

DESIGN STATEMENT  
DRAINAGE CALCULATIONS  
&  
HYDRAULIC ANALYSIS

BEACON HILL  
SECTION II

MANSFIELD CITY ROAD  
MANSFIELD CONNECTICUT

Civil Engineering Services, LLC  
203 Boston Hill Road  
Andover CT 06232

October 17, 2012

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# BEACON HILL – SECTION II

MANSFIELD CITY ROAD  
MANSFIELD CONNECTICUT

## OVERVIEW

The project proposed entails the development of a moderately small residential subdivision off of Mansfield City Road, on the west side of Mansfield, Connecticut. The proposed development will consist of 17 new building lots on approximately 62 acres on a new cul-de-sac to be constructed off the present Beacon Hill Estates. Lots on this plan are numbered 24 through 40 as an extension of the previously constructed Beacon Hills Subdivision.

The development access will be a 1500' long cul-de-sac serving 14 lots, with a long common drive serving an additional 3 rear lots.

## SITE LOCATION

The site of the proposed development is a block of land of about 62 acres located on the south side of Mansfield City Road. It is bounded by residential developments, including the previously constructed Beacon Hill Estates on the east, low-density rural housing on the west, and primarily unimproved and conservation lands to the south and southwest.

The area is zoned Rural Agricultural Residence (RAR-90) and the site itself is a re-grown woodlands re-establishing from past use as agricultural pasture and croplands.

## GEOGRAPHY

The subject site is located near the top of a long slope; the overall terrain rises steadily from the Willimantic River basin on the west to the top of the hill which is located to the southeast of the subject parcel in the area of the previously developed Beacon Hill Estates subdivision. Grades run parallel the proposed cul-de-sac road at a fairly consistent 4%-6% grade.

The hillside is fairly-well forested (second growth) with light underbrush, and soils in the area are predominantly Paxton and Montauk fine sandy loams, and Charlton-Chatfield complex well-drained soils.

## EXISTING CONDITIONS / PROPOSED CONDITIONS

Most of the property to be affected by the proposed development is an area of previously farmed land, with many stonewalls and established cart paths. The proposed plan is configured to make use of the existing paths and to utilize the existing stonewalls as property boundaries wherever possible.

The proposed cul-de-sac which will run directly down hill from the existing Beacon Hills Estates will be drained to a detention basin which will be located between the proposed development and Mansfield City Road, and which will empty into a new catch basin proposed for Mansfield City Road. A new culvert is also proposed for Mansfield City Road to connect the proposed catch basin with an existing catch basin at the north west end of the proposed development. The construction of the proposed detention basin and associated new structures in Mansfield City Road will help alleviate some of the existing drainage concerns along the town road.

## HYDROLOGY

The point of interest in our consideration of pre- versus post-development conditions is the existing catch basin in Mansfield City Road at the northwest end of the proposed development.

The design proposed utilizes a small detention basin and outlet structure to ensure that peak stormwater run-off from the site will not exceed the peak stormwater run-off rates that currently exist.

We used the Hydraflow Hydrographs Extension for AutoCAD program to model existing and proposed storm sewers and to analyze capacity for the 2-year, 10-year, 25-year, and 50-year storm events.

Assuming the present 18-inch culvert leaving the existing catch basin at the northwest end of the project was operating at capacity, we utilized the Hydraflow Hydrographs Extension program to design an on-site stormwater detention system. Hydrographs of peak discharges were prepared utilizing the Rational Method, and the TR-55 stormwater program. Hydrographs for “developed conditions” and “pre-developed conditions” were compared for development of target release values which were then used to design the size and outlet configuration for the detention structure.

The on-site system will be constructed of a shallow detention area which will discharge from an outlet structure to a new catch basin in Mansfield City Road.

A comparison of calculated pre-development and post-development stormwater flows to the 18-inch culvert are as follows:

STORM EVENT	EXISTING COND.	DEVELOPED COND.	REPORT SUMMARY PAGE
2-YR	4.3 cfs	3.5 cfs	2
10-YR	6.5 cfs	5.0 cfs	13
25-YR	7.8 cfs	6.0 cfs	24
50-YR	8.8 cfs	6.6 cfs	35

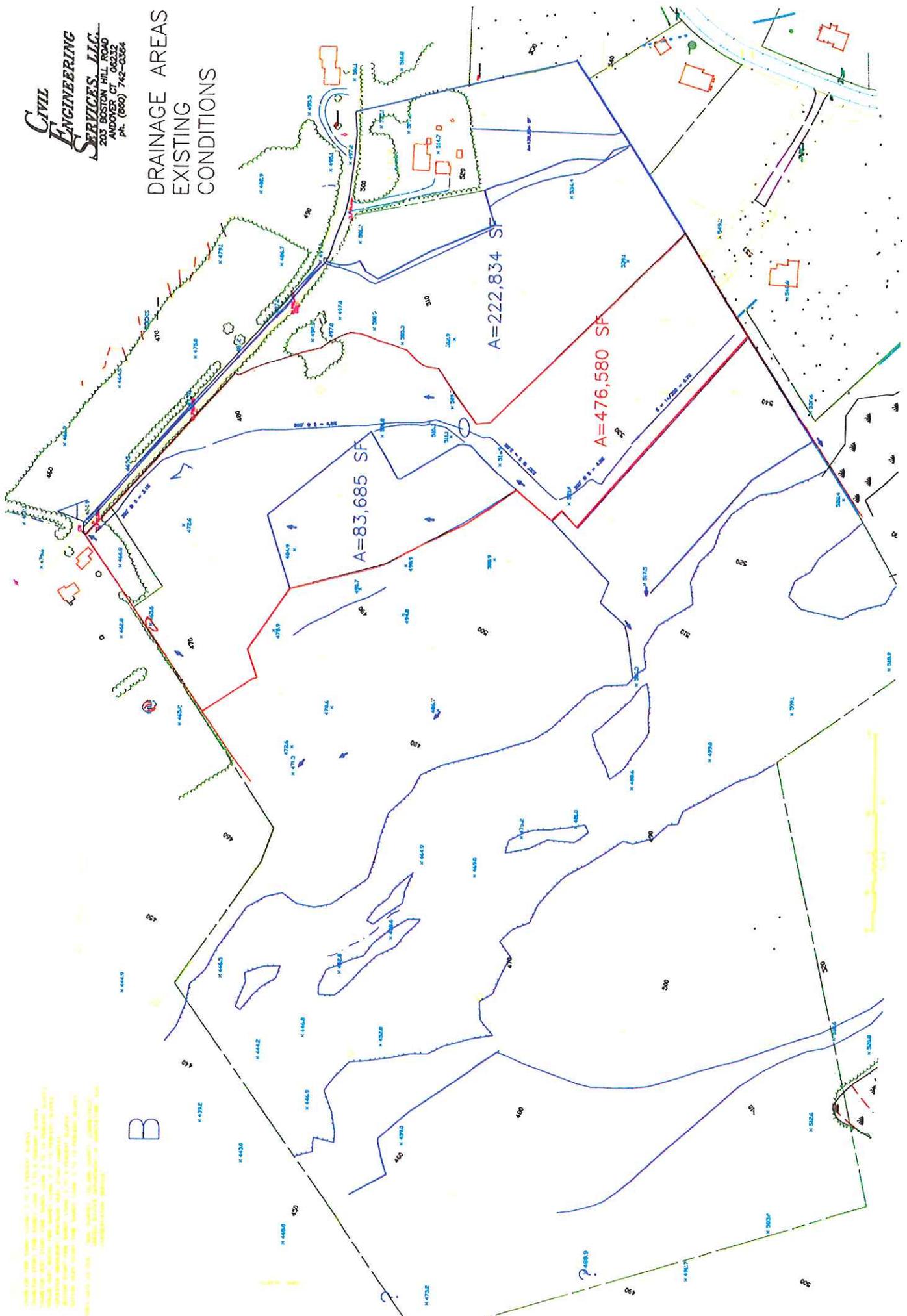
Stormwater calculations for design of drainage structures in the new road and in Mansfield City Road were based on Rational Method calculations and assumed a very conservative 5-minute time of concentration. Drainage areas were delineated on digital (Autocad) mapping. Drainage area delineations, gutter flow analysis, and storm sewer design calculations are included in Appendix A.

A schematic model of existing and proposed watersheds, and hydrographs comparing pre-development and post-developed conditions were utilized in design of the detention basin. This information is included in the Watershed Model Analysis included here in Appendix B.

Appendix C contains information on soils types and delineation as determined by USDA Natural Resources Conservation Service.

Appendix A  
Storm Sewer Calculations

**DRAINAGE AREAS  
 EXISTING  
 CONDITIONS**



1. ALL INFORMATION ON THIS PLAN IS BASED ON THE DATA PROVIDED BY THE CLIENT AND THE FIELD SURVEY. THE ENGINEER HAS CONDUCTED A VISUAL INSPECTION OF THE SITE AND HAS FOUND NO APPARENT DISCREPANCIES BETWEEN THE FIELD SURVEY AND THE DATA PROVIDED BY THE CLIENT.

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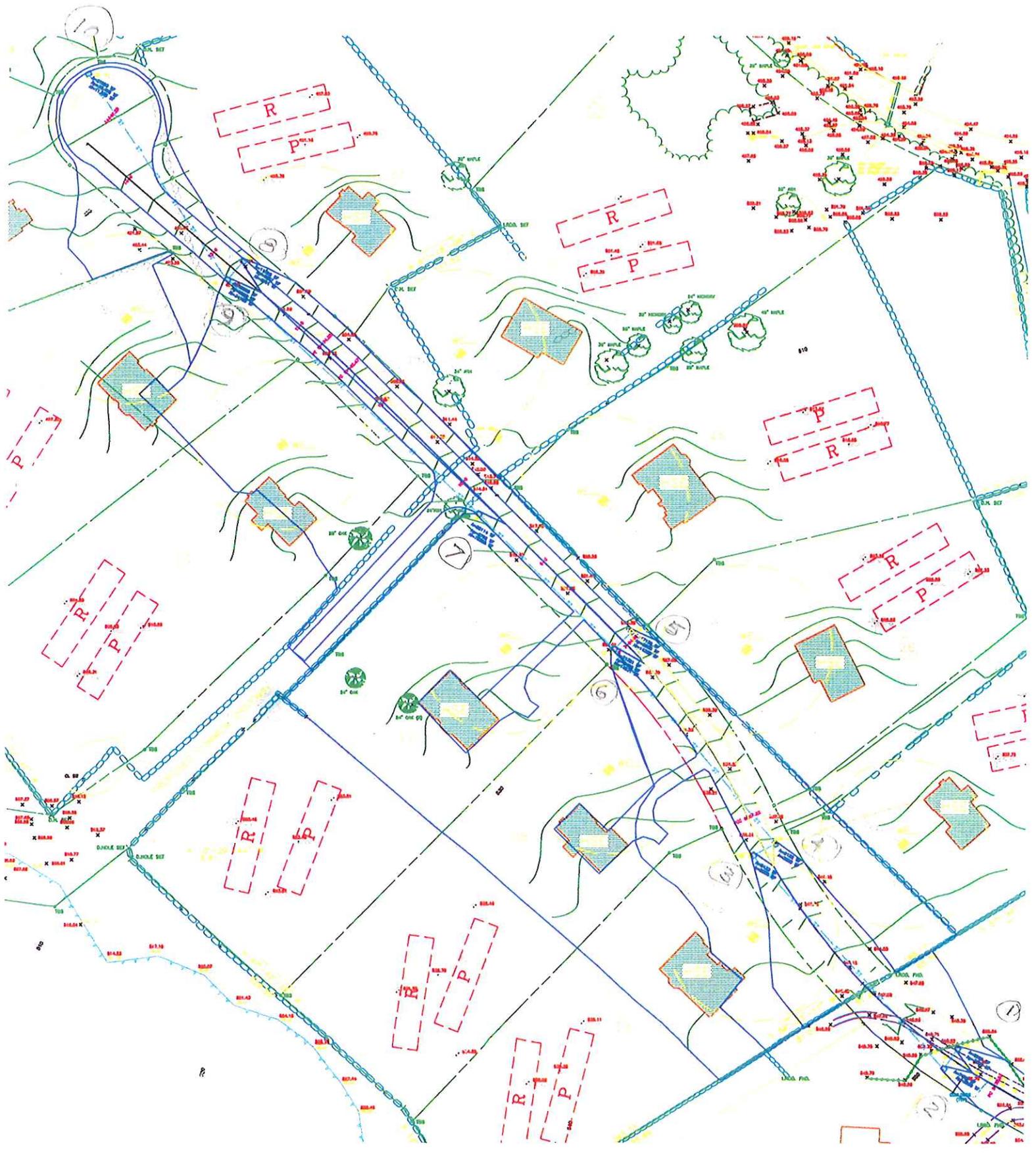
6. THE ENGINEER HAS CONDUCTED A VISUAL INSPECTION OF THE SITE AND HAS FOUND NO APPARENT DISCREPANCIES BETWEEN THE FIELD SURVEY AND THE DATA PROVIDED BY THE CLIENT.

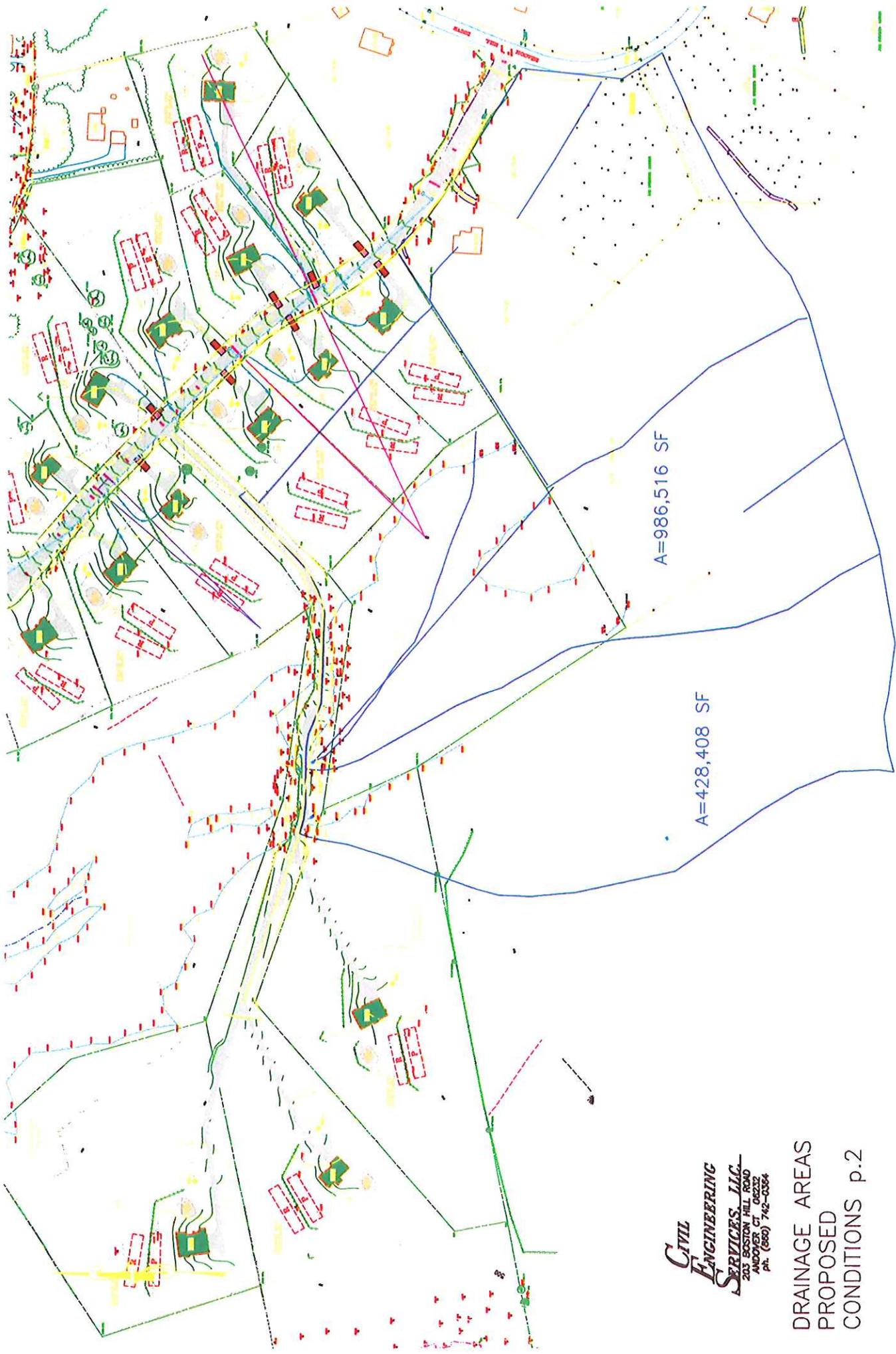
7. THE ENGINEER HAS CONDUCTED A VISUAL INSPECTION OF THE SITE AND HAS FOUND NO APPARENT DISCREPANCIES BETWEEN THE FIELD SURVEY AND THE DATA PROVIDED BY THE CLIENT.

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10. THE ENGINEER HAS CONDUCTED A VISUAL INSPECTION OF THE SITE AND HAS FOUND NO APPARENT DISCREPANCIES BETWEEN THE FIELD SURVEY AND THE DATA PROVIDED BY THE CLIENT.





**CIVIL**  
**ENGINEERING**  
**SERVICES, LLC**  
203 BOSTON HILL ROAD  
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DRAINAGE AREAS  
PROPOSED  
CONDITIONS p.2

PROJECT <b>BEACON HILL - II</b>	DATE 2/11/03	DESIGNED BY <b>GH</b>	DATE 9-12-12
STREET	FIRM	CHECKED BY	SHEET NO

INLET STATION AND OFFSET	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	TIME TO INLET	AREA IN ACRES	RUNOFF COEFFICIENT	AI	SUM OF AI	TOTAL AI	RAINFALL INTENSITY	Q TO INLET	GRADE OF GUTTER	CROSS SLOPE OF SHOULDER	DEPTH OF FLOW AT GUTTER	WIDTH OF FLOW	Q BYPASSING INLET	AI BYPASSING INLET	AI ENTERING CATCH BASIN
CB1 3+25	5	.09	.2	.08											
CB4 5+75	5	.07	.2	.01	.09	.09	6.2	0.56	.041	.031	.10	3.1	negl.	∅	.09
CB5 8+00	5	.14	.2	.03	.09	.09	6.2	0.56	.050	.031	<.10	<3.0	negl.	∅	.09
CB8 12+10	5	.06	.2	.07	.13	.13	6.2	2.81	.068	.031	1.2	3.1	negl.	∅	.12
CB11 3+25	5	.15	.2	.14											
CB2 5+75	5	.11	.2	.02	.16	.16	6.2	0.99	.068	.031	1.2	3.5	negl.	∅	.16
CB6 8+00	5	.10	.2	.09											
CB3 5+75	5	.07	.2	.21	.10	.10	6.2	0.62	.041	.031	.10	3.1	negl.	∅	.10
CB16 8+00	5	.08	.2	.07	.10	.10	6.2	0.62	.050	.031		3.0	negl.	∅	.10
CB7 9+70	5	.11	.2	.03	.10	.10	6.2	1.05	.068	.031	.12	3.5	negl.	∅	.17
CB9 12+70	5	.37	.2	.07	.17	.17	6.2	1.00	.055	.031	.12	3.5	negl.	∅	.16
	5	.16	.2	.14											
	5	0.13	.2	.02	.16	.16	6.2	2.17	.068	.031	.17	4.7	0.5	∅	.27
	5	.23	.2	.21											
	5	.71	.2	.14	.35	.35	6.2	2.17	.068	.031	.17	4.7	0.5	∅	.27

PROJECT BEASON HILL - II	DATUM 211053	DESIGNED BY EH	DATE 9-12-12
STREET	FIRM	CHECKED BY	SHEET N°

INLET STATION AND OFFSET	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
TIME TO INLET	5														
AREA IN ACRES	2.05	1.13													
RUNOFF COEFFICIENT	.9	.9													
AI	.25	.25													
SUM OF AI	.25	.25													
TOTAL AI	.25	.25													
RAINFALL INTENSITY	2.47	2.47													
Q TO INLET	2.47	2.47													
GRADE OF GUTTER	0.0	0.0													
CROSS SLOPE OF SHOULDER	.5	.5													
DEPTH OF FLOW AT GUTTER															
WIDTH OF FLOW															
Q BYPASSING INLET															
AI BYPASSING INLET															
AI ENTERING CATCH BASIN															

PROJECT	DESIGNED BY	DATE
STREET	CHECKED BY	SHEET NO

LINE NUMBER	TIME TO ENTER	TIME IN PIPE	ACCUMULATED TIME	AT ENTERING	SUM OF AT	IN SYSTEM	MAINTENANCE INTENSITY	IN SYSTEM	PIPE SIZE	LENGTH OF PIPE	SLOPE	AVERAGE VELOCITY	TOTAL CAPACITY	FEED WATER
0-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15"	0.00	0.00	0.00	0.00	0.00
1-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15"	0.00	0.00	0.00	0.00	0.00
2-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15"	0.00	0.00	0.00	0.00	0.00
3-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15"	0.00	0.00	0.00	0.00	0.00
4-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15"	0.00	0.00	0.00	0.00	0.00
5-6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15"	0.00	0.00	0.00	0.00	0.00
6-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15"	0.00	0.00	0.00	0.00	0.00
7-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15"	0.00	0.00	0.00	0.00	0.00
8-9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15"	0.00	0.00	0.00	0.00	0.00



Civil Engineering Services, LLC  
 203 Boston Hill Rd  
 ANDOVER, CT 06232  
 (860) 742-0364

JOB Beacon Hill - DATM 211053

SHEET NO. \_\_\_\_\_ OF \_\_\_\_\_

CALCULATED BY CA DATE 7-11-12

CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_

SCALE \_\_\_\_\_

CB's :

Cross slope:  $3/8" / ft \rightarrow .375'$

CB 1  
 TF: 550.48 STA 3+06.82  
 FL: 546.50 Q ELEV: 551.020

CB 2  
 550.48  
 546.30

CB 3  
 TF: 536.17 STA 6+07.6  
 FL: 532.10 Q ELEV: 536.72  
 gutter: 536.34

CB 4  
 TF: 536.17  
 FL: 531.90

CB 6 <sup>518.46</sup>  
~~TF: 536.17~~ STA 9+00 <sup>519.00</sup>  
 FL: 514.70 Q ELEV: ~~536.72~~  
 gutter EL: ~~536.34~~ <sup>518.67</sup>

CB 5 <sup>518.46</sup>  
~~TF: 536.17~~  
 FL: 514.50

CB 8  
 TF: 501.02 STA 12+00  
 FL: 497.20 Q ELEV: 501.56  
 gutter 501.19

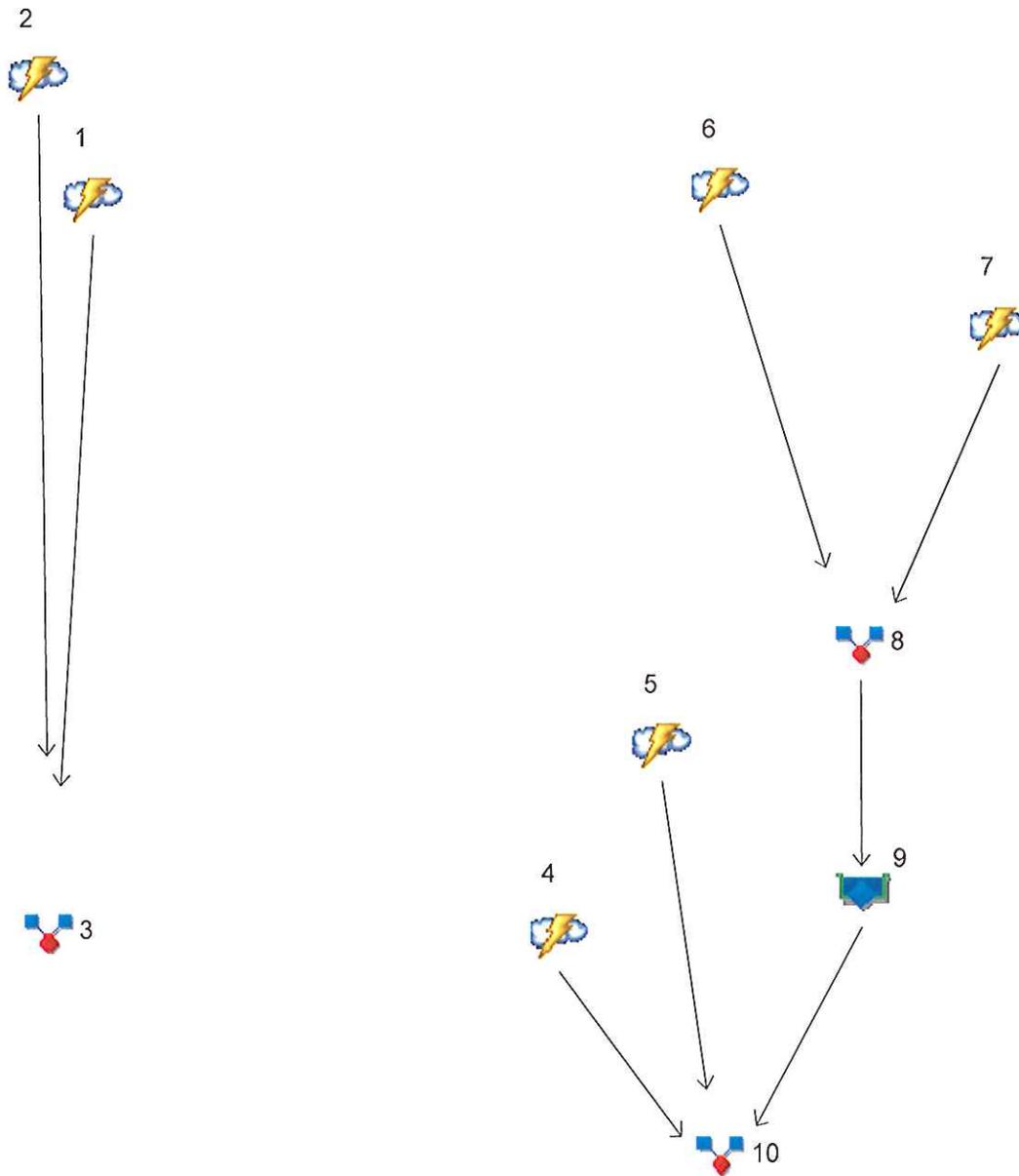
CB 7  
 TF: 501.02  
 FL: 497.00  
 496.00

