

Watershed Model Schematic

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022



Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	Rational	-----	-----	13.83	-----	16.30	18.12	20.84	22.96	25.08	PRE
2	Rational	-----	-----	32.45	-----	37.45	41.26	47.01	51.53	56.05	POST
3	Reservoir	2	-----	10.29	-----	11.98	13.29	15.43	19.16	23.12	2 EAST POND 2

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

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	Rational	13.83	1	10	8,297	-----	-----	-----	PRE
2	Rational	32.45	1	5	9,735	-----	-----	-----	POST
3	Reservoir	10.29	1	8	9,731	2	398.35	6,846	2 EAST POND 2
VERNIA PH 1 EAST POND.gpw					Return Period: 2 Year			Tuesday, 11 / 23 / 2021	

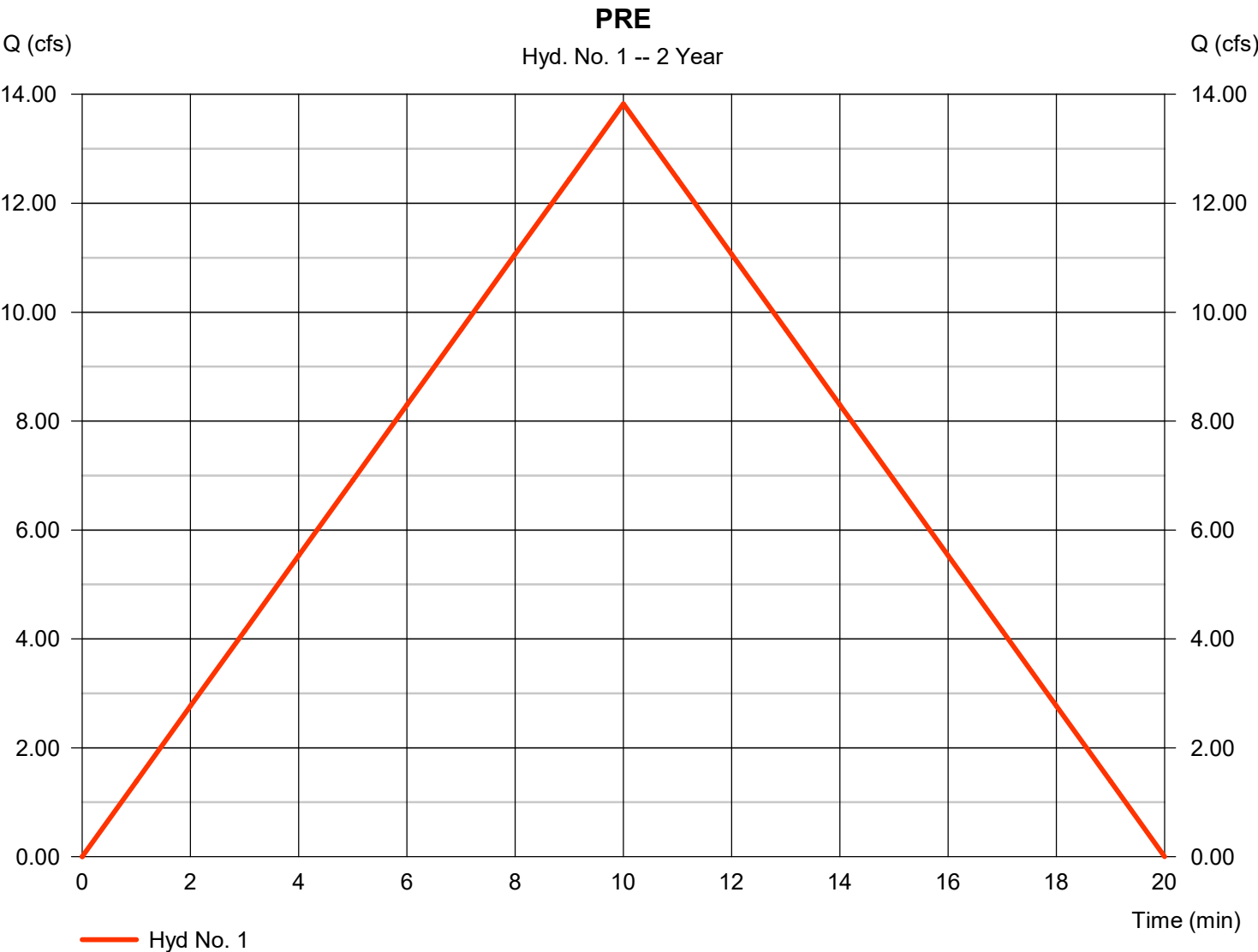
Hydrograph Report

Hyd. No. 1

PRE

Hydrograph type	= Rational	Peak discharge	= 13.83 cfs
Storm frequency	= 2 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 8,297 cuft
Drainage area	= 6.000 ac	Runoff coeff.	= 0.5*
Intensity	= 4.609 in/hr	Tc by User	= 10.00 min
IDF Curve	= Littlerock.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(1.600 x 0.40) + (0.160 x 0.95)] / 6.000



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Tuesday, 11 / 23 / 2021

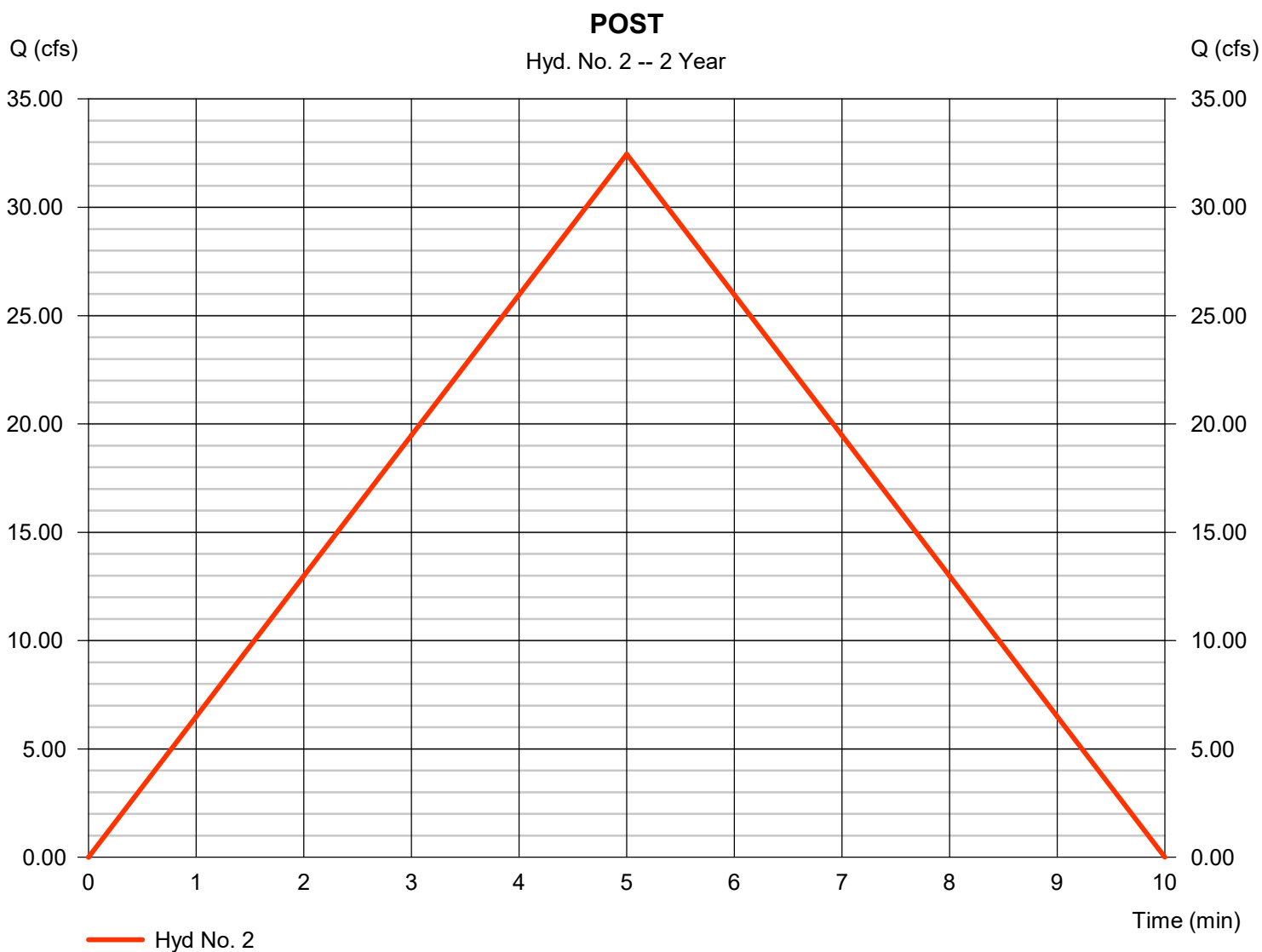
Hyd. No. 2

POST

Hydrograph type = Rational
 Storm frequency = 2 yrs
 Time interval = 1 min
 Drainage area = 6.000 ac
 Intensity = 5.693 in/hr
 IDF Curve = Littlerock.IDF

Peak discharge = 32.45 cfs
 Time to peak = 5 min
 Hyd. volume = 9,735 cuft
 Runoff coeff. = 0.95*
 Tc by User = 5.00 min
 Asc/Rec limb fact = 1/1

