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September 17, 2025

DRAINAGE CALCULATIONS

PREPARED FOR

"13 PLEASANT STREET"

BETHEL, CT

Project Narrative

The purpose of this report is to evaluate the existing and proposed site drainage of the property located at 13 Pleasant Street, Bethel, CT. The proposal consists of development of a single family residence on a vacant lot. The parcel is approximately 0.97 acres. The topography in the area where development is proposed is moderate with grades 10-25%.

The site currently drains to the west to an existing drainage swale/intermittent watercourse and pond located on the adjacent lot. The wetland receives water from up slope via a culvert that was installed for access to a rear lot. A lawn area created by said rear lot is maintained up to the edge of the wetland area on the north side.

The site drainage in the area of development will consist of drainage from the house, driveway and a small portion of lawn and will drain to a Cultec detention system that will provide the required stormwater management.

The site is served by sanitary sewer and municipal water.

The water quality volume (WQV) was computed before discharge from the outlet control device.

The net result is a post development flow that does not exceed predeveloped flows for the 2, 10, 25 & 100 year storm events. With the WQV stored there are no flows from the 2 year storm event.

Once the building roof is completed connecting the roof drainage as soon as practical will reduce erosion. Maintaining silt fence and removing any built up silt especially at low points is critical. It is also critical to get topsoil, seed and mulch on disturbed areas as soon as practical.

Please refer to the following pages for additional information and also site plan for available soil test data.

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The water quality volume for 1.3" of rainfall based on the 2024 Connecticut Stormwater Quality Manual is equal to:

WQV = ((1.3")(R)(A))/12 Where R = 0.05 + 0.009(I)

I = percent impervious cover

A = site area in acres

Infiltration rate of 5" drop per hour.

The required trench bottom surface area (A) is based on the WQV and the formula:

A=12(WQV)/Pnt

Where P = design infiltration rate = 2.5 in/hr
n = porosity of storage material = 0.4
t = maximum drain time = 48 hours

Area of site (A) in acres	0.9700
Percent impervious cover (I)	0.1
R	0.051
Water Quality Volume (WQV) ft^3	231.4
P = design infiltration rate (in/hr)	2.5
n = porosity of storage material	0.4
t = maximum drain time = (hours)	48.0
A = bottom trench surface area (ft^2)	57.9

Using 1 row of Cultec 330XLHD at 24' long provides 234 cu. ft. of storage below the outlet control pipe elevation of 392.3 and 144 sq. ft. of bottom area.

Hydraflow Table of Contents

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Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2026 Wednesday, 09 / 17 / 2025

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2026

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	------	-------	0.110	-------	-------	0.333	0.494	-------	0.758	Ex. study area
2	SCS Runoff	------	-------	0.140	-------	-------	0.221	0.272	-------	0.349	Dev. area to det. system
3	SCS Runoff	------	-------	0.108	-------	-------	0.282	0.404	-------	0.599	Area bypass
4	Reservoir	2	-------	0.000	-------	-------	0.054	0.075	-------	0.103	Route thru det. system
5	Combine	3, 4	-------	0.108	-------	-------	0.284	0.450	-------	0.674	Combined bypass & routing

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2026

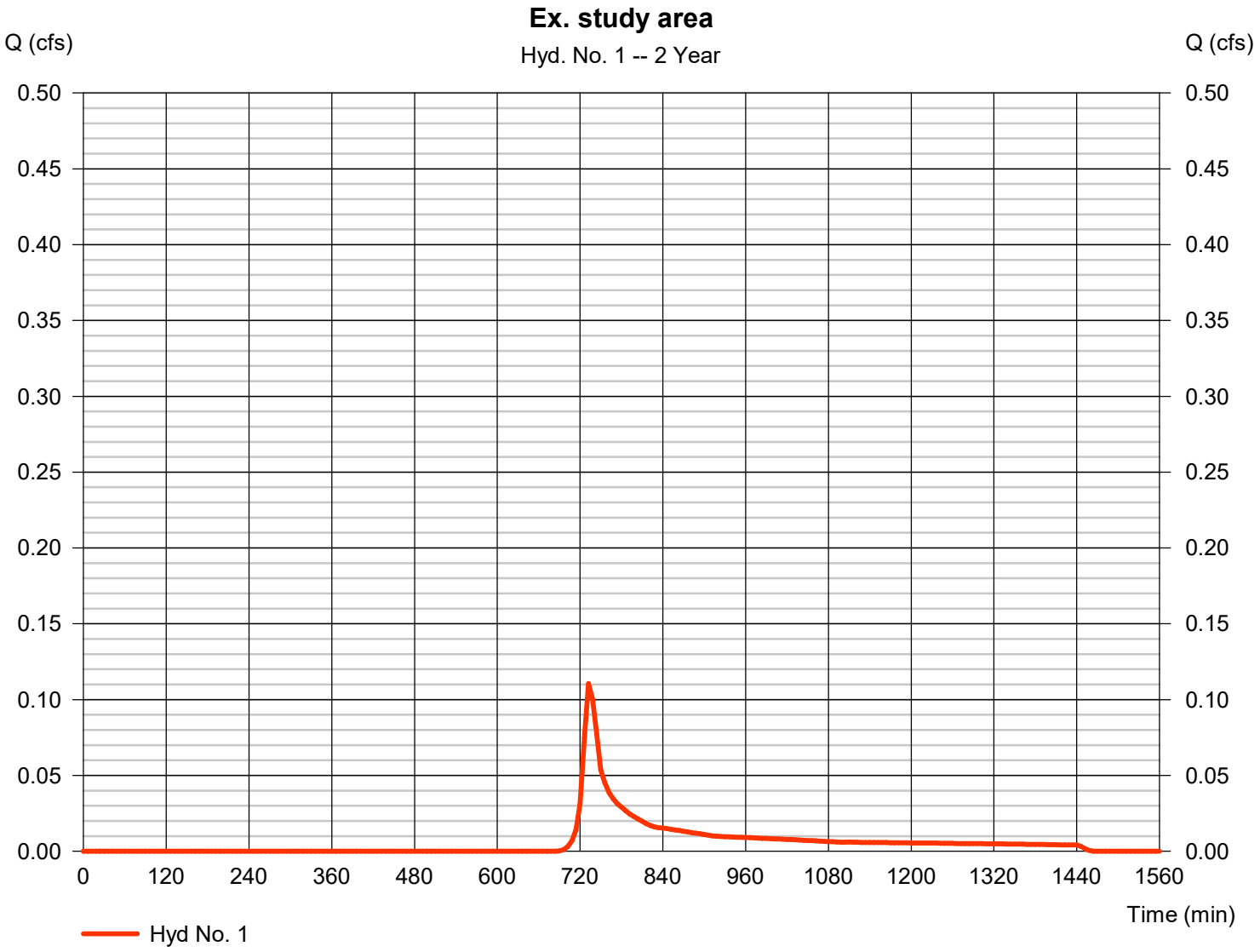
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.110	6	732	556	------	------	------	Ex. study area
2	SCS Runoff	0.140	6	732	677	------	------	------	Dev. area to det. system
3	SCS Runoff	0.108	6	732	502	------	------	------	Area bypass
4	Reservoir	0.000	6	n/a	0	2	392.27	229	Route thru det. system
5	Combine	0.108	6	732	502	3, 4	------	------	Combined bypass & routing

Hydrograph Report

Hyd. No. 1

Ex. study area

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.110 cfs
Storm frequency	=	2 yrs	Time to peak	=	732 min
Time interval	=	6 min	Hyd. volume	=	556 cuft
Drainage area	=	0.210 ac	Curve number	=	65
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	10.80 min
Total precip.	=	3.55 in	Distribution	=	Custom
Storm duration	=	Z:\Datafile\Hydraflow\Hydrographs\Shape Data\NOAA_D-Custom.csv	Shape factor	=	484



TR55 Tc Worksheet

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2026

Hyd. No. 1

Ex. study area

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.350		0.011		0.011		
Flow length (ft)	= 150.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 3.55		0.00		0.00		
Land slope (%)	= 17.00		0.00		0.00		
Travel Time (min)	**= 10.77**	**+**	**0.00**	**+**	**0.00**	**=**	**10.77**
Shallow Concentrated Flow							
Flow length (ft)	= 0.00		0.00		0.00		
Watercourse slope (%)	= 0.00		0.00		0.00		
Surface description	= Paved		Paved		Paved		
Average velocity (ft/s)	=0.00		0.00		0.00		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=0.00						
			0.00				
					0.00		
Flow length (ft)	({0})0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

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

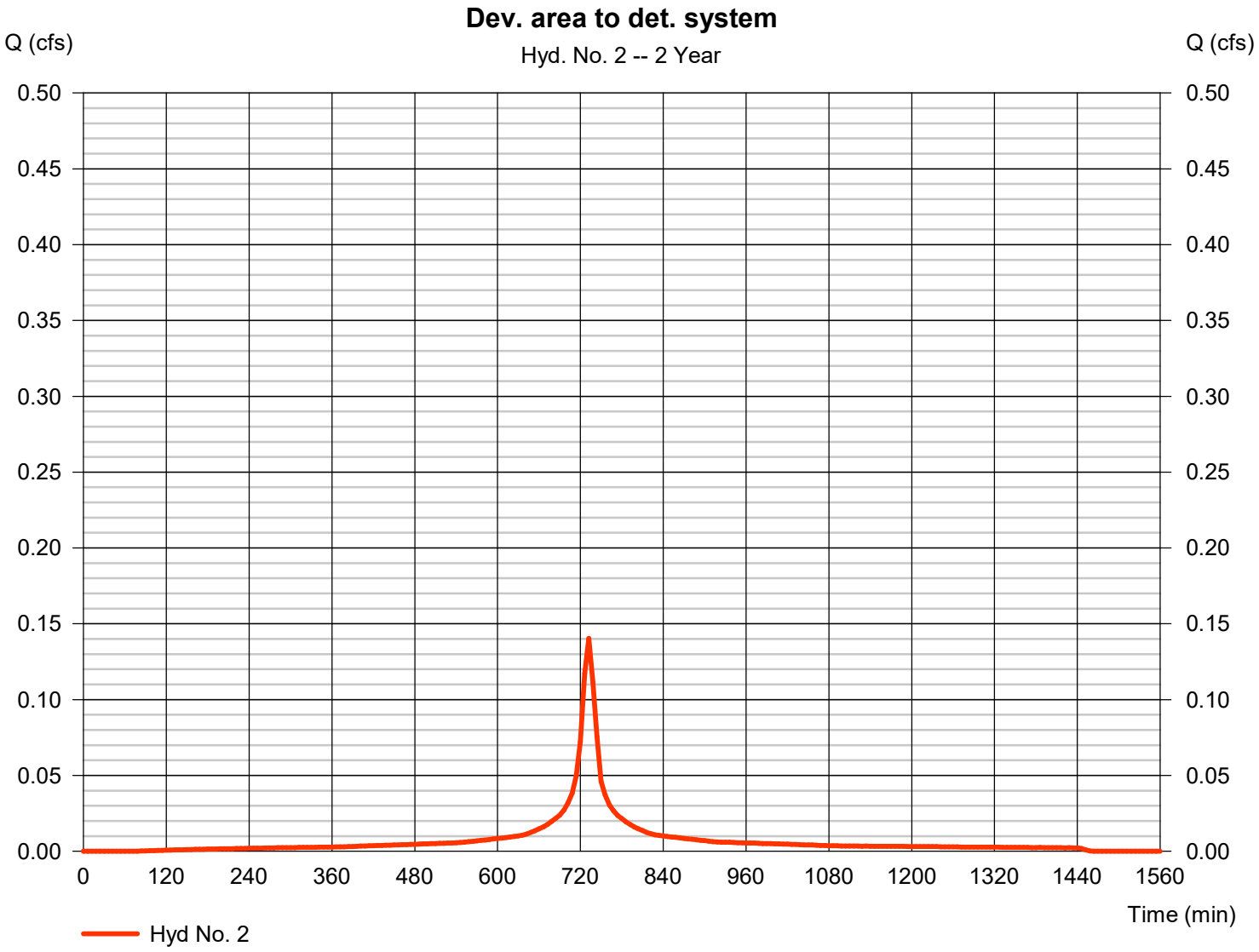
Hydrograph Report

Hyd. No. 2

Dev. area to det. system

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.140 cfs
Storm frequency	=	2 yrs	Time to peak	=	732 min
Time interval	=	6 min	Hyd. volume	=	677 cuft
Drainage area	=	0.060 ac	Curve number	=	98*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	10.00 min
Total precip.	=	3.55 in	Distribution	=	Custom
Storm duration	=	Z:\Datafile\Hydraflow\Hydrographs\NCTA_D-Custom.cds	Shape factor	=	484

