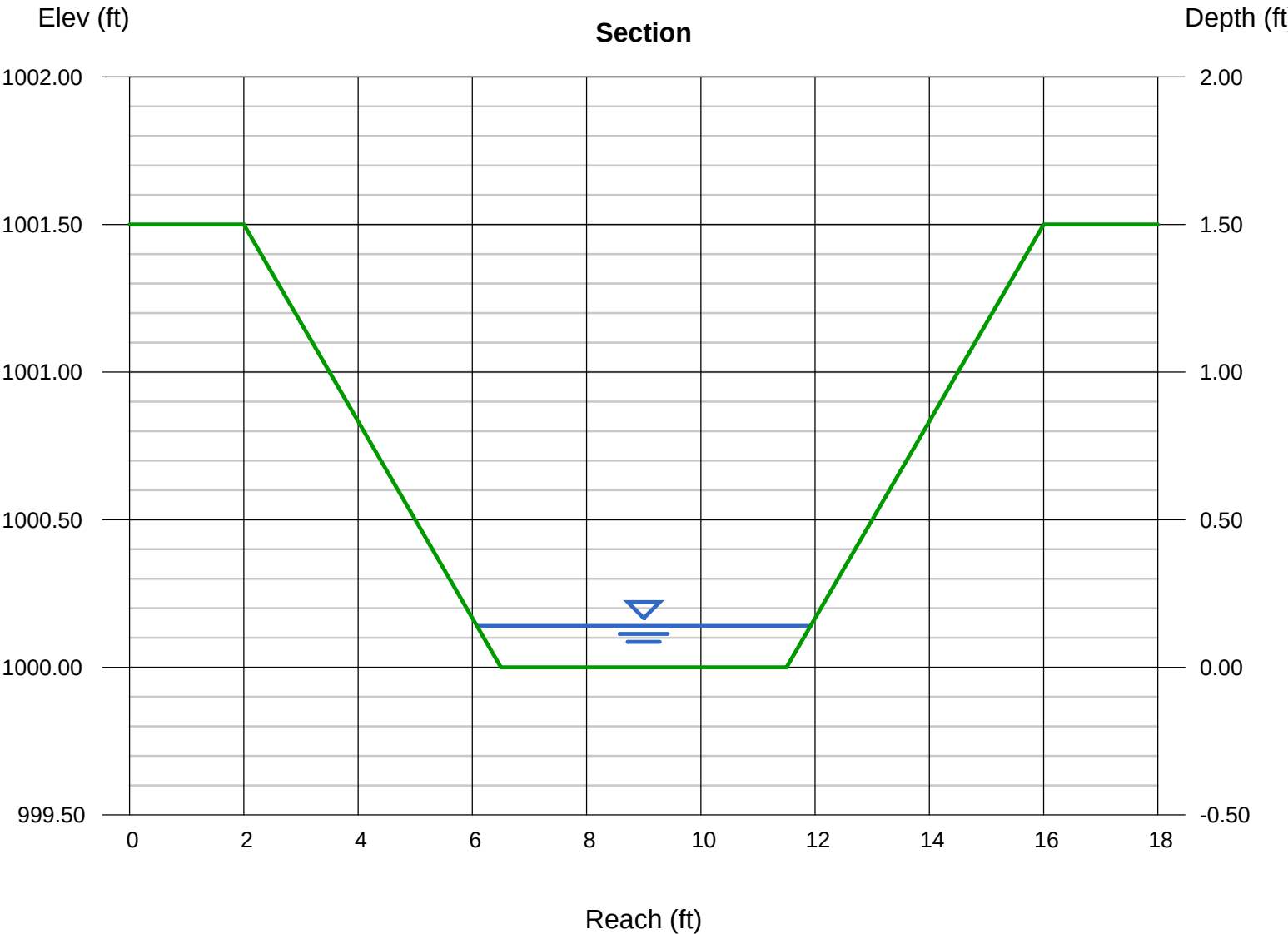
Bottom Width (ft) = 5.00
Side Slopes (z:1) = 3.00, 3.00
Total Depth (ft) = 1.50
Invert Elev (ft) = 1000.00
Slope (%) = 2.50
N-Value = 0.030

Calculations

Compute by: Known Q
Known Q (cfs) = 1.37

Highlighted

Depth (ft) = 0.14
Q (cfs) = 1.371
Area (sqft) = 0.76
Velocity (ft/s) = 1.81
Wetted Perim (ft) = 5.89
Crit Depth, Yc (ft) = 0.13
Top Width (ft) = 5.84
EGL (ft) = 0.19



Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc.

Wednesday, Jul 5 2017

GRASS SWALE #7

Trapezoidal

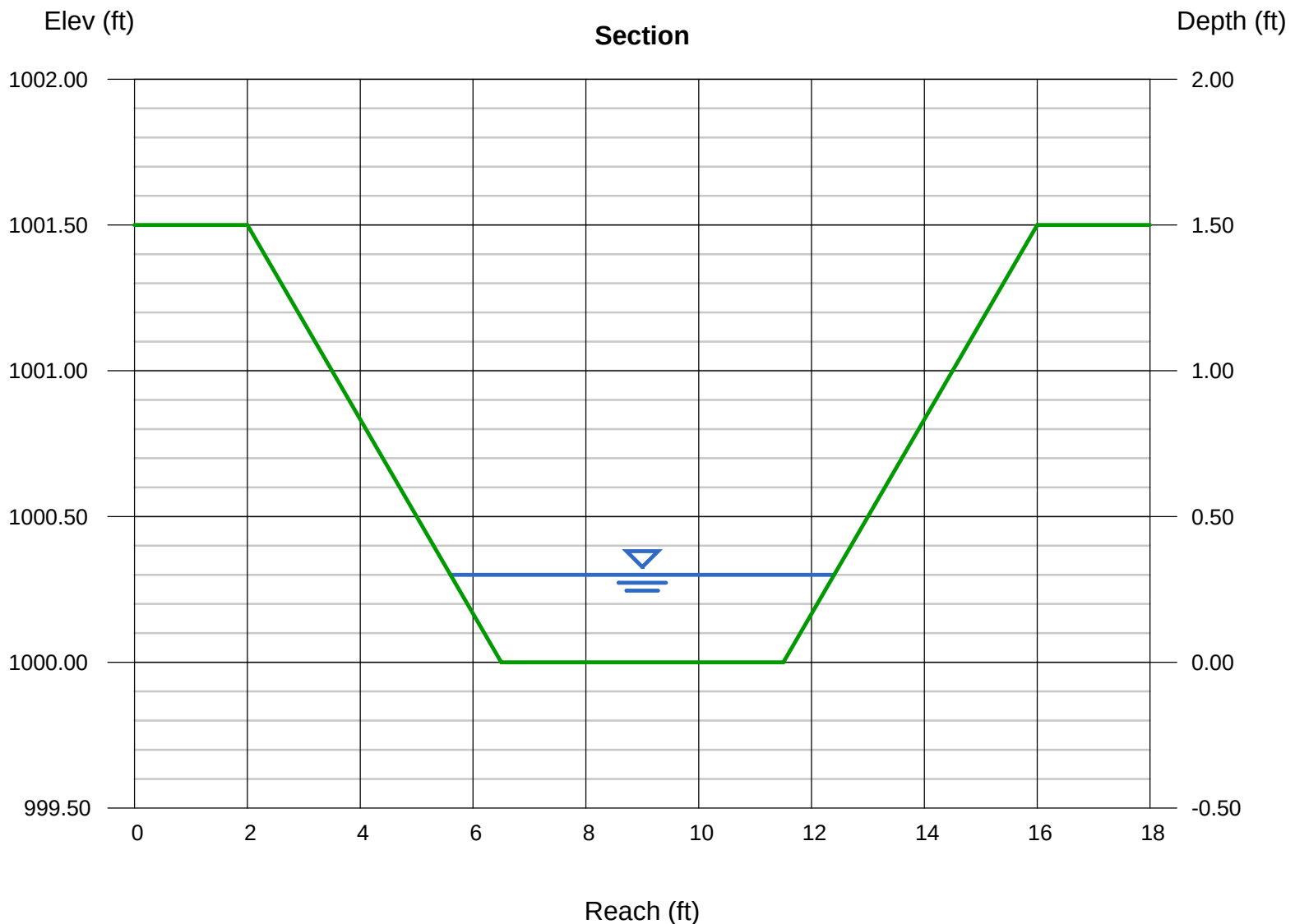
Bottom Width (ft) = 5.00
Side Slopes (z:1) = 3.00, 3.00
Total Depth (ft) = 1.50
Invert Elev (ft) = 1000.00
Slope (%) = 1.40
N-Value = 0.030

Calculations

Compute by: Known Q
Known Q (cfs) = 4.08

Highlighted

Depth (ft) = 0.30
Q (cfs) = 4.075
Area (sqft) = 1.77
Velocity (ft/s) = 2.30
Wetted Perim (ft) = 6.90
Crit Depth, Yc (ft) = 0.26
Top Width (ft) = 6.80
EGL (ft) = 0.38



Channel Report

GRASS SWALE #8

Trapezoidal

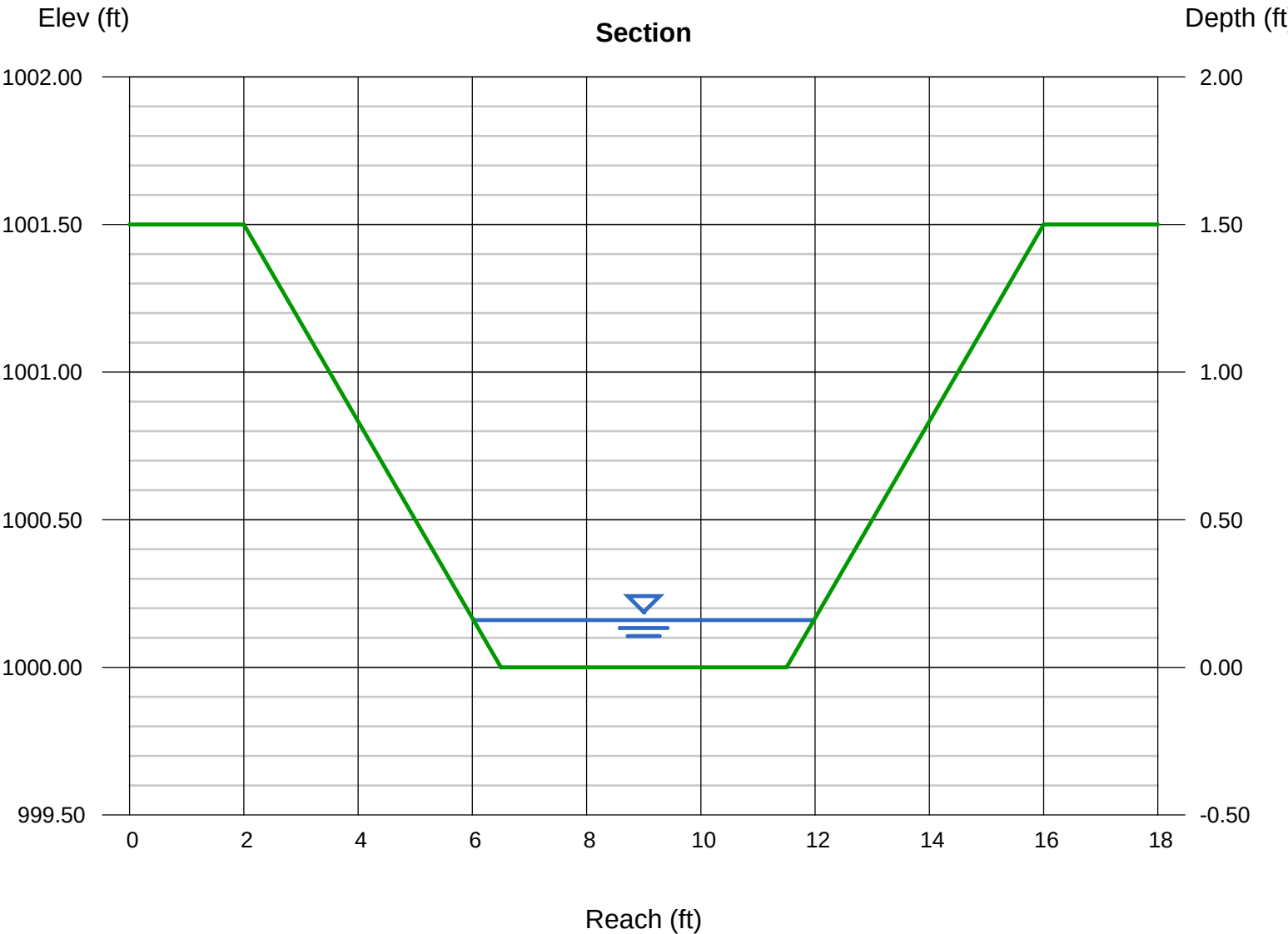
Bottom Width (ft) = 5.00
Side Slopes (z:1) = 3.00, 3.00
Total Depth (ft) = 1.50
Invert Elev (ft) = 1000.00
Slope (%) = 1.00
N-Value = 0.030