* Composite (Area/C) = $[(0.300 \times 0.40) + (1.460 \times 0.95)] / 6.000$



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

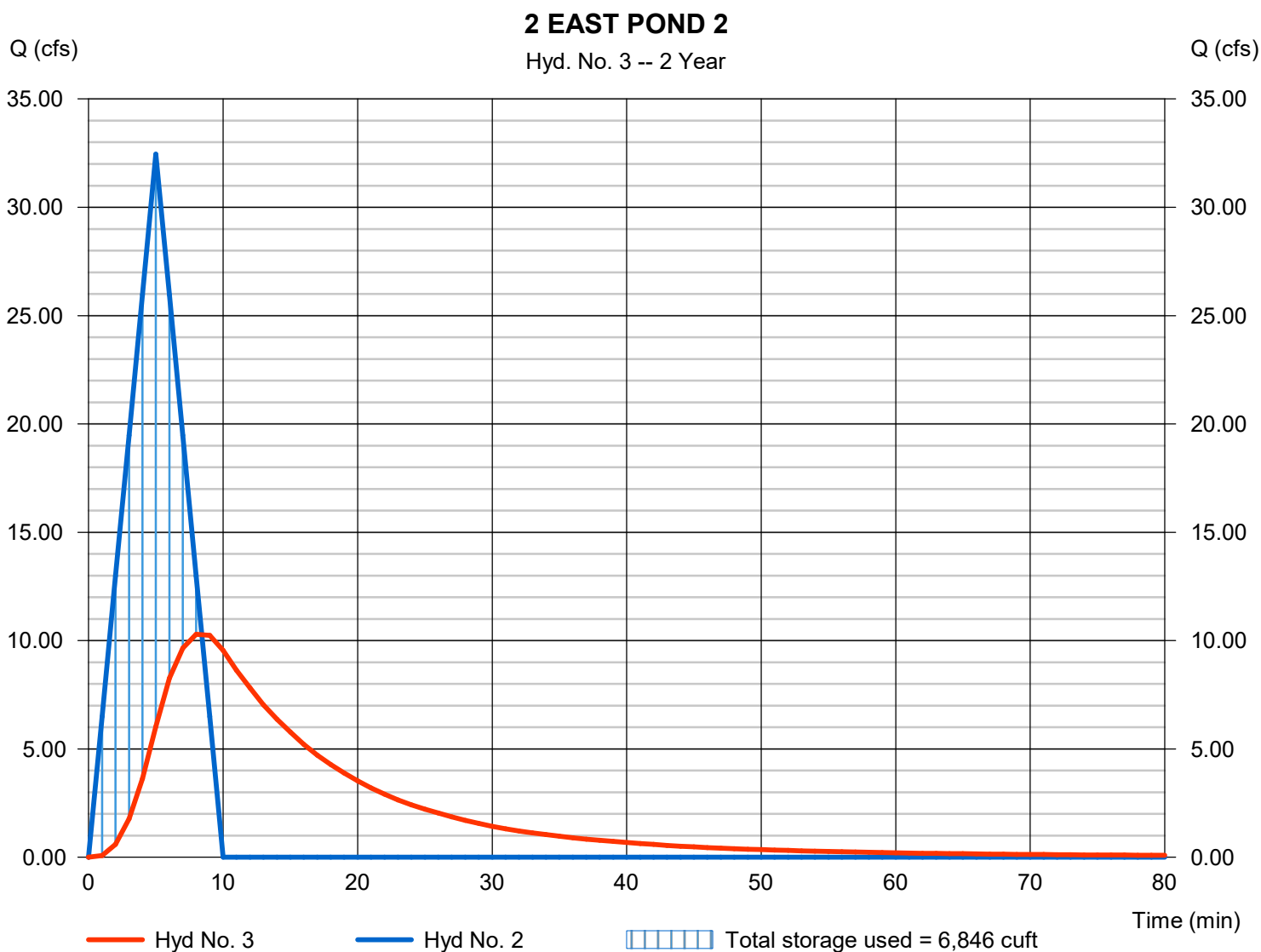
Tuesday, 11 / 23 / 2021

Hyd. No. 3

2 EAST POND 2

Hydrograph type	= Reservoir	Peak discharge	= 10.29 cfs
Storm frequency	= 2 yrs	Time to peak	= 8 min
Time interval	= 1 min	Hyd. volume	= 9,731 cuft
Inflow hyd. No.	= 2 - POST	Max. Elevation	= 398.35 ft
Reservoir name	= EAST POND 2	Max. Storage	= 6,846 cuft

Storage Indication method used.



Pond Report

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Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Tuesday, 11 / 23 / 2021

Pond No. 2 - EAST POND 2

Pond Data

Trapezoid -Bottom L x W = 100.0 x 20.0 ft, Side slope = 3.00:1, Bottom elev. = 396.00 ft, Depth = 4.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	396.00	2,000	0	0
0.40	396.40	2,294	858	858
0.80	396.80	2,599	978	1,837
1.20	397.20	2,916	1,103	2,939
1.60	397.60	3,244	1,232	4,171
2.00	398.00	3,584	1,365	5,536
2.40	398.40	3,935	1,503	7,039
2.80	398.80	4,298	1,646	8,686
3.20	399.20	4,673	1,794	10,480
3.60	399.60	5,059	1,946	12,425
4.00	400.00	5,456	2,103	14,528

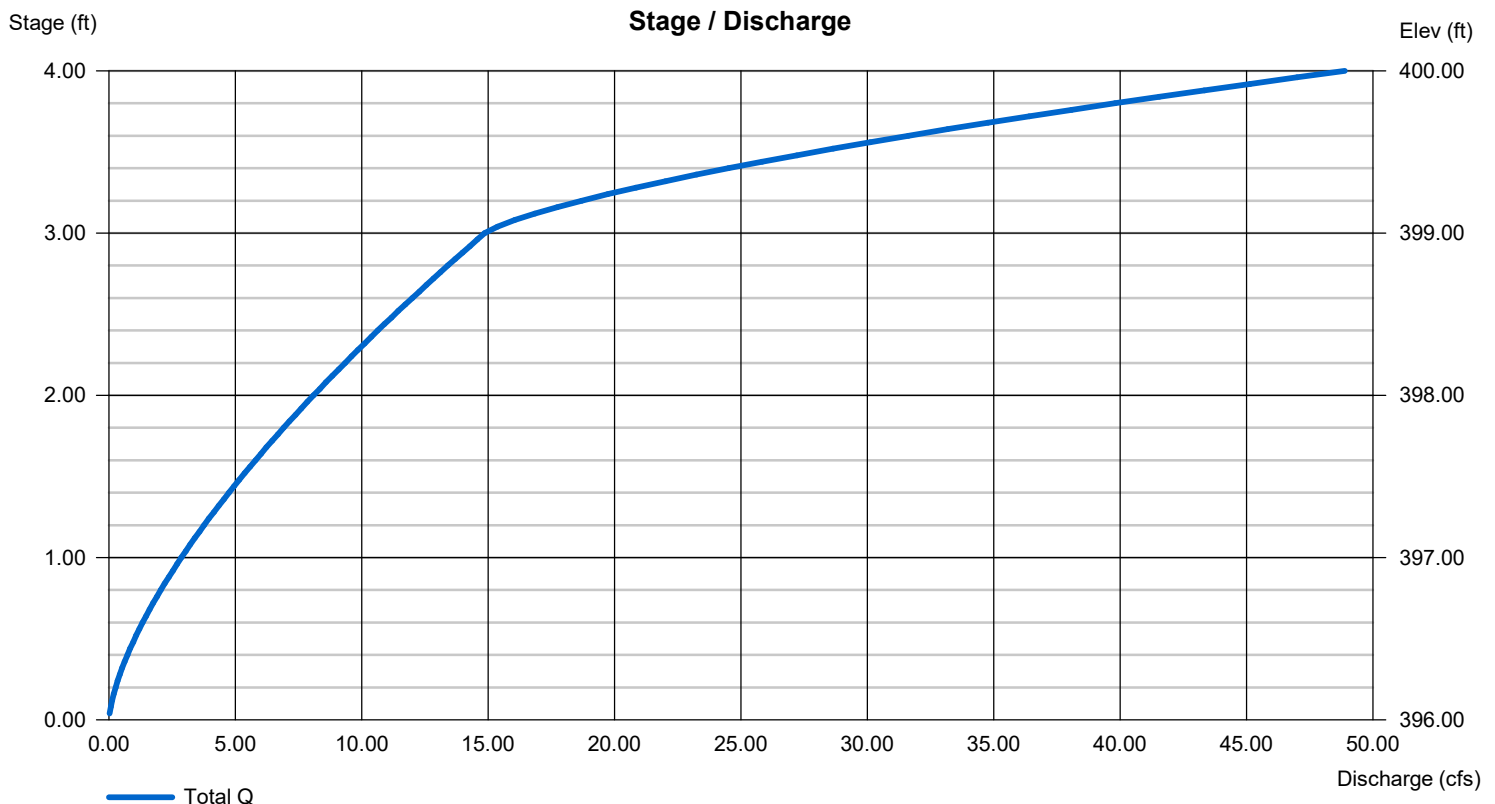
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 380.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 1.10	10.00	0.00	0.00
Crest El. (ft)	= 396.00	399.00	0.00	0.00
Weir Coeff.	= 2.60	2.60	3.33	3.33
Weir Type	= Broad	Broad	---	---
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 Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

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	Rational	16.30	1	10	9,778	-----	-----	-----	PRE
2	Rational	37.45	1	5	11,235	-----	-----	-----	POST
3	Reservoir	11.98	1	8	11,231	2	398.60	7,857	2 EAST POND 2
VERNIA PH 1 EAST POND.gpw					Return Period: 5 Year			Tuesday, 11 / 23 / 2021	

