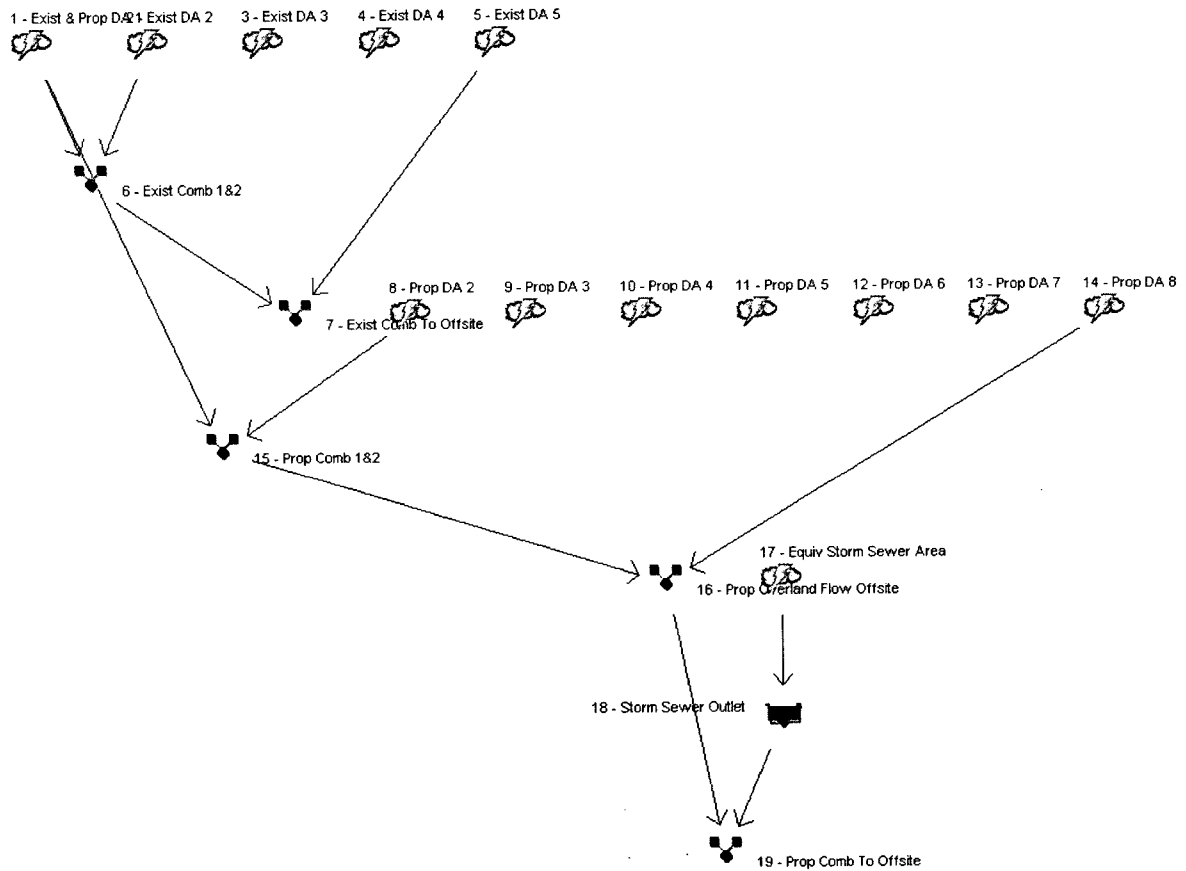




Legend

<u>Hyd.</u>	<u>Origin</u>	<u>Description</u>
1	Rational	Exist & Prop DA 1
2	Rational	Exist DA 2
3	Rational	Exist DA 3
4	Rational	Exist DA 4
5	Rational	Exist DA 5
6	Combine	Exist Comb 1&2
7	Combine	Exist Comb To Offsite
8	Rational	Prop DA 2
9	Rational	Prop DA 3
10	Rational	Prop DA 4
11	Rational	Prop DA 5
12	Rational	Prop DA 6
13	Rational	Prop DA 7
14	Rational	Prop DA 8
15	Combine	Prop Comb 1&2
16	Combine	Prop Overland Flow Offsite
17	Rational	Equiv Storm Sewer Area
18	Reservoir	Storm Sewer Outlet
19	Combine	Prop Comb To Offsite

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.02

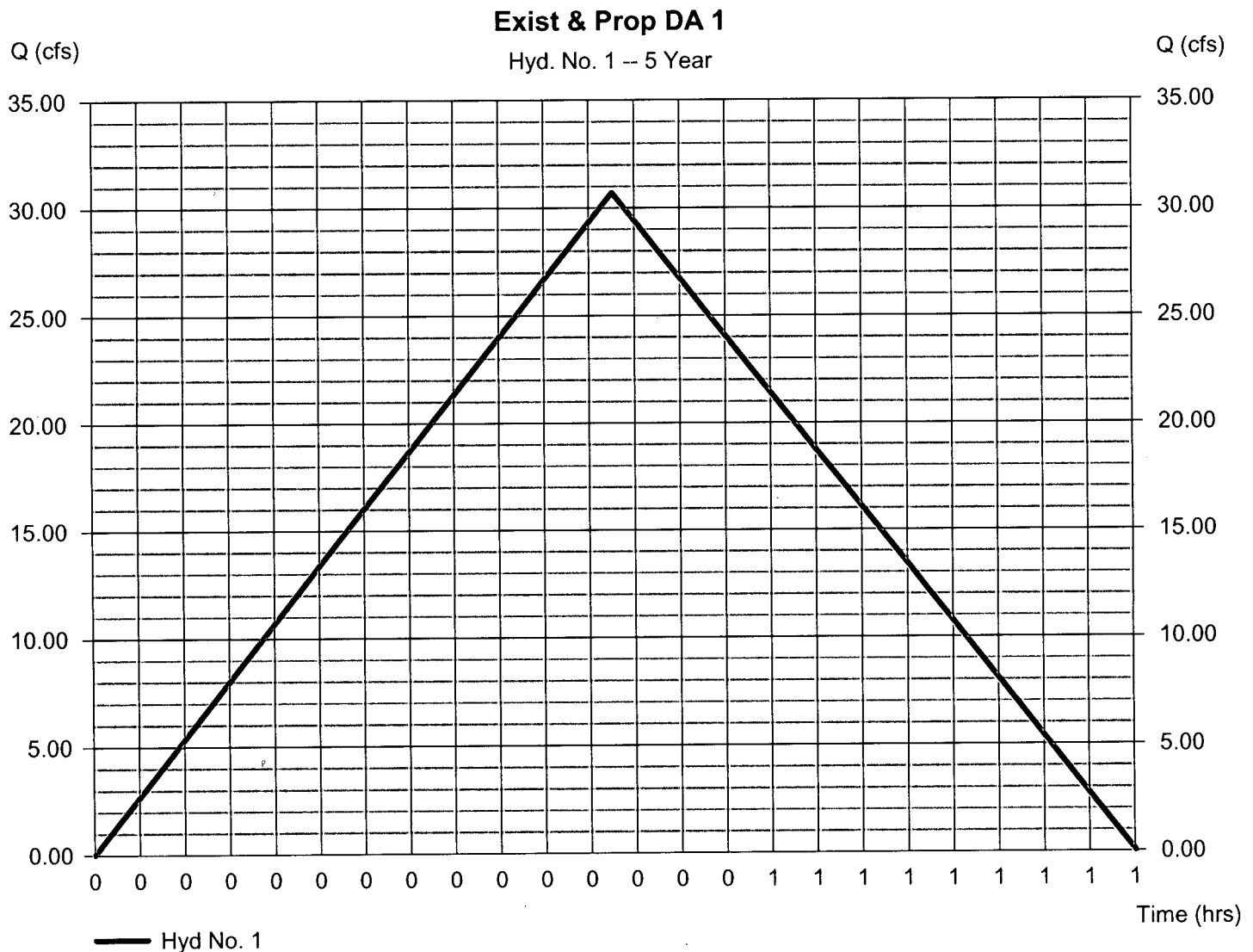
Friday, Jun 8, 2007

Hyd. No. 1

Exist & Prop DA 1

Hydrograph type = Rational
 Storm frequency = 5 yrs
 Time interval = 1 min
 Drainage area = 12.800 ac
 Intensity = 3.806 in/hr
 IDF Curve = wich15min.IDF

Peak discharge = 30.69 cfs
 Time to peak = 0.38 hrs
 Hyd. volume = 0.972 acft
 Runoff coeff. = 0.63
 Tc by TR55 = 23.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.02

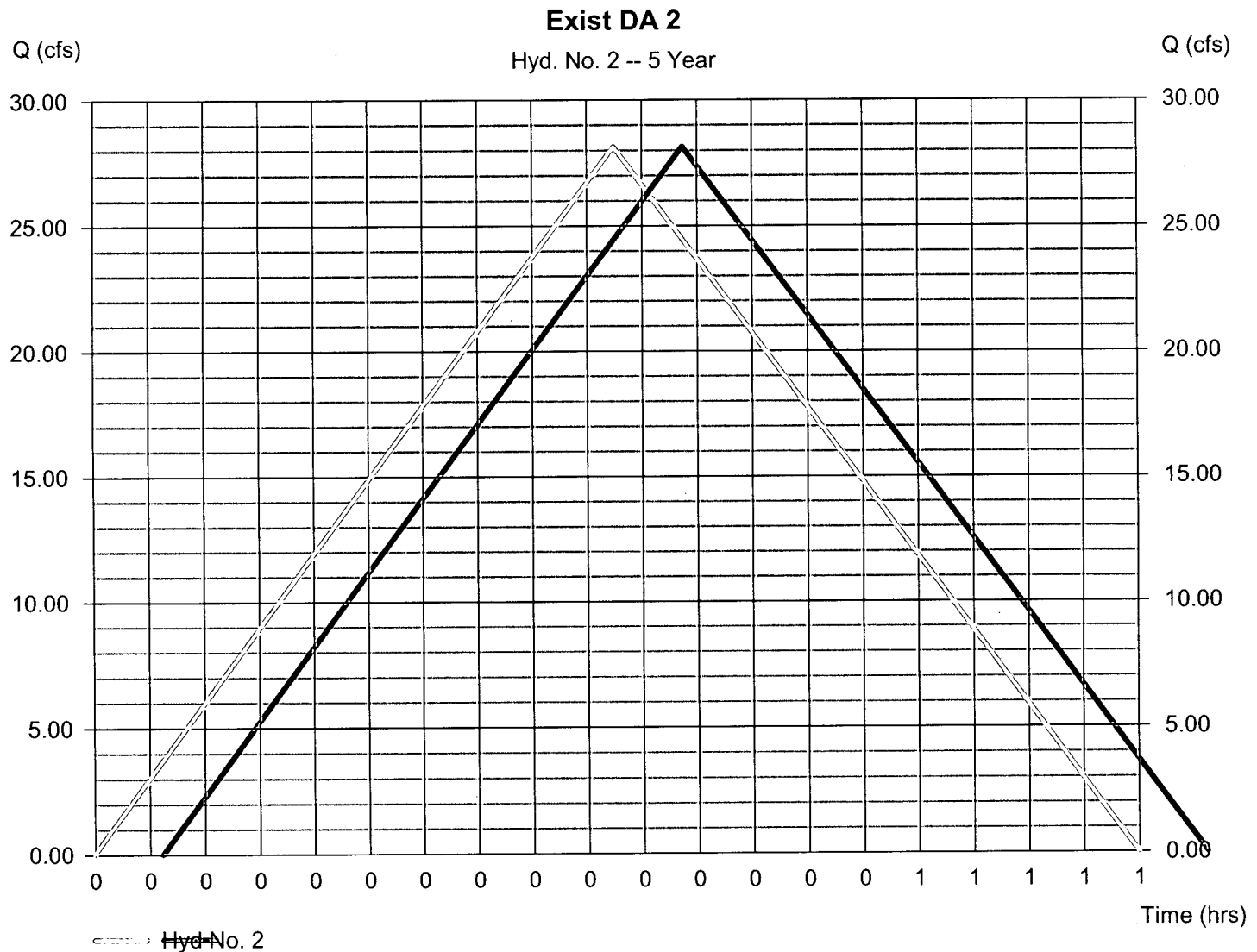
Friday, Jun 8, 2007

Hyd. No. 2

Exist DA 2

Hydrograph type = Rational
 Storm frequency = 5 yrs
 Time interval = 1 min
 Drainage area = 10.200 ac
 Intensity = 4.181 in/hr
 IDF Curve = wich15min.IDF

Peak discharge = 28.15 cfs
 Time to peak = 0.32 hrs
 Hyd. volume = 0.737 acft
 Runoff coeff. = 0.66
 Tc by TR55 = 19.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.02

Friday, Jun 8, 2007

Hyd. No. 3

Exist DA 3

Hydrograph type = Rational
 Storm frequency = 5 yrs
 Time interval = 1 min
 Drainage area = 3.700 ac
 Intensity = 4.650 in/hr
 IDF Curve = wich15min.IDF

Peak discharge = 11.35 cfs
 Time to peak = 0.25 hrs
 Hyd. volume = 0.235 acft
 Runoff coeff. = 0.66
 Tc by User = 15.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.02

Friday, Jun 8, 2007

Hyd. No. 4

Exist DA 4

Hydrograph type = Rational
Storm frequency = 5 yrs
Time interval = 1 min
Drainage area = 0.170 ac
Intensity = 4.650 in/hr
IDF Curve = wich15min.IDF

Peak discharge = 0.522 cfs
Time to peak = 0.25 hrs
Hyd. volume = 0.011 acft
Runoff coeff. = 0.66
Tc by User = 15.00 min
Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.02

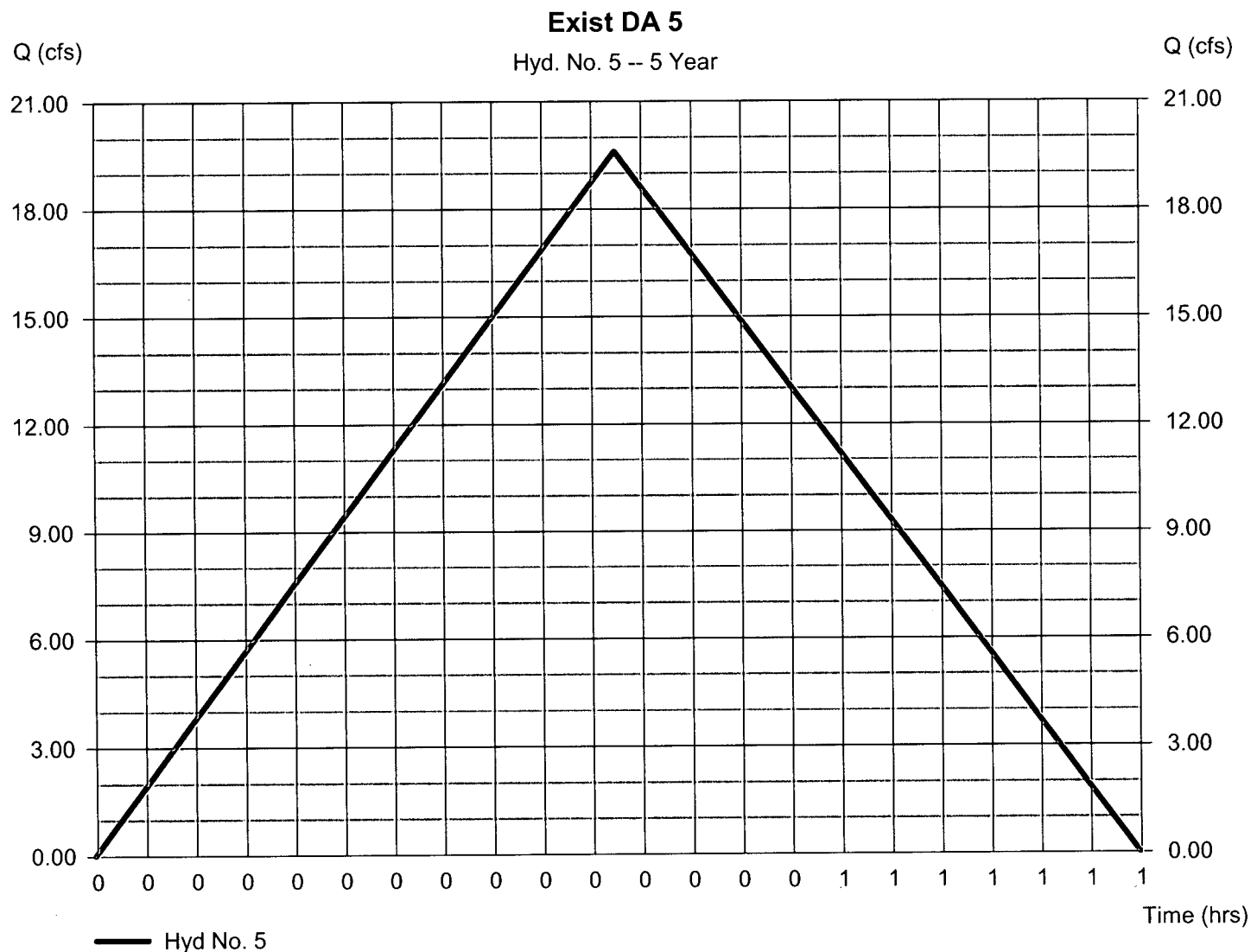
Friday, Jun 8, 2007

Hyd. No. 5

Exist DA 5

Hydrograph type = Rational
Storm frequency = 5 yrs
Time interval = 1 min
Drainage area = 13.300 ac
Intensity = 3.984 in/hr
IDF Curve = wich15min.IDF

Peak discharge = 19.60 cfs
Time to peak = 0.35 hrs
Hyd. volume = 0.567 acft
Runoff coeff. = 0.37
Tc by TR55 = 21.00 min
Asc/Rec limb fact = 1/1



Hydrograph Report

7

Hydraflow Hydrographs by Intelisolve v9.02

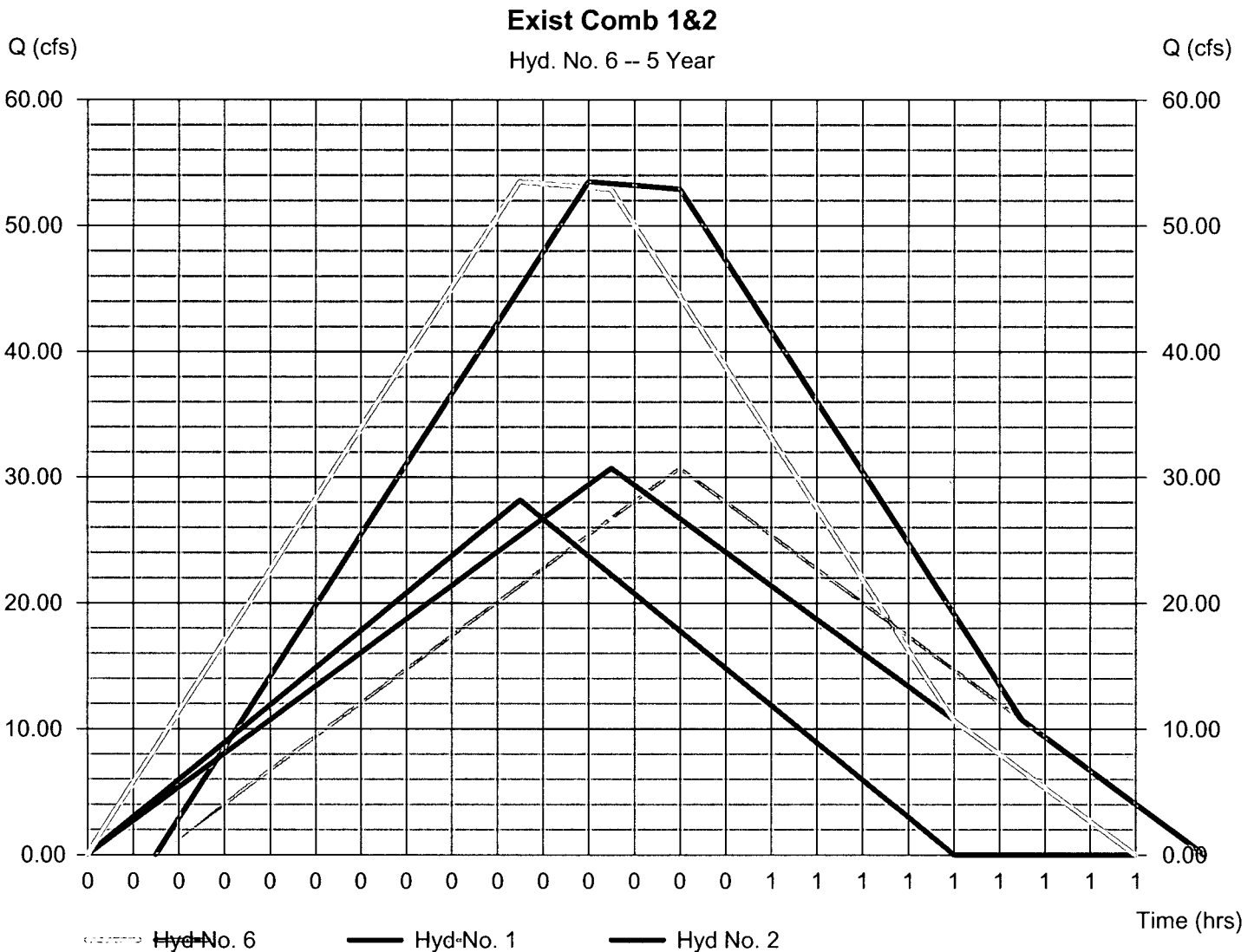
Friday, Jun 8, 2007

Hyd. No. 6

Exist Comb 1&2

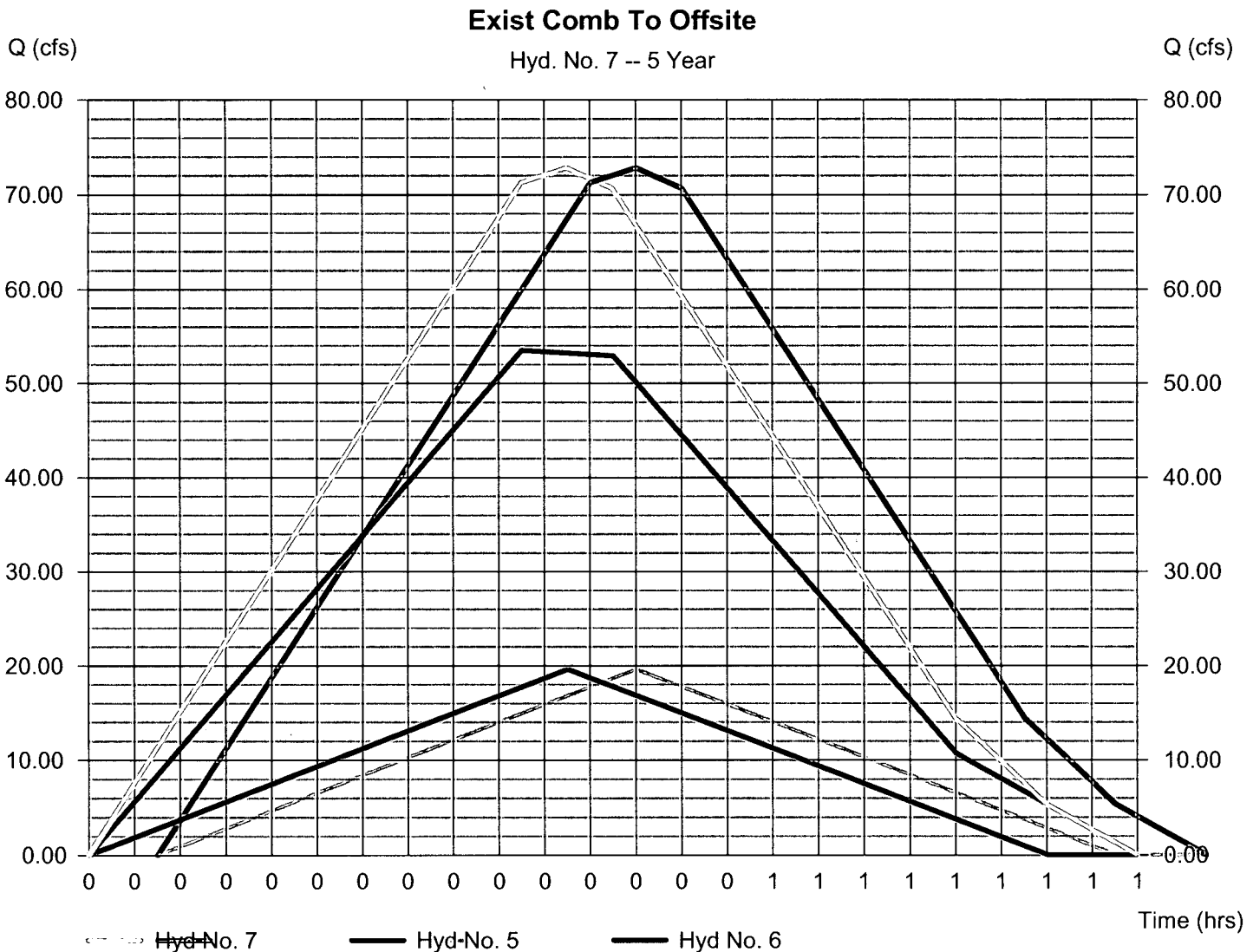
Hydrograph type = Combine
Storm frequency = 5 yrs
Time interval = 1 min
Inflow hyds. = 1, 2