Calculations

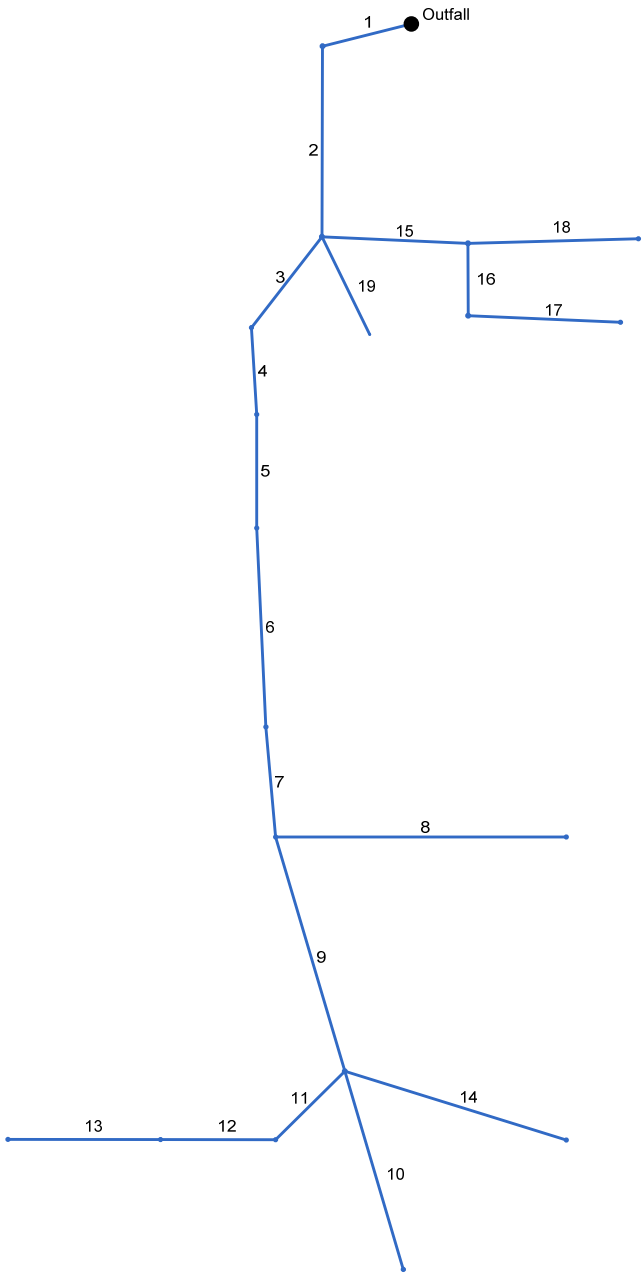
Compute by: Known Q
Known Q (cfs) = 1.09

Highlighted

Depth (ft) = 0.16
Q (cfs) = 1.086
Area (sqft) = 0.88
Velocity (ft/s) = 1.24
Wetted Perim (ft) = 6.01
Crit Depth, Yc (ft) = 0.12
Top Width (ft) = 5.96
EGL (ft) = 0.18



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



Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
1	End	120.181	165.841	MH	0.00	0.00	0.00	0.0	561.00	0.51	561.61	54	Cir	0.010	0.97	576.29	69
2	1	250.938	-75.672	MH	0.00	0.00	0.00	0.0	561.61	0.50	562.86	54	Cir	0.010	1.00	578.72	68
3	2	151.270	37.567	DrGrt	1.58	0.00	0.00	0.0	562.86	0.50	563.62	48	Cir	0.010	1.06	575.46	67
4	3	114.501	-41.244	DrGrt	10.38	0.00	0.00	0.0	563.62	0.50	564.19	48	Cir	0.010	0.50	576.52	66
5	4	149.551	3.508	DrGrt	8.38	0.00	0.00	0.0	564.19	0.50	564.94	48	Cir	0.010	0.50	577.75	65
6	5	262.140	-2.650	DrGrt	6.11	0.00	0.00	0.0	564.94	0.50	566.25	48	Cir	0.010	0.50	580.61	64
7	6	145.572	-2.339	DrGrt	21.26	0.00	0.00	0.0	566.25	0.52	567.00	48	Cir	0.010	1.80	578.05	63
8	7	381.315	-85.010	Genr	10.92	0.00	0.00	0.0	571.79	1.00	575.60	18	Cir	0.010	1.00	578.12	74
9	7	321.526	-11.396	MH	0.00	0.00	0.00	0.0	567.00	0.50	568.61	36	Cir	0.010	0.90	580.25	62
10	9	271.923	0.000	DrGrt	4.53	0.00	0.00	0.0	570.48	1.00	573.20	12	Cir	0.010	1.00	576.23	61
11	9	127.799	61.591	DrGrt	15.08	0.00	0.00	0.0	568.61	0.50	569.25	36	Cir	0.010	1.12	574.30	72
12	11	150.934	44.850	DrGrt	9.66	0.00	0.00	0.0	569.25	0.50	570.00	24	Cir	0.010	0.50	575.43	71
13	12	200.000	0.000	DrGrt	8.33	0.00	0.00	0.0	570.00	1.95	573.90	18	Cir	0.010	1.00	576.93	70
14	9	304.231	-56.309	Genr	21.69	0.00	0.00	0.0	569.88	0.50	571.40	24	Cir	0.010	1.00	574.38	73
15	2	191.726	-87.591	MH	0.00	0.00	0.00	0.0	566.20	1.00	568.12	24	Cir	0.010	1.00	576.46	79
16	15	95.299	87.371	MH	0.00	0.00	0.00	0.0	568.12	0.50	568.60	24	Cir	0.010	1.00	576.89	81
17	16	200.134	-87.494	Genr	10.91	0.00	0.00	0.0	568.60	0.50	569.60	24	Cir	0.010	1.00	573.14	80
18	15	223.391	-4.129	Genr	5.16	0.00	0.00	0.0	568.62	0.75	570.30	18	Cir	0.010	1.00	572.78	78
19	2	142.950	-26.027	None	28.44	0.00	0.00	0.0	566.12	1.00	567.55	24	Cir	0.010	1.00	569.19	101
Project File: REVISED 2 CLEAN WATER SYSTEM.stm												Number of lines: 19				Date: 7/31/2017	

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
1	12	Manhole	576.29	Cir	4.00	4.00	54	Cir	561.61	54	Cir	561.61
2	11	Manhole	578.72	Cir	4.00	4.00	54	Cir	562.86	48 24 24	Cir Cir Cir	562.86 566.20 566.12
3	10	DropGrate	575.46	Cir	3.00	3.00	48	Cir	563.62	48	Cir	563.62
4	9	DropGrate	576.52	Cir	3.00	3.00	48	Cir	564.19	48	Cir	564.19
5	8	DropGrate	577.75	Cir	3.00	3.00	48	Cir	564.94	48	Cir	564.94
6	7	DropGrate	580.61	Cir	3.00	3.00	48	Cir	566.25	48	Cir	566.25
7	6	DropGrate	578.05	Cir	3.00	3.00	48	Cir	567.00	18 36	Cir Cir	571.79 567.00
8	17	Generic	578.12	Cir	3.00	3.00	18	Cir	575.60			
9	5	Manhole	580.25	Cir	4.00	4.00	36	Cir	568.61	12 36 24	Cir Cir Cir	570.48 568.61 569.88
10	4	DropGrate	576.23	Cir	3.00	3.00	12	Cir	573.20			
11	15	DropGrate	574.30	Cir	3.00	3.00	36	Cir	569.25	24	Cir	569.25
12	14	DropGrate	575.43	Cir	3.00	3.00	24	Cir	570.00	18	Cir	570.00
13	13	DropGrate	576.93	Cir	3.00	3.00	18	Cir	573.90			
14	16	Generic	574.38	Cir	3.00	3.00	24	Cir	571.40			
15	21	Manhole	576.46	Cir	4.00	4.00	24	Cir	568.12	24 18	Cir Cir	568.12 568.62
16	20	Manhole	576.89	Cir	4.00	4.00	24	Cir	568.60	24	Cir	568.60
17	19	Generic	573.14	Cir	3.00	3.00	24	Cir	569.60			
18	18	Generic	572.78	Cir	3.00	3.00	18	Cir	570.30			
19	NULL 2	None	569.19	n/a	n/a	n/a	24	Cir	567.55			
Project File: REVISED 2 CLEAN WATER SYSTEM.stm							Number of Structures: 19			Run Date: 7/31/2017		

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1	69	162.4	54	Cir	120.181	561.00	561.61	0.508	564.72	565.33	2.01	565.33	End	Manhole
2	68	162.4	54	Cir	250.938	561.61	562.86	0.498	565.33	566.58	2.07	566.58	1	Manhole
3	67	117.9	48	Cir	151.270	562.86	563.62	0.502	566.58	566.89	n/a	566.89	2	DropGrate
4	66	116.3	48	Cir	114.501	563.62	564.19	0.498	566.89	567.44	n/a	567.44	3	DropGrate
5	65	106.0	48	Cir	149.551	564.19	564.94	0.502	567.44	568.05	n/a	568.05	4	DropGrate
6	64	97.59	48	Cir	262.140	564.94	566.25	0.500	568.05	569.24	n/a	569.24	5	DropGrate
7	63	91.47	48	Cir	145.572	566.25	567.00	0.515	569.24	569.90	n/a	569.90	6	DropGrate
8	74	10.92	18	Cir	381.315	571.79	575.60	0.999	572.81	576.87	n/a	576.87	7	Generic
9	62	59.30	36	Cir	321.526	567.00	568.61	0.501	569.90	571.10	n/a	571.10	7	Manhole
10	61	4.53	12	Cir	271.923	570.48	573.20	1.000	571.28	574.09	n/a	574.09	9	DropGrate
11	72	33.07	36	Cir	127.799	568.61	569.25	0.501	571.10	571.11	n/a	571.11	9	DropGrate
12	71	17.99	24	Cir	150.934	569.25	570.00	0.497	571.11	571.53	n/a	571.53	11	DropGrate
13	70	8.33	18	Cir	200.000	570.00	573.90	1.950	571.53	575.02	n/a	575.02	12	DropGrate
14	73	21.69	24	Cir	304.231	569.88	571.40	0.500	571.61	573.13	n/a	574.01	9	Generic
15	79	16.07	24	Cir	191.726	566.20	568.12	1.001	567.25	569.56	n/a	569.56	2	Manhole
16	81	10.91	24	Cir	95.299	568.12	568.60	0.504	569.56	569.78	n/a	569.78	15	Manhole
17	80	10.91	24	Cir	200.134	568.60	569.60	0.500	569.78	570.78	n/a	570.78	16	Generic
18	78	5.16	18	Cir	223.391	568.62	570.30	0.752	569.56	571.17	n/a	571.17	15	Generic
19	101	28.44	24	Cir	142.950	566.12	567.55	1.000	567.70	569.39	n/a	569.39	2	None
Project File: REVISED 2 CLEAN WATER SYSTEM.stm									Number of lines: 19				Run Date: 7/31/2017	
NOTES: Return period = 10 Yrs.														

