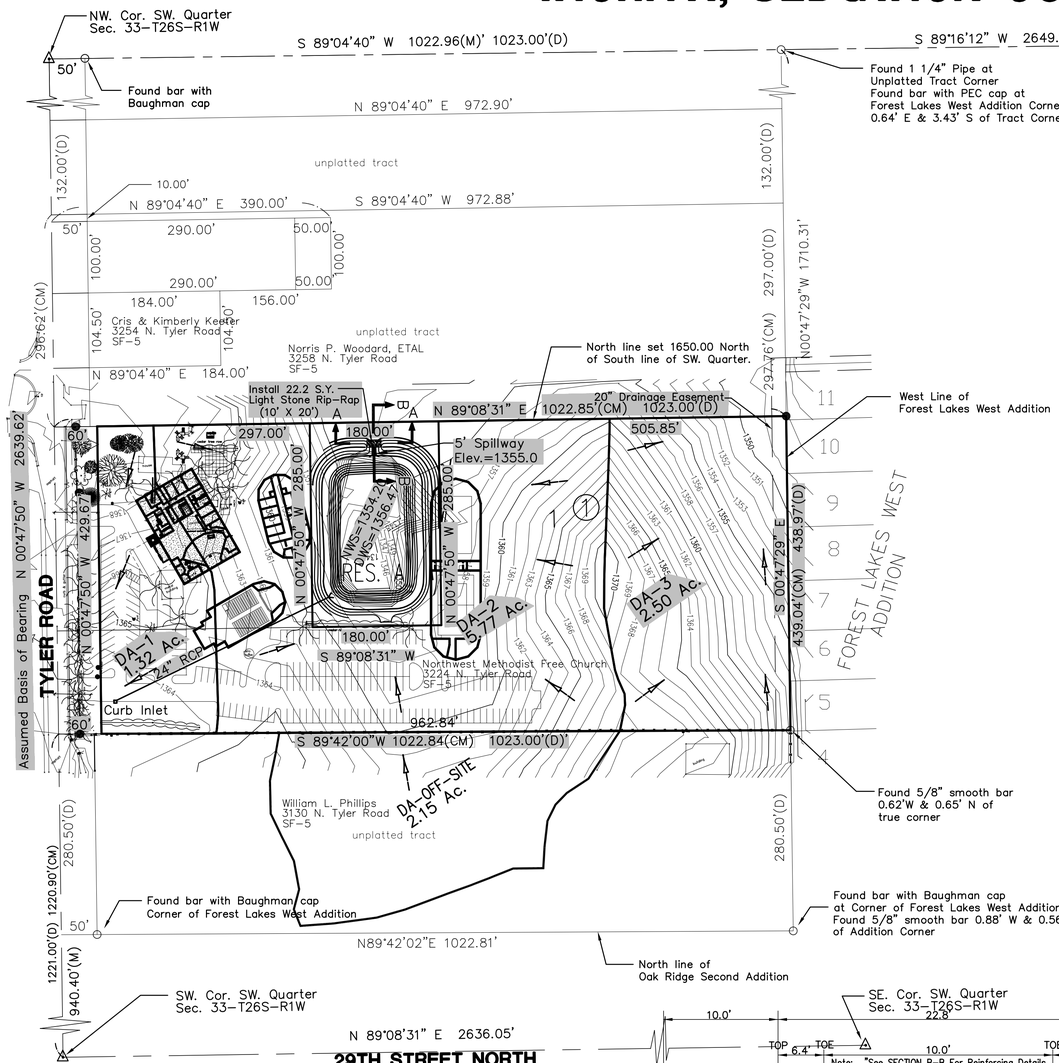
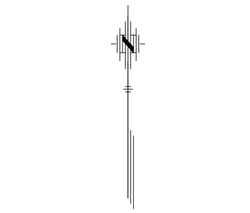
DRAINAGE PLAN FOR
NORTHWEST METHODIST ADDITION
WICHITA, SEDGWICK COUNTY, KANSAS





				Undeveloped			Developed		
Area #	Area	t_5	t_{100}	Q_5	Q_{100}	CN	CN	Q_5	Q_{100}
1	1.32	4.62	7.40	2.02	5.58	72.0	91.1	3.12	6.46
2	5.77	4.62	7.40	8.80	24.35	72.0	73.4	13.60	28.20
3	2.50	4.62	7.40	3.81	10.55	72.0	72.0	*	*
Offsite	2.15	4.62	7.40	3.28	9.06	72.0	72.0	*	*

* Undeveloped

LEGEND

- ○ = 1/2" Iron Pipe (found)
- ✖ = 1/2" Rebar (found)
- ● = PK Nail (found)
- \+ = "+" Cut (found)
- ◬ = Section Corner
- (M) = Measured
- (P) = Platted
- R.O.W. = Right-of-Way

PROPOSED POND STORAGE TABLE					
Elevation	Acres	Storage Acre-Ft.	Total Storage Acre-Ft.	Q_5	Q_{100}
1357	0.78	0.41	1.91		
1356.46	0.74	0.13	1.50		38.15
1356.28	0.73	0.20	1.36	12.67	28.74
1356	0.71	0.68	1.16	6.81	16.32
1355	0.65	0.48	0.48	0.64	0.64
1354.20	0.54	0.00	0.00	0.00	0.00

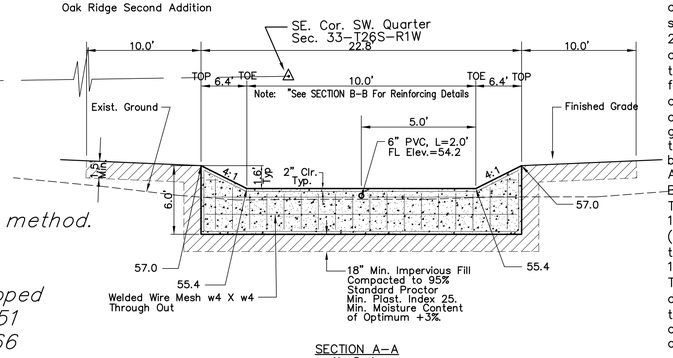
EXISTING POND STORAGE TABLE					
Elevation	Acres	Storage Acre-Ft.	Total Storage Acre-Ft.	Q_5	Q_{100}
1357	1.24	1.12	2.54		
1356	1.00	0.90	1.42		
1355	0.81	0.23	0.52		
1354.68	0.66	0.15	0.28		38.18
1354.44	0.59	0.13	0.13	13.43	13.43
1354.20	0.52	0.00	0.00	0.00	0.00

NOTES:

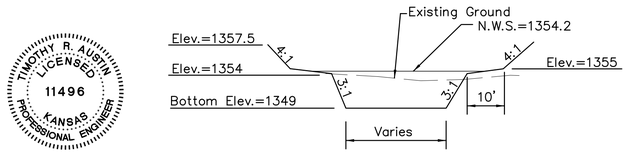
1. Determination of Q's was made using the rational method.

2. c's used were as follows:

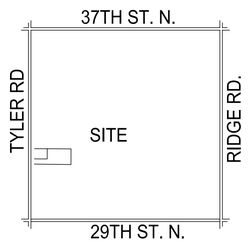
	Undeveloped	Developed
5yr frequency	0.33	0.51
100 yr frequency	0.57	0.66



SECTION A–A
No Scale



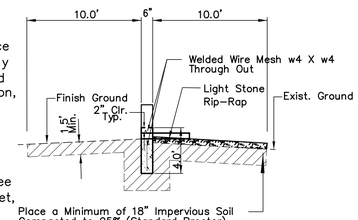
TYPICAL POND GRADING



LOCATION MAP
No Scale

LEGAL DESCRIPTION

A tract of land in the Southwest Quarter of Section 33, T26S, R1W of the 6th P.M., Sedgwick County, Kansas, being more particularly described as: Going Northerly on the West line of Section 33, T26S, R1W, a distance of 1221.00 feet North from the Southwest corner of said section for a point of beginning, thence turning right deflecting 90°29' 21" and going Easterly a distance of 1023.00 feet, thence turning left deflecting 90°29'21" and going Northerly a distance of 438.97 feet, thence turning left deflecting 90°04' and going Westerly on a line 1650 feet North of and parallel with the South line of the Section, a distance of 666.00 feet, thence turning left deflecting 89°56' and going Southerly a distance of 288.38 feet, thence turning right deflecting 90°29'21" and going Westerly a distance of 357.00 feet to the West line of the Section, thence turning right ***(left)*** and going South 144.10 feet to the point of beginning enclosing 7.84 acres more or less.
AND:
Beginning at a point on the West line of Section Thirty–three (33), Township Twenty–six (26) South, Range One (1) West, a distance of 1365.00 feet North of the Southwest Corner of said Section Thirty–three (33), thence going Northerly on the same line a distance of 284.90 feet, thence turning right deflecting 89°56' and going Easterly on a line 1650.10 feet North of and parallel with the South line of said Section Thirty–three (33), a distance of 357.00 feet, thence turning right deflecting 90°04' and going Southerly a distance of 288.38 feet, thence turning right deflecting 29°29'20" and thence going Westerly a distance of 357.00 feet to the point of beginning, enclosing an area of 2.35 acres, more or less.



SECTION B–B
No Scale

TIMOTHY R. AUSTIN LICENSED 11496 KANSAS PROFESSIONAL ENGINEER

No.	Revision	Date	By	Approved

NORTHWEST METHODIST ADDITION
DRAINAGE PLAN
CITY OF WICHITA, KANSAS
JIM ARMOUR P.E.– CITY ENGINEER

POE & ASSOCIATES, INC.
CONSULTING ENGINEERS
5940 E. Central, Suite 200 ■ Wichita, KS 67208-4242
Phone 316/685-4114 ■ FAX 316/685-4444

PRELIM

Designed By: T. Austin
Drawn By: S. Schmidt
874\Drainage.dwg
Date: 07/05/06
Sheet

Table of Contents

5 - Year

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	Rational	2.036	1	75	9,160	----	------	------	DA1-R5
2	Rational	8.884	1	75	39,978	----	------	------	DA2-R5
3	Rational	3.307	1	75	14,879	----	------	------	DAOFFSITE-R5
4	Rational	3.848	1	75	17,317	----	------	------	DA3-R5
5	Combine	12.19	1	75	54,858	2, 3,	------	------	ADD DA2 & DAOFFSITE
6	Combine	14.23	1	75	64,018	1, 5	------	------	ADD DA1, DA2, & DAOFFSITE
7	Reservoir	13.41	1	79	64,017	6	1354.44	6,825	THROUGH POND
8	Combine	17.08	1	78	81,334	4, 7	------	------	COMBINE OUTFALL TO DA3
9	Reservoir	17.08	1	78	81,334	8	1349.70	1	OFFSITE TO EAST

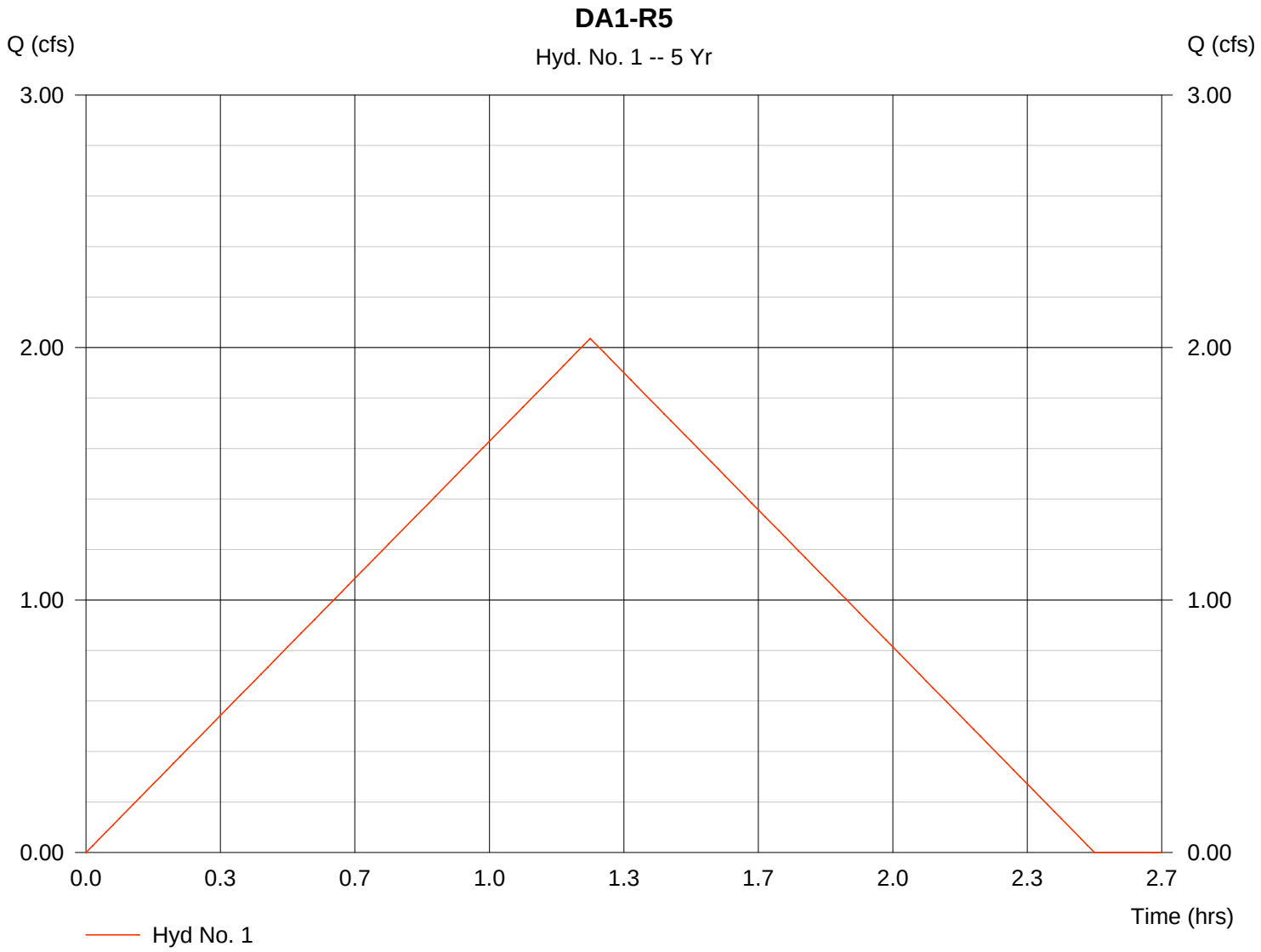
Hydrograph Plot

Hyd. No. 1

DA1-R5

Hydrograph type	= Rational	Peak discharge	= 2.036 cfs
Storm frequency	= 5 yrs	Time interval	= 1 min
Drainage area	= 1.323 ac	Runoff coeff.	= 0.33
Intensity	= 4.663 in/hr	Tc by User	= 15.00 min
IDF Curve	= SedgwickCo.IDF	Asc/Rec limb fact	= 5/5

Hydrograph Volume = 9,160 cuft



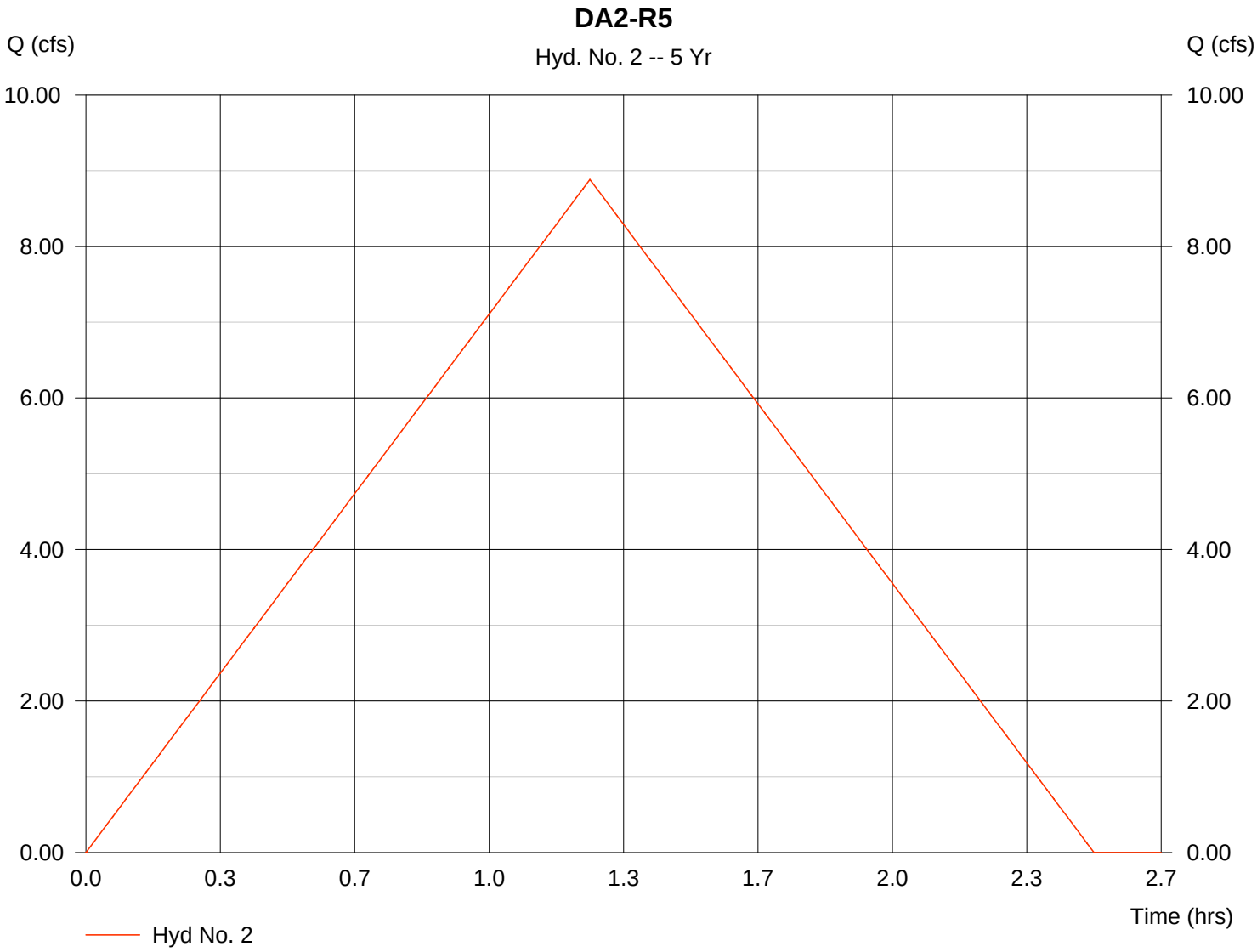
Hydrograph Plot

Hyd. No. 2

DA2-R5

Hydrograph type	= Rational	Peak discharge	= 8.884 cfs
Storm frequency	= 5 yrs	Time interval	= 1 min
Drainage area	= 5.774 ac	Runoff coeff.	= 0.33
Intensity	= 4.663 in/hr	Tc by User	= 15.00 min
IDF Curve	= SedgwickCo.IDF	Asc/Rec limb fact	= 5/5

Hydrograph Volume = 39,978 cuft



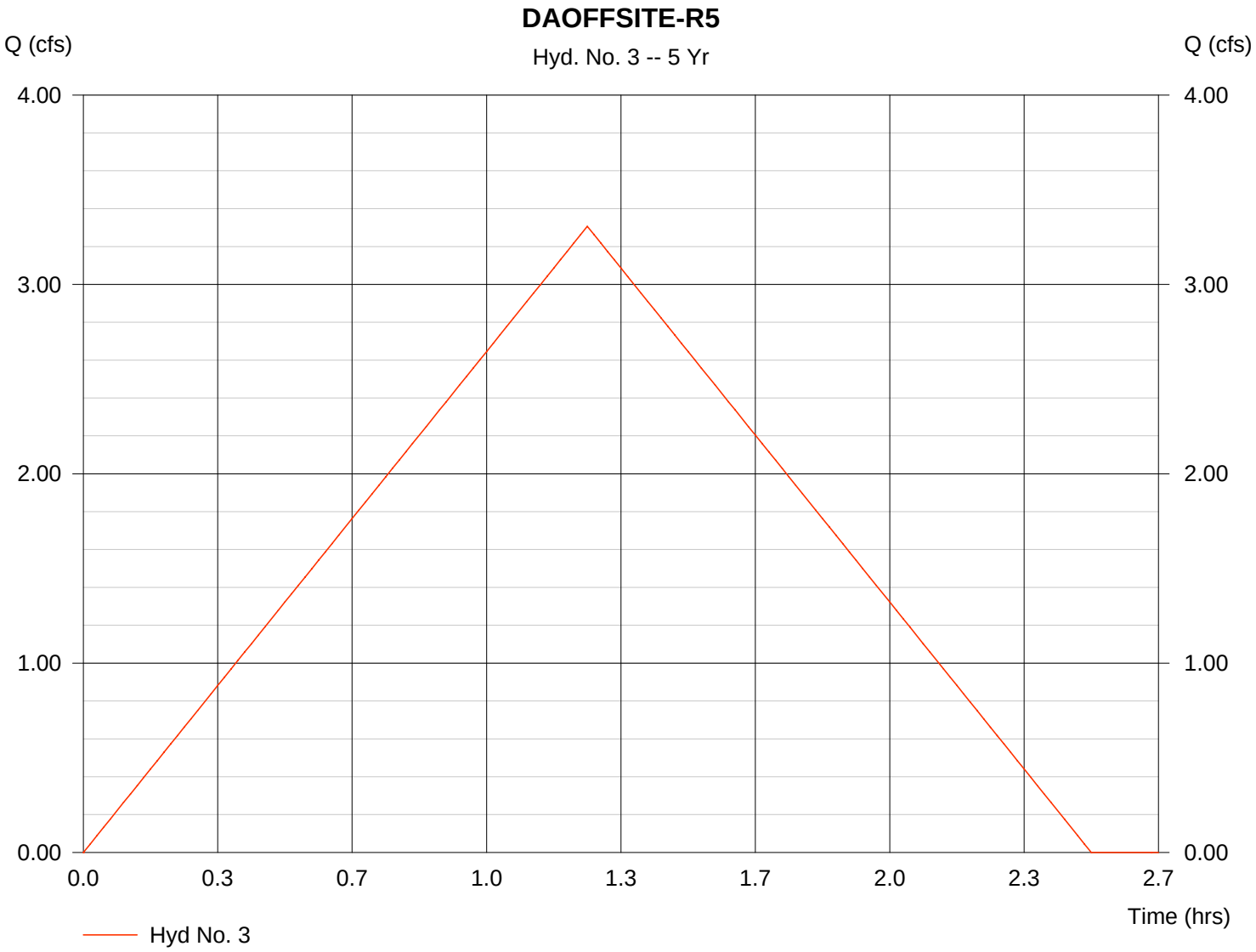
Hydrograph Plot

Hyd. No. 3

DAOFFSITE-R5

Hydrograph type	= Rational	Peak discharge	= 3.307 cfs
Storm frequency	= 5 yrs	Time interval	= 1 min
Drainage area	= 2.149 ac	Runoff coeff.	= 0.33
Intensity	= 4.663 in/hr	Tc by User	= 15.00 min
IDF Curve	= SedgwickCo.IDF	Asc/Rec limb fact	= 5/5

Hydrograph Volume = 14,879 cuft



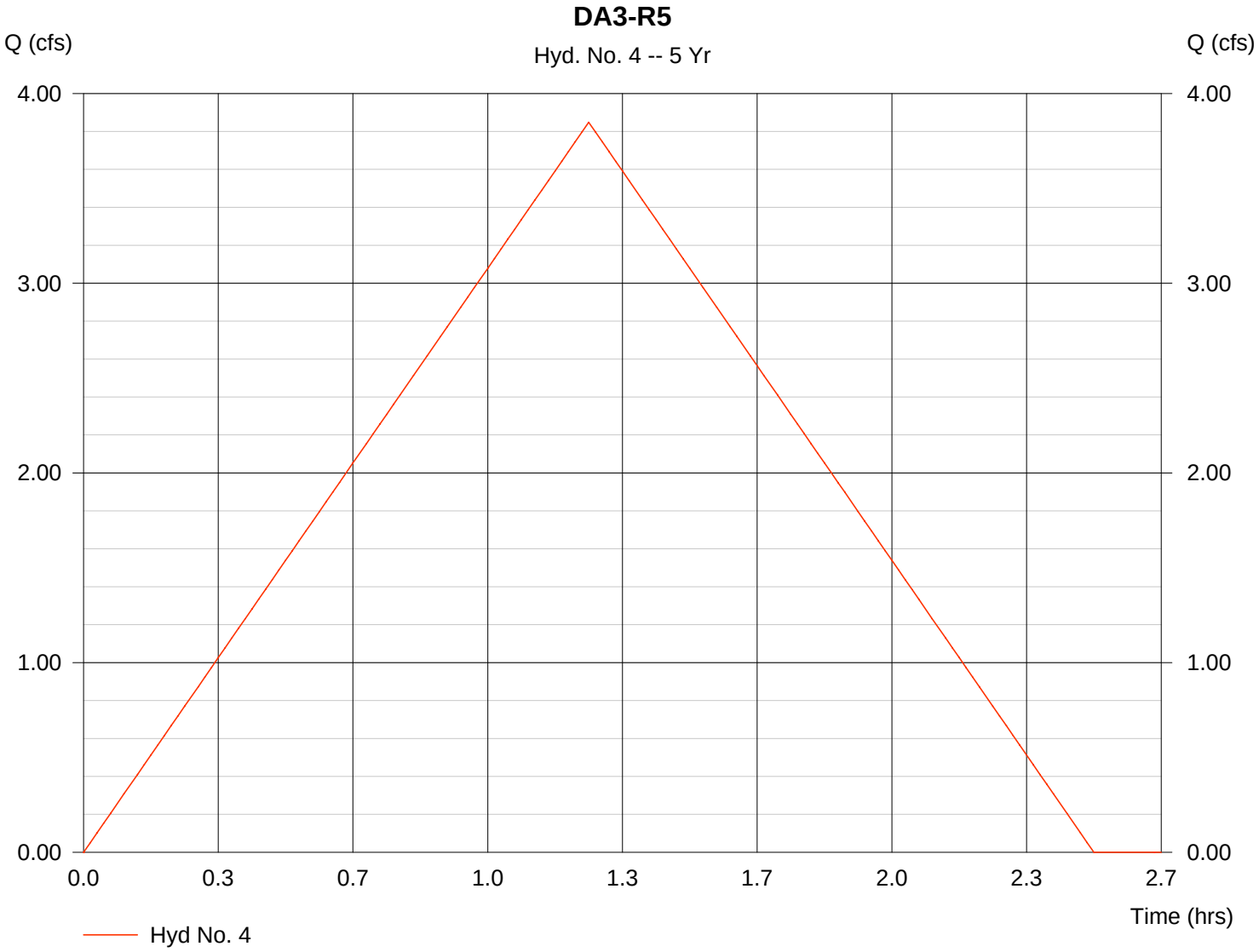
Hydrograph Plot

Hyd. No. 4

DA3-R5

Hydrograph type	=	Rational	Peak discharge	=	3.848 cfs
Storm frequency	=	5 yrs	Time interval	=	1 min
Drainage area	=	2.501 ac	Runoff coeff.	=	0.33
Intensity	=	4.663 in/hr	Tc by User	=	15.00 min
IDF Curve	=	SedgwickCo.IDF	Asc/Rec limb fact	=	5/5