Peak discharge = 53.50 cfs
Time to peak = 0.32 hrs
Hyd. volume = 1.709 acft
Contrib. drain. area = 23.000 ac



Exist Comb To Offsite

Peak discharge = 72.81 cfs
Time to peak = 0.35 hrs
Hyd. volume = 2.276 acft
Contrib. drain. area= 13.300 ac



Hydrograph Report

9

Hydraflow Hydrographs by Intelisolve v9.02

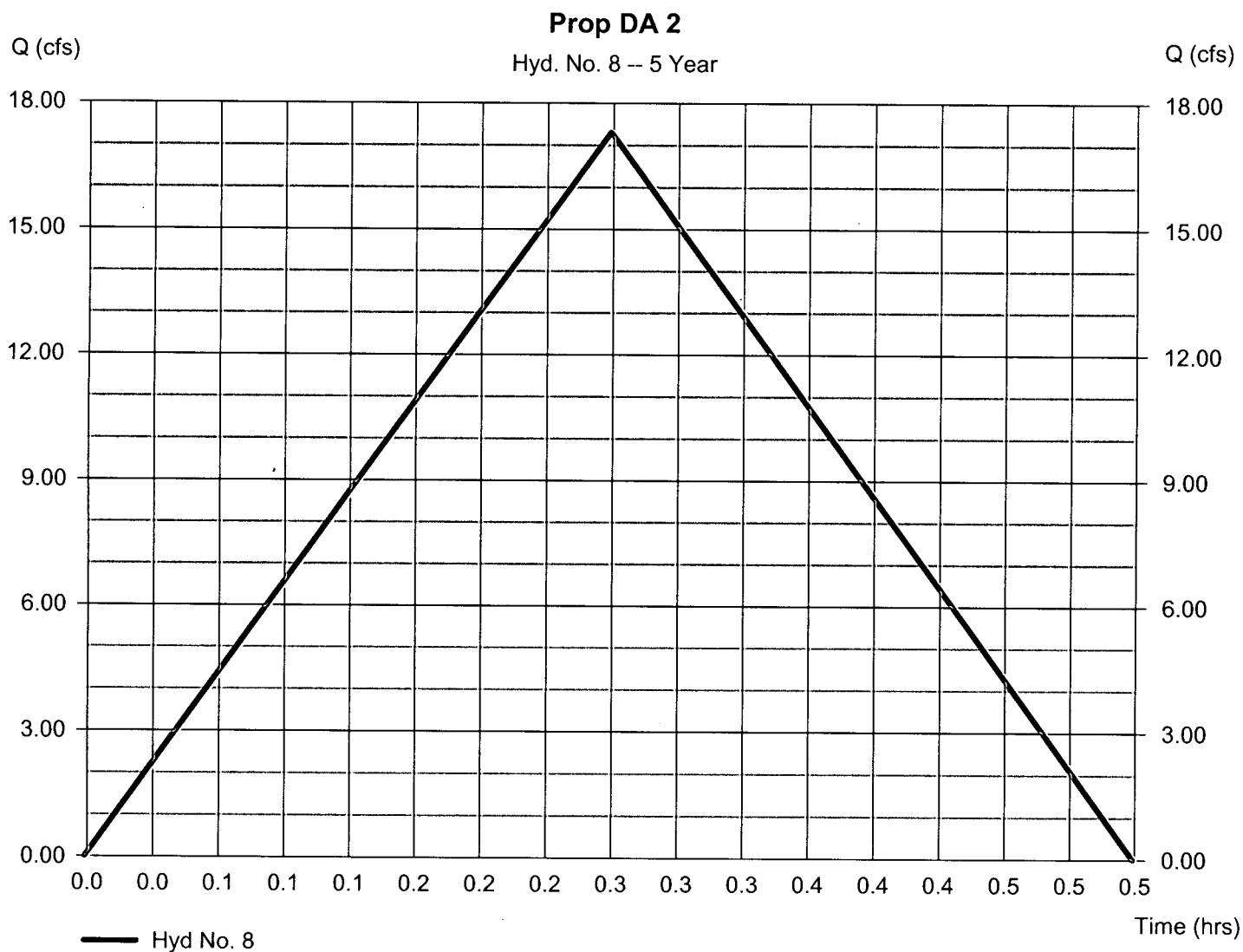
Friday, Jun 8, 2007

Hyd. No. 8

Prop DA 2

Hydrograph type = Rational
Storm frequency = 5 yrs
Time interval = 1 min
Drainage area = 5.800 ac
Intensity = 4.522 in/hr
IDF Curve = wic15min.IDF

Peak discharge = 17.31 cfs
Time to peak = 0.27 hrs
Hyd. volume = 0.381 acft
Runoff coeff. = 0.66
Tc by TR55 = 16.00 min
Asc/Rec limb fact = 1/1

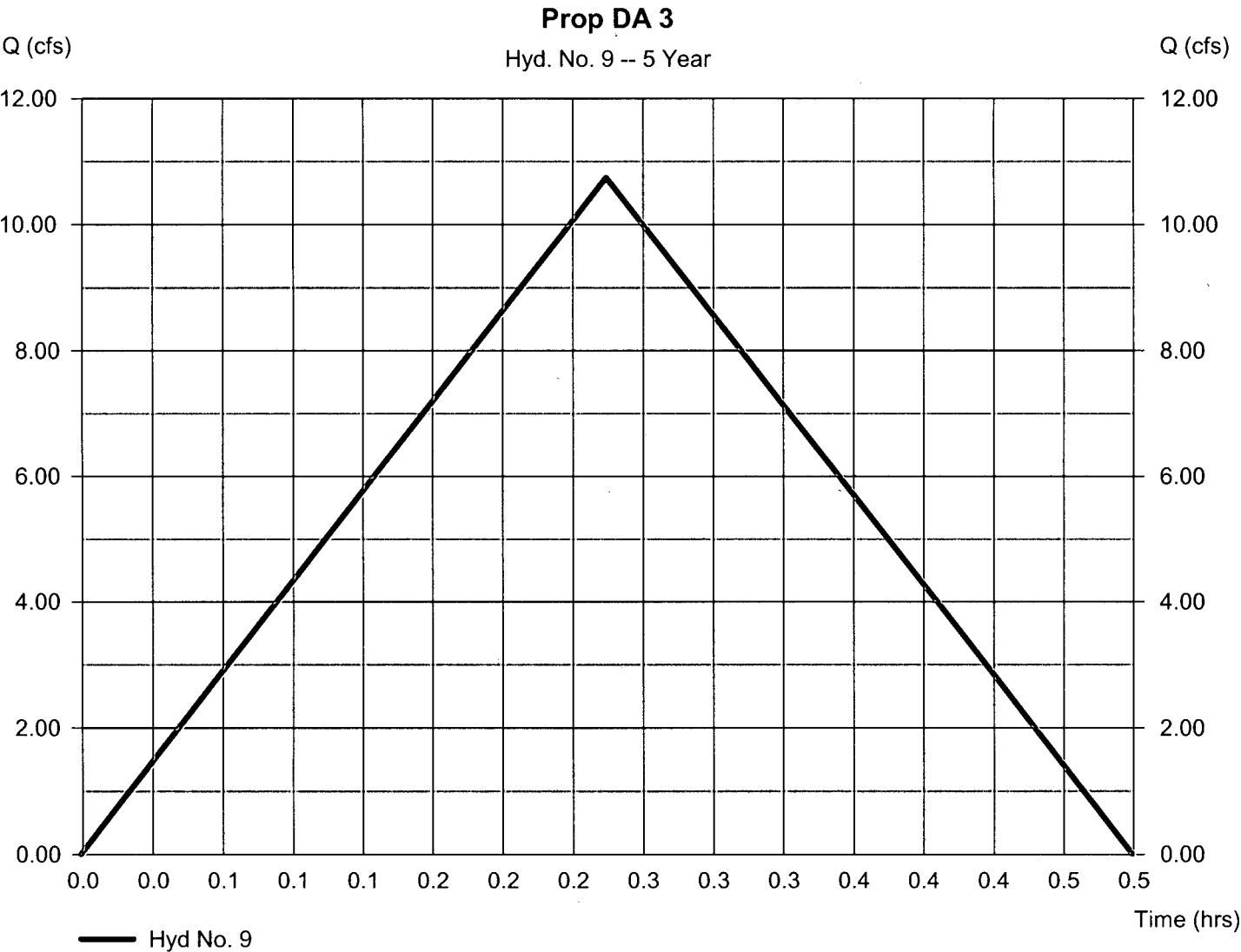


Hydrograph Report

Hyd. No. 9

Prop DA 3

Hydrograph type	= Rational	Peak discharge	= 10.74 cfs
Storm frequency	= 5 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 0.222 acft
Drainage area	= 3.500 ac	Runoff coeff.	= 0.66
Intensity	= 4.650 in/hr	Tc by User	= 15.00 min
IDF Curve	= wich15min.IDF	Asc/Rec limb fact	= 1/1



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.02

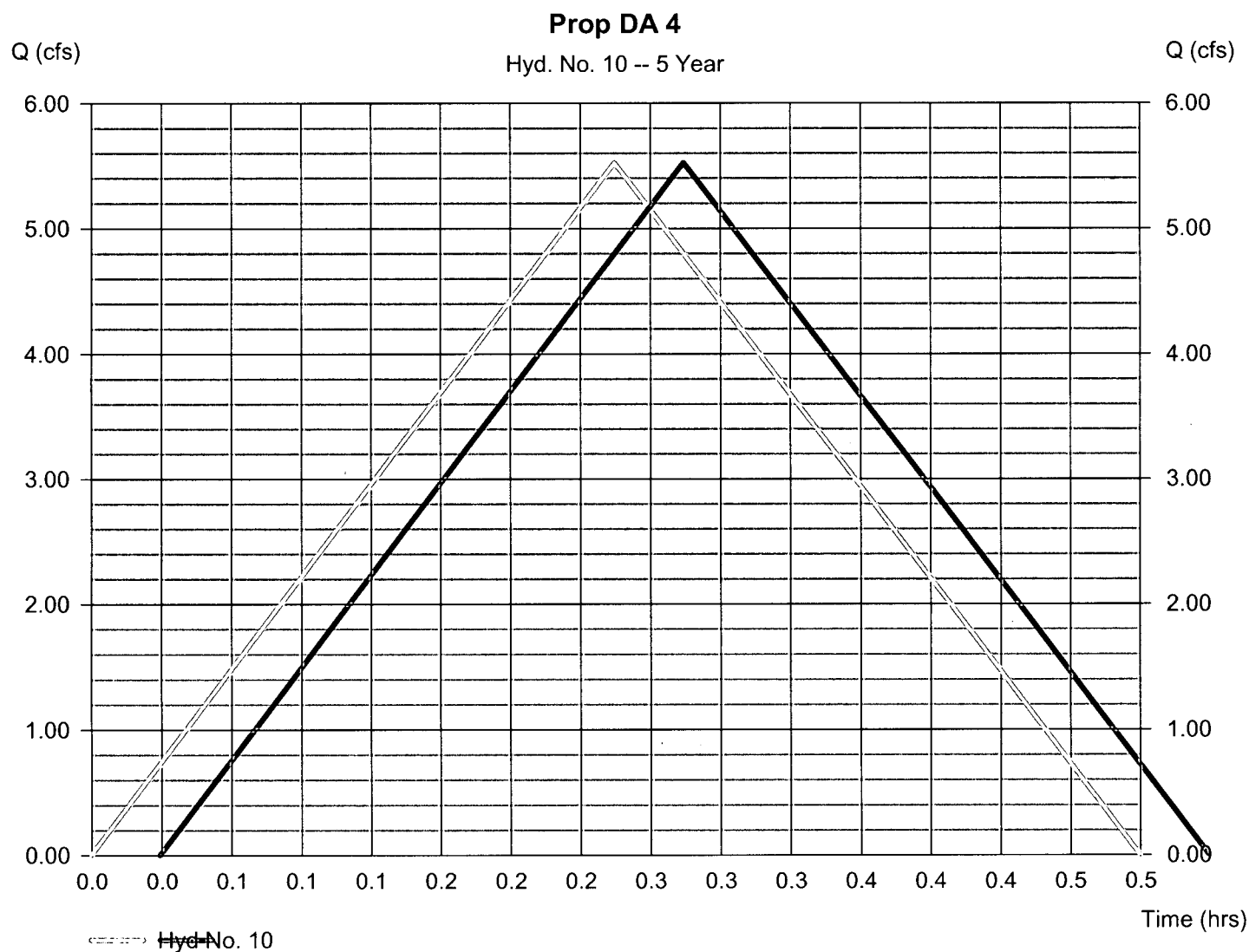
Friday, Jun 8, 2007

Hyd. No. 10

Prop DA 4

Hydrograph type = Rational
 Storm frequency = 5 yrs
 Time interval = 1 min
 Drainage area = 1.800 ac
 Intensity = 4.650 in/hr
 IDF Curve = wich15min.IDF

Peak discharge = 5.524 cfs
 Time to peak = 0.25 hrs
 Hyd. volume = 0.114 acft
 Runoff coeff. = 0.66
 Tc by User = 15.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.02

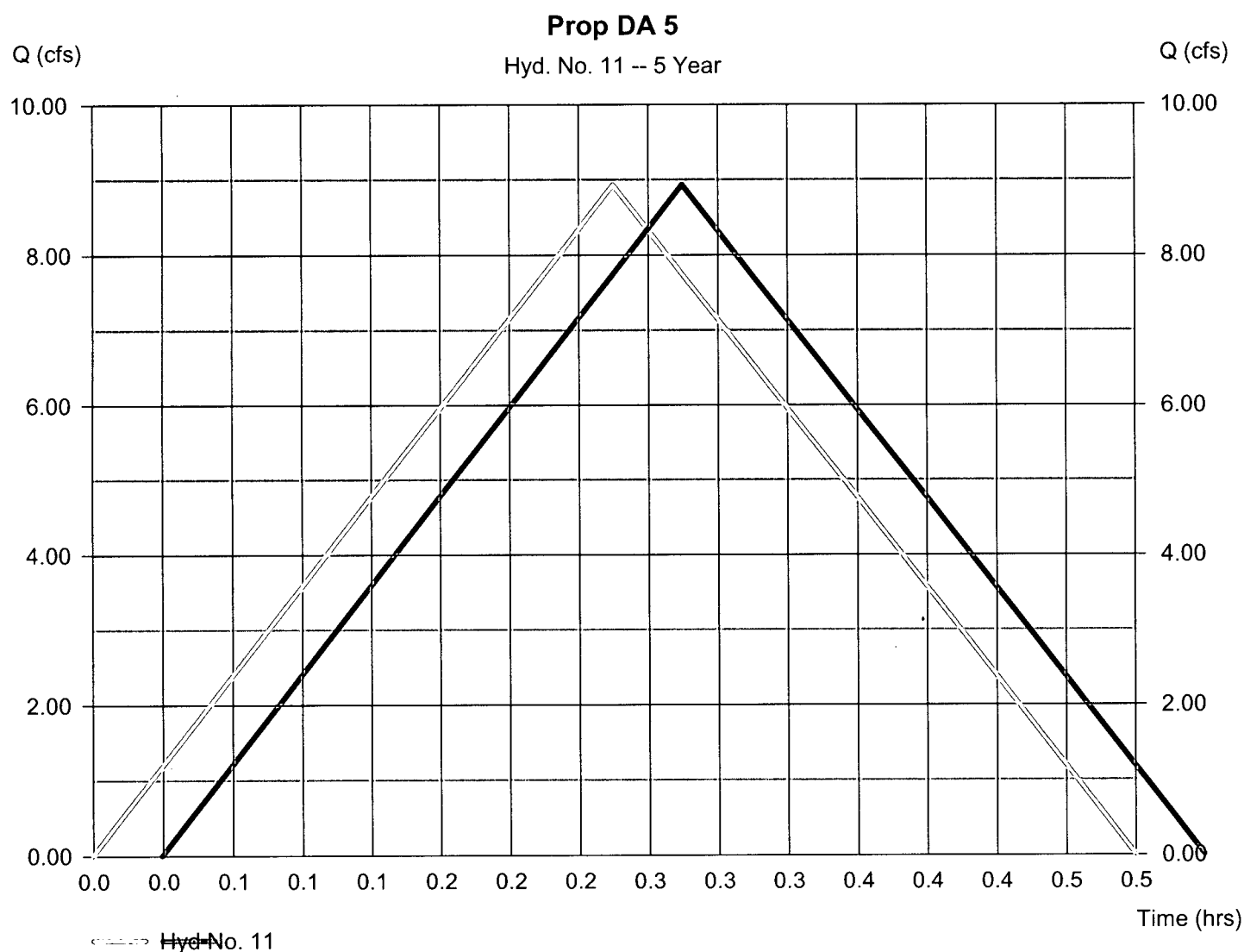
Friday, Jun 8, 2007

Hyd. No. 11

Prop DA 5

Hydrograph type = Rational
 Storm frequency = 5 yrs
 Time interval = 1 min
 Drainage area = 2.400 ac
 Intensity = 4.650 in/hr
 IDF Curve = wic15min.IDF

Peak discharge = 8.927 cfs
 Time to peak = 0.25 hrs
 Hyd. volume = 0.184 acft
 Runoff coeff. = 0.8
 Tc by User = 15.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

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Hydraflow Hydrographs by Intelisolve v9.02

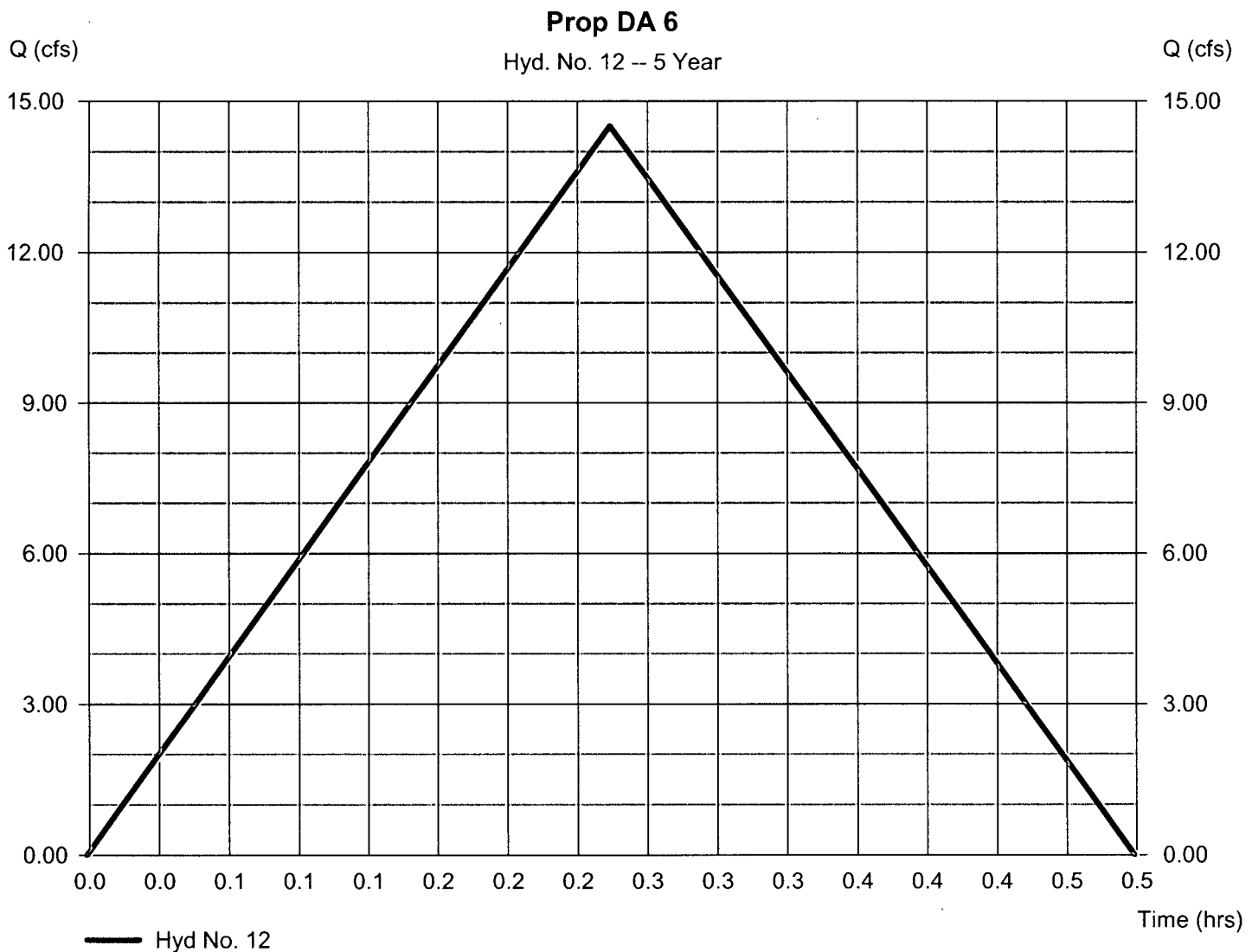
Friday, Jun 8, 2007

Hyd. No. 12

Prop DA 6

Hydrograph type = Rational
Storm frequency = 5 yrs
Time interval = 1 min
Drainage area = 3.900 ac
Intensity = 4.650 in/hr
IDF Curve = wich15min.IDF

Peak discharge = 14.51 cfs
Time to peak = 0.25 hrs
Hyd. volume = 0.300 acft
Runoff coeff. = 0.8
Tc by User = 15.00 min
Asc/Rec limb fact = 1/1