Inlet Report

Line No	Inlet ID	Q = CIA	Q carry	Q capt	Q Byp	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
		(cfs)	(cfs)	(cfs)	(cfs)		Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
1	12	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
2	11	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
3	10	1.58*	0.00	1.58	0.00	DrGrt	0.0	0.00	4.00	2.00	2.00	Sag	2.00	0.050	0.050	0.000	0.16	8.51	0.16	8.51	0.0	Off
4	9	10.38*	6.00	16.38	0.00	DrGrt	0.0	0.00	4.00	2.00	2.00	Sag	2.00	0.030	0.030	0.000	0.78	53.67	0.78	53.67	0.0	Off
5	8	8.38*	0.00	2.38	6.00	DrGrt	0.0	0.00	4.00	2.00	2.00	0.010	2.00	0.030	0.030	0.013	0.26	19.40	0.26	19.40	0.0	4
6	7	6.11*	0.00	6.11	0.00	DrGrt	0.0	0.00	4.00	2.00	2.00	Sag	2.00	0.020	0.020	0.000	0.40	42.16	0.40	42.16	0.0	Off
7	6	21.26*	0.00	21.26	0.00	DrGrt	0.0	0.00	4.00	2.00	2.00	Sag	2.00	0.030	0.030	0.000	0.98	67.23	0.98	67.23	0.0	Off
8	17	10.92*	0.00	10.92	0.00	Genr	0.0	0.00	0.00	0.00	0.00	Sag	2.00	0.050	0.020	0.000	0.30	12.00	0.30	12.00	0.0	Off
9	5	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
10	4	4.53*	0.00	4.53	0.00	DrGrt	0.0	0.00	4.00	2.00	2.00	Sag	2.00	0.027	0.027	0.000	0.33	26.37	0.33	26.37	0.0	Off
11	15	15.08*	14.12	29.20	0.00	DrGrt	0.0	0.00	4.00	2.00	2.00	Sag	2.00	0.030	0.030	0.000	1.85	125.06	1.85	125.06	0.0	Off
12	14	9.66*	6.61	2.15	14.12	DrGrt	0.0	0.00	4.00	2.00	2.00	0.010	2.00	0.011	0.011	0.013	0.24	45.82	0.24	45.82	0.0	11
13	13	8.33*	0.00	1.72	6.61	DrGrt	0.0	0.00	4.00	2.00	2.00	0.010	2.00	0.016	0.016	0.013	0.21	28.38	0.21	28.38	0.0	12
14	16	21.69*	0.00	21.69	0.00	Genr	0.0	0.00	0.00	0.00	0.00	Sag	2.00	0.050	0.020	0.000	0.30	12.00	0.30	12.00	0.0	Off
15	21	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
16	20	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
17	19	10.91*	0.00	10.91	0.00	Genr	0.0	0.00	0.00	0.00	0.00	Sag	2.00	0.050	0.020	0.000	0.30	12.00	0.30	12.00	0.0	Off
18	18	5.16*	0.00	5.16	0.00	Genr	0.0	0.00	0.00	0.00	0.00	Sag	2.00	0.050	0.020	0.000	0.30	12.00	0.30	12.00	0.0	Off
19	NULL 2	28.44*	0.00	0.00	28.44	None	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off

Project File: REVISED 2 CLEAN WATER SYSTEM.stm

Number of lines: 19

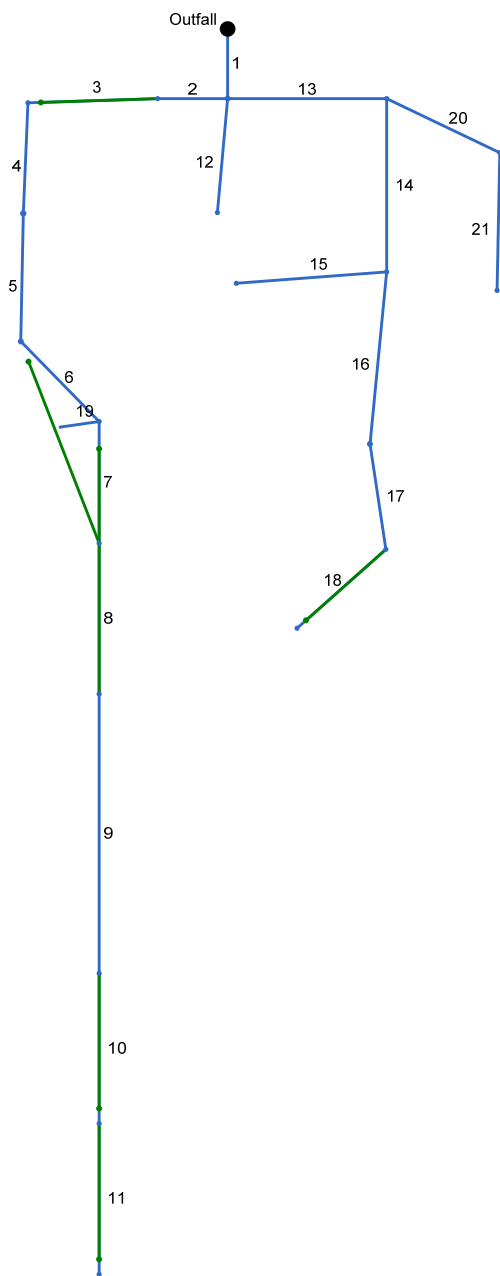
Run Date: 7/31/2017

NOTES: Inlet N-Values = 0.016; Intensity = 88.24 / (Inlet time + 15.50) ^ 0.83; Return period = 10 Yrs. ; * Indicates Known Q added. All curb inlets are throat.

Storm Sewer Inlet Time Tabulation

Line No.	Line ID	Tc Method	Sheet Flow					Shallow Concentrated Flow					Channel Flow							Total
			n-Value	flow Length (ft)	2-yr 24h P (in)	Land Slope (%)	Travel Time (min)	flow Length (ft)	Water Slope (%)	Surf Descr	Ave Vel (ft/s)	Travel Time (min)	X-sec Area (sqft)	Wetted Perim (ft)	Chan Slope (%)	n-Value	Vel	flow Length (ft)	Travel Time (min)	Travel Time (min)
1	69	User																		0.00
2	68	User																		0.00
3	67	User																		0.00
4	66	User																		0.00
5	65	User																		0.00
6	64	User																		0.00
7	63	User																		0.00
8	74	User																		0.00
9	62	User																		0.00
10	61	User																		0.00
11	72	User																		0.00
12	71	User																		0.00
13	70	User																		0.00
14	73	User																		0.00
15	79	User																		0.00
16	81	User																		0.00
17	80	User																		0.00
18	78	User																		0.00
19	101	User																		0.00
Project File: REVISED 2 CLEAN WATER SYSTEM.stm					Min. Tc used for intensity calculations = 5 min							Number of lines: 19				Date: 7/31/2017				

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



Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
1	End	92.396	89.994	MH	0.00	0.00	0.00	0.0	562.00	2.71	564.50	48	Cir	0.010	1.00	578.44	100
2	1	92.491	90.006	Genr	1.84	0.00	0.00	0.0	565.21	0.79	565.94	48	Cir	0.010	0.50	576.47	98
3	2	171.445	-1.904	DrGrt	7.14	0.00	0.00	0.0	565.94	0.50	566.80	48	Cir	0.010	1.50	572.81	89
4	3	146.864	-85.682	Genr	4.03	0.00	0.00	0.0	566.80	1.18	568.53	48	Cir	0.010	0.50	577.47	105
5	4	169.729	-1.299	MH	0.00	0.00	0.00	0.0	568.53	0.50	569.38	48	Cir	0.010	0.75	580.58	104
6	5	148.363	-45.370	DrGrt	5.65	0.00	0.00	0.0	569.38	0.51	570.14	48	Cir	0.010	1.50	578.61	87
7	6	161.532	44.255	Genr	3.89	0.00	0.00	0.0	570.14	0.50	570.95	36	Cir	0.010	0.50	579.38	86
8	7	199.888	0.000	Genr	6.01	0.00	0.00	0.0	570.95	0.50	571.95	30	Cir	0.010	0.50	580.38	85
9	8	370.456	0.000	Genr	6.01	0.00	0.00	0.0	571.95	0.50	573.80	30	Cir	0.010	0.50	580.34	84
10	9	199.290	0.000	Genr	7.56	0.00	0.00	0.0	573.80	0.50	574.80	24	Cir	0.010	0.50	579.32	83
11	10	200.125	0.000	DrGrt	9.35	0.00	0.00	0.0	574.80	0.50	575.80	18	Cir	0.010	1.00	578.29	82
12	1	151.908	5.124	DrGrt	3.25	0.00	0.00	0.0	574.91	2.03	578.00	12	Cir	0.010	1.00	580.00	99
13	1	210.006	-89.994	DrGrt	10.02	0.00	0.00	0.0	563.38	1.53	566.60	48	Cir	0.010	1.50	572.60	112
14	13	229.886	90.000	Genr	3.75	0.00	0.00	0.0	566.60	1.50	570.05	30	Cir	0.010	1.50	577.44	92
15	14	199.055	85.619	Genr	3.18	0.00	0.00	0.0	574.22	2.00	578.20	12	Cir	0.010	1.00	580.23	95
16	14	229.445	5.522	MH	0.00	0.00	0.00	0.0	570.05	0.50	571.20	24	Cir	0.010	0.29	579.87	111
17	16	141.222	-14.085	Genr	11.66	0.00	0.00	0.0	571.20	0.50	571.91	24	Cir	0.010	1.30	576.28	110
18	17	157.192	56.817	DrGrt	6.29	0.00	0.00	0.0	571.91	0.88	573.30	18	Cir	0.010	1.00	575.84	90
19	6	51.867	125.995	None	50.62	0.00	0.00	0.0	570.52	0.79	570.93	36	Cir	0.010	1.00	574.16	103
20	13	165.907	25.656	Genr	9.16	0.00	0.00	0.0	567.17	1.92	570.35	18	Cir	0.010	1.39	574.33	107
21	20	182.771	65.482	Genr	3.89	0.00	0.00	0.0	570.35	2.00	574.00	12	Cir	0.010	1.00	576.18	106
Project File: FINAL DIRTY SYSTEM.stm												Number of lines: 21				Date: 7/31/2017	

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
1	37	Manhole	578.44	Cir	4.00	4.00	48	Cir	564.50	48 12 48	Cir Cir Cir	565.21 574.91 563.38
2	30	Generic	576.47	Cir	3.00	3.00	48	Cir	565.94	48	Cir	565.94
3	29	DropGrate	572.81	Cir	3.00	3.00	48	Cir	566.80	48	Cir	566.80
4	38	Generic	577.47	Cir	4.50	4.50	48	Cir	568.53	48	Cir	568.53
5	28	Manhole	580.58	Cir	4.00	4.00	48	Cir	569.38	48	Cir	569.38
6	27	DropGrate	578.61	Cir	3.00	3.00	48	Cir	570.14	36 36	Cir Cir	570.14 570.52
7	26	Generic	579.38	Cir	3.00	3.00	36	Cir	570.95	30	Cir	570.95
8	25	Generic	580.38	Cir	3.00	3.00	30	Cir	571.95	30	Cir	571.95
9	24	Generic	580.34	Cir	3.00	3.00	30	Cir	573.80	24	Cir	573.80
10	23	Generic	579.32	Cir	3.00	3.00	24	Cir	574.80	18	Cir	574.80
11	22	DropGrate	578.29	Cir	3.00	3.00	18	Cir	575.80			
12	36	DropGrate	580.00	Cir	3.00	3.00	12	Cir	578.00			
13	34	DropGrate	572.60	Cir	3.00	3.00	48	Cir	566.60	30 18	Cir Cir	566.60 567.17
14	33	Generic	577.44	Cir	3.00	3.00	30	Cir	570.05	12 24	Cir Cir	574.22 570.05
15	35	Generic	580.23	Cir	3.00	3.00	12	Cir	578.20			
16	41	Manhole	579.87	Cir	4.00	4.00	24	Cir	571.20	24	Cir	571.20
17	32	Generic	576.28	Cir	3.00	3.00	24	Cir	571.91	18	Cir	571.91
18	31	DropGrate	575.84	Cir	3.00	3.00	18	Cir	573.30			
19	NULL 1	None	574.16	n/a	n/a	n/a	36	Cir	570.93			
20	40	Generic	574.33	Cir	3.00	3.00	18	Cir	570.35	12	Cir	570.35
Project File: FINAL DIRTY SYSTEM.stm							Number of Structures: 21			Run Date: 7/31/2017		

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
21	39	Generic	576.18	Cir	3.00	3.00	12	Cir	574.00			
Project File: FINAL DIRTY SYSTEM.stm							Number of Structures: 21			Run Date: 7/31/2017		

