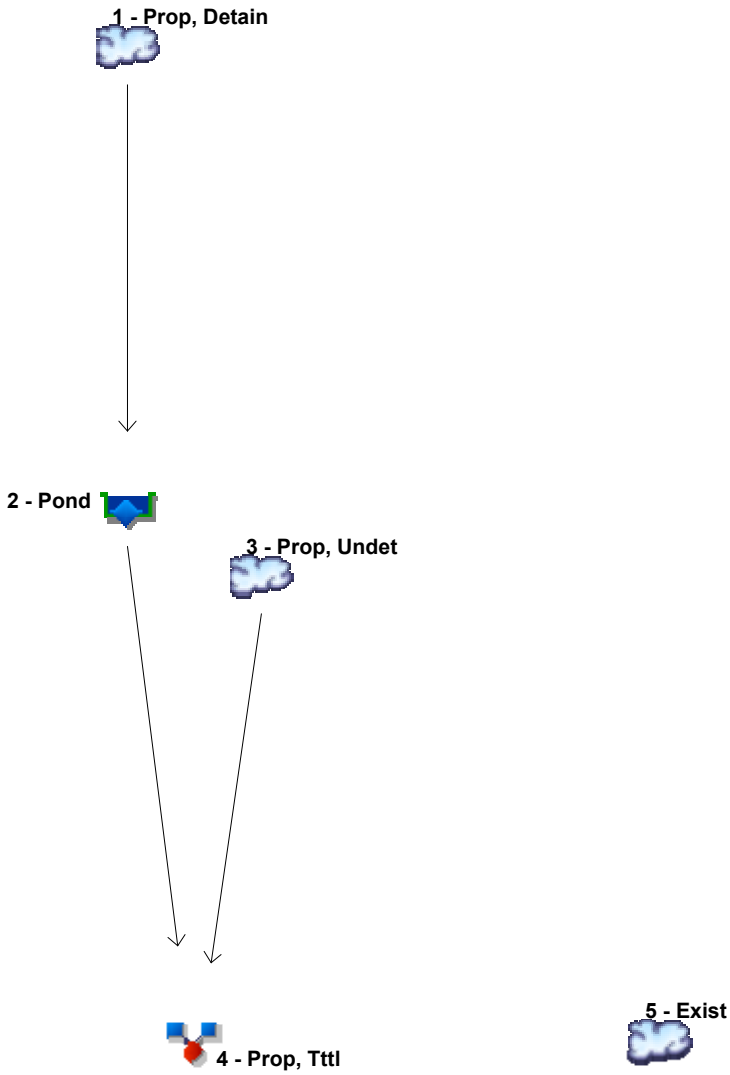
Hydraflow Table of Contents

2018159_H0.gpw

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12 Tuesday, 04 / 16 / 2019

Watershed Model Schematic



Legend

Hyd.	Origin	Description
1	SCS Runoff	Prop, Detain
2	Reservoir	Pond
3	SCS Runoff	Prop, Undet
4	Combine	Prop, Tttl
5	SCS Runoff	Exist

Hydrograph Return Period Recap

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)							Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	------	-------	5.143	-------	-------	8.338	-------	-------	15.21	Prop, Detain
2	Reservoir	1	-------	2.550	-------	-------	3.578	-------	-------	4.967	Pond
3	SCS Runoff	------	-------	2.579	-------	-------	4.502	-------	-------	8.807	Prop, Undet
4	Combine	2, 3	-------	4.534	-------	-------	7.137	-------	-------	12.63	Prop, Tttl
5	SCS Runoff	------	-------	5.804	-------	-------	10.41	-------	-------	20.82	Exist

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	5.143	1	721	13,033	------	------	------	Prop, Detain
2	Reservoir	2.550	1	730	13,029	1	22.04	3,165	Pond
3	SCS Runoff	2.579	1	719	5,442	------	------	------	Prop, Undet
4	Combine	4.534	1	719	18,471	2, 3	------	------	Prop, Tttl
5	SCS Runoff	5.804	1	721	14,741	------	------	------	Exist

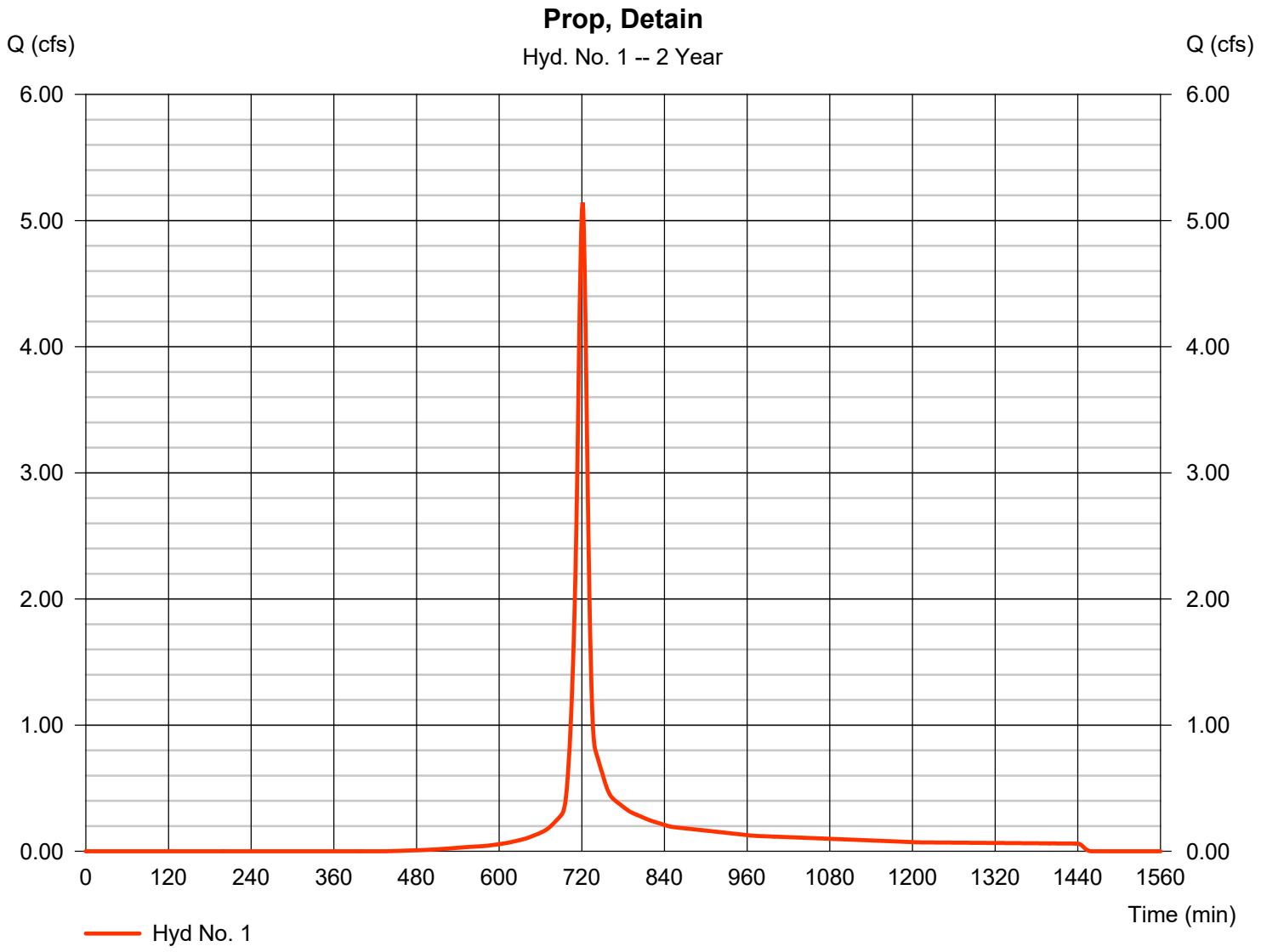
Hydrograph Report

Hyd. No. 1

Prop, Detain

Hydrograph type	= SCS Runoff	Peak discharge	= 5.143 cfs
Storm frequency	= 2 yrs	Time to peak	= 721 min
Time interval	= 1 min	Hyd. volume	= 13,033 cuft
Drainage area	= 2.360 ac	Curve number	= 88*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 12.20 min
Total precip.	= 2.69 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.270 x 80) + (0.240 x 98) + (0.850 x 98)] / 2.360



TR55 Tc Worksheet

Hyd. No. 1

Prop, Detain

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.240		0.011		
Flow length (ft)	= 85.7		14.3		0.0		
Two-year 24-hr precip. (in)	= 2.69		2.69		0.00		
Land slope (%)	= 4.70		20.00		0.00		
Travel Time (min)	**= 9.77**	**+**	**1.31**	**+**	**0.00**	**=**	**11.08**
Shallow Concentrated Flow							
Flow length (ft)	= 20.60		24.00		69.10		
Watercourse slope (%)	= 20.00		1.00		1.30		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=7.22		2.03		2.32		
Travel Time (min)	**= 0.05**	**+**	**0.20**	**+**	**0.50**	**=**	**0.74**
Channel Flow							
X sectional flow area (sqft)	= 12.00		1.78		3.14		
Wetted perimeter (ft)	= 24.00		4.71		6.28		
Channel slope (%)	= 1.00		0.50		0.50		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	=6.24						
			3.66				
					4.41		
Flow length (ft)	({0})33.4		35.9		29.1		
Travel Time (min)	**= 0.09**	**+**	**0.16**	**+**	**0.11**	**=**	**0.36**

Total Travel Time, Tc ..... 12.20 min

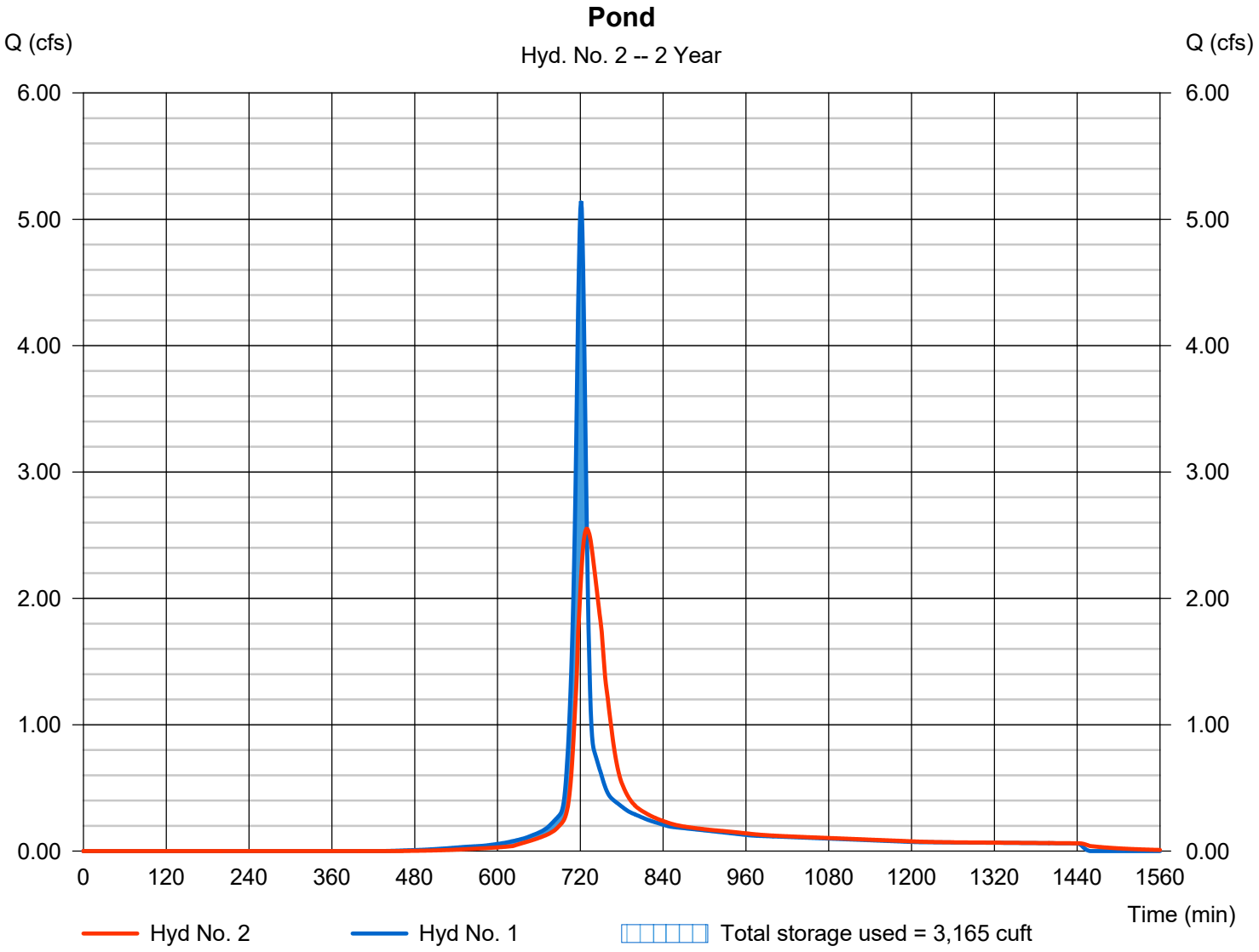
Hydrograph Report

Hyd. No. 2

Pond

Hydrograph type	= Reservoir	Peak discharge	= 2.550 cfs
Storm frequency	= 2 yrs	Time to peak	= 730 min
Time interval	= 1 min	Hyd. volume	= 13,029 cuft
Inflow hyd. No.	= 1 - Prop, Detain	Max. Elevation	= 22.04 ft
Reservoir name	= Pond	Max. Storage	= 3,165 cuft

Storage Indication method used.