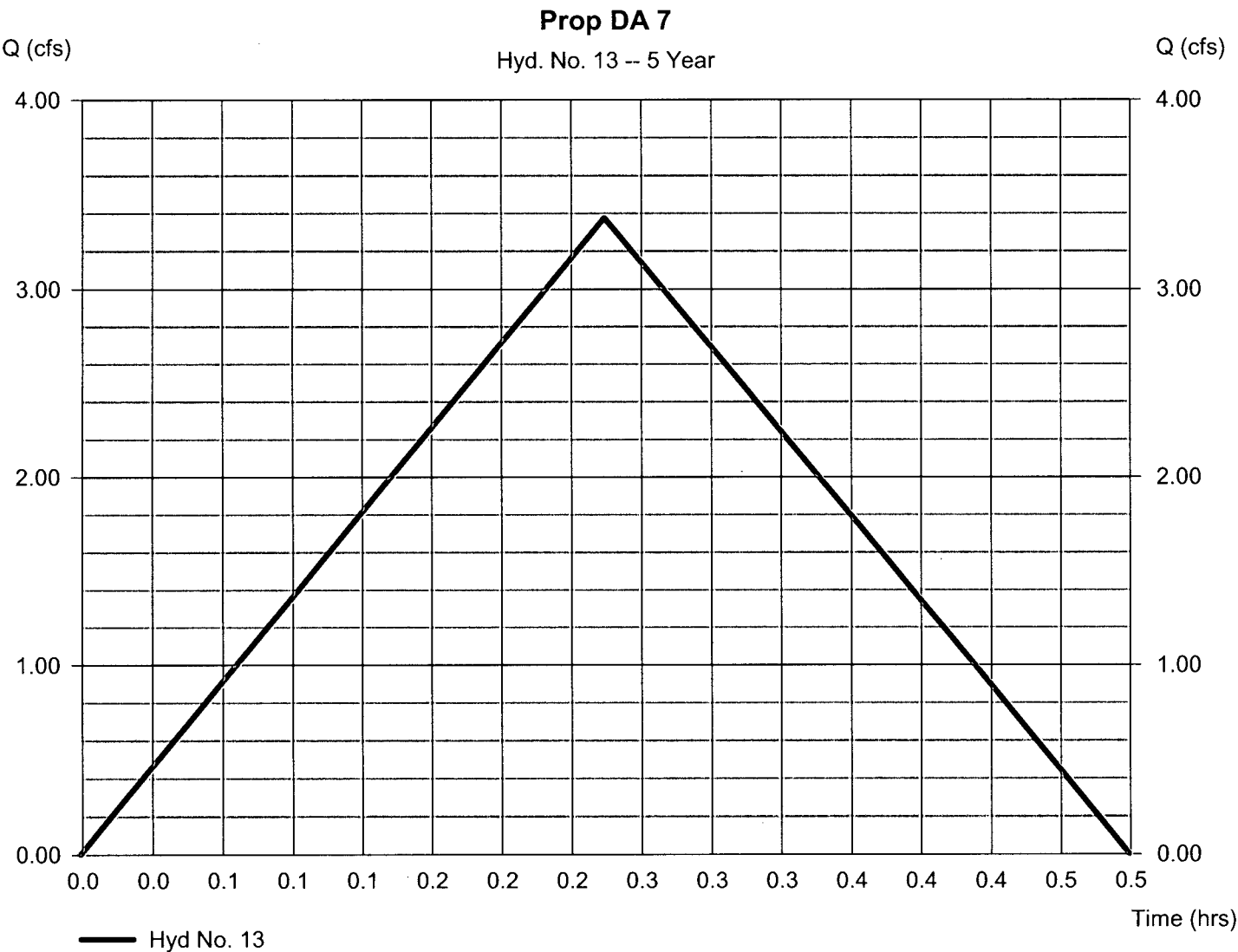


Hydrograph Report

Hyd. No. 13

Prop DA 7

Hydrograph type	= Rational	Peak discharge	= 3.376 cfs
Storm frequency	= 5 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 0.070 acft
Drainage area	= 1.100 ac	Runoff coeff.	= 0.66
Intensity	= 4.650 in/hr	Tc by User	= 15.00 min
IDF Curve	= wich15min.IDF	Asc/Rec limb fact	= 1/1



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.02

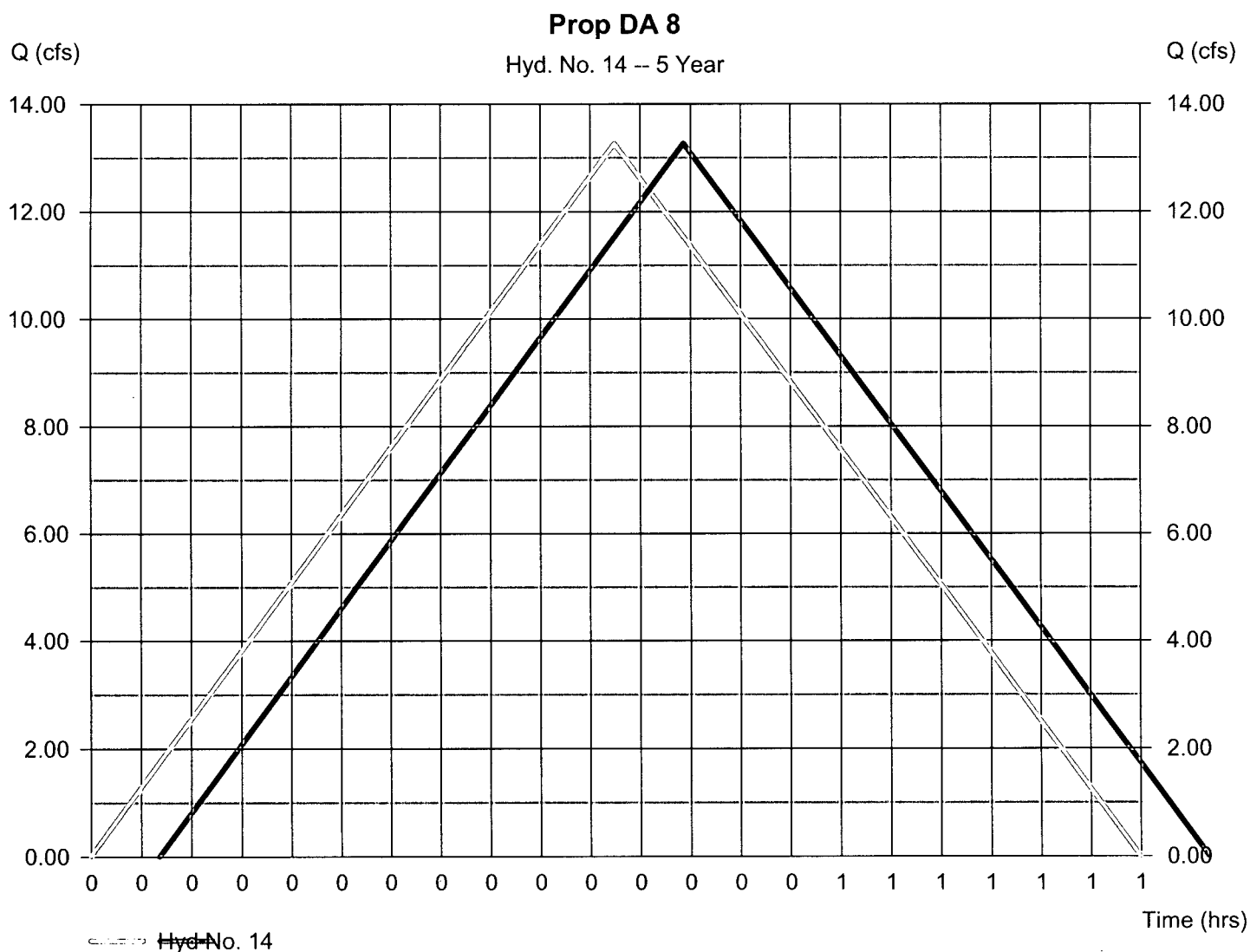
Friday, Jun 8, 2007

Hyd. No. 14

Prop DA 8

Hydrograph type = Rational
 Storm frequency = 5 yrs
 Time interval = 1 min
 Drainage area = 9.000 ac
 Intensity = 3.984 in/hr
 IDF Curve = wic15min.IDF

Peak discharge = 13.27 cfs
 Time to peak = 0.35 hrs
 Hyd. volume = 0.384 acft
 Runoff coeff. = 0.37
 Tc by TR55 = 21.00 min
 Asc/Rec limb fact = 1/1

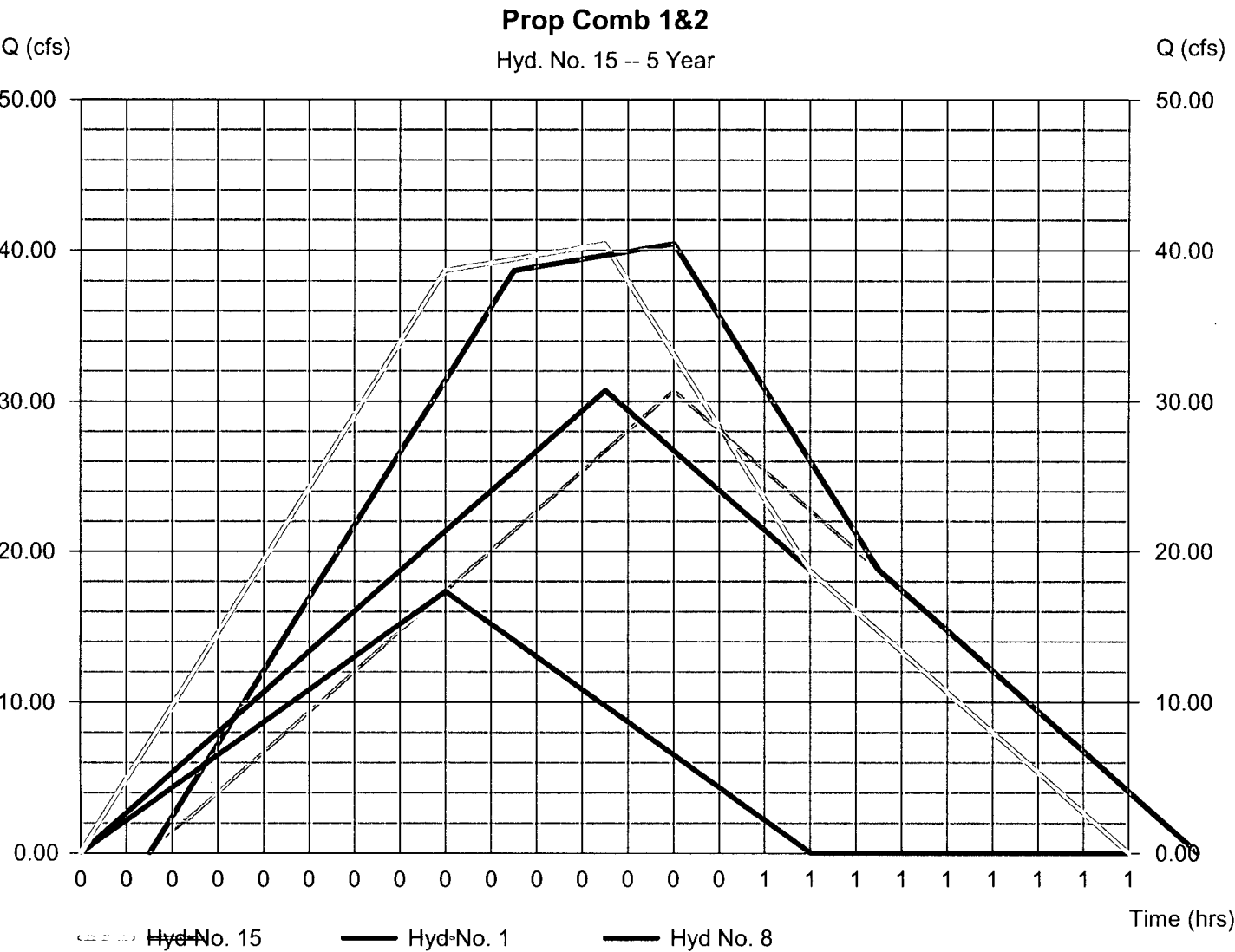


Hydrograph Report

Hyd. No. 15

Prop Comb 1&2

Hydrograph type	= Combine	Peak discharge	= 40.43 cfs
Storm frequency	= 5 yrs	Time to peak	= 0.38 hrs
Time interval	= 1 min	Hyd. volume	= 1.354 acft
Inflow hyds.	= 1, 8	Contrib. drain. area	= 18.600 ac



Hydrograph Report

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Hydraflow Hydrographs by Intelisolve v9.02

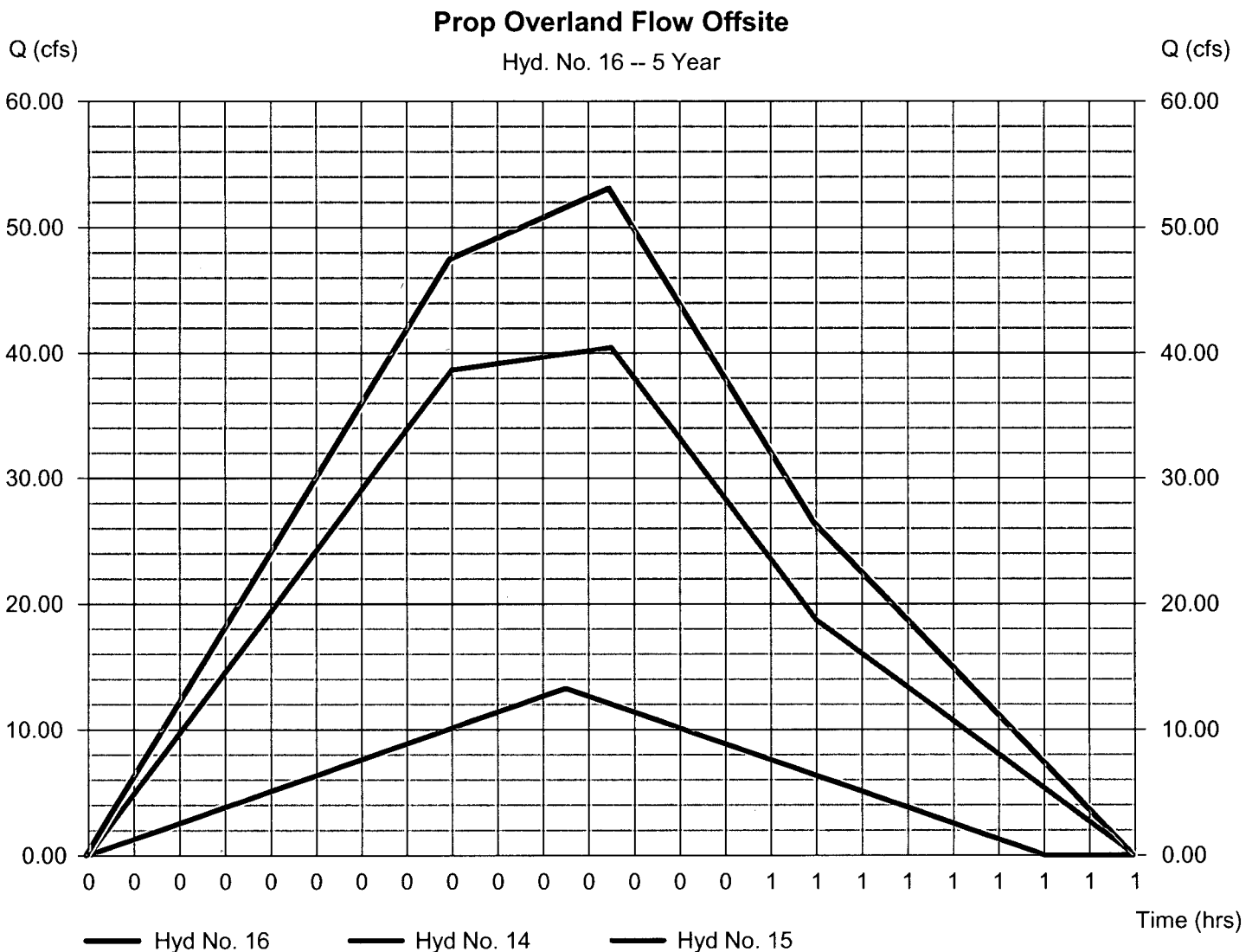
Friday, Jun 8, 2007

Hyd. No. 16

Prop Overland Flow Offsite

Hydrograph type = Combine
Storm frequency = 5 yrs
Time interval = 1 min
Inflow hyds. = 14, 15

Peak discharge = 53.10 cfs
Time to peak = 0.38 hrs
Hyd. volume = 1.755 acft
Contrib. drain. area = 9.000 ac

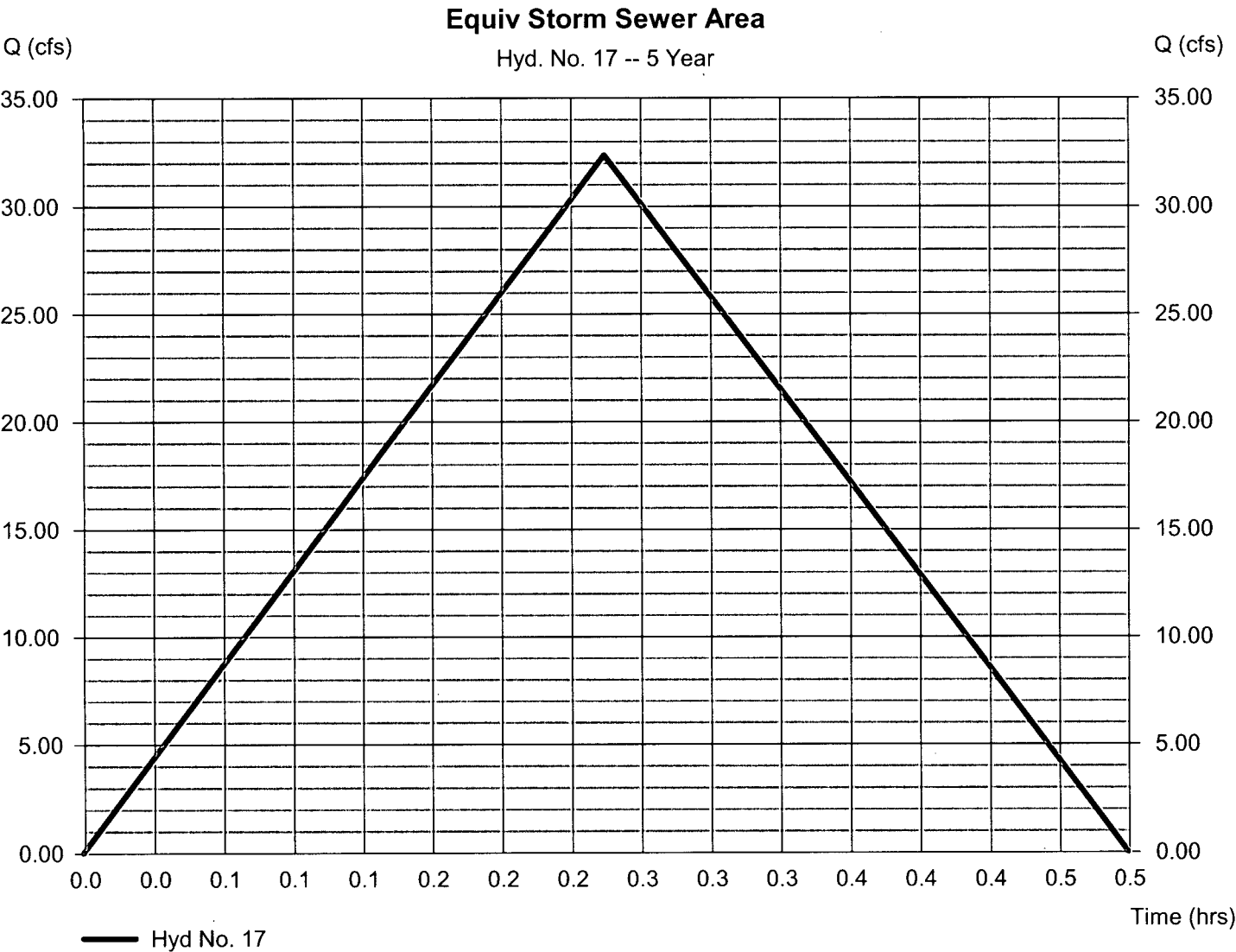


Hydrograph Report

Hyd. No. 17

Equiv Storm Sewer Area

Hydrograph type	= Rational	Peak discharge	= 32.36 cfs
Storm frequency	= 5 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 0.669 acft
Drainage area	= 8.700 ac	Runoff coeff.	= 0.8
Intensity	= 4.650 in/hr	Tc by User	= 15.00 min
IDF Curve	= wich15min.IDF	Asc/Rec limb fact	= 1/1



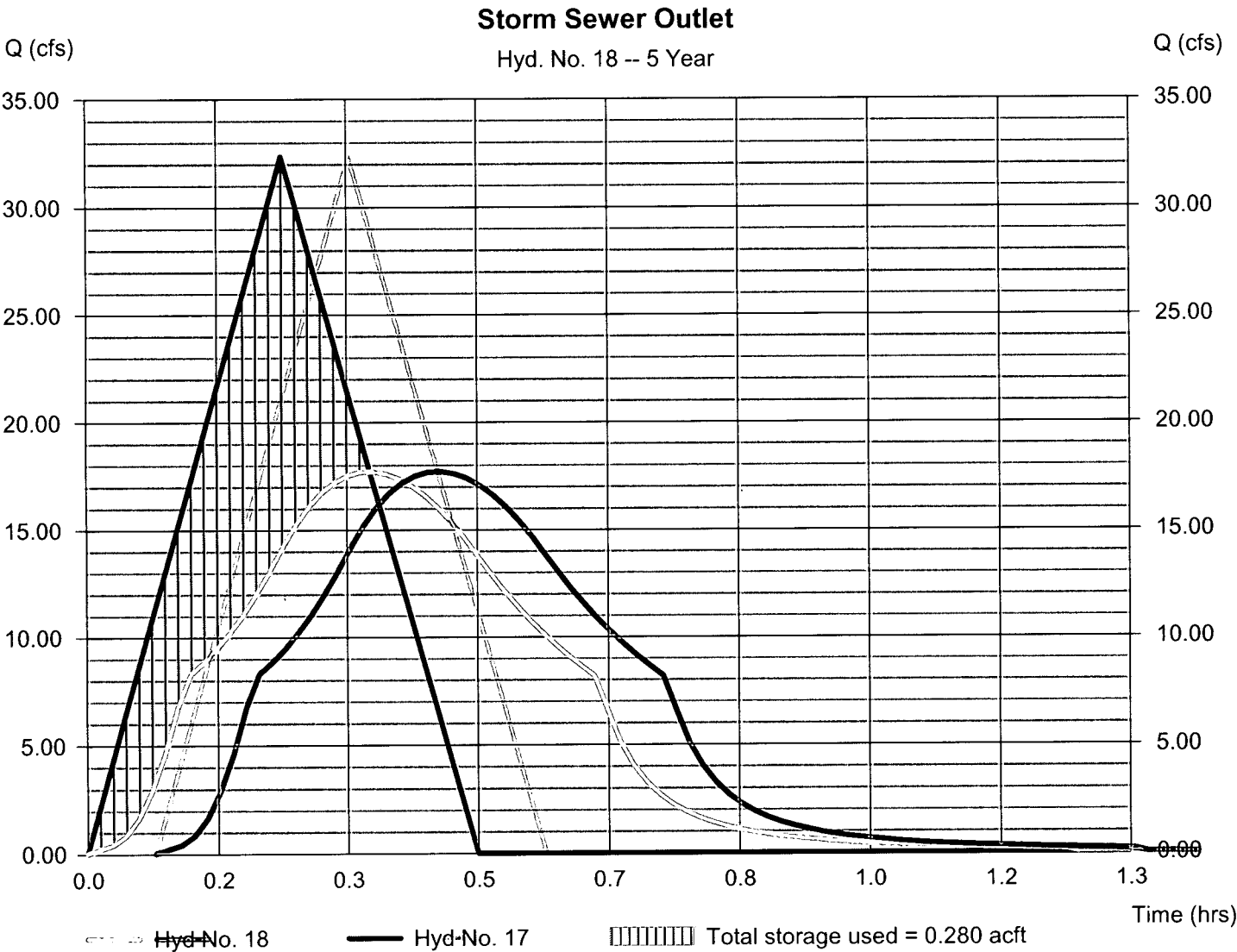
Hydrograph Report

Hyd. No. 18

Storm Sewer Outlet

Hydrograph type	= Reservoir	Peak discharge	= 17.71 cfs
Storm frequency	= 5 yrs	Time to peak	= 0.37 hrs
Time interval	= 1 min	Hyd. volume	= 0.669 acft
Inflow hyd. No.	= 17 - Equiv Storm Sewer Area	Max. Elevation	= 150.68 ft
Reservoir name	= Prop Storm Sewer Equiv	Max. Storage	= 0.280 acft

Storage Indication method used.



