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STORMWATER MANAGEMENT & PCSM REPORT

FOR

3 Point Garden Road Subdivision

513 3 Point Garden Road
Smithfield Township, Monroe County, PA

LTS Homes, LLC
815 Seven Bridge Road
East Stroudsburg, PA 18301

Date: June 28, 2024
Revision: November 4, 2024
Prepared by: Jeffrey L. Ott, P.E.
PA License No. 044775-E
LTSI 2301

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STORMWATER MANAGEMENT & PCSM REPORT

1. EXECUTIVE SUMMARY

The Applicant is proposing the construction of new single family dwellings with associated site improvements, located at 513 3 Point Garden Road, in the Township of Smithfield, Monroe County. The site is currently vacant. The existing land use for the past 10 years has been vacant. The land was historically vacant for the 50 years prior.

The project is located in Subarea 110 of the Brodhead-McMichael Watershed. Therefore, the 2 year postdevelopment peak rate of runoff must be equal to the 1 year predevelopment rate of runoff. The 5, 10, 25, 50, & 100 year postdevelopment peak rates of runoff must be equal to the predevelopment rate of runoff for each of the respective design storms.

The site has three Points of Interest. Runoff from the site discharges overland to the west, which then drain to Sambo Creek.

PEAK RATE

The peak rates from the developed condition will be managed by raingardens.

The post-development peak runoff rates from the project watersheds for the 5, 10, 25, 50, & 100 year, SCS design storms will be less than or equal to the predevelopment peak runoff rates. Runoff volume is being managed by the raingardens.

WATER QUALITY

As part of the NPDES Permit, the runoff must be treated through BMPs to reduce the NO_3 by 50%.

INFILTRATION VOLUME

As part of the NPDES Permit, the two-year differential volume of runoff must be treated through non-discharge BMPs. The site has been designed to mitigate this volume through the use of raingardens.

Geologic formations containing minerals (e.g. pyrite) in sufficient quantities that could result in discharges which do not meet water quality standards for the receiving surface water(s) do not occur within the NPDES permit boundaries. To our knowledge, there are no naturally occurring geologic formations or soil conditions that may have the potential to cause pollution during earth disturbance activities. Bedrock or soil conditions which could result in significant slope failures resulting in mass soil movement into surface waters, property damage, or a public safety hazard do not occur within the project boundaries.

Potential thermal impacts include the extent of impervious pavements and roof areas. Thermal impacts will be minimized and mitigated by a combination limiting the disturbed area and protecting existing trees.

NOI Checklist Notes:

1. To minimize any increase in stormwater runoff volume the project will utilize raingardens.
2. To minimize impervious areas, the minimum amount of impervious surface is being constructed for the proposed use of the site.
3. To protect the existing drainage features and existing vegetation and minimize land clearing and grading, earth disturbance will only be done in the areas necessary for construction.
4. The duration of earth disturbance is minimized by employing immediate stabilization practices per the sequence of construction.
5. Soil compaction is minimized on the site by limiting the extents and limits of earth disturbance.
6. The extent of paved roadways, driveways and roof areas present potential thermal impacts to surface waters, therefore, infiltration and limiting disturbed area are proposed throughout the project to lessen the impact.
7. The E&SPC plans have been planned and designed to be consistent with the post-construction stormwater management plans, therefore this plan prevents increased runoff.
8. There are no existing nor proposed riparian forest buffers related to this project. Therefore, there are no waiver requests, areas proposed to be waived or riparian buffer offsets.
9. To our knowledge, there are not naturally occurring geologic formations or soil conditions that may have the potential to cause pollution during earth disturbance activities.
10. There are no wetlands within the site.
11. The entire area shown hereon is within a watershed, therefore the boundaries of the watershed cannot be shown.

CONCLUSION

The site, as designed, will meet or exceed the stormwater requirements of the Smithfield Township Act 167 and Chapter 102. With the stormwater BMPs included in the design, the stormwater runoff from the developed site will not adversely affect the adjoining properties, the physical, biological and chemical qualities of the receiving lake and will preserve the integrity of the stream channels.

2. PREDEVELOPMENT CONDITION

The Applicant is proposing the construction of new single family dwellings with associated site improvements, located at 513 3 Point Garden Road, in the Township of Smithfield, Monroe County. The site is currently vacant. The existing land use for the past 10 years has been vacant. The land was historically vacant for the 50 years prior.

The project is located in Subarea 110 of the Brodhead-McMichael Watershed. Therefore, the 2 year postdevelopment peak rate of runoff must be equal to the 1 year predevelopment rate of runoff. The 5, 10, 25, 50, & 100 year postdevelopment peak rates of runoff must be equal to the predevelopment rate of runoff for each of the respective design storms.

The site has three Points of Interest. Runoff from the site discharges overland to the west, which then drain to Sambo Creek.

3. POSTDEVELOPMENT CONDITION

The post-development conditions include 2 cover types within the project area – impervious and lawn. The impervious cover for the site includes the buildings and driveways.

The project proposes approximately 43,660 square feet of impervious cover.

The runoff from the disturbed area will be captured by a subsurface detention basin. See section 6 of this report for additional information.

VOLUME CONTROL

Based on the Worksheet 4 (NRCS) calculations, the water quality volume for the project is as follows:

AREA	**2 YR RUNOFF VOLUME (ft^3)**
Predevelopment	23,924
Postdevelopment	31,831
2 yr Volume Increase	7,907

Please note that portions of this analysis that are not contained within text boxes are intended for demonstration of conformance to Township requirements.

RATE CONTROL

The project is located in Subarea 110 of the Brodhead-McMichael Watershed. Therefore, the 2 year postdevelopment peak rate of runoff must be equal to the 1 year predevelopment rate of runoff. The 5, 10, 25, 50, & 100 year postdevelopment peak rates of runoff must be equal to the predevelopment rate of runoff for each of the respective design storms. The site has three Points of Interest. Runoff from the site discharges overland to the west, which then drain to Spring Lake.

4. SUMMARY

3 Point Garden Road

Stormwater Management Rate Summary

Date: 11/4/2024
By: DJF
Revised:
By:

Samba Creek
Subarea XXXXX
Release Rate = 2-Yr Post Match 1-Yr Pre, All others match

POI 001

Return Period	Onsite PreDev Peak Q	Offsite PreDev Peak Q	Allowable Postdev Peak Q	Bypass/ Undetained Q	Routed Basin Q	Total Postdev POI Q	Total POI Q Variation
1	2.94	1.83					
2	4.27	2.52	5.47	0.84	0.31	1.15	-4.31
5	6.36	3.57	9.93	1.16	1.11	2.27	-7.66
10	8.28	4.51	12.78	1.44	2.39	3.84	-8.95
25	11.42	6.01	17.43	1.89	6.27	8.16	-9.27
50	14.36	7.931	22.29	2.30	9.78	12.08	-10.21
100	17.9	9.037	26.94	2.79	14.18	16.97	-9.97

POI 002

Return Period	Onsite PreDev Peak Q	Offsite PreDev Peak Q	Allowable Postdev Peak Q	Bypass/ Undetained Q	Routed Basin Q	Total Postdev POI Q	Total POI Q Variation
1	2.08	1.41					
2	3.04	2.06	4.14	0.71	0.35	1.07	-3.07
5	4.55	3.08	7.63	1.01	1.19	2.20	-5.43
10	5.92	4.01	9.93	1.28	1.96	3.24	-6.69
25	8.17	5.53	13.70	1.71	3.77	5.48	-8.23
50	10.28	6.97	17.25	2.11	7.06	9.17	-8.08
100	12.82	8.68	21.50	2.58	11.57	14.15	-7.35

POI 003

Return Period	Onsite PreDev Peak Q	Offsite PreDev Peak Q	Allowable Postdev Peak Q	Bypass/ Undetained Q	Routed Basin Q	Total Postdev POI Q	Total POI Q Variation
1	0.94	0.37					
2	1.37	0.55	1.48	0.82	0.46	1.28	-0.21
5	2.05	0.82	2.86	1.16	1.02	2.18	-0.68
10	2.66	1.07	3.73	1.47	1.32	2.79	-0.94
25	3.67	1.47	5.14	1.96	2.26	4.22	-0.92
50	4.63	1.85	6.48	2.42	3.48	5.89	-0.58
100	5.77	2.31	8.07	2.96	5.10	8.06	-0.02

5. PREDEVELOPMENT HYDROGRAPHS

NOAA Atlas 14, Volume 2, Version 3
Location name: Smithfield Twp, Pennsylvania, USA*
Latitude: 41.0144°, Longitude: -75.1644°
Elevation: 636 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

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

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

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

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.329** (0.293-0.368)	**0.393** (0.350-0.442)	**0.474** (0.420-0.532)	**0.541** (0.478-0.604)	**0.633** (0.553-0.706)	**0.711** (0.618-0.795)	**0.796** (0.684-0.891)	**0.893** (0.758-1.00)	**1.04** (0.870-1.18)	**1.17** (0.960-1.33)
10-min	**0.516** (0.460-0.579)	**0.620** (0.552-0.696)	**0.747** (0.662-0.838)	**0.847** (0.748-0.946)	**0.985** (0.862-1.10)	**1.10** (0.957-1.23)	**1.23** (1.06-1.38)	**1.37** (1.16-1.54)	**1.58** (1.32-1.79)	**1.76** (1.45-2.01)
15-min	**0.639** (0.569-0.716)	**0.769** (0.684-0.864)	**0.929** (0.824-1.04)	**1.06** (0.933-1.18)	**1.23** (1.08-1.37)	**1.38** (1.20-1.54)	**1.54** (1.32-1.72)	**1.72** (1.46-1.93)	**1.98** (1.65-2.24)	**2.21** (1.81-2.51)
30-min	**0.860** (0.766-0.963)	**1.04** (0.929-1.17)	**1.30** (1.15-1.45)	**1.50** (1.32-1.67)	**1.78** (1.55-1.98)	**2.02** (1.75-2.26)	**2.28** (1.96-2.55)	**2.58** (2.19-2.90)	**3.03** (2.53-3.43)	**3.43** (2.82-3.90)
60-min	**1.06** (0.944-1.19)	**1.29** (1.15-1.45)	**1.64** (1.46-1.84)	**1.92** (1.70-2.15)	**2.33** (2.04-2.61)	**2.70** (2.34-3.01)	**3.10** (2.66-3.47)	**3.56** (3.02-4.00)	**4.27** (3.56-4.83)	**4.90** (4.03-5.59)
2-hr	**1.28** (1.15-1.43)	**1.56** (1.41-1.74)	**1.98** (1.78-2.21)	**2.32** (2.08-2.59)	**2.86** (2.54-3.18)	**3.34** (2.94-3.73)	**3.91** (3.41-4.35)	**4.57** (3.95-5.11)	**5.63** (4.77-6.35)	**6.61** (5.51-7.51)
3-hr	**1.43** (1.29-1.58)	**1.73** (1.56-1.92)	**2.16** (1.95-2.40)	**2.52** (2.27-2.79)	**3.09** (2.75-3.41)	**3.60** (3.18-3.99)	**4.19** (3.66-4.65)	**4.89** (4.22-5.45)	**6.01** (5.09-6.75)	**7.04** (5.87-7.96)
6-hr	**1.85** (1.68-2.06)	**2.22** (2.02-2.47)	**2.74** (2.48-3.04)	**3.18** (2.88-3.53)	**3.89** (3.48-4.31)	**4.54** (4.02-5.04)	**5.31** (4.64-5.90)	**6.22** (5.37-6.94)	**7.69** (6.50-8.64)	**9.06** (7.52-10.2)
12-hr	**2.31** (2.10-2.57)	**2.79** (2.53-3.10)	**3.45** (3.12-3.83)	**4.04** (3.63-4.48)	**4.97** (4.42-5.50)	**5.83** (5.13-6.46)	**6.85** (5.95-7.60)	**8.05** (6.91-8.99)	**10.0** (8.43-11.2)	**11.8** (9.77-13.4)
24-hr	**2.76** (2.55-3.03)	**3.32** (3.07-3.64)	**4.13** (3.80-4.52)	**4.83** (4.43-5.28)	**5.94** (5.40-6.46)	**6.96** (6.28-7.55)	**8.17** (7.30-8.83)	**9.59** (8.47-10.3)	**11.9** (10.3-12.8)	**14.0** (12.0-15.0)
2-day	**3.25** (3.00-3.55)	**3.90** (3.61-4.27)	**4.83** (4.47-5.28)	**5.65** (5.20-6.16)	**6.93** (6.32-7.53)	**8.10** (7.33-8.78)	**9.47** (8.50-10.2)	**11.1** (9.84-12.0)	**13.7** (12.0-14.8)	**16.1** (13.9-17.3)
3-day	**3.41** (3.16-3.72)	**4.09** (3.79-4.46)	**5.05** (4.67-5.50)	**5.88** (5.43-6.39)	**7.20** (6.59-7.79)	**8.39** (7.63-9.07)	**9.79** (8.82-10.6)	**11.5** (10.2-12.3)	**14.1** (12.4-15.2)	**16.6** (14.4-17.8)
4-day	**3.58** (3.32-3.88)	**4.28** (3.98-4.65)	**5.26** (4.88-5.71)	**6.12** (5.66-6.62)	**7.46** (6.85-8.05)	**8.69** (7.93-9.35)	**10.1** (9.15-10.9)	**11.8** (10.6-12.7)	**14.5** (12.8-15.6)	**17.1** (14.9-18.2)
7-day	**4.23** (3.93-4.60)	**5.06** (4.70-5.49)	**6.17** (5.72-6.69)	**7.14** (6.60-7.73)	**8.64** (7.94-9.33)	**10.0** (9.15-10.8)	**11.6** (10.5-12.4)	**13.4** (12.1-14.4)	**16.3** (14.5-17.5)	**19.0** (16.6-20.3)
10-day	**4.89** (4.56-5.28)	**5.82** (5.43-6.29)	**7.02** (6.53-7.57)	**8.04** (7.47-8.67)	**9.61** (8.88-10.3)	**11.0** (10.1-11.8)	**12.6** (11.5-13.5)	**14.4** (13.1-15.4)	**17.3** (15.5-18.4)	**19.8** (17.6-21.2)
20-day	**6.61** (6.23-7.08)	**7.81** (7.36-8.35)	**9.17** (8.63-9.79)	**10.3** (9.68-11.0)	**12.0** (11.2-12.8)	**13.5** (12.5-14.3)	**15.1** (14.0-16.1)	**17.0** (15.6-18.0)	**19.8** (18.0-21.0)	**22.2** (20.0-23.6)
30-day	**8.23** (7.78-8.75)	**9.68** (9.13-10.3)	**11.2** (10.5-11.8)	**12.4** (11.7-13.1)	**14.2** (13.3-15.1)	**15.8** (14.7-16.7)	**17.5** (16.2-18.4)	**19.3** (17.9-20.4)	**22.1** (20.3-23.3)	**24.4** (22.3-25.8)
45-day	**10.5** (9.96-11.1)	**12.2** (11.6-12.9)	**13.9** (13.2-14.7)	**15.3** (14.5-16.1)	**17.2** (16.3-18.2)	**18.9** (17.8-19.9)	**20.6** (19.4-21.8)	**22.5** (21.1-23.8)	**25.3** (23.6-26.7)	**27.6** (25.6-29.2)
60-day	**12.6** (12.0-13.3)	**14.7** (14.0-15.4)	**16.5** (15.8-17.4)	**18.1** (17.2-19.0)	**20.3** (19.3-21.3)	**22.1** (21.0-23.2)	**24.0** (22.7-25.2)	**26.1** (24.6-27.4)	**29.1** (27.3-30.6)	**31.6** (29.4-33.2)

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

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

Please refer to NOAA Atlas 14 document for more information.

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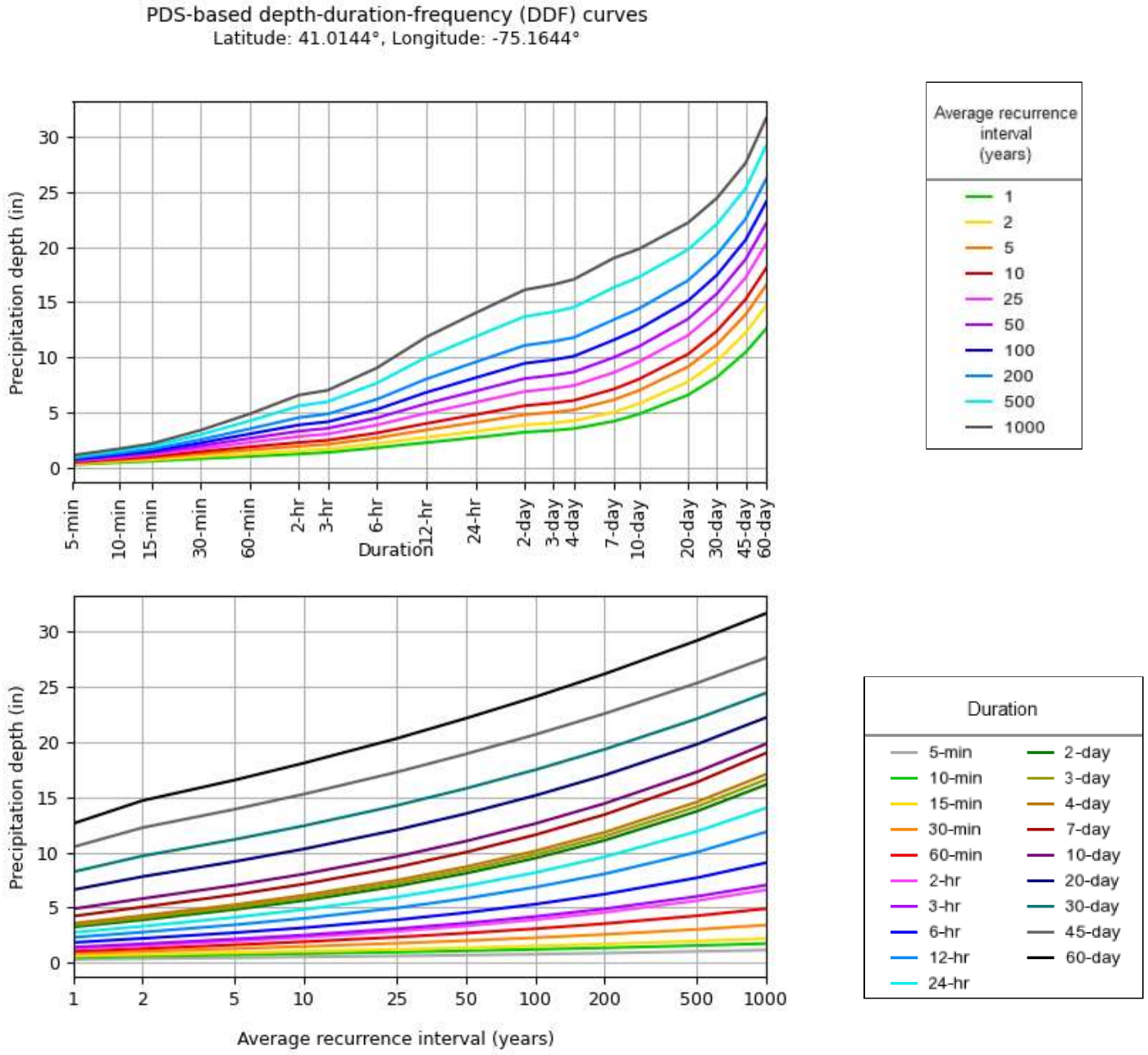
PF graphical



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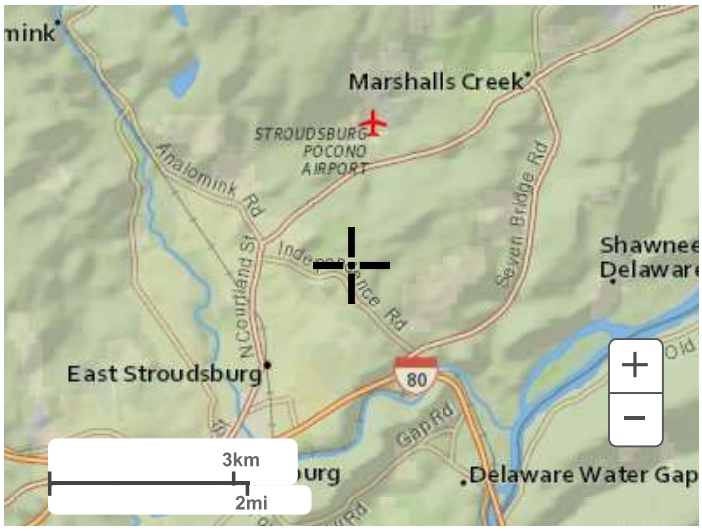
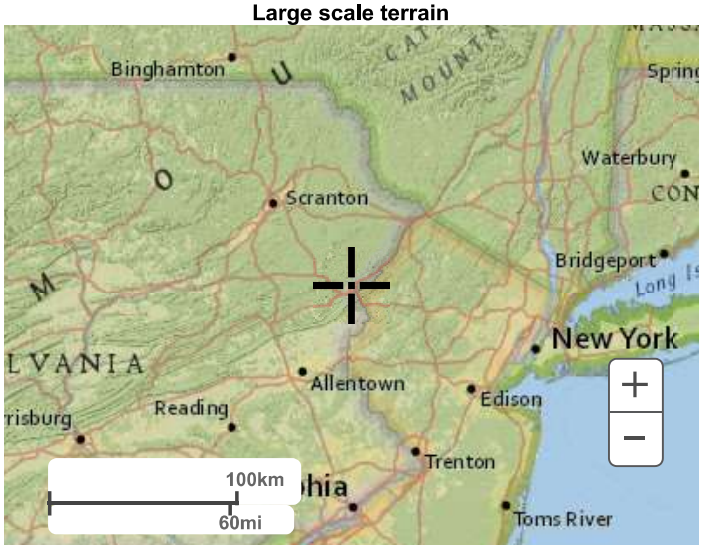
Maps & aerials

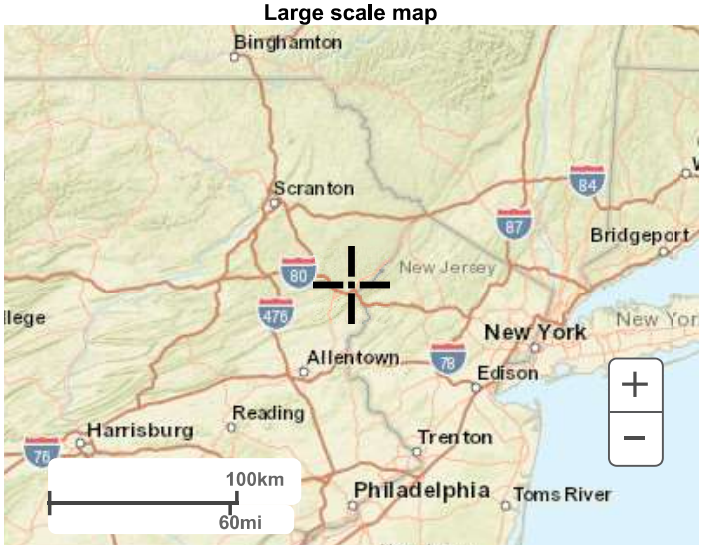
Small scale terrain



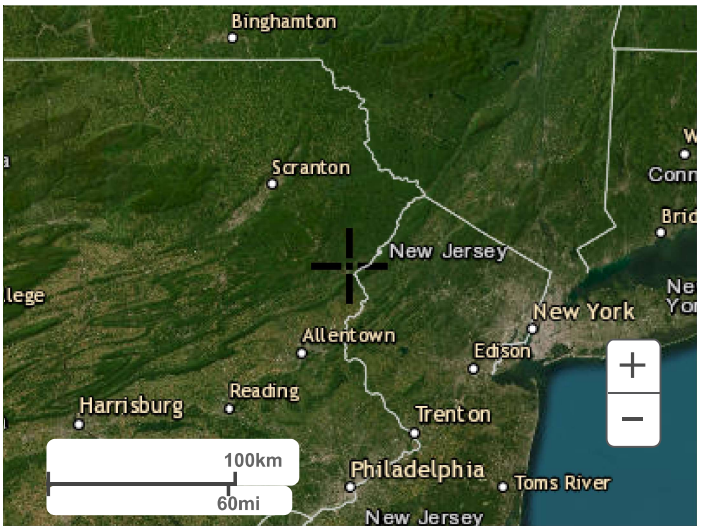
Large scale terrain



Large scale map



Large scale aerial



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

WORKSHEET 4b. RUNOFF VOLUME FOR 2-YR STORM EVENT - Pre-Development Condition

PROJECT: 3 Point Garden Road

Drainage Area: 5.06 AC.
2-Year Rainfall: 3.32 in.* * From NOAA

Existing Conditions: POI 001 Onsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D	100,440	2.31	77	2.99	0.60	1.30	10866.45	0.25
Meadow	D			78					
Fertilized Planting Area	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D			80					
Lawn, High-Input	D			84					
Golf Course Fairway/Green	D			80					
Grassed Athletic Field	D			80					
Rooftop	D			98					
High Traffic Street / Highway	D			93					
Medium Traffic Street	D	934	0.02	98	0.20	0.04	3.09	240.22	0.01
Low Traffic / Residential Street	D			98					
Res. Driveway, Play Courts, etc.	D			98					
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		101,374	2.33						0.26

Existing Conditions: POI 001 Offsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D	35,996	0.83	77	2.99	0.60	1.30	3894.35	0.09
Meadow	D			78					
Fertilized Planting Area	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D			80					
Lawn, High-Input	D			84					
Golf Course Fairway/Green	D			80					
Grassed Athletic Field	D			80					
Rooftop	D			98					
High Traffic Street / Highway	D			93					
Medium Traffic Street	D			98					
Low Traffic / Residential Street	D	10,618	0.24	98	0.20	0.04	3.09	2731.59	0.06
Res. Driveway, Play Courts, etc.	D			98					
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		46,614	1.07						0.15

TR55 Tc Worksheet

Hyd. No. 1

Predev POI 001 Onsite

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.800		0.011		0.011		
Flow length (ft)	= 46.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.32		0.00		0.00		
Land slope (%)	= 19.50		0.00		0.00		
Travel Time (min)	**= 7.93**	**+**	**0.00**	**+**	**0.00**	**=**	**7.93**
Shallow Concentrated Flow							
Flow length (ft)	= 149.00		289.00		244.00		
Watercourse slope (%)	= 8.10		4.20		4.90		
Surface description	= Unpaved		Unpaved		Unpaved		
Average velocity (ft/s)	=4.59		3.31		3.57		
Travel Time (min)	**= 0.54**	**+**	**1.46**	**+**	**1.14**	**=**	**3.14**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 11.10 min

TR55 Tc Worksheet

Hyd. No. 2

Predev POI 001 Offsite

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.150		0.011		0.011		
Flow length (ft)	= 91.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.32		0.00		0.00		
Land slope (%)	= 2.20		0.00		0.00		
Travel Time (min)	**= 8.59**	**+**	**0.00**	**+**	**0.00**	**=**	**8.59**
Shallow Concentrated Flow							
Flow length (ft)	= 108.00		343.00		0.00		
Watercourse slope (%)	= 7.40		5.80		0.00		
Surface description	= Unpaved		Unpaved		Paved		
Average velocity (ft/s)	=4.39		3.89		0.00		
Travel Time (min)	**= 0.41**	**+**	**1.47**	**+**	**0.00**	**=**	**1.88**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 10.50 min

Hydrograph Report

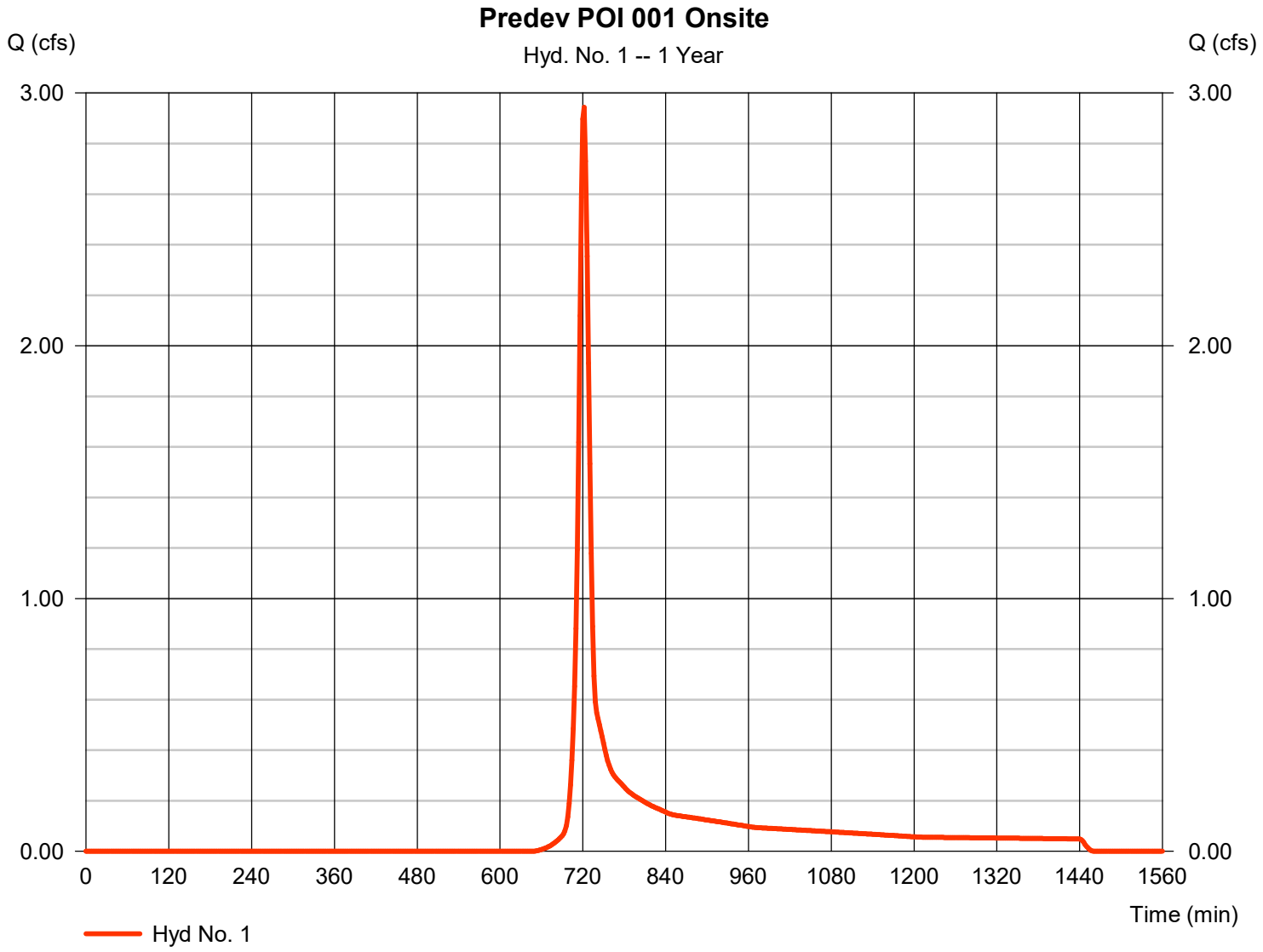
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 1

Predev POI 001 Onsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.944 cfs
Storm frequency	=	1 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	7,853 cuft
Drainage area	=	2.310 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	11.10 min
Total precip.	=	2.76 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(2.290 x 77) + (0.020 x 98)] / 2.310



Hydrograph Report

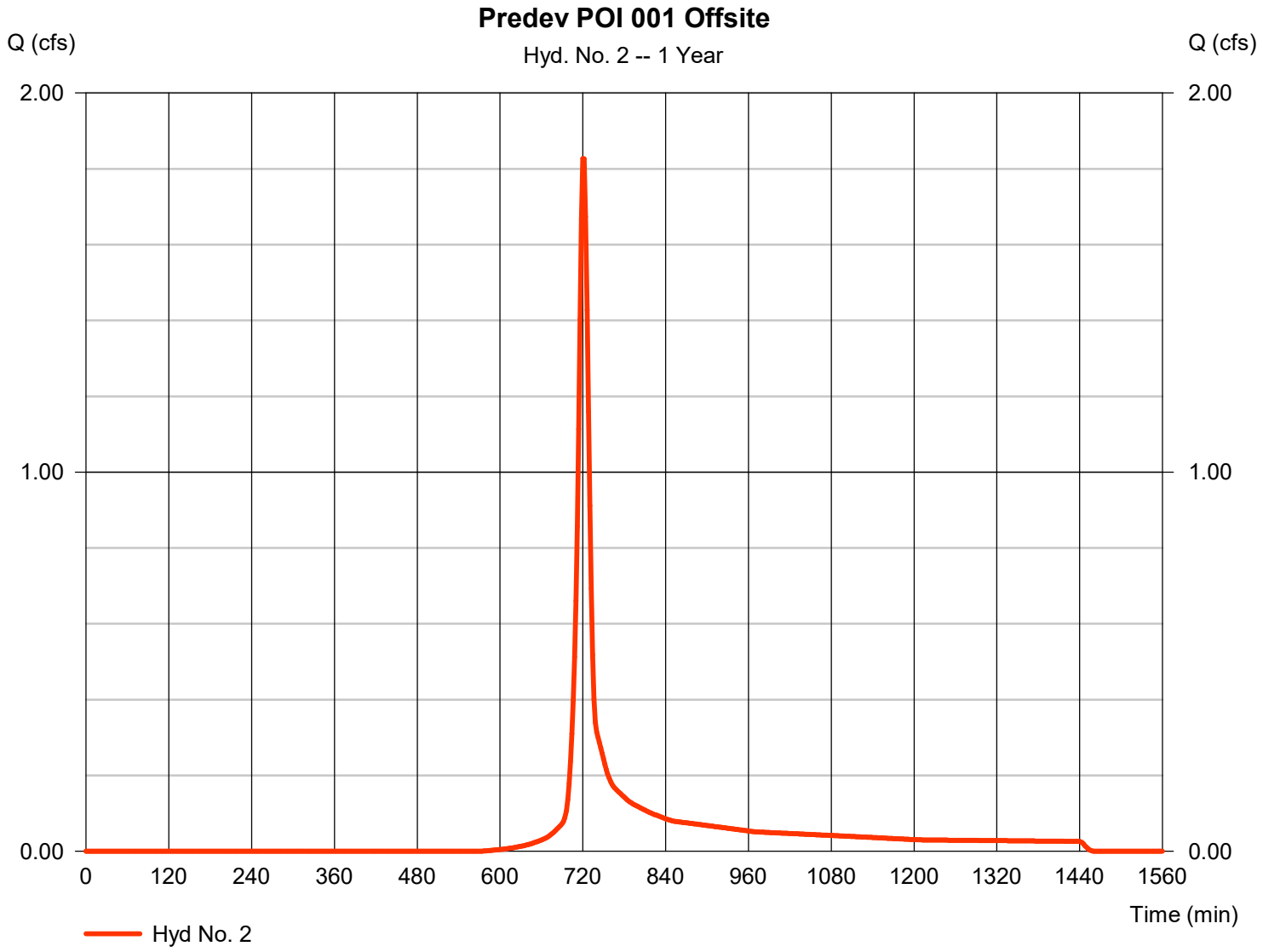
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 2

Predev POI 001 Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.827 cfs
Storm frequency	=	1 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	4,778 cuft
Drainage area	=	1.070 ac	Curve number	=	82*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	10.50 min
Total precip.	=	2.76 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.830 x 77) + (0.240 x 98)] / 1.070



Hydrograph Report

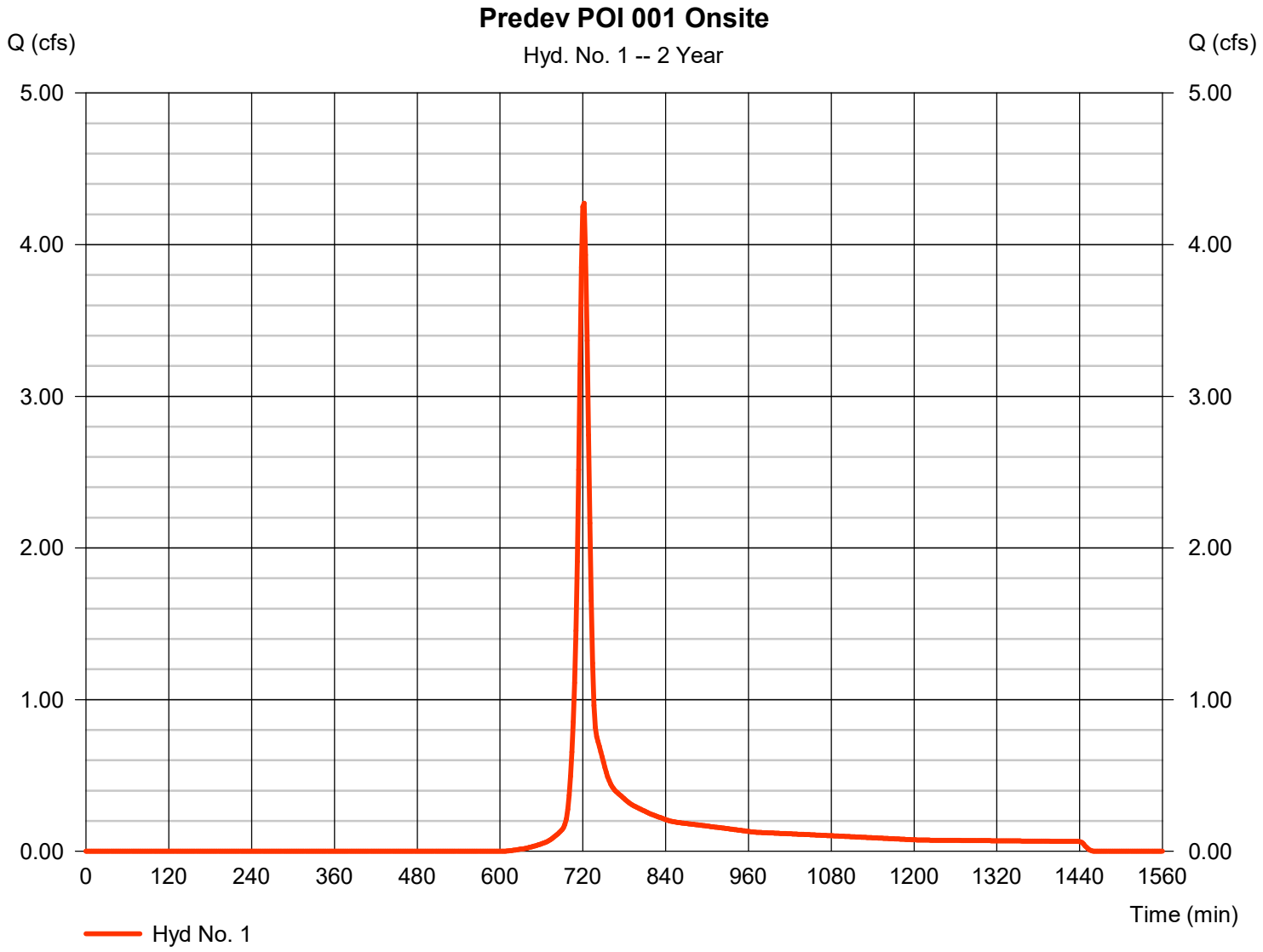
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 1

Predev POI 001 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 4.273 cfs
Storm frequency	= 2 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 11,226 cuft
Drainage area	= 2.310 ac	Curve number	= 77*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 11.10 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.290 x 77) + (0.020 x 98)] / 2.310



Hydrograph Report

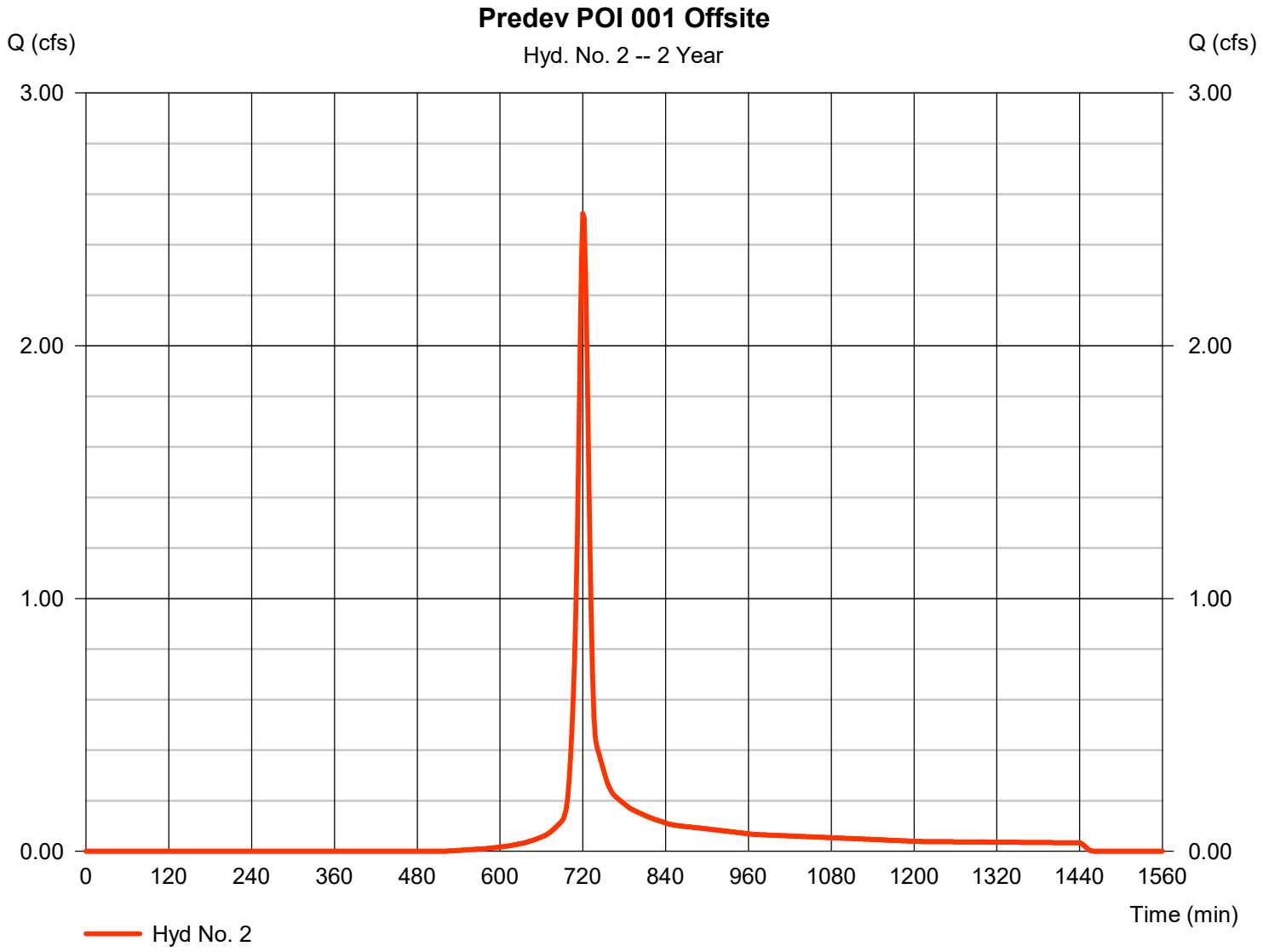
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 2

Predev POI 001 Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.523 cfs
Storm frequency	=	2 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	6,549 cuft
Drainage area	=	1.070 ac	Curve number	=	82*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	10.50 min
Total precip.	=	3.32 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.830 x 77) + (0.240 x 98)] / 1.070



Hydrograph Report

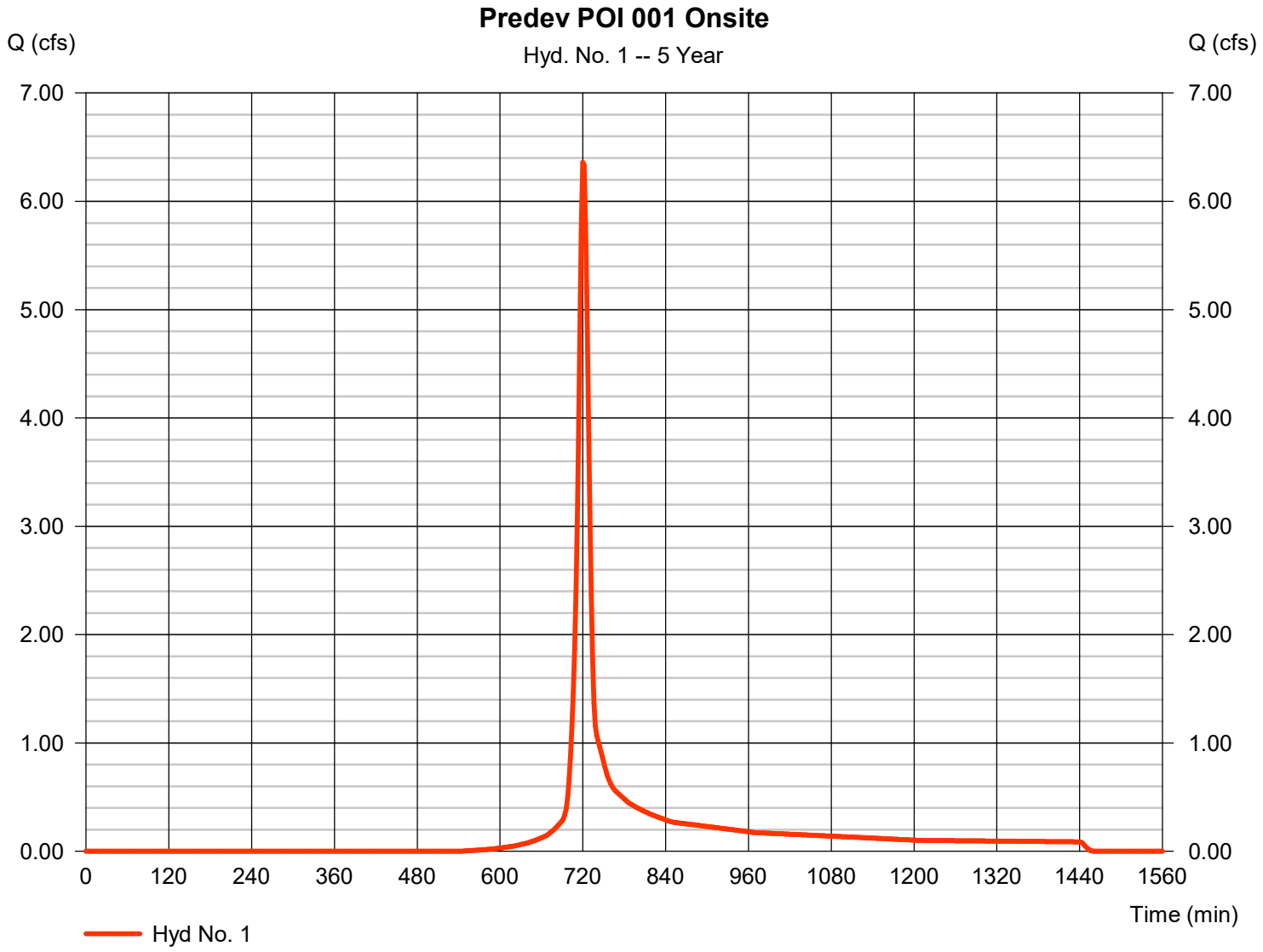
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 1

Predev POI 001 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 6.360 cfs
Storm frequency	= 5 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 16,552 cuft
Drainage area	= 2.310 ac	Curve number	= 77*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 11.10 min
Total precip.	= 4.13 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(2.290 x 77) + (0.020 x 98)] / 2.310



Hydrograph Report

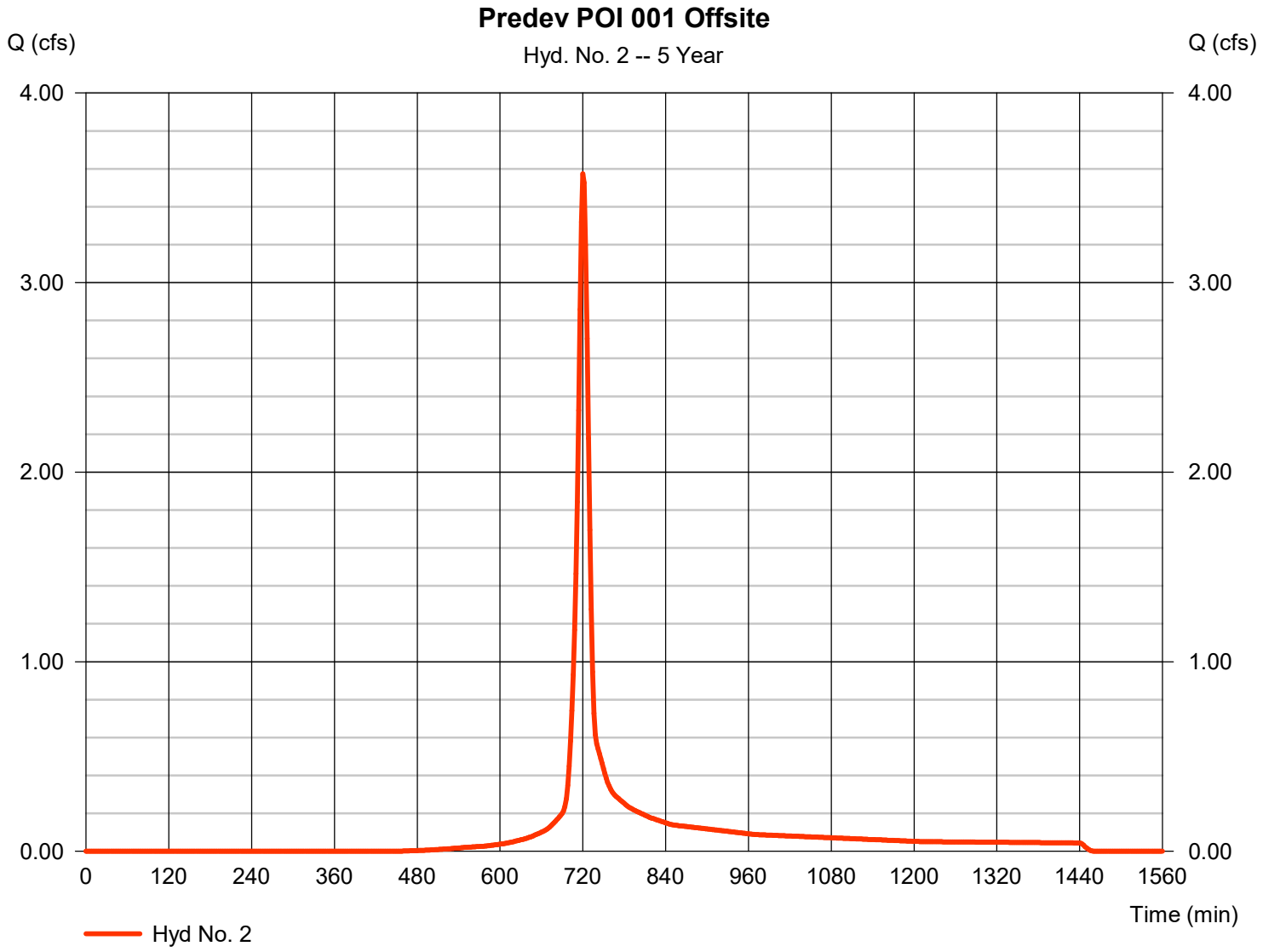
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 2

Predev POI 001 Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.574 cfs
Storm frequency	=	5 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	9,271 cuft
Drainage area	=	1.070 ac	Curve number	=	82*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	10.50 min
Total precip.	=	4.13 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.830 x 77) + (0.240 x 98)] / 1.070



Hydrograph Report

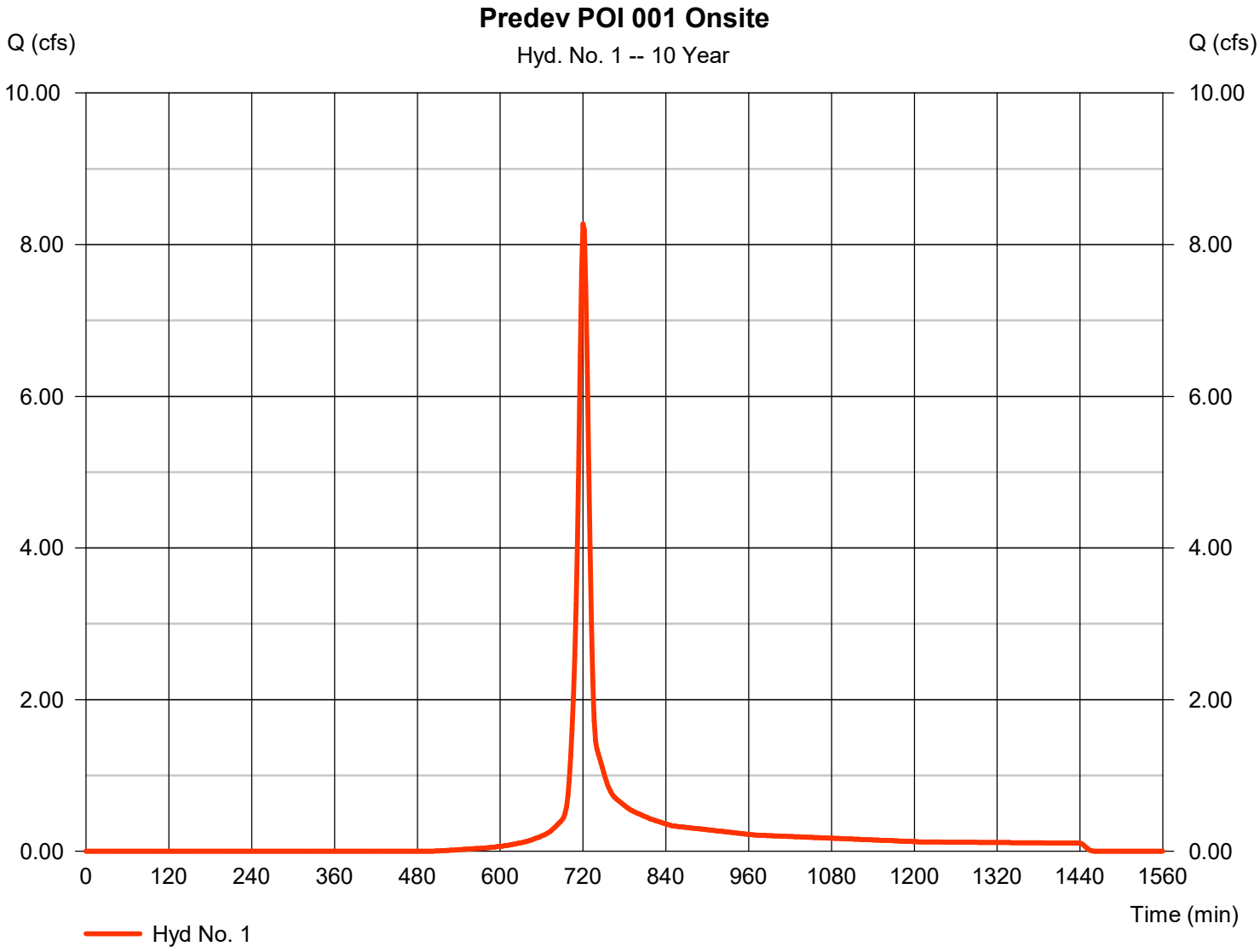
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 1

Predev POI 001 Onsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	8.275 cfs
Storm frequency	=	10 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	21,458 cuft
Drainage area	=	2.310 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	11.10 min
Total precip.	=	4.83 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(2.290 x 77) + (0.020 x 98)] / 2.310



Hydrograph Report

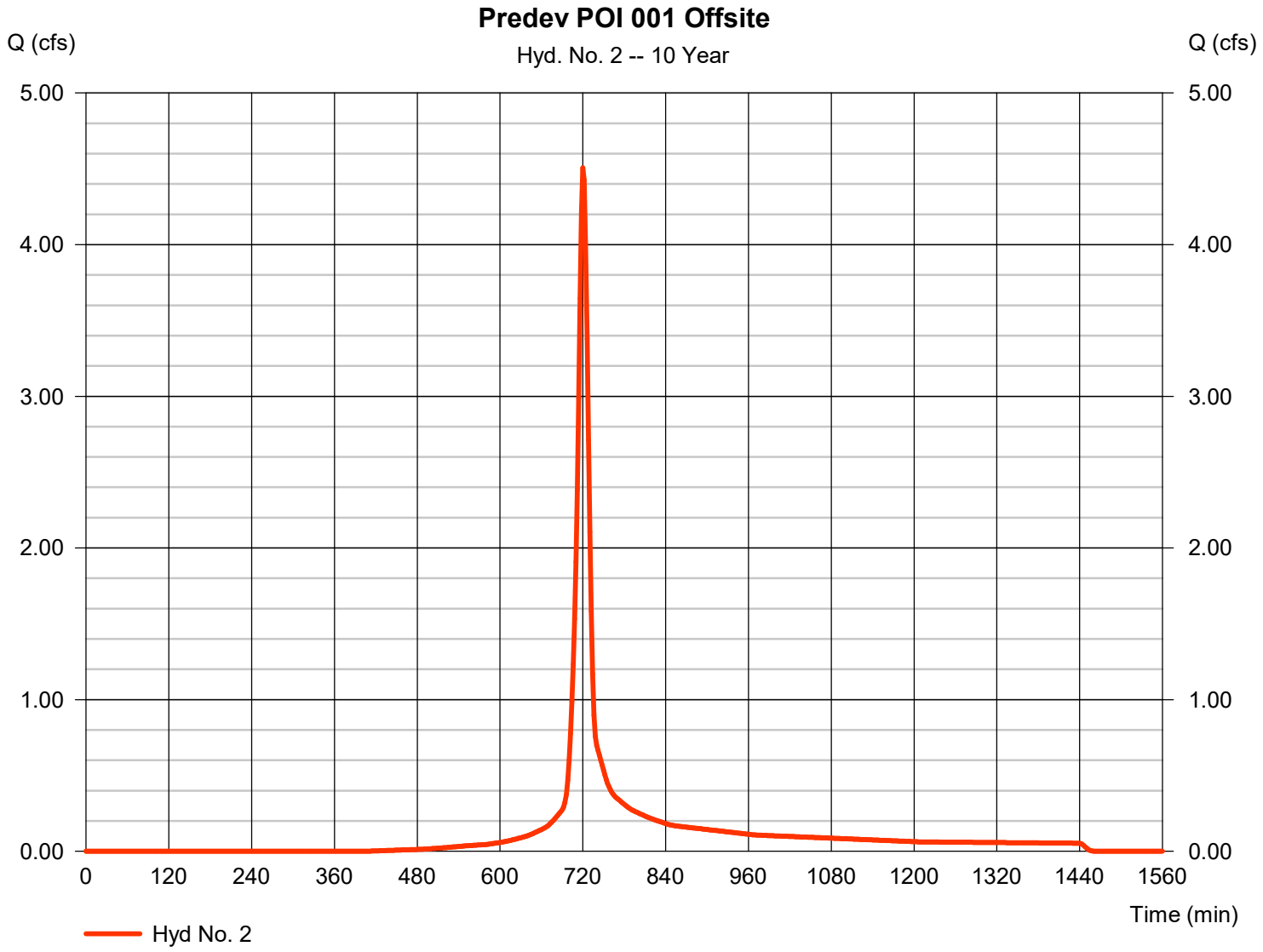
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 2

Predev POI 001 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 4.506 cfs
Storm frequency	= 10 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 11,726 cuft
Drainage area	= 1.070 ac	Curve number	= 82*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 10.50 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.830 x 77) + (0.240 x 98)] / 1.070



Hydrograph Report

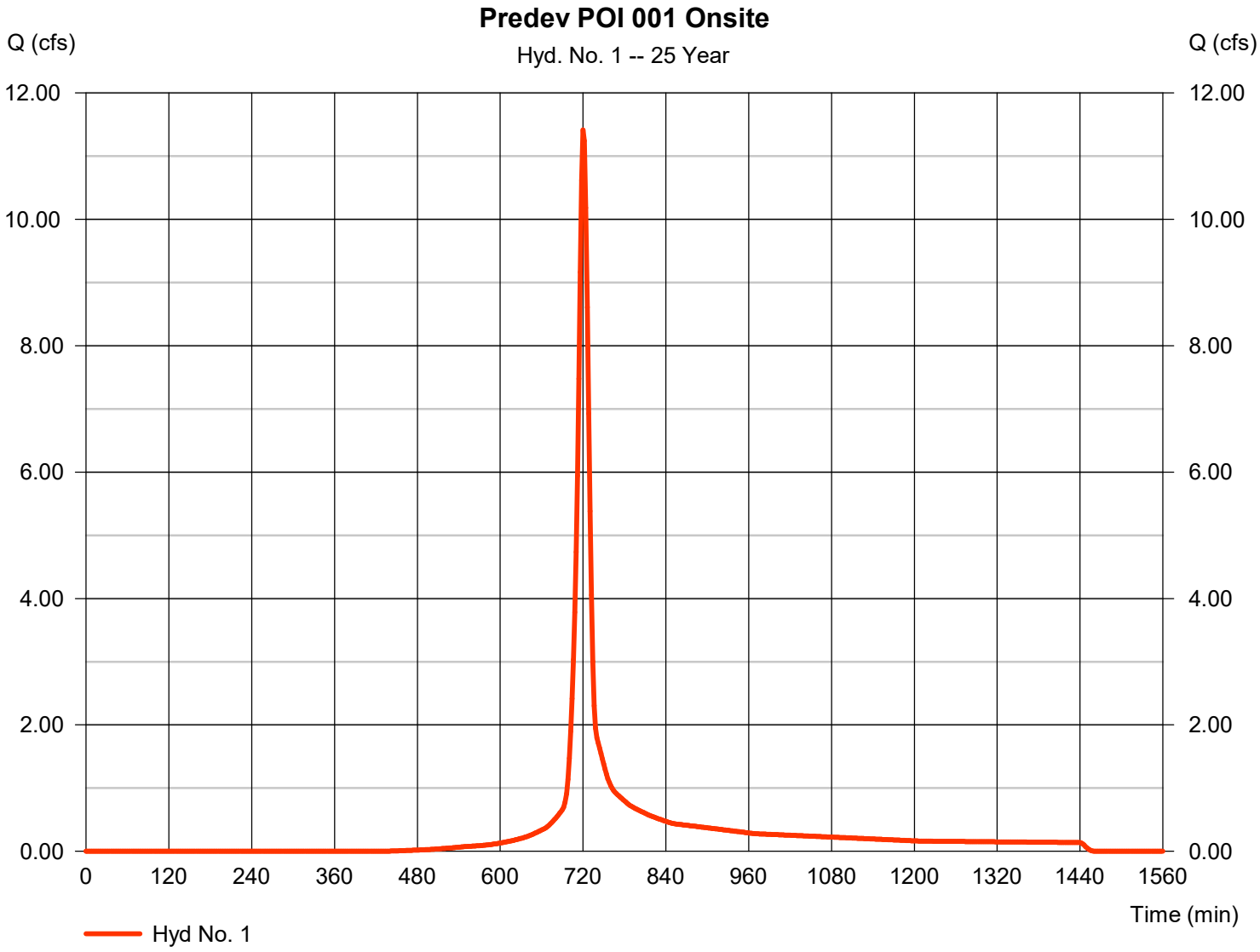
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 1

Predev POI 001 Onsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	11.42 cfs
Storm frequency	=	25 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	29,632 cuft
Drainage area	=	2.310 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	11.10 min
Total precip.	=	5.94 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(2.290 x 77) + (0.020 x 98)] / 2.310



Hydrograph Report

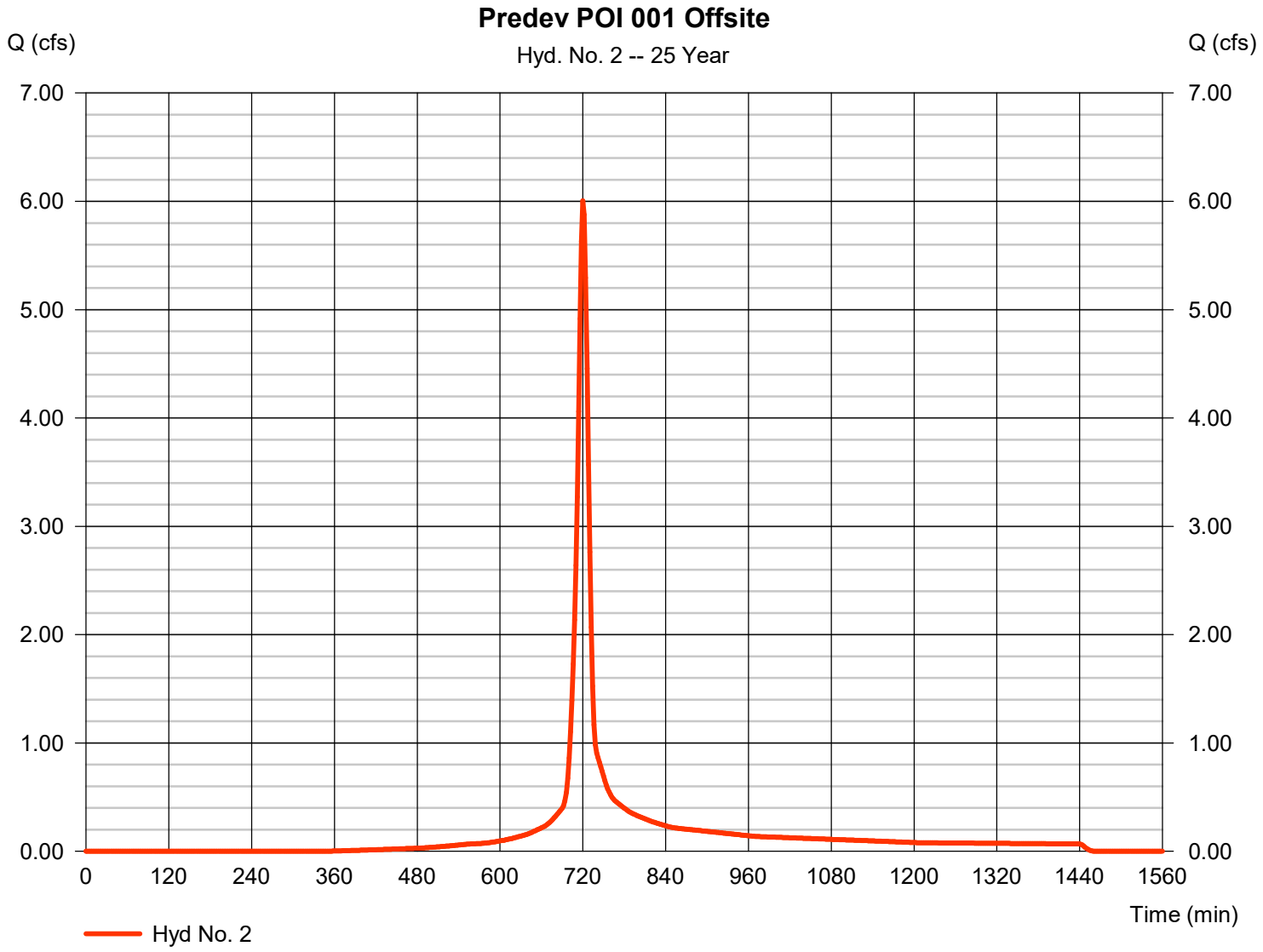
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 2

Predev POI 001 Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	6.005 cfs
Storm frequency	=	25 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	15,749 cuft
Drainage area	=	1.070 ac	Curve number	=	82*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	10.50 min
Total precip.	=	5.94 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.830 x 77) + (0.240 x 98)] / 1.070



Hydrograph Report

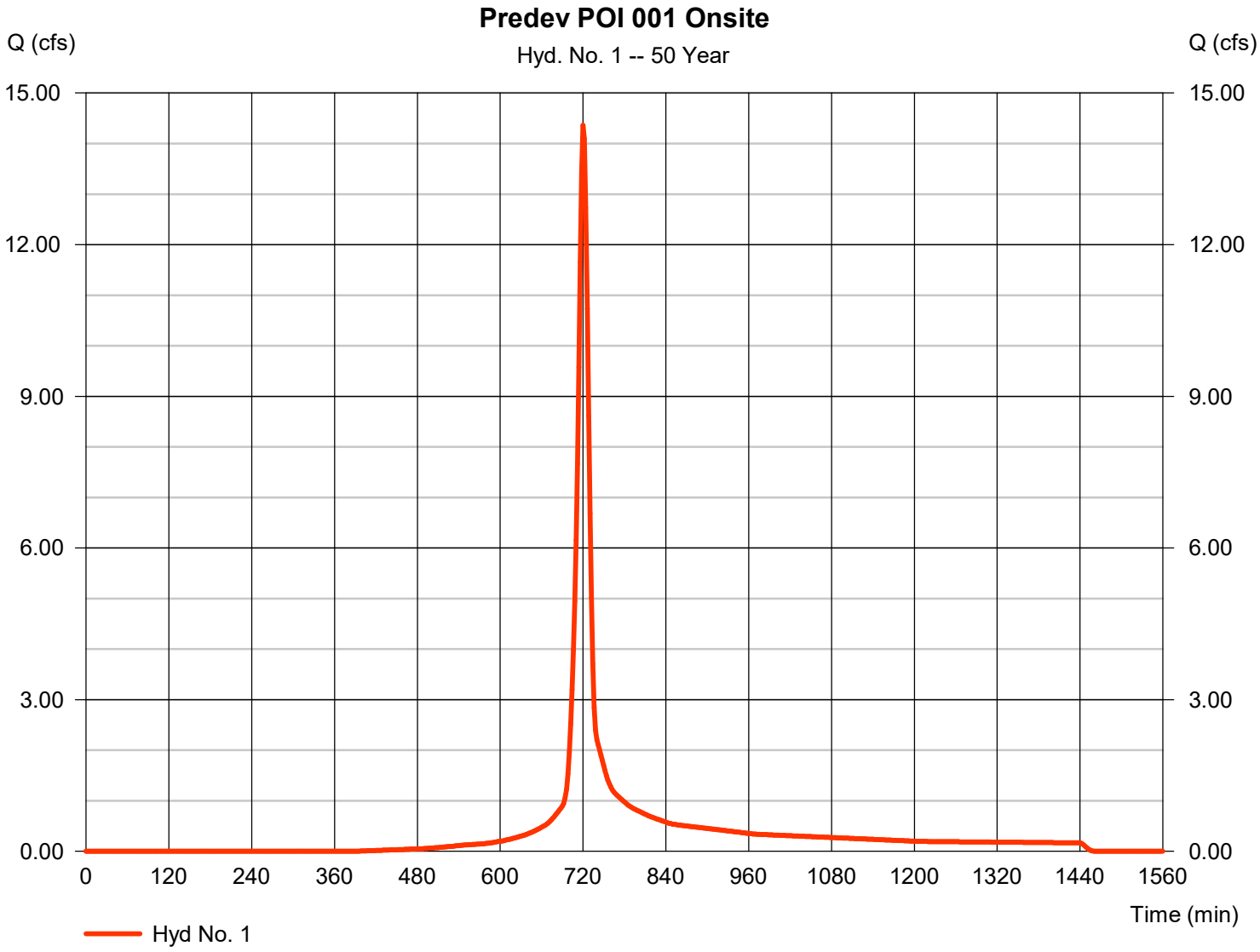
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 1

Predev POI 001 Onsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	14.36 cfs
Storm frequency	=	50 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	37,442 cuft
Drainage area	=	2.310 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	11.10 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(2.290 x 77) + (0.020 x 98)] / 2.310



Hydrograph Report

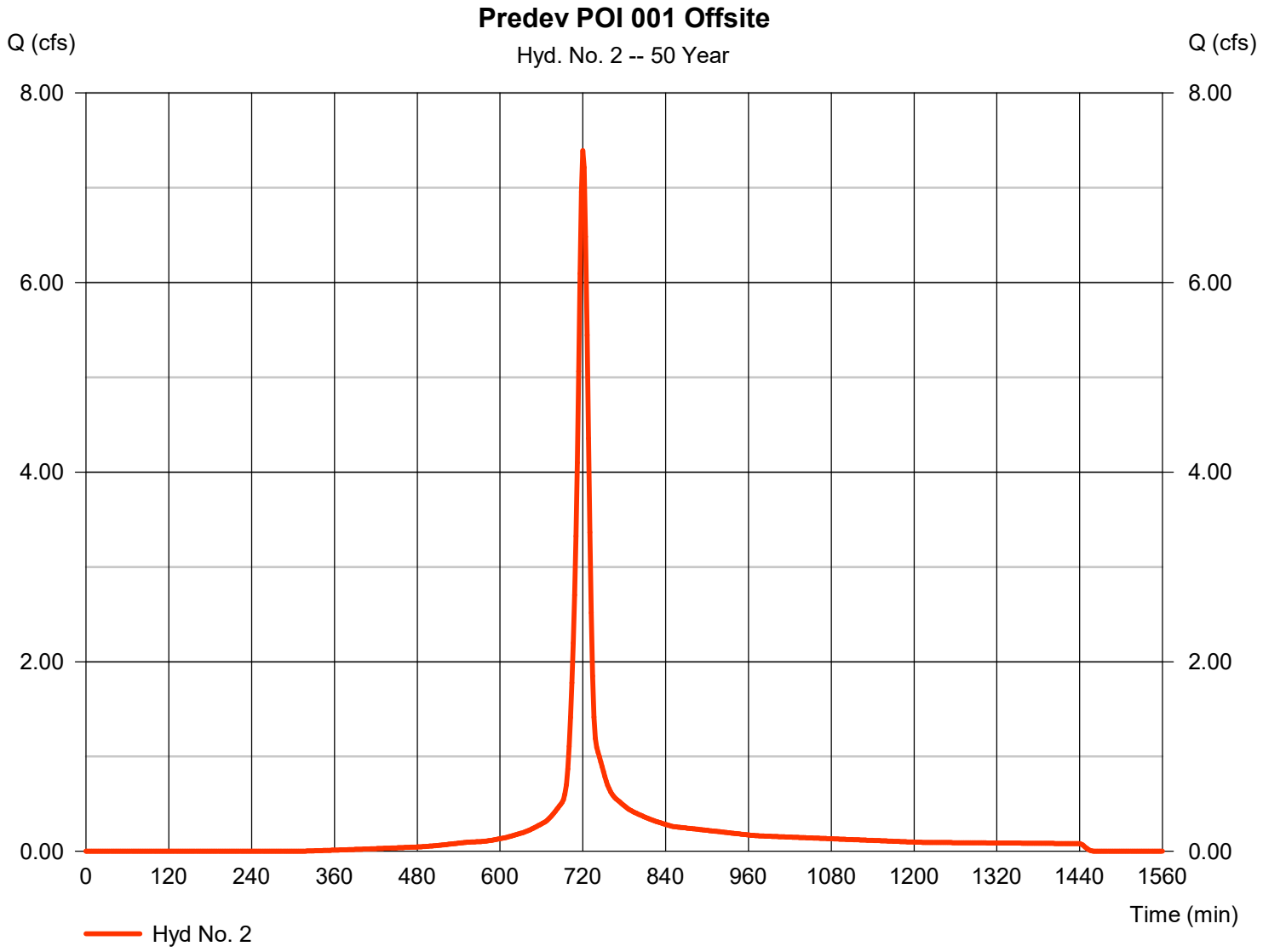
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 2

Predev POI 001 Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	7.391 cfs
Storm frequency	=	50 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	19,541 cuft
Drainage area	=	1.070 ac	Curve number	=	82*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	10.50 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.830 x 77) + (0.240 x 98)] / 1.070



Hydrograph Report

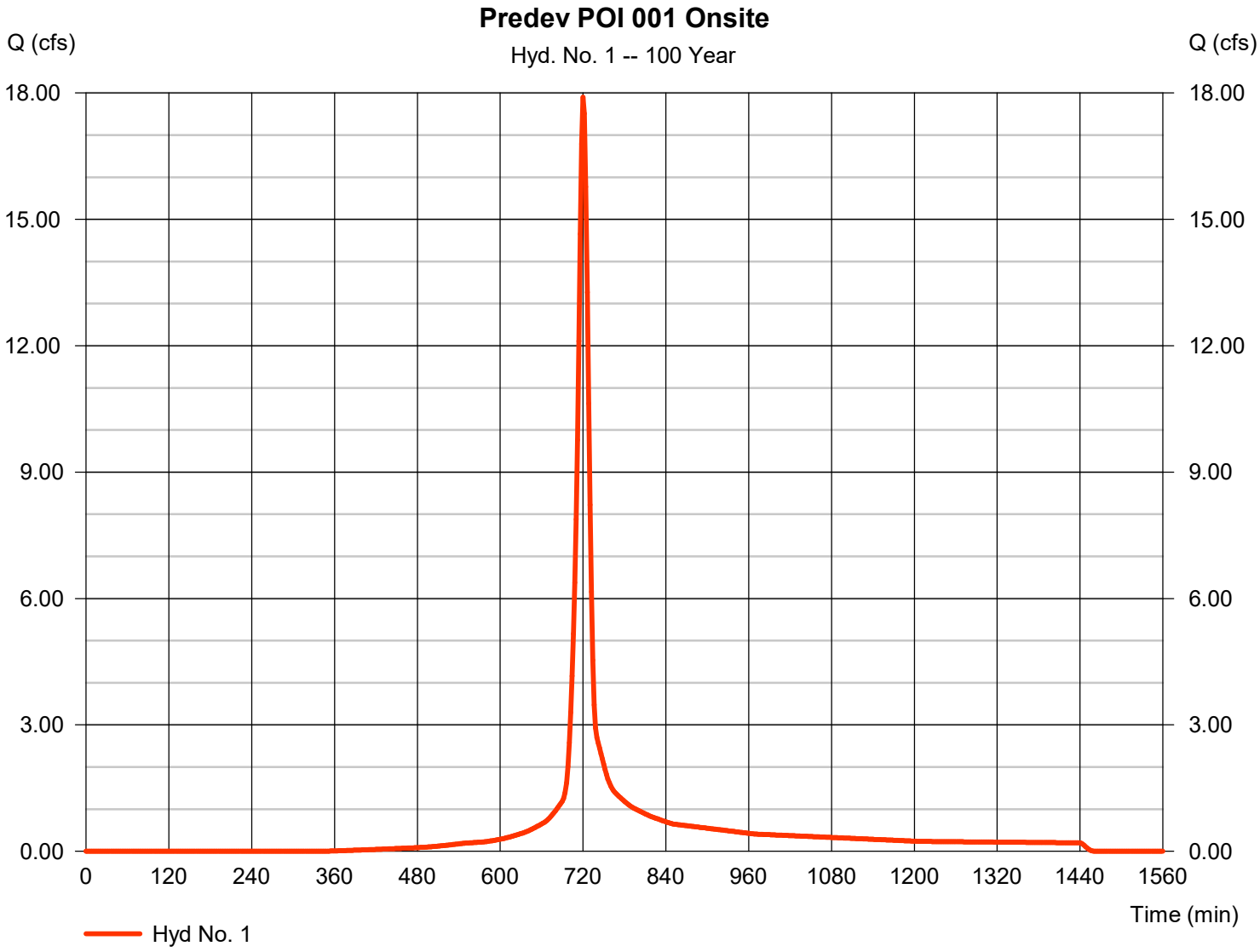
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 1

Predev POI 001 Onsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	17.90 cfs
Storm frequency	=	100 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	46,960 cuft
Drainage area	=	2.310 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	11.10 min
Total precip.	=	8.17 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(2.290 x 77) + (0.020 x 98)] / 2.310



Hydrograph Report

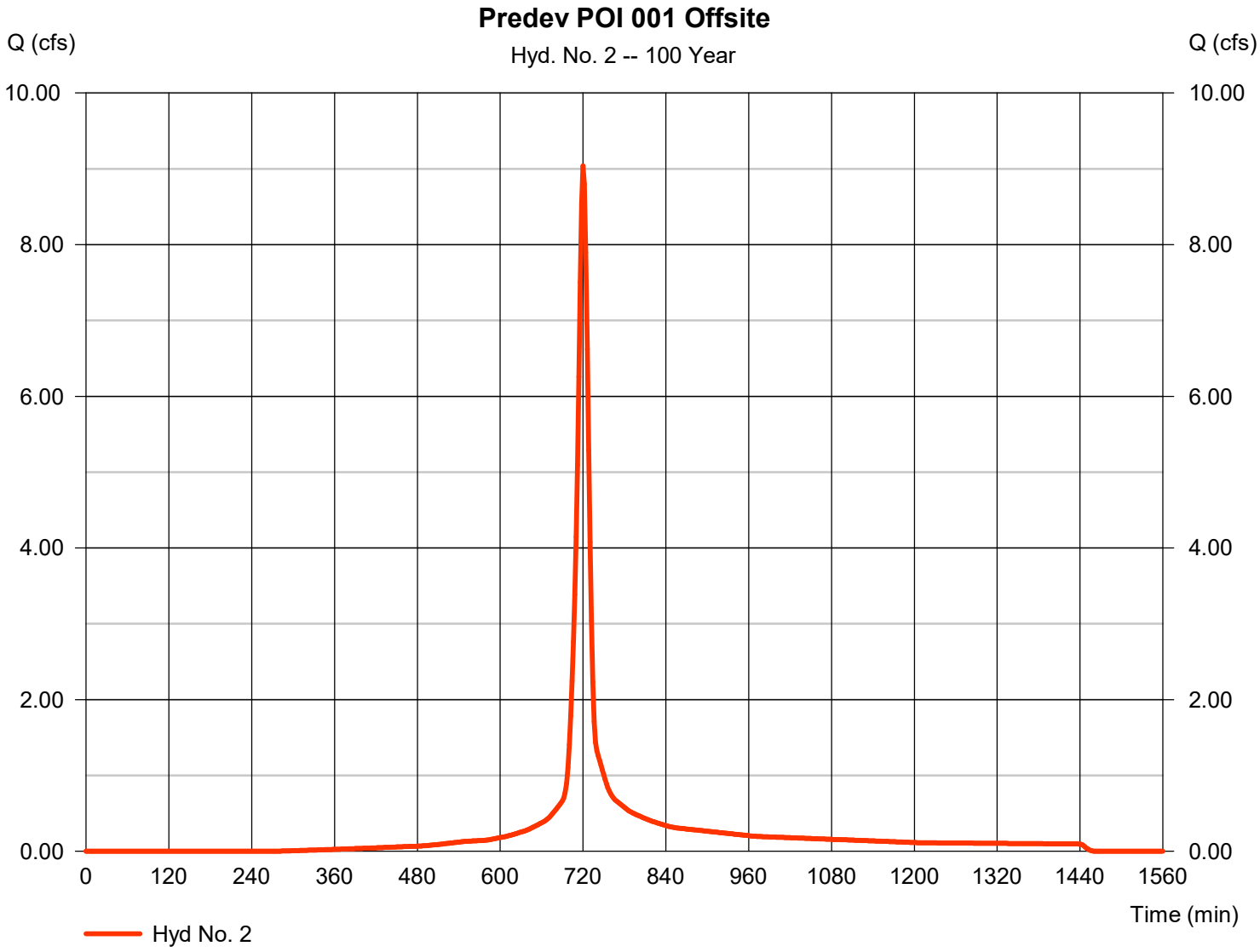
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 2

Predev POI 001 Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	9.037 cfs
Storm frequency	=	100 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	24,118 cuft
Drainage area	=	1.070 ac	Curve number	=	82*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	10.50 min
Total precip.	=	8.17 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.830 x 77) + (0.240 x 98)] / 1.070



Existing Conditions: POI 002 Onsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D	82,272	1.89	77	2.99	0.60	1.30	8900.87	0.20
Meadow	D			78					
Fertilized Planting Area	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D			80					
Lawn, High-Input	D			84					
Golf Course Fairway/Green	D			80					
Grassed Athletic Field	D			80					
Rooftop	D			98					
High Traffic Street / Highway	D			93					
Medium Traffic Street	D			98					
Low Traffic / Residential Street	D			98					
Res. Driveway, Play Courts, etc.	D			98					
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		82,272	1.89						0.20

Existing Conditions: POI 002 Offsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff1 (in)	Runoff Volume2 (ft3)	Runoff Volume (AC-FT)
Forest (Good)	D	55,935	1.28	77	2.99	0.60	1.30	6051.50	0.14
Meadow	D			78					
Fertilized Planting Area	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D			80					
Lawn, High-Input	D			84					
Golf Course Fairway/Green	D			80					
Grassed Athletic Field	D			80					
Rooftop	D			98					
High Traffic Street / Highway	D			93					
Medium Traffic Street	D			98					
Low Traffic / Residential Street	D			98					
Res. Driveway, Play Courts, etc.	D			98					
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		55,935	1.28						0.14

TR55 Tc Worksheet

Hyd. No. 4

Predev POI 002 Onsite

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.800		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.32		0.00		0.00		
Land slope (%)	= 10.00		0.00		0.00		
Travel Time (min)	**= 11.07**	**+**	**0.00**	**+**	**0.00**	**=**	**11.07**
Shallow Concentrated Flow							
Flow length (ft)	= 188.00		164.00		0.00		
Watercourse slope (%)	= 13.30		0.30		0.00		
Surface description	= Unpaved		Unpaved		Paved		
Average velocity (ft/s)	=5.88		0.88		0.00		
Travel Time (min)	**= 0.53**	**+**	**3.09**	**+**	**0.00**	**=**	**3.63**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 14.70 min

TR55 Tc Worksheet

Hyd. No. 5

Predev POI 002 Offsite

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.800		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.32		0.00		0.00		
Land slope (%)	= 12.00		0.00		0.00		
Travel Time (min)	**= 10.30**	**+**	**0.00**	**+**	**0.00**	**=**	**10.30**
Shallow Concentrated Flow							
Flow length (ft)	= 868.00		0.00		0.00		
Watercourse slope (%)	= 3.80		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=3.15		0.00		0.00		
Travel Time (min)	**= 4.60**	**+**	**0.00**	**+**	**0.00**	**=**	**4.60**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 14.90 min

Hydrograph Report

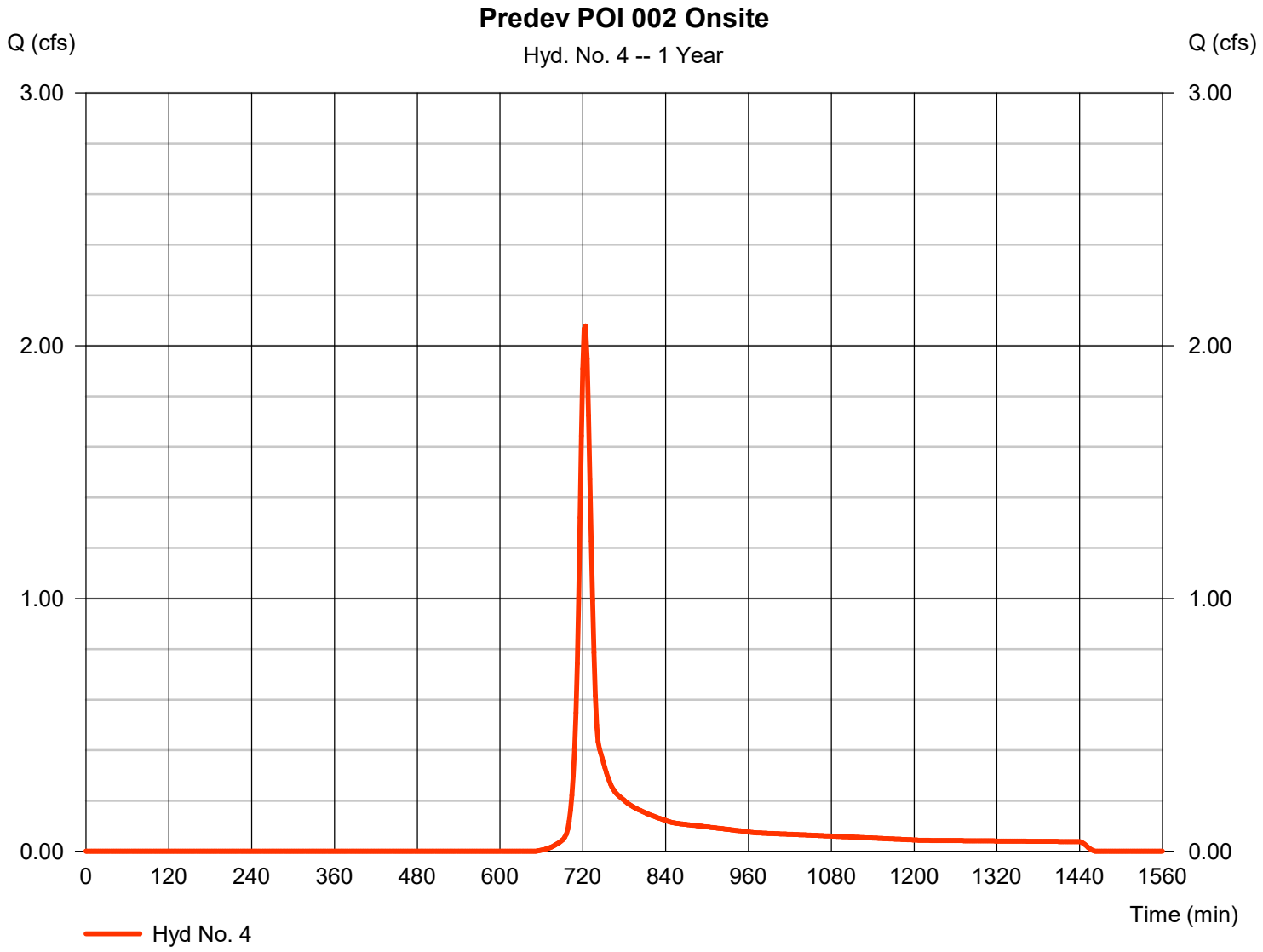
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 4

Predev POI 002 Onsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.079 cfs
Storm frequency	=	1 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	6,075 cuft
Drainage area	=	1.890 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	14.70 min
Total precip.	=	2.76 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.890 x 77)] / 1.890



Hydrograph Report

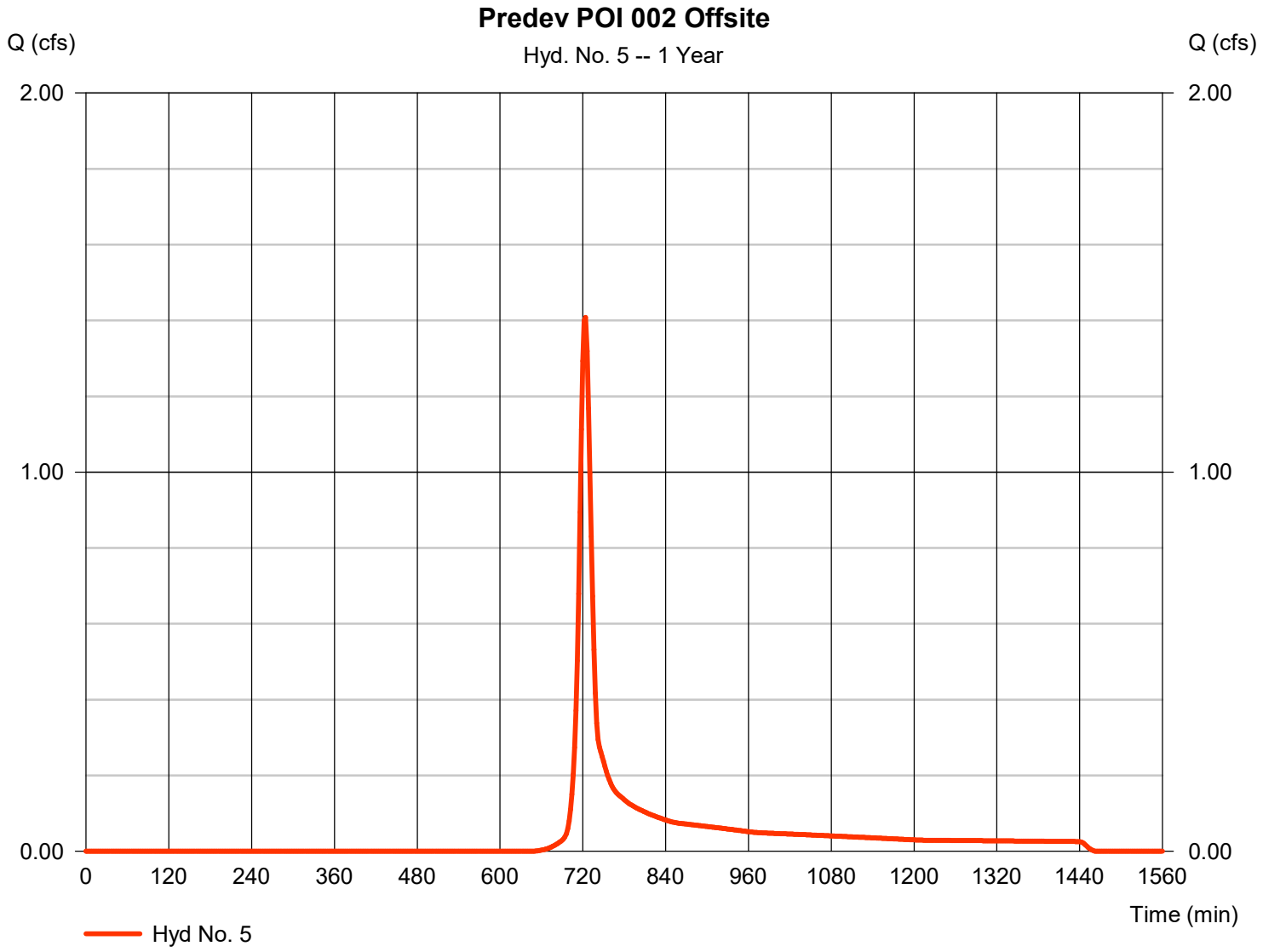
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 5

Predev POI 002 Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.408 cfs
Storm frequency	=	1 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	4,114 cuft
Drainage area	=	1.280 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	14.90 min
Total precip.	=	2.76 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.280 x 77)] / 1.280



Hydrograph Report

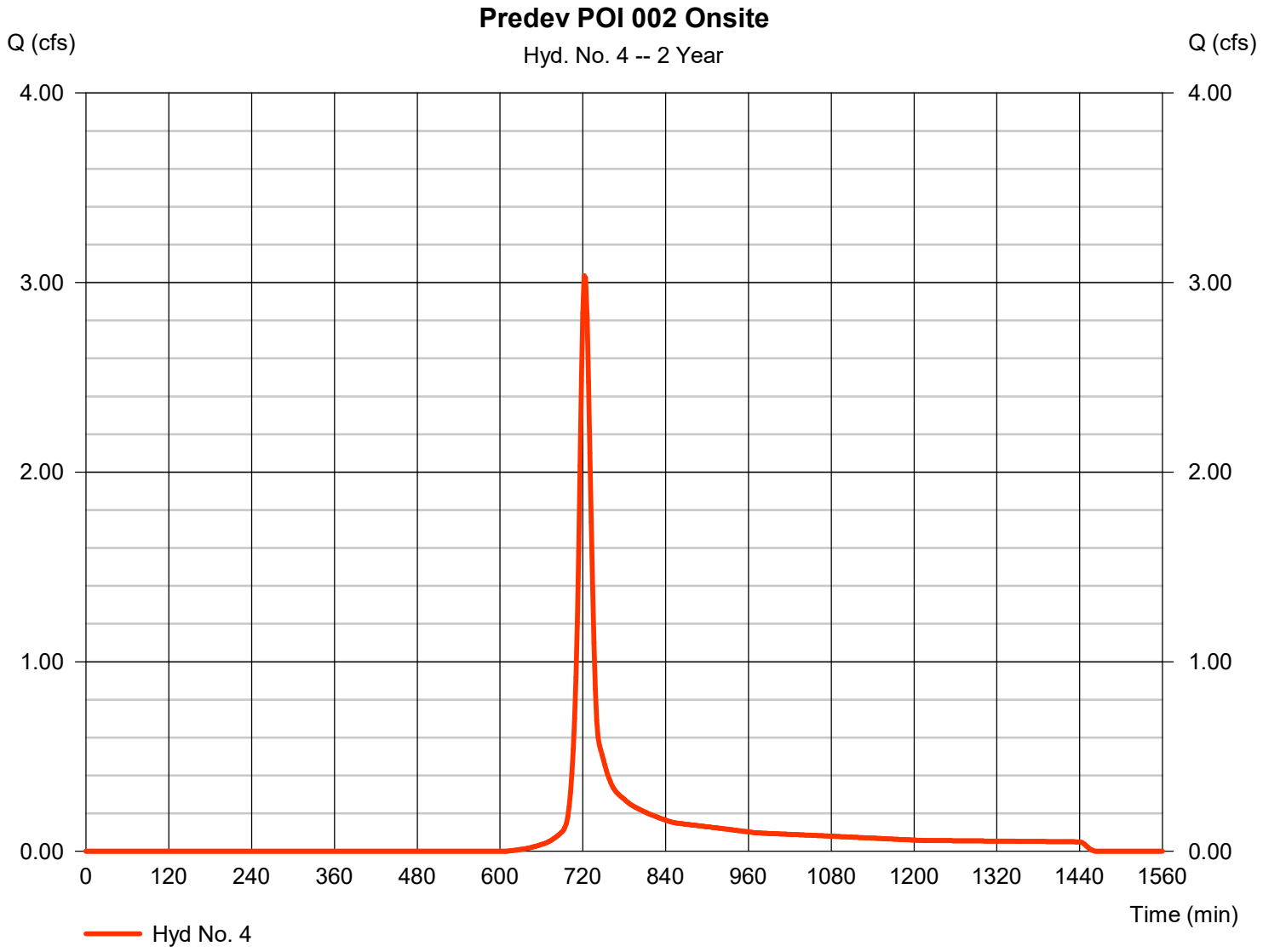
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 4

Predev POI 002 Onsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.036 cfs
Storm frequency	=	2 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	8,684 cuft
Drainage area	=	1.890 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	14.70 min
Total precip.	=	3.32 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.890 x 77)] / 1.890



Hydrograph Report

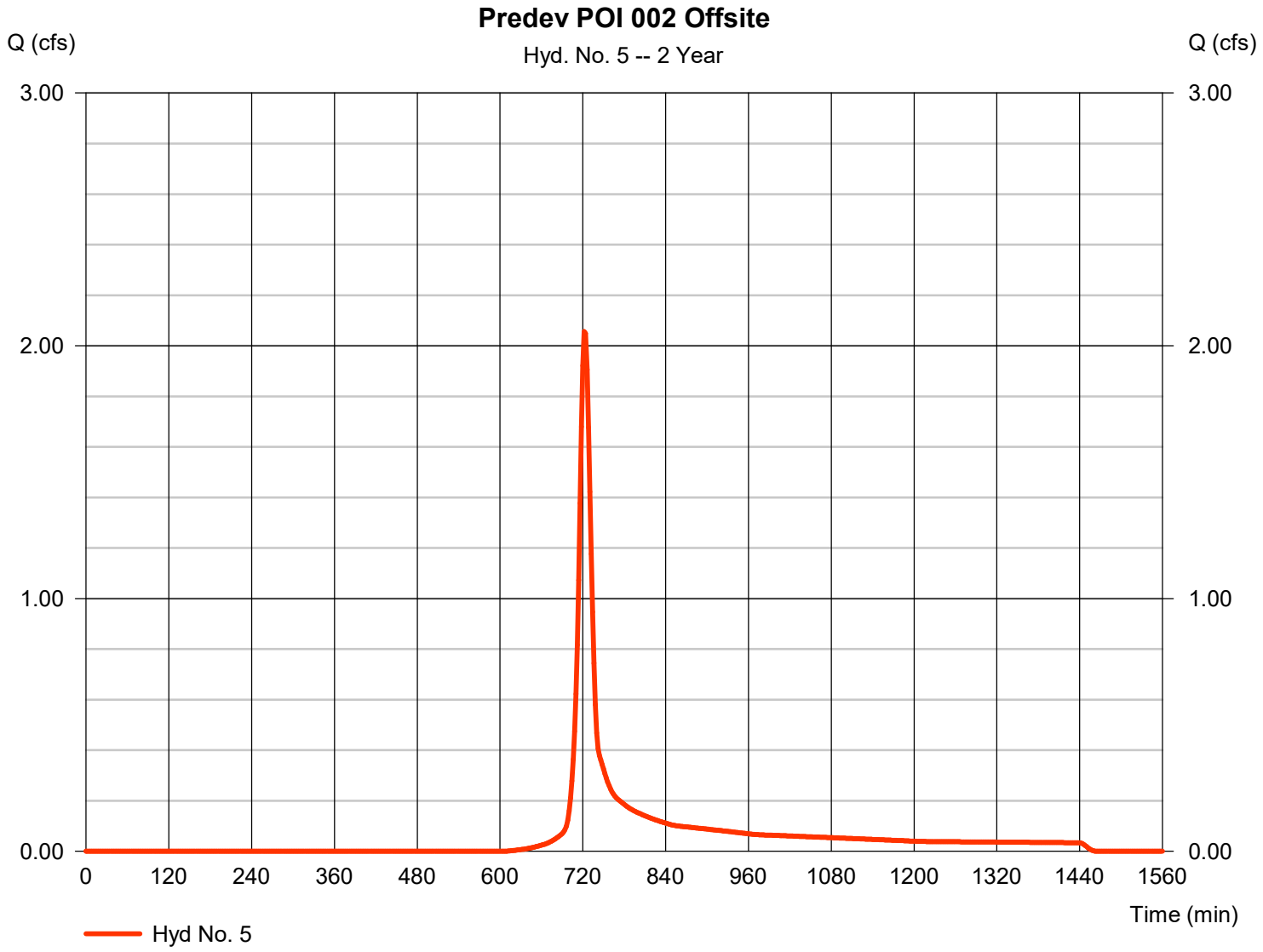
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 5

Predev POI 002 Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.056 cfs
Storm frequency	=	2 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	5,881 cuft
Drainage area	=	1.280 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	14.90 min
Total precip.	=	3.32 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.280 x 77)] / 1.280



Hydrograph Report

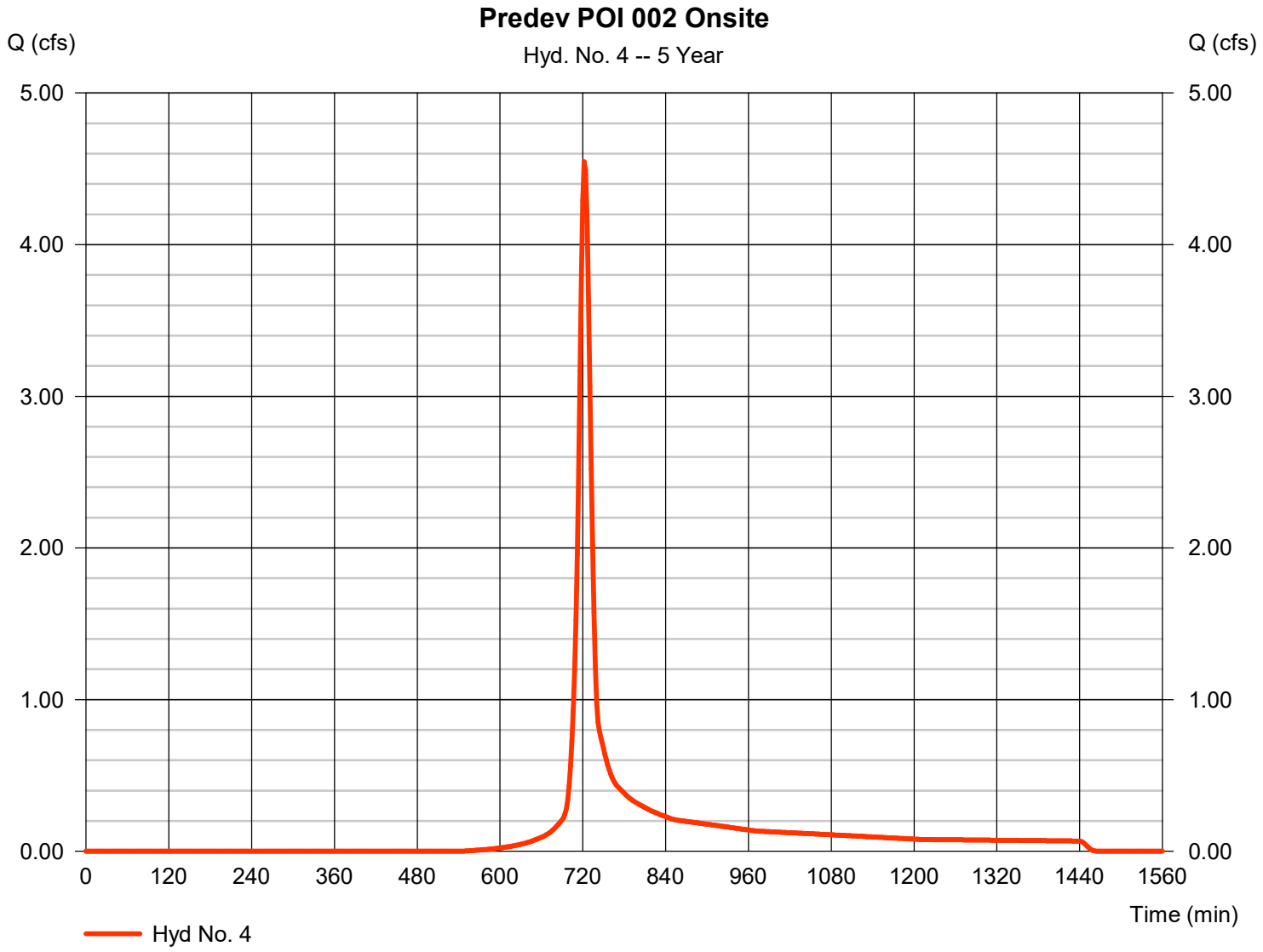
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 4

Predev POI 002 Onsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	4.546 cfs
Storm frequency	=	5 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	12,804 cuft
Drainage area	=	1.890 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	14.70 min
Total precip.	=	4.13 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.890 x 77)] / 1.890



Hydrograph Report

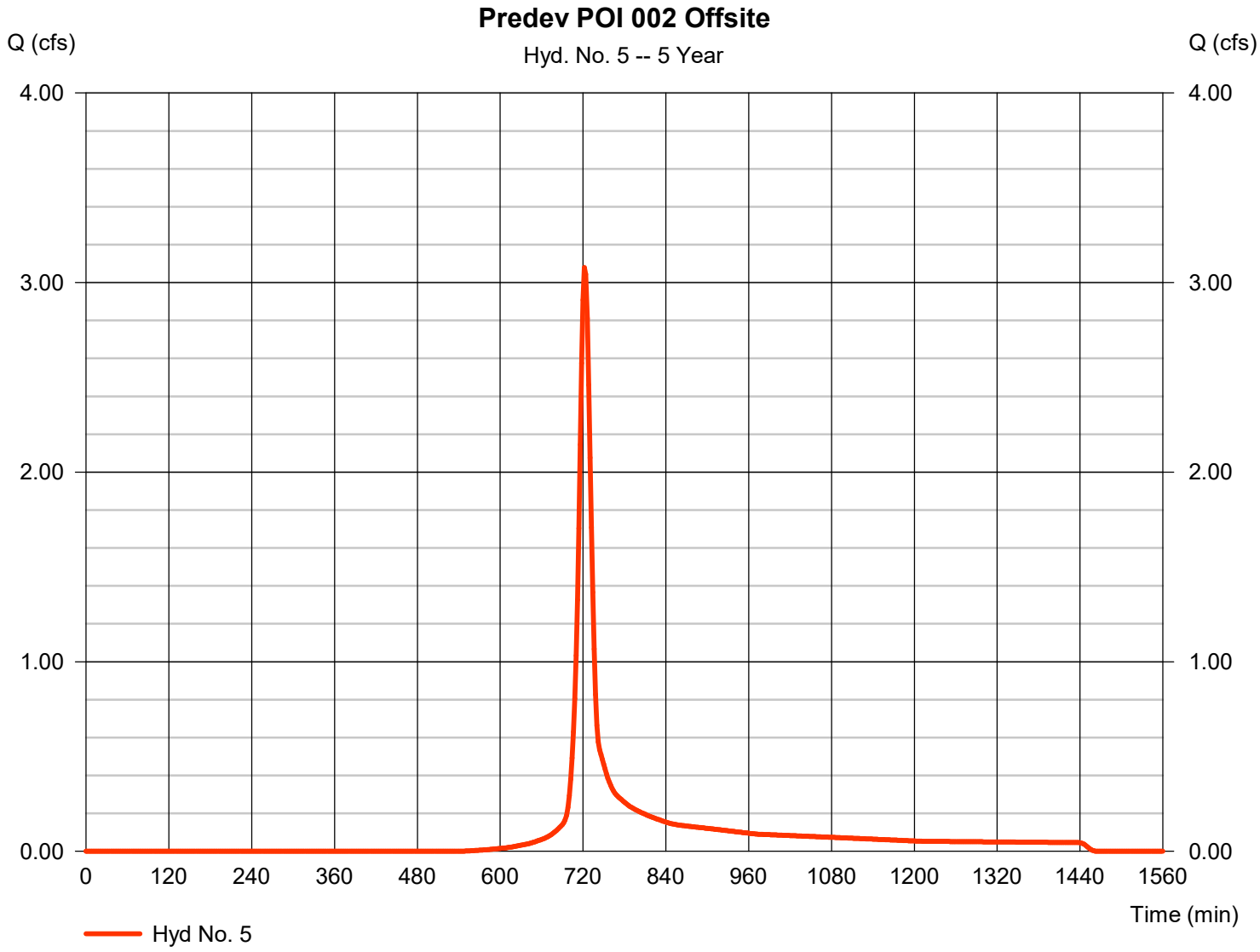
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 5

Predev POI 002 Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.079 cfs
Storm frequency	=	5 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	8,671 cuft
Drainage area	=	1.280 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	14.90 min
Total precip.	=	4.13 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.280 x 77)] / 1.280



Hydrograph Report

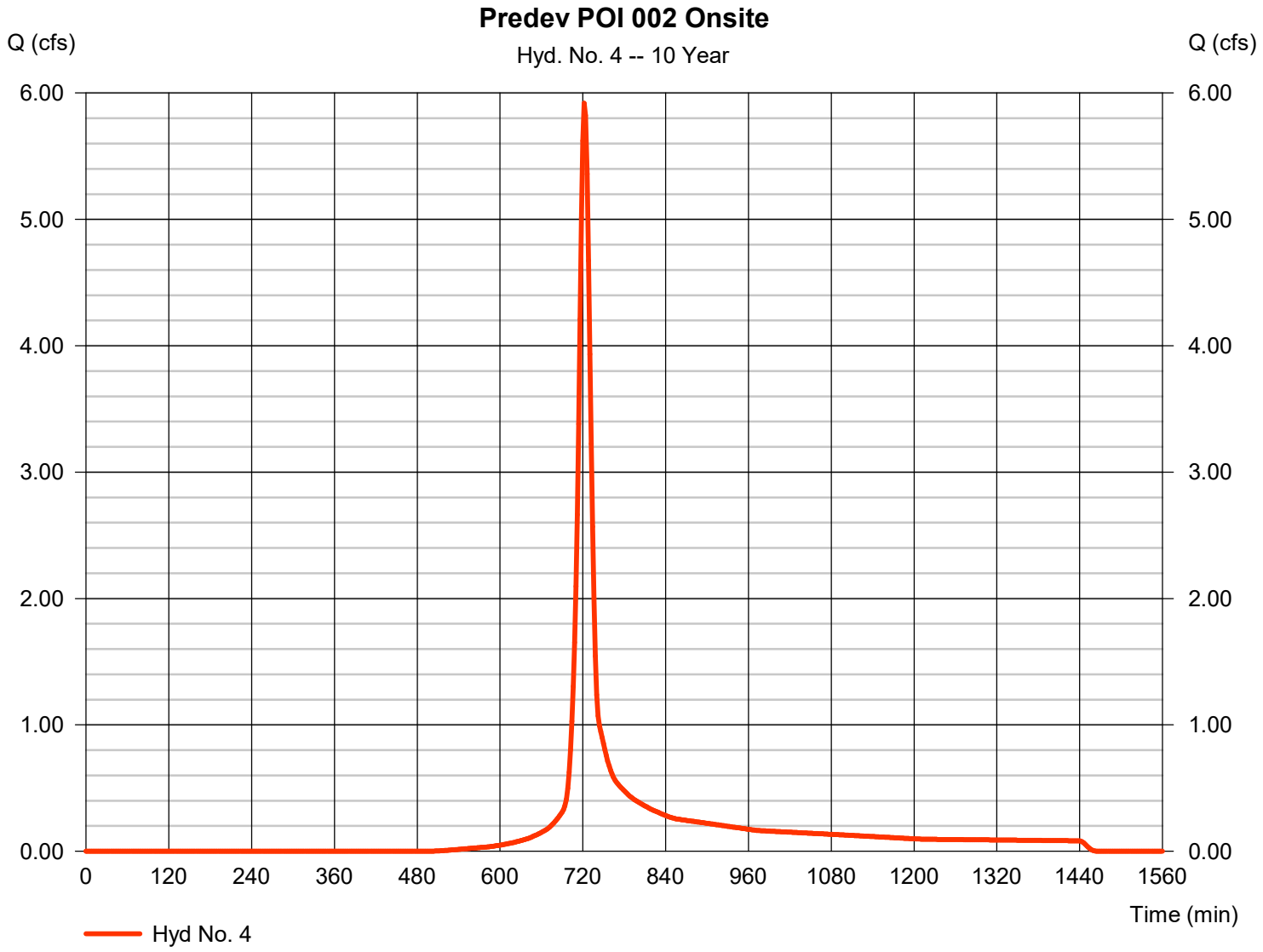
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 4

Predev POI 002 Onsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	5.919 cfs
Storm frequency	=	10 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	16,599 cuft
Drainage area	=	1.890 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	14.70 min
Total precip.	=	4.83 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.890 x 77)] / 1.890



Hydrograph Report

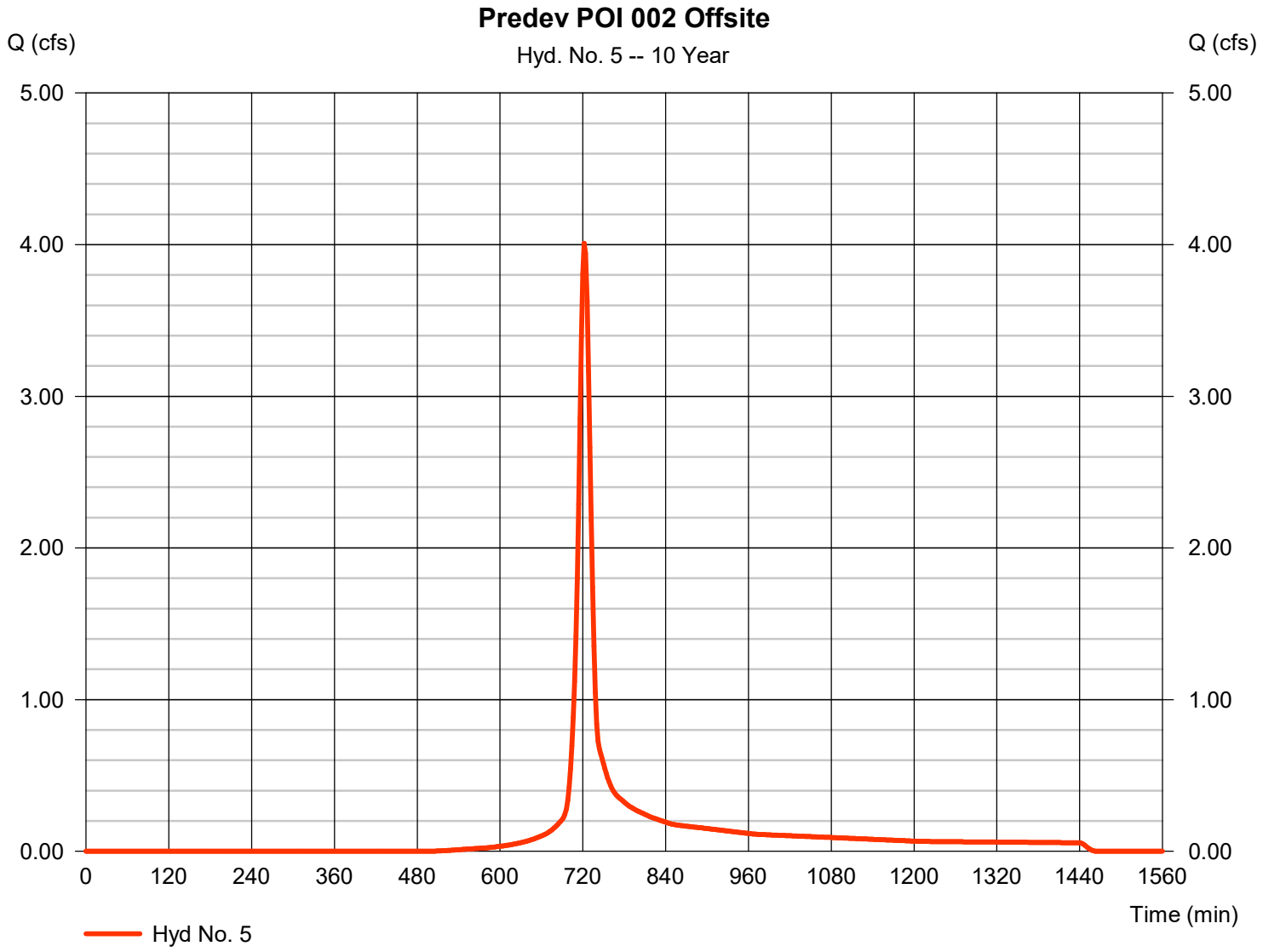
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 5

Predev POI 002 Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	4.009 cfs
Storm frequency	=	10 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	11,241 cuft
Drainage area	=	1.280 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	14.90 min
Total precip.	=	4.83 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.280 x 77)] / 1.280



Hydrograph Report

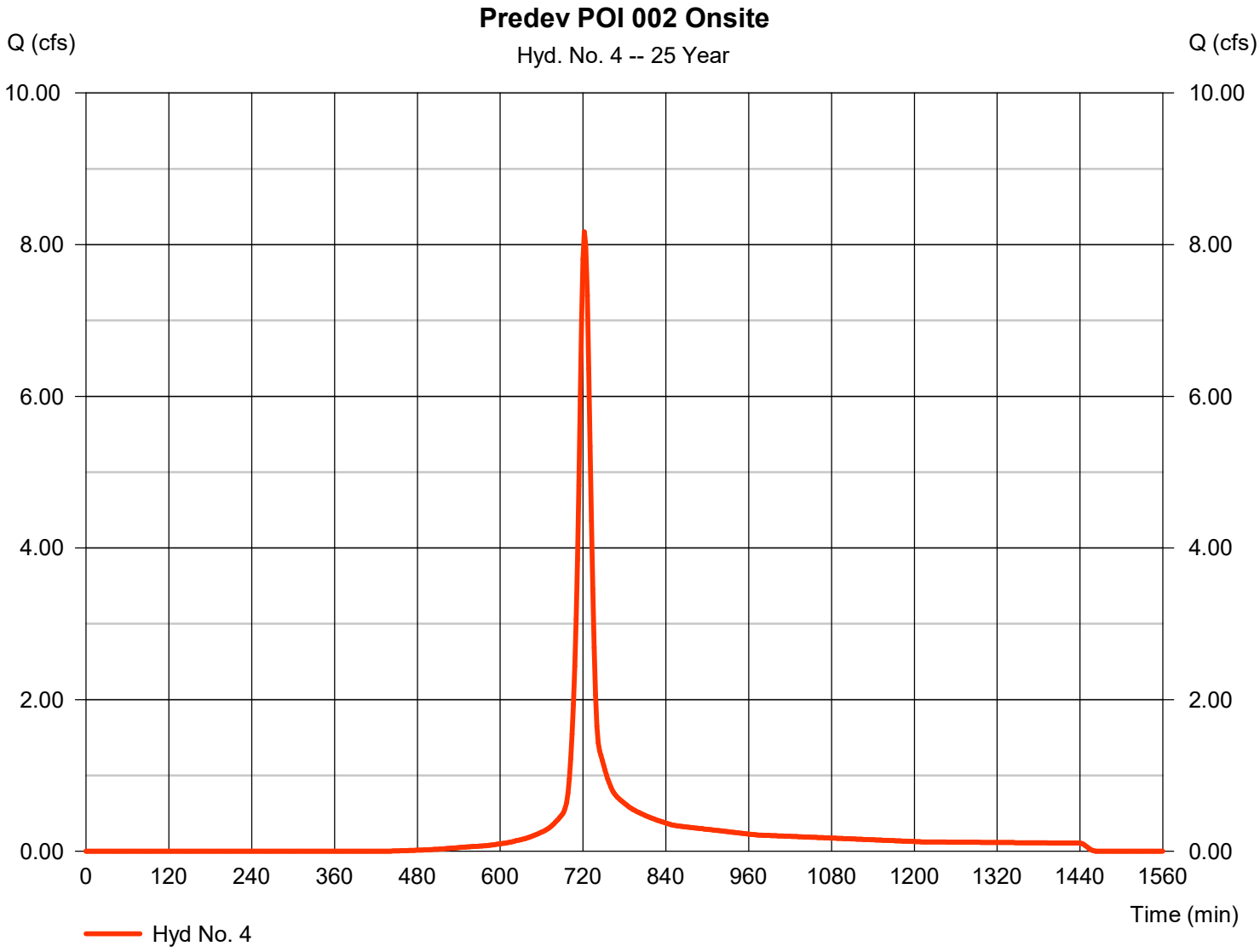
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 4

Predev POI 002 Onsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	8.170 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	22,922 cuft
Drainage area	=	1.890 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	14.70 min
Total precip.	=	5.94 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.890 x 77)] / 1.890



Hydrograph Report

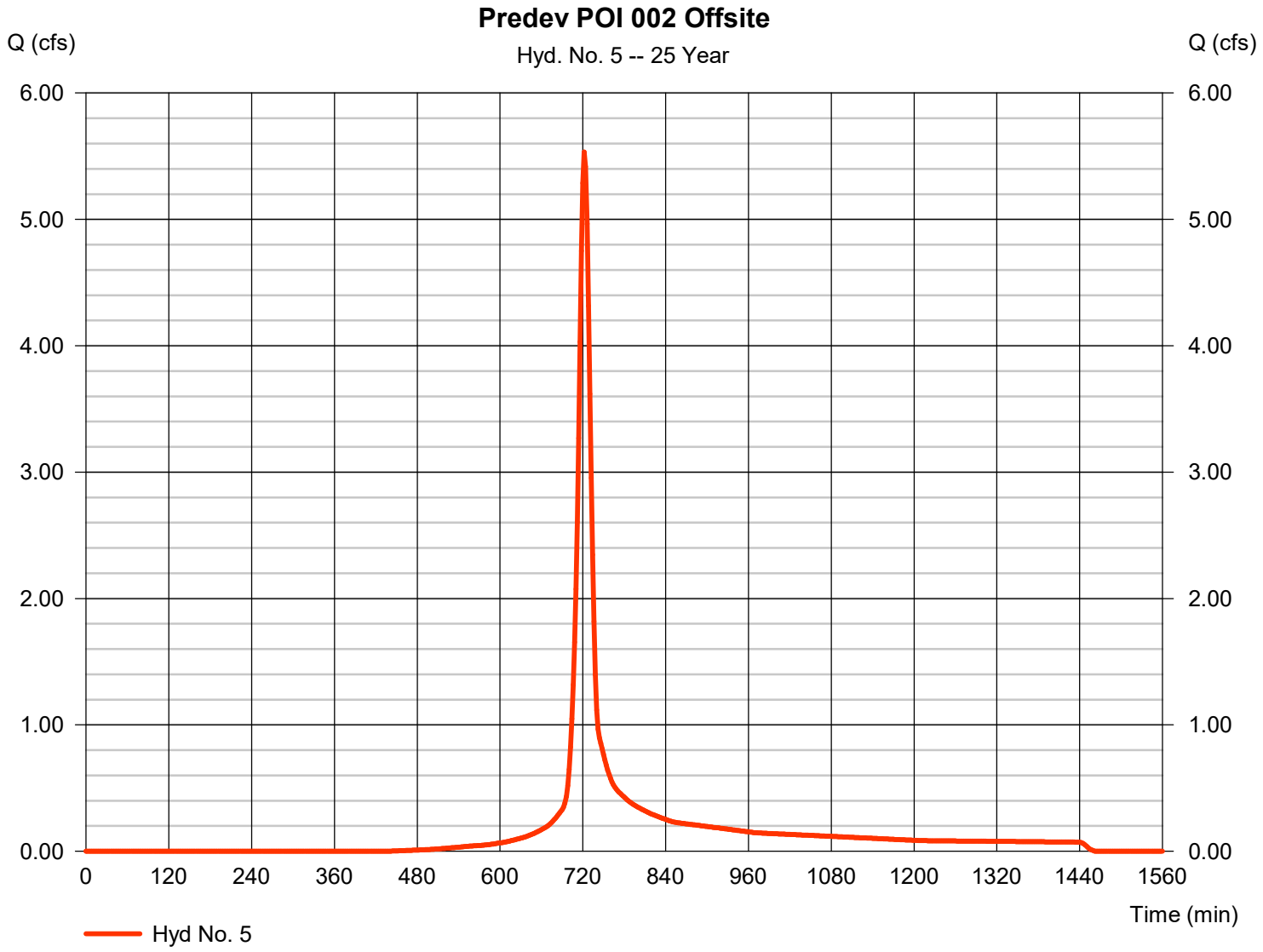
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 5

Predev POI 002 Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	5.533 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	15,524 cuft
Drainage area	=	1.280 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	14.90 min
Total precip.	=	5.94 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.280 x 77)] / 1.280



Hydrograph Report

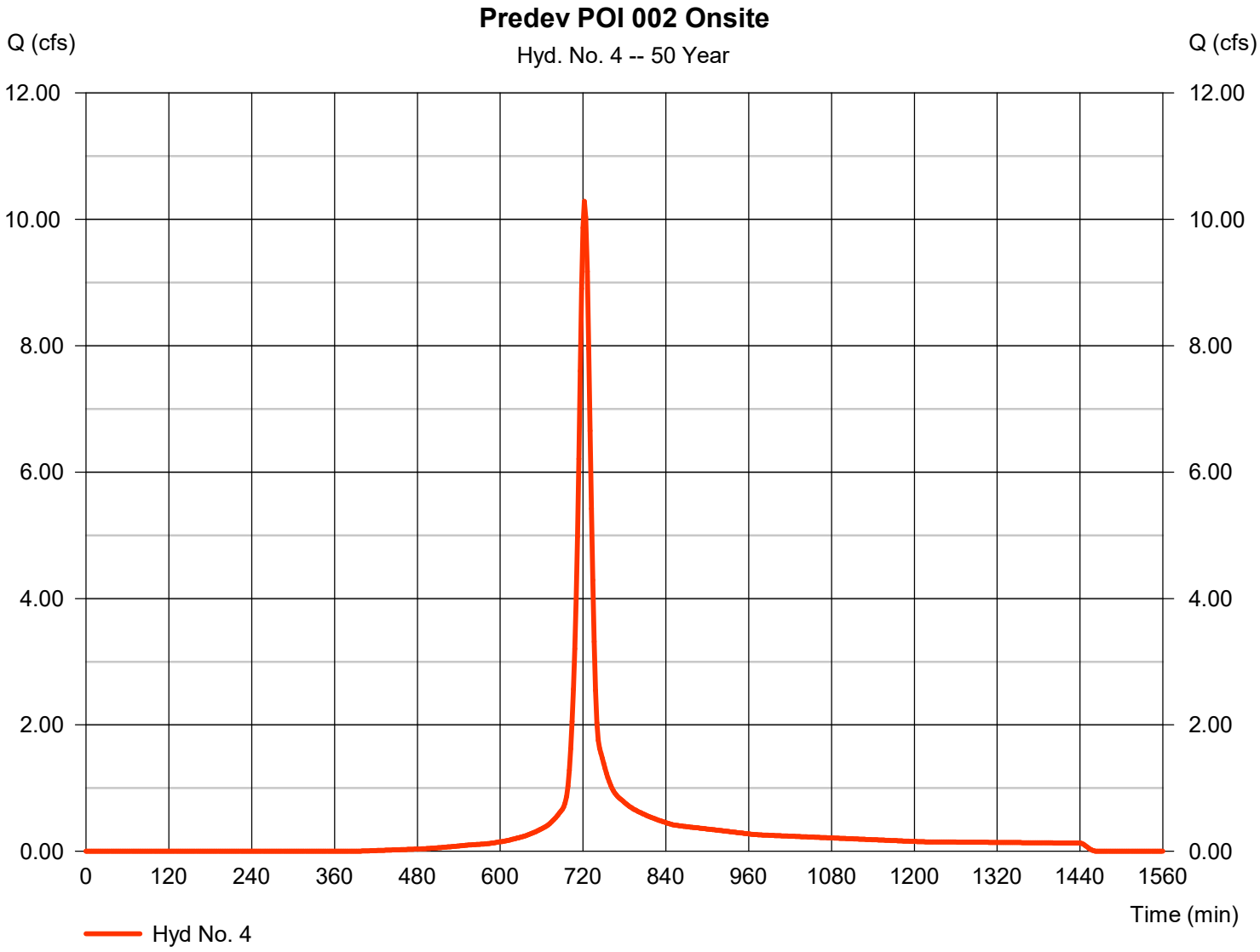
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 4

Predev POI 002 Onsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	10.28 cfs
Storm frequency	=	50 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	28,963 cuft
Drainage area	=	1.890 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	14.70 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.890 x 77)] / 1.890



Hydrograph Report

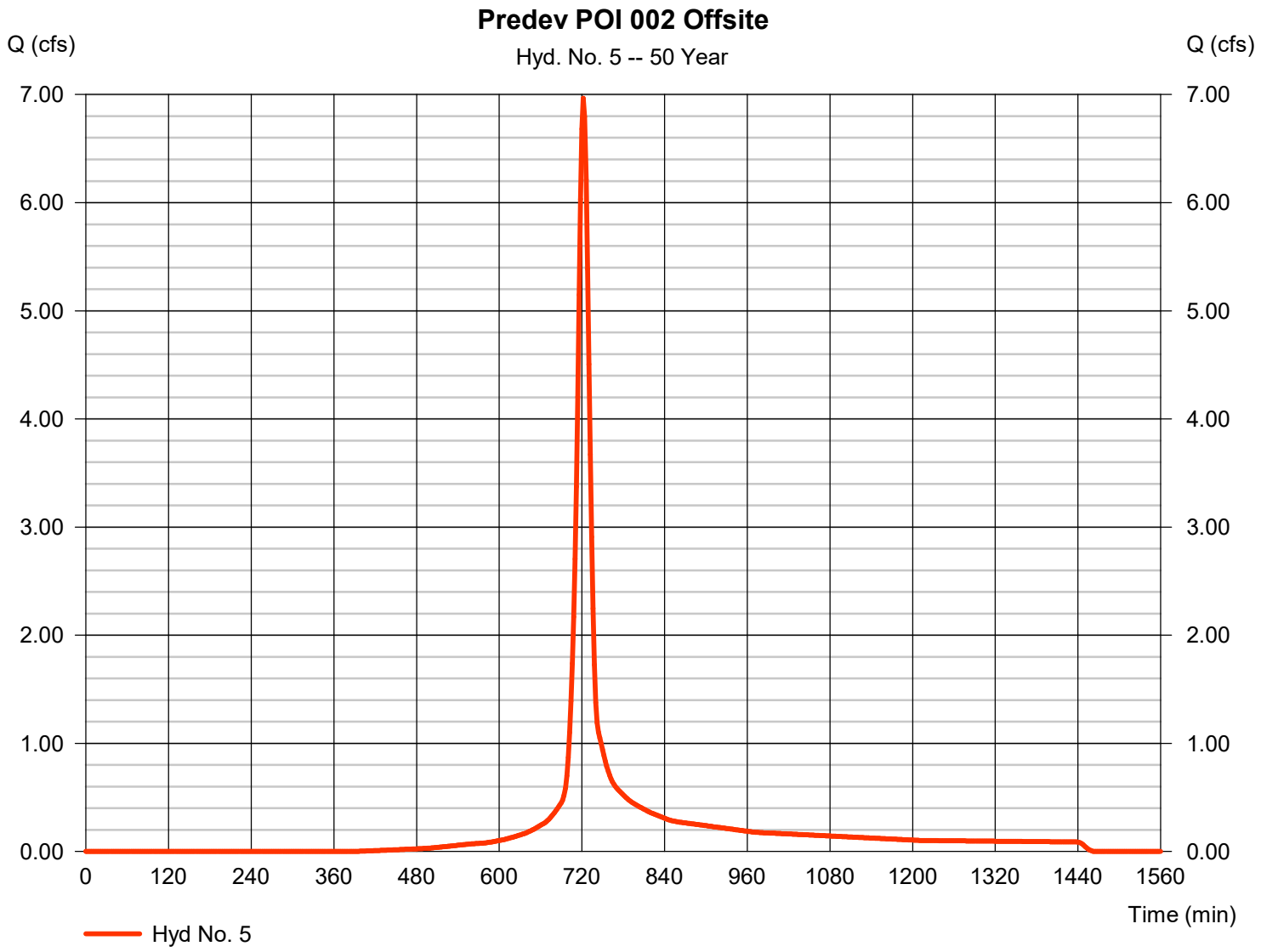
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 5

Predev POI 002 Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	6.965 cfs
Storm frequency	=	50 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	19,615 cuft
Drainage area	=	1.280 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	14.90 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.280 x 77)] / 1.280



Hydrograph Report

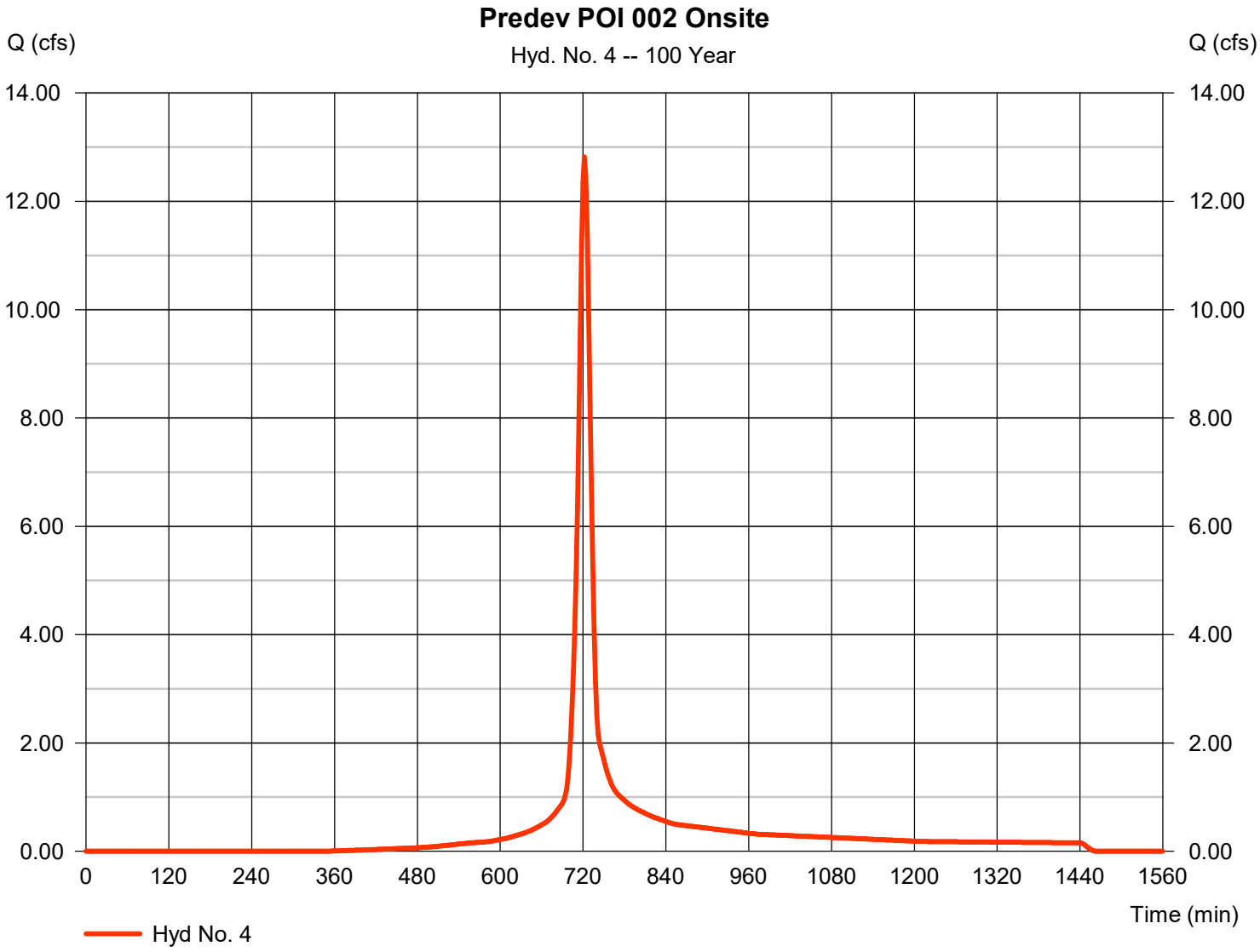
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 4

Predev POI 002 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 12.82 cfs
Storm frequency	= 100 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 36,326 cuft
Drainage area	= 1.890 ac	Curve number	= 77*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 14.70 min
Total precip.	= 8.17 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.890 x 77)] / 1.890



Hydrograph Report

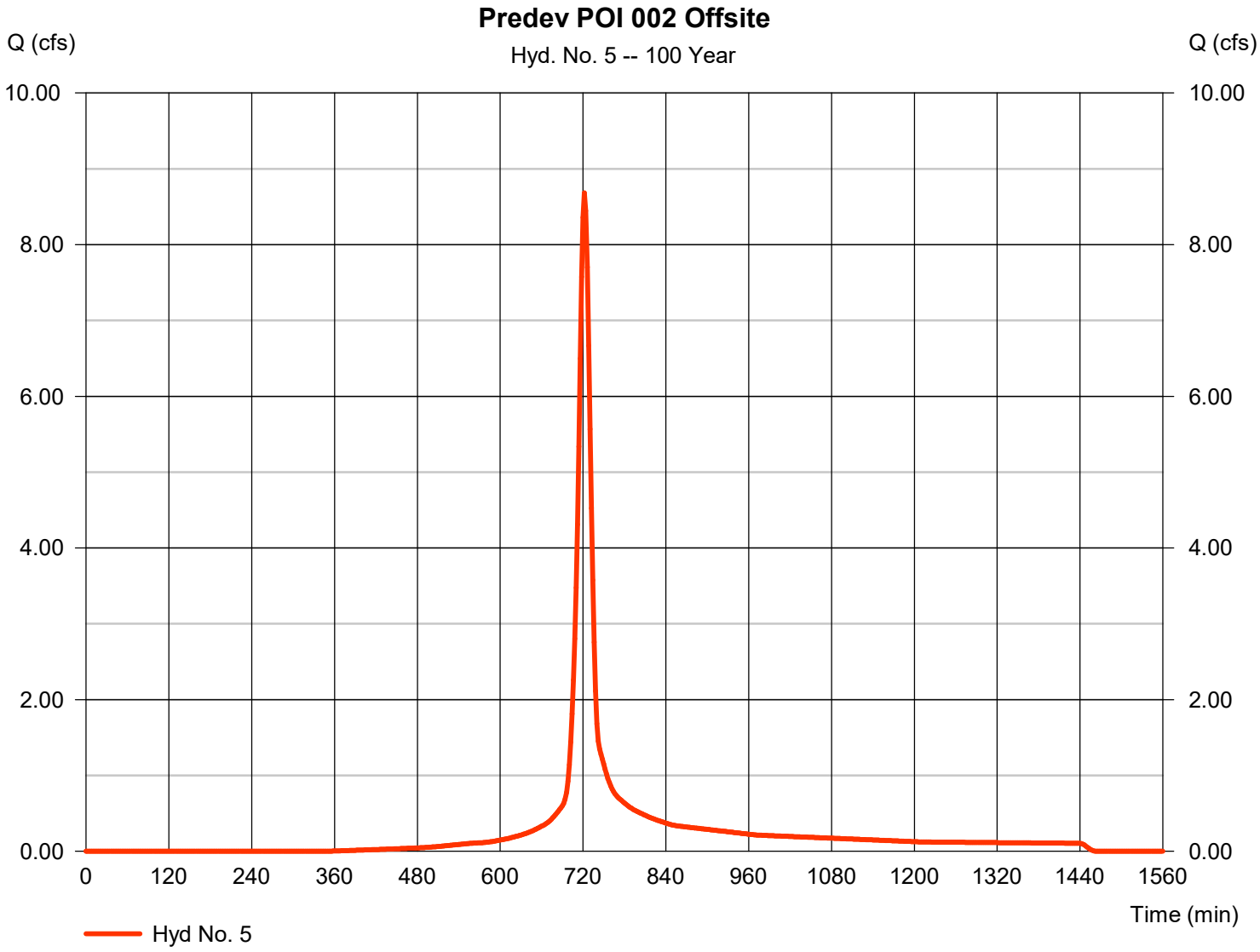
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 5

Predev POI 002 Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	8.682 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	24,602 cuft
Drainage area	=	1.280 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	14.90 min
Total precip.	=	8.17 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.280 x 77)] / 1.280



Existing Conditions: POI 003 Onsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D	36,911	0.85	77	2.99	0.60	1.30	3993.33	0.09
Meadow	D			78					
Fertilized Planting Area	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D			80					
Lawn, High-Input	D			84					
Golf Course Fairway/Green	D			80					
Grassed Athletic Field	D			80					
Rooftop	D			98					
High Traffic Street / Highway	D			93					
Medium Traffic Street	D			98					
Low Traffic / Residential Street	D	0		98					
Res. Driveway, Play Courts, etc.	D			98					
High Traffic Parking Lot	D			98					
Low Traffic / Residential Street	D			98					
TOTAL:		36,911	0.85						0.09

Existing Conditions: POI 003 Offsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff1 (in)	Runoff Volume2 (ft3)	Runoff Volume (AC-FT)
Forest (Good)	D	14,653	0.34	77	2.99	0.60	1.30	1585.28	0.04
Meadow	D			78					
Fertilized Planting Area	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D			80					
Lawn, High-Input	D			84					
Golf Course Fairway/Green	D			80					
Grassed Athletic Field	D			80					
Rooftop	D			98					
High Traffic Street / Highway	D			93					
Medium Traffic Street	D			98					
Low Traffic / Residential Street	D			98					
Res. Driveway, Play Courts, etc.	D			98					
High Traffic Parking Lot	D			98					
Low Traffic / Residential Street	D			98					
TOTAL:		14,653	0.34						0.04

TR55 Tc Worksheet

Hyd. No. 7

Predev POI 003 Onsite

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.800		0.011		0.011		
Flow length (ft)	= 50.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.32		0.00		0.00		
Land slope (%)	= 14.00		0.00		0.00		
Travel Time (min)	**= 9.68**	**+**	**0.00**	**+**	**0.00**	**=**	**9.68**
Shallow Concentrated Flow							
Flow length (ft)	= 17.00		257.00		627.00		
Watercourse slope (%)	= 53.00		6.20		6.20		
Surface description	= Unpaved		Unpaved		Unpaved		
Average velocity (ft/s)	=11.75		4.02		4.02		
Travel Time (min)	**= 0.02**	**+**	**1.07**	**+**	**2.60**	**=**	**3.69**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 13.40 min

Hydrograph Report

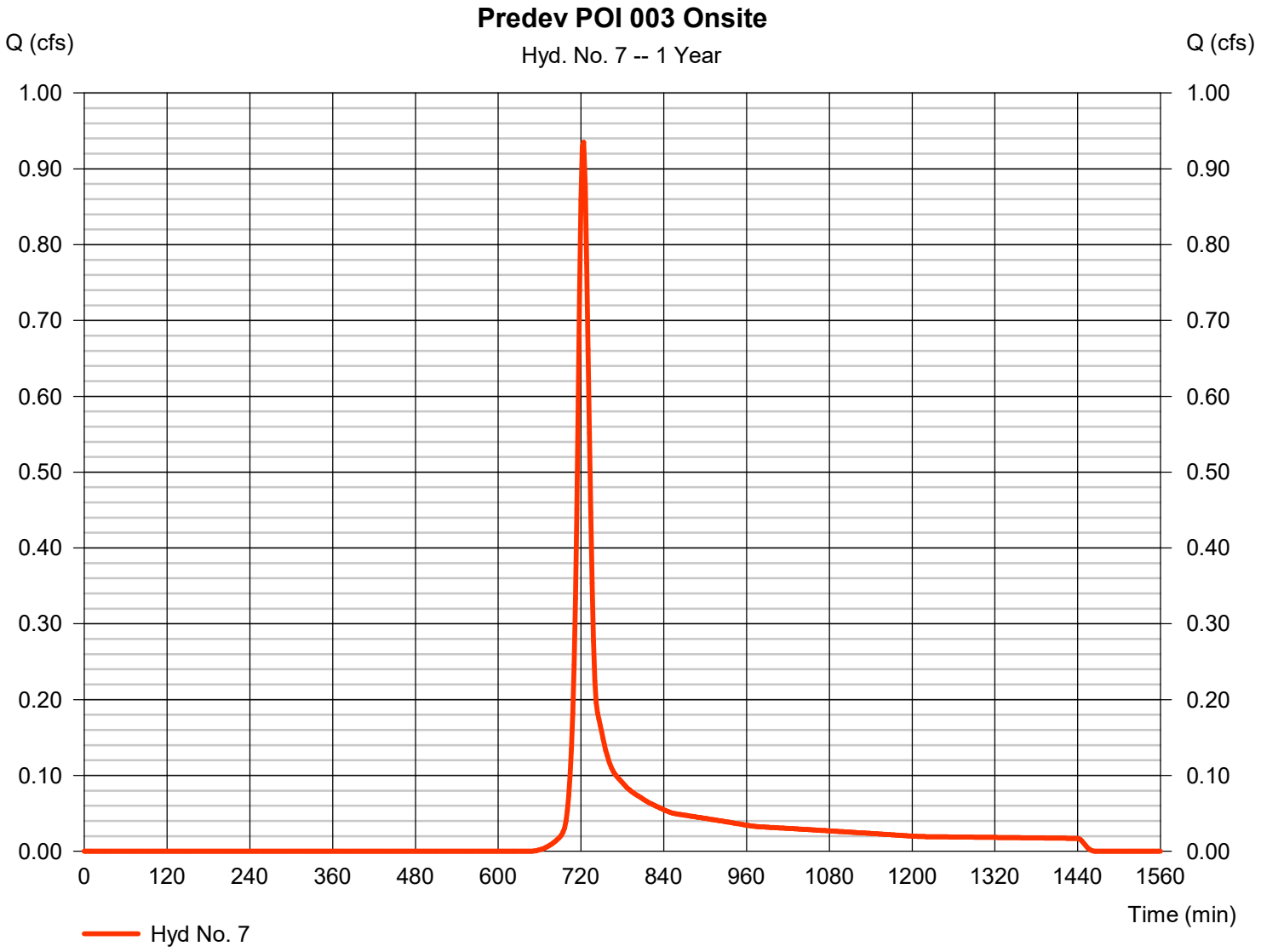
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 7

Predev POI 003 Onsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.935 cfs
Storm frequency	=	1 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	2,732 cuft
Drainage area	=	0.850 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	13.40 min
Total precip.	=	2.76 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.850 x 77)] / 0.850



Hydrograph Report

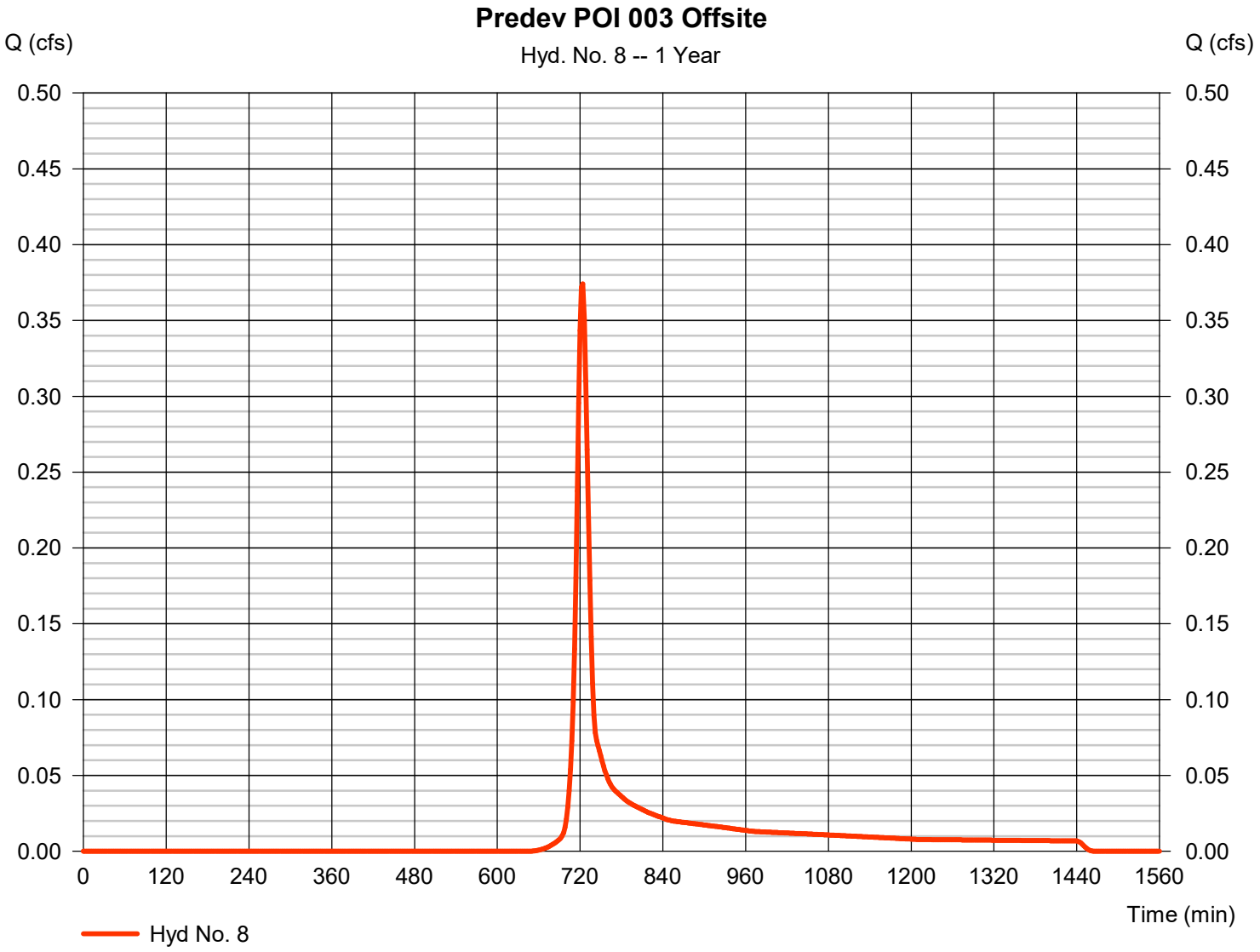
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 8

Predev POI 003 Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.374 cfs
Storm frequency	=	1 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	1,093 cuft
Drainage area	=	0.340 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	13.40 min
Total precip.	=	2.76 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.340 x 77)] / 0.340



Hydrograph Report

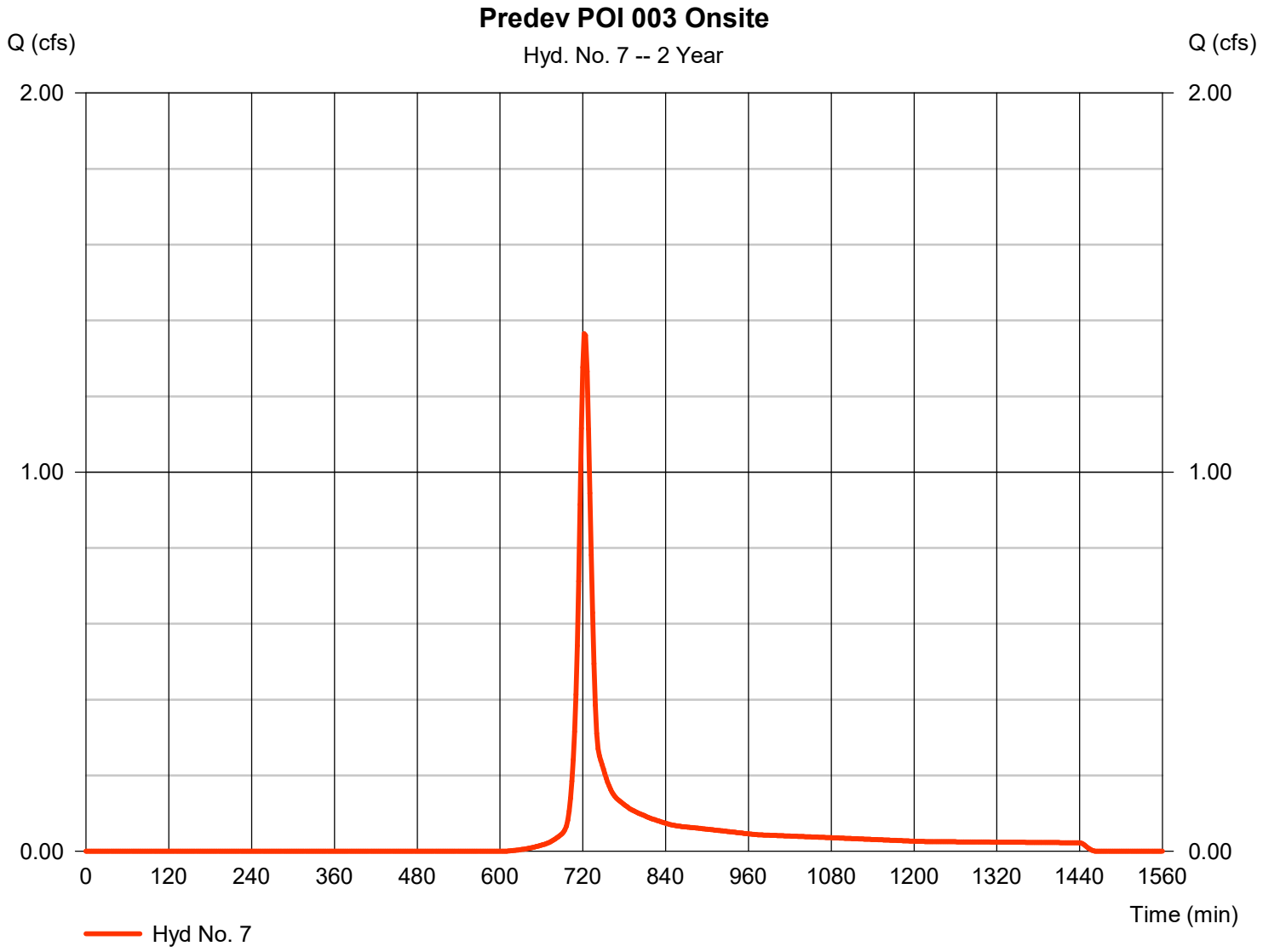
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 7

Predev POI 003 Onsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.365 cfs
Storm frequency	=	2 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	3,906 cuft
Drainage area	=	0.850 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	13.40 min
Total precip.	=	3.32 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.850 x 77)] / 0.850



Hydrograph Report

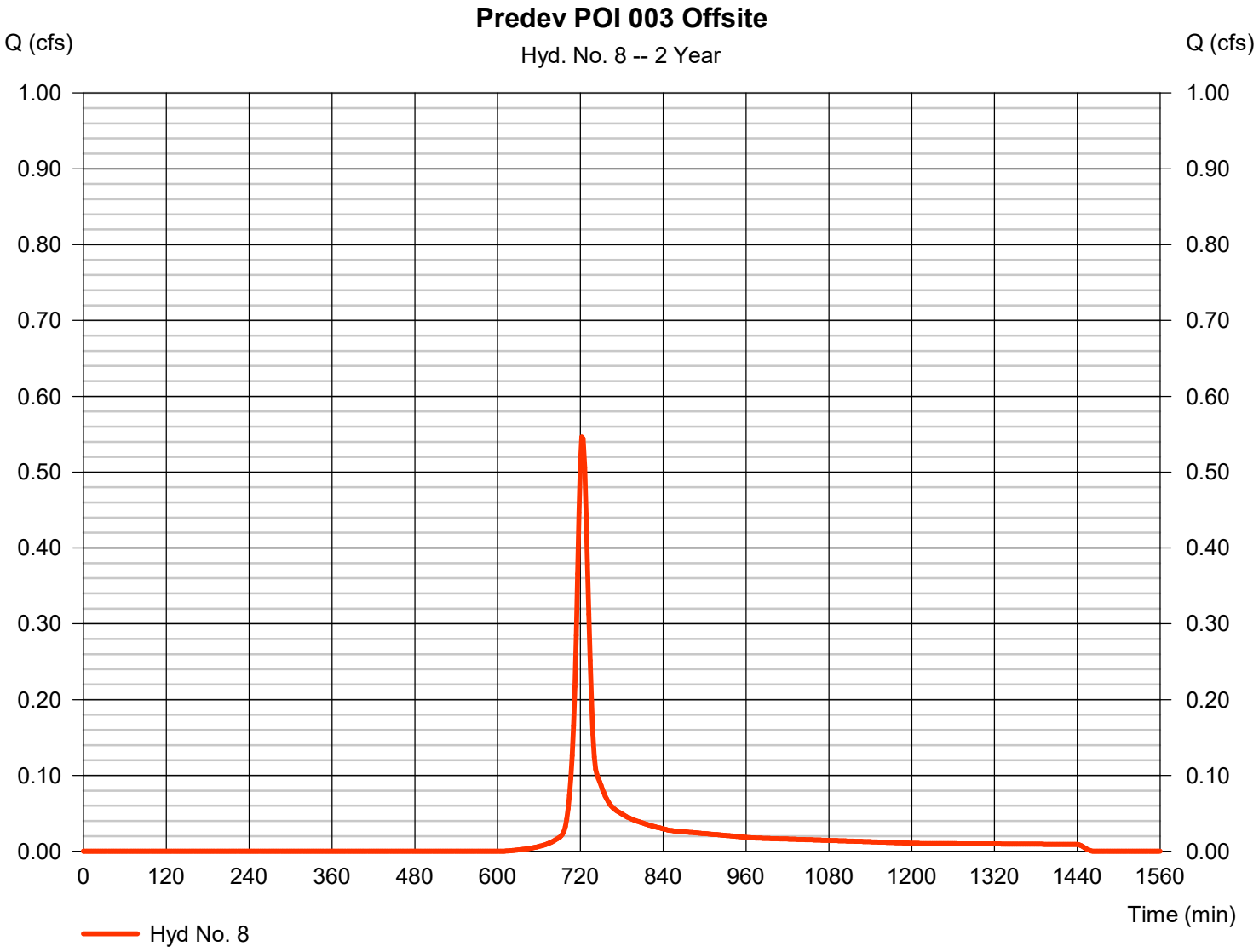
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 8

Predev POI 003 Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.546 cfs
Storm frequency	=	2 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	1,562 cuft
Drainage area	=	0.340 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	13.40 min
Total precip.	=	3.32 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.340 x 77)] / 0.340