CB 9  
 TF: 483.93  
 FL: 480.00  
 479.00

Appendix B  
Hydrologic Study  
Watershed Model

# Watershed Model Schematic

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8



## Legend

Hyd. Origin	Description
1 Rational	EXISTING CONDITIONS (EAST SIDE)
2 Rational	EXISTING CONDITIONS (WEST SIDE)
3 Combine	TOTAL FLOW @ OUTFALL
4 Rational	BELOW BASIN
5 Rational	FLOW INTO ROAD BASIN
6 Rational	OVERLAND FLOW INTO DETENTION BASIN
7 Rational	ROAD DRAINAGE INTO DETENTION BASIN
8 Combine	FLOW INTO DETENTION BASIN
9 Reservoir	DETENTION BASIN
10 Combine	FINAL BASIN

# Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

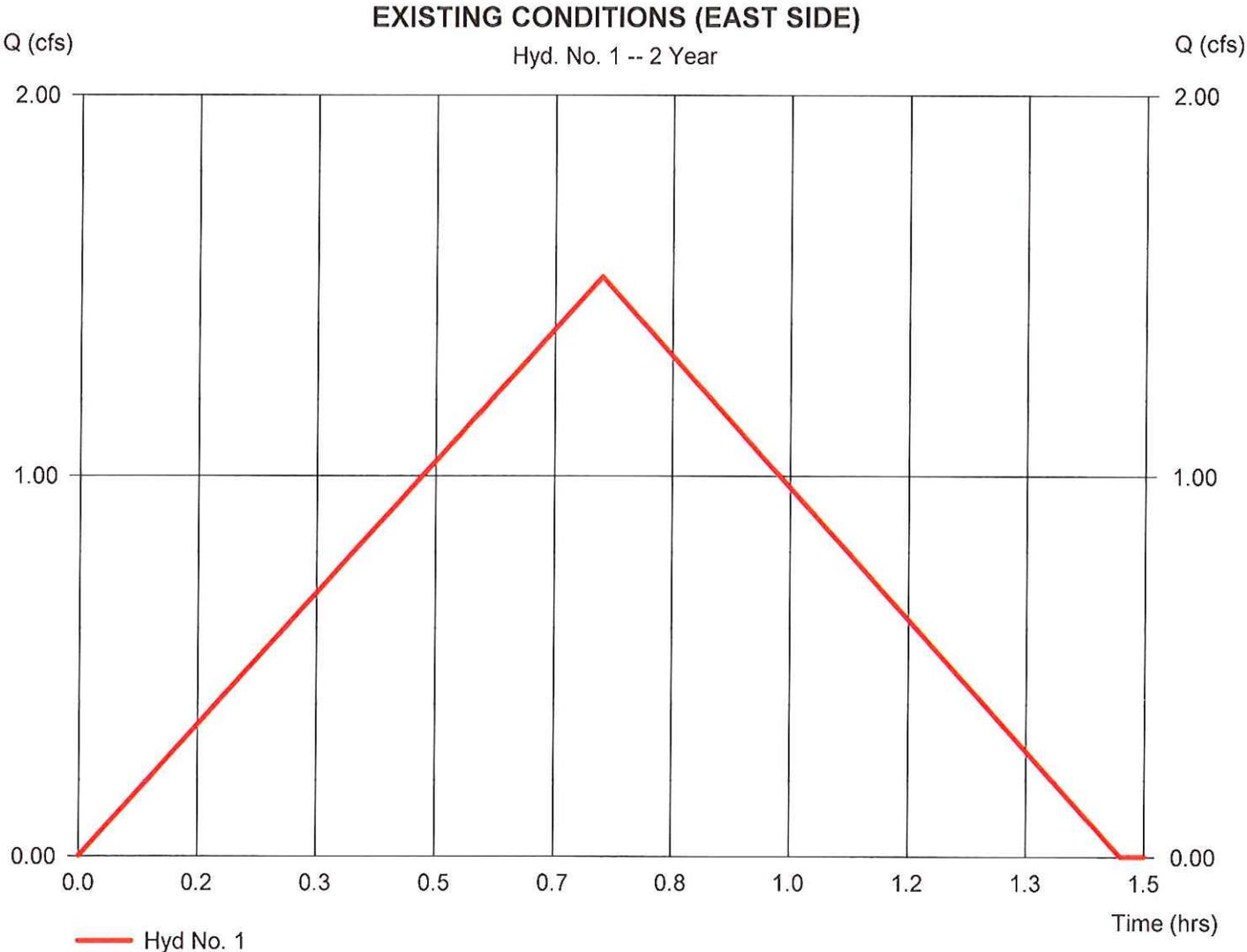
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	1.523	1	44	4,020	-----	-----	-----	EXISTING CONDITIONS (EAST SI
2	Rational	2.983	1	50	8,949	-----	-----	-----	EXISTING CONDITIONS (WEST SI
3	Combine	4.298	1	50	12,969	1, 2	-----	-----	TOTAL FLOW @ OUTFALL
4	Rational	1.310	1	30	2,358	-----	-----	-----	BELOW BASIN
5	Rational	0.162	1	18	175	-----	-----	-----	FLOW INTO ROAD BASIN
6	Rational	4.511	1	28	7,578	-----	-----	-----	OVERLAND FLOW INTO DETENTI
7	Rational	7.632	1	8	3,663	-----	-----	-----	ROAD DRAINAGE INTO DETENTI
8	Combine	8.921	1	8	11,242	6, 7	-----	-----	FLOW INTO DETENTION BASIN
9	Reservoir	2.318	1	41	10,519	8	476.33	6,254	DETENTION BASIN
10	Combine	3.460	1	30	13,052	4, 5, 9	-----	-----	FINAL BASIN
211053 HYDROGRAPHS.gpw					Return Period: 2 Year			Tuesday, Oct 16, 2012	

# Hydrograph Report

## Hyd. No. 1

### EXISTING CONDITIONS (EAST SIDE)

Hydrograph type	= Rational	Peak discharge	= 1.523 cfs
Storm frequency	= 2 yrs	Time to peak	= 0.73 hrs
Time interval	= 1 min	Hyd. volume	= 4,020 cuft
Drainage area	= 5.115 ac	Runoff coeff.	= 0.2
Intensity	= 1.489 in/hr	Tc by TR55	= 44.00 min
IDF Curve	= Hartford.IDF	Asc/Rec limb fact	= 1/1

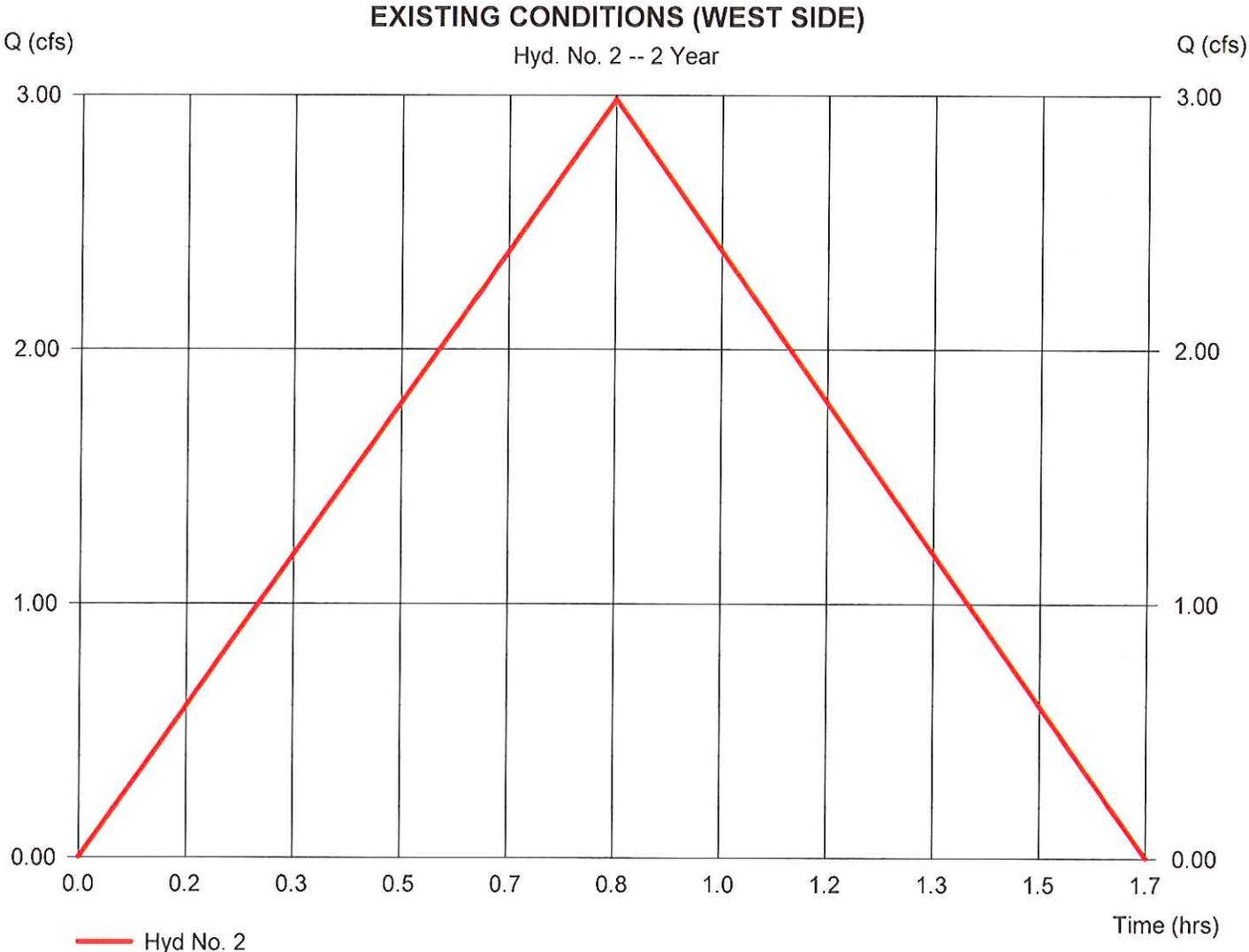


# Hydrograph Report

## Hyd. No. 2

### EXISTING CONDITIONS (WEST SIDE)

Hydrograph type	= Rational	Peak discharge	= 2.983 cfs
Storm frequency	= 2 yrs	Time to peak	= 0.83 hrs
Time interval	= 1 min	Hyd. volume	= 8,949 cuft
Drainage area	= 10.940 ac	Runoff coeff.	= 0.2
Intensity	= 1.363 in/hr	Tc by TR55	= 50.00 min
IDF Curve	= Hartford.IDF	Asc/Rec limb fact	= 1/1

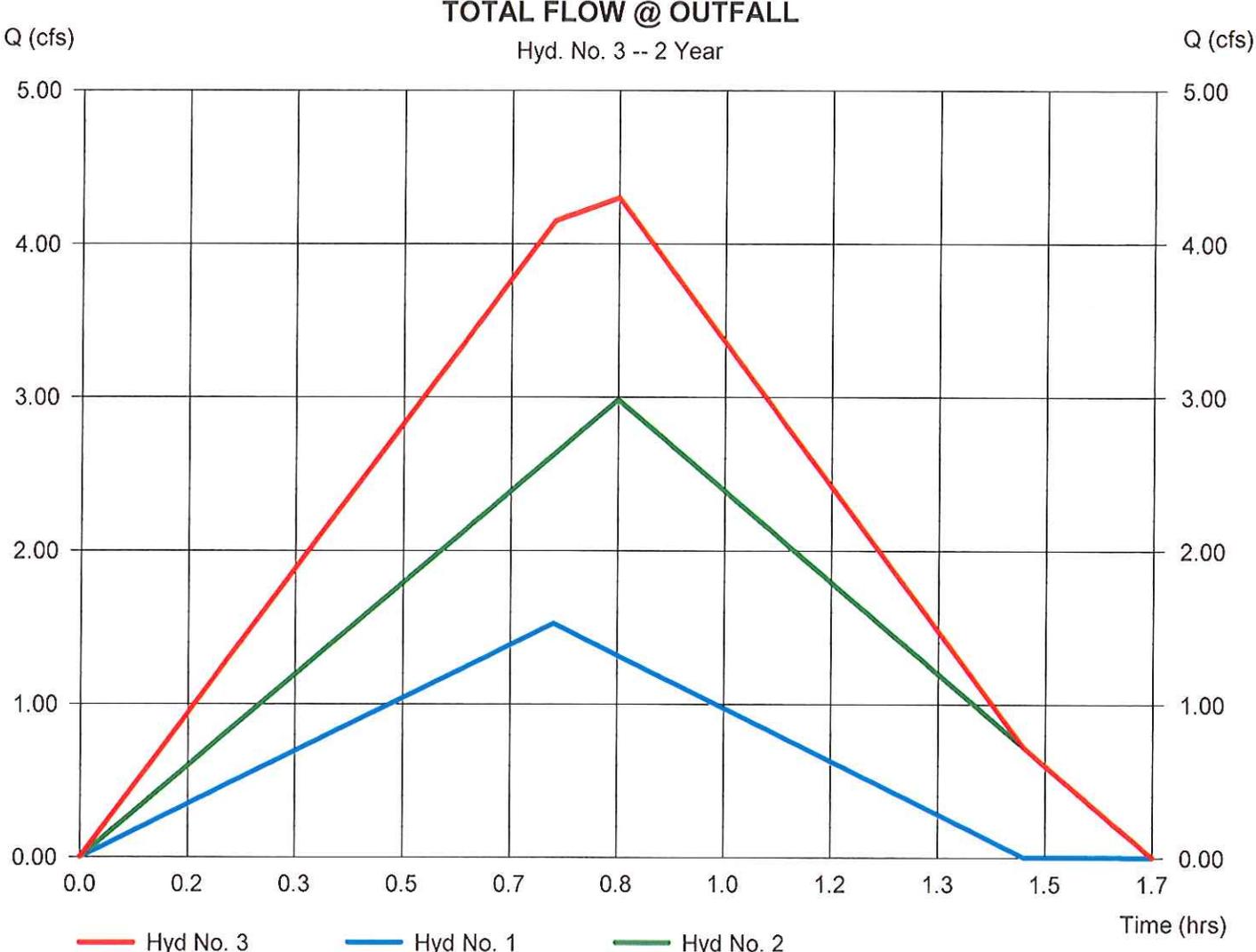


# Hydrograph Report

## Hyd. No. 3

### TOTAL FLOW @ OUTFALL

Hydrograph type	= Combine	Peak discharge	= 4.298 cfs
Storm frequency	= 2 yrs	Time to peak	= 0.83 hrs
Time interval	= 1 min	Hyd. volume	= 12,969 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 16.055 ac

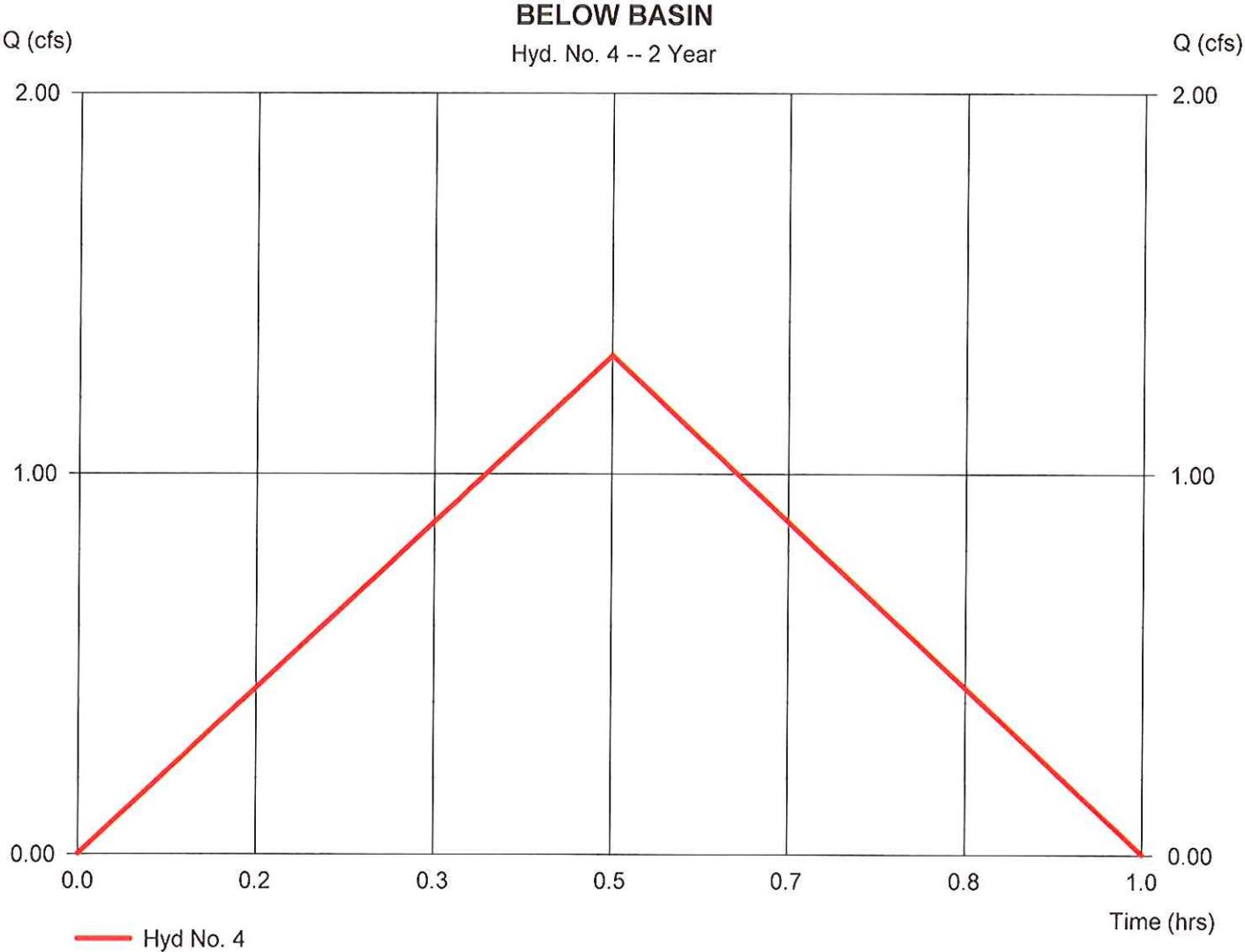


# Hydrograph Report

## Hyd. No. 4

### BELOW BASIN

Hydrograph type	= Rational	Peak discharge	= 1.310 cfs
Storm frequency	= 2 yrs	Time to peak	= 0.50 hrs
Time interval	= 1 min	Hyd. volume	= 2,358 cuft
Drainage area	= 3.100 ac	Runoff coeff.	= 0.22
Intensity	= 1.921 in/hr	Tc by TR55	= 30.00 min
IDF Curve	= Hartford.IDF	Asc/Rec limb fact	= 1/1



# Hydrograph Report

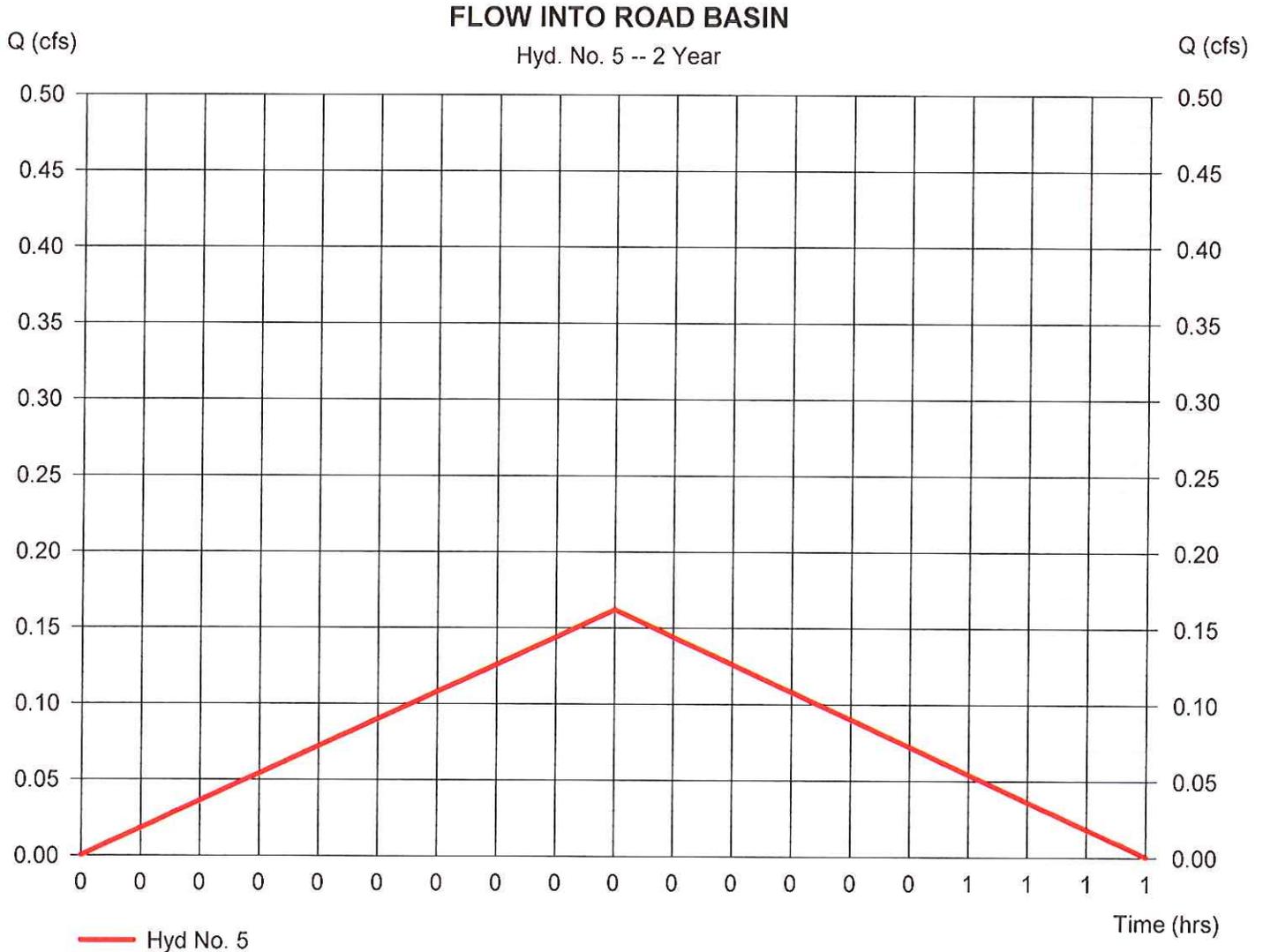
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, Oct 16, 2012

## Hyd. No. 5

### FLOW INTO ROAD BASIN

Hydrograph type	= Rational	Peak discharge	= 0.162 cfs
Storm frequency	= 2 yrs	Time to peak	= 0.30 hrs
Time interval	= 1 min	Hyd. volume	= 175 cuft
Drainage area	= 0.280 ac	Runoff coeff.	= 0.22
Intensity	= 2.628 in/hr	Tc by TR55	= 18.00 min
IDF Curve	= Hartford.IDF	Asc/Rec limb fact	= 1/1



