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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
Prepared by: Jeffrey L. Ott, P.E.
PA License No. 044775-E
LTSI 2301

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STORMWATER MANAGEMENT & PCSM REPORT

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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 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 two Points of Interest. Runoff from the site discharges overland to the west, which then drain to Spring Lake.

PEAK RATE

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

The post-development peak runoff rates from the project watersheds for the 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 and infiltration trenches.

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 and infiltration trenches.

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 and infiltration trenches.
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 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 two Points of Interest. Runoff from the site discharges overland to the west, which then drain to Spring Lake.

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 44,925 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 (ft³)
Predevelopment	22,543
Postdevelopment	31,917
2 yr Volume Increase	9,374

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 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 two Points of Interest. Runoff from the site discharges overland to the west, which then drain to Spring Lake.

5. PREDEVELOPMENT HYDROGRAPHS

Hydrograph Report

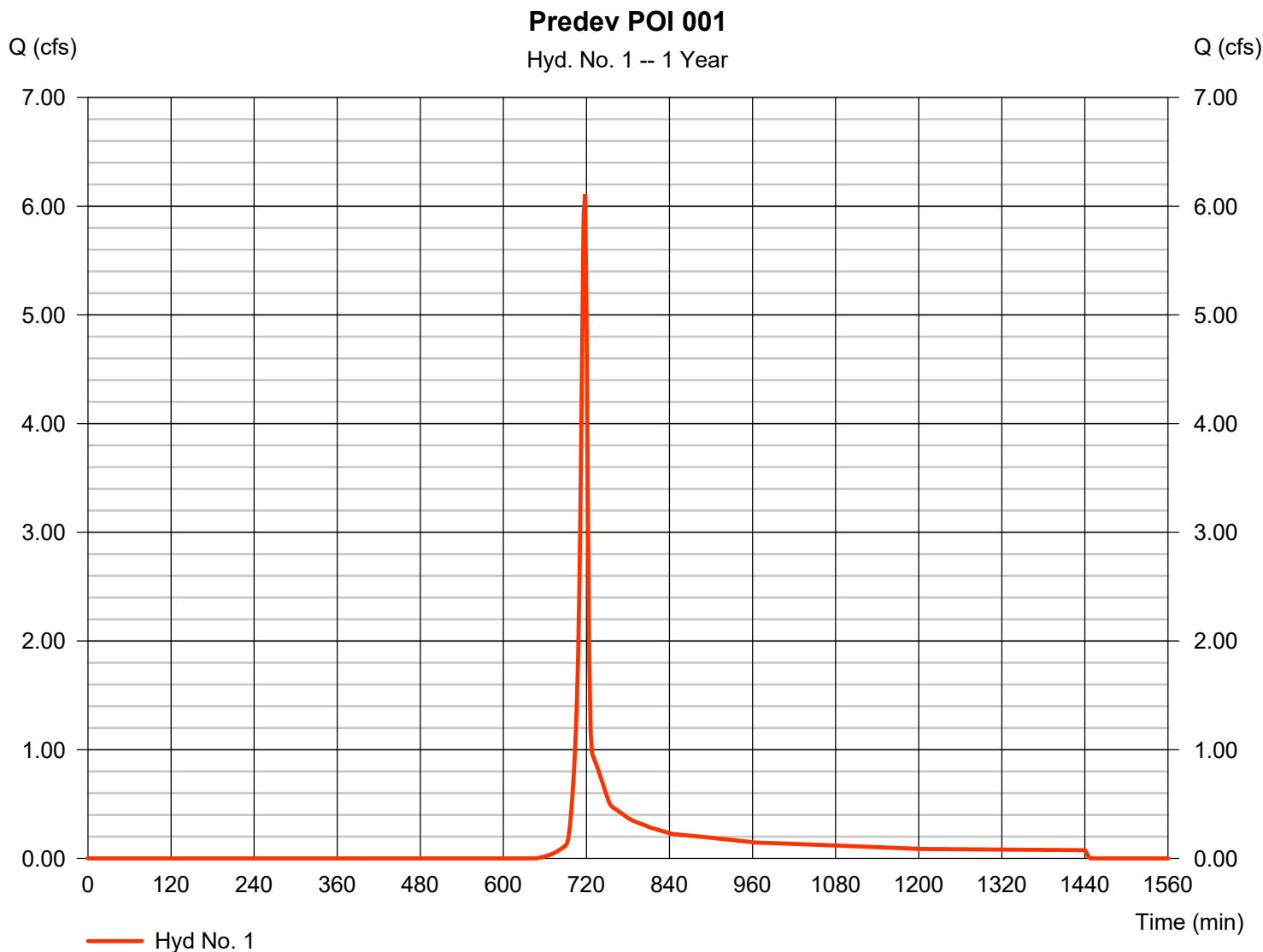
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

Friday, 06 / 28 / 2024

Hyd. No. 1

Predev POI 001

Hydrograph type	= SCS Runoff	Peak discharge	= 6.109 cfs
Storm frequency	= 1 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 12,239 cuft
Drainage area	= 3.960 ac	Curve number	= 77
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.76 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

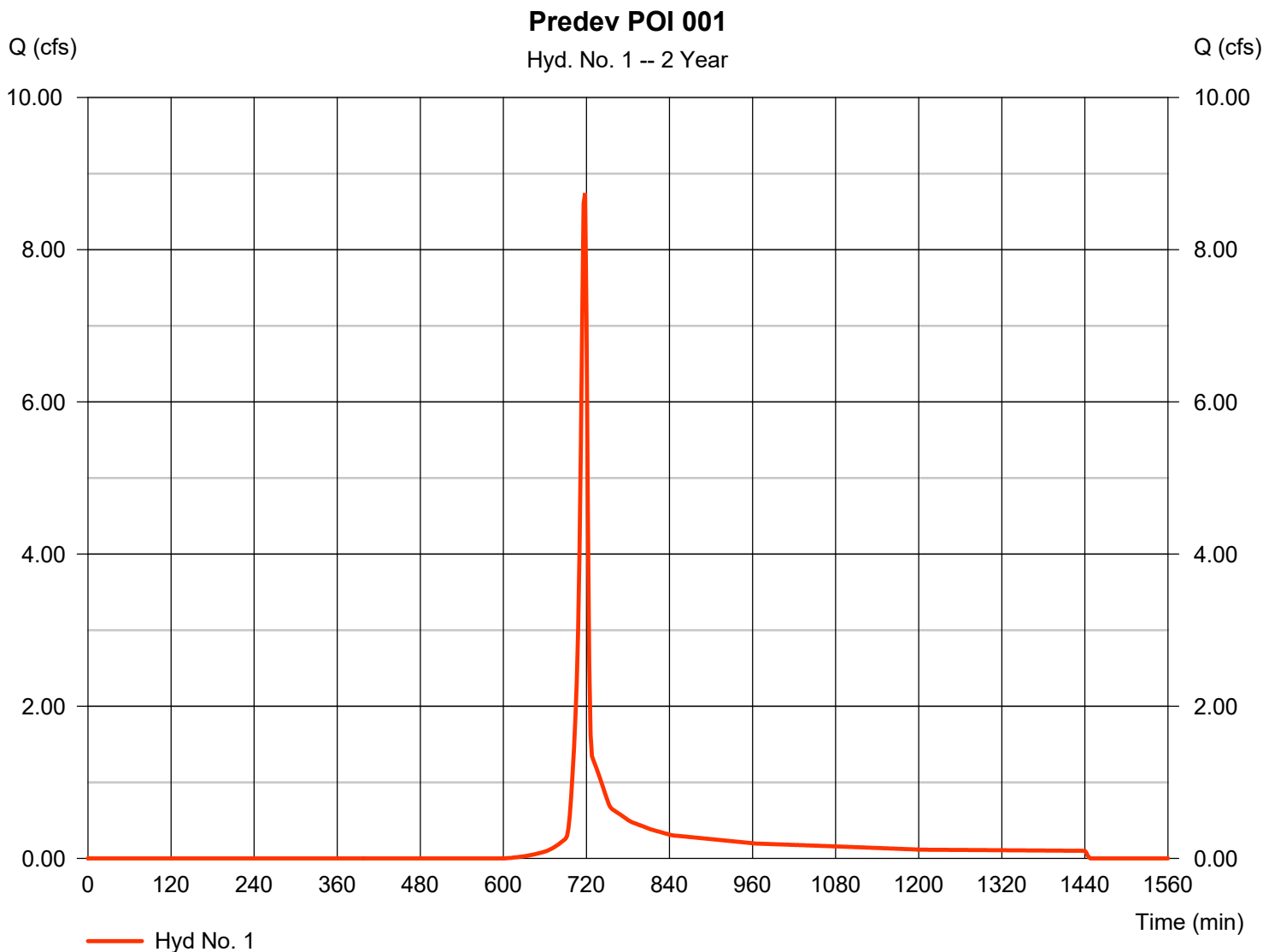
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

Friday, 06 / 28 / 2024

Hyd. No. 1

Predev POI 001

Hydrograph type	= SCS Runoff	Peak discharge	= 8.745 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 17,496 cuft
Drainage area	= 3.960 ac	Curve number	= 77
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

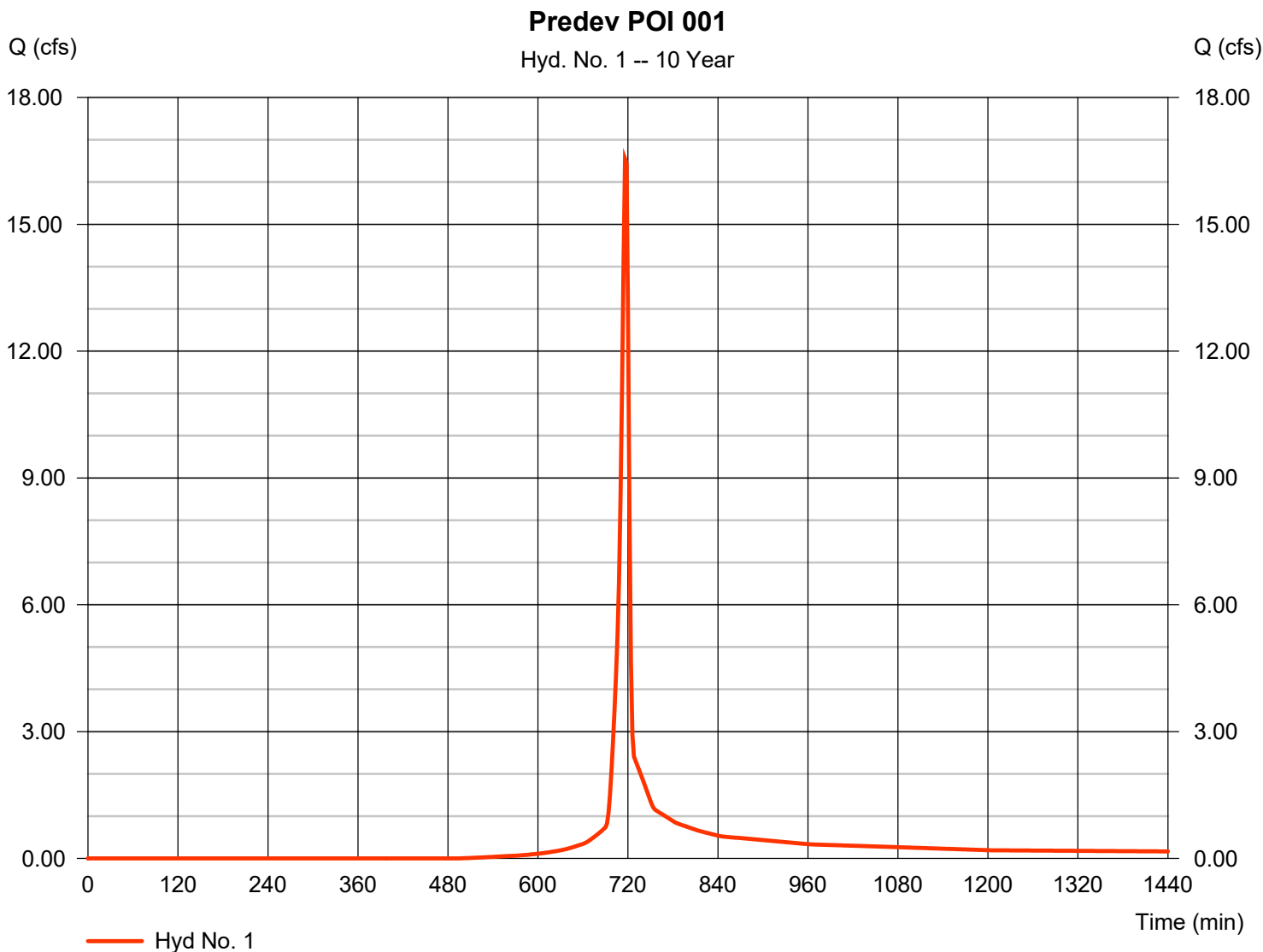
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

Friday, 06 / 28 / 2024

Hyd. No. 1

Predev POI 001

Hydrograph type	= SCS Runoff	Peak discharge	= 16.55 cfs
Storm frequency	= 10 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 33,441 cuft
Drainage area	= 3.960 ac	Curve number	= 77
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

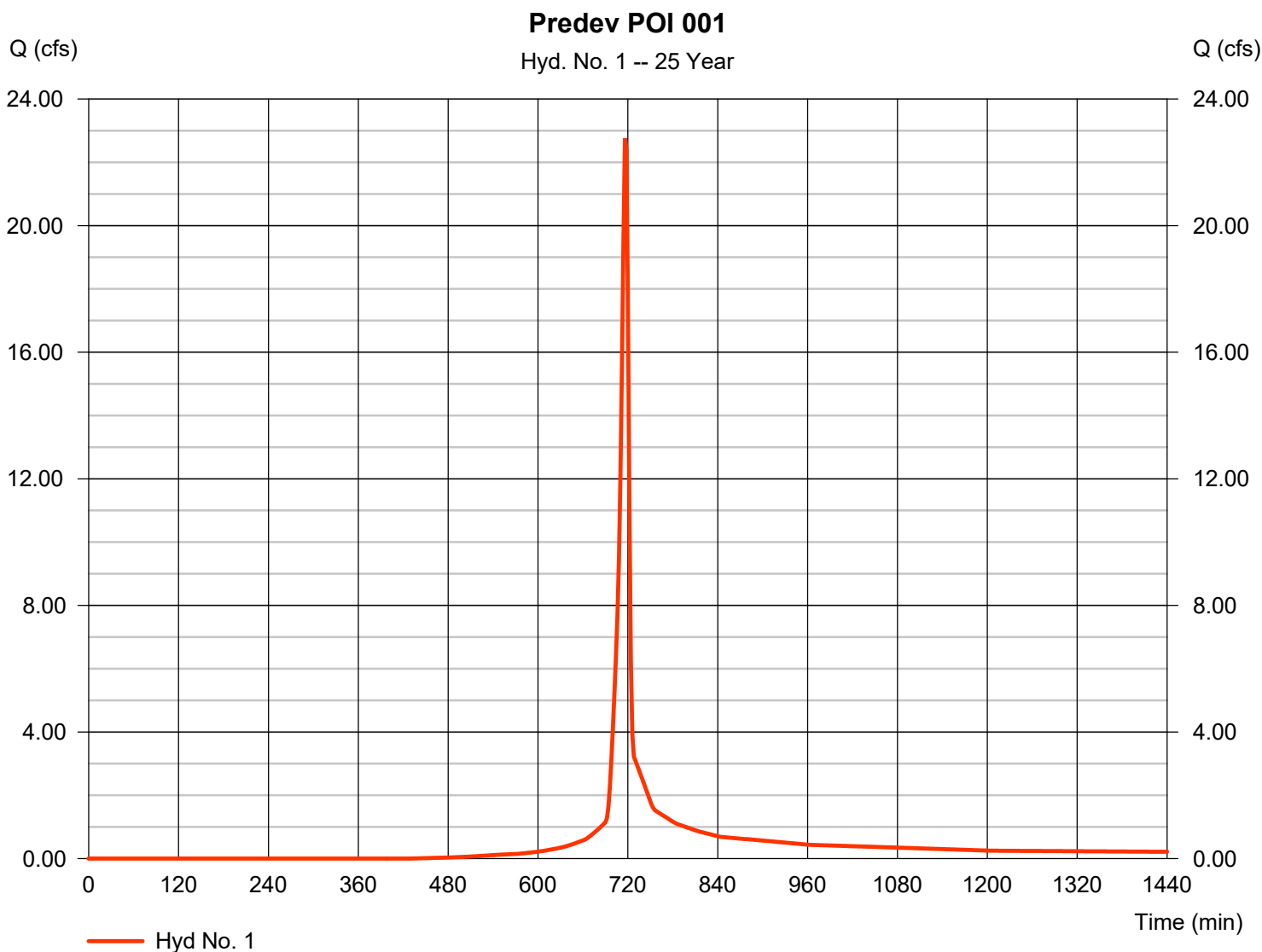
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

Friday, 06 / 28 / 2024

Hyd. No. 1

Predev POI 001

Hydrograph type	= SCS Runoff	Peak discharge	= 22.76 cfs
Storm frequency	= 25 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 46,297 cuft
Drainage area	= 3.960 ac	Curve number	= 77
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

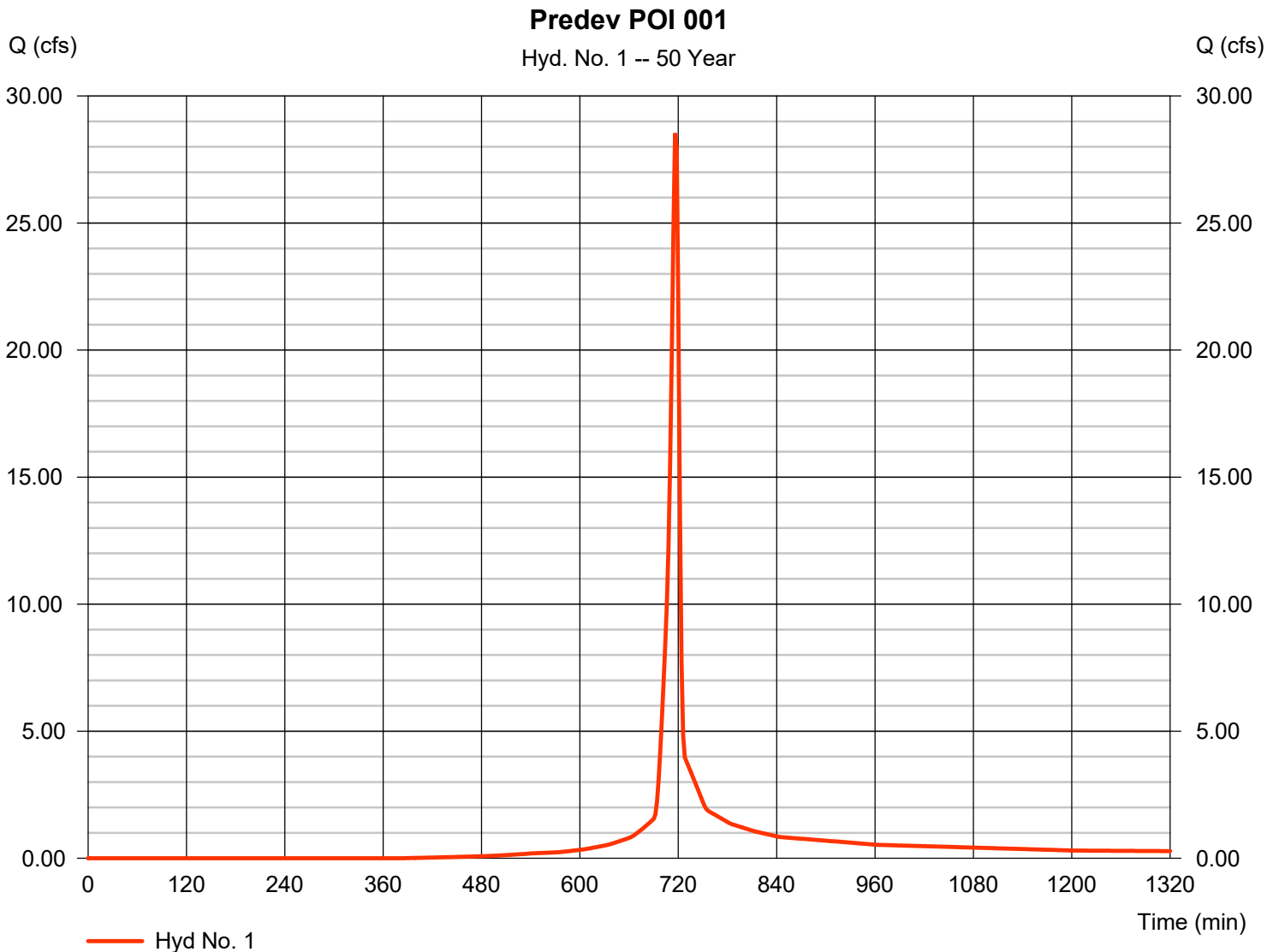
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Friday, 06 / 28 / 2024

Hyd. No. 1

Predev POI 001

Hydrograph type	= SCS Runoff	Peak discharge	= 28.53 cfs
Storm frequency	= 50 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 58,472 cuft
Drainage area	= 3.960 ac	Curve number	= 77
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.97 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

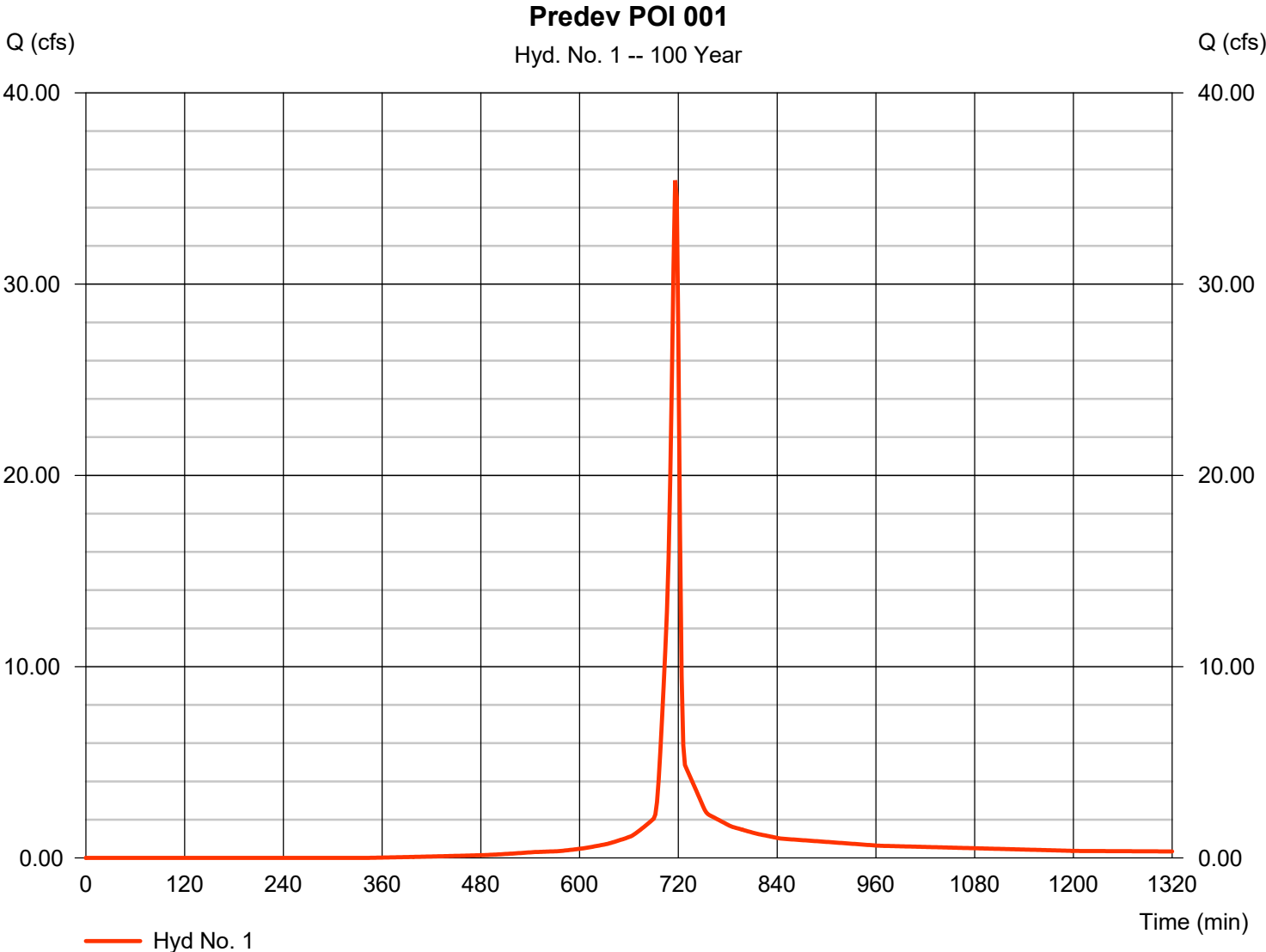


Hydrograph Report

Hyd. No. 1

Predev POI 001

Hydrograph type	= SCS Runoff	Peak discharge	= 35.43 cfs
Storm frequency	= 100 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 73,308 cuft
Drainage area	= 3.960 ac	Curve number	= 77
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 8.18 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

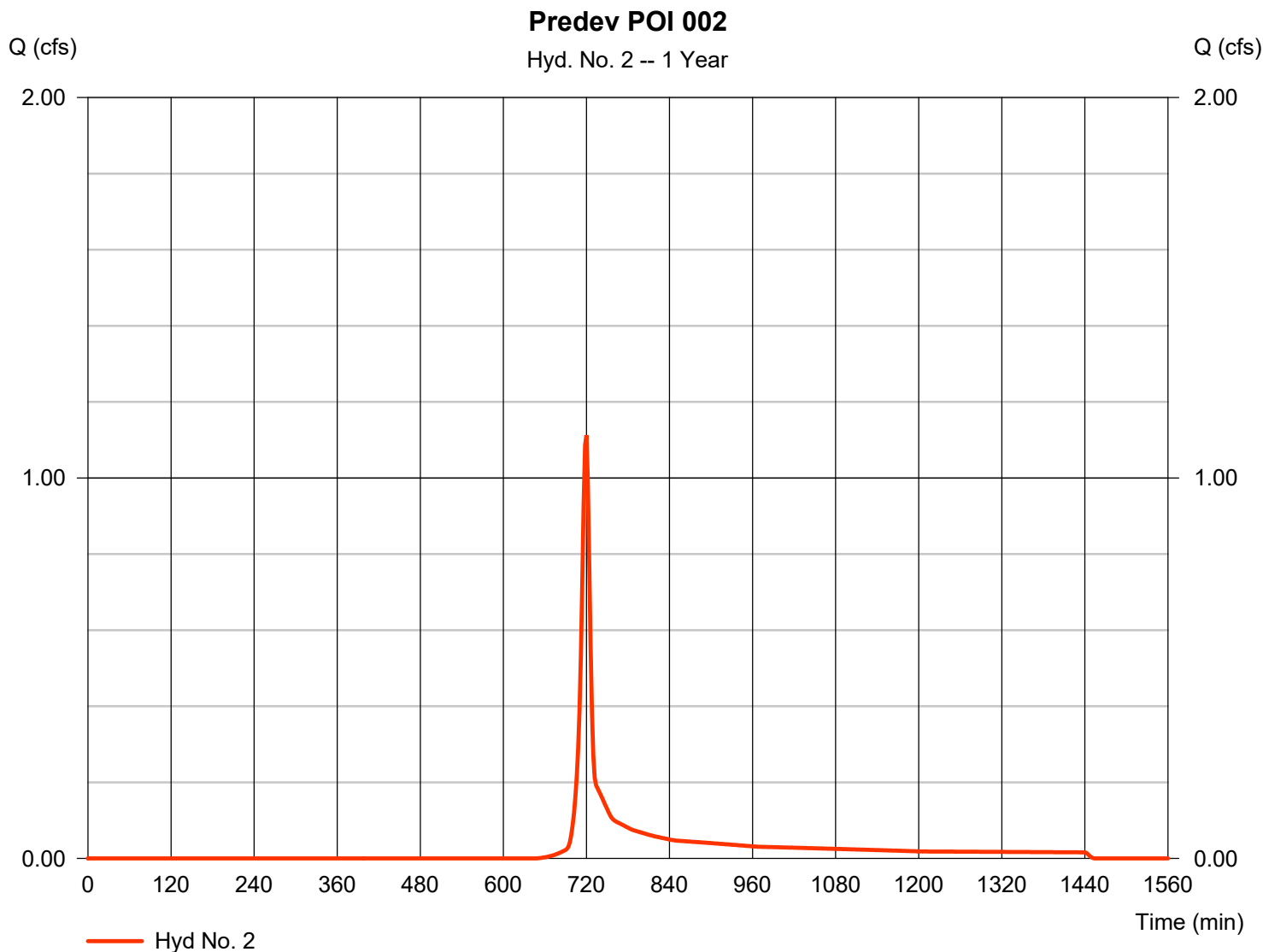


Hydrograph Report

Hyd. No. 2

Predev POI 002

Hydrograph type	= SCS Runoff	Peak discharge	= 1.112 cfs
Storm frequency	= 1 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 2,571 cuft
Drainage area	= 0.780 ac	Curve number	= 77
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 7.40 min
Total precip.	= 2.76 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

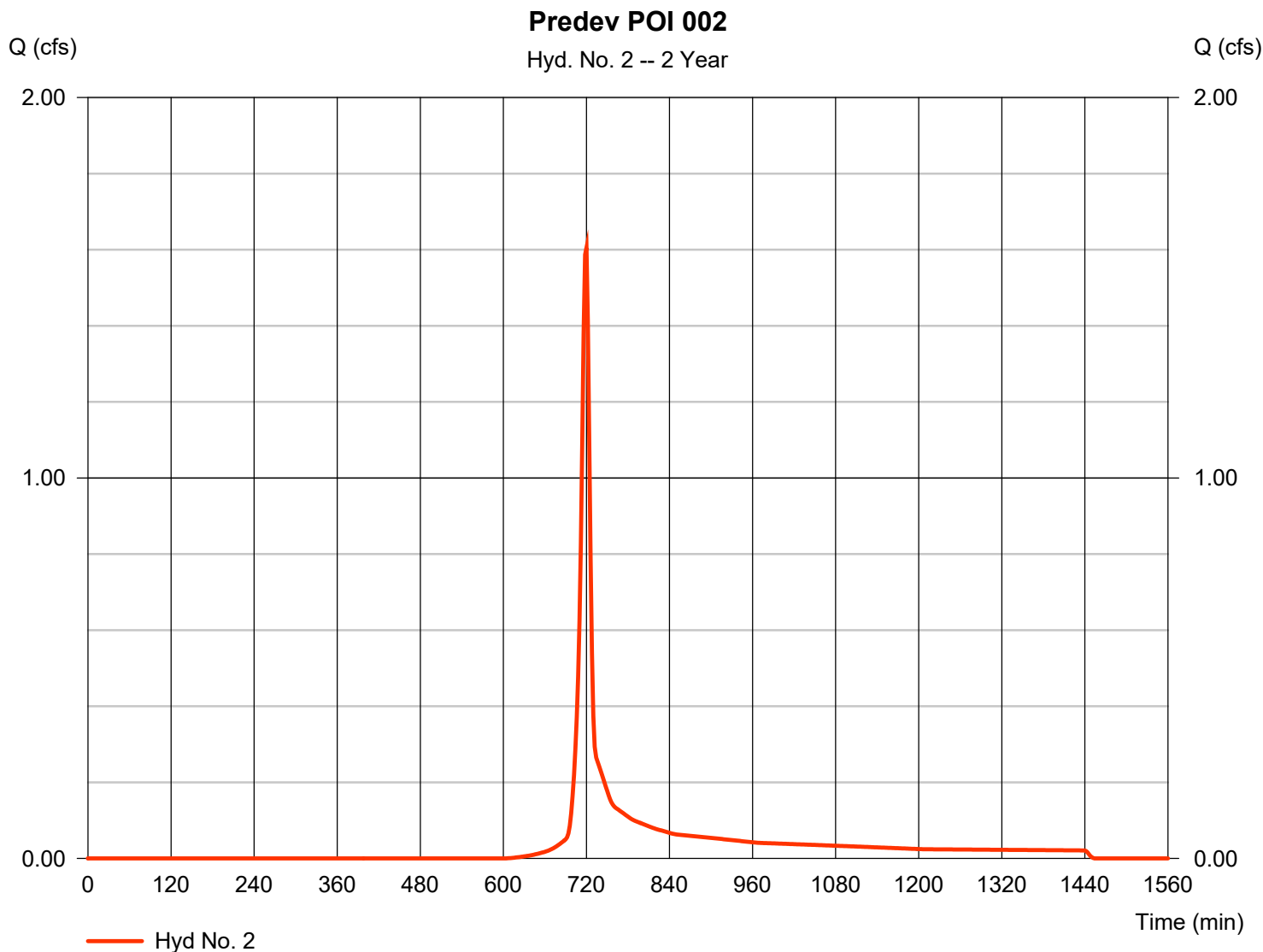


Hydrograph Report

Hyd. No. 2

Predev POI 002

Hydrograph type	= SCS Runoff	Peak discharge	= 1.605 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 3,676 cuft
Drainage area	= 0.780 ac	Curve number	= 77
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 7.40 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

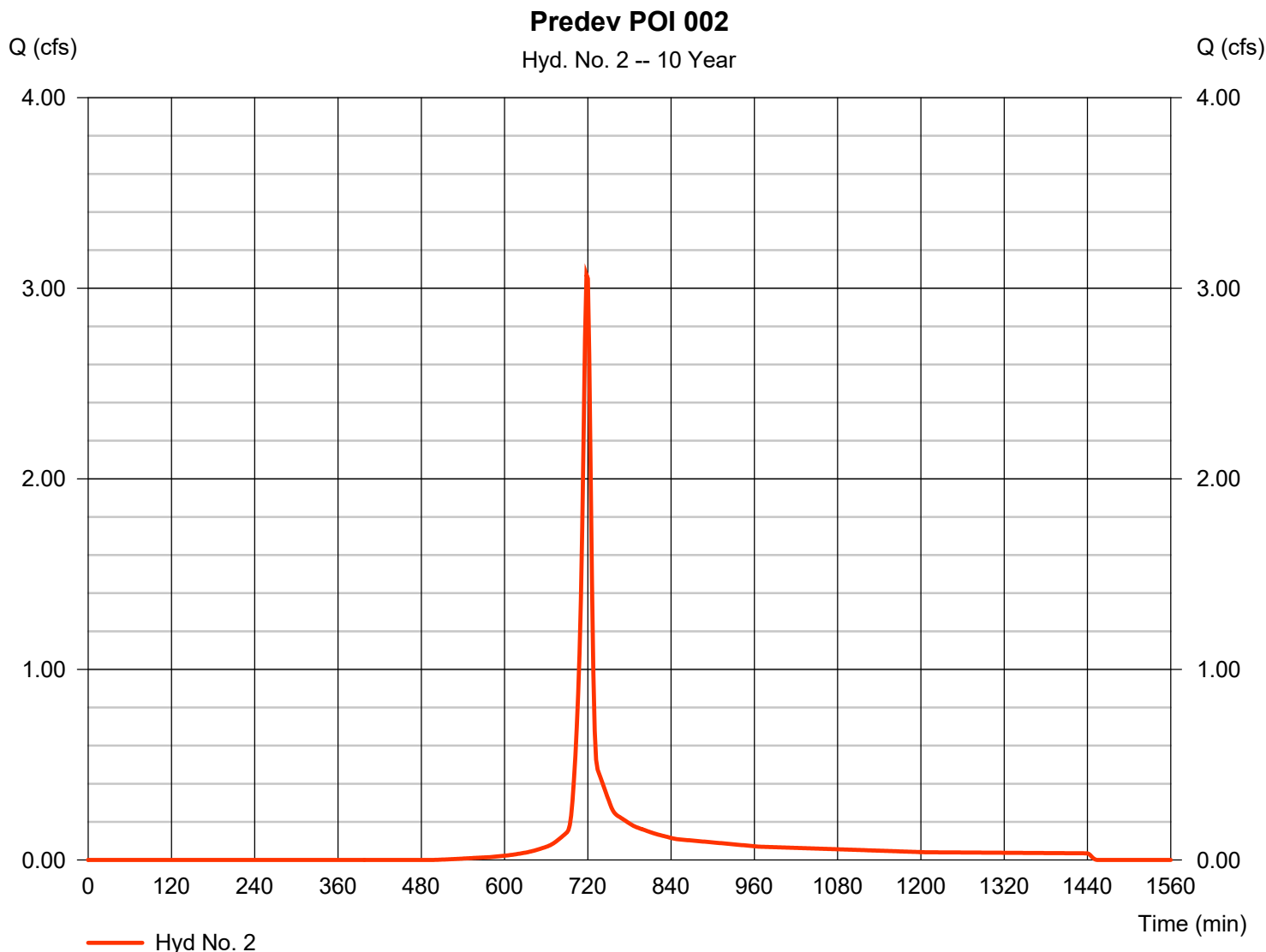
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Friday, 06 / 28 / 2024

Hyd. No. 2

Predev POI 002

Hydrograph type	= SCS Runoff	Peak discharge	= 3.071 cfs
Storm frequency	= 10 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 7,026 cuft
Drainage area	= 0.780 ac	Curve number	= 77
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 7.40 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

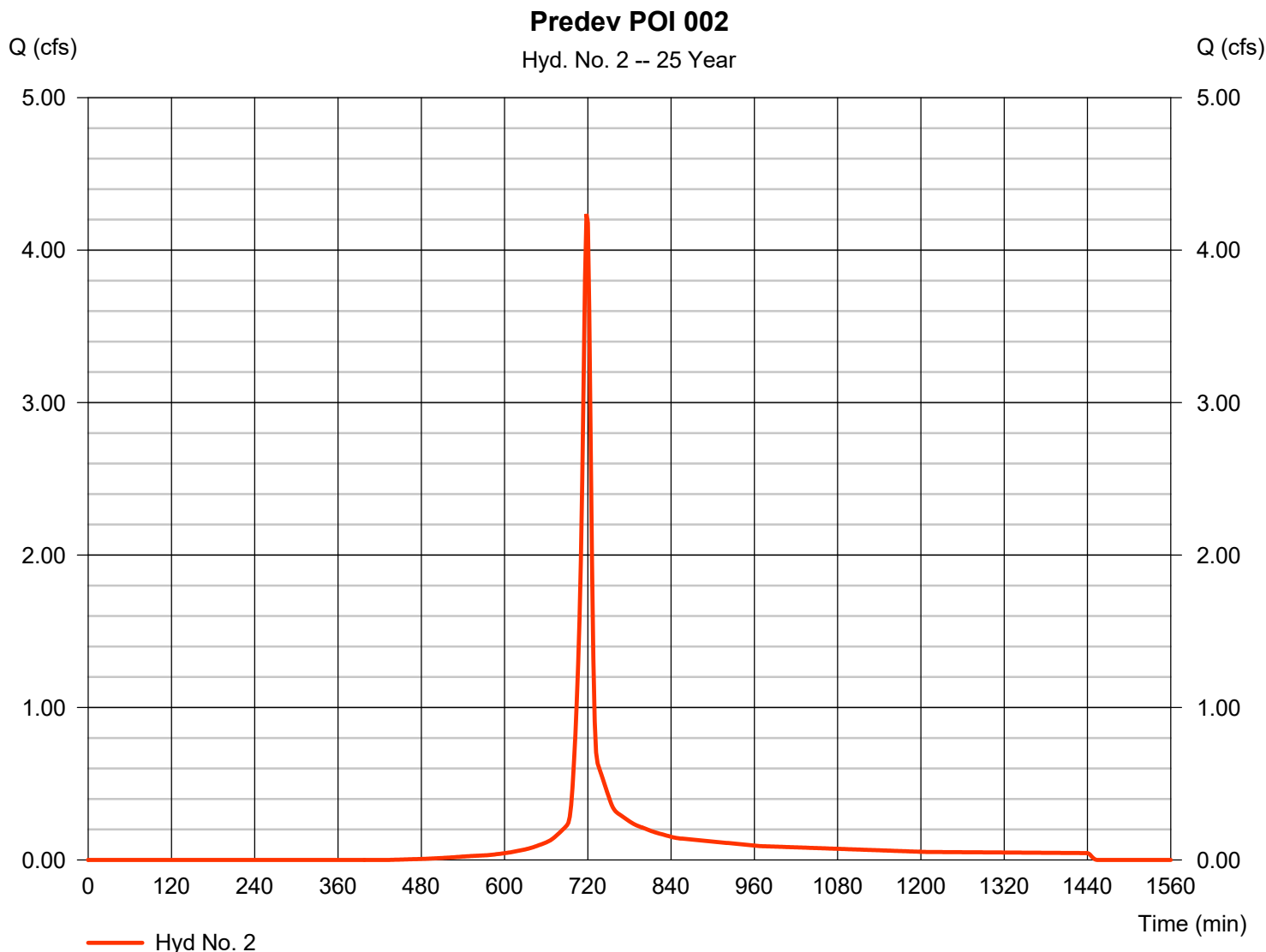
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

Friday, 06 / 28 / 2024

Hyd. No. 2

Predev POI 002

Hydrograph type	= SCS Runoff	Peak discharge	= 4.237 cfs
Storm frequency	= 25 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 9,727 cuft
Drainage area	= 0.780 ac	Curve number	= 77
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 7.40 min
Total precip.	= 5.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

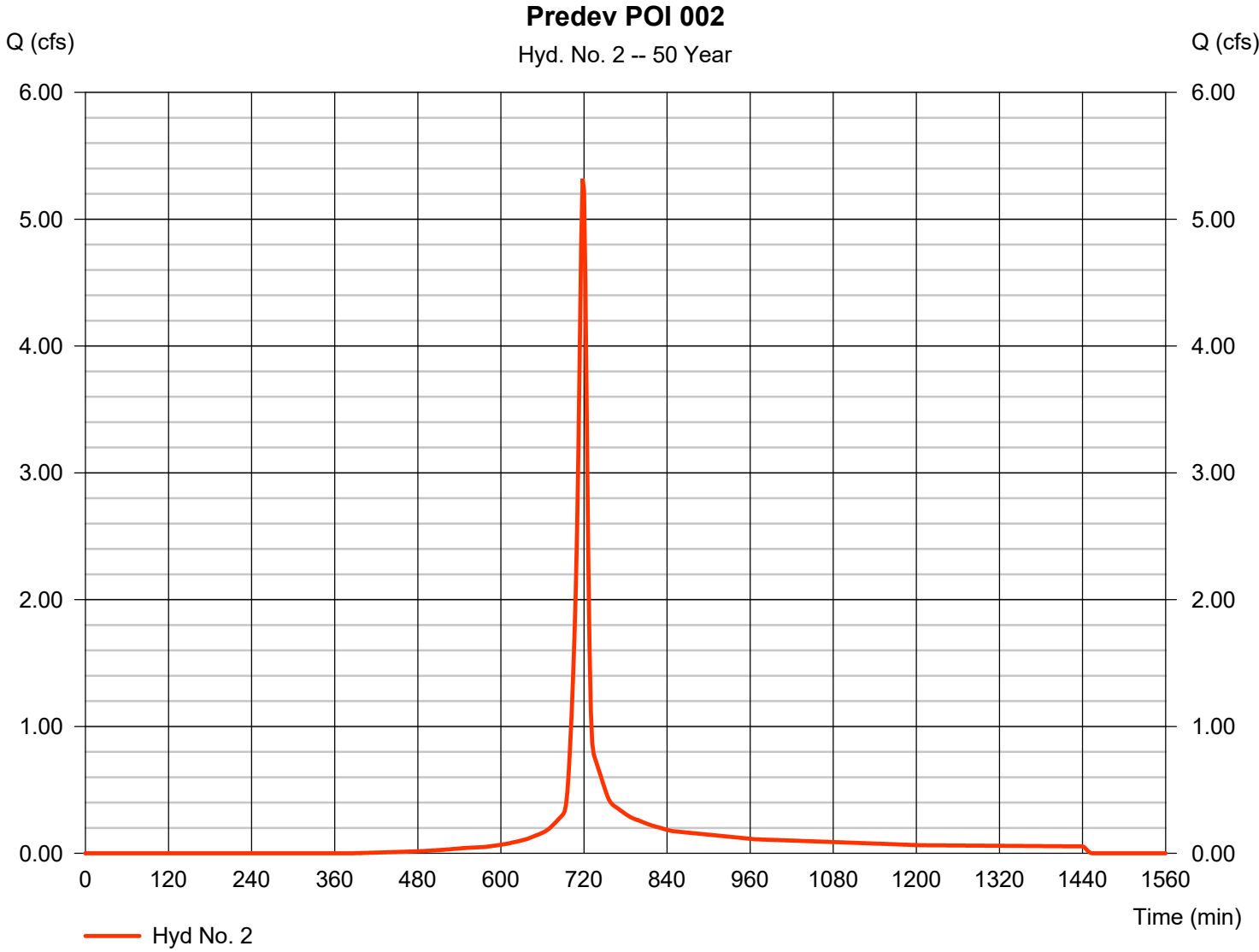
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Friday, 06 / 28 / 2024

Hyd. No. 2

Predev POI 002

Hydrograph type	= SCS Runoff	Peak discharge	= 5.320 cfs
Storm frequency	= 50 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 12,285 cuft
Drainage area	= 0.780 ac	Curve number	= 77
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 7.40 min
Total precip.	= 6.97 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

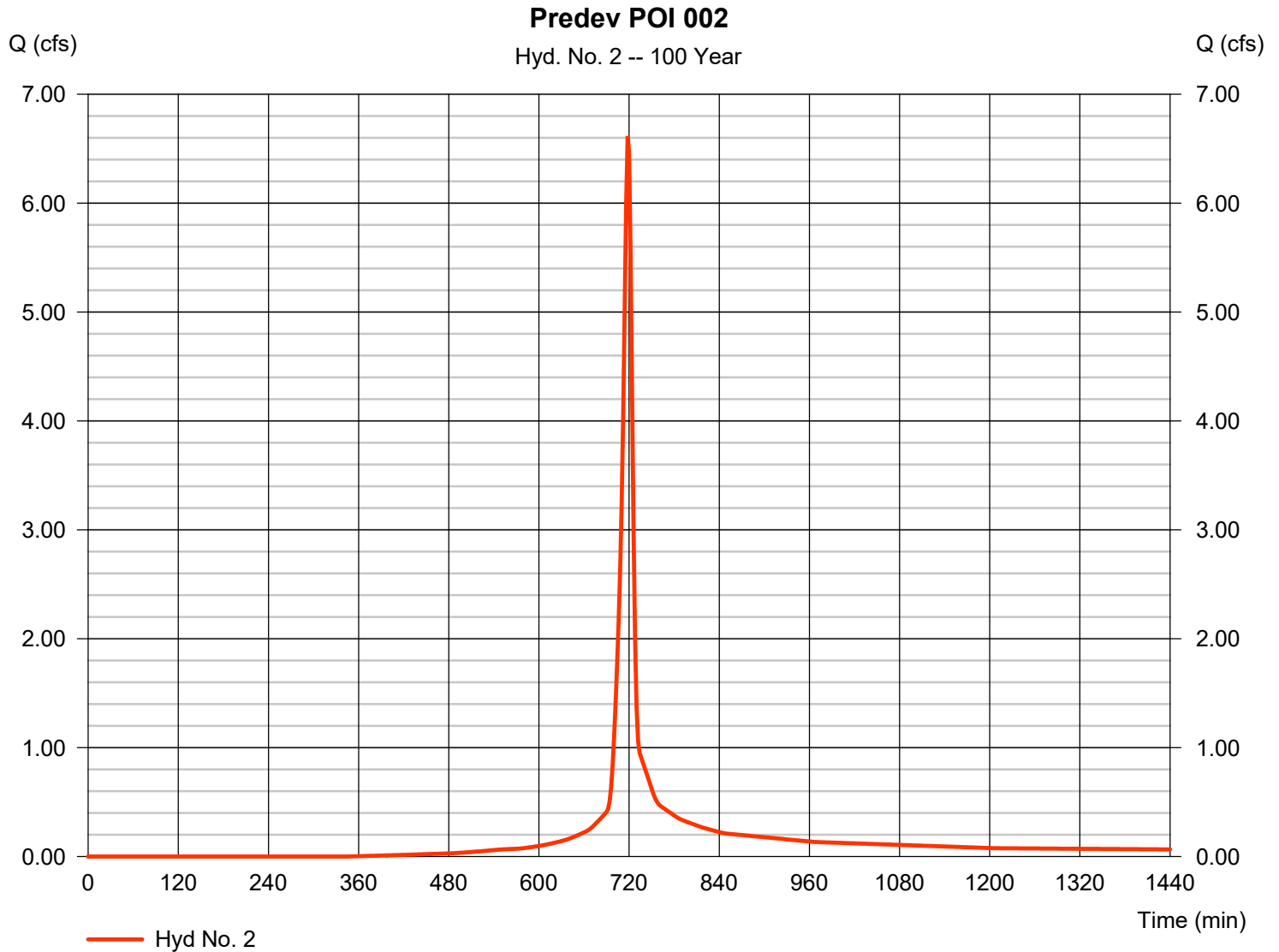
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Friday, 06 / 28 / 2024

Hyd. No. 2

Predev POI 002

Hydrograph type	= SCS Runoff	Peak discharge	= 6.617 cfs
Storm frequency	= 100 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 15,402 cuft
Drainage area	= 0.780 ac	Curve number	= 77
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 7.40 min
Total precip.	= 8.18 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



6. POSTDEVELOPMENT HYDROGRAPHS

Hydrograph Report

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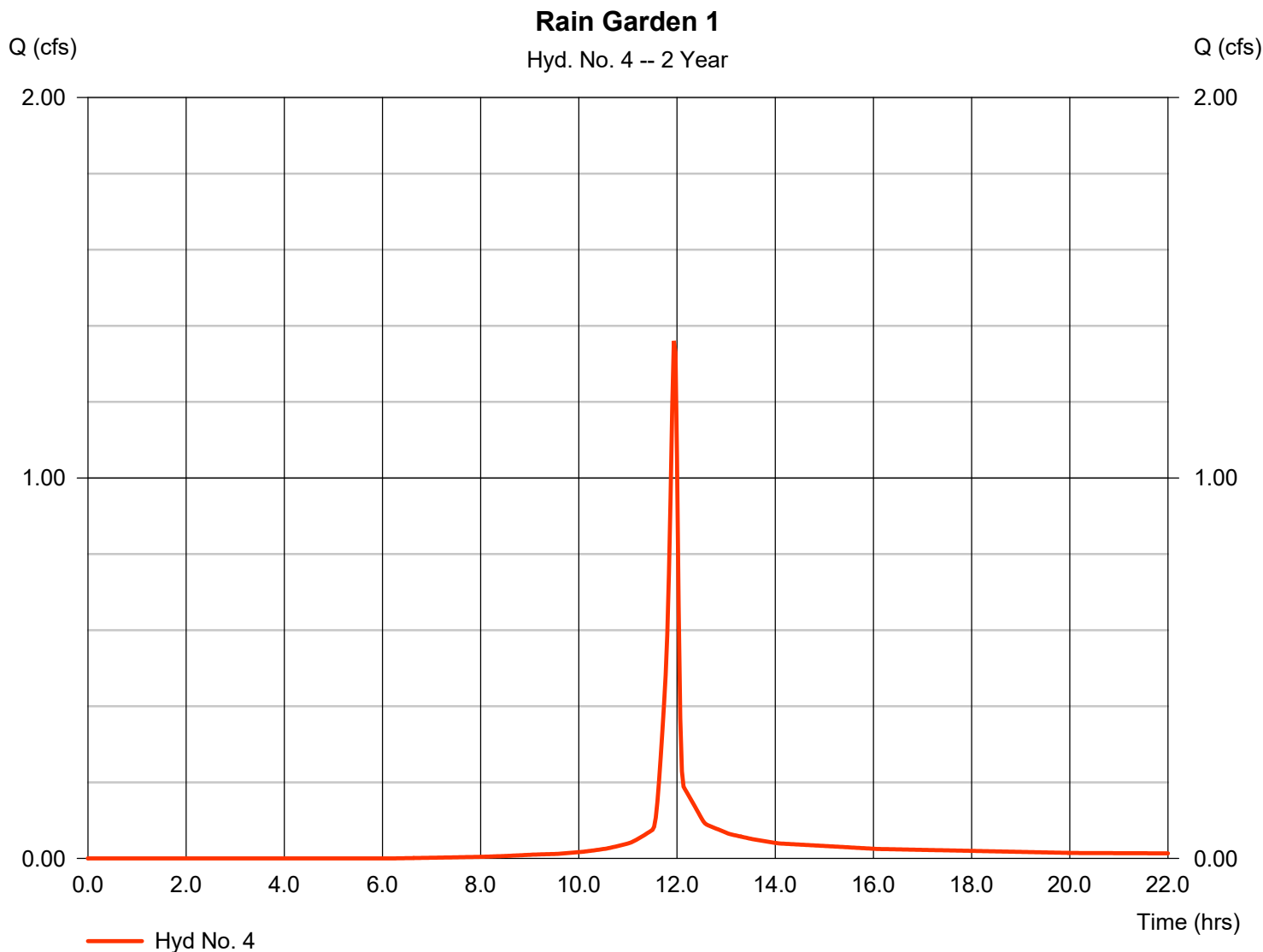
Friday, 06 / 28 / 2024

Hyd. No. 4

Rain Garden 1

Hydrograph type	= SCS Runoff	Peak discharge	= 1.360 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 2,794 cuft
Drainage area	= 0.390 ac	Curve number	= 88*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.210 x 80) + (0.180 x 98)] / 0.390