Hydrograph Volume = 17,317 cuft



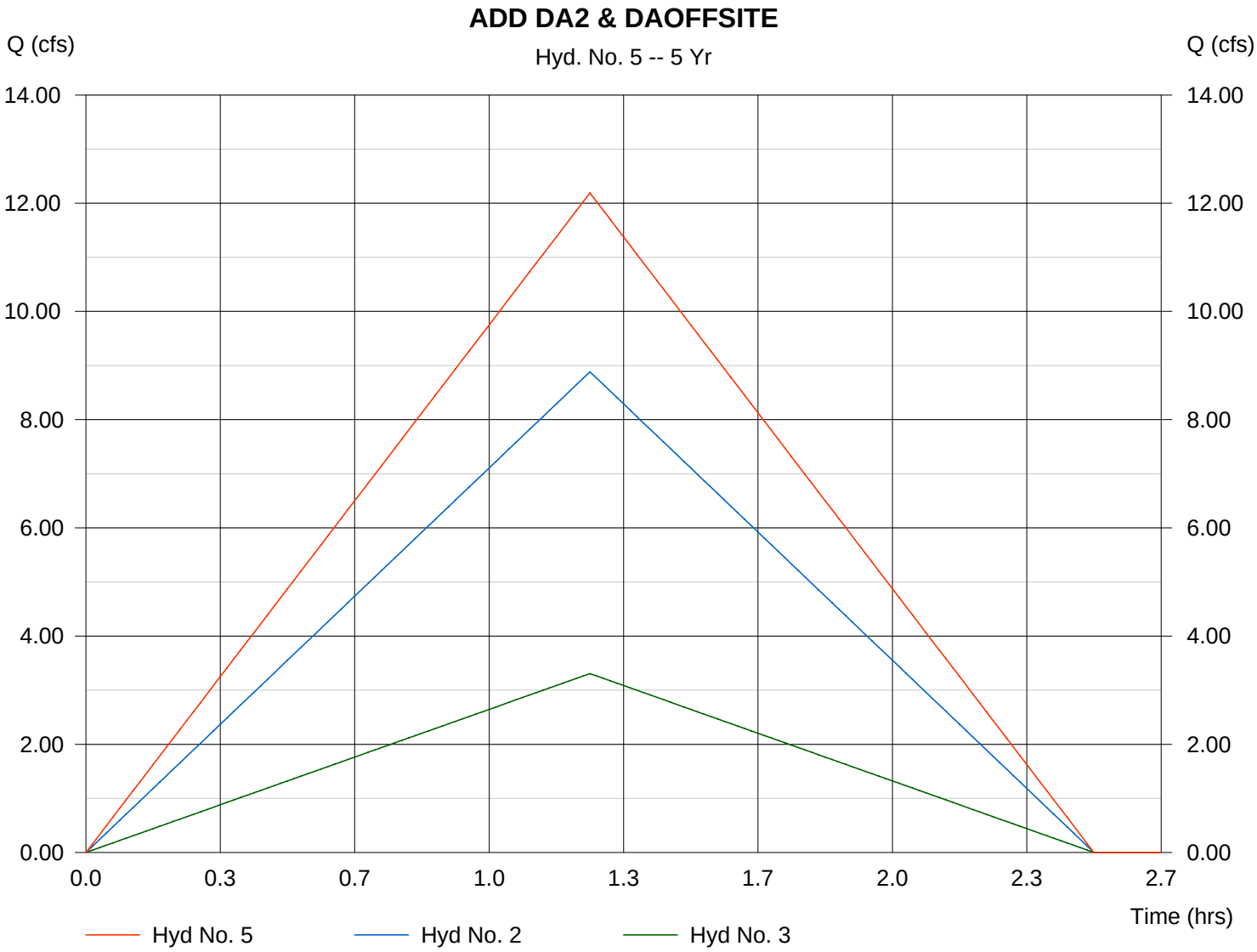
Hydrograph Plot

Hyd. No. 5

ADD DA2 & DAOFFSITE

Hydrograph type	= Combine	Peak discharge	= 12.19 cfs
Storm frequency	= 5 yrs	Time interval	= 1 min
Inflow hyds.	= 2, 3		

Hydrograph Volume = 54,858 cuft



Hydrograph Plot

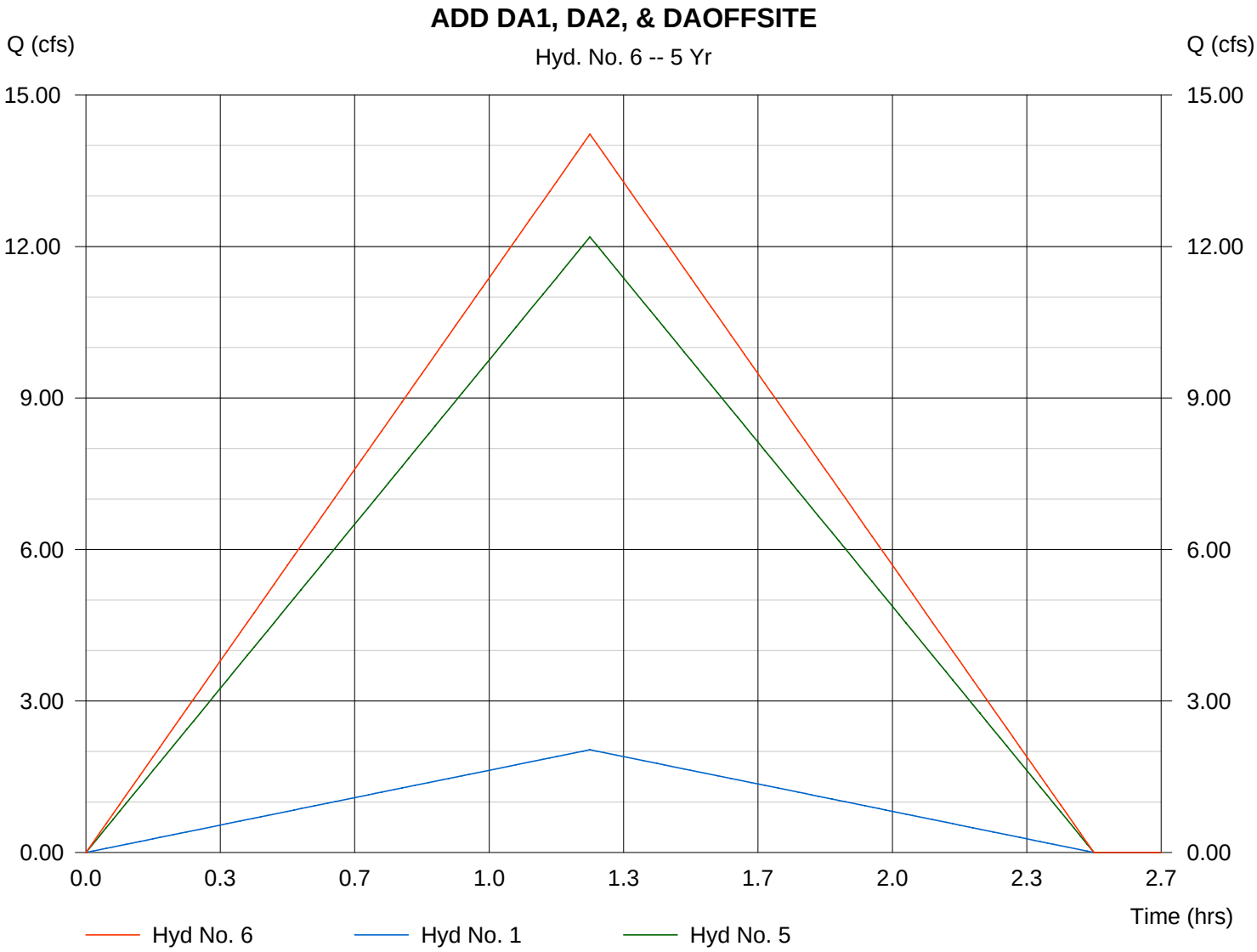
Hyd. No. 6

ADD DA1, DA2, & DAOFFSITE

Hydrograph type = Combine
Storm frequency = 5 yrs
Inflow hyds. = 1, 5

Peak discharge = 14.23 cfs
Time interval = 1 min

Hydrograph Volume = 64,018 cuft



Hydrograph Plot

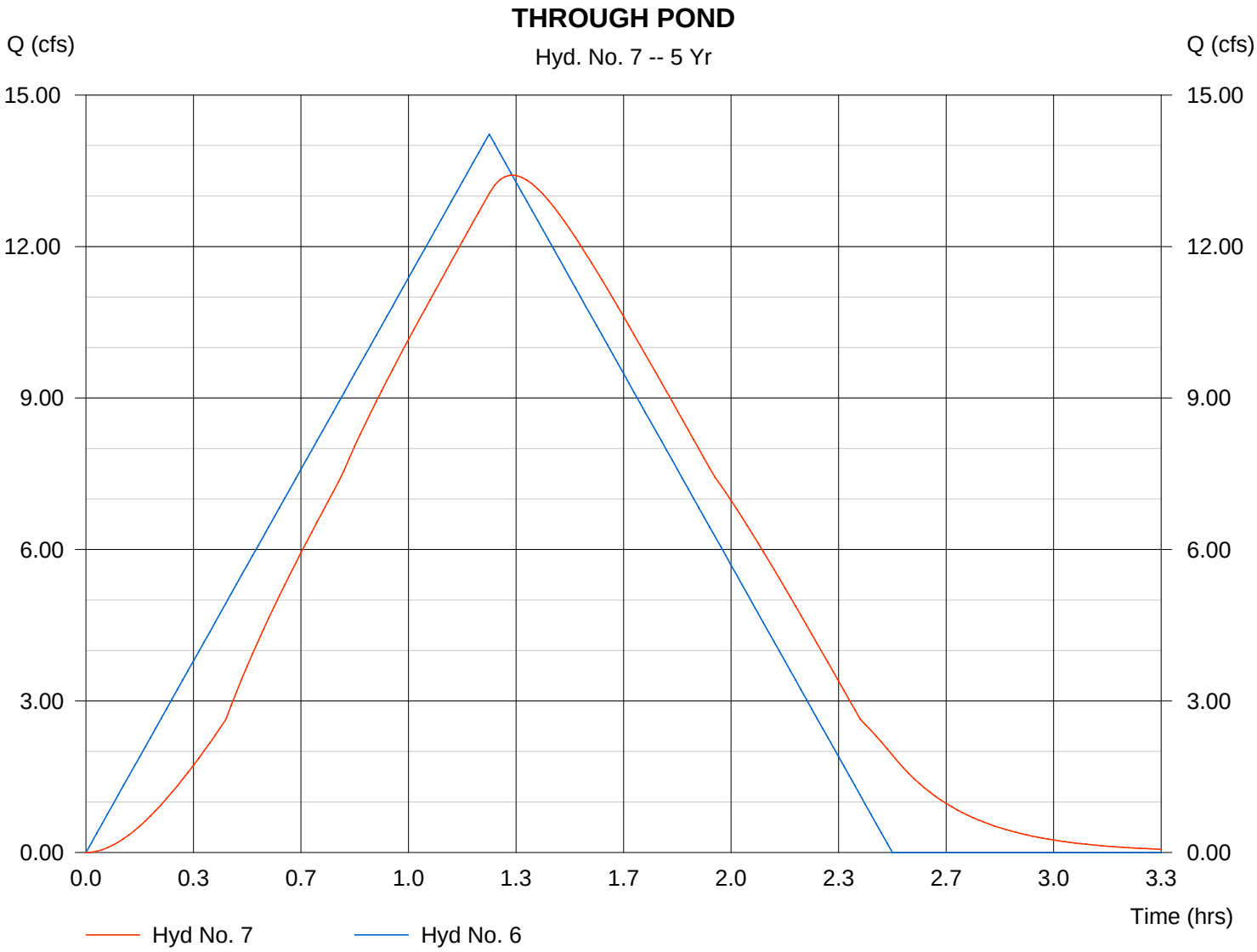
Hydraflow Hydrographs by Intelisolve | Thursday, Dec 14 2006, 11:41 AM

Hyd. No. 7

THROUGH POND

Hydrograph type	=	Reservoir	Peak discharge	=	13.41 cfs
Storm frequency	=	5 yrs	Time interval	=	1 min
Inflow hyd. No.	=	6	Max. Elevation	=	1354.44 ft
Reservoir name	=	EXISTING POND	Max. Storage	=	6,825 cuft

Storage Indication method used. | Hydrograph Volume = 64,017 cuft



Pond Report

Pond No. 1 - EXISTING POND

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1354.20	22,662	0	0
0.80	1355.00	35,073	23,094	23,094
1.80	1356.00	43,541	39,307	62,401
2.80	1357.00	54,091	48,816	111,217

Culvert / Orifice Structures

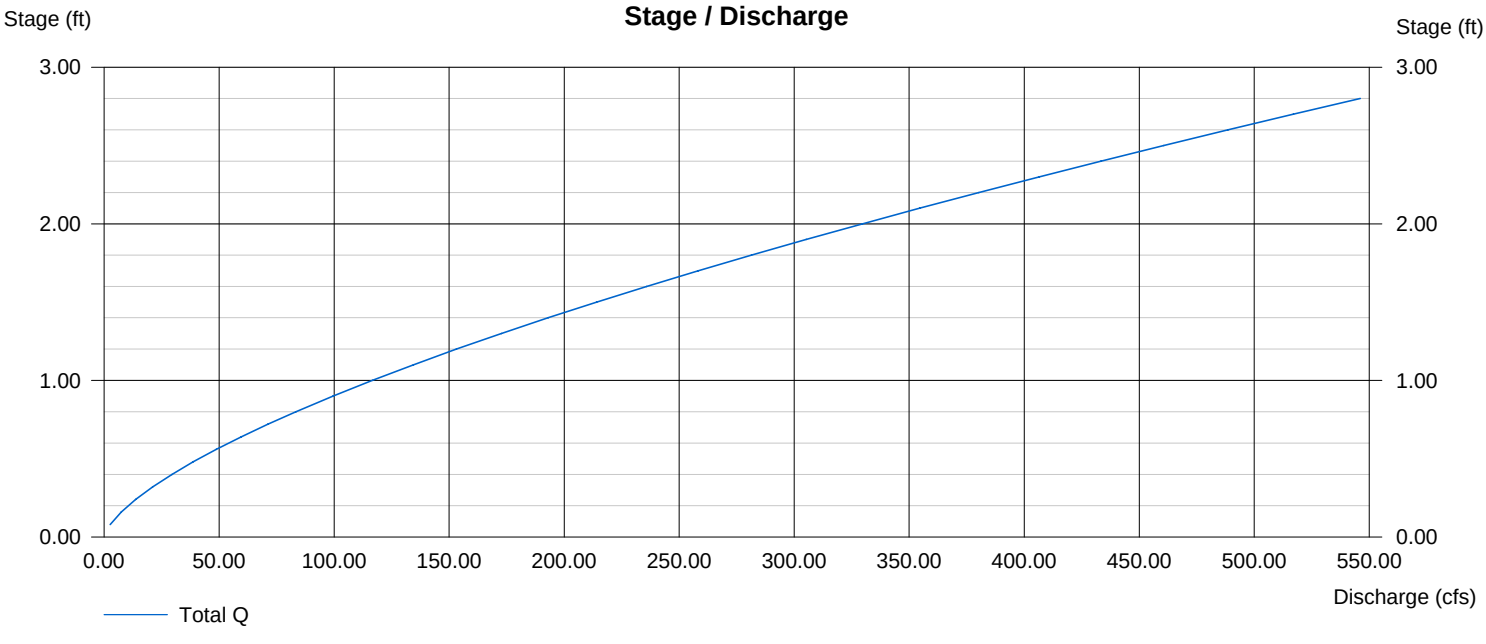
	[A]	[B]	[C]	[D]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	0.00
N-Value	= .013	.013	.013	.013
Orif. Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 35.00	0.00	0.00	0.00
Crest El. (ft)	= 1354.20	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	0.00	0.00
Weir Type	= Ciplti	---	---	---
Multi-Stage	= No	No	No	No

Exfiltration = 0.000 in/hr (Contour) Tailwater Elev. = 0.00 ft

Note: Culvert/Orifice outflows have been analyzed under inlet and outlet control.



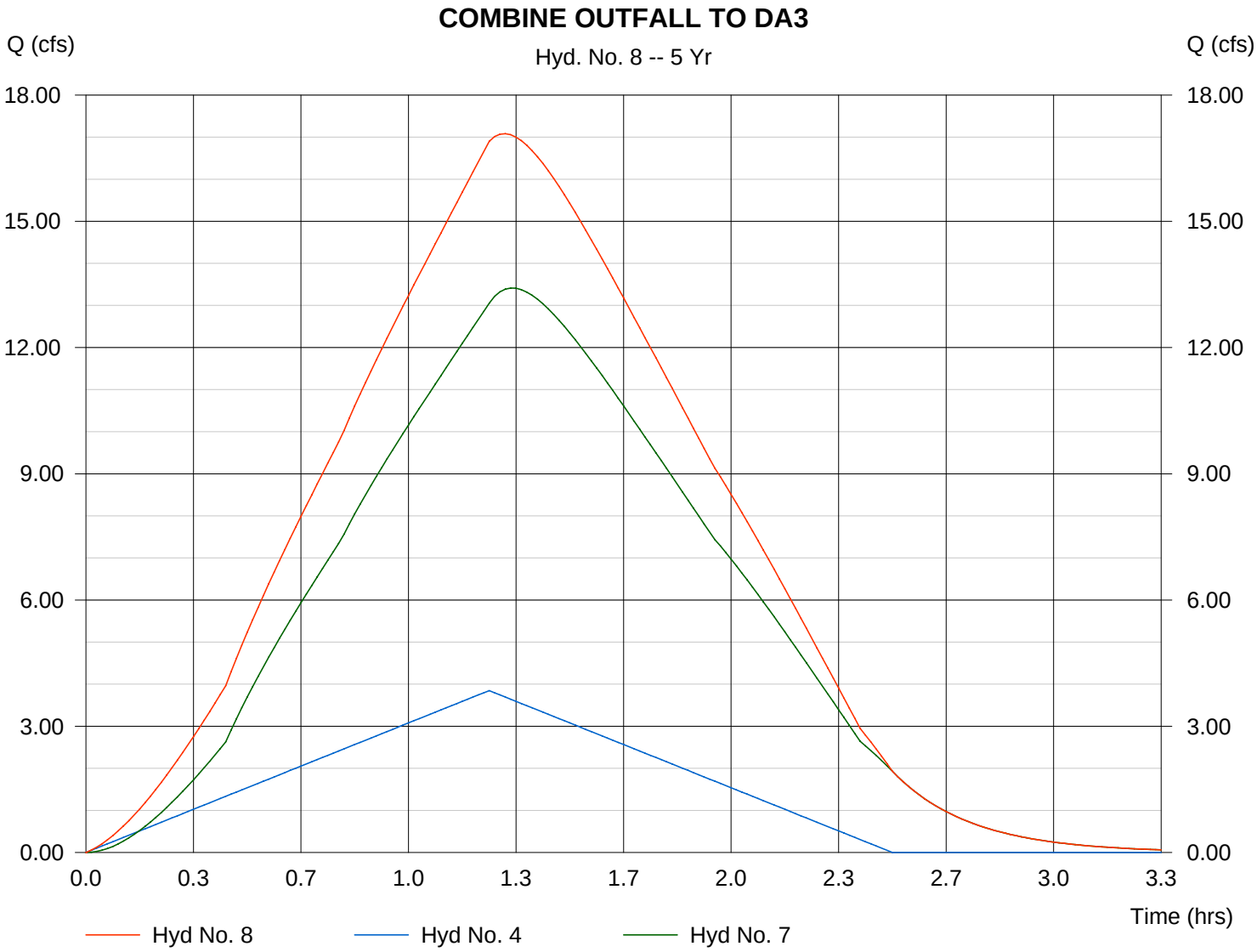
Hydrograph Plot

Hyd. No. 8

COMBINE OUTFALL TO DA3

Hydrograph type	= Combine	Peak discharge	= 17.08 cfs
Storm frequency	= 5 yrs	Time interval	= 1 min
Inflow hyds.	= 4, 7		

Hydrograph Volume = 81,334 cuft



Hydrograph Plot

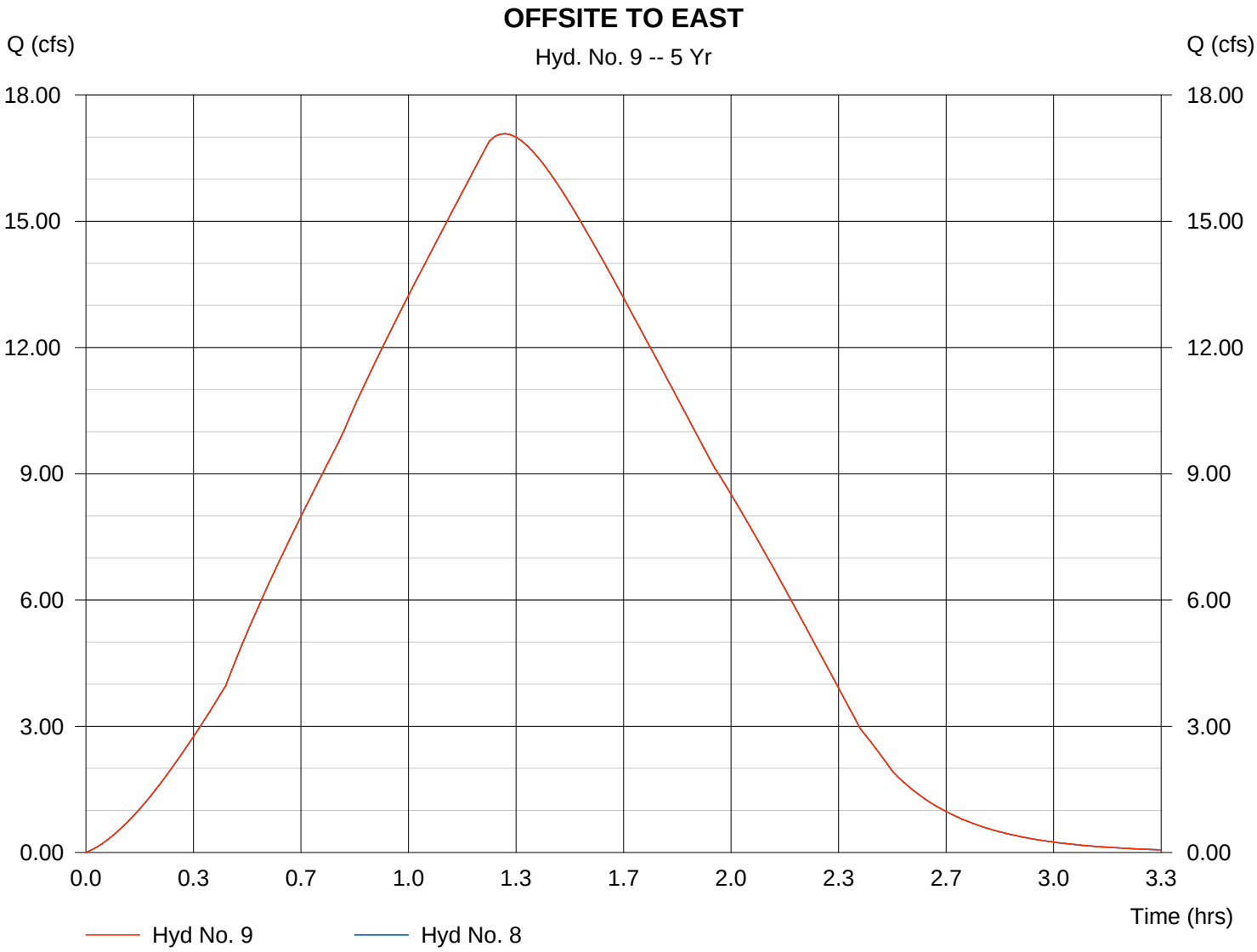
Hyd. No. 9

OFFSITE TO EAST

Hydrograph type	=	Reservoir	Peak discharge	=	17.08 cfs
Storm frequency	=	5 yrs	Time interval	=	1 min
Inflow hyd. No.	=	8	Max. Elevation	=	1349.70 ft
Reservoir name	=	To Offsite	Max. Storage	=	1 cuft

Storage Indication method used.