* Composite (Area/CN) = [(0.080 x 98) + (0.050 x 70)] / 0.060



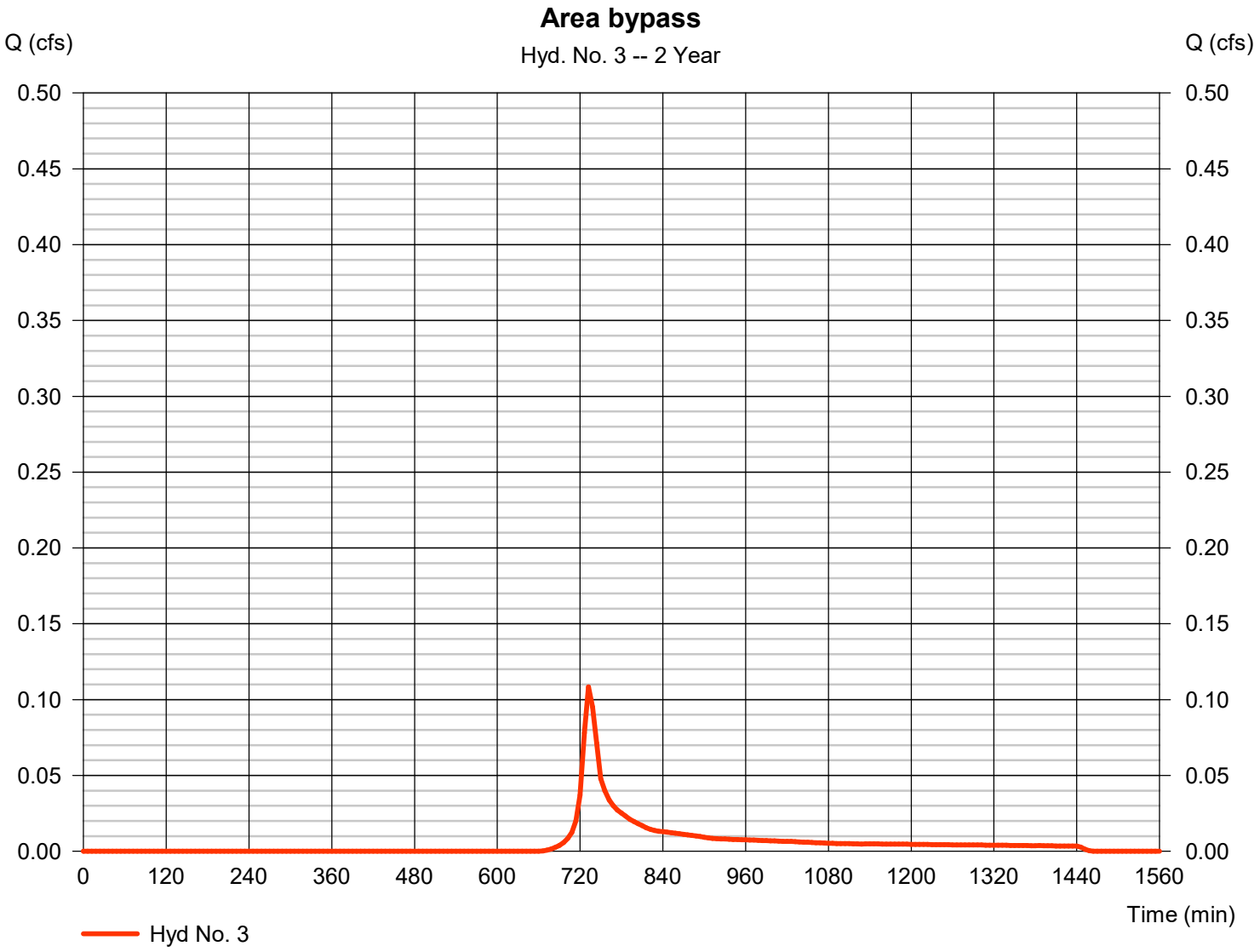
Hydrograph Report

Hyd. No. 3

Area bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.108 cfs
Storm frequency	=	2 yrs	Time to peak	=	732 min
Time interval	=	6 min	Hyd. volume	=	502 cuft
Drainage area	=	0.150 ac	Curve number	=	69*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	10.00 min
Total precip.	=	3.55 in	Distribution	=	Custom
Storm duration	=	Z:\Datafile\Hydraflow\Hydrographs\NCTA_D-Custom.cds	Shape factor	=	484

* Composite (Area/CN) = [(0.120 x 70) + (0.030 x 65)] / 0.150



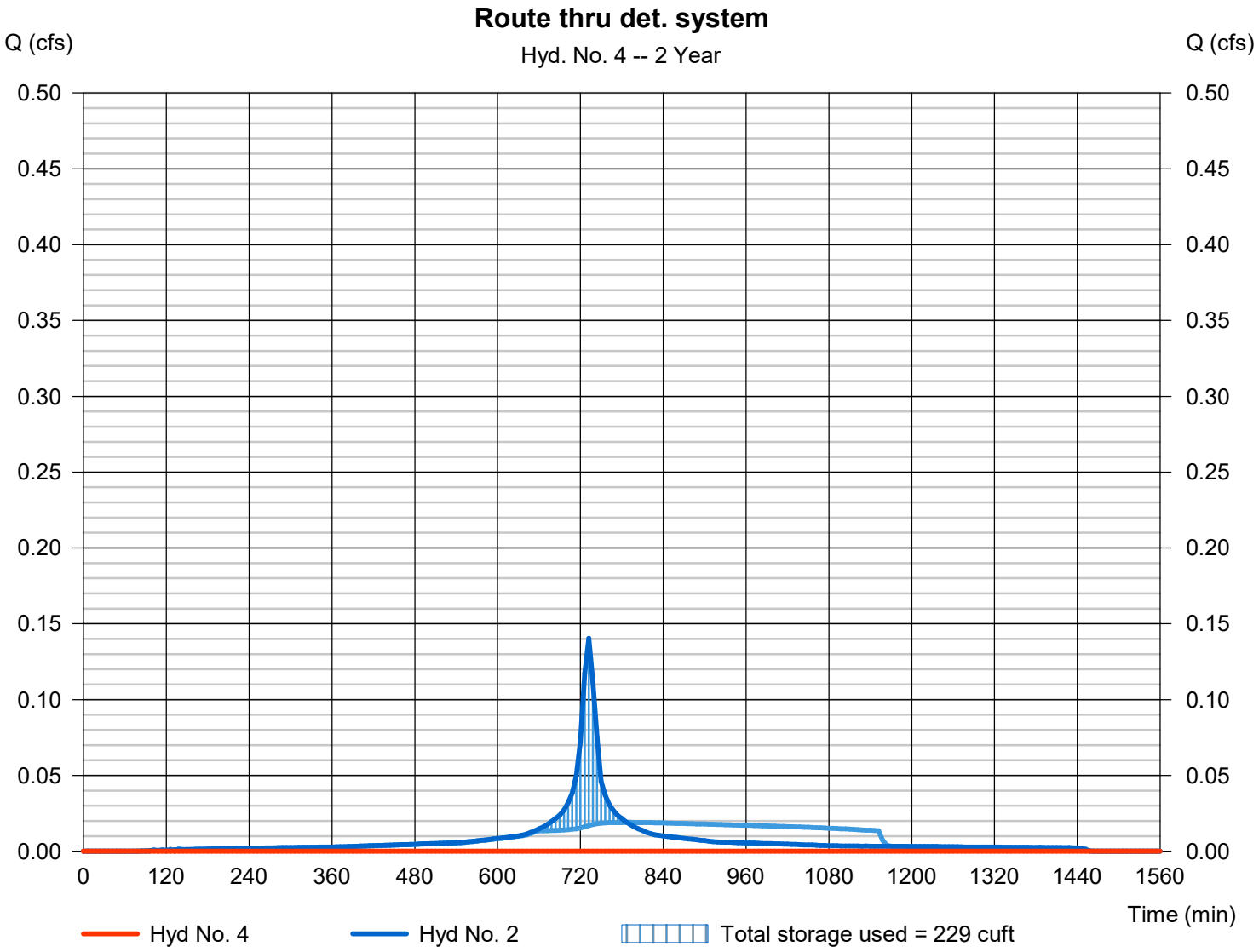
Hydrograph Report

Hyd. No. 4

Route thru det. system

Hydrograph type	=	Reservoir	Peak discharge	=	0.000 cfs
Storm frequency	=	2 yrs	Time to peak	=	n/a
Time interval	=	6 min	Hyd. volume	=	0 cuft
Inflow hyd. No.	=	2 - Dev. area to det. system	Max. Elevation	=	392.27 ft
Reservoir name	=	Cultec 330XLHD	Max. Storage	=	229 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Pond No. 1 - Cultec 330XLHD

Pond Data

UG Chambers -Invert elev. = 391.50 ft, Rise x Span = 2.50 x 3.75 ft, Barrel Len = 24.00 ft, No. Barrels = 2, Slope = 0.00%, Headers = No
Encasement -Invert elev. = 391.00 ft, Width = 6.00 ft, Height = 3.00 ft, Voids = 40.00%

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	391.00	n/a	0	0
0.30	391.30	n/a	35	35
0.60	391.60	n/a	45	80
0.90	391.90	n/a	67	147
1.20	392.20	n/a	66	213
1.50	392.50	n/a	65	278
1.80	392.80	n/a	63	341
2.10	393.10	n/a	61	402
2.40	393.40	n/a	58	460
2.70	393.70	n/a	53	513
3.00	394.00	n/a	45	558

Culvert / Orifice Structures

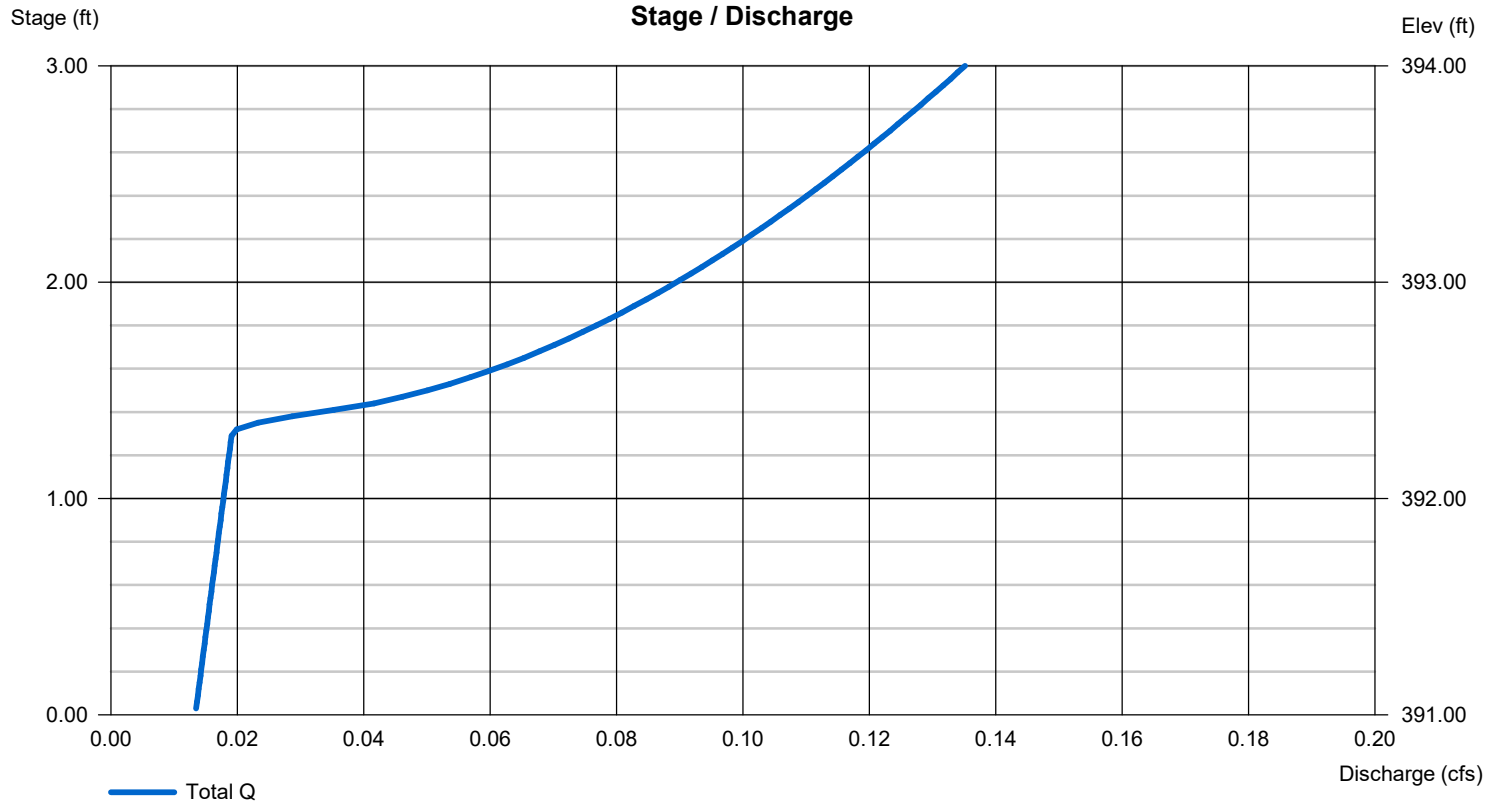
	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 1.80	Inactive	Inactive	0.00
Span (in)	= 1.80	2.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 392.30	393.00	0.00	0.00
Length (ft)	= 25.00	60.00	0.00	0.00
Slope (%)	= 26.00	0.50	0.00	n/a
N-Value	= .012	.012	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	Inactive	Inactive	Inactive	0.00
Crest El. (ft)	= 634.50	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 2.000 (by Wet area)
TW Elev. (ft) = 0.00

