

Stormwater Report

For

Paradise At The Lake Subdivision – Phase 1

Stokes Township, Logan County, Ohio



PETERMAN
ASSOCIATES, INC.

- ARCHITECTS - ENGINEERS - INSPECTORS - SURVEYORS -



	Pre		Post	
	sf	ac	sf	ac
Pond 1	1041641	23.91278696	1041641	23.91278696
Pond 2	1208615	27.74598255	1208615	27.74598255
Pond 3	618530	14.19949495	618530	14.19949495
Pond 4	386795	8.879591368	386795	8.879591368
Pond 5	1240627	28.48087695	1240627	28.48087695
Pond 6	13704577	314.6137971	13704577	314.6137971
		417.8325298		417.8325298

Pond 1				
Contour Elevation	Contour Surface Area (ft ²)	Incremental Volume (ft ³)	Cumulative Volume (ft ³)	Elevation Description
992.00	18,389	0	0	Bottom
993.00	20,113	19,251	19,251	
994.00	21,894	21,004	40,255	
995.00	23,731	22,813	63,067	
996.00	25,625	24,678	87,745	
997.00	27,575	26,600	114,345	
997.50	28,572	0	0	NWL
998.00	29,582	14,539	14,539	
999.00	31,645	30,614	45,152	
1000.00	33,765	32,705	77,857	
1001.00	35,942	34,854	112,711	
1002.00	38,175	37,059	149,769	
1003.00	40,465	39,320	189,089	
1004.00	42,811	41,638	230,727	
1005.00	45,214	44,013	274,740	Top

Pond 2				
Contour Elevation	Contour Surface Area (ft ²)	Incremental Volume (ft ³)	Cumulative Volume (ft ³)	Elevation Description
990	5,847	0	0	Bottom
991	7,258	6,553	6,553	
992	8,808	8,033	14,586	
993	10,432	9,620	24,206	
994	12,116	11,274	35,480	
995	13,856	12,986	48,466	
996	15,653	14,755	63,220	
997	17,506	16,580	79,800	
998	19,416	18,461	98,261	
998.50	20,392	0	0	NWL
999.00	21,382	10,444	10,444	
1000.00	23,405	22,394	32,837	
1001.00	25,485	24,445	57,282	
1002.00	27,621	26,553	83,835	
1003.00	29,814	28,718	112,553	
1004.00	32,063	30,939	143,491	
1005.00	34,369	33,216	176,707	
1006.00	36,731	35,550	212,257	Top

Pond 3				
Contour Elevation	Contour Surface Area (ft ²)	Incremental Volume (ft ³)	Cumulative Volume (ft ³)	Elevation Description
1000.00	14,397	0	0	NWL
1001.00	16,330	15,364	15,364	
1002.00	18,405	17,368	32,731	
1003.00	20,549	19,477	52,208	
1004.00	22,750	21,650	73,858	
1005.00	25,008	23,879	97,737	
1006.00	27,322	26,165	123,902	
1007.00	29,693	28,508	152,409	
1008.00	32,120	30,907	183,316	
1009.00	34,604	33,362	216,678	
1010.00	37,145	35,875	252,552	
1011.00	39,741	38,443	290,995	
1012.00	42,395	41,068	332,063	Top

Pond 4				
Contour Elevation	Contour Surface Area (ft ²)	Incremental Volume (ft ³)	Cumulative Volume (ft ³)	Elevation Description
1001.00	24,537	0	0	NWL
1002.00	26,466	25,502	25,502	
1003.00	28,452	27,459	52,961	
1004.00	30,494	29,473	82,434	
1005.00	32,593	31,544	113,977	
1006.00	34,748	33,671	147,648	
1007.00	36,960	35,854	183,502	
1008.00	39,228	38,094	221,596	
1009.00	41,553	40,391	261,986	
1010.00	43,934	42,744	304,730	
1011.00	46,372	45,153	349,883	
1012.00	48,867	47,620	397,502	Top

Pond 5				
Contour Elevation	Contour Surface Area (ft ²)	Incremental Volume (ft ³)	Cumulative Volume (ft ³)	Elevation Description
1000.00	36,083	0	0	NWL
1001.00	38,514	37,299	37,299	
1002.00	41,002	39,758	77,057	
1003.00	43,546	42,274	119,331	
1004.00	46,146	44,846	164,177	
1005.00	48,803	47,475	211,651	
1006.00	51,517	50,160	261,811	
1007.00	54,287	52,902	314,713	
1008.00	57,114	55,701	370,414	
1009.00	59,997	58,556	428,969	
1010.00	62,937	61,467	490,436	
1011.00	65,933	64,435	554,871	
1012.00	68,986	67,460	622,331	Top

Pond 6				
Contour Elevation	Contour Surface Area (ft ²)	Incremental Volume (ft ³)	Cumulative Volume (ft ³)	Elevation Description
1001.00	32,050	0	0	NWL
1002.00	34,123	33,087	33,087	
1003.00	36,253	35,188	68,275	
1004.00	38,439	37,346	105,621	
1005.00	40,682	39,561	145,181	
1006.00	42,981	41,832	187,013	
1007.00	45,337	44,159	231,172	
1008.00	47,749	46,543	277,715	
1009.00	50,219	48,984	326,699	
1010.00	52,744	51,482	378,180	
1011.00	55,326	54,035	432,215	
1012.00	57,965	56,646	488,861	Top

Runoff Curve Number (CN)					PFE		
Soil Name	Map Unit Symbol	Hydrologic Soil Group	Cover Description	CN	Area (sf)	Area (Acres)	Product of CN x Area
Blount silt loam, end moraine, 0-2% slopes	BE1/A1	D	Small grain crops, good condition, 8% dense woods cover, fair condition, 10% residential cover	86	5246613	120.45	10358.33
Blount silt loam, ground moraine, 0-2% slopes	BE1/A1	D	Small grain crops, good condition, 3% dense woods cover, fair condition	87	2651300	60.87	5295.30
Blount silt loam, end moraine, 2-4% slopes	BE1/B1	D	Small grain crops, 33% dense woods cover, fair condition	83	970178	22.27	1848.59
Blount silt loam, ground moraine, 2-4% slopes	BE1/B1	D	Small grain crops, good condition	87	21854	0.50	43.65
Minster siltly clay loam, till substratum, 0-1% slopes	Mn1/A	C/D	Small grain crops, good condition, 1% dense woods cover, fair condition, 17% water cover, 59% residential cover	90	568172	13.04	1173.91
Minster siltly clay loam, 0-1% slopes	PKA/Pe	C/D	Small grain crops, good condition, 4% dense woods cover, fair condition, 3% residential cover	87	7120589	163.47	14221.56
Willetie muck	Wx	C/D	Small grain crops, good condition, 20% dense woods cover, fair condition	87	889967	20.43	1777.48
Latty siltly clay	La	C/D	Residential cover	92	1665	0.04	3.52
Mortley silt loam, 12 to 18% slopes, eroded	MyD2	C	Small grain crops, good condition, 18% water cover, 57% residential cover	91	713893.61	16.39	1491.38
Wetzel siltly clay loam	Wv	C/D	Residential cover	91	16433.11	0.38	34.33
Totals:					417.83		36248.04
CN (Weighted):						87	
					CN (Weighted):		

Pre-Development		
Weighted CN	86	unitless
Frequency	1	year storm
Rainfall, P (24-hour)	2.35	inches
Retention, S	1.63	inches
Runoff, Q	1.12	inches
Post Development		
Weighted CN	90	unitless
Frequency	1	year storm
Rainfall, P (24-hour)	2.35	inches
Retention, S	1.11	inches
Runoff, Q	1.40	inches
% increase	25%	
Critical Storm	5-Year	

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	22.70	5	785	253,707	-----	-----	-----	Pond 6 Post Drainage Area
2	Reservoir	9.824	5	880	253,573	1	1004.17	112,314	Pond 6
3	SCS Runoff	14.53	5	805	192,427	-----	-----	-----	Pond 6 Pre
4	SCS Runoff	25.58	5	740	144,512	-----	-----	-----	Pond 5 Post Drainge Area
5	Combine	26.60	5	740	398,085	2, 4	-----	-----	Pond 5 Total Inflow
6	Reservoir	8.935	5	980	394,049	5	1003.29	132,454	Pond 5
7	SCS Runoff	33.28	5	730	144,946	-----	-----	-----	Pond 2 Post Drainage Area
8	Combine	33.44	5	730	538,995	6, 7	-----	-----	Pond 2 Total Inflow
9	Reservoir	14.88	5	755	535,257	8	1001.15	61,295	Pond 2
10	SCS Runoff	16.31	5	750	114,273	-----	-----	-----	Pond 5 Pre
11	SCS Runoff	5.093	5	750	35,685	-----	-----	-----	Pond 4 Pre
12	SCS Runoff	8.126	5	750	56,936	-----	-----	-----	Pond 3 Pre
13	SCS Runoff	15.85	5	750	111,065	-----	-----	-----	Pond 2 Pre
14	SCS Runoff	14.85	5	740	86,832	-----	-----	-----	Pond 1 Pre
15	SCS Runoff	10.69	5	730	46,571	-----	-----	-----	Pond 4 Post Drainage Area
16	Reservoir	0.832	5	840	46,428	15	1002.10	28,126	Pond 4
17	SCS Runoff	17.06	5	730	74,304	-----	-----	-----	Pond 3 Post Drainage Area
18	Combine	17.36	5	730	120,733	16, 17	-----	-----	Pond 3 Total Inflow
19	Reservoir	7.526	5	755	120,646	18	1002.01	33,022	Pond 3
20	SCS Runoff	21.46	5	740	121,272	-----	-----	-----	Pond 1 Post Drainage Area
21	Combine	41.56	5	745	777,175	9, 19, 20	-----	-----	Pond 1 Total Inflow
22	Reservoir	25.15	5	785	774,431	21	1000.81	106,230	Pond 1
23	Combine	66.06	5	750	597,217	3, 10, 11, 12, 13, 14,	-----	-----	Combined Pre All
Newland Phase 1.gpw					Return Period: 1 Year			Friday, 05 / 22 / 2026	

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

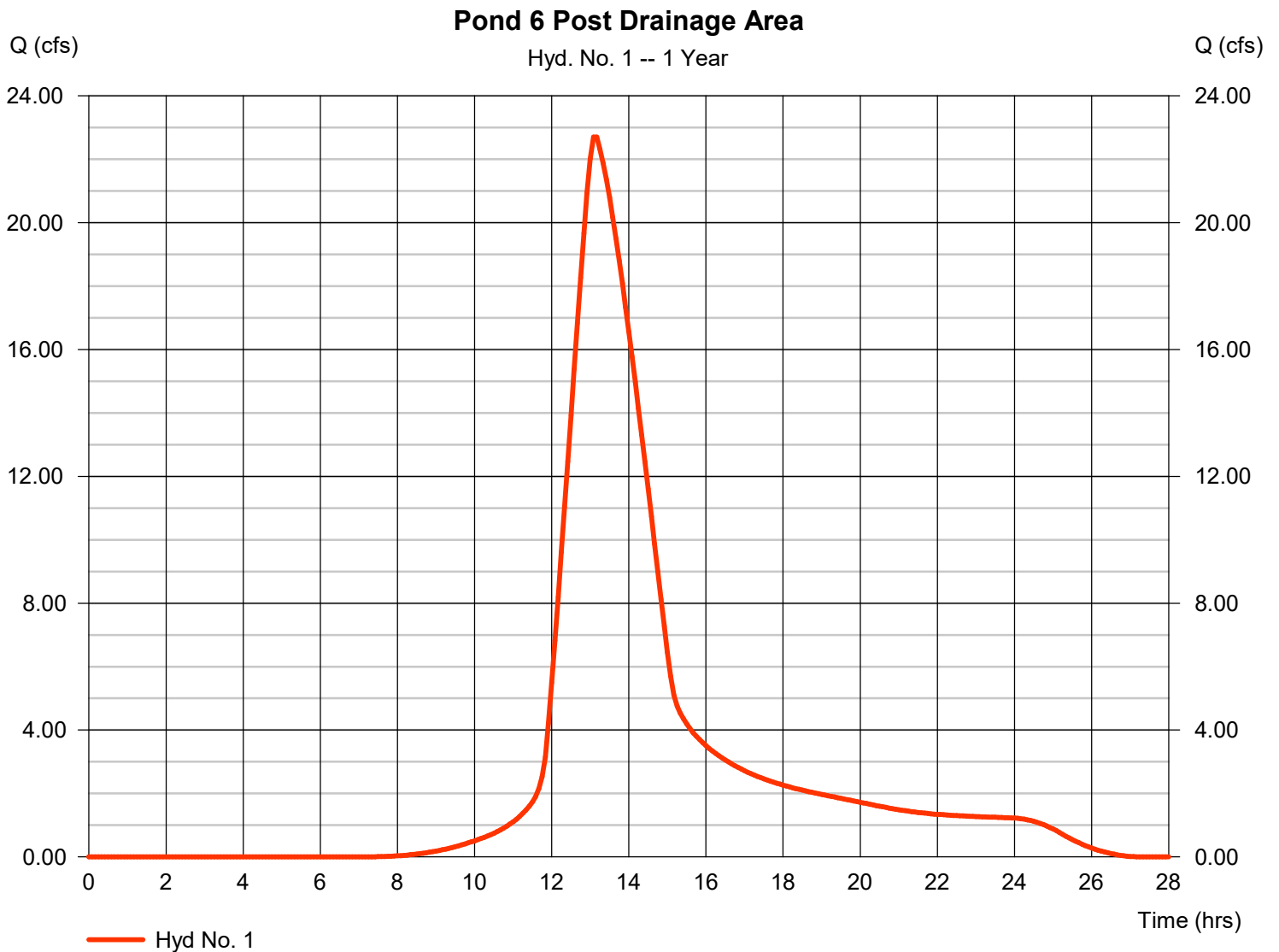
Friday, 05 / 22 / 2026

Hyd. No. 1

Pond 6 Post Drainage Area

Hydrograph type = SCS Runoff
 Storm frequency = 1 yrs
 Time interval = 5 min
 Drainage area = 50.000 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 2.35 in
 Storm duration = 24 hrs

Peak discharge = 22.70 cfs
 Time to peak = 13.08 hrs
 Hyd. volume = 253,707 cuft
 Curve number = 90
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 120.00 min
 Distribution = Type II
 Shape factor = 484



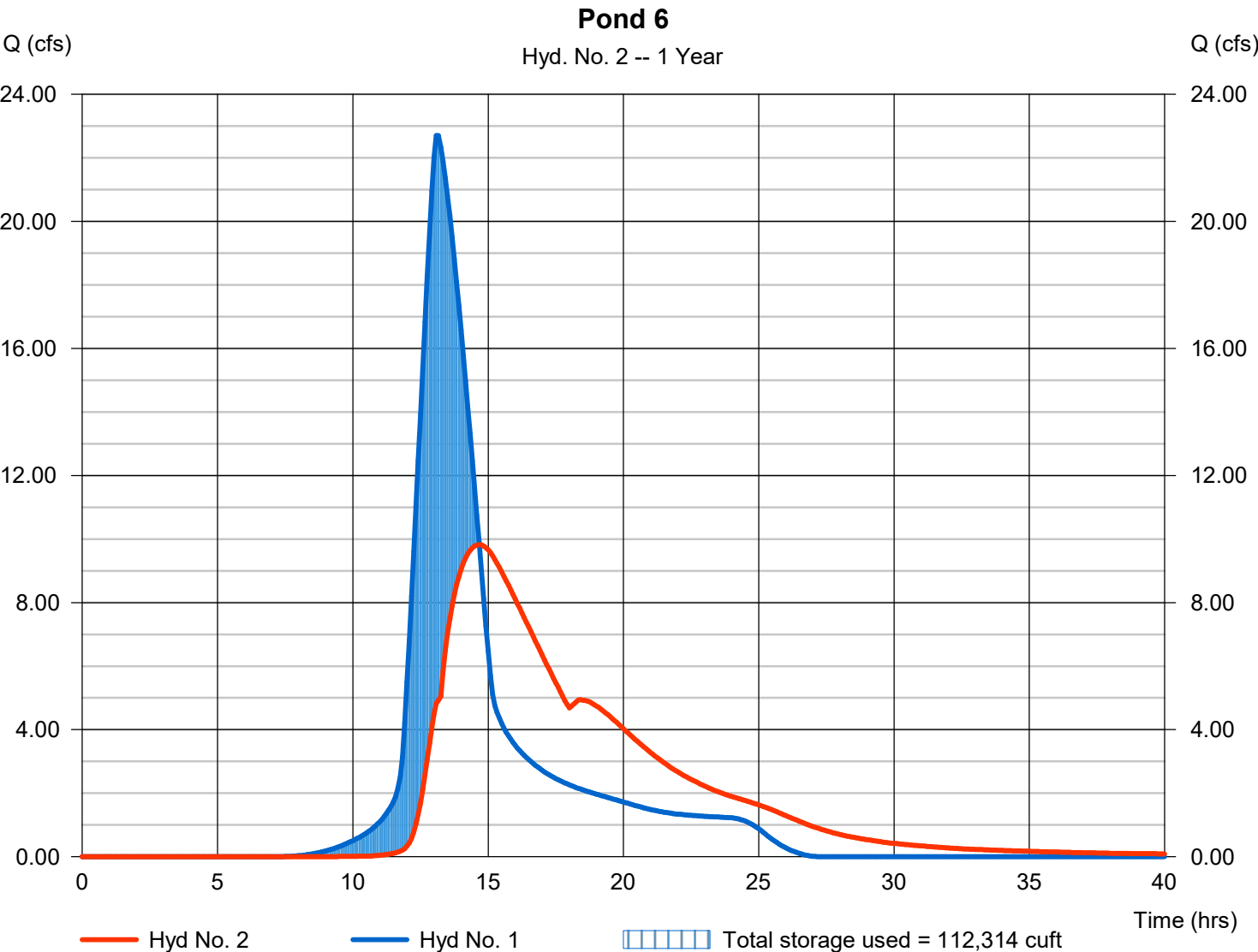
Hydrograph Report

Hyd. No. 2

Pond 6

Hydrograph type	= Reservoir	Peak discharge	= 9.824 cfs
Storm frequency	= 1 yrs	Time to peak	= 14.67 hrs
Time interval	= 5 min	Hyd. volume	= 253,573 cuft
Inflow hyd. No.	= 1 - Pond 6 Post Drainage Area	Max. Elevation	= 1004.17 ft
Reservoir name	= <New Pond>	Max. Storage	= 112,314 cuft

Storage Indication method used.



Pond No. 6 - <New Pond>

Pond Data

Contours -User-defined contour areas. Average end area method used for volume calculation. Beginning Elevation = 1001.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1001.00	32,050	0	0
1.00	1002.00	34,123	33,087	33,087
2.00	1003.00	36,253	35,188	68,275
3.00	1004.00	38,439	37,346	105,621
4.00	1005.00	40,682	39,561	145,181
5.00	1006.00	42,981	41,832	187,013
6.00	1007.00	45,337	44,159	231,172
7.00	1008.00	47,749	46,543	277,715
8.00	1009.00	50,219	48,984	326,699
9.00	1010.00	52,744	51,482	378,180
10.00	1011.00	55,326	54,035	432,215
11.00	1012.00	57,965	56,646	488,861

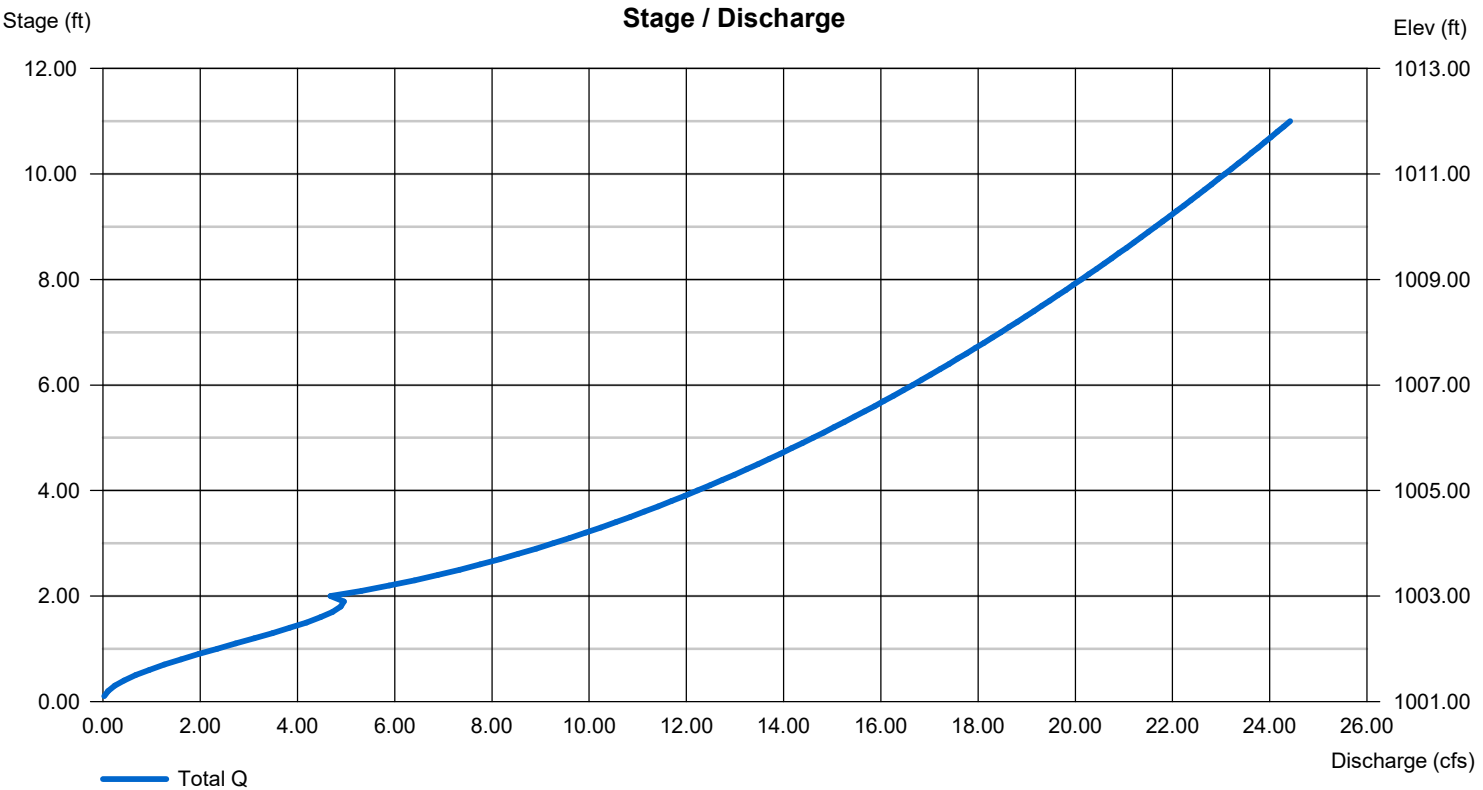
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	0.00	0.00	0.00
Span (in)	= 24.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 1001.00	0.00	0.00	0.00
Length (ft)	= 686.00	0.00	0.00	0.00
Slope (%)	= 0.05	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

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

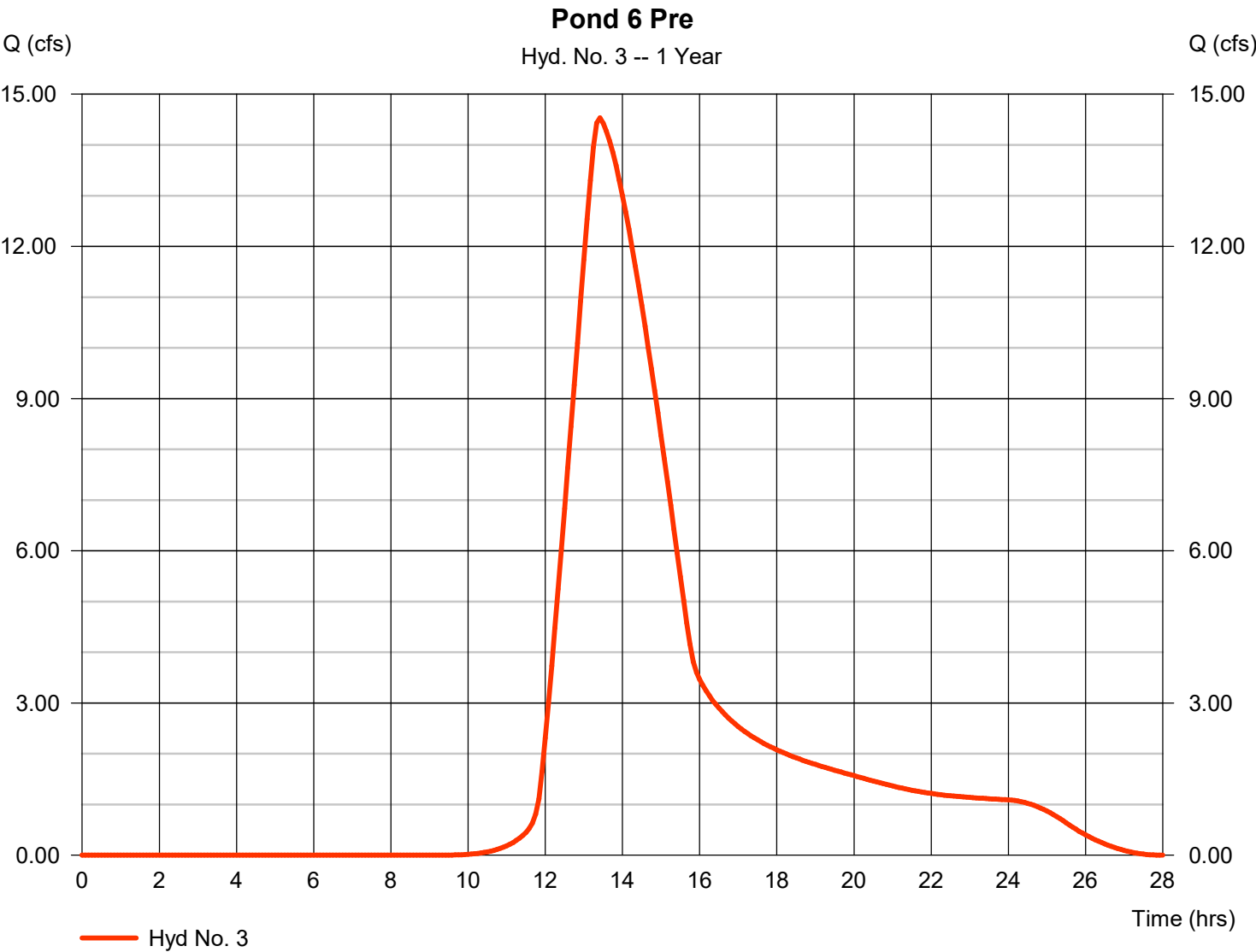


Hydrograph Report

Hyd. No. 3

Pond 6 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 14.53 cfs
Storm frequency	= 1 yrs	Time to peak	= 13.42 hrs
Time interval	= 5 min	Hyd. volume	= 192,427 cuft
Drainage area	= 50.000 ac	Curve number	= 85
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 150.00 min
Total precip.	= 2.35 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

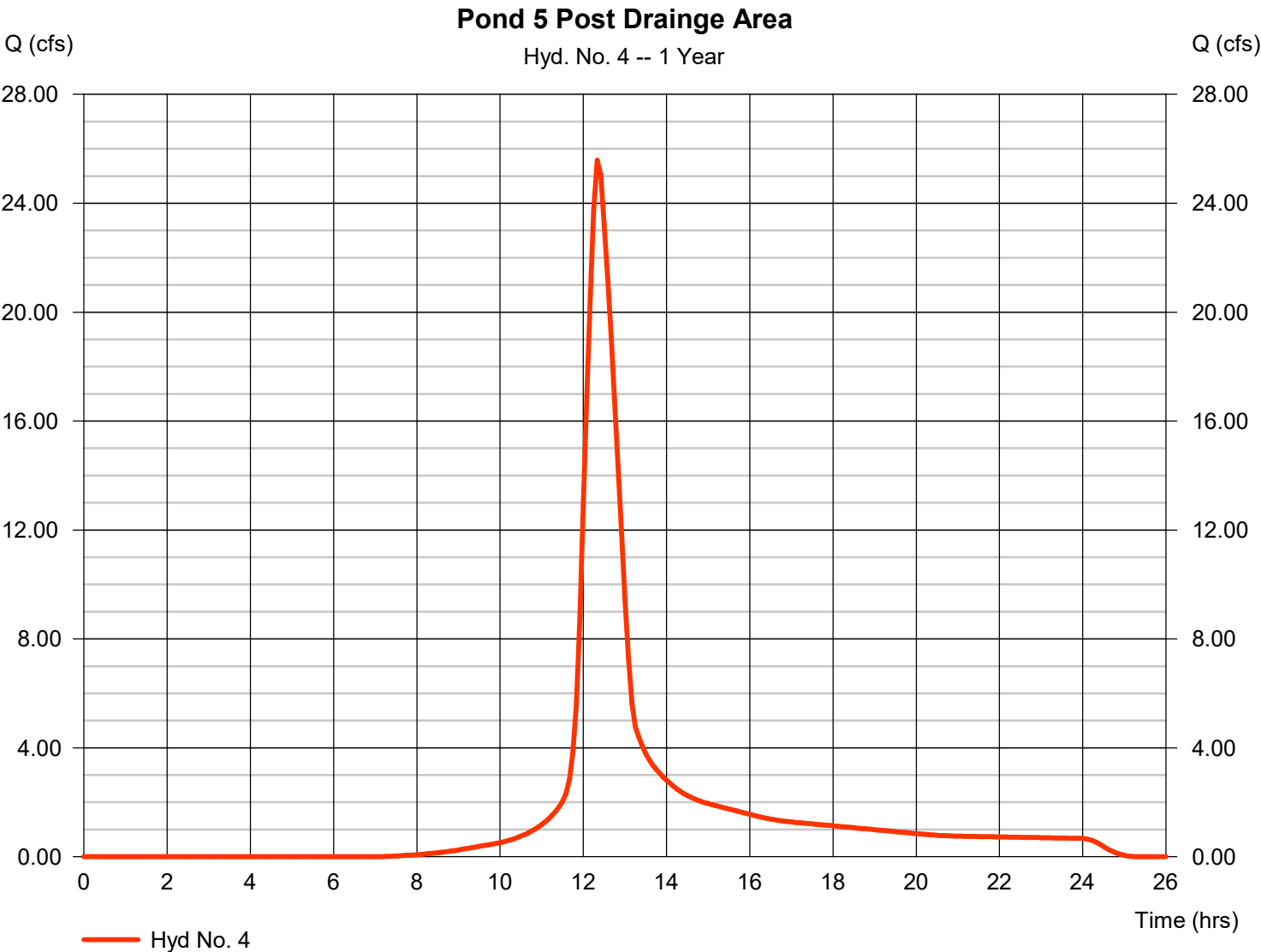


Hydrograph Report

Hyd. No. 4

Pond 5 Post Drainage Area

Hydrograph type	= SCS Runoff	Peak discharge	= 25.58 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.33 hrs
Time interval	= 5 min	Hyd. volume	= 144,512 cuft
Drainage area	= 28.480 ac	Curve number	= 90
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 45.00 min
Total precip.	= 2.35 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

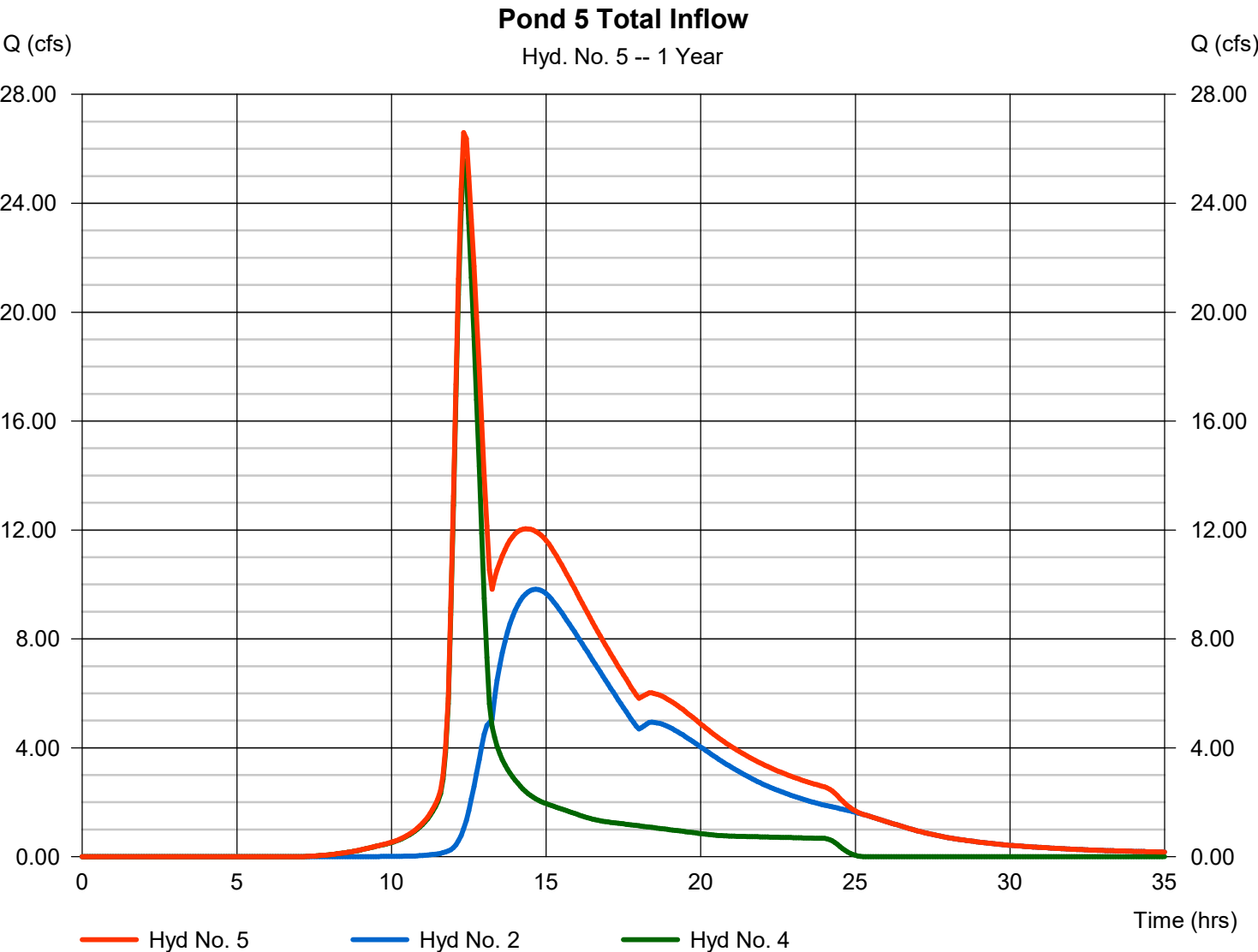
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Friday, 05 / 22 / 2026

Hyd. No. 5

Pond 5 Total Inflow

Hydrograph type	= Combine	Peak discharge	= 26.60 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.33 hrs
Time interval	= 5 min	Hyd. volume	= 398,085 cuft
Inflow hyds.	= 2, 4	Contrib. drain. area	= 28.480 ac



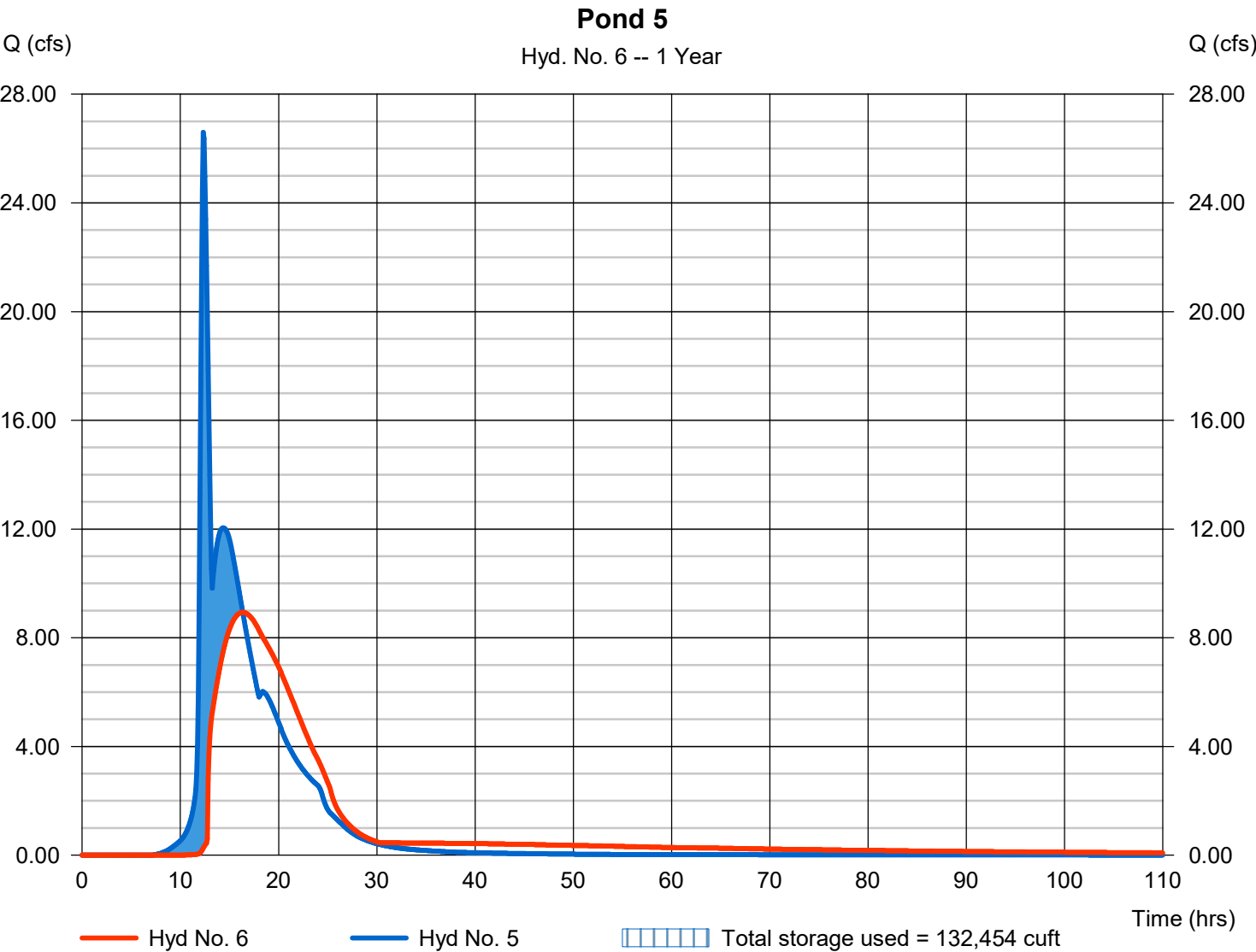
Hydrograph Report

Hyd. No. 6

Pond 5

Hydrograph type	= Reservoir	Peak discharge	= 8.935 cfs
Storm frequency	= 1 yrs	Time to peak	= 16.33 hrs
Time interval	= 5 min	Hyd. volume	= 394,049 cuft
Inflow hyd. No.	= 5 - Pond 5 Total Inflow	Max. Elevation	= 1003.29 ft
Reservoir name	= <New Pond>	Max. Storage	= 132,454 cuft

Storage Indication method used.



Pond No. 5 - <New Pond>

Pond Data

Contours -User-defined contour areas. Average end area method used for volume calculation. Beginning Elevation = 1000.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1000.00	36,083	0	0
1.00	1001.00	38,514	37,299	37,299
2.00	1002.00	41,002	39,758	77,057
3.00	1003.00	43,546	42,274	119,331
4.00	1004.00	46,146	44,846	164,177
5.00	1005.00	48,803	47,475	211,651
6.00	1006.00	51,517	50,160	261,811
7.00	1007.00	54,287	52,902	314,713
8.00	1008.00	57,144	55,716	370,429
9.00	1009.00	59,997	58,571	428,999
10.00	1010.00	62,937	61,467	490,466
11.00	1011.00	65,933	64,435	554,901
12.00	1012.00	68,986	67,460	622,361

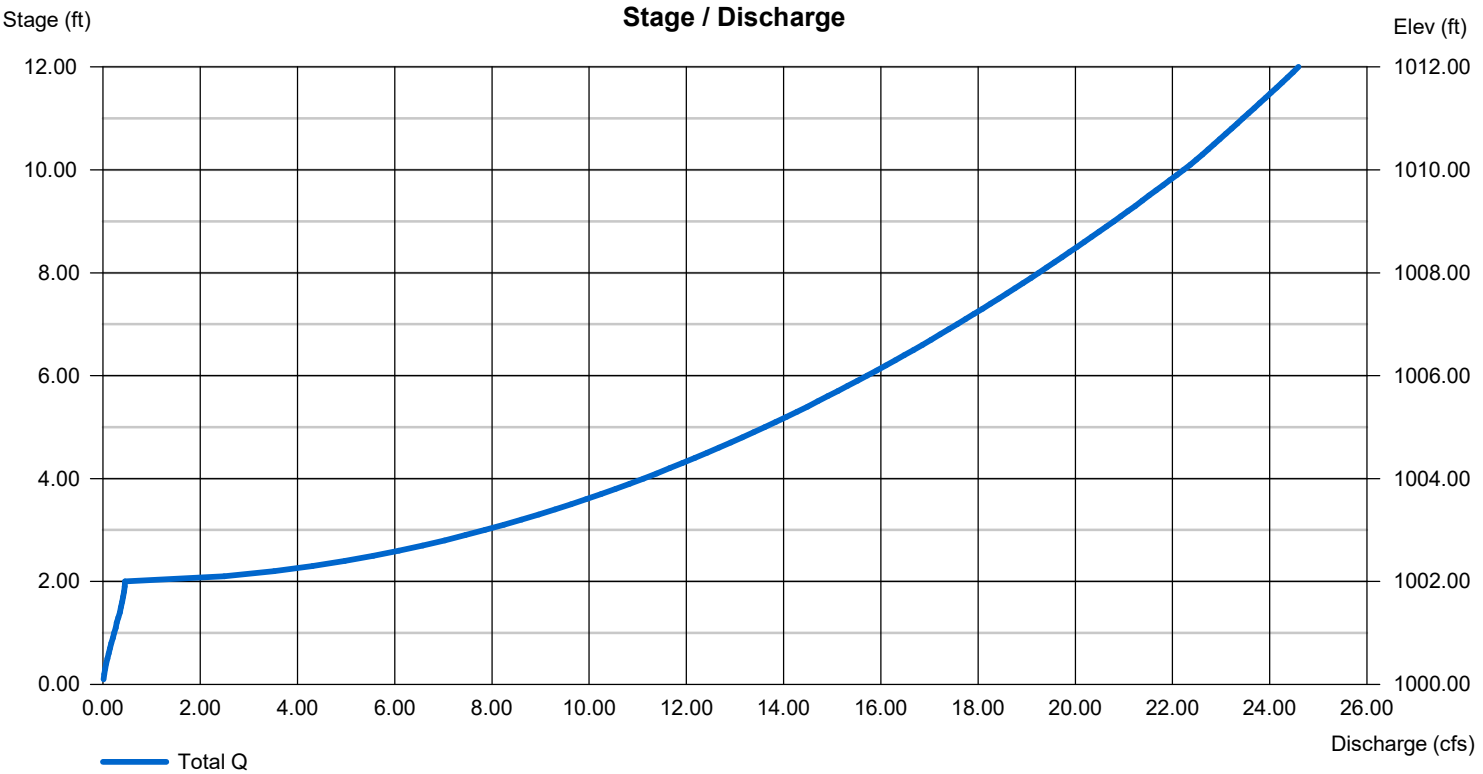
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	18.00	0.00	0.00
Span (in)	= 24.00	18.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 1000.00	1000.00	0.00	0.00
Length (ft)	= 1.00	1.00	0.00	0.00
Slope (%)	= 0.05	0.05	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)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

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

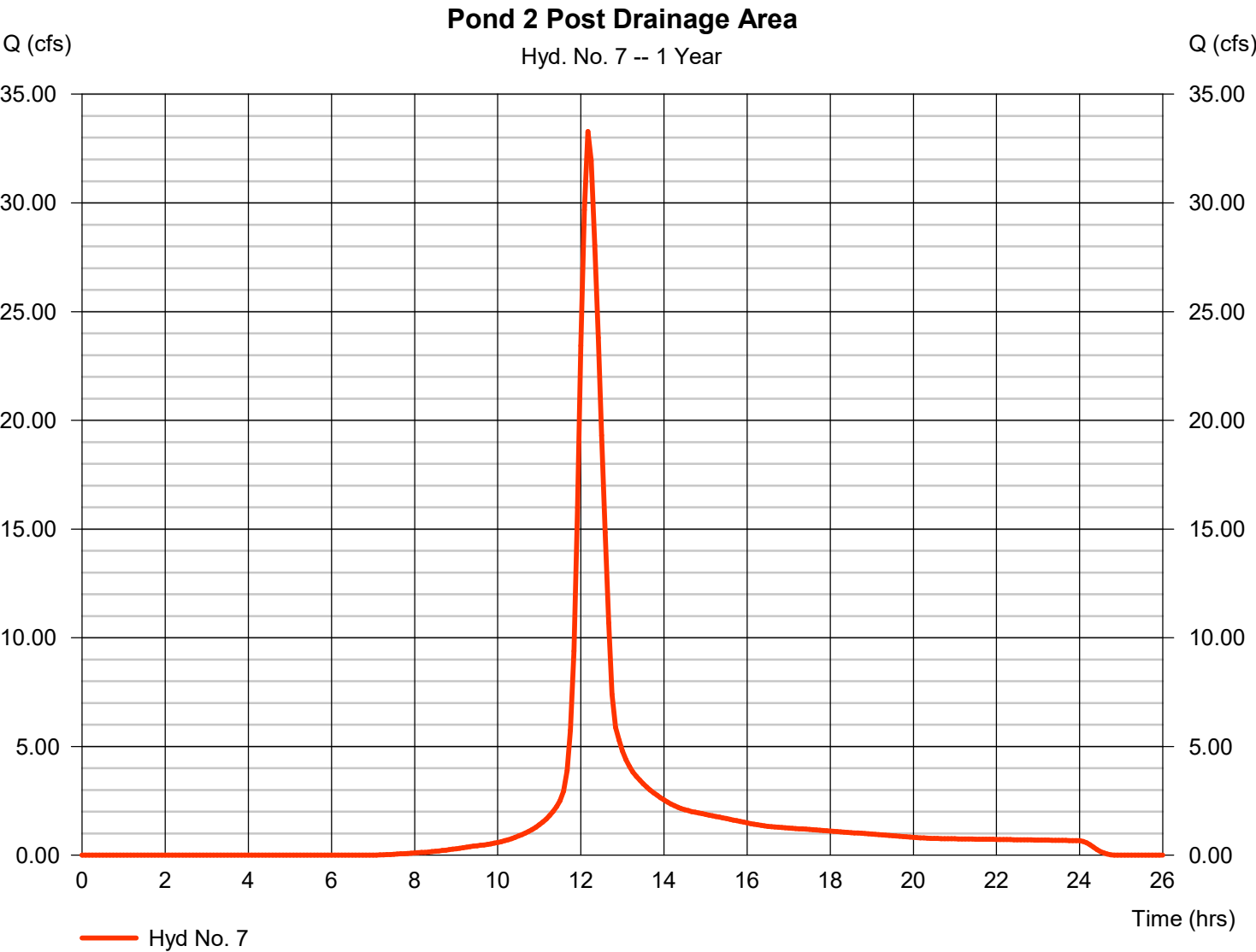


Hydrograph Report

Hyd. No. 7

Pond 2 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	33.28 cfs
Storm frequency	=	1 yrs	Time to peak	=	12.17 hrs
Time interval	=	5 min	Hyd. volume	=	144,946 cuft
Drainage area	=	27.700 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	30.00 min
Total precip.	=	2.35 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

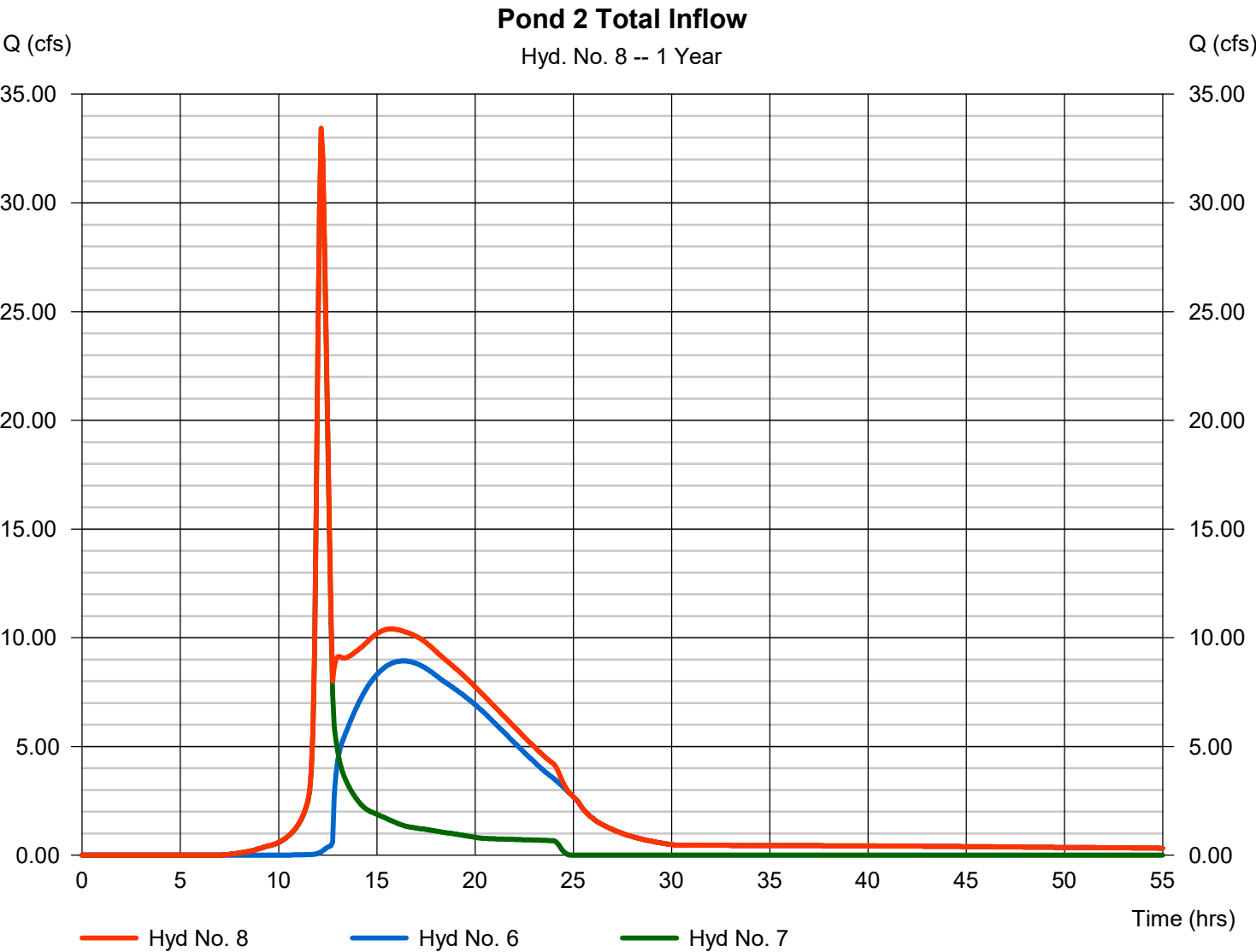


Hydrograph Report

Hyd. No. 8

Pond 2 Total Inflow

Hydrograph type	= Combine	Peak discharge	= 33.44 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.17 hrs
Time interval	= 5 min	Hyd. volume	= 538,995 cuft
Inflow hyds.	= 6, 7	Contrib. drain. area	= 27.700 ac



Hydrograph Report

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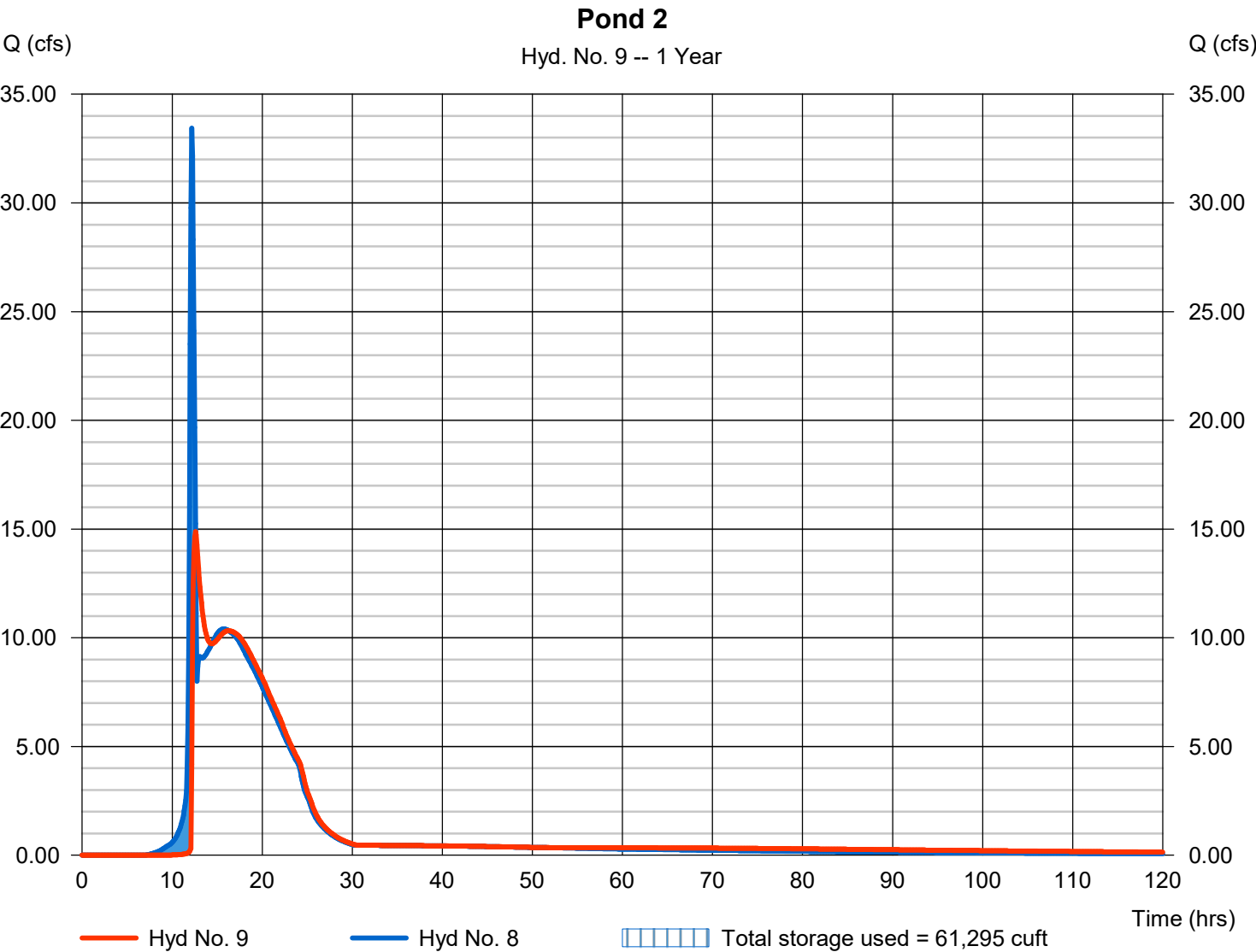
Friday, 05 / 22 / 2026

Hyd. No. 9

Pond 2

Hydrograph type	= Reservoir	Peak discharge	= 14.88 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.58 hrs
Time interval	= 5 min	Hyd. volume	= 535,257 cuft
Inflow hyd. No.	= 8 - Pond 2 Total Inflow	Max. Elevation	= 1001.15 ft
Reservoir name	= <New Pond>	Max. Storage	= 61,295 cuft

Storage Indication method used.



Pond No. 2 - <New Pond>

Pond Data

Contours -User-defined contour areas. Average end area method used for volume calculation. Beginning Elevation = 998.50 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	998.50	20,392	0	0
0.50	999.00	21,382	10,444	10,444
1.50	1000.00	23,405	22,394	32,837
2.50	1001.00	25,485	24,445	57,282
3.50	1002.00	27,621	26,553	83,835
4.50	1003.00	29,814	28,718	112,553
5.50	1004.00	32,063	30,939	143,491
6.50	1005.00	34,369	33,216	176,707
7.50	1006.00	36,731	35,550	212,257

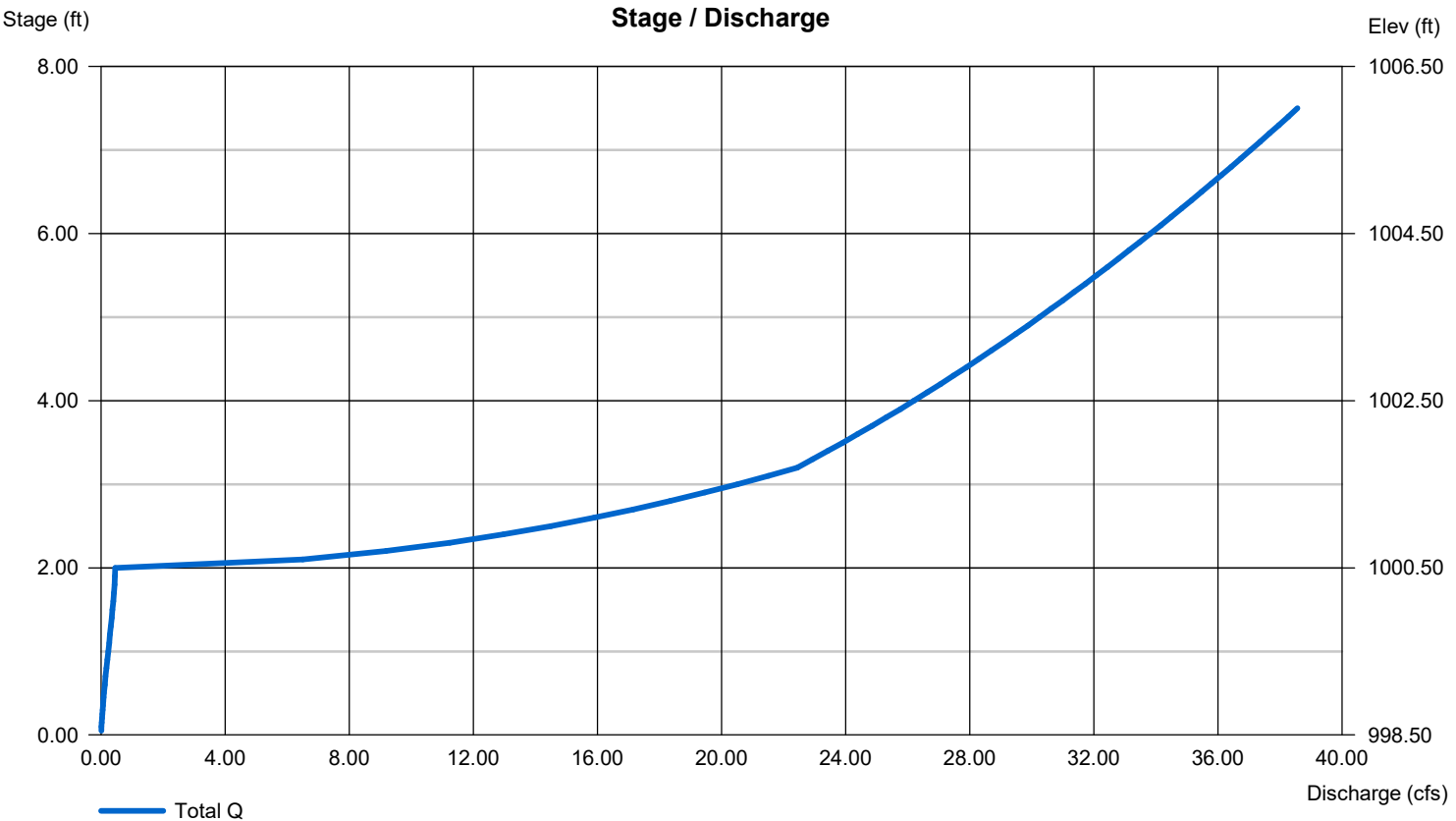
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 24.00	Inactive	Inactive	0.00
Span (in)	= 24.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 998.50	0.00	0.00	0.00
Length (ft)	= 1.00	0.00	0.00	0.00
Slope (%)	= 0.05	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	Inactive	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

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

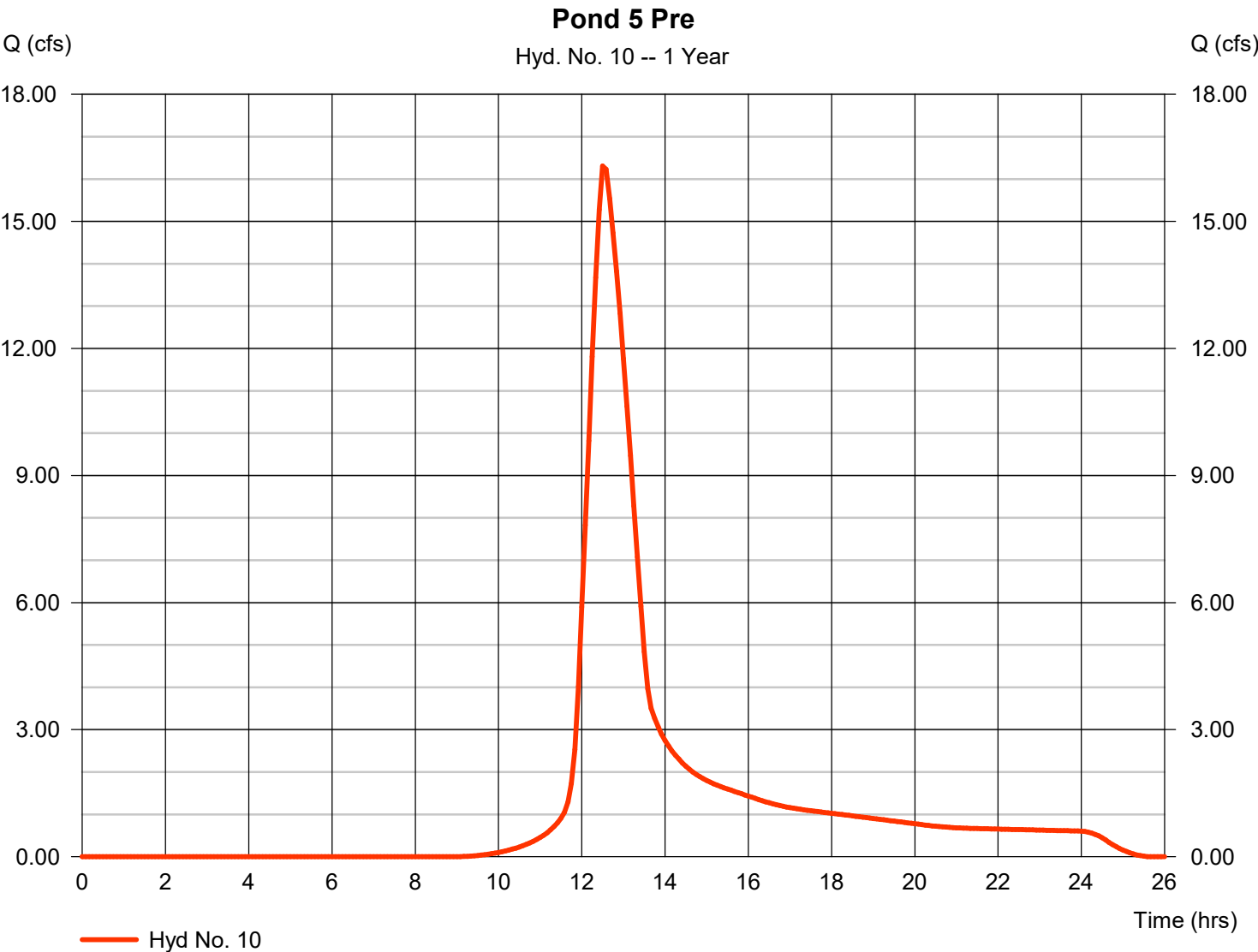


Hydrograph Report

Hyd. No. 10

Pond 5 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 16.31 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 114,273 cuft
Drainage area	= 28.500 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 60.00 min
Total precip.	= 2.35 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

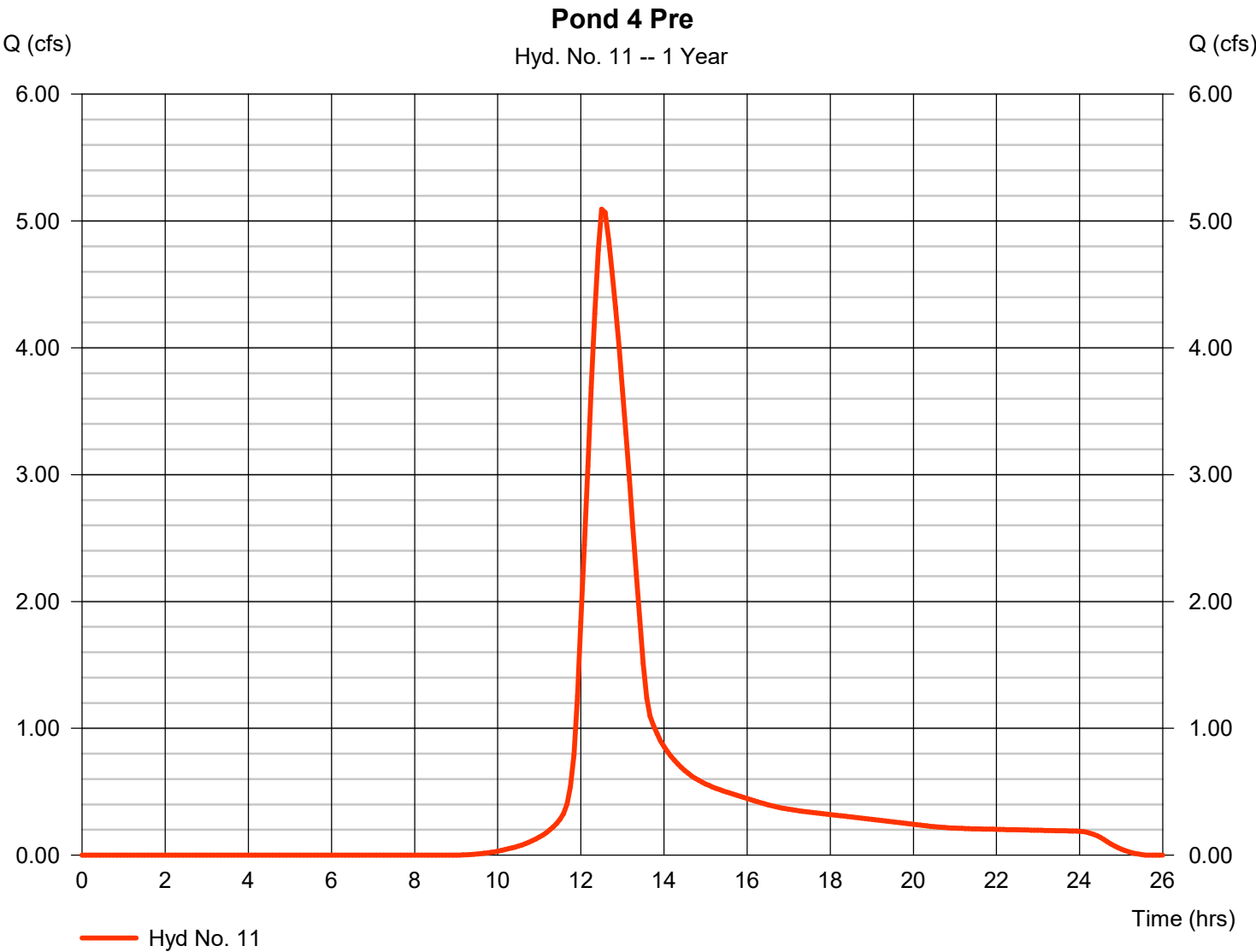
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Friday, 05 / 22 / 2026

Hyd. No. 11

Pond 4 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 5.093 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 35,685 cuft
Drainage area	= 8.900 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 60.00 min
Total precip.	= 2.35 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

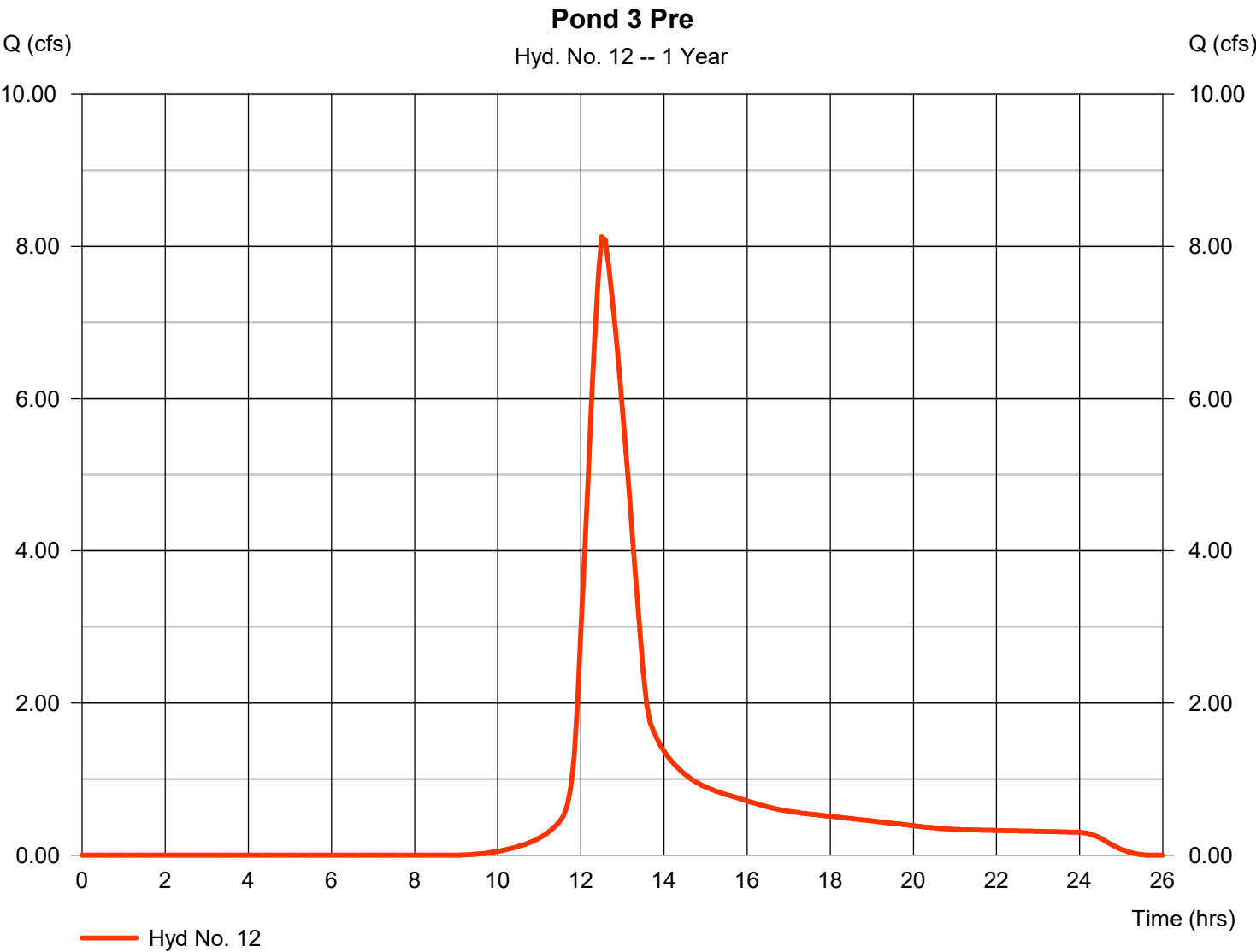
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Friday, 05 / 22 / 2026

Hyd. No. 12

Pond 3 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 8.126 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 56,936 cuft
Drainage area	= 14.200 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 60.00 min
Total precip.	= 2.35 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

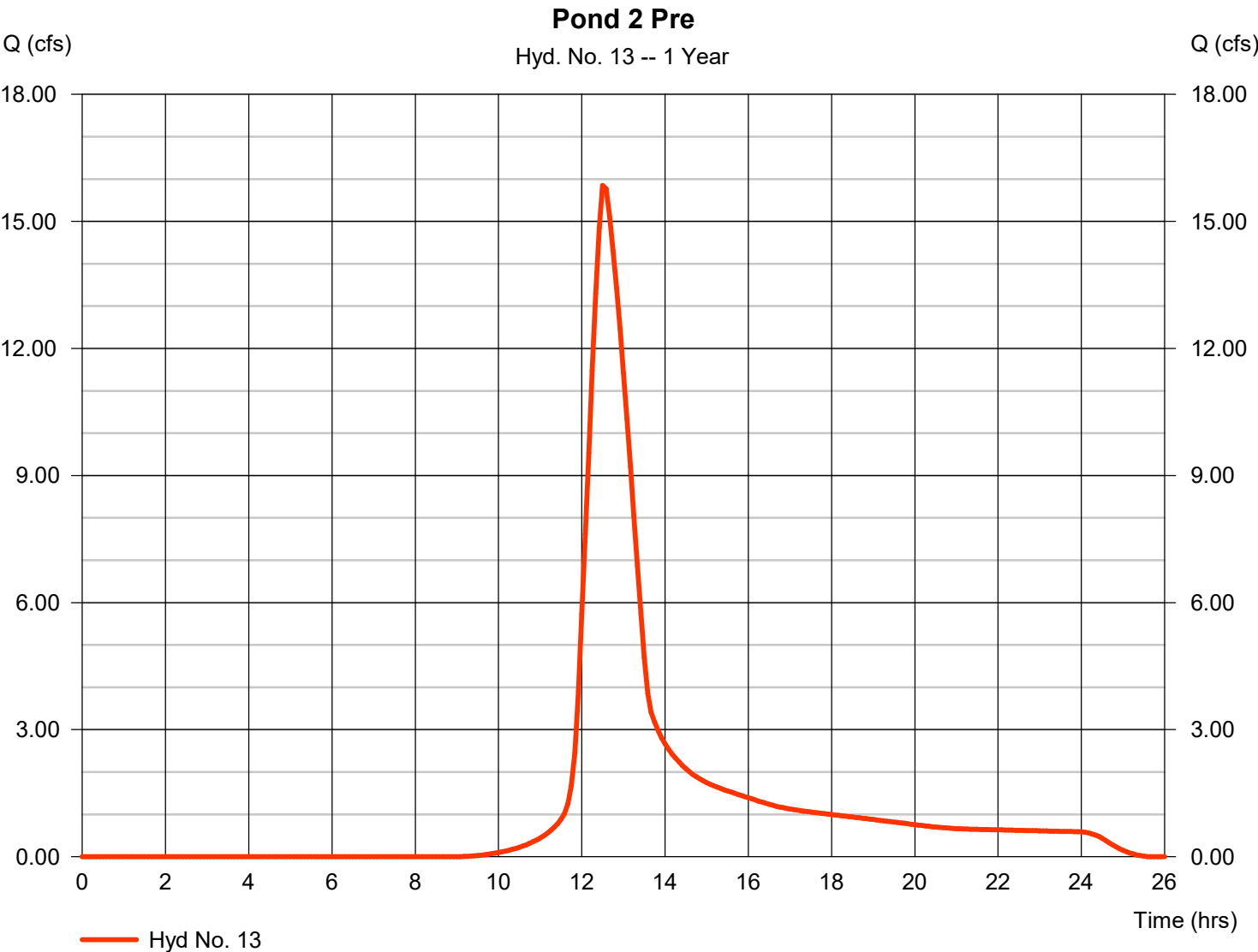


Hydrograph Report

Hyd. No. 13

Pond 2 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 15.85 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 111,065 cuft
Drainage area	= 27.700 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 60.00 min
Total precip.	= 2.35 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

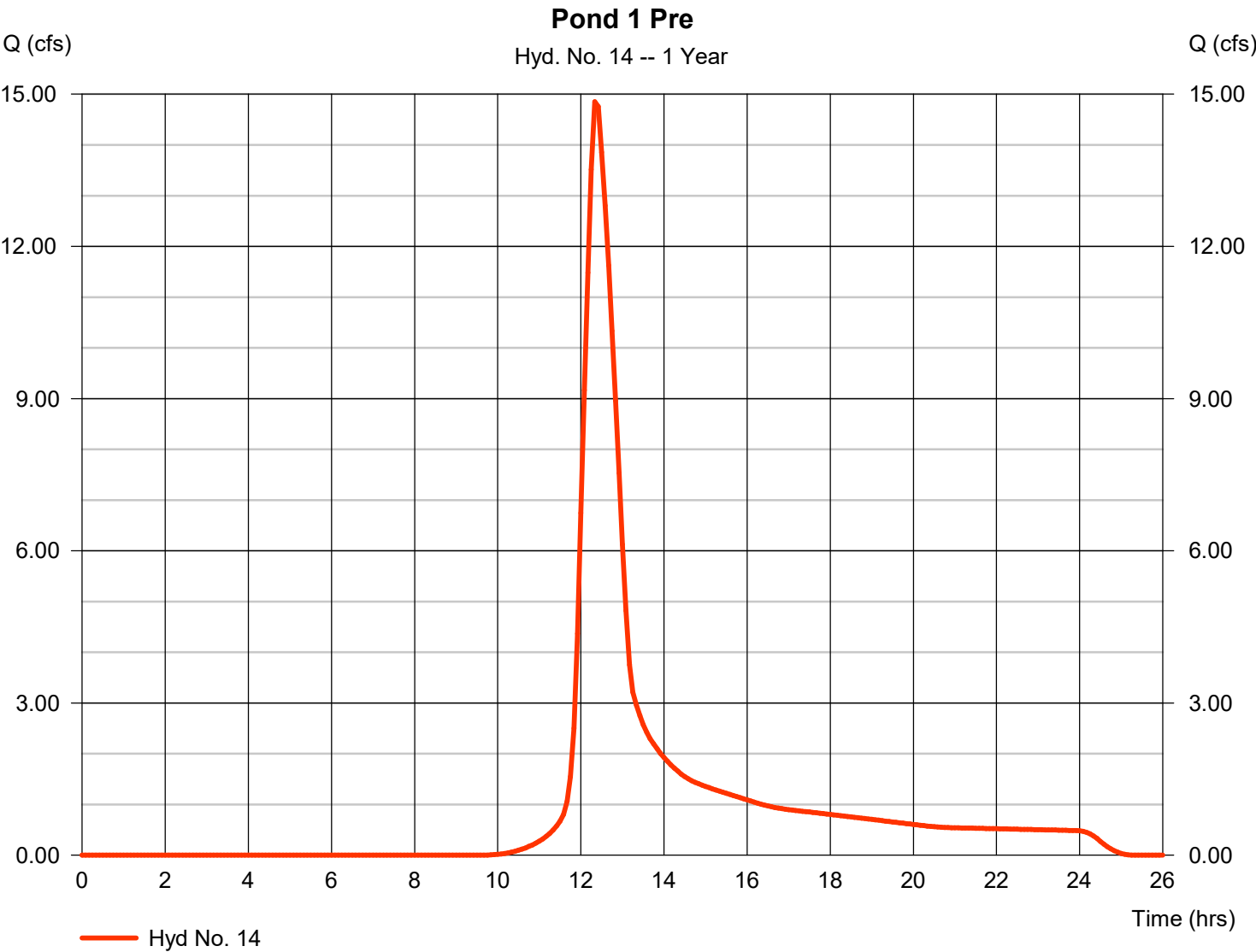


Hydrograph Report

Hyd. No. 14

Pond 1 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 14.85 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.33 hrs
Time interval	= 5 min	Hyd. volume	= 86,832 cuft
Drainage area	= 23.900 ac	Curve number	= 84
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 45.00 min
Total precip.	= 2.35 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

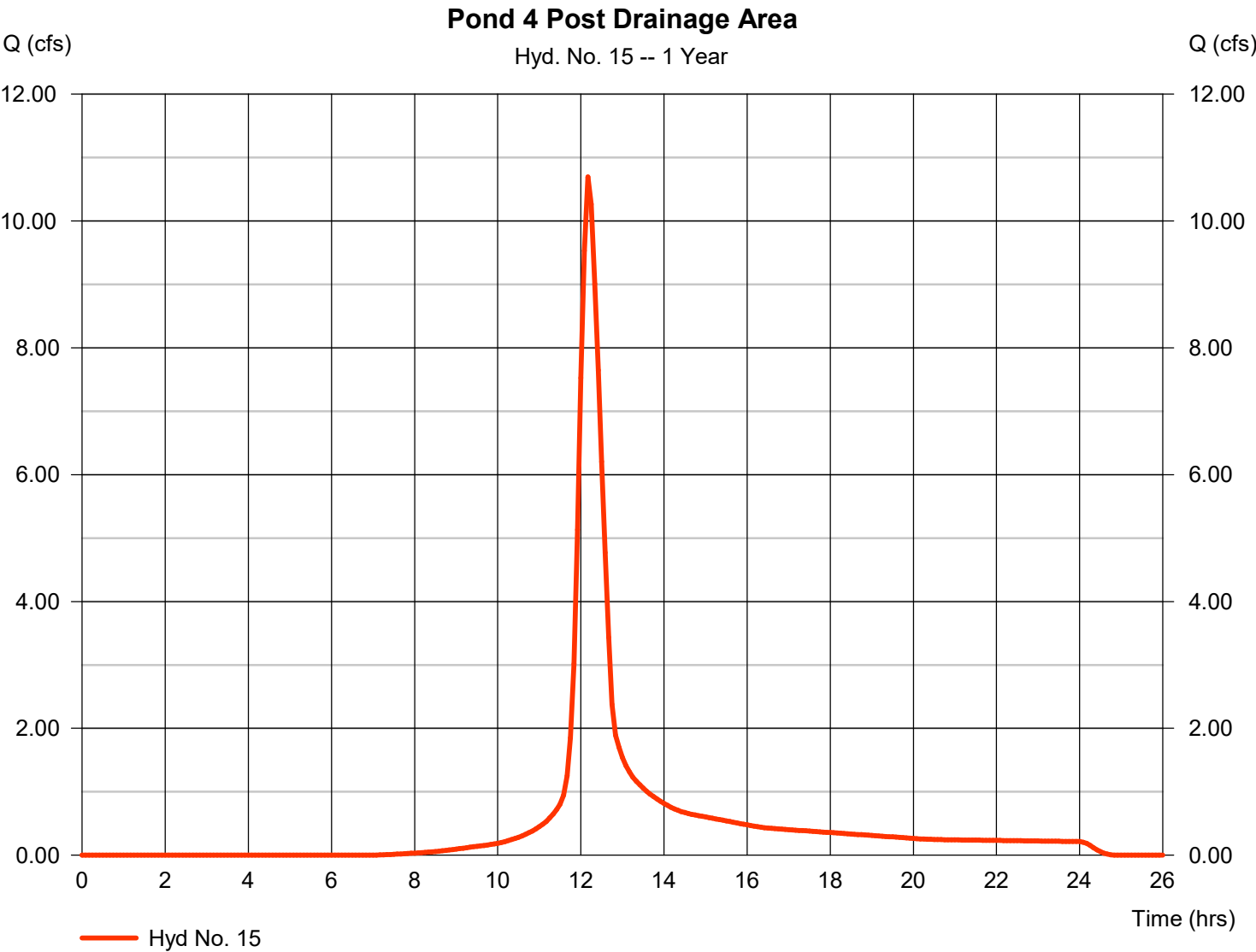


Hydrograph Report

Hyd. No. 15

Pond 4 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	10.69 cfs
Storm frequency	=	1 yrs	Time to peak	=	12.17 hrs
Time interval	=	5 min	Hyd. volume	=	46,571 cuft
Drainage area	=	8.900 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	30.00 min
Total precip.	=	2.35 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



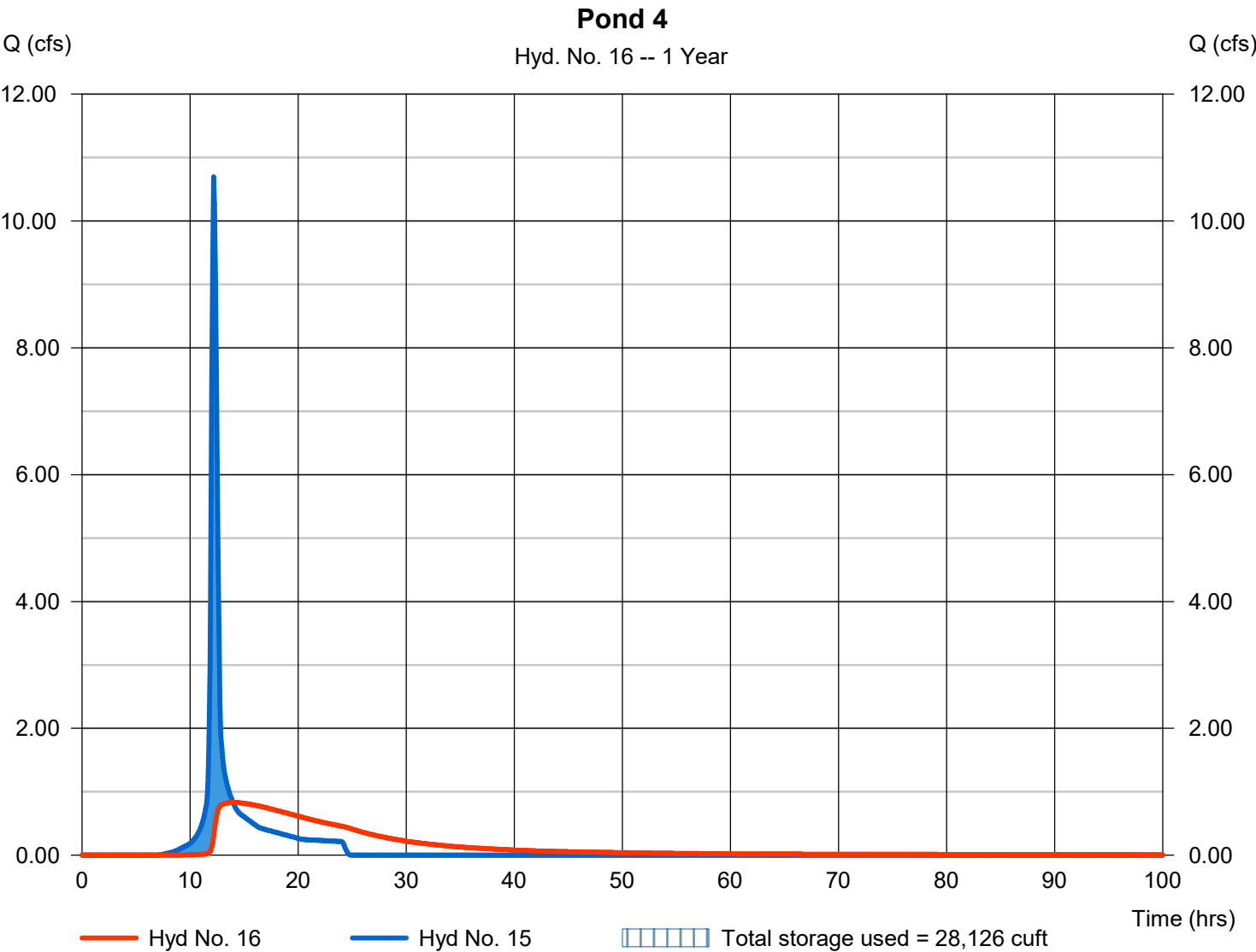
Hydrograph Report

Hyd. No. 16

Pond 4

Hydrograph type	= Reservoir	Peak discharge	= 0.832 cfs
Storm frequency	= 1 yrs	Time to peak	= 14.00 hrs
Time interval	= 5 min	Hyd. volume	= 46,428 cuft
Inflow hyd. No.	= 15 - Pond 4 Post Drainage Area	Max. Elevation	= 1002.10 ft
Reservoir name	= <New Pond>	Max. Storage	= 28,126 cuft

Storage Indication method used.



Pond No. 4 - <New Pond>

Pond Data

Contours -User-defined contour areas. Average end area method used for volume calculation. Beginning Elevation = 1001.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1001.00	24,537	0	0
1.00	1002.00	26,466	25,502	25,502
2.00	1003.00	28,452	27,459	52,961
3.00	1004.00	30,494	29,473	82,434
4.00	1005.00	32,593	31,544	113,977
5.00	1006.00	34,748	33,671	147,648
6.00	1007.00	36,960	35,854	183,502
7.00	1008.00	39,228	38,094	221,596
8.00	1009.00	41,553	40,391	261,986
9.00	1010.00	43,934	42,744	304,730
10.00	1011.00	46,372	45,153	349,883
11.00	1012.00	48,867	47,620	397,502

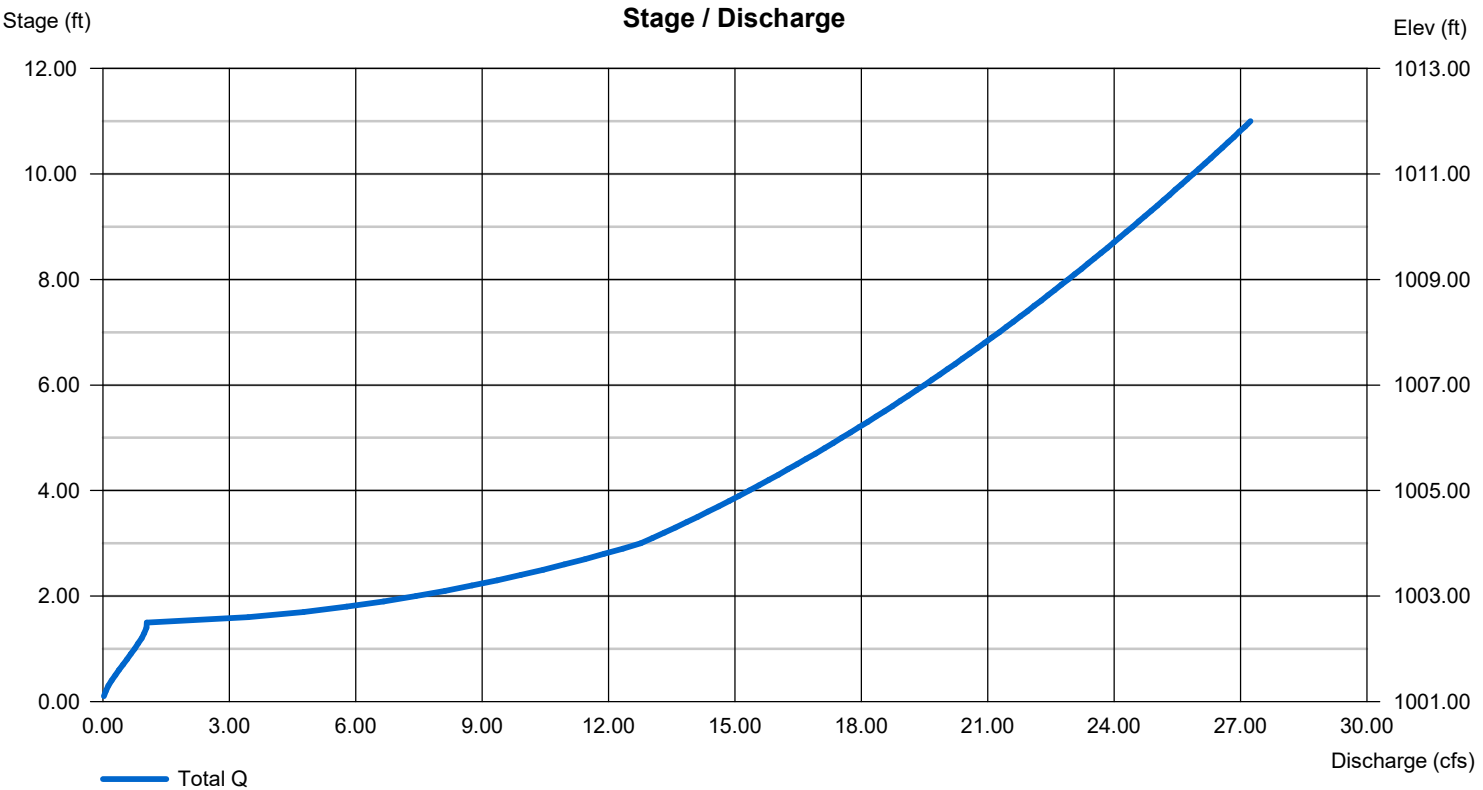
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 18.00	0.00	0.00	0.00
Span (in)	= 18.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 1001.00	0.00	0.00	0.00
Length (ft)	= 20.00	0.00	0.00	0.00
Slope (%)	= 0.05	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

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



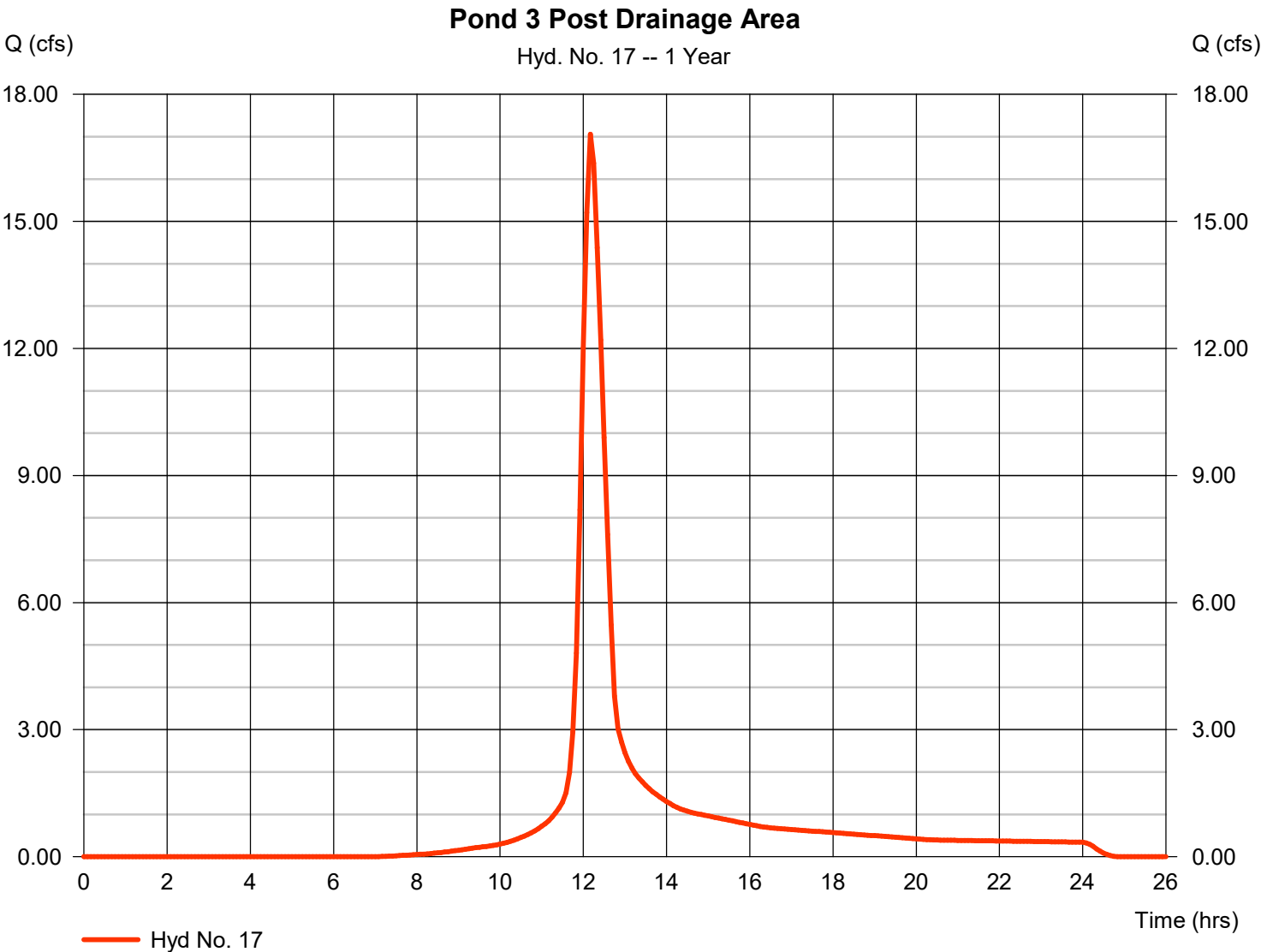
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025
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Hyd. No. 17

Pond 3 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	17.06 cfs
Storm frequency	=	1 yrs	Time to peak	=	12.17 hrs
Time interval	=	5 min	Hyd. volume	=	74,304 cuft
Drainage area	=	14.200 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	30.00 min
Total precip.	=	2.35 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

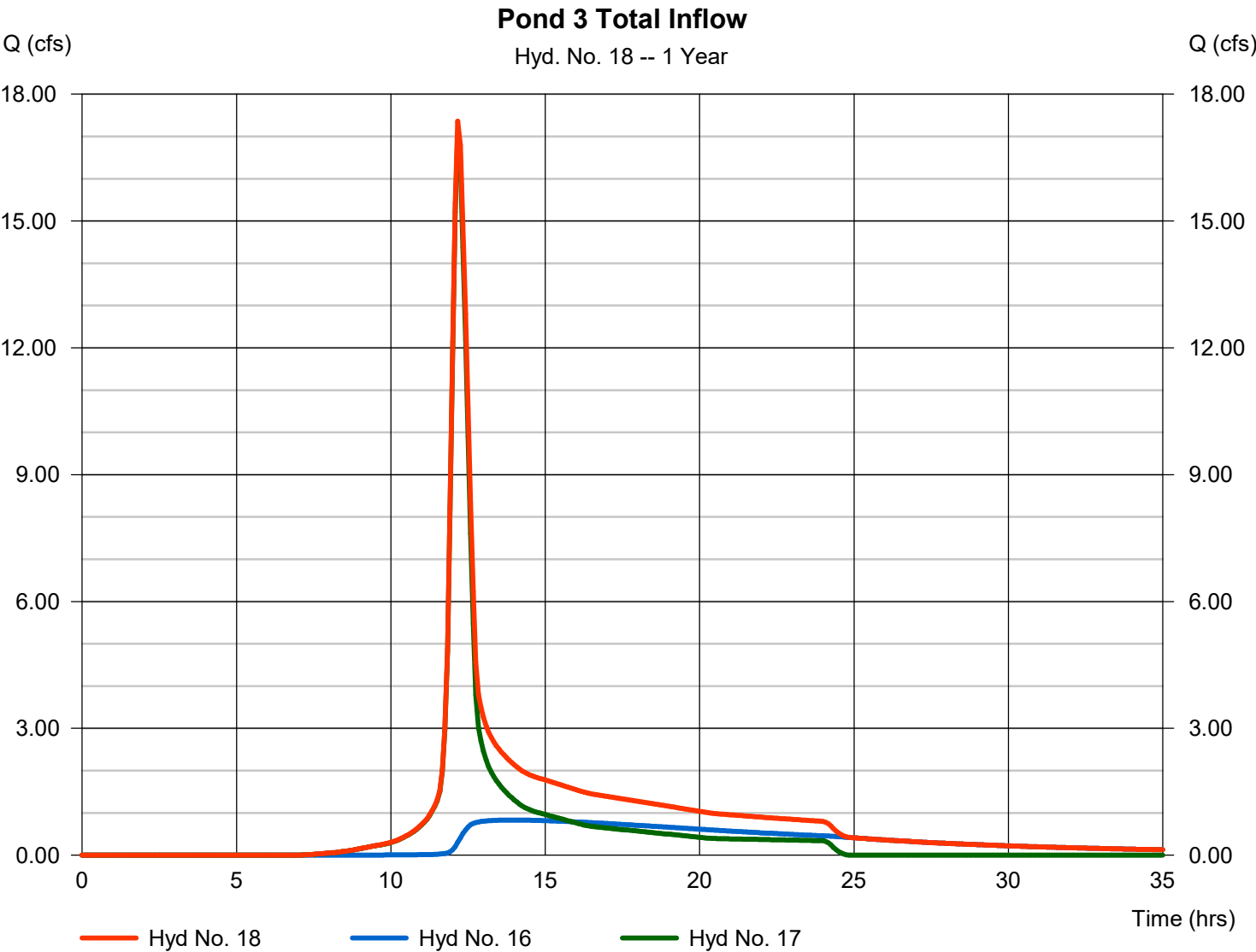


Hydrograph Report

Hyd. No. 18

Pond 3 Total Inflow

Hydrograph type	= Combine	Peak discharge	= 17.36 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.17 hrs
Time interval	= 5 min	Hyd. volume	= 120,733 cuft
Inflow hyds.	= 16, 17	Contrib. drain. area	= 14.200 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

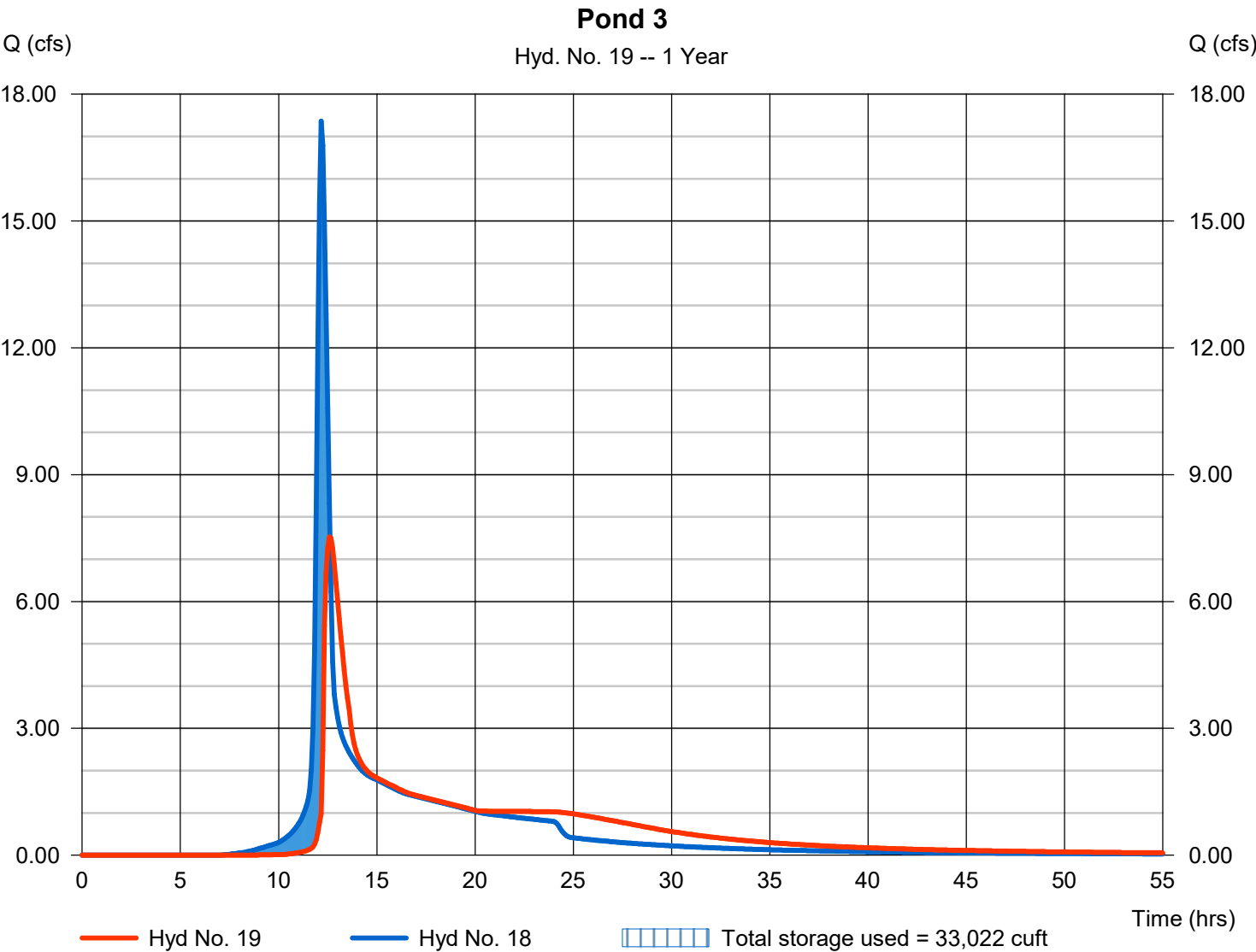
Friday, 05 / 22 / 2026

Hyd. No. 19

Pond 3

Hydrograph type	= Reservoir	Peak discharge	= 7.526 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.58 hrs
Time interval	= 5 min	Hyd. volume	= 120,646 cuft
Inflow hyd. No.	= 18 - Pond 3 Total Inflow	Max. Elevation	= 1002.01 ft
Reservoir name	= <New Pond>	Max. Storage	= 33,022 cuft

Storage Indication method used.