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1	100	153.3	48	Cir	92.396	562.00	564.50	2.706	565.62	568.12	n/a	568.12	End	Manhole
2	98	102.1	48	Cir	92.491	565.21	565.94	0.789	568.12	569.00	n/a	569.00	1	Generic
3	89	100.2	48	Cir	171.445	565.94	566.80	0.502	569.00	569.83	n/a	569.83	2	DropGrate
4	105	93.11	48	Cir	146.864	566.80	568.53	1.178	569.83	571.45	n/a	571.45	3	Generic
5	104	89.08	48	Cir	169.729	568.53	569.38	0.501	571.45	572.24	n/a	572.24	4	Manhole
6	87	89.08	48	Cir	148.363	569.38	570.14	0.512	572.24	573.00	n/a	573.00	5	DropGrate
7	86	32.81	36	Cir	161.532	570.14	570.95	0.501	573.00	572.81	n/a	572.81	6	Generic
8	85	28.92	30	Cir	199.888	570.95	571.95	0.500	572.81	573.78	n/a	573.78	7	Generic
9	84	22.91	30	Cir	370.456	571.95	573.80	0.499	573.78	575.43	n/a	575.43	8	Generic
10	83	16.91	24	Cir	199.290	573.80	574.80	0.502	575.43	576.28	n/a	576.28	9	Generic
11	82	9.35	18	Cir	200.125	574.80	575.80	0.500	576.28	577.05	n/a	577.60	10	DropGrate
12	99	3.25	12	Cir	151.908	574.91	578.00	2.034	575.41	578.77	n/a	578.77	1	DropGrate
13	112	47.94	48	Cir	210.006	563.38	566.60	1.533	568.12	568.67	n/a	568.67	1	DropGrate
14	92	24.87	30	Cir	229.886	566.60	570.05	1.501	568.67	571.75	n/a	571.75	13	Generic
15	95	3.18	12	Cir	199.055	574.22	578.20	1.999	574.71	578.96	n/a	578.96	14	Generic
16	111	17.95	24	Cir	229.445	570.05	571.20	0.501	571.75	572.73	n/a	572.73	14	Manhole
17	110	17.95	24	Cir	141.222	571.20	571.91	0.503	572.73	573.43	n/a	573.43	16	Generic
18	90	6.29	18	Cir	157.192	571.91	573.30	0.884	573.43	574.27	n/a	574.27	17	DropGrate
19	103	50.62	36	Cir	51.867	570.52	570.93	0.790	573.00	573.24	n/a	573.24	6	None
20	107	13.05	18	Cir	165.907	567.17	570.35	1.917	568.67	571.70	n/a	571.70	13	Generic
21	106	3.89	12	Cir	182.771	570.35	574.00	1.997	571.70	574.84	n/a	574.84	20	Generic

Project File: FINAL DIRTY SYSTEM.stm

Number of lines: 21

Run Date: 7/31/2017

NOTES: Return period = 25 Yrs.

Inlet Report

Line No	Inlet ID	Q = CIA	Q carry	Q capt	Q Byp	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
		(cfs)	(cfs)	(cfs)	(cfs)		Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
1	37	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
2	30	1.84*	0.00	1.84	0.00	Genr	0.0	0.00	0.00	0.00	0.00	0.010	2.00	0.050	0.036	0.013	0.23	5.61	0.23	5.61	0.0	3
3	29	7.14*	0.00	7.14	0.00	DrGrt	0.0	0.00	4.00	2.00	2.00	Sag	2.00	0.020	0.020	0.013	0.45	46.53	0.45	46.53	0.0	Off
4	38	4.03*	0.00	4.03	0.00	Genr	0.0	0.00	0.00	0.00	0.00	0.010	2.00	0.050	0.020	0.013	0.28	10.86	0.28	10.86	0.0	3
5	28	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
6	27	5.65*	0.00	5.65	0.00	DrGrt	0.0	0.00	4.00	2.00	2.00	Sag	2.00	0.020	0.020	0.000	0.38	40.12	0.38	40.12	0.0	Off
7	26	3.89*	0.00	3.89	0.00	Genr	0.0	0.00	0.00	0.00	0.00	0.005	2.00	0.050	0.020	0.013	0.31	12.25	0.31	12.25	0.0	5
8	25	6.01*	0.00	6.01	0.00	Genr	0.0	0.00	0.00	0.00	0.00	0.005	2.00	0.050	0.020	0.013	0.35	14.55	0.35	14.55	0.0	6
9	24	6.01*	0.00	6.01	0.00	Genr	0.0	0.00	0.00	0.00	0.00	0.005	2.00	0.050	0.020	0.013	0.35	14.55	0.35	14.55	0.0	10
10	23	7.56*	0.00	7.56	0.00	Genr	0.0	0.00	0.00	0.00	0.00	0.005	2.00	0.050	0.020	0.013	0.38	15.95	0.38	15.95	0.0	11
11	22	9.35*	0.00	9.35	0.00	DrGrt	0.0	0.00	4.00	2.00	2.00	Sag	2.00	0.020	0.020	0.000	0.53	55.32	0.53	55.32	0.0	Off
12	36	3.25*	0.00	3.25	0.00	DrGrt	0.0	0.00	4.00	2.00	2.00	Sag	2.00	0.020	0.020	0.000	0.26	28.35	0.26	28.35	0.0	Off
13	34	10.02*	0.00	10.02	0.00	DrGrt	0.0	0.00	4.00	2.00	2.00	Sag	2.00	0.020	0.020	0.000	0.56	57.84	0.56	57.84	0.0	Off
14	33	3.75*	0.00	3.75	0.00	Genr	0.0	0.00	0.00	0.00	0.00	0.013	2.00	0.050	0.014	0.013	0.25	12.36	0.25	12.36	0.0	13
15	35	3.18*	0.00	3.18	0.00	Genr	0.0	0.00	0.00	0.00	0.00	0.013	2.00	0.050	0.011	0.013	0.23	13.37	0.23	13.37	0.0	14
16	41	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
17	32	11.66*	0.00	11.66	0.00	Genr	0.0	0.00	0.00	0.00	0.00	0.013	2.00	0.050	0.020	0.013	0.37	15.65	0.37	15.65	0.0	18
18	31	6.29*	0.00	6.29	0.00	DrGrt	0.0	0.00	4.00	2.00	2.00	Sag	2.00	0.033	0.033	0.000	0.41	26.80	0.41	26.80	0.0	Off
19	NULL 1	50.62*	0.00	0.00	50.62	None	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
20	40	9.16*	0.00	9.16	0.00	Genr	0.0	0.00	0.00	0.00	0.00	0.013	2.00	0.050	0.020	0.013	0.35	14.25	0.35	14.25	0.0	13
21	39	3.89*	0.00	3.89	0.00	Genr	0.0	0.00	0.00	0.00	0.00	0.013	2.00	0.050	0.020	0.013	0.26	10.11	0.26	10.11	0.0	20

Project File: FINAL DIRTY SYSTEM.stm

Number of lines: 21

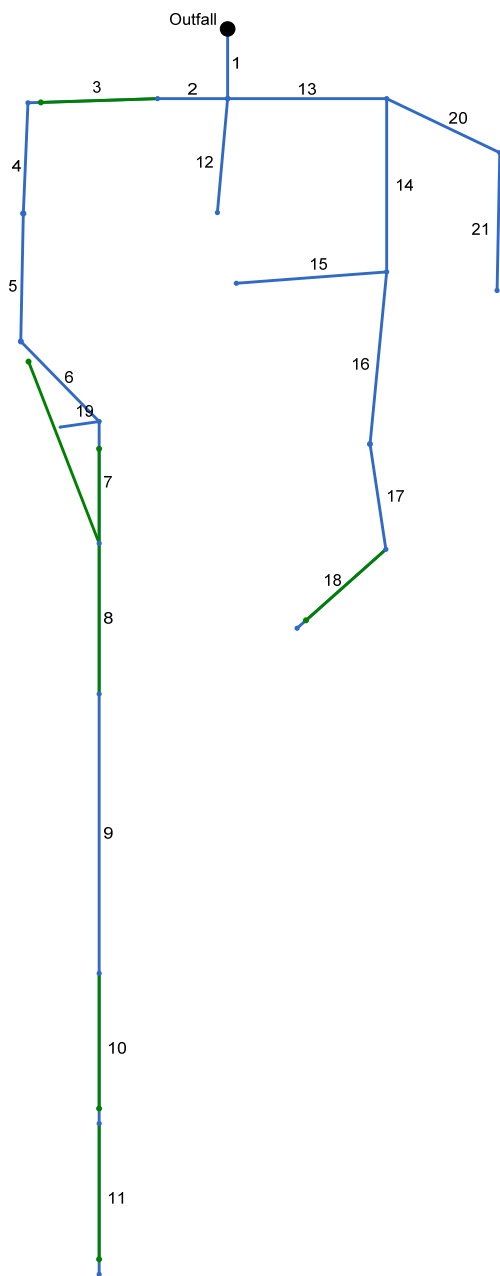
Run Date: 7/31/2017

NOTES: Inlet N-Values = 0.016; Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period = 25 Yrs. ; * Indicates Known Q added. All curb inlets are throat.

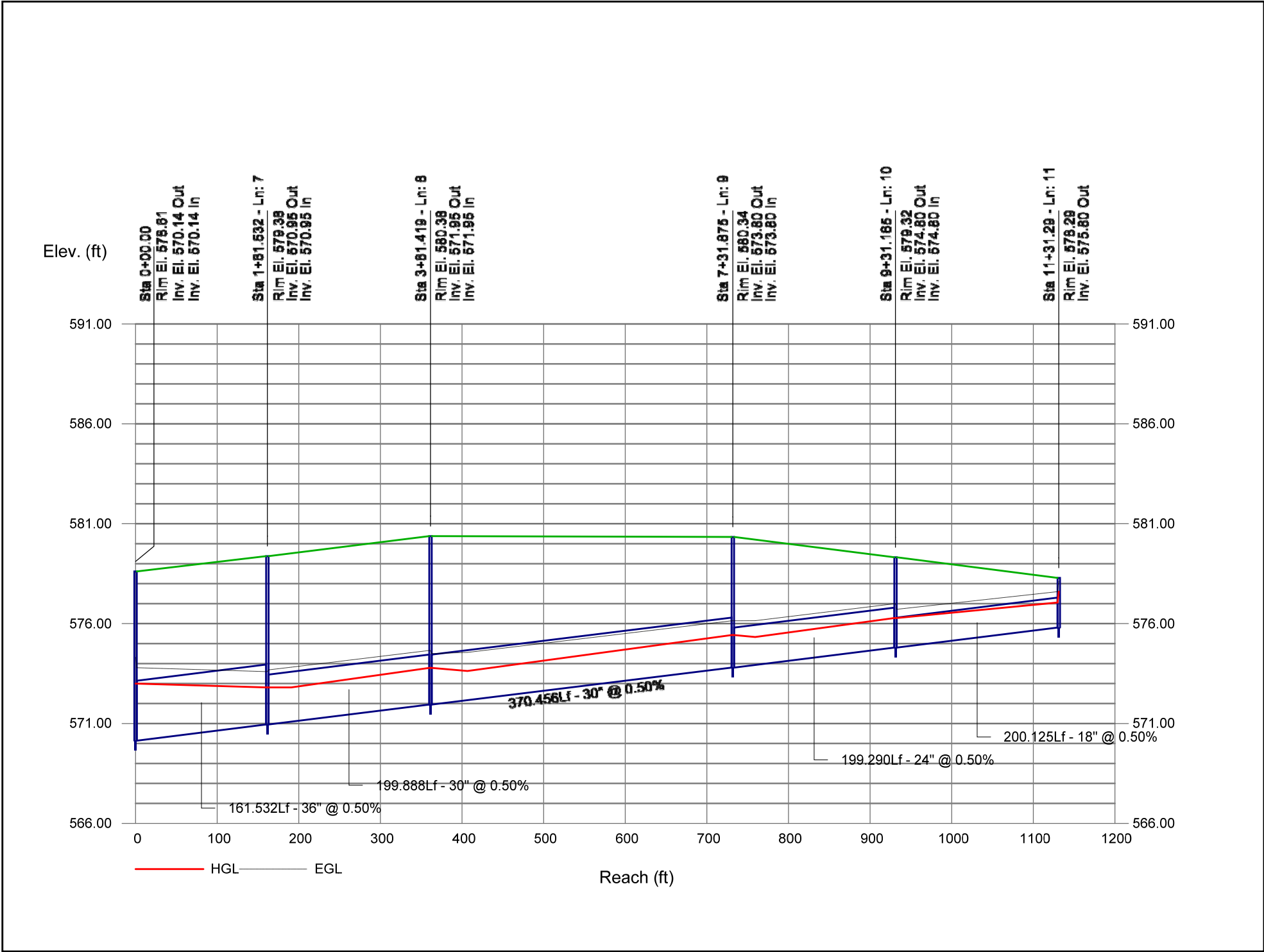
Storm Sewer Inlet Time Tabulation

Line No.	Line ID	Tc Method	Sheet Flow					Shallow Concentrated Flow					Channel Flow							Total
			n-Value	flow Length (ft)	2-yr 24h P (in)	Land Slope (%)	Travel Time (min)	flow Length (ft)	Water Slope (%)	Surf Descr	Ave Vel (ft/s)	Travel Time (min)	X-sec Area (sqft)	Wetted Perim (ft)	Chan Slope (%)	n-Value	Vel	flow Length (ft)	Travel Time (min)	Travel Time (min)
1	100	User																		0.00
2	98	User																		0.00
3	89	User																		0.00
4	105	User																		0.00
5	104	User																		0.00
6	87	User																		0.00
7	86	User																		0.00
8	85	User																		0.00
9	84	User																		0.00
10	83	User																		0.00
11	82	User																		0.00
12	99	User																		0.00
13	112	User																		0.00
14	92	User																		0.00
15	95	User																		0.00
16	111	User																		0.00
17	110	User																		0.00
18	90	User																		0.00
19	103	User																		0.00
20	107	User																		0.00
21	106	User																		0.00
Project File: FINAL DIRTY SYSTEM.stm					Min. Tc used for intensity calculations = 5 min							Number of lines: 21				Date: 7/31/2017				