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

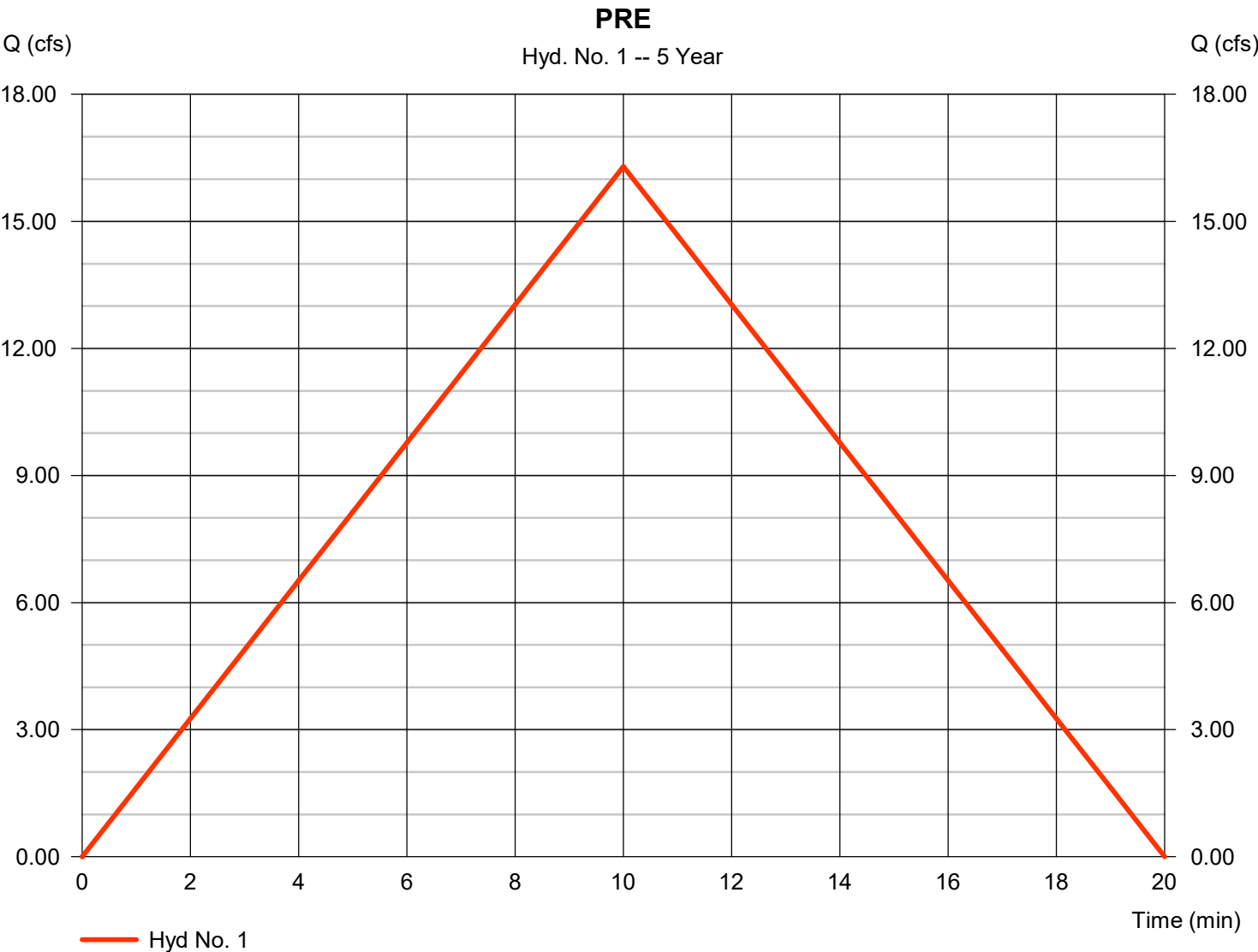
Tuesday, 11 / 23 / 2021

Hyd. No. 1

PRE

Hydrograph type	= Rational	Peak discharge	= 16.30 cfs
Storm frequency	= 5 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 9,778 cuft
Drainage area	= 6.000 ac	Runoff coeff.	= 0.5*
Intensity	= 5.432 in/hr	Tc by User	= 10.00 min
IDF Curve	= Littlerock.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(1.600 x 0.40) + (0.160 x 0.95)] / 6.000



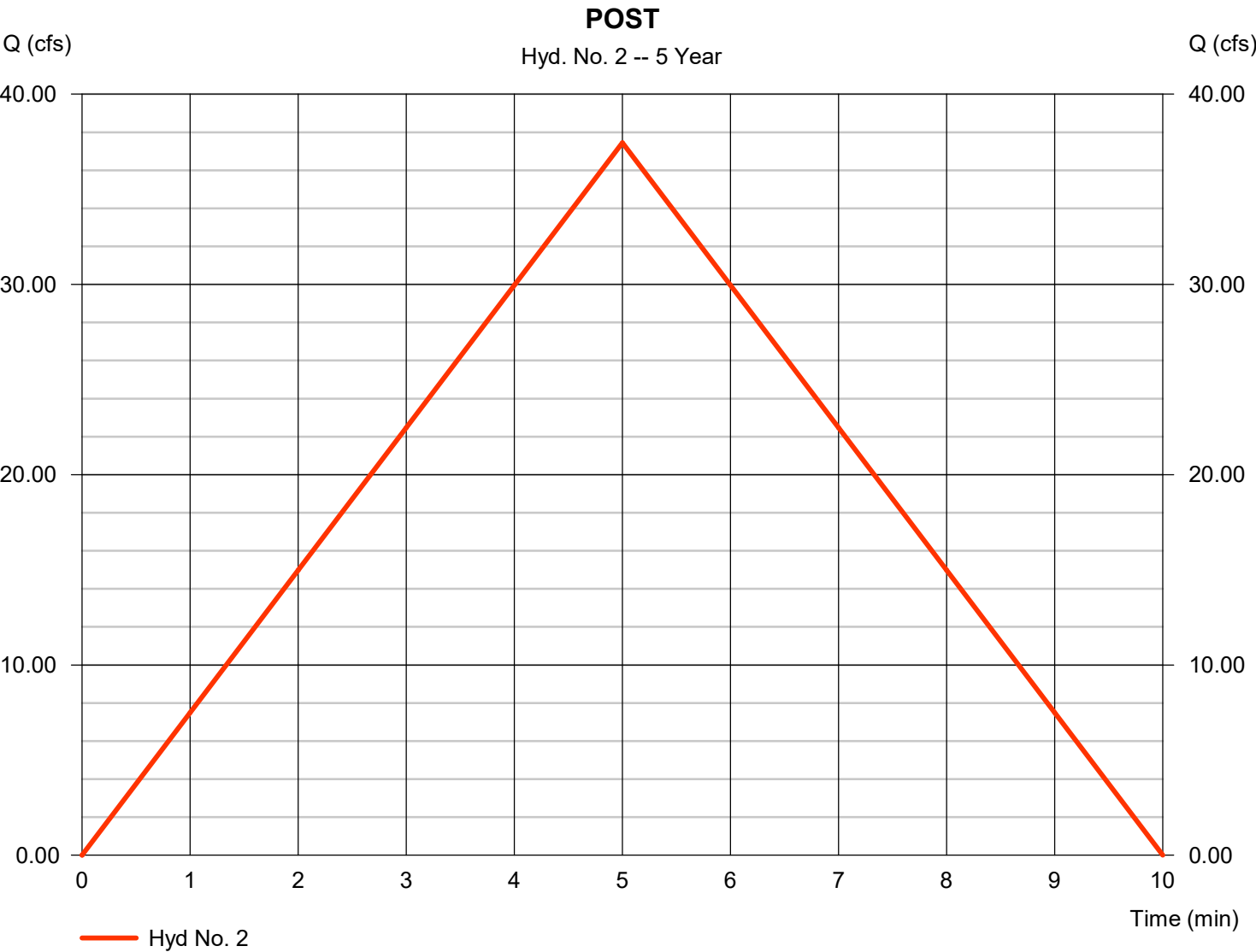
Hydrograph Report

Hyd. No. 2

POST

Hydrograph type	= Rational	Peak discharge	= 37.45 cfs
Storm frequency	= 5 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 11,235 cuft
Drainage area	= 6.000 ac	Runoff coeff.	= 0.95*
Intensity	= 6.570 in/hr	Tc by User	= 5.00 min
IDF Curve	= Littlerock.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.300 x 0.40) + (1.460 x 0.95)] / 6.000



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

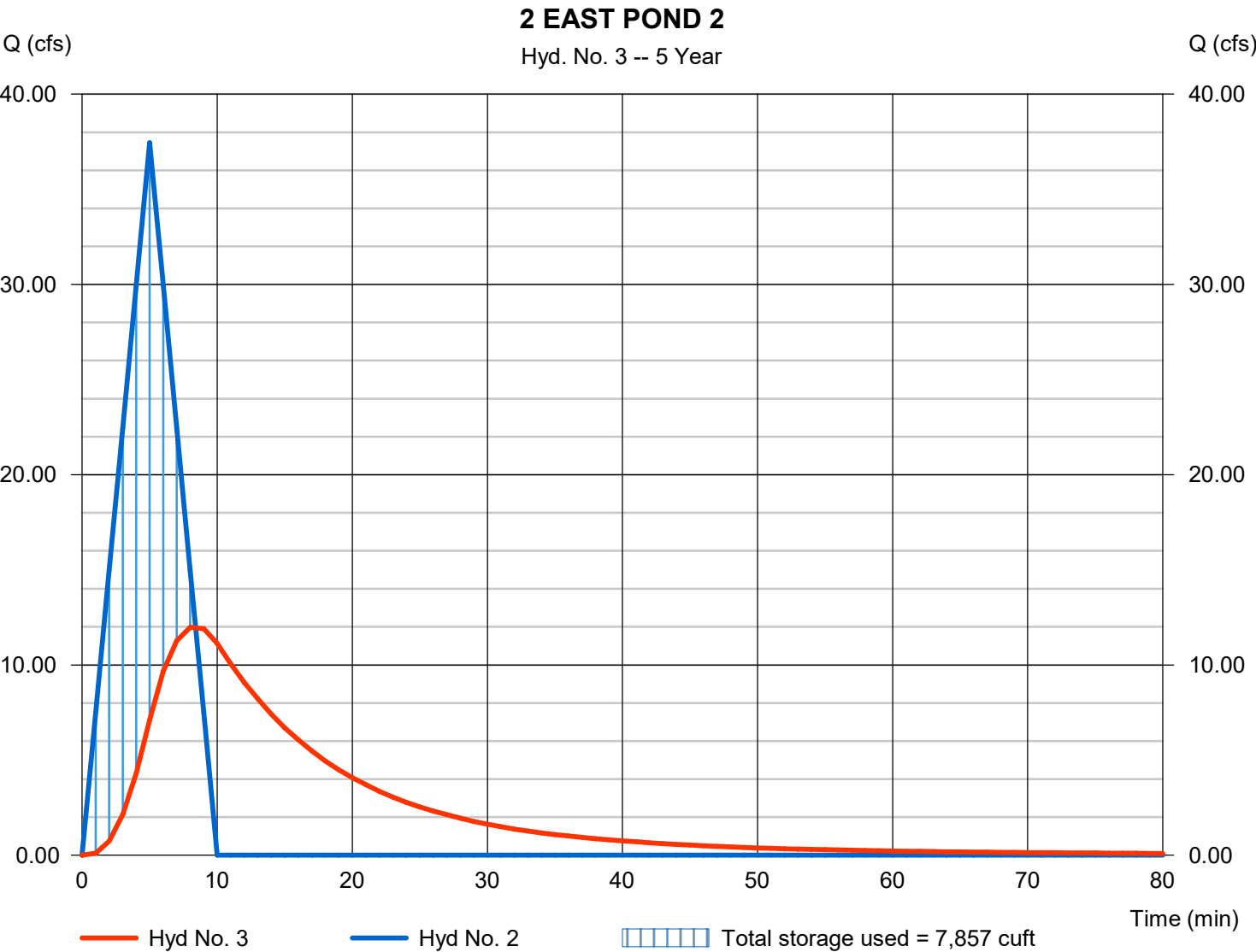
Tuesday, 11 / 23 / 2021

Hyd. No. 3

2 EAST POND 2

Hydrograph type	= Reservoir	Peak discharge	= 11.98 cfs
Storm frequency	= 5 yrs	Time to peak	= 8 min
Time interval	= 1 min	Hyd. volume	= 11,231 cuft
Inflow hyd. No.	= 2 - POST	Max. Elevation	= 398.60 ft
Reservoir name	= EAST POND 2	Max. Storage	= 7,857 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

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	Rational	18.12	1	10	10,875	-----	-----	-----	PRE
2	Rational	41.26	1	5	12,377	-----	-----	-----	POST
3	Reservoir	13.29	1	8	12,373	2	398.78	8,623	2 EAST POND 2
VERNIA PH 1 EAST POND.gpw					Return Period: 10 Year			Tuesday, 11 / 23 / 2021	