Pond No. 3 - <New Pond>

Pond Data

Contours -User-defined contour areas. Average end area method used for volume calculation. Beginning Elevation = 1000.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1000.00	14,397	0	0
1.00	1001.00	16,330	15,364	15,364
2.00	1002.00	18,405	17,368	32,731
3.00	1003.00	20,549	19,477	52,208
4.00	1004.00	22,750	21,650	73,858
5.00	1005.00	25,008	23,879	97,737
6.00	1006.00	27,322	26,165	123,902
7.00	1007.00	29,693	28,508	152,409
8.00	1008.00	32,120	30,907	183,316
9.00	1009.00	34,604	33,362	216,678
10.00	1010.00	37,145	35,875	252,552
11.00	1011.00	39,741	38,443	290,995
12.00	1012.00	42,395	41,068	332,063

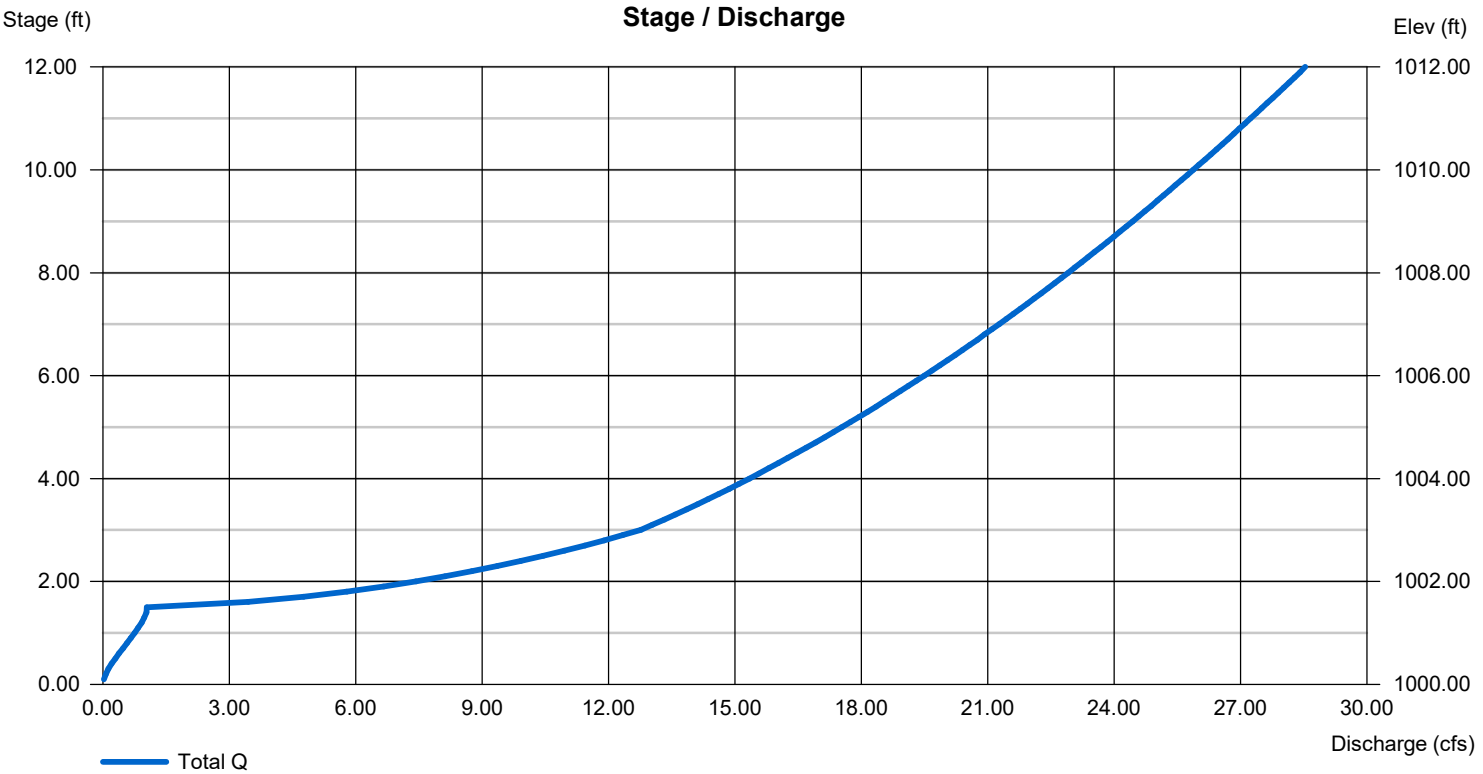
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 18.00	0.00	0.00	0.00
Span (in)	= 18.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 1000.00	0.00	0.00	0.00
Length (ft)	= 20.00	0.00	0.00	0.00
Slope (%)	= 0.05	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

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



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

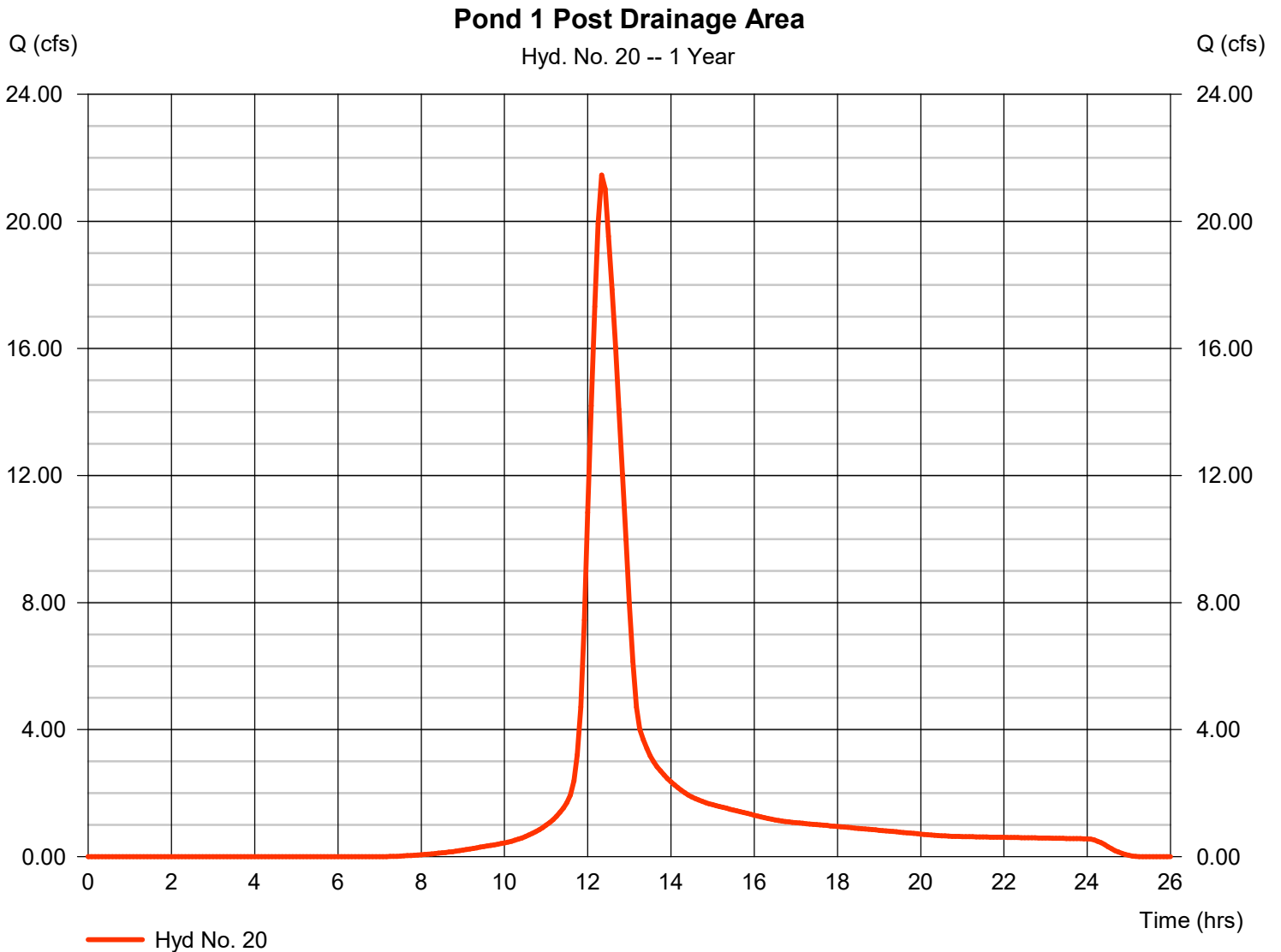
Friday, 05 / 22 / 2026

Hyd. No. 20

Pond 1 Post Drainage Area

Hydrograph type = SCS Runoff
 Storm frequency = 1 yrs
 Time interval = 5 min
 Drainage area = 23.900 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 2.35 in
 Storm duration = 24 hrs

Peak discharge = 21.46 cfs
 Time to peak = 12.33 hrs
 Hyd. volume = 121,272 cuft
 Curve number = 90
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 45.00 min
 Distribution = Type II
 Shape factor = 484



Hydrograph Report

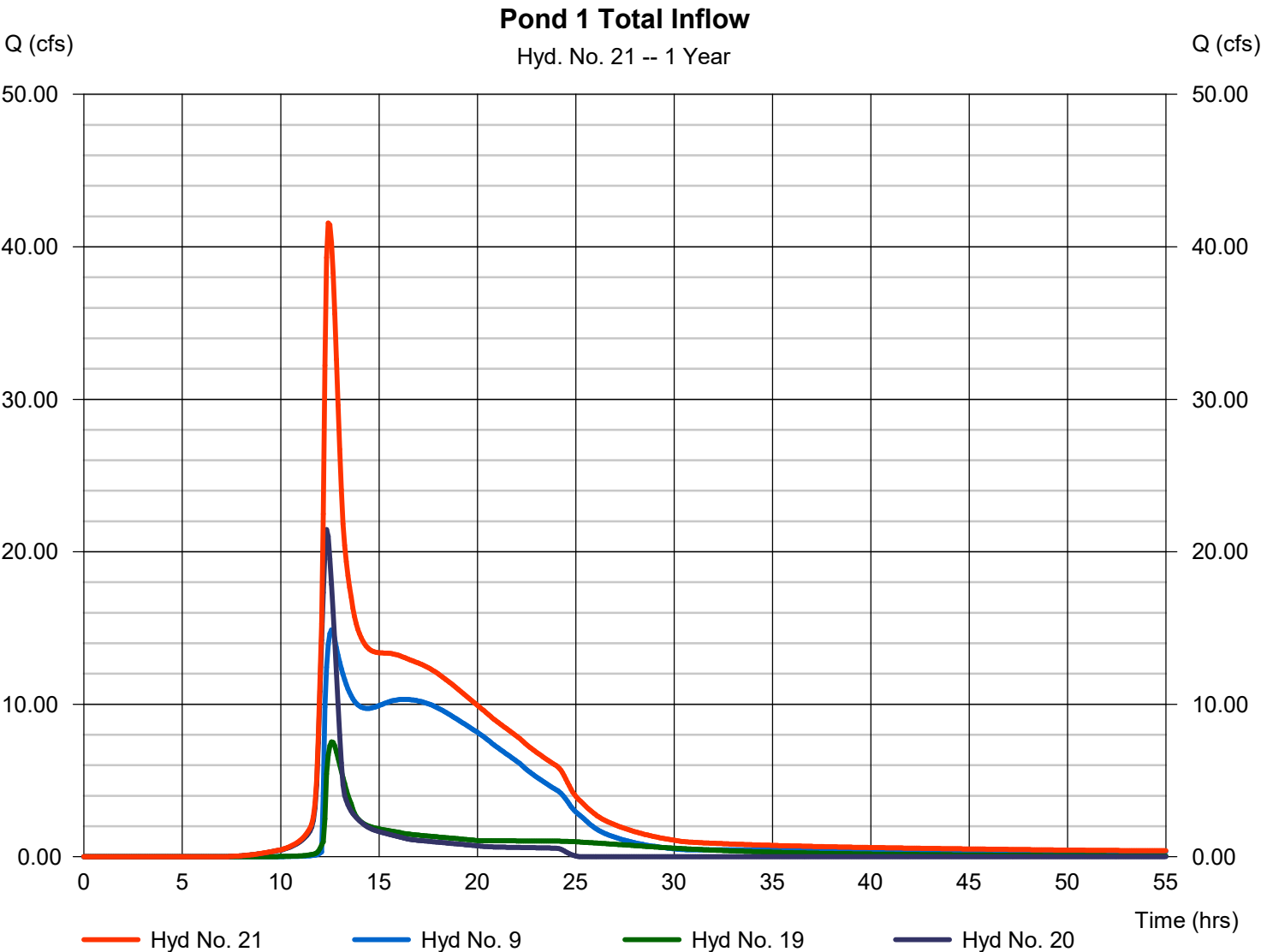
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Friday, 05 / 22 / 2026

Hyd. No. 21

Pond 1 Total Inflow

Hydrograph type	= Combine	Peak discharge	= 41.56 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.42 hrs
Time interval	= 5 min	Hyd. volume	= 777,175 cuft
Inflow hyds.	= 9, 19, 20	Contrib. drain. area	= 23.900 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

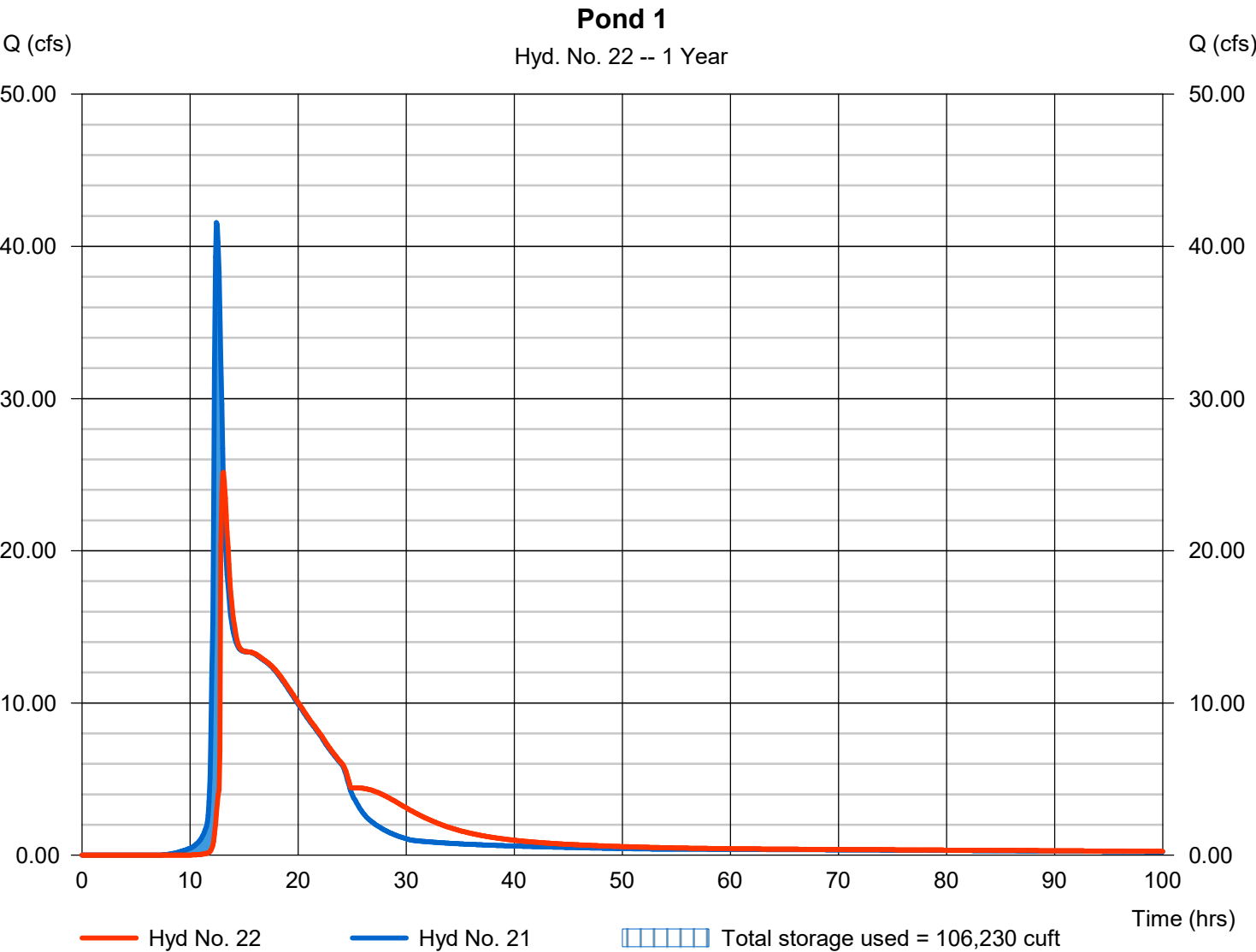
Friday, 05 / 22 / 2026

Hyd. No. 22

Pond 1

Hydrograph type	= Reservoir	Peak discharge	= 25.15 cfs
Storm frequency	= 1 yrs	Time to peak	= 13.08 hrs
Time interval	= 5 min	Hyd. volume	= 774,431 cuft
Inflow hyd. No.	= 21 - Pond 1 Total Inflow	Max. Elevation	= 1000.81 ft
Reservoir name	= <New Pond>	Max. Storage	= 106,230 cuft

Storage Indication method used.



Pond No. 1 - <New Pond>

Pond Data

Contours -User-defined contour areas. Average end area method used for volume calculation. Beginning Elevation = 997.50 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	997.50	28,572	0	0
0.50	998.00	29,582	14,539	14,539
1.50	999.00	31,645	30,614	45,152
2.50	1000.00	33,765	32,705	77,857
3.50	1001.00	35,942	34,854	112,711
4.50	1002.00	38,175	37,059	149,769
5.50	1003.00	40,465	39,320	189,089
6.50	1004.00	42,811	41,638	230,727
7.50	1005.00	45,214	44,013	274,740

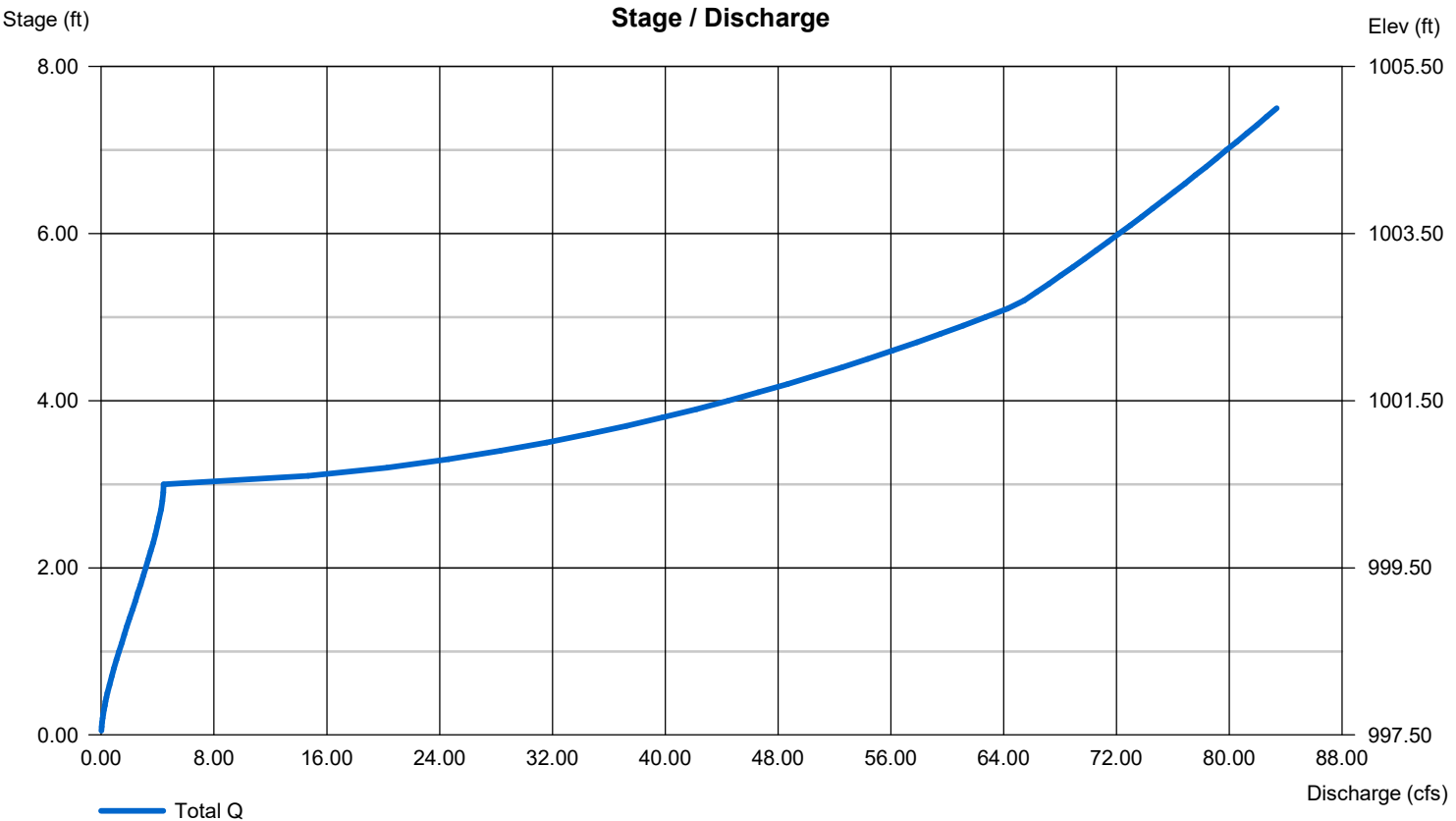
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 36.00	0.00	0.00	0.00
Span (in)	= 36.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 997.50	0.00	0.00	0.00
Length (ft)	= 20.00	0.00	0.00	0.00
Slope (%)	= 0.05	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

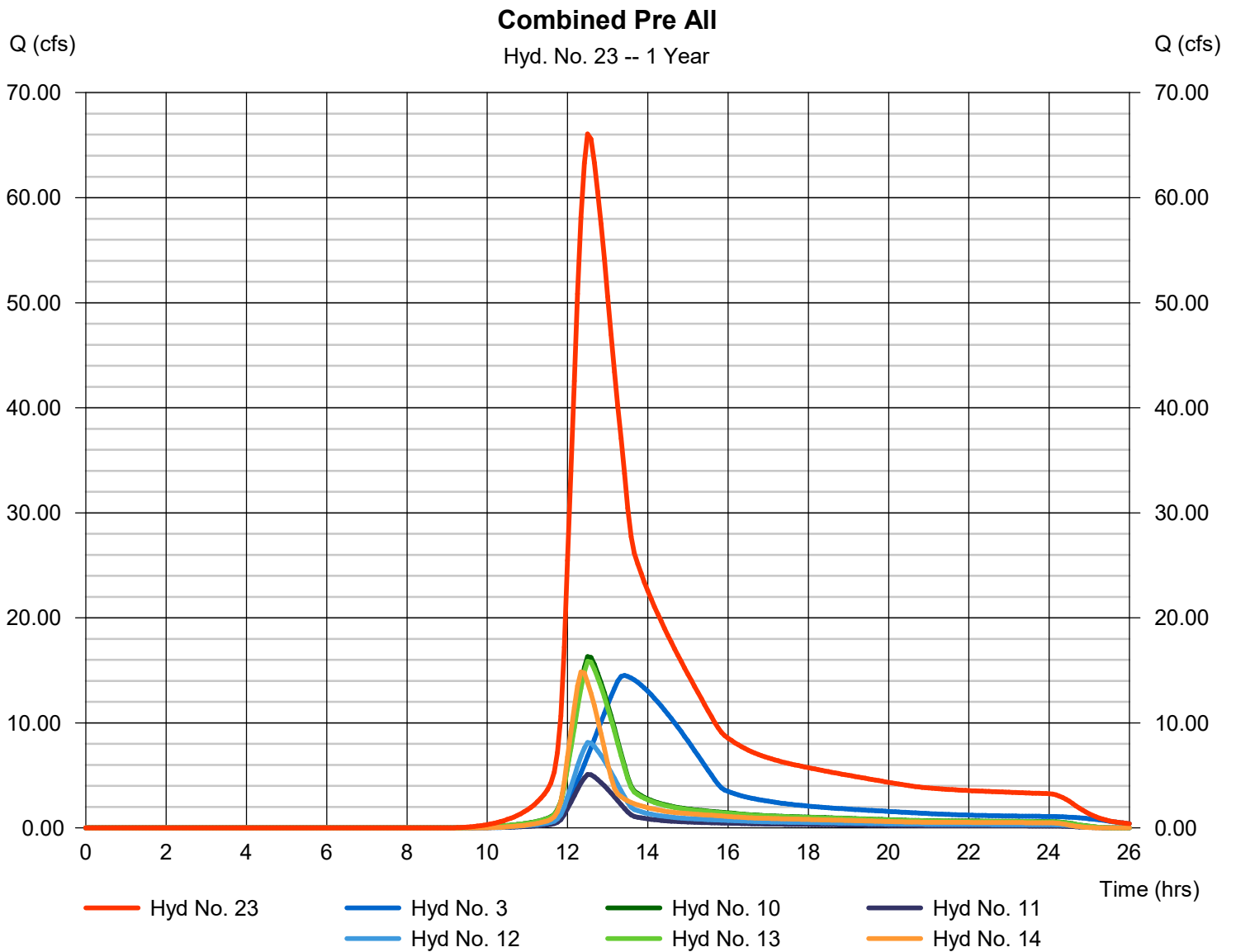
Weir Structures

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



Contrib. drain. area = 153.200 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

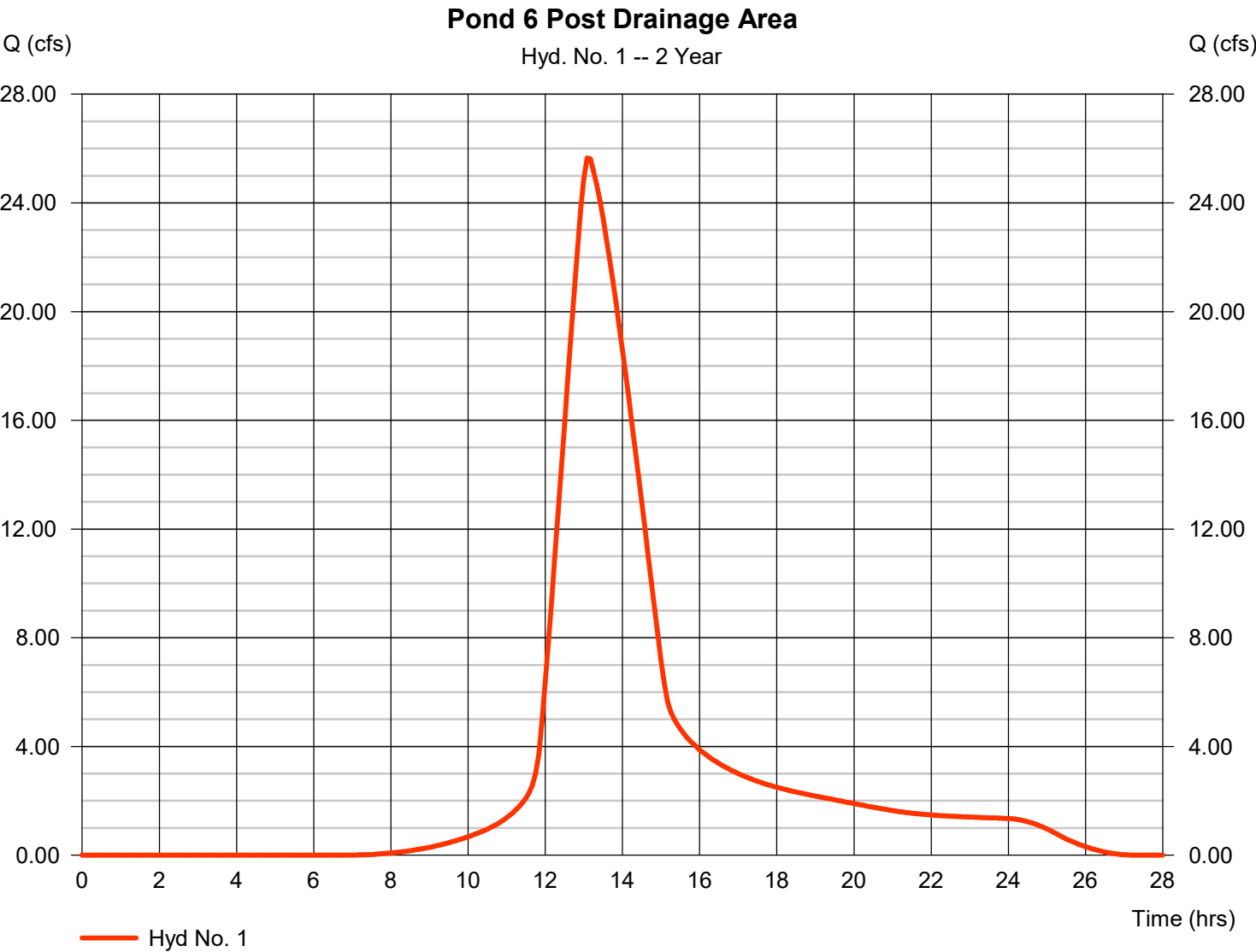
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	25.65	5	785	285,984	-----	-----	-----	Pond 6 Post Drainage Area
2	Reservoir	10.95	5	880	285,849	1	1004.54	126,852	Pond 6
3	SCS Runoff	16.85	5	805	221,142	-----	-----	-----	Pond 6 Pre
4	SCS Runoff	28.85	5	740	162,896	-----	-----	-----	Pond 5 Post Drainage Area
5	Combine	30.26	5	740	448,746	2, 4	-----	-----	Pond 5 Total Inflow
6	Reservoir	9.991	5	985	444,701	5	1003.62	146,974	Pond 5
7	SCS Runoff	37.52	5	730	163,386	-----	-----	-----	Pond 2 Post Drainage Area
8	Combine	37.72	5	730	608,086	6, 7	-----	-----	Pond 2 Total Inflow
9	Reservoir	16.56	5	755	604,338	8	1001.42	68,442	Pond 2
10	SCS Runoff	18.79	5	750	130,804	-----	-----	-----	Pond 5 Pre
11	SCS Runoff	5.868	5	750	40,848	-----	-----	-----	Pond 4 Pre
12	SCS Runoff	9.362	5	750	65,173	-----	-----	-----	Pond 3 Pre
13	SCS Runoff	18.26	5	750	127,133	-----	-----	-----	Pond 2 Pre
14	SCS Runoff	17.30	5	740	100,194	-----	-----	-----	Pond 1 Pre
15	SCS Runoff	12.06	5	730	52,496	-----	-----	-----	Pond 4 Post Drainage Area
16	Reservoir	0.934	5	835	52,353	15	1002.23	31,887	Pond 4
17	SCS Runoff	19.24	5	730	83,757	-----	-----	-----	Pond 3 Post Drainage Area
18	Combine	19.61	5	730	136,110	16, 17	-----	-----	Pond 3 Total Inflow
19	Reservoir	8.710	5	755	136,024	18	1002.19	36,481	Pond 3
20	SCS Runoff	24.21	5	740	136,700	-----	-----	-----	Pond 1 Post Drainage Area
21	Combine	47.70	5	745	877,063	9, 19, 20	-----	-----	Pond 1 Total Inflow
22	Reservoir	31.36	5	780	874,314	21	1000.99	112,465	Pond 1
23	Combine	76.42	5	750	685,293	3, 10, 11, 12, 13, 14,	-----	-----	Combined Pre All
Newland Phase 1.gpw					Return Period: 2 Year			Friday, 05 / 22 / 2026	

Hydrograph Report

Hyd. No. 1

Pond 6 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	25.65 cfs
Storm frequency	=	2 yrs	Time to peak	=	13.08 hrs
Time interval	=	5 min	Hyd. volume	=	285,984 cuft
Drainage area	=	50.000 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	120.00 min
Total precip.	=	2.55 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

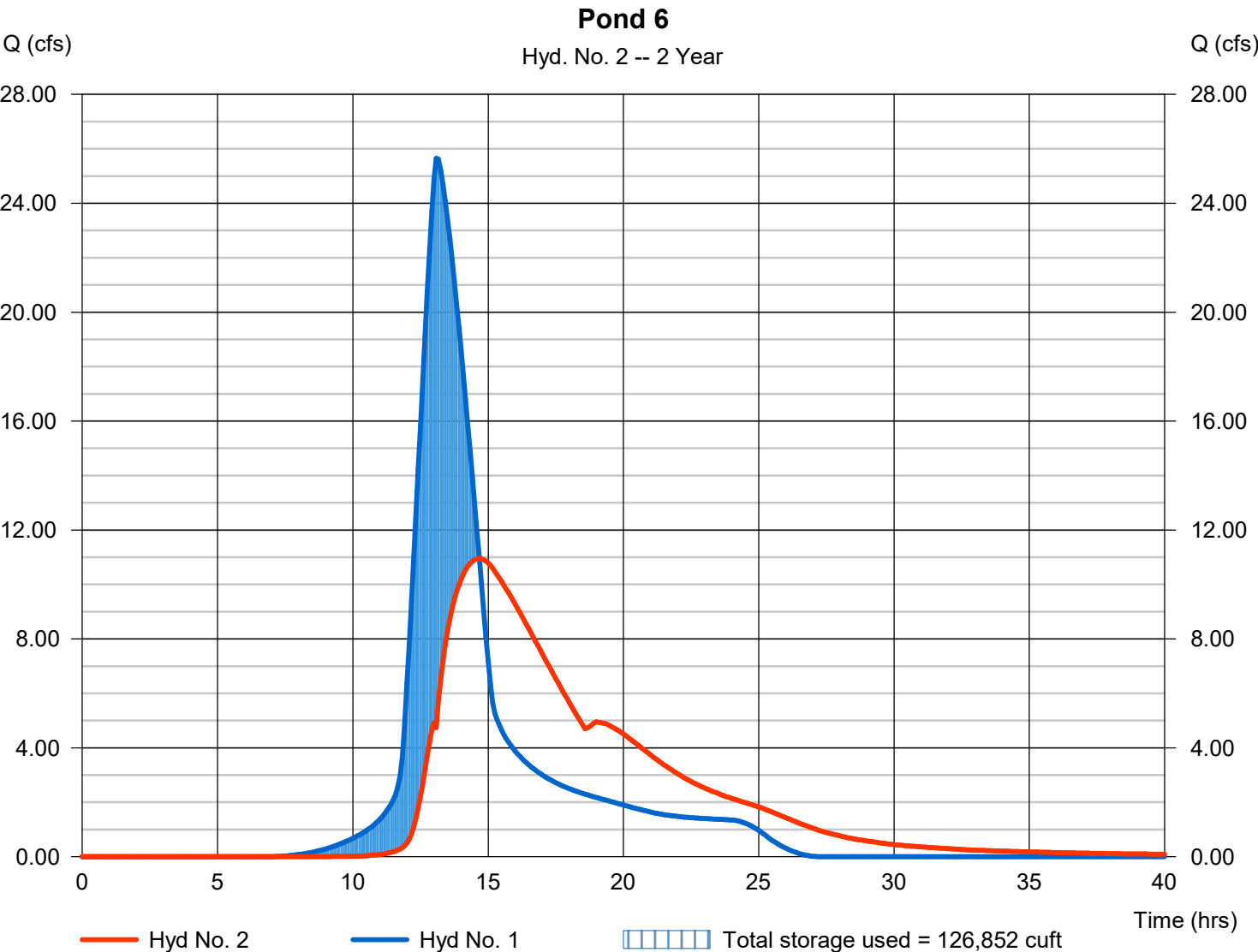
Friday, 05 / 22 / 2026

Hyd. No. 2

Pond 6

Hydrograph type	= Reservoir	Peak discharge	= 10.95 cfs
Storm frequency	= 2 yrs	Time to peak	= 14.67 hrs
Time interval	= 5 min	Hyd. volume	= 285,849 cuft
Inflow hyd. No.	= 1 - Pond 6 Post Drainage Area	Max. Elevation	= 1004.54 ft
Reservoir name	= <New Pond>	Max. Storage	= 126,852 cuft

Storage Indication method used.

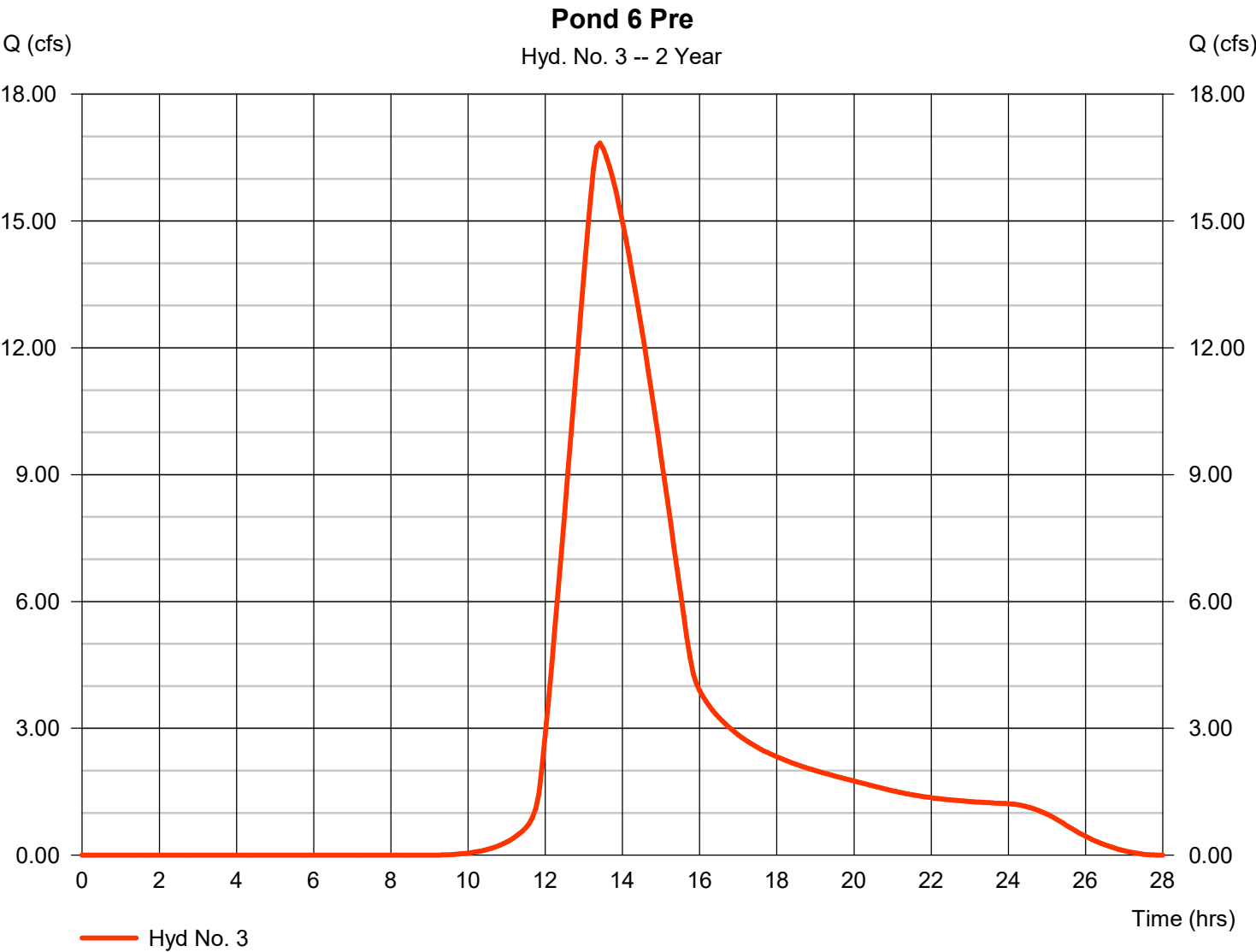


Hydrograph Report

Hyd. No. 3

Pond 6 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 16.85 cfs
Storm frequency	= 2 yrs	Time to peak	= 13.42 hrs
Time interval	= 5 min	Hyd. volume	= 221,142 cuft
Drainage area	= 50.000 ac	Curve number	= 85
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 150.00 min
Total precip.	= 2.55 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

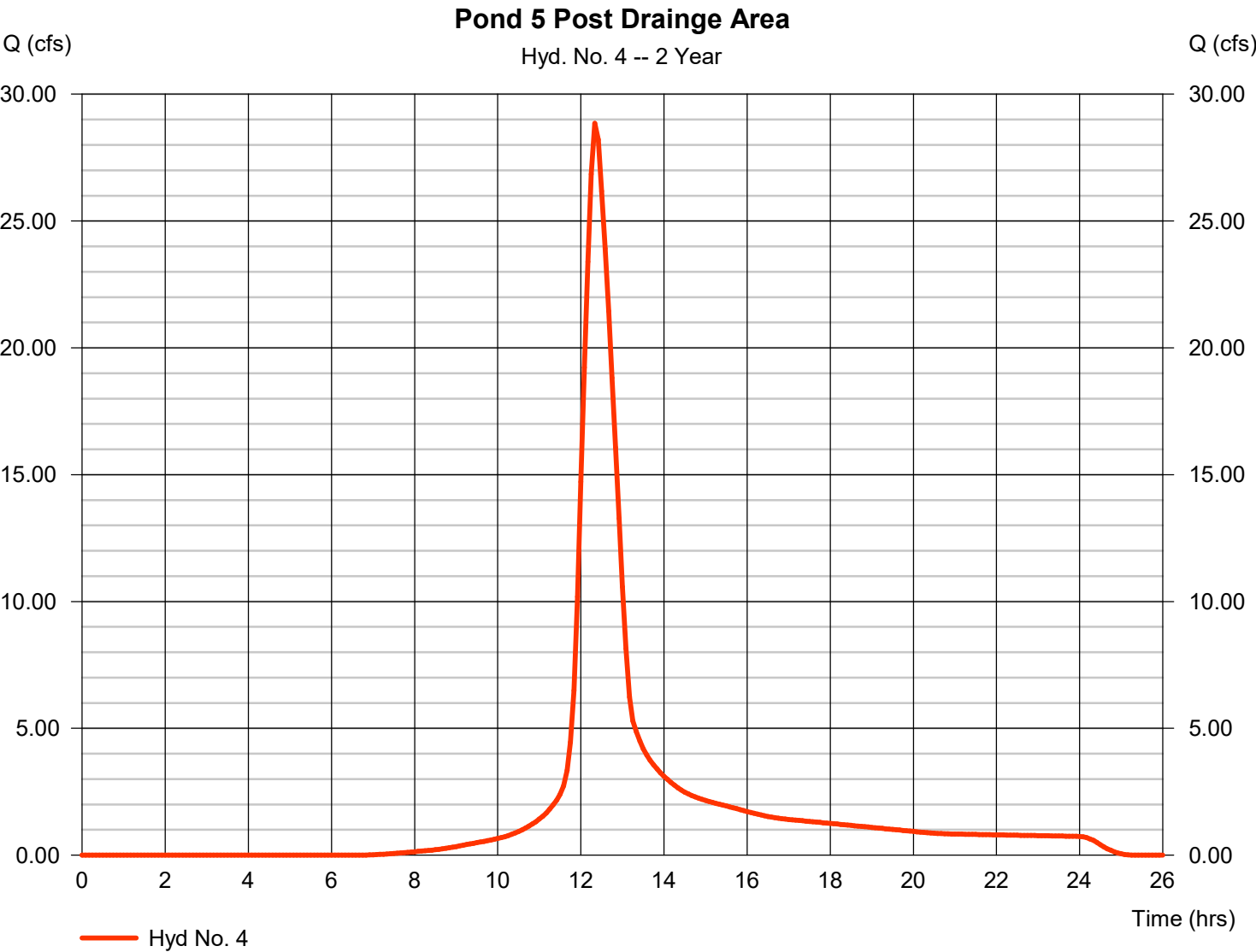


Hydrograph Report

Hyd. No. 4

Pond 5 Post Drainage Area

Hydrograph type	= SCS Runoff	Peak discharge	= 28.85 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.33 hrs
Time interval	= 5 min	Hyd. volume	= 162,896 cuft
Drainage area	= 28.480 ac	Curve number	= 90
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 45.00 min
Total precip.	= 2.55 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

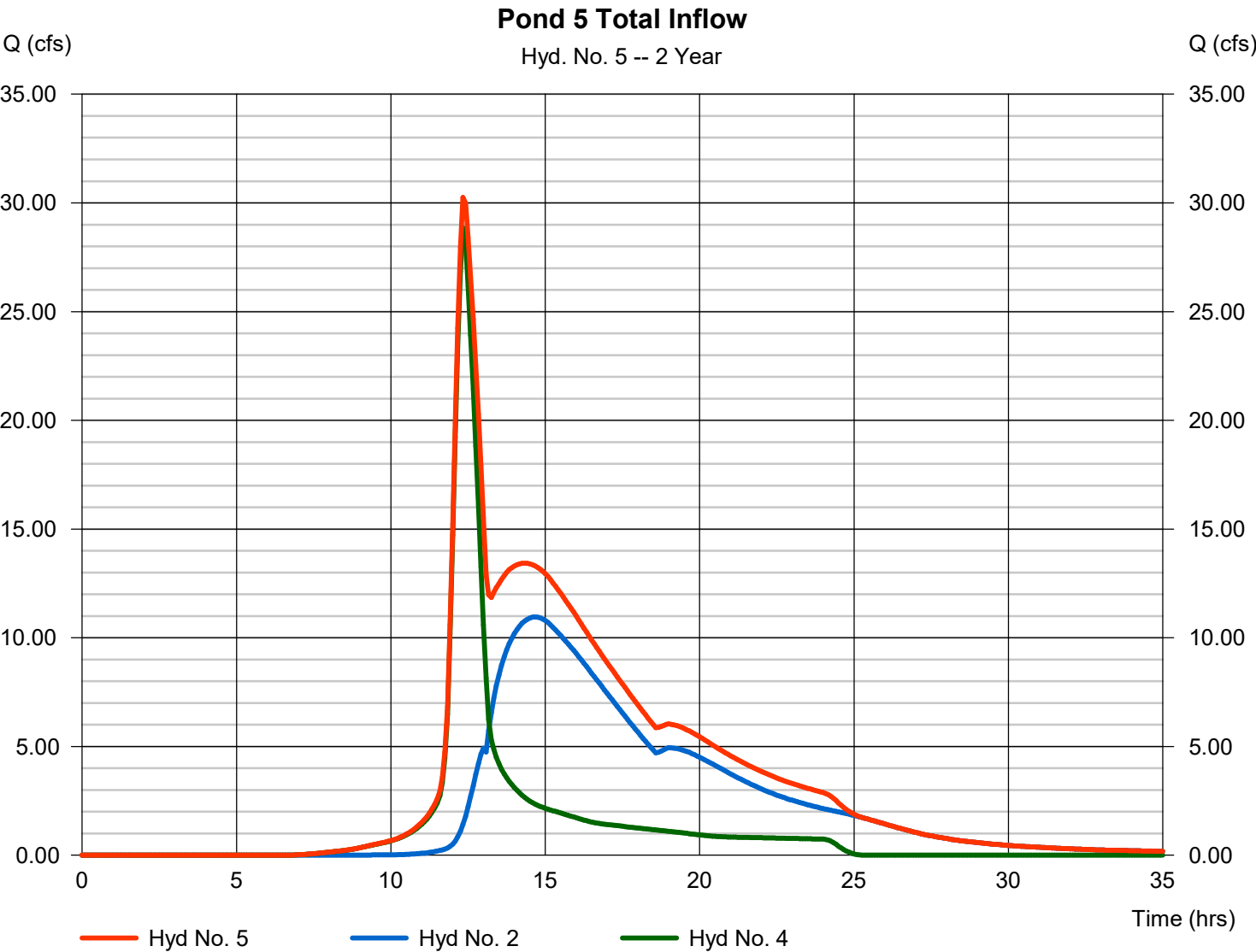
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Friday, 05 / 22 / 2026

Hyd. No. 5

Pond 5 Total Inflow

Hydrograph type	= Combine	Peak discharge	= 30.26 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.33 hrs
Time interval	= 5 min	Hyd. volume	= 448,746 cuft
Inflow hyds.	= 2, 4	Contrib. drain. area	= 28.480 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

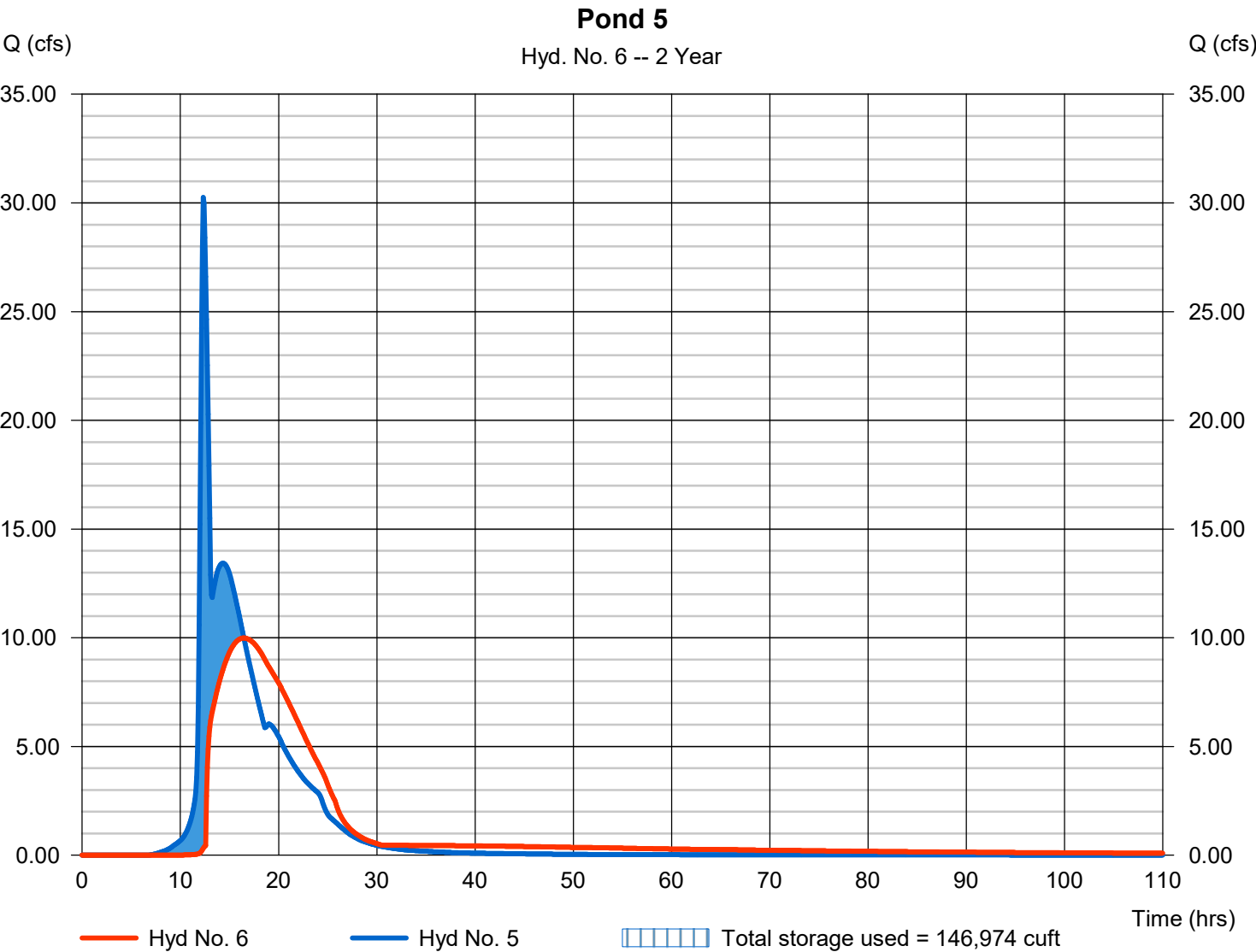
Friday, 05 / 22 / 2026

Hyd. No. 6

Pond 5

Hydrograph type	= Reservoir	Peak discharge	= 9.991 cfs
Storm frequency	= 2 yrs	Time to peak	= 16.42 hrs
Time interval	= 5 min	Hyd. volume	= 444,701 cuft
Inflow hyd. No.	= 5 - Pond 5 Total Inflow	Max. Elevation	= 1003.62 ft
Reservoir name	= <New Pond>	Max. Storage	= 146,974 cuft

Storage Indication method used.

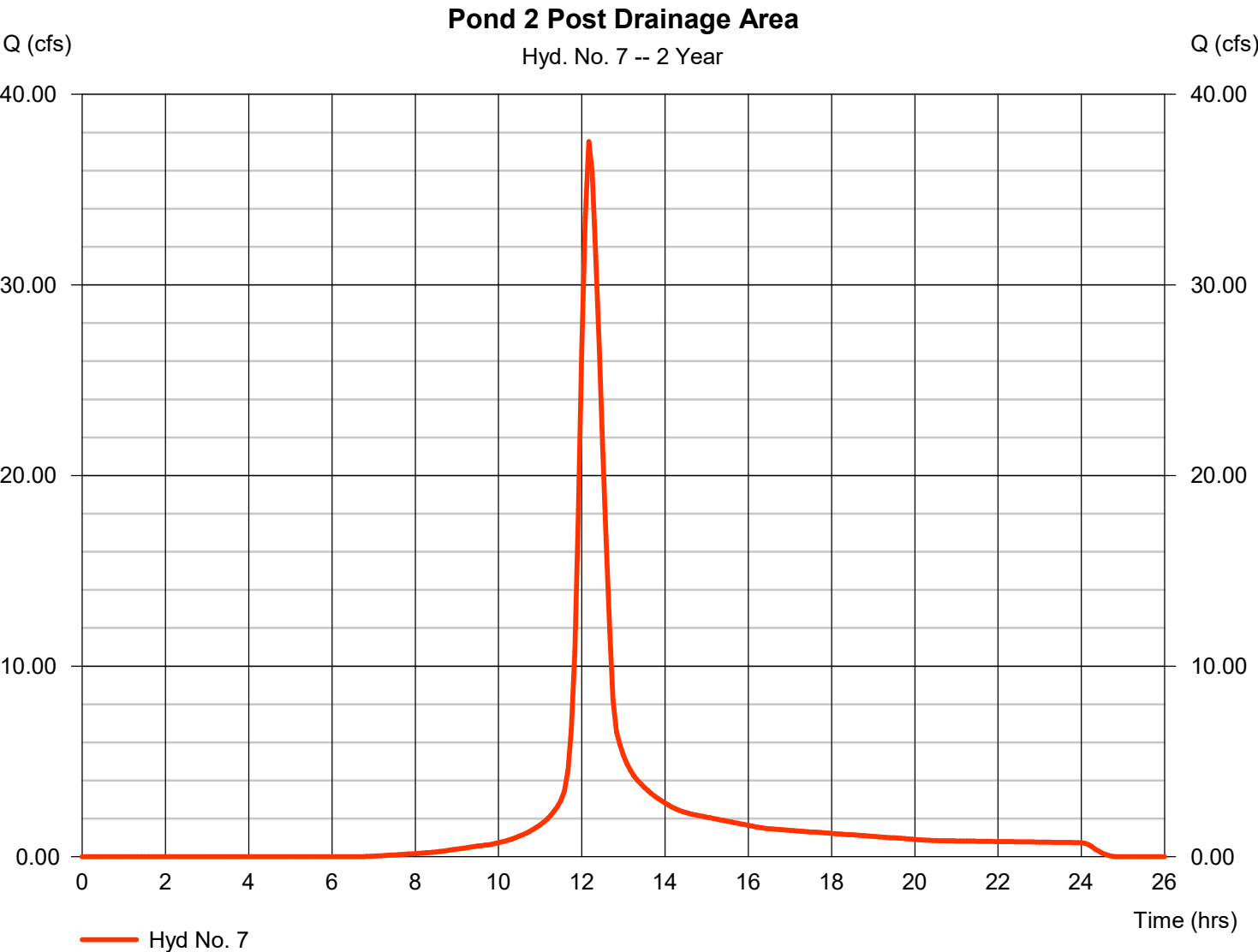


Hydrograph Report

Hyd. No. 7

Pond 2 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	37.52 cfs
Storm frequency	=	2 yrs	Time to peak	=	12.17 hrs
Time interval	=	5 min	Hyd. volume	=	163,386 cuft
Drainage area	=	27.700 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	30.00 min
Total precip.	=	2.55 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

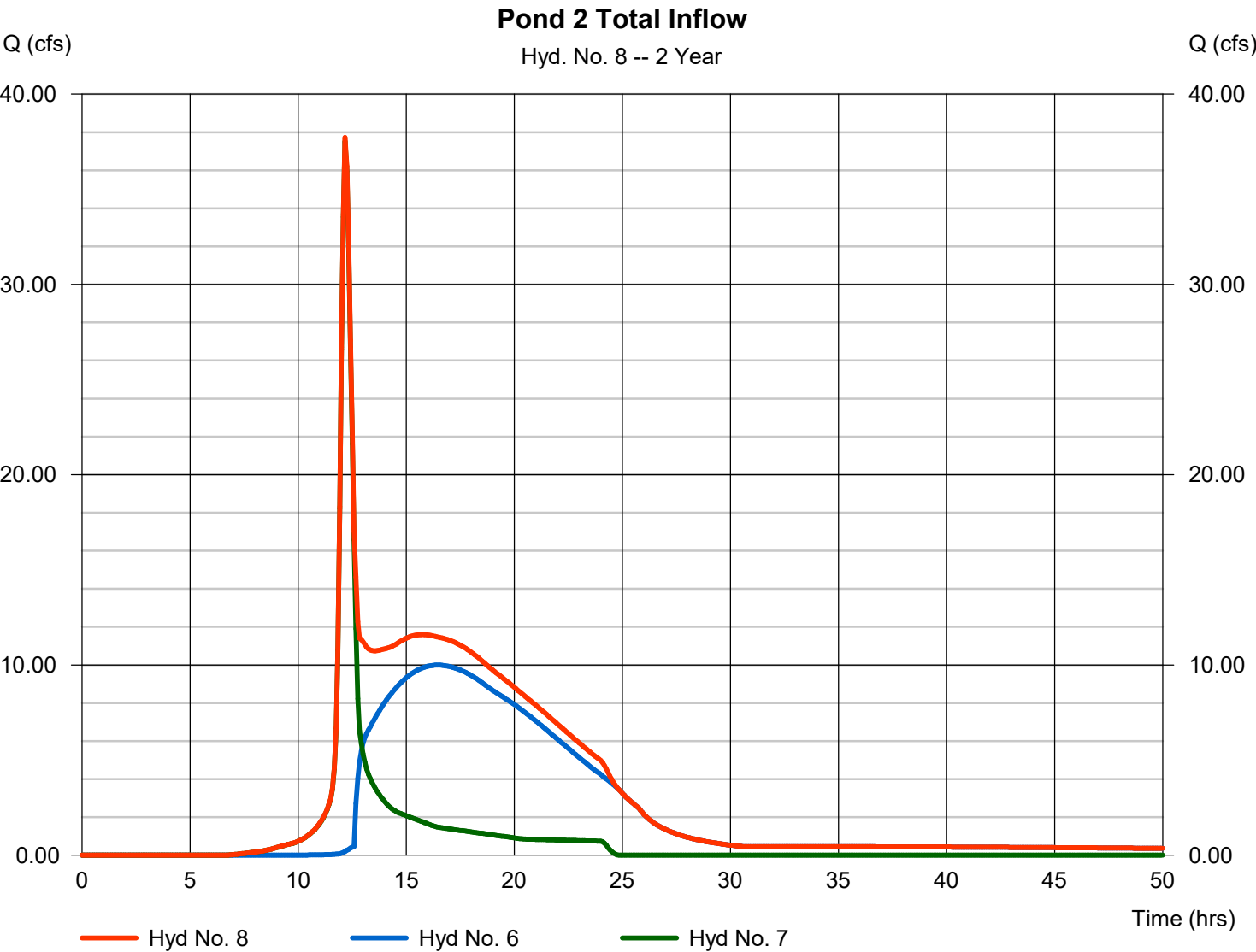
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Friday, 05 / 22 / 2026

Hyd. No. 8

Pond 2 Total Inflow

Hydrograph type	= Combine	Peak discharge	= 37.72 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.17 hrs
Time interval	= 5 min	Hyd. volume	= 608,086 cuft
Inflow hyds.	= 6, 7	Contrib. drain. area	= 27.700 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

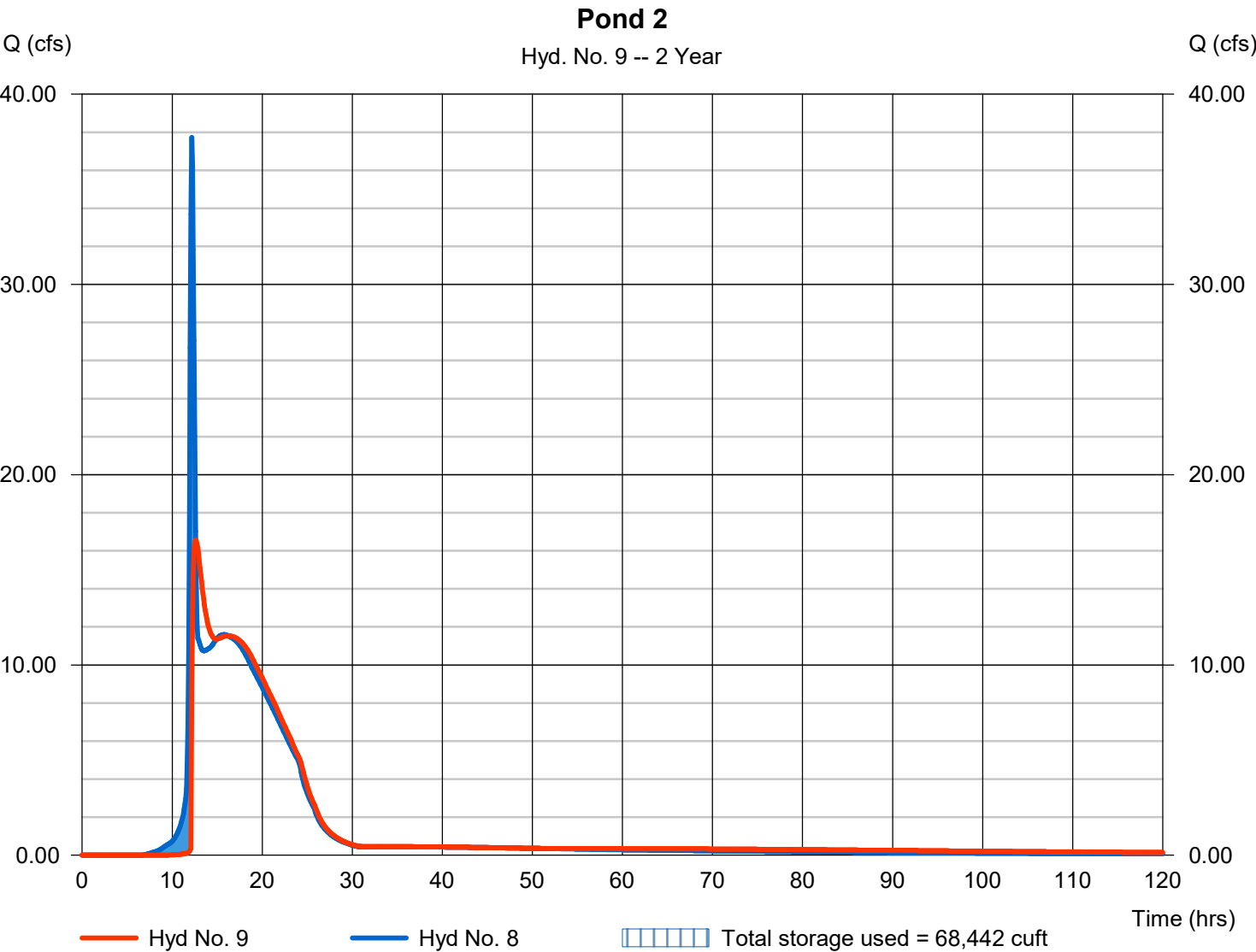
Friday, 05 / 22 / 2026

Hyd. No. 9

Pond 2

Hydrograph type	= Reservoir	Peak discharge	= 16.56 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.58 hrs
Time interval	= 5 min	Hyd. volume	= 604,338 cuft
Inflow hyd. No.	= 8 - Pond 2 Total Inflow	Max. Elevation	= 1001.42 ft
Reservoir name	= <New Pond>	Max. Storage	= 68,442 cuft

Storage Indication method used.

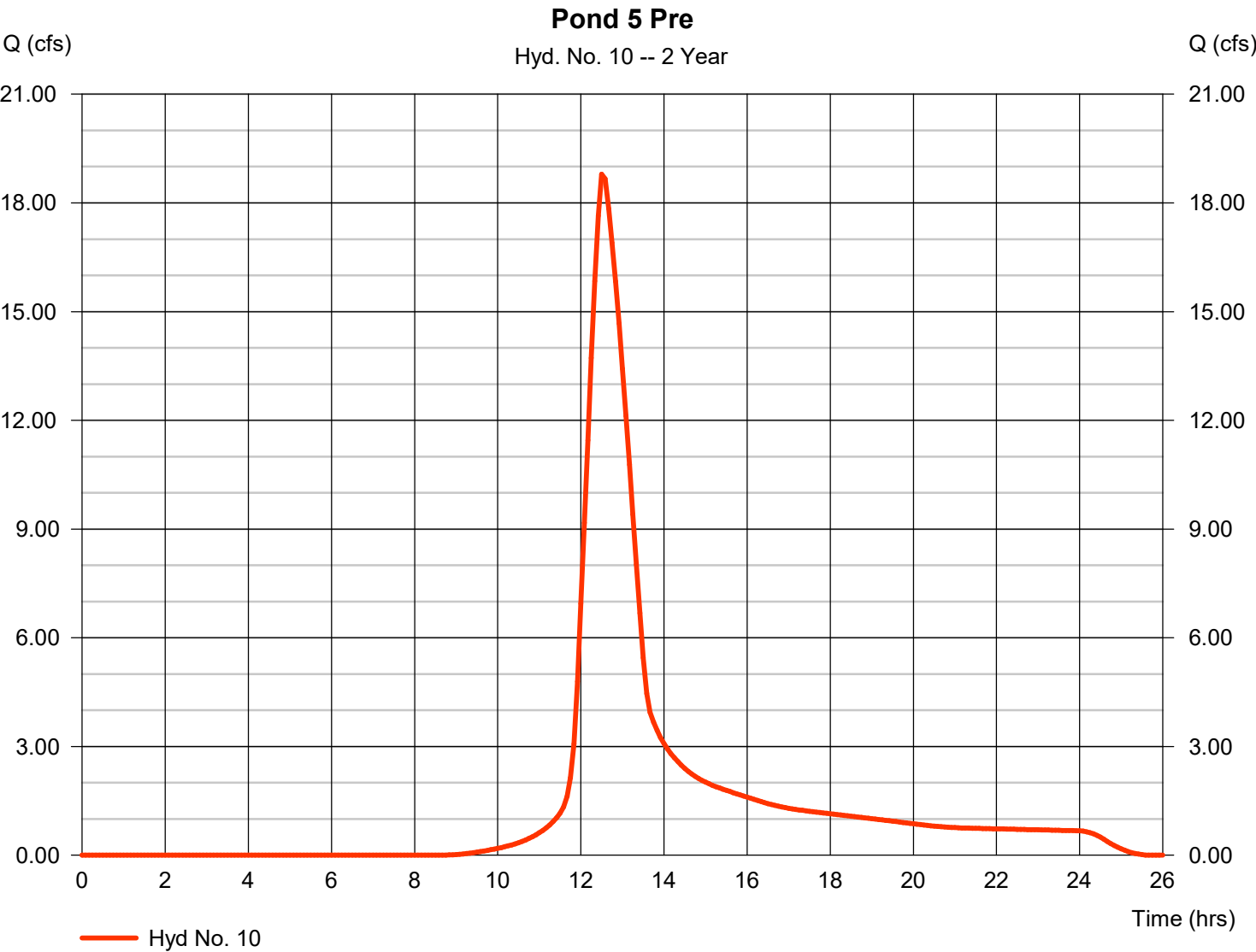


Hydrograph Report

Hyd. No. 10

Pond 5 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 18.79 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 130,804 cuft
Drainage area	= 28.500 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 60.00 min
Total precip.	= 2.55 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

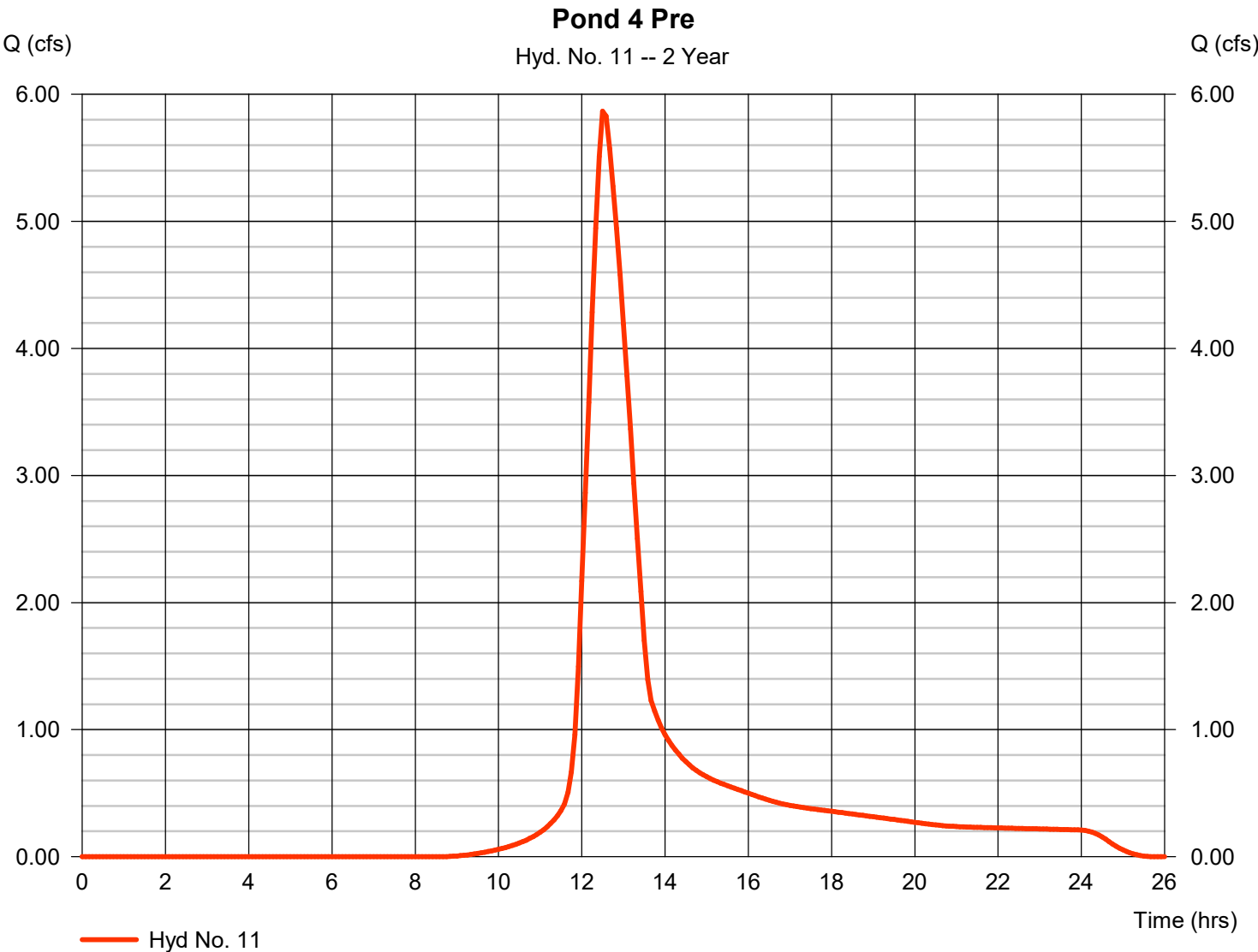


Hydrograph Report

Hyd. No. 11

Pond 4 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 5.868 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 40,848 cuft
Drainage area	= 8.900 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 60.00 min
Total precip.	= 2.55 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

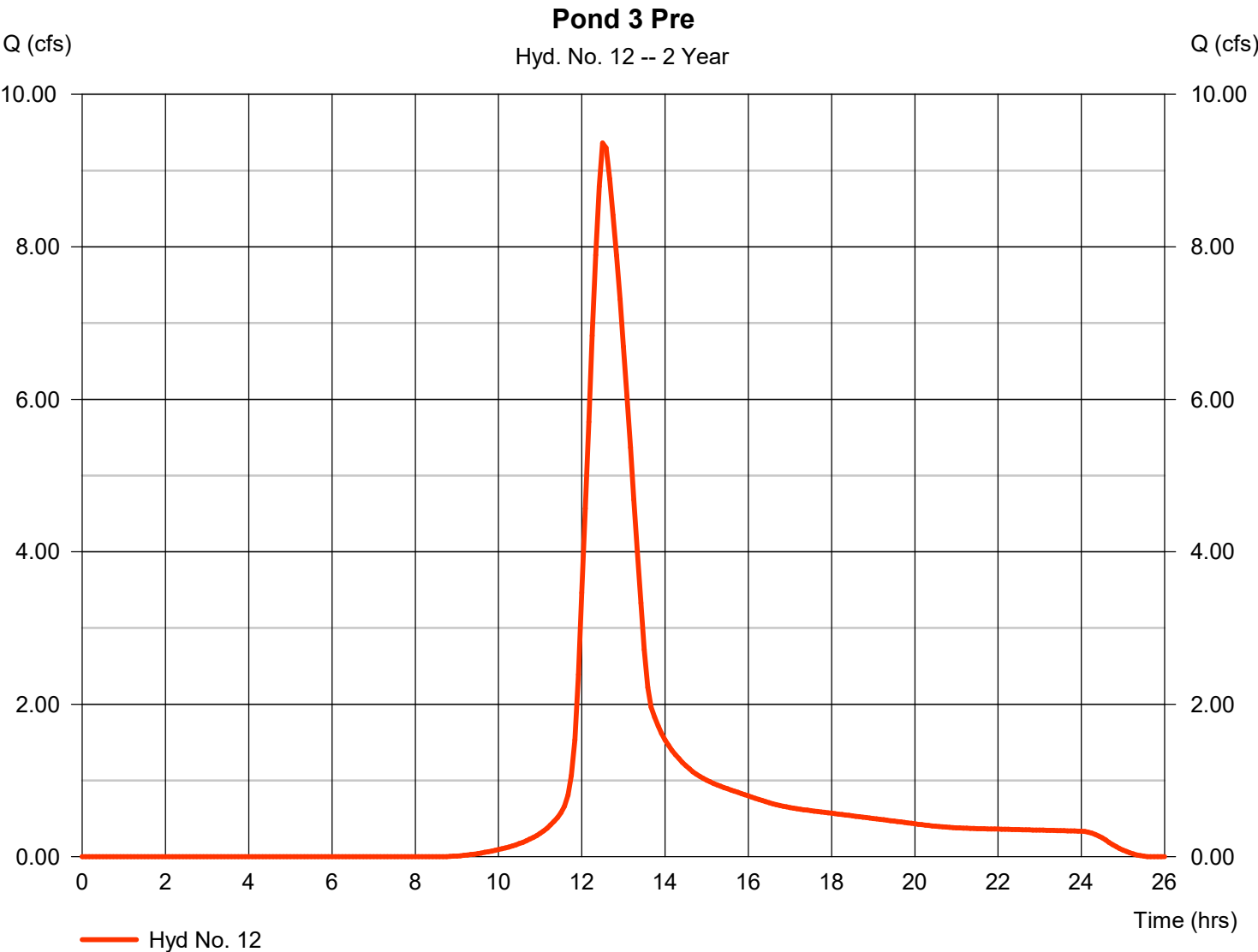
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Friday, 05 / 22 / 2026

Hyd. No. 12

Pond 3 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 9.362 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 65,173 cuft
Drainage area	= 14.200 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 60.00 min
Total precip.	= 2.55 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

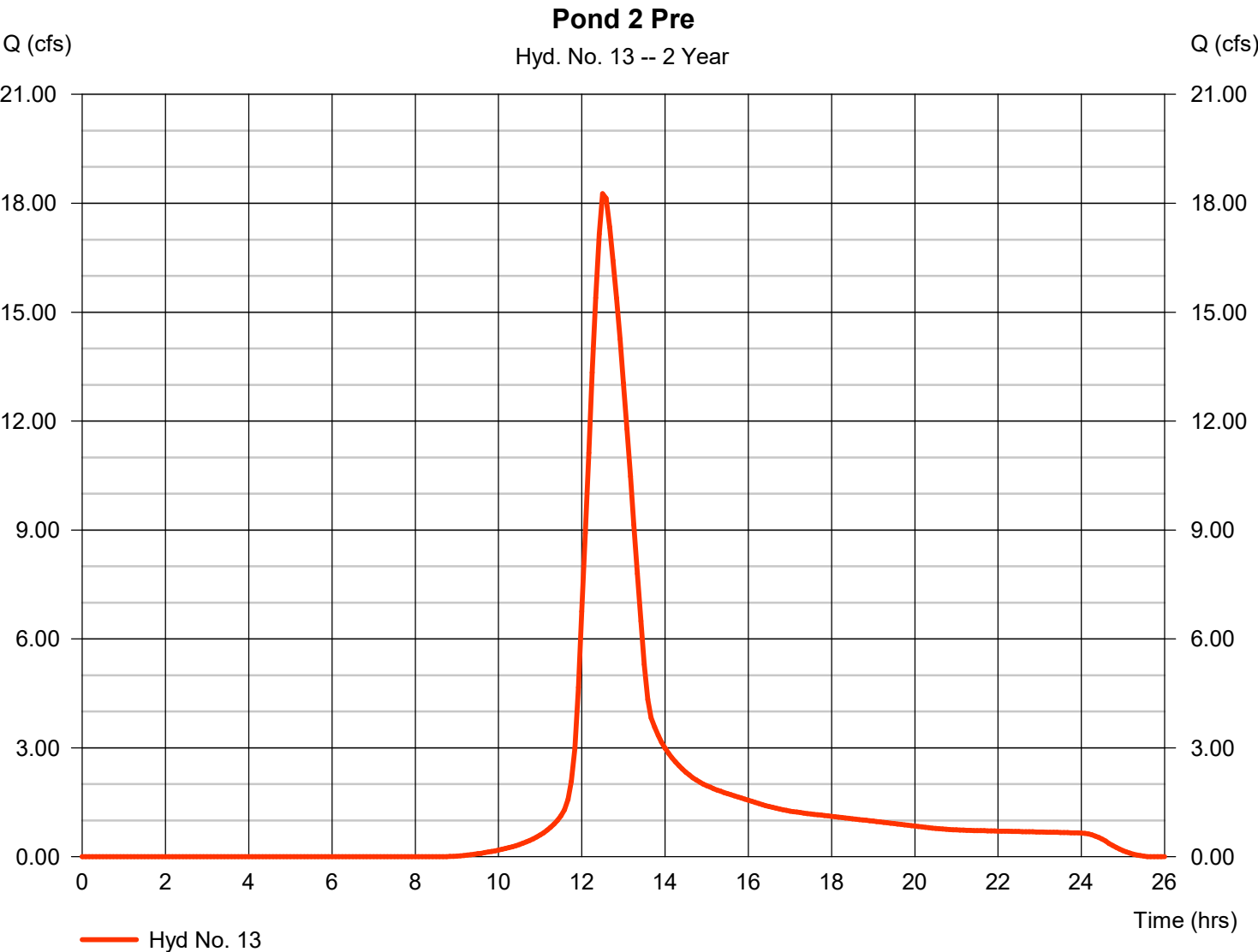


Hydrograph Report

Hyd. No. 13

Pond 2 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 18.26 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 127,133 cuft
Drainage area	= 27.700 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 60.00 min
Total precip.	= 2.55 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

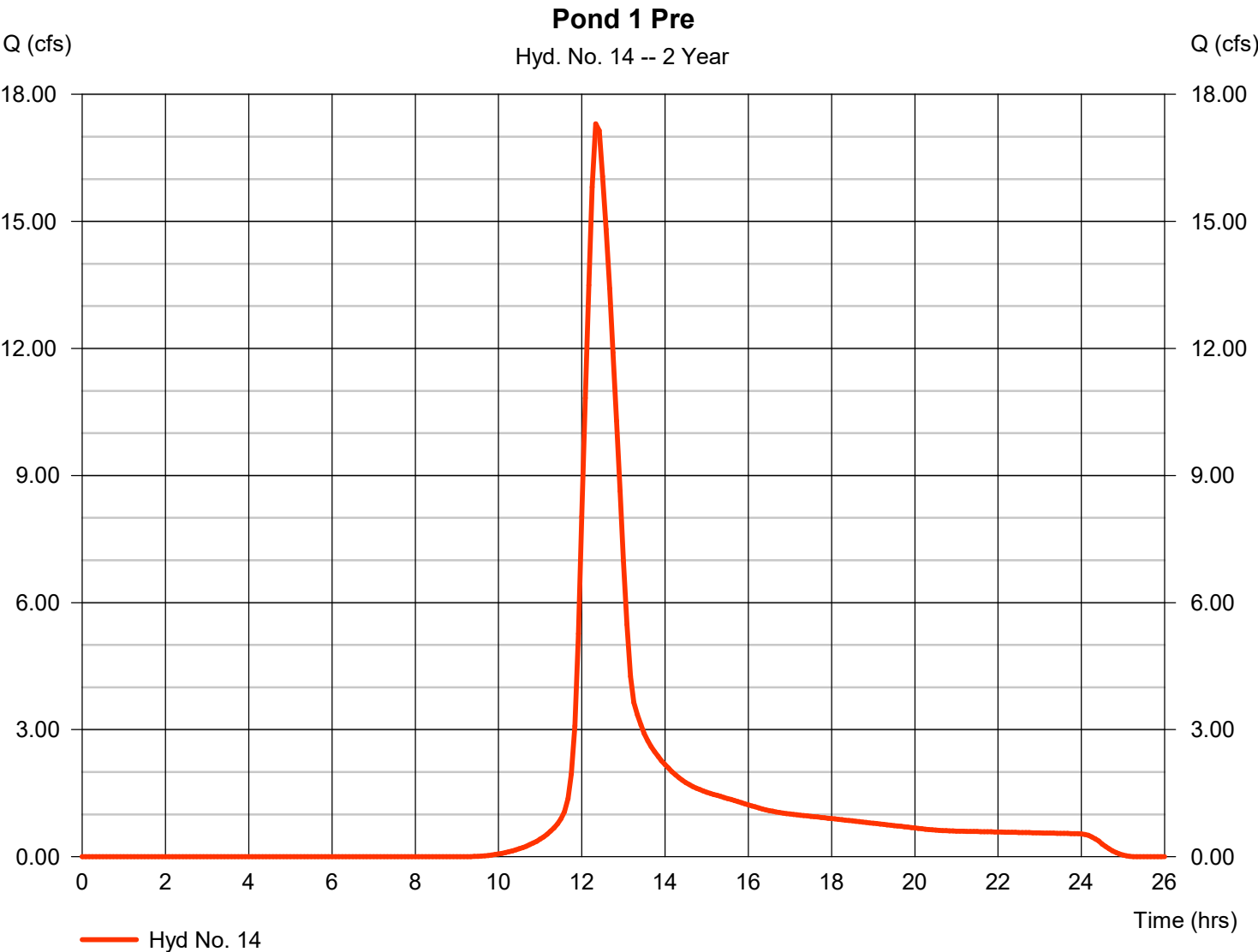


Hydrograph Report

Hyd. No. 14

Pond 1 Pre

Hydrograph type	=	SCS Runoff	Peak discharge	=	17.30 cfs
Storm frequency	=	2 yrs	Time to peak	=	12.33 hrs
Time interval	=	5 min	Hyd. volume	=	100,194 cuft
Drainage area	=	23.900 ac	Curve number	=	84
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	45.00 min
Total precip.	=	2.55 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

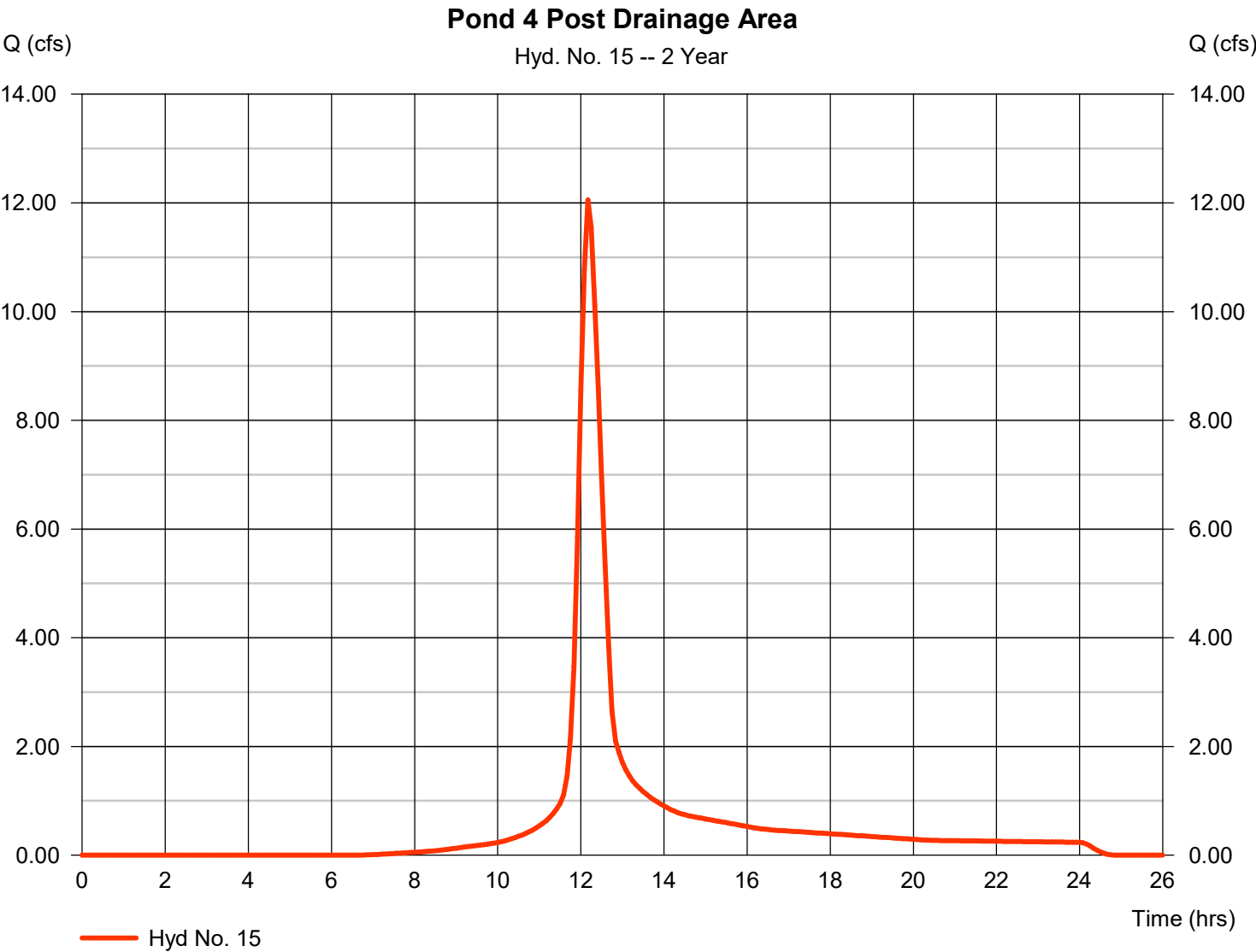


Hydrograph Report

Hyd. No. 15

Pond 4 Post Drainage Area

Hydrograph type	= SCS Runoff	Peak discharge	= 12.06 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.17 hrs
Time interval	= 5 min	Hyd. volume	= 52,496 cuft
Drainage area	= 8.900 ac	Curve number	= 90
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 30.00 min
Total precip.	= 2.55 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



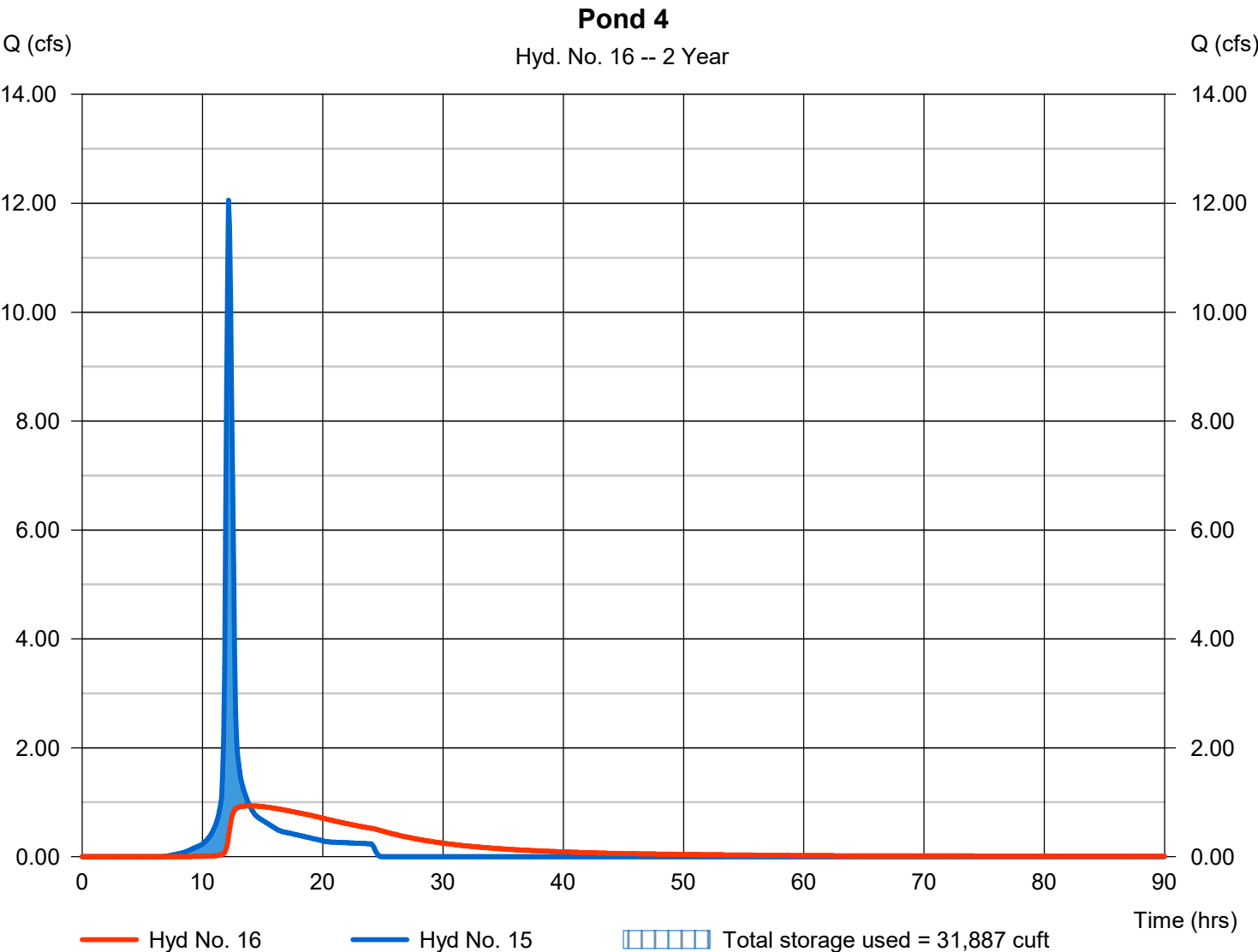
Hydrograph Report

Hyd. No. 16

Pond 4

Hydrograph type	= Reservoir	Peak discharge	= 0.934 cfs
Storm frequency	= 2 yrs	Time to peak	= 13.92 hrs
Time interval	= 5 min	Hyd. volume	= 52,353 cuft
Inflow hyd. No.	= 15 - Pond 4 Post Drainage Area	Max. Elevation	= 1002.23 ft
Reservoir name	= <New Pond>	Max. Storage	= 31,887 cuft

Storage Indication method used.