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

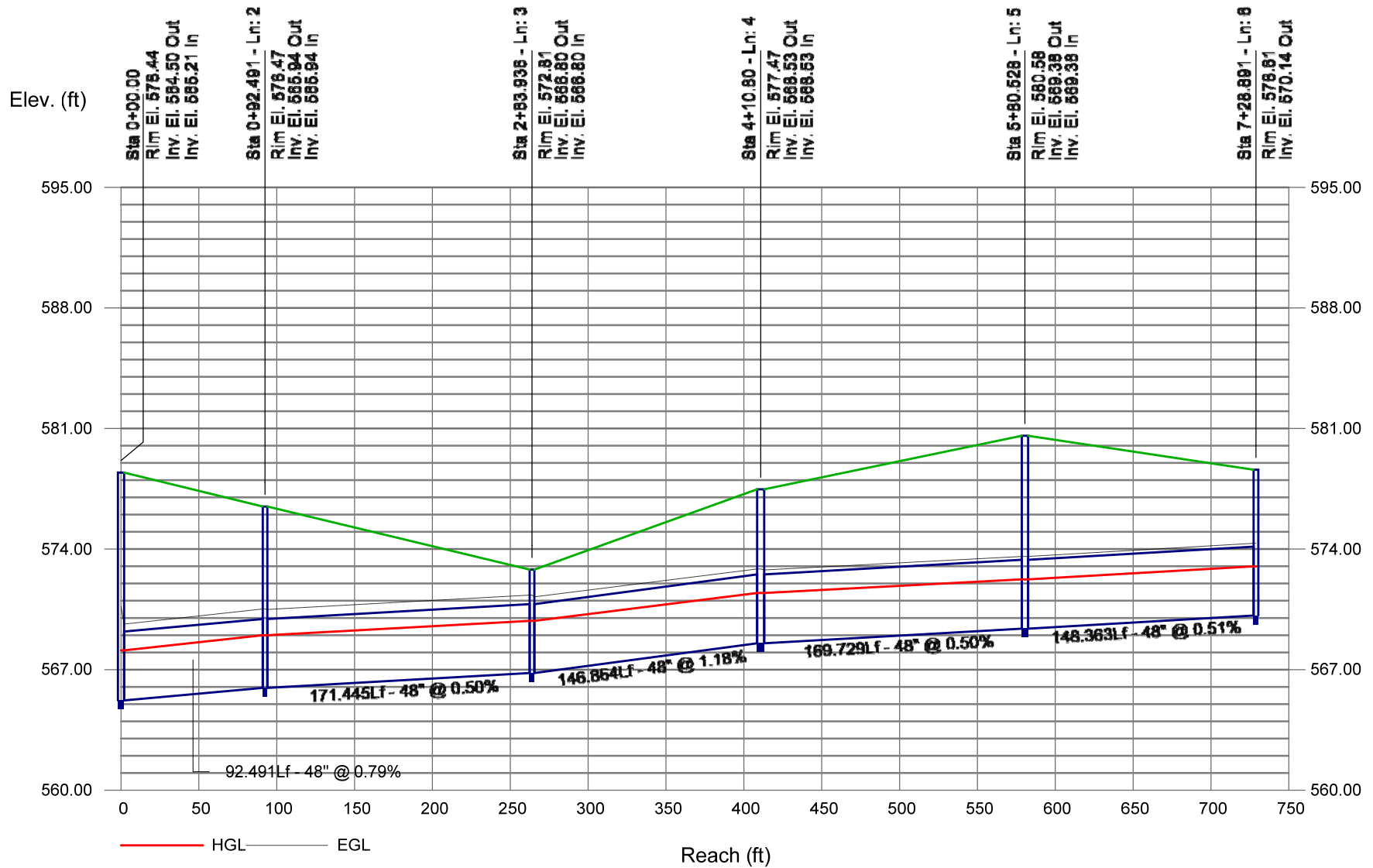


Storm Sewer Profile

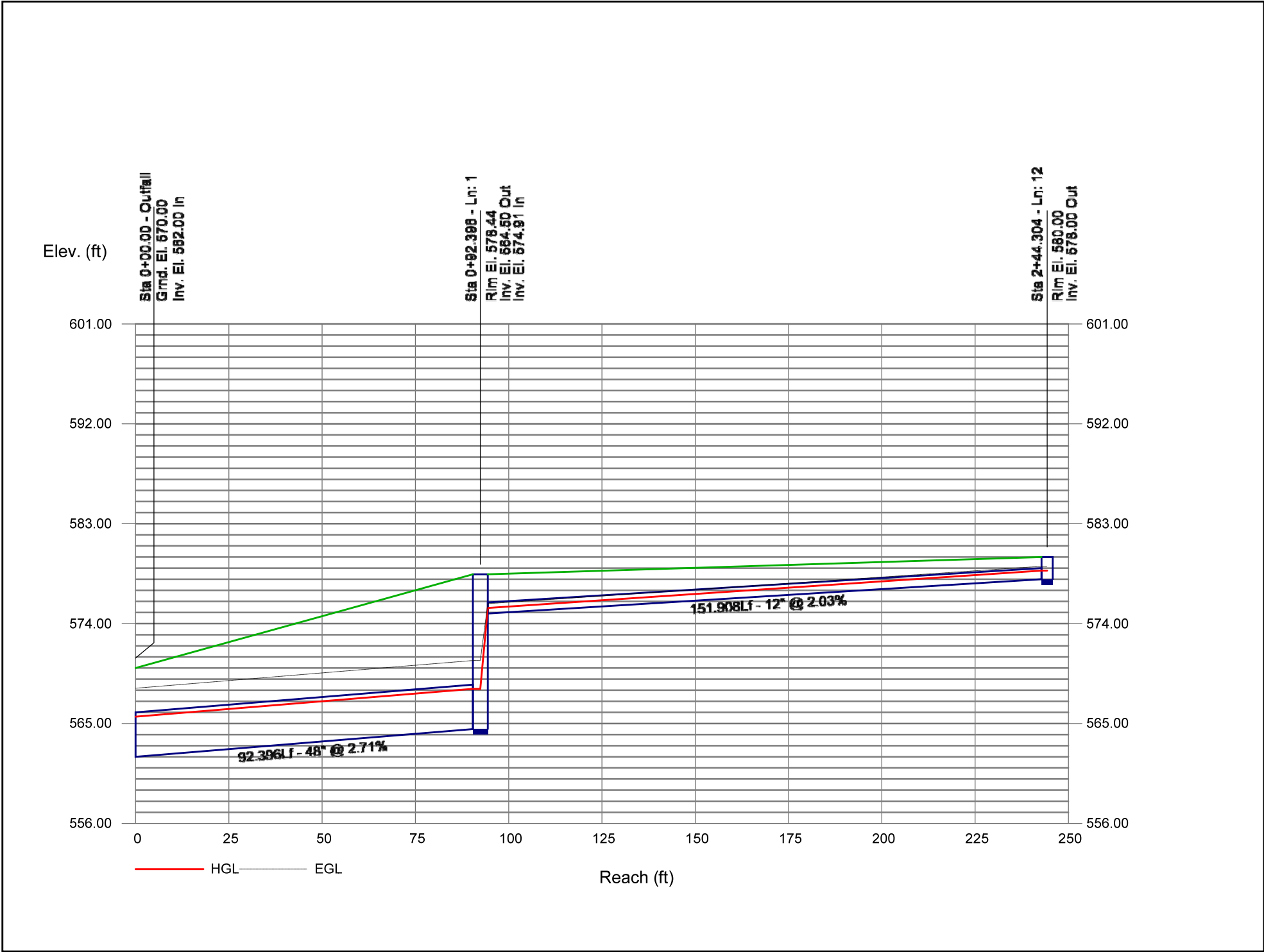


Storm Sewer Profile

Proj. file: New.stm

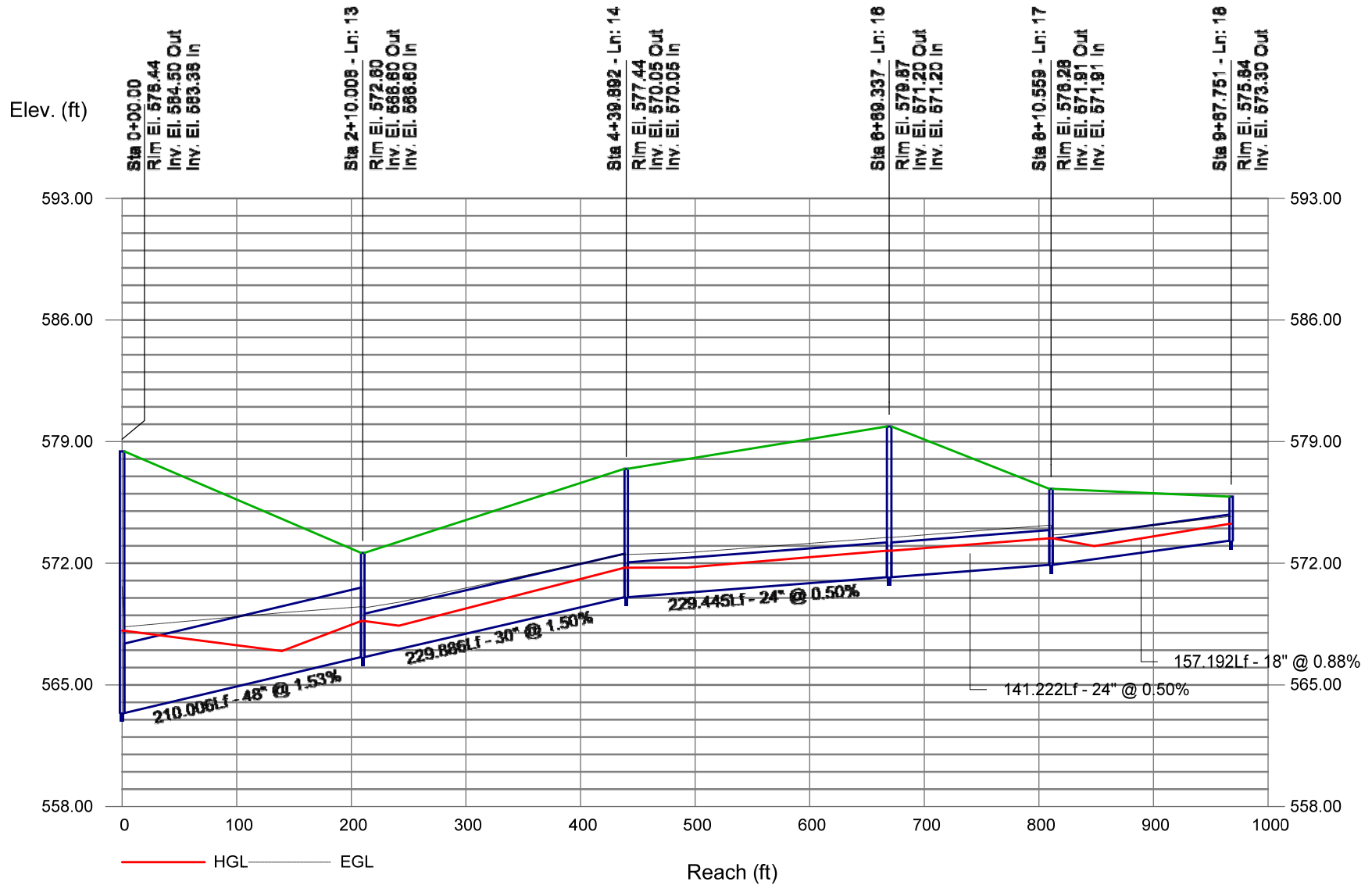


Storm Sewer Profile