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

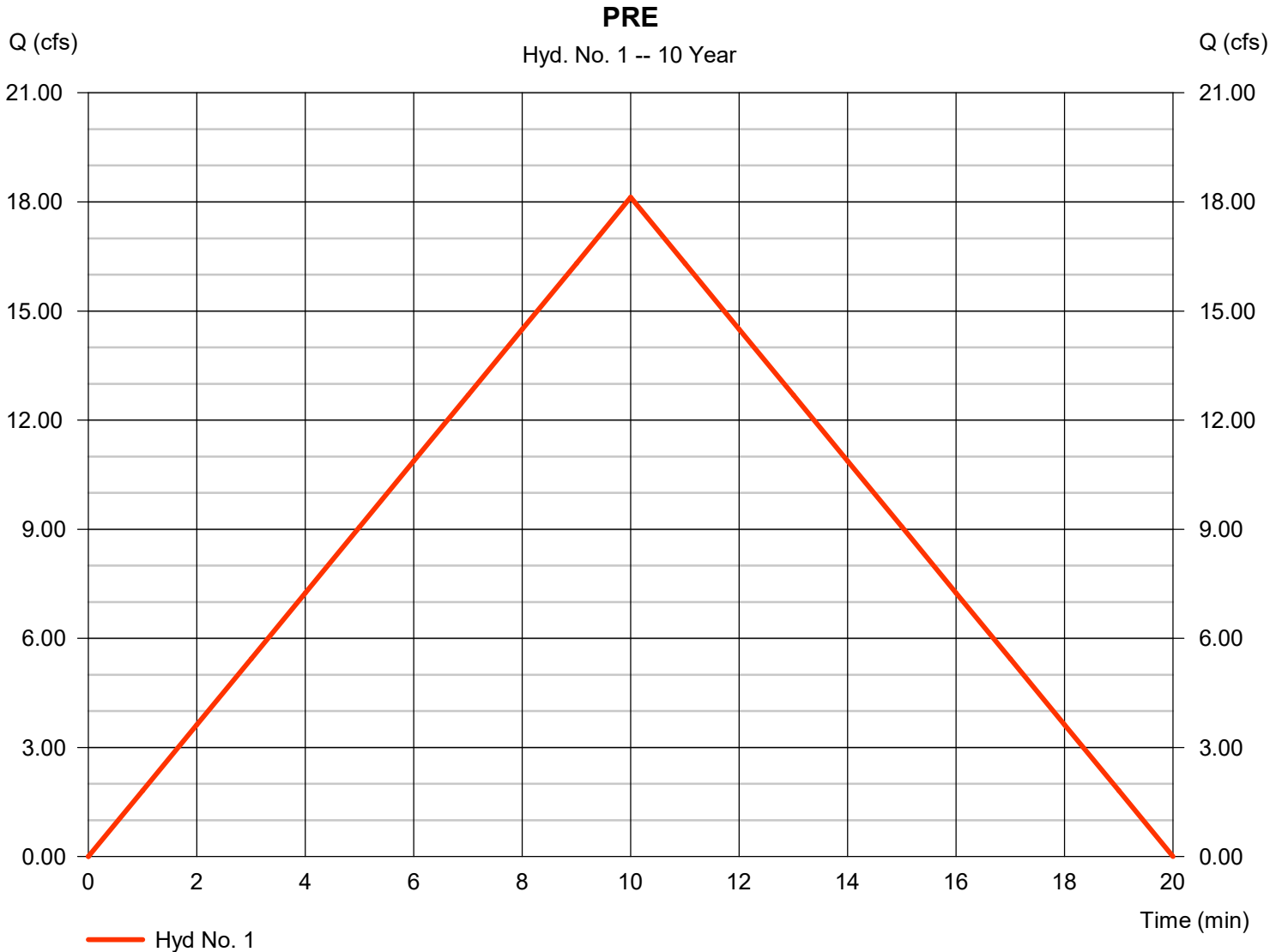
Tuesday, 11 / 23 / 2021

Hyd. No. 1

PRE

Hydrograph type	= Rational	Peak discharge	= 18.12 cfs
Storm frequency	= 10 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 10,875 cuft
Drainage area	= 6.000 ac	Runoff coeff.	= 0.5*
Intensity	= 6.042 in/hr	Tc by User	= 10.00 min
IDF Curve	= Littlerock.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = $[(1.600 \times 0.40) + (0.160 \times 0.95)] / 6.000$



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Tuesday, 11 / 23 / 2021

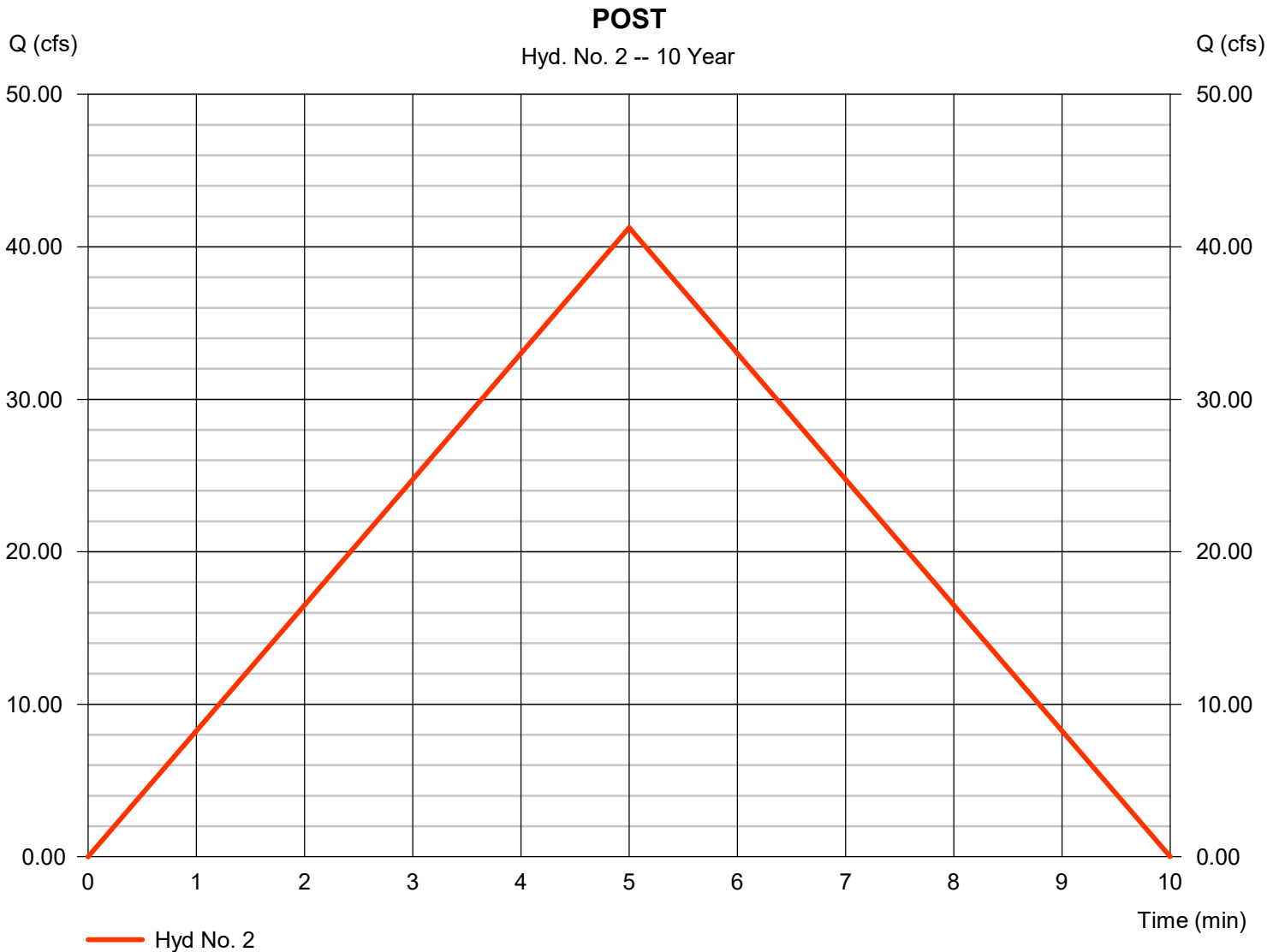
Hyd. No. 2

POST

Hydrograph type = Rational
 Storm frequency = 10 yrs
 Time interval = 1 min
 Drainage area = 6.000 ac
 Intensity = 7.238 in/hr
 IDF Curve = Littlerock.IDF

Peak discharge = 41.26 cfs
 Time to peak = 5 min
 Hyd. volume = 12,377 cuft
 Runoff coeff. = 0.95*
 Tc by User = 5.00 min
 Asc/Rec limb fact = 1/1

* Composite (Area/C) = $[(0.300 \times 0.40) + (1.460 \times 0.95)] / 6.000$



Hydrograph Report

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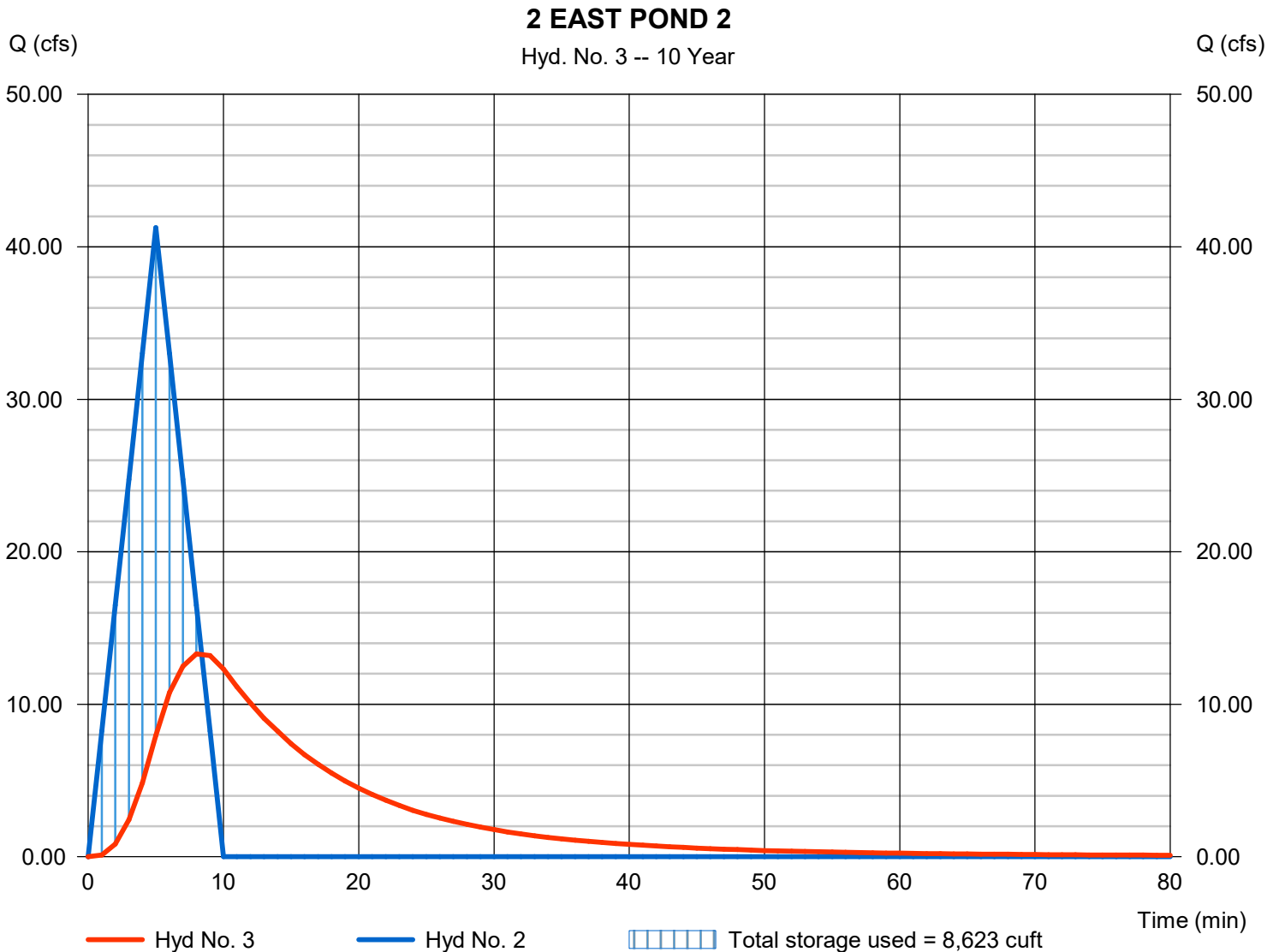
Tuesday, 11 / 23 / 2021