Hydrograph Report

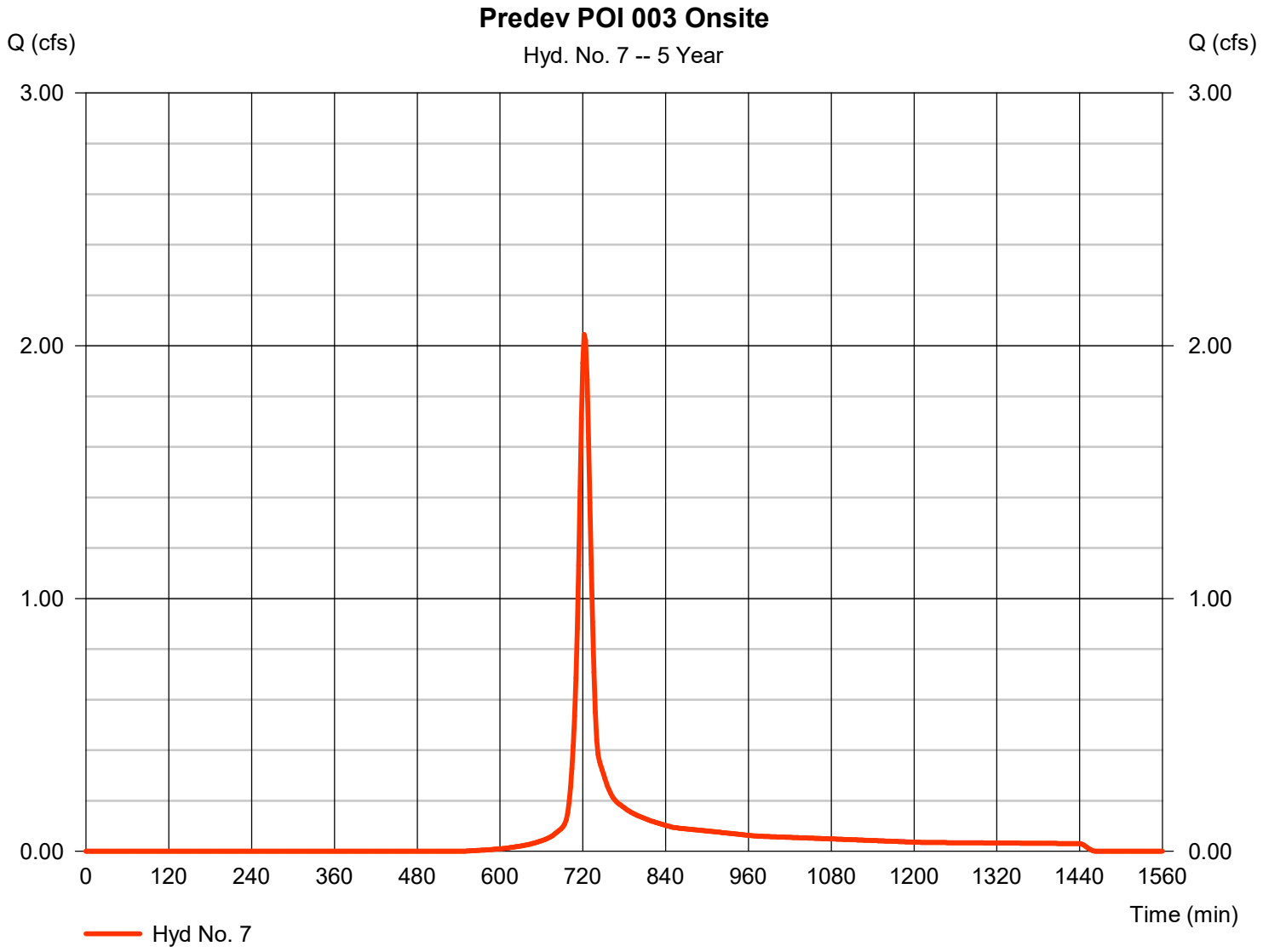
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 7

Predev POI 003 Onsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.045 cfs
Storm frequency	=	5 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	5,758 cuft
Drainage area	=	0.850 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	13.40 min
Total precip.	=	4.13 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.850 x 77)] / 0.850



Hydrograph Report

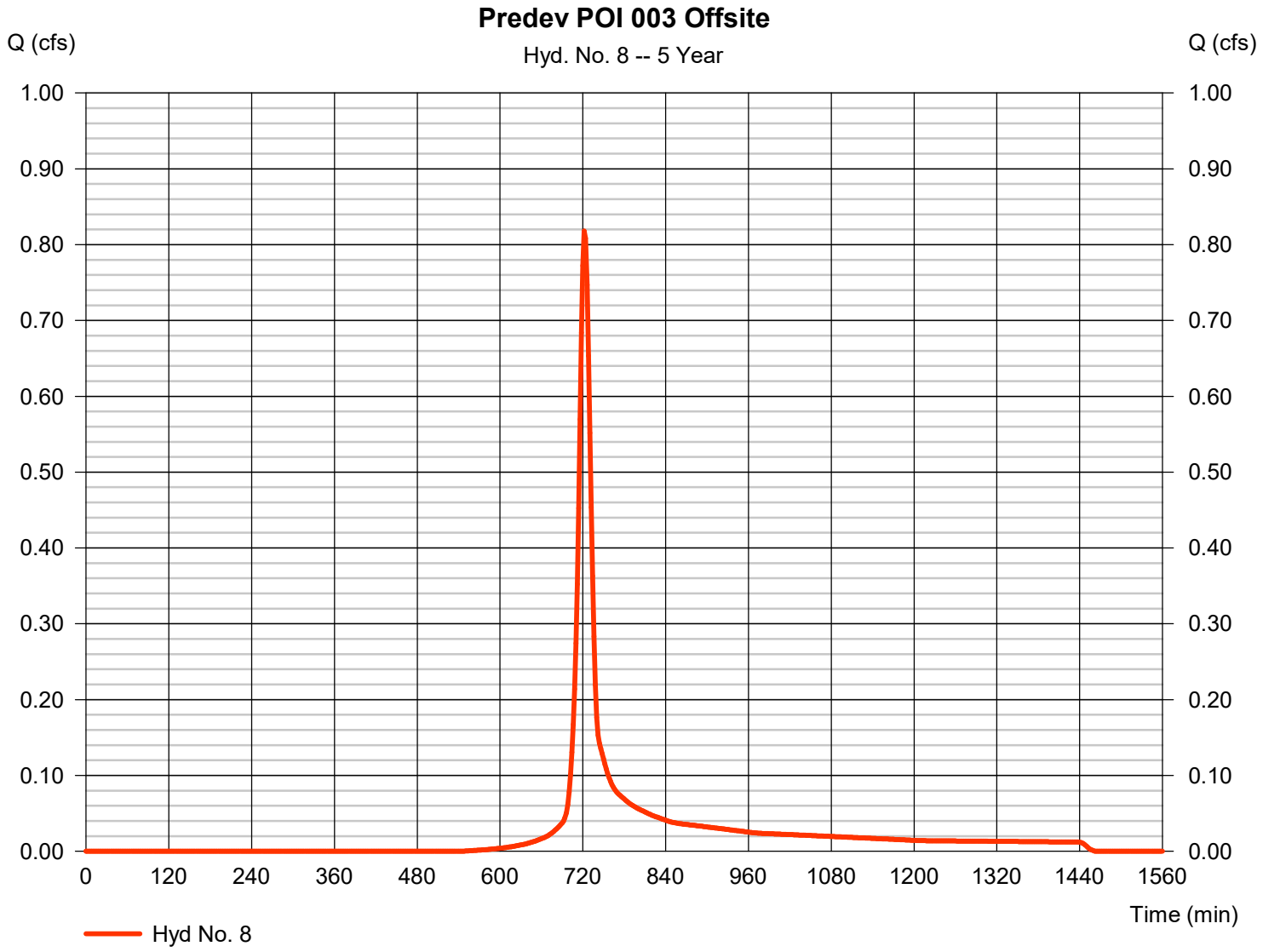
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 8

Predev POI 003 Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.818 cfs
Storm frequency	=	5 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	2,303 cuft
Drainage area	=	0.340 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	13.40 min
Total precip.	=	4.13 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.340 x 77)] / 0.340



Hydrograph Report

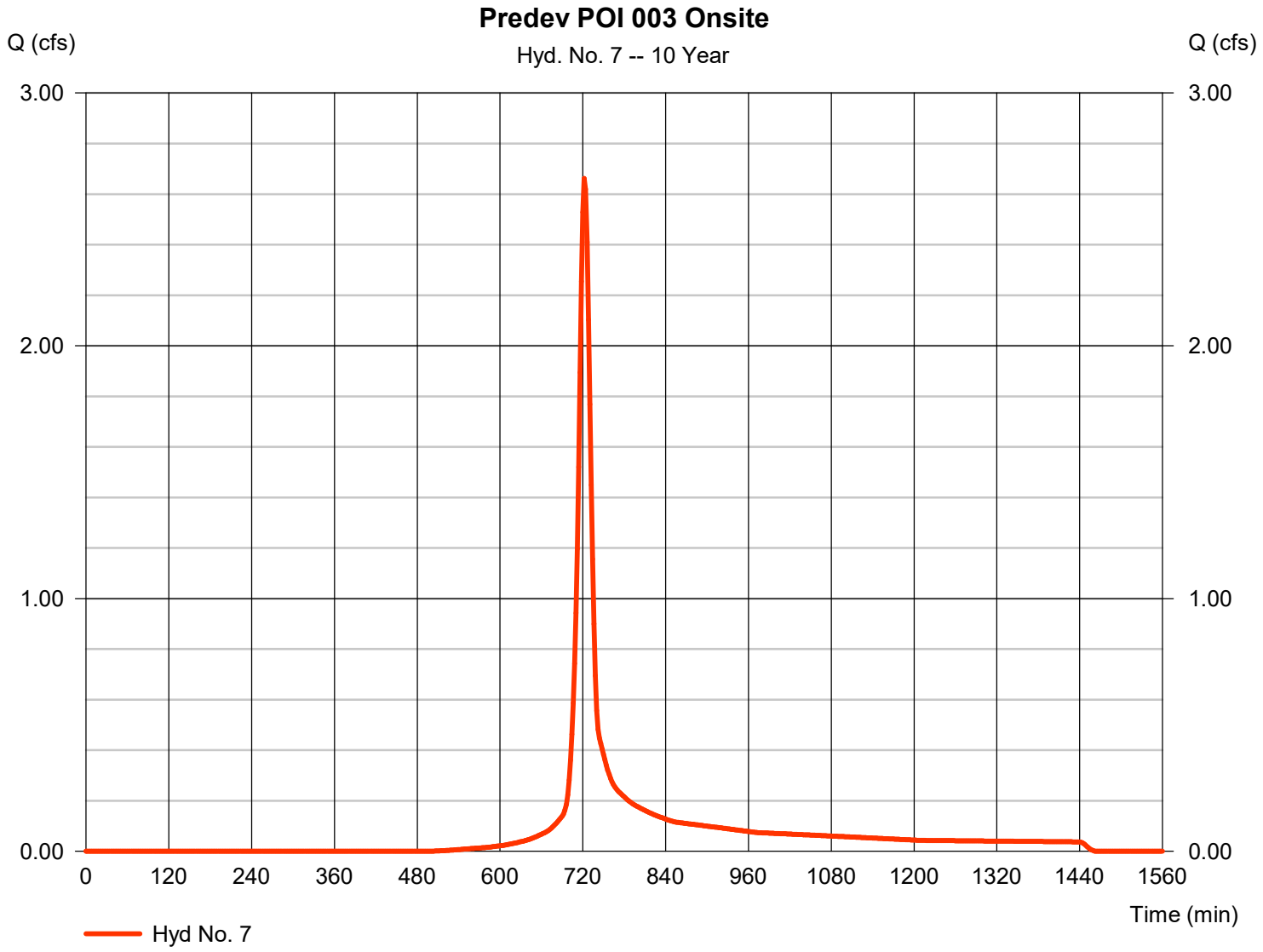
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 7

Predev POI 003 Onsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.662 cfs
Storm frequency	=	10 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	7,465 cuft
Drainage area	=	0.850 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	13.40 min
Total precip.	=	4.83 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.850 x 77)] / 0.850



Hydrograph Report

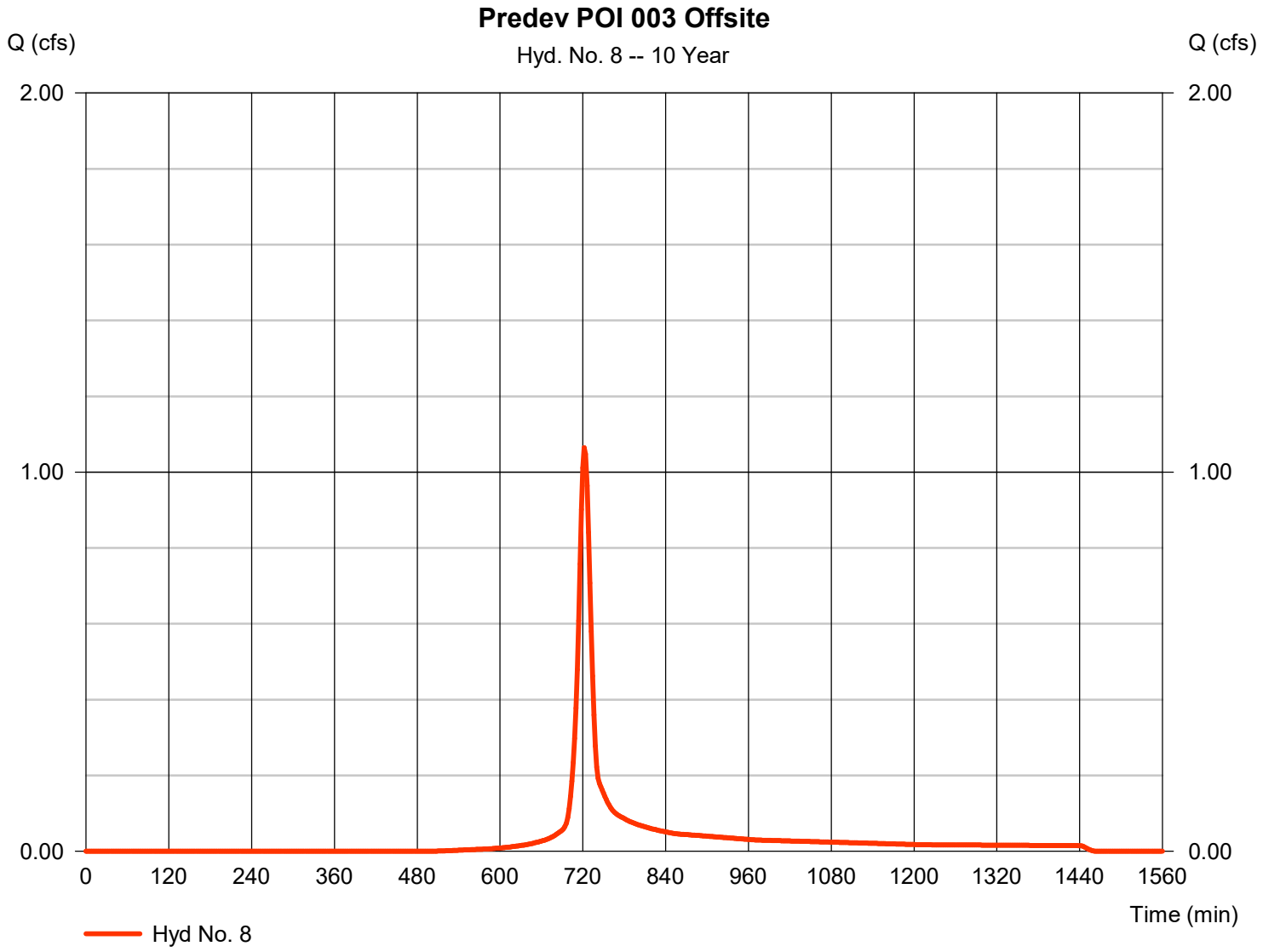
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 8

Predev POI 003 Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.065 cfs
Storm frequency	=	10 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	2,986 cuft
Drainage area	=	0.340 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	13.40 min
Total precip.	=	4.83 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.340 x 77)] / 0.340



Hydrograph Report

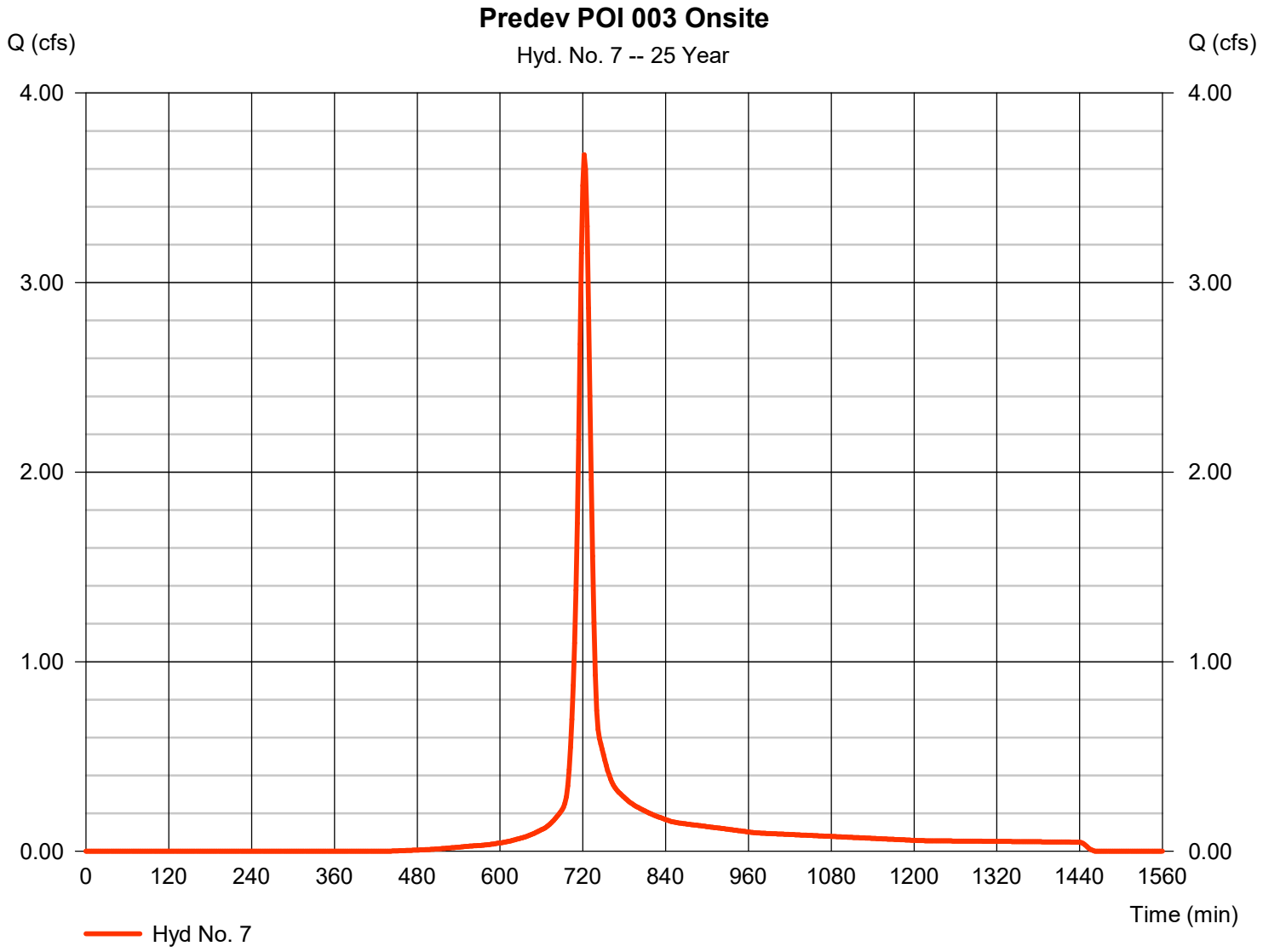
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 7

Predev POI 003 Onsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.674 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	10,309 cuft
Drainage area	=	0.850 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	13.40 min
Total precip.	=	5.94 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.850 x 77)] / 0.850



Hydrograph Report

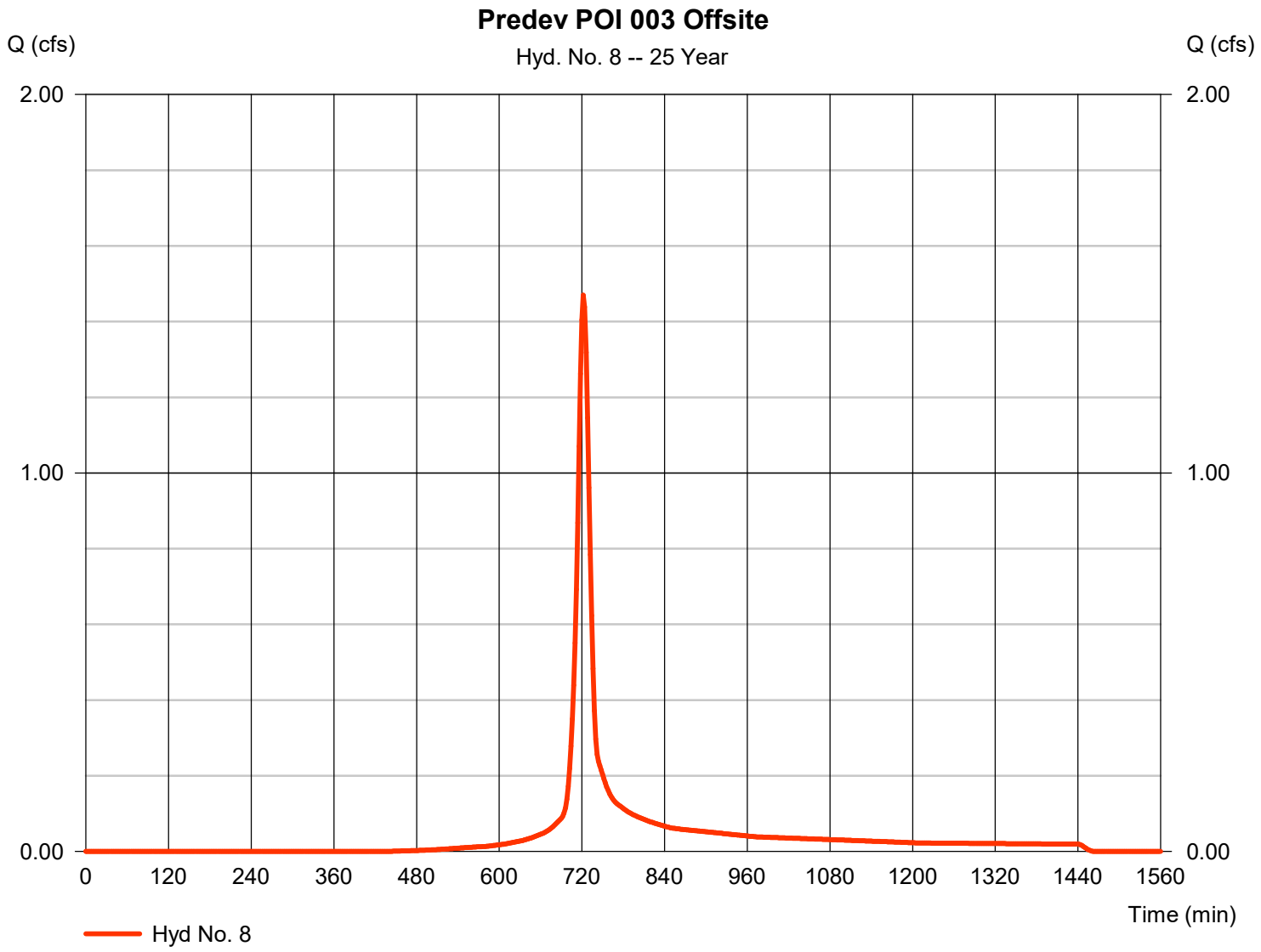
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 8

Predev POI 003 Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.470 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	4,124 cuft
Drainage area	=	0.340 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	13.40 min
Total precip.	=	5.94 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.340 x 77)] / 0.340



Hydrograph Report

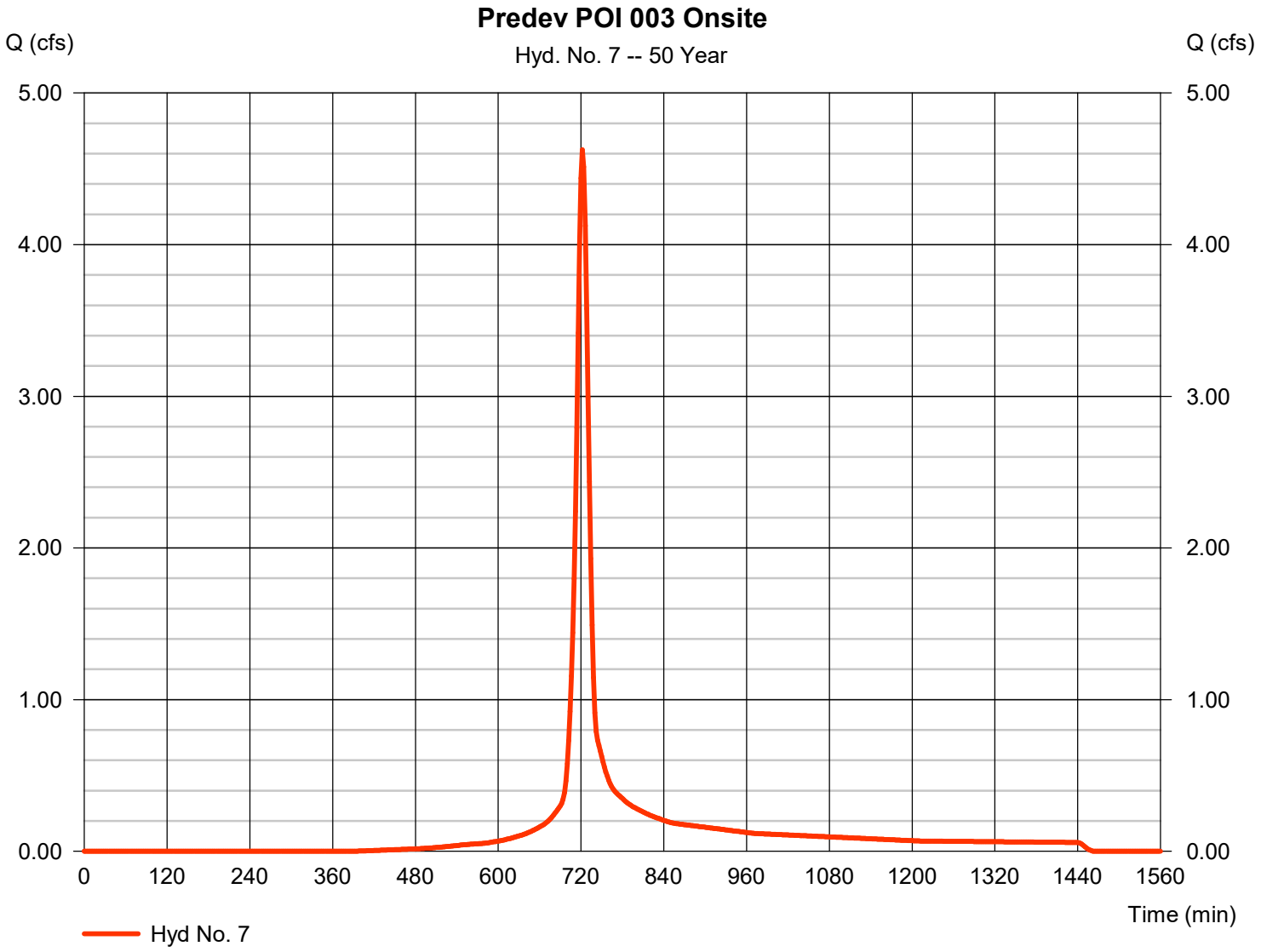
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 7

Predev POI 003 Onsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	4.625 cfs
Storm frequency	=	50 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	13,026 cuft
Drainage area	=	0.850 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	13.40 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.850 x 77)] / 0.850



Hydrograph Report

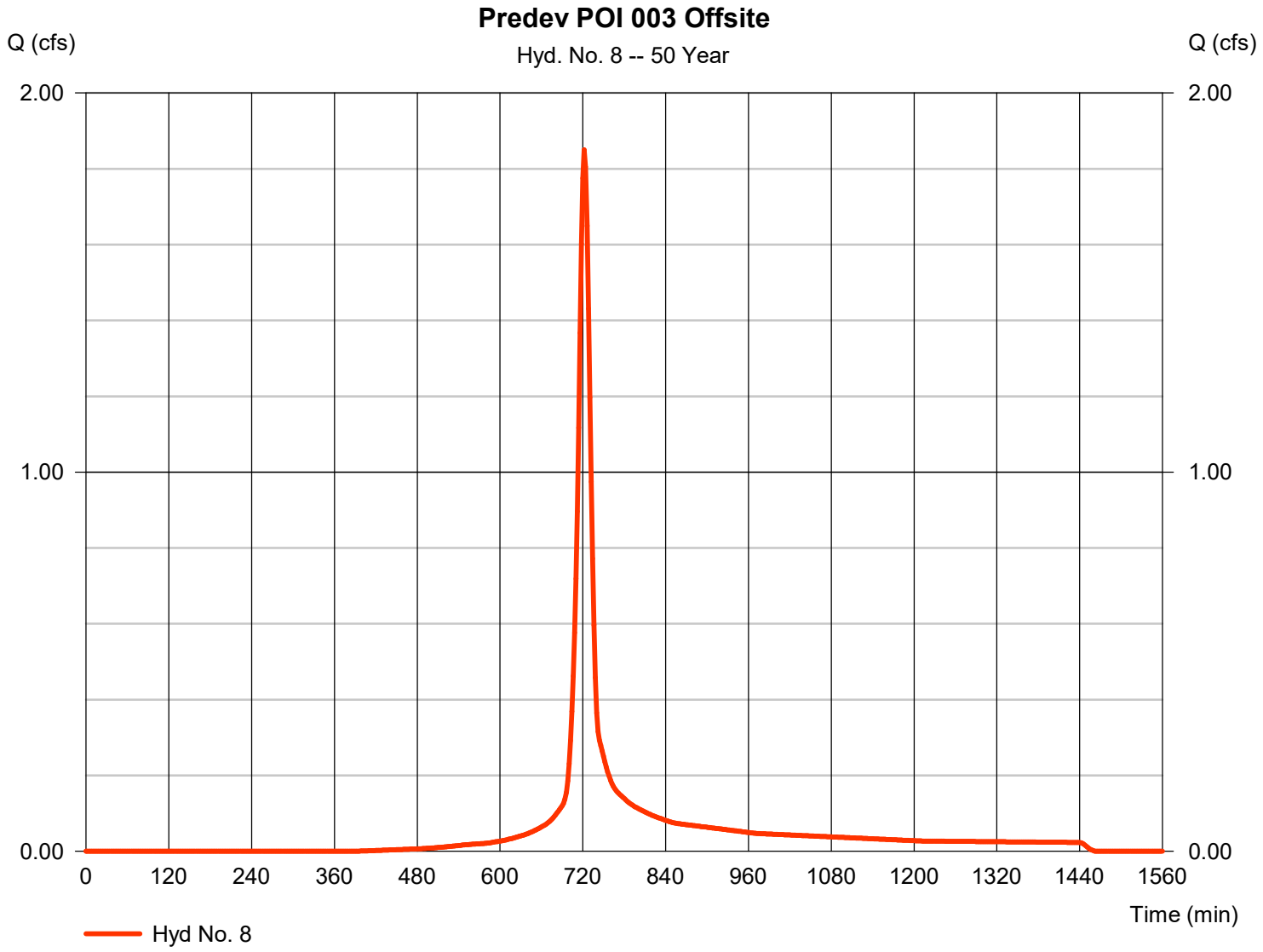
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 8

Predev POI 003 Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.850 cfs
Storm frequency	=	50 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	5,210 cuft
Drainage area	=	0.340 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	13.40 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.340 x 77)] / 0.340



Hydrograph Report

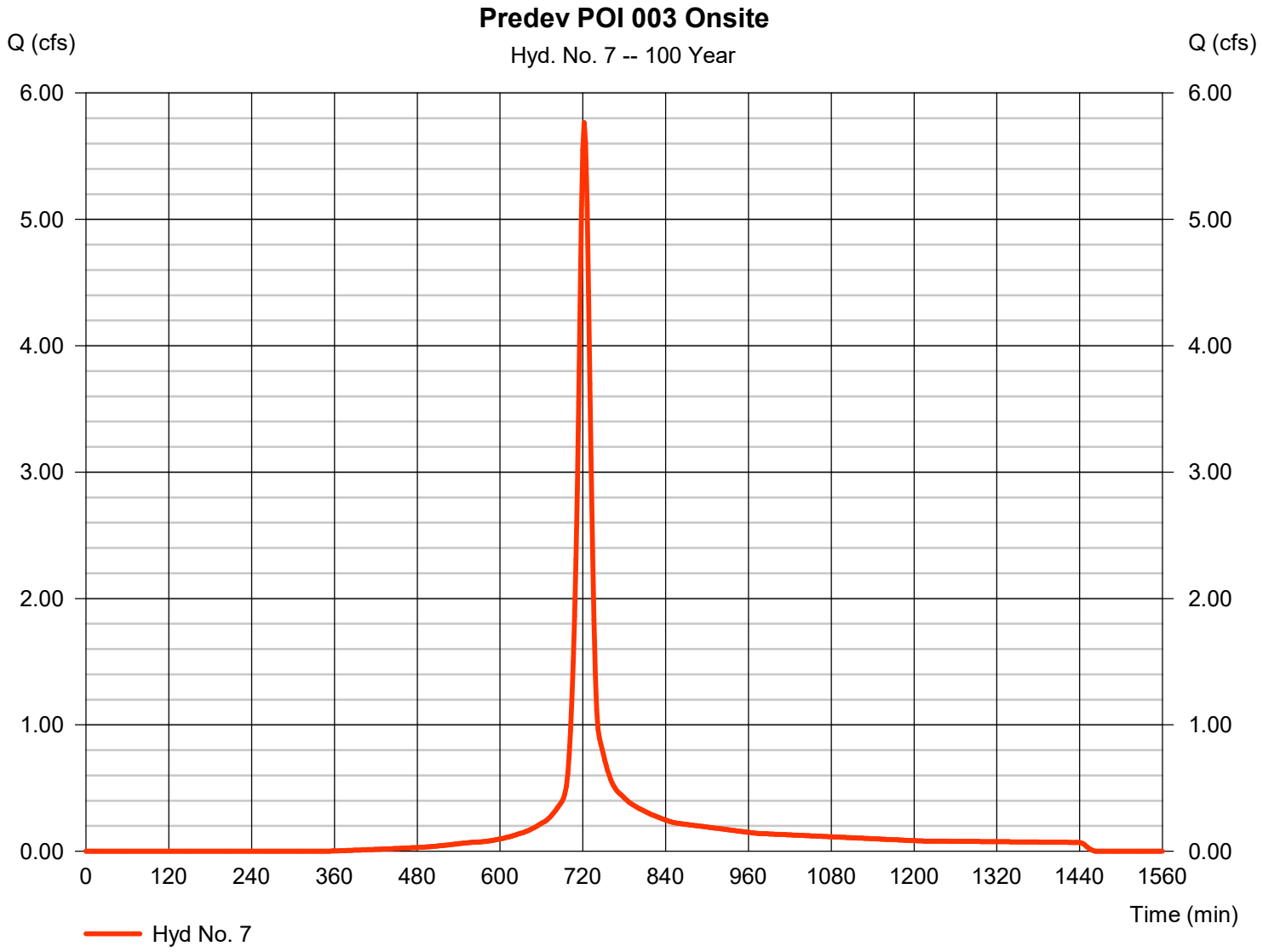
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 7

Predev POI 003 Onsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	5.766 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	16,337 cuft
Drainage area	=	0.850 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	13.40 min
Total precip.	=	8.17 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.850 x 77)] / 0.850



Hydrograph Report

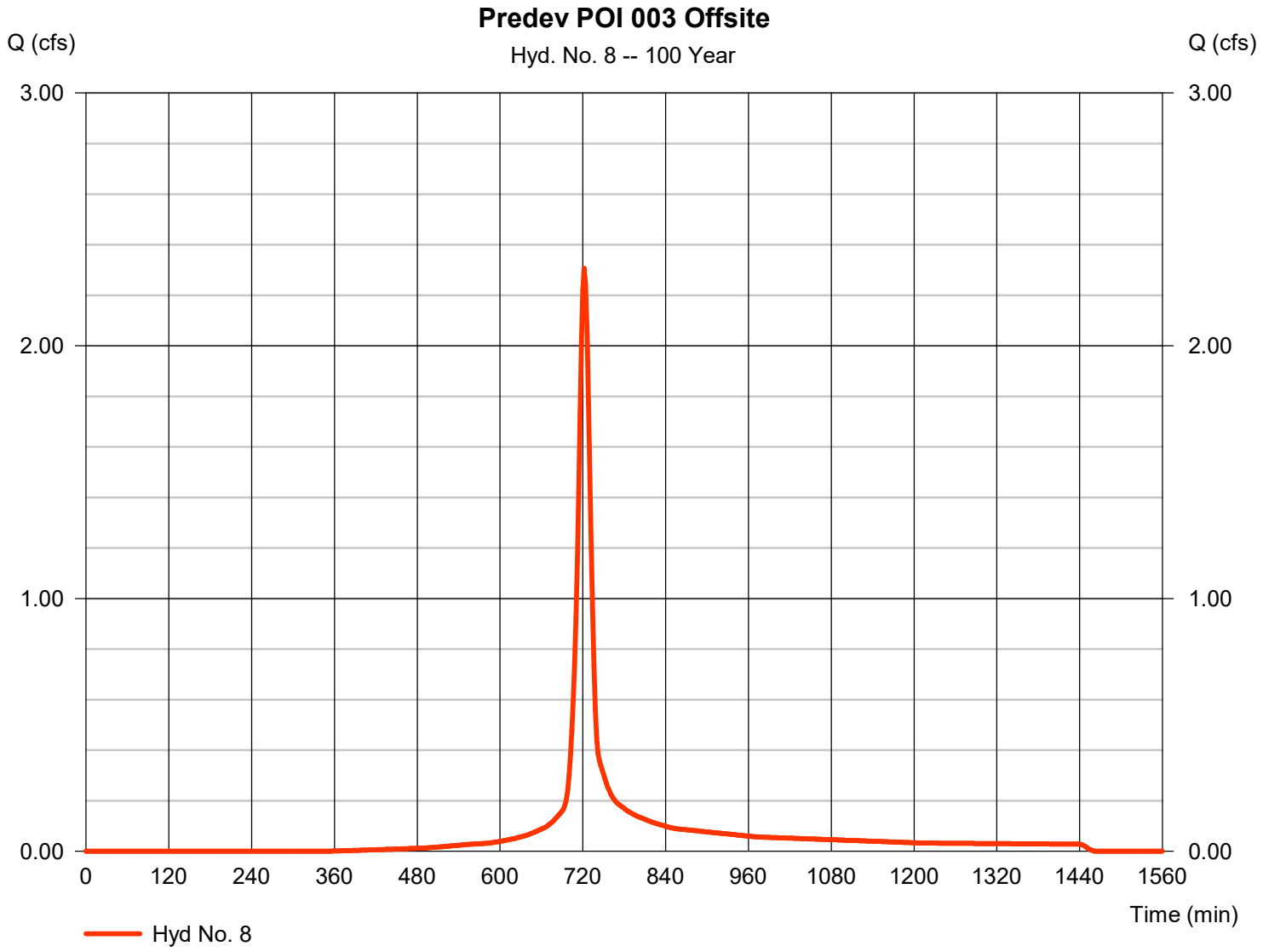
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 8

Predev POI 003 Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.306 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	6,535 cuft
Drainage area	=	0.340 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	13.40 min
Total precip.	=	8.17 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.340 x 77)] / 0.340



6. POSTDEVELOPMENT HYDROGRAPHS

WORKSHEET 4c. RUNOFF VOLUME FOR 2-YR STORM EVENT - Post-Development Condition

PROJECT: 3 Point Garden Road

Drainage Area: 1.38 AC.
2-Year Rainfall: 3.32 in.* * From NOAA

Developed Conditions: Rain Garden 1 Onsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D			77					
Meadow	D			78					
Fertilized Planting Area	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D	19,296	0.44	80	2.50	0.50	1.49	2403.65	0.06
Lawn, High-Input	D			84					
Golf Course Fairway/Green	D			80					
Grassed Athletic Field	D			80					
Rooftop	D	2,400	0.06	98	0.20	0.04	3.09	617.41	0.01
High Traffic Street / Highway	D			93					
Medium Traffic Street	D			98					
Low Traffic / Residential Street	D			98					
Res. Driveway, Play Courts, etc.	D	1,560	0.04	98	0.20	0.04	3.09	401.44	0.01
Impervious Allowance	D	500	0.01	98	0.20	0.04	3.09	128.63	0.00
Low Traffic Parking Lot	D			98					
TOTAL:		23,756	0.55						0.08

Developed Conditions: Rain Garden 1 Offsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D	5,507	0.13	77	2.99	0.60	1.30	595.79	0.01
Meadow	D			78					
Fertilized Planting Area	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D	919	0.02	80	2.50	0.50	1.49	114.53	0.00
Lawn, High-Input	D			84					
Golf Course Fairway/Green	D			80					
Grassed Athletic Field	D			80					
Rooftop	D			98					
High Traffic Street / Highway	D			93					
Medium Traffic Street	D			98					
Low Traffic / Residential Street	D	5,653	0.13	98	0.20	0.04	3.09	1454.22	0.03
Res. Driveway, Play Courts, etc.	D			98					
Impervious Allowance	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		12,079	0.28						0.04

Hydrograph Report

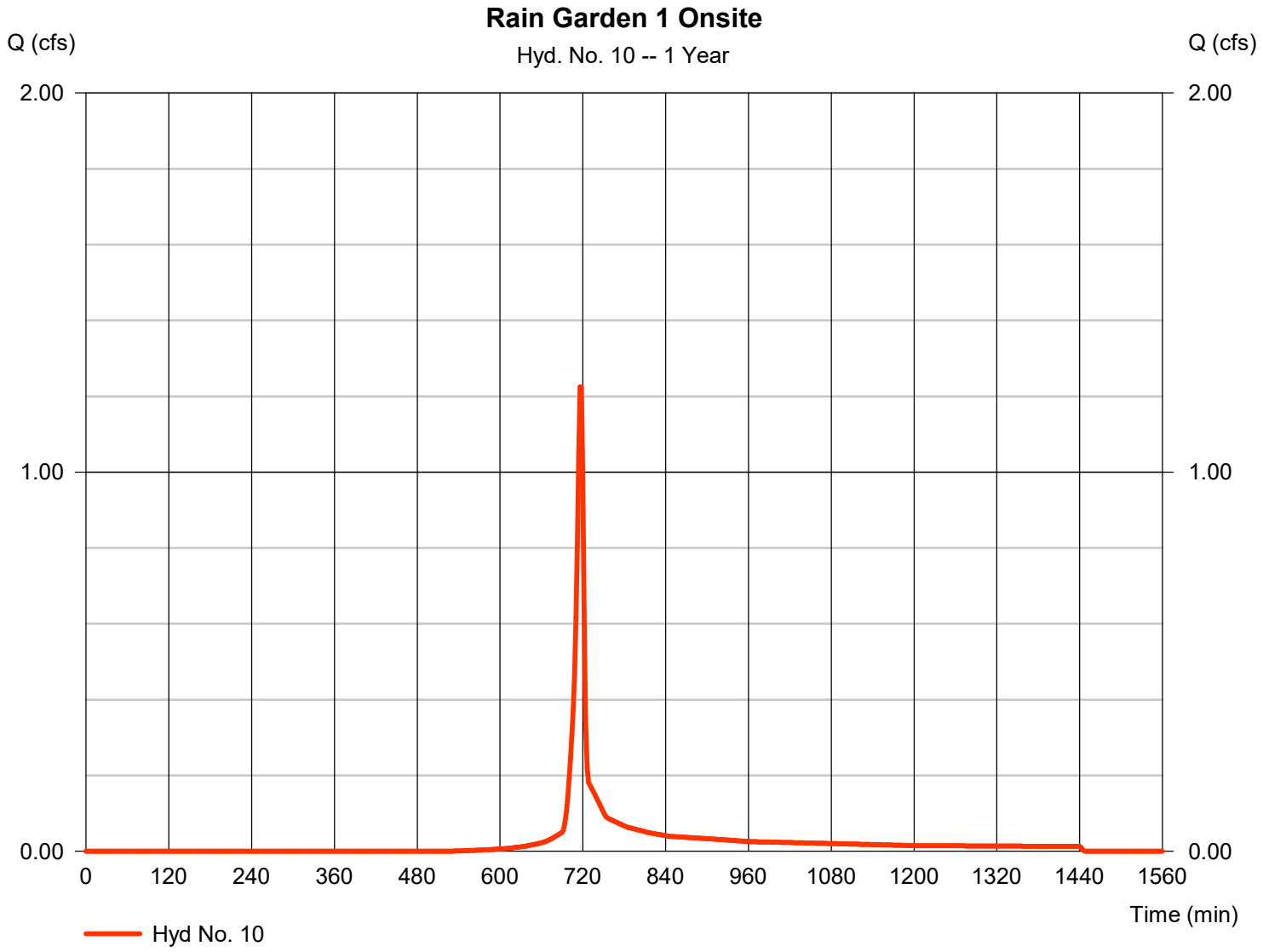
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 10

Rain Garden 1 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 1.225 cfs
Storm frequency	= 1 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 2,473 cuft
Drainage area	= 0.550 ac	Curve number	= 84*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.76 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.440 x 80) + (0.060 x 98) + (0.050 x 98)] / 0.550



Hydrograph Report

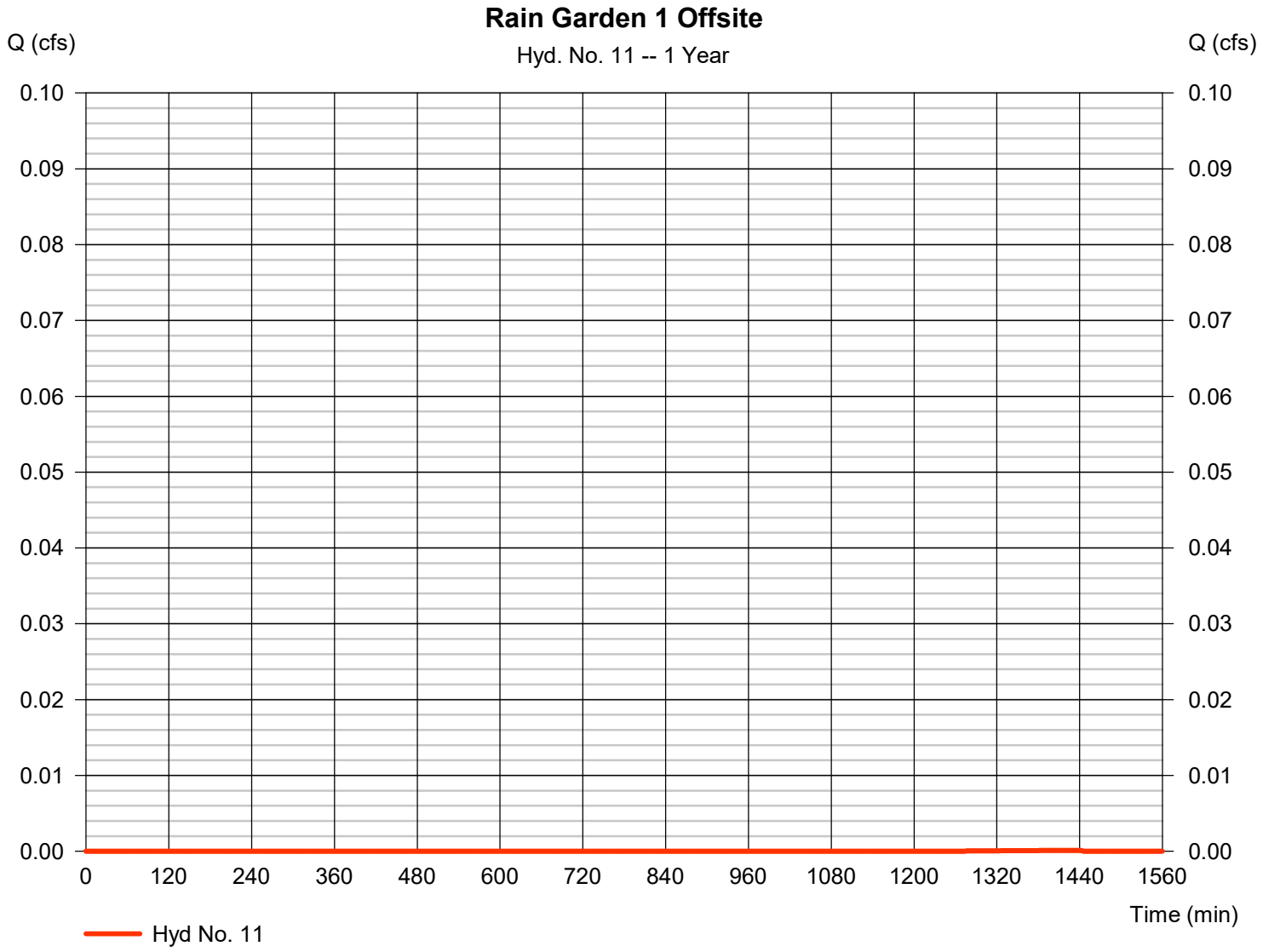
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 11

Rain Garden 1 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 1 yrs	Time to peak	= 1440 min
Time interval	= 2 min	Hyd. volume	= 1 cuft
Drainage area	= 0.280 ac	Curve number	= 43*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.76 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.130 x 77) + (0.020 x 98)] / 0.280



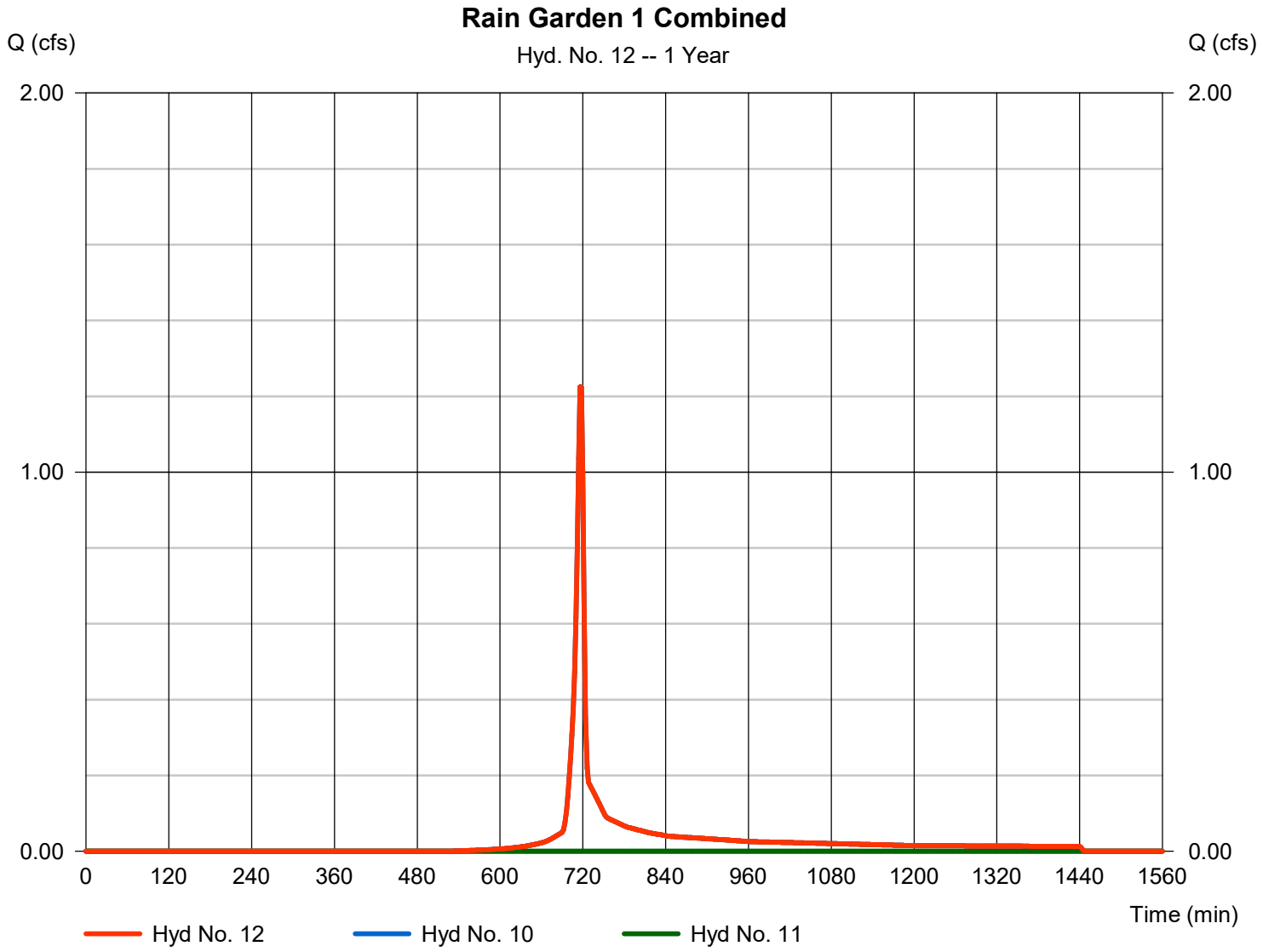
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 12

Rain Garden 1 Combined

Hydrograph type	= Combine	Peak discharge	= 1.225 cfs
Storm frequency	= 1 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 2,474 cuft
Inflow hyds.	= 10, 11	Contrib. drain. area	= 0.830 ac



Hydrograph Report

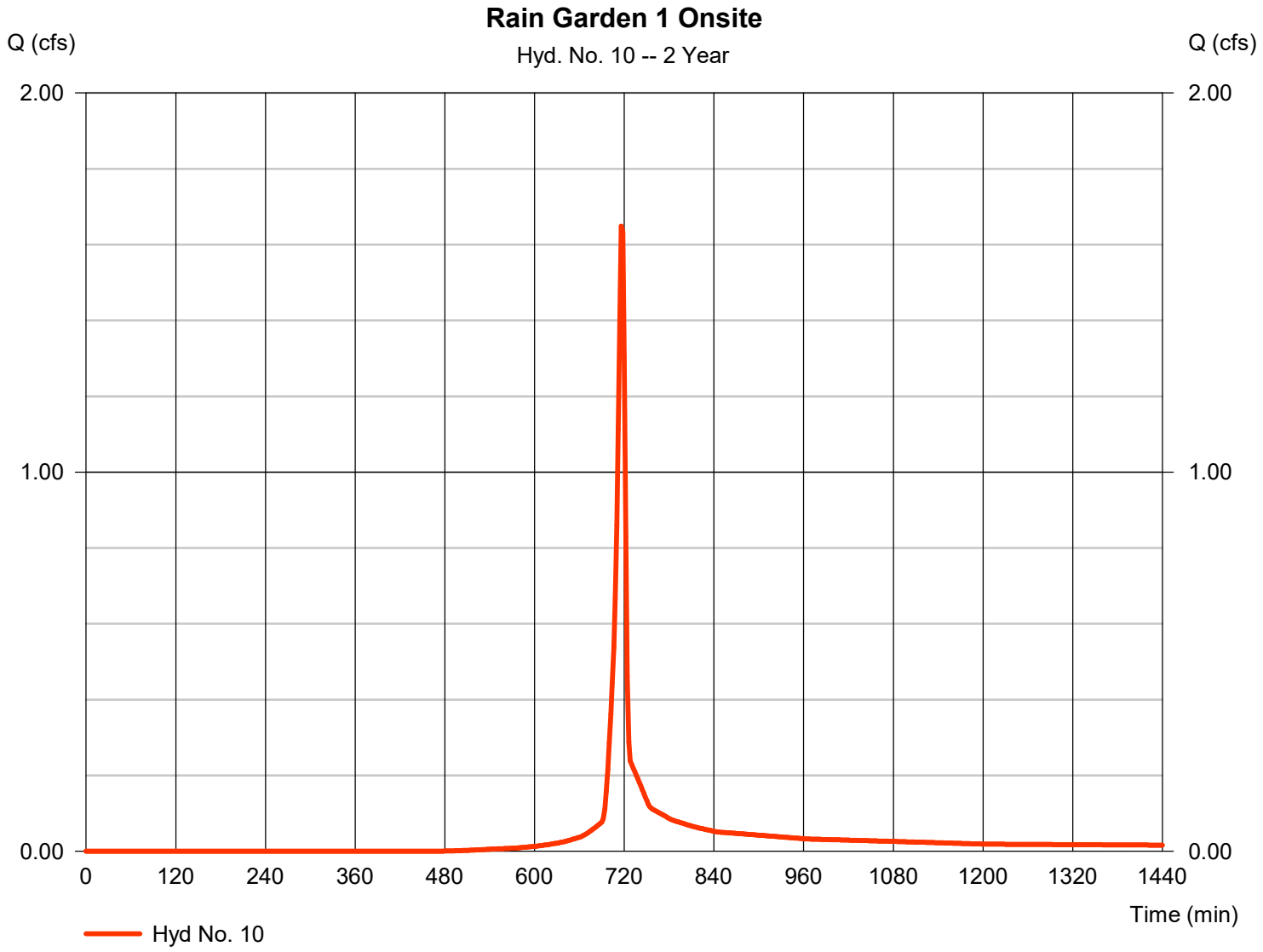
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 10

Rain Garden 1 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 1.649 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 3,338 cuft
Drainage area	= 0.550 ac	Curve number	= 84*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.440 x 80) + (0.060 x 98) + (0.050 x 98)] / 0.550



Hydrograph Report

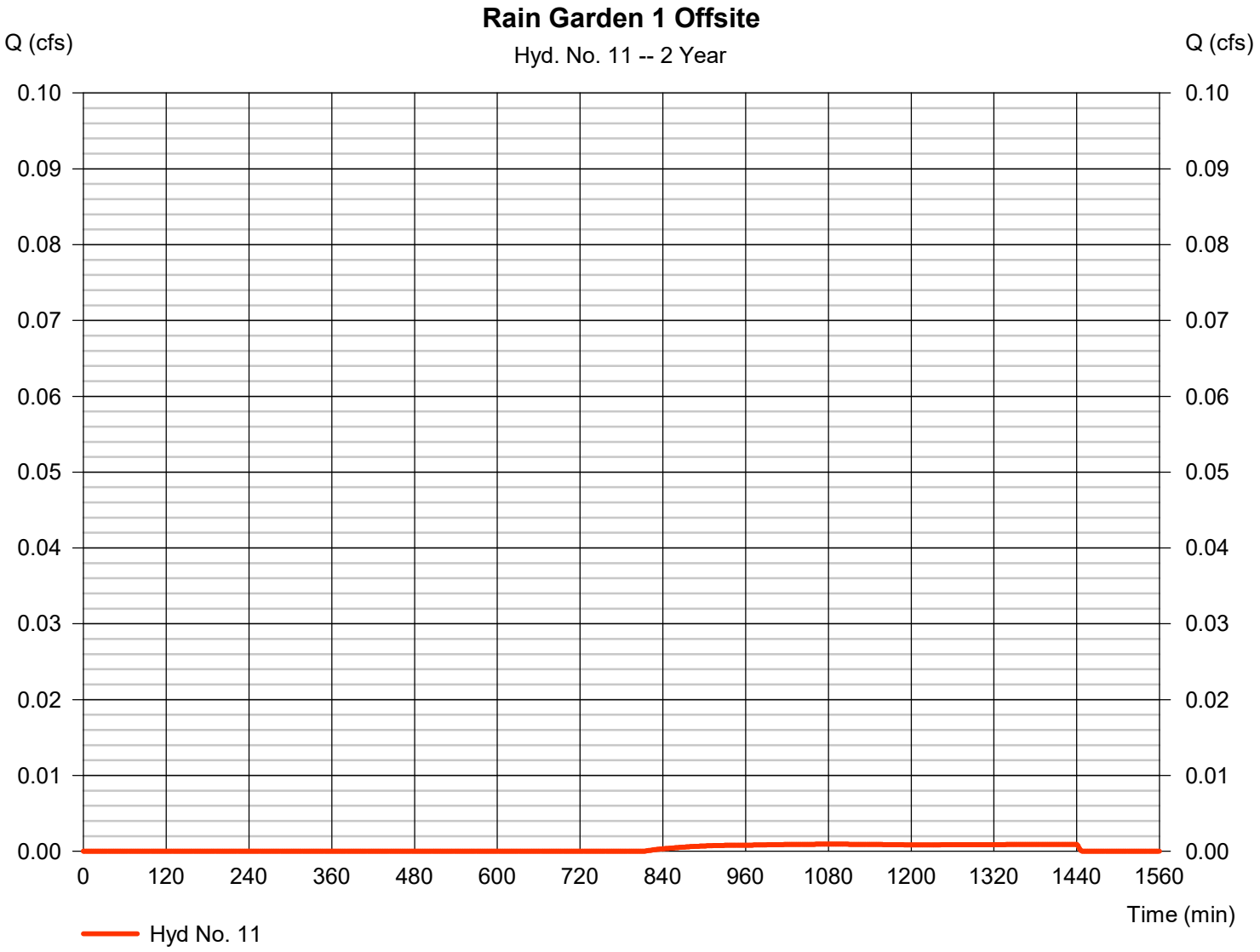
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 11

Rain Garden 1 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 0.001 cfs
Storm frequency	= 2 yrs	Time to peak	= 1086 min
Time interval	= 2 min	Hyd. volume	= 31 cuft
Drainage area	= 0.280 ac	Curve number	= 43*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.130 x 77) + (0.020 x 98)] / 0.280



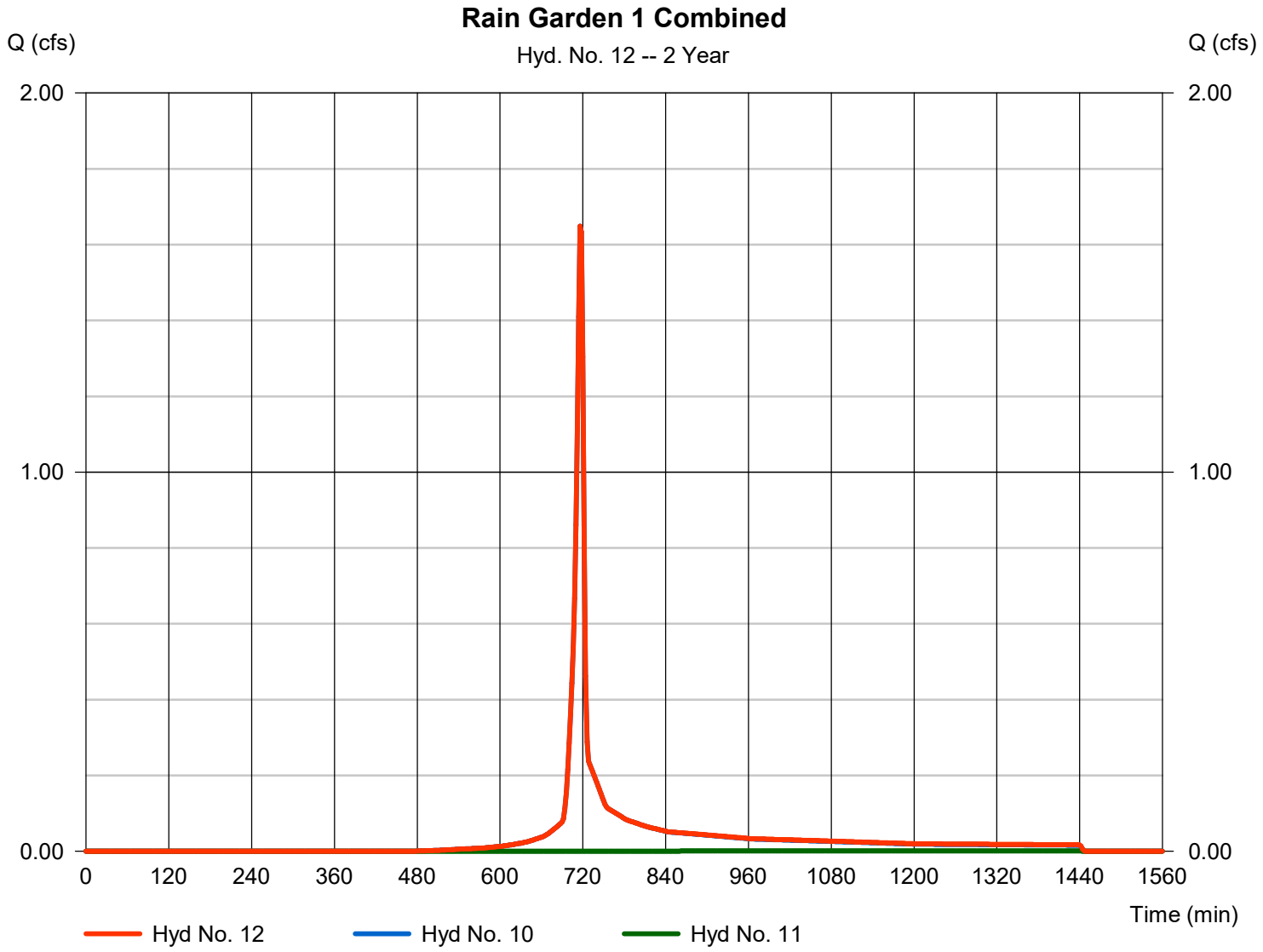
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 12

Rain Garden 1 Combined

Hydrograph type	= Combine	Peak discharge	= 1.649 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 3,368 cuft
Inflow hyds.	= 10, 11	Contrib. drain. area	= 0.830 ac



Hydrograph Report

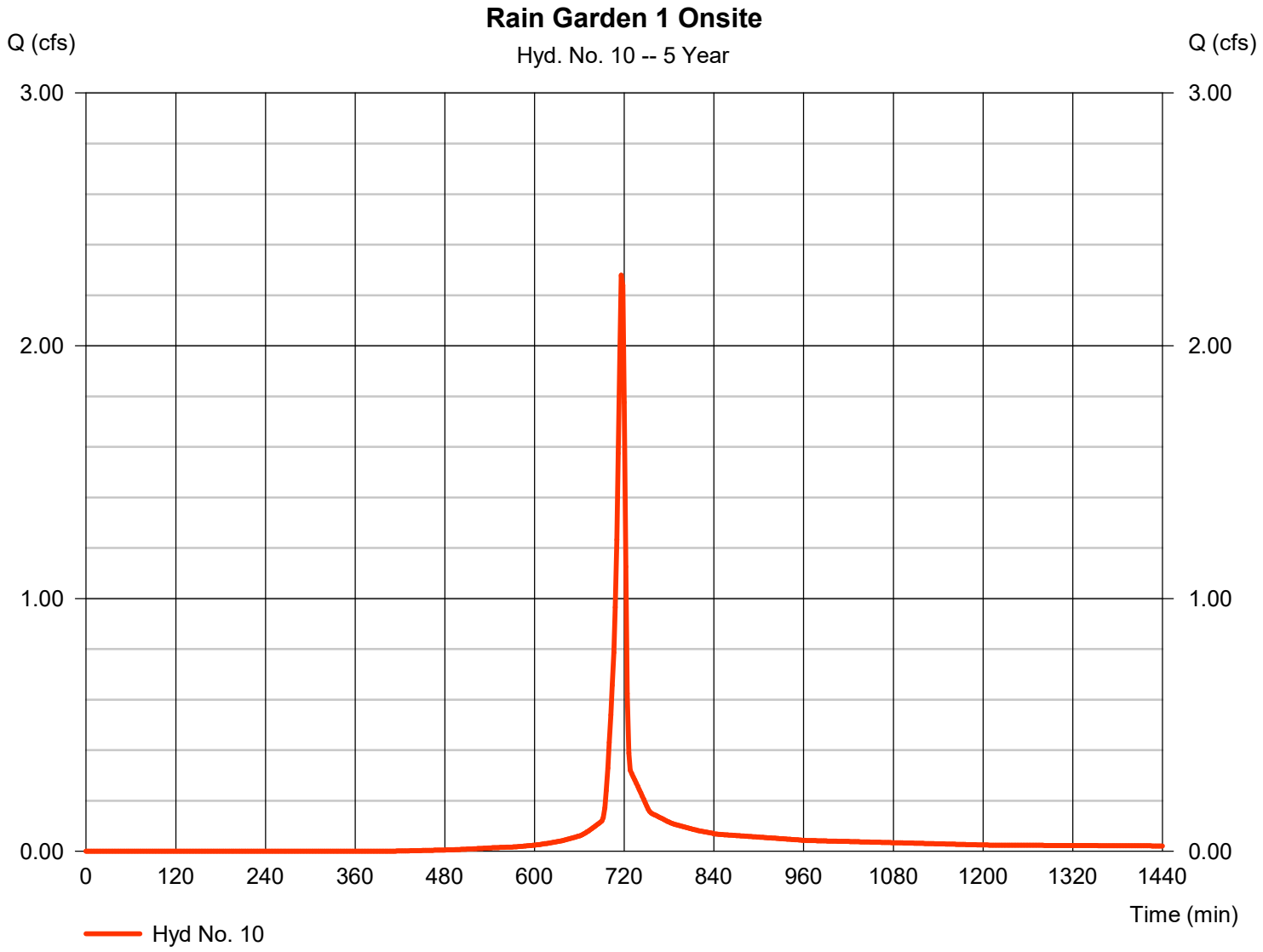
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 10

Rain Garden 1 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 2.279 cfs
Storm frequency	= 5 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 4,653 cuft
Drainage area	= 0.550 ac	Curve number	= 84*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.13 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.440 x 80) + (0.060 x 98) + (0.050 x 98)] / 0.550



Hydrograph Report

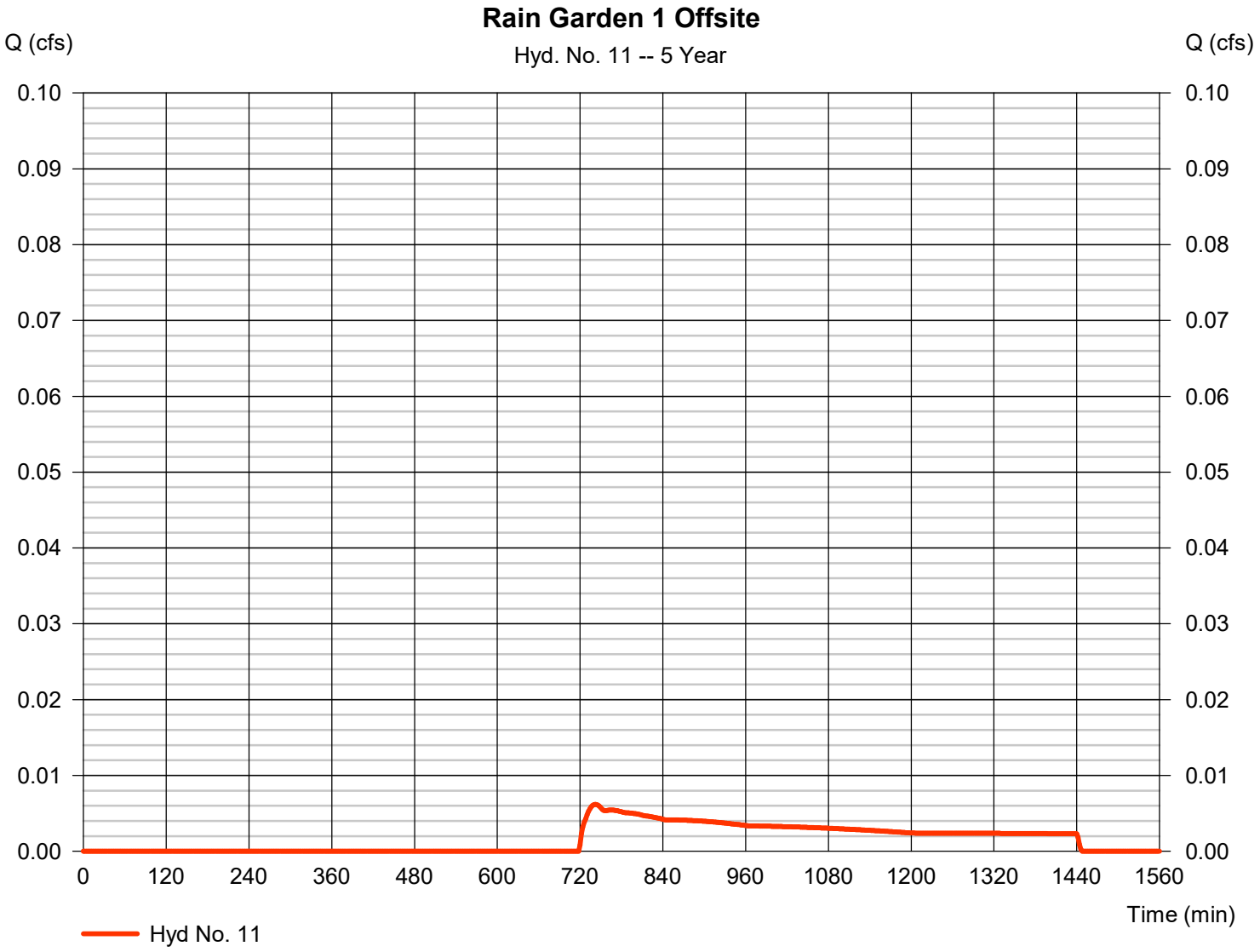
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 11

Rain Garden 1 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 0.006 cfs
Storm frequency	= 5 yrs	Time to peak	= 742 min
Time interval	= 2 min	Hyd. volume	= 141 cuft
Drainage area	= 0.280 ac	Curve number	= 43*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.13 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.130 x 77) + (0.020 x 98)] / 0.280



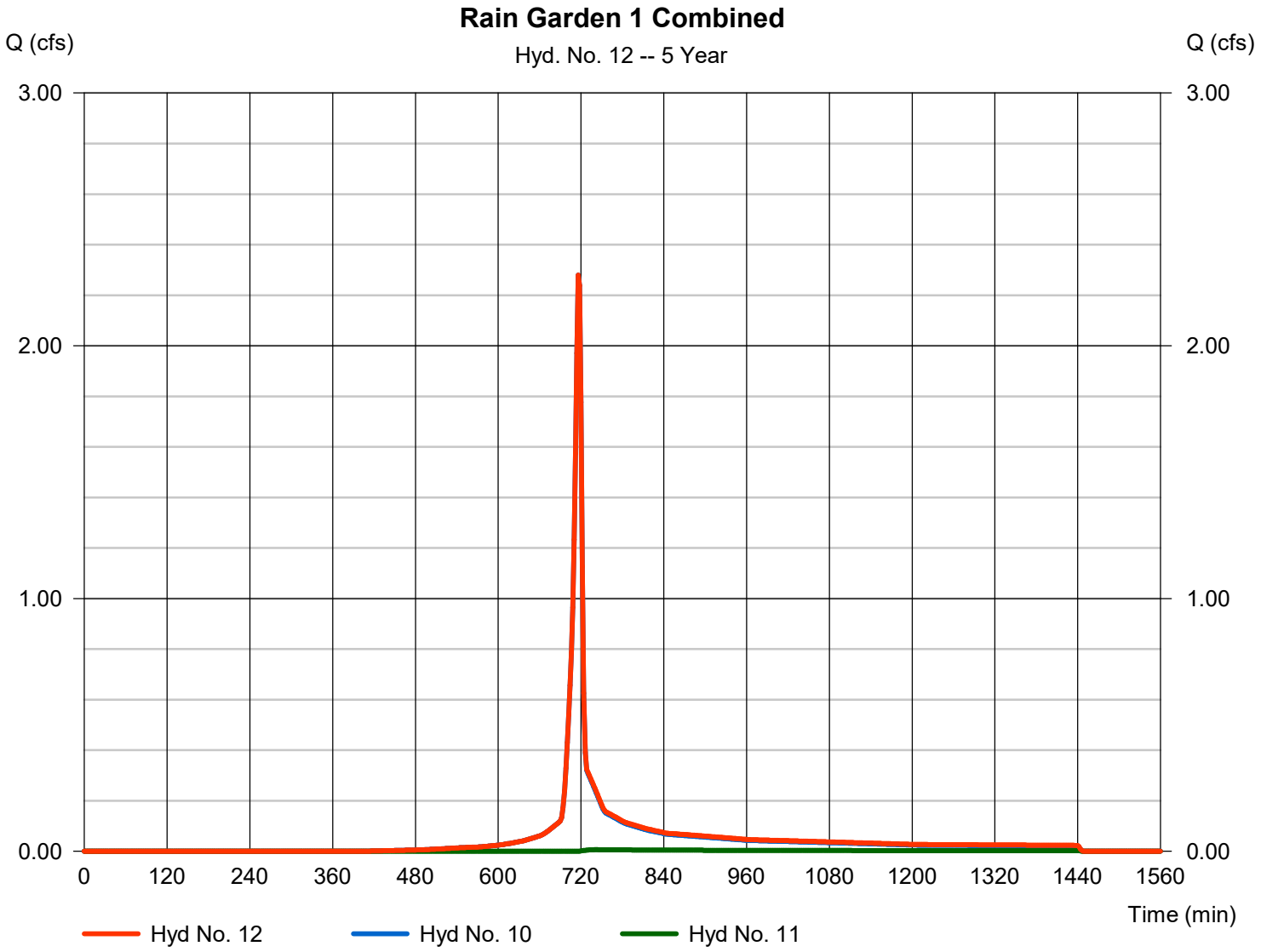
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 12

Rain Garden 1 Combined

Hydrograph type	= Combine	Peak discharge	= 2.279 cfs
Storm frequency	= 5 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 4,794 cuft
Inflow hyds.	= 10, 11	Contrib. drain. area	= 0.830 ac



Hydrograph Report

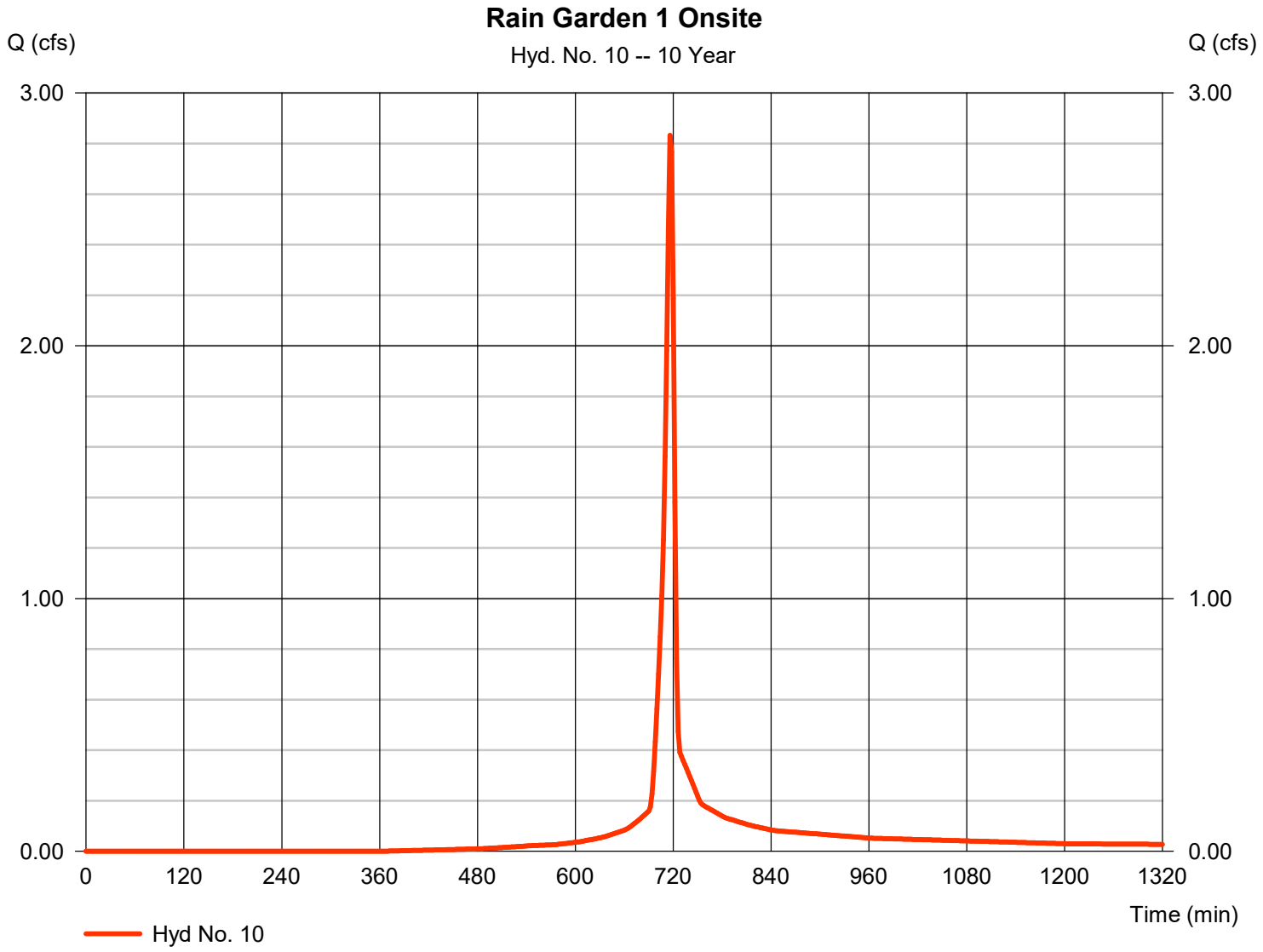
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 10

Rain Garden 1 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 2.832 cfs
Storm frequency	= 10 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 5,831 cuft
Drainage area	= 0.550 ac	Curve number	= 84*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.440 x 80) + (0.060 x 98) + (0.050 x 98)] / 0.550



Hydrograph Report

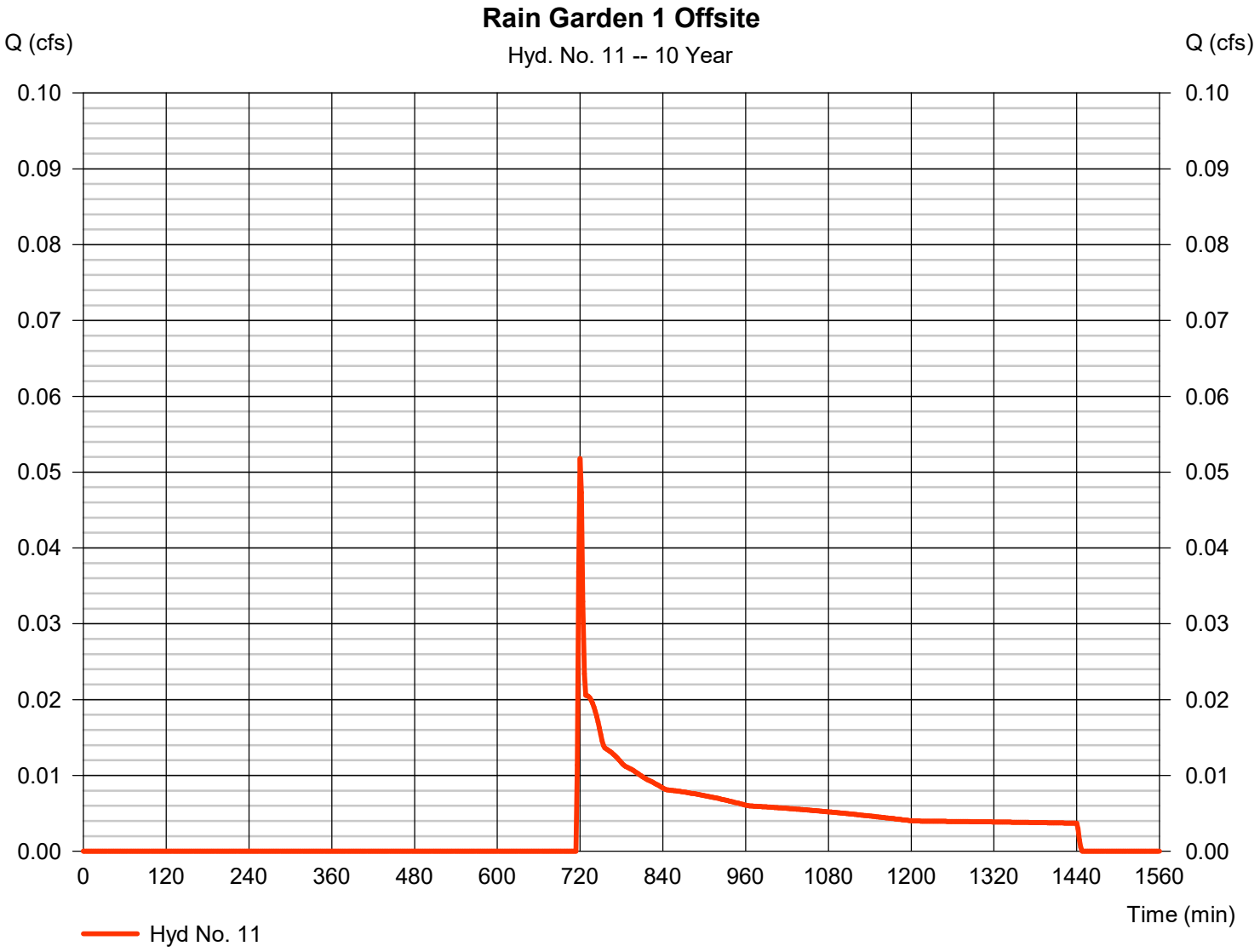
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 11

Rain Garden 1 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 0.052 cfs
Storm frequency	= 10 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 292 cuft
Drainage area	= 0.280 ac	Curve number	= 43*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.130 x 77) + (0.020 x 98)] / 0.280



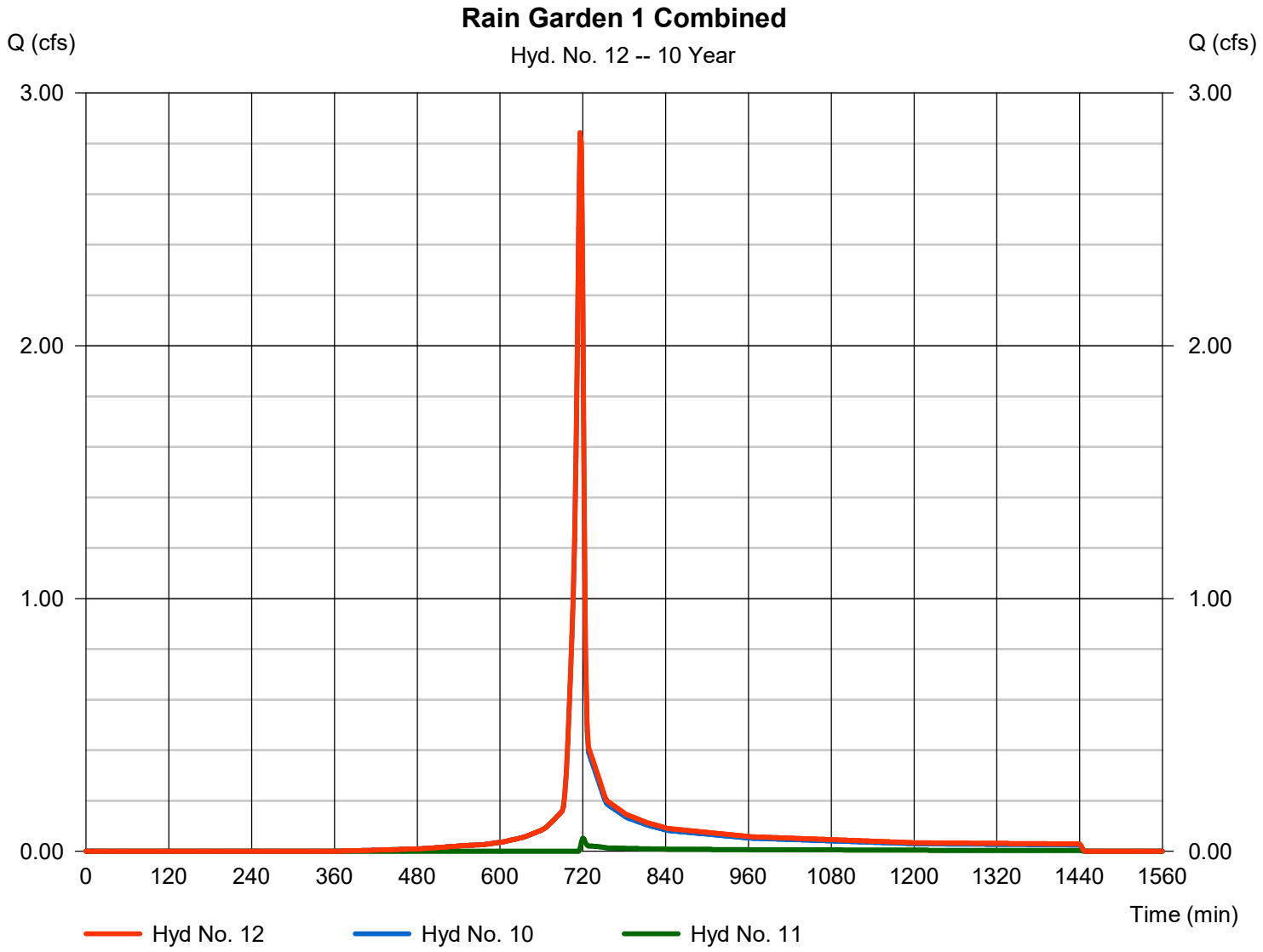
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 12

Rain Garden 1 Combined

Hydrograph type	= Combine	Peak discharge	= 2.843 cfs
Storm frequency	= 10 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 6,123 cuft
Inflow hyds.	= 10, 11	Contrib. drain. area	= 0.830 ac



Hydrograph Report

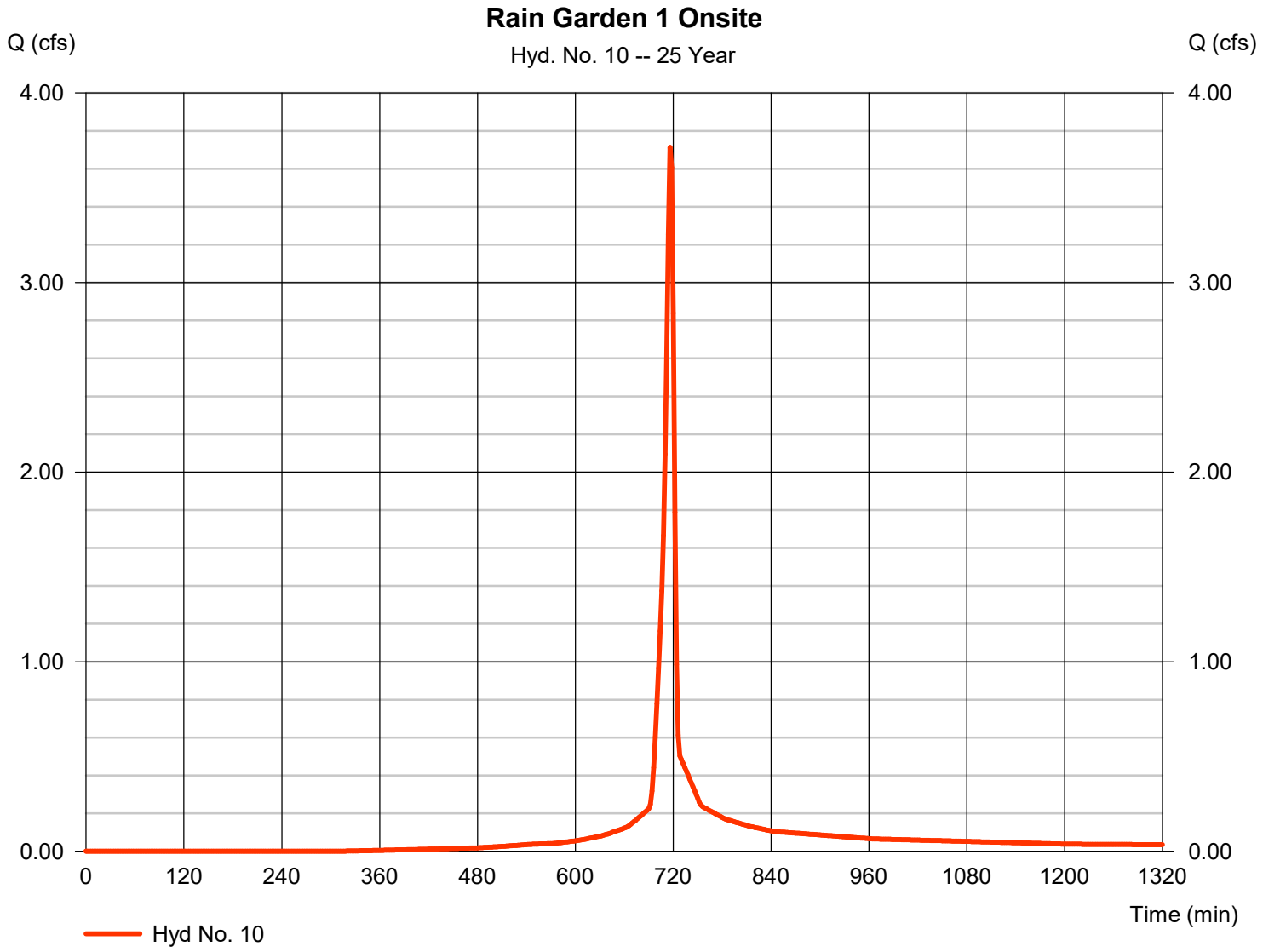
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 10

Rain Garden 1 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 3.713 cfs
Storm frequency	= 25 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 7,750 cuft
Drainage area	= 0.550 ac	Curve number	= 84*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.94 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.440 x 80) + (0.060 x 98) + (0.050 x 98)] / 0.550



Hydrograph Report

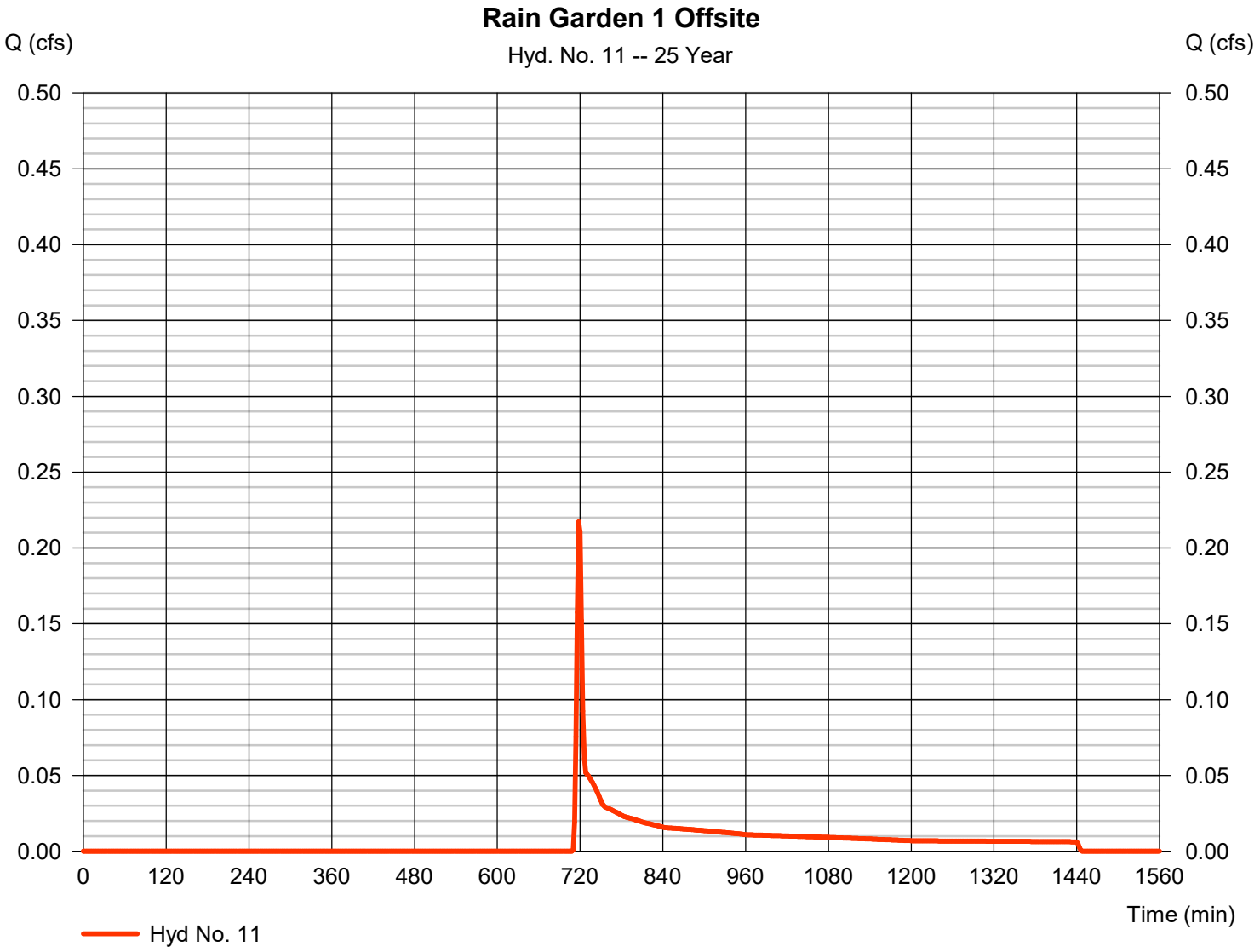
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 11

Rain Garden 1 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 0.217 cfs
Storm frequency	= 25 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 622 cuft
Drainage area	= 0.280 ac	Curve number	= 43*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.94 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.130 x 77) + (0.020 x 98)] / 0.280



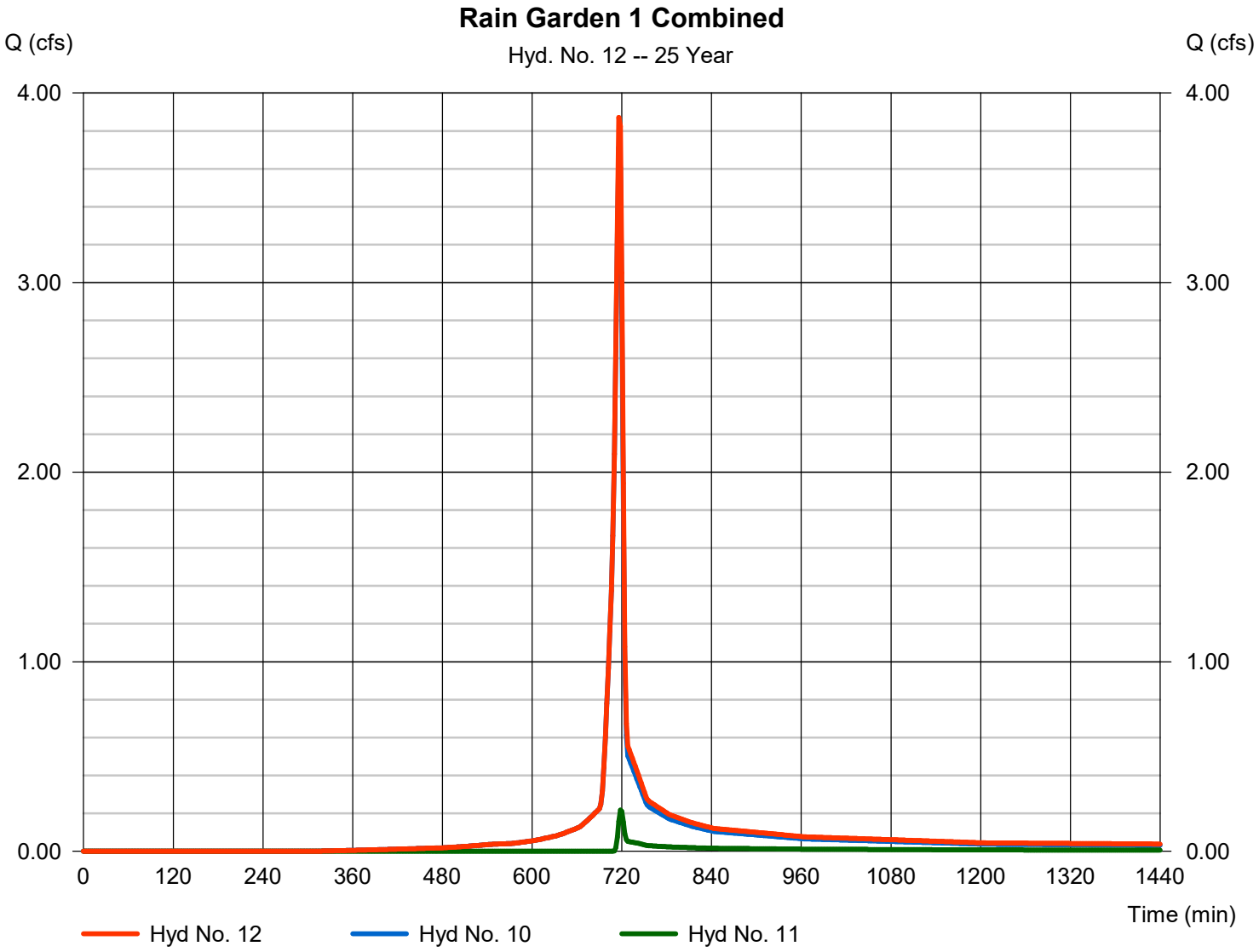
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 12

Rain Garden 1 Combined

Hydrograph type	= Combine	Peak discharge	= 3.871 cfs
Storm frequency	= 25 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 8,372 cuft
Inflow hyds.	= 10, 11	Contrib. drain. area	= 0.830 ac



Hydrograph Report

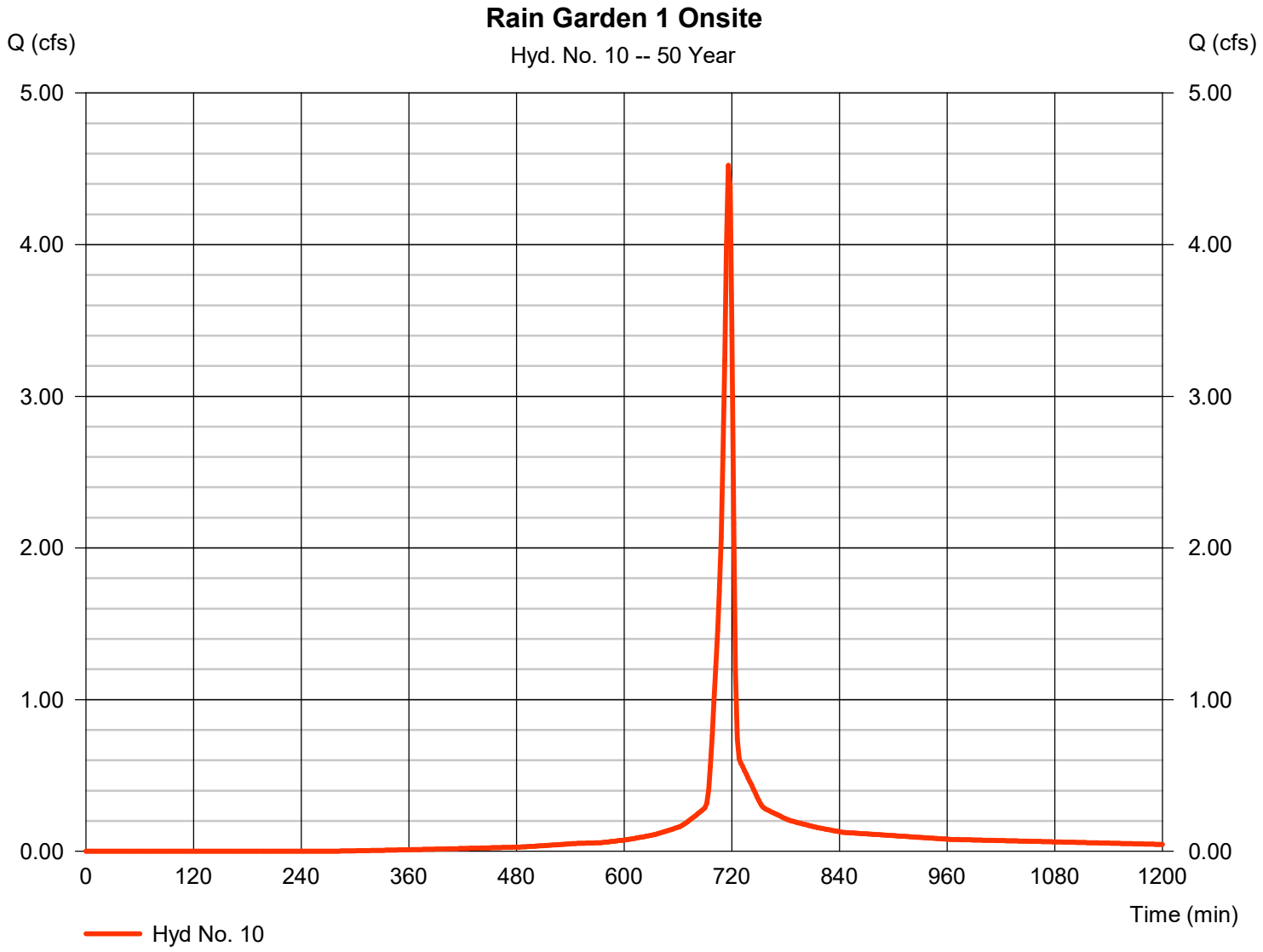
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 10

Rain Garden 1 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 4.523 cfs
Storm frequency	= 50 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 9,549 cuft
Drainage area	= 0.550 ac	Curve number	= 84*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.96 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.440 x 80) + (0.060 x 98) + (0.050 x 98)] / 0.550



Hydrograph Report

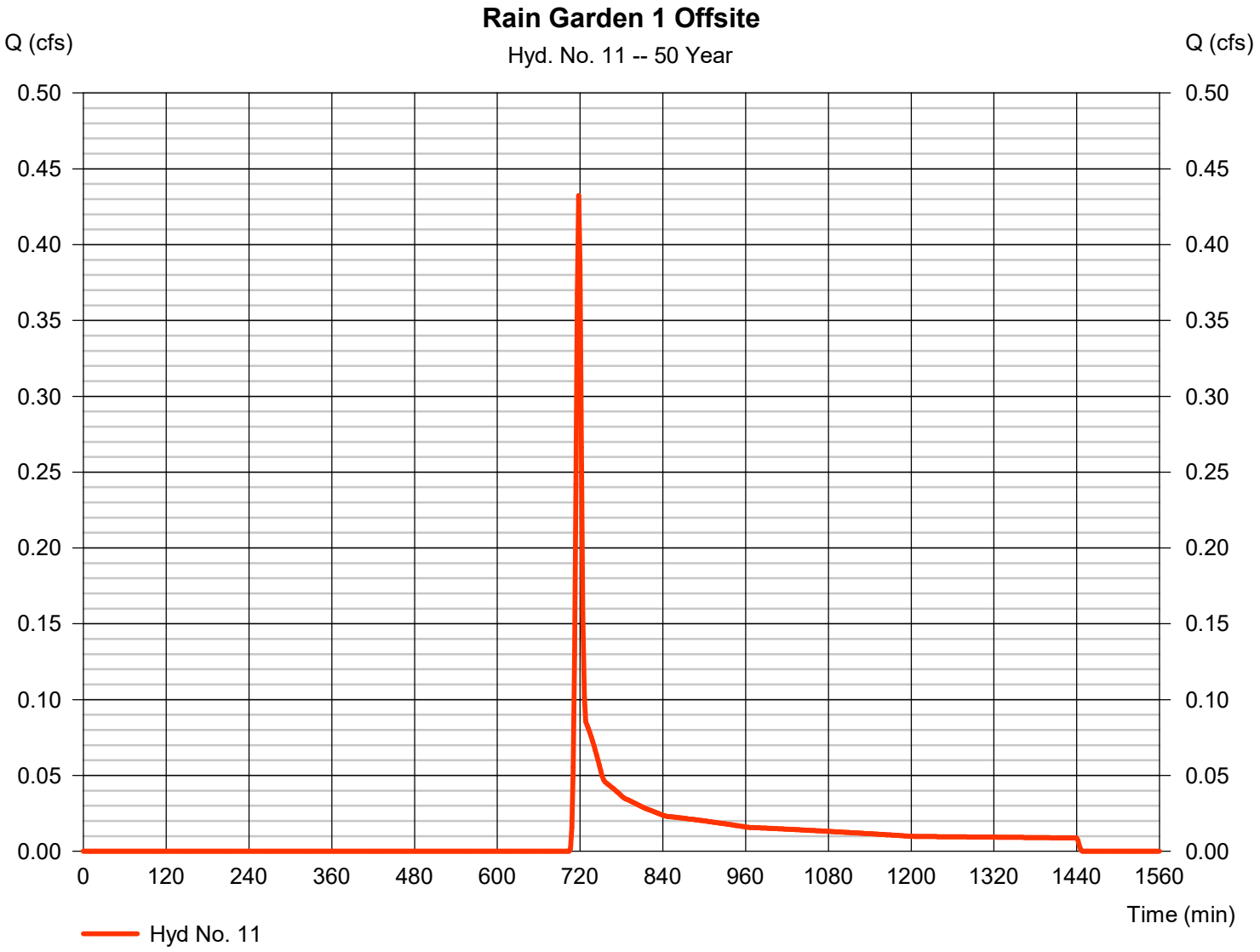
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 11

Rain Garden 1 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 0.432 cfs
Storm frequency	= 50 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 1,007 cuft
Drainage area	= 0.280 ac	Curve number	= 43*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.96 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.130 x 77) + (0.020 x 98)] / 0.280



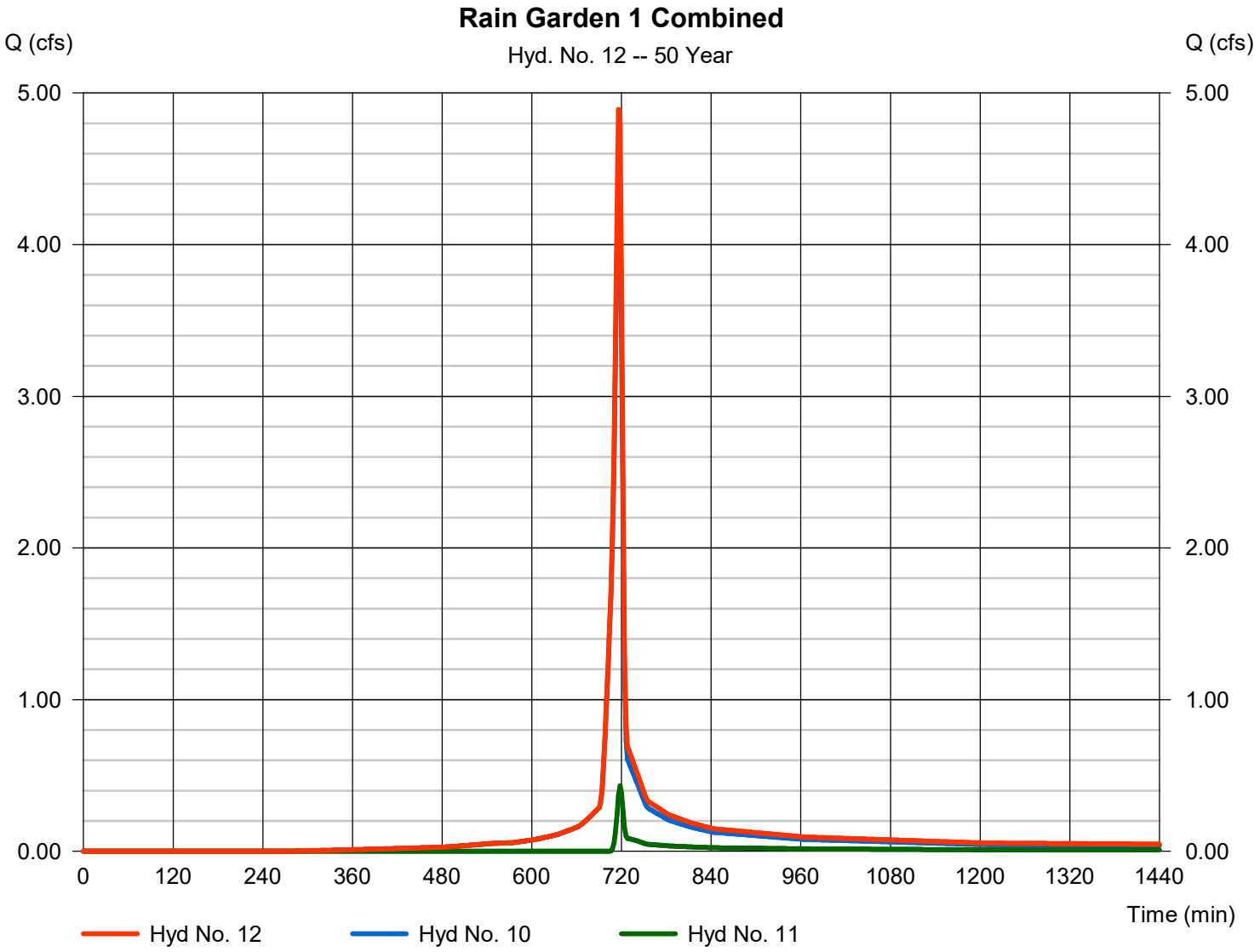
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 12

Rain Garden 1 Combined

Hydrograph type	= Combine	Peak discharge	= 4.891 cfs
Storm frequency	= 50 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 10,557 cuft
Inflow hyds.	= 10, 11	Contrib. drain. area	= 0.830 ac



Hydrograph Report

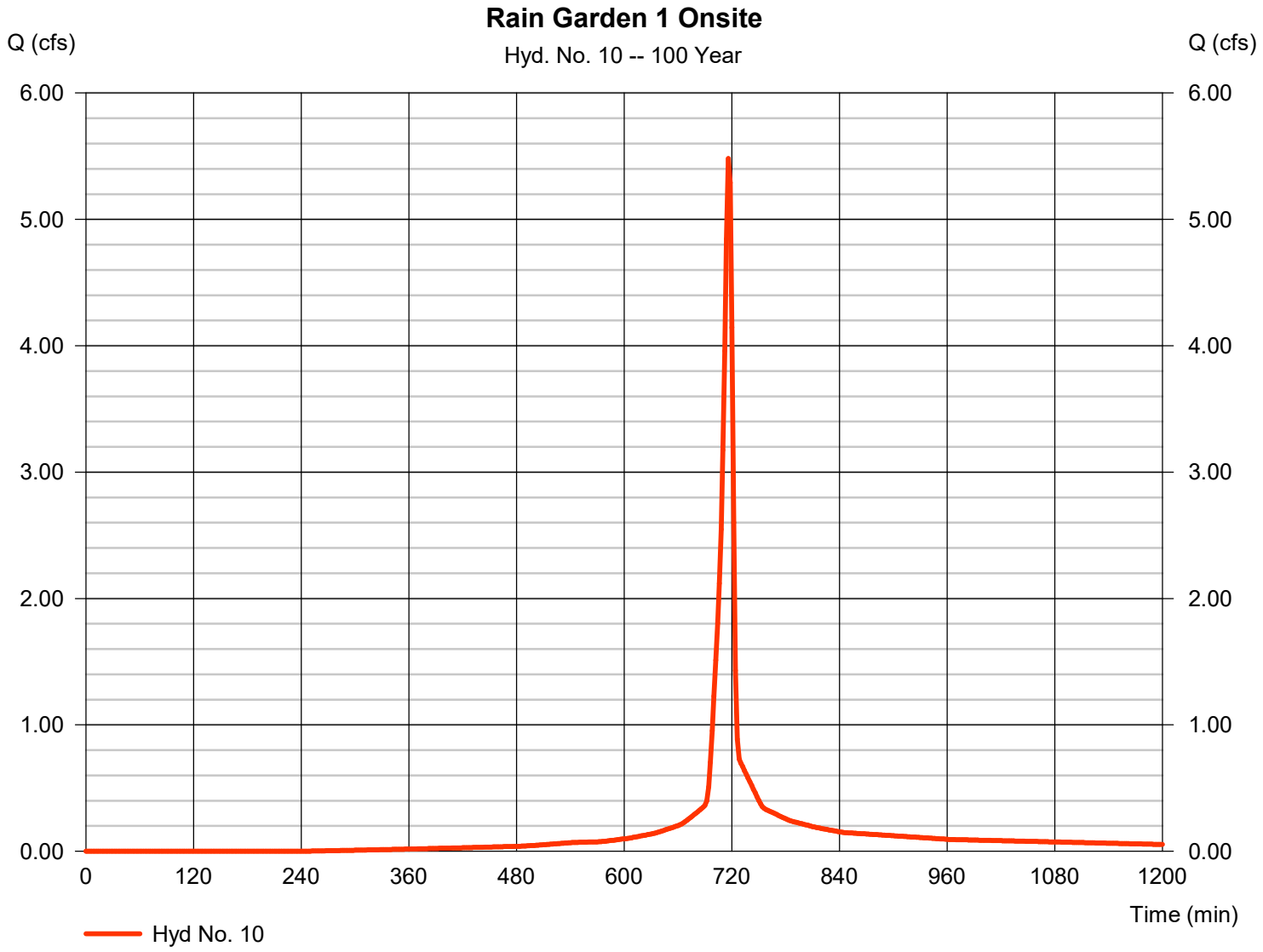
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 10

Rain Garden 1 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 5.480 cfs
Storm frequency	= 100 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 11,714 cuft
Drainage area	= 0.550 ac	Curve number	= 84*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 8.17 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.440 x 80) + (0.060 x 98) + (0.050 x 98)] / 0.550



Hydrograph Report

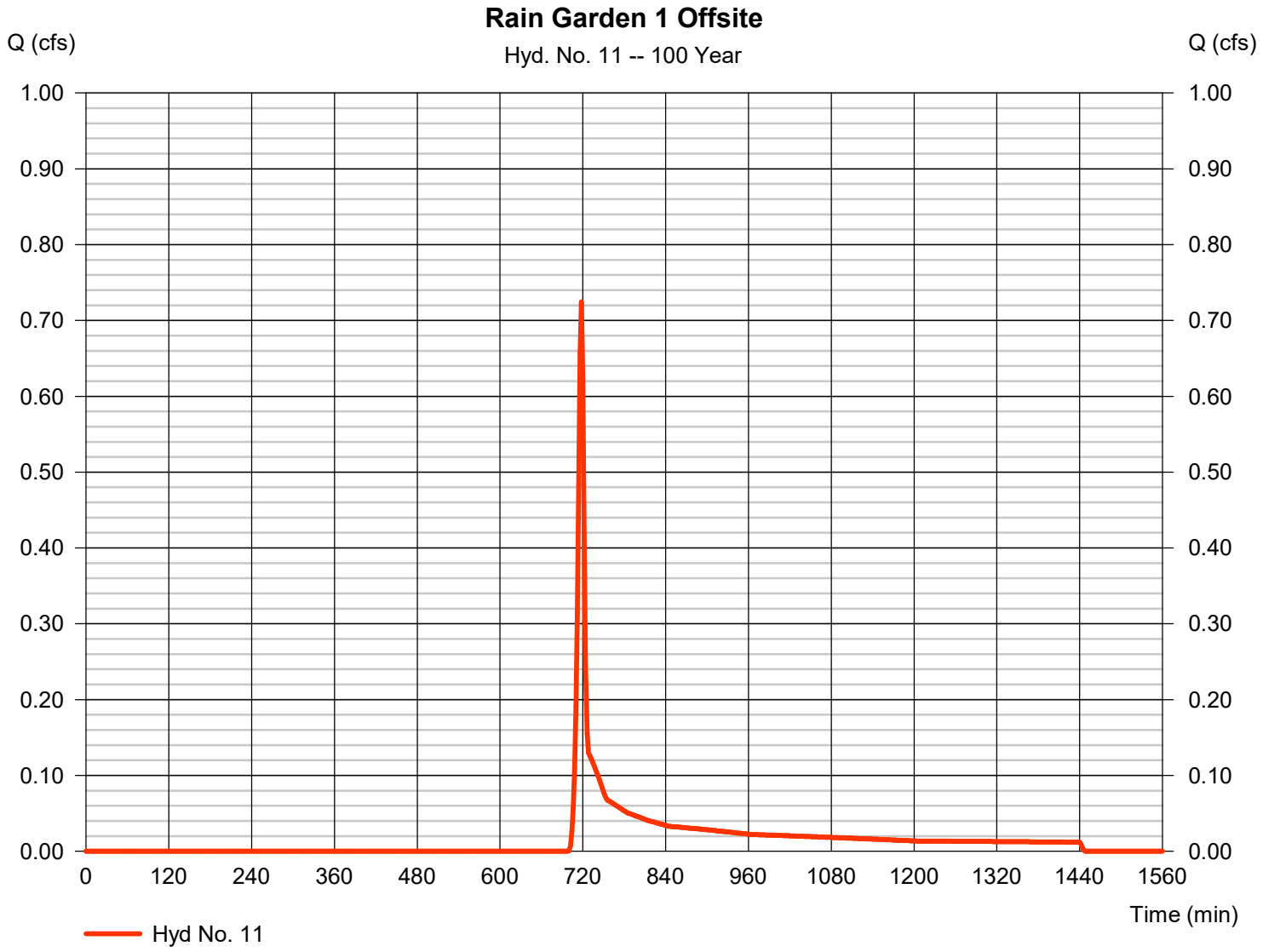
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 11

Rain Garden 1 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 0.725 cfs
Storm frequency	= 100 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 1,546 cuft
Drainage area	= 0.280 ac	Curve number	= 43*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 8.17 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.130 x 77) + (0.020 x 98)] / 0.280



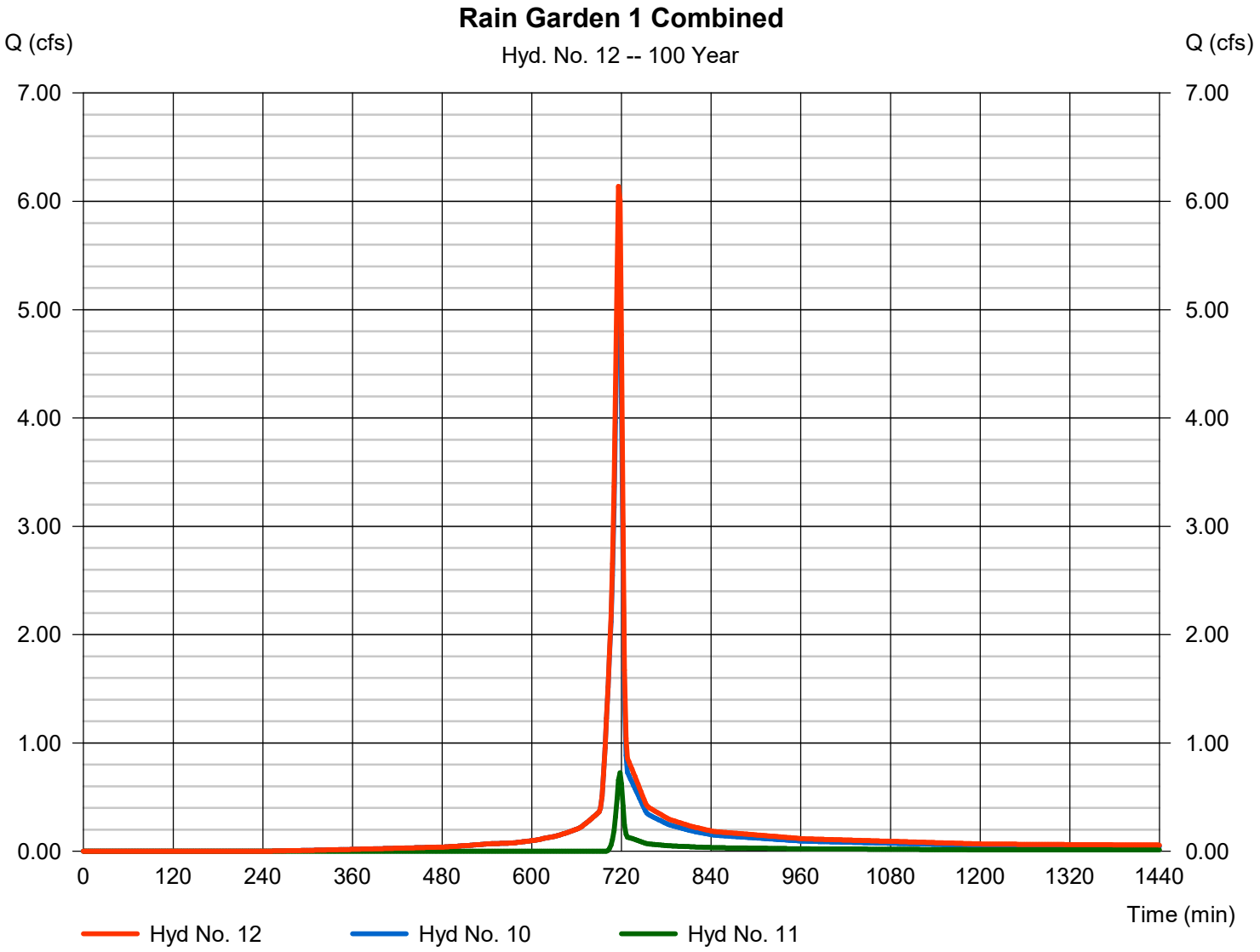
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 12

Rain Garden 1 Combined

Hydrograph type	=	Combine	Peak discharge	=	6.137 cfs
Storm frequency	=	100 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	13,260 cuft
Inflow hyds.	=	10, 11	Contrib. drain. area	=	0.830 ac



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Pond No. 1 - RG 1

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 641.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	641.00	1,831	0	0
1.00	642.00	2,382	2,100	2,100
2.00	643.00	2,990	2,680	4,780
3.00	644.00	3,655	3,317	8,097

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 15.00	3.00	9.00	0.00
Span (in)	= 15.00	3.00	18.00	0.00
No. Barrels	= 1	1	2	0
Invert El. (ft)	= 641.00	641.75	642.25	0.00
Length (ft)	= 50.00	1.00	1.00	0.00
Slope (%)	= 1.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	Yes	No

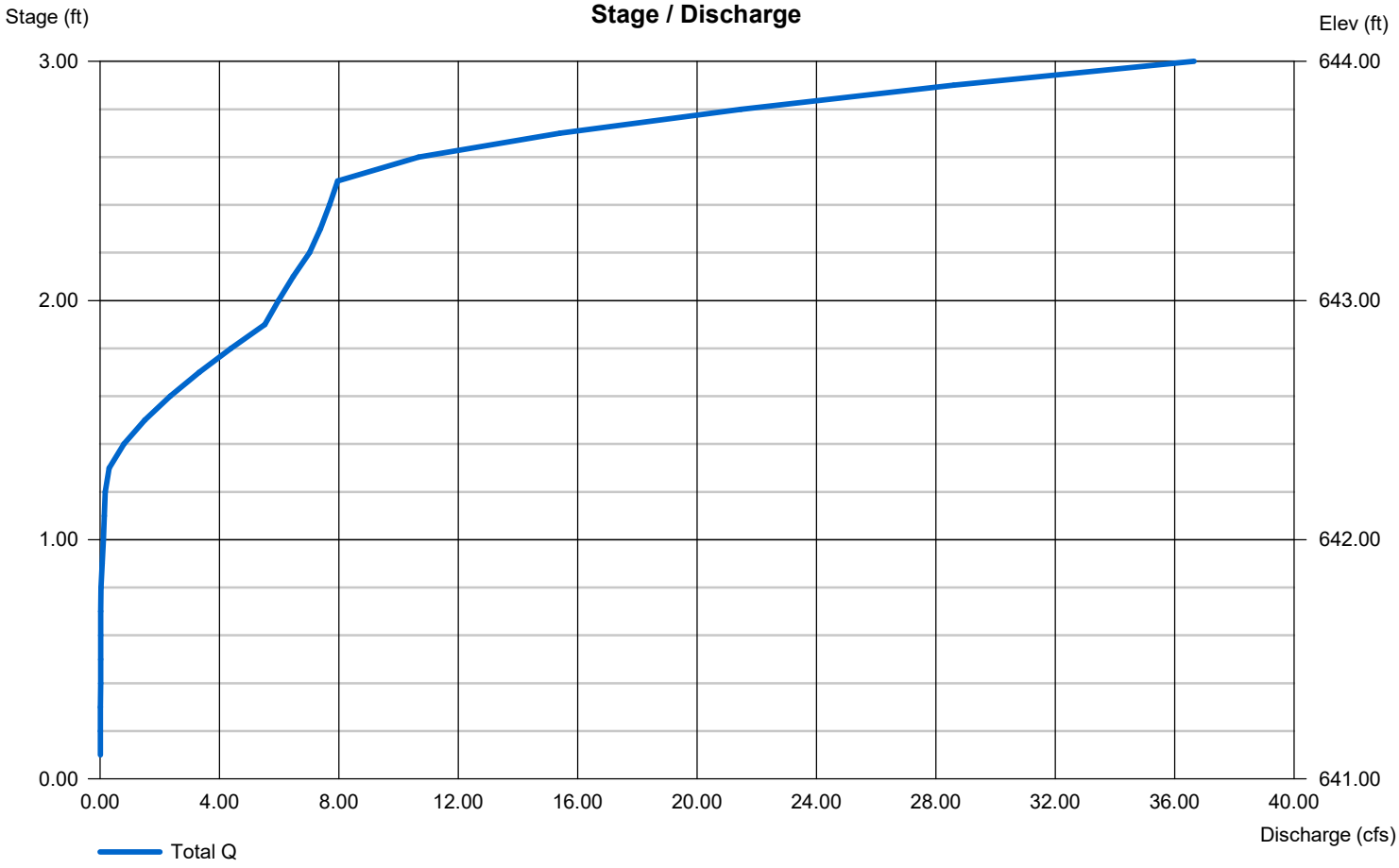
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 12.00	Inactive	30.00	Inactive
Crest El. (ft)	= 643.00	642.00	643.50	0.00
Weir Coeff.	= 3.33	3.33	2.60	3.33
Weir Type	= 1	45 degV	Broad	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.500 (by Contour)

TW Elev. (ft) = 0.00

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



Hydrograph Report

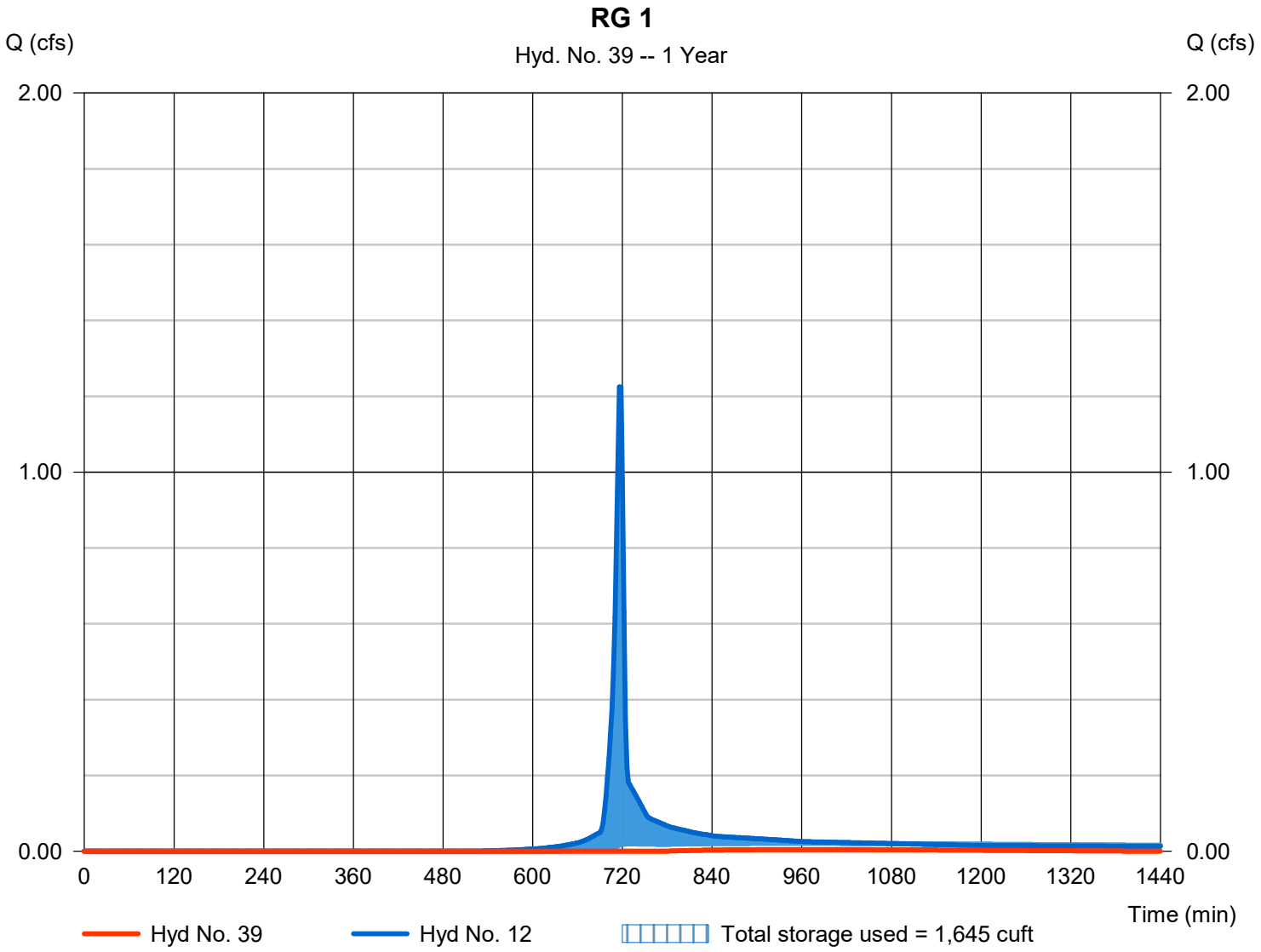
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 39

RG 1

Hydrograph type	=	Reservoir	Peak discharge	=	0.004 cfs
Storm frequency	=	1 yrs	Time to peak	=	958 min
Time interval	=	2 min	Hyd. volume	=	108 cuft
Inflow hyd. No.	=	12 - Rain Garden 1 Combined	Max. Elevation	=	641.78 ft
Reservoir name	=	RG 1	Max. Storage	=	1,645 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

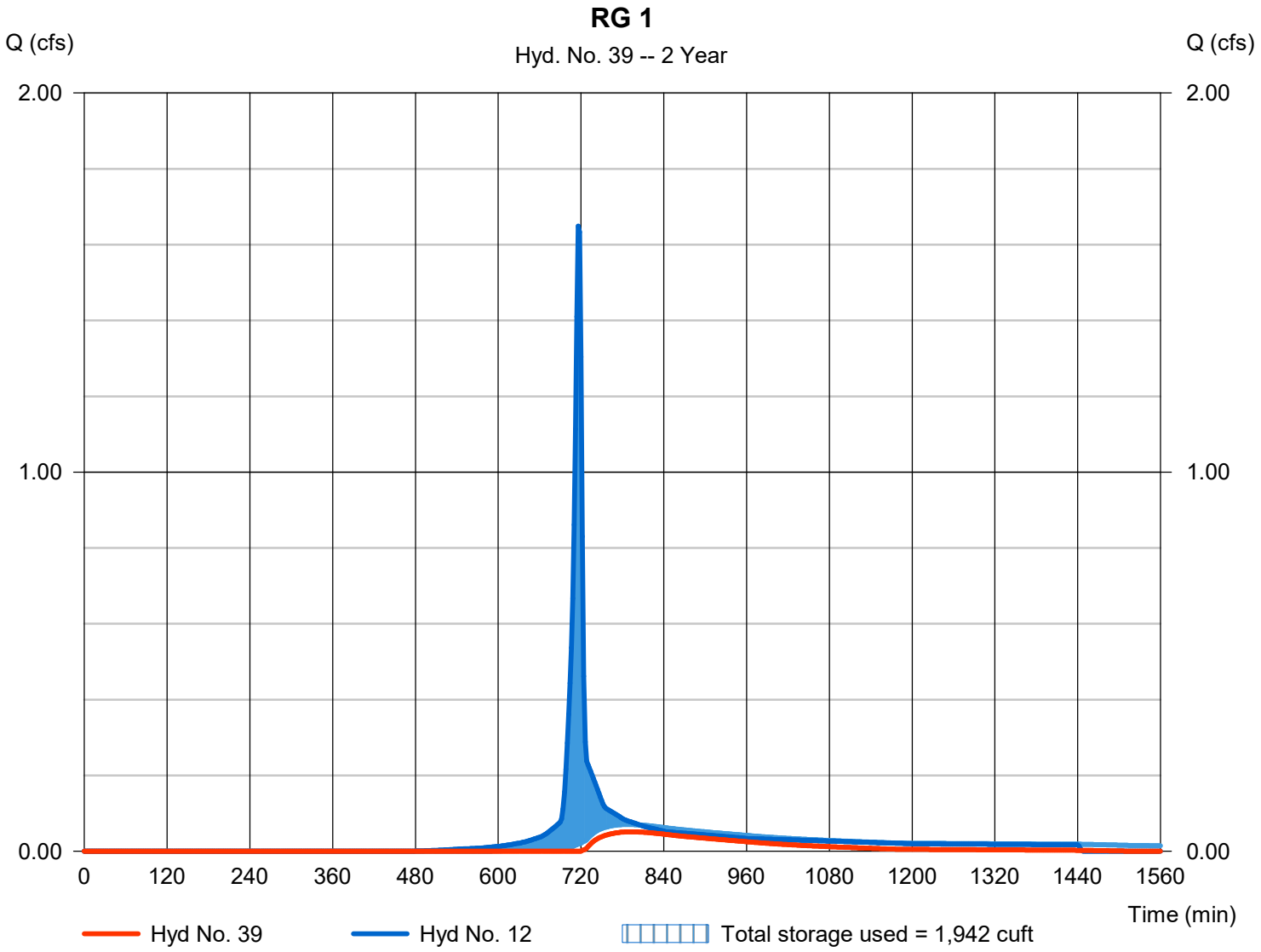
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 39

RG 1

Hydrograph type	=	Reservoir	Peak discharge	=	0.051 cfs
Storm frequency	=	2 yrs	Time to peak	=	794 min
Time interval	=	2 min	Hyd. volume	=	793 cuft
Inflow hyd. No.	=	12 - Rain Garden 1 Combined	Max. Elevation	=	641.92 ft
Reservoir name	=	RG 1	Max. Storage	=	1,942 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

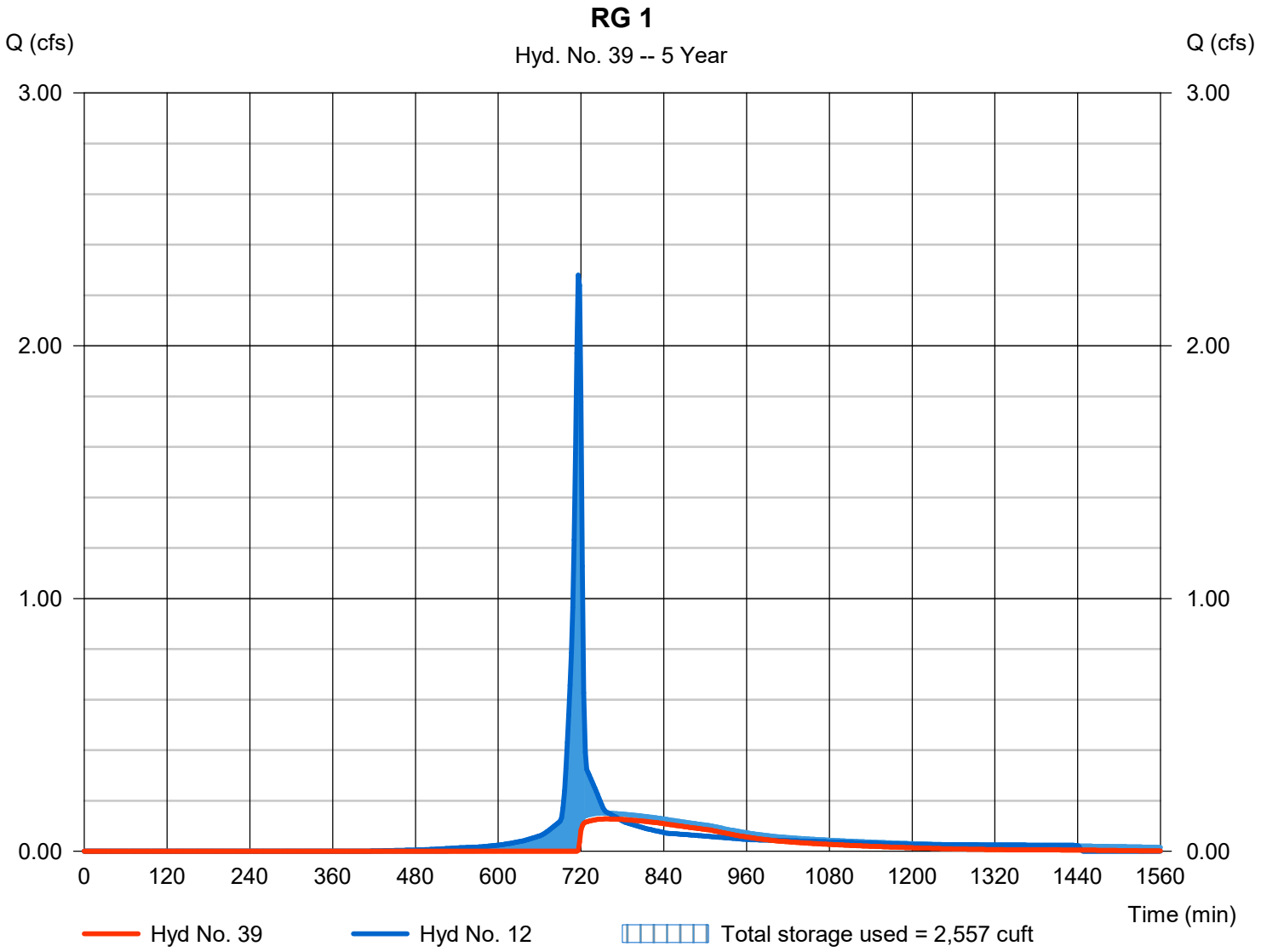
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 39

RG 1

Hydrograph type	=	Reservoir	Peak discharge	=	0.128 cfs
Storm frequency	=	5 yrs	Time to peak	=	756 min
Time interval	=	2 min	Hyd. volume	=	2,041 cuft
Inflow hyd. No.	=	12 - Rain Garden 1 Combined	Max. Elevation	=	642.17 ft
Reservoir name	=	RG 1	Max. Storage	=	2,557 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

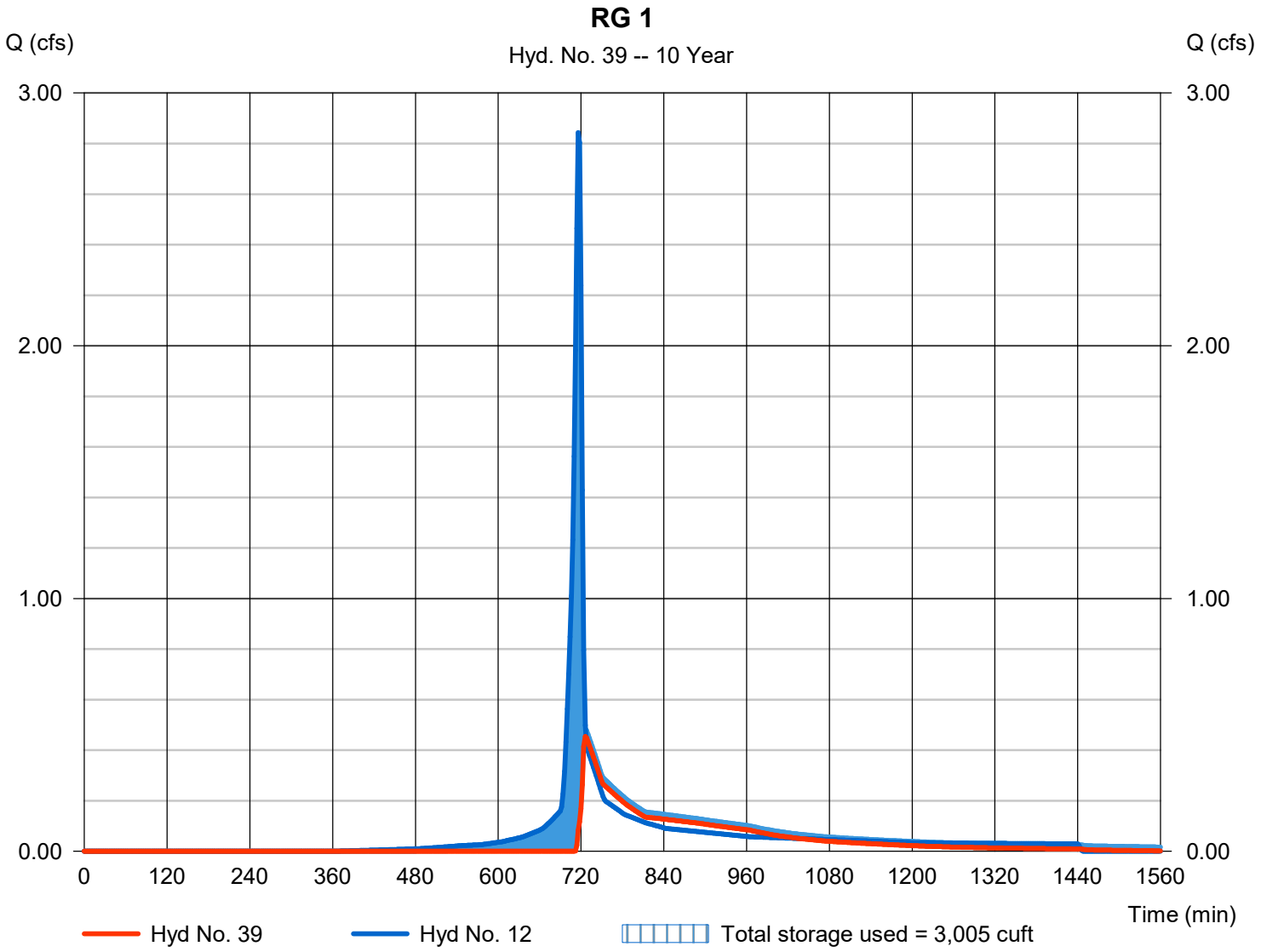
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 39

RG 1

Hydrograph type	=	Reservoir	Peak discharge	=	0.455 cfs
Storm frequency	=	10 yrs	Time to peak	=	726 min
Time interval	=	2 min	Hyd. volume	=	3,287 cuft
Inflow hyd. No.	=	12 - Rain Garden 1 Combined	Max. Elevation	=	642.34 ft
Reservoir name	=	RG 1	Max. Storage	=	3,005 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

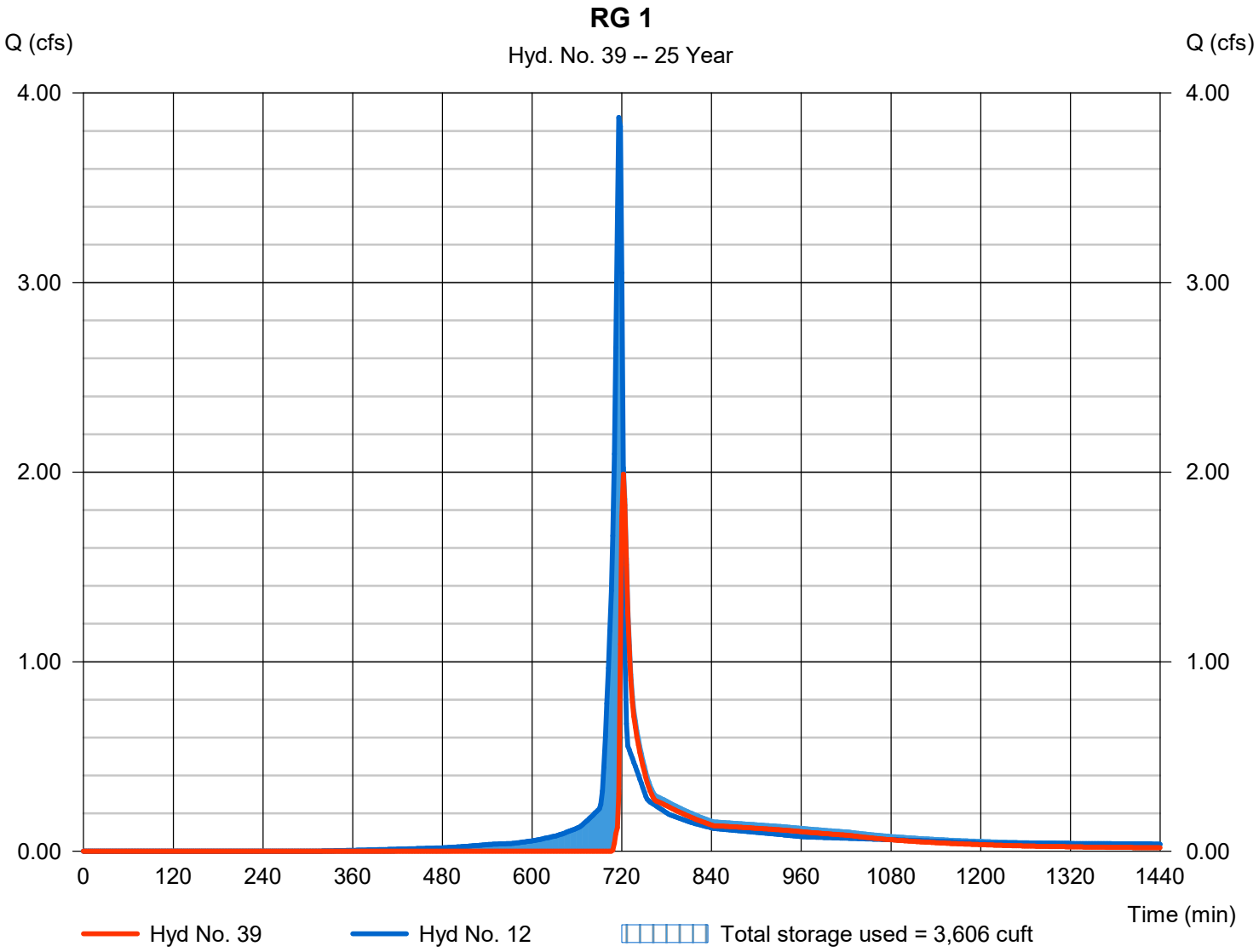
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 39

RG 1

Hydrograph type	=	Reservoir	Peak discharge	=	1.989 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	5,430 cuft
Inflow hyd. No.	=	12 - Rain Garden 1 Combined	Max. Elevation	=	642.56 ft
Reservoir name	=	RG 1	Max. Storage	=	3,606 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

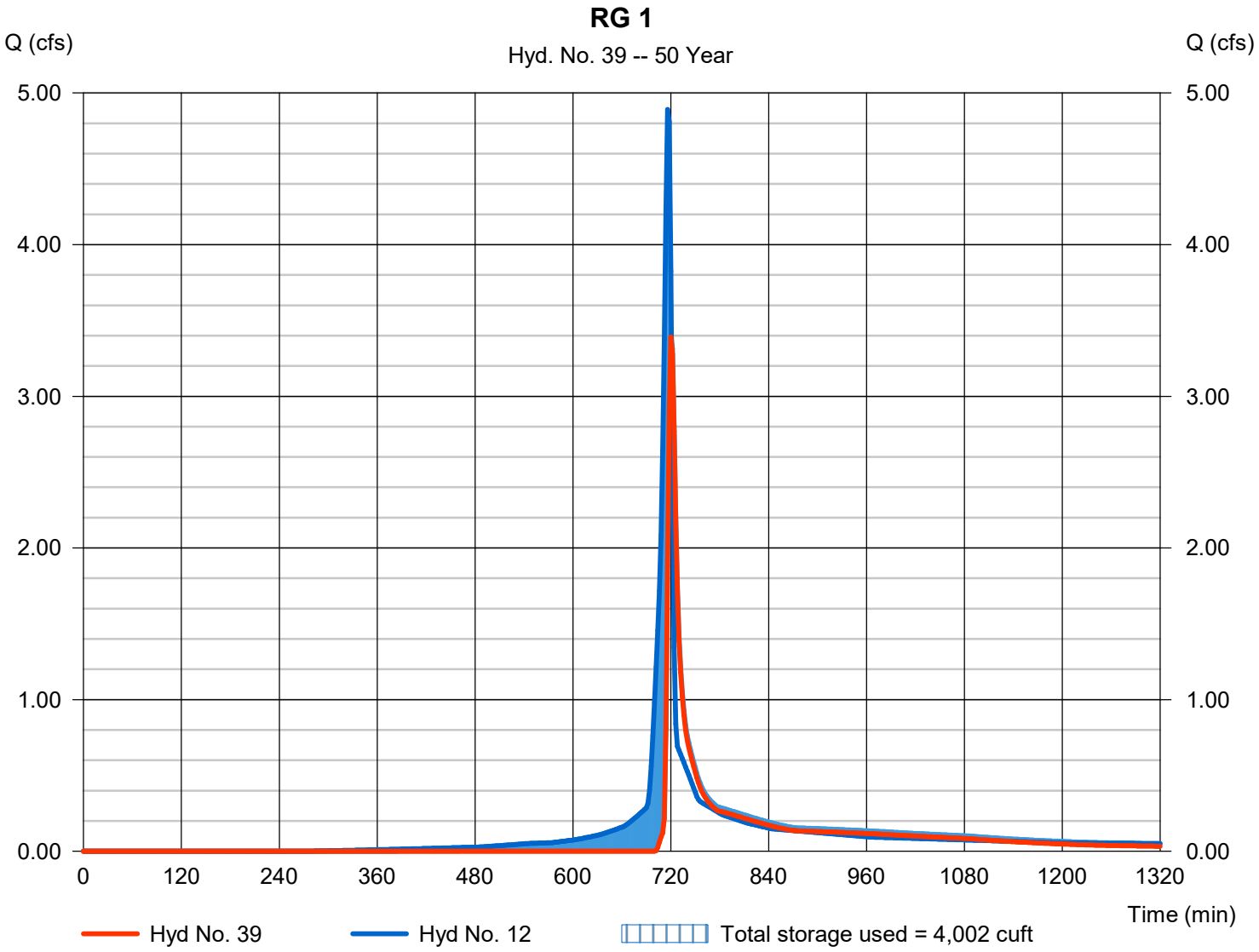
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 39

RG 1

Hydrograph type	=	Reservoir	Peak discharge	=	3.391 cfs
Storm frequency	=	50 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	7,523 cuft
Inflow hyd. No.	=	12 - Rain Garden 1 Combined	Max. Elevation	=	642.71 ft
Reservoir name	=	RG 1	Max. Storage	=	4,002 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

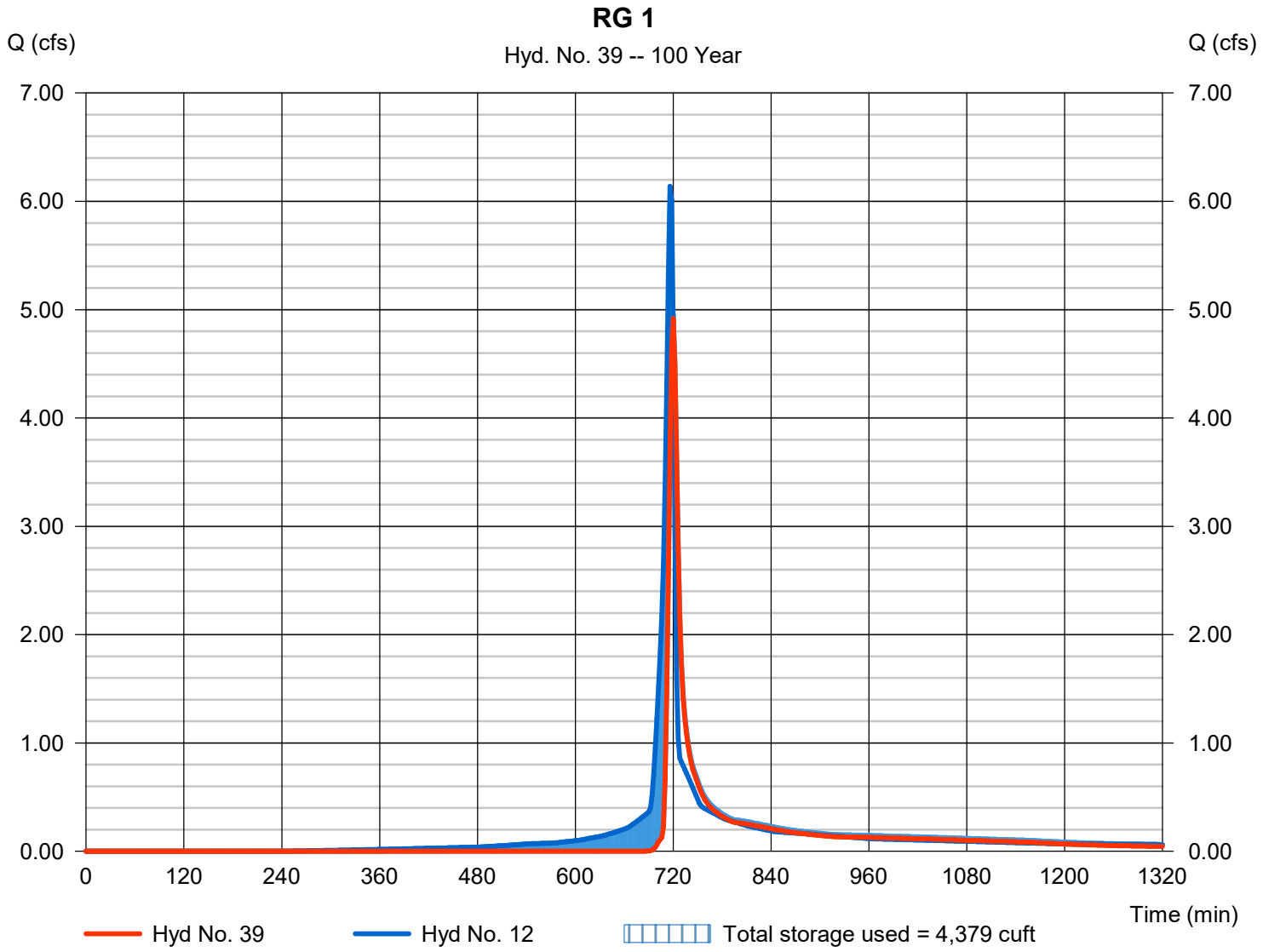
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 39

RG 1

Hydrograph type	=	Reservoir	Peak discharge	=	4.919 cfs
Storm frequency	=	100 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	10,125 cuft
Inflow hyd. No.	=	12 - Rain Garden 1 Combined	Max. Elevation	=	642.85 ft
Reservoir name	=	RG 1	Max. Storage	=	4,379 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Developed Conditions: Rain Garden 2 Onsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D			77					
Meadow	D			78					
Forest (Good)	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D	15,612	0.36	80	2.50	0.50	1.49	1944.80	0.04
Lawn, High-Input	D			84					
Golf Course Fairway/Green	D			80					
Grassed Athletic Field	D			80					
Rooftop	D			98					
High Traffic Street / Highway	D			93					
Medium Traffic Street	D			98					
Low Traffic / Residential Street	D			98					
Res. Driveway, Play Courts, etc.	D	5,582	0.13	98	0.20	0.04	3.09	1435.96	0.03
Impervious Allowance	D	500	0.01	98	0.20	0.04	3.09	128.63	0.00
Low Traffic Parking Lot	D			98					
TOTAL:		21,694	0.50						0.07

Developed Conditions: Rain Garden 2 Offsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D	8,730	0.20	77	2.99	0.60	1.30	944.46	0.02
Meadow	D			78					
Forest (Good)	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D			80					
Lawn, High-Input	D			84					
Golf Course Fairway/Green	D			80					
Grassed Athletic Field	D			80					
Rooftop	D			98					
High Traffic Street / Highway	D			93					
Medium Traffic Street	D			98					
Low Traffic / Residential Street	D	1,615	0.04	98	0.20	0.04	3.09	415.57	0.01
Res. Driveway, Play Courts, etc.	D			98					
Impervious Allowance	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		10,345	0.24						0.03

Hydrograph Report

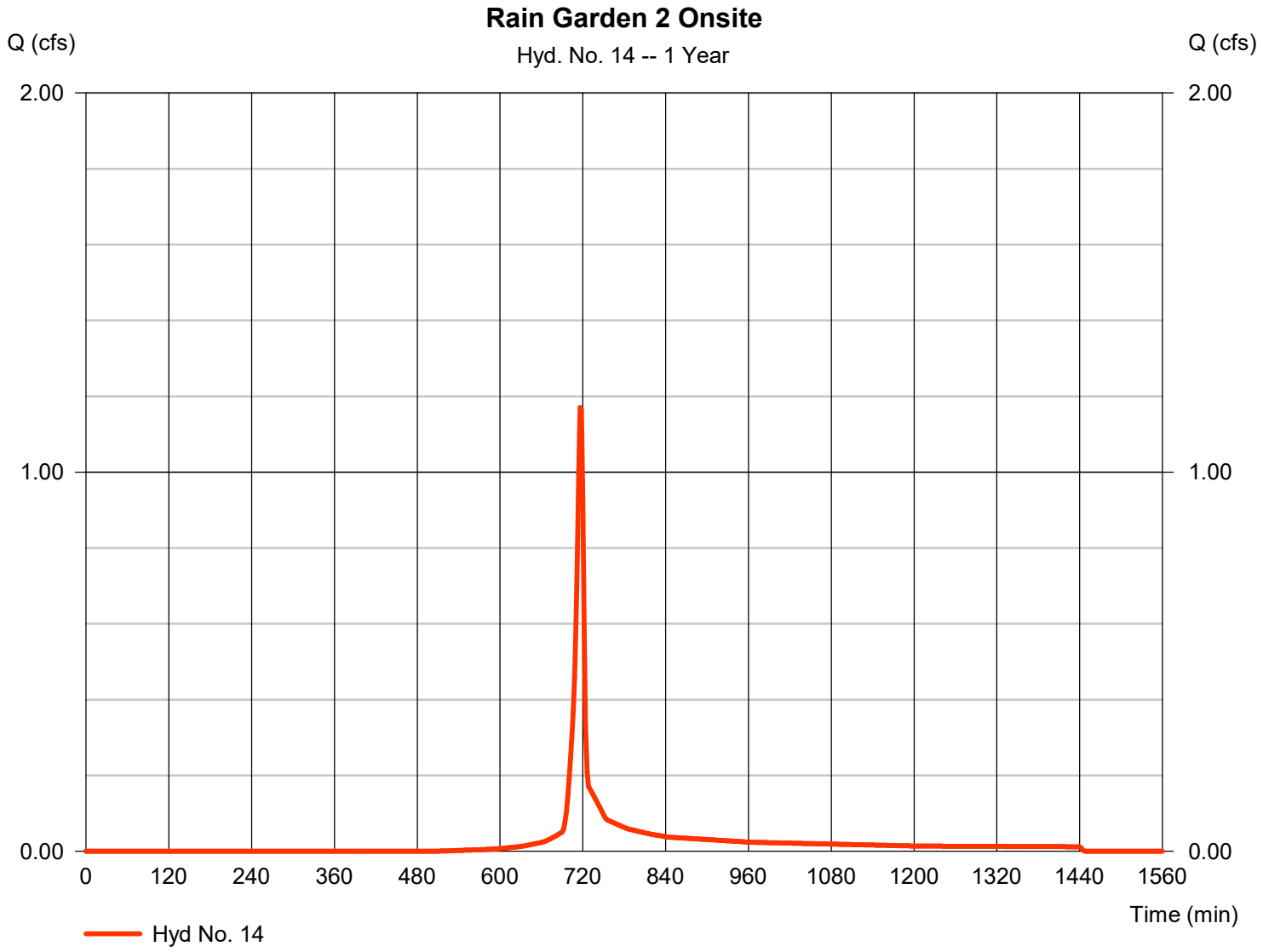
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 14