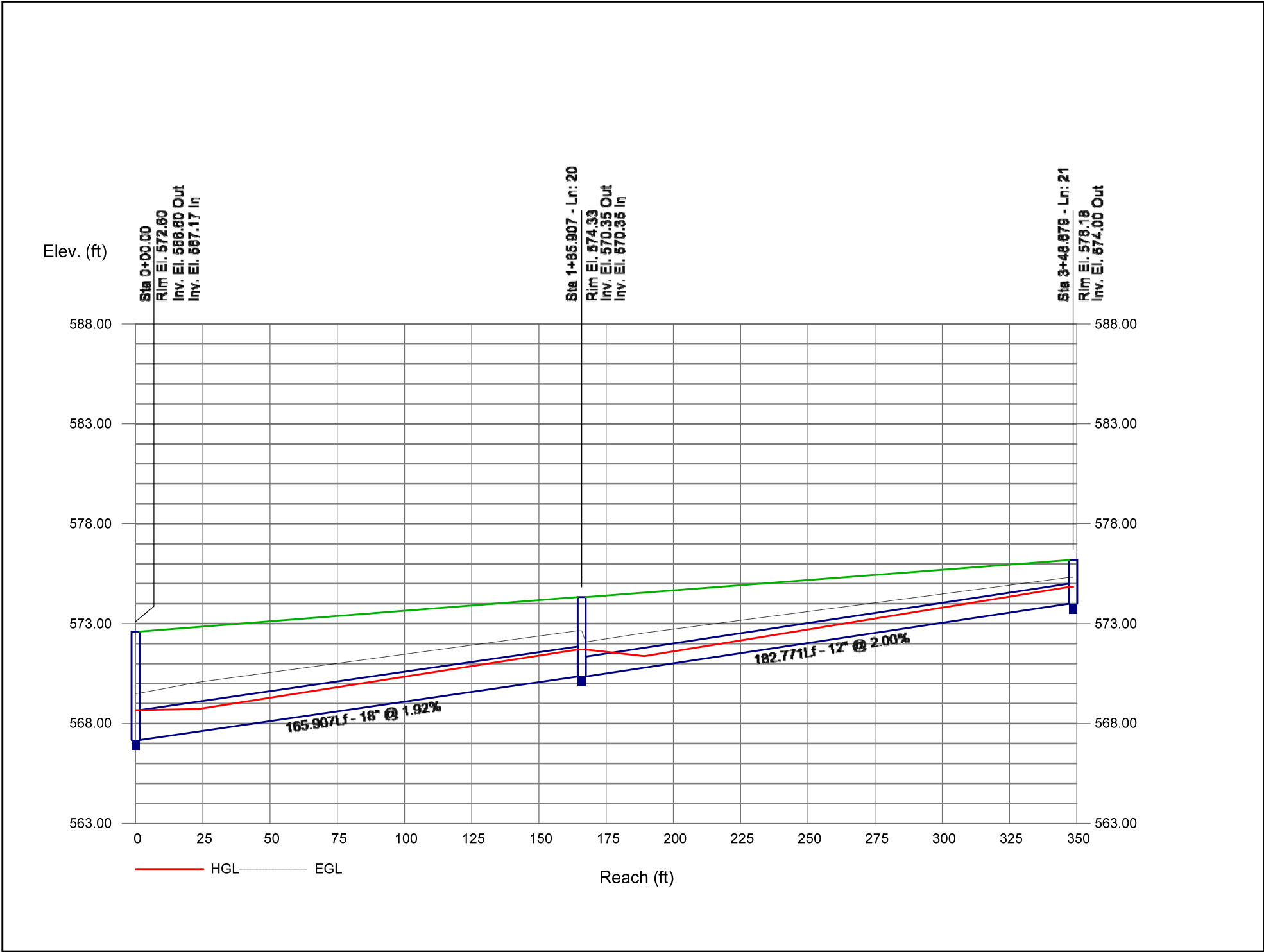


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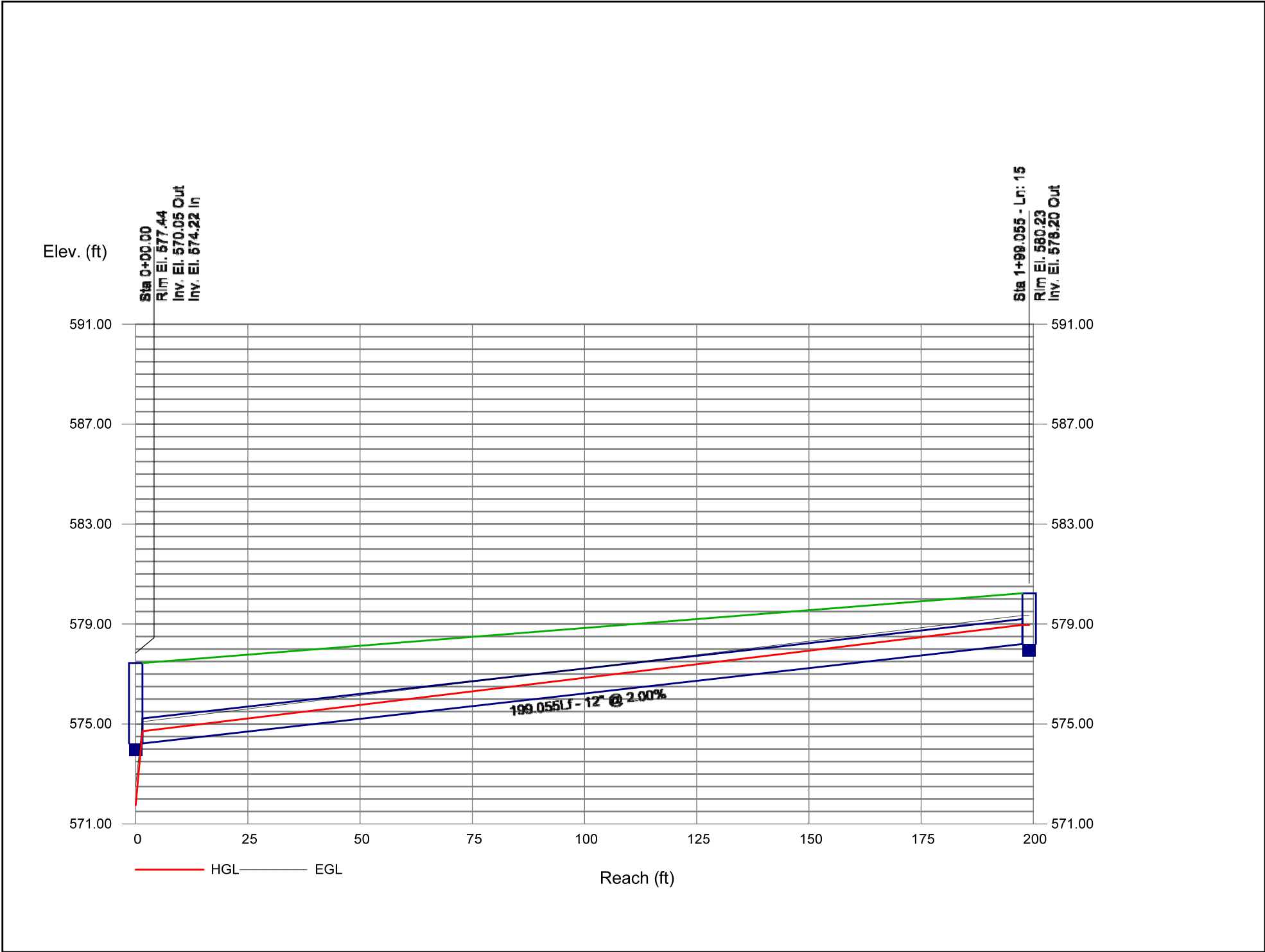
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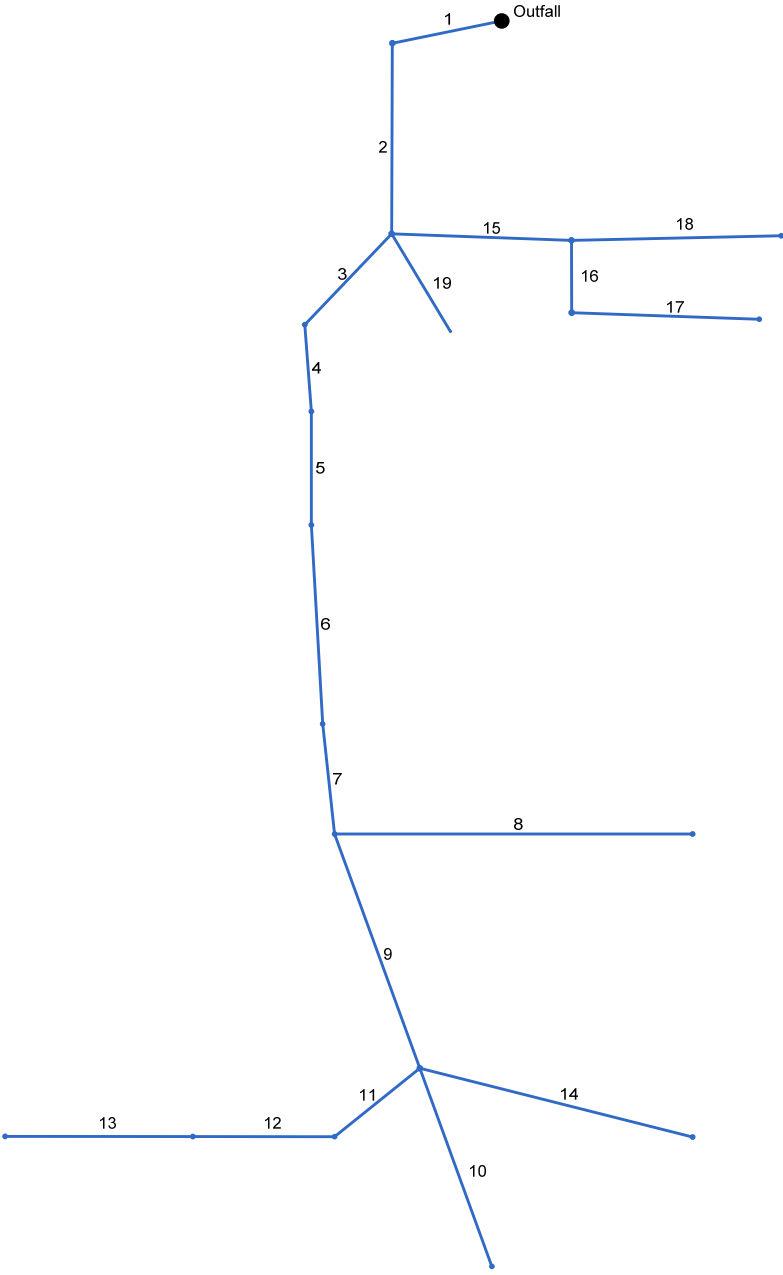
Storm Sewer Profile