Hydrograph Volume = 81,334 cuft



Pond Report

Pond No. 2 - To Offsite

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1348.50	01	0	0
1.00	1349.50	01	1	1
2.00	1350.50	01	1	2
3.00	1351.50	01	1	3
4.00	1352.50	01	1	4

Culvert / Orifice Structures

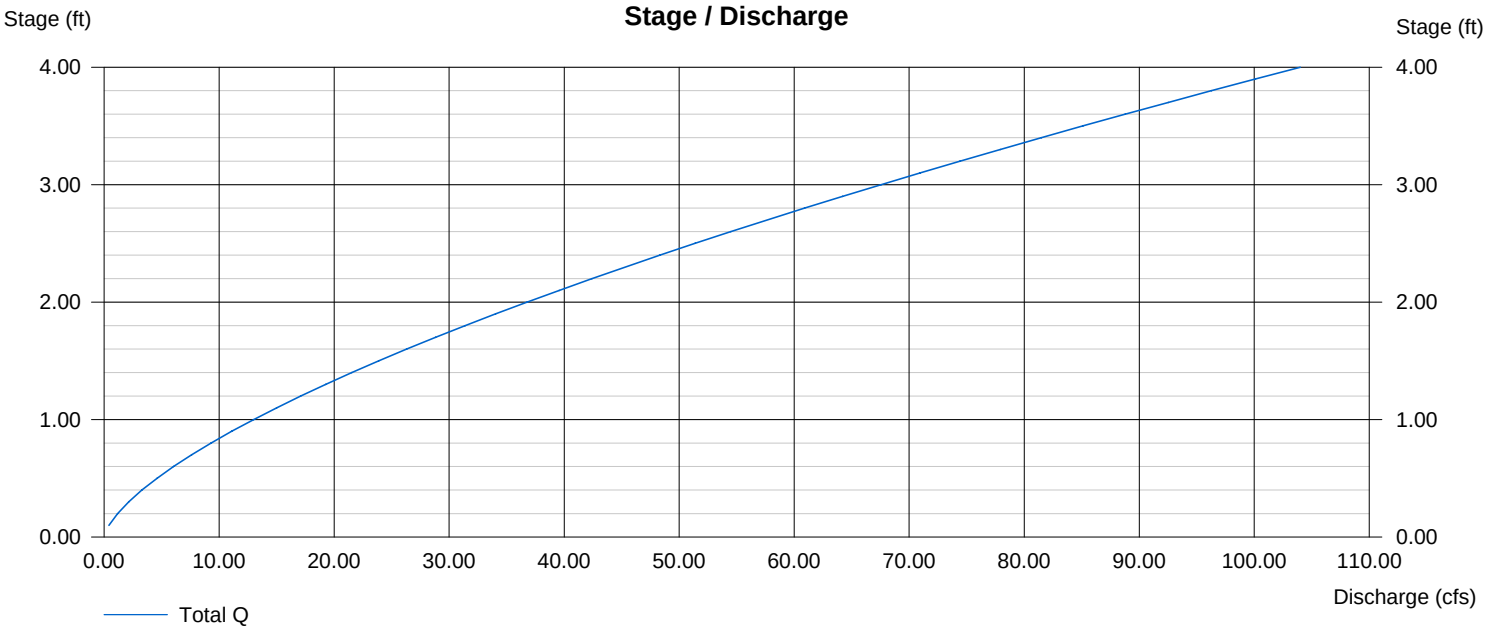
	[A]	[B]	[C]	[D]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	0.00
N-Value	= .013	.013	.013	.013
Orif. Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 5.00	0.00	0.00	0.00
Crest El. (ft)	= 1348.50	0.00	0.00	0.00
Weir Coeff.	= 2.60	0.00	0.00	0.00
Weir Type	= Broad	---	---	---
Multi-Stage	= No	No	No	No

Exfiltration = 0.000 in/hr (Contour) Tailwater Elev. = 0.00 ft

Note: Culvert/Orifice outflows have been analyzed under inlet and outlet control. Weir riser checked for orifice conditions.



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100 - Year

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	Rational	5.681	1	75	25,564	----	------	------	DA1-R100
2	Rational	24.79	1	75	111,570	----	------	------	DA2-R100
3	Rational	9.228	1	75	41,525	----	------	------	DAOFFSITE-R100
4	Rational	10.74	1	75	48,326	----	------	------	DA3-R100
5	Combine	34.02	1	75	153,094	2, 3,	------	------	ADD DA2 & DAOFFSITE
6	Combine	39.70	1	75	178,658	1, 5	------	------	ADD DA1, DA2, & DAOFFSITE
7	Reservoir	38.18	1	78	178,657	6	1354.68	13,720	THROUGH POND
8	Combine	48.58	1	77	226,984	4, 7	------	------	COMBINE OUTFALL TO DA3
9	Reservoir	48.58	1	77	226,984	8	1350.91	2	OFFSITE TO EAST

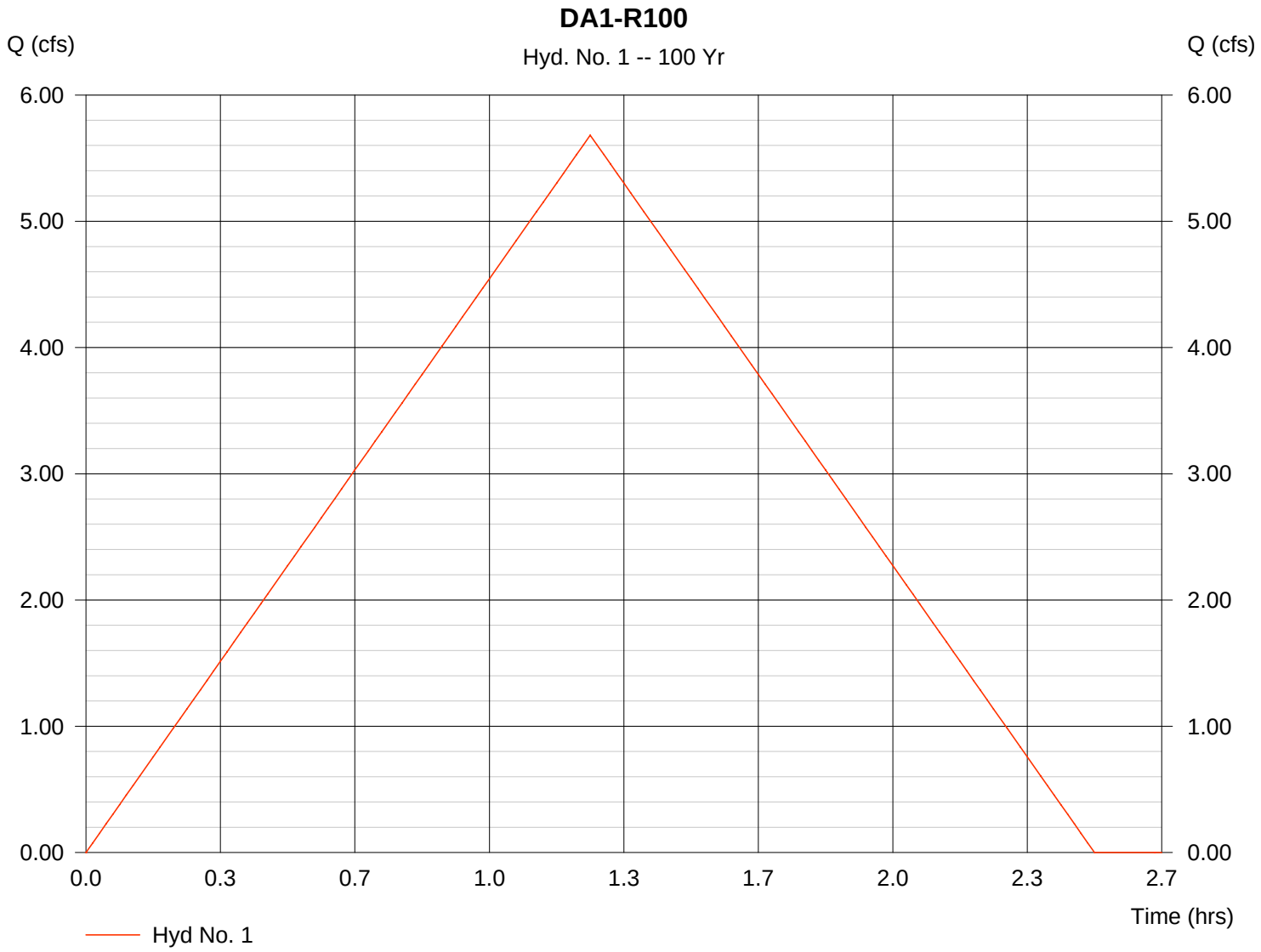
Hydrograph Plot

Hyd. No. 1

DA1-R100

Hydrograph type	=	Rational	Peak discharge	=	5.681 cfs
Storm frequency	=	100 yrs	Time interval	=	1 min
Drainage area	=	1.323 ac	Runoff coeff.	=	0.57
Intensity	=	7.533 in/hr	Tc by User	=	15.00 min
IDF Curve	=	SedgwickCo.IDF	Asc/Rec limb fact	=	5/5

Hydrograph Volume = 25,564 cuft



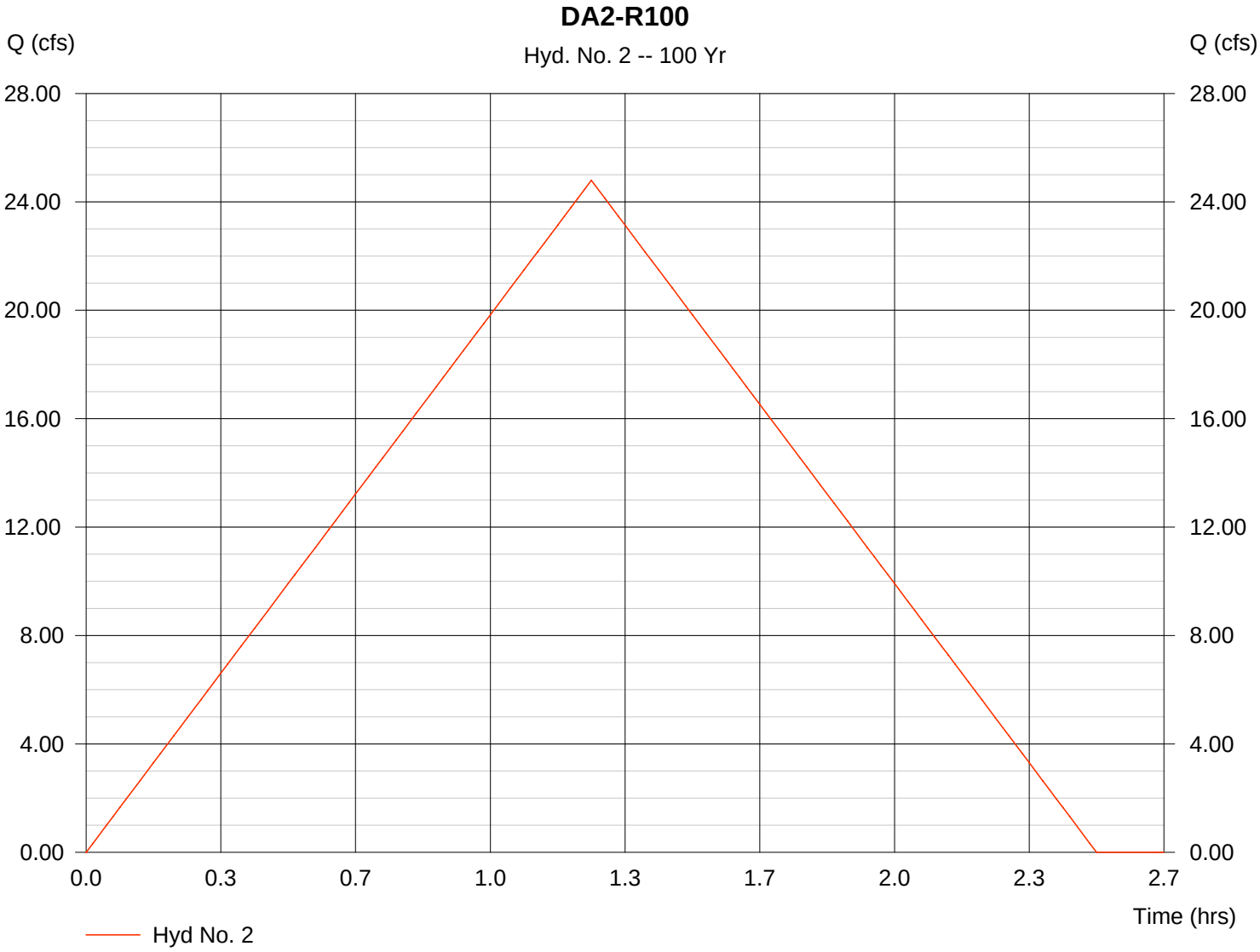
Hydrograph Plot

Hyd. No. 2

DA2-R100

Hydrograph type	= Rational	Peak discharge	= 24.79 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 5.774 ac	Runoff coeff.	= 0.57
Intensity	= 7.533 in/hr	Tc by User	= 15.00 min
IDF Curve	= SedgwickCo.IDF	Asc/Rec limb fact	= 5/5

Hydrograph Volume = 111,570 cuft



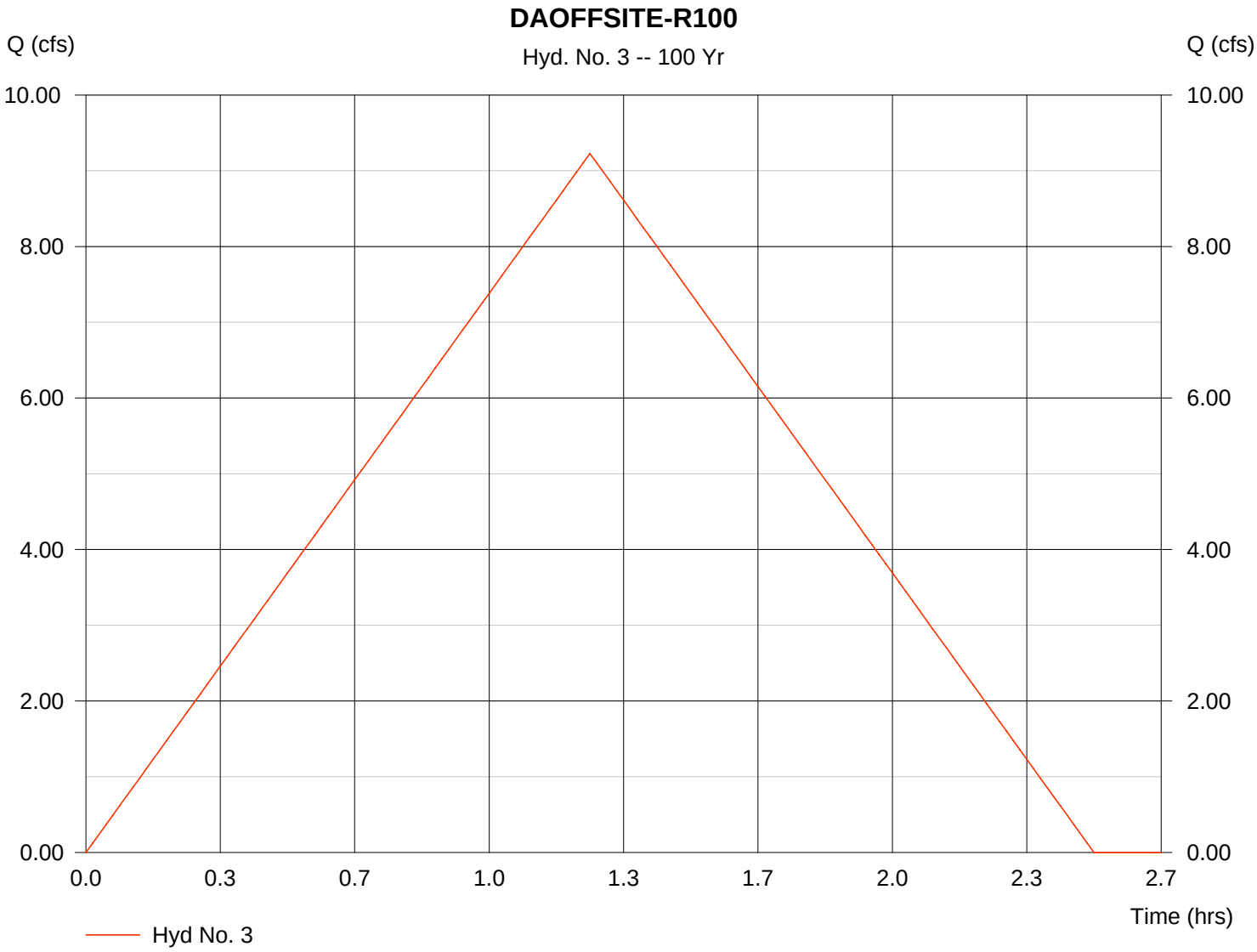
Hydrograph Plot

Hyd. No. 3

DAOFFSITE-R100

Hydrograph type	=	Rational	Peak discharge	=	9.228 cfs
Storm frequency	=	100 yrs	Time interval	=	1 min
Drainage area	=	2.149 ac	Runoff coeff.	=	0.57
Intensity	=	7.533 in/hr	Tc by User	=	15.00 min
IDF Curve	=	SedgwickCo.IDF	Asc/Rec limb fact	=	5/5

Hydrograph Volume = 41,525 cuft



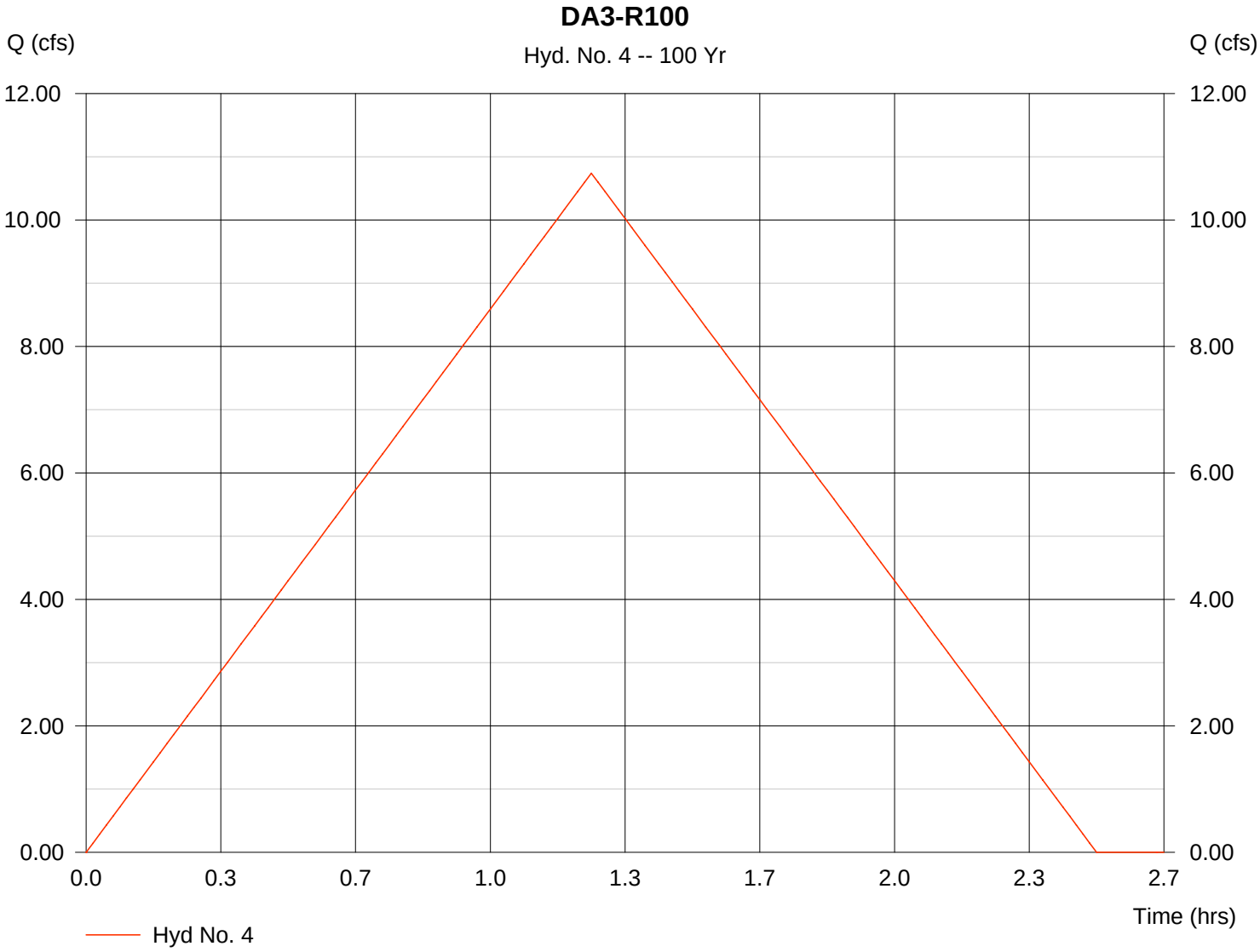
Hydrograph Plot

Hyd. No. 4

DA3-R100

Hydrograph type	= Rational	Peak discharge	= 10.74 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 2.501 ac	Runoff coeff.	= 0.57
Intensity	= 7.533 in/hr	Tc by User	= 15.00 min
IDF Curve	= SedgwickCo.IDF	Asc/Rec limb fact	= 5/5

Hydrograph Volume = 48,326 cuft



Hydrograph Plot

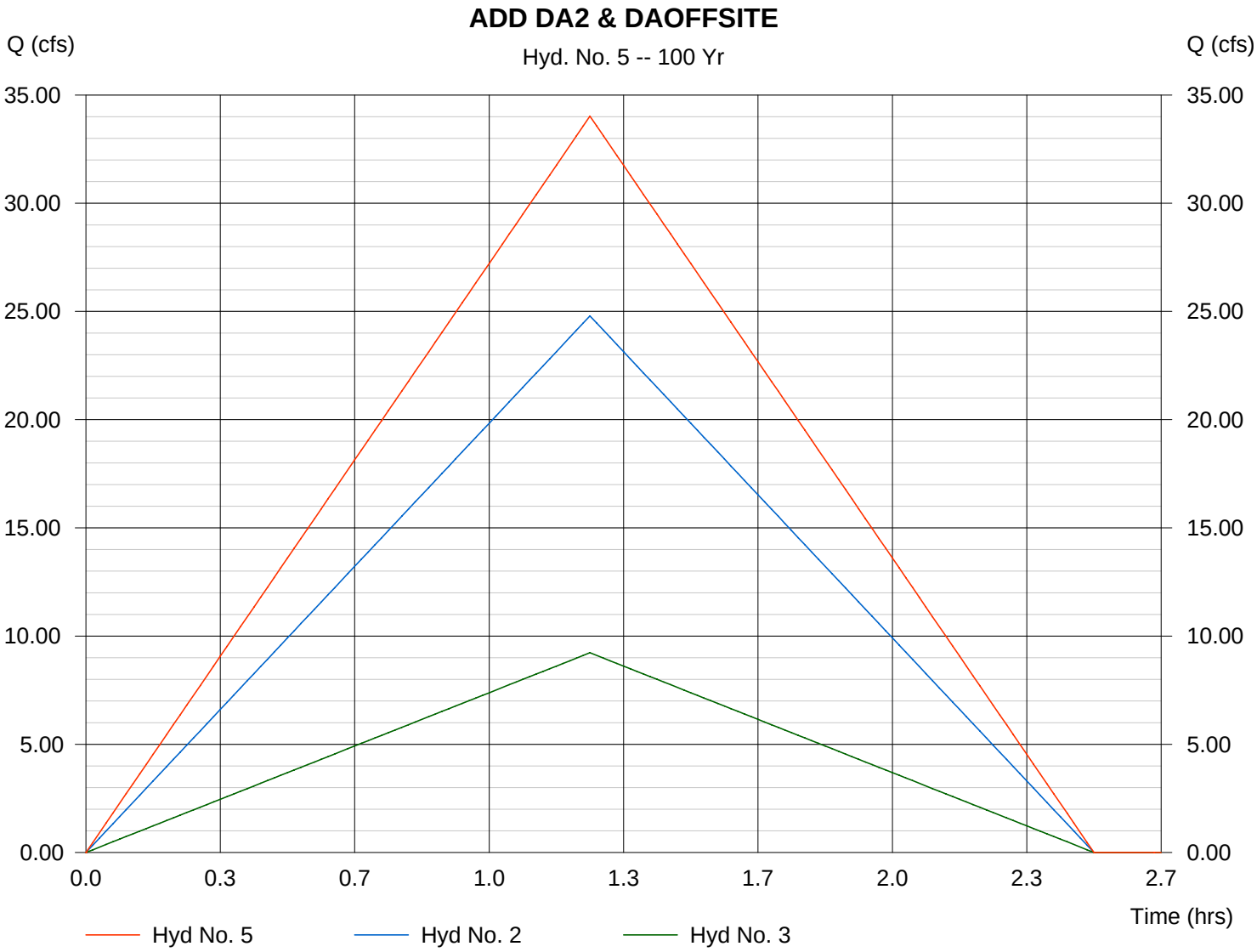
Hyd. No. 5

ADD DA2 & DAOFFSITE

Hydrograph type = Combine
Storm frequency = 100 yrs
Inflow hyds. = 2, 3

Peak discharge = 34.02 cfs
Time interval = 1 min

Hydrograph Volume = 153,094 cuft



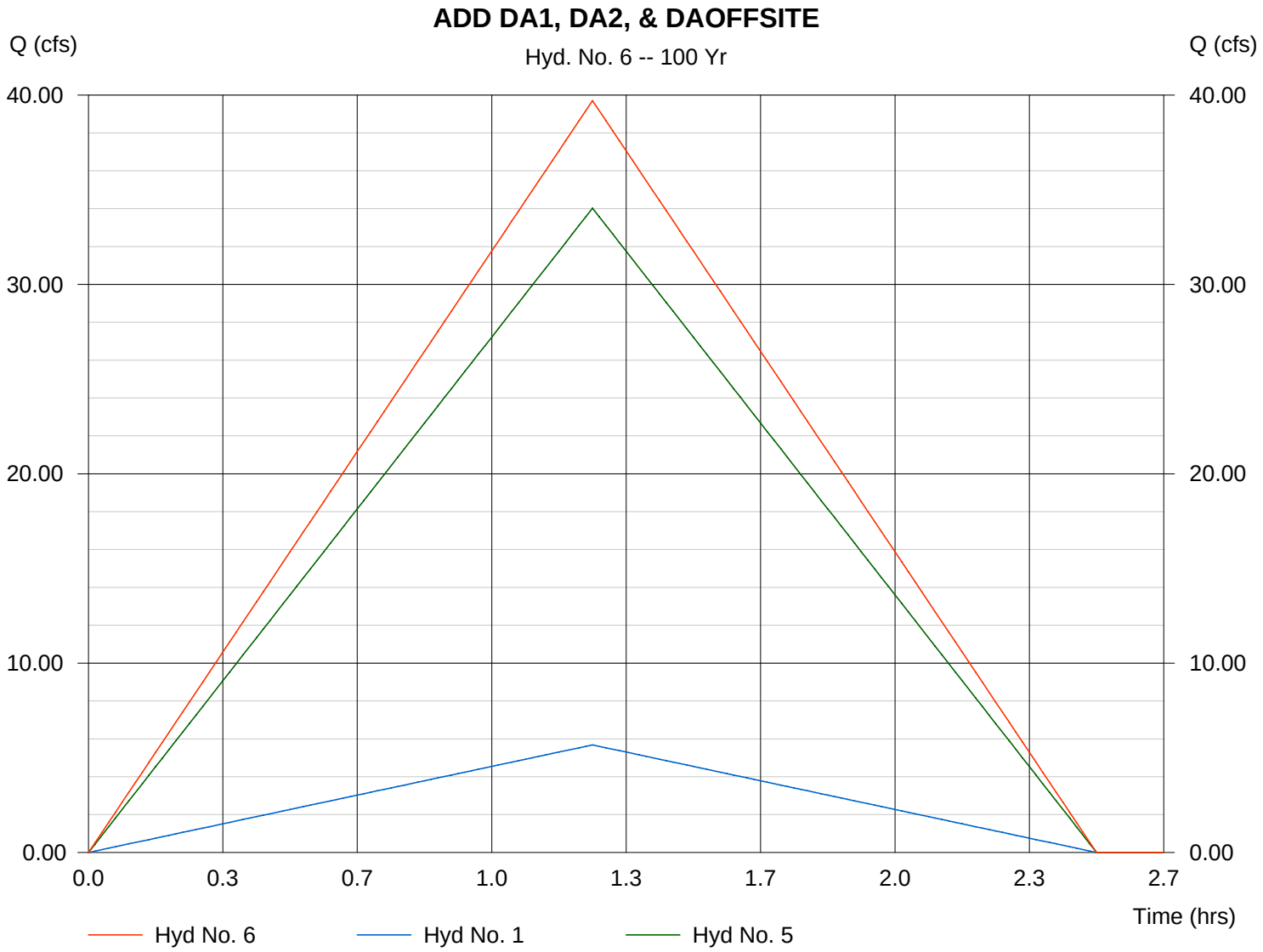
Hydrograph Plot

Hyd. No. 6

ADD DA1, DA2, & DAOFFSITE

Hydrograph type	= Combine	Peak discharge	= 39.70 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyds.	= 1, 5		