Rain Garden 2 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 1.170 cfs
Storm frequency	= 1 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 2,363 cuft
Drainage area	= 0.500 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.76 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.360 x 80) + (0.140 x 98)] / 0.500



Hydrograph Report

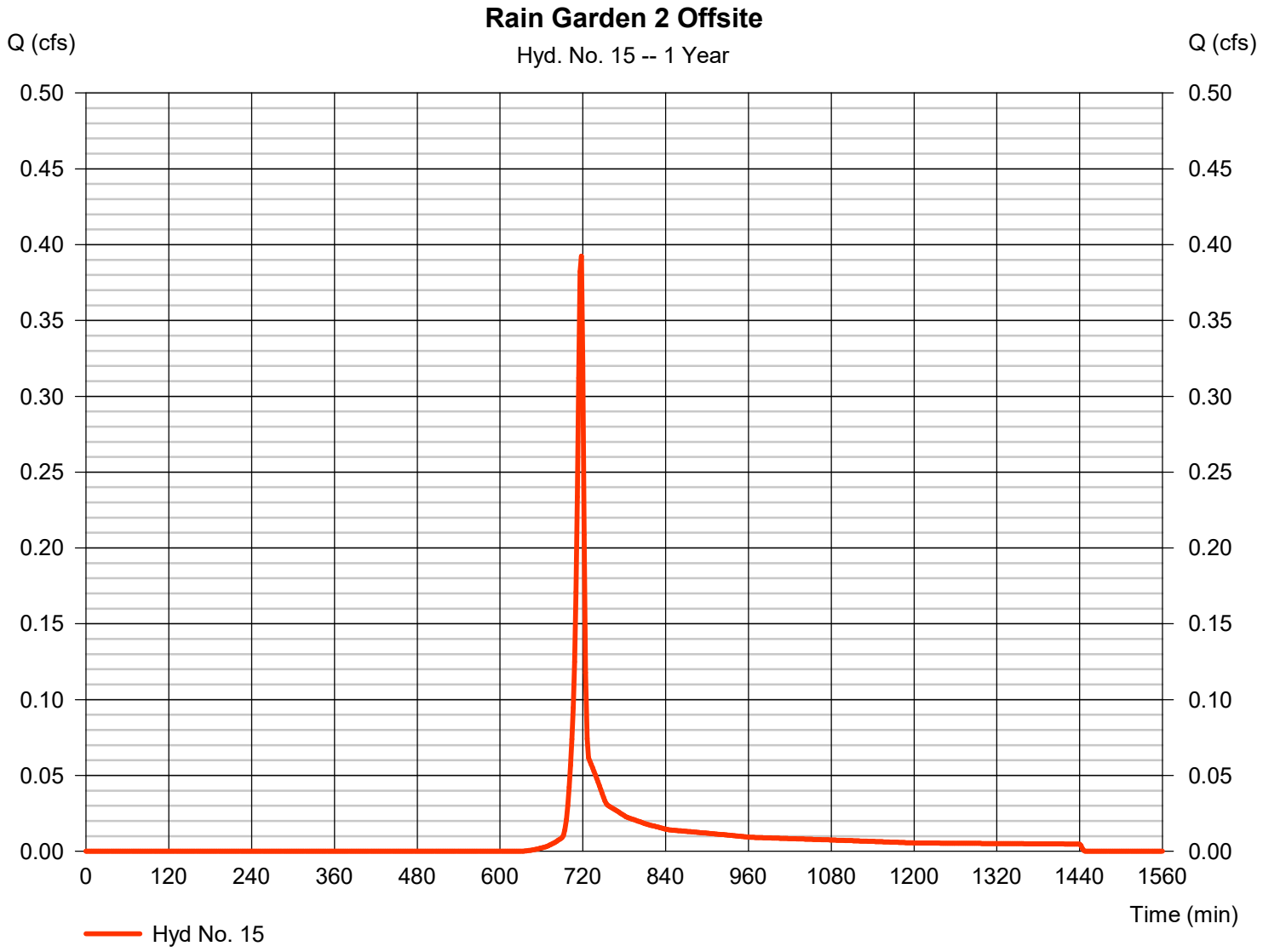
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 15

Rain Garden 2 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 0.392 cfs
Storm frequency	= 1 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 785 cuft
Drainage area	= 0.240 ac	Curve number	= 78*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.76 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.200 x 77) + (0.040 x 80)] / 0.240



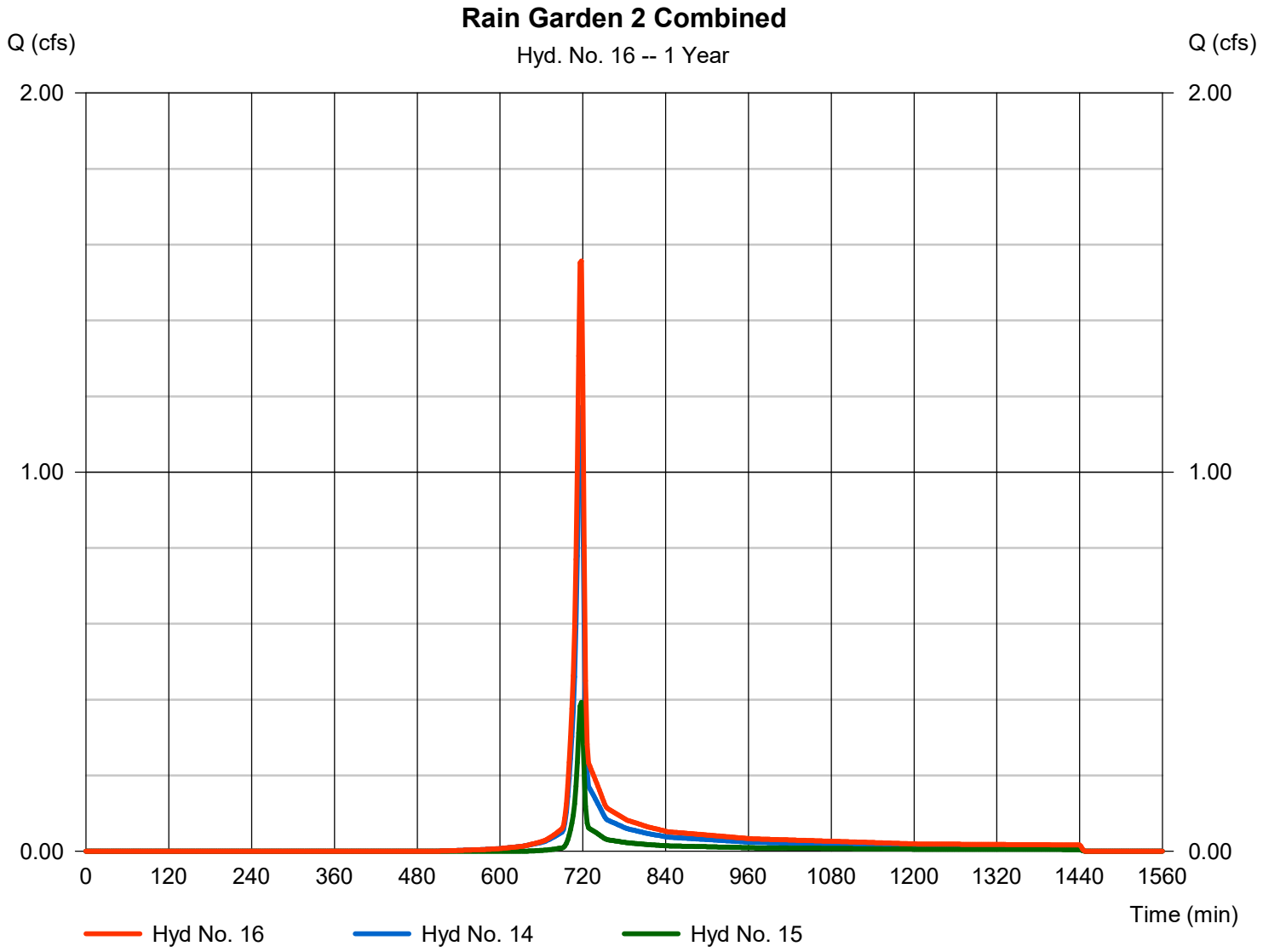
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 16

Rain Garden 2 Combined

Hydrograph type	= Combine	Peak discharge	= 1.557 cfs
Storm frequency	= 1 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 3,148 cuft
Inflow hyds.	= 14, 15	Contrib. drain. area	= 0.740 ac



Hydrograph Report

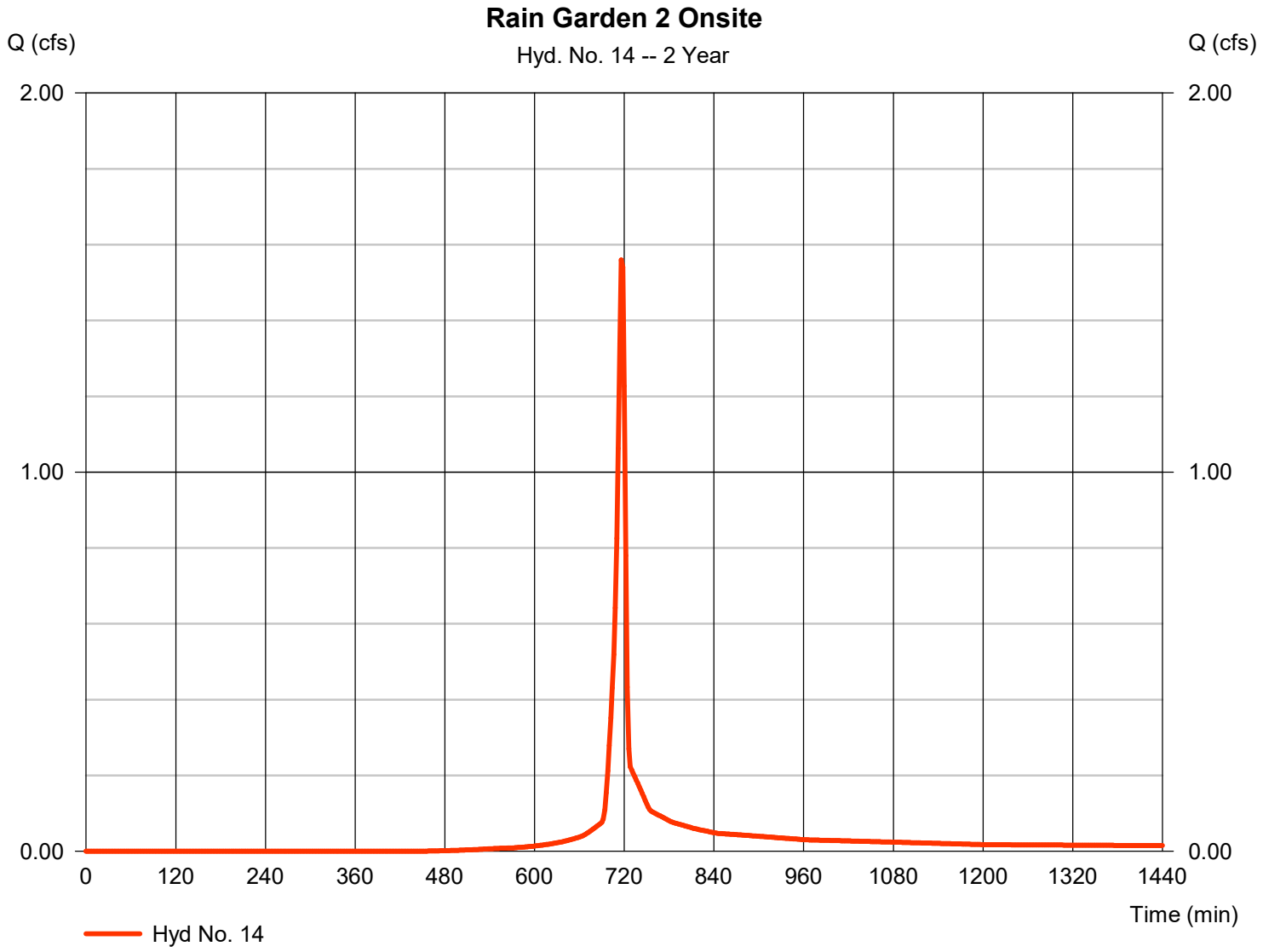
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 14

Rain Garden 2 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 1.560 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 3,166 cuft
Drainage area	= 0.500 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.360 x 80) + (0.140 x 98)] / 0.500



Hydrograph Report

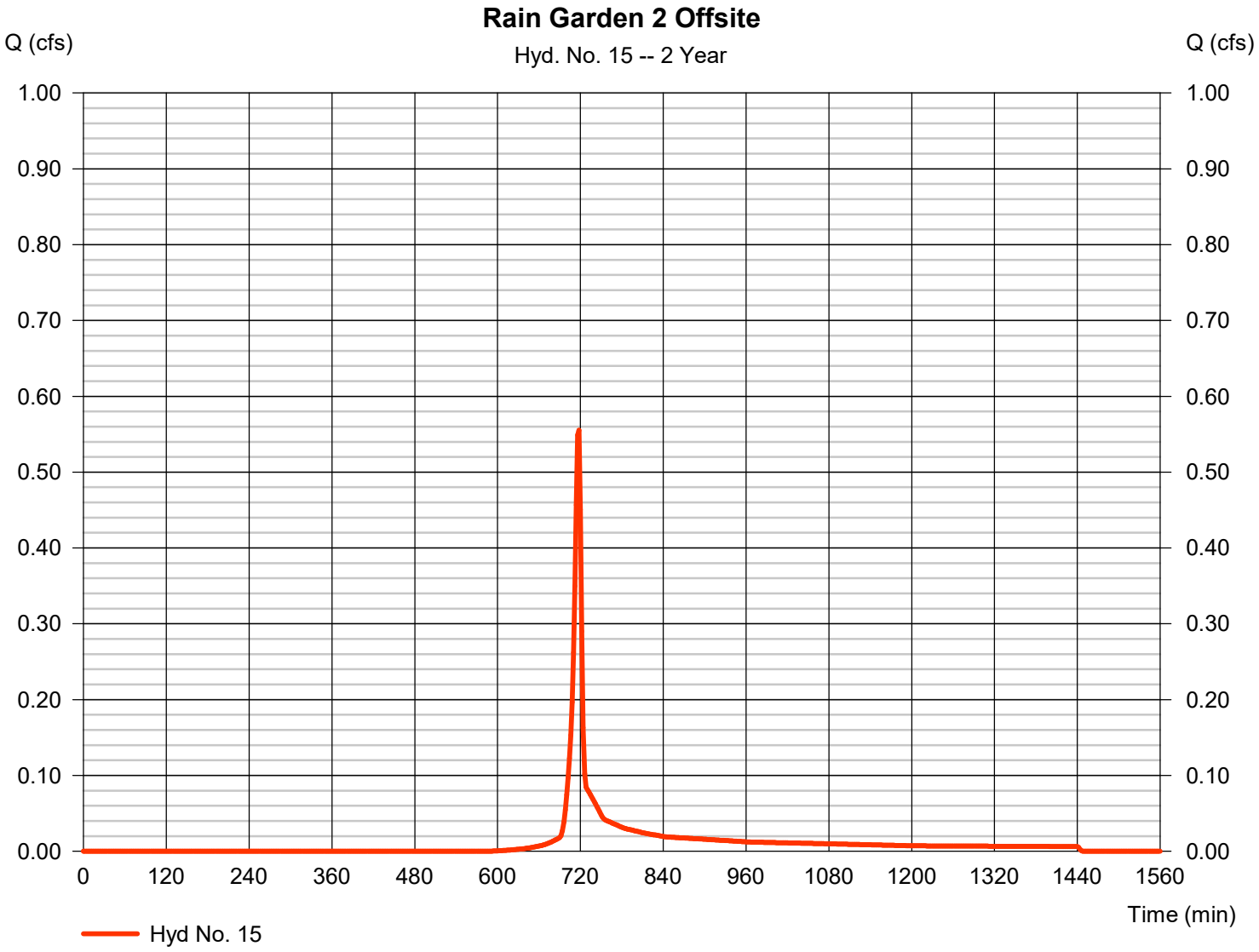
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 15

Rain Garden 2 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 0.555 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 1,112 cuft
Drainage area	= 0.240 ac	Curve number	= 78*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.200 x 77) + (0.040 x 80)] / 0.240



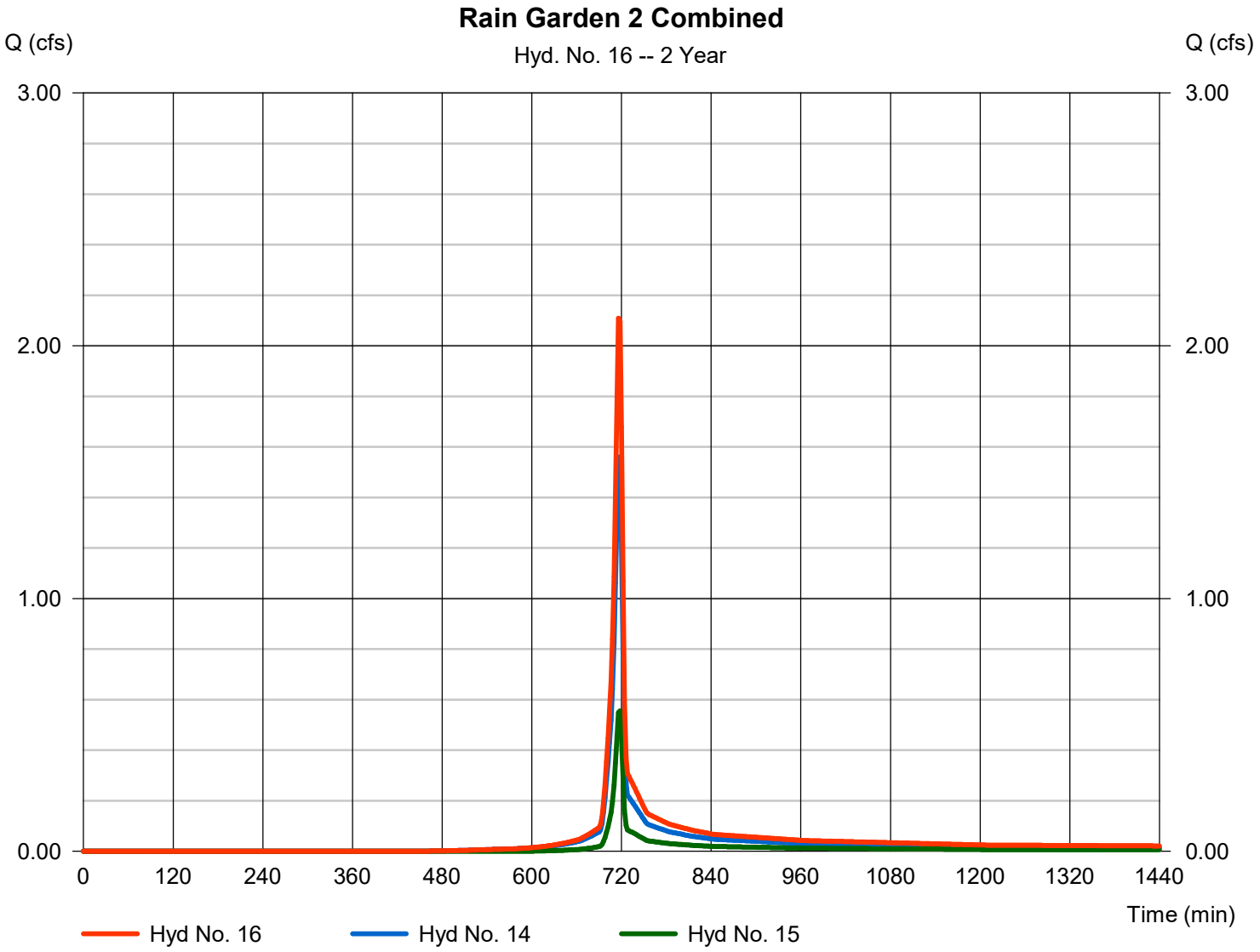
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 16

Rain Garden 2 Combined

Hydrograph type	= Combine	Peak discharge	= 2.109 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 4,278 cuft
Inflow hyds.	= 14, 15	Contrib. drain. area	= 0.740 ac



Hydrograph Report

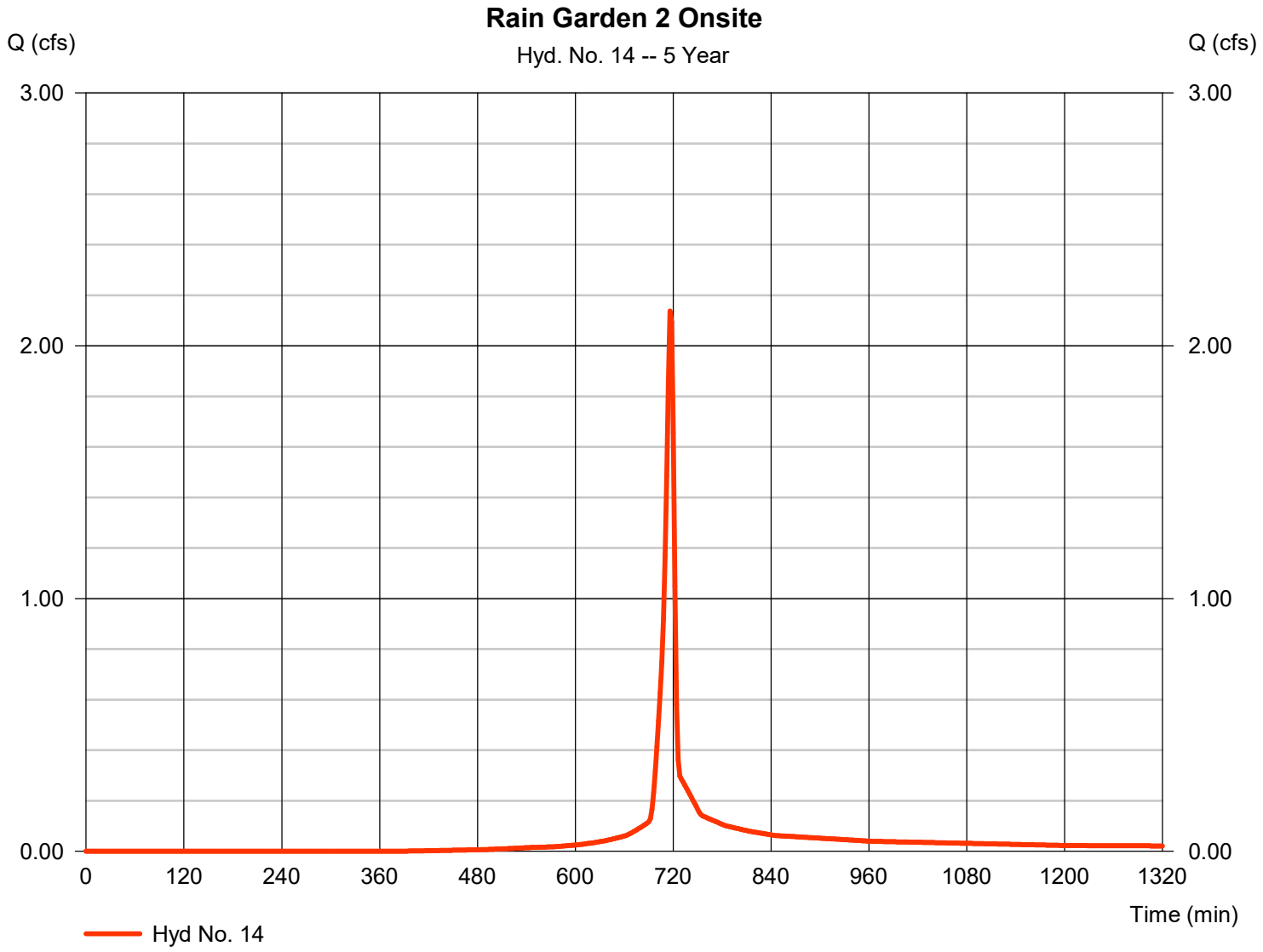
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 14

Rain Garden 2 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 2.137 cfs
Storm frequency	= 5 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 4,380 cuft
Drainage area	= 0.500 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.13 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.360 x 80) + (0.140 x 98)] / 0.500



Hydrograph Report

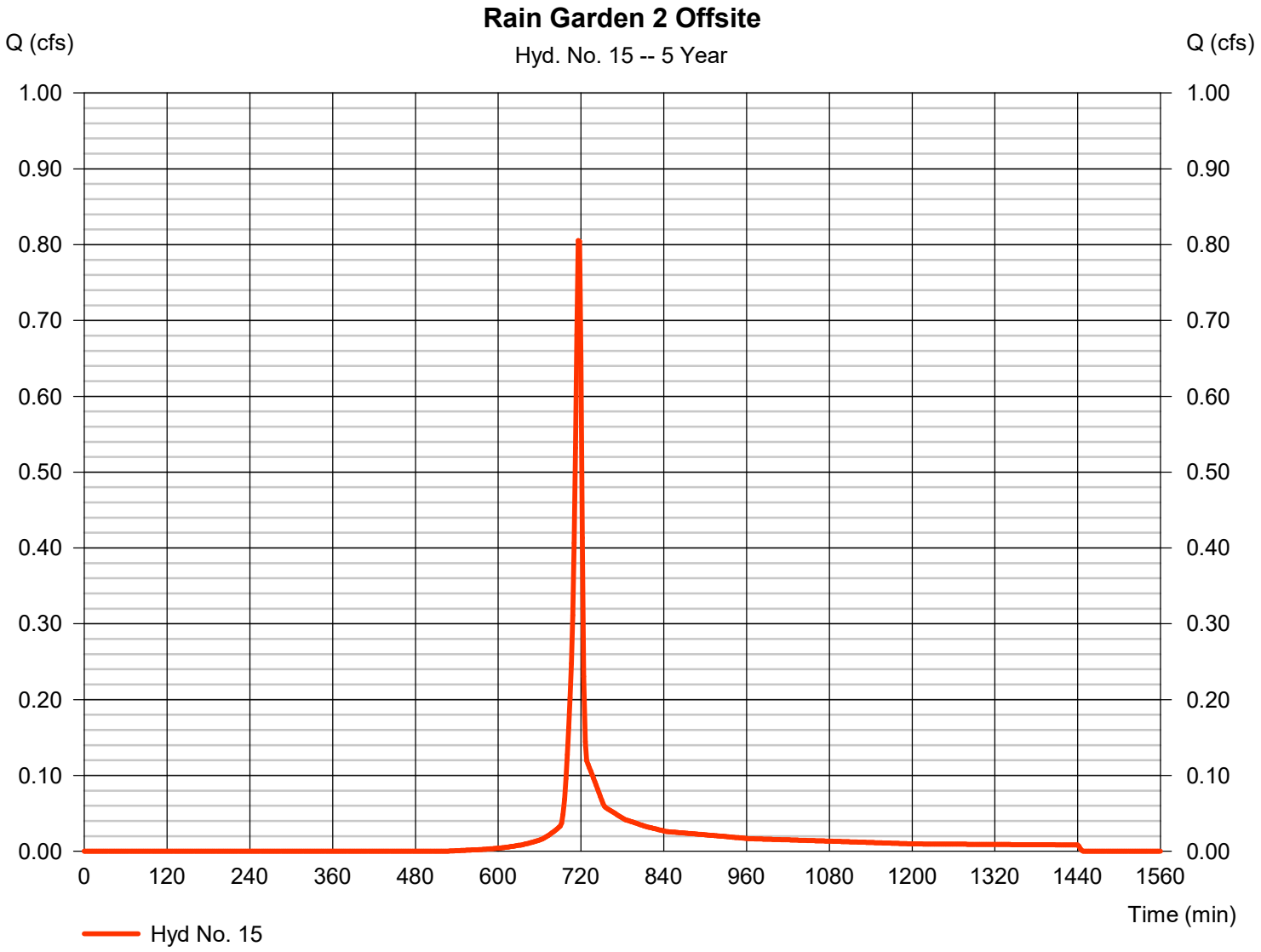
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 15

Rain Garden 2 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 0.805 cfs
Storm frequency	= 5 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 1,626 cuft
Drainage area	= 0.240 ac	Curve number	= 78*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.13 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.200 x 77) + (0.040 x 80)] / 0.240



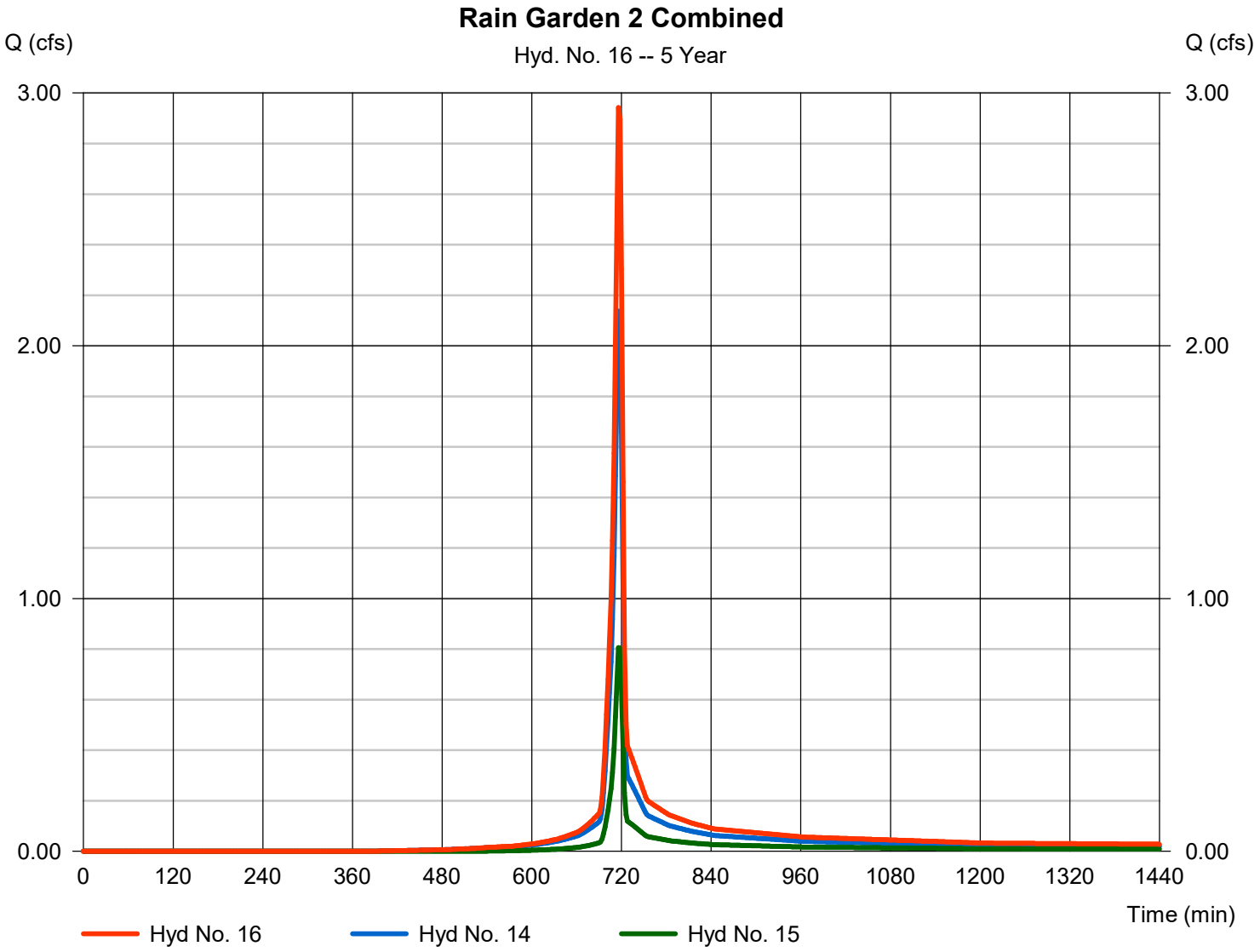
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 16

Rain Garden 2 Combined

Hydrograph type	= Combine	Peak discharge	= 2.943 cfs
Storm frequency	= 5 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 6,007 cuft
Inflow hyds.	= 14, 15	Contrib. drain. area	= 0.740 ac



Hydrograph Report

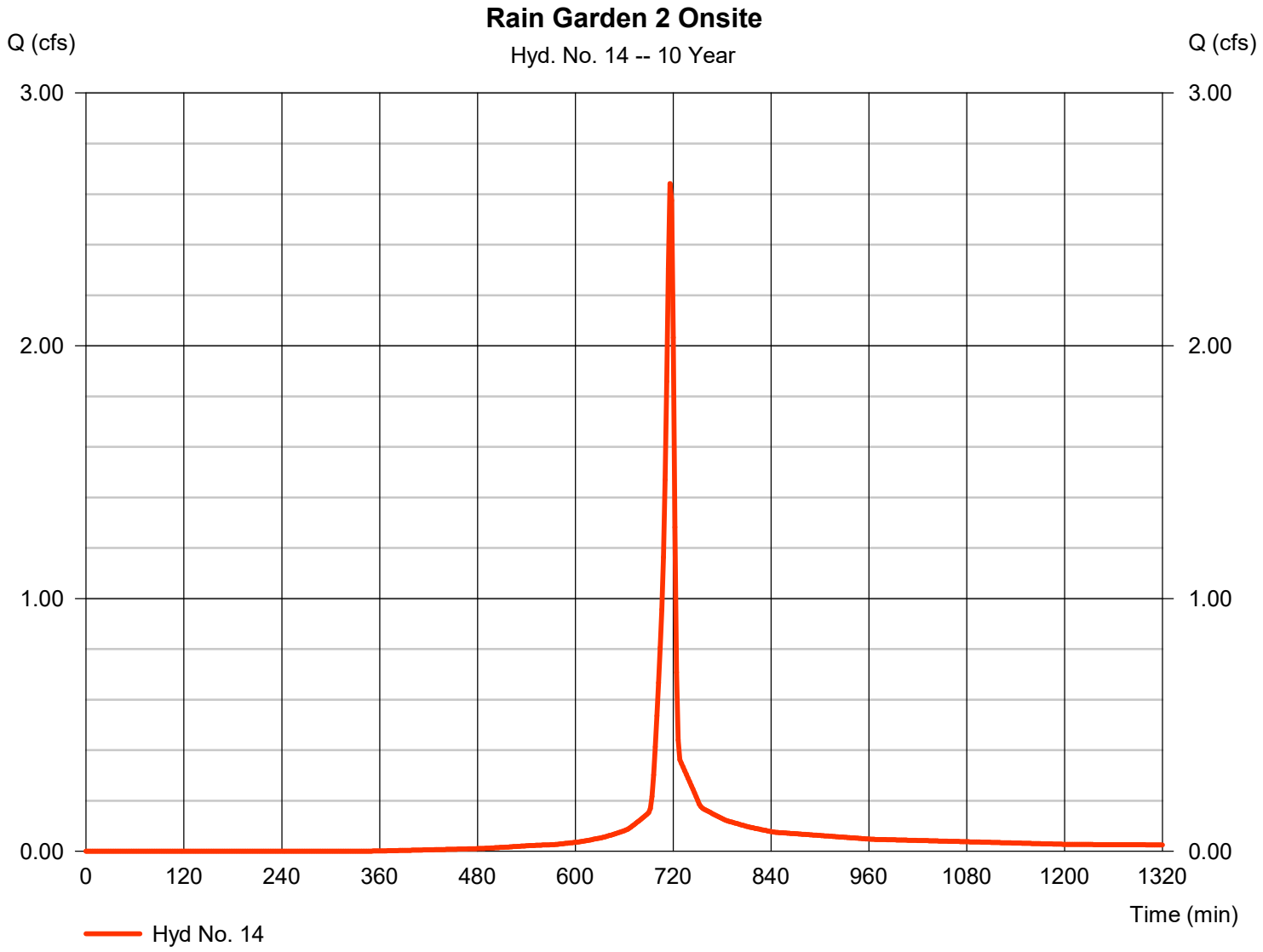
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 14

Rain Garden 2 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 2.641 cfs
Storm frequency	= 10 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 5,464 cuft
Drainage area	= 0.500 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.360 x 80) + (0.140 x 98)] / 0.500



Hydrograph Report

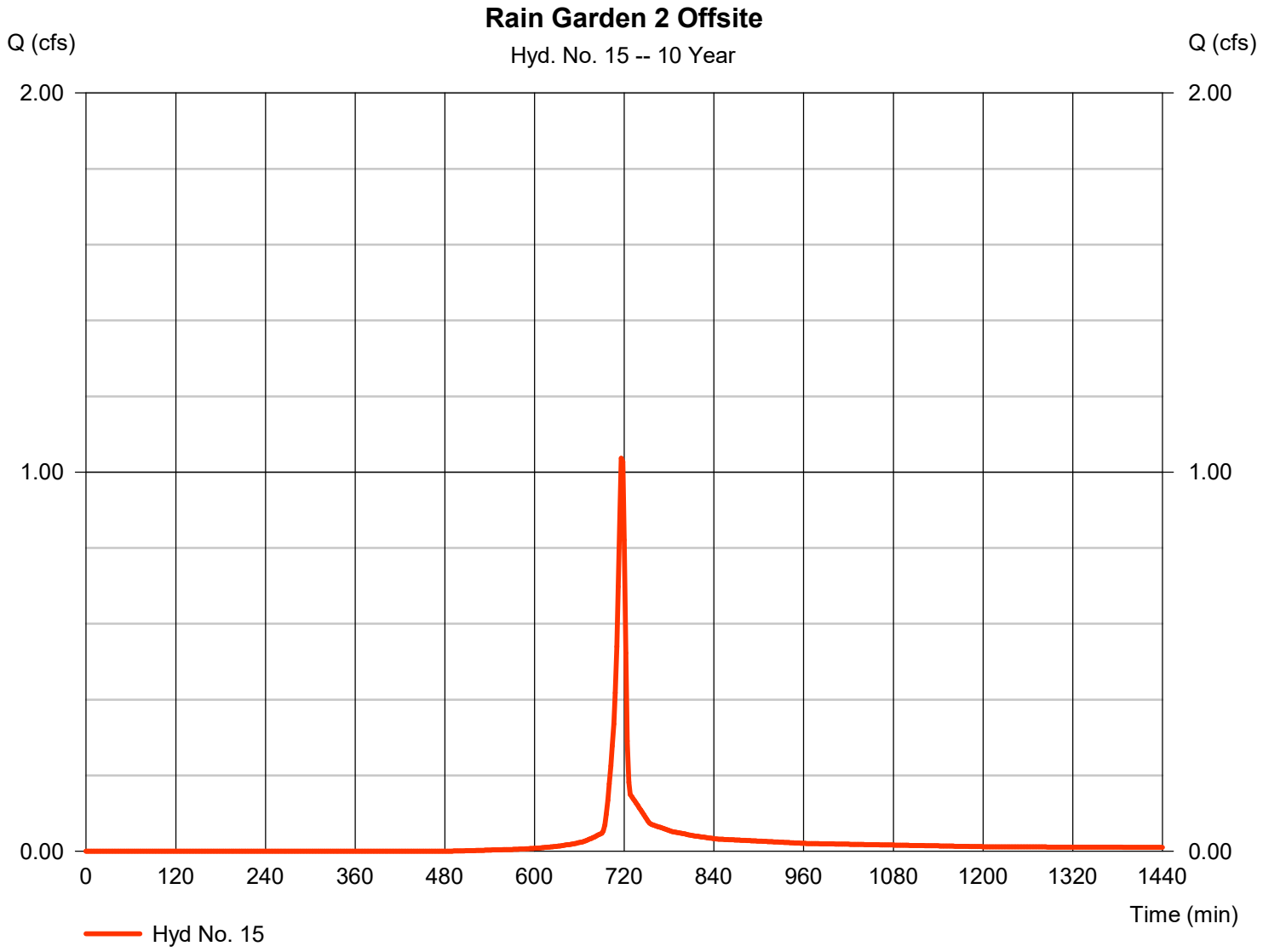
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 15

Rain Garden 2 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 1.037 cfs
Storm frequency	= 10 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 2,097 cuft
Drainage area	= 0.240 ac	Curve number	= 78*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.200 x 77) + (0.040 x 80)] / 0.240



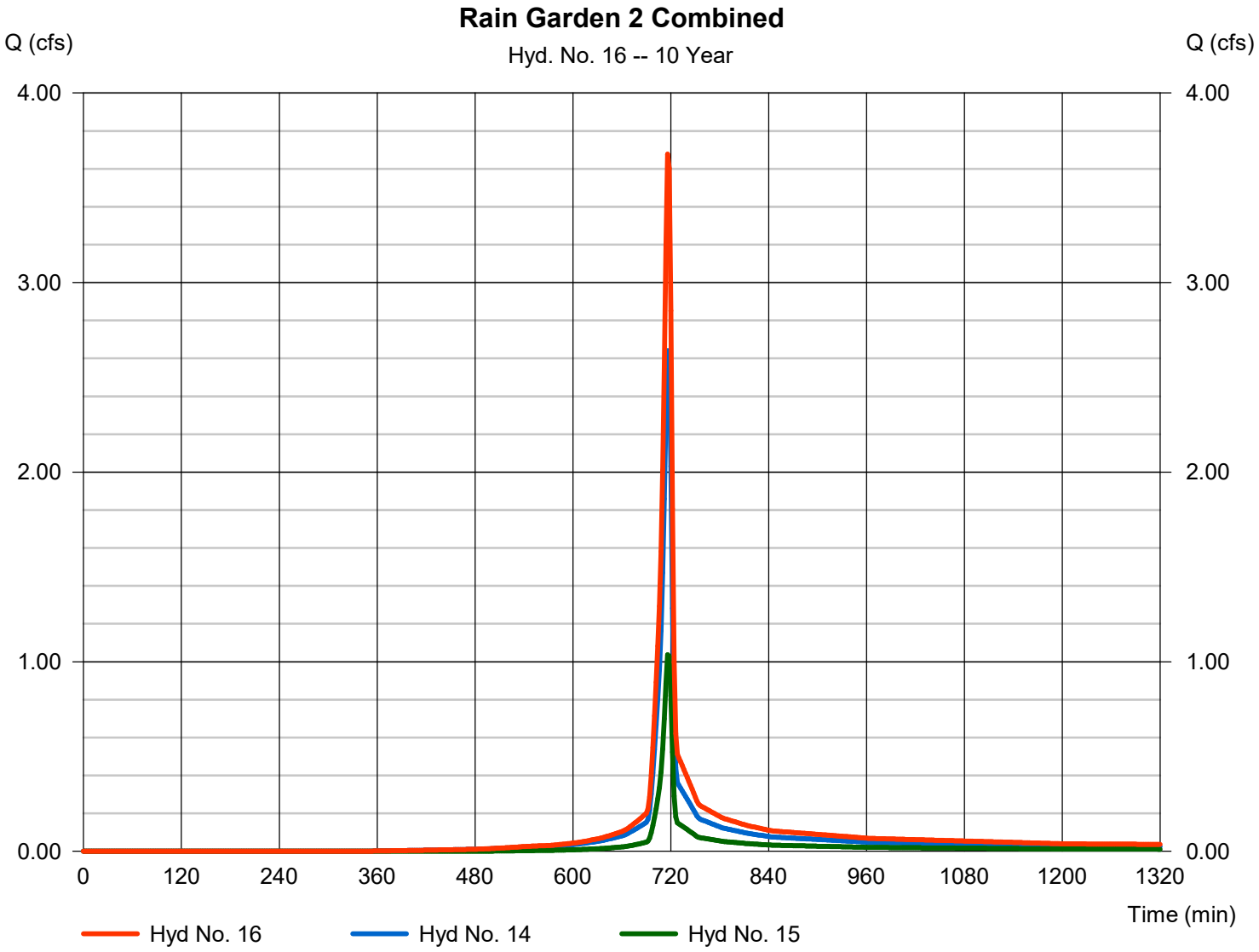
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 16

Rain Garden 2 Combined

Hydrograph type	= Combine	Peak discharge	= 3.678 cfs
Storm frequency	= 10 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 7,562 cuft
Inflow hyds.	= 14, 15	Contrib. drain. area	= 0.740 ac



Hydrograph Report

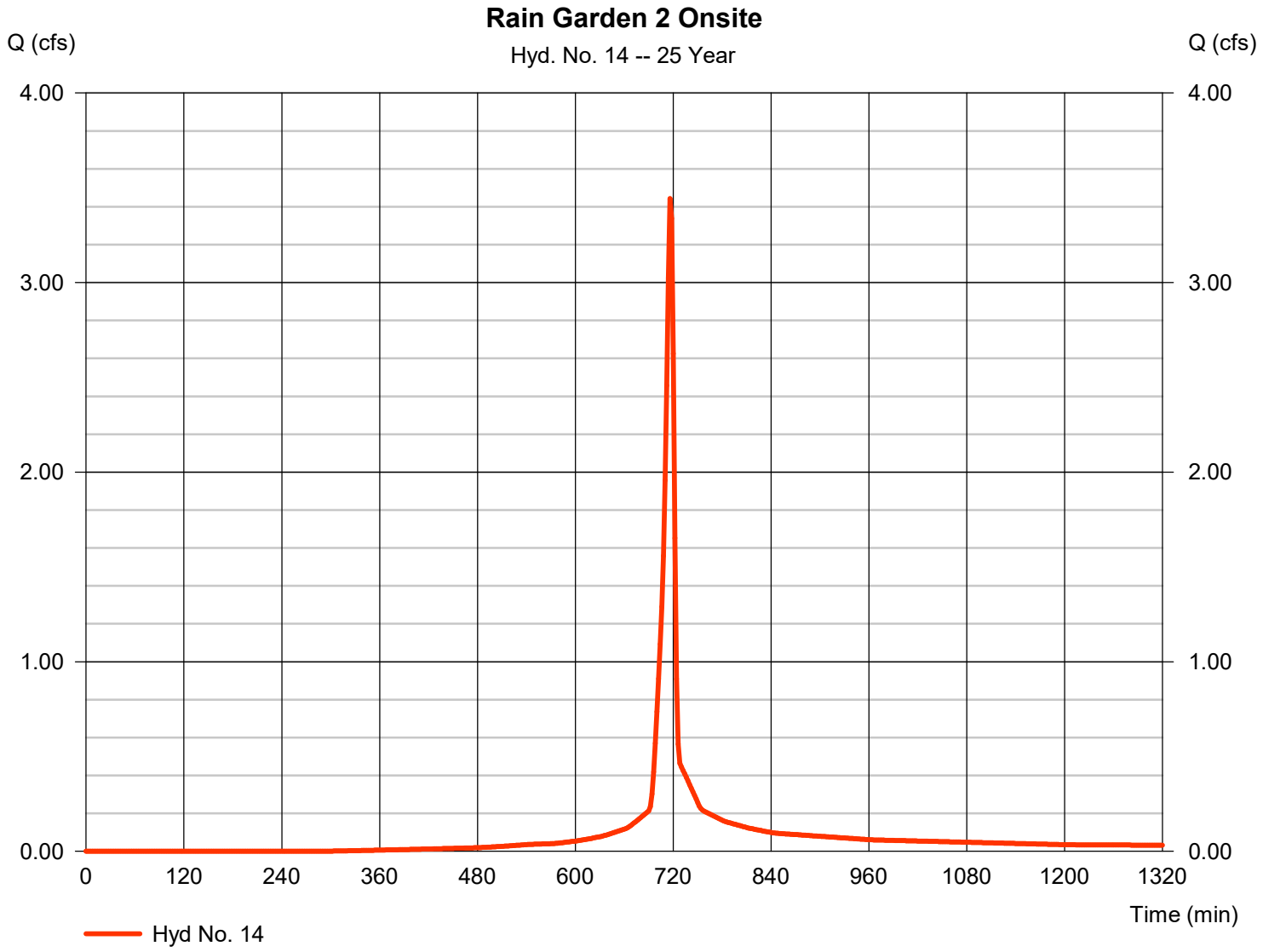
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 14

Rain Garden 2 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 3.443 cfs
Storm frequency	= 25 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 7,225 cuft
Drainage area	= 0.500 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.94 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.360 x 80) + (0.140 x 98)] / 0.500



Hydrograph Report

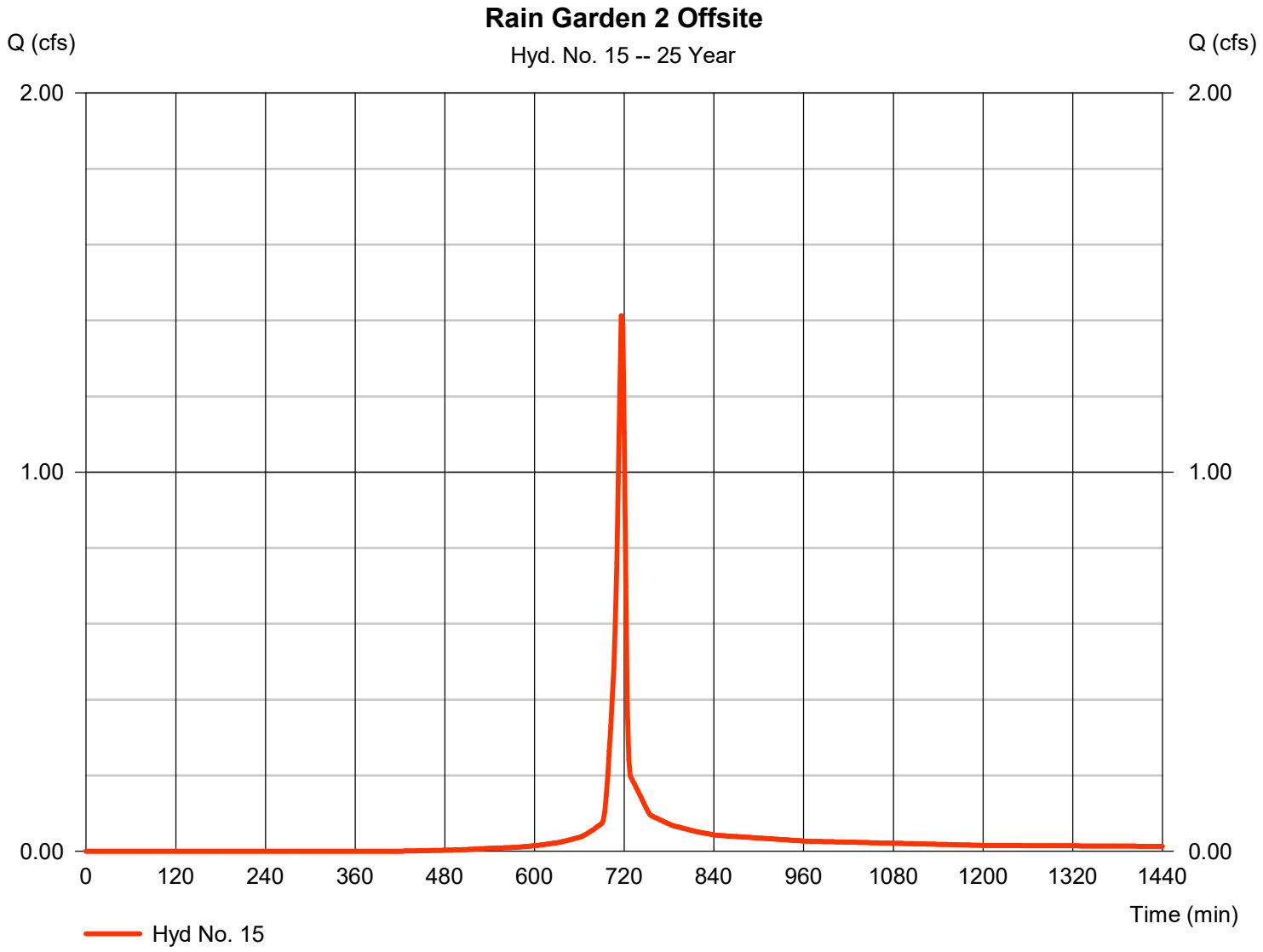
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 15

Rain Garden 2 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 1.413 cfs
Storm frequency	= 25 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 2,880 cuft
Drainage area	= 0.240 ac	Curve number	= 78*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.94 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.200 x 77) + (0.040 x 80)] / 0.240



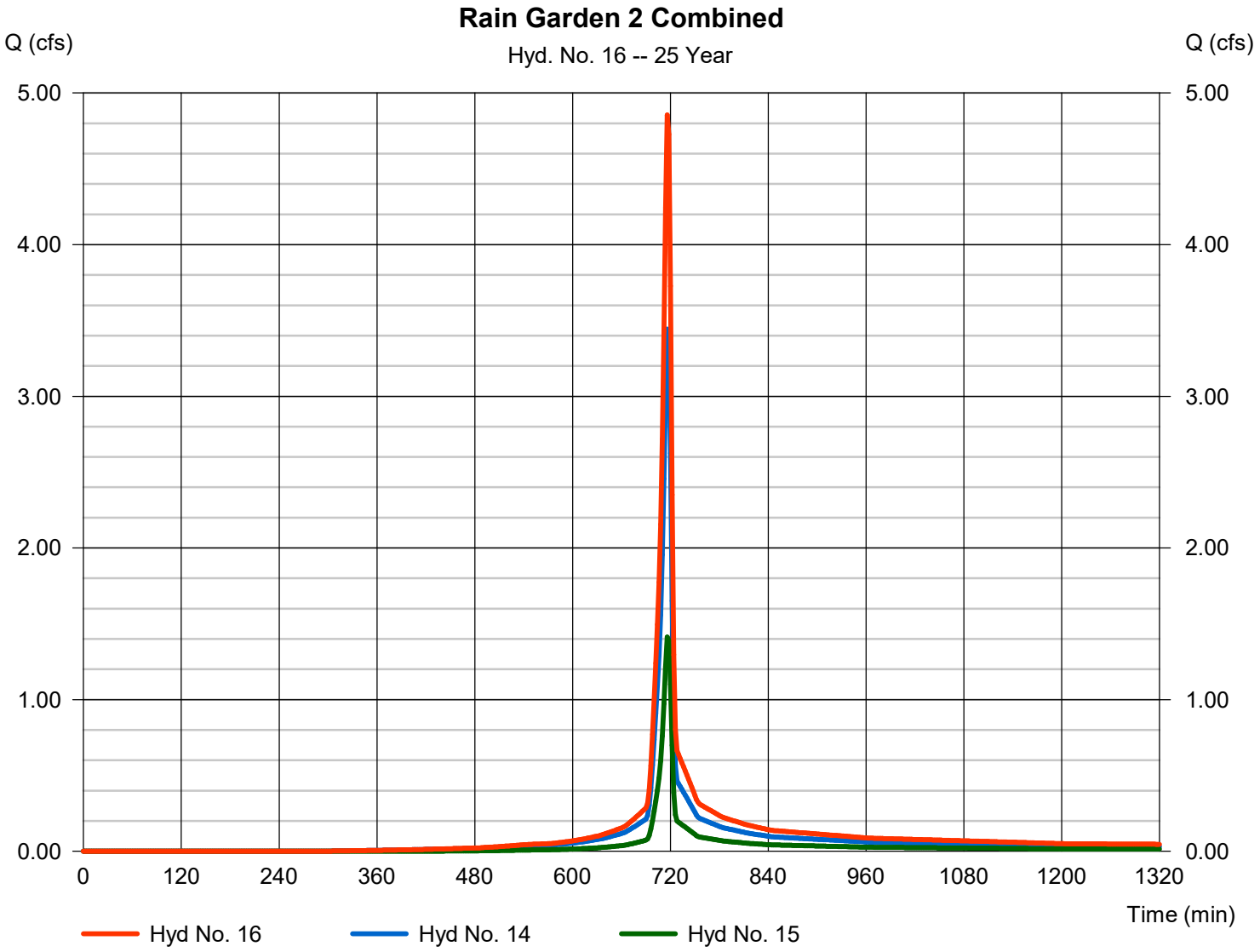
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 16

Rain Garden 2 Combined

Hydrograph type	= Combine	Peak discharge	= 4.855 cfs
Storm frequency	= 25 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 10,105 cuft
Inflow hyds.	= 14, 15	Contrib. drain. area	= 0.740 ac



Hydrograph Report

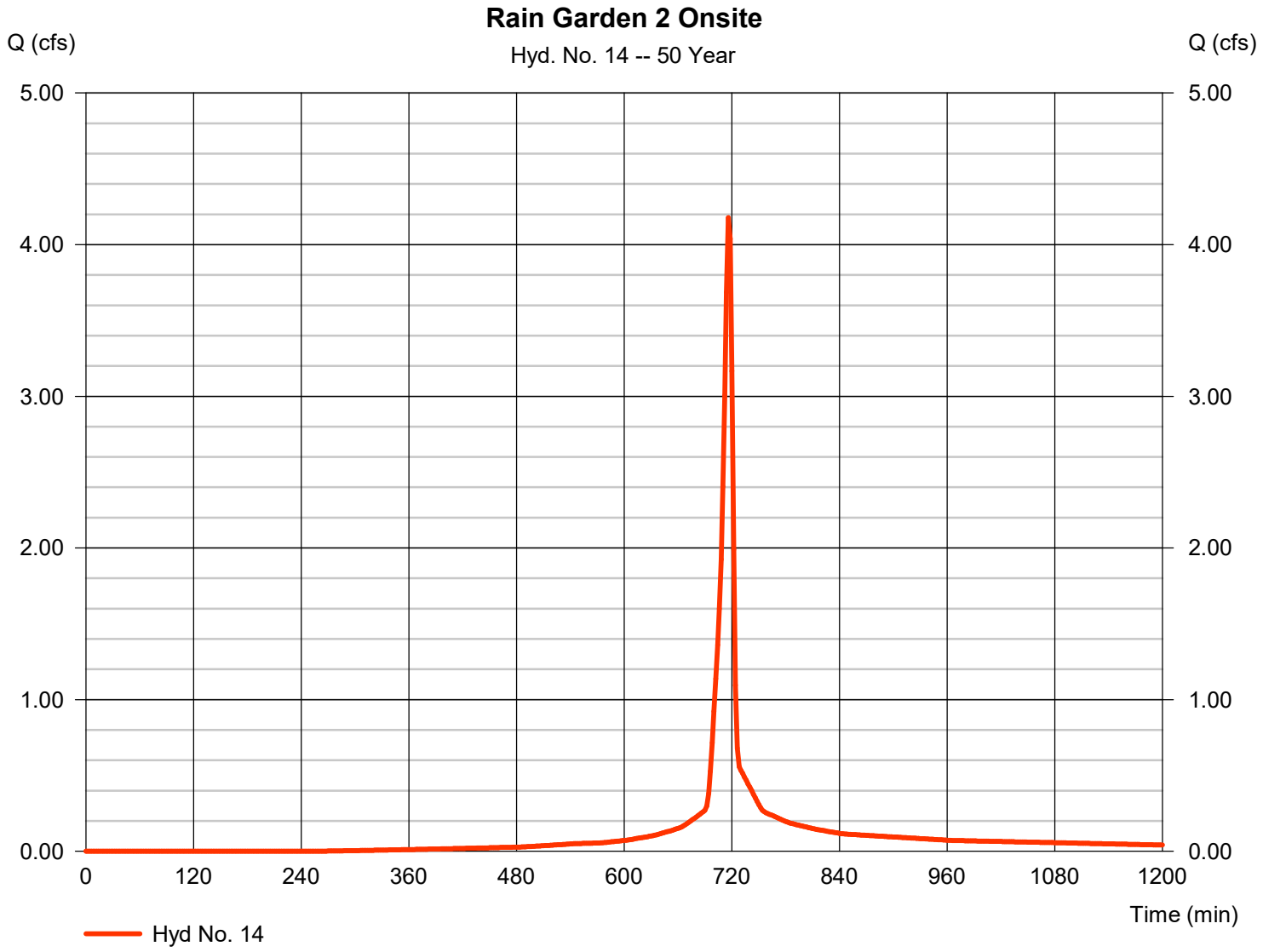
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 14

Rain Garden 2 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 4.178 cfs
Storm frequency	= 50 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 8,873 cuft
Drainage area	= 0.500 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.96 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.360 x 80) + (0.140 x 98)] / 0.500



Hydrograph Report

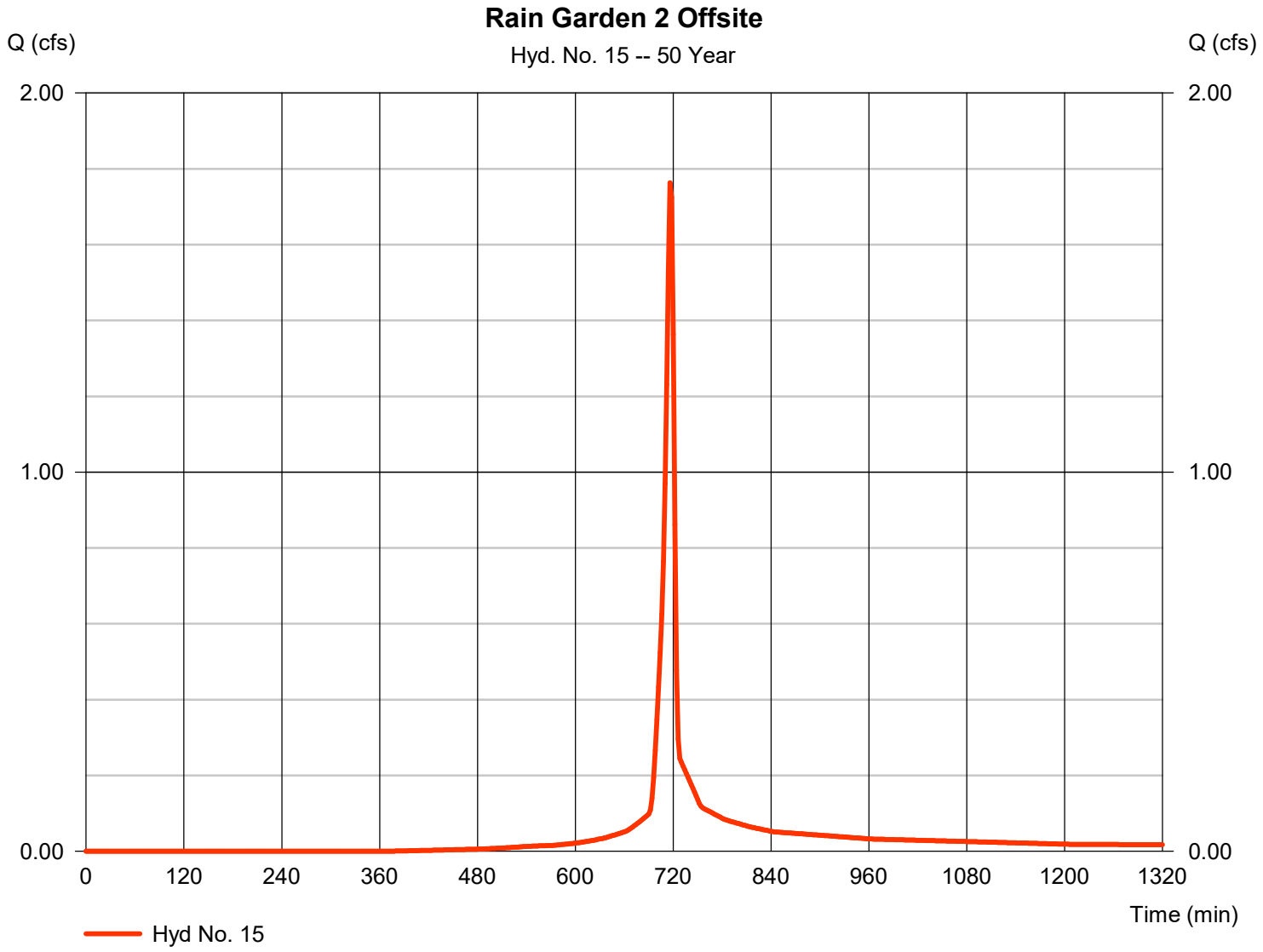
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 15

Rain Garden 2 Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.763 cfs
Storm frequency	=	50 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	3,625 cuft
Drainage area	=	0.240 ac	Curve number	=	78*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.200 x 77) + (0.040 x 80)] / 0.240



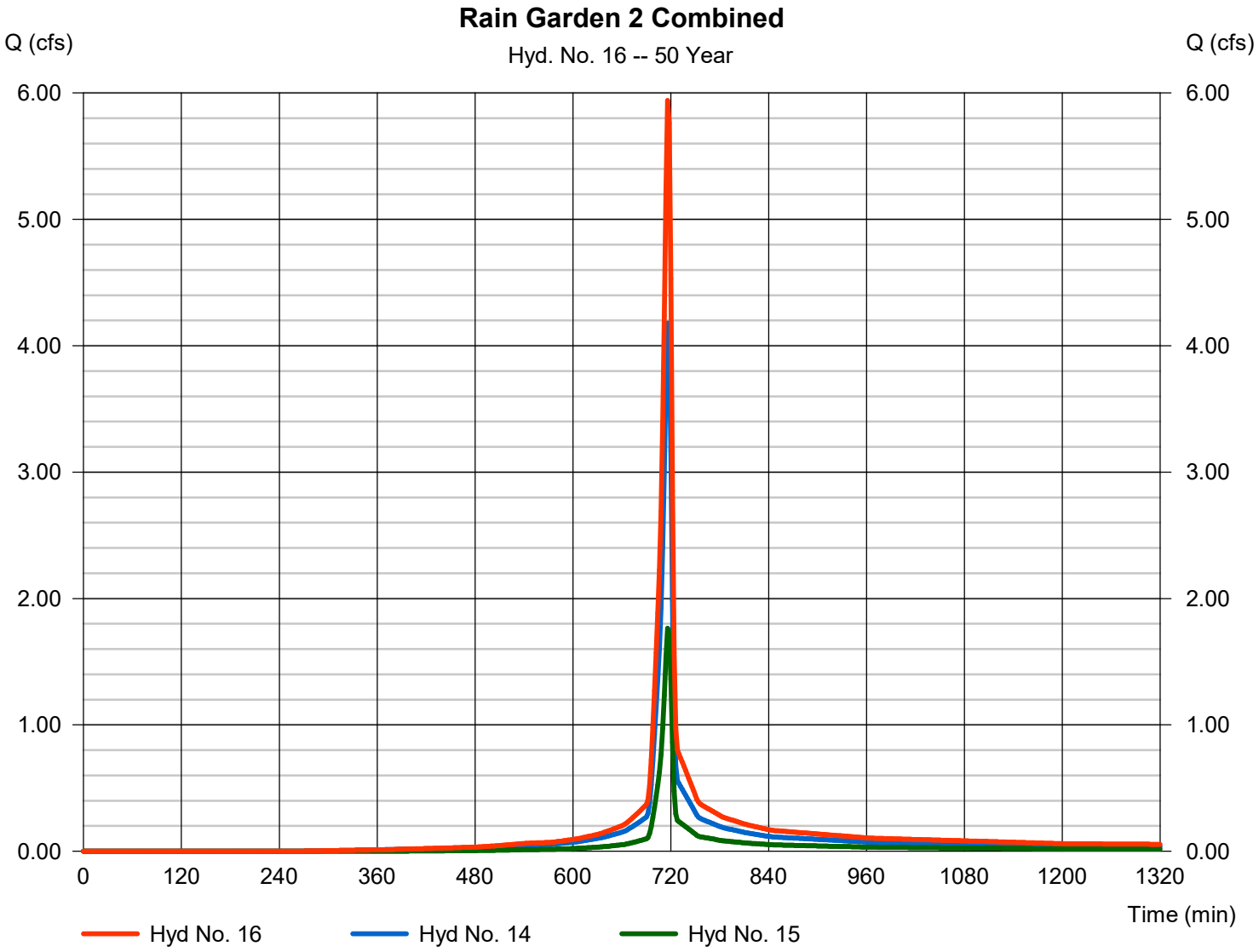
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 16

Rain Garden 2 Combined

Hydrograph type	= Combine	Peak discharge	= 5.941 cfs
Storm frequency	= 50 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 12,498 cuft
Inflow hyds.	= 14, 15	Contrib. drain. area	= 0.740 ac



Hydrograph Report

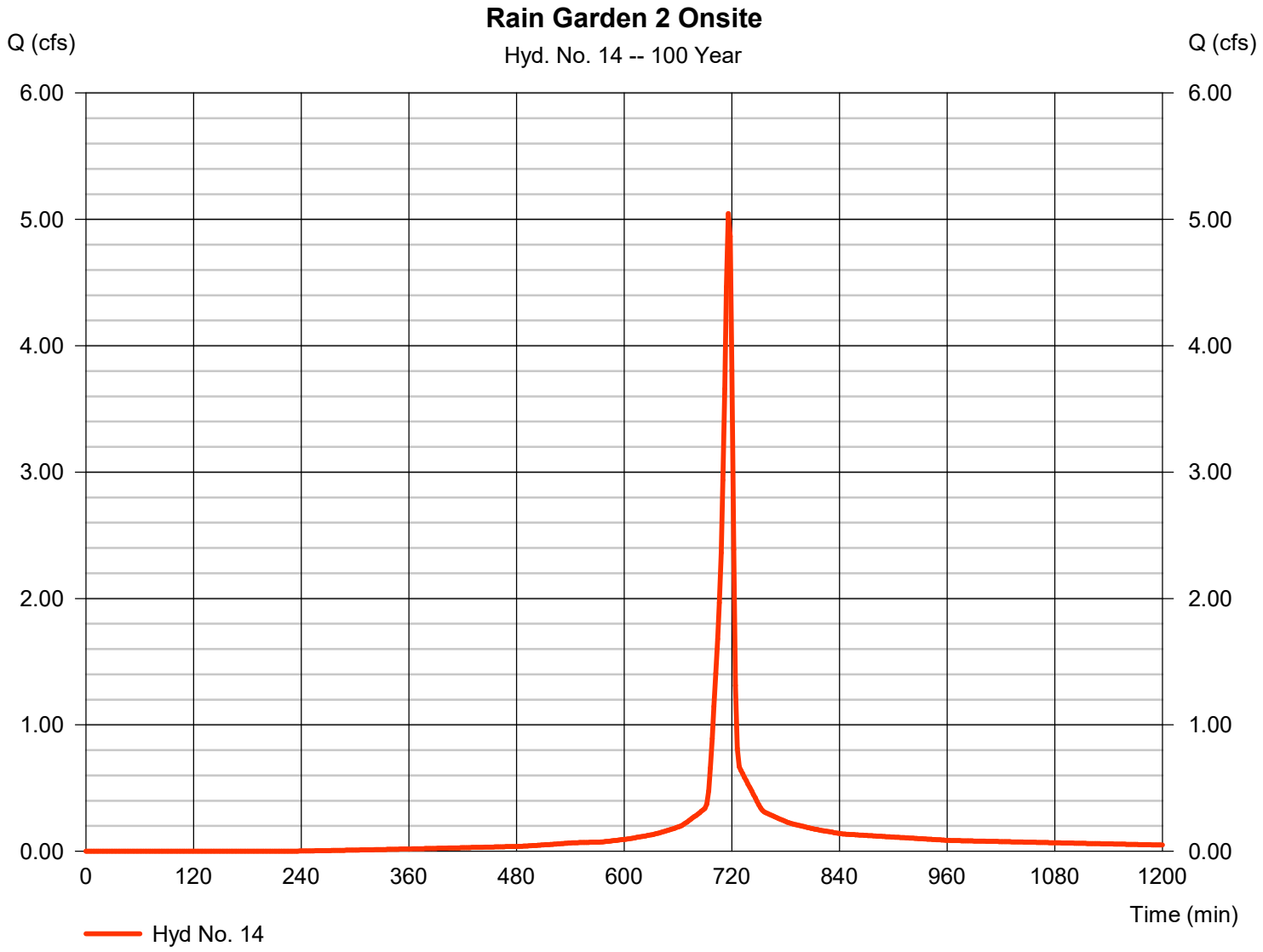
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 14

Rain Garden 2 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 5.047 cfs
Storm frequency	= 100 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 10,851 cuft
Drainage area	= 0.500 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 8.17 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.360 x 80) + (0.140 x 98)] / 0.500



Hydrograph Report

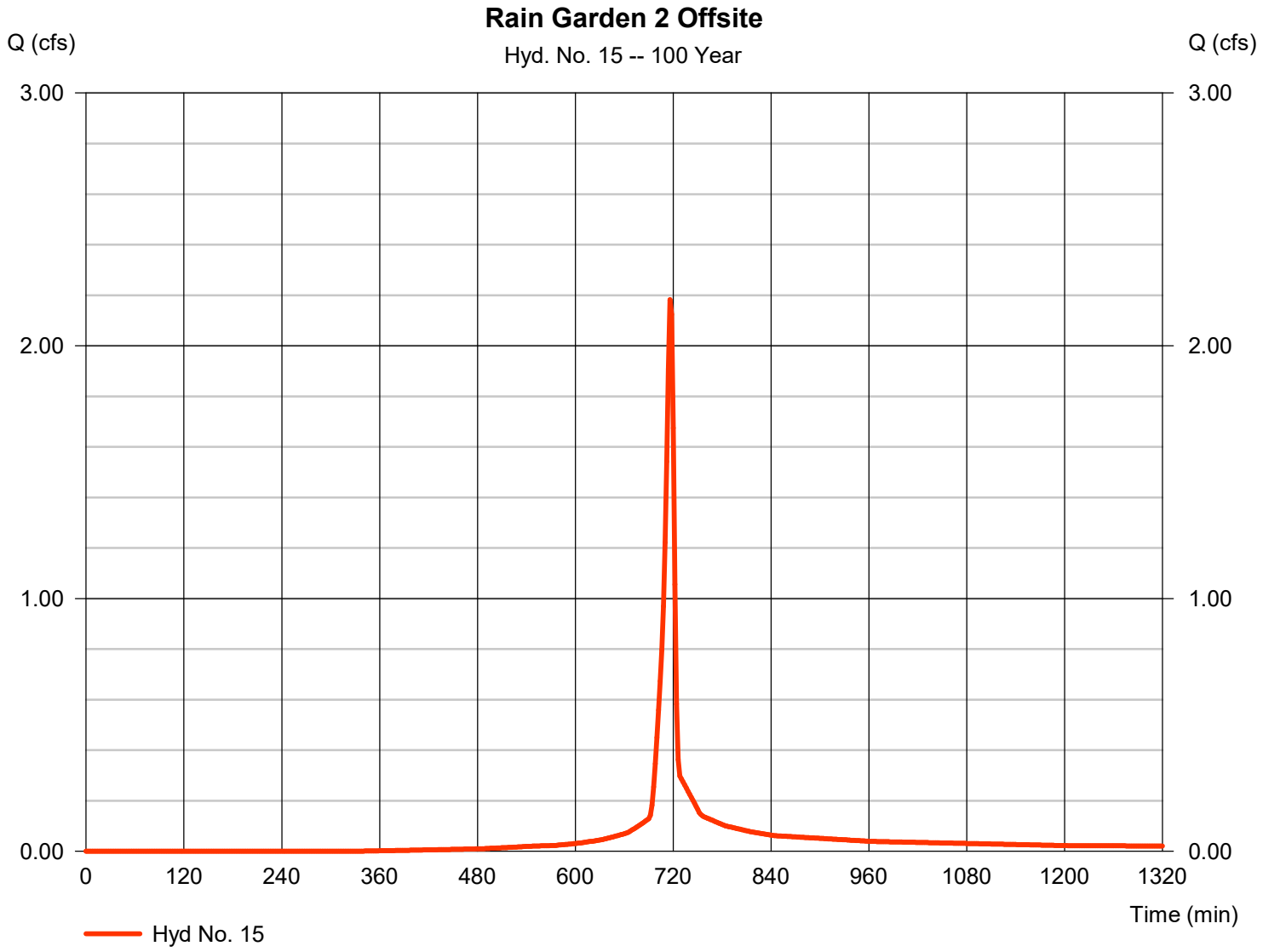
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 15

Rain Garden 2 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 2.182 cfs
Storm frequency	= 100 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 4,532 cuft
Drainage area	= 0.240 ac	Curve number	= 78*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 8.17 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.200 x 77) + (0.040 x 80)] / 0.240



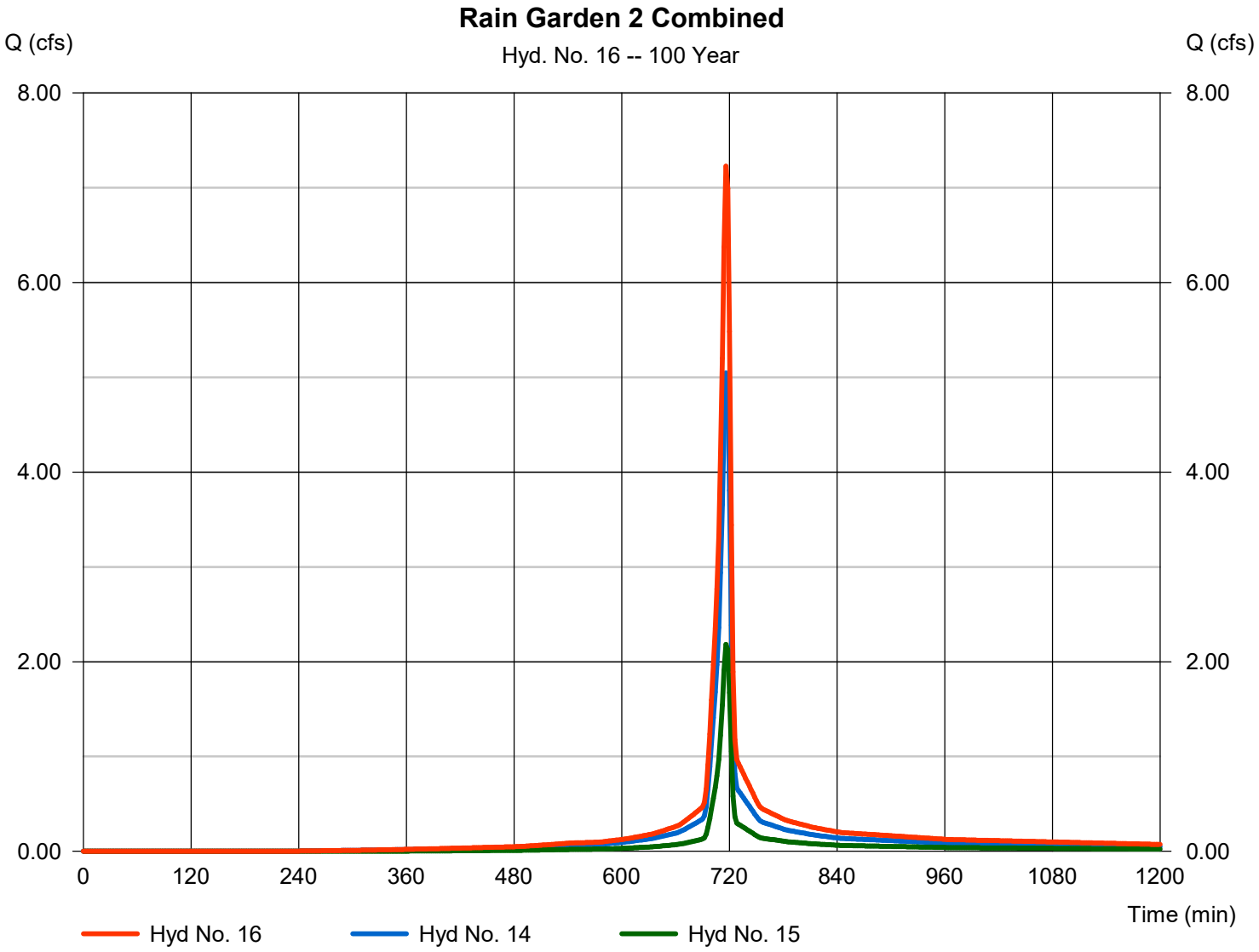
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 16

Rain Garden 2 Combined

Hydrograph type	= Combine	Peak discharge	= 7.229 cfs
Storm frequency	= 100 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 15,383 cuft
Inflow hyds.	= 14, 15	Contrib. drain. area	= 0.740 ac



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Pond No. 2 - RG 2

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 635.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	635.00	2,408	0	0
1.00	636.00	3,331	2,857	2,857
2.00	637.00	4,366	3,836	6,693
3.00	638.00	5,458	4,901	11,595

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 15.00	3.00	9.00	0.00
Span (in)	= 15.00	3.00	18.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 635.00	635.50	635.75	0.00
Length (ft)	= 50.00	1.00	1.00	0.00
Slope (%)	= 1.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	Yes	No

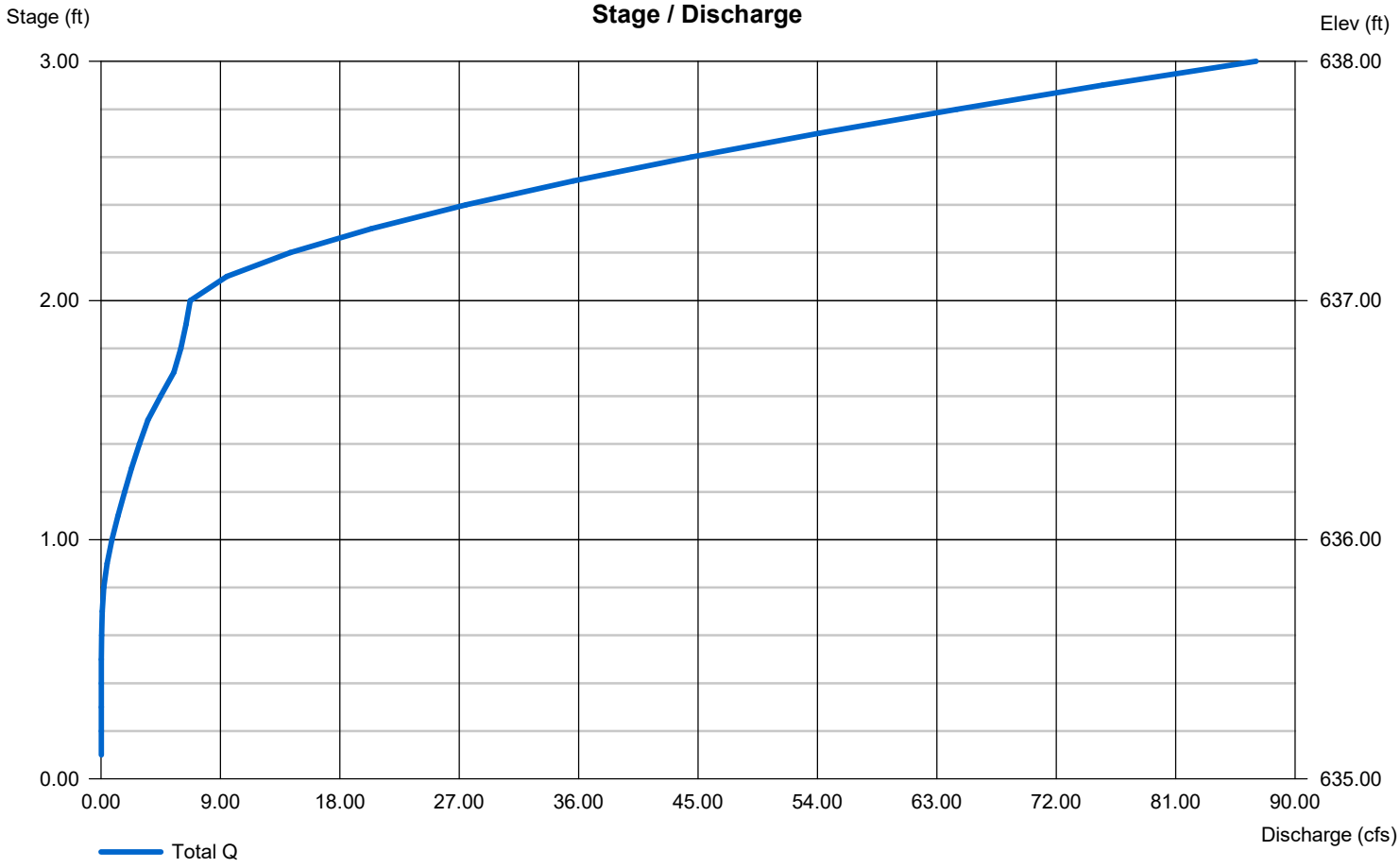
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 12.00	Inactive	30.00	Inactive
Crest El. (ft)	= 636.50	0.00	637.00	0.00
Weir Coeff.	= 3.33	3.33	2.60	3.33
Weir Type	= 1	---	Broad	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.500 (by Contour)

TW Elev. (ft) = 0.00

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



Hydrograph Report

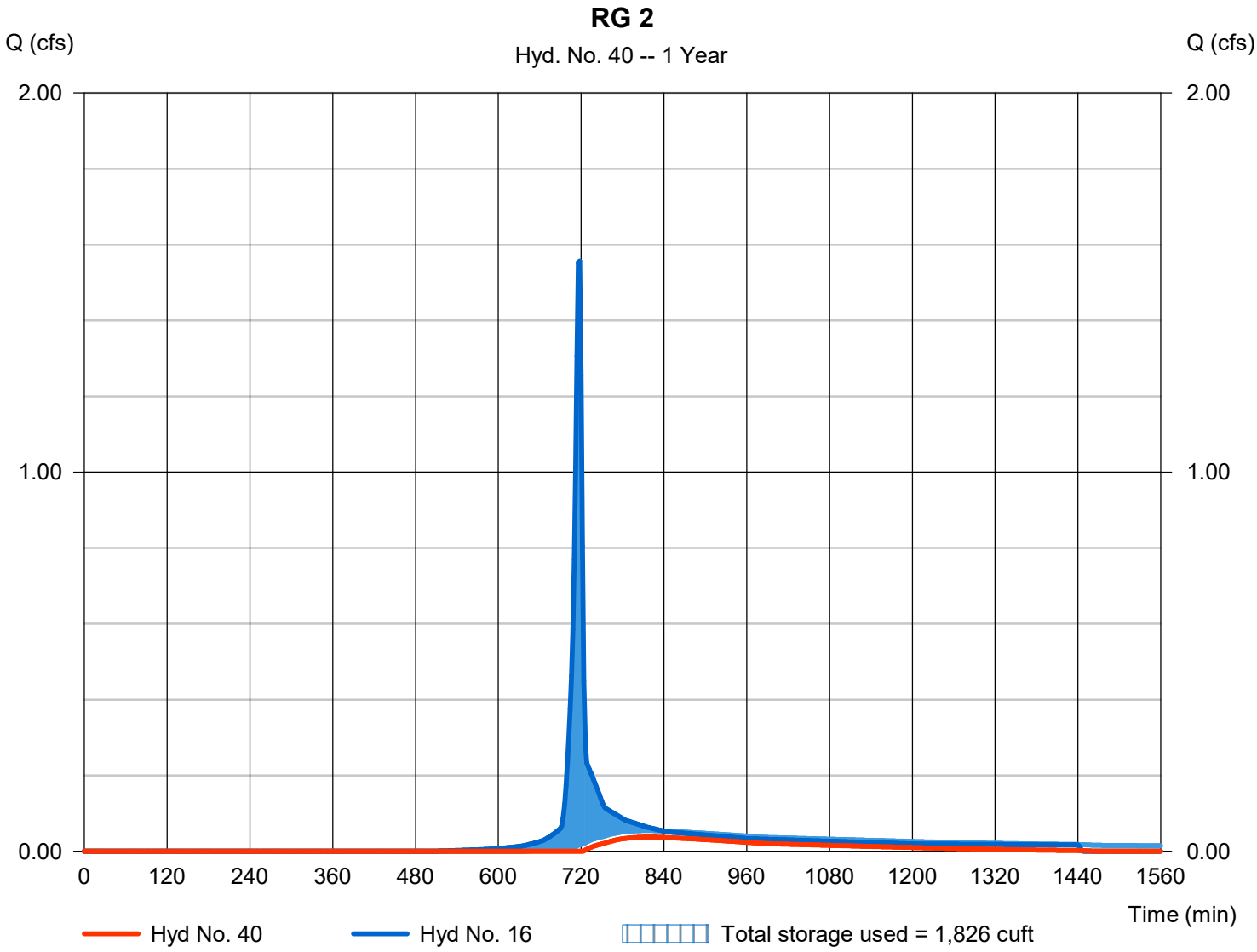
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 40

RG 2

Hydrograph type	=	Reservoir	Peak discharge	=	0.037 cfs
Storm frequency	=	1 yrs	Time to peak	=	820 min
Time interval	=	2 min	Hyd. volume	=	722 cuft
Inflow hyd. No.	=	16 - Rain Garden 2 Combined	Max. Elevation	=	635.64 ft
Reservoir name	=	RG 2	Max. Storage	=	1,826 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

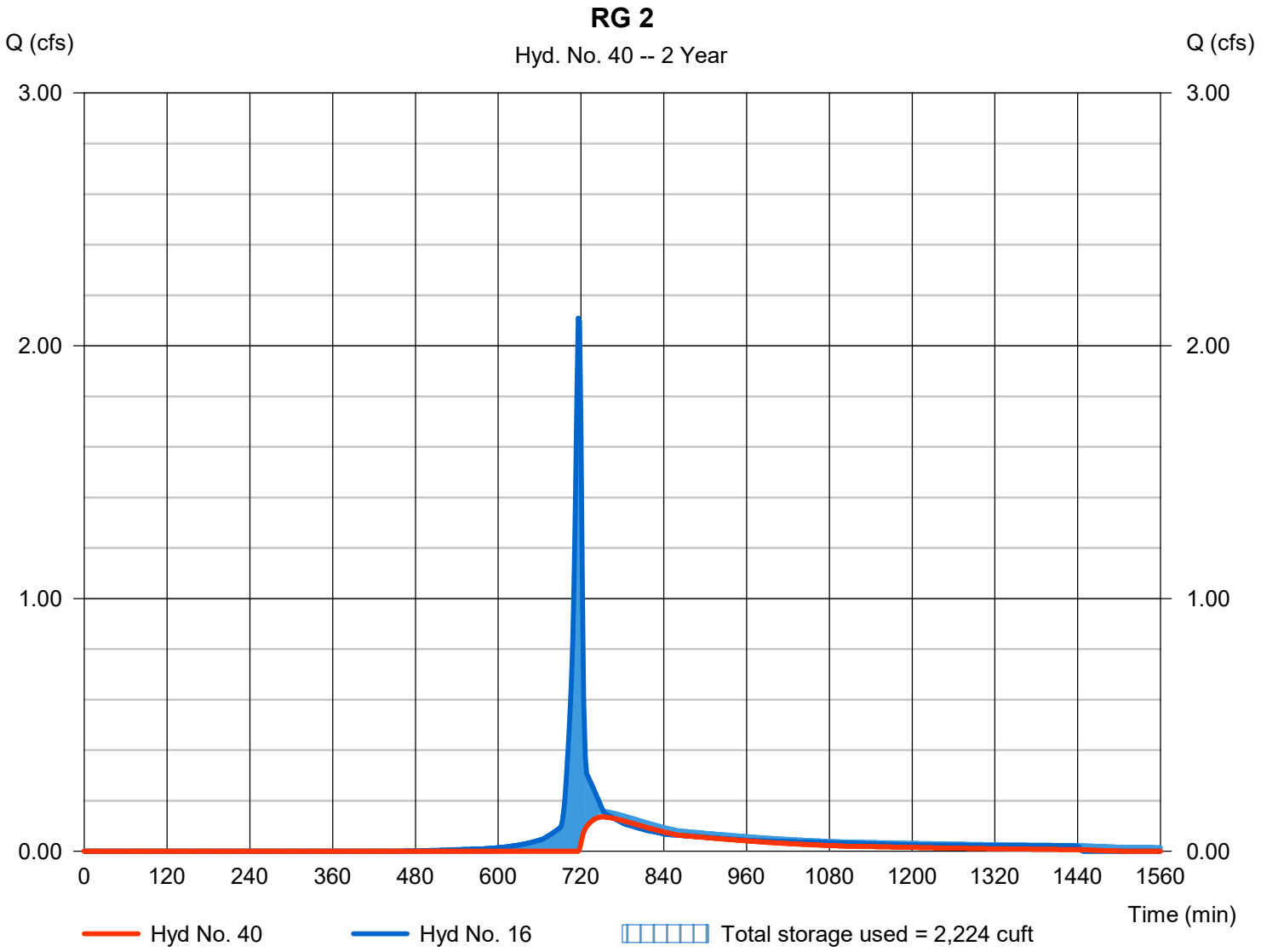
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 40

RG 2

Hydrograph type	=	Reservoir	Peak discharge	=	0.136 cfs
Storm frequency	=	2 yrs	Time to peak	=	752 min
Time interval	=	2 min	Hyd. volume	=	1,703 cuft
Inflow hyd. No.	=	16 - Rain Garden 2 Combined	Max. Elevation	=	635.78 ft
Reservoir name	=	RG 2	Max. Storage	=	2,224 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

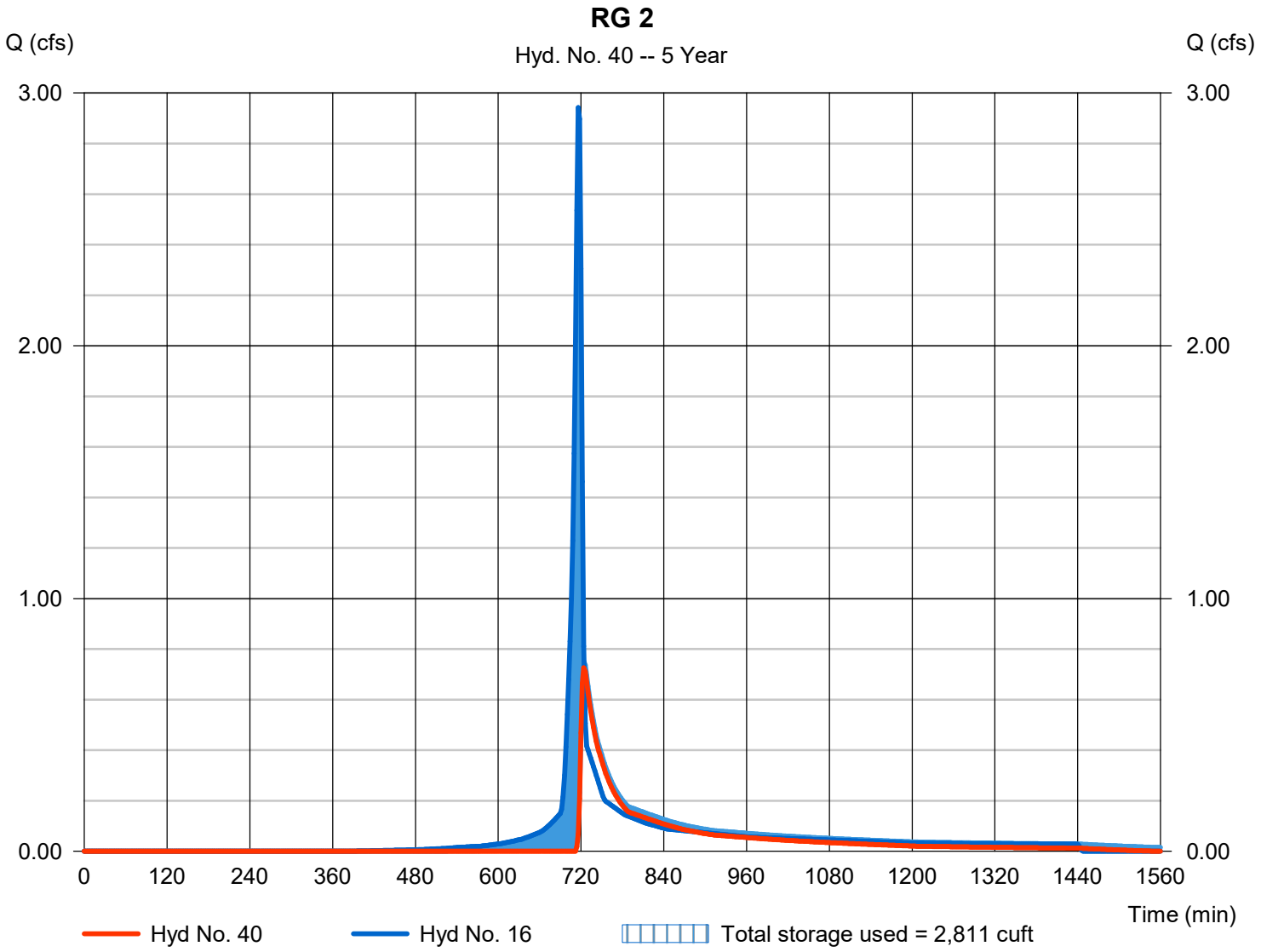
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 40

RG 2

Hydrograph type	=	Reservoir	Peak discharge	=	0.726 cfs
Storm frequency	=	5 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	3,290 cuft
Inflow hyd. No.	=	16 - Rain Garden 2 Combined	Max. Elevation	=	635.98 ft
Reservoir name	=	RG 2	Max. Storage	=	2,811 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

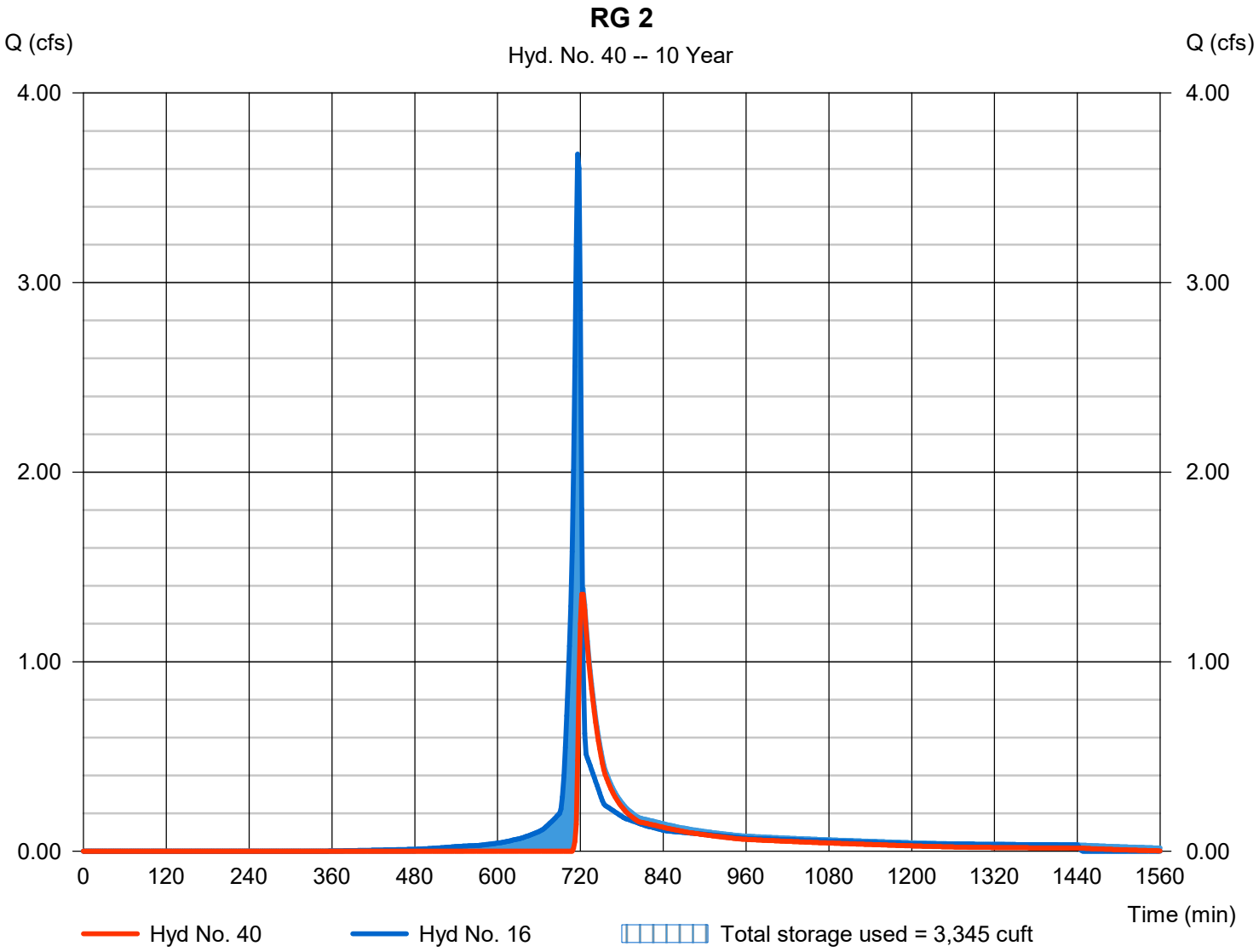
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 40

RG 2

Hydrograph type	=	Reservoir	Peak discharge	=	1.356 cfs
Storm frequency	=	10 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	4,746 cuft
Inflow hyd. No.	=	16 - Rain Garden 2 Combined	Max. Elevation	=	636.13 ft
Reservoir name	=	RG 2	Max. Storage	=	3,345 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

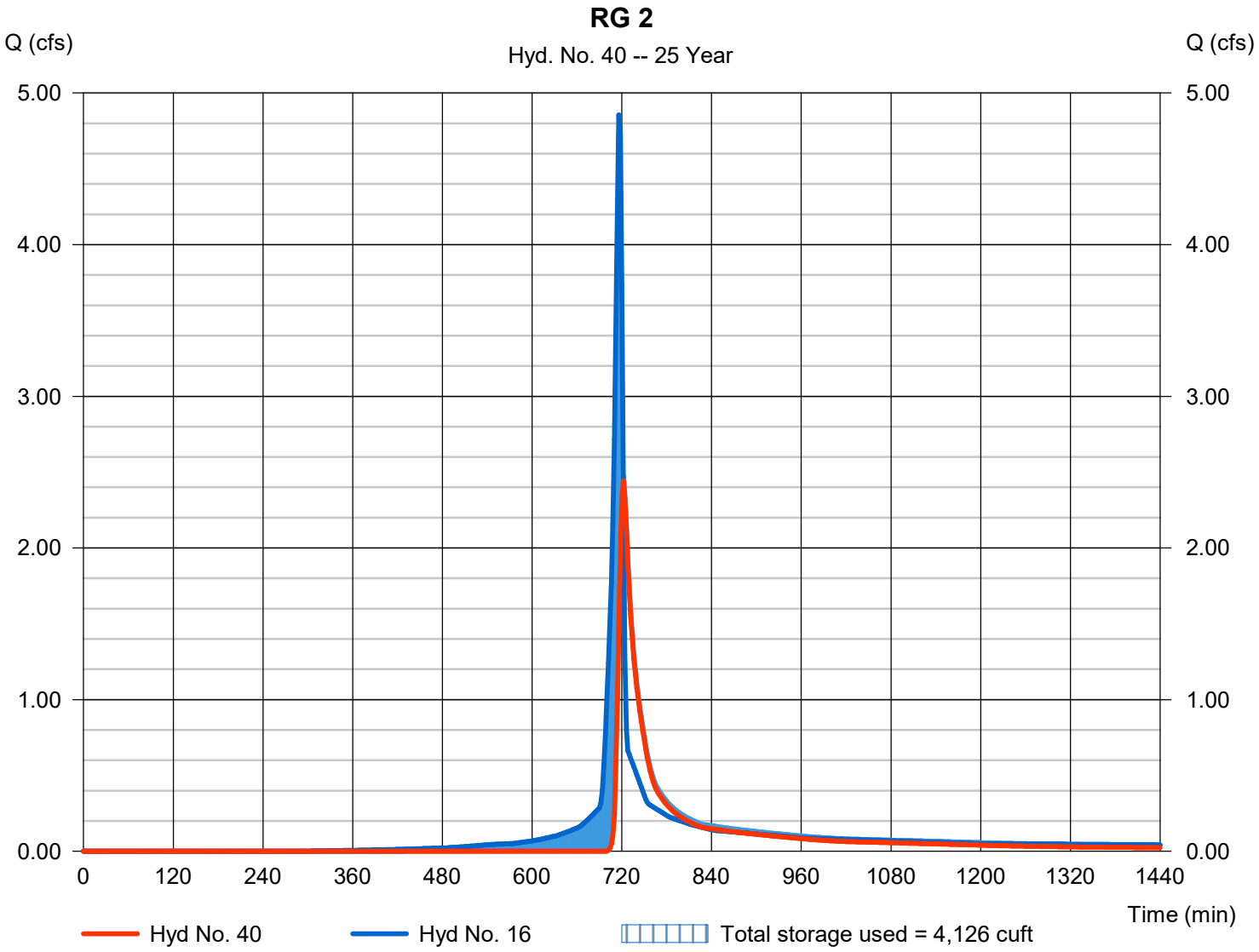
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 40

RG 2

Hydrograph type	=	Reservoir	Peak discharge	=	2.442 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	7,159 cuft
Inflow hyd. No.	=	16 - Rain Garden 2 Combined	Max. Elevation	=	636.33 ft
Reservoir name	=	RG 2	Max. Storage	=	4,126 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

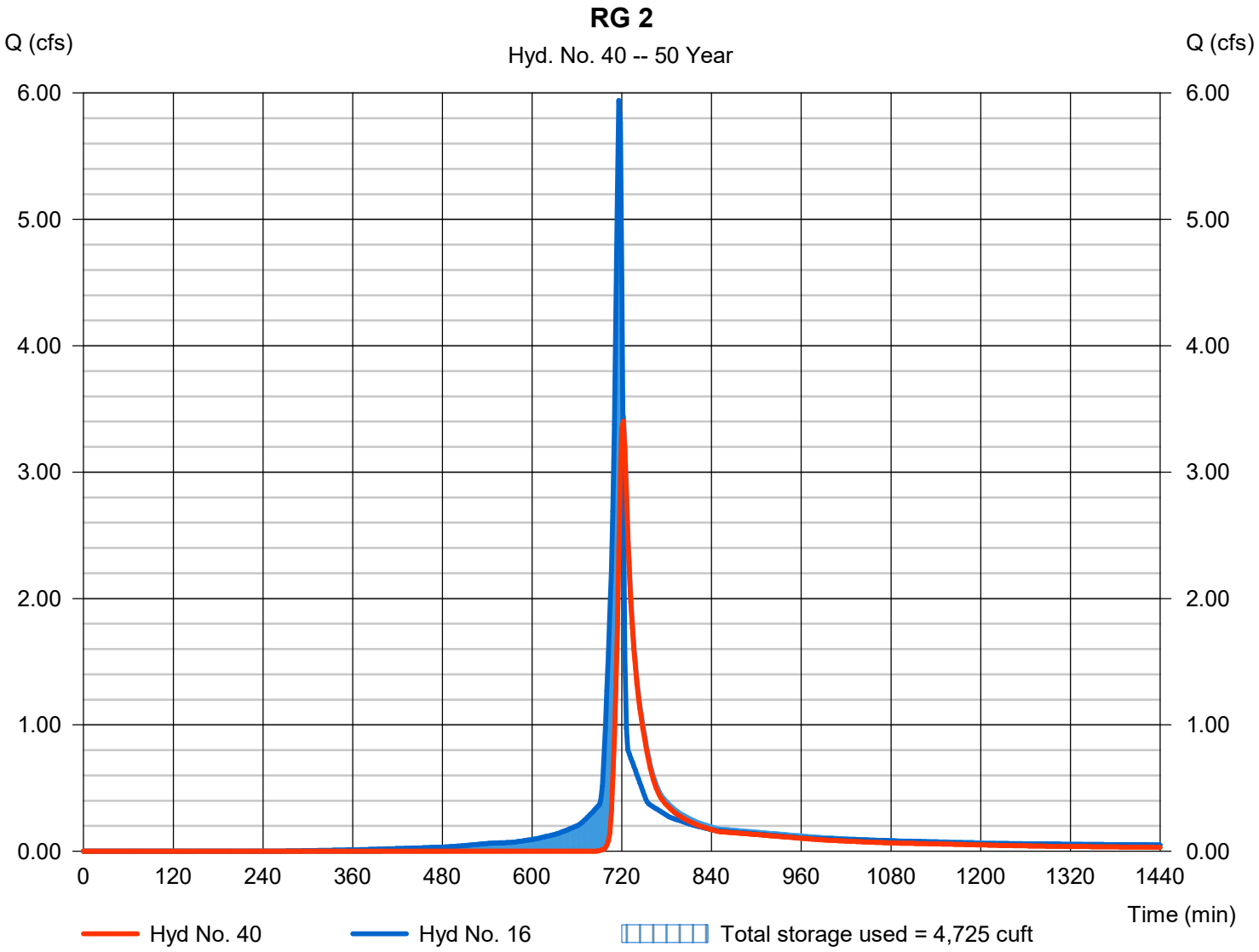
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 40

RG 2

Hydrograph type	=	Reservoir	Peak discharge	=	3.404 cfs
Storm frequency	=	50 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	9,445 cuft
Inflow hyd. No.	=	16 - Rain Garden 2 Combined	Max. Elevation	=	636.49 ft
Reservoir name	=	RG 2	Max. Storage	=	4,725 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

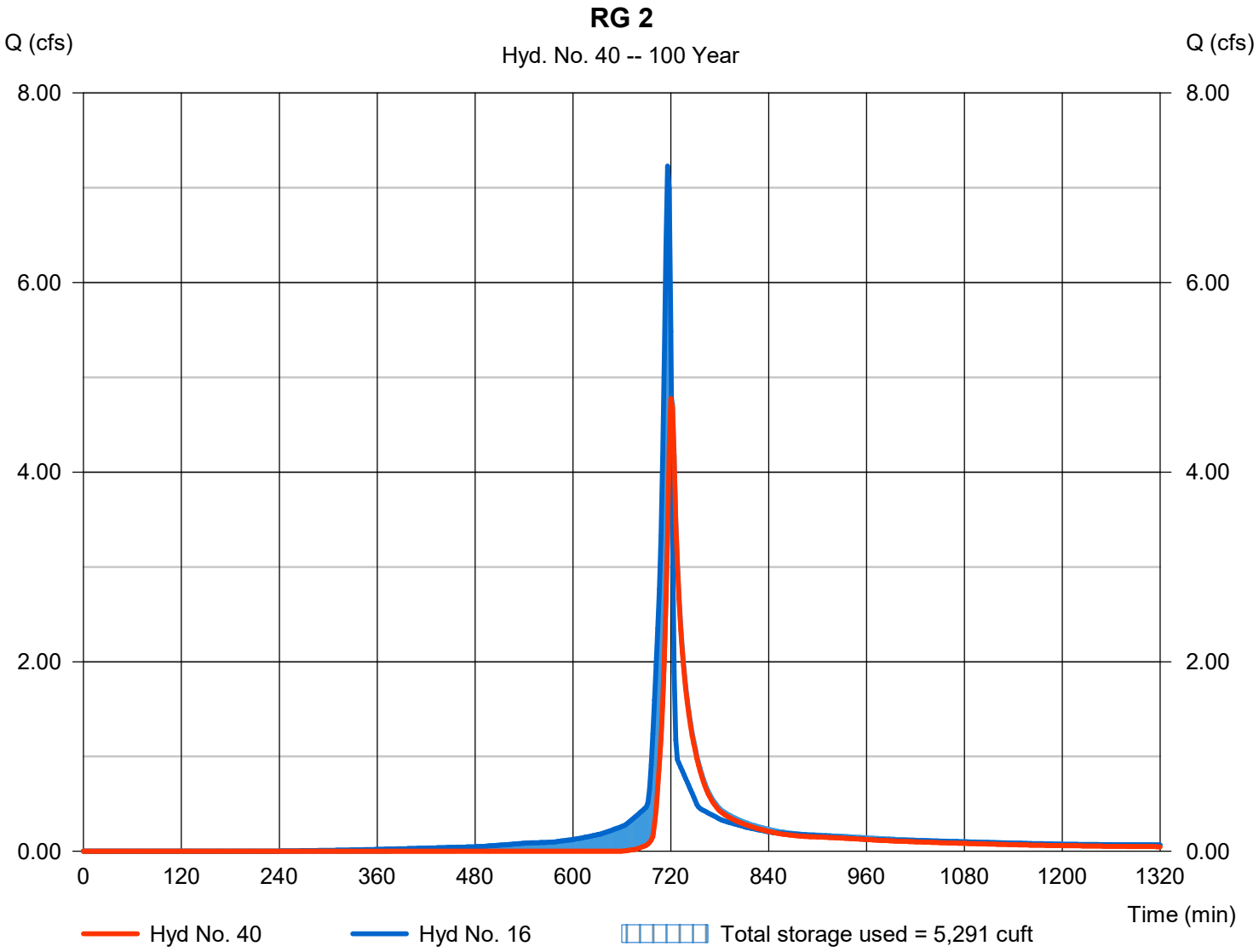
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 40

RG 2

Hydrograph type	=	Reservoir	Peak discharge	=	4.777 cfs
Storm frequency	=	100 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	12,209 cuft
Inflow hyd. No.	=	16 - Rain Garden 2 Combined	Max. Elevation	=	636.63 ft
Reservoir name	=	RG 2	Max. Storage	=	5,291 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Developed Conditions: Rain Garden 3 Onsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D			77					
Meadow	D			78					
Forest (Good)	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D	17,343	0.40	80	2.50	0.50	1.49	2160.33	0.05
Lawn, High-Input	D			84					
Golf Course Fairway/Green	D			80					
Grassed Athletic Field	D			80					
Rooftop	D			98					
High Traffic Street / Highway	D			93					
Medium Traffic Street	D			98					
Low Traffic / Residential Street	D			98					
Res. Driveway, Play Courts, etc.	D	5,672	0.13	98	0.20	0.04	3.09	1459.11	0.03
Impervious Allowance	D	500	0.01	98	0.20	0.04	3.09	128.63	0.00
Low Traffic Parking Lot	D			98					
TOTAL:		23,515	0.54						0.08

Developed Conditions: Rain Garden 3 Offsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D	285	0.01	77	2.99	0.60	1.30	30.81	0.00
Meadow	D			78					
Forest (Good)	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D	100	0.00	80	2.50	0.50	1.49	12.50	0.00
Lawn, High-Input	D			84					
Golf Course Fairway/Green	D			80					
Grassed Athletic Field	D			80					
Rooftop	D			98					
High Traffic Street / Highway	D			93					
Medium Traffic Street	D			98					
Low Traffic / Residential Street	D	457	0.01	98	0.20	0.04	3.09	117.49	0.00
Res. Driveway, Play Courts, etc.	D			98					
Impervious Allowance	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		842	0.02	88.8					

Hydrograph Report

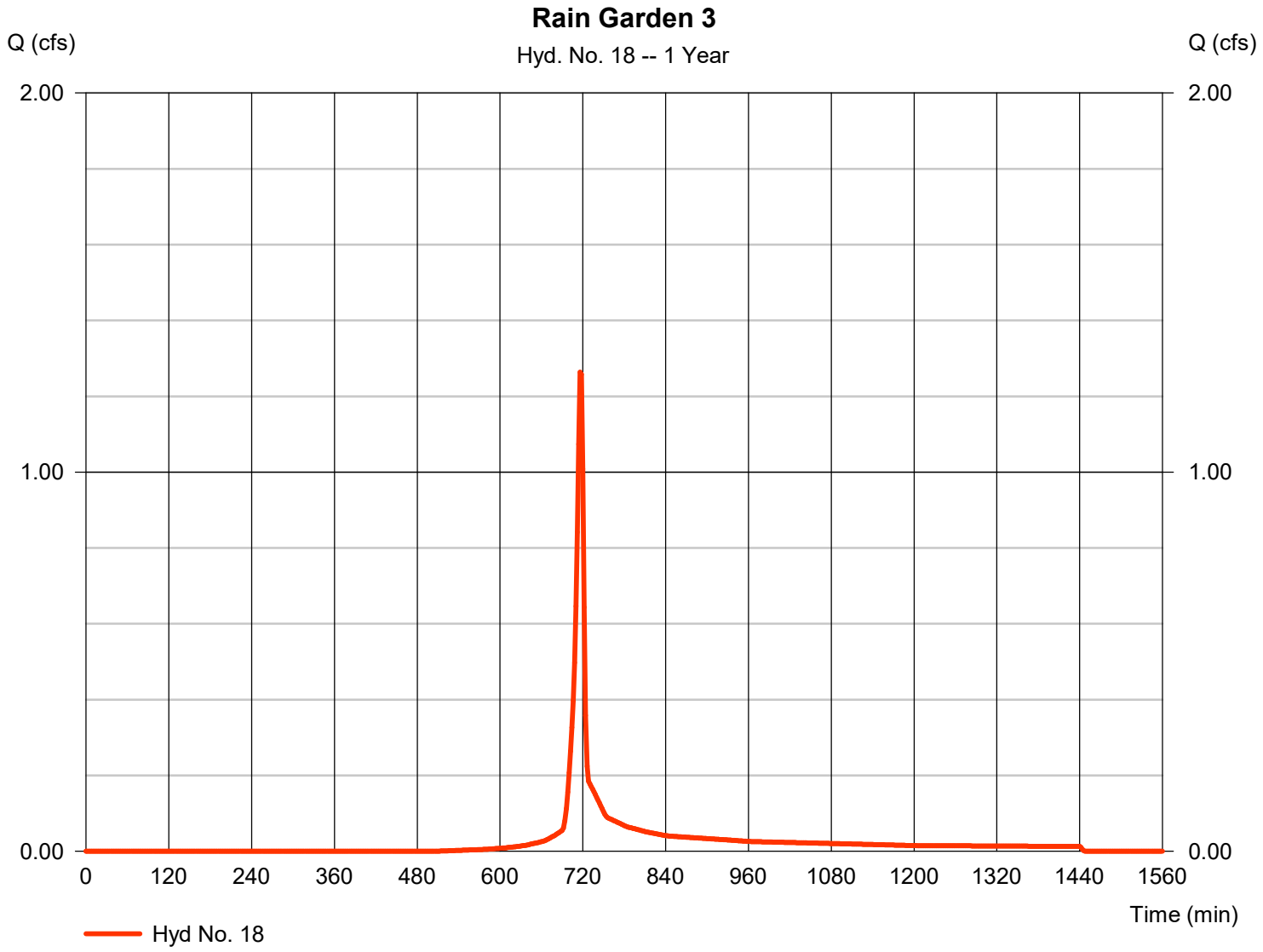
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 18

Rain Garden 3

Hydrograph type	= SCS Runoff	Peak discharge	= 1.263 cfs
Storm frequency	= 1 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 2,552 cuft
Drainage area	= 0.540 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.76 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.400 x 80) + (0.140 x 98)] / 0.540



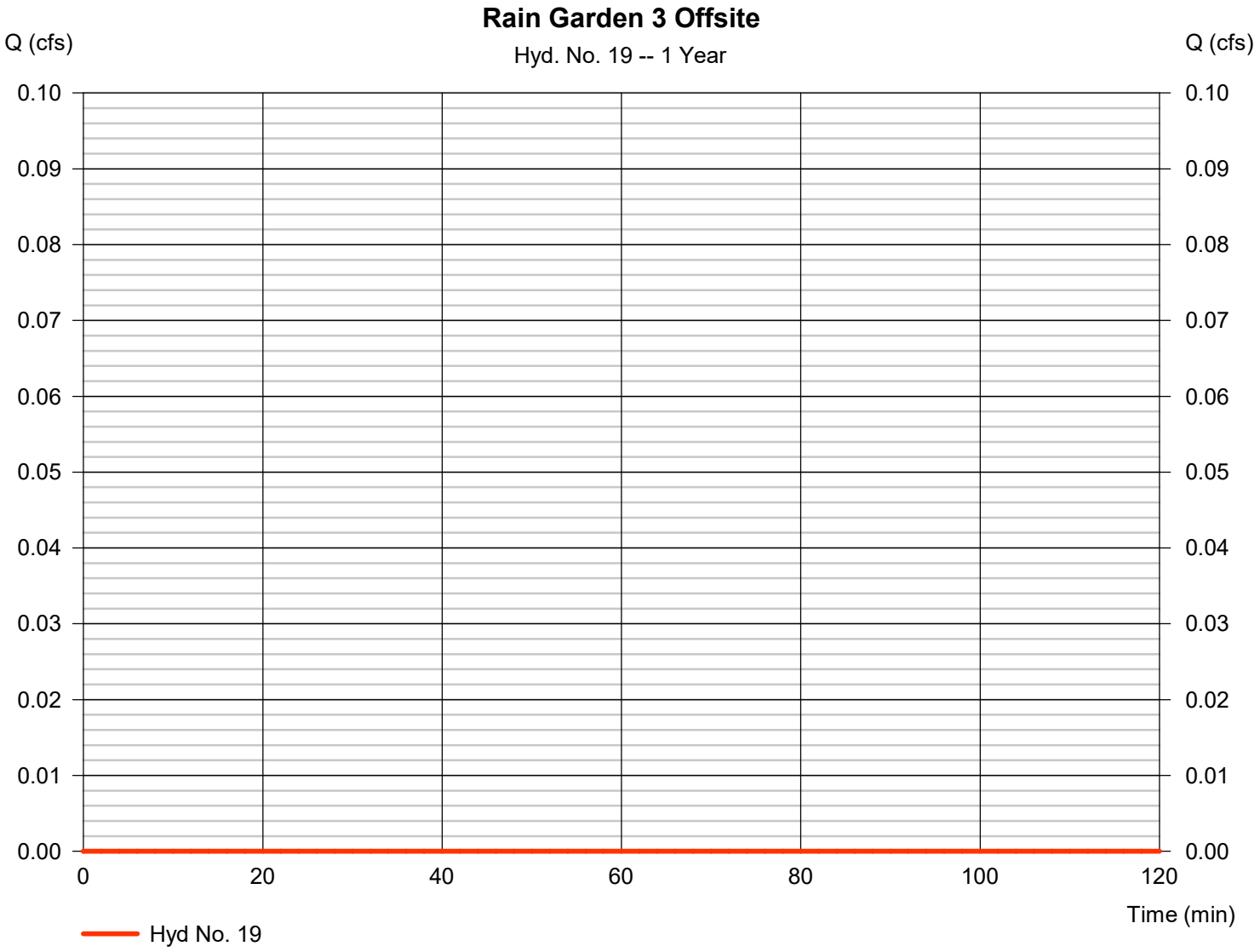
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 19

Rain Garden 3 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 1 yrs	Time to peak	= n/a
Time interval	= 2 min	Hyd. volume	= 0 cuft
Drainage area	= 0.020 ac	Curve number	= 8.88
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.76 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



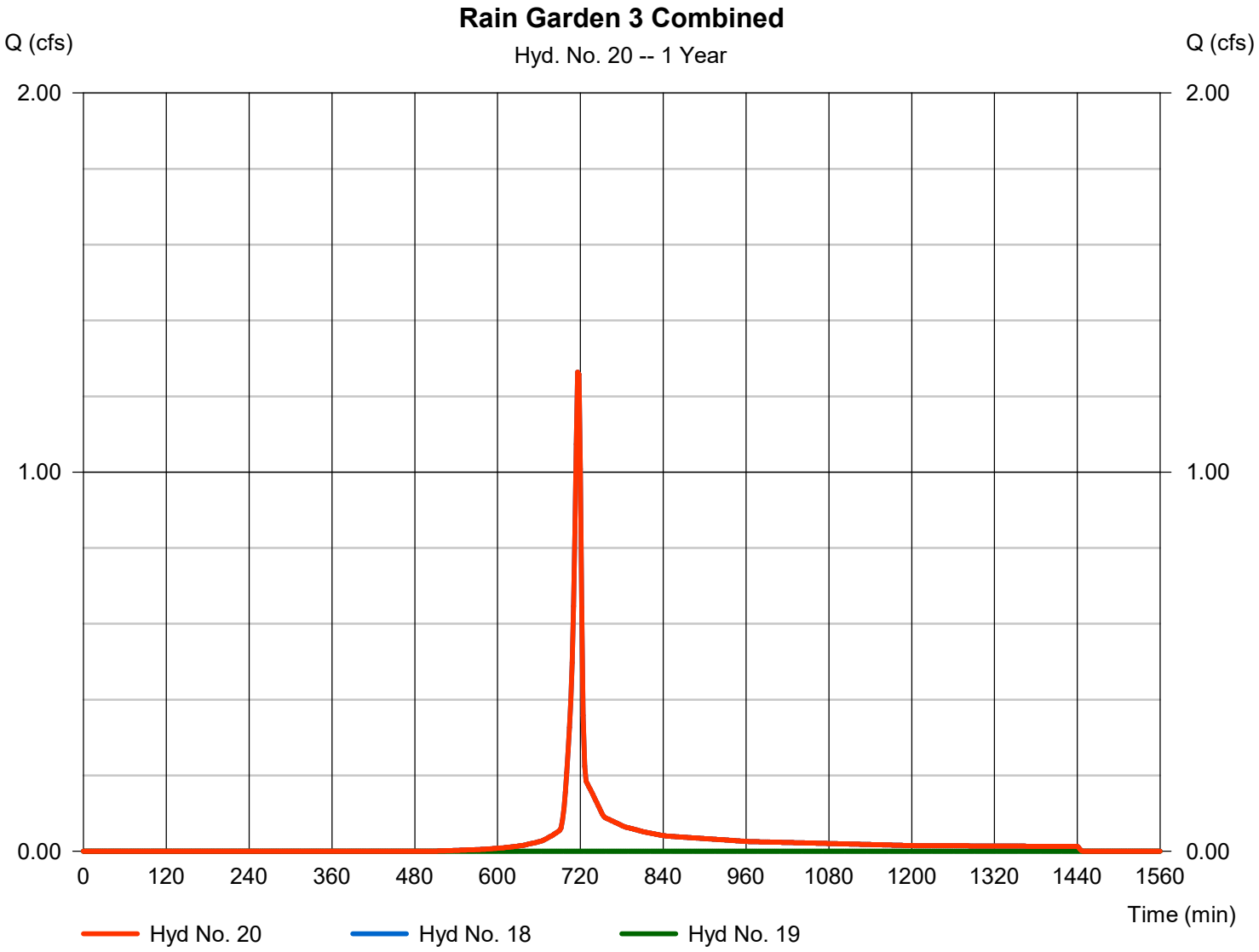
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 20

Rain Garden 3 Combined

Hydrograph type	= Combine	Peak discharge	= 1.263 cfs
Storm frequency	= 1 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 2,552 cuft
Inflow hyds.	= 18, 19	Contrib. drain. area	= 0.560 ac



Hydrograph Report

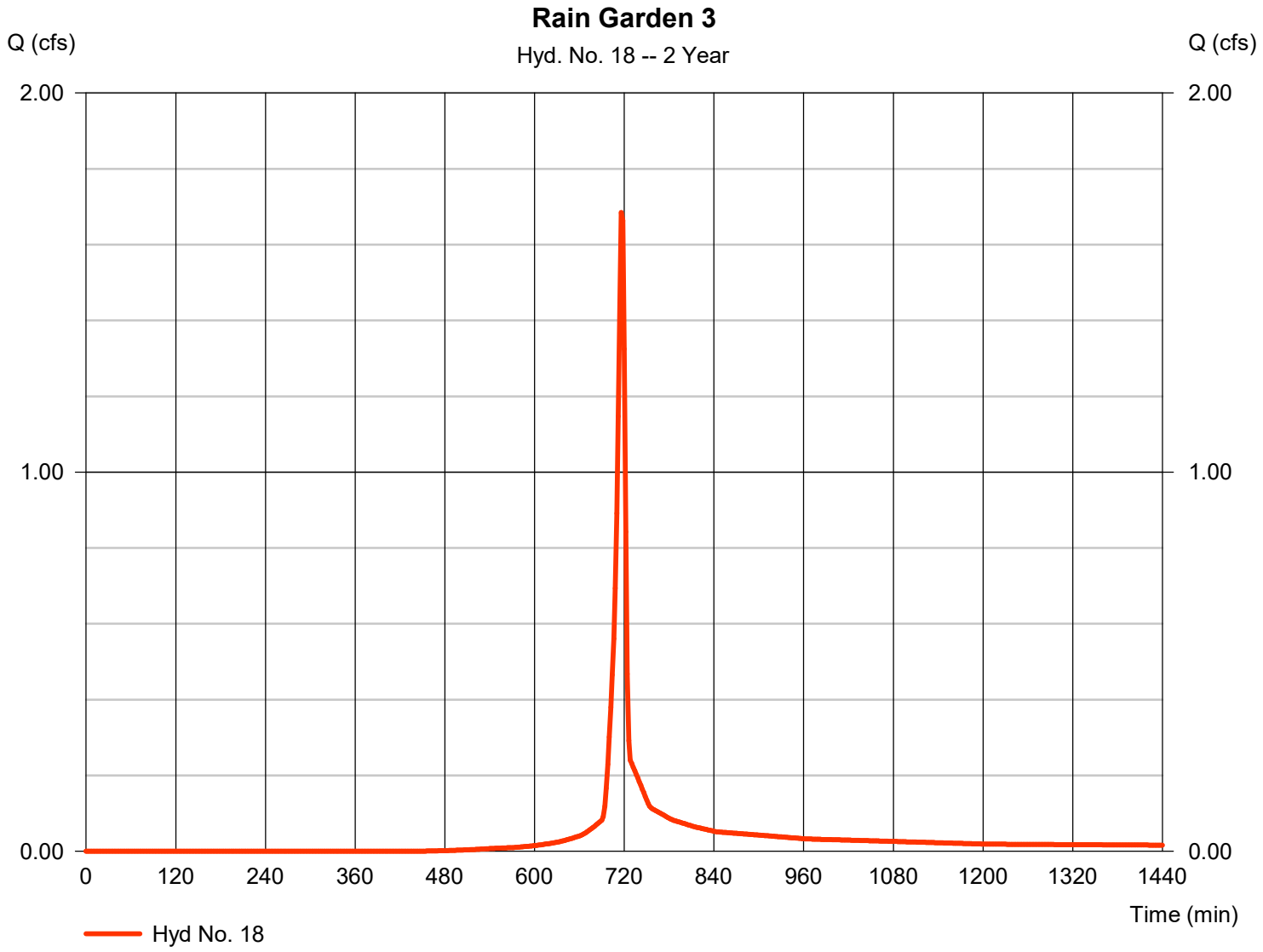
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 18

Rain Garden 3

Hydrograph type	= SCS Runoff	Peak discharge	= 1.685 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 3,419 cuft
Drainage area	= 0.540 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.400 x 80) + (0.140 x 98)] / 0.540



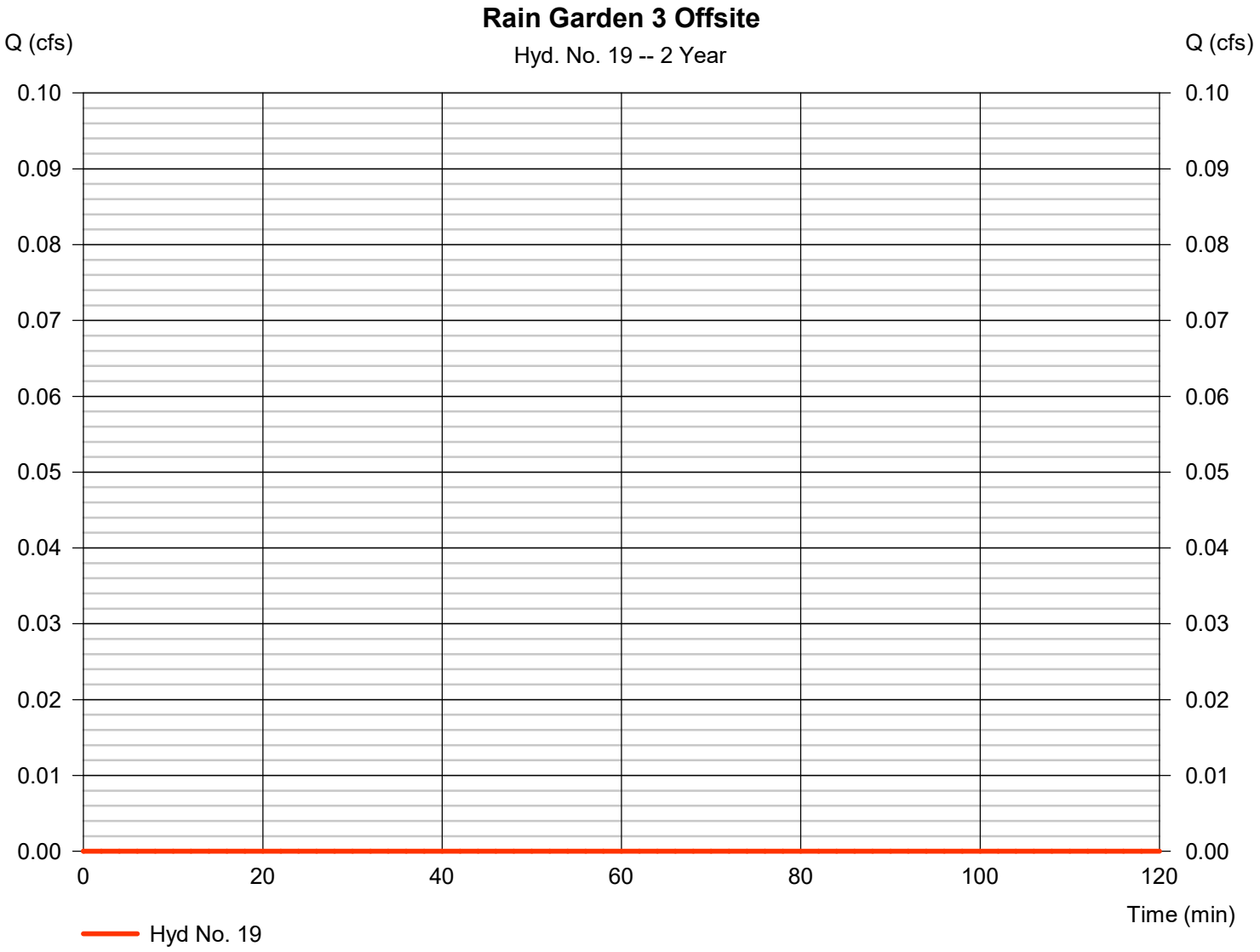
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 19

Rain Garden 3 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 2 yrs	Time to peak	= n/a
Time interval	= 2 min	Hyd. volume	= 0 cuft
Drainage area	= 0.020 ac	Curve number	= 8.88
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



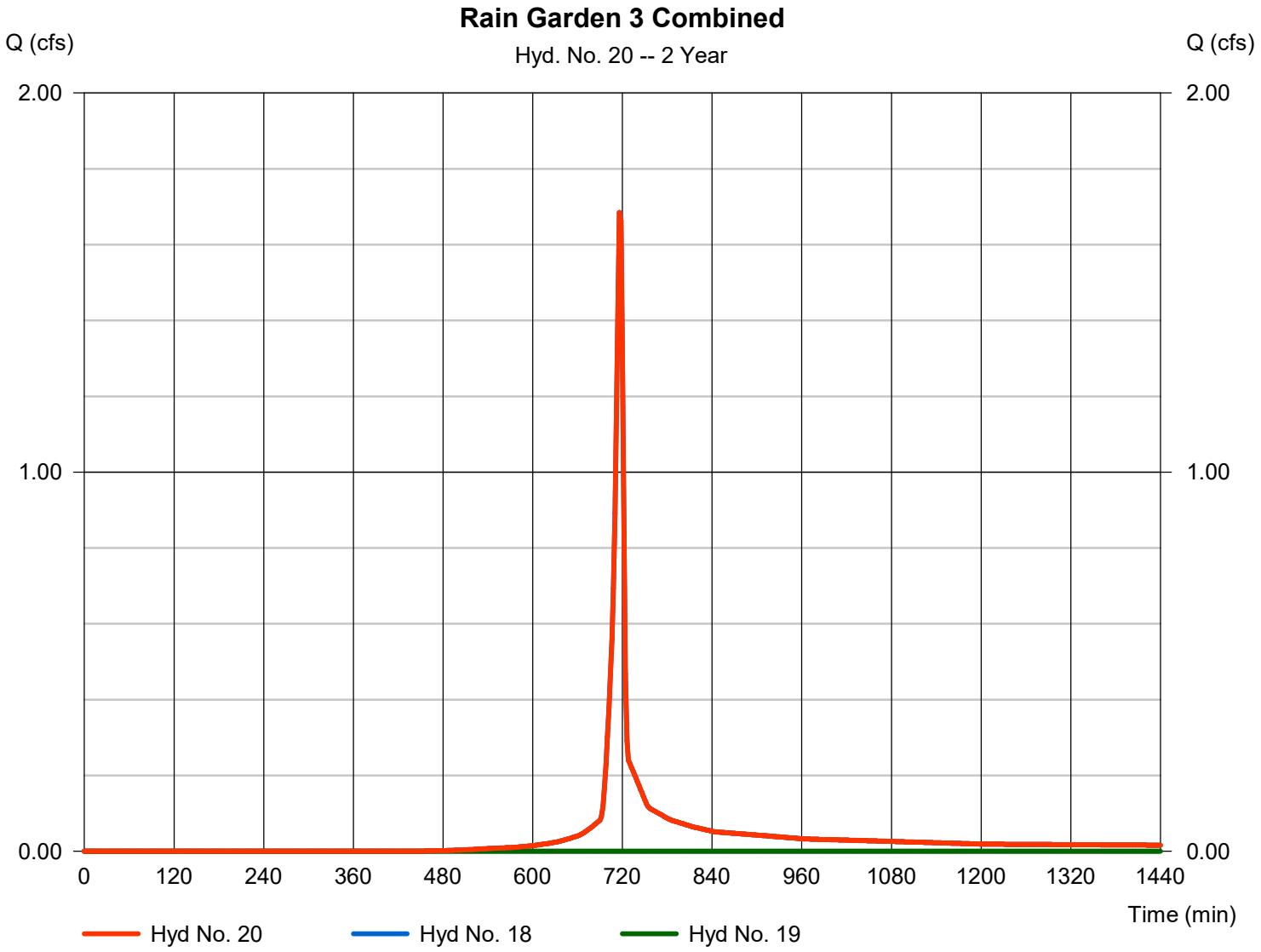
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 20

Rain Garden 3 Combined

Hydrograph type	= Combine	Peak discharge	= 1.685 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 3,419 cuft
Inflow hyds.	= 18, 19	Contrib. drain. area	= 0.560 ac



Hydrograph Report

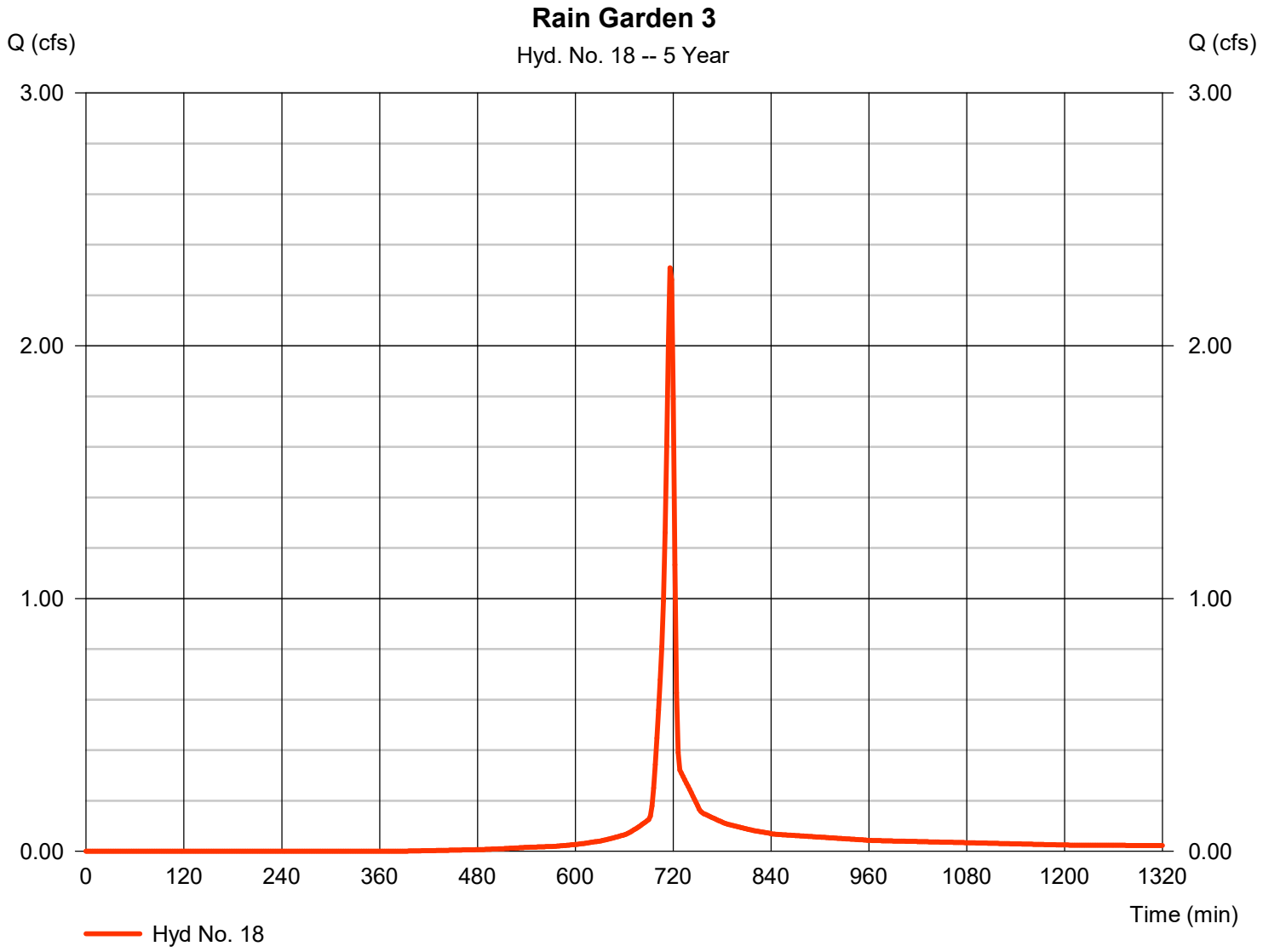
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 18

Rain Garden 3

Hydrograph type	= SCS Runoff	Peak discharge	= 2.308 cfs
Storm frequency	= 5 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 4,731 cuft
Drainage area	= 0.540 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.13 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.400 x 80) + (0.140 x 98)] / 0.540



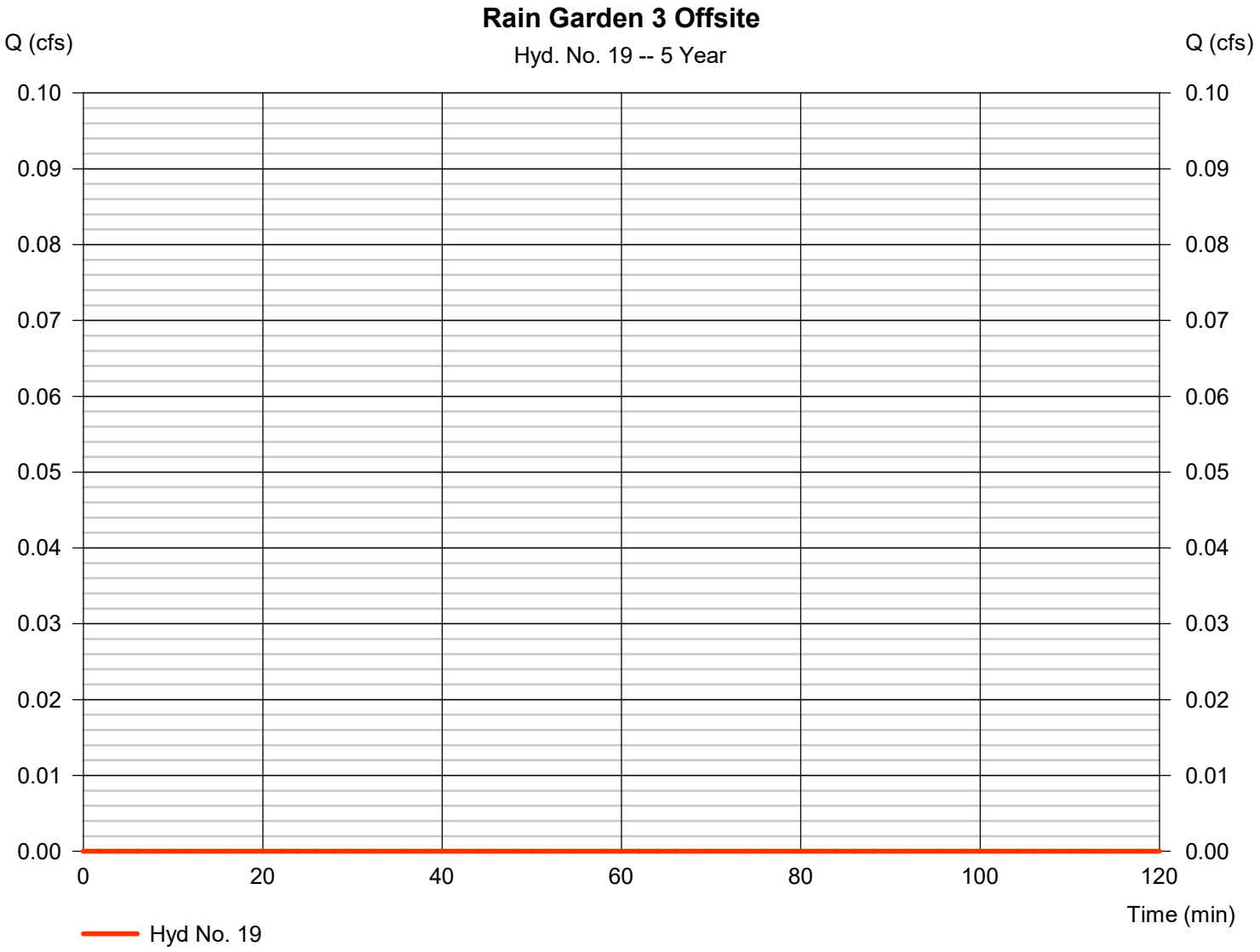
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 19

Rain Garden 3 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 5 yrs	Time to peak	= n/a
Time interval	= 2 min	Hyd. volume	= 0 cuft
Drainage area	= 0.020 ac	Curve number	= 8.88
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.13 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



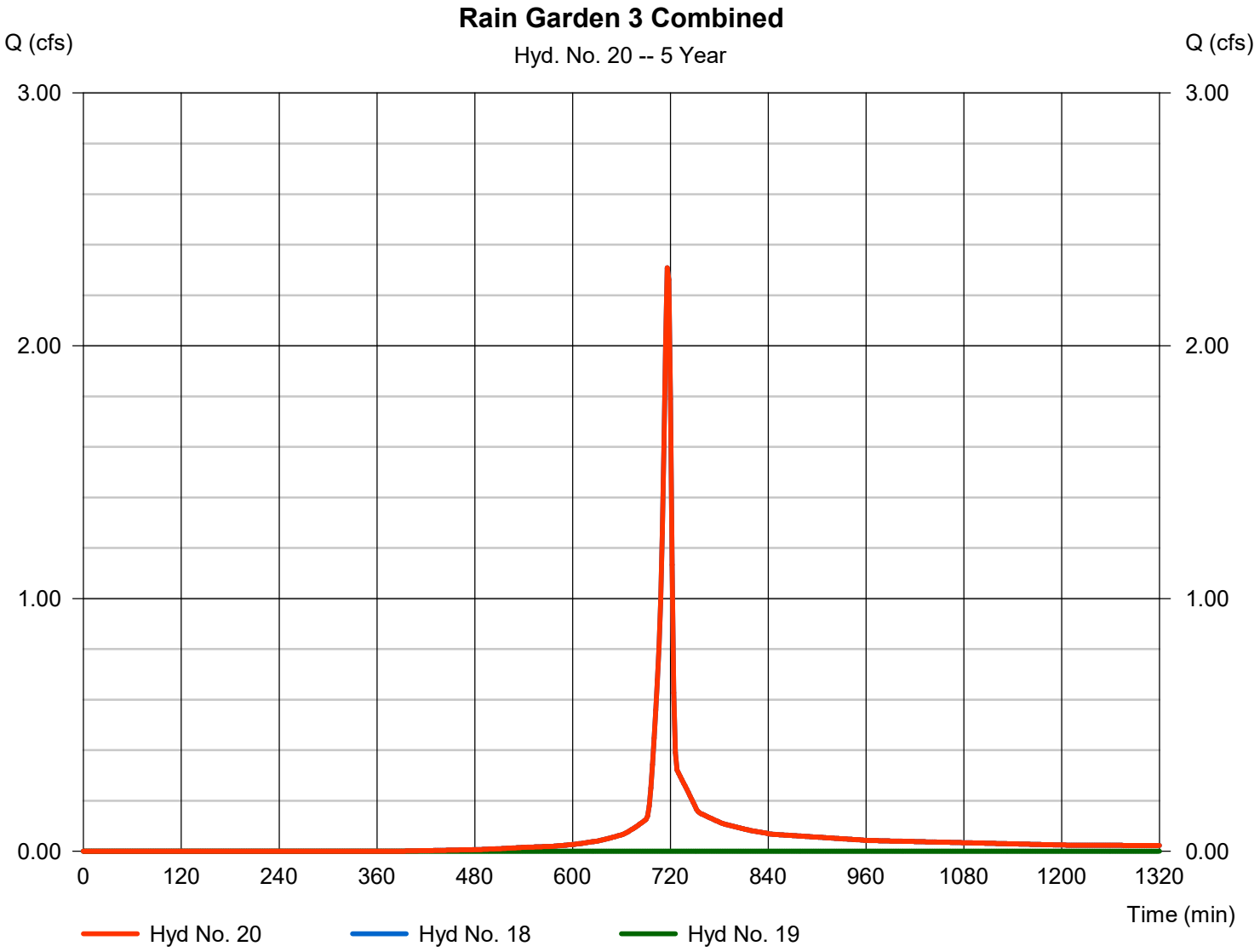
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 20

Rain Garden 3 Combined

Hydrograph type	= Combine	Peak discharge	= 2.308 cfs
Storm frequency	= 5 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 4,731 cuft
Inflow hyds.	= 18, 19	Contrib. drain. area	= 0.560 ac



Hydrograph Report

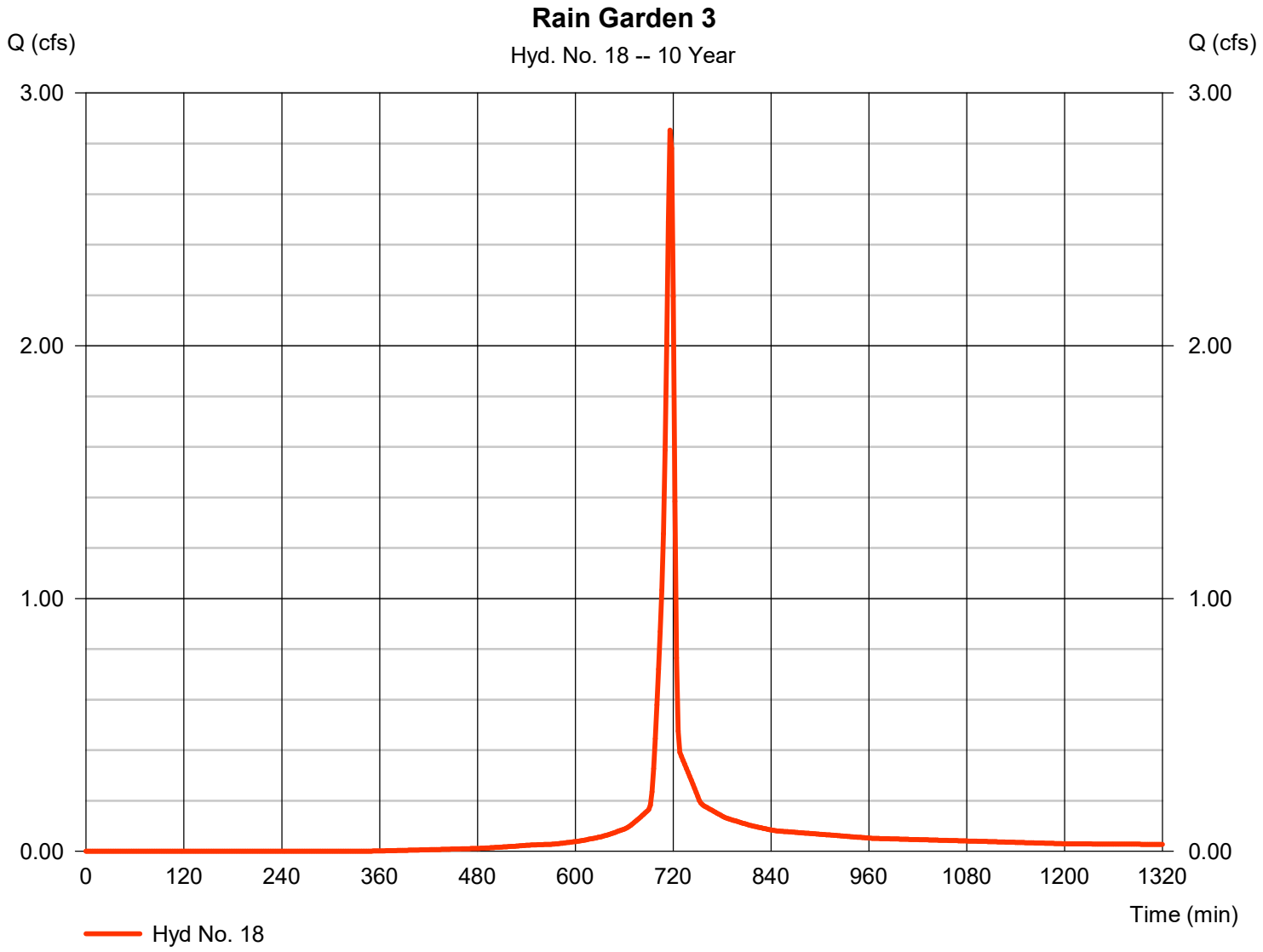
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 18

Rain Garden 3

Hydrograph type	= SCS Runoff	Peak discharge	= 2.852 cfs
Storm frequency	= 10 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 5,901 cuft
Drainage area	= 0.540 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.400 x 80) + (0.140 x 98)] / 0.540



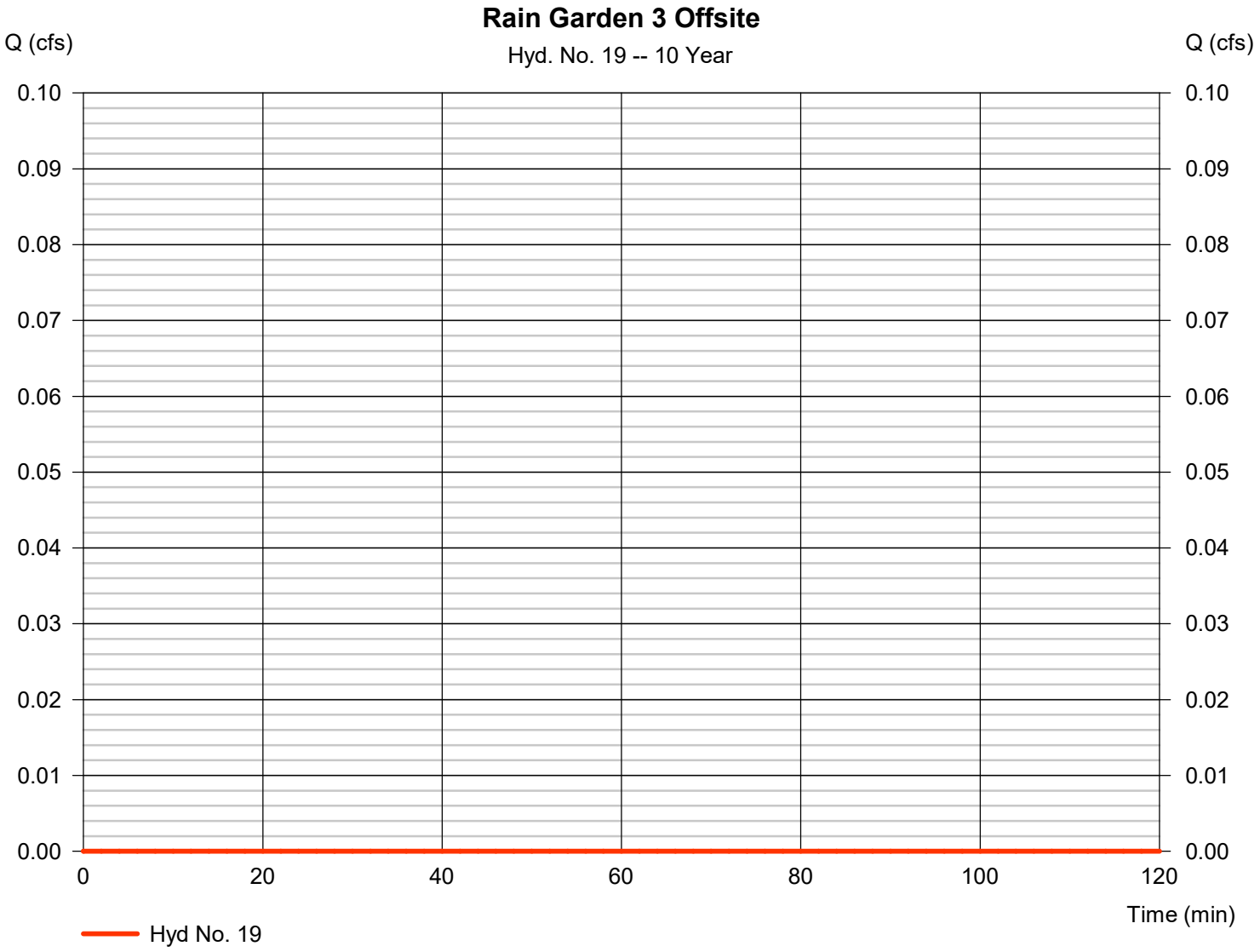
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 19

Rain Garden 3 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 10 yrs	Time to peak	= n/a
Time interval	= 2 min	Hyd. volume	= 0 cuft
Drainage area	= 0.020 ac	Curve number	= 8.88
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



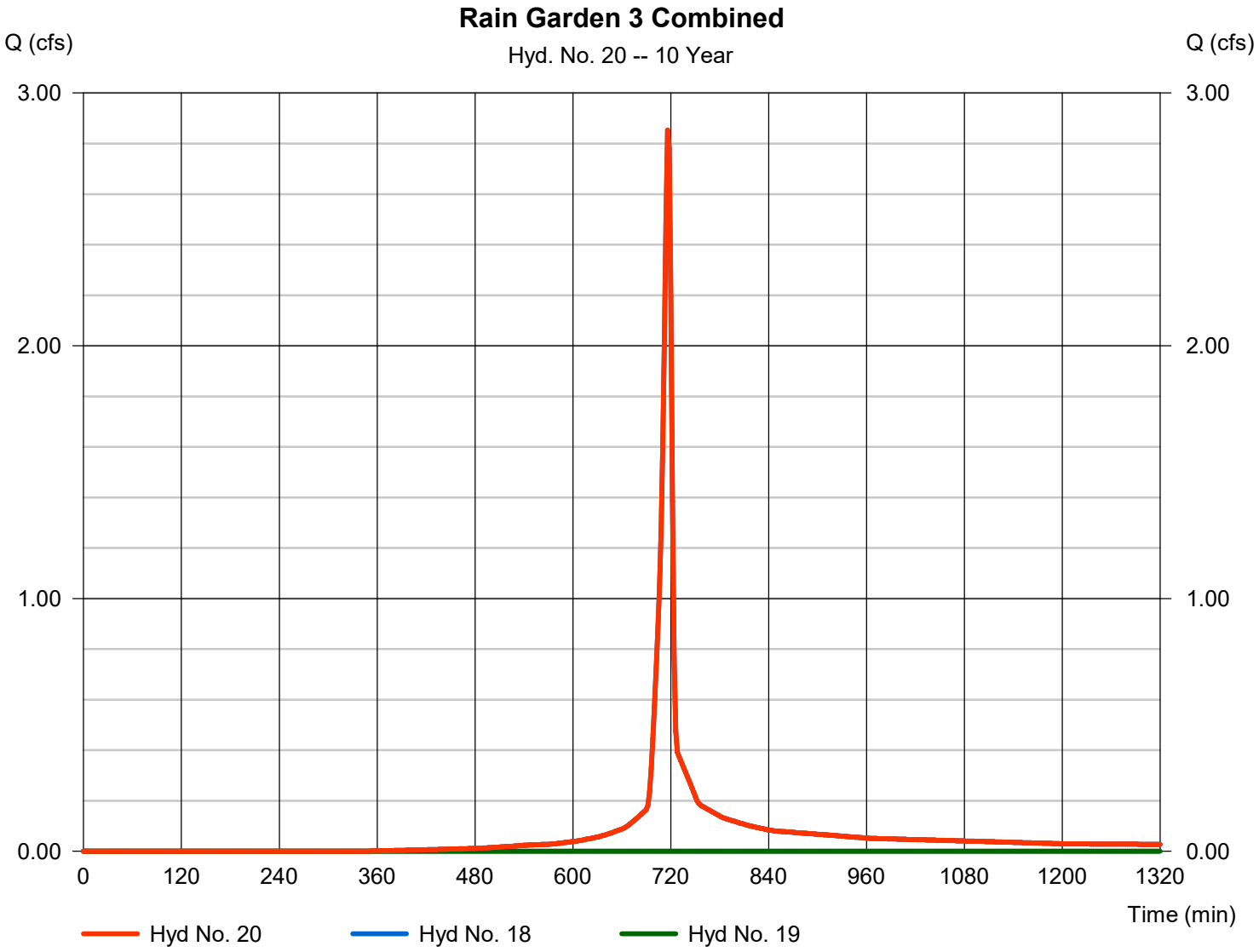
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 20