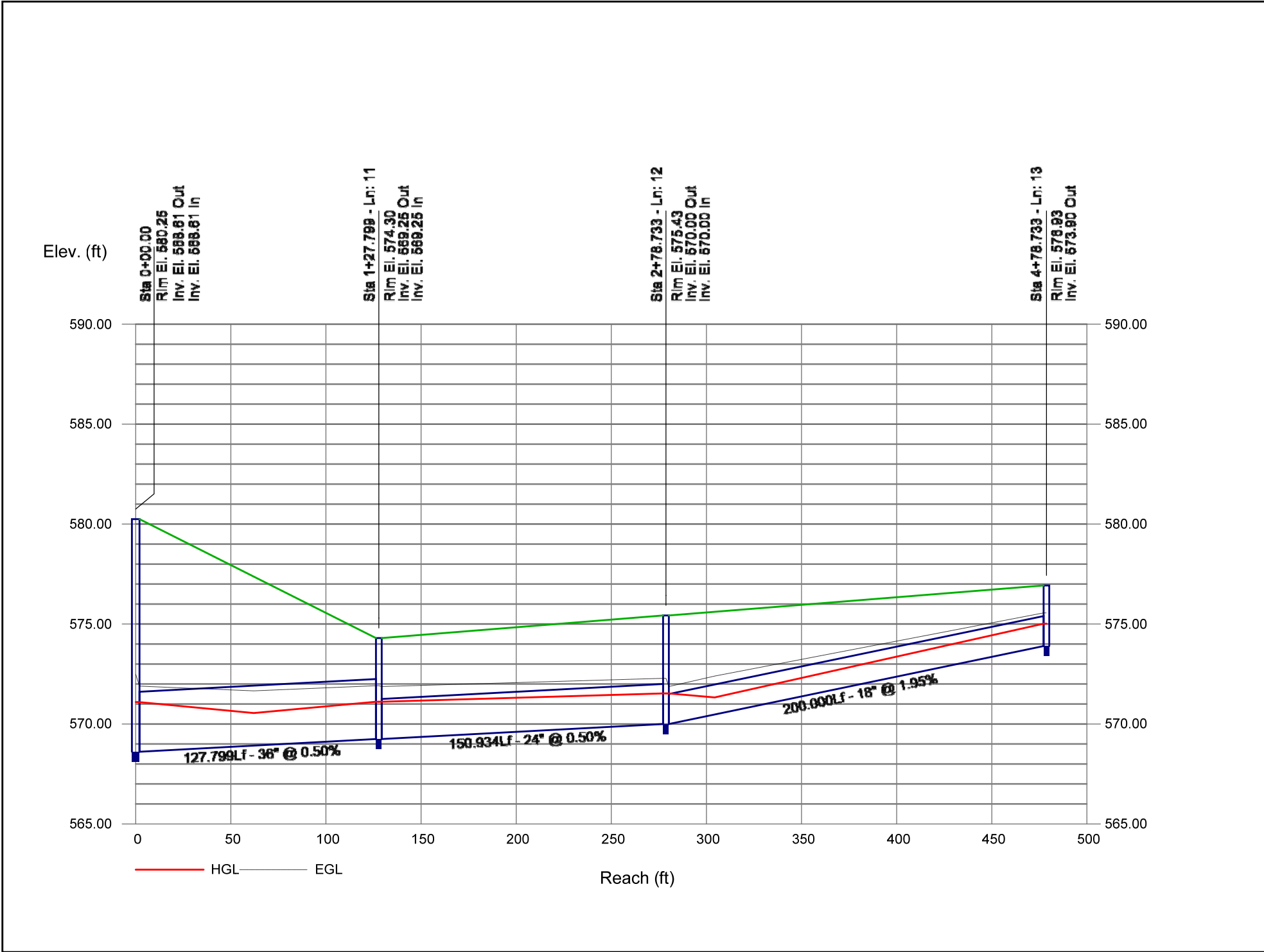
Storm Sewer Profile



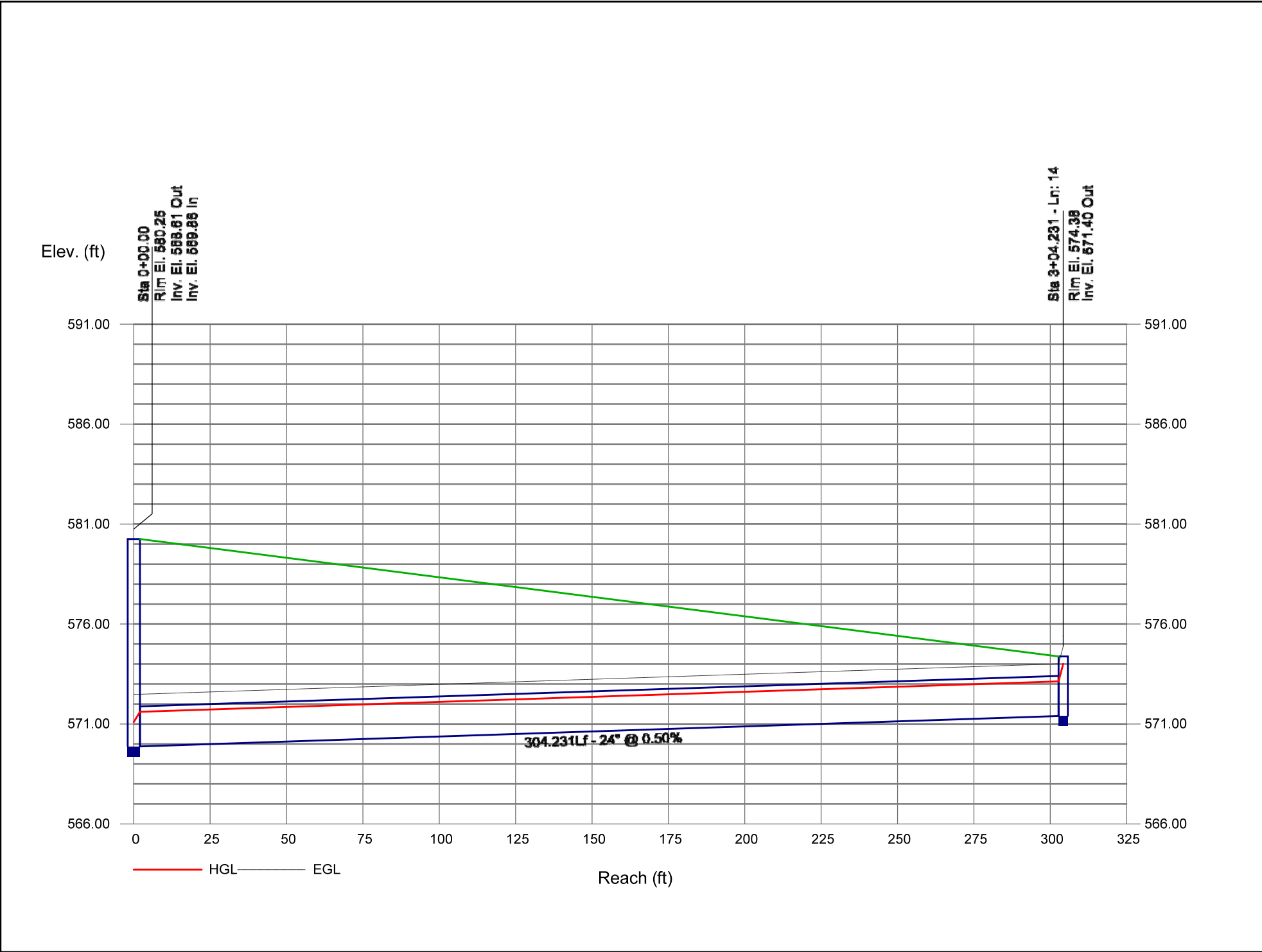
Hydraflow Storm Sewers Extension for Autodesk® AutoCAD® Civil 3D® Plan