Hydrograph Report

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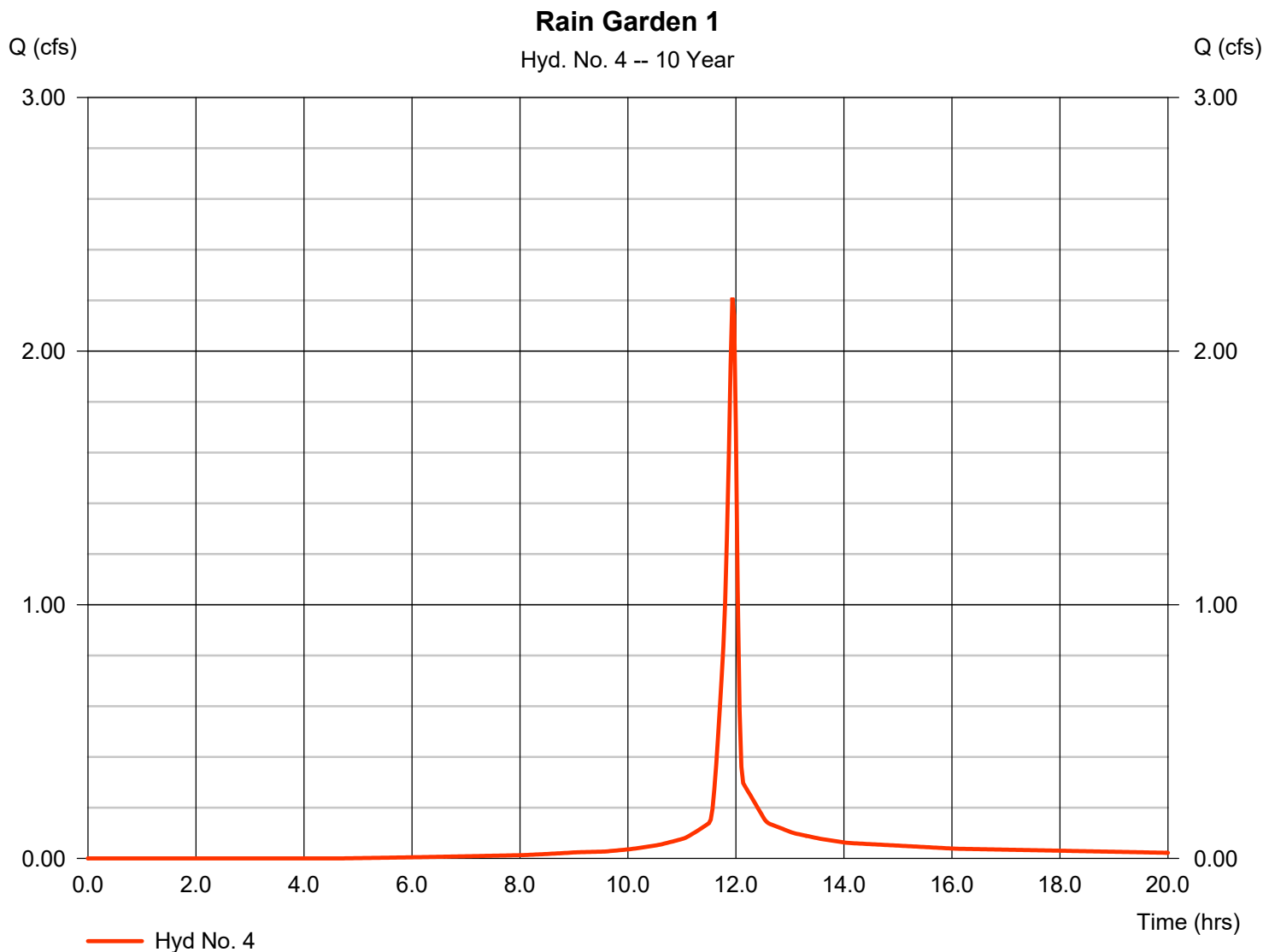
Friday, 06 / 28 / 2024

Hyd. No. 4

Rain Garden 1

Hydrograph type	= SCS Runoff	Peak discharge	= 2.210 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 4,655 cuft
Drainage area	= 0.390 ac	Curve number	= 88*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.210 x 80) + (0.180 x 98)] / 0.390



Hydrograph Report

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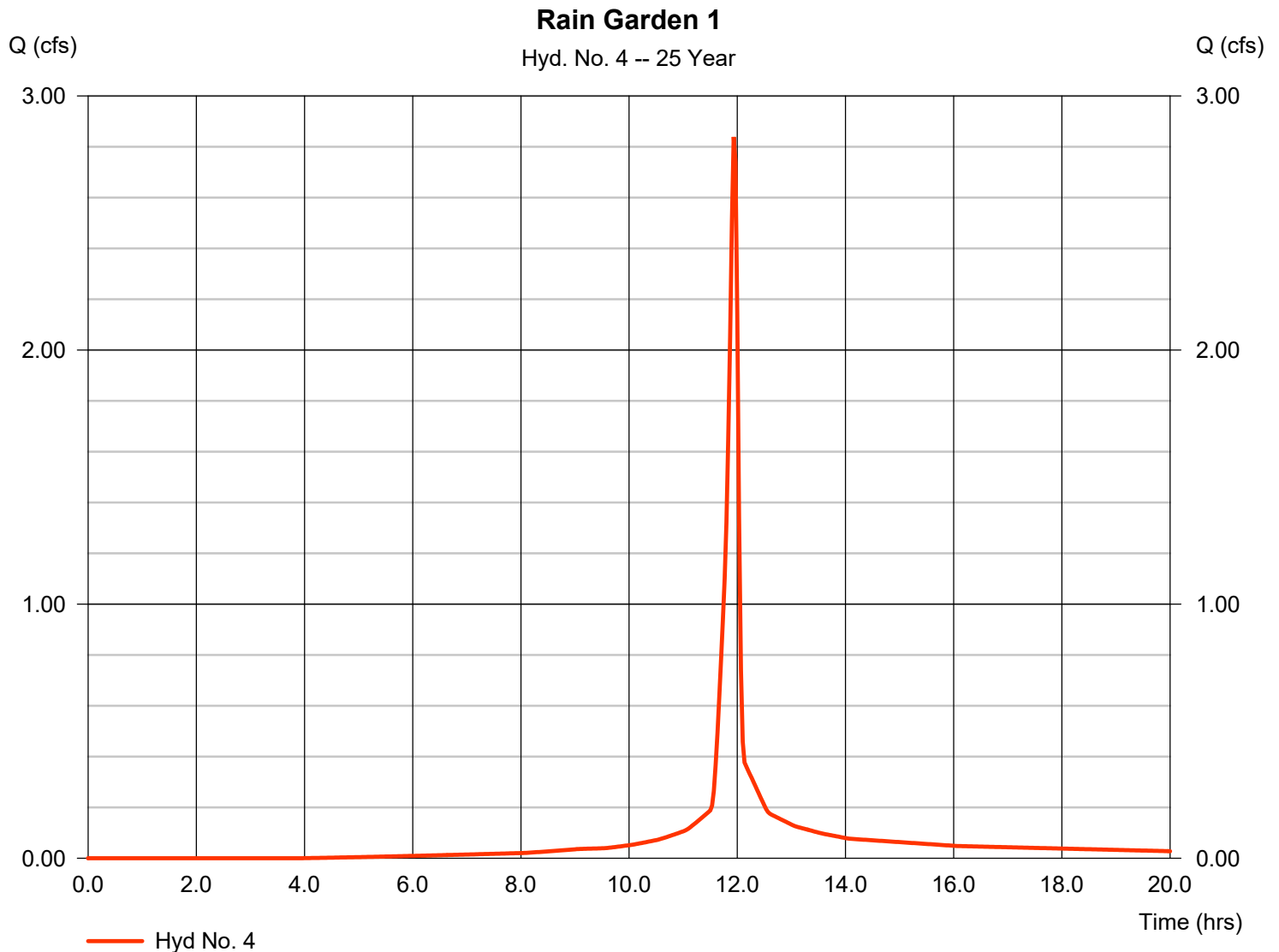
Friday, 06 / 28 / 2024

Hyd. No. 4

Rain Garden 1

Hydrograph type	= SCS Runoff	Peak discharge	= 2.839 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 6,076 cuft
Drainage area	= 0.390 ac	Curve number	= 88*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.210 x 80) + (0.180 x 98)] / 0.390



Hydrograph Report

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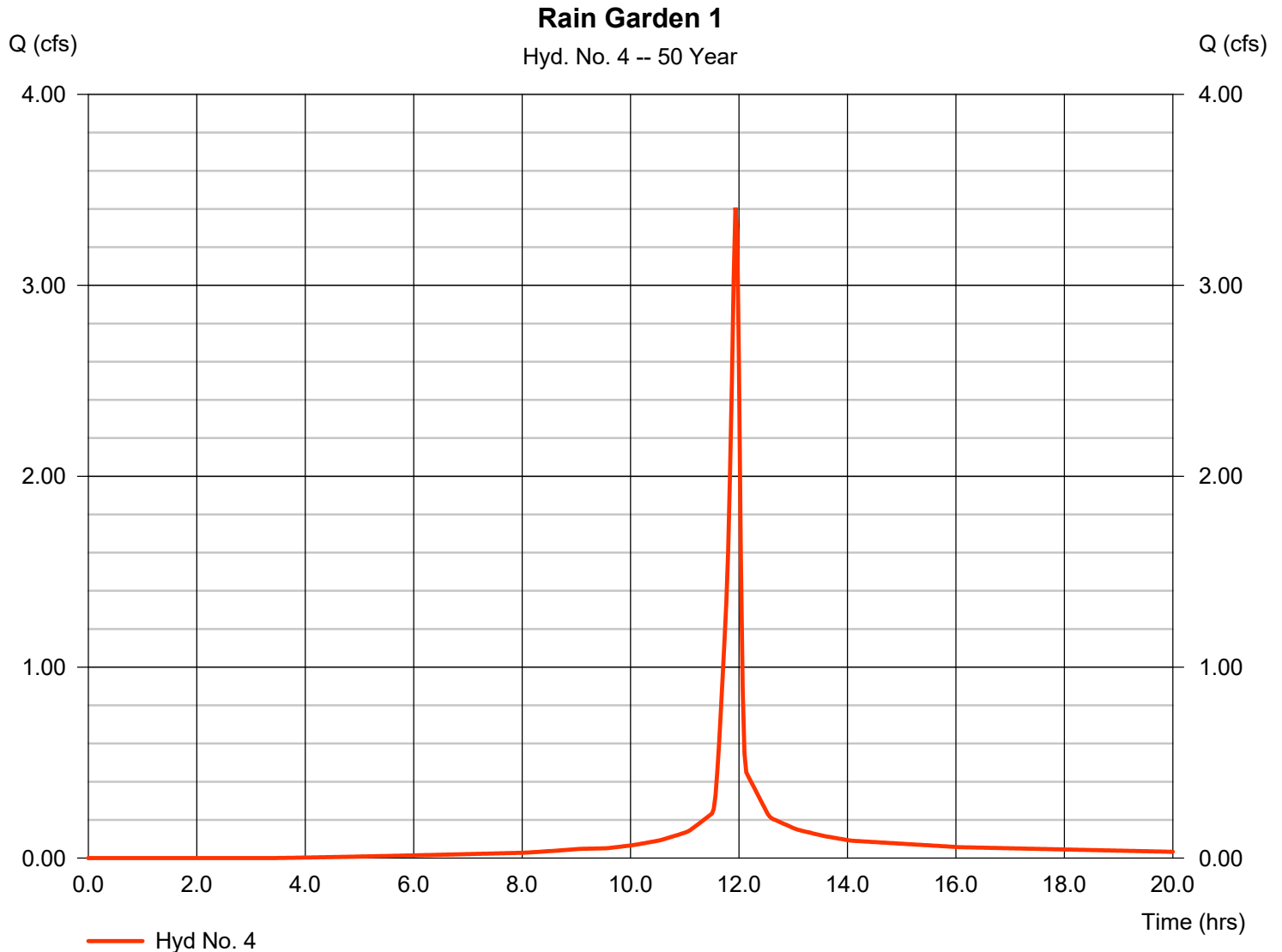
Friday, 06 / 28 / 2024

Hyd. No. 4

Rain Garden 1

Hydrograph type	= SCS Runoff	Peak discharge	= 3.408 cfs
Storm frequency	= 50 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 7,385 cuft
Drainage area	= 0.390 ac	Curve number	= 88*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.97 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.210 x 80) + (0.180 x 98)] / 0.390



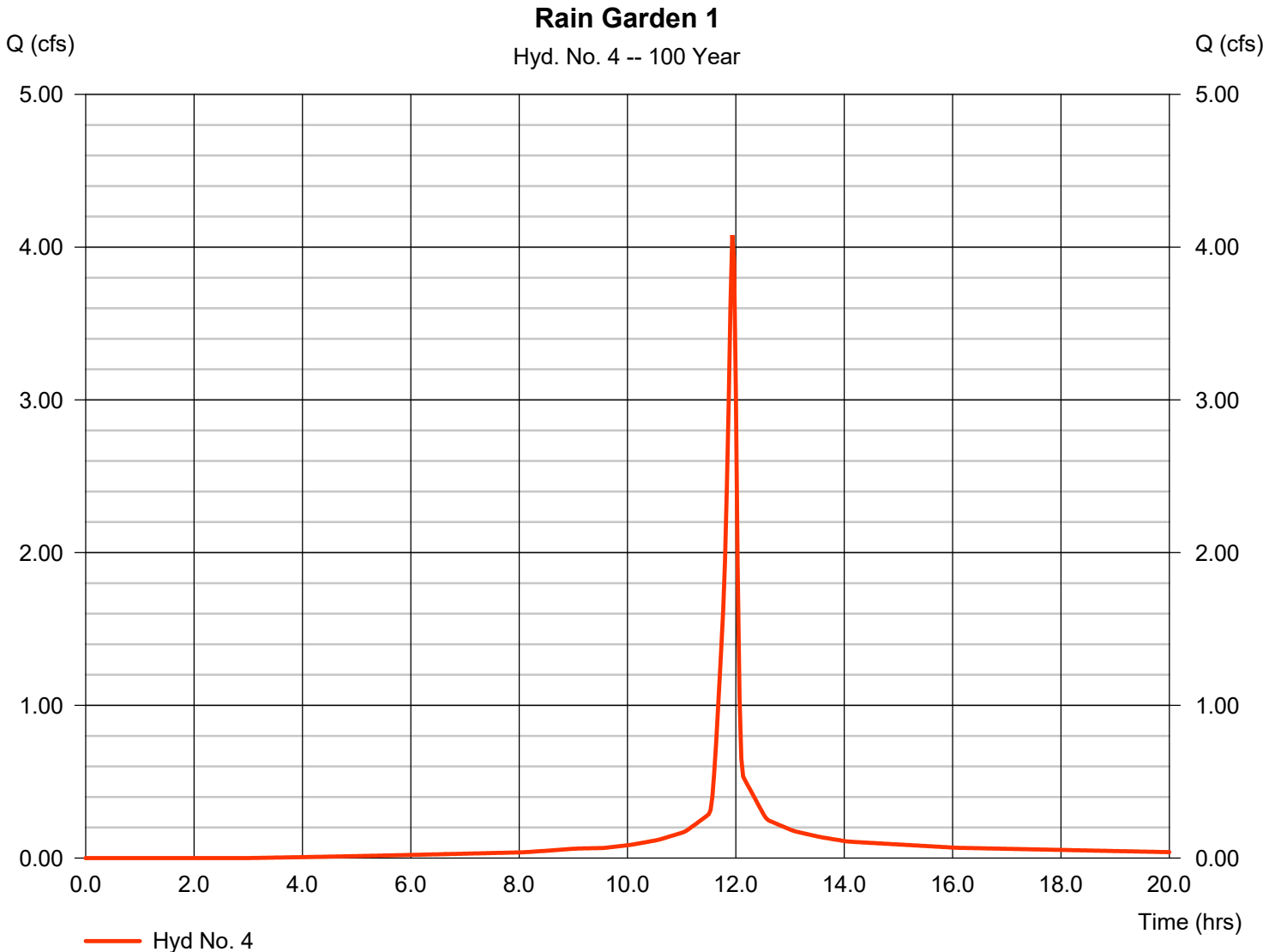
Hydrograph Report

Hyd. No. 4

Rain Garden 1

Hydrograph type	= SCS Runoff	Peak discharge	= 4.079 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 8,951 cuft
Drainage area	= 0.390 ac	Curve number	= 88*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 8.18 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.210 x 80) + (0.180 x 98)] / 0.390



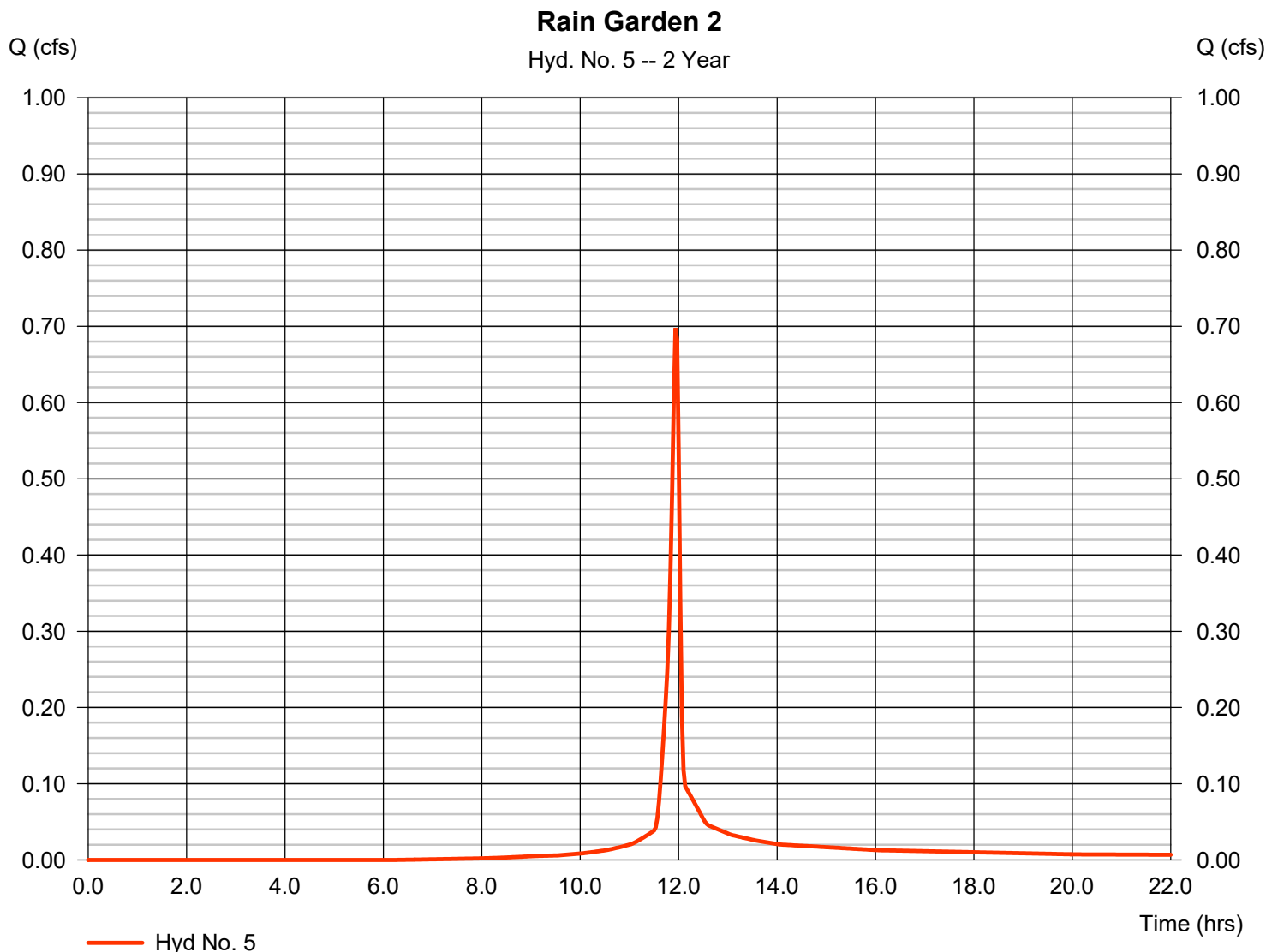
Hydrograph Report

Hyd. No. 5

Rain Garden 2

Hydrograph type	= SCS Runoff	Peak discharge	= 0.698 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 1,433 cuft
Drainage area	= 0.200 ac	Curve number	= 88*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.110 x 80) + (0.090 x 98)] / 0.200



Hydrograph Report

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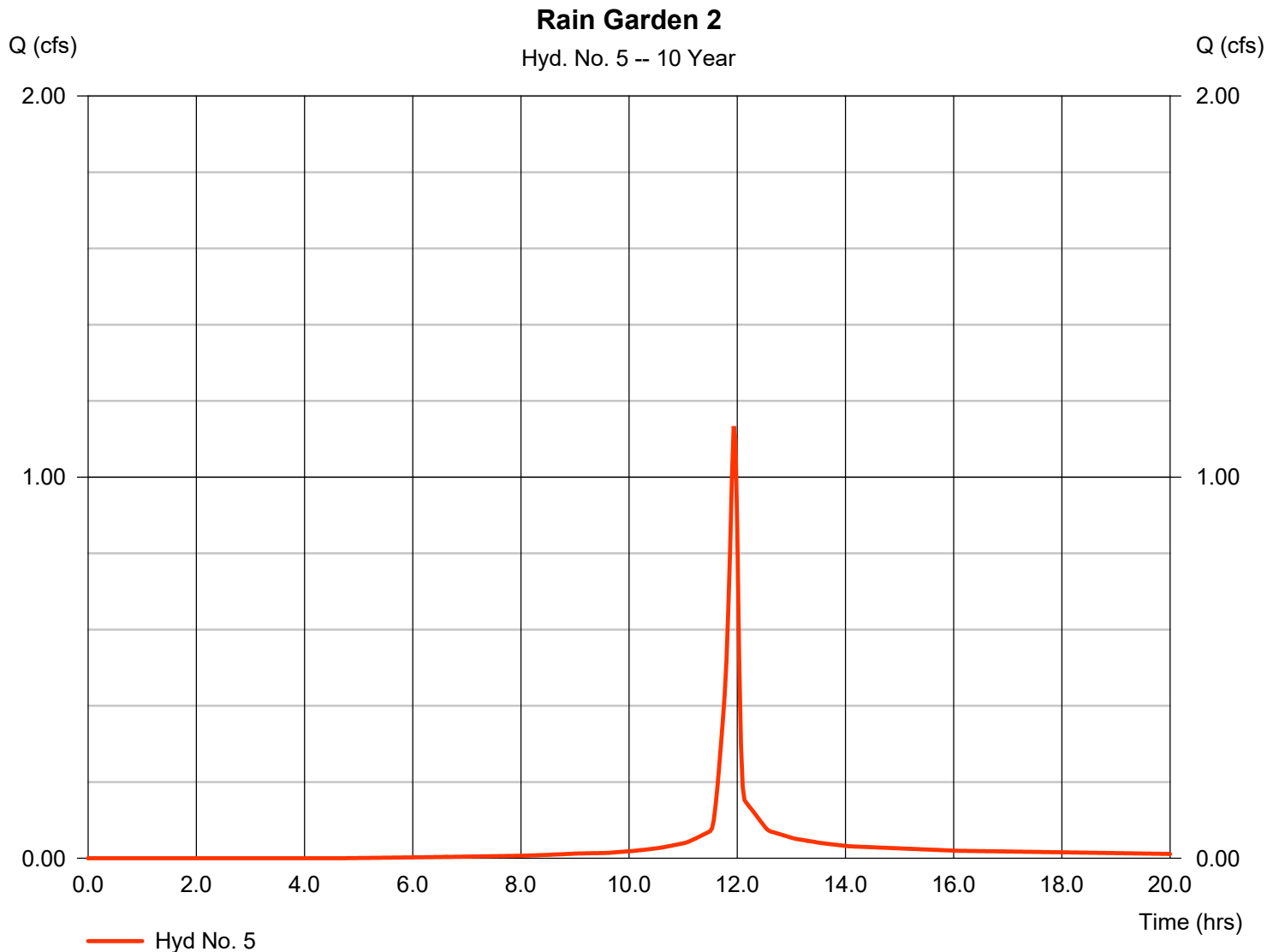
Friday, 06 / 28 / 2024

Hyd. No. 5

Rain Garden 2

Hydrograph type	= SCS Runoff	Peak discharge	= 1.133 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 2,387 cuft
Drainage area	= 0.200 ac	Curve number	= 88*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.110 x 80) + (0.090 x 98)] / 0.200



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

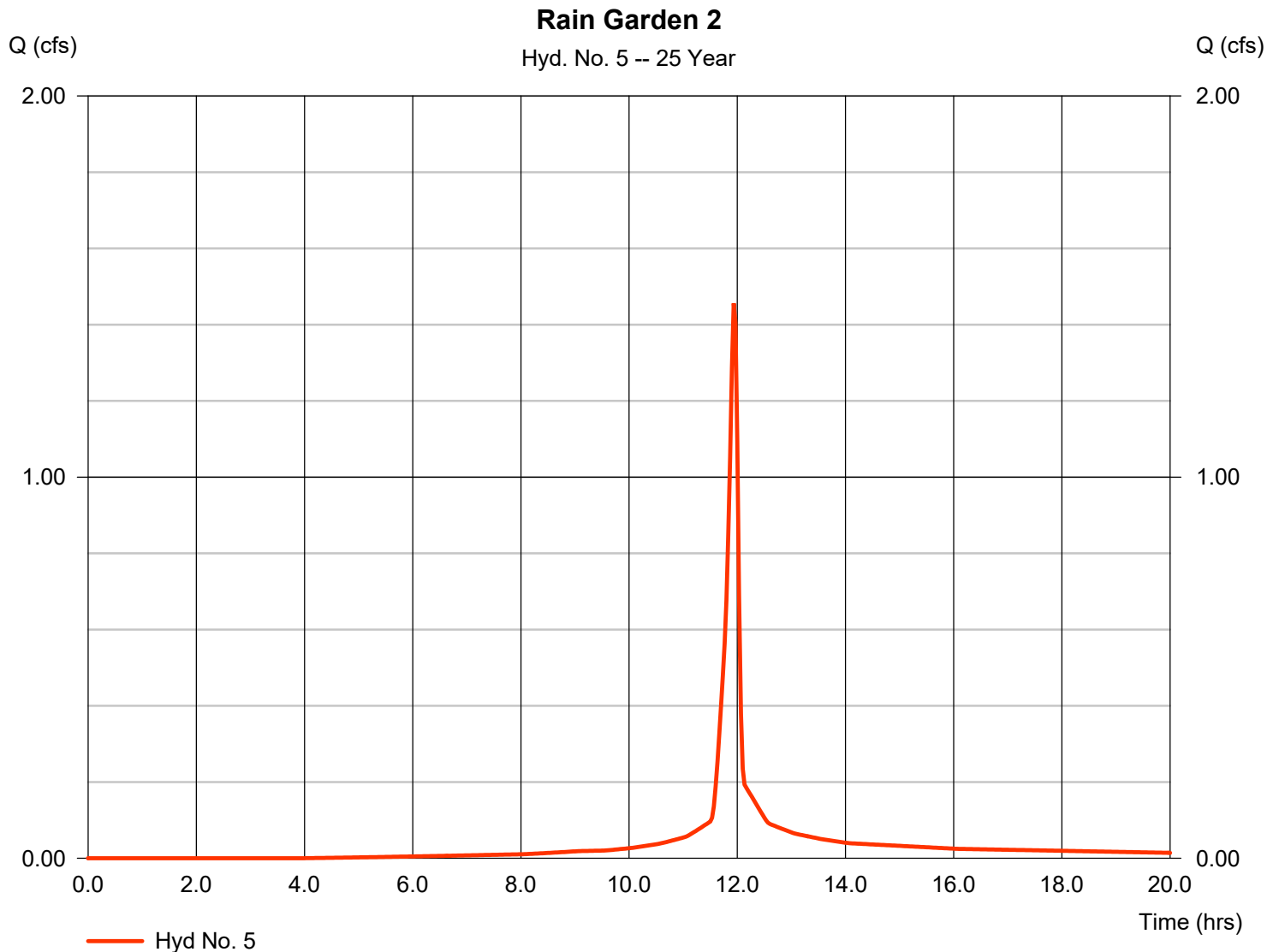
Friday, 06 / 28 / 2024

Hyd. No. 5

Rain Garden 2

Hydrograph type	= SCS Runoff	Peak discharge	= 1.456 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 3,116 cuft
Drainage area	= 0.200 ac	Curve number	= 88*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.110 x 80) + (0.090 x 98)] / 0.200



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

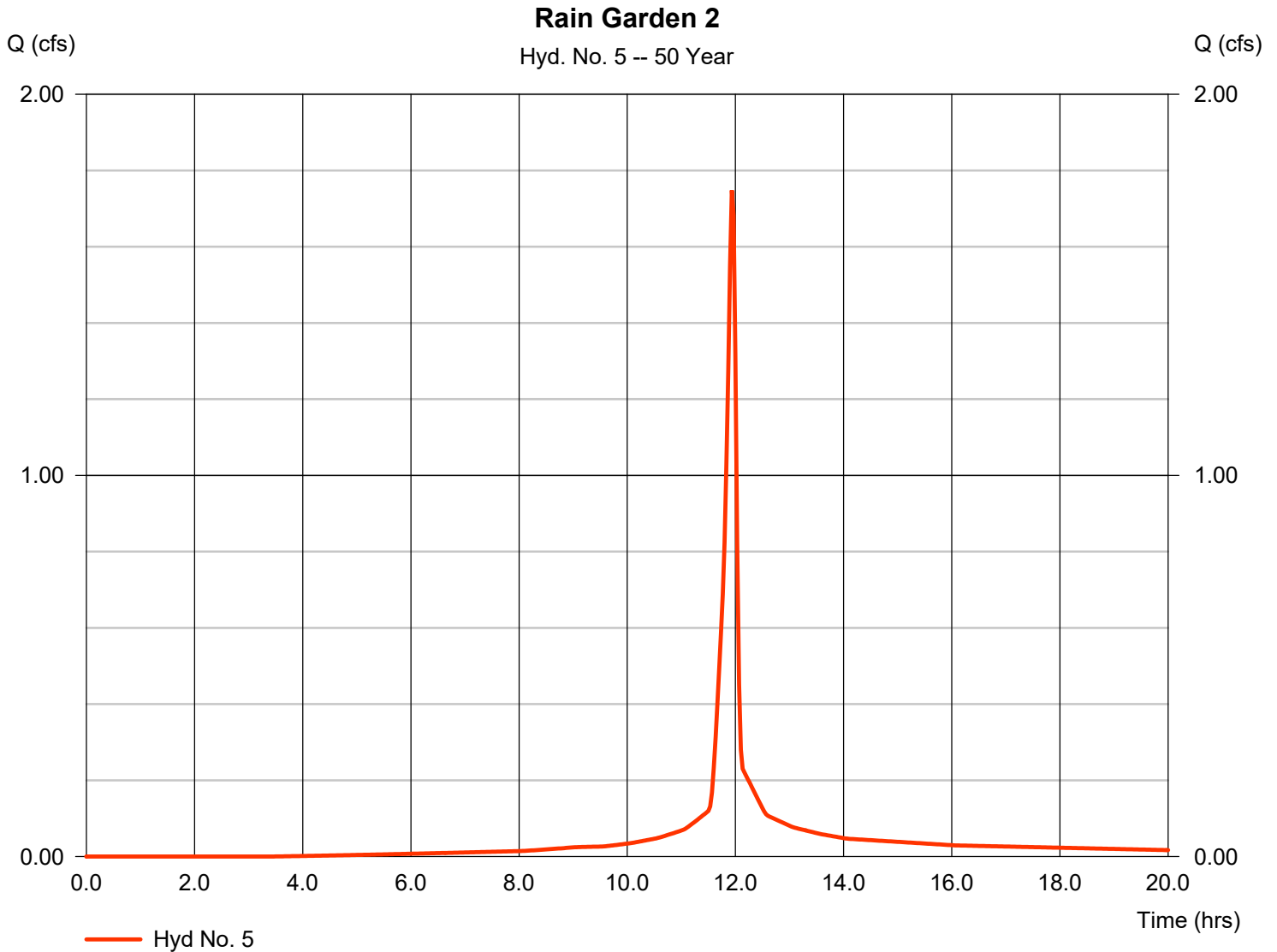
Friday, 06 / 28 / 2024

Hyd. No. 5

Rain Garden 2

Hydrograph type	= SCS Runoff	Peak discharge	= 1.748 cfs
Storm frequency	= 50 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 3,787 cuft
Drainage area	= 0.200 ac	Curve number	= 88*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.97 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.110 x 80) + (0.090 x 98)] / 0.200



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

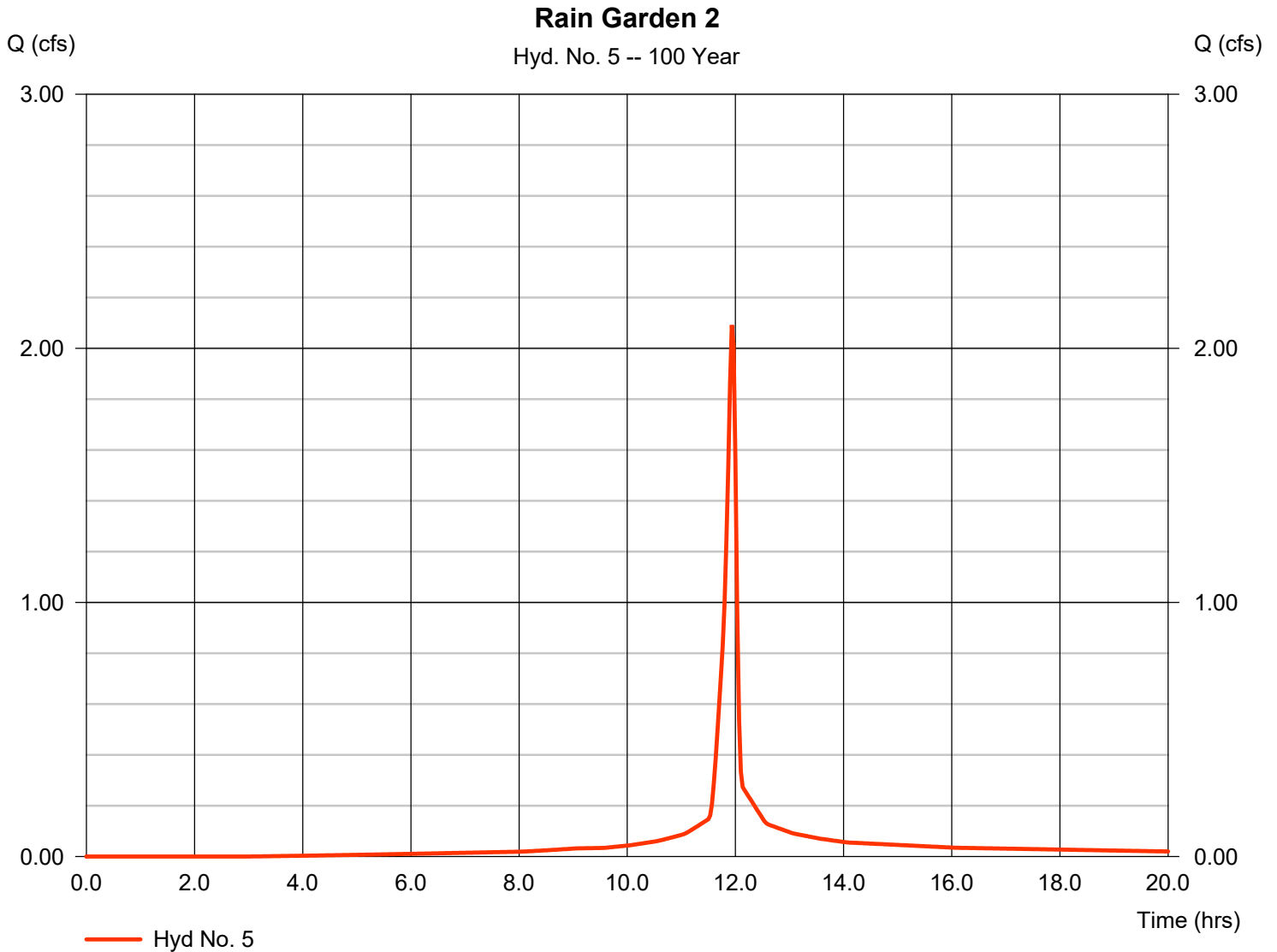
Friday, 06 / 28 / 2024

Hyd. No. 5

Rain Garden 2

Hydrograph type	= SCS Runoff	Peak discharge	= 2.092 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 4,590 cuft
Drainage area	= 0.200 ac	Curve number	= 88*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 8.18 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.110 x 80) + (0.090 x 98)] / 0.200



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

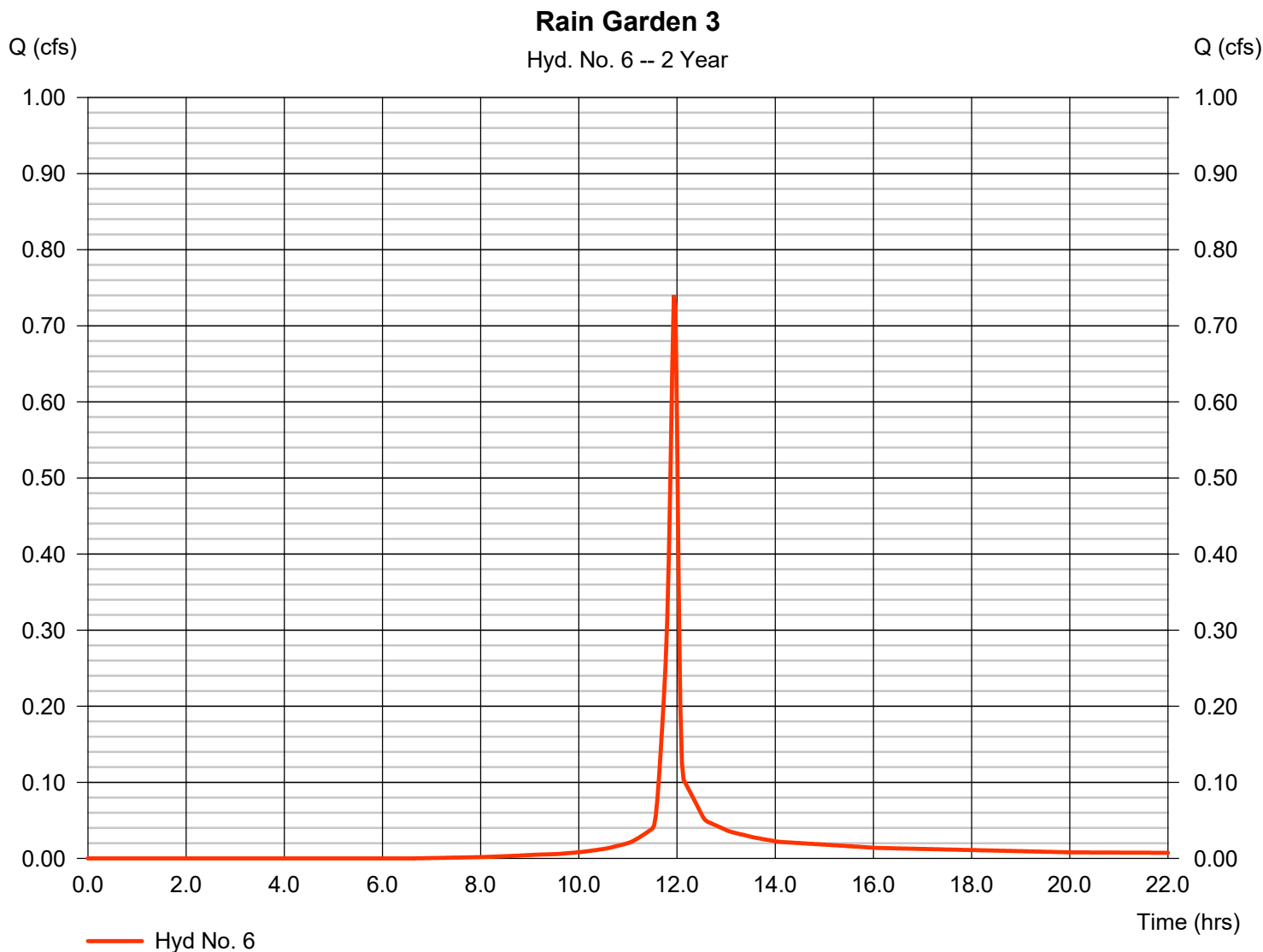
Friday, 06 / 28 / 2024

Hyd. No. 6

Rain Garden 3

Hydrograph type	= SCS Runoff	Peak discharge	= 0.740 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 1,513 cuft
Drainage area	= 0.220 ac	Curve number	= 87*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.130 x 80) + (0.090 x 98)] / 0.220



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

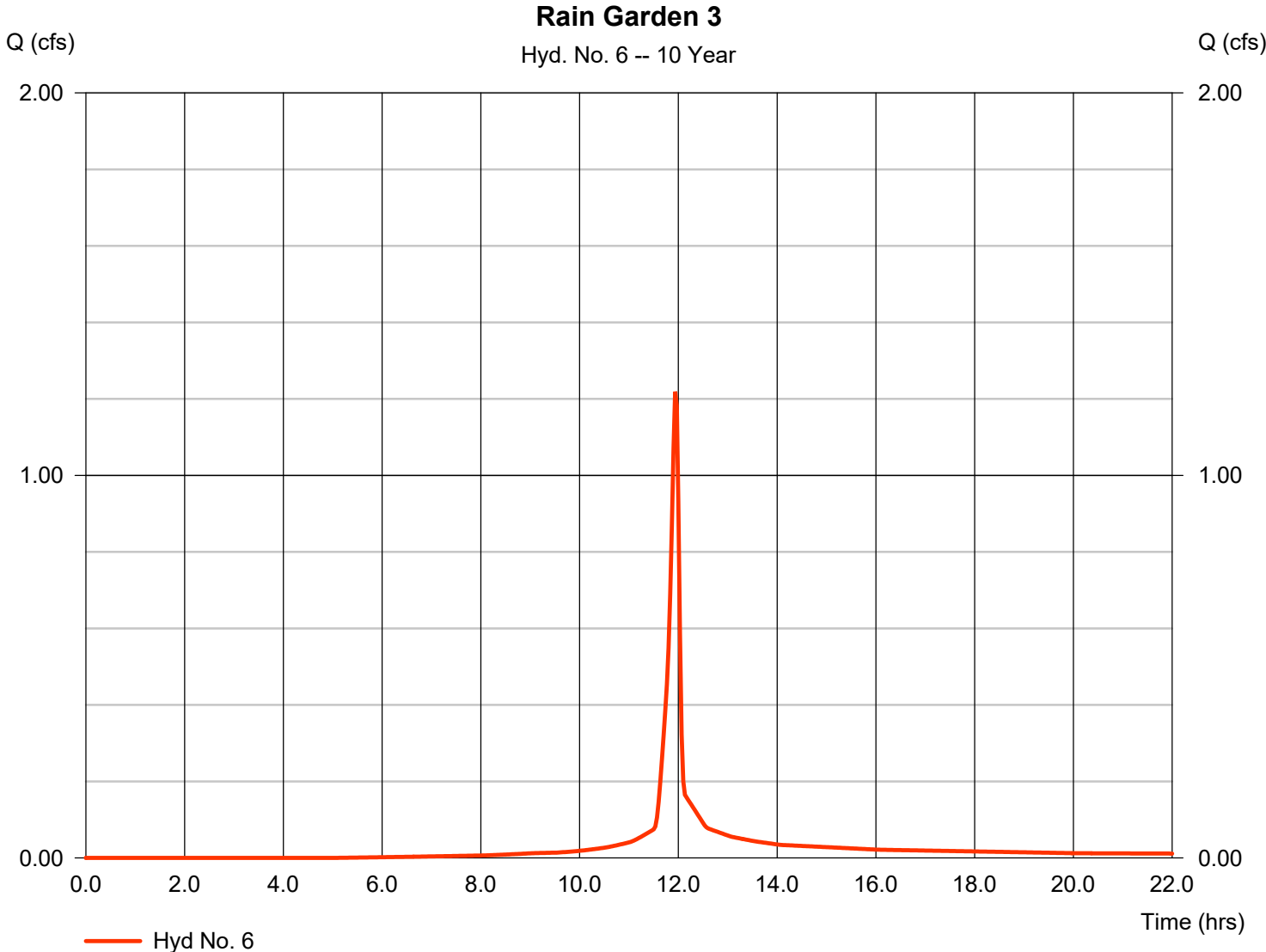
Friday, 06 / 28 / 2024

Hyd. No. 6

Rain Garden 3

Hydrograph type	= SCS Runoff	Peak discharge	= 1.219 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 2,551 cuft
Drainage area	= 0.220 ac	Curve number	= 87*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.130 x 80) + (0.090 x 98)] / 0.220



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

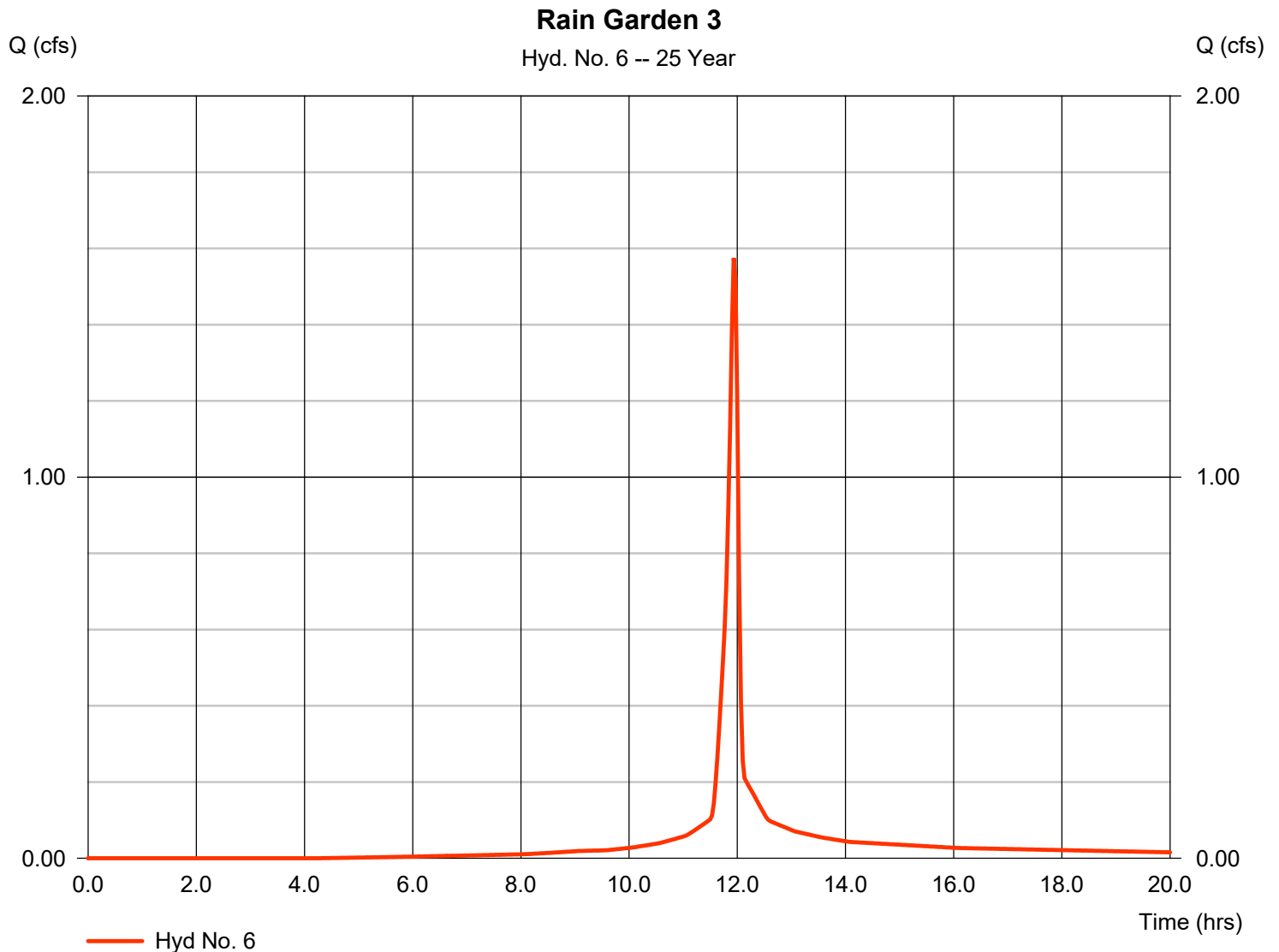
Friday, 06 / 28 / 2024

Hyd. No. 6

Rain Garden 3

Hydrograph type	= SCS Runoff	Peak discharge	= 1.575 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 3,346 cuft
Drainage area	= 0.220 ac	Curve number	= 87*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.130 x 80) + (0.090 x 98)] / 0.220



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

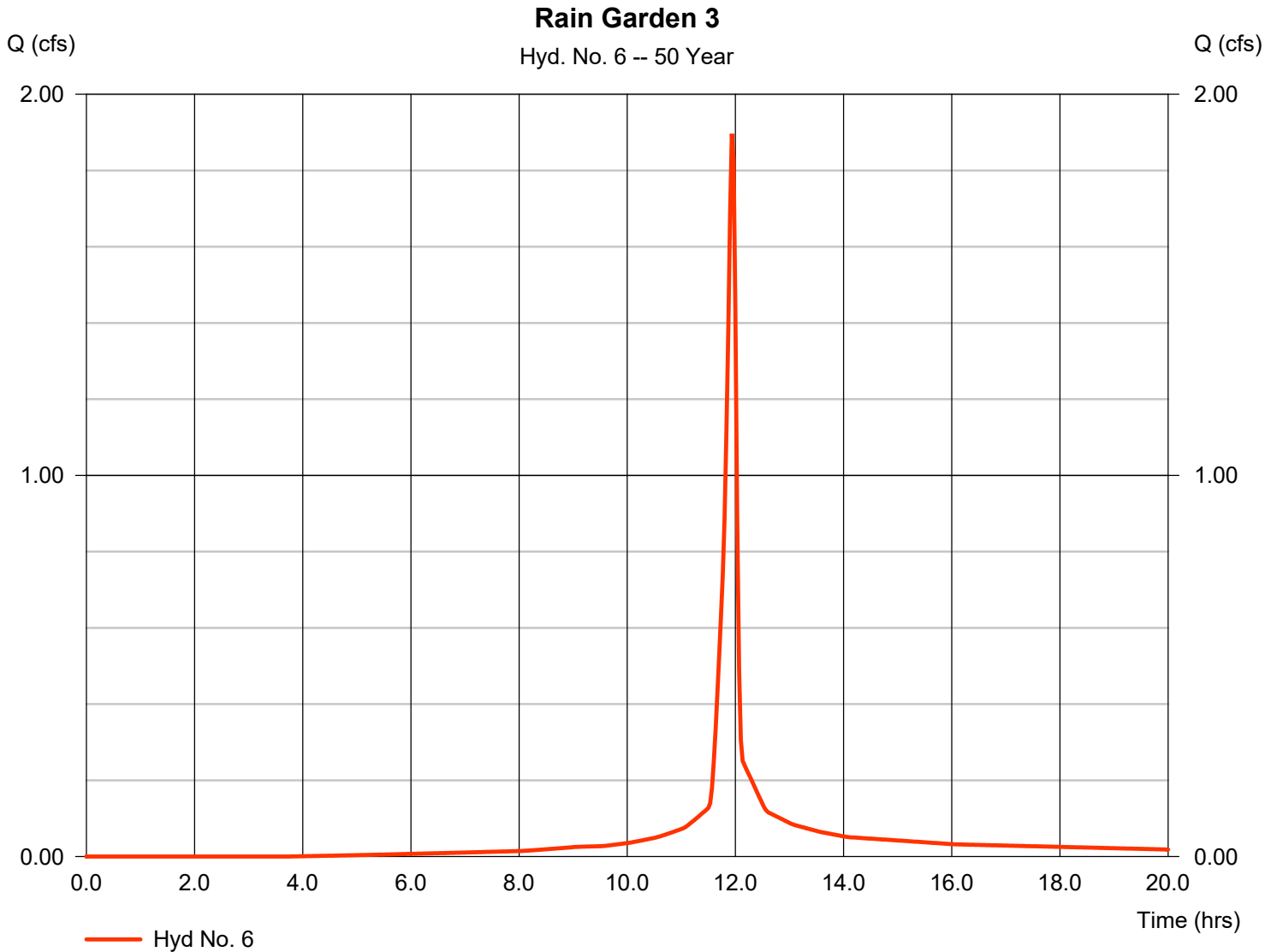
Friday, 06 / 28 / 2024

Hyd. No. 6

Rain Garden 3

Hydrograph type	= SCS Runoff	Peak discharge	= 1.897 cfs
Storm frequency	= 50 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 4,081 cuft
Drainage area	= 0.220 ac	Curve number	= 87*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.97 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.130 x 80) + (0.090 x 98)] / 0.220