Rain Garden 3 Combined

Hydrograph type	= Combine	Peak discharge	= 2.852 cfs
Storm frequency	= 10 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 5,901 cuft
Inflow hyds.	= 18, 19	Contrib. drain. area	= 0.560 ac



Hydrograph Report

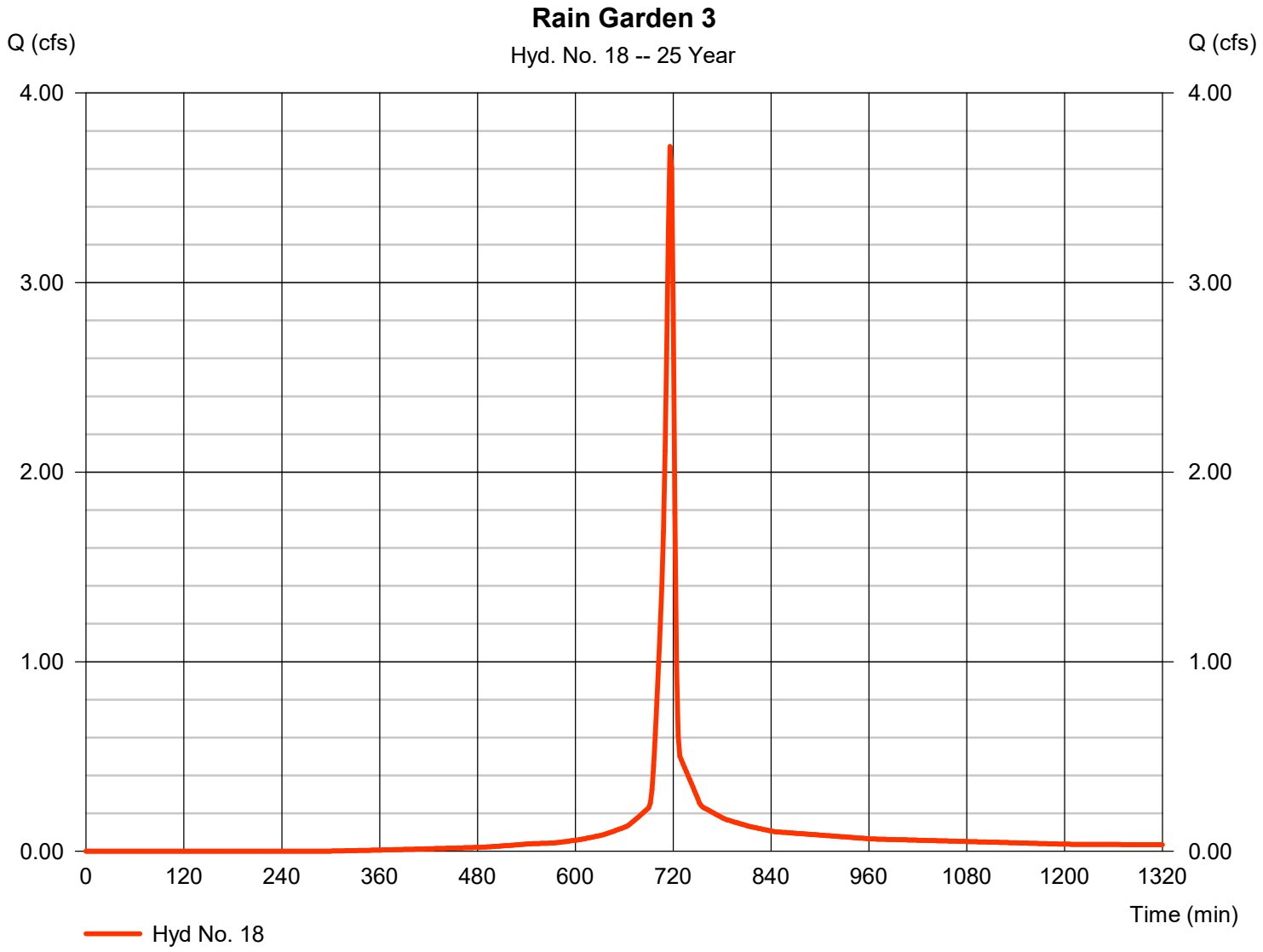
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 18

Rain Garden 3

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.718 cfs
Storm frequency	=	25 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	7,803 cuft
Drainage area	=	0.540 ac	Curve number	=	85*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	5.94 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.400 x 80) + (0.140 x 98)] / 0.540



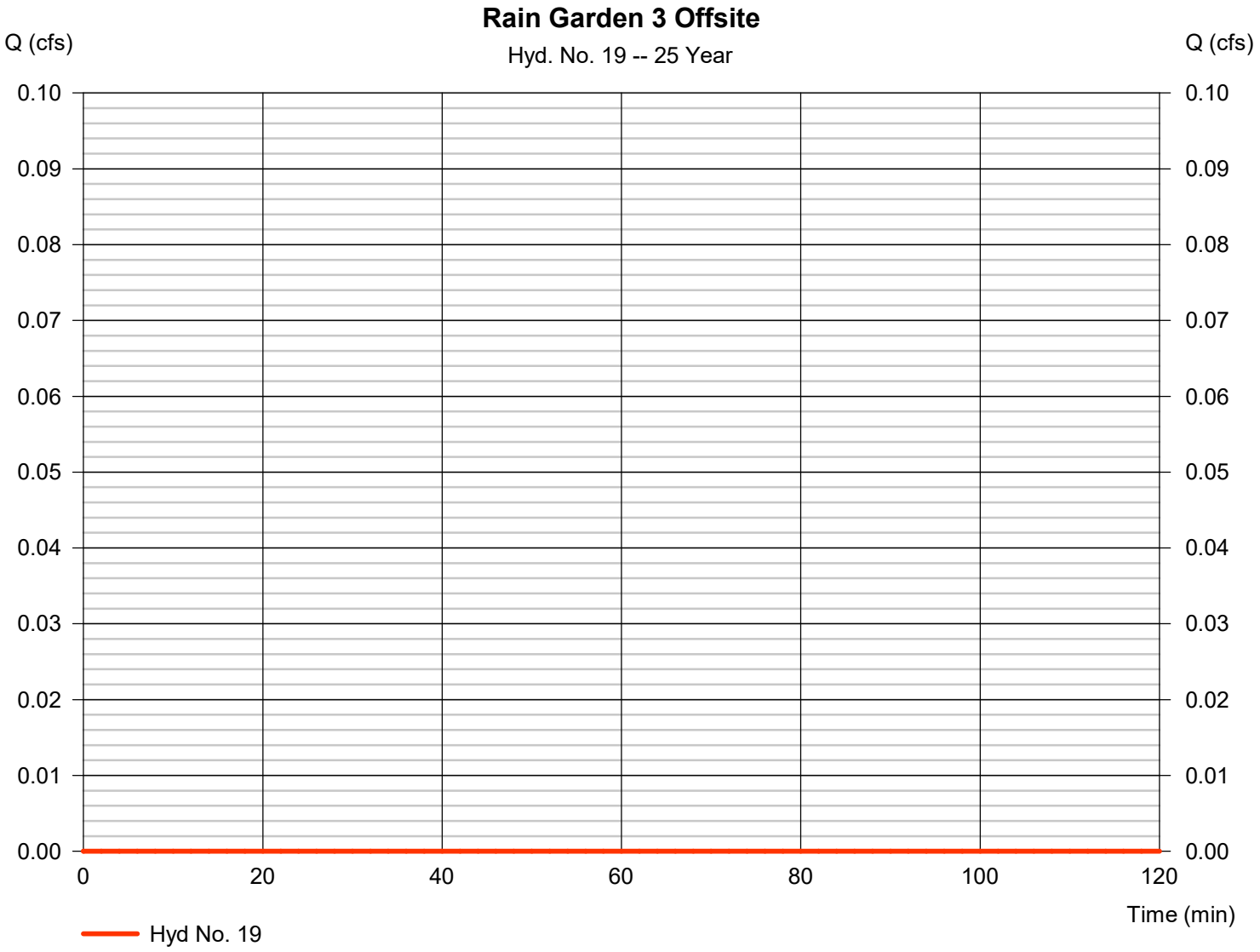
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 19

Rain Garden 3 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 25 yrs	Time to peak	= n/a
Time interval	= 2 min	Hyd. volume	= 0 cuft
Drainage area	= 0.020 ac	Curve number	= 8.88
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.94 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



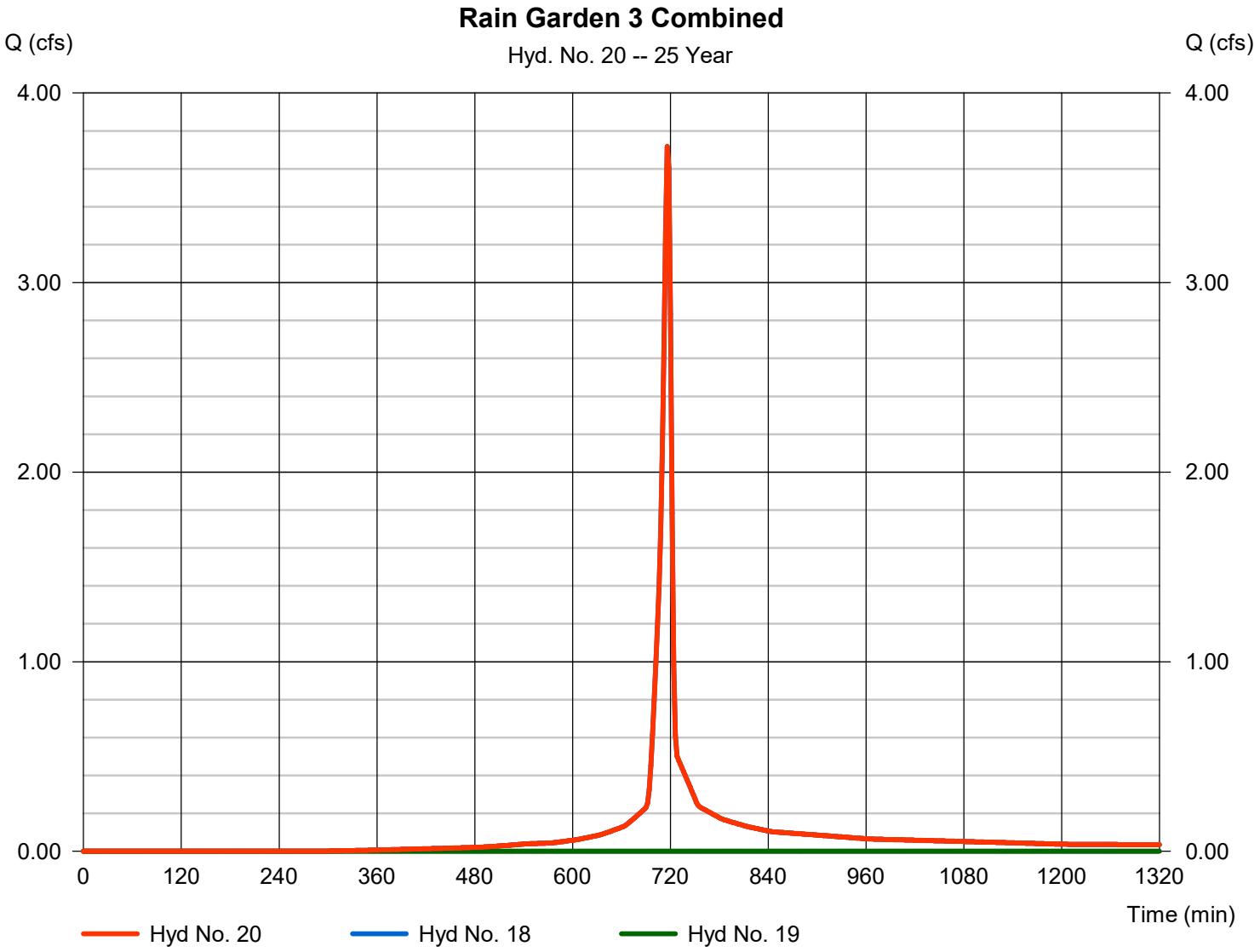
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 20

Rain Garden 3 Combined

Hydrograph type	= Combine	Peak discharge	= 3.718 cfs
Storm frequency	= 25 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 7,803 cuft
Inflow hyds.	= 18, 19	Contrib. drain. area	= 0.560 ac



Hydrograph Report

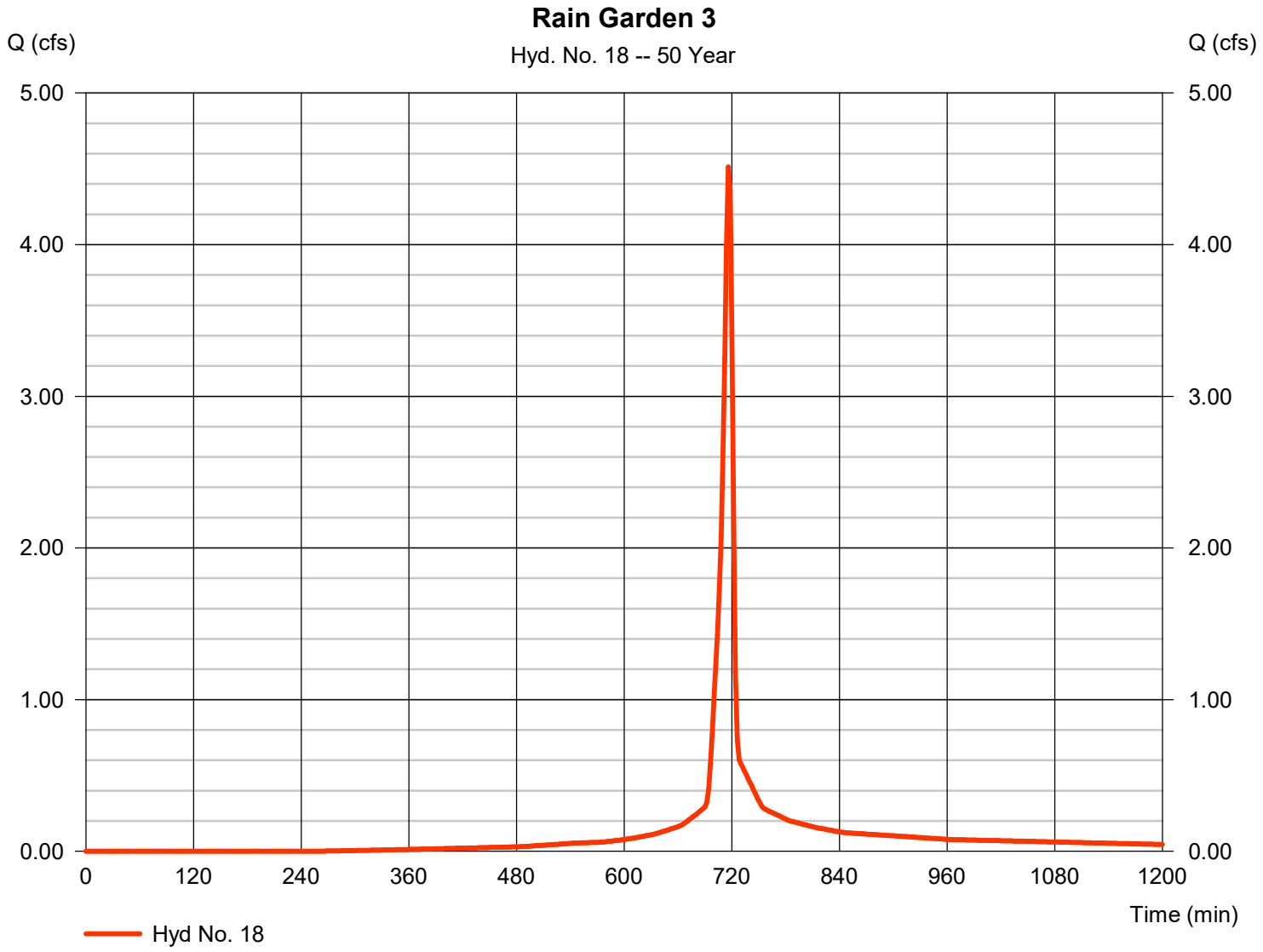
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 18

Rain Garden 3

Hydrograph type	=	SCS Runoff	Peak discharge	=	4.512 cfs
Storm frequency	=	50 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	9,582 cuft
Drainage area	=	0.540 ac	Curve number	=	85*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.400 x 80) + (0.140 x 98)] / 0.540



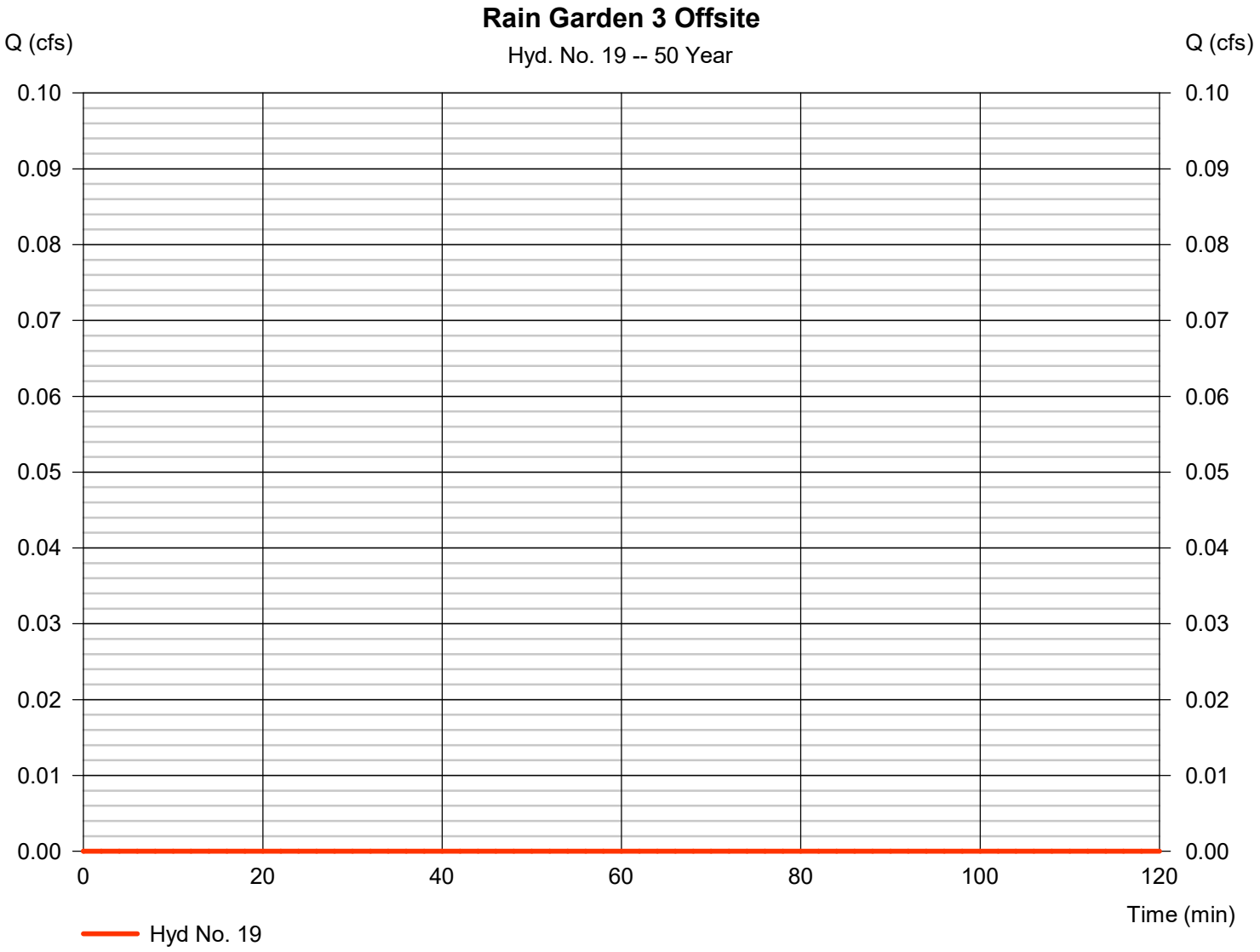
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 19

Rain Garden 3 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 50 yrs	Time to peak	= n/a
Time interval	= 2 min	Hyd. volume	= 0 cuft
Drainage area	= 0.020 ac	Curve number	= 8.88
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.96 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



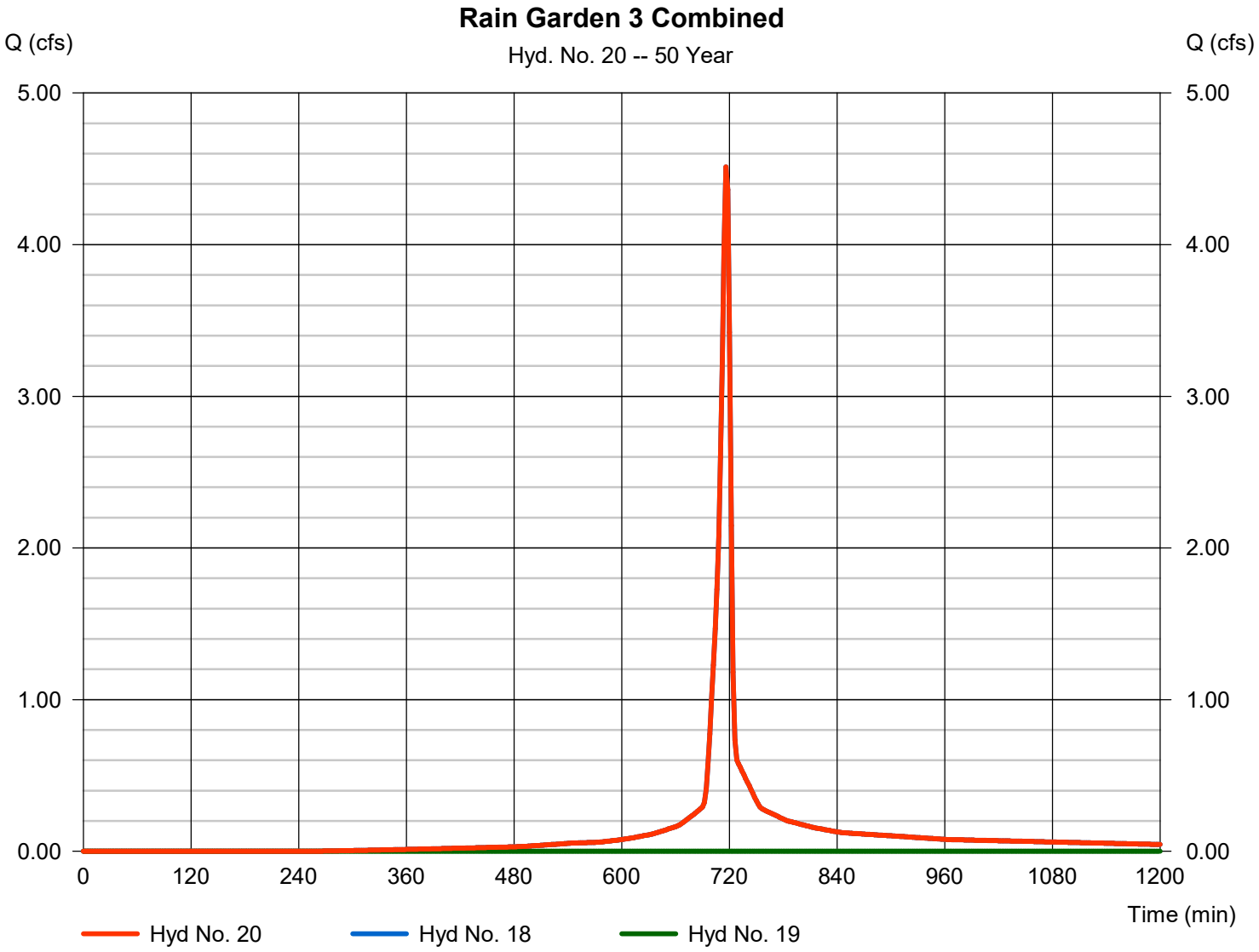
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 20

Rain Garden 3 Combined

Hydrograph type	= Combine	Peak discharge	= 4.512 cfs
Storm frequency	= 50 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 9,582 cuft
Inflow hyds.	= 18, 19	Contrib. drain. area	= 0.560 ac



Hydrograph Report

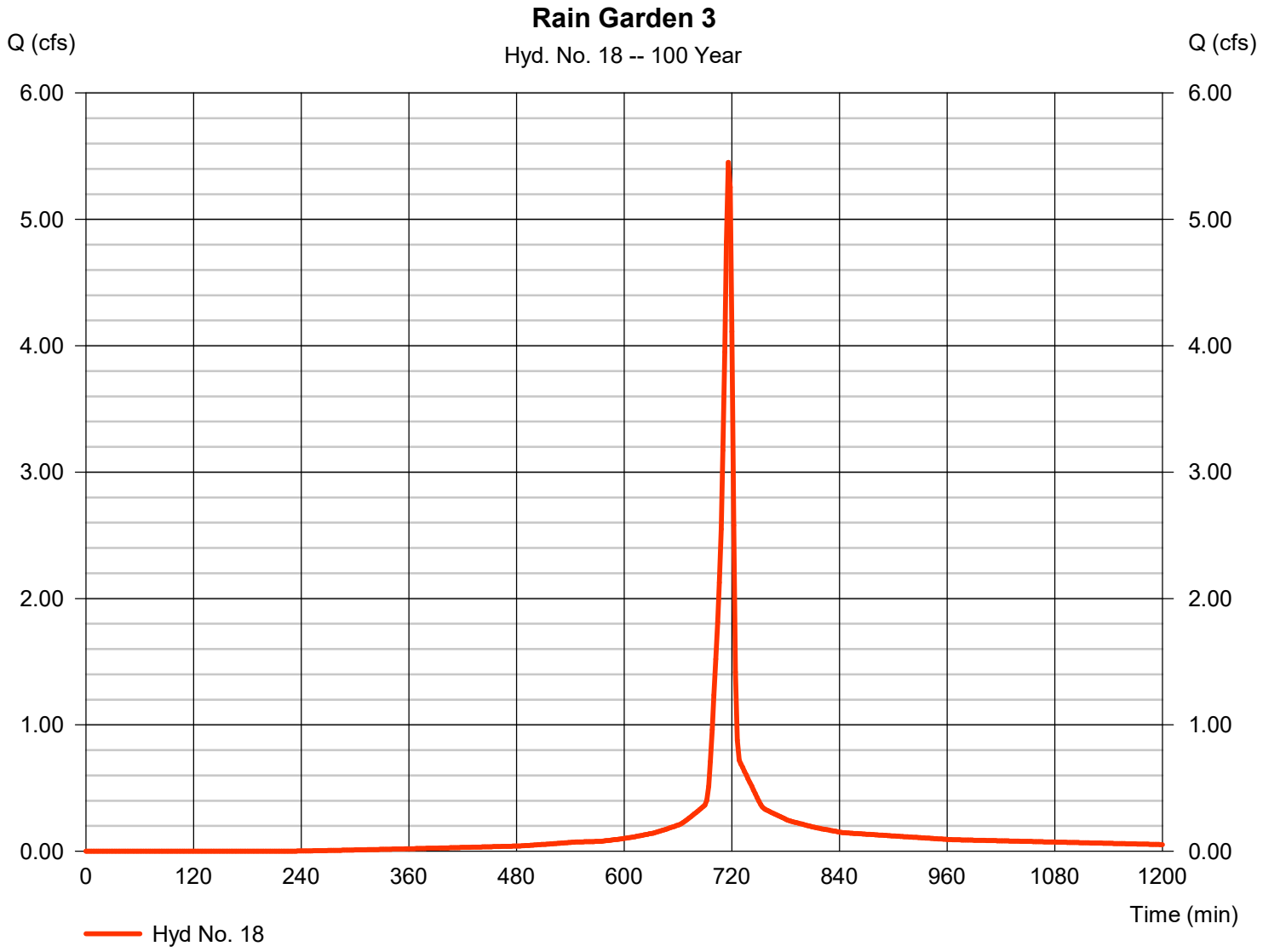
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 18

Rain Garden 3

Hydrograph type	= SCS Runoff	Peak discharge	= 5.450 cfs
Storm frequency	= 100 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 11,720 cuft
Drainage area	= 0.540 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 8.17 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.400 x 80) + (0.140 x 98)] / 0.540



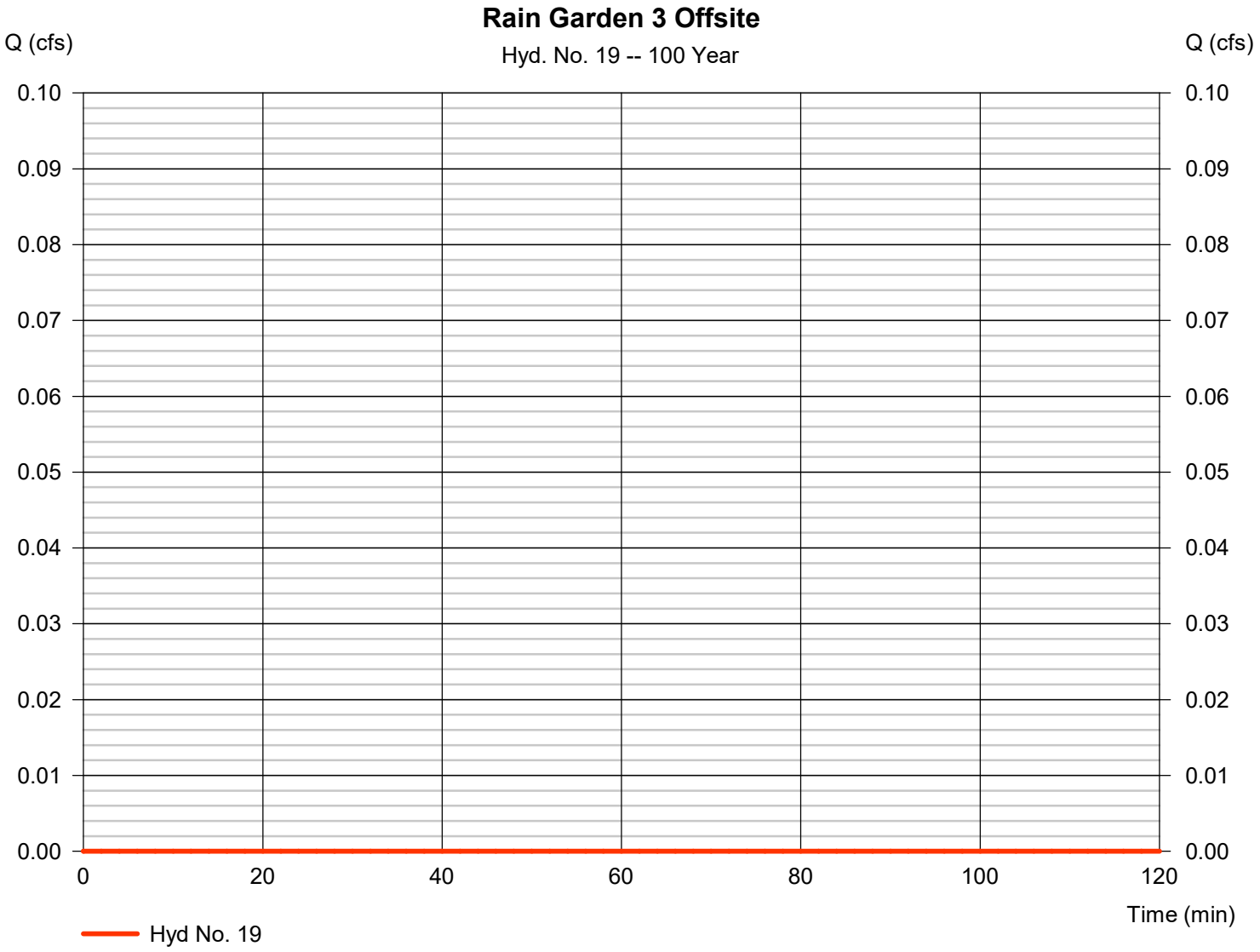
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 19

Rain Garden 3 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 0.000 cfs
Storm frequency	= 100 yrs	Time to peak	= n/a
Time interval	= 2 min	Hyd. volume	= 0 cuft
Drainage area	= 0.020 ac	Curve number	= 8.88
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 8.17 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



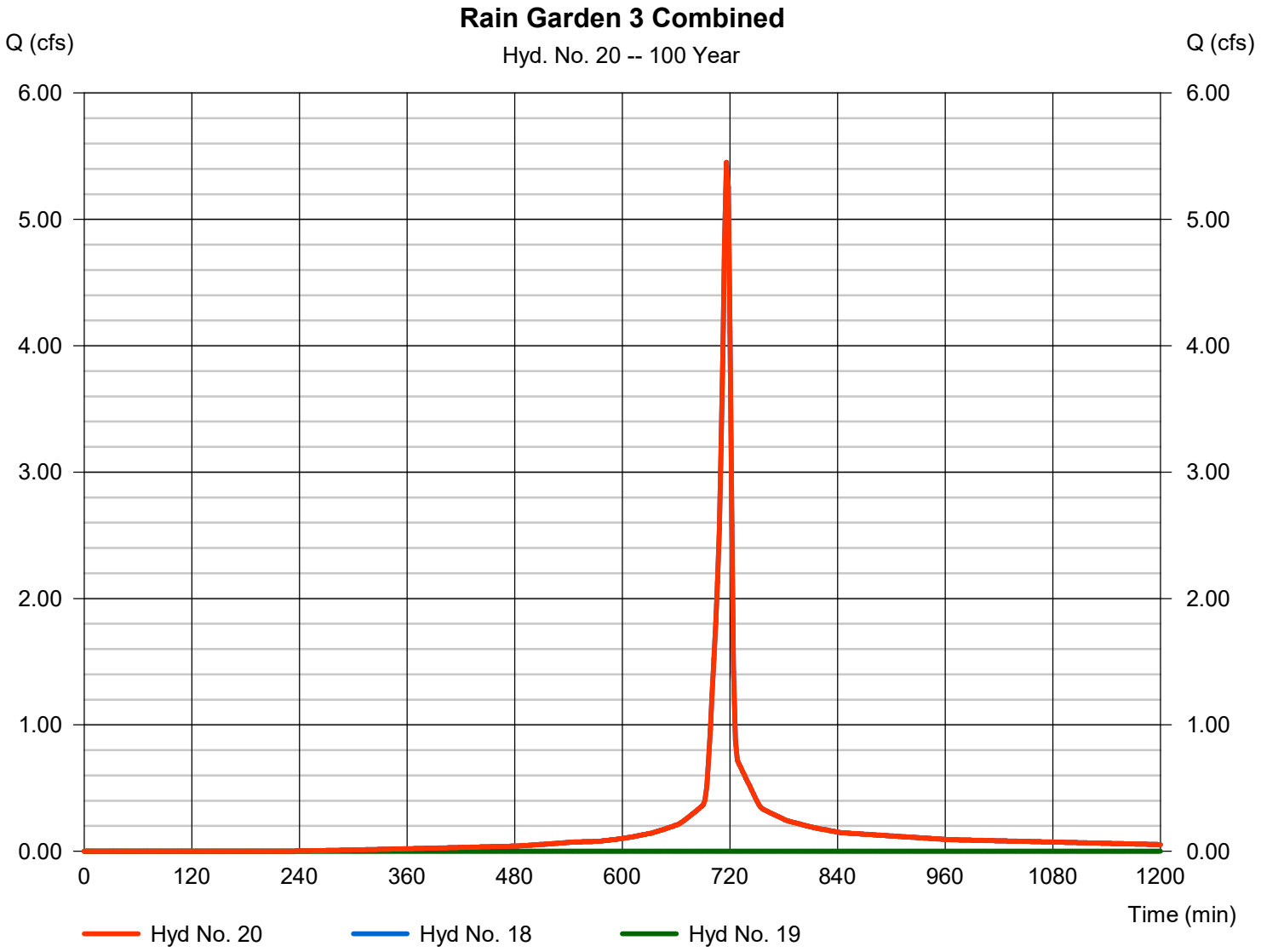
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 20

Rain Garden 3 Combined

Hydrograph type	= Combine	Peak discharge	= 5.450 cfs
Storm frequency	= 100 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 11,720 cuft
Inflow hyds.	= 18, 19	Contrib. drain. area	= 0.560 ac



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Pond No. 3 - RG 3

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 629.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	629.00	1,557	0	0
1.00	630.00	2,138	1,840	1,840
2.00	631.00	3,083	2,596	4,436
3.00	632.00	5,450	4,210	8,646

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 15.00	Inactive	10.00	0.00
Span (in)	= 15.00	3.00	24.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 629.00	630.00	630.35	0.00
Length (ft)	= 50.00	1.00	1.00	0.00
Slope (%)	= 1.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	Yes	No

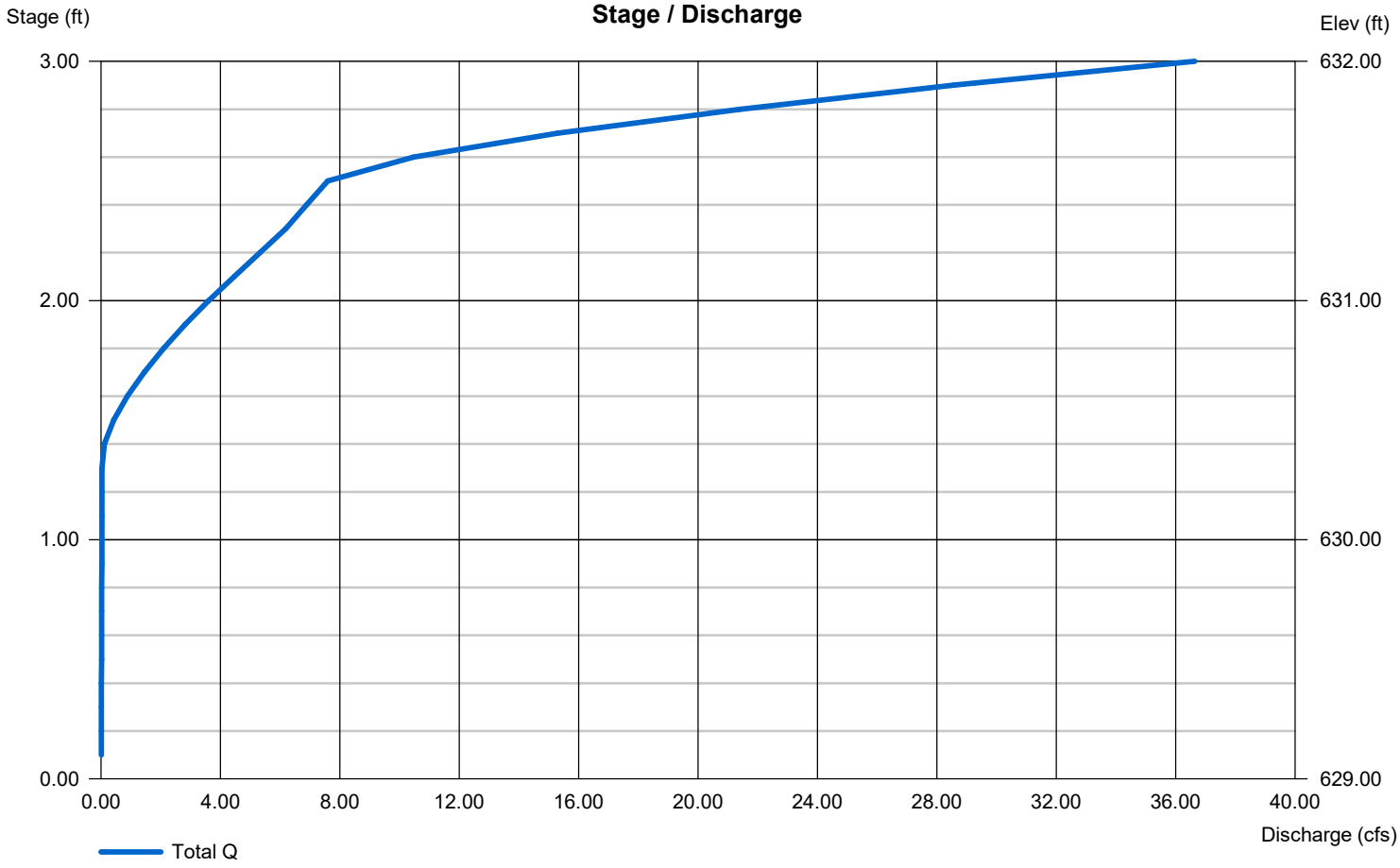
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 10.00	Inactive	30.00	0.00
Crest El. (ft)	= 631.25	630.00	631.50	0.00
Weir Coeff.	= 3.33	1.95	2.60	3.33
Weir Type	= 1	75 degV	Broad	---
Multi-Stage	= Yes	Yes	No	No

Exfil.(in/hr) = 0.500 (by Contour)

TW Elev. (ft) = 0.00

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



Hydrograph Report

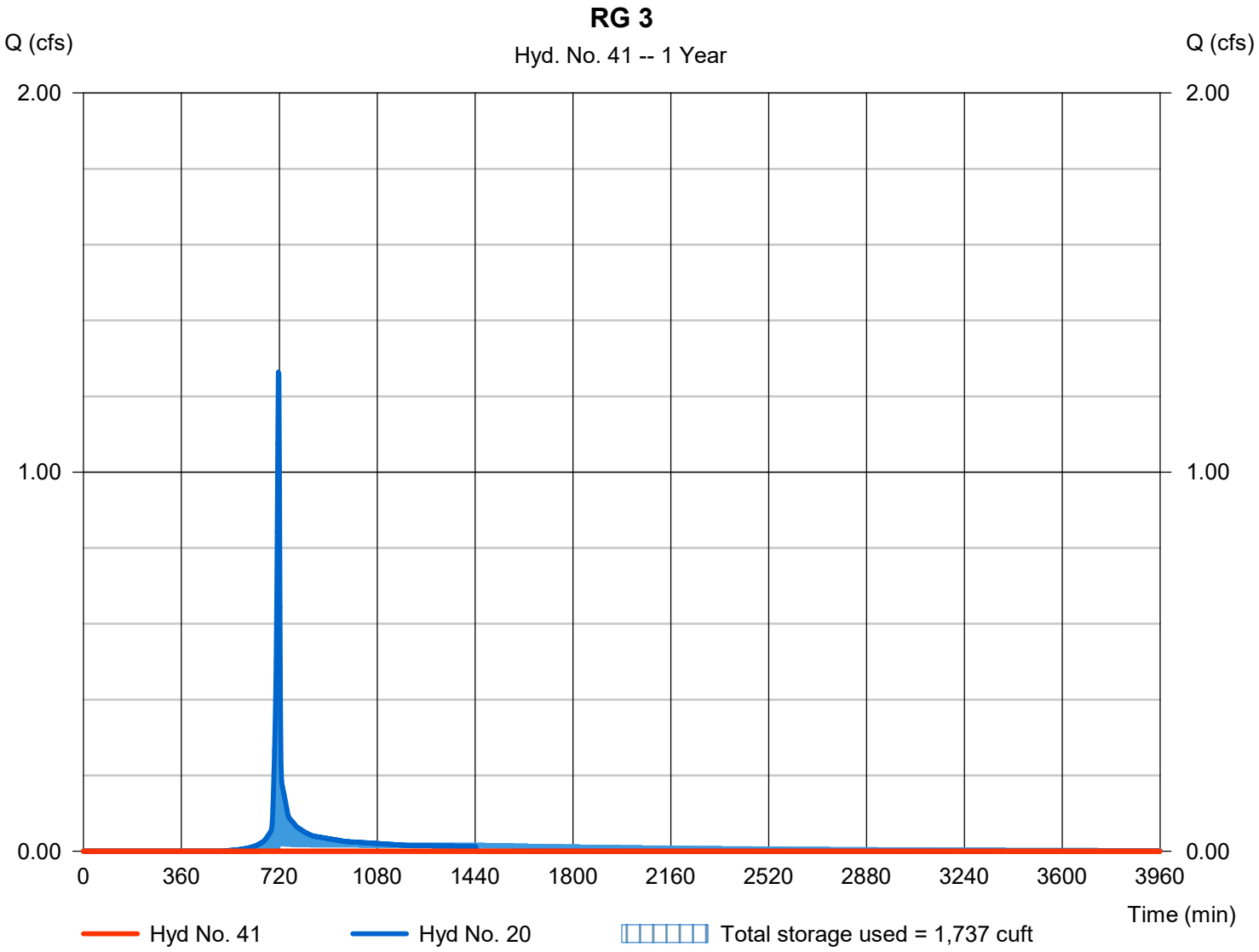
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 41

RG 3

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	1 yrs	Time to peak	=	1886 min
Time interval	=	2 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	20 - Rain Garden 3 Combined	Max. Elevation	=	629.94 ft
Reservoir name	=	RG 3	Max. Storage	=	1,737 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

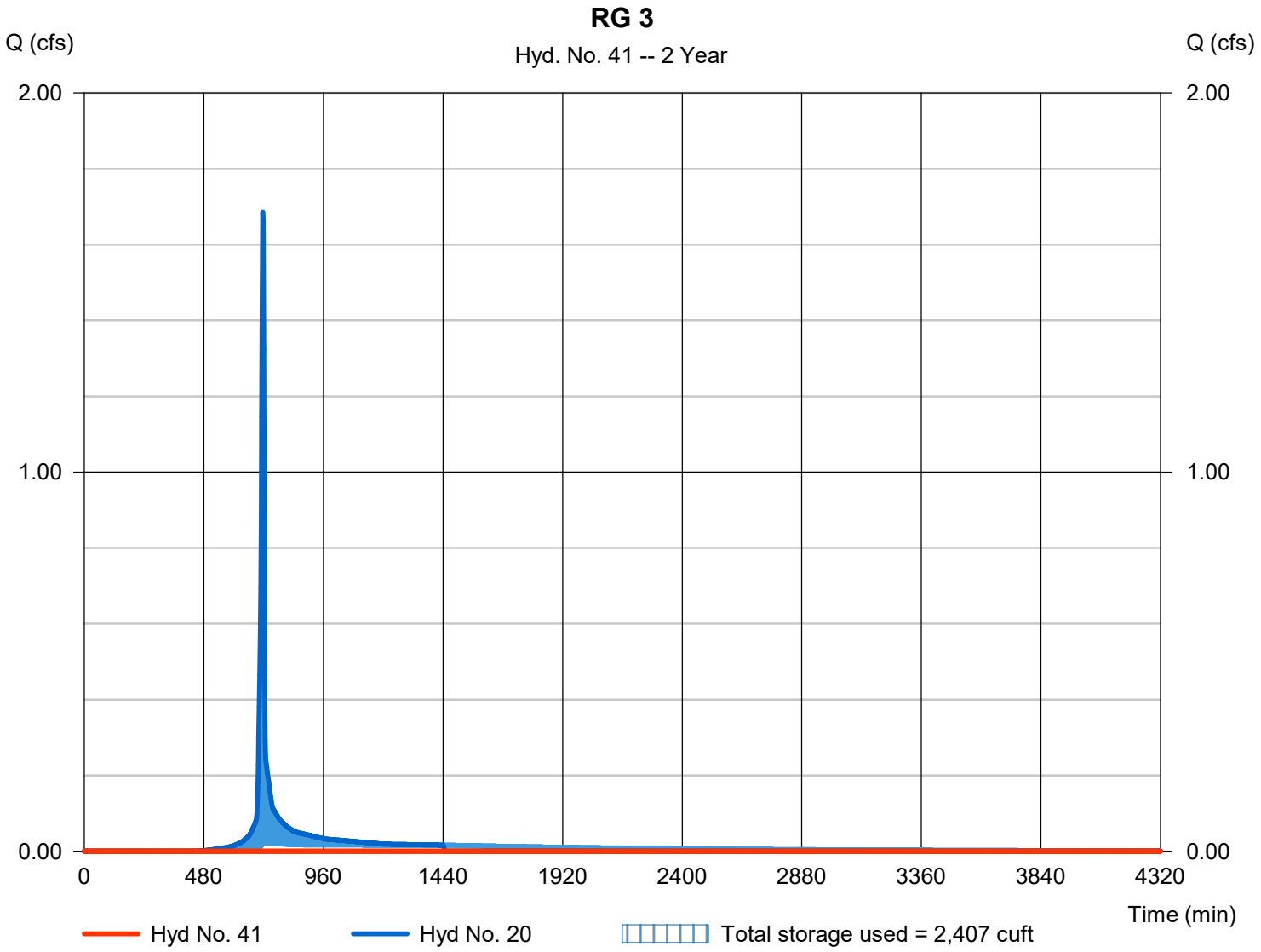
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 41

RG 3

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	1016 min
Time interval	=	2 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	20 - Rain Garden 3 Combined	Max. Elevation	=	630.22 ft
Reservoir name	=	RG 3	Max. Storage	=	2,407 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

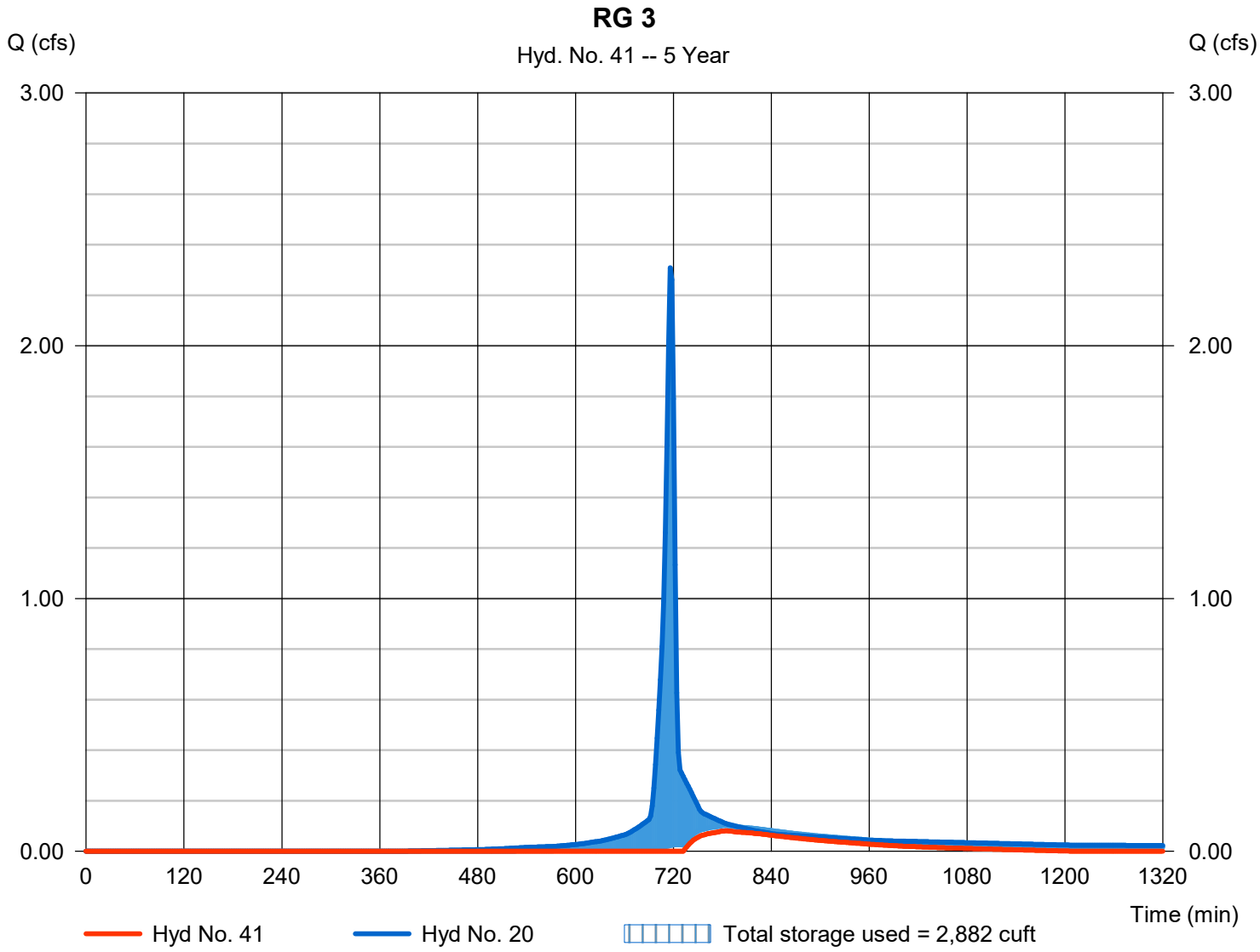
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 41

RG 3

Hydrograph type	=	Reservoir	Peak discharge	=	0.081 cfs
Storm frequency	=	5 yrs	Time to peak	=	784 min
Time interval	=	2 min	Hyd. volume	=	915 cuft
Inflow hyd. No.	=	20 - Rain Garden 3 Combined	Max. Elevation	=	630.40 ft
Reservoir name	=	RG 3	Max. Storage	=	2,882 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

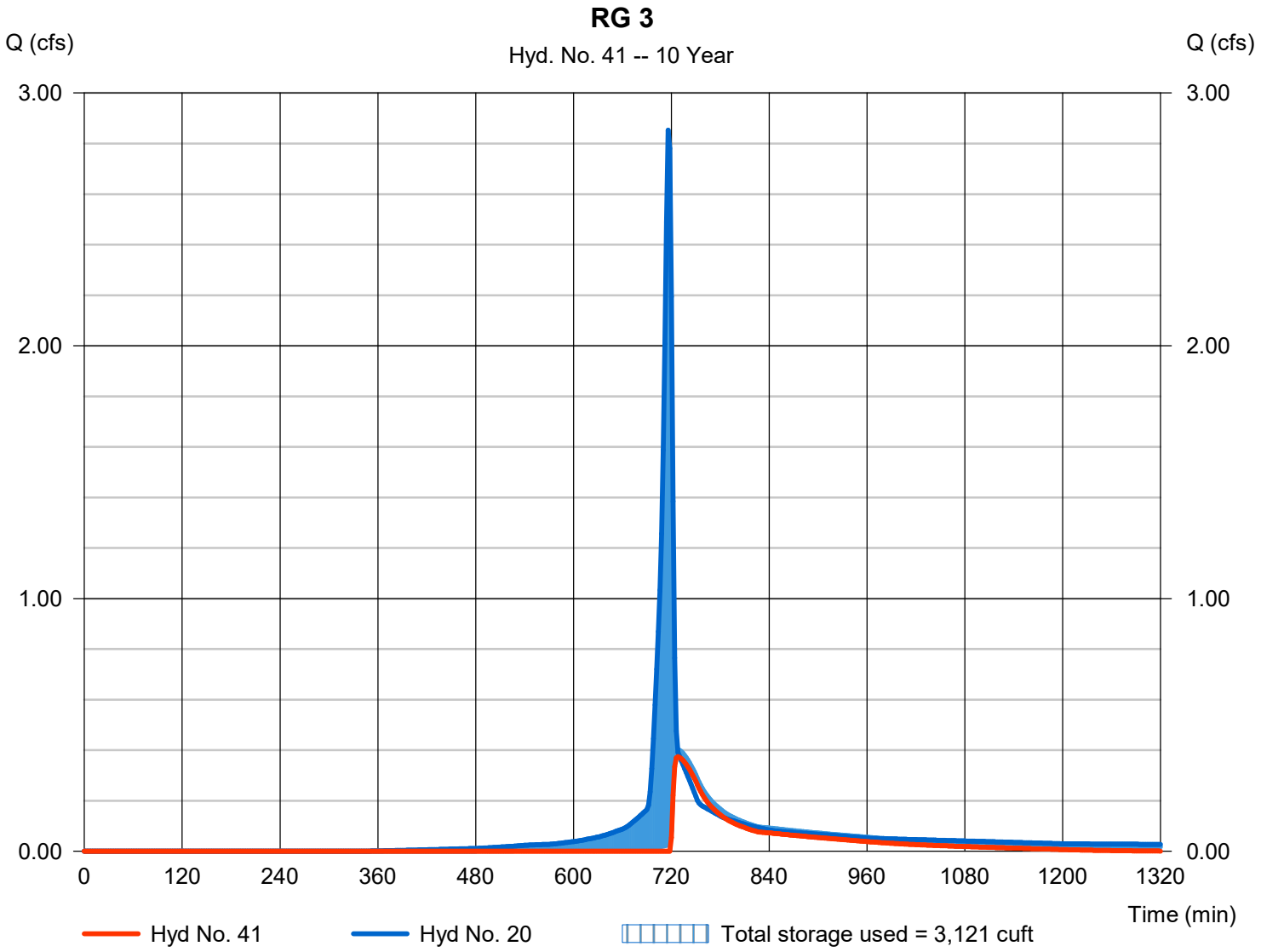
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 41

RG 3

Hydrograph type	=	Reservoir	Peak discharge	=	0.374 cfs
Storm frequency	=	10 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	1,995 cuft
Inflow hyd. No.	=	20 - Rain Garden 3 Combinded	Max. Elevation	=	630.49 ft
Reservoir name	=	RG 3	Max. Storage	=	3,121 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

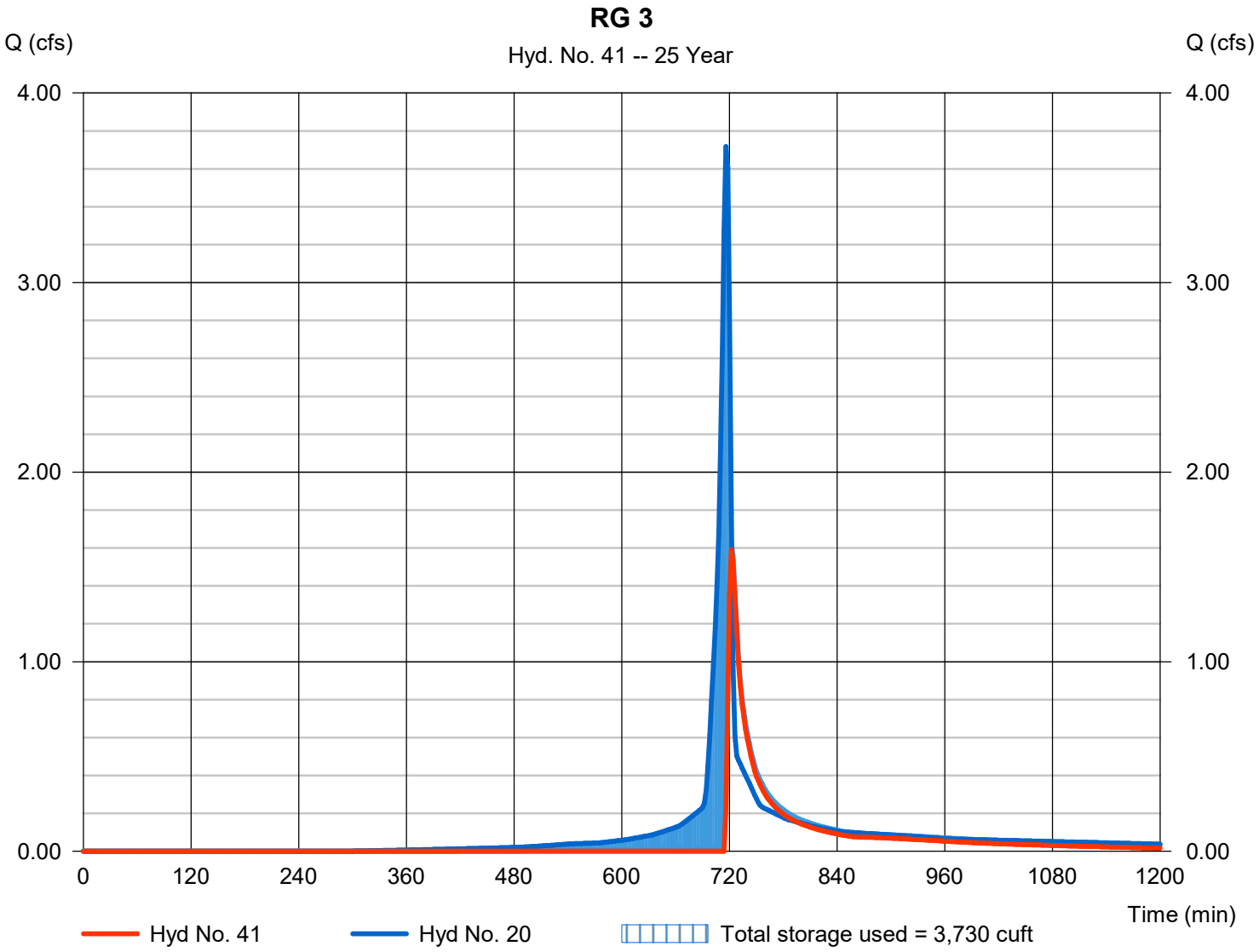
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 41

RG 3

Hydrograph type	=	Reservoir	Peak discharge	=	1.590 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	3,821 cuft
Inflow hyd. No.	=	20 - Rain Garden 3 Combinded	Max. Elevation	=	630.73 ft
Reservoir name	=	RG 3	Max. Storage	=	3,730 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

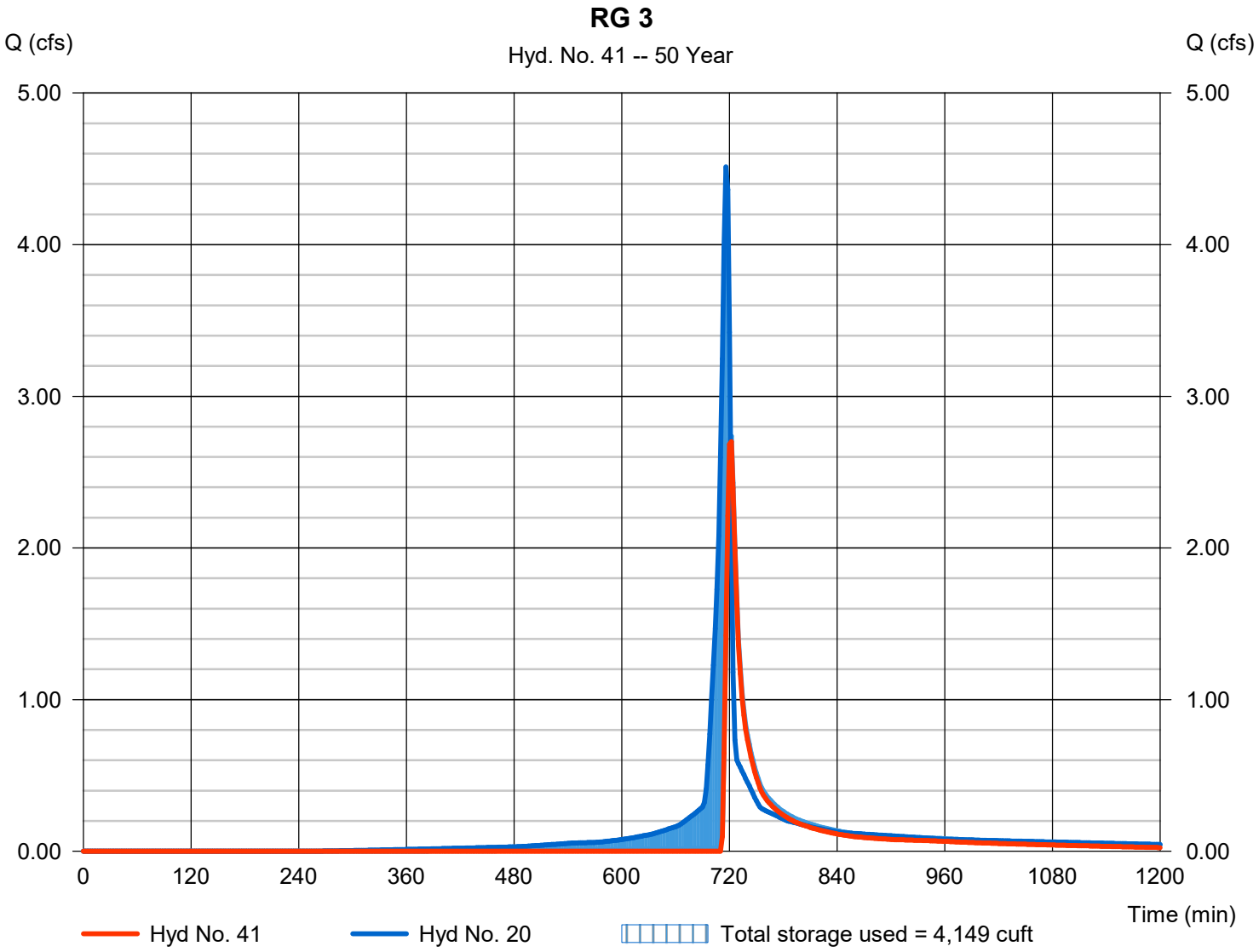
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 41

RG 3

Hydrograph type	=	Reservoir	Peak discharge	=	2.702 cfs
Storm frequency	=	50 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	5,539 cuft
Inflow hyd. No.	=	20 - Rain Garden 3 Combined	Max. Elevation	=	630.89 ft
Reservoir name	=	RG 3	Max. Storage	=	4,149 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

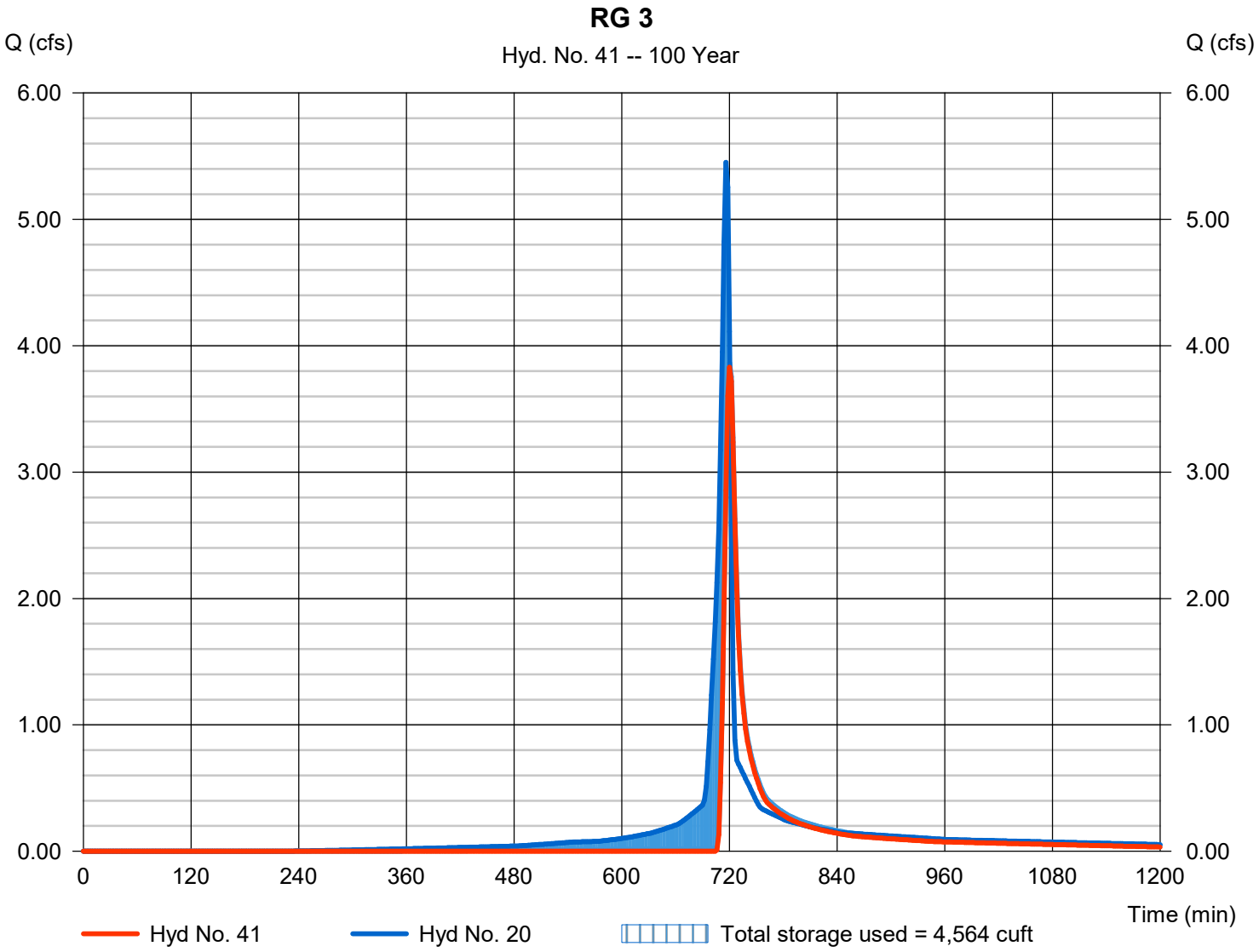
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 41

RG 3

Hydrograph type	=	Reservoir	Peak discharge	=	3.830 cfs
Storm frequency	=	100 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	7,602 cuft
Inflow hyd. No.	=	20 - Rain Garden 3 Combinded	Max. Elevation	=	631.03 ft
Reservoir name	=	RG 3	Max. Storage	=	4,564 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Developed Conditions: Rain Garden 4 Onsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D			77					
Meadow	D			78					
Forest (Good)	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D	15,722	0.36	80	2.50	0.50	1.49	1958.49	0.04
Lawn, High-Input	D			84					
Golf Course Fairway/Green	D			80					
Grassed Athletic Field	D			80					
Rooftop	D			98					
High Traffic Street / Highway	D			93					
Medium Traffic Street	D			98					
Low Traffic / Residential Street	D			98					
Res. Driveway, Play Courts, etc.	D	5,493	0.13	98	0.20	0.04	3.09	1413.11	0.03
Impervious Allowance	D	500	0.01	98	0.20	0.04	3.09	128.63	0.00
Low Traffic Parking Lot	D			98					
TOTAL:		21,715	0.50						0.07

Developed Conditions: Rain Garden 4 Offsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D			77					
Meadow	D			78					
Forest (Good)	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D			80					
Lawn, High-Input	D			84					
Golf Course Fairway/Green	D			80					
Grassed Athletic Field	D			80					
Rooftop	D			98					
High Traffic Street / Highway	D			93					
Medium Traffic Street	D			98					
Low Traffic / Residential Street	D			98					
Res. Driveway, Play Courts, etc.	D			98					
Impervious Allowance	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		0	0.00						

Hydrograph Report

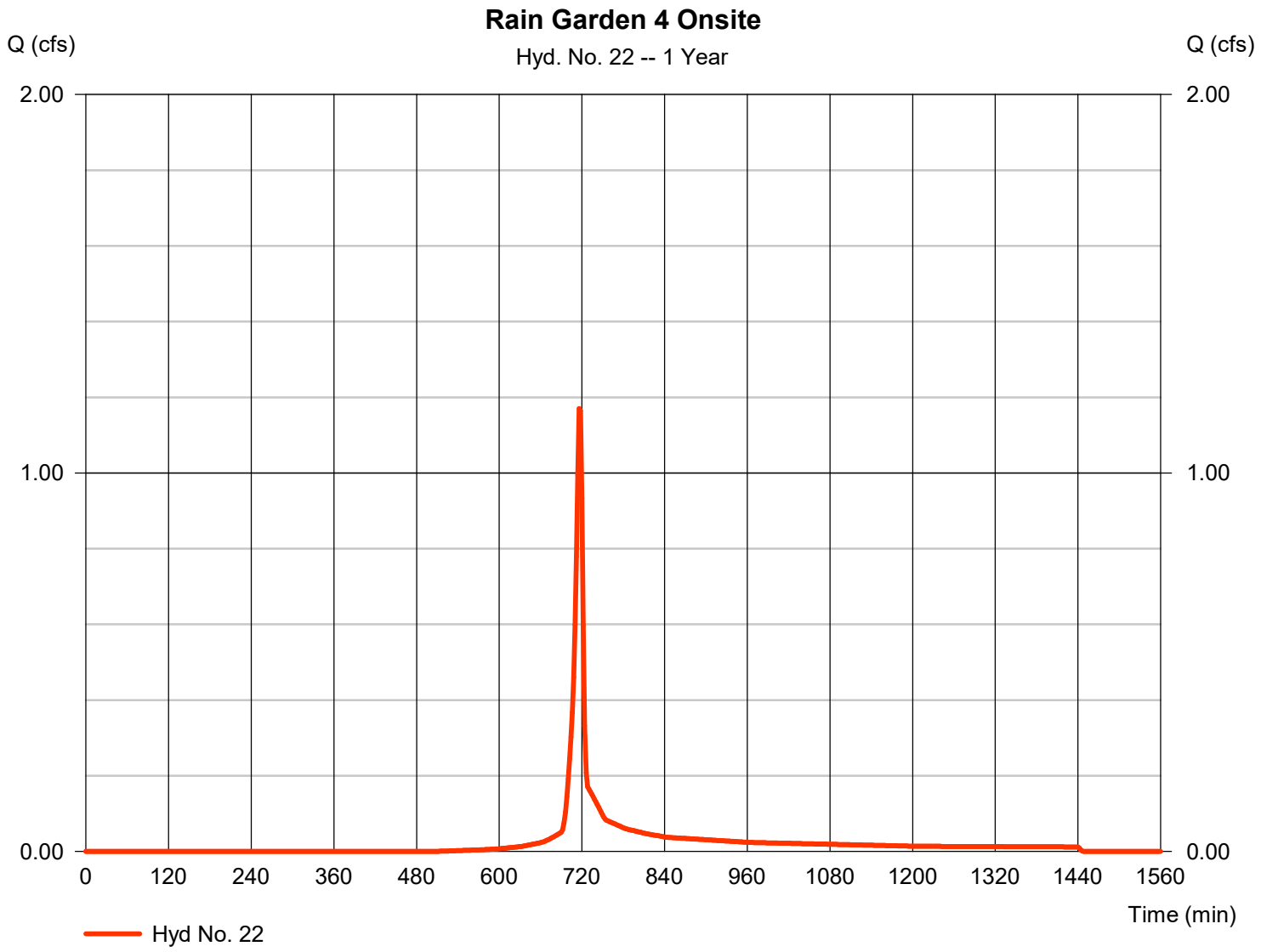
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 22

Rain Garden 4 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 1.170 cfs
Storm frequency	= 1 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 2,363 cuft
Drainage area	= 0.500 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.76 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.360 x 80) + (0.140 x 98)] / 0.500



Hydrograph Report

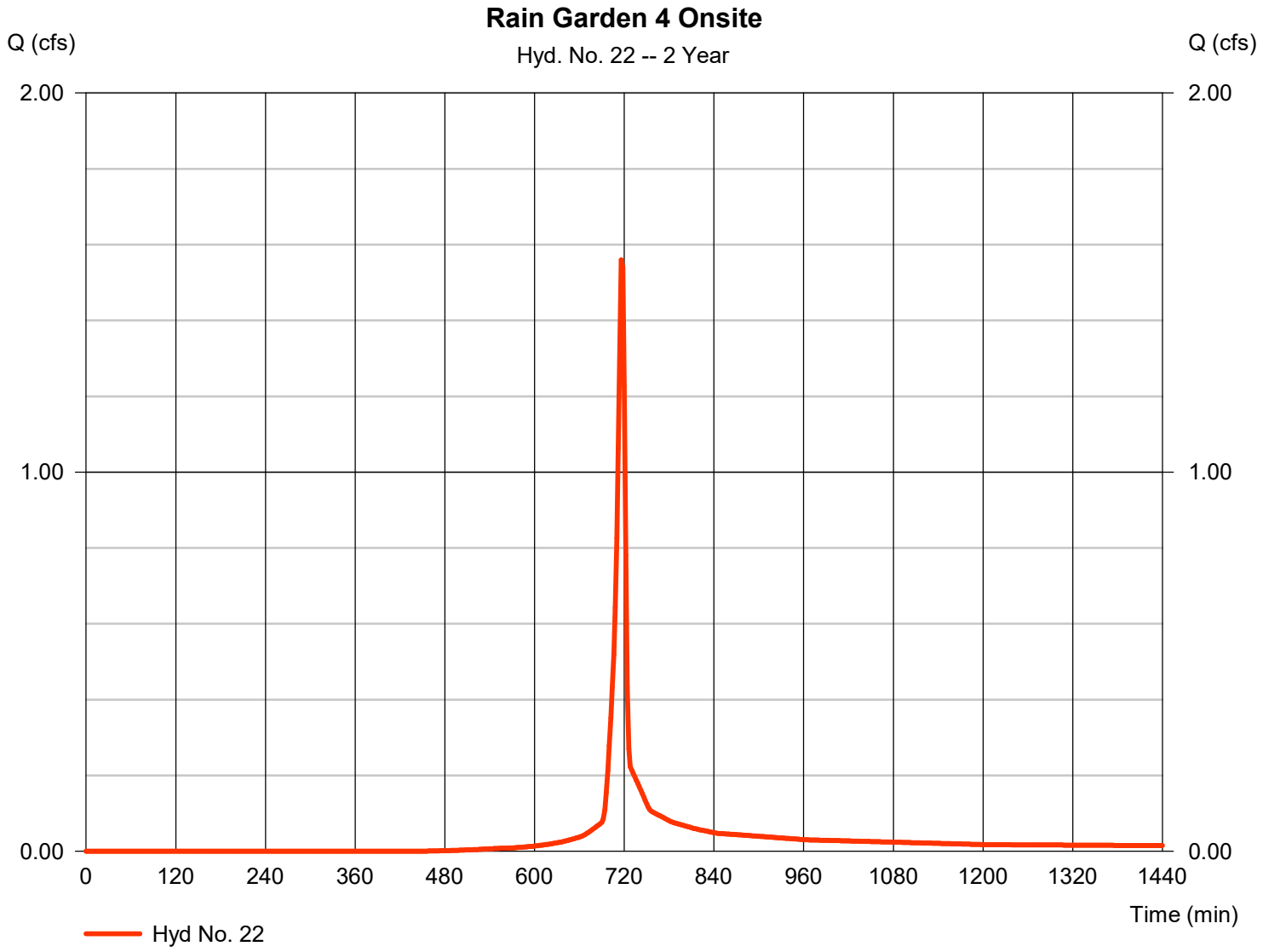
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 22

Rain Garden 4 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 1.560 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 3,166 cuft
Drainage area	= 0.500 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.360 x 80) + (0.140 x 98)] / 0.500



Hydrograph Report

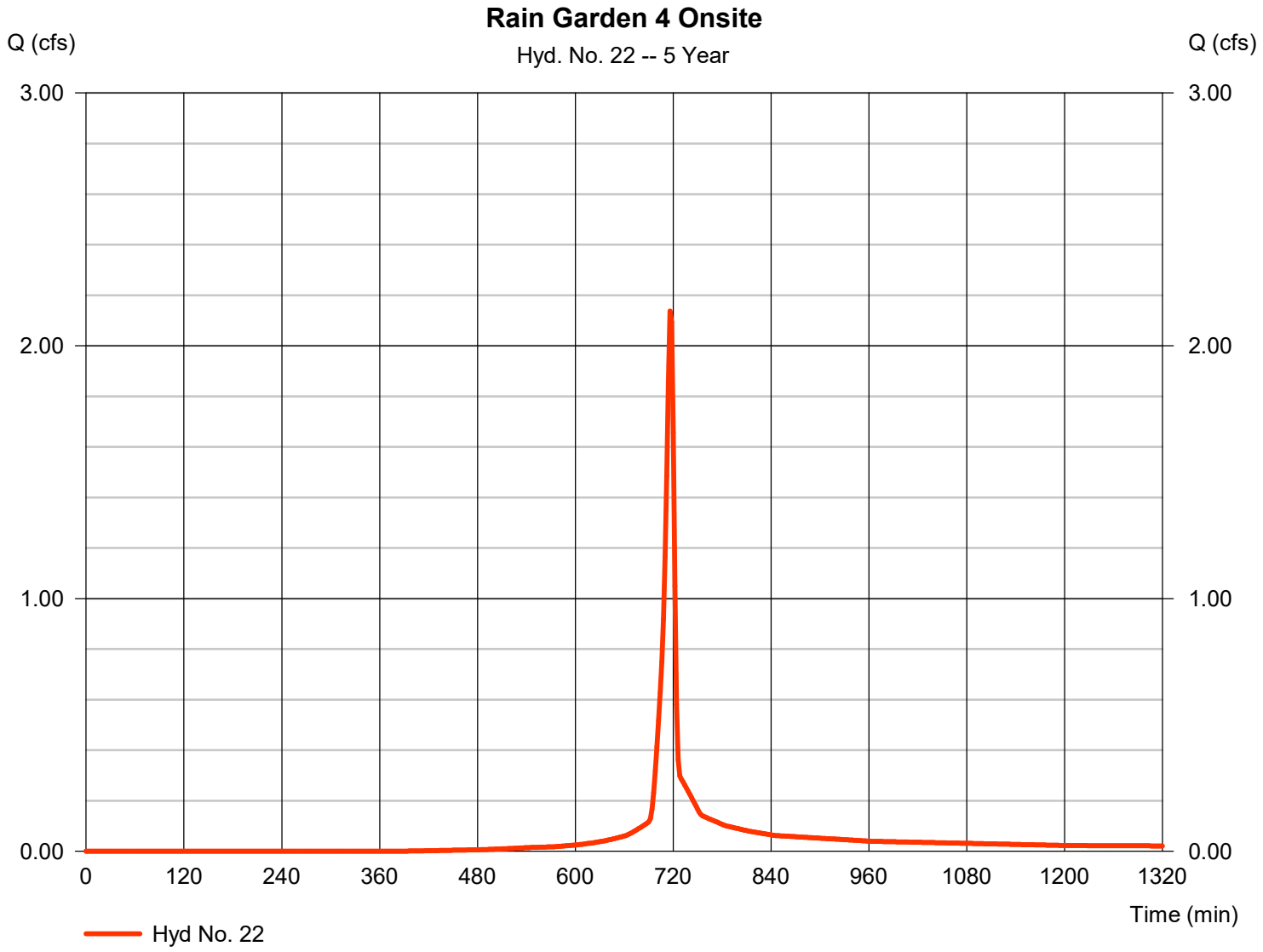
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 22

Rain Garden 4 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 2.137 cfs
Storm frequency	= 5 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 4,380 cuft
Drainage area	= 0.500 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.13 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.360 x 80) + (0.140 x 98)] / 0.500



Hydrograph Report

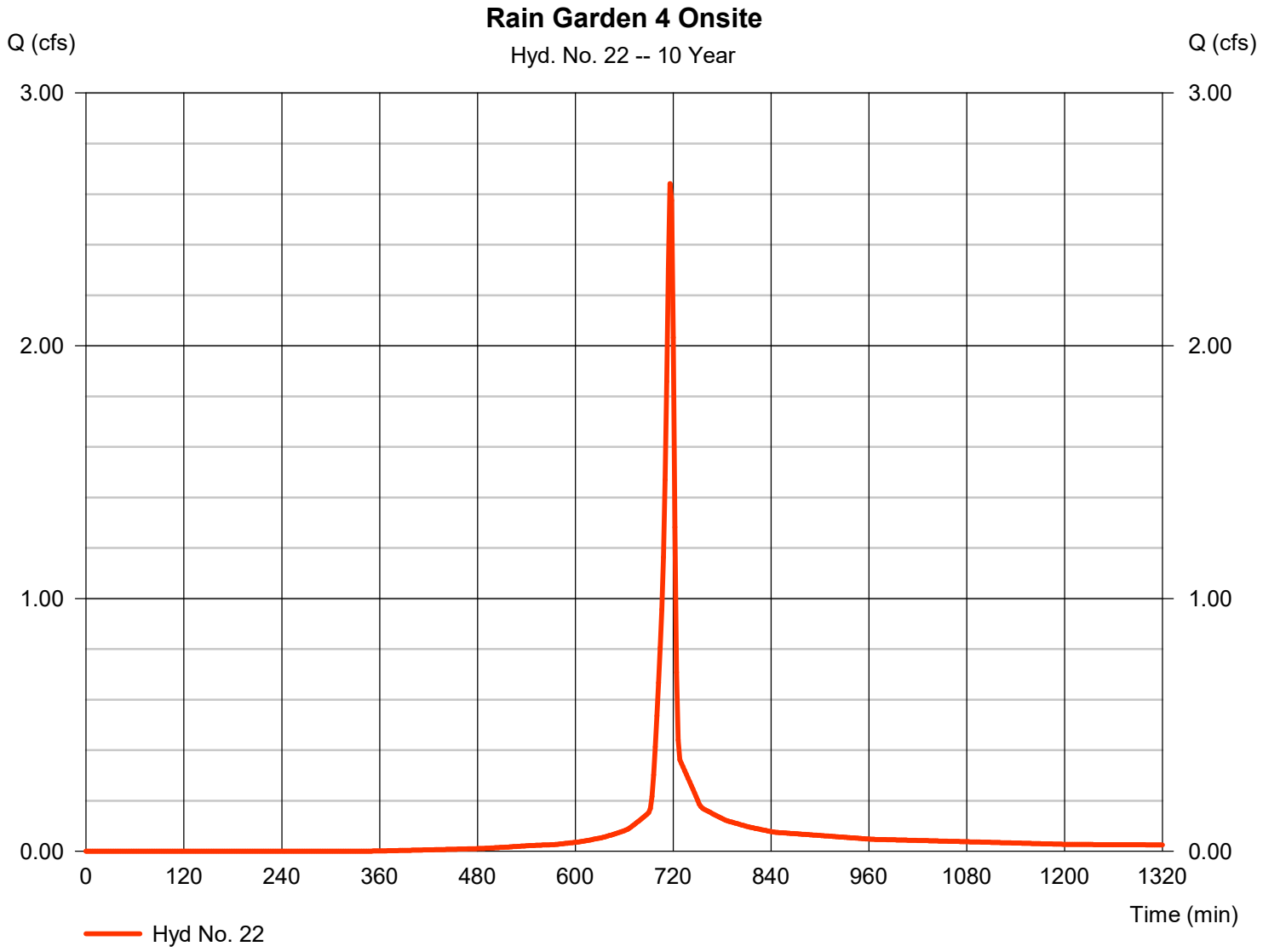
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 22

Rain Garden 4 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 2.641 cfs
Storm frequency	= 10 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 5,464 cuft
Drainage area	= 0.500 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.360 x 80) + (0.140 x 98)] / 0.500



Hydrograph Report

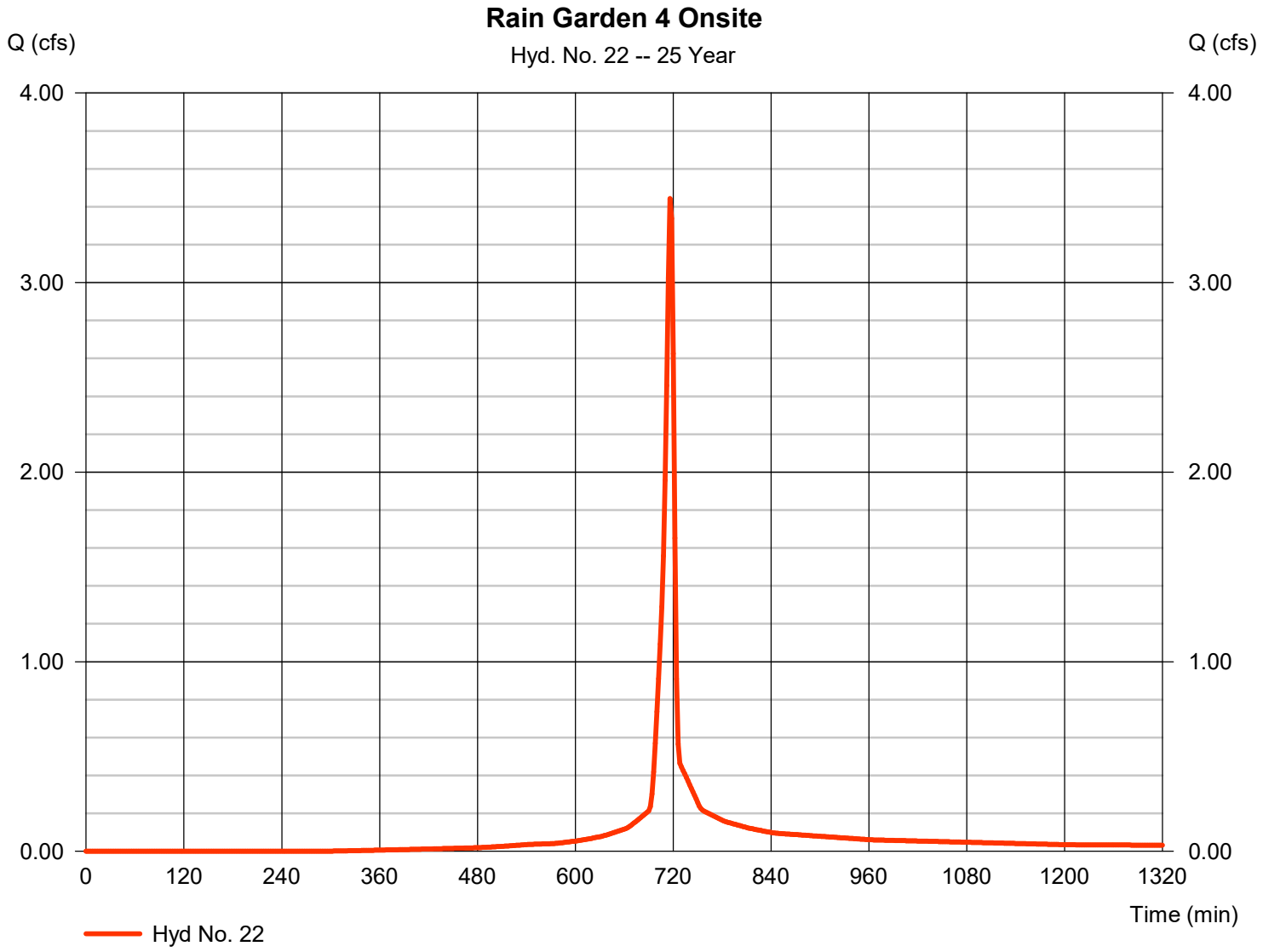
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 22

Rain Garden 4 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 3.443 cfs
Storm frequency	= 25 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 7,225 cuft
Drainage area	= 0.500 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.94 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.360 x 80) + (0.140 x 98)] / 0.500



Hydrograph Report

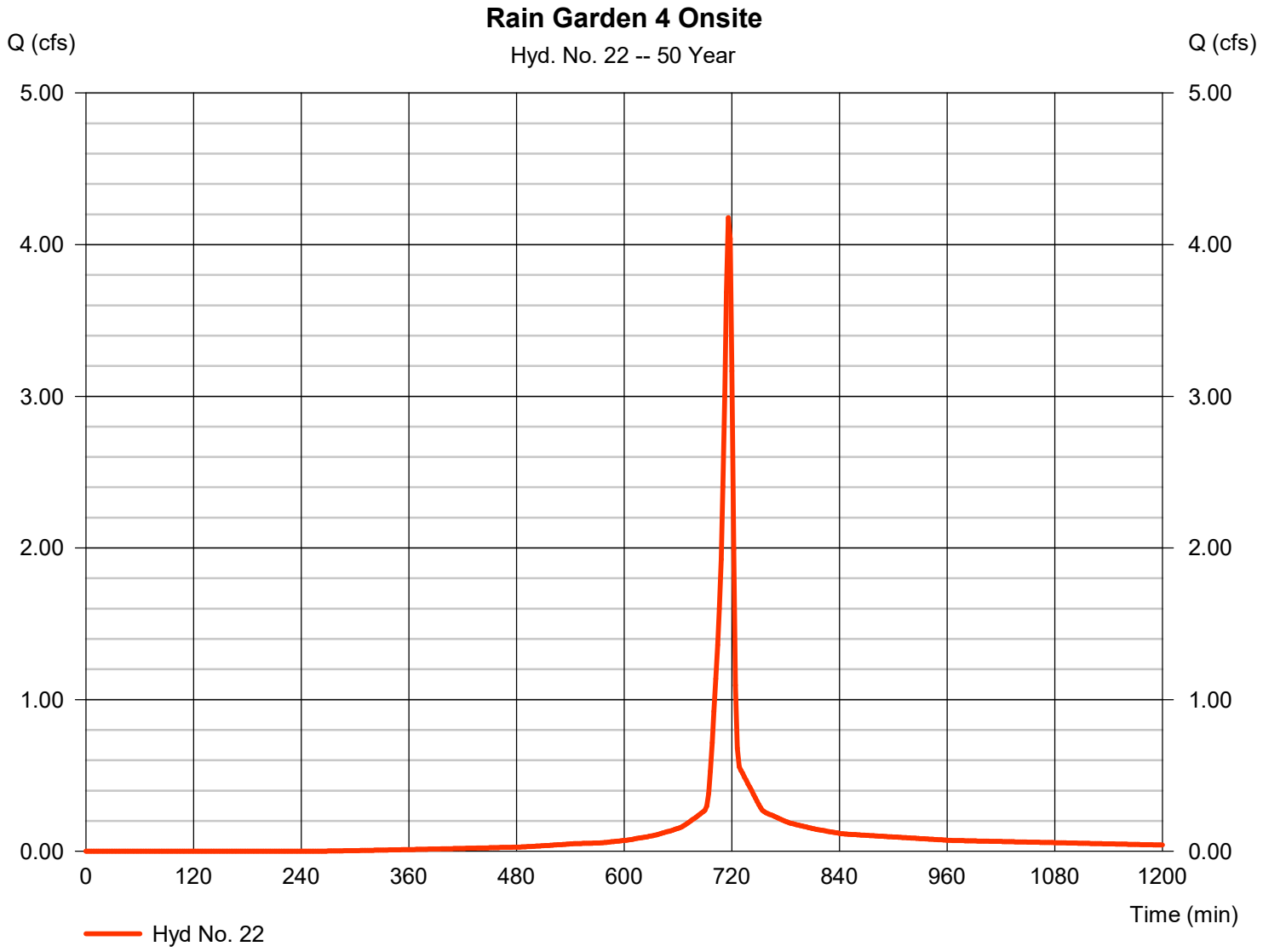
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 22

Rain Garden 4 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 4.178 cfs
Storm frequency	= 50 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 8,873 cuft
Drainage area	= 0.500 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.96 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.360 x 80) + (0.140 x 98)] / 0.500



Hydrograph Report

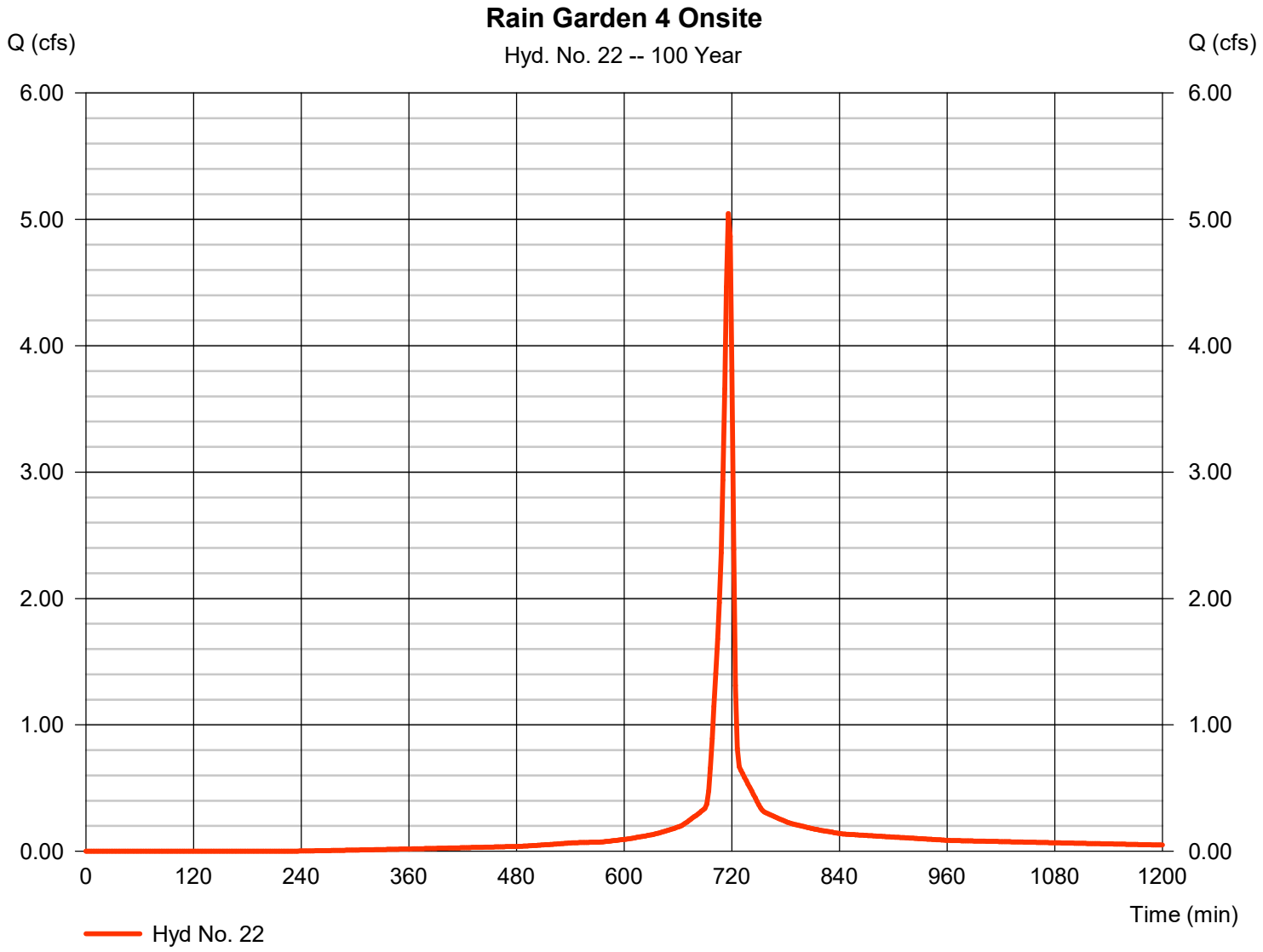
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 22

Rain Garden 4 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 5.047 cfs
Storm frequency	= 100 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 10,851 cuft
Drainage area	= 0.500 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 8.17 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.360 x 80) + (0.140 x 98)] / 0.500



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Pond No. 4 - RG 4

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 622.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	622.00	2,061	0	0
1.00	623.00	2,750	2,397	2,397
2.00	624.00	3,496	3,115	5,512
3.00	625.00	4,300	3,891	9,403

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 15.00	3.00	0.00	0.00
Span (in)	= 15.00	3.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 622.00	622.25	0.00	0.00
Length (ft)	= 50.00	1.00	0.00	0.00
Slope (%)	= 1.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

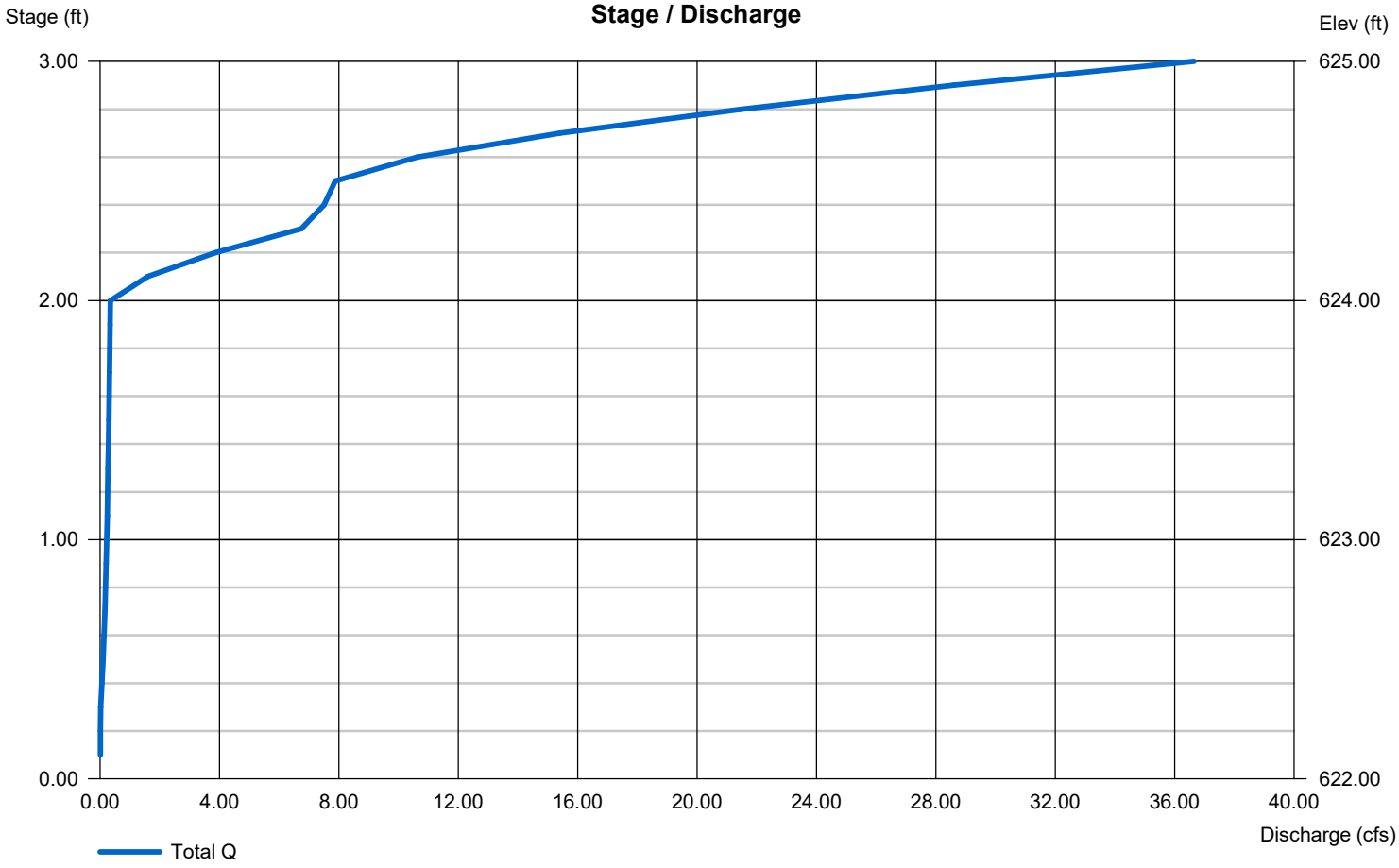
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 12.00	0.00	30.00	0.00
Crest El. (ft)	= 624.00	0.00	624.50	0.00
Weir Coeff.	= 3.33	3.33	2.60	3.33
Weir Type	= 1	---	Broad	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.500 (by Contour)

TW Elev. (ft) = 0.00

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



Hydrograph Report

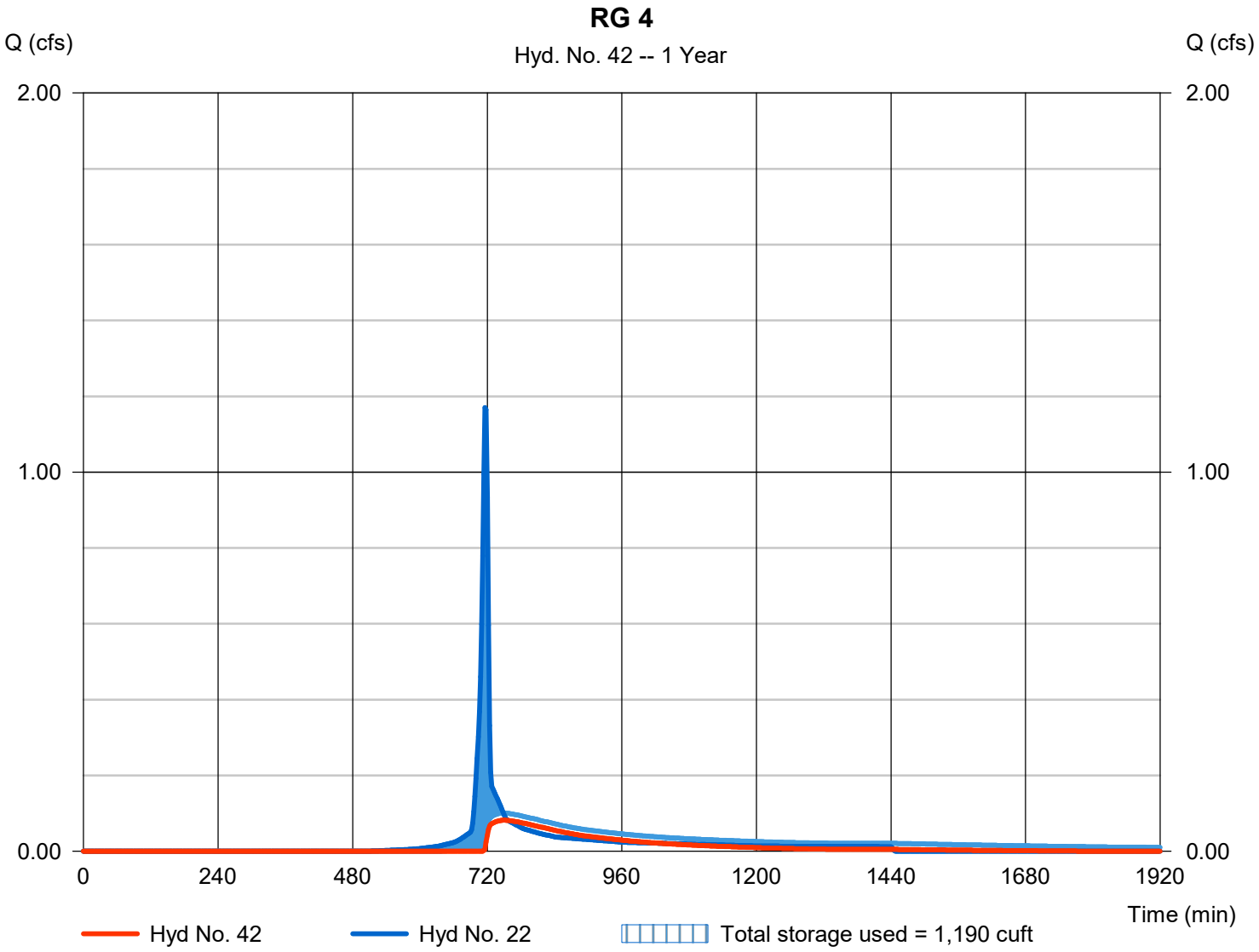
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 42

RG 4

Hydrograph type	=	Reservoir	Peak discharge	=	0.082 cfs
Storm frequency	=	1 yrs	Time to peak	=	750 min
Time interval	=	2 min	Hyd. volume	=	1,205 cuft
Inflow hyd. No.	=	22 - Rain Garden 4 Onsite	Max. Elevation	=	622.50 ft
Reservoir name	=	RG 4	Max. Storage	=	1,190 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

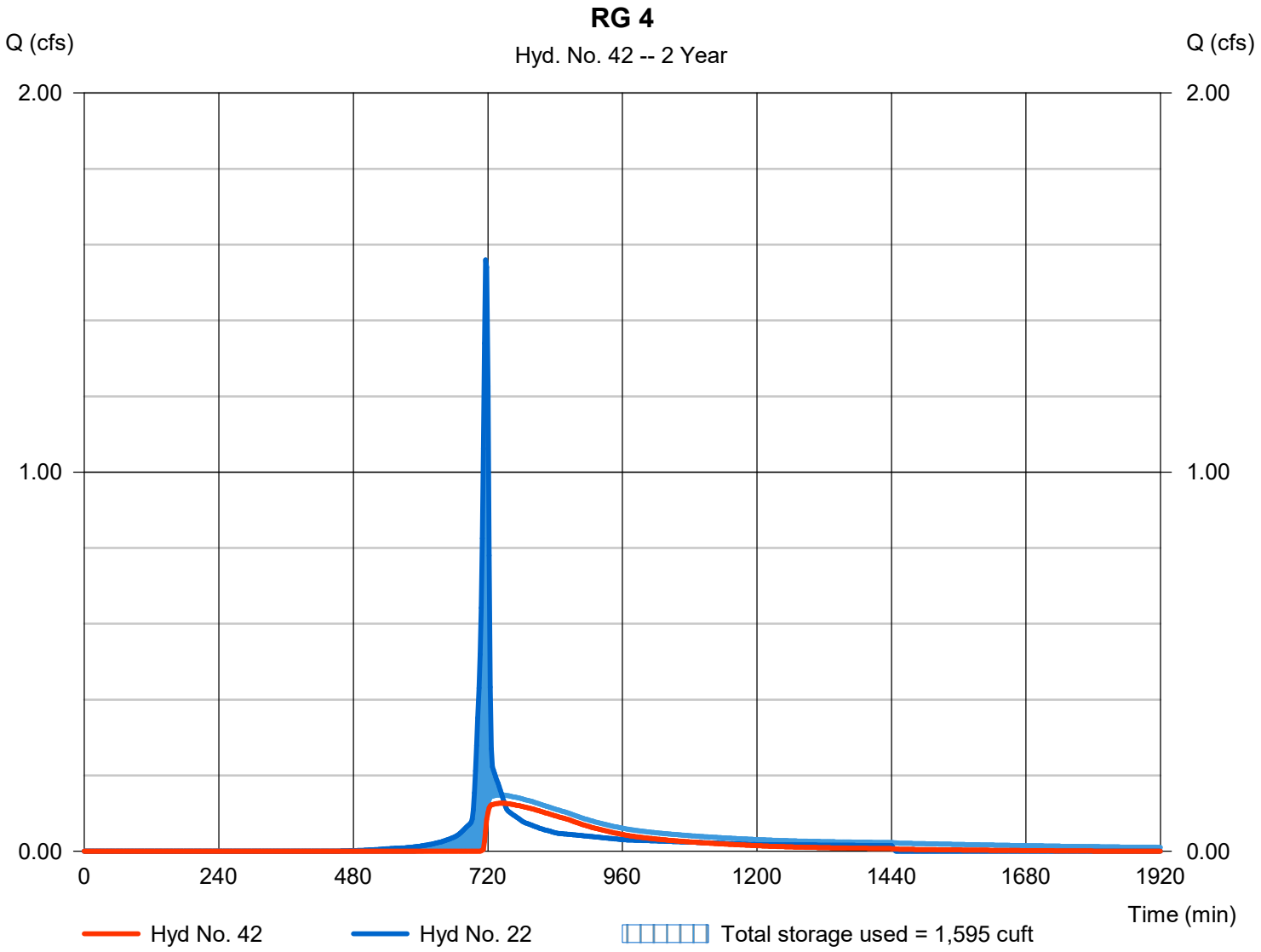
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 42

RG 4

Hydrograph type	=	Reservoir	Peak discharge	=	0.127 cfs
Storm frequency	=	2 yrs	Time to peak	=	744 min
Time interval	=	2 min	Hyd. volume	=	1,917 cuft
Inflow hyd. No.	=	22 - Rain Garden 4 Onsite	Max. Elevation	=	622.67 ft
Reservoir name	=	RG 4	Max. Storage	=	1,595 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

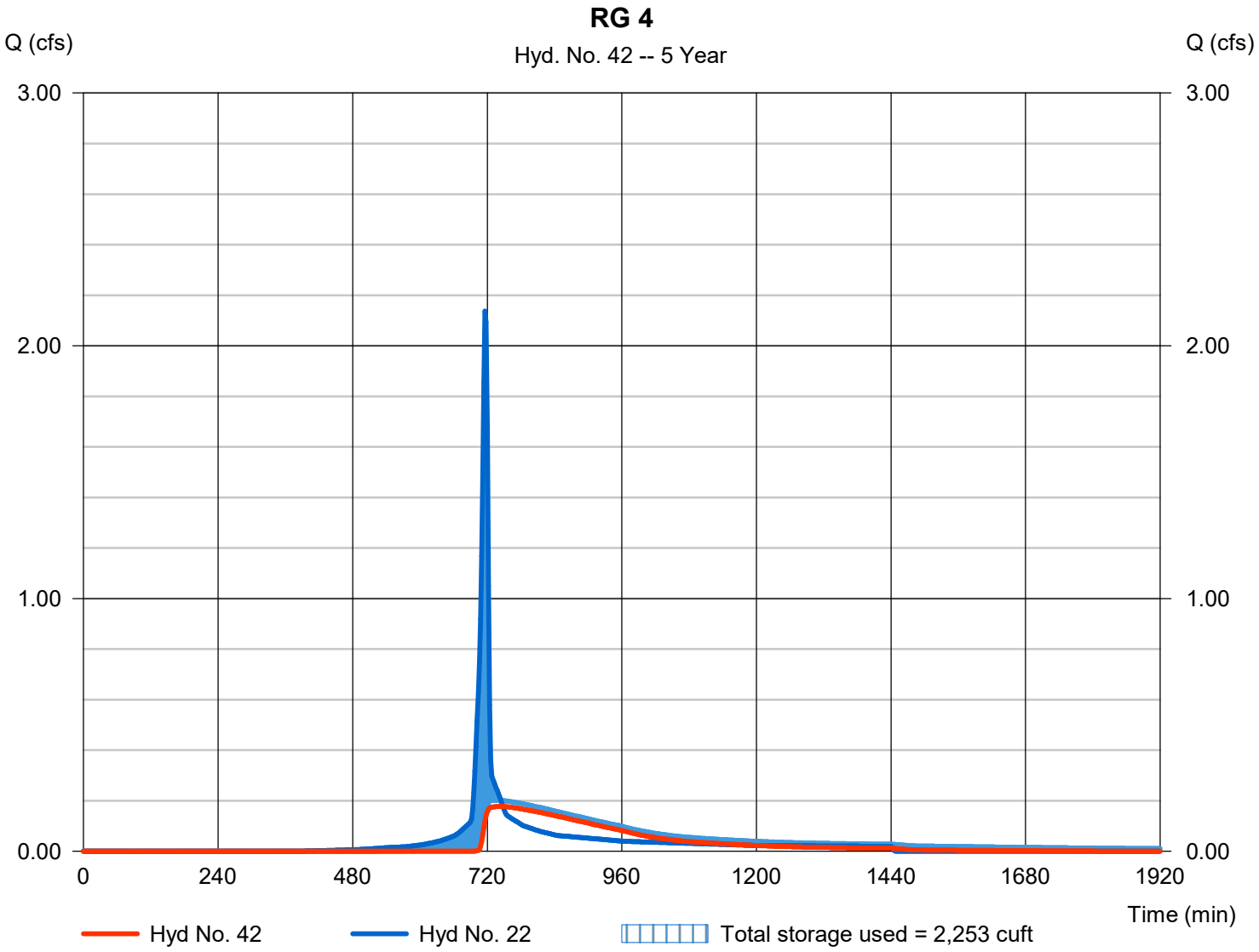
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 42

RG 4

Hydrograph type	=	Reservoir	Peak discharge	=	0.177 cfs
Storm frequency	=	5 yrs	Time to peak	=	744 min
Time interval	=	2 min	Hyd. volume	=	2,980 cuft
Inflow hyd. No.	=	22 - Rain Garden 4 Onsite	Max. Elevation	=	622.94 ft
Reservoir name	=	RG 4	Max. Storage	=	2,253 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

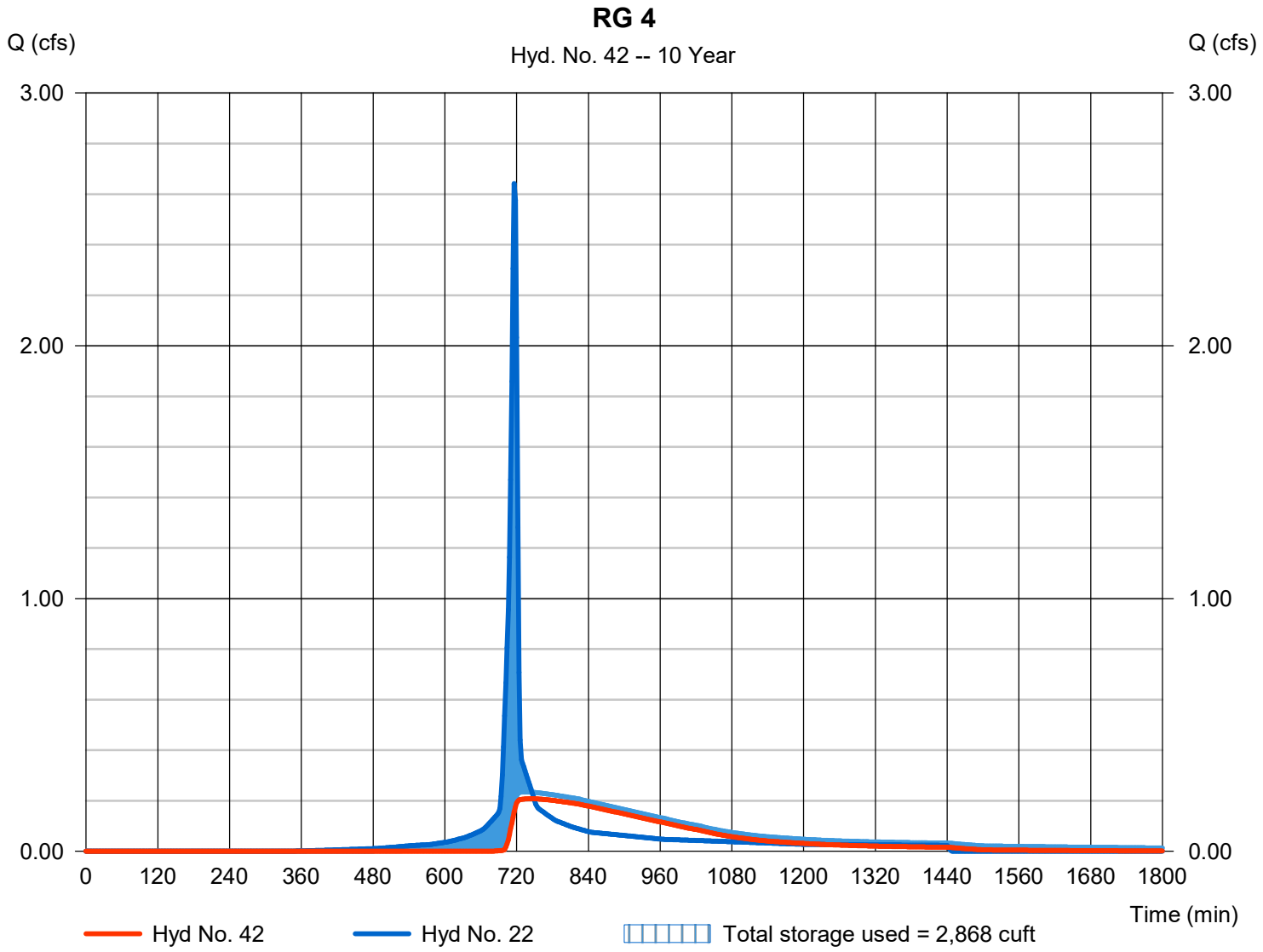
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 42

RG 4

Hydrograph type	=	Reservoir	Peak discharge	=	0.208 cfs
Storm frequency	=	10 yrs	Time to peak	=	744 min
Time interval	=	2 min	Hyd. volume	=	3,925 cuft
Inflow hyd. No.	=	22 - Rain Garden 4 Onsite	Max. Elevation	=	623.15 ft
Reservoir name	=	RG 4	Max. Storage	=	2,868 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

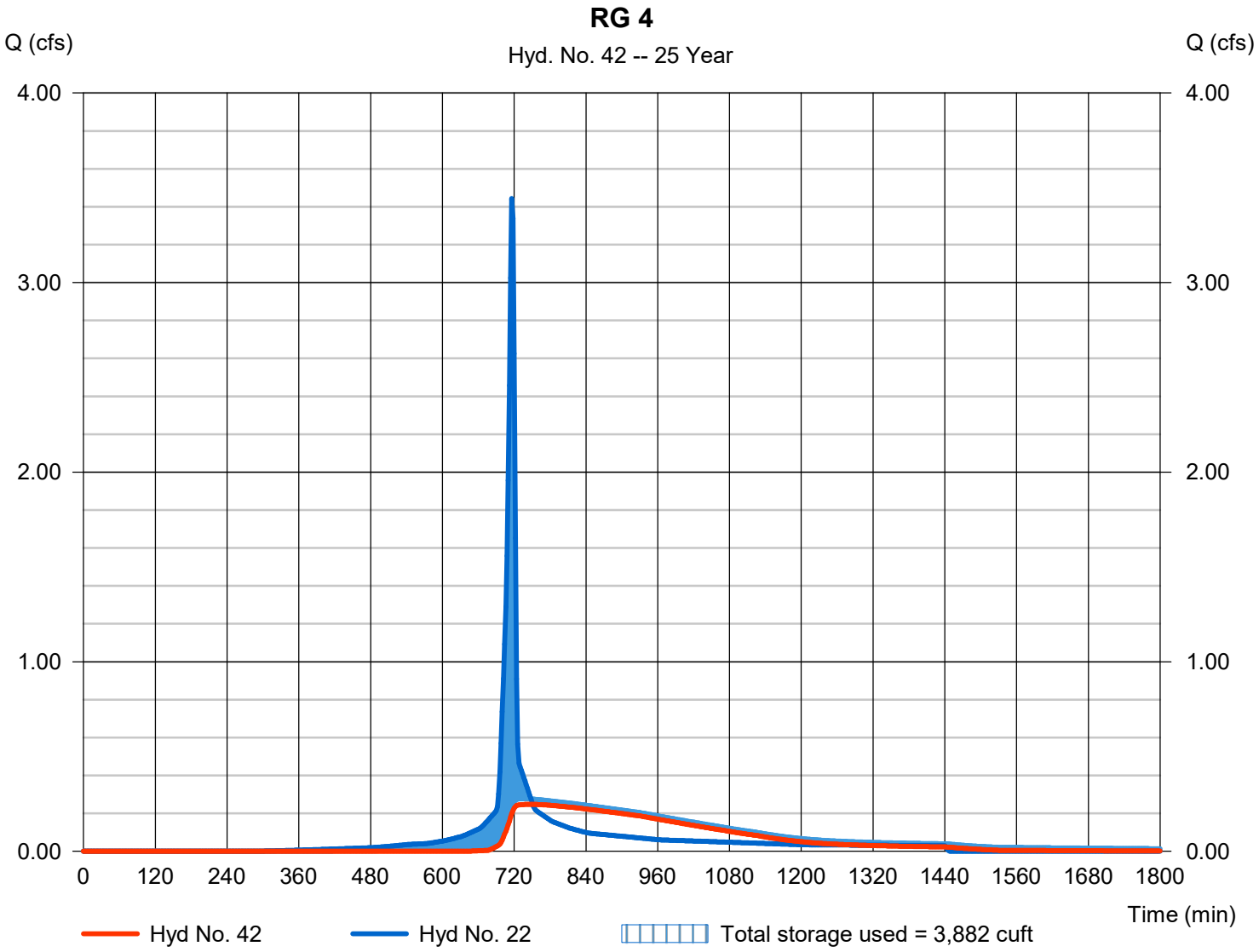
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 42

RG 4

Hydrograph type	=	Reservoir	Peak discharge	=	0.248 cfs
Storm frequency	=	25 yrs	Time to peak	=	748 min
Time interval	=	2 min	Hyd. volume	=	5,477 cuft
Inflow hyd. No.	=	22 - Rain Garden 4 Onsite	Max. Elevation	=	623.48 ft
Reservoir name	=	RG 4	Max. Storage	=	3,882 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

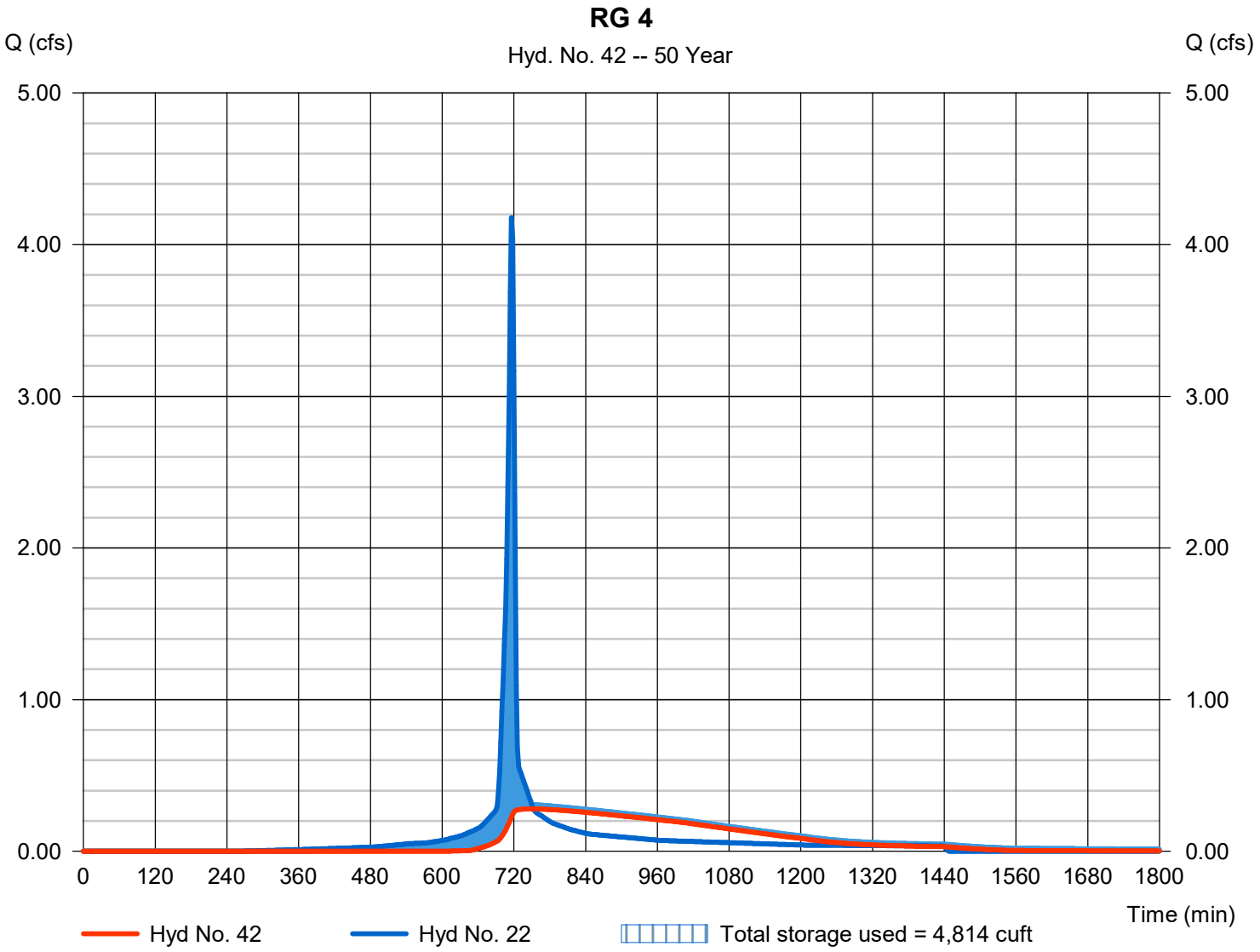
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 42

RG 4

Hydrograph type	=	Reservoir	Peak discharge	=	0.280 cfs
Storm frequency	=	50 yrs	Time to peak	=	750 min
Time interval	=	2 min	Hyd. volume	=	6,938 cuft
Inflow hyd. No.	=	22 - Rain Garden 4 Onsite	Max. Elevation	=	623.78 ft
Reservoir name	=	RG 4	Max. Storage	=	4,814 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

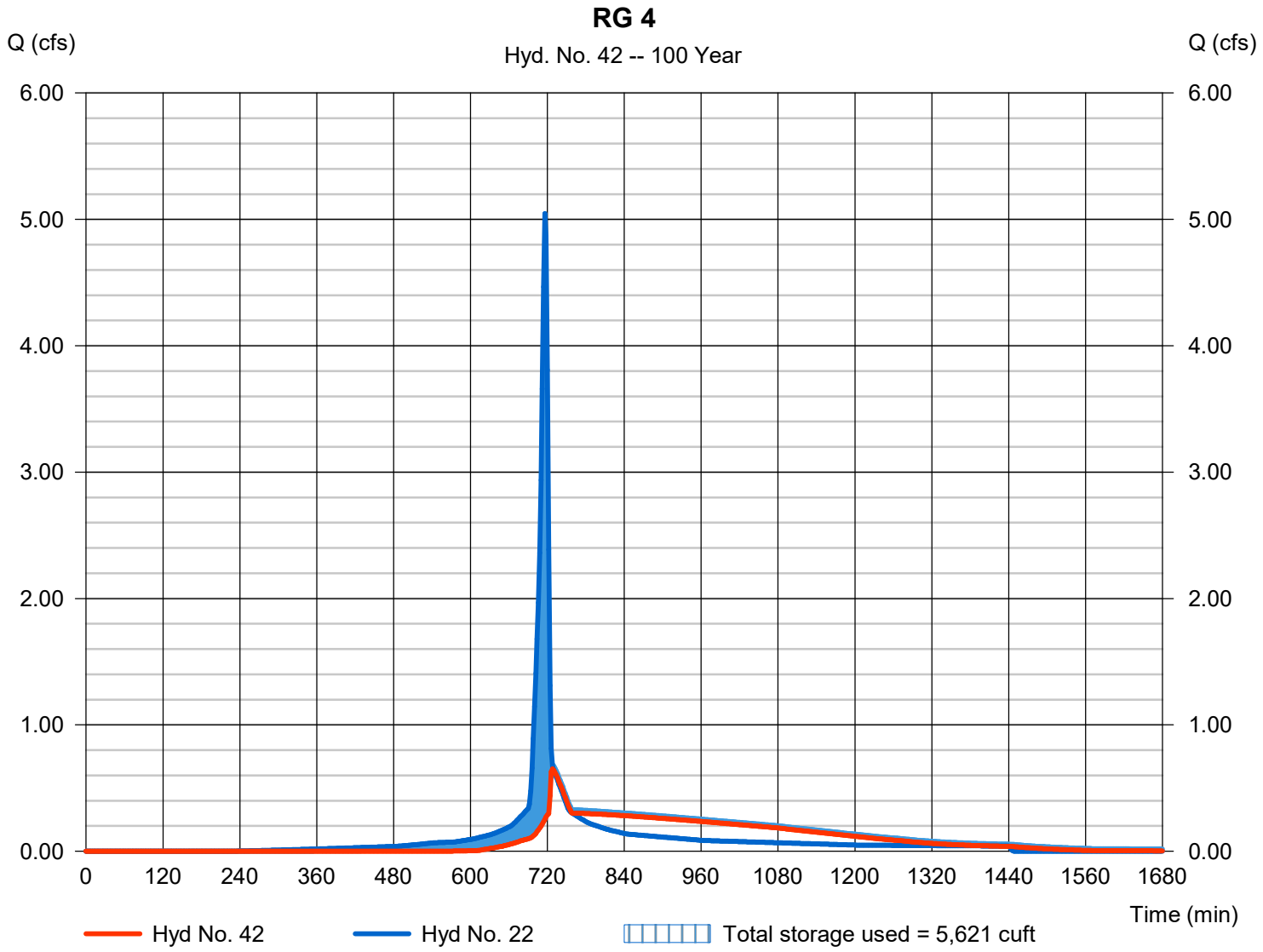
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 42

RG 4

Hydrograph type	=	Reservoir	Peak discharge	=	0.652 cfs
Storm frequency	=	100 yrs	Time to peak	=	728 min
Time interval	=	2 min	Hyd. volume	=	8,738 cuft
Inflow hyd. No.	=	22 - Rain Garden 4 Onsite	Max. Elevation	=	624.03 ft
Reservoir name	=	RG 4	Max. Storage	=	5,621 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Developed Conditions: Rain Garden 5 Onsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D			77					
Meadow	D			78					
Forest (Good)	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D	11,643	0.27	80	2.50	0.50	1.49	1450.40	0.03
Lawn, High-Input	D			84					
Golf Course Fairway/Green	D			80					
Grassed Athletic Field	D			80					
Rooftop	D			98					
High Traffic Street / Highway	D			93					
Medium Traffic Street	D			98					
Low Traffic / Residential Street	D			98					
Res. Driveway, Play Courts, etc.	D	3,867	0.09	98	0.20	0.04	3.09	994.76	0.02
Impervious Allowance	D	500	0.01	98	0.20	0.04	3.09	128.63	0.00
Low Traffic Parking Lot	D			98					
TOTAL:		16,010	0.37						0.05

Developed Conditions: Rain Garden 5 Offsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D	0		77					
Meadow	D			78					
Forest (Good)	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D			80					
Lawn, High-Input	D			84					
Golf Course Fairway/Green	D			80					
Grassed Athletic Field	D			80					
Rooftop	D			98					
High Traffic Street / Highway	D			93					
Medium Traffic Street	D			98					
Low Traffic / Residential Street	D			98					
Res. Driveway, Play Courts, etc.	D			98					
Impervious Allowance	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		0	0.00						

Hydrograph Report

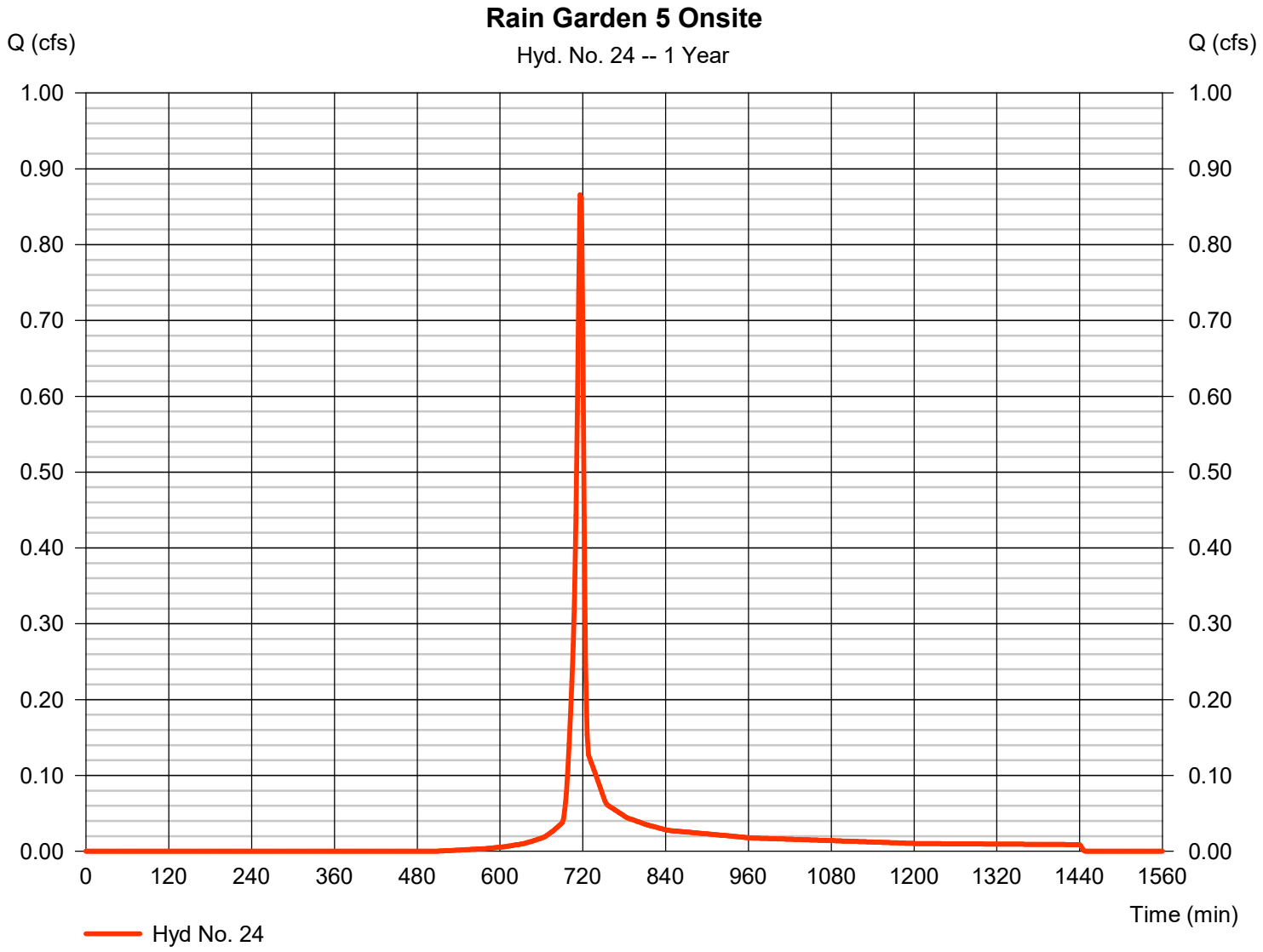
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 24

Rain Garden 5 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 0.866 cfs
Storm frequency	= 1 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 1,749 cuft
Drainage area	= 0.370 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.76 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.270 x 80) + (0.100 x 98)] / 0.370



Hydrograph Report

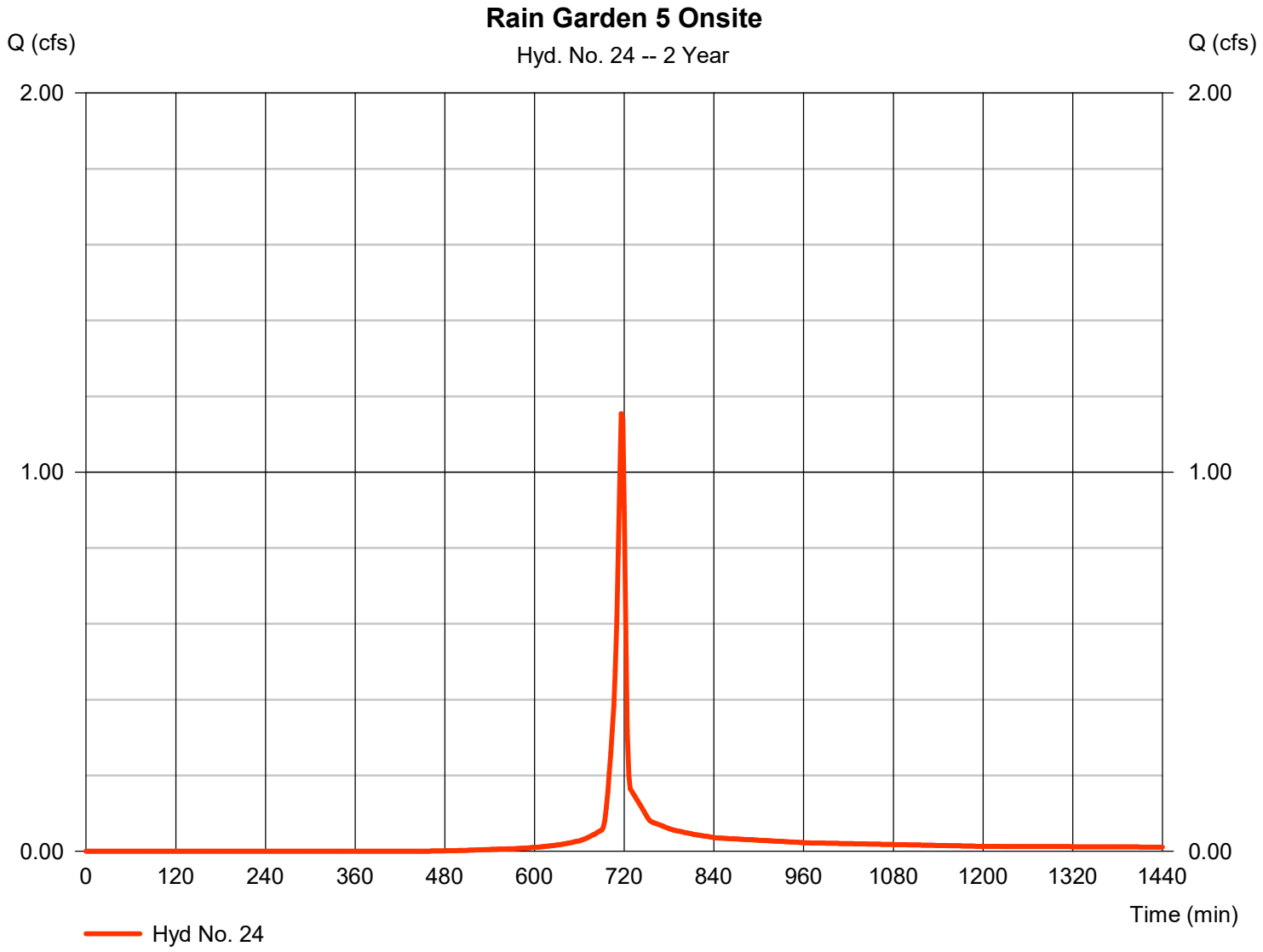
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 24

Rain Garden 5 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 1.154 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 2,343 cuft
Drainage area	= 0.370 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.270 x 80) + (0.100 x 98)] / 0.370



Hydrograph Report

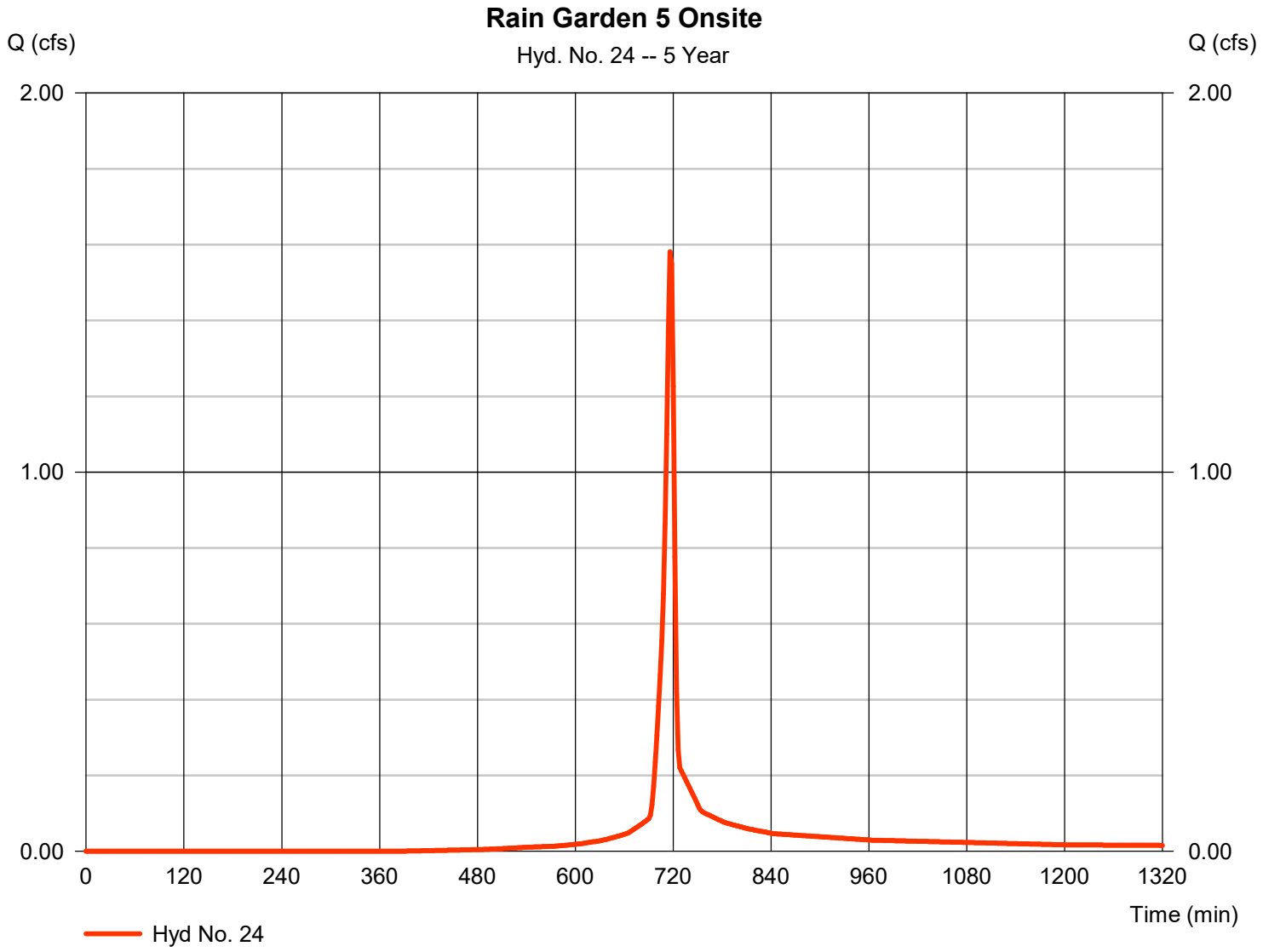
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 24

Rain Garden 5 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 1.581 cfs
Storm frequency	= 5 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 3,241 cuft
Drainage area	= 0.370 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.13 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.270 x 80) + (0.100 x 98)] / 0.370



Hydrograph Report

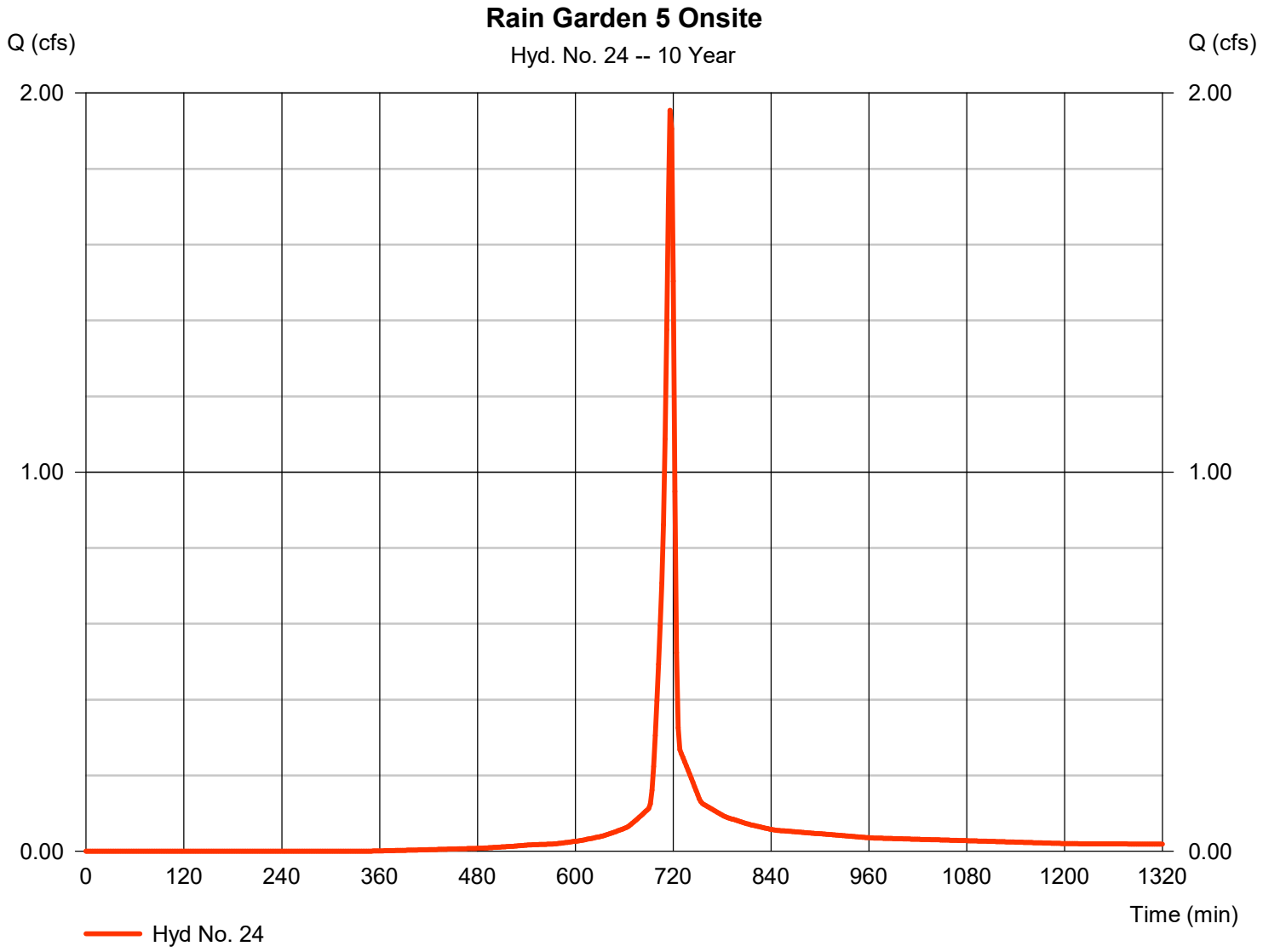
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 24

Rain Garden 5 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 1.954 cfs
Storm frequency	= 10 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 4,044 cuft
Drainage area	= 0.370 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.270 x 80) + (0.100 x 98)] / 0.370



Hydrograph Report

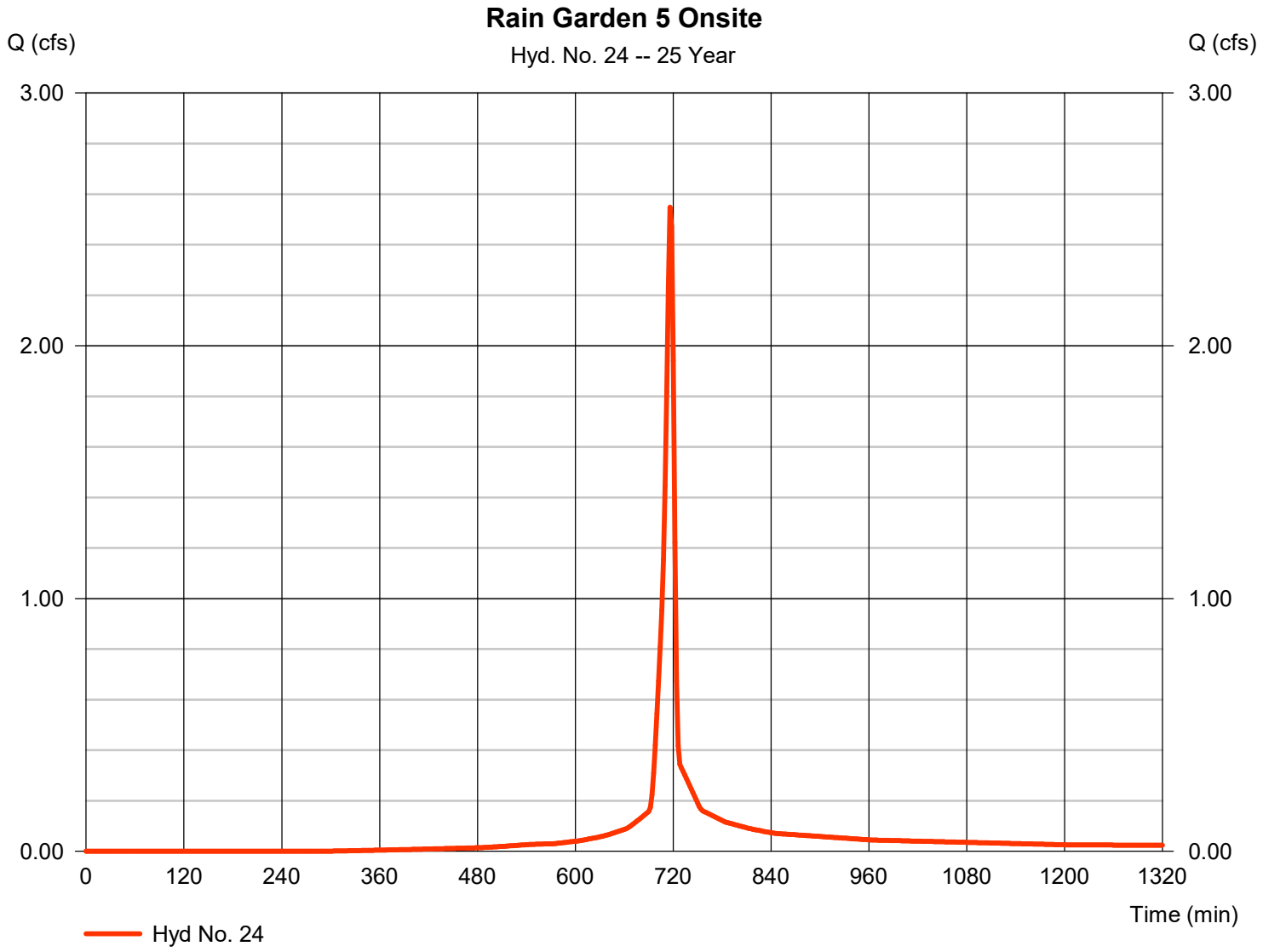
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 24

Rain Garden 5 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 2.548 cfs
Storm frequency	= 25 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 5,346 cuft
Drainage area	= 0.370 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.94 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.270 x 80) + (0.100 x 98)] / 0.370



Hydrograph Report

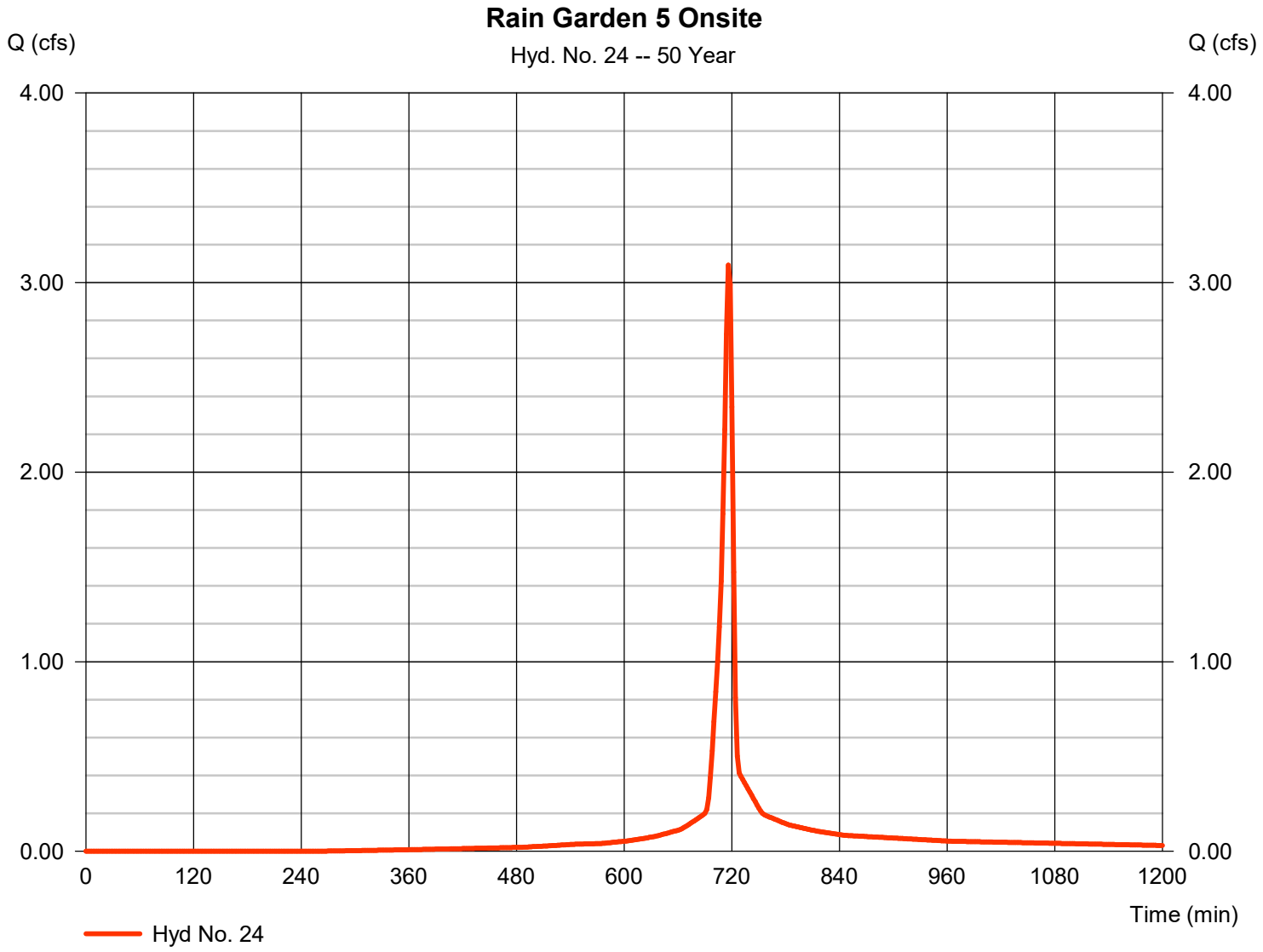
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 24

Rain Garden 5 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 3.092 cfs
Storm frequency	= 50 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 6,566 cuft
Drainage area	= 0.370 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.96 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.270 x 80) + (0.100 x 98)] / 0.370



Hydrograph Report

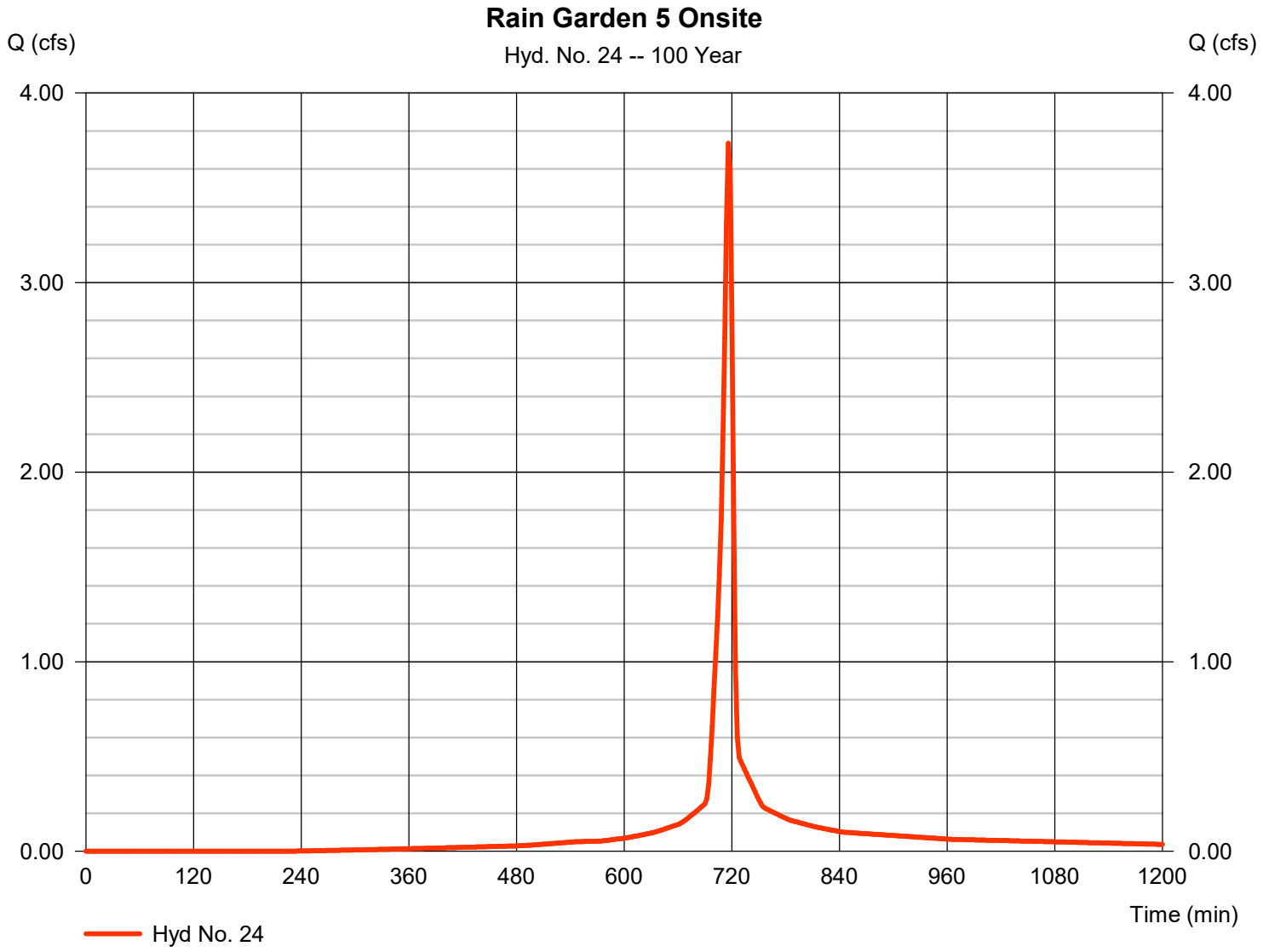
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 24