Pond Report

Pond No. 1 - Pond

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 20.44 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	20.44	1,199	0	0
1.00	21.44	2,094	1,626	1,626
2.00	22.44	3,046	2,555	4,181
3.00	23.44	4,054	3,538	7,718
4.00	24.44	5,119	4,576	12,294
5.00	25.44	6,241	5,670	17,964

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 12.00	8.00	Inactive	Inactive
Span (in)	= 12.00	8.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 20.45	20.45	0.00	0.00
Length (ft)	= 17.30	0.50	0.00	0.00
Slope (%)	= 0.50	0.50	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

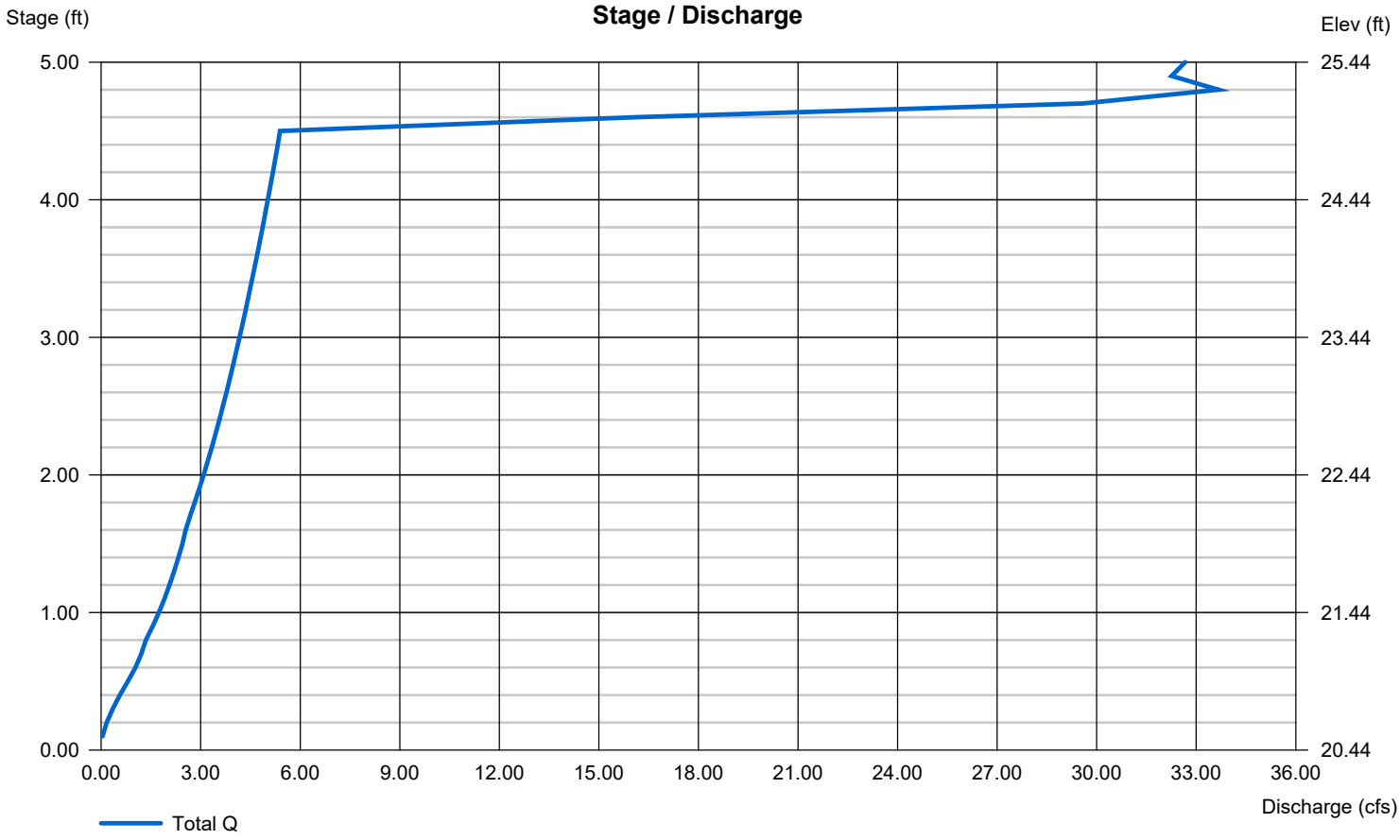
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	Inactive	Inactive	Inactive	Inactive
Crest El. (ft)	= 24.94	0.00	0.00	0.00
Weir Coeff.	= 2.60	3.33	3.33	3.33
Weir Type	= Broad	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 0.000 (by Contour)

TW Elev. (ft) = 0.00

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



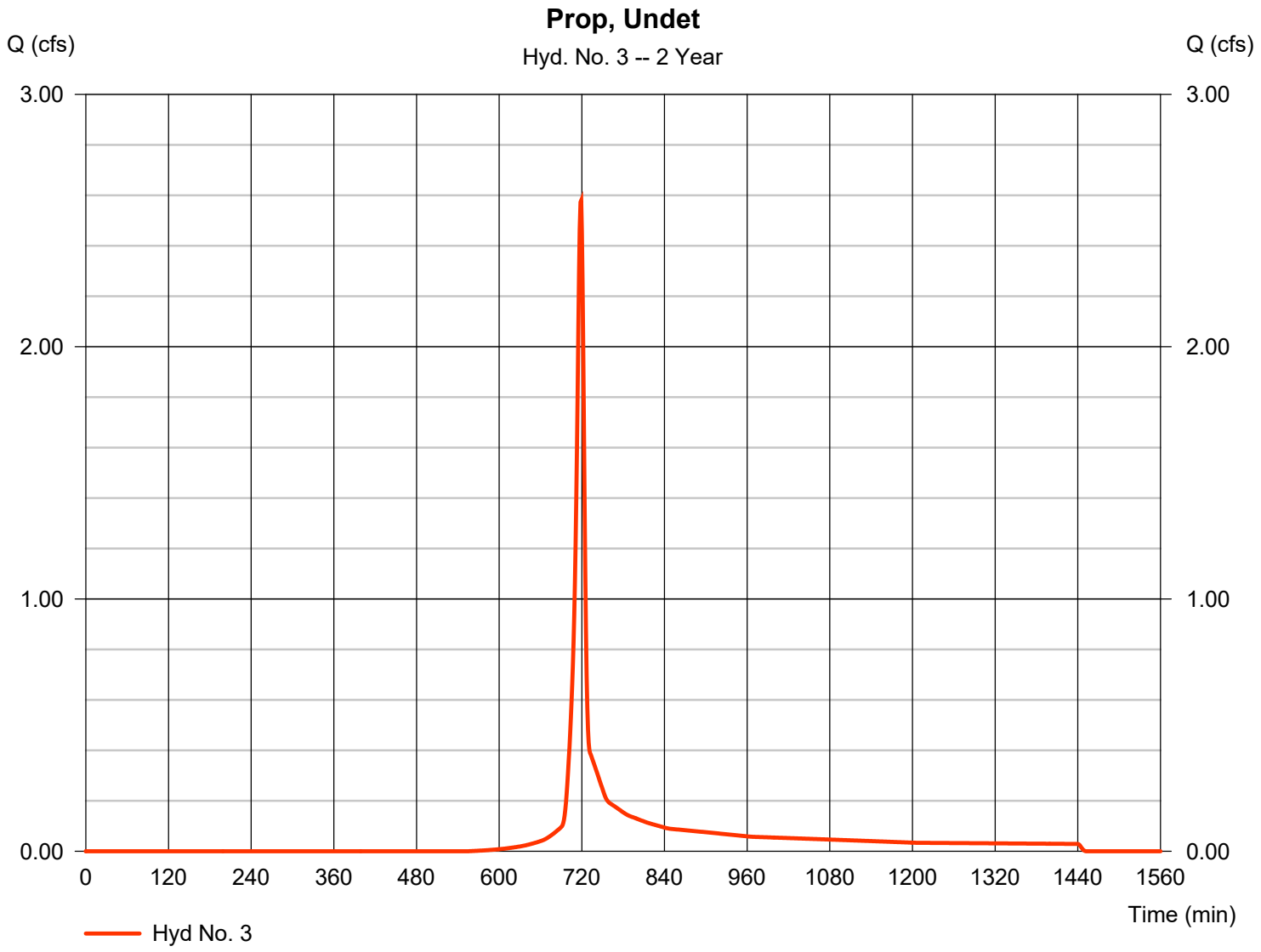
Hydrograph Report

Hyd. No. 3

Prop, Undet

Hydrograph type	= SCS Runoff	Peak discharge	= 2.579 cfs
Storm frequency	= 2 yrs	Time to peak	= 719 min
Time interval	= 1 min	Hyd. volume	= 5,442 cuft
Drainage area	= 1.280 ac	Curve number	= 83*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 6.80 min
Total precip.	= 2.69 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(1.100 x 80) + (0.180 x 98)] / 1.280



TR55 Tc Worksheet

Hyd. No. 3

Prop, Undet

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 56.6		0.0		0.0		
Two-year 24-hr precip. (in)	= 2.69		0.00		0.00		
Land slope (%)	= 7.10		0.00		0.00		
Travel Time (min)	**= 5.95**	**+**	**0.00**	**+**	**0.00**	**=**	**5.95**
Shallow Concentrated Flow							
Flow length (ft)	= 0.00		0.00		0.00		
Watercourse slope (%)	= 0.00		0.00		0.00		
Surface description	= Unpaved		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)	= 12.00		1.78		0.00		
Wetted perimeter (ft)	= 12.50		4.71		0.00		
Channel slope (%)	= 4.70		0.50		0.00		
Manning's n-value	= 0.025		0.015		0.015		
Velocity (ft/s)	=12.57						
			3.66				
					0.00		
Flow length (ft)	({0})189.5		140.1		0.0		
Travel Time (min)	**= 0.25**	**+**	**0.64**	**+**	**0.00**	**=**	**0.89**

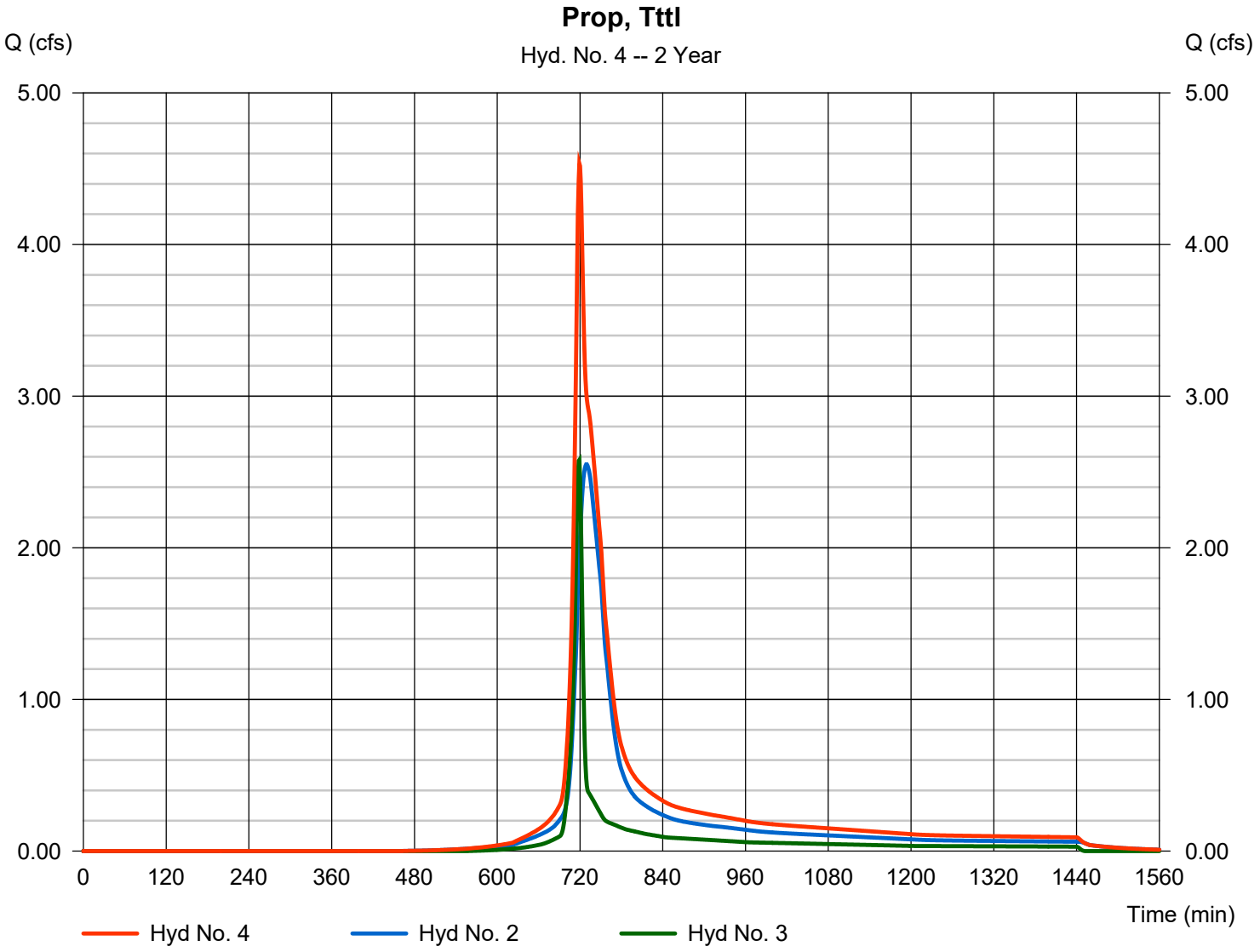
Total Travel Time, Tc ..... 6.80 min

Hydrograph Report

Hyd. No. 4

Prop, Tttl

Hydrograph type	= Combine	Peak discharge	= 4.534 cfs
Storm frequency	= 2 yrs	Time to peak	= 719 min
Time interval	= 1 min	Hyd. volume	= 18,471 cuft
Inflow hyds.	= 2, 3	Contrib. drain. area	= 1.280 ac