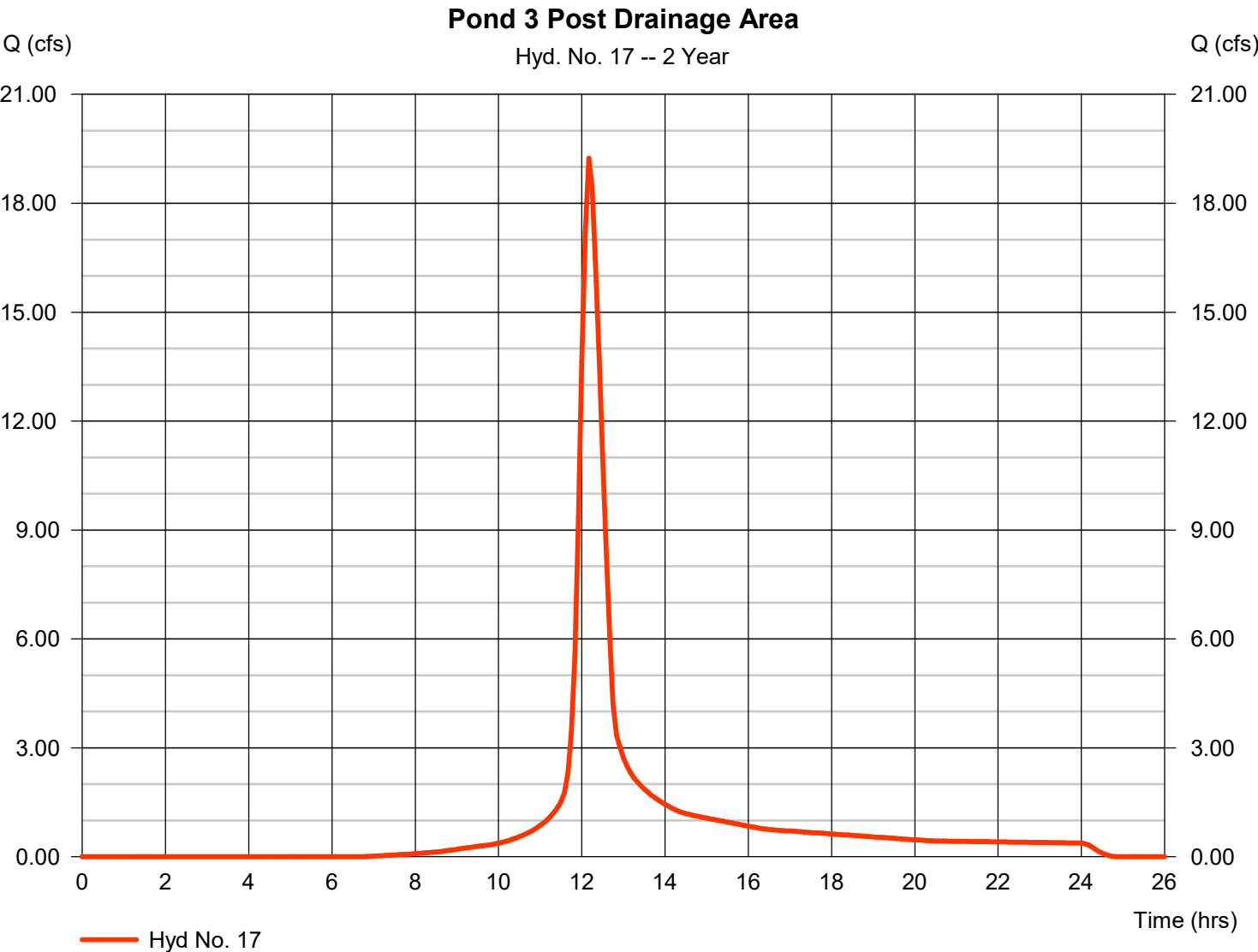


Hydrograph Report

Hyd. No. 17

Pond 3 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	19.24 cfs
Storm frequency	=	2 yrs	Time to peak	=	12.17 hrs
Time interval	=	5 min	Hyd. volume	=	83,757 cuft
Drainage area	=	14.200 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	30.00 min
Total precip.	=	2.55 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

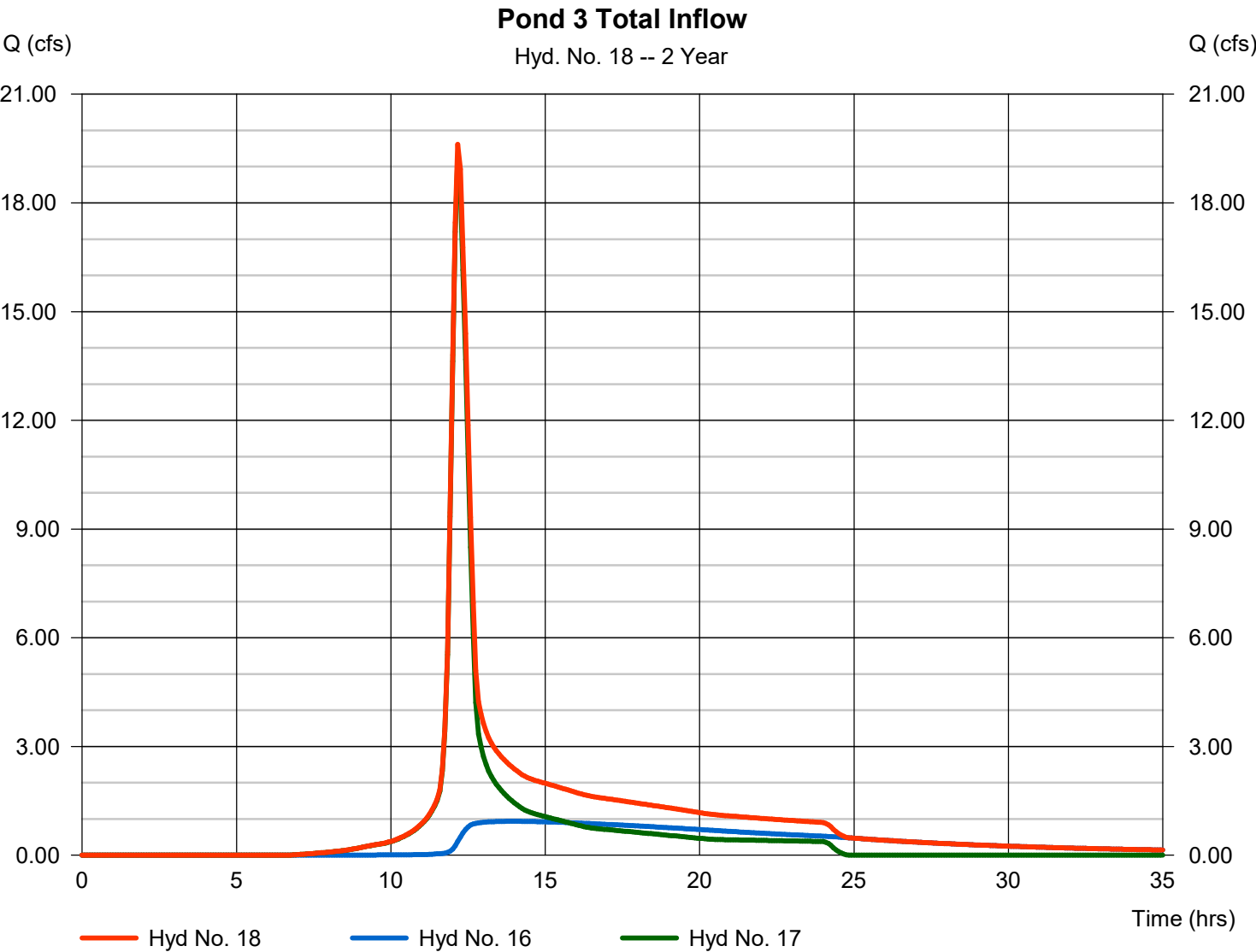
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Friday, 05 / 22 / 2026

Hyd. No. 18

Pond 3 Total Inflow

Hydrograph type	= Combine	Peak discharge	= 19.61 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.17 hrs
Time interval	= 5 min	Hyd. volume	= 136,110 cuft
Inflow hyds.	= 16, 17	Contrib. drain. area	= 14.200 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

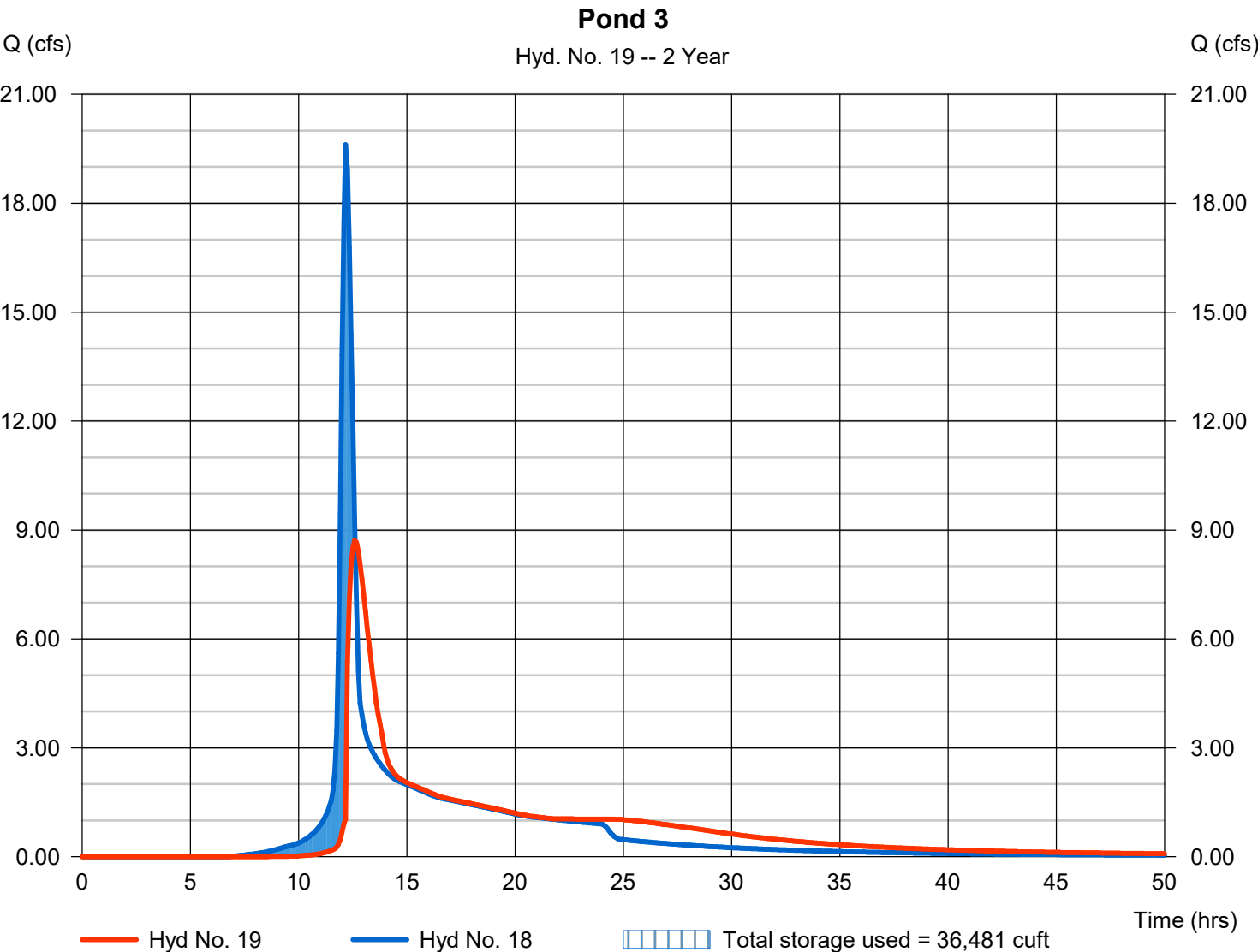
Friday, 05 / 22 / 2026

Hyd. No. 19

Pond 3

Hydrograph type	= Reservoir	Peak discharge	= 8.710 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.58 hrs
Time interval	= 5 min	Hyd. volume	= 136,024 cuft
Inflow hyd. No.	= 18 - Pond 3 Total Inflow	Max. Elevation	= 1002.19 ft
Reservoir name	= <New Pond>	Max. Storage	= 36,481 cuft

Storage Indication method used.



Hydrograph Report

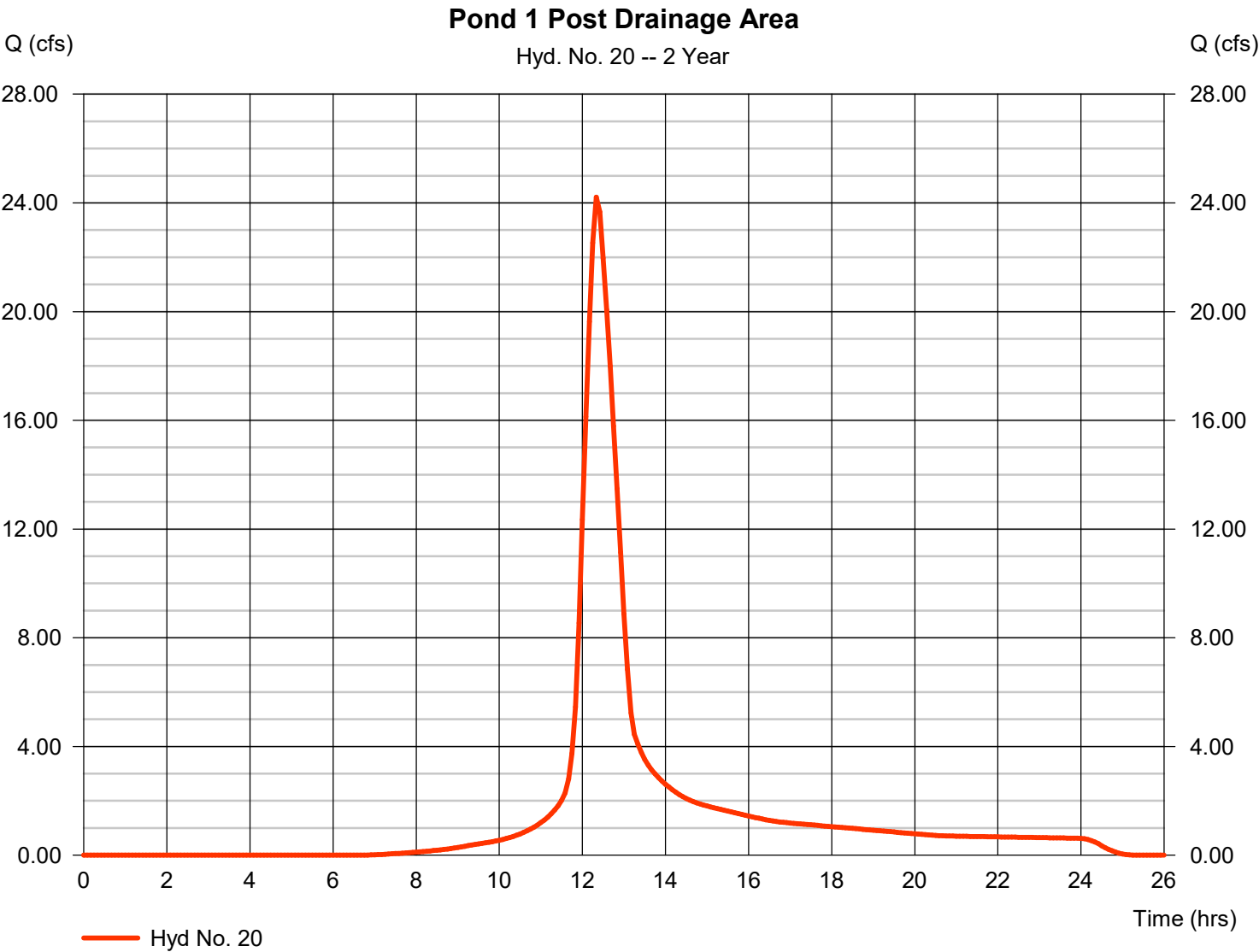
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Hyd. No. 20

Pond 1 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	24.21 cfs
Storm frequency	=	2 yrs	Time to peak	=	12.33 hrs
Time interval	=	5 min	Hyd. volume	=	136,700 cuft
Drainage area	=	23.900 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	45.00 min
Total precip.	=	2.55 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

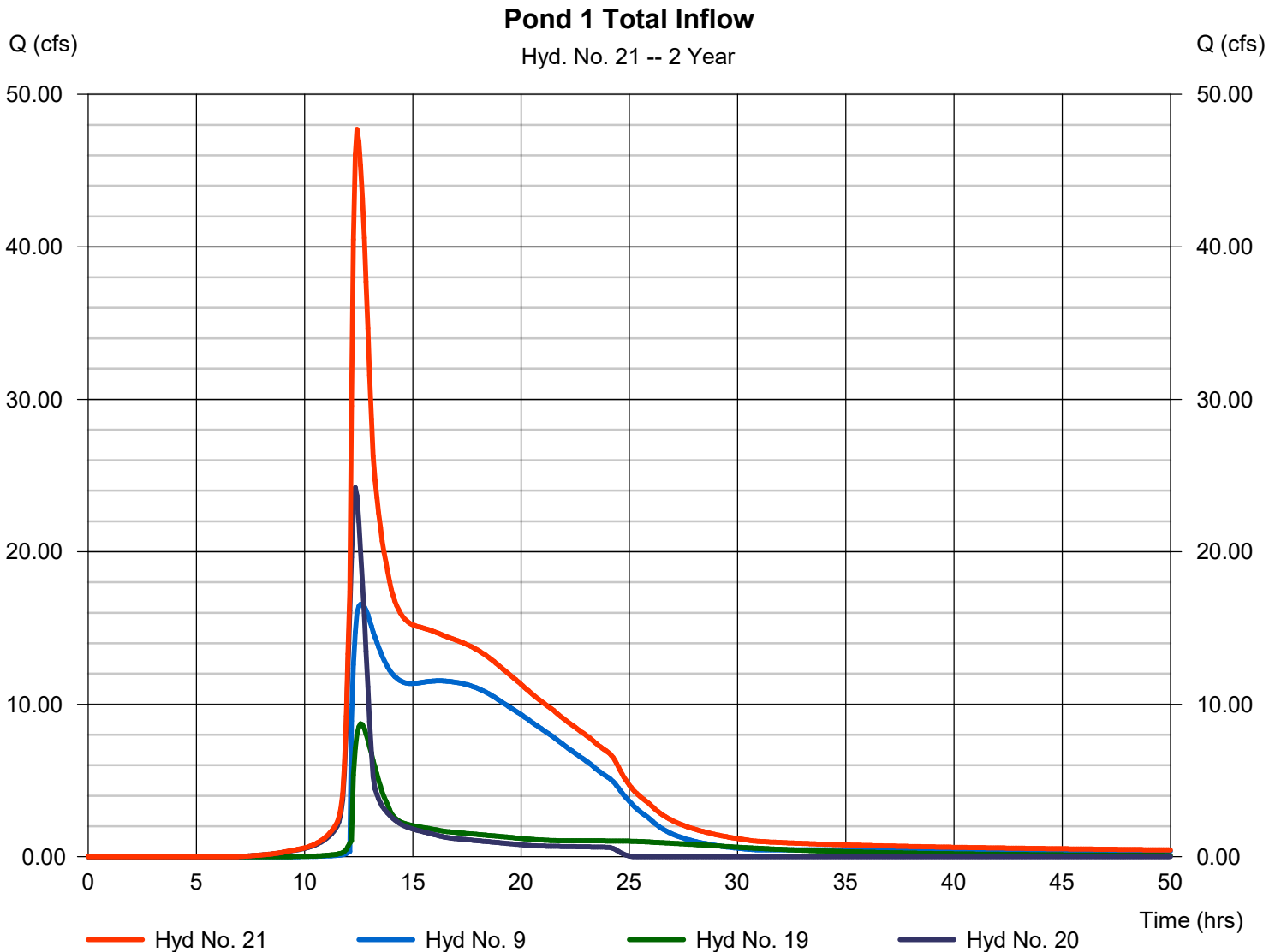
Friday, 05 / 22 / 2026

Hyd. No. 21

Pond 1 Total Inflow

Hydrograph type = Combine
Storm frequency = 2 yrs
Time interval = 5 min
Inflow hyds. = 9, 19, 20

Peak discharge = 47.70 cfs
Time to peak = 12.42 hrs
Hyd. volume = 877,063 cuft
Contrib. drain. area = 23.900 ac



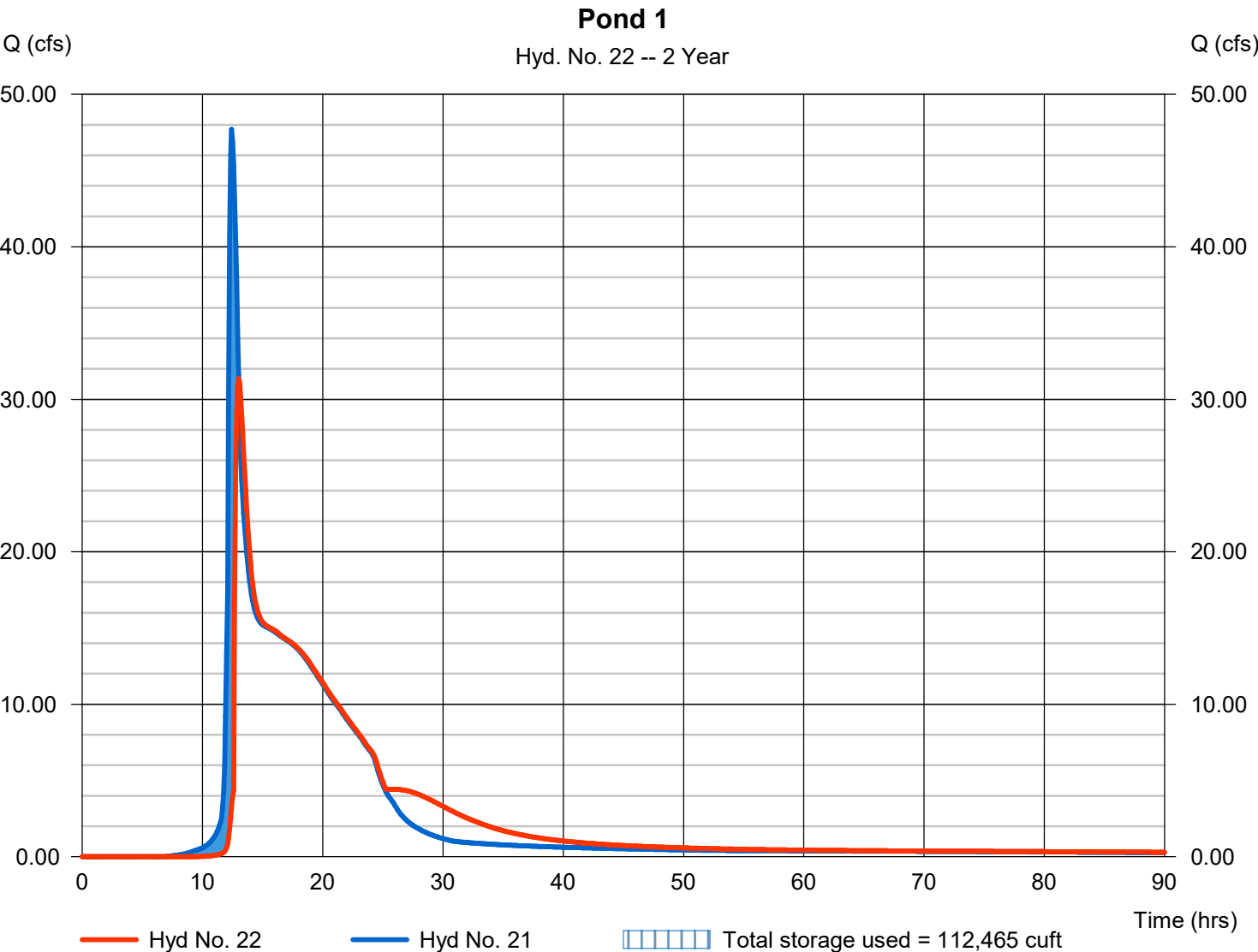
Hydrograph Report

Hyd. No. 22

Pond 1

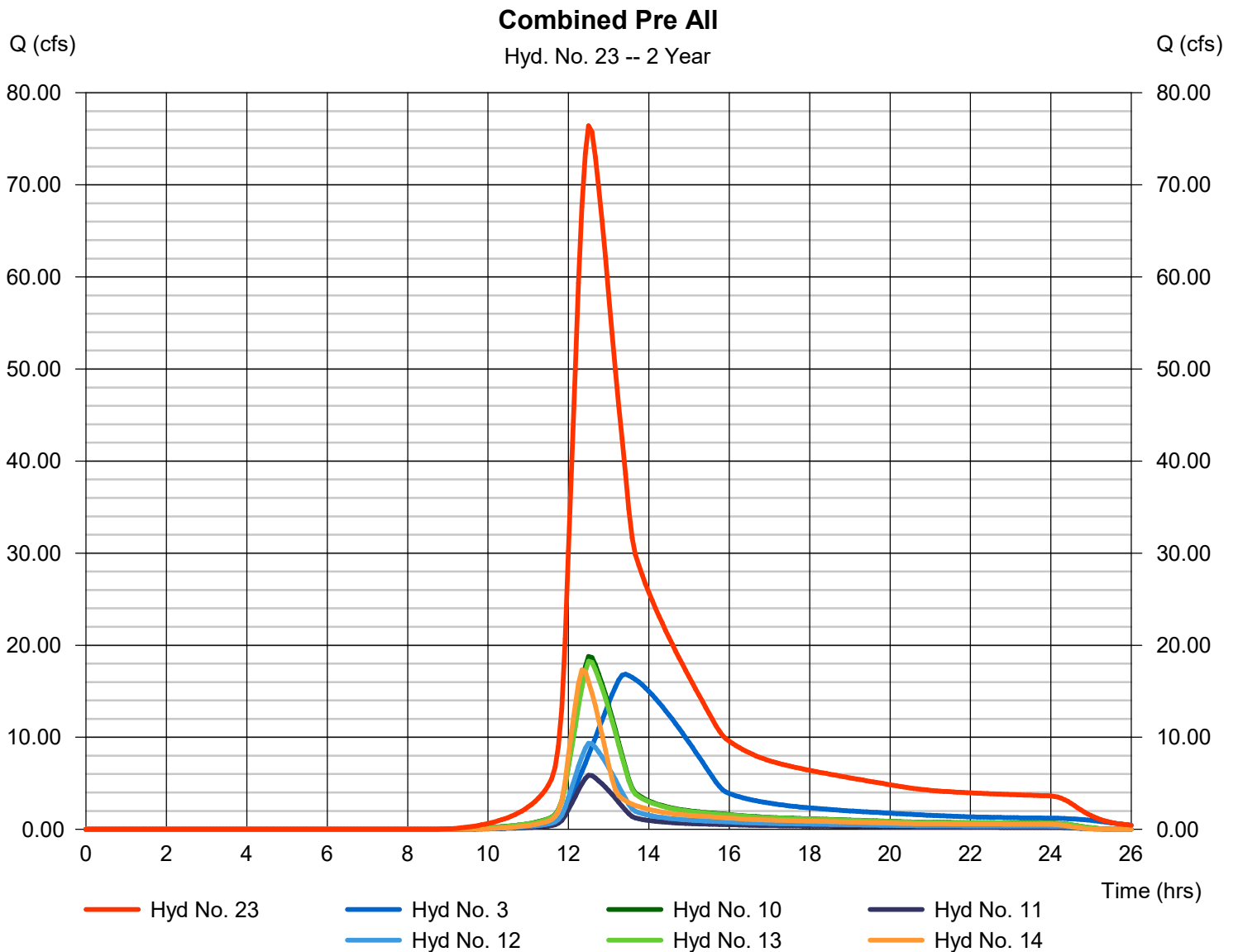
Hydrograph type	= Reservoir	Peak discharge	= 31.36 cfs
Storm frequency	= 2 yrs	Time to peak	= 13.00 hrs
Time interval	= 5 min	Hyd. volume	= 874,314 cuft
Inflow hyd. No.	= 21 - Pond 1 Total Inflow	Max. Elevation	= 1000.99 ft
Reservoir name	= <New Pond>	Max. Storage	= 112,465 cuft

Storage Indication method used.



Combined Pre All

Peak discharge = 76.42 cfs
Time to peak = 12.50 hrs
Hyd. volume = 685,293 cuft
Contrib. drain. area = 153.200 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

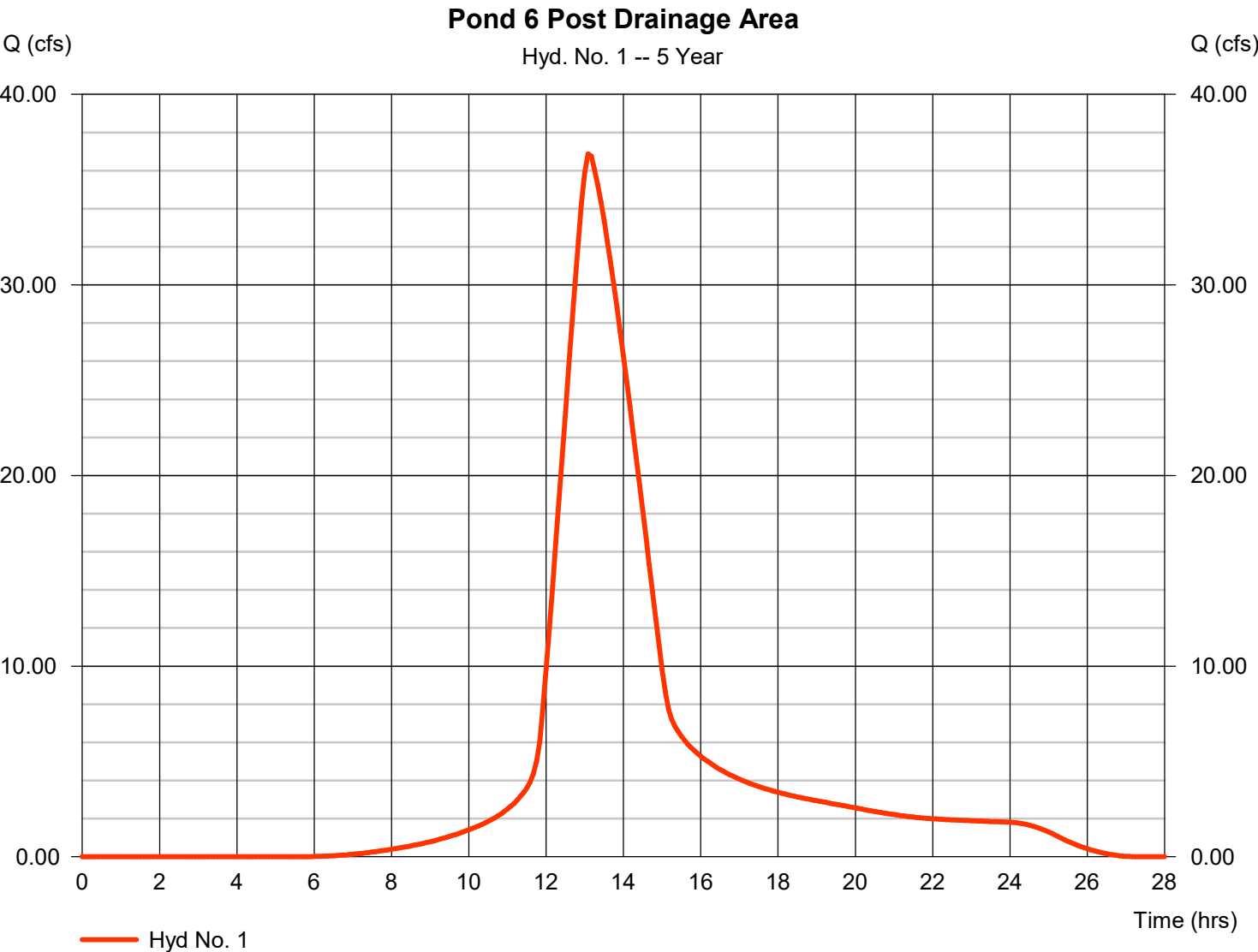
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	36.88	5	785	410,442	-----	-----	-----	Pond 6 Post Drainage Area
2	Reservoir	14.58	5	885	410,309	1	1005.99	186,403	Pond 6
3	SCS Runoff	25.94	5	805	334,557	-----	-----	-----	Pond 6 Pre
4	SCS Runoff	41.31	5	740	233,788	-----	-----	-----	Pond 5 Post Drainage Area
5	Combine	44.39	5	740	644,096	2, 4	-----	-----	Pond 5 Total Inflow
6	Reservoir	13.43	5	1010	640,022	5	1004.92	207,873	Pond 5
7	SCS Runoff	53.65	5	730	234,491	-----	-----	-----	Pond 2 Post Drainage Area
8	Combine	54.01	5	730	874,513	6, 7	-----	-----	Pond 2 Total Inflow
9	Reservoir	21.32	5	765	870,733	8	1002.76	105,765	Pond 2
10	SCS Runoff	28.45	5	750	195,767	-----	-----	-----	Pond 5 Pre
11	SCS Runoff	8.885	5	750	61,134	-----	-----	-----	Pond 4 Pre
12	SCS Runoff	14.18	5	750	97,540	-----	-----	-----	Pond 3 Pre
13	SCS Runoff	27.65	5	750	190,271	-----	-----	-----	Pond 2 Pre
14	SCS Runoff	26.97	5	740	153,248	-----	-----	-----	Pond 1 Pre
15	SCS Runoff	17.24	5	730	75,342	-----	-----	-----	Pond 4 Post Drainage Area
16	Reservoir	3.678	5	765	75,199	15	1002.62	42,459	Pond 4
17	SCS Runoff	27.50	5	730	120,208	-----	-----	-----	Pond 3 Post Drainage Area
18	Combine	28.18	5	730	195,407	16, 17	-----	-----	Pond 3 Total Inflow
19	Reservoir	12.49	5	760	195,321	18	1002.93	50,927	Pond 3
20	SCS Runoff	34.66	5	740	196,191	-----	-----	-----	Pond 1 Post Drainage Area
21	Combine	65.50	5	745	1,262,245	9, 19, 20	-----	-----	Pond 1 Total Inflow
22	Reservoir	47.31	5	775	1,259,478	21	1001.63	136,214	Pond 1
23	Combine	117.01	5	750	1,032,517	3, 10, 11, 12, 13, 14,	-----	-----	Combined Pre All
Newland Phase 1.gpw					Return Period: 5 Year			Friday, 05 / 22 / 2026	

Hydrograph Report

Hyd. No. 1

Pond 6 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	36.88 cfs
Storm frequency	=	5 yrs	Time to peak	=	13.08 hrs
Time interval	=	5 min	Hyd. volume	=	410,442 cuft
Drainage area	=	50.000 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	120.00 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

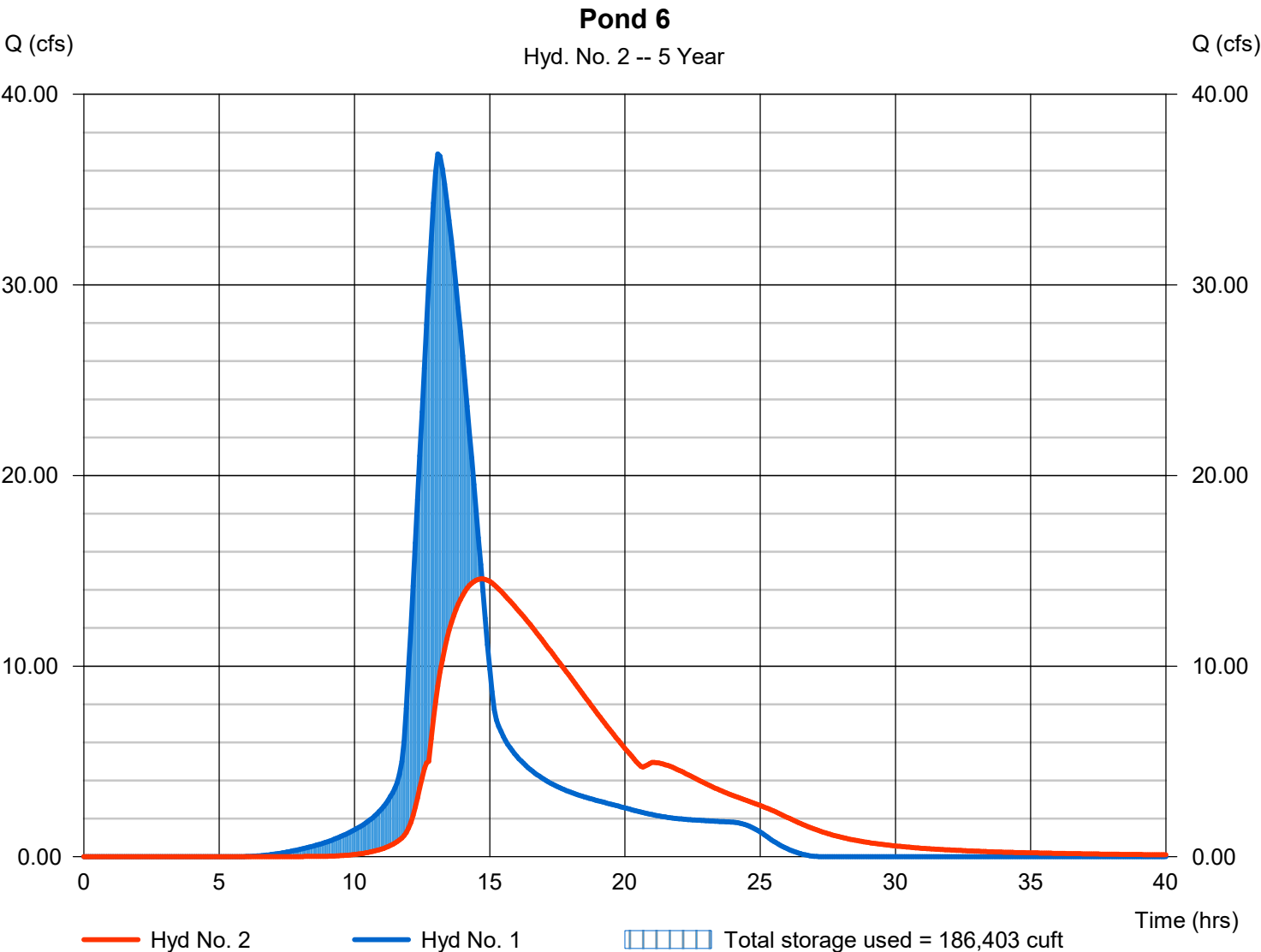
Friday, 05 / 22 / 2026

Hyd. No. 2

Pond 6

Hydrograph type	= Reservoir	Peak discharge	= 14.58 cfs
Storm frequency	= 5 yrs	Time to peak	= 14.75 hrs
Time interval	= 5 min	Hyd. volume	= 410,309 cuft
Inflow hyd. No.	= 1 - Pond 6 Post Drainage Area	Max. Elevation	= 1005.99 ft
Reservoir name	= <New Pond>	Max. Storage	= 186,403 cuft

Storage Indication method used.

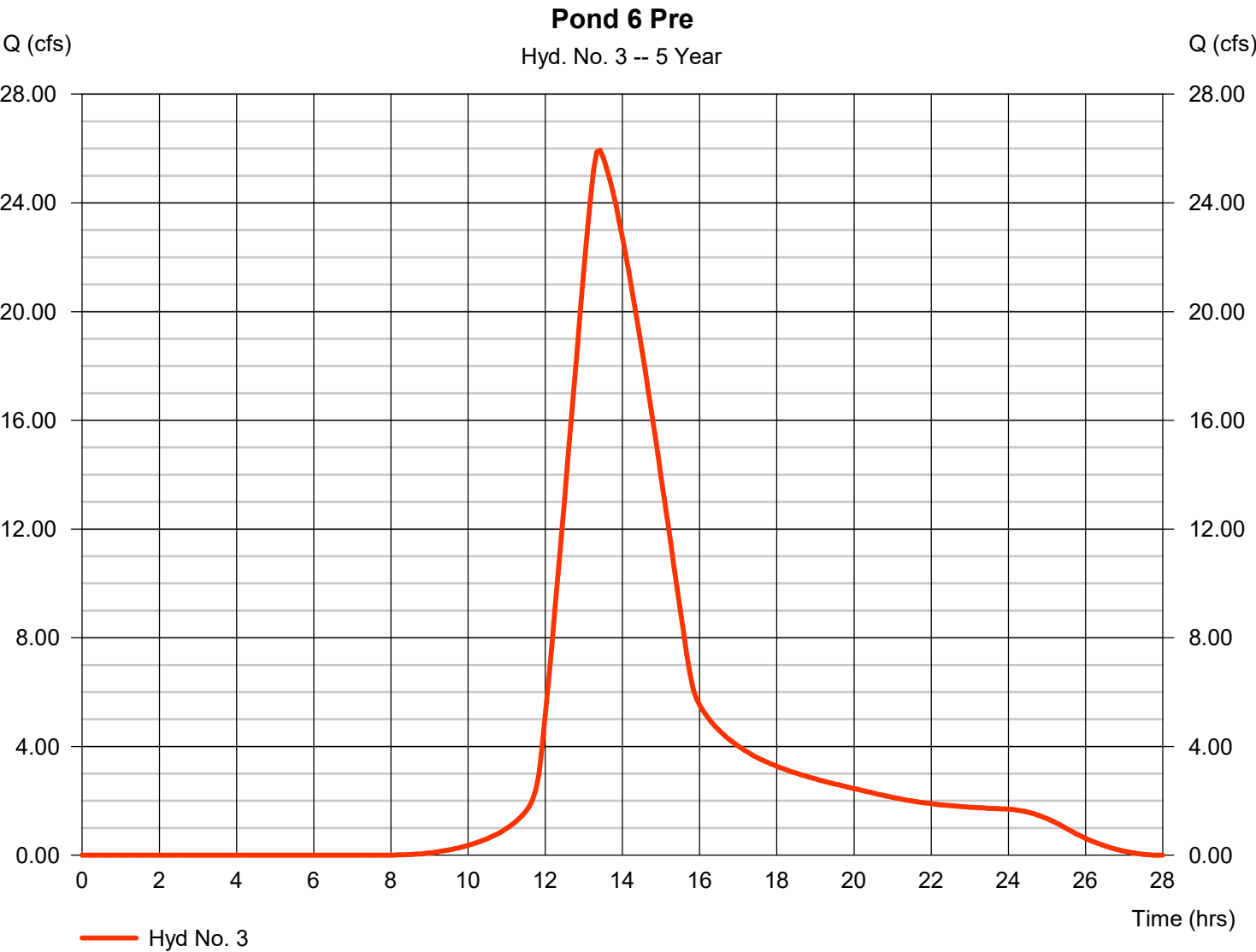


Hydrograph Report

Hyd. No. 3

Pond 6 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 25.94 cfs
Storm frequency	= 5 yrs	Time to peak	= 13.42 hrs
Time interval	= 5 min	Hyd. volume	= 334,557 cuft
Drainage area	= 50.000 ac	Curve number	= 85
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 150.00 min
Total precip.	= 3.30 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



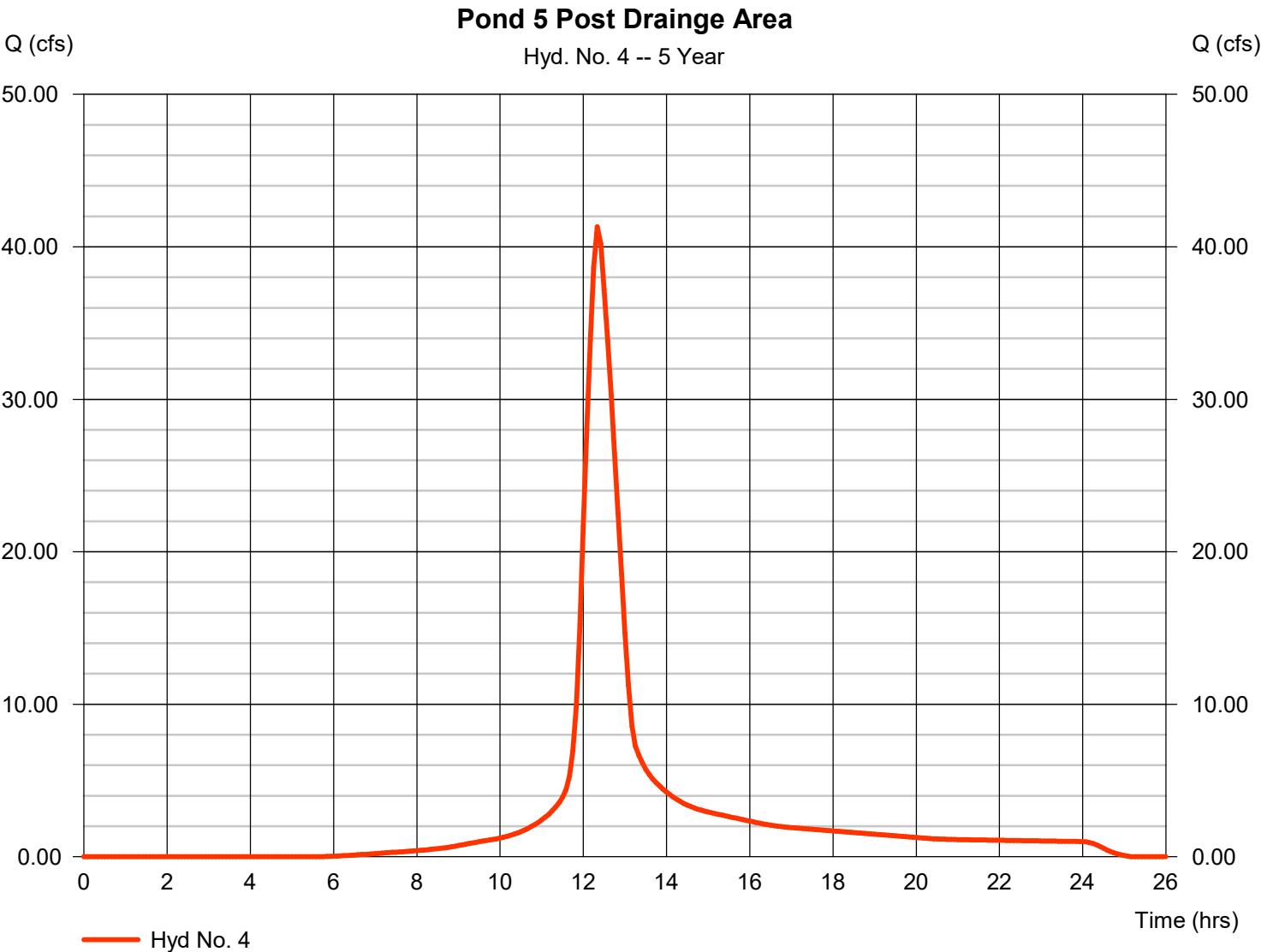
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025
Friday, 05 / 22 / 2026

Hyd. No. 4

Pond 5 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	41.31 cfs
Storm frequency	=	5 yrs	Time to peak	=	12.33 hrs
Time interval	=	5 min	Hyd. volume	=	233,788 cuft
Drainage area	=	28.480 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	45.00 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

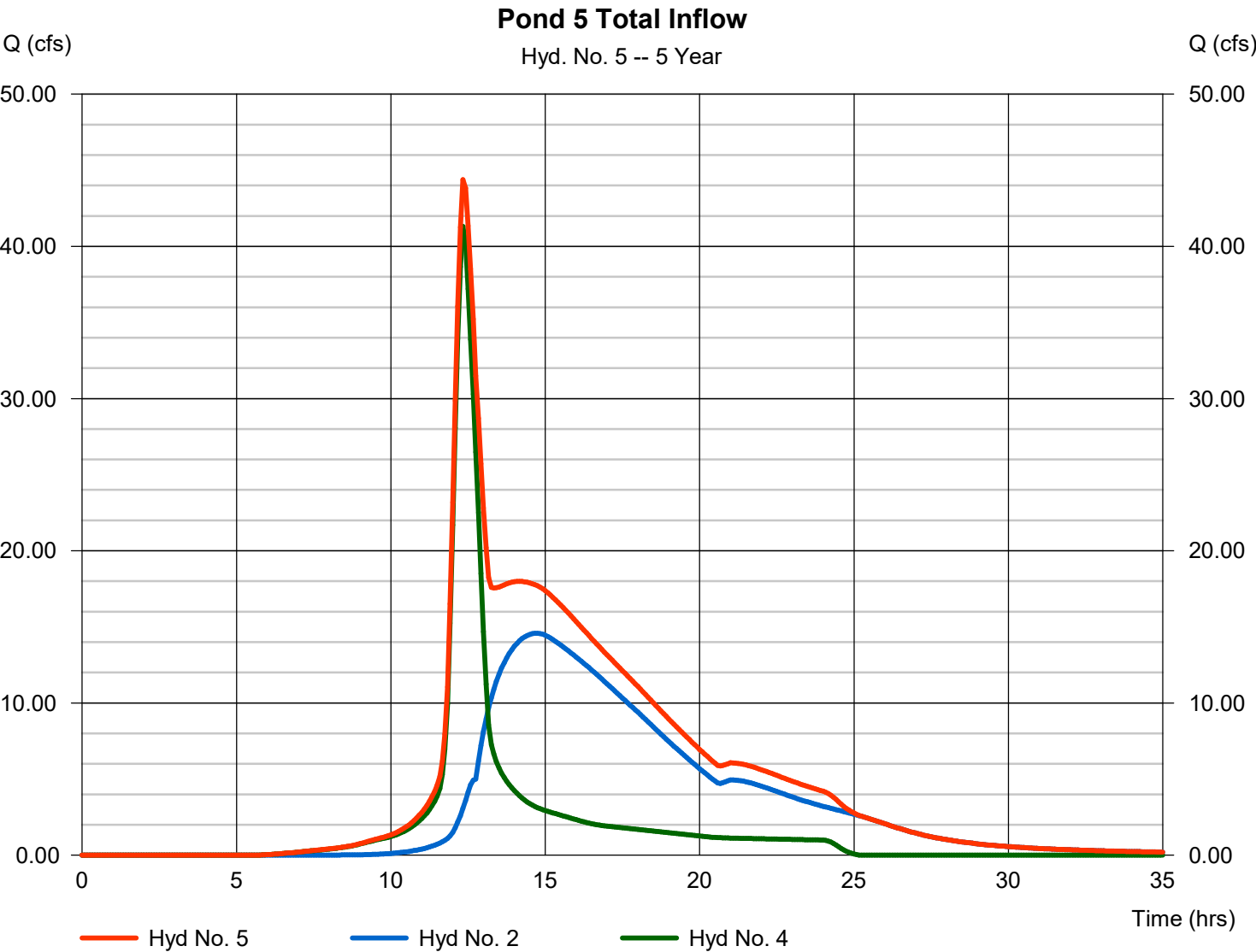


Hydrograph Report

Hyd. No. 5

Pond 5 Total Inflow

Hydrograph type	= Combine	Peak discharge	= 44.39 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.33 hrs
Time interval	= 5 min	Hyd. volume	= 644,096 cuft
Inflow hyds.	= 2, 4	Contrib. drain. area	= 28.480 ac



Hydrograph Report

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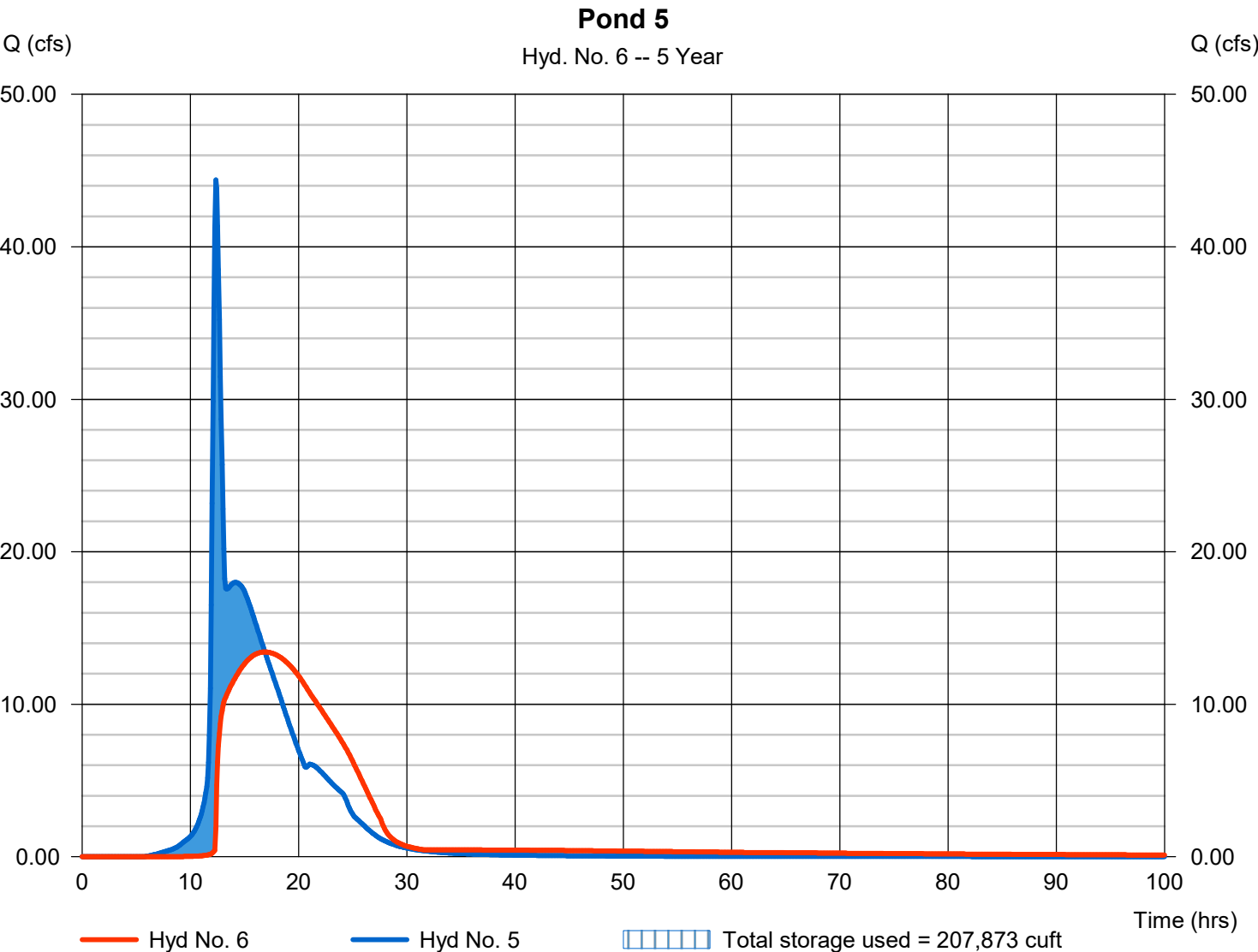
Friday, 05 / 22 / 2026

Hyd. No. 6

Pond 5

Hydrograph type	= Reservoir	Peak discharge	= 13.43 cfs
Storm frequency	= 5 yrs	Time to peak	= 16.83 hrs
Time interval	= 5 min	Hyd. volume	= 640,022 cuft
Inflow hyd. No.	= 5 - Pond 5 Total Inflow	Max. Elevation	= 1004.92 ft
Reservoir name	= <New Pond>	Max. Storage	= 207,873 cuft

Storage Indication method used.

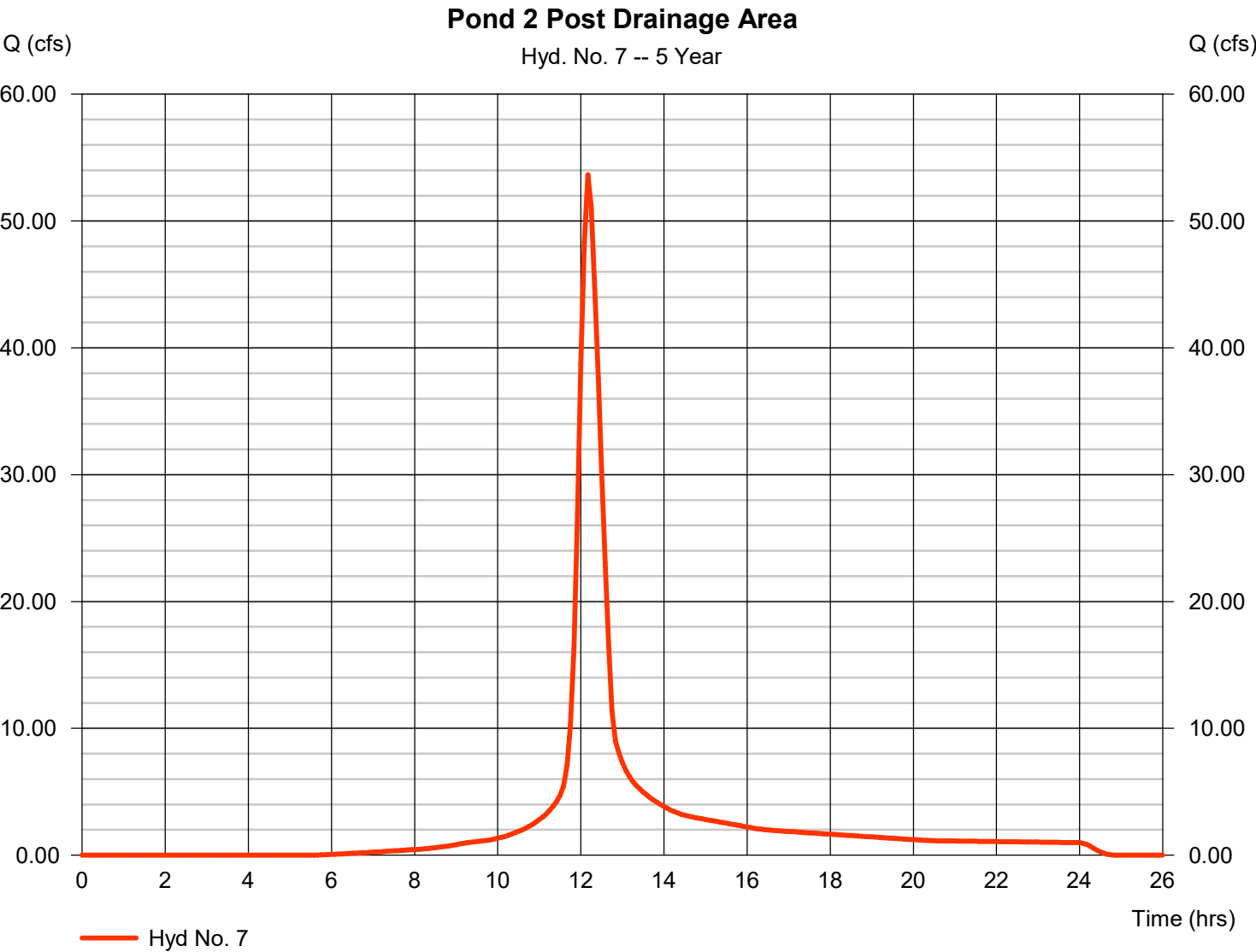


Hydrograph Report

Hyd. No. 7

Pond 2 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	53.65 cfs
Storm frequency	=	5 yrs	Time to peak	=	12.17 hrs
Time interval	=	5 min	Hyd. volume	=	234,491 cuft
Drainage area	=	27.700 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	30.00 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

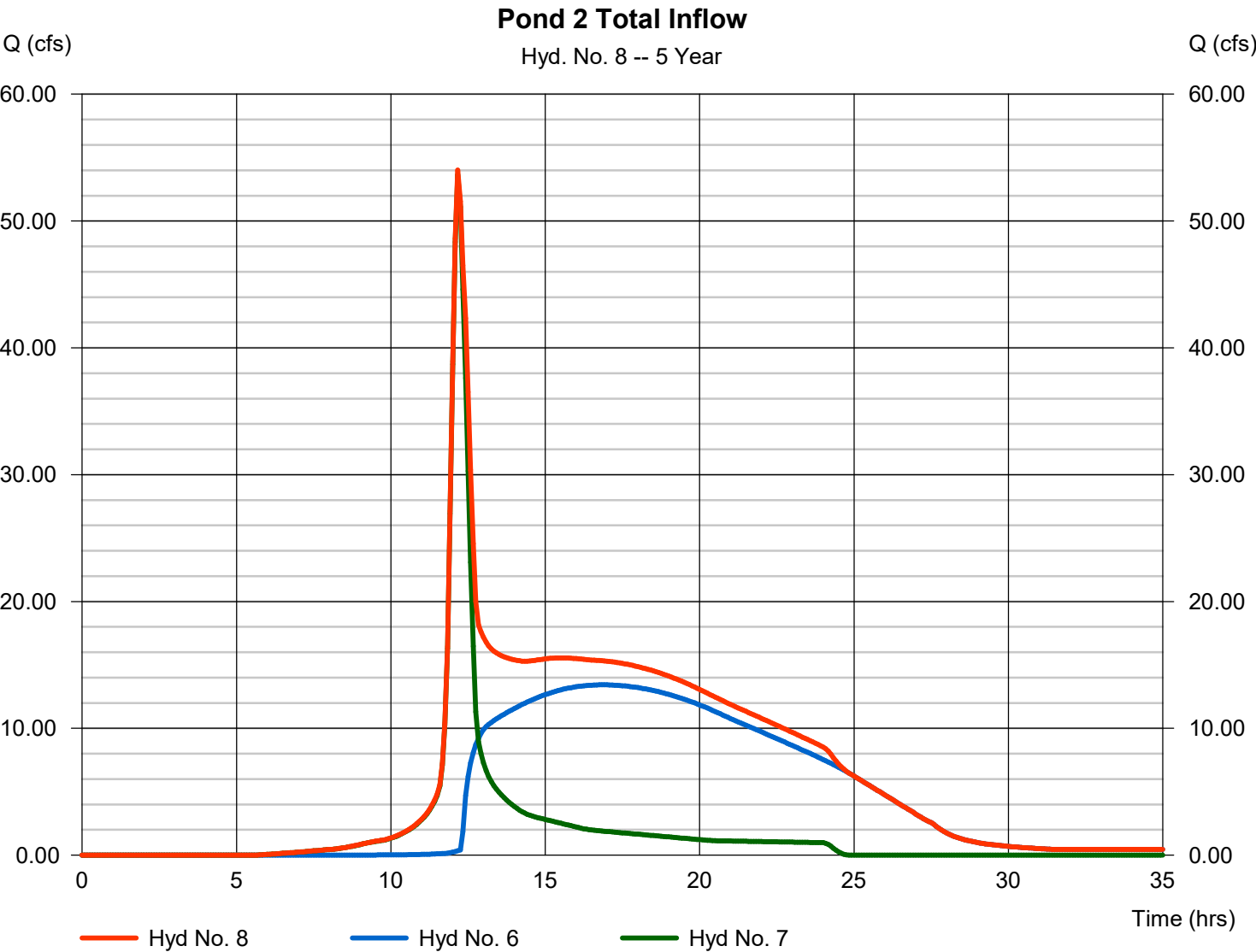


Hydrograph Report

Hyd. No. 8

Pond 2 Total Inflow

Hydrograph type	= Combine	Peak discharge	= 54.01 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.17 hrs
Time interval	= 5 min	Hyd. volume	= 874,513 cuft
Inflow hyds.	= 6, 7	Contrib. drain. area	= 27.700 ac



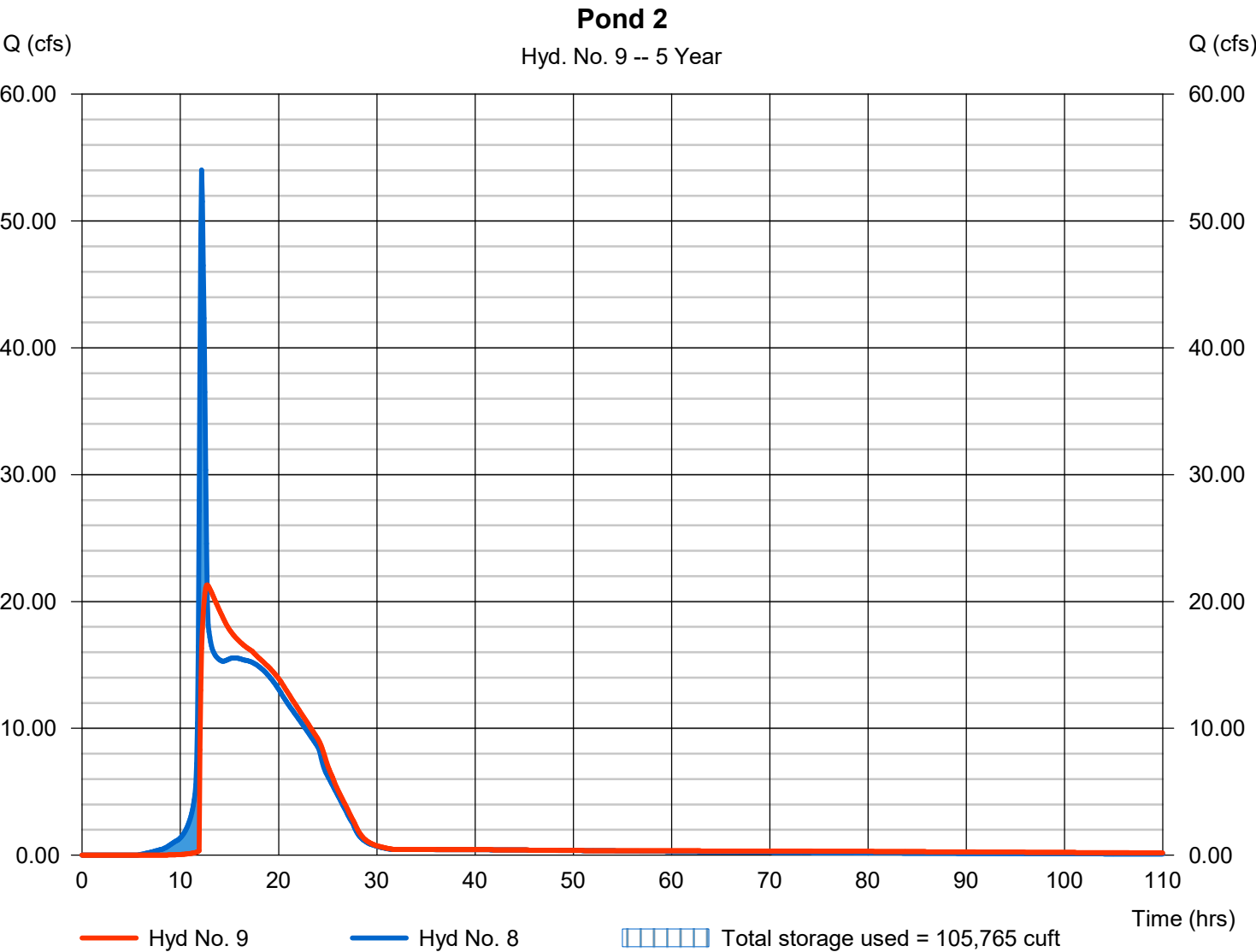
Hydrograph Report

Hyd. No. 9

Pond 2

Hydrograph type	= Reservoir	Peak discharge	= 21.32 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.75 hrs
Time interval	= 5 min	Hyd. volume	= 870,733 cuft
Inflow hyd. No.	= 8 - Pond 2 Total Inflow	Max. Elevation	= 1002.76 ft
Reservoir name	= <New Pond>	Max. Storage	= 105,765 cuft

Storage Indication method used.



Hydrograph Report

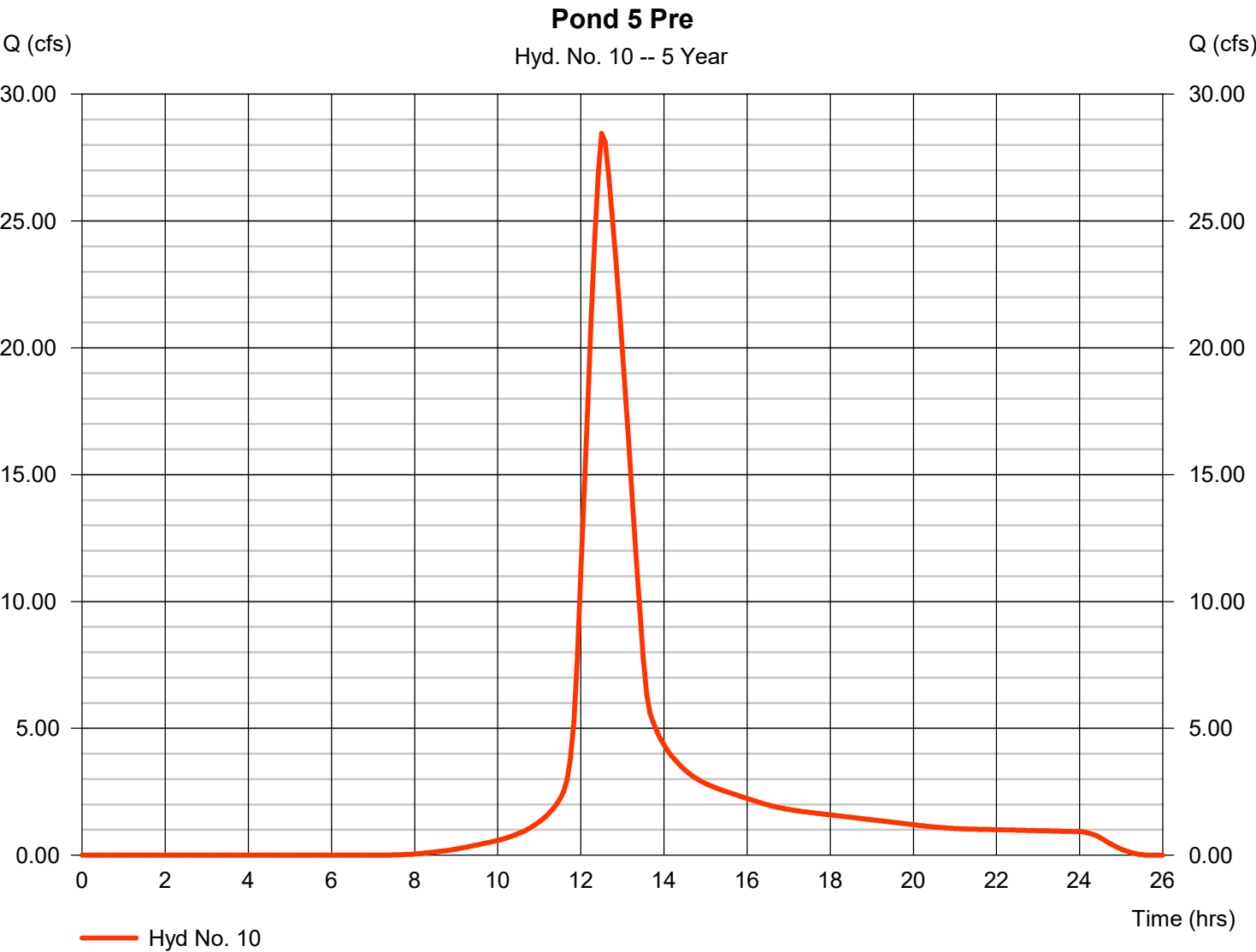
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Friday, 05 / 22 / 2026

Hyd. No. 10

Pond 5 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 28.45 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 195,767 cuft
Drainage area	= 28.500 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 60.00 min
Total precip.	= 3.30 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

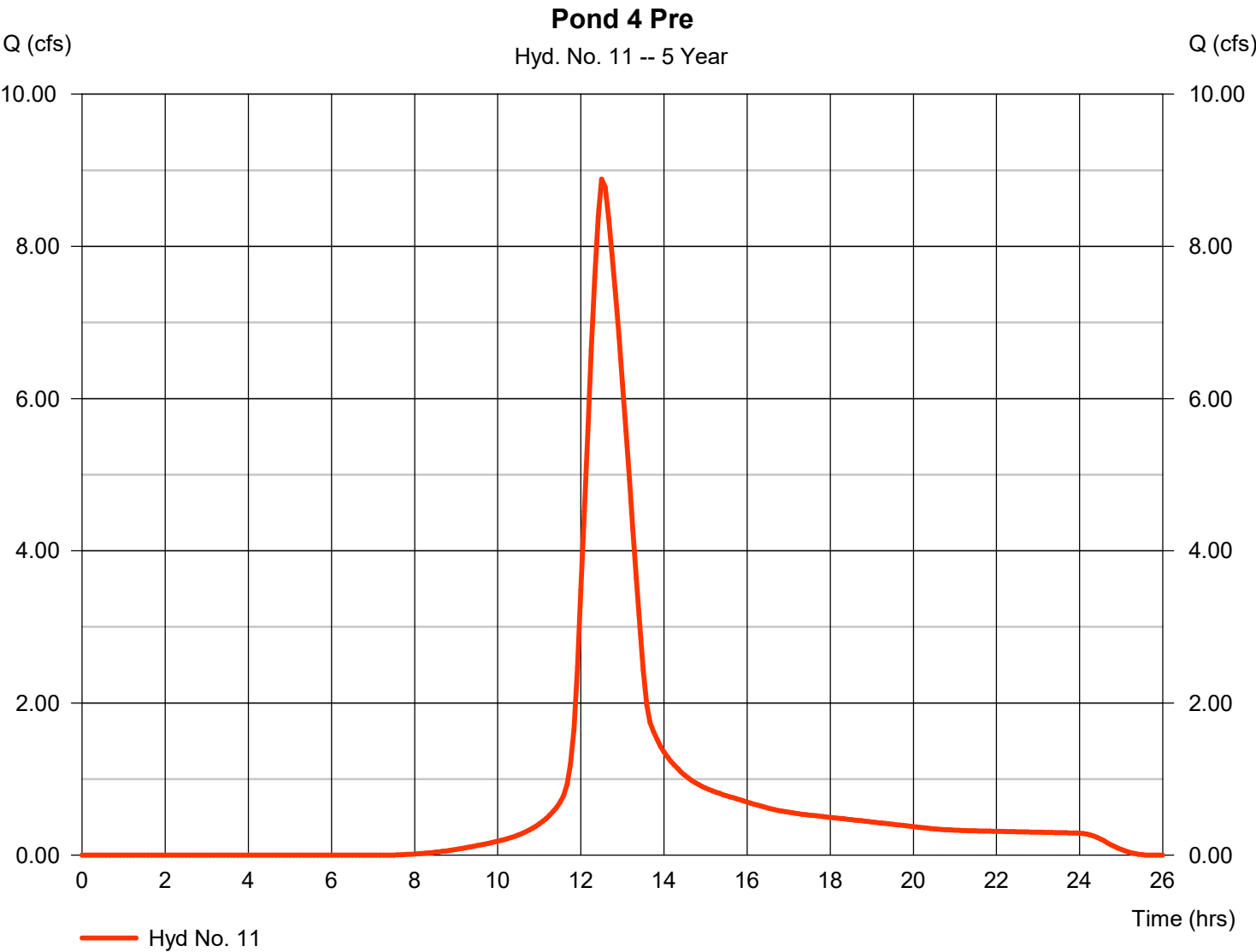


Hydrograph Report

Hyd. No. 11

Pond 4 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 8.885 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 61,134 cuft
Drainage area	= 8.900 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 60.00 min
Total precip.	= 3.30 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

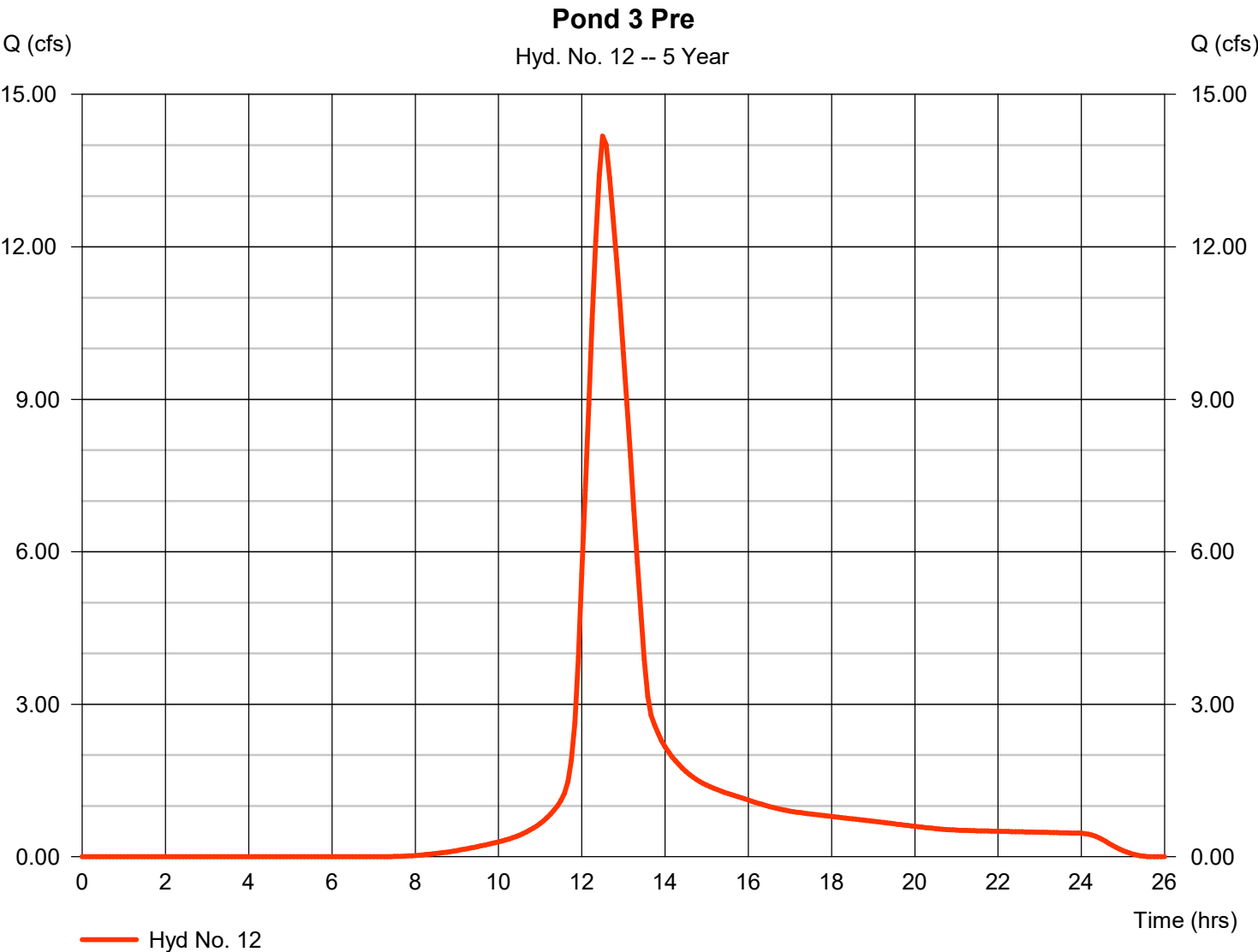
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Friday, 05 / 22 / 2026

Hyd. No. 12

Pond 3 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 14.18 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 97,540 cuft
Drainage area	= 14.200 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 60.00 min
Total precip.	= 3.30 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

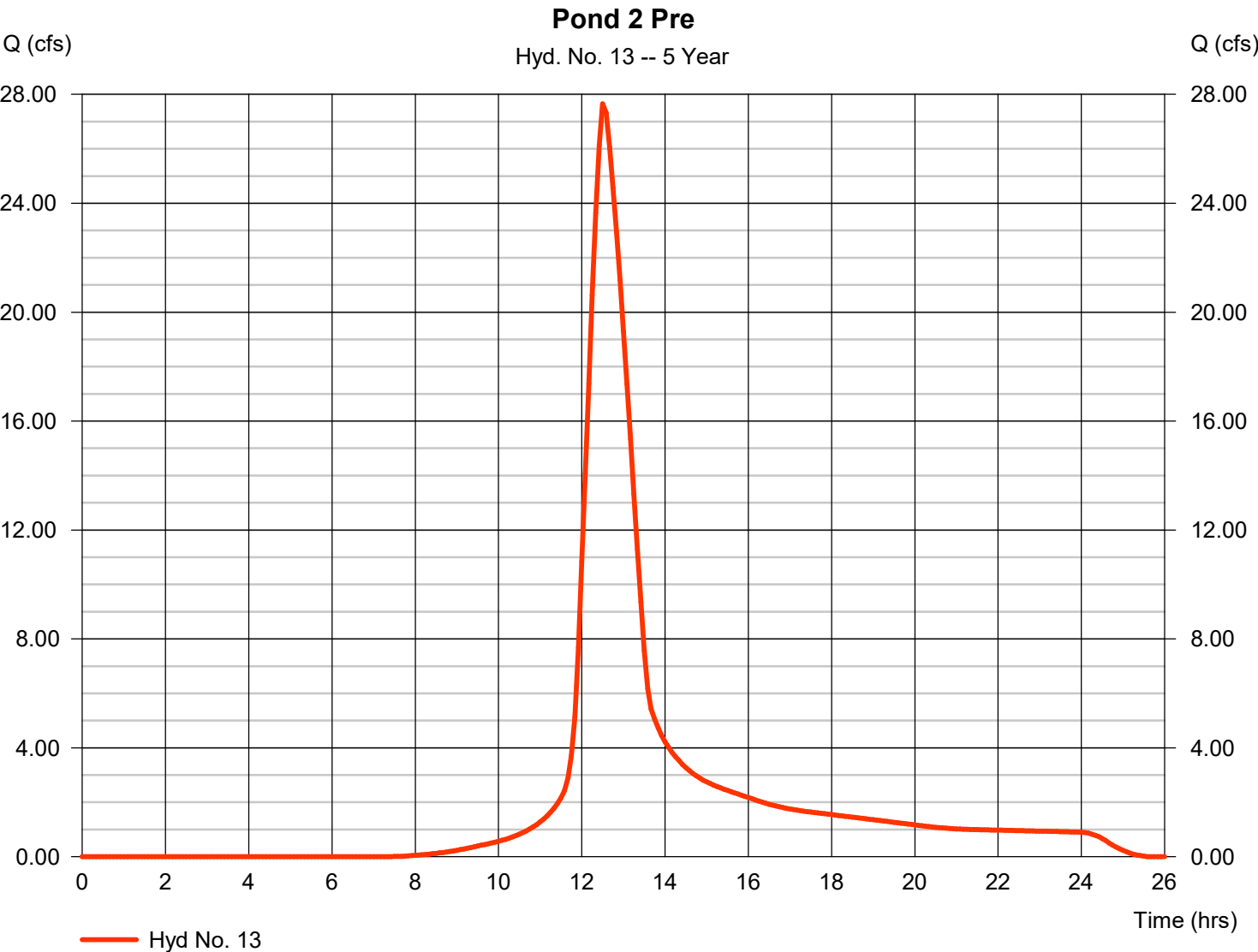
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Friday, 05 / 22 / 2026

Hyd. No. 13

Pond 2 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 27.65 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 190,271 cuft
Drainage area	= 27.700 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 60.00 min
Total precip.	= 3.30 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

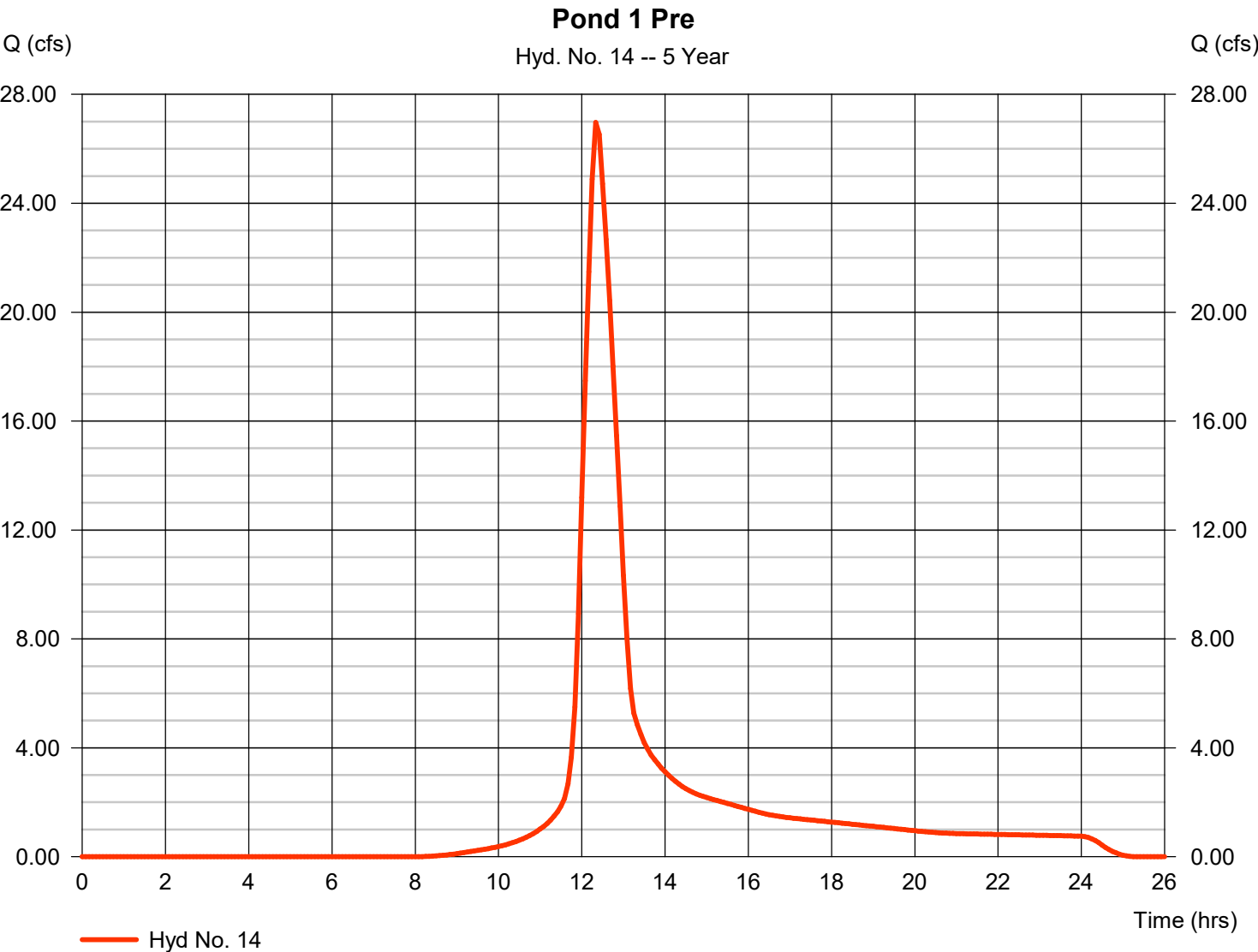
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Friday, 05 / 22 / 2026

Hyd. No. 14

Pond 1 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 26.97 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.33 hrs
Time interval	= 5 min	Hyd. volume	= 153,248 cuft
Drainage area	= 23.900 ac	Curve number	= 84
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 45.00 min
Total precip.	= 3.30 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

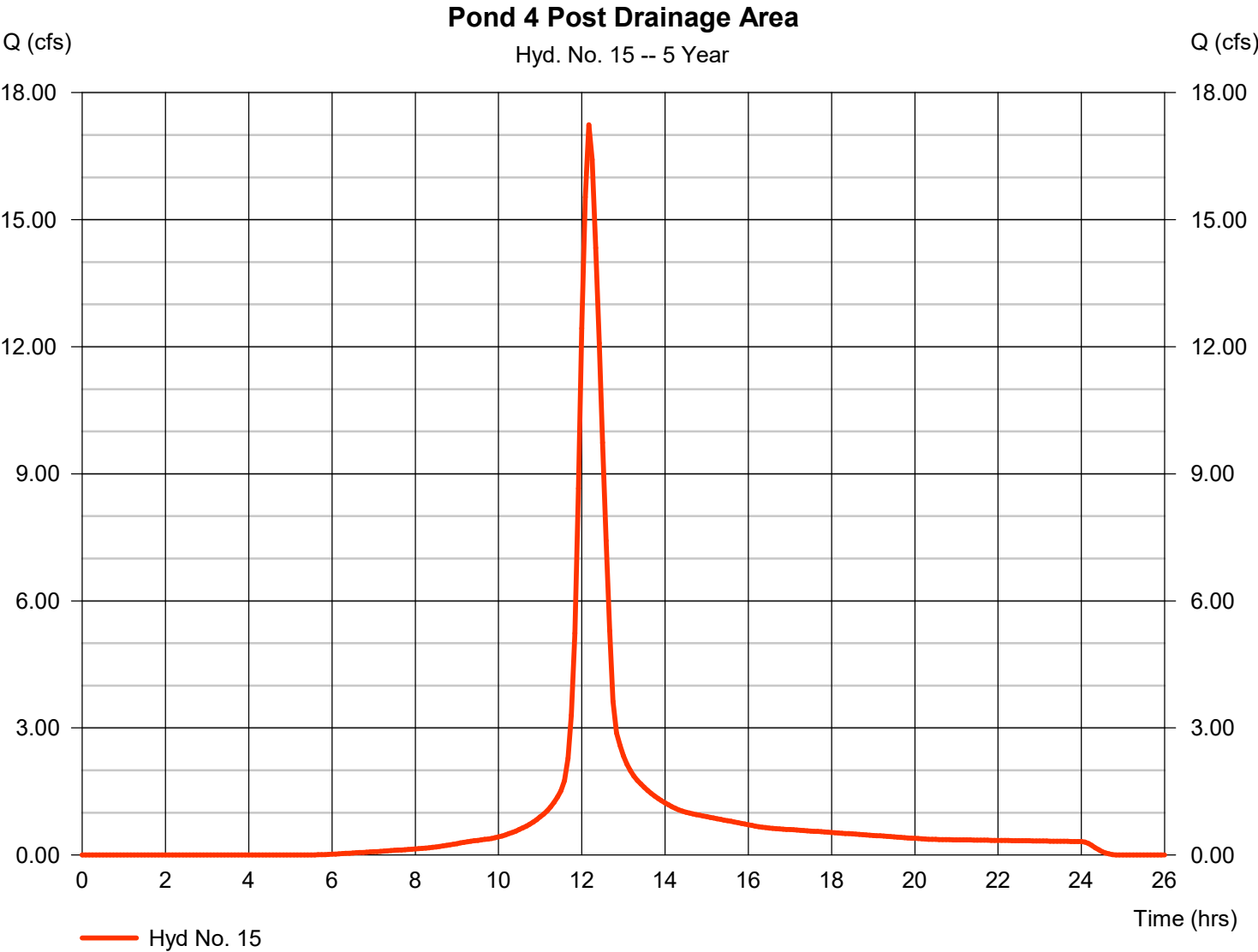


Hydrograph Report

Hyd. No. 15

Pond 4 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	17.24 cfs
Storm frequency	=	5 yrs	Time to peak	=	12.17 hrs
Time interval	=	5 min	Hyd. volume	=	75,342 cuft
Drainage area	=	8.900 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	30.00 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

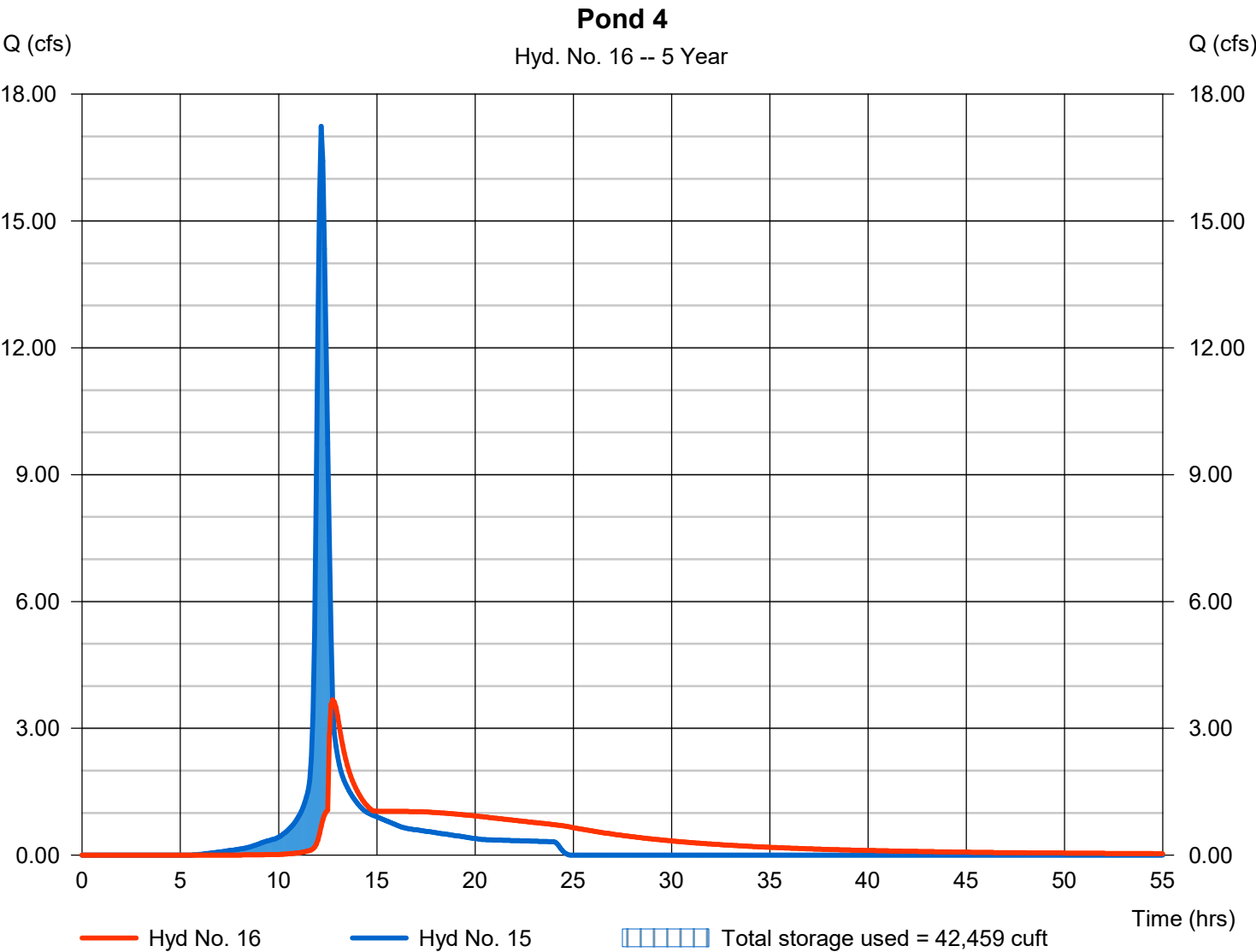
Friday, 05 / 22 / 2026

Hyd. No. 16

Pond 4

Hydrograph type	= Reservoir	Peak discharge	= 3.678 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.75 hrs
Time interval	= 5 min	Hyd. volume	= 75,199 cuft
Inflow hyd. No.	= 15 - Pond 4 Post Drainage Area	Max. Elevation	= 1002.62 ft
Reservoir name	= <New Pond>	Max. Storage	= 42,459 cuft

Storage Indication method used.