Rain Garden 5 Onsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.734 cfs
Storm frequency	=	100 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	8,030 cuft
Drainage area	=	0.370 ac	Curve number	=	85*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	8.17 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.270 x 80) + (0.100 x 98)] / 0.370



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Pond No. 5 - RG 5

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 633.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	633.00	1,050	0	0
1.00	634.00	1,534	1,284	1,284
2.00	635.00	2,076	1,798	3,082

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 15.00	6.00	0.00	0.00
Span (in)	= 15.00	36.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 633.00	633.75	0.00	0.00
Length (ft)	= 50.00	1.00	0.00	0.00
Slope (%)	= 1.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

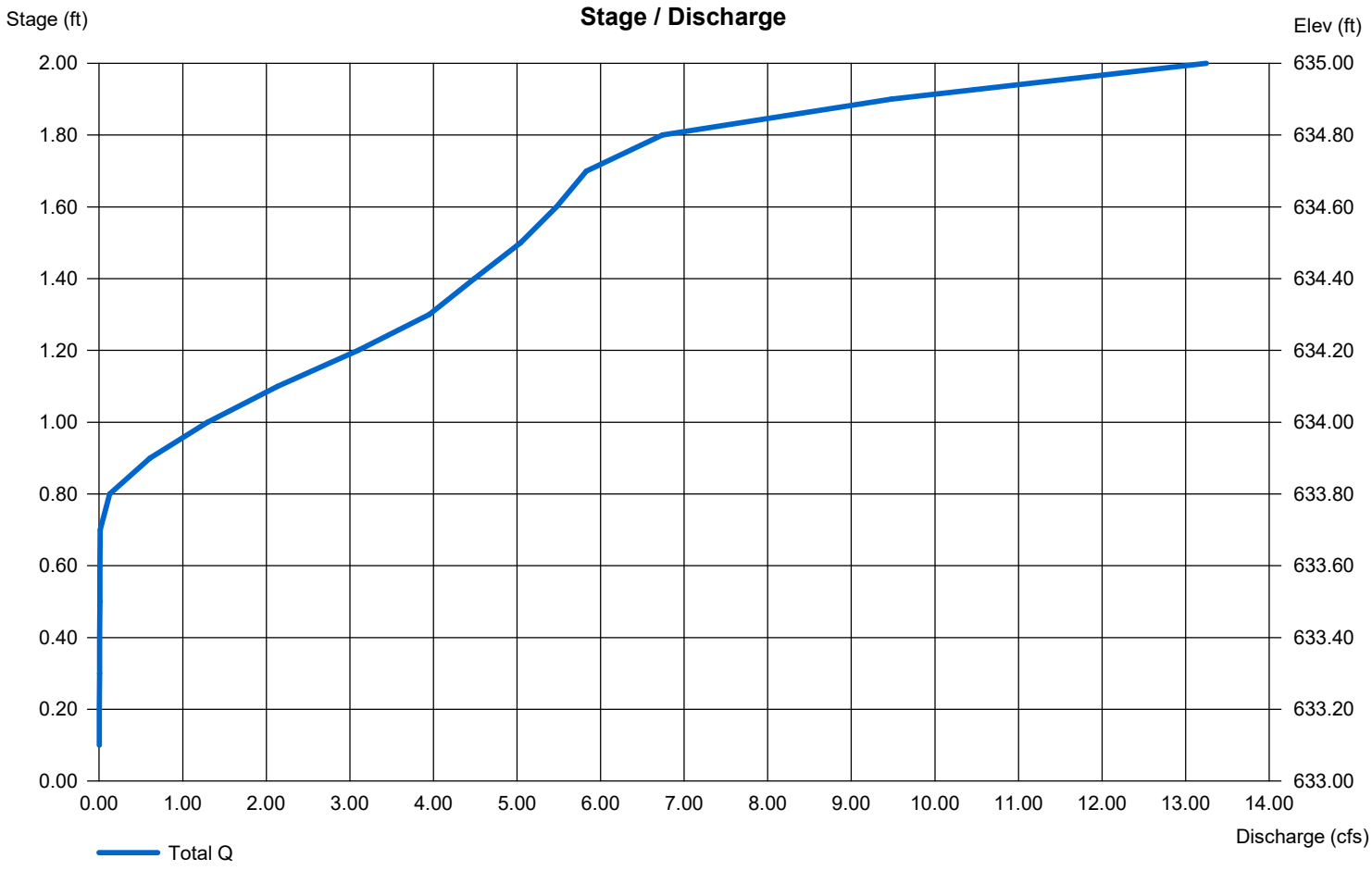
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 12.00	0.00	20.00	0.00
Crest El. (ft)	= 634.25	0.00	634.75	0.00
Weir Coeff.	= 3.33	3.33	2.60	3.33
Weir Type	= 1	---	Broad	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.500 (by Contour)

TW Elev. (ft) = 0.00

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



Hydrograph Report

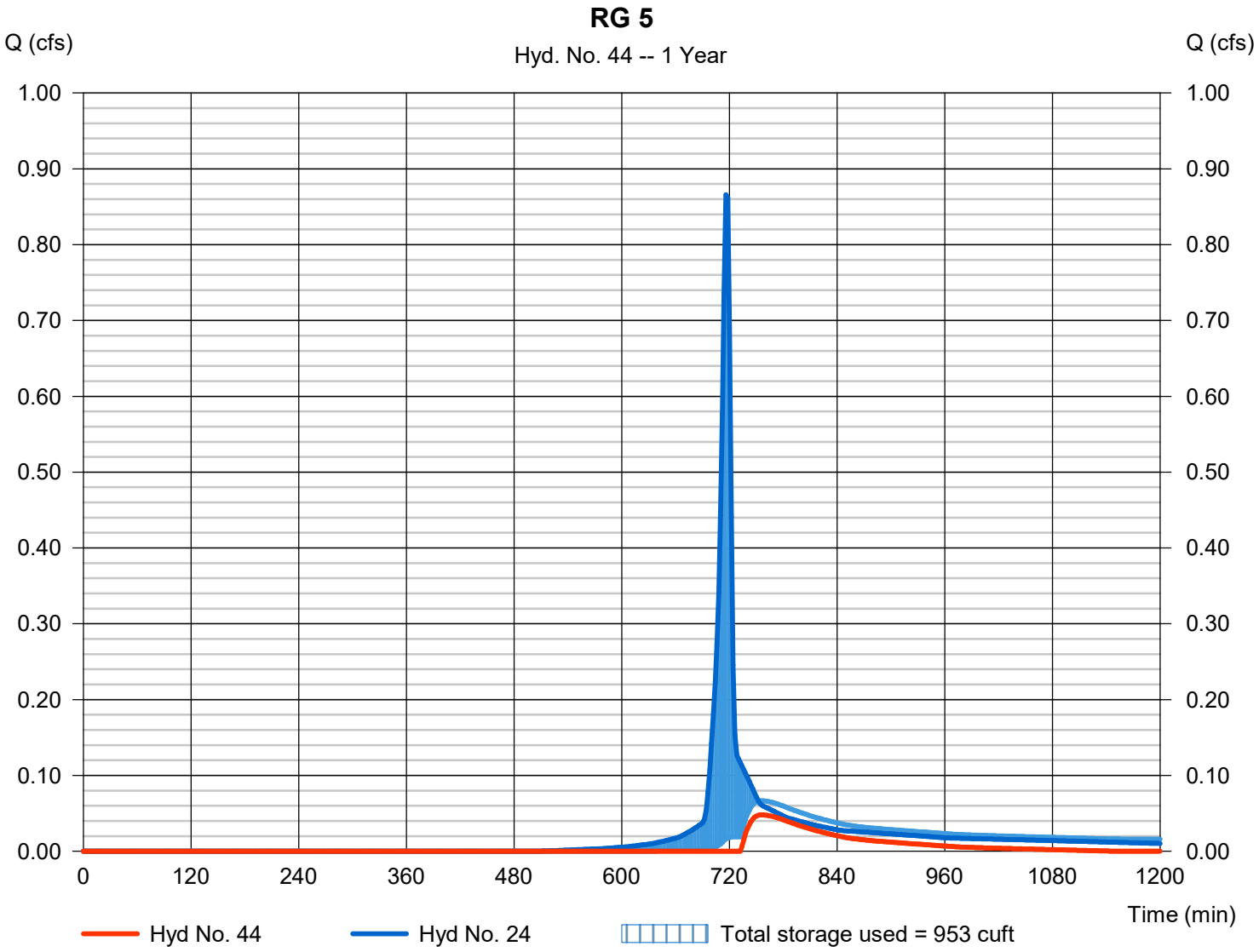
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 44

RG 5

Hydrograph type	=	Reservoir	Peak discharge	=	0.048 cfs
Storm frequency	=	1 yrs	Time to peak	=	756 min
Time interval	=	2 min	Hyd. volume	=	345 cuft
Inflow hyd. No.	=	24 - Rain Garden 5 Onsite	Max. Elevation	=	633.74 ft
Reservoir name	=	RG 5	Max. Storage	=	953 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

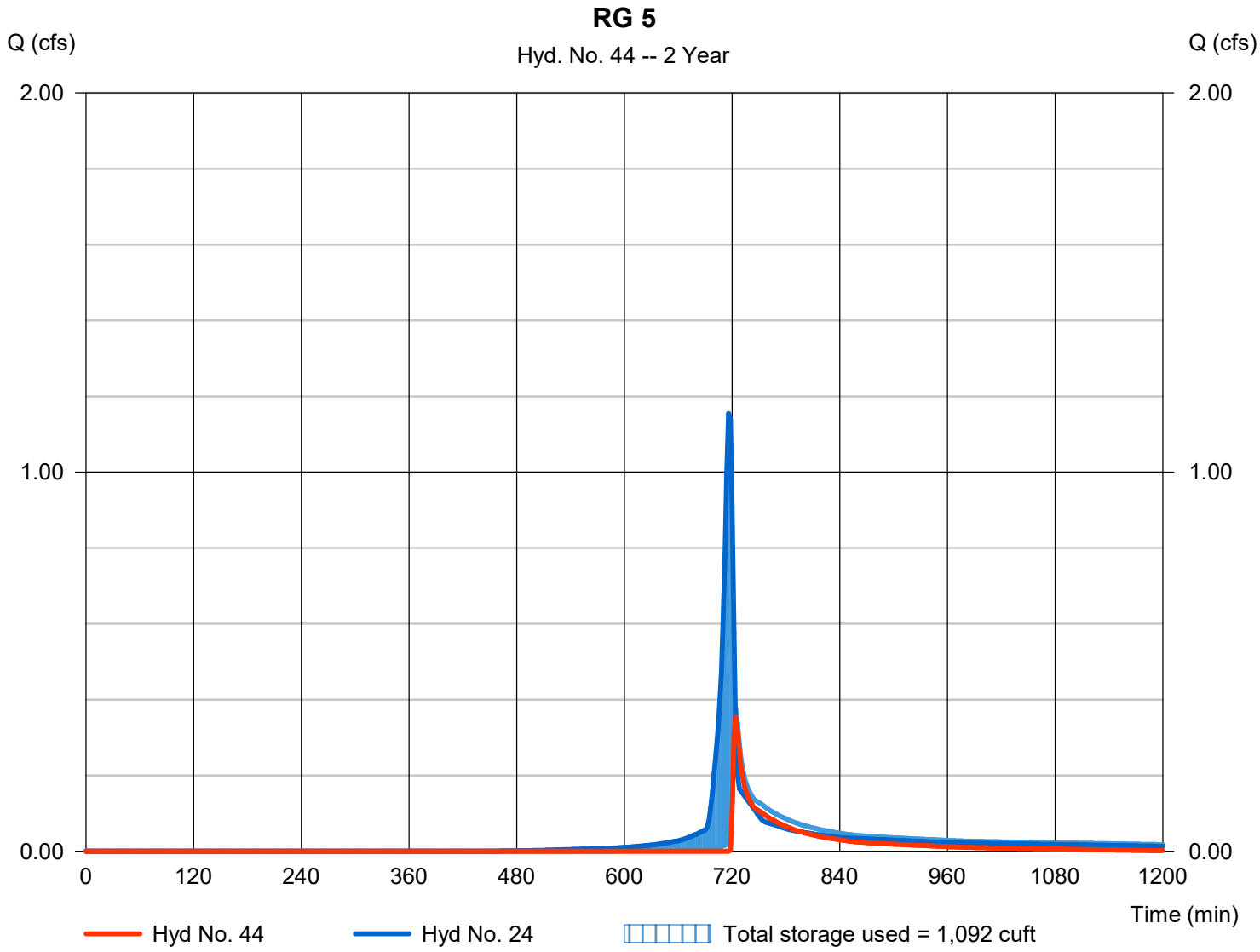
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 44

RG 5

Hydrograph type	=	Reservoir	Peak discharge	=	0.354 cfs
Storm frequency	=	2 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	885 cuft
Inflow hyd. No.	=	24 - Rain Garden 5 Onsite	Max. Elevation	=	633.85 ft
Reservoir name	=	RG 5	Max. Storage	=	1,092 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

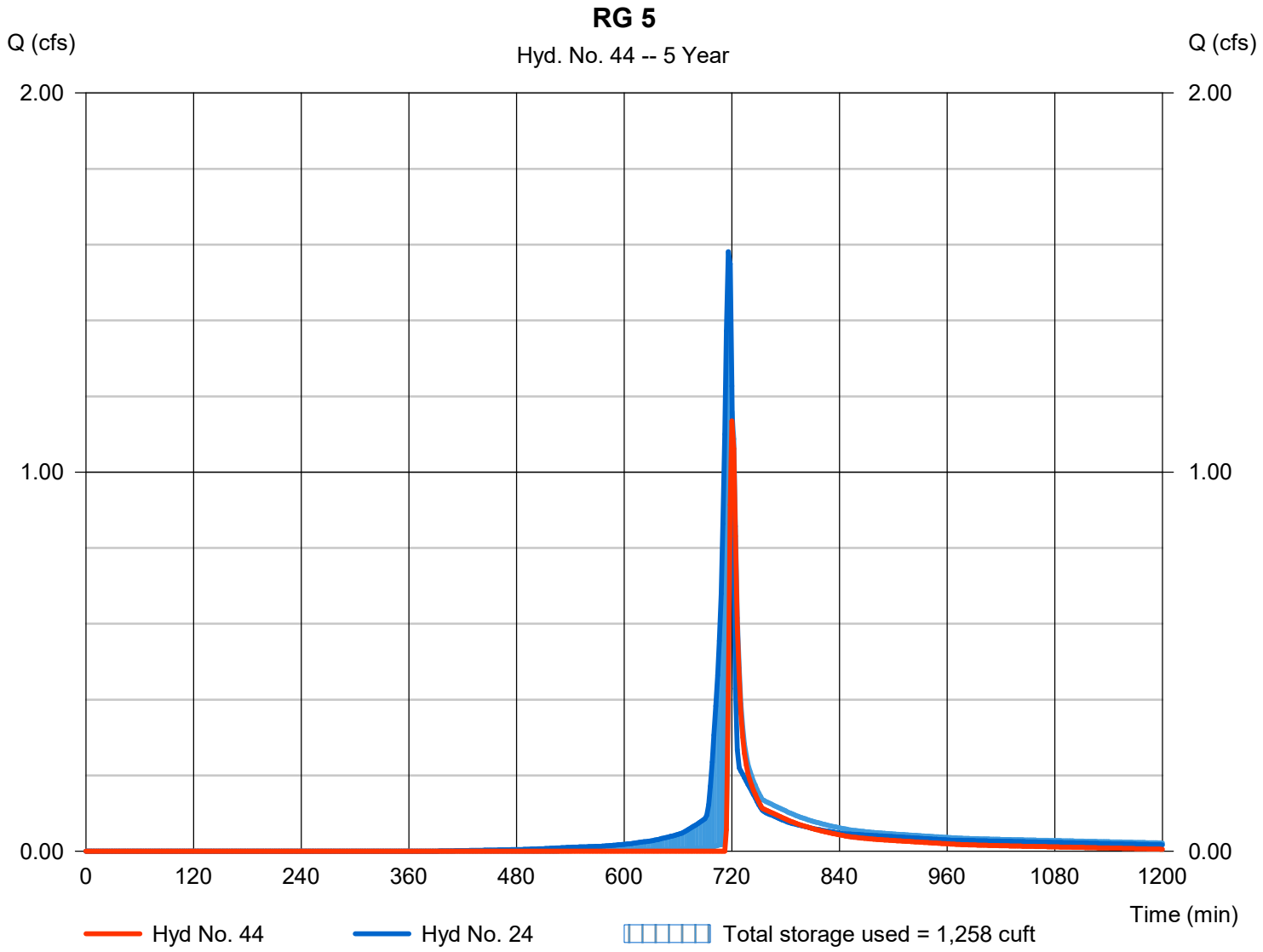
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 44

RG 5

Hydrograph type	=	Reservoir	Peak discharge	=	1.135 cfs
Storm frequency	=	5 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	1,754 cuft
Inflow hyd. No.	=	24 - Rain Garden 5 Onsite	Max. Elevation	=	633.98 ft
Reservoir name	=	RG 5	Max. Storage	=	1,258 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

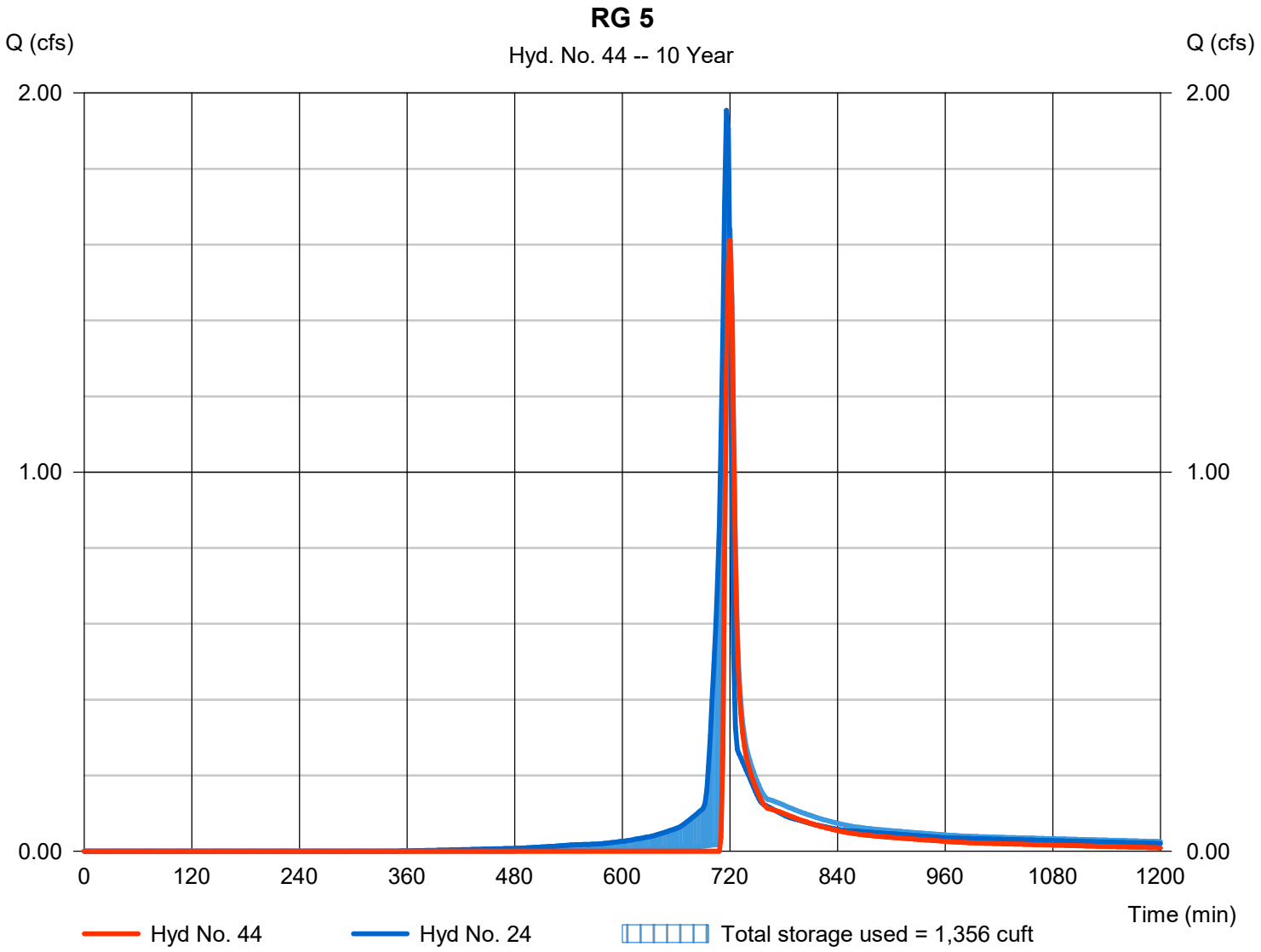
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 44

RG 5

Hydrograph type	=	Reservoir	Peak discharge	=	1.612 cfs
Storm frequency	=	10 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	2,535 cuft
Inflow hyd. No.	=	24 - Rain Garden 5 Onsite	Max. Elevation	=	634.04 ft
Reservoir name	=	RG 5	Max. Storage	=	1,356 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

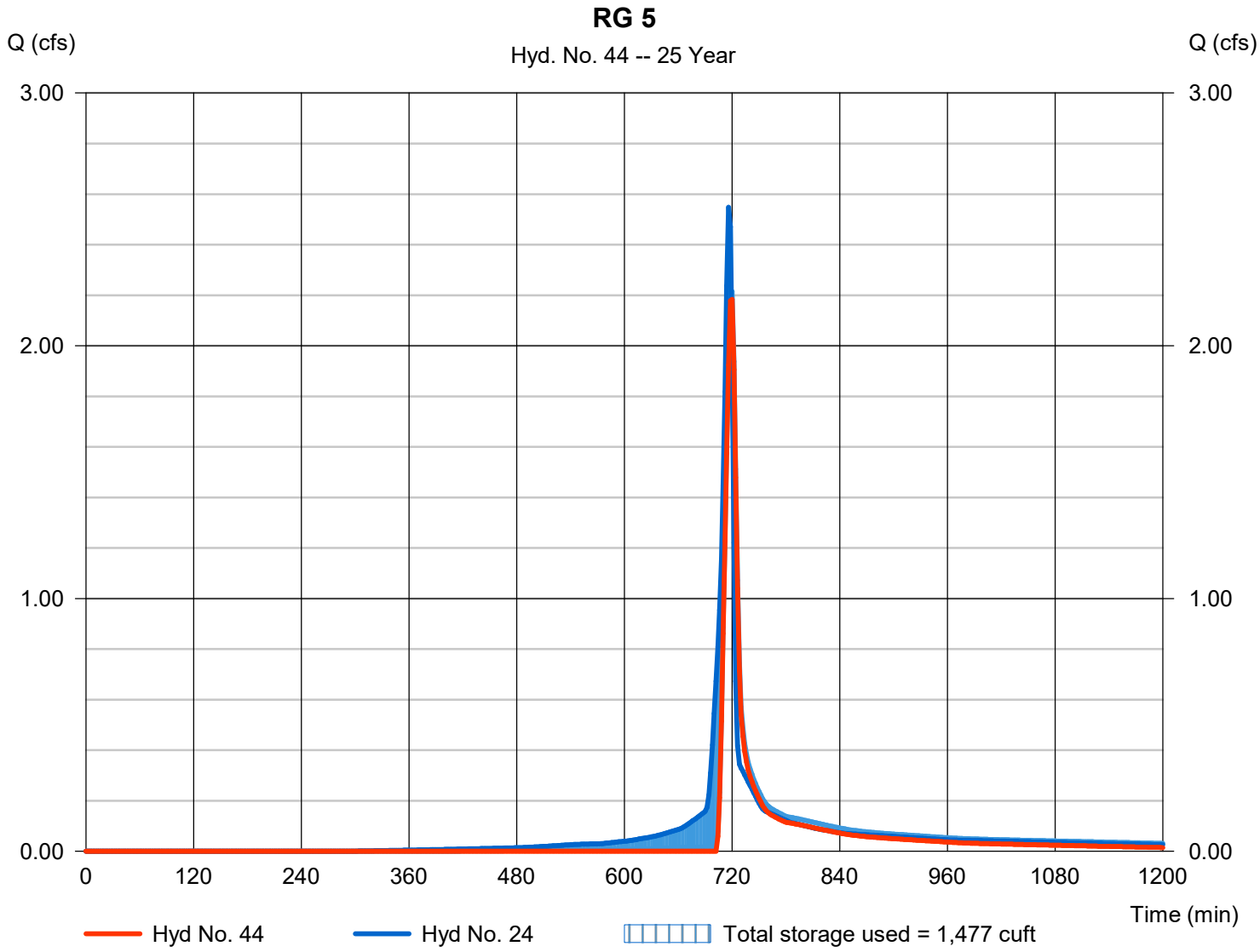
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 44

RG 5

Hydrograph type	=	Reservoir	Peak discharge	=	2.183 cfs
Storm frequency	=	25 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	3,803 cuft
Inflow hyd. No.	=	24 - Rain Garden 5 Onsite	Max. Elevation	=	634.11 ft
Reservoir name	=	RG 5	Max. Storage	=	1,477 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

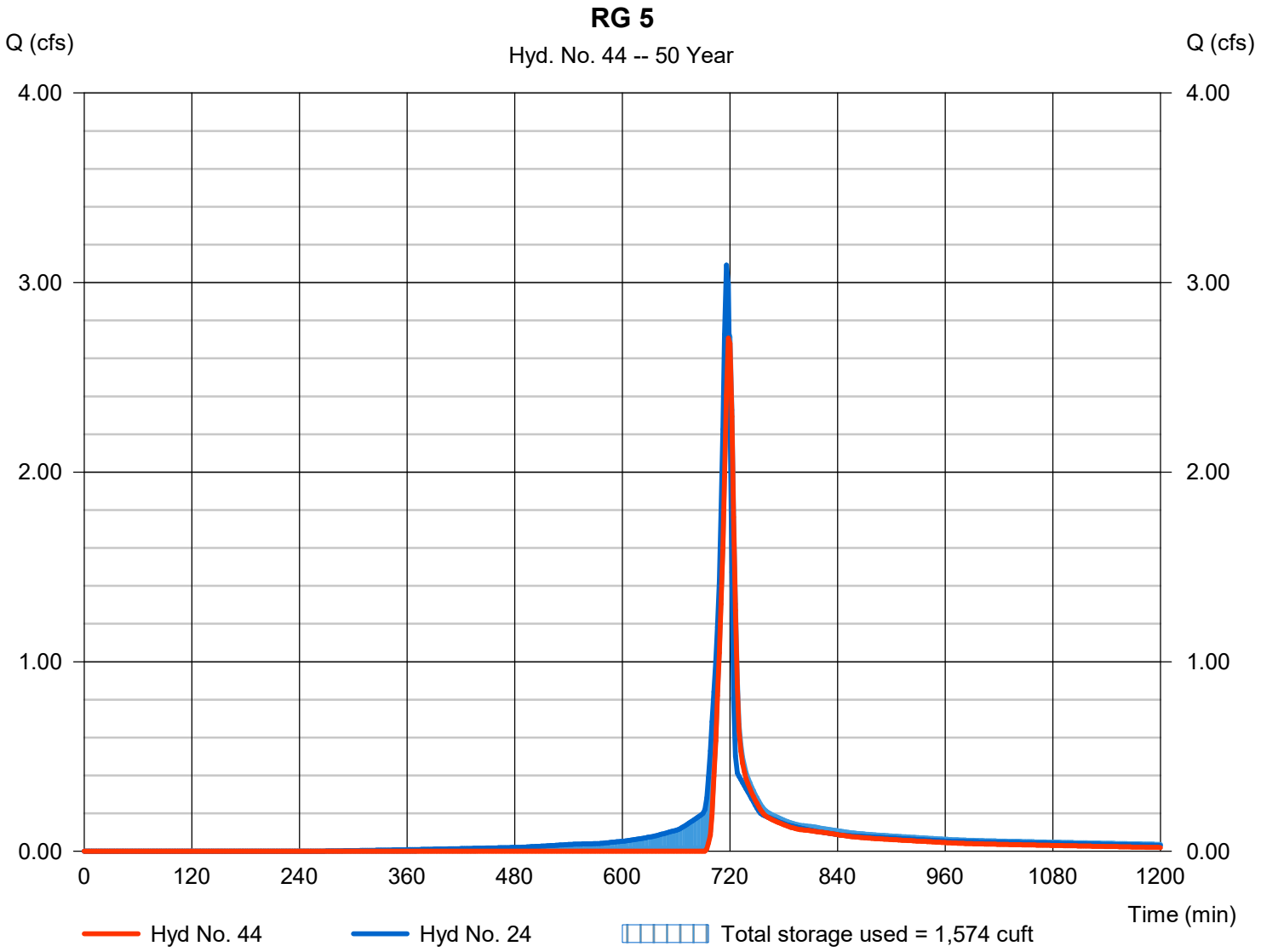
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 44

RG 5

Hydrograph type	=	Reservoir	Peak discharge	=	2.707 cfs
Storm frequency	=	50 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	4,988 cuft
Inflow hyd. No.	=	24 - Rain Garden 5 Onsite	Max. Elevation	=	634.16 ft
Reservoir name	=	RG 5	Max. Storage	=	1,574 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

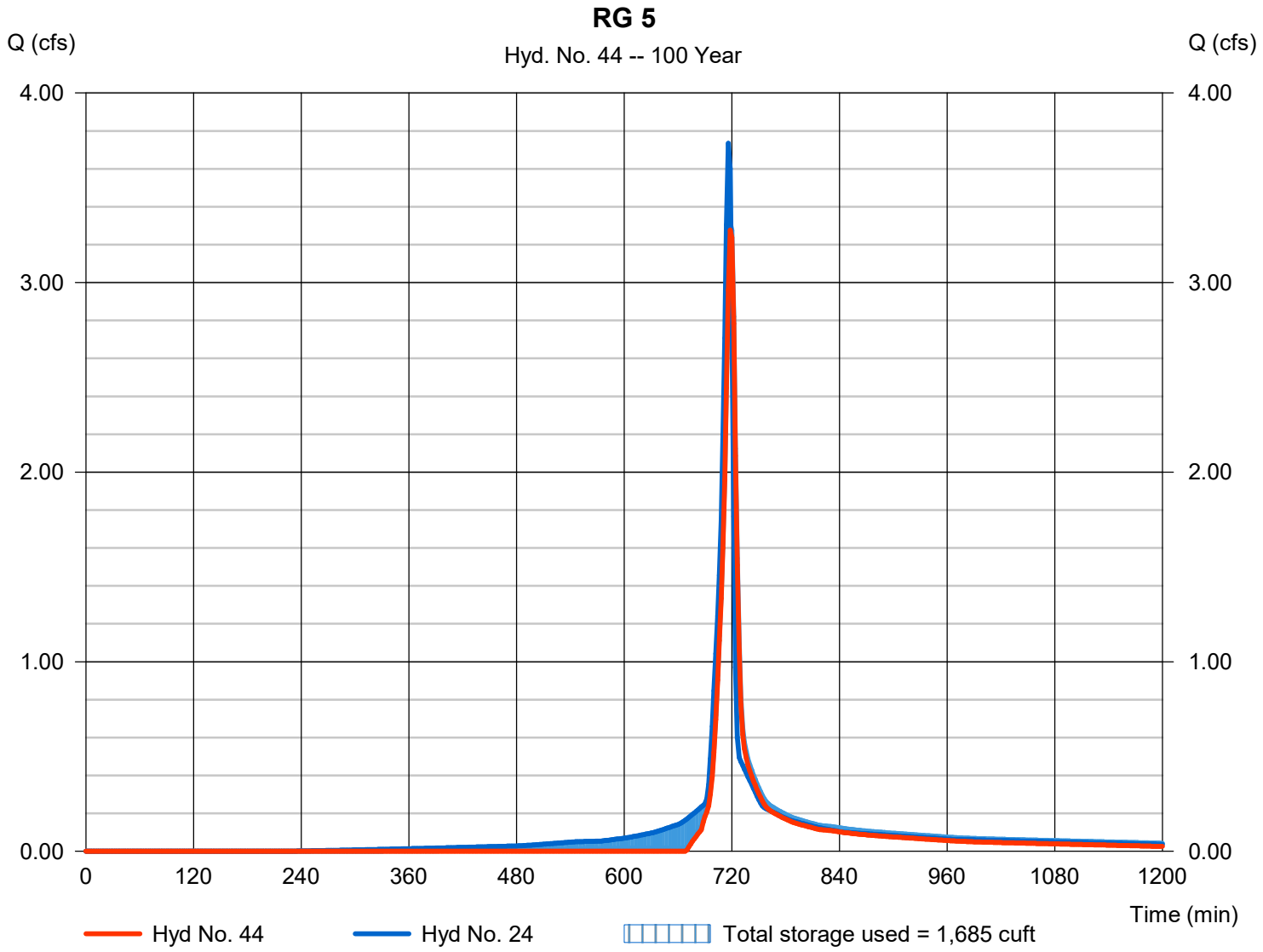
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 44

RG 5

Hydrograph type	=	Reservoir	Peak discharge	=	3.276 cfs
Storm frequency	=	100 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	6,411 cuft
Inflow hyd. No.	=	24 - Rain Garden 5 Onsite	Max. Elevation	=	634.22 ft
Reservoir name	=	RG 5	Max. Storage	=	1,685 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Developed Conditions: Rain Garden 6 Onsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D			77					
Meadow	D			78					
Forest (Good)	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D	41,342	0.95	80	2.50	0.50	1.49	5149.89	0.12
Lawn, High-Input	D			84					
Golf Course Fairway/Green	D			80					
Grassed Athletic Field	D			80					
Rooftop	D	2,400	0.06	98	0.20	0.04	3.09	617.41	0.01
High Traffic Street / Highway	D			93					
Medium Traffic Street	D			98					
Low Traffic / Residential Street	D			98					
Res. Driveway, Play Courts, etc.	D	7,194	0.17	98	0.20	0.04	3.09	1850.62	0.04
Impervious Allowance	D	500	0.01	98	0.20	0.04	3.09	128.63	0.00
Low Traffic Parking Lot	D			98					
TOTAL:		51,436	1.18						0.17

Developed Conditions: Rain Garden 6 Offsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D	43,269	0.99	77	2.99	0.60	1.30	4681.19	0.11
Meadow	D			78					
Forest (Good)	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D			80					
Lawn, High-Input	D			84					
Golf Course Fairway/Green	D			80					
Grassed Athletic Field	D			80					
Rooftop	D			98					
High Traffic Street / Highway	D			93					
Medium Traffic Street	D			98					
Low Traffic / Residential Street	D			98					
Res. Driveway, Play Courts, etc.	D			98					
Impervious Allowance	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		43,269	0.99						0.11

Hydrograph Report

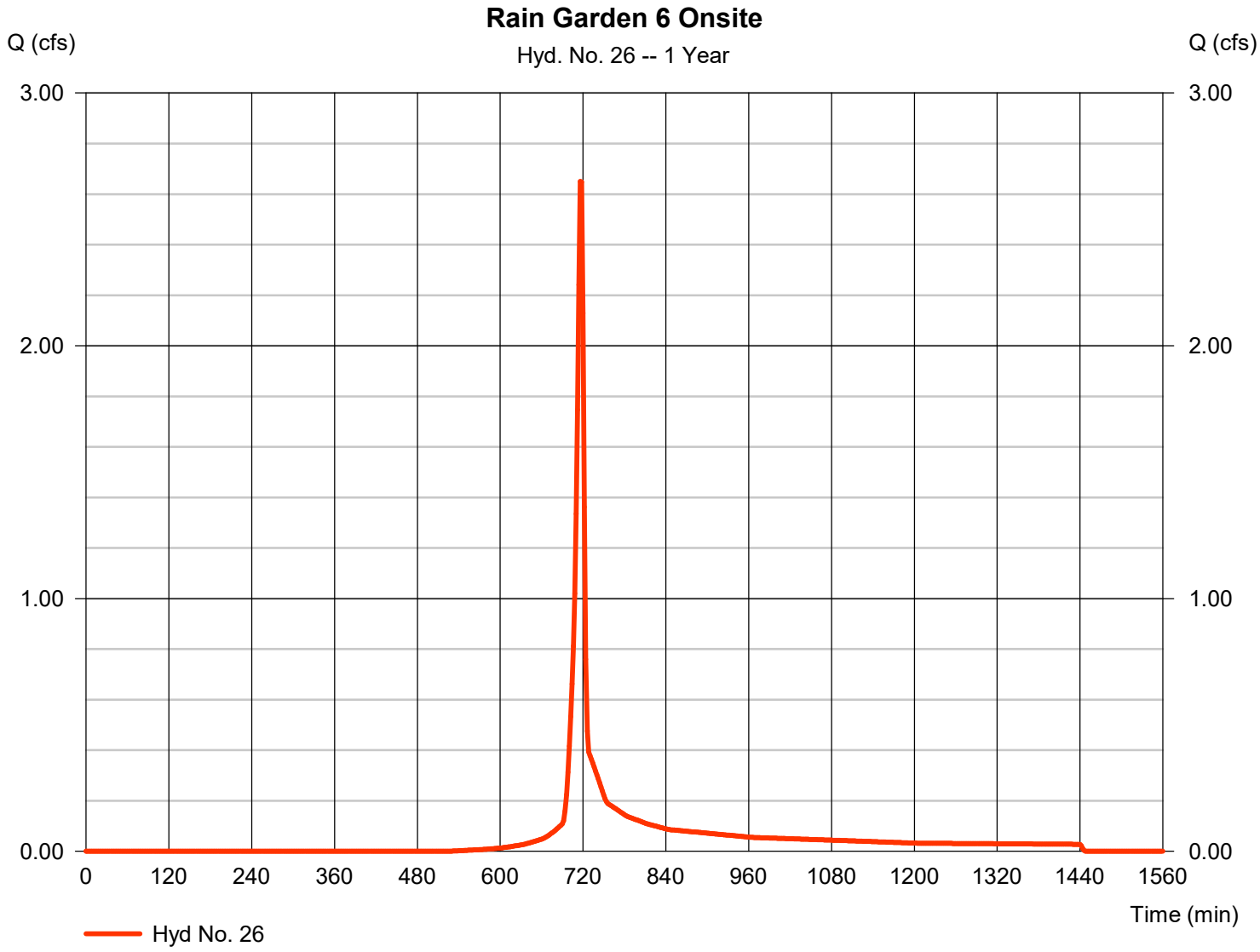
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 26

Rain Garden 6 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 2.650 cfs
Storm frequency	= 1 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 5,351 cuft
Drainage area	= 1.190 ac	Curve number	= 84*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.76 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.950 x 80) + (0.060 x 98) + (0.180 x 98)] / 1.190



Hydrograph Report

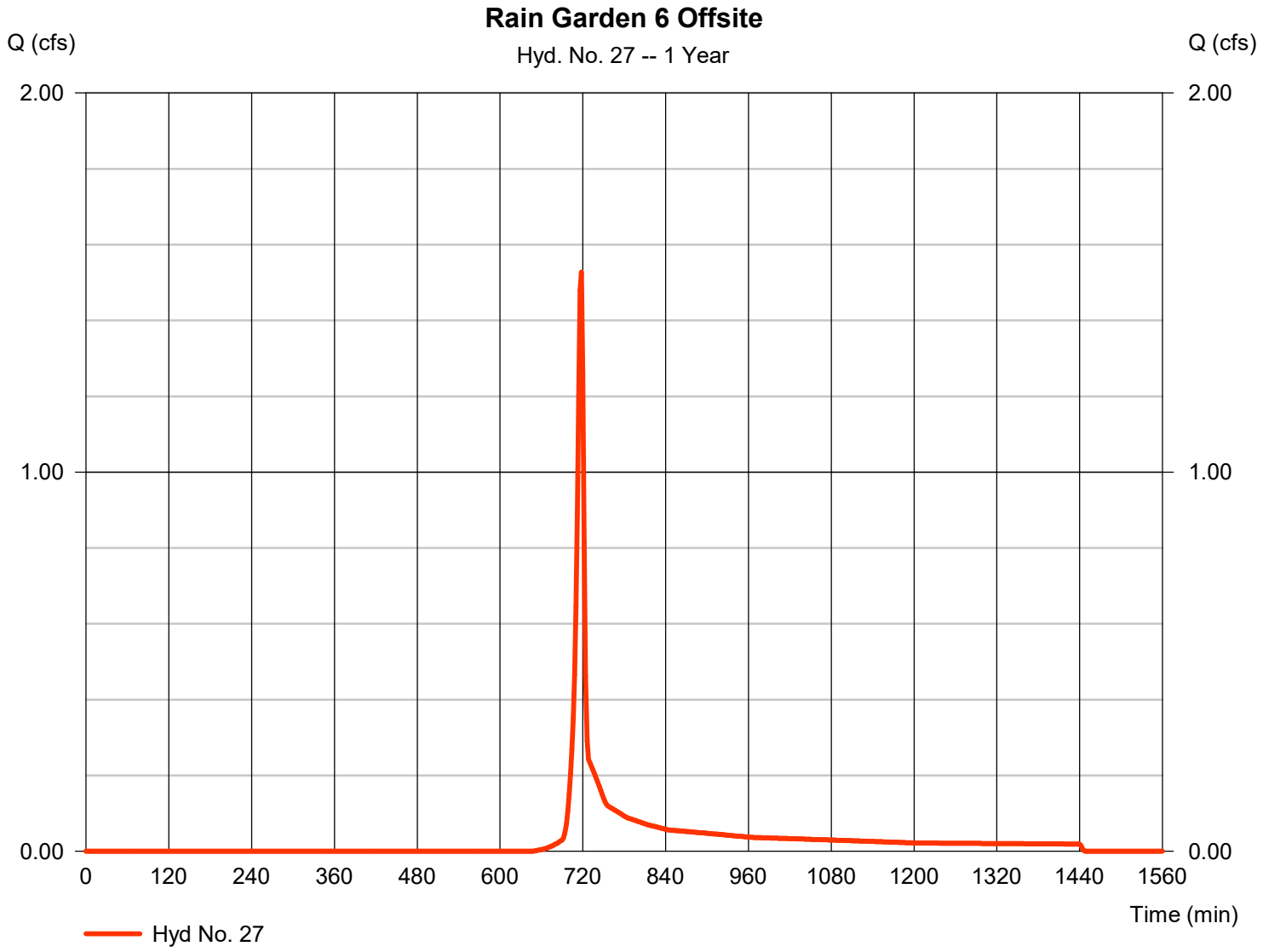
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 27

Rain Garden 6 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 1.527 cfs
Storm frequency	= 1 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 3,060 cuft
Drainage area	= 0.990 ac	Curve number	= 77*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.76 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.990 x 77)] / 0.990



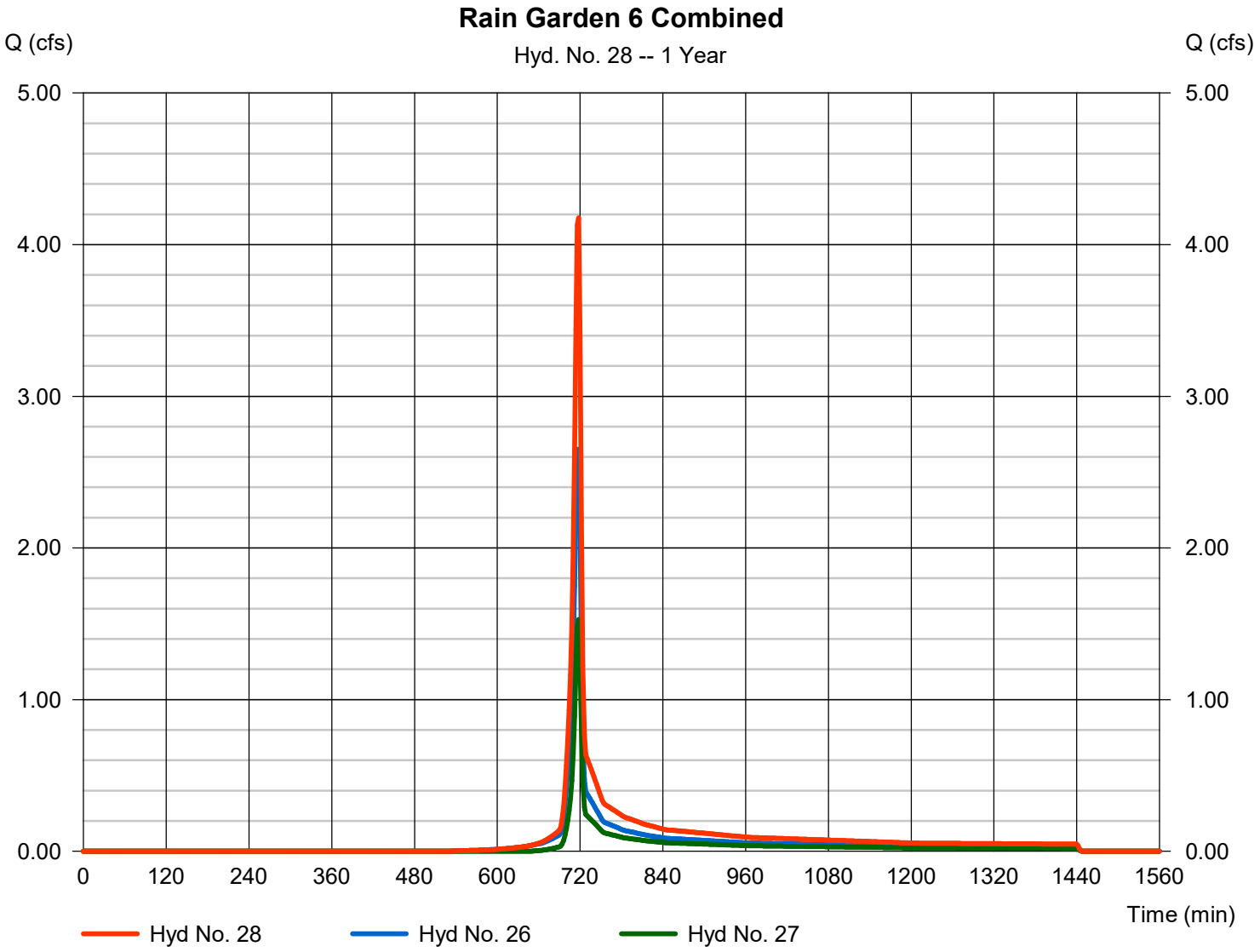
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 28

Rain Garden 6 Combined

Hydrograph type	= Combine	Peak discharge	= 4.176 cfs
Storm frequency	= 1 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 8,410 cuft
Inflow hyds.	= 26, 27	Contrib. drain. area	= 2.180 ac



Hydrograph Report

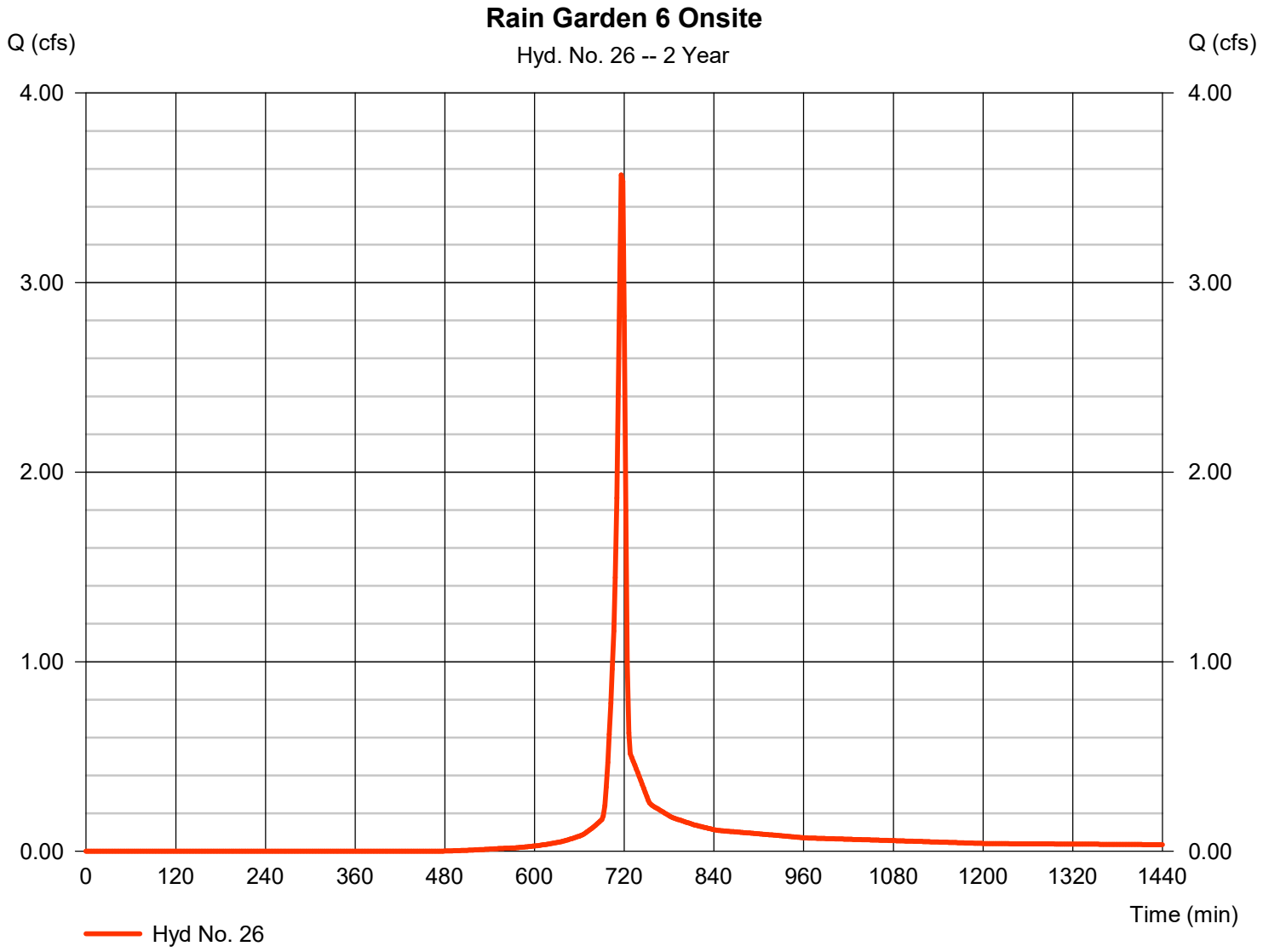
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 26

Rain Garden 6 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 3.567 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 7,222 cuft
Drainage area	= 1.190 ac	Curve number	= 84*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.950 x 80) + (0.060 x 98) + (0.180 x 98)] / 1.190



Hydrograph Report

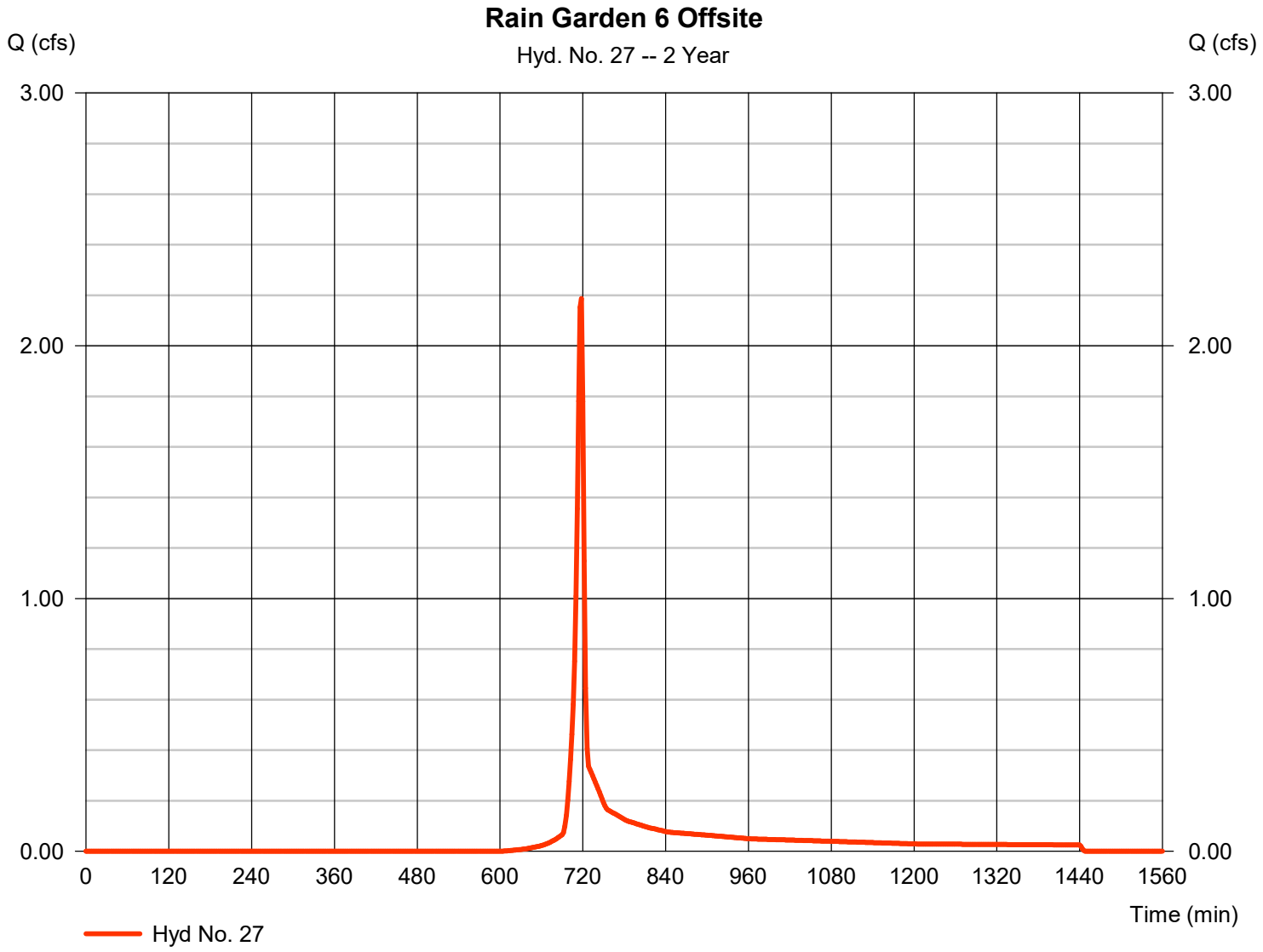
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 27

Rain Garden 6 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 2.186 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 4,374 cuft
Drainage area	= 0.990 ac	Curve number	= 77*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.990 x 77)] / 0.990



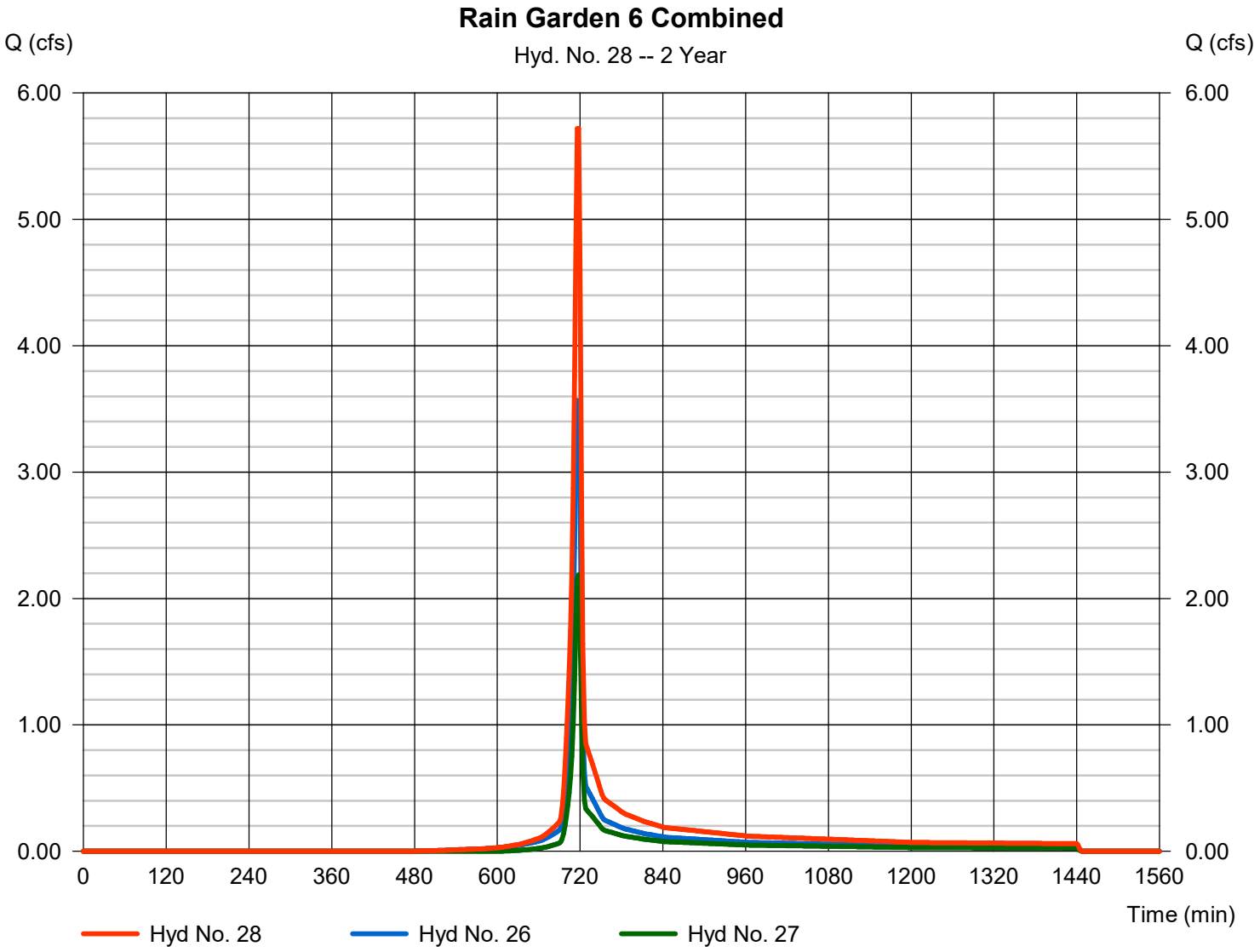
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 28

Rain Garden 6 Combined

Hydrograph type	= Combine	Peak discharge	= 5.719 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 11,596 cuft
Inflow hyds.	= 26, 27	Contrib. drain. area	= 2.180 ac



Hydrograph Report

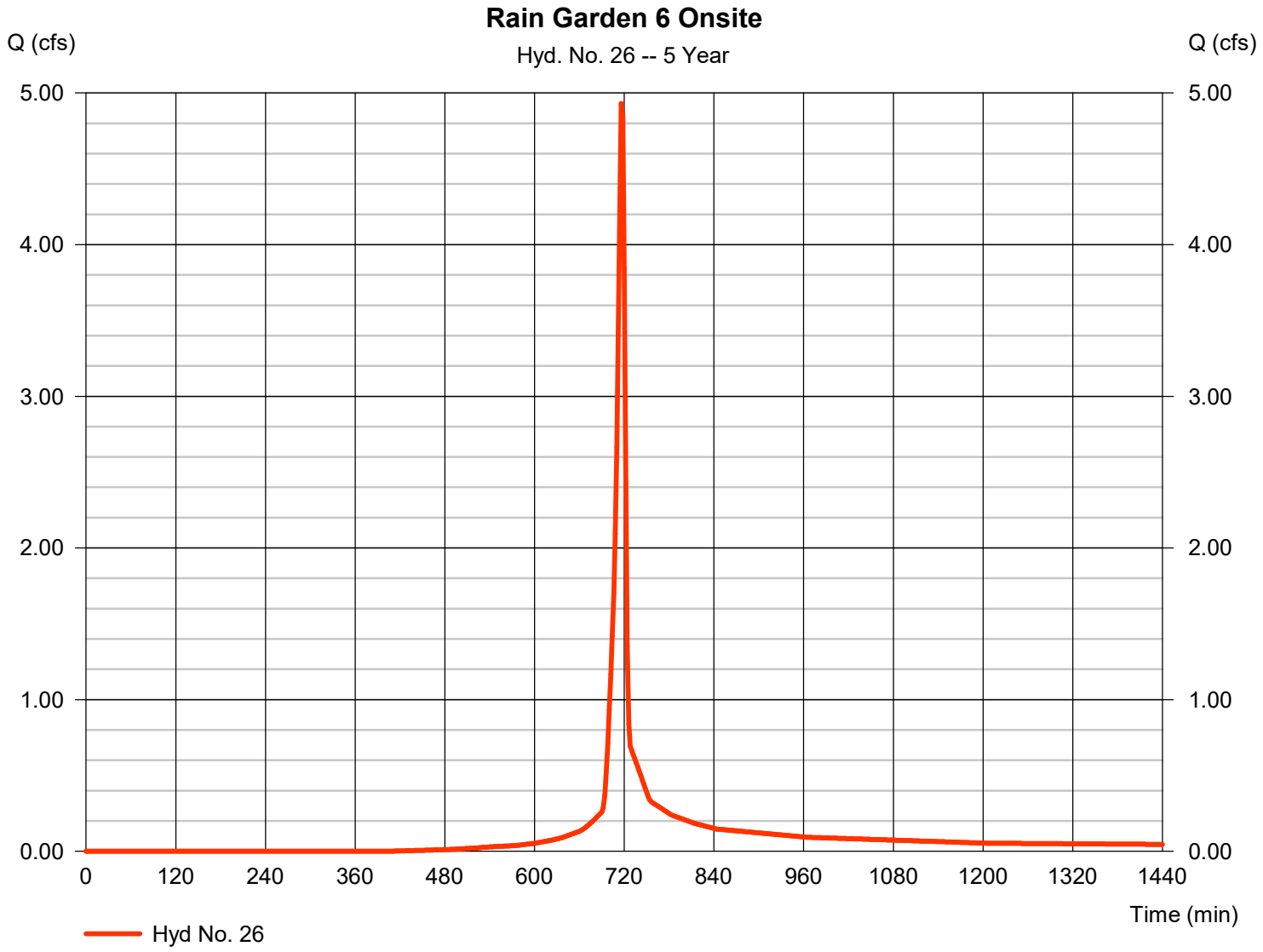
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 26

Rain Garden 6 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 4.931 cfs
Storm frequency	= 5 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 10,068 cuft
Drainage area	= 1.190 ac	Curve number	= 84*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.13 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.950 x 80) + (0.060 x 98) + (0.180 x 98)] / 1.190



Hydrograph Report

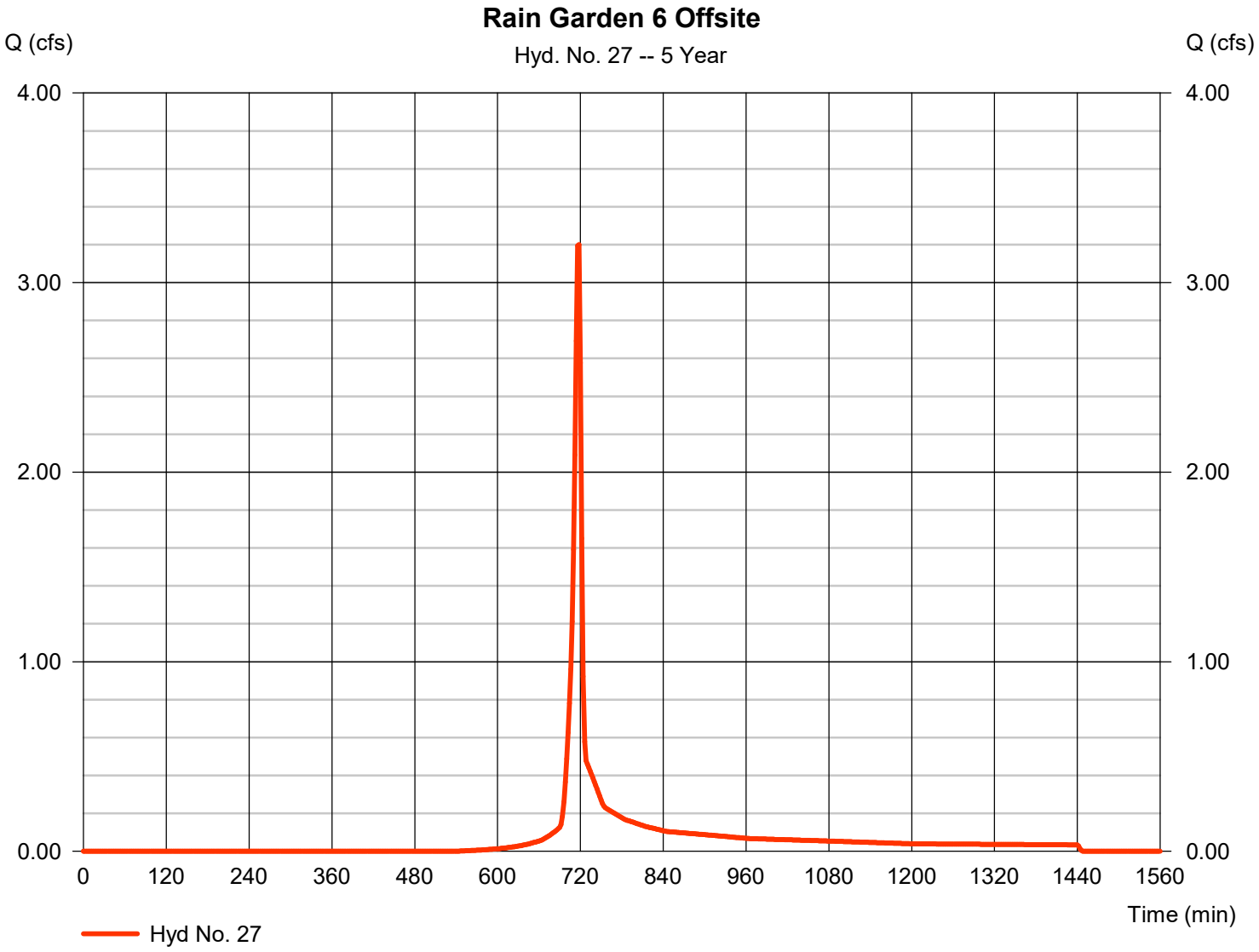
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 27

Rain Garden 6 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 3.200 cfs
Storm frequency	= 5 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 6,449 cuft
Drainage area	= 0.990 ac	Curve number	= 77*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.13 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.990 x 77)] / 0.990



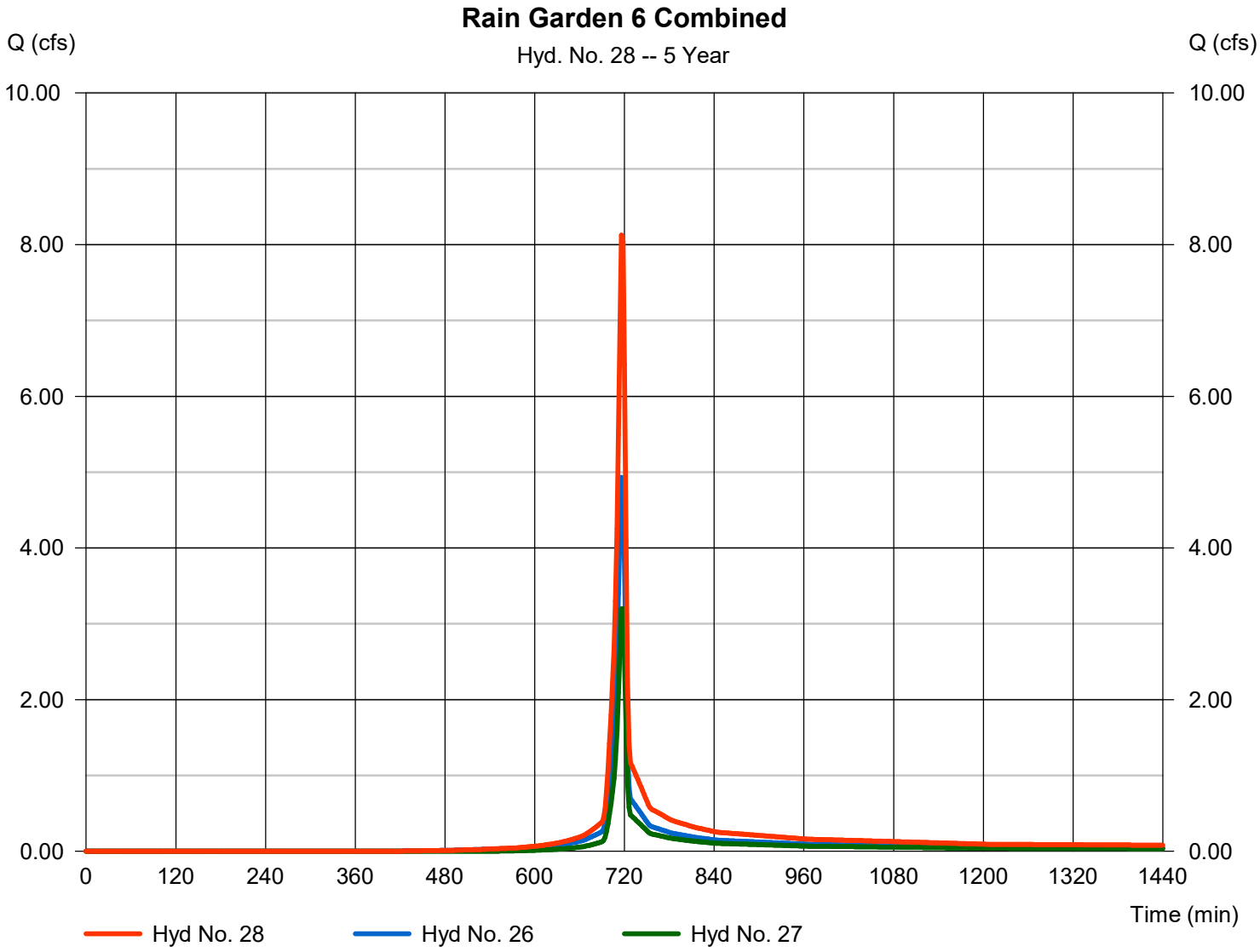
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 28

Rain Garden 6 Combined

Hydrograph type	= Combine	Peak discharge	= 8.125 cfs
Storm frequency	= 5 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 16,516 cuft
Inflow hyds.	= 26, 27	Contrib. drain. area	= 2.180 ac



Hydrograph Report

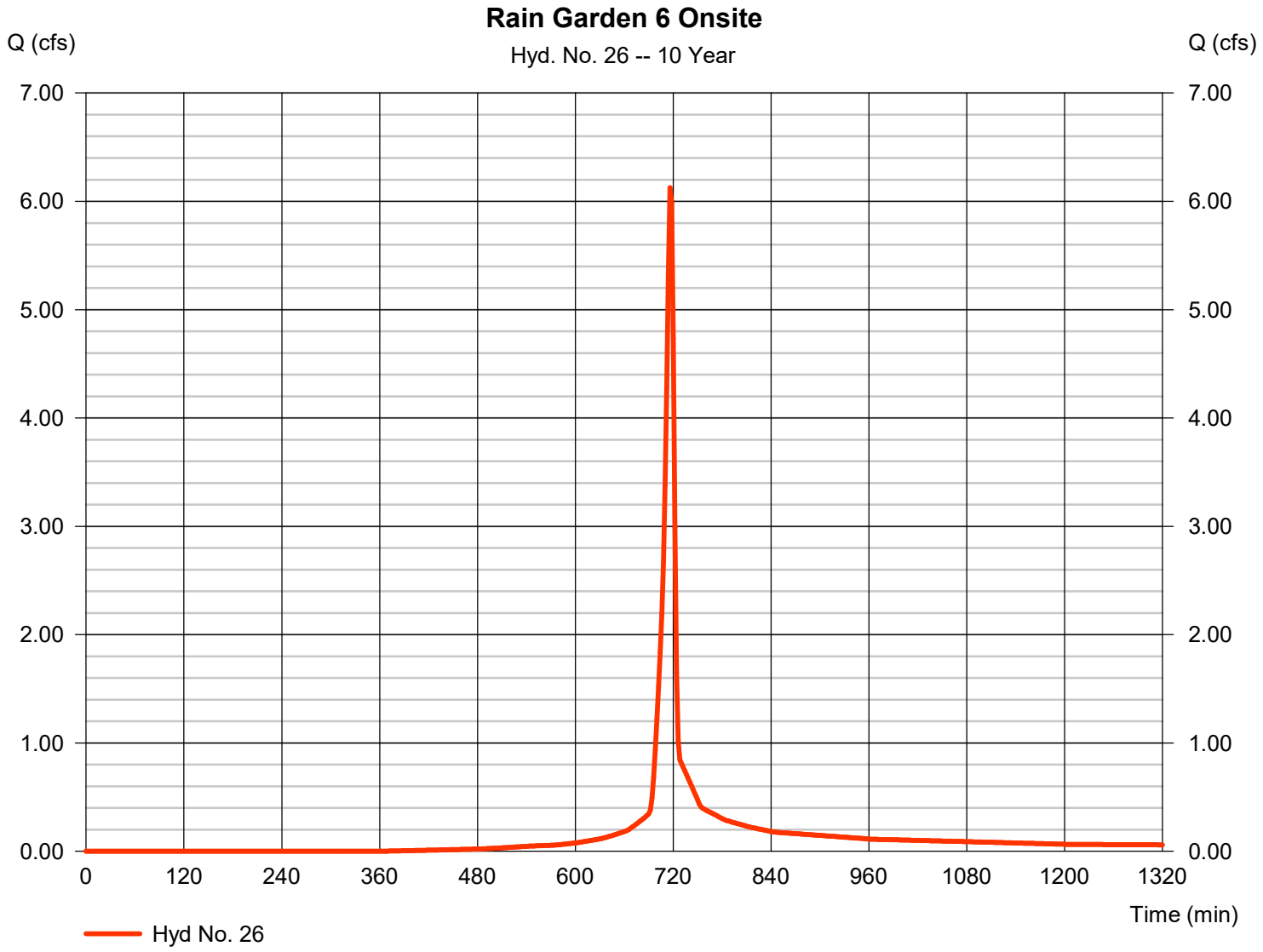
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 26

Rain Garden 6 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 6.127 cfs
Storm frequency	= 10 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 12,616 cuft
Drainage area	= 1.190 ac	Curve number	= 84*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.950 x 80) + (0.060 x 98) + (0.180 x 98)] / 1.190



Hydrograph Report

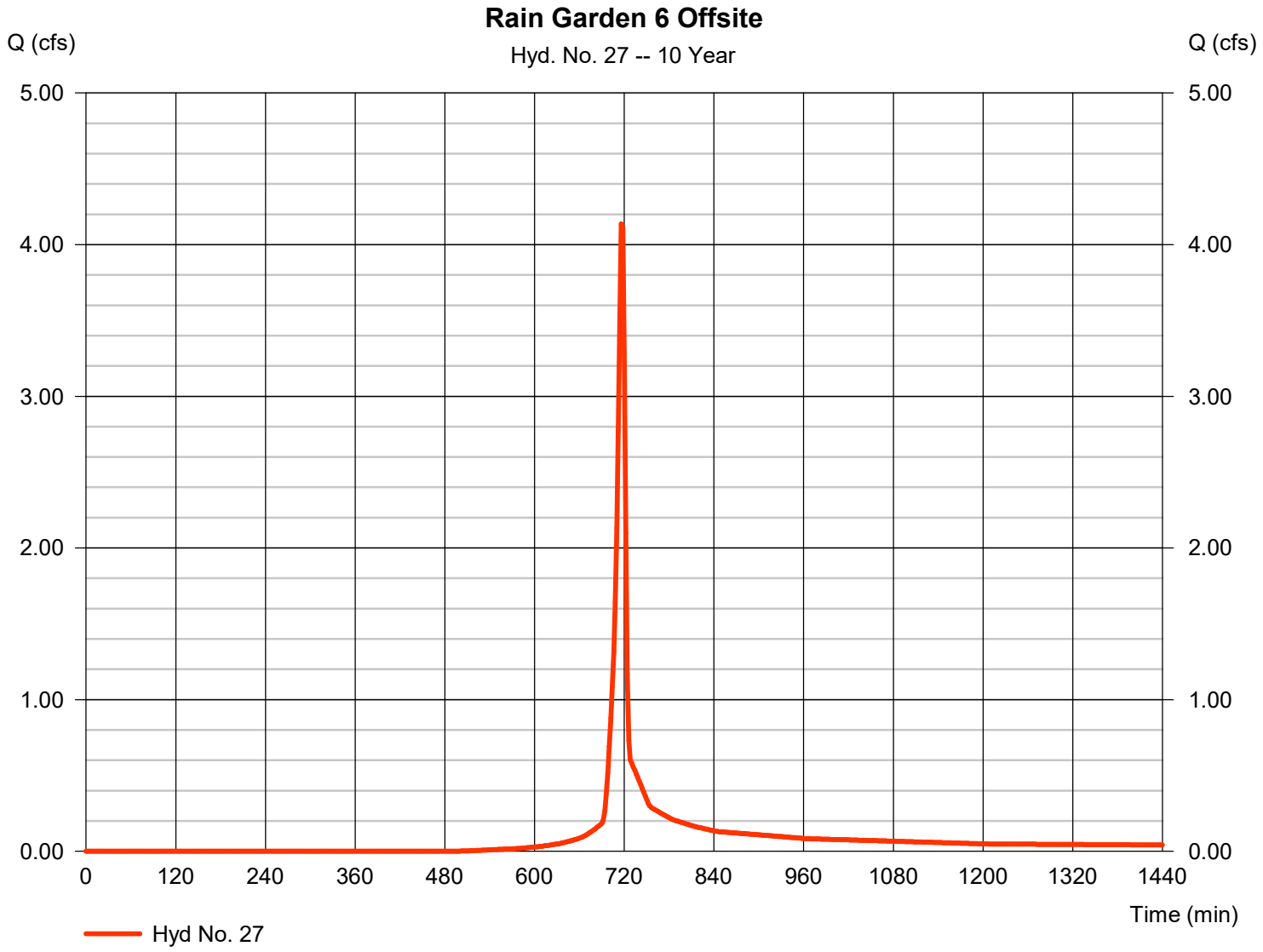
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 27

Rain Garden 6 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 4.137 cfs
Storm frequency	= 10 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 8,360 cuft
Drainage area	= 0.990 ac	Curve number	= 77*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.990 x 77)] / 0.990



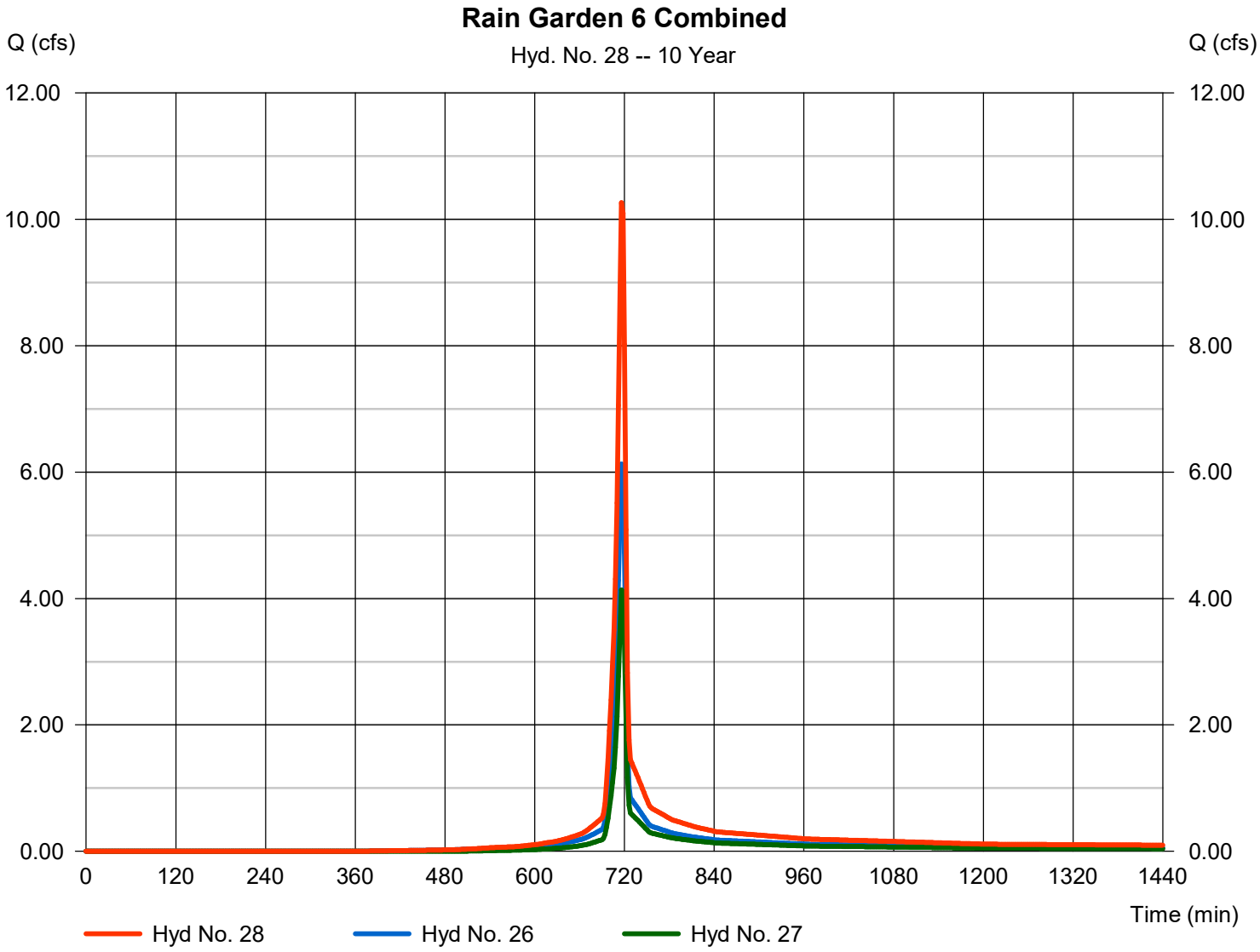
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 28

Rain Garden 6 Combined

Hydrograph type	= Combine	Peak discharge	= 10.26 cfs
Storm frequency	= 10 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 20,976 cuft
Inflow hyds.	= 26, 27	Contrib. drain. area	= 2.180 ac



Hydrograph Report

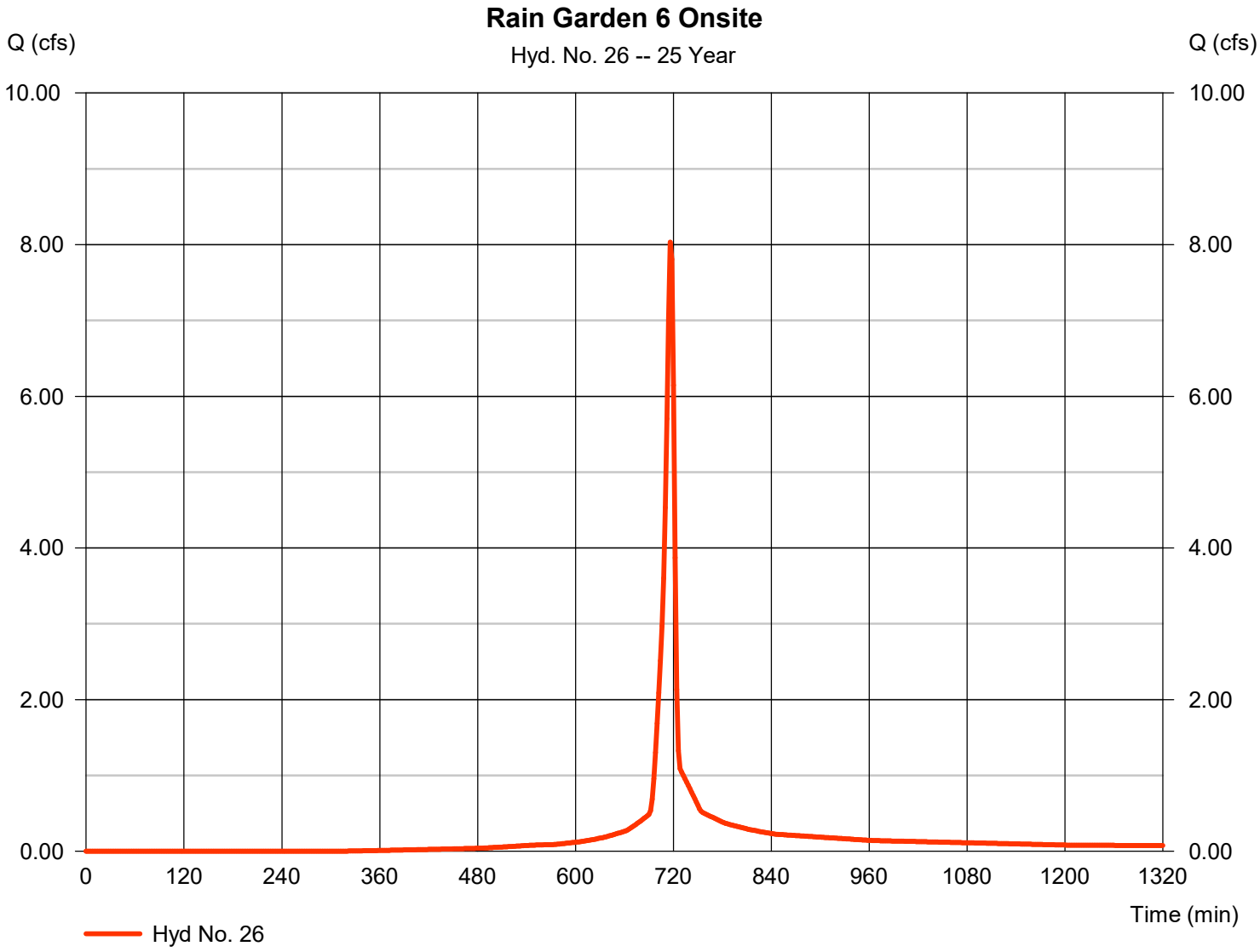
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 26

Rain Garden 6 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 8.034 cfs
Storm frequency	= 25 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 16,767 cuft
Drainage area	= 1.190 ac	Curve number	= 84*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.94 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.950 x 80) + (0.060 x 98) + (0.180 x 98)] / 1.190



Hydrograph Report

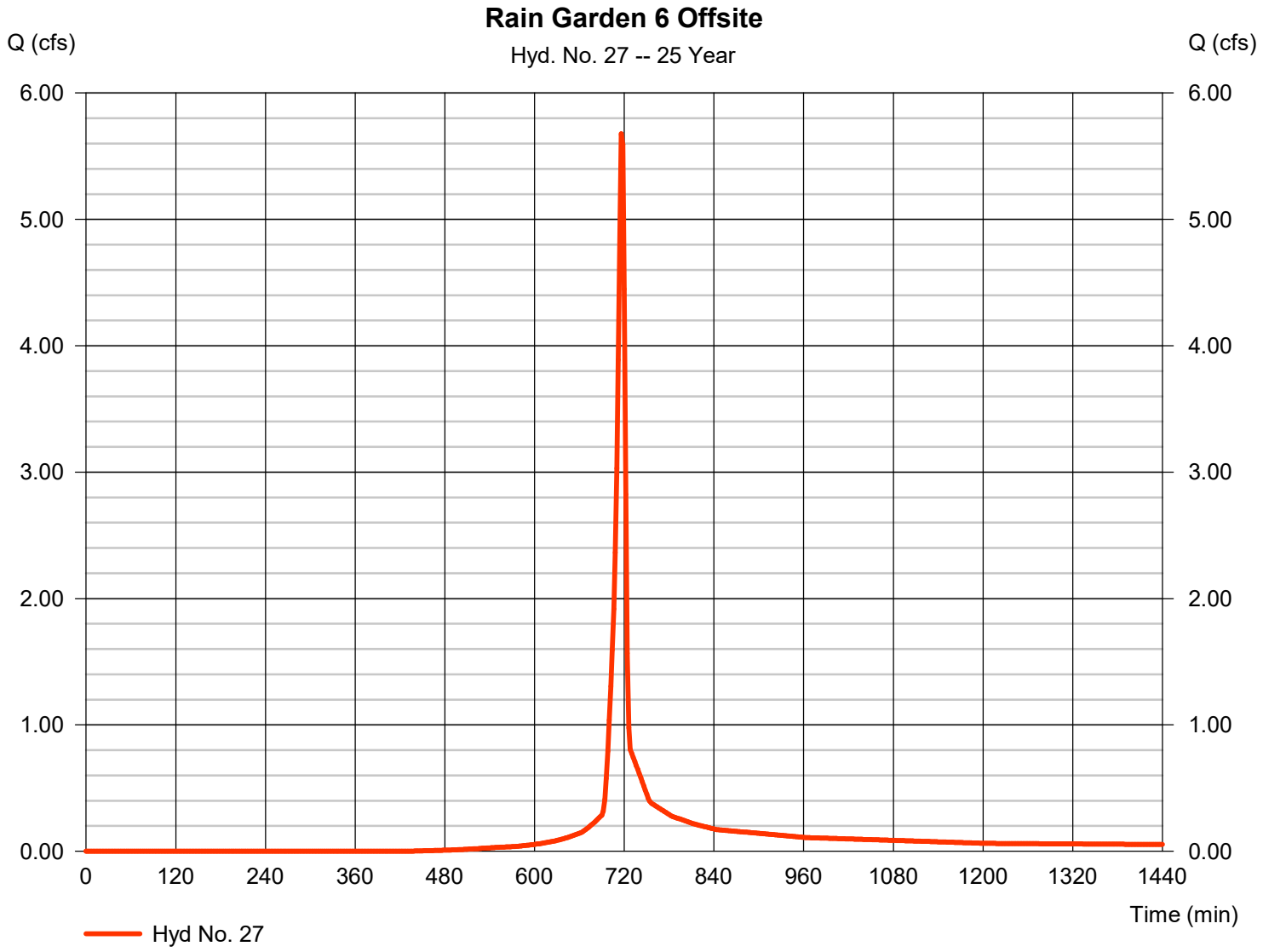
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 27

Rain Garden 6 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 5.677 cfs
Storm frequency	= 25 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 11,545 cuft
Drainage area	= 0.990 ac	Curve number	= 77*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.94 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.990 x 77)] / 0.990



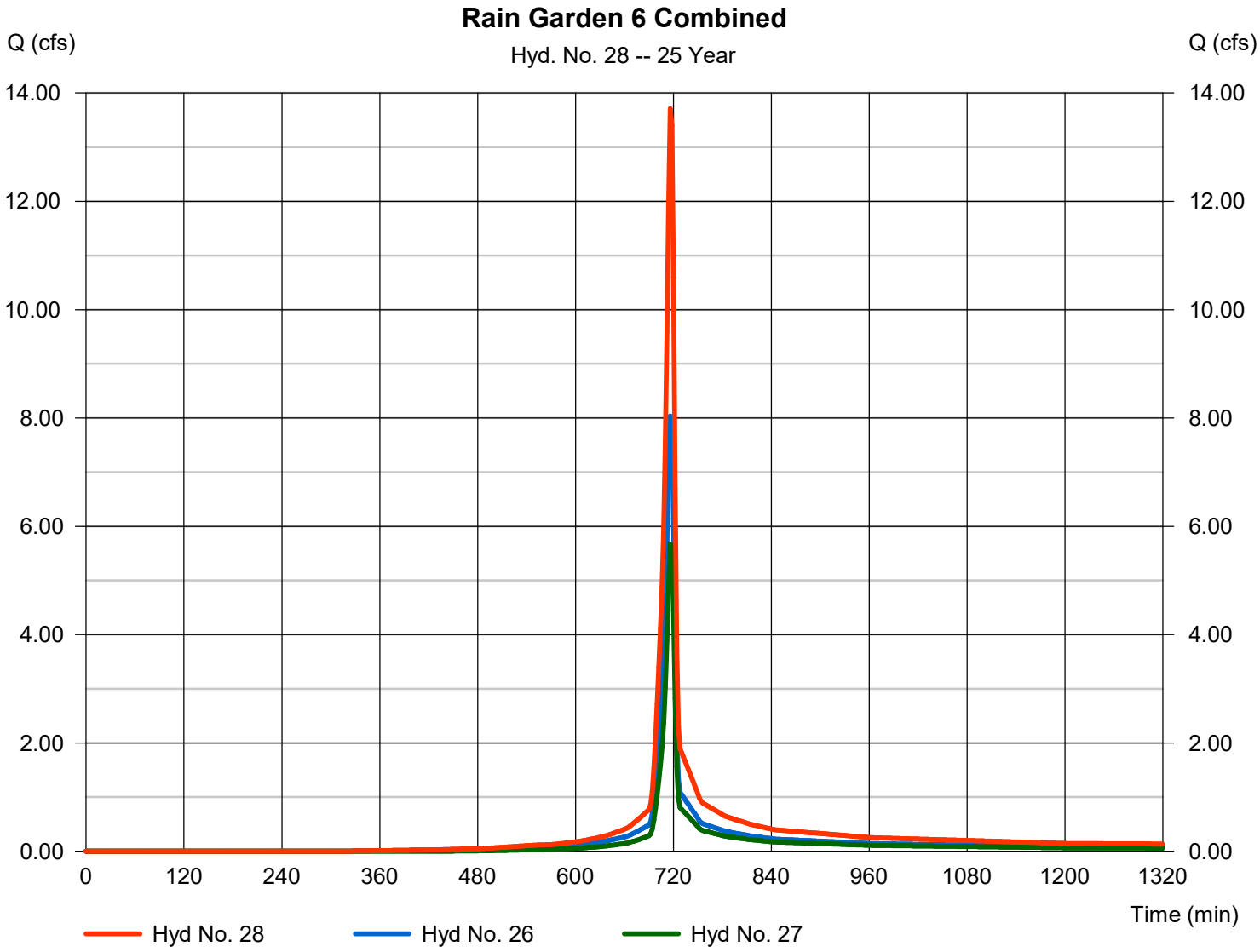
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 28

Rain Garden 6 Combined

Hydrograph type	= Combine	Peak discharge	= 13.71 cfs
Storm frequency	= 25 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 28,312 cuft
Inflow hyds.	= 26, 27	Contrib. drain. area	= 2.180 ac



Hydrograph Report

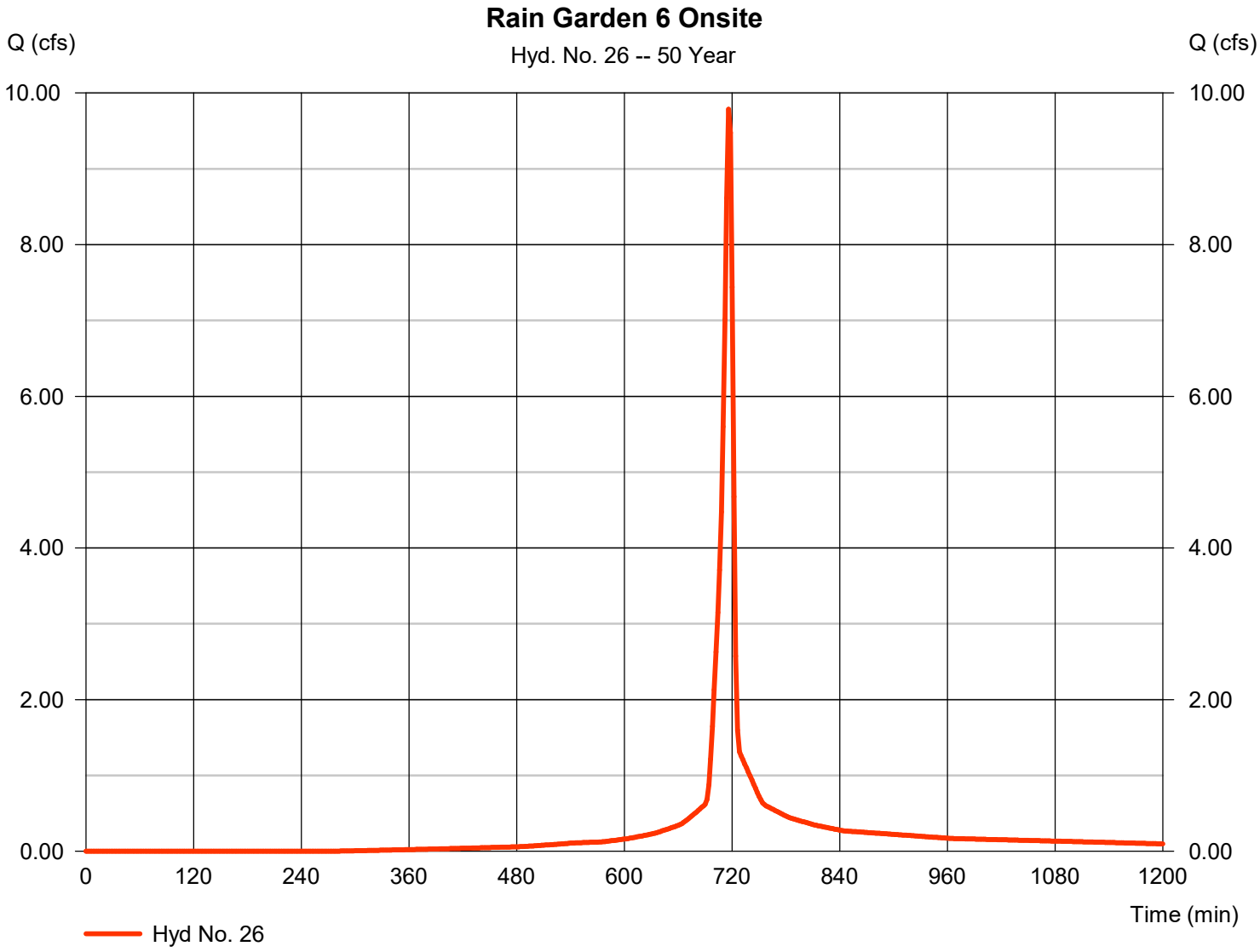
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 26

Rain Garden 6 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 9.786 cfs
Storm frequency	= 50 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 20,661 cuft
Drainage area	= 1.190 ac	Curve number	= 84*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.96 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.950 x 80) + (0.060 x 98) + (0.180 x 98)] / 1.190



Hydrograph Report

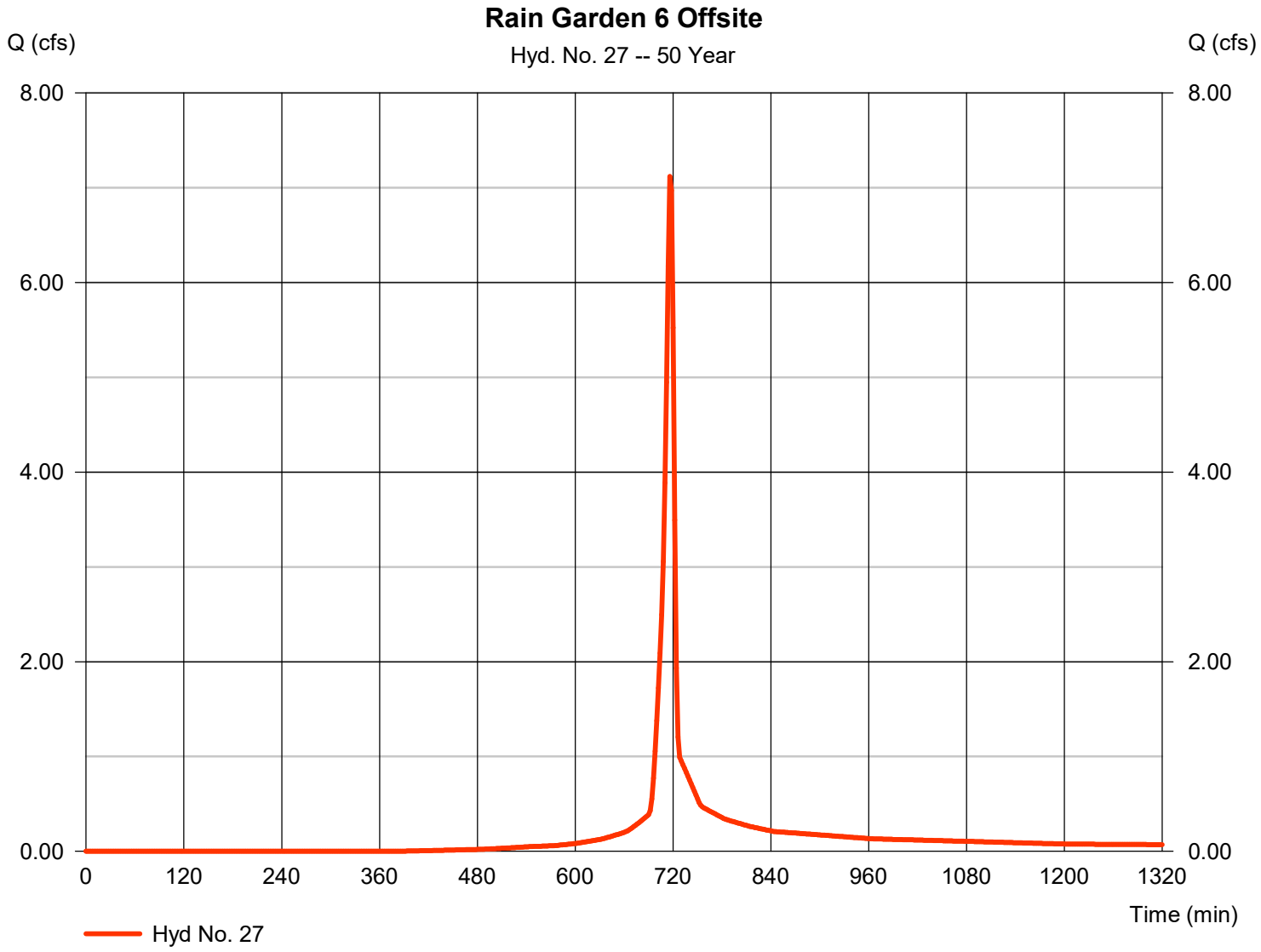
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 27

Rain Garden 6 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 7.119 cfs
Storm frequency	= 50 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 14,588 cuft
Drainage area	= 0.990 ac	Curve number	= 77*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.96 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.990 x 77)] / 0.990



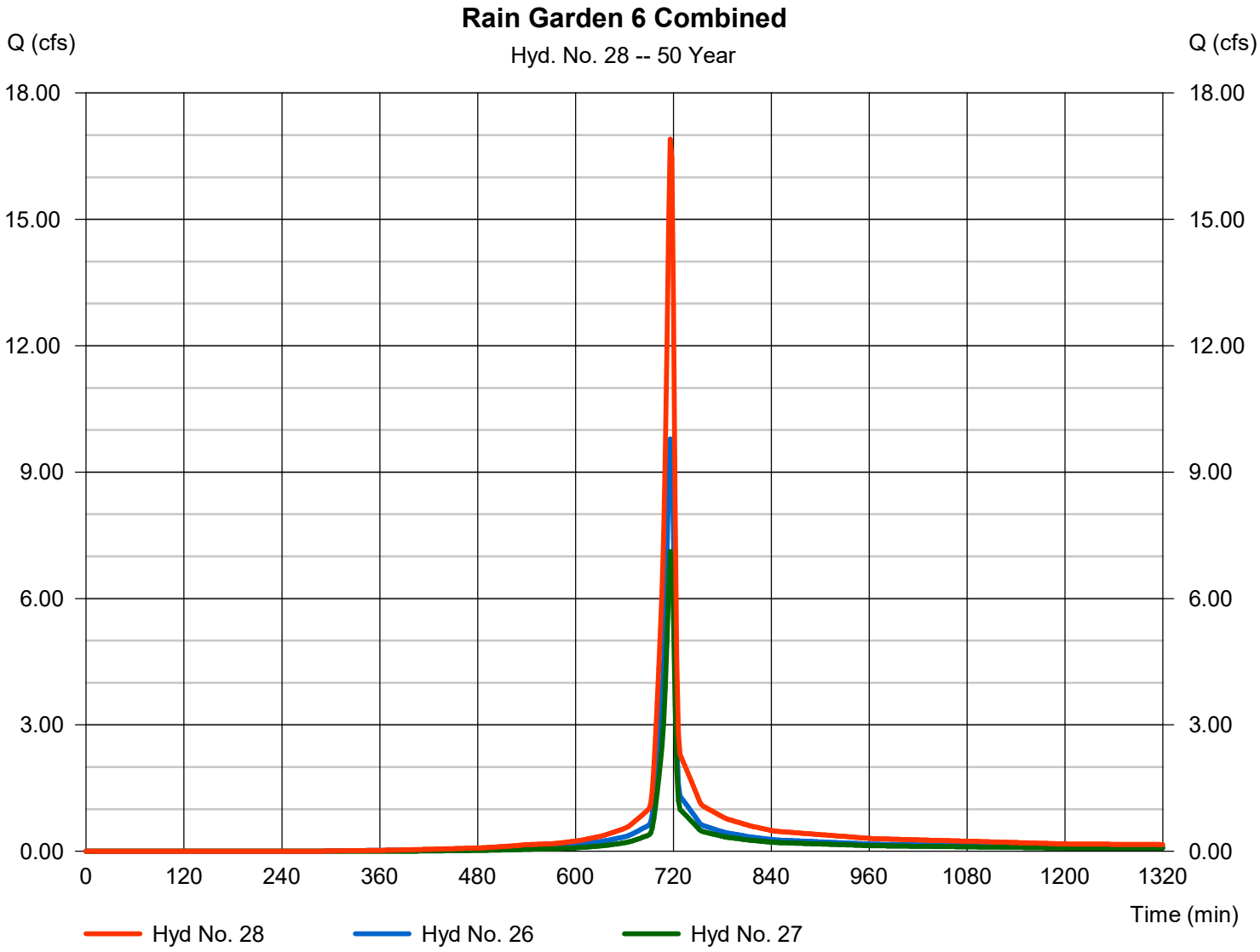
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 28

Rain Garden 6 Combined

Hydrograph type	= Combine	Peak discharge	= 16.90 cfs
Storm frequency	= 50 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 35,249 cuft
Inflow hyds.	= 26, 27	Contrib. drain. area	= 2.180 ac



Hydrograph Report

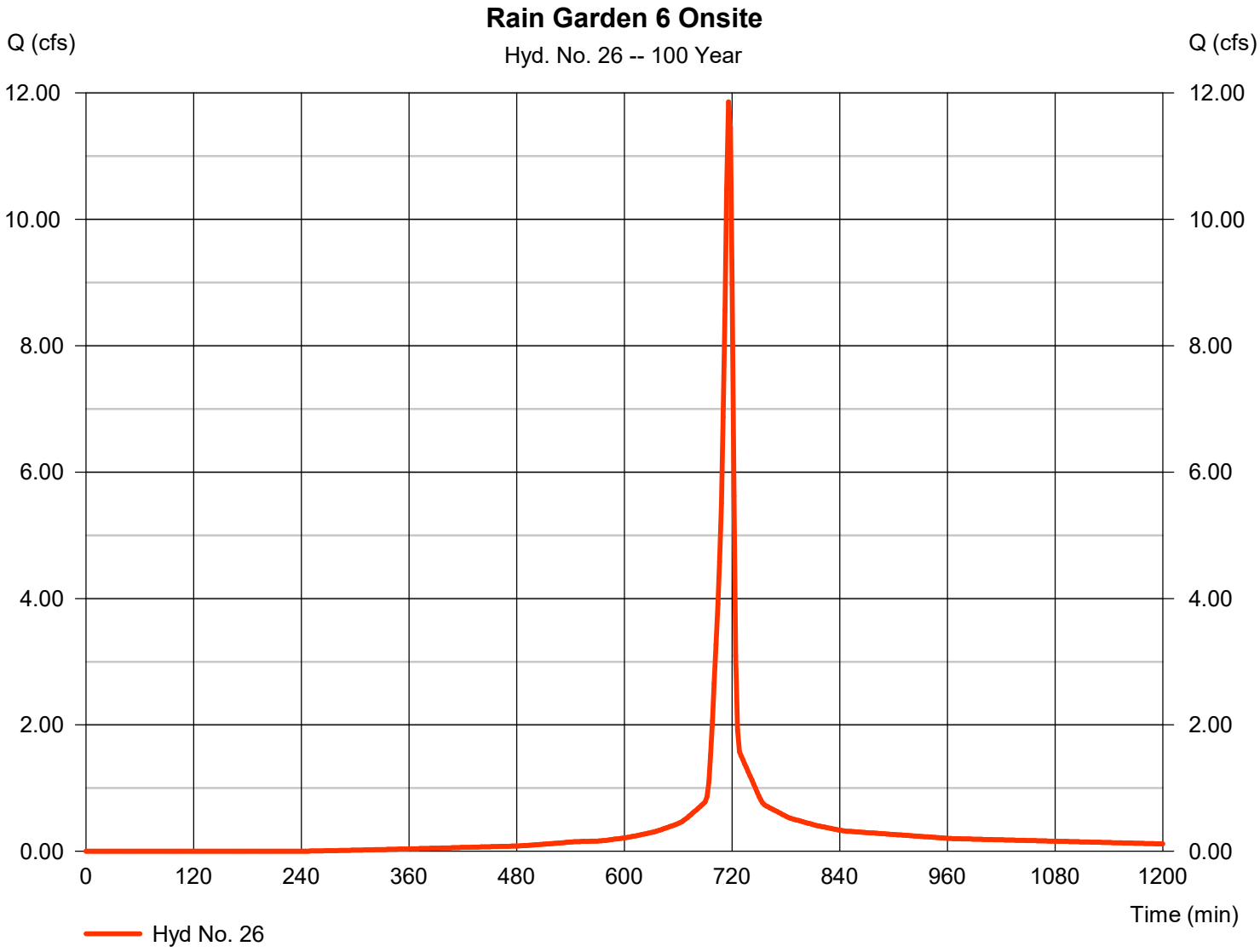
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 26

Rain Garden 6 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 11.86 cfs
Storm frequency	= 100 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 25,345 cuft
Drainage area	= 1.190 ac	Curve number	= 84*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 8.17 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.950 x 80) + (0.060 x 98) + (0.180 x 98)] / 1.190



Hydrograph Report

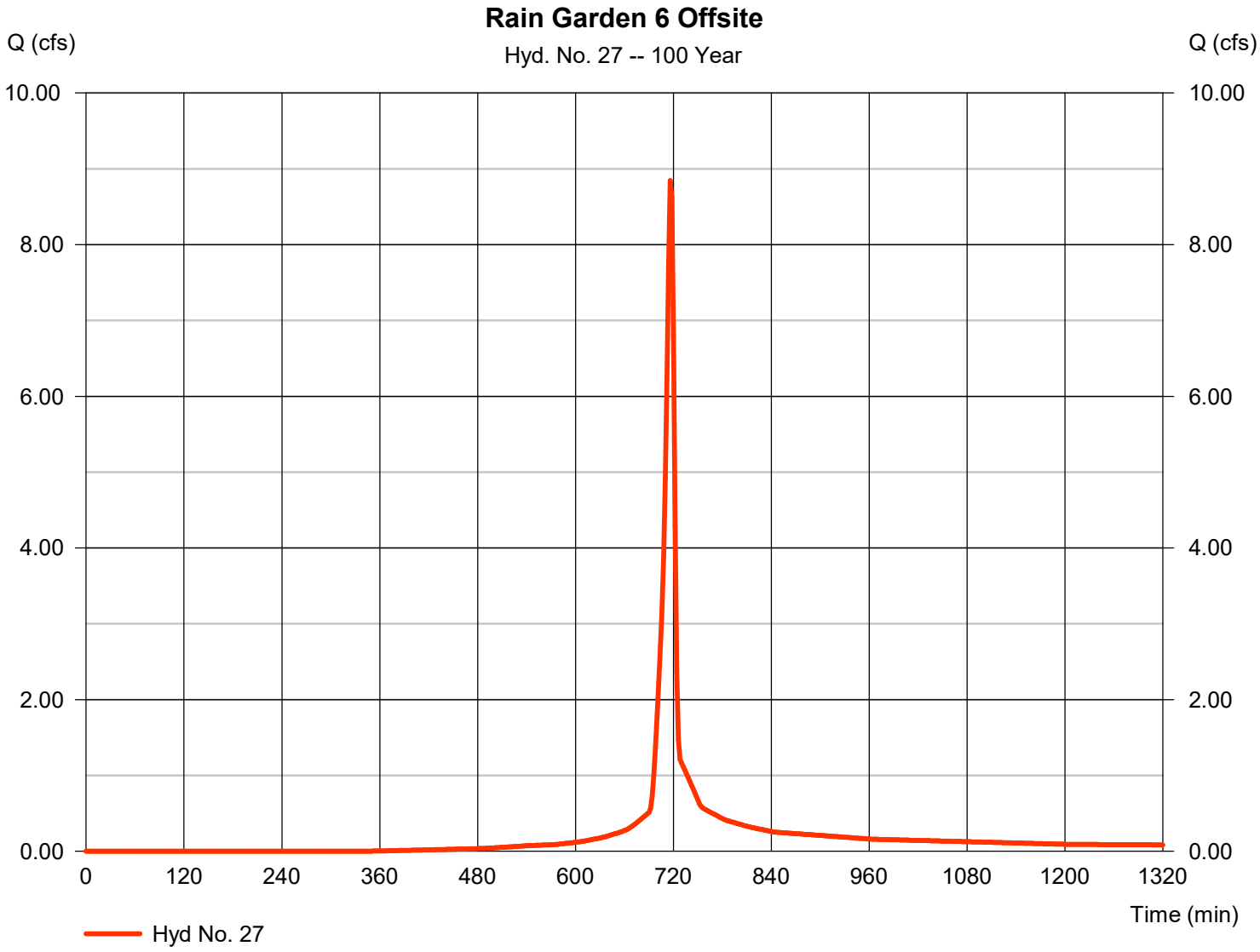
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 27

Rain Garden 6 Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	8.844 cfs
Storm frequency	=	100 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	18,296 cuft
Drainage area	=	0.990 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	8.17 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.990 x 77)] / 0.990



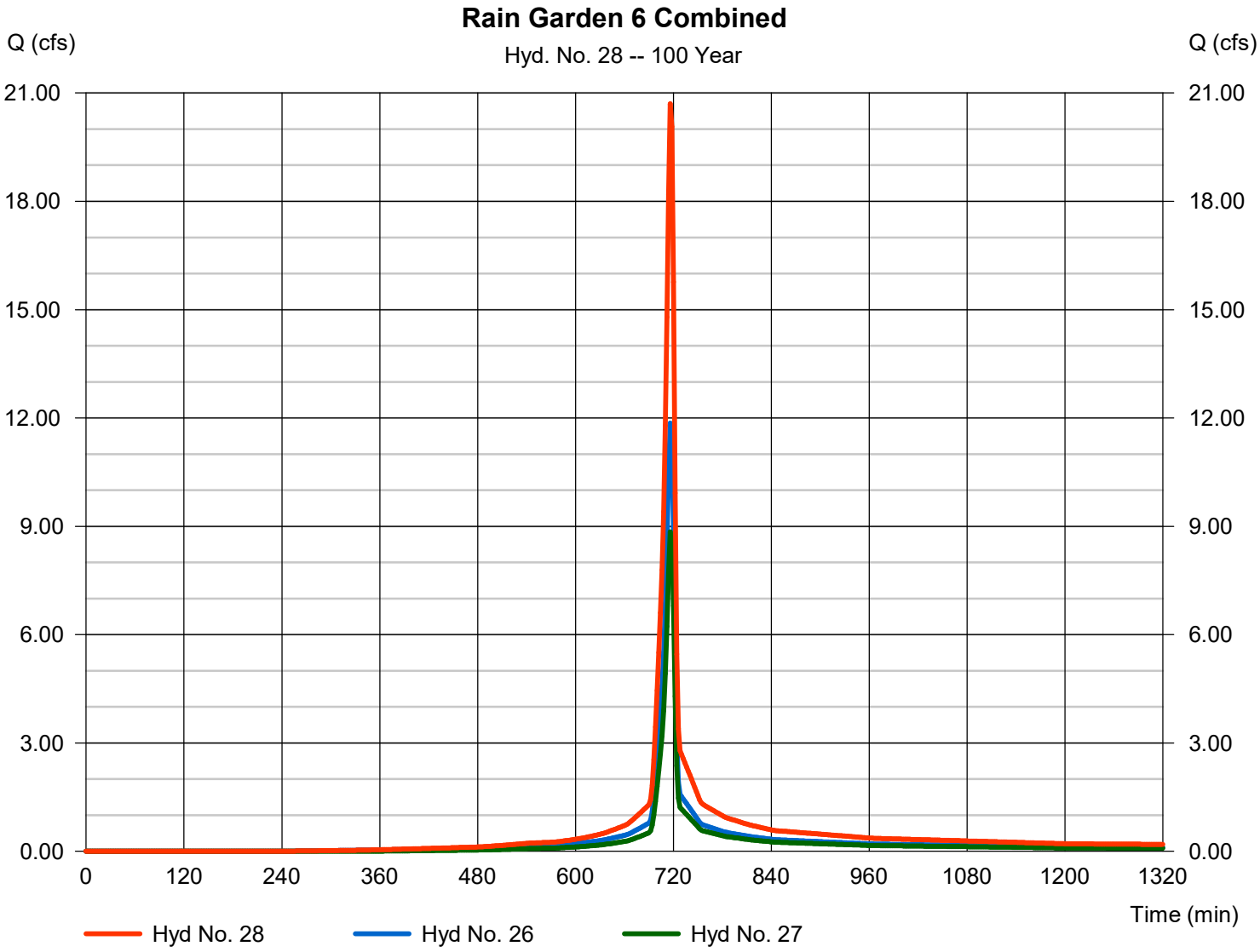
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 28

Rain Garden 6 Combined

Hydrograph type	= Combine	Peak discharge	= 20.70 cfs
Storm frequency	= 100 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 43,641 cuft
Inflow hyds.	= 26, 27	Contrib. drain. area	= 2.180 ac



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Pond No. 6 - RG 6

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 626.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	626.00	5,236	0	0
1.00	627.00	6,075	5,650	5,650
2.00	628.00	6,971	6,517	12,167
3.00	629.00	7,923	7,441	19,608
4.00	630.00	8,932	8,422	28,030

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 15.00	12.00	0.00	0.00
Span (in)	= 15.00	24.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 626.00	628.00	0.00	0.00
Length (ft)	= 50.00	1.00	0.00	0.00
Slope (%)	= 1.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

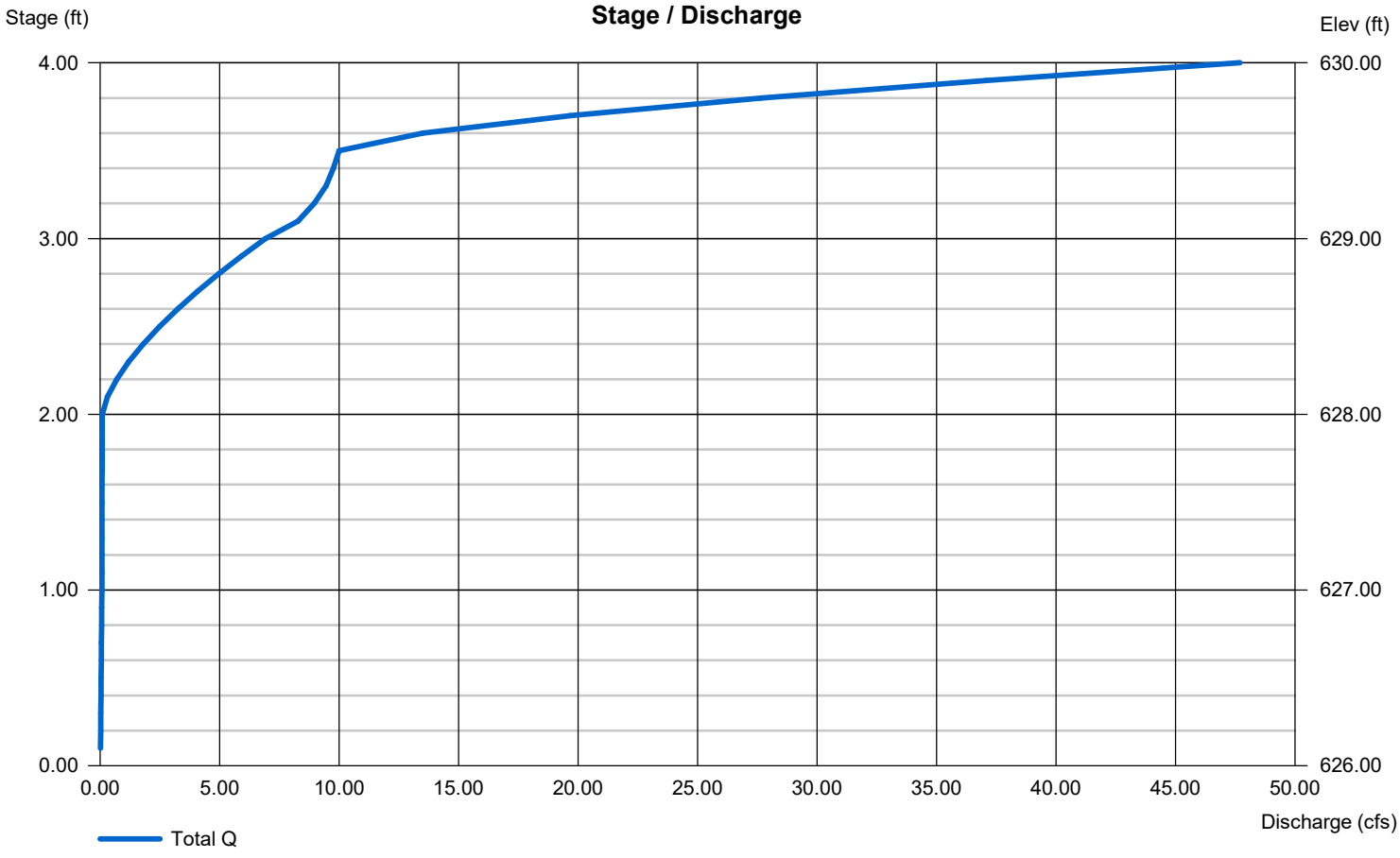
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 12.00	Inactive	40.00	0.00
Crest El. (ft)	= 629.00	628.25	629.50	0.00
Weir Coeff.	= 3.33	2.54	2.60	3.33
Weir Type	= 1	90 degV	Broad	---
Multi-Stage	= Yes	Yes	No	No

Exfil.(in/hr) = 0.500 (by Contour)

TW Elev. (ft) = 0.00

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



Hydrograph Report

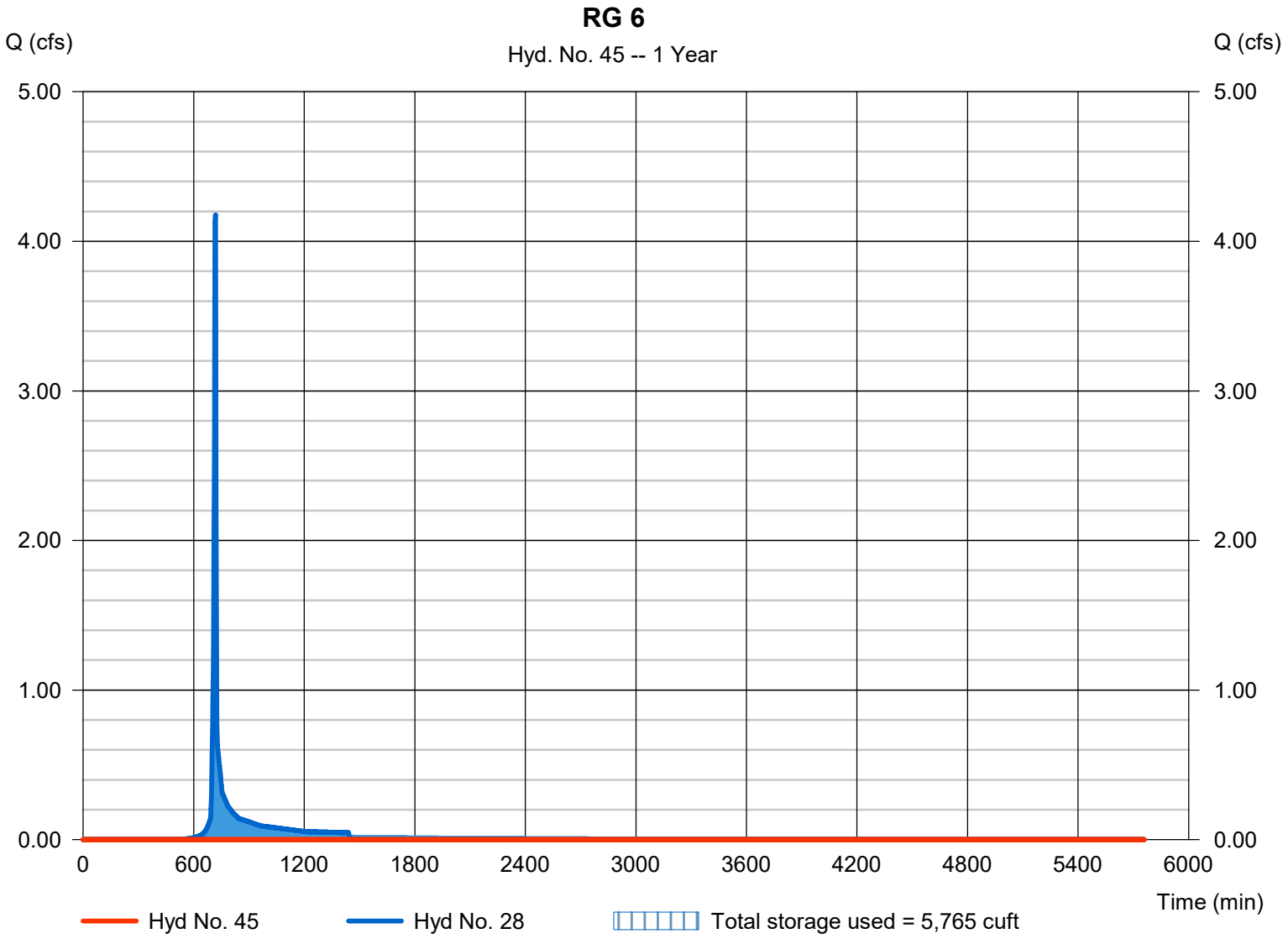
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 45

RG 6

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	1 yrs	Time to peak	=	698 min
Time interval	=	2 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	28 - Rain Garden 6 Combined	Max. Elevation	=	627.02 ft
Reservoir name	=	RG 6	Max. Storage	=	5,765 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

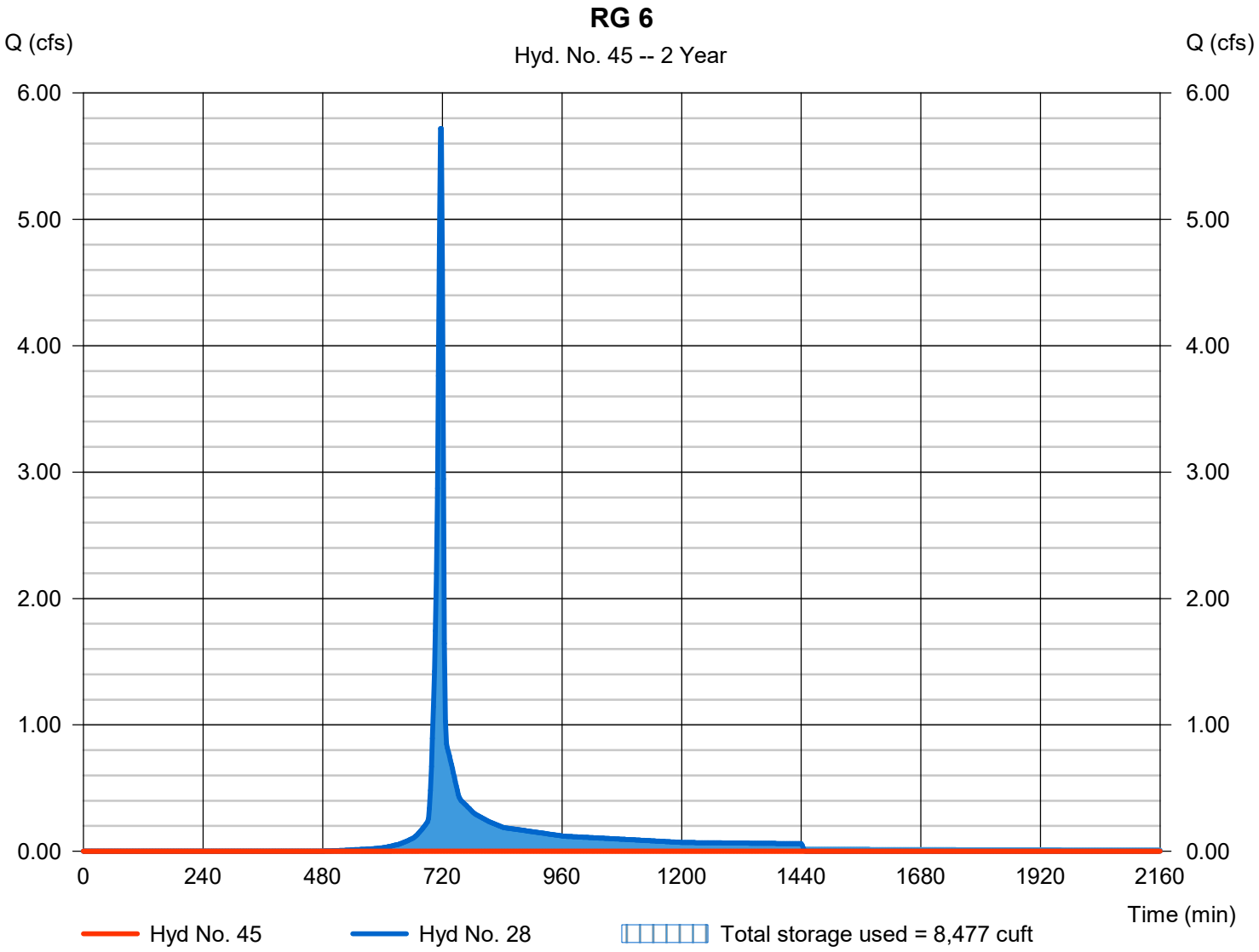
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 45

RG 6

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	840 min
Time interval	=	2 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	28 - Rain Garden 6 Combined	Max. Elevation	=	627.43 ft
Reservoir name	=	RG 6	Max. Storage	=	8,477 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

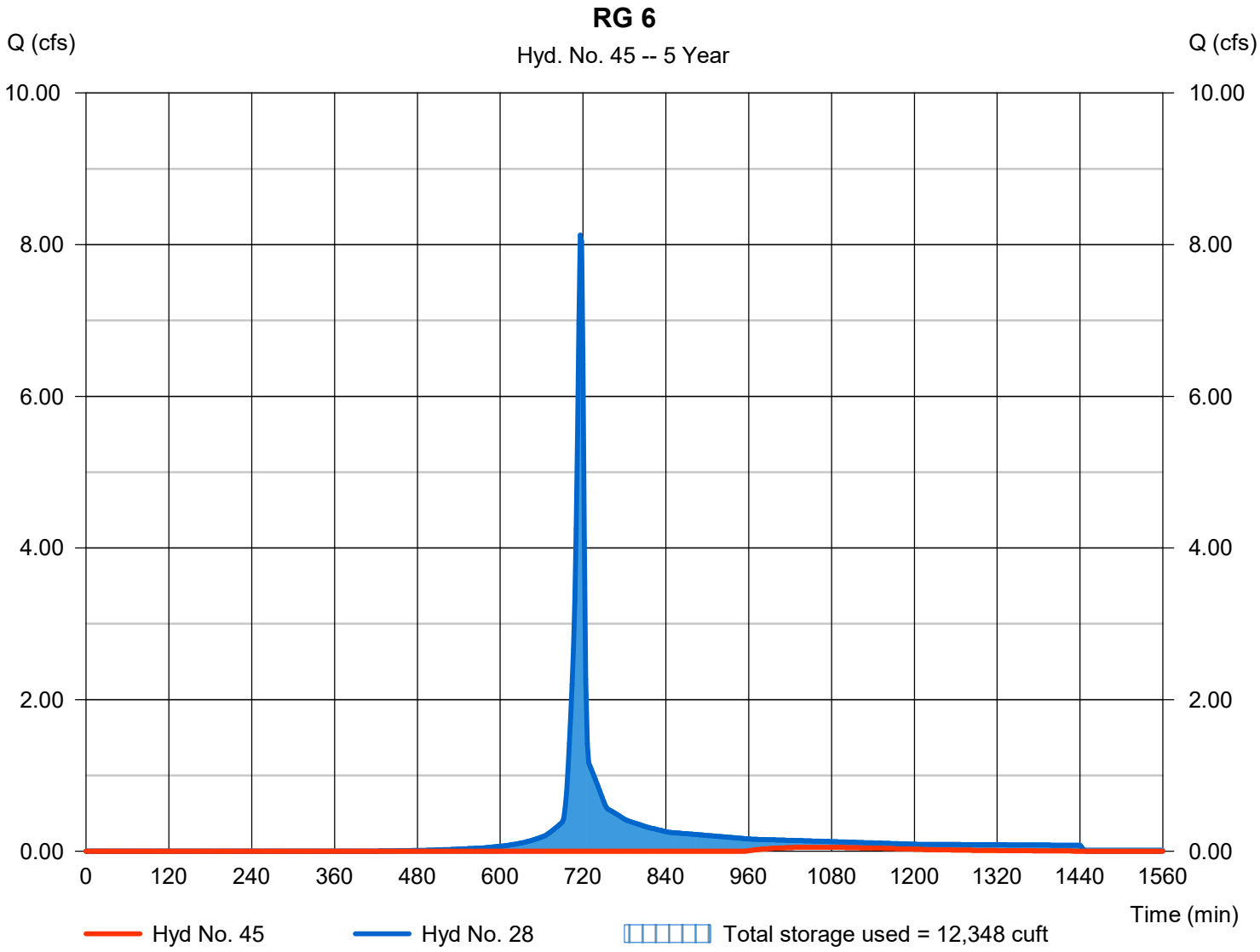
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 45

RG 6

Hydrograph type	=	Reservoir	Peak discharge	=	0.052 cfs
Storm frequency	=	5 yrs	Time to peak	=	1058 min
Time interval	=	2 min	Hyd. volume	=	759 cuft
Inflow hyd. No.	=	28 - Rain Garden 6 Combined	Max. Elevation	=	628.02 ft
Reservoir name	=	RG 6	Max. Storage	=	12,348 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

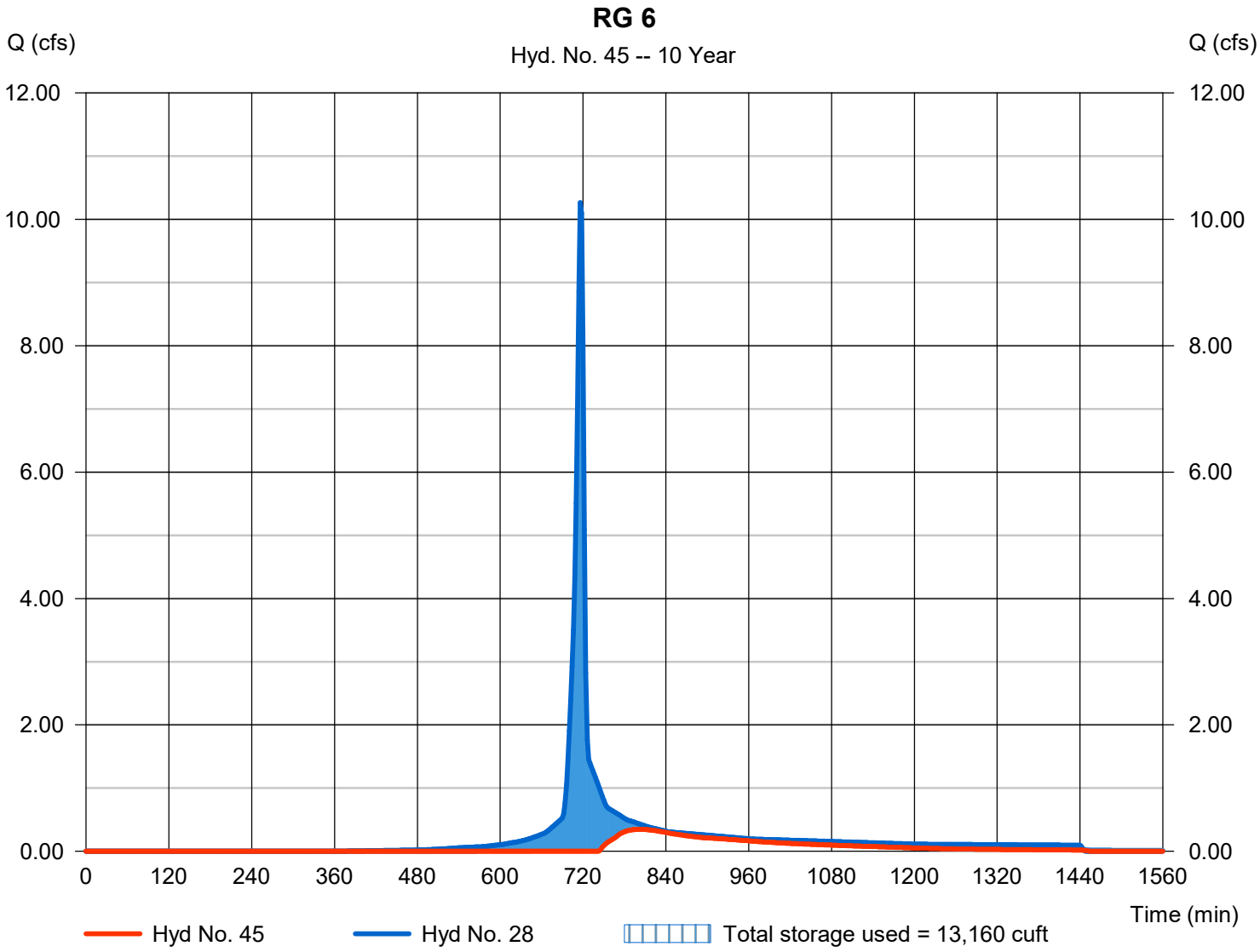
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 45

RG 6

Hydrograph type	=	Reservoir	Peak discharge	=	0.347 cfs
Storm frequency	=	10 yrs	Time to peak	=	802 min
Time interval	=	2 min	Hyd. volume	=	5,066 cuft
Inflow hyd. No.	=	28 - Rain Garden 6 Combined	Max. Elevation	=	628.13 ft
Reservoir name	=	RG 6	Max. Storage	=	13,160 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

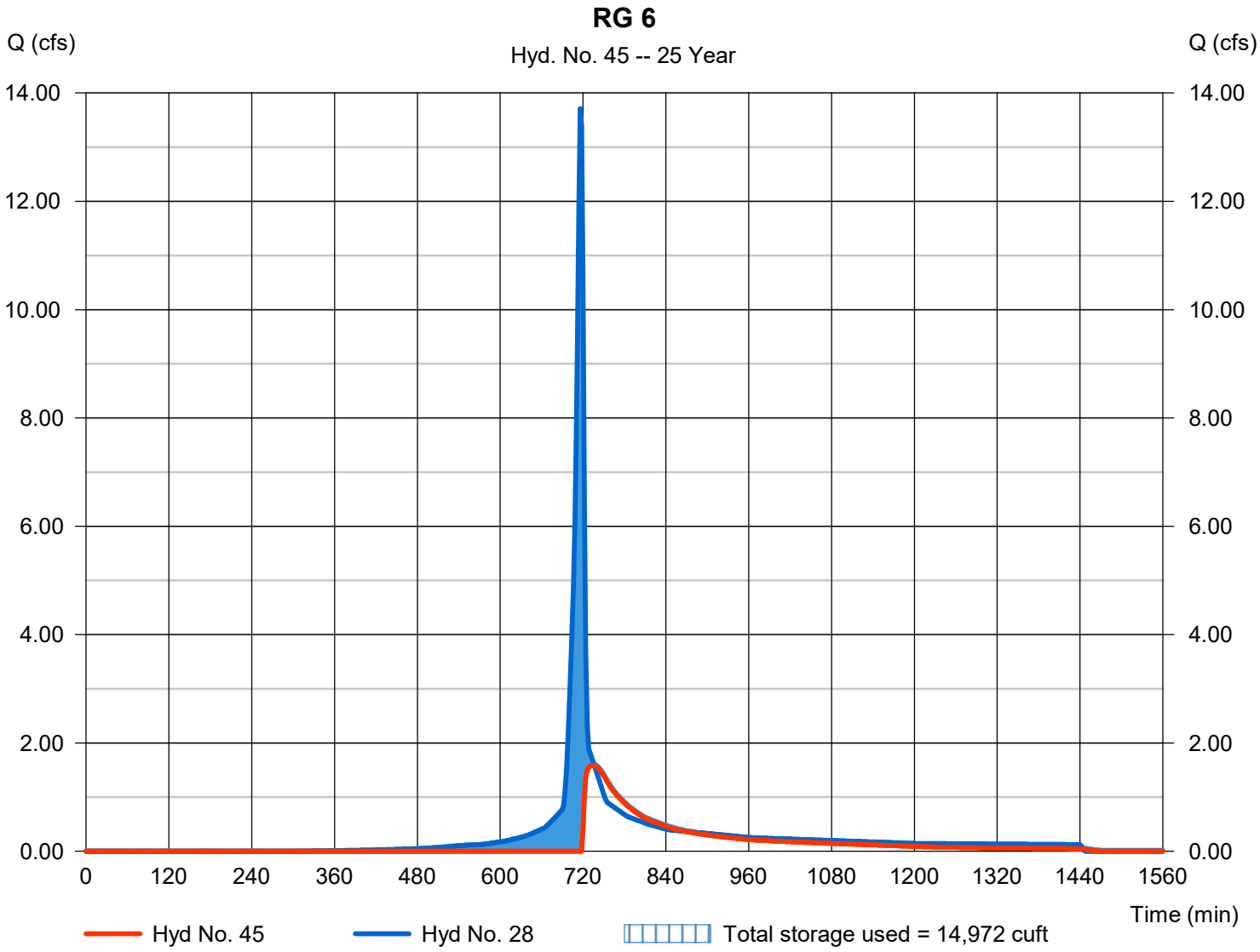
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 45

RG 6

Hydrograph type	=	Reservoir	Peak discharge	=	1.583 cfs
Storm frequency	=	25 yrs	Time to peak	=	734 min
Time interval	=	2 min	Hyd. volume	=	12,209 cuft
Inflow hyd. No.	=	28 - Rain Garden 6 Combined	Max. Elevation	=	628.38 ft
Reservoir name	=	RG 6	Max. Storage	=	14,972 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

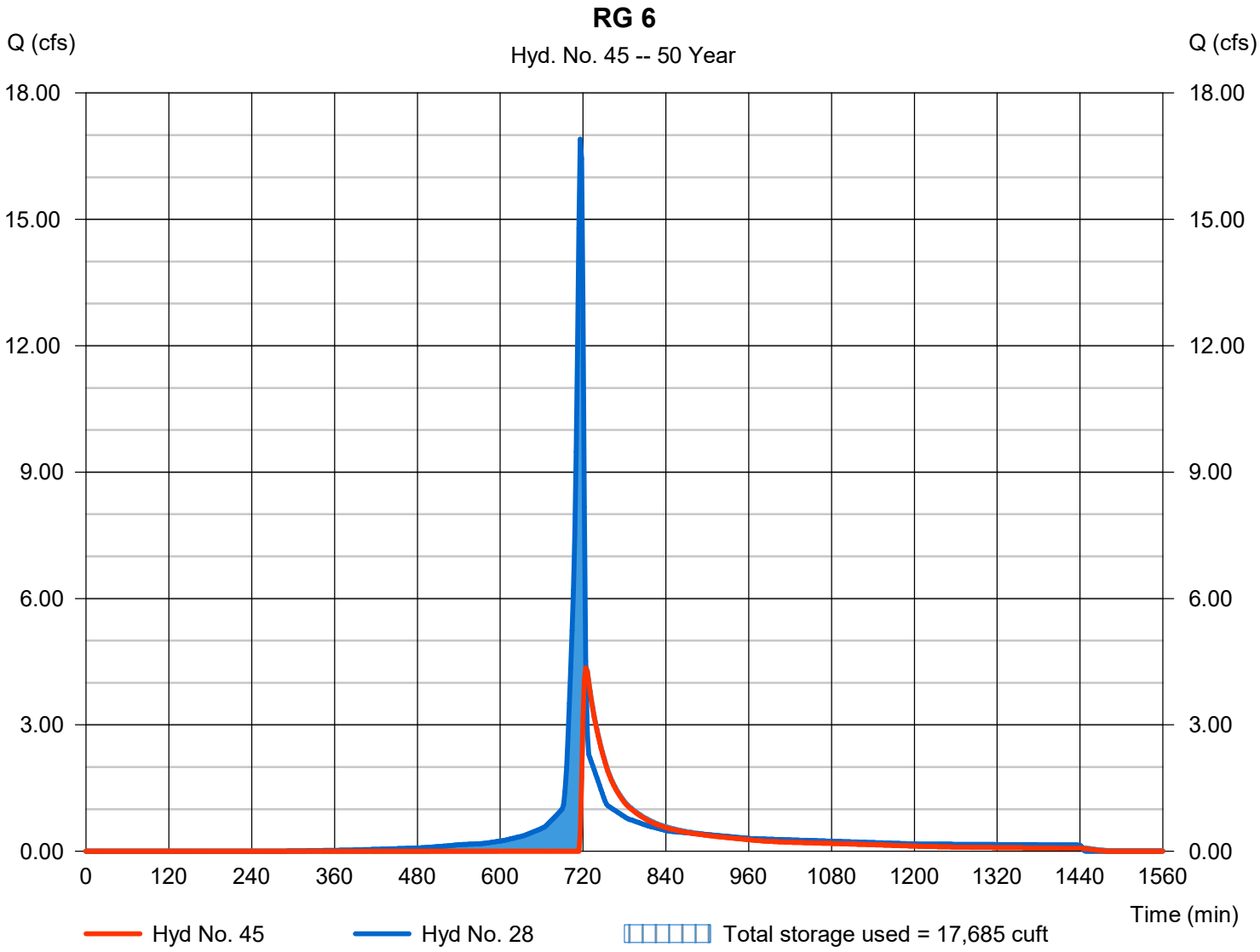
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 45

RG 6

Hydrograph type	=	Reservoir	Peak discharge	=	4.354 cfs
Storm frequency	=	50 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	18,972 cuft
Inflow hyd. No.	=	28 - Rain Garden 6 Combined	Max. Elevation	=	628.74 ft
Reservoir name	=	RG 6	Max. Storage	=	17,685 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

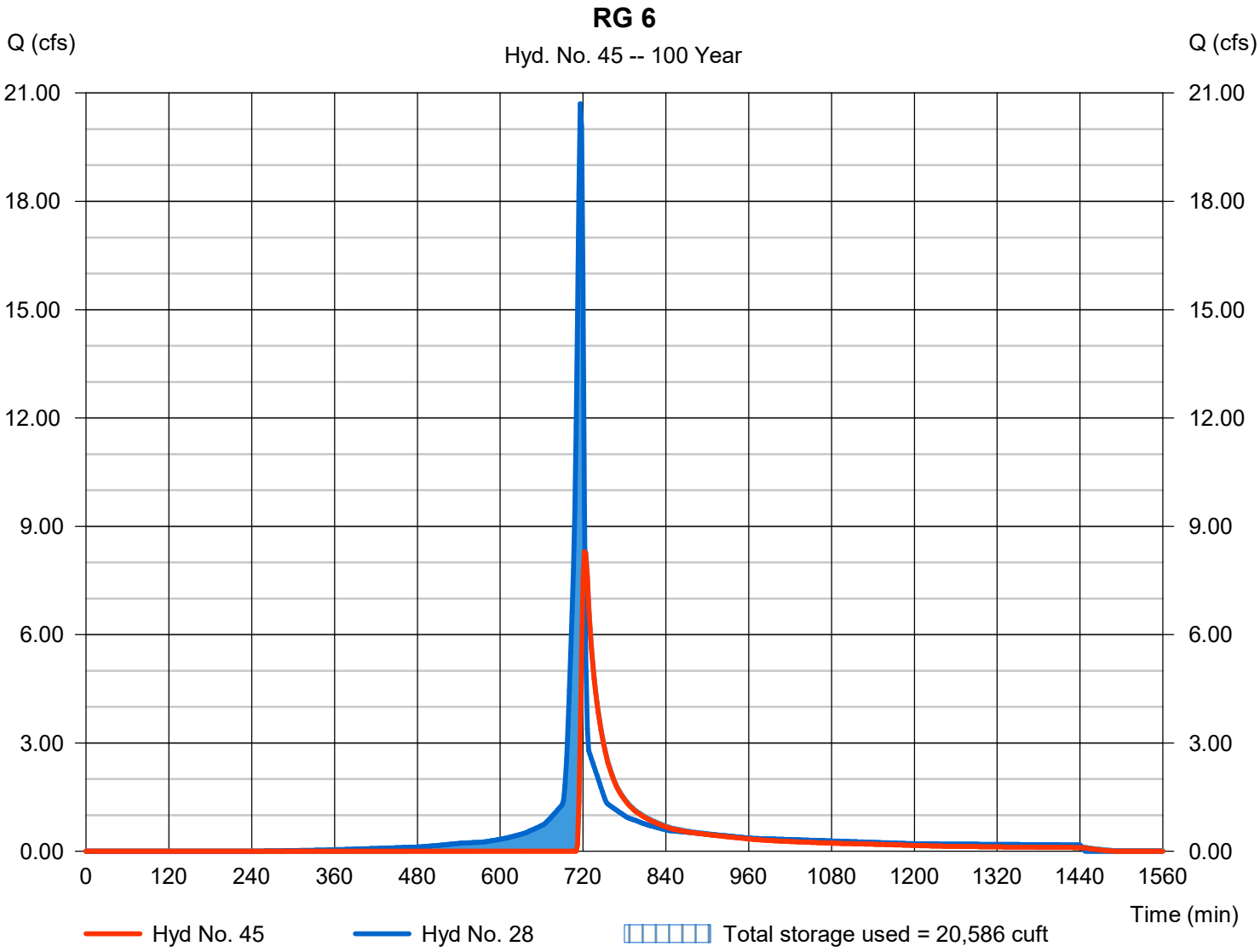
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 45

RG 6

Hydrograph type	=	Reservoir	Peak discharge	=	8.296 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	27,158 cuft
Inflow hyd. No.	=	28 - Rain Garden 6 Combined	Max. Elevation	=	629.12 ft
Reservoir name	=	RG 6	Max. Storage	=	20,586 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Developed Conditions: Rain Garden 7 Onsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D			77					
Meadow	D			78					
Forest (Good)	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D	16,778	0.39	80	2.50	0.50	1.49	2090.04	0.05
Lawn, High-Input	D			84					
Golf Course Fairway/Green	D			80					
Grassed Athletic Field	D			80					
Rooftop	D			98					
High Traffic Street / Highway	D			93					
Medium Traffic Street	D			98					
Low Traffic / Residential Street	D			98					
Res. Driveway, Play Courts, etc.	D	7,776	0.18	98	0.20	0.04	3.09	2000.46	0.05
Impervious Allowance	D	500	0.01	98	0.20	0.04	3.09	128.63	0.00
Low Traffic Parking Lot	D			98					
TOTAL:		25,054	0.58						0.10

Developed Conditions: Rain Garden 7 Offsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D	14,658	0.34	77	2.99	0.60	1.30	1585.77	0.04
Meadow	D			78					
Forest (Good)	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D			80					
Lawn, High-Input	D			84					
Golf Course Fairway/Green	D			80					
Grassed Athletic Field	D			80					
Rooftop	D			98					
High Traffic Street / Highway	D			93					
Medium Traffic Street	D			98					
Low Traffic / Residential Street	D			98					
Res. Driveway, Play Courts, etc.	D			98					
Impervious Allowance	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		14,658	0.34						0.04

Hydrograph Report

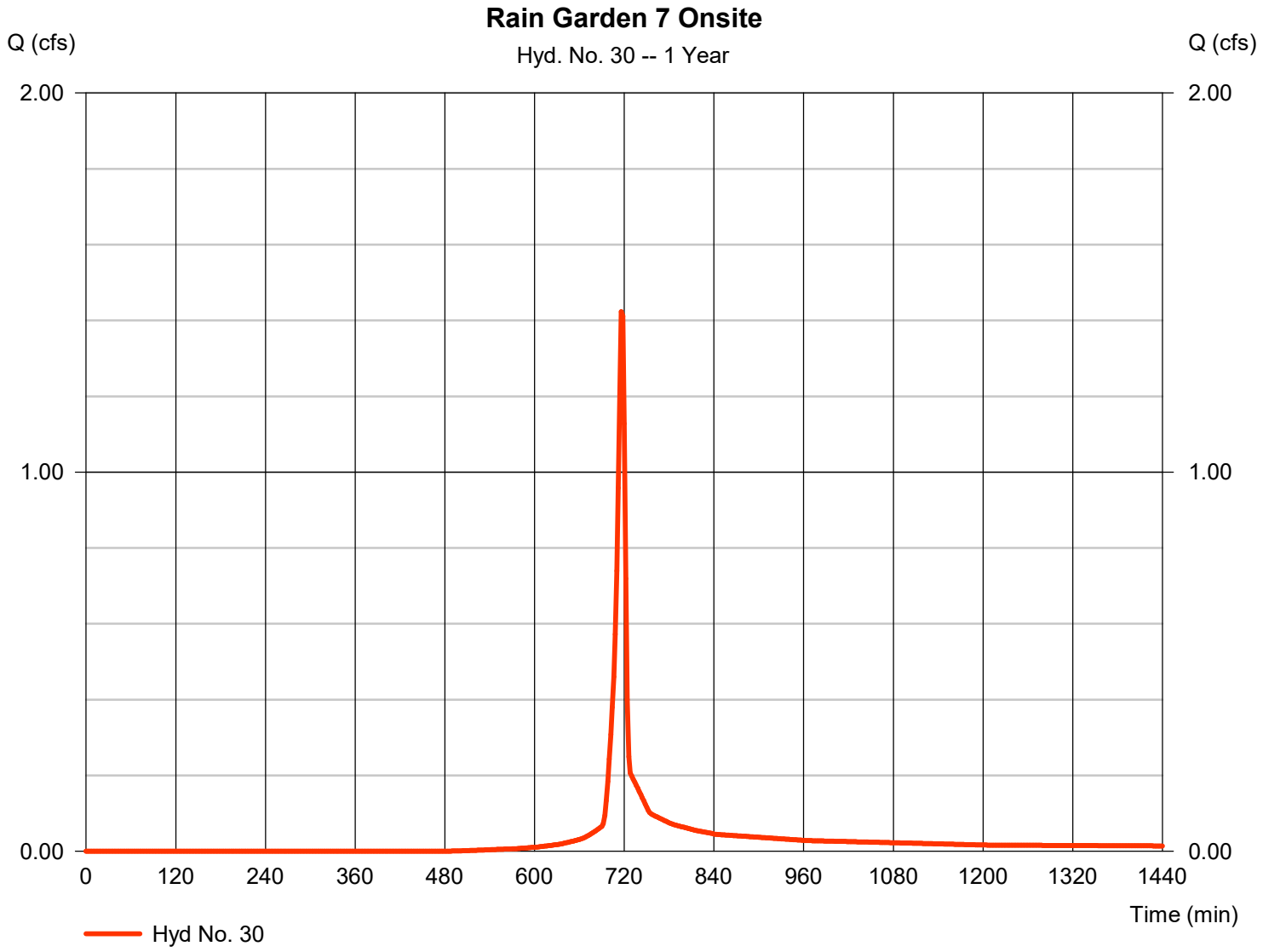
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 30

Rain Garden 7 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 1.423 cfs
Storm frequency	= 1 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 2,880 cuft
Drainage area	= 0.580 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.76 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.390 x 80) + (0.190 x 98)] / 0.580



Hydrograph Report

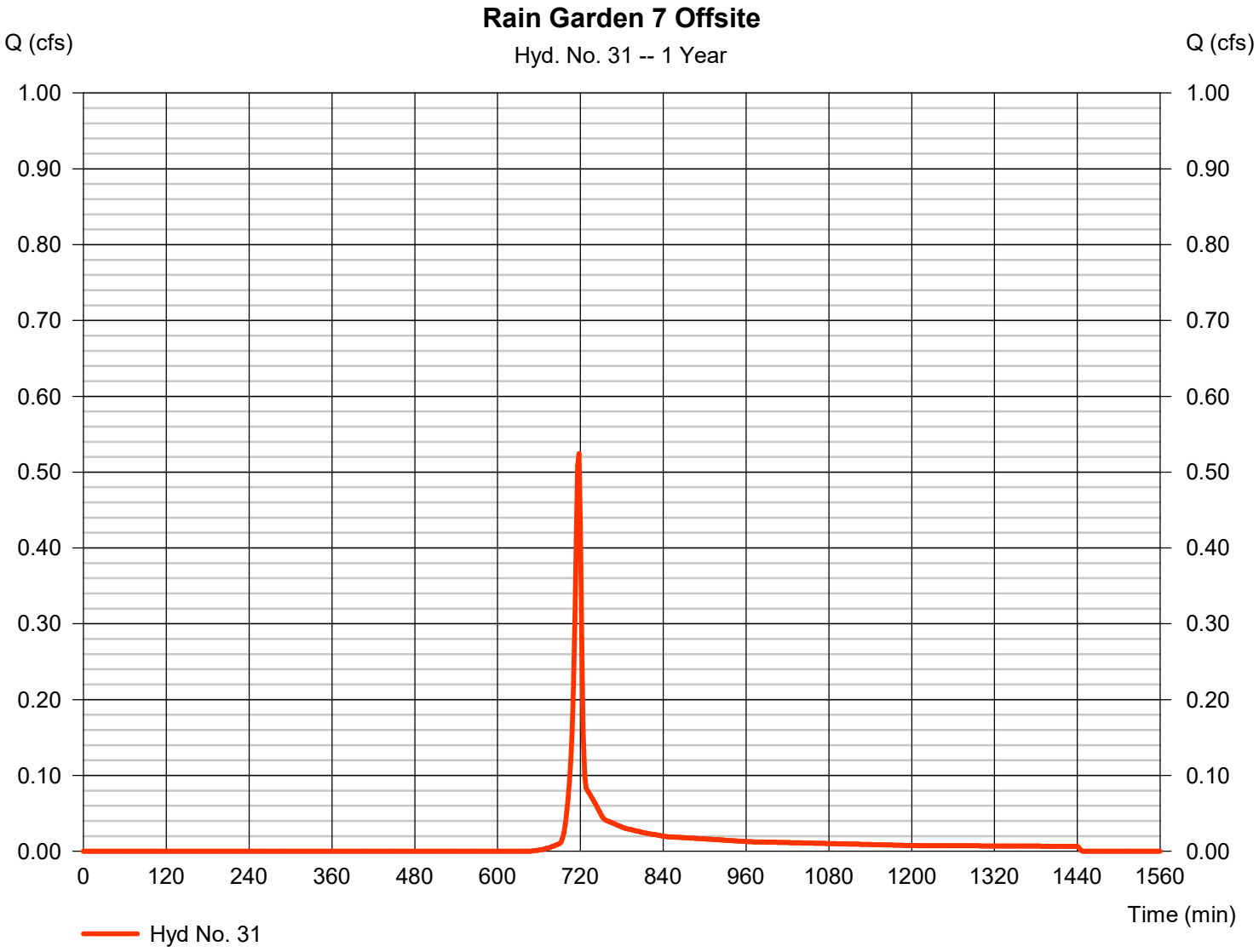
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 31

Rain Garden 7 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 0.525 cfs
Storm frequency	= 1 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 1,051 cuft
Drainage area	= 0.340 ac	Curve number	= 77*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.76 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.340 x 77)] / 0.340