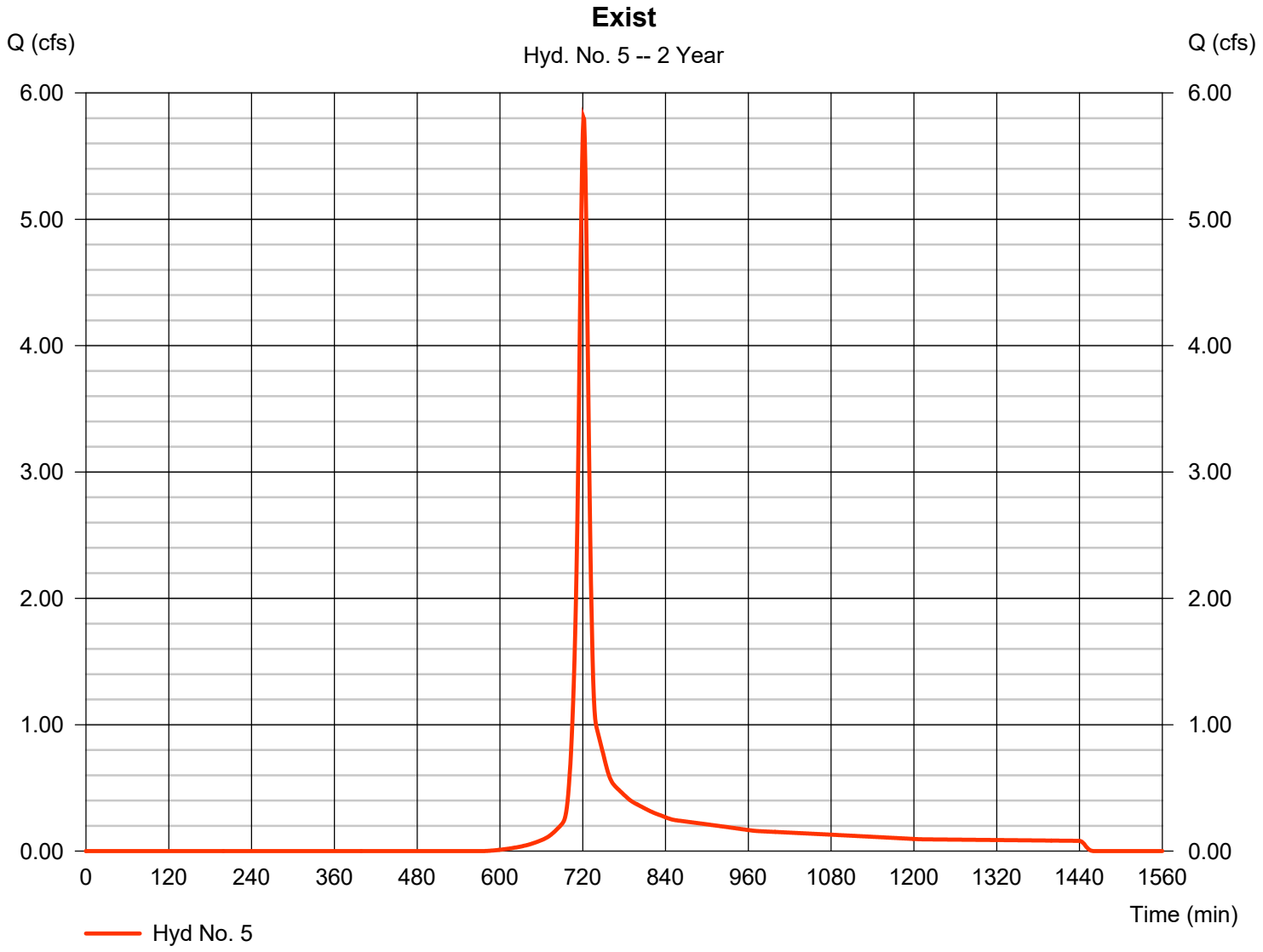
Hydrograph Report

Hyd. No. 5

Exist

Hydrograph type	=	SCS Runoff	Peak discharge	=	5.804 cfs
Storm frequency	=	2 yrs	Time to peak	=	721 min
Time interval	=	1 min	Hyd. volume	=	14,741 cuft
Drainage area	=	3.620 ac	Curve number	=	82*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.50 min
Total precip.	=	2.69 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(3.160 x 80) + (0.460 x 98)] / 3.620



TR55 Tc Worksheet

Hyd. No. 5

Exist

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 100.0		0.0		0.0		
Two-year 24-hr precip. (in)	= 2.69		0.00		0.00		
Land slope (%)	= 4.50		0.00		0.00		
Travel Time (min)	**= 11.25**	**+**	**0.00**	**+**	**0.00**	**=**	**11.25**
Shallow Concentrated Flow							
Flow length (ft)	= 330.60		0.00		0.00		
Watercourse slope (%)	= 7.90		0.00		0.00		
Surface description	= Unpaved		Paved		Paved		
Average velocity (ft/s)	=4.53		0.00		0.00		
Travel Time (min)	**= 1.22**	**+**	**0.00**	**+**	**0.00**	**=**	**1.22**
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 ..... 12.50 min

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

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	8.338	1	721	21,452	------	------	------	Prop, Detain
2	Reservoir	3.578	1	730	21,448	1	22.86	5,650	Pond
3	SCS Runoff	4.502	1	718	9,575	------	------	------	Prop, Undet
4	Combine	7.137	1	719	31,023	2, 3	------	------	Prop, Tttl
5	SCS Runoff	10.41	1	721	26,299	------	------	------	Exist

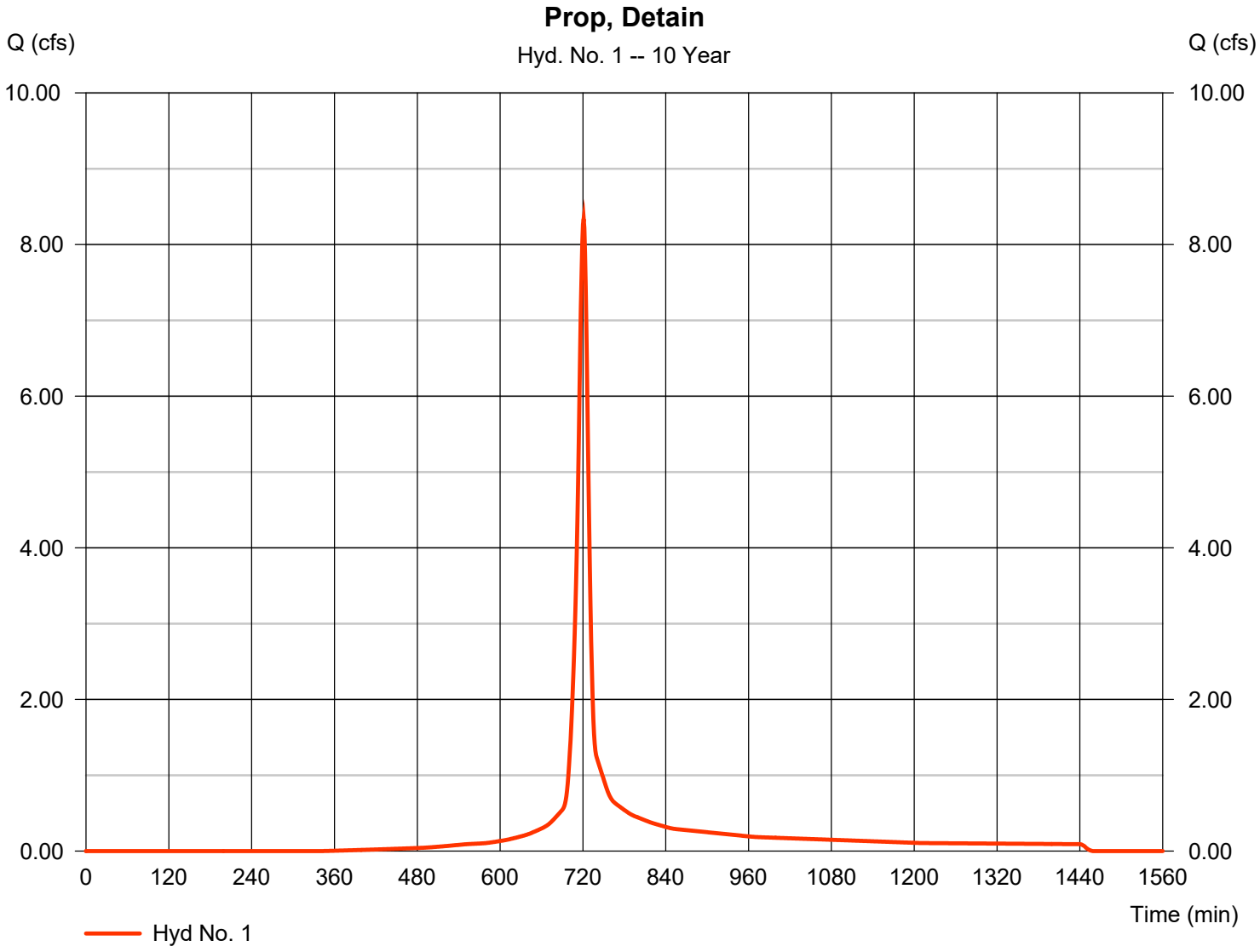
Hydrograph Report

Hyd. No. 1

Prop, Detain

Hydrograph type	=	SCS Runoff	Peak discharge	=	8.338 cfs
Storm frequency	=	10 yrs	Time to peak	=	721 min
Time interval	=	1 min	Hyd. volume	=	21,452 cuft
Drainage area	=	2.360 ac	Curve number	=	88*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.20 min
Total precip.	=	3.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.270 x 80) + (0.240 x 98) + (0.850 x 98)] / 2.360



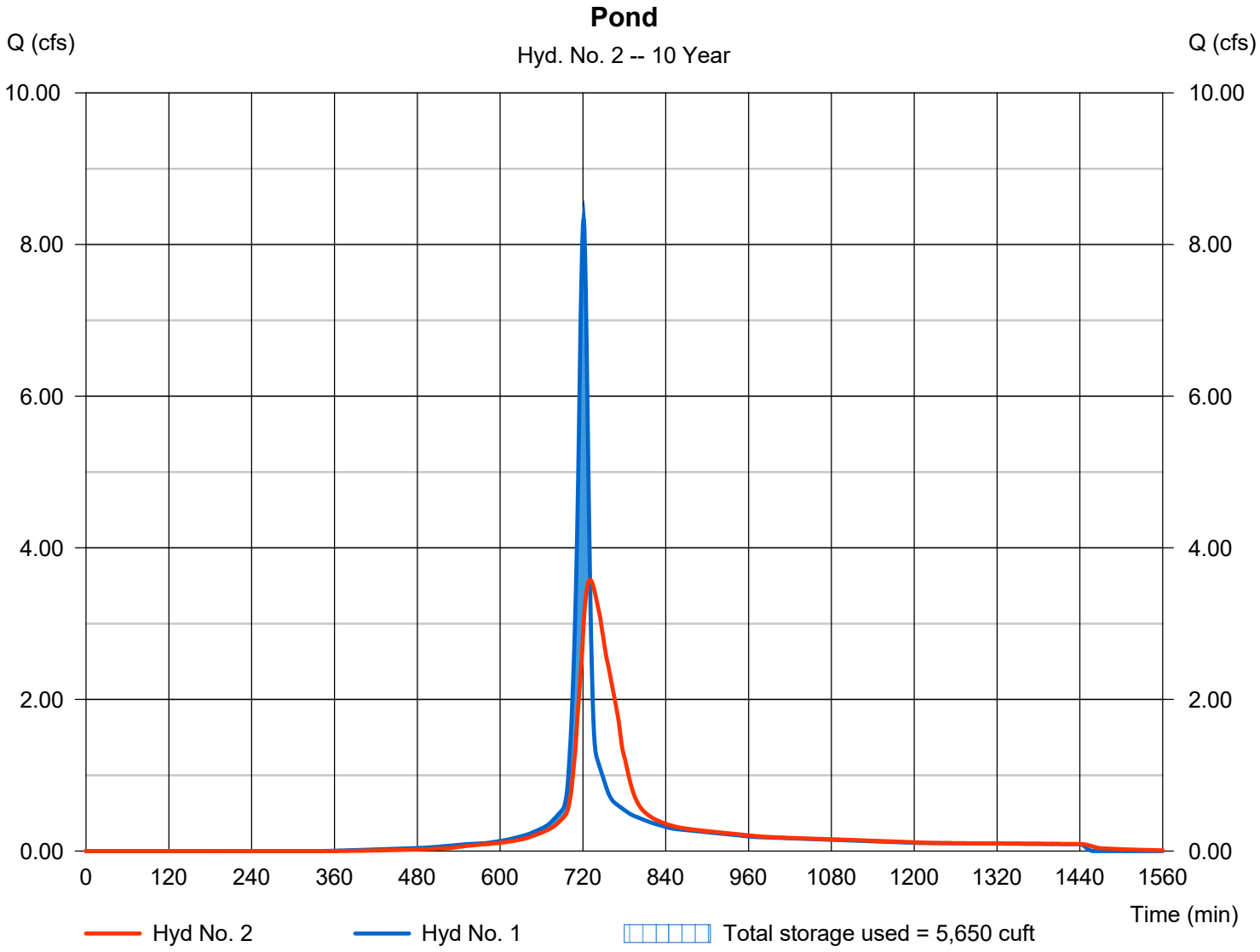
Hydrograph Report

Hyd. No. 2

Pond

Hydrograph type	=	Reservoir	Peak discharge	=	3.578 cfs
Storm frequency	=	10 yrs	Time to peak	=	730 min
Time interval	=	1 min	Hyd. volume	=	21,448 cuft
Inflow hyd. No.	=	1 - Prop, Detain	Max. Elevation	=	22.86 ft
Reservoir name	=	Pond	Max. Storage	=	5,650 cuft

Storage Indication method used.