Hydrograph Report

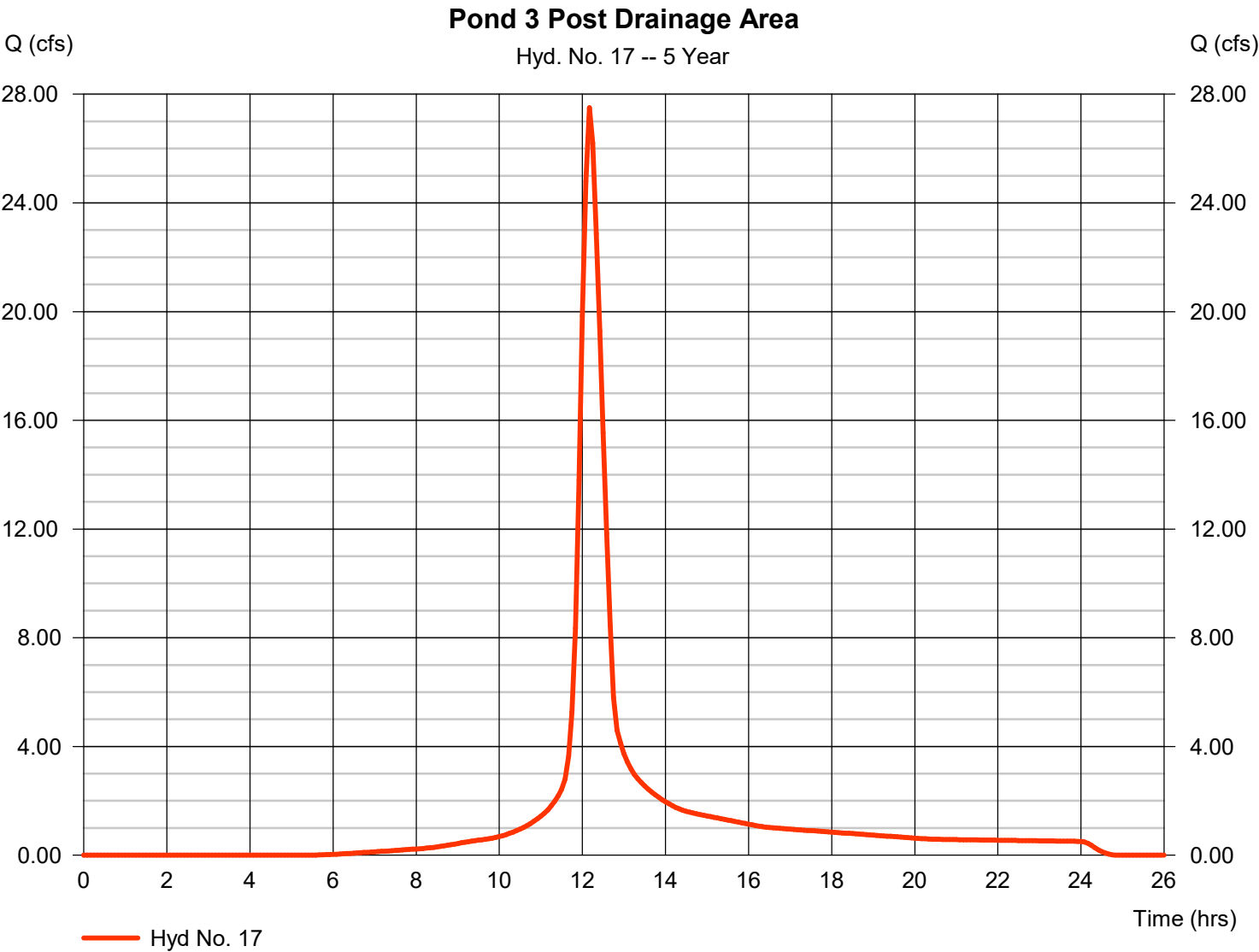
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Friday, 05 / 22 / 2026

Hyd. No. 17

Pond 3 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	27.50 cfs
Storm frequency	=	5 yrs	Time to peak	=	12.17 hrs
Time interval	=	5 min	Hyd. volume	=	120,208 cuft
Drainage area	=	14.200 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	30.00 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

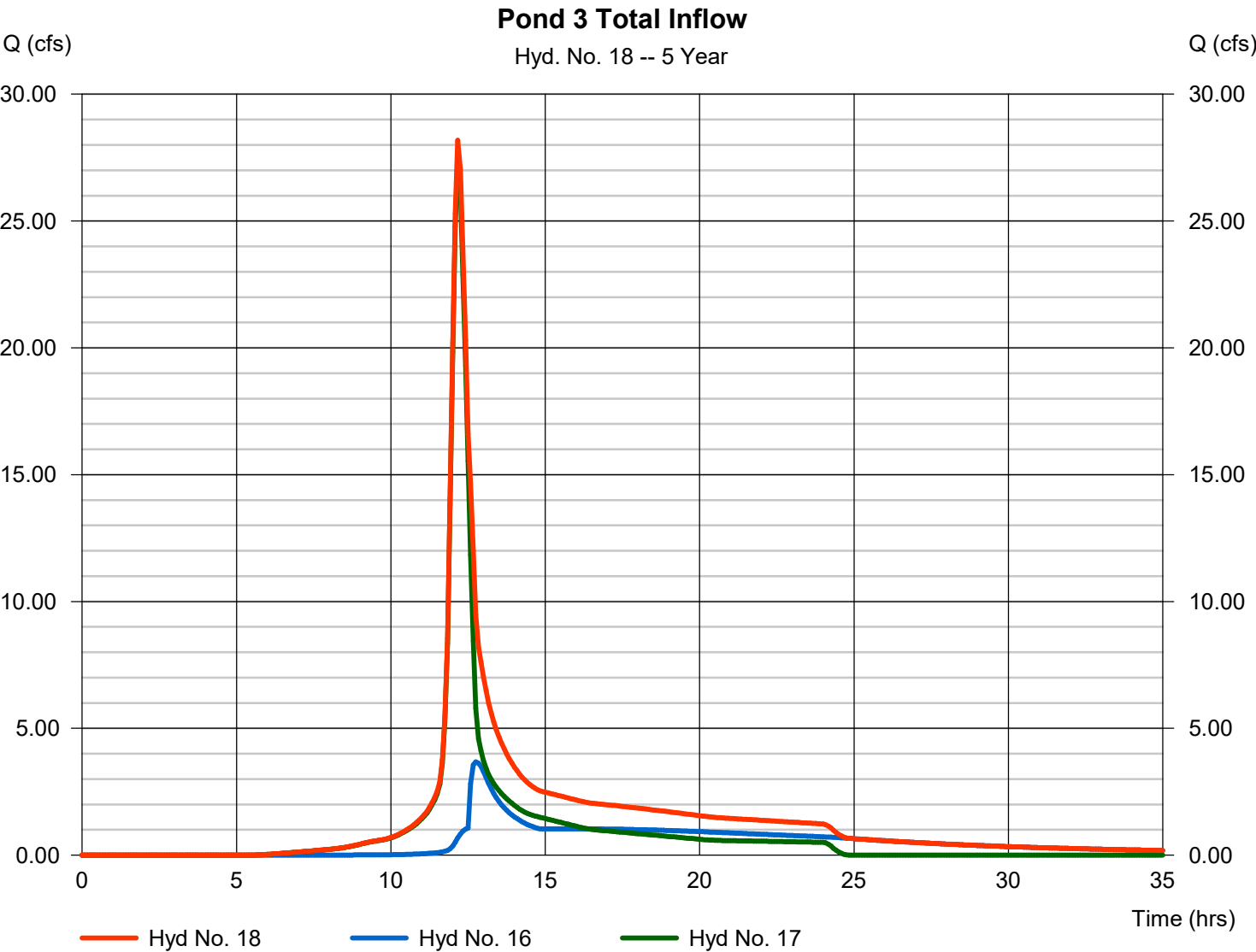
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Friday, 05 / 22 / 2026

Hyd. No. 18

Pond 3 Total Inflow

Hydrograph type	= Combine	Peak discharge	= 28.18 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.17 hrs
Time interval	= 5 min	Hyd. volume	= 195,407 cuft
Inflow hyds.	= 16, 17	Contrib. drain. area	= 14.200 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

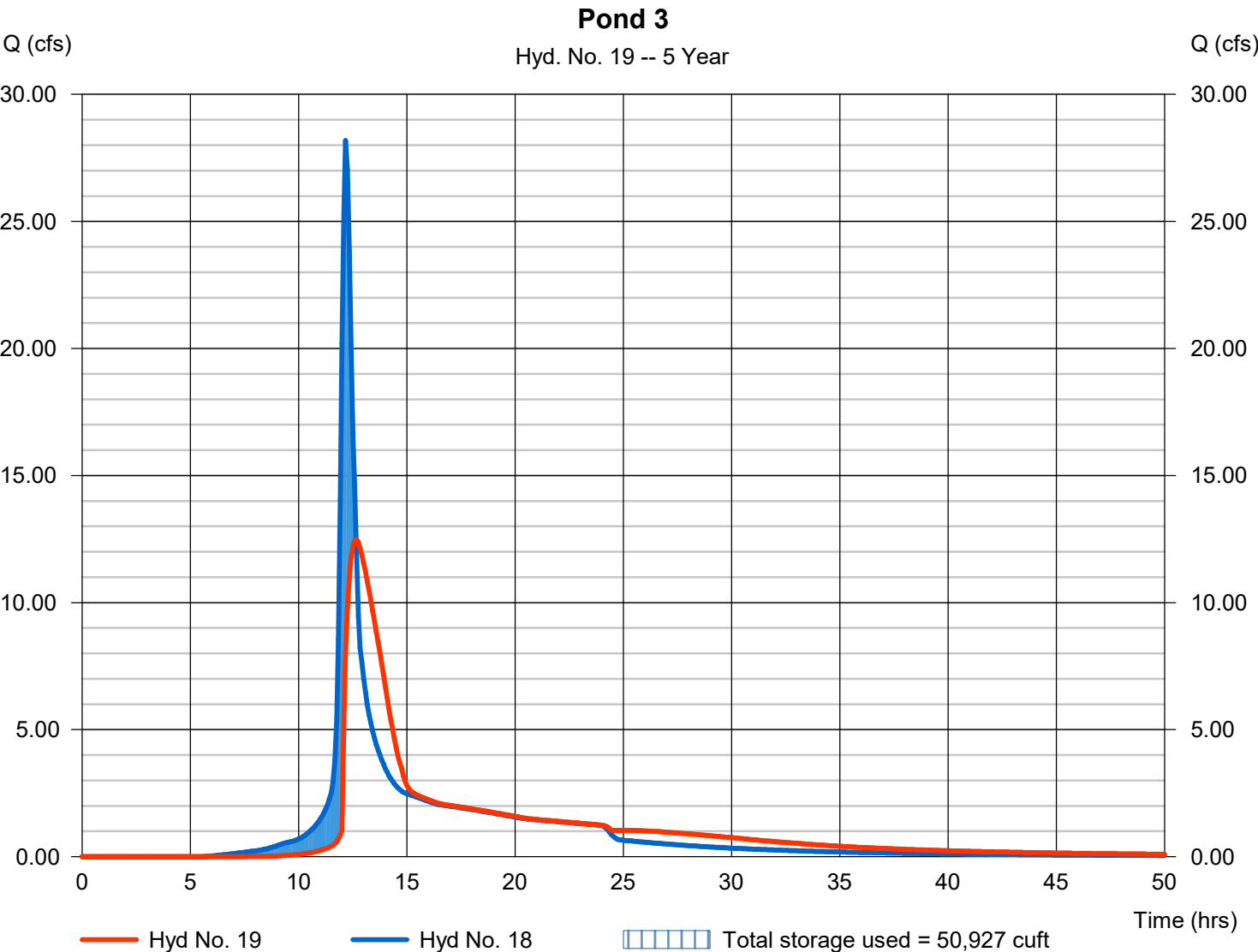
Friday, 05 / 22 / 2026

Hyd. No. 19

Pond 3

Hydrograph type	= Reservoir	Peak discharge	= 12.49 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.67 hrs
Time interval	= 5 min	Hyd. volume	= 195,321 cuft
Inflow hyd. No.	= 18 - Pond 3 Total Inflow	Max. Elevation	= 1002.93 ft
Reservoir name	= <New Pond>	Max. Storage	= 50,927 cuft

Storage Indication method used.



Hydrograph Report

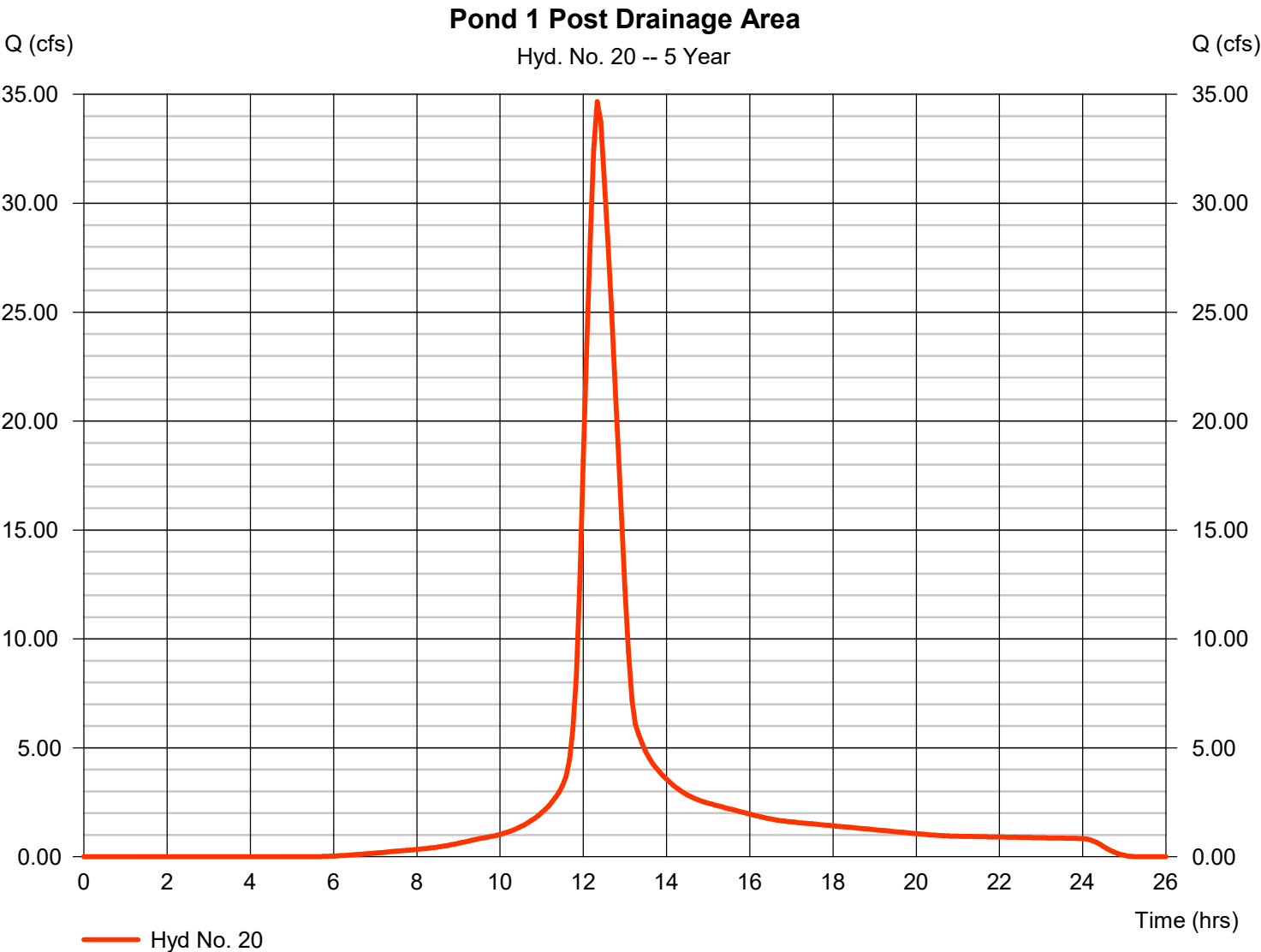
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Friday, 05 / 22 / 2026

Hyd. No. 20

Pond 1 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	34.66 cfs
Storm frequency	=	5 yrs	Time to peak	=	12.33 hrs
Time interval	=	5 min	Hyd. volume	=	196,191 cuft
Drainage area	=	23.900 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	45.00 min
Total precip.	=	3.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

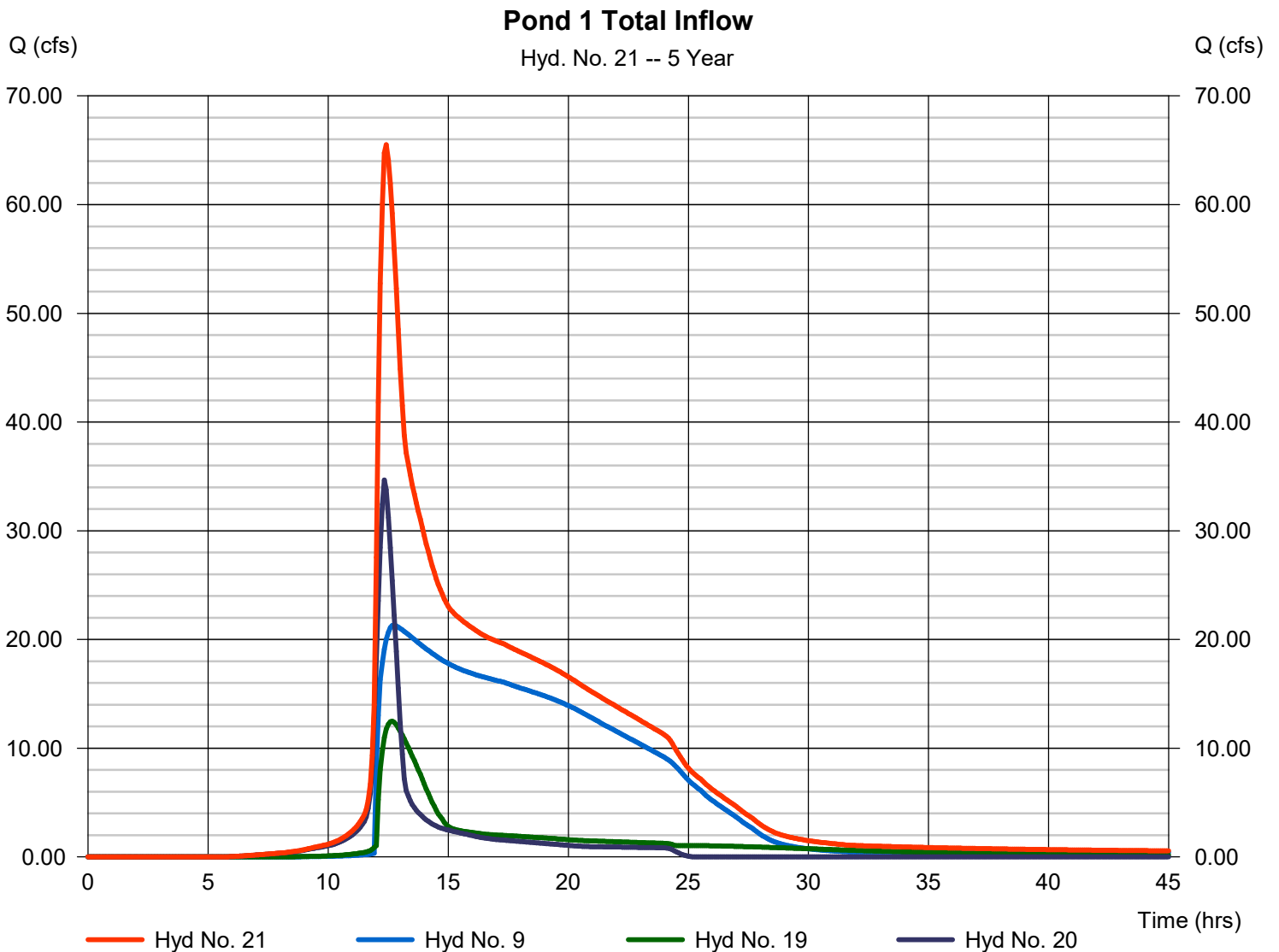
Friday, 05 / 22 / 2026

Hyd. No. 21

Pond 1 Total Inflow

Hydrograph type = Combine
Storm frequency = 5 yrs
Time interval = 5 min
Inflow hyds. = 9, 19, 20

Peak discharge = 65.50 cfs
Time to peak = 12.42 hrs
Hyd. volume = 1,262,245 cuft
Contrib. drain. area = 23.900 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

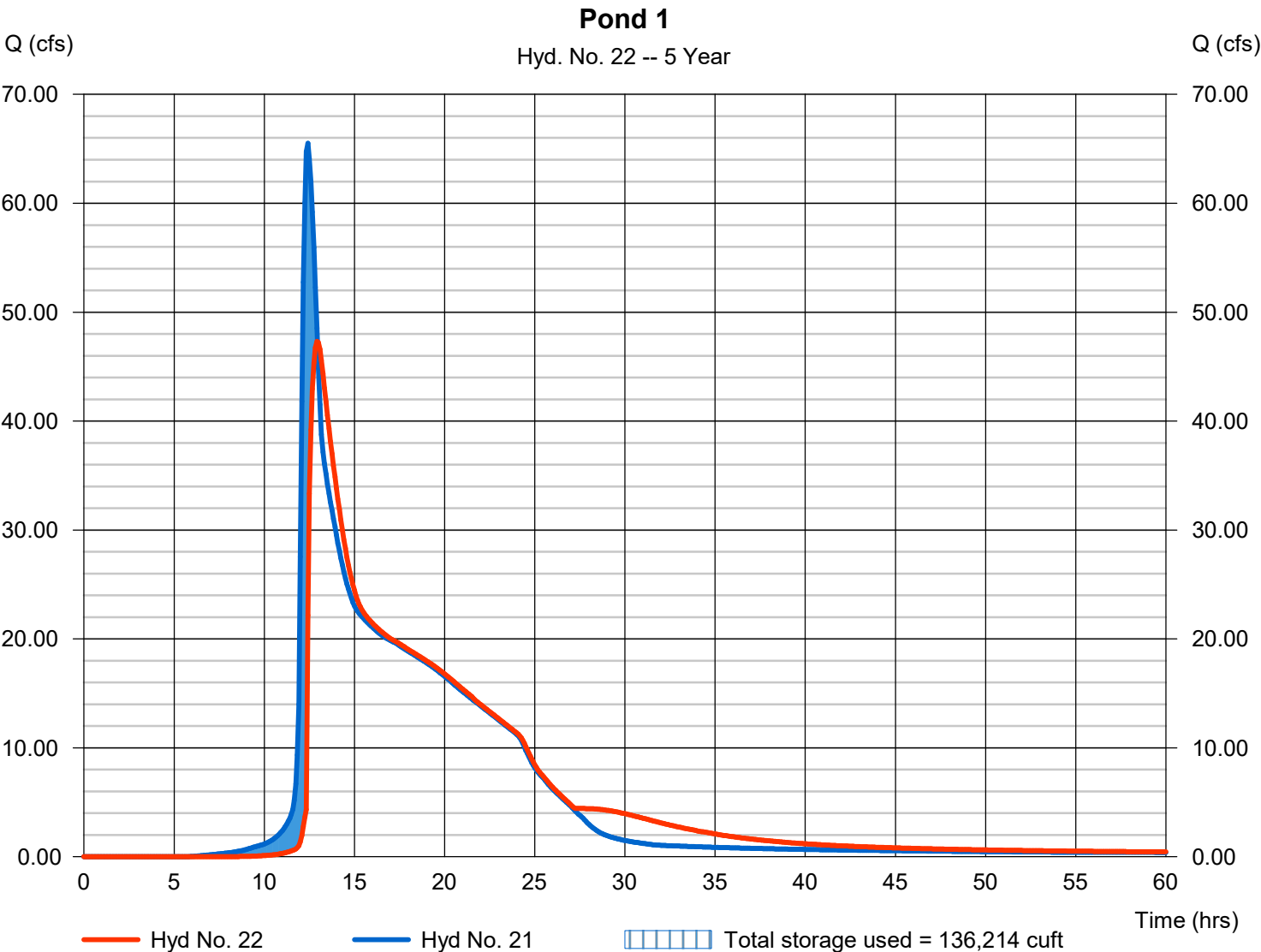
Friday, 05 / 22 / 2026

Hyd. No. 22

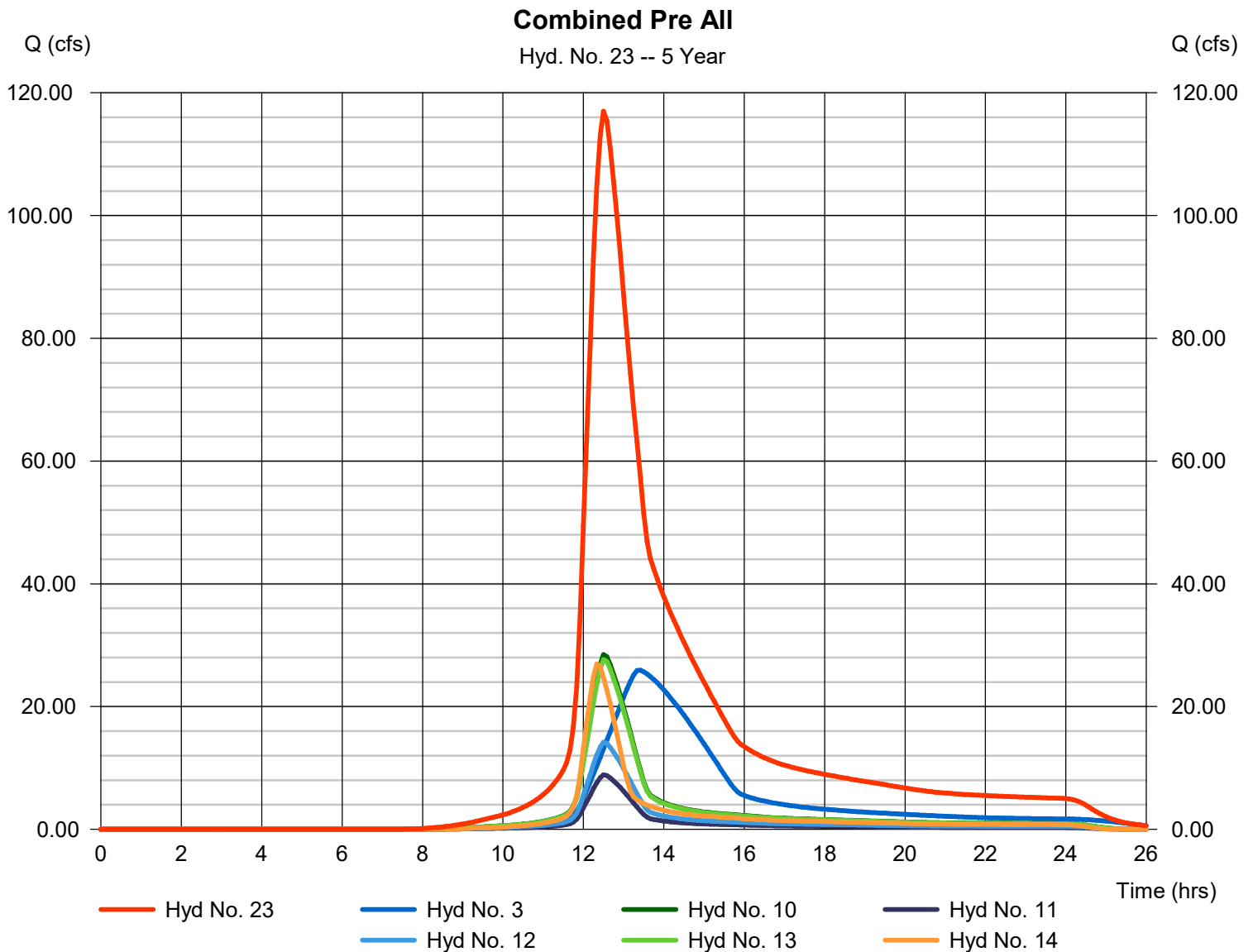
Pond 1

Hydrograph type	= Reservoir	Peak discharge	= 47.31 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.92 hrs
Time interval	= 5 min	Hyd. volume	= 1,259,478 cuft
Inflow hyd. No.	= 21 - Pond 1 Total Inflow	Max. Elevation	= 1001.63 ft
Reservoir name	= <New Pond>	Max. Storage	= 136,214 cuft

Storage Indication method used.



Contrib. drain. area = 153.200 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

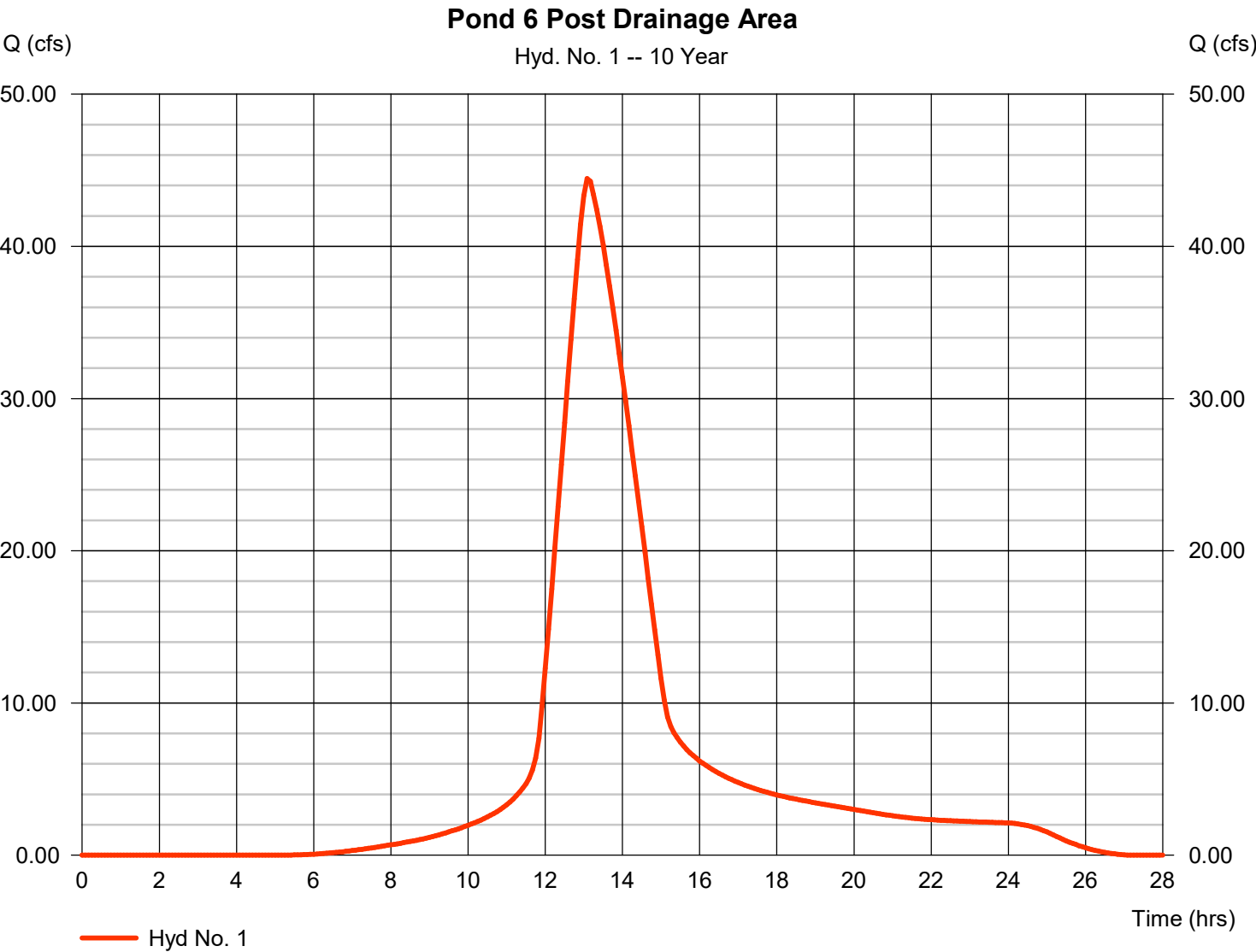
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	44.45	5	785	495,488	-----	-----	-----	Pond 6 Post Drainage Area
2	Reservoir	16.59	5	885	495,354	1	1006.97	229,666	Pond 6
3	SCS Runoff	32.24	5	805	413,799	-----	-----	-----	Pond 6 Pre
4	SCS Runoff	49.68	5	740	282,230	-----	-----	-----	Pond 5 Post Drainage Area
5	Combine	53.82	5	740	777,583	2, 4	-----	-----	Pond 5 Total Inflow
6	Reservoir	15.35	5	1030	773,487	5	1005.82	252,590	Pond 5
7	SCS Runoff	64.48	5	730	283,078	-----	-----	-----	Pond 2 Post Drainage Area
8	Combine	65.14	5	735	1,056,566	6, 7	-----	-----	Pond 2 Total Inflow
9	Reservoir	24.00	5	765	1,052,768	8	1003.67	133,298	Pond 2
10	SCS Runoff	35.09	5	750	240,940	-----	-----	-----	Pond 5 Pre
11	SCS Runoff	10.96	5	750	75,241	-----	-----	-----	Pond 4 Pre
12	SCS Runoff	17.48	5	750	120,047	-----	-----	-----	Pond 3 Pre
13	SCS Runoff	34.11	5	750	234,176	-----	-----	-----	Pond 2 Pre
14	SCS Runoff	33.68	5	740	190,499	-----	-----	-----	Pond 1 Pre
15	SCS Runoff	20.72	5	730	90,953	-----	-----	-----	Pond 4 Post Drainage Area
16	Reservoir	6.025	5	760	90,810	15	1002.83	48,223	Pond 4
17	SCS Runoff	33.05	5	730	145,116	-----	-----	-----	Pond 3 Post Drainage Area
18	Combine	33.92	5	730	235,926	16, 17	-----	-----	Pond 3 Total Inflow
19	Reservoir	14.34	5	765	235,839	18	1003.59	65,039	Pond 3
20	SCS Runoff	41.69	5	740	236,843	-----	-----	-----	Pond 1 Post Drainage Area
21	Combine	76.45	5	745	1,525,453	9, 19, 20	-----	-----	Pond 1 Total Inflow
22	Reservoir	55.99	5	775	1,522,673	21	1002.09	153,379	Pond 1
23	Combine	145.03	5	750	1,274,700	3, 10, 11, 12, 13, 14,	-----	-----	Combined Pre All
Newland Phase 1.gpw					Return Period: 10 Year			Friday, 05 / 22 / 2026	

Hydrograph Report

Hyd. No. 1

Pond 6 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	44.45 cfs
Storm frequency	=	10 yrs	Time to peak	=	13.08 hrs
Time interval	=	5 min	Hyd. volume	=	495,488 cuft
Drainage area	=	50.000 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	120.00 min
Total precip.	=	3.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

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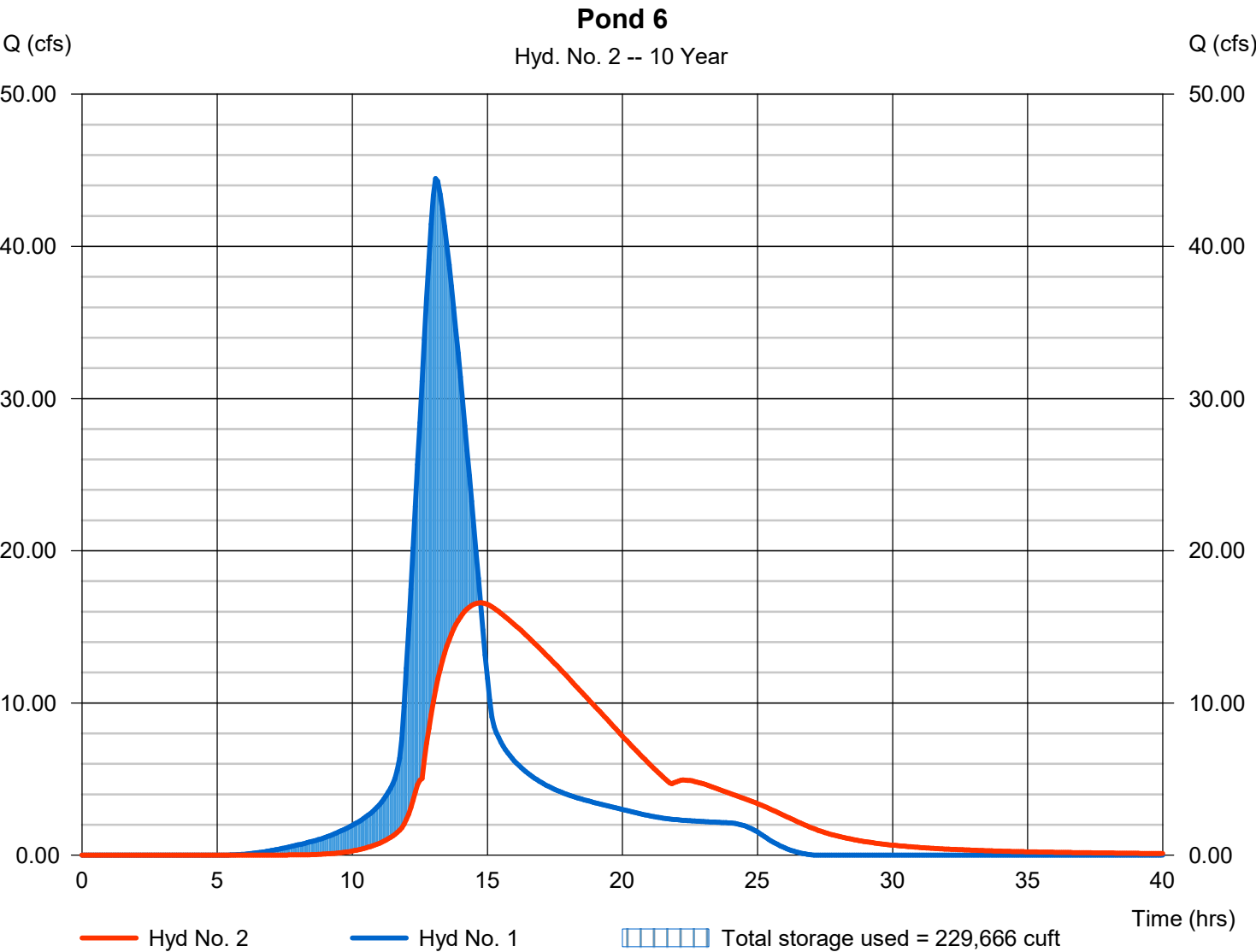
Friday, 05 / 22 / 2026

Hyd. No. 2

Pond 6

Hydrograph type	= Reservoir	Peak discharge	= 16.59 cfs
Storm frequency	= 10 yrs	Time to peak	= 14.75 hrs
Time interval	= 5 min	Hyd. volume	= 495,354 cuft
Inflow hyd. No.	= 1 - Pond 6 Post Drainage Area	Max. Elevation	= 1006.97 ft
Reservoir name	= <New Pond>	Max. Storage	= 229,666 cuft

Storage Indication method used.

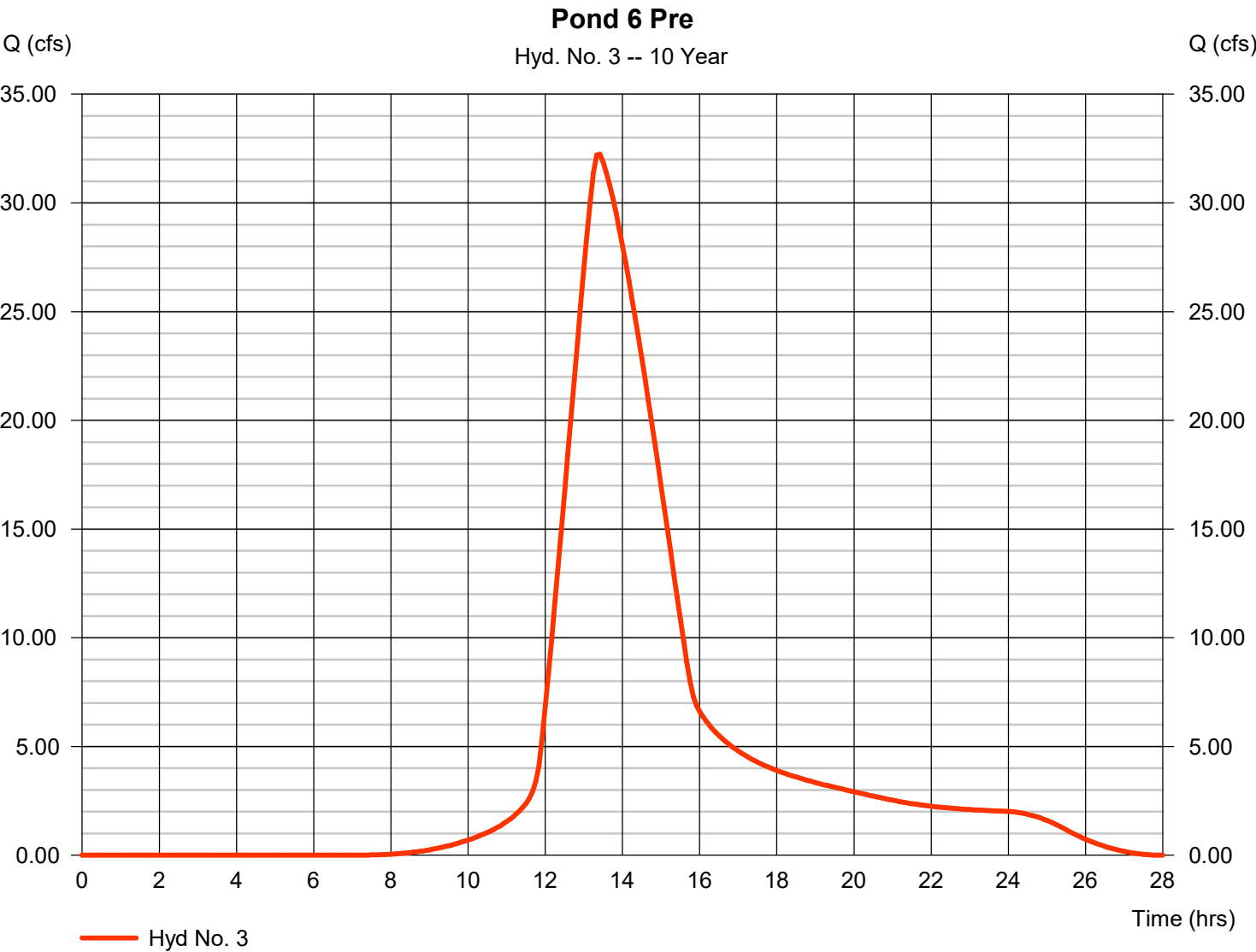


Hydrograph Report

Hyd. No. 3

Pond 6 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 32.24 cfs
Storm frequency	= 10 yrs	Time to peak	= 13.42 hrs
Time interval	= 5 min	Hyd. volume	= 413,799 cuft
Drainage area	= 50.000 ac	Curve number	= 85
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 150.00 min
Total precip.	= 3.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

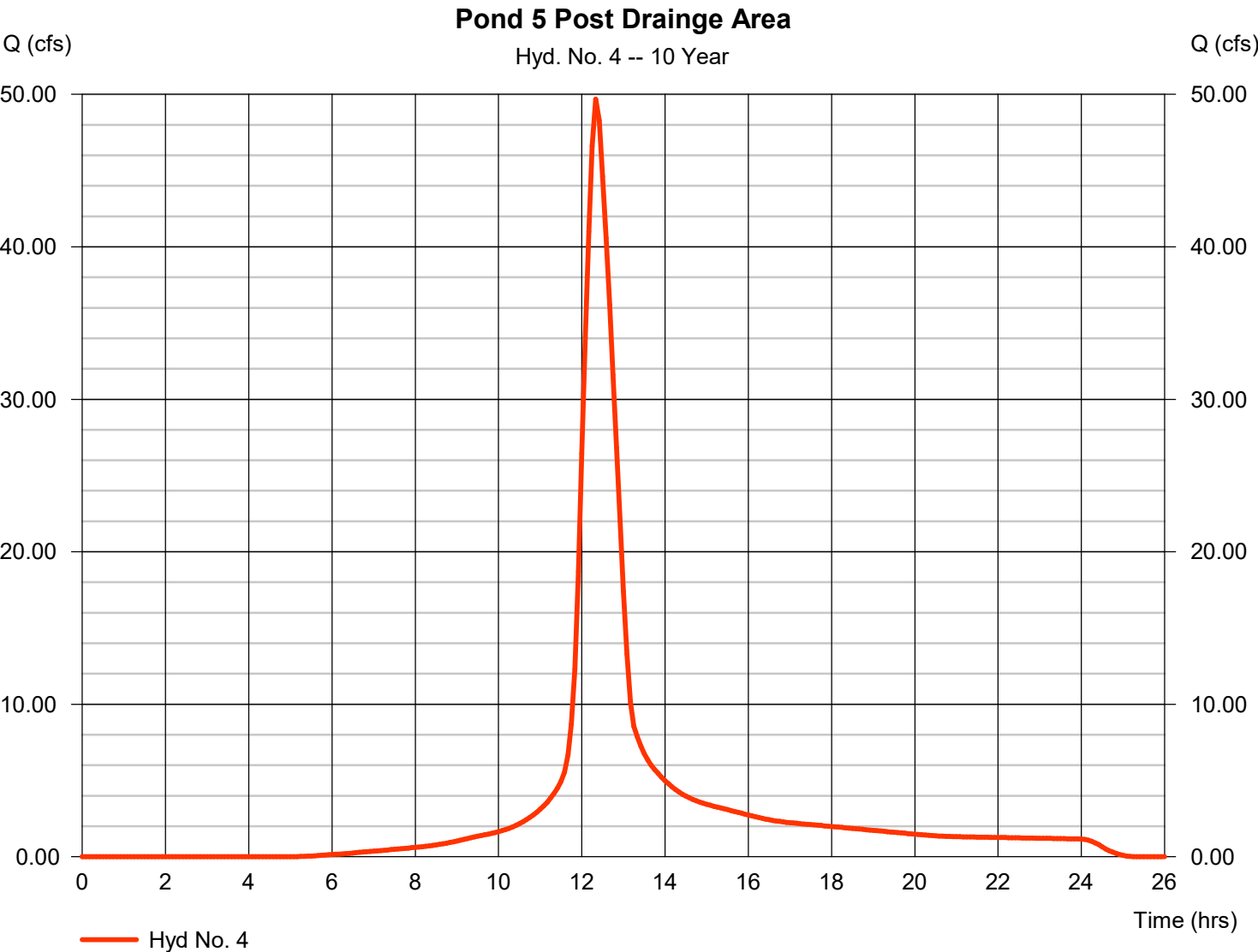
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Friday, 05 / 22 / 2026

Hyd. No. 4

Pond 5 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	49.68 cfs
Storm frequency	=	10 yrs	Time to peak	=	12.33 hrs
Time interval	=	5 min	Hyd. volume	=	282,230 cuft
Drainage area	=	28.480 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	45.00 min
Total precip.	=	3.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

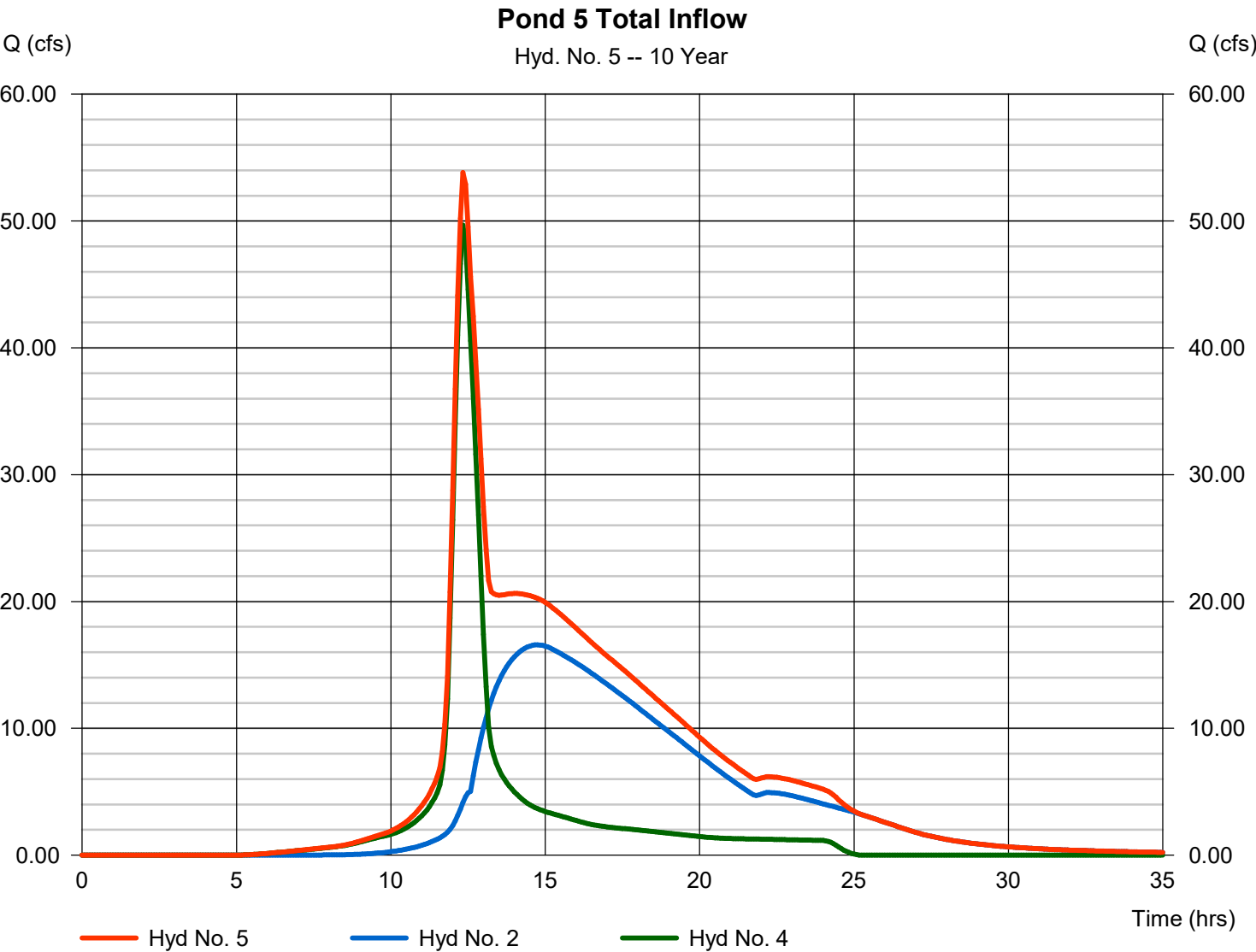


Hydrograph Report

Hyd. No. 5

Pond 5 Total Inflow

Hydrograph type	= Combine	Peak discharge	= 53.82 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.33 hrs
Time interval	= 5 min	Hyd. volume	= 777,583 cuft
Inflow hyds.	= 2, 4	Contrib. drain. area	= 28.480 ac



Hydrograph Report

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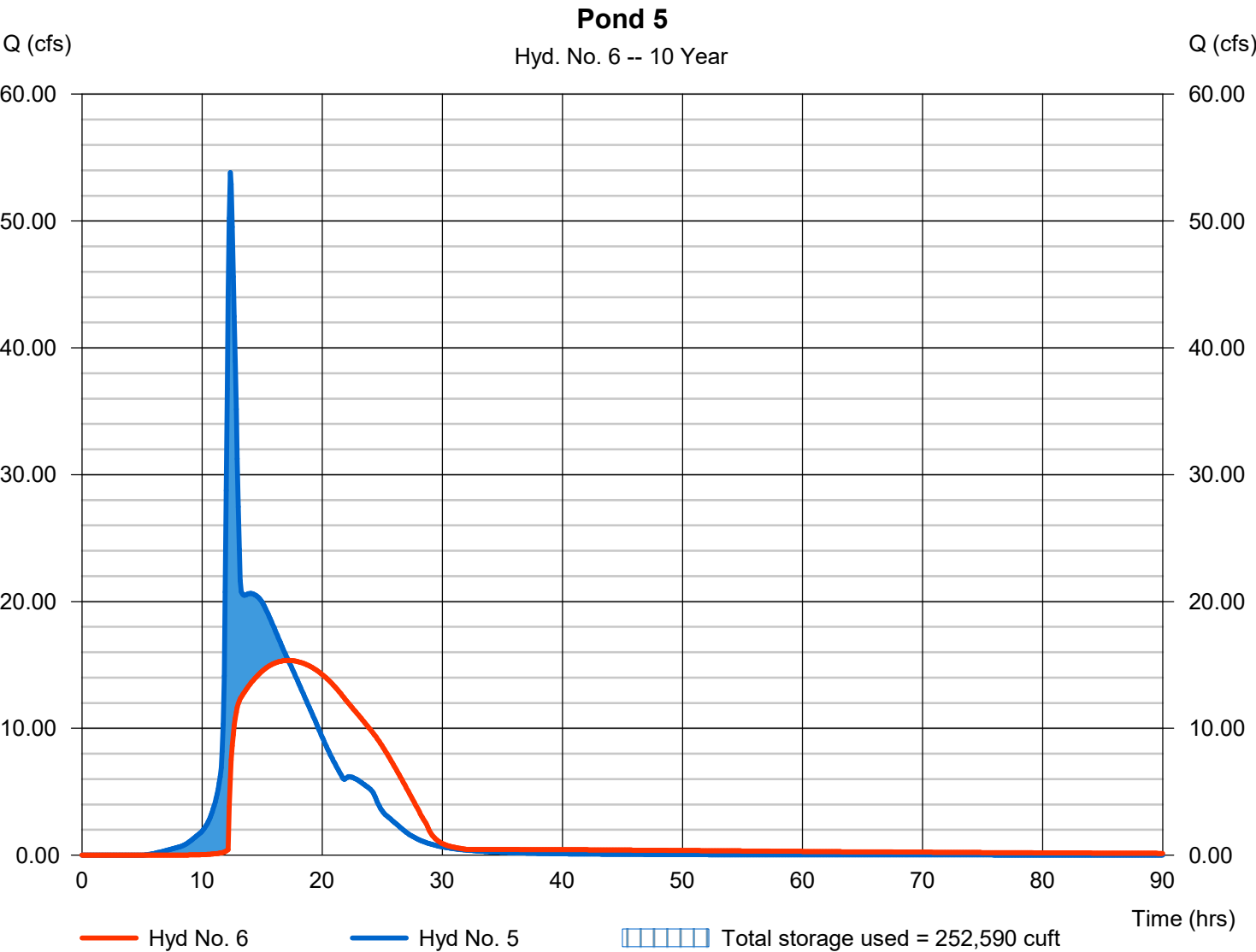
Friday, 05 / 22 / 2026

Hyd. No. 6

Pond 5

Hydrograph type	= Reservoir	Peak discharge	= 15.35 cfs
Storm frequency	= 10 yrs	Time to peak	= 17.17 hrs
Time interval	= 5 min	Hyd. volume	= 773,487 cuft
Inflow hyd. No.	= 5 - Pond 5 Total Inflow	Max. Elevation	= 1005.82 ft
Reservoir name	= <New Pond>	Max. Storage	= 252,590 cuft

Storage Indication method used.

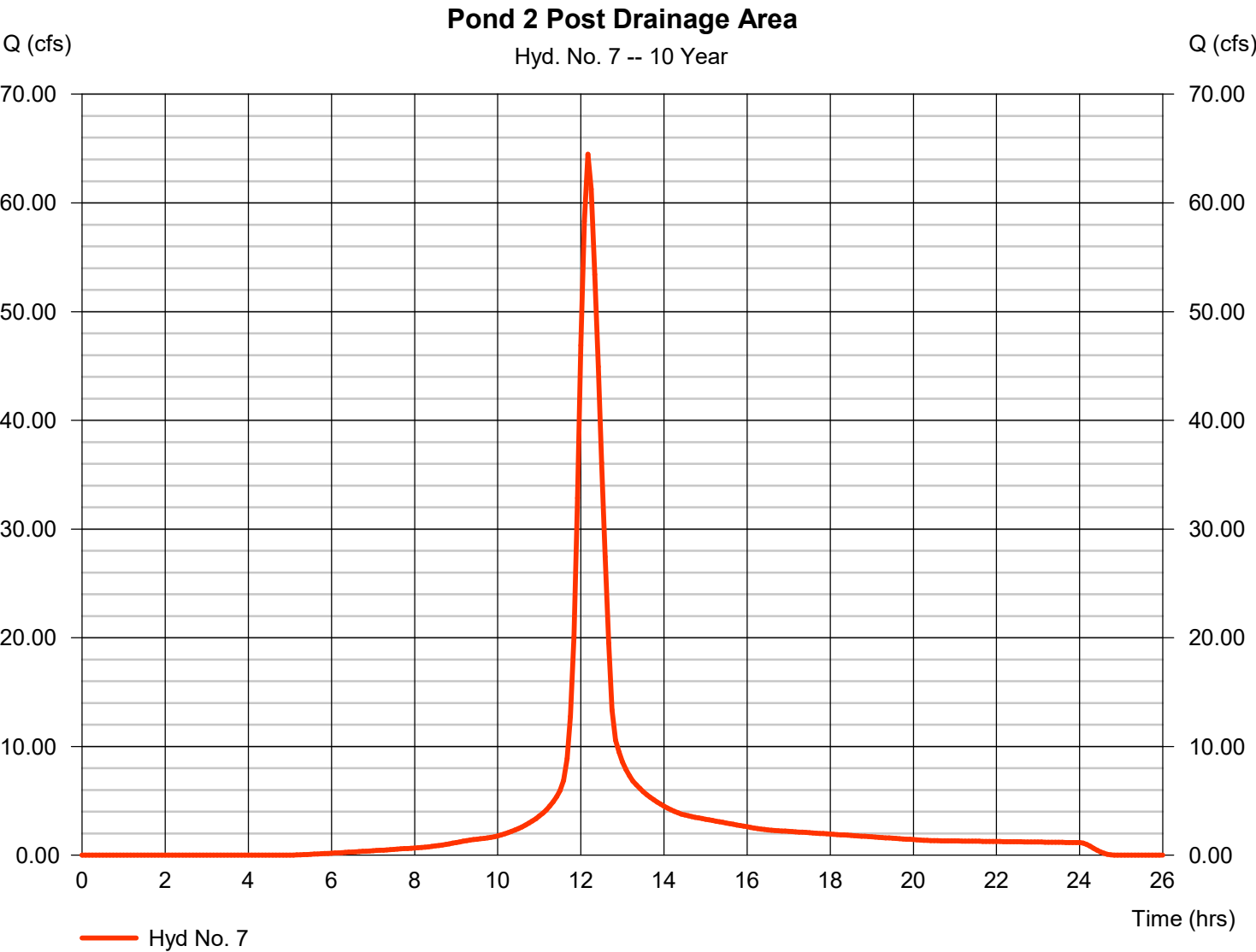


Hydrograph Report

Hyd. No. 7

Pond 2 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	64.48 cfs
Storm frequency	=	10 yrs	Time to peak	=	12.17 hrs
Time interval	=	5 min	Hyd. volume	=	283,078 cuft
Drainage area	=	27.700 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	30.00 min
Total precip.	=	3.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

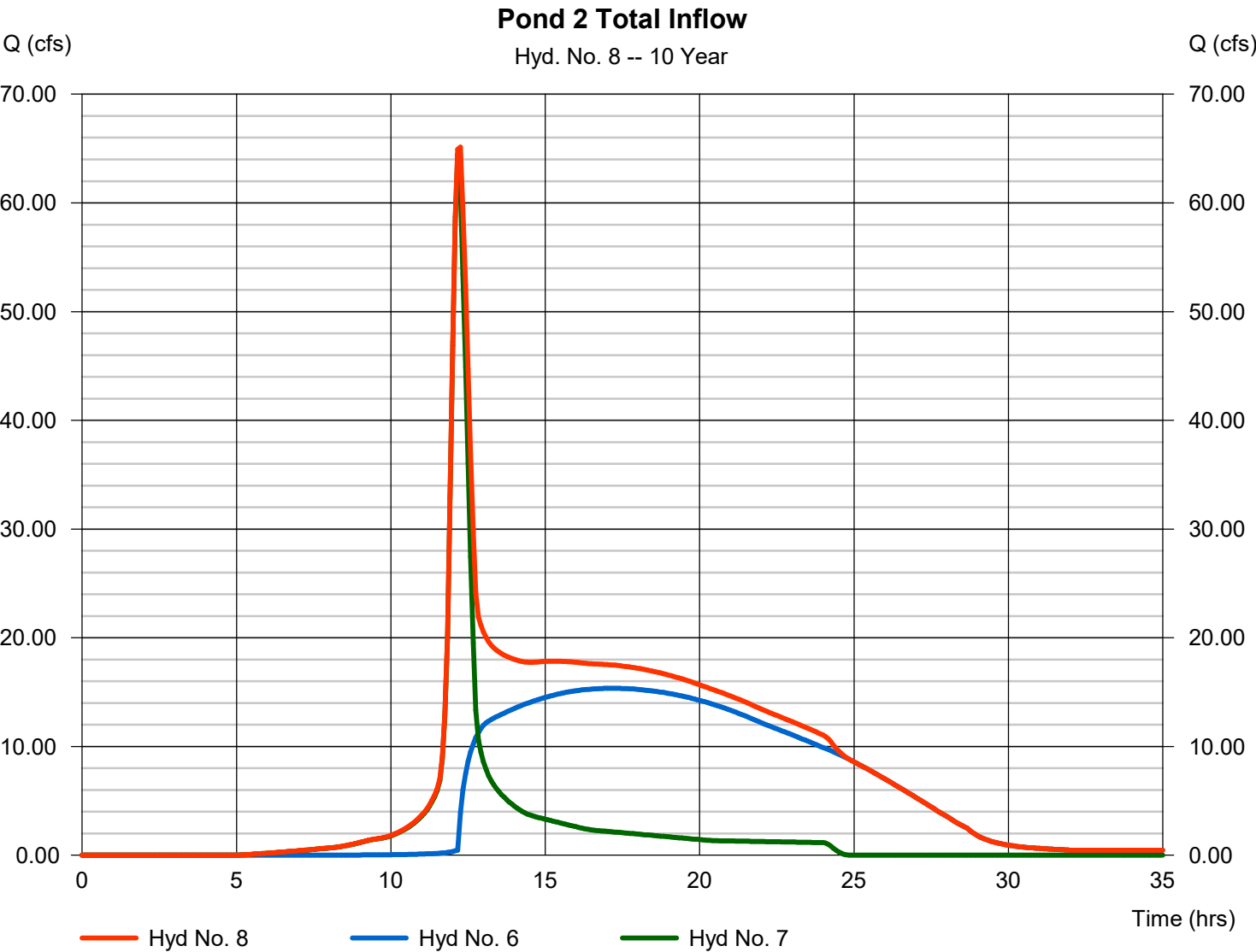


Hydrograph Report

Hyd. No. 8

Pond 2 Total Inflow

Hydrograph type	= Combine	Peak discharge	= 65.14 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.25 hrs
Time interval	= 5 min	Hyd. volume	= 1,056,566 cuft
Inflow hyds.	= 6, 7	Contrib. drain. area	= 27.700 ac



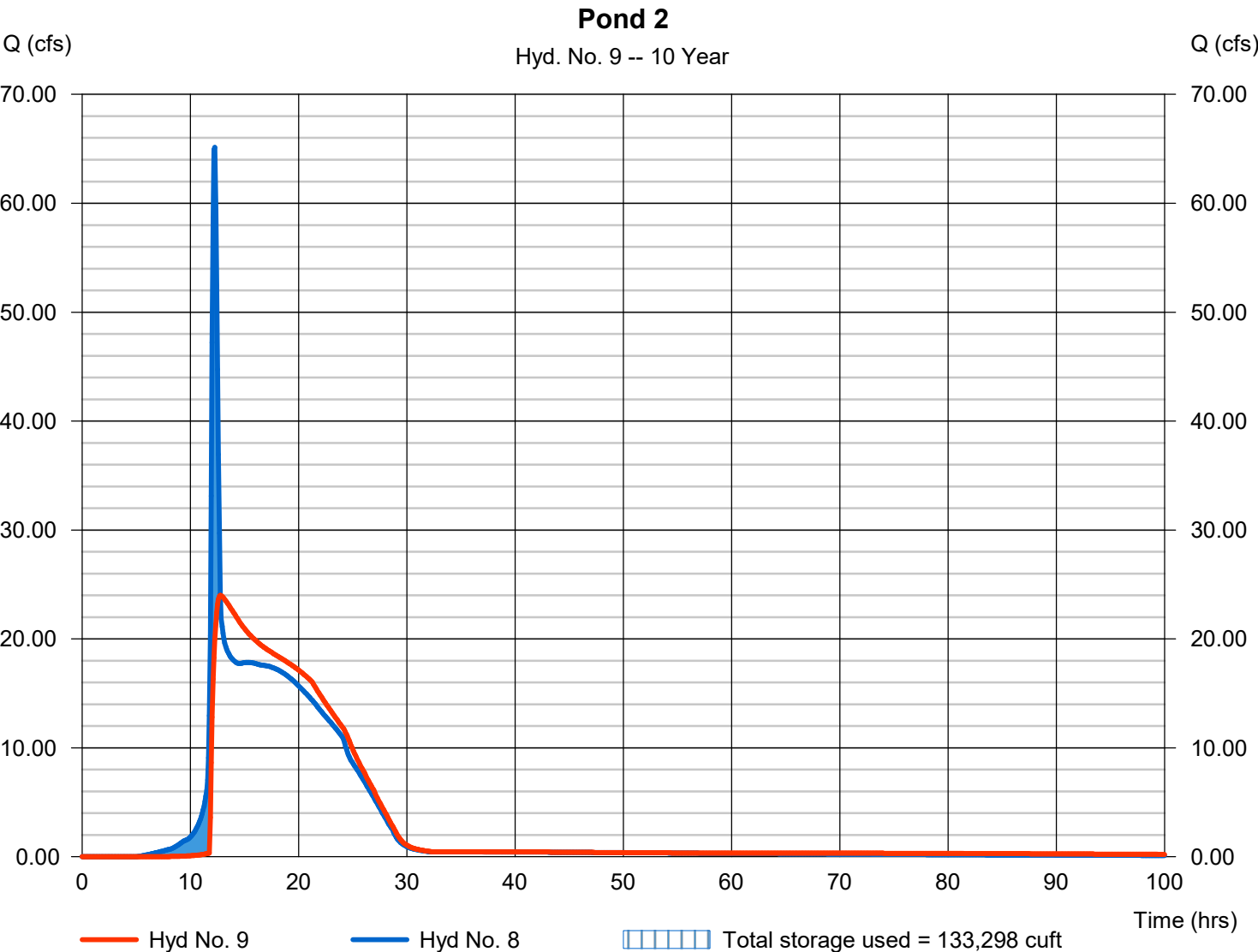
Hydrograph Report

Hyd. No. 9

Pond 2

Hydrograph type	= Reservoir	Peak discharge	= 24.00 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.75 hrs
Time interval	= 5 min	Hyd. volume	= 1,052,768 cuft
Inflow hyd. No.	= 8 - Pond 2 Total Inflow	Max. Elevation	= 1003.67 ft
Reservoir name	= <New Pond>	Max. Storage	= 133,298 cuft

Storage Indication method used.



Hydrograph Report

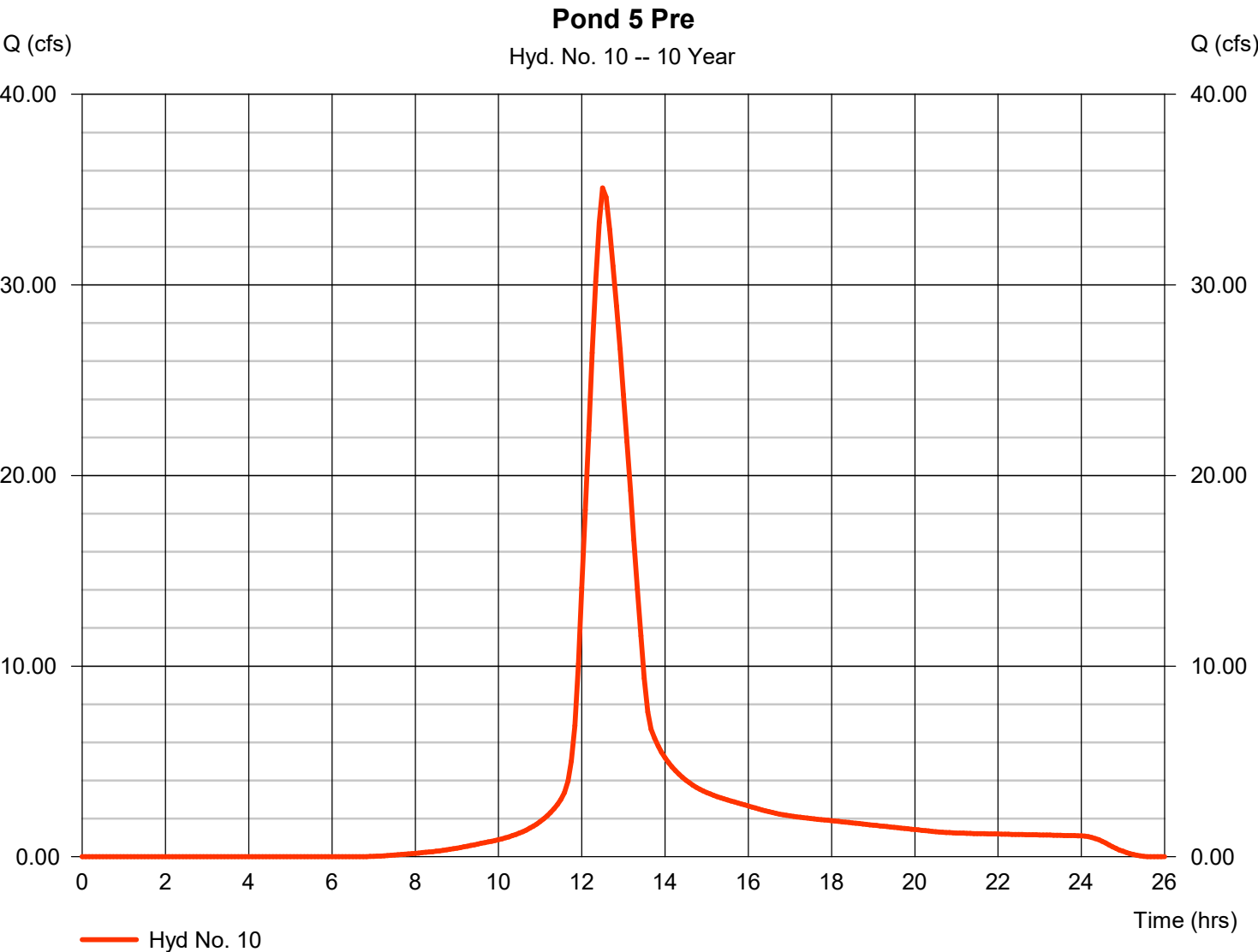
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Hyd. No. 10

Pond 5 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 35.09 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 240,940 cuft
Drainage area	= 28.500 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 60.00 min
Total precip.	= 3.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

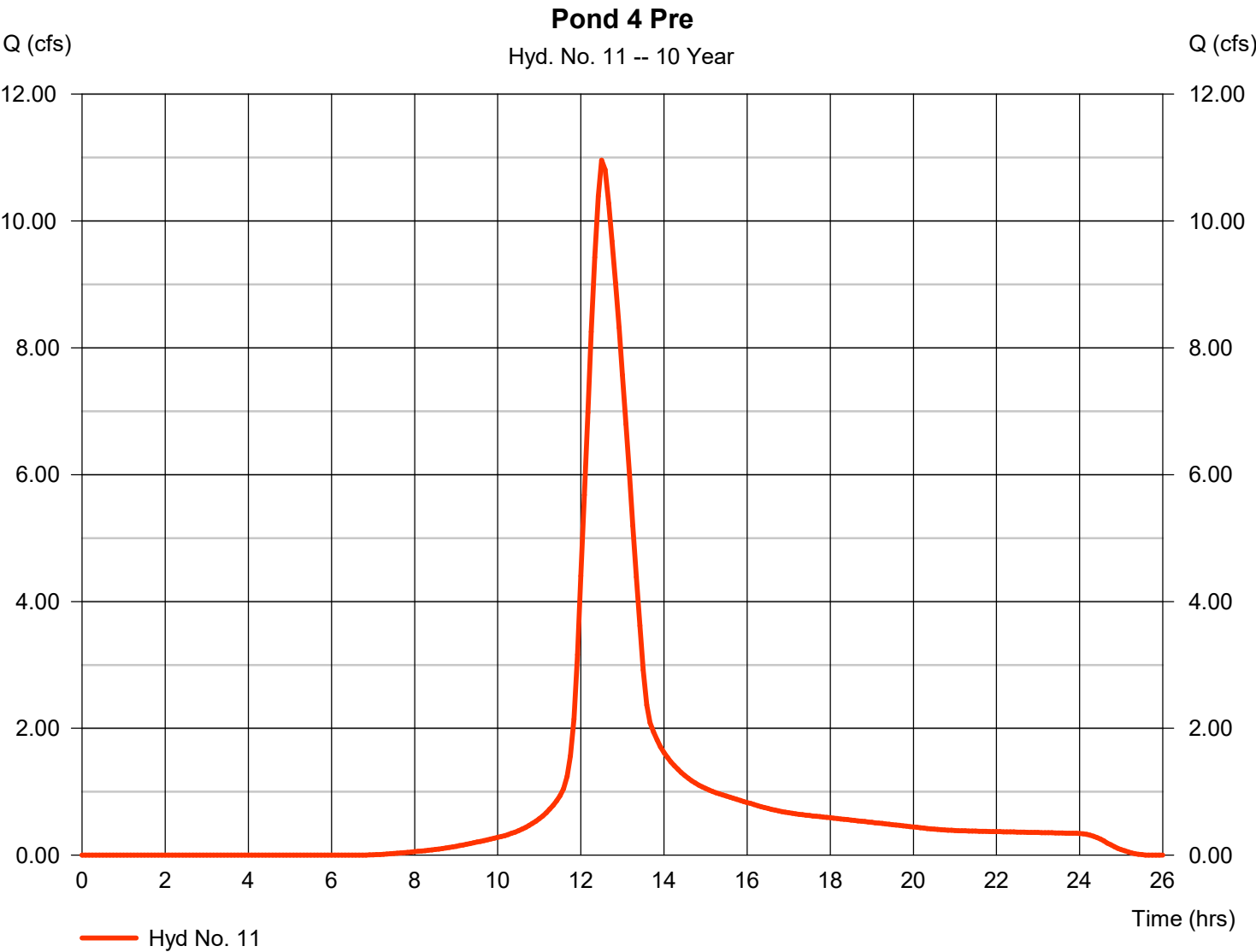


Hydrograph Report

Hyd. No. 11

Pond 4 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 10.96 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 75,241 cuft
Drainage area	= 8.900 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 60.00 min
Total precip.	= 3.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

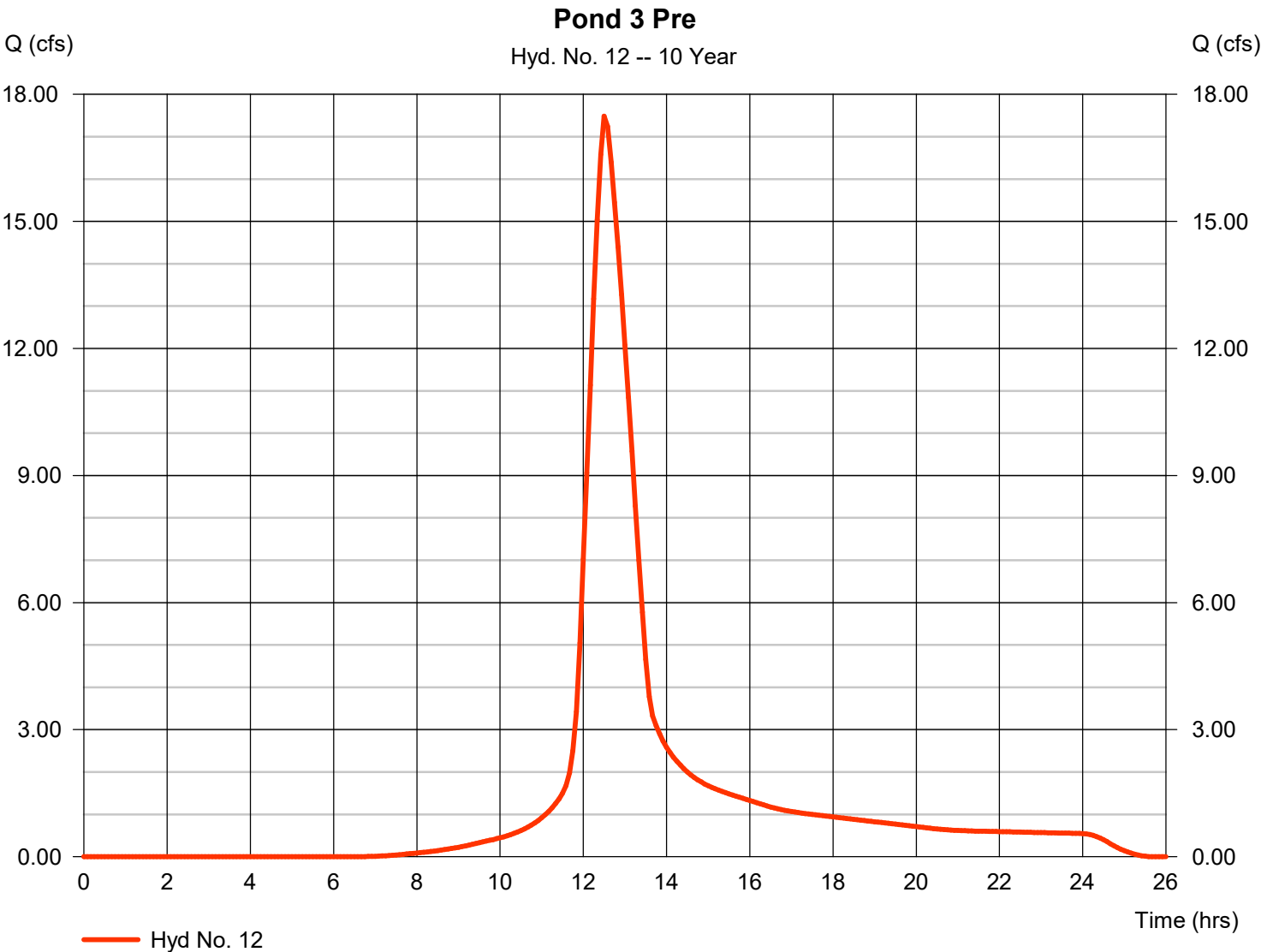
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Friday, 05 / 22 / 2026

Hyd. No. 12

Pond 3 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 17.48 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 120,047 cuft
Drainage area	= 14.200 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 60.00 min
Total precip.	= 3.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

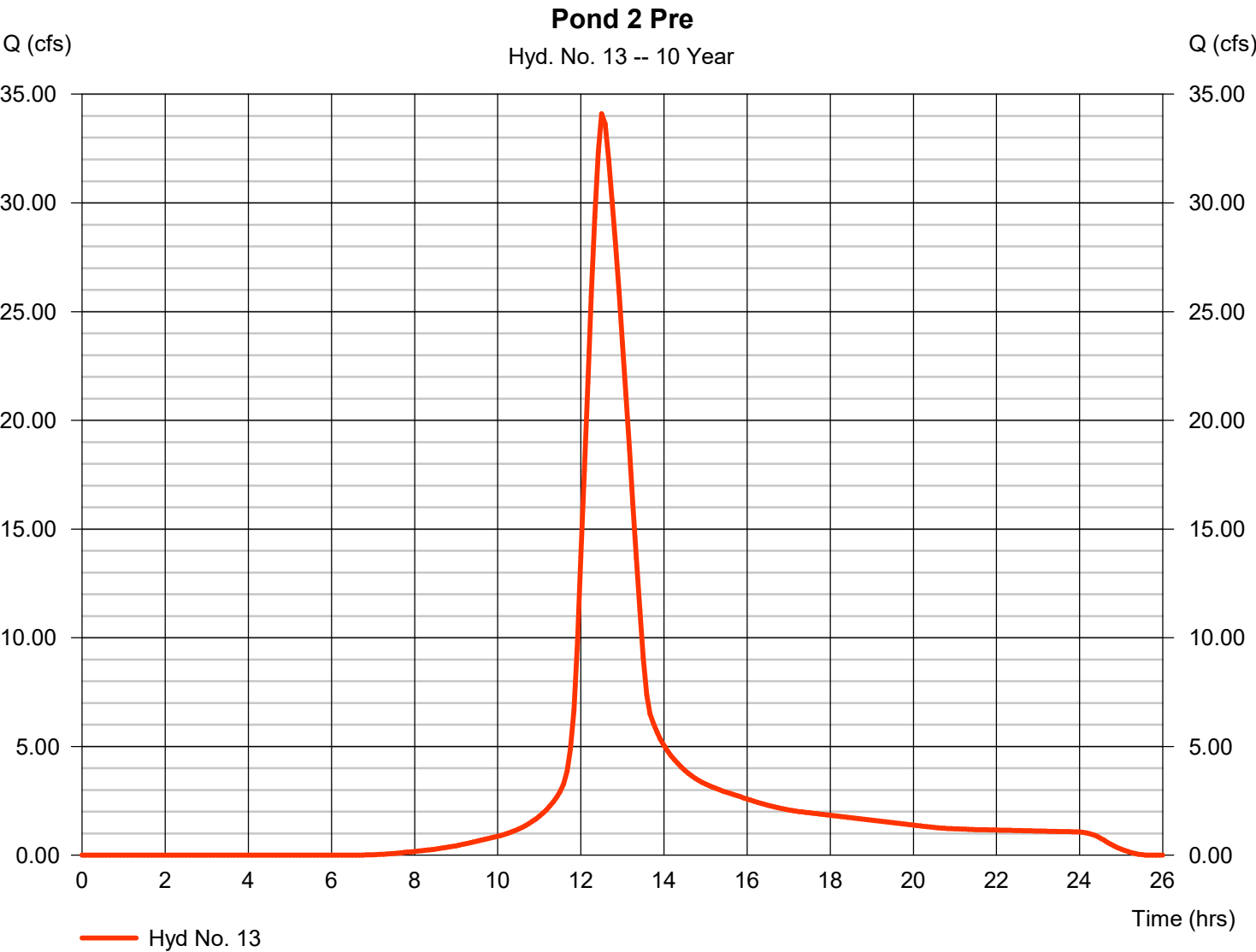


Hydrograph Report

Hyd. No. 13

Pond 2 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 34.11 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 234,176 cuft
Drainage area	= 27.700 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 60.00 min
Total precip.	= 3.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

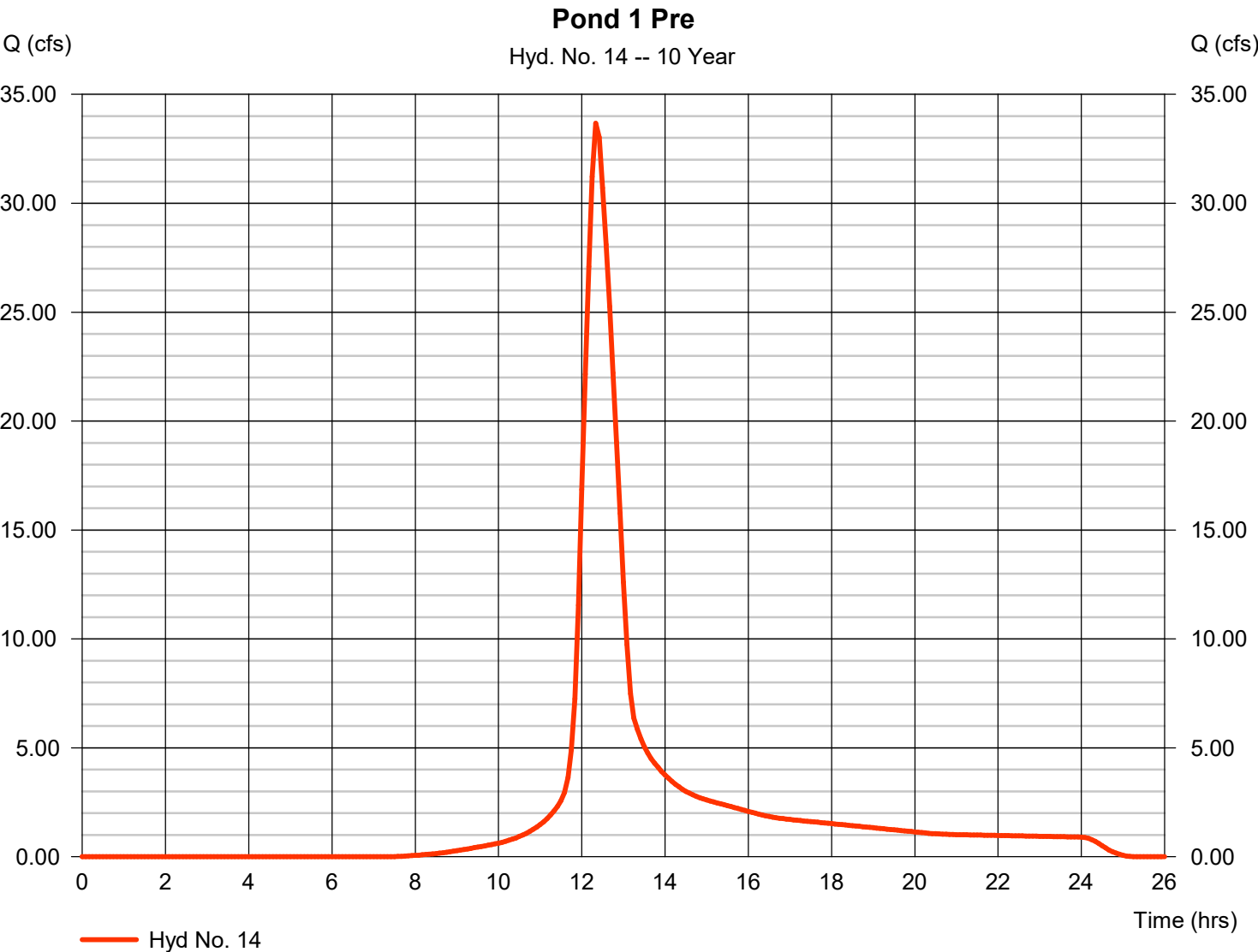


Hydrograph Report

Hyd. No. 14

Pond 1 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 33.68 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.33 hrs
Time interval	= 5 min	Hyd. volume	= 190,499 cuft
Drainage area	= 23.900 ac	Curve number	= 84
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 45.00 min
Total precip.	= 3.80 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

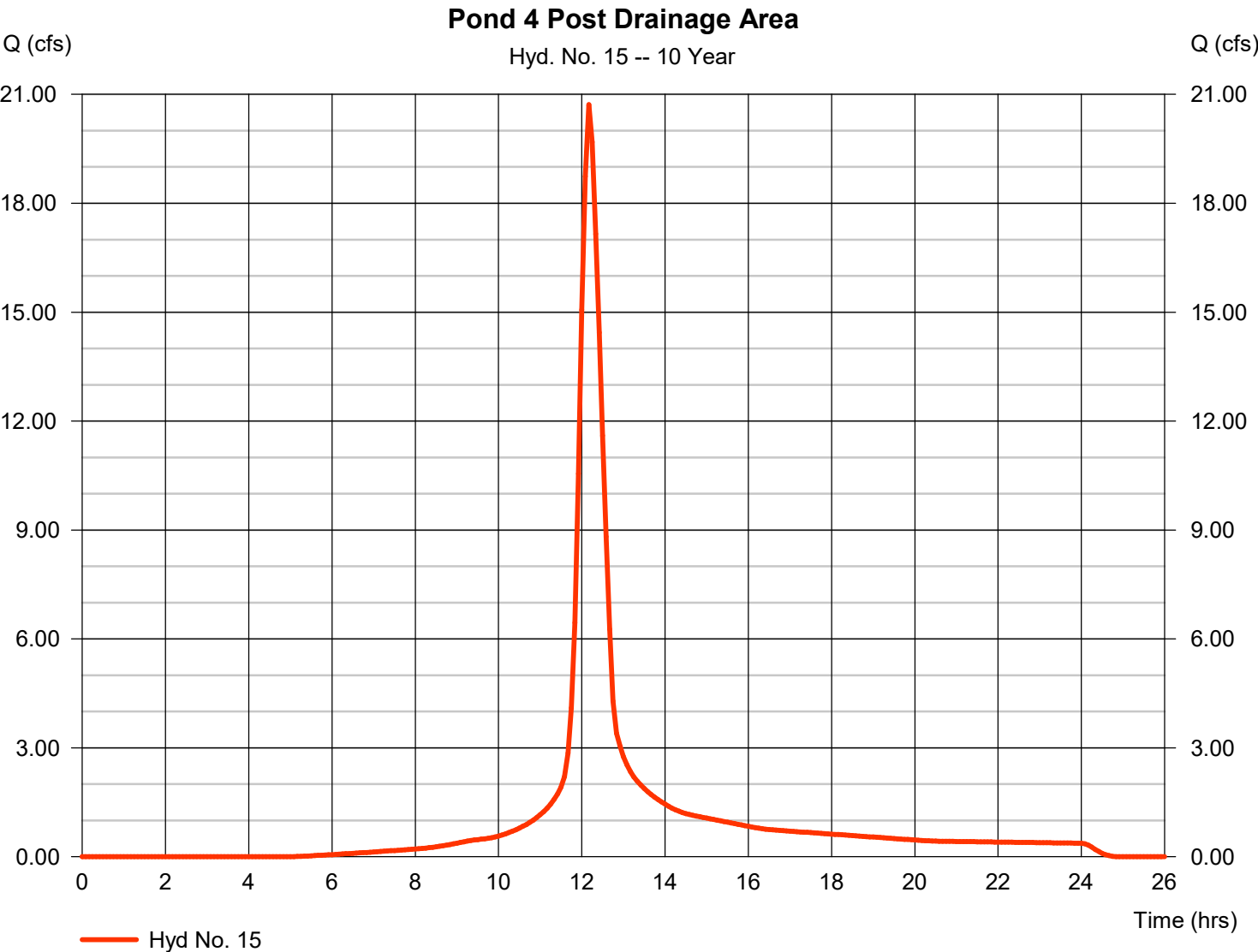


Hydrograph Report

Hyd. No. 15

Pond 4 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	20.72 cfs
Storm frequency	=	10 yrs	Time to peak	=	12.17 hrs
Time interval	=	5 min	Hyd. volume	=	90,953 cuft
Drainage area	=	8.900 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	30.00 min
Total precip.	=	3.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

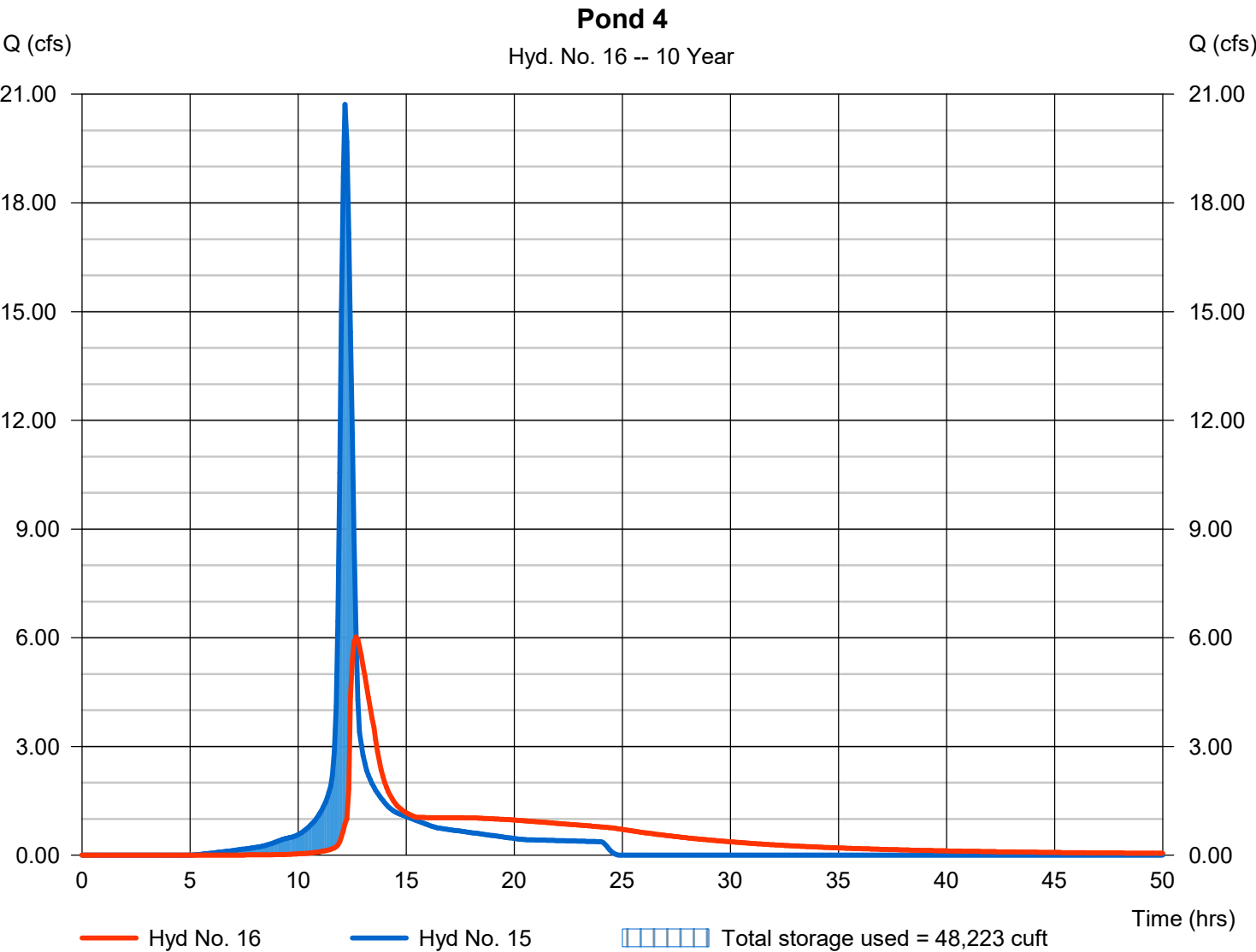
Friday, 05 / 22 / 2026

Hyd. No. 16

Pond 4

Hydrograph type	= Reservoir	Peak discharge	= 6.025 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.67 hrs
Time interval	= 5 min	Hyd. volume	= 90,810 cuft
Inflow hyd. No.	= 15 - Pond 4 Post Drainage Area	Max. Elevation	= 1002.83 ft
Reservoir name	= <New Pond>	Max. Storage	= 48,223 cuft

Storage Indication method used.



Hydrograph Report

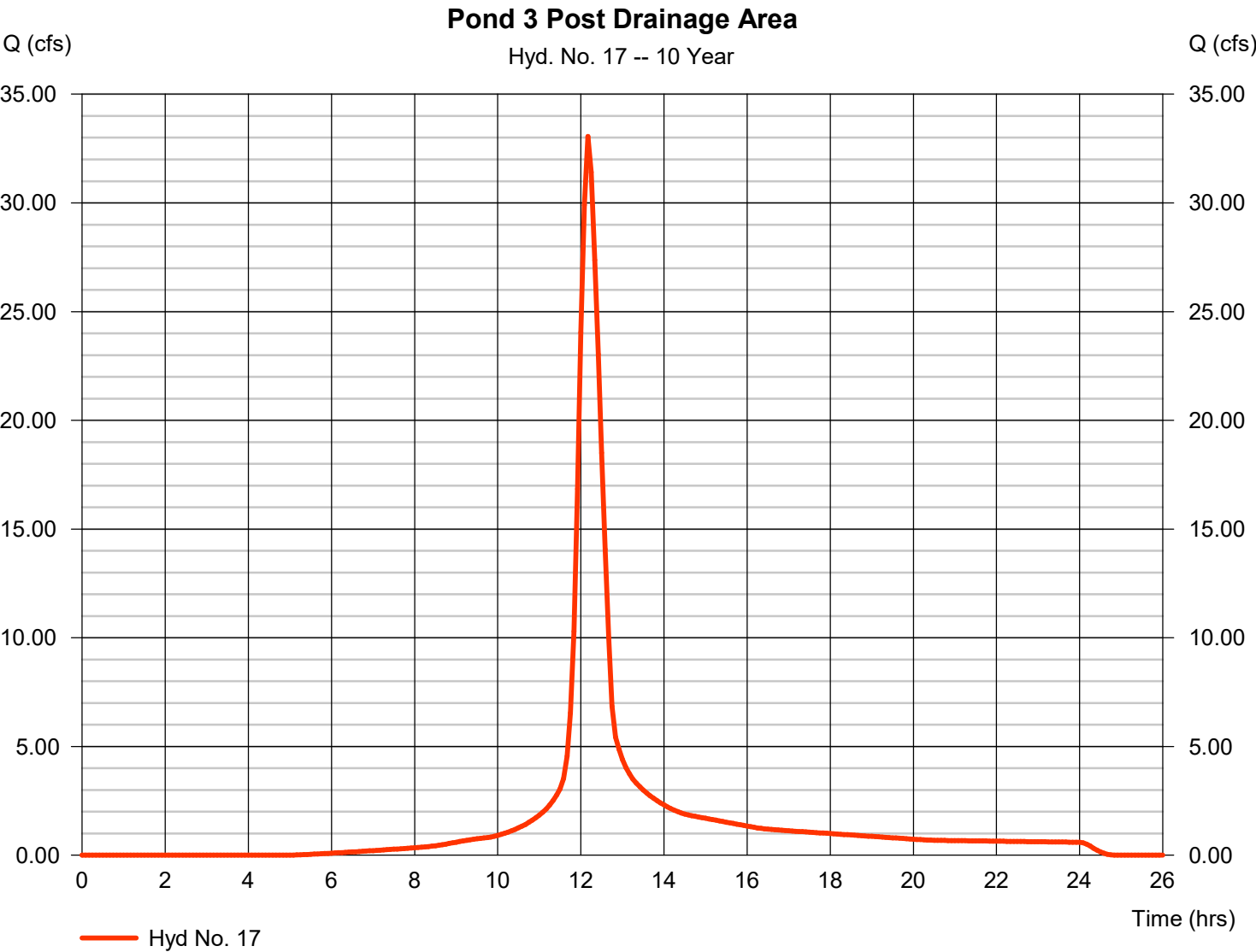
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Friday, 05 / 22 / 2026

Hyd. No. 17

Pond 3 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	33.05 cfs
Storm frequency	=	10 yrs	Time to peak	=	12.17 hrs
Time interval	=	5 min	Hyd. volume	=	145,116 cuft
Drainage area	=	14.200 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	30.00 min
Total precip.	=	3.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

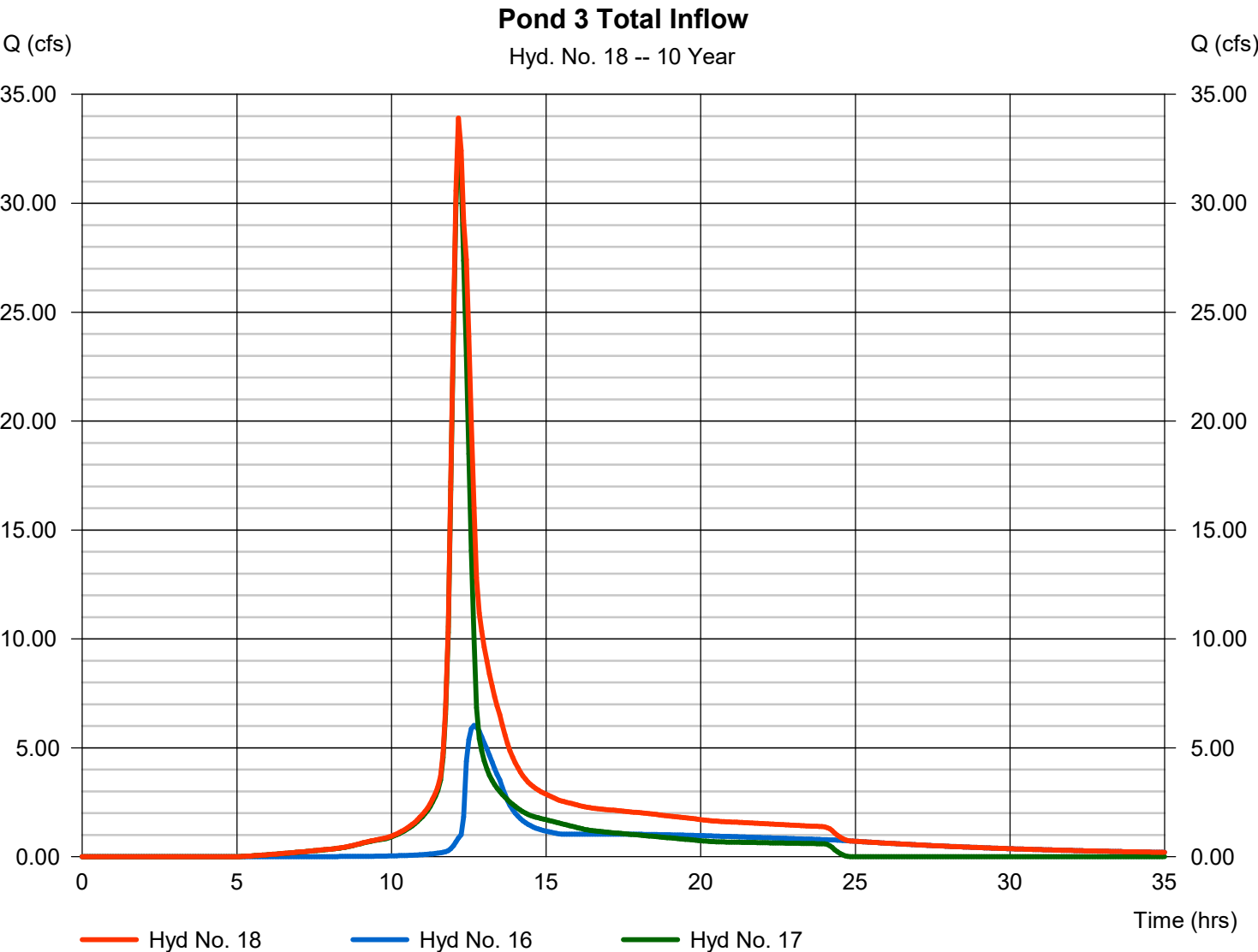
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Friday, 05 / 22 / 2026

Hyd. No. 18

Pond 3 Total Inflow

Hydrograph type	= Combine	Peak discharge	= 33.92 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.17 hrs
Time interval	= 5 min	Hyd. volume	= 235,926 cuft
Inflow hyds.	= 16, 17	Contrib. drain. area	= 14.200 ac



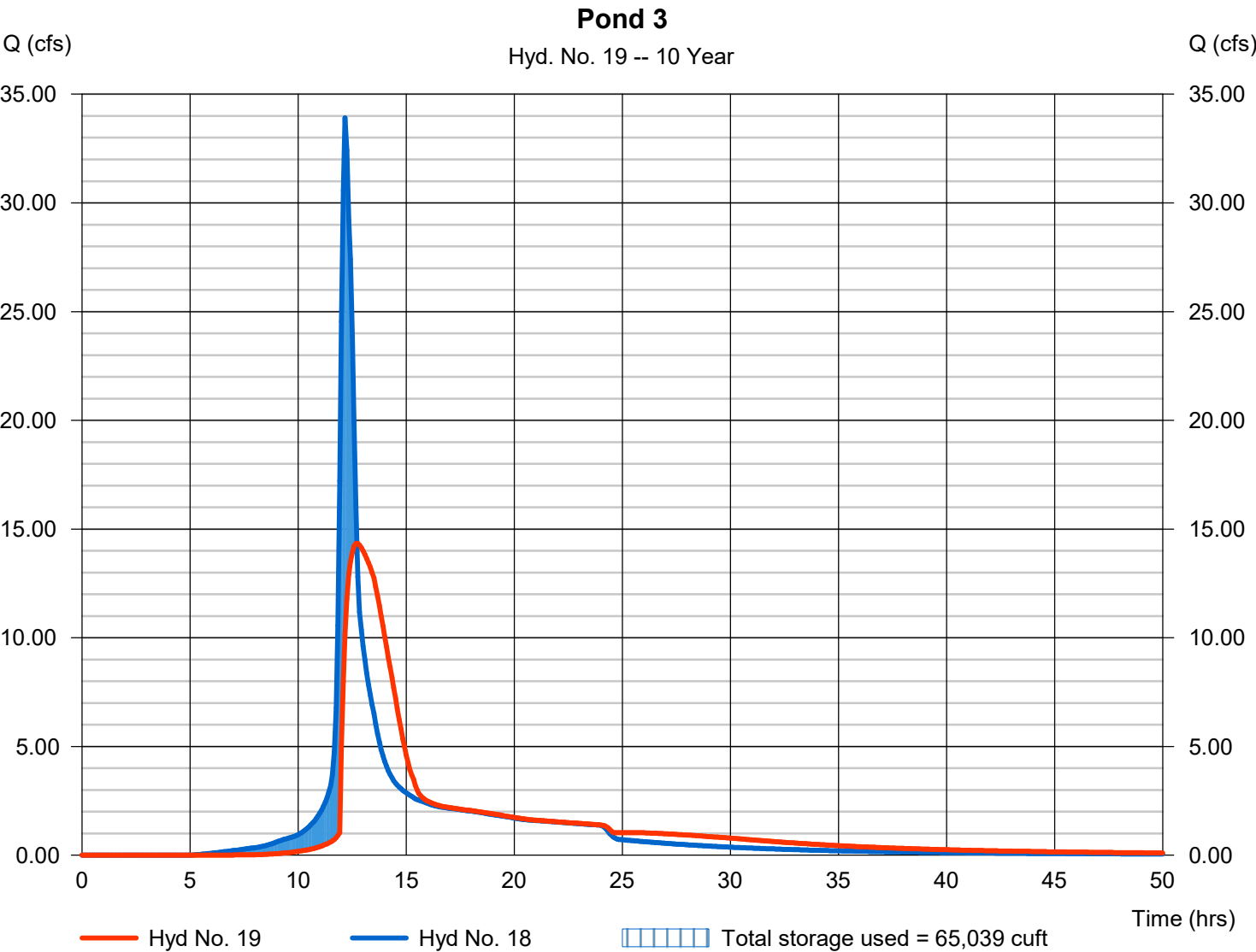
Hydrograph Report

Hyd. No. 19

Pond 3

Hydrograph type	= Reservoir	Peak discharge	= 14.34 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.75 hrs
Time interval	= 5 min	Hyd. volume	= 235,839 cuft
Inflow hyd. No.	= 18 - Pond 3 Total Inflow	Max. Elevation	= 1003.59 ft
Reservoir name	= <New Pond>	Max. Storage	= 65,039 cuft

Storage Indication method used.