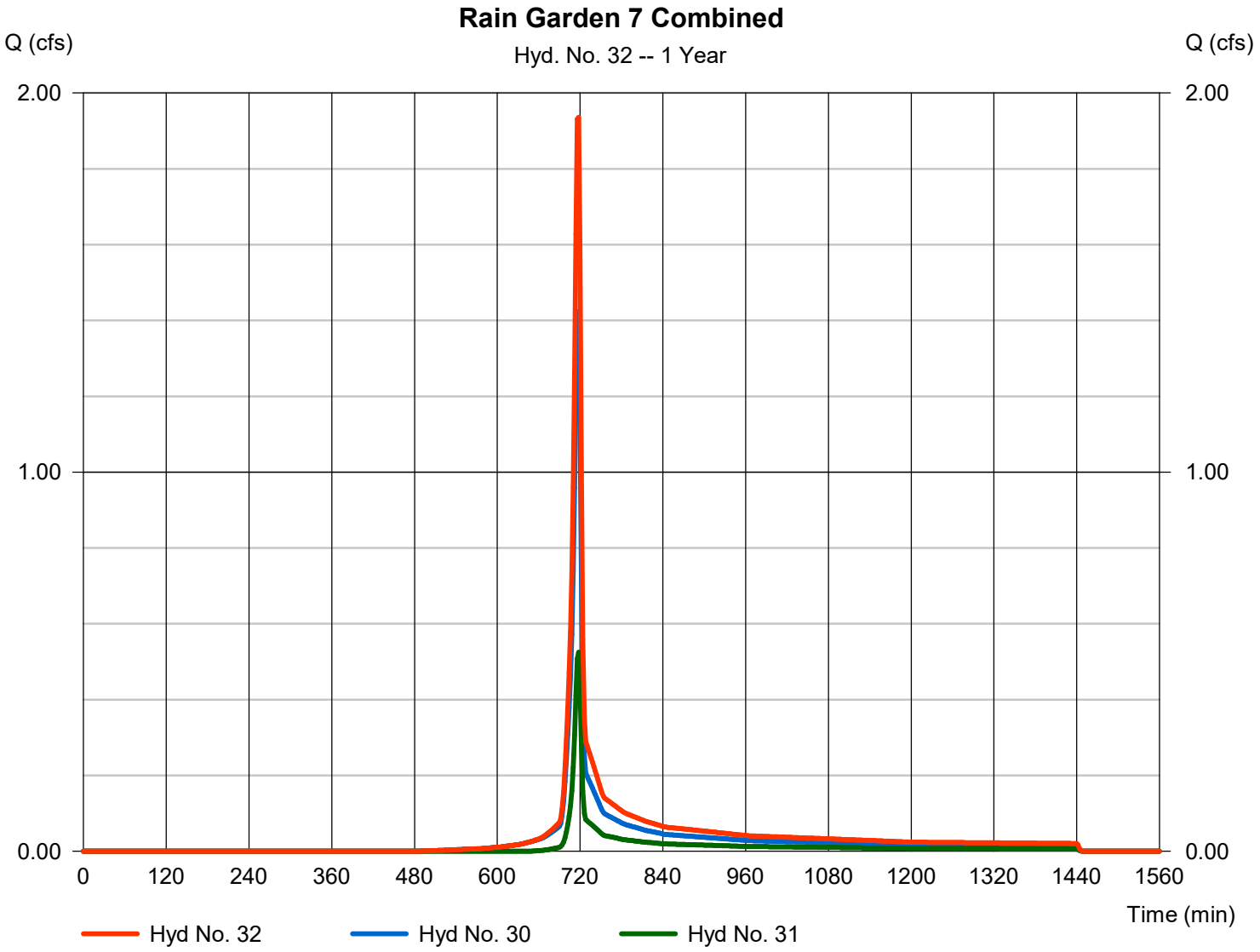
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 32

Rain Garden 7 Combined

Hydrograph type	= Combine	Peak discharge	= 1.936 cfs
Storm frequency	= 1 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 3,930 cuft
Inflow hyds.	= 30, 31	Contrib. drain. area	= 0.920 ac



Hydrograph Report

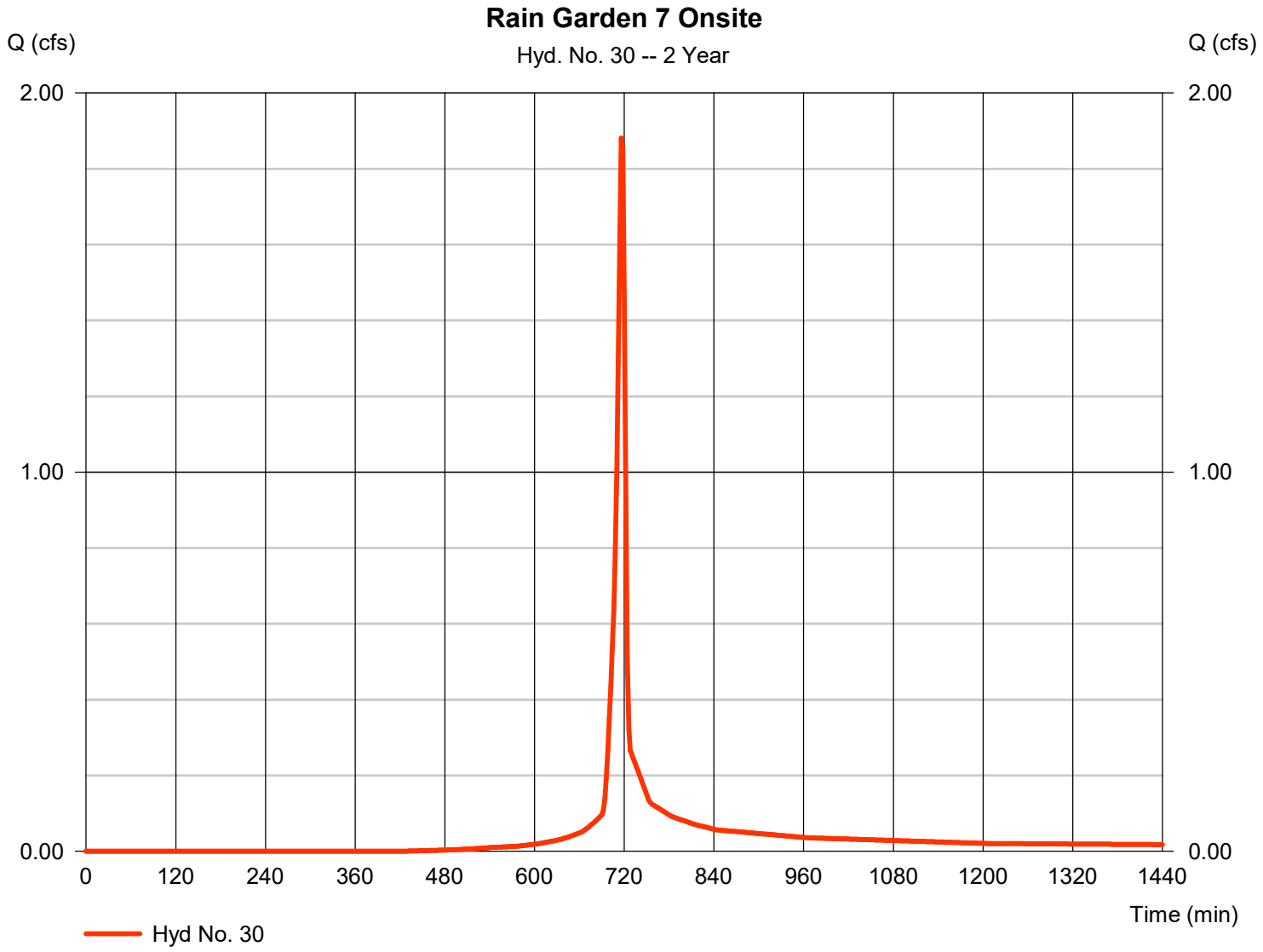
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 30

Rain Garden 7 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 1.881 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 3,829 cuft
Drainage area	= 0.580 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.390 x 80) + (0.190 x 98)] / 0.580



Hydrograph Report

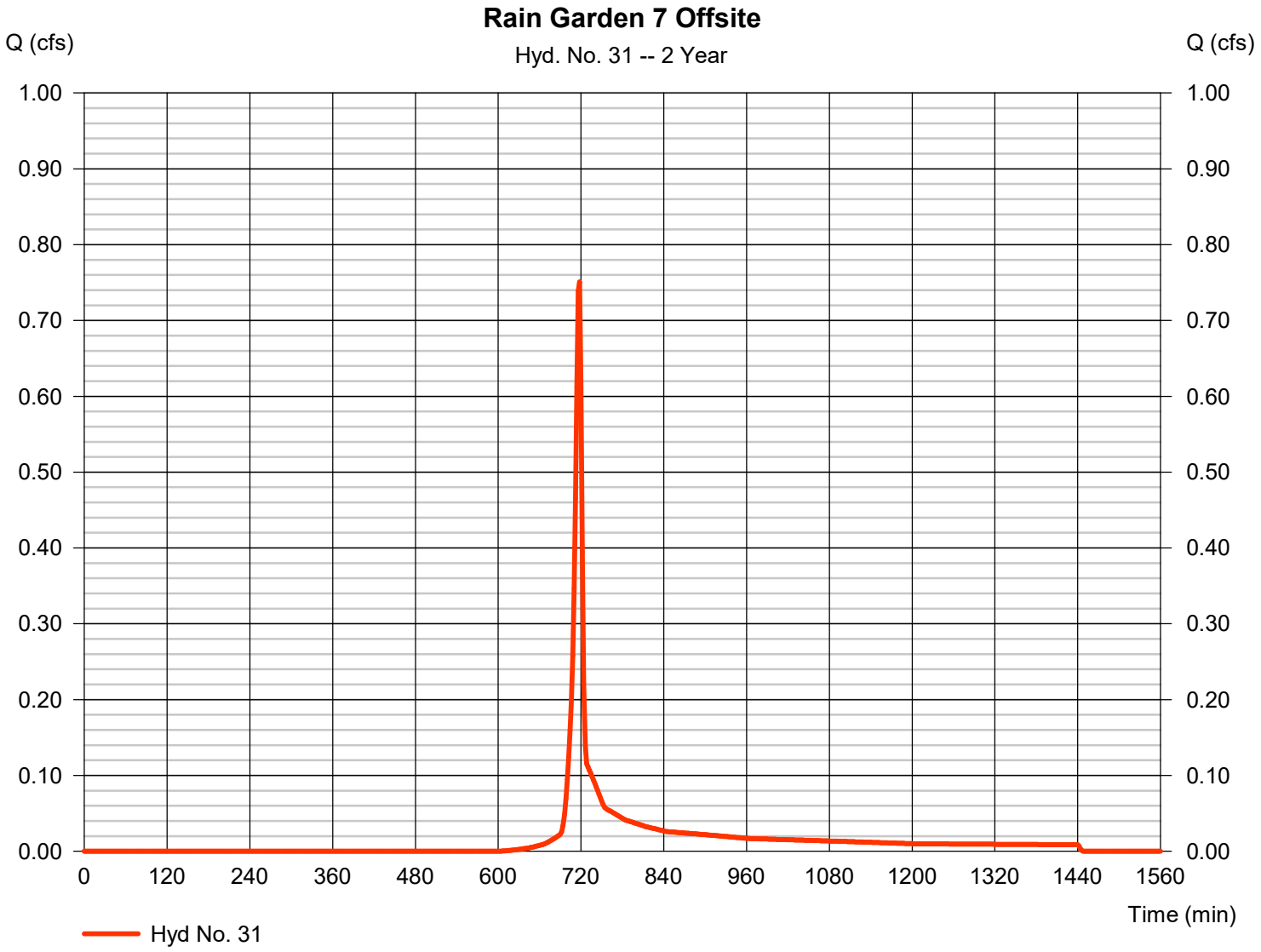
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 31

Rain Garden 7 Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.751 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	1,502 cuft
Drainage area	=	0.340 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.32 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.340 x 77)] / 0.340



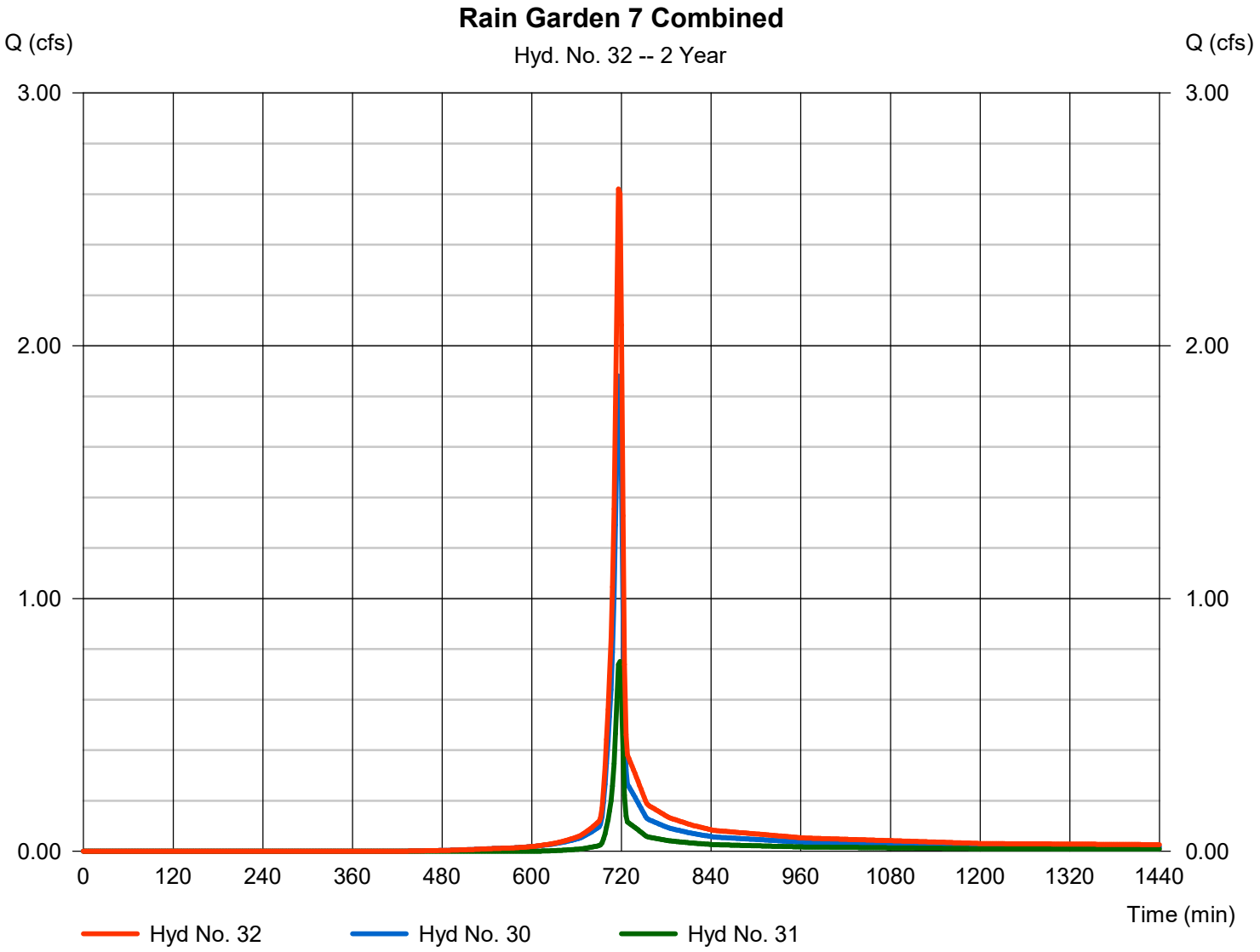
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 32

Rain Garden 7 Combined

Hydrograph type	= Combine	Peak discharge	= 2.620 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 5,331 cuft
Inflow hyds.	= 30, 31	Contrib. drain. area	= 0.920 ac



Hydrograph Report

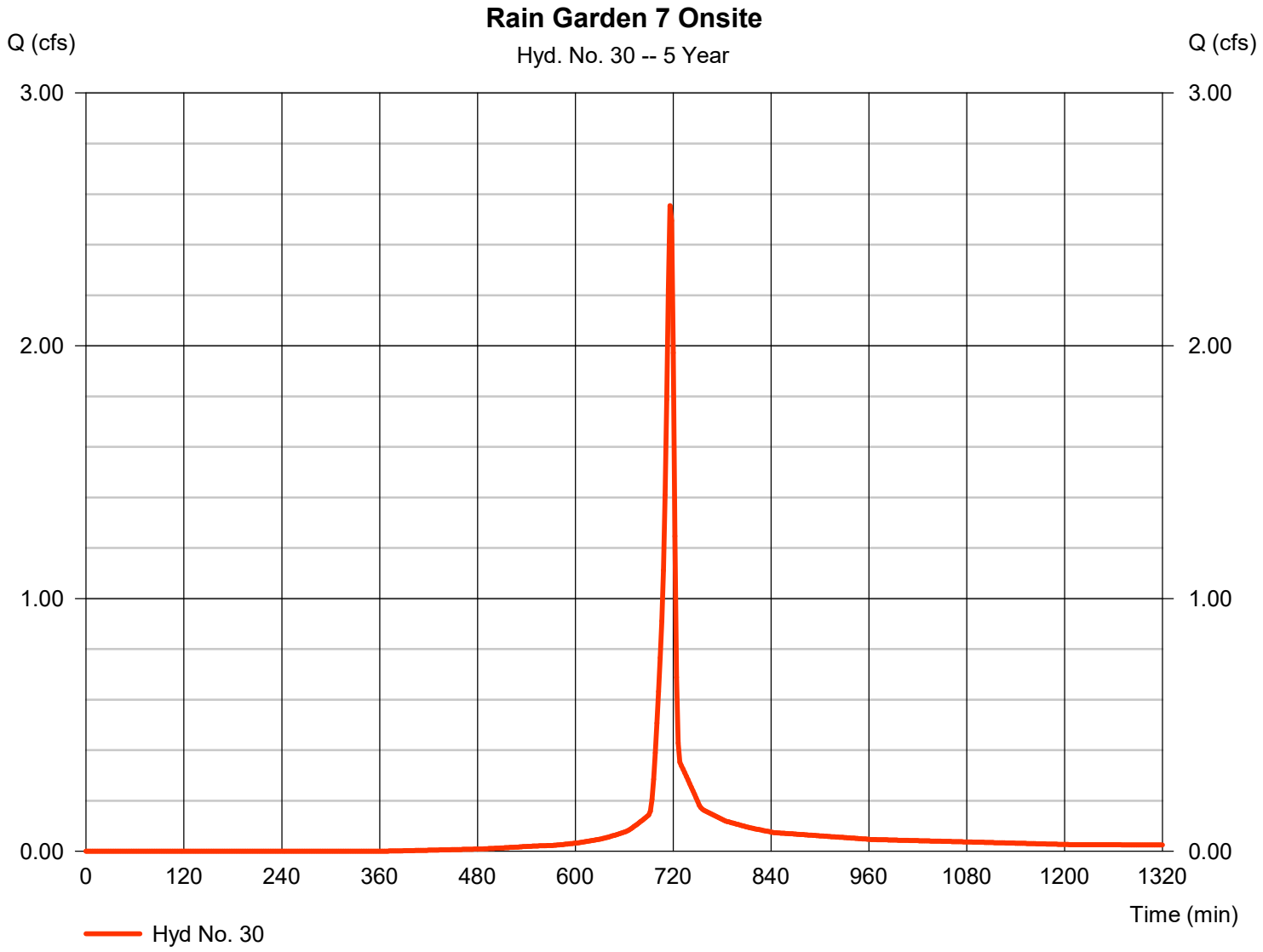
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 30

Rain Garden 7 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 2.554 cfs
Storm frequency	= 5 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 5,259 cuft
Drainage area	= 0.580 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.13 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.390 x 80) + (0.190 x 98)] / 0.580



Hydrograph Report

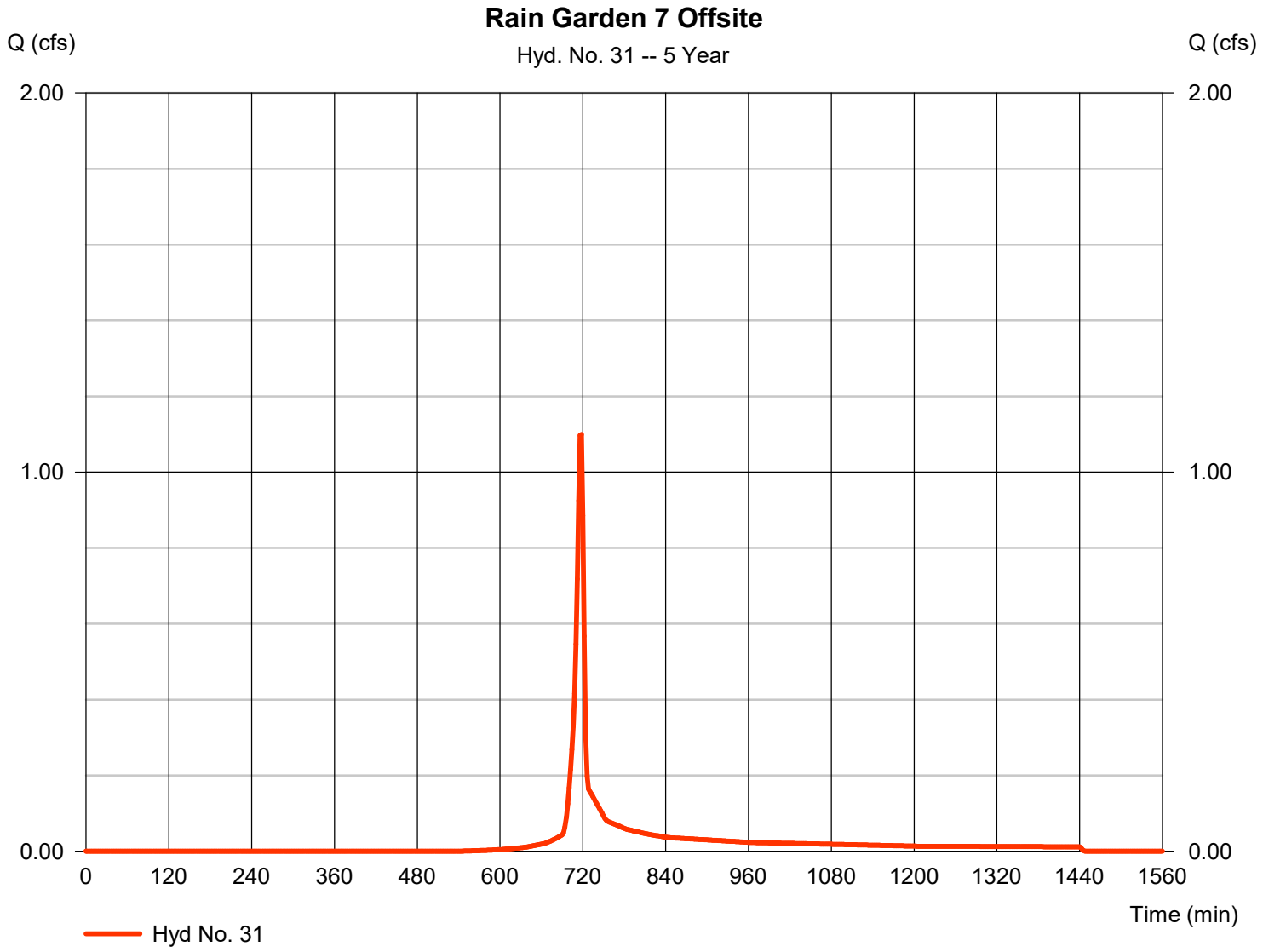
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 31

Rain Garden 7 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 1.099 cfs
Storm frequency	= 5 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 2,215 cuft
Drainage area	= 0.340 ac	Curve number	= 77*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.13 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.340 x 77)] / 0.340



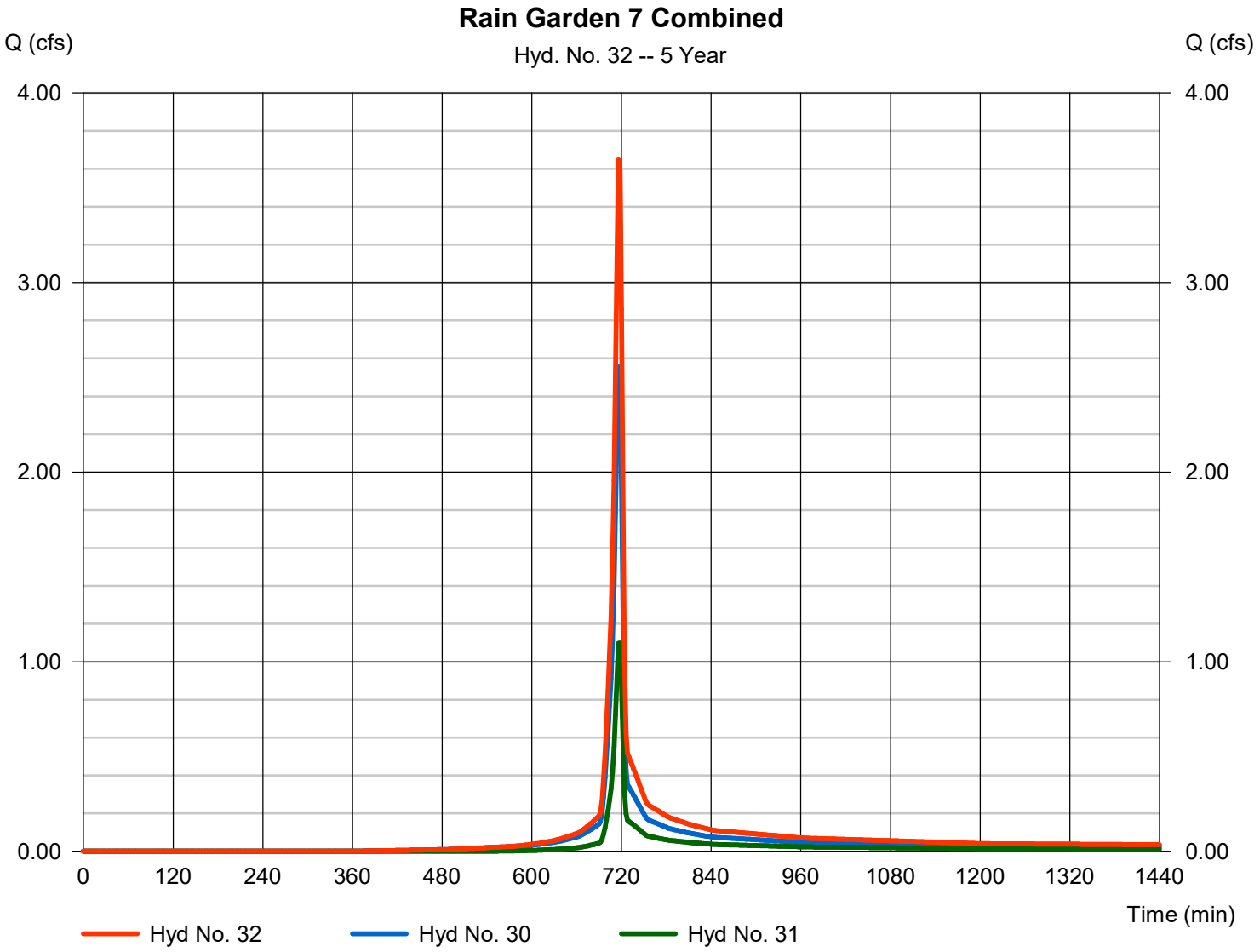
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 32

Rain Garden 7 Combined

Hydrograph type	= Combine	Peak discharge	= 3.651 cfs
Storm frequency	= 5 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 7,474 cuft
Inflow hyds.	= 30, 31	Contrib. drain. area	= 0.920 ac



Hydrograph Report

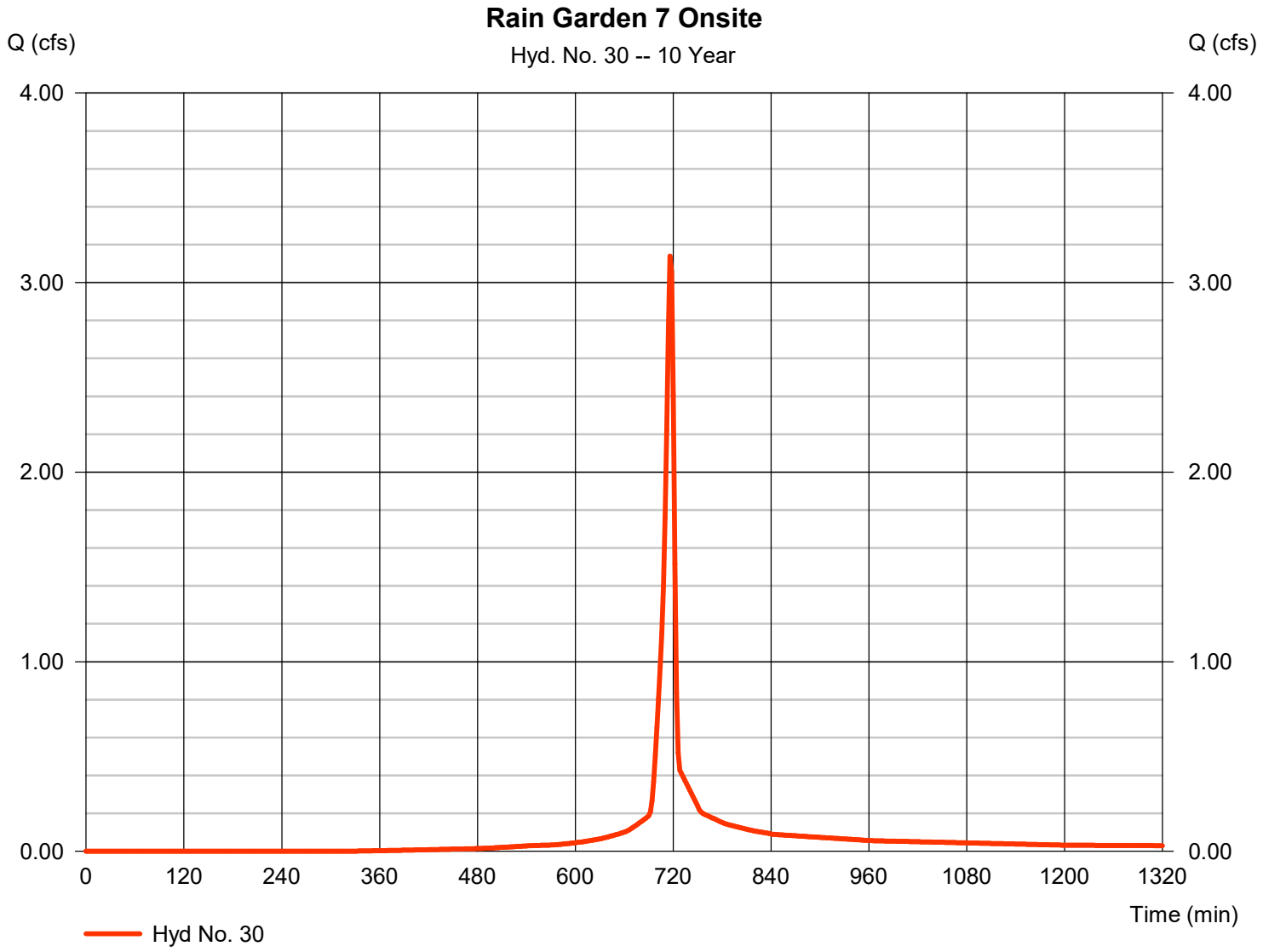
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 30

Rain Garden 7 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 3.140 cfs
Storm frequency	= 10 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 6,531 cuft
Drainage area	= 0.580 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.390 x 80) + (0.190 x 98)] / 0.580



Hydrograph Report

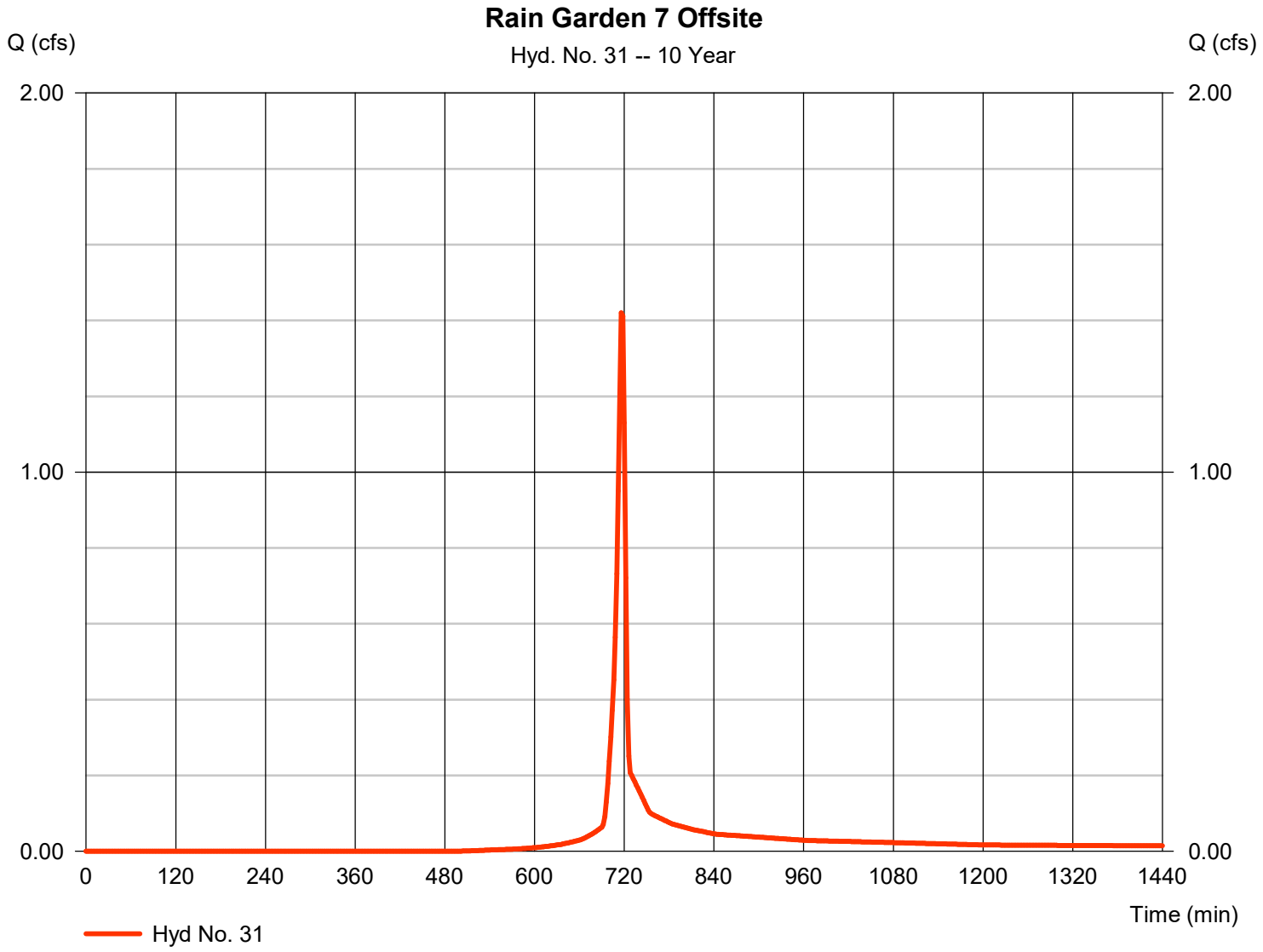
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 31

Rain Garden 7 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 1.421 cfs
Storm frequency	= 10 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 2,871 cuft
Drainage area	= 0.340 ac	Curve number	= 77*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.340 x 77)] / 0.340



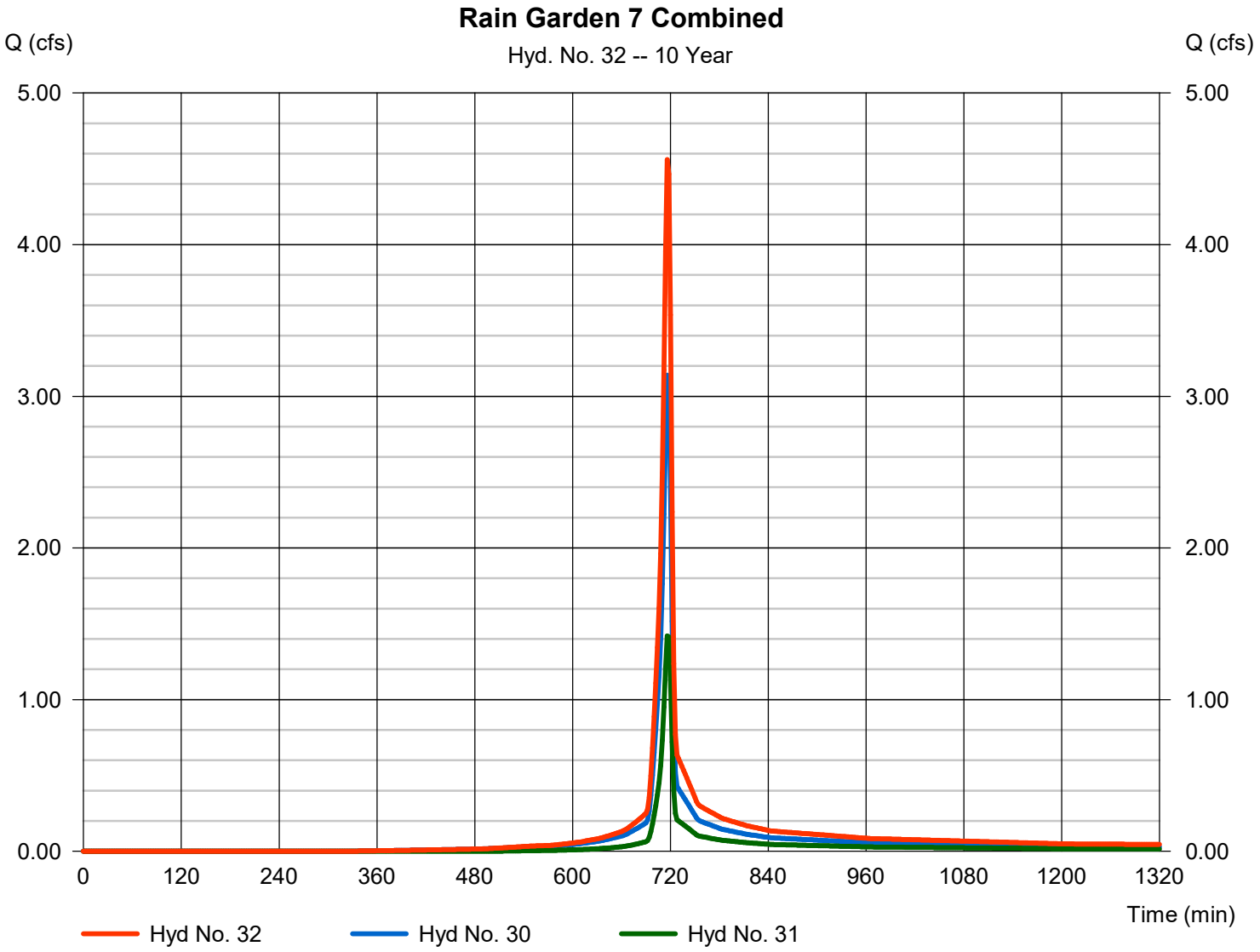
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 32

Rain Garden 7 Combined

Hydrograph type	= Combine	Peak discharge	= 4.560 cfs
Storm frequency	= 10 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 9,402 cuft
Inflow hyds.	= 30, 31	Contrib. drain. area	= 0.920 ac



Hydrograph Report

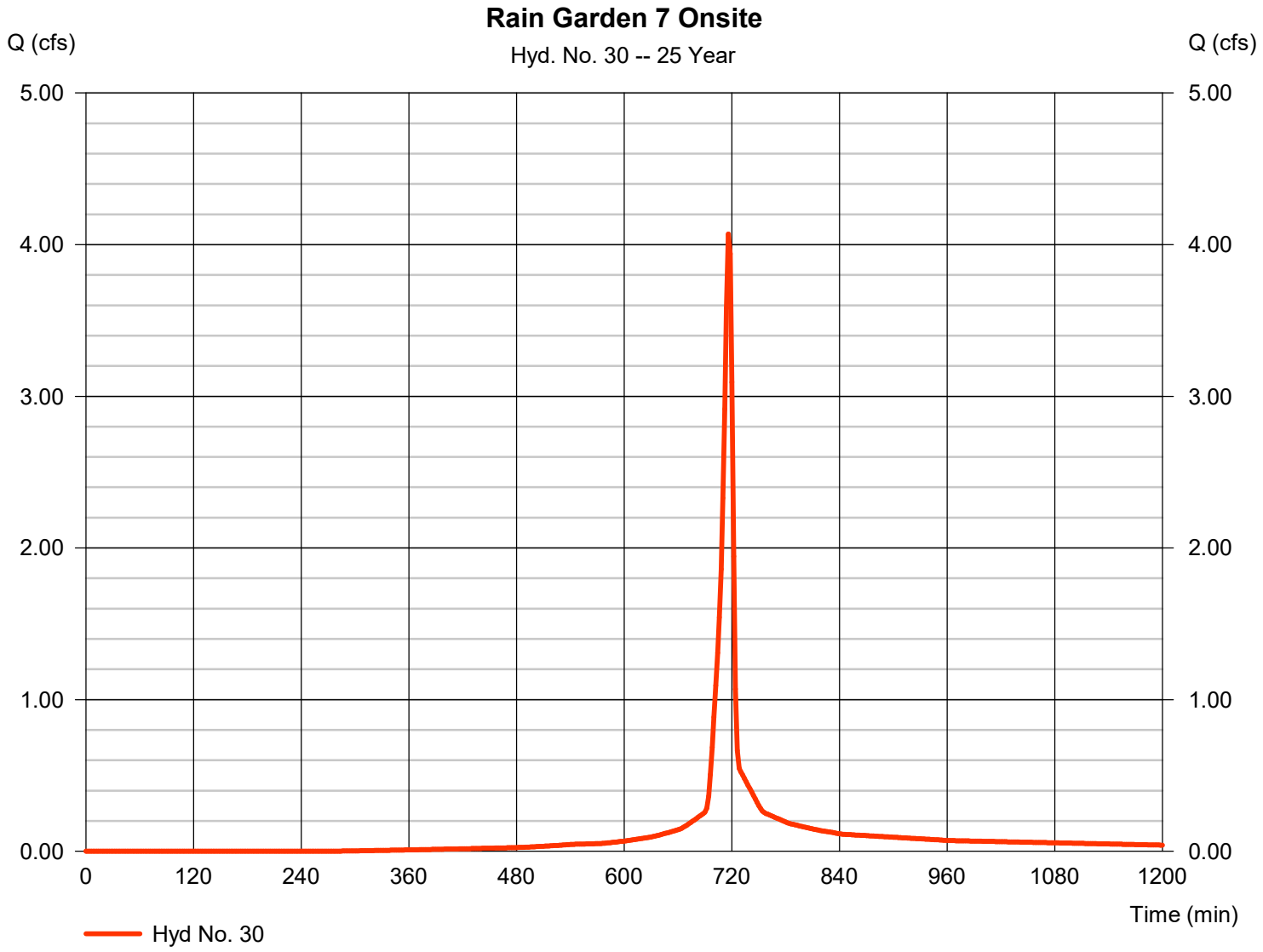
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 30

Rain Garden 7 Onsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	4.069 cfs
Storm frequency	=	25 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	8,591 cuft
Drainage area	=	0.580 ac	Curve number	=	86*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	5.94 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.390 x 80) + (0.190 x 98)] / 0.580



Hydrograph Report

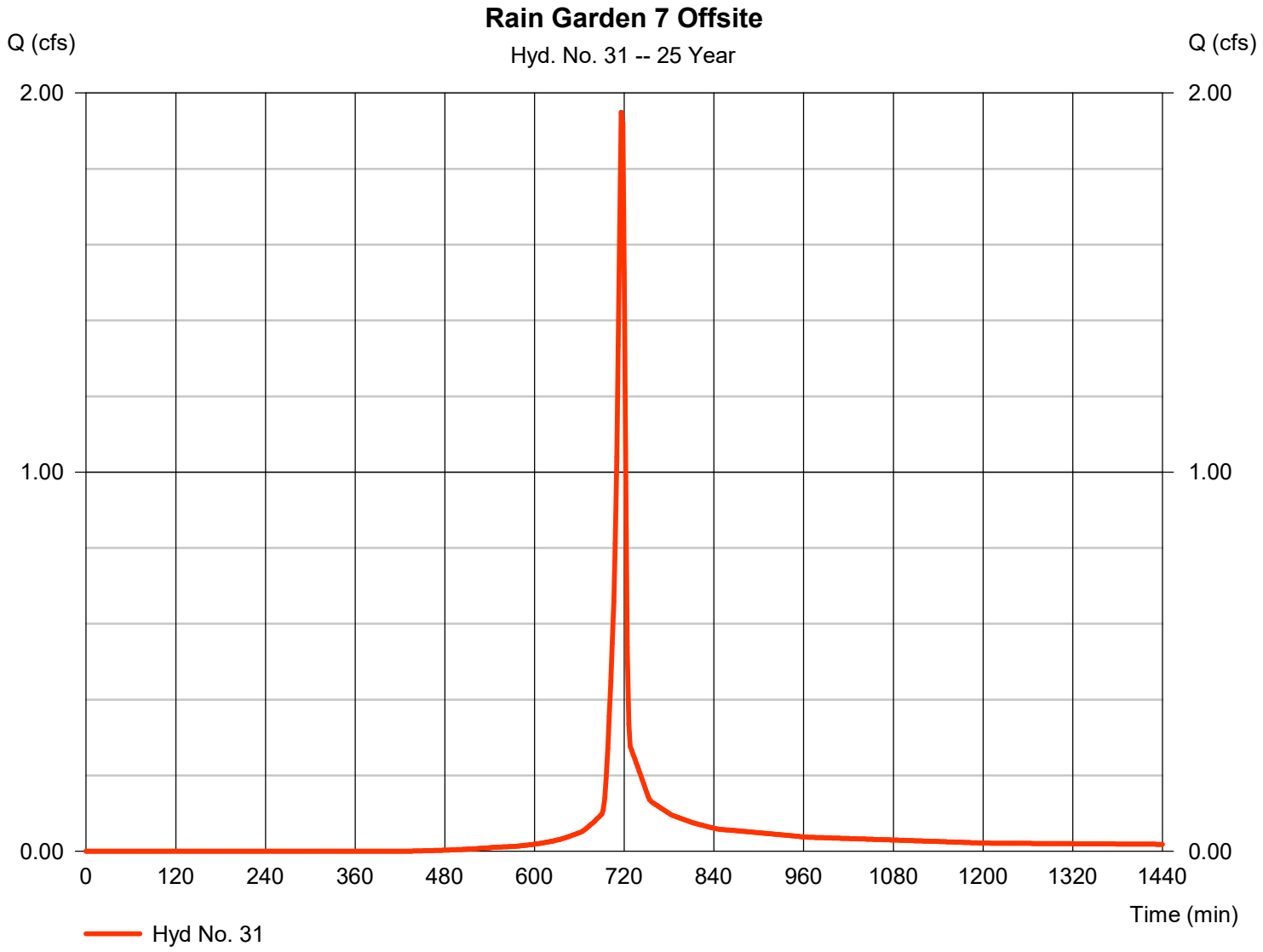
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 31

Rain Garden 7 Offsite

Hydrograph type	= SCS Runoff	Peak discharge	= 1.950 cfs
Storm frequency	= 25 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 3,965 cuft
Drainage area	= 0.340 ac	Curve number	= 77*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.94 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.340 x 77)] / 0.340



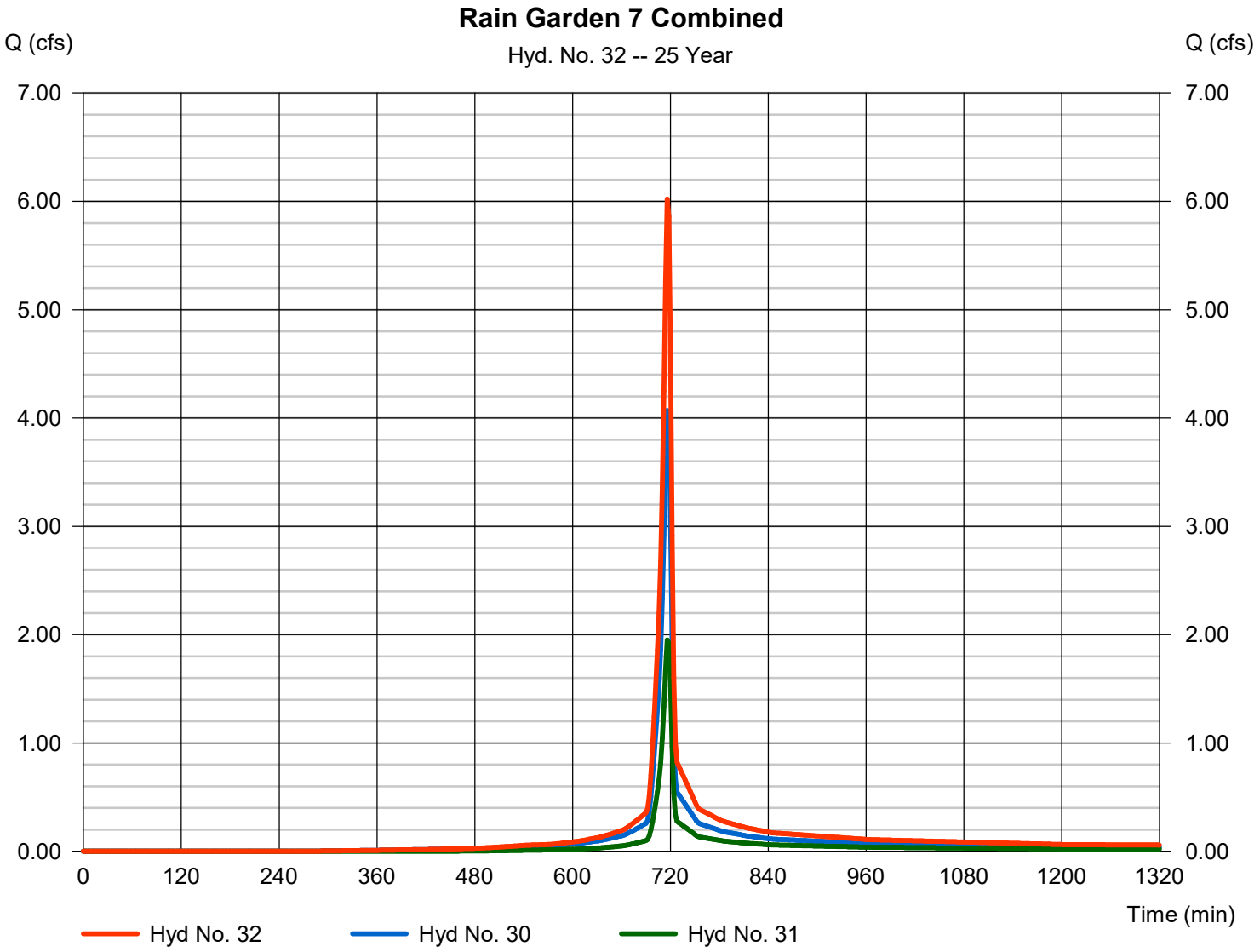
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 32

Rain Garden 7 Combined

Hydrograph type	=	Combine	Peak discharge	=	6.019 cfs
Storm frequency	=	25 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	12,556 cuft
Inflow hyds.	=	30, 31	Contrib. drain. area	=	0.920 ac



Hydrograph Report

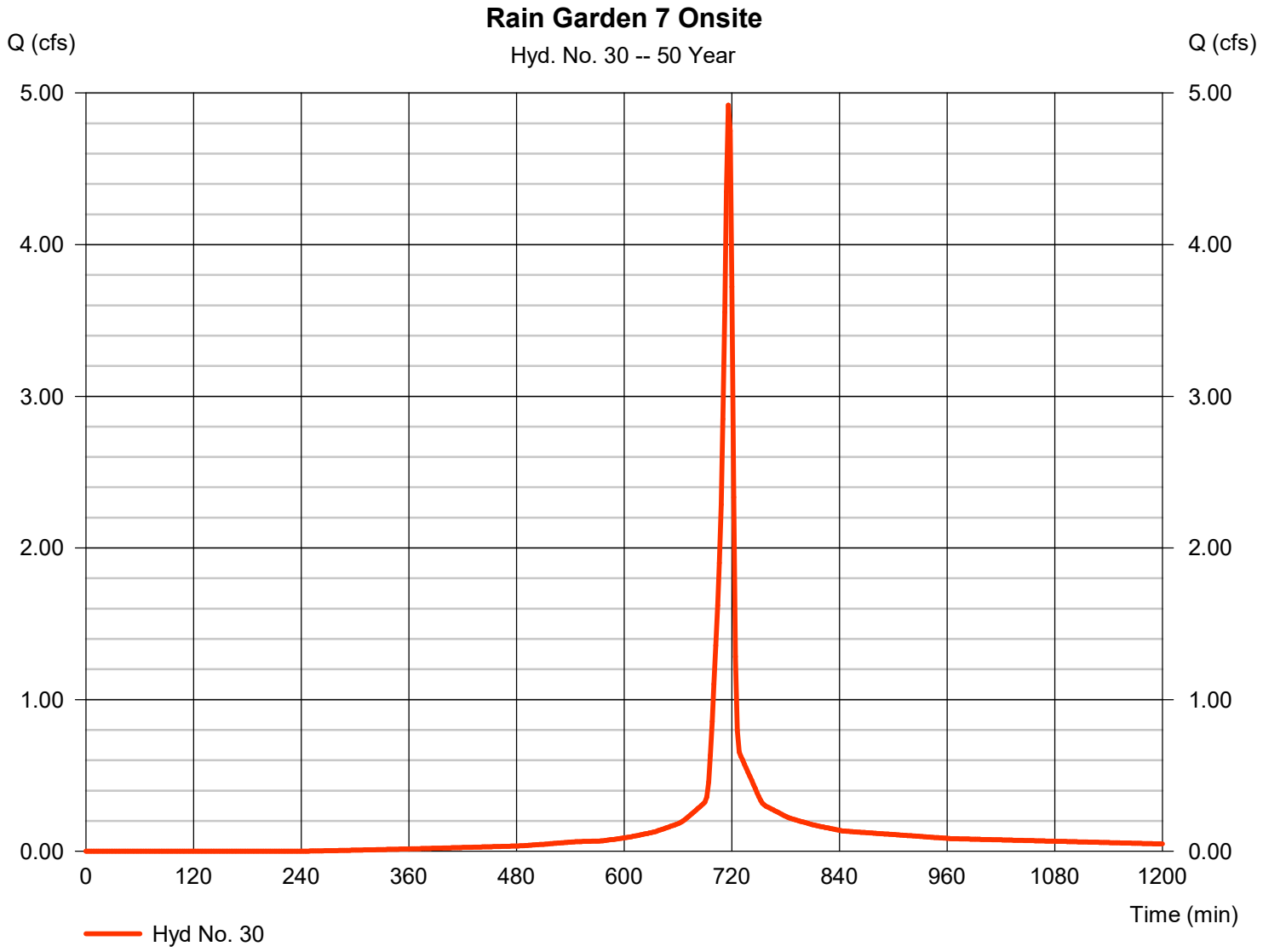
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 30

Rain Garden 7 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 4.921 cfs
Storm frequency	= 50 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 10,515 cuft
Drainage area	= 0.580 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.96 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.390 x 80) + (0.190 x 98)] / 0.580



Hydrograph Report

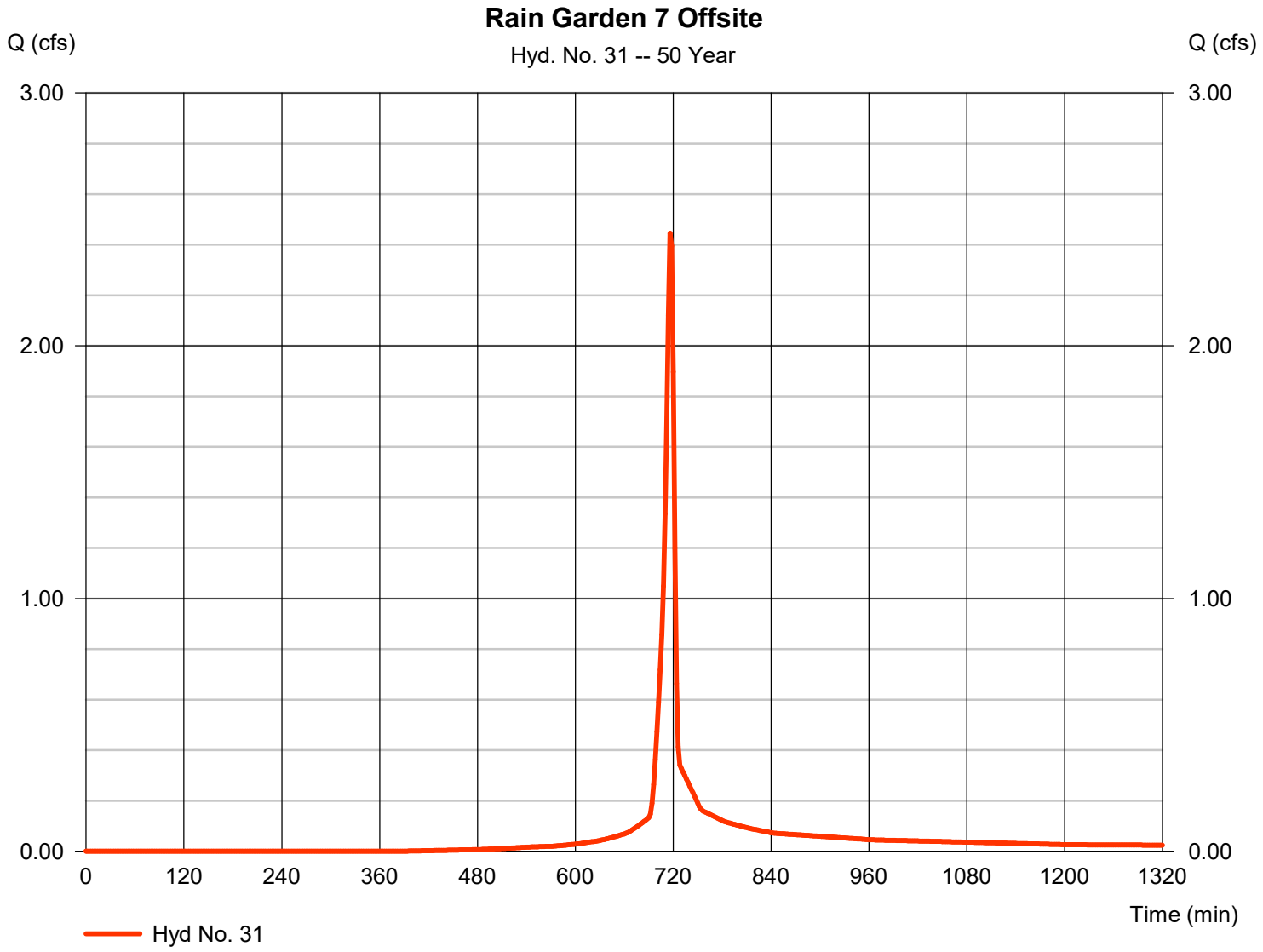
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 31

Rain Garden 7 Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.445 cfs
Storm frequency	=	50 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	5,010 cuft
Drainage area	=	0.340 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.340 x 77)] / 0.340



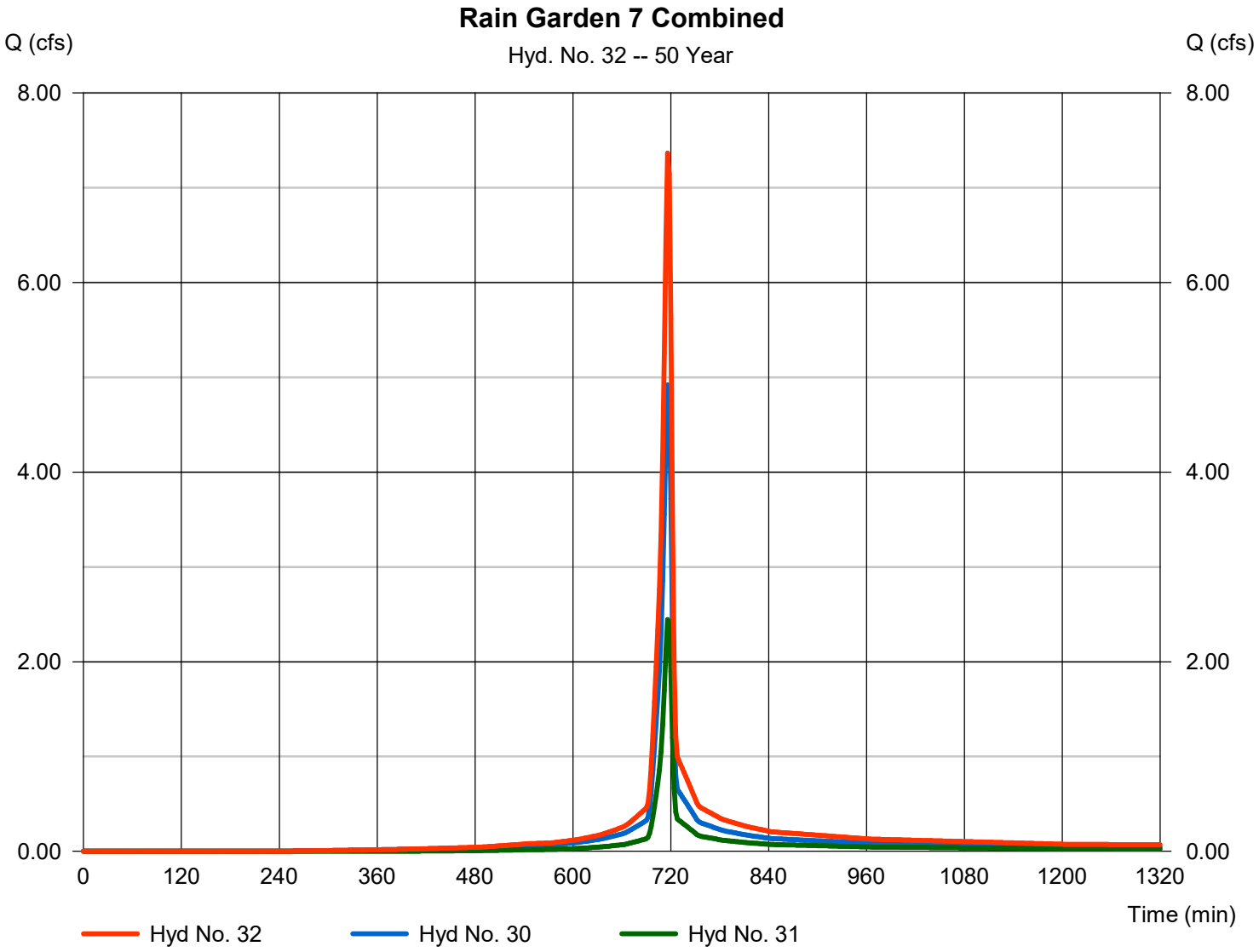
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 32

Rain Garden 7 Combined

Hydrograph type	= Combine	Peak discharge	= 7.366 cfs
Storm frequency	= 50 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 15,525 cuft
Inflow hyds.	= 30, 31	Contrib. drain. area	= 0.920 ac



Hydrograph Report

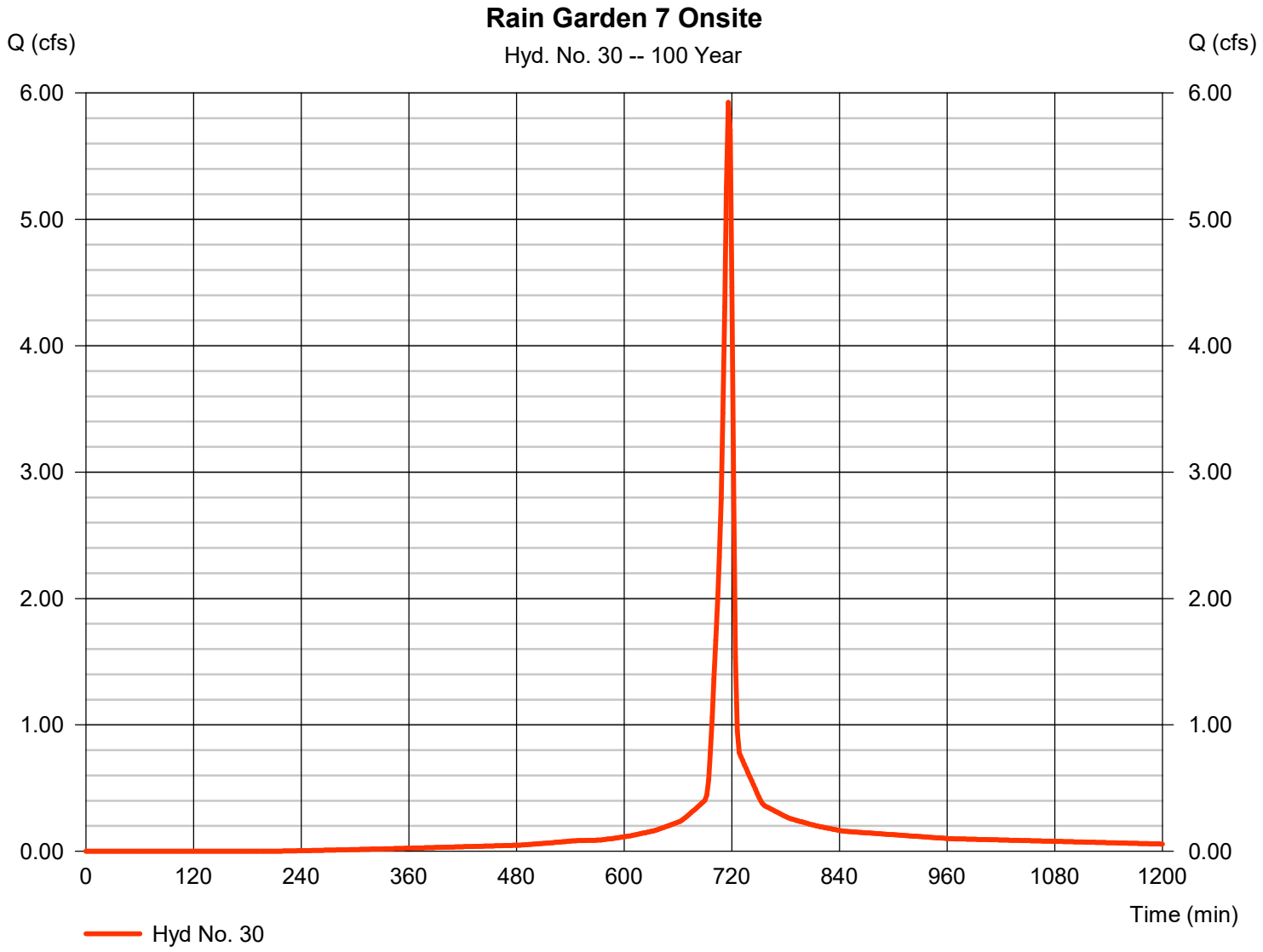
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 30

Rain Garden 7 Onsite

Hydrograph type	= SCS Runoff	Peak discharge	= 5.926 cfs
Storm frequency	= 100 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 12,822 cuft
Drainage area	= 0.580 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 8.17 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.390 x 80) + (0.190 x 98)] / 0.580



Hydrograph Report

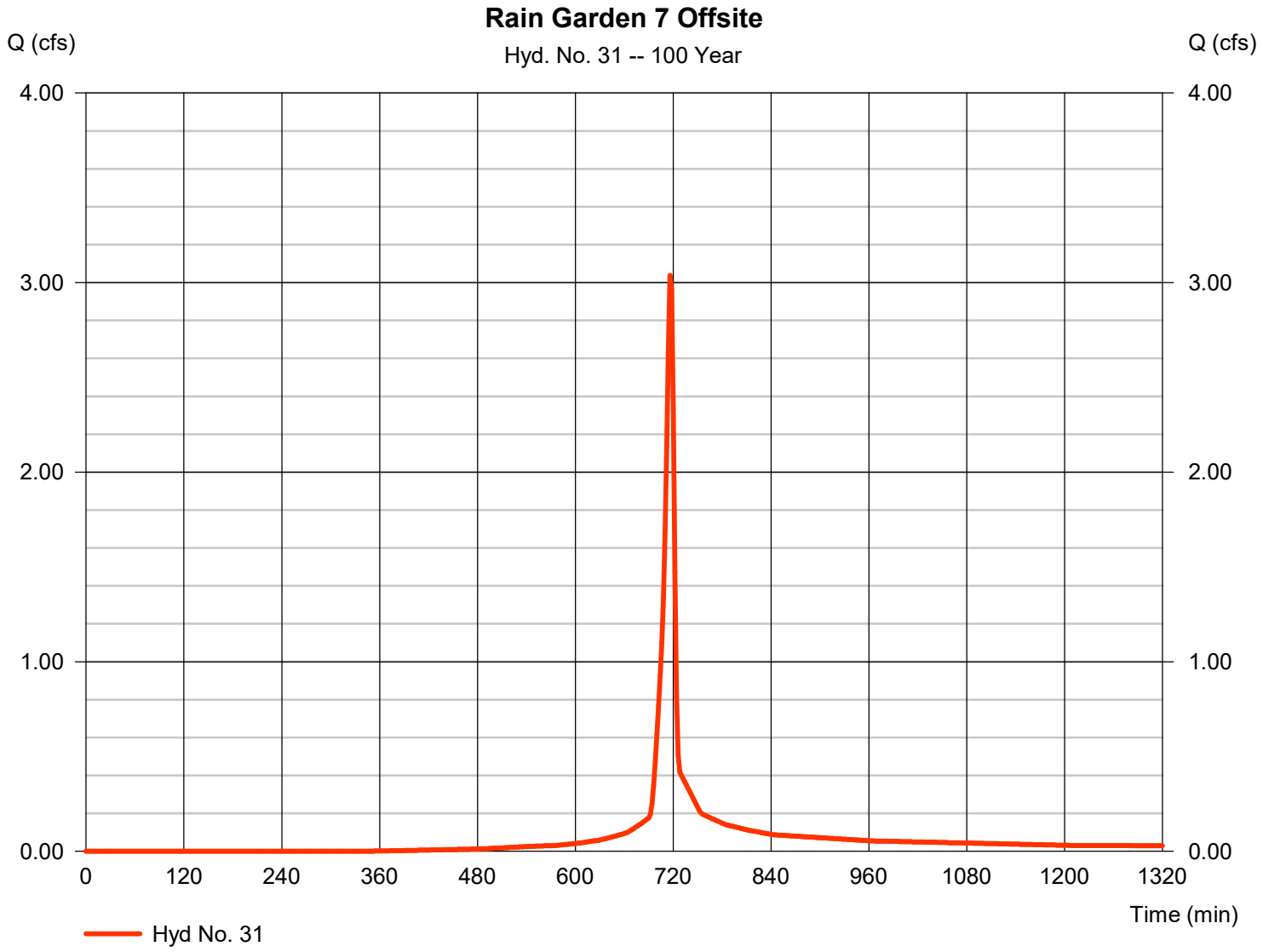
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 31

Rain Garden 7 Offsite

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.037 cfs
Storm frequency	=	100 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	6,283 cuft
Drainage area	=	0.340 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	8.17 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.340 x 77)] / 0.340



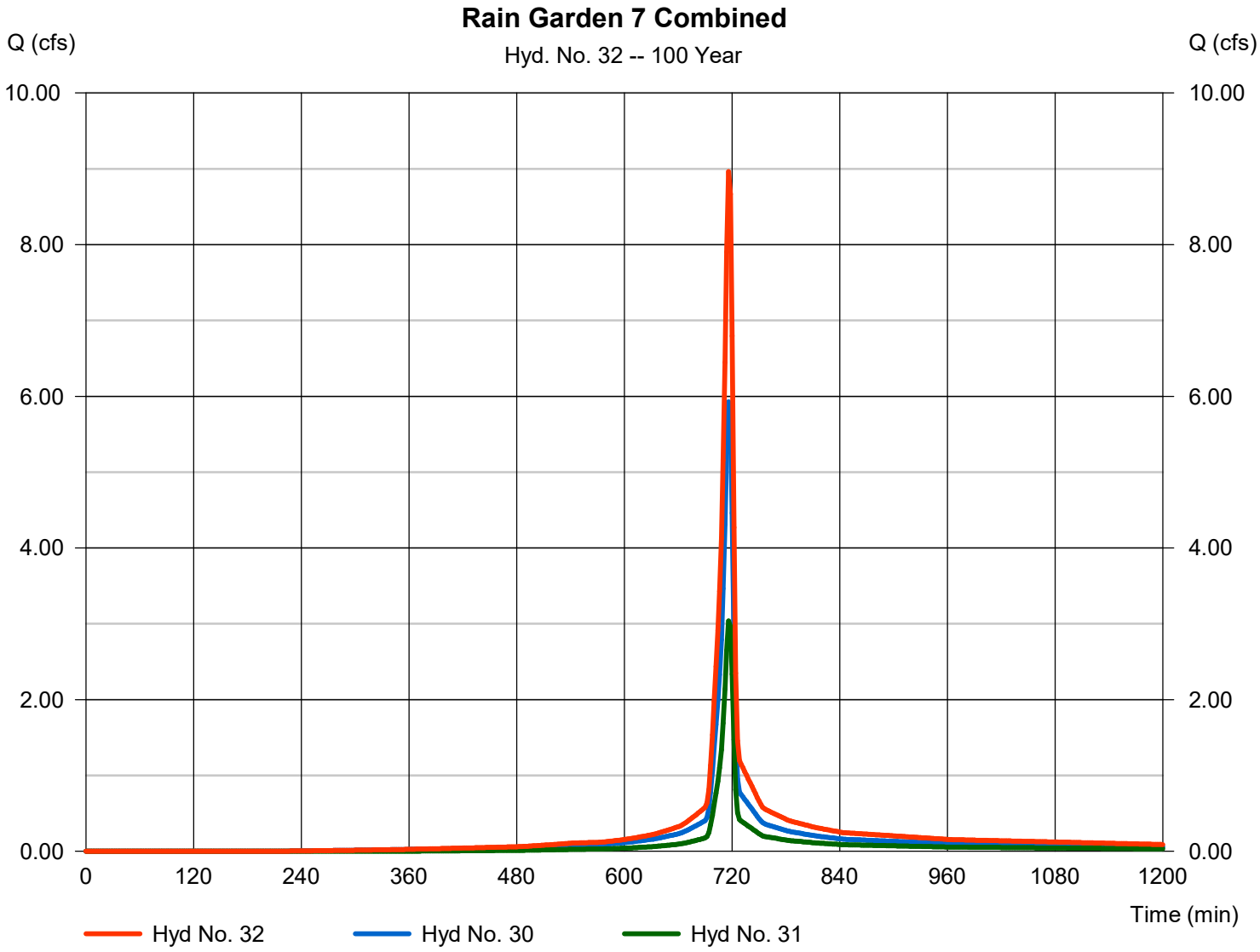
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 32

Rain Garden 7 Combined

Hydrograph type	= Combine	Peak discharge	= 8.963 cfs
Storm frequency	= 100 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 19,106 cuft
Inflow hyds.	= 30, 31	Contrib. drain. area	= 0.920 ac



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Pond No. 7 - RG 7

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 629.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	629.00	713	0	0
1.00	630.00	1,358	1,018	1,018
2.00	631.00	2,070	1,701	2,720
3.00	632.00	2,840	2,445	5,164
4.00	633.00	3,667	3,244	8,409

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 15.00	3.00	6.00	0.00
Span (in)	= 15.00	3.00	6.00	0.00
No. Barrels	= 1	2	1	0
Invert El. (ft)	= 629.00	630.00	630.65	0.00
Length (ft)	= 50.00	1.00	1.00	0.00
Slope (%)	= 1.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	Yes	No

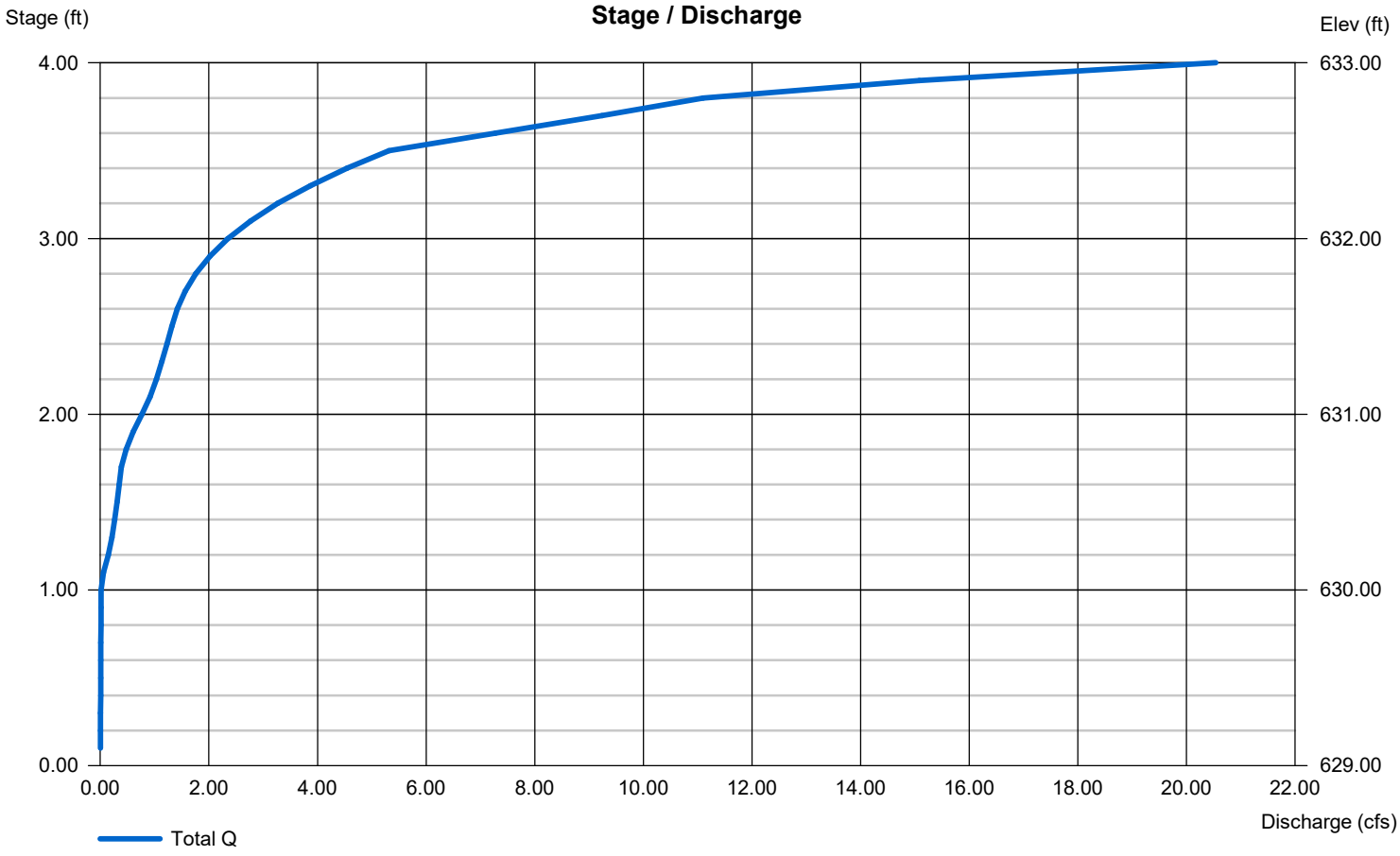
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 12.00	0.00	30.00	0.00
Crest El. (ft)	= 632.50	631.45	632.75	0.00
Weir Coeff.	= 3.33	3.03	2.60	3.33
Weir Type	= 1	100 degV	Broad	---
Multi-Stage	= Yes	Yes	No	No

Exfil.(in/hr) = 0.500 (by Contour)

TW Elev. (ft) = 0.00

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



Hydrograph Report

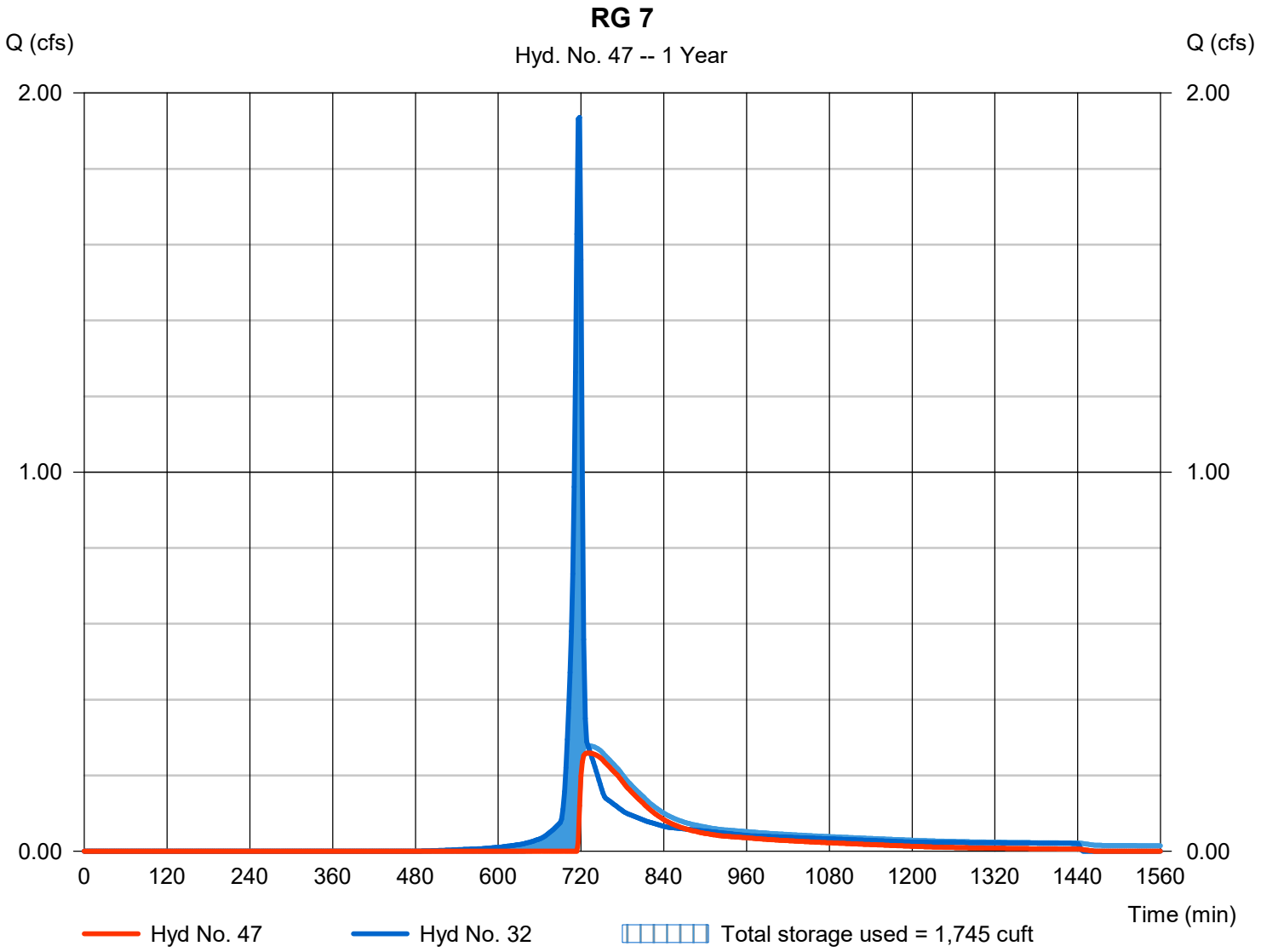
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 47

RG 7

Hydrograph type	=	Reservoir	Peak discharge	=	0.259 cfs
Storm frequency	=	1 yrs	Time to peak	=	730 min
Time interval	=	2 min	Hyd. volume	=	2,156 cuft
Inflow hyd. No.	=	32 - Rain Garden 7 Combined	Max. Elevation	=	630.43 ft
Reservoir name	=	RG 7	Max. Storage	=	1,745 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

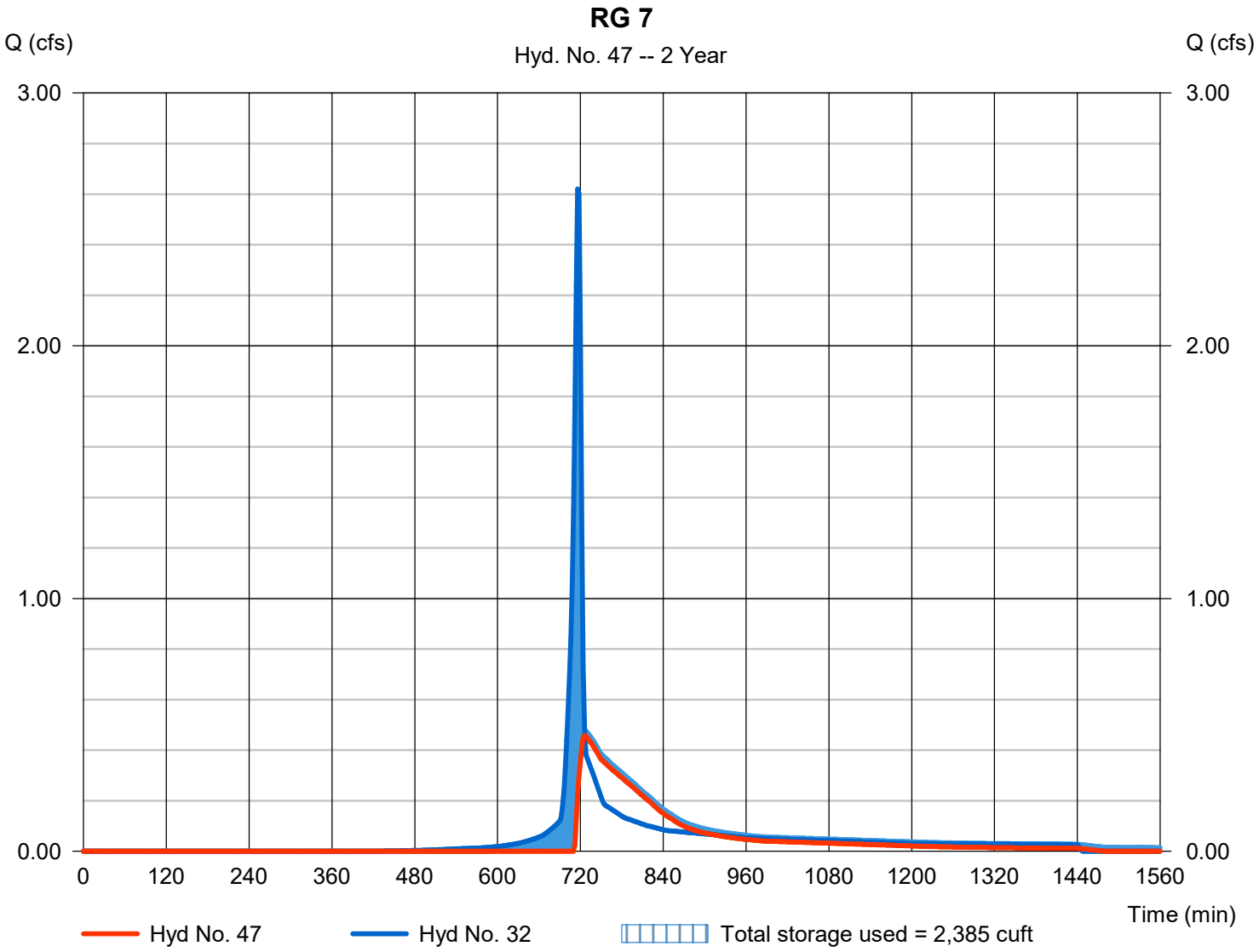
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 47

RG 7

Hydrograph type	=	Reservoir	Peak discharge	=	0.458 cfs
Storm frequency	=	2 yrs	Time to peak	=	726 min
Time interval	=	2 min	Hyd. volume	=	3,506 cuft
Inflow hyd. No.	=	32 - Rain Garden 7 Combined	Max. Elevation	=	630.80 ft
Reservoir name	=	RG 7	Max. Storage	=	2,385 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

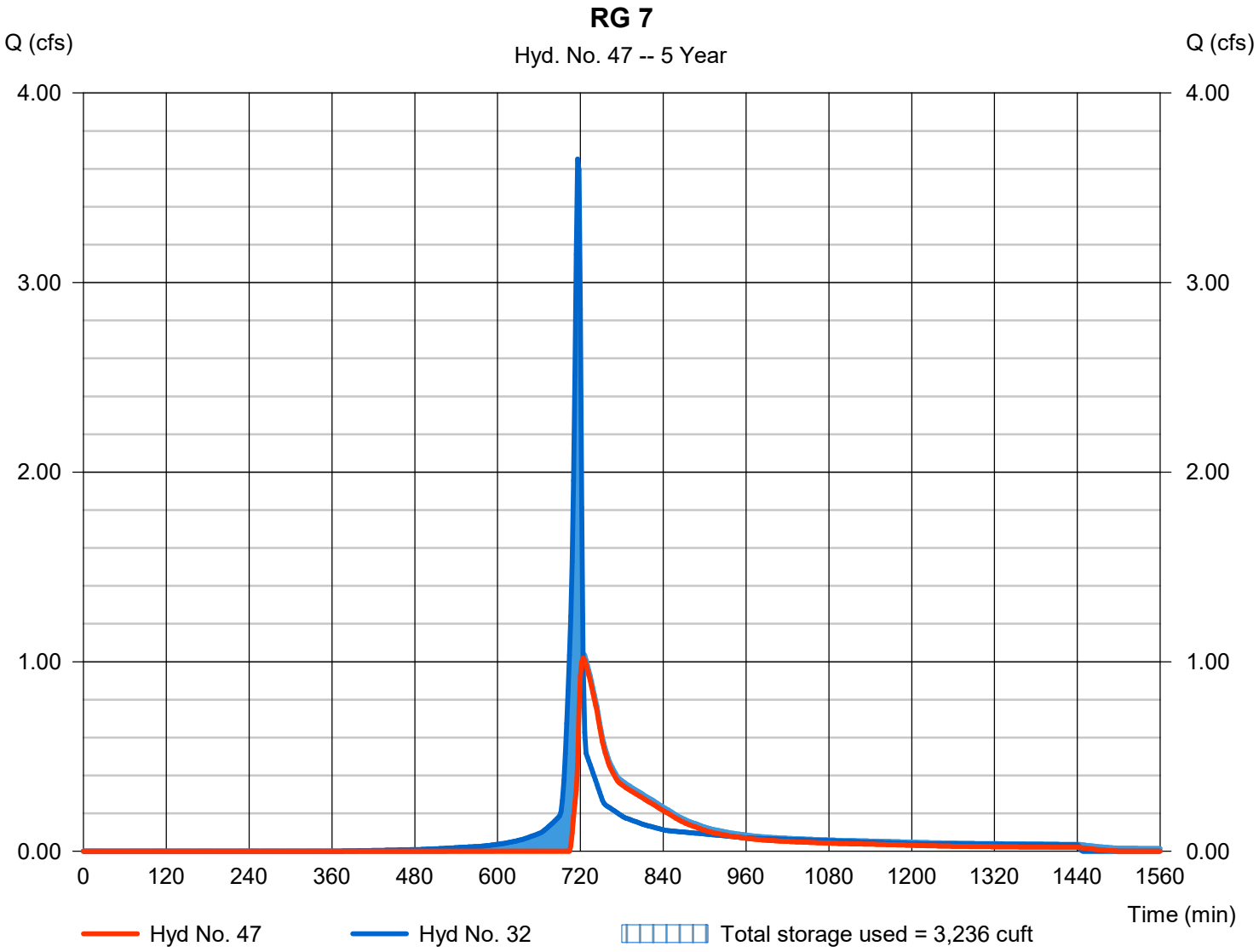
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 47

RG 7

Hydrograph type	=	Reservoir	Peak discharge	=	1.019 cfs
Storm frequency	=	5 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	5,582 cuft
Inflow hyd. No.	=	32 - Rain Garden 7 Combined	Max. Elevation	=	631.21 ft
Reservoir name	=	RG 7	Max. Storage	=	3,236 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

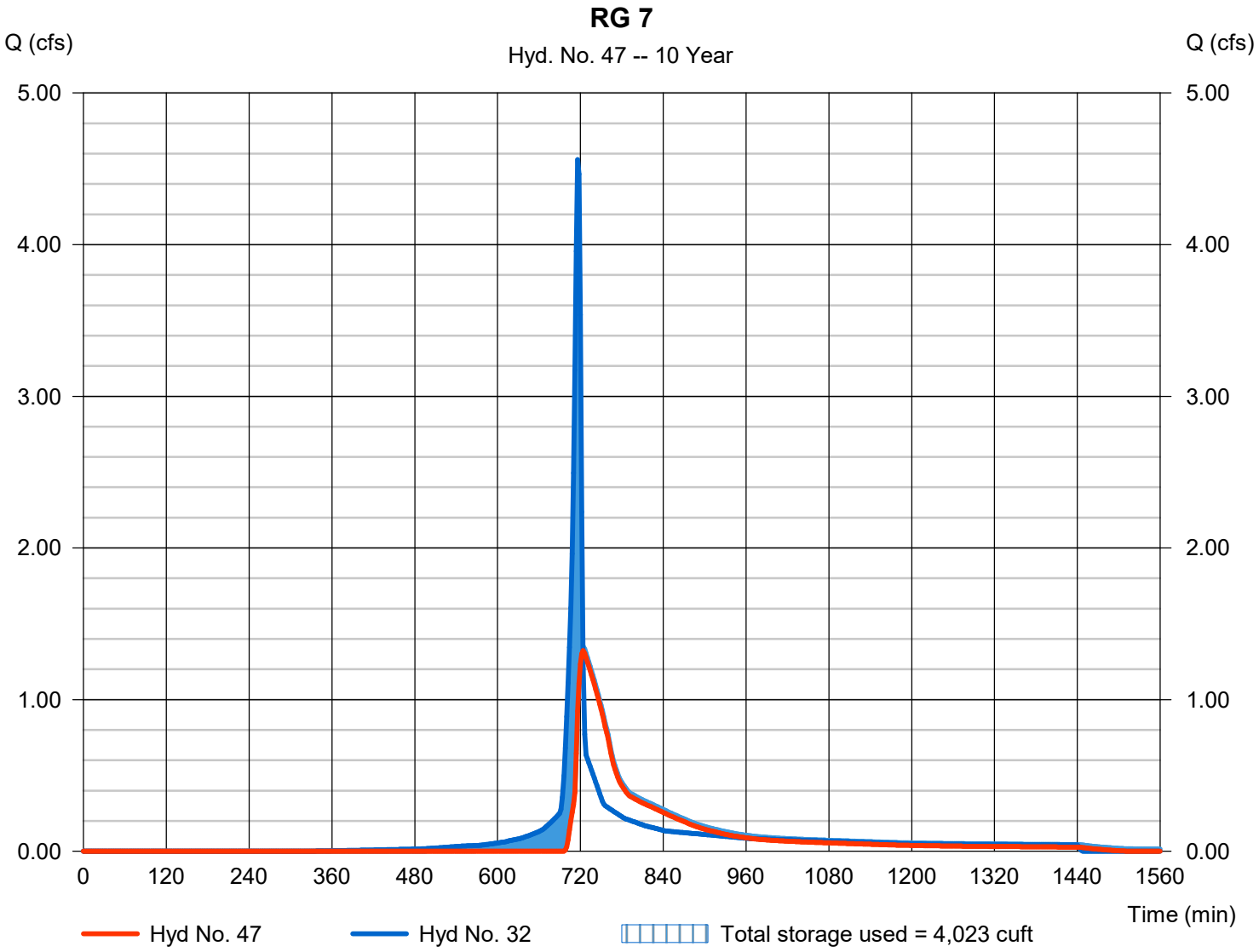
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 47

RG 7

Hydrograph type	=	Reservoir	Peak discharge	=	1.322 cfs
Storm frequency	=	10 yrs	Time to peak	=	724 min
Time interval	=	2 min	Hyd. volume	=	7,452 cuft
Inflow hyd. No.	=	32 - Rain Garden 7 Combined	Max. Elevation	=	631.53 ft
Reservoir name	=	RG 7	Max. Storage	=	4,023 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

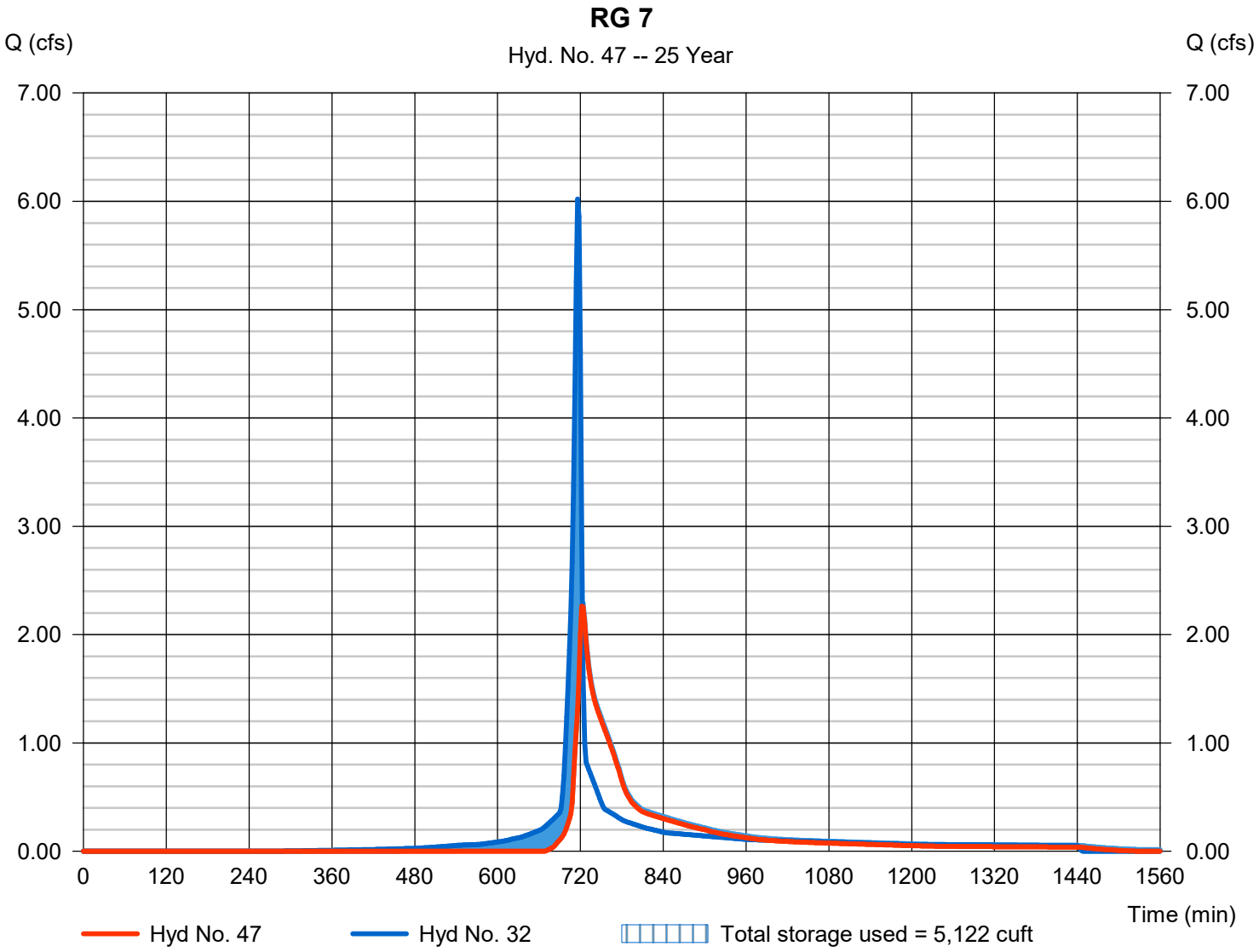
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 47

RG 7

Hydrograph type	=	Reservoir	Peak discharge	=	2.261 cfs
Storm frequency	=	25 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	10,516 cuft
Inflow hyd. No.	=	32 - Rain Garden 7 Combined	Max. Elevation	=	631.98 ft
Reservoir name	=	RG 7	Max. Storage	=	5,122 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

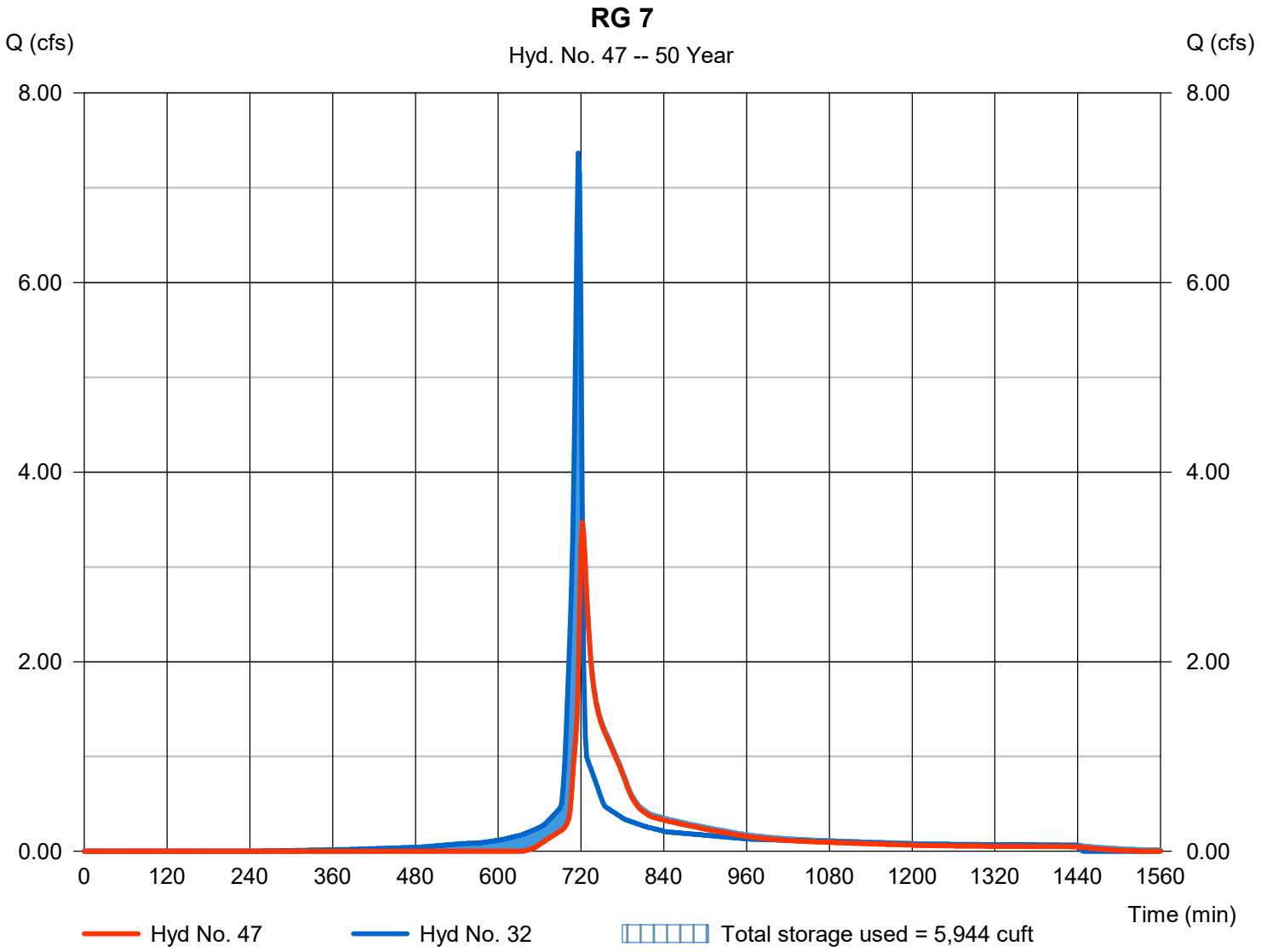
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 47

RG 7

Hydrograph type	=	Reservoir	Peak discharge	=	3.475 cfs
Storm frequency	=	50 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	13,416 cuft
Inflow hyd. No.	=	32 - Rain Garden 7 Combined	Max. Elevation	=	632.24 ft
Reservoir name	=	RG 7	Max. Storage	=	5,944 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

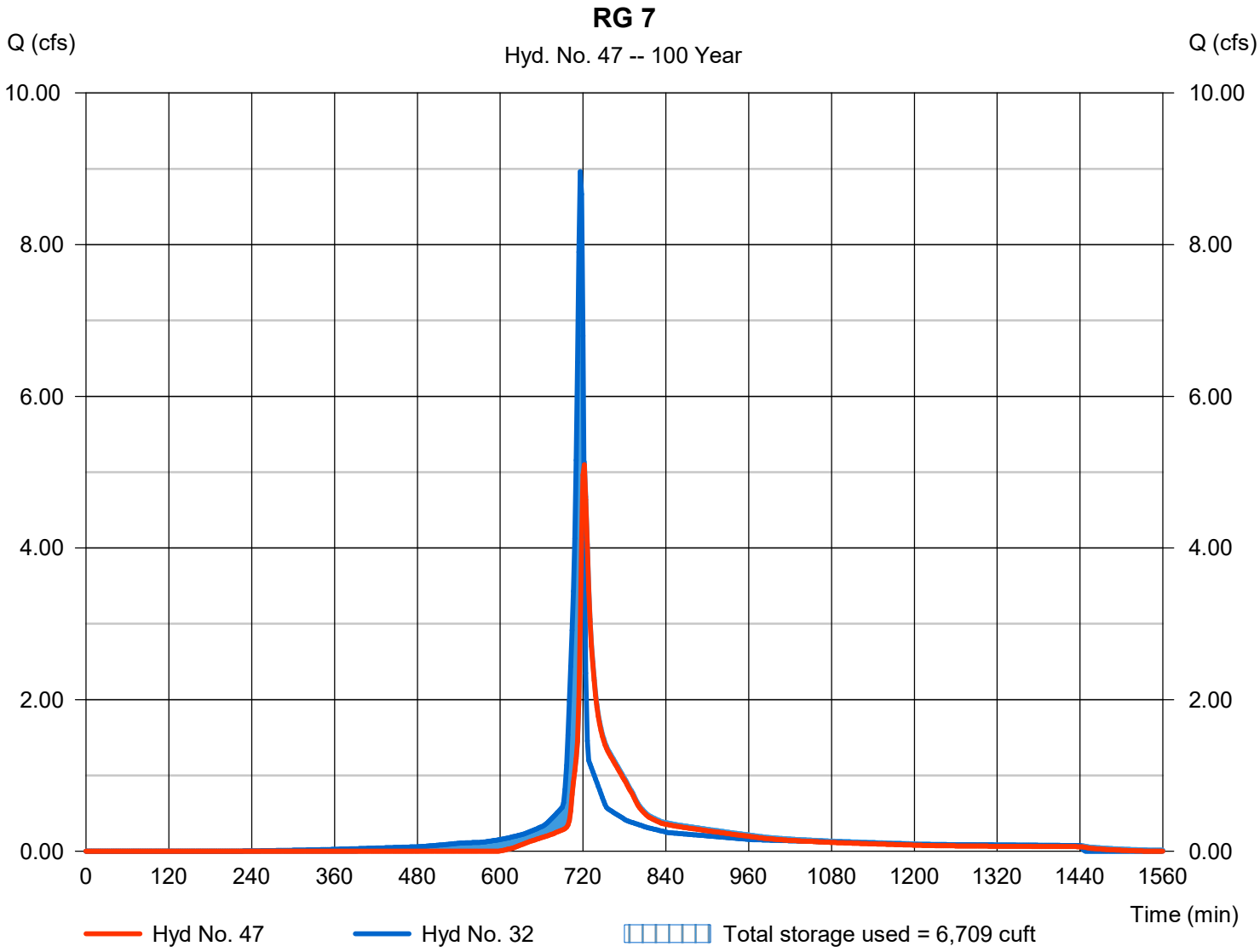
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 47

RG 7

Hydrograph type	=	Reservoir	Peak discharge	=	5.095 cfs
Storm frequency	=	100 yrs	Time to peak	=	722 min
Time interval	=	2 min	Hyd. volume	=	16,924 cuft
Inflow hyd. No.	=	32 - Rain Garden 7 Combined	Max. Elevation	=	632.48 ft
Reservoir name	=	RG 7	Max. Storage	=	6,709 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Developed Conditions: POI 001 Bypass ONSITE

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D			77					
Meadow	D			78					
Forest (Good)	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D	9,417	0.22	80	2.50	0.50	1.49	1173.07	0.03
Lawn, High-Input	D			84					
Golf Course Fairway/Green	D			80					
Grassed Athletic Field	D			80					
Rooftop	D			98					
High Traffic Street / Highway	D			93					
Medium Traffic Street	D			98					
Low Traffic / Residential Street	D			98					
Res. Driveway, Play Courts, etc.	D	2,592	0.06	98	0.20	0.04	3.09	666.84	0.02
Impervious Allowance	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		12,009	0.28						0.05

Developed Conditions: POI 002 Bypass ONSITE

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D			77					
Meadow	D			78					
Forest (Good)	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D	11,481	0.26	80	2.50	0.50	1.49	1430.16	0.03
Lawn, High-Input	D			84					
Golf Course Fairway/Green	D			80					
Grassed Athletic Field	D			80					
Rooftop	D			98					
High Traffic Street / Highway	D			93					
Medium Traffic Street	D			98					
Low Traffic / Residential Street	D			98					
Res. Driveway, Play Courts, etc.	D	405	0.01	98	0.20	0.04	3.09	104.18	0.00
Impervious Allowance	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		11,886	0.27						0.03

Developed Conditions: POI 003 Bypass ONSITE

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff1 (in)	Runoff Volume2 (ft3)	Runoff Volume (AC-FT)
Forest (Good)	D			77					
Meadow	D			78					
Forest (Good)	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D	12,609	0.29	80	2.50	0.50	1.49	1570.63	0.04
Lawn, High-Input	D			84					
Golf Course Fairway/Green	D			80					
Grassed Athletic Field	D			80					
Rooftop	D			98					
High Traffic Street / Highway	D			93					
Medium Traffic Street	D			98					
Low Traffic / Residential Street	D			98					
Res. Driveway, Play Courts, etc.	D	925	0.02	98	0.20	0.04	3.09	237.95	0.01
Impervious Allowance	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		13,534	0.31						0.05

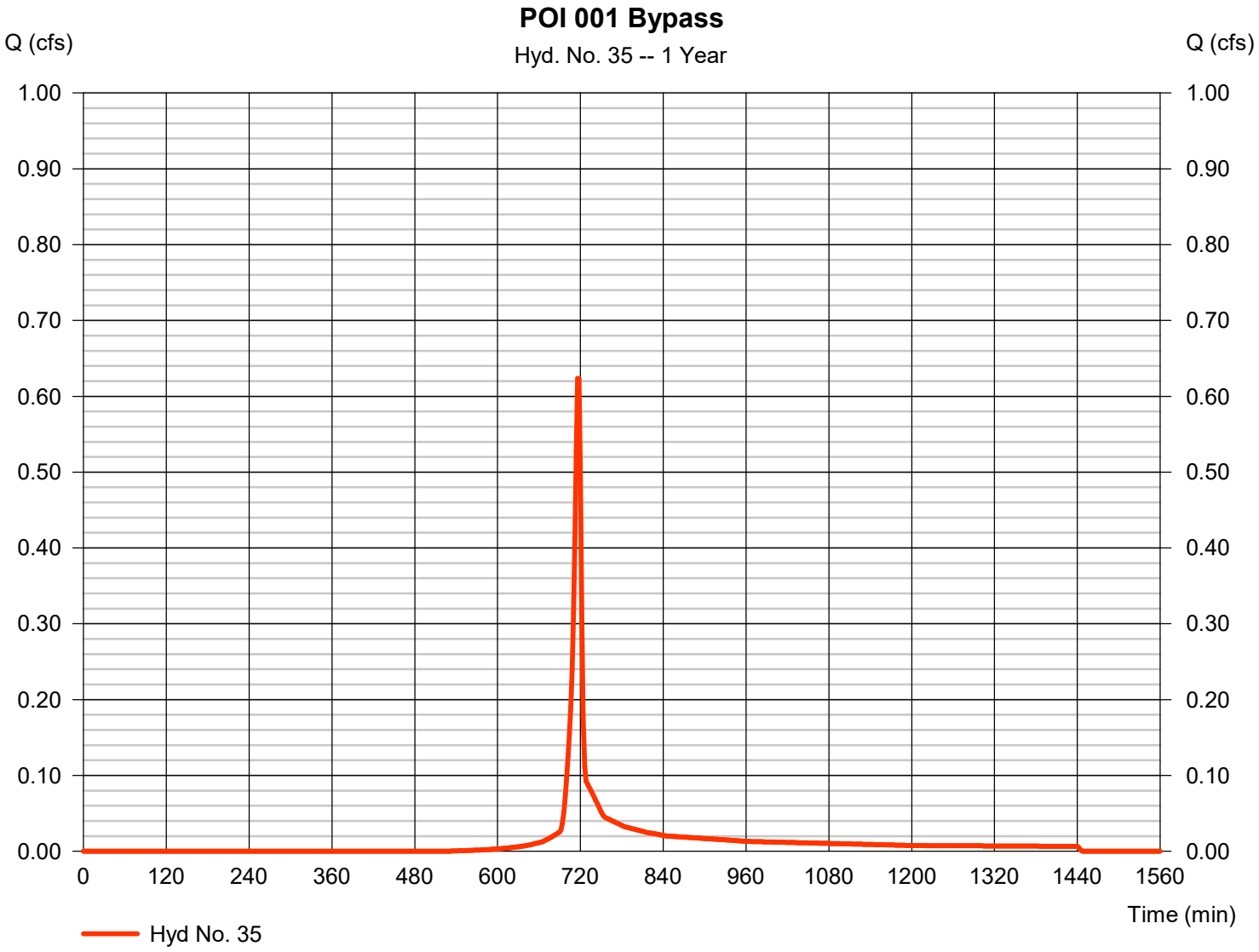
Hydrograph Report

Hyd. No. 35

POI 001 Bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.624 cfs
Storm frequency	=	1 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	1,259 cuft
Drainage area	=	0.280 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	2.76 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.220 x 80) + (0.060 x 98)] / 0.280



Hydrograph Report

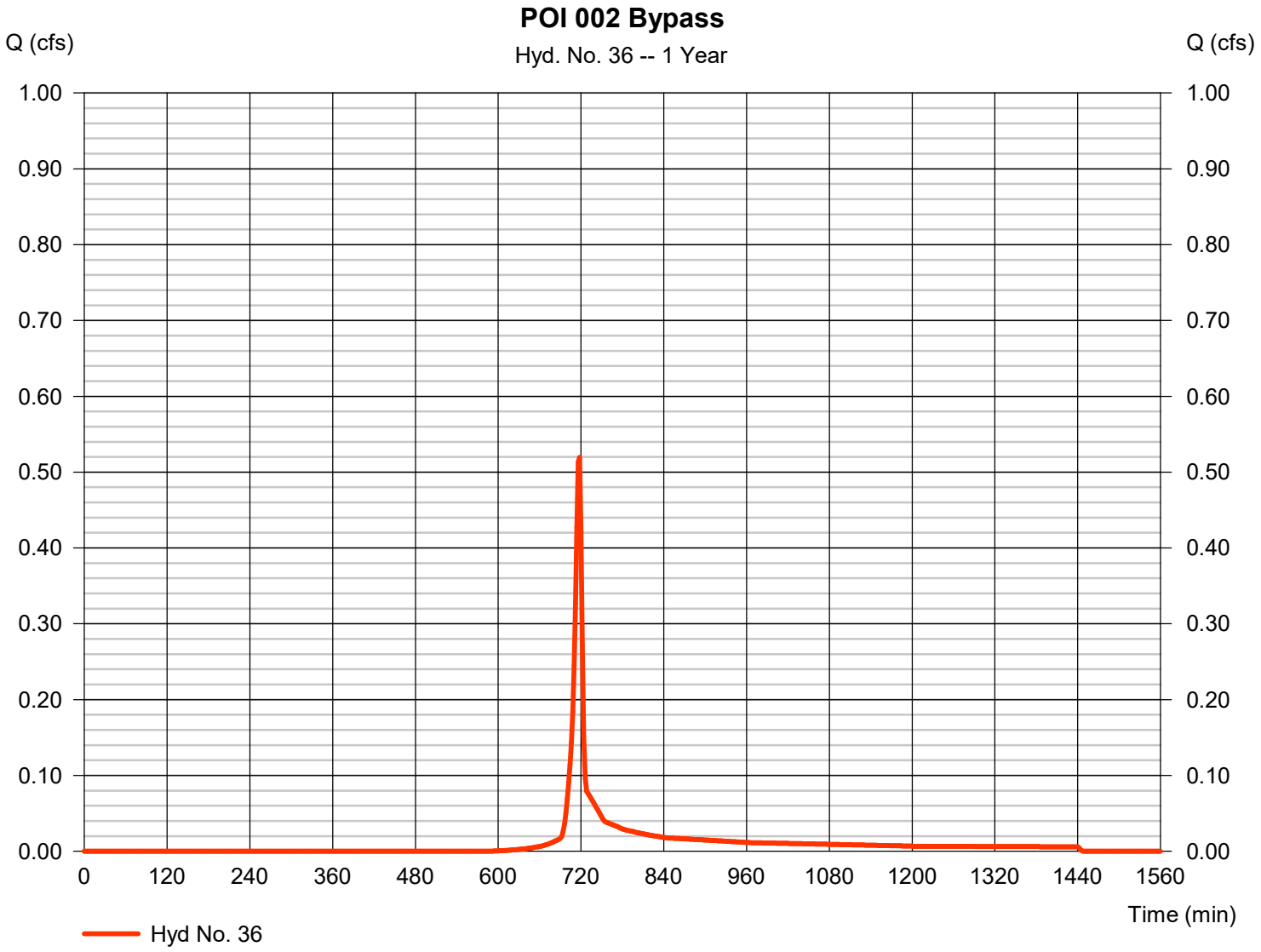
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 36

POI 002 Bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.519 cfs
Storm frequency	=	1 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	1,040 cuft
Drainage area	=	0.270 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	2.76 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.260 x 80) + (0.010 x 98)] / 0.270



Hydrograph Report

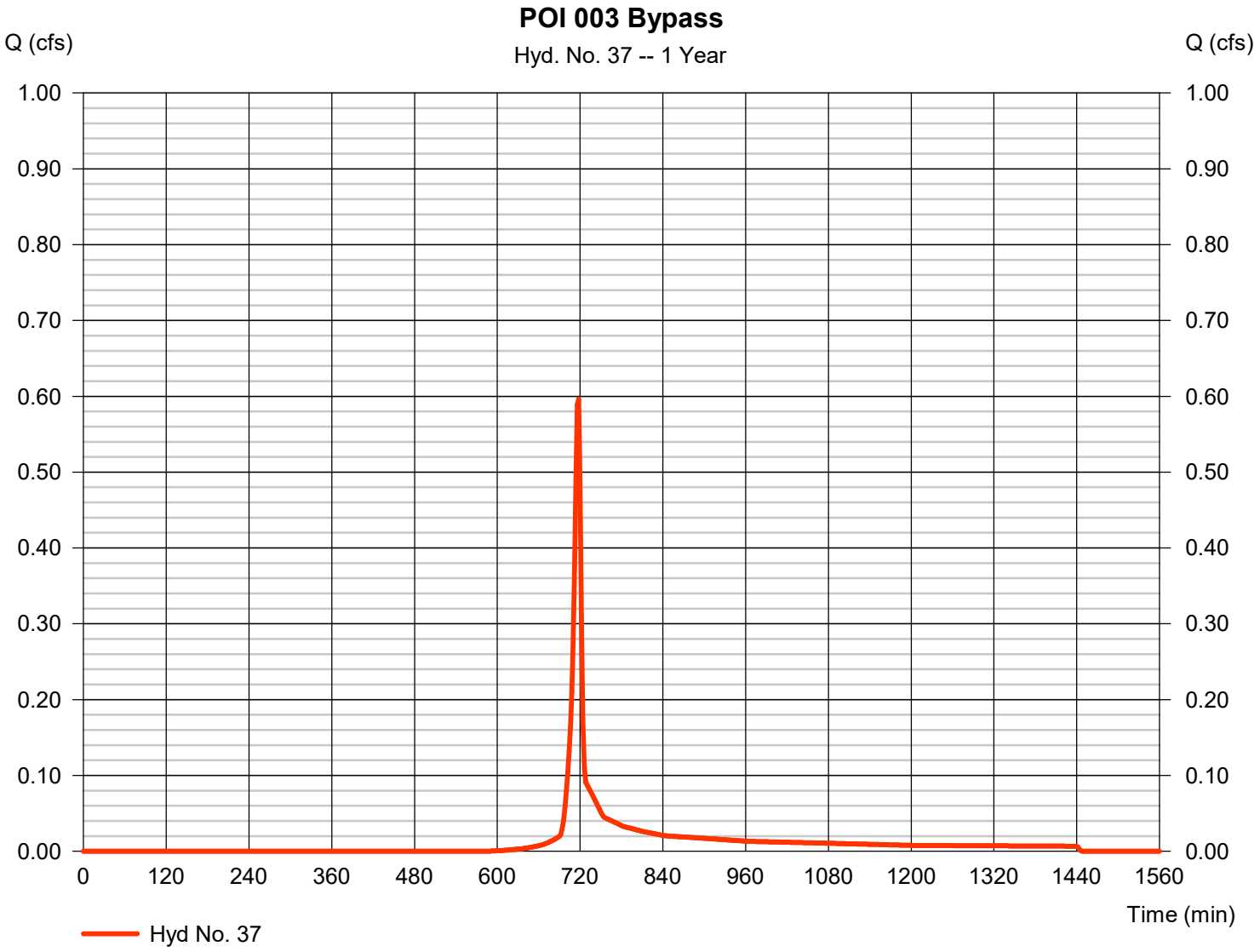
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 37

POI 003 Bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.596 cfs
Storm frequency	=	1 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	1,194 cuft
Drainage area	=	0.310 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	2.76 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.290 x 80) + (0.020 x 98)] / 0.310



Hydrograph Report

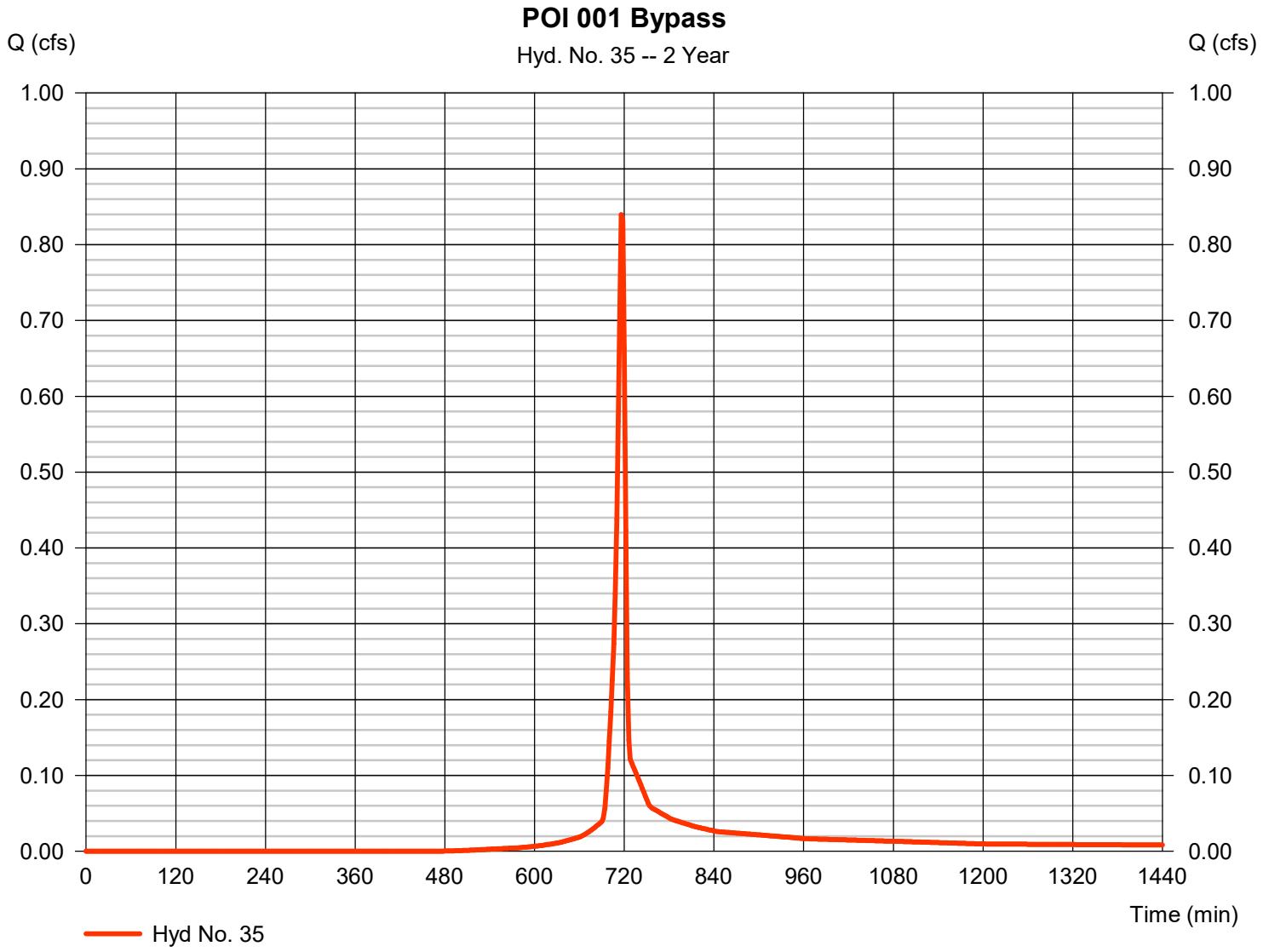
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 35

POI 001 Bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.839 cfs
Storm frequency	=	2 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	1,699 cuft
Drainage area	=	0.280 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.32 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.220 x 80) + (0.060 x 98)] / 0.280



Hydrograph Report

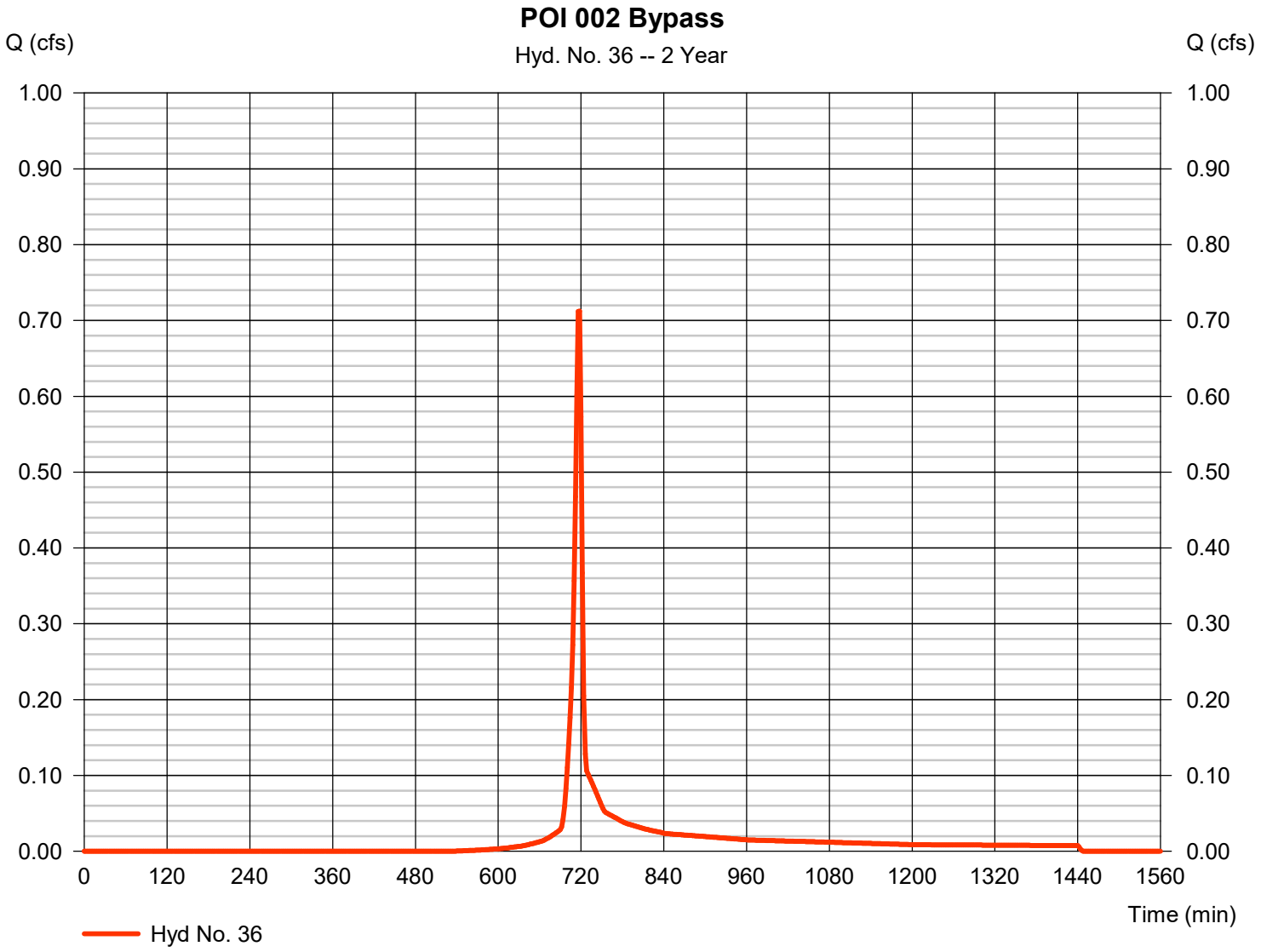
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 36

POI 002 Bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.712 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	1,437 cuft
Drainage area	=	0.270 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.32 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.260 x 80) + (0.010 x 98)] / 0.270



Hydrograph Report

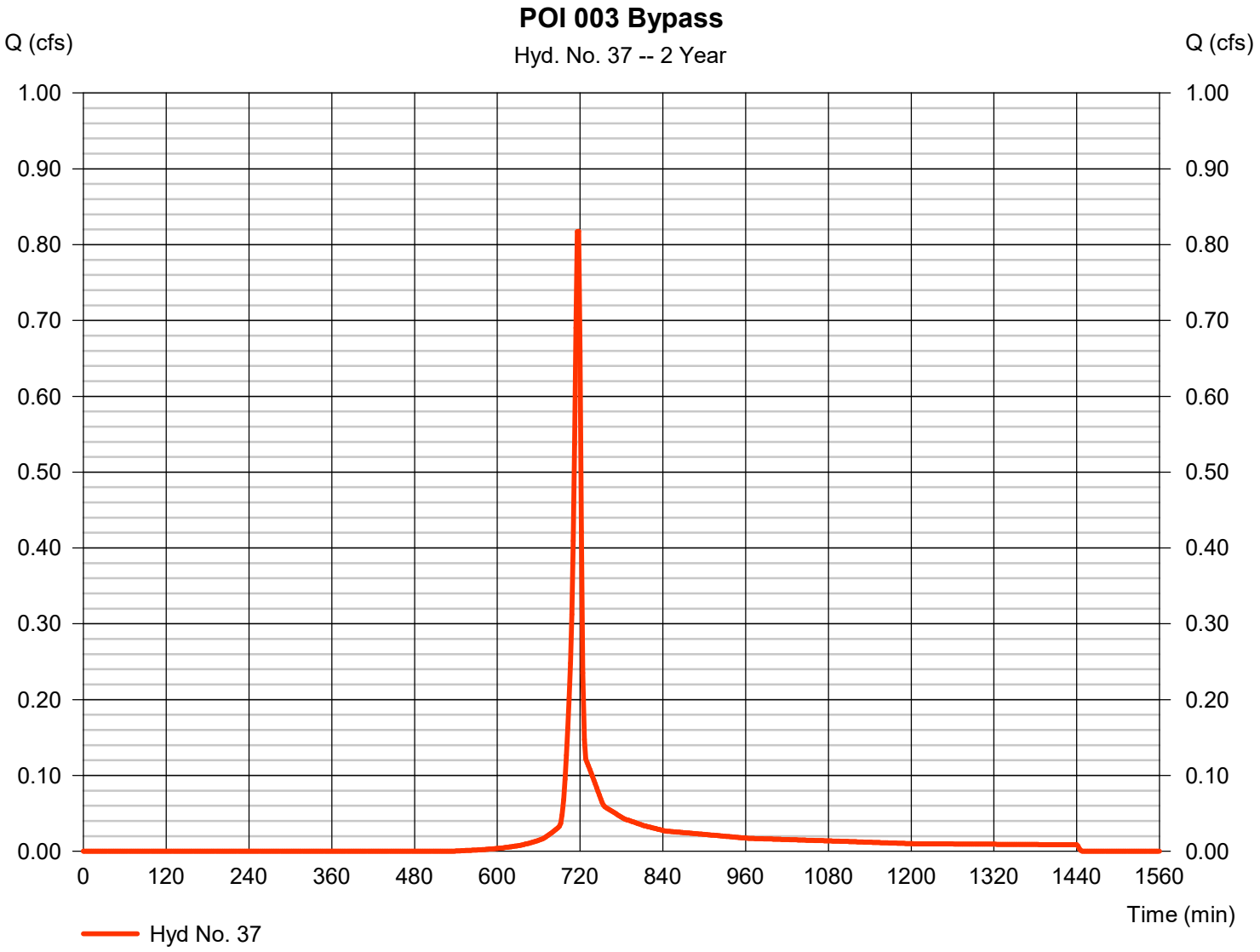
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 37

POI 003 Bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.818 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	1,650 cuft
Drainage area	=	0.310 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.32 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.290 x 80) + (0.020 x 98)] / 0.310



Hydrograph Report

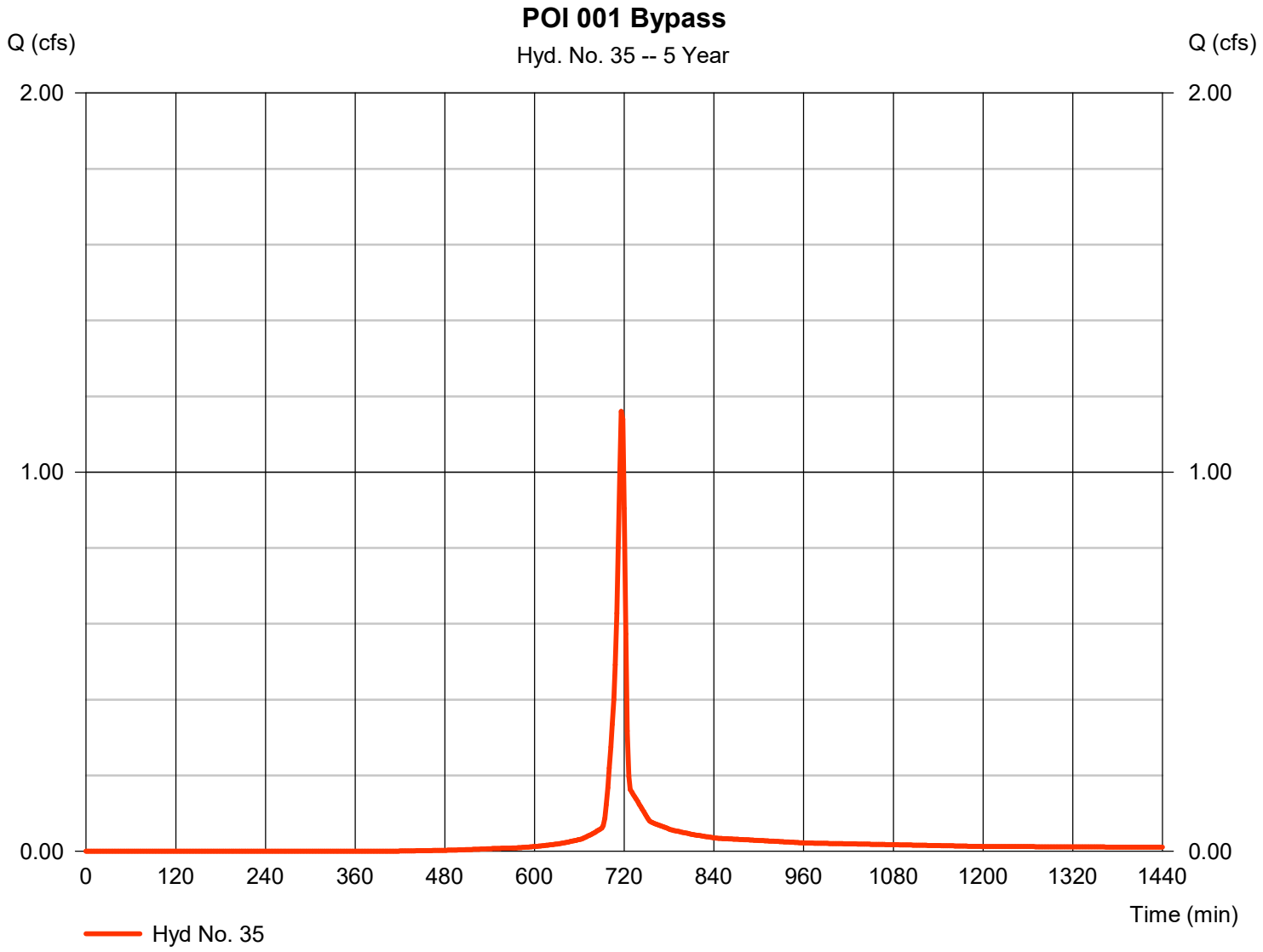
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 35

POI 001 Bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.160 cfs
Storm frequency	=	5 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	2,369 cuft
Drainage area	=	0.280 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	4.13 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.220 x 80) + (0.060 x 98)] / 0.280



Hydrograph Report

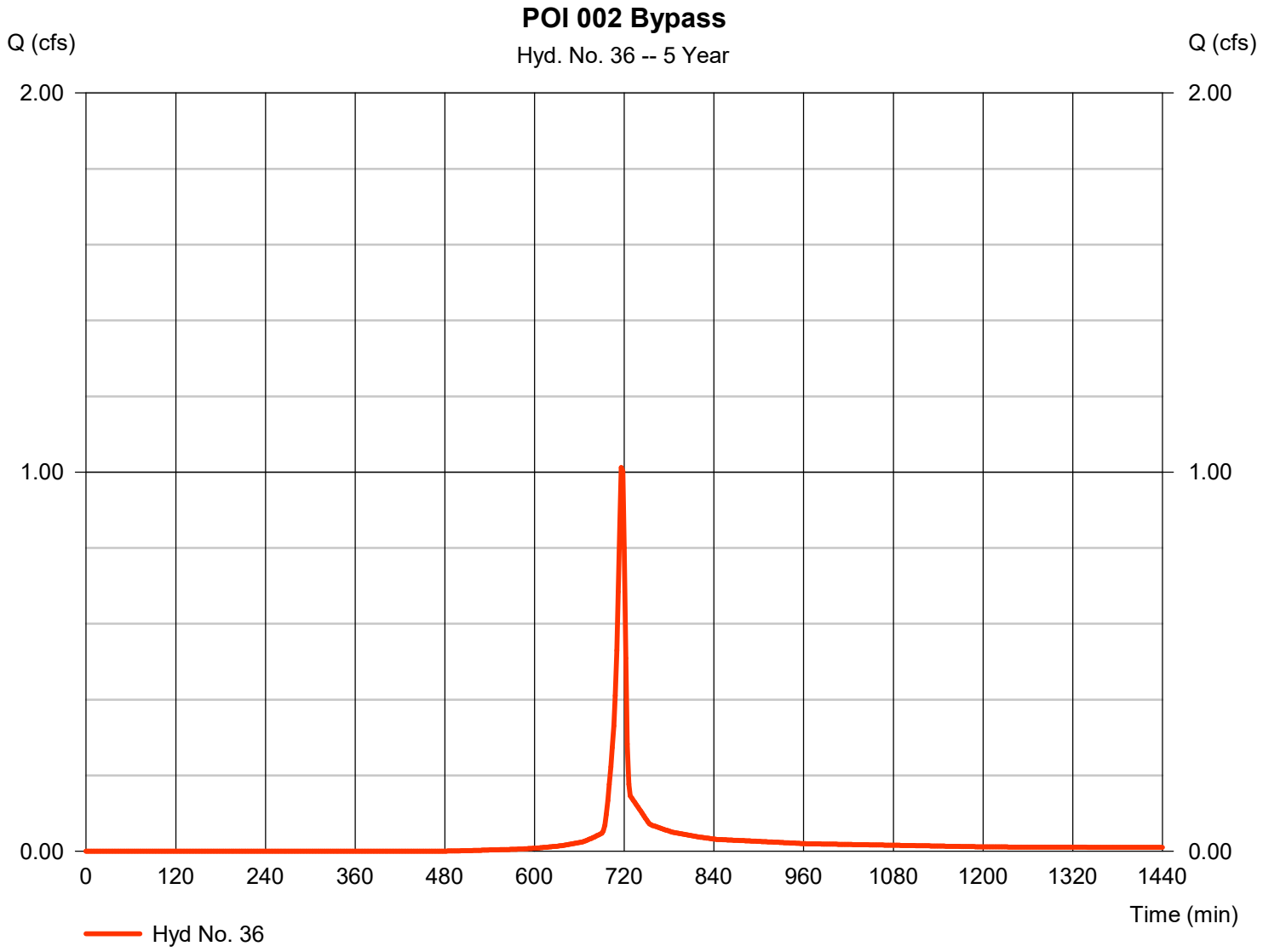
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 36

POI 002 Bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.012 cfs
Storm frequency	=	5 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	2,050 cuft
Drainage area	=	0.270 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	4.13 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.260 x 80) + (0.010 x 98)] / 0.270



Hydrograph Report

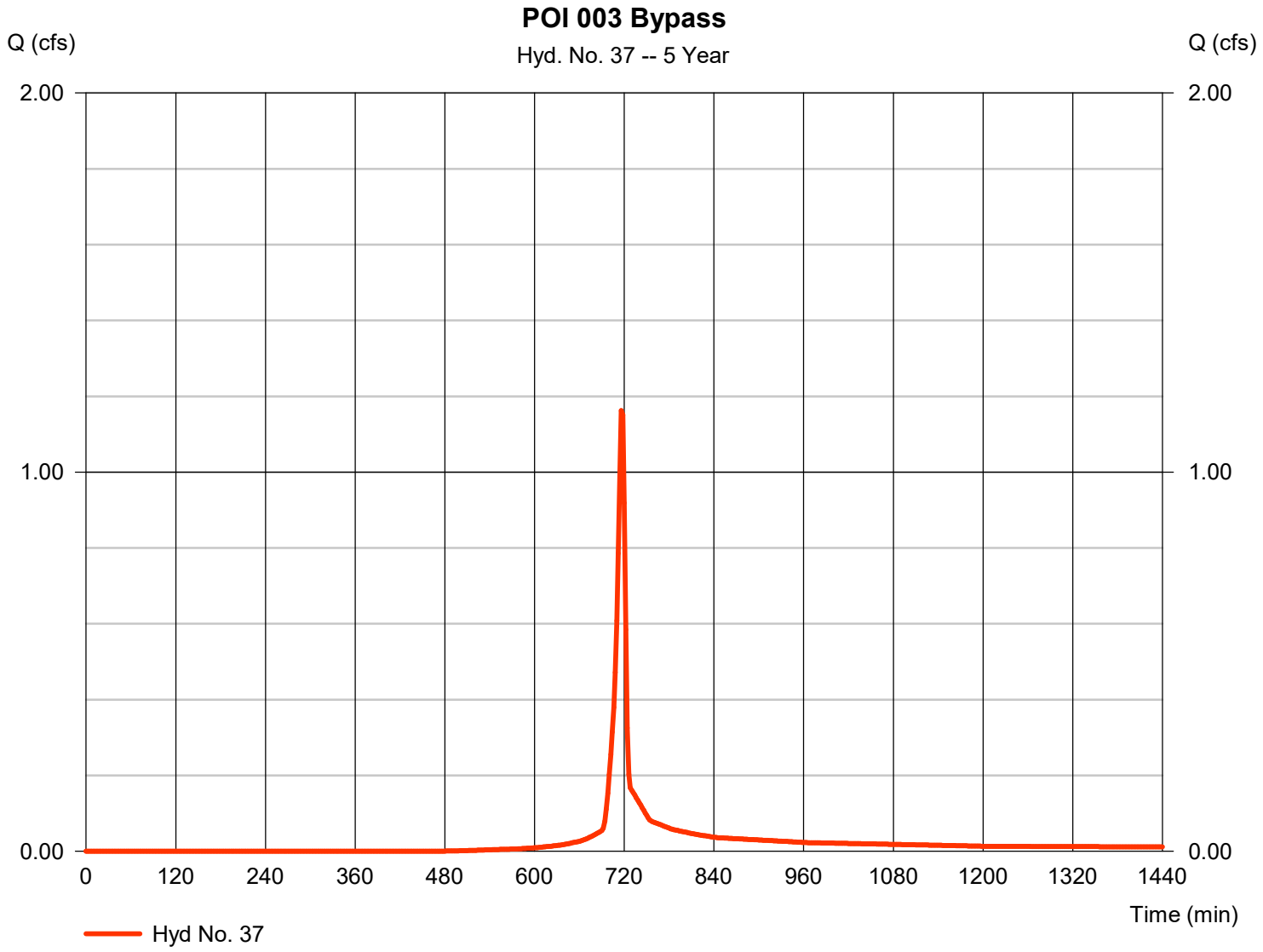
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 37

POI 003 Bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.162 cfs
Storm frequency	=	5 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	2,354 cuft
Drainage area	=	0.310 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	4.13 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.290 x 80) + (0.020 x 98)] / 0.310



Hydrograph Report

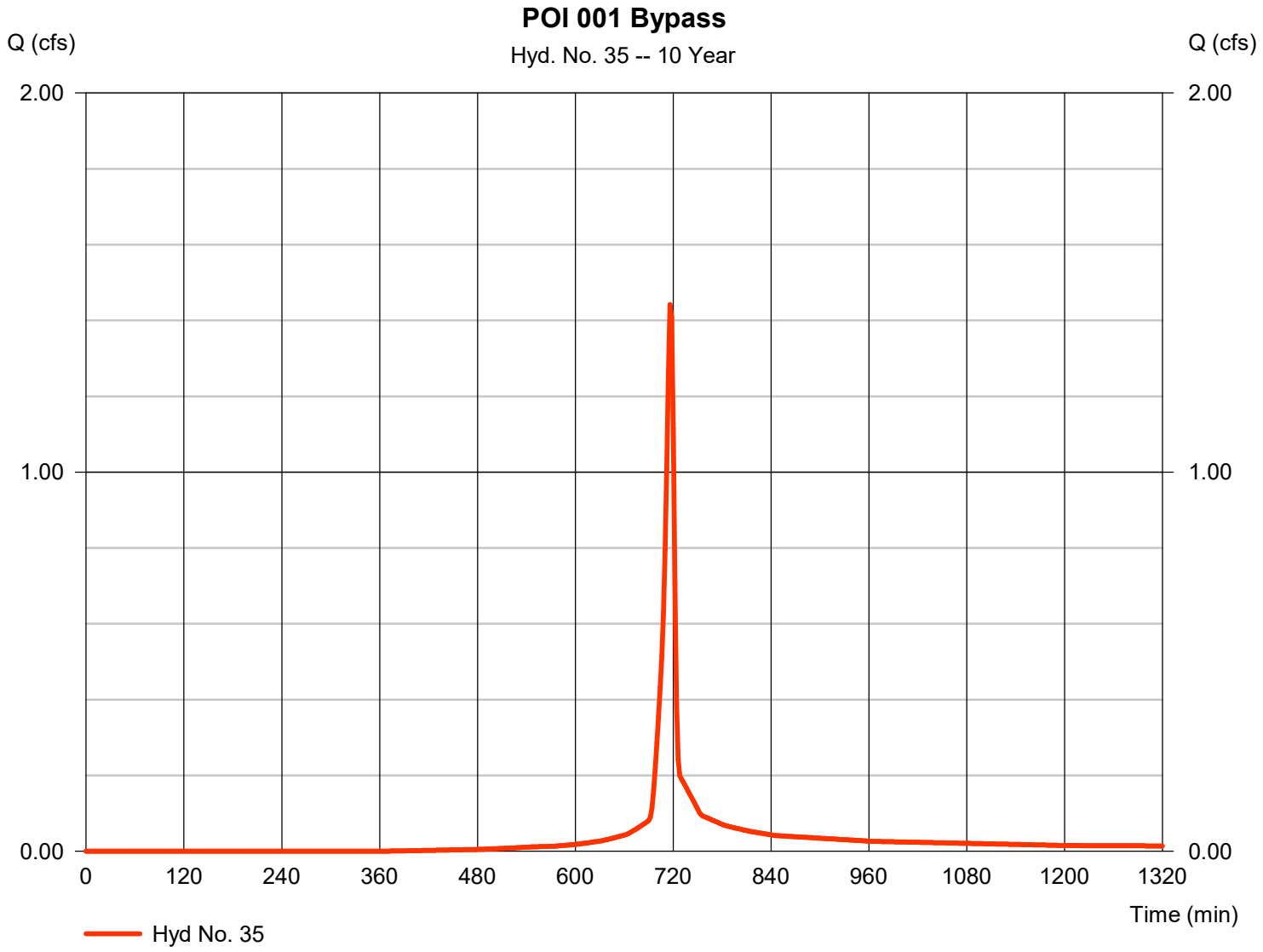
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 35

POI 001 Bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.442 cfs
Storm frequency	=	10 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	2,968 cuft
Drainage area	=	0.280 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	4.83 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.220 x 80) + (0.060 x 98)] / 0.280



Hydrograph Report

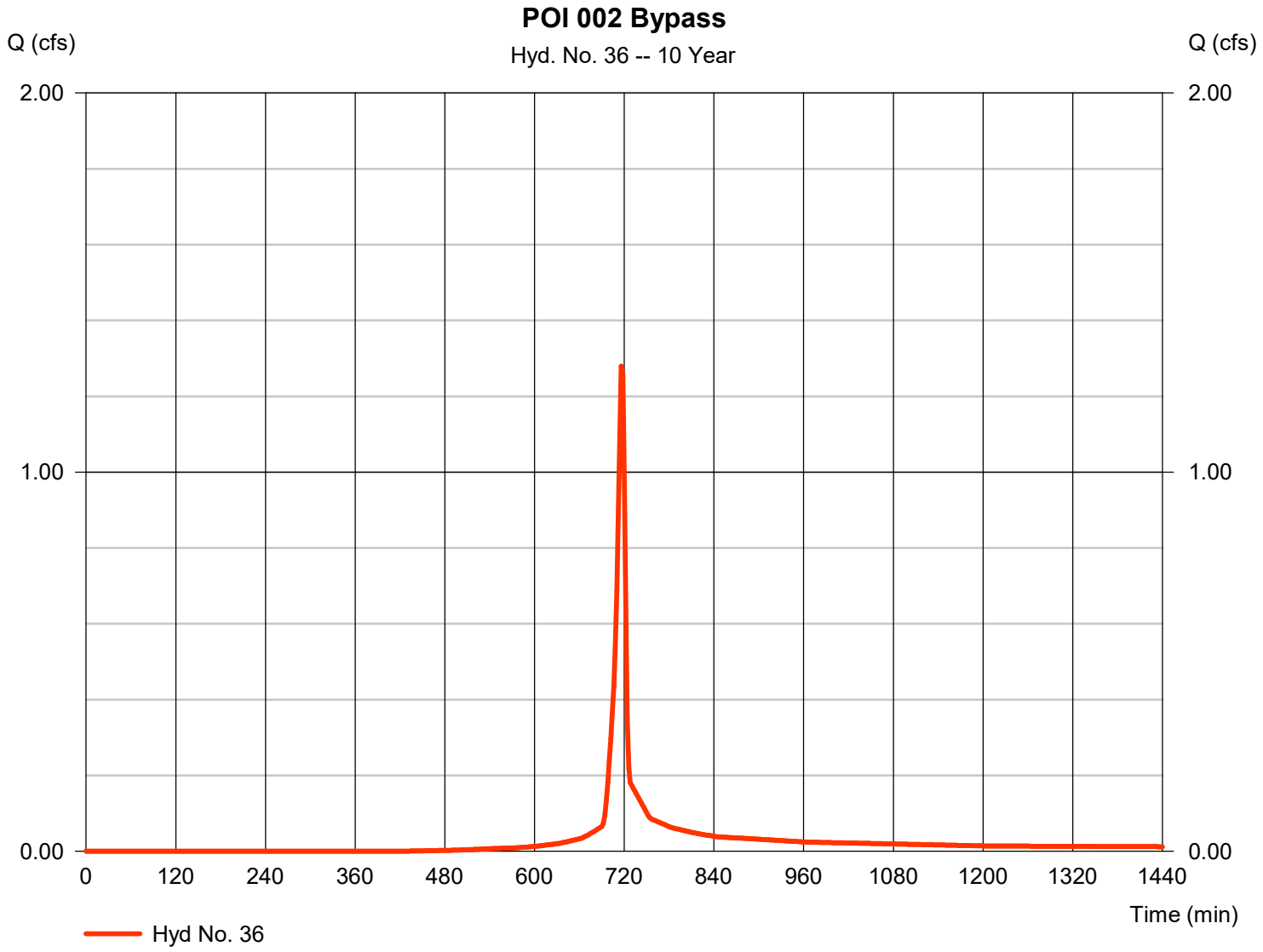
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 36

POI 002 Bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.279 cfs
Storm frequency	=	10 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	2,605 cuft
Drainage area	=	0.270 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	4.83 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.260 x 80) + (0.010 x 98)] / 0.270



Hydrograph Report

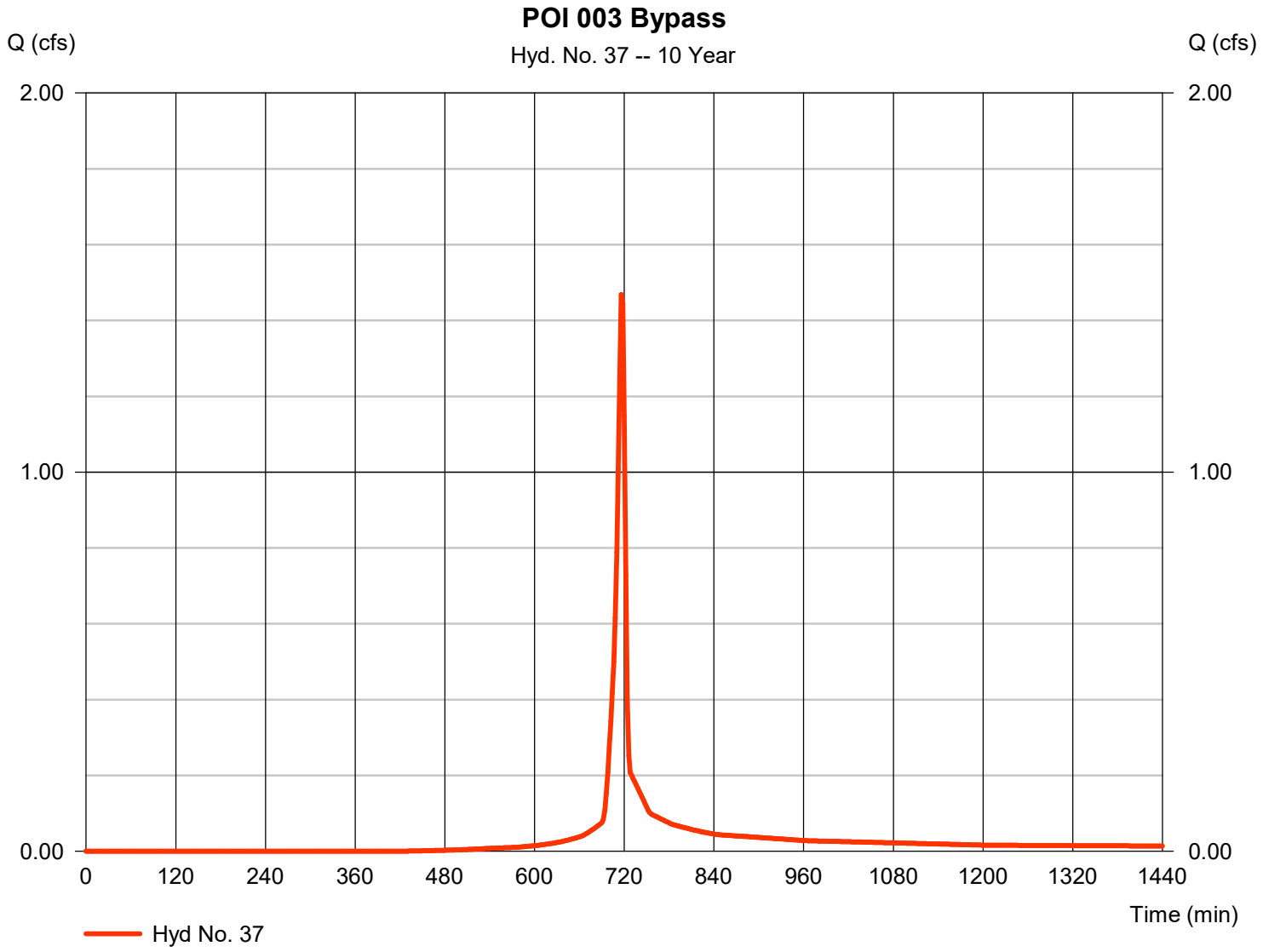
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 37

POI 003 Bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.469 cfs
Storm frequency	=	10 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	2,991 cuft
Drainage area	=	0.310 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	4.83 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.290 x 80) + (0.020 x 98)] / 0.310



Hydrograph Report

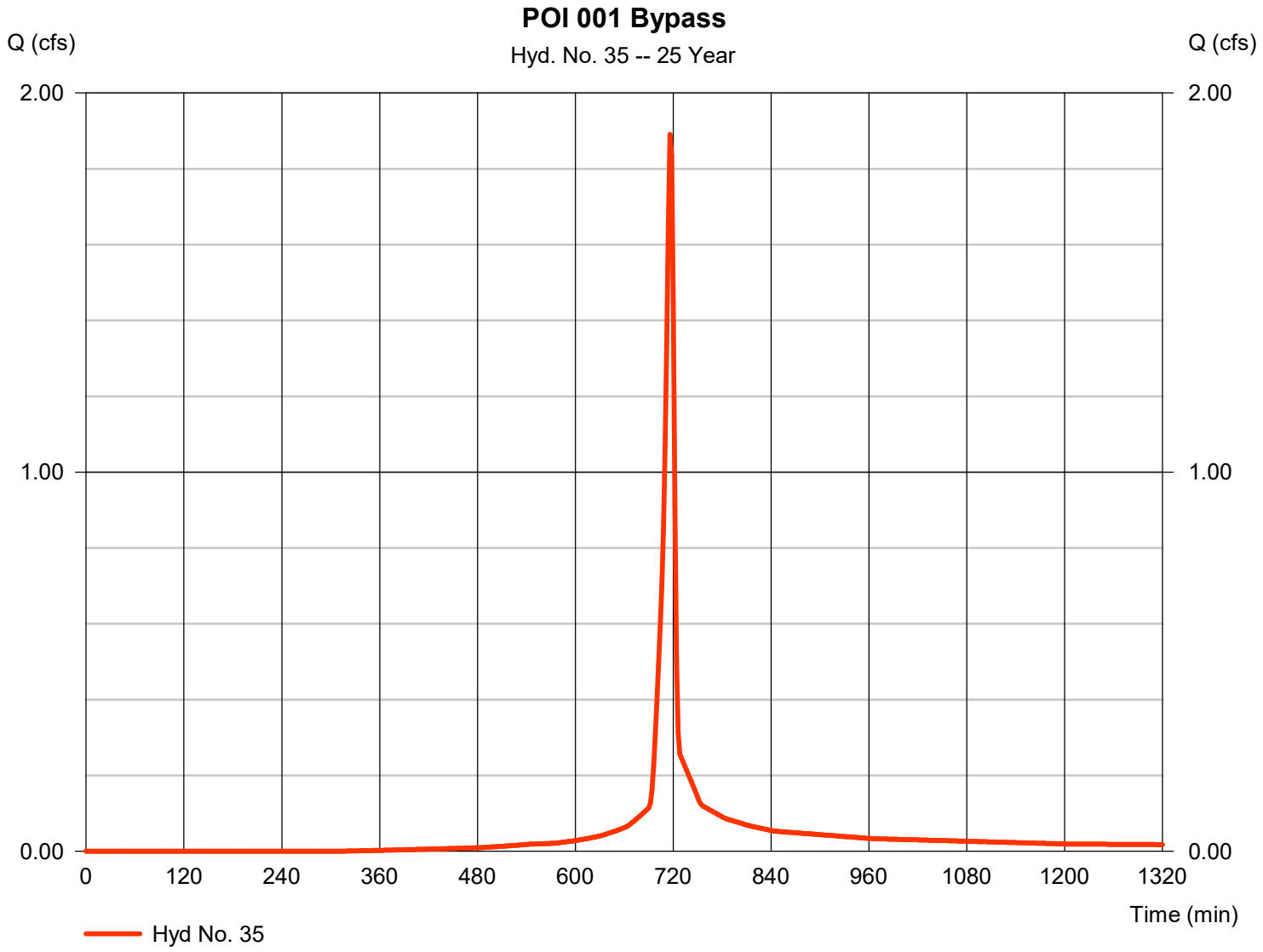
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 35