Hyd. No. 3

2 EAST POND 2

Hydrograph type	= Reservoir	Peak discharge	= 13.29 cfs
Storm frequency	= 10 yrs	Time to peak	= 8 min
Time interval	= 1 min	Hyd. volume	= 12,373 cuft
Inflow hyd. No.	= 2 - POST	Max. Elevation	= 398.78 ft
Reservoir name	= EAST POND 2	Max. Storage	= 8,623 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

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	Rational	20.84	1	10	12,502	-----	-----	-----	PRE
2	Rational	47.01	1	5	14,103	-----	-----	-----	POST
3	Reservoir	15.43	1	8	14,099	2	399.04	9,779	2 EAST POND 2
VERNIA PH 1 EAST POND.gpw					Return Period: 25 Year			Tuesday, 11 / 23 / 2021	

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Tuesday, 11 / 23 / 2021

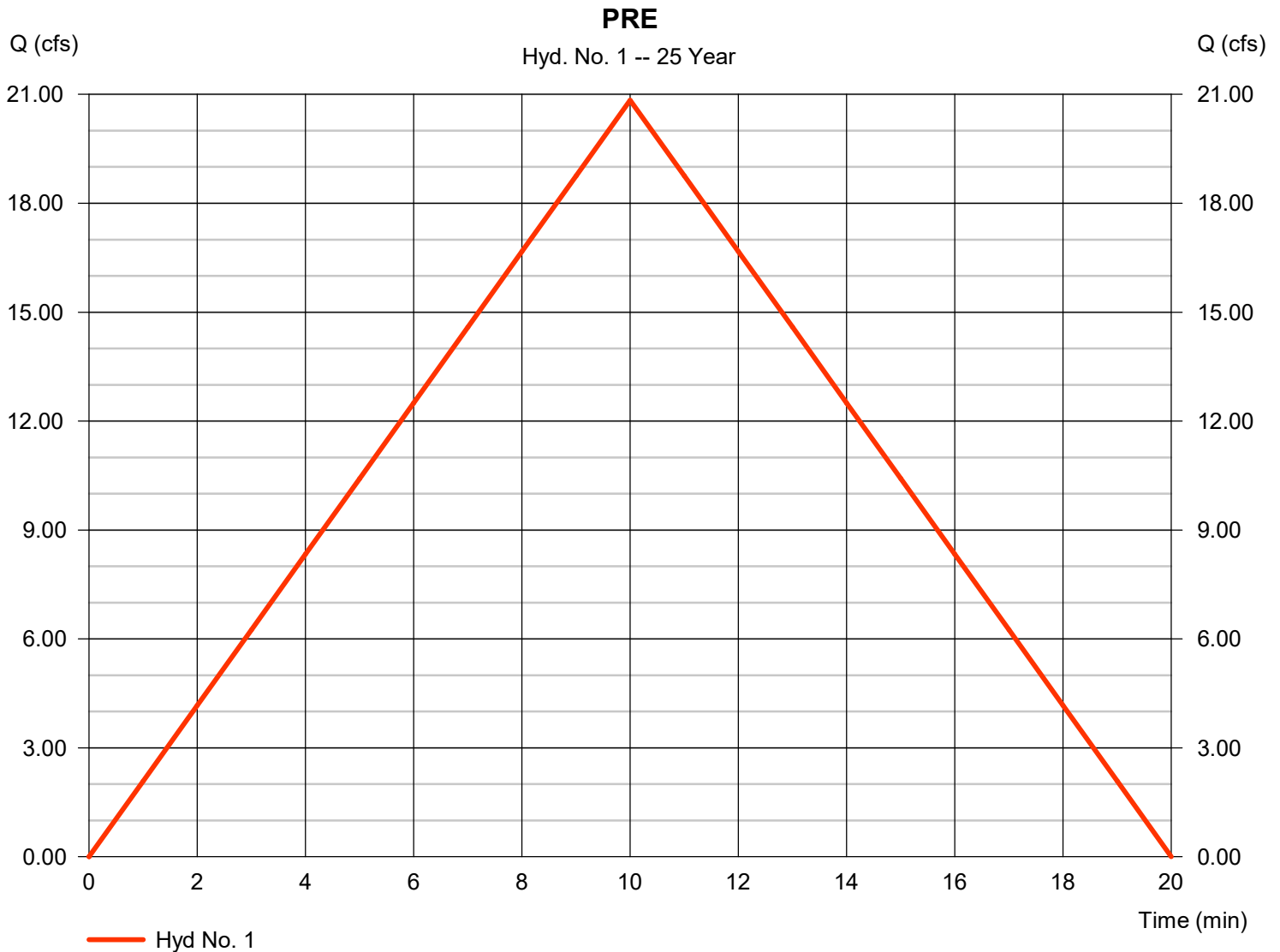
Hyd. No. 1

PRE

Hydrograph type = Rational
 Storm frequency = 25 yrs
 Time interval = 1 min
 Drainage area = 6.000 ac
 Intensity = 6.945 in/hr
 IDF Curve = Littlerock.IDF

Peak discharge = 20.84 cfs
 Time to peak = 10 min
 Hyd. volume = 12,502 cuft
 Runoff coeff. = 0.5*
 Tc by User = 10.00 min
 Asc/Rec limb fact = 1/1

* Composite (Area/C) = [(1.600 x 0.40) + (0.160 x 0.95)] / 6.000



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

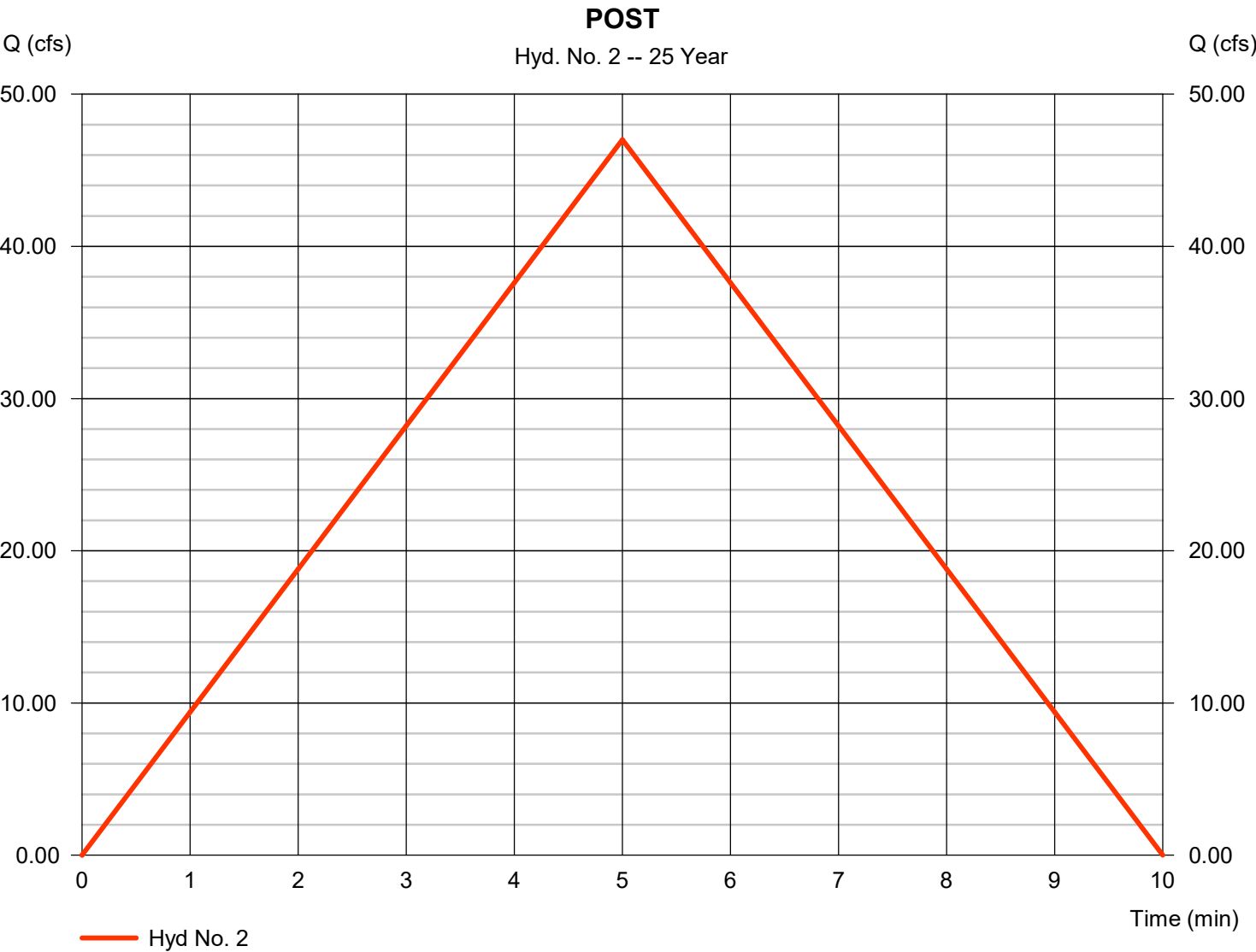
Tuesday, 11 / 23 / 2021

Hyd. No. 2

POST

Hydrograph type	= Rational	Peak discharge	= 47.01 cfs
Storm frequency	= 25 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 14,103 cuft
Drainage area	= 6.000 ac	Runoff coeff.	= 0.95*
Intensity	= 8.247 in/hr	Tc by User	= 5.00 min
IDF Curve	= Littlerock.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.300 x 0.40) + (1.460 x 0.95)] / 6.000