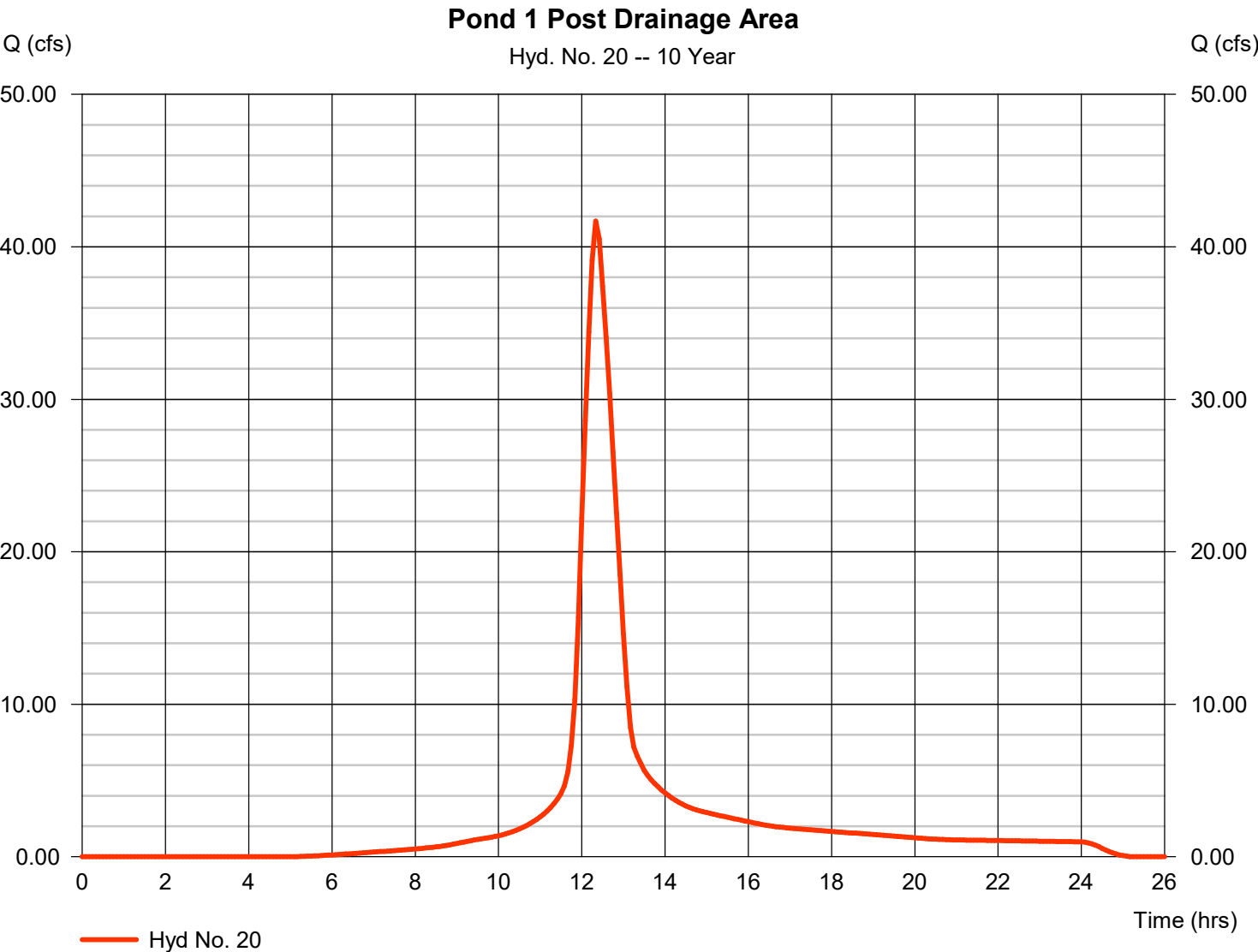
Hydrograph Report

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Friday, 05 / 22 / 2026

Hyd. No. 20

Pond 1 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	41.69 cfs
Storm frequency	=	10 yrs	Time to peak	=	12.33 hrs
Time interval	=	5 min	Hyd. volume	=	236,843 cuft
Drainage area	=	23.900 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	45.00 min
Total precip.	=	3.80 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

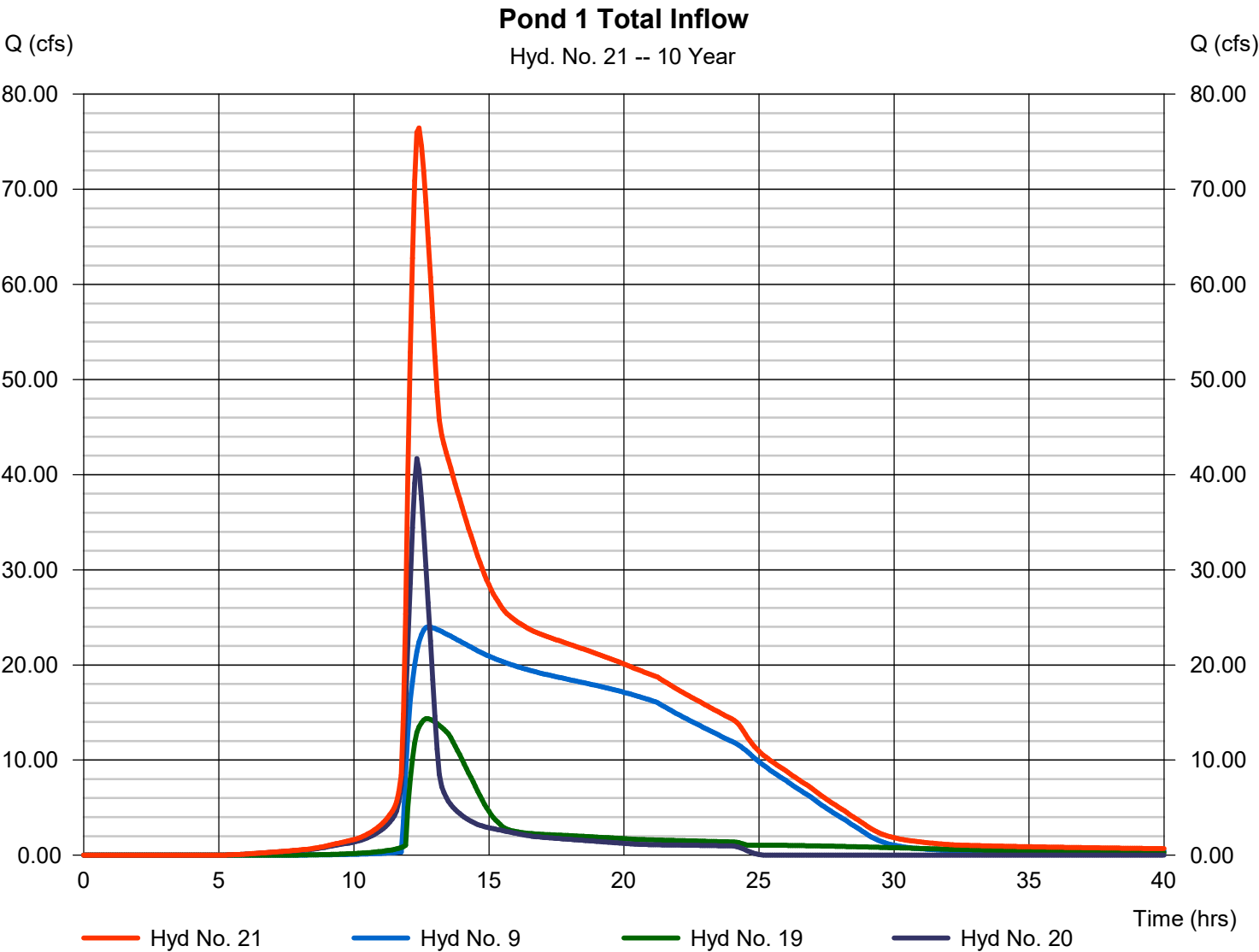
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Hyd. No. 21

Pond 1 Total Inflow

Hydrograph type	= Combine	Peak discharge	= 76.45 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.42 hrs
Time interval	= 5 min	Hyd. volume	= 1,525,453 cuft
Inflow hyds.	= 9, 19, 20	Contrib. drain. area	= 23.900 ac



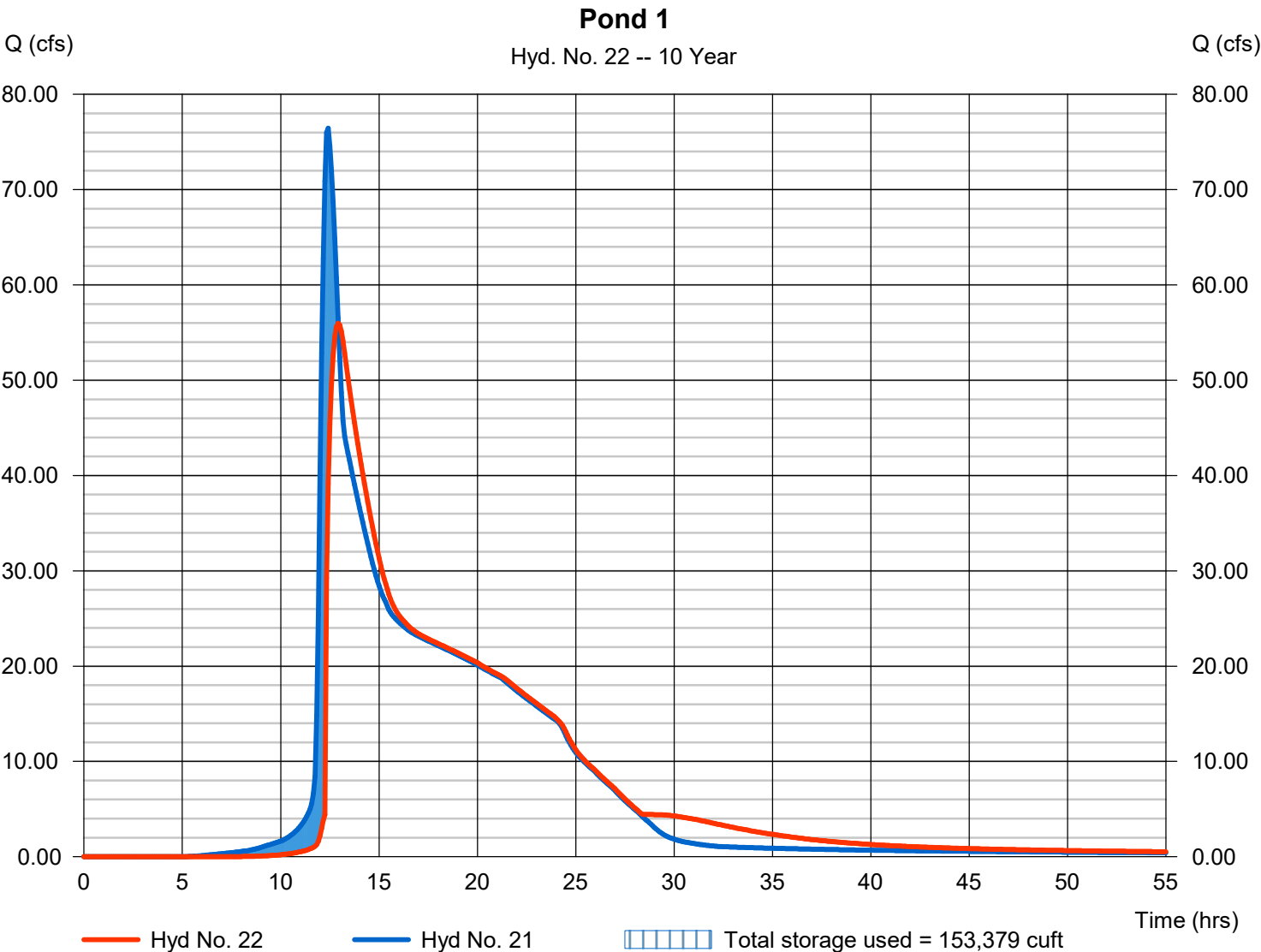
Hydrograph Report

Hyd. No. 22

Pond 1

Hydrograph type	= Reservoir	Peak discharge	= 55.99 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.92 hrs
Time interval	= 5 min	Hyd. volume	= 1,522,673 cuft
Inflow hyd. No.	= 21 - Pond 1 Total Inflow	Max. Elevation	= 1002.09 ft
Reservoir name	= <New Pond>	Max. Storage	= 153,379 cuft

Storage Indication method used.



Hydrograph Report

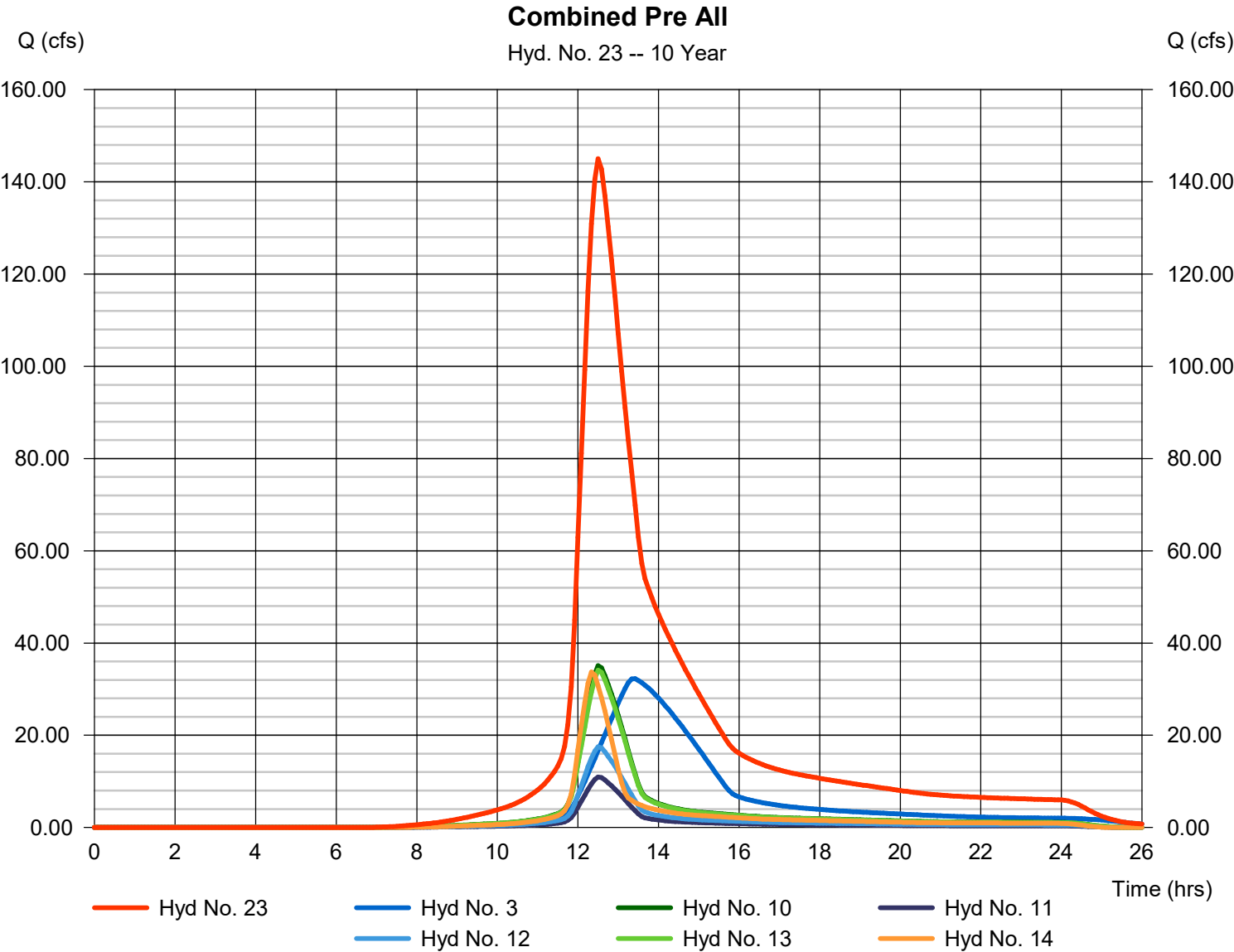
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Friday, 05 / 22 / 2026

Hyd. No. 23

Combined Pre All

Hydrograph type	= Combine	Peak discharge	= 145.03 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 1,274,700 cuft
Inflow hyds.	= 3, 10, 11, 12, 13, 14	Contrib. drain. area	= 153.200 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

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	52.05	5	785	581,634	-----	-----	-----	Pond 6 Post Drainage Area
2	Reservoir	18.36	5	885	581,500	1	1007.94	274,875	Pond 6
3	SCS Runoff	38.65	5	805	495,055	-----	-----	-----	Pond 6 Pre
4	SCS Runoff	58.07	5	740	331,299	-----	-----	-----	Pond 5 Post Drainage Area
5	Combine	62.94	5	740	912,798	2, 4	-----	-----	Pond 5 Total Inflow
6	Reservoir	17.06	5	1050	908,684	5	1006.71	299,514	Pond 5
7	SCS Runoff	75.32	5	730	332,294	-----	-----	-----	Pond 2 Post Drainage Area
8	Combine	80.07	5	730	1,240,976	6, 7	-----	-----	Pond 2 Total Inflow
9	Reservoir	26.29	5	770	1,237,161	8	1004.53	161,117	Pond 2
10	SCS Runoff	41.82	5	750	287,138	-----	-----	-----	Pond 5 Pre
11	SCS Runoff	13.06	5	750	89,668	-----	-----	-----	Pond 4 Pre
12	SCS Runoff	20.84	5	750	143,065	-----	-----	-----	Pond 3 Pre
13	SCS Runoff	40.64	5	750	279,078	-----	-----	-----	Pond 2 Pre
14	SCS Runoff	40.52	5	740	228,801	-----	-----	-----	Pond 1 Pre
15	SCS Runoff	24.20	5	730	106,766	-----	-----	-----	Pond 4 Post Drainage Area
16	Reservoir	7.767	5	760	106,623	15	1003.05	54,424	Pond 4
17	SCS Runoff	38.61	5	730	170,346	-----	-----	-----	Pond 3 Post Drainage Area
18	Combine	39.73	5	735	276,969	16, 17	-----	-----	Pond 3 Total Inflow
19	Reservoir	15.95	5	765	276,883	18	1004.27	80,235	Pond 3
20	SCS Runoff	48.73	5	740	278,021	-----	-----	-----	Pond 1 Post Drainage Area
21	Combine	86.75	5	745	1,792,065	9, 19, 20	-----	-----	Pond 1 Total Inflow
22	Reservoir	63.38	5	775	1,789,276	21	1002.54	171,121	Pond 1
23	Combine	173.50	5	750	1,522,805	3, 10, 11, 12, 13, 14,	-----	-----	Combined Pre All
Newland Phase 1.gpw					Return Period: 25 Year			Friday, 05 / 22 / 2026	

Hydrograph Report

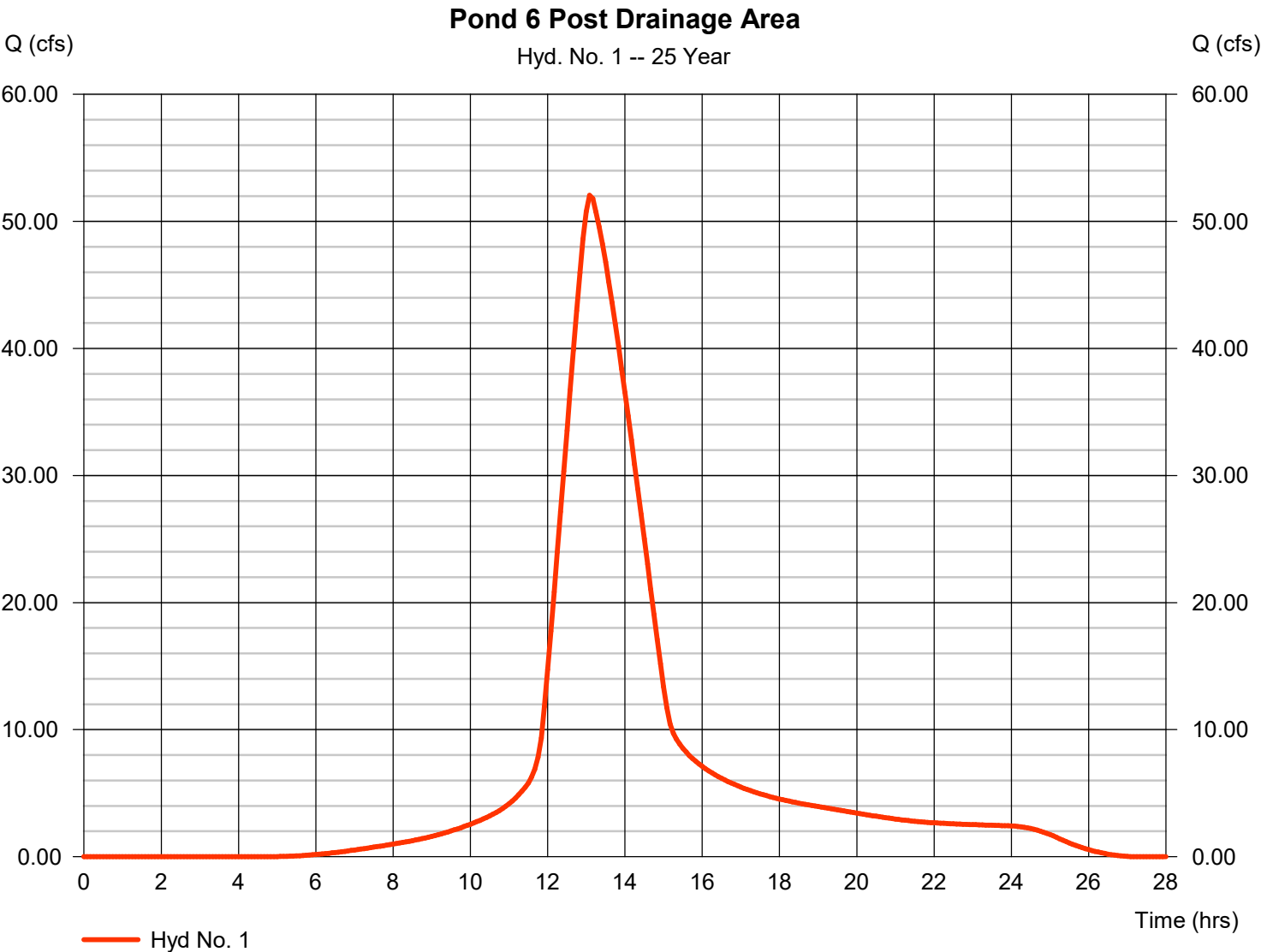
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Hyd. No. 1

Pond 6 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	52.05 cfs
Storm frequency	=	25 yrs	Time to peak	=	13.08 hrs
Time interval	=	5 min	Hyd. volume	=	581,634 cuft
Drainage area	=	50.000 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	120.00 min
Total precip.	=	4.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

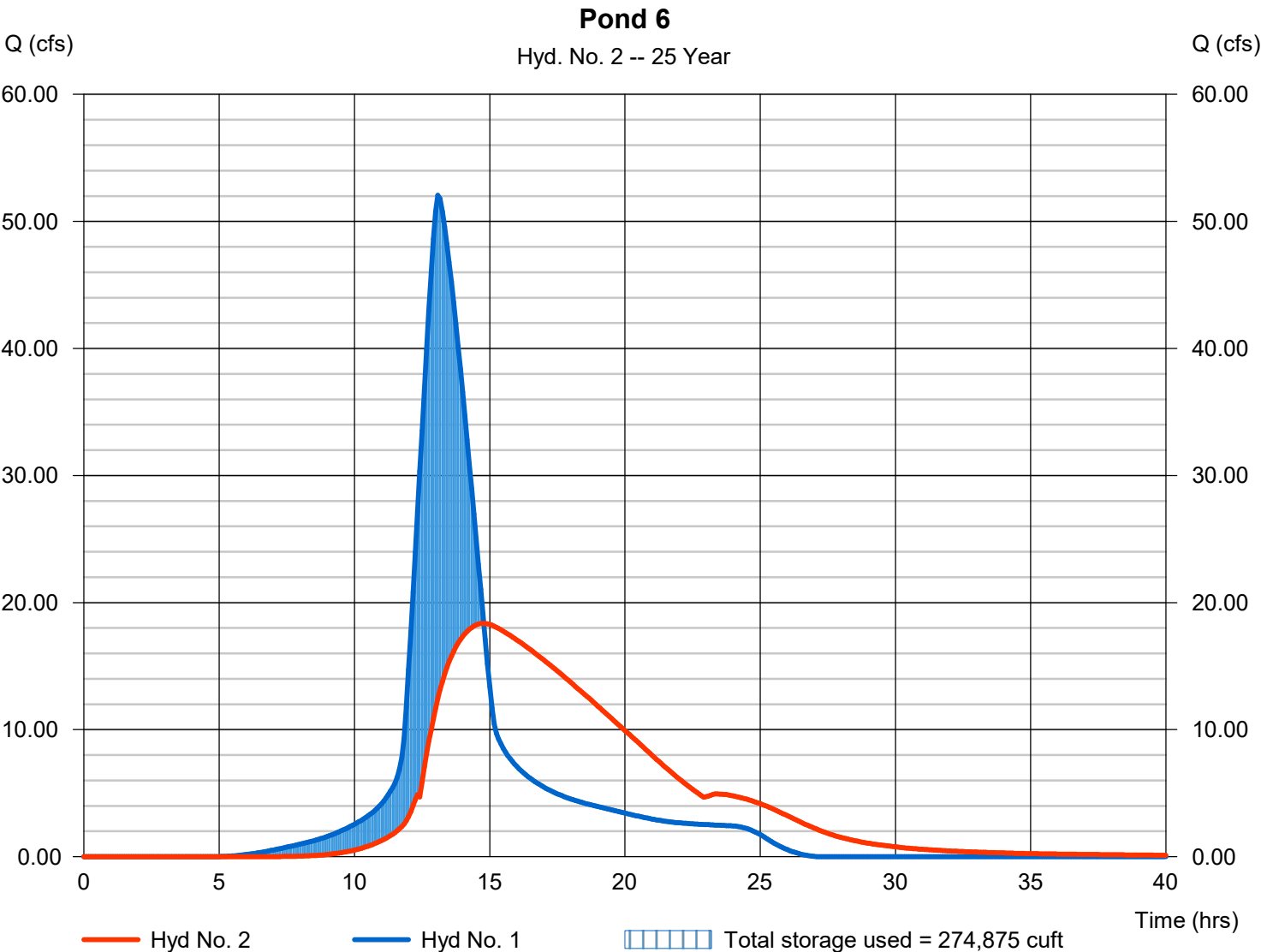


Hyd. No. 2

Pond 6

Hydrograph type	= Reservoir	Peak discharge	= 18.36 cfs
Storm frequency	= 25 yrs	Time to peak	= 14.75 hrs
Time interval	= 5 min	Hyd. volume	= 581,500 cuft
Inflow hyd. No.	= 1 - Pond 6 Post Drainage Area	Max. Elevation	= 1007.94 ft
Reservoir name	= <New Pond>	Max. Storage	= 274,875 cuft

Storage Indication method used.



Hydrograph Report

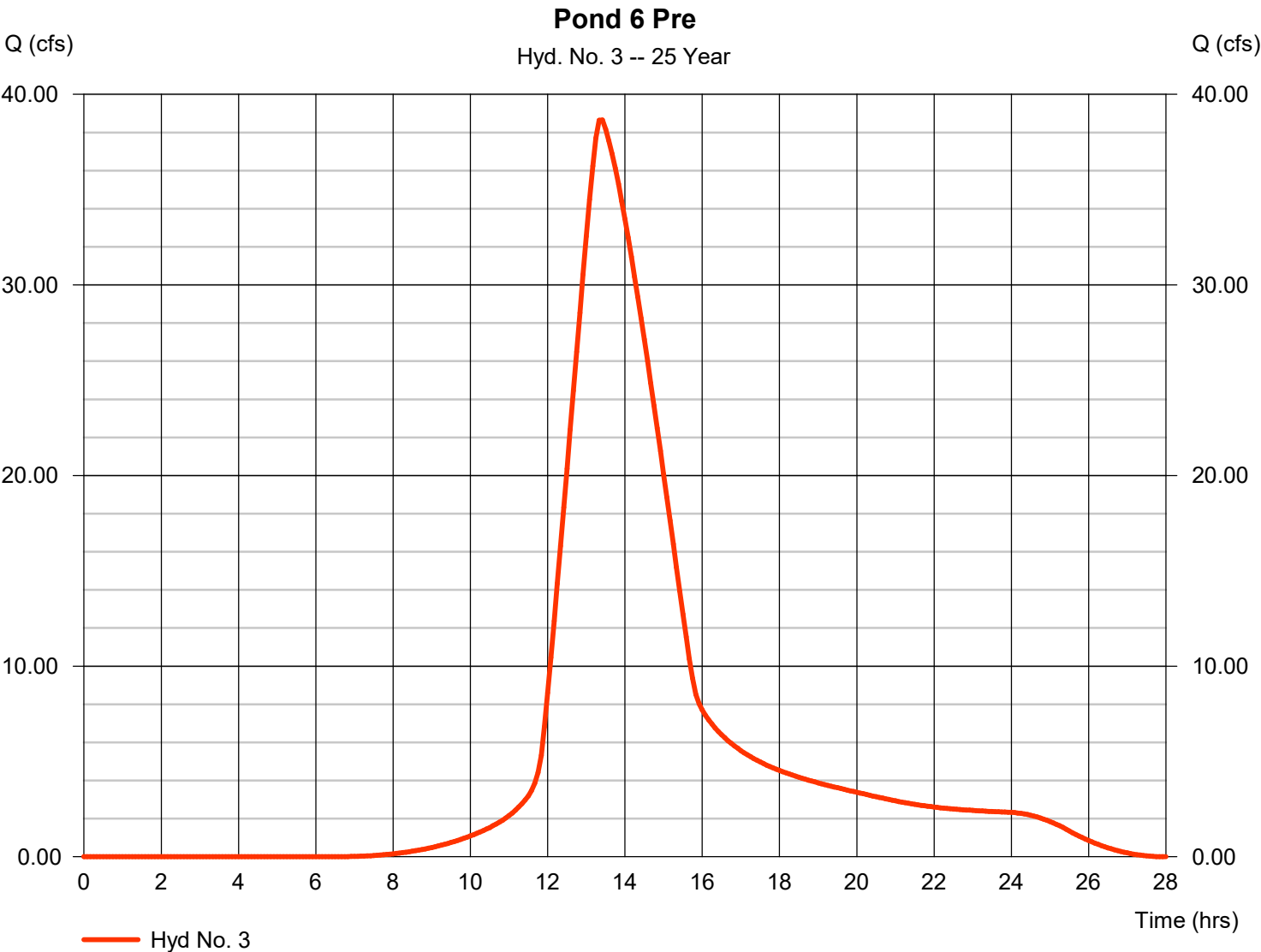
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Hyd. No. 3

Pond 6 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 38.65 cfs
Storm frequency	= 25 yrs	Time to peak	= 13.42 hrs
Time interval	= 5 min	Hyd. volume	= 495,055 cuft
Drainage area	= 50.000 ac	Curve number	= 85
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 150.00 min
Total precip.	= 4.30 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

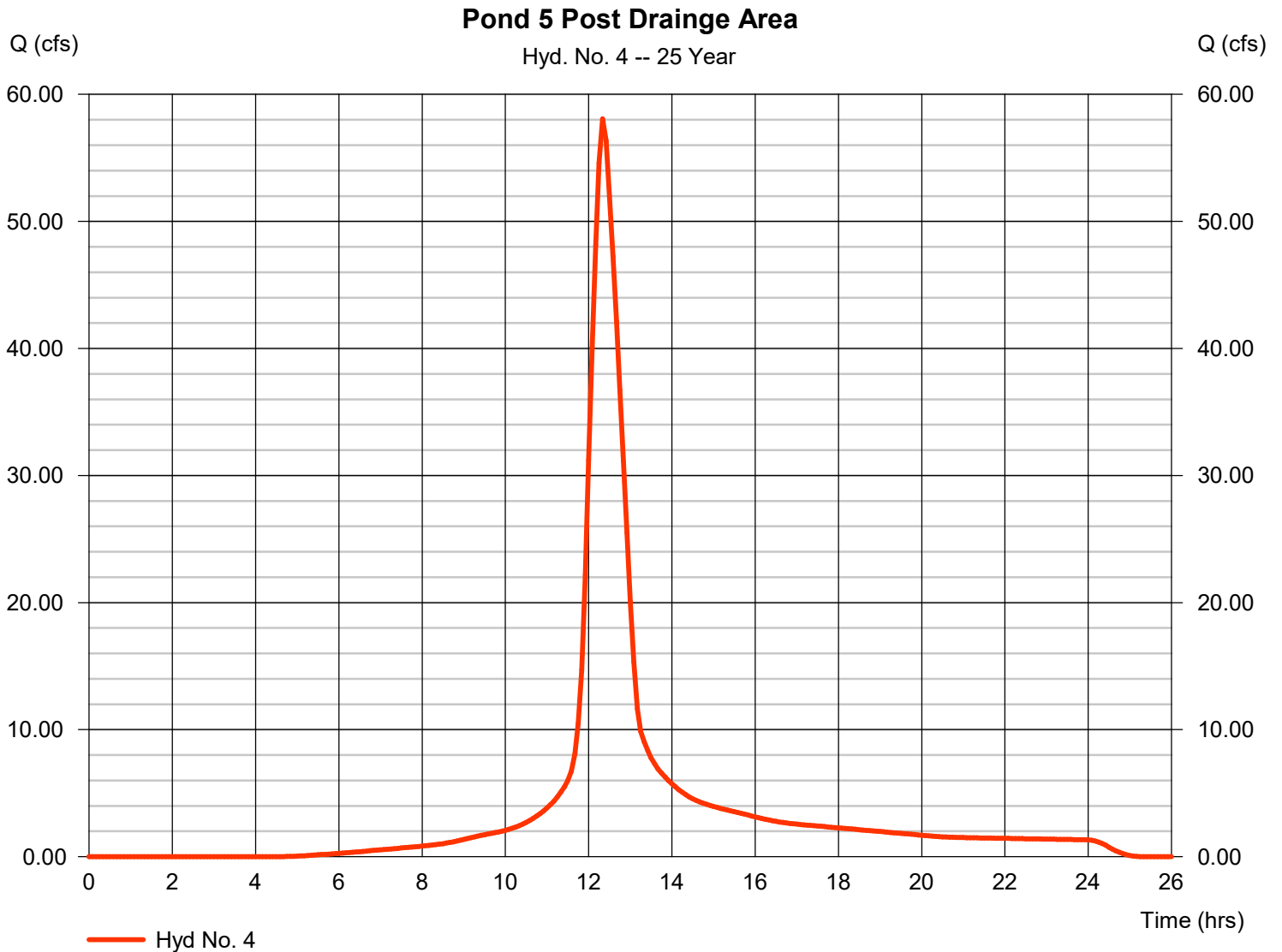
Friday, 05 / 22 / 2026

Hyd. No. 4

Pond 5 Post Drainage Area

Hydrograph type = SCS Runoff
Storm frequency = 25 yrs
Time interval = 5 min
Drainage area = 28.480 ac
Basin Slope = 0.0 %
Tc method = User
Total precip. = 4.30 in
Storm duration = 24 hrs

Peak discharge = 58.07 cfs
Time to peak = 12.33 hrs
Hyd. volume = 331,299 cuft
Curve number = 90
Hydraulic length = 0 ft
Time of conc. (Tc) = 45.00 min
Distribution = Type II
Shape factor = 484



Hydrograph Report

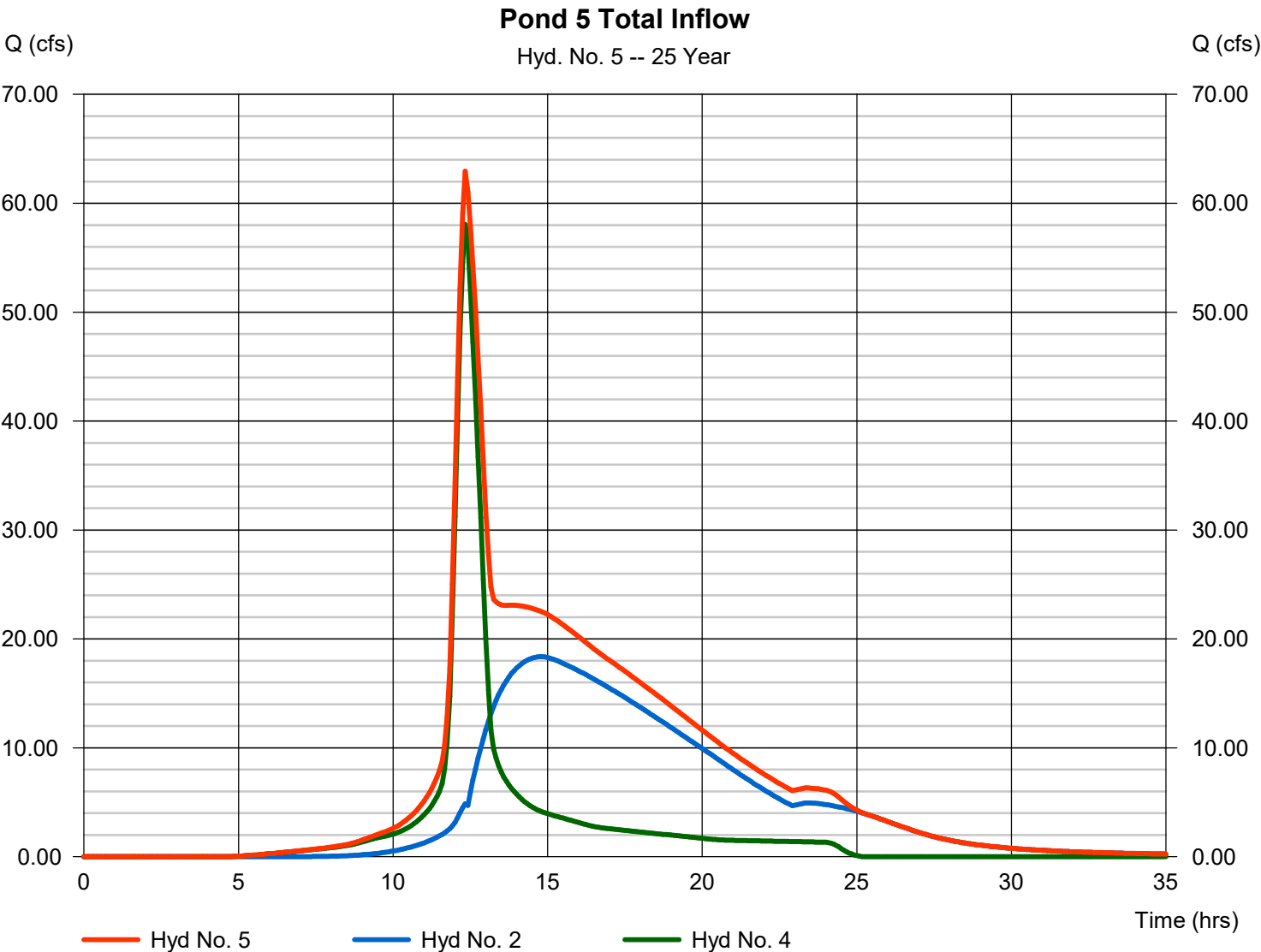
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Hyd. No. 5

Pond 5 Total Inflow

Hydrograph type	= Combine	Peak discharge	= 62.94 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.33 hrs
Time interval	= 5 min	Hyd. volume	= 912,798 cuft
Inflow hyds.	= 2, 4	Contrib. drain. area	= 28.480 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

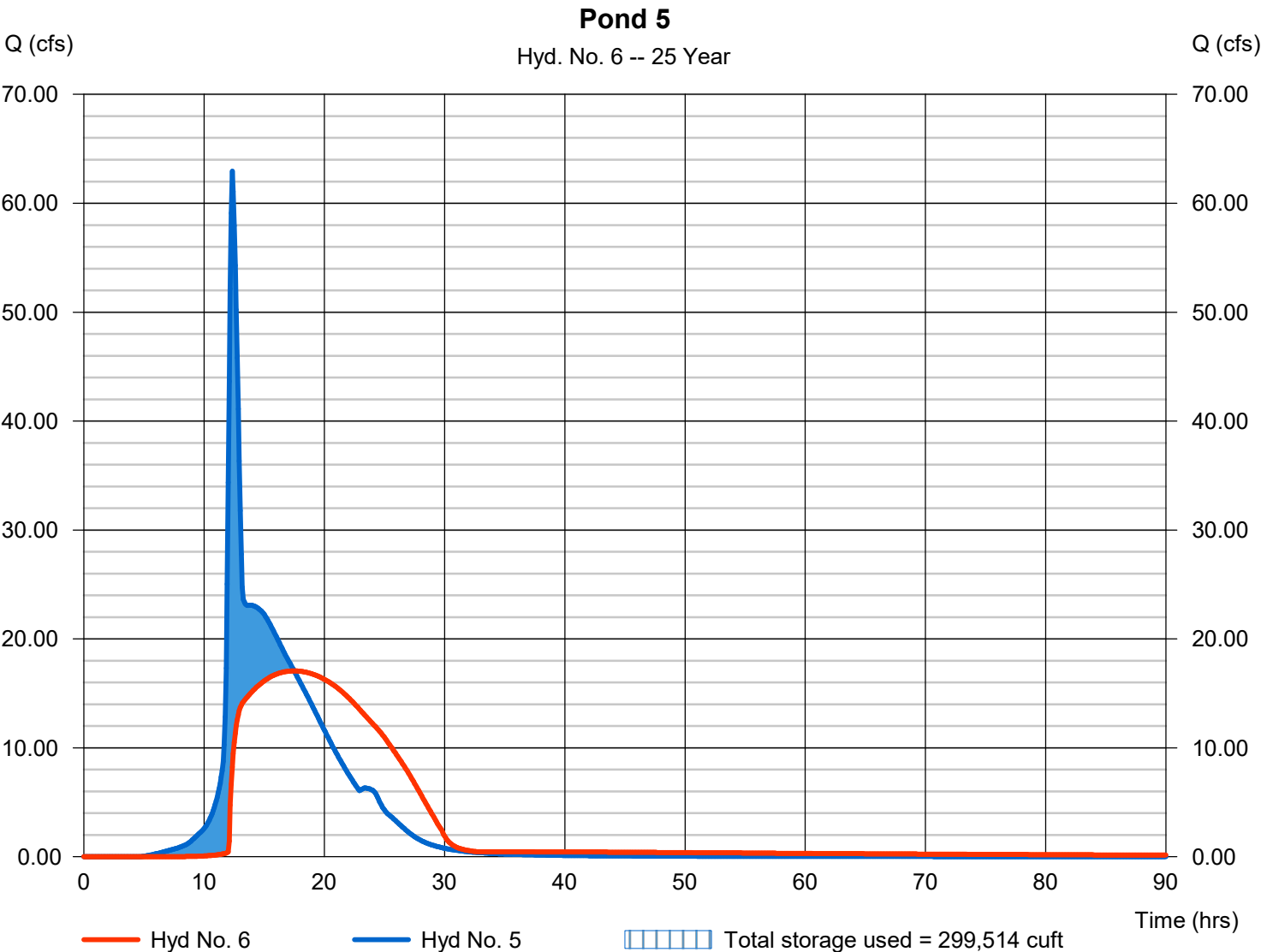
Friday, 05 / 22 / 2026

Hyd. No. 6

Pond 5

Hydrograph type	= Reservoir	Peak discharge	= 17.06 cfs
Storm frequency	= 25 yrs	Time to peak	= 17.50 hrs
Time interval	= 5 min	Hyd. volume	= 908,684 cuft
Inflow hyd. No.	= 5 - Pond 5 Total Inflow	Max. Elevation	= 1006.71 ft
Reservoir name	= <New Pond>	Max. Storage	= 299,514 cuft

Storage Indication method used.



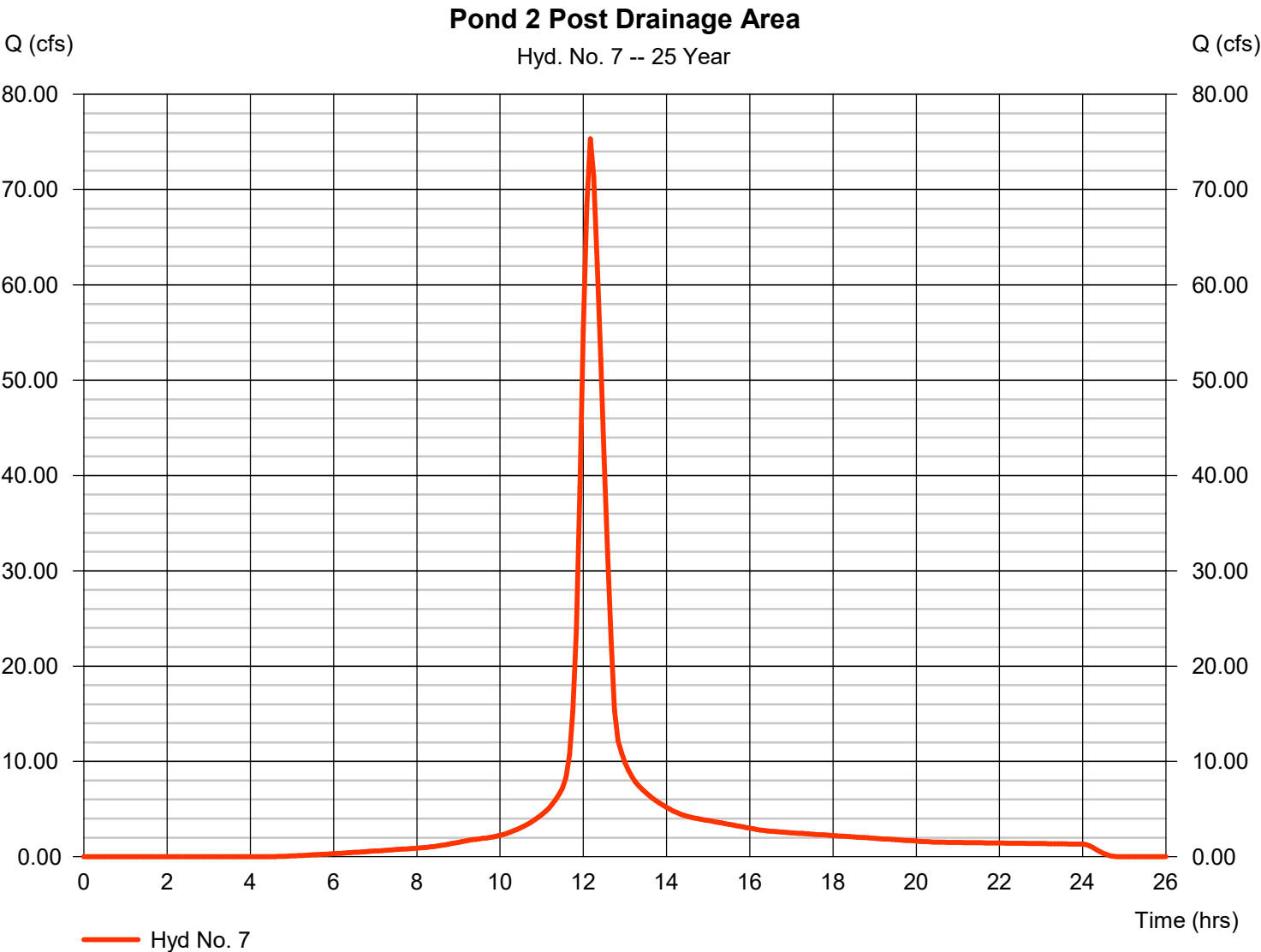
Hydrograph Report

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Hyd. No. 7

Pond 2 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	75.32 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.17 hrs
Time interval	=	5 min	Hyd. volume	=	332,294 cuft
Drainage area	=	27.700 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	30.00 min
Total precip.	=	4.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

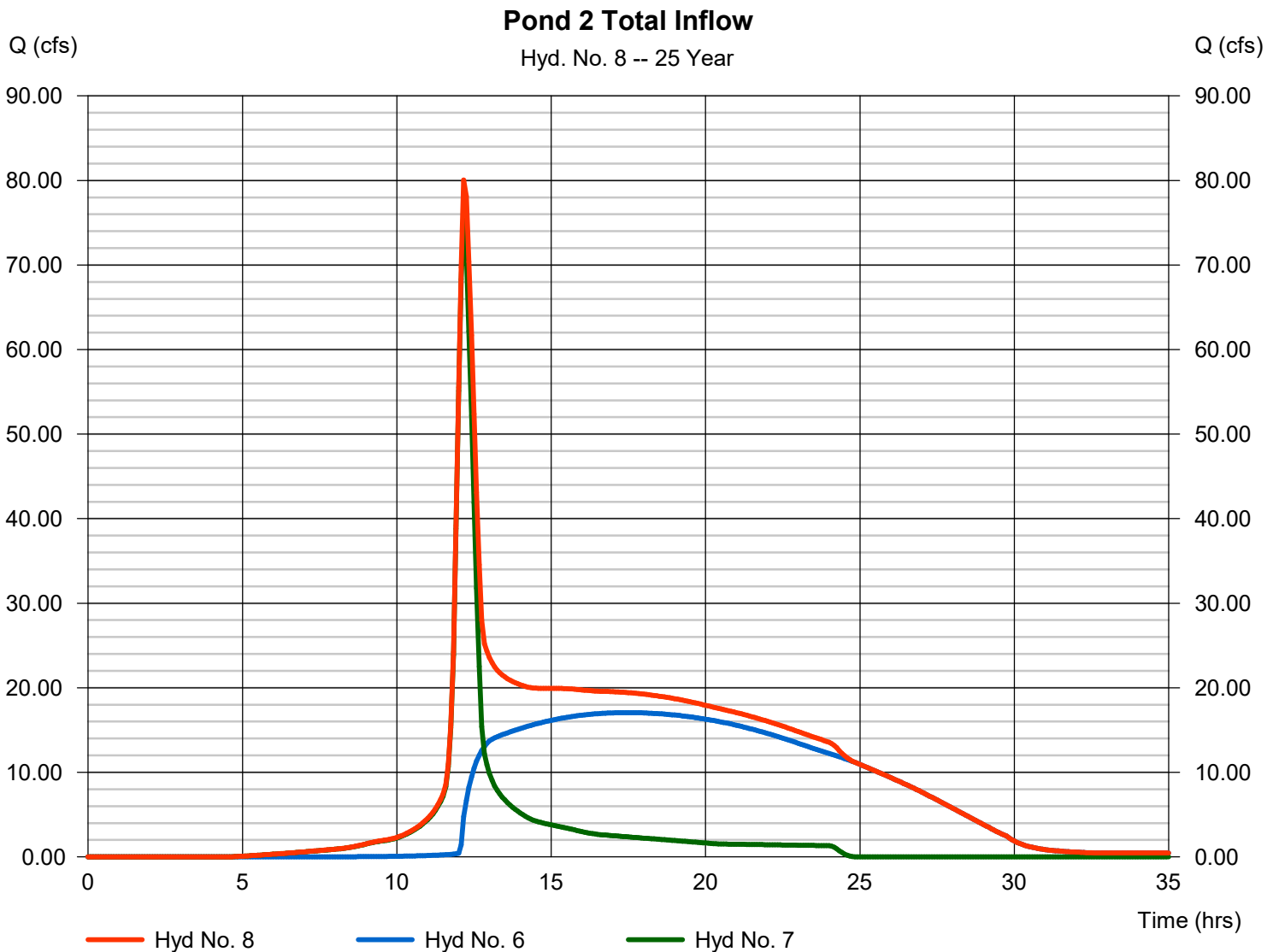
Friday, 05 / 22 / 2026

Hyd. No. 8

Pond 2 Total Inflow

Hydrograph type = Combine
Storm frequency = 25 yrs
Time interval = 5 min
Inflow hyds. = 6, 7

Peak discharge = 80.07 cfs
Time to peak = 12.17 hrs
Hyd. volume = 1,240,976 cuft
Contrib. drain. area = 27.700 ac



Hydrograph Report

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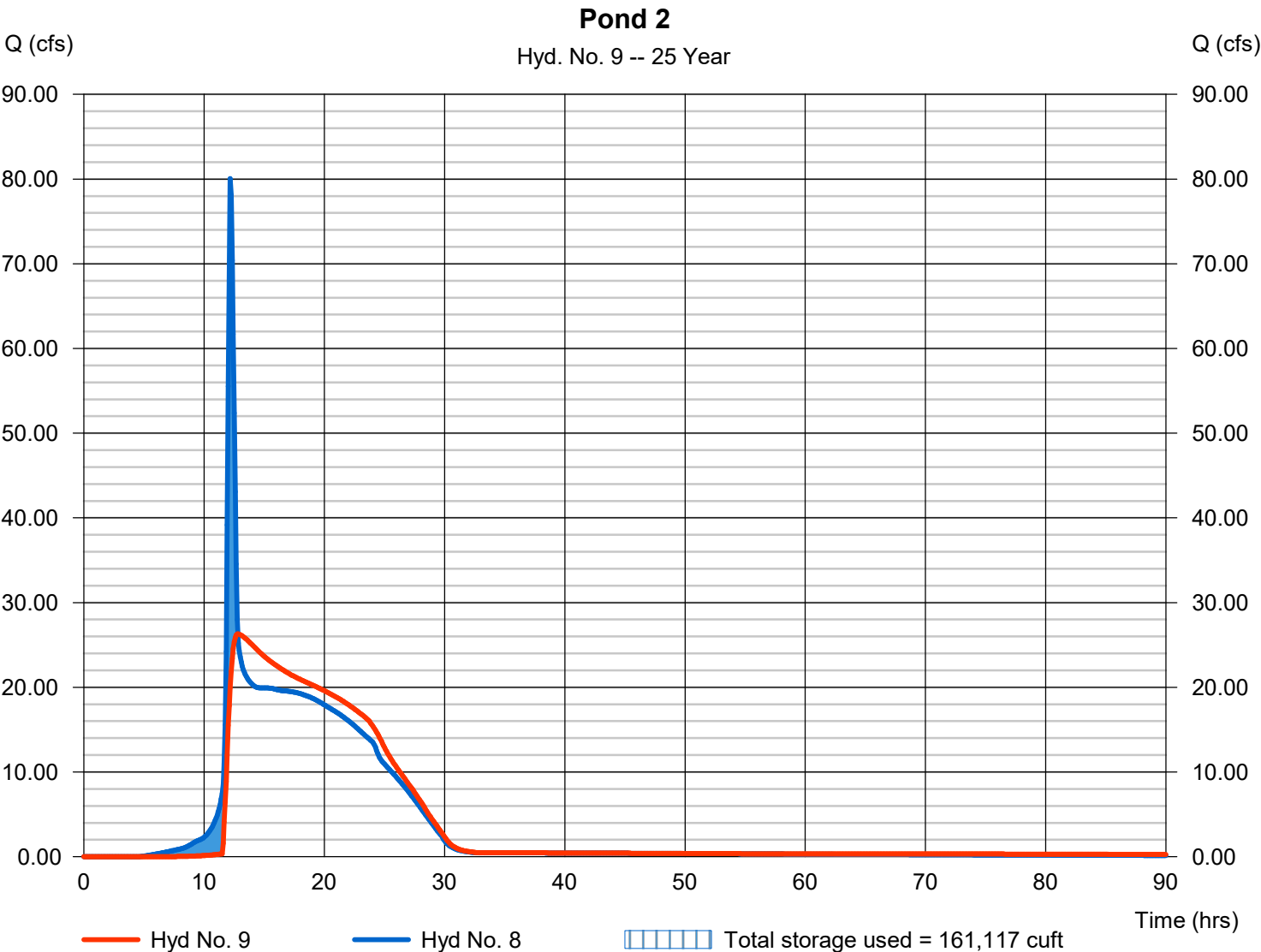
Friday, 05 / 22 / 2026

Hyd. No. 9

Pond 2

Hydrograph type	= Reservoir	Peak discharge	= 26.29 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.83 hrs
Time interval	= 5 min	Hyd. volume	= 1,237,161 cuft
Inflow hyd. No.	= 8 - Pond 2 Total Inflow	Max. Elevation	= 1004.53 ft
Reservoir name	= <New Pond>	Max. Storage	= 161,117 cuft

Storage Indication method used.



Hydrograph Report

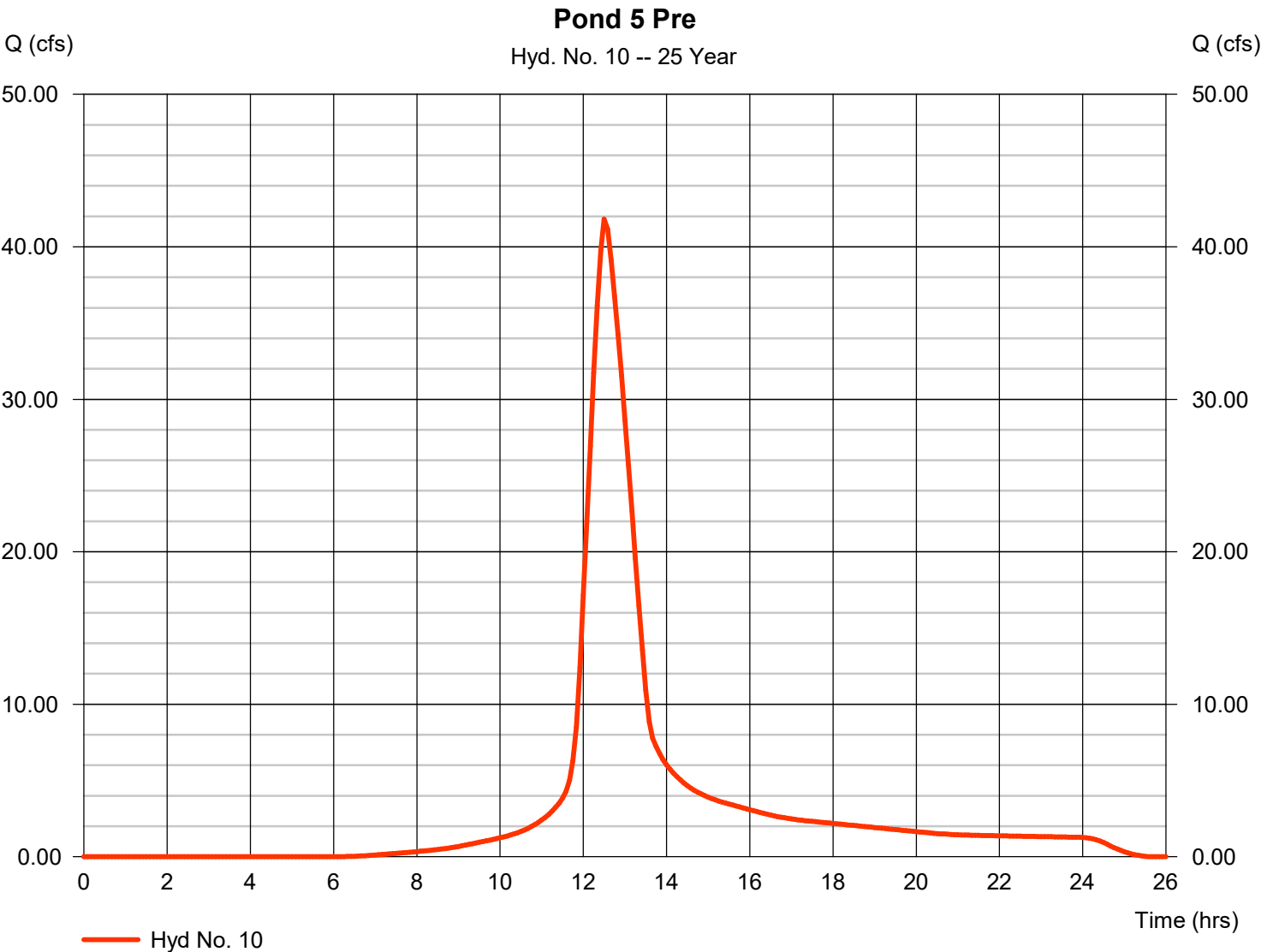
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Hyd. No. 10

Pond 5 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 41.82 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 287,138 cuft
Drainage area	= 28.500 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 60.00 min
Total precip.	= 4.30 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

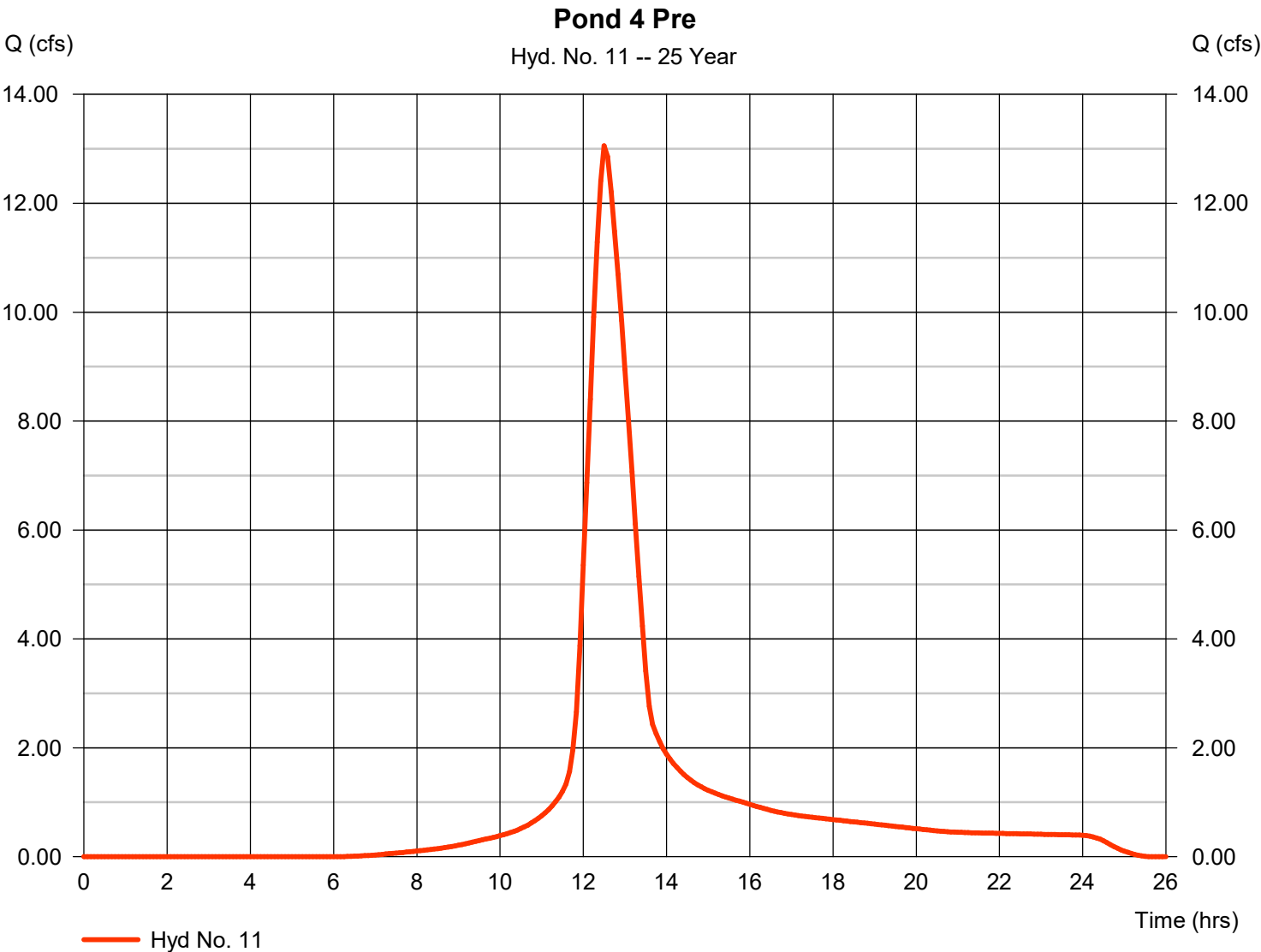
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Hyd. No. 11

Pond 4 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 13.06 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 89,668 cuft
Drainage area	= 8.900 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 60.00 min
Total precip.	= 4.30 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

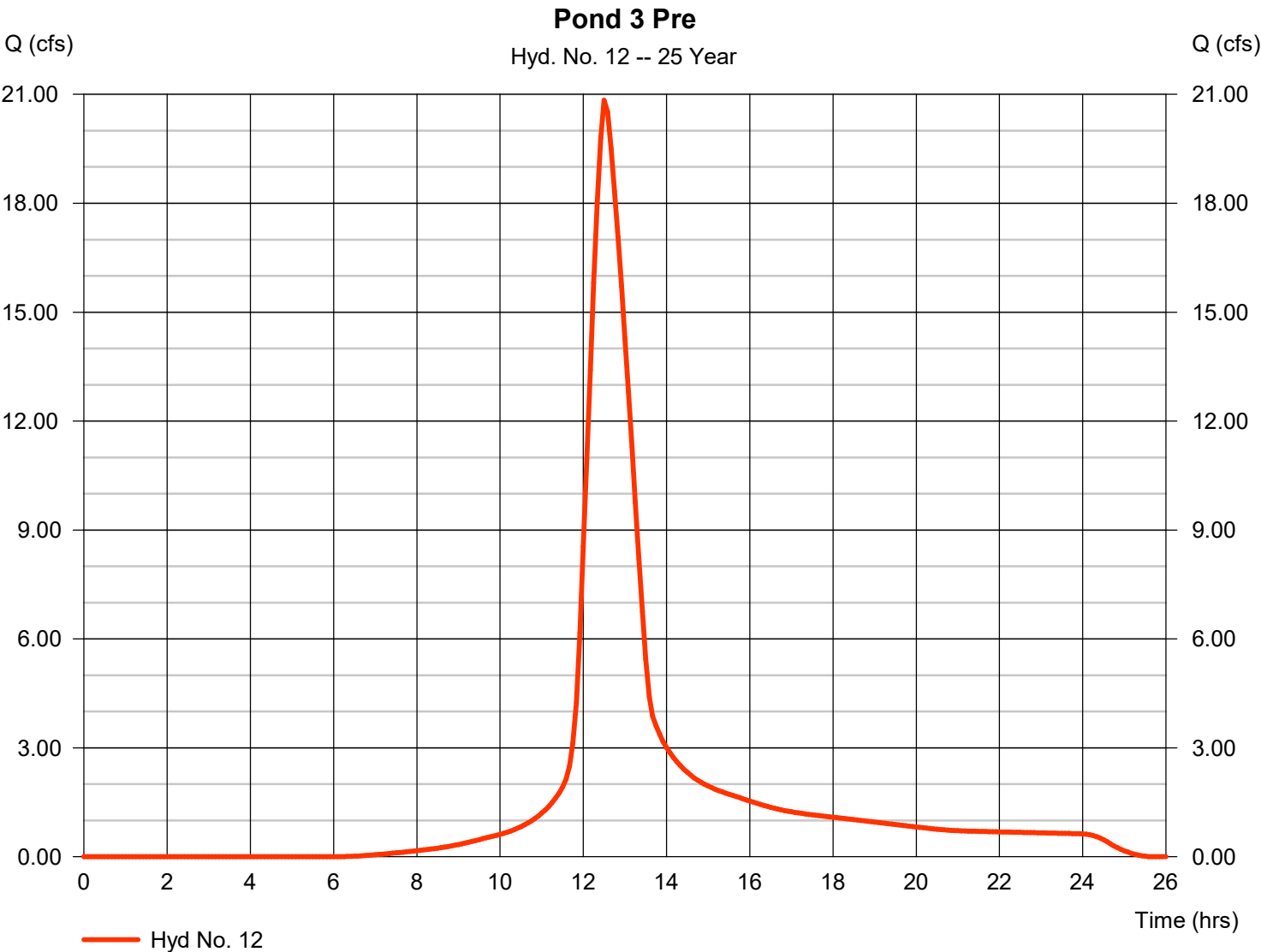
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Hyd. No. 12

Pond 3 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 20.84 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 143,065 cuft
Drainage area	= 14.200 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 60.00 min
Total precip.	= 4.30 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

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Hyd. No. 13

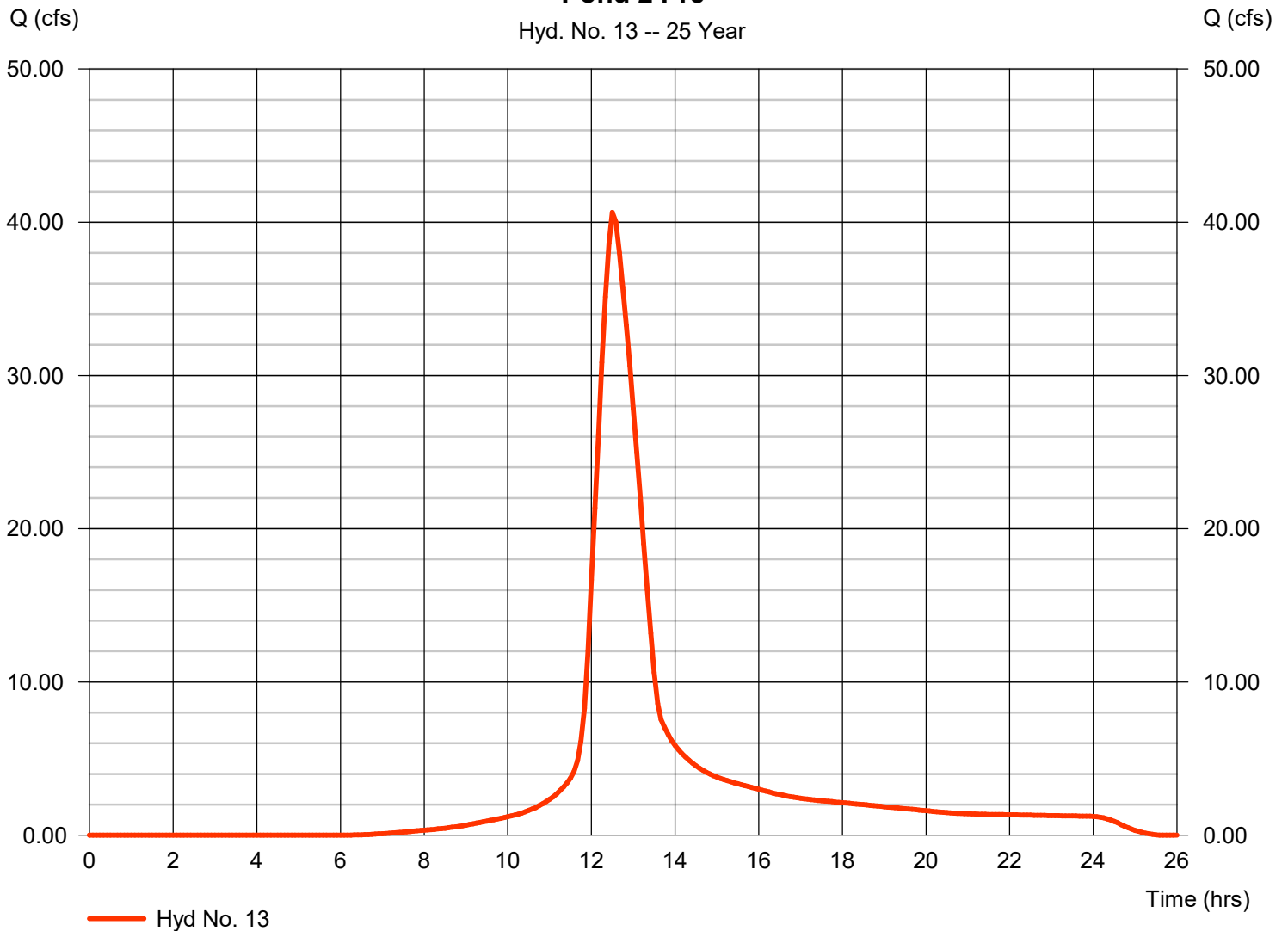
Pond 2 Pre

Hydrograph type = SCS Runoff
 Storm frequency = 25 yrs
 Time interval = 5 min
 Drainage area = 27.700 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 4.30 in
 Storm duration = 24 hrs

Peak discharge = 40.64 cfs
 Time to peak = 12.50 hrs
 Hyd. volume = 279,078 cuft
 Curve number = 86
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 60.00 min
 Distribution = Type II
 Shape factor = 484

Pond 2 Pre

Hyd. No. 13 -- 25 Year



Hydrograph Report

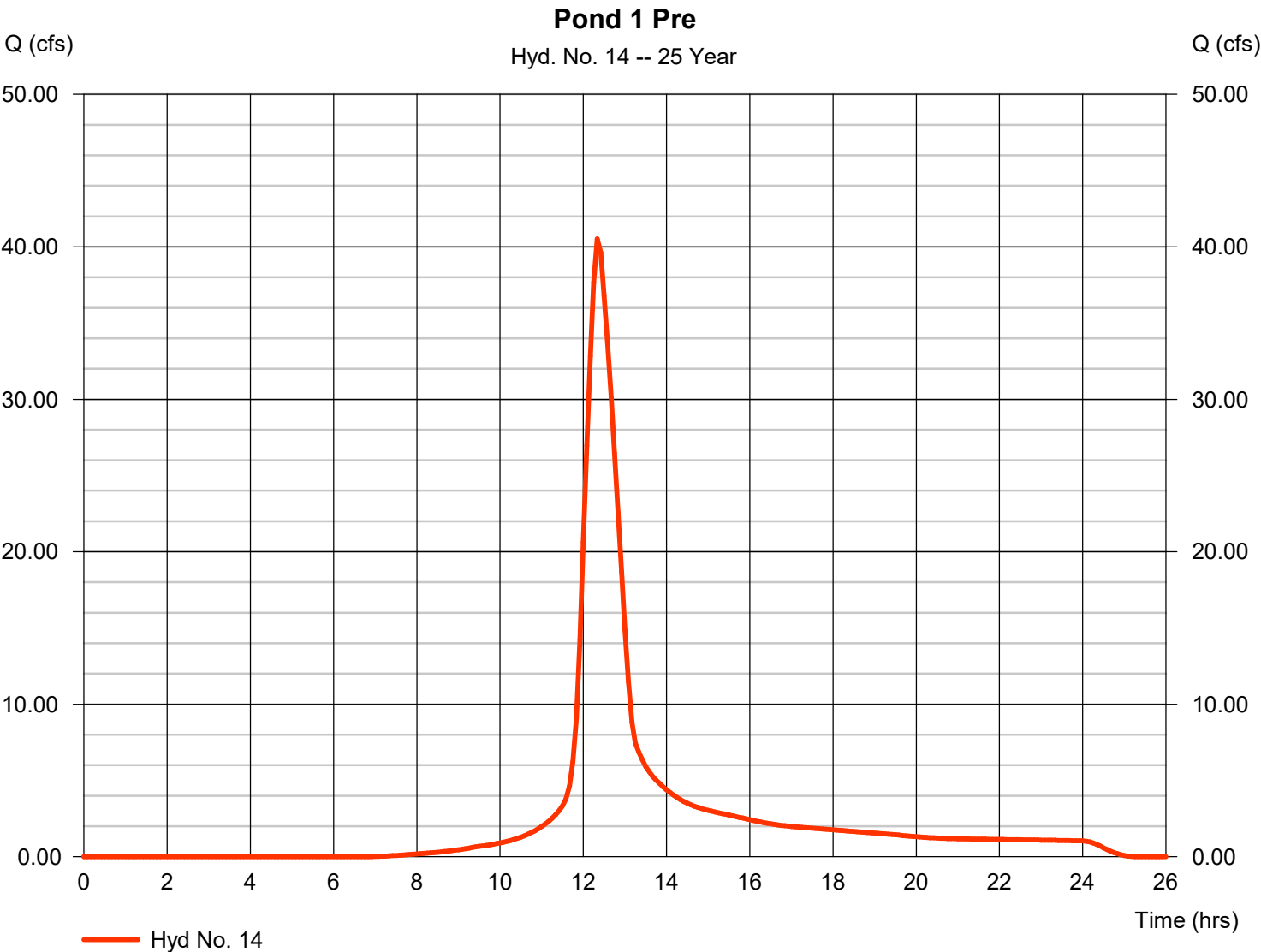
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Hyd. No. 14

Pond 1 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 40.52 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.33 hrs
Time interval	= 5 min	Hyd. volume	= 228,801 cuft
Drainage area	= 23.900 ac	Curve number	= 84
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 45.00 min
Total precip.	= 4.30 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

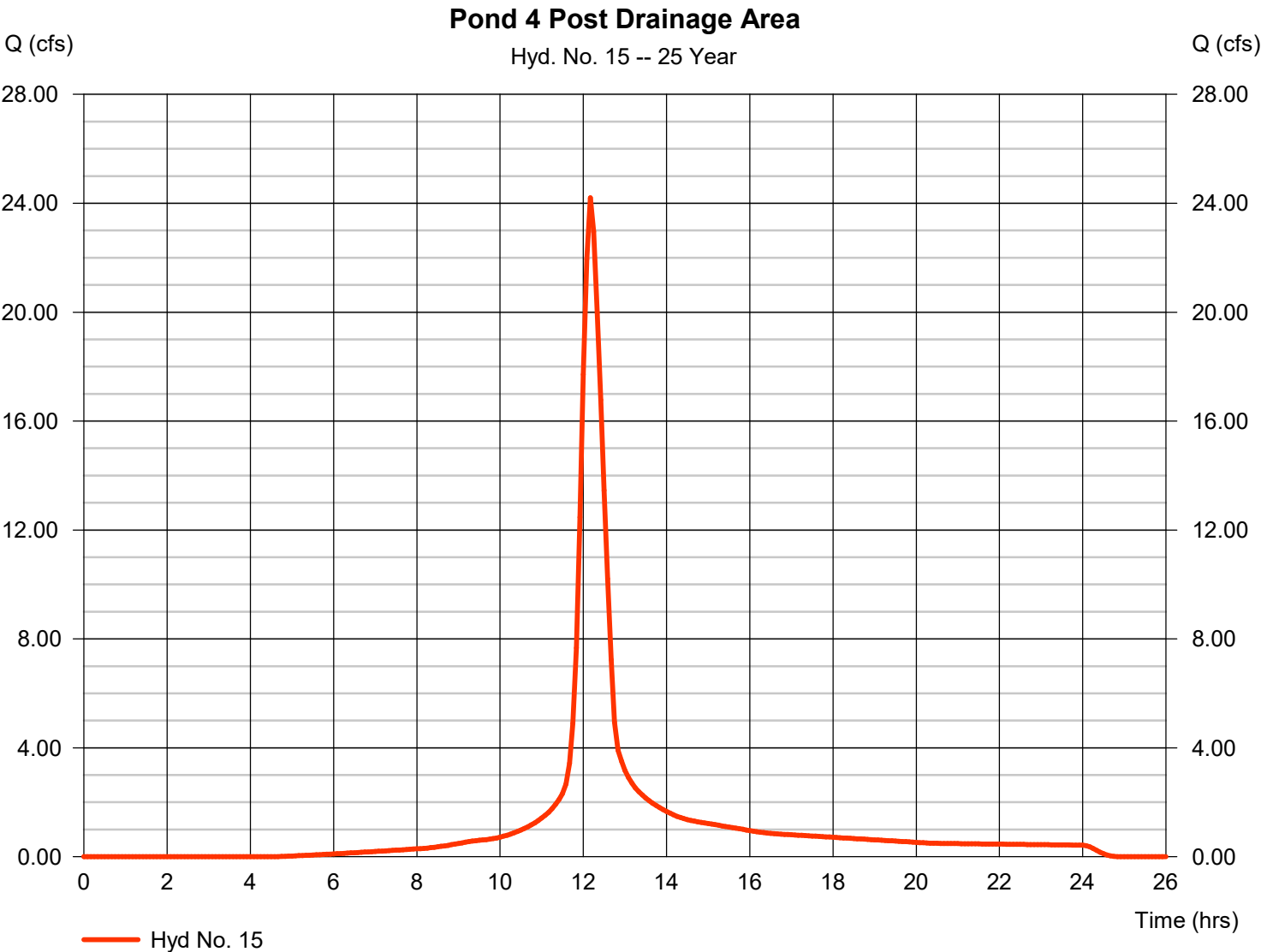
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Hyd. No. 15

Pond 4 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	24.20 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.17 hrs
Time interval	=	5 min	Hyd. volume	=	106,766 cuft
Drainage area	=	8.900 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	30.00 min
Total precip.	=	4.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

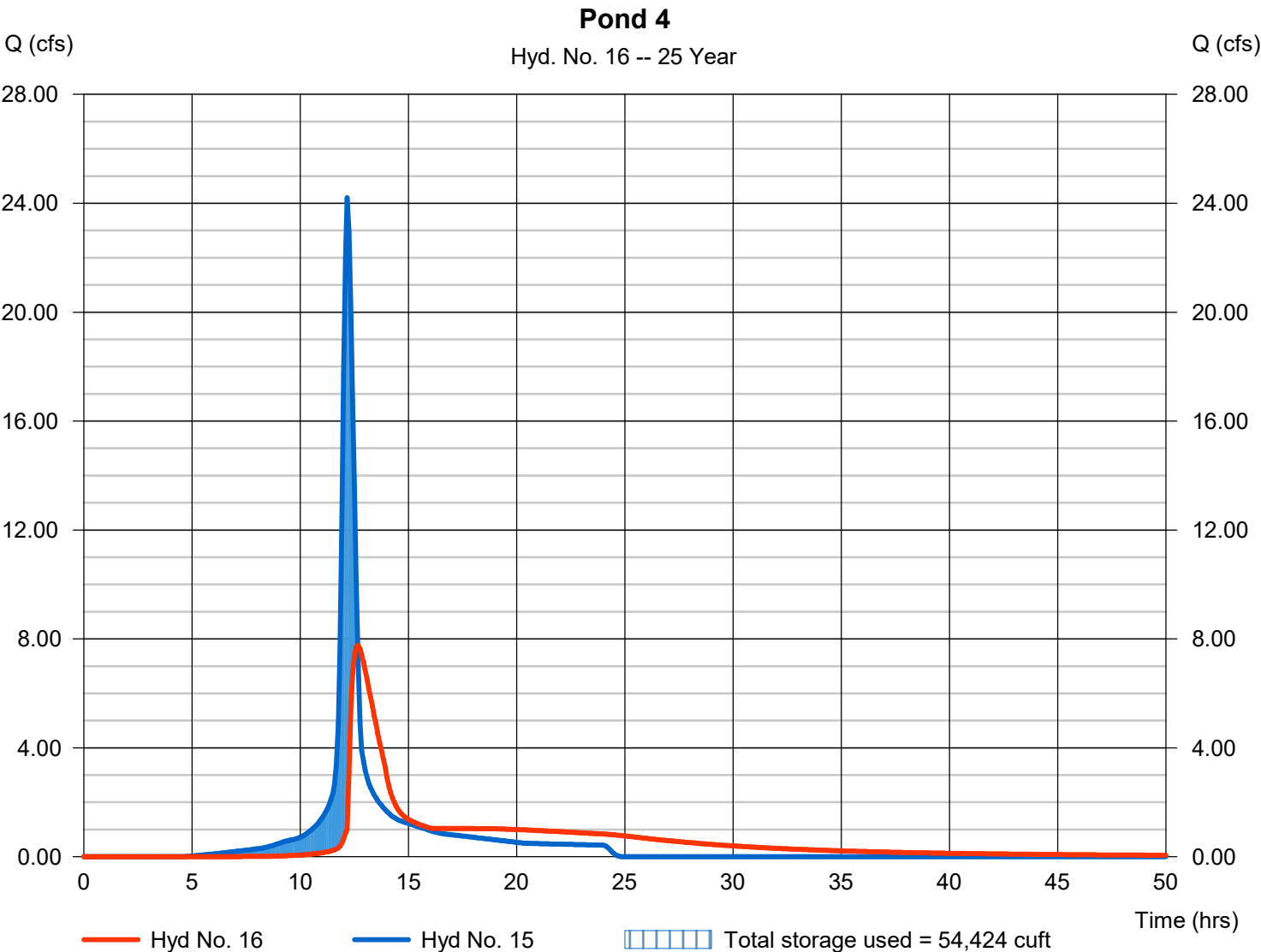
Friday, 05 / 22 / 2026

Hyd. No. 16

Pond 4

Hydrograph type	= Reservoir	Peak discharge	= 7.767 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.67 hrs
Time interval	= 5 min	Hyd. volume	= 106,623 cuft
Inflow hyd. No.	= 15 - Pond 4 Post Drainage Area	Max. Elevation	= 1003.05 ft
Reservoir name	= <New Pond>	Max. Storage	= 54,424 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

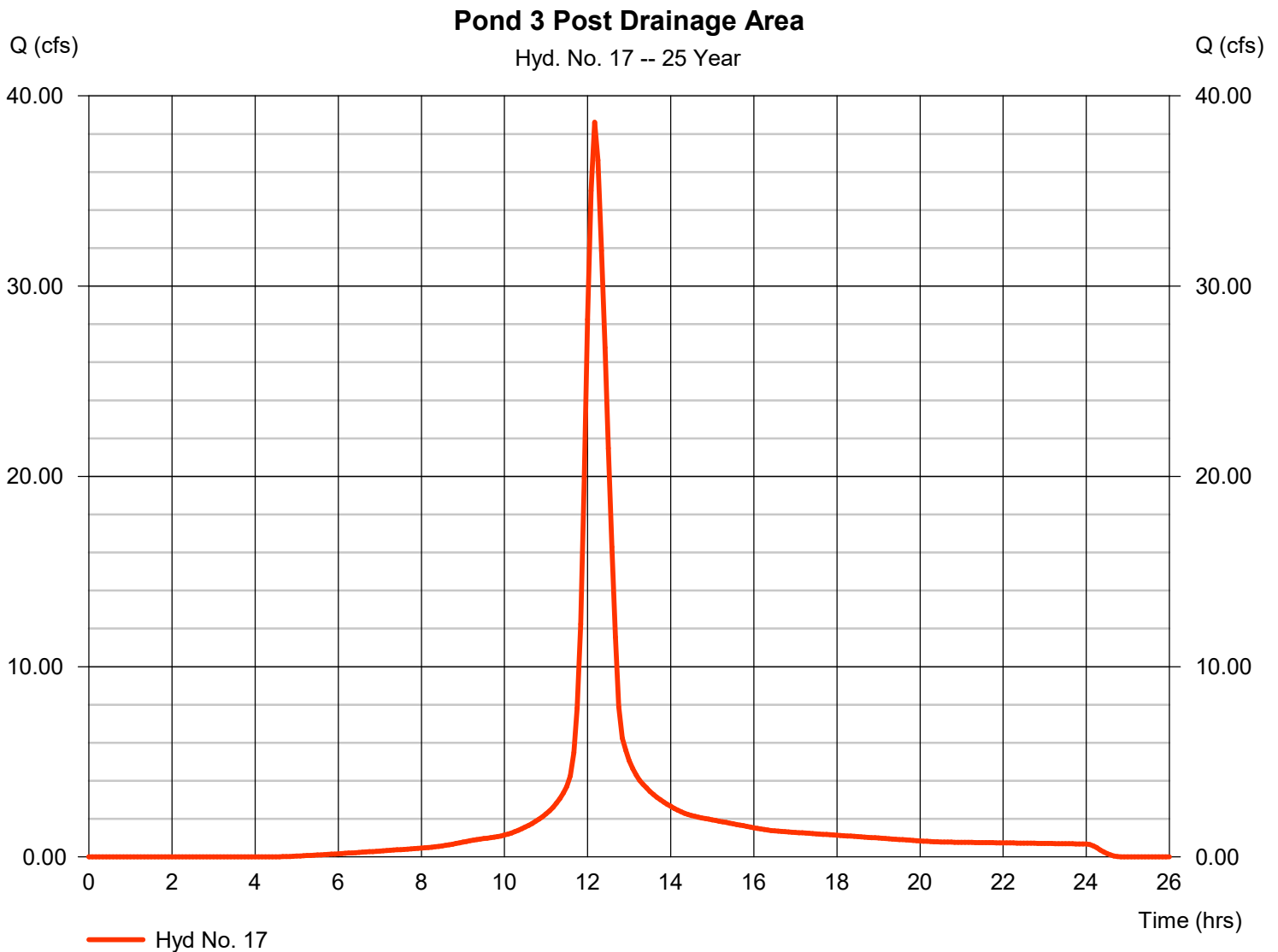
Friday, 05 / 22 / 2026

Hyd. No. 17

Pond 3 Post Drainage Area

Hydrograph type = SCS Runoff
Storm frequency = 25 yrs
Time interval = 5 min
Drainage area = 14.200 ac
Basin Slope = 0.0 %
Tc method = User
Total precip. = 4.30 in
Storm duration = 24 hrs

Peak discharge = 38.61 cfs
Time to peak = 12.17 hrs
Hyd. volume = 170,346 cuft
Curve number = 90
Hydraulic length = 0 ft
Time of conc. (Tc) = 30.00 min
Distribution = Type II
Shape factor = 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

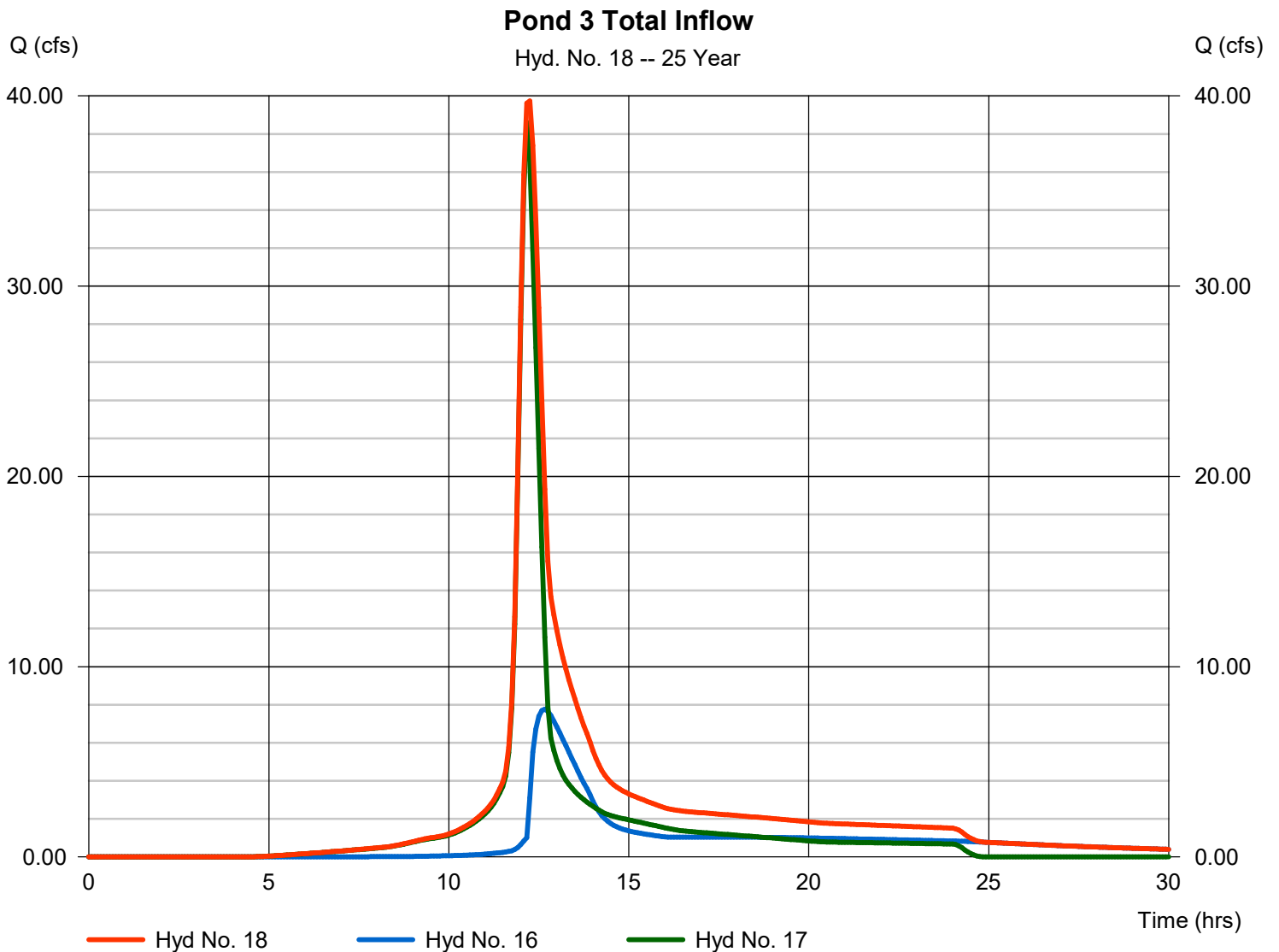
Friday, 05 / 22 / 2026

Hyd. No. 18

Pond 3 Total Inflow

Hydrograph type = Combine
Storm frequency = 25 yrs
Time interval = 5 min
Inflow hyds. = 16, 17

Peak discharge = 39.73 cfs
Time to peak = 12.25 hrs
Hyd. volume = 276,969 cuft
Contrib. drain. area = 14.200 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

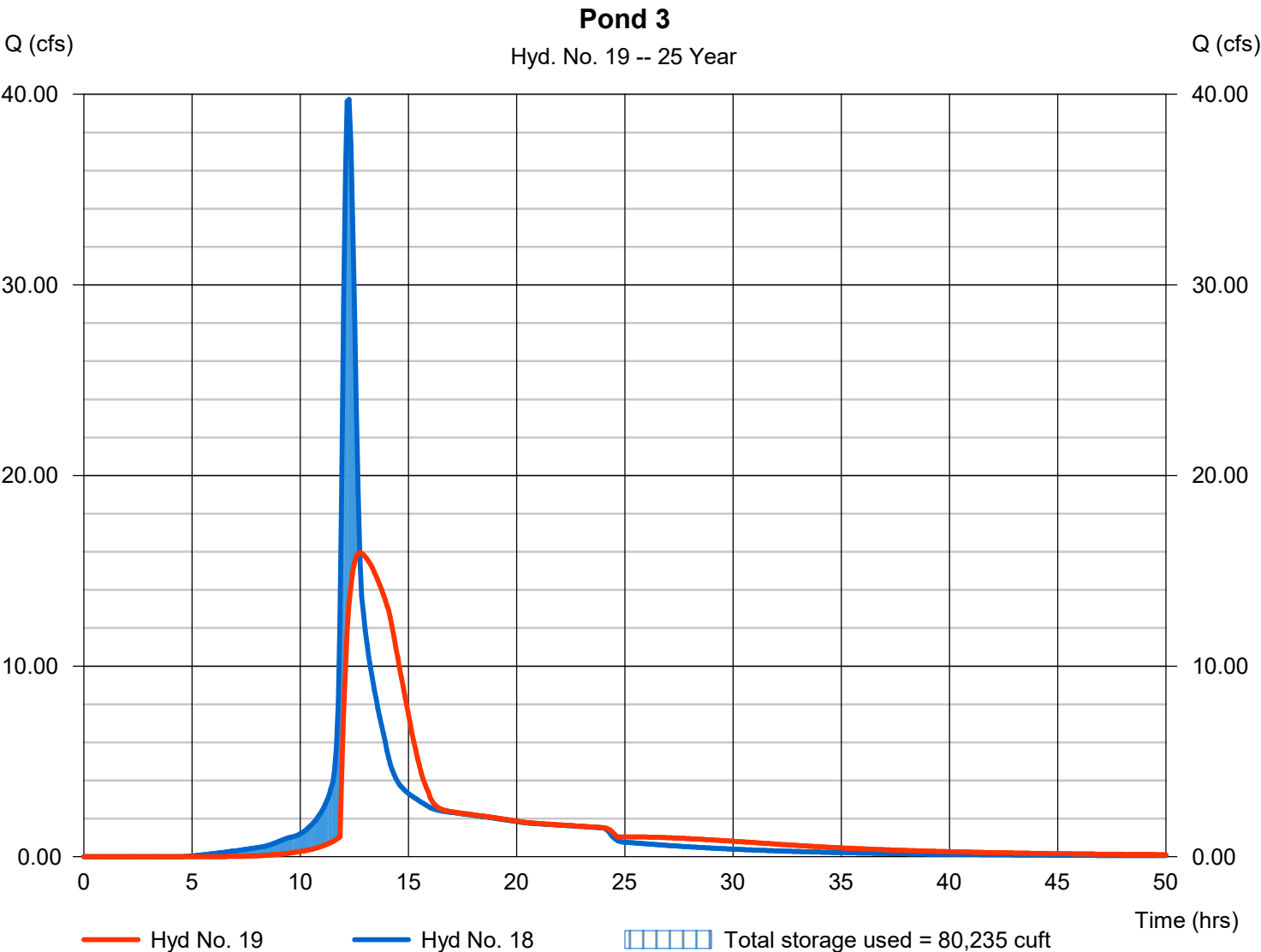
Friday, 05 / 22 / 2026

Hyd. No. 19

Pond 3

Hydrograph type	= Reservoir	Peak discharge	= 15.95 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.75 hrs
Time interval	= 5 min	Hyd. volume	= 276,883 cuft
Inflow hyd. No.	= 18 - Pond 3 Total Inflow	Max. Elevation	= 1004.27 ft
Reservoir name	= <New Pond>	Max. Storage	= 80,235 cuft

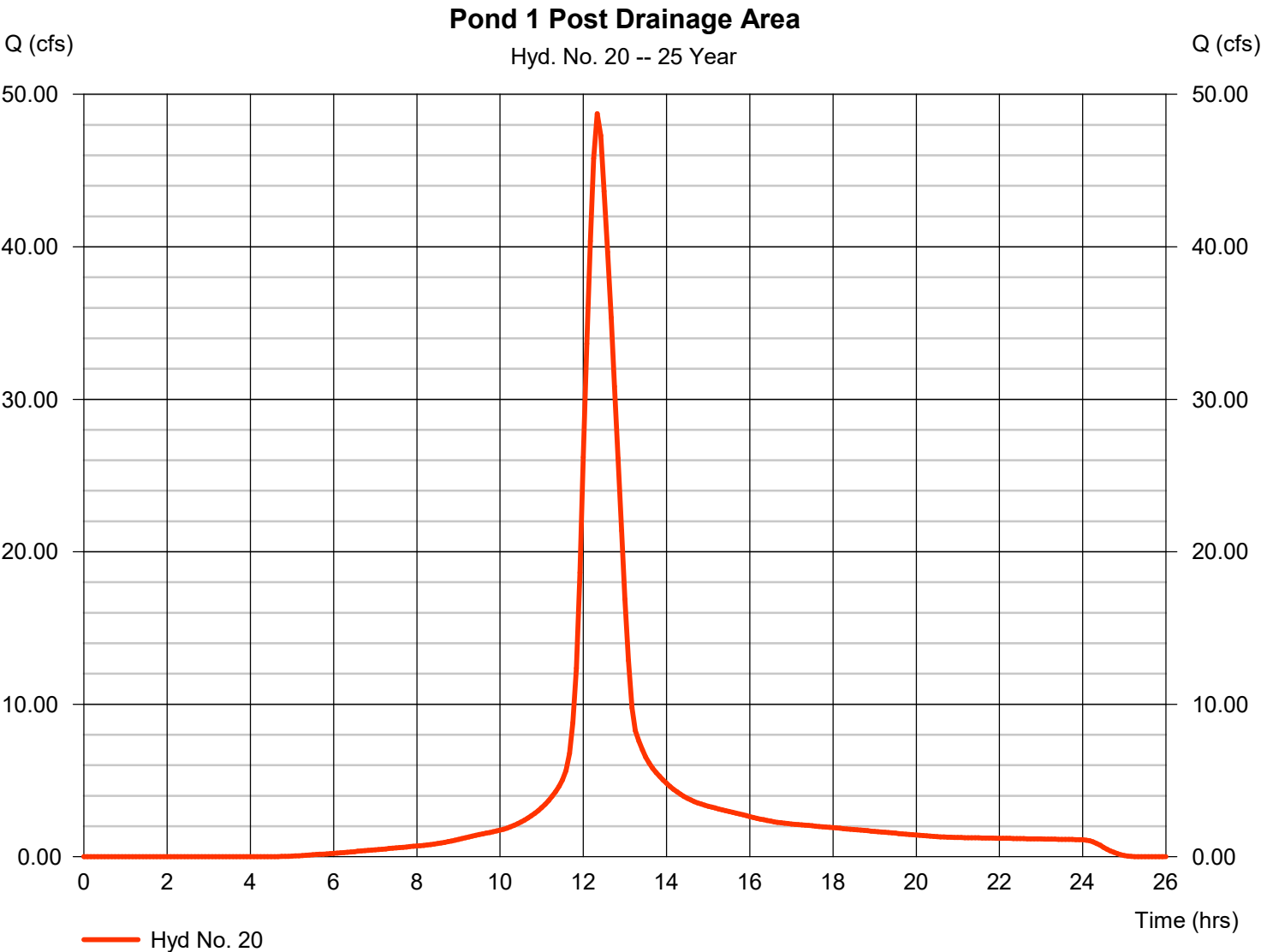
Storage Indication method used.