Hydrograph Volume = 178,658 cuft



Hydrograph Plot

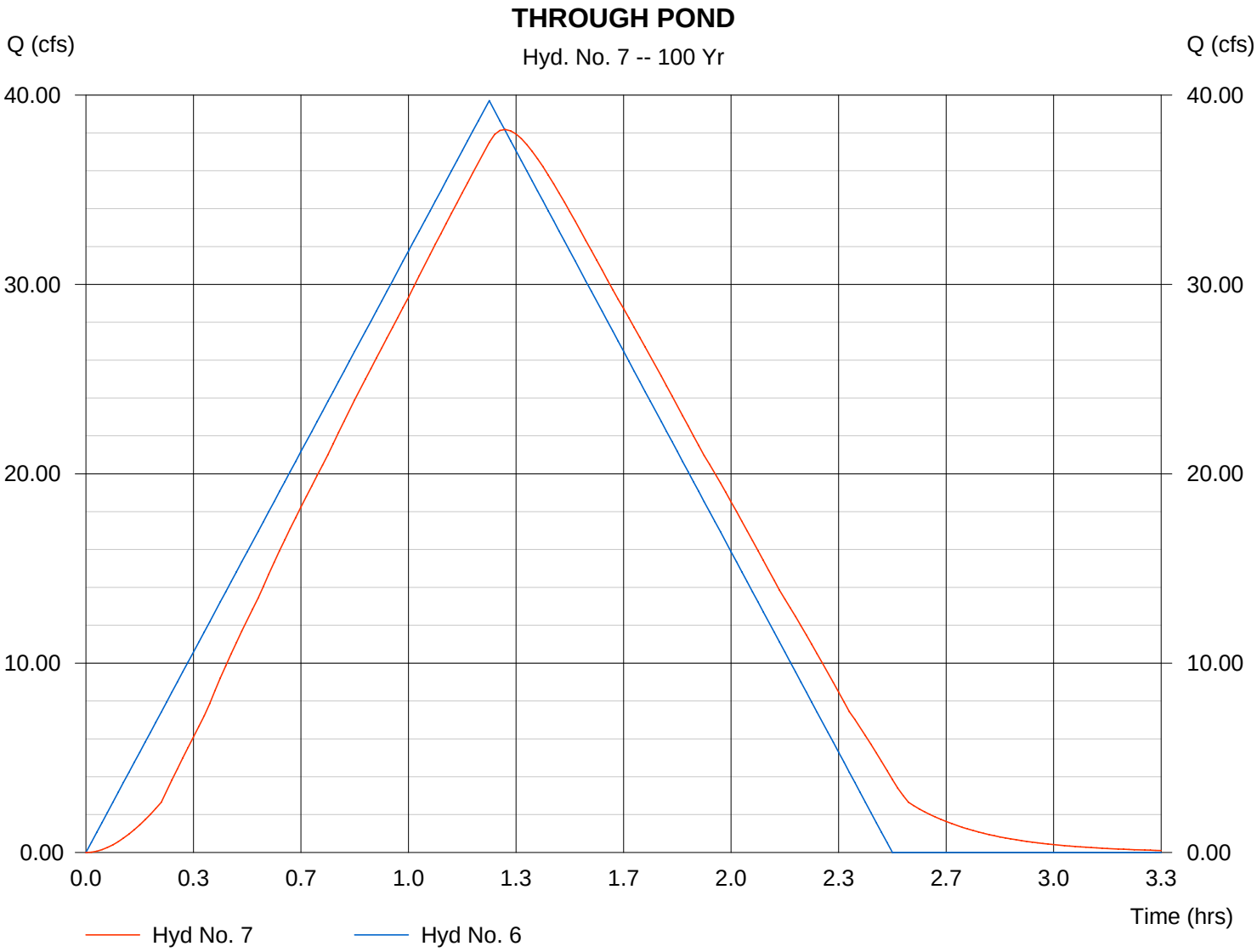
Hyd. No. 7

THROUGH POND

Hydrograph type	=	Reservoir	Peak discharge	=	38.18 cfs
Storm frequency	=	100 yrs	Time interval	=	1 min
Inflow hyd. No.	=	6	Max. Elevation	=	1354.68 ft
Reservoir name	=	EXISTING POND	Max. Storage	=	13,720 cuft

Storage Indication method used.

Hydrograph Volume = 178,657 cuft



Pond Report

Pond No. 1 - EXISTING POND

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1354.20	22,662	0	0
0.80	1355.00	35,073	23,094	23,094
1.80	1356.00	43,541	39,307	62,401
2.80	1357.00	54,091	48,816	111,217

Culvert / Orifice Structures

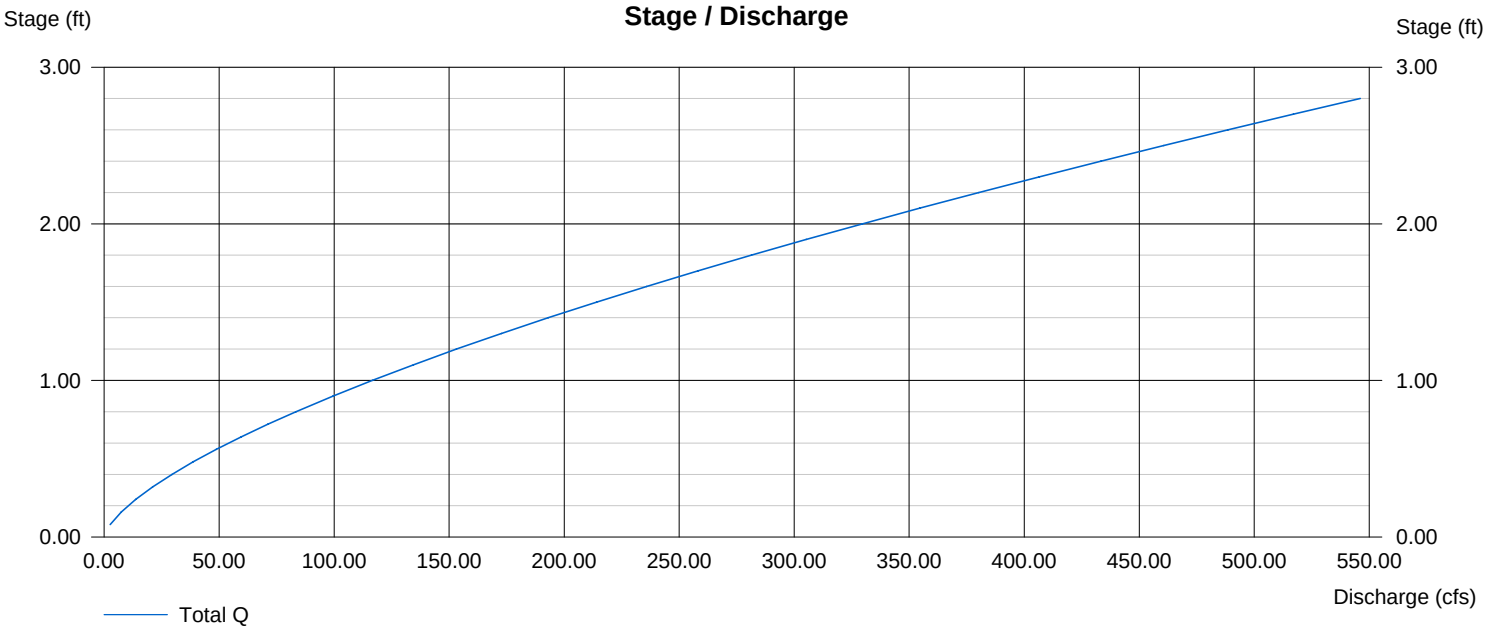
	[A]	[B]	[C]	[D]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	0.00
N-Value	= .013	.013	.013	.013
Orif. Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 35.00	0.00	0.00	0.00
Crest El. (ft)	= 1354.20	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	0.00	0.00
Weir Type	= Ciplti	---	---	---
Multi-Stage	= No	No	No	No

Exfiltration = 0.000 in/hr (Contour) Tailwater Elev. = 0.00 ft

Note: Culvert/Orifice outflows have been analyzed under inlet and outlet control.



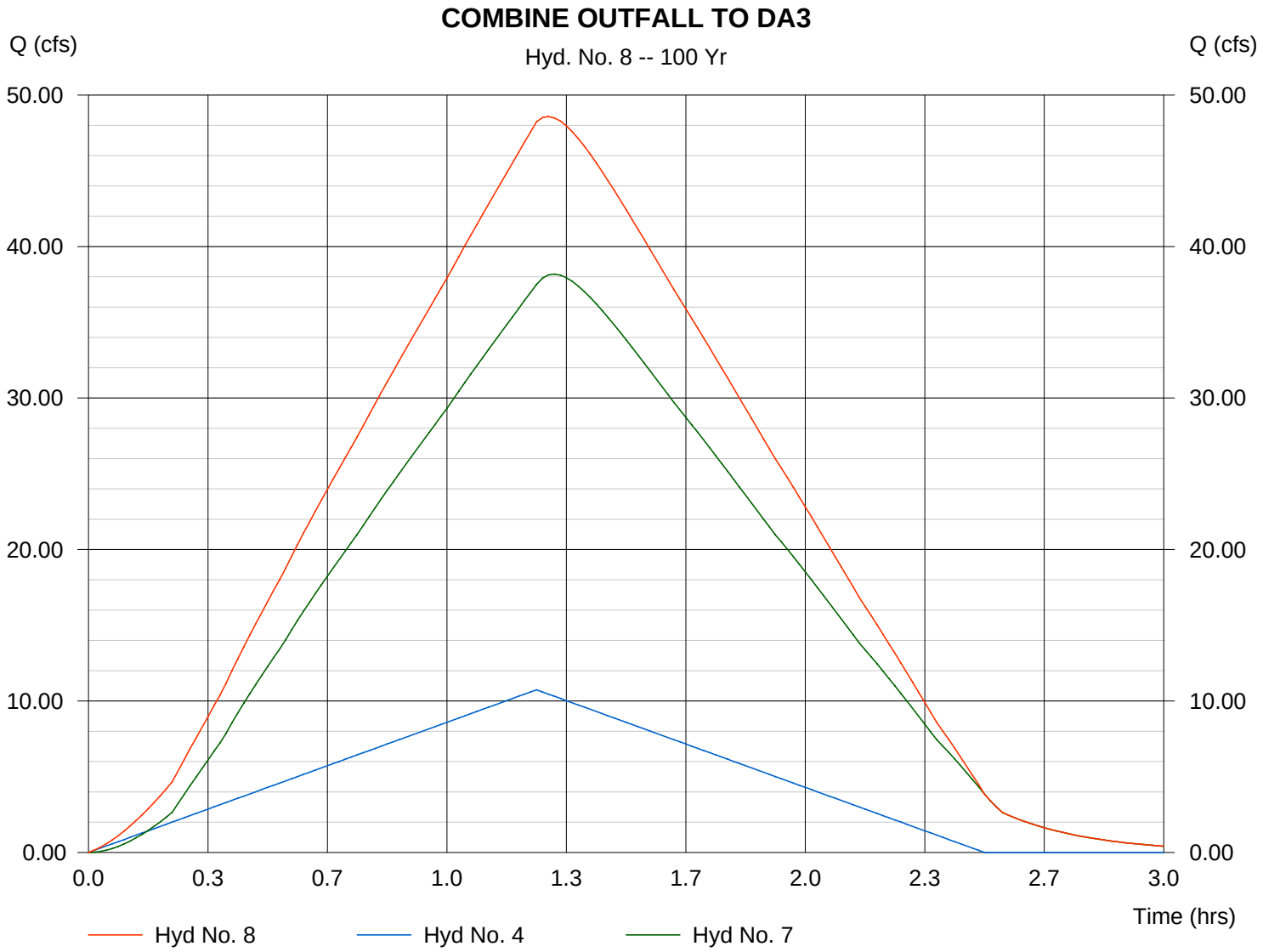
Hydrograph Plot

Hyd. No. 8

COMBINE OUTFALL TO DA3

Hydrograph type	= Combine	Peak discharge	= 48.58 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyds.	= 4, 7		

Hydrograph Volume = 226,984 cuft



Hydrograph Plot

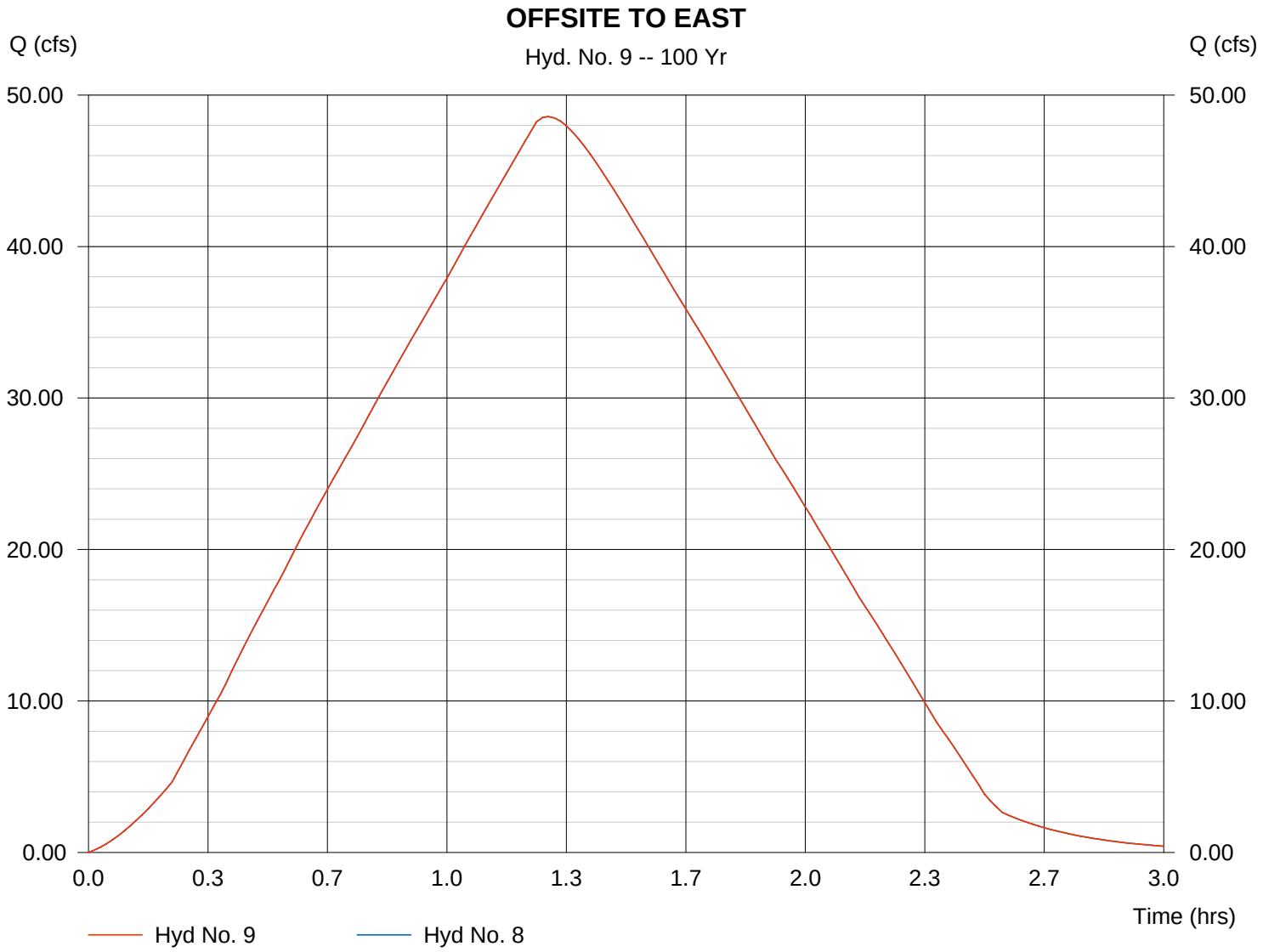
Hyd. No. 9

OFFSITE TO EAST

Hydrograph type	=	Reservoir	Peak discharge	=	48.58 cfs
Storm frequency	=	100 yrs	Time interval	=	1 min
Inflow hyd. No.	=	8	Max. Elevation	=	1350.91 ft
Reservoir name	=	To Offsite	Max. Storage	=	2 cuft

Storage Indication method used.

Hydrograph Volume = 226,984 cuft



Pond Report

Pond No. 2 - To Offsite

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1348.50	01	0	0
1.00	1349.50	01	1	1
2.00	1350.50	01	1	2
3.00	1351.50	01	1	3
4.00	1352.50	01	1	4

Culvert / Orifice Structures

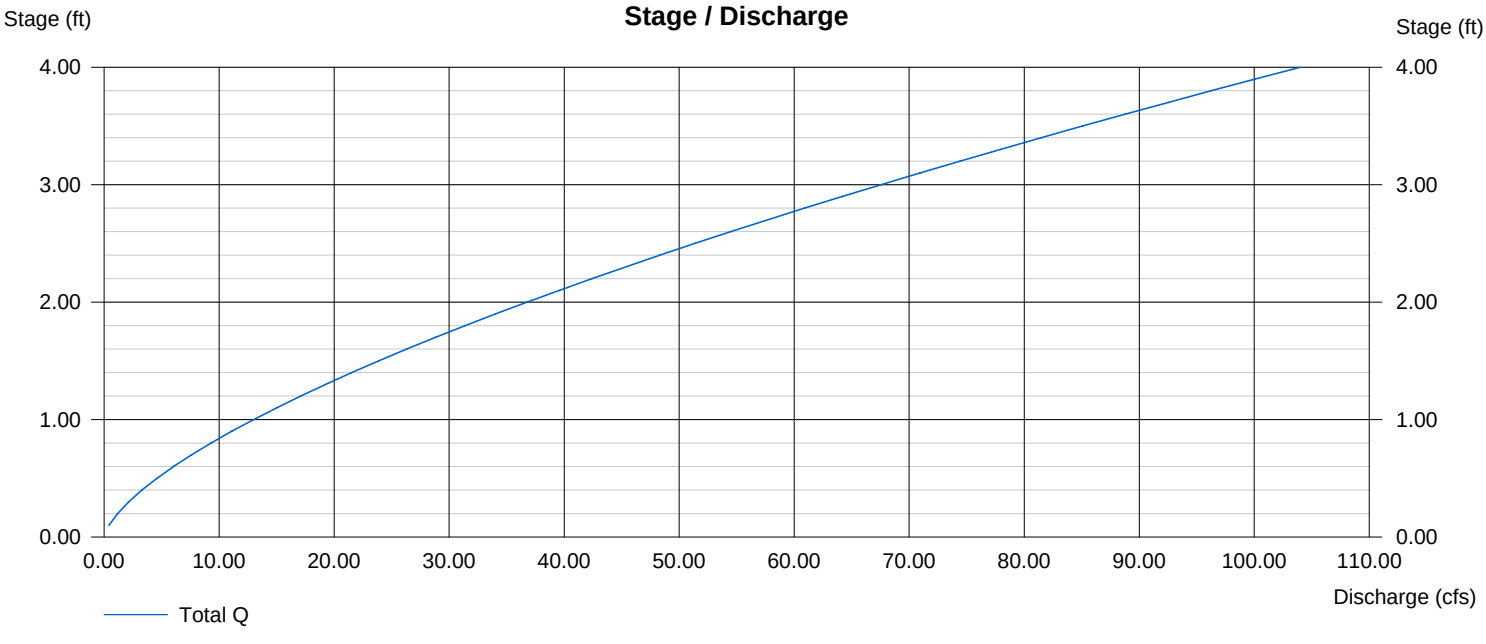
	[A]	[B]	[C]	[D]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	0.00
N-Value	= .013	.013	.013	.013
Orif. Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 5.00	0.00	0.00	0.00
Crest El. (ft)	= 1348.50	0.00	0.00	0.00
Weir Coeff.	= 2.60	0.00	0.00	0.00
Weir Type	= Broad	---	---	---
Multi-Stage	= No	No	No	No

Exfiltration = 0.000 in/hr (Contour) Tailwater Elev. = 0.00 ft

Note: Culvert/Orifice outflows have been analyzed under inlet and outlet control. Weir riser checked for orifice conditions.