POI 001 Bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.890 cfs
Storm frequency	=	25 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	3,945 cuft
Drainage area	=	0.280 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	5.94 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.220 x 80) + (0.060 x 98)] / 0.280



Hydrograph Report

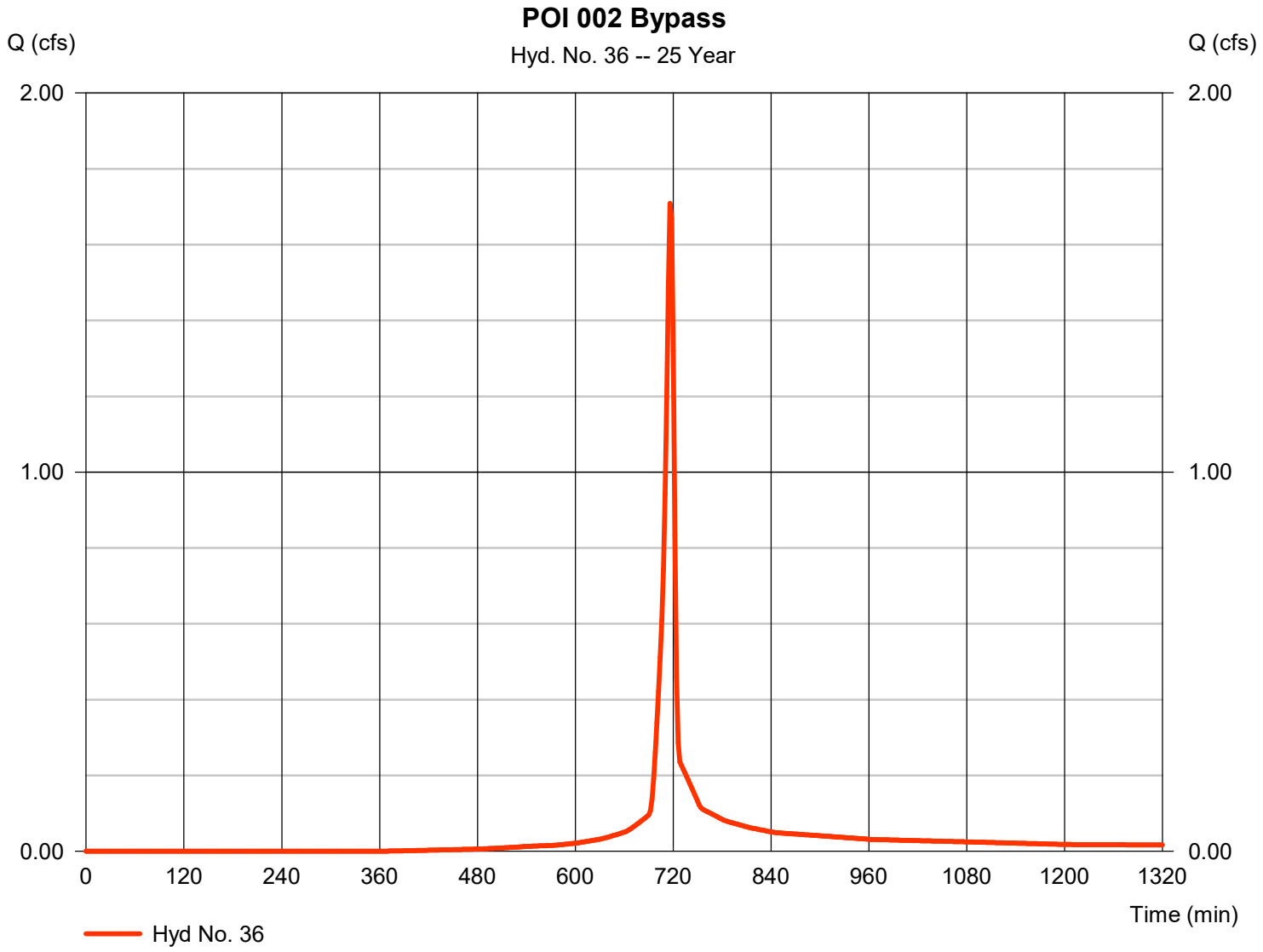
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 36

POI 002 Bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.709 cfs
Storm frequency	=	25 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	3,518 cuft
Drainage area	=	0.270 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	5.94 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.260 x 80) + (0.010 x 98)] / 0.270



Hydrograph Report

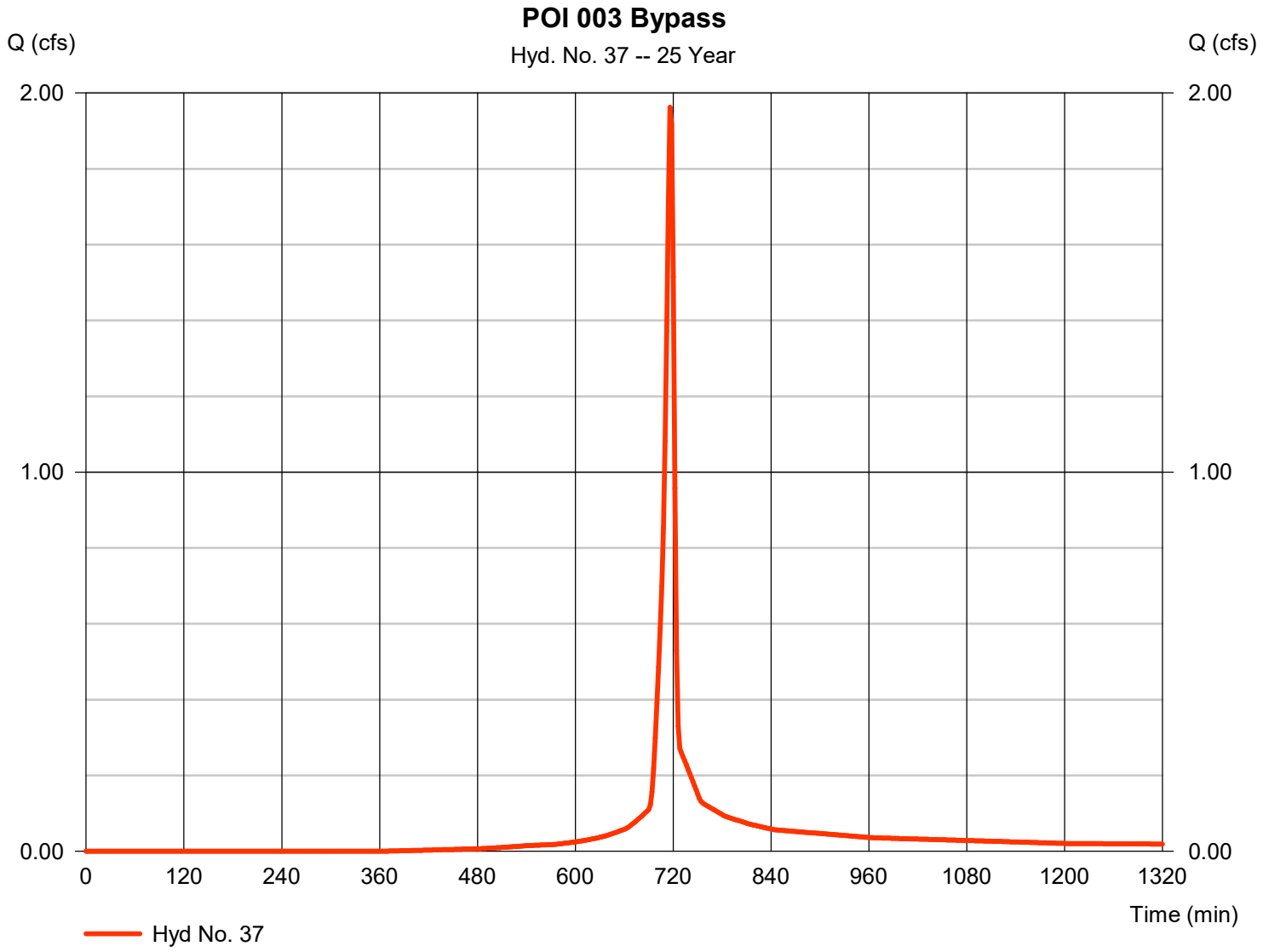
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 37

POI 003 Bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.962 cfs
Storm frequency	=	25 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	4,040 cuft
Drainage area	=	0.310 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	5.94 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.290 x 80) + (0.020 x 98)] / 0.310



Hydrograph Report

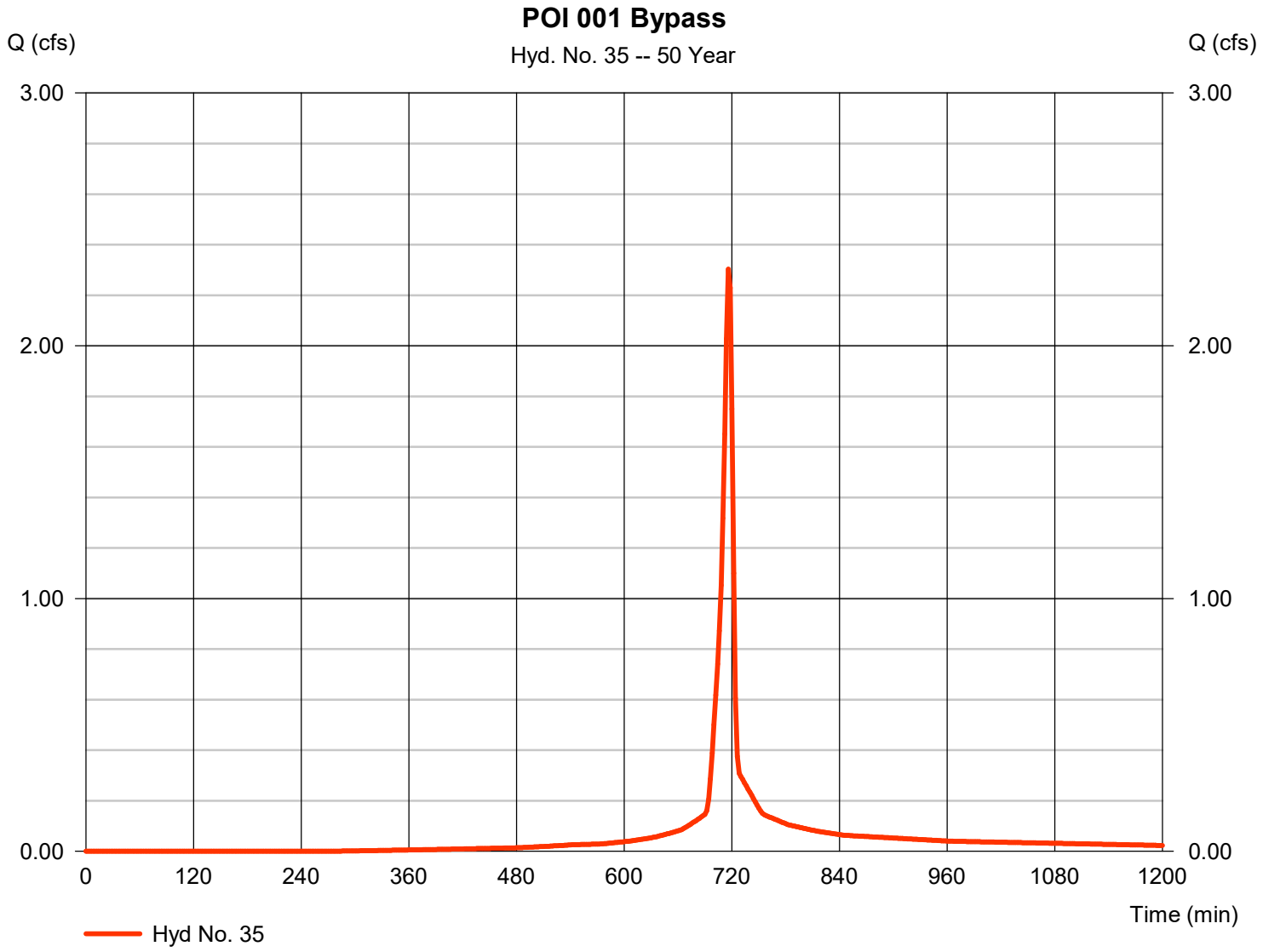
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 35

POI 001 Bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.303 cfs
Storm frequency	=	50 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	4,862 cuft
Drainage area	=	0.280 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.220 x 80) + (0.060 x 98)] / 0.280



Hydrograph Report

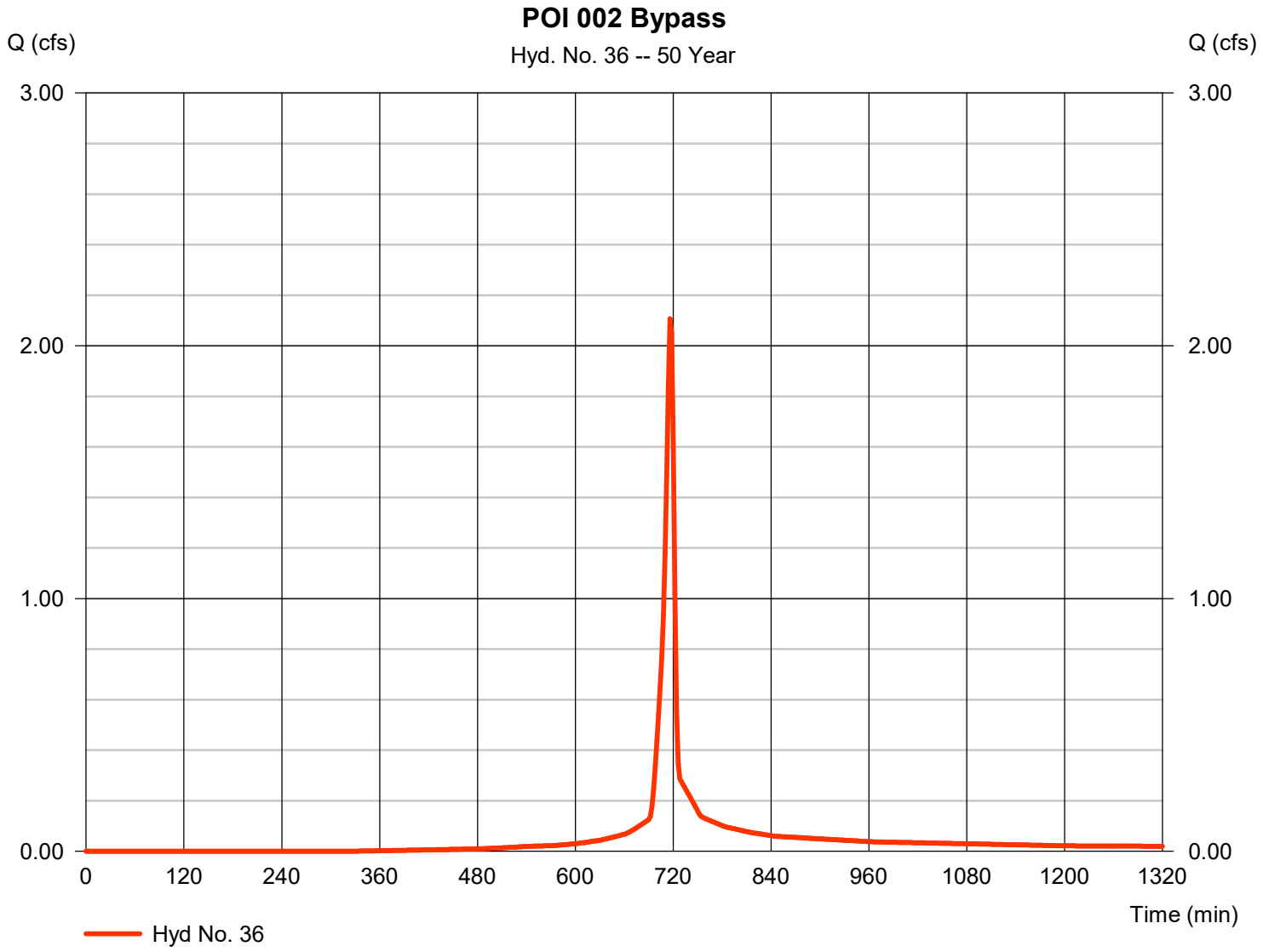
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 36

POI 002 Bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.106 cfs
Storm frequency	=	50 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	4,381 cuft
Drainage area	=	0.270 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.260 x 80) + (0.010 x 98)] / 0.270



Hydrograph Report

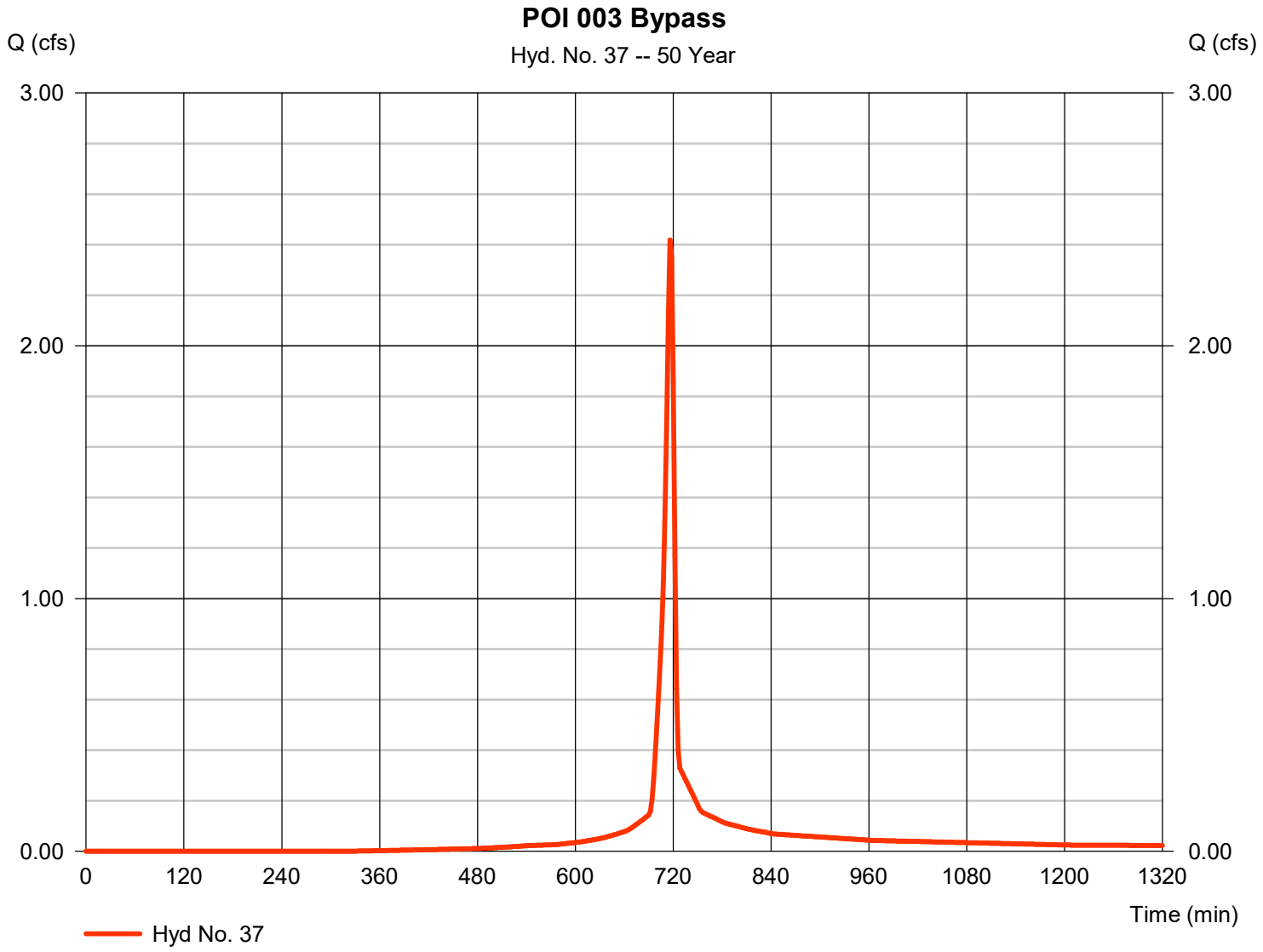
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 37

POI 003 Bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.418 cfs
Storm frequency	=	50 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	5,030 cuft
Drainage area	=	0.310 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.290 x 80) + (0.020 x 98)] / 0.310



Hydrograph Report

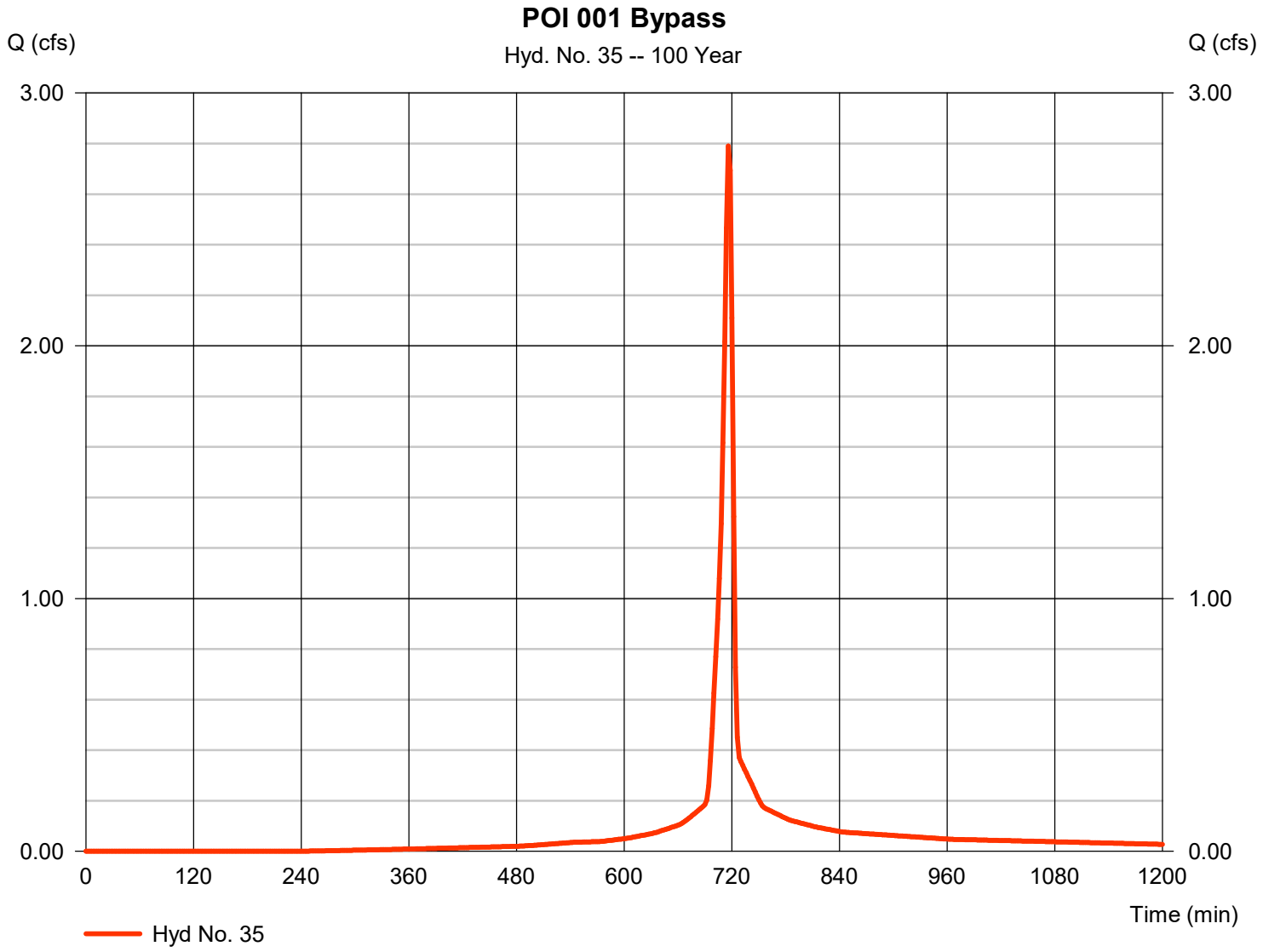
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 35

POI 001 Bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.790 cfs
Storm frequency	=	100 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	5,964 cuft
Drainage area	=	0.280 ac	Curve number	=	84*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	8.17 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.220 x 80) + (0.060 x 98)] / 0.280



Hydrograph Report

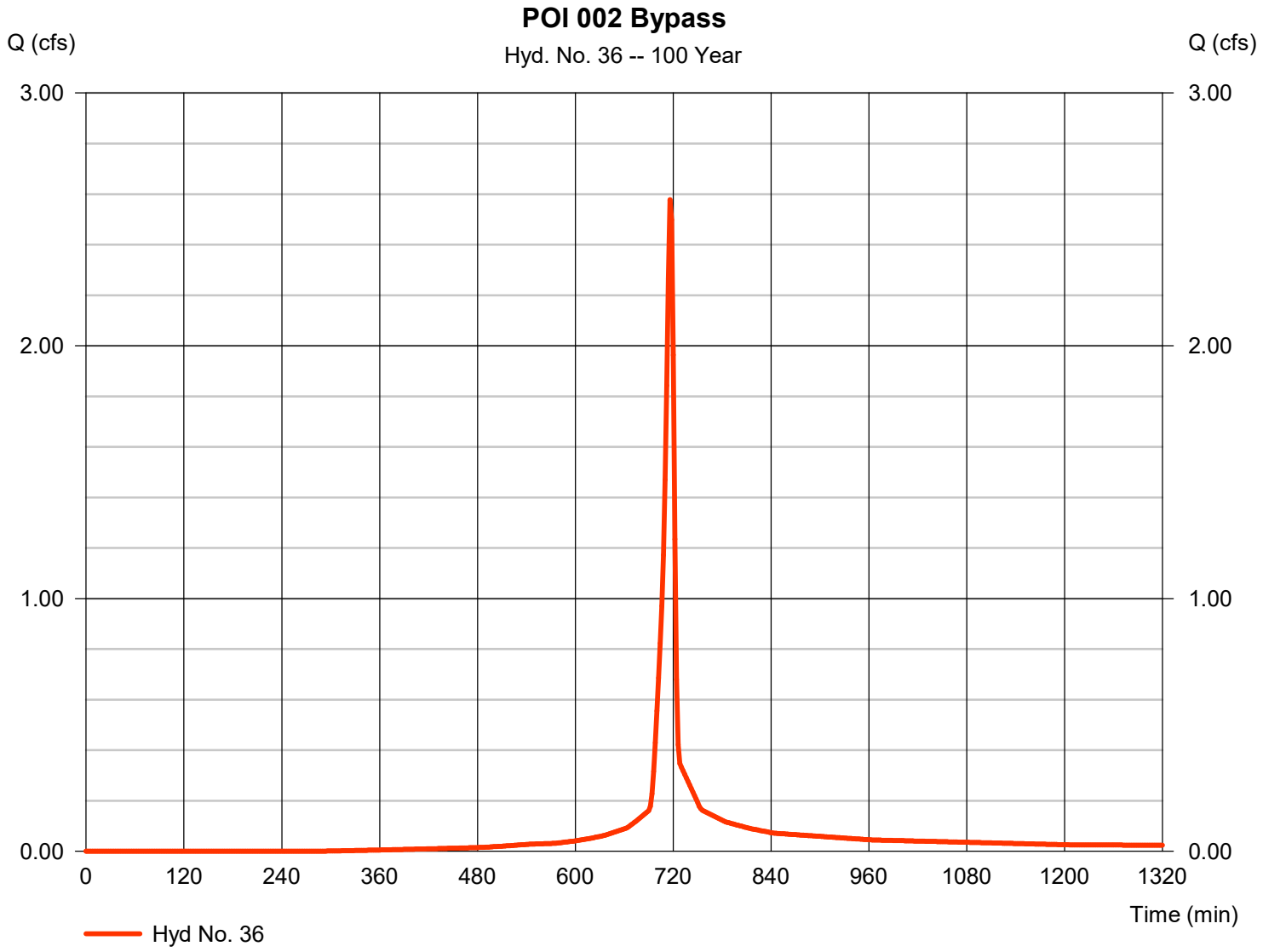
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 36

POI 002 Bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.578 cfs
Storm frequency	=	100 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	5,424 cuft
Drainage area	=	0.270 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	8.17 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.260 x 80) + (0.010 x 98)] / 0.270



Hydrograph Report

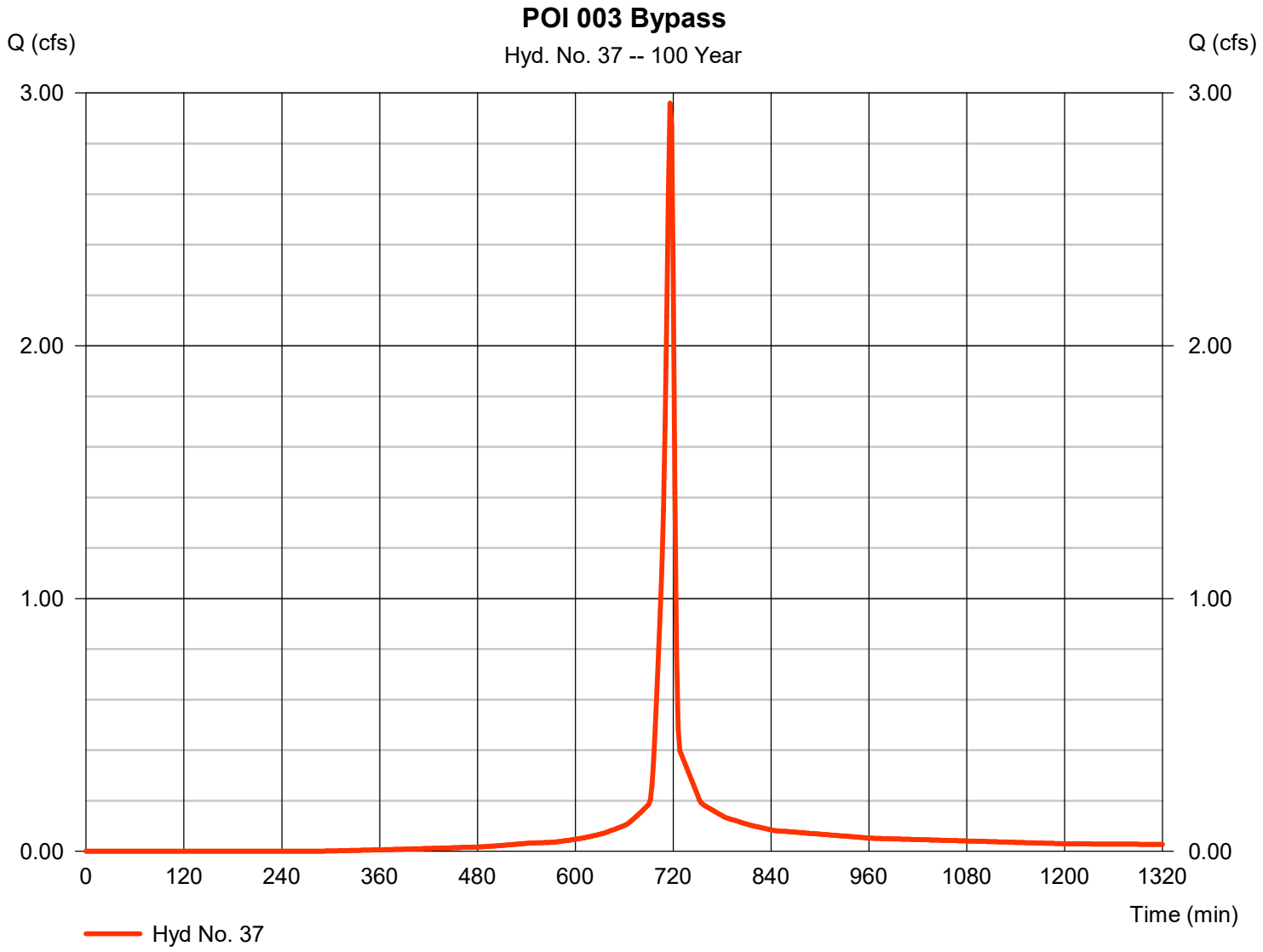
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 37

POI 003 Bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.960 cfs
Storm frequency	=	100 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	6,227 cuft
Drainage area	=	0.310 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	8.17 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.290 x 80) + (0.020 x 98)] / 0.310



7. CONVEYANCE CALCULATIONS

WORKSHEET 4b. RUNOFF VOLUME FOR 2-YR STORM EVENT - Post-Development Condition

PROJECT: 3 Point Garden Road

Drainage Area: 0.48 AC.
2-Year Rainfall: 3.32 in.* * From NOAA

Existing Conditions: Swale 7

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D	12,505	0.29	77	2.99	0.60	1.30	1352.87	0.03
Meadow	D			78					
Fertilized Planting Area	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D	4,816	0.11	80	2.50	0.50	1.49	599.92	0.01
Lawn, High-Input	D			84					
Golf Course Fairway/Green	D			80					
Grassed Athletic Field	D			80					
Rooftop	D			98					
High Traffic Street / Highway	D			93					
Medium Traffic Street	D			98					
Low Traffic / Residential Street	D			98					
Res. Driveway, Play Courts, etc.	D	3,721	0.09	98	0.20	0.04	3.09	957.17	0.02
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		21,042	0.48						0.06

Existing Conditions: Swale IN-4 NW

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D	39,174	0.90	77	2.99	0.60	1.30	4238.15	0.10
Meadow	D			78					
Fertilized Planting Area	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D	1,313	0.03	80	2.50	0.50	1.49	163.55	0.00
Lawn, High-Input	D			84					
Golf Course Fairway/Green	D			80					
Grassed Athletic Field	D			80					
Rooftop	D			98					
High Traffic Street / Highway	D			93					
Medium Traffic Street	D			98					
Low Traffic / Residential Street	D			98					
Res. Driveway, Play Courts, etc.	D			98					
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		40,487	0.93						0.10

Existing Conditions: Swale IN-4 SE

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D	34,915	0.80	77	2.99	0.60	1.30	3777.40	0.09
Meadow	D			78					
Fertilized Planting Area	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D	1,169	0.03	80	2.50	0.50	1.49	145.66	0.00
Lawn, High-Input	D			84					
Golf Course Fairway/Green	D			80					
Grassed Athletic Field	D			80					
Rooftop	D			98					
High Traffic Street / Highway	D			93					
Medium Traffic Street	D			98					
Low Traffic / Residential Street	D			98					
Res. Driveway, Play Courts, etc.	D	1,981	0.05	98	0.20	0.04	3.09	509.74	0.01
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		38,066	0.87						0.10

8. LOCATION AND DESCRIPTION OF PCSM BMP's

The following BMPs will be employed:

a. Raingardens

9. PLAN DRAWINGS OF PERMANENT STABILIZATION & BMP's

The various BMPs are shown and detailed on the *Post Construction Stormwater Management Plan*, which is attached to this report.

10. OPERATION AND MAINTENANCE PROCEDURES

Raingarden:

- Inspect area two times per year.
- Weeding and pruning as required during establishment of vegetation.
- During periods of drought, watering may be required.
- Routinely remove accumulated trash and debris and sediment.
- Re-spread mulch once every 2 to 3 years and replenish as needed.

All PCSM BMPs will be operated and maintained by the property owner.

After maintenance activities are performed, any bare soil areas shall be immediately stabilized with topsoil, permanent seed, fertilized and mulched.

WORKSHEET 4c. RUNOFF VOLUME FOR 2-YR STORM EVENT - Post-Development Inlets & Swales

PROJECT: 3 Point Garden Road

Drainage Area: _____ AC.
2-Year Rainfall: 3.32 in.* * From NOAA

IN-4

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D	369,163	8.47	77	2.99	0.60	1.30	39939.05	0.92
Lawn, Low-Input	D	43,104	0.99	80	2.50	0.50	1.49	5369.33	0.12
Impervious	D	17,397	0.40	98	0.20	0.04	3.09	4475.43	0.10
TOTAL:		429,664	9.86						1.14

IN-7

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D	3,520	0.08	77	2.99	0.60	1.30	380.84	0.01
Lawn, Low-Input	D	860	0.02	80	2.50	0.50	1.49	107.16	0.00
Impervious	D	616	0.01	98	0.20	0.04	3.09	158.58	0.00
TOTAL:		4,997	0.11						0.01

IN-9

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D	9,976	0.23	77	2.99	0.60	1.30	1079.30	0.02
Lawn, Low-Input	D	3,865	0.09	80	2.50	0.50	1.49	481.43	0.01
Impervious	D	1,999	0.05	98	0.20	0.04	3.09	514.29	0.01
TOTAL:		15,840	0.36						0.04

Ex. Culvert 3 Point Garden Road

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)	Runoff Volume (AC-FT)
Forest (Good)	D	44,918	1.03	77	2.99	0.60	1.30	4859.63	0.11
Lawn, Low-Input	D	19,920	0.46	80	2.50	0.50	1.49	2481.40	0.06
Impervious	D	12,667	0.29	98	0.20	0.04	3.09	3258.55	0.07
TOTAL:		77,505	1.78						0.24

Hydrograph Report

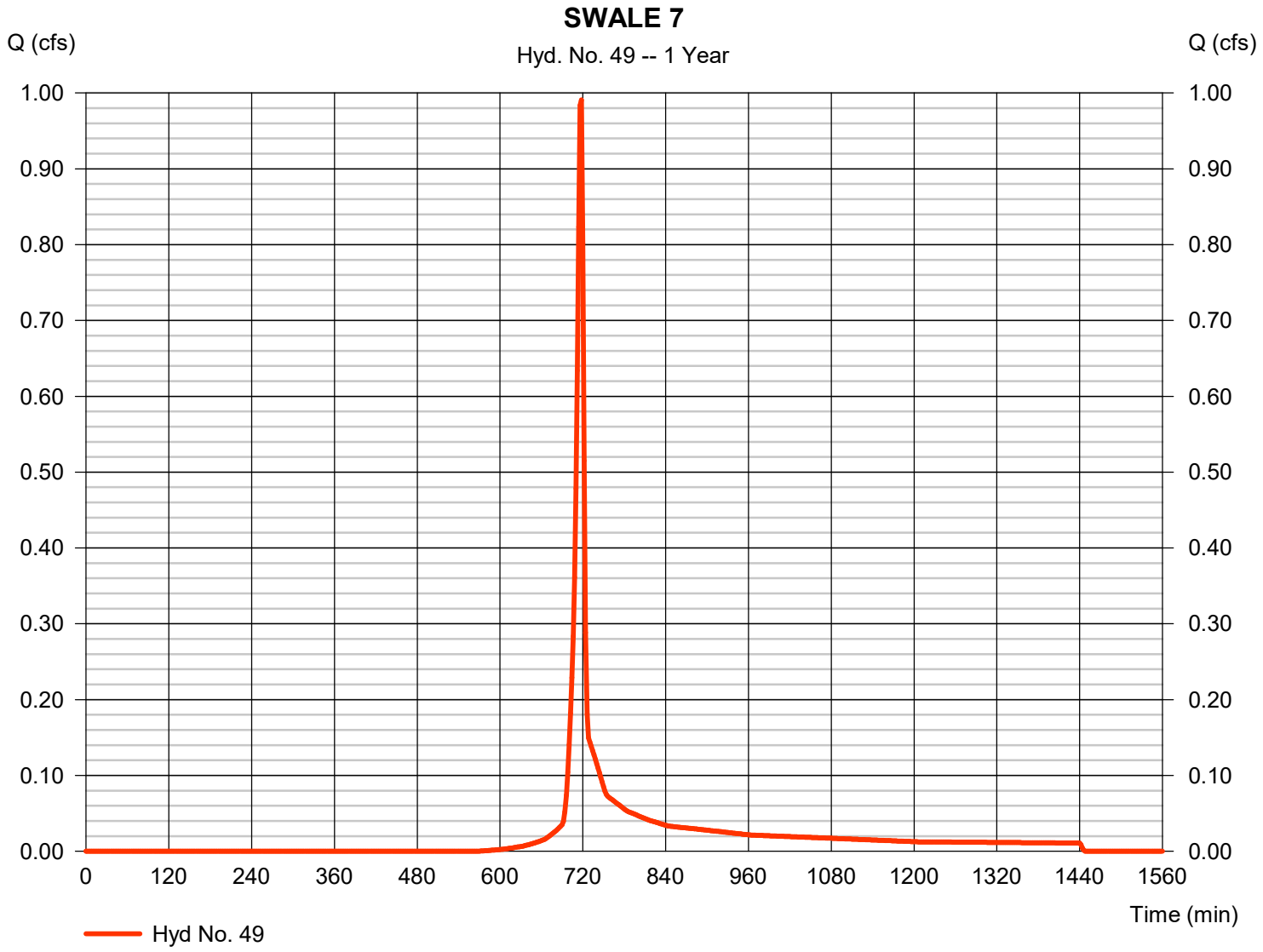
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 49

SWALE 7

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.991 cfs
Storm frequency	=	1 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	1,989 cuft
Drainage area	=	0.490 ac	Curve number	=	82*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	2.76 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.290 x 77) + (0.110 x 80) + (0.090 x 98)] / 0.490



Hydrograph Report

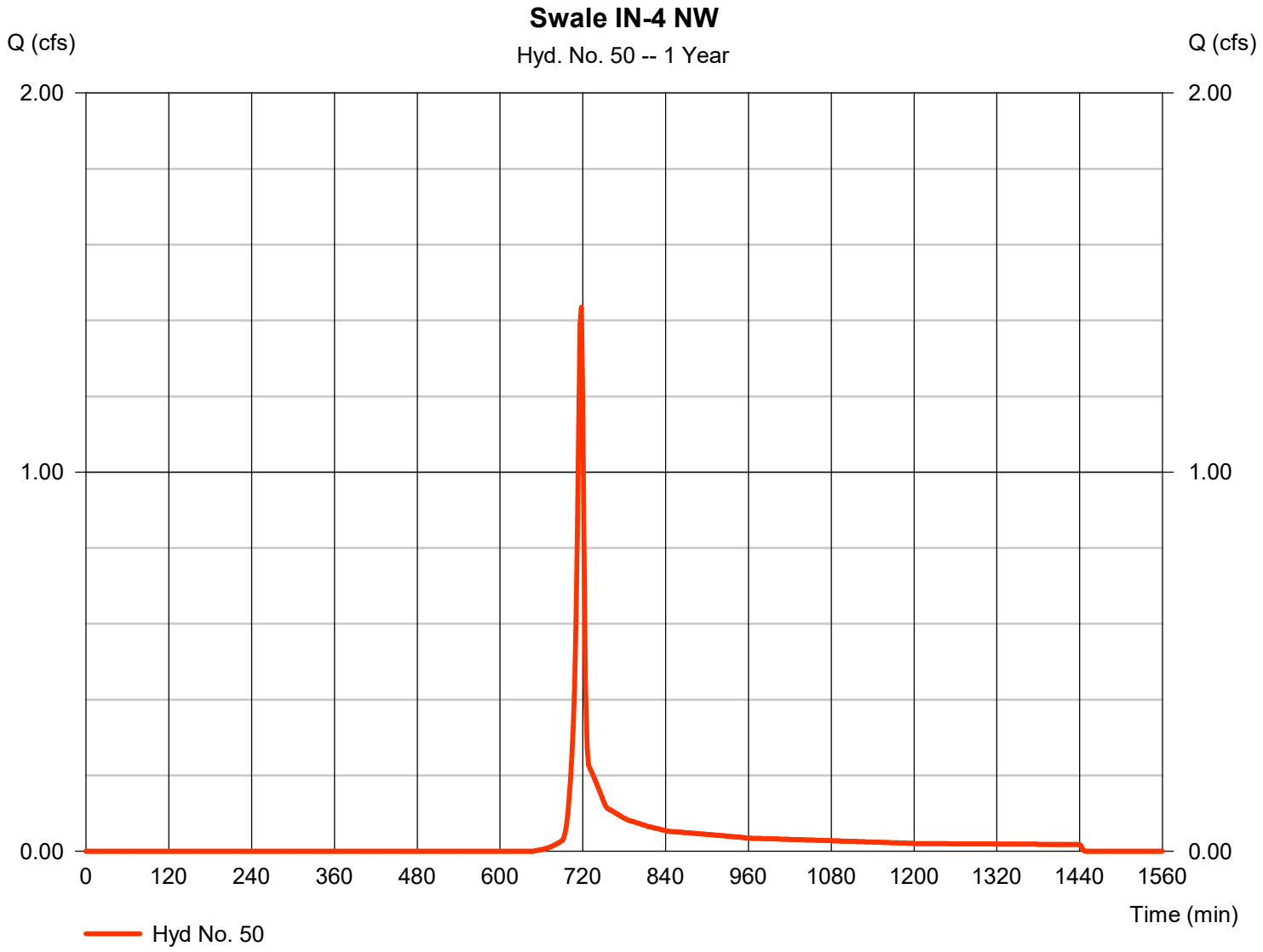
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 50

Swale IN-4 NW

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.435 cfs
Storm frequency	=	1 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	2,874 cuft
Drainage area	=	0.930 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	2.76 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.900 x 77) + (0.030 x 80)] / 0.930



Hydrograph Report

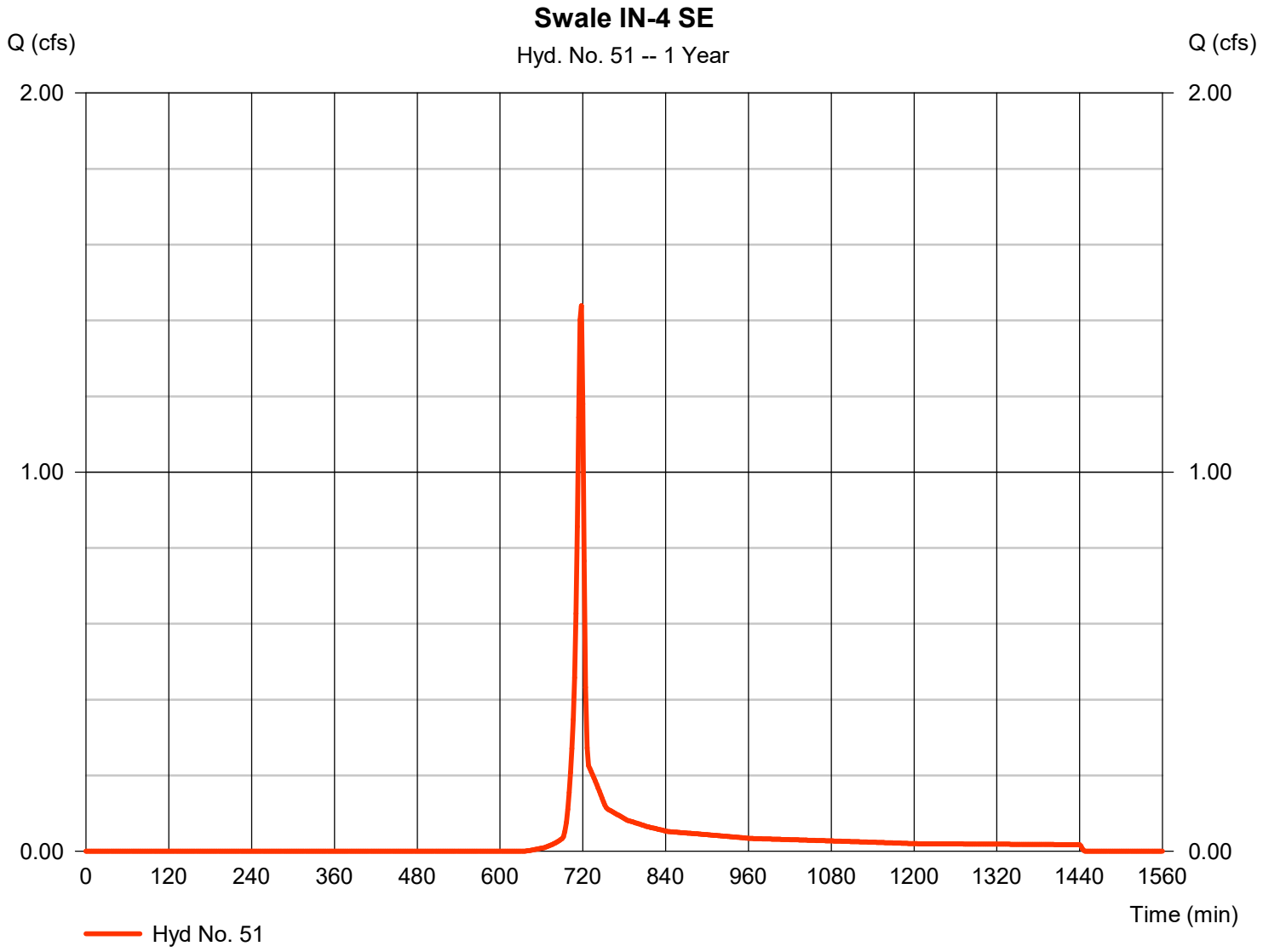
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 51

Swale IN-4 SE

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.439 cfs
Storm frequency	=	1 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	2,879 cuft
Drainage area	=	0.880 ac	Curve number	=	78*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	2.76 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.800 x 77) + (0.030 x 80) + (0.050 x 98)] / 0.880



Hydrograph Report

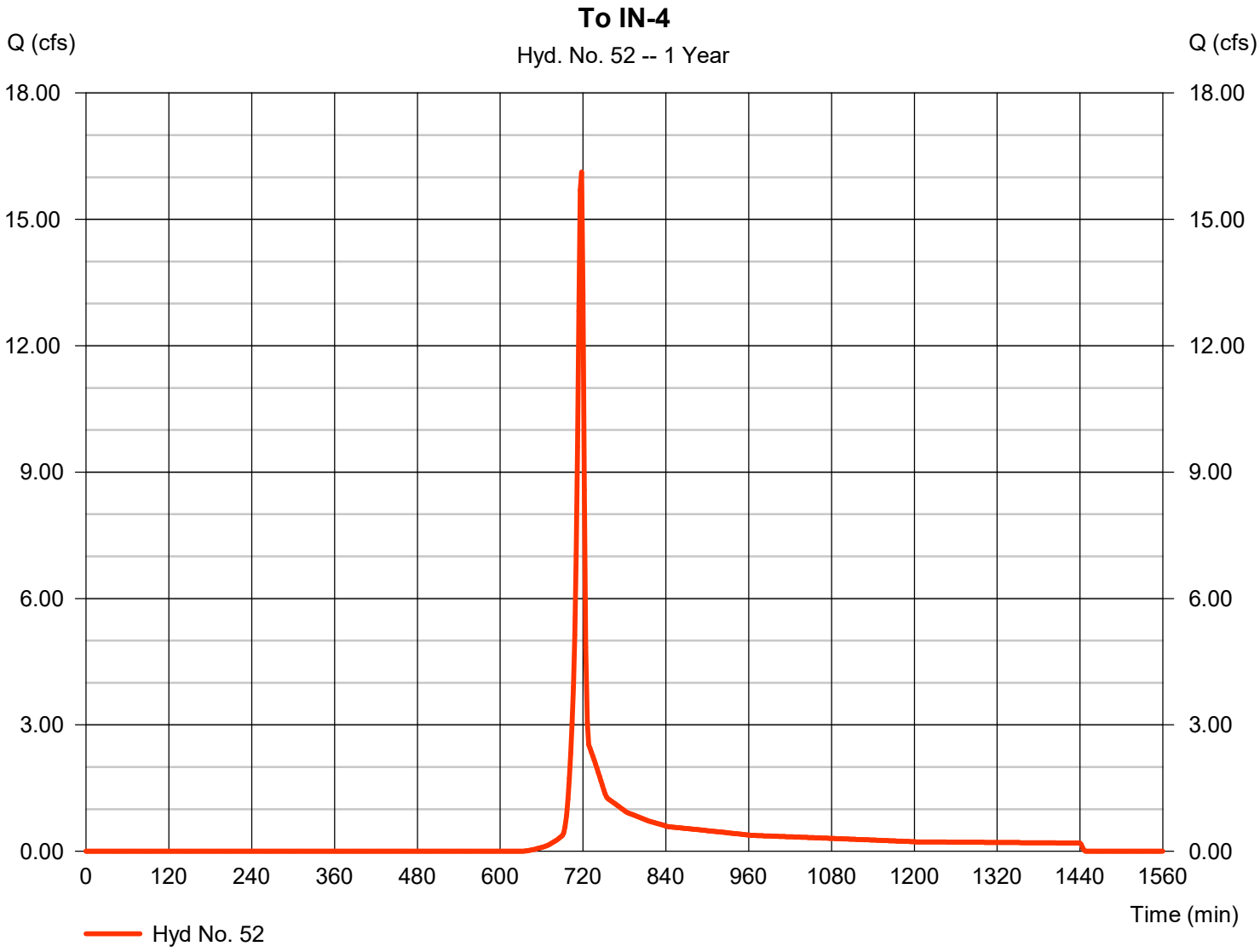
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 52

To IN-4

Hydrograph type	=	SCS Runoff	Peak discharge	=	16.12 cfs
Storm frequency	=	1 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	32,254 cuft
Drainage area	=	9.860 ac	Curve number	=	78*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	2.76 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(8.470 x 77) + (0.400 x 98) + (0.990 x 80)] / 9.860



Hydrograph Report

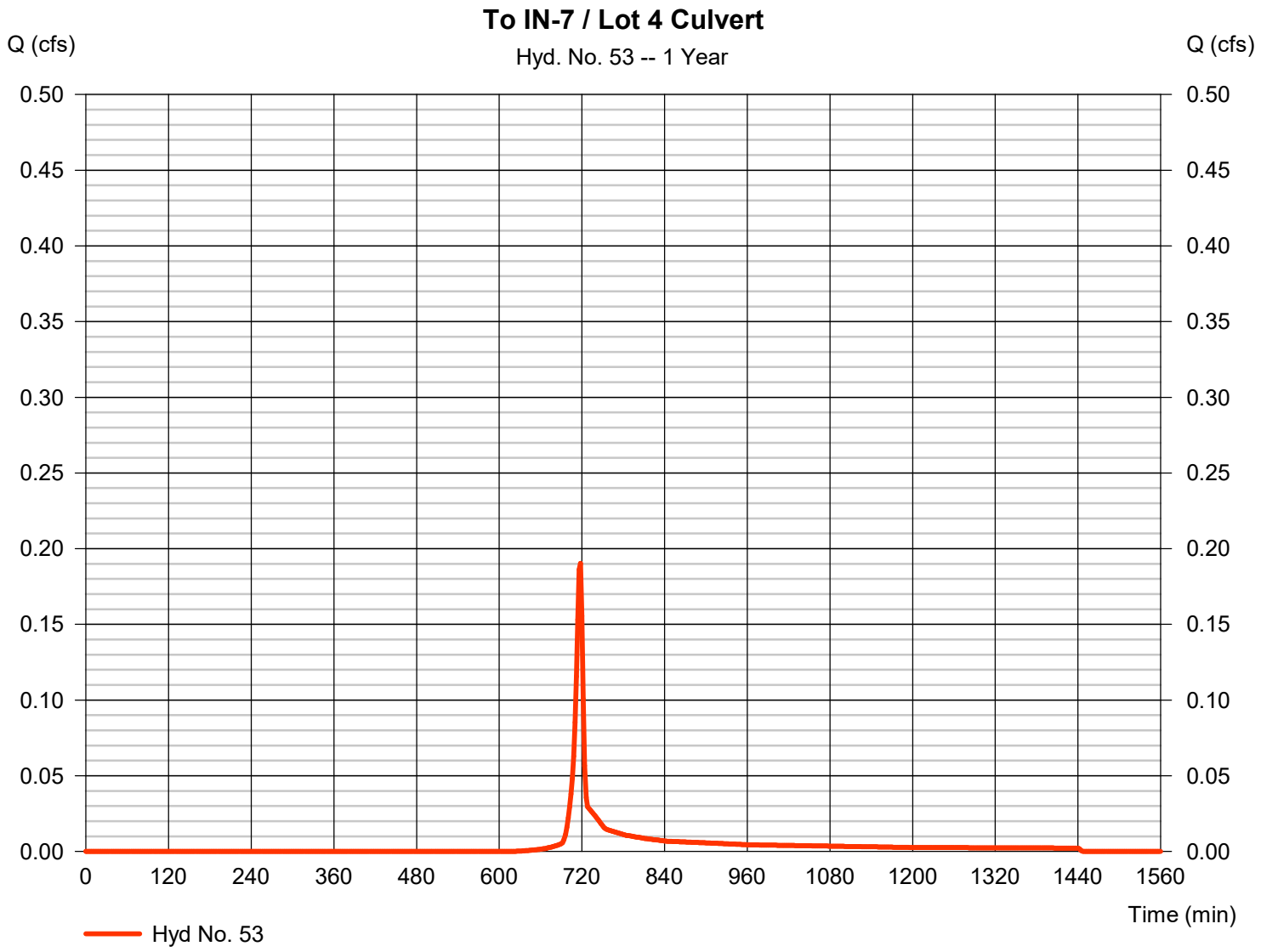
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 53

To IN-7 / Lot 4 Culvert

Hydrograph type	= SCS Runoff	Peak discharge	= 0.190 cfs
Storm frequency	= 1 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 380 cuft
Drainage area	= 0.110 ac	Curve number	= 79*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.76 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.080 x 77) + (0.020 x 80) + (0.010 x 98)] / 0.110



Hydrograph Report

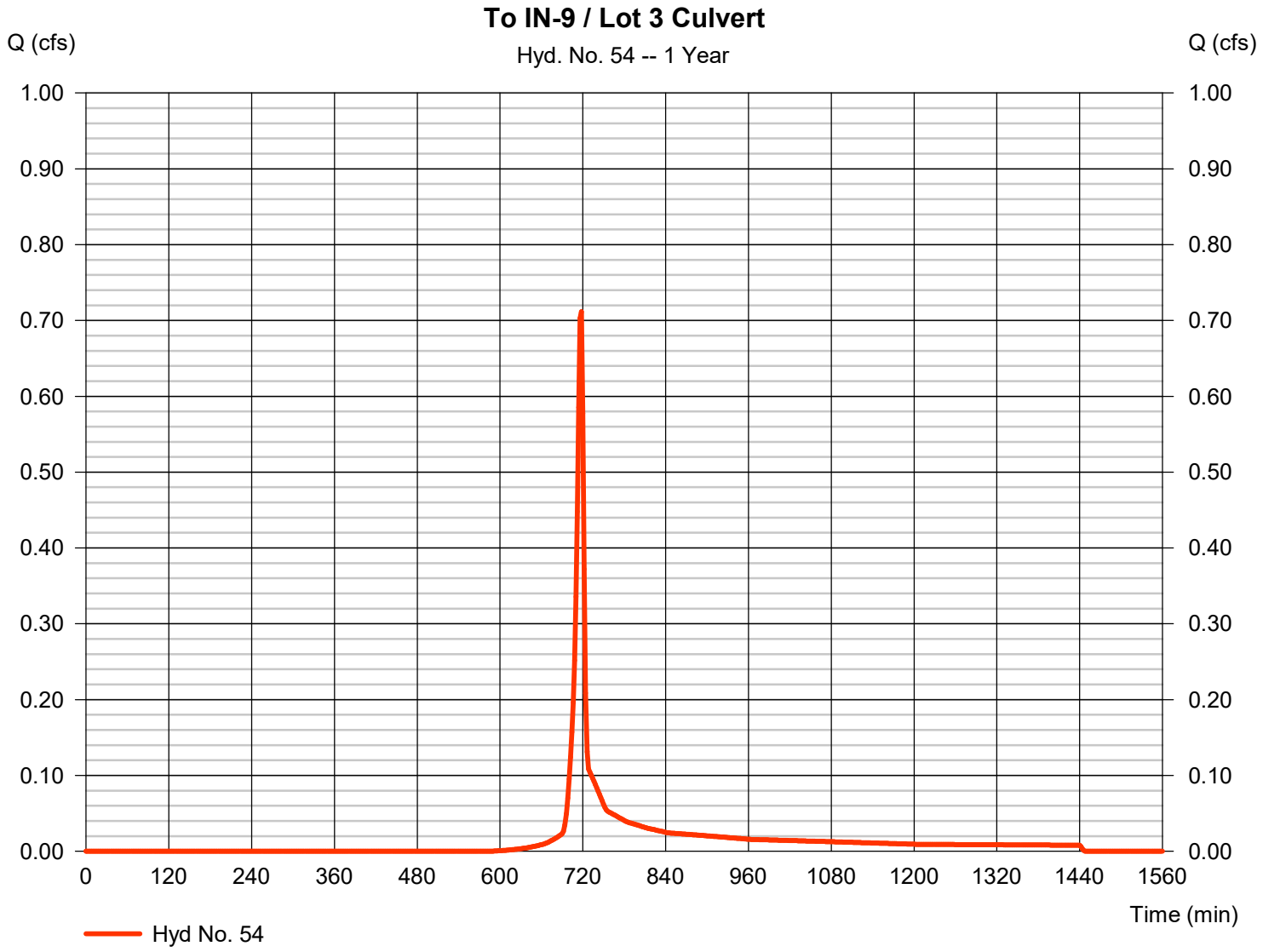
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 54

To IN-9 / Lot 3 Culvert

Hydrograph type	= SCS Runoff	Peak discharge	= 0.712 cfs
Storm frequency	= 1 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 1,425 cuft
Drainage area	= 0.370 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 2.76 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.230 x 77) + (0.090 x 80) + (0.050 x 98)] / 0.370



Hydrograph Report

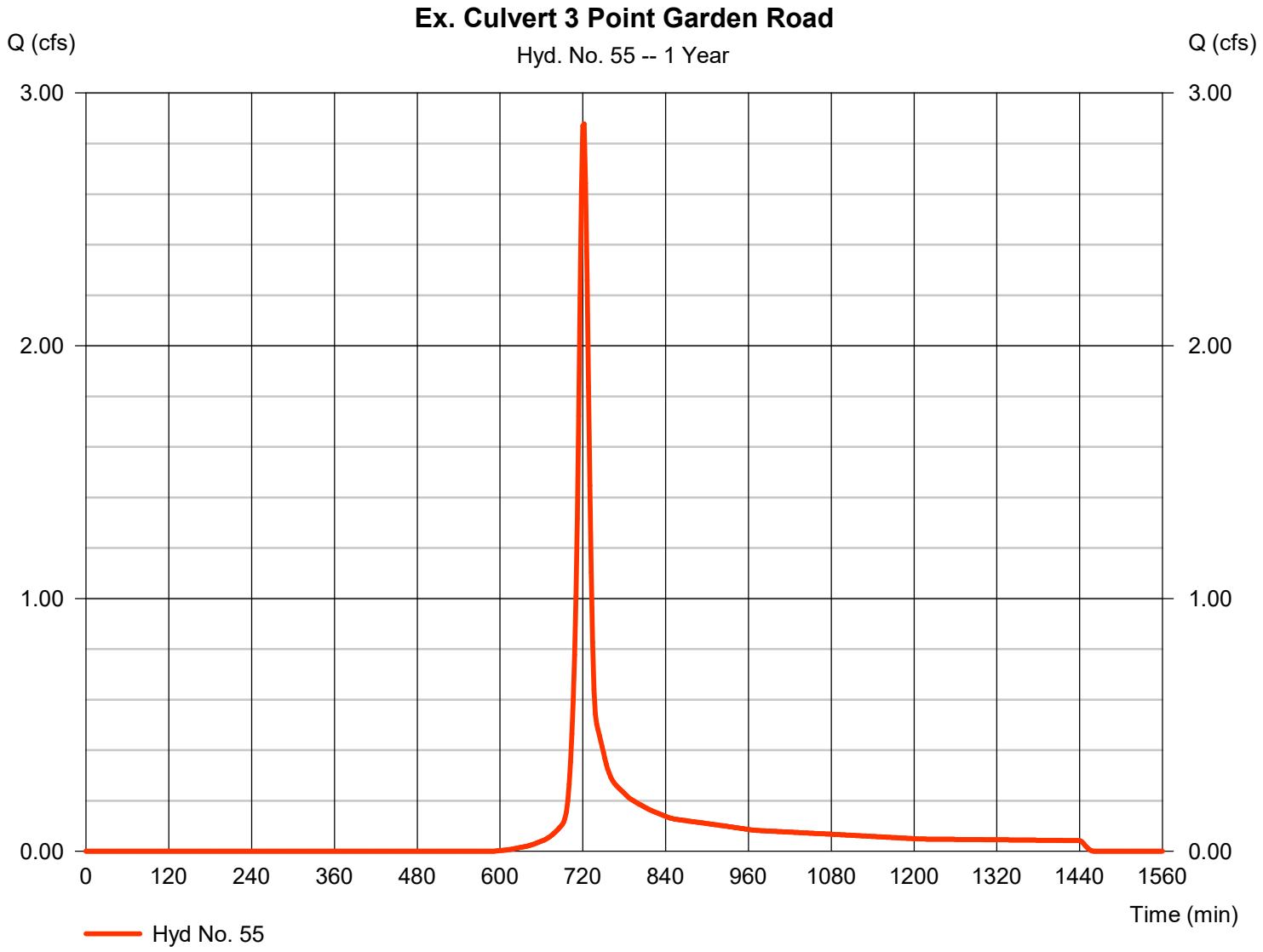
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 55

Ex. Culvert 3 Point Garden Road

Hydrograph type	= SCS Runoff	Peak discharge	= 2.878 cfs
Storm frequency	= 1 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 7,542 cuft
Drainage area	= 1.780 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 10.80 min
Total precip.	= 2.76 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.030 x 77) + (0.460 x 80) + (0.290 x 98)] / 1.780



TR55 Tc Worksheet

Hyd. No. 55

Ex. Culvert 3 Point Garden Road

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.150		0.011		0.011		
Flow length (ft)	= 90.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.32		0.00		0.00		
Land slope (%)	= 2.22		0.00		0.00		
Travel Time (min)	**= 8.48**	**+**	**0.00**	**+**	**0.00**	**=**	**8.48**
Shallow Concentrated Flow							
Flow length (ft)	= 108.00		343.00		122.00		
Watercourse slope (%)	= 7.41		5.83		5.74		
Surface description	= Unpaved		Unpaved		Paved		
Average velocity (ft/s)	=4.39		3.90		4.87		
Travel Time (min)	**= 0.41**	**+**	**1.47**	**+**	**0.42**	**=**	**2.29**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... 10.80 min

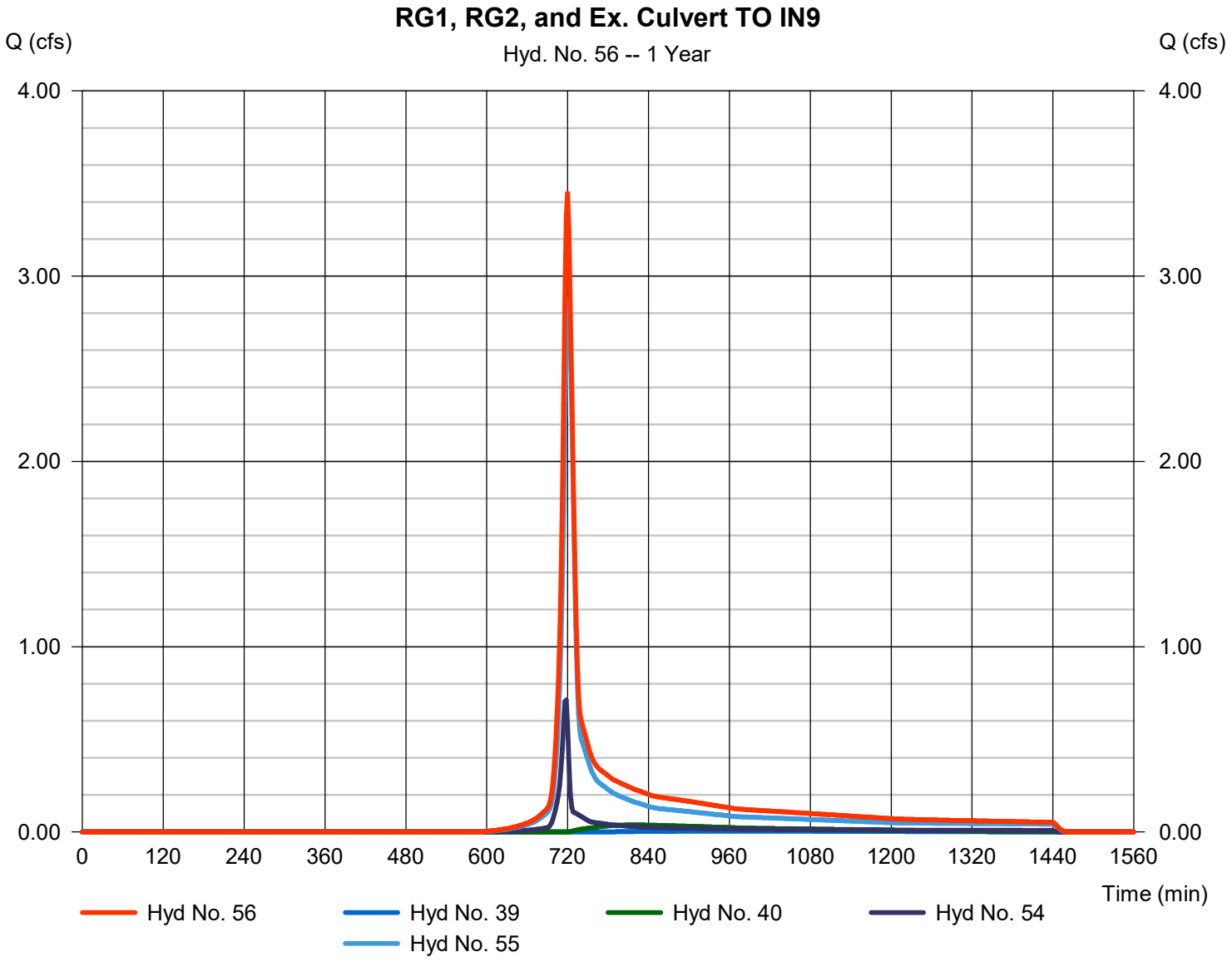
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 56

RG1, RG2, and Ex. Culvert TO IN9

Hydrograph type	= Combine	Peak discharge	= 3.448 cfs
Storm frequency	= 1 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 9,798 cuft
Inflow hyds.	= 39, 40, 54, 55	Contrib. drain. area	= 2.150 ac



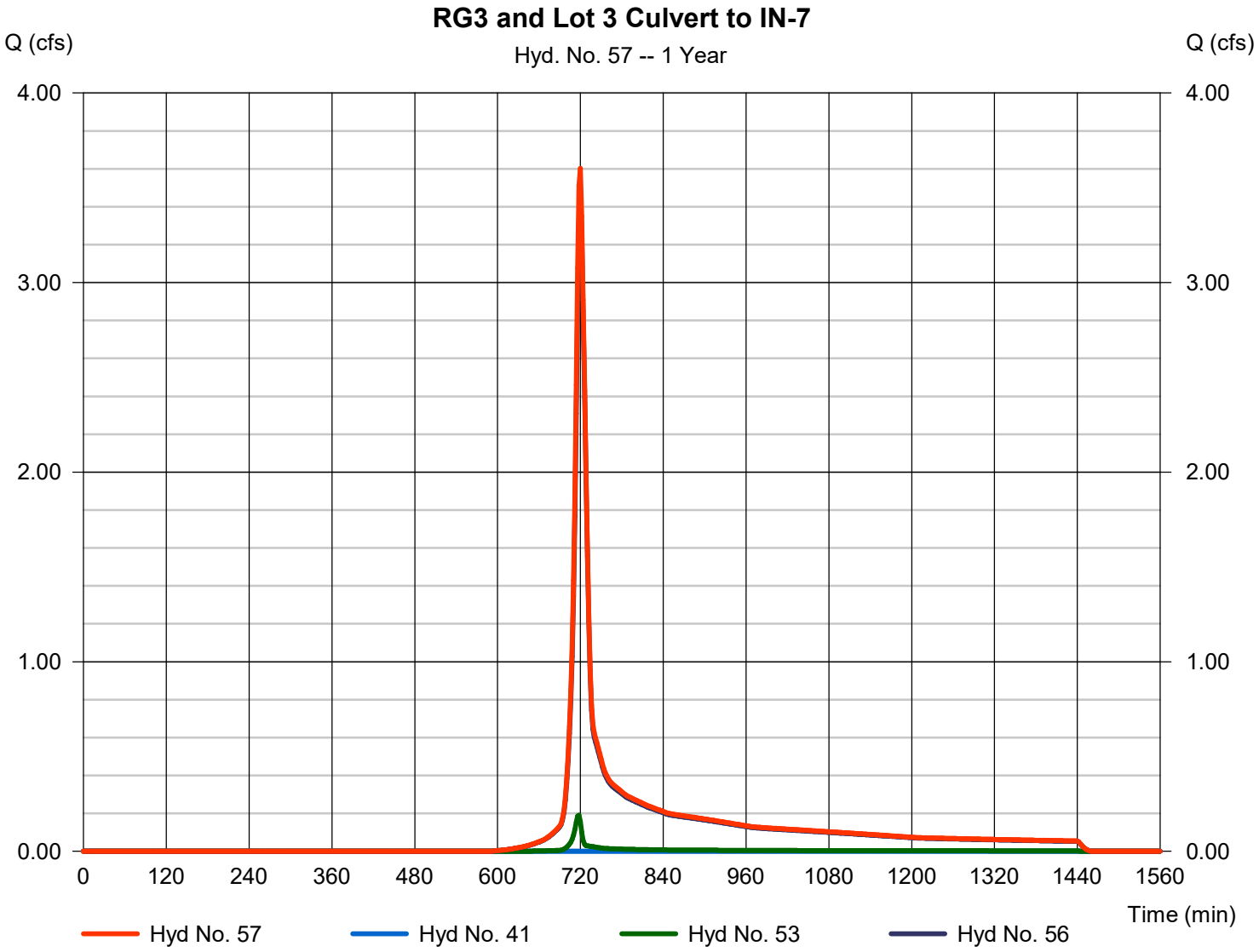
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 57

RG3 and Lot 3 Culvert to IN-7

Hydrograph type	= Combine	Peak discharge	= 3.603 cfs
Storm frequency	= 1 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 10,178 cuft
Inflow hyds.	= 41, 53, 56	Contrib. drain. area	= 0.110 ac



Hydrograph Report

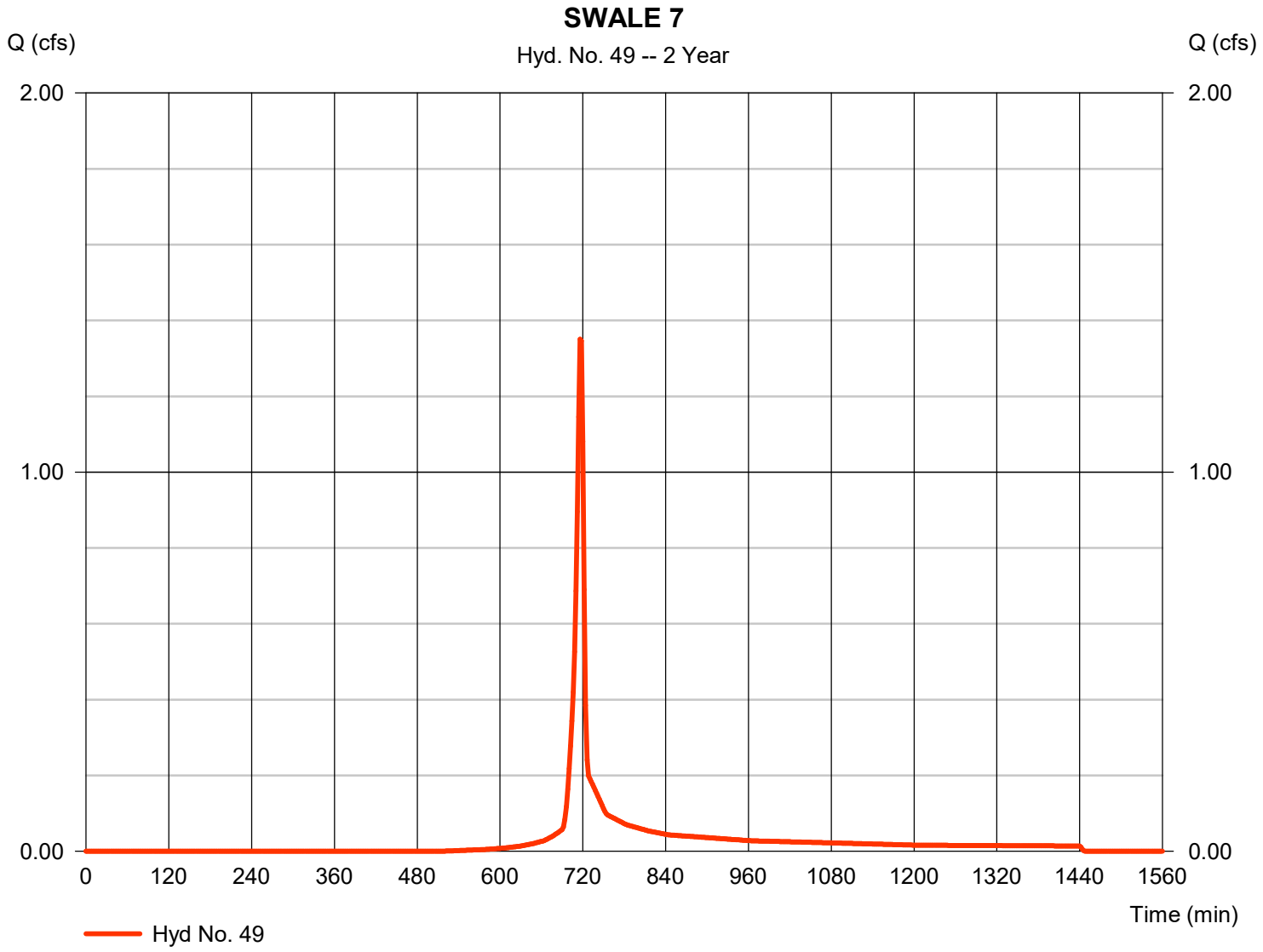
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 49

SWALE 7

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.350 cfs
Storm frequency	=	2 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	2,727 cuft
Drainage area	=	0.490 ac	Curve number	=	82*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.32 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.290 x 77) + (0.110 x 80) + (0.090 x 98)] / 0.490



Hydrograph Report

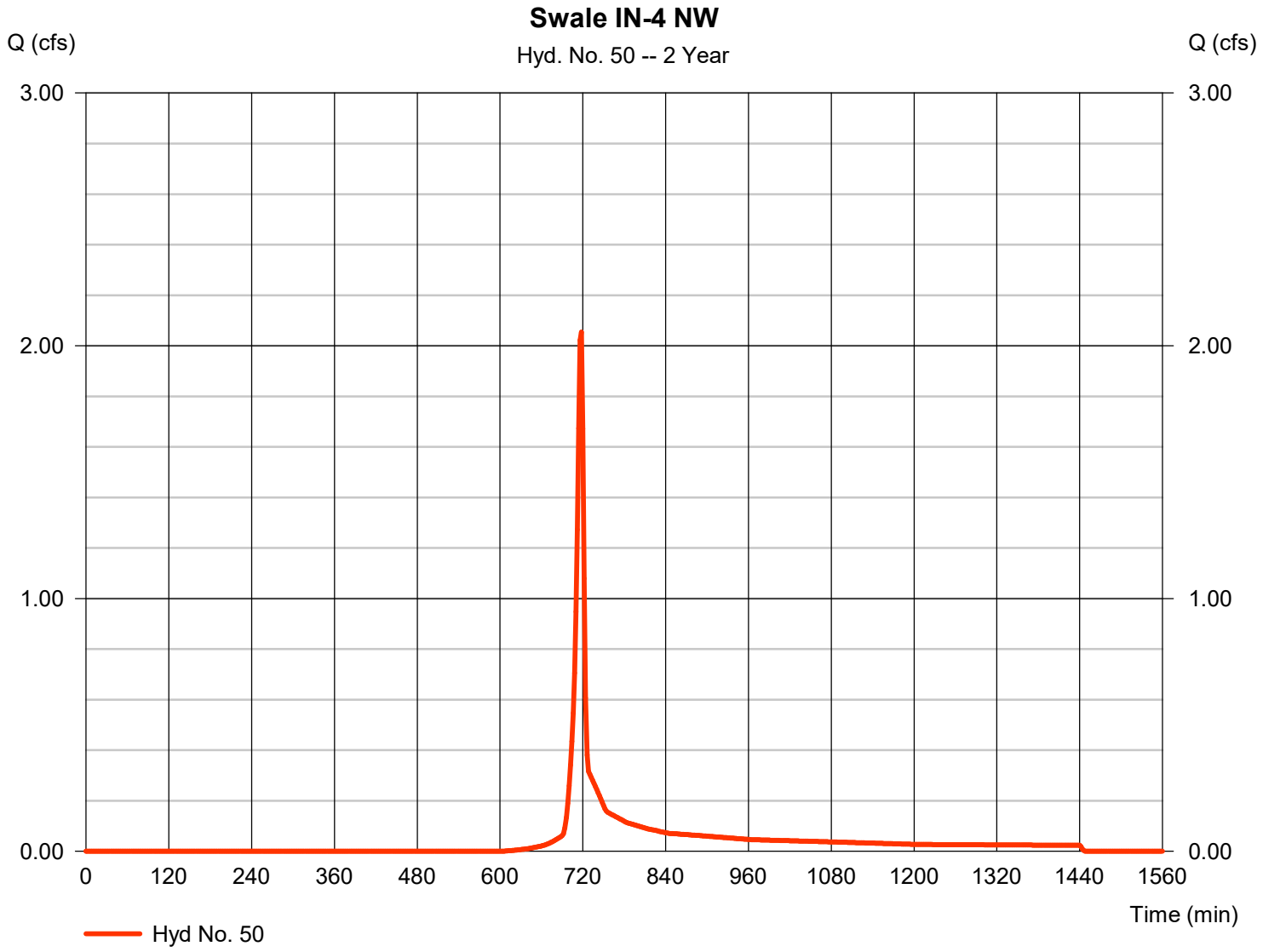
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 50

Swale IN-4 NW

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.054 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	4,109 cuft
Drainage area	=	0.930 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.32 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.900 x 77) + (0.030 x 80)] / 0.930



Hydrograph Report

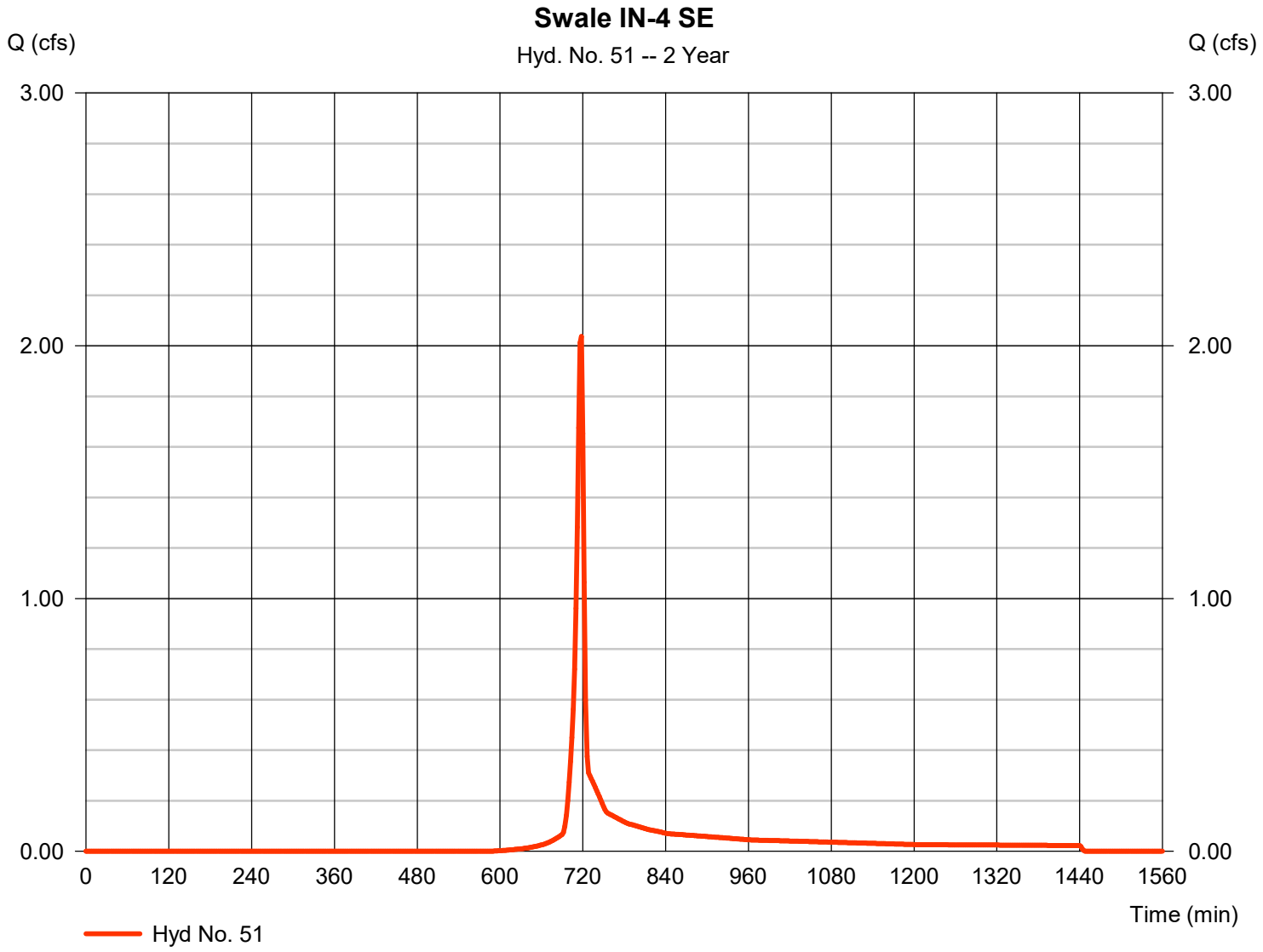
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 51

Swale IN-4 SE

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.036 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	4,079 cuft
Drainage area	=	0.880 ac	Curve number	=	78*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.32 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.800 x 77) + (0.030 x 80) + (0.050 x 98)] / 0.880



Hydrograph Report

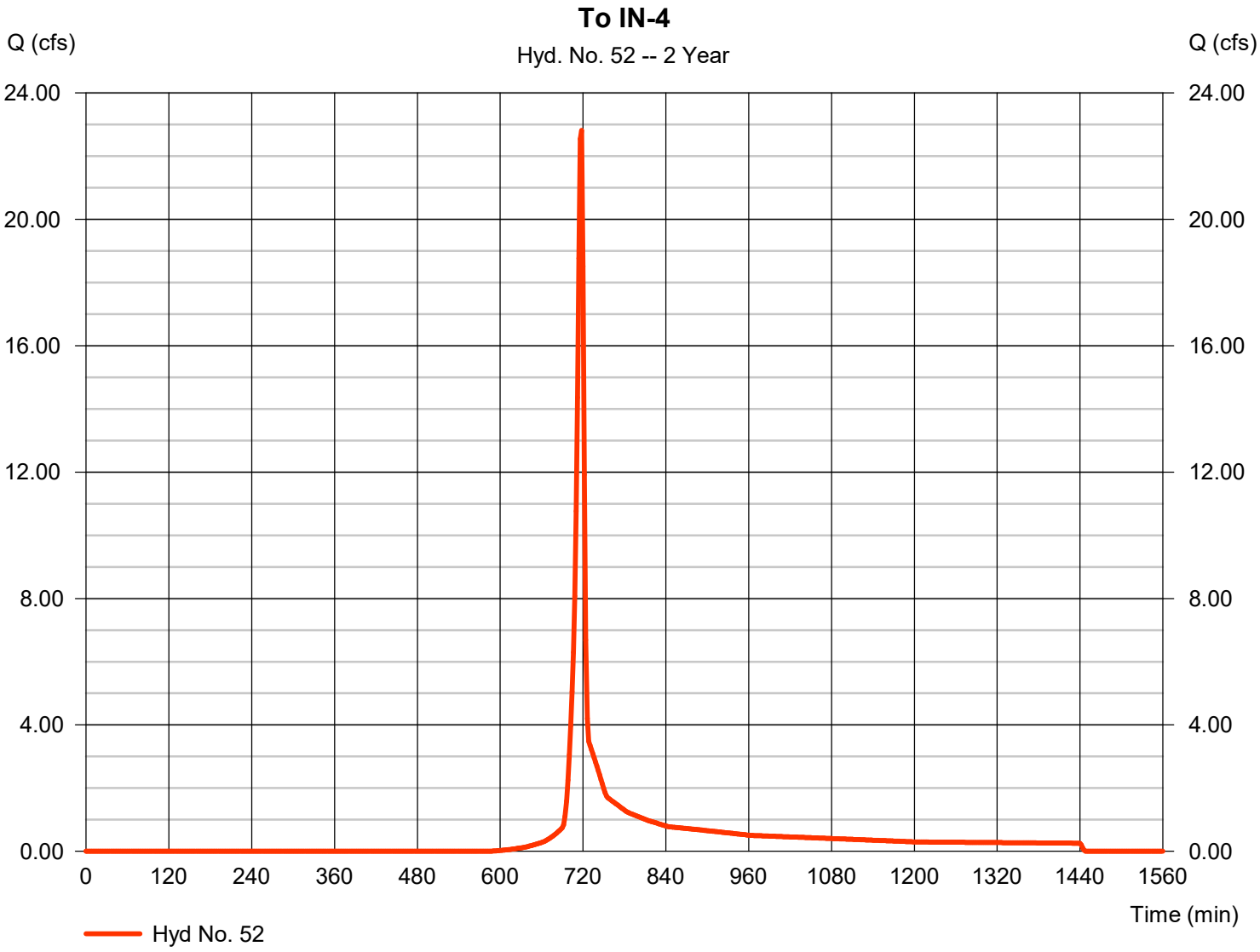
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 52

To IN-4

Hydrograph type	=	SCS Runoff	Peak discharge	=	22.81 cfs
Storm frequency	=	2 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	45,701 cuft
Drainage area	=	9.860 ac	Curve number	=	78*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	3.32 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(8.470 x 77) + (0.400 x 98) + (0.990 x 80)] / 9.860



Hydrograph Report

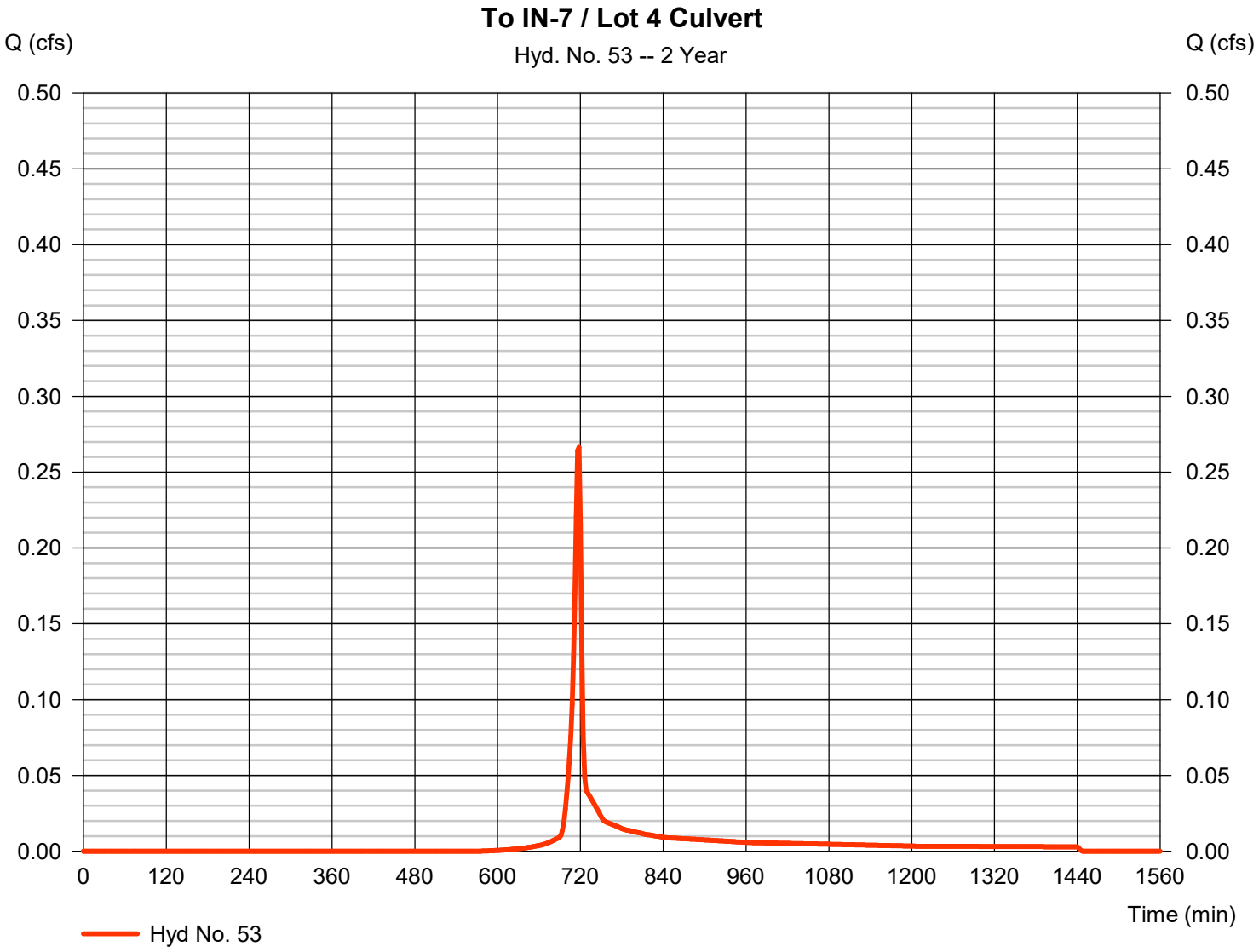
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 53

To IN-7 / Lot 4 Culvert

Hydrograph type	= SCS Runoff	Peak discharge	= 0.266 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 534 cuft
Drainage area	= 0.110 ac	Curve number	= 79*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.080 x 77) + (0.020 x 80) + (0.010 x 98)] / 0.110



Hydrograph Report

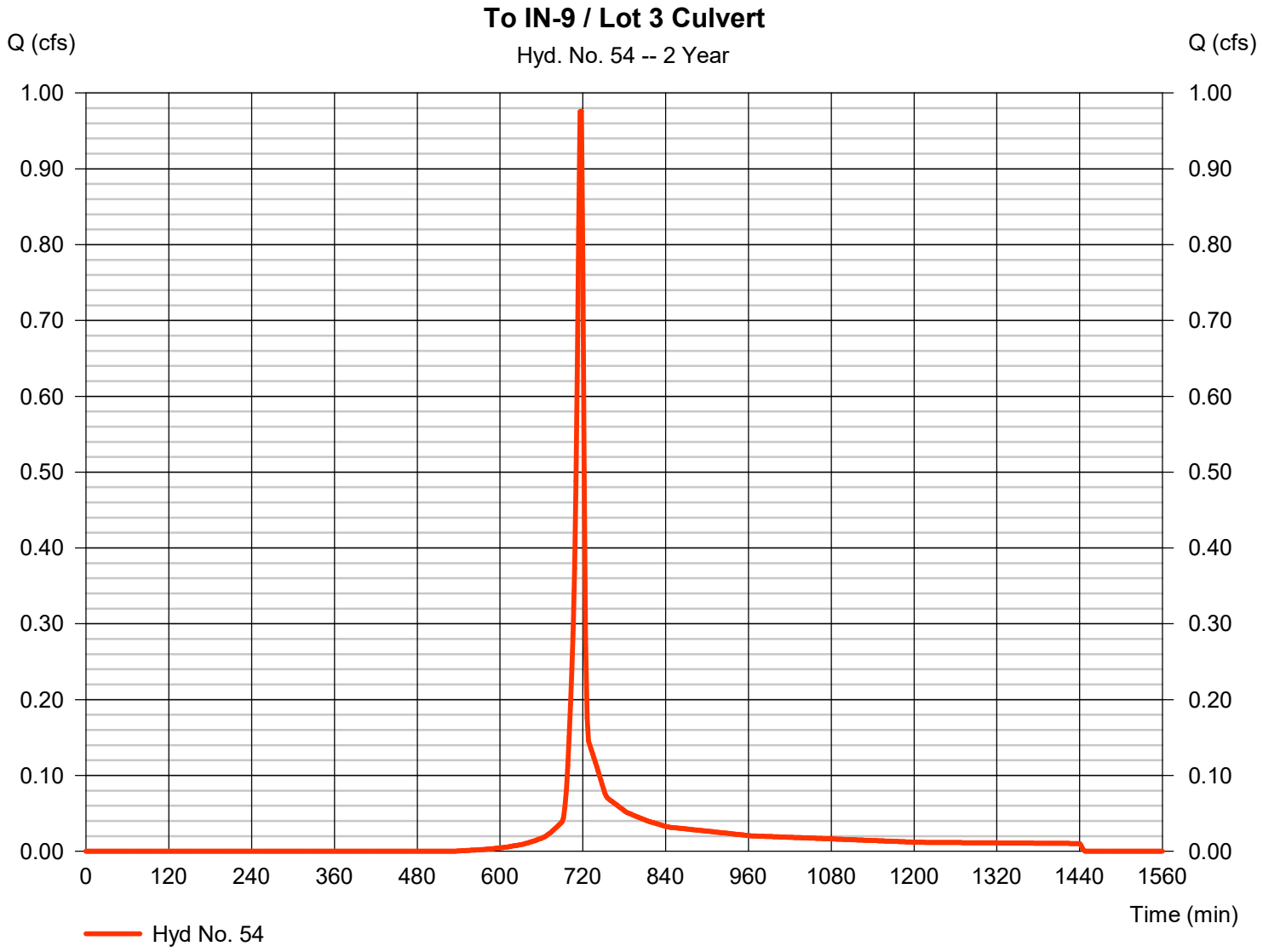
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 54

To IN-9 / Lot 3 Culvert

Hydrograph type	= SCS Runoff	Peak discharge	= 0.976 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 1,969 cuft
Drainage area	= 0.370 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.230 x 77) + (0.090 x 80) + (0.050 x 98)] / 0.370



Hydrograph Report

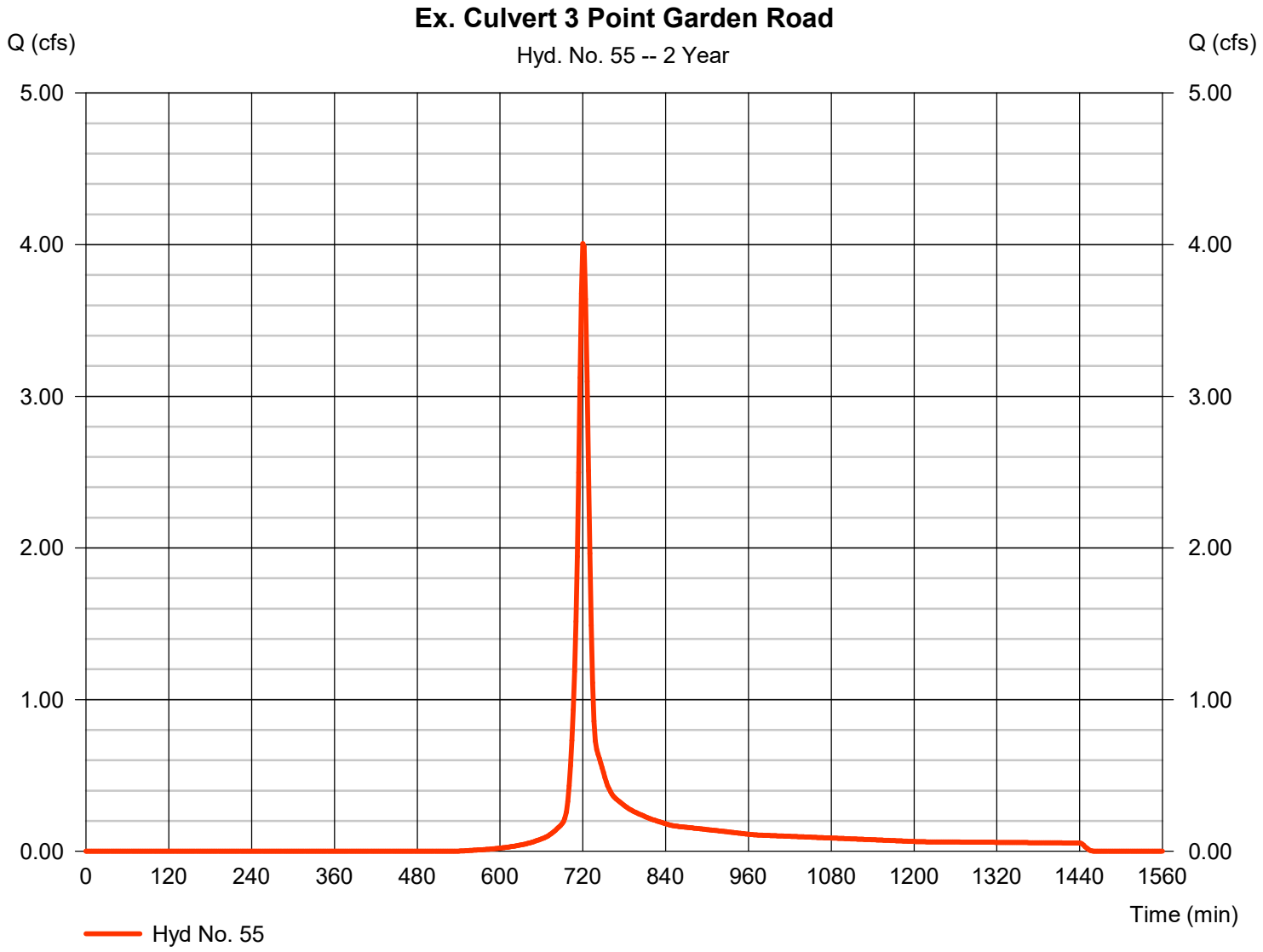
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 55

Ex. Culvert 3 Point Garden Road

Hydrograph type	=	SCS Runoff	Peak discharge	=	4.008 cfs
Storm frequency	=	2 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	10,421 cuft
Drainage area	=	1.780 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	10.80 min
Total precip.	=	3.32 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.030 x 77) + (0.460 x 80) + (0.290 x 98)] / 1.780



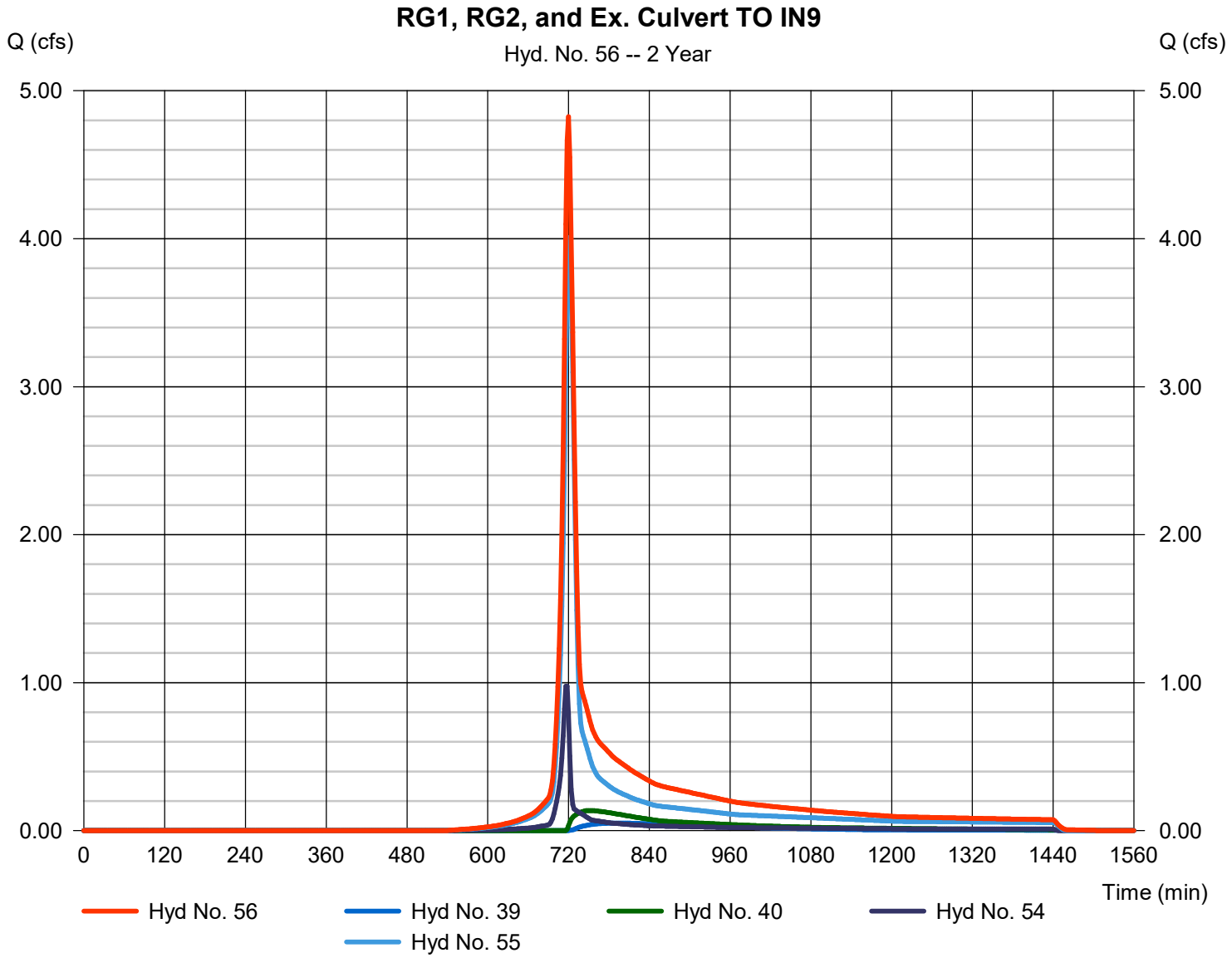
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 56

RG1, RG2, and Ex. Culvert TO IN9

Hydrograph type	= Combine	Peak discharge	= 4.825 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 14,887 cuft
Inflow hyds.	= 39, 40, 54, 55	Contrib. drain. area	= 2.150 ac



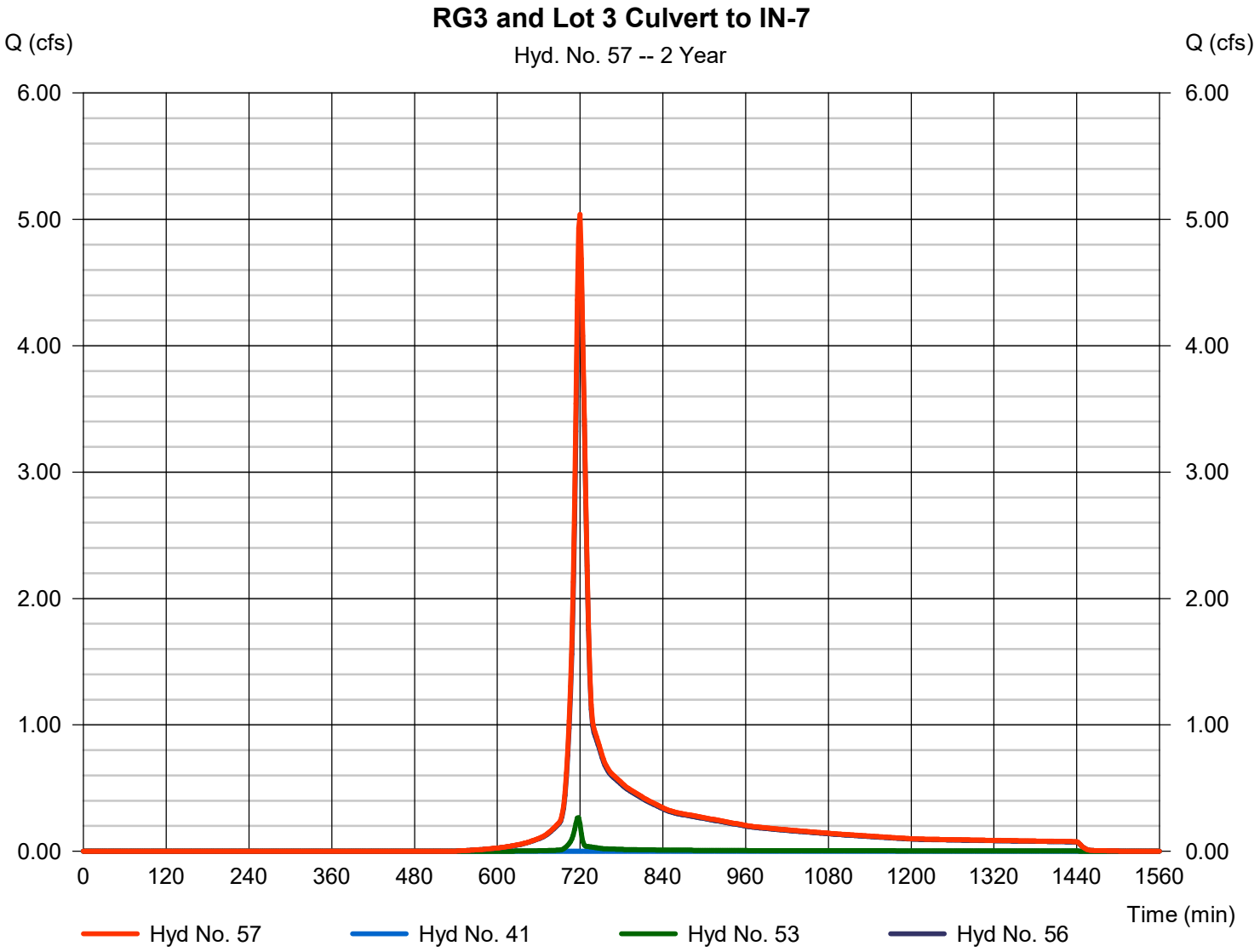
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 57

RG3 and Lot 3 Culvert to IN-7

Hydrograph type	= Combine	Peak discharge	= 5.040 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 15,421 cuft
Inflow hyds.	= 41, 53, 56	Contrib. drain. area	= 0.110 ac



Hydrograph Report

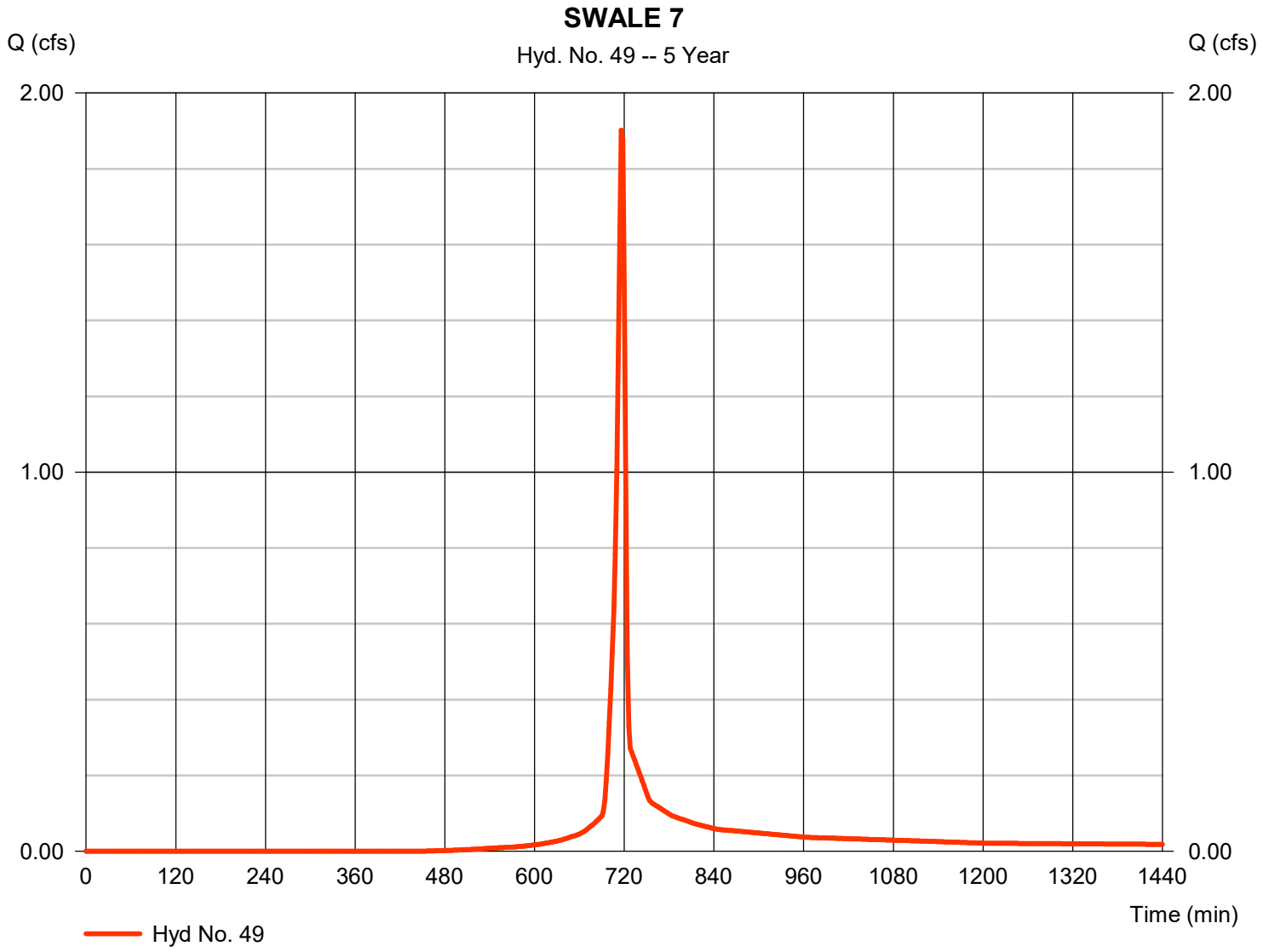
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 49

SWALE 7

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.902 cfs
Storm frequency	=	5 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	3,859 cuft
Drainage area	=	0.490 ac	Curve number	=	82*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	4.13 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.290 x 77) + (0.110 x 80) + (0.090 x 98)] / 0.490



Hydrograph Report

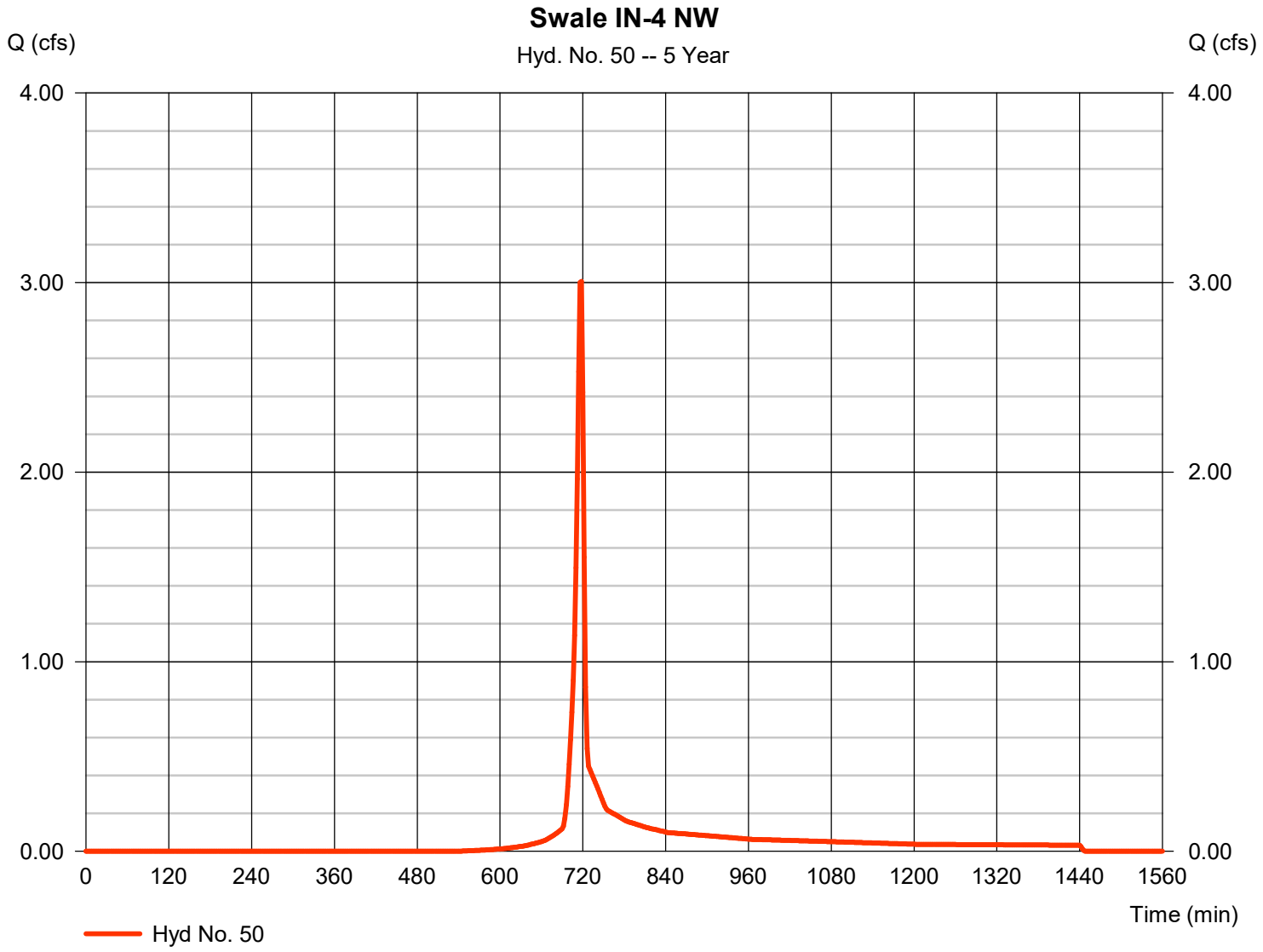
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 50

Swale IN-4 NW

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.006 cfs
Storm frequency	=	5 yrs	Time to peak	=	718 min
Time interval	=	2 min	Hyd. volume	=	6,058 cuft
Drainage area	=	0.930 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	4.13 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.900 x 77) + (0.030 x 80)] / 0.930



Hydrograph Report

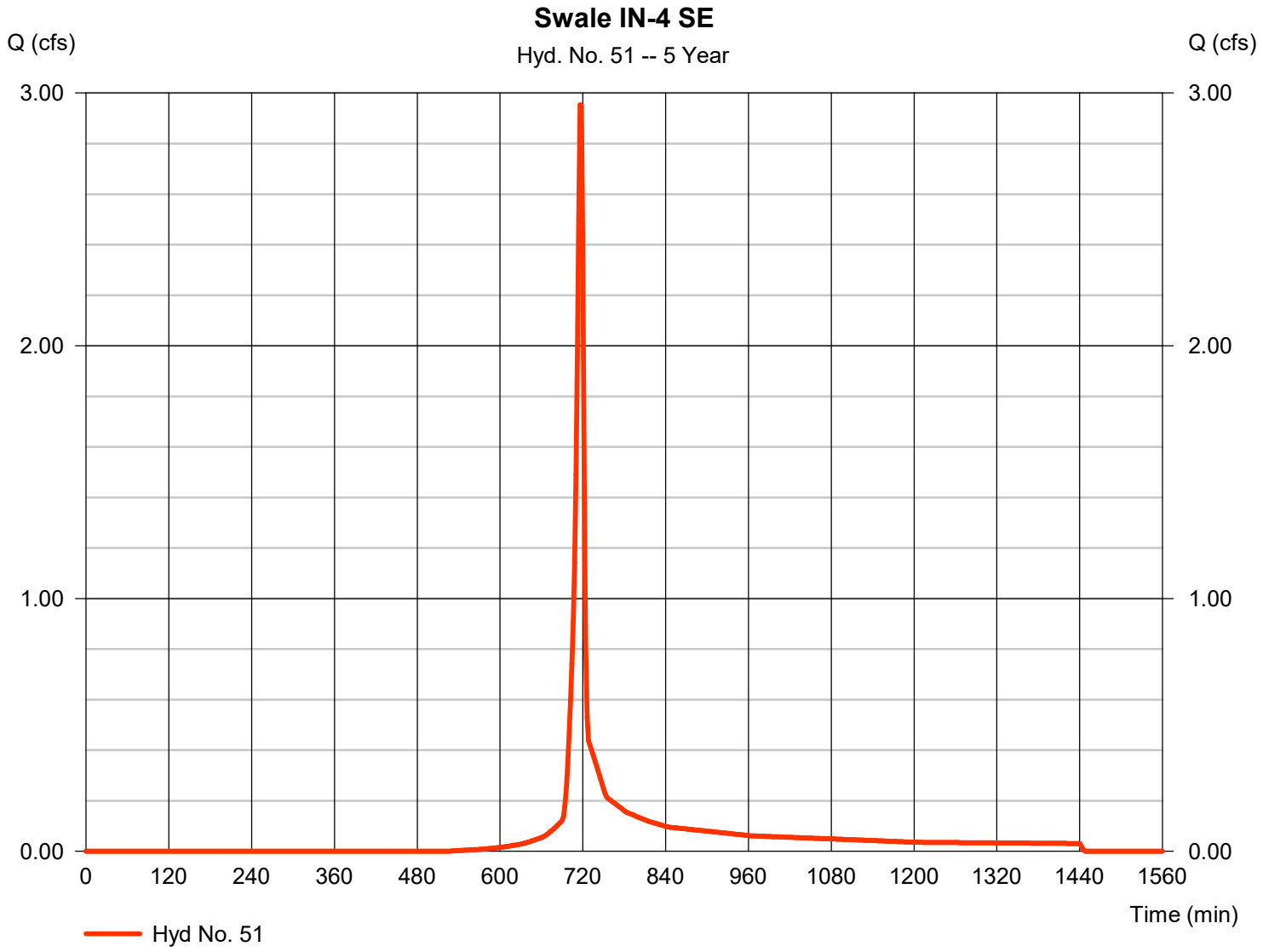
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 51

Swale IN-4 SE

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.953 cfs
Storm frequency	=	5 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	5,963 cuft
Drainage area	=	0.880 ac	Curve number	=	78*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	4.13 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.800 x 77) + (0.030 x 80) + (0.050 x 98)] / 0.880



Hydrograph Report

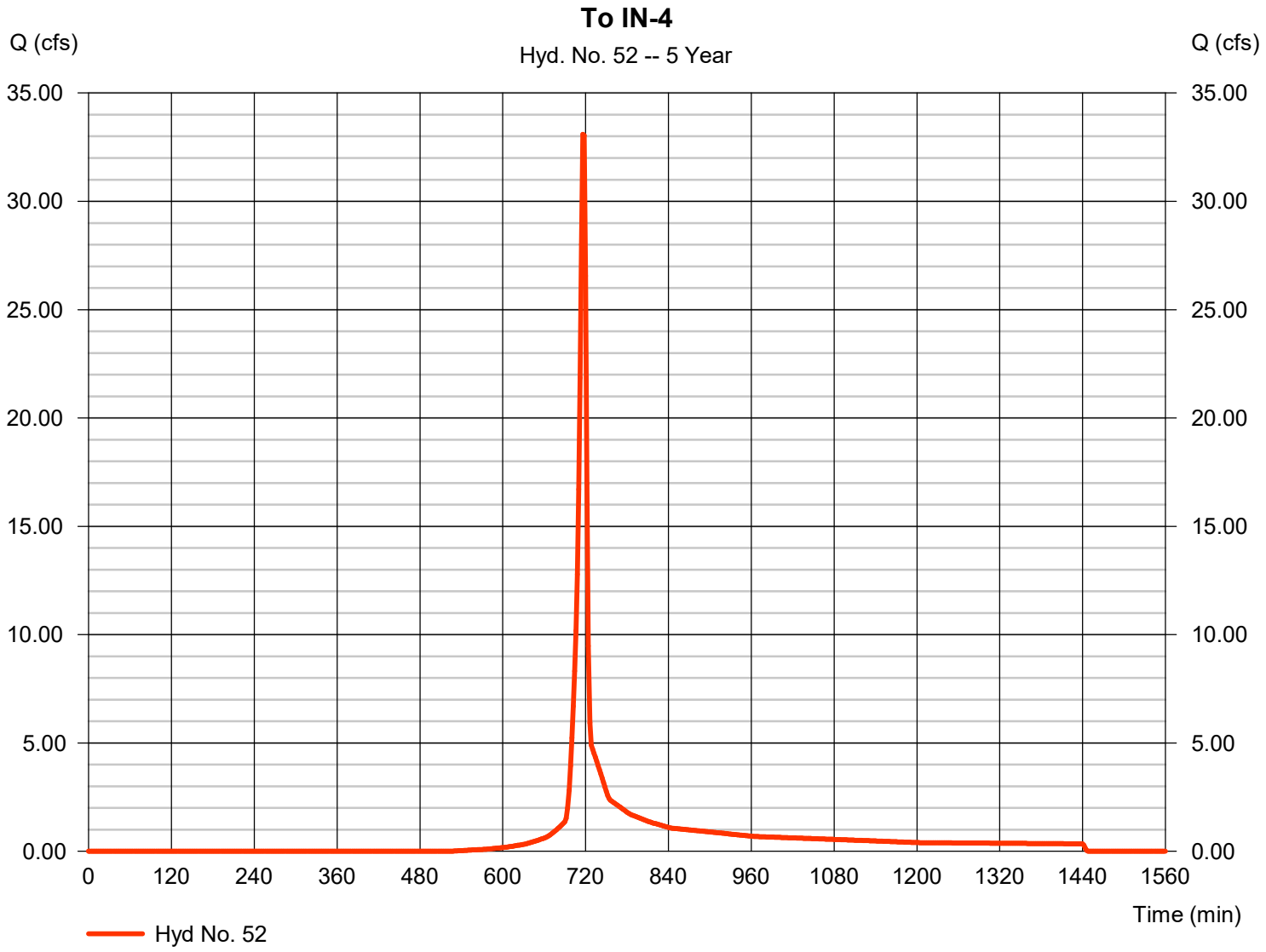
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 52

To IN-4

Hydrograph type	=	SCS Runoff	Peak discharge	=	33.09 cfs
Storm frequency	=	5 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	66,809 cuft
Drainage area	=	9.860 ac	Curve number	=	78*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	4.13 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(8.470 x 77) + (0.400 x 98) + (0.990 x 80)] / 9.860



Hydrograph Report

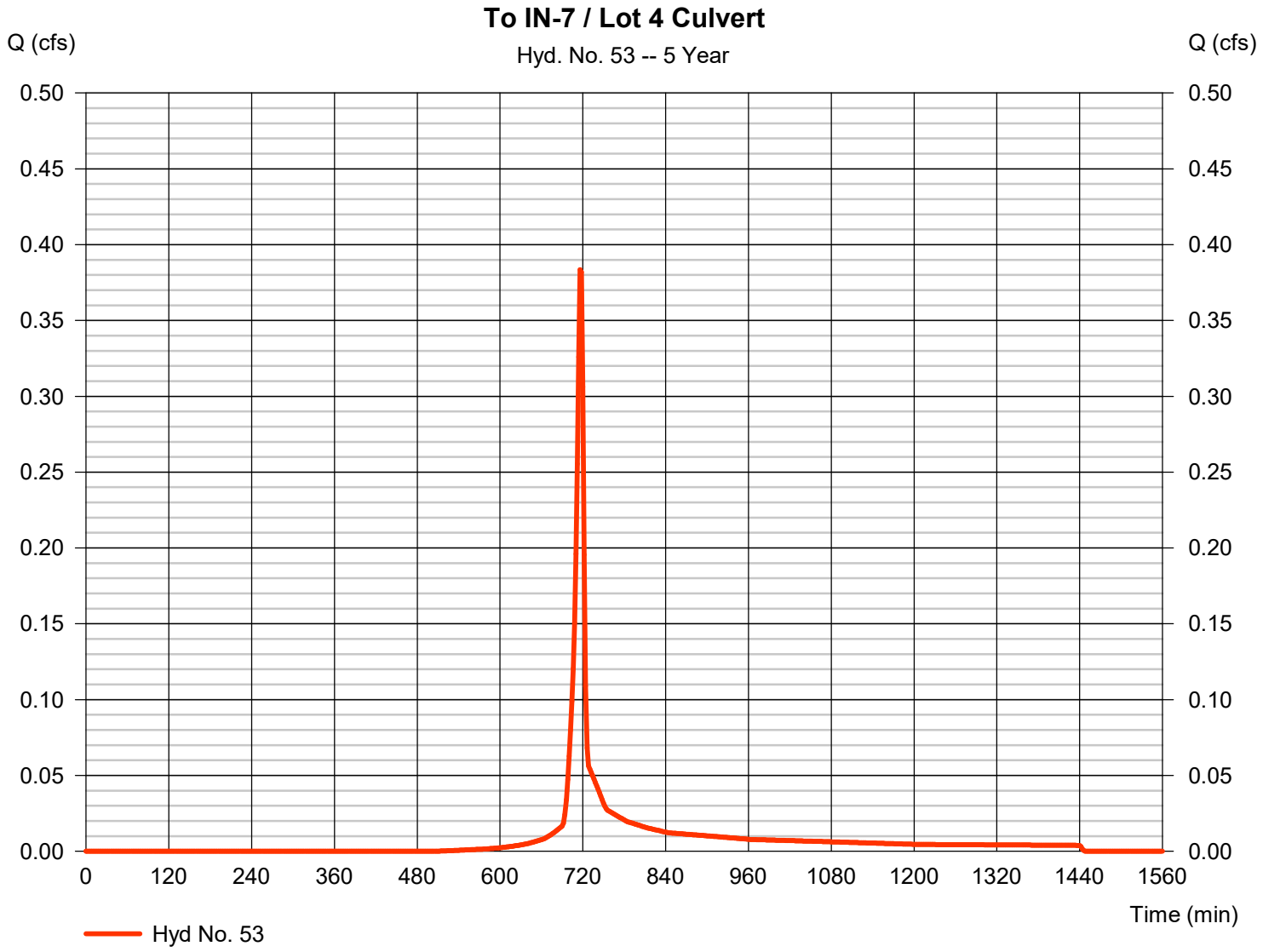
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 53

To IN-7 / Lot 4 Culvert

Hydrograph type	= SCS Runoff	Peak discharge	= 0.384 cfs
Storm frequency	= 5 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 775 cuft
Drainage area	= 0.110 ac	Curve number	= 79*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.13 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.080 x 77) + (0.020 x 80) + (0.010 x 98)] / 0.110



Hydrograph Report

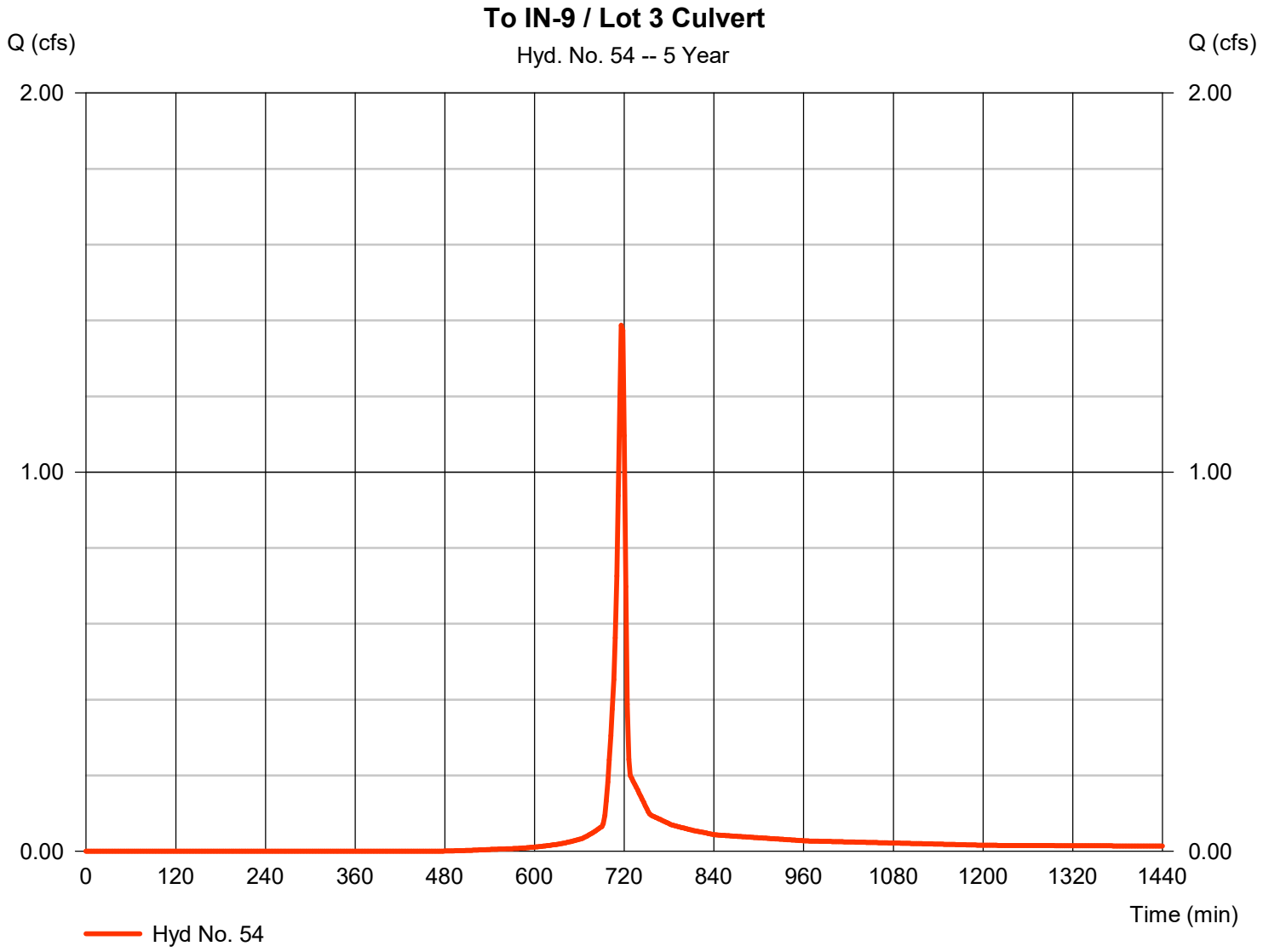
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 54

To IN-9 / Lot 3 Culvert

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.387 cfs
Storm frequency	=	5 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	2,809 cuft
Drainage area	=	0.370 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	4.13 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.230 x 77) + (0.090 x 80) + (0.050 x 98)] / 0.370



Hydrograph Report

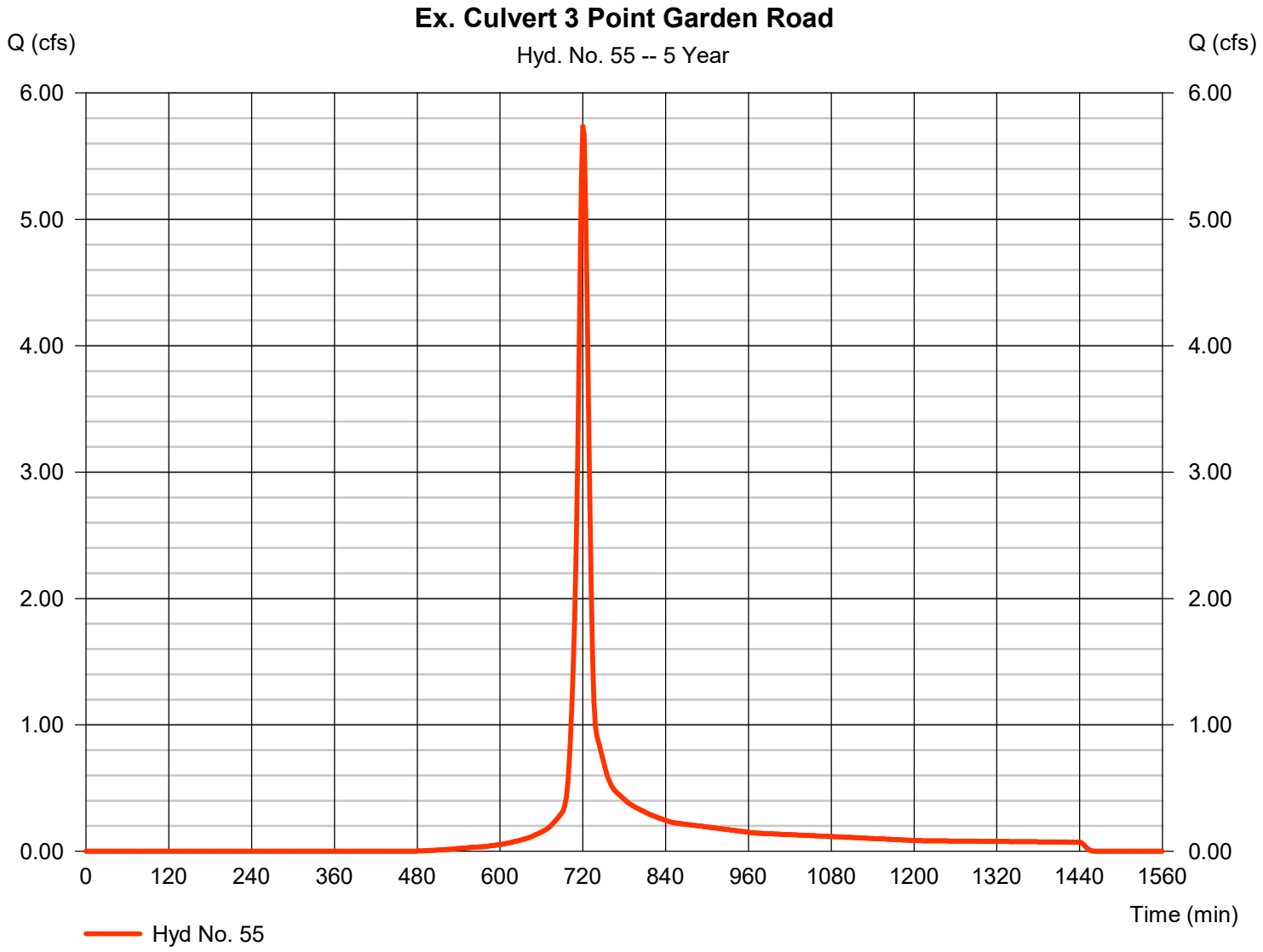
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 55

Ex. Culvert 3 Point Garden Road

Hydrograph type	=	SCS Runoff	Peak discharge	=	5.735 cfs
Storm frequency	=	5 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	14,867 cuft
Drainage area	=	1.780 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	10.80 min
Total precip.	=	4.13 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.030 x 77) + (0.460 x 80) + (0.290 x 98)] / 1.780



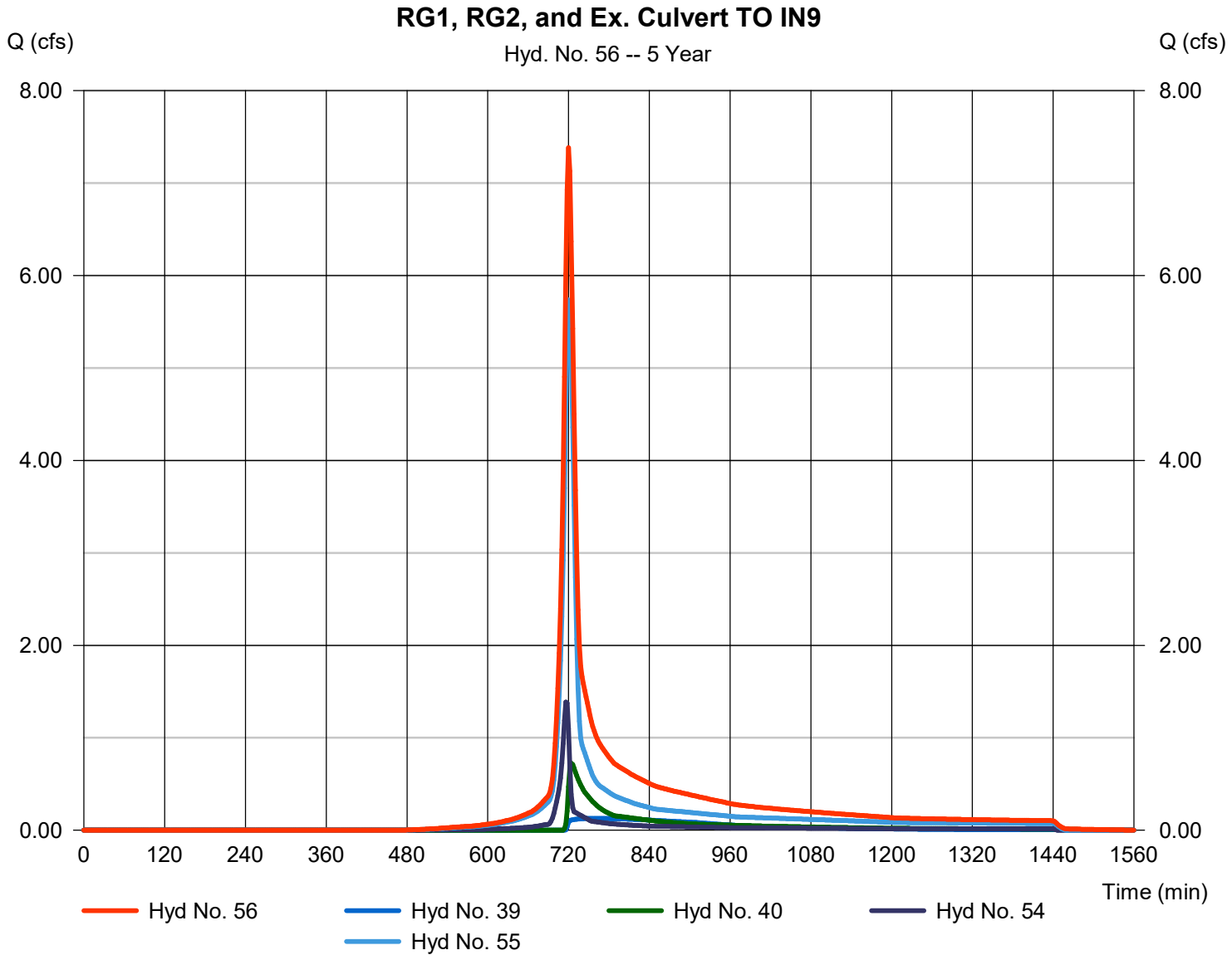
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 56

RG1, RG2, and Ex. Culvert TO IN9

Hydrograph type	= Combine	Peak discharge	= 7.383 cfs
Storm frequency	= 5 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 23,008 cuft
Inflow hyds.	= 39, 40, 54, 55	Contrib. drain. area	= 2.150 ac



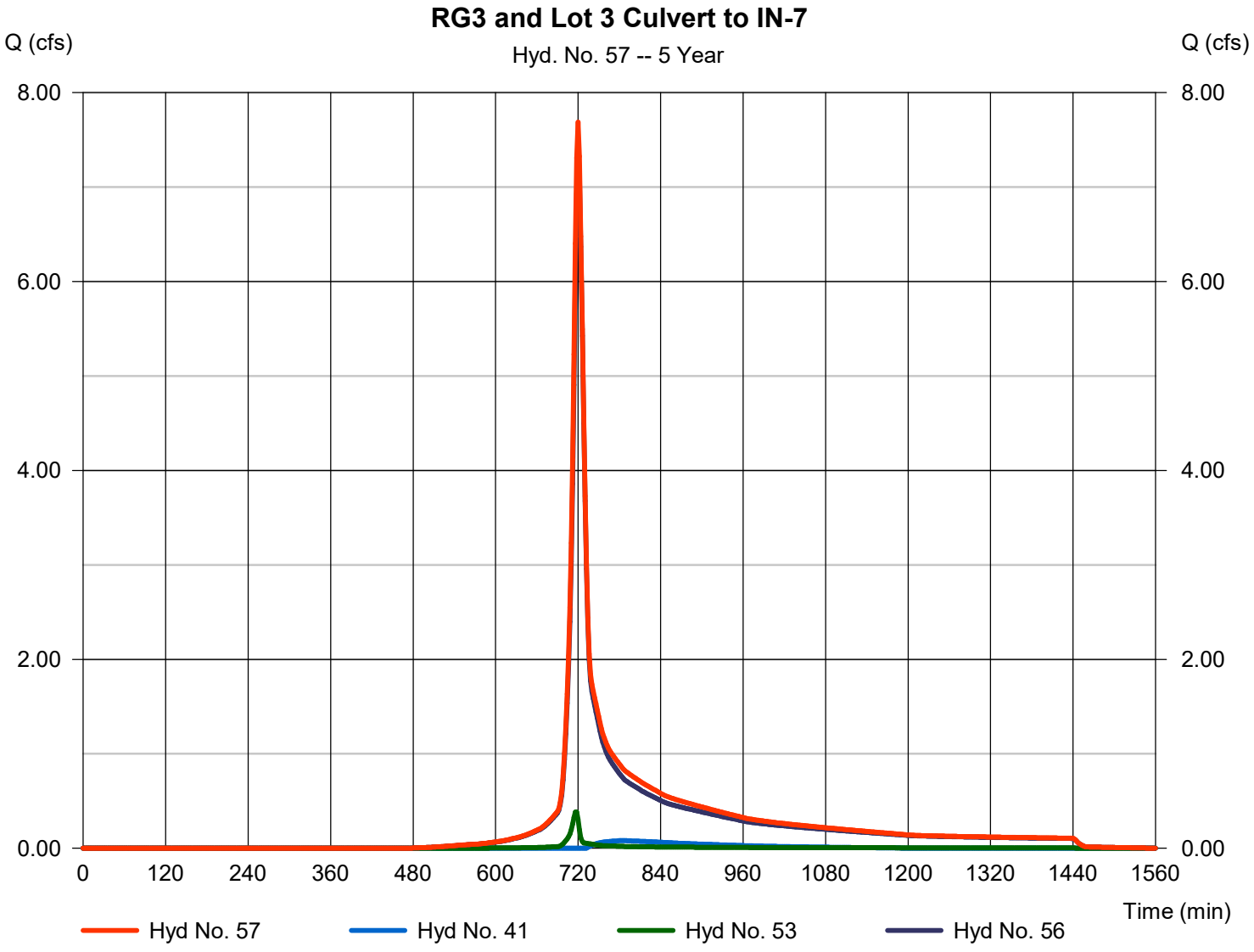
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 57

RG3 and Lot 3 Culvert to IN-7

Hydrograph type	= Combine	Peak discharge	= 7.689 cfs
Storm frequency	= 5 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 24,698 cuft
Inflow hyds.	= 41, 53, 56	Contrib. drain. area	= 0.110 ac



Hydrograph Report

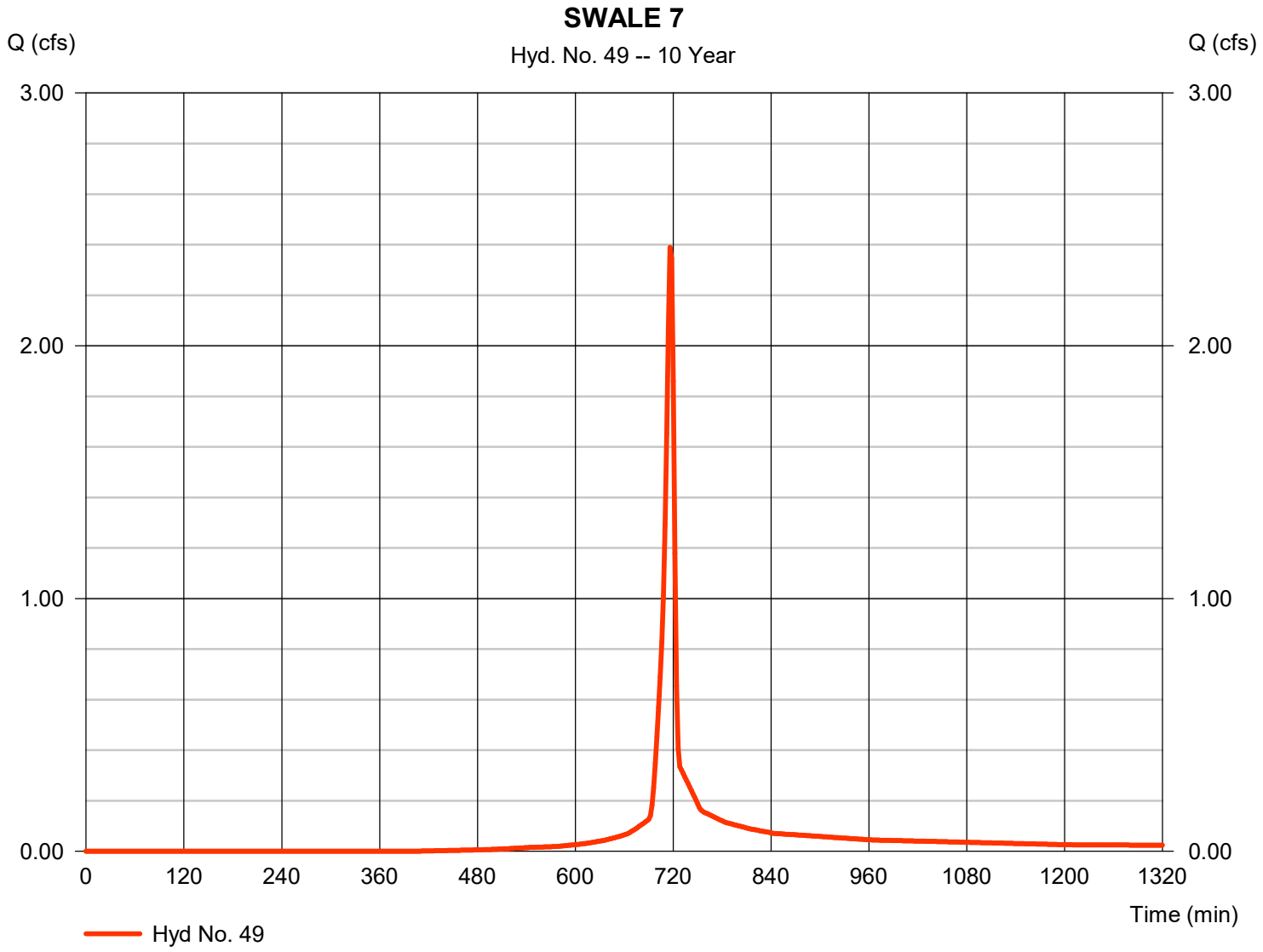
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 49

SWALE 7

Hydrograph type	=	SCS Runoff	Peak discharge	=	2.389 cfs
Storm frequency	=	10 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	4,882 cuft
Drainage area	=	0.490 ac	Curve number	=	82*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	4.83 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.290 x 77) + (0.110 x 80) + (0.090 x 98)] / 0.490



Hydrograph Report

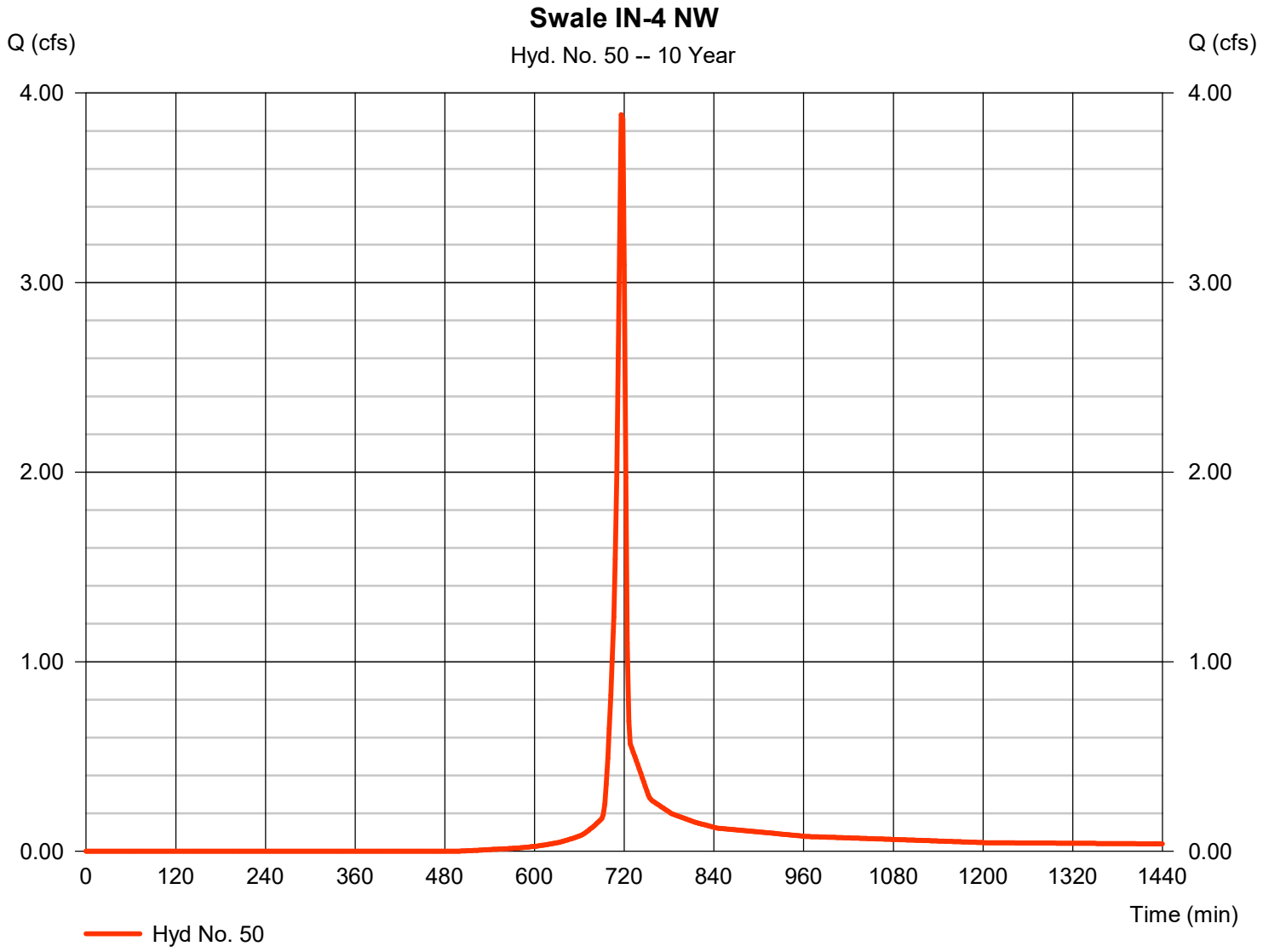
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 50

Swale IN-4 NW

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.886 cfs
Storm frequency	=	10 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	7,853 cuft
Drainage area	=	0.930 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	4.83 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.900 x 77) + (0.030 x 80)] / 0.930



Hydrograph Report

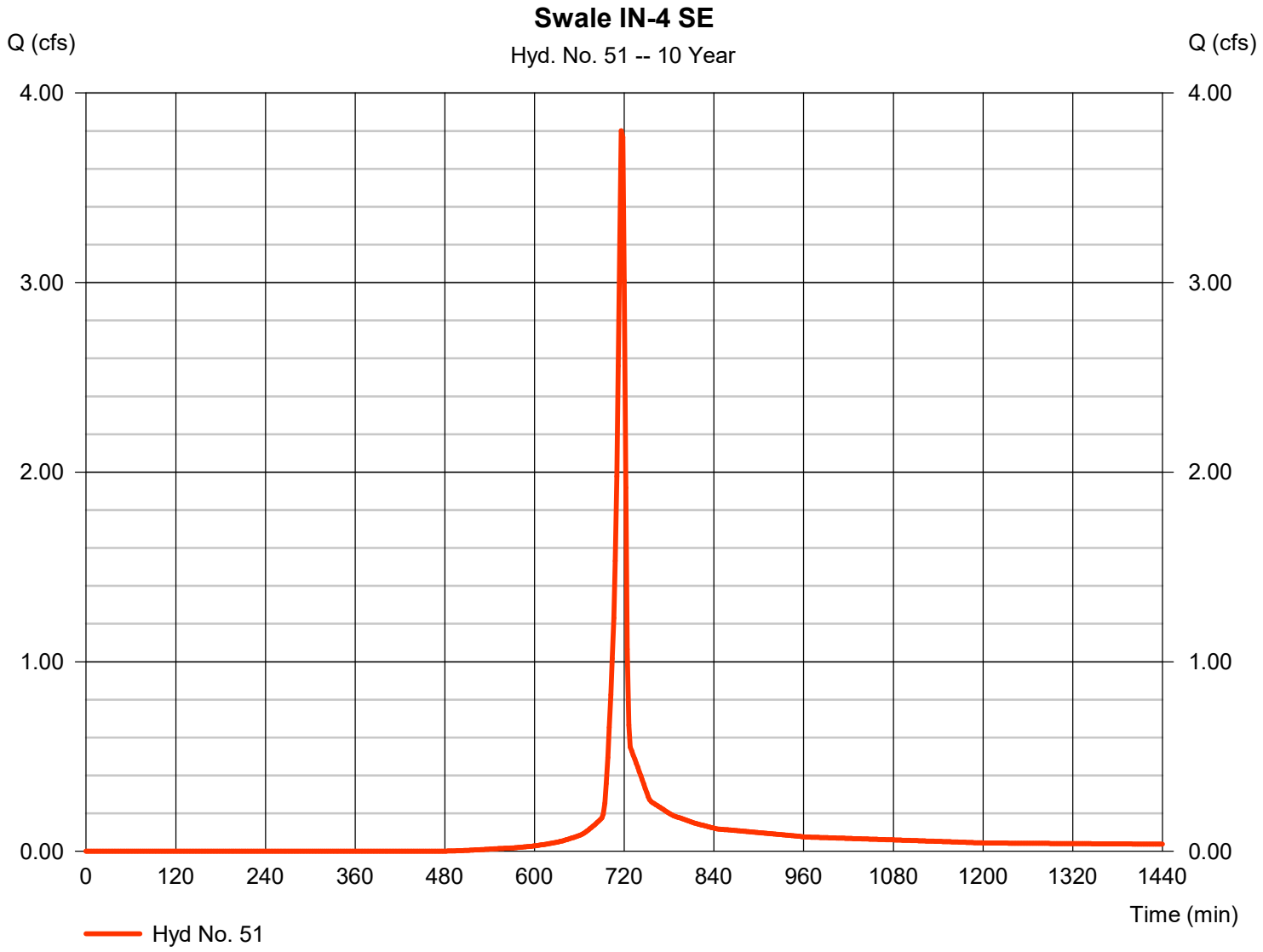
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 51

Swale IN-4 SE

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.801 cfs
Storm frequency	=	10 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	7,691 cuft
Drainage area	=	0.880 ac	Curve number	=	78*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	4.83 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.800 x 77) + (0.030 x 80) + (0.050 x 98)] / 0.880