Pond Report

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Hydraflow Hydrographs by Intelisolve v9.02

Friday, Jun 8, 2007

Pond No. 1 - Prop Storm Sewer Equiv

Pond Data

Contours - User-defined contour areas. Conic method used for volume calculation. Beginning Elevation = 148.85 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (acft)	Total storage (acft)
0.00	148.85	08	0.000	0.000
0.15	149.00	121	0.000	0.000
1.15	150.00	6,805	0.060	0.060
2.15	151.00	23,000	0.324	0.384
3.15	152.00	42,000	0.735	1.119

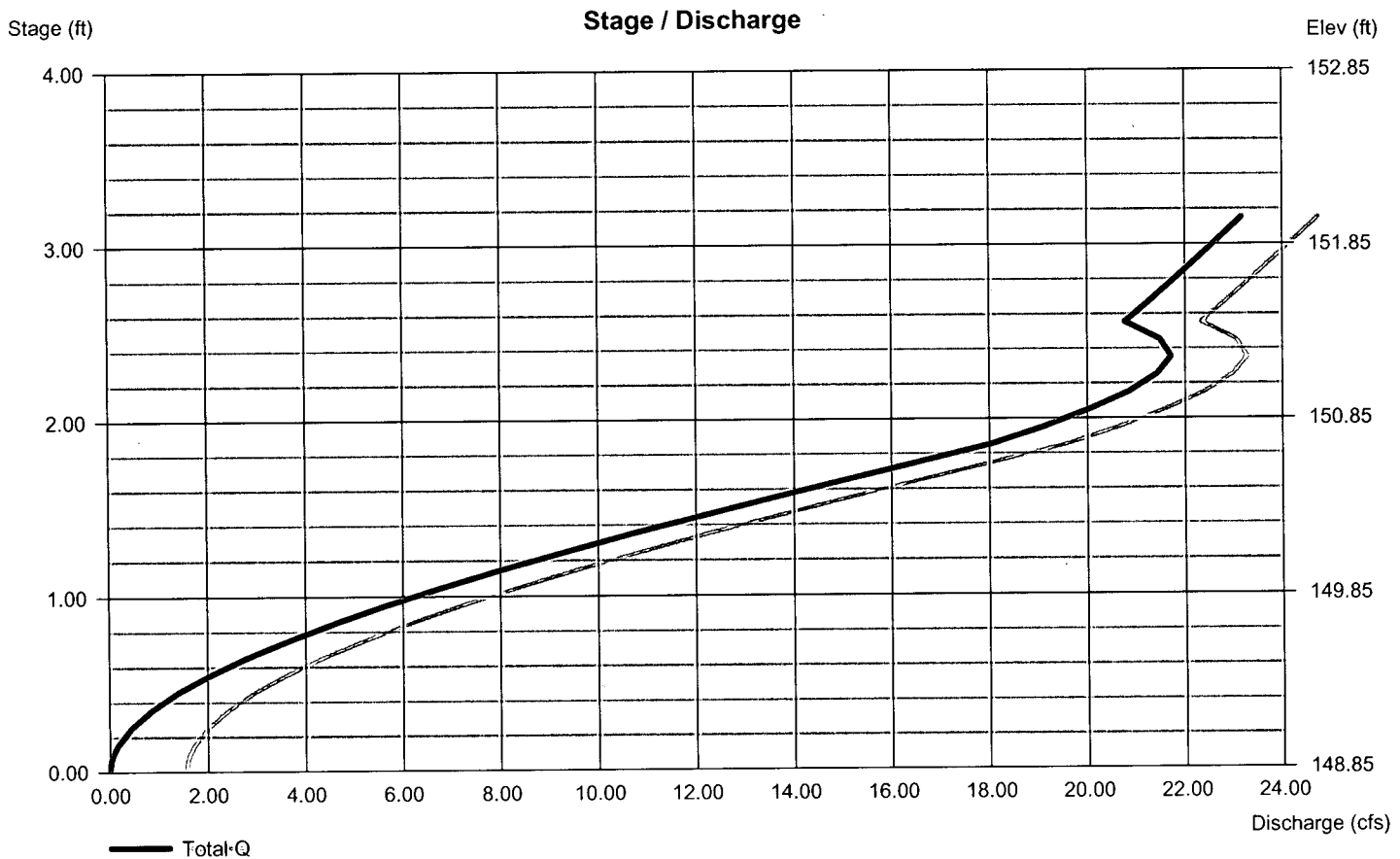
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 30.00	0.00	0.00	0.00
Span (in)	= 30.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 148.85	0.00	0.00	0.00
Length (ft)	= 800.00	0.00	0.00	0.00
Slope (%)	= 0.30	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 and outlet control. Weir risers are checked for orifice conditions.



Hydrograph Report

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Hydraflow Hydrographs by Intelisolve v9.02

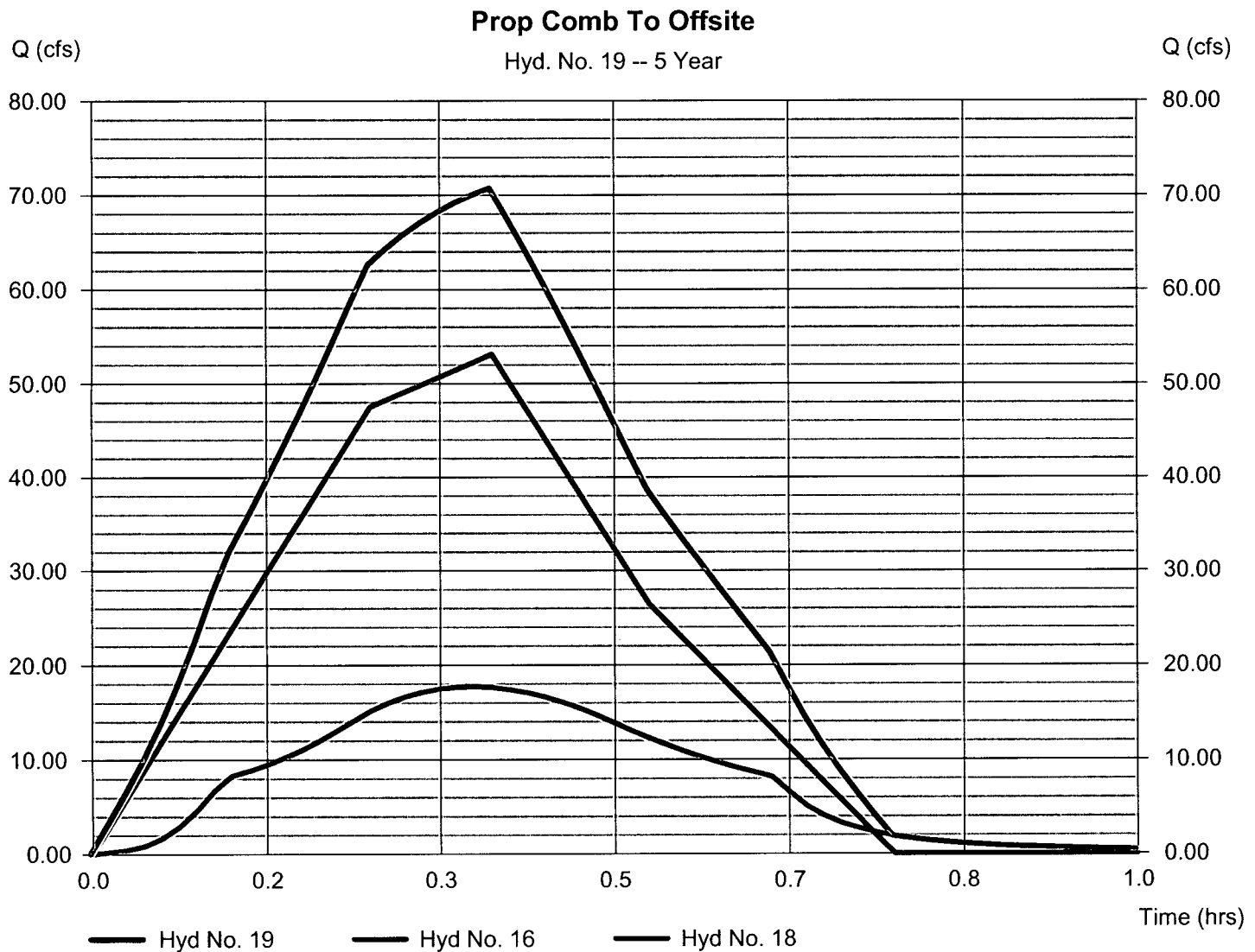
Friday, Jun 8, 2007

Hyd. No. 19

Prop Comb To Offsite

Hydrograph type = Combine
Storm frequency = 5 yrs
Time interval = 1 min
Inflow hyds. = 16, 18

Peak discharge = 70.72 cfs
Time to peak = 0.38 hrs
Hyd. volume = 2.424 acft
Contrib. drain. area = 0.000 ac

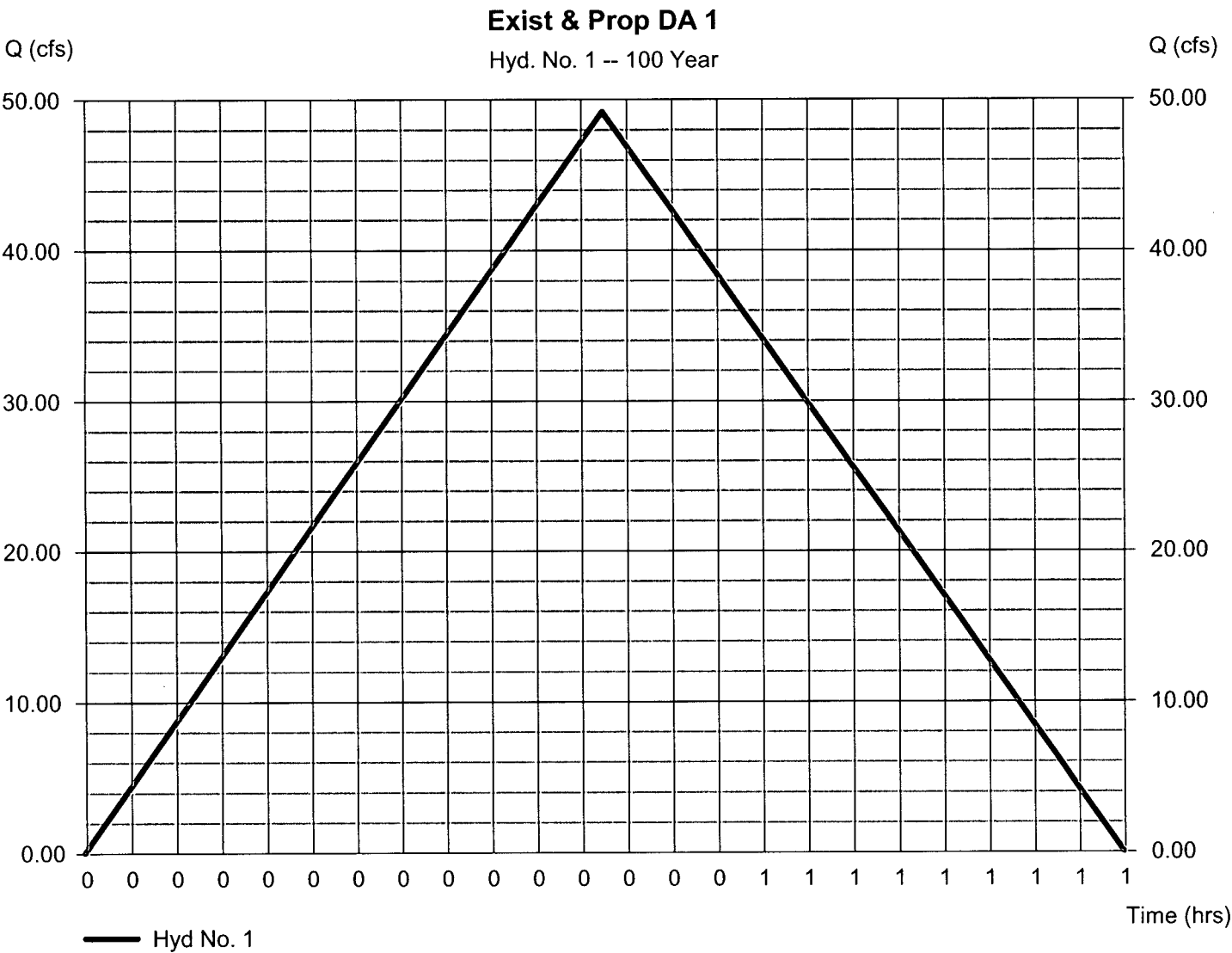


Hydrograph Report

Hyd. No. 1

Exist & Prop DA 1

Hydrograph type	= Rational	Peak discharge	= 49.20 cfs
Storm frequency	= 100 yrs	Time to peak	= 0.38 hrs
Time interval	= 1 min	Hyd. volume	= 1.559 acft
Drainage area	= 12.800 ac	Runoff coeff.	= 0.63
Intensity	= 6.101 in/hr	Tc by TR55	= 23.00 min
IDF Curve	= wich15min.IDF	Asc/Rec limb fact	= 1/1

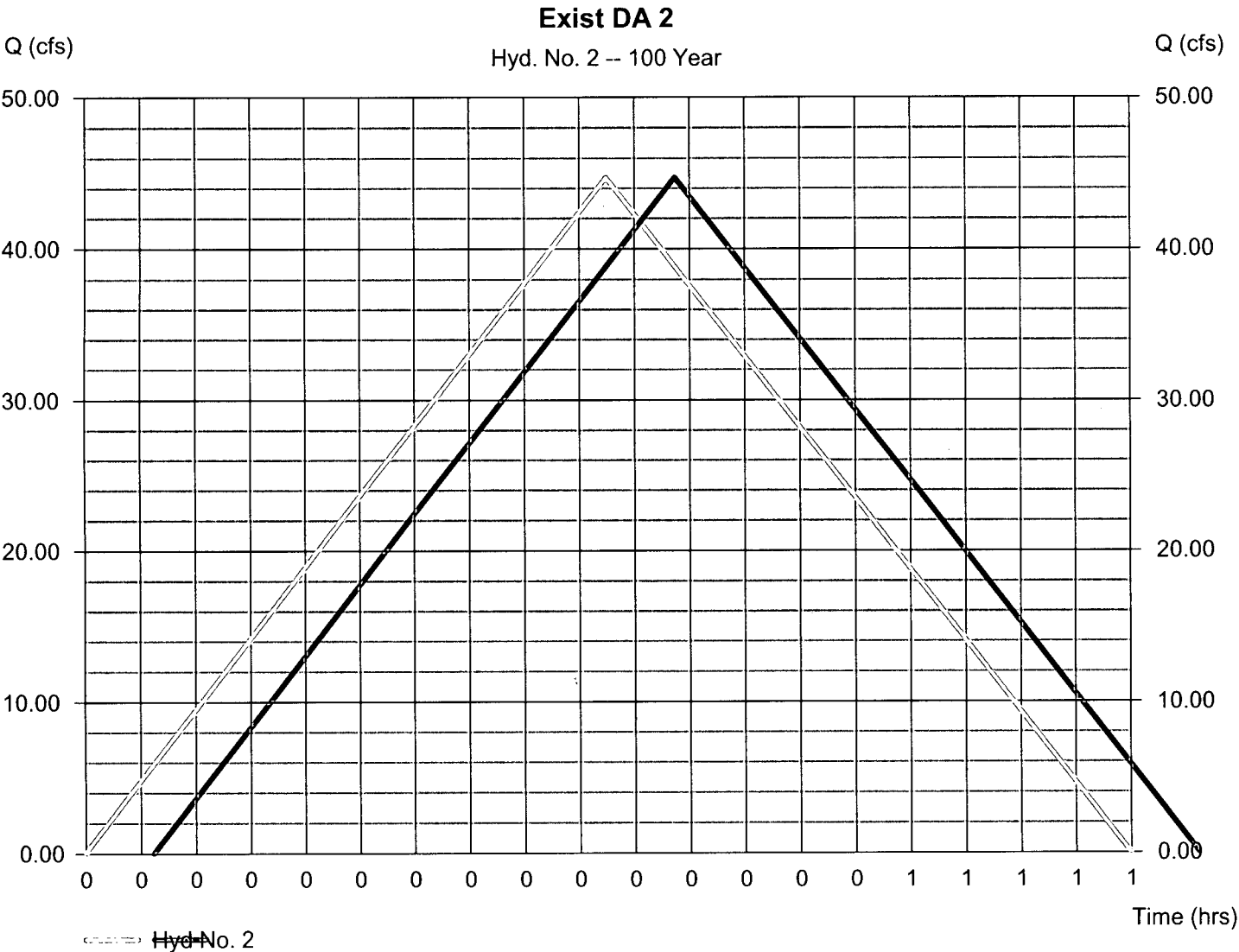


Hydrograph Report

Hyd. No. 2

Exist DA 2

Hydrograph type	= Rational	Peak discharge	= 44.69 cfs
Storm frequency	= 100 yrs	Time to peak	= 0.32 hrs
Time interval	= 1 min	Hyd. volume	= 1.170 acft
Drainage area	= 10.200 ac	Runoff coeff.	= 0.66
Intensity	= 6.639 in/hr	Tc by TR55	= 19.00 min
IDF Curve	= wich15min.IDF	Asc/Rec limb fact	= 1/1



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.02

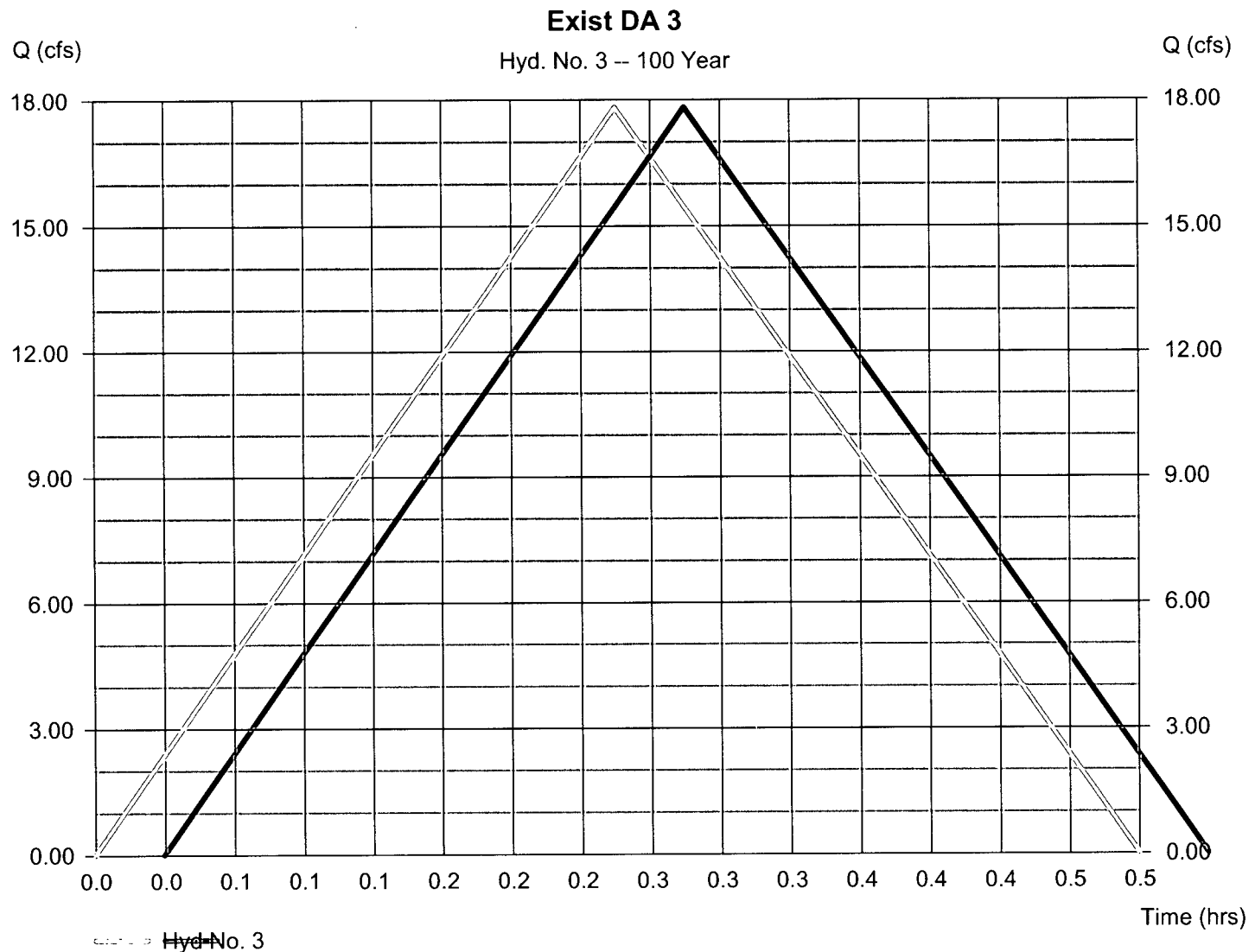
Friday, Jun 8, 2007

Hyd. No. 3

Exist DA 3

Hydrograph type = Rational
Storm frequency = 100 yrs
Time interval = 1 min
Drainage area = 3.700 ac
Intensity = 7.295 in/hr
IDF Curve = wich15min.IDF

Peak discharge = 17.82 cfs
Time to peak = 0.25 hrs
Hyd. volume = 0.368 acft
Runoff coeff. = 0.66
Tc by User = 15.00 min
Asc/Rec limb fact = 1/1