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

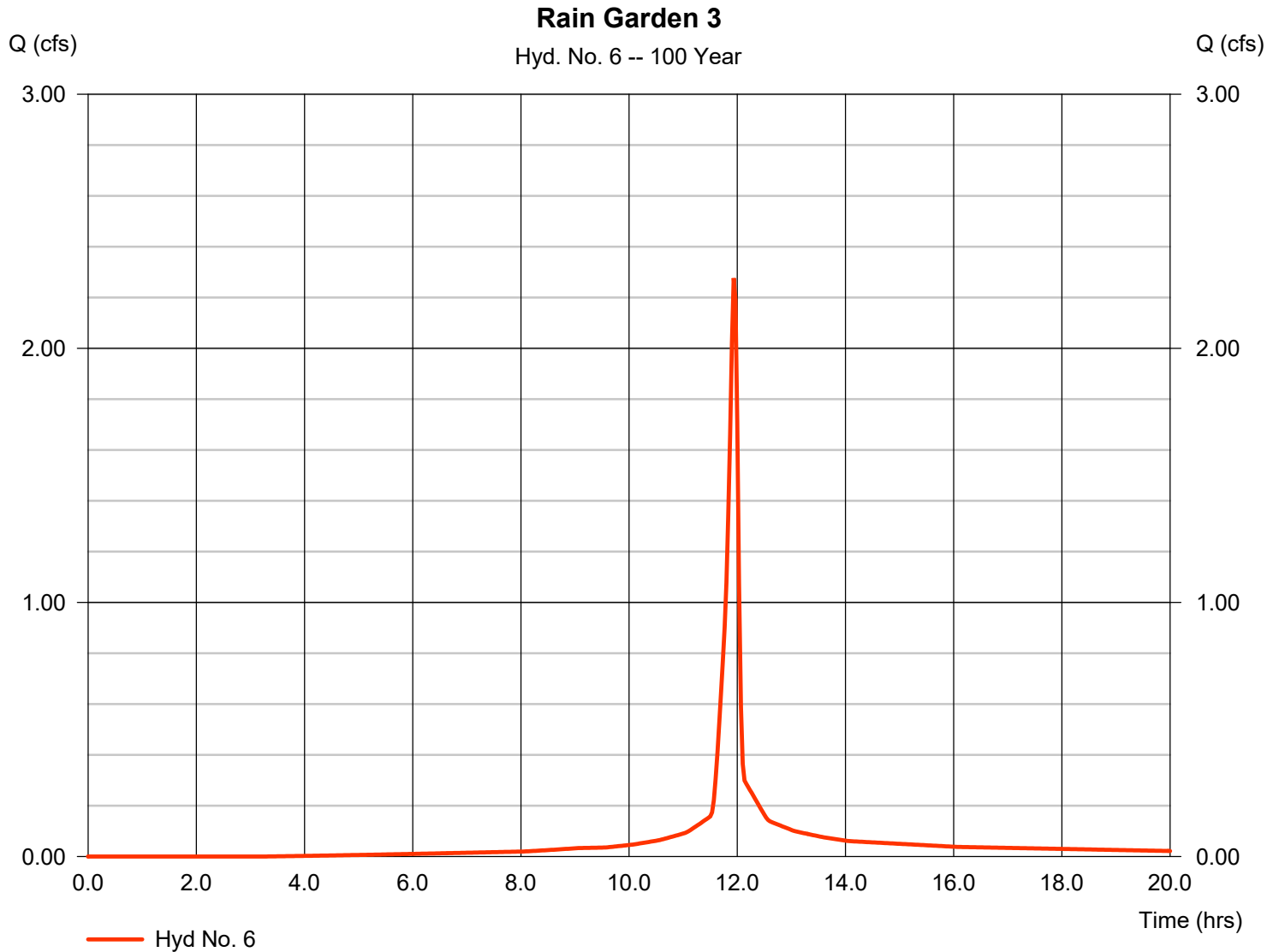
Friday, 06 / 28 / 2024

Hyd. No. 6

Rain Garden 3

Hydrograph type	= SCS Runoff	Peak discharge	= 2.277 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 4,960 cuft
Drainage area	= 0.220 ac	Curve number	= 87*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 8.18 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.130 x 80) + (0.090 x 98)] / 0.220



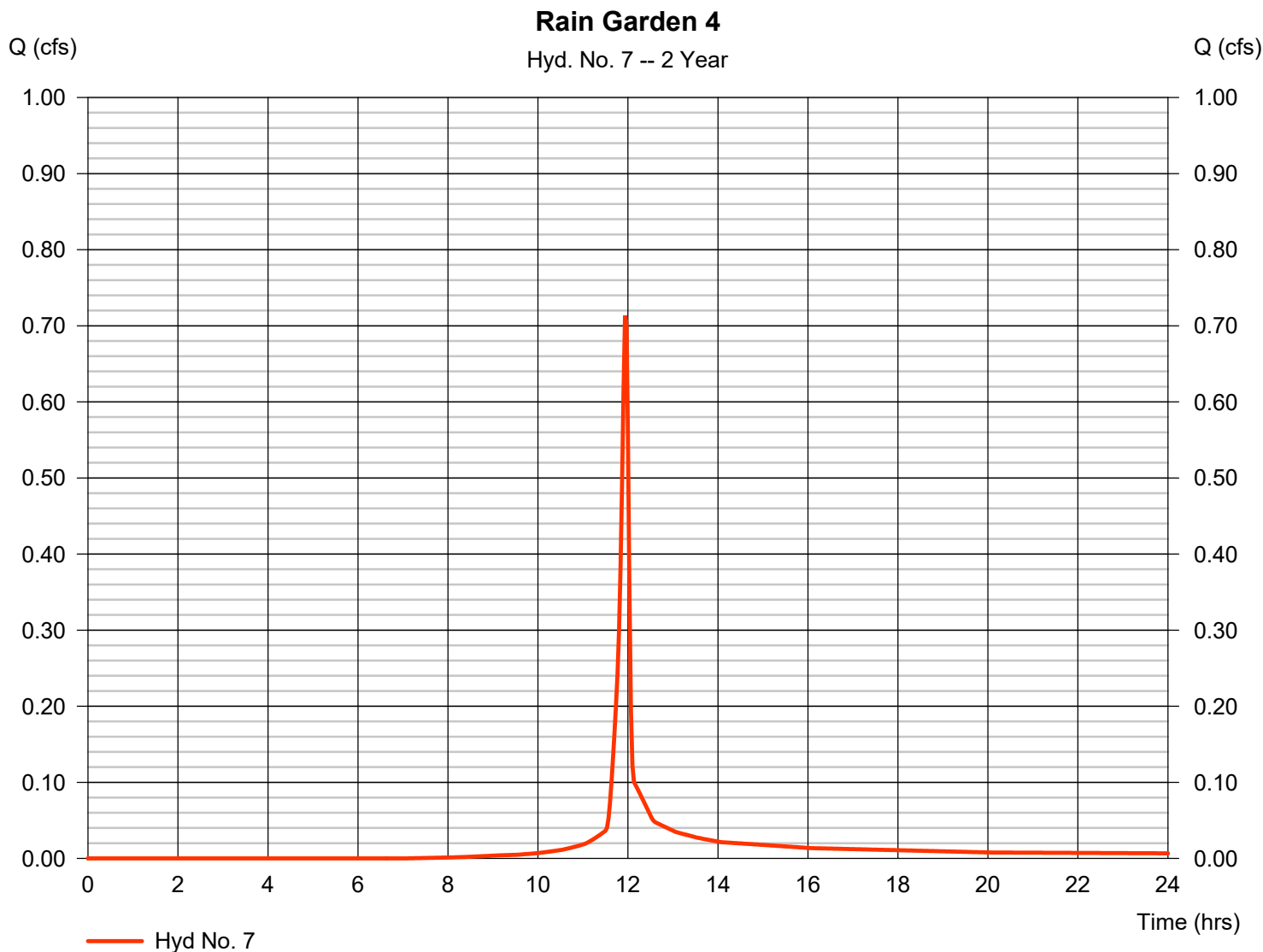
Hydrograph Report

Hyd. No. 7

Rain Garden 4

Hydrograph type	= SCS Runoff	Peak discharge	= 0.713 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 1,452 cuft
Drainage area	= 0.220 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.150 x 80) + (0.070 x 98)] / 0.220



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

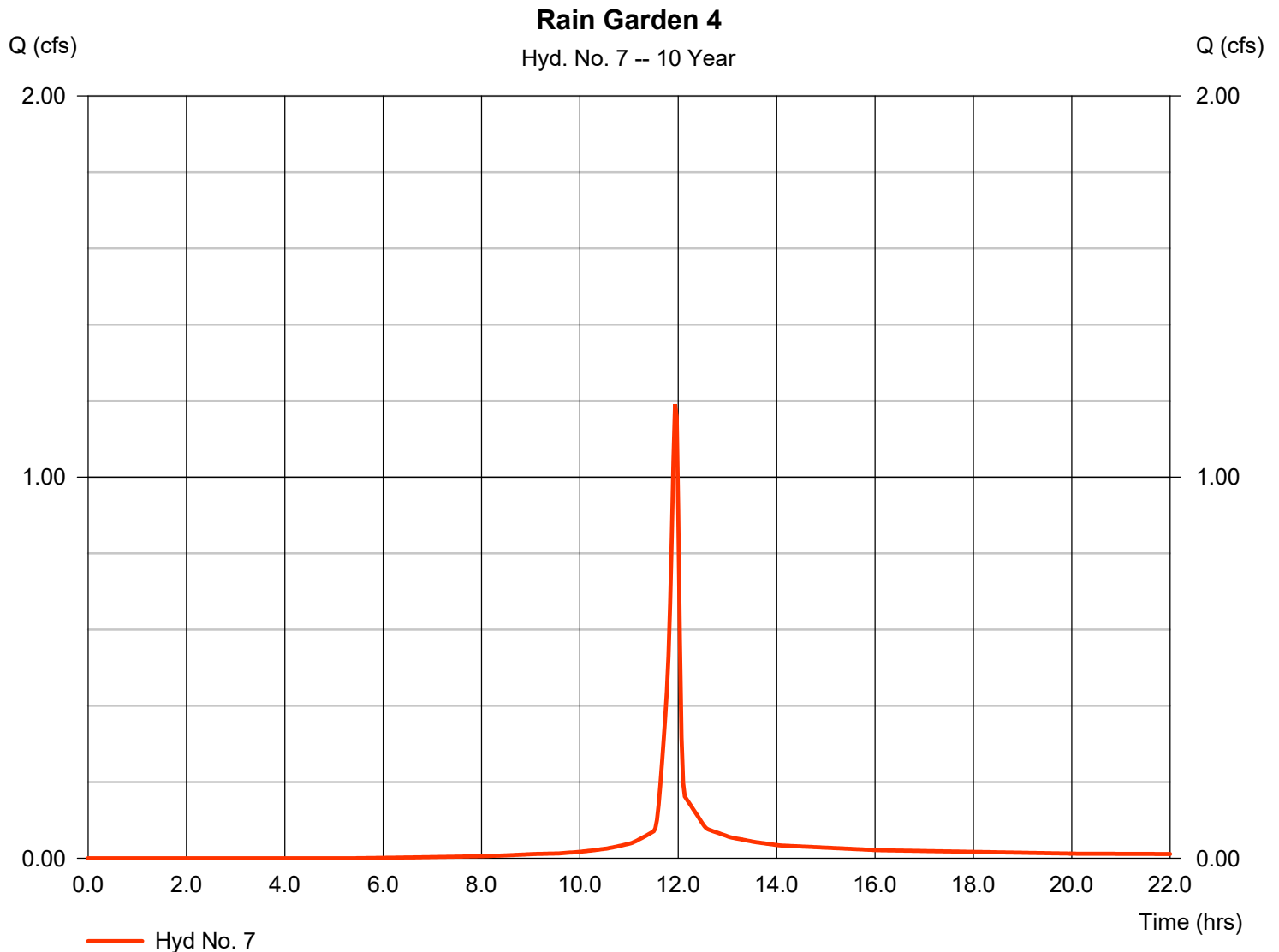
Friday, 06 / 28 / 2024

Hyd. No. 7

Rain Garden 4

Hydrograph type	= SCS Runoff	Peak discharge	= 1.191 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 2,477 cuft
Drainage area	= 0.220 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.150 x 80) + (0.070 x 98)] / 0.220



Hydrograph Report

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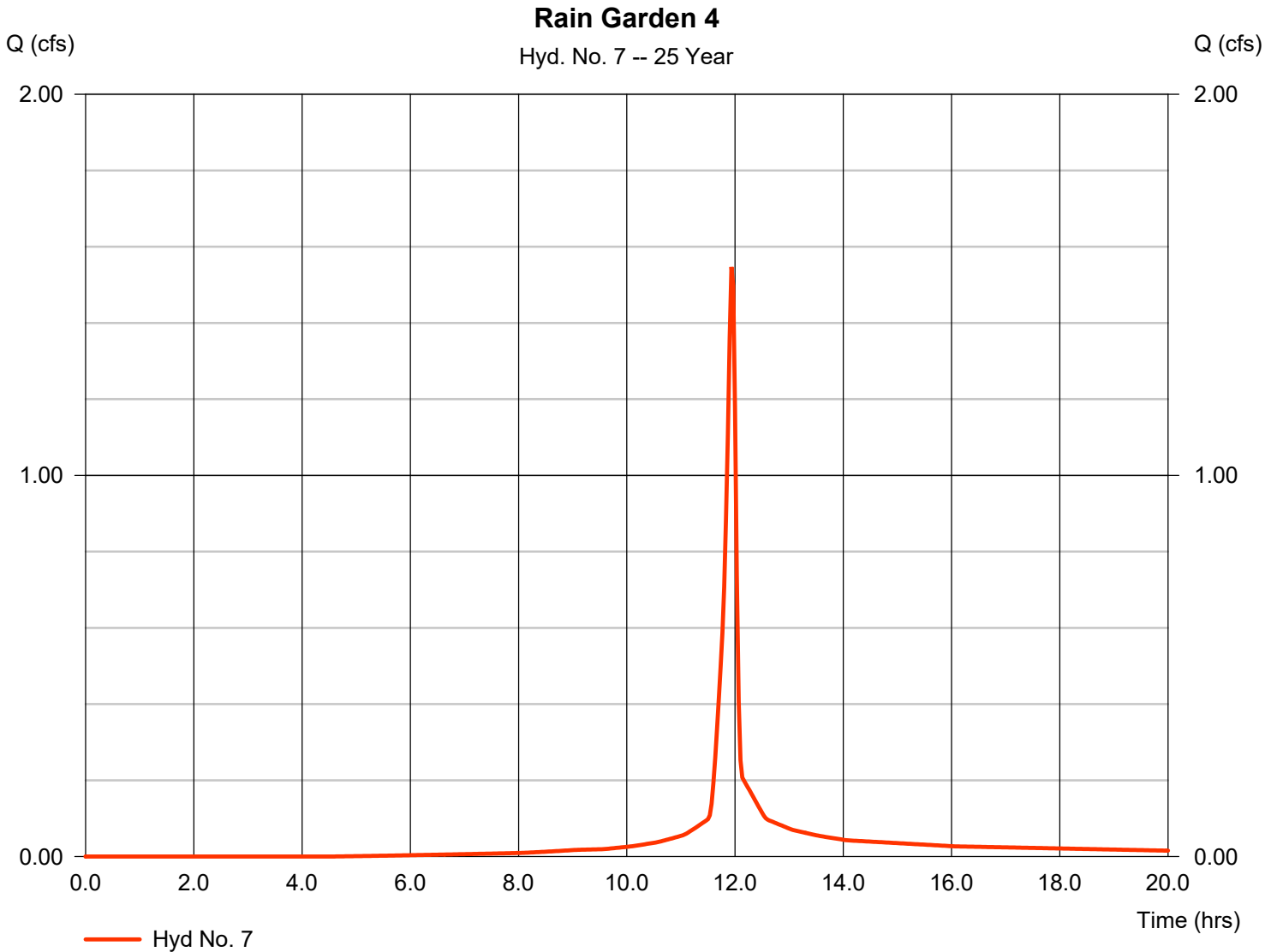
Friday, 06 / 28 / 2024

Hyd. No. 7

Rain Garden 4

Hydrograph type	= SCS Runoff	Peak discharge	= 1.547 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 3,266 cuft
Drainage area	= 0.220 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.150 x 80) + (0.070 x 98)] / 0.220



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

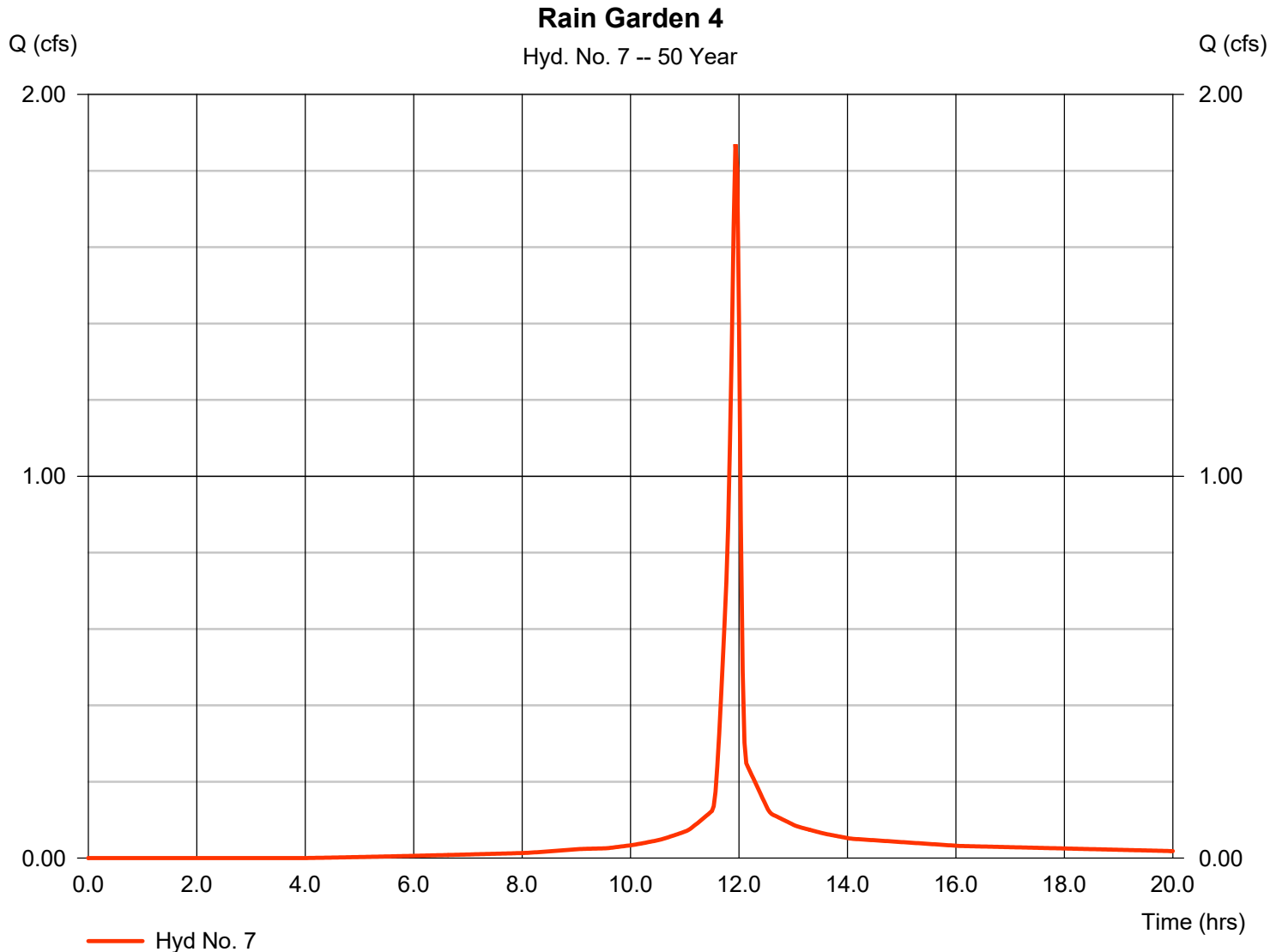
Friday, 06 / 28 / 2024

Hyd. No. 7

Rain Garden 4

Hydrograph type	= SCS Runoff	Peak discharge	= 1.870 cfs
Storm frequency	= 50 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 3,996 cuft
Drainage area	= 0.220 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.97 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.150 x 80) + (0.070 x 98)] / 0.220



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

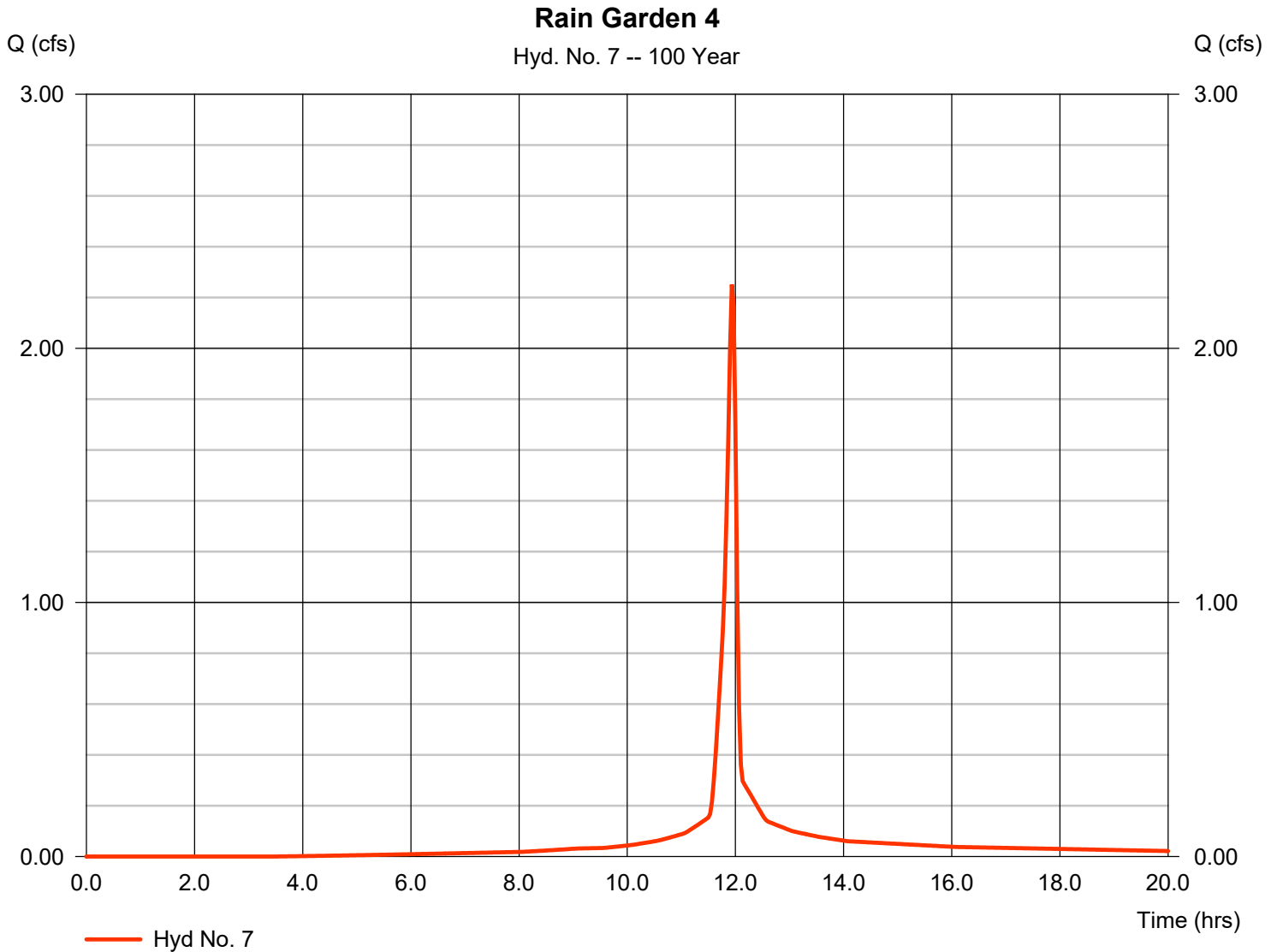
Friday, 06 / 28 / 2024

Hyd. No. 7

Rain Garden 4

Hydrograph type	= SCS Runoff	Peak discharge	= 2.251 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 4,871 cuft
Drainage area	= 0.220 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 8.18 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.150 x 80) + (0.070 x 98)] / 0.220



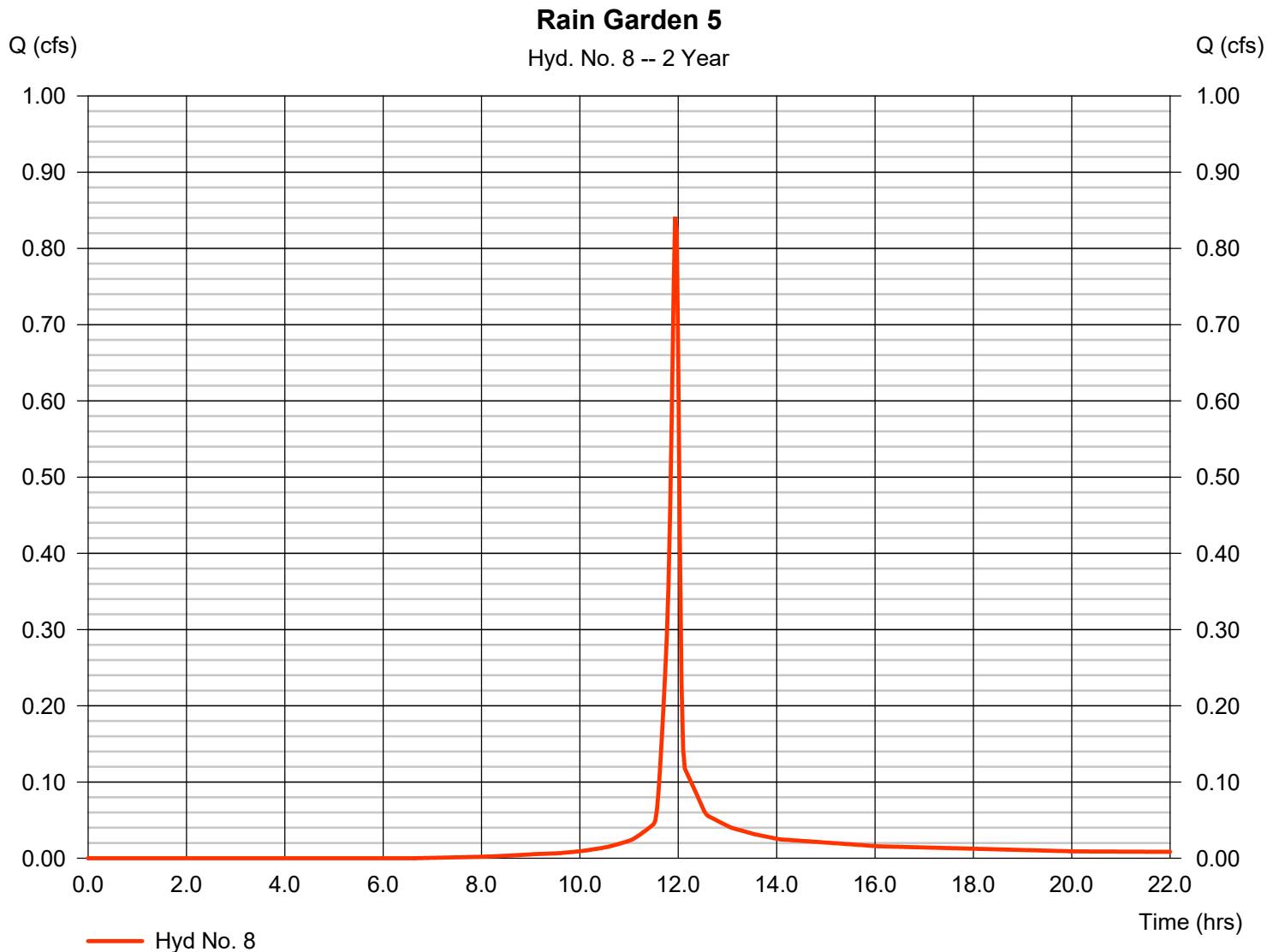
Hydrograph Report

Hyd. No. 8

Rain Garden 5

Hydrograph type	= SCS Runoff	Peak discharge	= 0.841 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 1,720 cuft
Drainage area	= 0.250 ac	Curve number	= 87*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.150 x 80) + (0.100 x 98)] / 0.250



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

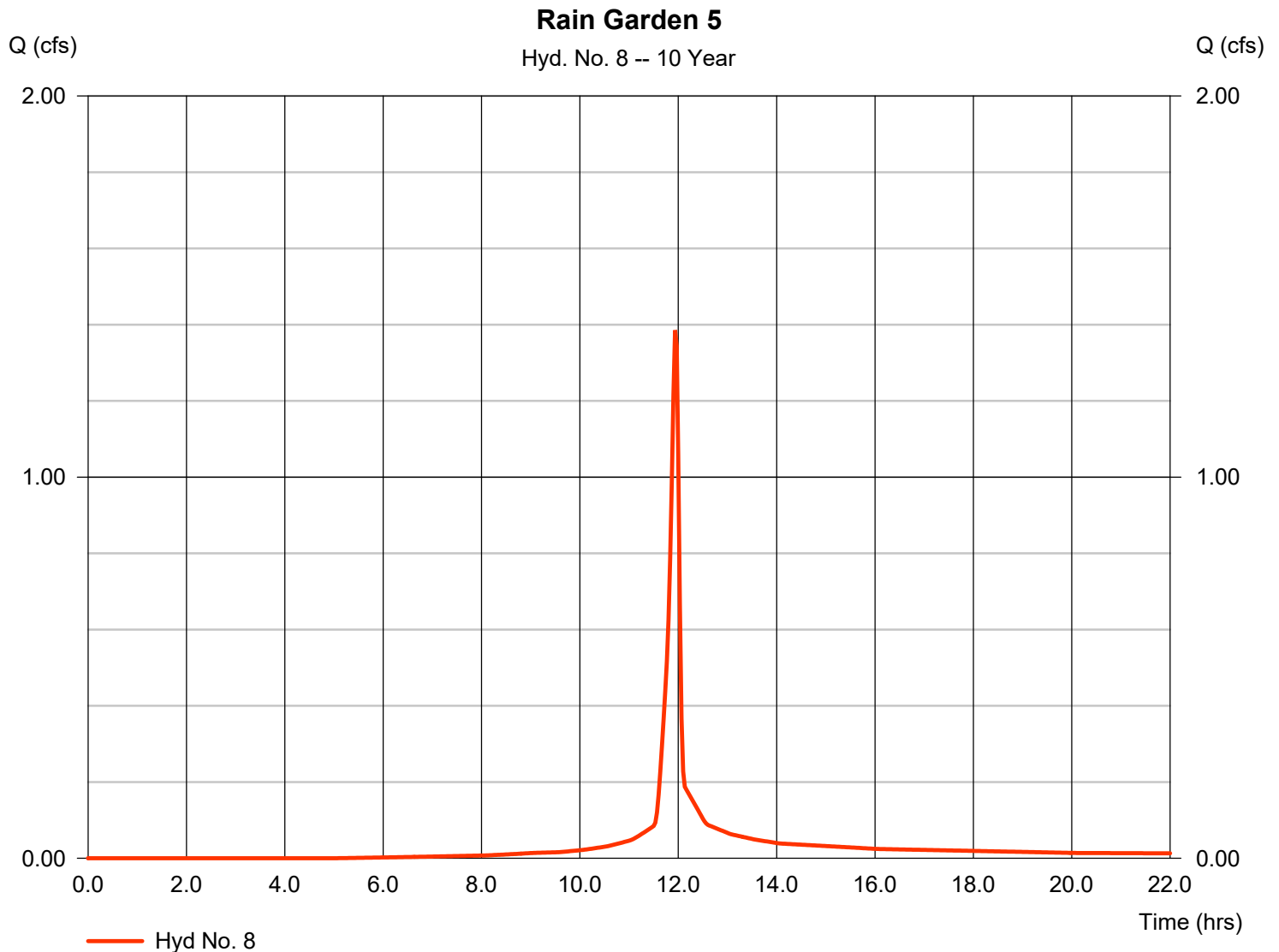
Friday, 06 / 28 / 2024

Hyd. No. 8

Rain Garden 5

Hydrograph type	= SCS Runoff	Peak discharge	= 1.385 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 2,899 cuft
Drainage area	= 0.250 ac	Curve number	= 87*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.150 x 80) + (0.100 x 98)] / 0.250



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

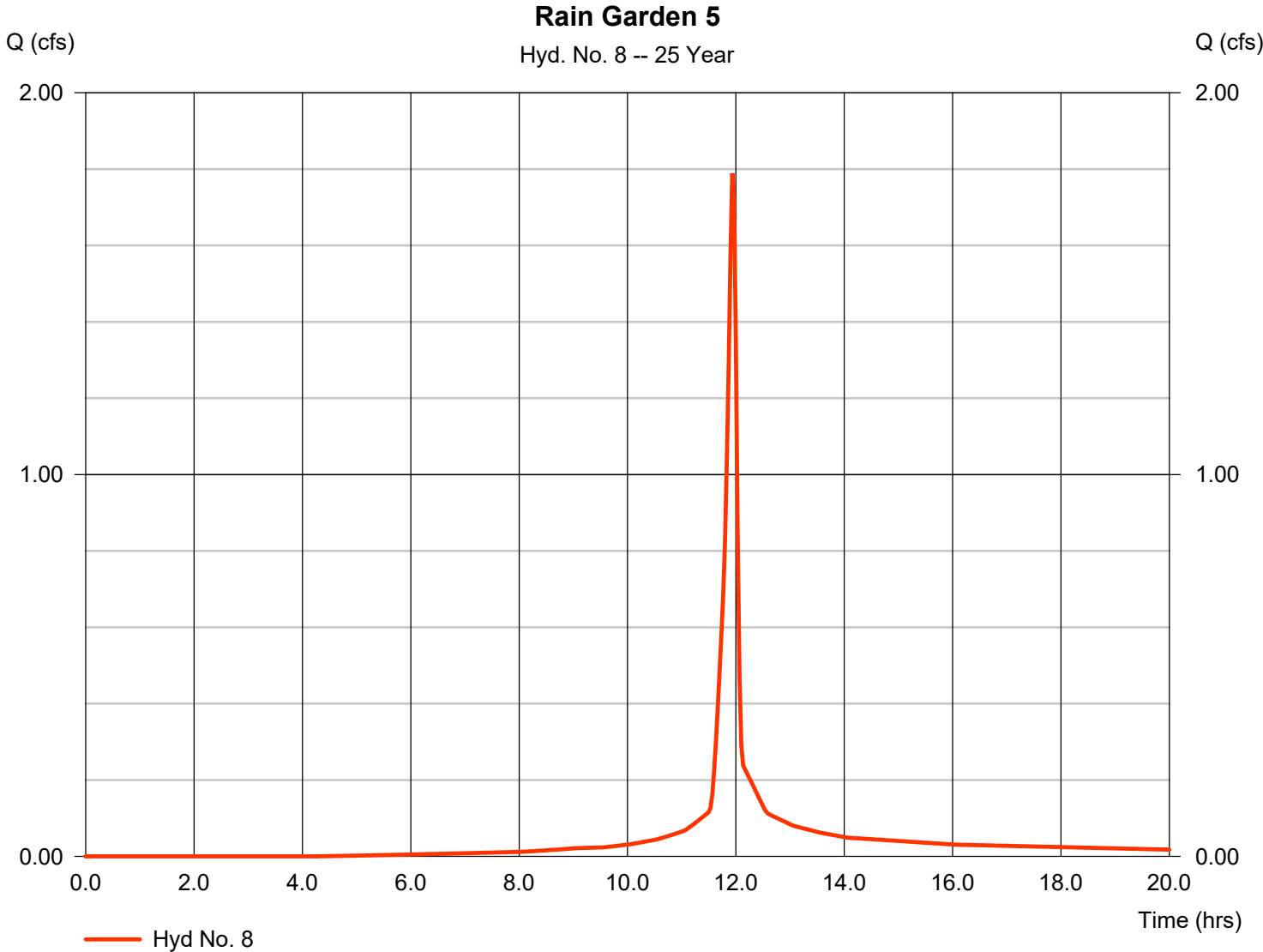
Friday, 06 / 28 / 2024

Hyd. No. 8

Rain Garden 5

Hydrograph type	= SCS Runoff	Peak discharge	= 1.789 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 3,802 cuft
Drainage area	= 0.250 ac	Curve number	= 87*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.150 x 80) + (0.100 x 98)] / 0.250



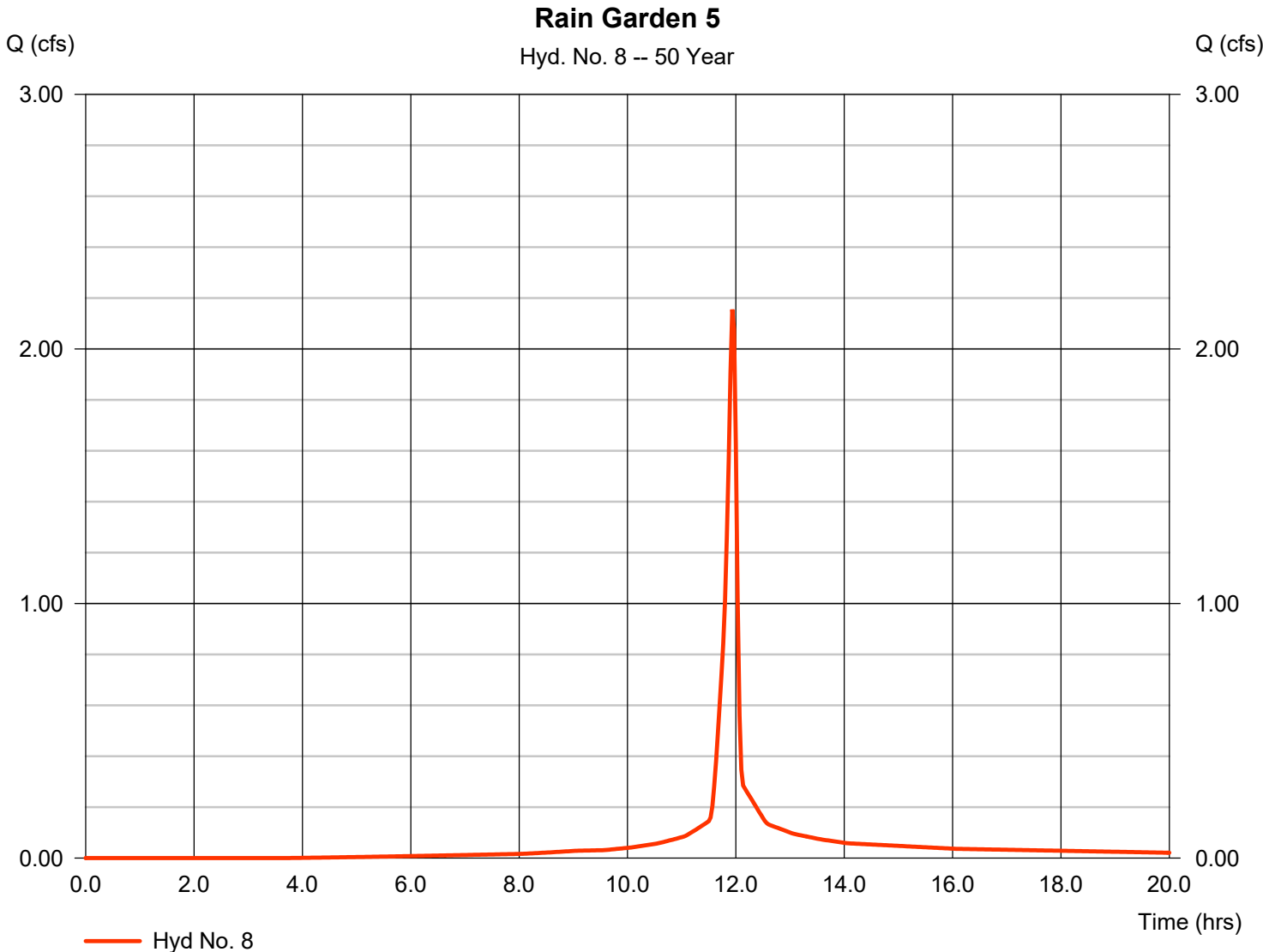
Hydrograph Report

Hyd. No. 8

Rain Garden 5

Hydrograph type	= SCS Runoff	Peak discharge	= 2.155 cfs
Storm frequency	= 50 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 4,637 cuft
Drainage area	= 0.250 ac	Curve number	= 87*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.97 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.150 x 80) + (0.100 x 98)] / 0.250



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

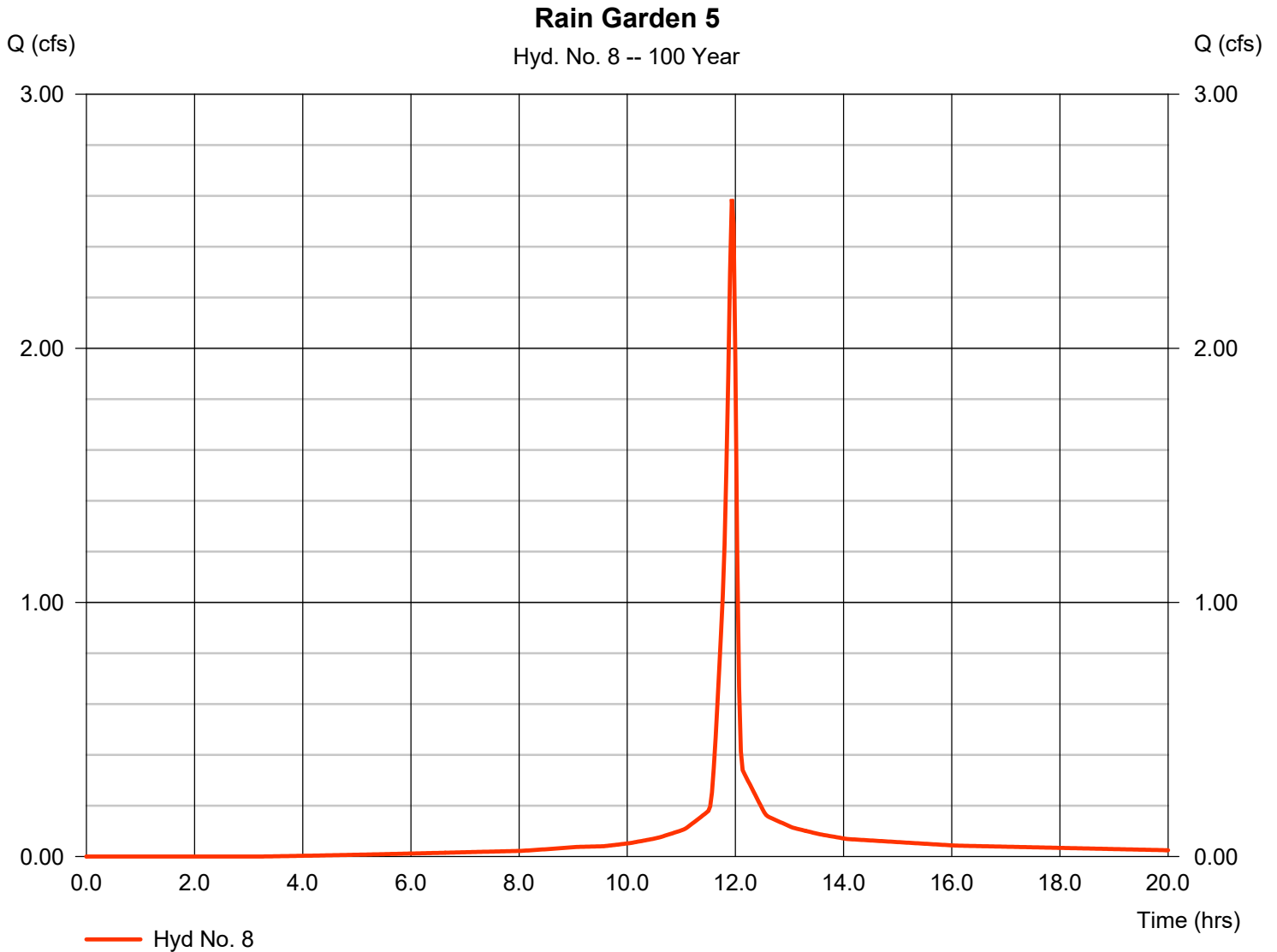
Friday, 06 / 28 / 2024

Hyd. No. 8

Rain Garden 5

Hydrograph type	= SCS Runoff	Peak discharge	= 2.587 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 5,636 cuft
Drainage area	= 0.250 ac	Curve number	= 87*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 8.18 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.150 x 80) + (0.100 x 98)] / 0.250



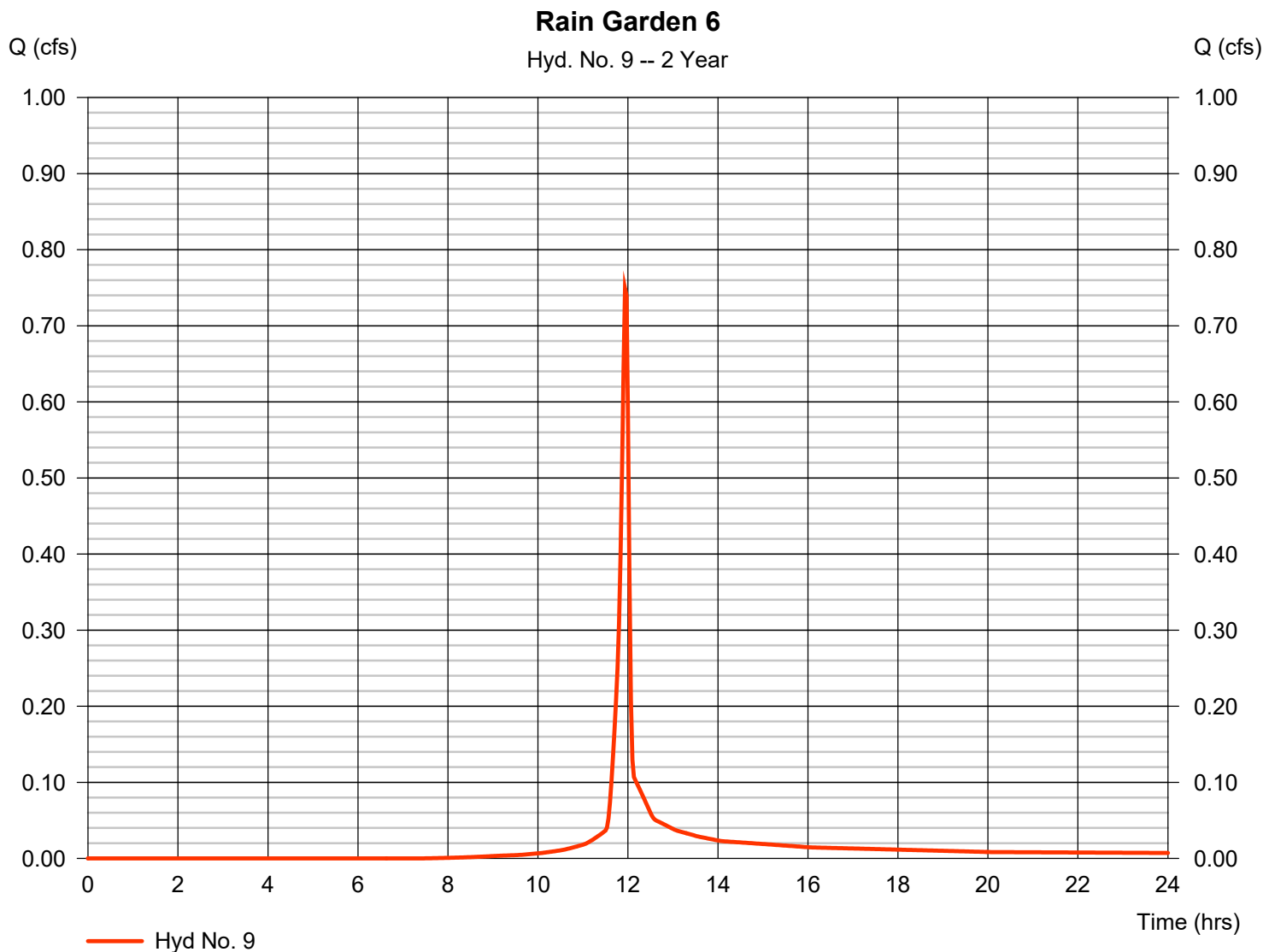
Hydrograph Report

Hyd. No. 9

Rain Garden 6

Hydrograph type	= SCS Runoff	Peak discharge	= 0.749 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 1,520 cuft
Drainage area	= 0.240 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.170 x 80) + (0.070 x 98)] / 0.240



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

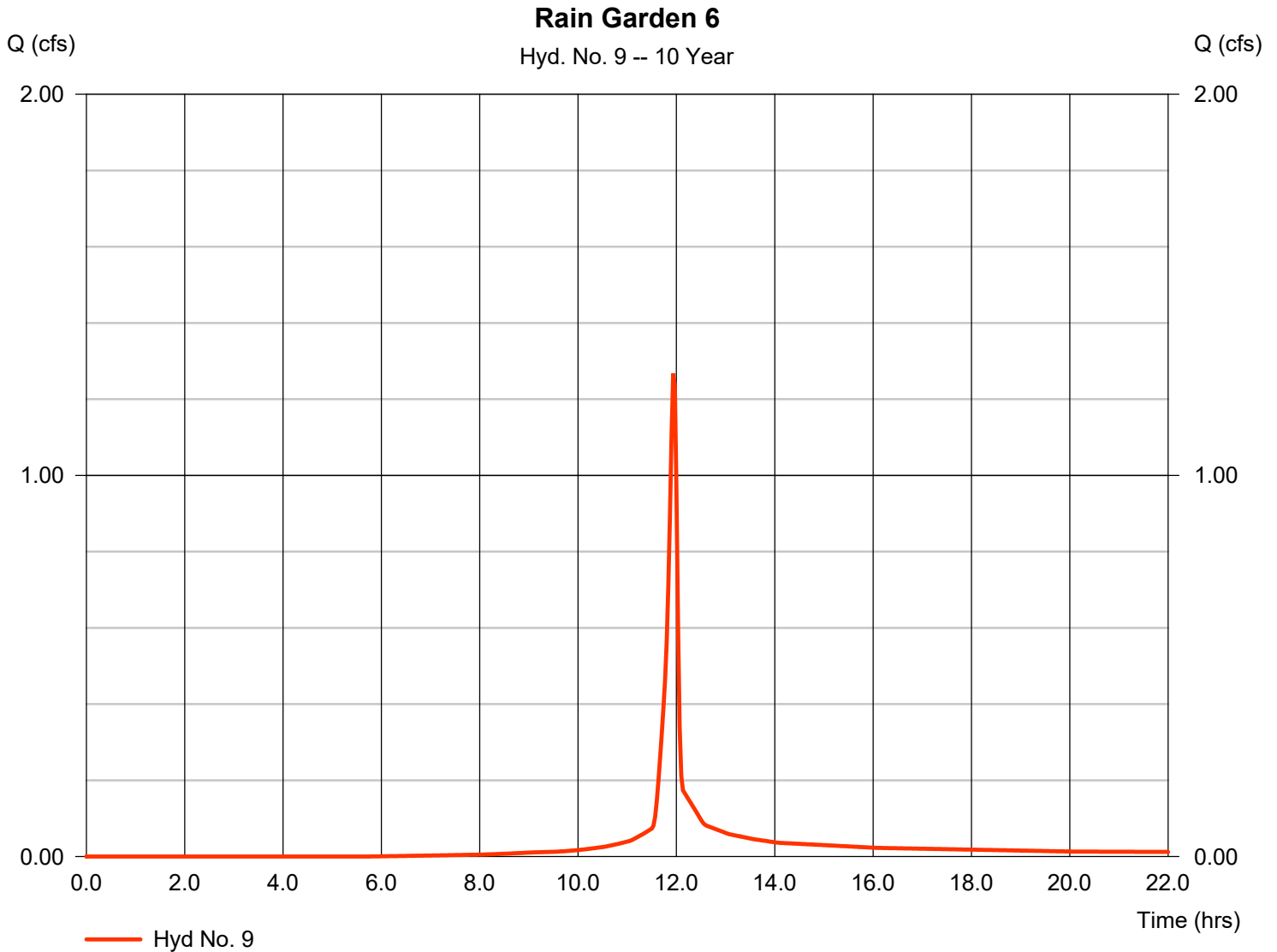
Friday, 06 / 28 / 2024

Hyd. No. 9

Rain Garden 6

Hydrograph type	= SCS Runoff	Peak discharge	= 1.268 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 2,623 cuft
Drainage area	= 0.240 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.170 x 80) + (0.070 x 98)] / 0.240



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

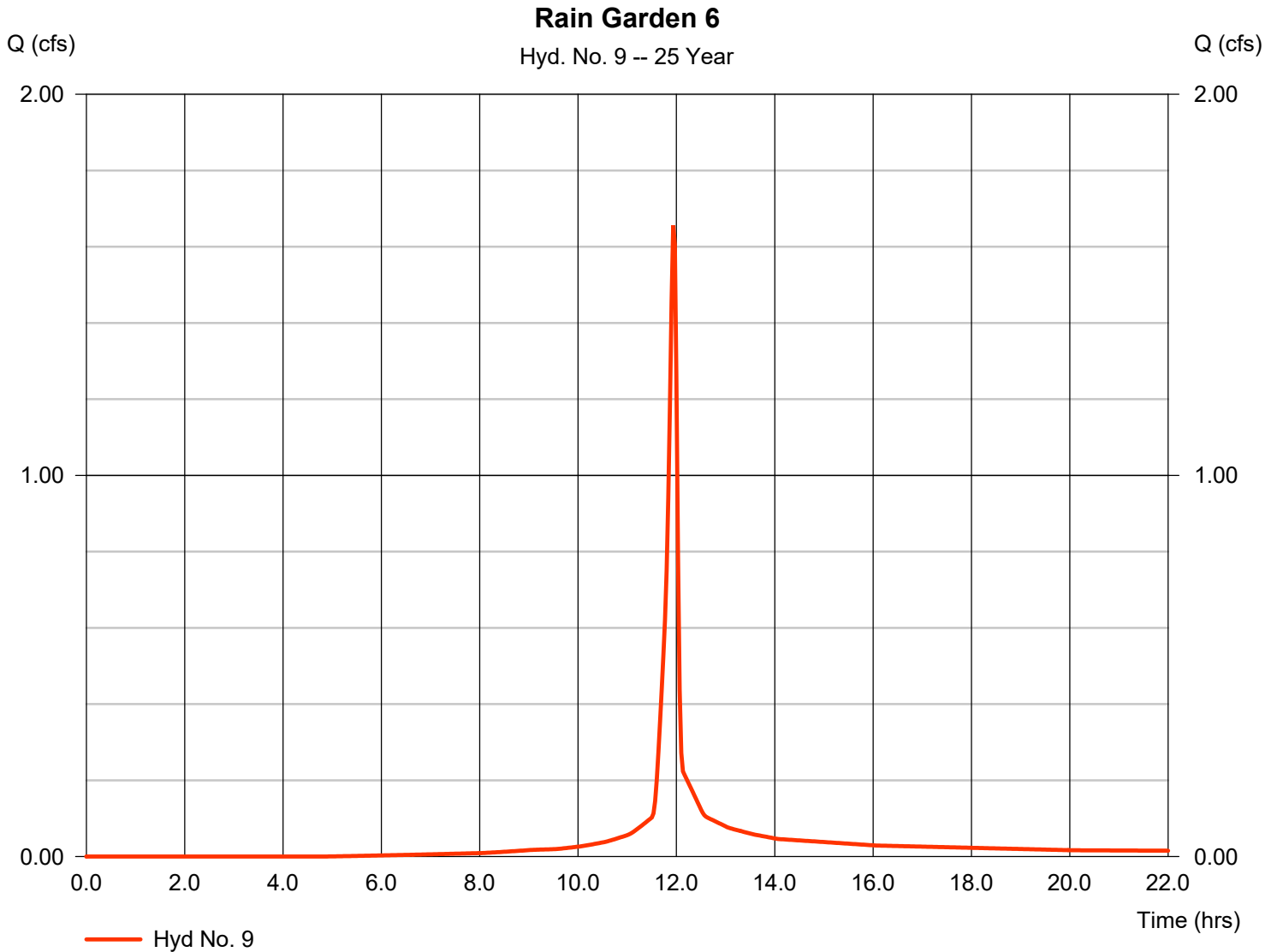
Friday, 06 / 28 / 2024

Hyd. No. 9

Rain Garden 6

Hydrograph type	= SCS Runoff	Peak discharge	= 1.656 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 3,476 cuft
Drainage area	= 0.240 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.170 x 80) + (0.070 x 98)] / 0.240