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

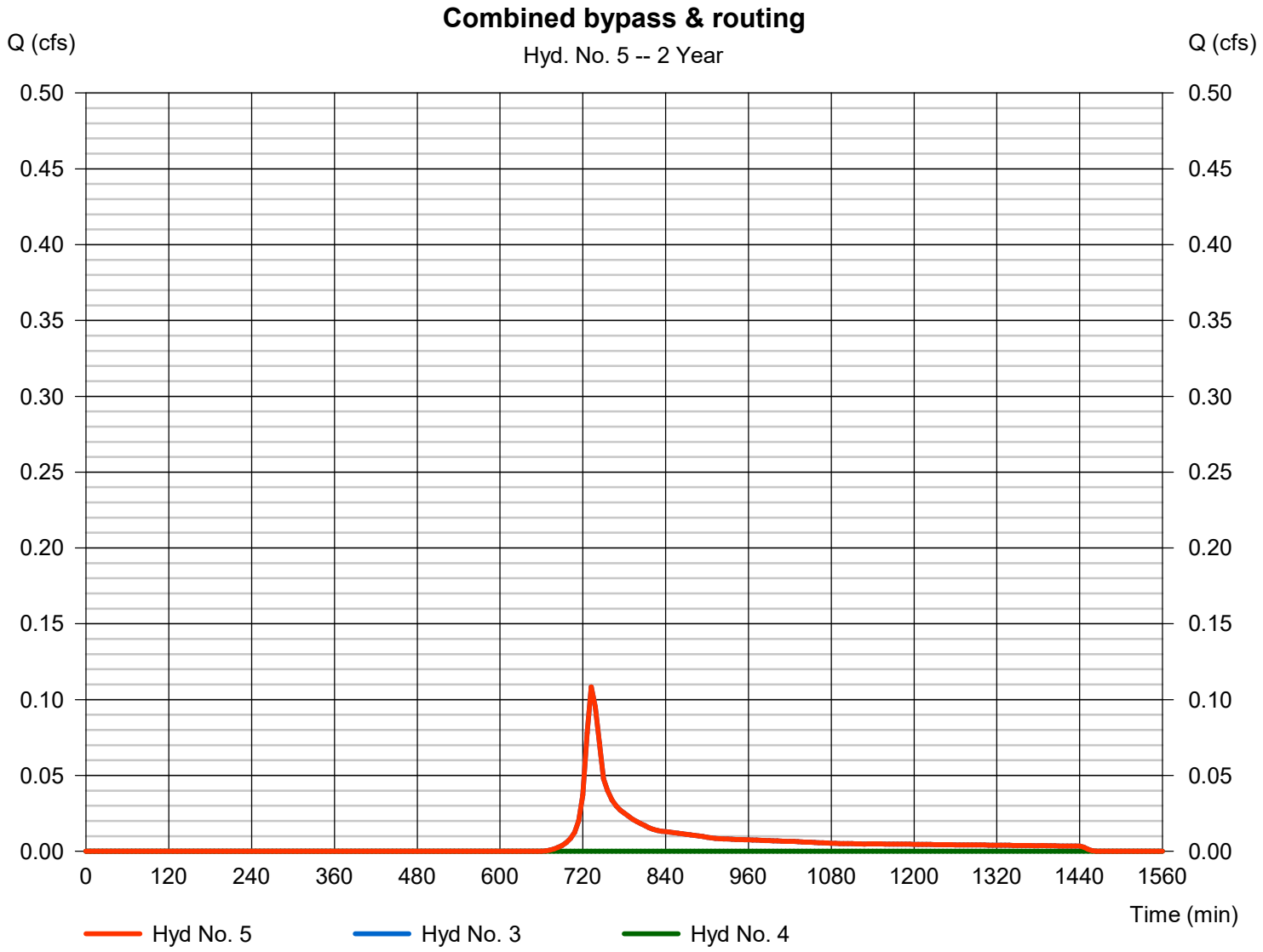


Hydrograph Report

Hyd. No. 5

Combined bypass & routing

Hydrograph type	= Combine	Peak discharge	= 0.108 cfs
Storm frequency	= 2 yrs	Time to peak	= 732 min
Time interval	= 6 min	Hyd. volume	= 502 cuft
Inflow hyds.	= 3, 4	Contrib. drain. area	= 0.150 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2026

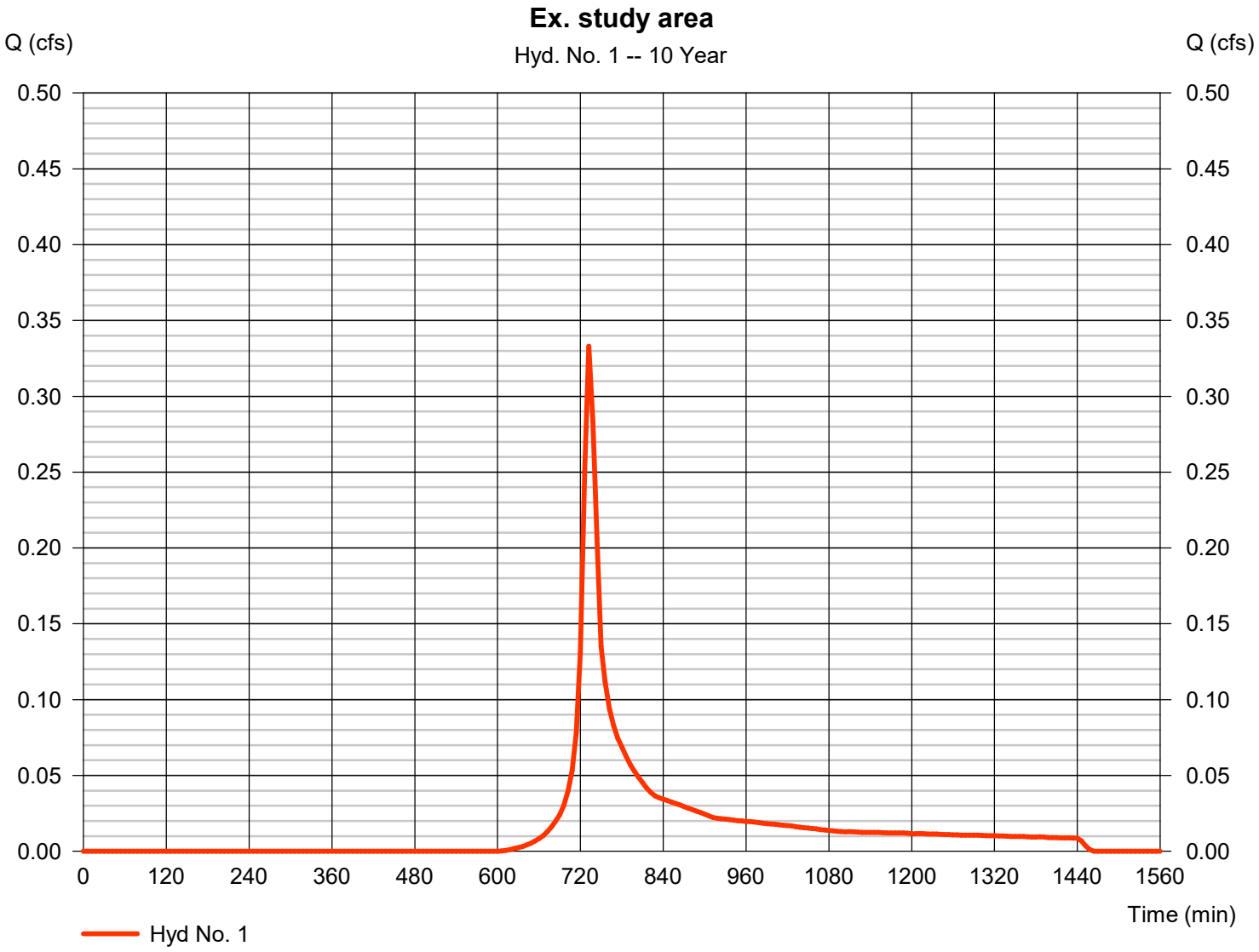
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.333	6	732	1,456	------	------	------	Ex. study area
2	SCS Runoff	0.221	6	732	1,087	------	------	------	Dev. area to det. system
3	SCS Runoff	0.282	6	732	1,212	------	------	------	Area bypass
4	Reservoir	0.054	6	750	195	2	392.77	335	Route thru det. system
5	Combine	0.284	6	732	1,406	3, 4	------	------	Combined bypass & routing

Hydrograph Report

Hyd. No. 1

Ex. study area

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.333 cfs
Storm frequency	=	10 yrs	Time to peak	=	732 min
Time interval	=	6 min	Hyd. volume	=	1,456 cuft
Drainage area	=	0.210 ac	Curve number	=	65
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	10.80 min
Total precip.	=	5.56 in	Distribution	=	Custom
Storm duration	=	Z:\Datafile\Hydraflow\Hydrographs\Data\NOAA_D-Custom.cds	Shape factor	=	484



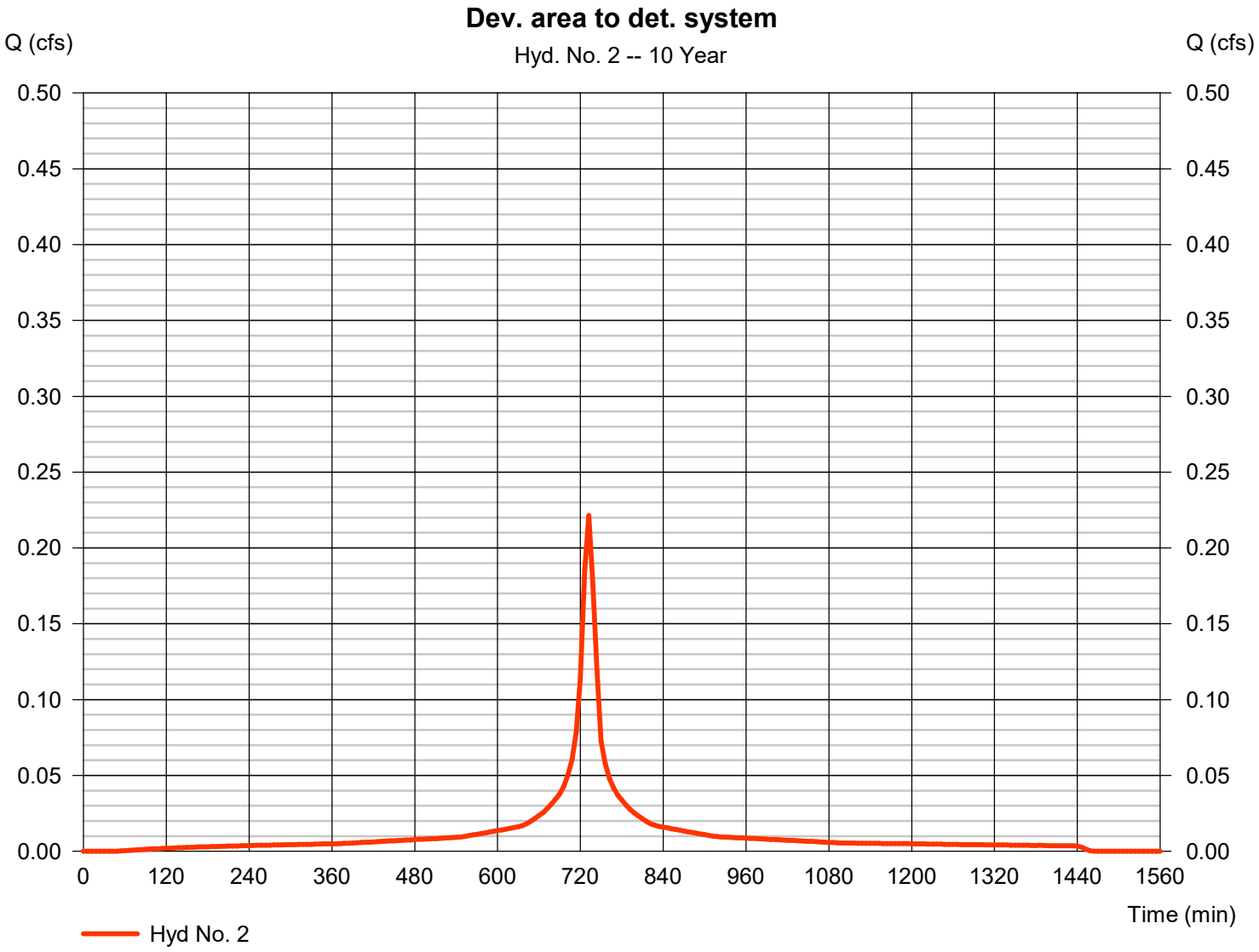
Hydrograph Report

Hyd. No. 2

Dev. area to det. system

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.221 cfs
Storm frequency	=	10 yrs	Time to peak	=	732 min
Time interval	=	6 min	Hyd. volume	=	1,087 cuft
Drainage area	=	0.060 ac	Curve number	=	98*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	10.00 min
Total precip.	=	5.56 in	Distribution	=	Custom
Storm duration	=	Z:\Datafile\Hydraflow\Hydrographs\NCTA\D-Custom.cds	Shape factor	=	484