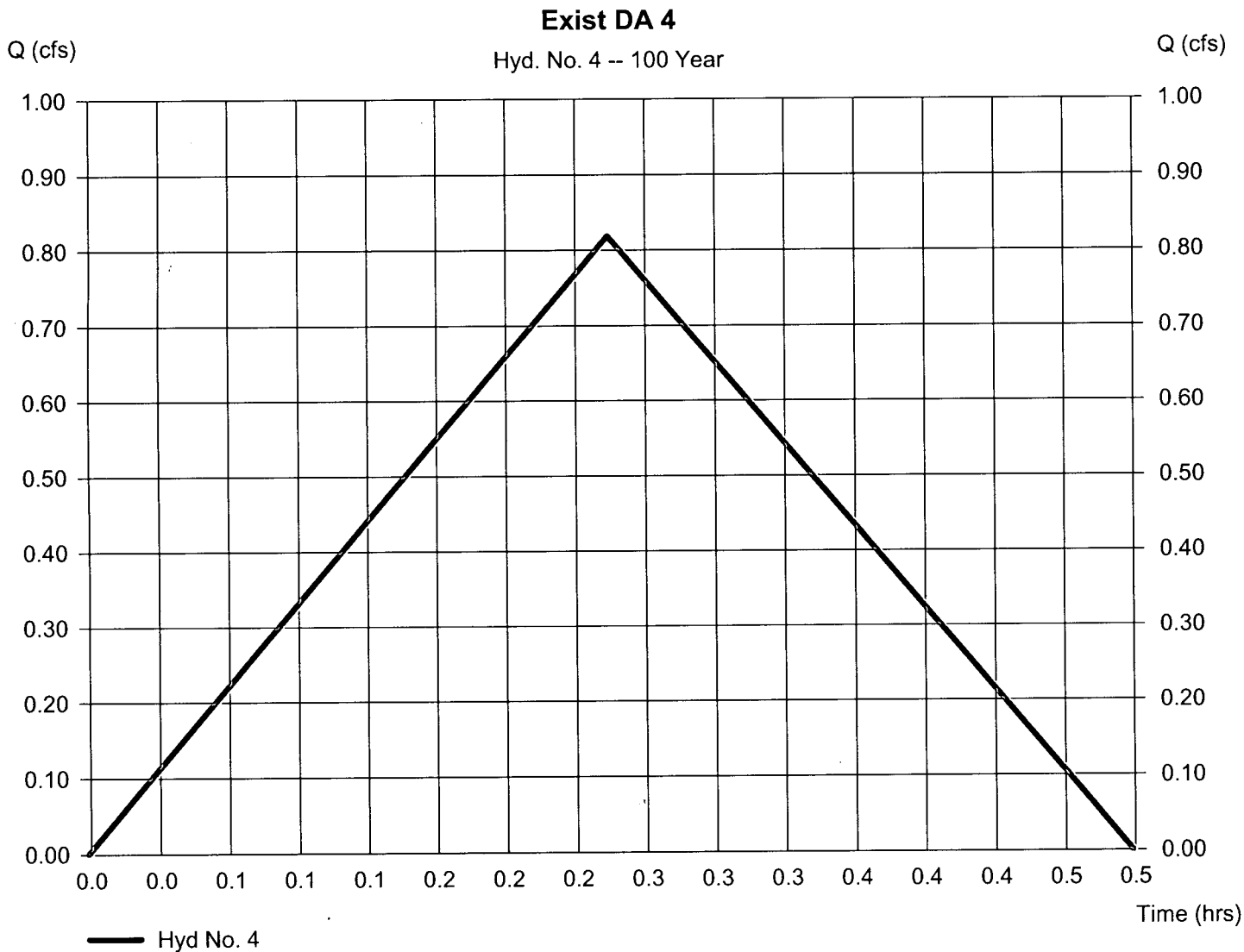


Hydrograph Report

Hyd. No. 4

Exist DA 4

Hydrograph type	=	Rational	Peak discharge	=	0.819 cfs
Storm frequency	=	100 yrs	Time to peak	=	0.25 hrs
Time interval	=	1 min	Hyd. volume	=	0.017 acft
Drainage area	=	0.170 ac	Runoff coeff.	=	0.66
Intensity	=	7.295 in/hr	Tc by User	=	15.00 min
IDF Curve	=	wich15min.IDF	Asc/Rec limb fact	=	1/1

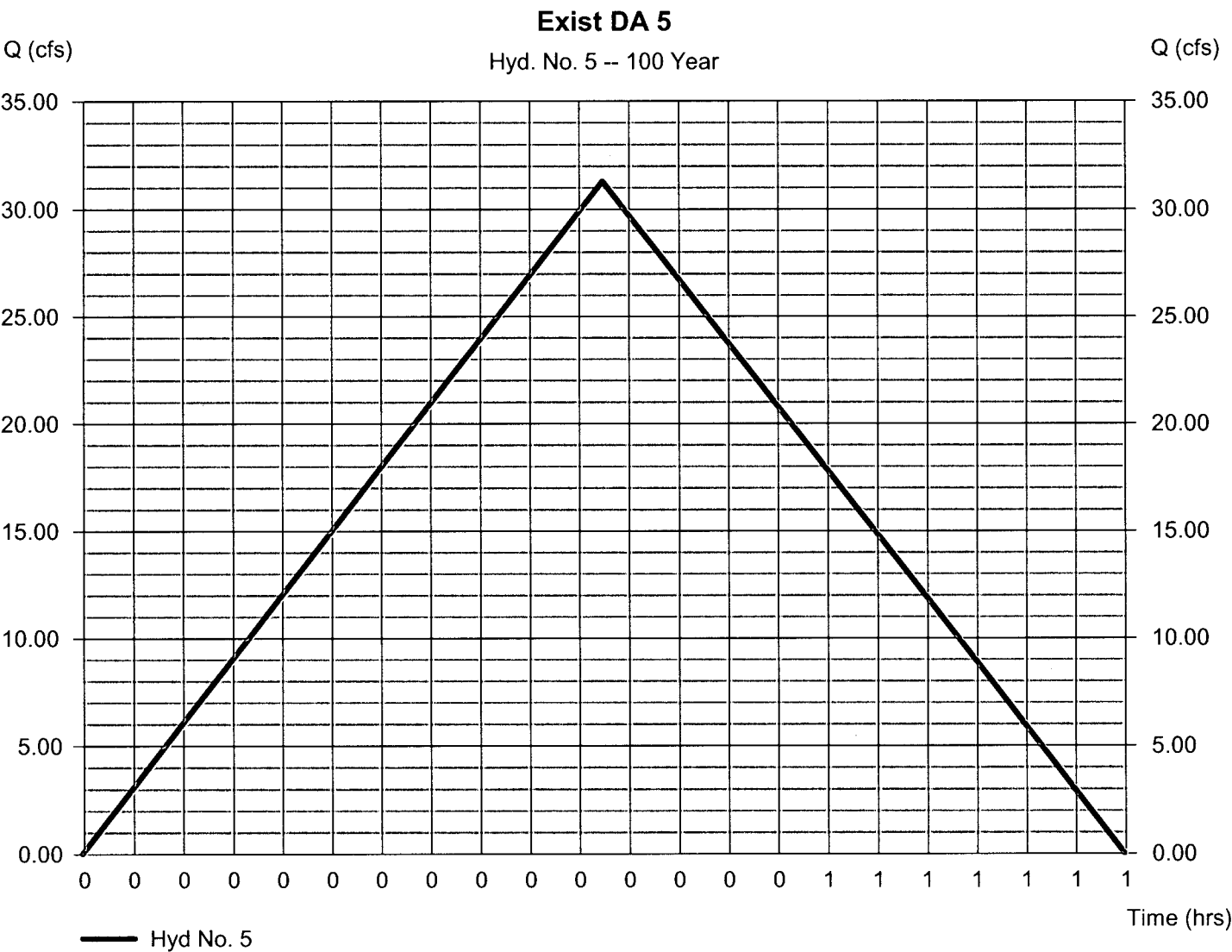


Hydrograph Report

Hyd. No. 5

Exist DA 5

Hydrograph type	= Rational	Peak discharge	= 31.29 cfs
Storm frequency	= 100 yrs	Time to peak	= 0.35 hrs
Time interval	= 1 min	Hyd. volume	= 0.905 acft
Drainage area	= 13.300 ac	Runoff coeff.	= 0.37
Intensity	= 6.358 in/hr	Tc by TR55	= 21.00 min
IDF Curve	= wich15min.IDF	Asc/Rec limb fact	= 1/1



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.02

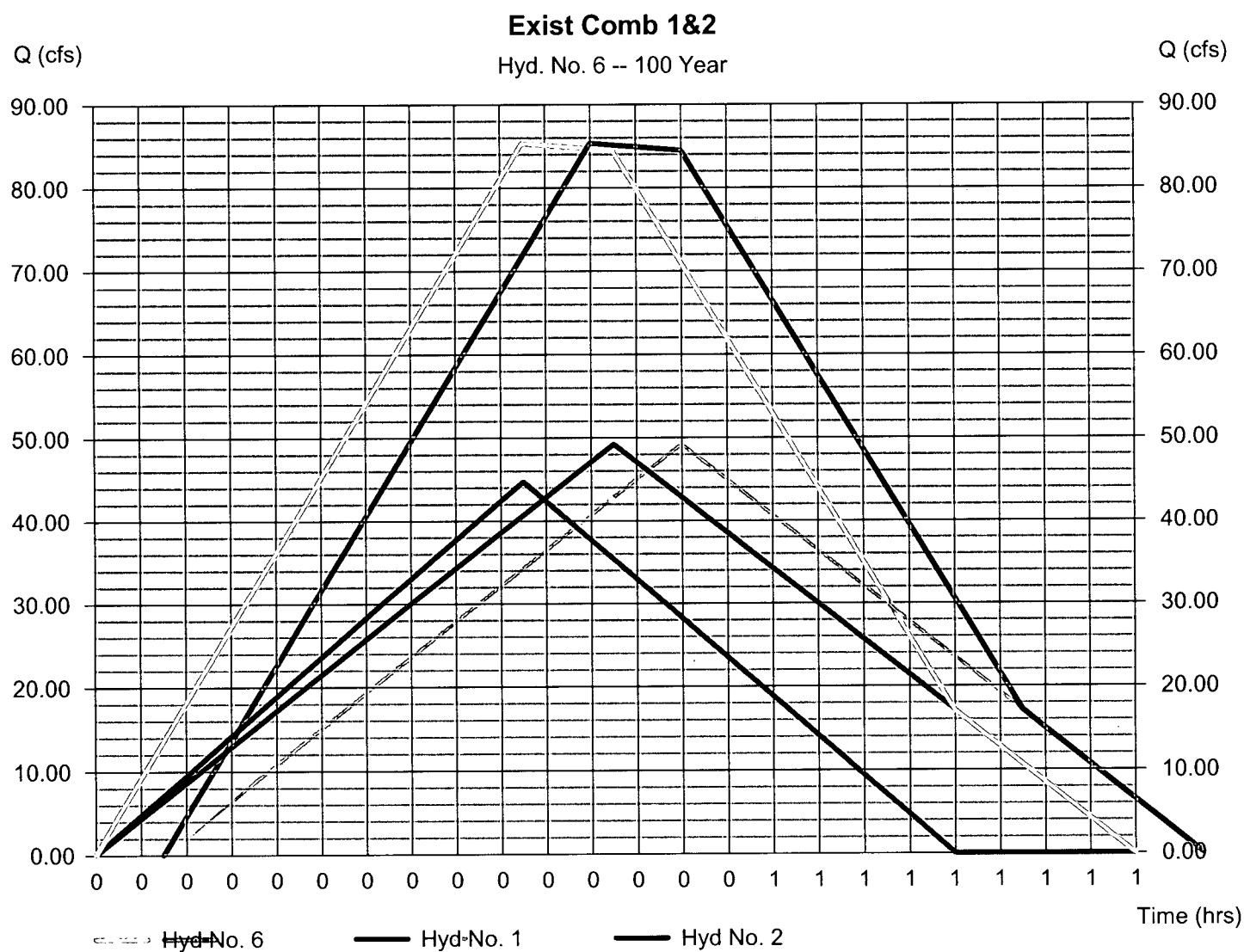
Friday, Jun 8, 2007

Hyd. No. 6

Exist Comb 1&2

Hydrograph type = Combine
 Storm frequency = 100 yrs
 Time interval = 1 min
 Inflow hyds. = 1, 2

Peak discharge = 85.34 cfs
 Time to peak = 0.32 hrs
 Hyd. volume = 2.728 acft
 Contrib. drain. area = 23.000 ac

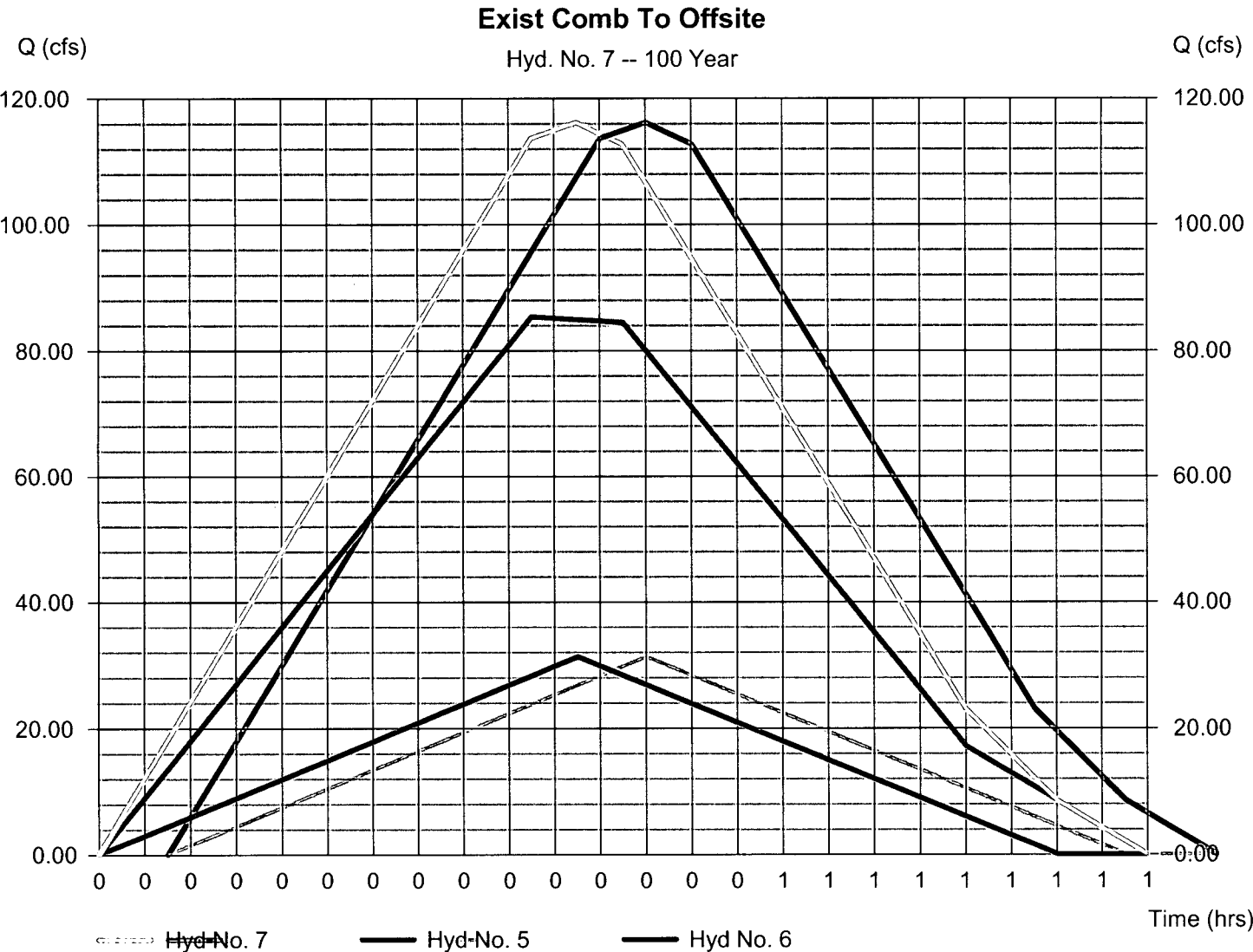


Hydrograph Report

Hyd. No. 7

Exist Comb To Offsite

Hydrograph type	= Combine	Peak discharge	= 116.20 cfs
Storm frequency	= 100 yrs	Time to peak	= 0.35 hrs
Time interval	= 1 min	Hyd. volume	= 3.633 acft
Inflow hyds.	= 5, 6	Contrib. drain. area	= 13.300 ac



Hydrograph Report

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Hydraflow Hydrographs by Intelisolve v9.02

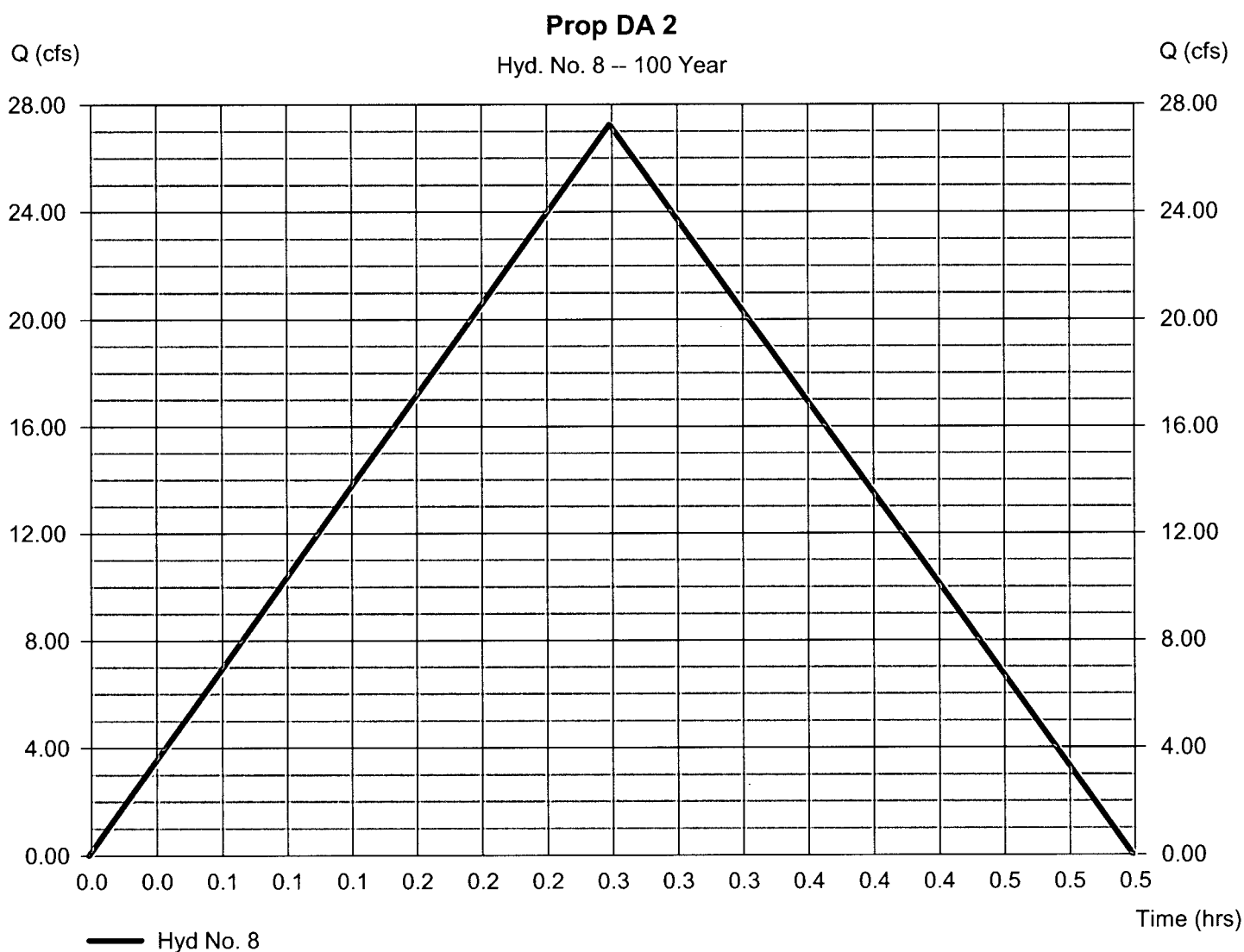
Friday, Jun 8, 2007

Hyd. No. 8

Prop DA 2

Hydrograph type = Rational
Storm frequency = 100 yrs
Time interval = 1 min
Drainage area = 5.800 ac
Intensity = 7.118 in/hr
IDF Curve = wich15min.IDF

Peak discharge = 27.25 cfs
Time to peak = 0.27 hrs
Hyd. volume = 0.601 acft
Runoff coeff. = 0.66
Tc by TR55 = 16.00 min
Asc/Rec limb fact = 1/1

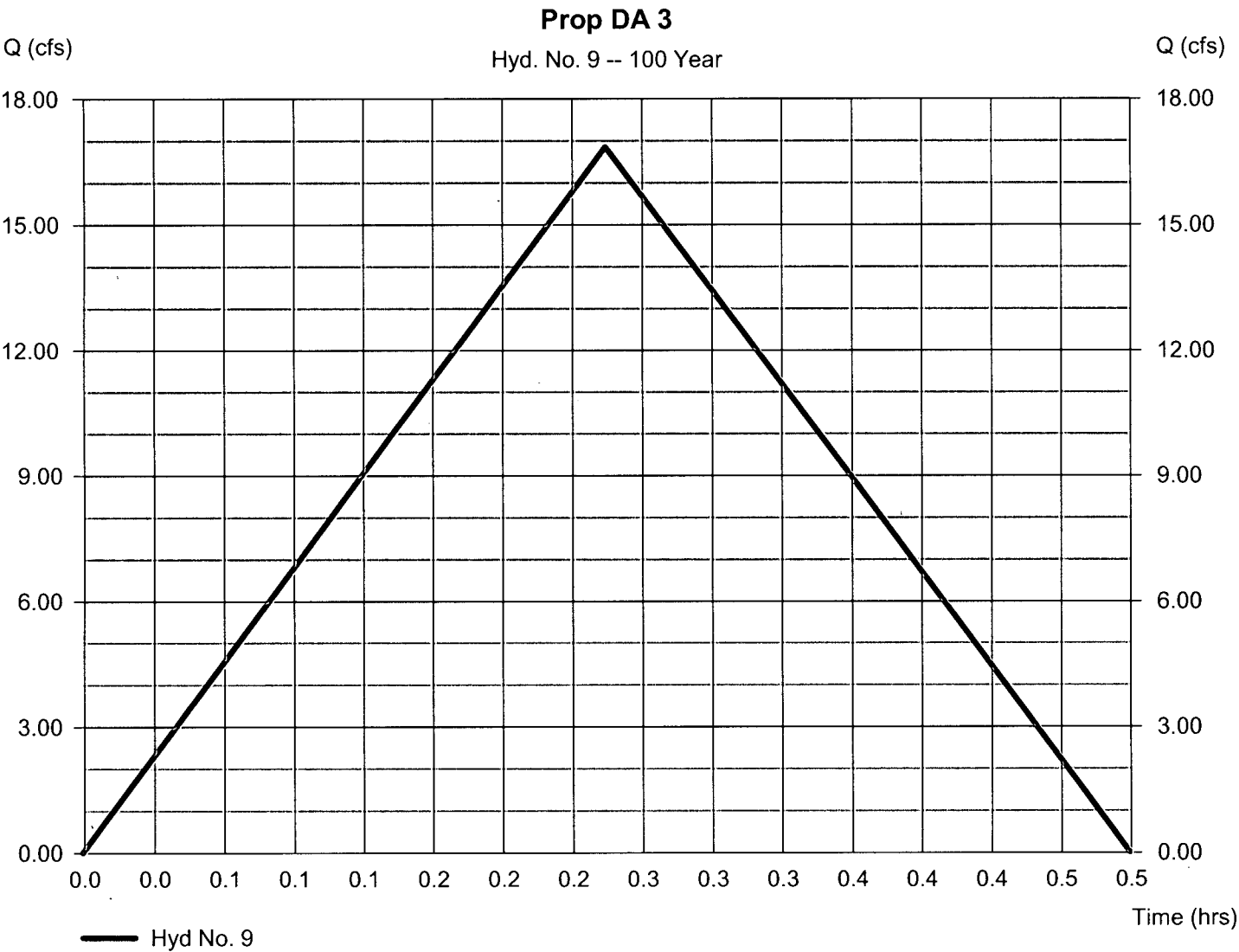


Hydrograph Report

Hyd. No. 9

Prop DA 3

Hydrograph type	= Rational	Peak discharge	= 16.85 cfs
Storm frequency	= 100 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 0.348 acft
Drainage area	= 3.500 ac	Runoff coeff.	= 0.66
Intensity	= 7.295 in/hr	Tc by User	= 15.00 min
IDF Curve	= wich15min.IDF	Asc/Rec limb fact	= 1/1