Hyd. No. 20

Pond 1 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	48.73 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.33 hrs
Time interval	=	5 min	Hyd. volume	=	278,021 cuft
Drainage area	=	23.900 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	45.00 min
Total precip.	=	4.30 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

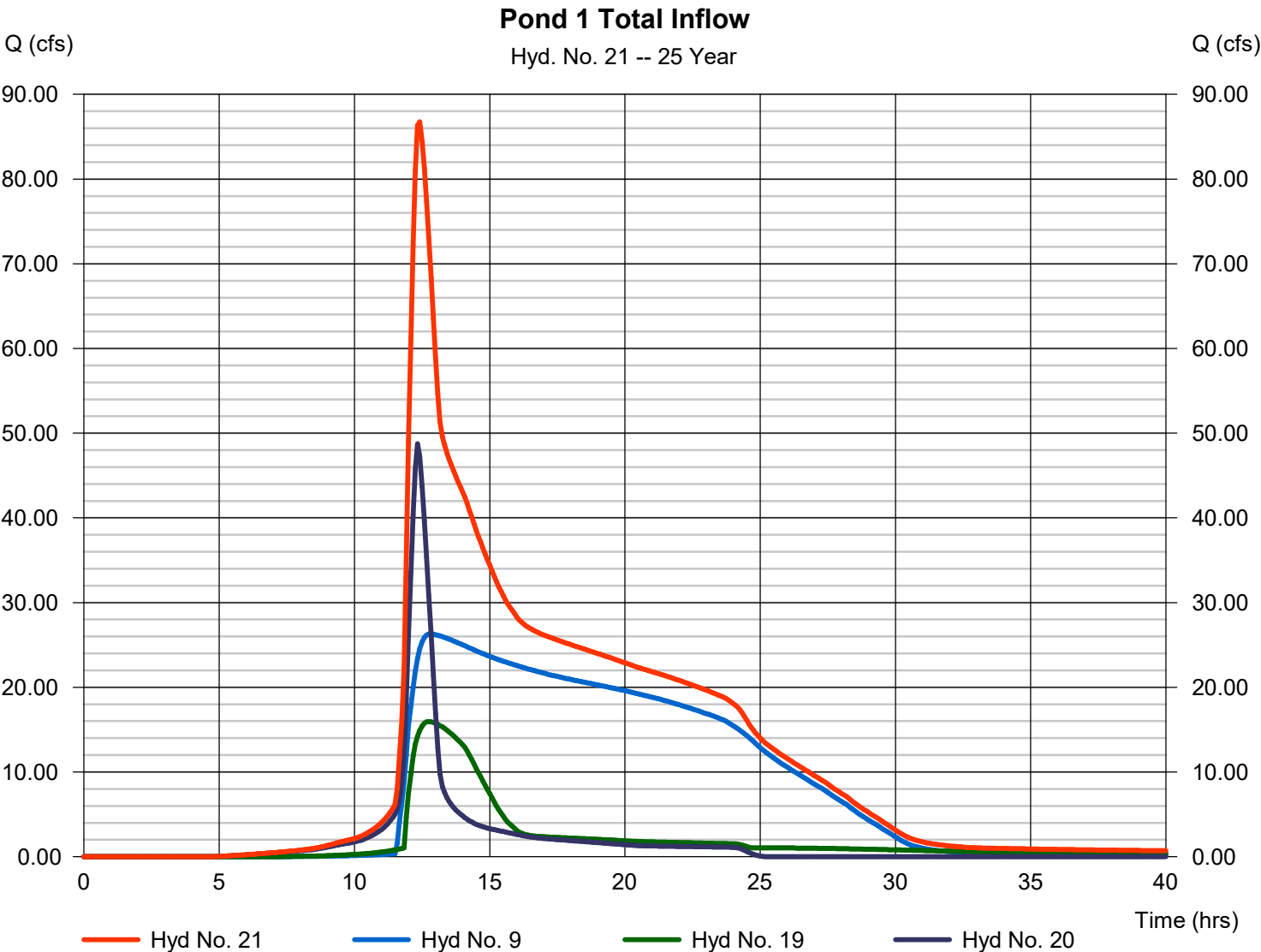
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Friday, 05 / 22 / 2026

Hyd. No. 21

Pond 1 Total Inflow

Hydrograph type	= Combine	Peak discharge	= 86.75 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.42 hrs
Time interval	= 5 min	Hyd. volume	= 1,792,065 cuft
Inflow hyds.	= 9, 19, 20	Contrib. drain. area	= 23.900 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

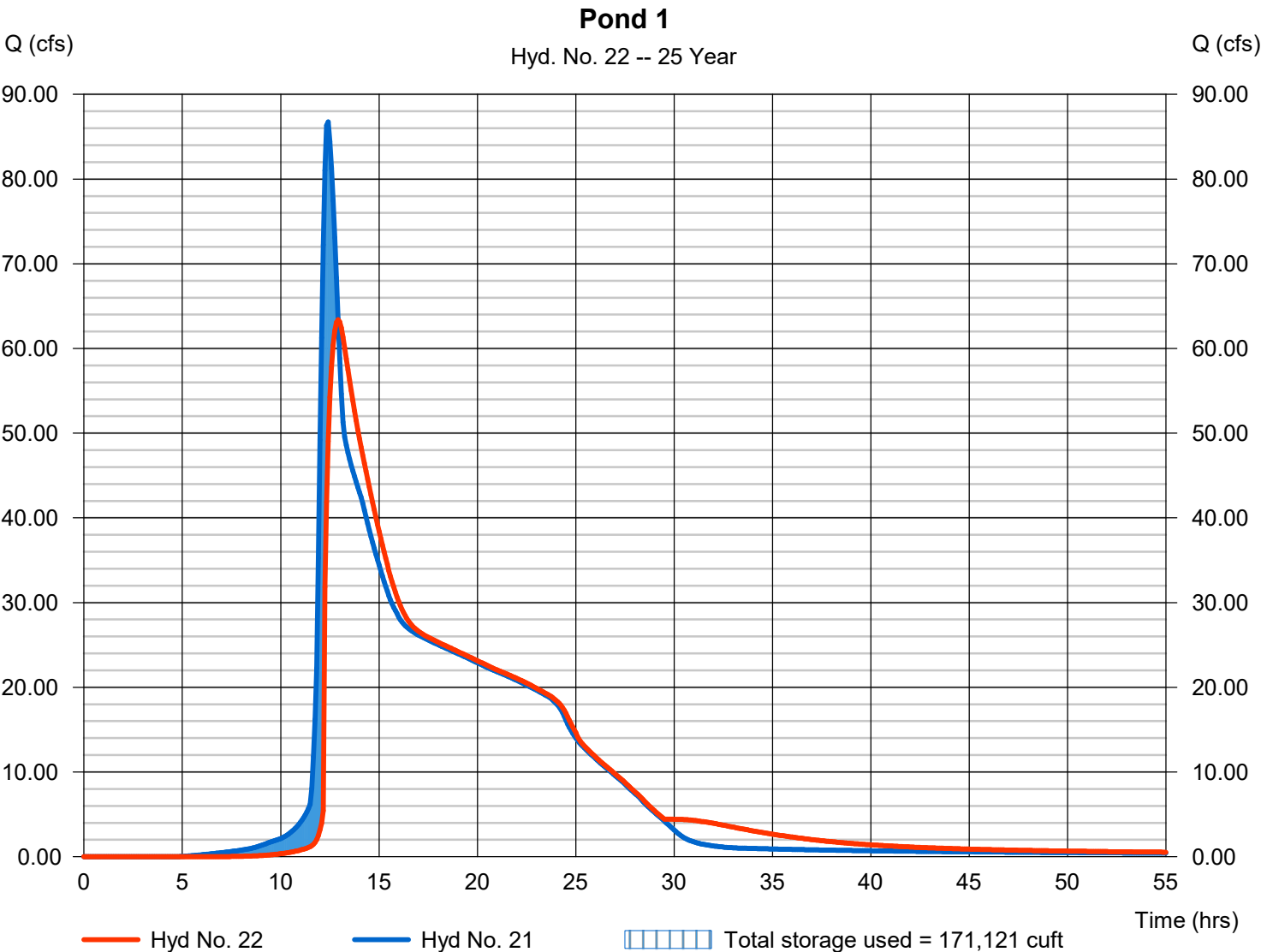
Friday, 05 / 22 / 2026

Hyd. No. 22

Pond 1

Hydrograph type	= Reservoir	Peak discharge	= 63.38 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.92 hrs
Time interval	= 5 min	Hyd. volume	= 1,789,276 cuft
Inflow hyd. No.	= 21 - Pond 1 Total Inflow	Max. Elevation	= 1002.54 ft
Reservoir name	= <New Pond>	Max. Storage	= 171,121 cuft

Storage Indication method used.



Hydrograph Report

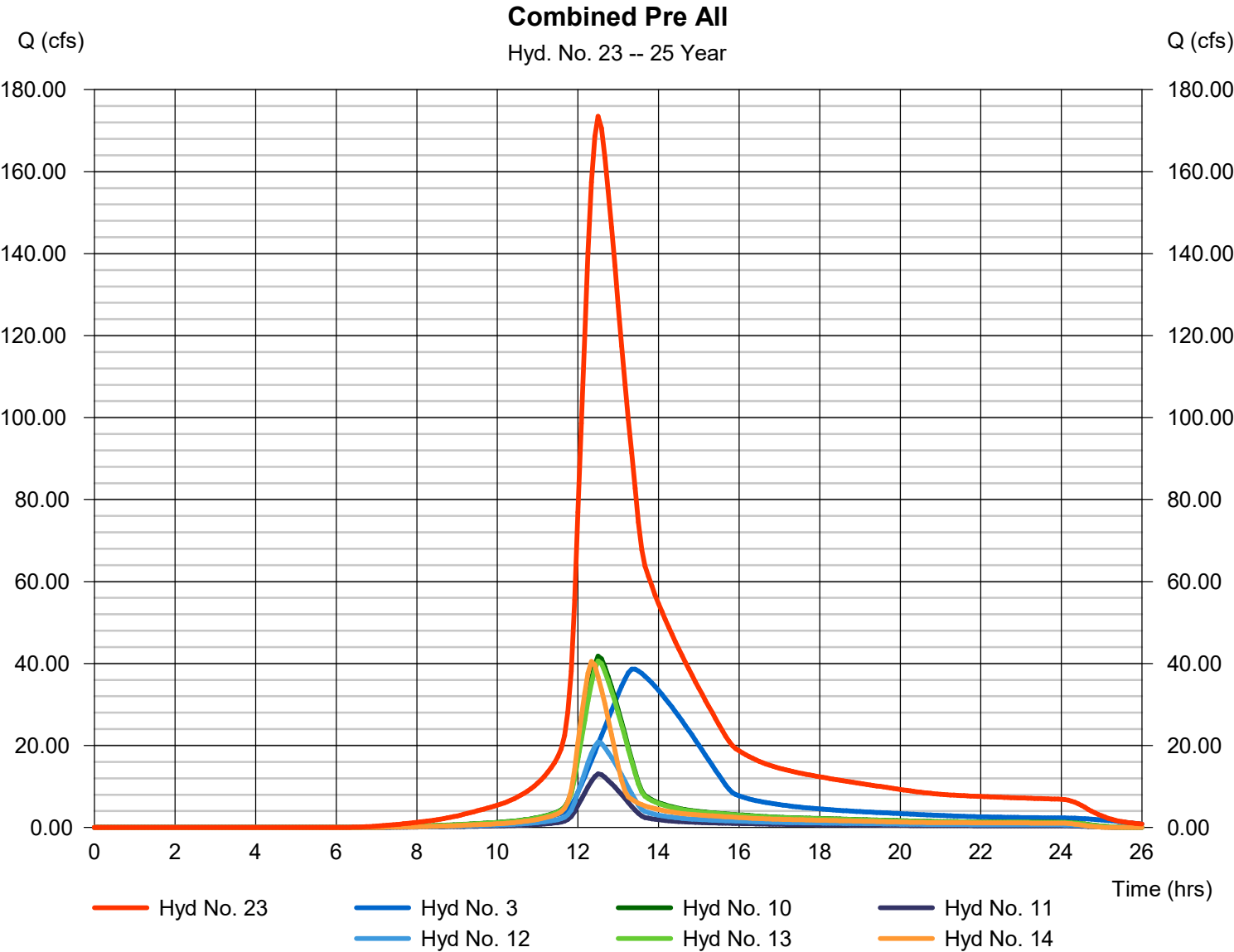
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Hyd. No. 23

Combined Pre All

Hydrograph type	= Combine	Peak discharge	= 173.50 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 1,522,805 cuft
Inflow hyds.	= 3, 10, 11, 12, 13, 14	Contrib. drain. area	= 153.200 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

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	58.89	5	785	659,862	-----	-----	-----	Pond 6 Post Drainage Area
2	Reservoir	19.80	5	890	659,728	1	1008.80	316,926	Pond 6
3	SCS Runoff	44.51	5	800	569,503	-----	-----	-----	Pond 6 Pre
4	SCS Runoff	65.61	5	740	375,858	-----	-----	-----	Pond 5 Post Drainage Area
5	Combine	70.68	5	740	1,035,586	2, 4	-----	-----	Pond 5 Total Inflow
6	Reservoir	18.45	5	1065	1,031,456	5	1007.51	343,119	Pond 5
7	SCS Runoff	85.07	5	730	376,988	-----	-----	-----	Pond 2 Post Drainage Area
8	Combine	91.91	5	730	1,408,441	6, 7	-----	-----	Pond 2 Total Inflow
9	Reservoir	28.10	5	770	1,404,608	8	1005.26	186,102	Pond 2
10	SCS Runoff	47.92	5	750	329,384	-----	-----	-----	Pond 5 Pre
11	SCS Runoff	14.96	5	750	102,860	-----	-----	-----	Pond 4 Pre
12	SCS Runoff	23.87	5	750	164,114	-----	-----	-----	Pond 3 Pre
13	SCS Runoff	46.57	5	750	320,138	-----	-----	-----	Pond 2 Pre
14	SCS Runoff	46.75	5	740	263,965	-----	-----	-----	Pond 1 Pre
15	SCS Runoff	27.33	5	730	121,126	-----	-----	-----	Pond 4 Post Drainage Area
16	Reservoir	9.087	5	760	120,983	15	1003.26	60,483	Pond 4
17	SCS Runoff	43.61	5	730	193,257	-----	-----	-----	Pond 3 Post Drainage Area
18	Combine	47.00	5	735	314,240	16, 17	-----	-----	Pond 3 Total Inflow
19	Reservoir	17.20	5	765	314,154	18	1004.84	93,803	Pond 3
20	SCS Runoff	55.06	5	740	315,414	-----	-----	-----	Pond 1 Post Drainage Area
21	Combine	95.57	5	745	2,034,177	9, 19, 20	-----	-----	Pond 1 Total Inflow
22	Reservoir	67.95	5	775	2,031,380	21	1002.99	188,578	Pond 1
23	Combine	199.37	5	750	1,749,965	3, 10, 11, 12, 13, 14,	-----	-----	Combined Pre All
Newland Phase 1.gpw					Return Period: 50 Year			Friday, 05 / 22 / 2026	

Hydrograph Report

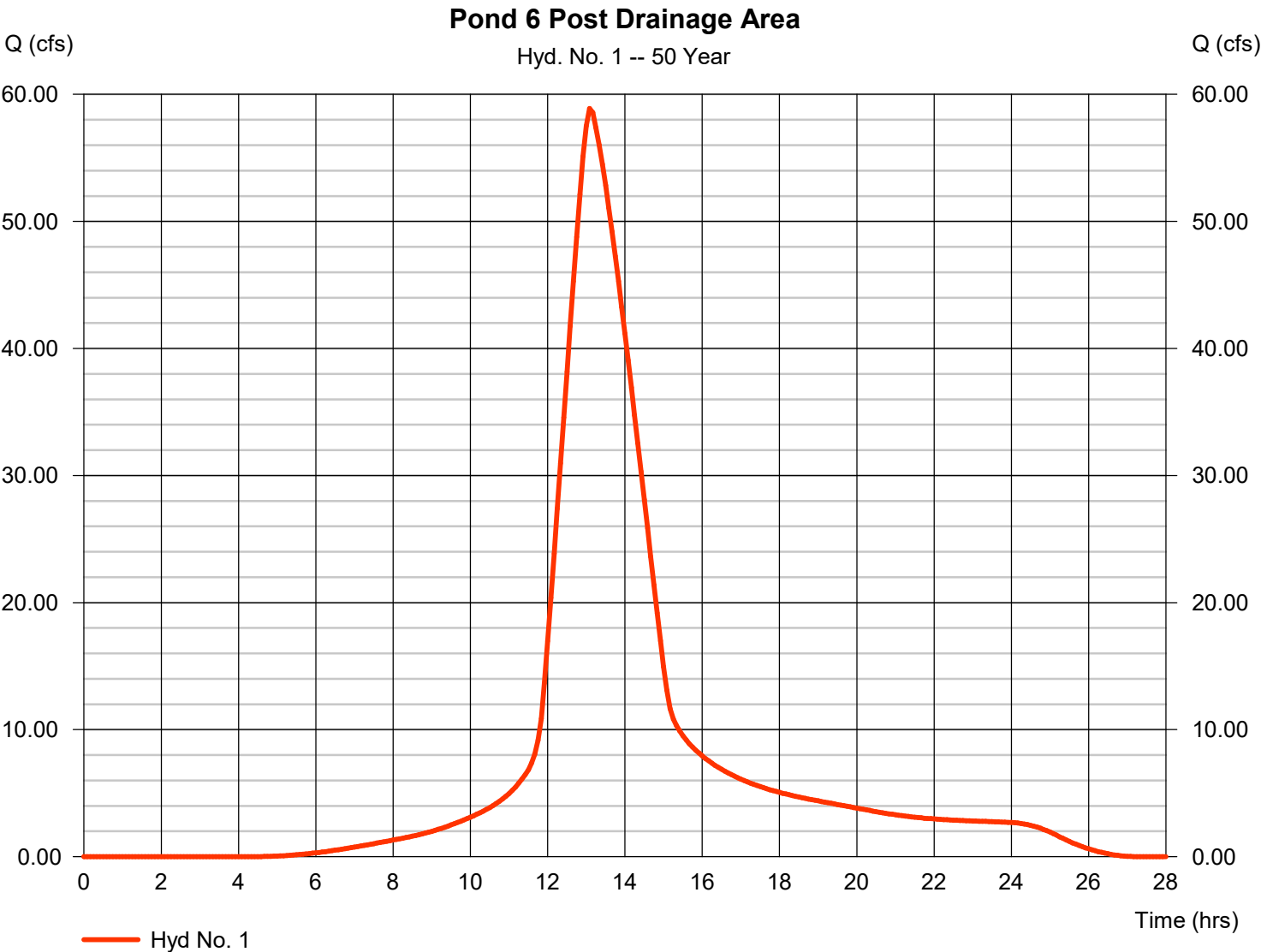
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Friday, 05 / 22 / 2026

Hyd. No. 1

Pond 6 Post Drainage Area

Hydrograph type	= SCS Runoff	Peak discharge	= 58.89 cfs
Storm frequency	= 50 yrs	Time to peak	= 13.08 hrs
Time interval	= 5 min	Hyd. volume	= 659,862 cuft
Drainage area	= 50.000 ac	Curve number	= 90
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 120.00 min
Total precip.	= 4.75 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

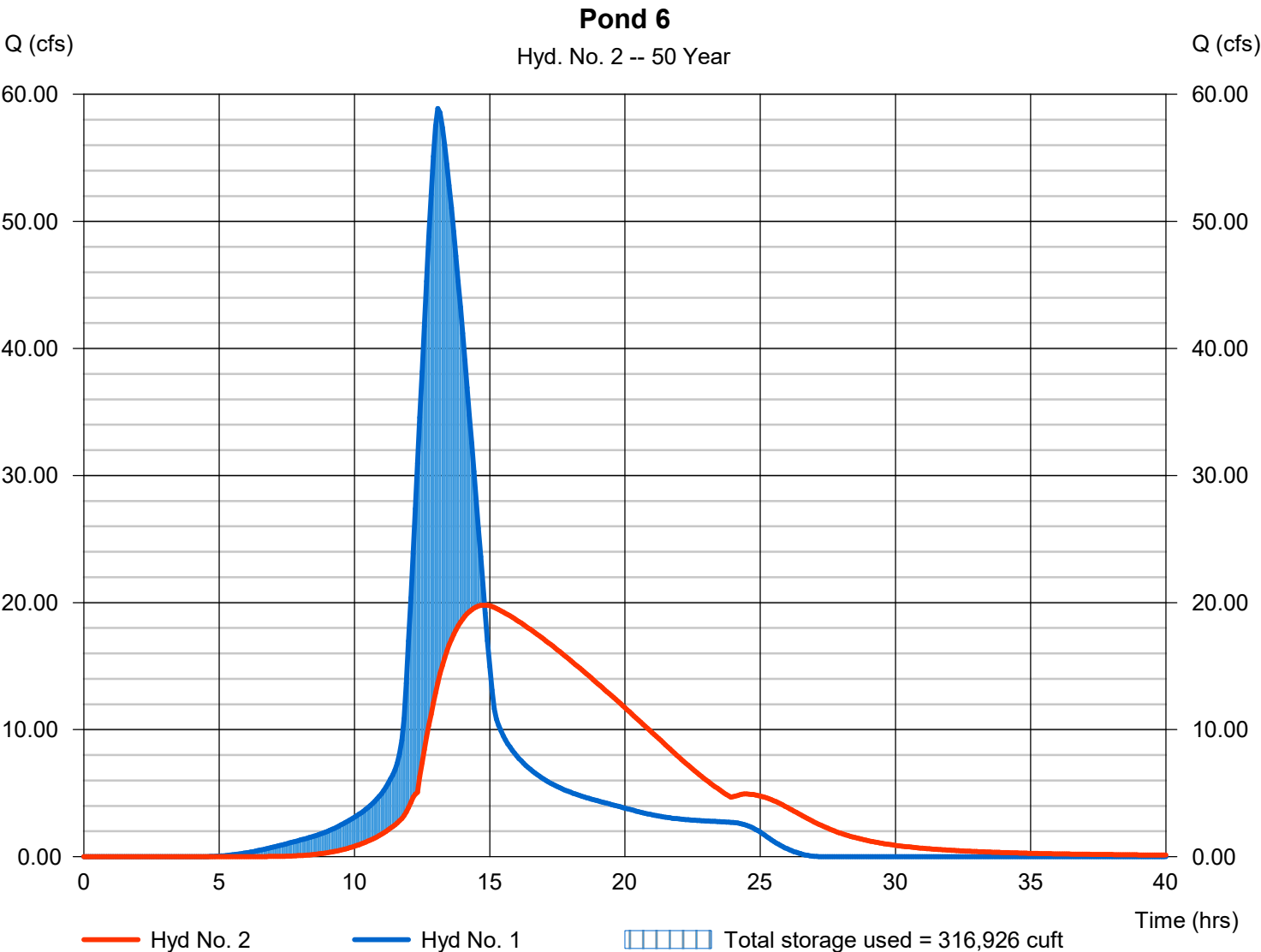
Friday, 05 / 22 / 2026

Hyd. No. 2

Pond 6

Hydrograph type	= Reservoir	Peak discharge	= 19.80 cfs
Storm frequency	= 50 yrs	Time to peak	= 14.83 hrs
Time interval	= 5 min	Hyd. volume	= 659,728 cuft
Inflow hyd. No.	= 1 - Pond 6 Post Drainage Area	Max. Elevation	= 1008.80 ft
Reservoir name	= <New Pond>	Max. Storage	= 316,926 cuft

Storage Indication method used.



Hydrograph Report

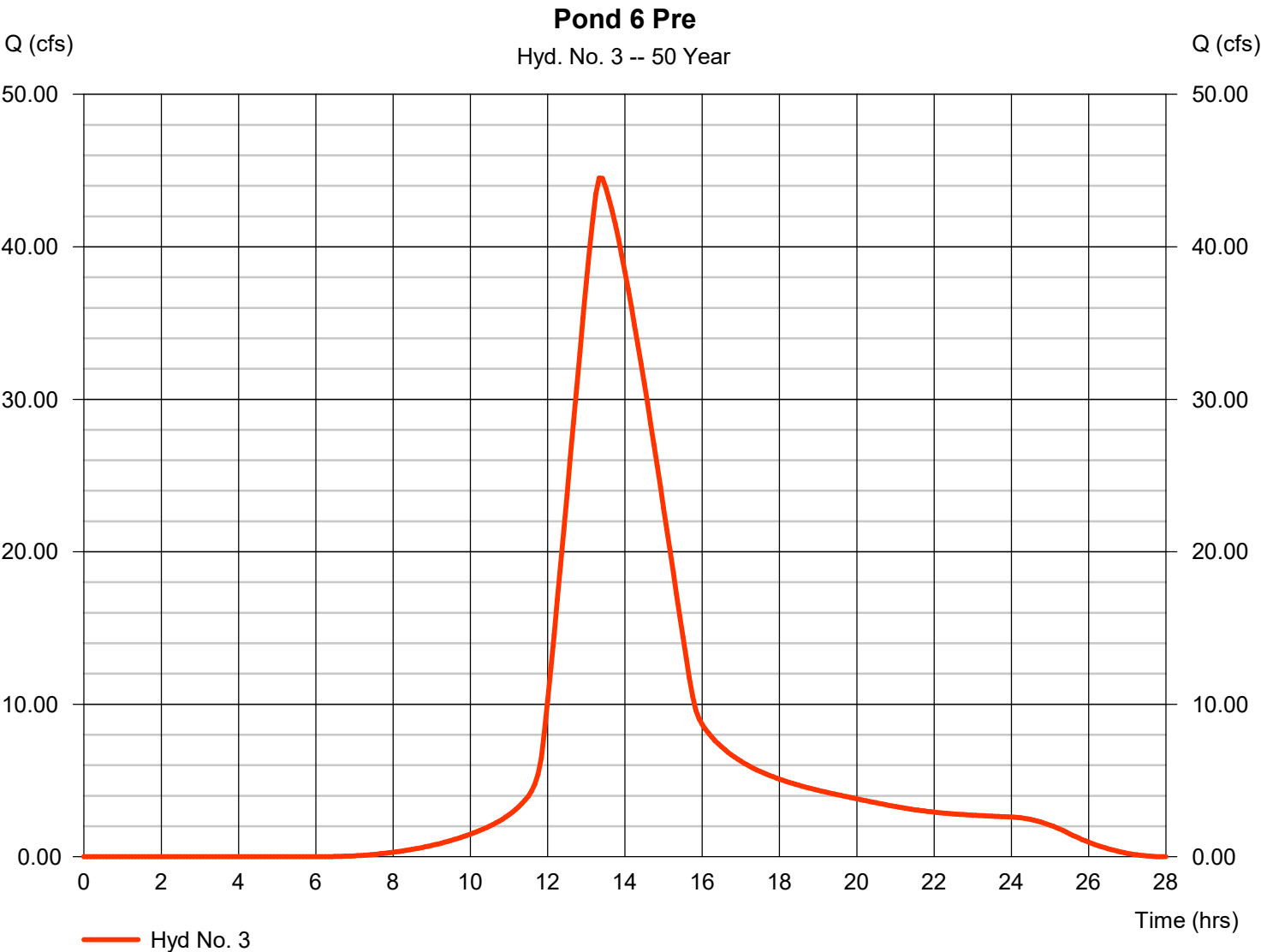
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Hyd. No. 3

Pond 6 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 44.51 cfs
Storm frequency	= 50 yrs	Time to peak	= 13.33 hrs
Time interval	= 5 min	Hyd. volume	= 569,503 cuft
Drainage area	= 50.000 ac	Curve number	= 85
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 150.00 min
Total precip.	= 4.75 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

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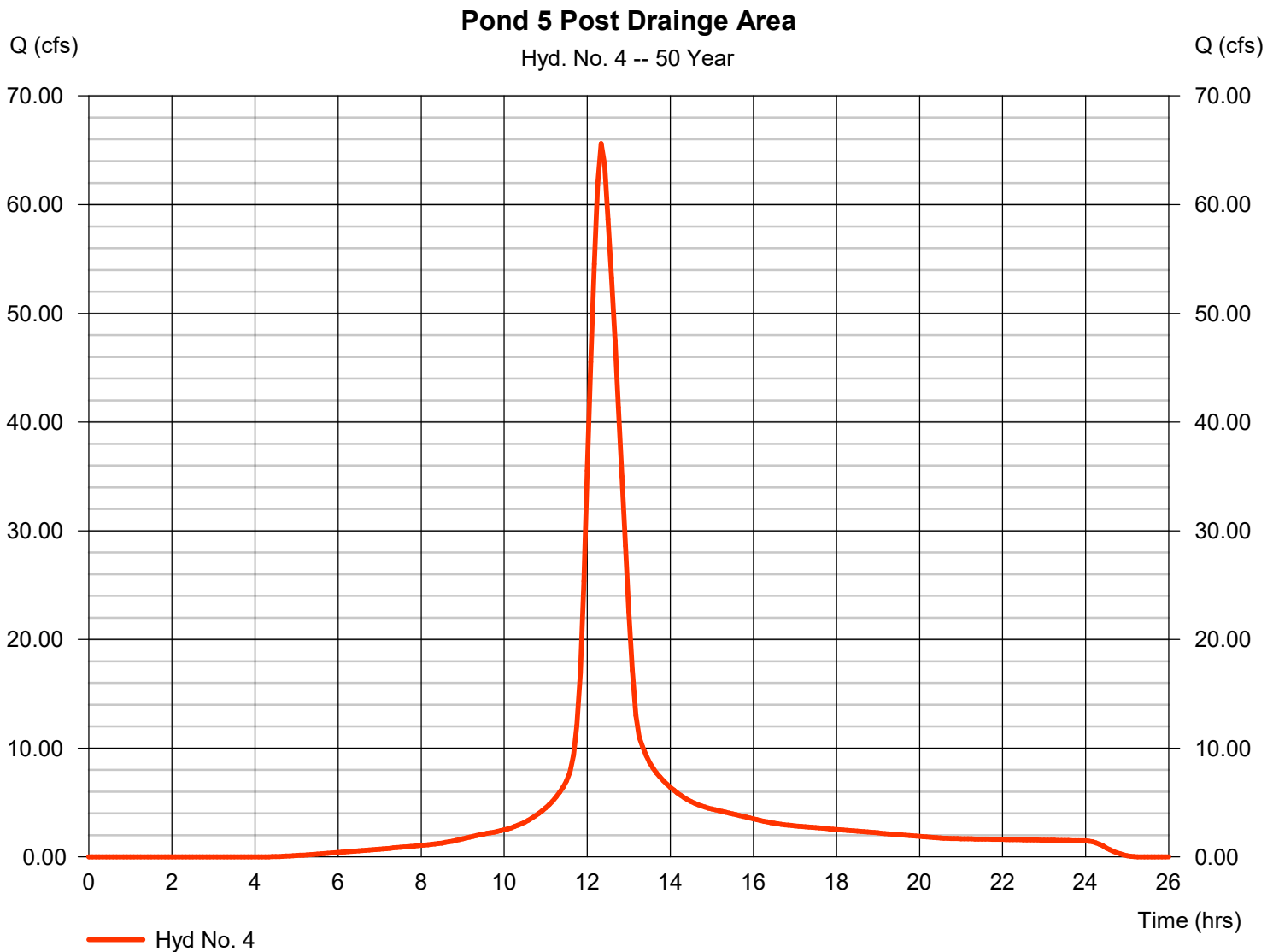
Friday, 05 / 22 / 2026

Hyd. No. 4

Pond 5 Post Drainage Area

Hydrograph type = SCS Runoff
Storm frequency = 50 yrs
Time interval = 5 min
Drainage area = 28.480 ac
Basin Slope = 0.0 %
Tc method = User
Total precip. = 4.75 in
Storm duration = 24 hrs

Peak discharge = 65.61 cfs
Time to peak = 12.33 hrs
Hyd. volume = 375,858 cuft
Curve number = 90
Hydraulic length = 0 ft
Time of conc. (Tc) = 45.00 min
Distribution = Type II
Shape factor = 484



Hydrograph Report

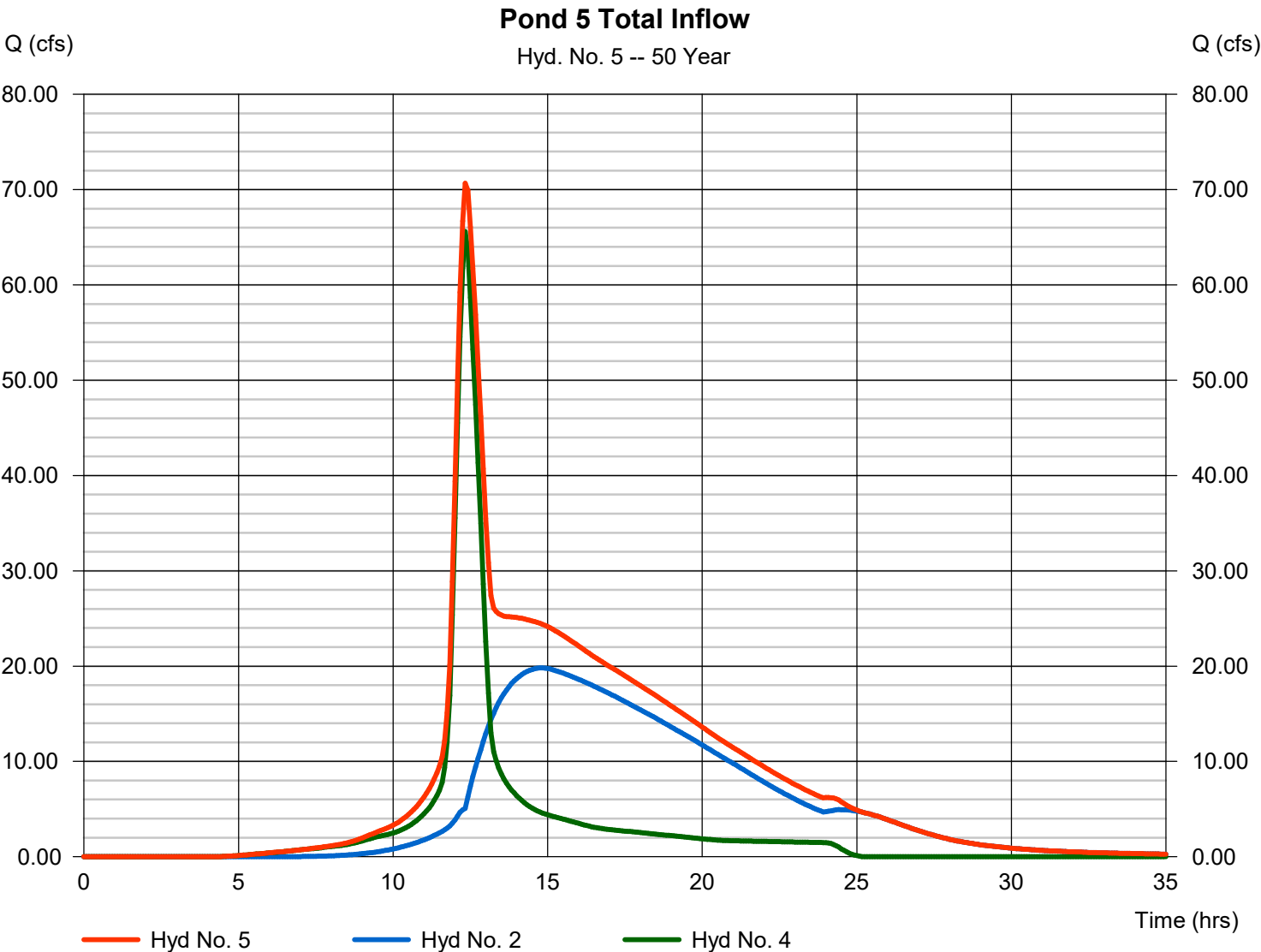
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Hyd. No. 5

Pond 5 Total Inflow

Hydrograph type	= Combine	Peak discharge	= 70.68 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.33 hrs
Time interval	= 5 min	Hyd. volume	= 1,035,586 cuft
Inflow hyds.	= 2, 4	Contrib. drain. area	= 28.480 ac



Hydrograph Report

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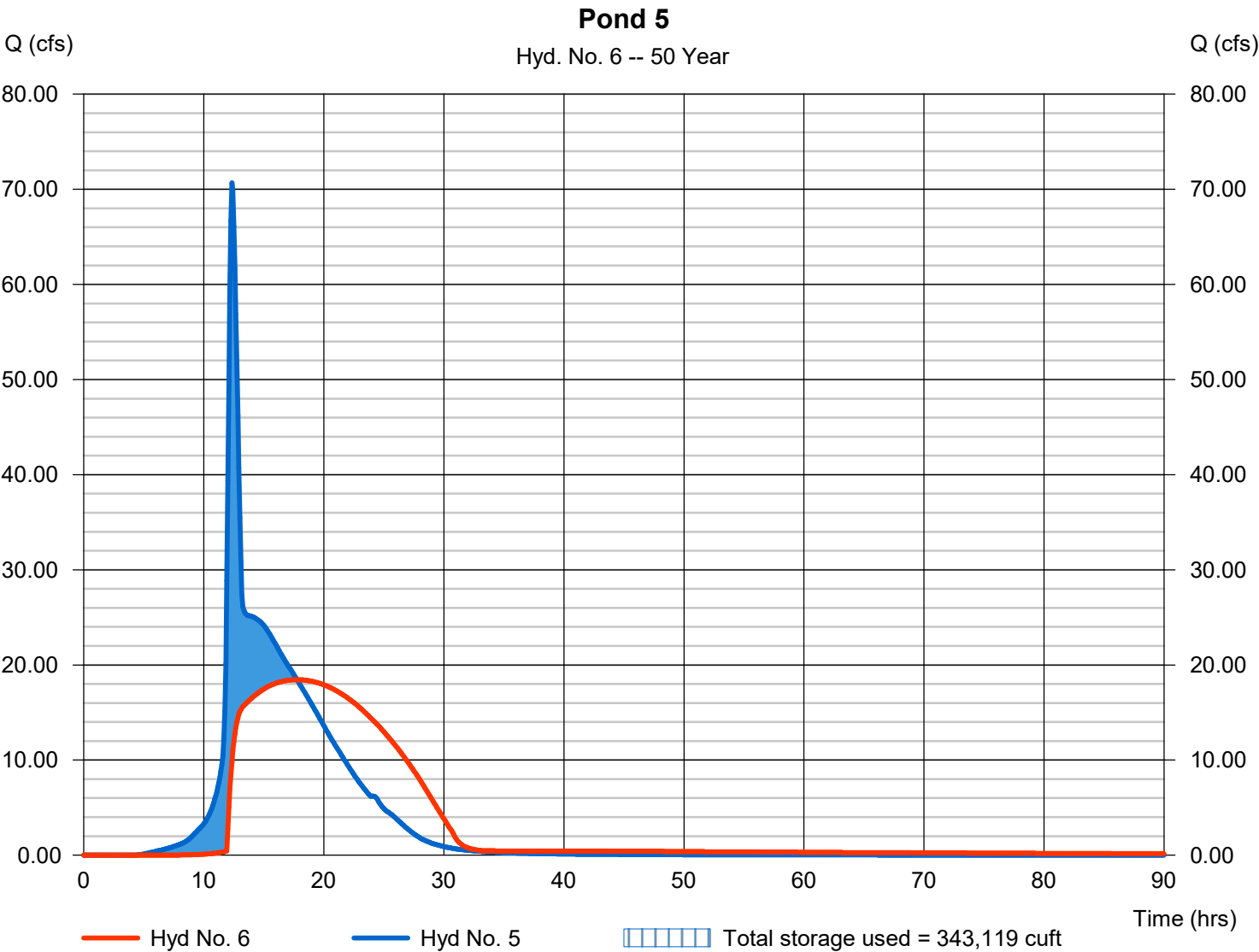
Friday, 05 / 22 / 2026

Hyd. No. 6

Pond 5

Hydrograph type	= Reservoir	Peak discharge	= 18.45 cfs
Storm frequency	= 50 yrs	Time to peak	= 17.75 hrs
Time interval	= 5 min	Hyd. volume	= 1,031,456 cuft
Inflow hyd. No.	= 5 - Pond 5 Total Inflow	Max. Elevation	= 1007.51 ft
Reservoir name	= <New Pond>	Max. Storage	= 343,119 cuft

Storage Indication method used.



Hydrograph Report

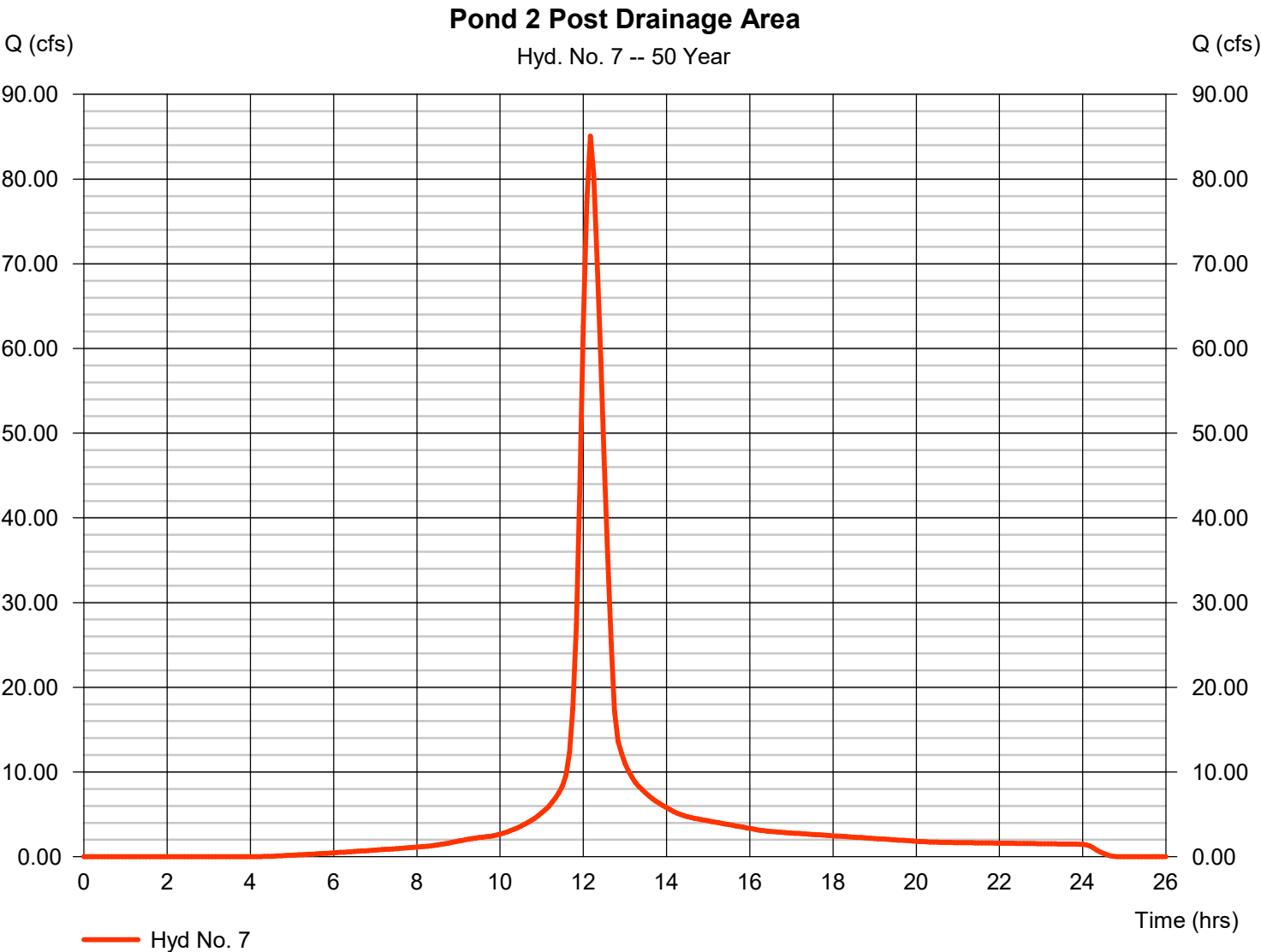
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Hyd. No. 7

Pond 2 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	85.07 cfs
Storm frequency	=	50 yrs	Time to peak	=	12.17 hrs
Time interval	=	5 min	Hyd. volume	=	376,988 cuft
Drainage area	=	27.700 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	30.00 min
Total precip.	=	4.75 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

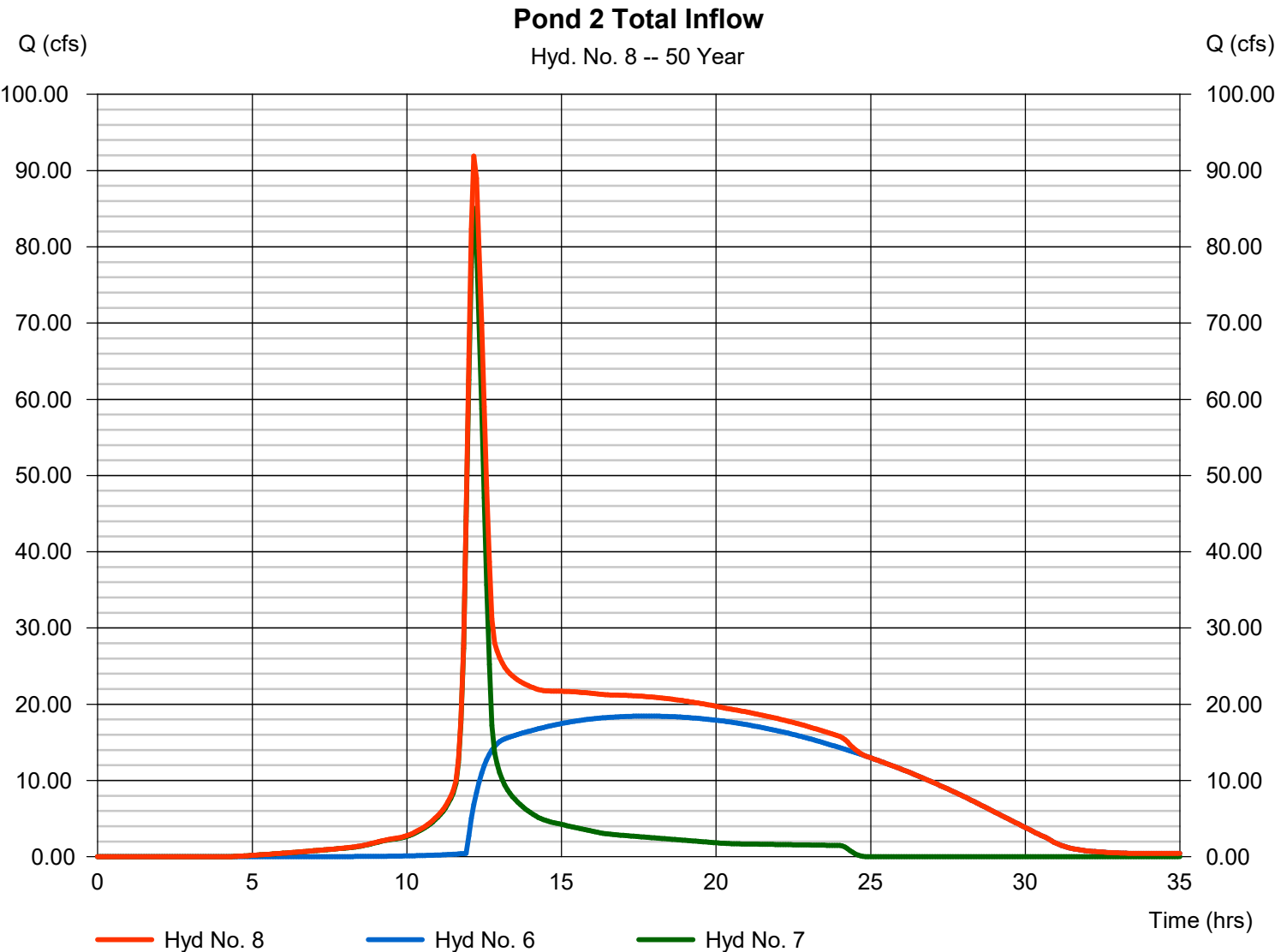
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Hyd. No. 8

Pond 2 Total Inflow

Hydrograph type	= Combine	Peak discharge	= 91.91 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.17 hrs
Time interval	= 5 min	Hyd. volume	= 1,408,441 cuft
Inflow hyds.	= 6, 7	Contrib. drain. area	= 27.700 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

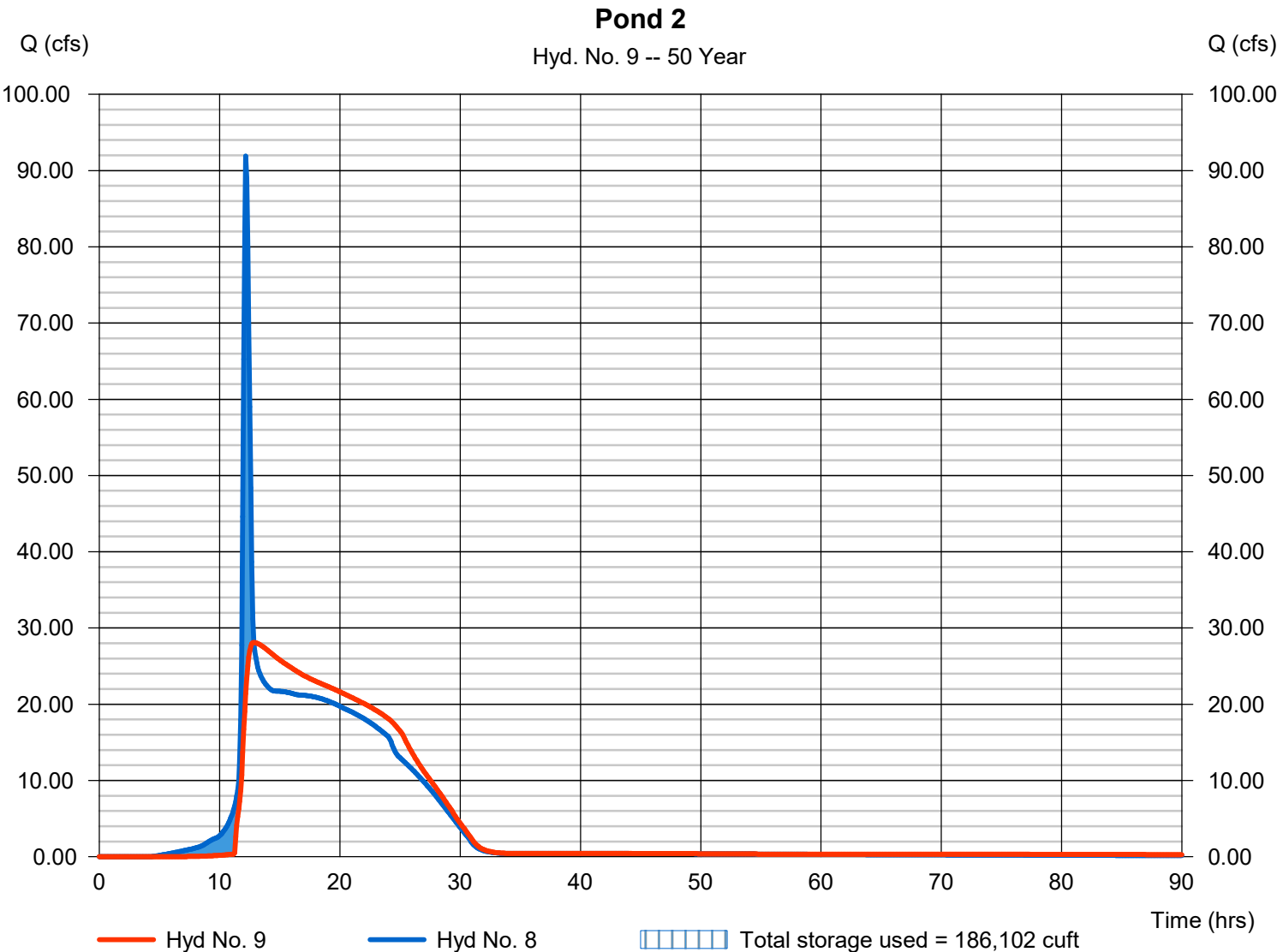
Friday, 05 / 22 / 2026

Hyd. No. 9

Pond 2

Hydrograph type	= Reservoir	Peak discharge	= 28.10 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.83 hrs
Time interval	= 5 min	Hyd. volume	= 1,404,608 cuft
Inflow hyd. No.	= 8 - Pond 2 Total Inflow	Max. Elevation	= 1005.26 ft
Reservoir name	= <New Pond>	Max. Storage	= 186,102 cuft

Storage Indication method used.



Hydrograph Report

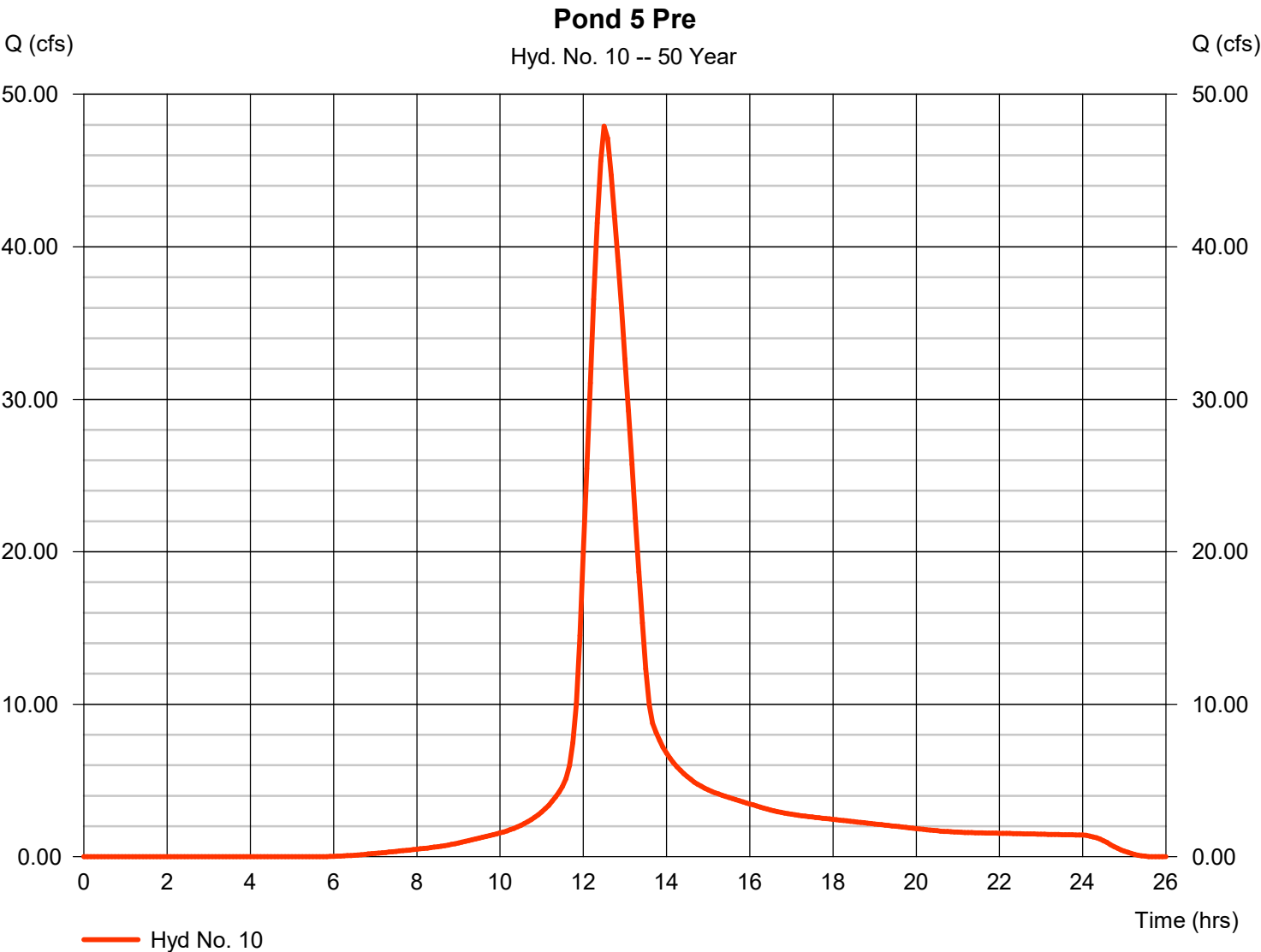
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Friday, 05 / 22 / 2026

Hyd. No. 10

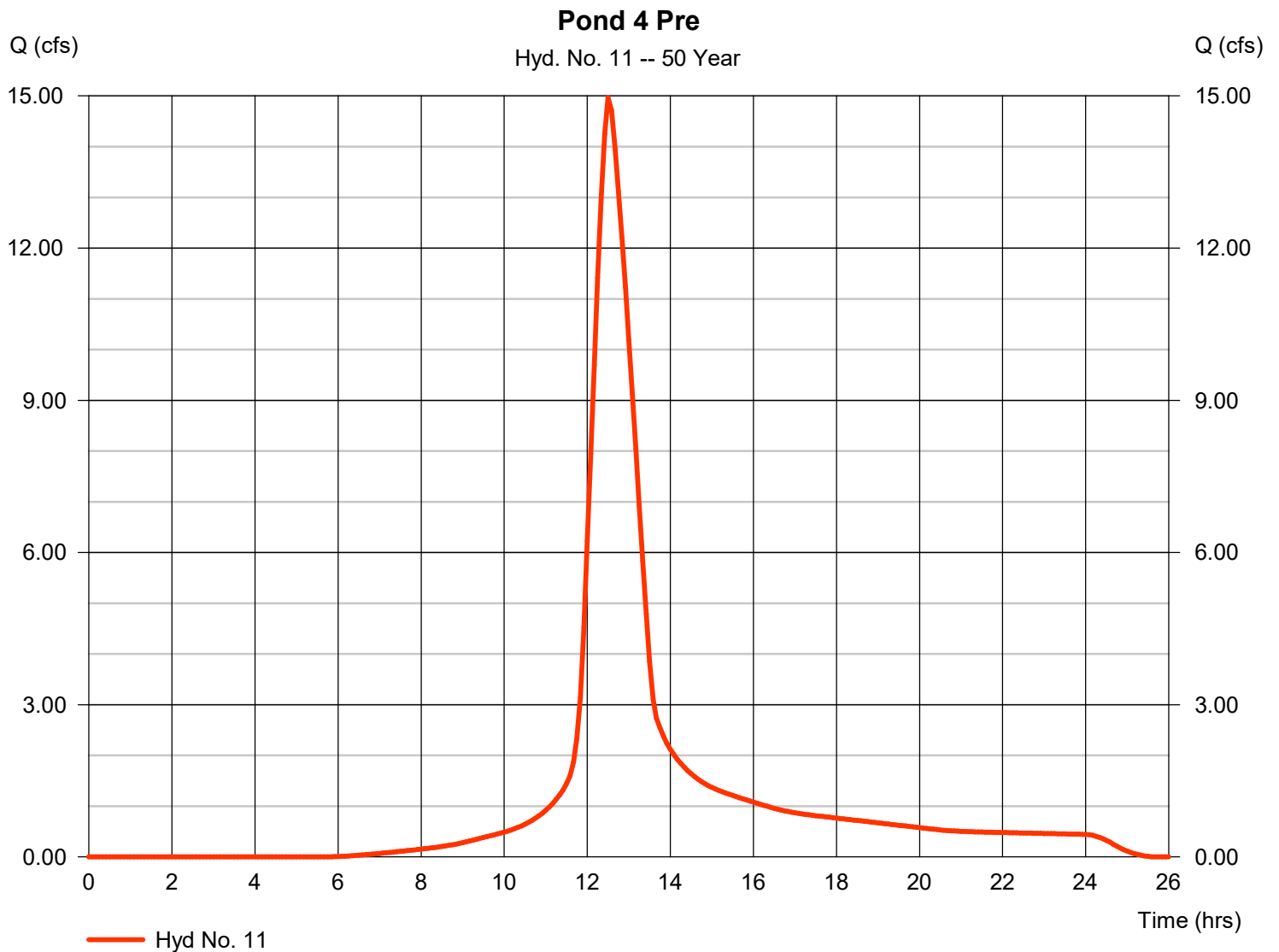
Pond 5 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 47.92 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 329,384 cuft
Drainage area	= 28.500 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 60.00 min
Total precip.	= 4.75 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Pond 4 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 14.96 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 102,860 cuft
Drainage area	= 8.900 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 60.00 min
Total precip.	= 4.75 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

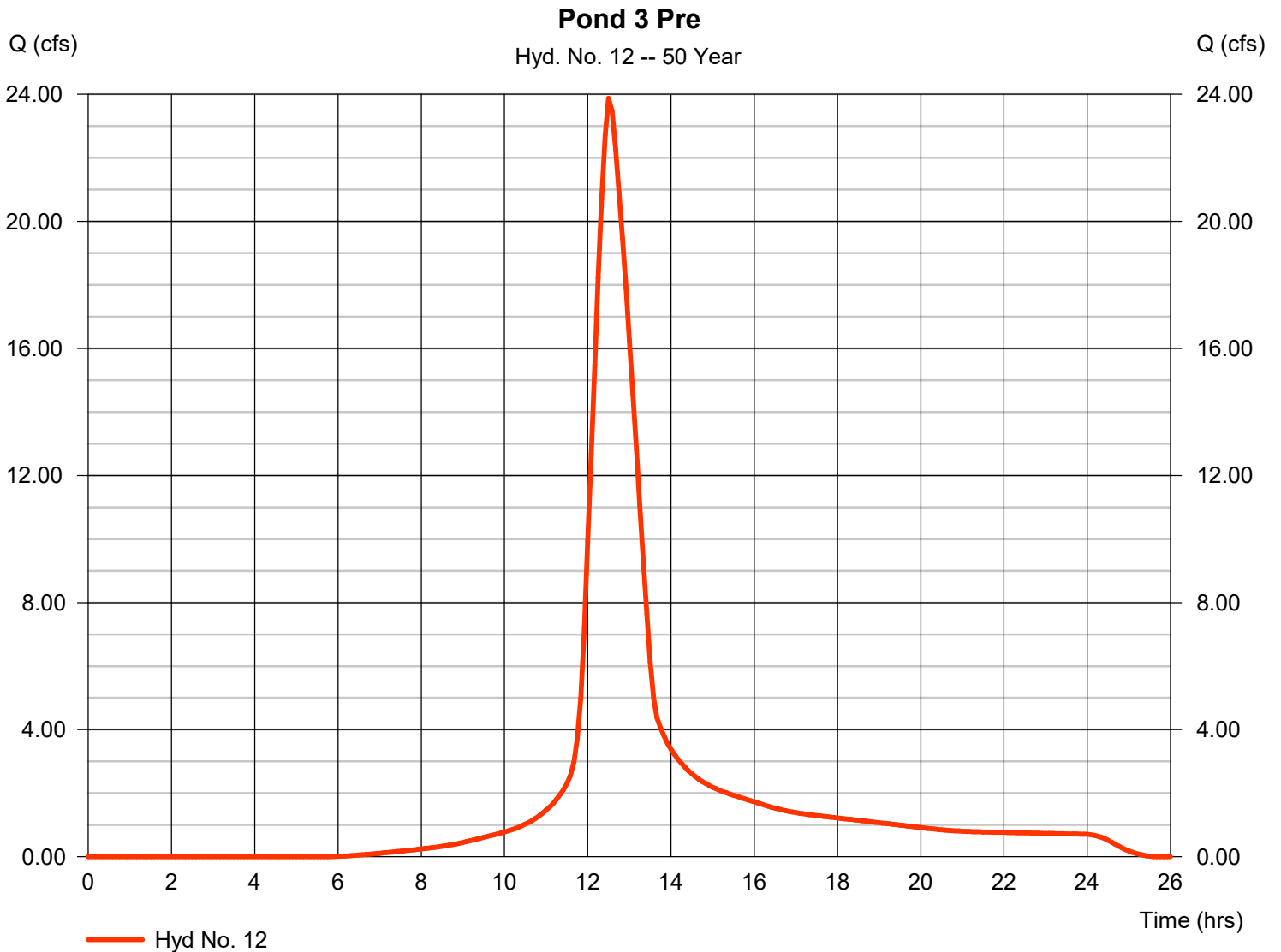
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Hyd. No. 12

Pond 3 Pre

Hydrograph type = SCS Runoff
Storm frequency = 50 yrs
Time interval = 5 min
Drainage area = 14.200 ac
Basin Slope = 0.0 %
Tc method = User
Total precip. = 4.75 in
Storm duration = 24 hrs

Peak discharge = 23.87 cfs
Time to peak = 12.50 hrs
Hyd. volume = 164,114 cuft
Curve number = 86
Hydraulic length = 0 ft
Time of conc. (Tc) = 60.00 min
Distribution = Type II
Shape factor = 484



Hydrograph Report

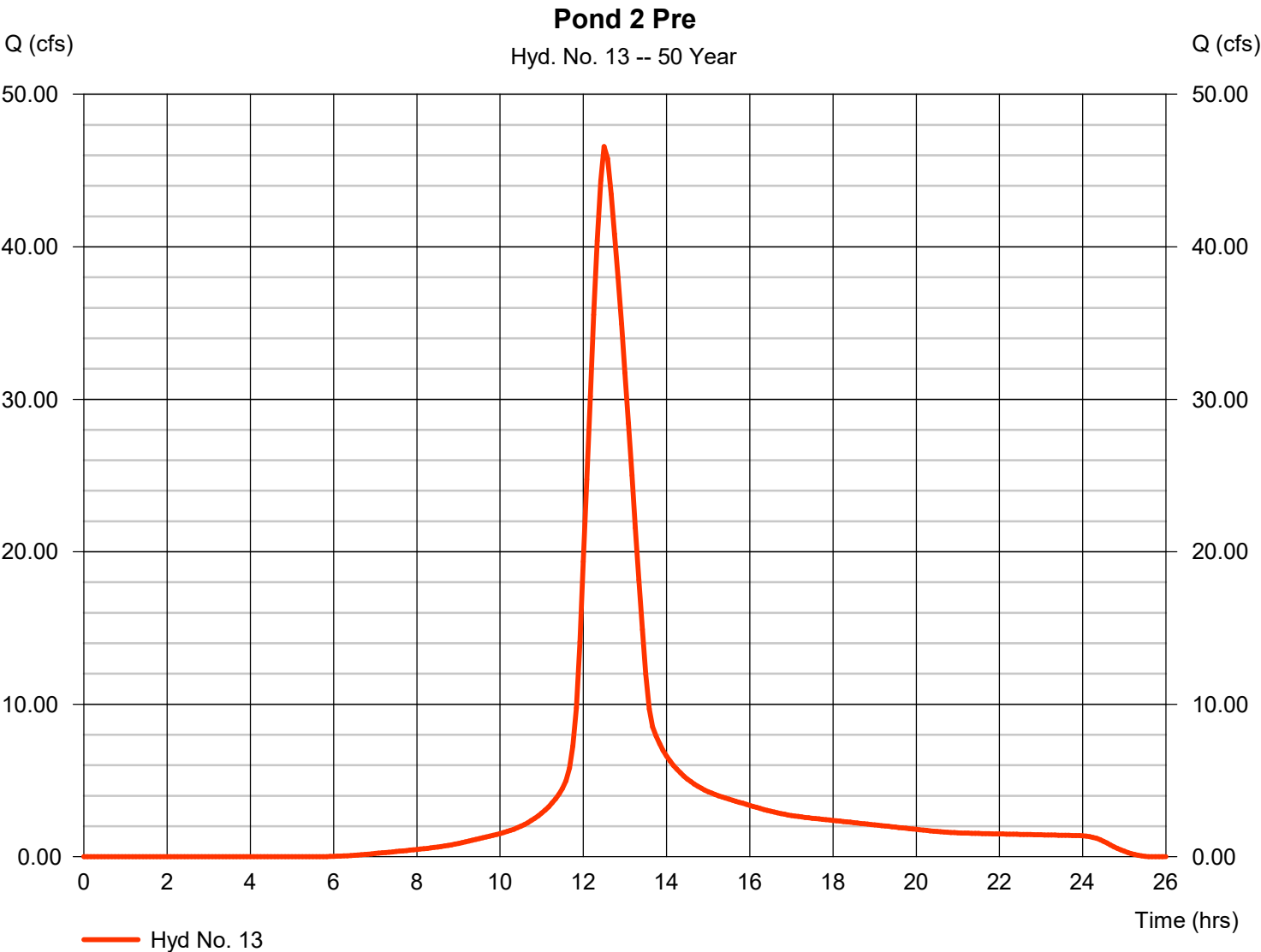
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Hyd. No. 13

Pond 2 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 46.57 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 320,138 cuft
Drainage area	= 27.700 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 60.00 min
Total precip.	= 4.75 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

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Hyd. No. 14

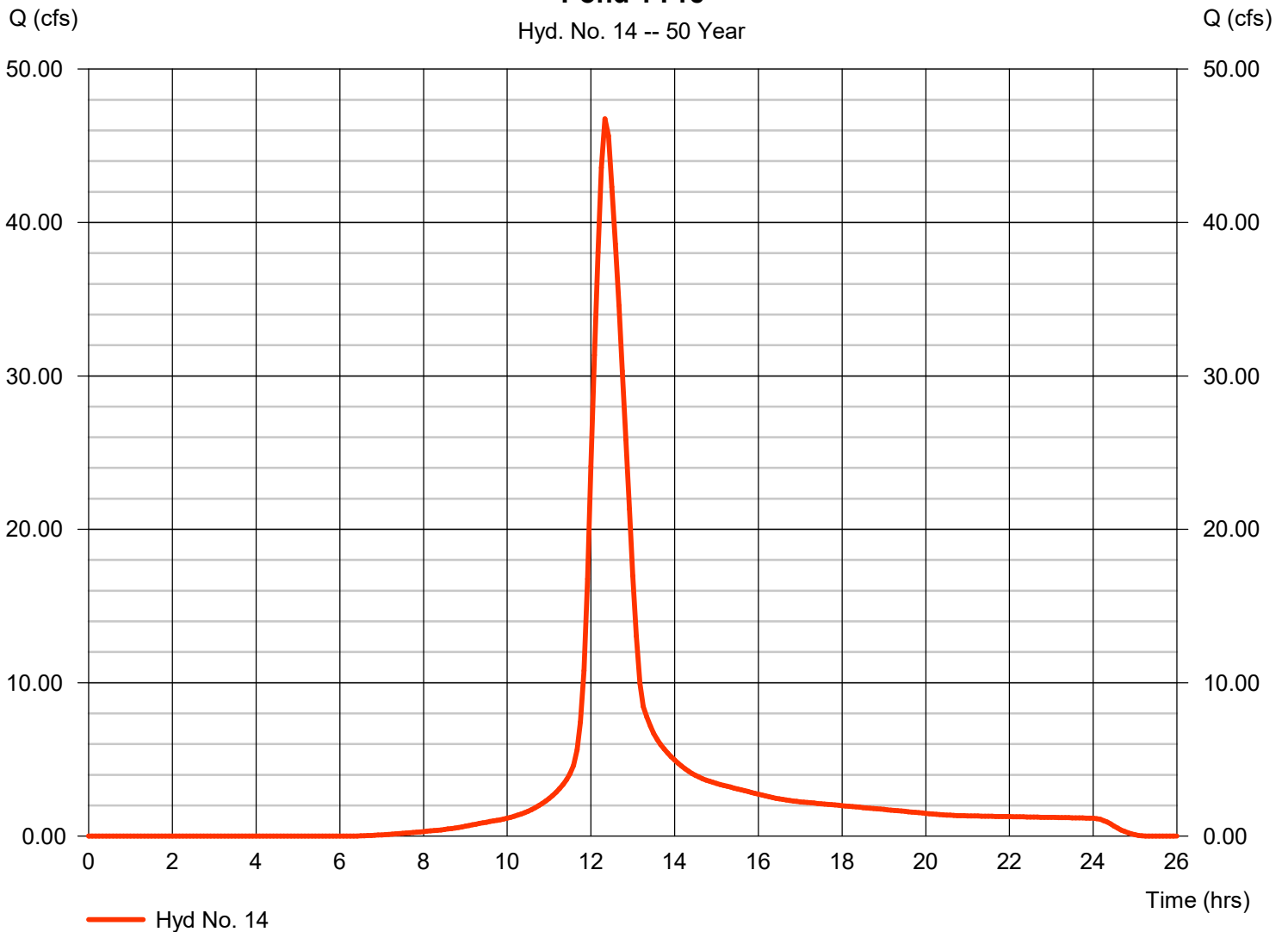
Pond 1 Pre

Hydrograph type = SCS Runoff
Storm frequency = 50 yrs
Time interval = 5 min
Drainage area = 23.900 ac
Basin Slope = 0.0 %
Tc method = User
Total precip. = 4.75 in
Storm duration = 24 hrs

Peak discharge = 46.75 cfs
Time to peak = 12.33 hrs
Hyd. volume = 263,965 cuft
Curve number = 84
Hydraulic length = 0 ft
Time of conc. (Tc) = 45.00 min
Distribution = Type II
Shape factor = 484

Pond 1 Pre

Hyd. No. 14 -- 50 Year



Hydrograph Report

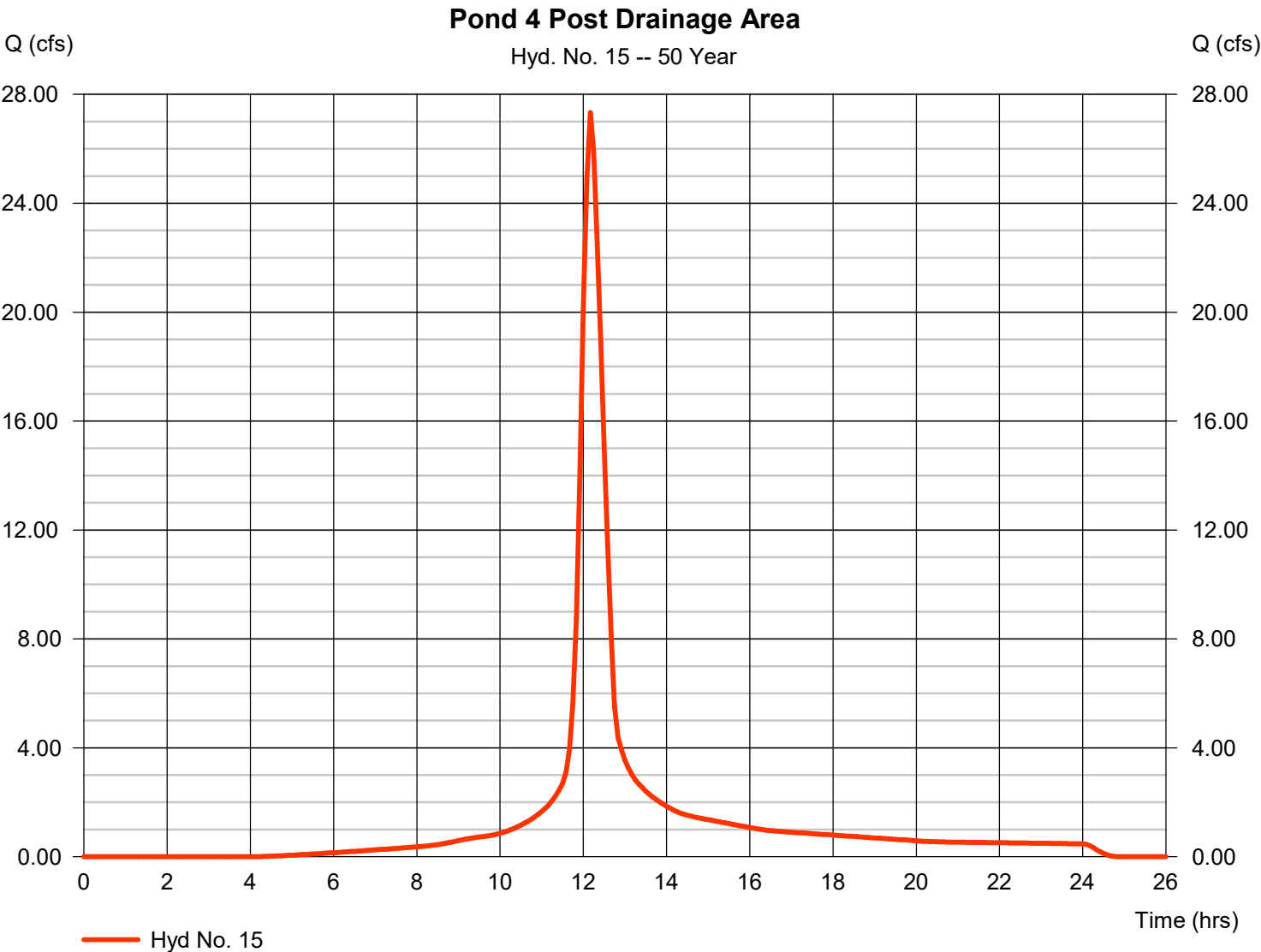
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Hyd. No. 15

Pond 4 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	27.33 cfs
Storm frequency	=	50 yrs	Time to peak	=	12.17 hrs
Time interval	=	5 min	Hyd. volume	=	121,126 cuft
Drainage area	=	8.900 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	30.00 min
Total precip.	=	4.75 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

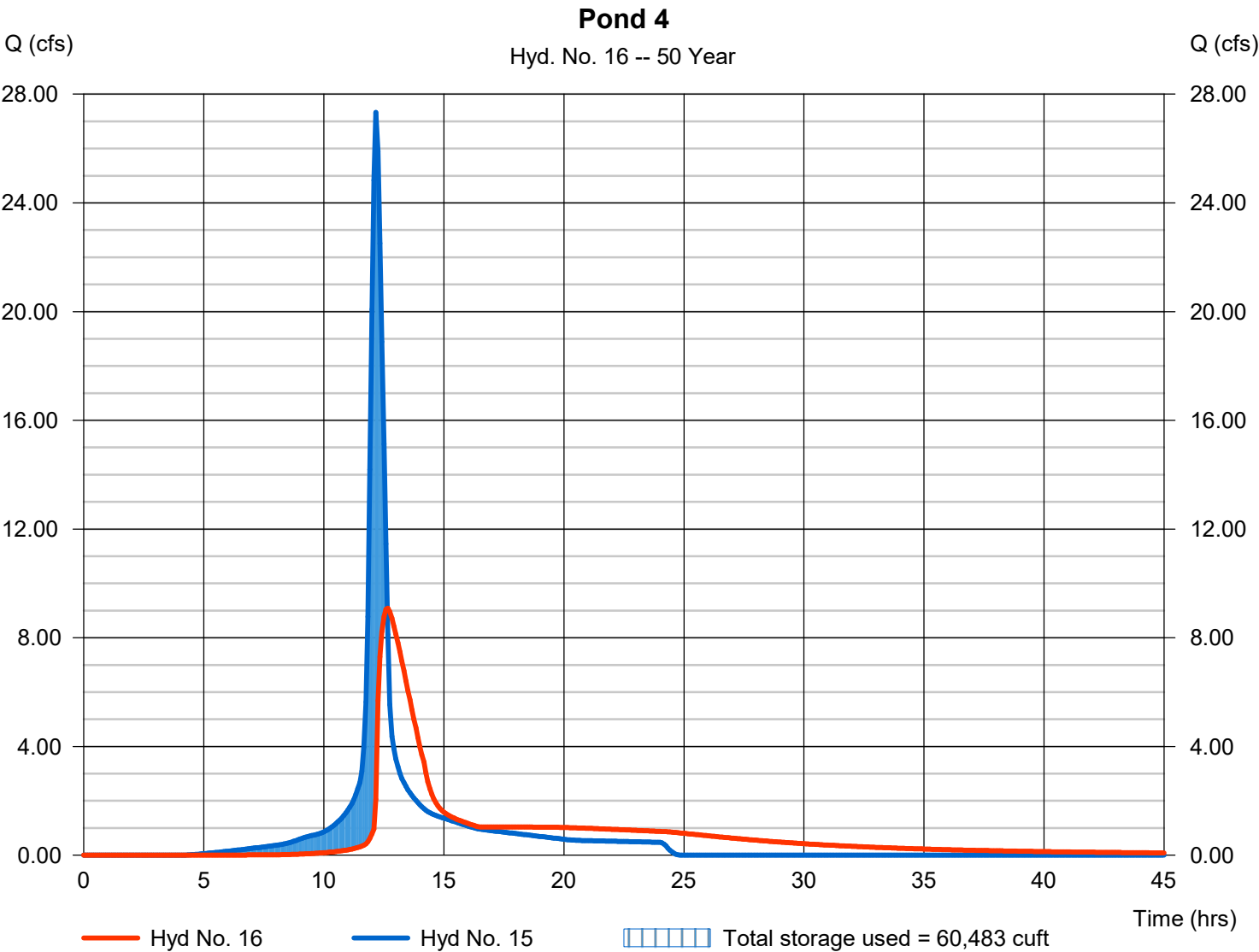
Friday, 05 / 22 / 2026

Hyd. No. 16

Pond 4

Hydrograph type	= Reservoir	Peak discharge	= 9.087 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.67 hrs
Time interval	= 5 min	Hyd. volume	= 120,983 cuft
Inflow hyd. No.	= 15 - Pond 4 Post Drainage Area	Max. Elevation	= 1003.26 ft
Reservoir name	= <New Pond>	Max. Storage	= 60,483 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

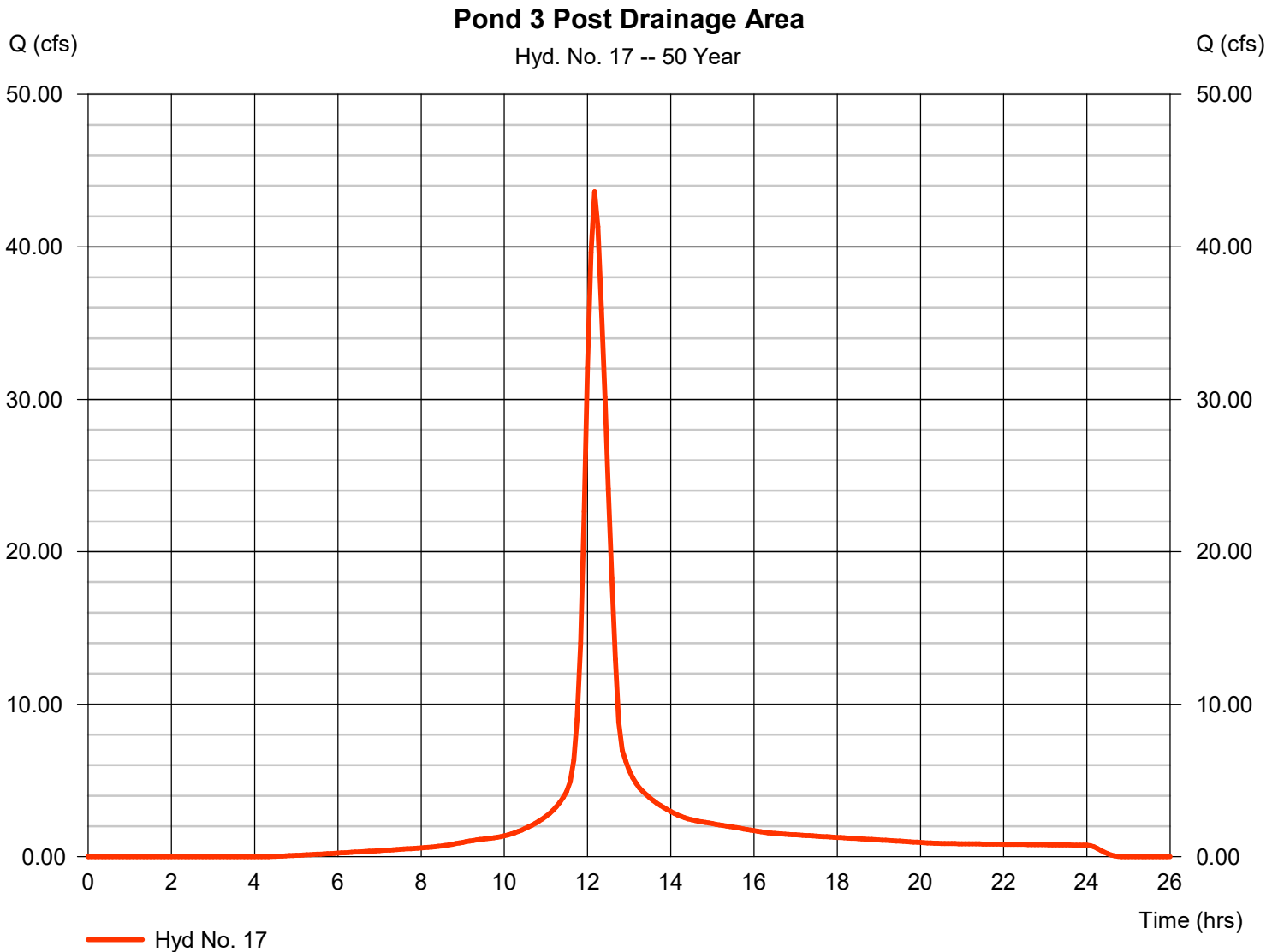
Friday, 05 / 22 / 2026

Hyd. No. 17

Pond 3 Post Drainage Area

Hydrograph type = SCS Runoff
 Storm frequency = 50 yrs
 Time interval = 5 min
 Drainage area = 14.200 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 4.75 in
 Storm duration = 24 hrs

Peak discharge = 43.61 cfs
 Time to peak = 12.17 hrs
 Hyd. volume = 193,257 cuft
 Curve number = 90
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 30.00 min
 Distribution = Type II
 Shape factor = 484



Hydrograph Report

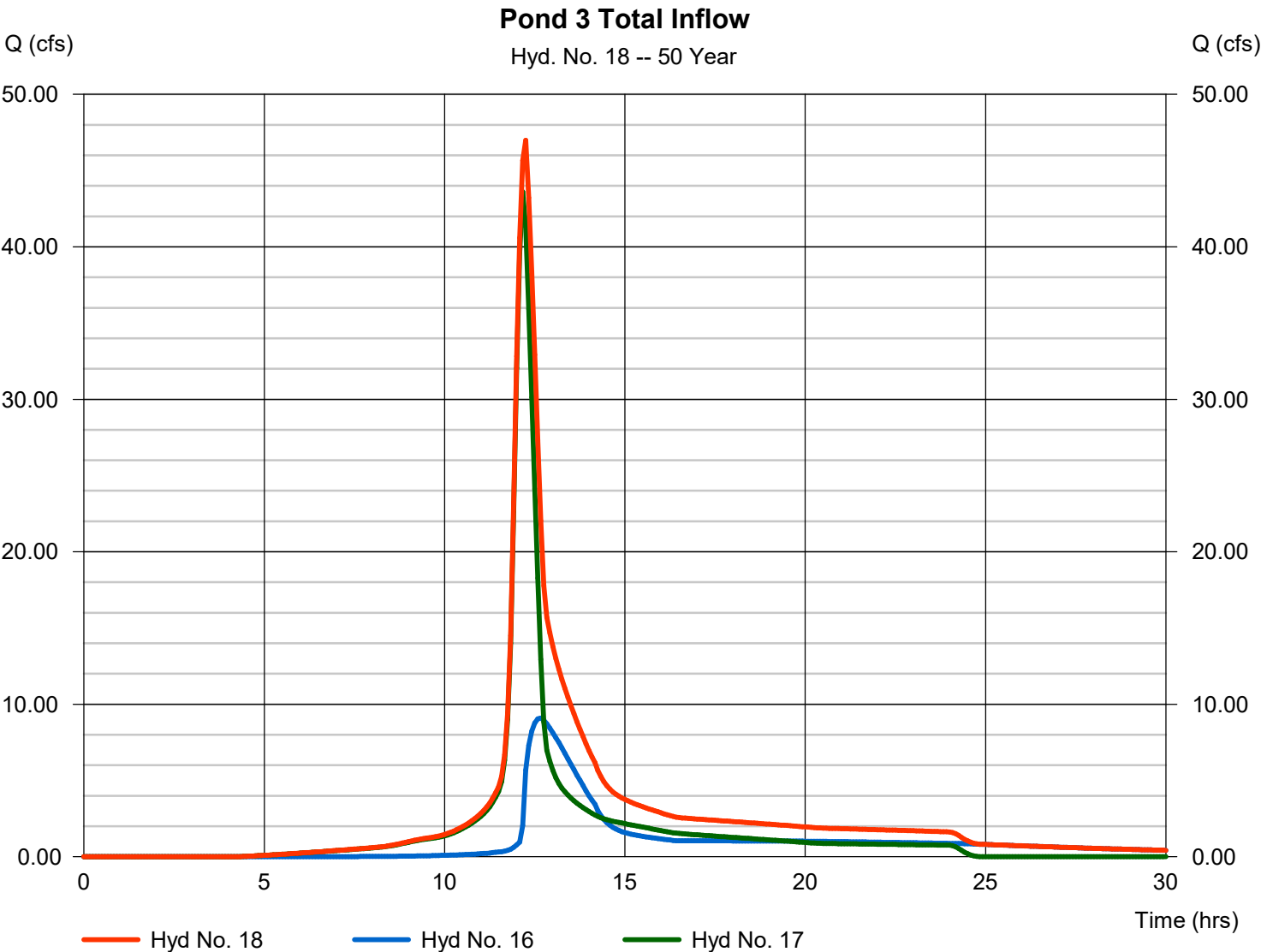
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

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Hyd. No. 18

Pond 3 Total Inflow

Hydrograph type	= Combine	Peak discharge	= 47.00 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.25 hrs
Time interval	= 5 min	Hyd. volume	= 314,240 cuft
Inflow hyds.	= 16, 17	Contrib. drain. area	= 14.200 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

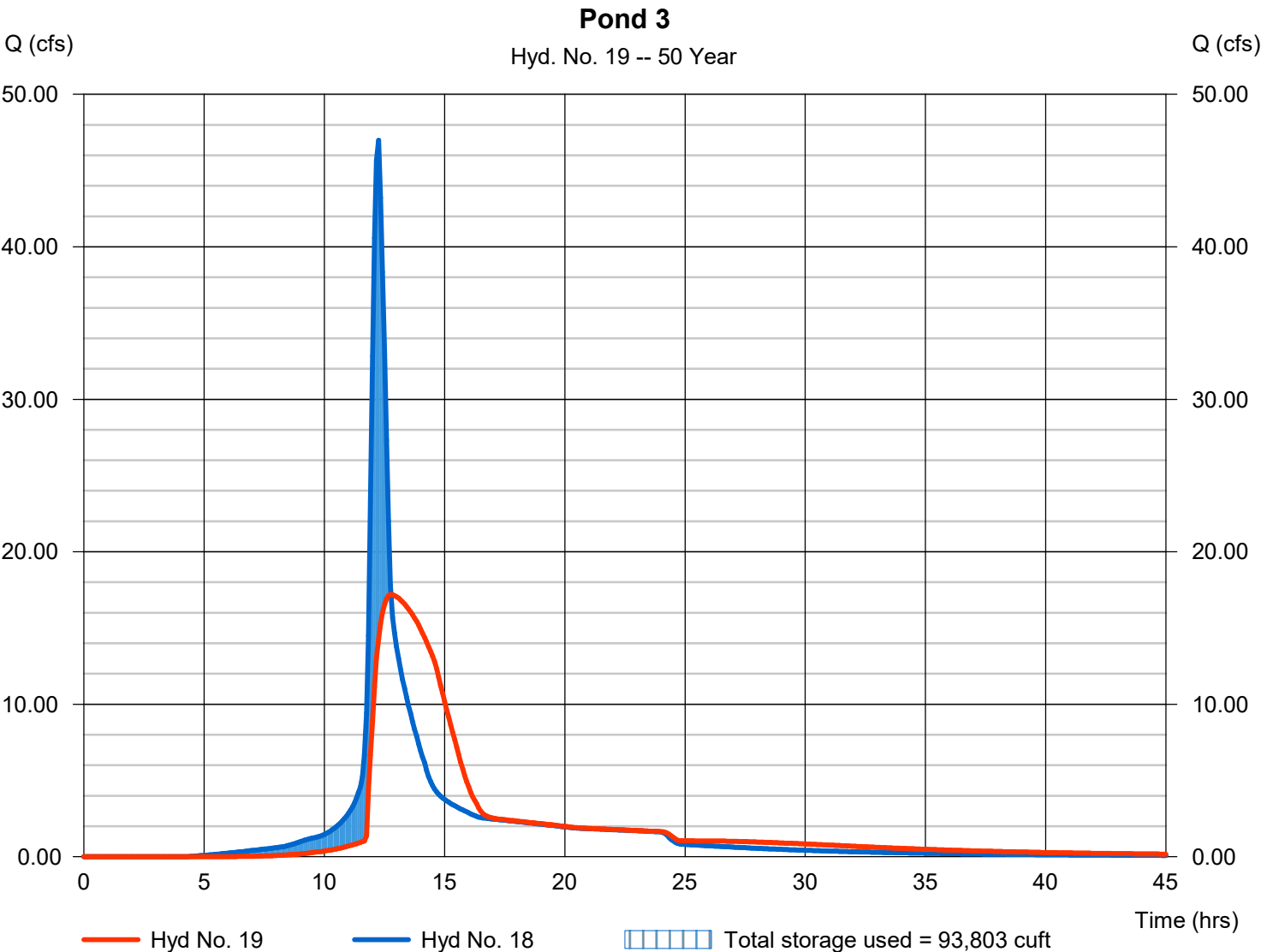
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Hyd. No. 19

Pond 3

Hydrograph type	= Reservoir	Peak discharge	= 17.20 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.75 hrs
Time interval	= 5 min	Hyd. volume	= 314,154 cuft
Inflow hyd. No.	= 18 - Pond 3 Total Inflow	Max. Elevation	= 1004.84 ft
Reservoir name	= <New Pond>	Max. Storage	= 93,803 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

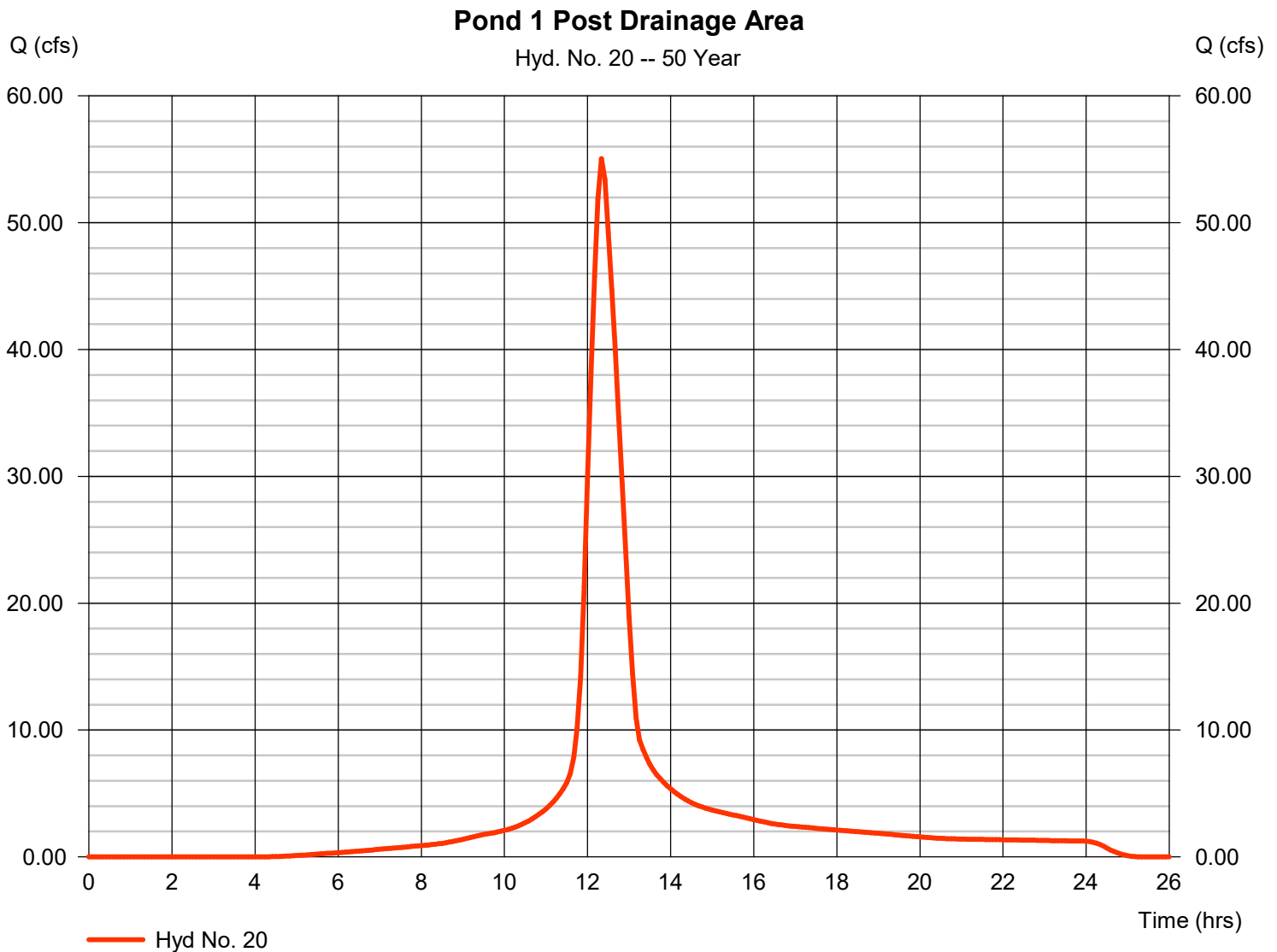
Friday, 05 / 22 / 2026

Hyd. No. 20

Pond 1 Post Drainage Area

Hydrograph type = SCS Runoff
Storm frequency = 50 yrs
Time interval = 5 min
Drainage area = 23.900 ac
Basin Slope = 0.0 %
Tc method = User
Total precip. = 4.75 in
Storm duration = 24 hrs

Peak discharge = 55.06 cfs
Time to peak = 12.33 hrs
Hyd. volume = 315,414 cuft
Curve number = 90
Hydraulic length = 0 ft
Time of conc. (Tc) = 45.00 min
Distribution = Type II
Shape factor = 484



Hydrograph Report

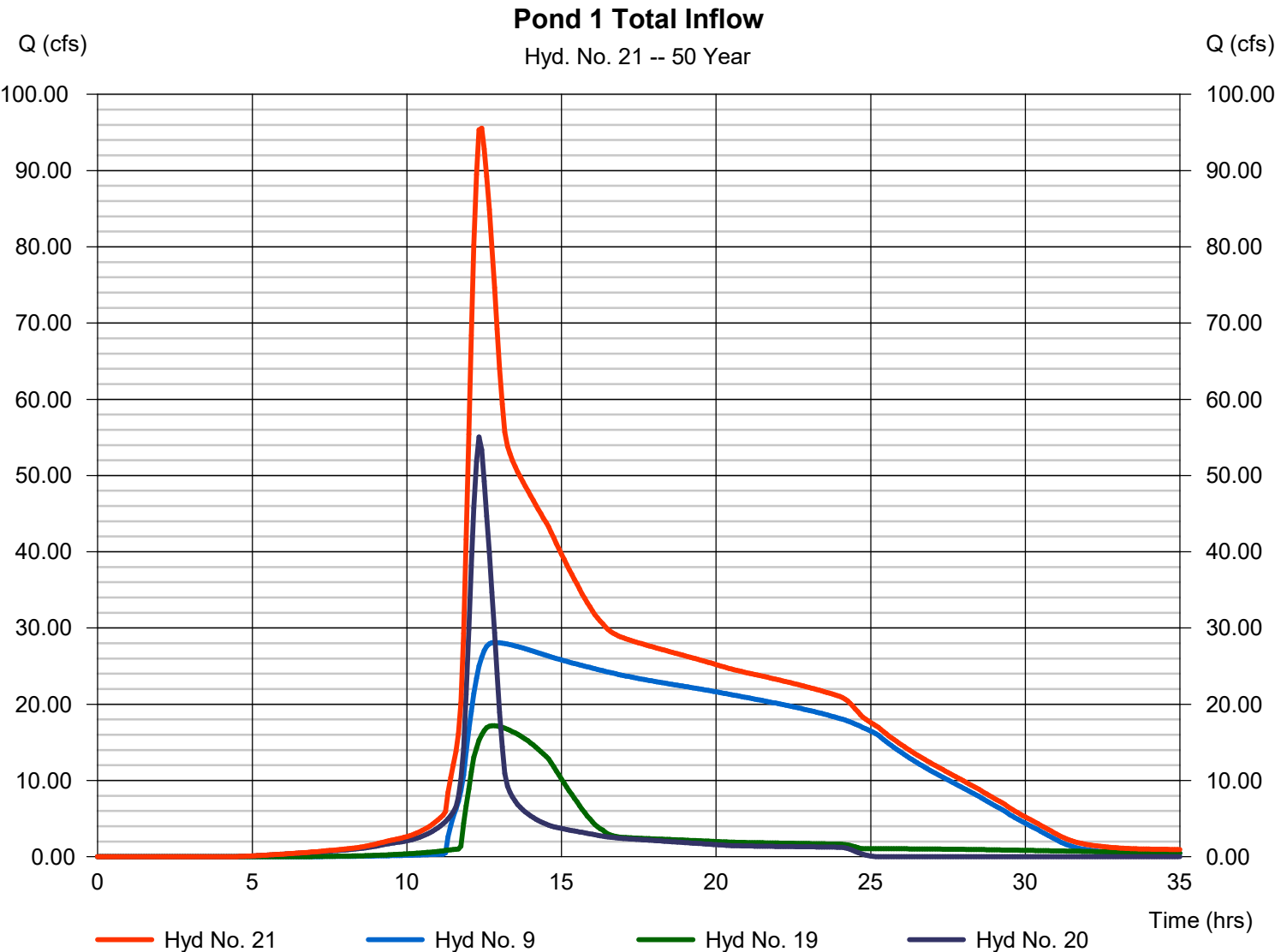
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Hyd. No. 21

Pond 1 Total Inflow

Hydrograph type	= Combine	Peak discharge	= 95.57 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.42 hrs
Time interval	= 5 min	Hyd. volume	= 2,034,177 cuft
Inflow hyds.	= 9, 19, 20	Contrib. drain. area	= 23.900 ac



Hydrograph Report

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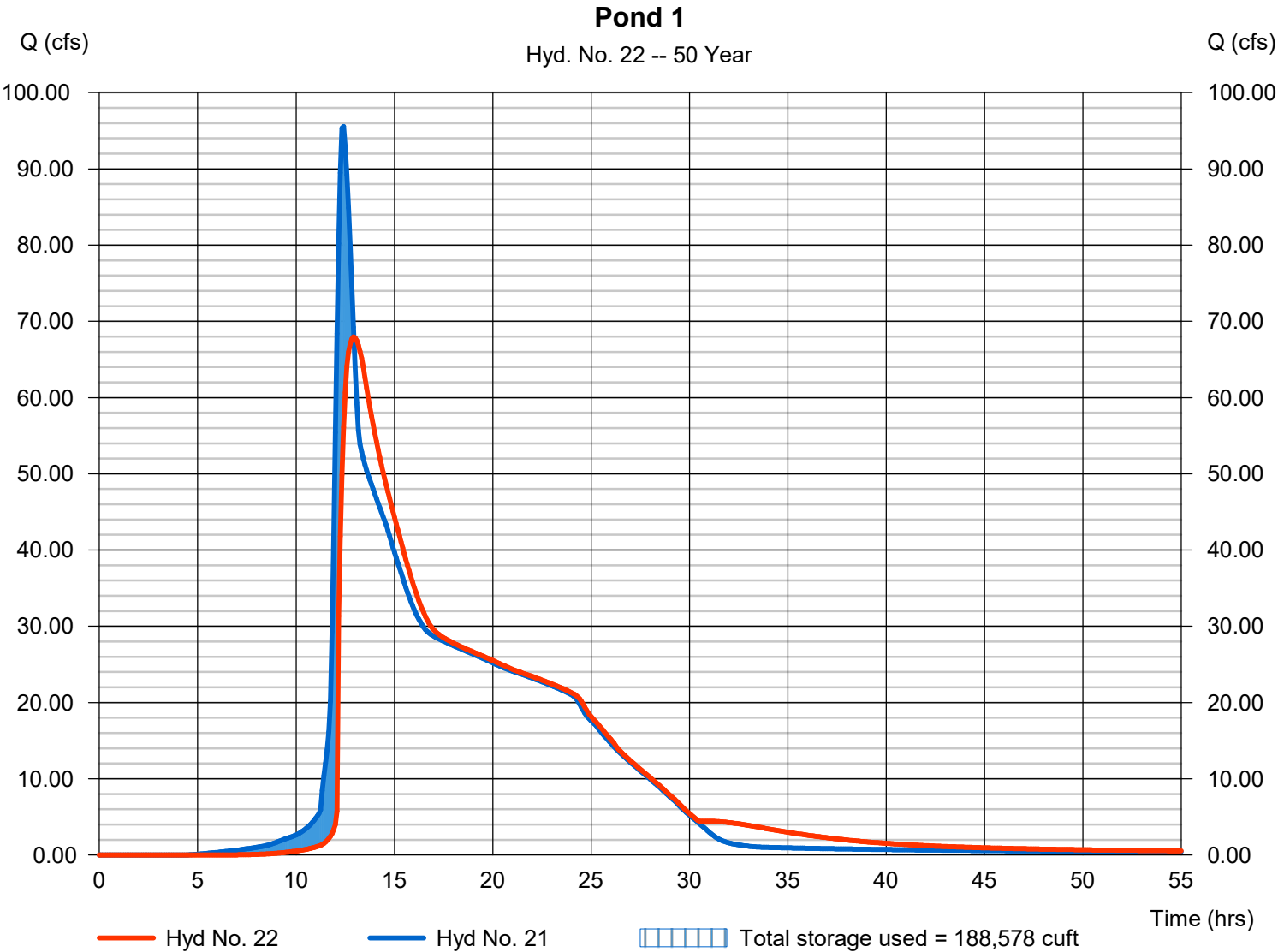
Friday, 05 / 22 / 2026

Hyd. No. 22

Pond 1

Hydrograph type	= Reservoir	Peak discharge	= 67.95 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.92 hrs
Time interval	= 5 min	Hyd. volume	= 2,031,380 cuft
Inflow hyd. No.	= 21 - Pond 1 Total Inflow	Max. Elevation	= 1002.99 ft
Reservoir name	= <New Pond>	Max. Storage	= 188,578 cuft

Storage Indication method used.