# Hydrograph Report

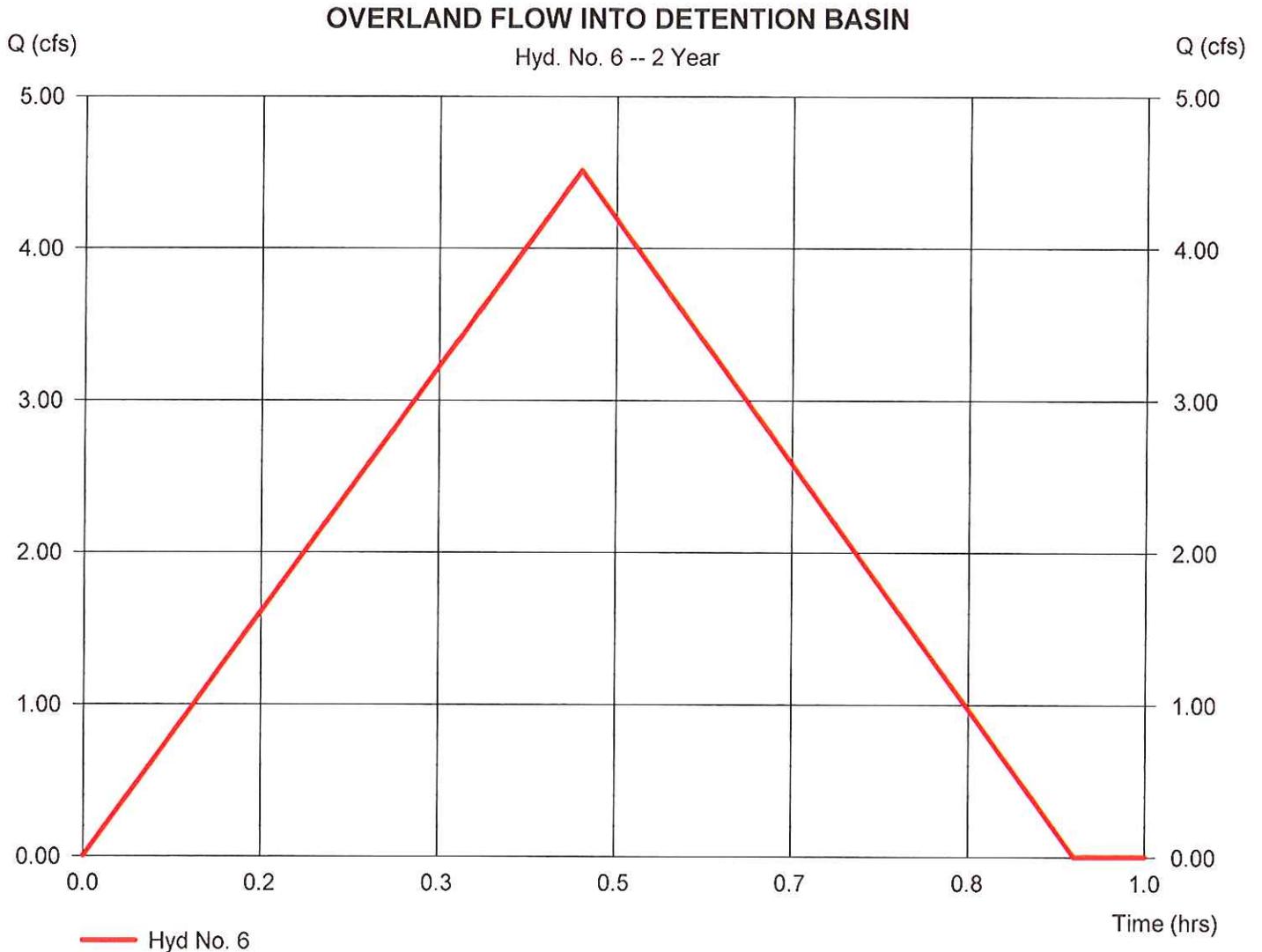
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, Oct 16, 2012

## Hyd. No. 6

### OVERLAND FLOW INTO DETENTION BASIN

Hydrograph type	= Rational	Peak discharge	= 4.511 cfs
Storm frequency	= 2 yrs	Time to peak	= 0.47 hrs
Time interval	= 1 min	Hyd. volume	= 7,578 cuft
Drainage area	= 7.490 ac	Runoff coeff.	= 0.3
Intensity	= 2.008 in/hr	Tc by TR55	= 28.00 min
IDF Curve	= Hartford.IDF	Asc/Rec limb fact	= 1/1



# Hydrograph Report

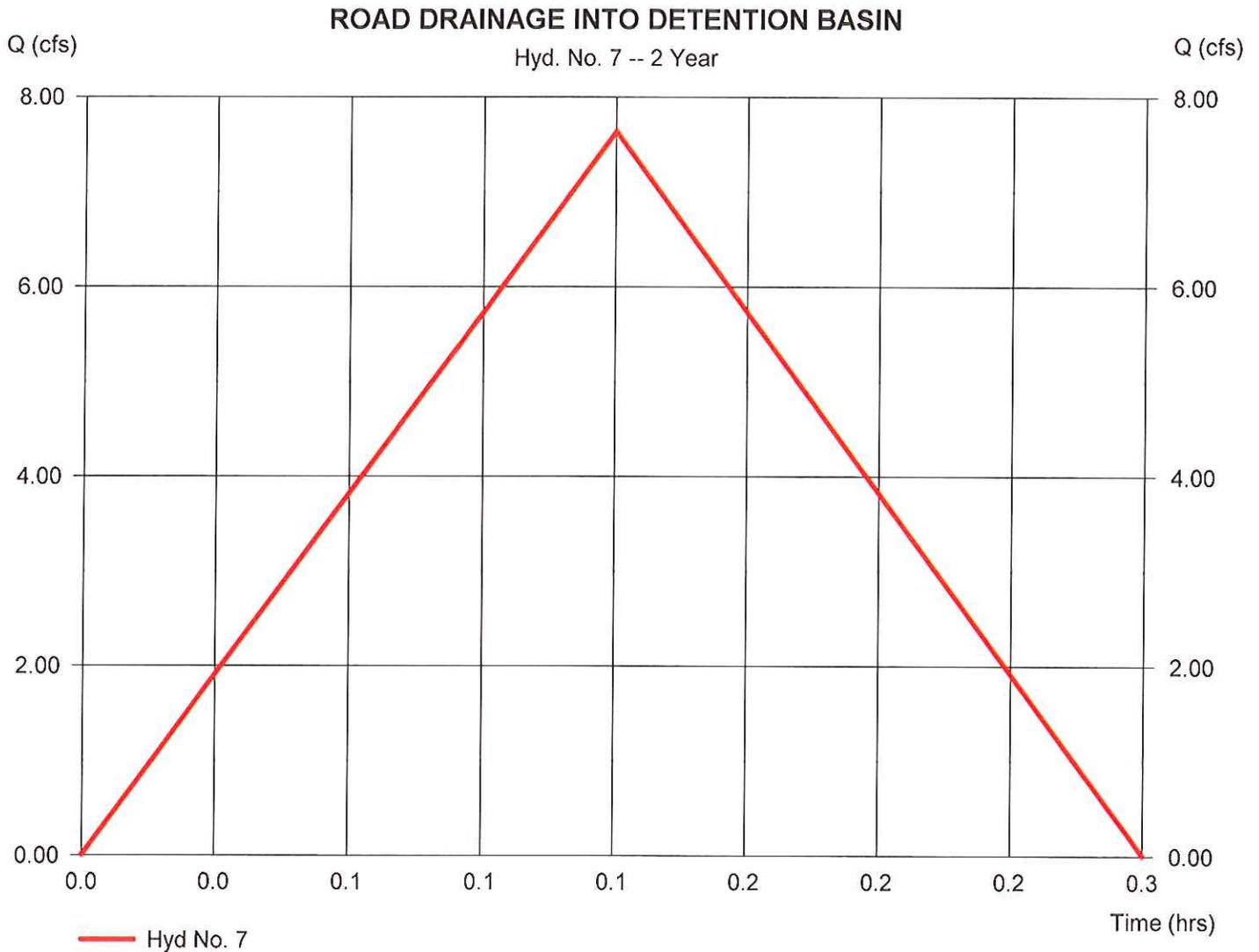
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, Oct 16, 2012

## Hyd. No. 7

### ROAD DRAINAGE INTO DETENTION BASIN

Hydrograph type	= Rational	Peak discharge	= 7.632 cfs
Storm frequency	= 2 yrs	Time to peak	= 0.13 hrs
Time interval	= 1 min	Hyd. volume	= 3,663 cuft
Drainage area	= 5.180 ac	Runoff coeff.	= 0.37
Intensity	= 3.982 in/hr	Tc by User	= 8.00 min
IDF Curve	= Hartford.IDF	Asc/Rec limb fact	= 1/1

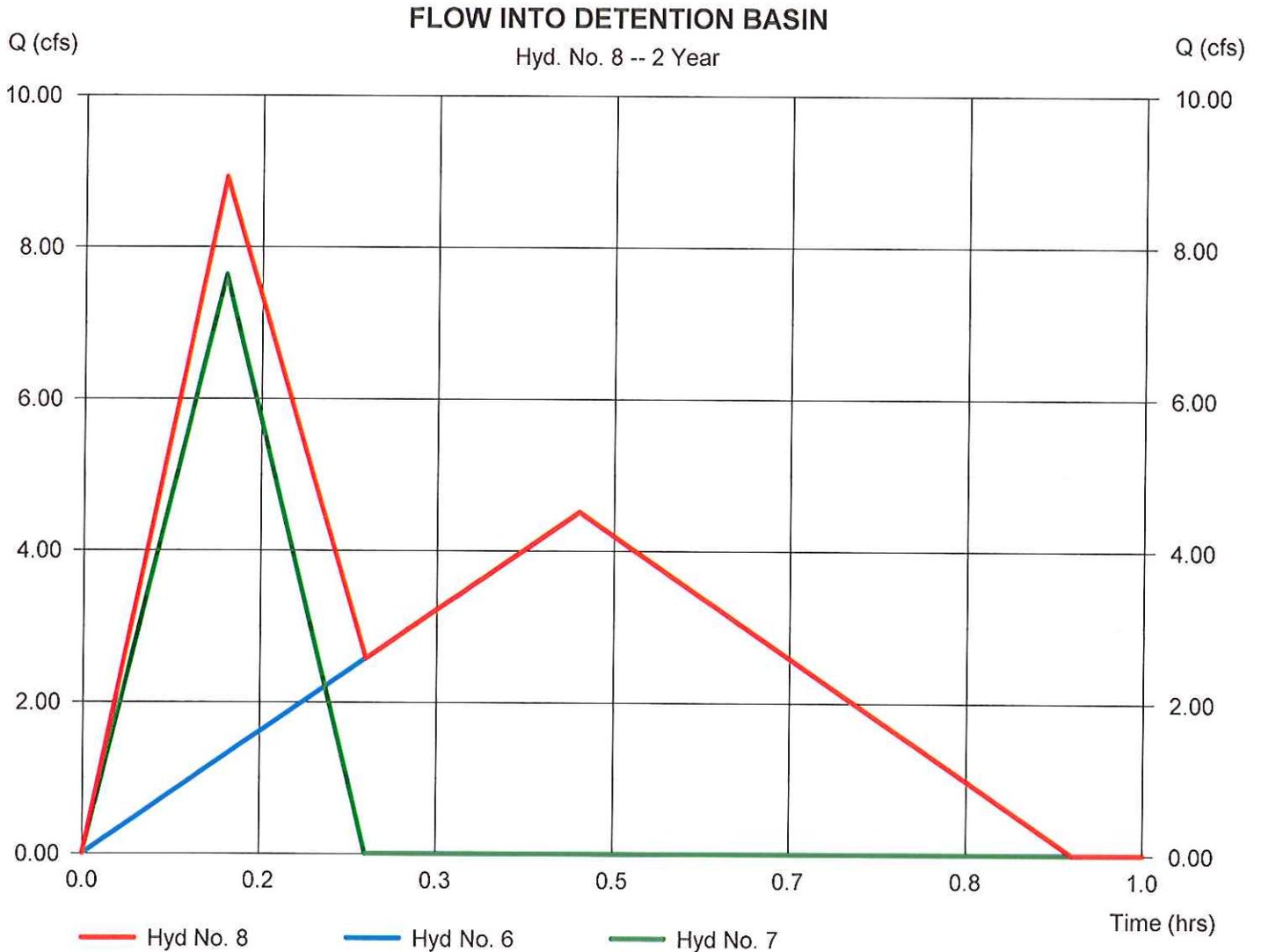


# Hydrograph Report

## Hyd. No. 8

### FLOW INTO DETENTION BASIN

Hydrograph type	= Combine	Peak discharge	= 8.921 cfs
Storm frequency	= 2 yrs	Time to peak	= 0.13 hrs
Time interval	= 1 min	Hyd. volume	= 11,242 cuft
Inflow hyds.	= 6, 7	Contrib. drain. area	= 12.670 ac



# Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

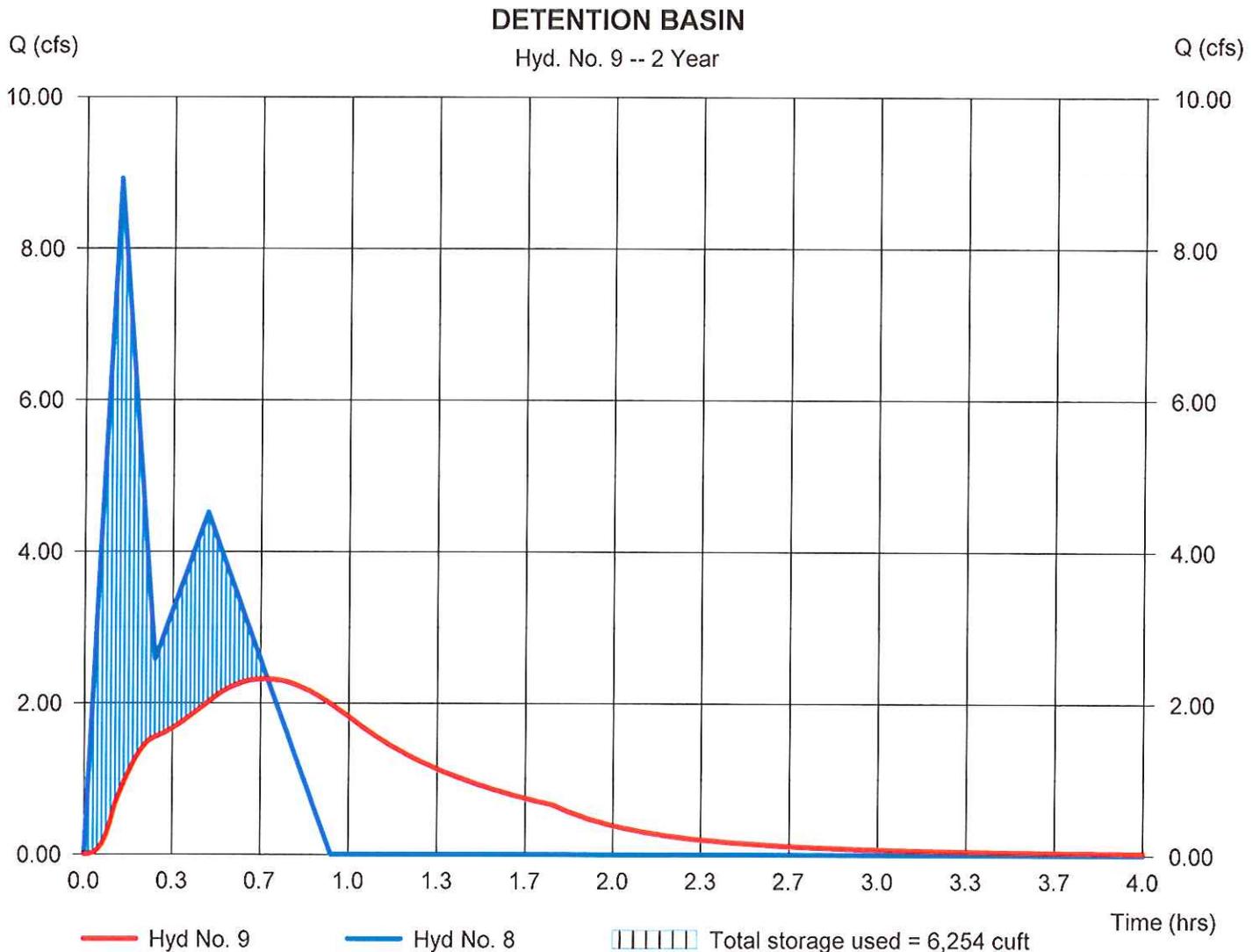
Tuesday, Oct 16, 2012

## Hyd. No. 9

### DETENTION BASIN

Hydrograph type	= Reservoir	Peak discharge	= 2.318 cfs
Storm frequency	= 2 yrs	Time to peak	= 0.68 hrs
Time interval	= 1 min	Hyd. volume	= 10,519 cuft
Inflow hyd. No.	= 8 - FLOW INTO DETENTION BASIN	Basin Elevation	= 476.33 ft
Reservoir name	= POND 3	Max. Storage	= 6,254 cuft

Storage Indication method used. Exfiltration extracted from Outflow.

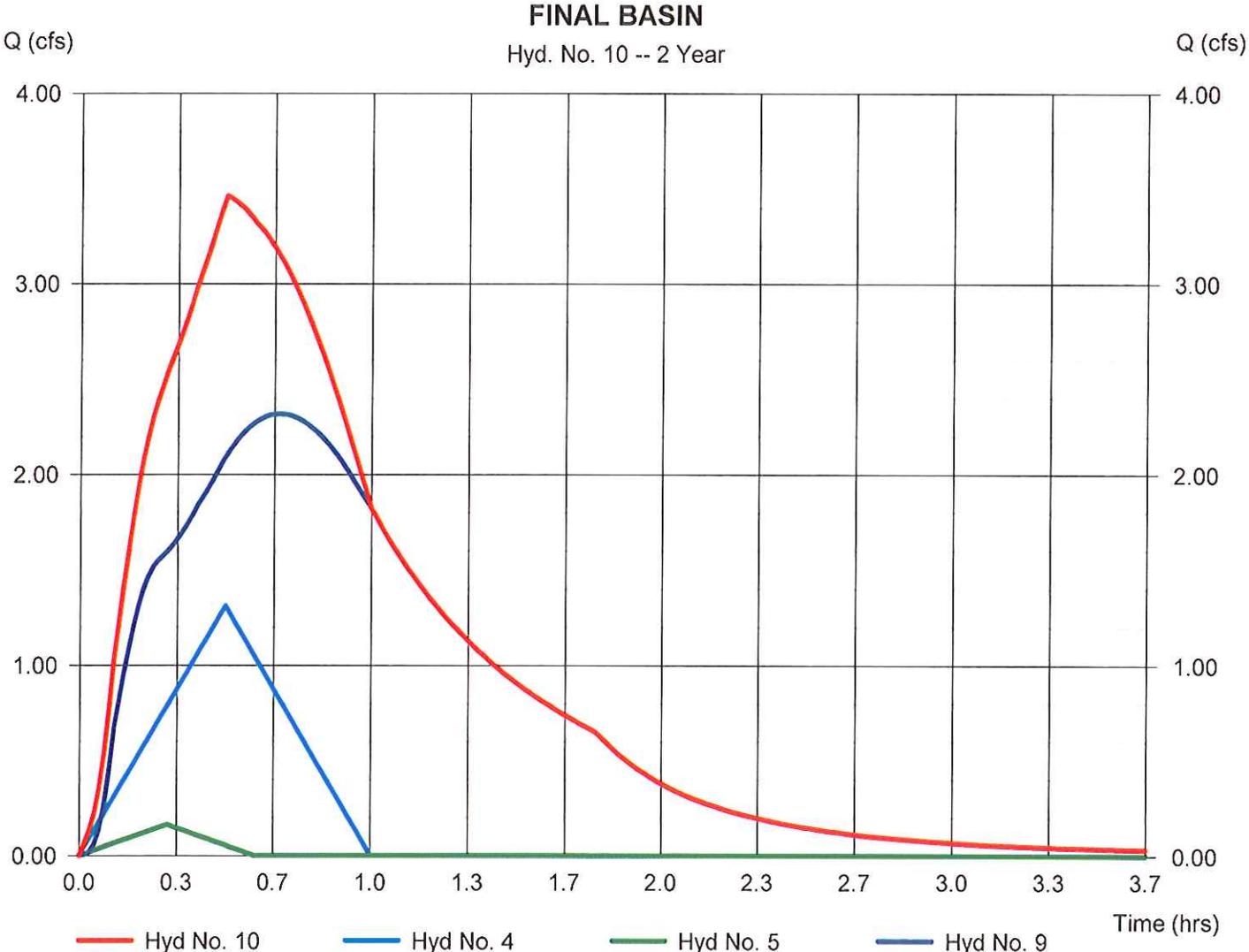


# Hydrograph Report

## Hyd. No. 10

### FINAL BASIN

Hydrograph type	= Combine	Peak discharge	= 3.460 cfs
Storm frequency	= 2 yrs	Time to peak	= 0.50 hrs
Time interval	= 1 min	Hyd. volume	= 13,052 cuft
Inflow hyds.	= 4, 5, 9	Contrib. drain. area	= 3.380 ac



# Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

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	2.298	1	44	6,065	-----	-----	-----	EXISTING CONDITIONS (EAST SI	
2	Rational	4.521	1	50	13,564	-----	-----	-----	EXISTING CONDITIONS (WEST SI	
3	Combine	6.506	1	50	19,630	1, 2	-----	-----	TOTAL FLOW @ OUTFALL	
4	Rational	1.943	1	30	3,498	-----	-----	-----	BELOW BASIN	
5	Rational	0.234	1	18	252	-----	-----	-----	FLOW INTO ROAD BASIN	
6	Rational	6.670	1	28	11,206	-----	-----	-----	OVERLAND FLOW INTO DETENTI	
7	Rational	10.41	1	8	4,995	-----	-----	-----	ROAD DRAINAGE INTO DETENTI	
8	Combine	12.31	1	8	16,201	6, 7	-----	-----	FLOW INTO DETENTION BASIN	
9	Reservoir	3.395	1	41	15,348	8	477.01	9,110	DETENTION BASIN	
10	Combine	5.027	1	30	19,098	4, 5, 9	-----	-----	FINAL BASIN	
211053 HYDROGRAPHS.gpw					Return Period: 10 Year			Tuesday, Oct 16, 2012		

# Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, Oct 16, 2012

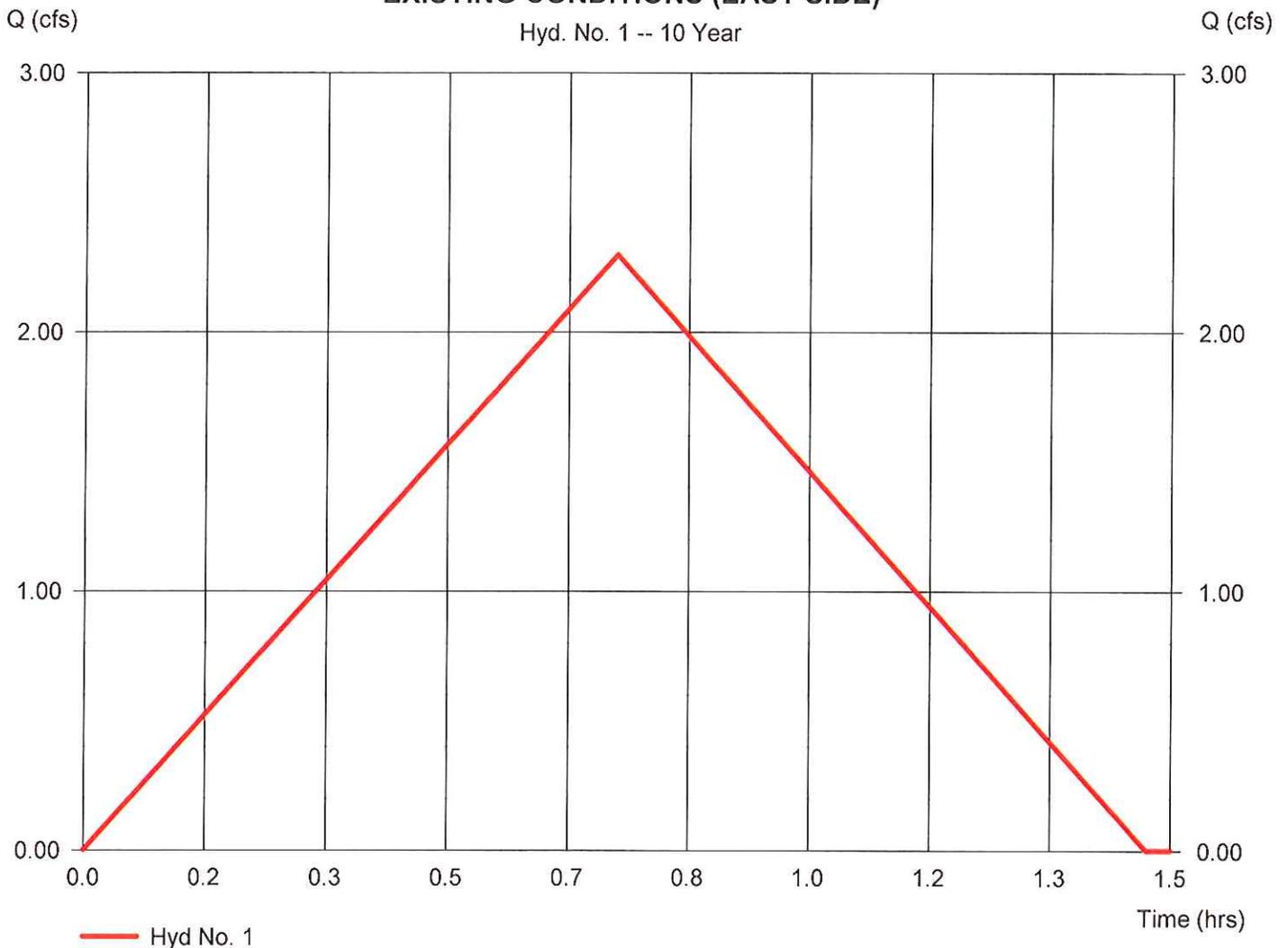
## Hyd. No. 1

### EXISTING CONDITIONS (EAST SIDE)

Hydrograph type	= Rational	Peak discharge	= 2.298 cfs
Storm frequency	= 10 yrs	Time to peak	= 0.73 hrs
Time interval	= 1 min	Hyd. volume	= 6,065 cuft
Drainage area	= 5.115 ac	Runoff coeff.	= 0.2
Intensity	= 2.246 in/hr	Tc by TR55	= 44.00 min
IDF Curve	= Hartford.IDF	Asc/Rec limb fact	= 1/1