Hydrograph Report

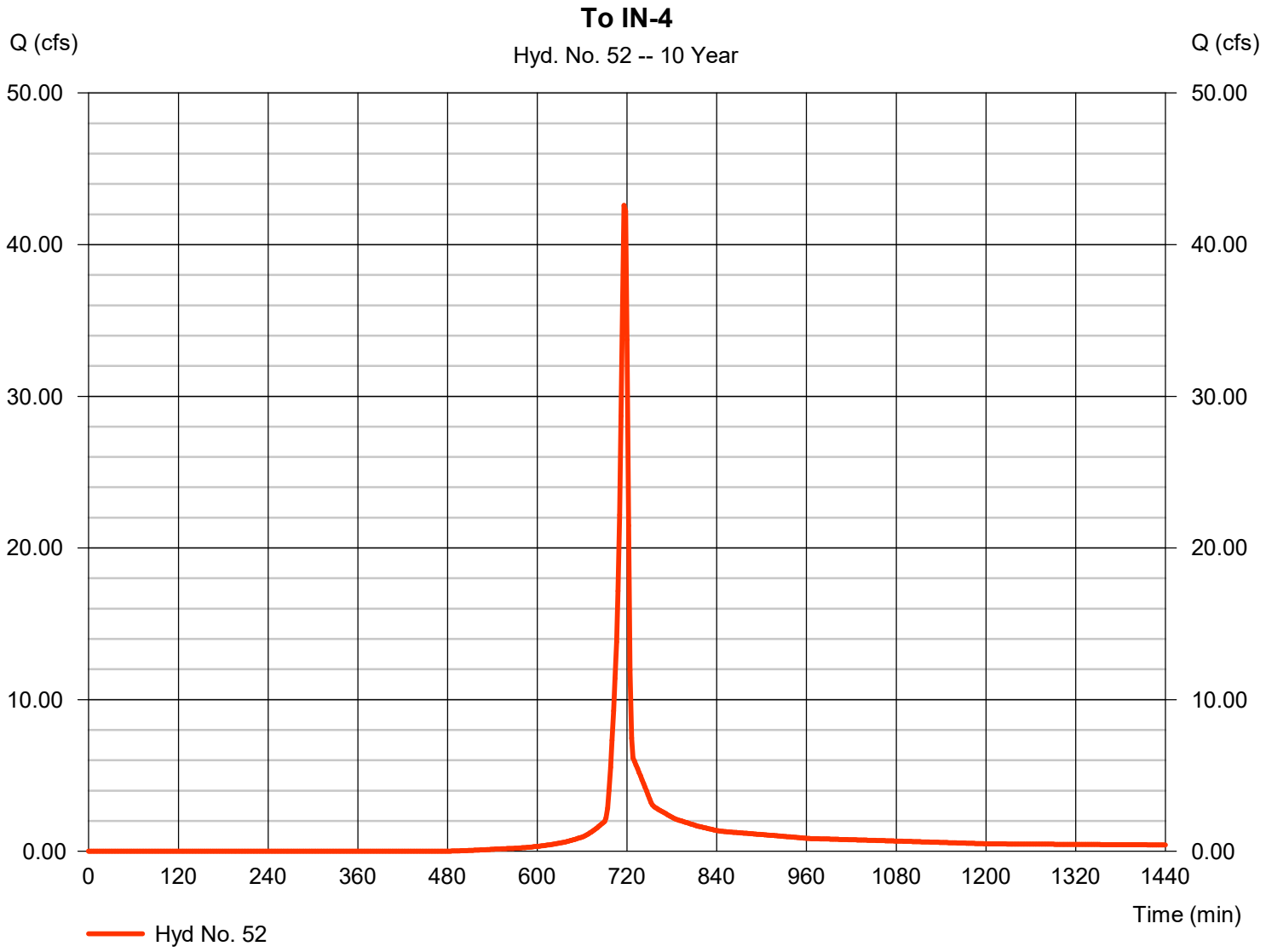
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 52

To IN-4

Hydrograph type	=	SCS Runoff	Peak discharge	=	42.58 cfs
Storm frequency	=	10 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	86,169 cuft
Drainage area	=	9.860 ac	Curve number	=	78*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	4.83 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(8.470 x 77) + (0.400 x 98) + (0.990 x 80)] / 9.860



Hydrograph Report

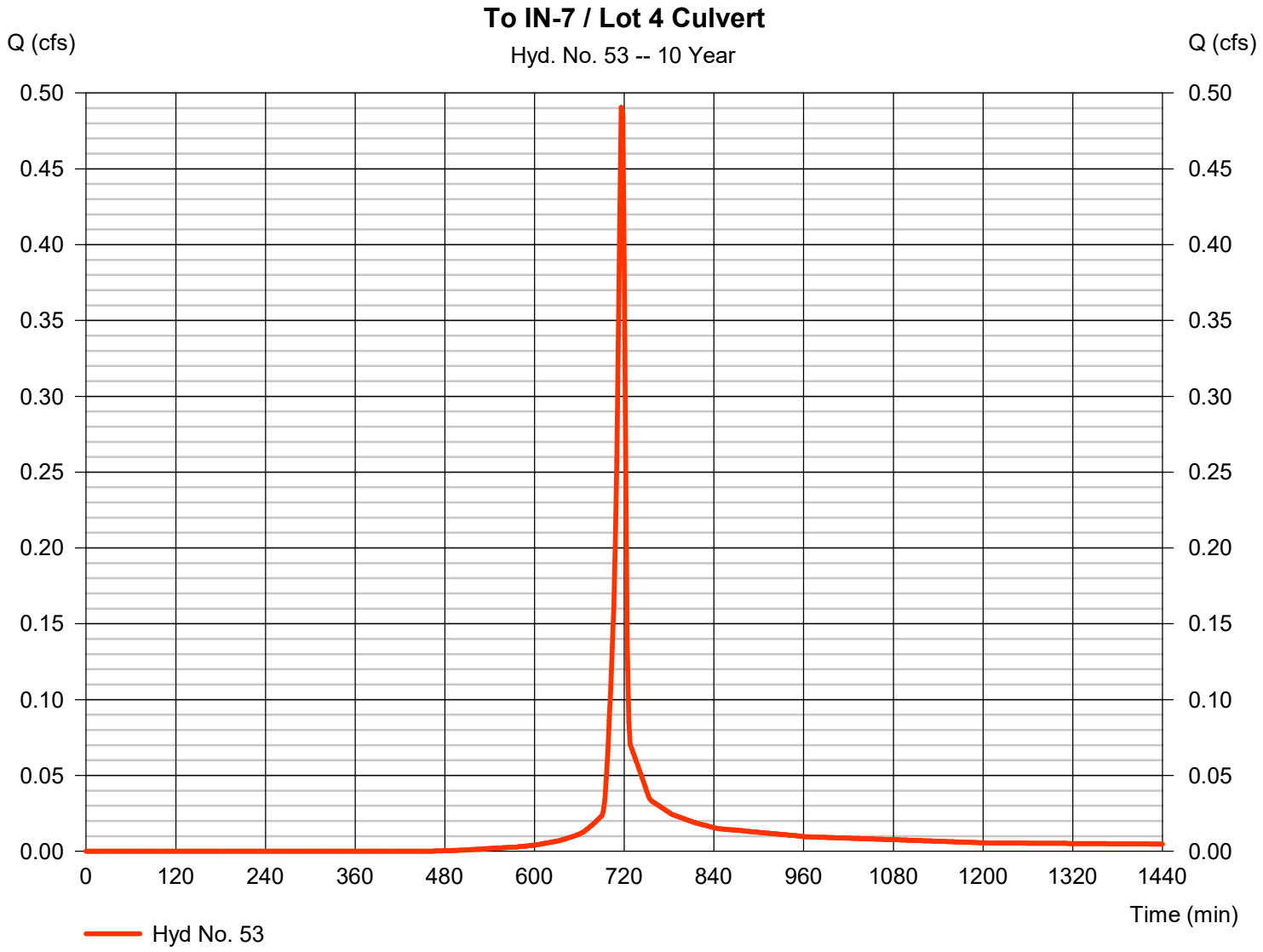
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 53

To IN-7 / Lot 4 Culvert

Hydrograph type	= SCS Runoff	Peak discharge	= 0.490 cfs
Storm frequency	= 10 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 994 cuft
Drainage area	= 0.110 ac	Curve number	= 79*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.080 x 77) + (0.020 x 80) + (0.010 x 98)] / 0.110



Hydrograph Report

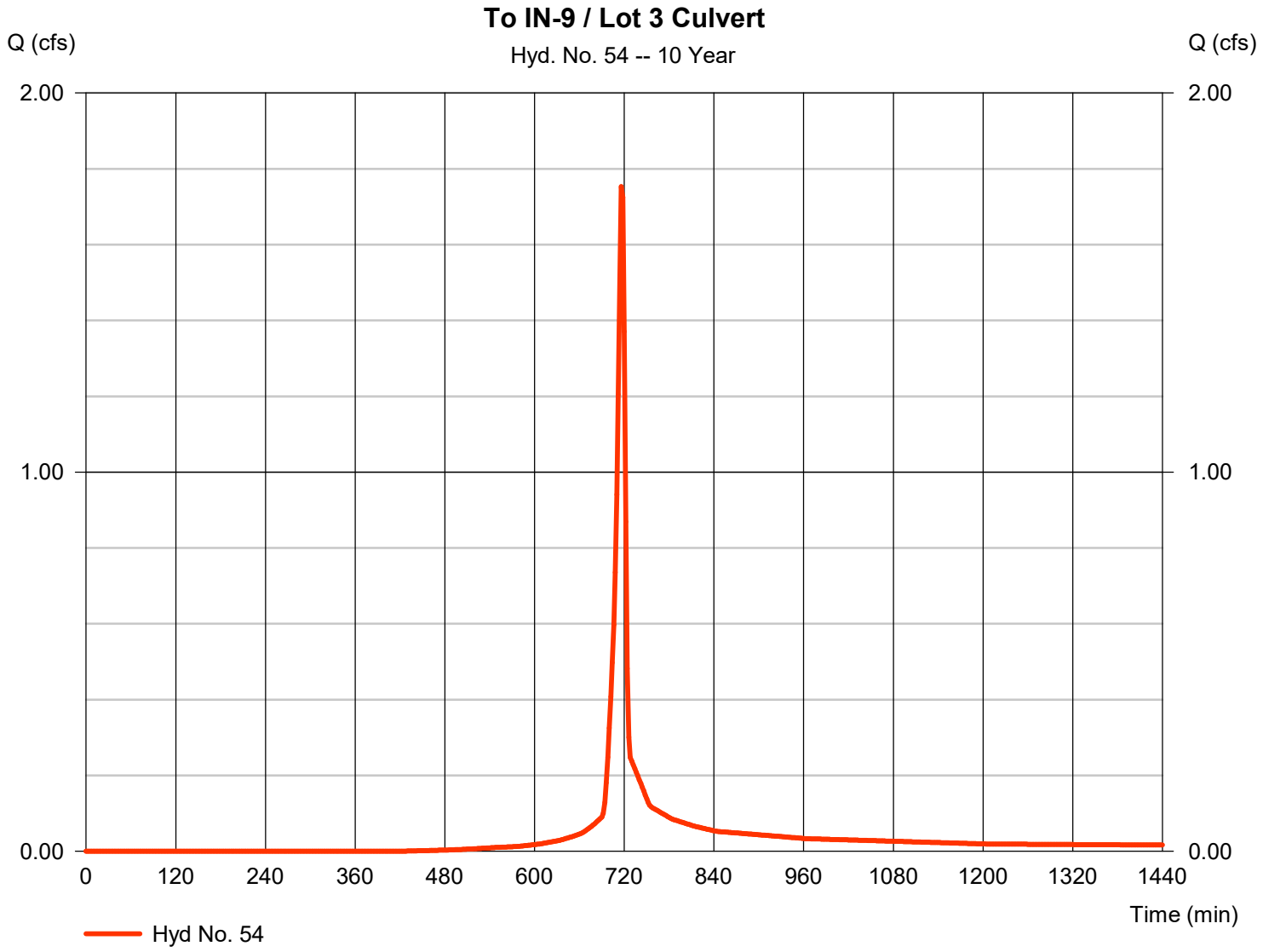
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 54

To IN-9 / Lot 3 Culvert

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.753 cfs
Storm frequency	=	10 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	3,570 cuft
Drainage area	=	0.370 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	4.83 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.230 x 77) + (0.090 x 80) + (0.050 x 98)] / 0.370



Hydrograph Report

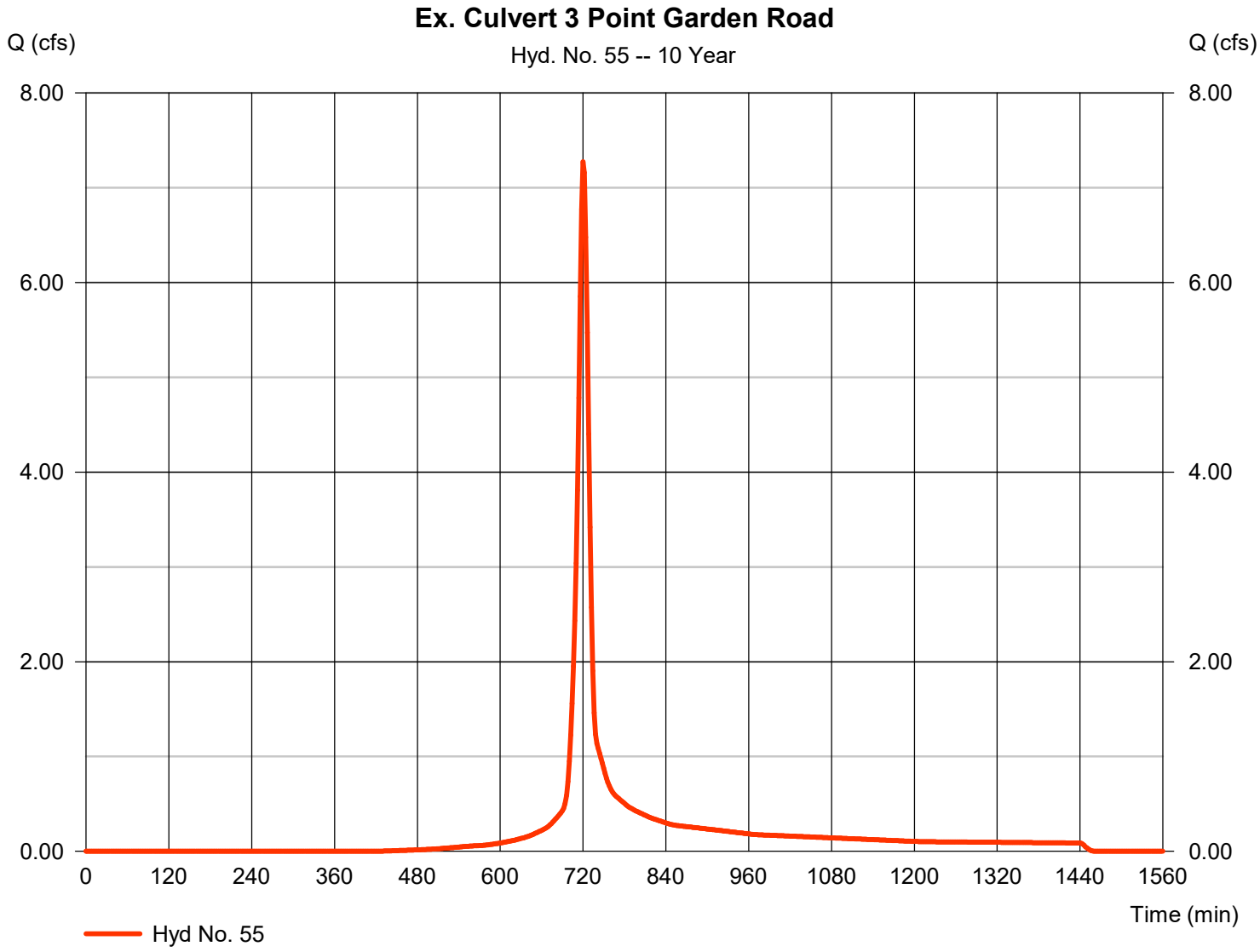
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 55

Ex. Culvert 3 Point Garden Road

Hydrograph type	= SCS Runoff	Peak discharge	= 7.274 cfs
Storm frequency	= 10 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 18,895 cuft
Drainage area	= 1.780 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 10.80 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.030 x 77) + (0.460 x 80) + (0.290 x 98)] / 1.780



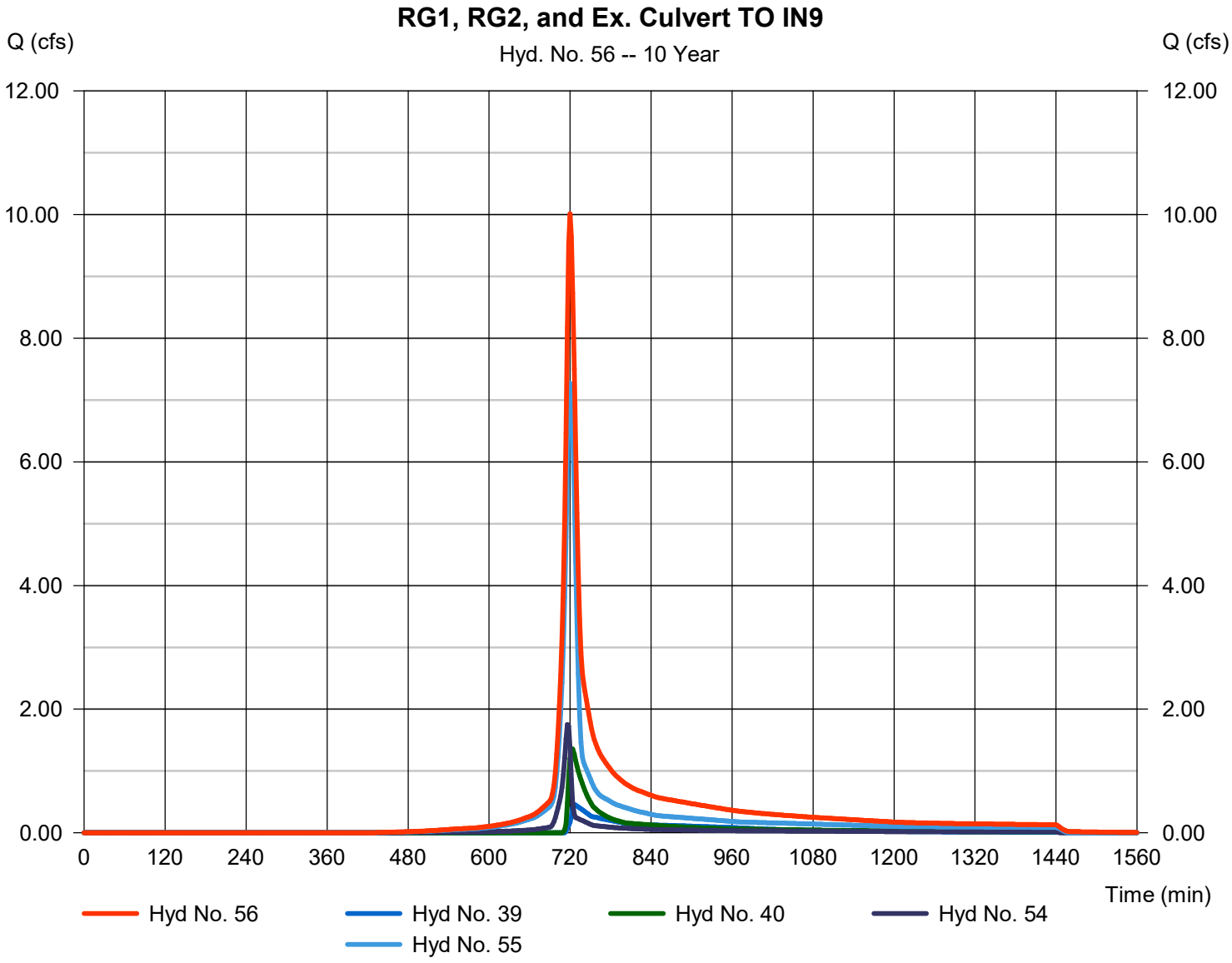
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 56

RG1, RG2, and Ex. Culvert TO IN9

Hydrograph type	= Combine	Peak discharge	= 10.01 cfs
Storm frequency	= 10 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 30,498 cuft
Inflow hyds.	= 39, 40, 54, 55	Contrib. drain. area	= 2.150 ac



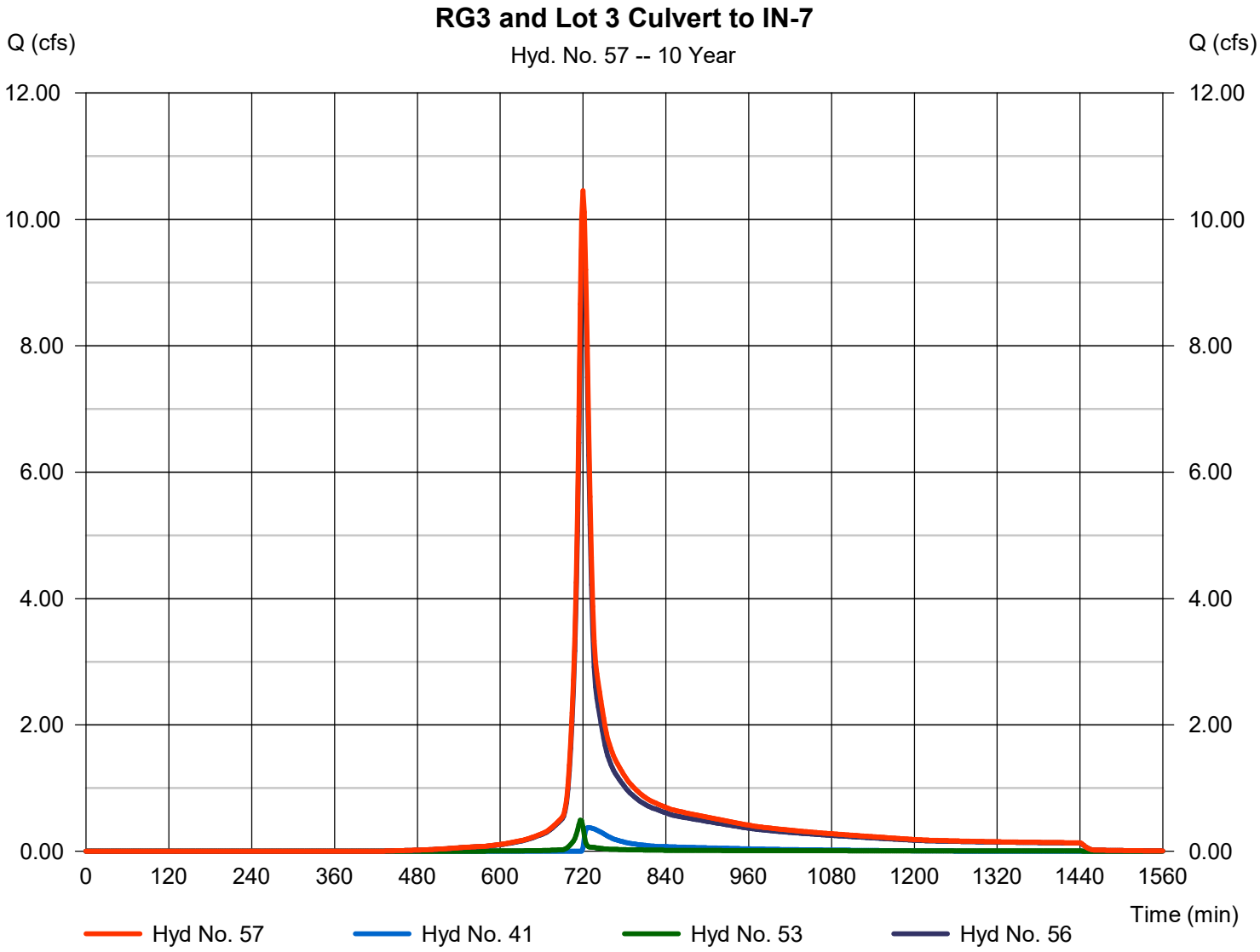
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 57

RG3 and Lot 3 Culvert to IN-7

Hydrograph type	= Combine	Peak discharge	= 10.45 cfs
Storm frequency	= 10 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 33,487 cuft
Inflow hyds.	= 41, 53, 56	Contrib. drain. area	= 0.110 ac



Hydrograph Report

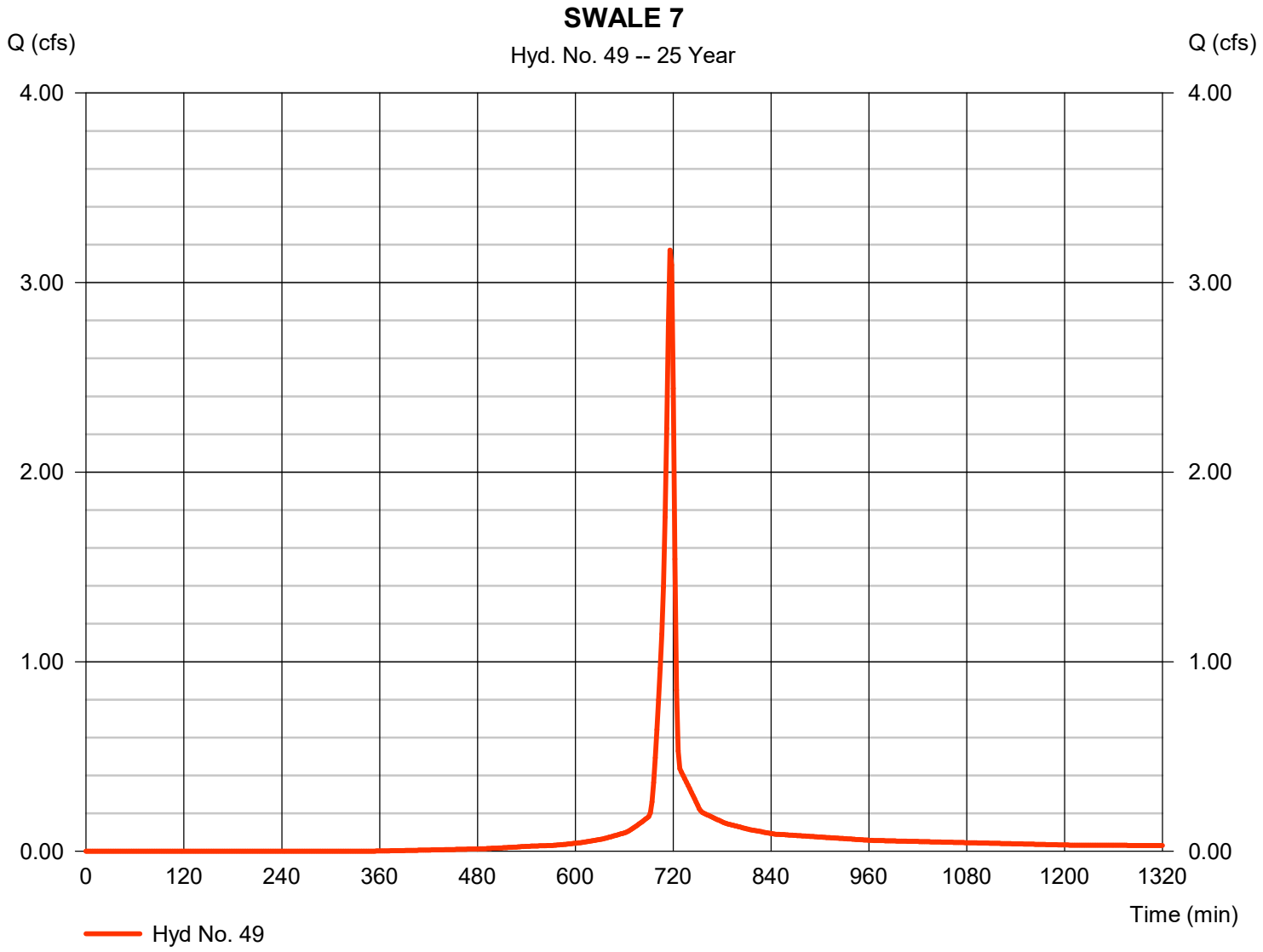
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 49

SWALE 7

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.172 cfs
Storm frequency	=	25 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	6,557 cuft
Drainage area	=	0.490 ac	Curve number	=	82*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	5.94 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.290 x 77) + (0.110 x 80) + (0.090 x 98)] / 0.490



Hydrograph Report

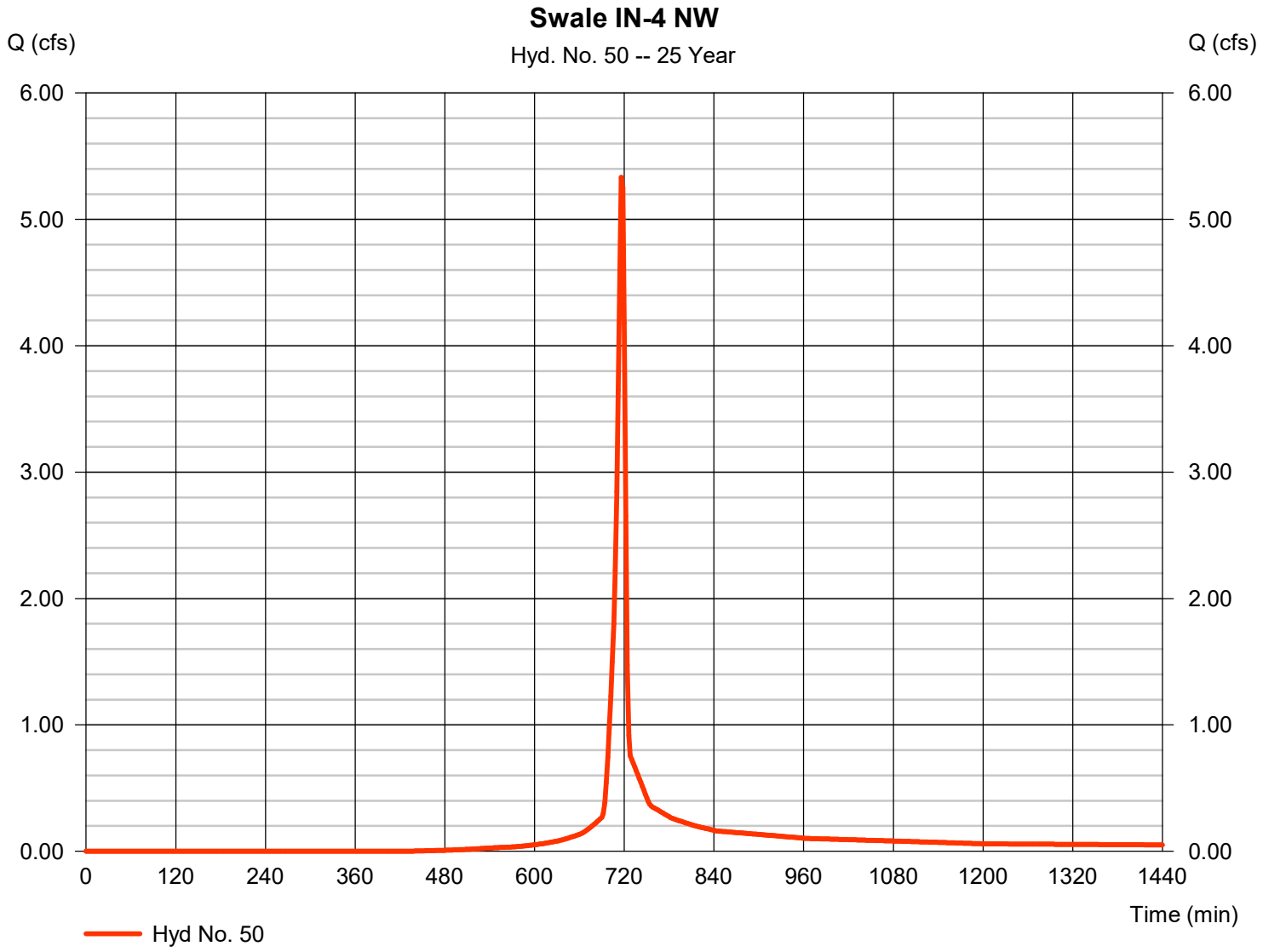
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 50

Swale IN-4 NW

Hydrograph type	=	SCS Runoff	Peak discharge	=	5.333 cfs
Storm frequency	=	25 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	10,845 cuft
Drainage area	=	0.930 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	5.94 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.900 x 77) + (0.030 x 80)] / 0.930



Hydrograph Report

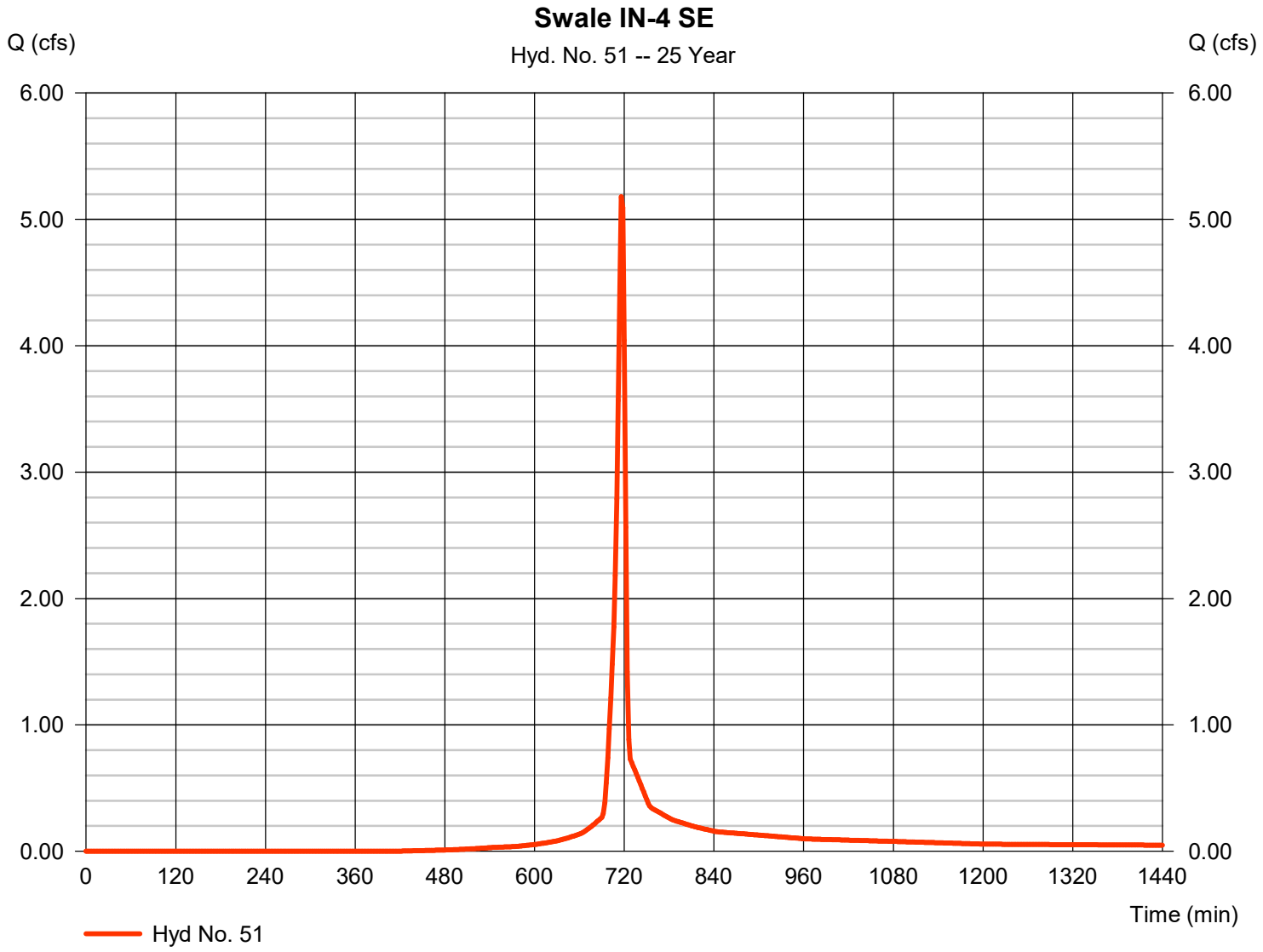
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 51

Swale IN-4 SE

Hydrograph type	=	SCS Runoff	Peak discharge	=	5.179 cfs
Storm frequency	=	25 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	10,559 cuft
Drainage area	=	0.880 ac	Curve number	=	78*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	5.94 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.800 x 77) + (0.030 x 80) + (0.050 x 98)] / 0.880



Hydrograph Report

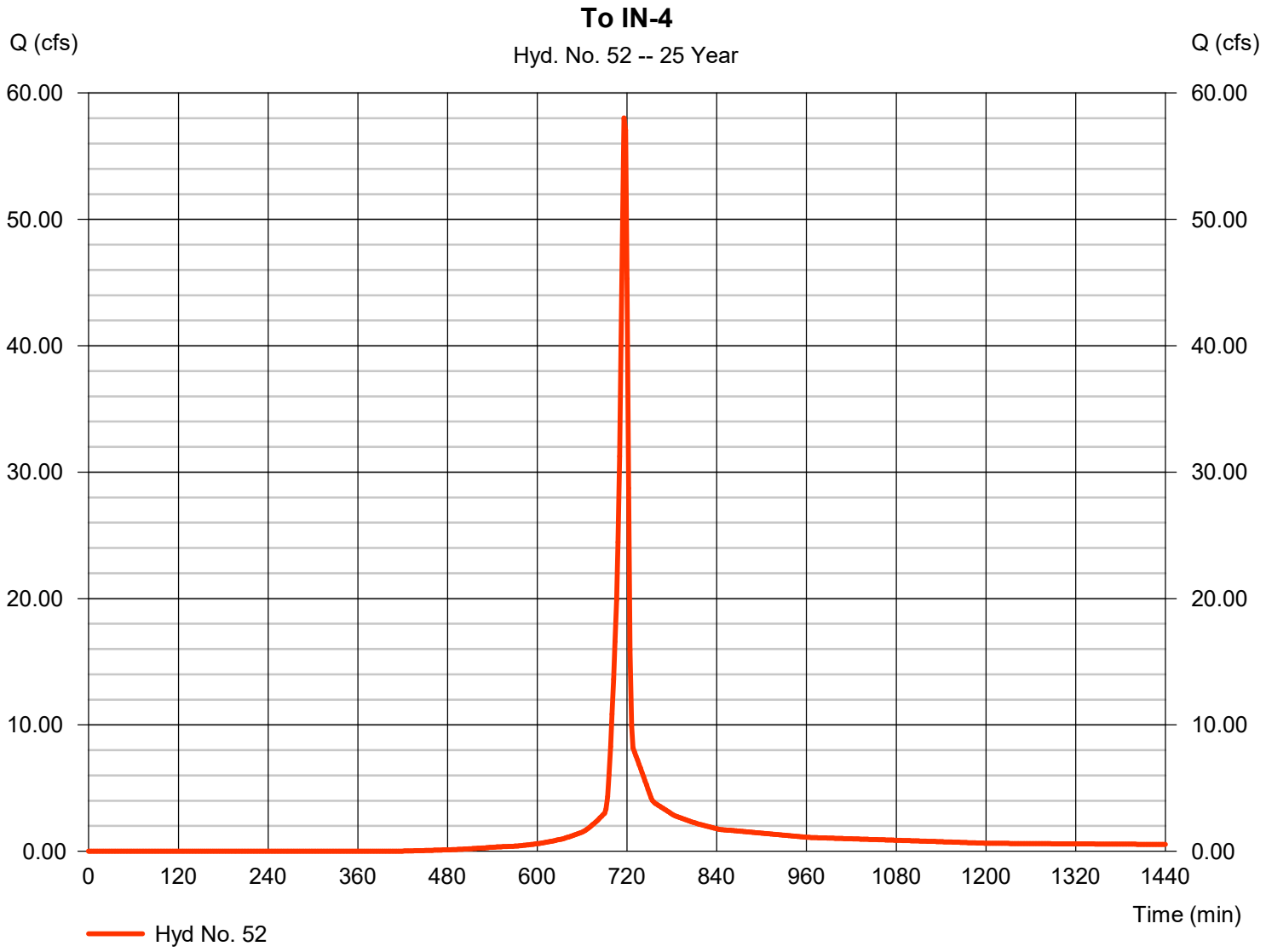
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 52

To IN-4

Hydrograph type	=	SCS Runoff	Peak discharge	=	58.03 cfs
Storm frequency	=	25 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	118,313 cuft
Drainage area	=	9.860 ac	Curve number	=	78*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	5.94 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(8.470 x 77) + (0.400 x 98) + (0.990 x 80)] / 9.860



Hydrograph Report

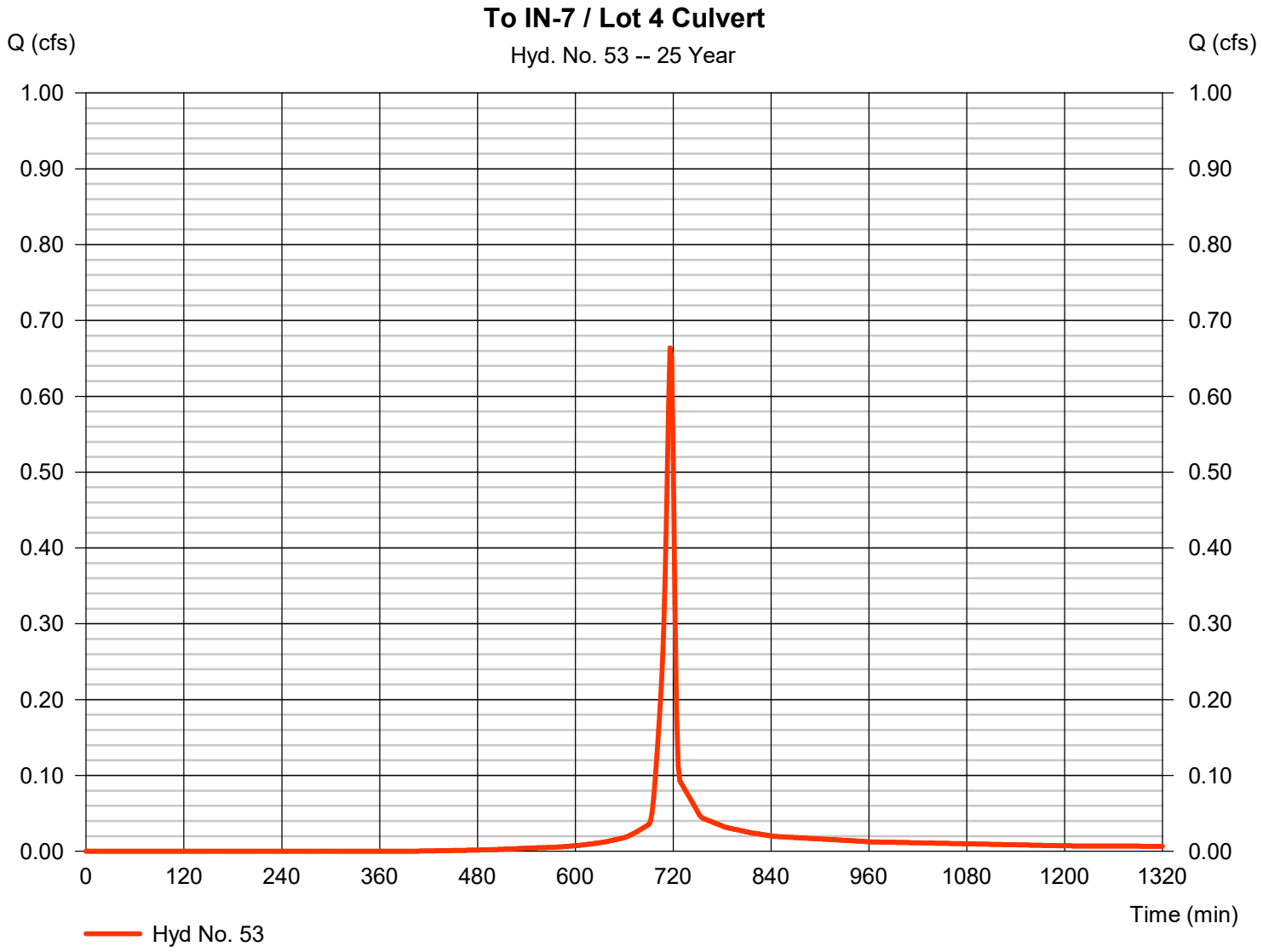
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 53

To IN-7 / Lot 4 Culvert

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.664 cfs
Storm frequency	=	25 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	1,357 cuft
Drainage area	=	0.110 ac	Curve number	=	79*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	5.94 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.080 x 77) + (0.020 x 80) + (0.010 x 98)] / 0.110



Hydrograph Report

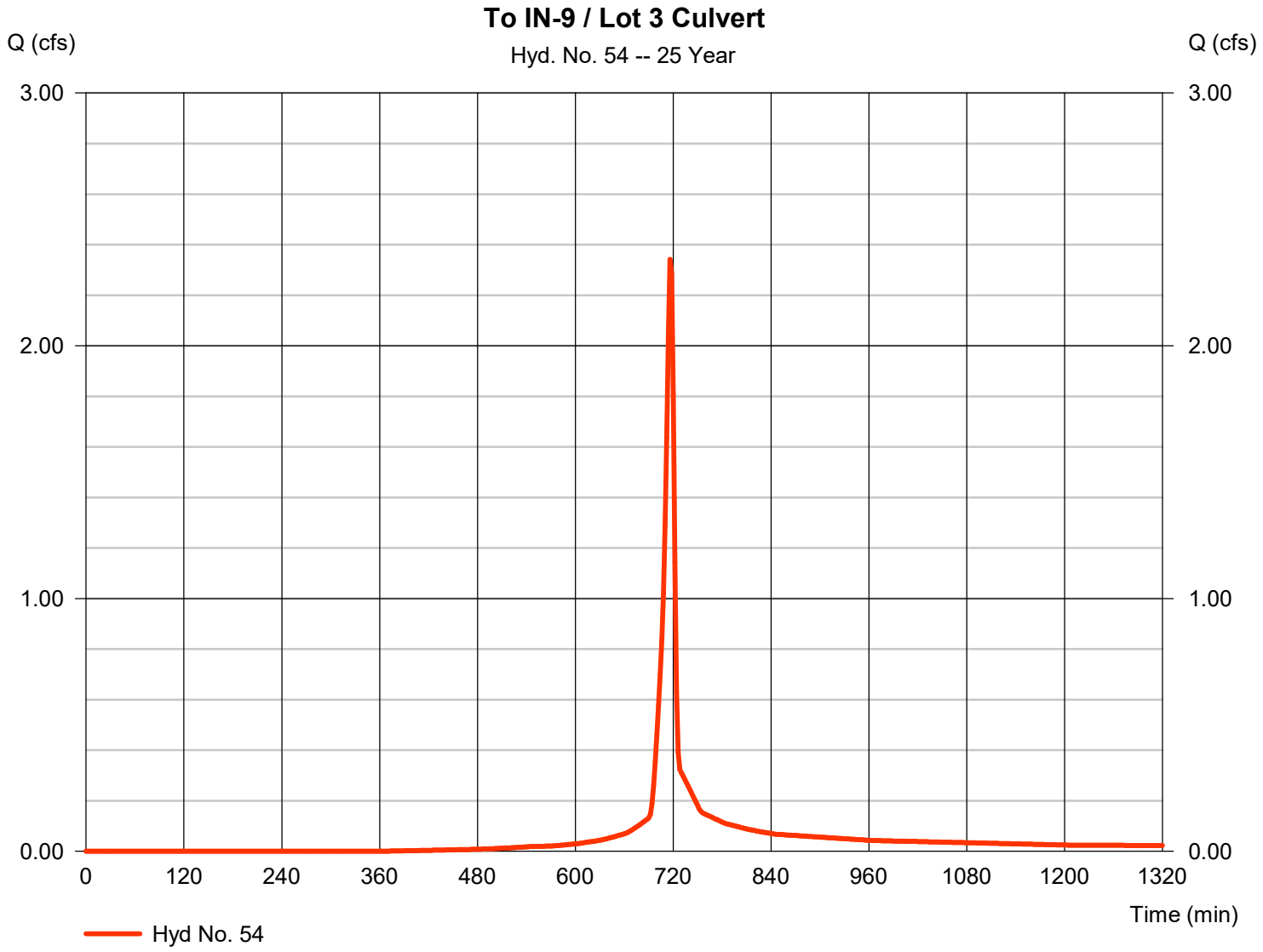
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 54

To IN-9 / Lot 3 Culvert

Hydrograph type	= SCS Runoff	Peak discharge	= 2.342 cfs
Storm frequency	= 25 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 4,821 cuft
Drainage area	= 0.370 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.94 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.230 x 77) + (0.090 x 80) + (0.050 x 98)] / 0.370



Hydrograph Report

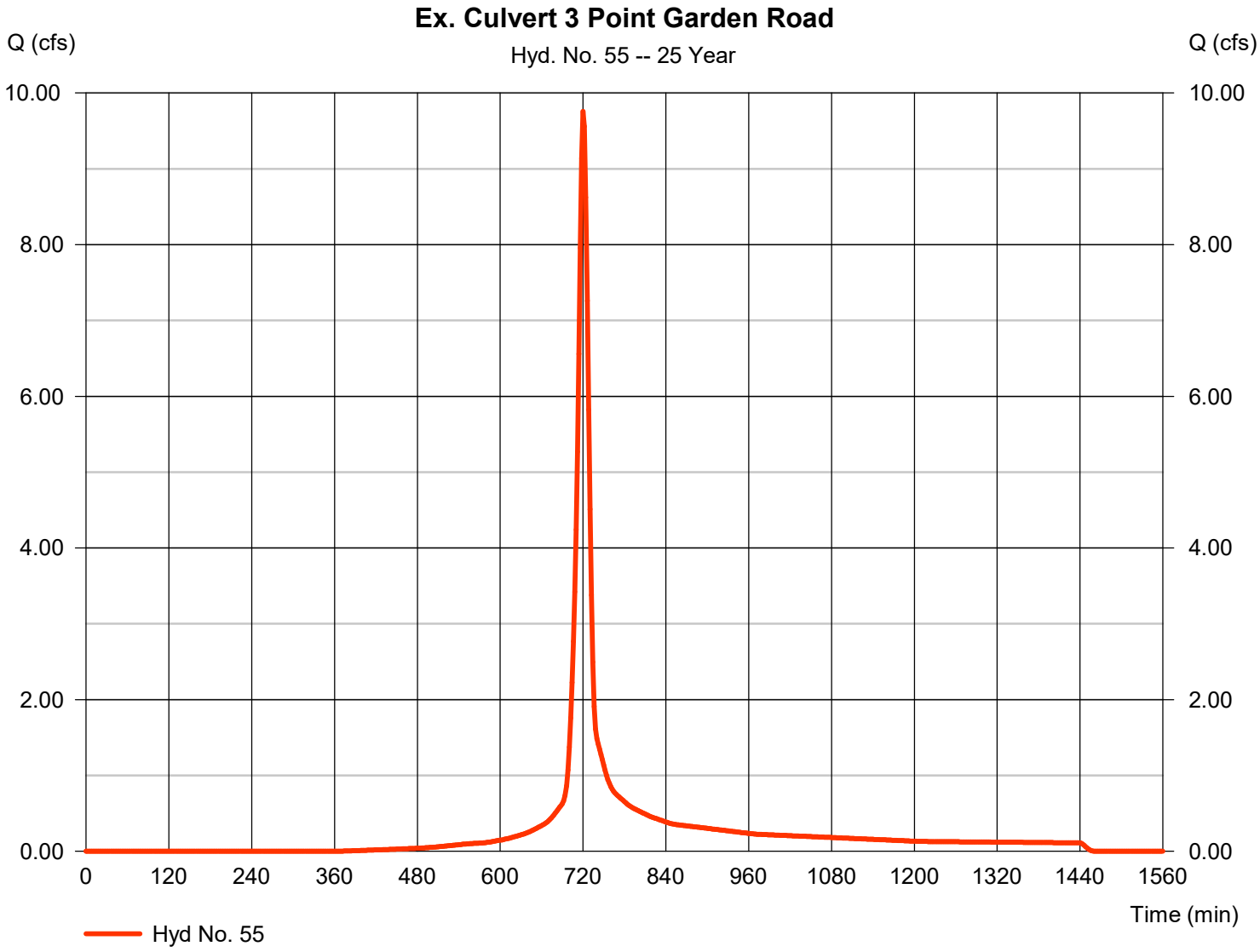
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 55

Ex. Culvert 3 Point Garden Road

Hydrograph type	=	SCS Runoff	Peak discharge	=	9.757 cfs
Storm frequency	=	25 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	25,515 cuft
Drainage area	=	1.780 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	10.80 min
Total precip.	=	5.94 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.030 x 77) + (0.460 x 80) + (0.290 x 98)] / 1.780



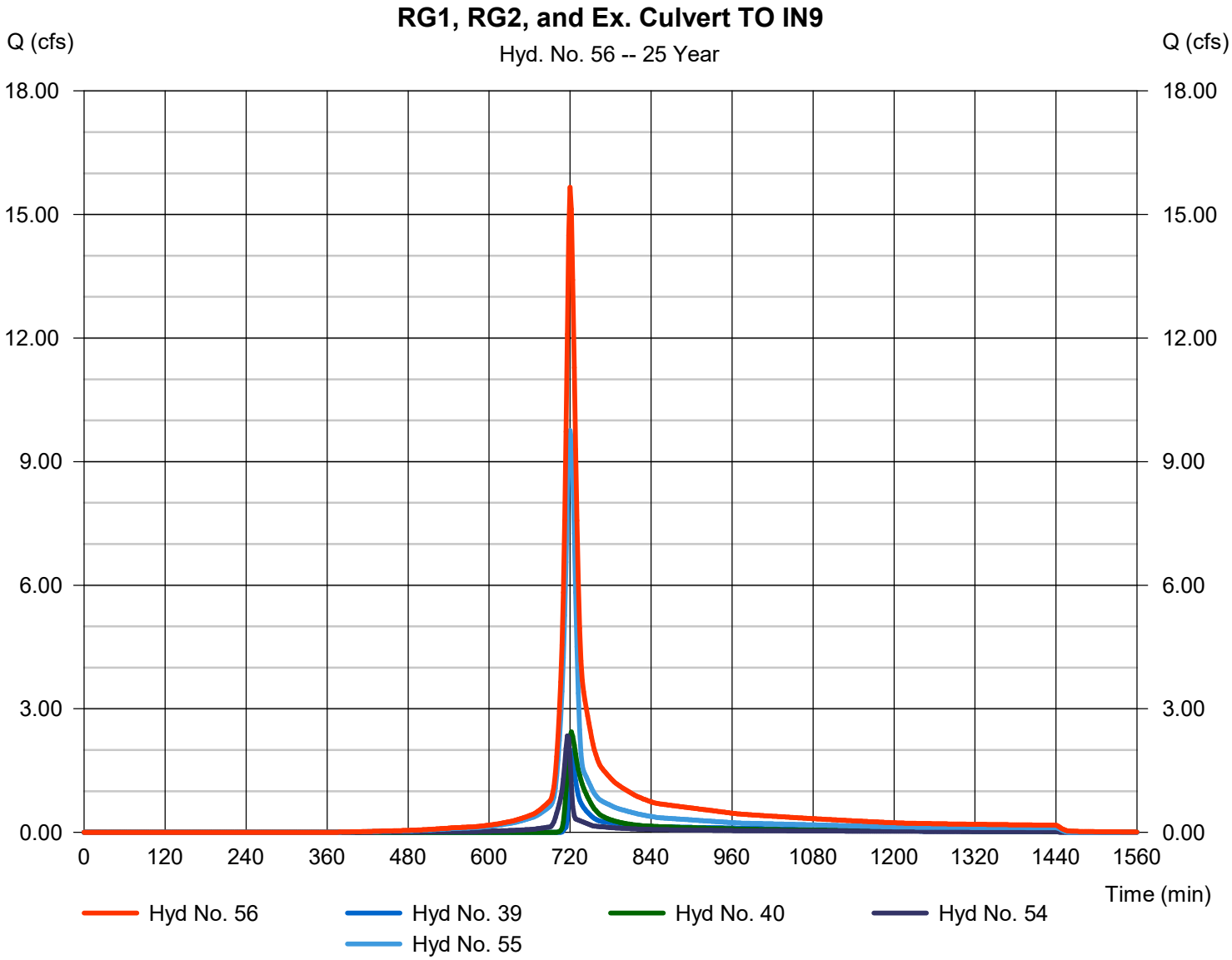
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 56

RG1, RG2, and Ex. Culvert TO IN9

Hydrograph type	= Combine	Peak discharge	= 15.66 cfs
Storm frequency	= 25 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 42,925 cuft
Inflow hyds.	= 39, 40, 54, 55	Contrib. drain. area	= 2.150 ac



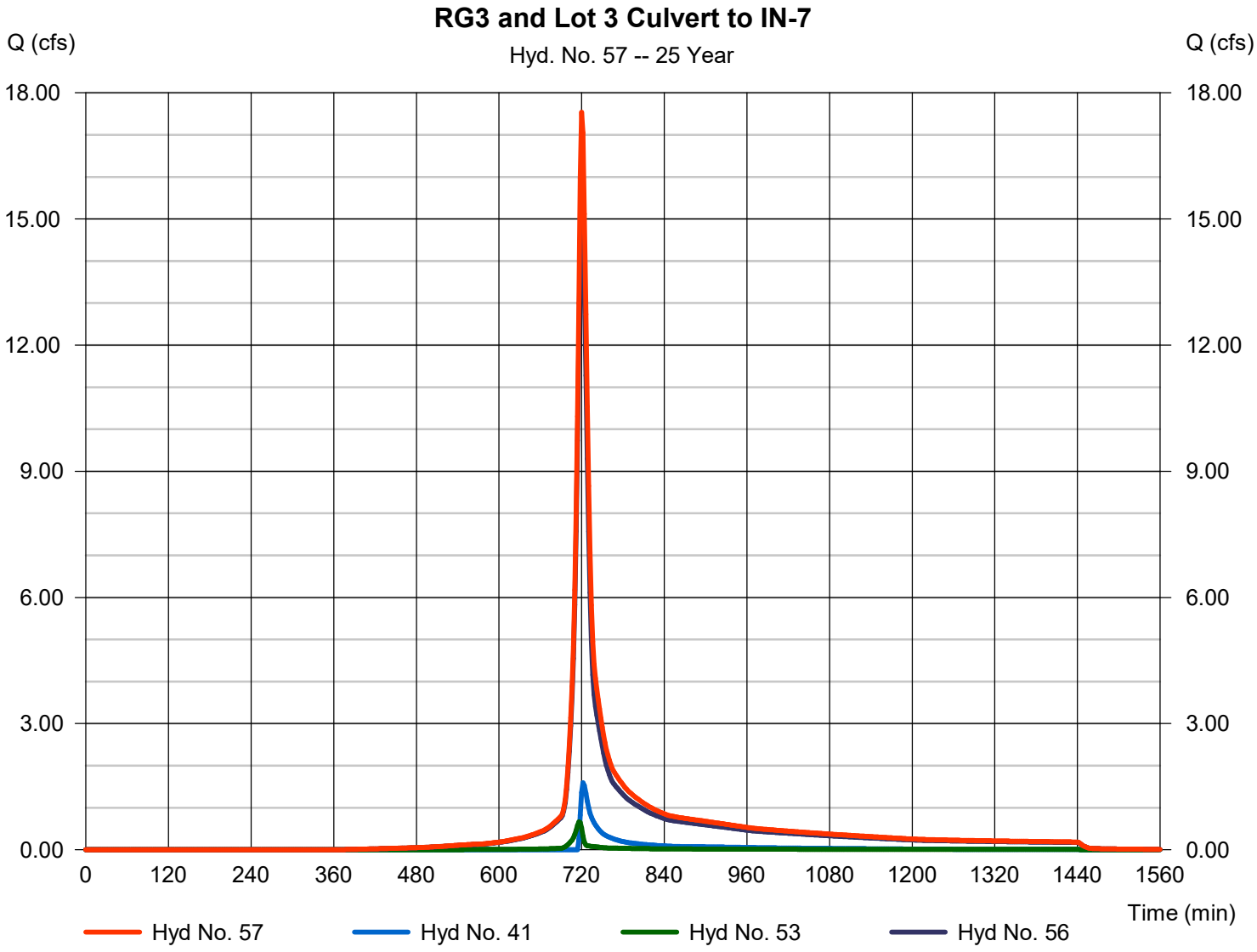
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 57

RG3 and Lot 3 Culvert to IN-7

Hydrograph type	= Combine	Peak discharge	= 17.54 cfs
Storm frequency	= 25 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 48,104 cuft
Inflow hyds.	= 41, 53, 56	Contrib. drain. area	= 0.110 ac



Hydrograph Report

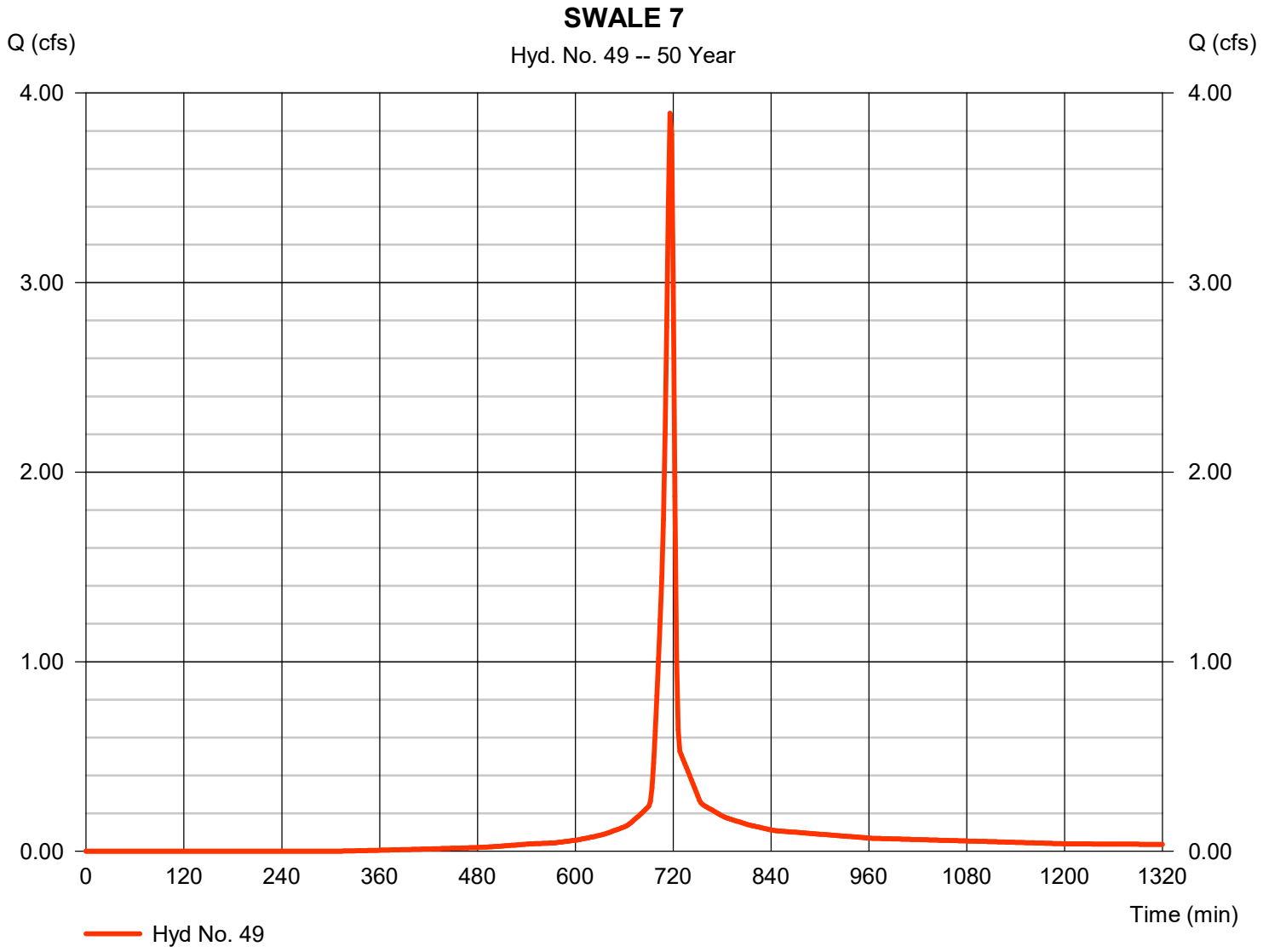
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 49

SWALE 7

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.893 cfs
Storm frequency	=	50 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	8,135 cuft
Drainage area	=	0.490 ac	Curve number	=	82*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.290 x 77) + (0.110 x 80) + (0.090 x 98)] / 0.490



Hydrograph Report

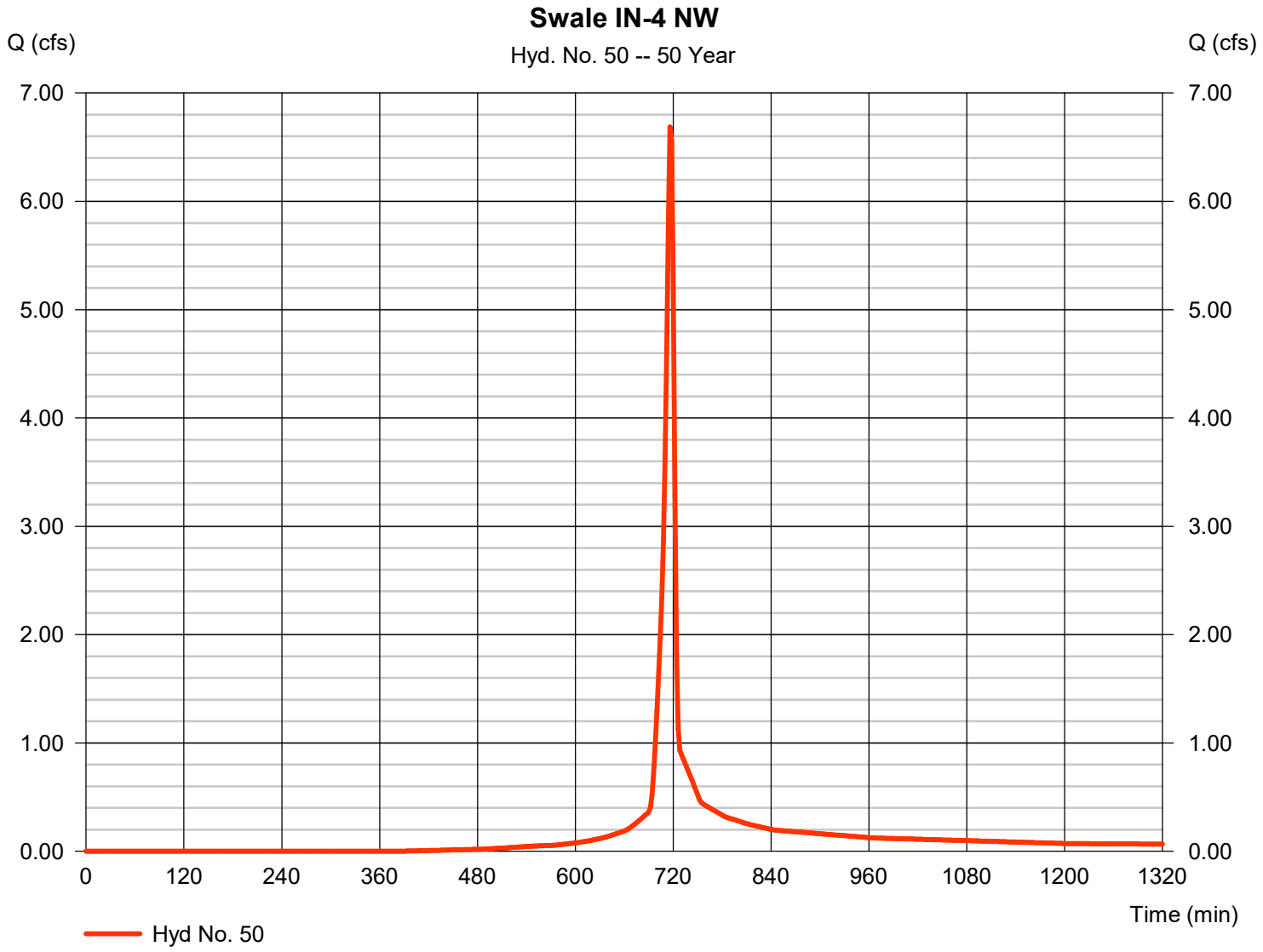
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 50

Swale IN-4 NW

Hydrograph type	=	SCS Runoff	Peak discharge	=	6.687 cfs
Storm frequency	=	50 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	13,704 cuft
Drainage area	=	0.930 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.900 x 77) + (0.030 x 80)] / 0.930



Hydrograph Report

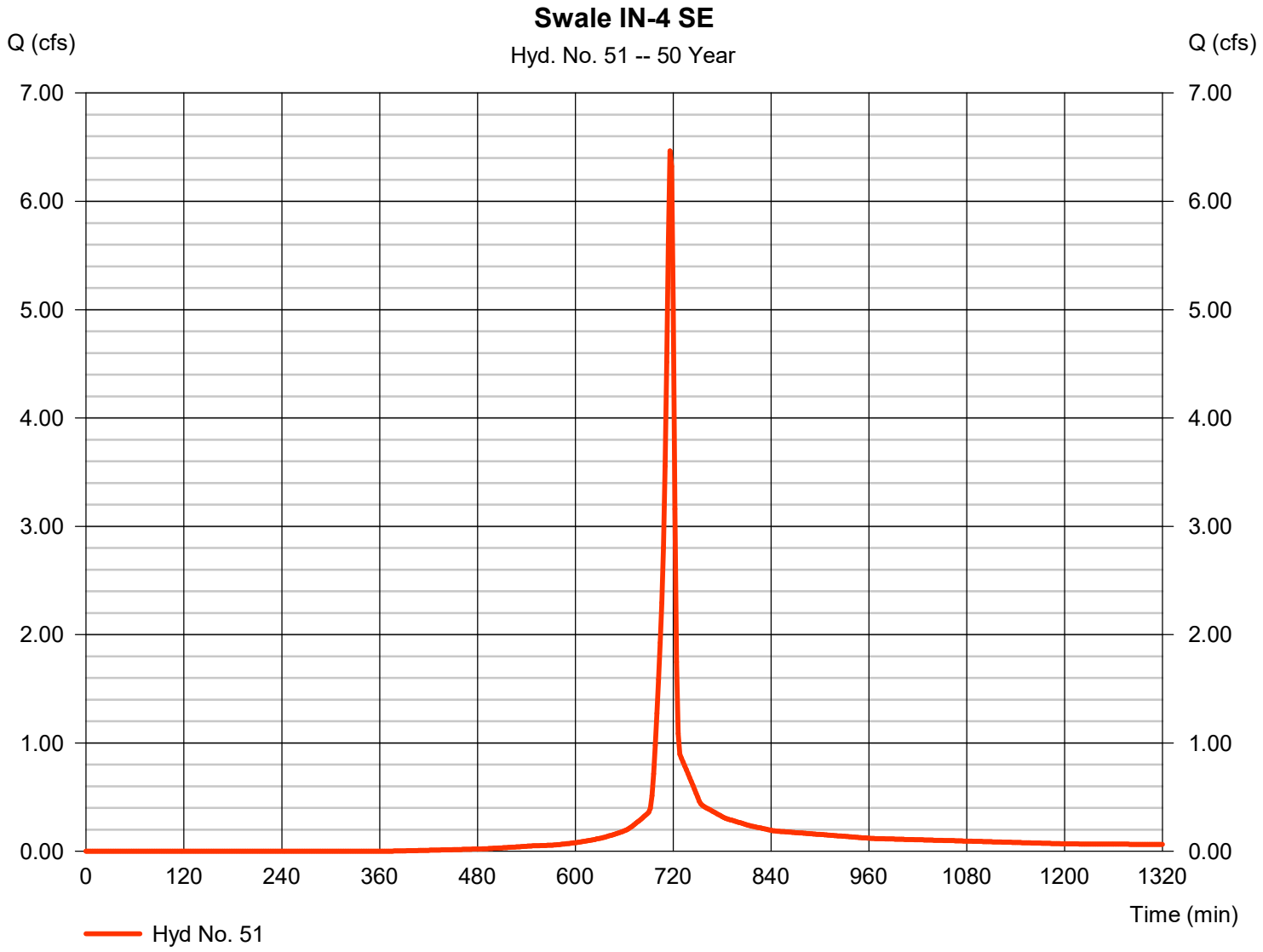
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 51

Swale IN-4 SE

Hydrograph type	=	SCS Runoff	Peak discharge	=	6.466 cfs
Storm frequency	=	50 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	13,292 cuft
Drainage area	=	0.880 ac	Curve number	=	78*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.800 x 77) + (0.030 x 80) + (0.050 x 98)] / 0.880



Hydrograph Report

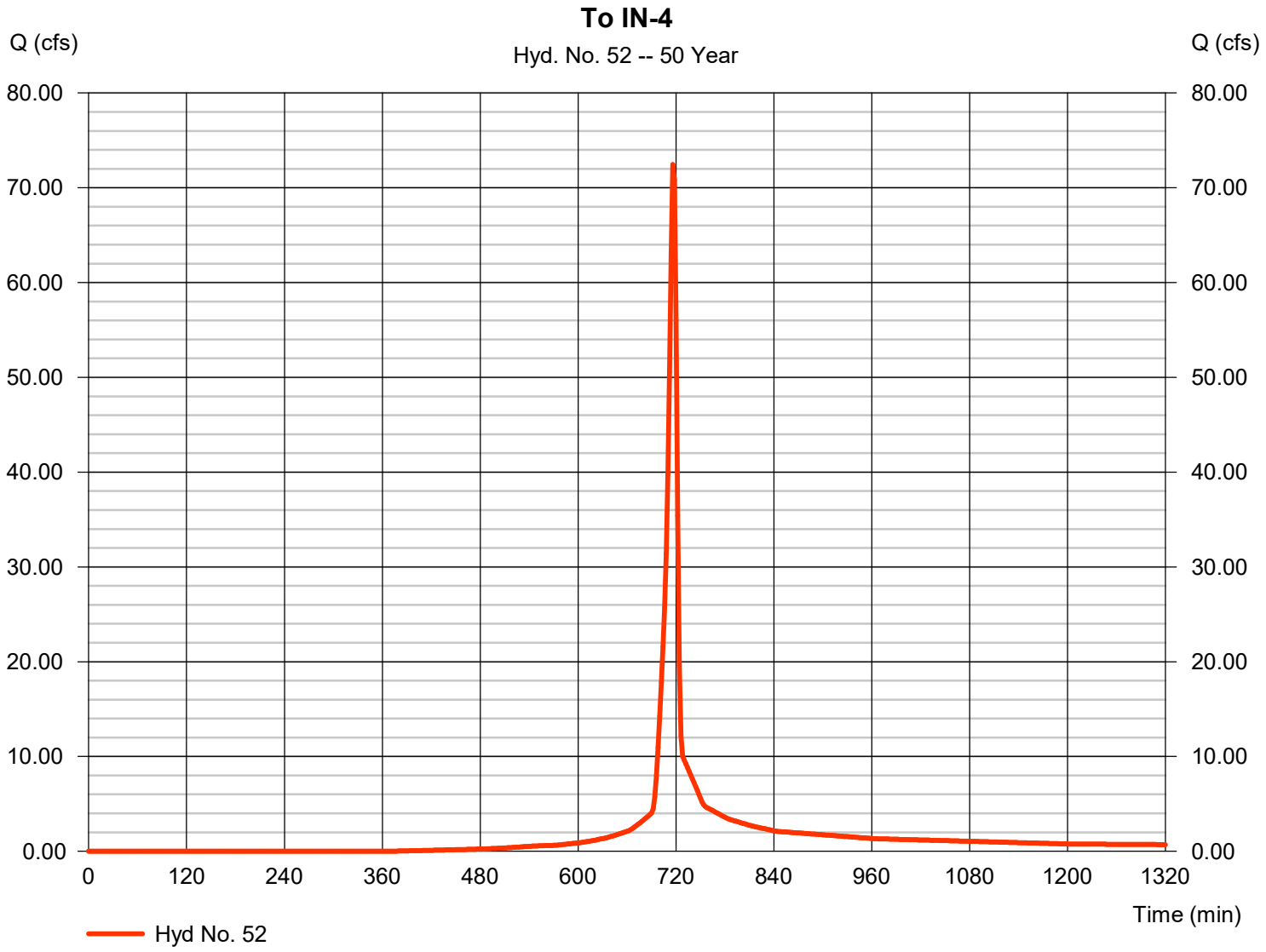
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 52

To IN-4

Hydrograph type	=	SCS Runoff	Peak discharge	=	72.45 cfs
Storm frequency	=	50 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	148,935 cuft
Drainage area	=	9.860 ac	Curve number	=	78*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(8.470 x 77) + (0.400 x 98) + (0.990 x 80)] / 9.860



Hydrograph Report

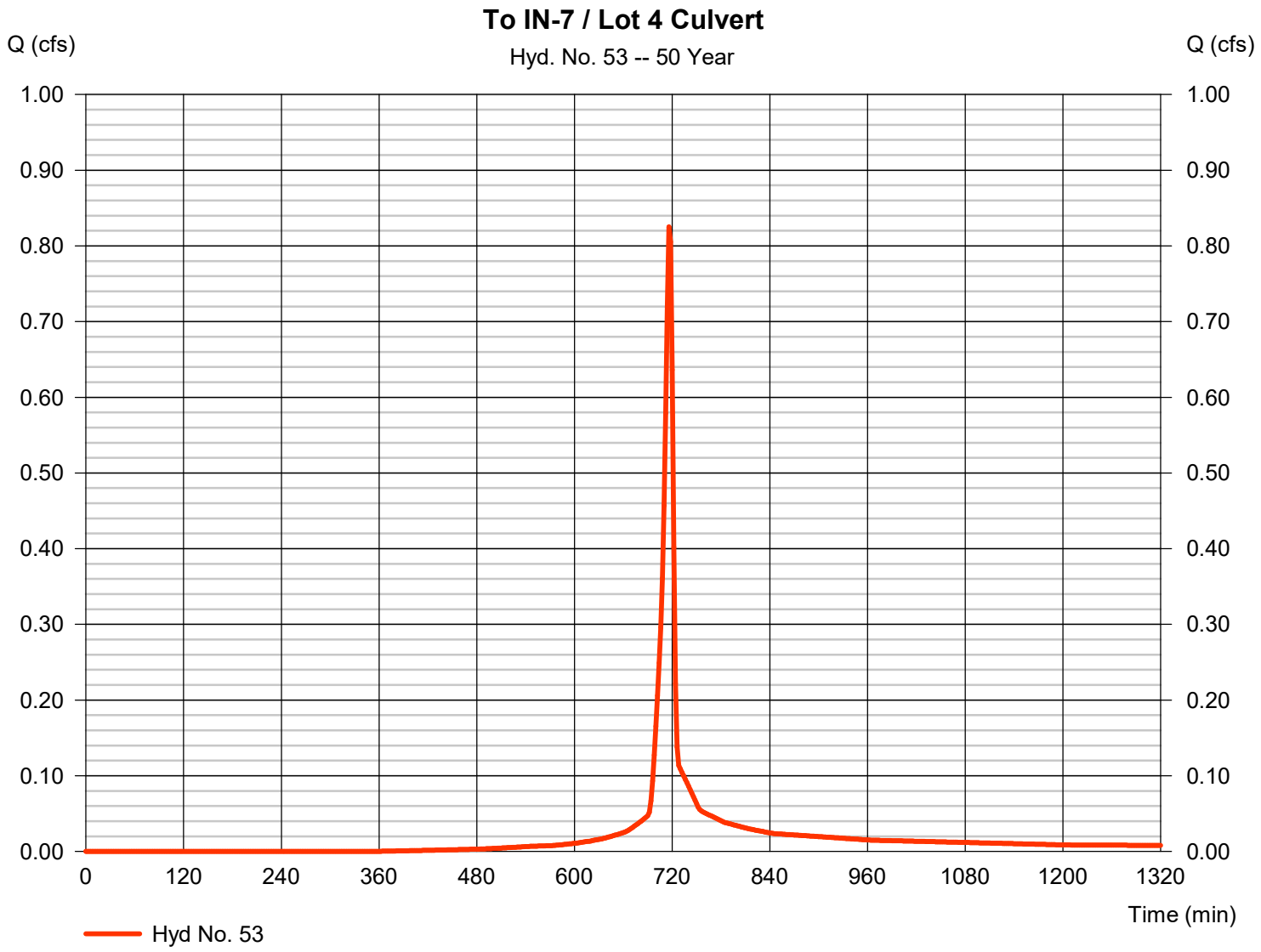
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 53

To IN-7 / Lot 4 Culvert

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.825 cfs
Storm frequency	=	50 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	1,702 cuft
Drainage area	=	0.110 ac	Curve number	=	79*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.080 x 77) + (0.020 x 80) + (0.010 x 98)] / 0.110



Hydrograph Report

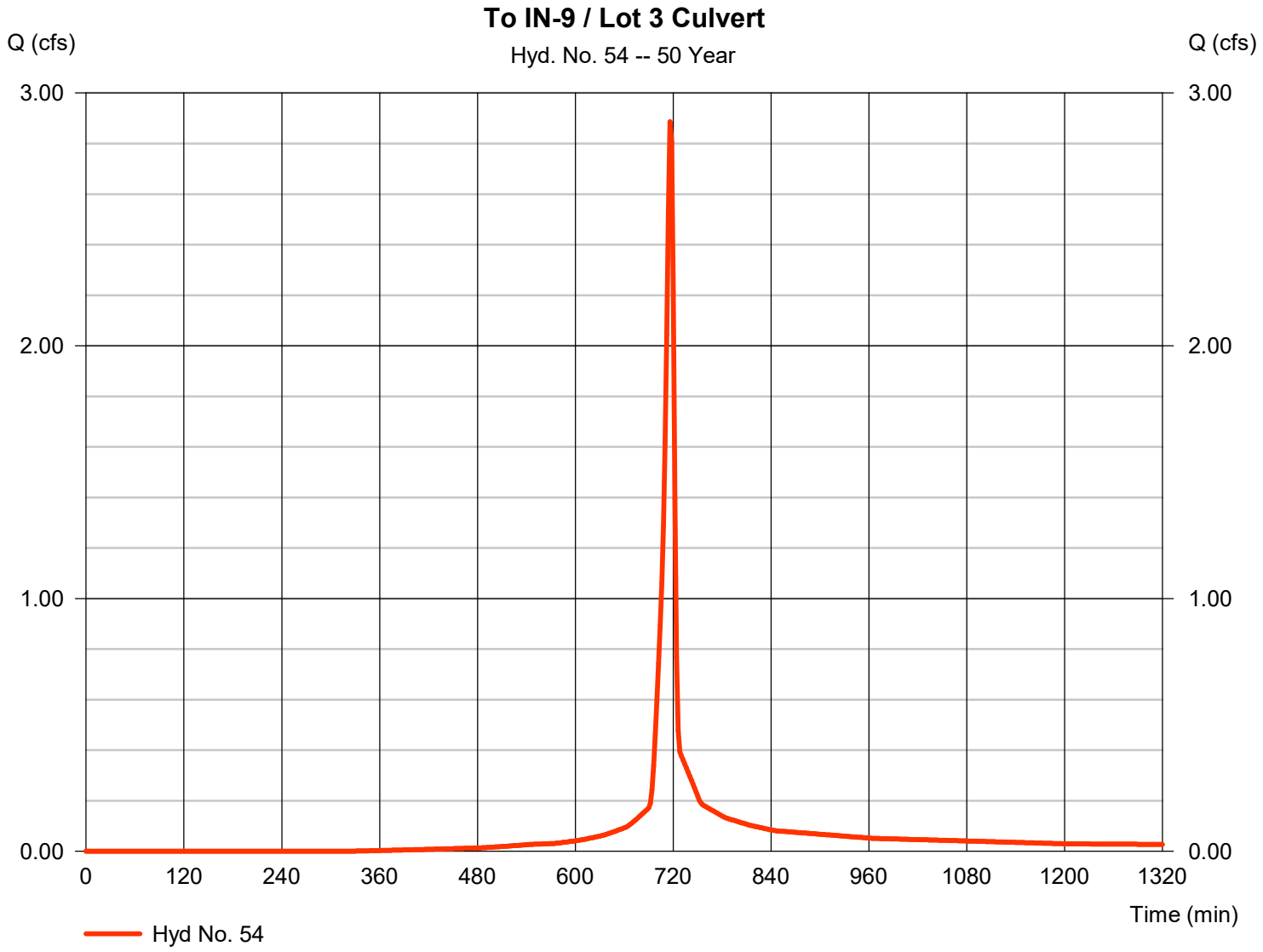
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 54

To IN-9 / Lot 3 Culvert

Hydrograph type	= SCS Runoff	Peak discharge	= 2.886 cfs
Storm frequency	= 50 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 6,003 cuft
Drainage area	= 0.370 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 6.96 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.230 x 77) + (0.090 x 80) + (0.050 x 98)] / 0.370



Hydrograph Report

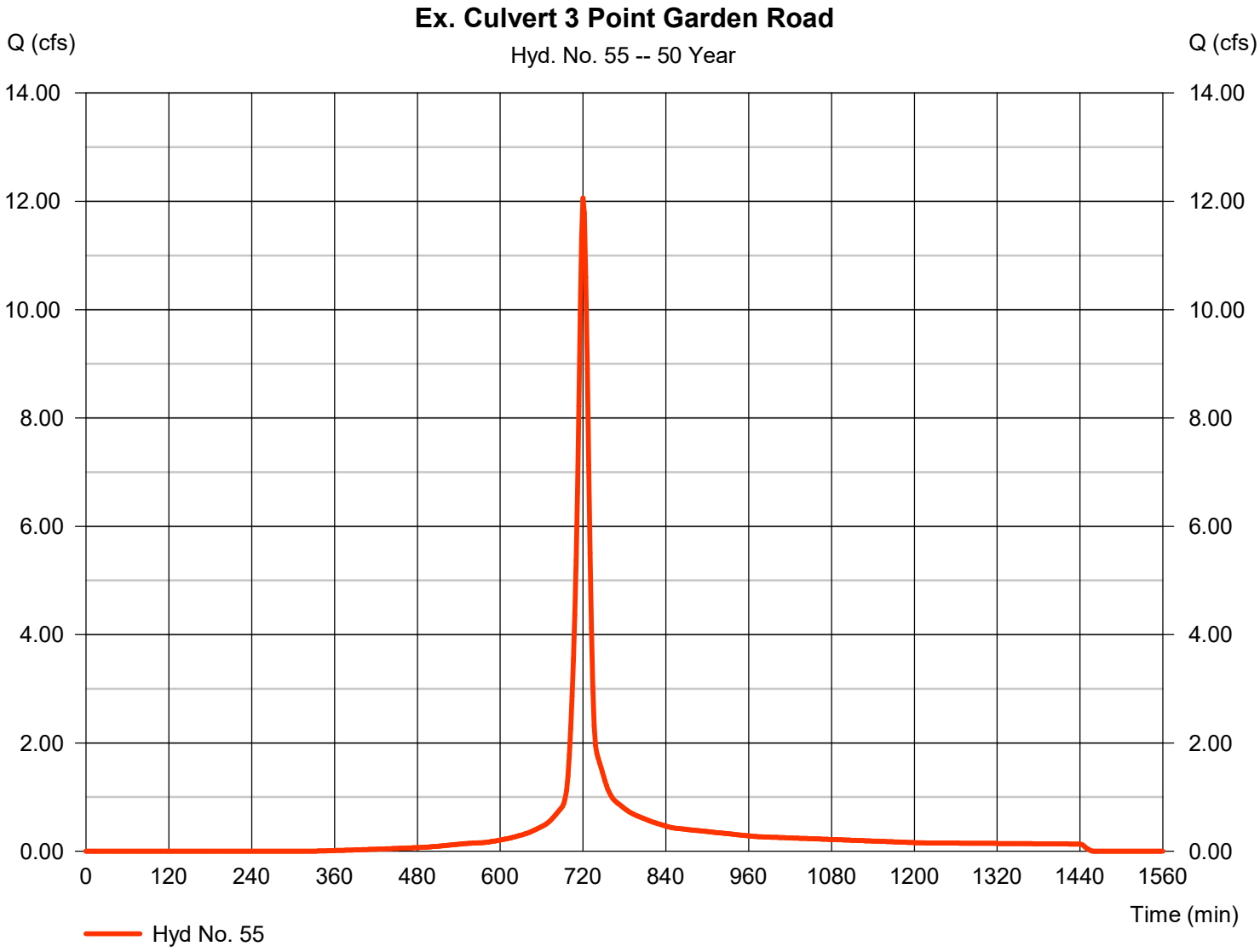
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 55

Ex. Culvert 3 Point Garden Road

Hydrograph type	=	SCS Runoff	Peak discharge	=	12.06 cfs
Storm frequency	=	50 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	31,770 cuft
Drainage area	=	1.780 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	10.80 min
Total precip.	=	6.96 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.030 x 77) + (0.460 x 80) + (0.290 x 98)] / 1.780



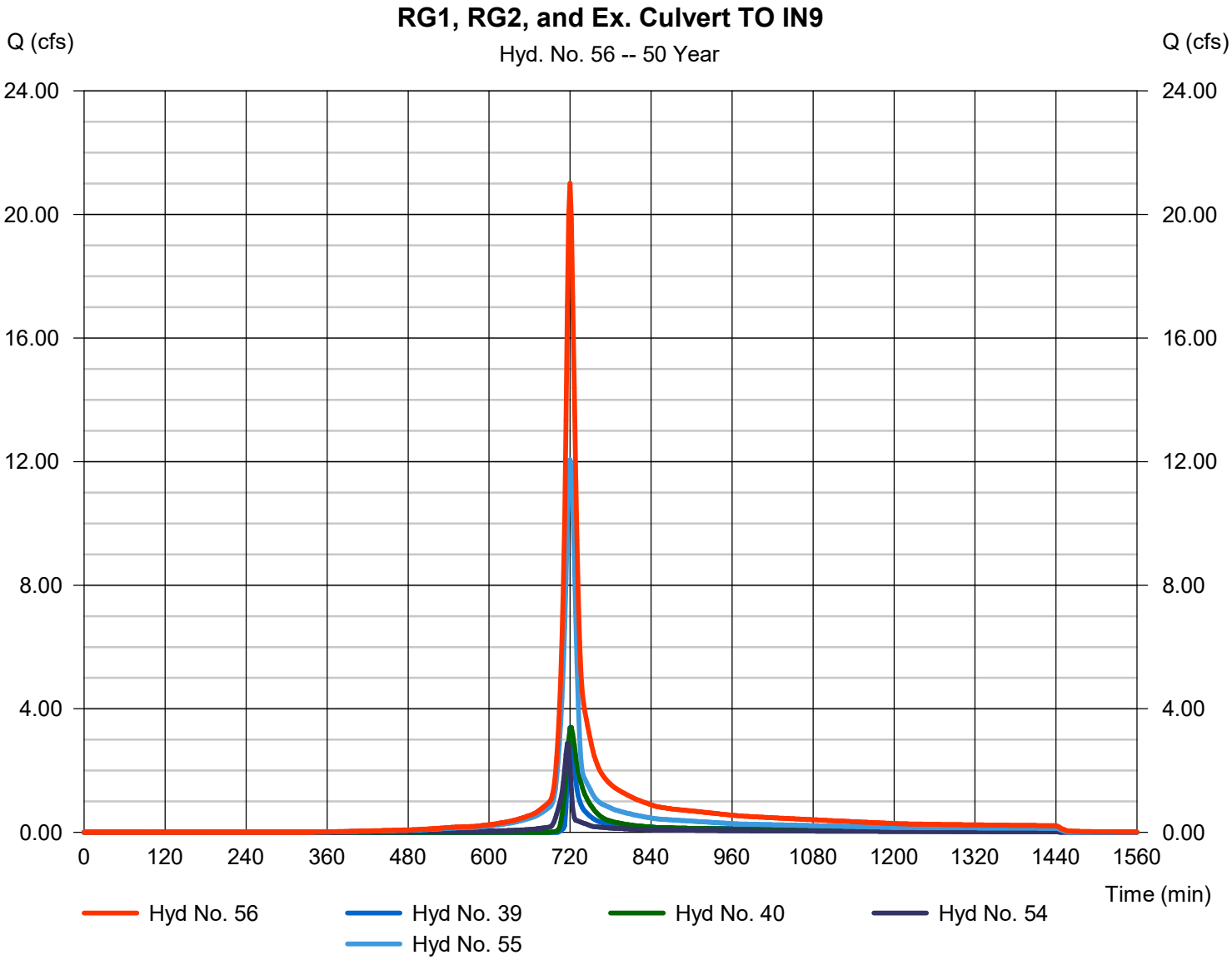
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 56

RG1, RG2, and Ex. Culvert TO IN9

Hydrograph type	= Combine	Peak discharge	= 21.01 cfs
Storm frequency	= 50 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 54,741 cuft
Inflow hyds.	= 39, 40, 54, 55	Contrib. drain. area	= 2.150 ac



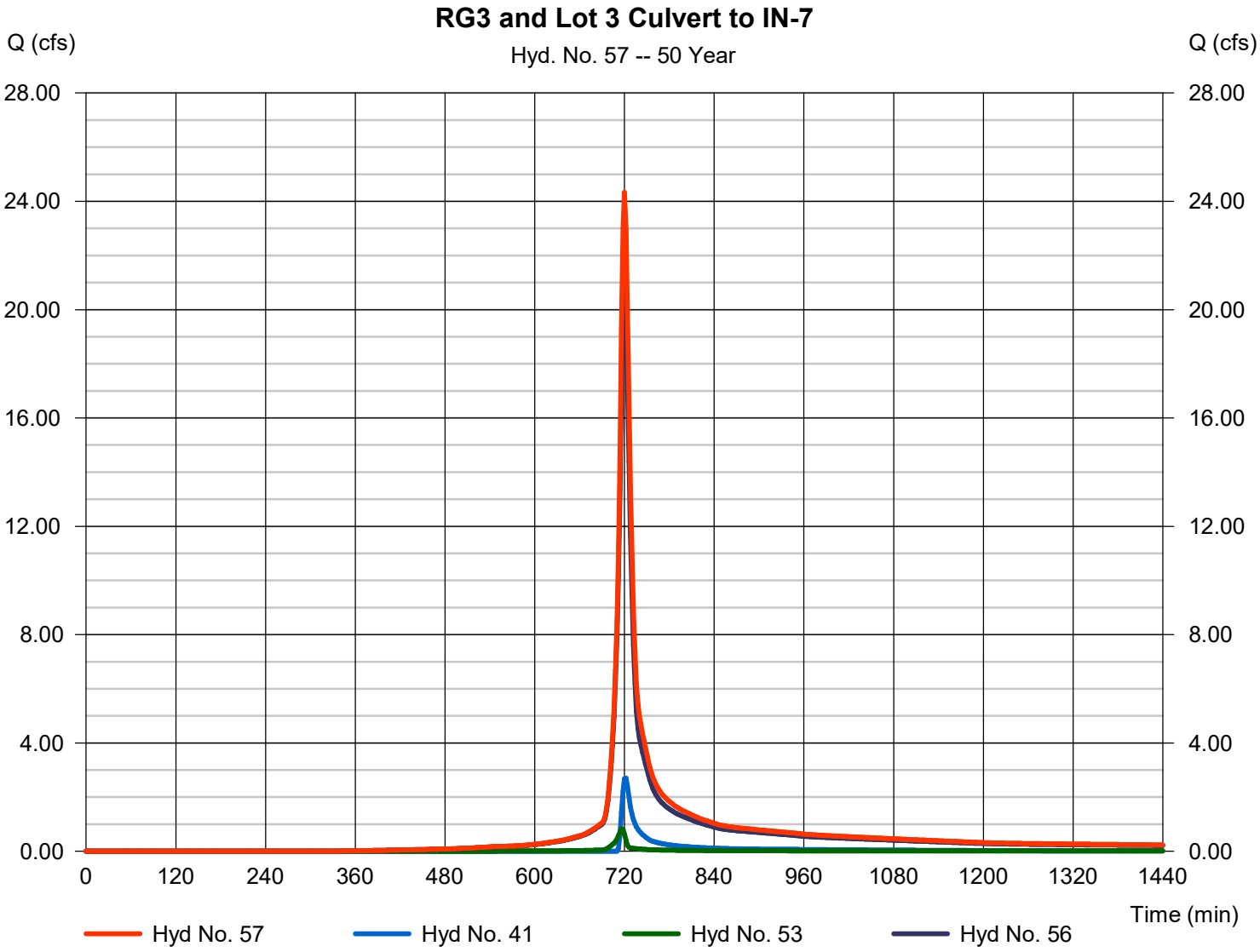
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 57

RG3 and Lot 3 Culvert to IN-7

Hydrograph type	= Combine	Peak discharge	= 24.33 cfs
Storm frequency	= 50 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 61,983 cuft
Inflow hyds.	= 41, 53, 56	Contrib. drain. area	= 0.110 ac



Hydrograph Report

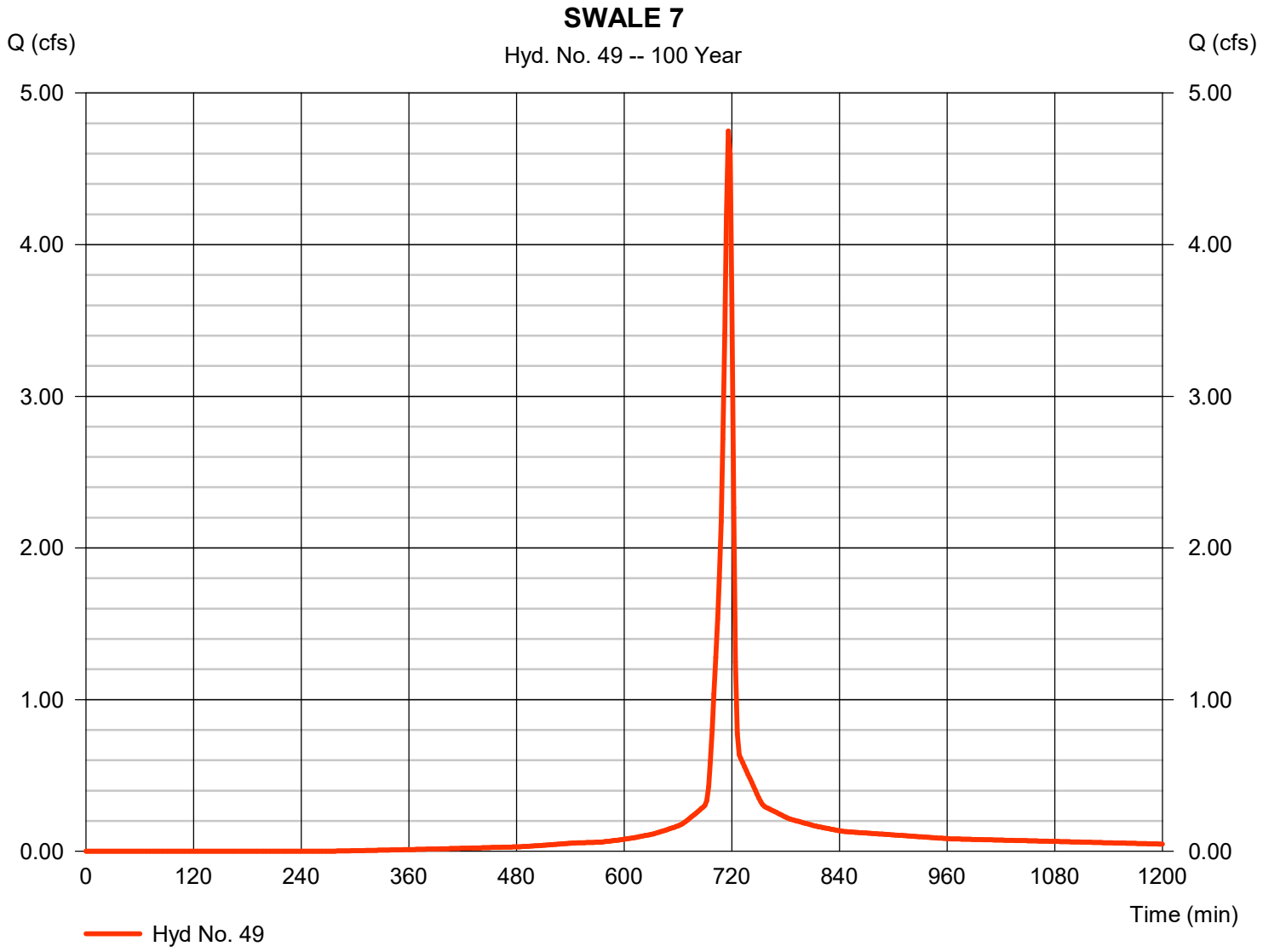
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 49

SWALE 7

Hydrograph type	=	SCS Runoff	Peak discharge	=	4.749 cfs
Storm frequency	=	100 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	10,041 cuft
Drainage area	=	0.490 ac	Curve number	=	82*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	8.17 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.290 x 77) + (0.110 x 80) + (0.090 x 98)] / 0.490



Hydrograph Report

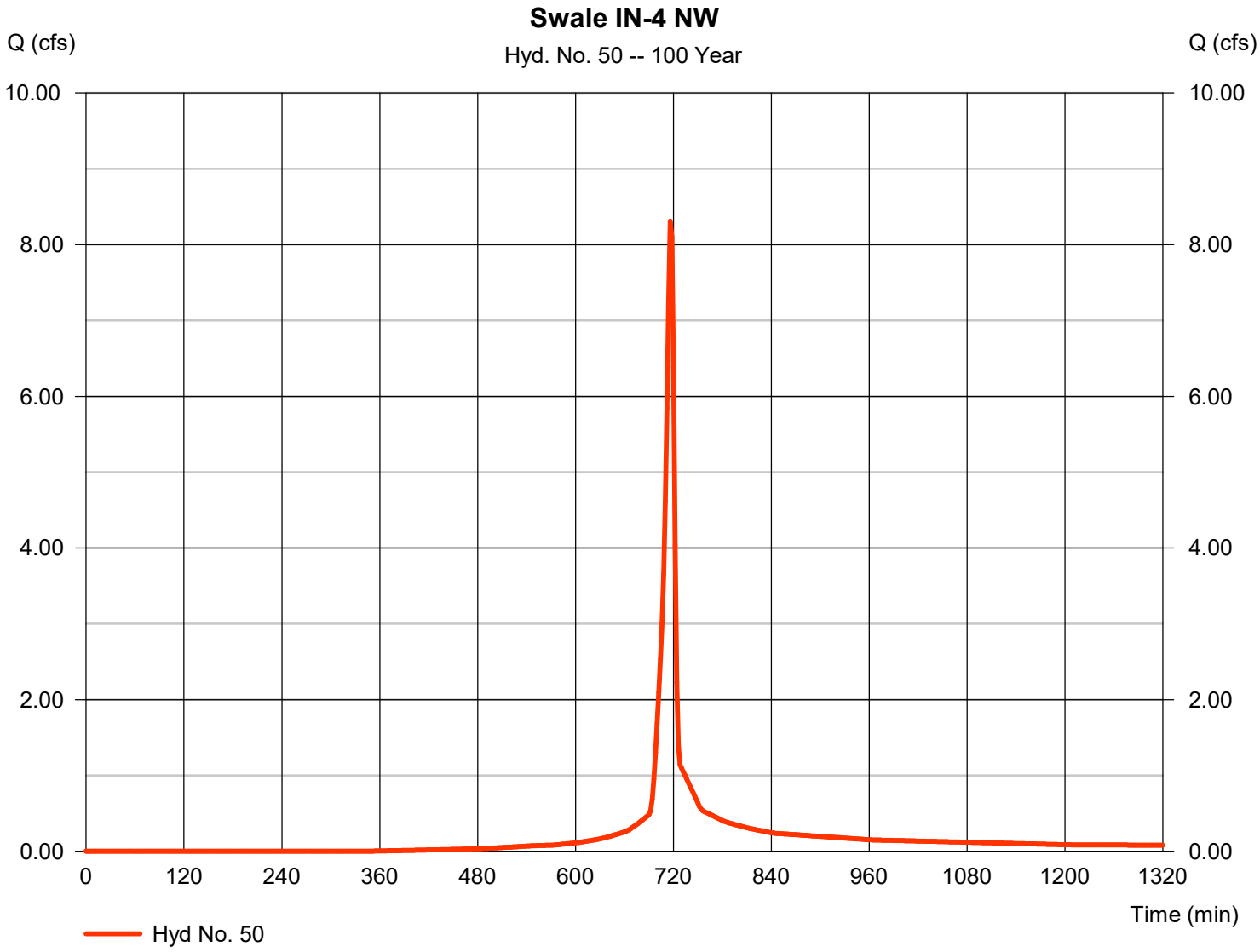
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 50

Swale IN-4 NW

Hydrograph type	=	SCS Runoff	Peak discharge	=	8.308 cfs
Storm frequency	=	100 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	17,187 cuft
Drainage area	=	0.930 ac	Curve number	=	77*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	8.17 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.900 x 77) + (0.030 x 80)] / 0.930



Hydrograph Report

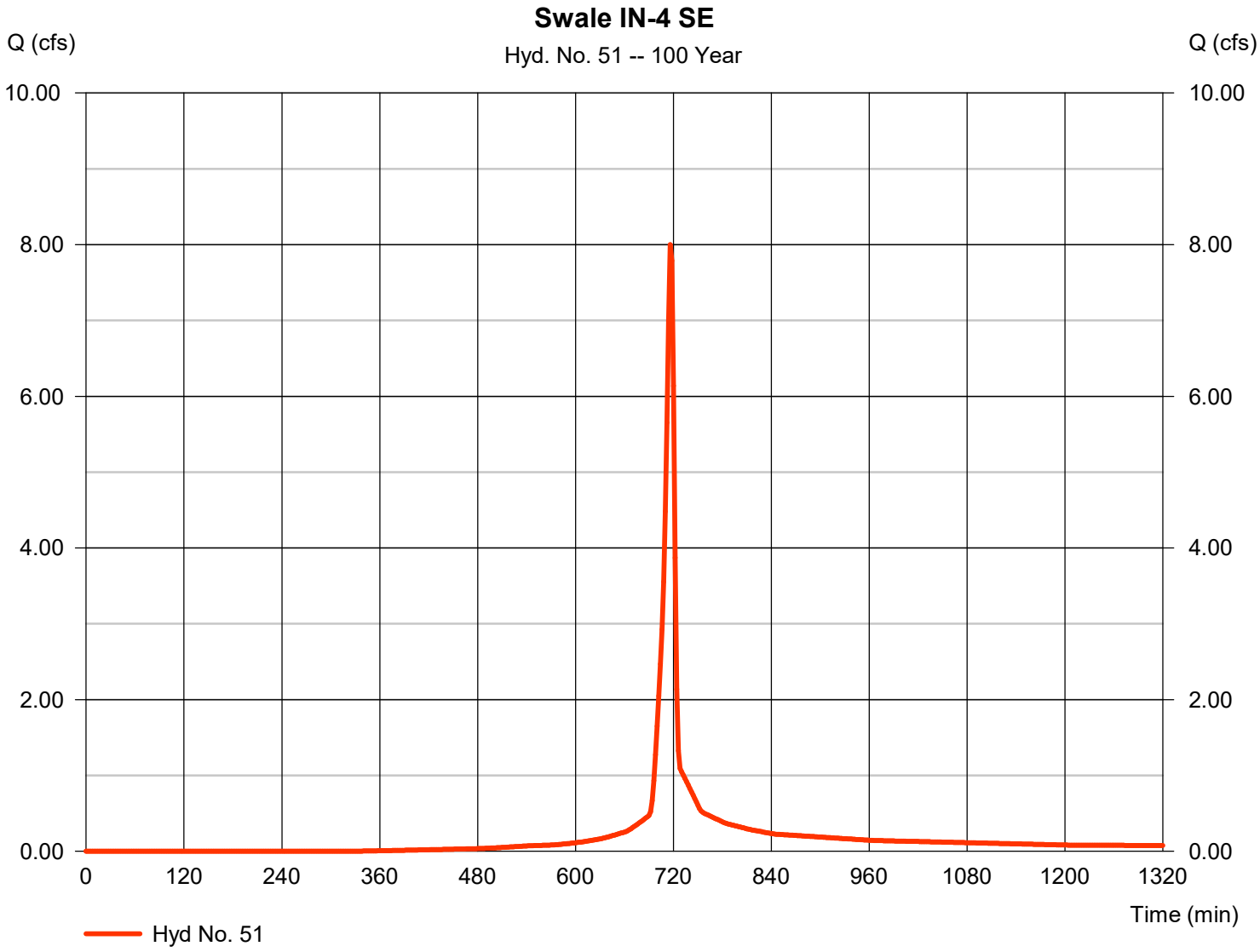
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 51

Swale IN-4 SE

Hydrograph type	=	SCS Runoff	Peak discharge	=	8.002 cfs
Storm frequency	=	100 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	16,616 cuft
Drainage area	=	0.880 ac	Curve number	=	78*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	8.17 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.800 x 77) + (0.030 x 80) + (0.050 x 98)] / 0.880



Hydrograph Report

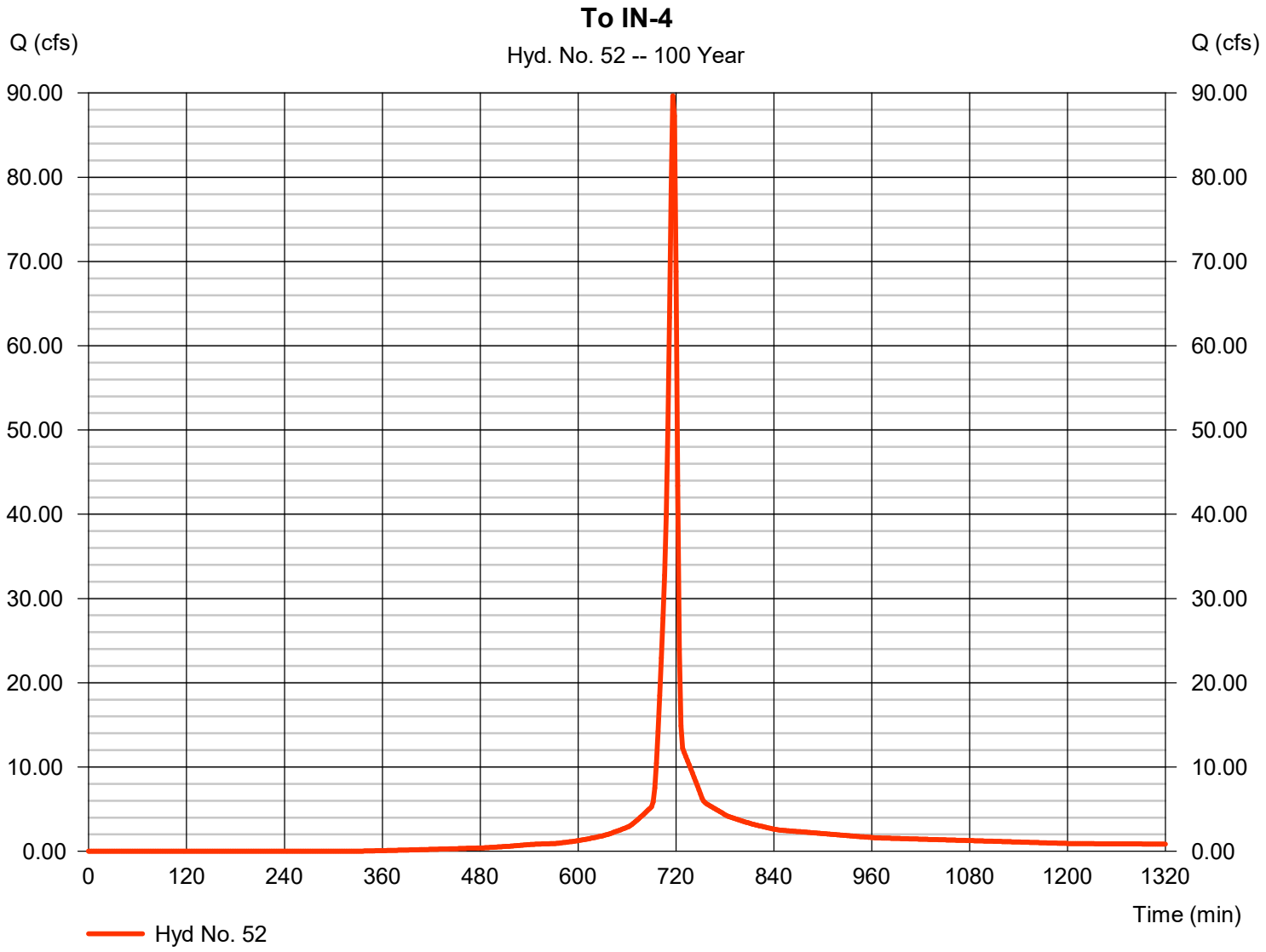
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 52

To IN-4

Hydrograph type	=	SCS Runoff	Peak discharge	=	89.65 cfs
Storm frequency	=	100 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	186,175 cuft
Drainage area	=	9.860 ac	Curve number	=	78*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	8.17 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(8.470 x 77) + (0.400 x 98) + (0.990 x 80)] / 9.860



Hydrograph Report

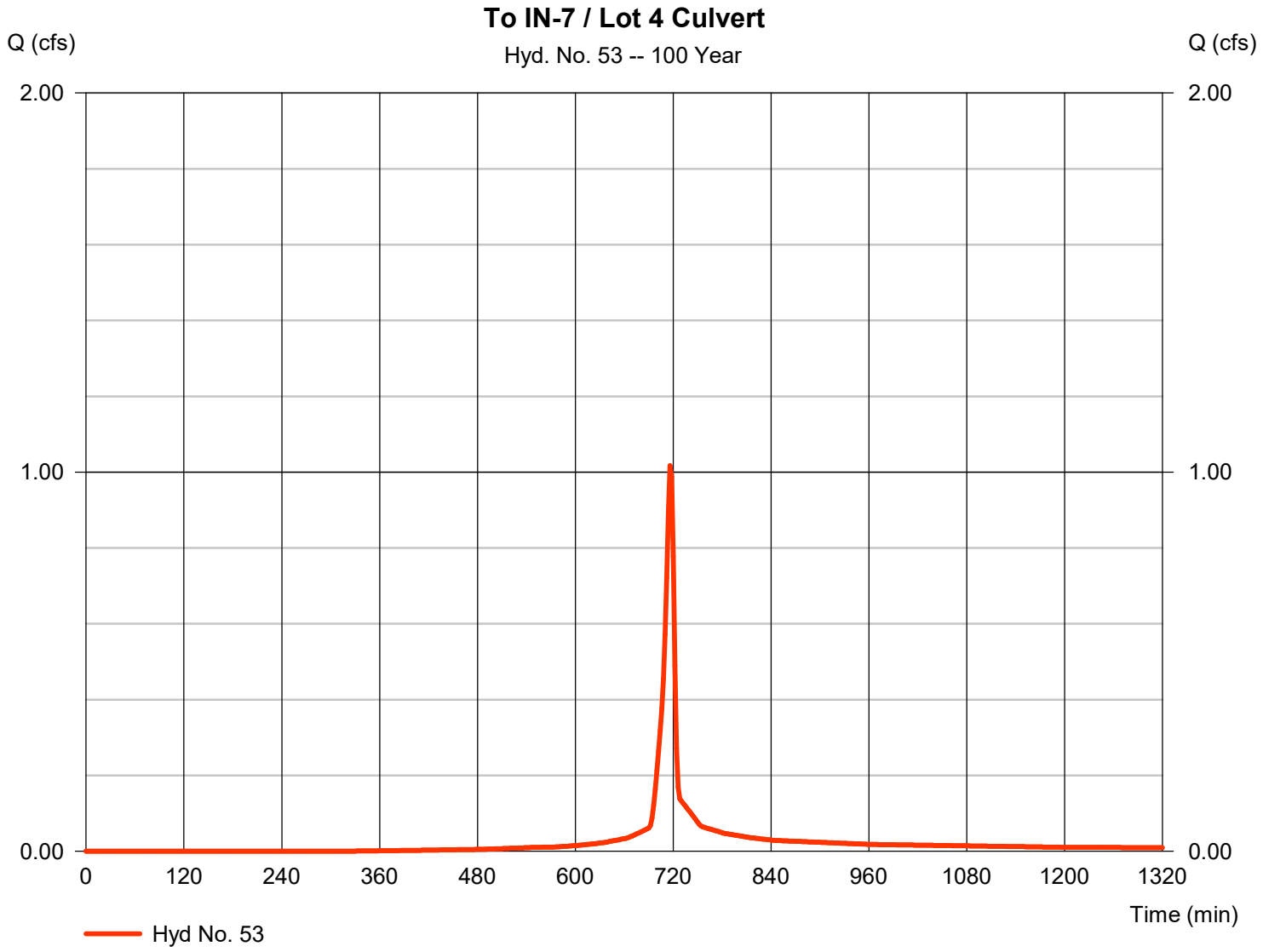
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 53

To IN-7 / Lot 4 Culvert

Hydrograph type	=	SCS Runoff	Peak discharge	=	1.017 cfs
Storm frequency	=	100 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	2,121 cuft
Drainage area	=	0.110 ac	Curve number	=	79*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	8.17 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.080 x 77) + (0.020 x 80) + (0.010 x 98)] / 0.110



Hydrograph Report

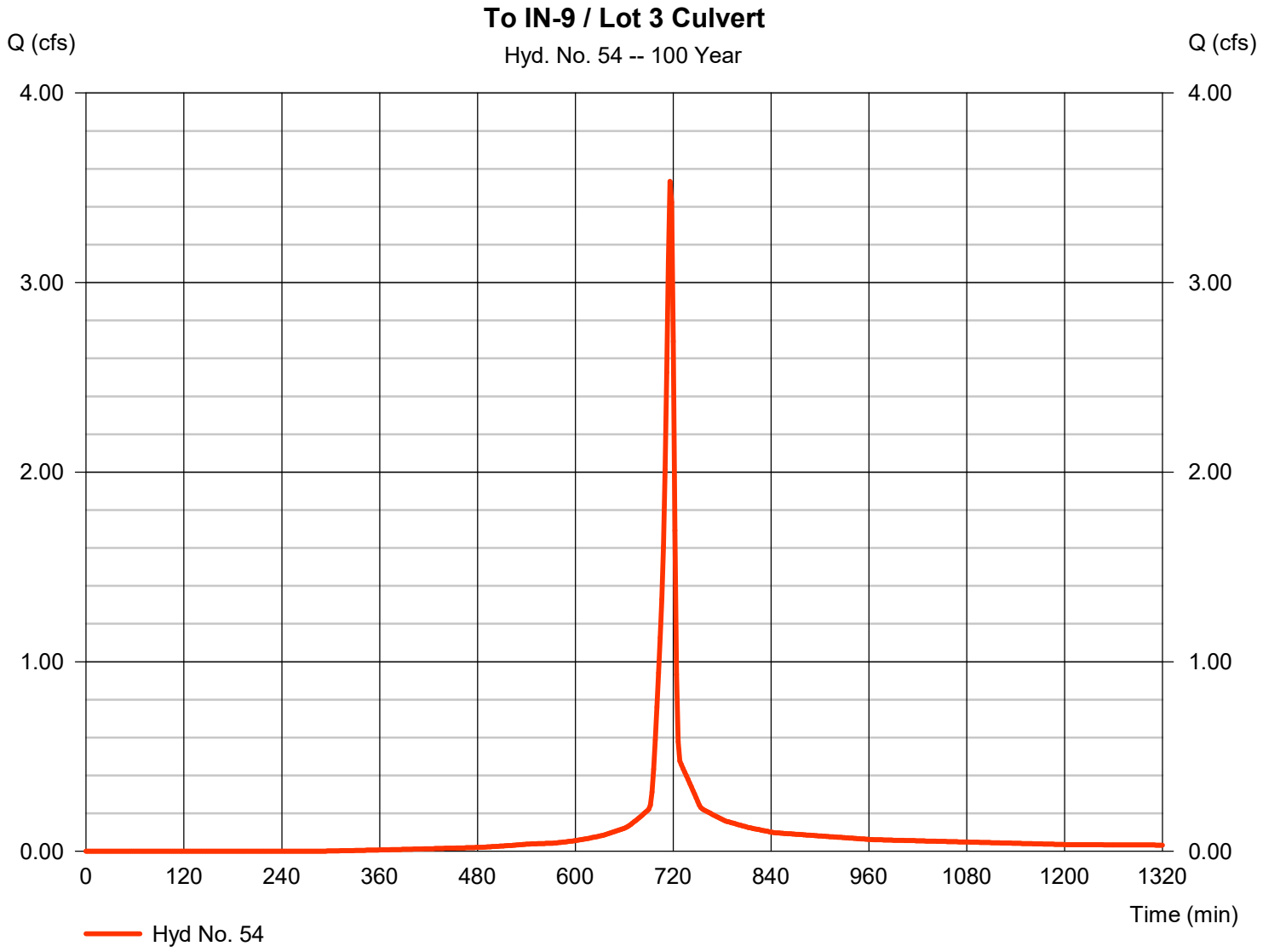
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 54

To IN-9 / Lot 3 Culvert

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.533 cfs
Storm frequency	=	100 yrs	Time to peak	=	716 min
Time interval	=	2 min	Hyd. volume	=	7,433 cuft
Drainage area	=	0.370 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	8.17 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(0.230 x 77) + (0.090 x 80) + (0.050 x 98)] / 0.370



Hydrograph Report

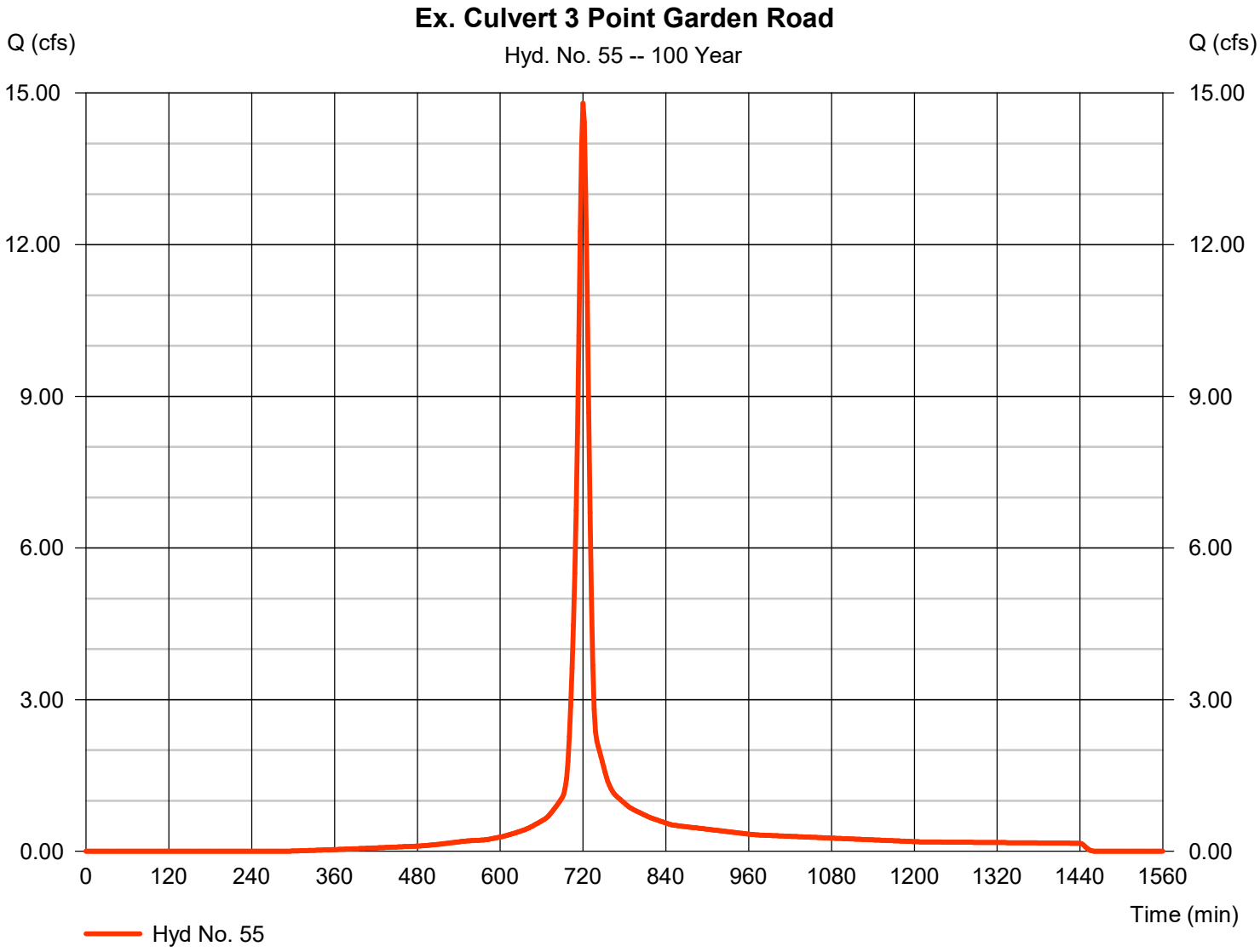
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 55

Ex. Culvert 3 Point Garden Road

Hydrograph type	=	SCS Runoff	Peak discharge	=	14.80 cfs
Storm frequency	=	100 yrs	Time to peak	=	720 min
Time interval	=	2 min	Hyd. volume	=	39,333 cuft
Drainage area	=	1.780 ac	Curve number	=	81*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	10.80 min
Total precip.	=	8.17 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.030 x 77) + (0.460 x 80) + (0.290 x 98)] / 1.780



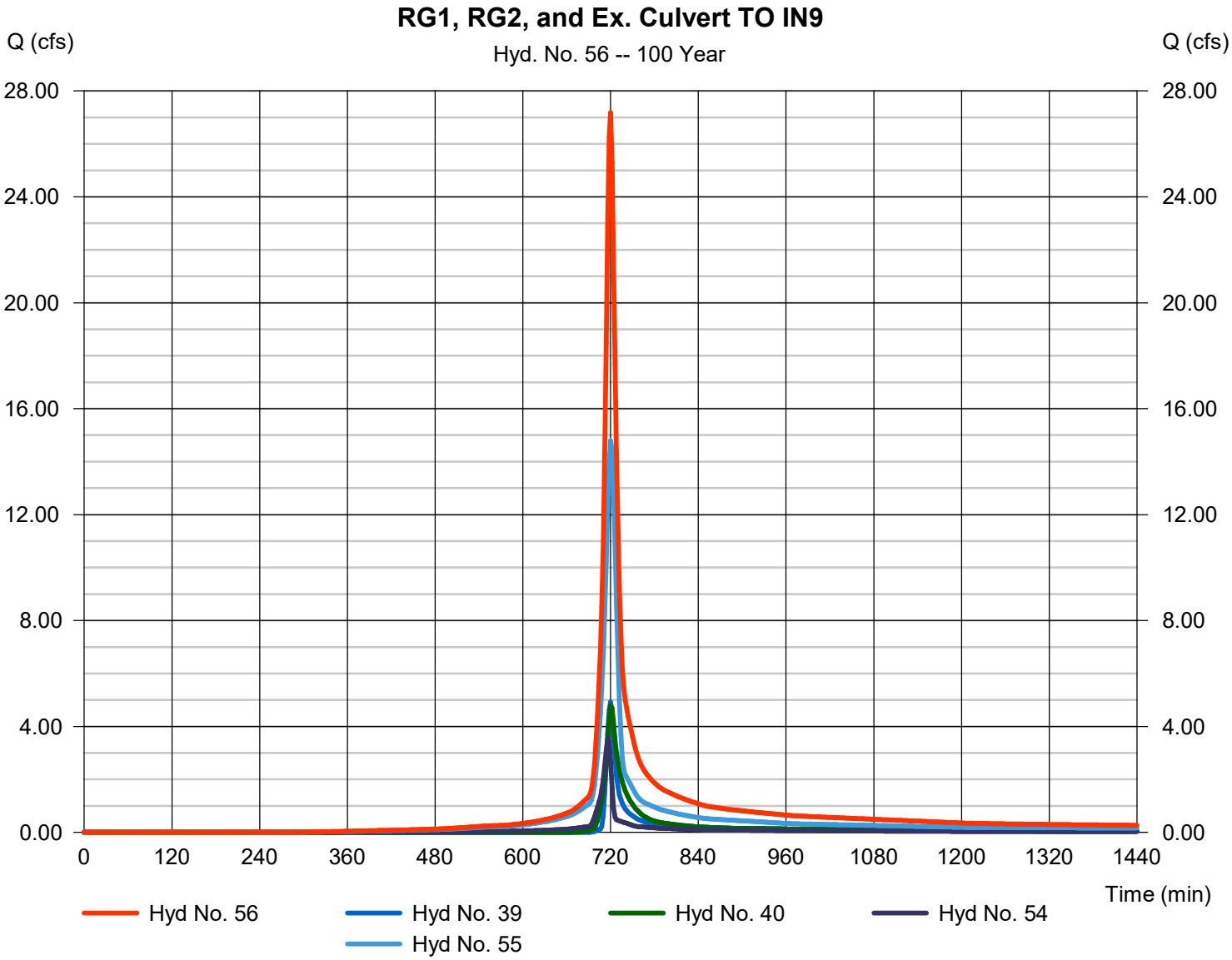
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 56

RG1, RG2, and Ex. Culvert TO IN9

Hydrograph type	= Combine	Peak discharge	= 27.18 cfs
Storm frequency	= 100 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 69,100 cuft
Inflow hyds.	= 39, 40, 54, 55	Contrib. drain. area	= 2.150 ac



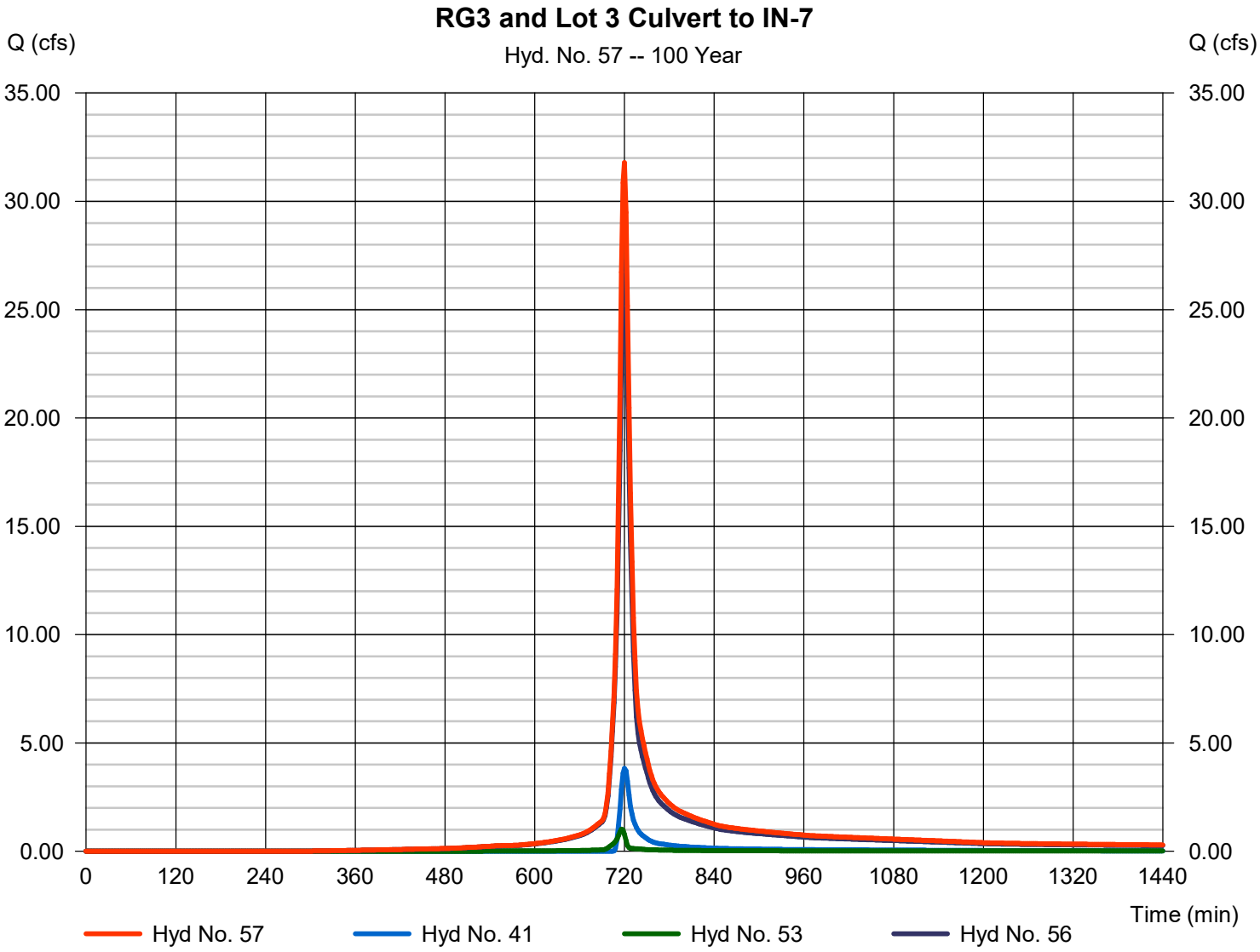
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Thursday, 10 / 31 / 2024

Hyd. No. 57

RG3 and Lot 3 Culvert to IN-7

Hydrograph type	= Combine	Peak discharge	= 31.79 cfs
Storm frequency	= 100 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 78,823 cuft
Inflow hyds.	= 41, 53, 56	Contrib. drain. area	= 0.110 ac



11. ATTACHMENTS

a. Plan Preparers Experience

EXPERIENCE OF PLAN PREPARER

The E&SPC plan and Narrative has been prepared by Jeffrey L. Ott, P.E.

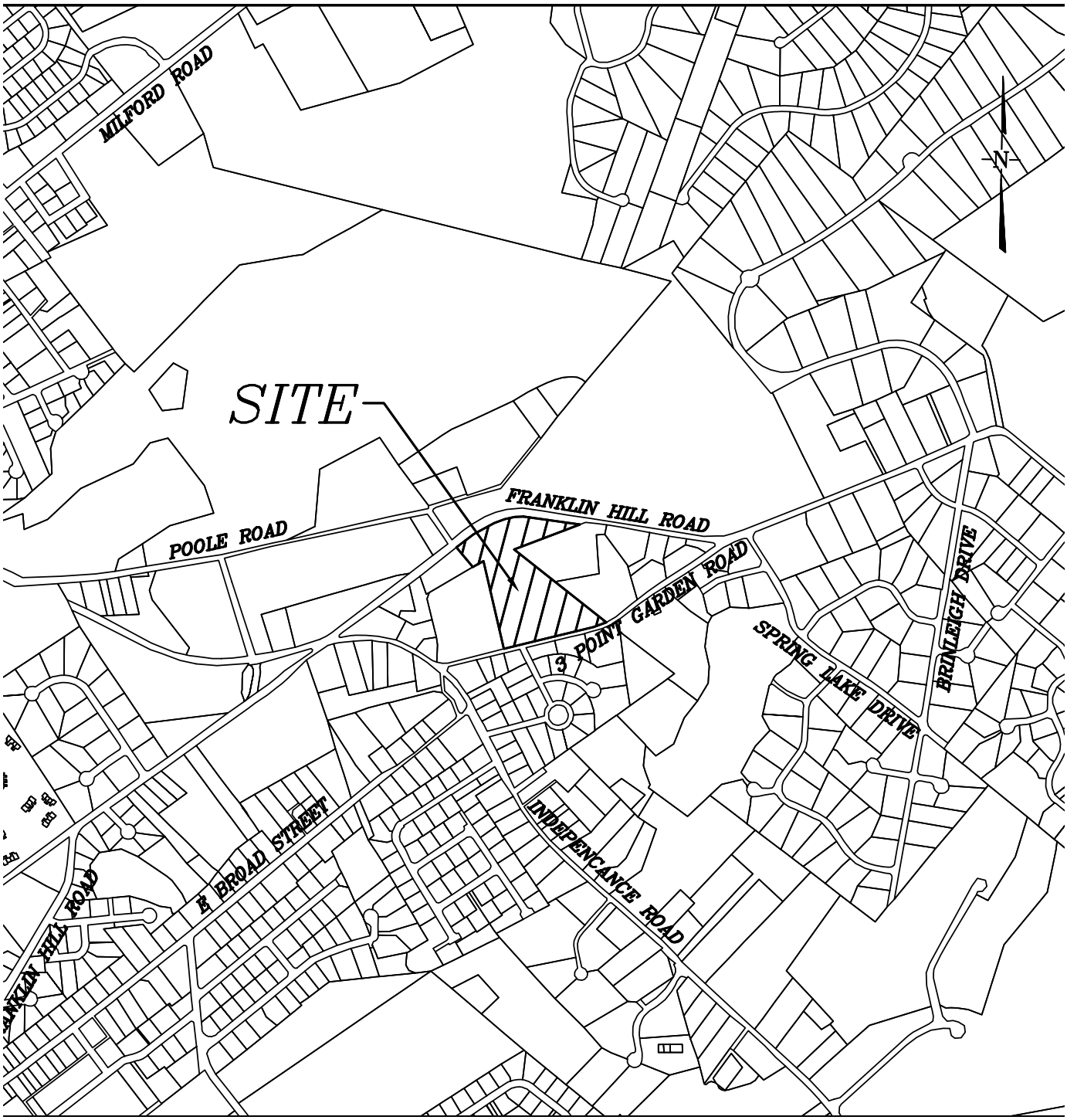
Mr. Ott has prepared numerous E&SPC Plans and Narratives over the last 16 years in Lehigh, Northampton, Bucks, Berks, Monroe, Lackawanna and Luzerne Counties. Mr. Ott graduated from Drexel University with a Bachelor of Science in Civil Engineering in June 1989 and immediately began his employment in the Land Development industry. Over the years, Mr. Ott has attended numerous training seminars offered by the local County Conservation Districts. The following is a recent list of projects which required E&SPC Plans and Narratives, which were prepared by Mr. Ott:

Ravena Street Subdivision – Townhouse Development, Bethlehem, PA
PPL Interstate Pipeline Facility, Lower Mt. Bethel Township, PA
The Carriages at Jordan Creek, Allentown, PA
Panther Valley Middle School, Summit Hill, PA
Lots 4, 5 & 6 – Stabler Center, Upper Saucon Township, PA
Ravena Street Townhouses, Bethlehem, PA
Mountain Glen at Saucon Valley, Upper Saucon Township, PA
CVS in Bangor, PA
CVS in Wind Gap, PA
CVS in East Stroudsburg, PA
CVS in Reading, PA
CVS in Upper Nazareth, PA
CVS in Wilkes-Barre, PA
The Plaza at PPL Center, Allentown, PA
PPL Parking Structure, Allentown, PA
The Palmer Town Center, Palmer Township, PA
PPL Maintenance Building, West Rockhill Township, PA
Kutztown Rod & Gun Club, Kutztown, PA
Legacy Place, Salisbury Township, PA
Apartments in the Parkway, City of Allentown, PA
HMB Hotel and Banquet Center, Upper Saucon Township, PA
Transitional Care Facility, Upper Saucon Township, PA

Mr. Ott is employed as President and Principal Engineer by:

Ott Consulting Inc.
Lehigh Valley Office
P.O. Box 386
Emmaus, PA 18049
610-928-4690

b. Location Map


MILFORD ROAD
N
SITE
FRANKLIN HILL ROAD
POOLE ROAD
3 POINT GARDEN ROAD
SPRING LAKE DRIVE
BRINLEIGH DRIVE
E BROAD STREET
INDEPENDANCE ROAD
FRANKLIN HILL ROAD

Map Scale: 1:2,570 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Monroe County, Pennsylvania
Survey Area Data: Version 17, Sep 6, 2022

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

Date(s) aerial images were photographed: May 21, 2022—Jul 20, 2022

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BeB	Benson-Rock outcrop complex, 0 to 8 percent slopes	D	13.3	67.9%
BeC	Benson-Rock outcrop complex, 8 to 25 percent slopes	D	1.4	7.1%
CnB	Chippewa and Norwich soils, 0 to 8 percent slopes, extremely stony	D	0.0	0.1%
MbB	Mardin very stony silt loam, 0 to 8 percent slopes	D	4.9	24.9%
Totals for Area of Interest			**19.6**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

c. Water Quality Worksheets

WORKSHEET 4. CHANGE IN RUNOFF VOLUME FOR 2-YR STORM EVENT

PROJECT: 3 Point Garden Road
Drainage Area: 5.06
2-Year Rainfall: 3.32 in.* * From NOAA

LOD (SF)= 361585.5

Total Site Area: 10.5 acres
Protected Site Area: 5.73 acres
Managed Area: 4.78 acres

Existing Conditions:

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)
Woodland	D	219,624	5.04	77	2.99	0.60	1.30	23760.65
Meadow	D	0		78				
Impervious	D	934	0.02	98	0.20	0.04	3.09	240.22
Impervious as Meadow	D	0		78				
Impervious (Utility Area)	D	0		98				
TOTAL:		220,557	5.06	77.1				24,001

Developed Conditions:

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)
Woodland	D	0		77				
Lawn	D	171,244	3.93	80	2.50	0.50	1.49	21331.45
Impervious	D	49,366	1.13	98	0.20	0.04	3.09	12699.64
Impervious (Utility Area)	D	0		98				
TOTAL:		220,610	5.06					34,031

2-Year Volume Increase (ft^3): 10,030

2-Year Volume Increase = Developed Conditions Runoff Volume - Existing Conditions Runoff Volume

1. Runoff (in) = $Q = (P - 0.2S)^2 / (P + 0.8S)$ where

P = 2-Year Rainfall (in)

S = (1000/CN)-10

** Actual Impervious 0.XX acres. 20% considered meadow as per PA DEP manual.

2. Runoff Volume (CF) = Q x Area x 1/12

Q = Runoff (in)

Area = Land use area (sq. ft)

Note: Runoff Volume must be calculated for EACH land use type/condition and HSGI.
The use of a weighted CN value for volume calculations is not acceptable.

WORKSHEET 4. CHANGE IN RUNOFF VOLUME FOR 2-YR STORM EVENT

PROJECT: 3 Point Garden Road
Drainage Area: 2.33
2-Year Rainfall: 3.32 in.* * From NOAA

LOD (SF)= 361585.5

Total Site Area: 10.5 acres
Protected Site Area: 5.73 acres POI 1
Managed Area: 4.78 acres

Existing Conditions:

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)
Woodland	D	100,440	2.31	77	2.99	0.60	1.30	10866.45
Meadow	D	0		78				
Impervious	D	934	0.02	98	0.20	0.04	3.09	240.22
Impervious as Meadow	D	0		78				
Impervious (Utility Area)	D	0		98				
TOTAL:		101,374	2.33	77.19				11,107

Developed Conditions:

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)
Woodland	D	0		77				
Lawn	D	77,390	1.78	80	2.50	0.50	1.49	9640.33
Impervious	D	25,299	0.58	98	0.20	0.04	3.09	6508.38
Impervious (Utility Area)	D	0		98				
TOTAL:		102,690	2.36					16,149

2-Year Volume Increase (ft^3): 5,042

2-Year Volume Increase = Developed Conditions Runoff Volume - Existing Conditions Runoff Volume

1. Runoff (in) = $Q = (P - 0.2S)^2 / (P + 0.8S)$ where

P = 2-Year Rainfall (in)

S = (1000/CN)-10

** Actual Impervious 0.XX acres. 20% considered meadow as per PA DEP manual.

2. Runoff Volume (CF) = Q x Area x 1/12

Q = Runoff (in)

Area = Land use area (sq. ft)

Note: Runoff Volume must be calculated for EACH land use type/condition and HSGI. The use of a weighted CN value for volume calculations is not acceptable.

WORKSHEET 4. CHANGE IN RUNOFF VOLUME FOR 2-YR STORM EVENT

PROJECT: 3 Point Garden Road
Drainage Area: 1.89 LOD (SF)= 361585.5
2-Year Rainfall: 3.32 in.* * From NOAA

Total Site Area: 10.5 acres
Protected Site Area: 5.73 acres POI 2
Managed Area: 4.78 acres

Existing Conditions:

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)
Woodland	D	82,272	1.89	77	2.99	0.60	1.30	8900.87
Meadow	D	0		78				
Impervious	D			98				
Impervious as Meadow	D	0		78				
Impervious (Utility Area)	D	0		98				
TOTAL:		82,272	1.89					8,901

Developed Conditions:

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)
Woodland	D	0		77				
Lawn	D	64,467	1.48	80	2.50	0.50	1.49	8030.45
Impervious	D	14,866	0.34	98	0.20	0.04	3.09	3824.23
Impervious (Utility Area)	D	0		98				
TOTAL:		79,332	1.82					11,855

2-Year Volume Increase (ft^3): 2,954

2-Year Volume Increase = Developed Conditions Runoff Volume - Existing Conditions Runoff Volume

1. Runoff (in) = $Q = (P - 0.2S)^2 / (P + 0.8S)$ where

P = 2-Year Rainfall (in)

S = (1000/CN)-10

** Actual Impervious 0.XX acres. 20% considered meadow as per PA DEP manual.

2. Runoff Volume (CF) = Q x Area x 1/12

Q = Runoff (in)

Area = Land use area (sq. ft)

Note: Runoff Volume must be calculated for EACH land use type/condition and HSGI.
The use of a weighted CN value for volume calculations is not acceptable.

WORKSHEET 4. CHANGE IN RUNOFF VOLUME FOR 2-YR STORM EVENT

PROJECT: 3 Point Garden Road
Drainage Area: 0.85
2-Year Rainfall: 3.32 in.* * From NOAA

LOD (SF)= 361585.5

Total Site Area: 10.5 acres
Protected Site Area: 5.73 acres POI 3
Managed Area: 4.78 acres

Existing Conditions:

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)
Woodland	D	36,911	0.85	77	2.99	0.60	1.30	3993.33
Meadow	D	0		78				
Impervious	D			98				
Impervious as Meadow	D	0		78				
Impervious (Utility Area)	D	0		98				
TOTAL:		36,911	0.85					3,993

Developed Conditions:

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)
Woodland	D	0		77				
Lawn	D	29,387	0.67	80	2.50	0.50	1.49	3660.67
Impervious	D	9,201	0.21	98	0.20	0.04	3.09	2367.03
Impervious (Utility Area)	D	0		98				
TOTAL:		38,588	0.89					6,028

2-Year Volume Increase (ft^3): 2,034

2-Year Volume Increase = Developed Conditions Runoff Volume - Existing Conditions Runoff Volume

1. Runoff (in) = $Q = (P - 0.2S)^2 / (P + 0.8S)$ where

P = 2-Year Rainfall (in)

S = (1000/CN)-10

** Actual Impervious 0.XX acres. 20% considered meadow as per PA DEP manual.

2. Runoff Volume (CF) = Q x Area x 1/12

Q = Runoff (in)

Area = Land use area (sq. ft)

Note: Runoff Volume must be calculated for EACH land use type/condition and HSGI.
The use of a weighted CN value for volume calculations is not acceptable.

d. Rain Garden Summary

Supporting Calculations for WORKSHEET 5 (5a)

PROJECT: 3 Pt Garden Subdivision

BMP 6.4.5 - Rain Garden Design Data

Rain Garden Number	Tested Infiltration Rate (in./hr.)	Safety Factor	Design Infilitration Rate (in./hr.)	6 Hour Infiltrated Volume[1] (ft^3)	Planting Soil Void Volume[2] (ft^3)	Above Ground Storage Volume (ft^3)	Total Storage Volume (ft^3)	Runoff Volume[3] (ft^3)	Ponded Water Depth (ft)	Total Tributary Area (ft^2)	Impervious (ft^2)	Bottom Area (ft^2)	Top of Berm Area (ft^2)	Top of Berm Elevation	Spillway Crest Elevation	Bottom of Planting Soil Elevation	Load Ratio Imperv.	Load Ratio Total	Actual Draw Down Time (hours)
1	***1.00***	2.0	0.50	458	549	2107	2656	2805	1.80	35836	3960	1831	3655	644	643.50	641.5	2.2	19.6	43.2
2	***1.00***	2.0	0.50	602	722	2870	3592	3381	0.80	32039	5582	2408	5458	638	637.0	635.5	2.3	13.3	19.2
3	***1.00***	2.0	0.50	389	467	1848	2315	3619	0.80	24356	5672	1557	5450	632	631.5	629.5	3.6	15.6	19.2
4	***1.00***	2.0	0.50	515	618	2406	3024	3372	0.80	21715	5493	2061	4300	625	624.5	622.5	2.7	10.5	19.2
5	***1.00***	2.0	0.50	263	315	1292	1607	2445	1.80	16010	5493	1050	2076	635	634.75	632.5	***5.2***	15.2	43.2
6	***1.00***	2.0	0.50	1309	1571	5656	7226	7001	0.80	94705	7194	5236	8932	630	629.5	627.5	1.4	18.1	19.2
7	***1.00***	2.0	0.50	178	214	1036	1249	4090	0.80	39712	7776	713	3667	633	632.75	630.5	***10.9***	55.7	19.2

NOTES: Infiltration test results shown in ***bold italics*** were performed 9/6/14 to 9/10/14 by Lehigh Soils and Wetlands.

1. Infiltrated volume for 6 hour period during storm event. (Infiltration Rate/12) x Bottom Area x 6 hours
2. Planting soil volume based on 20% voids, 18" depth over the bottom area. Bottom Area x 1.5 ft x 0.20
3. Runoff Volumes based on tributary areas to BMP. See WORKSHEET 5b(s) attached. Volume credit taken for runoff volumes only.

e. Emergency Spillway Calculations

3 Point Garden Road

Emergency Spillway Design

Date: 3 Point Garden Road
By:
Revised:
By:

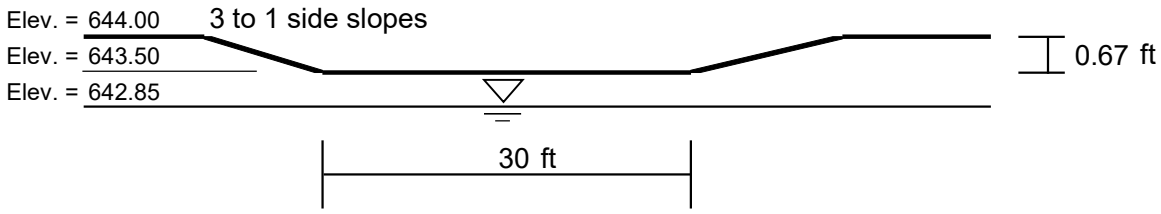
Basin RG 001

$Q = CLH^{3/2}$

25 YR. HWE =	642.56	100 YR. HWE =	642.85
1' freeboard Req. =	643.56	0.5' freeboard Req. =	643.35

Crest Length =	30	ft	
Q =	6.137	cfs	Peak Q100 inflow to basin
C =	2.8		(per PADEP)
H =	0.17	ft	
Total height =	0.67	ft	

MIN. SPILLWAY EL. =	643.35	PROP. SPILLWAY EL. =	643.50
MIN. BERM EL. =	644.02	PROP. BERM EL. =	644.00



* A minimum of one foot above the design elevation of the water surface to the invert of emergency spillway shall be provided. A minimum of six inches shall also be provided above the design elevation of the emergency spillway to allow for settlement of the embankment.

3 Point Garden Road

Emergency Spillway Design

Date: 3 Point Garden Road
By:
Revised:
By:

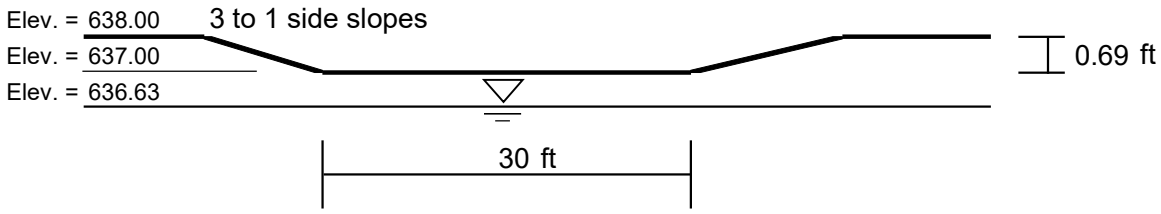
Basin RG 002

$Q = CLH^{3/2}$

25 YR. HWE =	636.33	100 YR. HWE =	636.63
1' freeboard Req. =	637.33	0.5' freeboard Req. =	637.13

Crest Length =	30	ft	
Q =	7.229	cfs	Peak Q100 inflow to basin
C =	2.8		(per PADEP)
H =	0.19	ft	
Total height =	0.69	ft	

MIN. SPILLWAY EL. =	637.13	PROP. SPILLWAY EL. =	637.00
MIN. BERM EL. =	637.82	PROP. BERM EL. =	638.00



* A minimum of one foot above the design elevation of the water surface to the invert of emergency spillway shall be provided. A minimum of six inches shall also be provided above the design elevation of the emergency spillway to allow for settlement of the embankment.

3 Point Garden Road

Emergency Spillway Design

Date: 3 Point Garden Road
By:
Revised:
By:

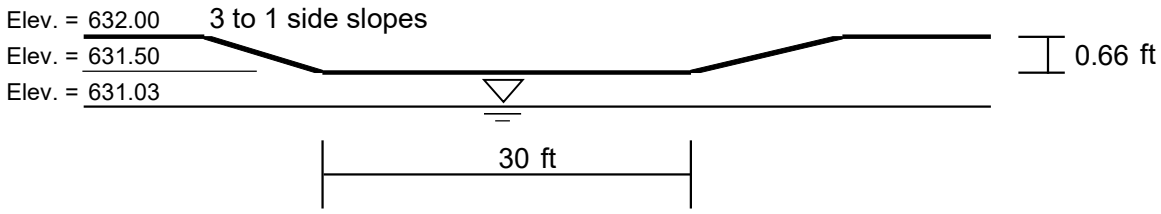
Basin RG 003

$Q = CLH^{3/2}$

25 YR. HWE =	630.73	100 YR. HWE =	631.03
1' freeboard Req. =	631.73	0.5' freeboard Req. =	631.53

Crest Length =	30	ft	
Q =	5.45	cfs	Peak Q100 inflow to basin
C =	2.8		(per PADEP)
H =	0.16	ft	
Total height =	0.66	ft	

MIN. SPILLWAY EL. =	631.53	PROP. SPILLWAY EL. =	631.50
MIN. BERM EL. =	632.19	PROP. BERM EL. =	632.00



* A minimum of one foot above the design elevation of the water surface to the invert of emergency spillway shall be provided. A minimum of six inches shall also be provided above the design elevation of the emergency spillway to allow for settlement of the embankment.

3 Point Garden Road

Emergency Spillway Design

Date: 3 Point Garden Road
By:
Revised:
By:

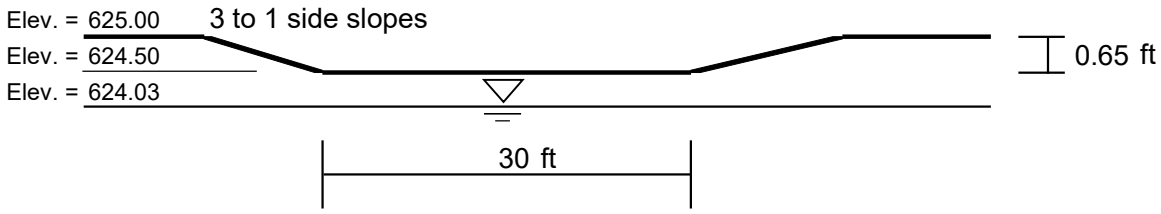
Basin RG 004

$Q = CLH^{3/2}$

25 YR. HWE =	623.48	100 YR. HWE =	624.03
1' freeboard Req. =	624.48	0.5' freeboard Req. =	624.53

Crest Length =	30	ft	
Q =	5.047	cfs	Peak Q100 inflow to basin
C =	2.8		(per PADEP)
H =	0.15	ft	
Total height =	0.65	ft	

MIN. SPILLWAY EL. =	624.53	PROP. SPILLWAY EL. =	624.50
MIN. BERM EL. =	625.18	PROP. BERM EL. =	625.00



* A minimum of one foot above the design elevation of the water surface to the invert of emergency spillway shall be provided. A minimum of six inches shall also be provided above the design elevation of the emergency spillway to allow for settlement of the embankment.

3 Point Garden Road

Emergency Spillway Design

Date: 3 Point Garden Road
By:
Revised:
By:

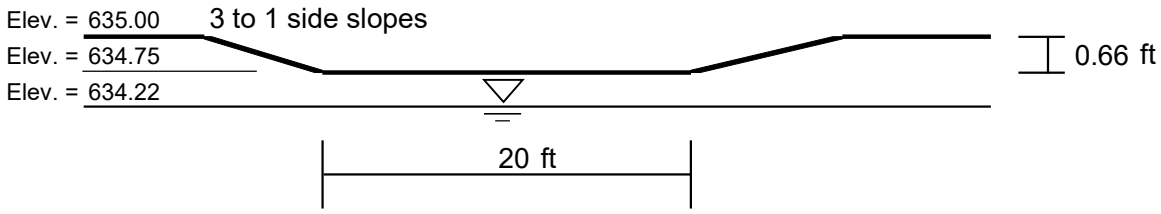
Basin RG 005

$Q = CLH^{3/2}$

25 YR. HWE =	634.11	100 YR. HWE =	634.22
1' freeboard Req. =	635.11	0.5' freeboard Req. =	634.72

Crest Length =	20	ft	
Q =	3.734	cfs	Peak Q100 inflow to basin
C =	2.8		(per PADEP)
H =	0.16	ft	
Total height =	0.66	ft	

MIN. SPILLWAY EL. =	634.72	PROP. SPILLWAY EL. =	634.75
MIN. BERM EL. =	635.38	PROP. BERM EL. =	635.00



* A minimum of one foot above the design elevation of the water surface to the invert of emergency spillway shall be provided. A minimum of six inches shall also be provided above the design elevation of the emergency spillway to allow for settlement of the embankment.

3 Point Garden Road

Emergency Spillway Design

Date: 3 Point Garden Road
By:
Revised:
By:

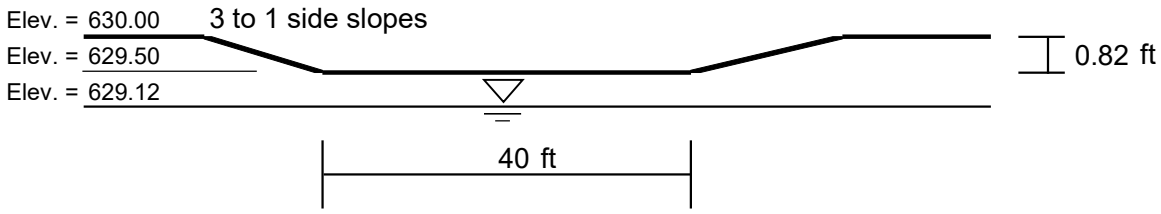
Basin RG 006

$Q = CLH^{3/2}$

25 YR. HWE =	628.38	100 YR. HWE =	629.12
1' freeboard Req. =	629.38	0.5' freeboard Req. =	629.62

Crest Length =	40	ft	
Q =	20.7	cfs	Peak Q100 inflow to basin
C =	2.8		(per PADEP)
H =	0.32	ft	
Total height =	0.82	ft	

MIN. SPILLWAY EL. =	629.62	PROP. SPILLWAY EL. =	629.50
MIN. BERM EL. =	630.44	PROP. BERM EL. =	630.00



* A minimum of one foot above the design elevation of the water surface to the invert of emergency spillway shall be provided. A minimum of six inches shall also be provided above the design elevation of the emergency spillway to allow for settlement of the embankment.

3 Point Garden Road

Emergency Spillway Design

Date: 3 Point Garden Road
By:
Revised:
By:

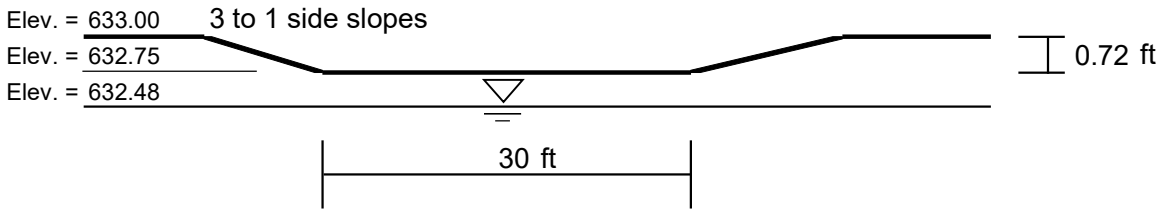
Basin RG 007

$Q = CLH^{3/2}$

25 YR. HWE =	631.98	100 YR. HWE =	632.48
1' freeboard Req. =	632.98	0.5' freeboard Req. =	632.98

Crest Length =	30	ft	
Q =	8.963	cfs	Peak Q100 inflow to basin
C =	2.8		(per PADEP)
H =	0.22	ft	
Total height =	0.72	ft	

MIN. SPILLWAY EL. =	632.98	PROP. SPILLWAY EL. =	632.75
MIN. BERM EL. =	633.70	PROP. BERM EL. =	633.00



* A minimum of one foot above the design elevation of the water surface to the invert of emergency spillway shall be provided. A minimum of six inches shall also be provided above the design elevation of the emergency spillway to allow for settlement of the embankment.

f. Recharge Volume Calculations

Recharge Volume Calculations Per POI (Section 225.1.A.(4))					
POI 1	EX. CN	Proposed Impervious (SF)			
	77.19	25,299			
P = I(infiltration)(in.) = (200/CN)-2			=	0.59	in.
ReV (c.f.) = [I (in.) * Imp. Area (s.f.)]/12			=	1246	CF
POI 2	EX. CN	Proposed Impervious (SF)			
	77	14,866			
P = I(infiltration)(in.) = (200/CN)-2			=	0.60	in.
ReV (c.f.) = [I (in.) * Imp. Area (s.f.)]/12			=	740	CF
POI 3	EX. CN	Proposed Impervious (SF)			
	77	9,201			
P = I(infiltration)(in.) = (200/CN)-2			=	0.60	in.
ReV (c.f.) = [I (in.) * Imp. Area (s.f.)]/12			=	458	CF

Total Recharge Volume	=	2444	CF
Net Volume From Dep Sheet	=	7907	CF