* Composite (Area/CN) = [(0.080 x 98) + (0.050 x 70)] / 0.060



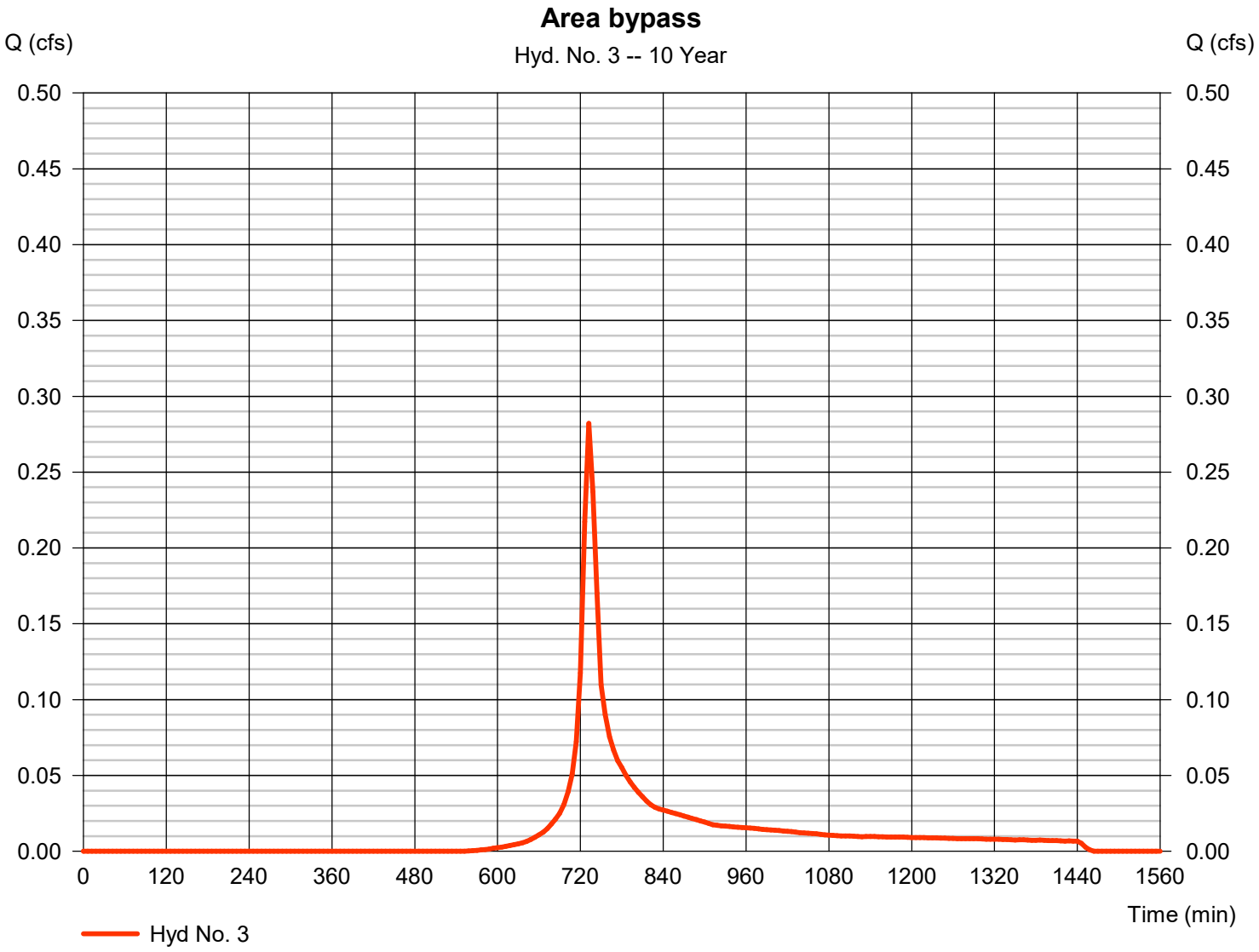
Hydrograph Report

Hyd. No. 3

Area bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.282 cfs
Storm frequency	=	10 yrs	Time to peak	=	732 min
Time interval	=	6 min	Hyd. volume	=	1,212 cuft
Drainage area	=	0.150 ac	Curve number	=	69*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	10.00 min
Total precip.	=	5.56 in	Distribution	=	Custom
Storm duration	=	Z:\Datafile\Hydraflow\Hydrographs\NCTA_D-Custom.cds	Shape factor	=	484

* Composite (Area/CN) = [(0.120 x 70) + (0.030 x 65)] / 0.150



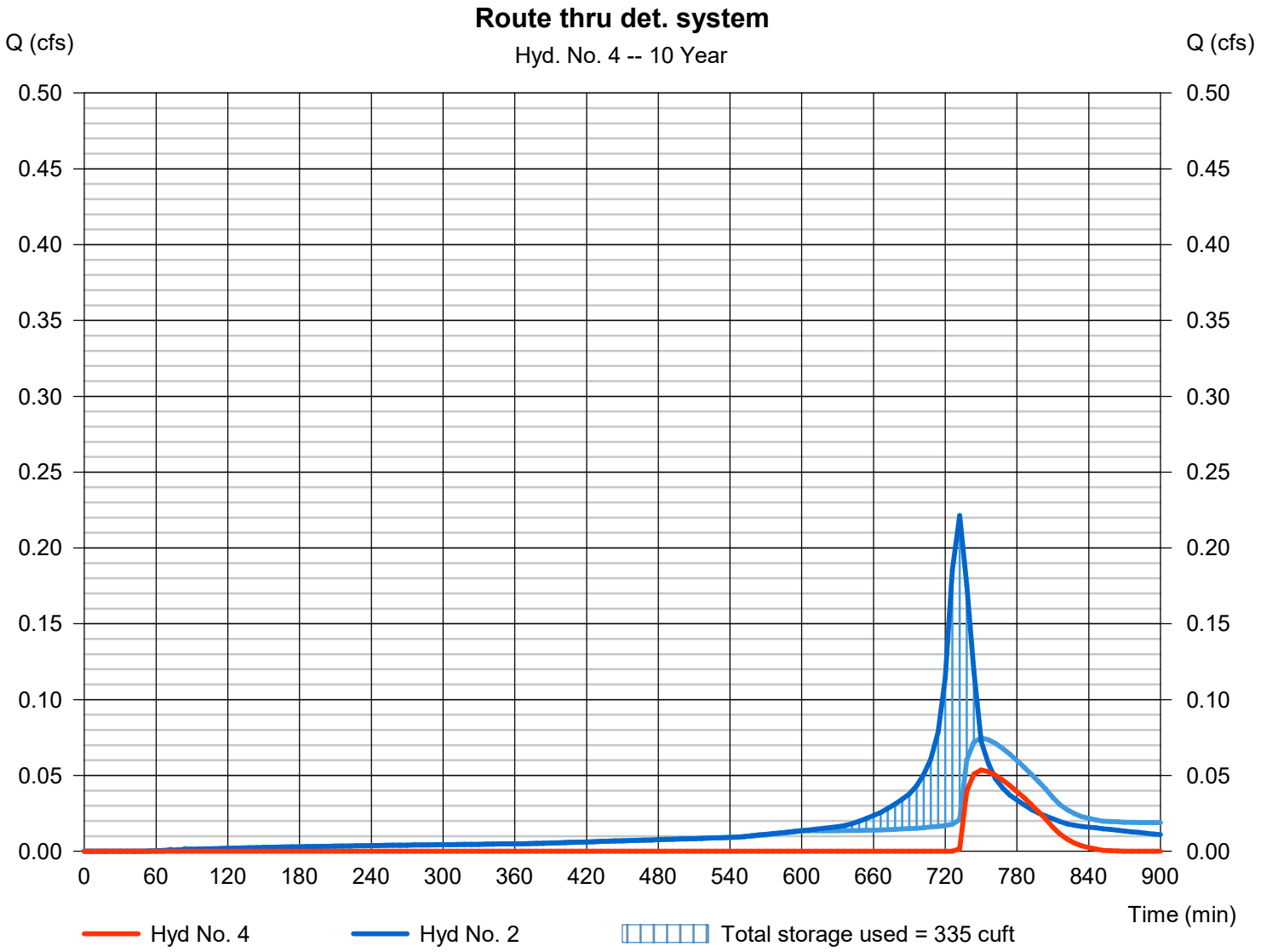
Hydrograph Report

Hyd. No. 4

Route thru det. system

Hydrograph type	=	Reservoir	Peak discharge	=	0.054 cfs
Storm frequency	=	10 yrs	Time to peak	=	750 min
Time interval	=	6 min	Hyd. volume	=	195 cuft
Inflow hyd. No.	=	2 - Dev. area to det. system	Max. Elevation	=	392.77 ft
Reservoir name	=	Cultec 330XLHD	Max. Storage	=	335 cuft

Storage Indication method used. Exfiltration extracted from Outflow.

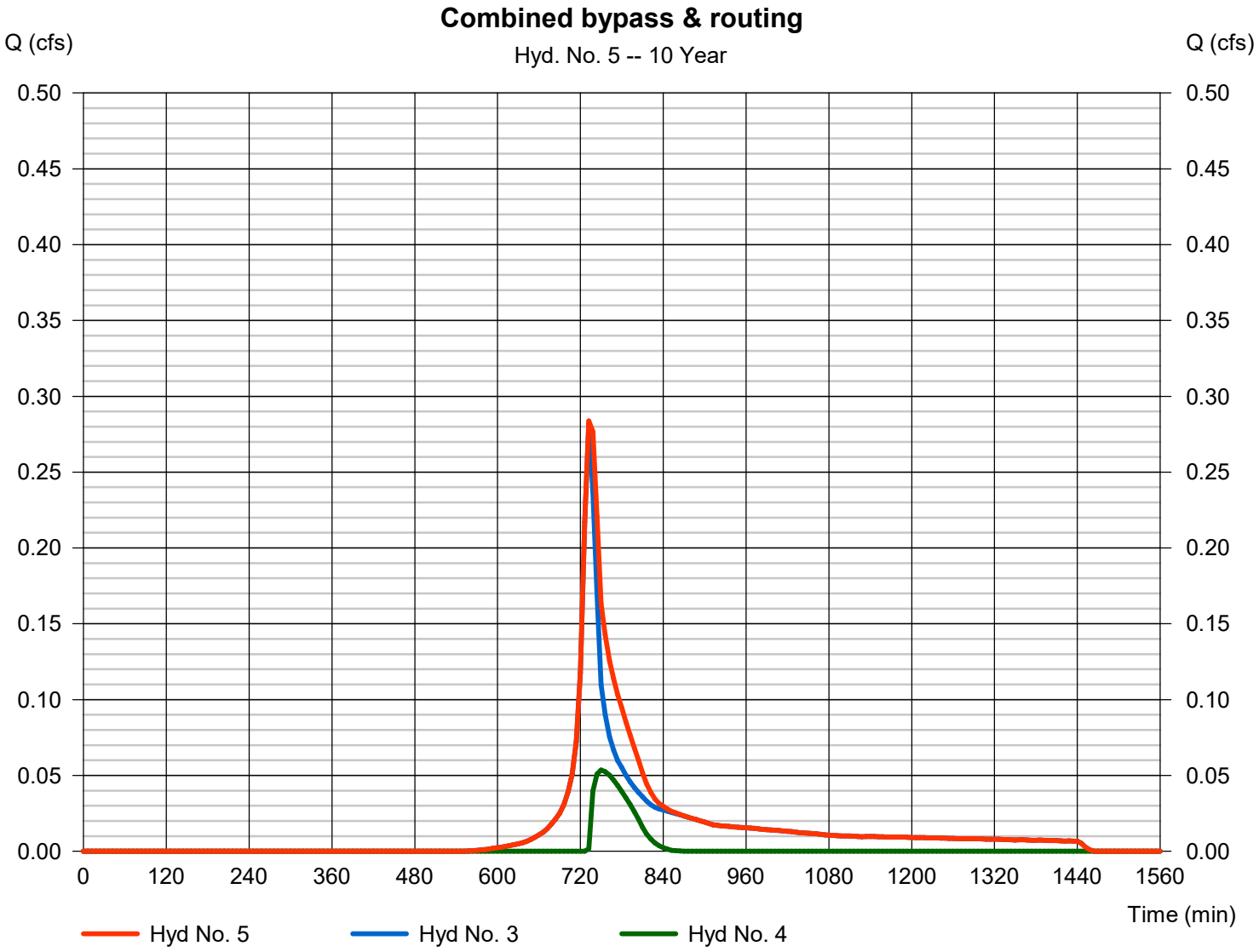


Hydrograph Report

Hyd. No. 5

Combined bypass & routing

Hydrograph type	= Combine	Peak discharge	= 0.284 cfs
Storm frequency	= 10 yrs	Time to peak	= 732 min
Time interval	= 6 min	Hyd. volume	= 1,406 cuft
Inflow hyds.	= 3, 4	Contrib. drain. area	= 0.150 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2026