Hydrograph Report

Hyd. No. 10

Prop DA 4

Hydrograph type	= Rational	Peak discharge	= 8.667 cfs
Storm frequency	= 100 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 0.179 acft
Drainage area	= 1.800 ac	Runoff coeff.	= 0.66
Intensity	= 7.295 in/hr	Tc by User	= 15.00 min
IDF Curve	= wich15min.IDF	Asc/Rec limb fact	= 1/1



Hydrograph Report

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Hydraflow Hydrographs by Intelisolve v9.02

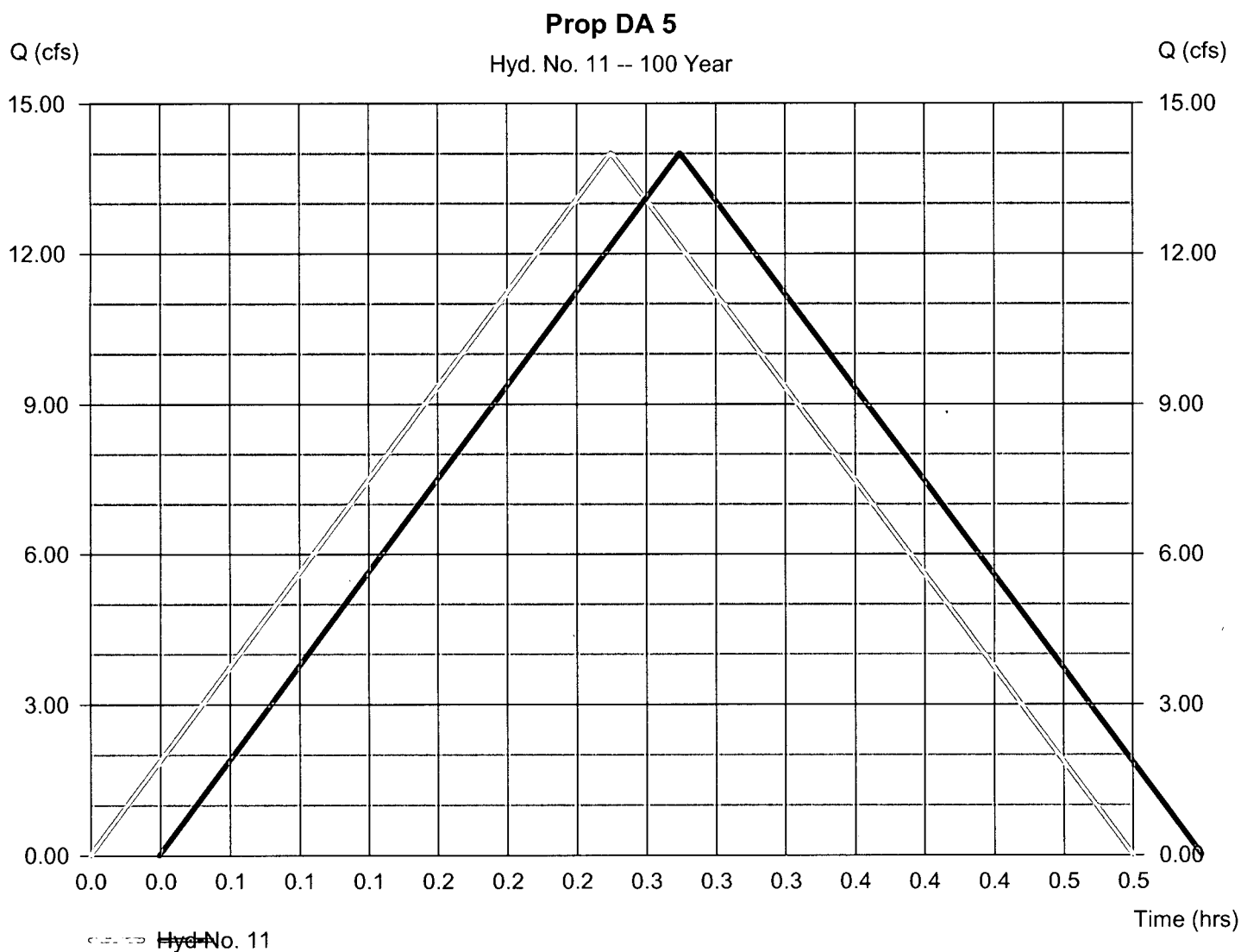
Friday, Jun 8, 2007

Hyd. No. 11

Prop DA 5

Hydrograph type = Rational
Storm frequency = 100 yrs
Time interval = 1 min
Drainage area = 2.400 ac
Intensity = 7.295 in/hr
IDF Curve = wich15min.IDF

Peak discharge = 14.01 cfs
Time to peak = 0.25 hrs
Hyd. volume = 0.289 acft
Runoff coeff. = 0.8
Tc by User = 15.00 min
Asc/Rec limb fact = 1/1

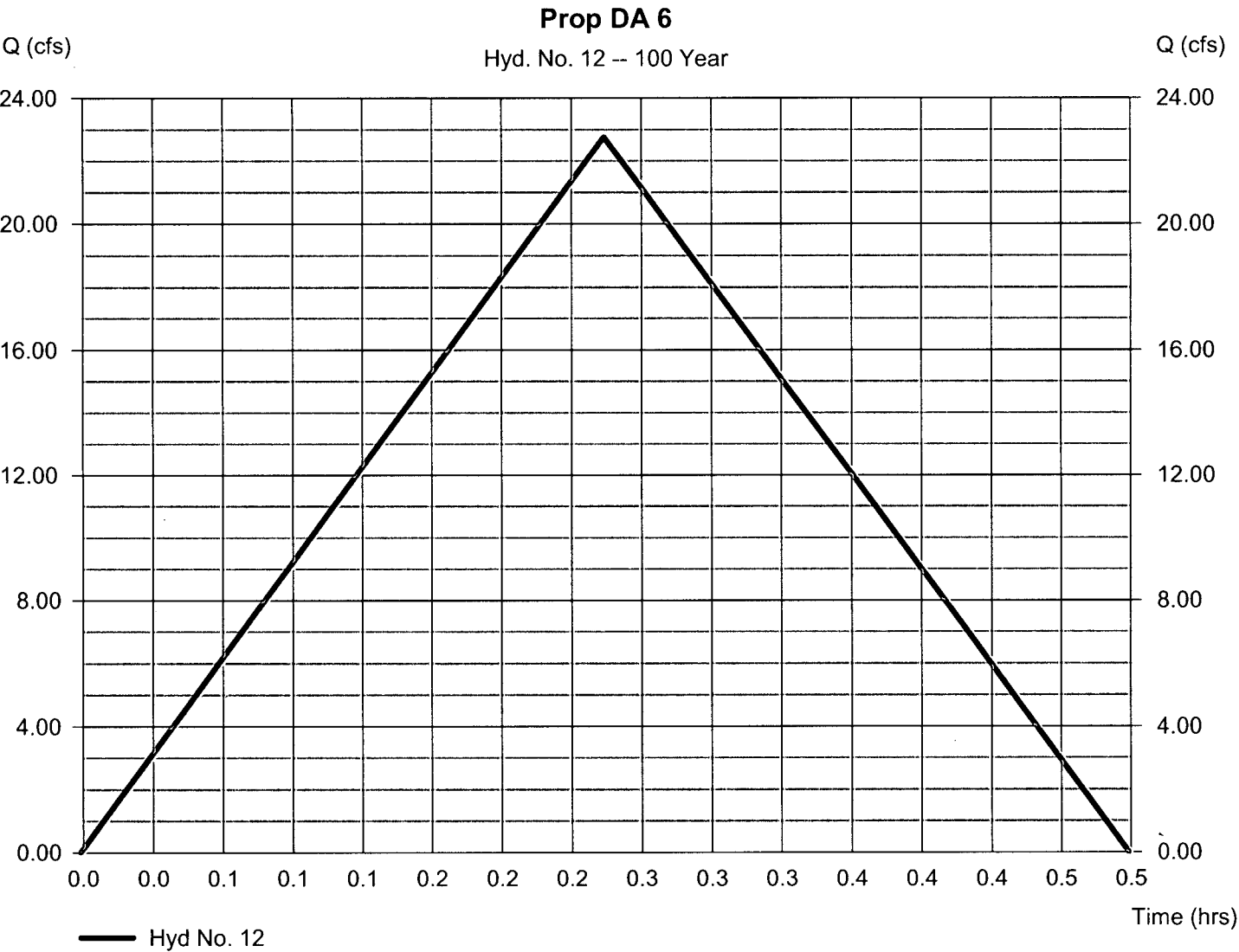


Hydrograph Report

Hyd. No. 12

Prop DA 6

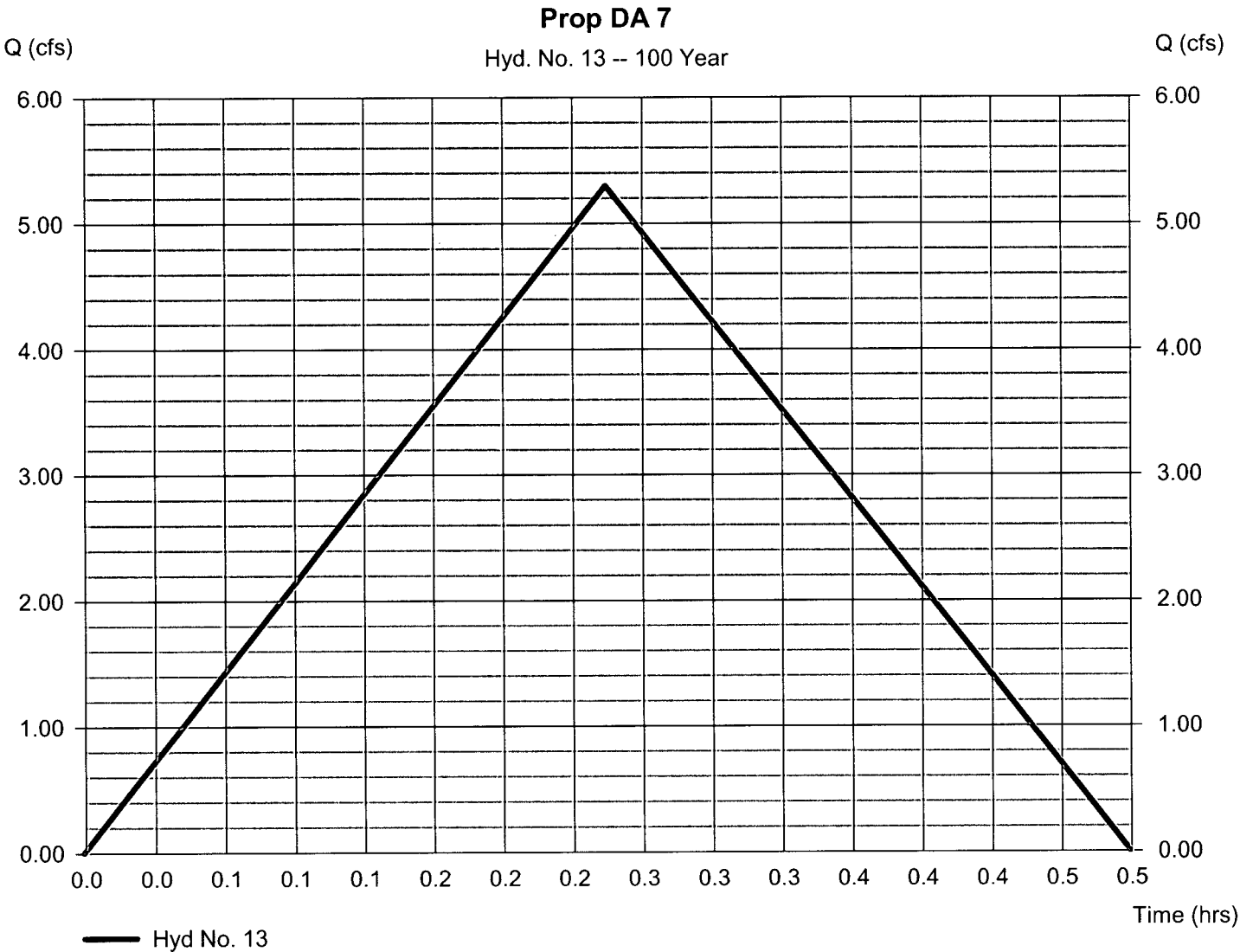
Hydrograph type	= Rational	Peak discharge	= 22.76 cfs
Storm frequency	= 100 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 0.470 acft
Drainage area	= 3.900 ac	Runoff coeff.	= 0.8
Intensity	= 7.295 in/hr	Tc by User	= 15.00 min
IDF Curve	= wich15min.IDF	Asc/Rec limb fact	= 1/1



Hyd. No. 13

Prop DA 7

Hydrograph type	= Rational	Peak discharge	= 5.296 cfs
Storm frequency	= 100 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 0.109 acft
Drainage area	= 1.100 ac	Runoff coeff.	= 0.66
Intensity	= 7.295 in/hr	Tc by User	= 15.00 min
IDF Curve	= wich15min.IDF	Asc/Rec limb fact	= 1/1



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.02

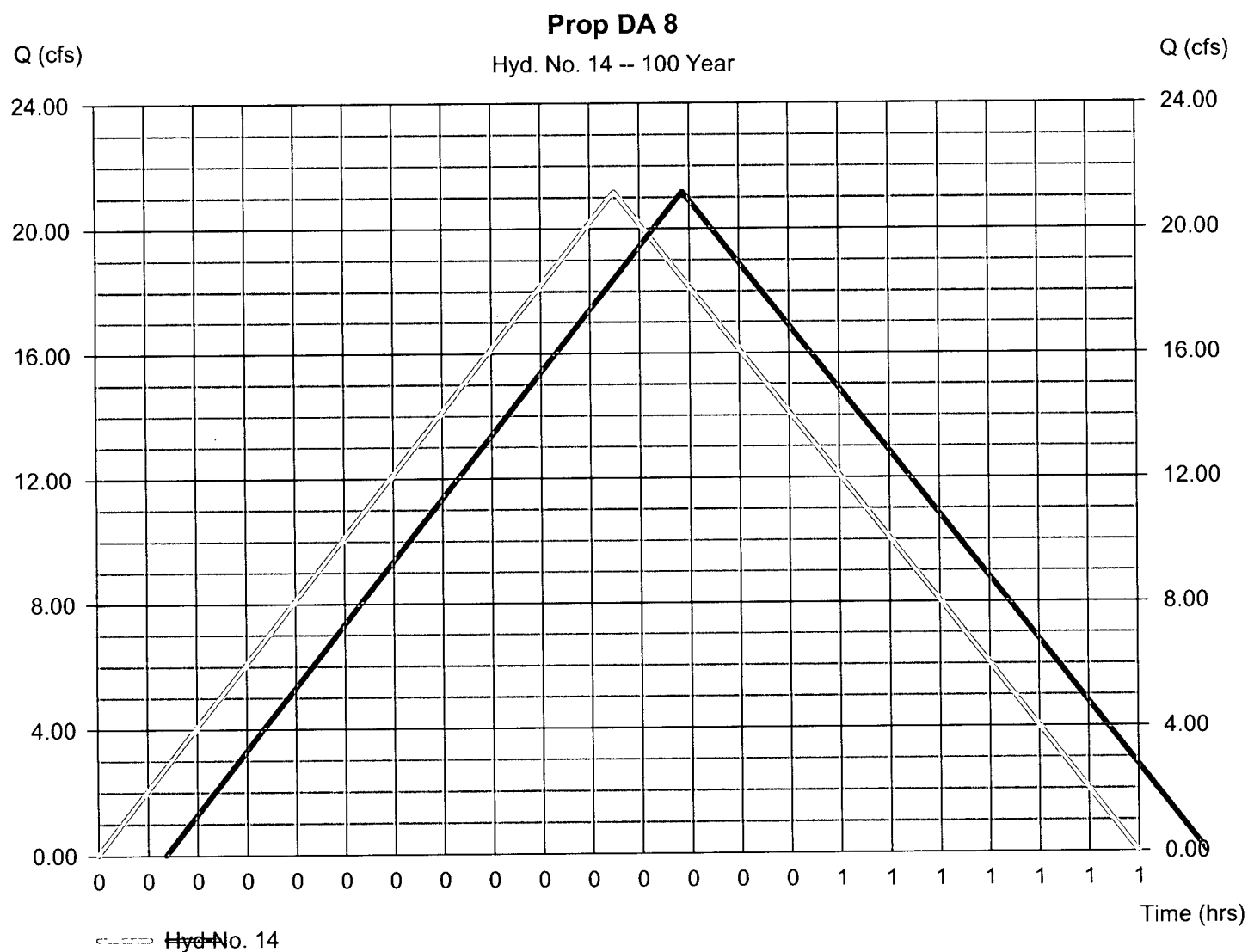
Friday, Jun 8, 2007

Hyd. No. 14

Prop DA 8

Hydrograph type = Rational
 Storm frequency = 100 yrs
 Time interval = 1 min
 Drainage area = 9.000 ac
 Intensity = 6.358 in/hr
 IDF Curve = wich15min.IDF

Peak discharge = 21.17 cfs
 Time to peak = 0.35 hrs
 Hyd. volume = 0.612 acft
 Runoff coeff. = 0.37
 Tc by TR55 = 21.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.02

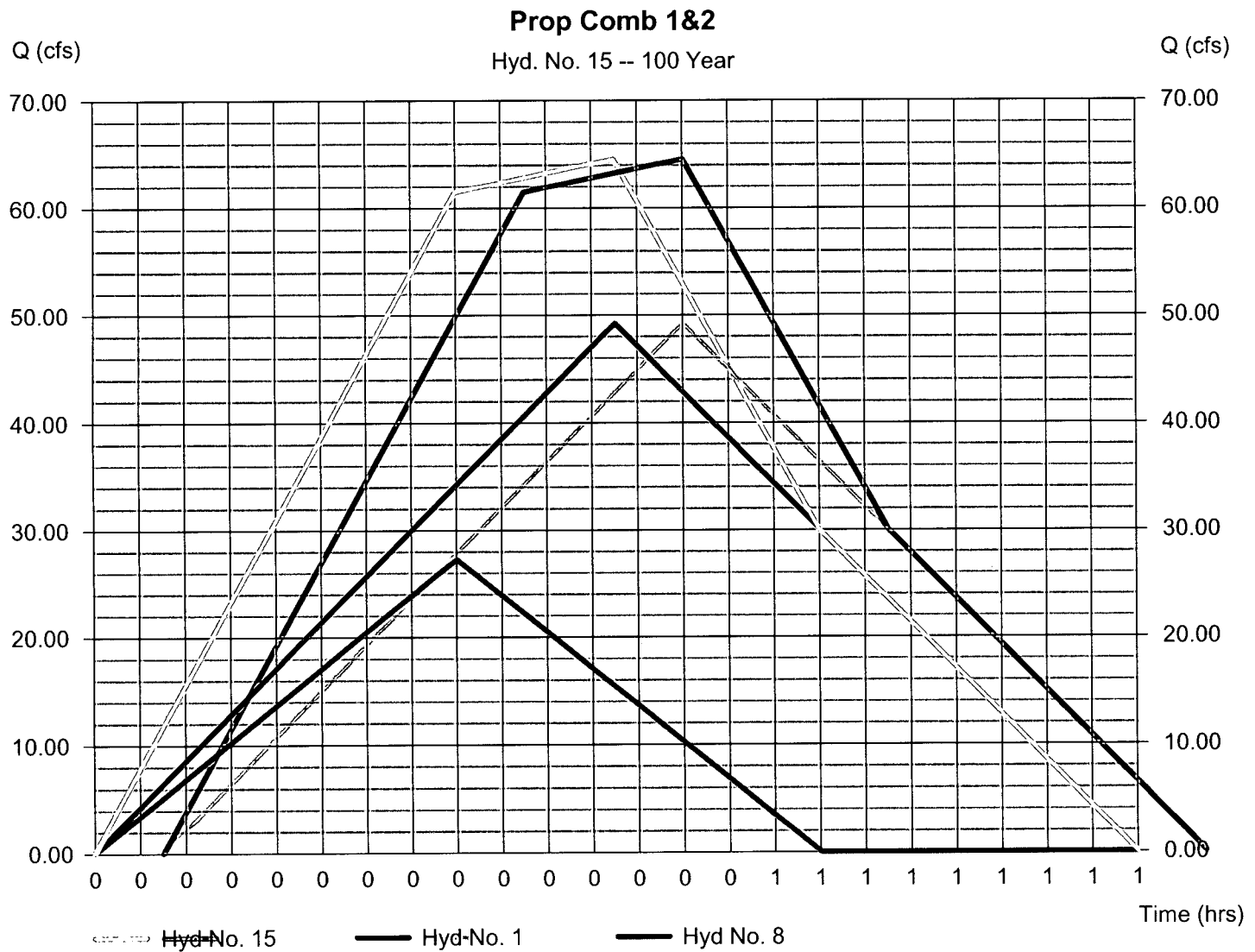
Friday, Jun 8, 2007

Hyd. No. 15

Prop Comb 1&2

Hydrograph type = Combine
 Storm frequency = 100 yrs
 Time interval = 1 min
 Inflow hyds. = 1, 8

Peak discharge = 64.53 cfs
 Time to peak = 0.38 hrs
 Hyd. volume = 2.159 acft
 Contrib. drain. area = 18.600 ac