Hydrograph Report

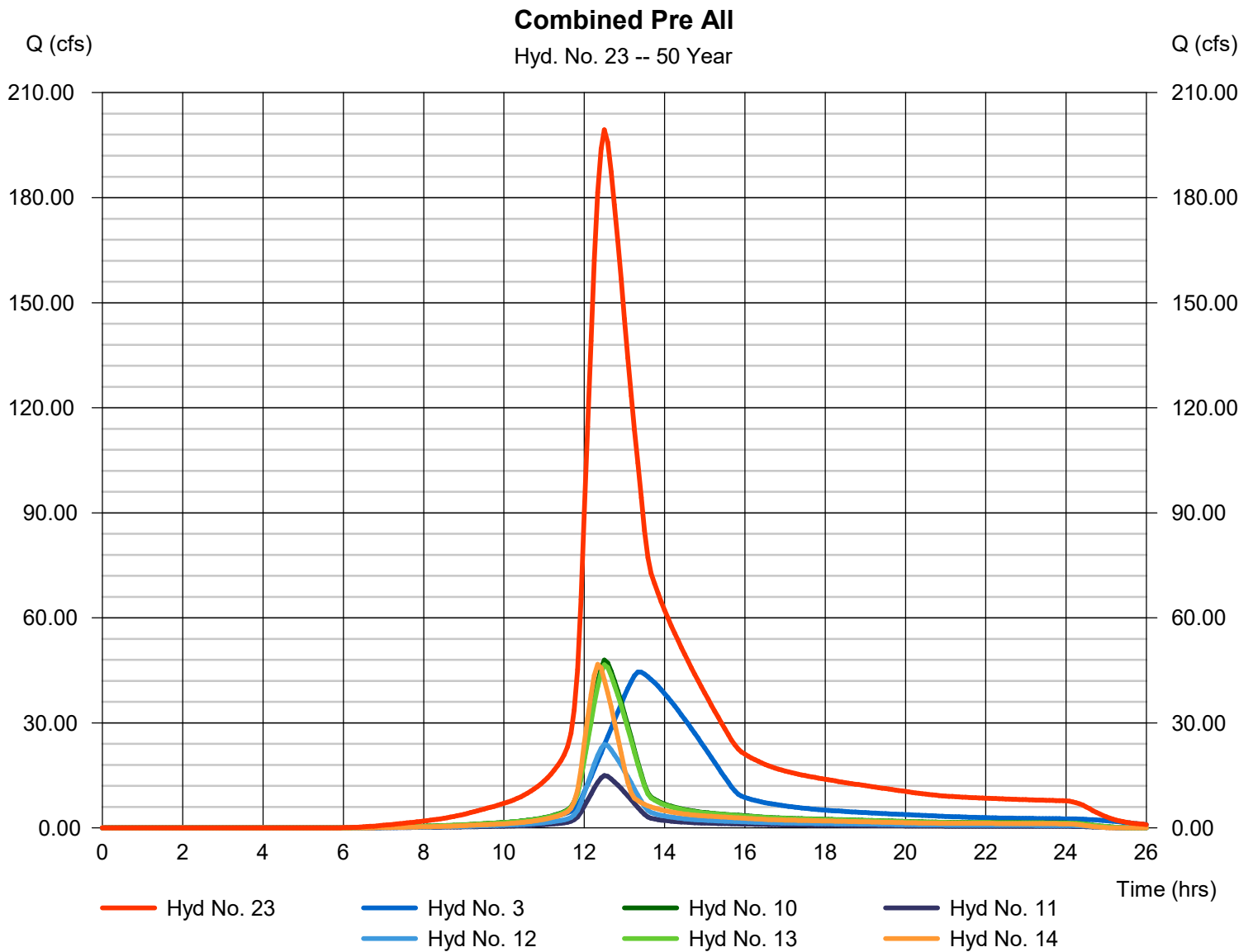
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Friday, 05 / 22 / 2026

Hyd. No. 23

Combined Pre All

Hydrograph type	= Combine	Peak discharge	= 199.37 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 1,749,965 cuft
Inflow hyds.	= 3, 10, 11, 12, 13, 14	Contrib. drain. area	= 153.200 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

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	62.69	5	785	703,551	-----	-----	-----	Pond 6 Post Drainage Area
2	Reservoir	20.55	5	890	703,416	1	1009.27	340,839	Pond 6
3	SCS Runoff	47.79	5	800	611,300	-----	-----	-----	Pond 6 Pre
4	SCS Runoff	69.80	5	740	400,742	-----	-----	-----	Pond 5 Post Drainage Area
5	Combine	75.74	5	740	1,104,159	2, 4	-----	-----	Pond 5 Total Inflow
6	Reservoir	19.17	5	1075	1,100,018	5	1007.95	367,804	Pond 5
7	SCS Runoff	90.48	5	730	401,947	-----	-----	-----	Pond 2 Post Drainage Area
8	Combine	98.25	5	730	1,501,965	6, 7	-----	-----	Pond 2 Total Inflow
9	Reservoir	29.02	5	770	1,498,124	8	1005.65	199,966	Pond 2
10	SCS Runoff	51.31	5	750	353,074	-----	-----	-----	Pond 5 Pre
11	SCS Runoff	16.02	5	750	110,258	-----	-----	-----	Pond 4 Pre
12	SCS Runoff	25.57	5	750	175,918	-----	-----	-----	Pond 3 Pre
13	SCS Runoff	49.87	5	750	343,163	-----	-----	-----	Pond 2 Pre
14	SCS Runoff	50.23	5	740	283,731	-----	-----	-----	Pond 1 Pre
15	SCS Runoff	29.07	5	730	129,145	-----	-----	-----	Pond 4 Post Drainage Area
16	Reservoir	9.737	5	760	129,002	15	1003.37	63,818	Pond 4
17	SCS Runoff	46.38	5	730	206,052	-----	-----	-----	Pond 3 Post Drainage Area
18	Combine	50.50	5	735	335,055	16, 17	-----	-----	Pond 3 Total Inflow
19	Reservoir	17.82	5	770	334,969	18	1005.14	101,333	Pond 3
20	SCS Runoff	58.57	5	740	336,297	-----	-----	-----	Pond 1 Post Drainage Area
21	Combine	100.37	5	745	2,169,386	9, 19, 20	-----	-----	Pond 1 Total Inflow
22	Reservoir	70.01	5	775	2,166,585	21	1003.23	198,775	Pond 1
23	Combine	213.81	5	750	1,877,445	3, 10, 11, 12, 13, 14,	-----	-----	Combined Pre All
Newland Phase 1.gpw					Return Period: 100 Year			Friday, 05 / 22 / 2026	

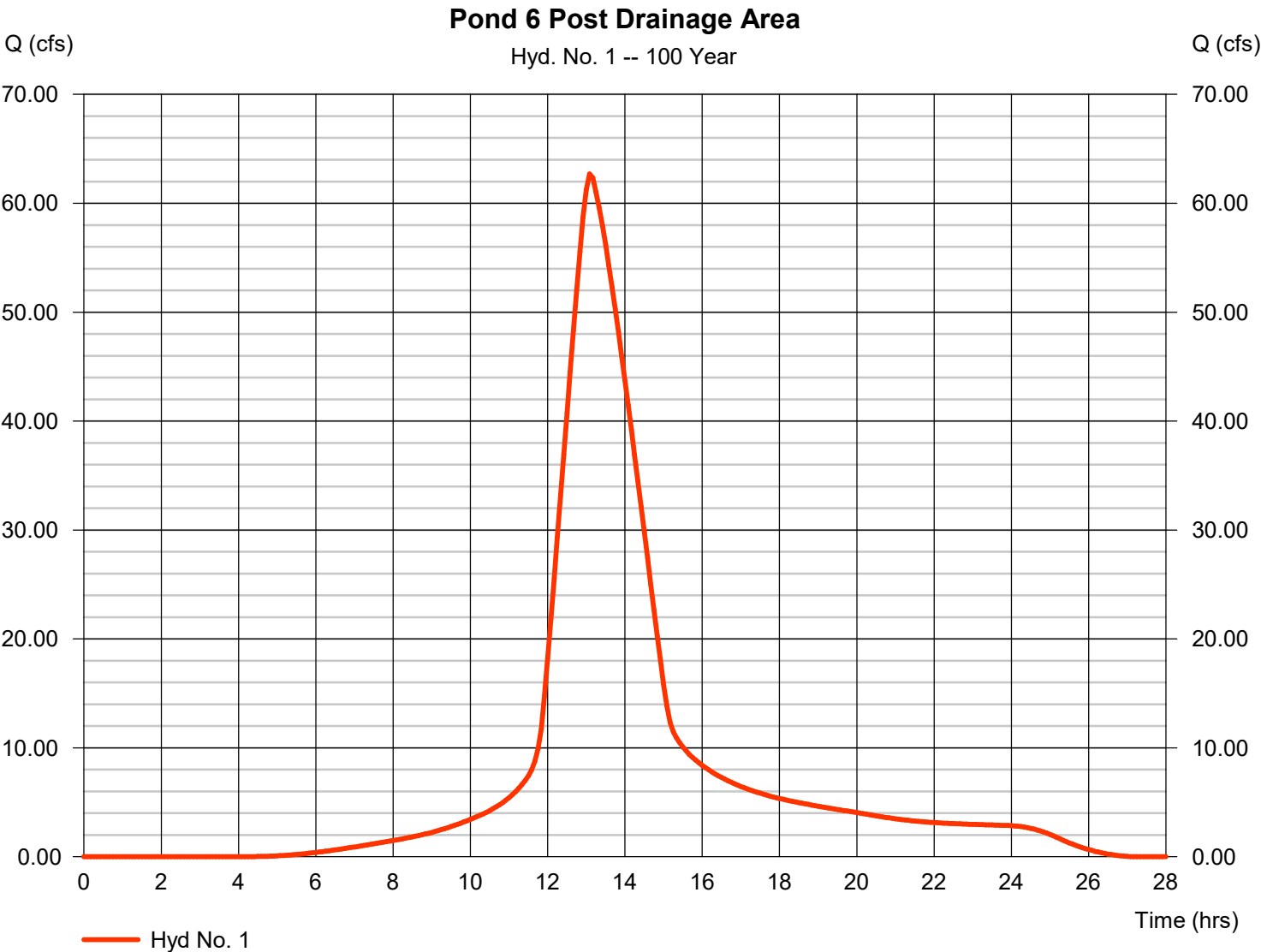
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025
 Friday, 05 / 22 / 2026

Hyd. No. 1

Pond 6 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	62.69 cfs
Storm frequency	=	100 yrs	Time to peak	=	13.08 hrs
Time interval	=	5 min	Hyd. volume	=	703,551 cuft
Drainage area	=	50.000 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	120.00 min
Total precip.	=	5.00 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

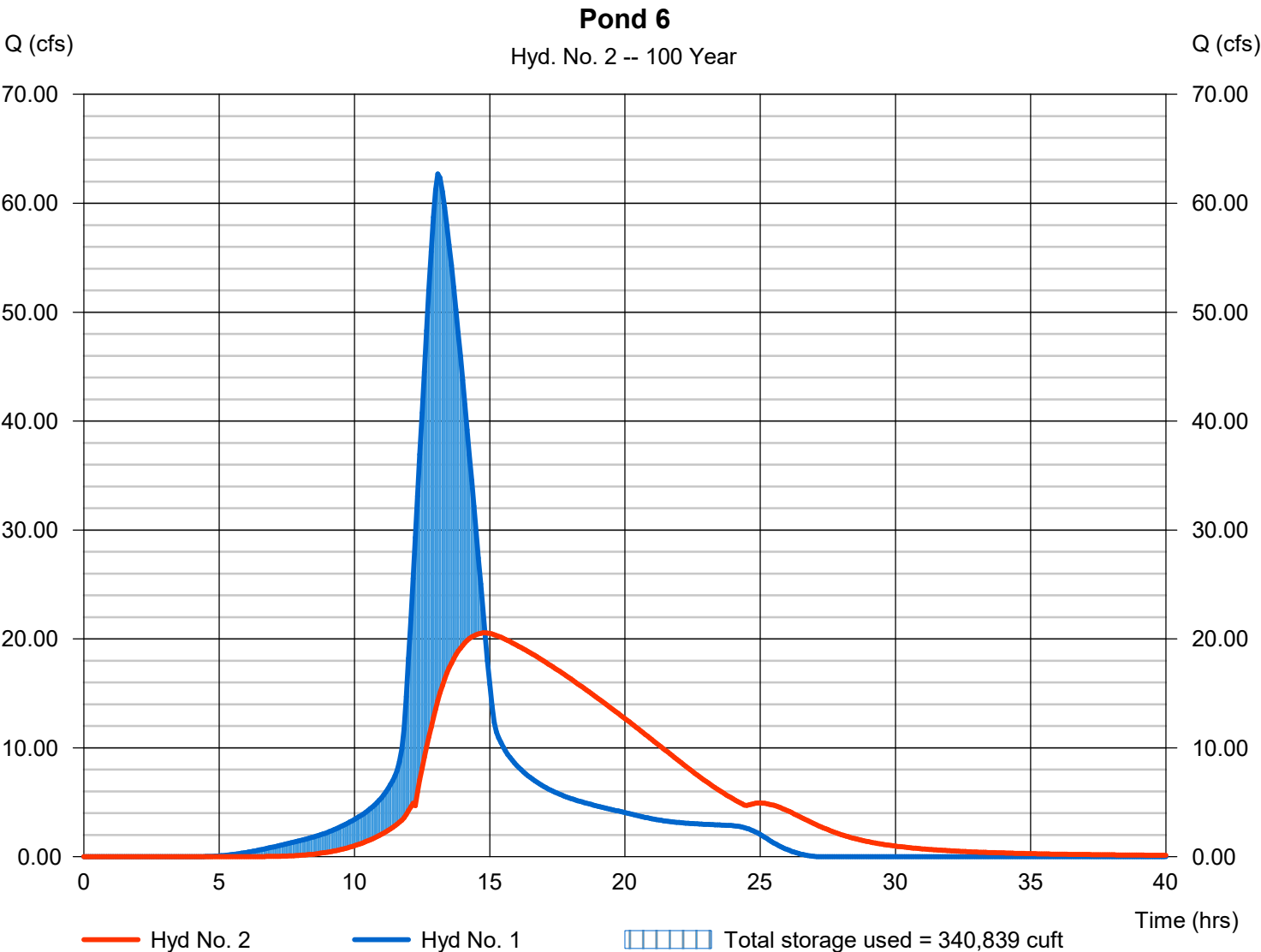
Friday, 05 / 22 / 2026

Hyd. No. 2

Pond 6

Hydrograph type	= Reservoir	Peak discharge	= 20.55 cfs
Storm frequency	= 100 yrs	Time to peak	= 14.83 hrs
Time interval	= 5 min	Hyd. volume	= 703,416 cuft
Inflow hyd. No.	= 1 - Pond 6 Post Drainage Area	Max. Elevation	= 1009.27 ft
Reservoir name	= <New Pond>	Max. Storage	= 340,839 cuft

Storage Indication method used.



Hydrograph Report

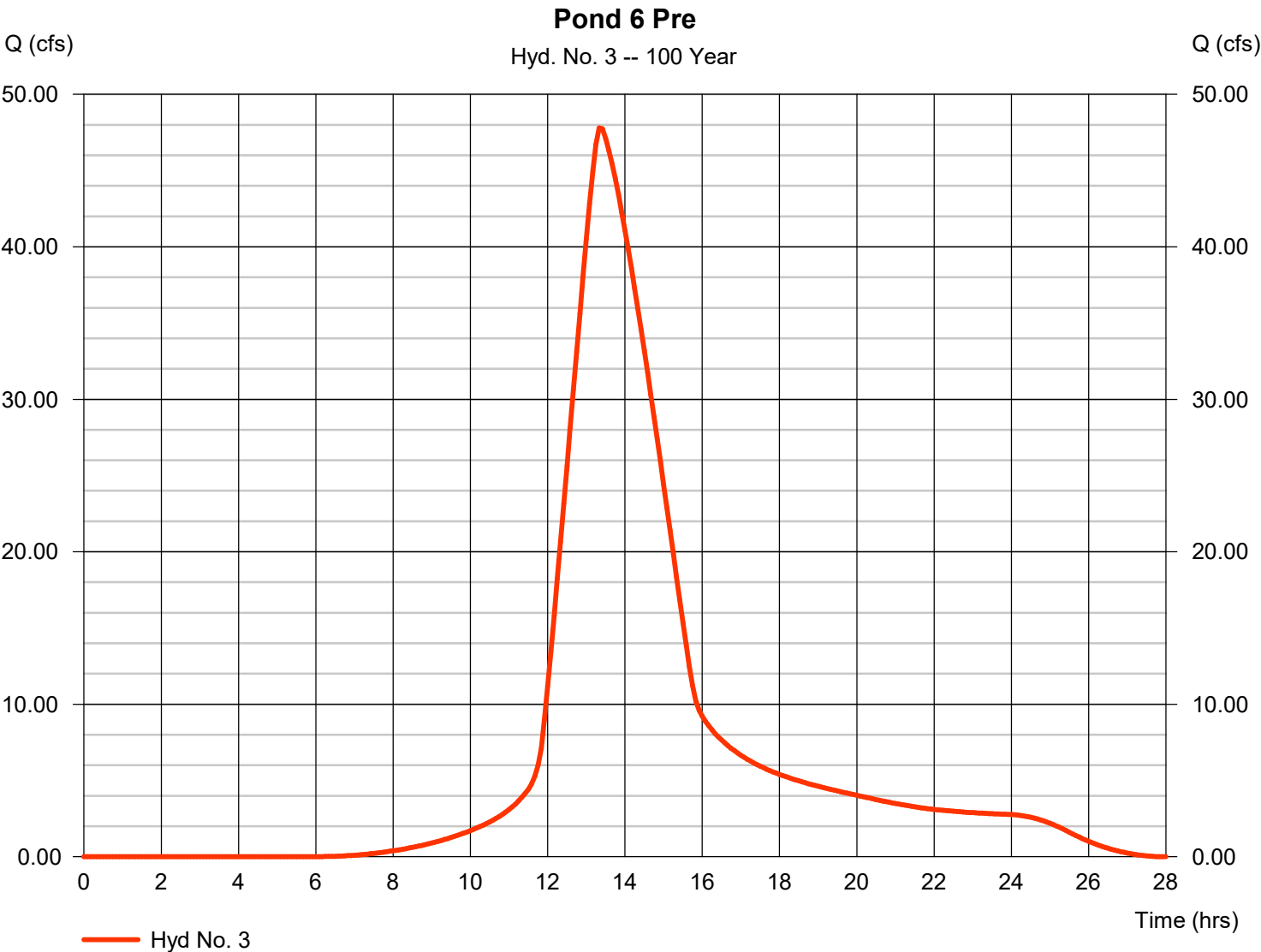
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Friday, 05 / 22 / 2026

Hyd. No. 3

Pond 6 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 47.79 cfs
Storm frequency	= 100 yrs	Time to peak	= 13.33 hrs
Time interval	= 5 min	Hyd. volume	= 611,300 cuft
Drainage area	= 50.000 ac	Curve number	= 85
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 150.00 min
Total precip.	= 5.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

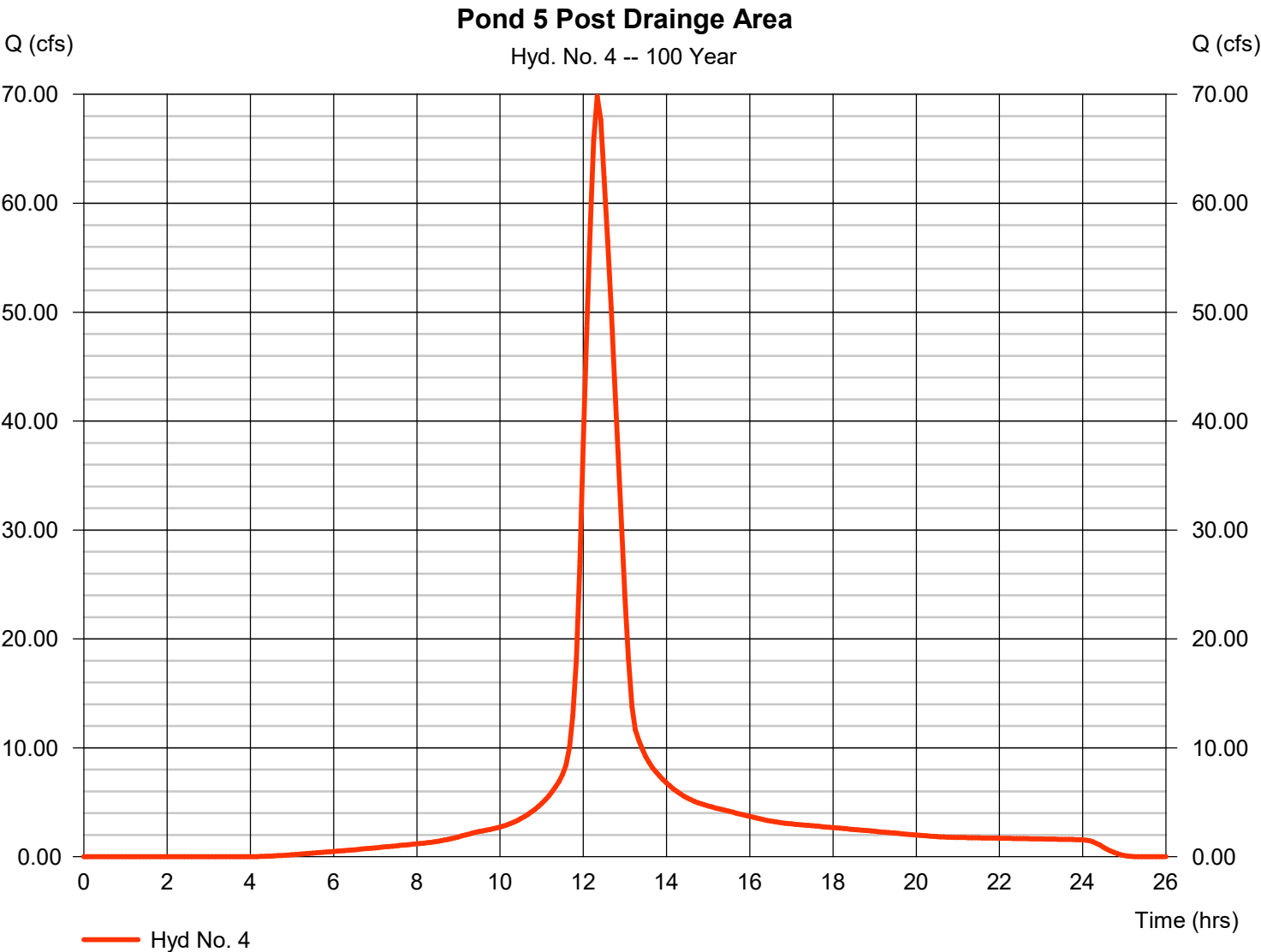
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Friday, 05 / 22 / 2026

Hyd. No. 4

Pond 5 Post Drainage Area

Hydrograph type	= SCS Runoff	Peak discharge	= 69.80 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.33 hrs
Time interval	= 5 min	Hyd. volume	= 400,742 cuft
Drainage area	= 28.480 ac	Curve number	= 90
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 45.00 min
Total precip.	= 5.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

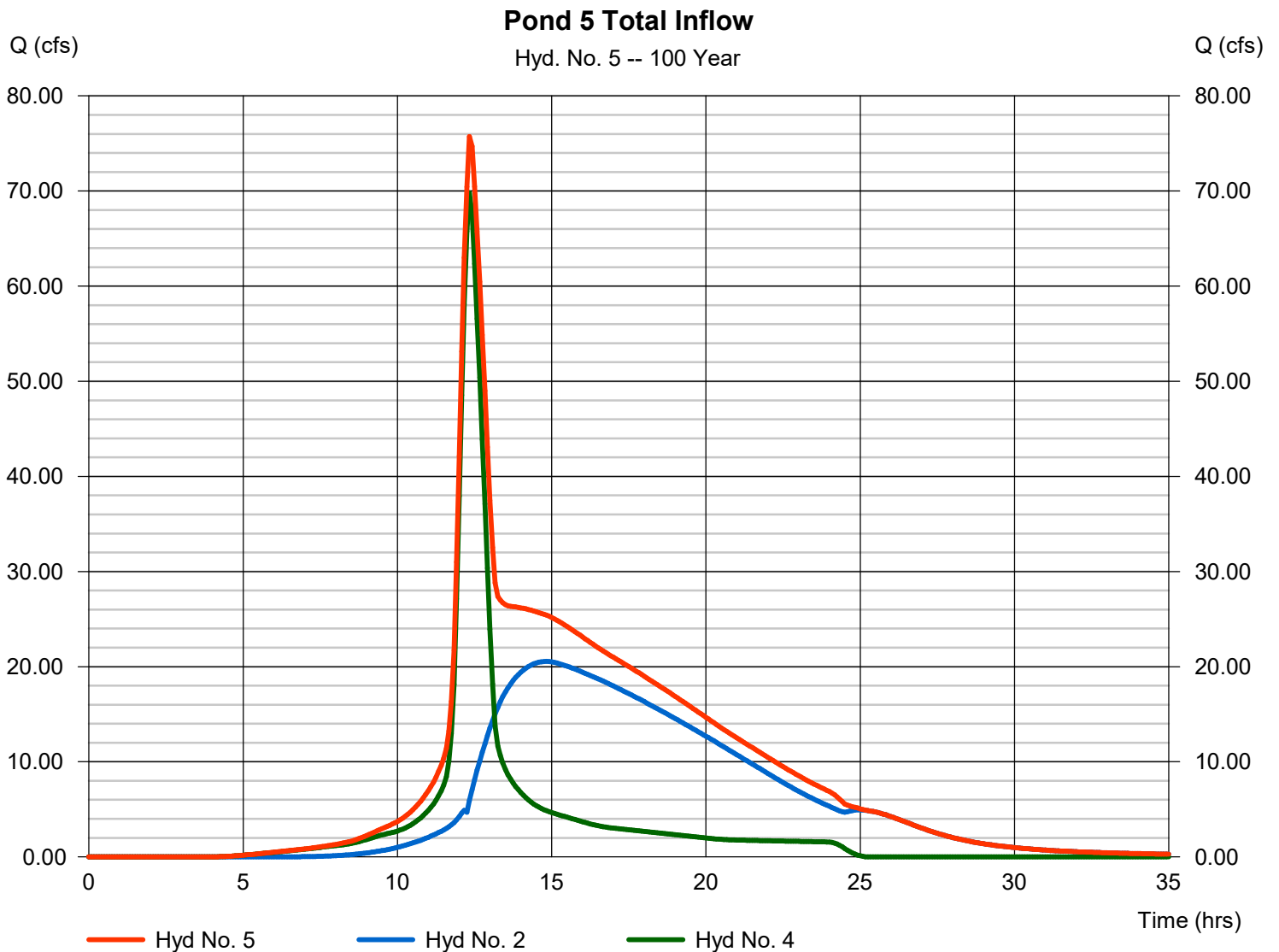
Friday, 05 / 22 / 2026

Hyd. No. 5

Pond 5 Total Inflow

Hydrograph type = Combine
Storm frequency = 100 yrs
Time interval = 5 min
Inflow hyds. = 2, 4

Peak discharge = 75.74 cfs
Time to peak = 12.33 hrs
Hyd. volume = 1,104,159 cuft
Contrib. drain. area = 28.480 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

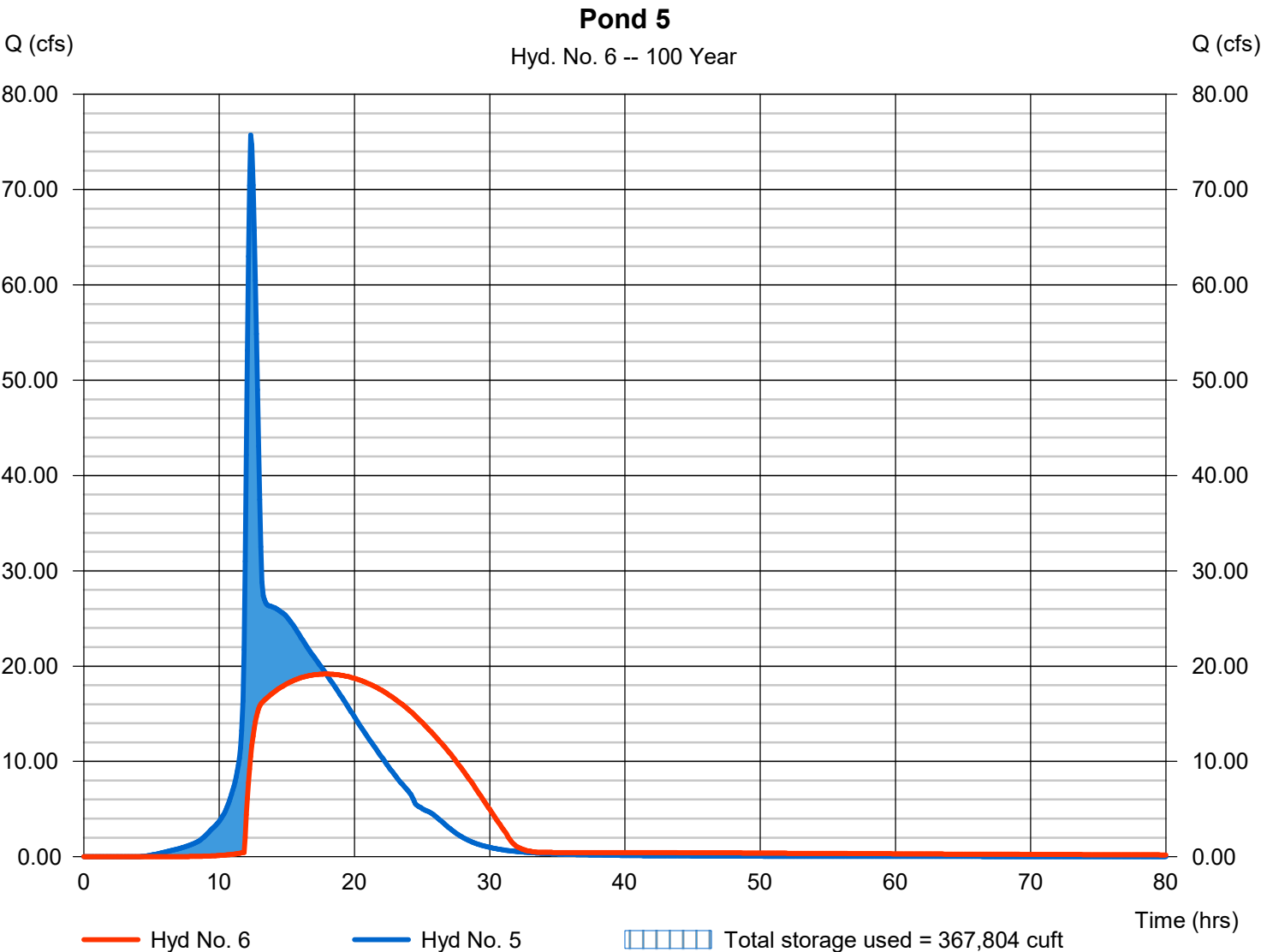
Friday, 05 / 22 / 2026

Hyd. No. 6

Pond 5

Hydrograph type	= Reservoir	Peak discharge	= 19.17 cfs
Storm frequency	= 100 yrs	Time to peak	= 17.92 hrs
Time interval	= 5 min	Hyd. volume	= 1,100,018 cuft
Inflow hyd. No.	= 5 - Pond 5 Total Inflow	Max. Elevation	= 1007.95 ft
Reservoir name	= <New Pond>	Max. Storage	= 367,804 cuft

Storage Indication method used.



Hydrograph Report

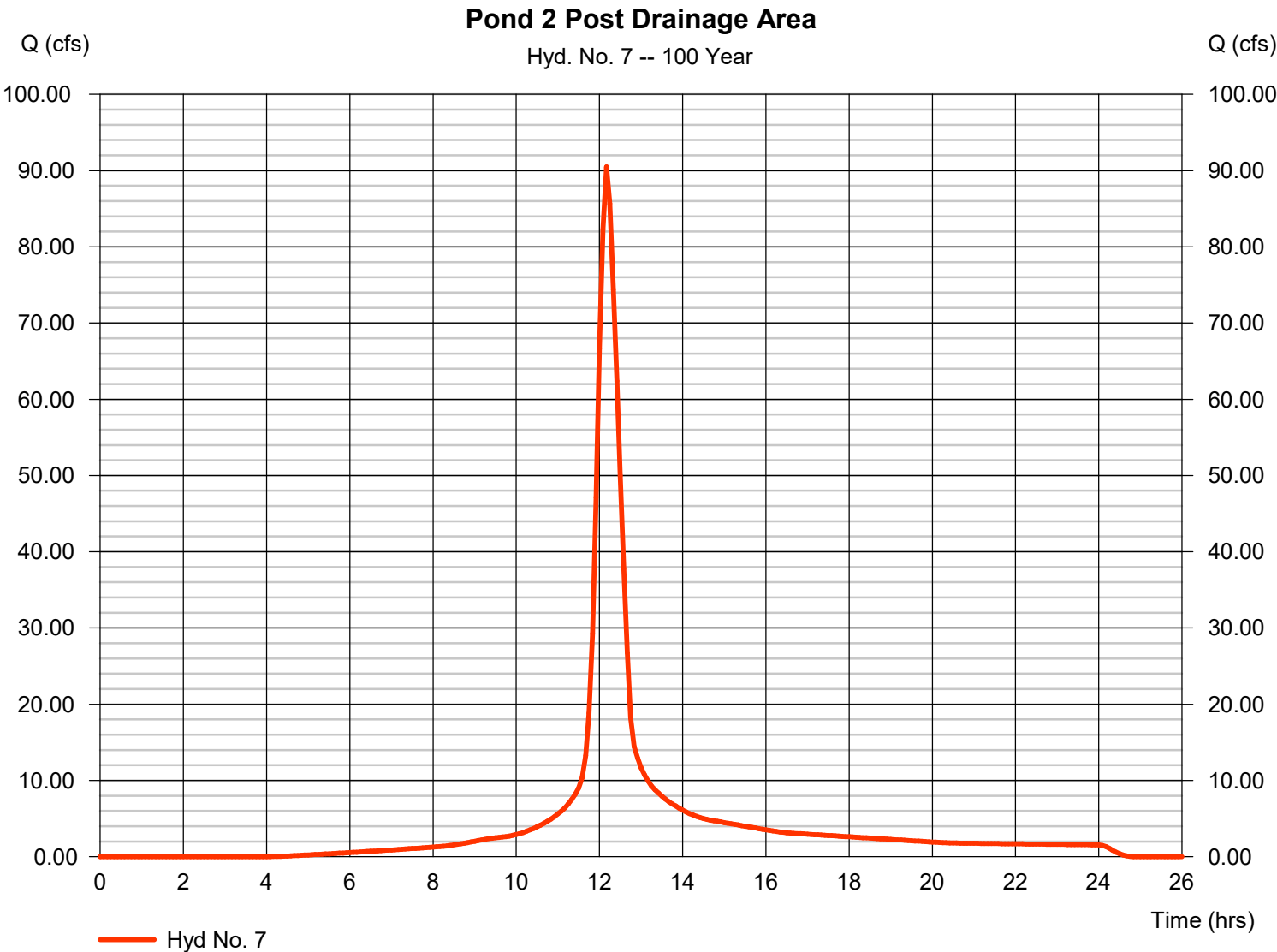
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Friday, 05 / 22 / 2026

Hyd. No. 7

Pond 2 Post Drainage Area

Hydrograph type	= SCS Runoff	Peak discharge	= 90.48 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.17 hrs
Time interval	= 5 min	Hyd. volume	= 401,947 cuft
Drainage area	= 27.700 ac	Curve number	= 90
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 30.00 min
Total precip.	= 5.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

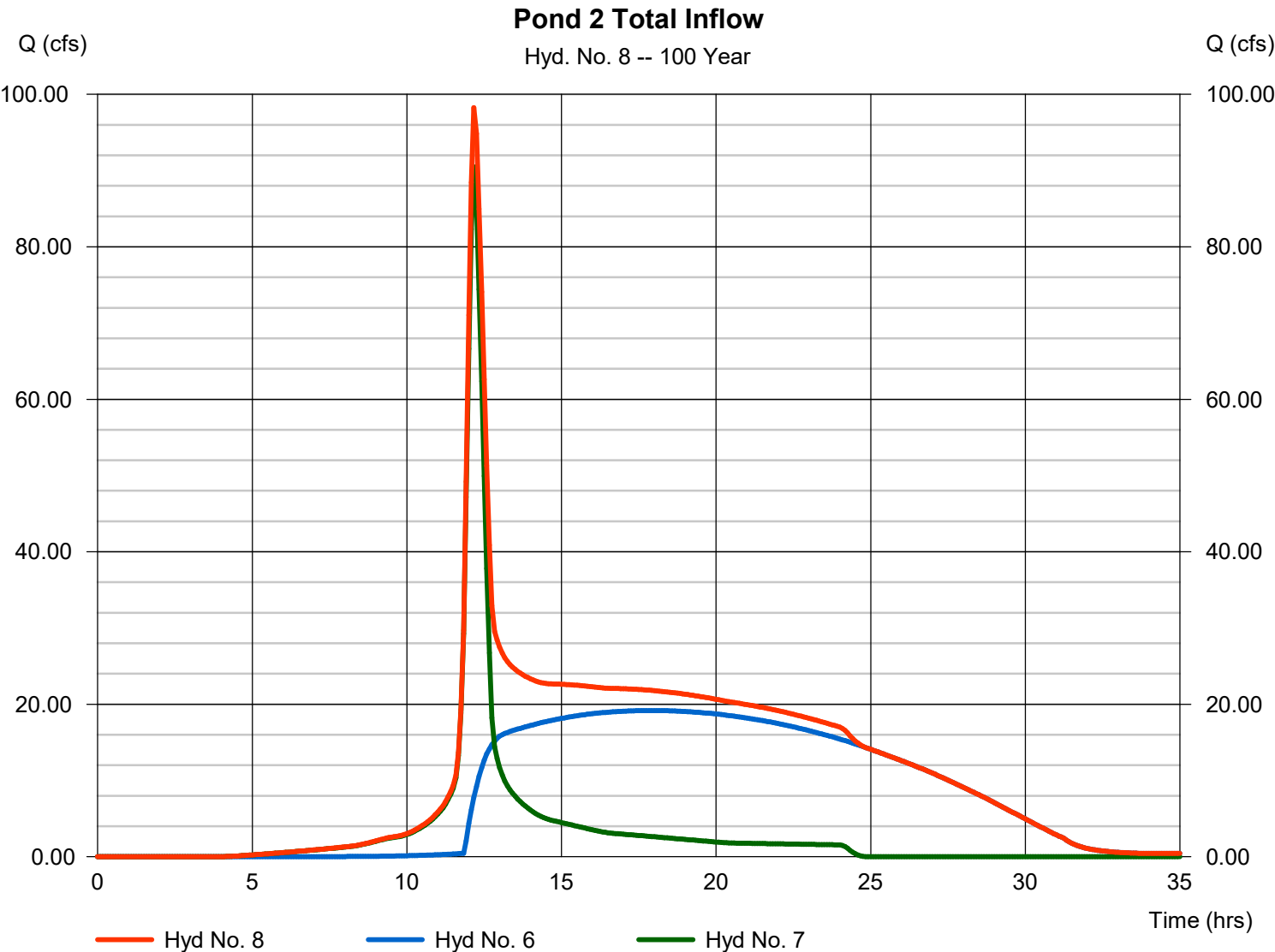
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Hyd. No. 8

Pond 2 Total Inflow

Hydrograph type	= Combine	Peak discharge	= 98.25 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.17 hrs
Time interval	= 5 min	Hyd. volume	= 1,501,965 cuft
Inflow hyds.	= 6, 7	Contrib. drain. area	= 27.700 ac



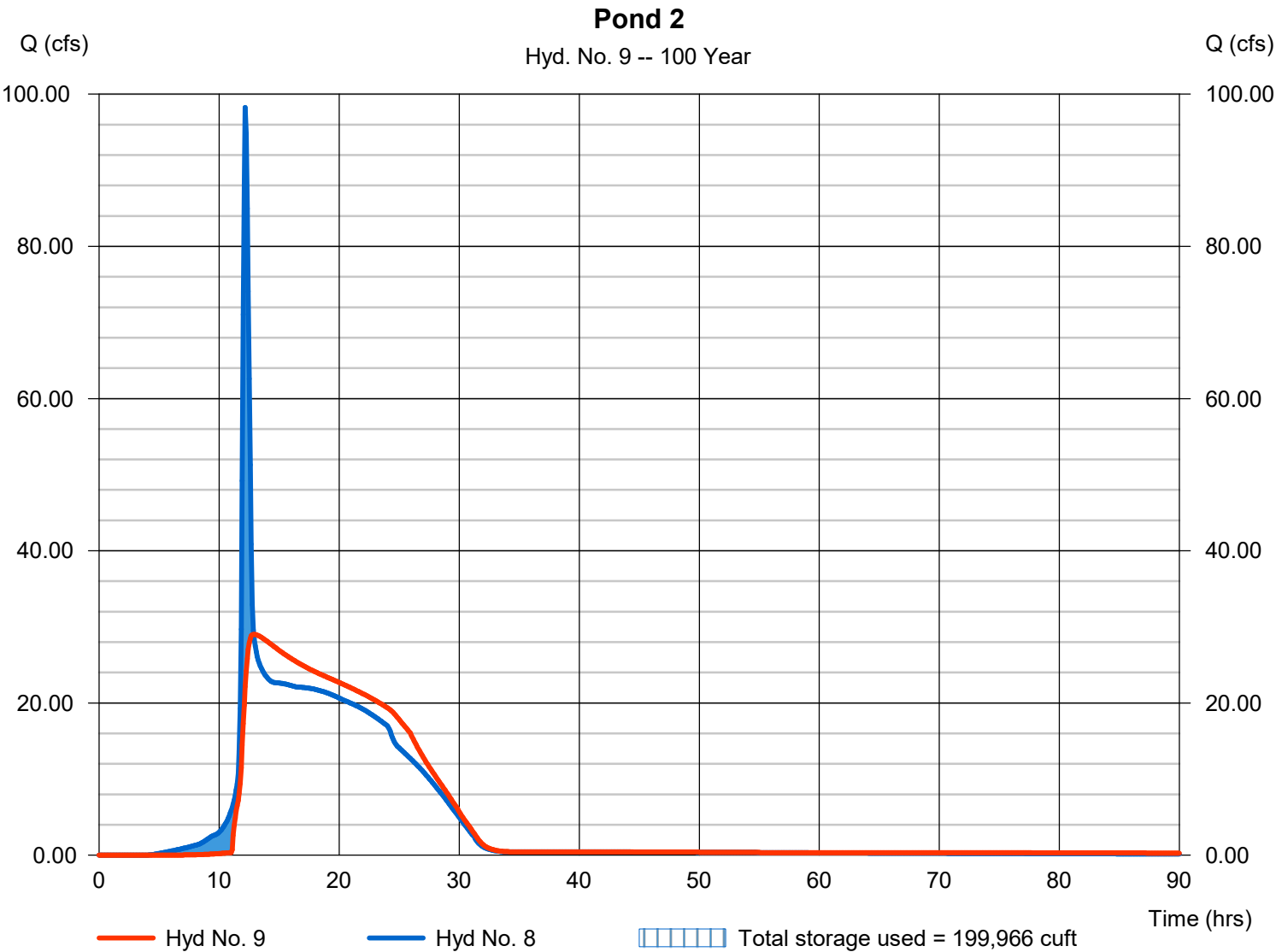
Hydrograph Report

Hyd. No. 9

Pond 2

Hydrograph type	= Reservoir	Peak discharge	= 29.02 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.83 hrs
Time interval	= 5 min	Hyd. volume	= 1,498,124 cuft
Inflow hyd. No.	= 8 - Pond 2 Total Inflow	Max. Elevation	= 1005.65 ft
Reservoir name	= <New Pond>	Max. Storage	= 199,966 cuft

Storage Indication method used.



Hydrograph Report

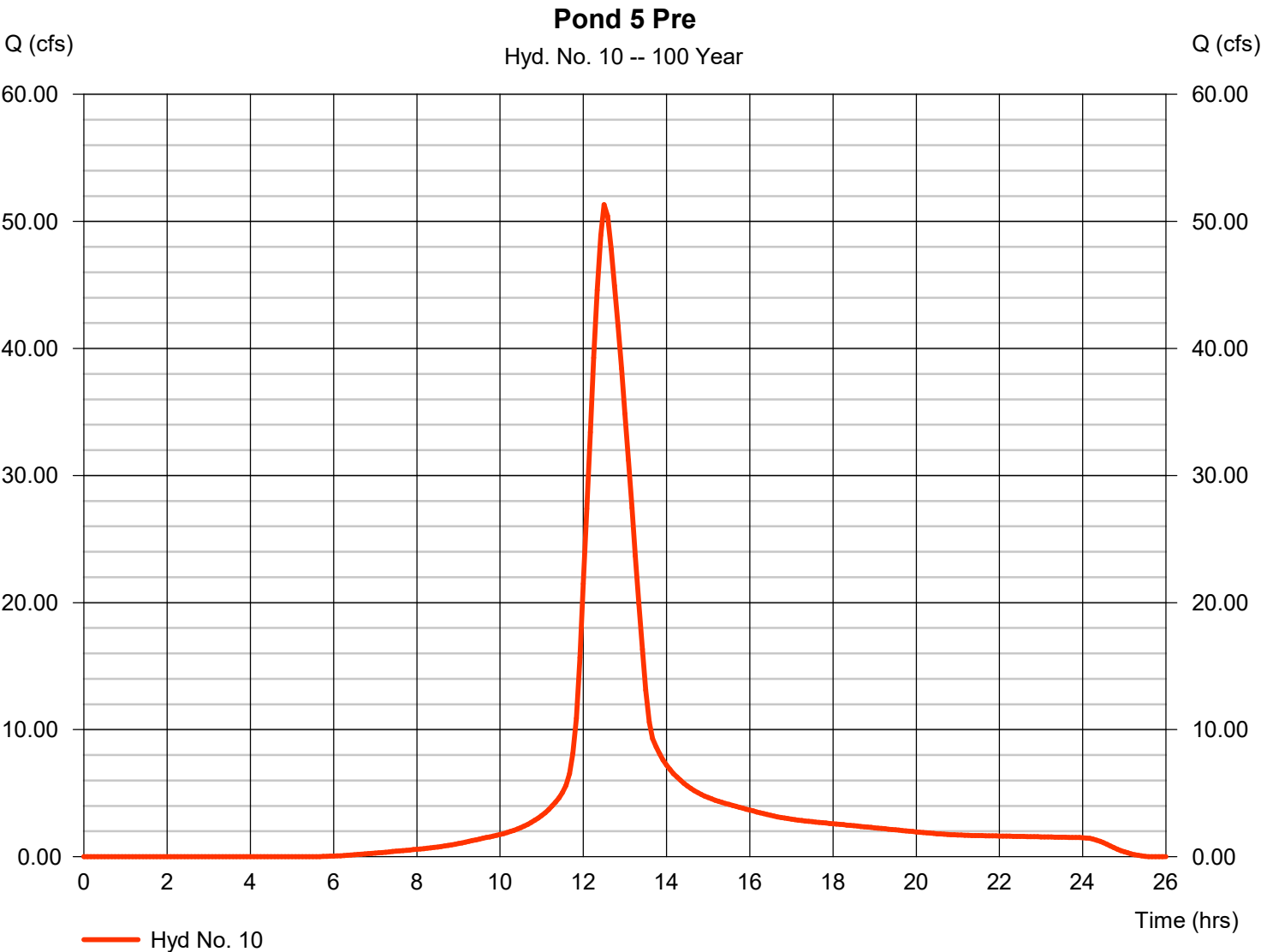
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Friday, 05 / 22 / 2026

Hyd. No. 10

Pond 5 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 51.31 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 353,074 cuft
Drainage area	= 28.500 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 60.00 min
Total precip.	= 5.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

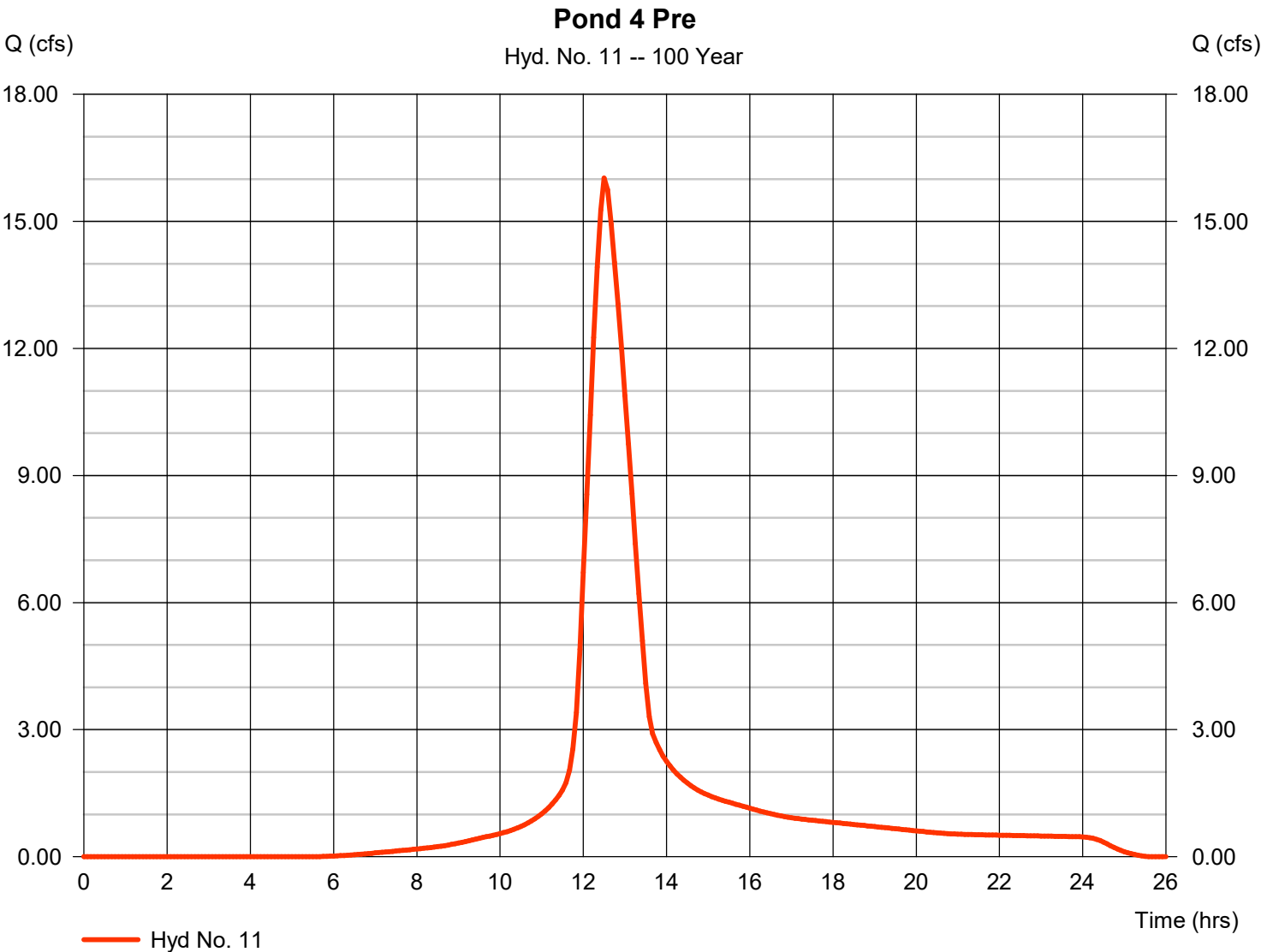
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Hyd. No. 11

Pond 4 Pre

Hydrograph type	=	SCS Runoff	Peak discharge	=	16.02 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.50 hrs
Time interval	=	5 min	Hyd. volume	=	110,258 cuft
Drainage area	=	8.900 ac	Curve number	=	86
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	60.00 min
Total precip.	=	5.00 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

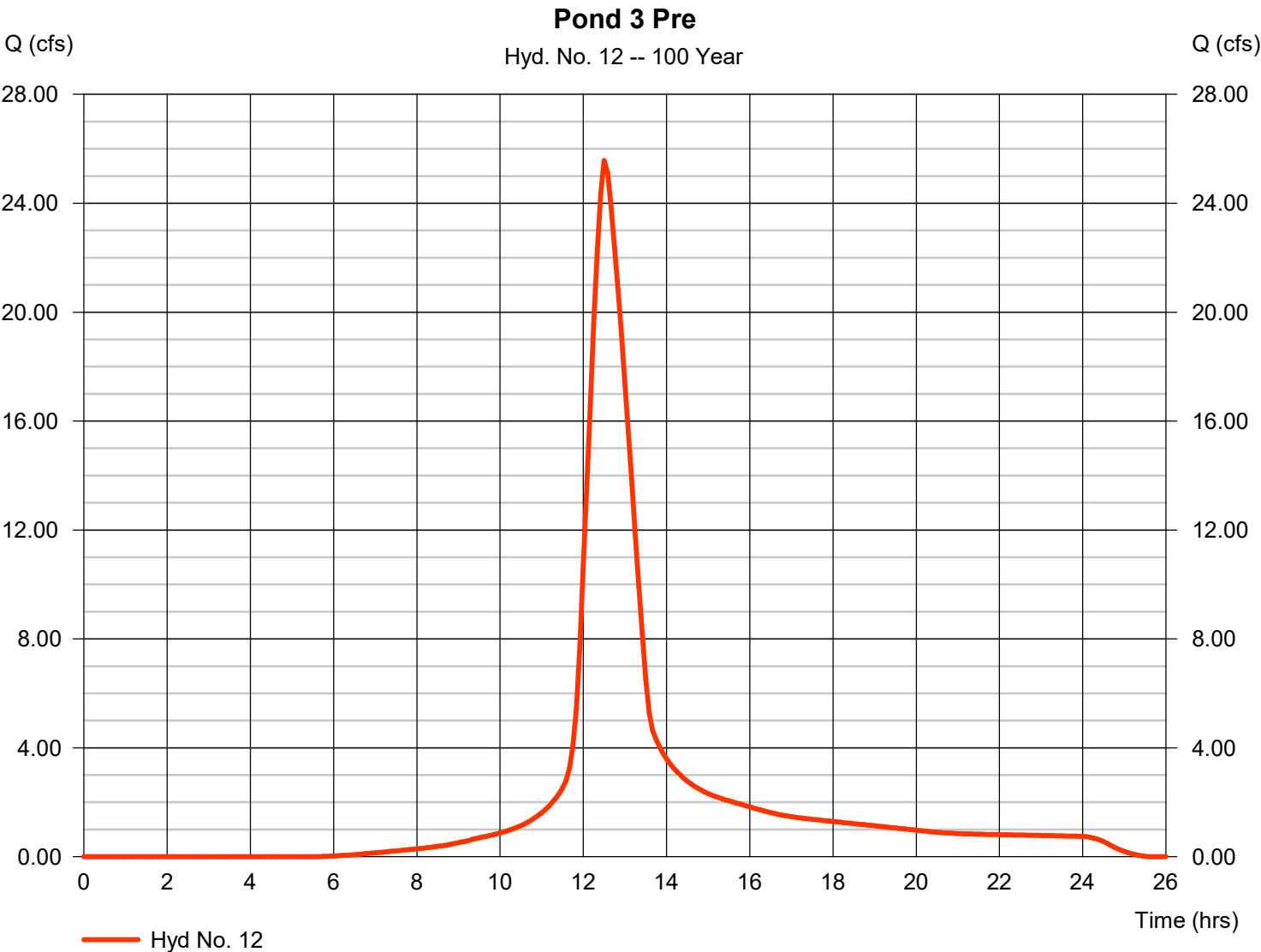
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Hyd. No. 12

Pond 3 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 25.57 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 175,918 cuft
Drainage area	= 14.200 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 60.00 min
Total precip.	= 5.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

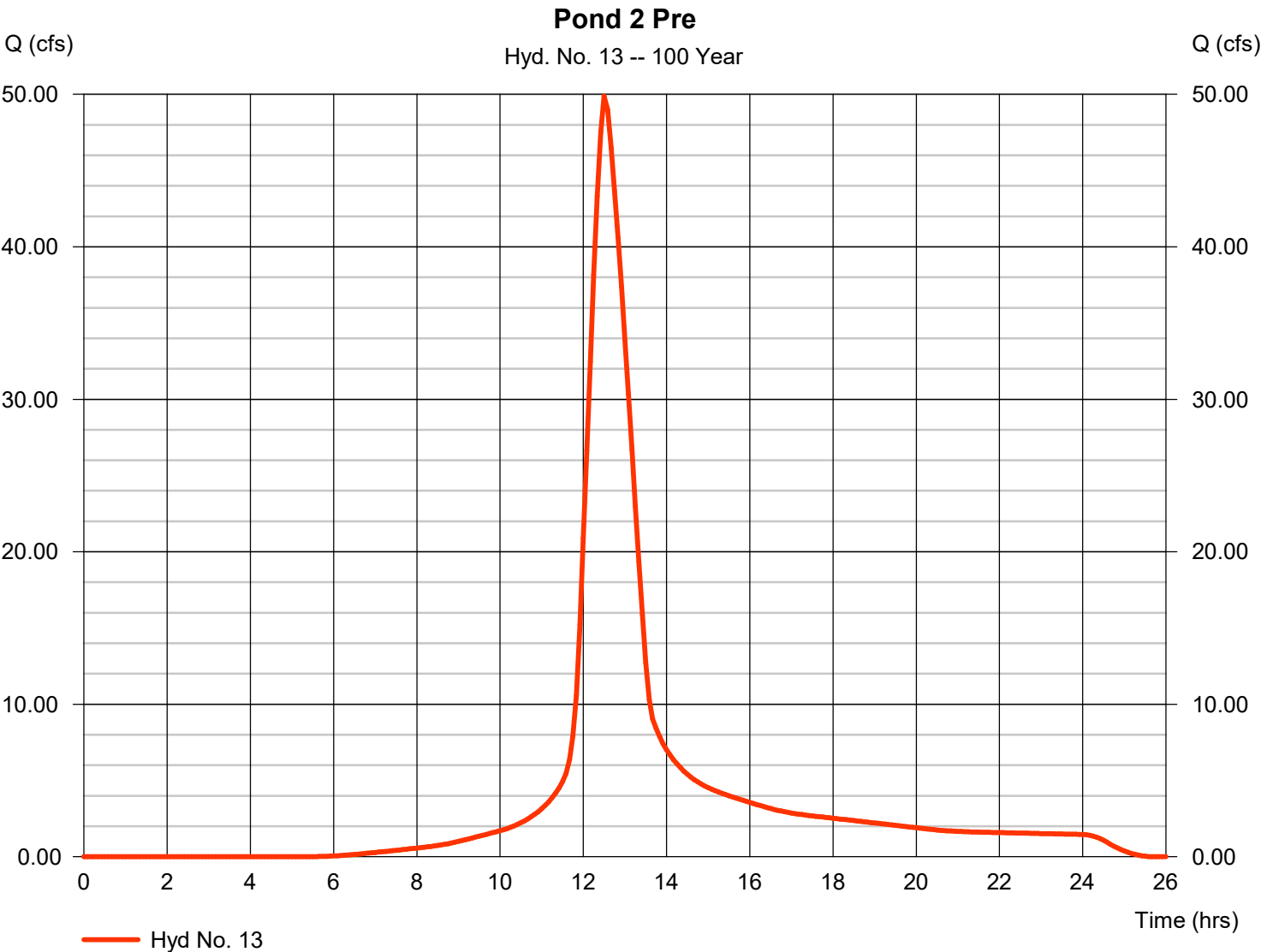
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Friday, 05 / 22 / 2026

Hyd. No. 13

Pond 2 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 49.87 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.50 hrs
Time interval	= 5 min	Hyd. volume	= 343,163 cuft
Drainage area	= 27.700 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 60.00 min
Total precip.	= 5.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

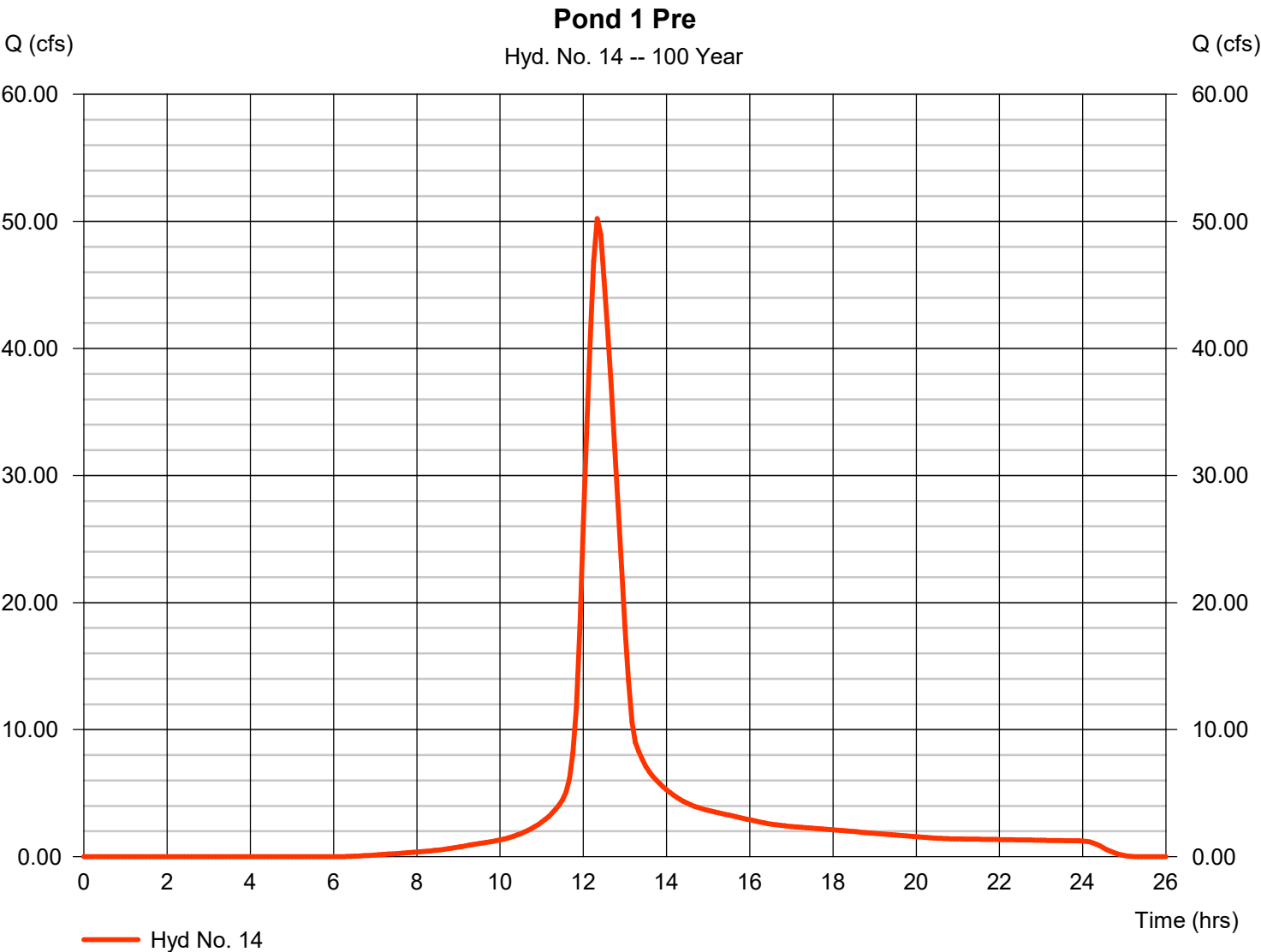
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Friday, 05 / 22 / 2026

Hyd. No. 14

Pond 1 Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 50.23 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.33 hrs
Time interval	= 5 min	Hyd. volume	= 283,731 cuft
Drainage area	= 23.900 ac	Curve number	= 84
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 45.00 min
Total precip.	= 5.00 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

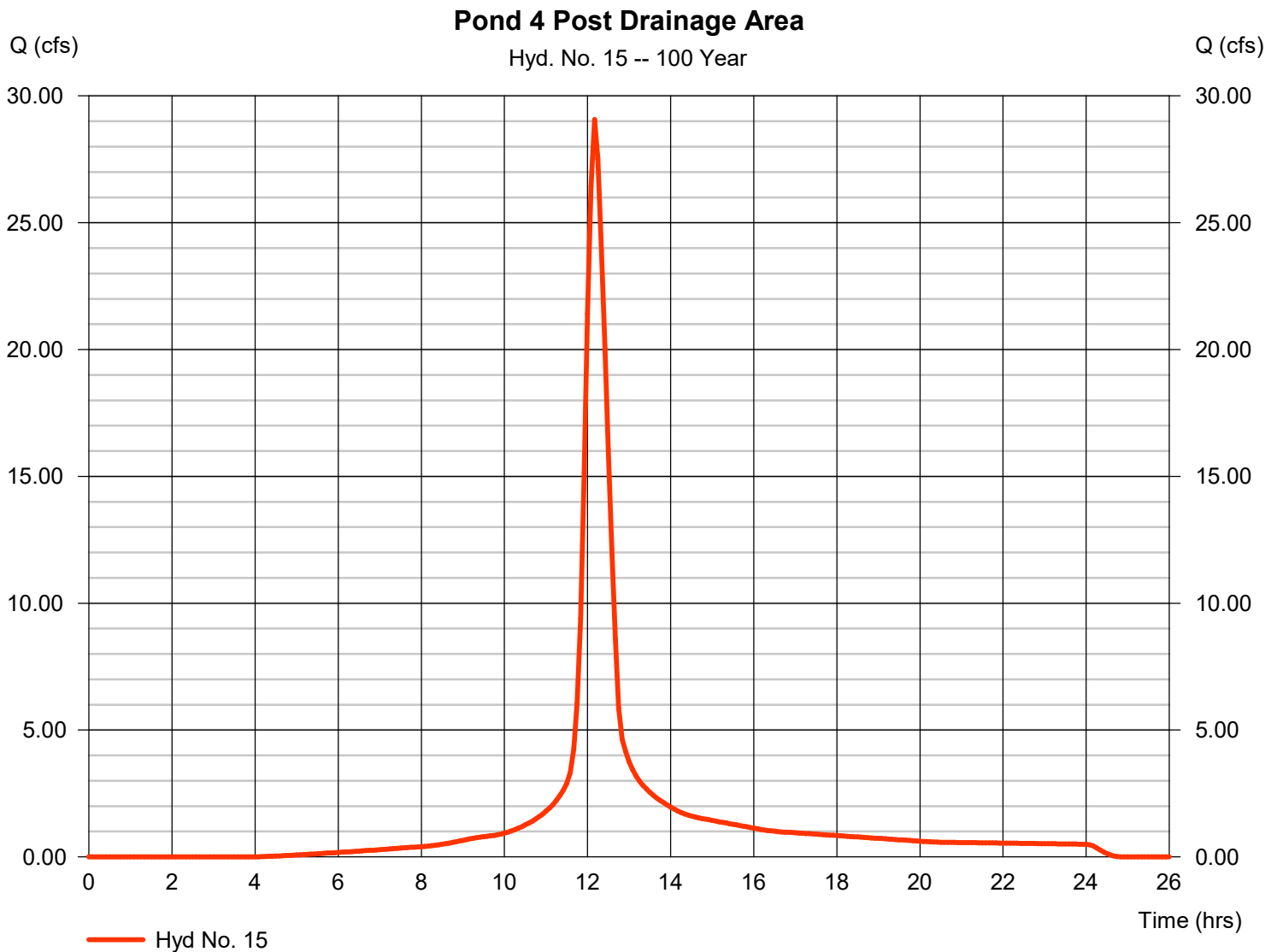
Friday, 05 / 22 / 2026

Hyd. No. 15

Pond 4 Post Drainage Area

Hydrograph type = SCS Runoff
Storm frequency = 100 yrs
Time interval = 5 min
Drainage area = 8.900 ac
Basin Slope = 0.0 %
Tc method = User
Total precip. = 5.00 in
Storm duration = 24 hrs

Peak discharge = 29.07 cfs
Time to peak = 12.17 hrs
Hyd. volume = 129,145 cuft
Curve number = 90
Hydraulic length = 0 ft
Time of conc. (Tc) = 30.00 min
Distribution = Type II
Shape factor = 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

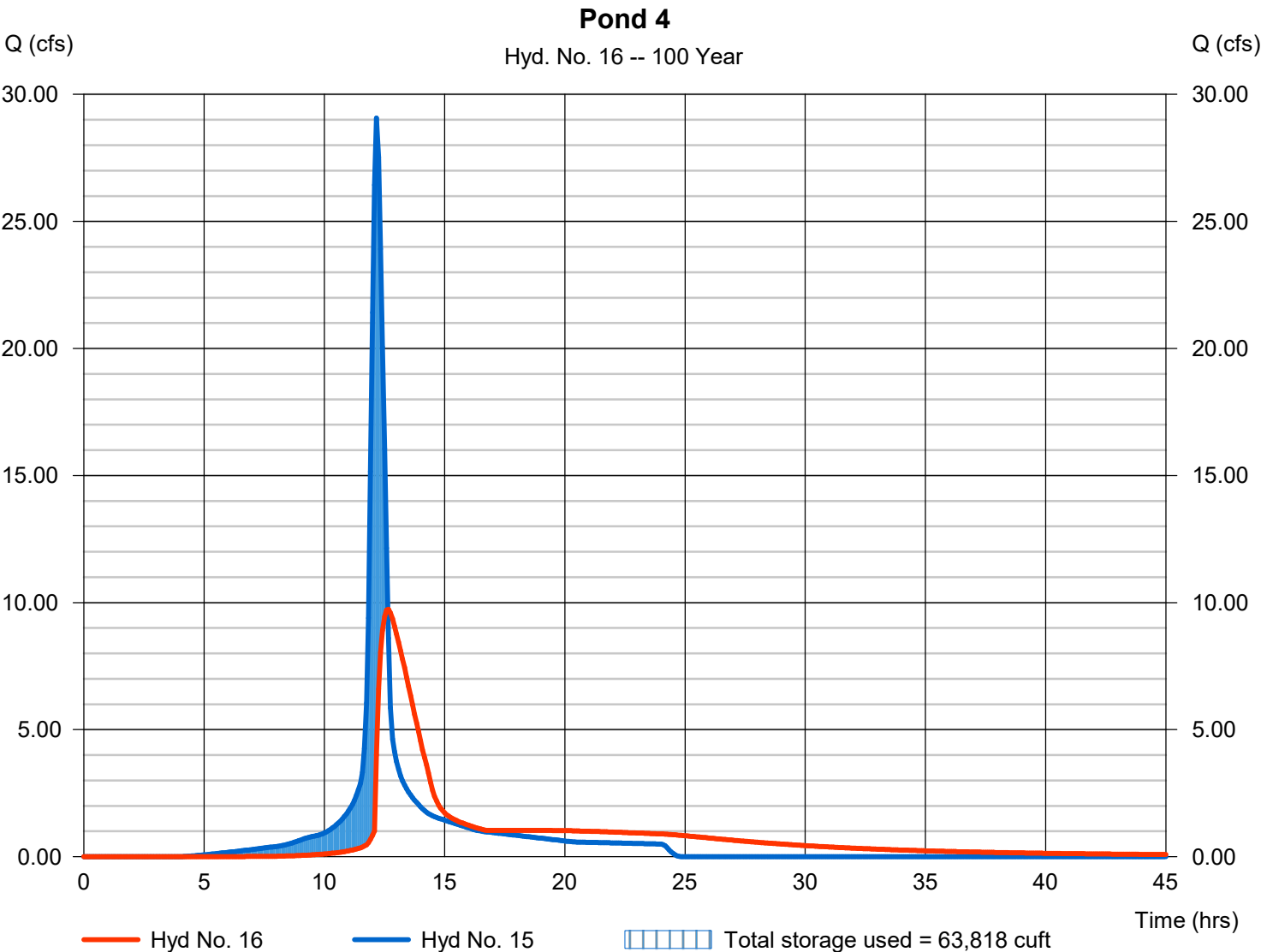
Friday, 05 / 22 / 2026

Hyd. No. 16

Pond 4

Hydrograph type	= Reservoir	Peak discharge	= 9.737 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.67 hrs
Time interval	= 5 min	Hyd. volume	= 129,002 cuft
Inflow hyd. No.	= 15 - Pond 4 Post Drainage Area	Max. Elevation	= 1003.37 ft
Reservoir name	= <New Pond>	Max. Storage	= 63,818 cuft

Storage Indication method used.



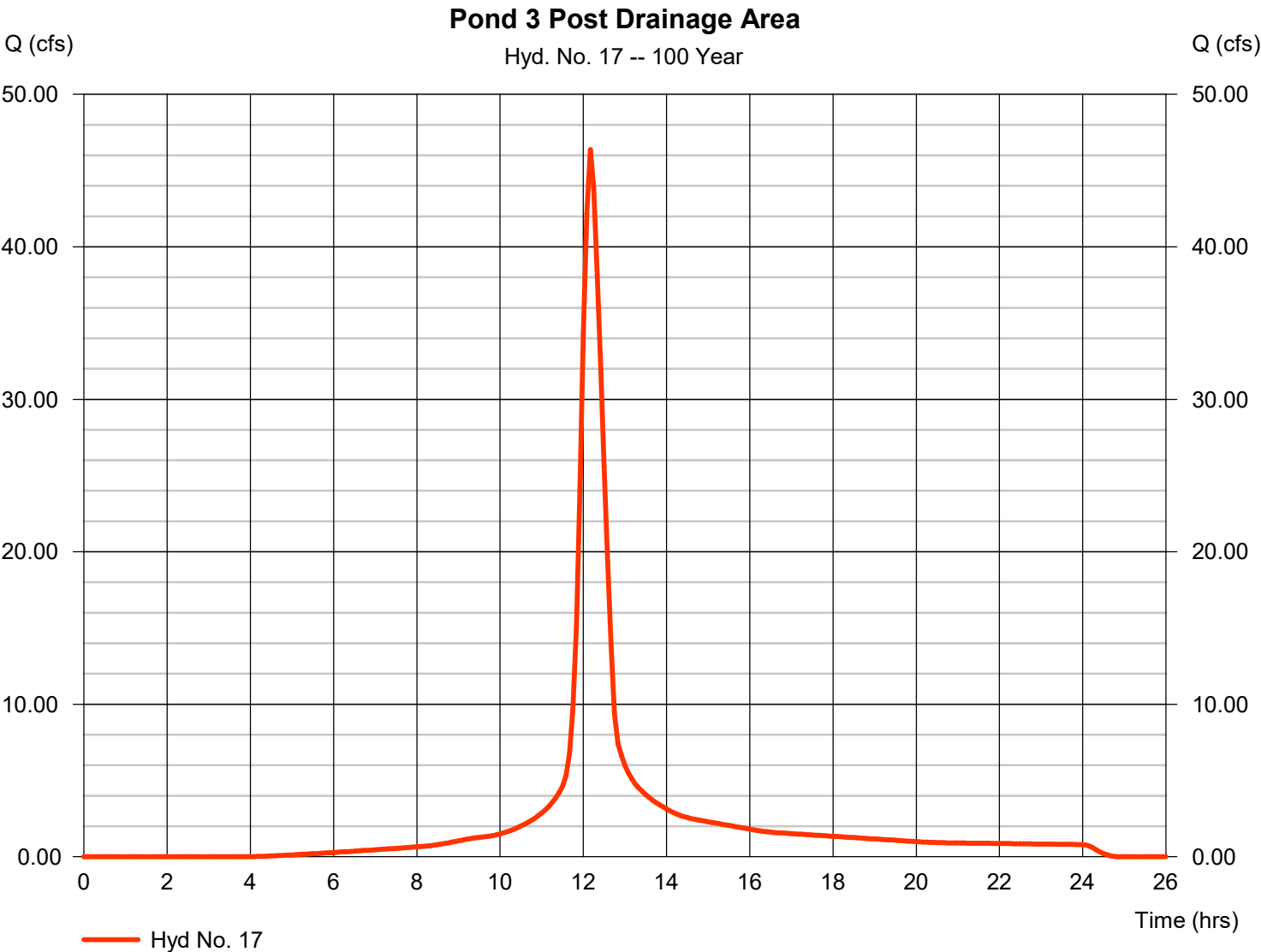
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025
Friday, 05 / 22 / 2026

Hyd. No. 17

Pond 3 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	46.38 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.17 hrs
Time interval	=	5 min	Hyd. volume	=	206,052 cuft
Drainage area	=	14.200 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	30.00 min
Total precip.	=	5.00 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

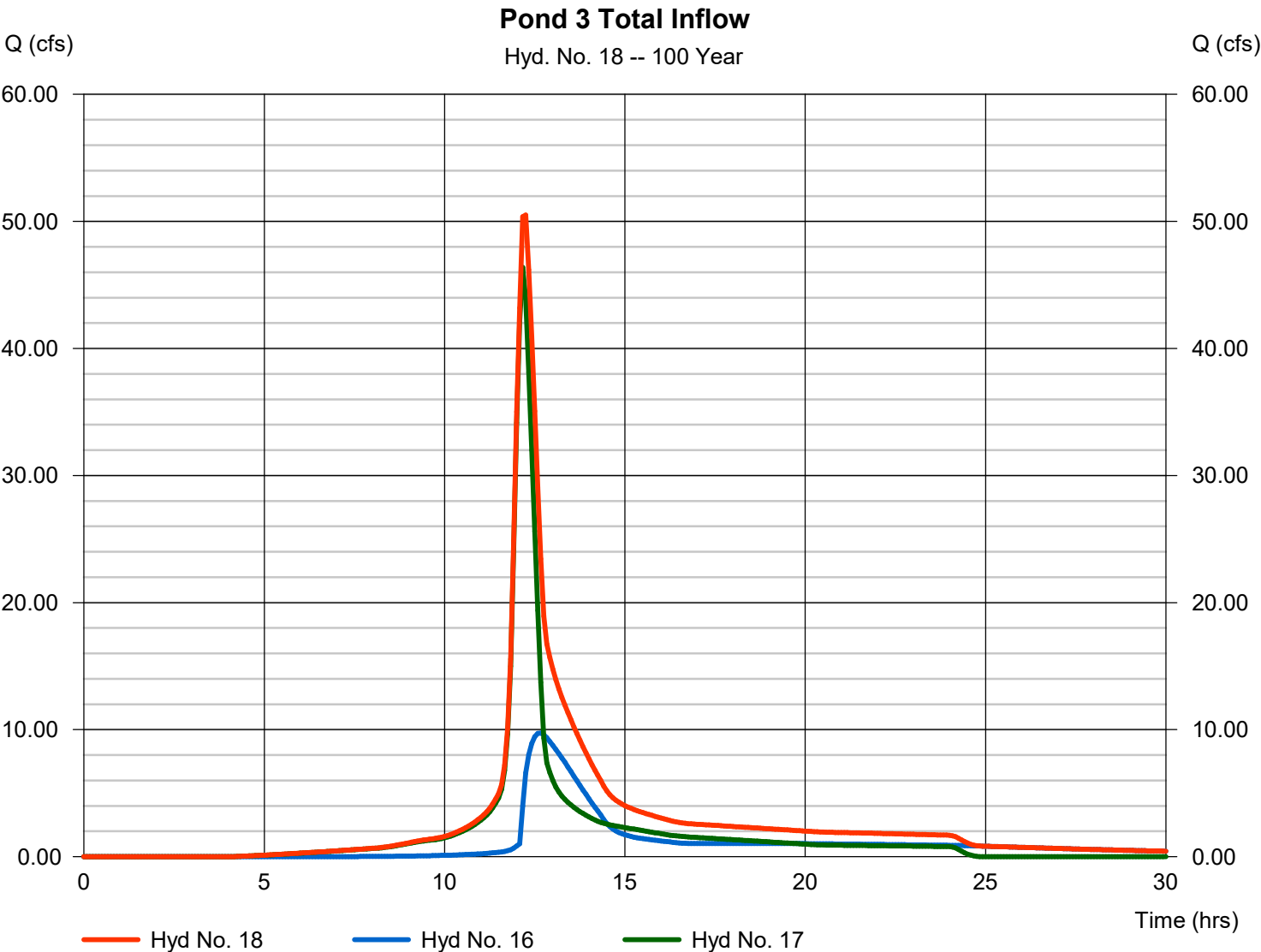
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Hyd. No. 18

Pond 3 Total Inflow

Hydrograph type	= Combine	Peak discharge	= 50.50 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.25 hrs
Time interval	= 5 min	Hyd. volume	= 335,055 cuft
Inflow hyds.	= 16, 17	Contrib. drain. area	= 14.200 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

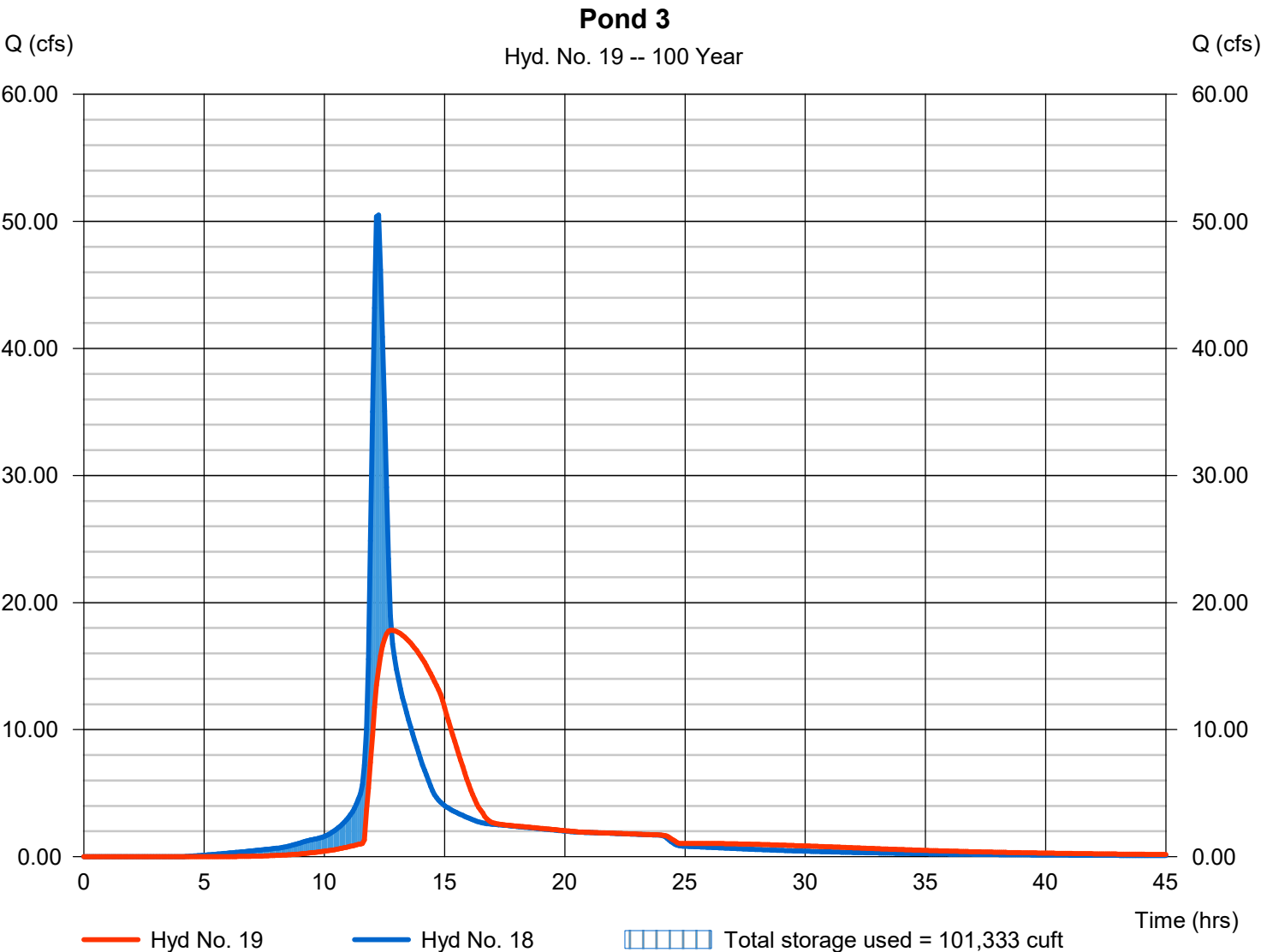
Friday, 05 / 22 / 2026

Hyd. No. 19

Pond 3

Hydrograph type	= Reservoir	Peak discharge	= 17.82 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.83 hrs
Time interval	= 5 min	Hyd. volume	= 334,969 cuft
Inflow hyd. No.	= 18 - Pond 3 Total Inflow	Max. Elevation	= 1005.14 ft
Reservoir name	= <New Pond>	Max. Storage	= 101,333 cuft

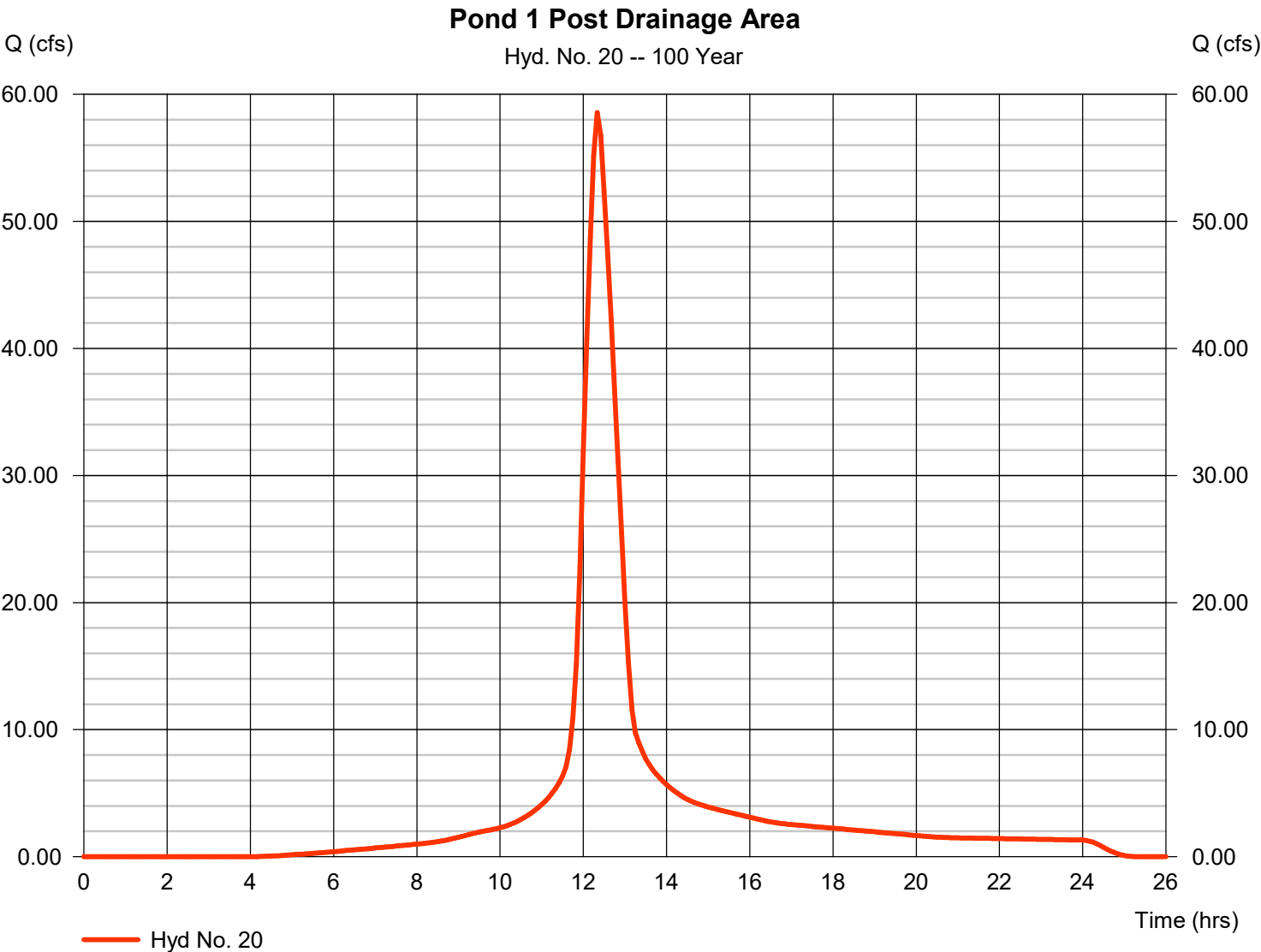
Storage Indication method used.