### EXISTING CONDITIONS (EAST SIDE)

Hyd. No. 1 -- 10 Year



# Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, Oct 16, 2012

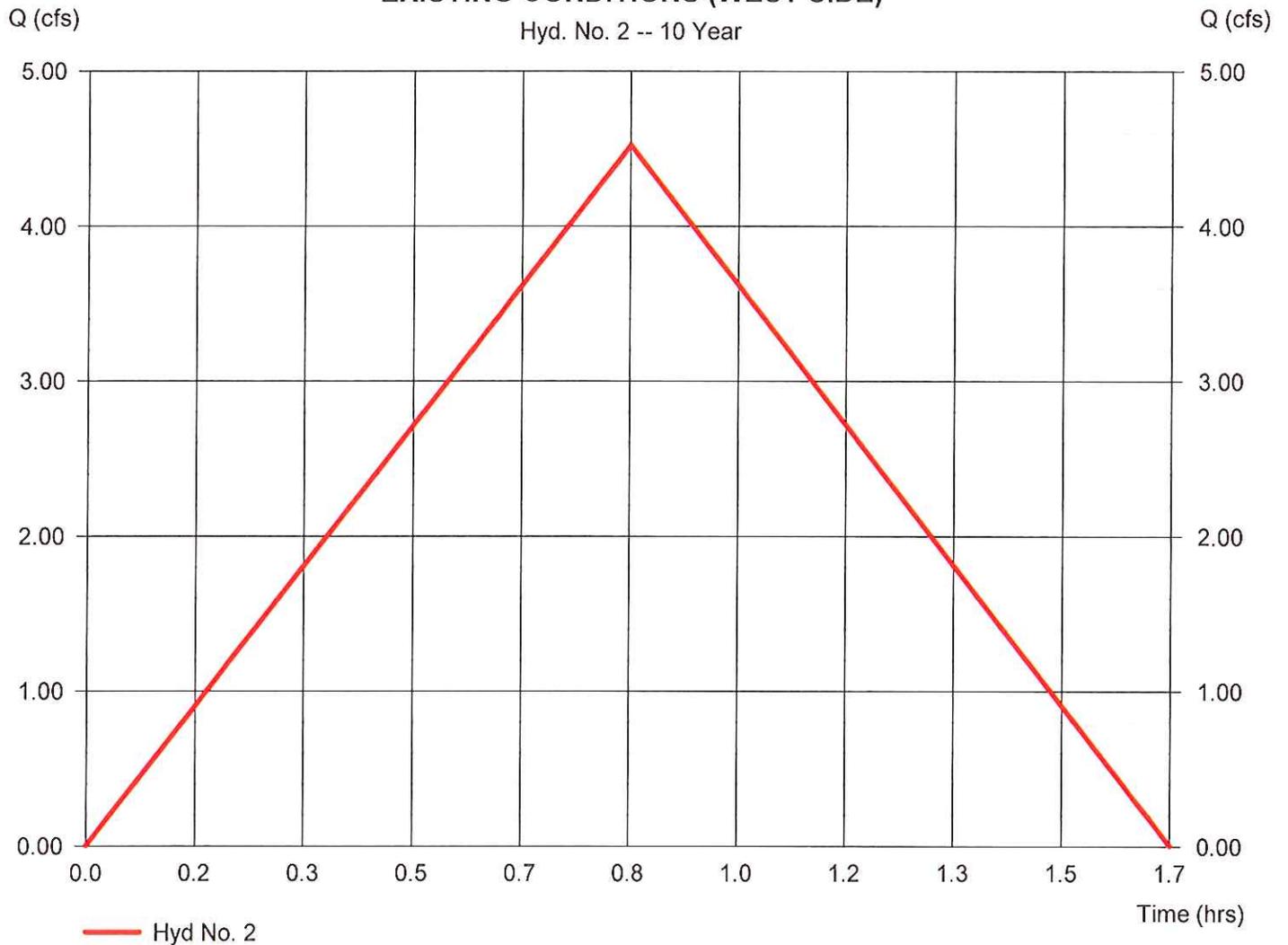
## Hyd. No. 2

### EXISTING CONDITIONS (WEST SIDE)

Hydrograph type	= Rational	Peak discharge	= 4.521 cfs
Storm frequency	= 10 yrs	Time to peak	= 0.83 hrs
Time interval	= 1 min	Hyd. volume	= 13,564 cuft
Drainage area	= 10.940 ac	Runoff coeff.	= 0.2
Intensity	= 2.066 in/hr	Tc by TR55	= 50.00 min
IDF Curve	= Hartford.IDF	Asc/Rec limb fact	= 1/1

### EXISTING CONDITIONS (WEST SIDE)

Hyd. No. 2 -- 10 Year



# Hydrograph Report

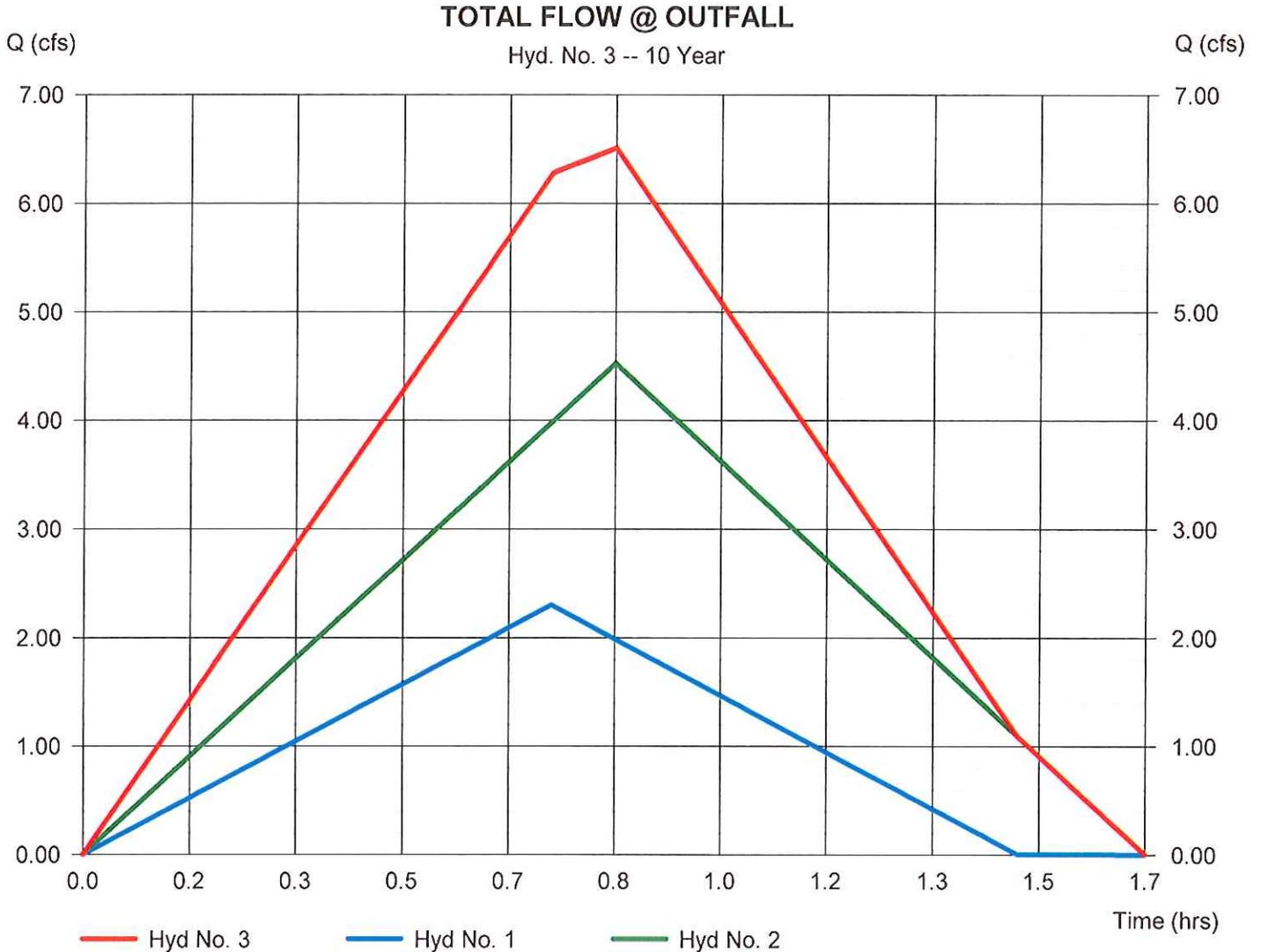
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, Oct 16, 2012

## Hyd. No. 3

### TOTAL FLOW @ OUTFALL

Hydrograph type	= Combine	Peak discharge	= 6.506 cfs
Storm frequency	= 10 yrs	Time to peak	= 0.83 hrs
Time interval	= 1 min	Hyd. volume	= 19,630 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 16.055 ac



# Hydrograph Report

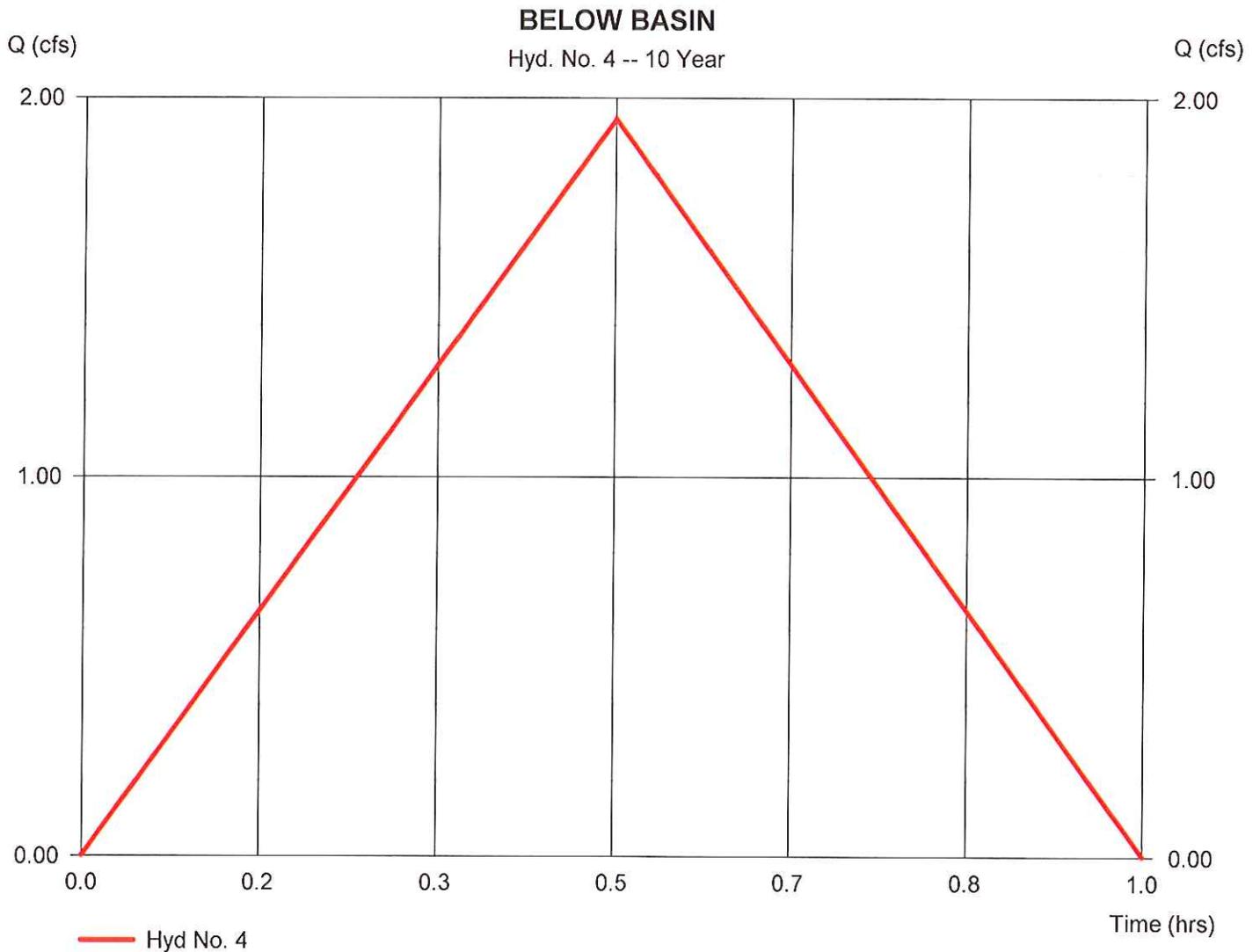
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

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## Hyd. No. 4

### BELOW BASIN

Hydrograph type	= Rational	Peak discharge	= 1.943 cfs
Storm frequency	= 10 yrs	Time to peak	= 0.50 hrs
Time interval	= 1 min	Hyd. volume	= 3,498 cuft
Drainage area	= 3.100 ac	Runoff coeff.	= 0.22
Intensity	= 2.850 in/hr	Tc by TR55	= 30.00 min
IDF Curve	= Hartford.IDF	Asc/Rec limb fact	= 1/1



# Hydrograph Report

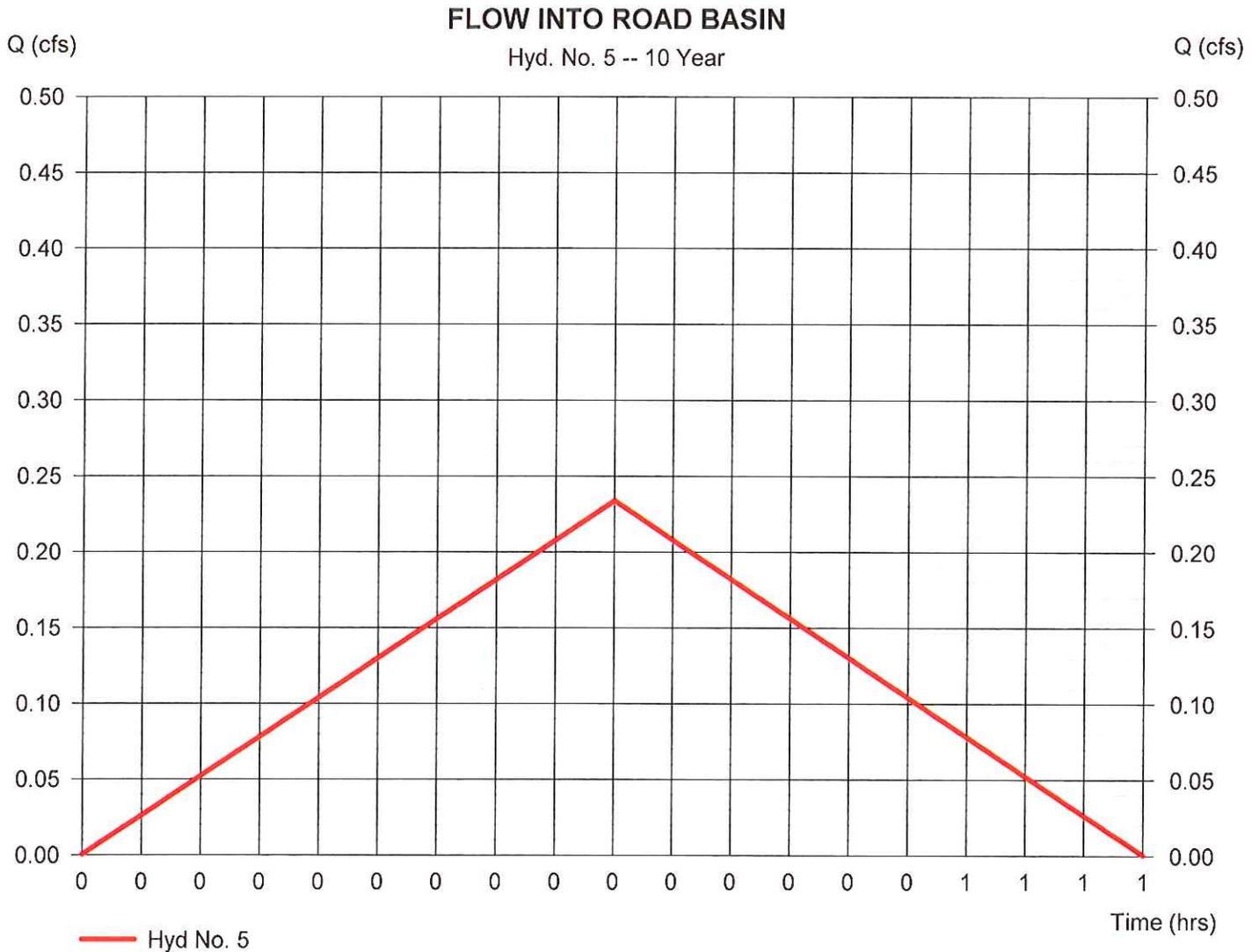
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, Oct 16, 2012

## Hyd. No. 5

### FLOW INTO ROAD BASIN

Hydrograph type	= Rational	Peak discharge	= 0.234 cfs
Storm frequency	= 10 yrs	Time to peak	= 0.30 hrs
Time interval	= 1 min	Hyd. volume	= 252 cuft
Drainage area	= 0.280 ac	Runoff coeff.	= 0.22
Intensity	= 3.791 in/hr	Tc by TR55	= 18.00 min
IDF Curve	= Hartford.IDF	Asc/Rec limb fact	= 1/1

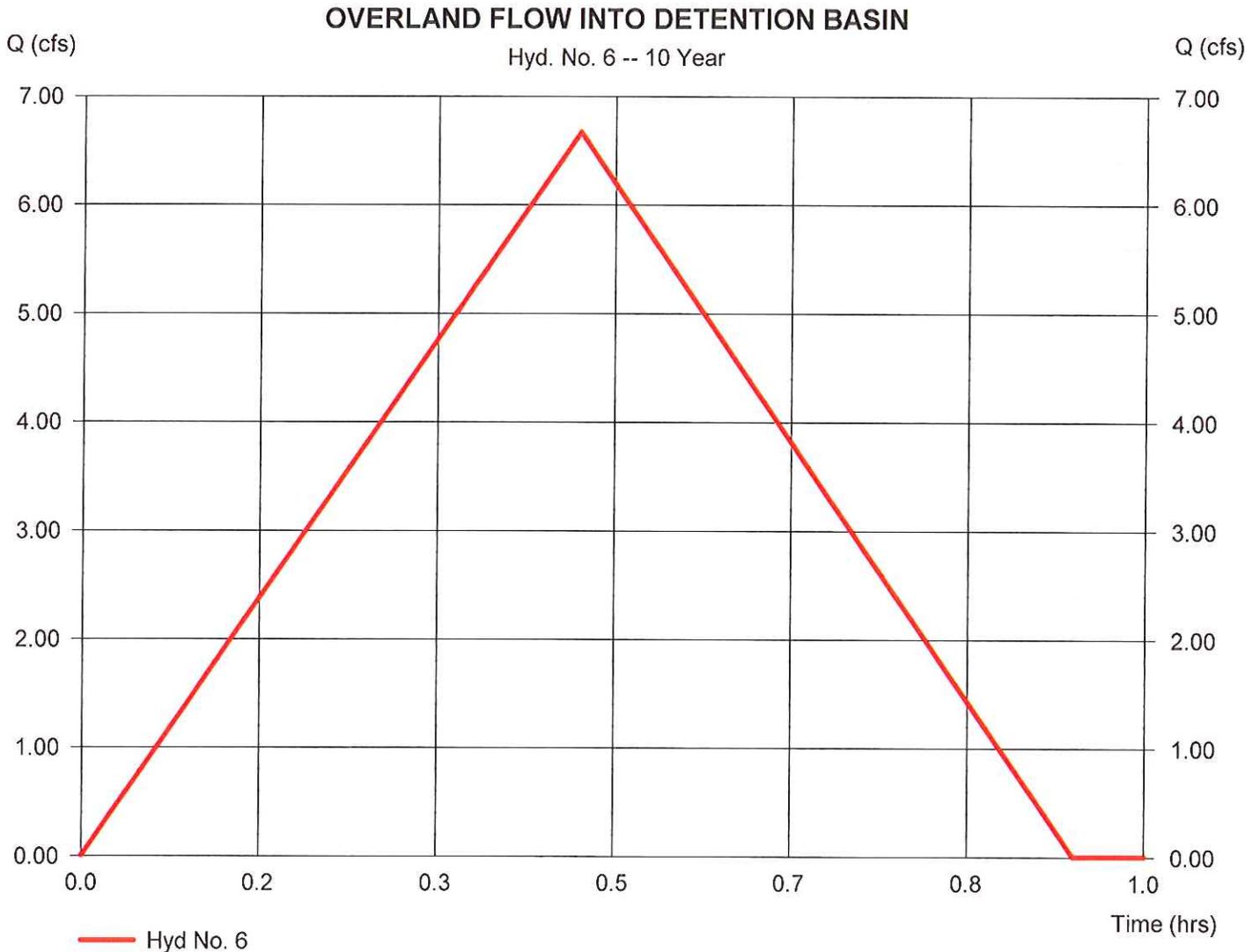


# Hydrograph Report

## Hyd. No. 6

### OVERLAND FLOW INTO DETENTION BASIN

Hydrograph type	= Rational	Peak discharge	= 6.670 cfs
Storm frequency	= 10 yrs	Time to peak	= 0.47 hrs
Time interval	= 1 min	Hyd. volume	= 11,206 cuft
Drainage area	= 7.490 ac	Runoff coeff.	= 0.3
Intensity	= 2.969 in/hr	Tc by TR55	= 28.00 min
IDF Curve	= Hartford.IDF	Asc/Rec limb fact	= 1/1