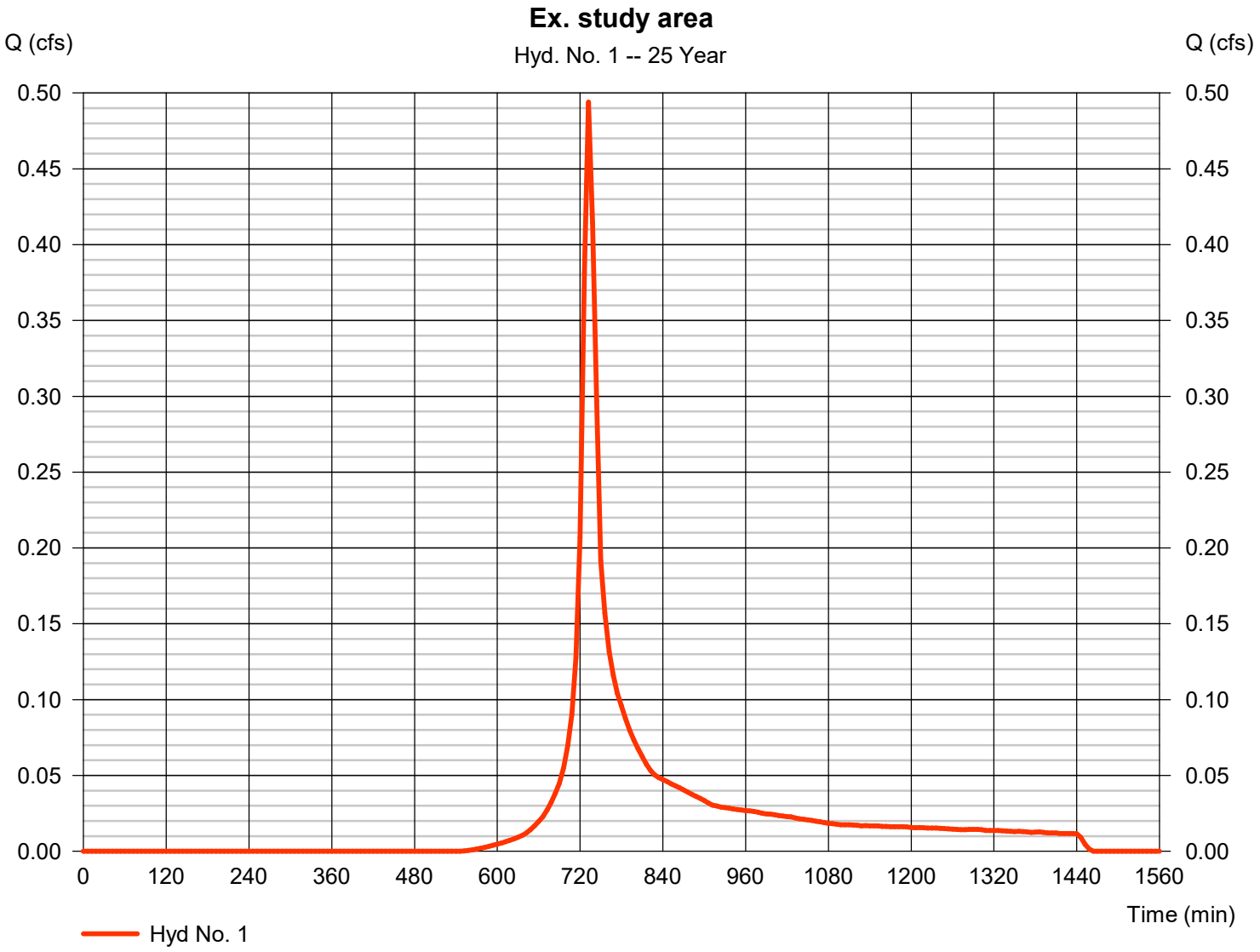
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.494	6	732	2,118	------	------	------	Ex. study area
2	SCS Runoff	0.272	6	732	1,344	------	------	------	Dev. area to det. system
3	SCS Runoff	0.404	6	732	1,719	------	------	------	Area bypass
4	Reservoir	0.075	6	750	340	2	393.15	413	Route thru det. system
5	Combine	0.450	6	732	2,059	3, 4	------	------	Combined bypass & routing

Hydrograph Report

Hyd. No. 1

Ex. study area

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.494 cfs
Storm frequency	=	25 yrs	Time to peak	=	732 min
Time interval	=	6 min	Hyd. volume	=	2,118 cuft
Drainage area	=	0.210 ac	Curve number	=	65
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	10.80 min
Total precip.	=	6.82 in	Distribution	=	Custom
Storm duration	=	Z:\Datafile\Hydraflow\Hydrographs\NCTA_D-Custom.cds	Shape factor	=	484



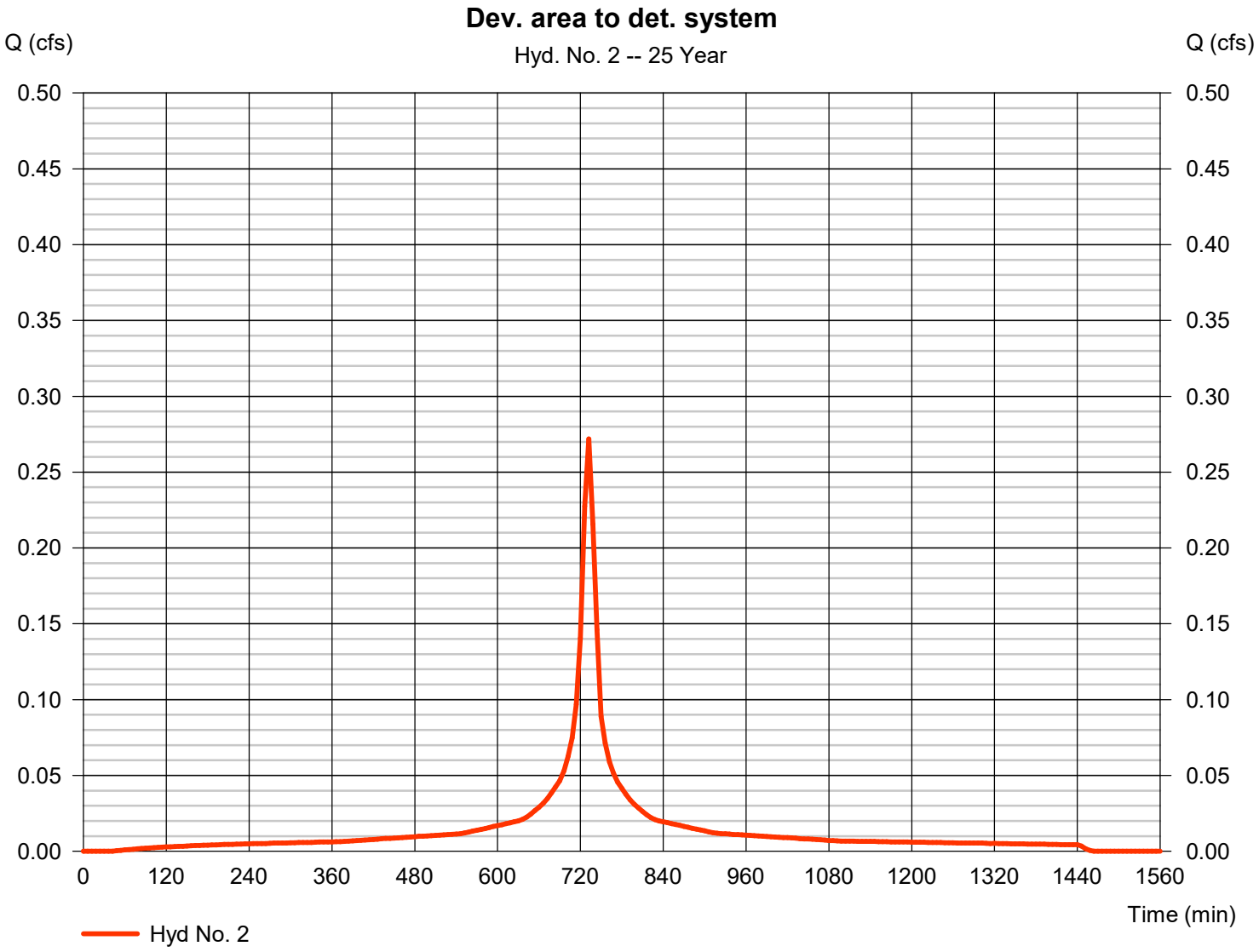
Hydrograph Report

Hyd. No. 2

Dev. area to det. system

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.272 cfs
Storm frequency	=	25 yrs	Time to peak	=	732 min
Time interval	=	6 min	Hyd. volume	=	1,344 cuft
Drainage area	=	0.060 ac	Curve number	=	98*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	10.00 min
Total precip.	=	6.82 in	Distribution	=	Custom
Storm duration	=	Z:\Datafile\Hydraflow\Hydrographs\NCTA\D-Custom.cds	Shape factor	=	484

* Composite (Area/CN) = [(0.080 x 98) + (0.050 x 70)] / 0.060



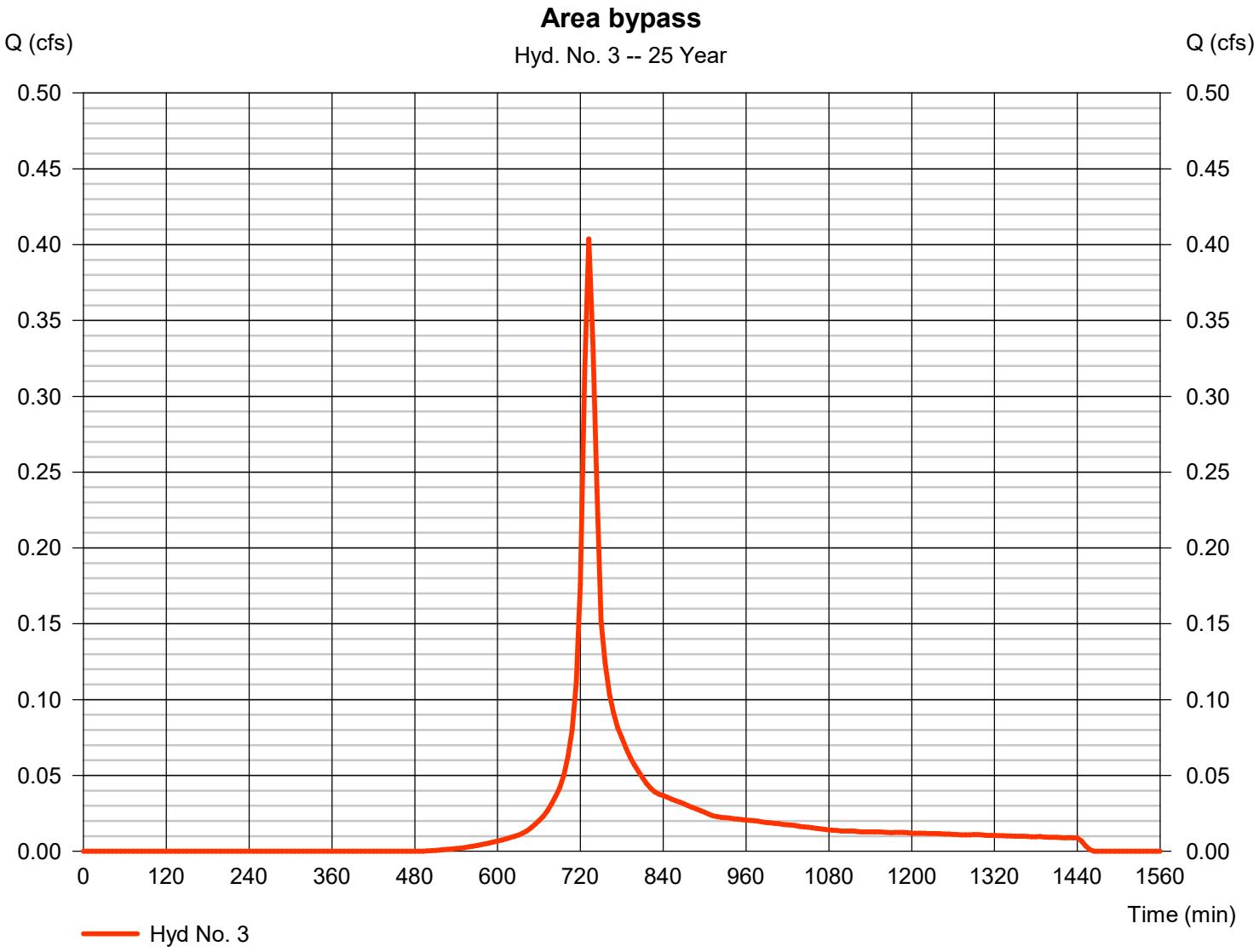
Hydrograph Report

Hyd. No. 3

Area bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.404 cfs
Storm frequency	=	25 yrs	Time to peak	=	732 min
Time interval	=	6 min	Hyd. volume	=	1,719 cuft
Drainage area	=	0.150 ac	Curve number	=	69*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	10.00 min
Total precip.	=	6.82 in	Distribution	=	Custom
Storm duration	=	Z:\Datafile\Hydraflow\Hydrographs\NCTA_D-Custom.cds	Shape factor	=	484