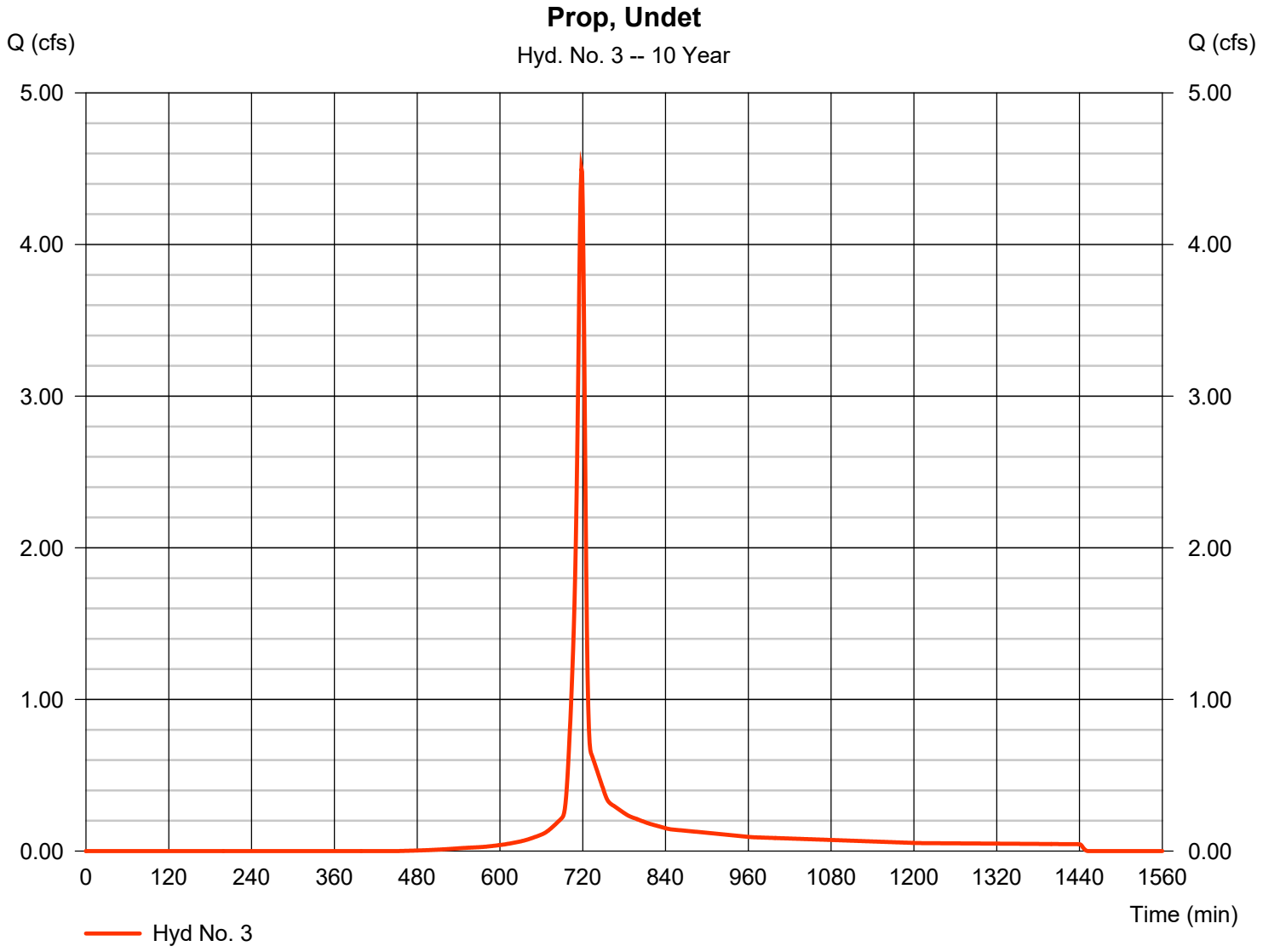
Hydrograph Report

Hyd. No. 3

Prop, Undet

Hydrograph type	=	SCS Runoff	Peak discharge	=	4.502 cfs
Storm frequency	=	10 yrs	Time to peak	=	718 min
Time interval	=	1 min	Hyd. volume	=	9,575 cuft
Drainage area	=	1.280 ac	Curve number	=	83*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	6.80 min
Total precip.	=	3.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.100 x 80) + (0.180 x 98)] / 1.280

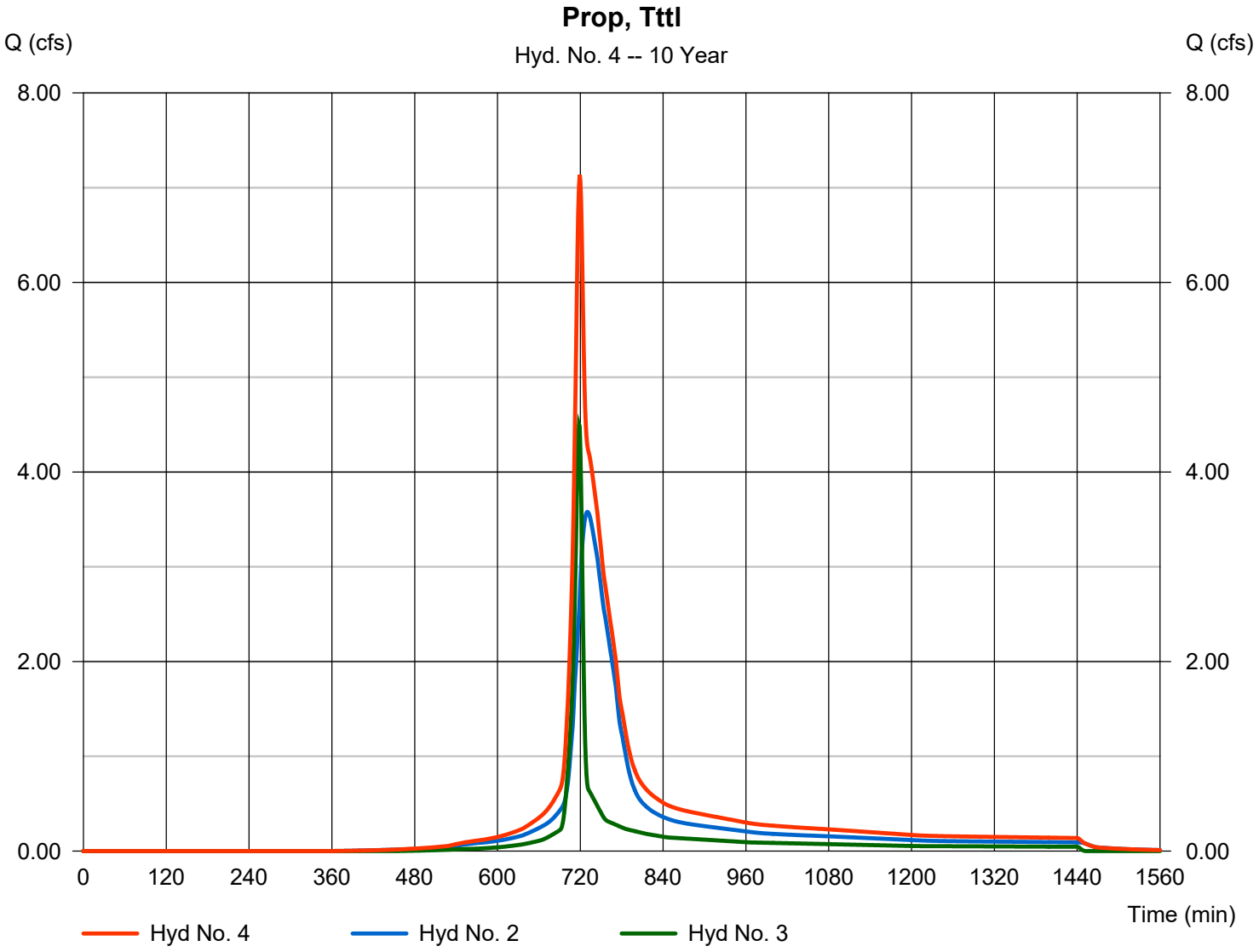


Hydrograph Report

Hyd. No. 4

Prop, Tttl

Hydrograph type	= Combine	Peak discharge	= 7.137 cfs
Storm frequency	= 10 yrs	Time to peak	= 719 min
Time interval	= 1 min	Hyd. volume	= 31,023 cuft
Inflow hyds.	= 2, 3	Contrib. drain. area	= 1.280 ac



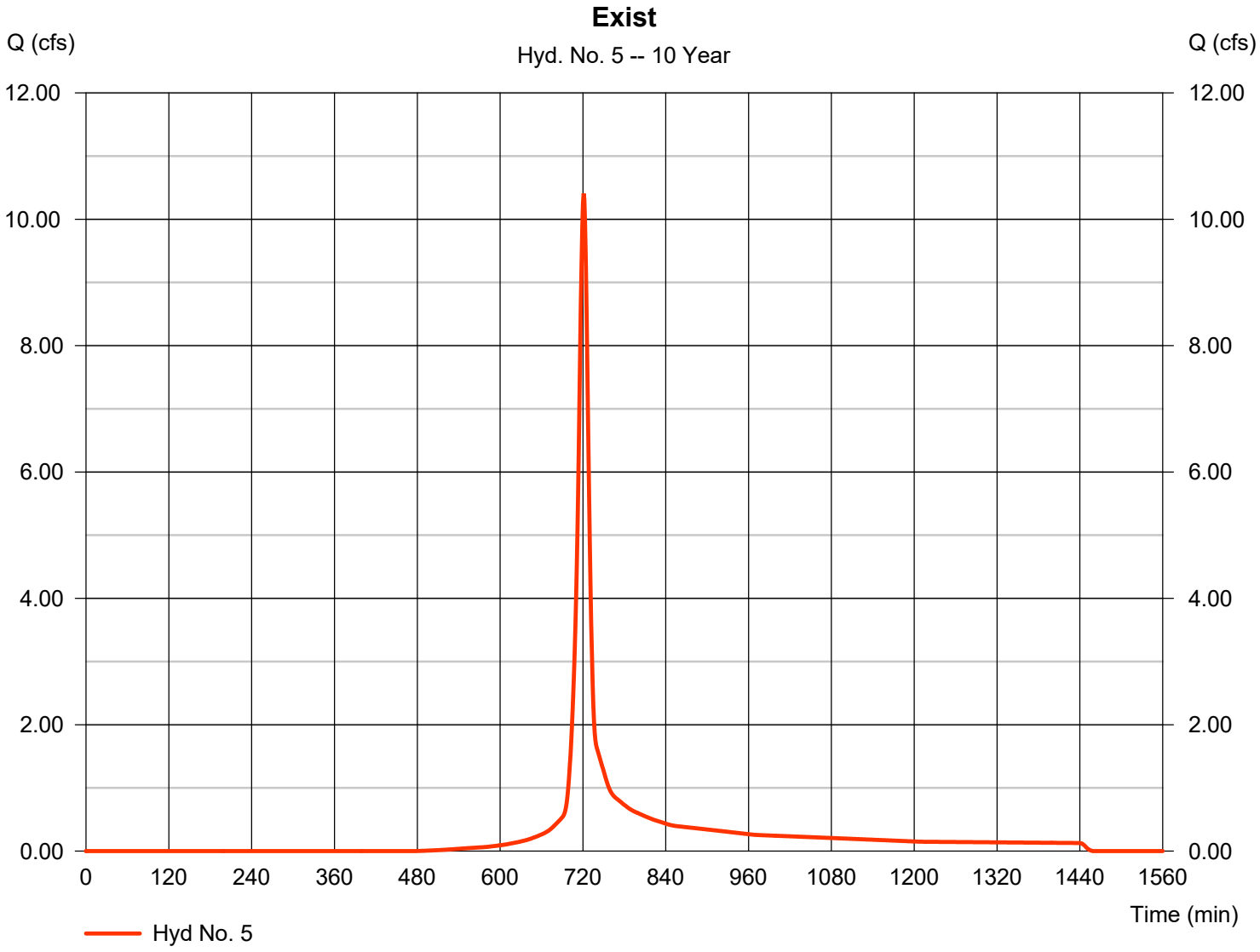
Hydrograph Report

Hyd. No. 5

Exist

Hydrograph type	=	SCS Runoff	Peak discharge	=	10.41 cfs
Storm frequency	=	10 yrs	Time to peak	=	721 min
Time interval	=	1 min	Hyd. volume	=	26,299 cuft
Drainage area	=	3.620 ac	Curve number	=	82*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.50 min
Total precip.	=	3.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(3.160 x 80) + (0.460 x 98)] / 3.620