# Hydrograph Report

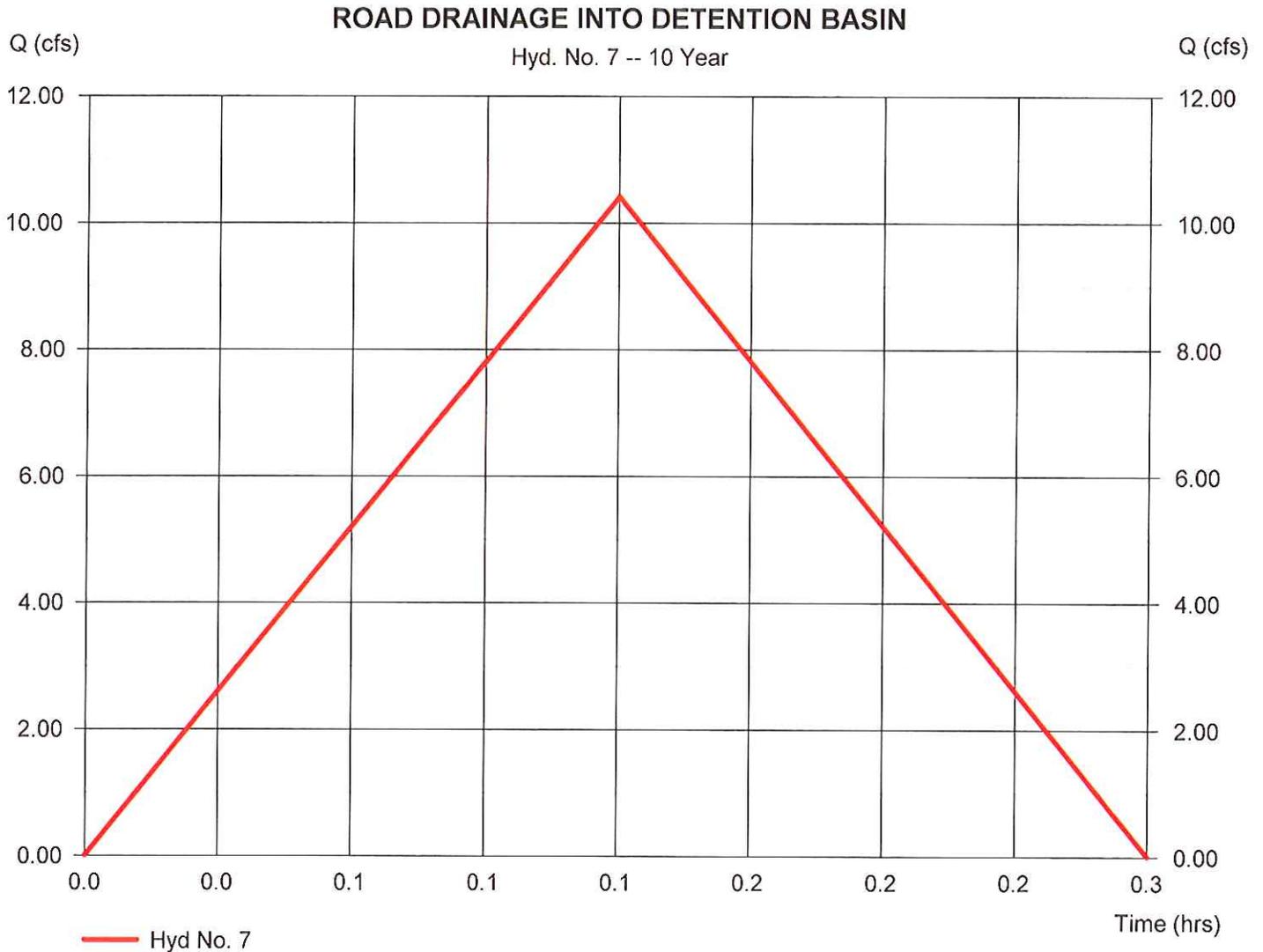
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, Oct 16, 2012

## Hyd. No. 7

### ROAD DRAINAGE INTO DETENTION BASIN

Hydrograph type	= Rational	Peak discharge	= 10.41 cfs
Storm frequency	= 10 yrs	Time to peak	= 0.13 hrs
Time interval	= 1 min	Hyd. volume	= 4,995 cuft
Drainage area	= 5.180 ac	Runoff coeff.	= 0.37
Intensity	= 5.429 in/hr	Tc by User	= 8.00 min
IDF Curve	= Hartford.IDF	Asc/Rec limb fact	= 1/1



# Hydrograph Report

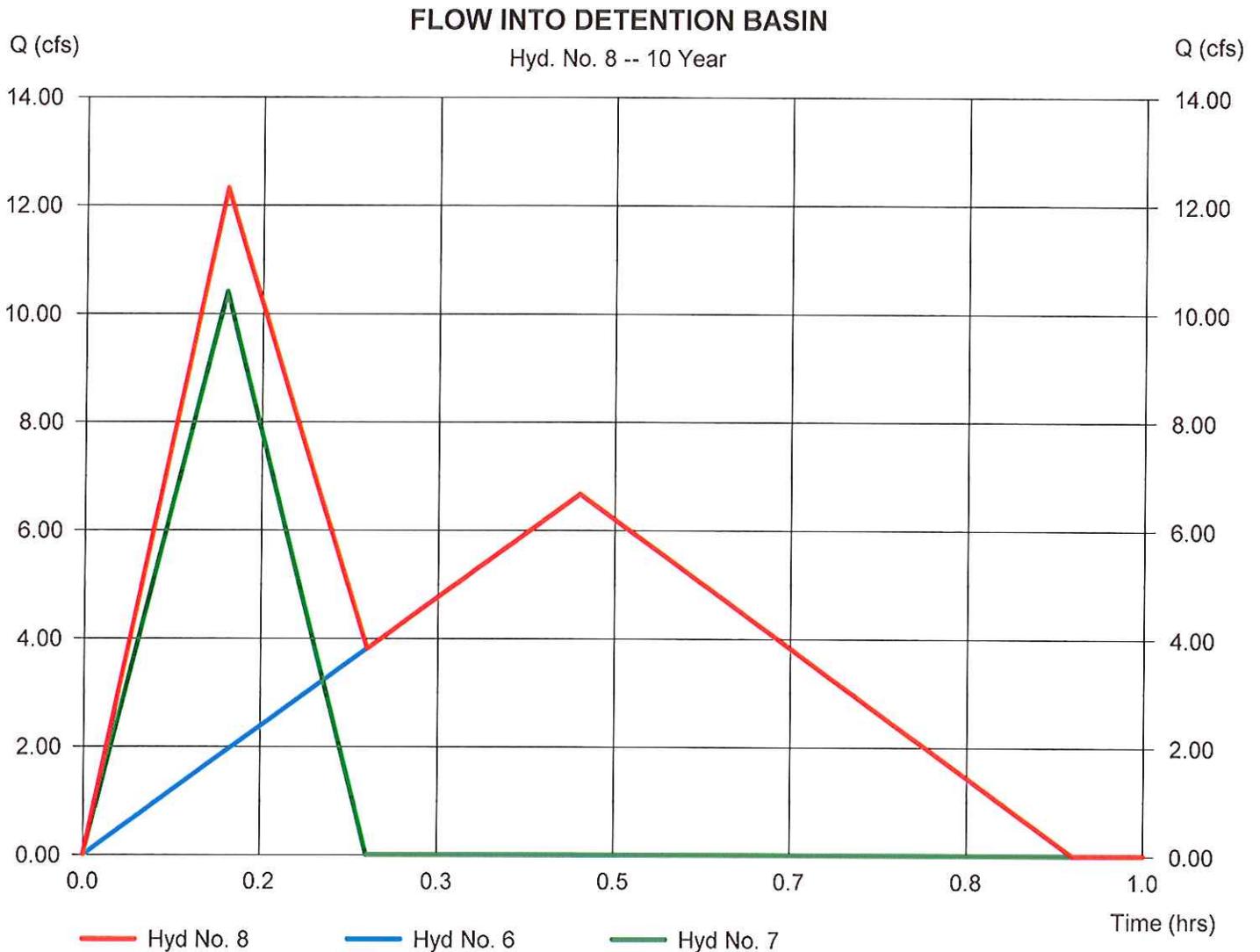
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, Oct 16, 2012

## Hyd. No. 8

### FLOW INTO DETENTION BASIN

Hydrograph type	= Combine	Peak discharge	= 12.31 cfs
Storm frequency	= 10 yrs	Time to peak	= 0.13 hrs
Time interval	= 1 min	Hyd. volume	= 16,201 cuft
Inflow hyds.	= 6, 7	Contrib. drain. area	= 12.670 ac



# Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

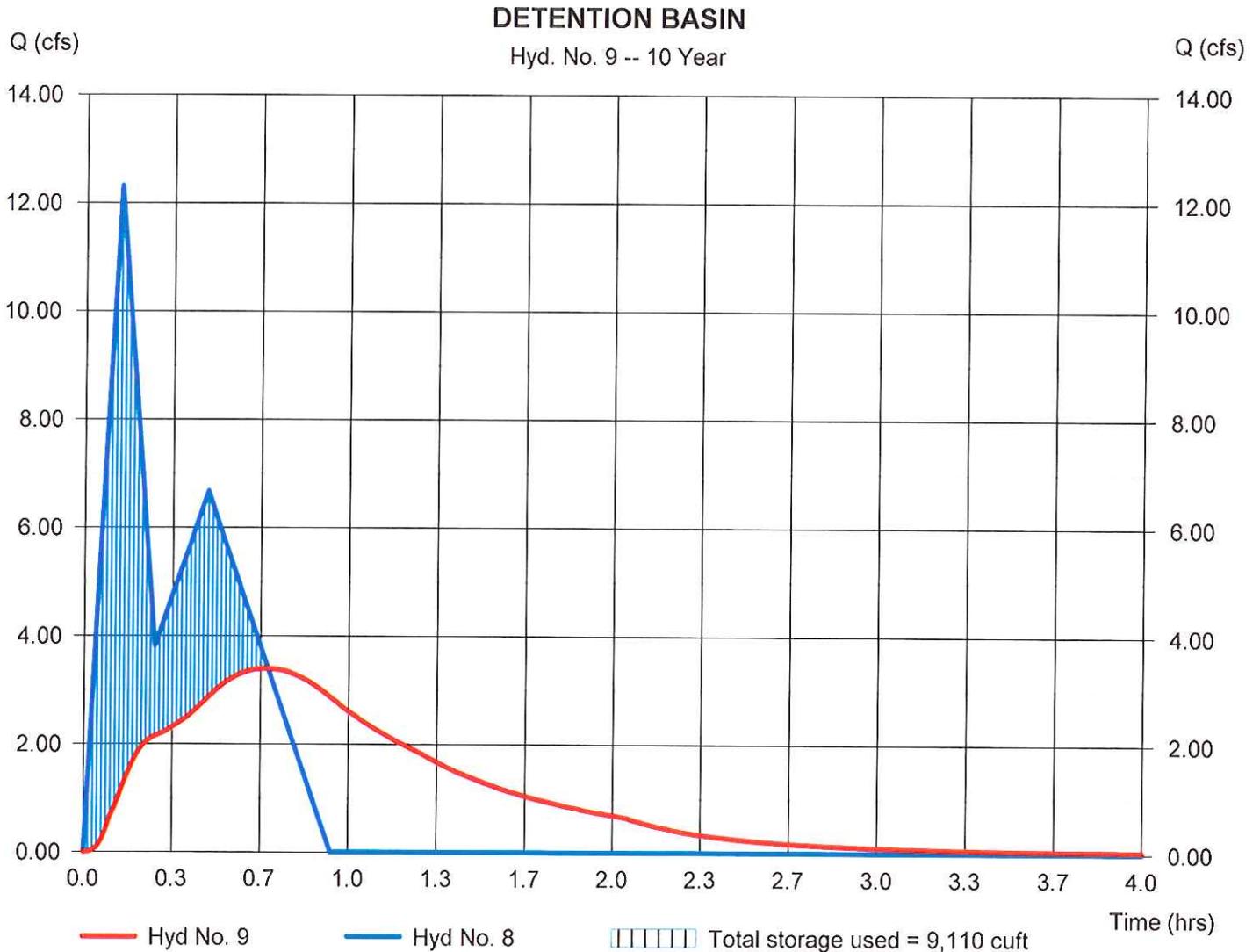
Tuesday, Oct 16, 2012

## Hyd. No. 9

### DETENTION BASIN

Hydrograph type	= Reservoir	Peak discharge	= 3.395 cfs
Storm frequency	= 10 yrs	Time to peak	= 0.68 hrs
Time interval	= 1 min	Hyd. volume	= 15,348 cuft
Inflow hyd. No.	= 8 - FLOW INTO DETENTION BASIN	Basin Elevation	= 477.01 ft
Reservoir name	= POND 3	Max. Storage	= 9,110 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



# Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

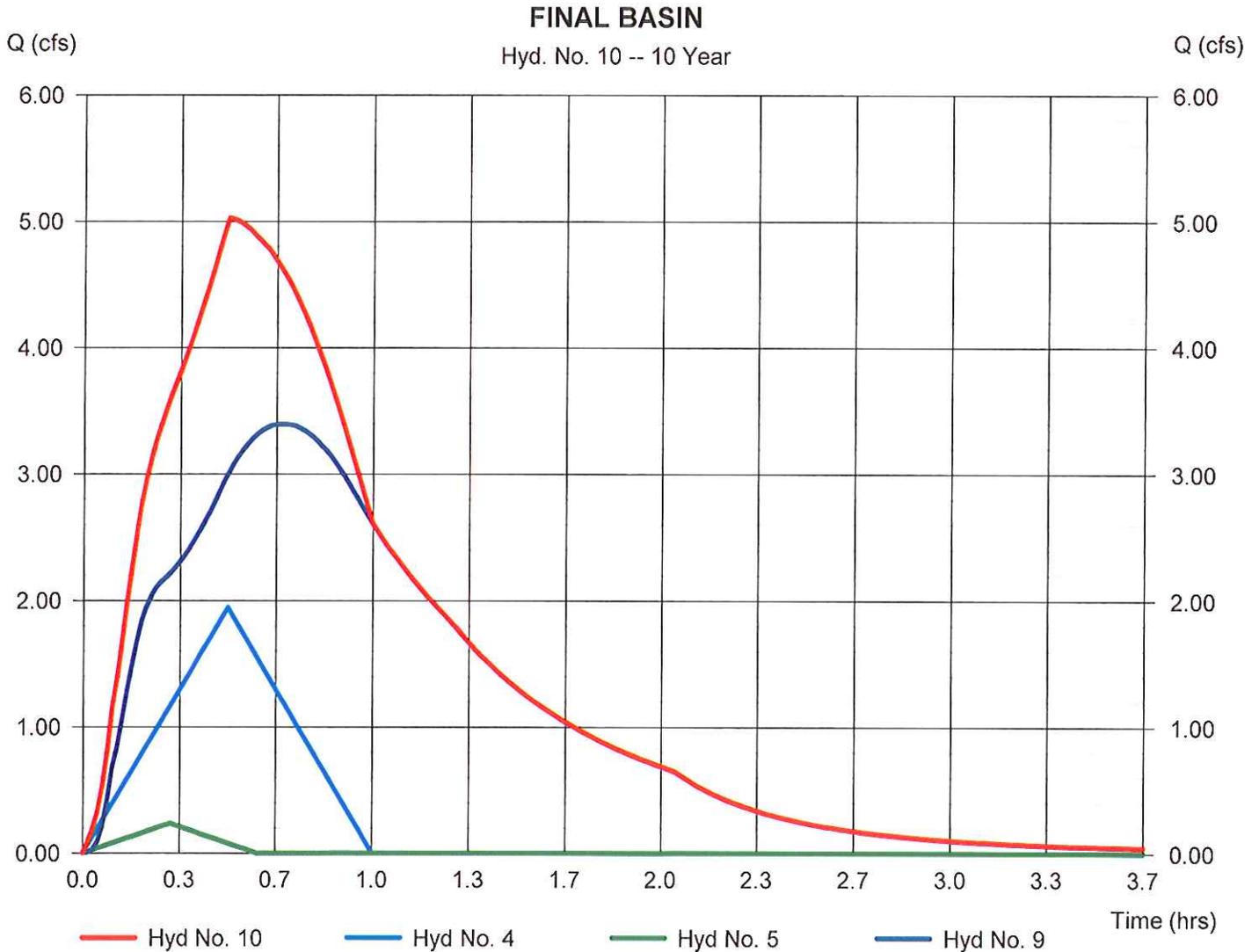
Tuesday, Oct 16, 2012

## Hyd. No. 10

### FINAL BASIN

Hydrograph type = Combine  
Storm frequency = 10 yrs  
Time interval = 1 min  
Inflow hyds. = 4, 5, 9

Peak discharge = 5.027 cfs  
Time to peak = 0.50 hrs  
Hyd. volume = 19,098 cuft  
Contrib. drain. area = 3.380 ac



# Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

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	2.744	1	44	7,245	-----	-----	-----	EXISTING CONDITIONS (EAST SI
2	Rational	5.407	1	50	16,221	-----	-----	-----	EXISTING CONDITIONS (WEST SI
3	Combine	7.777	1	50	23,466	1, 2	-----	-----	TOTAL FLOW @ OUTFALL
4	Rational	2.311	1	30	4,161	-----	-----	-----	BELOW BASIN
5	Rational	0.276	1	18	298	-----	-----	-----	FLOW INTO ROAD BASIN
6	Rational	7.926	1	28	13,316	-----	-----	-----	OVERLAND FLOW INTO DETENTI
7	Rational	12.09	1	8	5,802	-----	-----	-----	ROAD DRAINAGE INTO DETENTI
8	Combine	14.35	1	8	19,118	6, 7	-----	-----	FLOW INTO DETENTION BASIN
9	Reservoir	3.968	1	42	18,198	8	477.34	10,807	DETENTION BASIN
10	Combine	5.952	1	30	22,656	4, 5, 9	-----	-----	FINAL BASIN
211053 HYDROGRAPHS.gpw					Return Period: 25 Year			Tuesday, Oct 16, 2012	

# Hydrograph Report

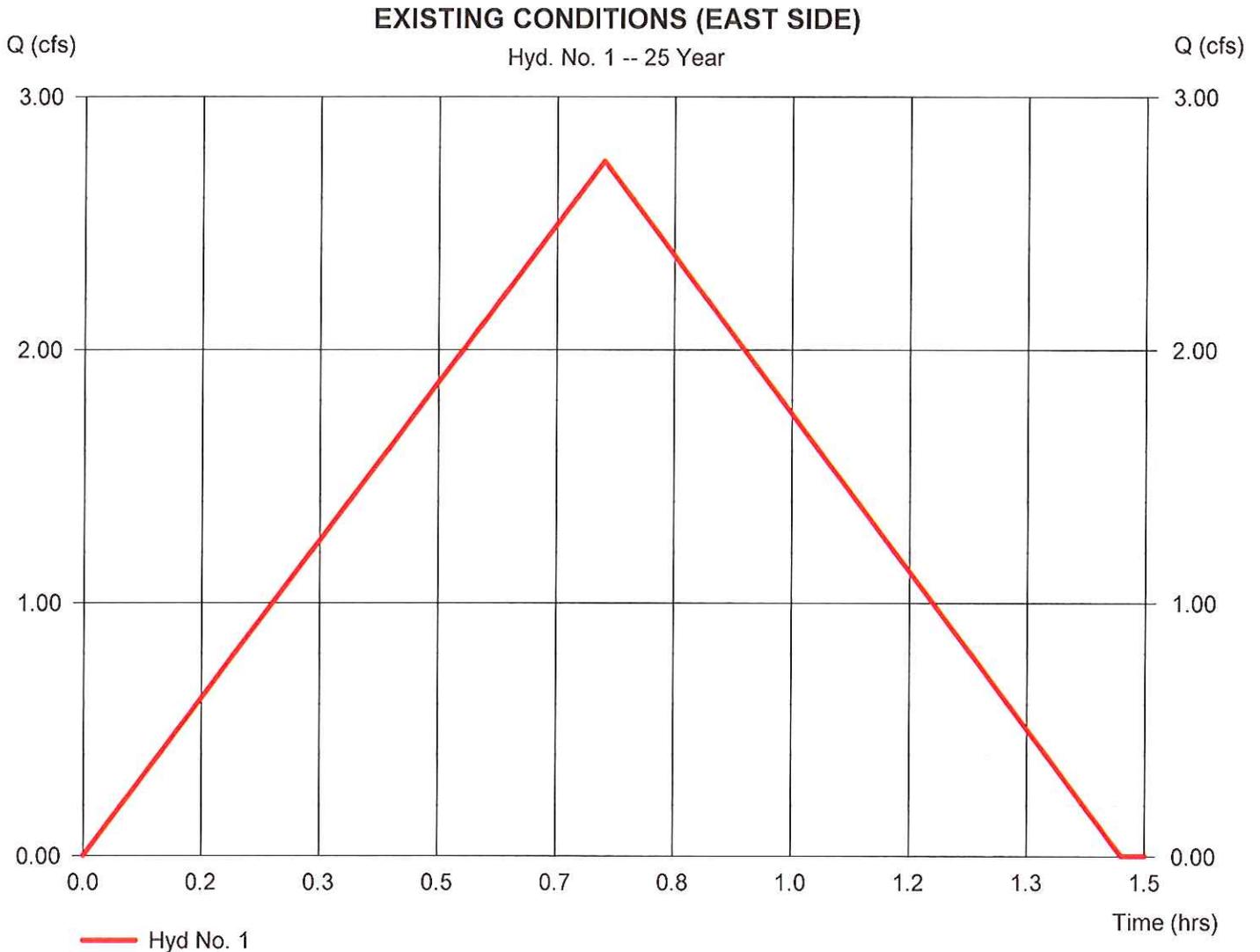
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, Oct 16, 2012

## Hyd. No. 1

### EXISTING CONDITIONS (EAST SIDE)

Hydrograph type	= Rational	Peak discharge	= 2.744 cfs
Storm frequency	= 25 yrs	Time to peak	= 0.73 hrs
Time interval	= 1 min	Hyd. volume	= 7,245 cuft
Drainage area	= 5.115 ac	Runoff coeff.	= 0.2
Intensity	= 2.683 in/hr	Tc by TR55	= 44.00 min
IDF Curve	= Hartford.IDF	Asc/Rec limb fact	= 1/1



# Hydrograph Report

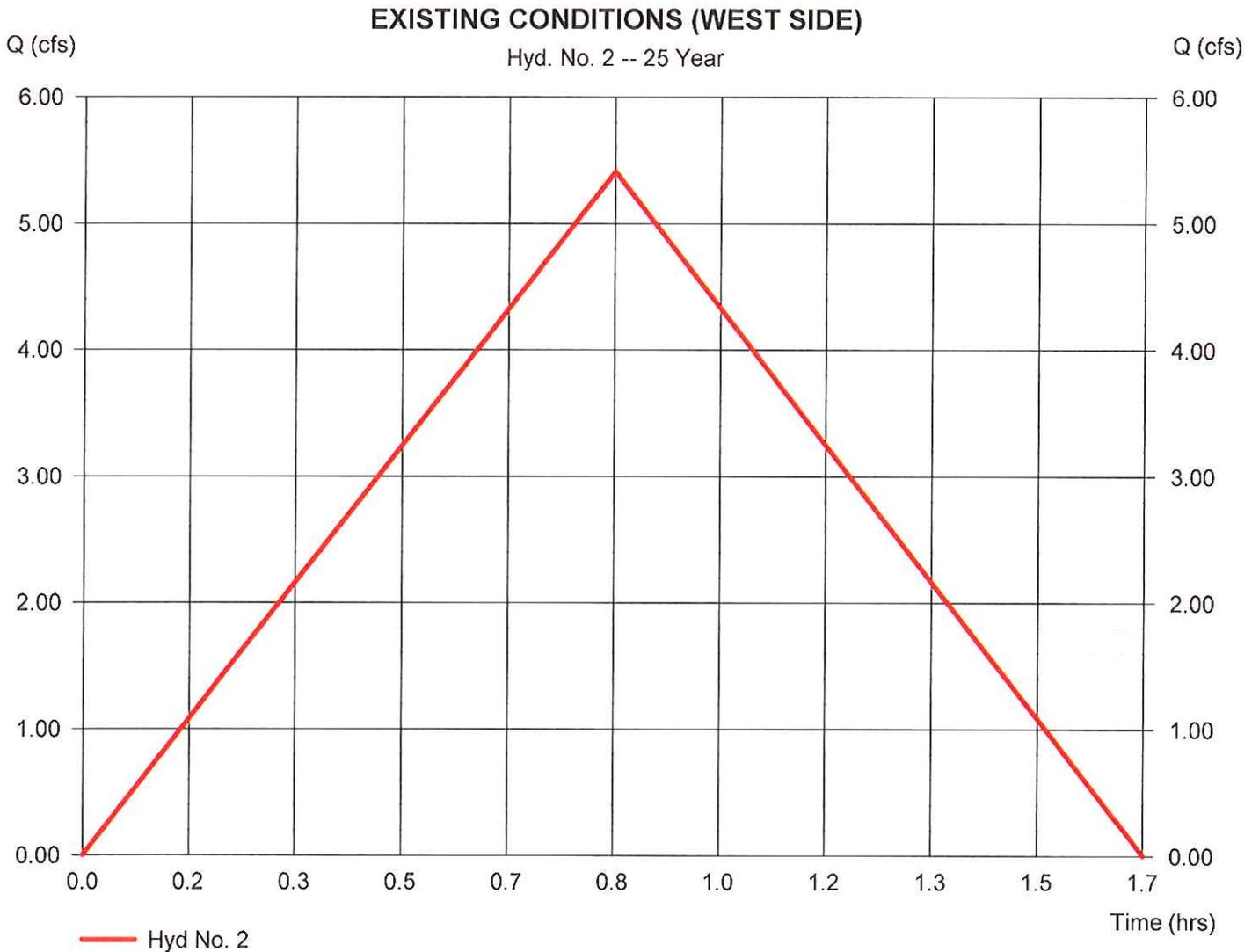
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, Oct 16, 2012