* Composite (Area/CN) = [(0.120 x 70) + (0.030 x 65)] / 0.150



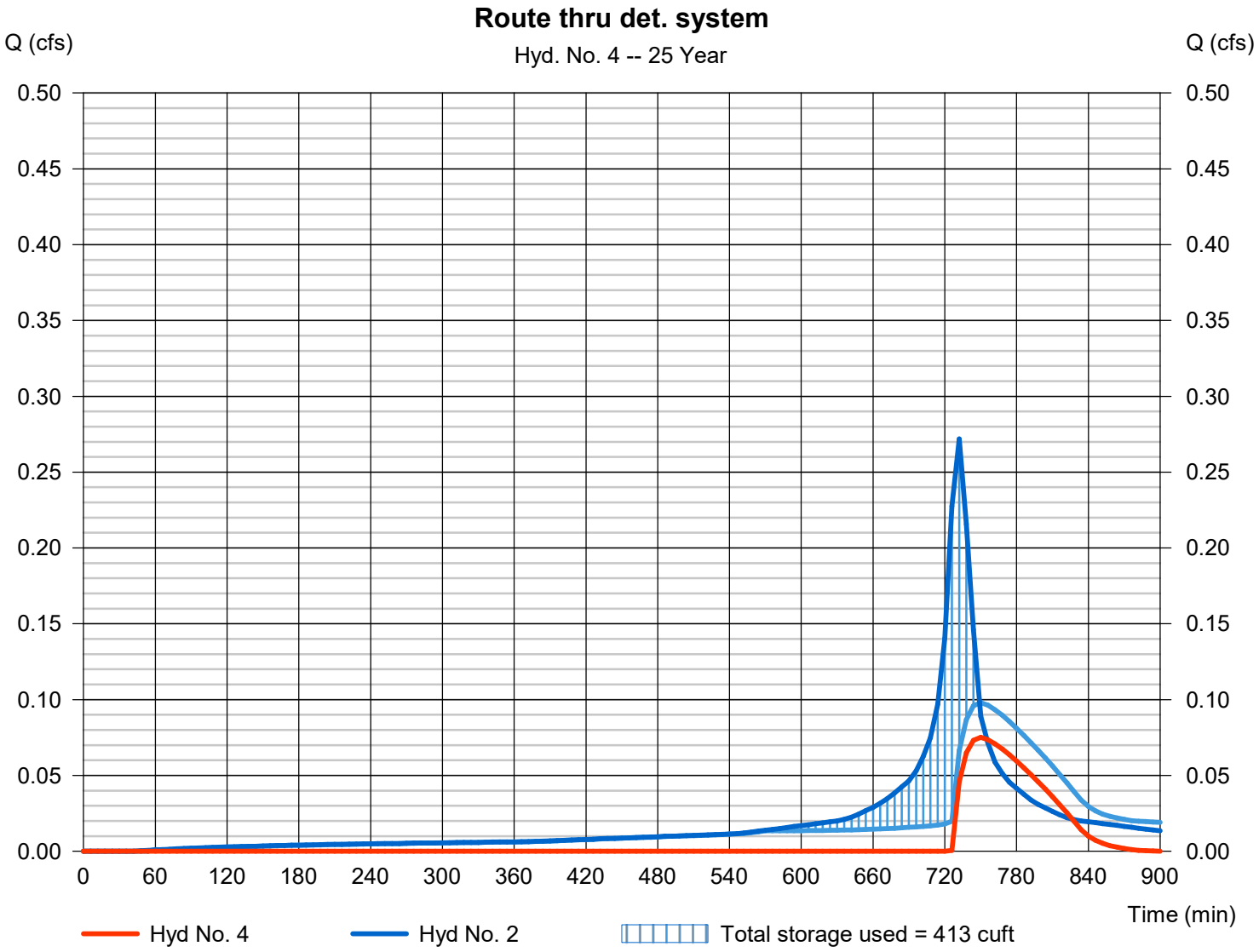
Hydrograph Report

Hyd. No. 4

Route thru det. system

Hydrograph type	=	Reservoir	Peak discharge	=	0.075 cfs
Storm frequency	=	25 yrs	Time to peak	=	750 min
Time interval	=	6 min	Hyd. volume	=	340 cuft
Inflow hyd. No.	=	2 - Dev. area to det. system	Max. Elevation	=	393.15 ft
Reservoir name	=	Cultec 330XLHD	Max. Storage	=	413 cuft

Storage Indication method used. Exfiltration extracted from Outflow.

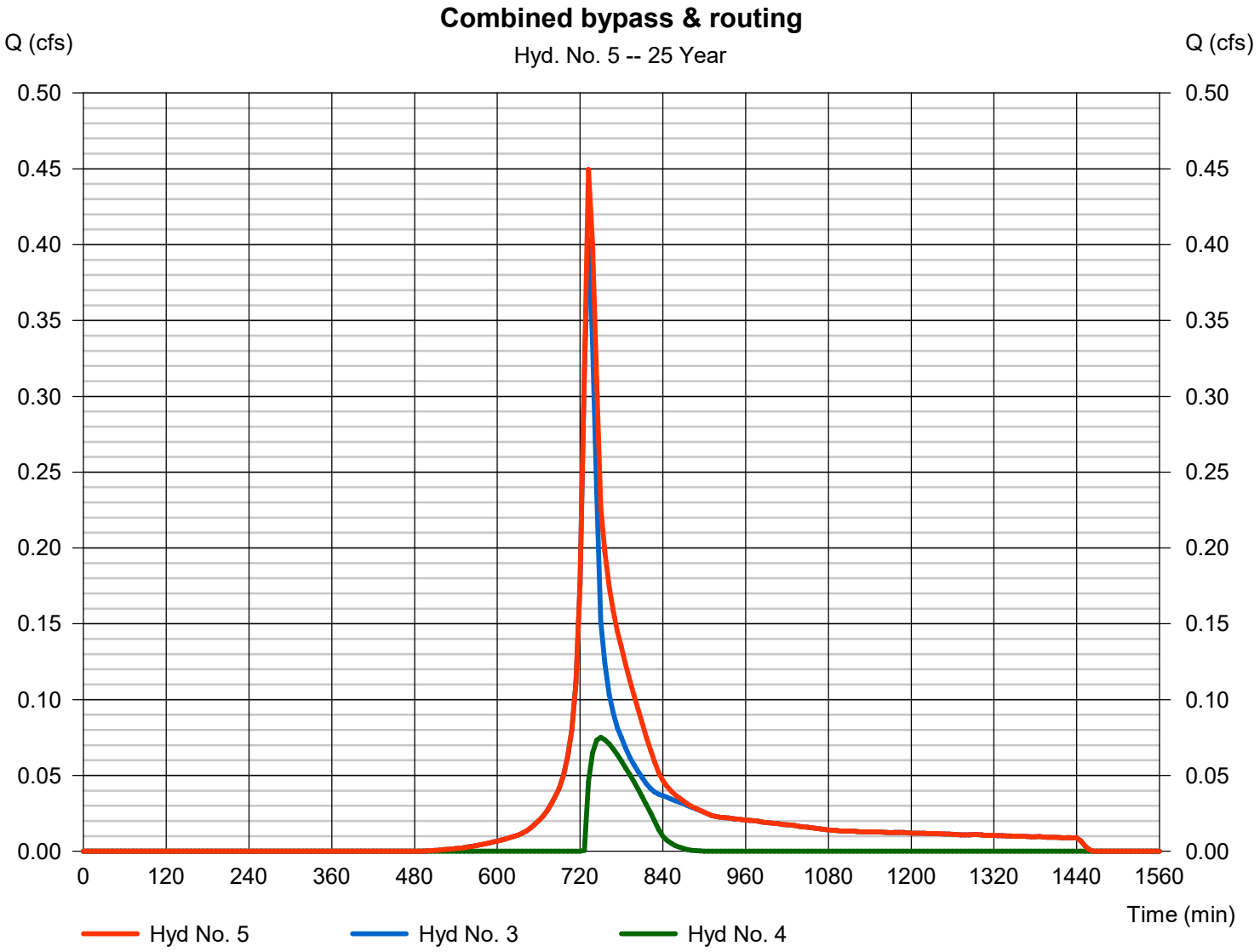


Hydrograph Report

Hyd. No. 5

Combined bypass & routing

Hydrograph type	=	Combine	Peak discharge	=	0.450 cfs
Storm frequency	=	25 yrs	Time to peak	=	732 min
Time interval	=	6 min	Hyd. volume	=	2,059 cuft
Inflow hyds.	=	3, 4	Contrib. drain. area	=	0.150 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2026

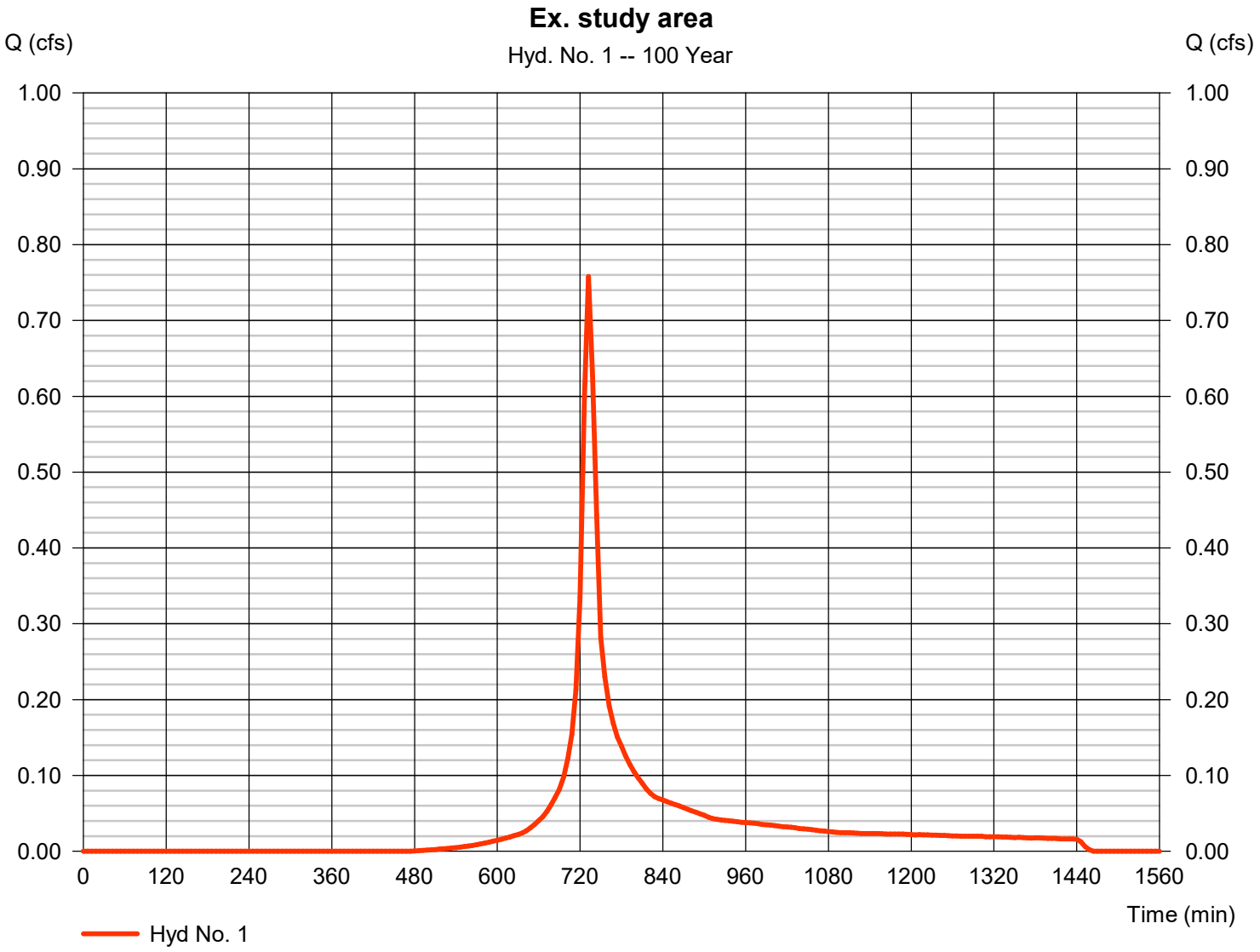
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.758	6	732	3,222	------	------	------	Ex. study area
2	SCS Runoff	0.349	6	732	1,738	------	------	------	Dev. area to det. system
3	SCS Runoff	0.599	6	732	2,549	------	------	------	Area bypass
4	Reservoir	0.103	6	750	578	2	393.84	534	Route thru det. system
5	Combine	0.674	6	732	3,127	3, 4	------	------	Combined bypass & routing

Hydrograph Report

Hyd. No. 1

Ex. study area

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.758 cfs
Storm frequency	=	100 yrs	Time to peak	=	732 min
Time interval	=	6 min	Hyd. volume	=	3,222 cuft
Drainage area	=	0.210 ac	Curve number	=	65
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	10.80 min
Total precip.	=	8.75 in	Distribution	=	Custom
Storm duration	=	Z:\Datafile\Hydraflow\Hydrographs\NCTA_D-Custom.cds	Shape factor	=	484