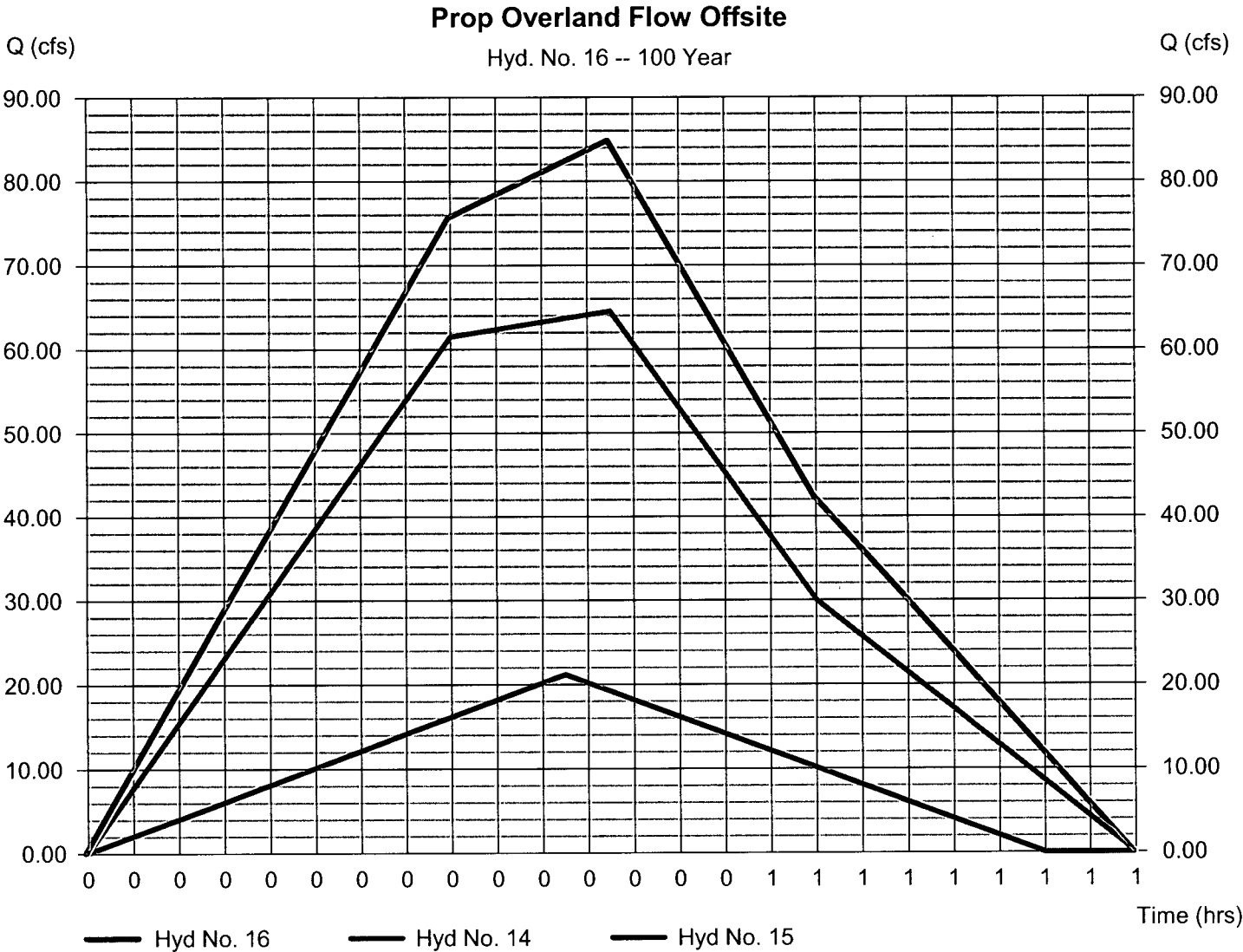


Hydrograph Report

Hyd. No. 16

Prop Overland Flow Offsite

Hydrograph type	= Combine	Peak discharge	= 84.85 cfs
Storm frequency	= 100 yrs	Time to peak	= 0.38 hrs
Time interval	= 1 min	Hyd. volume	= 2.803 acft
Inflow hyds.	= 14, 15	Contrib. drain. area	= 9.000 ac

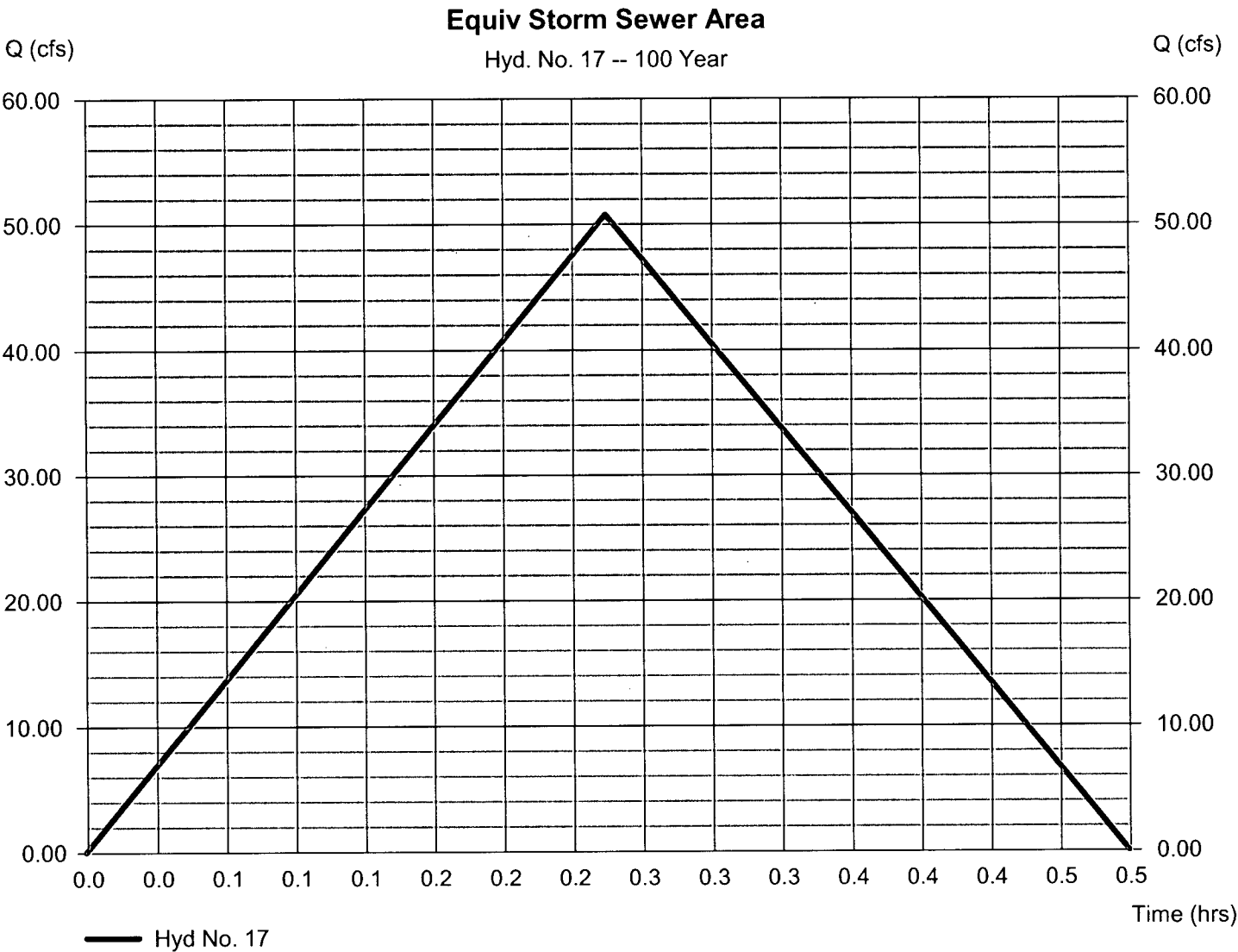


Hydrograph Report

Hyd. No. 17

Equiv Storm Sewer Area

Hydrograph type	= Rational	Peak discharge	= 50.78 cfs
Storm frequency	= 100 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 1.049 acft
Drainage area	= 8.700 ac	Runoff coeff.	= 0.8
Intensity	= 7.295 in/hr	Tc by User	= 15.00 min
IDF Curve	= wich15min.IDF	Asc/Rec limb fact	= 1/1



Hydrograph Report

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Hydraflow Hydrographs by Intelisolve v9.02

Friday, Jun 8, 2007

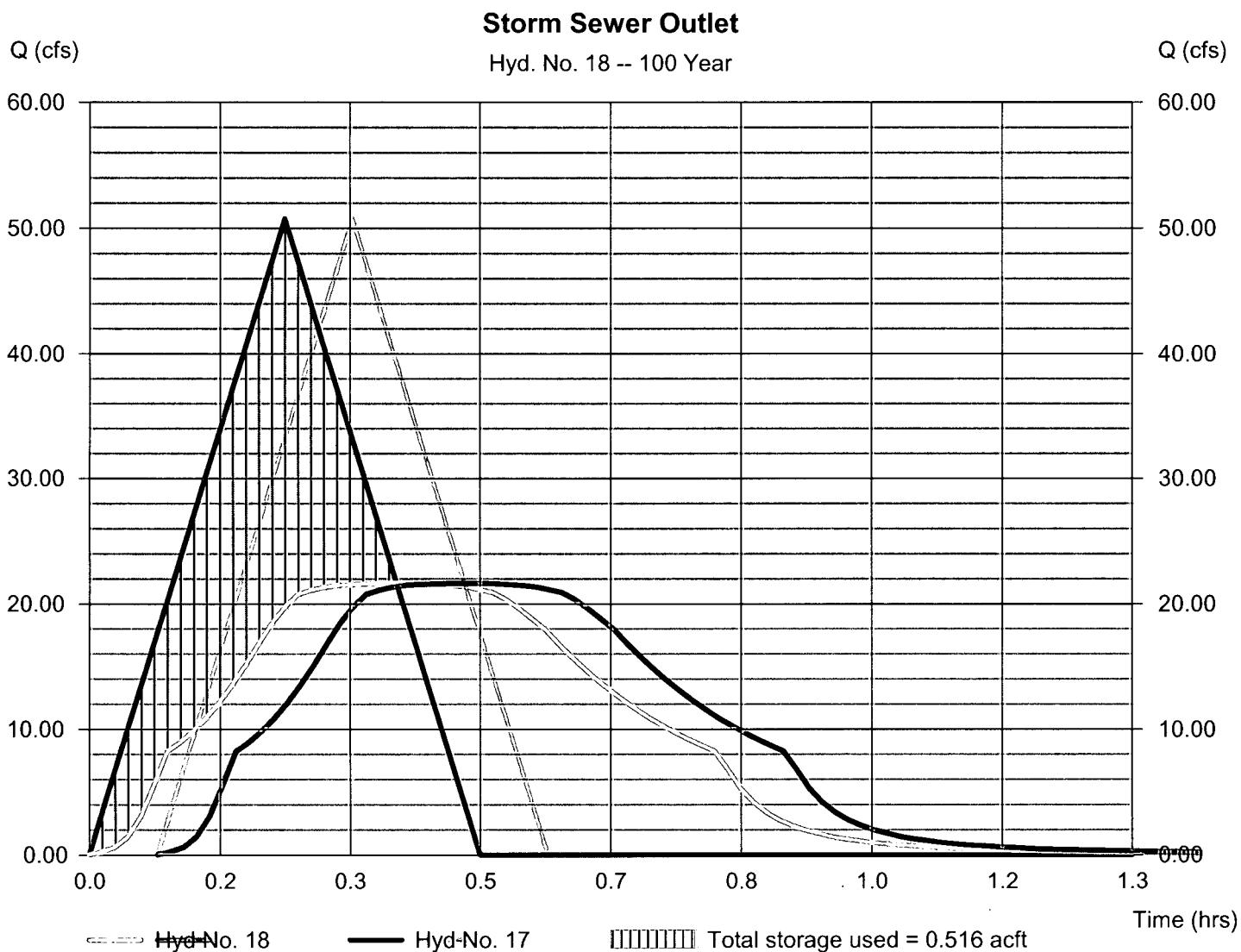
Hyd. No. 18

Storm Sewer Outlet

Hydrograph type = Reservoir
Storm frequency = 100 yrs
Time interval = 1 min
Inflow hyd. No. = 17 - Equiv Storm Sewer Area
Reservoir name = Prop Storm Sewer Equiv

Peak discharge = 21.64 cfs
Time to peak = 0.40 hrs
Hyd. volume = 1.049 acft
Max. Elevation = 151.18 ft
Max. Storage = 0.516 acft

Storage Indication method used.



Pond Report

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Hydraflow Hydrographs by Intelisolve v9.02

Friday, Jun 8, 2007

Pond No. 1 - Prop Storm Sewer Equiv

Pond Data

Contours - User-defined contour areas. Conic method used for volume calculation. Beginning Elevation = 148.85 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (acft)	Total storage (acft)
0.00	148.85	08	0.000	0.000
0.15	149.00	121	0.000	0.000
1.15	150.00	6,805	0.060	0.060
2.15	151.00	23,000	0.324	0.384
3.15	152.00	42,000	0.735	1.119

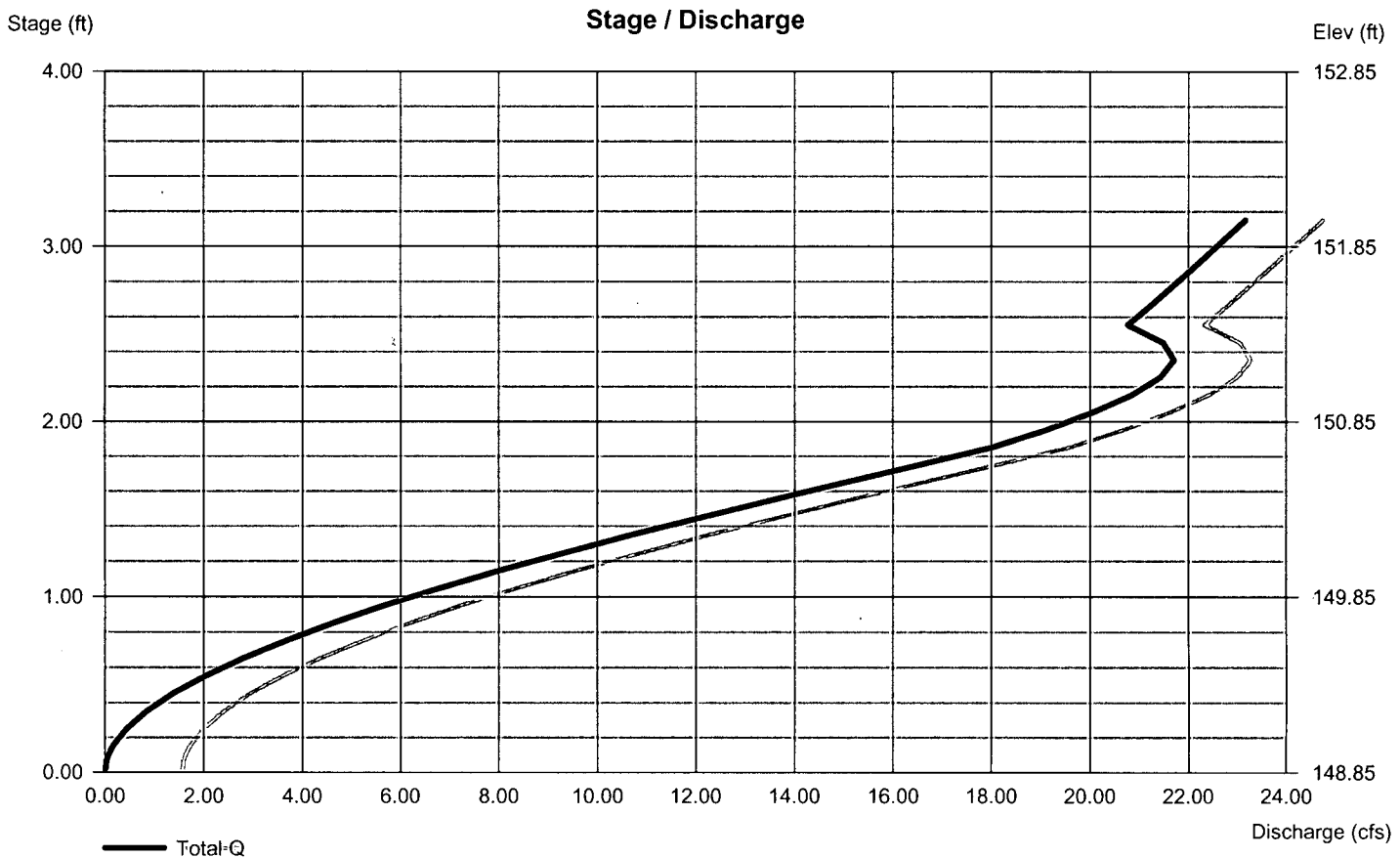
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 30.00	0.00	0.00	0.00
Span (in)	= 30.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 148.85	0.00	0.00	0.00
Length (ft)	= 800.00	0.00	0.00	0.00
Slope (%)	= 0.30	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 and outlet control. Weir risers are checked for orifice conditions.



Hydrograph Report

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Hydraflow Hydrographs by Intelisolve v9.02

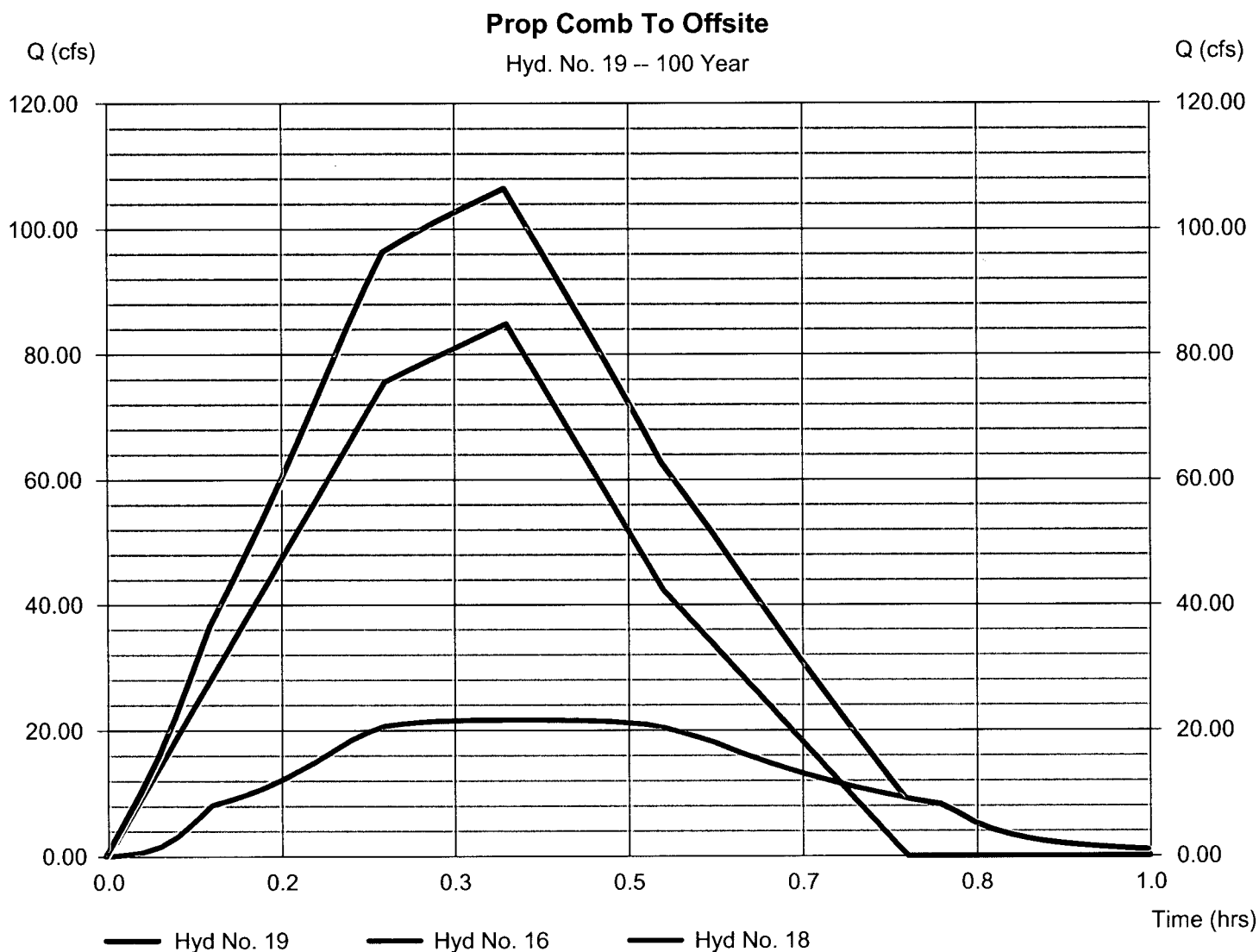
Friday, Jun 8, 2007

Hyd. No. 19

Prop Comb To Offsite

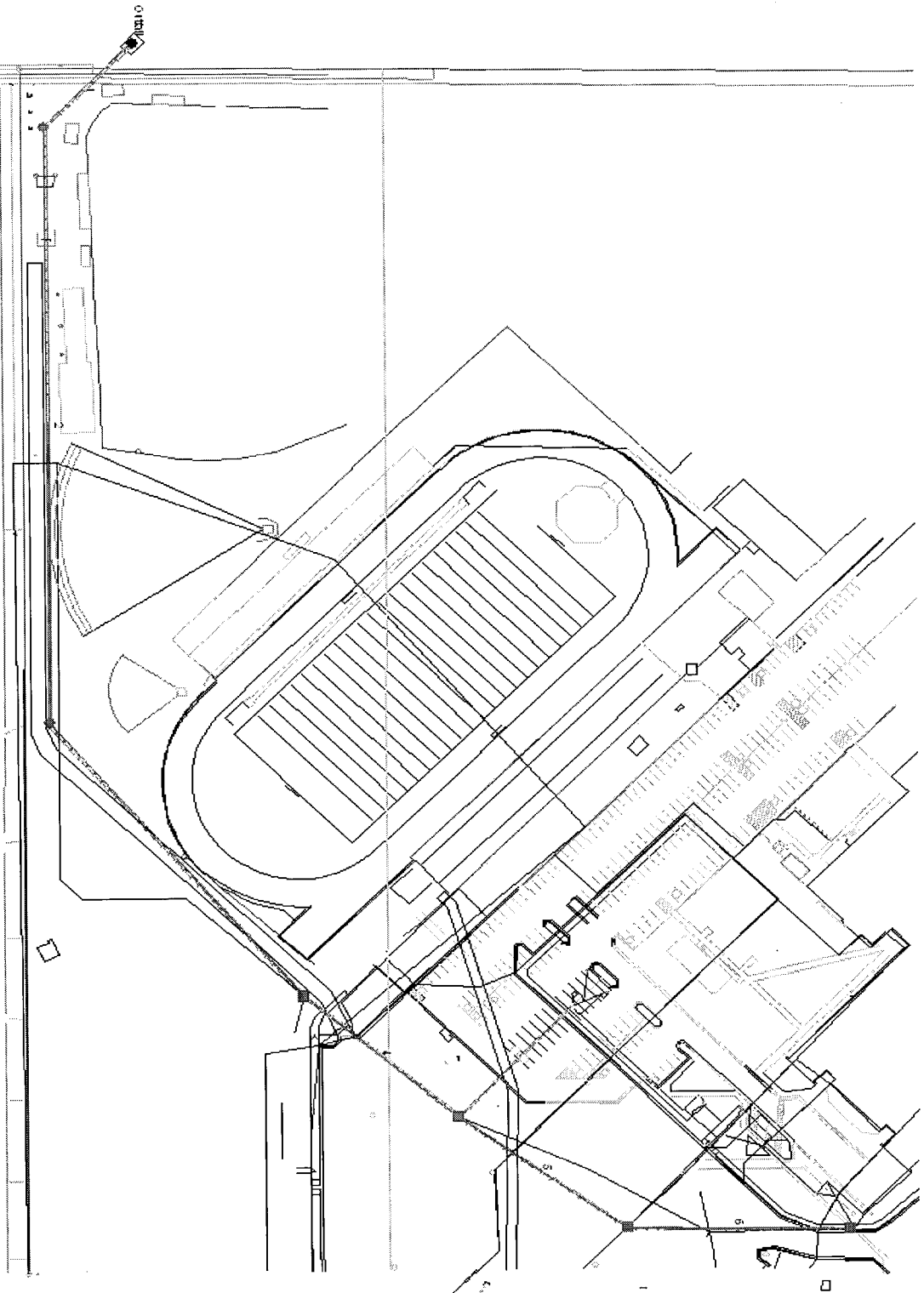
Hydrograph type = Combine
Storm frequency = 100 yrs
Time interval = 1 min
Inflow hyds. = 16, 18

Peak discharge = 106.48 cfs
Time to peak = 0.38 hrs
Hyd. volume = 3.852 acft
Contrib. drain. area = 0.000 ac



Hydraflow Plan View

S VR



Project File: BC_rational.stm

No. Lines: 6

06-08-2007

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line size (in)	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line slope (%)	HGL down (ft)	HGL up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns line No.
1		32.08	30 c	121.3	138.90	139.26	0.297	141.40*	142.14*	n/a	142.24!	End
2		32.08	30 c	628.2	139.26	141.15	0.301	142.24*	146.08*	0.46	146.54	1
3		32.08	30 c	376.8	141.15	142.28	0.300	146.54*	148.85*	0.33	149.18	2
4		28.48	30 c	195.0	142.28	142.86	0.297	149.32*	150.26*	0.26	150.52	3
5		14.29	24 c	198.8	142.86	143.46	0.302	150.73*	151.52*	0.30	151.82	4
6		5.55	15 c	216.0	144.71	145.96	0.579	151.83*	153.42*	0.32	153.74	5
Project File: BC_rational.stm												
Number of lines: 6												
Run Date: 06-08-2007												

NOTES: c = cir; e = ellip; b = box; Return period = 5 Yrs. ; *Surcharged (HGL above crown). ; ! - Inlet control.