## Hyd. No. 2

### EXISTING CONDITIONS (WEST SIDE)

Hydrograph type	= Rational	Peak discharge	= 5.407 cfs
Storm frequency	= 25 yrs	Time to peak	= 0.83 hrs
Time interval	= 1 min	Hyd. volume	= 16,221 cuft
Drainage area	= 10.940 ac	Runoff coeff.	= 0.2
Intensity	= 2.471 in/hr	Tc by TR55	= 50.00 min
IDF Curve	= Hartford.IDF	Asc/Rec limb fact	= 1/1



# Hydrograph Report

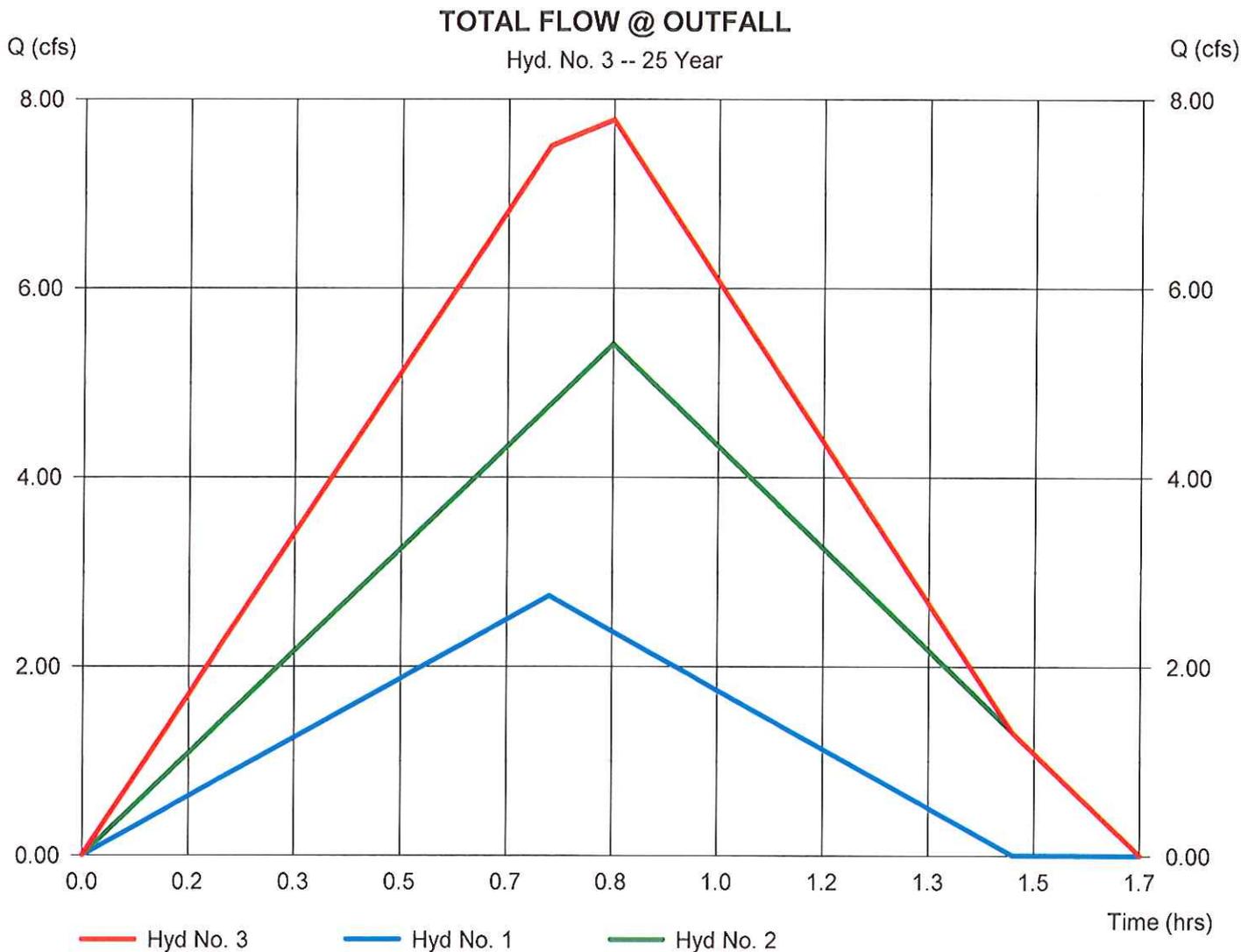
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, Oct 16, 2012

## Hyd. No. 3

### TOTAL FLOW @ OUTFALL

Hydrograph type	= Combine	Peak discharge	= 7.777 cfs
Storm frequency	= 25 yrs	Time to peak	= 0.83 hrs
Time interval	= 1 min	Hyd. volume	= 23,466 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 16.055 ac



# Hydrograph Report

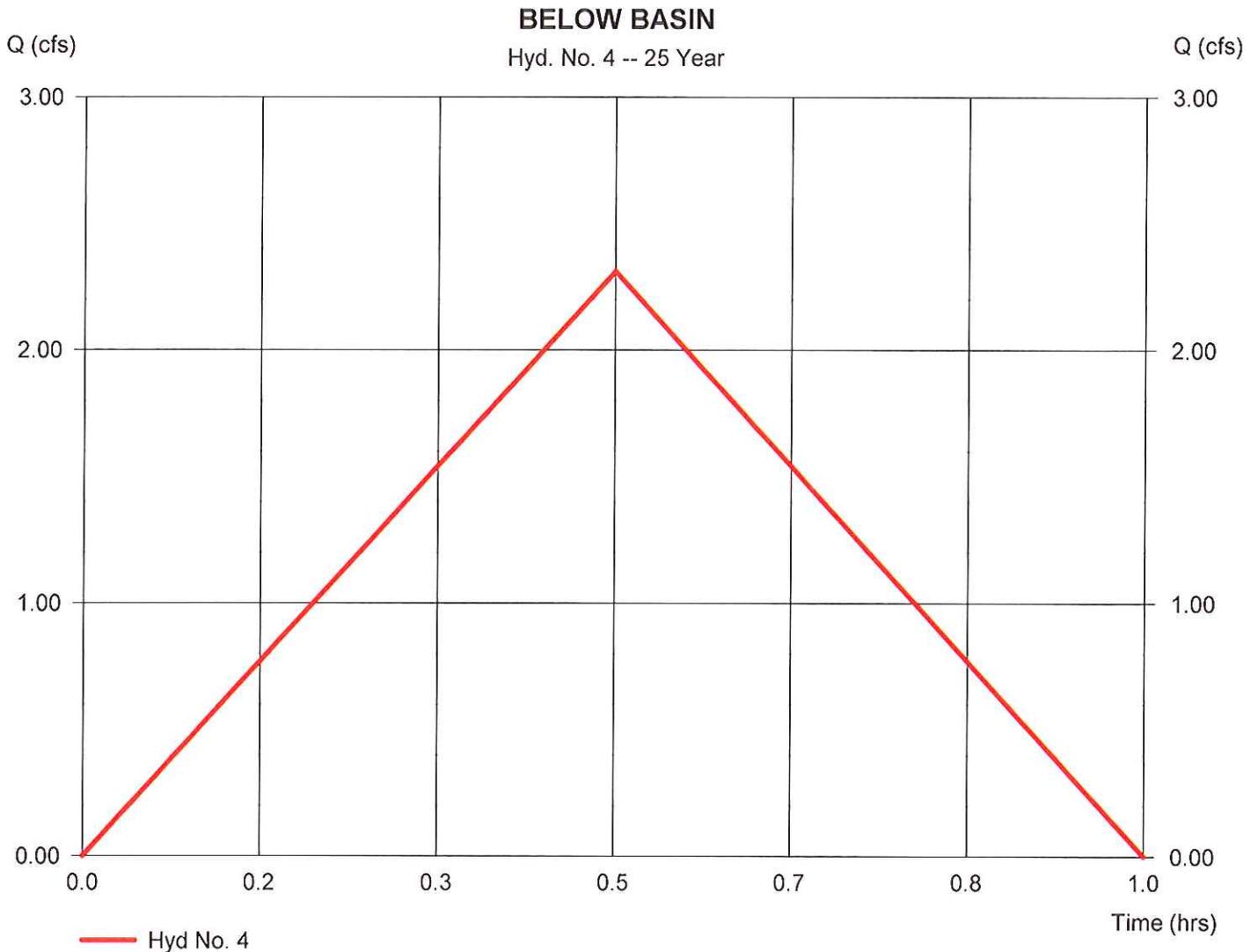
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, Oct 16, 2012

## Hyd. No. 4

BELOW BASIN

Hydrograph type	= Rational	Peak discharge	= 2.311 cfs
Storm frequency	= 25 yrs	Time to peak	= 0.50 hrs
Time interval	= 1 min	Hyd. volume	= 4,161 cuft
Drainage area	= 3.100 ac	Runoff coeff.	= 0.22
Intensity	= 3.389 in/hr	Tc by TR55	= 30.00 min
IDF Curve	= Hartford.IDF	Asc/Rec limb fact	= 1/1



# Hydrograph Report

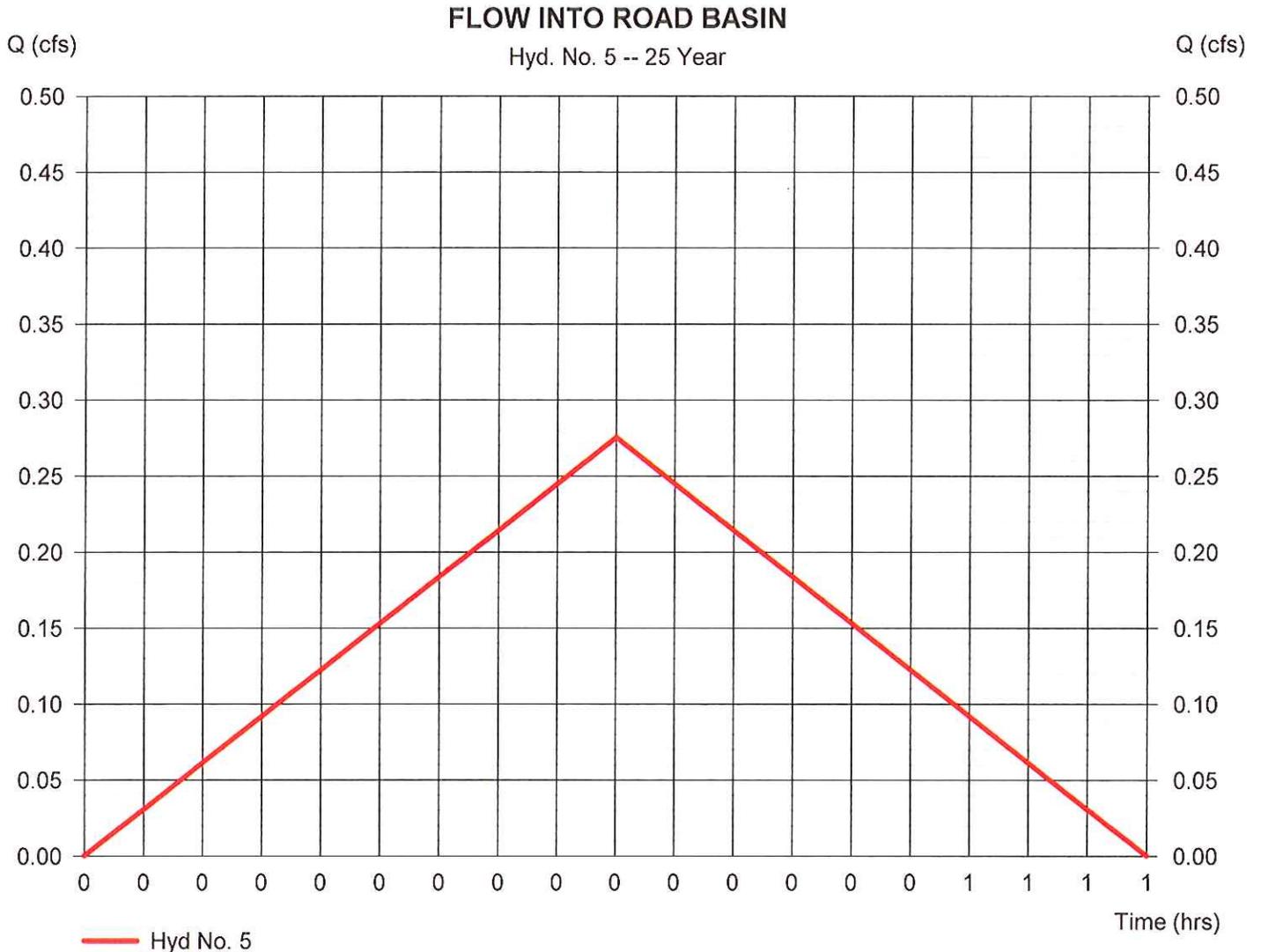
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, Oct 16, 2012

## Hyd. No. 5

### FLOW INTO ROAD BASIN

Hydrograph type	= Rational	Peak discharge	= 0.276 cfs
Storm frequency	= 25 yrs	Time to peak	= 0.30 hrs
Time interval	= 1 min	Hyd. volume	= 298 cuft
Drainage area	= 0.280 ac	Runoff coeff.	= 0.22
Intensity	= 4.474 in/hr	Tc by TR55	= 18.00 min
IDF Curve	= Hartford.IDF	Asc/Rec limb fact	= 1/1



# Hydrograph Report

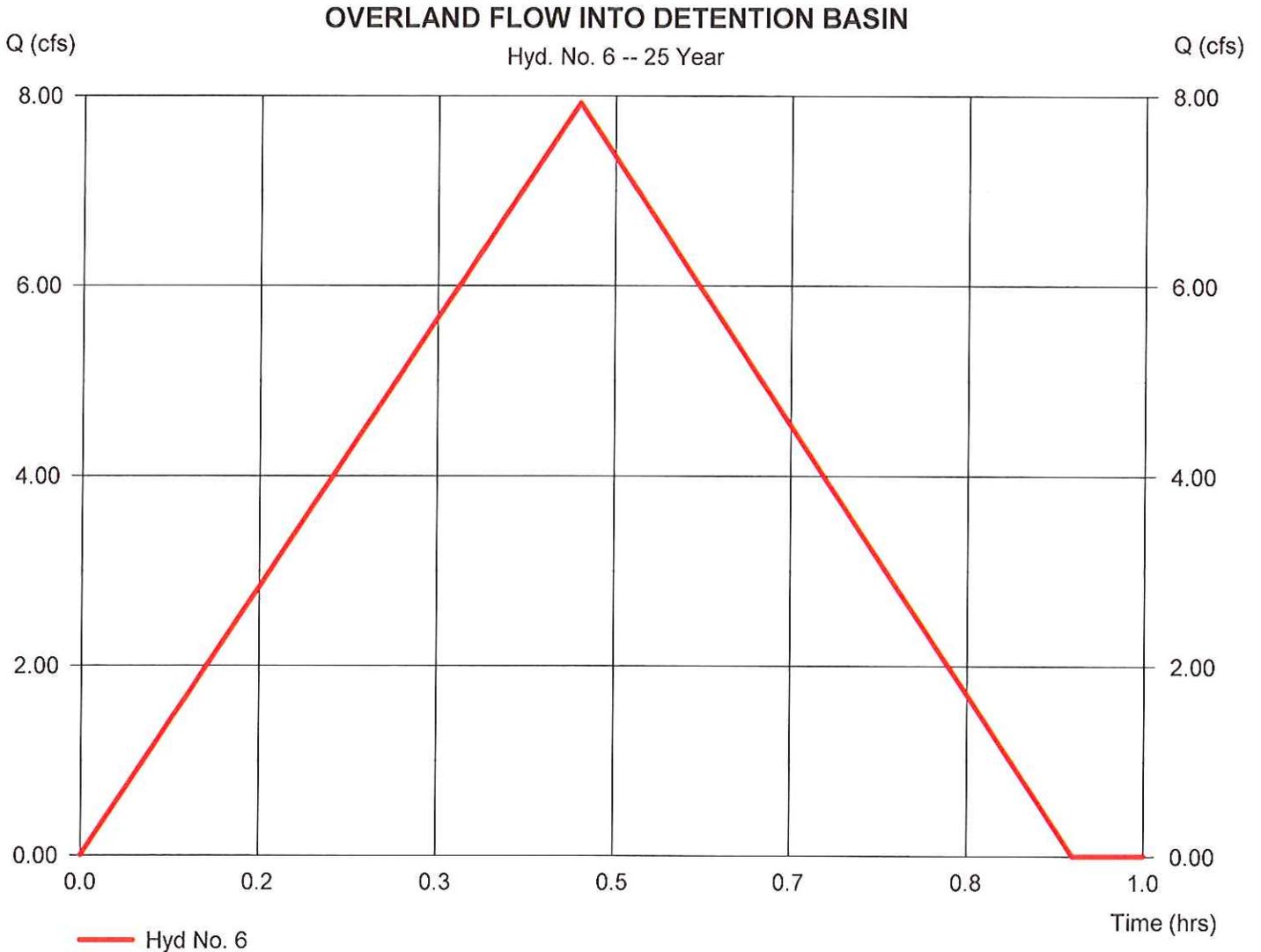
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, Oct 16, 2012

## Hyd. No. 6

### OVERLAND FLOW INTO DETENTION BASIN

Hydrograph type	= Rational	Peak discharge	= 7.926 cfs
Storm frequency	= 25 yrs	Time to peak	= 0.47 hrs
Time interval	= 1 min	Hyd. volume	= 13,316 cuft
Drainage area	= 7.490 ac	Runoff coeff.	= 0.3
Intensity	= 3.527 in/hr	Tc by TR55	= 28.00 min
IDF Curve	= Hartford.IDF	Asc/Rec limb fact	= 1/1



# Hydrograph Report

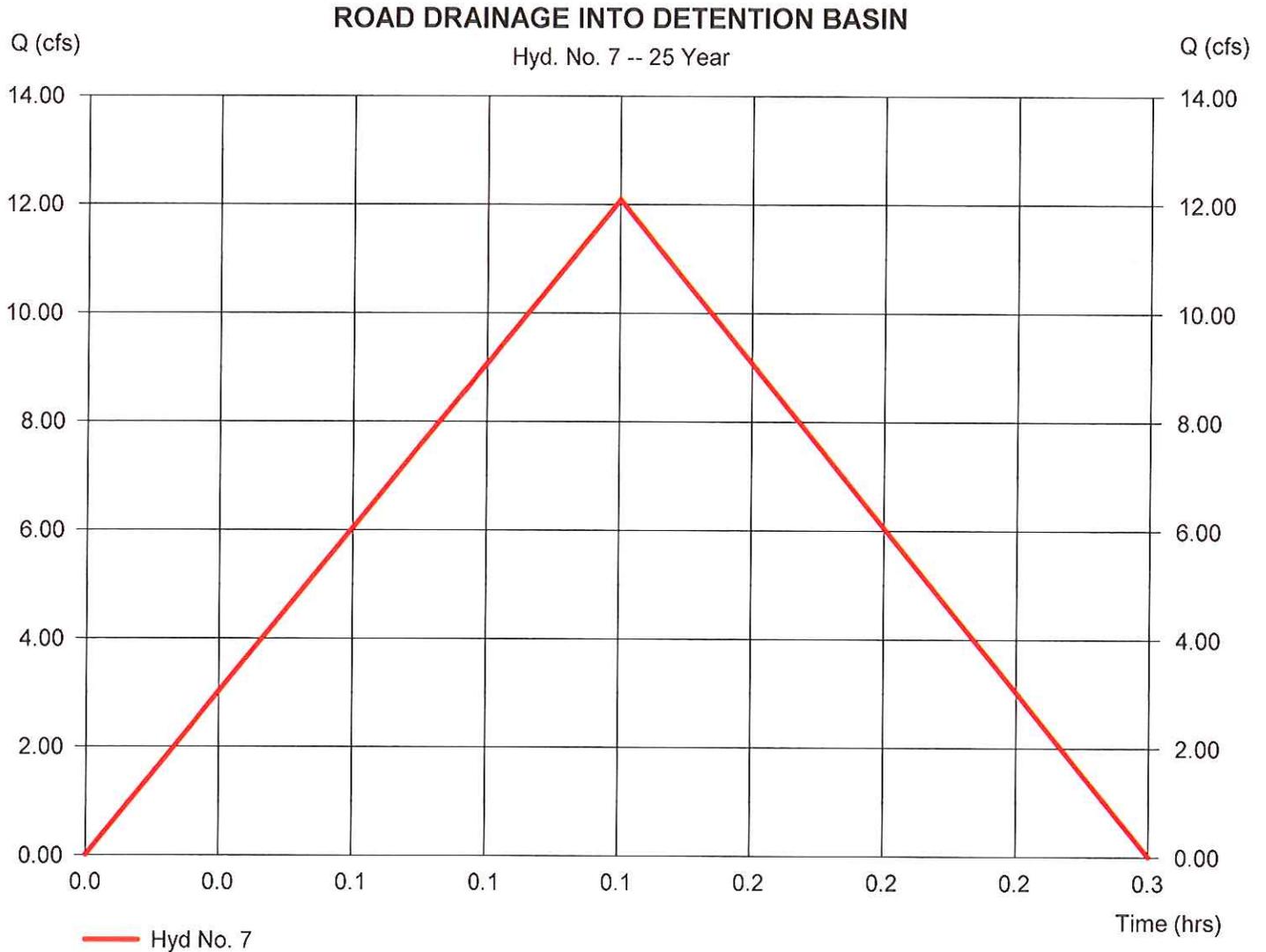
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, Oct 16, 2012

## Hyd. No. 7

### ROAD DRAINAGE INTO DETENTION BASIN

Hydrograph type	= Rational	Peak discharge	= 12.09 cfs
Storm frequency	= 25 yrs	Time to peak	= 0.13 hrs
Time interval	= 1 min	Hyd. volume	= 5,802 cuft
Drainage area	= 5.180 ac	Runoff coeff.	= 0.37
Intensity	= 6.307 in/hr	Tc by User	= 8.00 min
IDF Curve	= Hartford.IDF	Asc/Rec limb fact	= 1/1



# Hydrograph Report

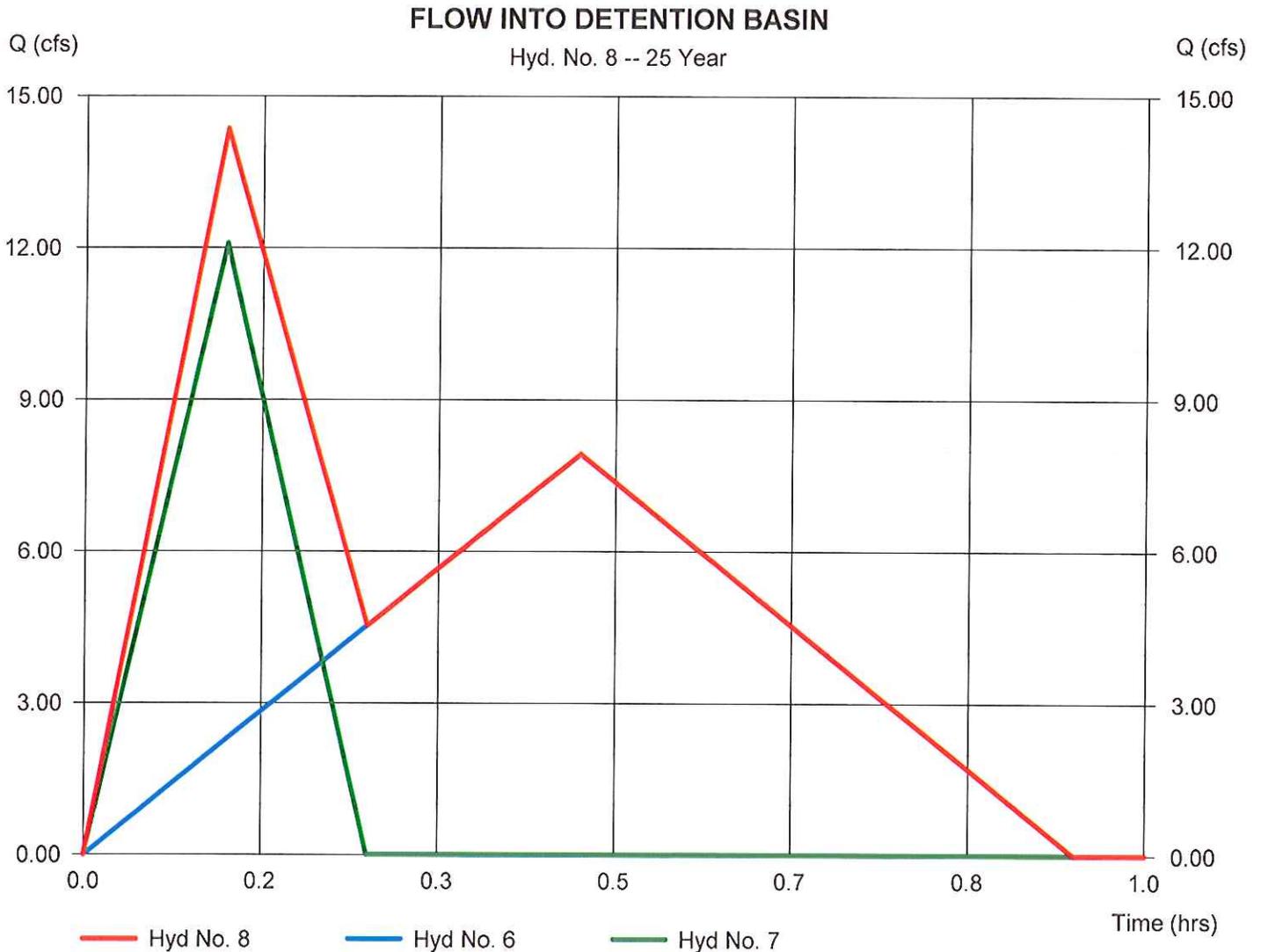
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, Oct 16, 2012