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

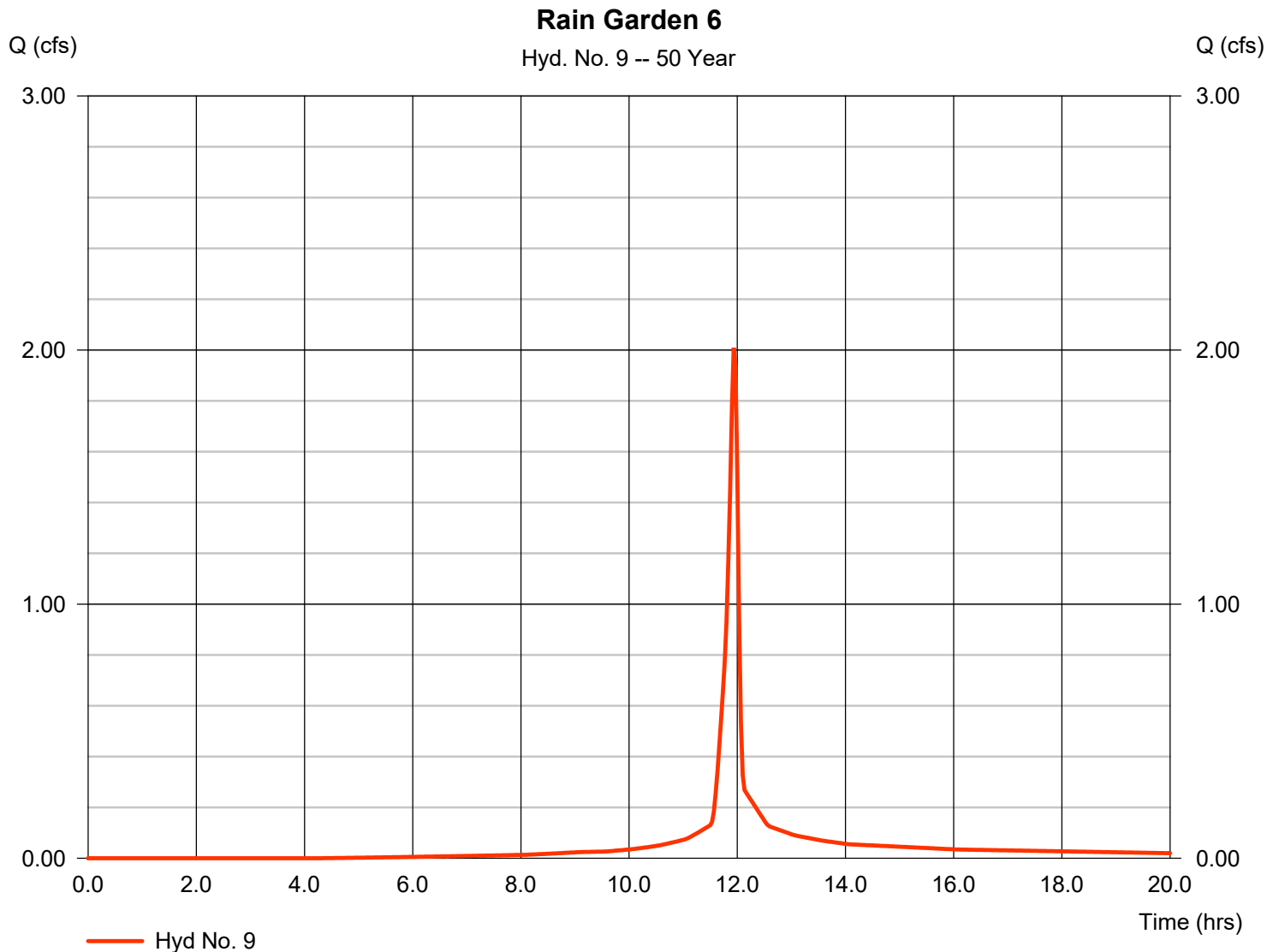
Friday, 06 / 28 / 2024

Hyd. No. 9

Rain Garden 6

Hydrograph type	= SCS Runoff	Peak discharge	= 2.009 cfs
Storm frequency	= 50 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 4,267 cuft
Drainage area	= 0.240 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.97 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.170 x 80) + (0.070 x 98)] / 0.240



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

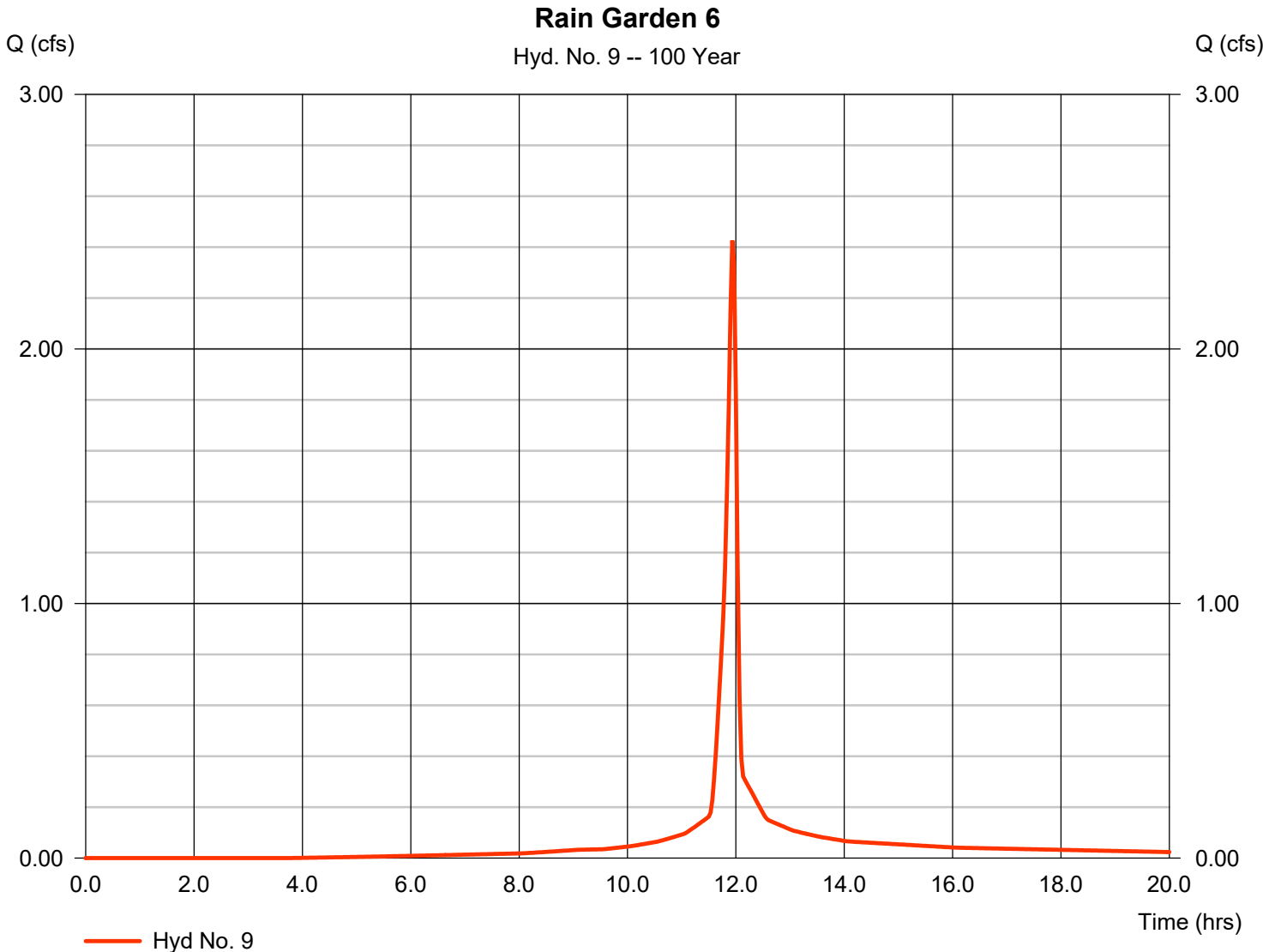
Friday, 06 / 28 / 2024

Hyd. No. 9

Rain Garden 6

Hydrograph type	= SCS Runoff	Peak discharge	= 2.426 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 5,217 cuft
Drainage area	= 0.240 ac	Curve number	= 85*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 8.18 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.170 x 80) + (0.070 x 98)] / 0.240



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

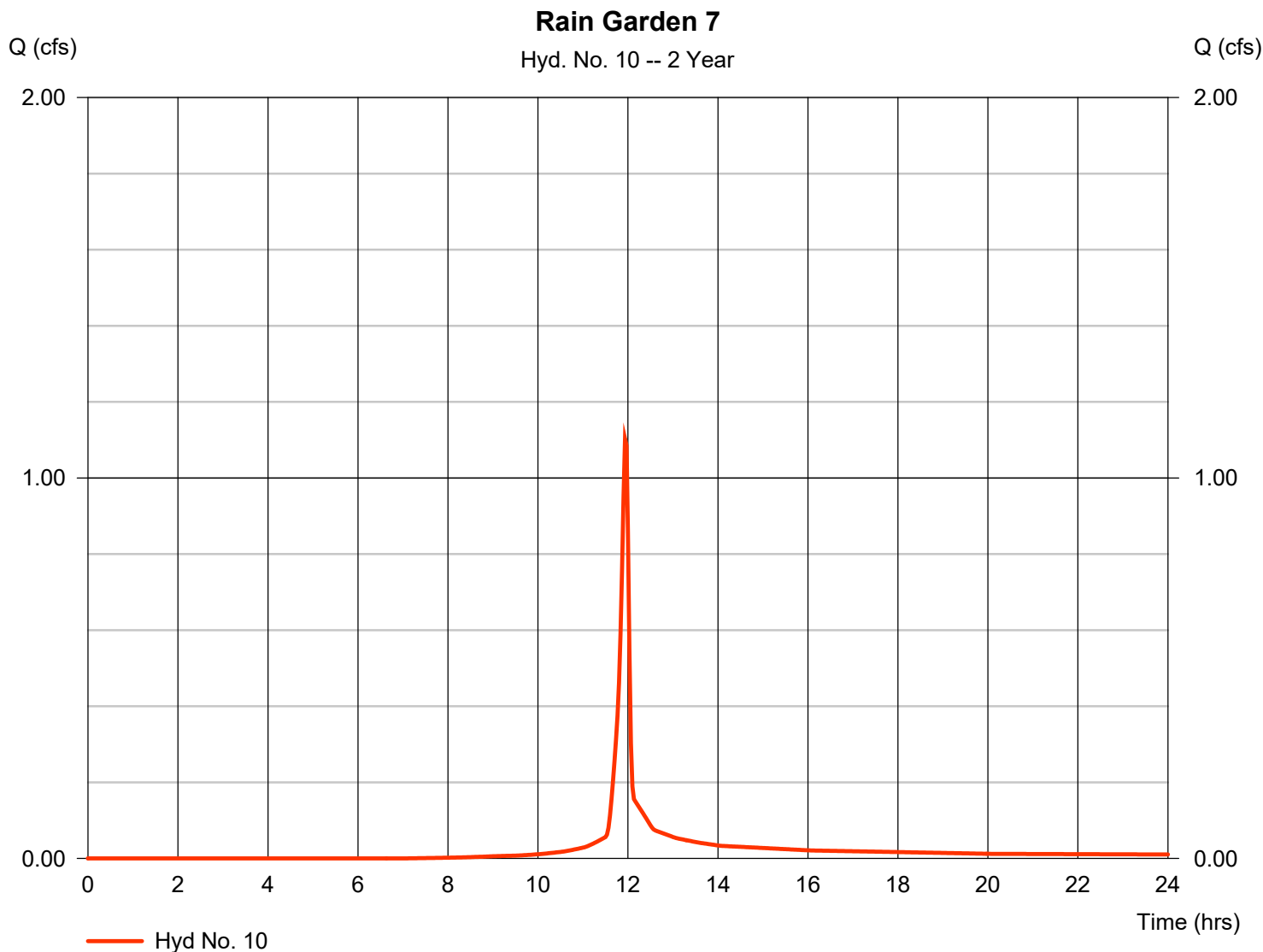
Friday, 06 / 28 / 2024

Hyd. No. 10

Rain Garden 7

Hydrograph type	= SCS Runoff	Peak discharge	= 1.103 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 2,245 cuft
Drainage area	= 0.340 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.230 x 80) + (0.110 x 98)] / 0.340



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

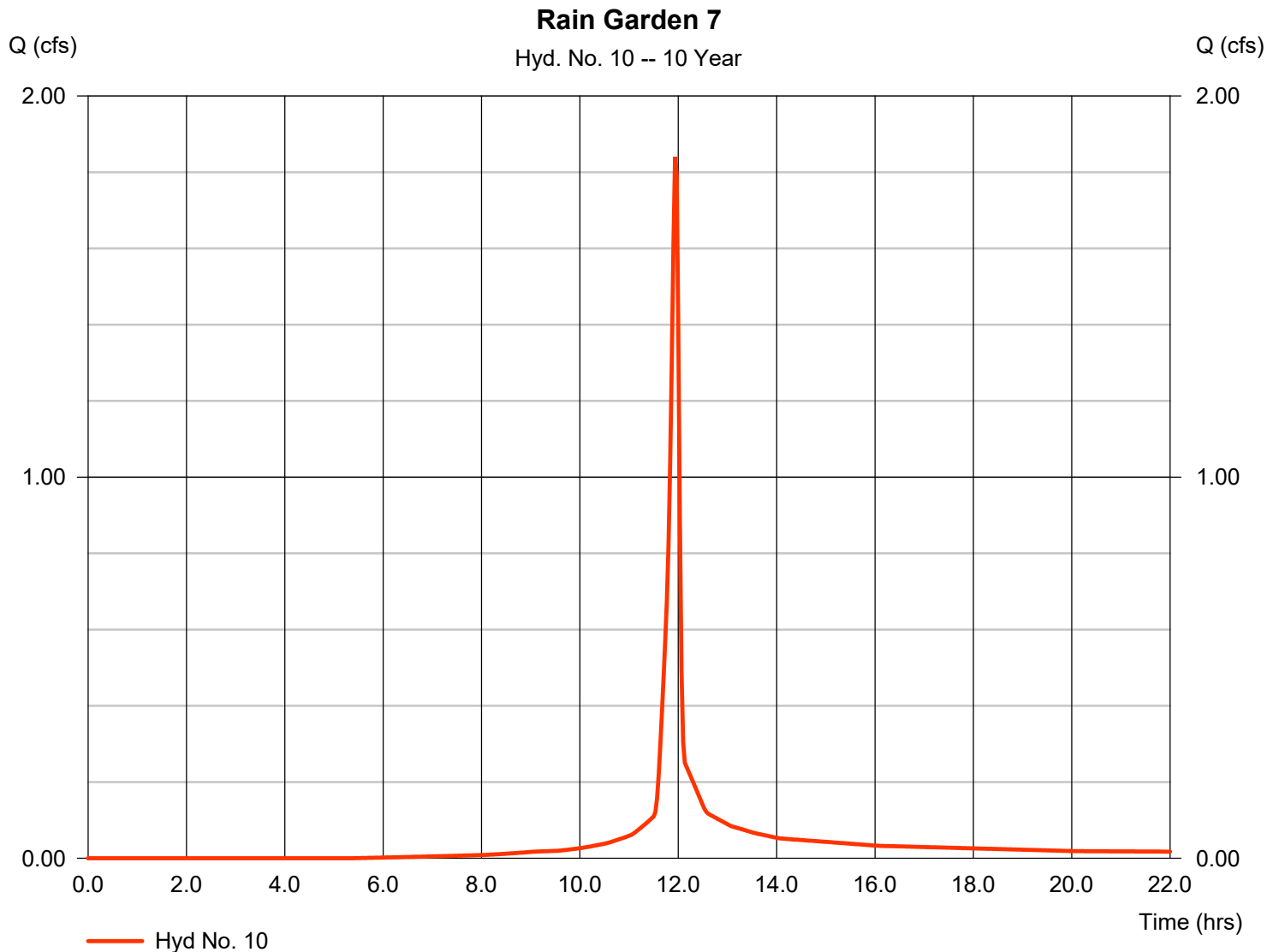
Friday, 06 / 28 / 2024

Hyd. No. 10

Rain Garden 7

Hydrograph type	= SCS Runoff	Peak discharge	= 1.841 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 3,828 cuft
Drainage area	= 0.340 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.230 x 80) + (0.110 x 98)] / 0.340



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

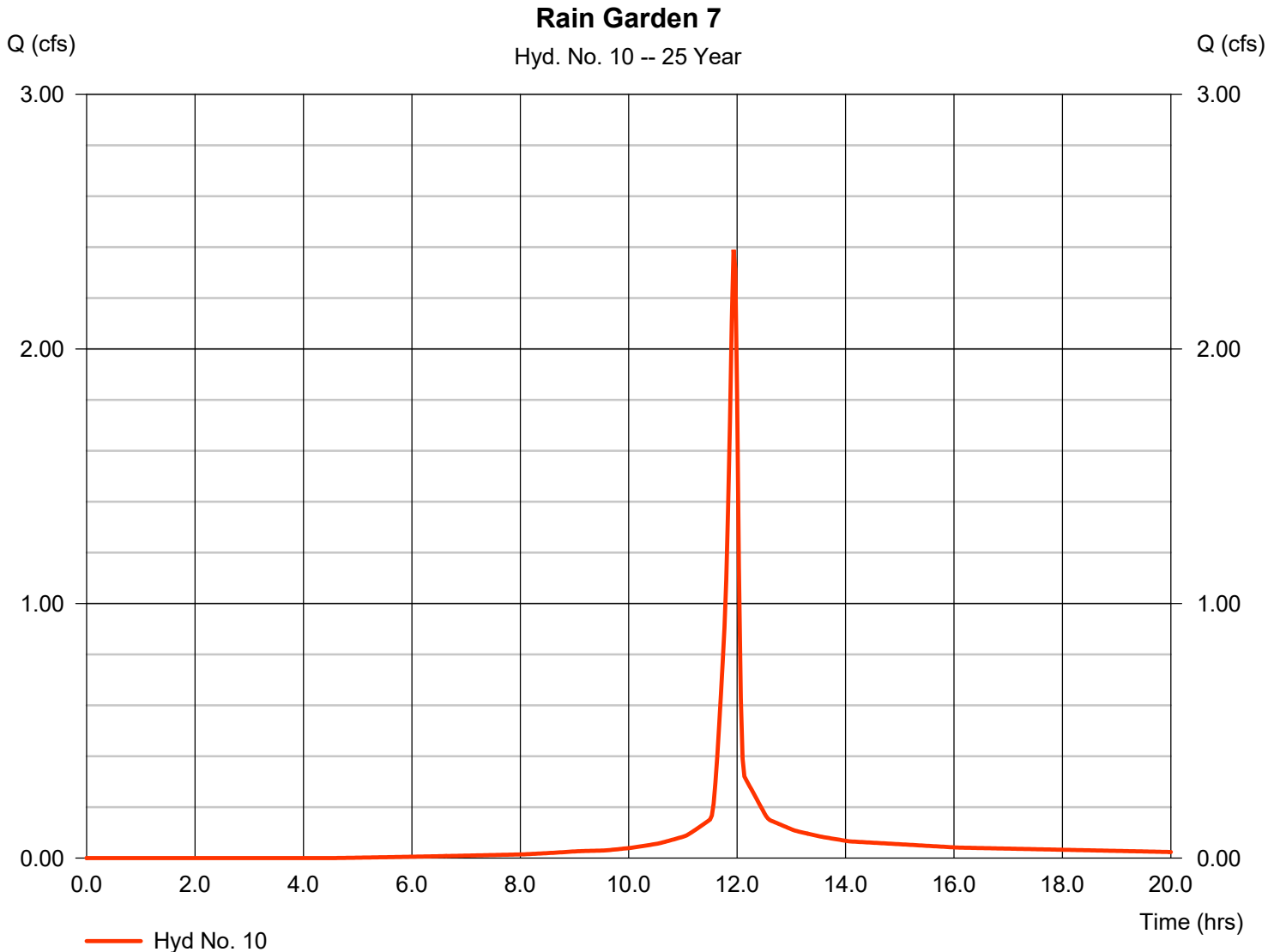
Friday, 06 / 28 / 2024

Hyd. No. 10

Rain Garden 7

Hydrograph type	= SCS Runoff	Peak discharge	= 2.390 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 5,047 cuft
Drainage area	= 0.340 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.230 x 80) + (0.110 x 98)] / 0.340



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

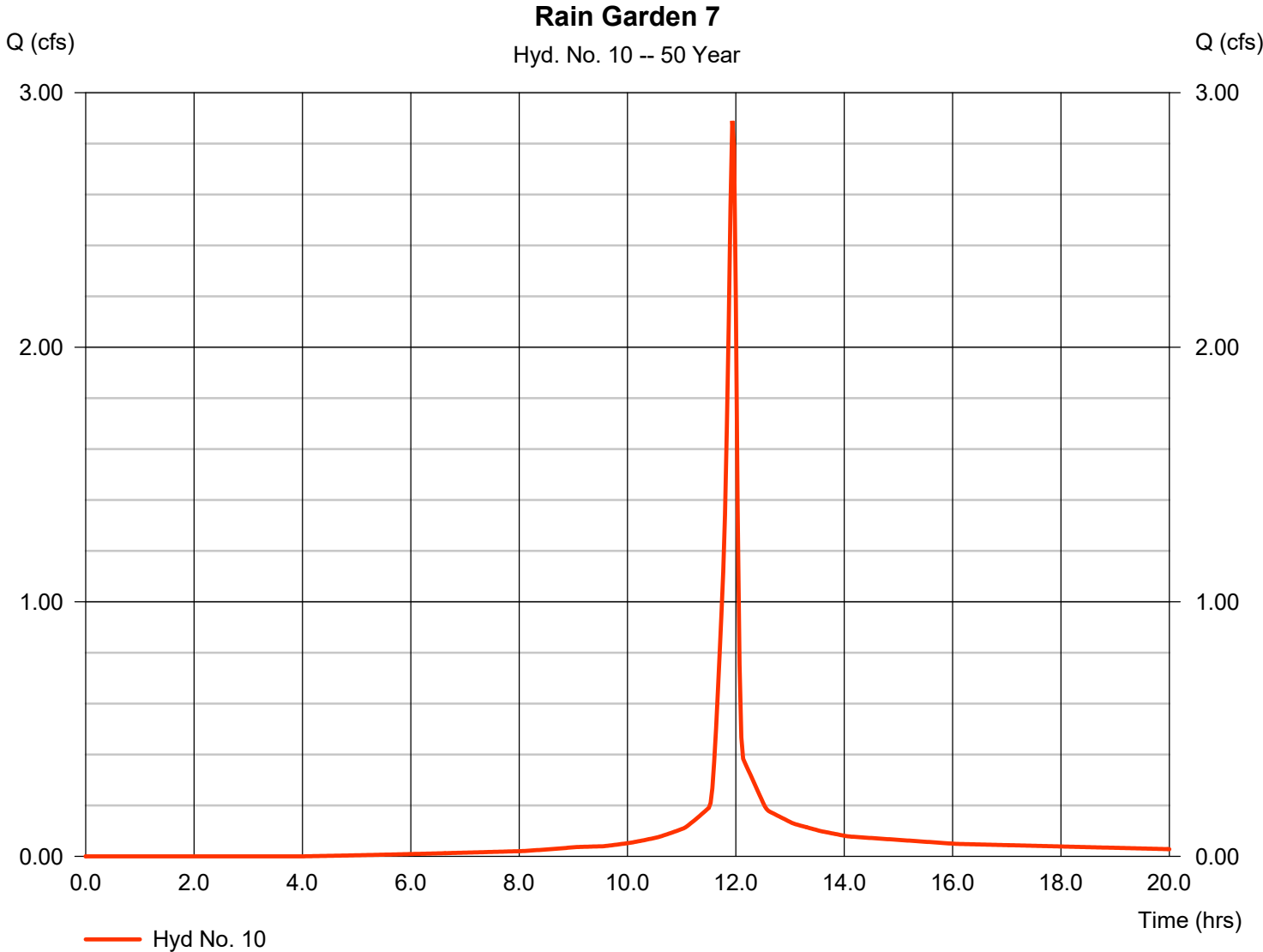
Friday, 06 / 28 / 2024

Hyd. No. 10

Rain Garden 7

Hydrograph type	= SCS Runoff	Peak discharge	= 2.889 cfs
Storm frequency	= 50 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 6,175 cuft
Drainage area	= 0.340 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.97 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.230 x 80) + (0.110 x 98)] / 0.340



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

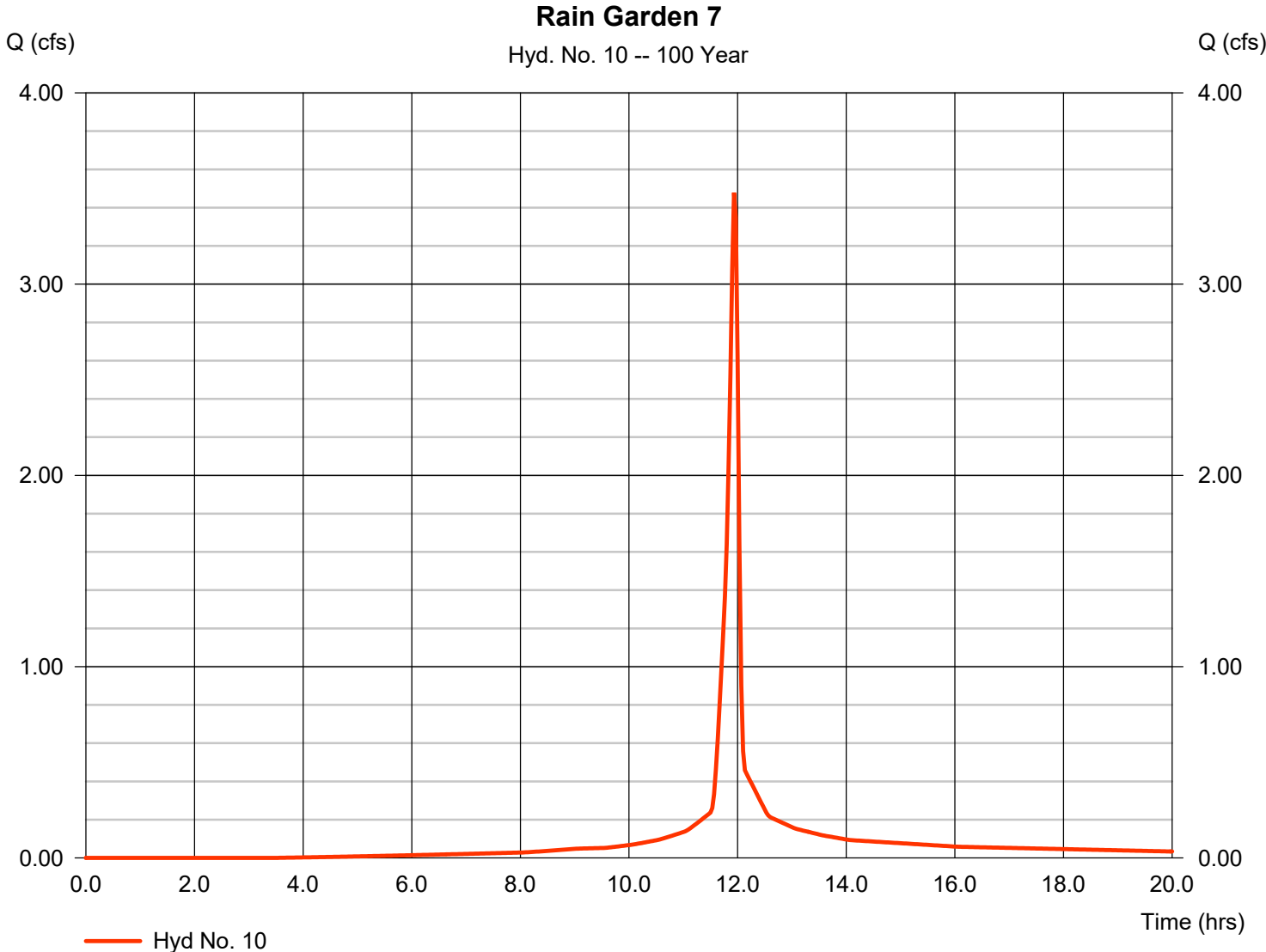
Friday, 06 / 28 / 2024

Hyd. No. 10

Rain Garden 7

Hydrograph type	= SCS Runoff	Peak discharge	= 3.478 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 7,528 cuft
Drainage area	= 0.340 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 8.18 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.230 x 80) + (0.110 x 98)] / 0.340



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

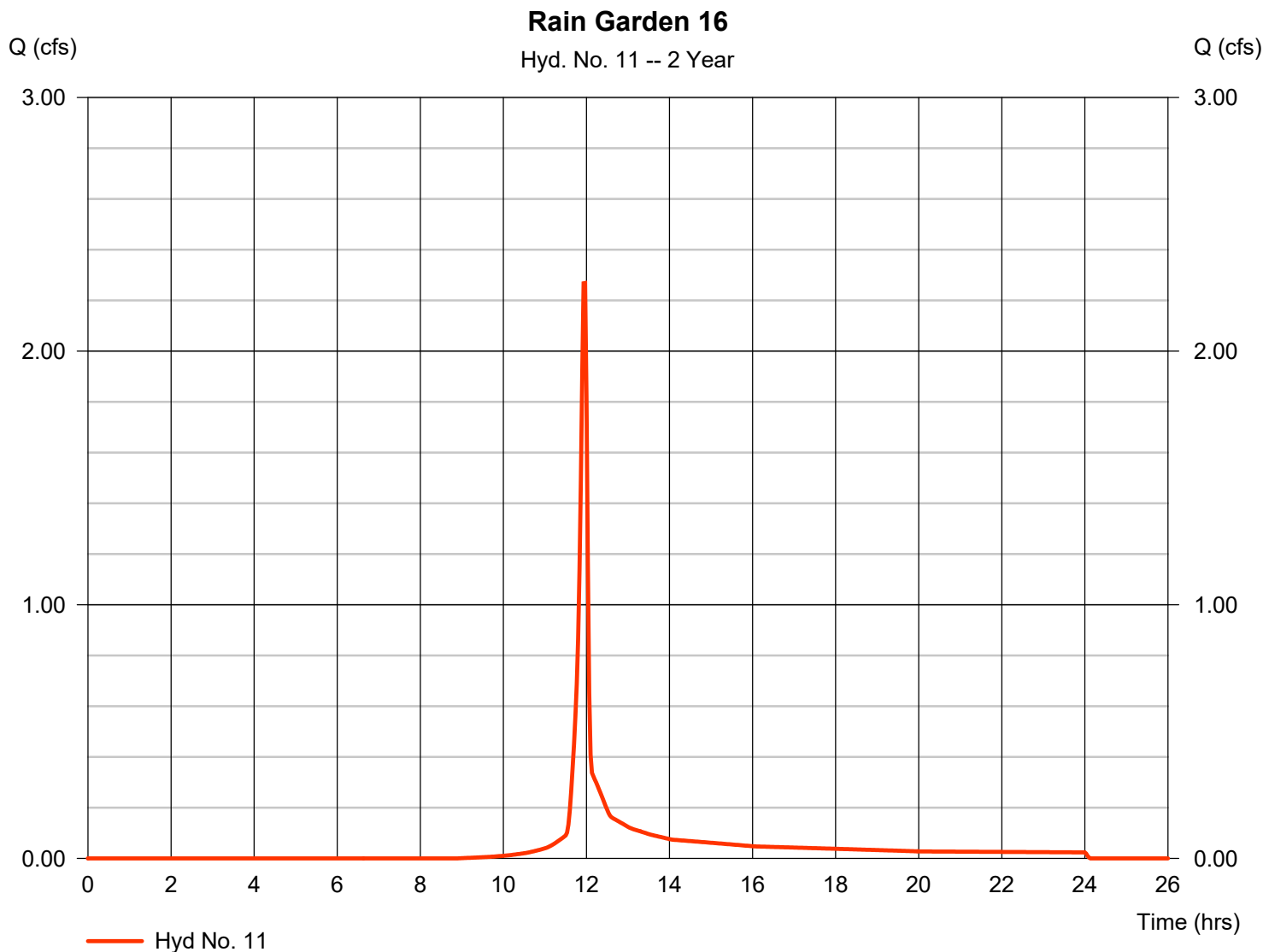
Friday, 06 / 28 / 2024

Hyd. No. 11

Rain Garden 16

Hydrograph type	= SCS Runoff	Peak discharge	= 2.268 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 4,577 cuft
Drainage area	= 0.860 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.830 x 80) + (0.030 x 98)] / 0.860



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

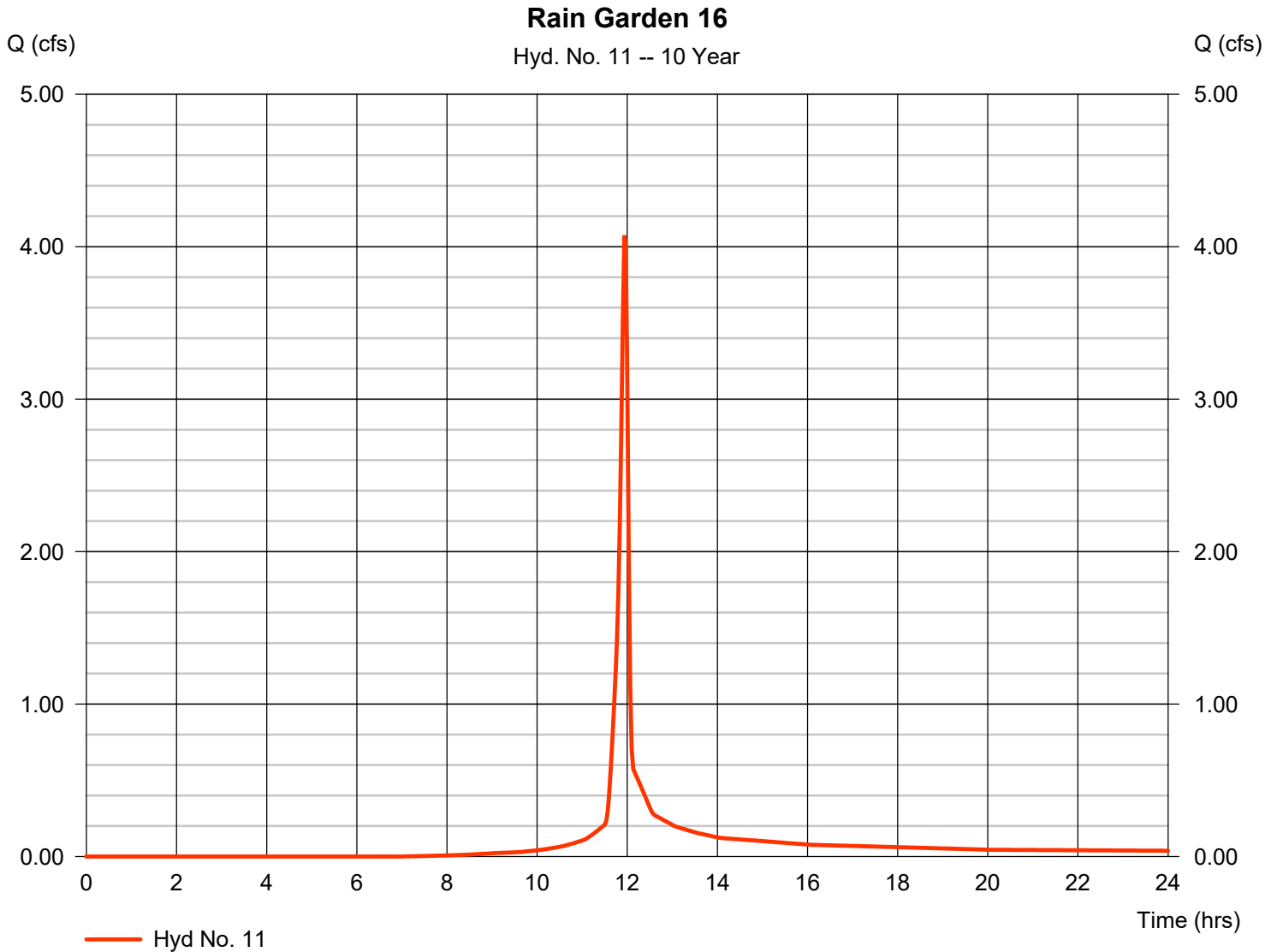
Friday, 06 / 28 / 2024

Hyd. No. 11

Rain Garden 16

Hydrograph type	= SCS Runoff	Peak discharge	= 4.075 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 8,299 cuft
Drainage area	= 0.860 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.830 x 80) + (0.030 x 98)] / 0.860



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

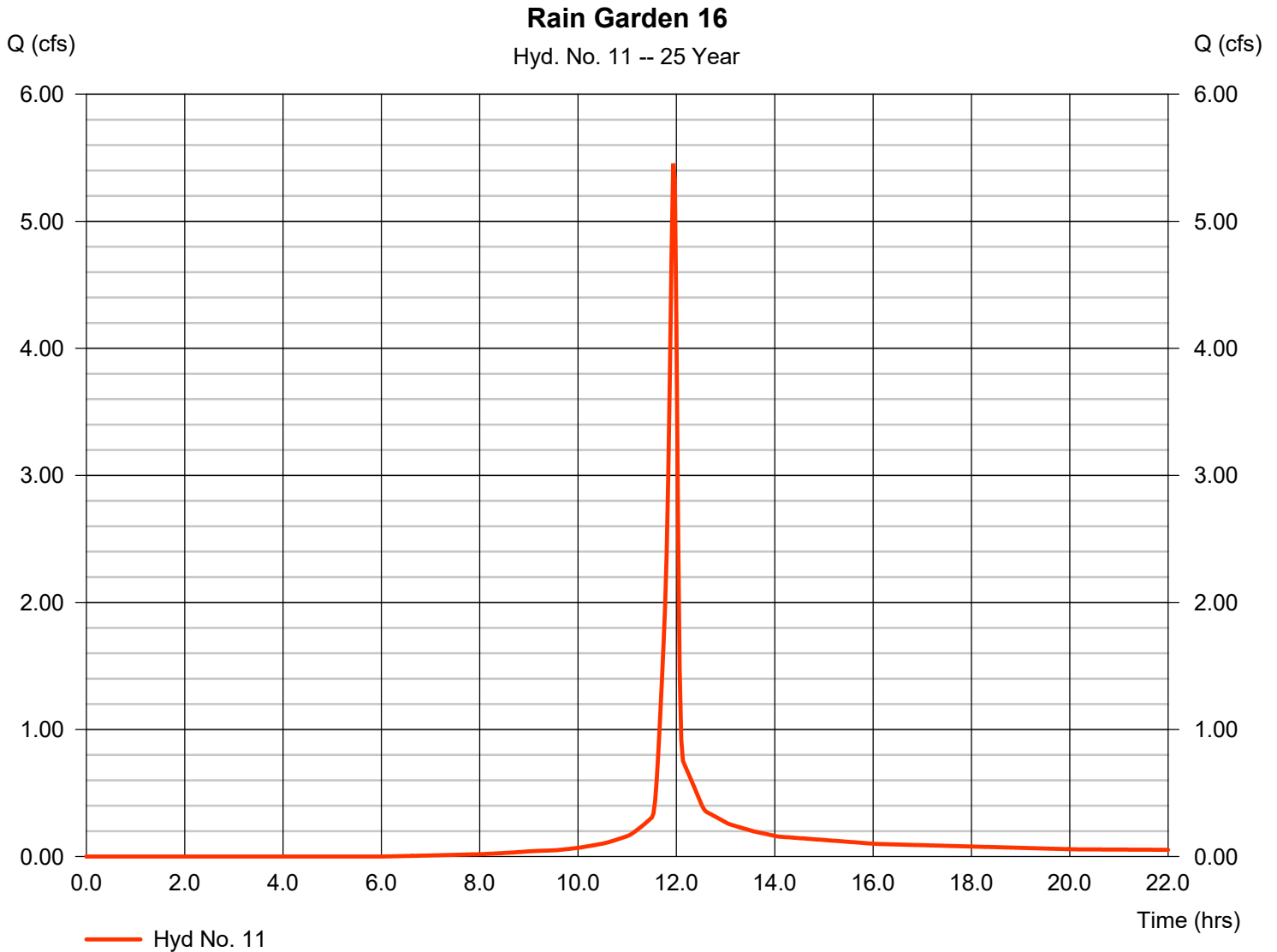
Friday, 06 / 28 / 2024

Hyd. No. 11

Rain Garden 16

Hydrograph type	= SCS Runoff	Peak discharge	= 5.455 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 11,233 cuft
Drainage area	= 0.860 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.830 x 80) + (0.030 x 98)] / 0.860



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

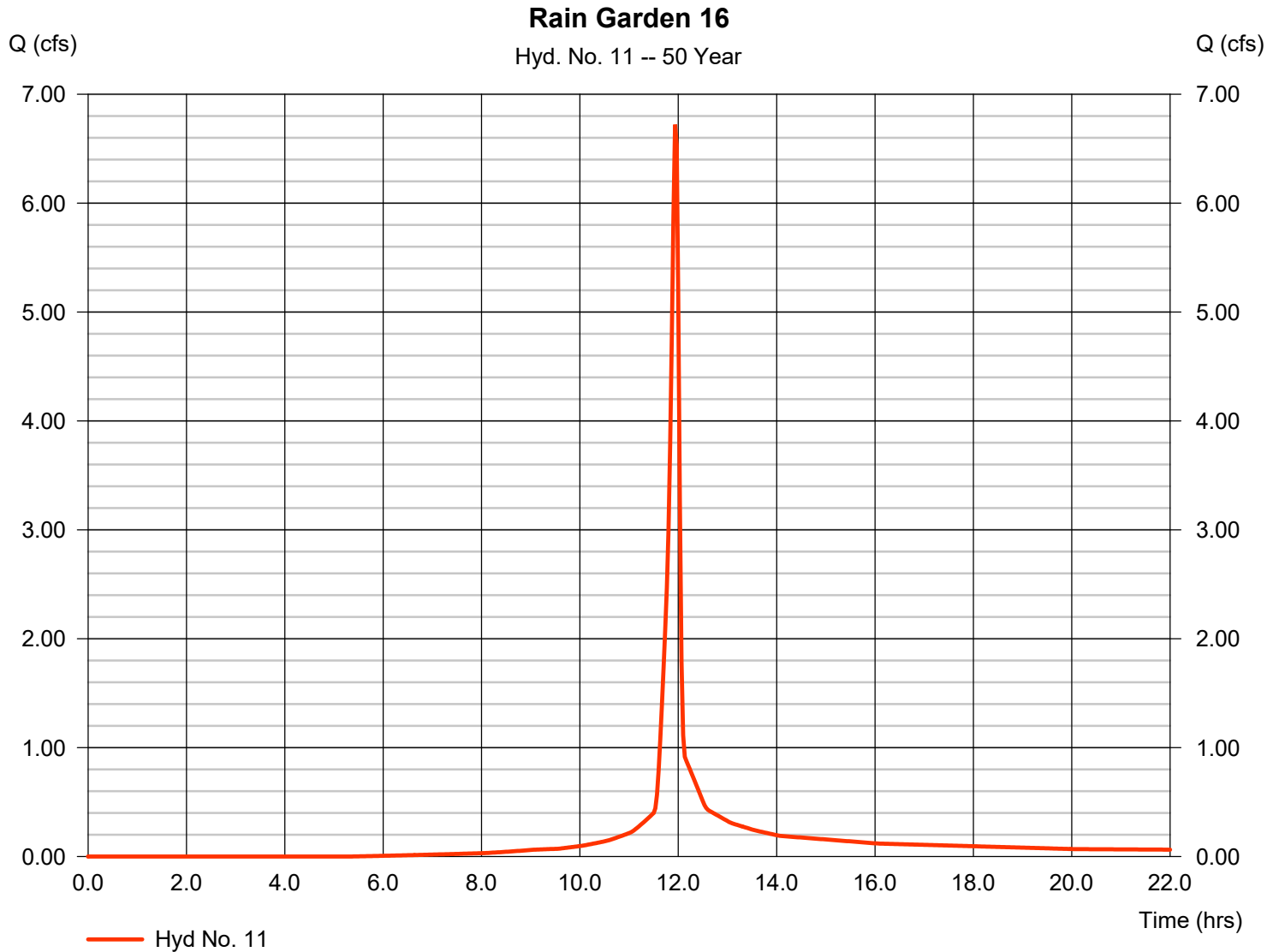
Friday, 06 / 28 / 2024

Hyd. No. 11

Rain Garden 16

Hydrograph type	= SCS Runoff	Peak discharge	= 6.721 cfs
Storm frequency	= 50 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 13,981 cuft
Drainage area	= 0.860 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.97 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.830 x 80) + (0.030 x 98)] / 0.860



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

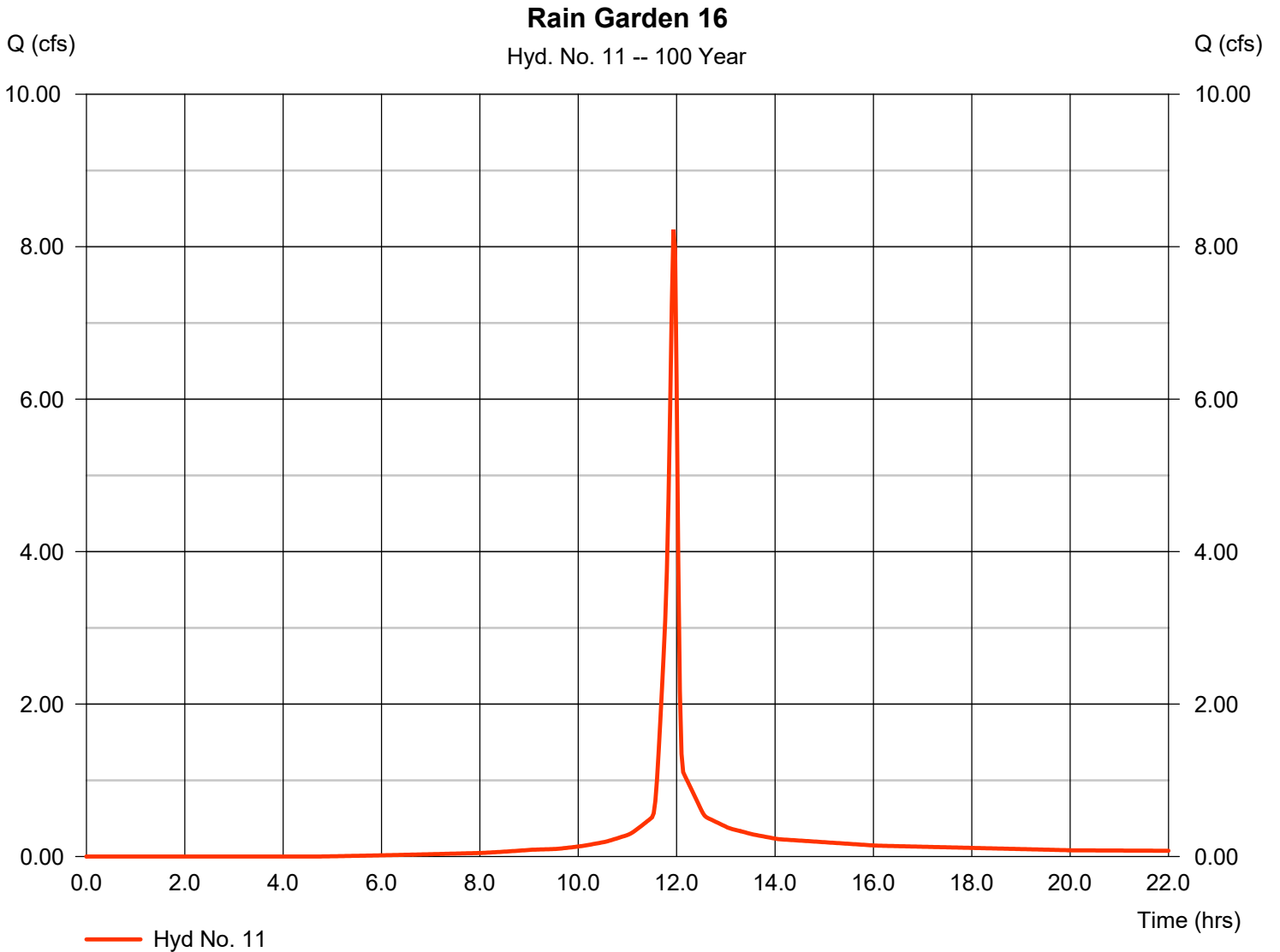
Friday, 06 / 28 / 2024

Hyd. No. 11

Rain Garden 16

Hydrograph type	= SCS Runoff	Peak discharge	= 8.224 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 17,303 cuft
Drainage area	= 0.860 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 8.18 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.830 x 80) + (0.030 x 98)] / 0.860



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

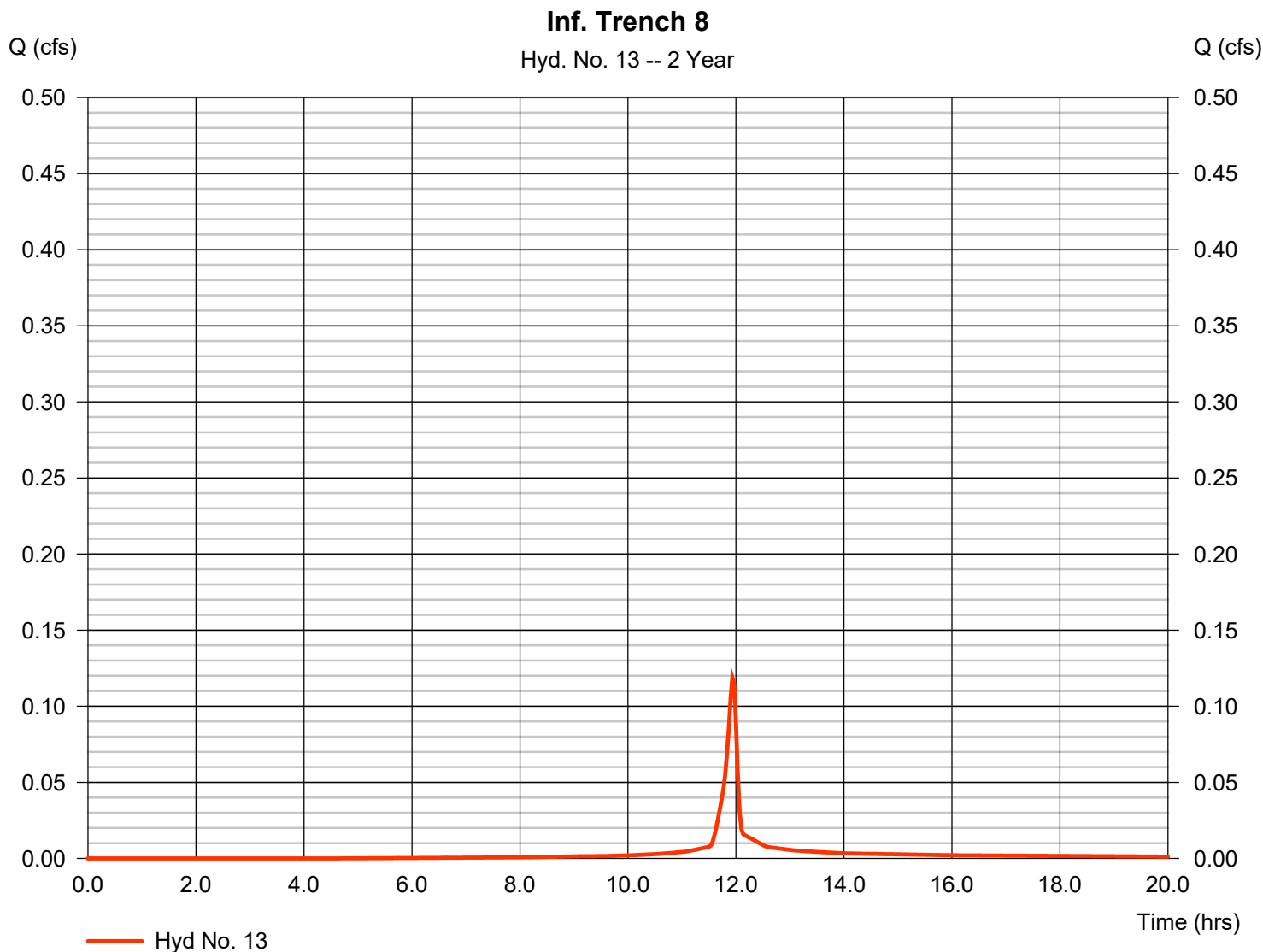
Friday, 06 / 28 / 2024

Hyd. No. 13

Inf. Trench 8

Hydrograph type	= SCS Runoff	Peak discharge	= 0.119 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 252 cuft
Drainage area	= 0.030 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.010 x 80) + (0.020 x 98)] / 0.030