Hyd. No. 20

Pond 1 Post Drainage Area

Hydrograph type	=	SCS Runoff	Peak discharge	=	58.57 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.33 hrs
Time interval	=	5 min	Hyd. volume	=	336,297 cuft
Drainage area	=	23.900 ac	Curve number	=	90
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	45.00 min
Total precip.	=	5.00 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

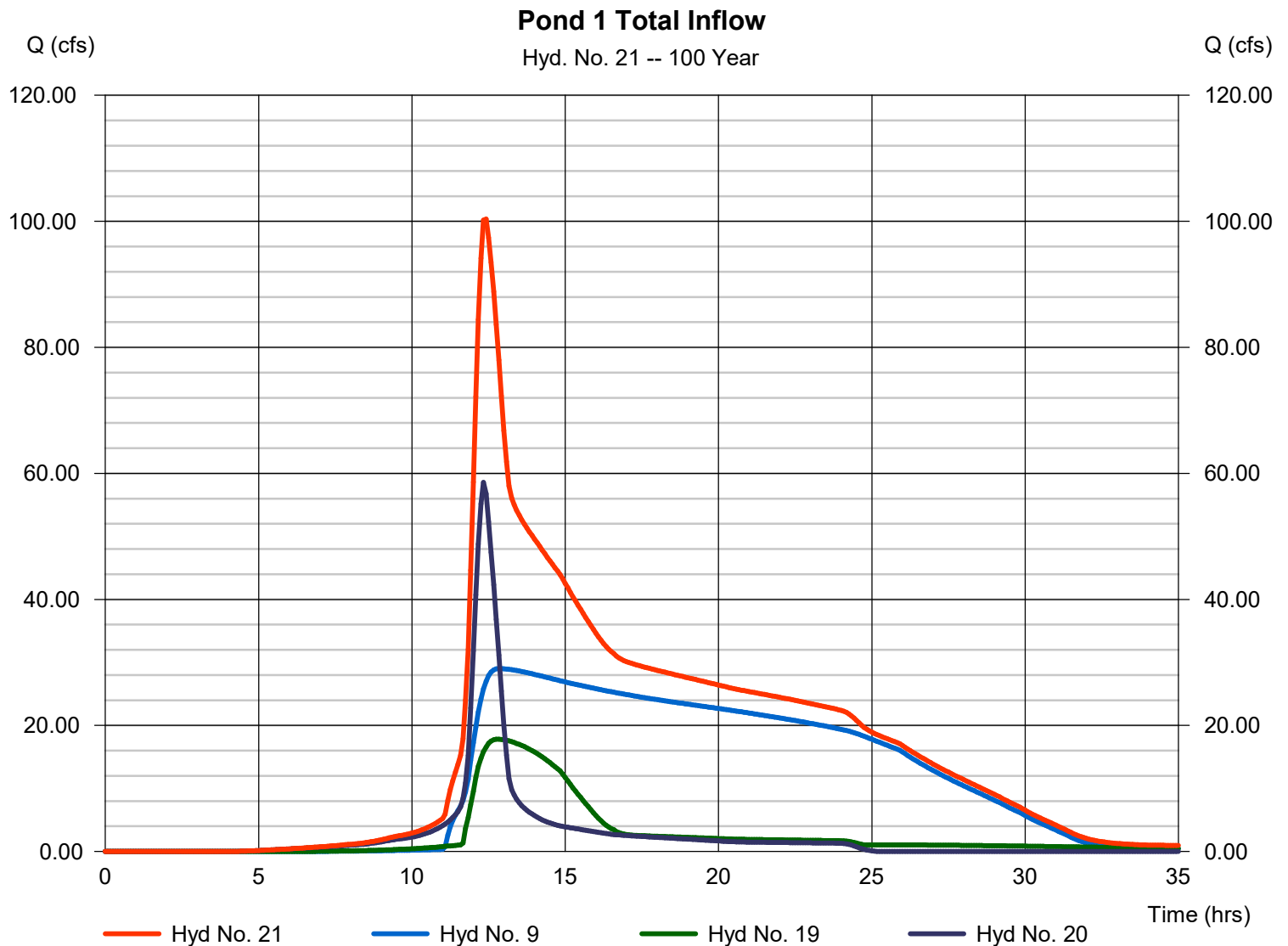
Friday, 05 / 22 / 2026

Hyd. No. 21

Pond 1 Total Inflow

Hydrograph type = Combine
Storm frequency = 100 yrs
Time interval = 5 min
Inflow hyds. = 9, 19, 20

Peak discharge = 100.37 cfs
Time to peak = 12.42 hrs
Hyd. volume = 2,169,386 cuft
Contrib. drain. area = 23.900 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

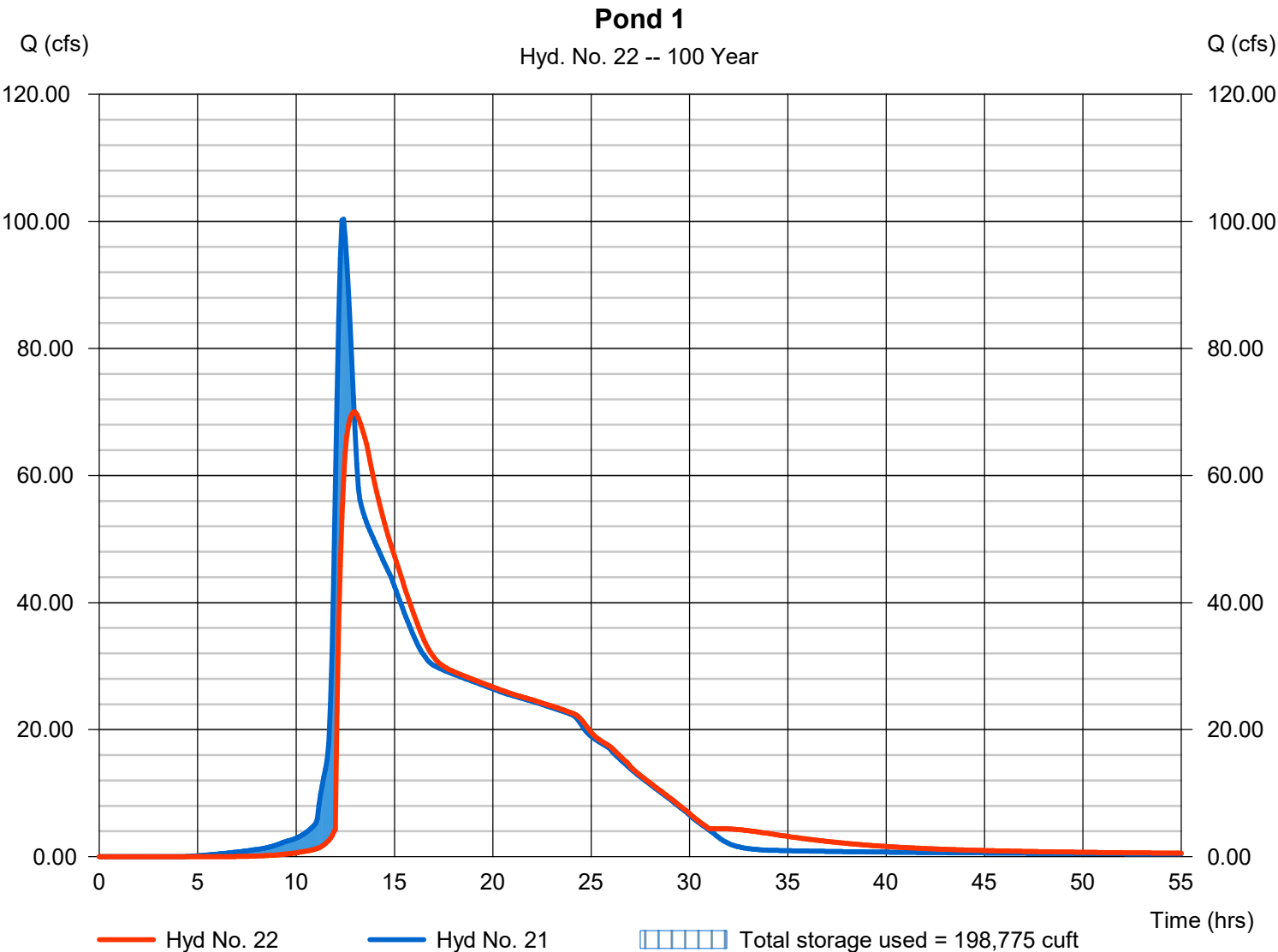
Friday, 05 / 22 / 2026

Hyd. No. 22

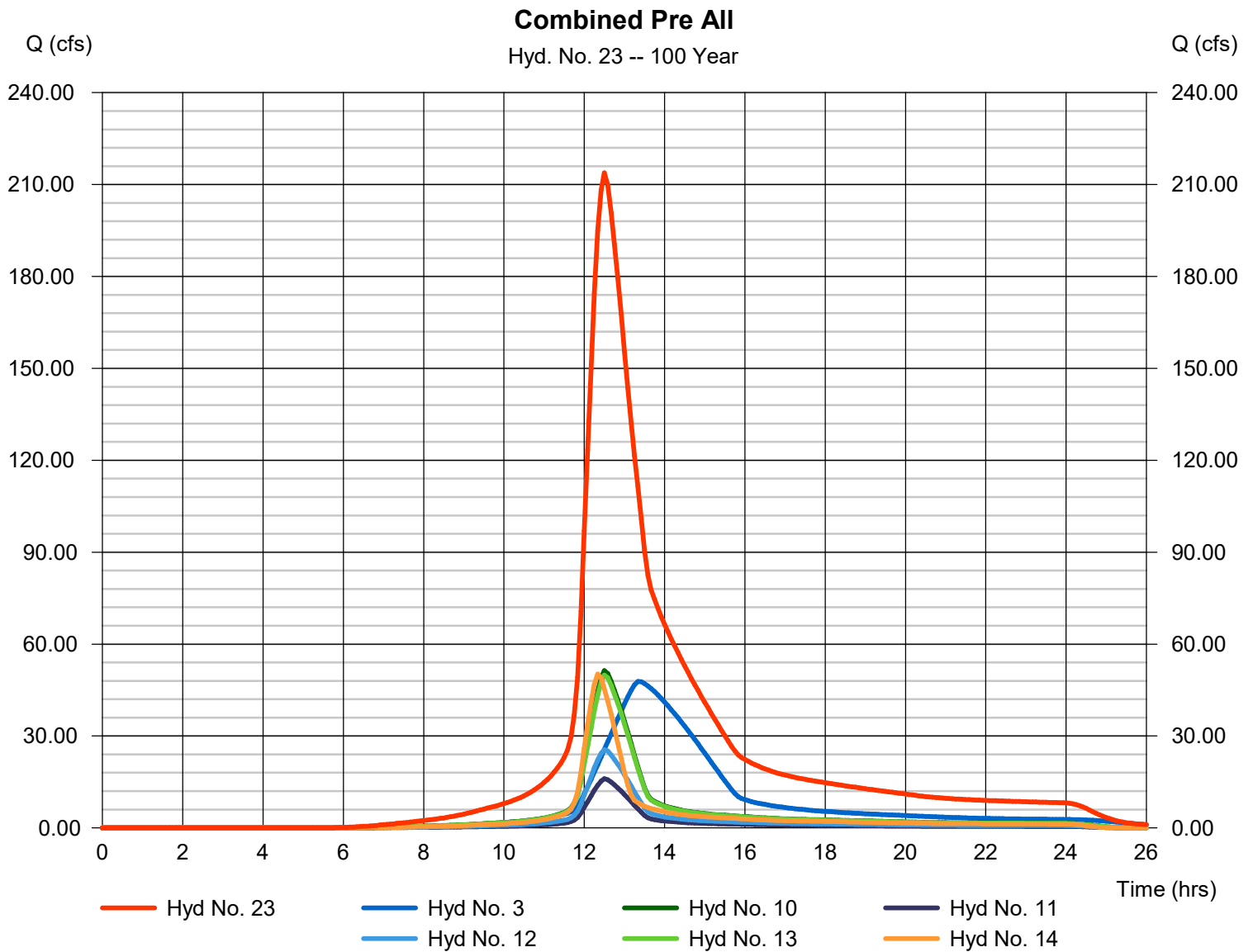
Pond 1

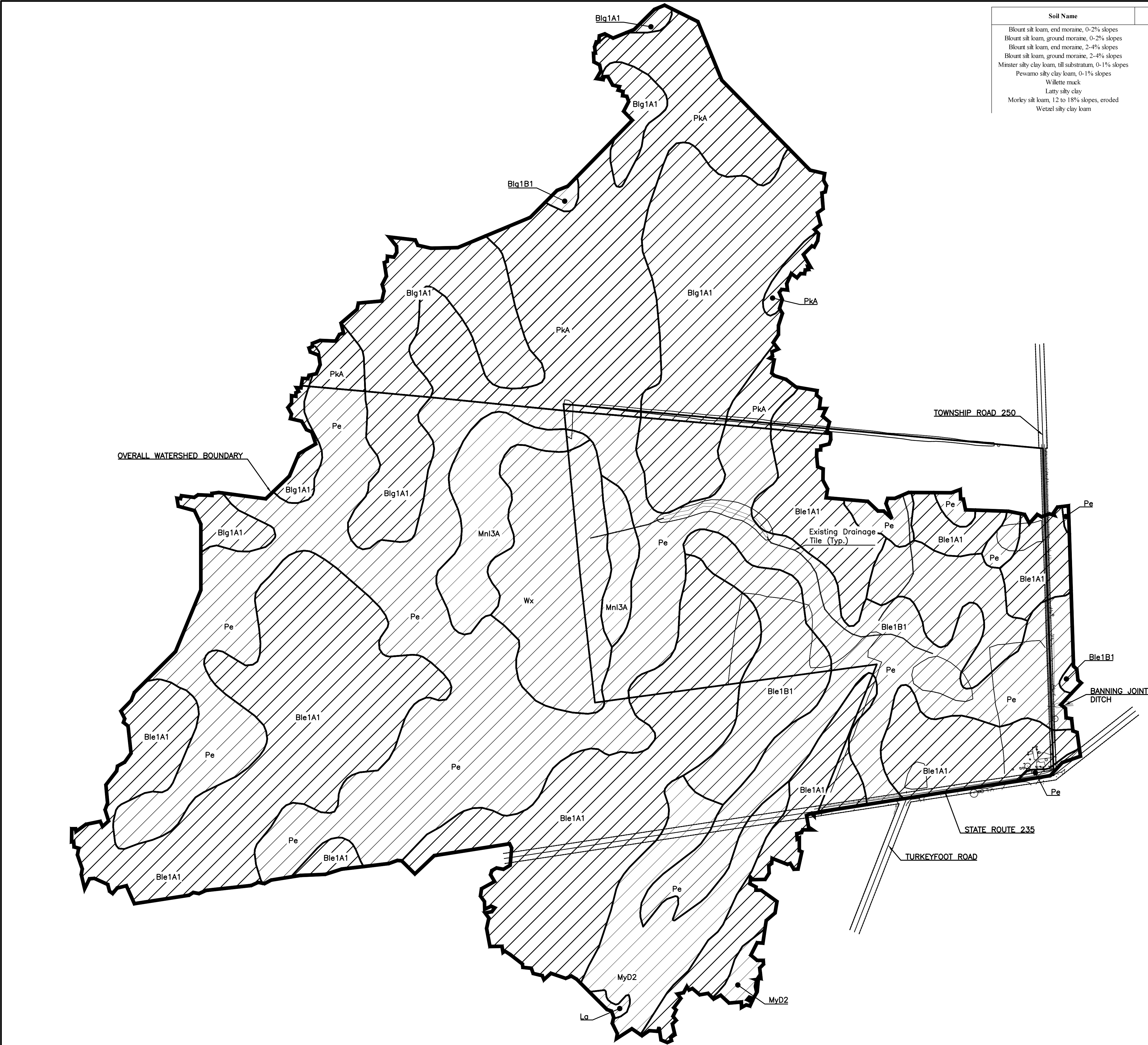
Hydrograph type	= Reservoir	Peak discharge	= 70.01 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.92 hrs
Time interval	= 5 min	Hyd. volume	= 2,166,585 cuft
Inflow hyd. No.	= 21 - Pond 1 Total Inflow	Max. Elevation	= 1003.23 ft
Reservoir name	= <New Pond>	Max. Storage	= 198,775 cuft

Storage Indication method used.



Peak discharge = 213.81 cfs
Time to peak = 12.50 hrs
Hyd. volume = 1,877,445 cuft
Contrib. drain. area = 153.200 ac



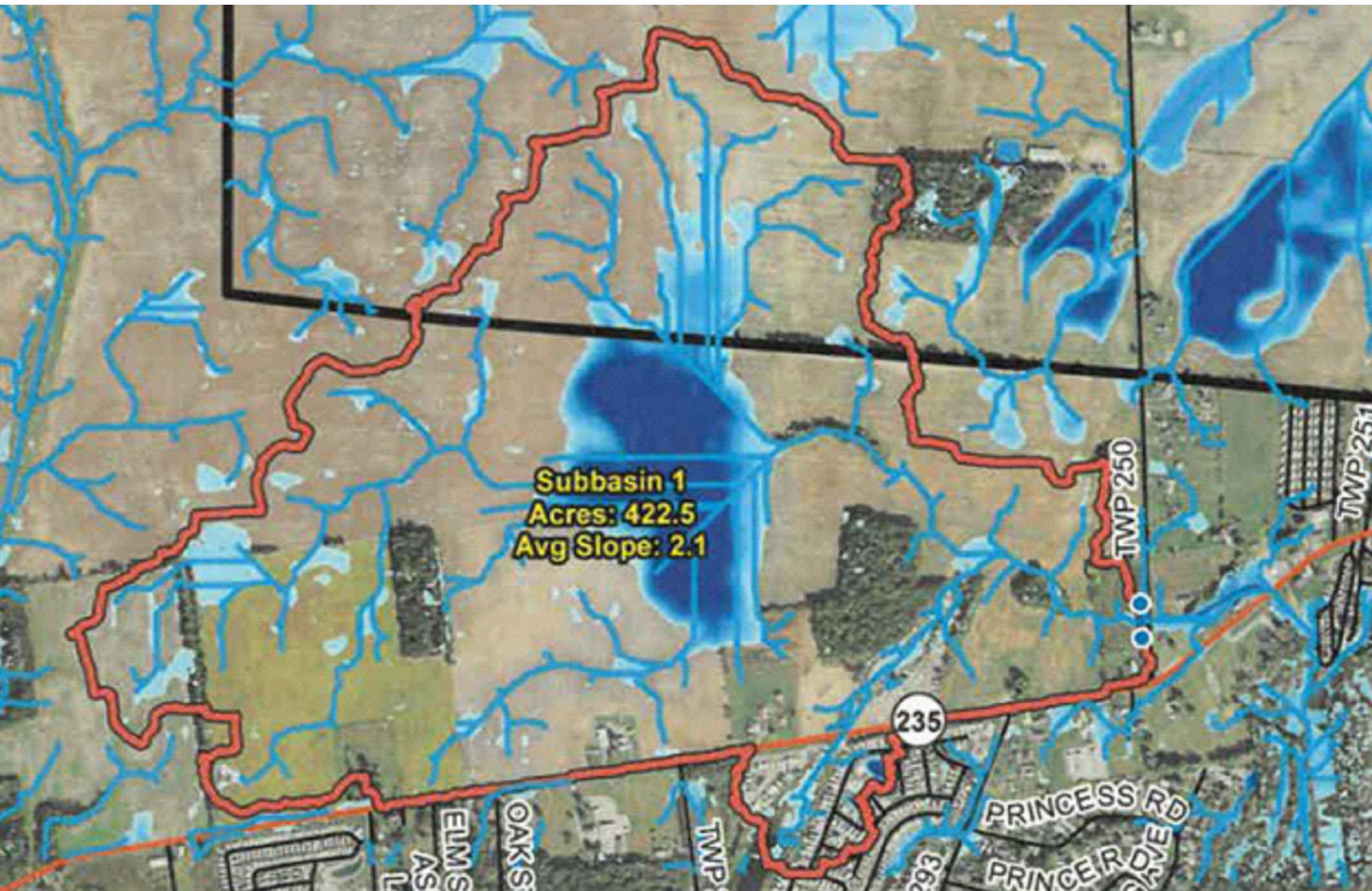


Soil Name	Map Unit Symbol	Hydrologic Soil Group	Cover Description
Blount silt loam, end moraine, 0-2% slopes	Ble1A1	D	Small grain crops, good condition, 8% dense woods cover, fair condition, 10% residential cover
Blount silt loam, ground moraine, 0-2% slopes	Ble1A1	D	Small grain crops, good condition, 3% dense woods cover, fair condition
Blount silt loam, end moraine, 2-4% slopes	Ble1B1	D	Small grain crops, 33% dense woods cover, fair condition
Blount silt loam, ground moraine, 2-4% slopes	Ble1B1	D	Small grain crops, good condition
Minster silty clay loam, till substratum, 0-1% slopes	Mn13A	C/D	Small grain crops, good condition, 1% dense woods cover, fair condition, 17% water cover, 59% residential cover
Pewamo silty clay loam, 0-1% slopes	PkA/Pe	C/D	Small grain crops, good condition, 4% dense woods cover, fair condition, 3% residential cover
Willette muck	Wx	C/D	Small grain crops, good condition, 20% dense woods cover, fair condition
Latty silty clay	La	C/D	Residential cover
Morley silt loam, 12 to 18% slopes, eroded	MyD2	C	Small grain crops, good condition, 18% water cover, 57% residential cover
Wetzel silty clay loam	Wv	C/D	Residential cover

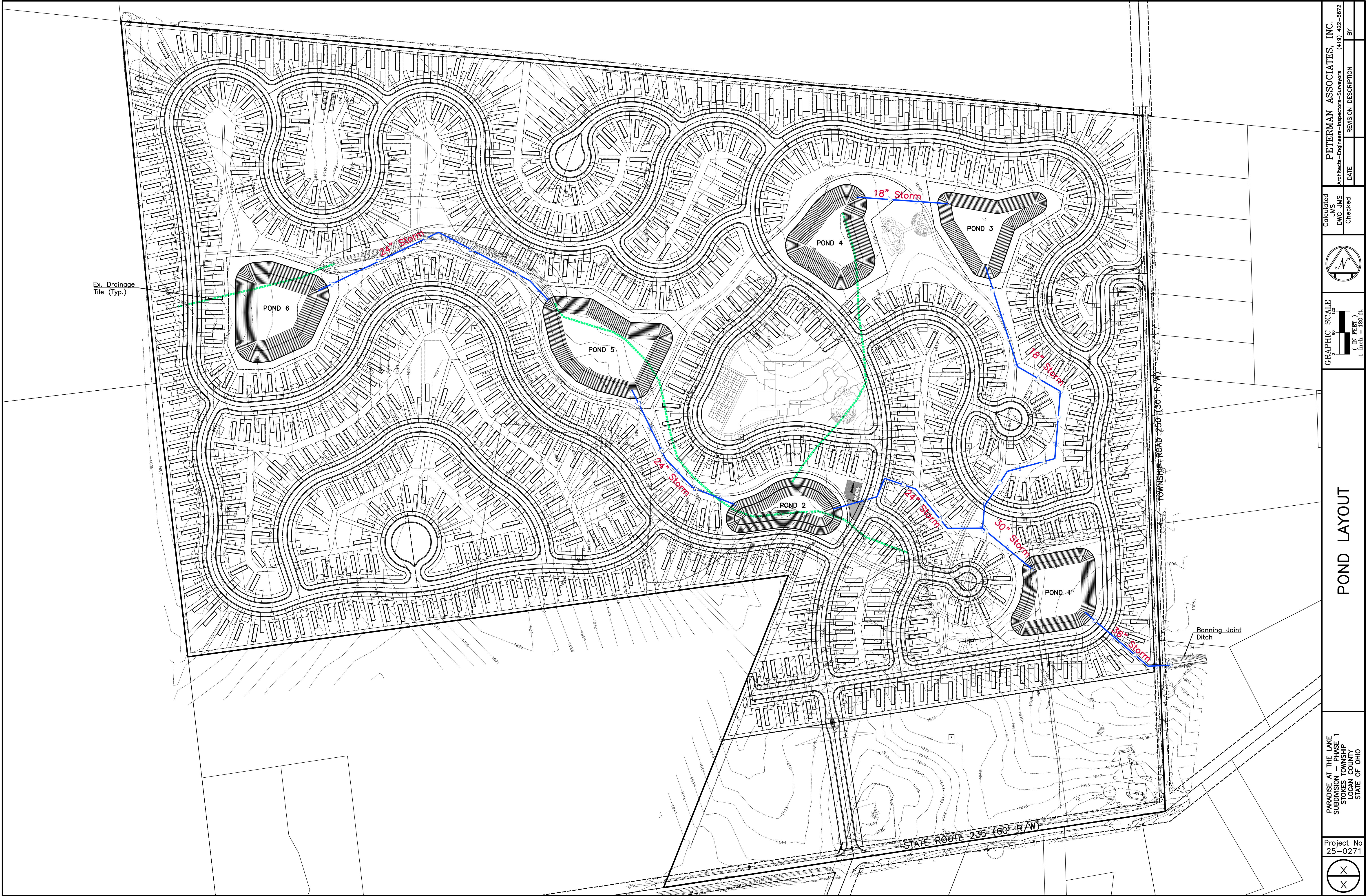
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ble1A1	Blount silt loam, end moraine, 0 to 2 percent slopes	1.5	0.4%
Ble1A1	Blount silt loam, ground moraine, 0 to 2 percent slopes	44.0	10.5%
Ble1B1	Blount silt loam, ground moraine, 2 to 4 percent slopes	0.5	0.1%
PkA	Pewamo silty clay loam, 0 to 1 percent slopes	46.8	11.2%
Subtotals for Soil Survey Area		92.8	22.1%
Totals for Area of Interest		419.1	100.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ble1A1	Blount silt loam, end moraine, 0 to 2 percent slopes	120.2	28.7%
Ble1B1	Blount silt loam, end moraine, 2 to 4 percent slopes	22.3	5.3%
Ble1A1	Blount silt loam, ground moraine, 0 to 2 percent slopes	16.9	4.0%
La	Latty silty clay	0.0	0.0%
Mn13A	Minster silty clay loam, till substratum, 0 to 1 percent slopes	13.0	3.1%
MyD2	Morley silt loam, 12 to 18 percent slopes, eroded	16.4	3.9%
Pe	Pewamo silty clay loam, 0 to 1 percent slopes	116.7	27.6%
Wv	Wetzel silty clay loam	0.4	0.1%
Wx	Willette muck	20.4	4.9%

TOTAL WATERSHED AREA = 417.83 ACRES



Note: The Watershed Map Shown On This Sheet Was Developed Using OGRIP LIDAR Contour Data And USGS StreamStats Data. Soil Data Was Acquired From USDA NRCS Web Soil Survey. Land Cover Data Was Gathered From Aerial Imagery.



NO SUBCONTRACTOR SHOULD BE PROVIDED WITH A PARTIAL SET OF PLANS FOR EITHER BIDDING OR CONSTRUCTION PURPOSES WITHOUT FIRST TAKING AMPLE TIME TO REVIEW A COMPLETE SET IN ORDER TO DETERMINE FOR THEMSELVES THE INFORMATION AND DOCUMENTATION THEY WISH TO HAVE COPIED. THERE ARE MANY CROSS REFERENCES IN A SET OF CONSTRUCTION DOCUMENTS. ANY DISCREPANCIES SHOULD BE BROUGHT TO THE ATTENTION OF THE DESIGN PROFESSIONAL FOR FORMAL CLARIFICATION. SUBCONTRACTORS ARE RESPONSIBLE FOR BIDDING AND CONSTRUCTION IN ACCORDANCE WITH THE COMPLETE CONSTRUCTION DOCUMENTS, NOT SPECIFIC SHEETS. ONLY HAVING A PARTIAL SET OF DRAWINGS SHALL NOT BE ACCEPTED AS AN EXCUSE FOR DELAYS OR INCOMPLETE WORK.



STORM SEWER SYSTEM

PID : **Date :** 04/07/2026 **Project :** Paradise At The Lake P1 **Location :** Stokes Township, Logan County, Ohio
Description : This is the storm sewer sizing for Sandal Way, Coastal Drive, Paradise Lane **Designer :** James Schroeder

Rainfall Area: B **Just Full Capacity Frequency (yrs.) :** 5 **Hydraulic Gradient Frequency (yrs.) :** 10
Minimum Pipe Size : 12.00 **Tailwater Elevation (ft.):** 0.00

JUNCTION From	STATION To	Δ AREA Σ AREA (acres)	Δ CA Σ CA	BEGIN TIME (min.)	RAINFALL INTENSITY (5 yrs.) (10 yrs.)	DISCHARGE (cfs.) (5 yrs.) (10 yrs.)	PIPE DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	F/L PIPE IN / OUT (ft.)	MEAN VEL (fps.)	JUST FULL CAPACITY (cfs.)	FRICT SLOPE (ft./ft.)	HYGR EL. IN / OUT (ft.)	COVER IN / OUT (ft.)	COVER MINUS HY GR	COVER MINUS CROWN	INLET TYPE MANNING'S 'n'
CI53	CI54	0.25 0.25	0.18 0.17	10.00	4.55 4.57	0.8 0.8	12	23.0	0.0050	1006.79 1006.68	3.01	2.94	0.0004	1008.35 1008.34	1009.25 1009.25	0.90	1.46	1 3A 0.012
CI54	CI55	0.35 0.60	0.25 0.42	10.13	4.52 4.57	1.9 1.9	12	304.2	0.0030	1006.57 1005.66	3.04	2.27	0.0025	1008.34 1007.59	1009.20 1012.37	0.86	1.63	1 3A 0.012
CI55	MH2	0.30 0.90	0.21 0.63	11.79	4.23 4.57	2.7 2.9	12	51.5	0.0070	1005.56 1005.20	3.74	2.78	0.0087	1007.59 1007.14	1012.33 1012.33	4.74	5.77	1 3A 0.015
CI56	CI57	0.27 1.17	0.19 0.82	10.00	4.55 4.83	0.9 0.9	12	36.5	0.0050	1010.16 1009.98	3.07	2.94	0.0006	1010.75 1010.73	1012.62 1012.81	1.87	1.46	1 3A 0.012
CI57	CI58	0.32 1.49	0.22 1.04	10.20	4.51 4.83	1.9 2.0	12	23.0	0.0050	1009.88 1009.77	3.74	2.94	0.0027	1010.73 1010.67	1012.65 1012.65	1.92	1.77	1 3A 0.012
CI60	CI59	0.45 1.94	0.32 1.36	10.00	4.55 5.05	1.4 1.6	12	23.0	0.0040	1014.30 1014.21	3.24	2.63	0.0017	1015.02 1014.98	1016.76 1016.76	1.74	1.46	1 3A 0.012
CI59	CI58	0.45 2.39	0.32 1.67	10.12	4.52 4.83	2.8 3.0	12	271.4	0.0060	1011.40 1009.77	4.33	3.22	0.0062	1012.35 1010.67	1016.65 1012.58	4.30	4.25	1 3A 0.012
CI58	MH2	0.30 2.69	0.21 1.88	11.16	4.34 4.83	5.4 6.0	15	51.5	0.0060	1009.42 1009.11	5.05	5.84	0.0075	1010.67 1010.23	1012.53 1011.91	1.86	1.86	1 3A 0.012



STORM SEWER SYSTEM

JUNCTION		STATION		ΔAREA	ΔCA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From	To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (5 yrs.)	(10 yrs.)	(5 yrs.)	(10 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
CI51	MH1			0.25 2.94	0.18 2.06	10.00	4.55	5.04	0.8	0.9	12	35.3	0.0050	1007.35 1007.17	3.01	2.94	0.0005	1007.89 1007.87	1009.81 1010.27	1.92	1.46	1 3A 0.012
CI52	MH1			0.25 3.19	0.18 2.23	10.00	4.55	5.05	0.8	0.9	12	24.9	0.0052	1007.30 1007.17	3.05	3.00	0.0005	1007.88 1007.87	1010.13 1010.32	2.25	1.83	1 3A 0.012
MH1	MH2			0.00 3.19	0.00 2.23	10.20	4.51	4.57	1.6	1.6	12	180.2	0.0040	1007.07 1006.35	3.31	2.62	0.0017	1007.66 1007.14	1010.27 1011.83	2.61	2.20	MH 3 0.012
MH2	CI50			0.00 3.19	0.00 2.23	12.02	4.19	4.57	9.4	10.2	18	25.5	0.0062	1004.70 1004.54	5.75	9.64	0.0080	1007.14 1006.93	1011.82 1011.37	4.68	5.62	MH 3 0.012
CI49	CI50			0.32 3.51	0.22 2.46	10.00	4.55	5.05	1.0	1.1	12	23.0	0.0050	1008.99 1008.88	3.22	2.94	0.0009	1009.62 1009.60	1011.45 1011.45	1.83	1.46	1 3A 0.012
CI50	CI48			0.37 3.88	0.26 2.72	12.10	4.18	4.57	11.4	12.4	18	170.3	0.0090	1004.44 1002.91	6.90	11.60	0.0119	1006.93 1004.90	1011.36 1009.23	4.43	5.42	1 3A 0.012
CI47	CI48			0.30 4.18	0.21 2.93	10.00	4.55	5.05	1.0	1.1	12	23.0	0.0052	1006.82 1006.70	3.22	3.00	0.0008	1007.43 1007.42	1009.28 1009.28	1.85	1.46	1 3A 0.012
CI48	MH3			0.35 4.53	0.25 3.17	12.51	4.12	4.57	13.1	14.5	18	137.9	0.0115	1002.81 1001.22	7.39	13.14	0.0162	1004.90 1002.67	1009.19 1007.48	4.29	4.88	1 3A 0.012
CI30	CI32			0.33 4.86	0.23 3.40	10.00	4.55	4.97	1.1	1.1	12	106.7	0.0050	1008.69 1008.16	3.24	2.94	0.0009	1009.14 1008.88	1011.51 1010.61	2.37	1.82	1 3A 0.012
CI31	CI32			0.26 5.12	0.18 3.58	10.00	4.55	5.05	0.8	0.9	12	23.0	0.0050	1008.20 1008.09	3.04	2.94	0.0006	1008.80 1008.79	1010.66 1010.66	1.86	1.46	1 3A 0.012
CI32	MH4			0.32 5.44	0.22 3.81	10.55	4.44	4.93	2.8	3.1	12	78.3	0.0124	1008.09 1007.12	5.84	4.62	0.0066	1008.72 1008.00	1010.58 1009.58	1.86	1.49	1 3A 0.012



STORM SEWER SYSTEM

JUNCTION		STATION	ΔAREA	ΔCA	BEGIN	RAINFALL			DISCHARGE		PIPE		F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (5 yrs.)	(10 yrs.)	(5 yrs.)	(10 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
CI27	CI28		0.20 5.64	0.14 3.95	10.00	4.55	4.47	0.6	0.6	12	29.9	0.0058	1005.36 1005.19	3.00	3.16	0.0003	1006.06 1006.05	1007.90 1007.66	1.84	1.54	1 3A 0.012
CI29	CI28		0.30 5.94	0.21 4.16	10.00	4.55	4.47	1.0	0.9	12	23.0	0.0050	1005.23 1005.12	3.16	2.94	0.0006	1006.06 1006.05	1007.69 1007.69	1.63	1.46	1 3A 0.012
CI28	MH4		0.34 6.28	0.24 4.40	10.17	4.51	4.47	2.7	2.6	12	60.3	0.0050	1005.01 1004.71	3.95	2.93	0.0046	1006.05 1005.77	1007.62 1009.65	1.57	1.61	1 3A 0.012
MH4	CI33		0.00 6.28	0.00 4.40	10.77	4.40	4.47	5.4	5.5	15	102.1	0.0060	1004.36 1003.75	5.03	5.82	0.0061	1005.77 1005.14	1009.73 1008.83	3.96	4.12	MH 3 0.012
CI33	CI34		0.30 6.58	0.21 4.61	11.11	4.34	4.47	6.2	6.4	15	23.0	0.0070	1003.65 1003.49	5.08	6.28	0.0084	1005.14 1004.95	1008.58 1008.58	3.44	3.68	1 3A 0.012
CI34	CI35		0.30 6.88	0.21 4.82	11.19	4.33	4.47	7.1	7.4	15	74.1	0.0090	1003.39 1002.72	5.81	7.16	0.0110	1004.95 1004.13	1008.52 1007.30	3.57	3.88	1 3A 0.012
CI35	CI36		0.28 7.16	0.20 5.01	11.40	4.30	4.47	7.9	8.2	15	46.0	0.0120	1002.62 1002.07	7.09	8.24	0.0138	1004.13 1003.50	1007.47 1006.67	3.34	3.60	1 3A 0.012
CI36	CI37		0.33 7.49	0.23 5.24	11.51	4.28	4.47	8.9	9.3	18	23.0	0.0060	1001.82 1001.68	5.69	9.48	0.0066	1003.50 1003.35	1006.52 1006.52	3.02	3.20	1 3A 0.012
CI37	MH3		0.34 7.83	0.24 5.48	11.57	4.27	4.47	9.9	10.3	18	116.7	0.0070	1001.58 1000.76	6.13	10.24	0.0082	1003.35 1002.39	1006.42 1007.47	3.07	3.34	1 3A 0.012
MH3	CI39		0.00 7.83	0.00 5.48	12.82	4.07	4.47	22.3	24.5	27	98.9	0.0040	1000.02 999.62	6.09	22.95	0.0053	1002.39 1001.86	1007.42 1005.75	5.03	5.15	MH 3 0.012
CI38	CI39		0.30 8.13	0.21 5.69	10.00	4.55	5.05	1.0	1.1	12	23.0	0.0050	1003.36 1003.25	3.16	2.94	0.0008	1003.98 1003.96	1005.82 1005.82	1.84	1.46	1 3A 0.012



STORM SEWER SYSTEM

JUNCTION		STATION		ΔAREA	ΔCA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From	To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (5 yrs.)	(10 yrs.)	(5 yrs.)	(10 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
CI39	CI40			0.35 8.48	0.25 5.94	13.09	4.03	4.47	23.9	26.5	27	99.4	0.0044	999.52 999.08	6.02	23.94	0.0062	1001.86 1001.24	1005.74 1004.83	3.88	3.97	1 3A 0.012
CI46	CI45			0.30 8.78	0.21 6.15	10.00	4.55	5.05	1.0	1.1	12	23.0	0.0050	1007.74 1007.62	3.16	2.94	0.0008	1008.36 1008.34	1010.20 1010.20	1.84	1.46	1 3A 0.012
CI45	CI44			0.31 9.09	0.22 6.36	10.12	4.52	4.99	1.9	2.1	12	107.2	0.0163	1007.53 1005.78	5.90	5.30	0.0030	1007.99 1006.59	1010.16 1008.24	2.17	1.63	1 3A 0.012
CI44	CI42			0.35 9.44	0.25 6.61	10.42	4.47	4.89	3.0	3.3	12	92.9	0.0192	1005.68 1003.90	7.00	5.75	0.0072	1006.25 1005.14	1008.18 1006.36	1.93	1.50	1 3A 0.012
CI43	CI42			0.28 9.72	0.20 6.80	10.00	4.55	4.89	0.9	1.0	12	23.0	0.0050	1003.94 1003.83	3.10	2.94	0.0006	1005.16 1005.14	1006.40 1006.40	1.24	1.46	1 3A 0.012
CI42	CI40			0.29 10.01	0.20 7.01	10.65	4.43	4.89	4.7	5.2	12	133.1	0.0150	1003.73 1001.73	6.87	5.09	0.0184	1005.14 1002.69	1006.30 1004.82	1.16	1.57	1 3A 0.012
CI40	CI41			0.34 10.35	0.24 7.24	13.37	3.99	4.47	28.9	32.4	30	23.1	0.0040	998.74 998.65	6.51	30.23	0.0053	1001.24 1000.89	1004.91 1004.91	3.67	3.67	1 3A 0.012
CI41	END			0.20 10.55	0.14 7.38	13.42	3.98	4.47	29.4	33.0	30	30.0	0.0050	998.65 998.50	7.27	33.80	0.0055	1000.89 1000.73	1005.08 998.50	4.19	3.93	HW Full He 0.012



STORM SEWER SYSTEM

PID : <?xml vers **Date :** 04/07/2026 **Project :** Paradise At The Lake P1

Location : Stokes Township, Logan County, Ohio

Description : This is the storm sewer sizing for the sewers on the east side of Kiwi Drive

Designer : James Schroeder

Rainfall Area: B

Just Full Capacity Frequency (yrs.) : 5

Hydraulic Gradient Frequency (yrs.) : 10

Minimum Pipe Size : 12.00

Tailwater Elevation (ft.): 0.00

JUNCTION	STATION	Δ AREA	Δ CA	BEGIN	RAINFALL	DISCHARGE	PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	Σ AREA	Σ CA	TIME	INTENSITY	(cfs.)	DIAM.	LENGTH	SLOPE	IN / OUT	VEL	CAPACITY	SLOPE	IN / OUT	IN / OUT	MINUS	MINUS	MANNING'S
	From	(acres)		(min.)	(5 yrs.)	(10 yrs.)	(5 yrs.)	(10 yrs.)	(in.)	(ft.)	(ft./ft.)	(ft.)	(fps.)	(cfs.)	(ft./ft.)	(ft.)	(ft.)	'n'
CI26	CI25	0.30	0.21	10.00	4.55	5.05	1.0	1.1	12	23.0	0.0043	1009.38	3.00	2.74	0.0008	1010.01	1012.43	1 3A
		0.30	0.21									1009.28				1010.00	1012.43	0.012
CI25	CI24	0.33	0.23	10.13	4.52	4.94	2.0	2.2	12	133.7	0.0089	1009.18	4.74	3.92	0.0032	1009.74	1012.34	1 3A
		0.63	0.44									1007.99				1008.95	1011.04	0.012
CI22	CI23	0.34	0.24	10.00	4.55	4.94	1.1	1.2	12	23.0	0.0043	1008.31	3.10	2.74	0.0009	1009.07	1011.36	1 3A
		0.97	0.68									1008.21				1009.05	1011.36	0.012
CI23	CI24	0.28	0.20	10.12	4.52	4.94	2.0	2.1	12	35.1	0.0035	1008.11	3.27	2.46	0.0031	1009.05	1011.52	1 3A
		1.25	0.88									1007.99				1008.95	1011.25	0.012
CI24	CI21	0.00	0.00	10.60	4.43	4.94	3.9	4.3	12	33.6	0.0090	1007.89	5.26	3.94	0.0125	1008.95	1011.11	1 3A
		1.25	0.88									1007.59				1008.52	1010.81	0.012
CI21	CI19	0.35	0.25	10.70	4.42	4.75	4.9	5.3	15	165.3	0.0110	1007.24	6.42	7.90	0.0058	1008.08	1010.69	1 3A
		1.60	1.12									1005.42				1007.13	1008.88	0.012
CI20	CI19	0.30	0.21	10.00	4.55	4.75	1.0	1.0	12	23.0	0.0100	1005.90	4.07	4.15	0.0007	1007.15	1008.95	1 3A
		1.90	1.33									1005.67				1007.13	1008.95	0.012
CI19	CI18	0.29	0.20	11.13	4.34	4.75	6.7	7.3	15	83.3	0.0080	1005.32	5.77	6.75	0.0108	1007.13	1008.86	1 3A
		2.19	1.53									1004.65				1006.23	1008.18	0.012



STORM SEWER SYSTEM

JUNCTION		STATION	ΔAREA	ΔCA	BEGIN	RAINFALL			DISCHARGE		PIPE		F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (5 yrs.)	(10 yrs.)	(5 yrs.)	(10 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
CI18	MH10		0.28 2.47	0.20 1.73	11.37	4.30	4.75	7.4	8.2	15	29.9	0.0100	1004.55 1004.25	6.45	7.55	0.0137	1006.23 1005.82	1007.97 1007.83	1.74	2.17	1 3A 0.012
MH10	CI17		0.00 2.47	0.00 1.73	11.45	4.29	4.75	7.4	8.2	15	130.0	0.0100	1004.15 1002.85	6.44	7.53	0.0137	1005.82 1004.04	1007.77 1006.88	1.95	2.37	MH 3 0.012
CI16	CI17		0.35 2.82	0.25 1.97	10.00	4.55	4.58	1.1	1.1	12	23.0	0.0050	1003.21 1003.10	3.30	2.94	0.0008	1004.02 1004.00	1006.95 1006.95	2.93	2.74	1 3A 0.012
CI17	CI15		0.20 3.02	0.14 2.11	11.79	4.23	4.58	8.9	9.7	18	49.3	0.0061	1002.50 1002.20	5.73	9.55	0.0072	1004.00 1003.60	1006.86 1007.08	2.86	2.86	1 3A 0.012
CI15	CI13		0.20 3.22	0.14 2.25	11.93	4.21	4.58	9.5	10.3	18	53.0	0.0070	1002.10 1001.73	6.14	10.23	0.0082	1003.60 1003.13	1007.11 1007.55	3.51	3.51	1 3A 0.012
CI14	CI13		0.26 3.48	0.18 2.44	10.00	4.55	5.05	0.8	0.9	12	23.0	0.0052	1004.61 1004.49	3.09	3.00	0.0006	1005.20 1005.19	1007.66 1007.66	2.46	2.05	1 3A 0.012
CI1	CI2		0.25 3.73	0.18 2.61	10.00	4.55	5.05	0.8	0.9	12	23.0	0.0054	1008.41 1008.29	3.10	3.05	0.0005	1008.99 1008.98	1013.28 1013.28	4.29	3.87	1 3A 0.012
CI2	CI3		0.25 3.98	0.19 2.80	10.12	4.52	4.59	1.6	1.7	12	197.8	0.0060	1008.19 1007.00	3.89	3.22	0.0019	1008.72 1008.26	1013.22 1010.85	4.50	4.03	1 3A 0.012
CI4	CI3		0.25 4.23	0.18 2.97	10.00	4.55	4.59	0.8	0.8	12	23.5	0.0051	1007.22 1007.10	3.03	2.97	0.0004	1008.27 1008.26	1010.88 1010.89	2.61	2.66	1 3A 0.012
CI3	CI5		0.30 4.53	0.21 3.18	10.97	4.37	4.59	3.3	3.4	12	114.5	0.0102	1007.00 1005.83	5.56	4.19	0.0079	1008.26 1007.36	1010.80 1009.33	2.54	2.80	1 3A 0.012
CI6	CI5		0.27 4.80	0.19 3.37	10.00	4.55	4.59	0.9	0.9	12	23.0	0.0050	1005.95 1005.84	3.07	2.94	0.0005	1007.37 1007.36	1009.41 1009.41	2.04	2.46	1 3A 0.012



STORM SEWER SYSTEM

JUNCTION		STATION		ΔAREA	ΔCA	BEGIN	RAINFALL		DISCHARGE		PIPE			F/L PIPE	MEAN	JUST FULL	FRICT	HYGR EL.	COVER	COVER	COVER	INLET TYPE
From	To	From	To	Σ AREA (acres)	Σ CA	TIME (min.)	INTENSITY (5 yrs.)	(10 yrs.)	(5 yrs.)	(10 yrs.)	DIAM. (in.)	LENGTH (ft.)	SLOPE (ft./ft.)	IN / OUT (ft.)	VEL (fps.)	CAPACITY (cfs.)	SLOPE (ft./ft.)	IN / OUT (ft.)	IN / OUT (ft.)	MINUS HY GR	MINUS CROWN	MANNING'S 'n'
CI5	CI7			0.30 5.10	0.21 3.58	11.31	4.31	4.59	4.9	5.3	15	104.8	0.0044	1005.49 1005.03	4.03	4.99	0.0056	1007.36 1006.77	1009.33 1009.78	1.97	2.59	1 3A 0.012
CI8	CI7			0.35 5.45	0.25 3.83	10.00	4.55	4.59	1.1	1.1	12	23.0	0.0050	1005.39 1005.28	3.30	2.94	0.0008	1006.79 1006.77	1009.85 1009.85	3.06	3.46	1 3A 0.012
CI7	CI9			0.34 5.79	0.24 4.07	11.75	4.24	4.59	6.9	7.5	15	94.7	0.0090	1004.93 1004.08	6.13	7.13	0.0114	1006.77 1005.69	1009.82 1009.82	3.05	3.64	1 3A 0.012
CI10	CI9			0.33 6.12	0.23 4.30	10.00	4.55	4.59	1.1	1.1	12	23.0	0.0050	1004.44 1004.33	3.24	2.94	0.0008	1005.71 1005.69	1009.96 1009.96	4.25	4.52	1 3A 0.012
CI9	CI11			0.35 6.47	0.25 4.54	12.00	4.20	4.59	8.8	9.7	18	91.0	0.0054	1003.73 1003.24	5.35	9.00	0.0072	1005.69 1005.03	1009.92 1009.39	4.23	4.69	1 3A 0.012
CI12	CI11			0.30 6.77	0.21 4.75	10.00	4.55	4.59	1.0	1.0	12	23.0	0.0048	1003.84 1003.73	3.12	2.87	0.0006	1005.05 1005.03	1009.45 1009.45	4.40	4.61	1 3A 0.012
CI11	CI13			0.35 7.12	0.25 5.00	12.29	4.15	4.59	10.6	11.7	18	164.8	0.0076	1003.13 1001.88	6.01	10.66	0.0106	1005.03 1003.28	1009.37 1007.57	4.34	4.74	1 3A 0.012
CI13	MH5			0.25 7.37	0.18 5.17	12.74	4.08	4.58	21.1	23.7	27	15.8	0.0040	1000.88 1000.82	6.08	22.83	0.0050	1003.13 1002.79	1007.11 1007.97	3.98	3.98	1 3A 0.012
MH5	END			0.00 7.37	0.00 5.17	12.79	4.07	4.53	21.1	23.4	27	117.4	0.0050	999.09 998.50	6.75	25.59	0.0049	1001.04 1000.47	1007.98 1000.01	6.94	6.64	MH 3 0.012

version 1.3 2023-05-15

Project Name:	Park Model Paradise At The Lake Phase 1
Project Location:	Northwest corner of intersection of Township
Subwatershed ID/Label:	Pond 1 Drainage Area
Project Latitude:	40.524921
Project Longitude:	-83.862848
NPDES Permit Applicant:	Kody Newland
Submitted by:	James Schroeder, EIT
Date:	5/1/2026

Enter longitude at entrance to site in decimal degrees (format: -81.465240)

Select from dropdown which watershed the project is located in, select "Statewide" if not in the Big Darby Creek Watershed

Report to the nearest 0.01 acre; include any drainage from off-site

All Basin dewatering discharge calculations in these worksheets assume free discharge from the outlet (i.e., no tailwater)

Watershed: Statewide 

Subwatershed Total Drainage Area, A_{total}	23.91 acres	=	1,041,520 ft^2
Subwatershed Disturbed Drainage Area, A_{dist}	10.50 acres	=	457,380 ft^2

For Statewide Watersheds

Minimum Sediment Storage Volume, Vsediment =	10500 ft3	=	389 yd3	=	0.241 acre-ft
Minimum Dewatering Zone Volume, Vdewatering =	43038 ft3	=	1,594 yd3	=	0.988 acre-ft

Requirement: Minimum Sediment Volume = 1000 ft³/acre of disturbed drainage area
Requirement: Minimum Dewatering Volume = 1800 ft³/acre of total drainage area

[illegible]

The diagram illustrates a cross-section of a pond with the following elevation data:

- Top of Pond Elevation = 1005.00 ft**
- Secondary Outlet Invert Elevation = 1000.00 ft**
- Skimmer Outlet/Stop Elevation = 998.00 ft**
- Bottom of Pond Elevation = 997.50 ft**

The pond is divided into two main zones:

- Dewatering Zone** (light blue area above the skimmer outlet)
- Sediment Storage Zone** (yellow area below the skimmer outlet)

A vertical double-headed arrow indicates the height of the dewatering zone. A pipe with a valve is shown on the right side, connected to the secondary outlet invert.

Note: The basin dewatering discharge calculation in this worksheet assumes a free discharge from the outlet (i.e., no tailwater). The skimmer outlet elevation may need to be adjusted upward to account for tailwater as appropriate. Tailwater is common to low gradient ditches or water bodies with prolonged increases in water level

Step 3 - Outlet Elevations and Storage Volumes

Skimmer Outlet Invert/Skimmer Stop Elevation =	998.00 ft	OKAY
Secondary Outlet Invert Elevation =	1000.00 ft	OKAY
Provided Sediment Storage Volume =	14,538 ft ³	OKAY
Provided Dewatering Volume =	63,307 ft ³	OKAY

The invert of the Skimmer Outlet/Skimmer Stop (e.g. stone pad) corresponds to the top of the sediment storage zone/permanent pool and the bottom of the Dewatering Volume. It cannot be below the bottom of the pond.
The invert elevation for the next (usually peak discharge or flood control) outlet. This elevation must exceed that of the Skimmer Outlet Invert Elevation and be below the top of the pond. *Check - The difference between the skimmer outlet invert/skimmer stop elevation and the secondary outlet invert elevation (dewatering zone depth) must not exceed 5ft.

The Sediment Storage Volume must exceed the requirement listed above in Step 1

The Dewatering Volume must exceed the requirement listed above in Step 1

ERROR Check - The Step 2 Stage Storage Table above must include the exact Skimmer Outlet/Skimmer Stop Elevation and the Secondary Outlet Invert Elevation provided in Step 3

Step 4 - Skimmer-Type Outlet Sizing

Select Skimmer Type or Manufacturer: Delaware DOT Skimmer

Delaware: See Calculator Below

Orifice Size Selected: 3 in
Dewatering Drawdown Time: 77 hrs

Follow Step 5 below to identify skimmer orifice size to meet dewatering time requirement

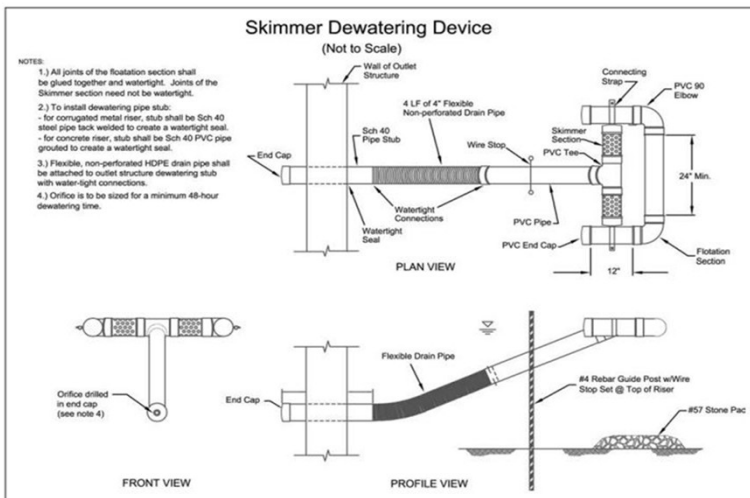
Check to ensure that orifice sizing calculation is done using required, NOT provided dewatering volume
Check that dewatering drawdown time is greater than 2 days and less than 7 days

The skimmer orifice size estimate uses a variable head skimmer with the orifice drilled in an end cap inside the outlet structure

Example Delaware Skimmer Spec Sheet

Delaware Skimmer Photo

Please note the drawing and image shown below are provided solely to assist with identification of the skimmer type and its associated components. The drawing and photo below does not necessarily depict an installation that complies with the General Permit or Rainwater & Land Development specification, especially where the sediment storage zone is omitted.



Maximum Hydraulic Head, Hmax =	1.88	ft		
Orifice Coefficient, C =	0.6			
Target (Minimum) Draw-down Time, Td-min =	48	hr		
Target Average Discharge, Qavg =	0.37	cfs		
Average Hydraulic Head, Havg =	0.94	ft		
Estimated Orifice Area, Aorifice =	11.32	in2	=	0.08 ft2
Estimated Orifice Diameter, Dorifice =	3.80	in	=	0.32 ft
Design Orifice Diameter, Dorifice =	3.00	in	=	0.25 ft
Design Orifice Area, Aorifice =	7.02	in2	=	0.05 ft2
Time to Completely Drain Dewatering Volume, Td =	77.34	hr	must be > 48 hrs	OKAY
			should be < 168 hrs	OKAY
			(7 days)	

Hmax is the dewatering depth measured from the skimmer orifice invert to top of the dewatering zone
Orifice equation discharge coefficient, Corifice = 0.6 is typical (range 0.59-0.62)
Minimum drawdown time specified by CGP and RLD
Qavg = Dewatering Volume/Td-min
Havg = Hmax/2
Orifice Area, Aorifice = Qavg/[C(2*g*Havg)0.5]

Enter a design orifice diameter similar to the estimated diameter, but orifice diameter cannot exceed max head
Oftentimes the diameter can be slightly increased or decreased to meet a standard dimension, provided it meet:

- The dewatering drawdown time (Td) must be at least 48 hrs and less than 7 days for a sediment basin

version 1.3 2023-05-15

Project Name:	Park Model Paradise At The Lake Phase 1
Project Location:	Northwest corner of intersection of Township
Subwatershed ID/Label:	Pond 2 Drainage Area
Project Latitude:	40.524921
Project Longitude:	-83.862848
NPDES Permit Applicant:	Kody Newland
Submitted by:	James Schroeder, EIT
Date:	5/1/2026

Enter longitude at entrance to site in decimal degrees (format: -81.465240)

Select from dropdown which watershed the project is located in, select "Statewide" if not in the Big Darby Creek Watershed

Report to the nearest 0.01 acre; include any drainage from off-site

All Basin dewatering discharge calculations in these worksheets assume free discharge from the outlet (i.e., no tailwater)

Watershed: Statewide 

Subwatershed Total Drainage Area, A_{total} = 27.75 acres = 1,208,790 ft^2

Subwatershed Disturbed Drainage Area, A_{dist} = 10.50 acres = 457,380 ft^2

For Statewide Watersheds

Minimum Sediment Storage Volume, $V_{\text{sediment}} = 10500 \text{ ft}^3 = 389 \text{ yd}^3 = 0.241 \text{ acre-ft}$

Minimum Dewatering Zone Volume, $V_{\text{dewatering}}$ =	49950 ft ³	=	1,850 yd ³	=	1.147 acre-ft
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Requirement: Minimum Sediment Volume = 1000 ft³/acre of disturbed drainage area

Requirement: Minimum Dewatering Volume = 1800 ft³/acre of total drainage area

Bottom of Sediment Storage (Pond) =

IMPORTANT: Must include the exact Skimmer Outlet/Skimmer Stop Elevation and the Secondary Outlet Invert Elevation in the Stage-Storage Table

[illegible]

The diagram illustrates a cross-section of a pond with the following elevation data:

- Top of Pond Elevation = 1006.00 ft**
- Secondary Outlet Invert Elevation = 1002.00 ft**
- Skimmer Outlet/Stop Elevation = 1000.00 ft**
- Bottom of Pond Elevation = 998.50 ft**

The pond is divided into two main zones:

- Dewatering Zone** (light blue area above the skimmer outlet)
- Sediment Storage Zone** (yellow area below the skimmer outlet)

A dashed line indicates the water level, and a vertical double-headed arrow shows the height of the water column above the skimmer outlet.

Note: The basin dewatering discharge calculation in this worksheet assumes a free discharge from the outlet (i.e., no tailwater). The skimmer outlet elevation may need to be adjusted upward to account for tailwater as appropriate. Tailwater is common to low gradient ditches or water bodies with prolonged increases in water level

Step 3 - Outlet Elevations and Storage Volumes

Skimmer Outlet Invert/Skimmer Stop Elevation =	1000.00 ft	OKAY
Secondary Outlet Invert Elevation =	1002.00 ft	OKAY
Provided Sediment Storage Volume =	32,828 ft ³	OKAY
Provided Dewatering Volume =	50,983 ft ³	OKAY

The invert of the Skimmer Outlet/Skimmer Stop (e.g. stone pad) corresponds to the top of the sediment storage zone/permanent pool and the bottom of the Dewatering Volume. It cannot be below the bottom of the pond.
The invert elevation for the next (usually peak discharge or flood control) outlet. This elevation must exceed that of the Skimmer Outlet Invert Elevation and be below the top of the pond. *Check - The difference between the skimmer outlet invert/skimmer stop elevation and the secondary outlet invert elevation (dewatering zone depth) must not exceed 5ft.

The Sediment Storage Volume must exceed the requirement listed above in Step 1

The Dewatering Volume must exceed the requirement listed above in Step 1

ERROR Check - The Step 2 Stage Storage Table above must include the exact Skimmer Outlet/Skimmer Stop Elevation and the Secondary Outlet Invert Elevation provided in Step 3

Step 4 - Skimmer-Type Outlet Sizing

Select Skimmer Type or Manufacturer: Delaware DOT Skimmer

Delaware: See Calculator Below

Orifice Size Selected: 3 in
Dewatering Drawdown Time: 65 hrs

Follow Step 5 below to identify skimmer orifice size to meet dewatering time requirement

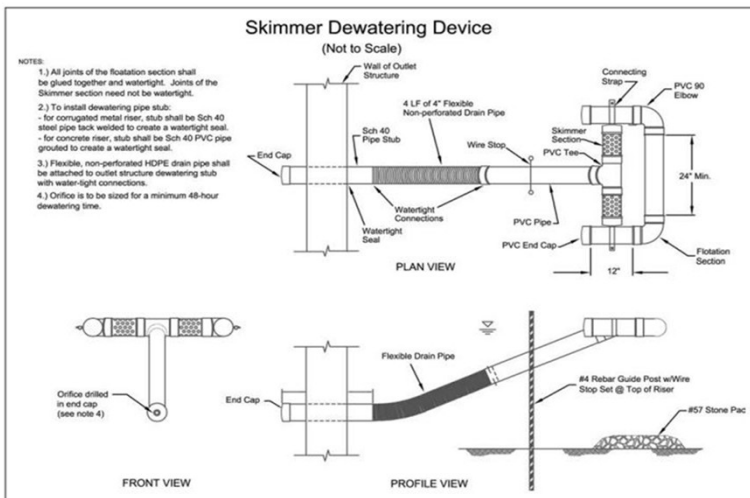
Check to ensure that orifice sizing calculation is done using required, NOT provided dewatering volume
Check that dewatering drawdown time is greater than 2 days and less than 7 days

The skimmer orifice size estimate uses a variable head skimmer with the orifice drilled in an end cap inside the outlet structure

Example Delaware Skimmer Spec Sheet

Delaware Skimmer Photo

Please note the drawing and image shown below are provided solely to assist with identification of the skimmer type and its associated components. The drawing and photo below does not necessarily depict an installation that complies with the General Permit or Rainwater & Land Development specification, especially where the sediment storage zone is omitted.



Maximum Hydraulic Head, Hmax =	1.88	ft	
Orifice Coefficient, C =	0.6		
Target (Minimum) Draw-down Time, Td-min =	48	hr	
Target Average Discharge, Qavg =	0.30	cfs	
Average Hydraulic Head, Havg =	0.94	ft	
Estimated Orifice Area, Aorifice =	9.11	in2	= 0.06 ft2
Estimated Orifice Diameter, Dorifice =	3.41	in	= 0.28 ft
Design Orifice Diameter, Dorifice =	3.00	in	= 0.25 ft
Design Orifice Area, Aorifice =	7.02	in2	= 0.05 ft2
Time to Completely Drain Dewatering Volume, Td =	62.28	hr	must be > 48 hrs should be < 168 hrs (7 days)

OKAY

Hmax is the dewatering depth measured from the skimmer orifice invert to top of the dewatering zone
Orifice equation discharge coefficient, Corifice = 0.6 is typical (range 0.59-0.62)
Minimum drawdown time specified by CGP and RLD
Qavg = Dewatering Volume/Td-min
Havg = Hmax/2
Orifice Area, Aorifice = Qavg/[C(2*g*Havg)0.5]

Enter a design orifice diameter similar to the estimated diameter, but orifice diameter cannot exceed max head
Oftentimes the diameter can be slightly increased or decreased to meet a standard dimension, provided it meet:
- The dewatering drawdown time (Td) must be at least 48 hrs and less than 7 days for a sediment basin

Wet Extended Detention Basin WQv Compliance Tool

version 3.2 2020-07-07

Project Summary

Project Name: Paradise At The Lake Subdivision Phase 1
Subwatershed ID/Label: Pond 1 Drainage Area
Submitted by: James Schroeder, EIT
Date: 4/7/2026

Subwatershed Drainage Area, A_{total} =	23.91	acres	=	1,041,520	ft ²
Subwatershed Impervious Area, A_{imp} =	19.12	acres	=	832,867	ft ²
Imperviousness fraction, i =	0.80			80	%
Water Quality Volume, WQv =	60,124	ft ³	=	1.38	ac-ft

Step 1 - Soil Suitability

Soil Series Ble1B1

HSG D

Step 2 - Wet ED Basin Volume Requirements

Extended Detention Volume, EDv =	60124	ft ³
Minimum Sediment Storage Volume, $V_{sediment}$ =	12025	ft ³
Minimum Permanent Pool Volume, PPv =	72149	ft ³

Step 3 - Basin Stage-Storage Relationship

	Elevation ft	Area ft ²	Incremental Volume ft ³	Cumulative Volume ft ³
Bottom of Permanent Micropool =	992.00	18389		
	993.00	20113	19,245	19,245
	994.00	21894	20,997	40,242
	995.00	23731	22,806	63,048
	996.00	25625	24,672	87,720
	997.00	27575	26,594	114,314
	997.50	28572	14,036	128,350
	998.00	29582	14,538	142,888
	999.00	31645	30,608	173,496
	1000.00	33765	32,699	206,195
	1001.00	35942	34,848	241,043
	1002.00	38175	37,053	278,096
	1003.00	40465	39,314	317,410
	1004.00	42811	41,632	359,043
	1005.00	45214	44,007	403,050

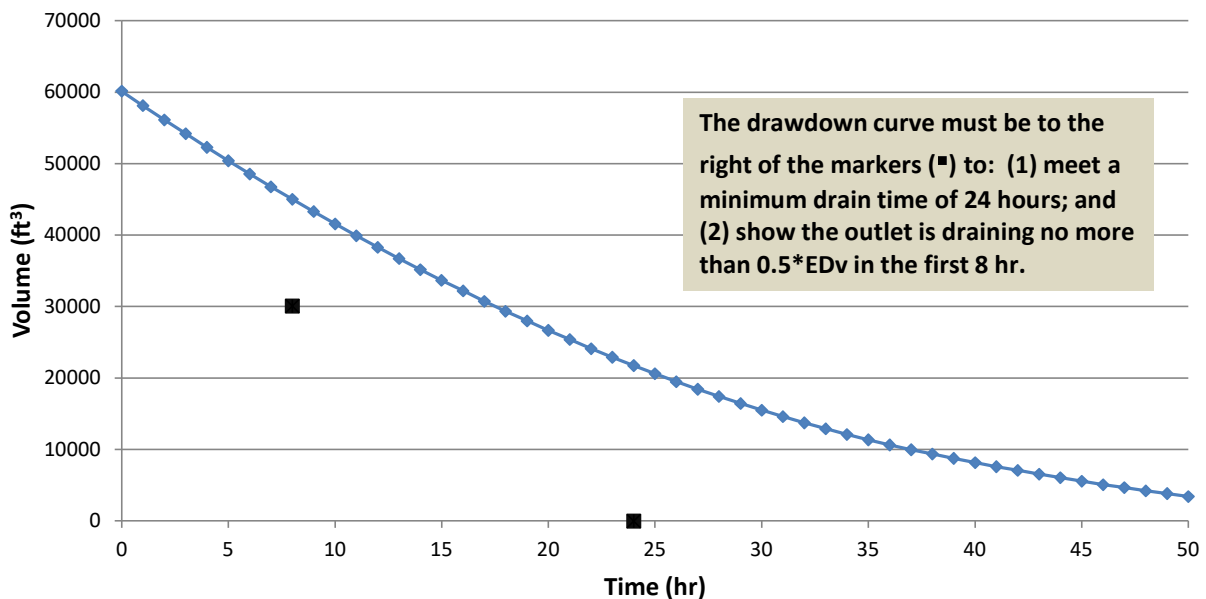
Step 4 - Outlet Elevations and Storage Volumes

WQ Orifice Invert Elevation =	997.50		
Elevation of Top of EDv =	999.47		
Secondary Outlet Invert Elevation =	1000.00		OKAY
WQ Treatment Volume Provided, $V_{\text{treatment}}$ =	77,845	ft ³	
Treatment Vol Provided Relative to EDv, $V_{\text{treatment}}/\text{EDv}$ =	1.29	=	129% OKAY
Permanent Pool Volume Provided, PPv =	128,350	ft ³	
Ratio PPv Provided to PPv Required =	1.78	=	178% OKAY

Step 5 - Outlet (Orifice) Sizing

Maximum Hydraulic Head, H_{max} =	1.97	ft	
Orifice Coefficient, C =	0.6		
Target (Minimum) Draw-down Time, T_d =	24	hr	
Target Average Discharge, Q_{avg} =	0.70	cfs	
Average Hydraulic Head, H_{avg} =	0.99	ft	
Estimated Orifice Area, A_{orifice} =	20.97	in ²	= 0.146 ft ²
Estimated Orifice Diameter, D_{orifice} =	5.17	in	= 0.43 ft
Design Orifice Diameter, D_{orifice} =	4.00	in	= 0.33 ft
Design Orifice Area, A_{orifice} =	12.49	in ²	= 0.087 ft ²
Time to Completely Drain EDv, T_d =	64	hr	must be ≥ 24 hr OKAY
Volume Drained in First 8 hr =	15,122	ft ³	
% of EDv =	25.2	%	must be $\leq 50\%$ OKAY

Wet Basin - EDv Drawdown vs Time



Wet Extended Detention Basin WQv Compliance Tool

version 3.2 2020-07-07

Project Summary

Project Name: Paradise At The Lake Subdivision Phase 1
Subwatershed ID/Label: Pond 2 Drainage Area
Submitted by: James Schroeder, EIT
Date: 4/7/2026

Subwatershed Drainage Area, A_{total} =	27.75	acres	=	1,208,790	ft ²
Subwatershed Impervious Area, A_{imp} =	22.20	acres	=	967,032	ft ²
Imperviousness fraction, i =	0.80			80	%
Water Quality Volume, WQv =	69,808	ft ³	=	1.60	ac-ft

Step 1 - Soil Suitability

Soil Series Ble1B1

HSG D

Step 2 - Wet ED Basin Volume Requirements

Extended Detention Volume, EDv =	69808	ft ³
Minimum Sediment Storage Volume, $V_{sediment}$ =	13962	ft ³
Minimum Permanent Pool Volume, PPv =	83769	ft ³

Step 3 - Basin Stage-Storage Relationship

	Elevation ft	Area ft ²		Incremental Volume ft ³	Cumulative Volume ft ³
Bottom of Permanent Micropool =	990.00	5847			
	991.00	7258		6,540	6,540
	992.00	8808		8,021	14,560
	993.00	10432		9,609	24,169
	994.00	12116		11,264	35,432
	995.00	13856		12,976	48,409
	996.00	15653		14,745	63,154
	997.00	17506		16,571	79,725
	998.00	19416		18,453	98,178
	998.50	20392		9,951	108,129
	999.00	21382		10,443	118,571
	1000.00	23405		22,386	140,957
	1001.00	25485		24,438	165,395
	1002.00	27621		26,546	191,941
	1003.00	29814		28,711	220,651
	1004.00	32063		30,932	251,583
	1005.00	34369		33,209	284,792
	1006.00	36731		35,543	320,336

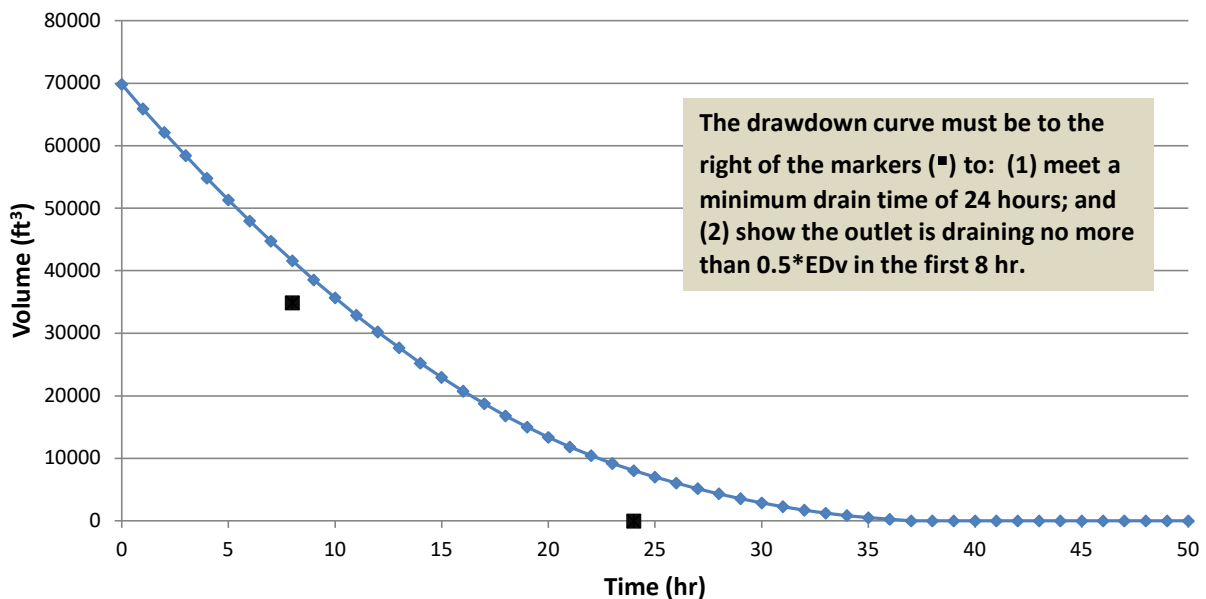
Step 4 - Outlet Elevations and Storage Volumes

WQ Orifice Invert Elevation =	998.50		
Elevation of Top of EDv =	1001.49		
Secondary Outlet Invert Elevation =	1001.50		OKAY
WQ Treatment Volume Provided, $V_{\text{treatment}}$ =	70,272	ft ³	
Treatment Vol Provided Relative to EDv, $V_{\text{treatment}}/\text{EDv}$ =	1.01		= 101% OKAY
Permanent Pool Volume Provided, PPv =	108,129	ft ³	
Ratio PPv Provided to PPv Required =	1.29		= 129% OKAY

Step 5 - Outlet (Orifice) Sizing

Maximum Hydraulic Head, H_{max} =	2.99	ft	
Orifice Coefficient, C =	0.6		
Target (Minimum) Draw-down Time, T_d =	24	hr	
Target Average Discharge, Q_{avg} =	0.81	cfs	
Average Hydraulic Head, H_{avg} =	1.50	ft	
Estimated Orifice Area, A_{orifice} =	19.76	in ²	= 0.137 ft ²
Estimated Orifice Diameter, D_{orifice} =	5.02	in	= 0.42 ft
Design Orifice Diameter, D_{orifice} =	5.00	in	= 0.42 ft
Design Orifice Area, A_{orifice} =	19.51	in ²	= 0.135 ft ²
Time to Completely Drain EDv, T_d =	37	hr	must be ≥ 24 hr OKAY
Volume Drained in First 8 hr =	28,212	ft ³	
% of EDv =	40.4	%	must be $\leq 50\%$ OKAY

Wet Basin - EDv Drawdown vs Time





United States
Department of
Agriculture

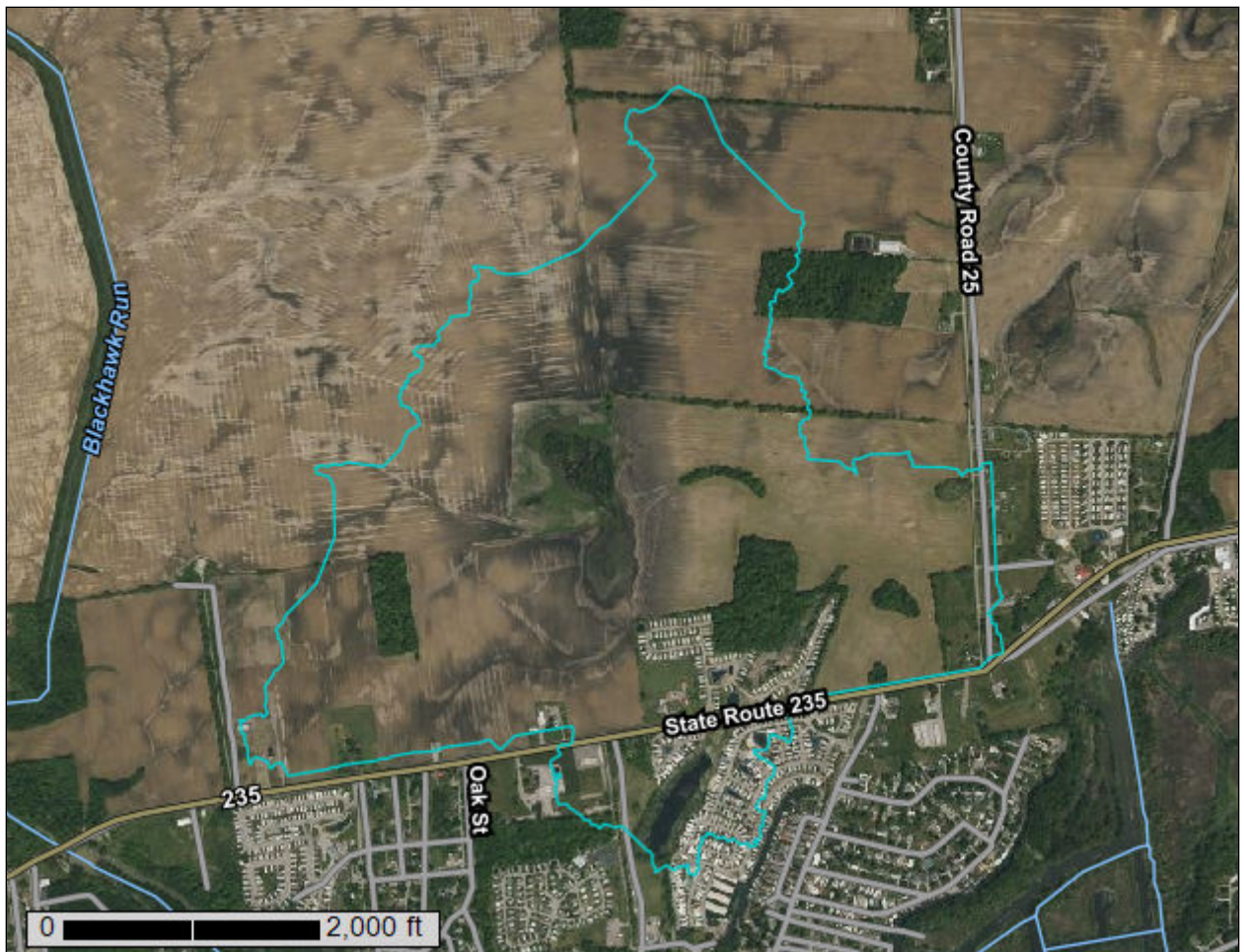


Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Hardin County, Ohio, and Logan County, Ohio

Newland Project Overall Watershed



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



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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.

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: Hardin County, Ohio

Survey Area Data: Version 23, Aug 28, 2025

Soil Survey Area: Logan County, Ohio

Survey Area Data: Version 23, Sep 2, 2025

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

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

Date(s) aerial images were photographed: May 21, 2023—Aug 8, 2023

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

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
Ble1A1	Blount silt loam, end moraine, 0 to 2 percent slopes	1.5	0.4%
Blg1A1	Blount silt loam, ground moraine, 0 to 2 percent slopes	44.0	10.5%
Blg1B1	Blount silt loam, ground moraine, 2 to 4 percent slopes	0.5	0.1%
PkA	Pewamo silty clay loam, 0 to 1 percent slopes	46.8	11.2%
Subtotals for Soil Survey Area		92.8	22.1%
Totals for Area of Interest		419.1	100.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ble1A1	Blount silt loam, end moraine, 0 to 2 percent slopes	120.2	28.7%
Ble1B1	Blount silt loam, end moraine, 2 to 4 percent slopes	22.3	5.3%
Blg1A1	Blount silt loam, ground moraine, 0 to 2 percent slopes	16.9	4.0%
La	Latty silty clay	0.0	0.0%
Mni3A	Minster silty clay loam, till substratum, 0 to 1 percent slopes	13.0	3.1%
MyD2	Morley silt loam, 12 to 18 percent slopes, eroded	16.4	3.9%
Pe	Pewamo silty clay loam, 0 to 1 percent slopes	116.7	27.8%
Wv	Wetzel silty clay loam	0.4	0.1%
Wx	Willette muck	20.4	4.9%
Subtotals for Soil Survey Area		326.3	77.9%
Totals for Area of Interest		419.1	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named

according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

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An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Hardin County, Ohio

Ble1A1—Blount silt loam, end moraine, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2s1j4
Landscape: Till plains
Elevation: 700 to 1,300 feet
Mean annual precipitation: 34 to 42 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Prime farmland if drained

Map Unit Composition

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

Description of Blount, End Moraine

Setting

Landscape: Till plains
Landform: End moraines on till plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Wisconsin till derived from limestone and shale

Typical profile

Ap - 0 to 10 inches: silt loam
Bt - 10 to 33 inches: silty clay
BC - 33 to 39 inches: clay loam
Cd - 39 to 79 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 30 to 60 inches to densic material
Drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.20 in/hr)
Depth to water table: About 6 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: D
Ecological site: F111XB502IN - Wet Till Ridge
Hydric soil rating: No

Minor Components

Glynwood, end moraine

Percent of map unit: 9 percent
Landscape: Till plains
Landform: End moraines on till plains
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F111XE503IN - Till Ridge
Hydric soil rating: No

Pewamo, end moraine

Percent of map unit: 6 percent
Landscape: Till plains
Landform: End moraines on till plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: F111XB501IN - Till Depression
Hydric soil rating: Yes

Blg1A1—Blount silt loam, ground moraine, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2skcv
Landscape: Till plains
Elevation: 700 to 1,300 feet
Mean annual precipitation: 34 to 42 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Prime farmland if drained

Map Unit Composition

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

Description of Blount, Ground Moraine

Setting

Landscape: Till plains
Landform: Ground moraines on till plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear

Custom Soil Resource Report

Parent material: Wisconsin till derived from limestone and shale

Typical profile

Ap - 0 to 10 inches: silt loam
Bt - 10 to 33 inches: silty clay
BC - 33 to 39 inches: clay loam
Cd - 39 to 79 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 31 to 54 inches to densic material
Drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.20 in/hr)
Depth to water table: About 6 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: D
Ecological site: F111XB502IN - Wet Till Ridge
Hydric soil rating: No

Minor Components

Pewamo, ground moraine

Percent of map unit: 9 percent
Landscape: Till plains
Landform: Ground moraines on till plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave, linear
Ecological site: F111XB501IN - Till Depression
Hydric soil rating: Yes

Glynwood, ground moraine

Percent of map unit: 6 percent
Landscape: Till plains
Landform: Ground moraines on till plains
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F111XE503IN - Till Ridge
Hydric soil rating: No

Blg1B1—Blount silt loam, ground moraine, 2 to 4 percent slopes

Map Unit Setting

National map unit symbol: 2s1j6
Landscape: Till plains
Elevation: 700 to 1,300 feet
Mean annual precipitation: 34 to 42 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Prime farmland if drained

Map Unit Composition

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

Description of Blount, Ground Moraine

Setting

Landscape: Till plains
Landform: Ground moraines on till plains
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Wisconsin till derived from limestone and shale

Typical profile

Ap - 0 to 9 inches: silt loam
Bt - 9 to 32 inches: silty clay
BC - 32 to 37 inches: clay loam
Cd - 37 to 79 inches: clay loam

Properties and qualities

Slope: 2 to 4 percent
Depth to restrictive feature: 30 to 54 inches to densic material
Drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.20 in/hr)
Depth to water table: About 6 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e

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Hydrologic Soil Group: D
Ecological site: F111XB502IN - Wet Till Ridge
Hydric soil rating: No

Minor Components

Pewamo, ground moraine

Percent of map unit: 9 percent
Landscape: Till plains
Landform: Ground moraines on till plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: F111XB501IN - Till Depression
Hydric soil rating: Yes

Glynwood, ground moraine

Percent of map unit: 6 percent
Landscape: Till plains
Landform: Ground moraines on till plains
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F111XE503IN - Till Ridge
Hydric soil rating: No

PkA—Pewamo silty clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2t6lv
Landscape: Till plains
Elevation: 700 to 1,300 feet
Mean annual precipitation: 32 to 42 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Prime farmland if drained

Map Unit Composition

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

Description of Pewamo

Setting

Landscape: Till plains
Landform: Depressions on till plains, Drainageways on till plains
Landform position (two-dimensional): Toeslope

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Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave
Parent material: Wisconsin till derived from limestone and shale

Typical profile

Ap - 0 to 11 inches: silty clay loam
Btg1 - 11 to 34 inches: silty clay
Btg2 - 34 to 47 inches: silty clay
BCg - 47 to 57 inches: clay loam
Cg - 57 to 79 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F111XB501IN - Till Depression
Hydric soil rating: Yes

Minor Components

Blount

Percent of map unit: 9 percent
Landscape: Till plains
Landform: Ground moraines on till plains, End moraines on till plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Interfluvium
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F111XB502IN - Wet Till Ridge
Hydric soil rating: No

Minster

Percent of map unit: 6 percent
Landscape: Till plains
Landform: Depressions on till plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: F111XB101IN - Lacustrine Flatwood
Hydric soil rating: Yes

Logan County, Ohio

Ble1A1—Blount silt loam, end moraine, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2s1j4
Landscape: Till plains
Elevation: 700 to 1,300 feet
Mean annual precipitation: 34 to 42 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Prime farmland if drained

Map Unit Composition

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

Description of Blount, End Moraine

Setting

Landscape: Till plains
Landform: End moraines on till plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Wisconsin till derived from limestone and shale

Typical profile

Ap - 0 to 10 inches: silt loam
Bt - 10 to 33 inches: silty clay
BC - 33 to 39 inches: clay loam
Cd - 39 to 79 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 30 to 60 inches to densic material
Drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.20 in/hr)
Depth to water table: About 6 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: D
Ecological site: F111XB502IN - Wet Till Ridge
Hydric soil rating: No

Minor Components

Glynwood, end moraine

Percent of map unit: 9 percent
Landscape: Till plains
Landform: End moraines on till plains
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F111XE503IN - Till Ridge
Hydric soil rating: No

Pewamo, end moraine

Percent of map unit: 6 percent
Landscape: Till plains
Landform: End moraines on till plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: F111XB501IN - Till Depression
Hydric soil rating: Yes

Ble1B1—Blount silt loam, end moraine, 2 to 4 percent slopes

Map Unit Setting

National map unit symbol: 2s1j5
Landscape: Till plains
Elevation: 700 to 1,300 feet
Mean annual precipitation: 34 to 42 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Prime farmland if drained

Map Unit Composition

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

Description of Blount, End Moraine

Setting

Landscape: Till plains
Landform: End moraines on till plains
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear

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Parent material: Wisconsin till derived from limestone and shale

Typical profile

Ap - 0 to 9 inches: silt loam
Bt - 9 to 32 inches: silty clay
BC - 32 to 37 inches: clay loam
Cd - 37 to 79 inches: clay loam

Properties and qualities

Slope: 2 to 4 percent
Depth to restrictive feature: 30 to 56 inches to densic material
Drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.20 in/hr)
Depth to water table: About 6 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: D
Ecological site: F111XB502IN - Wet Till Ridge
Hydric soil rating: No

Minor Components

Glynwood, end moraine

Percent of map unit: 9 percent
Landscape: Till plains
Landform: End moraines on till plains
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F111XE503IN - Till Ridge
Hydric soil rating: No

Pewamo, end moraine

Percent of map unit: 6 percent
Landscape: Till plains
Landform: End moraines on till plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: F111XB501IN - Till Depression
Hydric soil rating: Yes

Blg1A1—Blount silt loam, ground moraine, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2skcv
Landscape: Till plains
Elevation: 700 to 1,300 feet
Mean annual precipitation: 34 to 42 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Prime farmland if drained

Map Unit Composition

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

Description of Blount, Ground Moraine

Setting

Landscape: Till plains
Landform: Ground moraines on till plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Wisconsin till derived from limestone and shale

Typical profile

Ap - 0 to 10 inches: silt loam
Bt - 10 to 33 inches: silty clay
BC - 33 to 39 inches: clay loam
Cd - 39 to 79 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 31 to 54 inches to densic material
Drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.20 in/hr)
Depth to water table: About 6 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w

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Hydrologic Soil Group: D
Ecological site: F111XB502IN - Wet Till Ridge
Hydric soil rating: No

Minor Components

Pewamo, ground moraine

Percent of map unit: 9 percent
Landscape: Till plains
Landform: Ground moraines on till plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave, linear
Ecological site: F111XB501IN - Till Depression
Hydric soil rating: Yes

Glynwood, ground moraine

Percent of map unit: 6 percent
Landscape: Till plains
Landform: Ground moraines on till plains
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F111XE503IN - Till Ridge
Hydric soil rating: No

La—Latty silty clay

Map Unit Setting

National map unit symbol: 5r26
Elevation: 570 to 990 feet
Mean annual precipitation: 29 to 42 inches
Mean annual air temperature: 48 to 55 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Prime farmland if drained

Map Unit Composition

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

Description of Latty

Setting

Landform: Depressions
Parent material: Clayey glaciolacustrine deposits

Typical profile

H1 - 0 to 8 inches: silty clay

Custom Soil Resource Report

H2 - 8 to 44 inches: silty clay

H3 - 44 to 70 inches: silty clay

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: High

*Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low
(0.01 to 0.06 in/hr)*

Depth to water table: About 0 to 6 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: C/D

Ecological site: F111XB101IN - Lacustrine Flatwood

Hydric soil rating: Yes

Minor Components

Henshaw

Percent of map unit: 5 percent

Landform: Stream terraces

Hydric soil rating: No

Fulton

Percent of map unit: 5 percent

Landform: Lake plains

Landform position (two-dimensional): Summit, shoulder

Landform position (three-dimensional): Rise

Down-slope shape: Convex

Across-slope shape: Convex

Ecological site: F111XB102IN - Lacustrine Forest

Hydric soil rating: No

MnI3A—Minster silty clay loam, till substratum, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2psgw

Elevation: 750 to 1,000 feet

Mean annual precipitation: 34 to 42 inches

Mean annual air temperature: 48 to 55 degrees F

Frost-free period: 140 to 180 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Minster, till substratum, and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Minster, Till Substratum

Setting

Landform: Till plains

Landform position (three-dimensional): Talf

Down-slope shape: Concave

Across-slope shape: Concave

Parent material: Clayey lacustrine deposits over clayey till

Typical profile

Ap - 0 to 10 inches: silty clay loam

Bg1 - 10 to 36 inches: silty clay

Bg2 - 36 to 57 inches: silty clay

2Cg - 57 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

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: About 0 to 12 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: High (about 9.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: C/D

Ecological site: F111XB101IN - Lacustrine Flatwood

Hydric soil rating: Yes

Minor Components

Wallkill

Percent of map unit: 8 percent

Landform: Till plains

Landform position (three-dimensional): Tread, dip

Down-slope shape: Linear

Across-slope shape: Concave

Hydric soil rating: Yes

Blount

Percent of map unit: 7 percent

Landform: Rises on till plains

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

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Across-slope shape: Linear
Ecological site: F111XB502IN - Wet Till Ridge
Hydric soil rating: No

MyD2—Morley silt loam, 12 to 18 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2wvhf
Landscape: Till plains
Elevation: 670 to 1,300 feet
Mean annual precipitation: 36 to 40 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 150 to 170 days
Farmland classification: Farmland of local importance

Map Unit Composition

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

Description of Morley

Setting

Landscape: Till plains
Landform: Moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Nose slope, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Wisconsin till derived from limestone and shale

Typical profile

Ap - 0 to 8 inches: silt loam
Bt1 - 8 to 17 inches: silty clay
Bt2 - 17 to 28 inches: clay
BC - 28 to 33 inches: clay loam
Cd - 33 to 79 inches: clay loam

Properties and qualities

Slope: 12 to 18 percent
Depth to restrictive feature: 24 to 38 inches to densic material
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.20 in/hr)
Depth to water table: About 24 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Custom Soil Resource Report

Available water supply, 0 to 60 inches: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: C

Ecological site: F111XE503IN - Till Ridge

Hydric soil rating: No

Minor Components

Glynwood

Percent of map unit: 8 percent

Landscape: Till plains

Landform: Moraines

Landform position (two-dimensional): Shoulder, backslope

Landform position (three-dimensional): Side slope, nose slope

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F111XE503IN - Till Ridge

Hydric soil rating: No

Blount

Percent of map unit: 5 percent

Landscape: Till plains

Landform: Moraines

Landform position (two-dimensional): Backslope, footslope

Landform position (three-dimensional): Interfluvium

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F111XB502IN - Wet Till Ridge

Hydric soil rating: No

Pewamo

Percent of map unit: 2 percent

Landscape: Till plains

Landform: Moraines

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope

Down-slope shape: Linear

Across-slope shape: Concave

Ecological site: F111XB501IN - Till Depression

Hydric soil rating: Yes

Pe—Pewamo silty clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2t6lv

Landscape: Till plains

Elevation: 700 to 1,300 feet

Mean annual precipitation: 32 to 42 inches

Custom Soil Resource Report

Mean annual air temperature: 48 to 54 degrees F

Frost-free period: 140 to 180 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Pewamo and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pewamo

Setting

Landscape: Till plains

Landform: Depressions on till plains, Drainageways on till plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope

Down-slope shape: Concave, linear

Across-slope shape: Concave

Parent material: Wisconsin till derived from limestone and shale

Typical profile

Ap - 0 to 11 inches: silty clay loam

Btg1 - 11 to 34 inches: silty clay

Btg2 - 34 to 47 inches: silty clay

BCg - 47 to 57 inches: clay loam

Cg - 57 to 79 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)

Depth to water table: About 0 to 12 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 30 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: C/D

Ecological site: F111XB501IN - Till Depression

Hydric soil rating: Yes

Minor Components

Blount

Percent of map unit: 9 percent

Landscape: Till plains

Landform: Ground moraines on till plains, End moraines on till plains

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Interfluvium

Down-slope shape: Linear

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Across-slope shape: Linear
Ecological site: F111XB502IN - Wet Till Ridge
Hydric soil rating: No

Minster

Percent of map unit: 6 percent
Landscape: Till plains
Landform: Depressions on till plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: F111XB101IN - Lacustrine Flatwood
Hydric soil rating: Yes

Wv—Wetzel silty clay loam

Map Unit Setting

National map unit symbol: 2zy2x
Landscape: Till plains
Elevation: 980 to 1,100 feet
Mean annual precipitation: 33 to 38 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 155 to 165 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Wetzel and similar soils: 84 percent
Minor components: 16 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wetzel

Setting

Landscape: Till plains
Landform: Ground moraines, Depressions
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear, concave
Parent material: Wisconsin till derived from limestone and shale

Typical profile

Ap - 0 to 10 inches: silty clay loam
Btg - 10 to 36 inches: clay
C - 36 to 79 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained

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Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)

Depth to water table: About 8 to 13 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 35 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 7.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: C/D

Ecological site: F111XB501IN - Till Depression

Hydric soil rating: Yes

Minor Components

Blount

Percent of map unit: 8 percent

Landscape: Till plains

Landform: Ground moraines

Landform position (two-dimensional): Summit, backslope

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear, convex

Across-slope shape: Linear

Ecological site: F111XB502IN - Wet Till Ridge

Hydric soil rating: No

Pewamo

Percent of map unit: 5 percent

Landscape: Till plains

Landform: Ground moraines, Depressions

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope

Down-slope shape: Linear, concave

Across-slope shape: Concave

Ecological site: F111XB501IN - Till Depression

Hydric soil rating: Yes

Glynwood

Percent of map unit: 3 percent

Landscape: Till plains

Landform: Ground moraines

Landform position (two-dimensional): Shoulder, backslope

Landform position (three-dimensional): Side slope, nose slope

Down-slope shape: Convex, linear

Across-slope shape: Linear, convex

Ecological site: F111XE503IN - Till Ridge

Hydric soil rating: No

Wx—Willette muck

Map Unit Setting

National map unit symbol: 5r3x
Elevation: 600 to 1,500 feet
Mean annual precipitation: 27 to 42 inches
Mean annual air temperature: 46 to 55 degrees F
Frost-free period: 110 to 180 days
Farmland classification: Farmland of local importance

Map Unit Composition

Willette and similar soils: 98 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Willette

Setting

Landform: Depressions
Parent material: Organic material over glaciolacustrine deposits

Typical profile

O - 0 to 34 inches: muck
H2 - 34 to 70 inches: silty clay

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
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: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 20 percent
Available water supply, 0 to 60 inches: Very high (about 17.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Ecological site: R111XB001IN - Mineral Muck
Hydric soil rating: Yes

Minor Components

Carlisle

Percent of map unit: 1 percent
Landform: Depressions

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Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R111XB003IN - Deep Muck
Hydric soil rating: Yes

Muskego

Percent of map unit: 1 percent
Landform: Lake plains, Flood plains
Ecological site: R111XB003IN - Deep Muck
Hydric soil rating: Yes

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