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

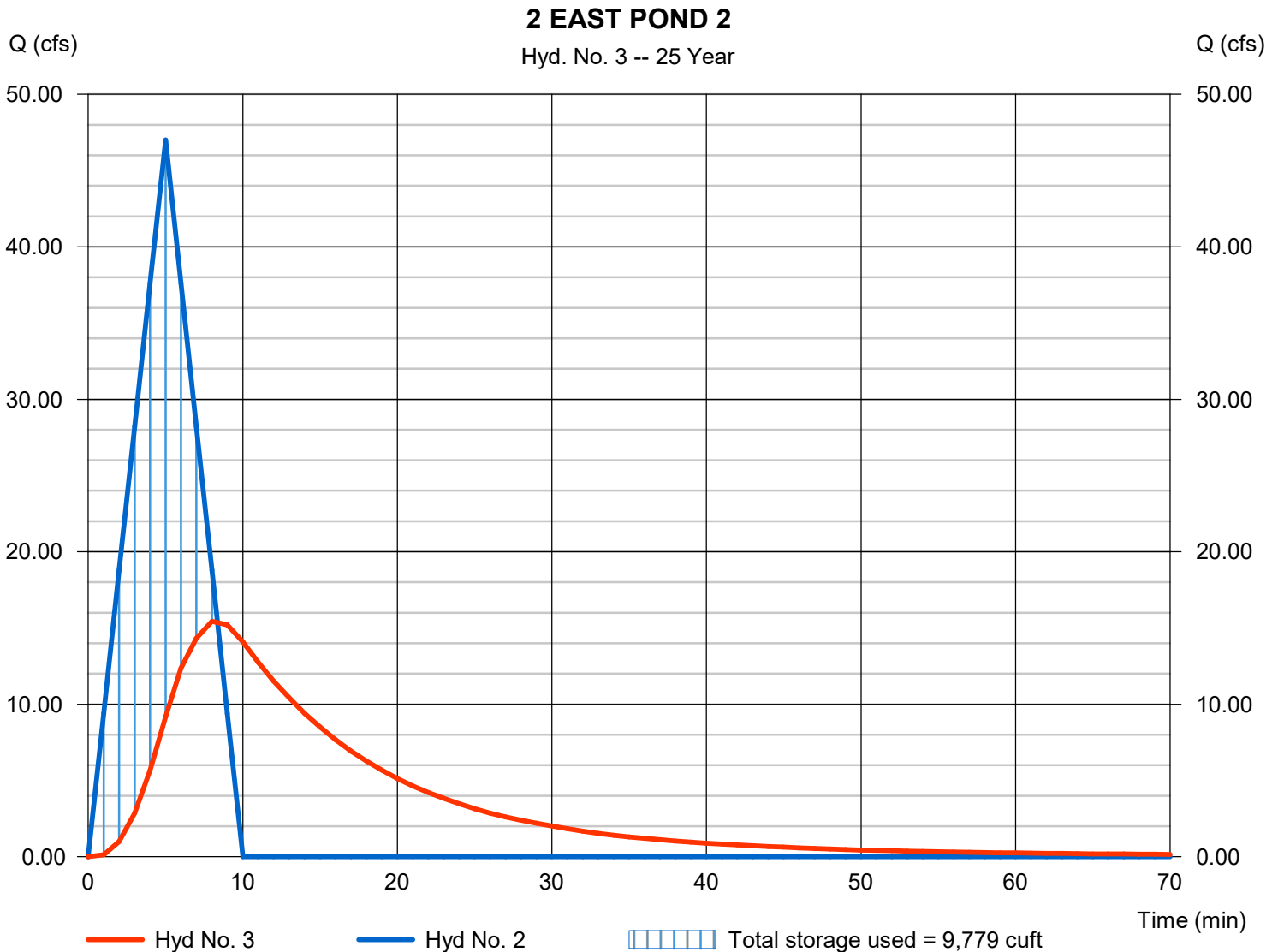
Tuesday, 11 / 23 / 2021

Hyd. No. 3

2 EAST POND 2

Hydrograph type	= Reservoir	Peak discharge	= 15.43 cfs
Storm frequency	= 25 yrs	Time to peak	= 8 min
Time interval	= 1 min	Hyd. volume	= 14,099 cuft
Inflow hyd. No.	= 2 - POST	Max. Elevation	= 399.04 ft
Reservoir name	= EAST POND 2	Max. Storage	= 9,779 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

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	Rational	22.96	1	10	13,777	-----	-----	-----	PRE
2	Rational	51.53	1	5	15,460	-----	-----	-----	POST
3	Reservoir	19.16	1	8	15,456	2	399.22	10,566	2 EAST POND 2
VERNIA PH 1 EAST POND.gpw					Return Period: 50 Year			Tuesday, 11 / 23 / 2021	

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

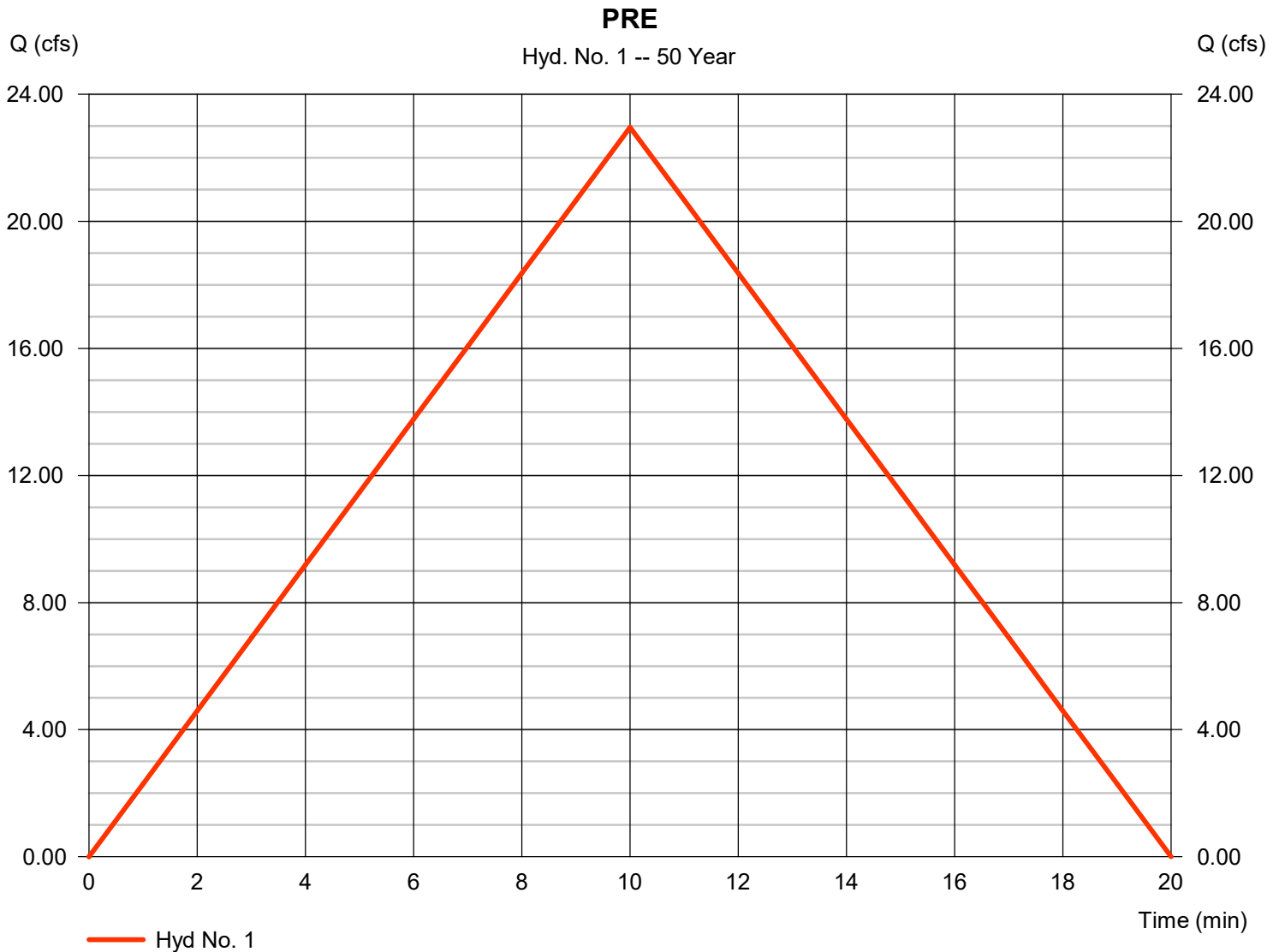
Tuesday, 11 / 23 / 2021

Hyd. No. 1

PRE

Hydrograph type	= Rational	Peak discharge	= 22.96 cfs
Storm frequency	= 50 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 13,777 cuft
Drainage area	= 6.000 ac	Runoff coeff.	= 0.5*
Intensity	= 7.654 in/hr	Tc by User	= 10.00 min
IDF Curve	= Littlerock.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = $[(1.600 \times 0.40) + (0.160 \times 0.95)] / 6.000$