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

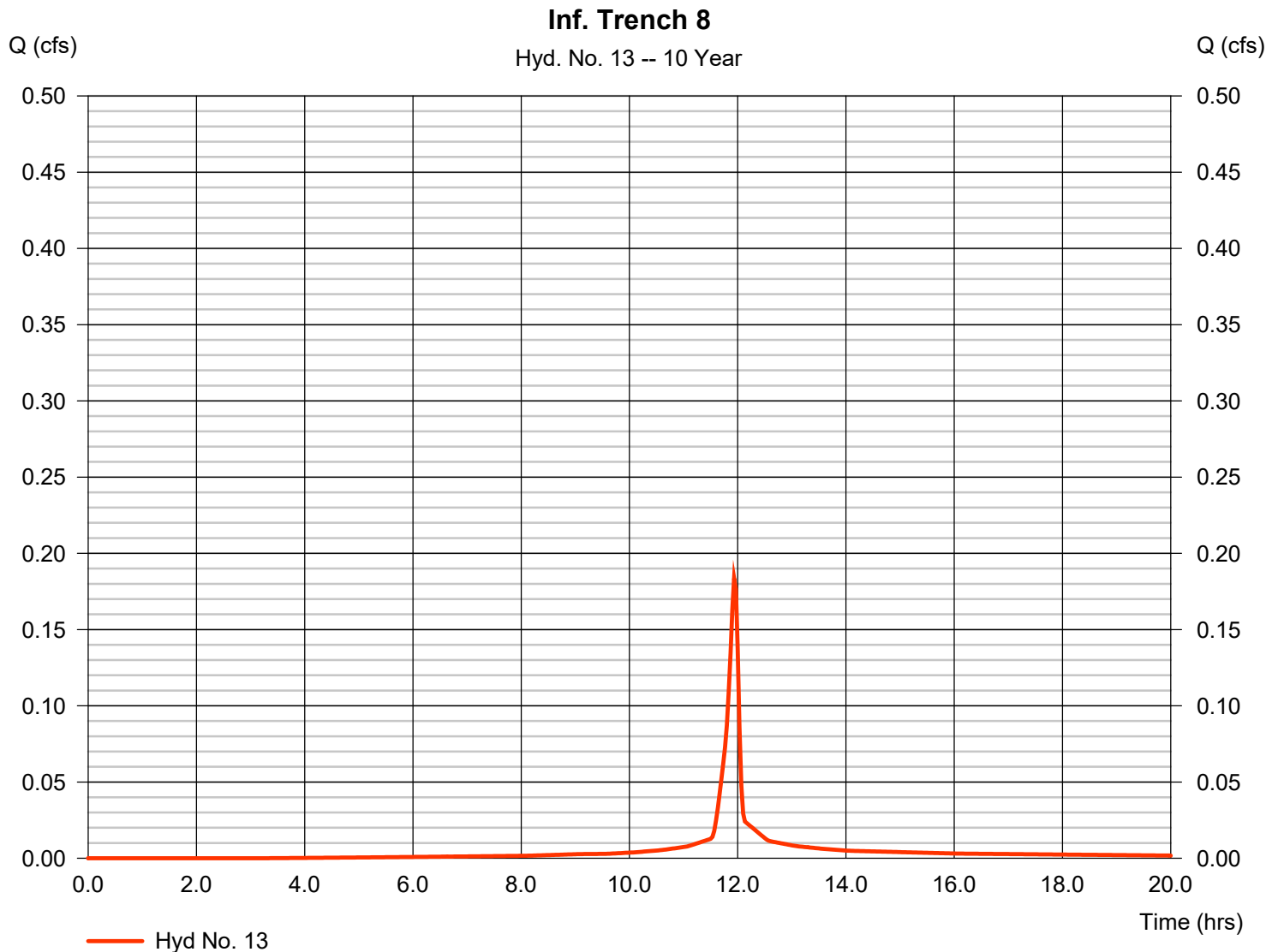
Friday, 06 / 28 / 2024

Hyd. No. 13

Inf. Trench 8

Hydrograph type	= SCS Runoff	Peak discharge	= 0.184 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 401 cuft
Drainage area	= 0.030 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.010 x 80) + (0.020 x 98)] / 0.030



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

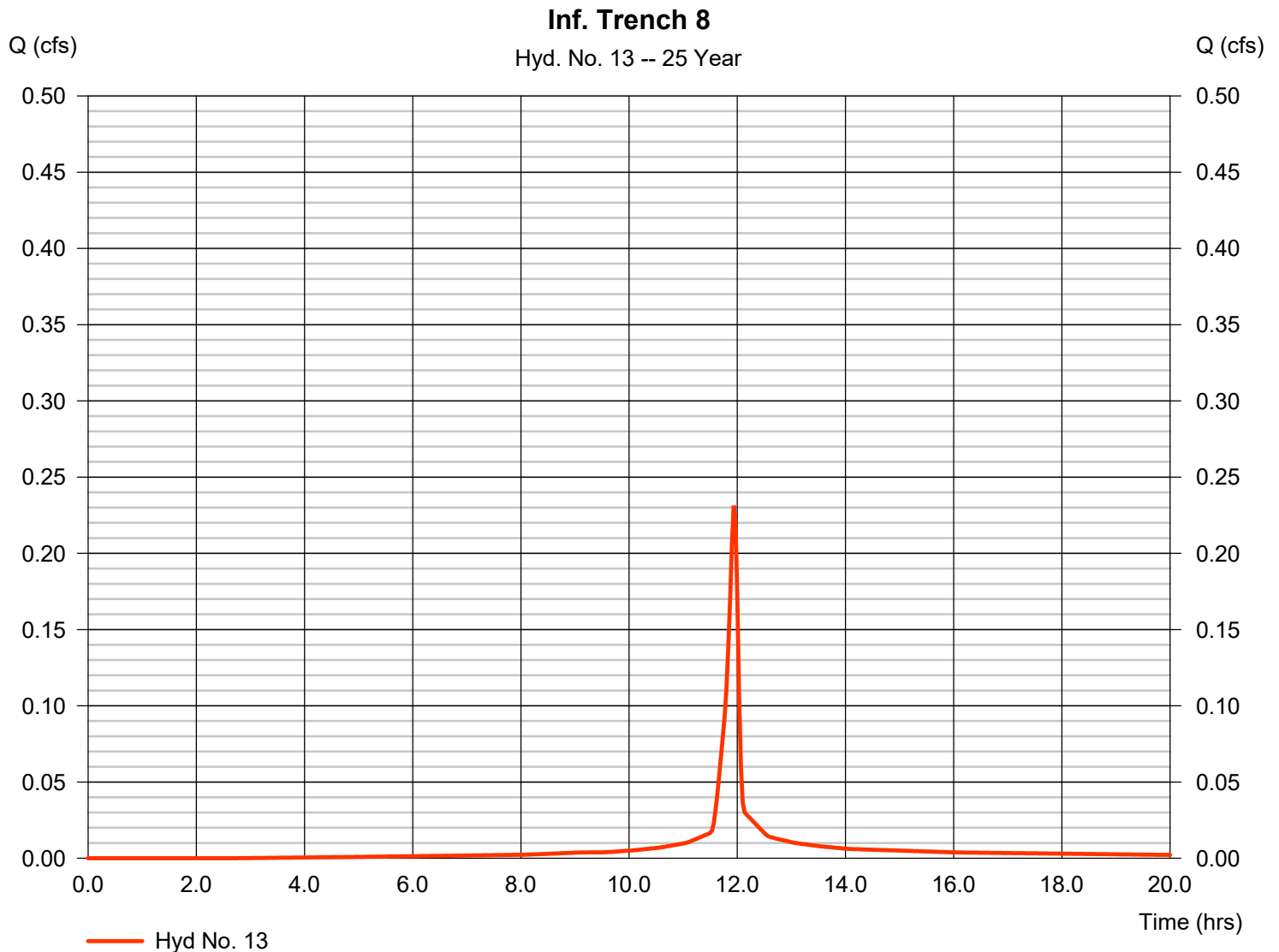
Friday, 06 / 28 / 2024

Hyd. No. 13

Inf. Trench 8

Hydrograph type	= SCS Runoff	Peak discharge	= 0.231 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 513 cuft
Drainage area	= 0.030 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.010 x 80) + (0.020 x 98)] / 0.030



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

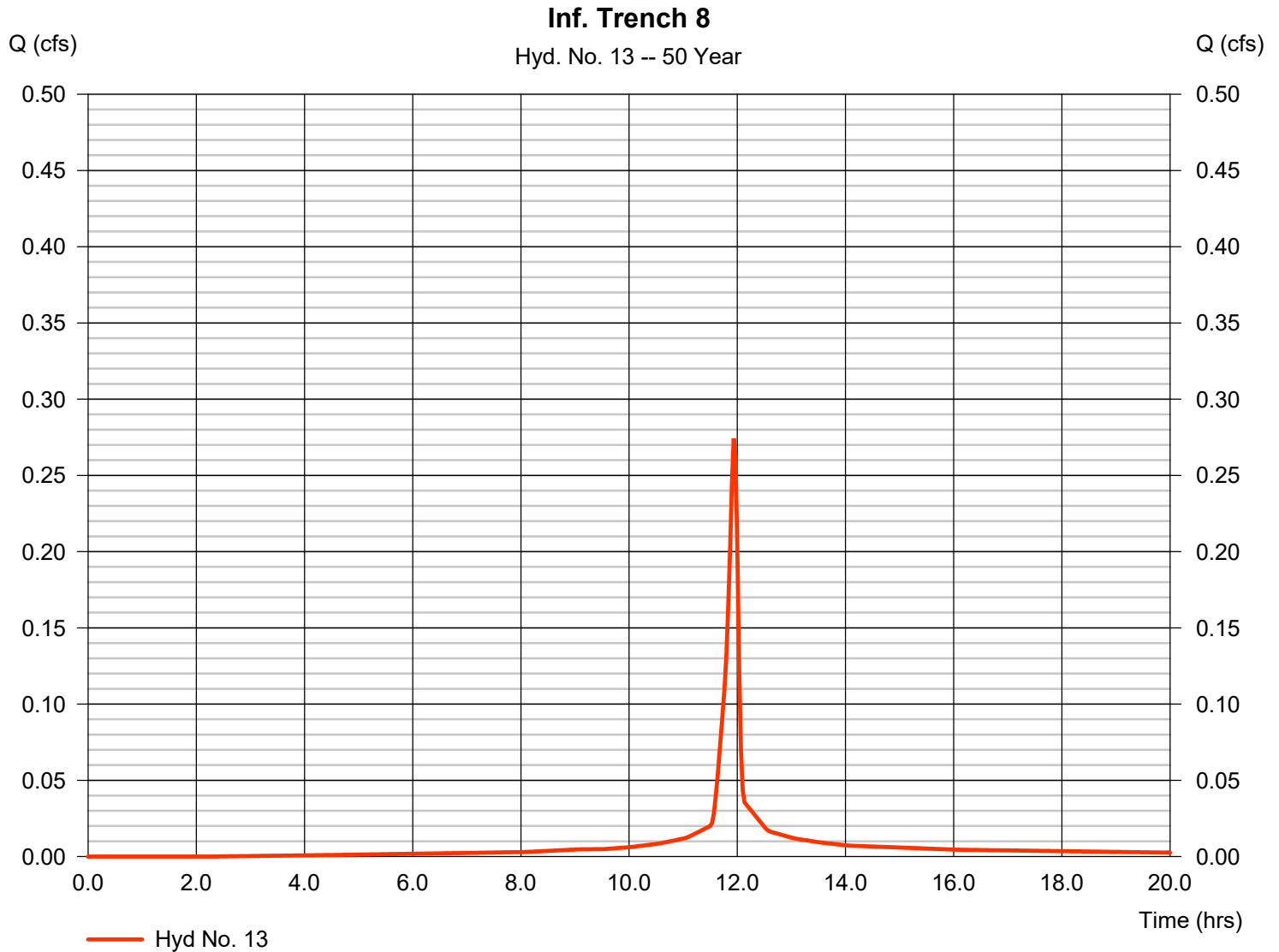
Friday, 06 / 28 / 2024

Hyd. No. 13

Inf. Trench 8

Hydrograph type	= SCS Runoff	Peak discharge	= 0.274 cfs
Storm frequency	= 50 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 615 cuft
Drainage area	= 0.030 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.97 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.010 x 80) + (0.020 x 98)] / 0.030



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

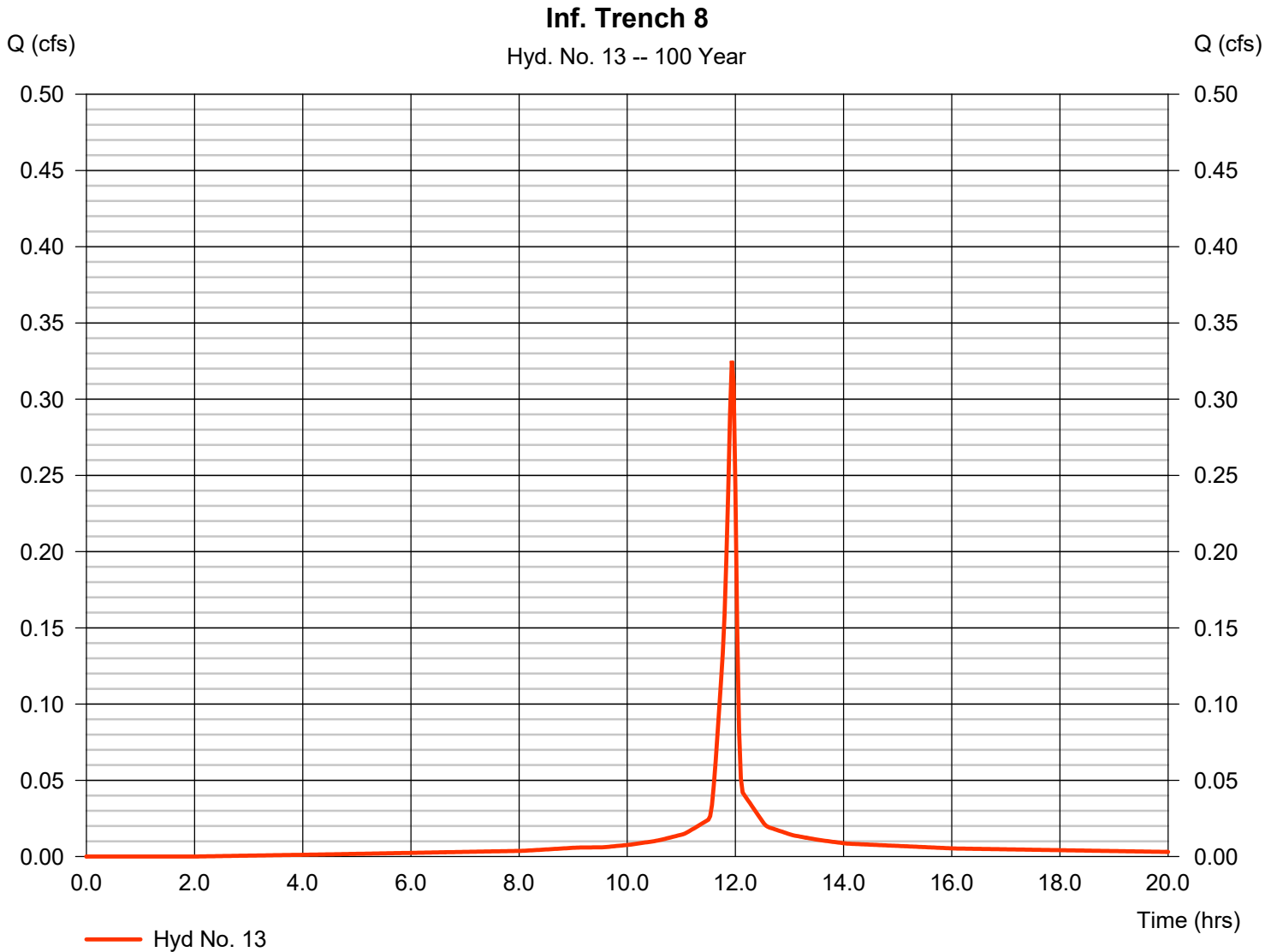
Friday, 06 / 28 / 2024

Hyd. No. 13

Inf. Trench 8

Hydrograph type	= SCS Runoff	Peak discharge	= 0.325 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 737 cuft
Drainage area	= 0.030 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 8.18 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.010 x 80) + (0.020 x 98)] / 0.030



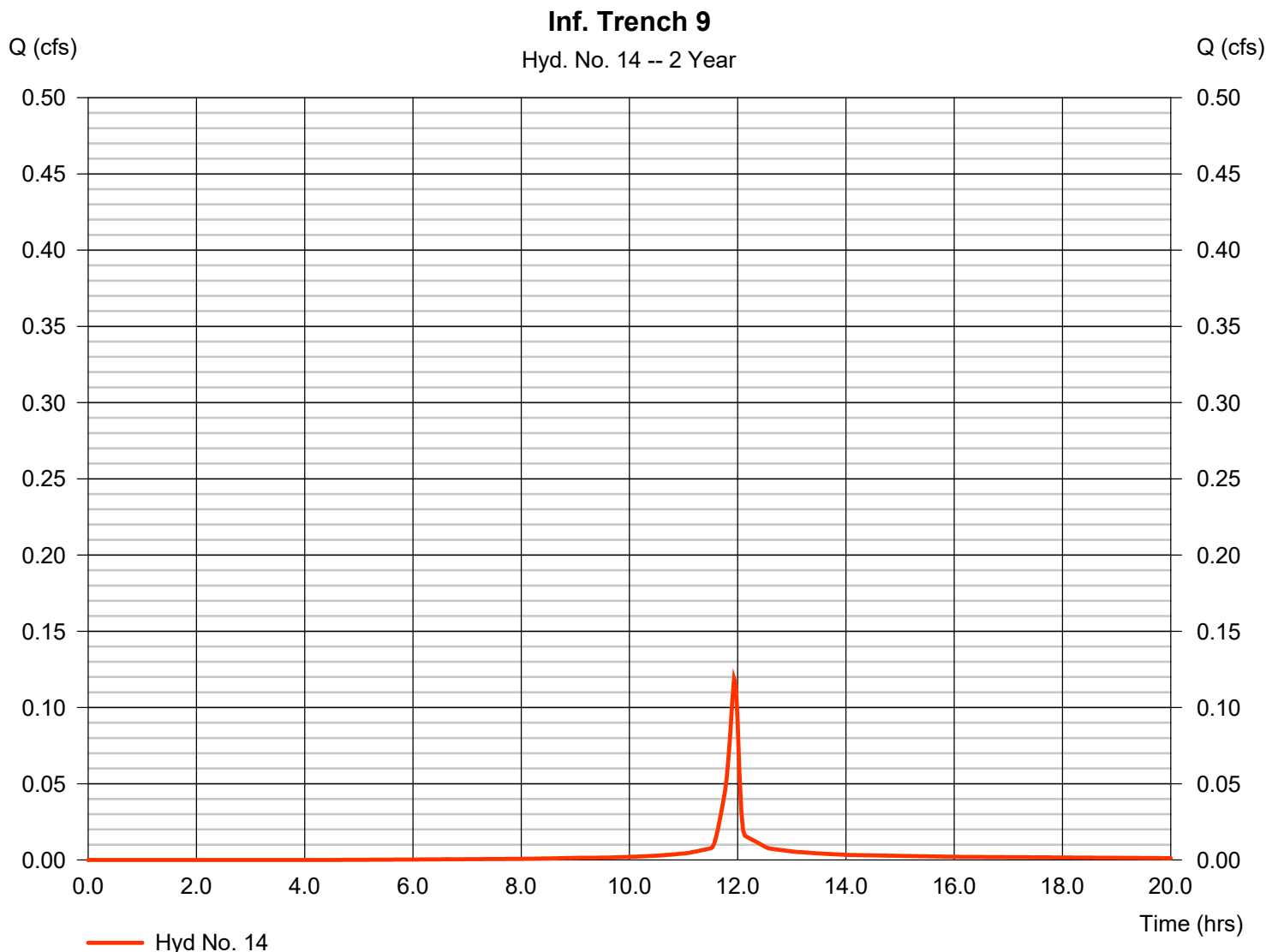
Hydrograph Report

Hyd. No. 14

Inf. Trench 9

Hydrograph type	= SCS Runoff	Peak discharge	= 0.119 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 252 cuft
Drainage area	= 0.030 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.010 x 80) + (0.020 x 98)] / 0.030



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

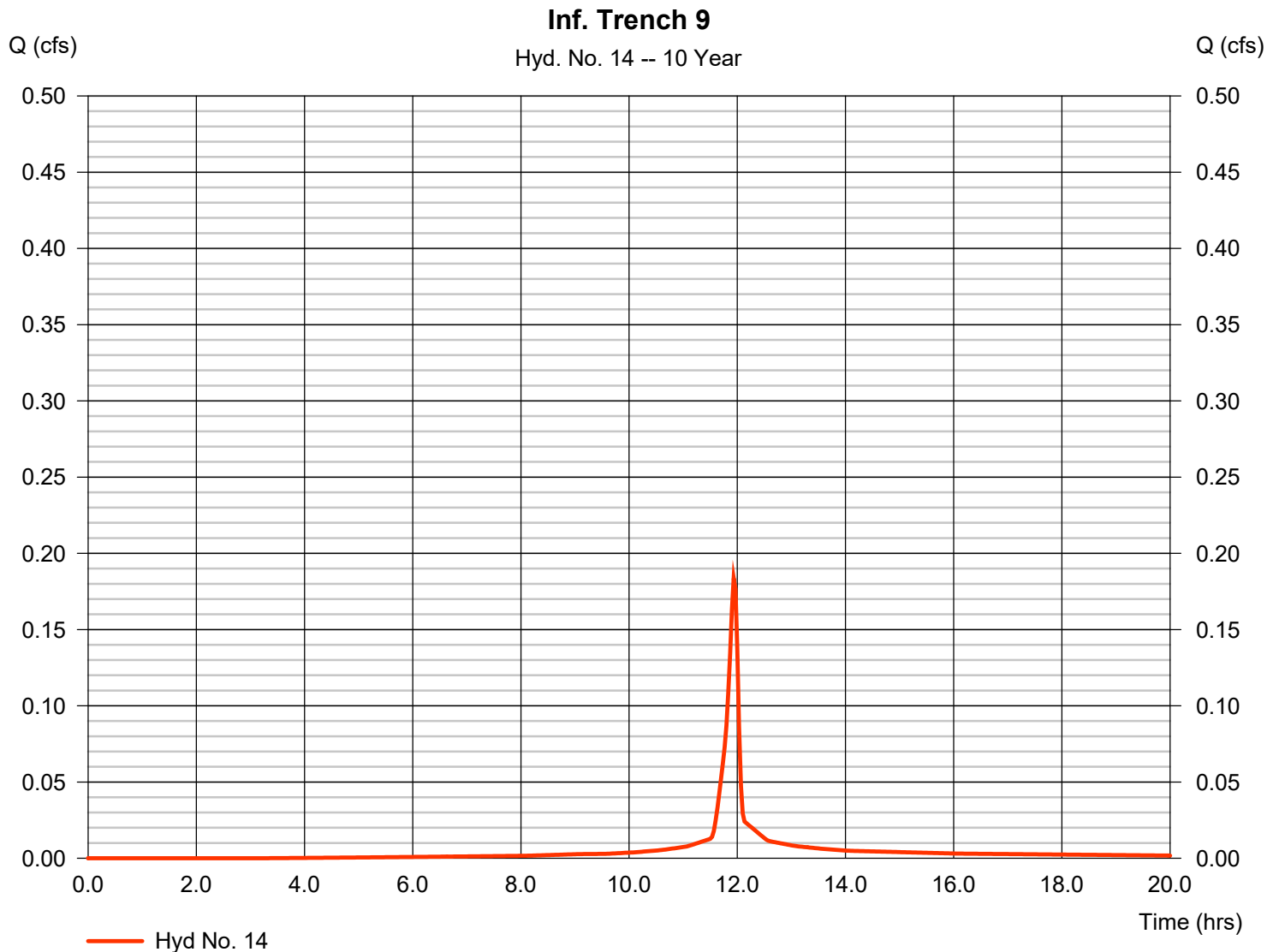
Friday, 06 / 28 / 2024

Hyd. No. 14

Inf. Trench 9

Hydrograph type	= SCS Runoff	Peak discharge	= 0.184 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 401 cuft
Drainage area	= 0.030 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.010 x 80) + (0.020 x 98)] / 0.030



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

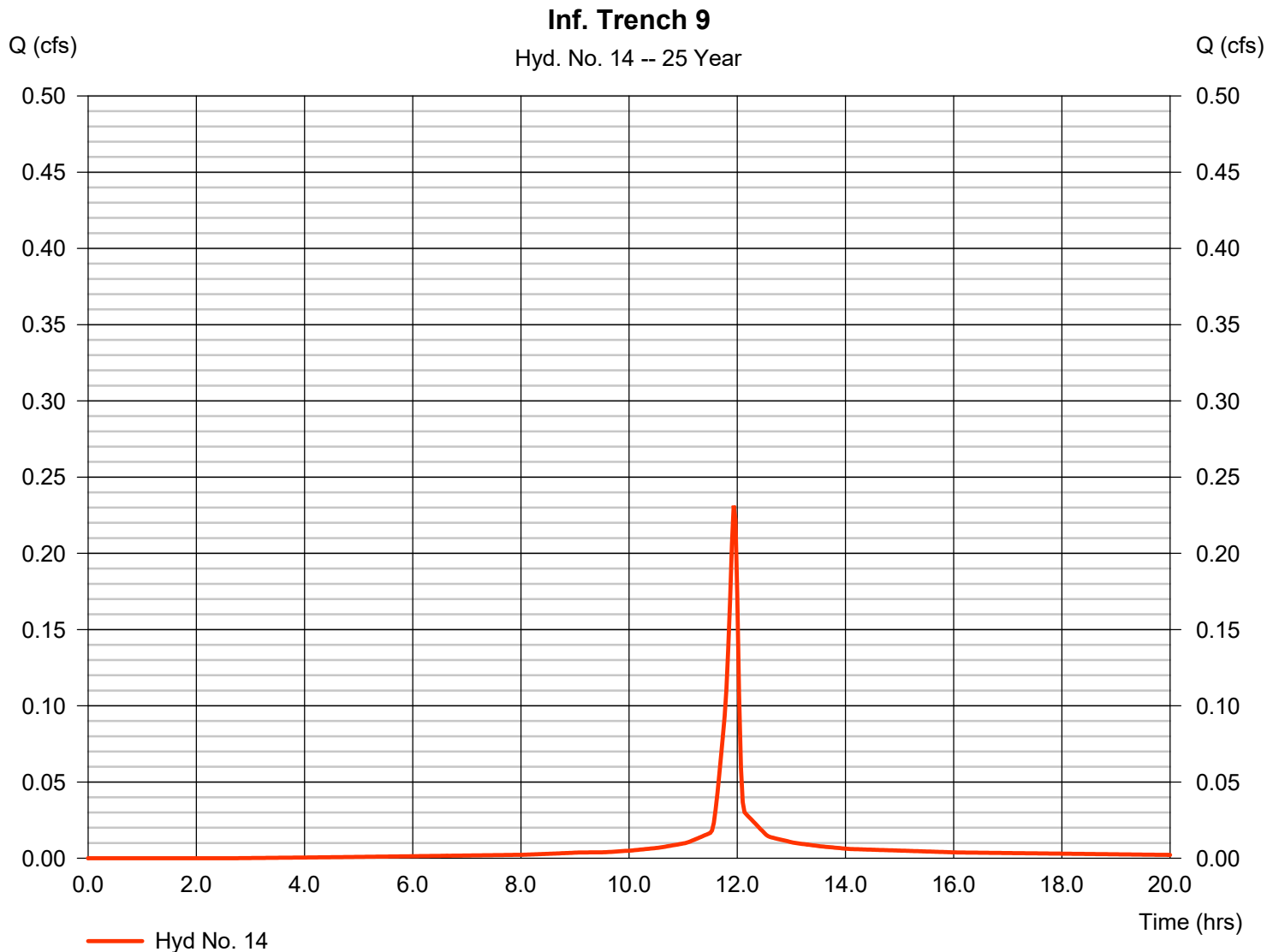
Friday, 06 / 28 / 2024

Hyd. No. 14

Inf. Trench 9

Hydrograph type	= SCS Runoff	Peak discharge	= 0.231 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 513 cuft
Drainage area	= 0.030 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.010 x 80) + (0.020 x 98)] / 0.030



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

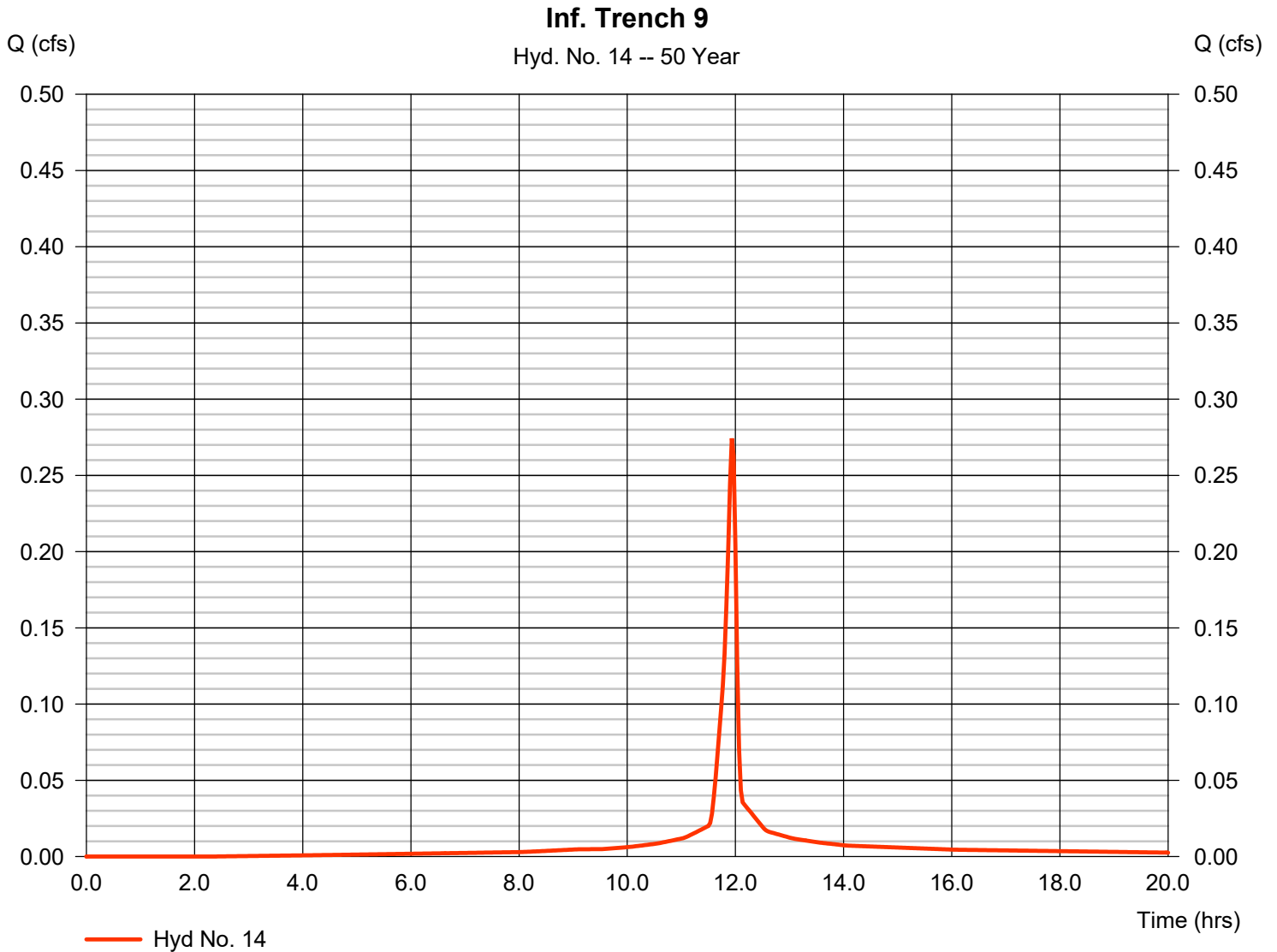
Friday, 06 / 28 / 2024

Hyd. No. 14

Inf. Trench 9

Hydrograph type	= SCS Runoff	Peak discharge	= 0.274 cfs
Storm frequency	= 50 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 615 cuft
Drainage area	= 0.030 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.97 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.010 x 80) + (0.020 x 98)] / 0.030



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

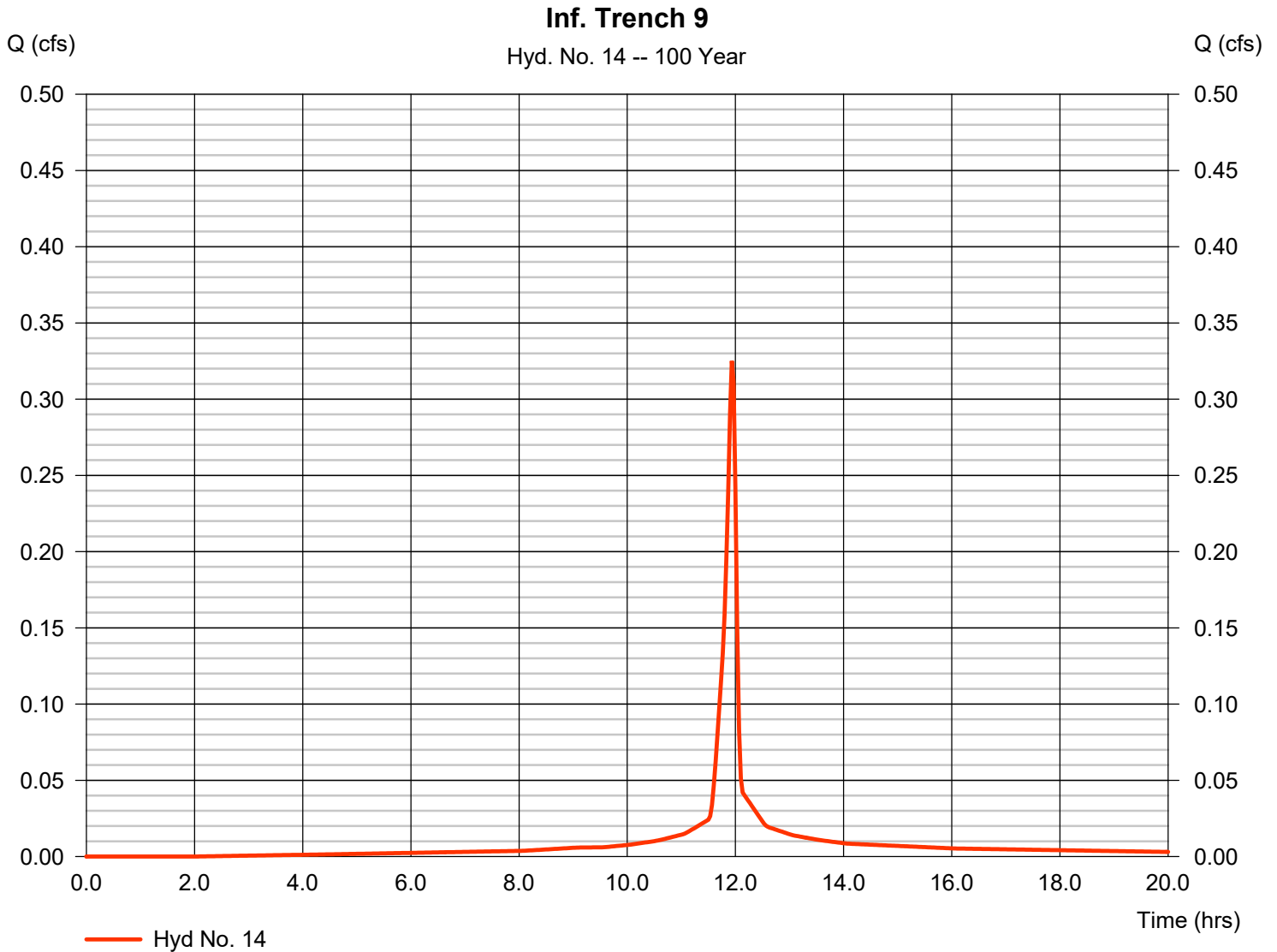
Friday, 06 / 28 / 2024

Hyd. No. 14

Inf. Trench 9

Hydrograph type	= SCS Runoff	Peak discharge	= 0.325 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 737 cuft
Drainage area	= 0.030 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 8.18 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.010 x 80) + (0.020 x 98)] / 0.030



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

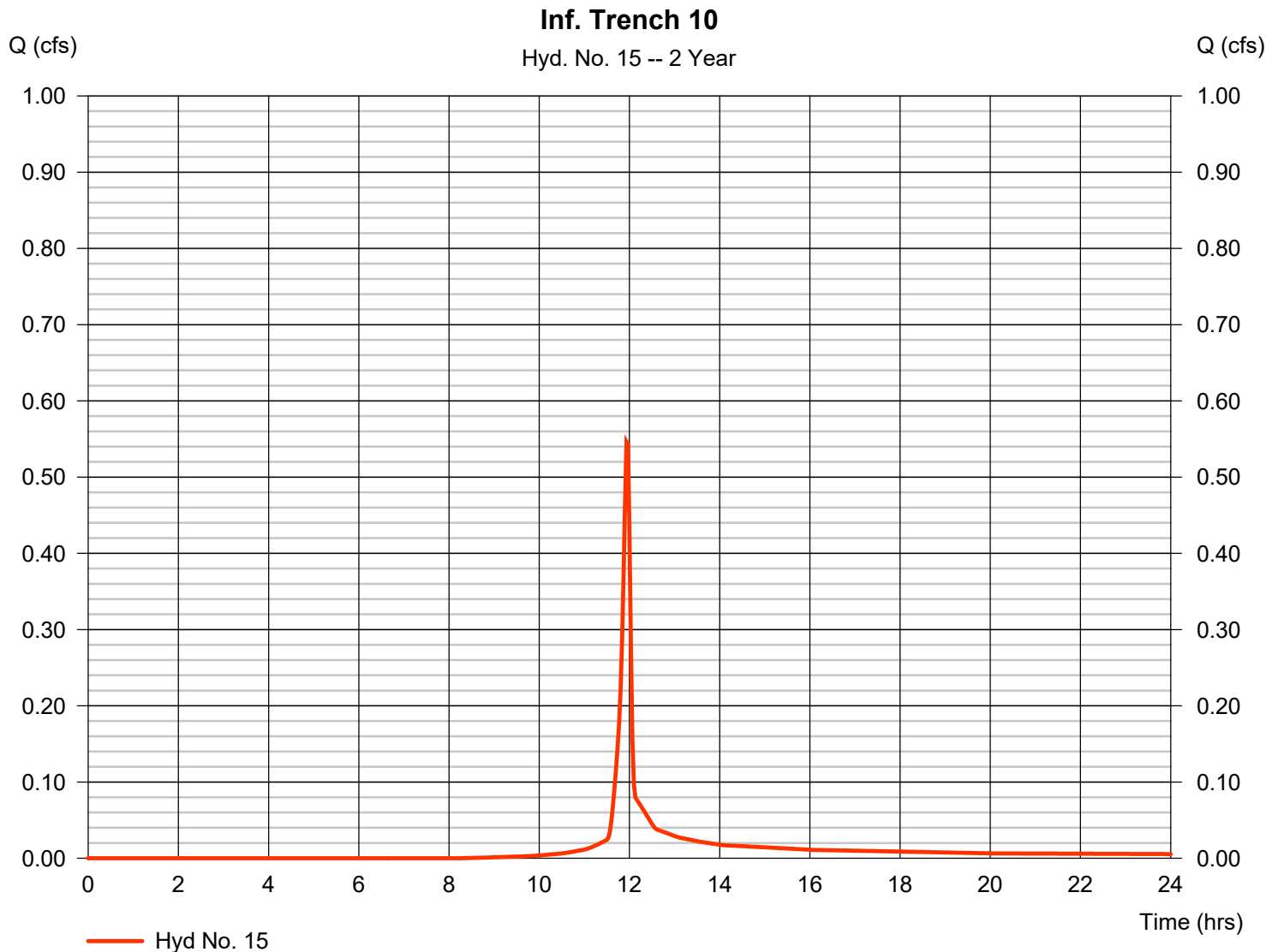
Friday, 06 / 28 / 2024

Hyd. No. 15

Inf. Trench 10

Hydrograph type	= SCS Runoff	Peak discharge	= 0.546 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 1,105 cuft
Drainage area	= 0.190 ac	Curve number	= 83*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.160 x 80) + (0.030 x 98)] / 0.190



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

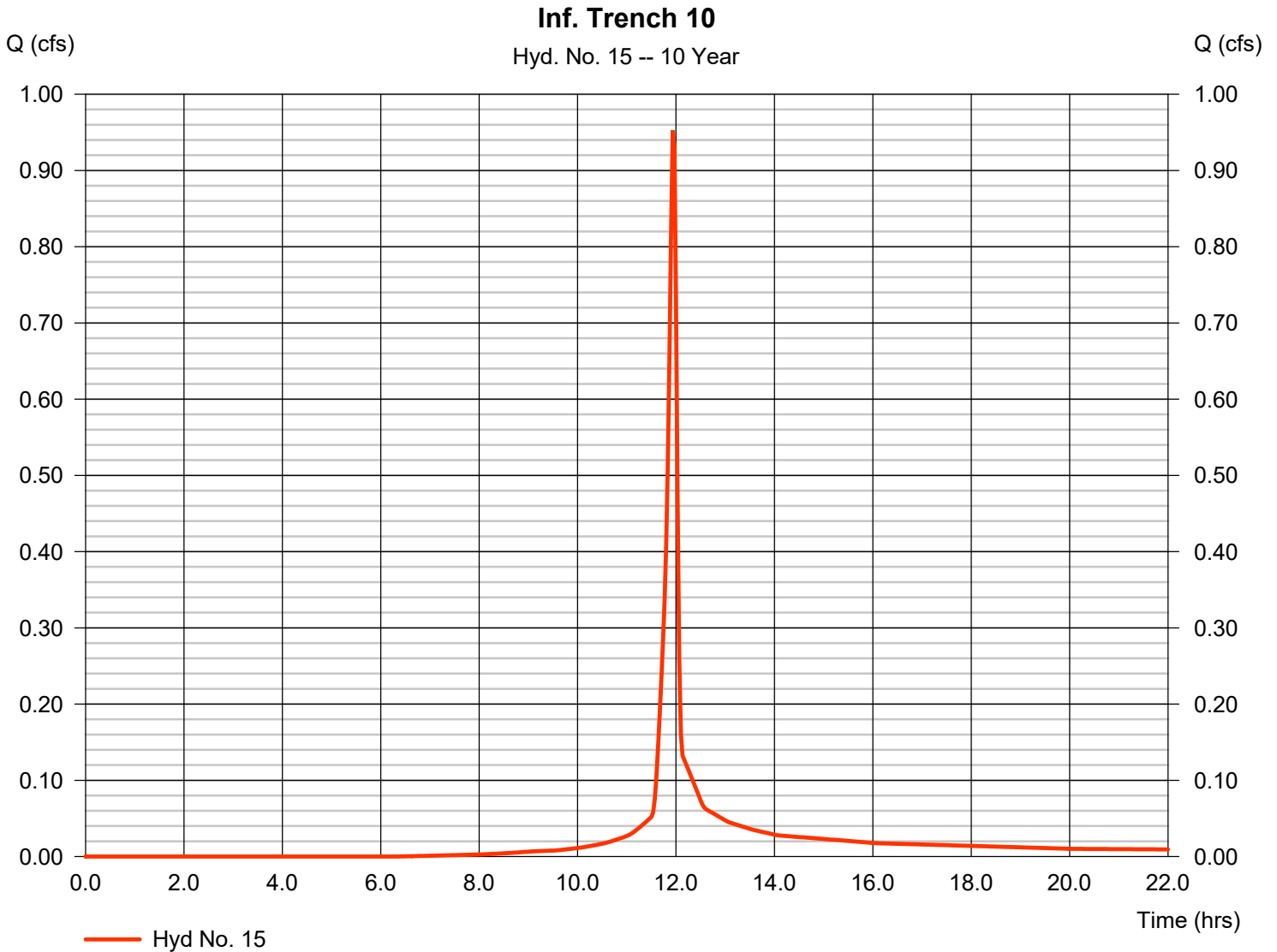
Friday, 06 / 28 / 2024

Hyd. No. 15

Inf. Trench 10

Hydrograph type	= SCS Runoff	Peak discharge	= 0.953 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 1,953 cuft
Drainage area	= 0.190 ac	Curve number	= 83*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.160 x 80) + (0.030 x 98)] / 0.190



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

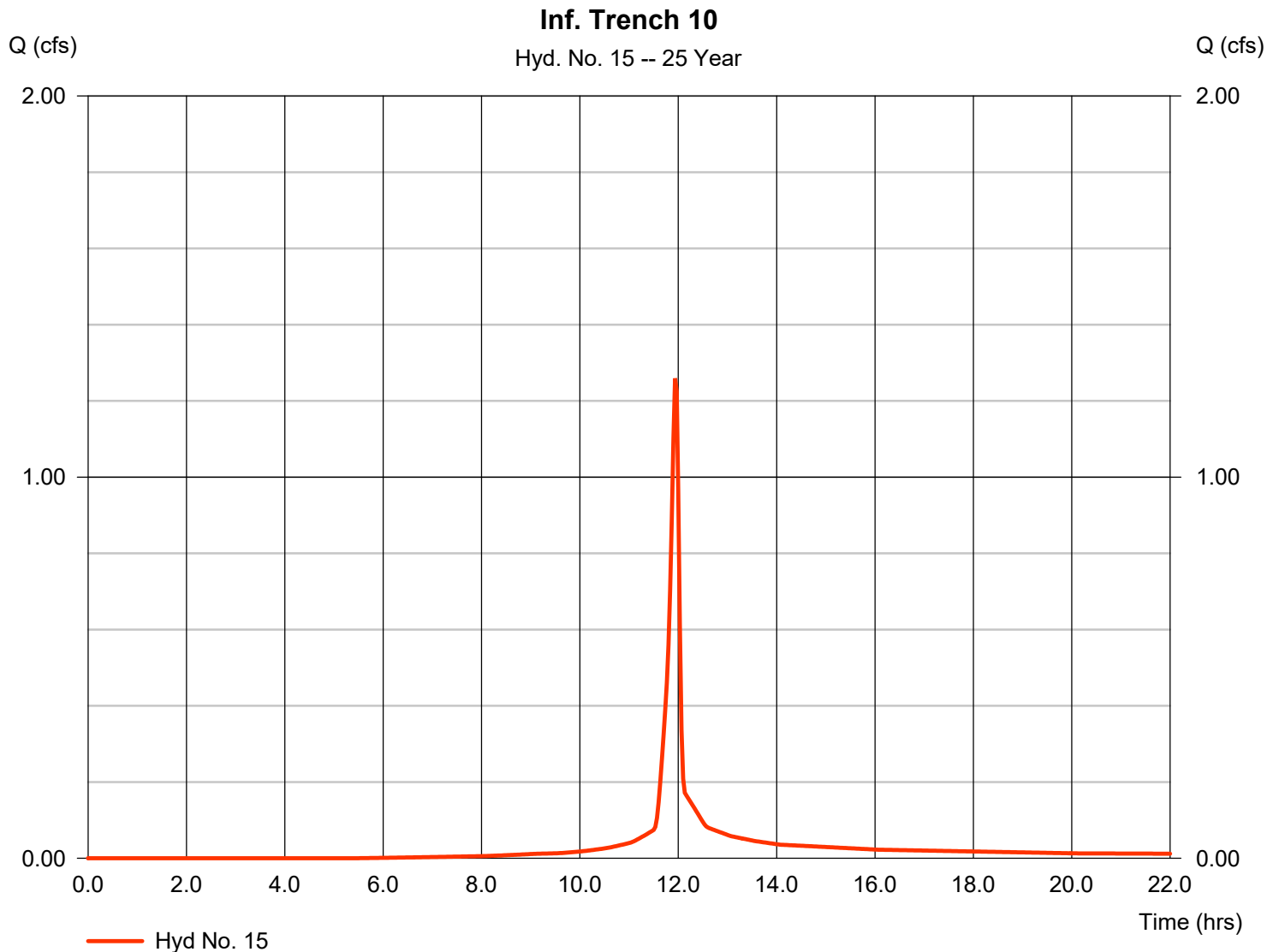
Friday, 06 / 28 / 2024

Hyd. No. 15

Inf. Trench 10

Hydrograph type	= SCS Runoff	Peak discharge	= 1.259 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 2,615 cuft
Drainage area	= 0.190 ac	Curve number	= 83*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.160 x 80) + (0.030 x 98)] / 0.190



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

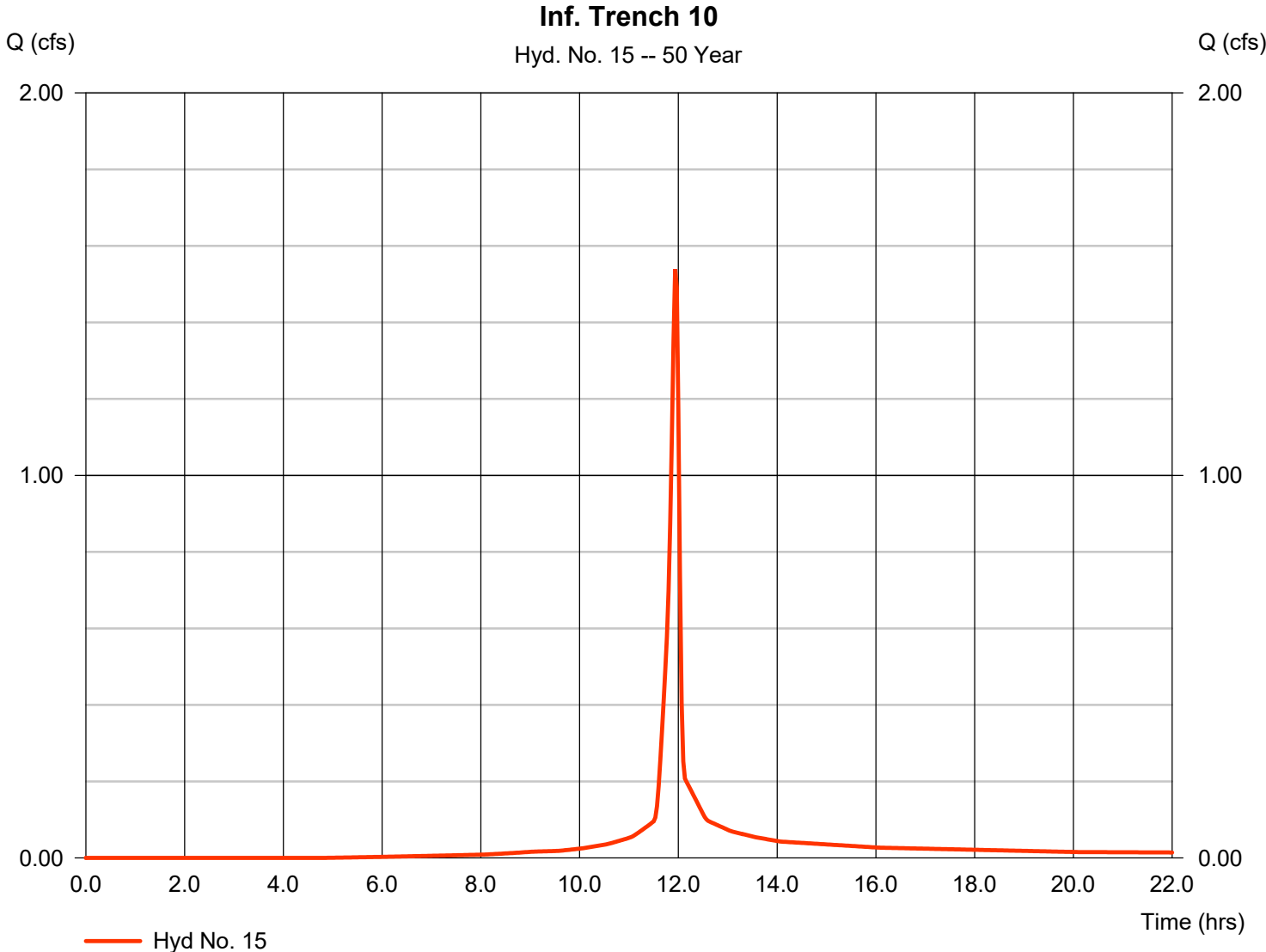
Friday, 06 / 28 / 2024

Hyd. No. 15

Inf. Trench 10

Hydrograph type	= SCS Runoff	Peak discharge	= 1.539 cfs
Storm frequency	= 50 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 3,233 cuft
Drainage area	= 0.190 ac	Curve number	= 83*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.97 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.160 x 80) + (0.030 x 98)] / 0.190