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	15.21	1	721	40,392	------	------	------	Prop, Detain
2	Reservoir	4.967	1	732	40,388	1	24.37	11,962	Pond
3	SCS Runoff	8.807	1	718	19,251	------	------	------	Prop, Undet
4	Combine	12.63	1	719	59,638	2, 3	------	------	Prop, Tttl
5	SCS Runoff	20.82	1	721	53,601	------	------	------	Exist

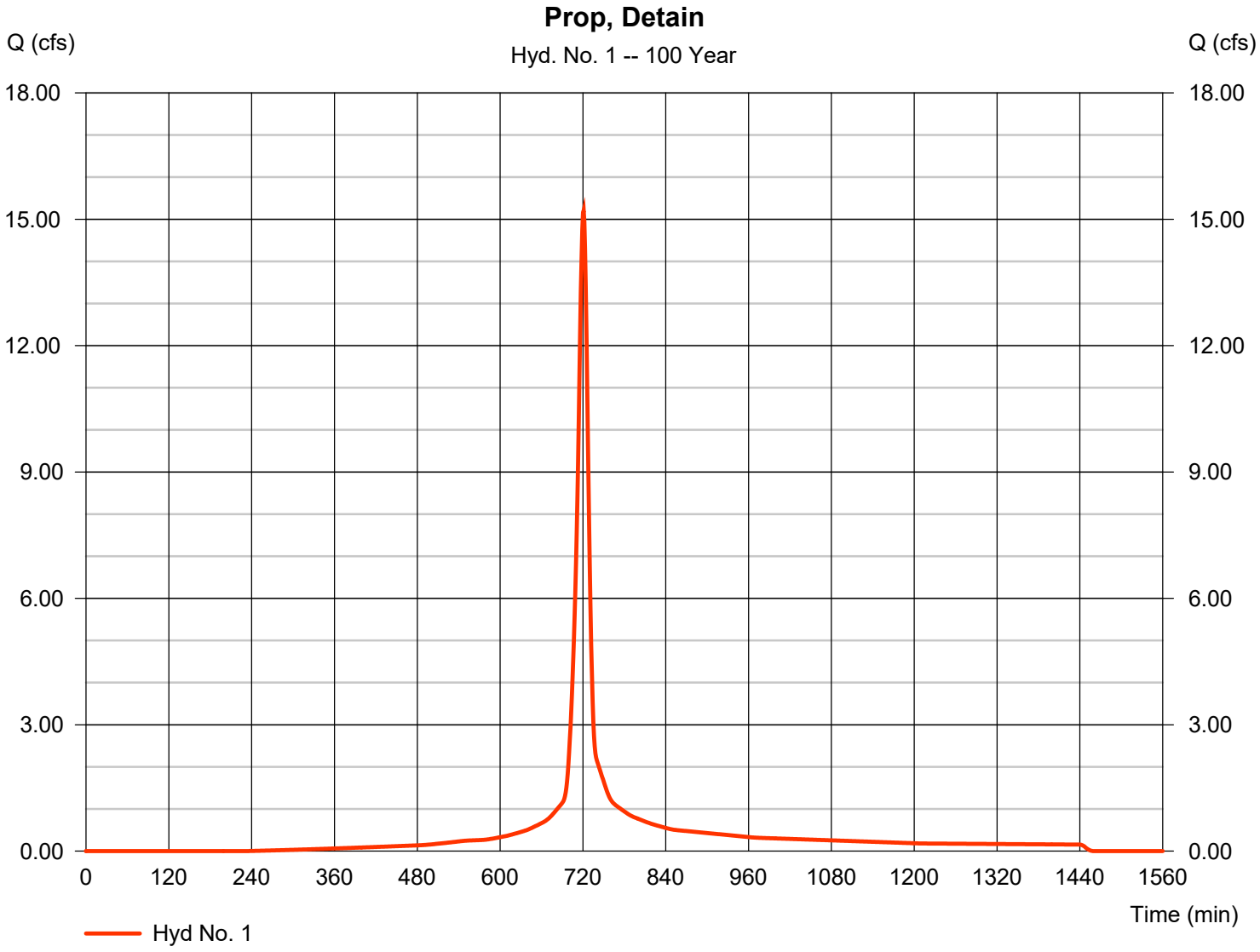
Hydrograph Report

Hyd. No. 1

Prop, Detain

Hydrograph type	=	SCS Runoff	Peak discharge	=	15.21 cfs
Storm frequency	=	100 yrs	Time to peak	=	721 min
Time interval	=	1 min	Hyd. volume	=	40,392 cuft
Drainage area	=	2.360 ac	Curve number	=	88*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.20 min
Total precip.	=	6.17 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.270 x 80) + (0.240 x 98) + (0.850 x 98)] / 2.360



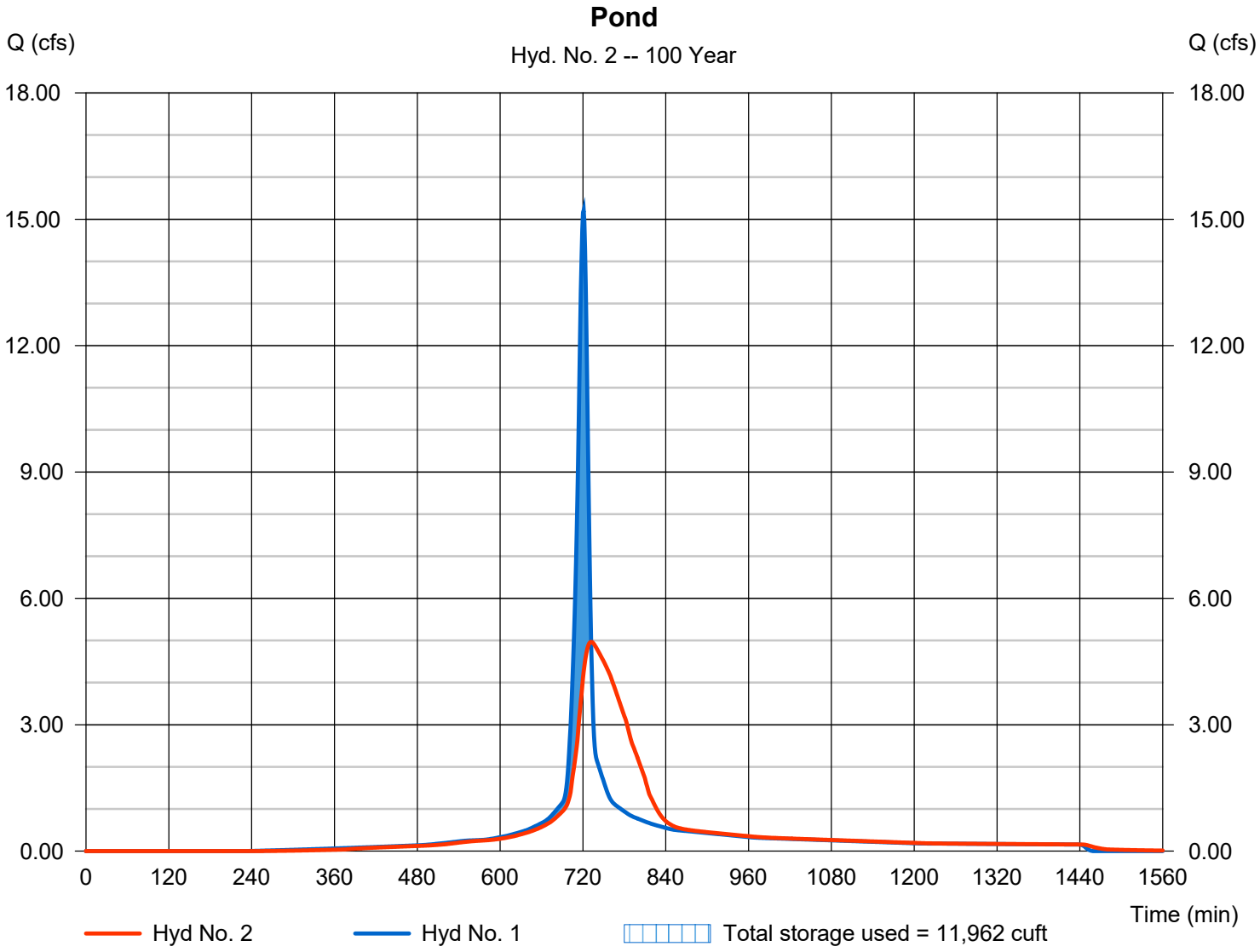
Hydrograph Report

Hyd. No. 2

Pond

Hydrograph type	=	Reservoir	Peak discharge	=	4.967 cfs
Storm frequency	=	100 yrs	Time to peak	=	732 min
Time interval	=	1 min	Hyd. volume	=	40,388 cuft
Inflow hyd. No.	=	1 - Prop, Detain	Max. Elevation	=	24.37 ft
Reservoir name	=	Pond	Max. Storage	=	11,962 cuft

Storage Indication method used.



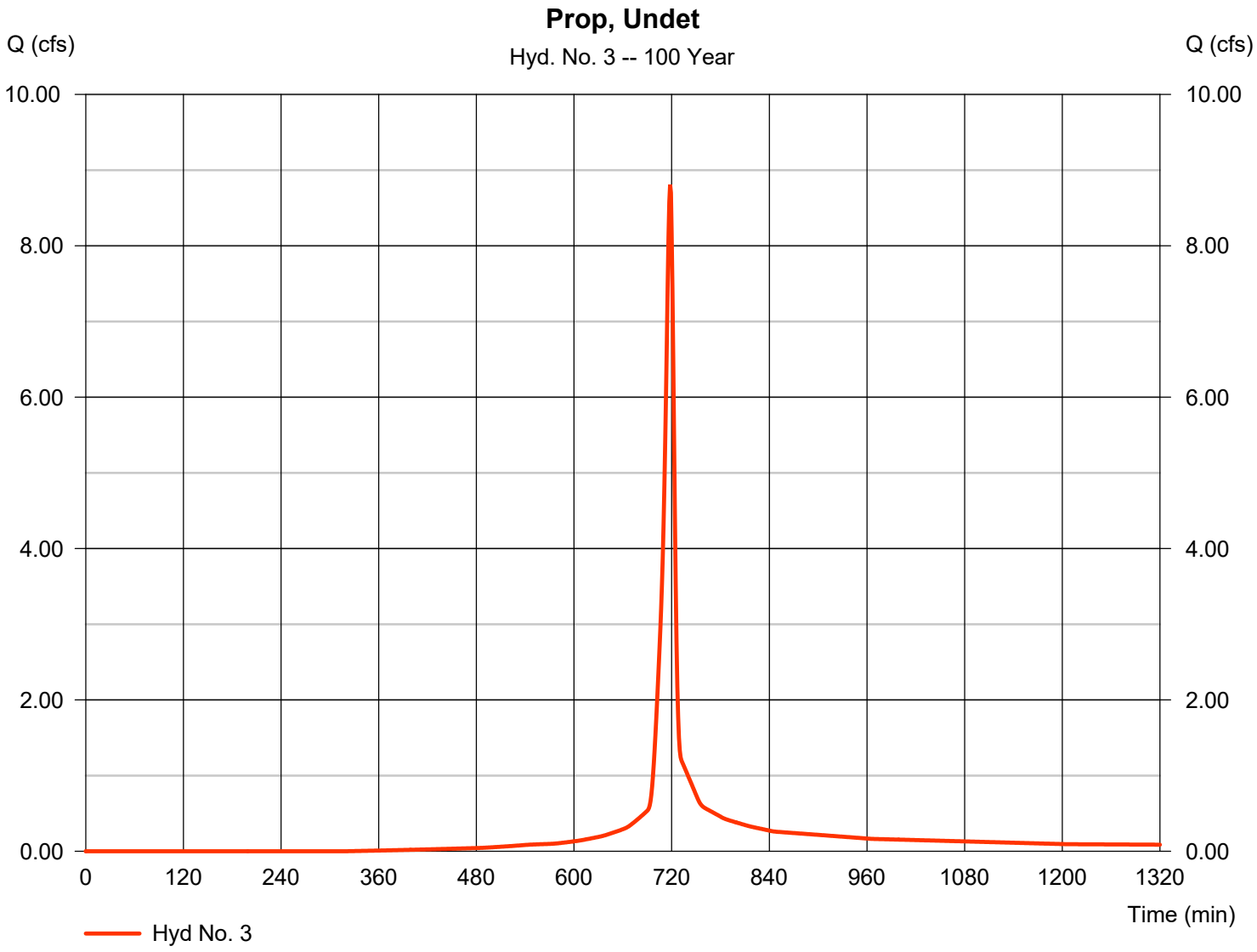
Hydrograph Report

Hyd. No. 3

Prop, Undet

Hydrograph type	=	SCS Runoff	Peak discharge	=	8.807 cfs
Storm frequency	=	100 yrs	Time to peak	=	718 min
Time interval	=	1 min	Hyd. volume	=	19,251 cuft
Drainage area	=	1.280 ac	Curve number	=	83*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	6.80 min
Total precip.	=	6.17 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(1.100 x 80) + (0.180 x 98)] / 1.280