Hydrograph Report

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Tuesday, 11 / 23 / 2021

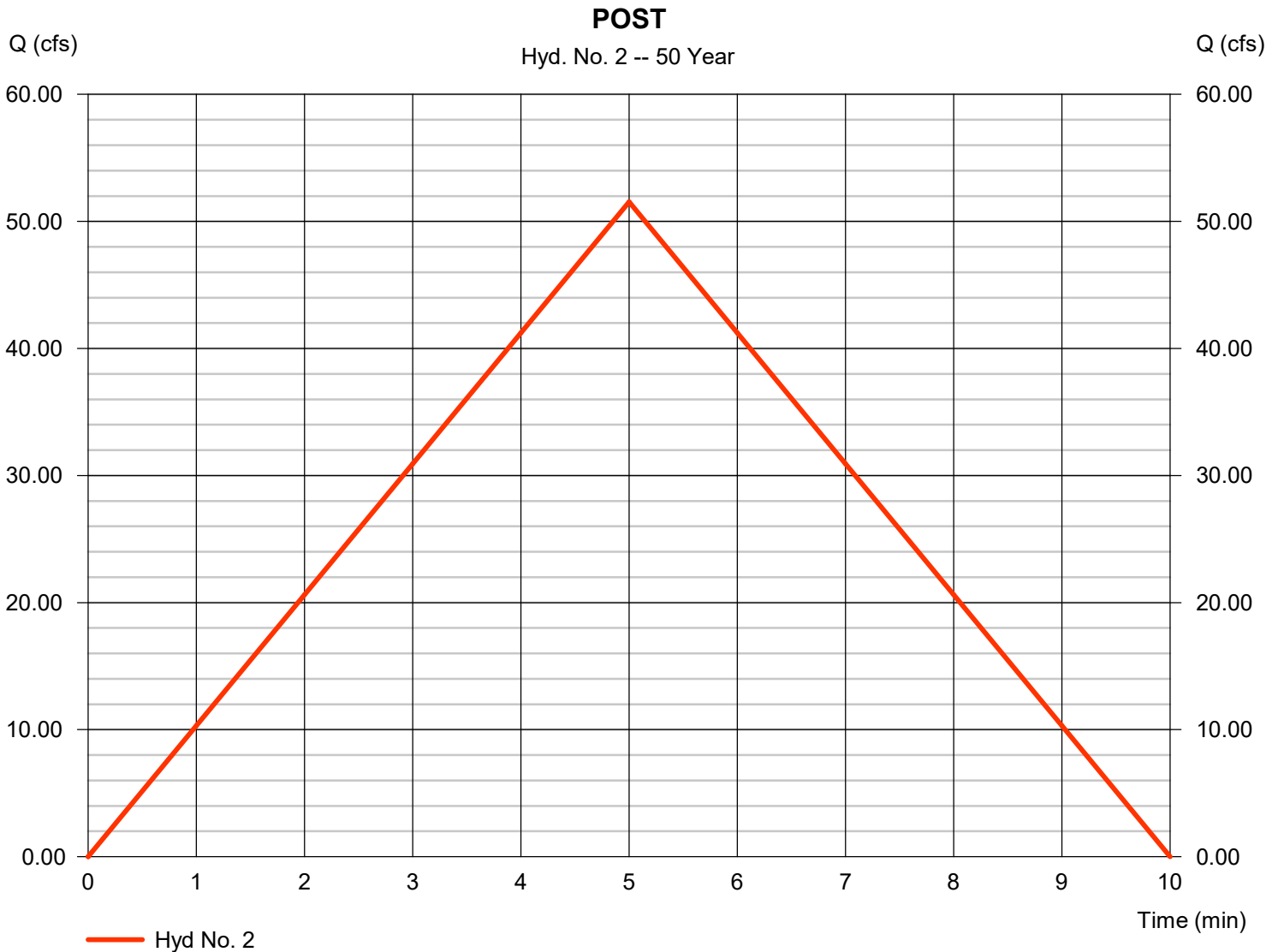
Hyd. No. 2

POST

Hydrograph type = Rational
 Storm frequency = 50 yrs
 Time interval = 1 min
 Drainage area = 6.000 ac
 Intensity = 9.041 in/hr
 IDF Curve = Littlerock.IDF

Peak discharge = 51.53 cfs
 Time to peak = 5 min
 Hyd. volume = 15,460 cuft
 Runoff coeff. = 0.95*
 Tc by User = 5.00 min
 Asc/Rec limb fact = 1/1

* Composite (Area/C) = $[(0.300 \times 0.40) + (1.460 \times 0.95)] / 6.000$



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

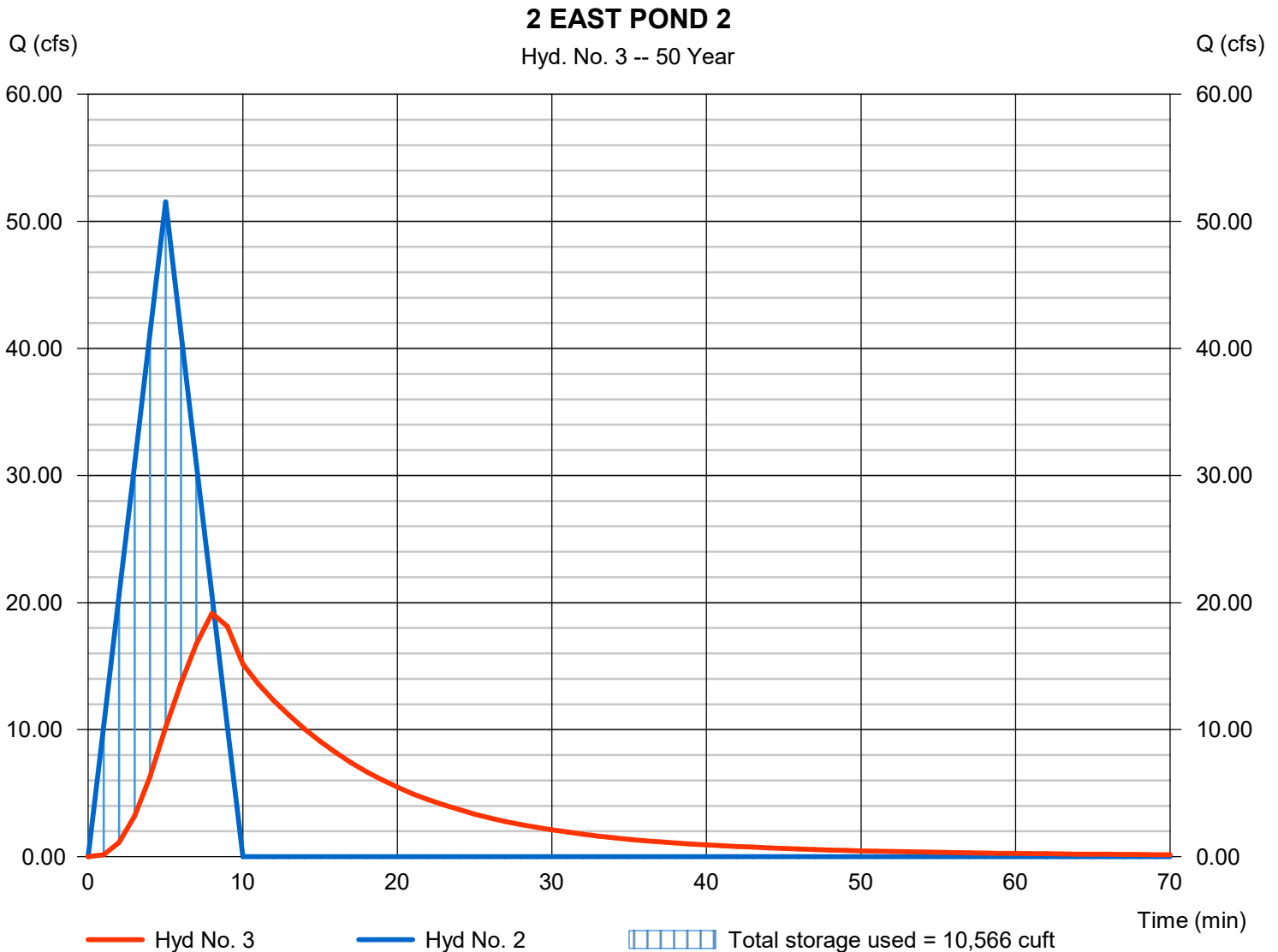
Tuesday, 11 / 23 / 2021

Hyd. No. 3

2 EAST POND 2

Hydrograph type	= Reservoir	Peak discharge	= 19.16 cfs
Storm frequency	= 50 yrs	Time to peak	= 8 min
Time interval	= 1 min	Hyd. volume	= 15,456 cuft
Inflow hyd. No.	= 2 - POST	Max. Elevation	= 399.22 ft
Reservoir name	= EAST POND 2	Max. Storage	= 10,566 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

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	Rational	25.08	1	10	15,047	-----	-----	-----	PRE
2	Rational	56.05	1	5	16,814	-----	-----	-----	POST
3	Reservoir	23.12	1	8	16,810	2	399.36	11,240	2 EAST POND 2
VERNIA PH 1 EAST POND.gpw					Return Period: 100 Year			Tuesday, 11 / 23 / 2021	

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

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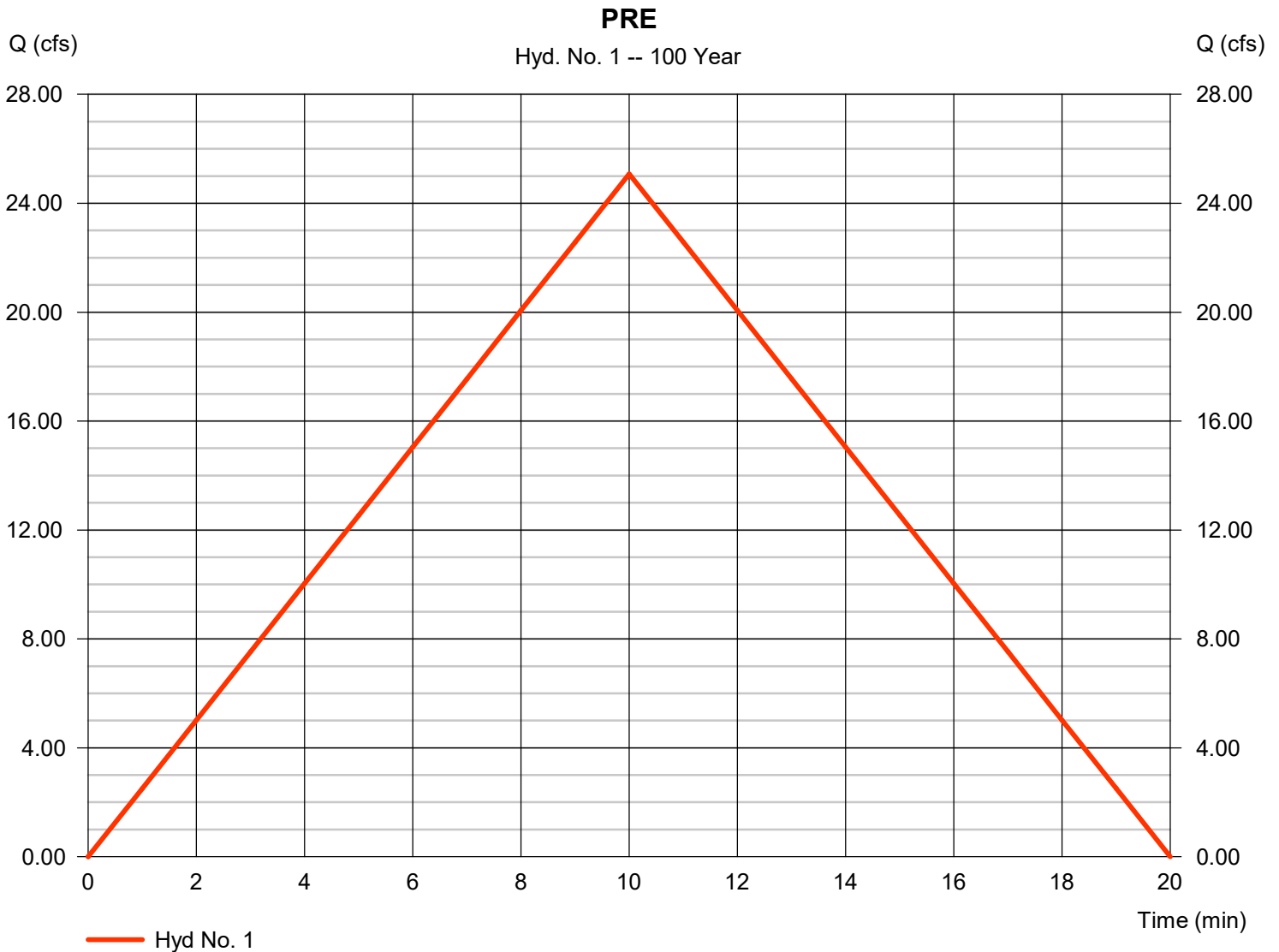
Hyd. No. 1