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

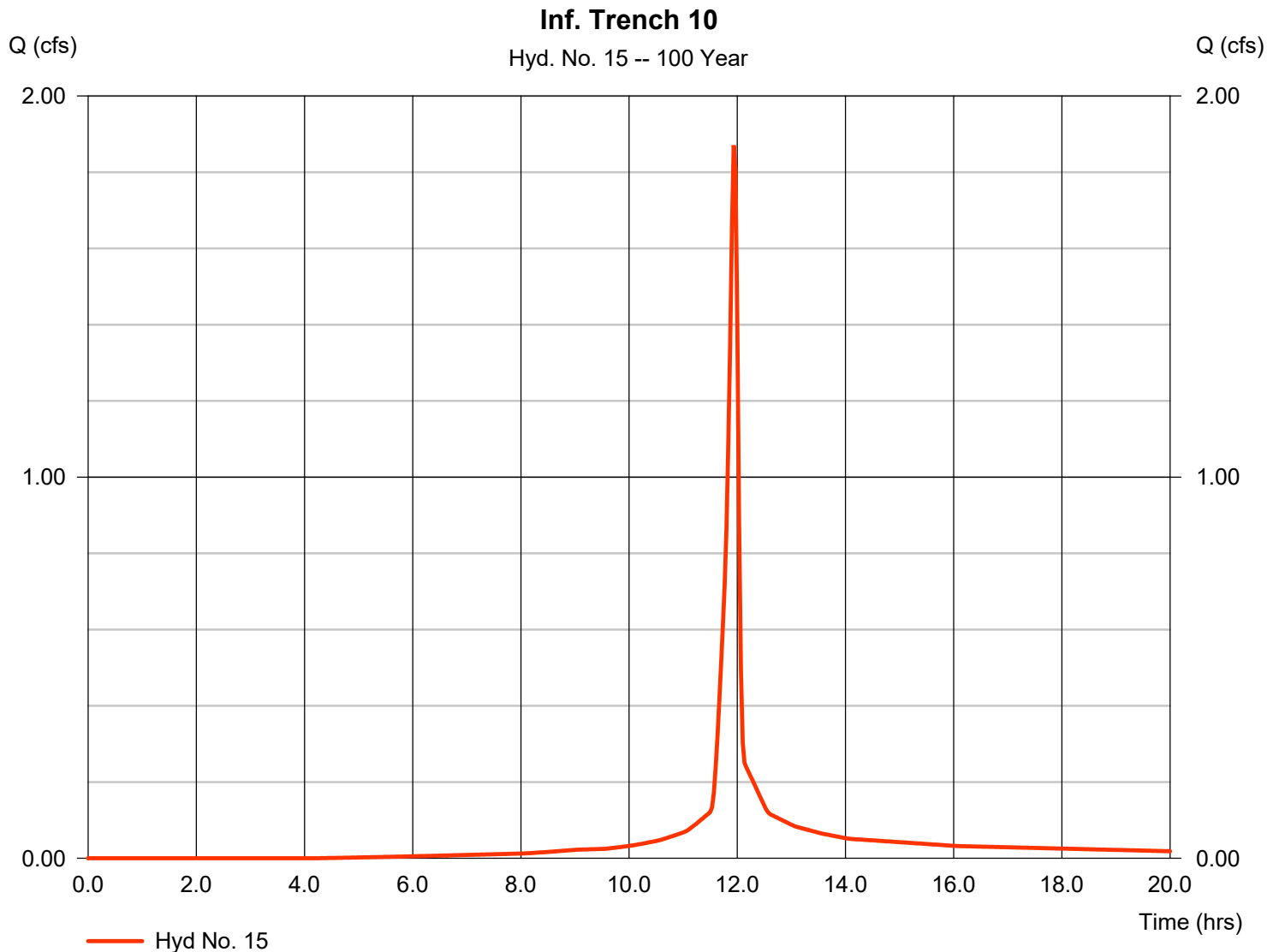
Friday, 06 / 28 / 2024

Hyd. No. 15

Inf. Trench 10

Hydrograph type	= SCS Runoff	Peak discharge	= 1.871 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 3,976 cuft
Drainage area	= 0.190 ac	Curve number	= 83*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 8.18 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.160 x 80) + (0.030 x 98)] / 0.190



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

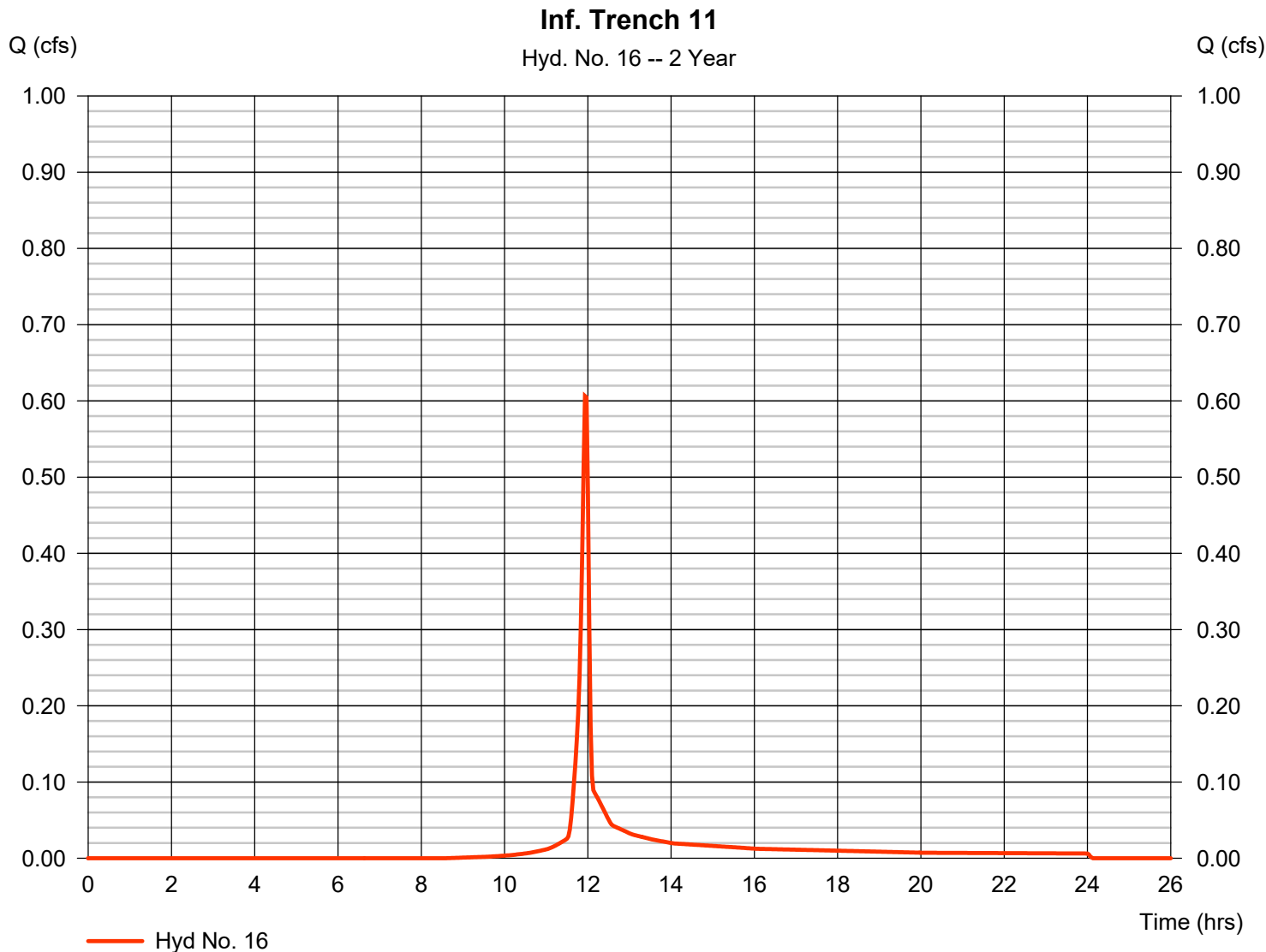
Friday, 06 / 28 / 2024

Hyd. No. 16

Inf. Trench 11

Hydrograph type	= SCS Runoff	Peak discharge	= 0.606 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 1,224 cuft
Drainage area	= 0.220 ac	Curve number	= 82*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.190 x 80) + (0.030 x 98)] / 0.220



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

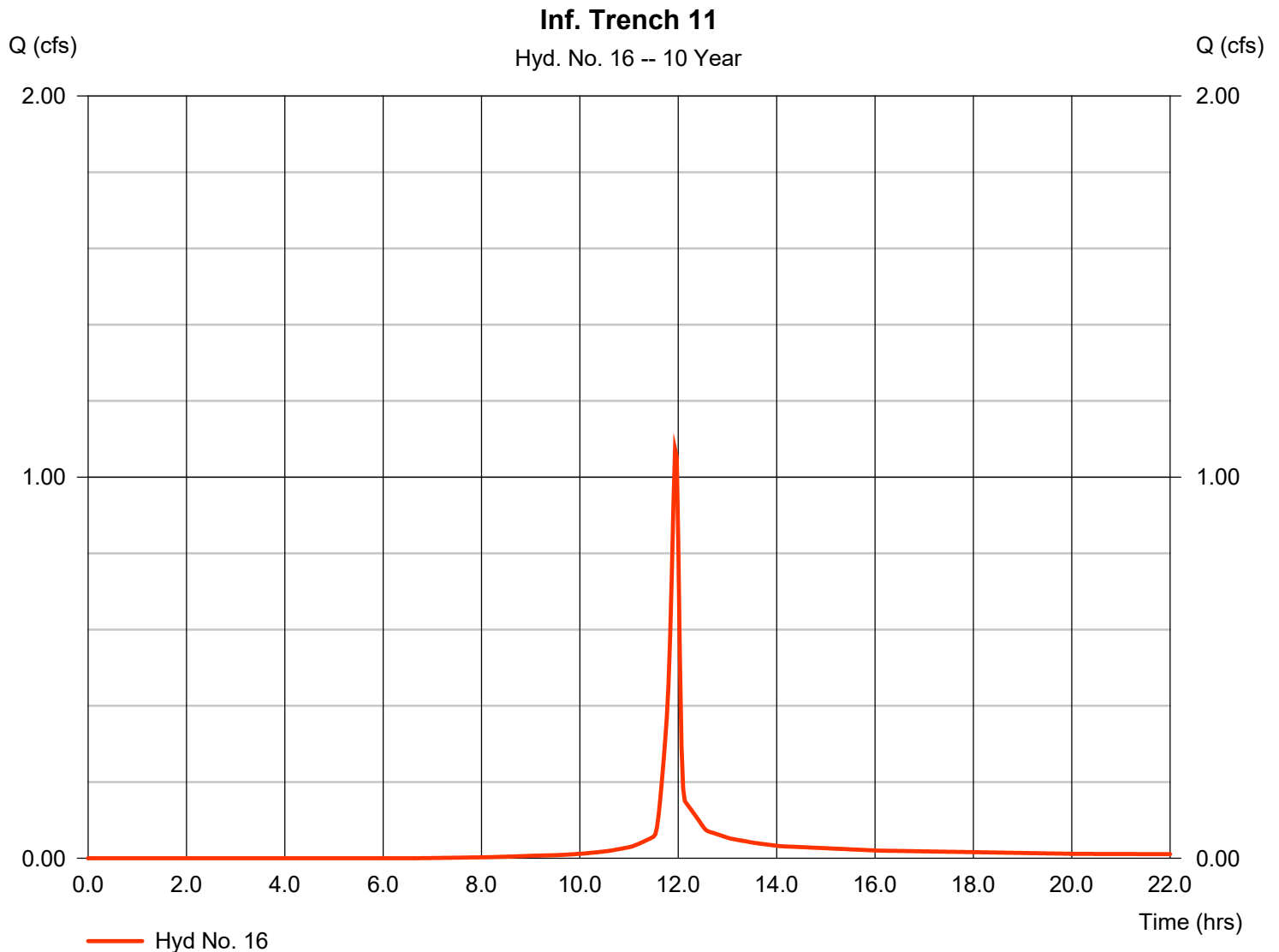
Friday, 06 / 28 / 2024

Hyd. No. 16

Inf. Trench 11

Hydrograph type	= SCS Runoff	Peak discharge	= 1.073 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 2,192 cuft
Drainage area	= 0.220 ac	Curve number	= 82*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.190 x 80) + (0.030 x 98)] / 0.220



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

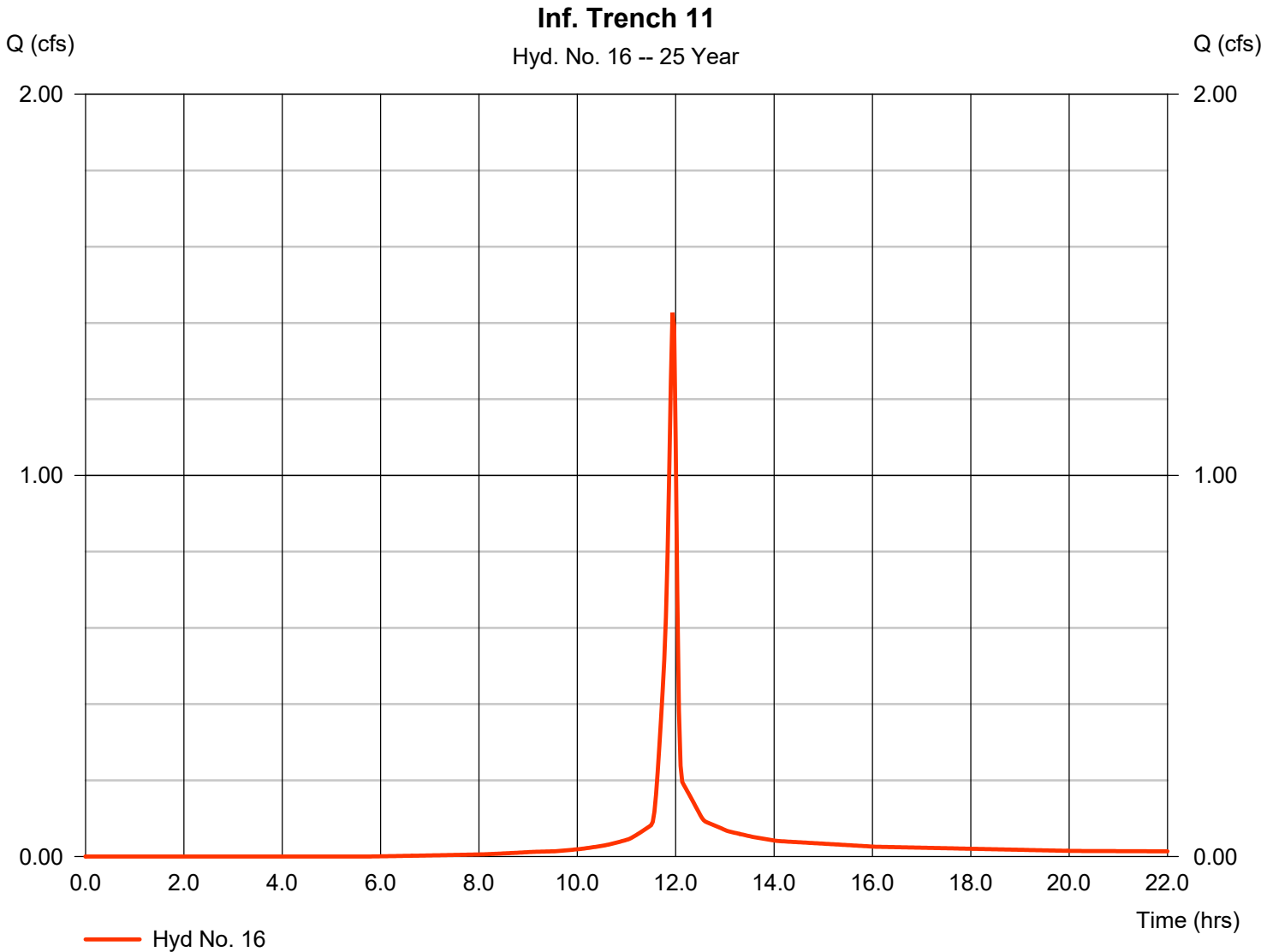
Friday, 06 / 28 / 2024

Hyd. No. 16

Inf. Trench 11

Hydrograph type	= SCS Runoff	Peak discharge	= 1.427 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 2,951 cuft
Drainage area	= 0.220 ac	Curve number	= 82*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.190 x 80) + (0.030 x 98)] / 0.220



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

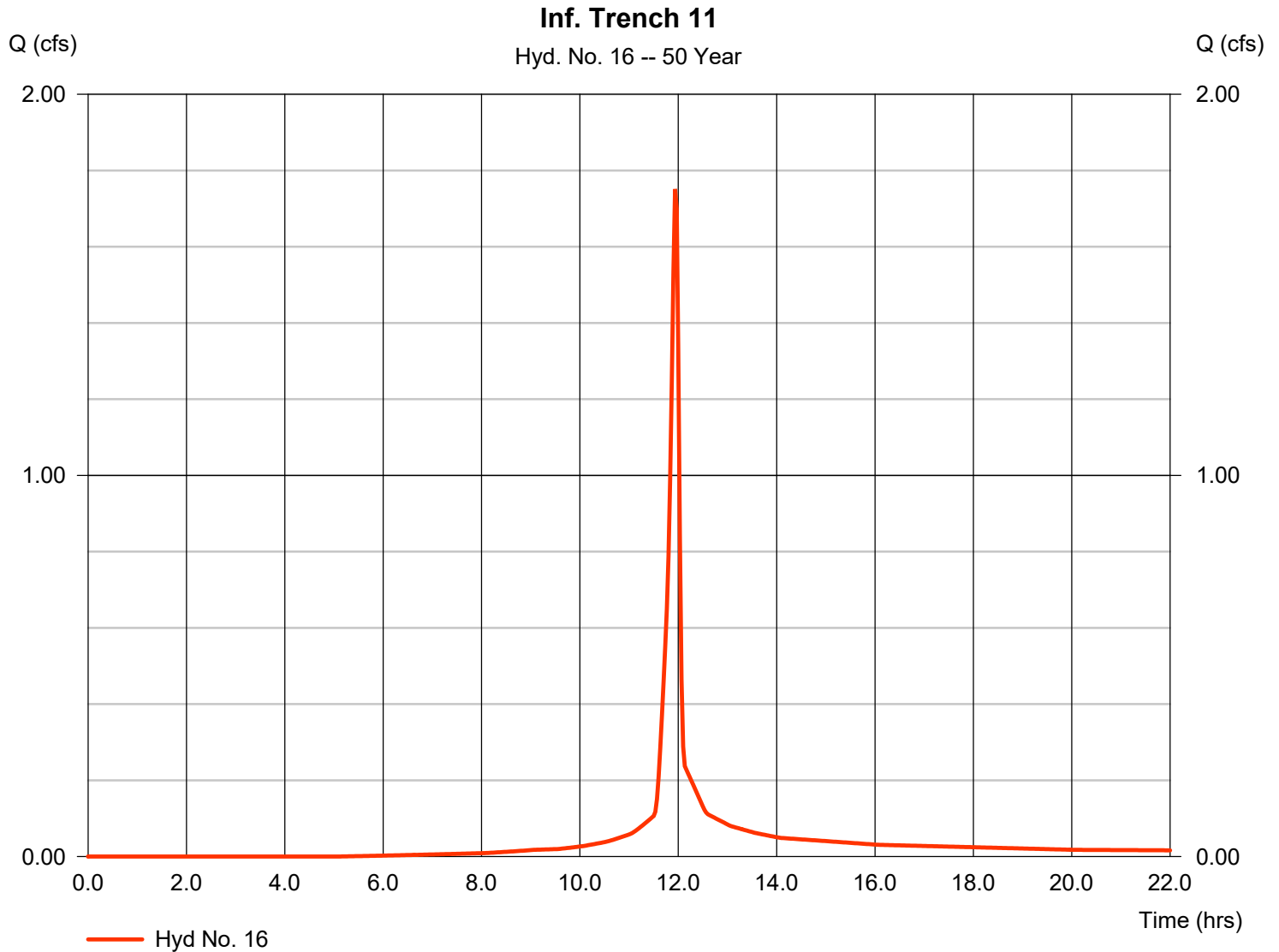
Friday, 06 / 28 / 2024

Hyd. No. 16

Inf. Trench 11

Hydrograph type	= SCS Runoff	Peak discharge	= 1.751 cfs
Storm frequency	= 50 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 3,660 cuft
Drainage area	= 0.220 ac	Curve number	= 82*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.97 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.190 x 80) + (0.030 x 98)] / 0.220



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

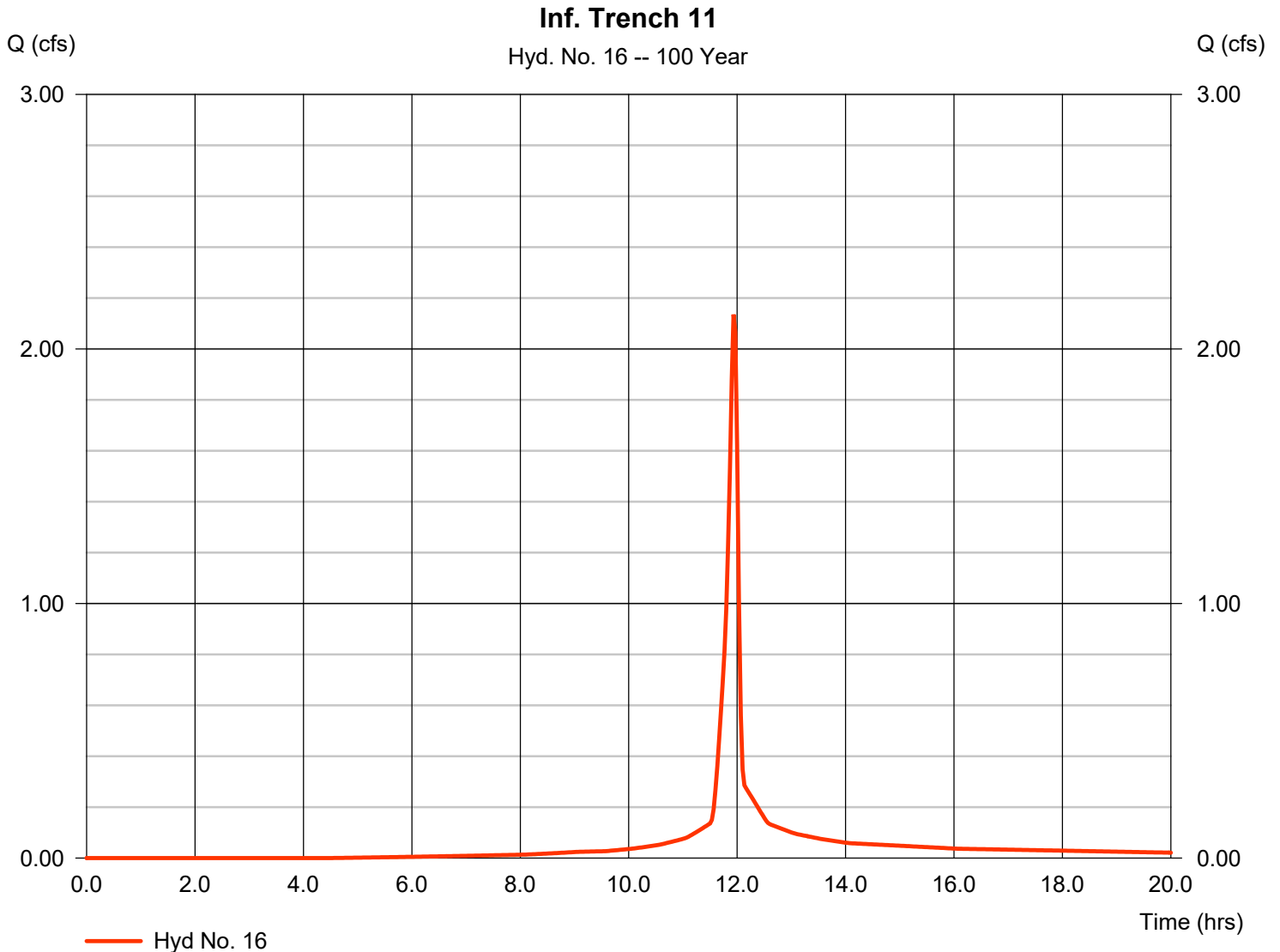
Friday, 06 / 28 / 2024

Hyd. No. 16

Inf. Trench 11

Hydrograph type	= SCS Runoff	Peak discharge	= 2.135 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 4,515 cuft
Drainage area	= 0.220 ac	Curve number	= 82*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 8.18 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.190 x 80) + (0.030 x 98)] / 0.220



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

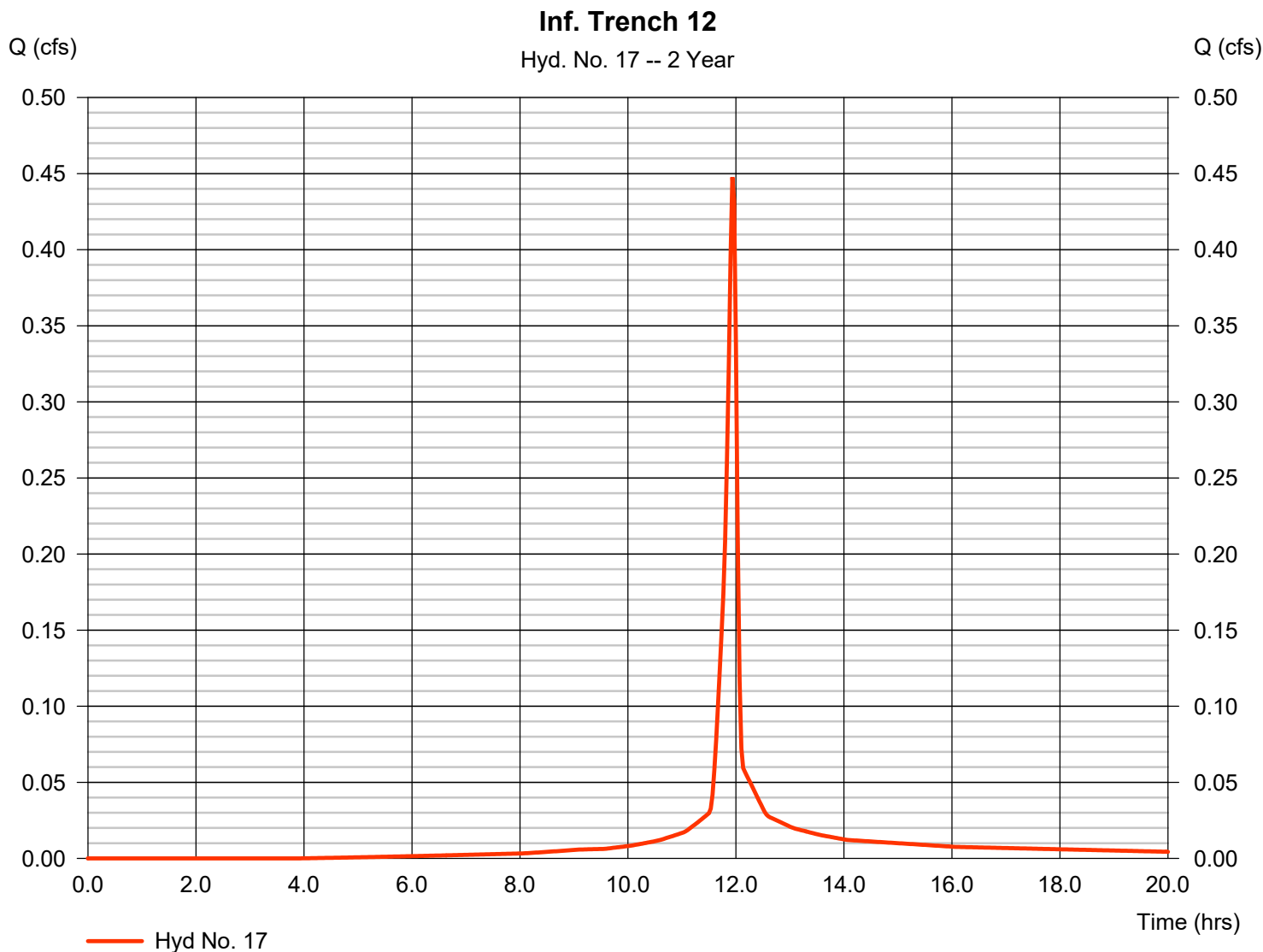
Friday, 06 / 28 / 2024

Hyd. No. 17

Inf. Trench 12

Hydrograph type	= SCS Runoff	Peak discharge	= 0.448 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 959 cuft
Drainage area	= 0.110 ac	Curve number	= 93*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.030 x 80) + (0.080 x 98)] / 0.110



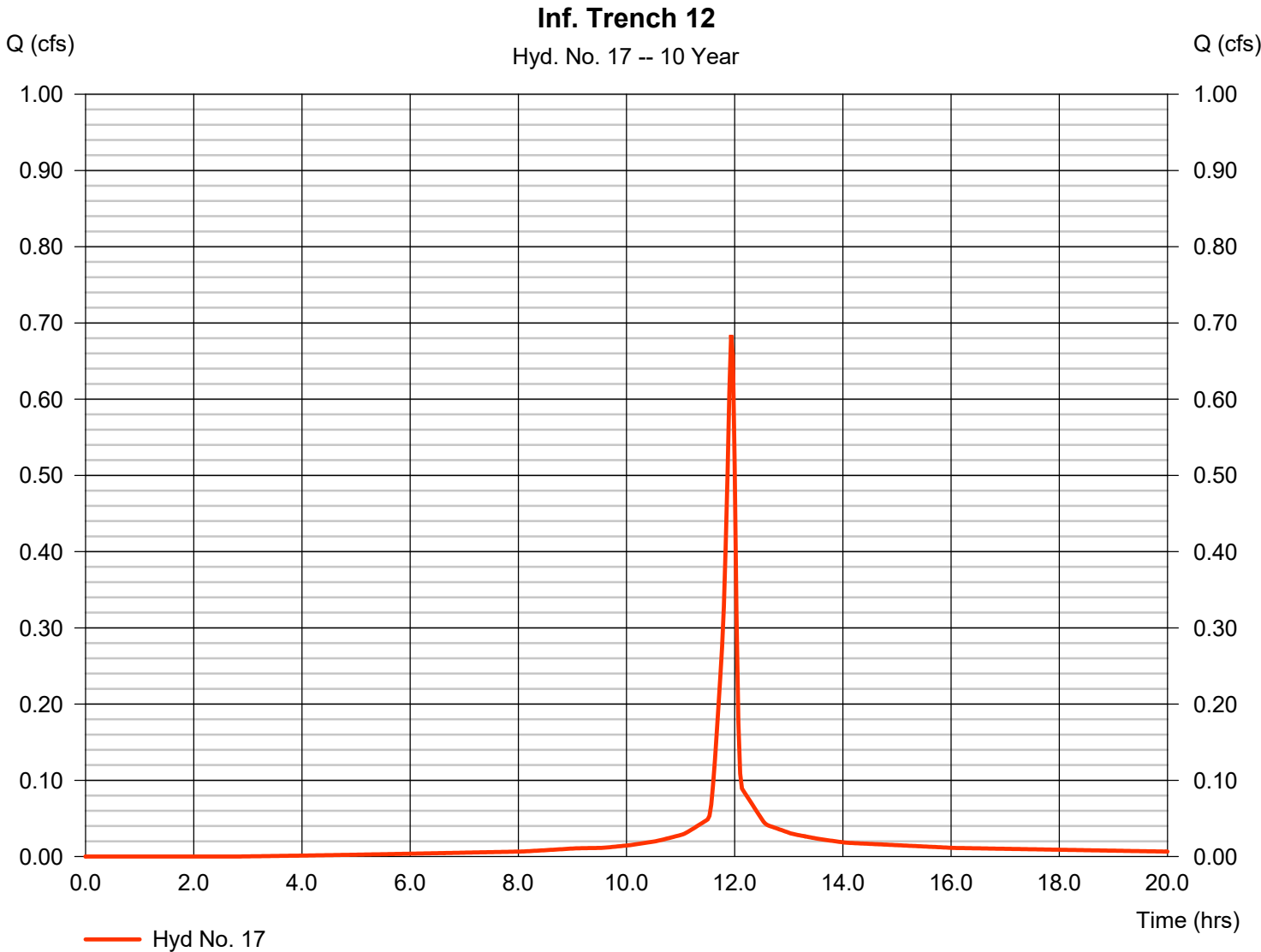
Hydrograph Report

Hyd. No. 17

Inf. Trench 12

Hydrograph type	= SCS Runoff	Peak discharge	= 0.684 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 1,509 cuft
Drainage area	= 0.110 ac	Curve number	= 93*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.030 x 80) + (0.080 x 98)] / 0.110



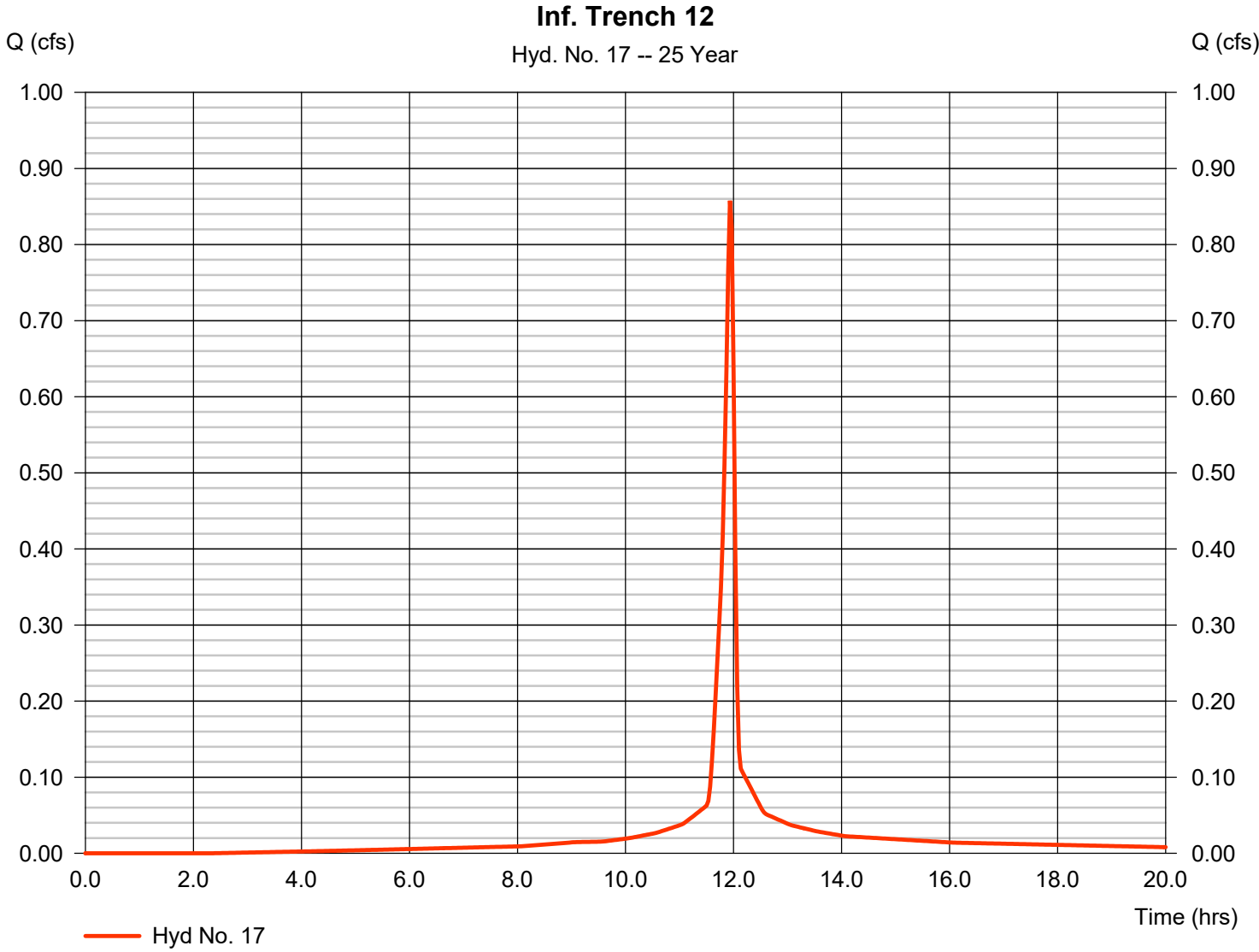
Hydrograph Report

Hyd. No. 17

Inf. Trench 12

Hydrograph type	= SCS Runoff	Peak discharge	= 0.858 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 1,922 cuft
Drainage area	= 0.110 ac	Curve number	= 93*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.030 x 80) + (0.080 x 98)] / 0.110



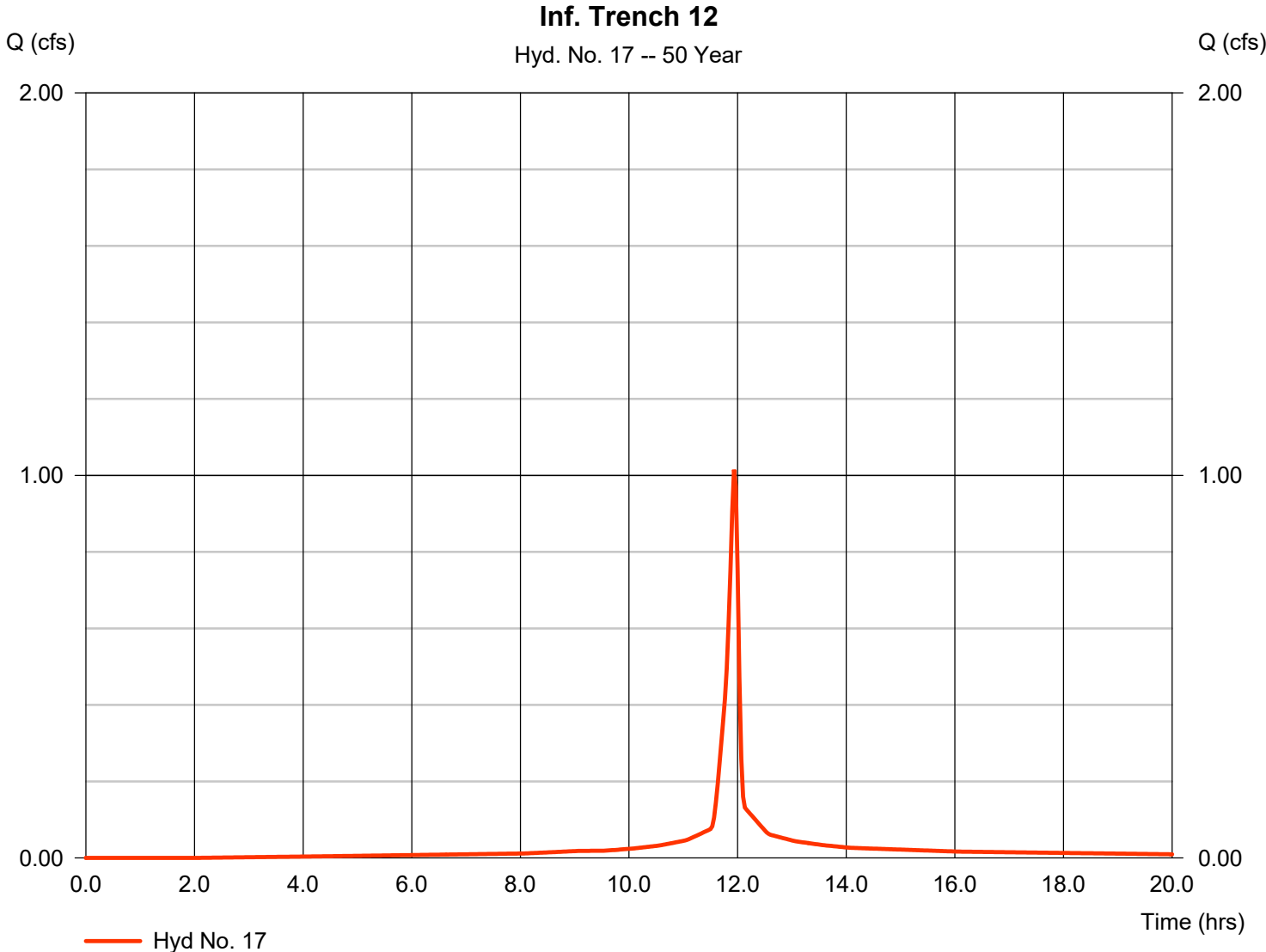
Hydrograph Report

Hyd. No. 17

Inf. Trench 12

Hydrograph type	= SCS Runoff	Peak discharge	= 1.015 cfs
Storm frequency	= 50 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 2,299 cuft
Drainage area	= 0.110 ac	Curve number	= 93*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.97 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.030 x 80) + (0.080 x 98)] / 0.110



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

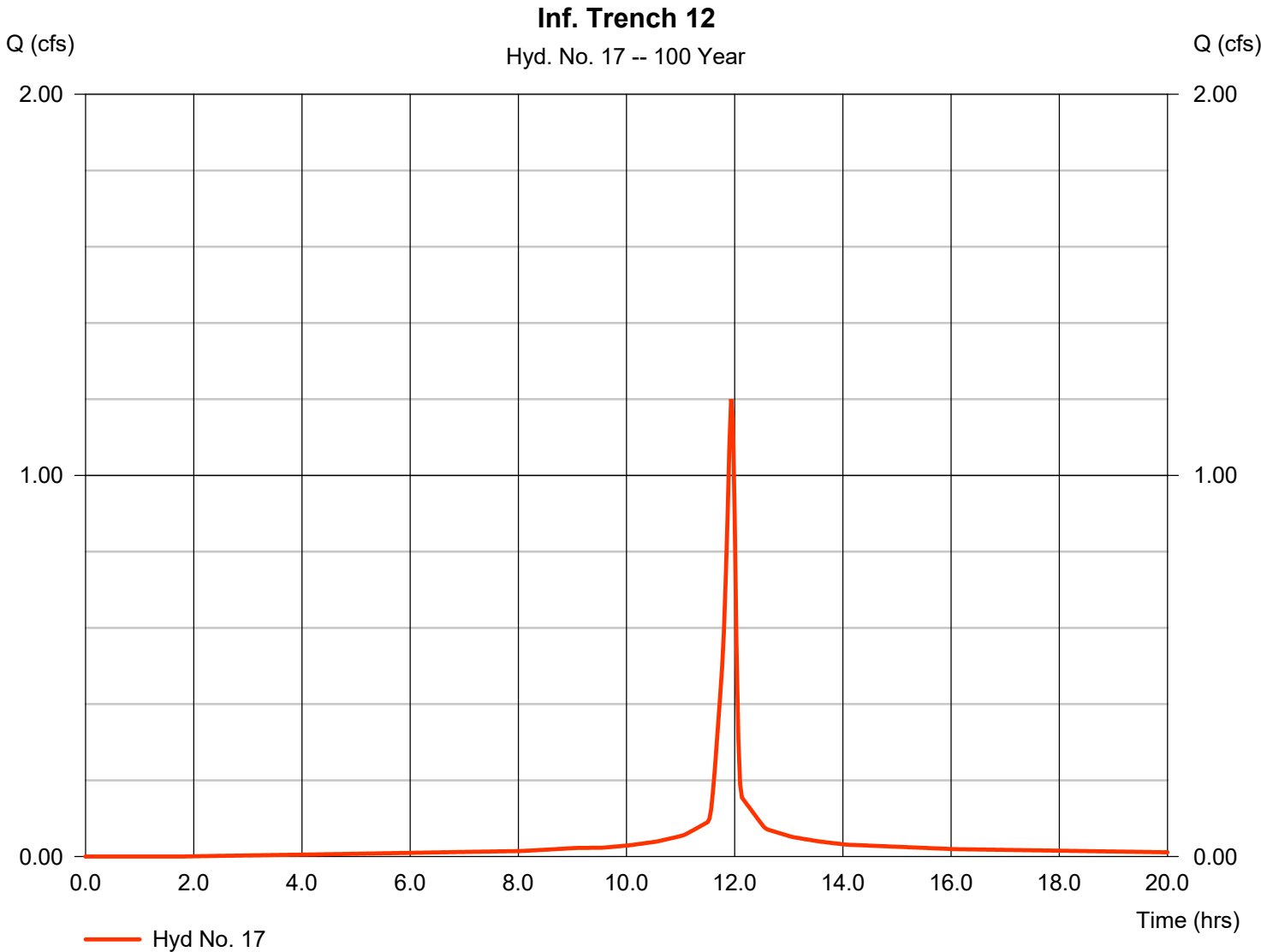
Friday, 06 / 28 / 2024

Hyd. No. 17

Inf. Trench 12

Hydrograph type	= SCS Runoff	Peak discharge	= 1.200 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 2,748 cuft
Drainage area	= 0.110 ac	Curve number	= 93*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 8.18 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.030 x 80) + (0.080 x 98)] / 0.110



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

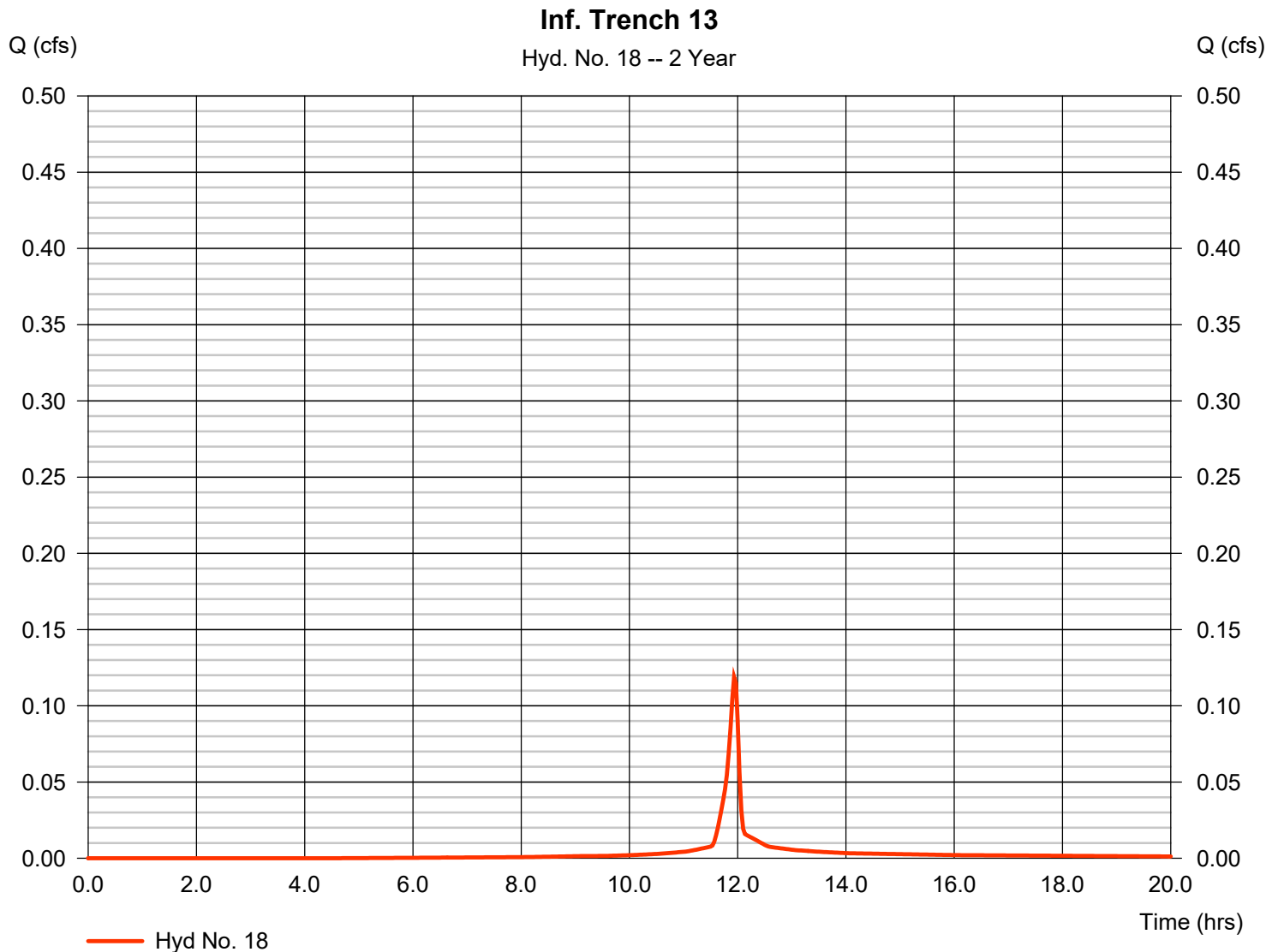
Friday, 06 / 28 / 2024

Hyd. No. 18

Inf. Trench 13

Hydrograph type	= SCS Runoff	Peak discharge	= 0.119 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 252 cuft
Drainage area	= 0.030 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.010 x 80) + (0.020 x 98)] / 0.030



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

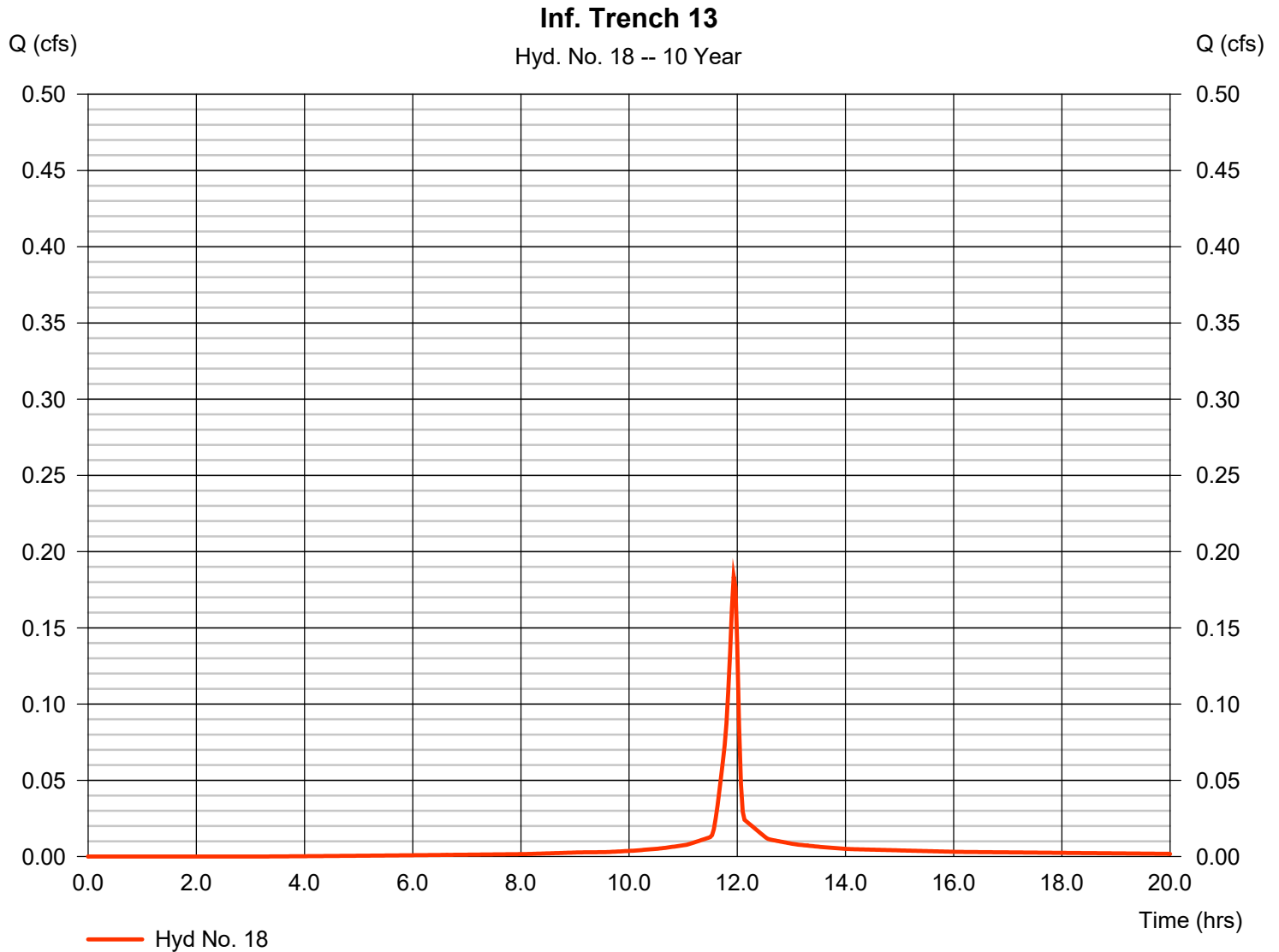
Friday, 06 / 28 / 2024

Hyd. No. 18

Inf. Trench 13

Hydrograph type	= SCS Runoff	Peak discharge	= 0.184 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 401 cuft
Drainage area	= 0.030 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.010 x 80) + (0.020 x 98)] / 0.030



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

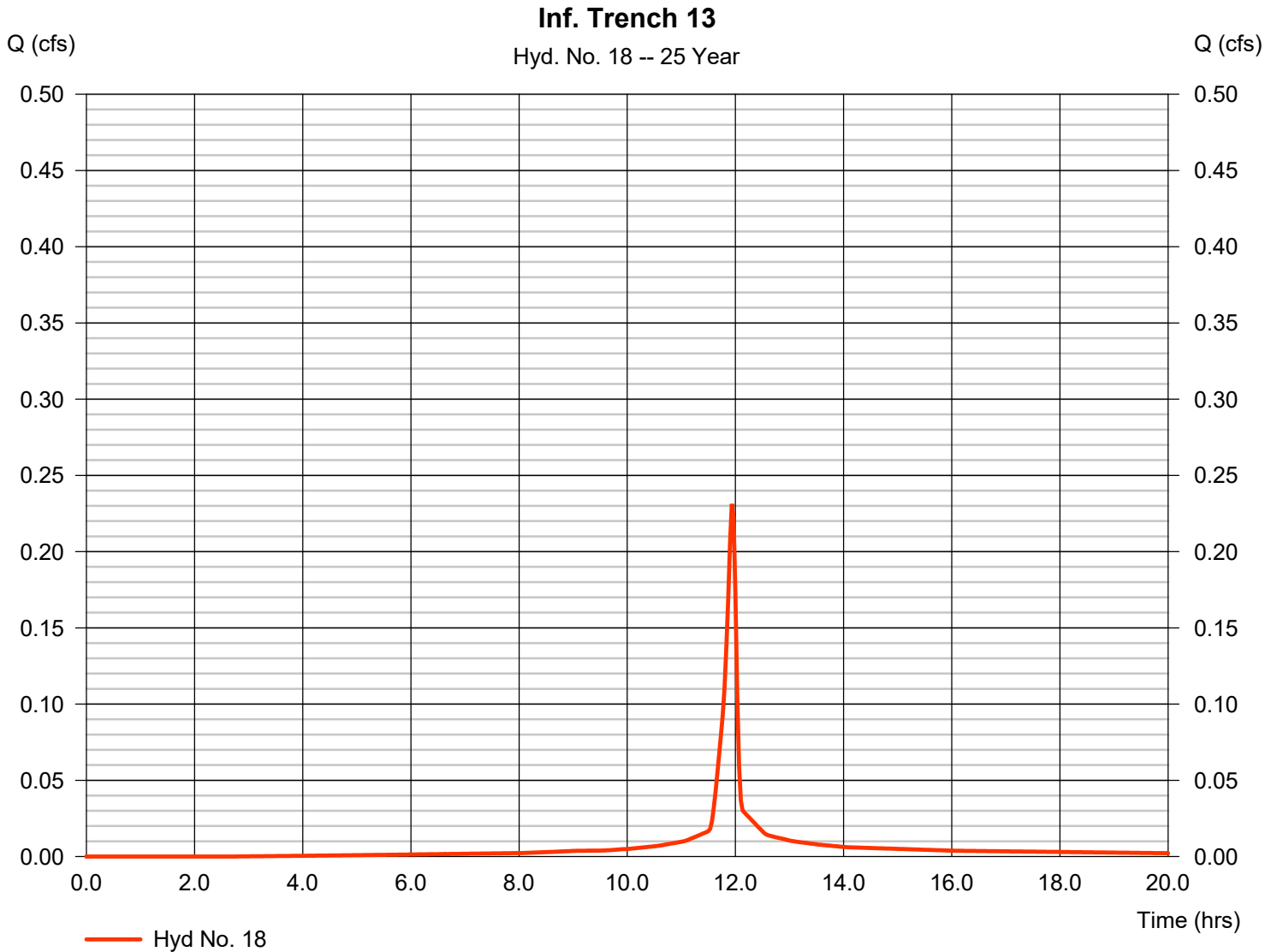
Friday, 06 / 28 / 2024

Hyd. No. 18

Inf. Trench 13

Hydrograph type	= SCS Runoff	Peak discharge	= 0.231 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 513 cuft
Drainage area	= 0.030 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.010 x 80) + (0.020 x 98)] / 0.030