## Hyd. No. 8

### FLOW INTO DETENTION BASIN

Hydrograph type	= Combine	Peak discharge	= 14.35 cfs
Storm frequency	= 25 yrs	Time to peak	= 0.13 hrs
Time interval	= 1 min	Hyd. volume	= 19,118 cuft
Inflow hyds.	= 6, 7	Contrib. drain. area	= 12.670 ac



# Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

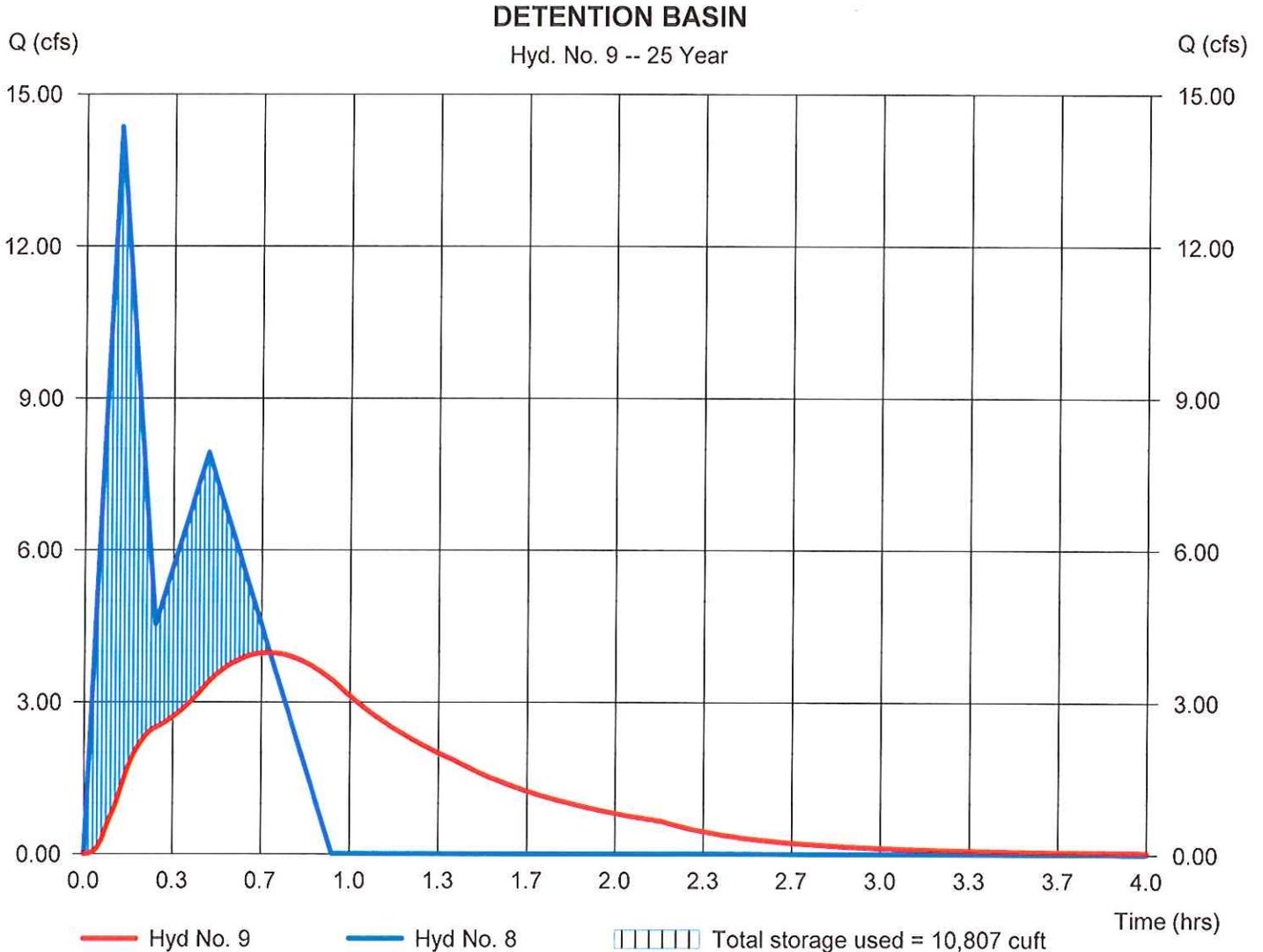
Tuesday, Oct 16, 2012

## Hyd. No. 9

### DETENTION BASIN

Hydrograph type	= Reservoir	Peak discharge	= 3.968 cfs
Storm frequency	= 25 yrs	Time to peak	= 0.70 hrs
Time interval	= 1 min	Hyd. volume	= 18,198 cuft
Inflow hyd. No.	= 8 - FLOW INTO DETENTION BASIN	Basin Elevation	= 477.34 ft
Reservoir name	= POND 3	Max. Storage	= 10,807 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



# Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

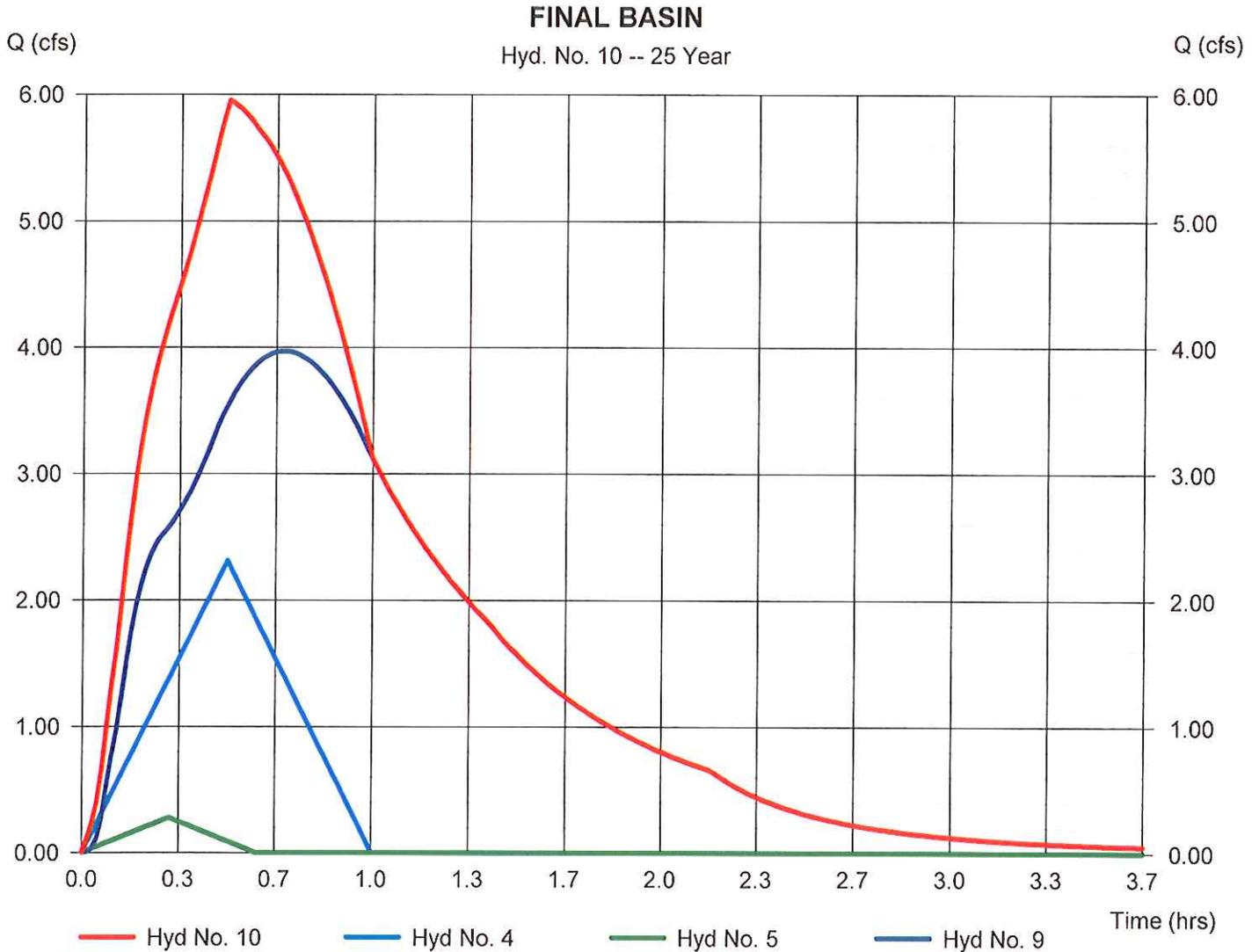
Tuesday, Oct 16, 2012

## Hyd. No. 10

### FINAL BASIN

Hydrograph type = Combine  
 Storm frequency = 25 yrs  
 Time interval = 1 min  
 Inflow hyds. = 4, 5, 9

Peak discharge = 5.952 cfs  
 Time to peak = 0.50 hrs  
 Hyd. volume = 22,656 cuft  
 Contrib. drain. area = 3.380 ac



# Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

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	3.091	1	44	8,161	-----	-----	-----	EXISTING CONDITIONS (EAST SI	
2	Rational	6.094	1	50	18,282	-----	-----	-----	EXISTING CONDITIONS (WEST SI	
3	Combine	8.764	1	50	26,442	1, 2	-----	-----	TOTAL FLOW @ OUTFALL	
4	Rational	2.597	1	30	4,675	-----	-----	-----	BELOW BASIN	
5	Rational	0.308	1	18	333	-----	-----	-----	FLOW INTO ROAD BASIN	
6	Rational	8.901	1	28	14,954	-----	-----	-----	OVERLAND FLOW INTO DETENTI	
7	Rational	13.39	1	8	6,427	-----	-----	-----	ROAD DRAINAGE INTO DETENTI	
8	Combine	15.93	1	8	21,381	6, 7	-----	-----	FLOW INTO DETENTION BASIN	
9	Reservoir	4.433	1	42	20,411	8	477.60	12,126	DETENTION BASIN	
10	Combine	6.634	1	30	25,419	4, 5, 9	-----	-----	FINAL BASIN	
211053 HYDROGRAPHS.gpw					Return Period: 50 Year			Tuesday, Oct 16, 2012		

# Hydrograph Report

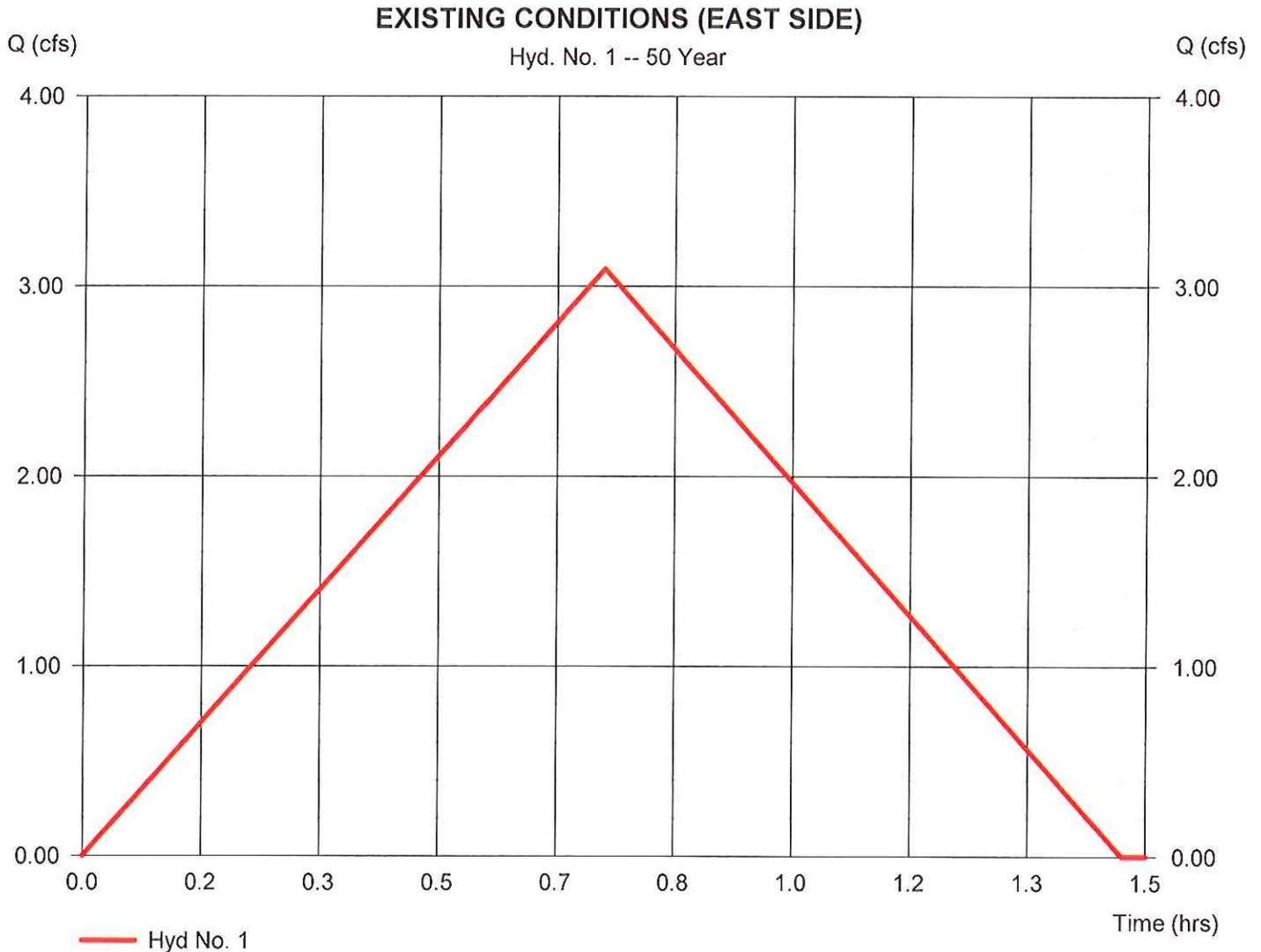
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, Oct 16, 2012

## Hyd. No. 1

### EXISTING CONDITIONS (EAST SIDE)

Hydrograph type	= Rational	Peak discharge	= 3.091 cfs
Storm frequency	= 50 yrs	Time to peak	= 0.73 hrs
Time interval	= 1 min	Hyd. volume	= 8,161 cuft
Drainage area	= 5.115 ac	Runoff coeff.	= 0.2
Intensity	= 3.022 in/hr	Tc by TR55	= 44.00 min
IDF Curve	= Hartford.IDF	Asc/Rec limb fact	= 1/1



# Hydrograph Report

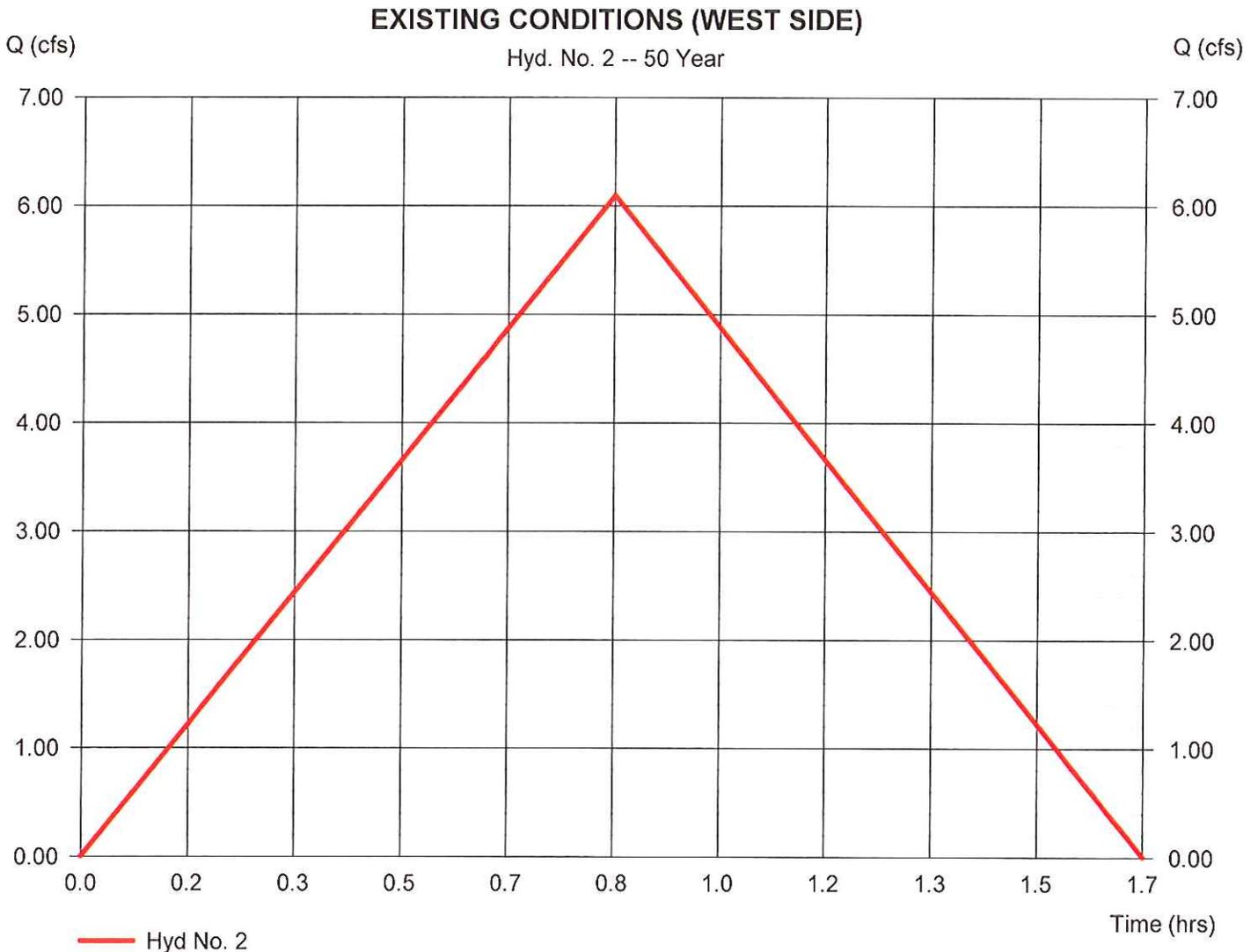
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, Oct 16, 2012

## Hyd. No. 2

### EXISTING CONDITIONS (WEST SIDE)

Hydrograph type	= Rational	Peak discharge	= 6.094 cfs
Storm frequency	= 50 yrs	Time to peak	= 0.83 hrs
Time interval	= 1 min	Hyd. volume	= 18,282 cuft
Drainage area	= 10.940 ac	Runoff coeff.	= 0.2
Intensity	= 2.785 in/hr	Tc by TR55	= 50.00 min
IDF Curve	= Hartford.IDF	Asc/Rec limb fact	= 1/1



# Hydrograph Report

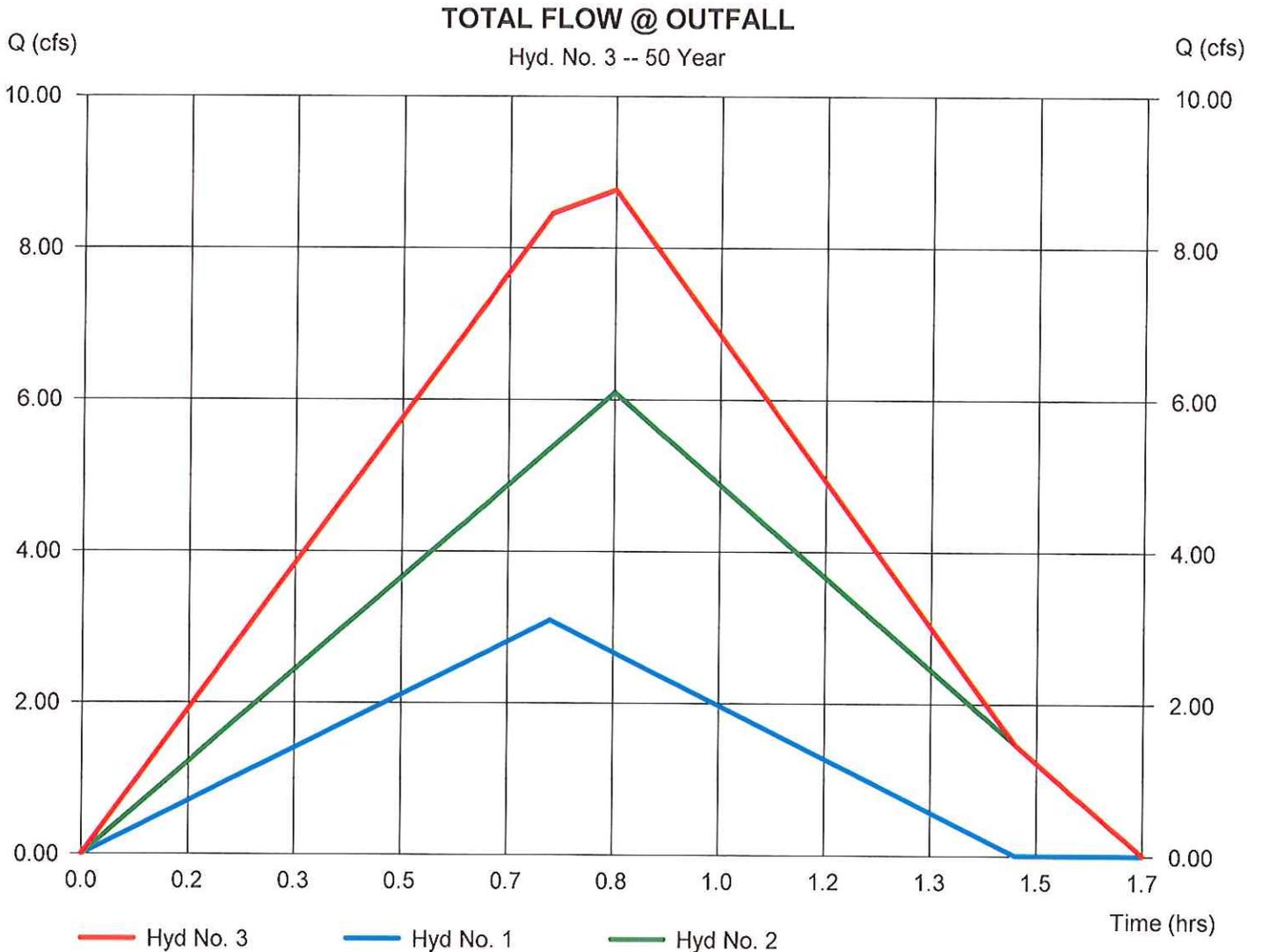
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, Oct 16, 2012

## Hyd. No. 3

### TOTAL FLOW @ OUTFALL

Hydrograph type	= Combine	Peak discharge	= 8.764 cfs
Storm frequency	= 50 yrs	Time to peak	= 0.83 hrs
Time interval	= 1 min	Hyd. volume	= 26,442 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 16.055 ac