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q byp (cfs)	Junc type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp line No			
							Ht (in)	L (ft)	area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)				
1		0.00	0.00	0.00	0.00	MH	6.0	6.00	2.00	4.00	2.00	Sag	2.00	0.080	0.050	0.013	0.00	0.00	0.00	0.00	Off				
2		0.00	0.00	0.00	0.00	MH	6.0	6.00	2.50	4.00	2.00	Sag	2.00	0.050	0.050	0.013	0.00	0.00	0.00	0.00	1				
3		3.60	0.00	3.60	0.00	DIGt	6.0	6.00	2.50	4.00	2.00	Sag	2.00	0.050	0.050	0.013	0.22	10.62	0.22	10.62	2				
4		14.19	0.00	14.19	0.00	DIGt	6.0	6.00	2.50	4.00	2.00	Sag	2.00	0.050	0.050	0.013	1.12	46.65	1.12	46.65	3				
5		8.73	0.00	8.73	0.00	DIGt	6.0	6.00	2.50	4.00	2.00	Sag	2.00	0.050	0.050	0.013	0.42	18.91	0.42	18.91	4				
6		5.55	0.00	5.55	0.00	Curb	6.0	6.00	2.00	4.00	2.00	Sag	2.00	0.080	0.050	0.013	0.46	7.93	0.56	7.93	5				
Project File: BC_rational.stm																						Number of lines: 6		Run Date: 06-08-2007	
NOTES: Inlet N-Values = 0.016 ; Intensity = 52.62 / (Inlet time + 11.20) ^ 0.75; Return period = 5 Yrs. ; * Indicates Known Q added																									

Line No.	Area Dn	Area Up	Byp Ln No	Coeff C1	Coeff C2	Coeff C3	Capac Full	Crit Depth	Cross Sl, Sw	Cross Sl, Sx	Curb Len	Defl Ang	Depth Dn	Depth Up	DnStm Ln No	Drng Area	Easting X	EGL Dn	EGL Up	EGL Jnct	Energy Loss
1	4.91	4.91	n/a	0.20	0.50	0.90	22.34	1.89	...	...	...	44.3	2.50	2.50	Outfall	0.00	15651.67	142.06	142.81	142.24	0.173
2	4.91	4.91	1	0.20	0.50	0.90	22.49	1.89	...	...	...	-44.4	2.50	2.50	1	0.00	16279.91	142.90	146.75	147.21	3.846
3	4.91	4.91	2	0.20	0.50	0.90	22.46	1.89	0.050	0.050	...	-39.9	2.50	2.50	2	1.20	16568.50	147.21	149.51	149.85	2.306
4	4.91	4.91	3	0.20	0.50	0.90	22.37	1.78	0.050	0.050	...	-9.5	2.50	2.50	3	3.90	16695.20	149.85	150.79	151.05	0.941
5	3.14	3.14	4	0.20	0.50	0.90	12.42	1.34	0.050	0.050	...	-4.9	2.00	2.00	4	2.40	16811.08	151.05	151.84	152.14	0.794
6	1.23	1.23	5	0.20	0.50	0.90	4.91	0.94	0.080	0.050	6.00	-34.8	1.25	1.25	5	1.85	16814.29	152.14	153.74	154.06	1.599

Project File: BC_rational.stm

Number of lines: 6

Date: 06-08-2007

NOTES: ! Inlet control; ** Critical depth ; System flows limited to inlet captured flows.

Flow Rate	Sf Ave	Sf Dn	Grate Area	Grate Len	Grate Width	Gnd/Rim El Dn	Gnd/Rim El Up	Gutter Depth	Gutter Slope	Gutter Spread	Gutter Width	HGL Dn	HGL Up	HGL Jct	HGL Jump Dn	HGL Jump Up	Incr CxA	Incr Q	Inlet Depth	Inlet Eff	Inlet ID
(cfs)	(ft/ft)	(ft/ft)	(sqft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)		(cfs)	(ft)	(%)	
32.08	n/a	n/a	....	....	....	143.50	144.70	....	....	....	....	141.40	142.14	142.24	....	....	0.00	0.00	....	....	
32.08	0.612	0.612	....	....	....	144.70	148.10	....	....	....	....	142.24	146.08	146.54	....	....	0.00	0.00	....	....	
32.08	0.612	0.612	2.50	4.00	2.00	148.10	150.20	0.22	Sag	10.62	2.00	146.54	148.85	149.18	....	....	0.79	3.60	0.22	100	
28.48	0.482	0.483	2.50	4.00	2.00	150.20	148.85	1.12	Sag	46.65	2.00	149.32	150.26	150.52	....	....	3.12	14.19	1.12	100	
14.29	0.399	0.399	2.50	4.00	2.00	148.85	150.00	0.42	Sag	18.91	2.00	150.73	151.52	151.82	....	....	1.92	8.73	0.42	100	
5.55	0.740	0.740	....	....	....	150.00	151.75	0.46	Sag	7.93	2.00	151.83	153.42	153.74	....	....	1.22	5.55	0.56	100	

Project File: BC_rational.stm

Number of lines: 6

Date: 06-08-2007

NOTES: i Inlet control; ** Critical depth ; System flows limited to inlet captured flows.

Inlet Loc	Inlet Spread (ft)	Inlet Time (min)	i Sys (in/hr)	i Inlet (in/hr)	Invert Dn (ft)	Invert Up (ft)	Jump Loc (ft)	Jump Len (ft)	Vel Hd Jump (ft)	Vel Hd Dump (ft)	J-Loss Coeff	Junct Type	Known Q (cfs)	Cost RCP (\$)	Cost CMP (\$)	(\$)	Line ID	Line Length (ft)	Line Size (in)	Line Slope (%)
Sag	....	0.0	4.03	0.00	138.90	139.26	....	....	0.00	0.00	0.74	MH	0.00	6,906	6,215			121.33	30	0.30
Sag	....	0.0	4.19	0.00	139.26	141.15	....	....	0.00	0.00	0.69	MH	0.00	38,472	34,625			628.24	30	0.30
Sag	10.62	15.0	4.30	4.55	141.15	142.28	....	....	0.00	0.00	0.50	Dp-Grate	0.00	24,236	21,812			376.76	30	0.30
Sag	46.65	15.0	4.36	4.55	142.28	142.86	....	....	0.00	0.00	0.50	Dp-Grate	0.00	12,598	11,338			195.00	30	0.30
Sag	18.91	15.0	4.45	4.55	142.86	143.46	....	....	0.00	0.00	0.94	Dp-Grate	0.00	12,022	10,820			198.82	24	0.30
Sag	7.93	15.0	4.55	4.55	144.71	145.96	....	....	0.00	0.00	1.00	Curb	0.00	8,770	7,893			216.00	15	0.58

Project File: BC_rational.stm

Number of lines: 6

Date: 06-08-2007

NOTES: Intensity = 52.62 / (Inlet time + 11.20) ^ 0.75 -- Return period = 5 Yrs. ; Inlet control; ** Critical depth ; System flows limited to inlet captured flows.

Line Type	Local Depr	n-val Gutter	n-val Pipe	Minor Loss	Northing Y	Pipe Travel	Q Byp	Q Capt	Q Carry	Line Rise	Runoff Coeff	Line Span	Area A1	Area A2	Area A3	Tc	Throat Ht	Total Area	Total CxA	Total Runoff	Vel Ave	Vel Dn	Vel Hd Dn
	(in)			(ft)	(ft)	(min)	(cfs)	(cfs)	(cfs)	(in)	(C)	(in)	(ac)	(ac)	(ac)	(min)	(in)	(ac)		(cfs)	(ft/s)	(ft/s)	(ft)
Cir	....	....	0.013	n/a	7773.68	0.31	....	....	....	30	0.00	30	0.00	0.00	0.00	19.6	....	9.35	7.05	28.39	6.54	6.54	0.66
Cir	....	....	0.013	0.46	7775.22	1.60	....	....	....	30	0.00	30	0.00	0.00	0.00	18.0	....	9.35	7.05	29.55	6.54	6.54	0.66
Cir	....	....	0.013	0.33	8017.41	0.96	0.00	3.60	0.00	30	0.66	30	0.00	0.00	0.00	17.1	....	9.35	7.05	30.30	6.54	6.54	0.66
Cir	....	....	0.013	0.26	8165.65	0.56	0.00	14.19	0.00	30	0.80	30	0.00	0.00	0.00	16.5	....	8.15	6.26	27.30	5.80	5.80	0.52
Cir	....	....	0.013	0.30	8327.21	0.73	0.00	8.73	0.00	24	0.80	24	0.00	0.00	0.00	15.8	....	4.25	3.14	13.97	4.55	4.55	0.32
Cir	2.00	....	0.013	0.32	8543.19	0.80	0.00	5.55	0.00	15	0.66	15	0.00	0.00	0.00	15.0	6.0	1.85	1.22	5.55	4.53	4.53	0.32

Project File: BC_rational.stm

Number of lines: 6

Date: 06-08-2007

NOTES: | Inlet control; ** Critical depth ; System flows limited to inlet captured flows.

MyReport

Vel Hd Up	Vel Up	Cover Dn	Cover Up	Storage
(ft)	(ft/s)	(ft)	(ft)	(cft)
0.66	6.54	2.10	2.94	595.47
0.66	6.54	2.94	4.45	3083.26
0.66	6.54	4.45	5.42	1849.05
0.52	5.80	5.42	3.49	957.02
0.32	4.55	3.99	4.54	624.50
0.32	4.53	4.04	4.54	265.02

Project File: BC_rational.stm

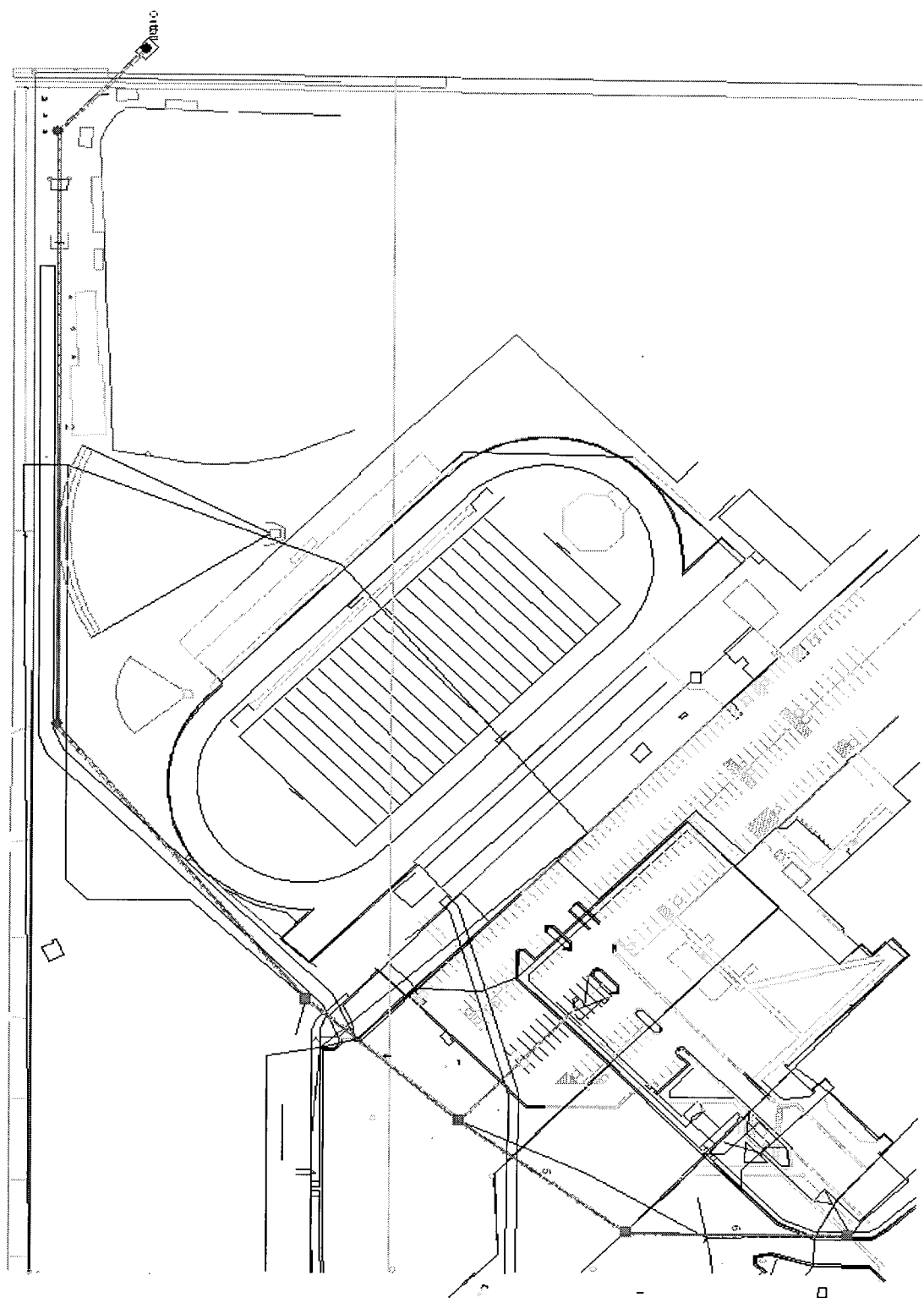
Number of lines: 6

Date: 06-08-2007

NOTES: i Inlet control; ** Critical depth ; System flows limited to inlet captured flows.

Hydraflow Plan View

100 HR



Project File: BC_rational.stm

No. Lines: 6

06-08-2007

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line size (in)	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line slope (%)	HGL down (ft)	HGL up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns line No.
1		51.95	30 c	121.3	138.90	139.26	0.297	141.40*	143.35*	n/a	145.04!	End
2		51.95	30 c	628.2	139.26	141.15	0.301	145.04*	155.12*	1.20	156.32	1
3		51.95	30 c	376.8	141.15	142.28	0.300	156.32*	162.37*	0.87	163.24	2
4		46.11	30 c	195.0	142.28	142.86	0.297	163.61*	166.07*	0.69	166.76	3
5		23.13	24 c	198.8	142.86	143.46	0.302	167.29*	169.37*	0.79	170.16	4
6		8.99	15 c	216.0	144.71	145.96	0.579	170.17*	174.36*	0.83	175.20	5

Project File: BC_rational.stm

Number of lines: 6

Run Date: 06-08-2007

NOTES: c = cir; e = ellip; b = box; Return period = 100 Yrs. ; *Surcharged (HGL above crown). ! i - Inlet control.

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q byp (cfs)	Junc type	Curb Inlet			Grate Inlet			Gutter							Inlet			Byp line No
							Ht (in)	L (ft)	area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)		
1		0.00	0.00	0.00	0.00	MH	6.0	6.00	2.00	4.00	2.00	Sag	2.00	0.080	0.050	0.013	0.00	0.00	0.00	0.00	Off		
2		0.00	0.00	0.00	0.00	MH	6.0	6.00	2.50	4.00	2.00	Sag	2.00	0.050	0.050	0.013	0.00	0.00	0.00	0.00	1		
3		5.83	0.00	5.83	0.00	DrGt	6.0	6.00	2.50	4.00	2.00	Sag	2.00	0.050	0.050	0.013	0.30	13.88	0.30	13.88	2		
4		22.98	0.00	22.98	0.00	DrGt	6.0	6.00	2.50	4.00	2.00	Sag	2.00	0.050	0.050	0.013	2.93	119.04	2.93	119.04	3		
5		14.14	0.00	14.14	0.00	DrGt	6.0	6.00	2.50	4.00	2.00	Sag	2.00	0.050	0.050	0.013	1.11	46.32	1.11	46.32	4		
6		8.99	0.00	8.99	0.00	Curb	6.0	6.00	2.00	4.00	2.00	Sag	2.00	0.080	0.050	0.013	0.61	10.96	0.71	10.96	5		

Project File: BC_rational.stm

Number of lines: 6

Run Date: 06-08-2007

NOTES: Inlet N-Values = 0.016 ; Intensity = 62.28 / (Inlet time + 10.10) ^ 0.66; Return period = 100 Yrs. ; * Indicates Known Q added

Line No.	Area Dn	Area Up	Byp Ln No	Coef C1	Coef C2	Coef C3	Capac Full	Crit Depth	Cross Sl, Sw	Cross Sl, Sx	Curb Len	Defl Ang	Depth Dn	Depth Up	DnStm Ln No	Drng Area	Easting X	EGL Dn	EGL Up	EGL Jnct	Energy Loss
1	4.91	4.91	n/a	0.20	0.50	0.90	22.34	2.33	...	...	...	44.3	2.50	2.50	Outfall	0.00	15651.67	143.14	145.09	145.04	1.898
2	4.91	4.91	1	0.20	0.50	0.90	22.49	2.33	...	...	...	-44.4	2.50	2.50	1	0.00	16279.91	146.78	156.86	158.06	10.081
3	4.91	4.91	2	0.20	0.50	0.90	22.46	2.33	0.050	0.050	...	-39.9	2.50	2.50	2	1.20	16568.50	158.06	164.11	164.98	6.046
4	4.91	4.91	3	0.20	0.50	0.90	22.37	2.25	0.050	0.050	...	-9.5	2.50	2.50	3	3.90	16695.20	164.98	167.45	168.13	2.466
5	3.14	3.14	4	0.20	0.50	0.90	12.42	1.71	0.050	0.050	...	-4.9	2.00	2.00	4	2.40	16811.08	168.13	170.21	171.01	2.080
6	1.23	1.23	5	0.20	0.50	0.90	4.91	1.16	0.080	0.050	6.00	-34.8	1.25	1.25	5	1.85	16814.29	171.01	175.20	176.03	4.190

Project File: BC_rational.stm

Number of lines: 6

Date: 06-08-2007

NOTES: i Inlet control; ** Critical depth ; System flows limited to inlet captured flows.

Project File: BC_rational.stm					
	Number of lines: 6				
	Date: 06-08-2007				

Hydraflow Storm Sewers 2005

Inlet Loc	Inlet Spread (ft)	Inlet Time (min)	i Sys (in/hr)	i Inlet (in/hr)	Invert Dn (ft)	Invert Up (ft)	Jump Loc (ft)	Jump Len (ft)	Vel Hd Jump (ft)	Vel Hd Dnump (ft)	J-Loss Coeff	Junct Type	Known Q (cfs)	Cost RCP (\$)	Cost CMP (\$)		Line ID	Line Length (ft)	Line Size (in)	Line Slope (%)
Sag	....	0.0	6.86	0.00	138.90	139.26	....	....	0.00	0.00	0.74	MH	0.00	6,906	6,215			121.33	30	0.30
Sag	....	0.0	7.02	0.00	139.26	141.15	....	....	0.00	0.00	0.69	MH	0.00	38,472	34,625			628.24	30	0.30
Sag	13.88	15.0	7.13	7.37	141.15	142.28	....	....	0.00	0.00	0.50	Dp-Grate	0.00	24,236	21,812			376.76	30	0.30
Sag	119.04	15.0	7.19	7.37	142.28	142.86	....	....	0.00	0.00	0.50	Dp-Grate	0.00	12,598	11,338			195.00	30	0.30
Sag	46.32	15.0	7.27	7.37	142.86	143.46	....	....	0.00	0.00	0.94	Dp-Grate	0.00	12,022	10,820			198.82	24	0.30
Sag	10.96	15.0	7.37	7.37	144.71	145.96	....	....	0.00	0.00	1.00	Curb	0.00	8,770	7,893			216.00	15	0.58

Project File: BC_rational.stm

Number of lines: 6

Date: 06-08-2007

NOTES: Intensity = 62.28 / (Inlet time + 10.10) ^ 0.66 -- Return period = 100 Yrs. ; i Inlet control; ** Critical depth ; System flows limited to inlet captured flows.

Line Type	Local Depr	n-val Gutter	n-val Pipe	Minor Loss	Northing Y	Pipe Travel	Q Byp	Q Capt	Q Carry	Line Rise	Runoff Coeff	Line Span	Area A1	Area A2	Area A3	Tc	Throat Ht	Total Area	Total CxA	Total Runoff	Vel Ave	Vel Dn	Vel Hd Dn
	(in)			(ft)	(ft)	(min)	(cfs)	(cfs)	(cfs)	(in)	(C)	(in)	(ac)	(ac)	(ac)	(min)	(in)	(ac)		(cfs)	(ft/s)	(ft/s)	(ft)
Cir	....	....	0.013	n/a	7773.68	0.19	....	....	....	30	0.00	30	0.00	0.00	0.00	17.9	....	9.35	7.05	48.35	10.58	10.58	1.74
Cir	....	....	0.013	1.20	7775.22	0.99	....	....	....	30	0.00	30	0.00	0.00	0.00	16.9	....	9.35	7.05	49.52	10.58	10.58	1.74
Cir	....	....	0.013	0.87	8017.41	0.59	0.00	5.83	0.00	30	0.66	30	0.00	0.00	0.00	16.3	....	9.35	7.05	50.25	10.58	10.58	1.74
Cir	....	....	0.013	0.69	8165.65	0.35	0.00	22.98	0.00	30	0.80	30	0.00	0.00	0.00	15.9	....	8.15	6.26	45.00	9.39	9.40	1.37
Cir	....	....	0.013	0.79	8327.21	0.45	0.00	14.14	0.00	24	0.80	24	0.00	0.00	0.00	15.5	....	4.25	3.14	22.84	7.36	7.37	0.84
Cir	2.00	....	0.013	0.83	8543.19	0.49	0.00	8.99	0.00	15	0.66	15	0.00	0.00	0.00	15.0	6.0	1.85	1.22	8.99	7.33	7.33	0.84

Project File: BC_rational.stm

Number of lines: 6

Date: 06-08-2007

NOTES: i Inlet control; ** Critical depth ; System flows limited to inlet captured flows.

Vel Hd Up	Vel Up	Cover Dn	Cover Up	Storage (cft)	
(ft)	(ft/s)	(ft)	(ft)		
1.74	10.58	2.10	2.94	595.47	
1.74	10.58	2.94	4.45	3083.26	
1.74	10.58	4.45	5.42	1849.05	
1.37	9.39	5.42	3.49	957.02	
0.84	7.36	3.99	4.54	624.50	
0.83	7.33	4.04	4.54	265.02	

Project File: BC_rational.sim

Number of lines: 6

Date: 06-08-2007

NOTES: | Inlet control; ** Critical depth ; System flows limited to inlet captured flows.