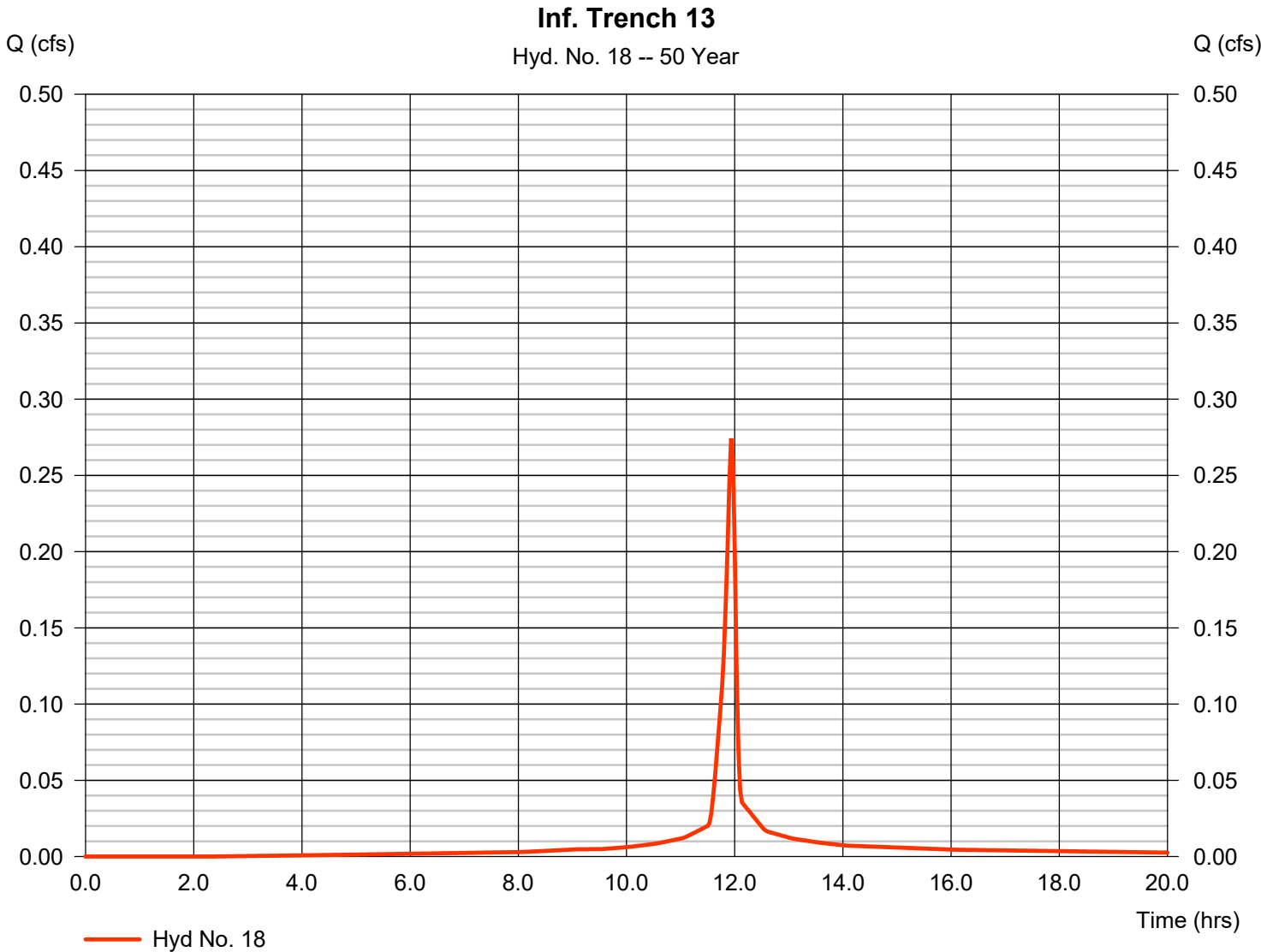
Hydrograph Report

Hyd. No. 18

Inf. Trench 13

Hydrograph type	= SCS Runoff	Peak discharge	= 0.274 cfs
Storm frequency	= 50 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 615 cuft
Drainage area	= 0.030 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.97 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.010 x 80) + (0.020 x 98)] / 0.030



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

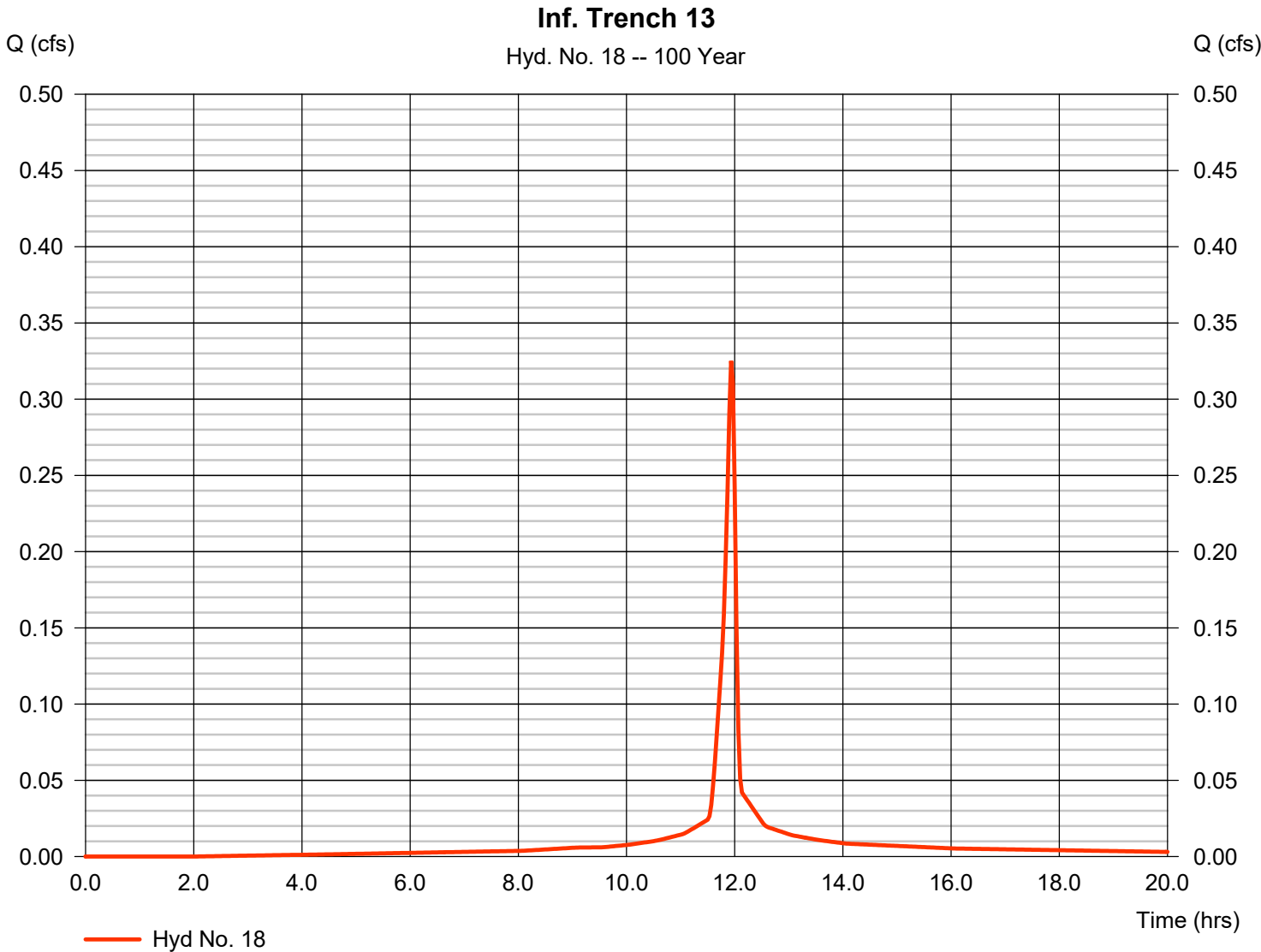
Friday, 06 / 28 / 2024

Hyd. No. 18

Inf. Trench 13

Hydrograph type	= SCS Runoff	Peak discharge	= 0.325 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 737 cuft
Drainage area	= 0.030 ac	Curve number	= 92*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 8.18 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.010 x 80) + (0.020 x 98)] / 0.030



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

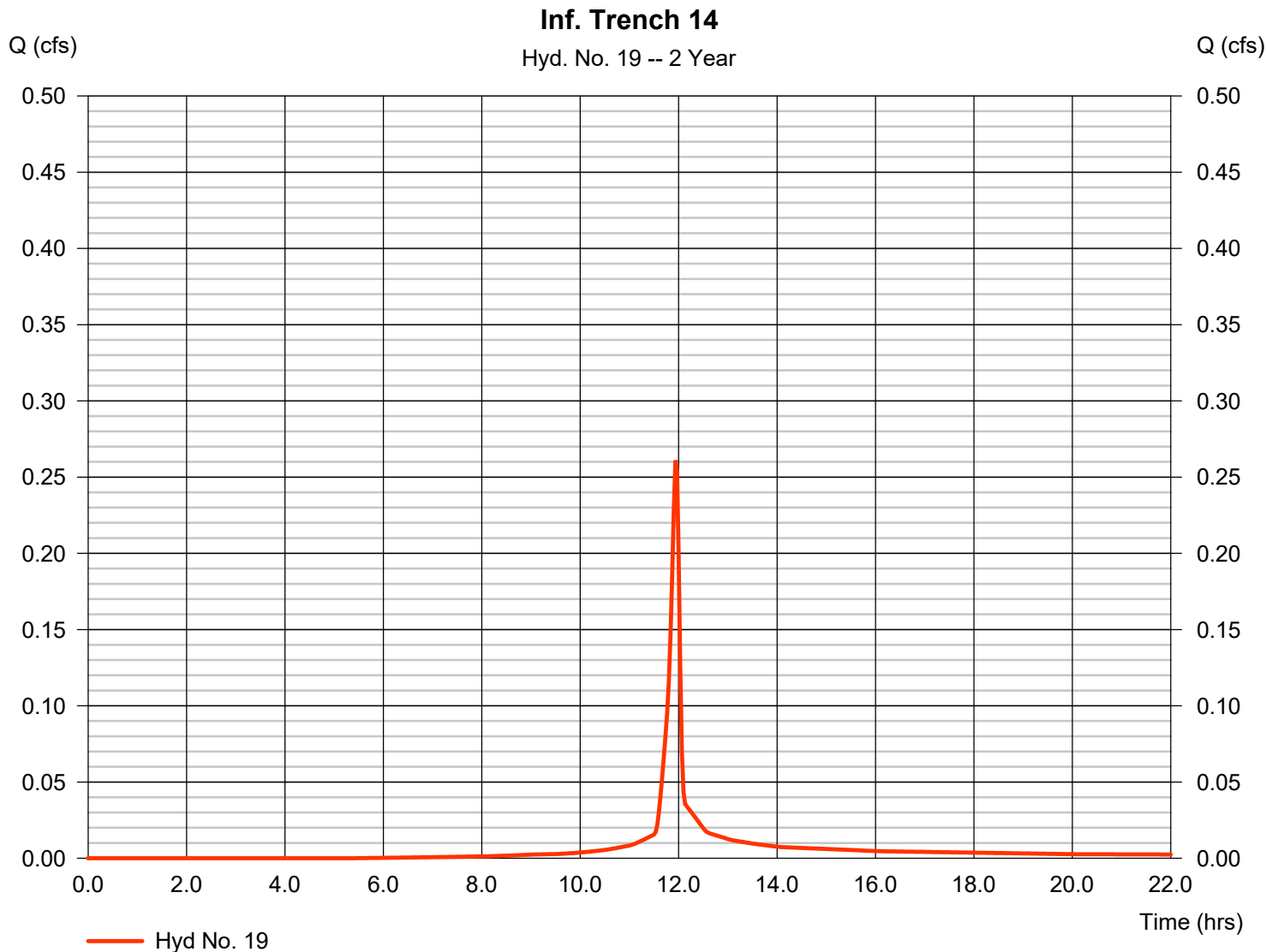
Friday, 06 / 28 / 2024

Hyd. No. 19

Inf. Trench 14

Hydrograph type	= SCS Runoff	Peak discharge	= 0.261 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 543 cuft
Drainage area	= 0.070 ac	Curve number	= 90*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.030 x 80) + (0.040 x 98)] / 0.070



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

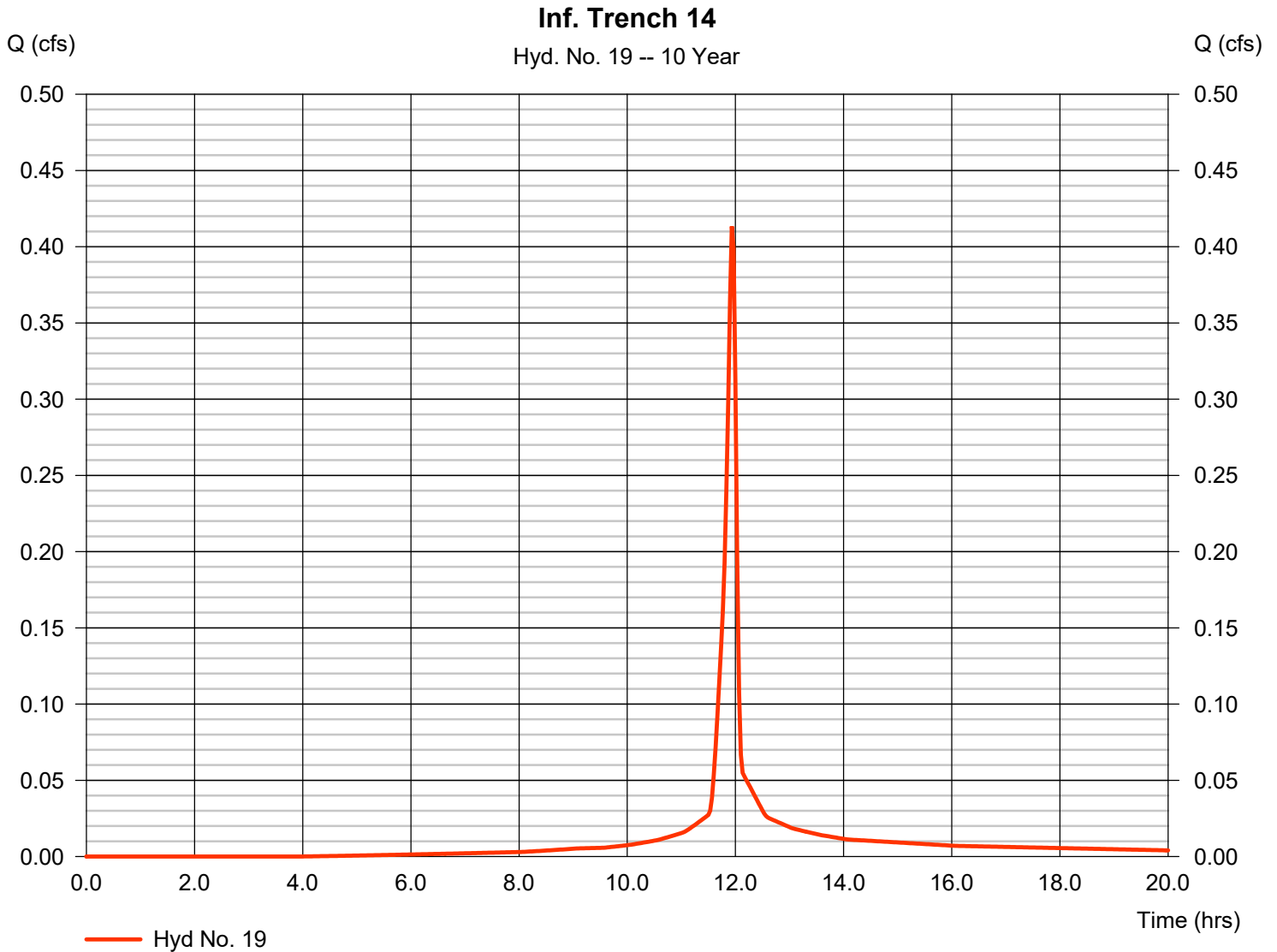
Friday, 06 / 28 / 2024

Hyd. No. 19

Inf. Trench 14

Hydrograph type	= SCS Runoff	Peak discharge	= 0.413 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 884 cuft
Drainage area	= 0.070 ac	Curve number	= 90*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.030 x 80) + (0.040 x 98)] / 0.070



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

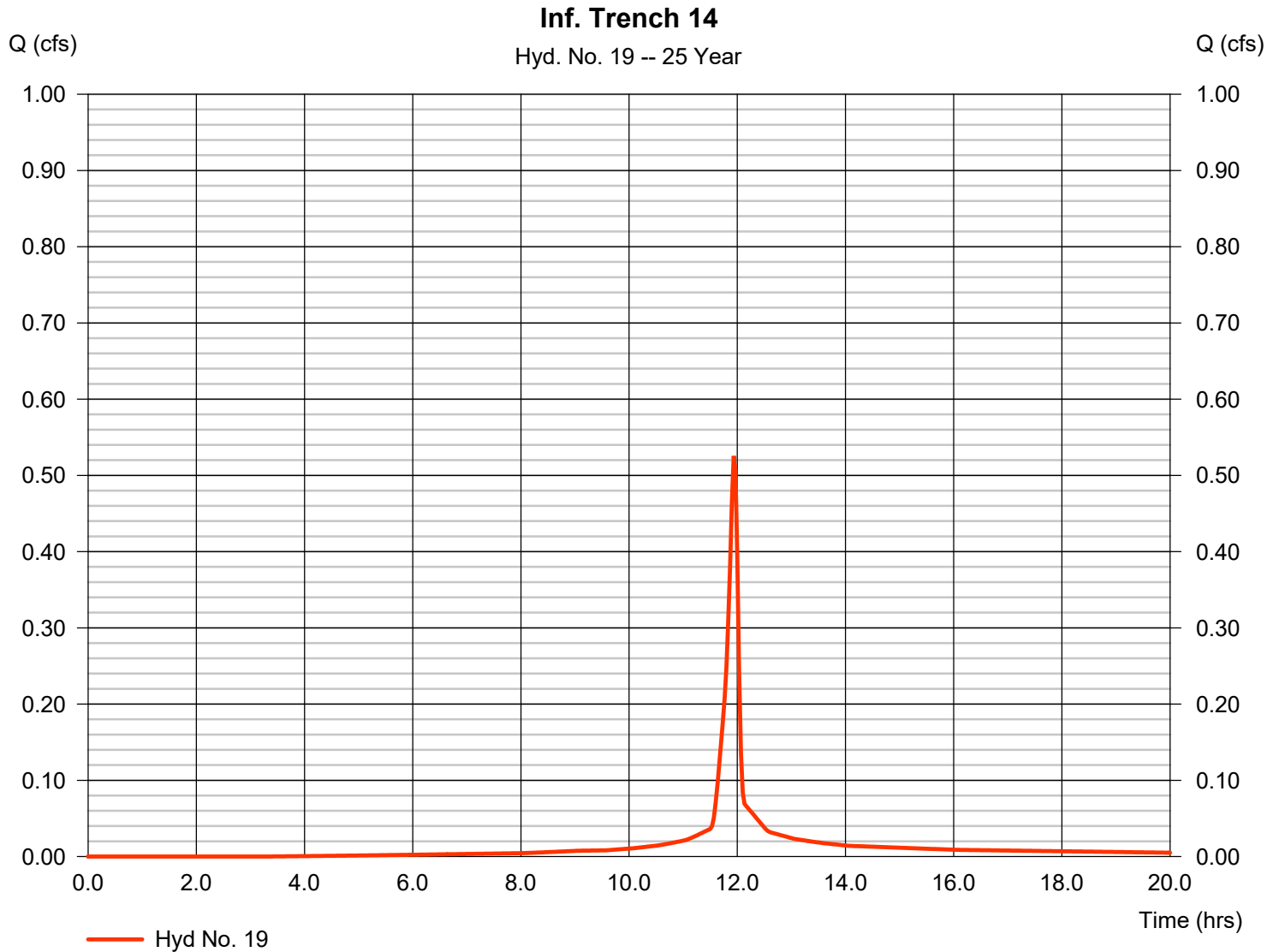
Friday, 06 / 28 / 2024

Hyd. No. 19

Inf. Trench 14

Hydrograph type	= SCS Runoff	Peak discharge	= 0.525 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 1,143 cuft
Drainage area	= 0.070 ac	Curve number	= 90*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.030 x 80) + (0.040 x 98)] / 0.070



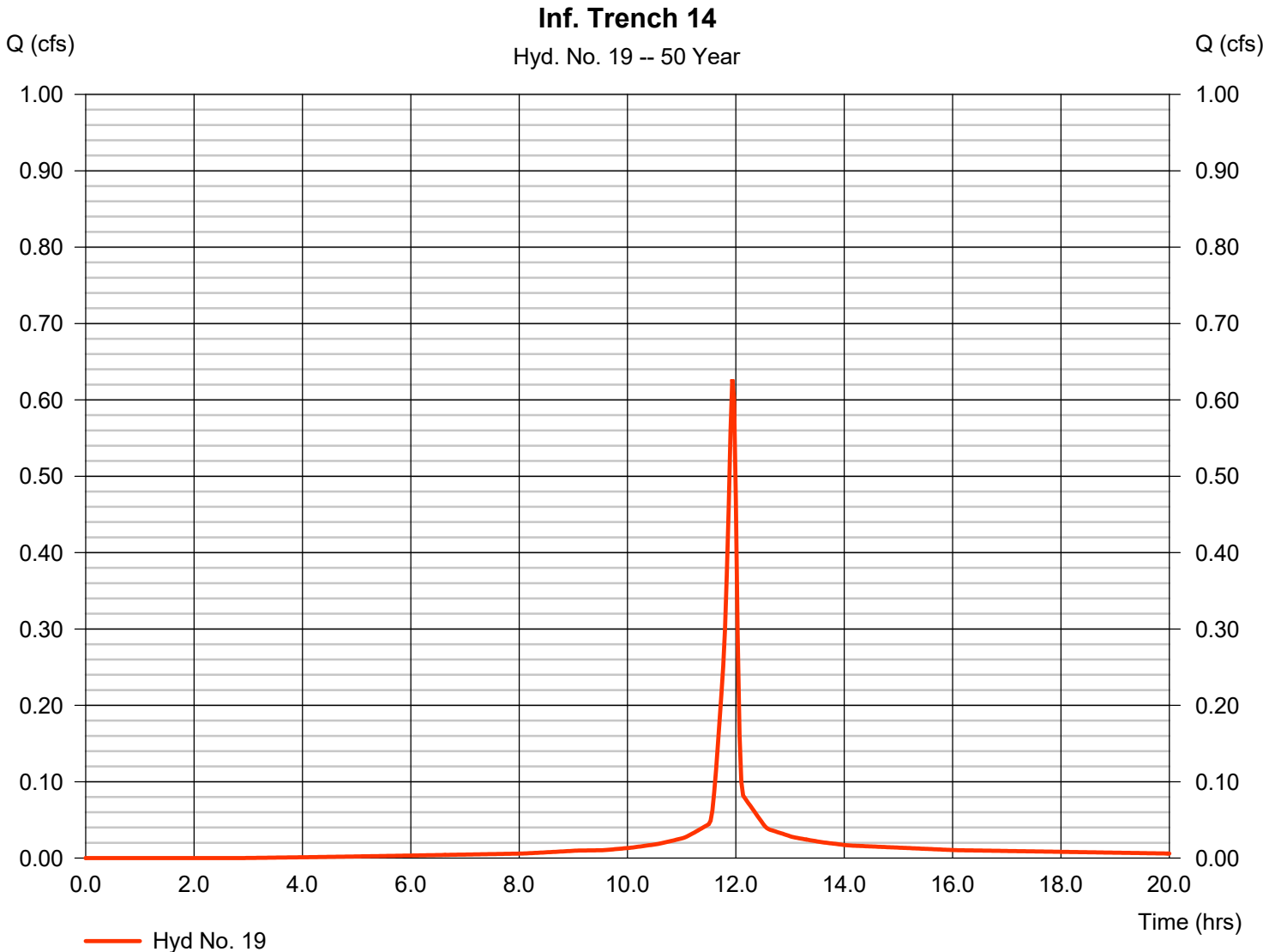
Hydrograph Report

Hyd. No. 19

Inf. Trench 14

Hydrograph type	= SCS Runoff	Peak discharge	= 0.627 cfs
Storm frequency	= 50 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 1,380 cuft
Drainage area	= 0.070 ac	Curve number	= 90*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.97 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.030 x 80) + (0.040 x 98)] / 0.070



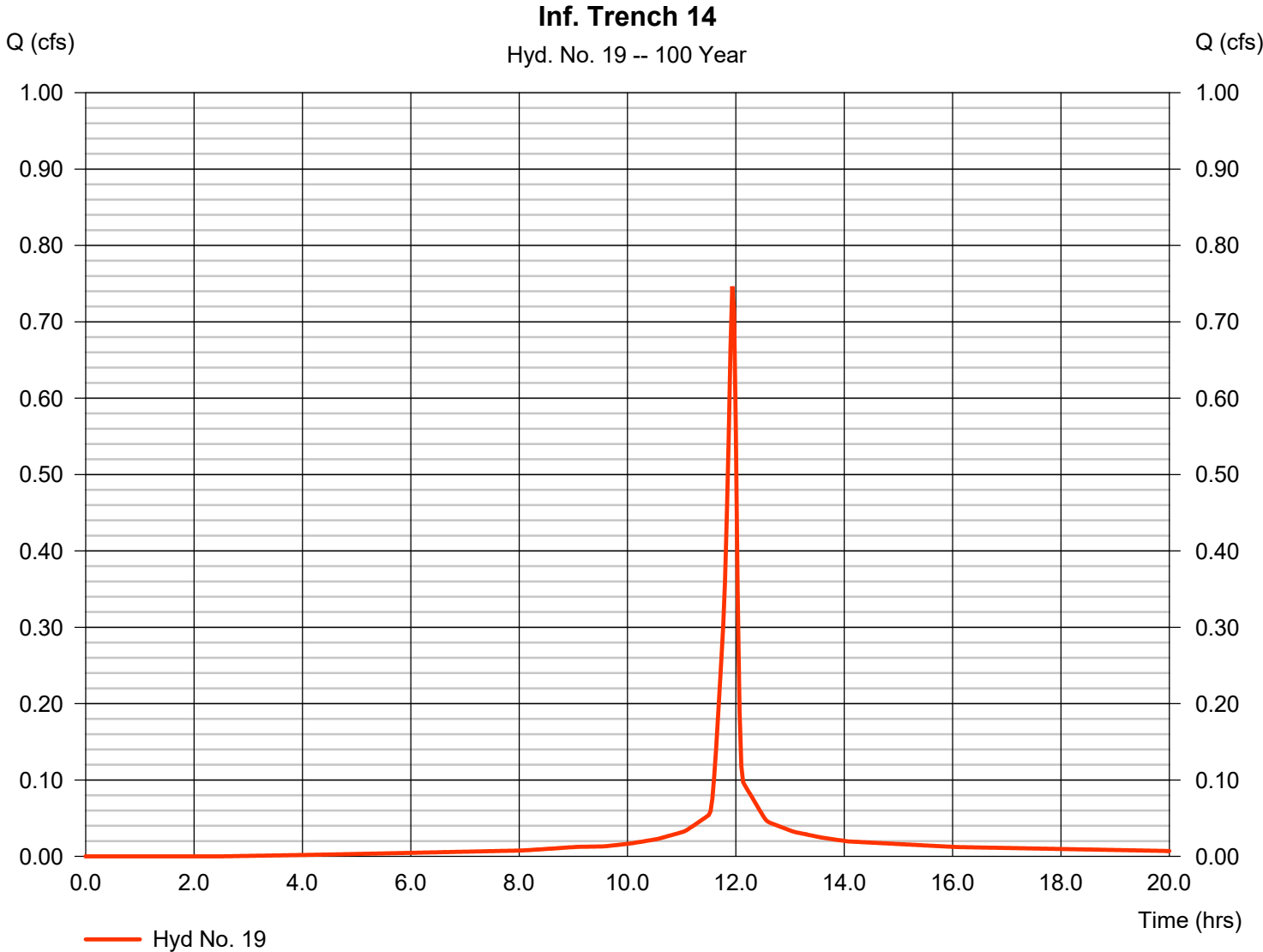
Hydrograph Report

Hyd. No. 19

Inf. Trench 14

Hydrograph type	= SCS Runoff	Peak discharge	= 0.746 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 1,663 cuft
Drainage area	= 0.070 ac	Curve number	= 90*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 8.18 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.030 x 80) + (0.040 x 98)] / 0.070



Hydrograph Report

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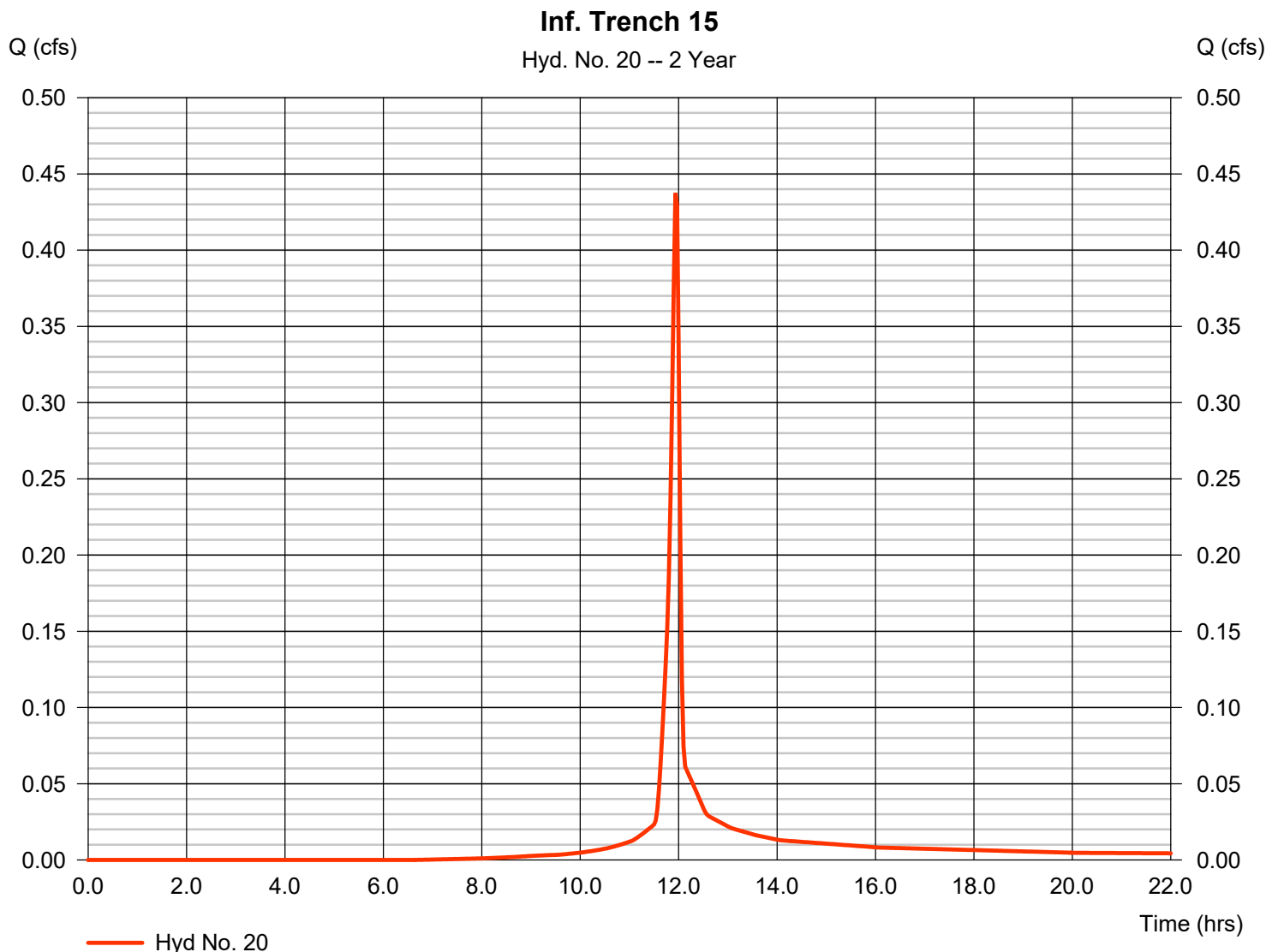
Friday, 06 / 28 / 2024

Hyd. No. 20

Inf. Trench 15

Hydrograph type	= SCS Runoff	Peak discharge	= 0.437 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 894 cuft
Drainage area	= 0.130 ac	Curve number	= 87*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.080 x 80) + (0.050 x 98)] / 0.130



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

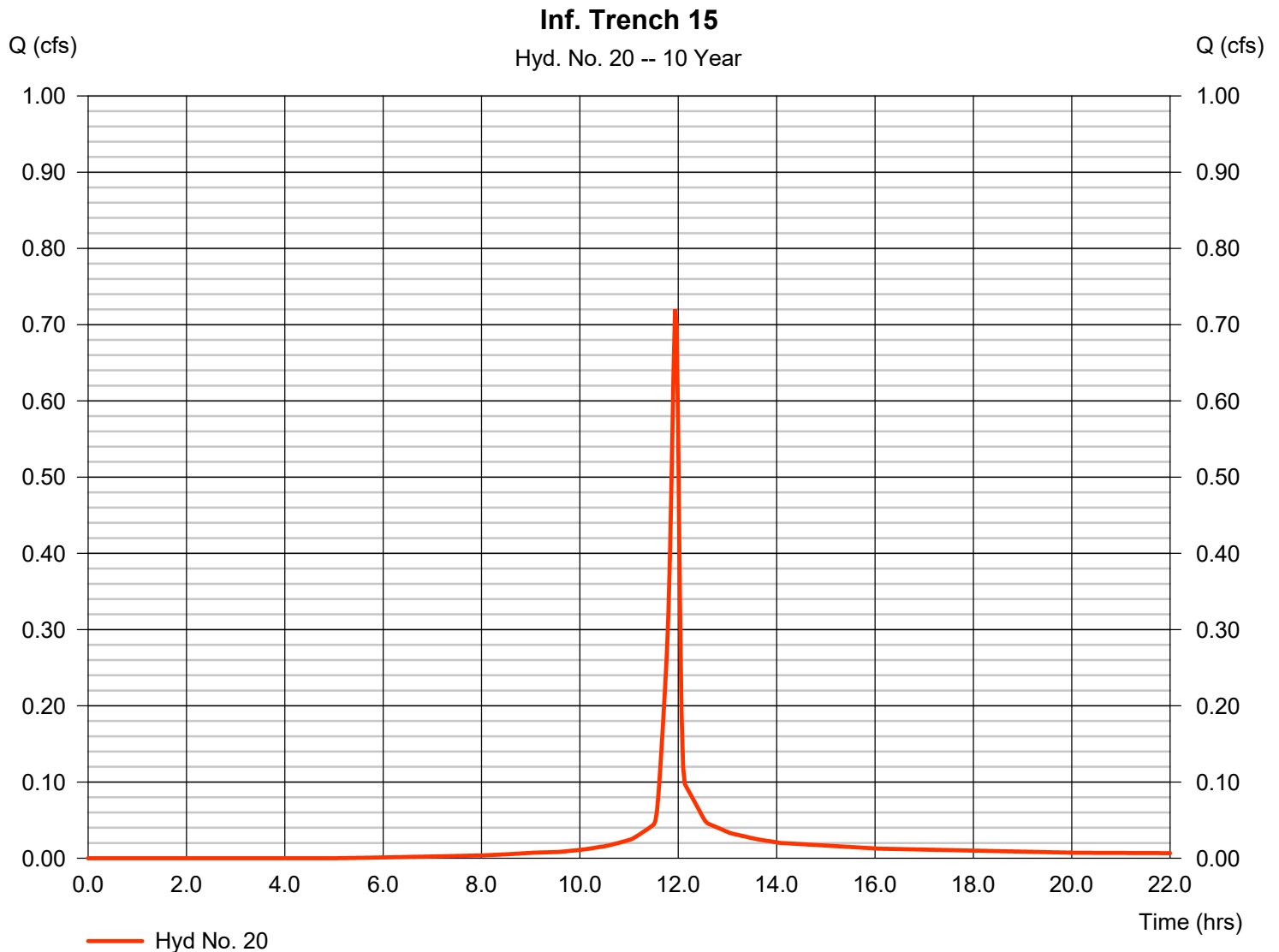
Friday, 06 / 28 / 2024

Hyd. No. 20

Inf. Trench 15

Hydrograph type	= SCS Runoff	Peak discharge	= 0.720 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 1,507 cuft
Drainage area	= 0.130 ac	Curve number	= 87*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.080 x 80) + (0.050 x 98)] / 0.130



Hydrograph Report

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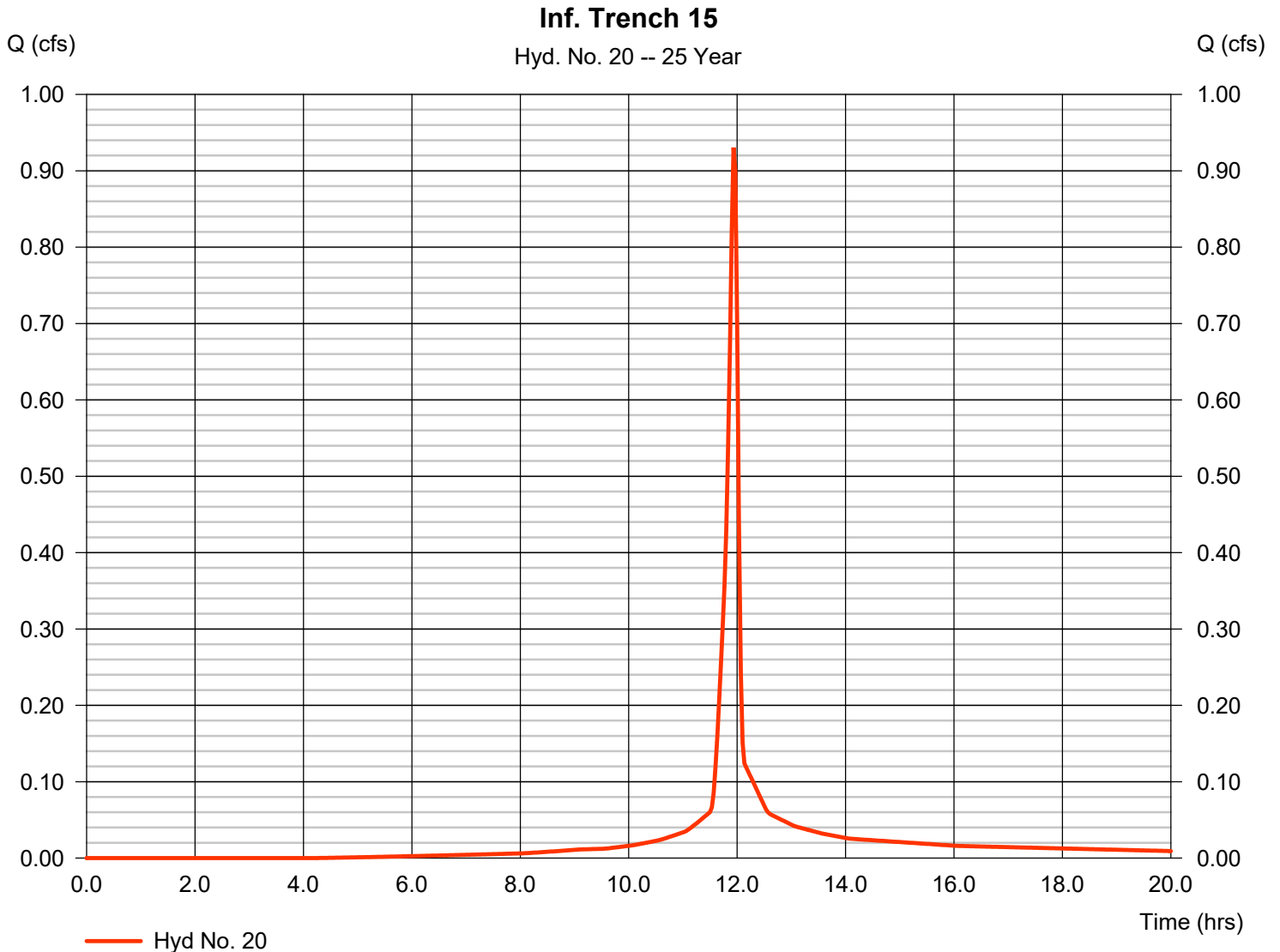
Friday, 06 / 28 / 2024

Hyd. No. 20

Inf. Trench 15

Hydrograph type	= SCS Runoff	Peak discharge	= 0.930 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 1,977 cuft
Drainage area	= 0.130 ac	Curve number	= 87*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.080 x 80) + (0.050 x 98)] / 0.130



Hydrograph Report

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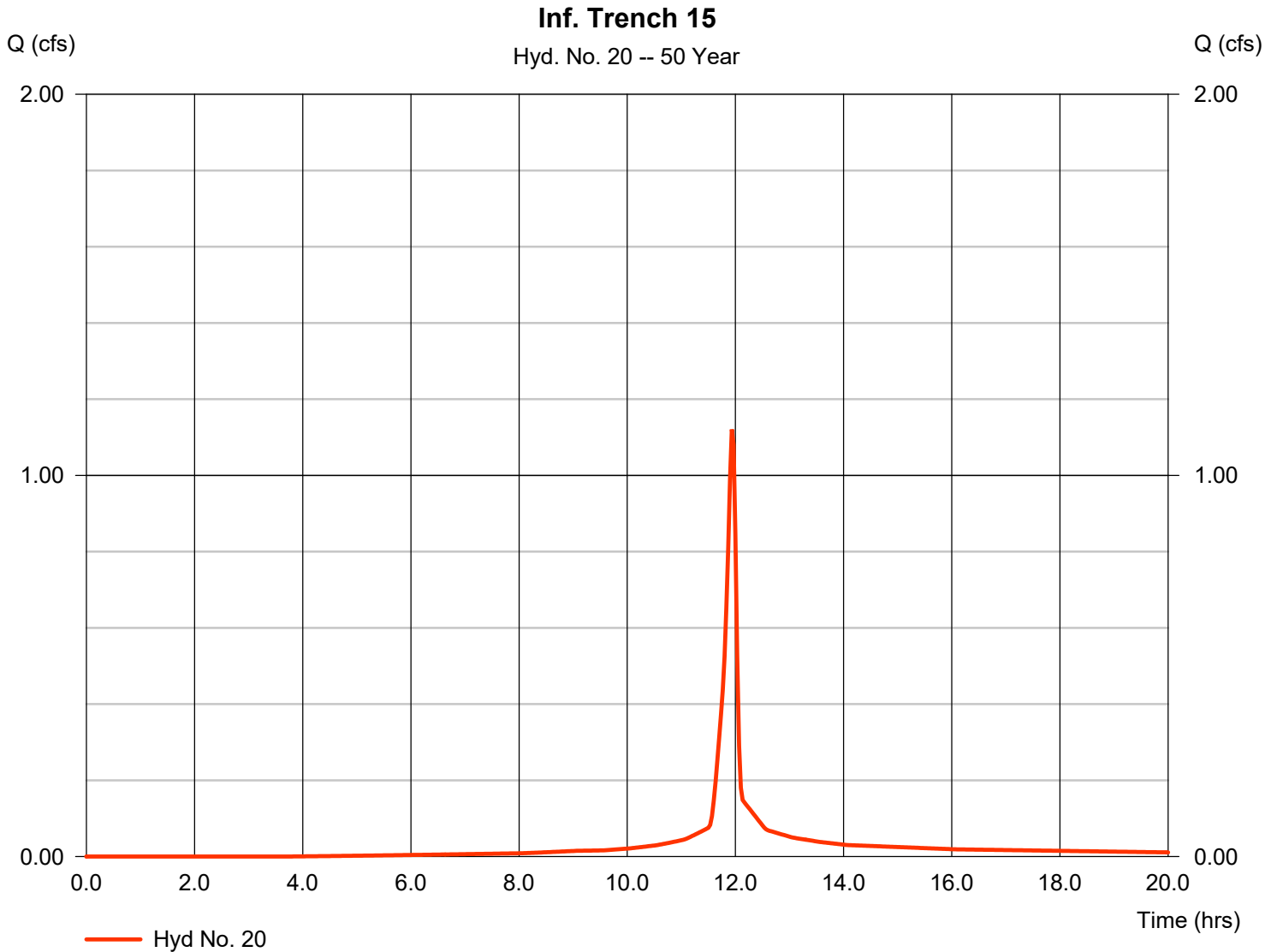
Friday, 06 / 28 / 2024

Hyd. No. 20

Inf. Trench 15

Hydrograph type	= SCS Runoff	Peak discharge	= 1.121 cfs
Storm frequency	= 50 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 2,411 cuft
Drainage area	= 0.130 ac	Curve number	= 87*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.97 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.080 x 80) + (0.050 x 98)] / 0.130



Hydrograph Report

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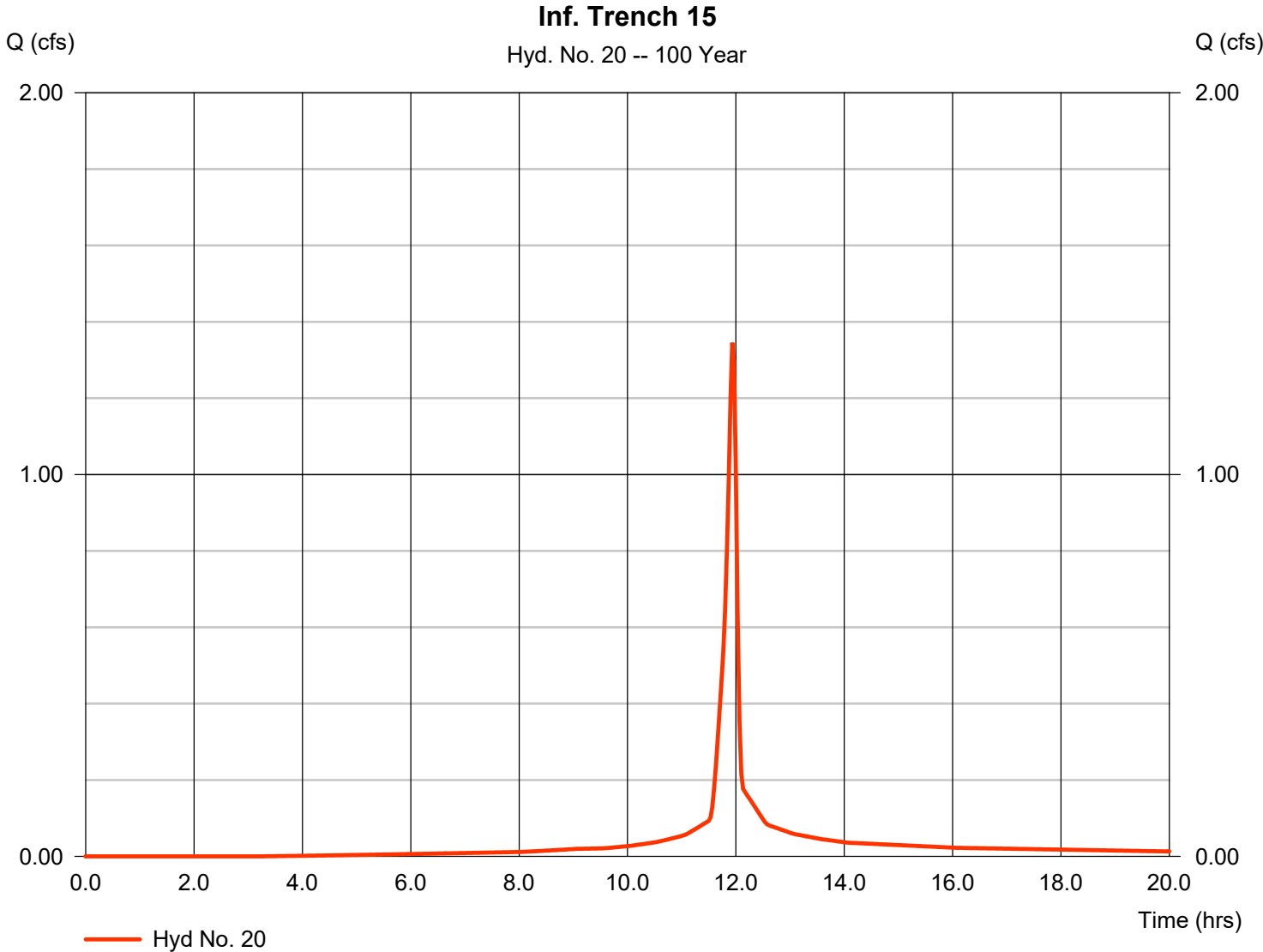
Friday, 06 / 28 / 2024

Hyd. No. 20

Inf. Trench 15

Hydrograph type	= SCS Runoff	Peak discharge	= 1.345 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 2,931 cuft
Drainage area	= 0.130 ac	Curve number	= 87*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 8.18 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.080 x 80) + (0.050 x 98)] / 0.130



Hydrograph Report

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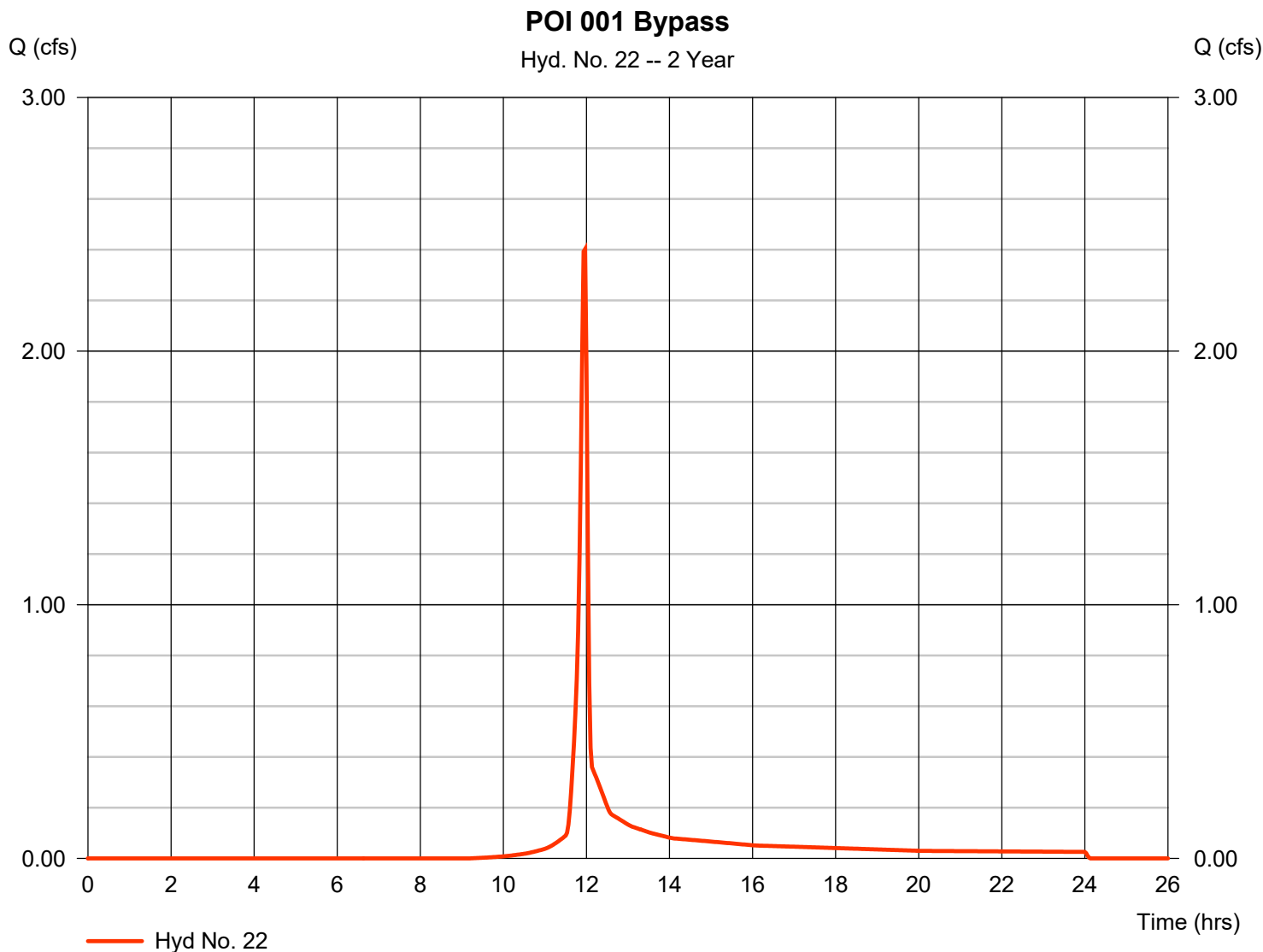
Friday, 06 / 28 / 2024

Hyd. No. 22

POI 001 Bypass

Hydrograph type	= SCS Runoff	Peak discharge	= 2.402 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 4,833 cuft
Drainage area	= 0.950 ac	Curve number	= 80*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.950 x 80)] / 0.950