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5 - Year

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	Rational	3.118	1	75	14,032	----	------	------	DA1-R5
2	Rational	13.61	1	75	61,239	----	------	------	DA2-R5
3	Rational	5.065	1	75	22,792	----	------	------	DAOFFSITE-R5
4	Rational	5.895	1	75	26,526	----	------	------	DA3-R5
5	Combine	18.67	1	75	84,032	2, 3,	------	------	ADD DA2 & DAOFFSITE
6	Reservoir	3.117	1	75	13,954	1	1362.93	87	DA1 TO STORM SEWER
7	Combine	21.79	1	75	97,986	5, 6	------	------	ADD DA1, DA2, & DAOFFSITE
8	Reservoir	12.67	1	106	96,401	7	1356.28	59,557	THROUGH POND
9	Combine	16.34	1	101	122,927	4, 8	------	------	COMBINE OUTFALL TO DA3
10	Reservoir	16.34	1	100	122,927	9	1349.66	1	OFFSITE

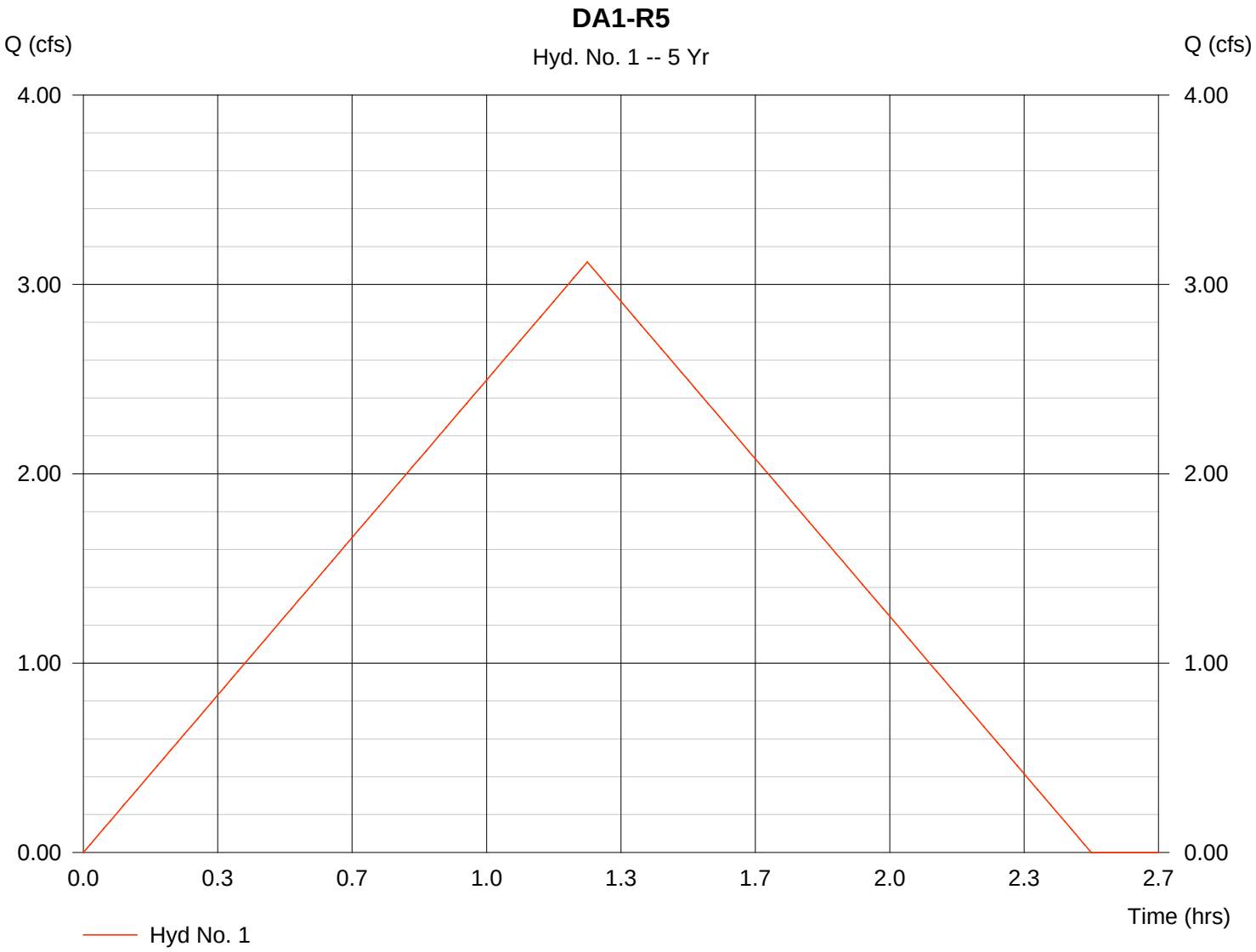
Hydrograph Plot

Hyd. No. 1

DA1-R5

Hydrograph type	= Rational	Peak discharge	= 3.118 cfs
Storm frequency	= 5 yrs	Time interval	= 1 min
Drainage area	= 1.323 ac	Runoff coeff.	= 0.51
Intensity	= 4.621 in/hr	Tc by User	= 15.00 min
IDF Curve	= SedgwickCoREV.IDF	Asc/Rec limb fact	= 5/5

Hydrograph Volume = 14,032 cuft



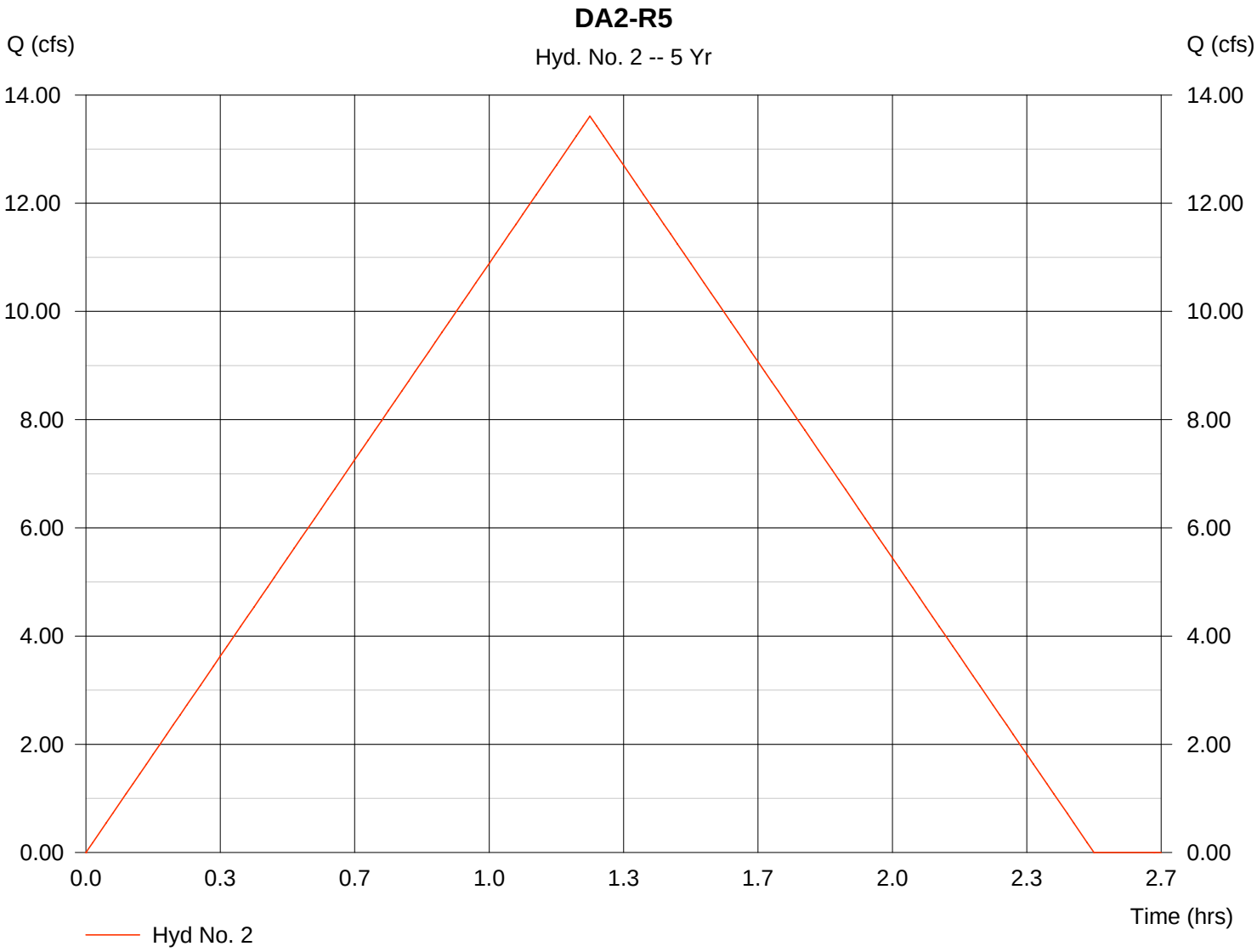
Hydrograph Plot

Hyd. No. 2

DA2-R5

Hydrograph type	= Rational	Peak discharge	= 13.61 cfs
Storm frequency	= 5 yrs	Time interval	= 1 min
Drainage area	= 5.774 ac	Runoff coeff.	= 0.51
Intensity	= 4.621 in/hr	Tc by User	= 15.00 min
IDF Curve	= SedgwickCoREV.IDF	Asc/Rec limb fact	= 5/5

Hydrograph Volume = 61,239 cuft



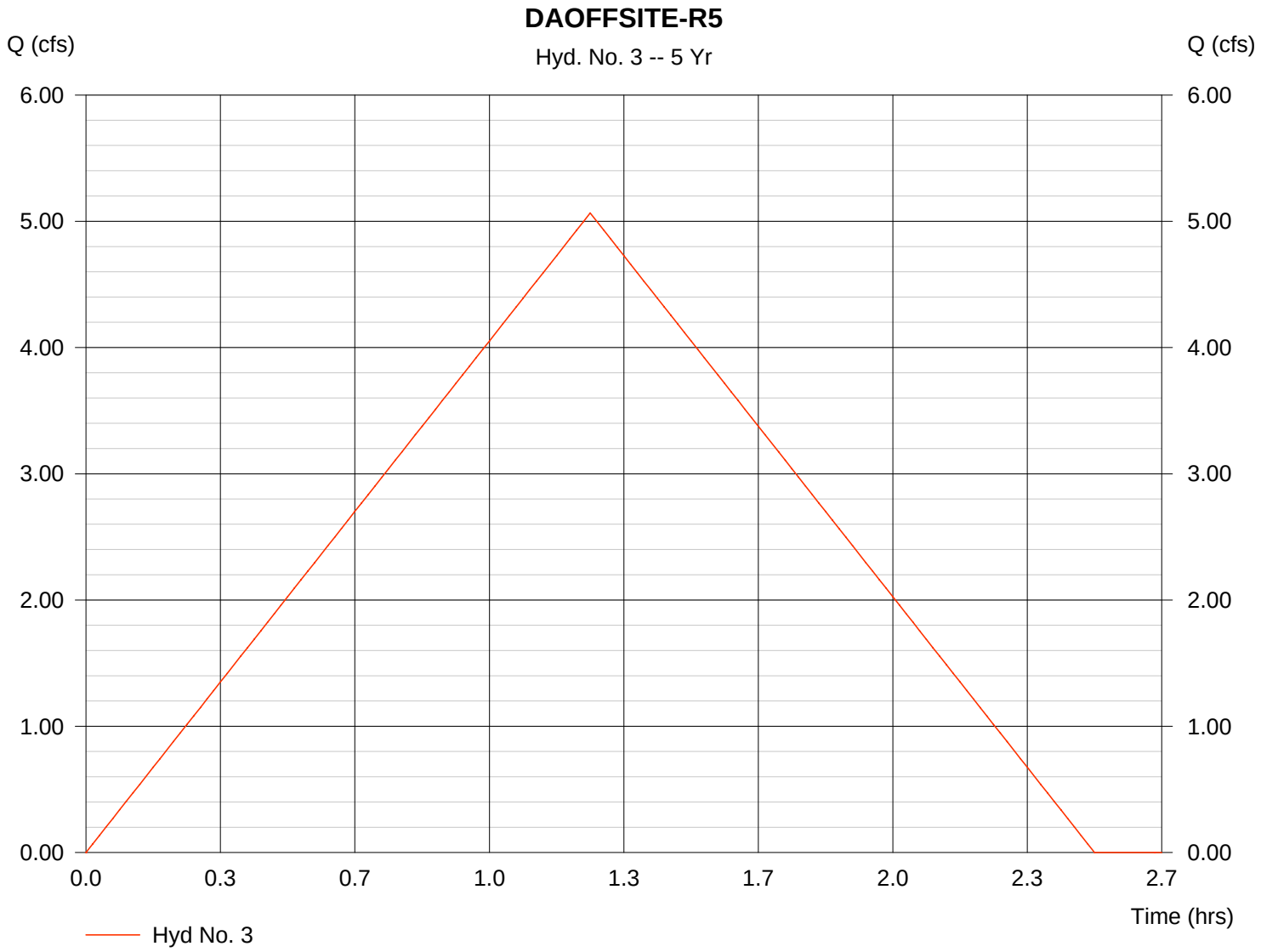
Hydrograph Plot

Hyd. No. 3

DAOFFSITE-R5

Hydrograph type	= Rational	Peak discharge	= 5.065 cfs
Storm frequency	= 5 yrs	Time interval	= 1 min
Drainage area	= 2.149 ac	Runoff coeff.	= 0.51
Intensity	= 4.621 in/hr	Tc by User	= 15.00 min
IDF Curve	= SedgwickCoREV.IDF	Asc/Rec limb fact	= 5/5

Hydrograph Volume = 22,792 cuft



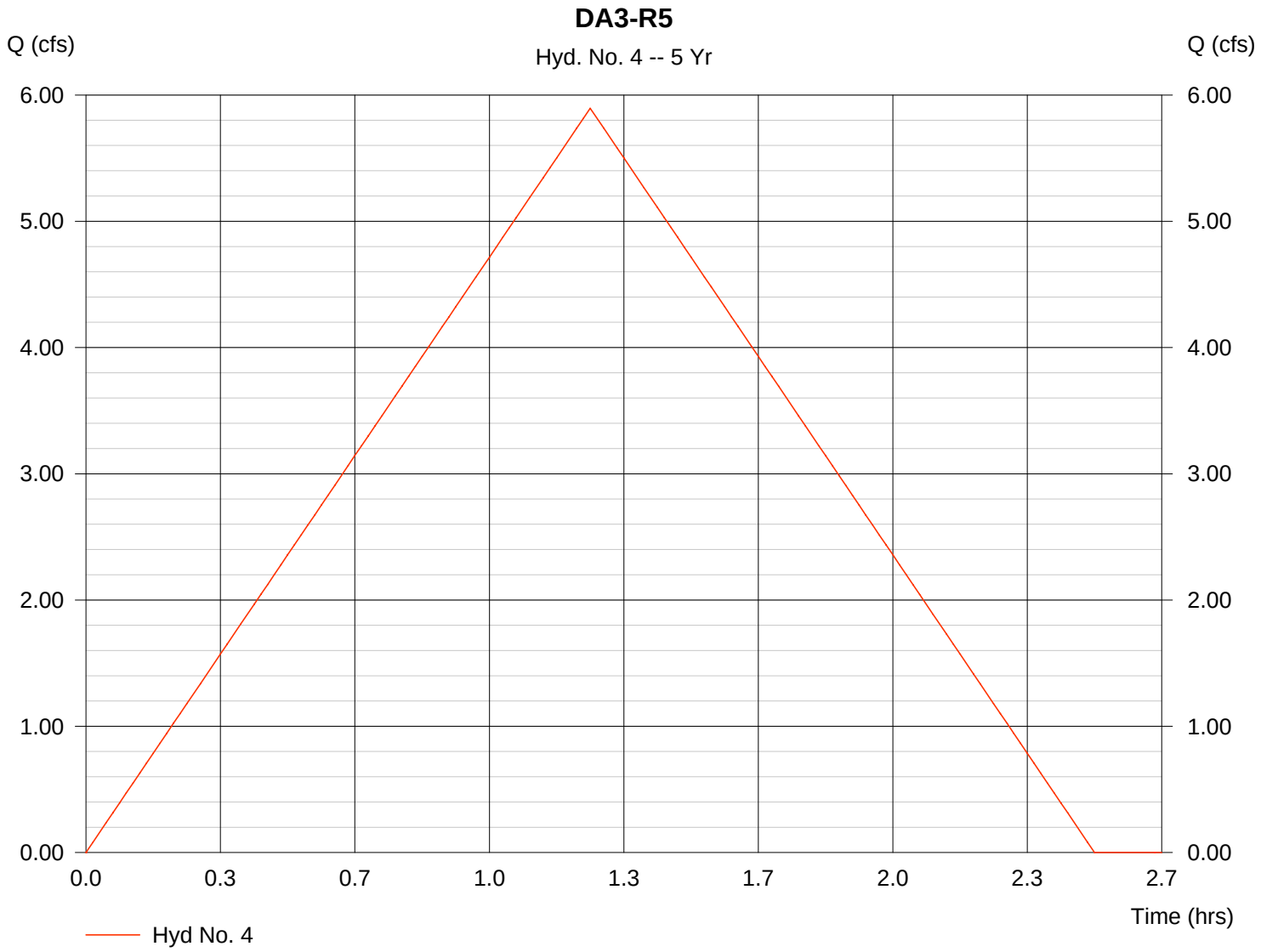
Hydrograph Plot

Hyd. No. 4

DA3-R5

Hydrograph type	=	Rational	Peak discharge	=	5.895 cfs
Storm frequency	=	5 yrs	Time interval	=	1 min
Drainage area	=	2.501 ac	Runoff coeff.	=	0.51
Intensity	=	4.621 in/hr	Tc by User	=	15.00 min
IDF Curve	=	SedgwickCoREV.IDF	Asc/Rec limb fact	=	5/5

Hydrograph Volume = 26,526 cuft



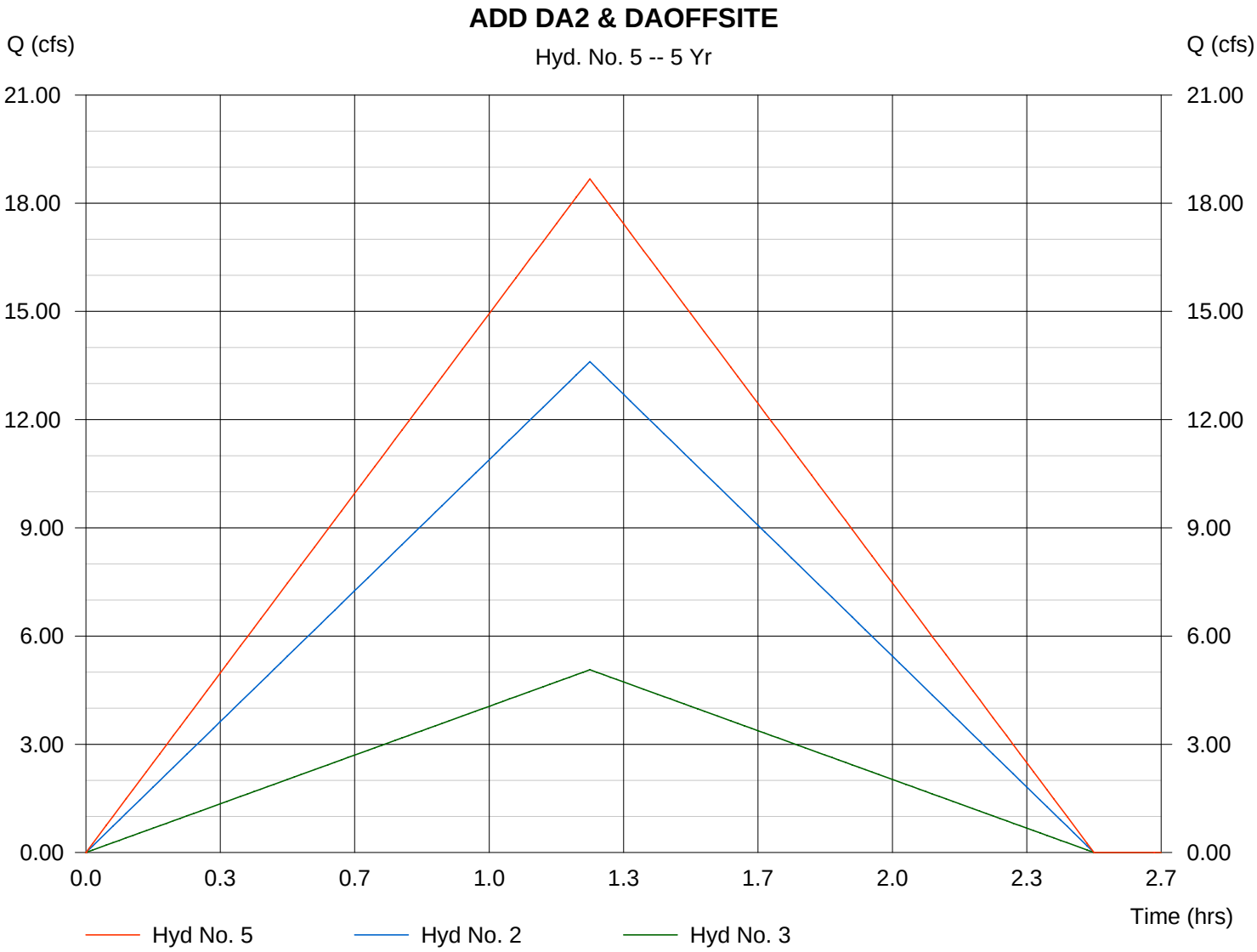
Hydrograph Plot

Hyd. No. 5

ADD DA2 & DAOFFSITE

Hydrograph type	= Combine	Peak discharge	= 18.67 cfs
Storm frequency	= 5 yrs	Time interval	= 1 min
Inflow hyds.	= 2, 3		

Hydrograph Volume = 84,032 cuft



Hydrograph Plot

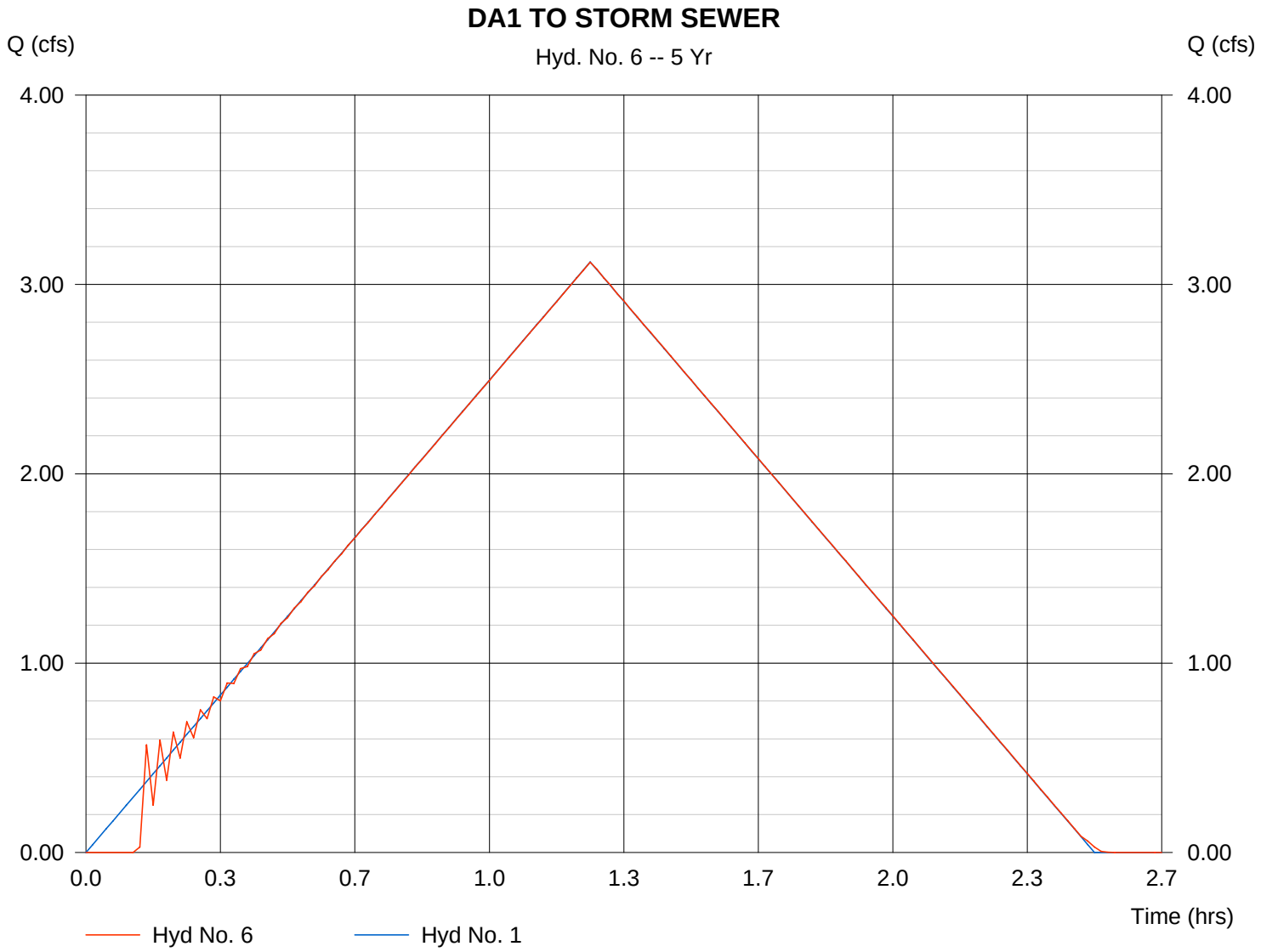
Hydraflow Hydrographs by Intelisolve | Thursday, Dec 14 2006, 11:42 AM

Hyd. No. 6

DA1 TO STORM SEWER

Hydrograph type	=	Reservoir	Peak discharge	=	3.117 cfs
Storm frequency	=	5 yrs	Time interval	=	1 min
Inflow hyd. No.	=	1	Max. Elevation	=	1362.93 ft
Reservoir name	=	STORM SEWER	Max. Storage	=	87 cuft

Storage Indication method used. | Hydrograph Volume = 13,954 cuft



Pond Report

Pond No. 3 - STORM SEWER

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1358.00	16	0	0
0.44	1358.44	16	7	7
1.44	1359.44	16	16	23
2.44	1360.44	16	16	39
3.44	1361.44	16	16	55
4.44	1362.44	16	16	71
5.44	1363.44	50	33	104
6.44	1364.44	8,702	4,376	4,480
7.44	1365.44	9,000	8,851	13,331

Culvert / Orifice Structures

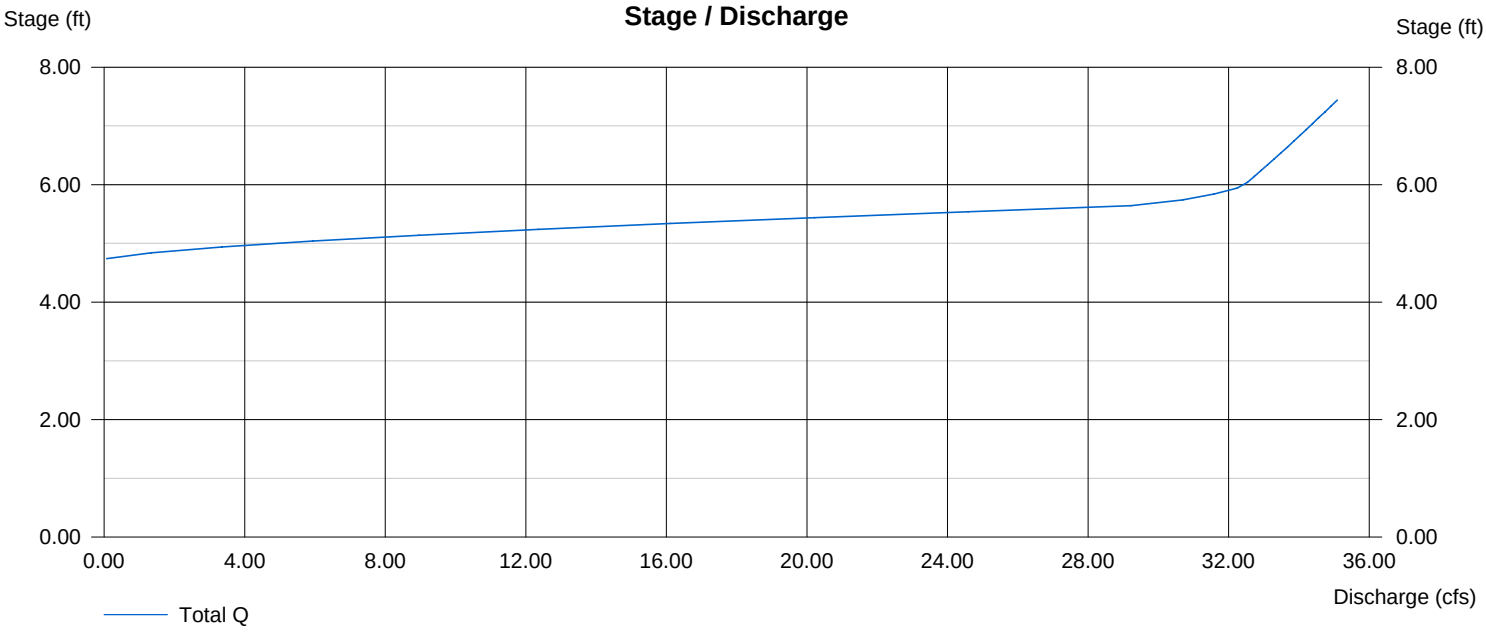
	[A]	[B]	[C]	[D]
Rise (in)	= 24.00	0.00	0.00	0.00
Span (in)	= 24.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 1358.00	0.00	0.00	0.00
Length (ft)	= 302.00	0.00	0.00	0.00
Slope (%)	= 1.65	0.00	0.00	0.00
N-Value	= .013	.000	.000	.000
Orif. Coeff.	= 0.60	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 10.00	0.00	0.00	0.00
Crest El. (ft)	= 1362.72	0.00	0.00	0.00
Weir Coeff.	= 3.33	0.00	0.00	0.00
Weir Type	= Riser	---	---	---
Multi-Stage	= Yes	No	No	No

Exfiltration = 0.000 in/hr (Contour) Tailwater Elev. = 0.00 ft

Note: Culvert/Orifice outflows have been analyzed under inlet and outlet control. Weir riser checked for orifice conditions.