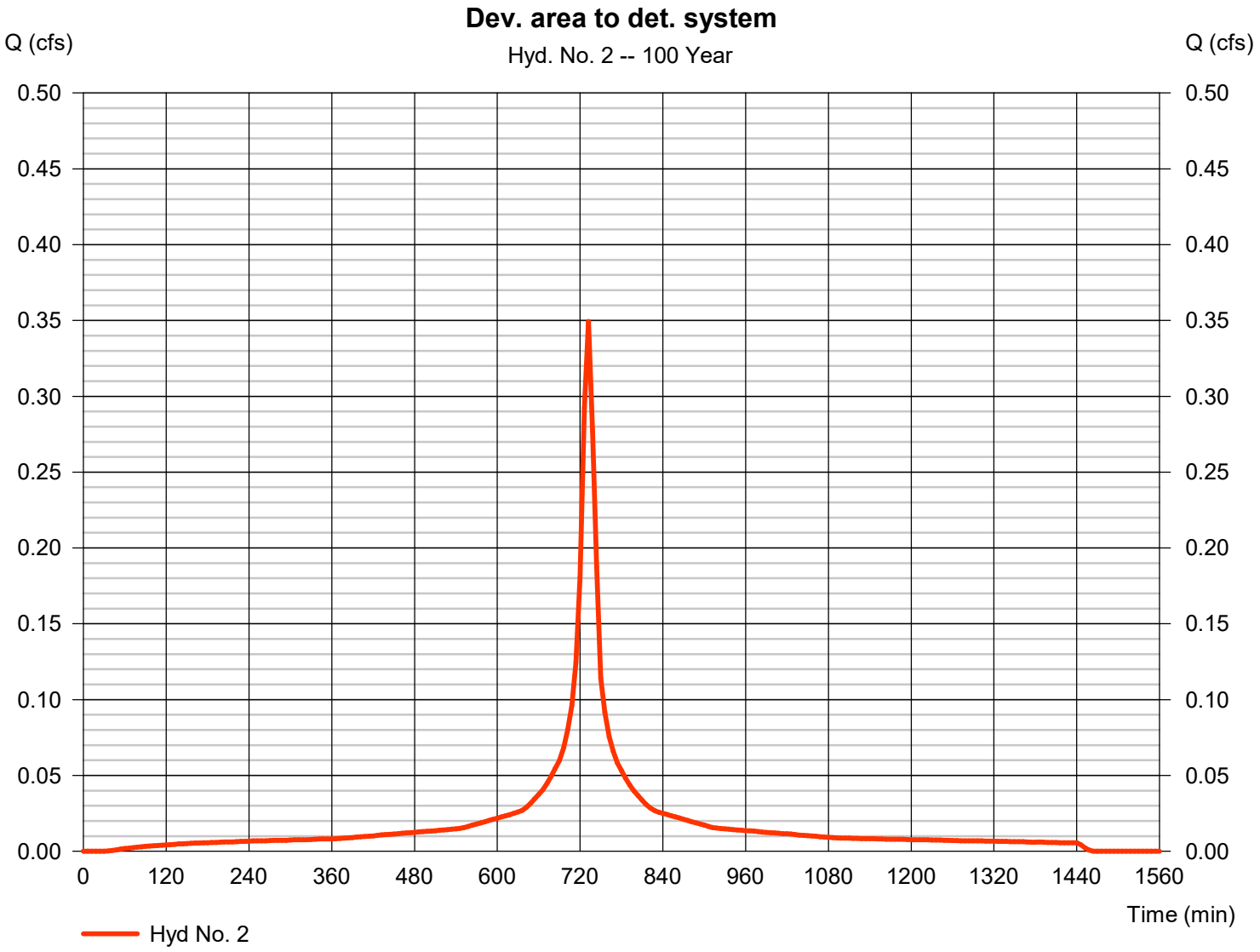
Hydrograph Report

Hyd. No. 2

Dev. area to det. system

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.349 cfs
Storm frequency	=	100 yrs	Time to peak	=	732 min
Time interval	=	6 min	Hyd. volume	=	1,738 cuft
Drainage area	=	0.060 ac	Curve number	=	98*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	10.00 min
Total precip.	=	8.75 in	Distribution	=	Custom
Storm duration	=	Z:\Datafile\Hydraflow\Hydrographs\NCTA_D-Custom.cds	Shape factor	=	484

* Composite (Area/CN) = [(0.080 x 98) + (0.050 x 70)] / 0.060



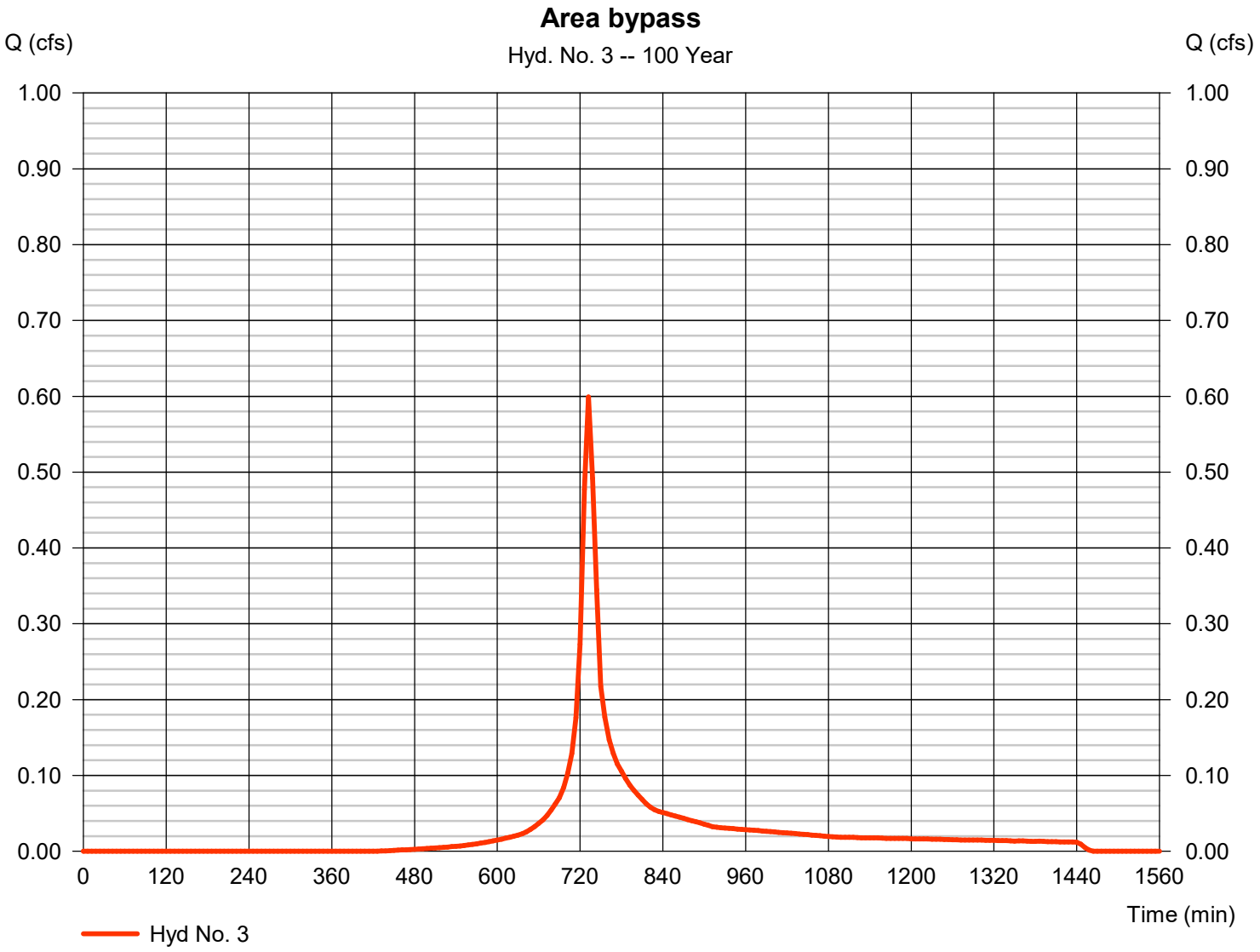
Hydrograph Report

Hyd. No. 3

Area bypass

Hydrograph type	=	SCS Runoff	Peak discharge	=	0.599 cfs
Storm frequency	=	100 yrs	Time to peak	=	732 min
Time interval	=	6 min	Hyd. volume	=	2,549 cuft
Drainage area	=	0.150 ac	Curve number	=	69*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	10.00 min
Total precip.	=	8.75 in	Distribution	=	Custom
Storm duration	=	Z:\Datafile\Hydraflow\Hydrographs\Jacob\NOAA_D-Custom.cds	Shape factor	=	484

* Composite (Area/CN) = [(0.120 x 70) + (0.030 x 65)] / 0.150



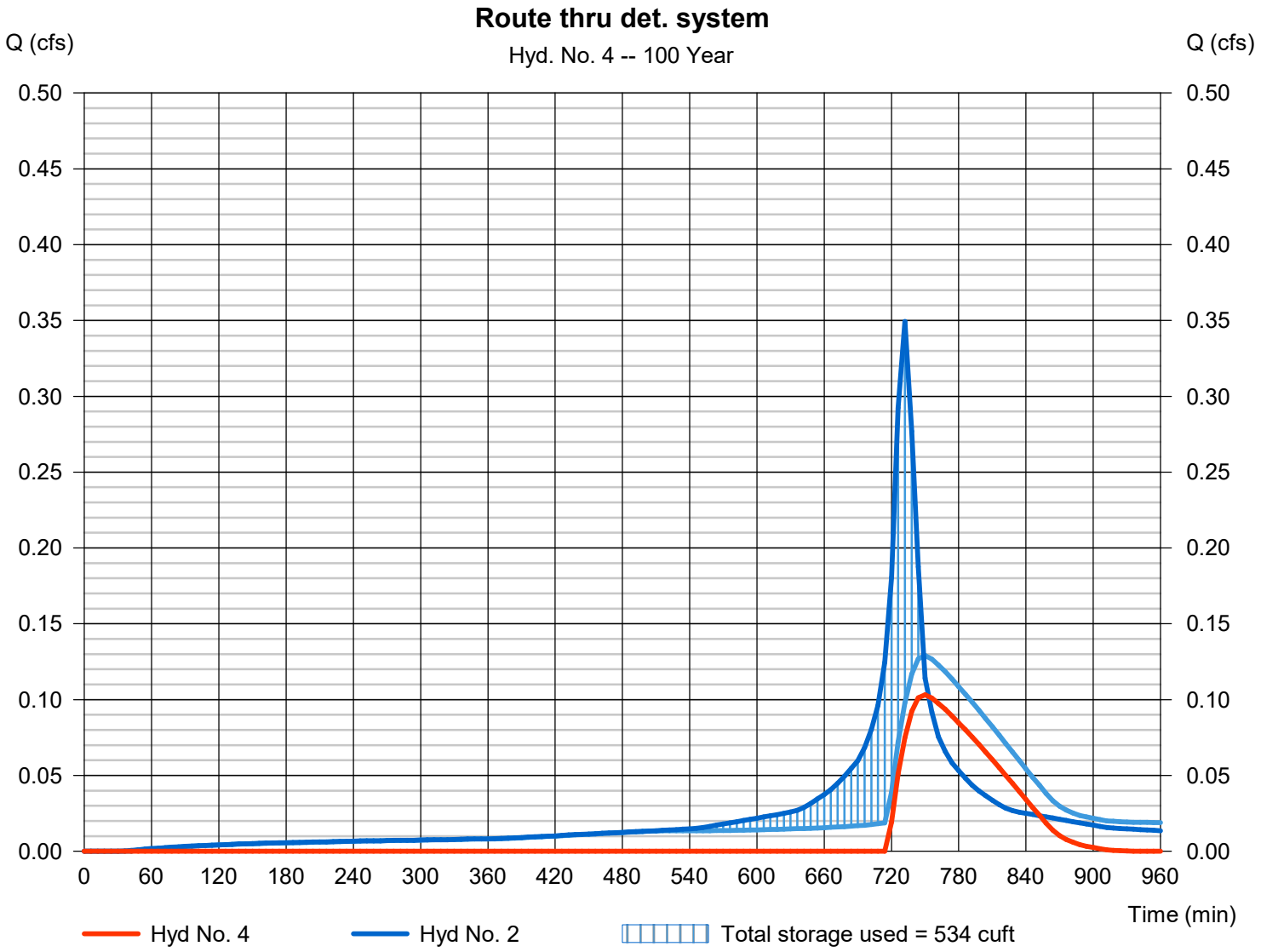
Hydrograph Report

Hyd. No. 4

Route thru det. system

Hydrograph type	=	Reservoir	Peak discharge	=	0.103 cfs
Storm frequency	=	100 yrs	Time to peak	=	750 min
Time interval	=	6 min	Hyd. volume	=	578 cuft
Inflow hyd. No.	=	2 - Dev. area to det. system	Max. Elevation	=	393.84 ft
Reservoir name	=	Cultec 330XLHD	Max. Storage	=	534 cuft

Storage Indication method used. Exfiltration extracted from Outflow.