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

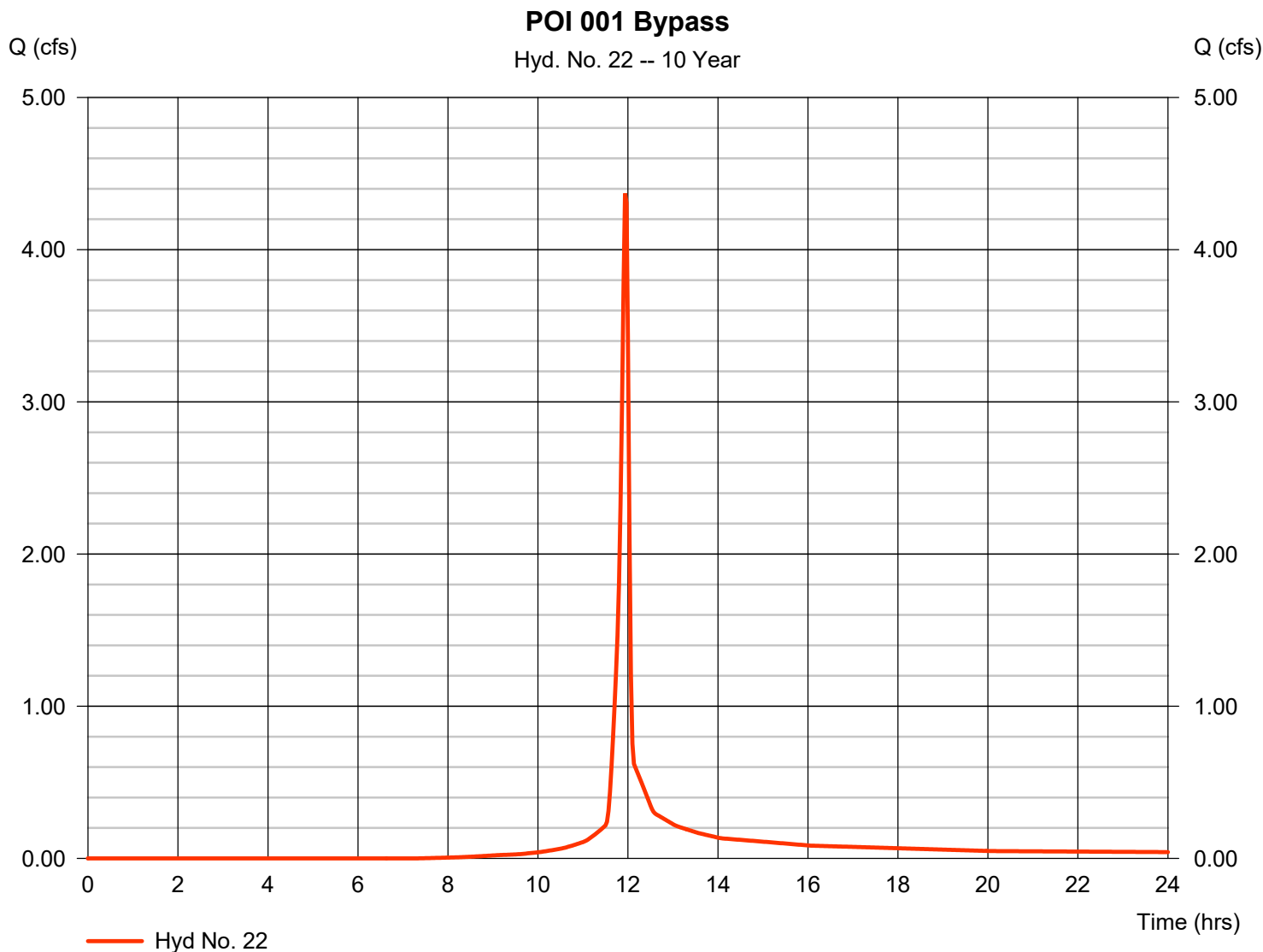
Friday, 06 / 28 / 2024

Hyd. No. 22

POI 001 Bypass

Hydrograph type	= SCS Runoff	Peak discharge	= 4.369 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 8,875 cuft
Drainage area	= 0.950 ac	Curve number	= 80*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.950 x 80)] / 0.950



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

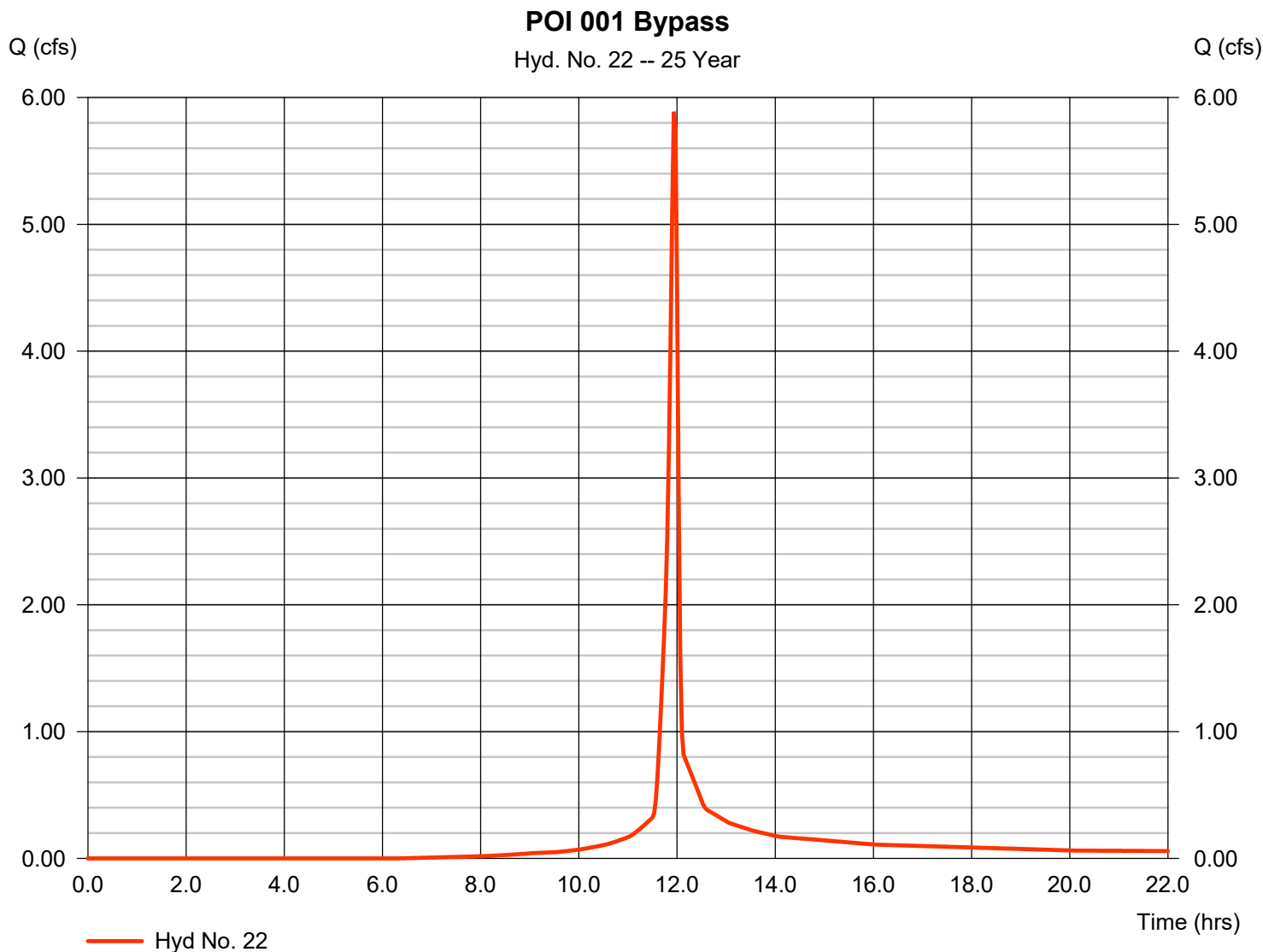
Friday, 06 / 28 / 2024

Hyd. No. 22

POI 001 Bypass

Hydrograph type	= SCS Runoff	Peak discharge	= 5.888 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 12,079 cuft
Drainage area	= 0.950 ac	Curve number	= 80*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.950 x 80)] / 0.950



Hydrograph Report

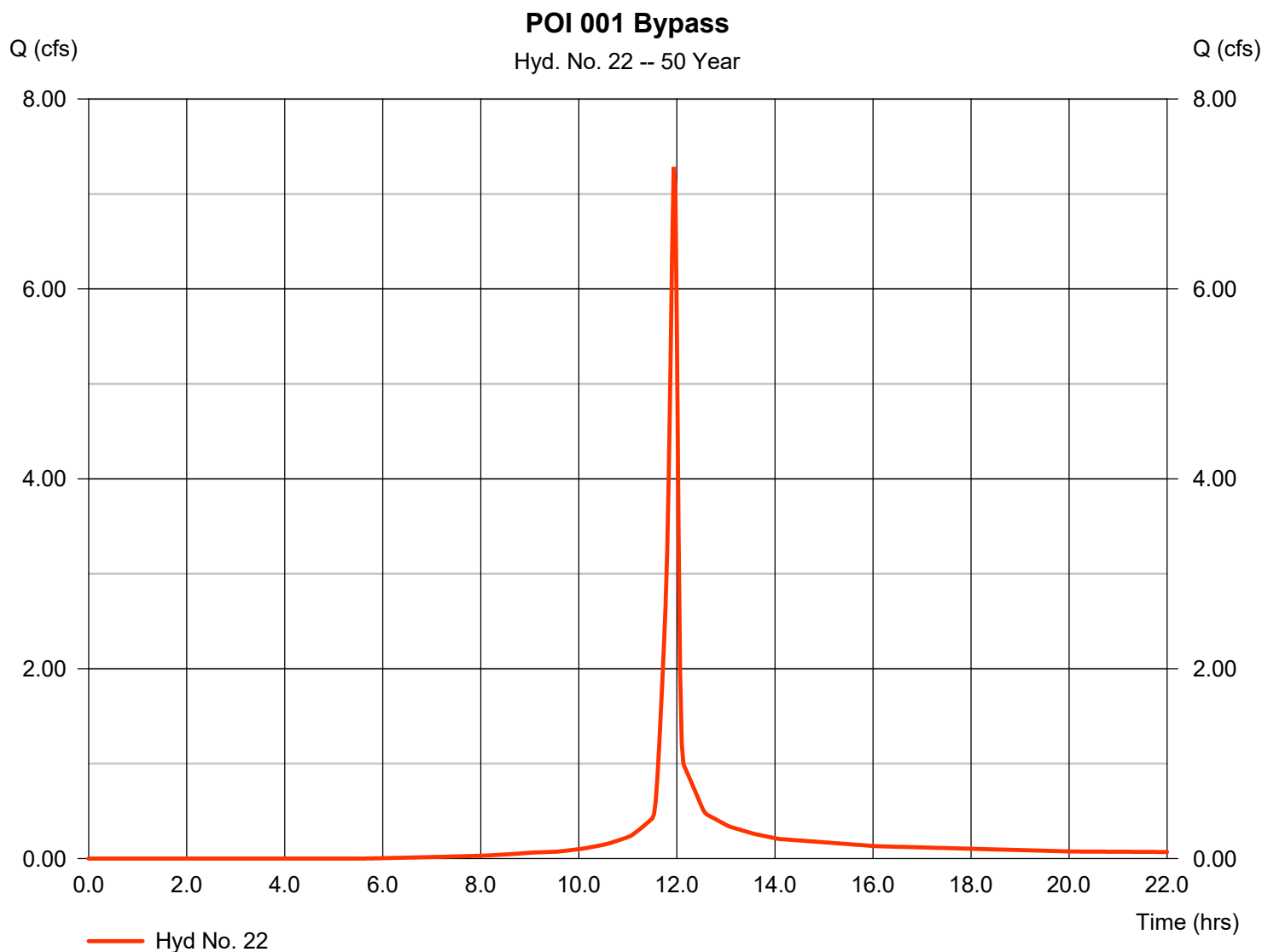
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

Friday, 06 / 28 / 2024

Hyd. No. 22

POI 001 Bypass

Hydrograph type	= SCS Runoff	Peak discharge	= 7.284 cfs
Storm frequency	= 50 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 15,088 cuft
Drainage area	= 0.950 ac	Curve number	= 80*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.97 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(0.950 \times 80)] / 0.950$ 

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

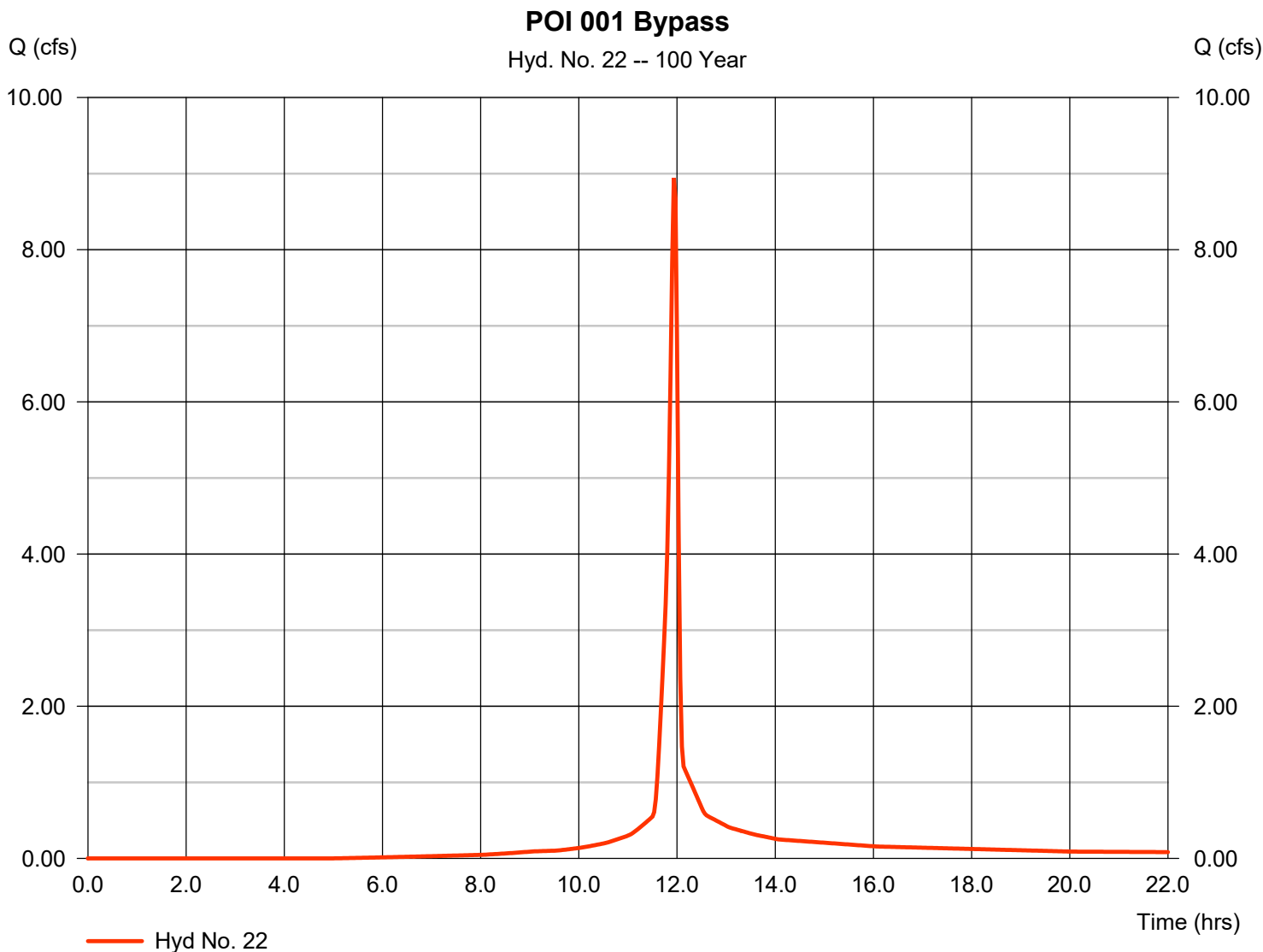
Friday, 06 / 28 / 2024

Hyd. No. 22

POI 001 Bypass

Hydrograph type	= SCS Runoff	Peak discharge	= 8.944 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 18,732 cuft
Drainage area	= 0.950 ac	Curve number	= 80*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 8.18 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.950 x 80)] / 0.950

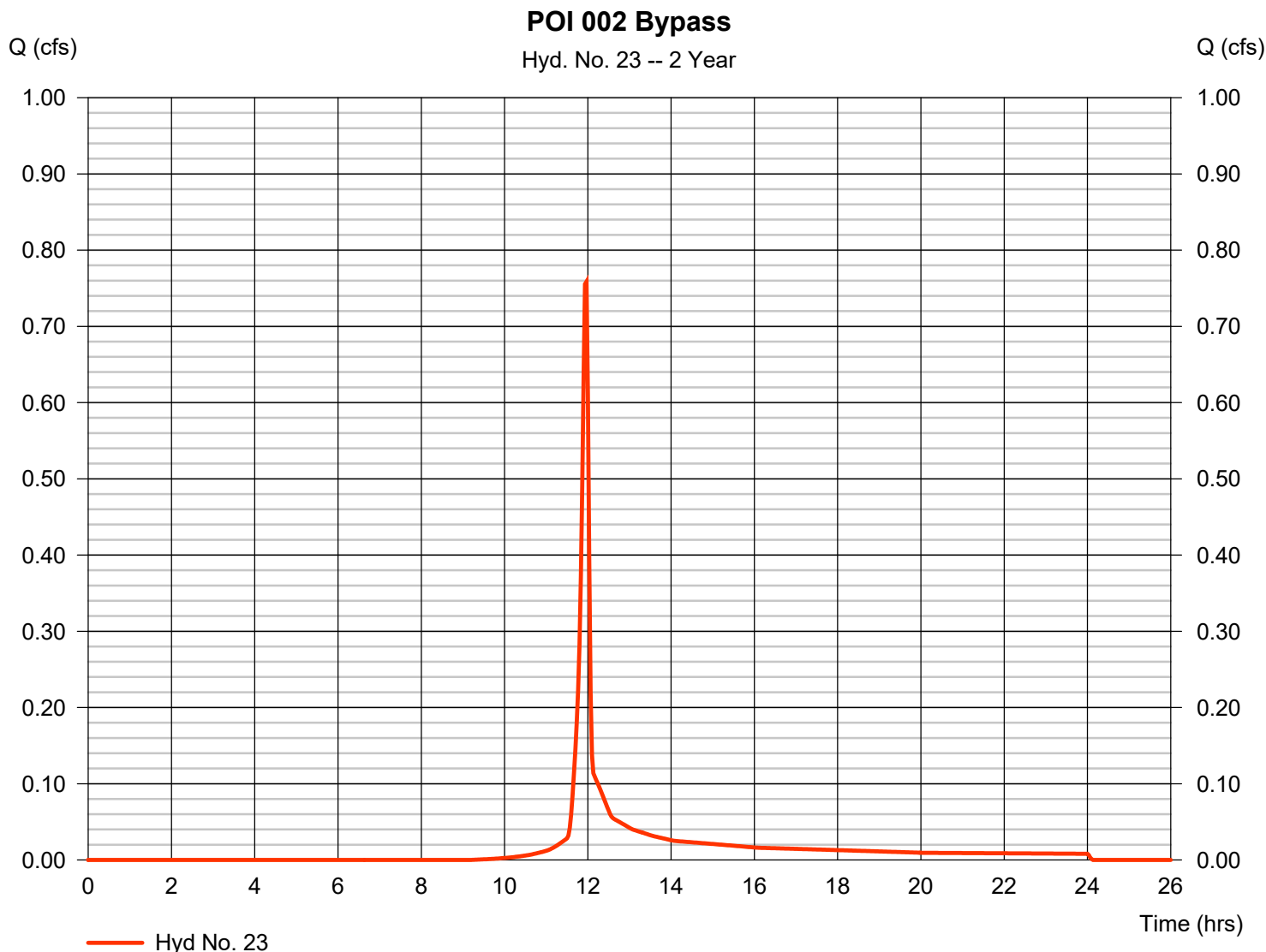


Hydrograph Report

Hyd. No. 23

POI 002 Bypass

Hydrograph type	= SCS Runoff	Peak discharge	= 0.759 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 1,526 cuft
Drainage area	= 0.300 ac	Curve number	= 80
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.32 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

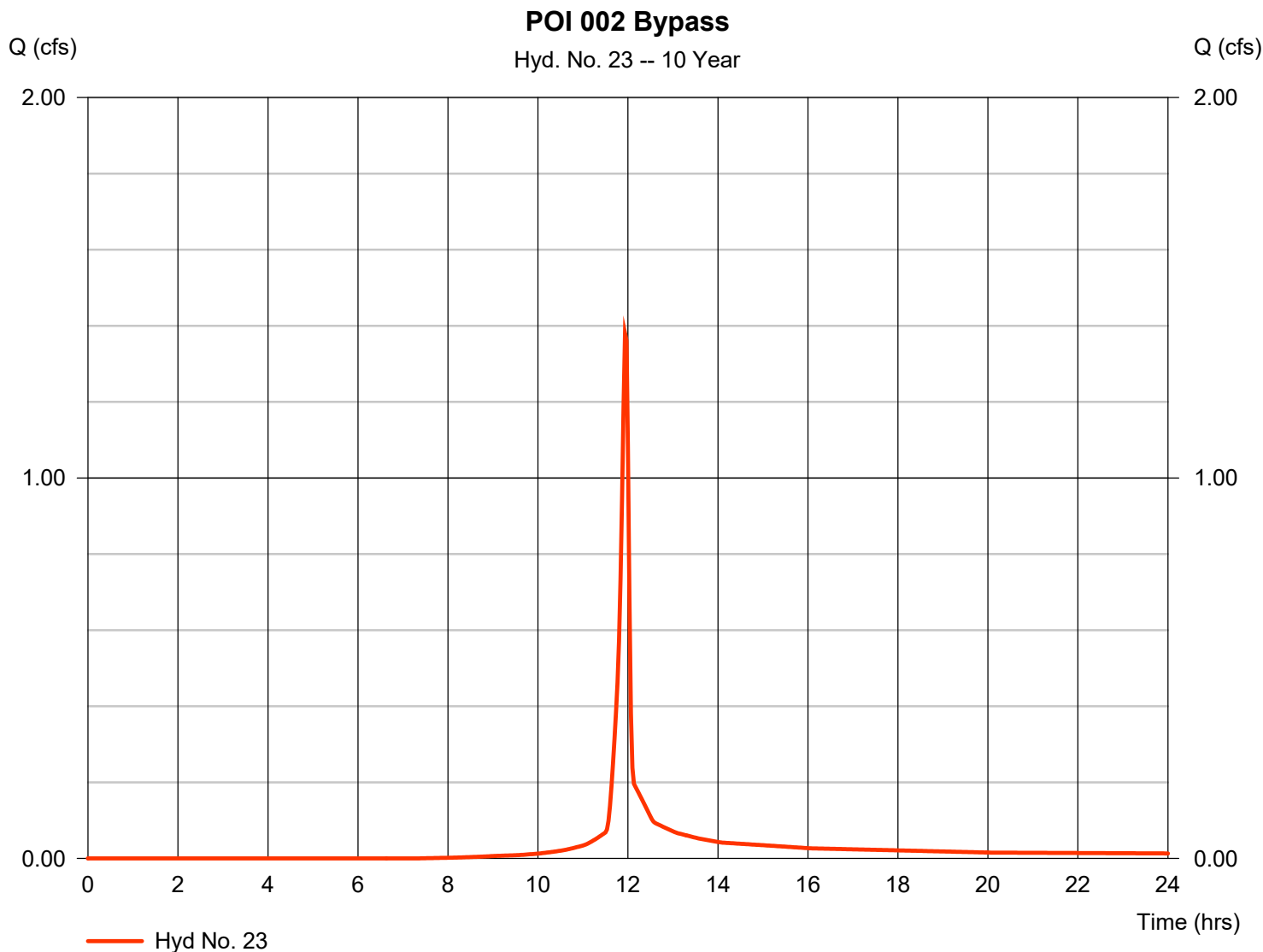


Hydrograph Report

Hyd. No. 23

POI 002 Bypass

Hydrograph type	= SCS Runoff	Peak discharge	= 1.380 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 2,803 cuft
Drainage area	= 0.300 ac	Curve number	= 80
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.83 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

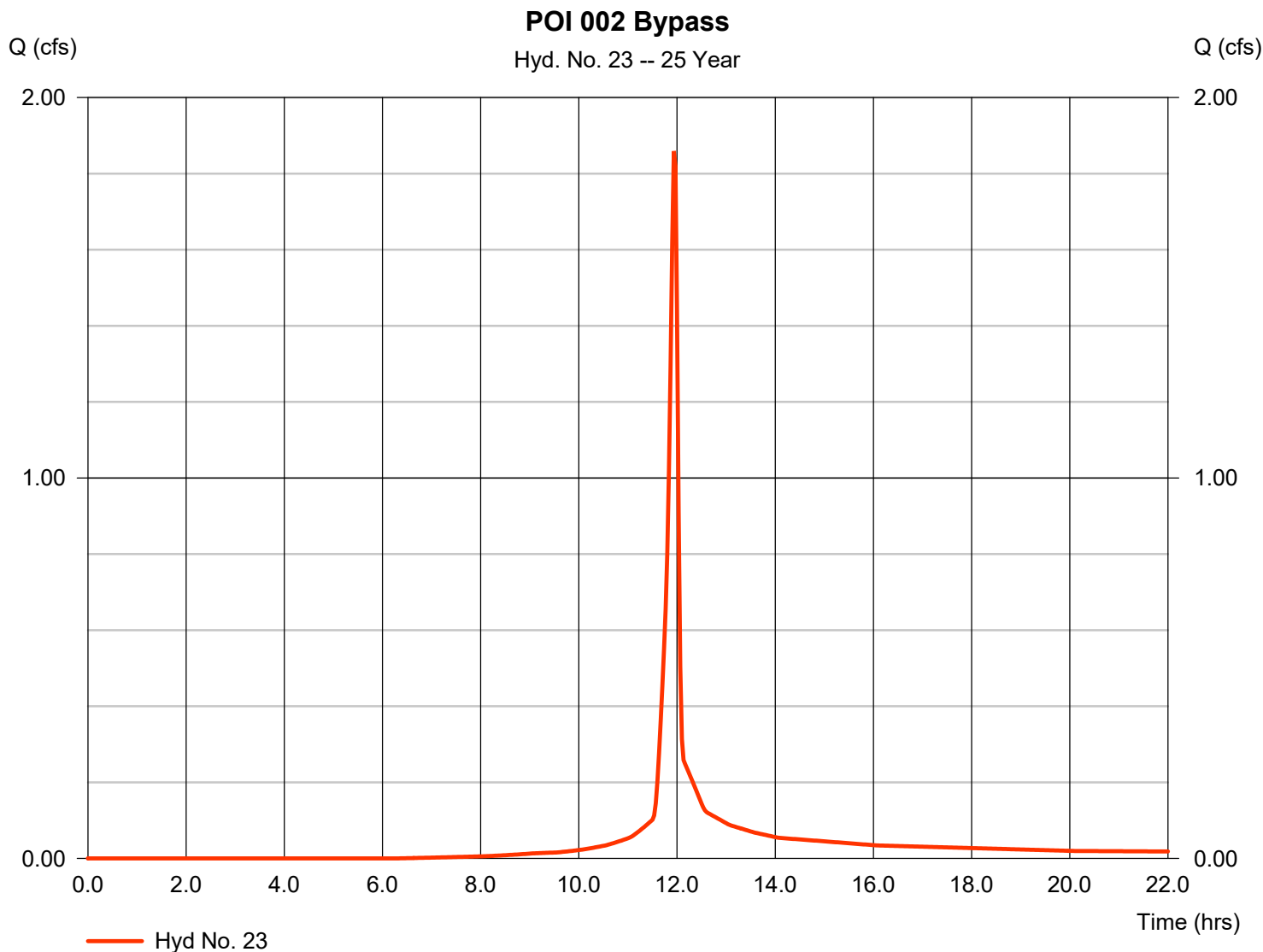


Hydrograph Report

Hyd. No. 23

POI 002 Bypass

Hydrograph type	= SCS Runoff	Peak discharge	= 1.859 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 3,814 cuft
Drainage area	= 0.300 ac	Curve number	= 80
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

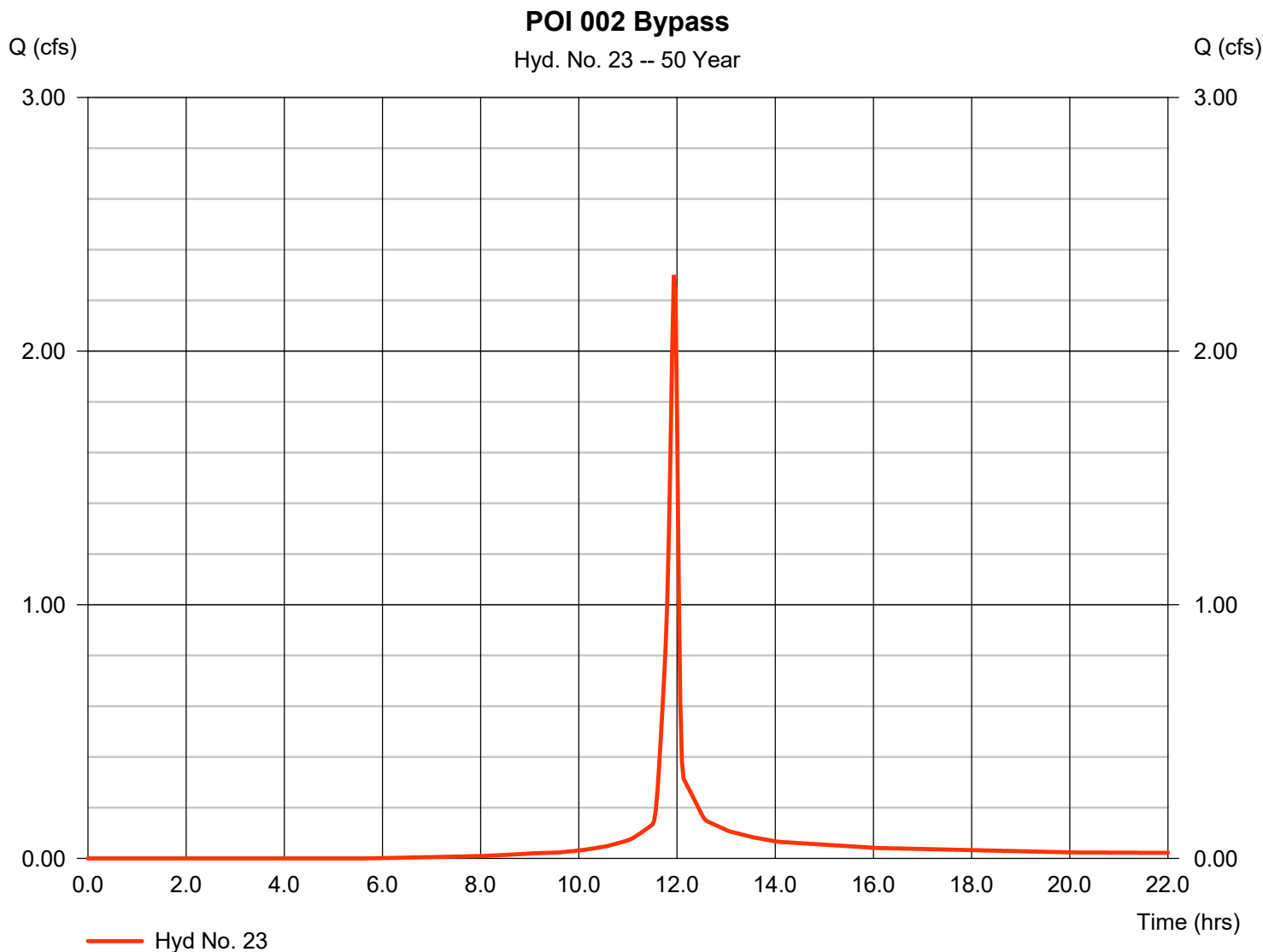
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

Friday, 06 / 28 / 2024

Hyd. No. 23

POI 002 Bypass

Hydrograph type	= SCS Runoff	Peak discharge	= 2.300 cfs
Storm frequency	= 50 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 4,764 cuft
Drainage area	= 0.300 ac	Curve number	= 80
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.97 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

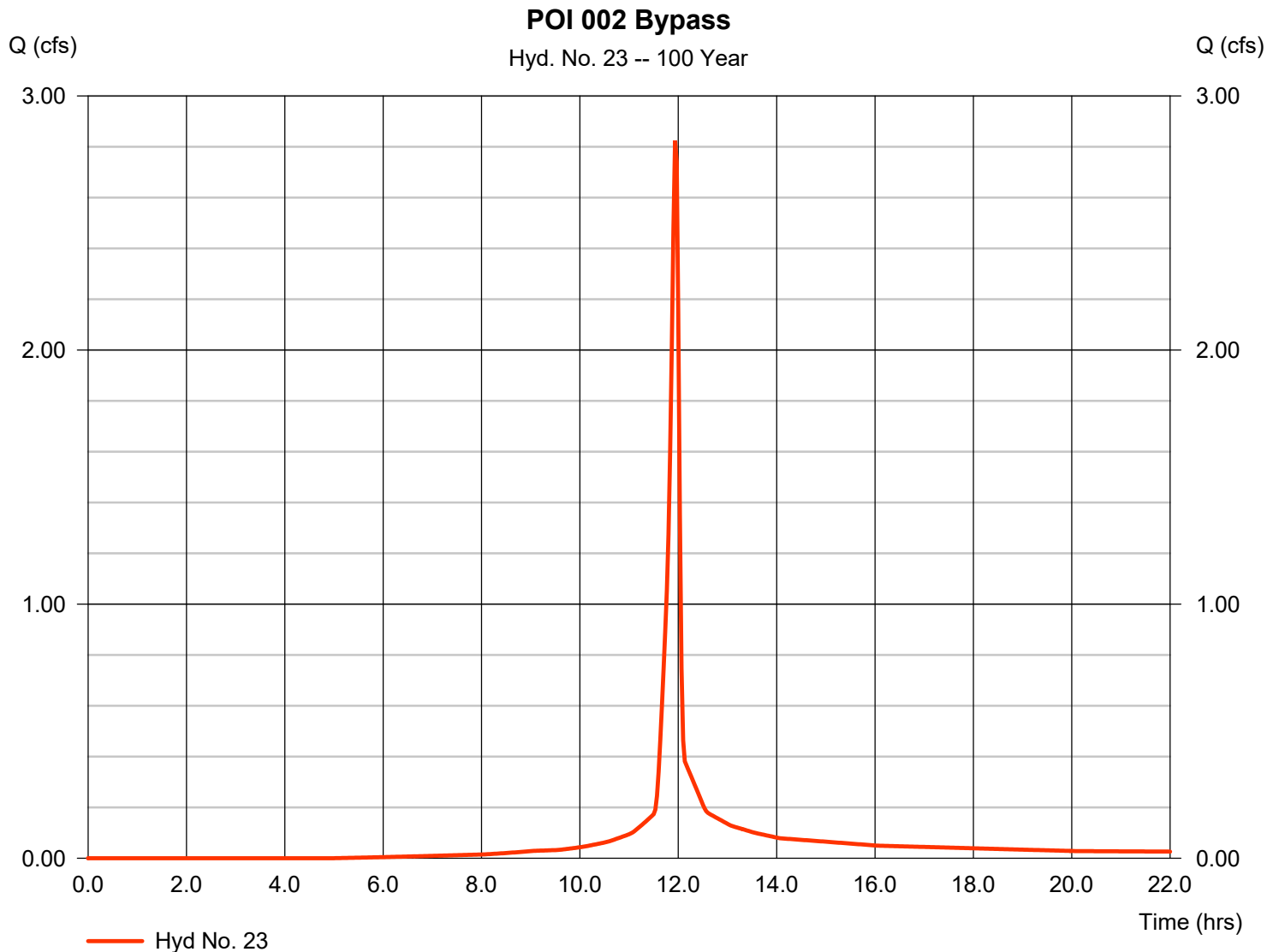
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

Friday, 06 / 28 / 2024

Hyd. No. 23

POI 002 Bypass

Hydrograph type	= SCS Runoff	Peak discharge	= 2.825 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 5,915 cuft
Drainage area	= 0.300 ac	Curve number	= 80
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 8.18 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



8. LOCATION AND DESCRIPTION OF PCSM BMP'S

The following BMPs will be employed:

- a. Raingardens
- b. Infiltration Trenches

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.

Infiltration Trench:

- Inspect area two times per year.
- Vegetation along the surface of the Infiltration Trench should be maintained in good condition.
- Vehicles should not be parked or driven on vegetated Infiltration Trench and care should be taken to avoid excessive compaction.

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.

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.

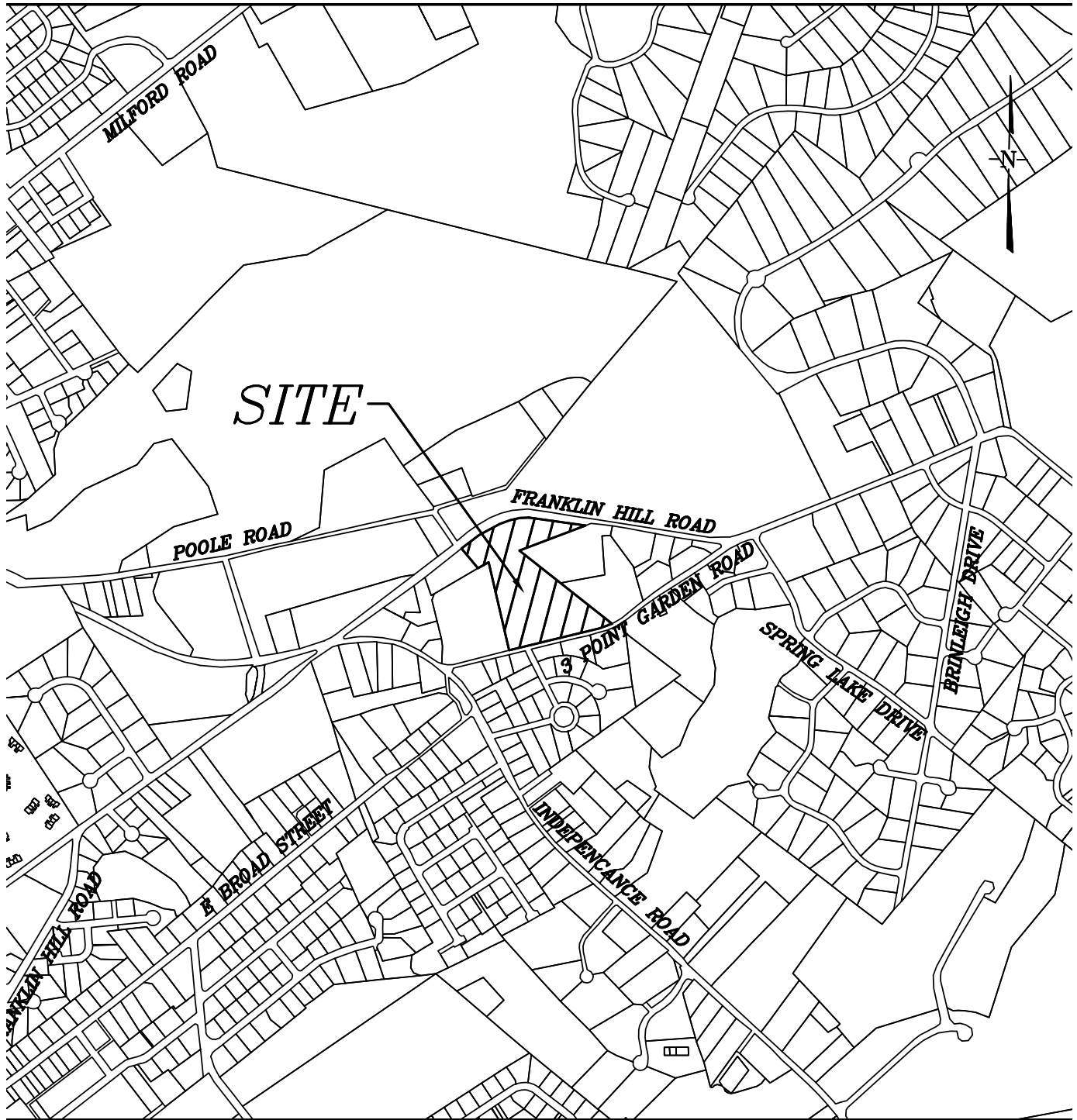
Mr. Ott has prepared numerous E&SPC Plans and Narratives over the last 16 years in Lehigh, Northampton, Bucks, Berks, Monroe, Lackawanna and Luzerne Counties. Mr. Ott graduated from Drexel University with a Bachelor of Science in Civil Engineering in June 1989 and immediately began his employment in 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

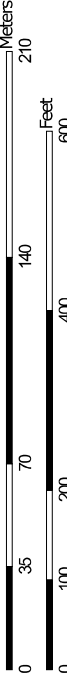
b. Location Map



Hydrologic Soil Group—Monroe County, Pennsylvania



Map Scale: 1:2,570 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84



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%



c. Stormwater Worksheets

WORKSHEET 4. CHANGE IN RUNOFF VOLUME FOR 2-YR STORM EVENT

PROJECT: 3 Point Garden Road
 Drainage Area: 4.78 LOD (SF)= 361585.5
 2-Year Rainfall: 3.32 in.* * From NOAA
 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	la (0.2*S)	Q Runoff ¹ (in)	Runoff Volume ² (ft ³)
Woodland	D	208,372	4.78	77	2.99	0.60	1.30	22543.37
Meadow	D	0		78				
Impervious	D	0		98				
Impervious as Meadow	D	0		78				
Impervious (Utility Area)	D	0		98				
TOTAL:		208,372	4.78					22,543

Developed Conditions:

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)	CN	S	la (0.2*S)	Q Runoff ¹ (in)	Runoff Volume ² (ft ³)
Woodland	D	0		77				
Lawn	D	163,447	3.75	80	2.50	0.50	1.49	20360.24
Impervious	D	44,925	1.03	98	0.20	0.04	3.09	11557.16
Impervious (Utility Area)	D	0		98				
TOTAL:		208,372	4.78					31,917

2-Year Volume Increase (ft³): 9,374

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

PROJECT: 3 Point Garden Road

Drainage Area: 4.78 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	174,190	4.00	77	2.99	0.60	1.30	18845.24	0.43
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:		174,190	4.00						0.43

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	368,277	8.45	77	2.99	0.60	1.30	39843.19	0.91
Meadow	D			78					
Fertilized Planting Area	D			84					
Native Planting Area	D			80					
Lawn, Low-Input	D	39,994	0.92	80	2.50	0.50	1.49	4981.98	0.11
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	29,576	0.68	98	0.20	0.04	3.09	7608.48	0.17
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		437,847	10.05						1.19

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	34,182	0.78	77	2.99	0.60	1.30	3698.13	0.08
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:		34,182	0.78						0.08

Existing Conditions: POI 002 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	118,299	2.72	77	2.99	0.60	1.30	12798.50	0.29
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	9,971	0.23	98	0.20	0.04	3.09	2565.19	0.06
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		128,270	2.94						0.35

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

PROJECT: 3 Point Garden Road

Drainage Area: 0.66 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	la (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	8,950	0.21	80	2.50	0.50	1.49	1114.92	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	7,647	0.18	98	0.20	0.04	3.09	1967.28	0.05
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		16,597	0.38						0.08

Developed Conditions: Rain Garden 1 Offsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (0.2*S)	Q Runoff ¹ (in)	Runoff Volume ² (ft ³)	Runoff Volume (AC-FT)
Forest (Good)	D	2,051	0.05	77	2.99	0.60	1.30	221.87	0.01
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:		2,051	0.05						0.01

Developed Conditions: Rain Garden 2 Onsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (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	4,942	0.11	80	2.50	0.50	1.49	615.62	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	4,054	0.09	98	0.20	0.04	3.09	1042.93	0.02
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		8,996	0.21						0.03

Developed Conditions: Rain Garden 2 Offsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (0.2*S)	Q Runoff ¹ (in)	Runoff Volume ² (ft ³)	Runoff Volume (AC-FT)
Forest (Good)	D	4,326	0.10	77	2.99	0.60	1.30	468.07	0.01
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					
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		4,326	0.10						0.01

Developed Conditions: Rain Garden 3 Onsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (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	5,853	0.13	80	2.50	0.50	1.49	729.10	0.02
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	3,857	0.09	98	0.20	0.04	3.09	992.31	0.02
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		9,710	0.22						0.04

Developed Conditions: Rain Garden 3 Offsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (0.2*S)	Q Runoff ¹ (in)	Runoff Volume ² (ft ³)	Runoff Volume (AC-FT)
Forest (Good)	D	400	0.01	77	2.99	0.60	1.30	43.27	0.00
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					
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		400	0.01						

Developed Conditions: Rain Garden 4 Onsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (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	6,496	0.15	80	2.50	0.50	1.49	809.25	0.02
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	3,242	0.07	98	0.20	0.04	3.09	834.00	0.02
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		9,738	0.22						0.04

Developed Conditions: Rain Garden 4 Offsite

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (0.2*S)	Q Runoff ¹ (in)	Runoff Volume ² (ft ³)	Runoff Volume (AC-FT)
Forest (Good)	D	260	0.01	77	2.99	0.60	1.30	28.14	0.00
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					
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		260	0.01						

Developed Conditions: **Rain Garden 5 Onsite**

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (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	6,605	0.15	80	2.50	0.50	1.49	822.71	0.02
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	4,280	0.10	98	0.20	0.04	3.09	1101.09	0.03
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		10,885	0.25						0.05

Developed Conditions: **Rain Garden 5 Offsite**

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (0.2*S)	Q Runoff ¹ (in)	Runoff Volume ² (ft ³)	Runoff Volume (AC-FT)
Forest (Good)	D	976	0.02	77	2.99	0.60	1.30	105.60	0.00
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					
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		976	0.02						

Developed Conditions: **Rain Garden 6 Onsite**

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (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	7,592	0.17	80	2.50	0.50	1.49	945.75	0.02
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	2,900	0.07	98	0.20	0.04	3.09	746.04	0.02
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		10,492	0.24						0.04

Developed Conditions: **Rain Garden 6 Offsite**

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (0.2*S)	Q Runoff ¹ (in)	Runoff Volume ² (ft ³)	Runoff Volume (AC-FT)
Forest (Good)	D	1,730	0.04	77	2.99	0.60	1.30	187.16	0.00
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					
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		1,730	0.04						

Developed Conditions: **Rain Garden 7 Onsite**

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (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	10,078	0.23	80	2.50	0.50	1.49	1255.42	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	4,635	0.11	98	0.20	0.04	3.09	1192.39	0.03
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		14,713	0.34						0.06

Developed Conditions: **Rain Garden 7 Offsite**

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (0.2*S)	Q Runoff ¹ (in)	Runoff Volume ² (ft ³)	Runoff Volume (AC-FT)
Forest (Good)	D	5,492	0.13	77	2.99	0.60	1.30	594.17	0.01
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					
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		5,492	0.13						0.01

Developed Conditions: **Infiltration Trench 8 (Lot 1)**

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (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	329	0.01	80	2.50	0.50	1.49	40.99	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	793	0.02	98	0.20	0.04	3.09	203.94	0.00
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		1,122	0.03						

Developed Conditions: **Infiltration Trench 9 (Lot 1)**

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (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	334	0.01	80	2.50	0.50	1.49	41.61	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	1,041	0.02	98	0.20	0.04	3.09	267.76	0.01
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		1,375	0.03						0.01

Developed Conditions: **Infiltration Trench 10 (Lot 2)**

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (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	7,005	0.16	80	2.50	0.50	1.49	872.58	0.02
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	1,176	0.03	98	0.20	0.04	3.09	302.47	0.01
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		8,181	0.19						0.03

Developed Conditions: **Infiltration Trench 10 (Lot 2) Offsite**

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (0.2*S)	Q Runoff ¹ (in)	Runoff Volume ² (ft ³)	Runoff Volume (AC-FT)
Forest (Good)	D	8,600	0.20	77	2.99	0.60	1.30	930.42	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			98					
Res. Driveway, Play Courts, etc.	D			98					
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		8,600	0.20						0.02

Developed Conditions: **Infiltration Trench 11 (Lot 3)**

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (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	8,183	0.19	80	2.50	0.50	1.49	1019.31	0.02
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	1,469	0.03	98	0.20	0.04	3.09	377.87	0.01
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		9,652	0.22						0.03

Developed Conditions: **Infiltration Trench 11 (Lot 3) Offsite**

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (0.2*S)	Q Runoff ¹ (in)	Runoff Volume ² (ft ³)	Runoff Volume (AC-FT)
Forest (Good)	D	6,830	0.16	77	2.99	0.60	1.30	738.95	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			98					
Res. Driveway, Play Courts, etc.	D			98					
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		6,830	0.16						0.02

Developed Conditions: **Infiltration Trench 12 (Lot 4)**

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (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	1,417	0.03	80	2.50	0.50	1.49	176.54	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	3,633	0.08	98	0.20	0.04	3.09	934.73	0.02
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		5,051	0.12						0.02

Developed Conditions: **Infiltration Trench 13 (Lot 5)**

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (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	462	0.01	80	2.50	0.50	1.49	57.58	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	765	0.02	98	0.20	0.04	3.09	196.67	0.00
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		1,227	0.03						

Developed Conditions: **Infiltration Trench 14 (Lot 7)**

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (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	1,322	0.03	80	2.50	0.50	1.49	164.63	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	1,582	0.04	98	0.20	0.04	3.09	406.88	0.01
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		2,903	0.07						0.01

Developed Conditions: **Infiltration Trench 14 (Lot 7) Offsite**

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (0.2*S)	Q Runoff ¹ (in)	Runoff Volume ² (ft ³)	Runoff Volume (AC-FT)
Forest (Good)	D	6,282	0.14	77	2.99	0.60	1.30	679.68	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			98					
Res. Driveway, Play Courts, etc.	D			98					
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		6,282	0.14						0.02

Developed Conditions: **Infiltration Trench 15 (Lot 7)**

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (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	3,408	0.08	80	2.50	0.50	1.49	424.50	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	2,360	0.05	98	0.20	0.04	3.09	607.21	0.01
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		5,768	0.13						0.02

Developed Conditions: **Infiltration Trench 15 (Lot 7) Offsite**

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (0.2*S)	Q Runoff ¹ (in)	Runoff Volume ² (ft ³)	Runoff Volume (AC-FT)
Forest (Good)	D	7,975	0.18	77	2.99	0.60	1.30	862.77	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			98					
Res. Driveway, Play Courts, etc.	D			98					
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		7,975	0.18						0.02

Developed Conditions: **Rain Garden 16**

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (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	35,956	0.83	80	2.50	0.50	1.49	4478.89	0.10
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	1,491	0.03	98	0.20	0.04	3.09	383.59	0.01
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		37,447	0.86						0.11

Developed Conditions: **Rain Garden 16 Offsite**

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (0.2*S)	Q Runoff ¹ (in)	Runoff Volume ² (ft ³)	Runoff Volume (AC-FT)
Forest (Good)	D	45,262	1.04	77	2.99	0.60	1.30	4896.77	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					
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		45,262	1.04						0.11

Developed Conditions: **POI 001 Bypass**

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (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	41,513	0.95	80	2.50	0.50	1.49	5171.14	0.12
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:		41,513	0.95						0.12

Developed Conditions: POI 002 Bypass

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)**	CN	S	la (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	13,003	0.30	80	2.50	0.50	1.49	1619.70	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			98					
High Traffic Parking Lot	D			98					
Low Traffic Parking Lot	D			98					
TOTAL:		13,003	0.30						0.04

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 Infiltration 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	437	524	874	1398	3082	1.80	16597	7647	1747	2875	643	642.8	640.5	4.4	9.5	43.2	
2	1.00	2.0	0.50	419	502	837	1340	1659	0.80	8996	4054	1675	2188	637	636.8	634.5	2.4	5.4	19.2	
3	1.00	2.0	0.50	359	431	718	1149	1721	0.80	9710	3857	1437	2024	632	631.8	629.5	2.7	6.8	19.2	
4	1.00	2.0	0.50	383	460	767	1227	1643	0.80	9738	3242	1533	2537	629	628.8	626.5	2.1	6.4	19.2	
5	1.00	2.0	0.50	345	414	690	1104	1924	1.80	10885	4280	1380	2076	635	634.8	632.5	3.1	7.9	43.2	
6	1.00	2.0	0.50	378	454	757	1211	1692	0.80	10492	2900	1514	2294	632	631.8	629.5	1.9	6.9	19.2	
7	1.00	2.0	0.50	432	518	864	1382	2448	0.80	14713	4635	1728	2354	633	632.8	630.5	2.7	8.5	19.2	
16	1.00	2.0	0.50	525	630	1050	1681	4862	1.80	37447	1491	2101	7489	630	629.8	627.5	0.7	17.8	43.2	

- 13-16 (0.59+0.46+0.46+0.43)/4 RG 13-16 does not contain a spillway, elevation is top of grate for overflow
- NOTES:
- 1. Infiltrated test results shown in **bold italics** were performed 9/6/14 to 9/10/14 by Leigh Soils and Wetlands.
 - 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.

Line No	Line ID	Flow Rate (l/s)	GRHC Full (l/s)	Line Size (in)	Vel Ave (ft/s)	n-val Pipe	Line Length (ft)	Line Slope (%)	HGL Dn (ft)	Grid/rim El Dn (ft)	Invert Dn (ft)	HGL Up (ft)	Grid/rim El Up (ft)	Invert Up (ft)	Incr Q (l/s)
1	IN2-L51	25.64	24.50	24	6.23	0.012	132.020	1.00	630.22	630.55	626.38	631.89	630.55	626.70	2.37
2	MH3-N2	23.77	43.05	24	7.30	0.012	252.000	4.01	632.21	630.55	626.50	636.731	641.84	637.00	0.00
3	IN4-W-13	23.77	34.59	24	6.52	0.012	27.650	1.99	638.73	641.84	637.46	639.44	643.10	637.71	23.77

Project File: I:\SI\Byjasa\Storv\Storv.sdw

Number of lines: 3

Date: 6/23/2024

NOTES -- Circuit Break