PRE

Hydrograph type = Rational
 Storm frequency = 100 yrs
 Time interval = 1 min
 Drainage area = 6.000 ac
 Intensity = 8.360 in/hr
 IDF Curve = Littlerock.IDF

Peak discharge = 25.08 cfs
 Time to peak = 10 min
 Hyd. volume = 15,047 cuft
 Runoff coeff. = 0.5*
 Tc by User = 10.00 min
 Asc/Rec limb fact = 1/1

* Composite (Area/C) = [(1.600 x 0.40) + (0.160 x 0.95)] / 6.000



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Tuesday, 11 / 23 / 2021

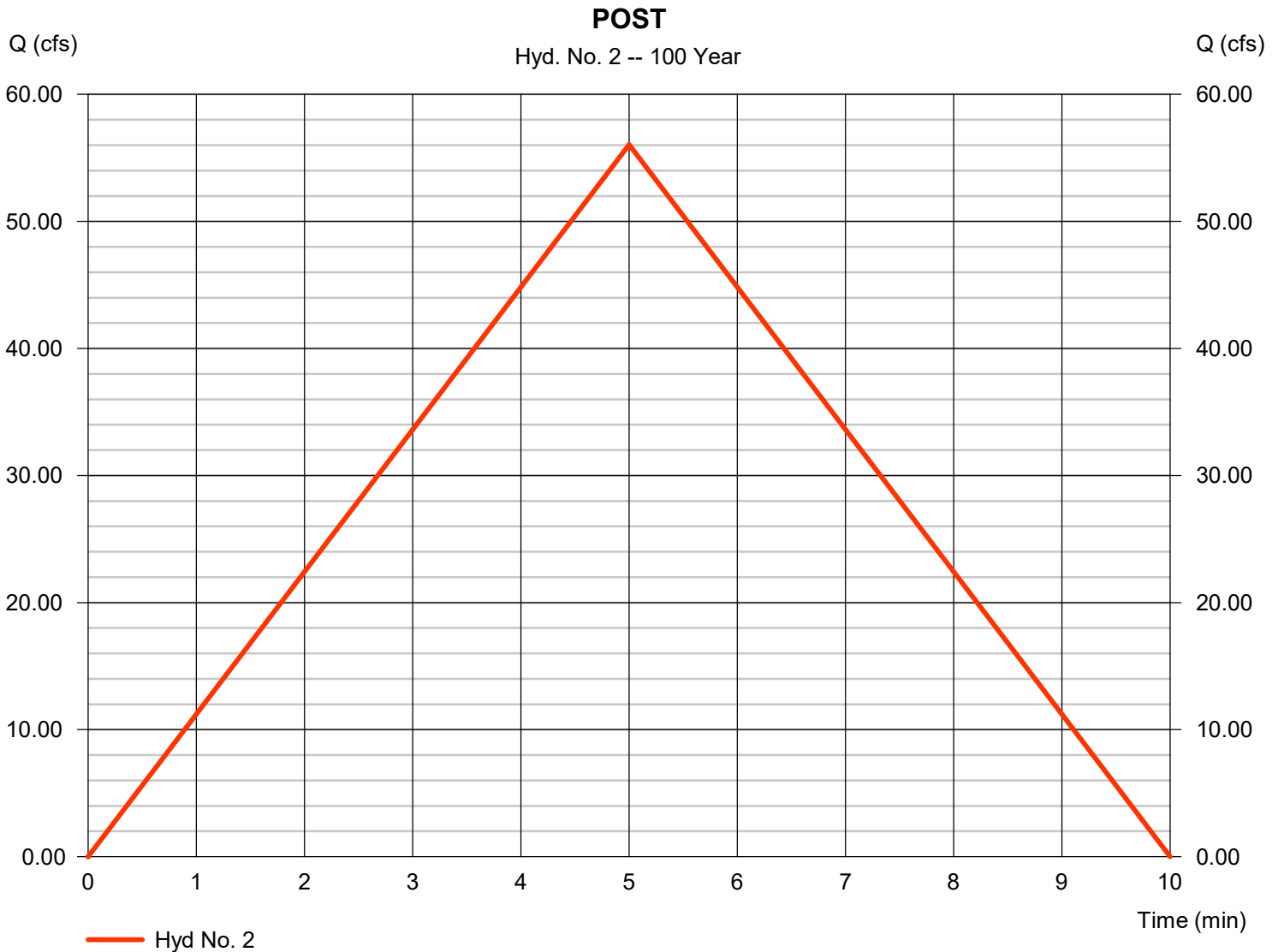
Hyd. No. 2

POST

Hydrograph type = Rational
 Storm frequency = 100 yrs
 Time interval = 1 min
 Drainage area = 6.000 ac
 Intensity = 9.833 in/hr
 IDF Curve = Littlerock.IDF

Peak discharge = 56.05 cfs
 Time to peak = 5 min
 Hyd. volume = 16,814 cuft
 Runoff coeff. = 0.95*
 Tc by User = 5.00 min
 Asc/Rec limb fact = 1/1

* Composite (Area/C) = $[(0.300 \times 0.40) + (1.460 \times 0.95)] / 6.000$



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

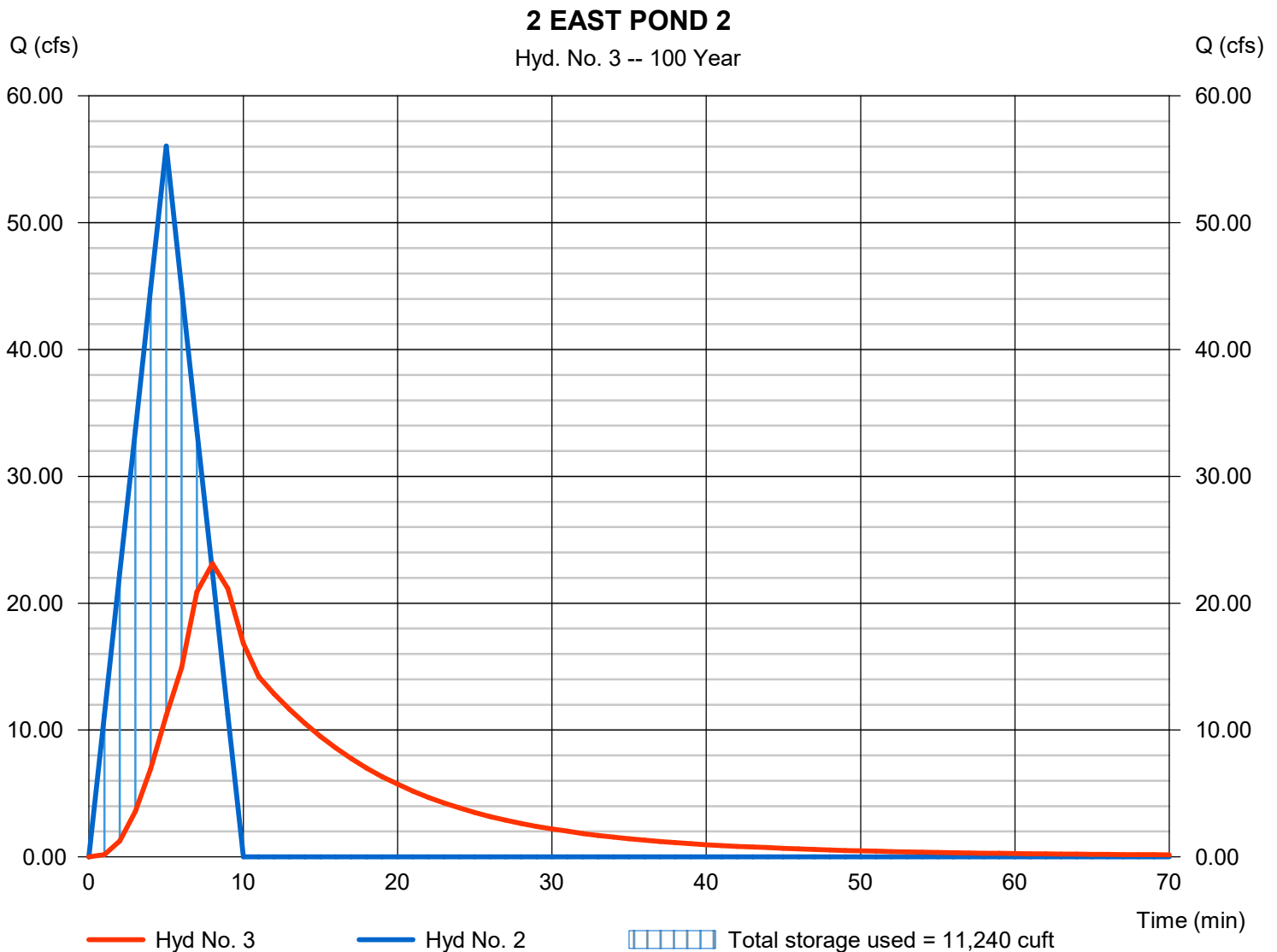
Tuesday, 11 / 23 / 2021

Hyd. No. 3

2 EAST POND 2

Hydrograph type	= Reservoir	Peak discharge	= 23.12 cfs
Storm frequency	= 100 yrs	Time to peak	= 8 min
Time interval	= 1 min	Hyd. volume	= 16,810 cuft
Inflow hyd. No.	= 2 - POST	Max. Elevation	= 399.36 ft
Reservoir name	= EAST POND 2	Max. Storage	= 11,240 cuft

Storage Indication method used.



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