Hydrograph Plot

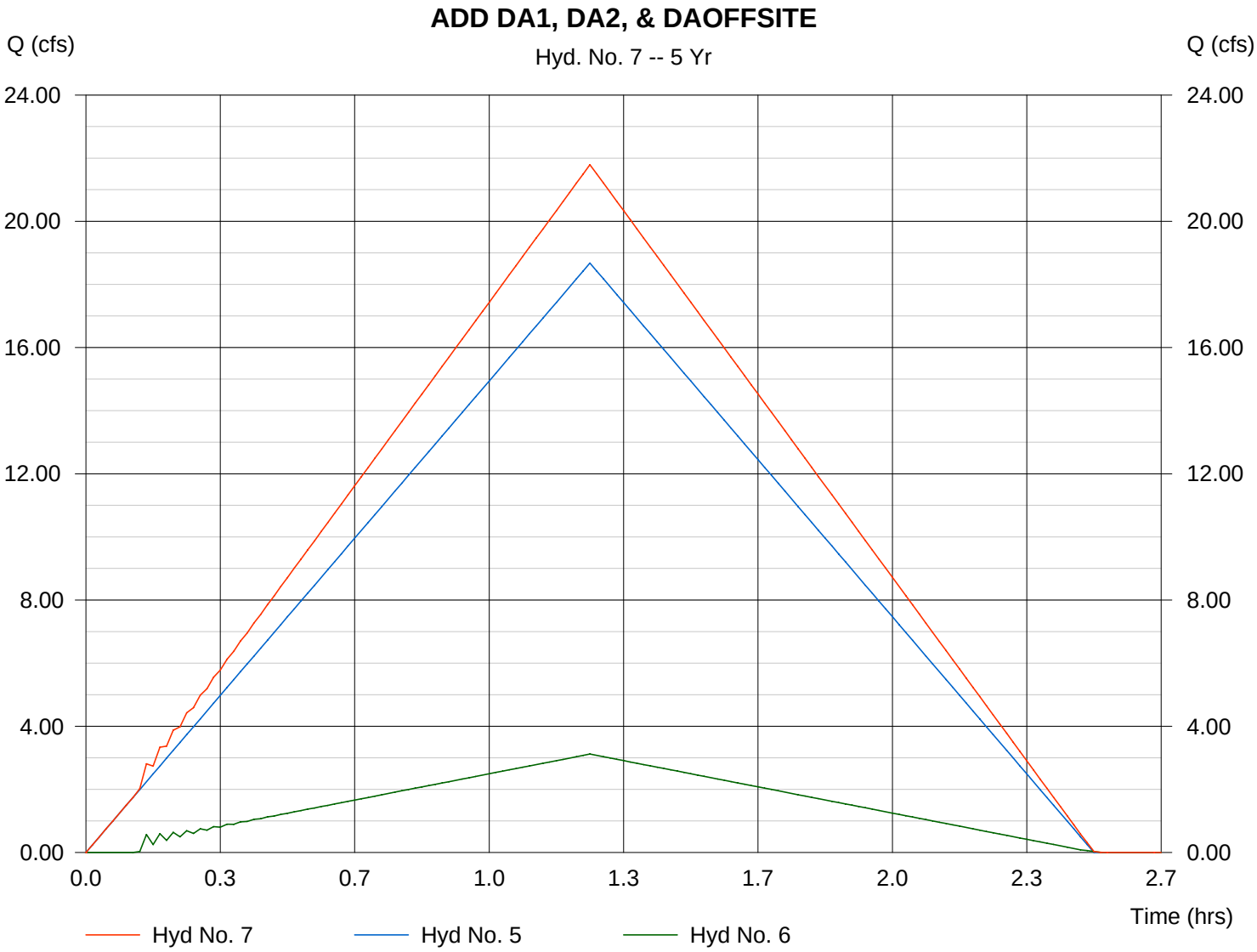
Hyd. No. 7

ADD DA1, DA2, & DAOFFSITE

Hydrograph type = Combine
Storm frequency = 5 yrs
Inflow hyds. = 5, 6

Peak discharge = 21.79 cfs
Time interval = 1 min

Hydrograph Volume = 97,986 cuft



Hydrograph Plot

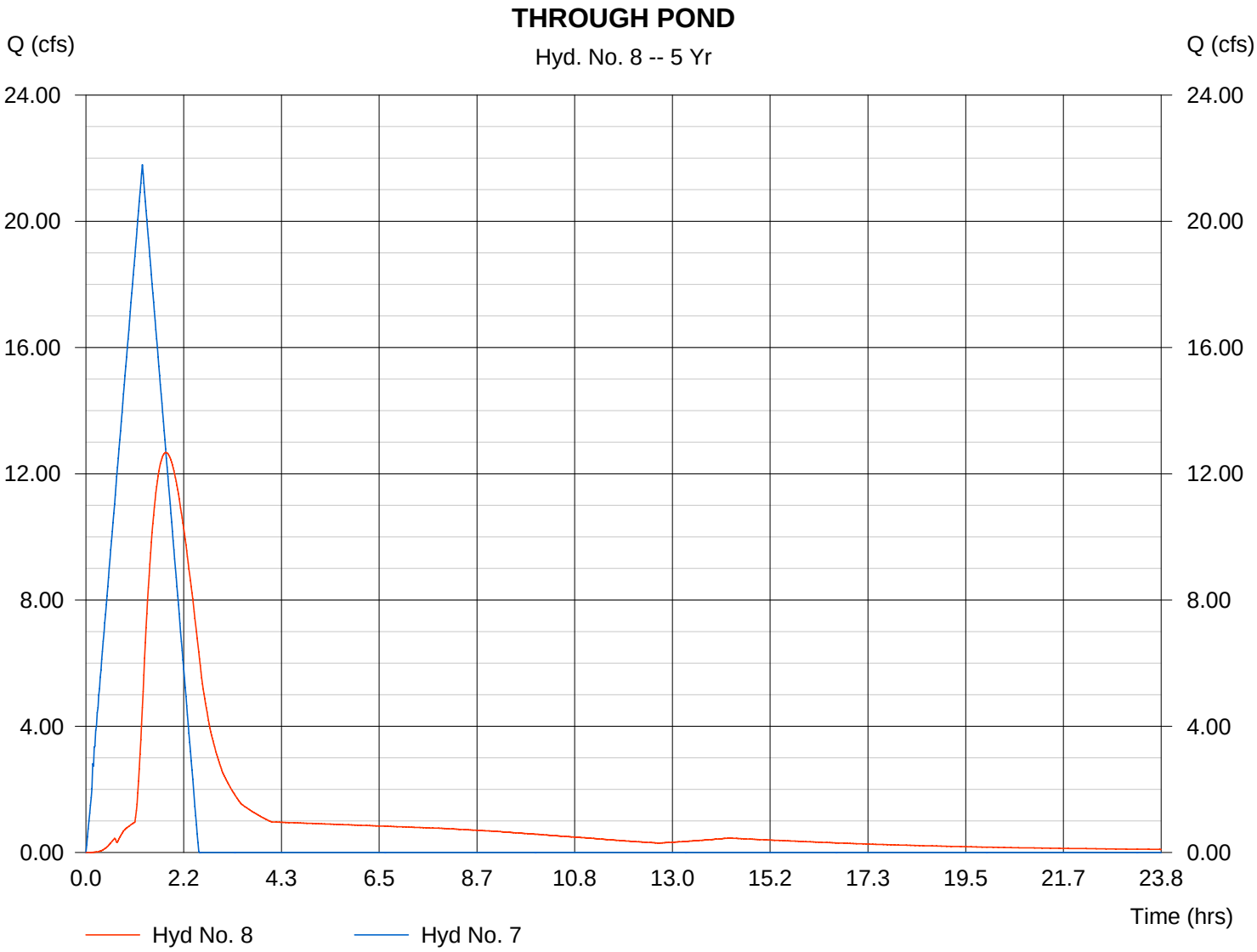
Hyd. No. 8

THROUGH POND

Hydrograph type	=	Reservoir	Peak discharge	=	12.67 cfs
Storm frequency	=	5 yrs	Time interval	=	1 min
Inflow hyd. No.	=	7	Max. Elevation	=	1356.28 ft
Reservoir name	=	PROPOSED POND	Max. Storage	=	59,557 cuft

Storage Indication method used.

Hydrograph Volume = 96,401 cuft



Pond Report

Pond No. 1 - PROPOSED POND

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1354.20	23,620	0	0
0.80	1355.00	28,470	20,836	20,836
1.80	1356.00	31,071	29,771	50,607
2.80	1357.00	33,773	32,422	83,029

Culvert / Orifice Structures

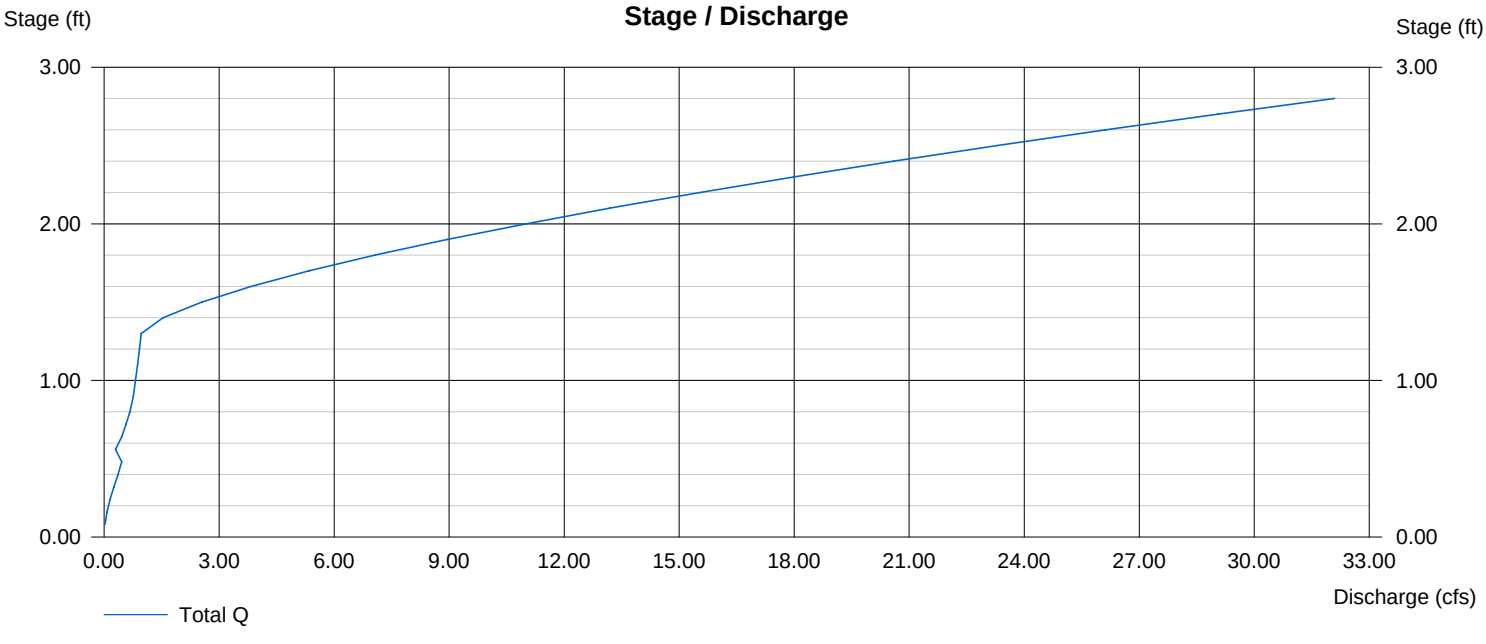
	[A]	[B]	[C]	[D]
Rise (in)	= 6.00	0.00	0.00	0.00
Span (in)	= 6.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 1354.20	0.00	0.00	0.00
Length (ft)	= 2.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	0.00
N-Value	= .013	.013	.013	.013
Orif. Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 5.00	0.00	0.00	0.00
Crest El. (ft)	= 1355.50	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	0.00	0.00
Weir Type	= Ciplti	---	---	---
Multi-Stage	= No	No	No	No

Exfiltration = 0.000 in/hr (Contour) Tailwater Elev. = 0.00 ft

Note: Culvert/Orifice outflows have been analyzed under inlet and outlet control.



Hydrograph Plot

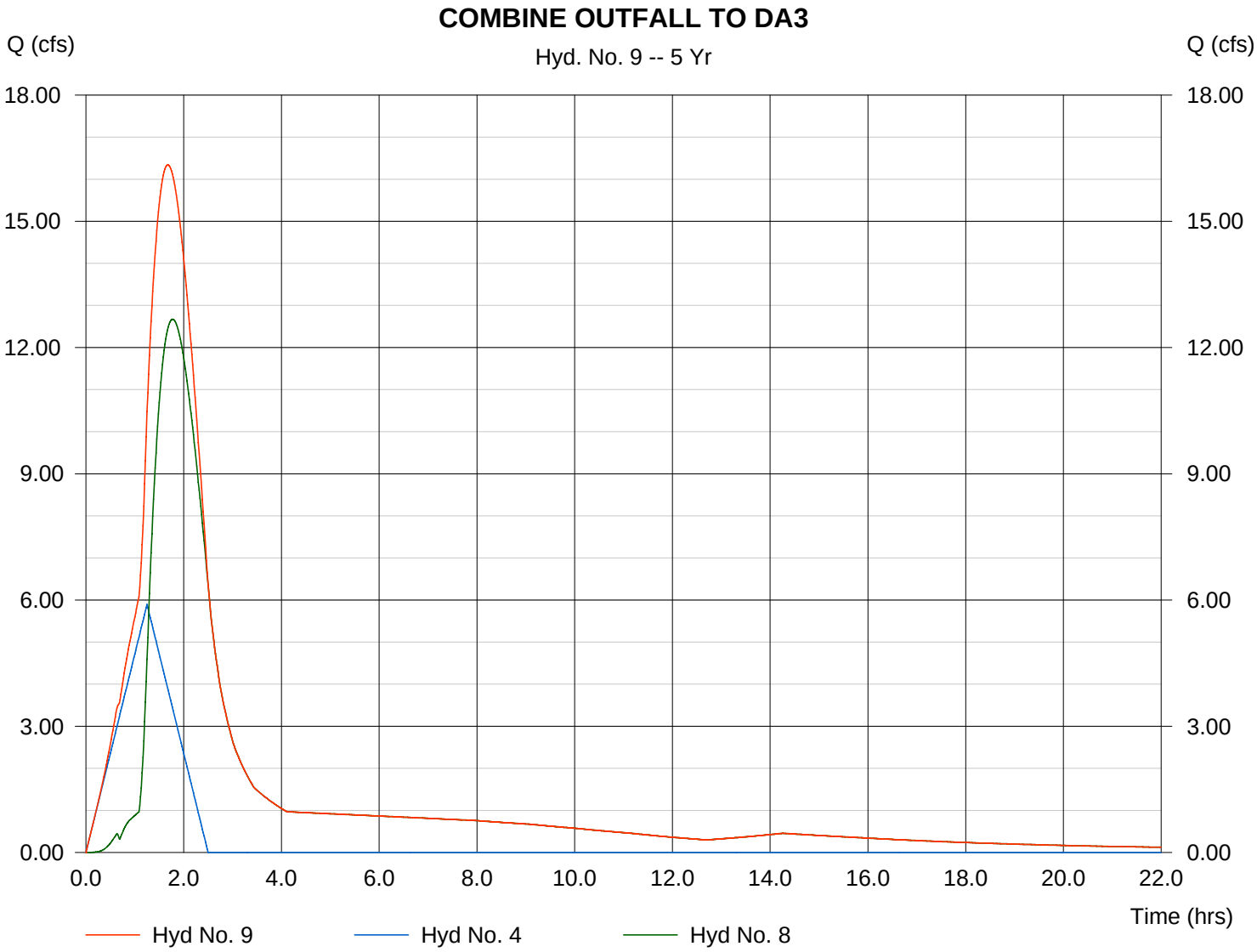
Hyd. No. 9

COMBINE OUTFALL TO DA3

Hydrograph type = Combine
Storm frequency = 5 yrs
Inflow hyds. = 4, 8

Peak discharge = 16.34 cfs
Time interval = 1 min

Hydrograph Volume = 122,927 cuft



Hydrograph Plot

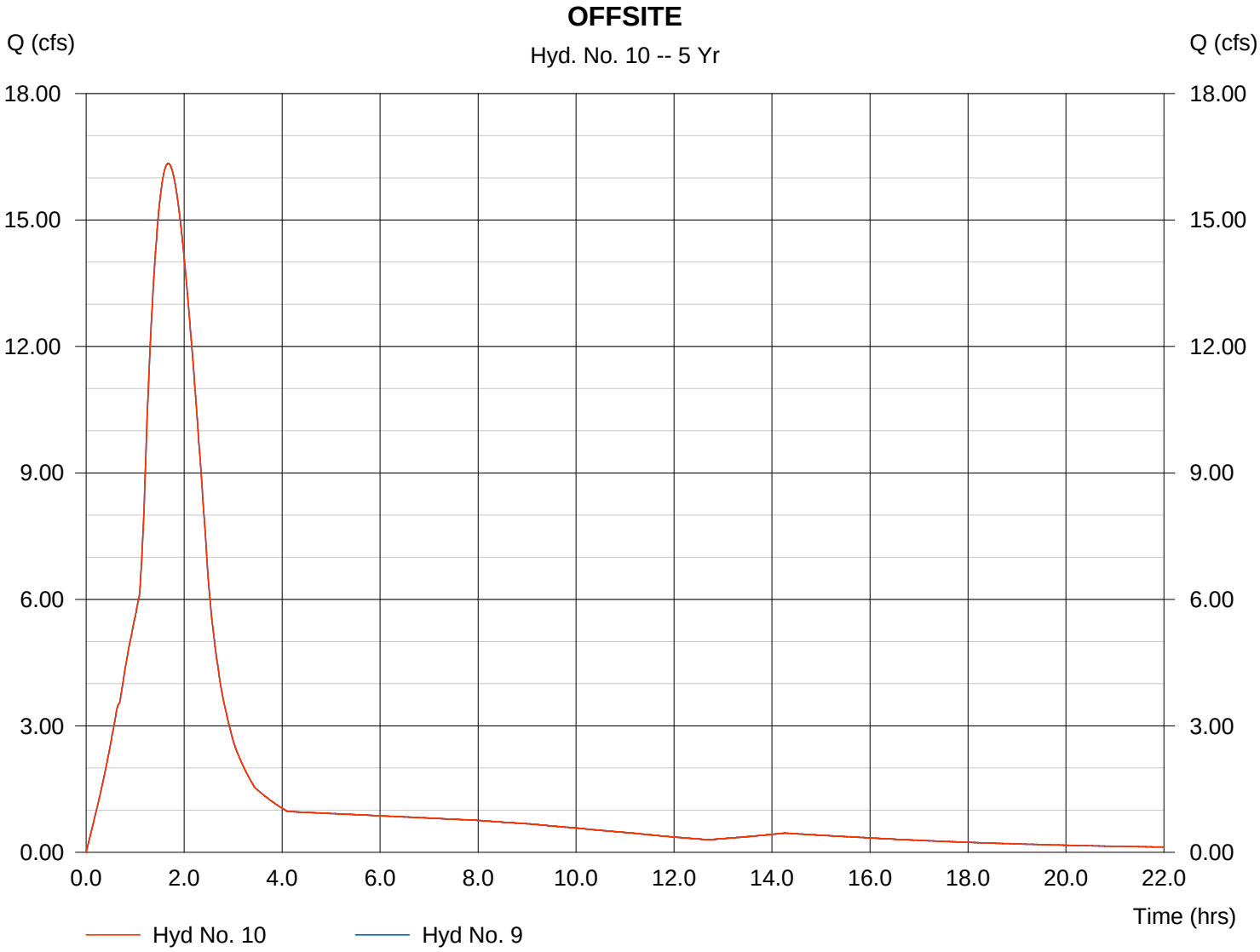
Hyd. No. 10

OFFSITE

Hydrograph type	=	Reservoir	Peak discharge	=	16.34 cfs
Storm frequency	=	5 yrs	Time interval	=	1 min
Inflow hyd. No.	=	9	Max. Elevation	=	1349.66 ft
Reservoir name	=	To Offsite	Max. Storage	=	1 cuft

Storage Indication method used.

Hydrograph Volume = 122,927 cuft



Pond No. 2 - To Offsite

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1348.50	01	0	0
1.00	1349.50	01	1	1
2.00	1350.50	01	1	2
3.00	1351.50	01	1	3
4.00	1352.50	01	1	4

Culvert / Orifice Structures

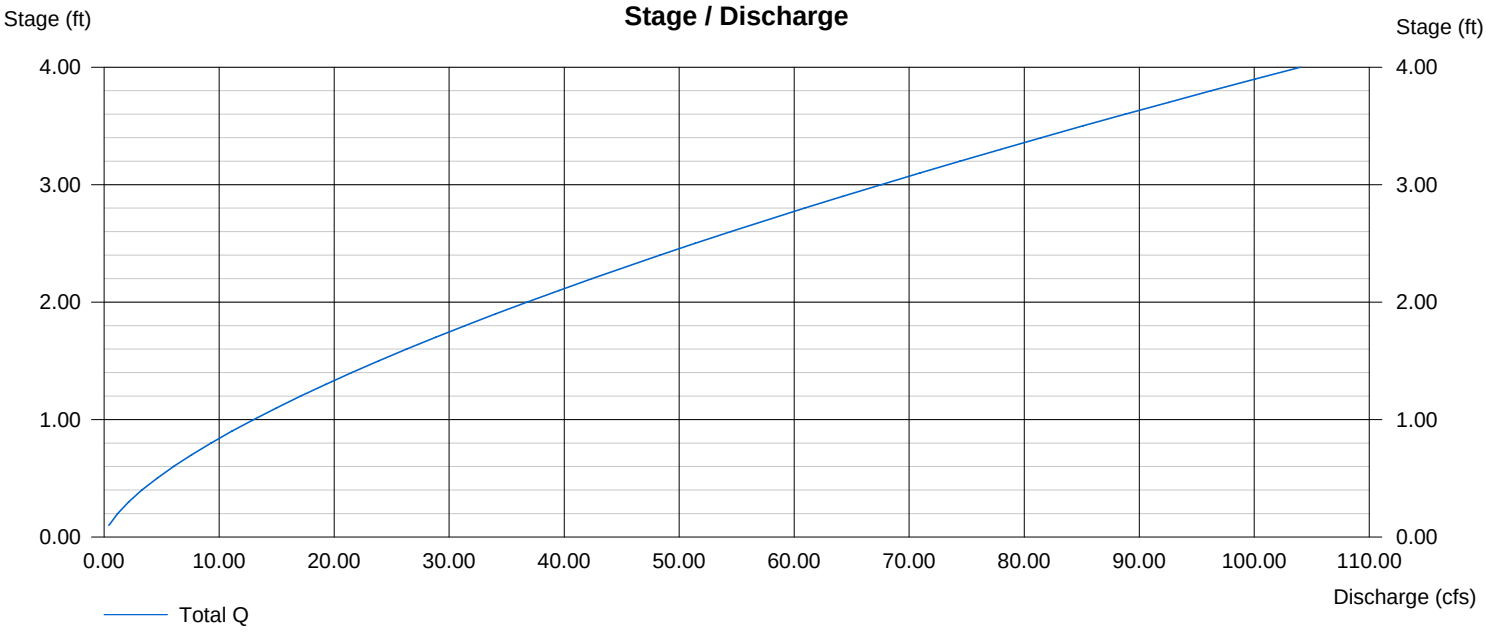
	[A]	[B]	[C]	[D]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	0.00
N-Value	= .013	.013	.013	.013
Orif. Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 5.00	0.00	0.00	0.00
Crest El. (ft)	= 1348.50	0.00	0.00	0.00
Weir Coeff.	= 2.60	0.00	0.00	0.00
Weir Type	= Broad	---	---	---
Multi-Stage	= No	No	No	No

Exfiltration = 0.000 in/hr (Contour) Tailwater Elev. = 0.00 ft

Note: Culvert/Orifice outflows have been analyzed under inlet and outlet control. Weir riser checked for orifice conditions.