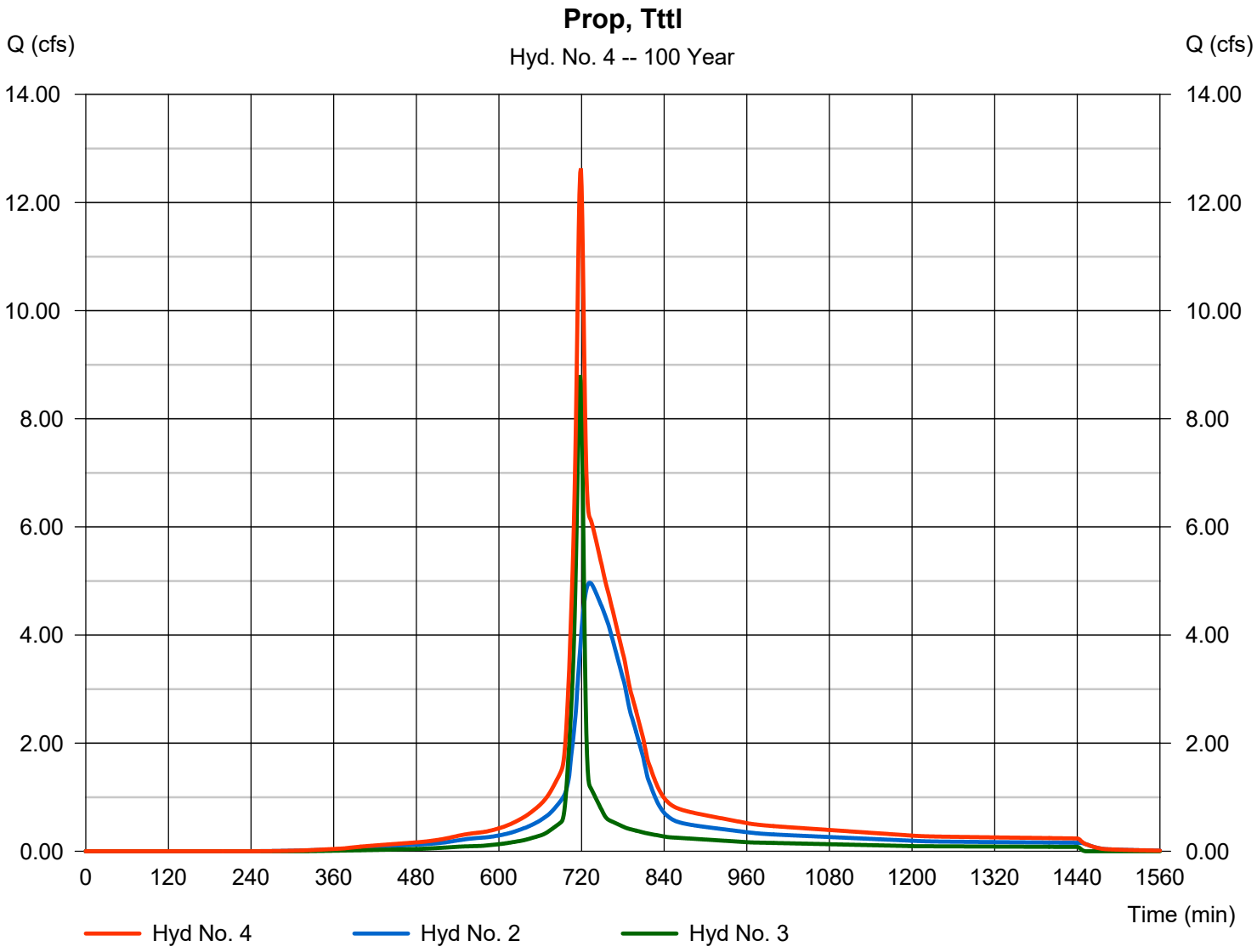


Hydrograph Report

Hyd. No. 4

Prop, Tttl

Hydrograph type	= Combine	Peak discharge	= 12.63 cfs
Storm frequency	= 100 yrs	Time to peak	= 719 min
Time interval	= 1 min	Hyd. volume	= 59,638 cuft
Inflow hyds.	= 2, 3	Contrib. drain. area	= 1.280 ac



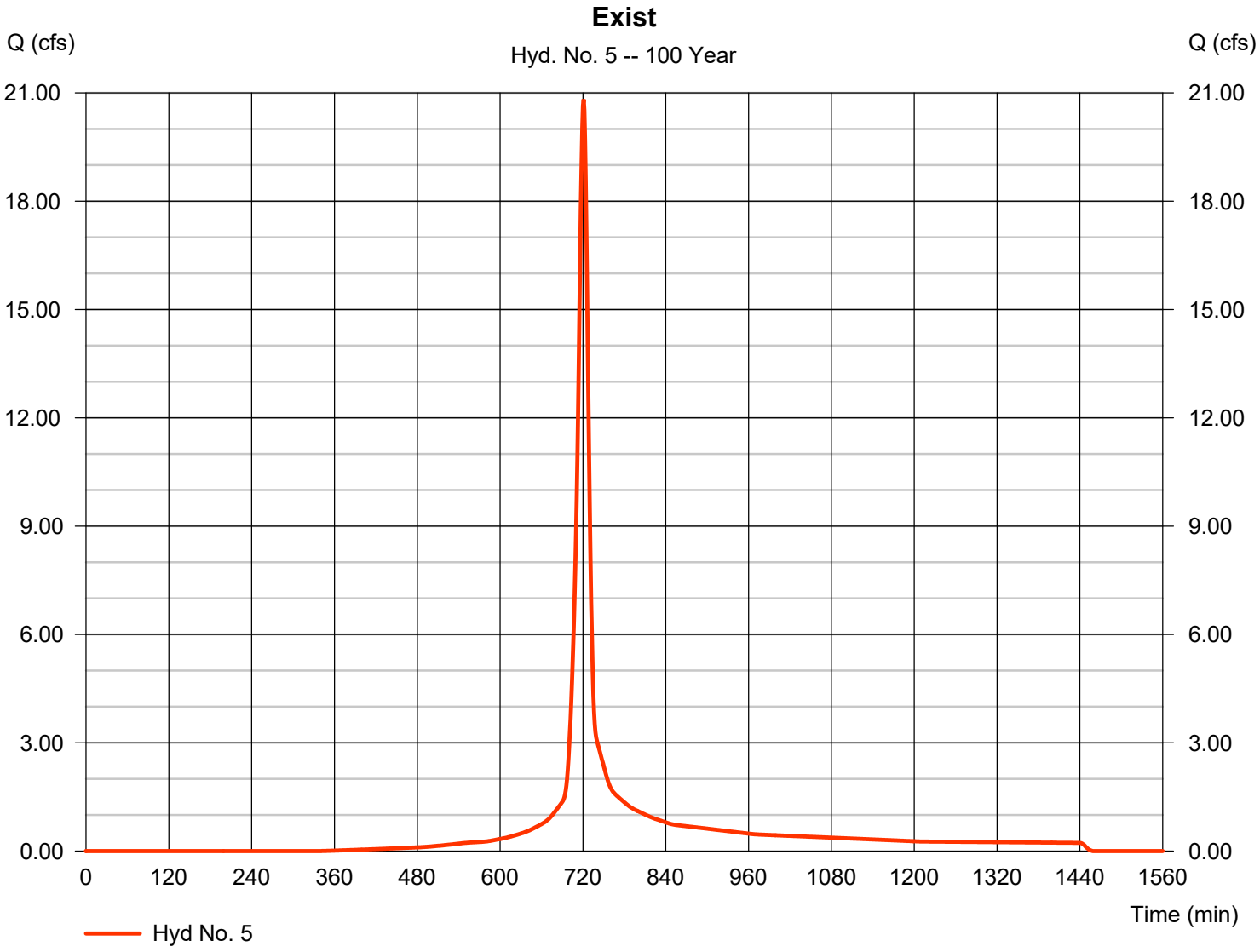
Hydrograph Report

Hyd. No. 5

Exist

Hydrograph type	=	SCS Runoff	Peak discharge	=	20.82 cfs
Storm frequency	=	100 yrs	Time to peak	=	721 min
Time interval	=	1 min	Hyd. volume	=	53,601 cuft
Drainage area	=	3.620 ac	Curve number	=	82*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	TR55	Time of conc. (Tc)	=	12.50 min
Total precip.	=	6.17 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(3.160 x 80) + (0.460 x 98)] / 3.620



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	69.8703	13.1000	0.8658	--------
3	0.0000	0.0000	0.0000	--------
5	79.2597	14.6000	0.8369	--------
10	88.2351	15.5000	0.8279	--------
25	102.6072	16.5000	0.8217	--------
50	114.8193	17.2000	0.8199	--------
100	127.1596	17.8000	0.8186	--------

File name: SampleFHA.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	5.69	4.61	3.89	3.38	2.99	2.69	2.44	2.24	2.07	1.93	1.81	1.70
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	6.57	5.43	4.65	4.08	3.65	3.30	3.02	2.79	2.59	2.42	2.27	2.15
10	7.24	6.04	5.21	4.59	4.12	3.74	3.43	3.17	2.95	2.77	2.60	2.46
25	8.25	6.95	6.03	5.34	4.80	4.38	4.02	3.73	3.48	3.26	3.07	2.91
50	9.04	7.65	6.66	5.92	5.34	4.87	4.49	4.16	3.88	3.65	3.44	3.25
100	9.83	8.36	7.30	6.50	5.87	5.36	4.94	4.59	4.29	4.03	3.80	3.60

Tc = time in minutes. Values may exceed 60.

) 17L1S Peninsula SP Construct New Dump Station\02 Design\06 Storm Water Management\Hydrology\Waukesha.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	2.38	2.69	0.00	0.00	3.80	0.00	0.00	6.17
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

NOAA Atlas 14, Volume 8, Version 2 WAUKESHA
Station ID: 47-8937
Location name: Waukesha, Wisconsin, USA*
Latitude: 43.0064°, Longitude: -88.2492°
Elevation:
Elevation (station metadata): 830 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

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

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.337** (0.273-0.417)	**0.403** (0.326-0.499)	**0.509** (0.411-0.630)	**0.595** (0.479-0.739)	**0.712** (0.556-0.896)	**0.801** (0.614-1.01)	**0.888** (0.663-1.14)	**0.975** (0.704-1.27)	**1.09** (0.762-1.43)	**1.17** (0.806-1.56)
10-min	**0.494** (0.400-0.611)	**0.590** (0.478-0.730)	**0.745** (0.602-0.923)	**0.872** (0.701-1.08)	**1.04** (0.814-1.31)	**1.17** (0.899-1.49)	**1.30** (0.971-1.67)	**1.43** (1.03-1.85)	**1.59** (1.12-2.10)	**1.72** (1.18-2.28)
15-min	**0.602** (0.488-0.745)	**0.719** (0.583-0.890)	**0.909** (0.734-1.13)	**1.06** (0.855-1.32)	**1.27** (0.992-1.60)	**1.43** (1.10-1.81)	**1.59** (1.18-2.03)	**1.74** (1.26-2.26)	**1.94** (1.36-2.56)	**2.09** (1.44-2.78)
30-min	**0.829** (0.672-1.02)	**0.994** (0.805-1.23)	**1.26** (1.02-1.56)	**1.48** (1.19-1.84)	**1.77** (1.38-2.23)	**2.00** (1.53-2.53)	**2.22** (1.65-2.84)	**2.44** (1.76-3.16)	**2.72** (1.90-3.58)	**2.93** (2.01-3.90)
60-min	**1.06** (0.862-1.32)	**1.28** (1.03-1.58)	**1.63** (1.32-2.02)	**1.93** (1.55-2.39)	**2.34** (1.84-2.97)	**2.67** (2.06-3.40)	**3.01** (2.25-3.87)	**3.35** (2.43-4.37)	**3.82** (2.68-5.04)	**4.18** (2.87-5.55)
2-hr	**1.30** (1.07-1.59)	**1.56** (1.28-1.90)	**1.99** (1.63-2.44)	**2.37** (1.93-2.91)	**2.91** (2.32-3.66)	**3.35** (2.61-4.22)	**3.80** (2.88-4.85)	**4.27** (3.13-5.52)	**4.92** (3.50-6.45)	**5.42** (3.77-7.15)
3-hr	**1.45** (1.20-1.76)	**1.73** (1.43-2.10)	**2.21** (1.82-2.69)	**2.64** (2.16-3.22)	**3.27** (2.63-4.10)	**3.79** (2.98-4.77)	**4.34** (3.32-5.52)	**4.92** (3.64-6.35)	**5.74** (4.12-7.51)	**6.40** (4.47-8.39)
6-hr	**1.75** (1.47-2.10)	**2.03** (1.70-2.44)	**2.55** (2.13-3.07)	**3.04** (2.52-3.65)	**3.77** (3.09-4.71)	**4.40** (3.52-5.50)	**5.08** (3.95-6.43)	**5.83** (4.38-7.47)	**6.89** (5.01-8.96)	**7.76** (5.49-10.1)
12-hr	**2.08** (1.77-2.47)	**2.35** (2.00-2.79)	**2.87** (2.42-3.40)	**3.36** (2.83-3.99)	**4.13** (3.44-5.11)	**4.81** (3.90-5.96)	**5.55** (4.38-6.97)	**6.37** (4.85-8.11)	**7.56** (5.57-9.76)	**8.55** (6.11-11.0)
24-hr	**2.38** (2.05-2.79)	**2.69** (2.31-3.15)	**3.26** (2.80-3.82)	**3.80** (3.25-4.47)	**4.65** (3.91-5.67)	**5.37** (4.41-6.57)	**6.17** (4.92-7.64)	**7.04** (5.42-8.86)	**8.30** (6.18-10.6)	**9.33** (6.75-11.9)
2-day	**2.66** (2.32-3.07)	**3.07** (2.68-3.55)	**3.81** (3.31-4.40)	**4.47** (3.86-5.18)	**5.46** (4.63-6.54)	**6.28** (5.21-7.56)	**7.16** (5.77-8.75)	**8.11** (6.30-10.1)	**9.44** (7.09-11.9)	**10.5** (7.69-13.3)
3-day	**2.92** (2.56-3.34)	**3.35** (2.94-3.84)	**4.12** (3.61-4.73)	**4.81** (4.20-5.54)	**5.85** (4.99-6.95)	**6.70** (5.60-8.01)	**7.61** (6.17-9.24)	**8.59** (6.73-10.6)	**9.97** (7.55-12.5)	**11.1** (8.16-14.0)
4-day	**3.15** (2.79-3.59)	**3.59** (3.18-4.10)	**4.38** (3.86-5.00)	**5.08** (4.46-5.82)	**6.14** (5.27-7.25)	**7.01** (5.89-8.33)	**7.94** (6.47-9.59)	**8.94** (7.03-11.0)	**10.3** (7.87-12.9)	**11.5** (8.50-14.4)
7-day	**3.72** (3.33-4.19)	**4.22** (3.77-4.76)	**5.08** (4.53-5.74)	**5.85** (5.18-6.62)	**6.97** (6.04-8.13)	**7.89** (6.69-9.27)	**8.86** (7.29-10.6)	**9.90** (7.86-12.0)	**11.3** (8.70-14.0)	**12.5** (9.34-15.6)
10-day	**4.23** (3.81-4.74)	**4.78** (4.30-5.36)	**5.72** (5.13-6.42)	**6.54** (5.84-7.36)	**7.72** (6.73-8.93)	**8.68** (7.40-10.1)	**9.68** (8.01-11.5)	**10.7** (8.56-12.9)	**12.2** (9.39-15.0)	**13.3** (10.0-16.5)
20-day	**5.79** (5.29-6.40)	**6.48** (5.91-7.17)	**7.62** (6.93-8.44)	**8.56** (7.75-9.52)	**9.88** (8.69-11.2)	**10.9** (9.39-12.5)	**11.9** (9.98-13.9)	**13.0** (10.5-15.4)	**14.4** (11.2-17.4)	**15.4** (11.8-19.0)
30-day	**7.17** (6.60-7.86)	**7.98** (7.35-8.76)	**9.30** (8.53-10.2)	**10.4** (9.46-11.4)	**11.8** (10.4-13.2)	**12.9** (11.2-14.6)	**13.9** (11.7-16.1)	**15.0** (12.1-17.6)	**16.3** (12.8-19.6)	**17.3** (13.2-21.1)
45-day	**8.98** (8.34-9.77)	**9.98** (9.26-10.9)	**11.5** (10.7-12.6)	**12.8** (11.8-14.0)	**14.4** (12.8-15.9)	**15.5** (13.5-17.4)	**16.6** (14.1-19.0)	**17.6** (14.4-20.6)	**18.9** (14.9-22.5)	**19.7** (15.2-24.0)
60-day	**10.6** (9.87-11.4)	**11.7** (11.0-12.7)	**13.6** (12.6-14.7)	**14.9** (13.8-16.3)	**16.7** (14.9-18.4)	**17.9** (15.7-20.0)	**19.0** (16.2-21.6)	**20.1** (16.4-23.2)	**21.2** (16.8-25.1)	**22.0** (17.0-26.6)