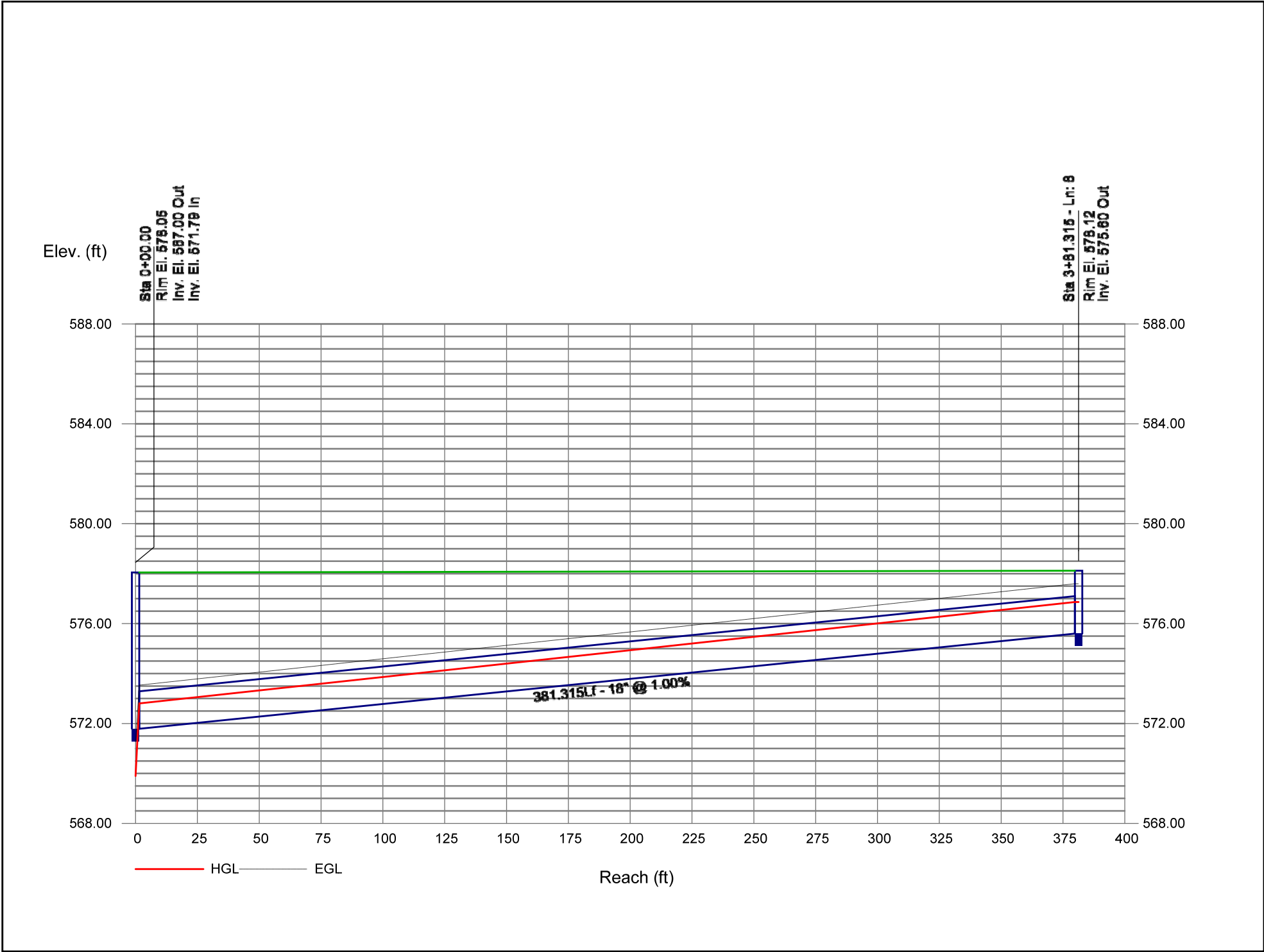
Storm Sewer Profile



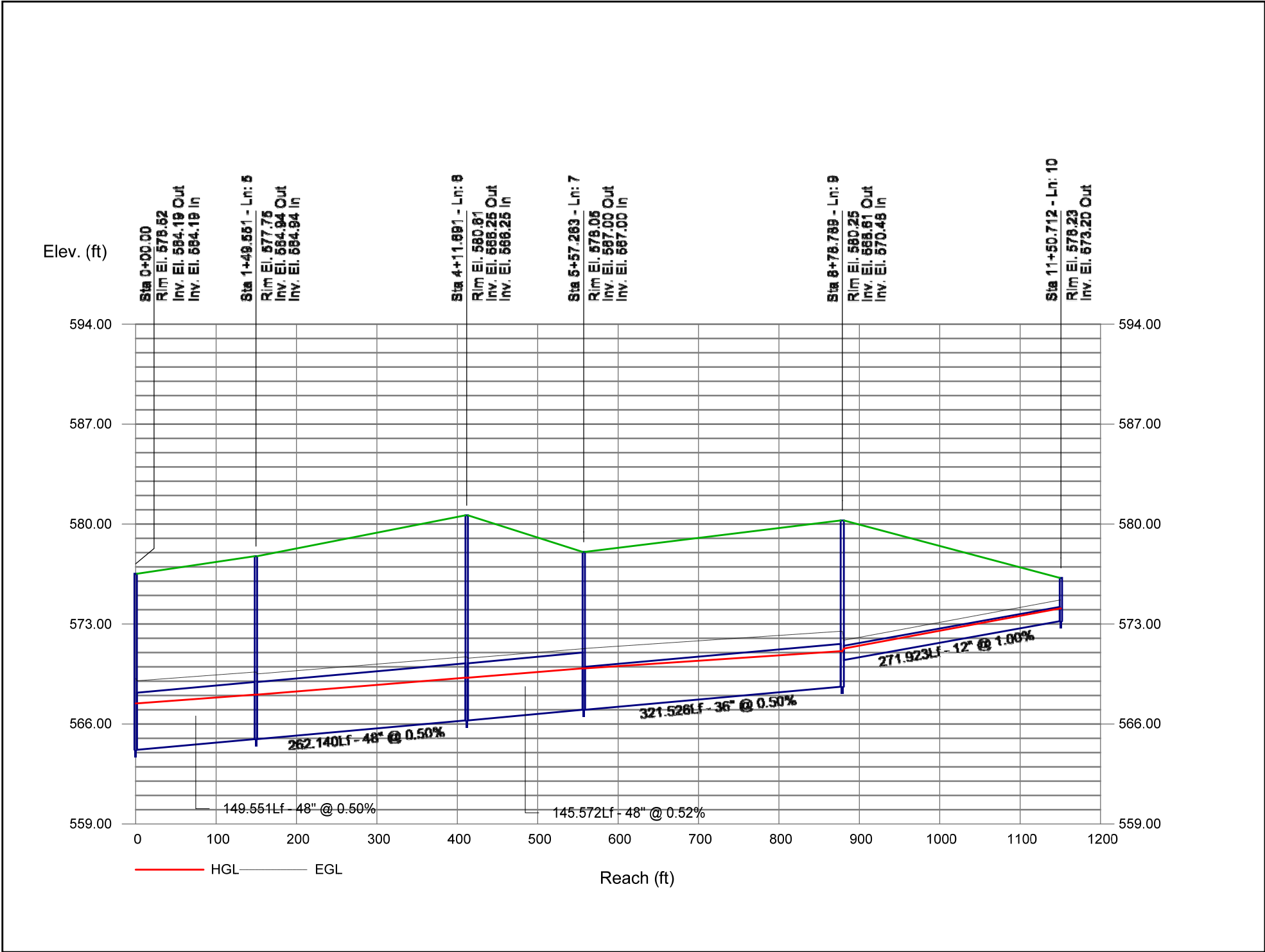
Storm Sewer Profile



Storm Sewer Profile

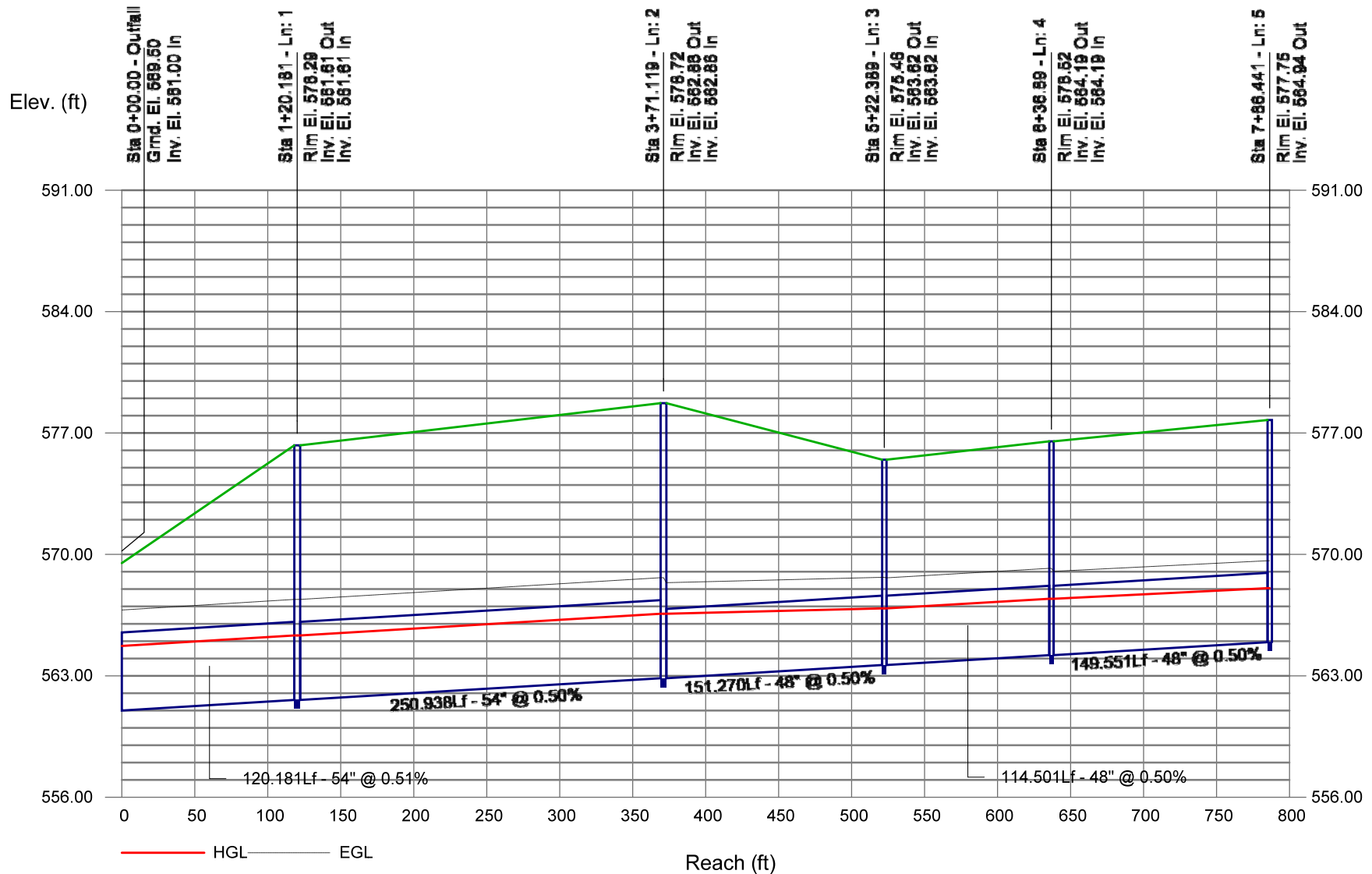


Storm Sewer Profile

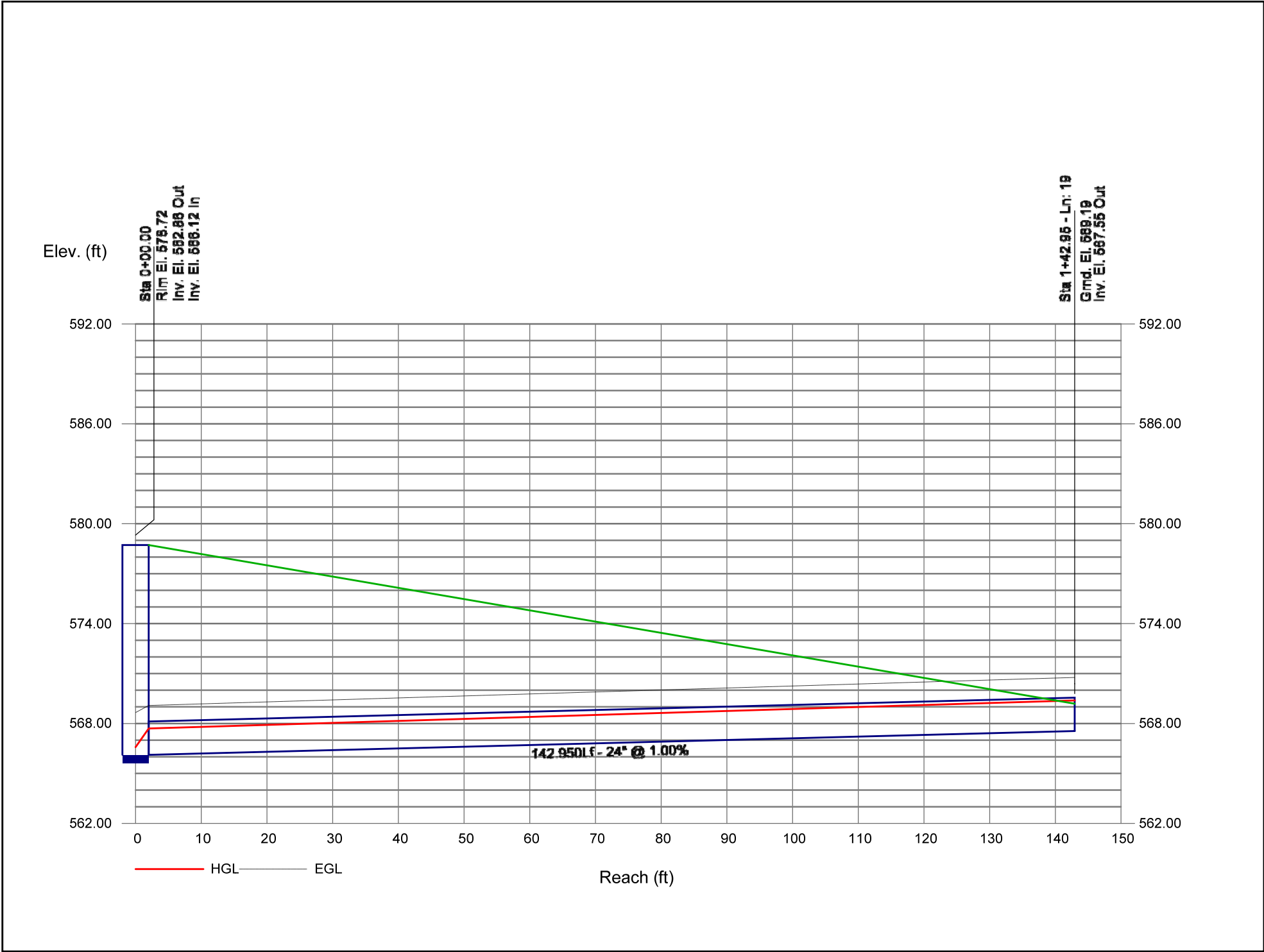


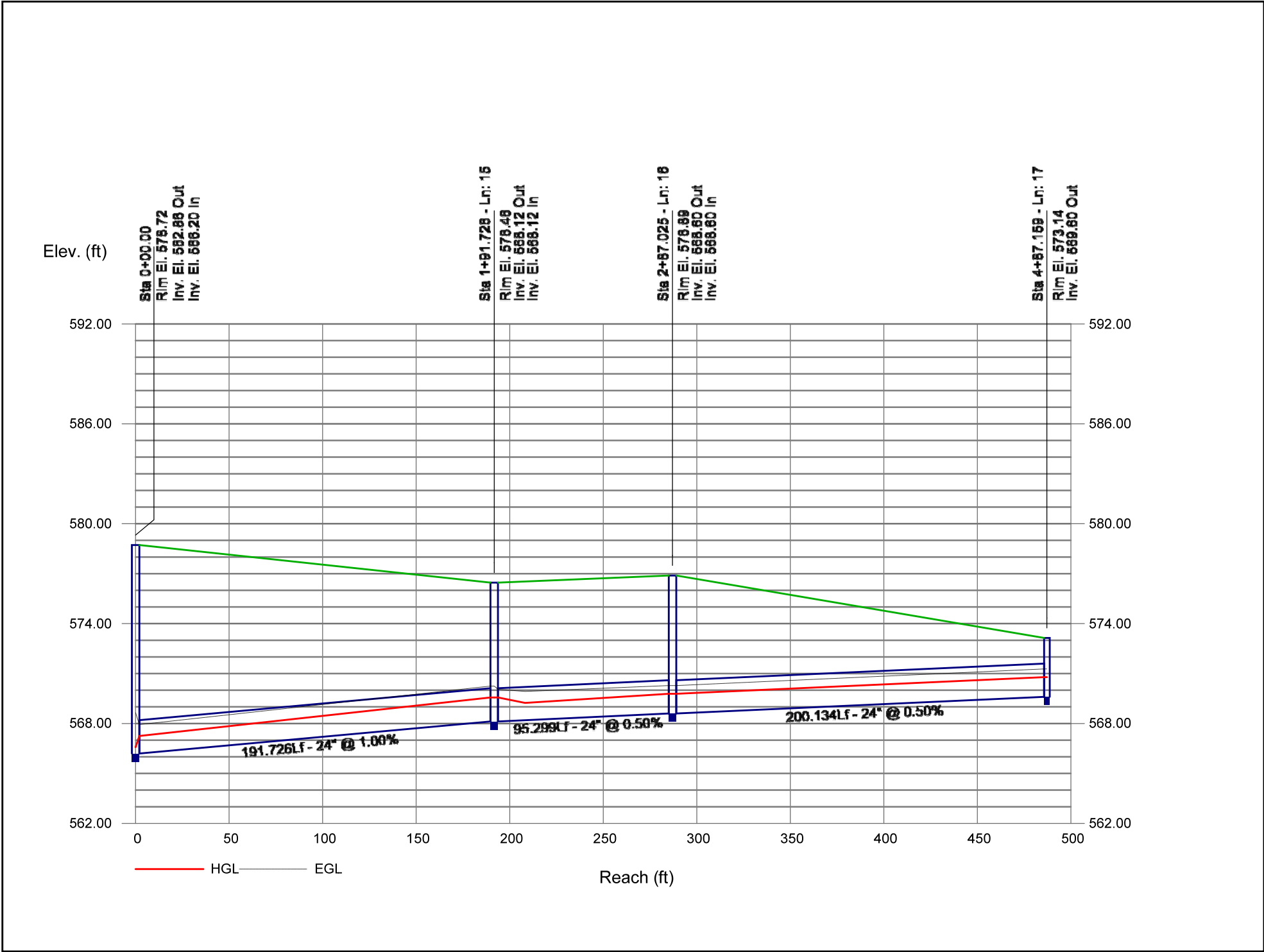
Storm Sewer Profile

Proj. file: REVISED 2 CLEAN WATER SYSTEM.stm



Storm Sewer Profile





Storm Sewer Profile