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100 - Year

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	Rational	6.462	1	75	29,079	----	------	------	DA1-R100
2	Rational	28.20	1	75	126,909	----	------	------	DA2-R100
3	Rational	9.065	1	75	40,793	----	------	------	DAOFFSITE-R100
4	Rational	10.55	1	75	47,474	----	------	------	DA3-R100
5	Combine	37.27	1	75	167,701	2, 3,	------	------	ADD DA2 & DAOFFSITE
6	Reservoir	6.460	1	75	29,001	1	1363.06	91	DA1 TO STORM SEWER
7	Combine	43.73	1	75	196,702	5, 6	------	------	ADD DA1, DA2, & DAOFFSITE
8	Reservoir	38.15	1	85	195,749	7	1356.46	65,624	THROUGH POND
9	Combine	47.52	1	82	243,223	4, 8	------	------	COMBINE OUTFALL TO DA3
10	Reservoir	47.52	1	82	243,223	9	1350.87	2	OFFSITE

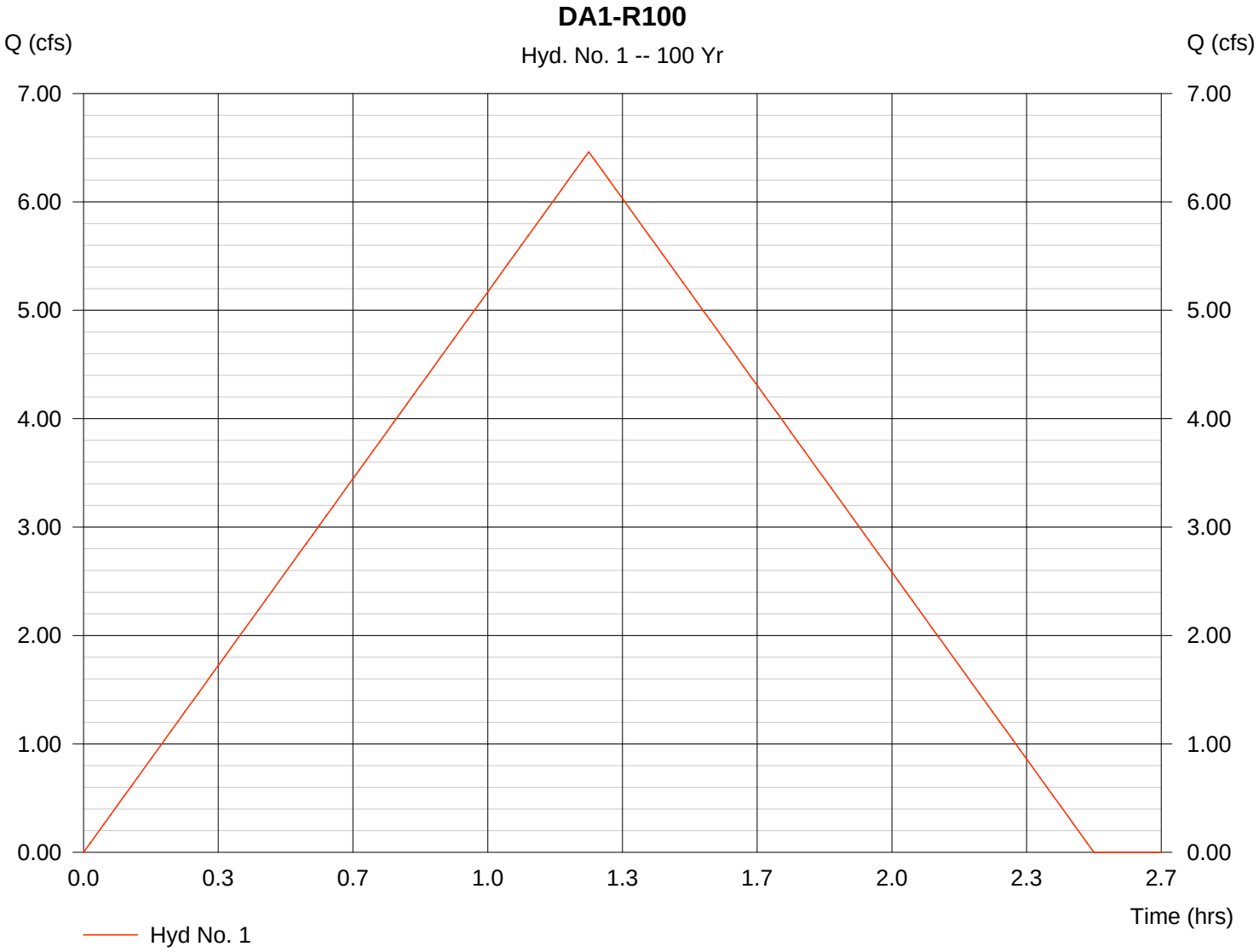
Hydrograph Plot

Hyd. No. 1

DA1-R100

Hydrograph type	= Rational	Peak discharge	= 6.462 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 1.323 ac	Runoff coeff.	= 0.66
Intensity	= 7.400 in/hr	Tc by User	= 15.00 min
IDF Curve	= SedgwickCoREV.IDF	Asc/Rec limb fact	= 5/5

Hydrograph Volume = 29,079 cuft



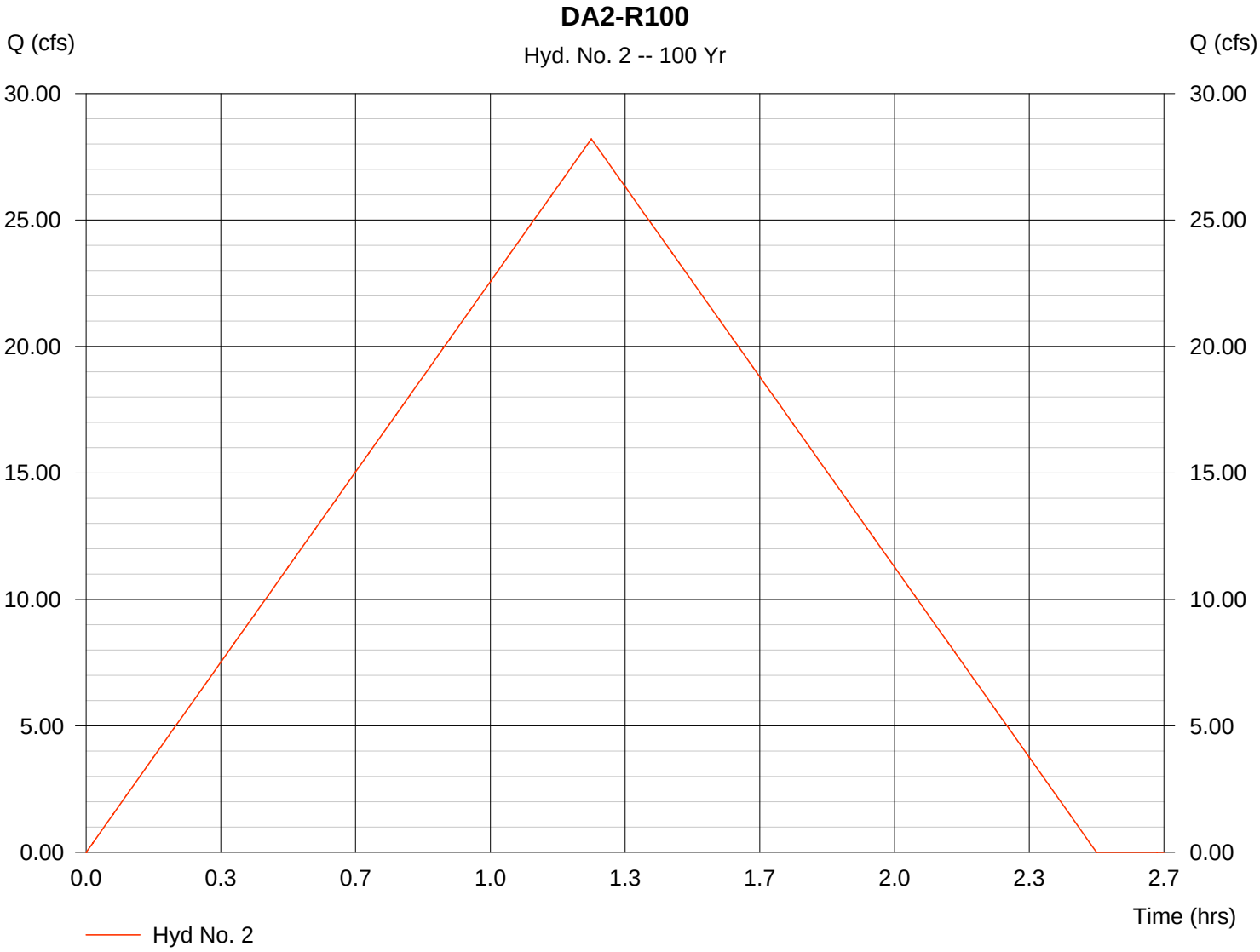
Hydrograph Plot

Hyd. No. 2

DA2-R100

Hydrograph type	= Rational	Peak discharge	= 28.20 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 5.774 ac	Runoff coeff.	= 0.66
Intensity	= 7.400 in/hr	Tc by User	= 15.00 min
IDF Curve	= SedgwickCoREV.IDF	Asc/Rec limb fact	= 5/5

Hydrograph Volume = 126,909 cuft



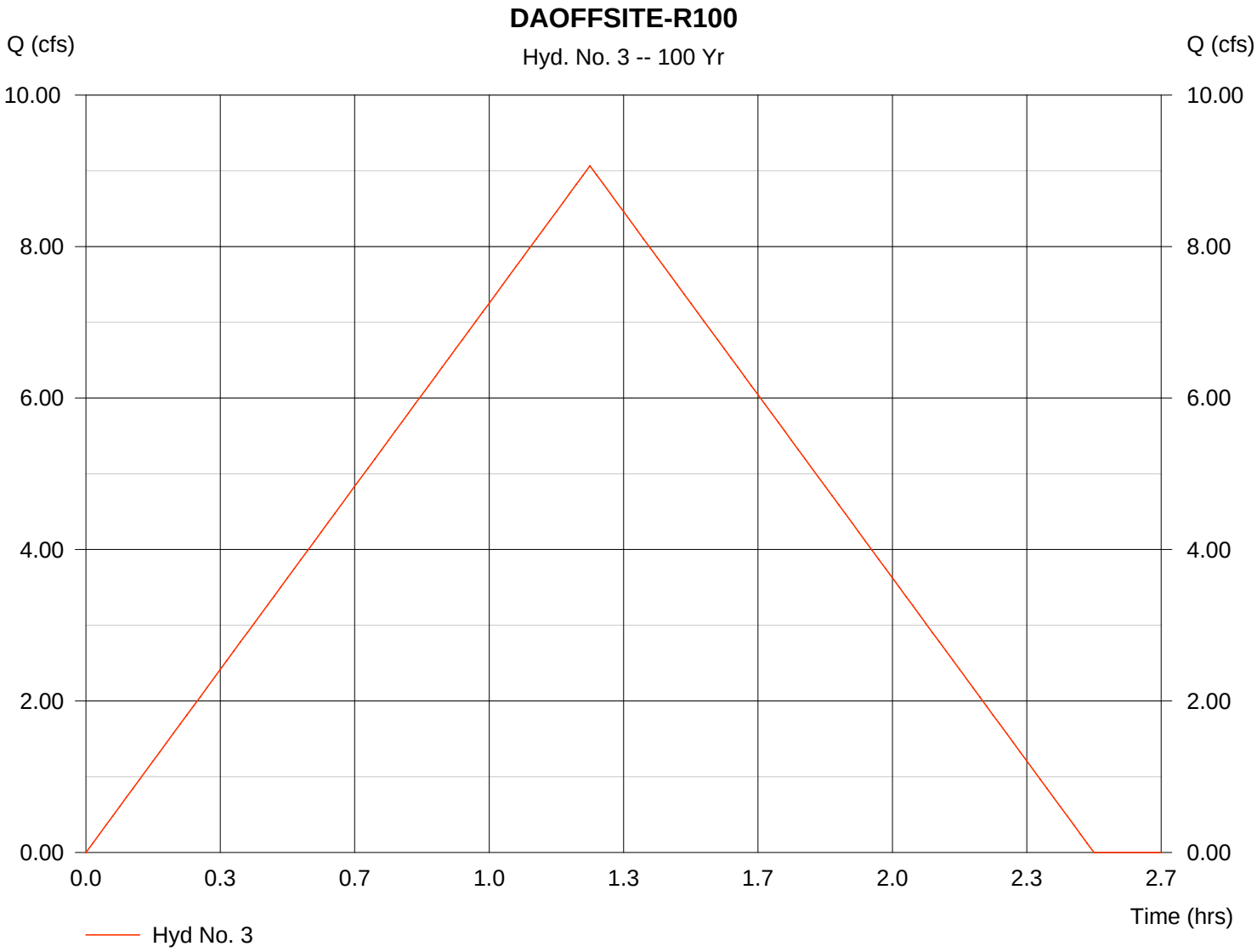
Hydrograph Plot

Hyd. No. 3

DAOFFSITE-R100

Hydrograph type	=	Rational	Peak discharge	=	9.065 cfs
Storm frequency	=	100 yrs	Time interval	=	1 min
Drainage area	=	2.149 ac	Runoff coeff.	=	0.57
Intensity	=	7.400 in/hr	Tc by User	=	15.00 min
IDF Curve	=	SedgwickCoREV.IDF	Asc/Rec limb fact	=	5/5

Hydrograph Volume = 40,793 cuft



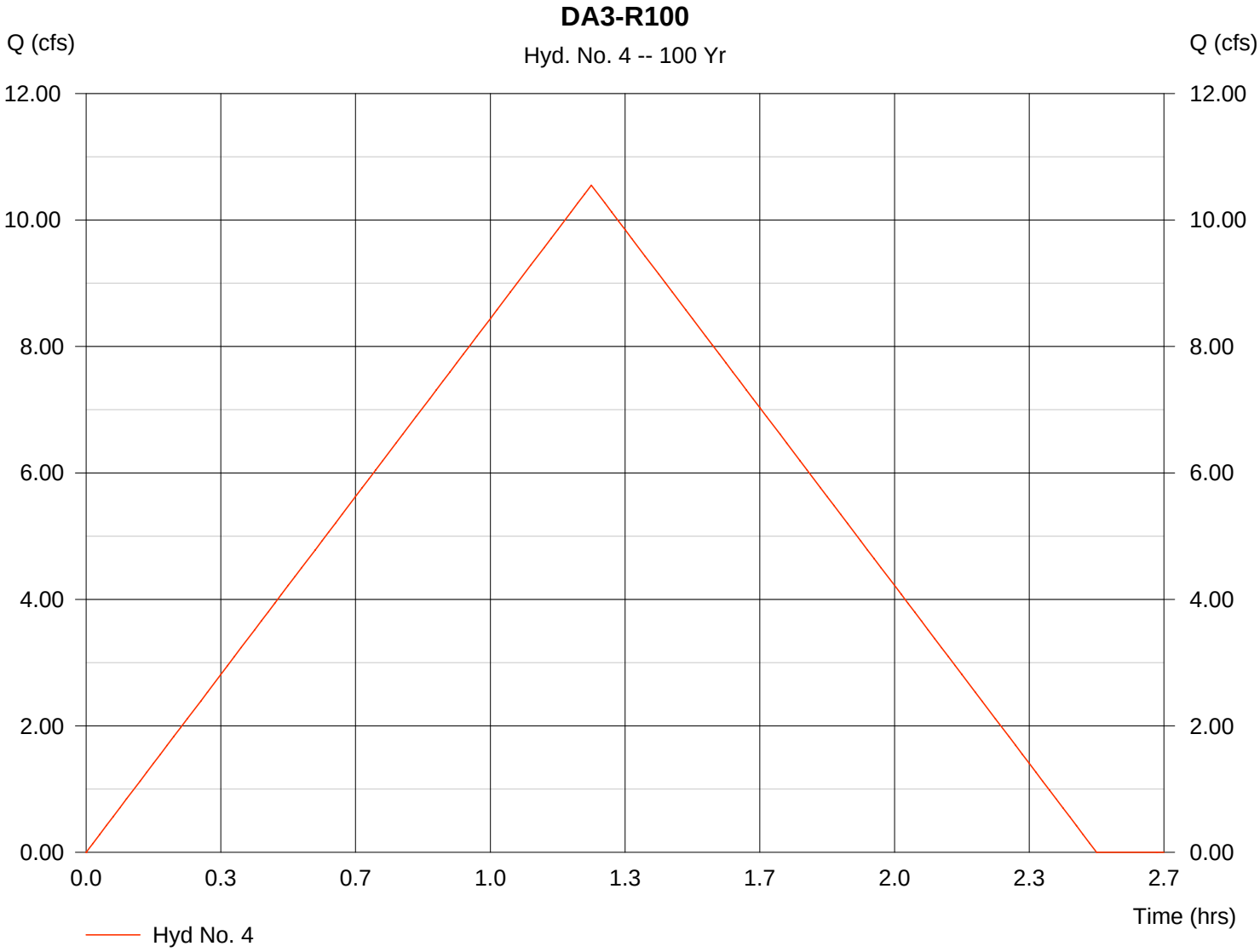
Hydrograph Plot

Hyd. No. 4

DA3-R100

Hydrograph type	= Rational	Peak discharge	= 10.55 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 2.501 ac	Runoff coeff.	= 0.57
Intensity	= 7.400 in/hr	Tc by User	= 15.00 min
IDF Curve	= SedgwickCoREV.IDF	Asc/Rec limb fact	= 5/5

Hydrograph Volume = 47,474 cuft



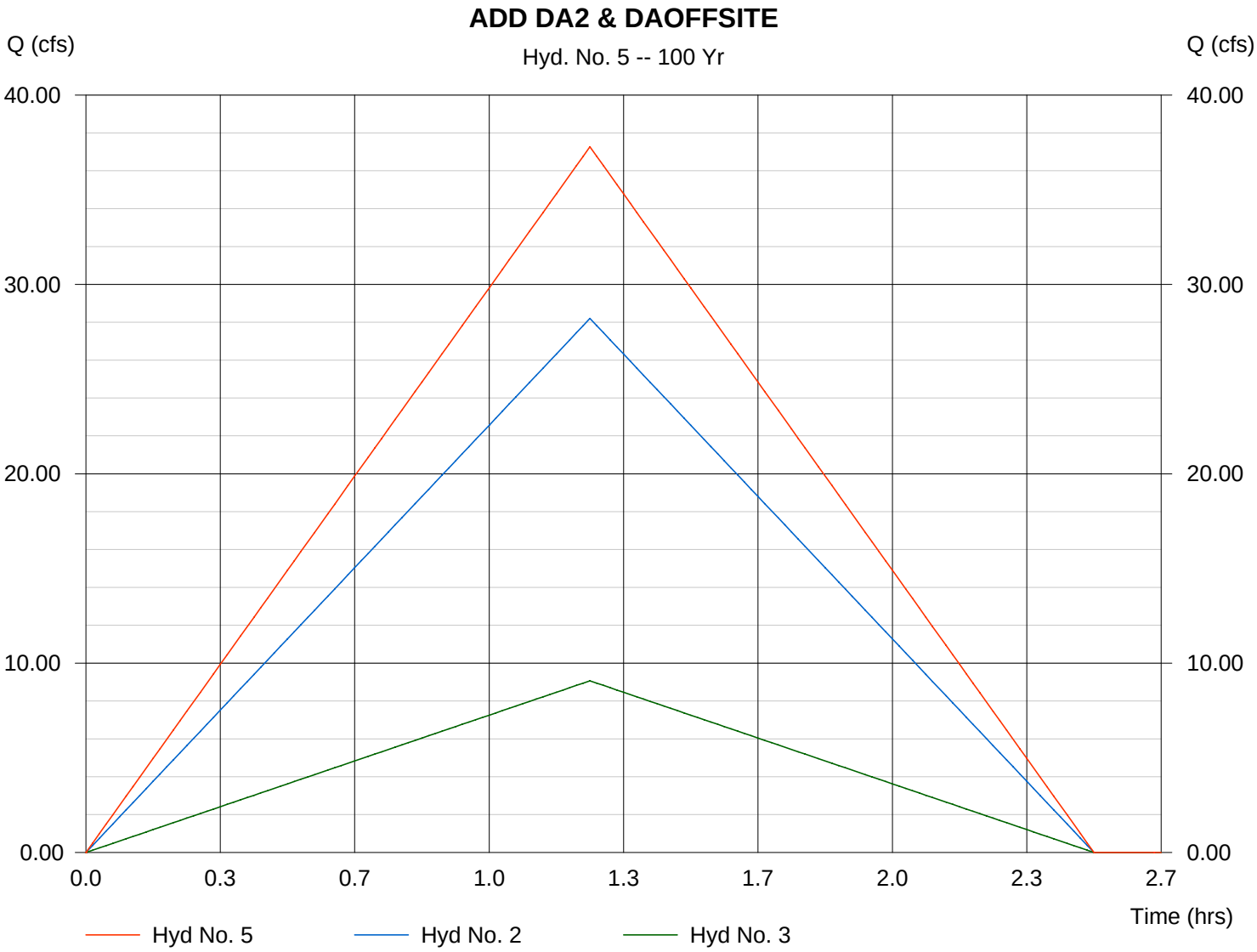
Hydrograph Plot

Hyd. No. 5

ADD DA2 & DAOFFSITE

Hydrograph type	= Combine	Peak discharge	= 37.27 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyds.	= 2, 3		

Hydrograph Volume = 167,701 cuft



Hydrograph Plot

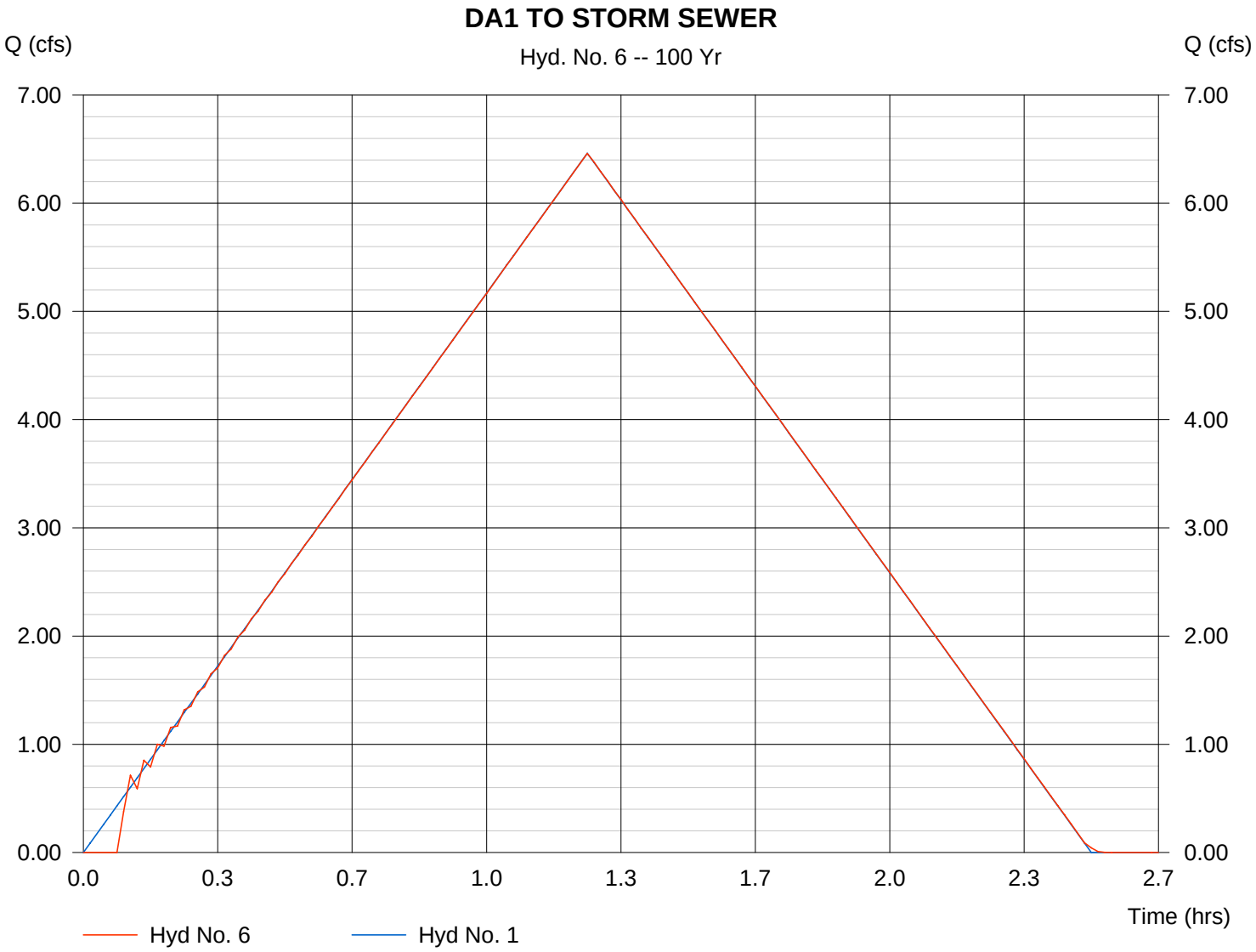
Hydraflow Hydrographs by Intelisolve | Thursday, Dec 14 2006, 11:43 AM