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

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

Please refer to NOAA Atlas 14 document for more information.

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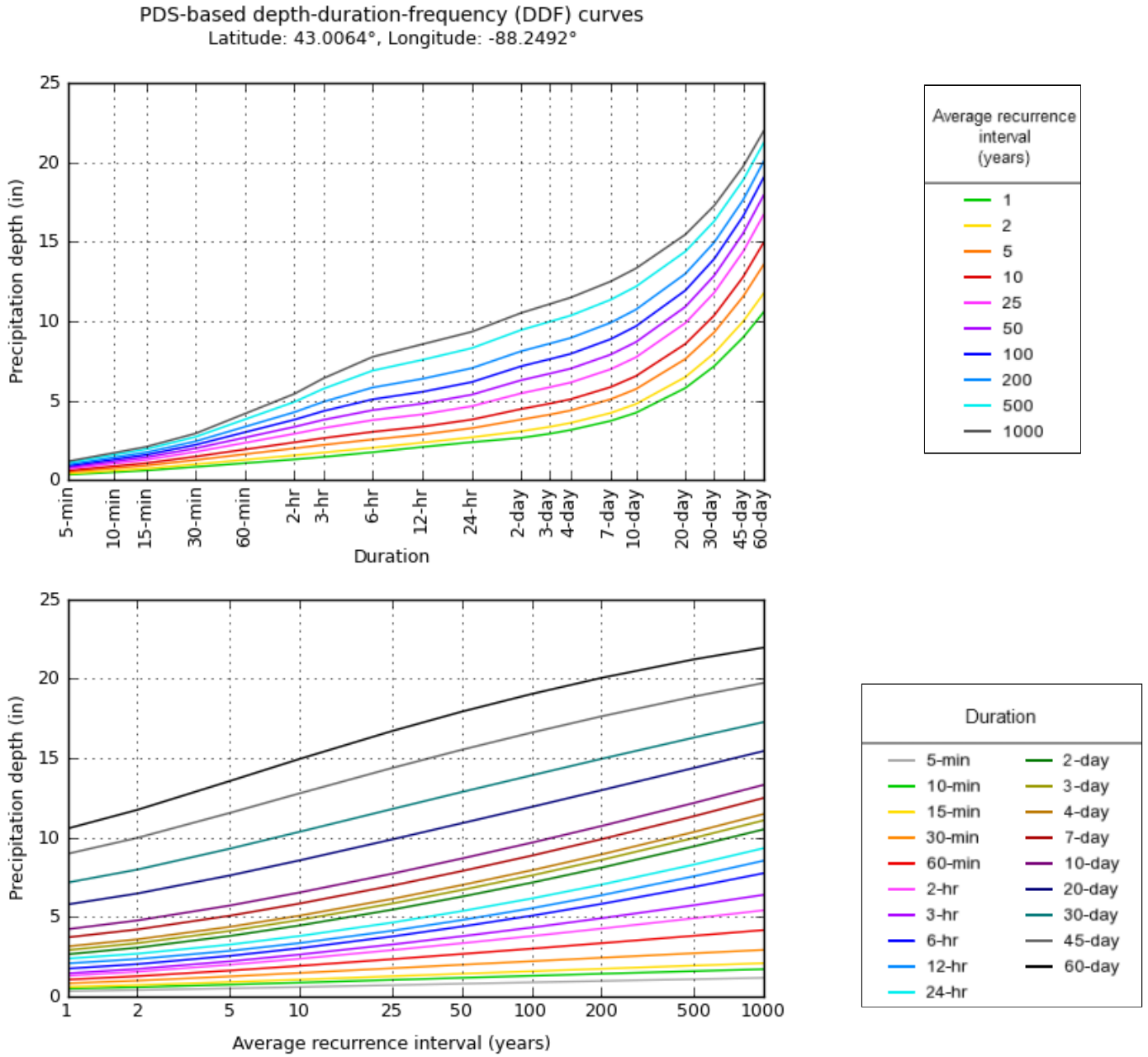
PF graphical



NOAA Atlas 14, Volume 8, Version 2

Created (GMT): Wed Feb 13 21:14:35 2019

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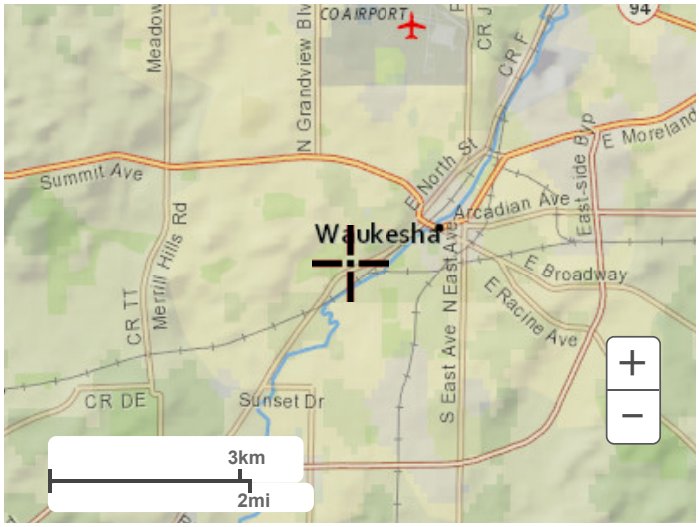
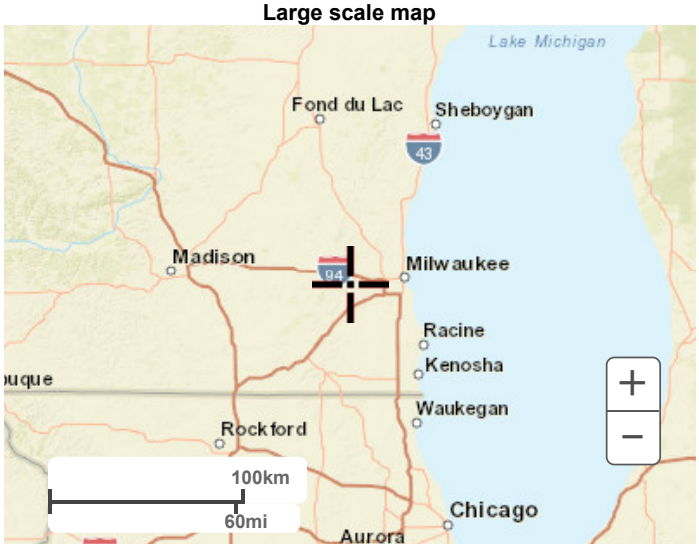
Maps & aerials

Small scale terrain

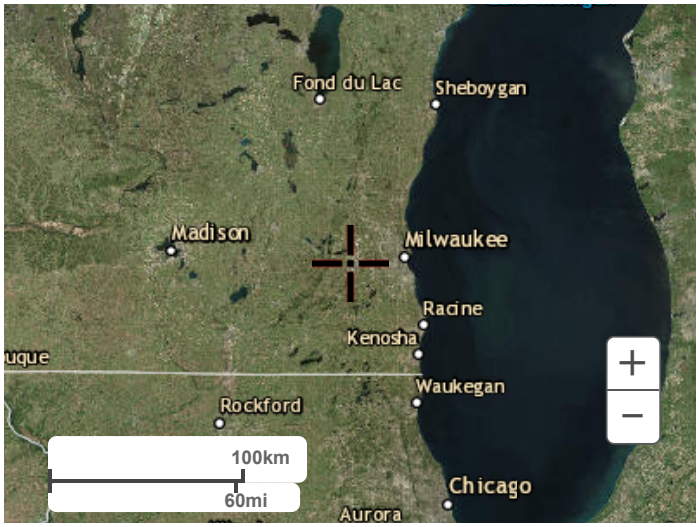


Large scale terrain

Large scale map



Large scale aerial



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

Disclaimer

Map Scale: 1:1,010 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 10 20 40 60

Feet
0 45 90 180 270

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Milwaukee and Waukesha Counties, Wisconsin
Survey Area Data: Version 14, Sep 12, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 7, 2014—Sep 22, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
FsB	Fox silt loam, 2 to 6 percent slopes	.01 0.0	0.4%
HmB	Hochheim loam, 2 to 6 percent slopes	1.3	46.1%
HmC2	Hochheim loam, 6 to 12 percent slopes, eroded	1.5	53.5%
Totals for Area of Interest		**2.8**	**100.0%**

Milwaukee and Waukesha Counties, Wisconsin

FsB—Fox silt loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2tjx0
Elevation: 570 to 1,150 feet
Mean annual precipitation: 31 to 37 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 124 to 176 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Fox and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fox

Setting

Landform: Outwash plains
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loess over loamy glaciofluvial deposits over sandy and gravelly outwash

Typical profile

Ap - 0 to 7 inches: silt loam
Bt1 - 7 to 21 inches: silty clay loam
2Bt2 - 21 to 31 inches: sandy clay loam
3C - 31 to 79 inches: stratified sand to gravel

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: 30 to 40 inches to strongly contrasting textural stratification
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 45 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Forage suitability group: Mod AWC, adequately drained (G095BY005WI)
Hydric soil rating: No

Minor Components

Casco

Percent of map unit: 8 percent
Landform: Outwash plains
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

St. charles, gravelly substratum

Percent of map unit: 7 percent
Landform: Outwash plains
Hydric soil rating: No

Data Source Information

Soil Survey Area: Milwaukee and Waukesha Counties, Wisconsin
Survey Area Data: Version 14, Sep 12, 2018

Milwaukee and Waukesha Counties, Wisconsin

HmB—Hochheim loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2t03x
Elevation: 820 to 1,330 feet
Mean annual precipitation: 29 to 31 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 135 to 155 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Hochheim and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hochheim

Setting

Landform: Drumlins
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy till and/or calcareous, dense loamy till

Typical profile

Ap - 0 to 9 inches: loam
Bt - 9 to 17 inches: clay loam
Cd - 17 to 79 inches: gravelly loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: 15 to 24 inches to densic material
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 60 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: D

Forage suitability group: Mod AWC, adequately drained (G095BY005WI)
Hydric soil rating: No

Minor Components

Theresa
Percent of map unit: 7 percent
Landform: Drumlins
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Lamartine
Percent of map unit: 3 percent
Landform: Drumlins
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Data Source Information