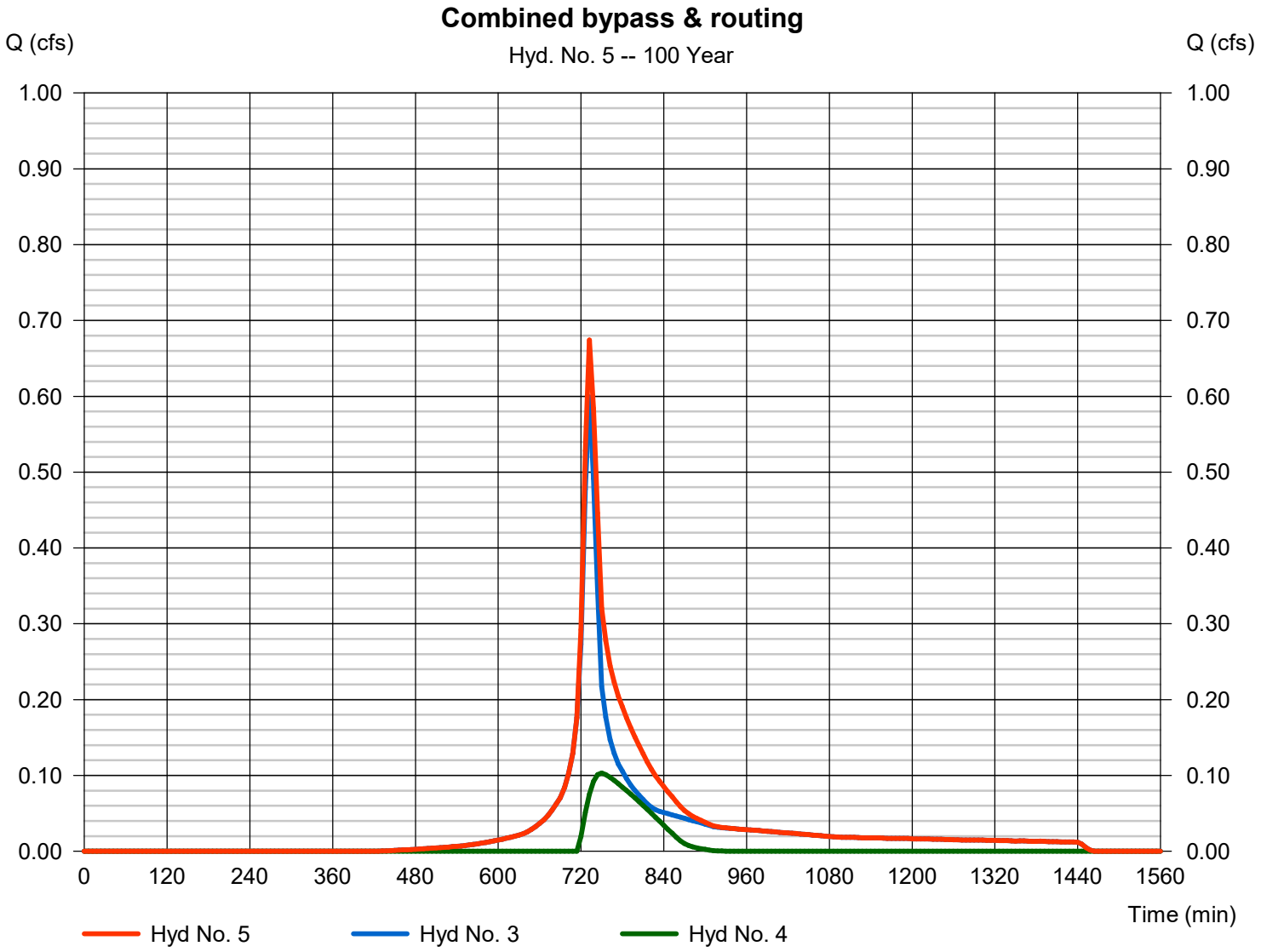


Hydrograph Report

Hyd. No. 5

Combined bypass & routing

Hydrograph type	= Combine	Peak discharge	= 0.674 cfs
Storm frequency	= 100 yrs	Time to peak	= 732 min
Time interval	= 6 min	Hyd. volume	= 3,127 cuft
Inflow hyds.	= 3, 4	Contrib. drain. area	= 0.150 ac



Hydraflow Rainfall Report

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	0.0000	0.0000	0.0000	--------
2	30.1225	6.6000	0.7676	--------
3	0.0000	0.0000	0.0000	--------
5	52.3308	9.8000	0.8367	--------
10	54.7383	10.8000	0.8016	--------
25	73.4912	11.6000	0.8324	--------
50	72.2617	11.6000	0.7972	--------
100	65.2937	10.2000	0.7493	--------

File name: FAIRFIELD COUNTY.IDF

Intensity = B / (Tc + D)^E

Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	4.59	3.49	2.85	2.43	2.13	1.90	1.72	1.58	1.46	1.36	1.27	1.20
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	5.49	4.30	3.57	3.06	2.69	2.40	2.17	1.99	1.84	1.71	1.60	1.50
10	5.99	4.81	4.04	3.51	3.11	2.80	2.55	2.35	2.18	2.03	1.91	1.80
25	7.09	5.69	4.79	4.15	3.67	3.30	3.00	2.76	2.55	2.38	2.23	2.10
50	7.70	6.24	5.28	4.61	4.10	3.70	3.38	3.12	2.89	2.71	2.54	2.40
100	8.50	6.87	5.82	5.08	4.53	4.10	3.76	3.47	3.23	3.03	2.85	2.70

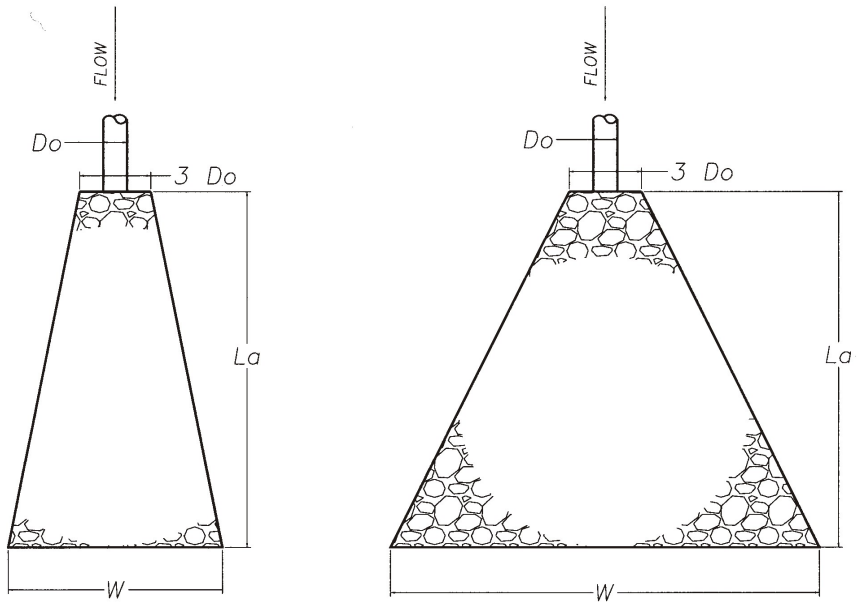
Tc = time in minutes. Values may exceed 60.

Precip. file name: Z:\Datafile\Hydraflow\Hydrographs\DANBURY NOAA 24 HR.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	2.88	3.55	0.00	4.65	5.56	6.82	7.75	8.75
SCS 6-Hr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-1st	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	1.55	0.00	2.75	4.00	5.38	6.50	8.00
Custom	0.00	3.55	0.00	0.00	5.56	6.82	0.00	8.75

MICHAEL J. MAZZUCCO, P.C. *CIVIL ENGINEER*

19A TA'AGAN POINT ROAD (203)744-0057
DANBURY, CONNECTICUT 06811 FAX 744-0057



$W = 3Do + 0.4La$
$TAILWATER >= 0.5\ Do$

$W = 3Do + La$
$TAILWATER < 0.5Do$

$$La = \left(\frac{1.7Q}{Do^{3/2}}\right) + 8Do$$

Median Stone Diameter:

$$d_{50} = \left(\frac{0.02}{TW}\right)\left(\frac{Q}{Do}\right)^{4/3}$$

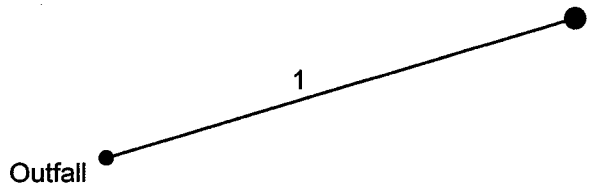
OUTLET PROTECTION CALCULATIONS

SCALE = N.T.S.

CALCULATION OF RIPRAP SIZING
FOR OUTLET PROTECTION

Tail Water TW (feet)	Discharge Q (cfs)	Do (feet)	La (feet)	W (feet)	d_{50} (inches)
.2	.1	0.33	3.54	2.40	0.24

25016



Project File: 25016.stm	Number of lines: 1	Date: 9/17/2025

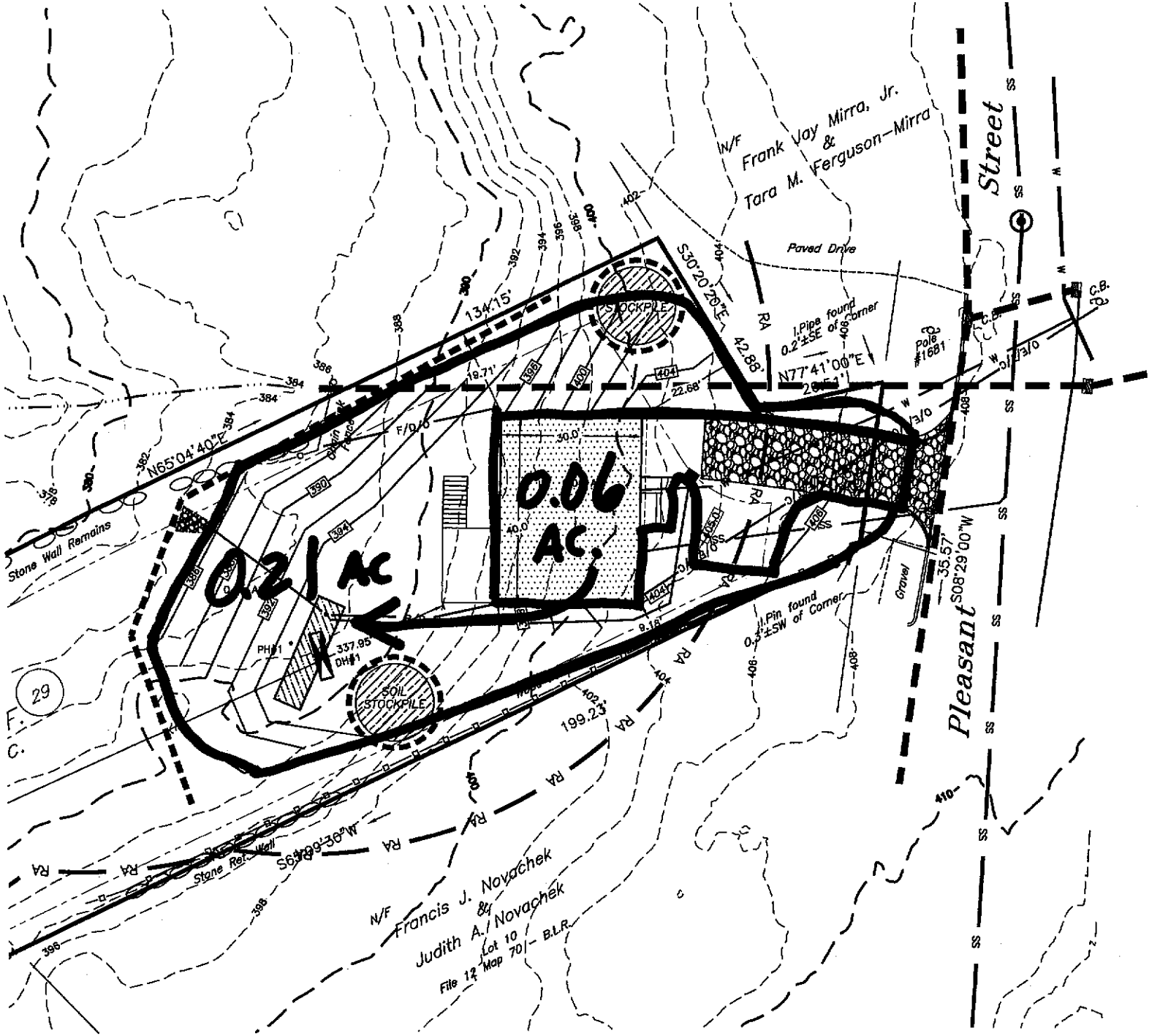
Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	100.000	0.06	0.06	0.90	0.05	0.05	5.0	5.0	8.2	0.45	1.80	3.13	6	8.80	393.00	401.80	393.34	402.14	395.00	404.10	

25016 | Number of lines: 1 | Run Date: 9/17/2025

NOTES:Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82 ; Return period =Yrs. 25 ; c = cir e = ellip b = box

WATERSHED MAPS


0.06 AC.
0.21 AC
N/F
Frank Vay Mirra, Jr.
&
Tara M. Ferguson-Mirra
Paved Drive
S30°20'20"E
42.88'
N77°41'00"E
134.15'
I.Pipe found
0.2'±SE of Corner
Pole #1681
Pleasant Street
S08°29'00"W
35.57'
Gravel
I.Pin found
0.2'±SW of Corner
199.23'
S65°39'30"W
Stone Wall Remains
Stone Ret. Wall
SOIL STOCKPILE
SOIL STOCKPILE
PH#1
337.95
DH#1
N65°04'40"E
19.71'
22.66'
9.16'
30.0'
40.0'
F/O
C.B.
W
SS
RA
N/F
Francis J. Novachek
&
Judith A. Novachek
Lot 10
Map 70
File 12
B.L.R.
29