Hyd. No. 6

DA1 TO STORM SEWER

Hydrograph type	=	Reservoir	Peak discharge	=	6.460 cfs
Storm frequency	=	100 yrs	Time interval	=	1 min
Inflow hyd. No.	=	1	Max. Elevation	=	1363.06 ft
Reservoir name	=	STORM SEWER	Max. Storage	=	91 cuft

Storage Indication method used. | Hydrograph Volume = 29,001 cuft



Pond Report

Pond No. 3 - STORM SEWER

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1358.00	16	0	0
0.44	1358.44	16	7	7
1.44	1359.44	16	16	23
2.44	1360.44	16	16	39
3.44	1361.44	16	16	55
4.44	1362.44	16	16	71
5.44	1363.44	50	33	104
6.44	1364.44	8,702	4,376	4,480
7.44	1365.44	9,000	8,851	13,331

Culvert / Orifice Structures

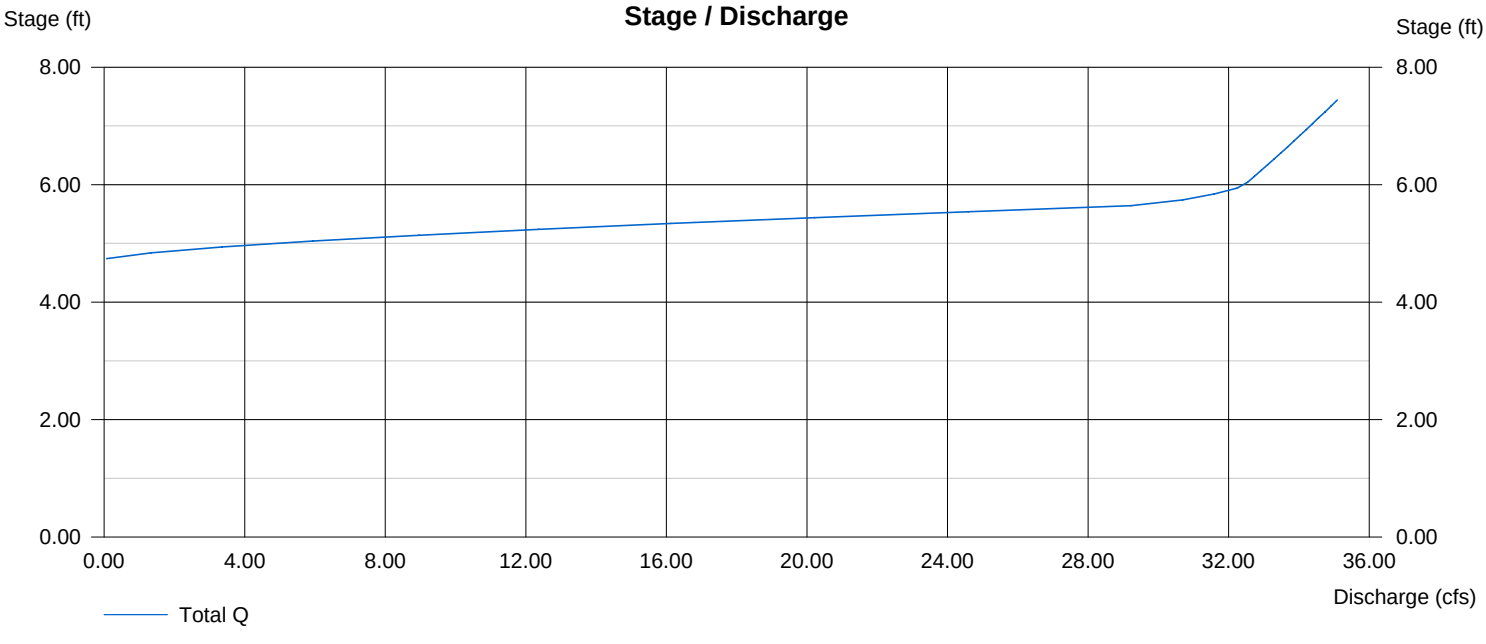
	[A]	[B]	[C]	[D]
Rise (in)	= 24.00	0.00	0.00	0.00
Span (in)	= 24.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 1358.00	0.00	0.00	0.00
Length (ft)	= 302.00	0.00	0.00	0.00
Slope (%)	= 1.65	0.00	0.00	0.00
N-Value	= .013	.000	.000	.000
Orif. Coeff.	= 0.60	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 10.00	0.00	0.00	0.00
Crest El. (ft)	= 1362.72	0.00	0.00	0.00
Weir Coeff.	= 3.33	0.00	0.00	0.00
Weir Type	= Riser	---	---	---
Multi-Stage	= Yes	No	No	No

Exfiltration = 0.000 in/hr (Contour) Tailwater Elev. = 0.00 ft

Note: Culvert/Orifice outflows have been analyzed under inlet and outlet control. Weir riser checked for orifice conditions.



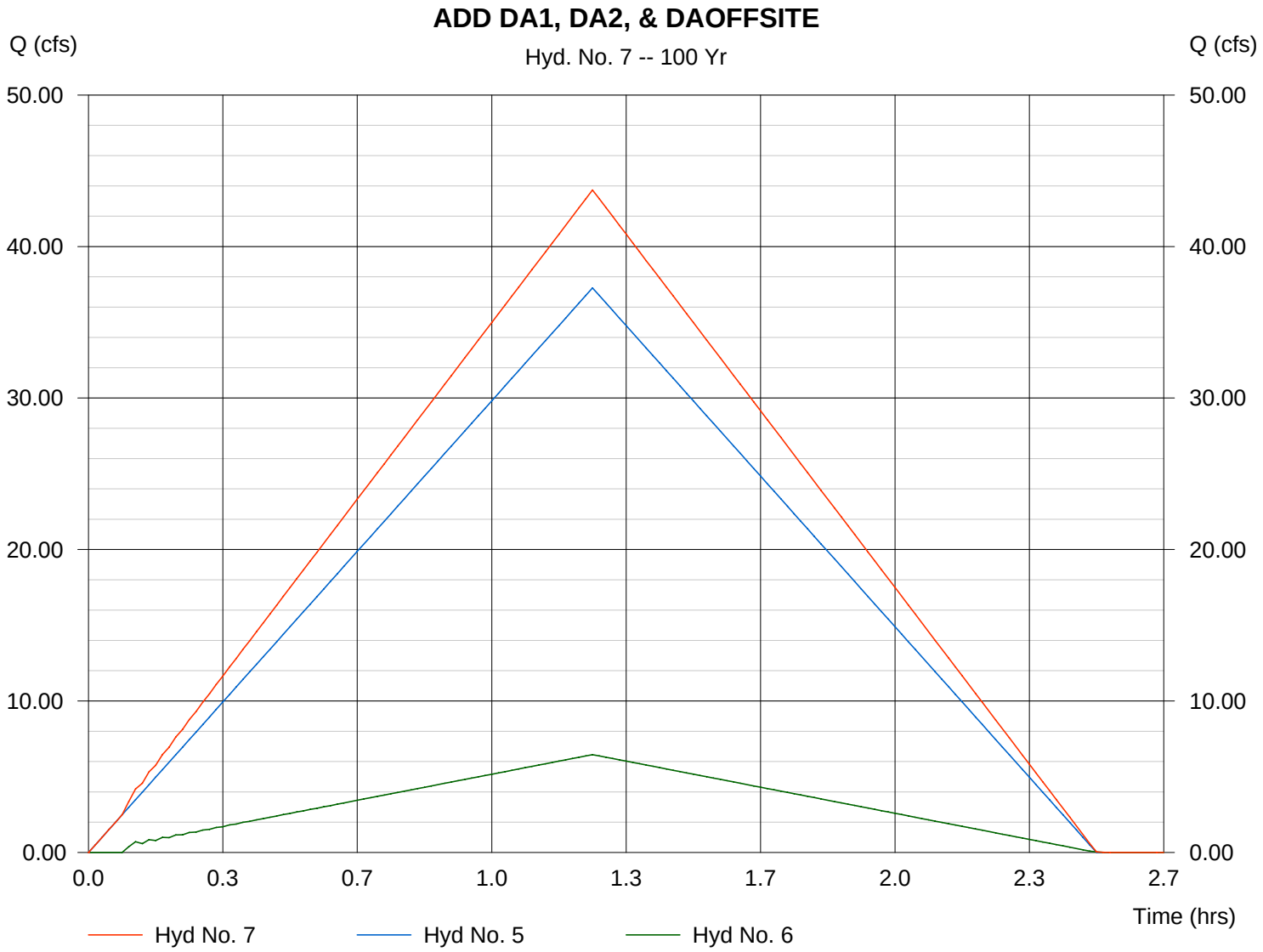
Hydrograph Plot

Hyd. No. 7

ADD DA1, DA2, & DAOFFSITE

Hydrograph type	= Combine	Peak discharge	= 43.73 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyds.	= 5, 6		

Hydrograph Volume = 196,702 cuft



Hydrograph Plot

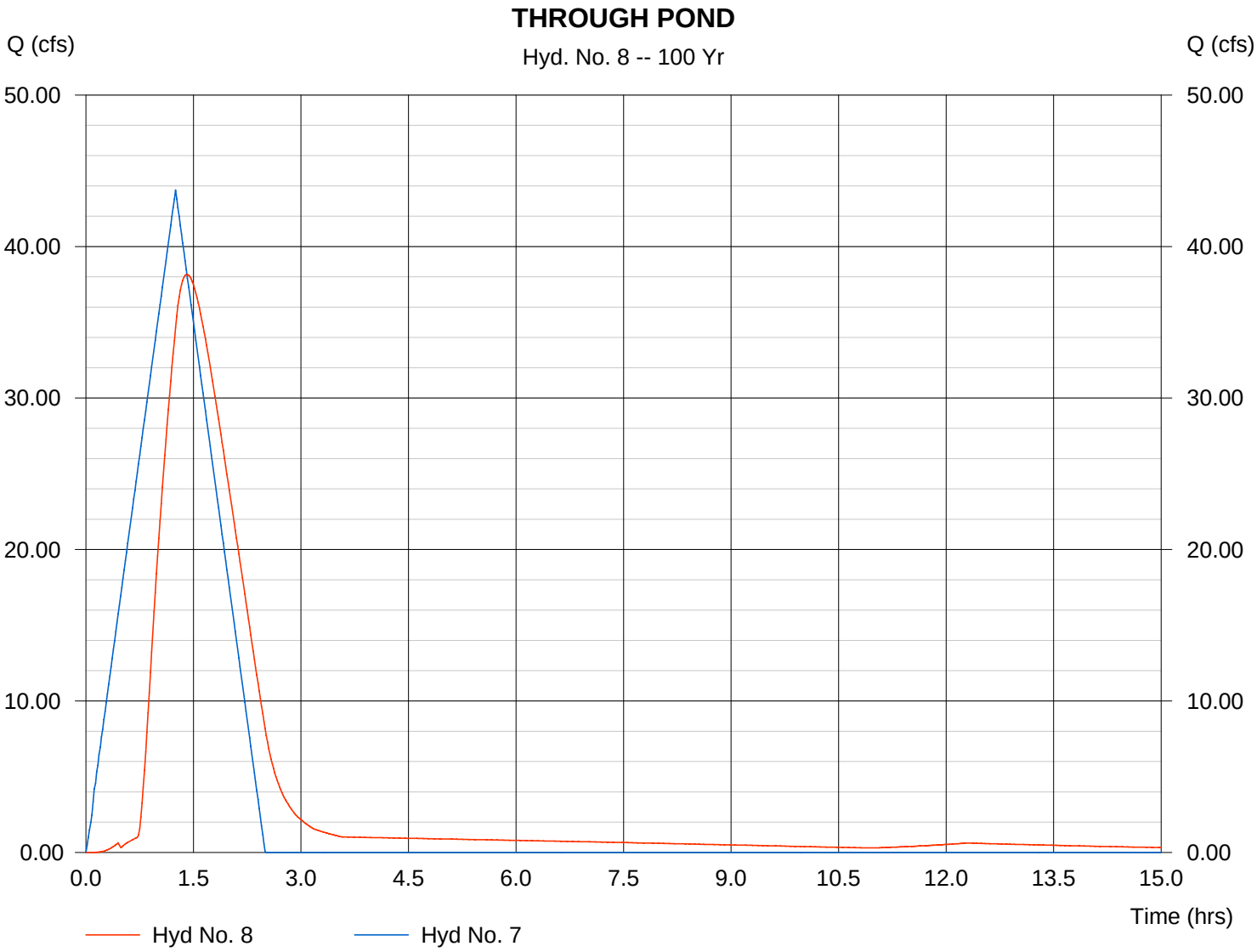
Hyd. No. 8

THROUGH POND

Hydrograph type	=	Reservoir	Peak discharge	=	38.15 cfs
Storm frequency	=	100 yrs	Time interval	=	1 min
Inflow hyd. No.	=	7	Max. Elevation	=	1356.46 ft
Reservoir name	=	PROPOSED POND	Max. Storage	=	65,624 cuft

Storage Indication method used.

Hydrograph Volume = 195,749 cuft



Pond Report

Pond No. 1 - PROPOSED POND

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1354.20	23,620	0	0
0.80	1355.00	28,470	20,836	20,836
1.20	1355.40	29,510	11,596	32,432
1.80	1356.00	31,071	18,174	50,606
2.80	1357.00	33,773	32,422	83,028

Culvert / Orifice Structures

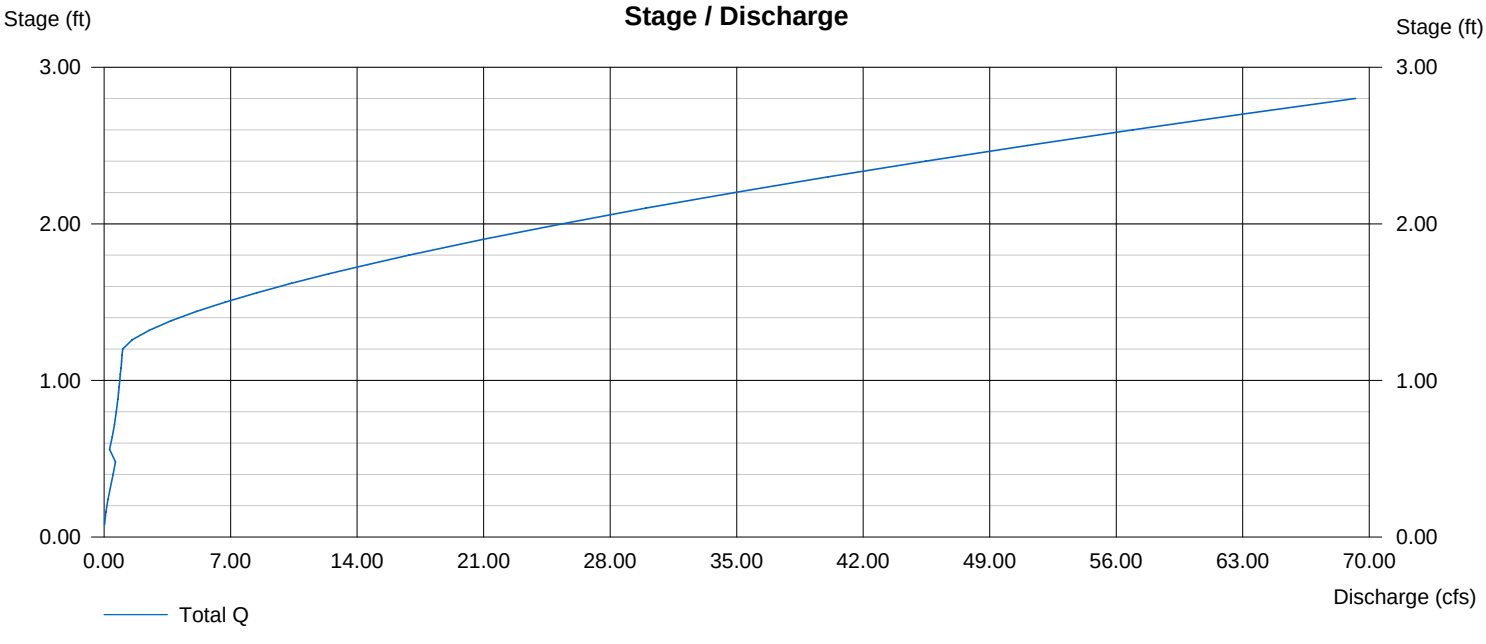
	[A]	[B]	[C]	[D]
Rise (in)	= 6.00	0.00	0.00	0.00
Span (in)	= 6.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 1354.20	0.00	0.00	0.00
Length (ft)	= 2.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	0.00
N-Value	= .013	.013	.013	.013
Orif. Coeff.	= 0.82	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 10.00	0.00	0.00	0.00
Crest El. (ft)	= 1355.40	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	0.00	0.00
Weir Type	= Ciplti	---	---	---
Multi-Stage	= No	No	No	No

Exfiltration = 0.000 in/hr (Contour) Tailwater Elev. = 0.00 ft

Note: Culvert/Orifice outflows have been analyzed under inlet and outlet control.



Hydrograph Plot

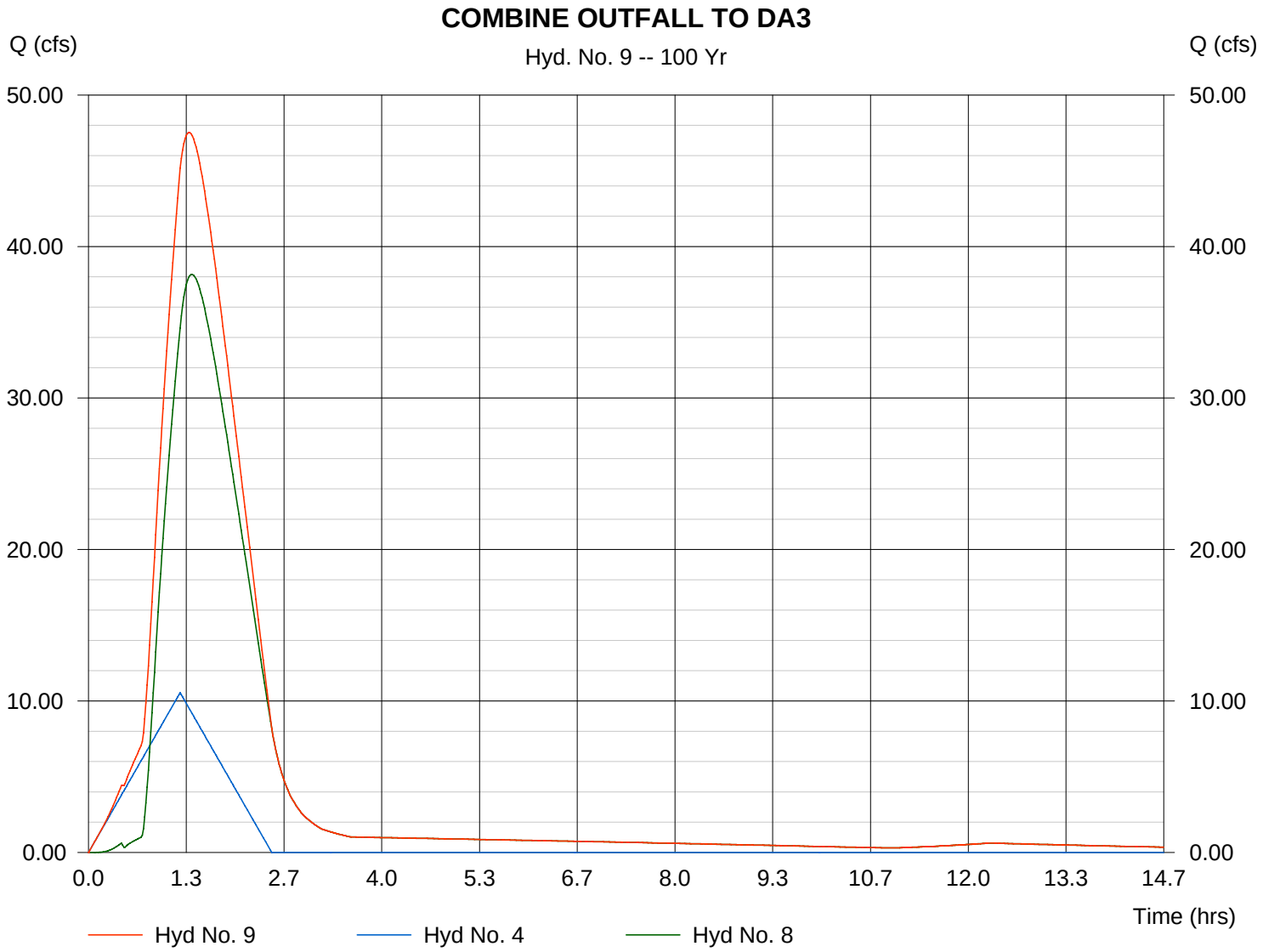
Hyd. No. 9

COMBINE OUTFALL TO DA3

Hydrograph type = Combine
Storm frequency = 100 yrs
Inflow hyds. = 4, 8

Peak discharge = 47.52 cfs
Time interval = 1 min

Hydrograph Volume = 243,223 cuft



Hydrograph Plot

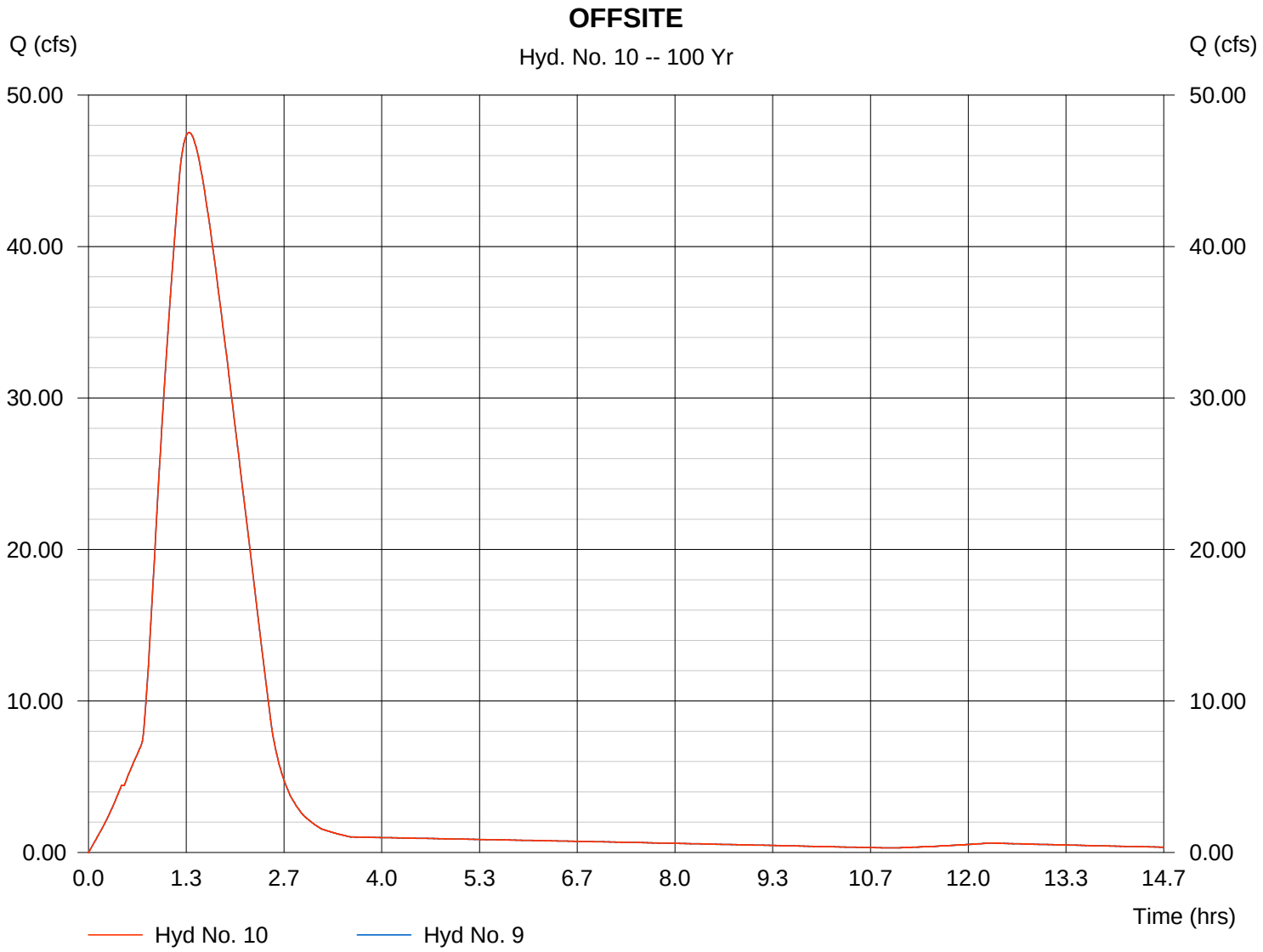
Hyd. No. 10

OFFSITE

Hydrograph type	=	Reservoir	Peak discharge	=	47.52 cfs
Storm frequency	=	100 yrs	Time interval	=	1 min
Inflow hyd. No.	=	9	Max. Elevation	=	1350.87 ft
Reservoir name	=	To Offsite	Max. Storage	=	2 cuft

Storage Indication method used.

Hydrograph Volume = 243,223 cuft



Pond No. 2 - To Offsite

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1348.50	01	0	0
1.00	1349.50	01	1	1
2.00	1350.50	01	1	2
3.00	1351.50	01	1	3
4.00	1352.50	01	1	4

Culvert / Orifice Structures

	[A]	[B]	[C]	[D]
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)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	0.00
N-Value	= .013	.013	.013	.013
Orif. 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)	= 5.00	0.00	0.00	0.00
Crest El. (ft)	= 1348.50	0.00	0.00	0.00
Weir Coeff.	= 2.60	0.00	0.00	0.00
Weir Type	= Broad	---	---	---
Multi-Stage	= No	No	No	No

Exfiltration = 0.000 in/hr (Contour) Tailwater Elev. = 0.00 ft

Note: Culvert/Orifice outflows have been analyzed under inlet and outlet control. Weir riser checked for orifice conditions.