Soil Survey Area: Milwaukee and Waukesha Counties, Wisconsin
Survey Area Data: Version 14, Sep 12, 2018

Milwaukee and Waukesha Counties, Wisconsin

HmC2—Hochheim loam, 6 to 12 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2t03r
Elevation: 900 to 1,340 feet
Mean annual precipitation: 31 to 33 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 135 to 175 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Hochheim, eroded, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hochheim, Eroded

Setting

Landform: Drumlins
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy till and/or calcareous, dense loamy till

Typical profile

Ap - 0 to 7 inches: loam
Bt - 7 to 16 inches: clay loam
Cd - 16 to 79 inches: gravelly sandy loam

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: 10 to 18 inches to densic material
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 60 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D

Forage suitability group: Mod AWC, adequately drained (G095BY005WI)
Hydric soil rating: No

Minor Components

Theresa

Percent of map unit: 5 percent
Landform: Drumlins
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Hochheim

Percent of map unit: 5 percent
Landform: Drumlins
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Side slope, head slope
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Data Source Information

Soil Survey Area: Milwaukee and Waukesha Counties, Wisconsin
Survey Area Data: Version 14, Sep 12, 2018

LEGEND

EXISTING	PROPOSED	
		MAJOR CONTOUR
		MINOR CONTOUR
OH		OVERHEAD ELECTRICAL
W	W	WATER PIPE
ST	ST	STORM SEWER
		CONCRETE ENDWALL
G		GAS PIPE
T		TELECOMMUNICATION
		STRUCTURE
		SIGN
		TREE
		WATER VALVE
		FIRE HYDRANT
		LIGHT POLE
		PEDESTAL
		UTILITY POLE
		CATCH BASIN
		MANHOLE / SANITARY SEWER STRUCTURE

HYDROLOGY

EXISTING	PROPOSED	
5.80 CFS	4.53 CFS	2–YEAR
10.41 CFS	7.14 CFS	10–YEAR
20.82 CFS	12.63 CFS	100–YEAR

NOTES:

1. BEARINGS ARE REFERENCED TO THE WISCONSIN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 1927.
2. VERTICAL DATUM FOR THE PROJECT SURVEY IS CITY OF WAUKESHA. CONVERSION TO USGS IS 780.558.

N

0 40 80 160

TO OBTAIN LOCATIONS OF PARTICIPTANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

CALL DIGGERS HOTLINE
1–800–242–8511
TOLL FREE
WIS STATUTE 182.0175(1974)
REQUIRES MIN. 3 WORK DAYS
NOTICE BEFORE YOU EXCAVATE

ATTENTION:
ALL UTILITY LOCATIONS ARE SHOWN FROM FIELD OBSERVATION BASED UPON LOCATES AND/OR INFORMATION RECEIVED FROM OTHER SURVEYS AND VARIOUS UTILITY COMPANIES. BEFORE THE START OF ANY EXCAVATION, A COMPLETE LOCATE OF ALL UTILITIES WITHIN THE CONSTRUCTION AREA SHOULD BE COMPLETED.

4/10/2019 9:33:19 AM

Froedtert & Medical College of Wisconsin

Kahler Slater

OTIE
An Oneida ESC Group Company

NOT FOR CONSTRUCTION

Revisions

CITY OF WAUKESHA PLAN COMMISSION REVIEW

SCOPE DOCUMENTS

Drawing Date
4/22/2019

FROEDTERT SUNSET DRIVE CLINIC

Project No. FROEDTERT HEALTH
218082.00

Sheet Title
EXISTING HYDROLOGY (65% COMPLETE)

111 West Wisconsin Avenue, Milwaukee, Wisconsin 53203
Telephone 414.272.2000 Fax 414.272.2001

44 East Mifflin Street, Suite 700, Madison, Wisconsin 53703
Telephone 608.283.6300 Fax 608.283.6317

Sheet No.
C-901

LEGEND

EXISTING	PROPOSED	
		MAJOR CONTOUR
		MINOR CONTOUR
OH		OVERHEAD ELECTRICAL
W	W	WATER PIPE
ST	ST	STORM SEWER
		CONCRETE ENDWALL
G		GAS PIPE
T		TELECOMMUNICATION
		STRUCTURE
		SIGN
		TREE
		WATER VALVE
		FIRE HYDRANT
		LIGHT POLE
		PEDESTAL
		UTILITY POLE
		CATCH BASIN
		MANHOLE / SANITARY
		SEWER STRUCTURE

HYDROLOGY

EXISTING	PROPOSED	
5.80 CFS	4.53 CFS	2–YEAR
10.41 CFS	7.14 CFS	10–YEAR
20.82 CFS	12.63 CFS	100–YEAR

NOTES:

1. BEARINGS ARE REFERENCED TO THE WISCONSIN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 1927.
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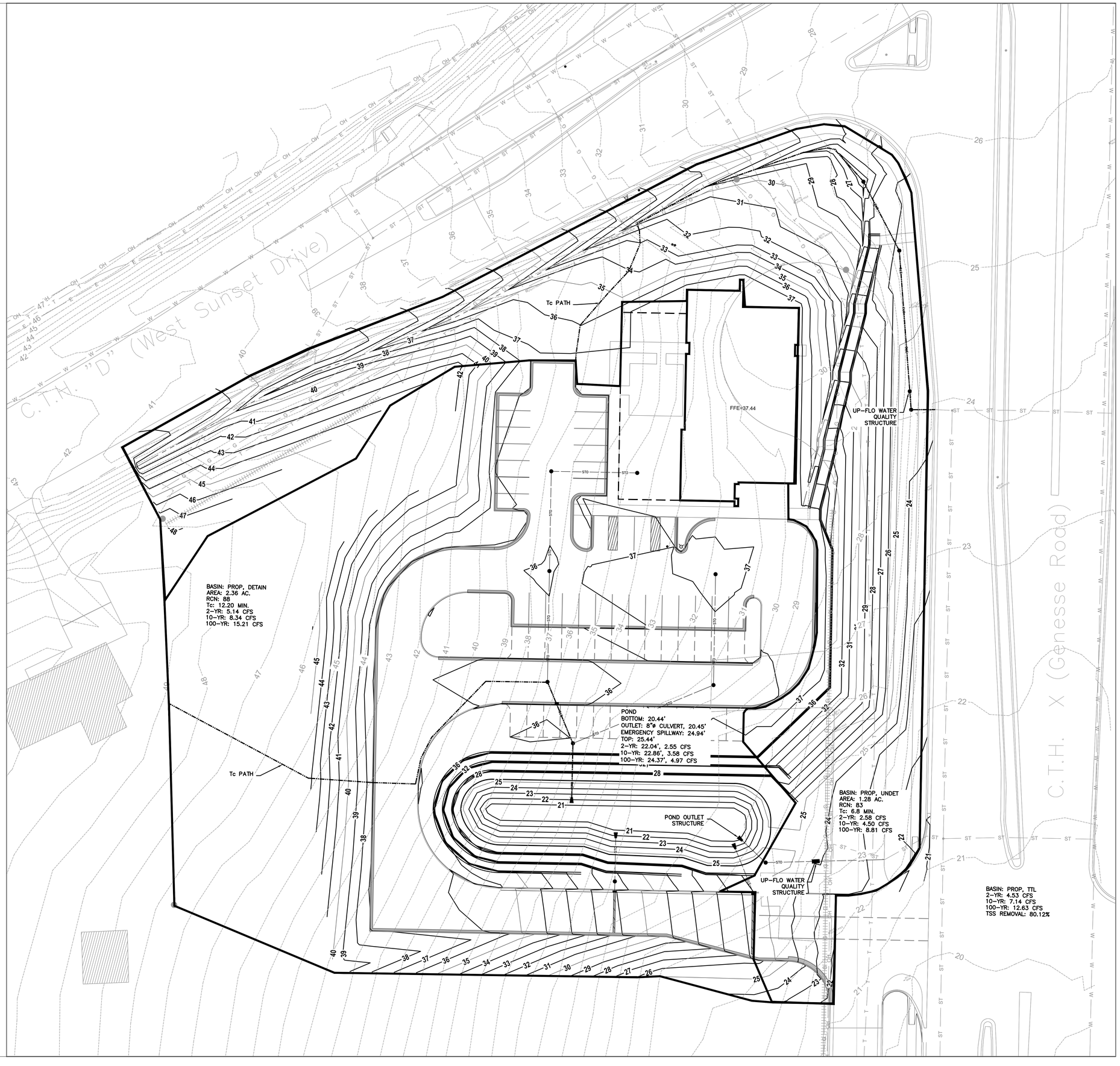

Froedtert & Medical College of Wisconsin

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Revisions

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SCOPE DOCUMENTS

Drawing Date
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FROEDTERT SUNSET DRIVE CLINIC

Project No. FROEDTERT HEALTH
218082.00

Sheet Title
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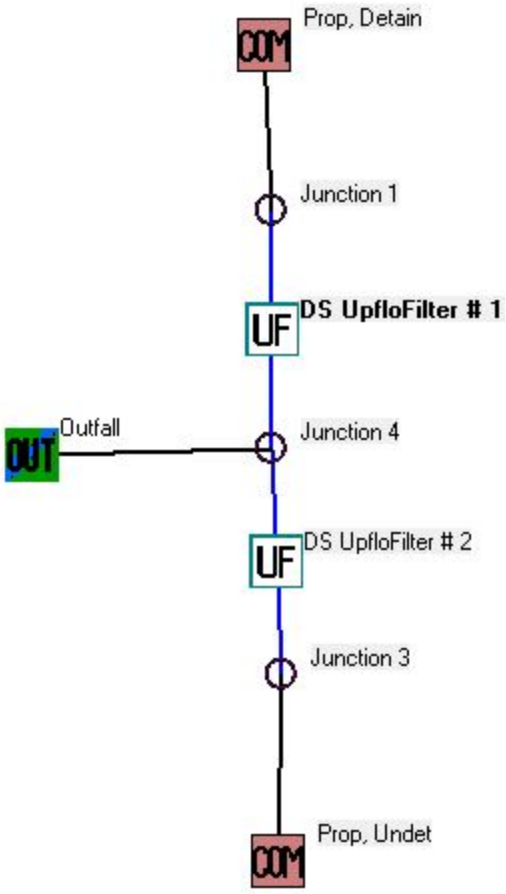
111 West Wisconsin Avenue, Milwaukee, Wisconsin 53203
Telephone 414.272.2000 Fax 414.272.2001

44 East Mifflin Street, Suite 700, Madison, Wisconsin 53703
Telephone 608.283.6300 Fax 608.283.6317

Sheet No.
C-902

4/22/2019 9:55:19 AM


Prop, Detain
COM
Junction 1
DS UpfloFilter # 1
UF
Outfall
OUT
Junction 4
DS UpfloFilter # 2
UF
Junction 3
Prop, Undet
COM

Data file name: Q:\2018 Projects\2018159 - Kahler Slater Froedtert Sunset Drive Health Center\02 Design\11 Storm Water Management\Water Quality\2018159_WQ0.mdb
WinSLAMM Version 10.4.0
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/01/81 Study period ending date: 12/31/81
Start of Winter Season: 12/02 End of Winter Season: 03/12
Date: 04-16-2019 Time: 08:54:07
Site information:

LU# 1 - Commercial: Prop, Detain Total area (ac): 2.360
1 - Roofs 1: 0.240 ac. Flat Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
13 - Paved Parking 1: 0.230 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
25 - Driveways 1: 0.550 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.070 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 1.270 ac. Normal Clayey Low Density Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 2 - Commercial: Prop, Undet Total area (ac): 1.280
31 - Sidewalks 1: 0.180 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 1.100 ac. Normal Clayey Low Density Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

Control Practice 1: Upflo Filter CP# 1 (DS) - DS UpfloFilter # 1
   Media Type: CPZ
   Fraction of Area Served by Upflo Filters (0-1): 1.0
   Height from Outlet Invert to Structure Top (ft): 5.0
   Sump Depth (ft): 2.00
   Sump Cleaning/Filter Replacement is not considered during the model run
   Solve for Given Conditions
   Number of filters: 22
   Upflo Filter particle size distribution file name: Not needed - calculated by program

Control Practice 2: Upflo Filter CP# 2 (DS) - DS UpfloFilter # 2
   Media Type: CPZ
   Fraction of Area Served by Upflo Filters (0-1): 1.0
   Height from Outlet Invert to Structure Top (ft): 4.0
   Sump Depth (ft): 2.00
   Sump Cleaning/Filter Replacement is not considered during the model run
   Solve for Given Conditions
   Number of filters: 6
   Upflo Filter particle size distribution file name: Not needed - calculated by program

2018159_WQ0 - Output Summary

SLAMM for Windows Version 10.4.0

Data file name: Q:\2018 Projects\2018159 - Kahler Slater Froedtert Sunset Drive Health Center\02 Design\11 Storm Water Management\Water Quality\2018159_WQ0.mdb
Data file description:
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Start of Winter Season: 12/02 End of Winter Season: 03/12
Model Run Start Date: 01/01/81 Model Run End Date: 12/31/81
Date of run: 04-16-2019 Time of run: 08:51:12
Total Area Modeled (acres): 3.640
Years in Model Run: 1.00

	Runoff Volume (cu ft)	Percent Runoff Volume Reduction	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of all Land Uses without Controls:	116041	-	129.1	935.2	-
Outfall Total with Controls:	116322	-0.24%	25.60	185.9	80.12%
Annualized Total After Outfall Controls:	116642			186.4	