# Hydrograph Report

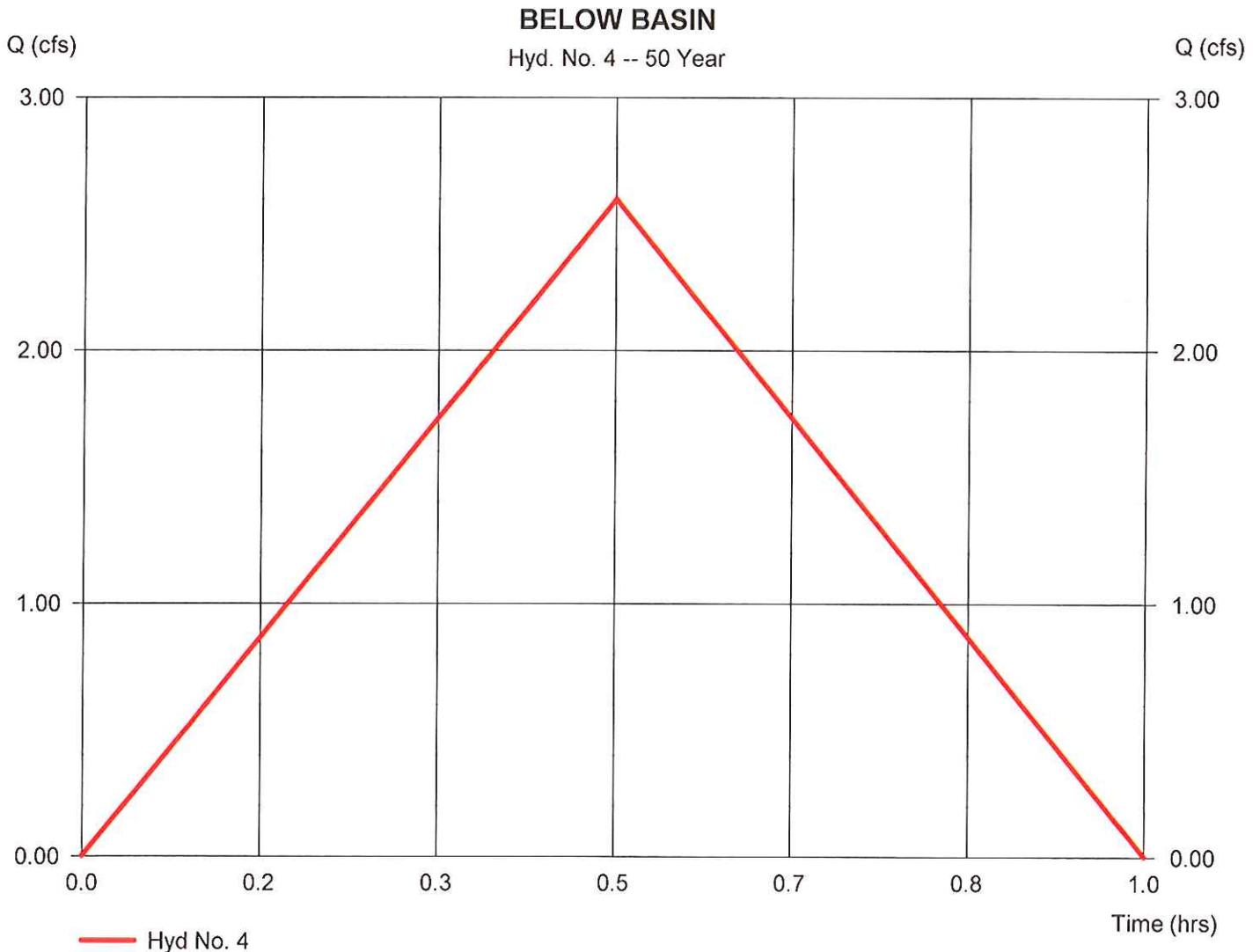
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, Oct 16, 2012

## Hyd. No. 4

BELOW BASIN

Hydrograph type	= Rational	Peak discharge	= 2.597 cfs
Storm frequency	= 50 yrs	Time to peak	= 0.50 hrs
Time interval	= 1 min	Hyd. volume	= 4,675 cuft
Drainage area	= 3.100 ac	Runoff coeff.	= 0.22
Intensity	= 3.808 in/hr	Tc by TR55	= 30.00 min
IDF Curve	= Hartford.IDF	Asc/Rec limb fact	= 1/1



# Hydrograph Report

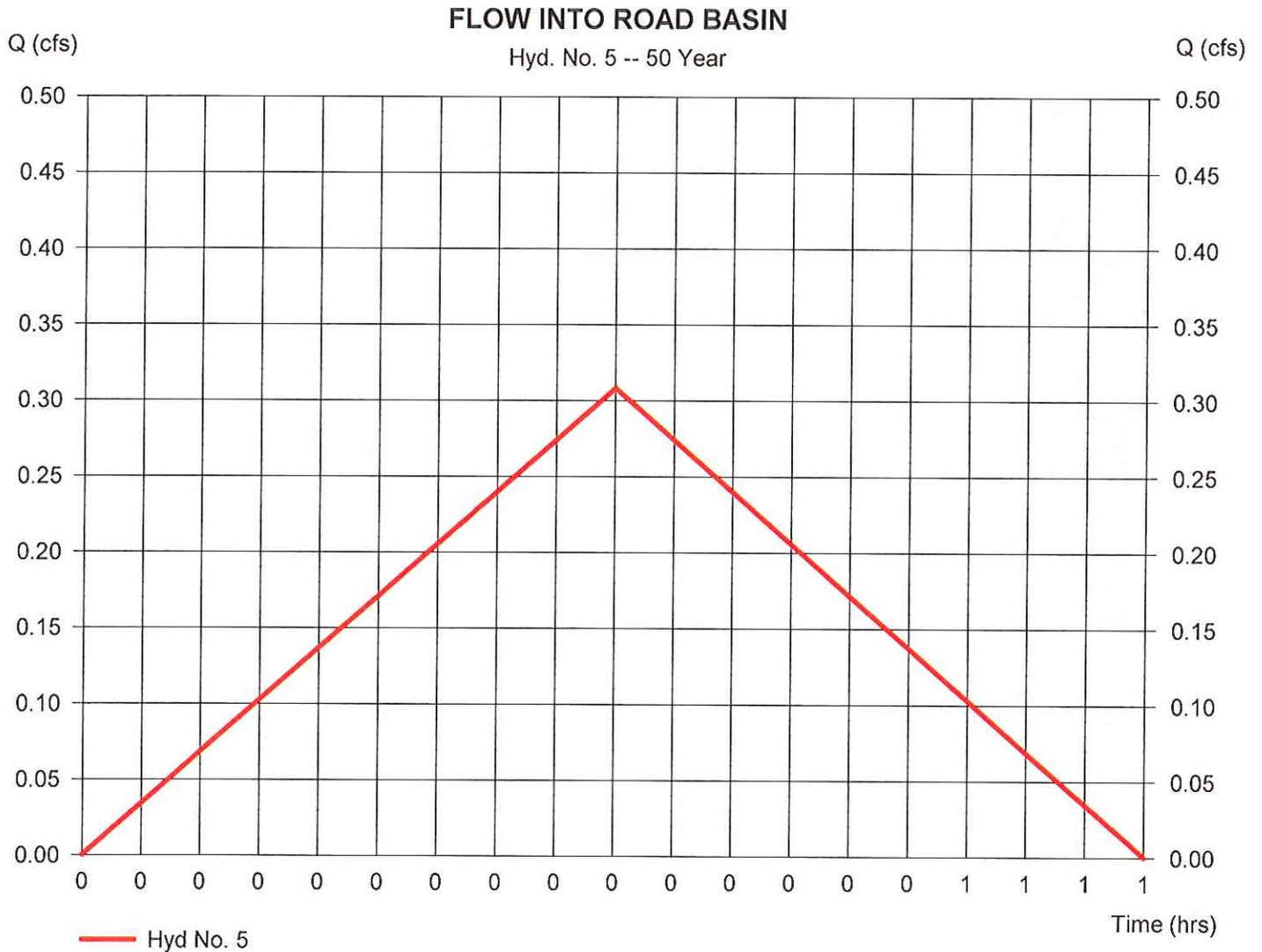
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, Oct 16, 2012

## Hyd. No. 5

### FLOW INTO ROAD BASIN

Hydrograph type	= Rational	Peak discharge	= 0.308 cfs
Storm frequency	= 50 yrs	Time to peak	= 0.30 hrs
Time interval	= 1 min	Hyd. volume	= 333 cuft
Drainage area	= 0.280 ac	Runoff coeff.	= 0.22
Intensity	= 5.003 in/hr	Tc by TR55	= 18.00 min
IDF Curve	= Hartford.IDF	Asc/Rec limb fact	= 1/1



# Hydrograph Report

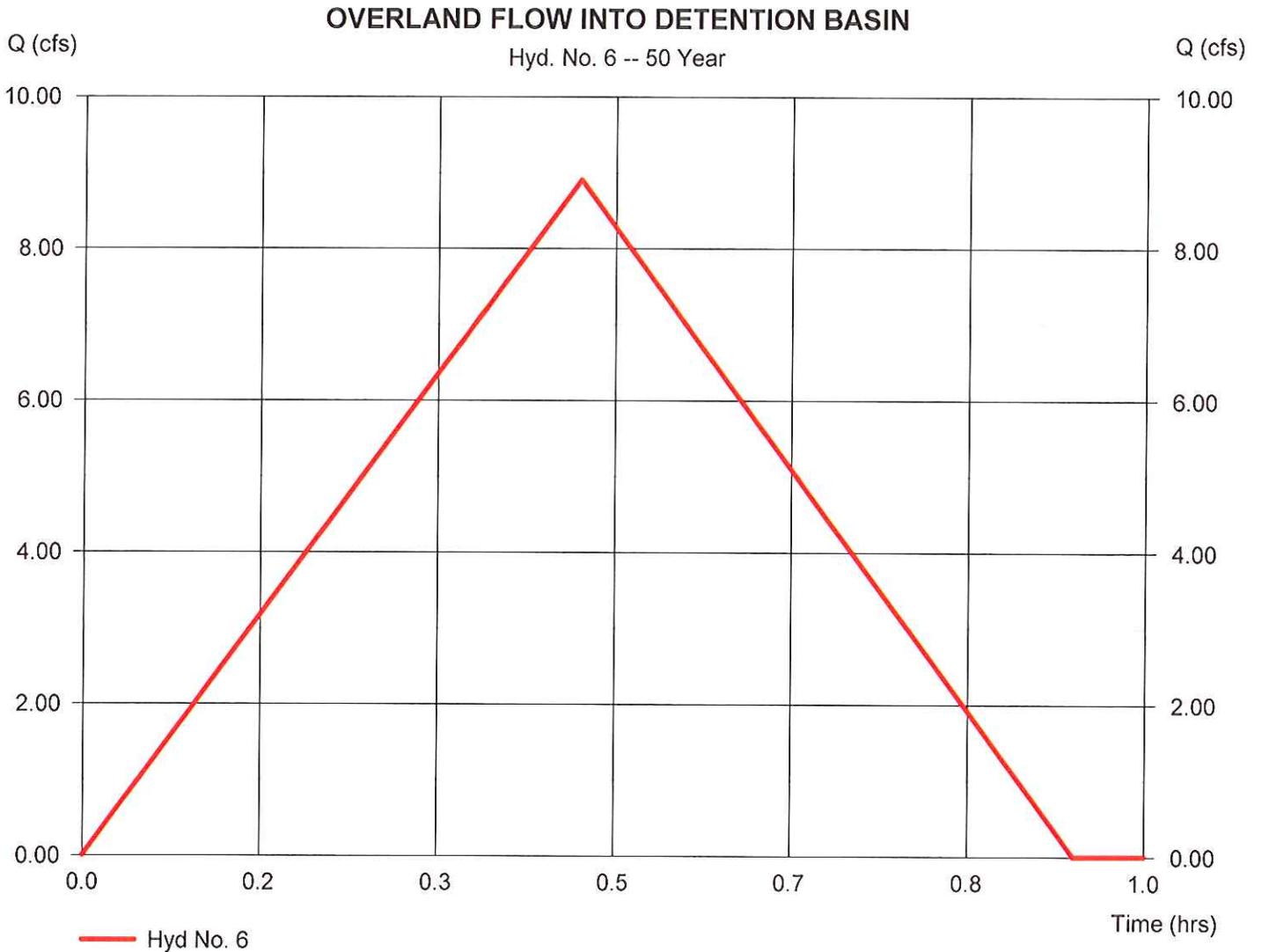
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, Oct 16, 2012

## Hyd. No. 6

### OVERLAND FLOW INTO DETENTION BASIN

Hydrograph type	= Rational	Peak discharge	= 8.901 cfs
Storm frequency	= 50 yrs	Time to peak	= 0.47 hrs
Time interval	= 1 min	Hyd. volume	= 14,954 cuft
Drainage area	= 7.490 ac	Runoff coeff.	= 0.3
Intensity	= 3.961 in/hr	Tc by TR55	= 28.00 min
IDF Curve	= Hartford.IDF	Asc/Rec limb fact	= 1/1



# Hydrograph Report

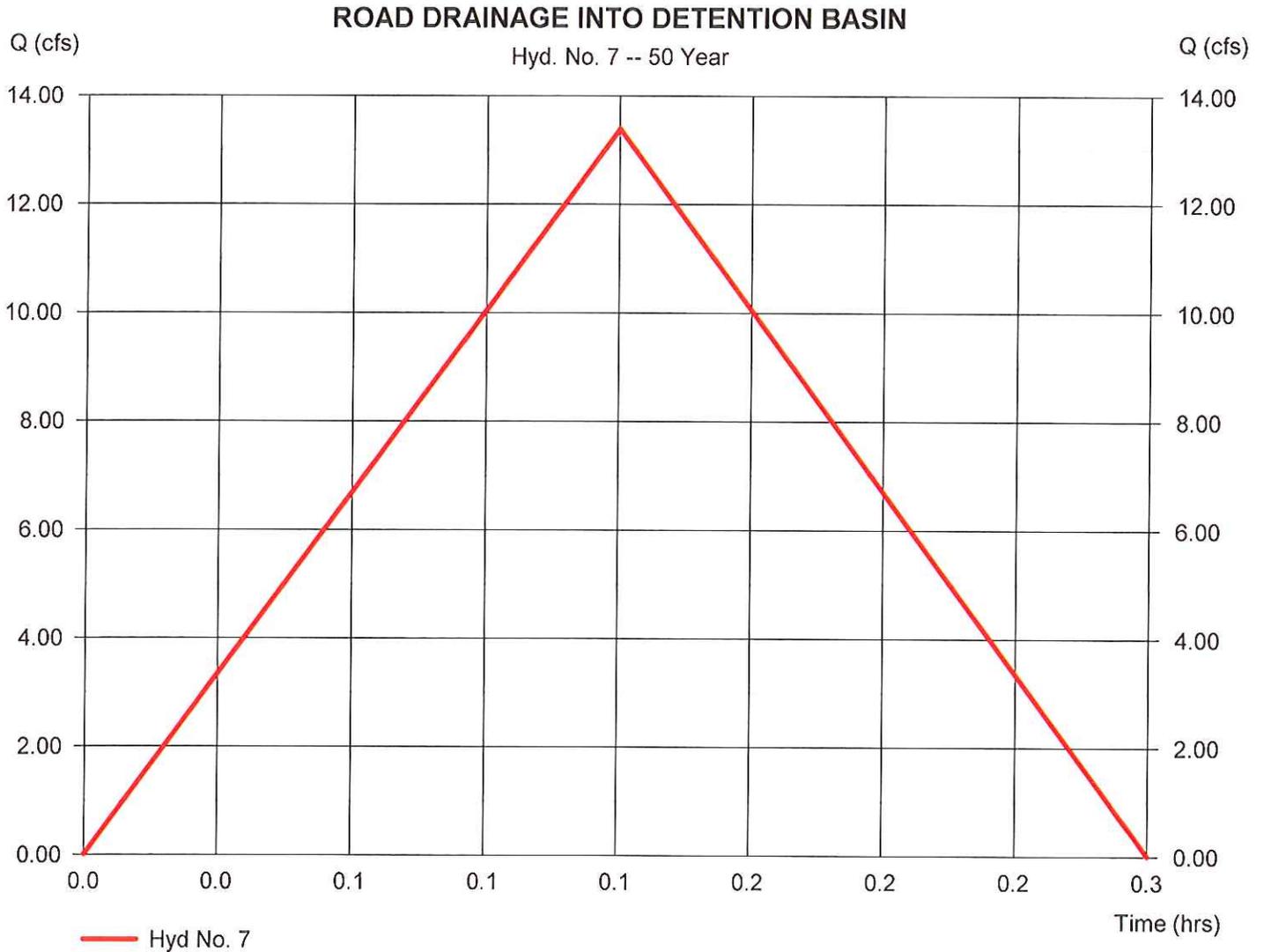
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, Oct 16, 2012

## Hyd. No. 7

### ROAD DRAINAGE INTO DETENTION BASIN

Hydrograph type	= Rational	Peak discharge	= 13.39 cfs
Storm frequency	= 50 yrs	Time to peak	= 0.13 hrs
Time interval	= 1 min	Hyd. volume	= 6,427 cuft
Drainage area	= 5.180 ac	Runoff coeff.	= 0.37
Intensity	= 6.986 in/hr	Tc by User	= 8.00 min
IDF Curve	= Hartford.IDF	Asc/Rec limb fact	= 1/1



# Hydrograph Report

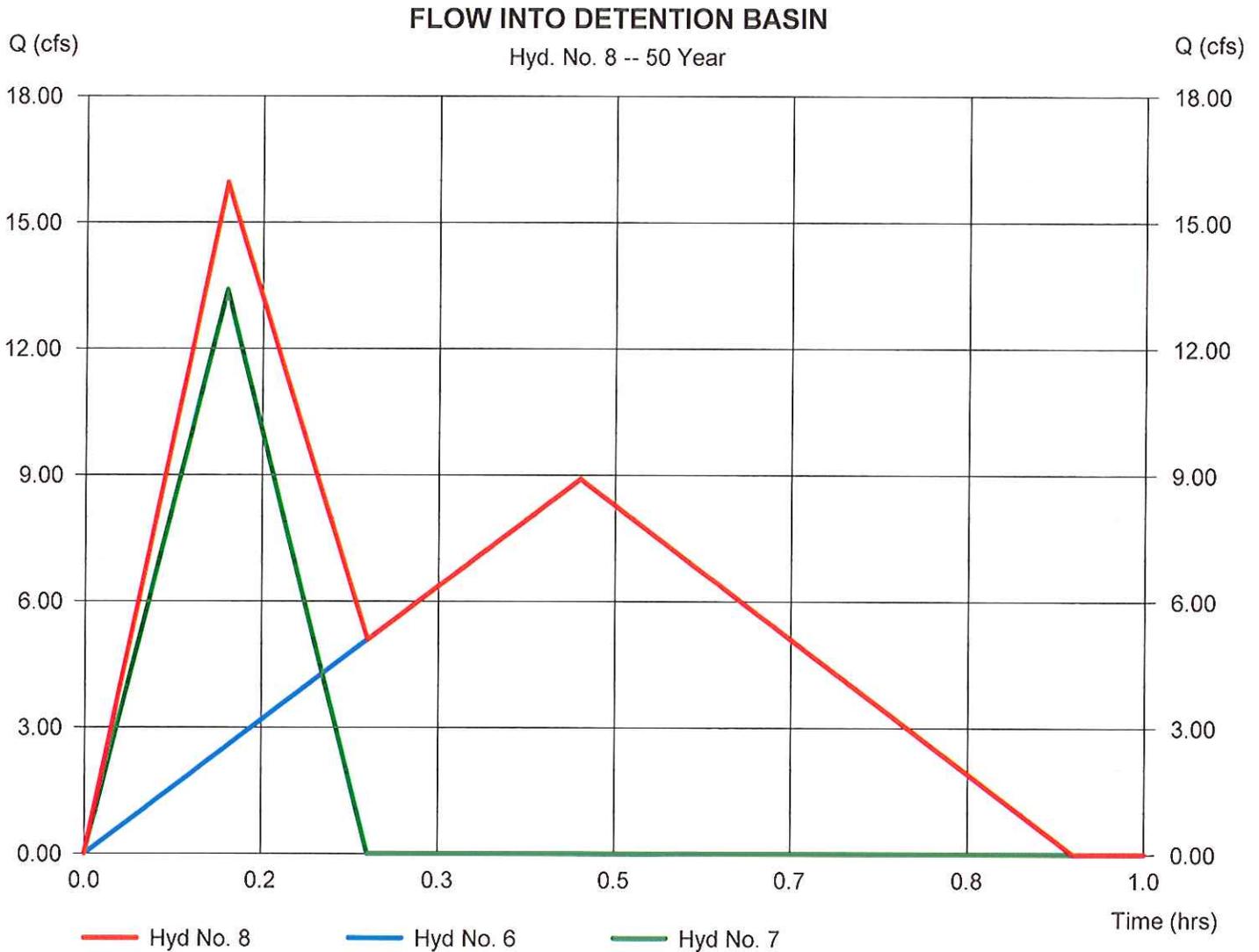
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Tuesday, Oct 16, 2012

## Hyd. No. 8

### FLOW INTO DETENTION BASIN

Hydrograph type	= Combine	Peak discharge	= 15.93 cfs
Storm frequency	= 50 yrs	Time to peak	= 0.13 hrs
Time interval	= 1 min	Hyd. volume	= 21,381 cuft
Inflow hyds.	= 6, 7	Contrib. drain. area	= 12.670 ac



# Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

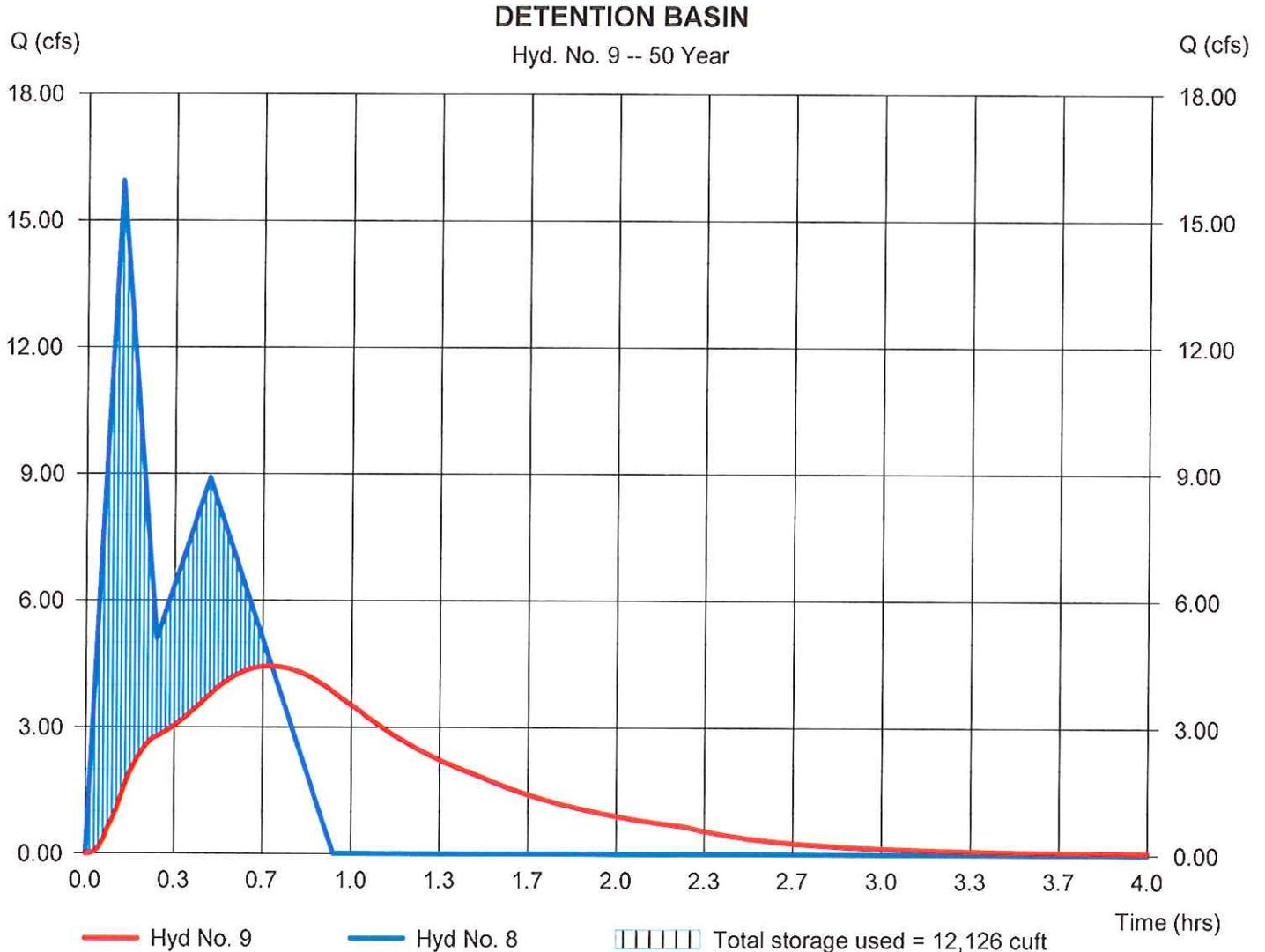
Tuesday, Oct 16, 2012

## Hyd. No. 9

### DETENTION BASIN

Hydrograph type	= Reservoir	Peak discharge	= 4.433 cfs
Storm frequency	= 50 yrs	Time to peak	= 0.70 hrs
Time interval	= 1 min	Hyd. volume	= 20,411 cuft
Inflow hyd. No.	= 8 - FLOW INTO DETENTION BASIN	Basin Elevation	= 477.60 ft
Reservoir name	= POND 3	Max. Storage	= 12,126 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



# Hydrograph Report

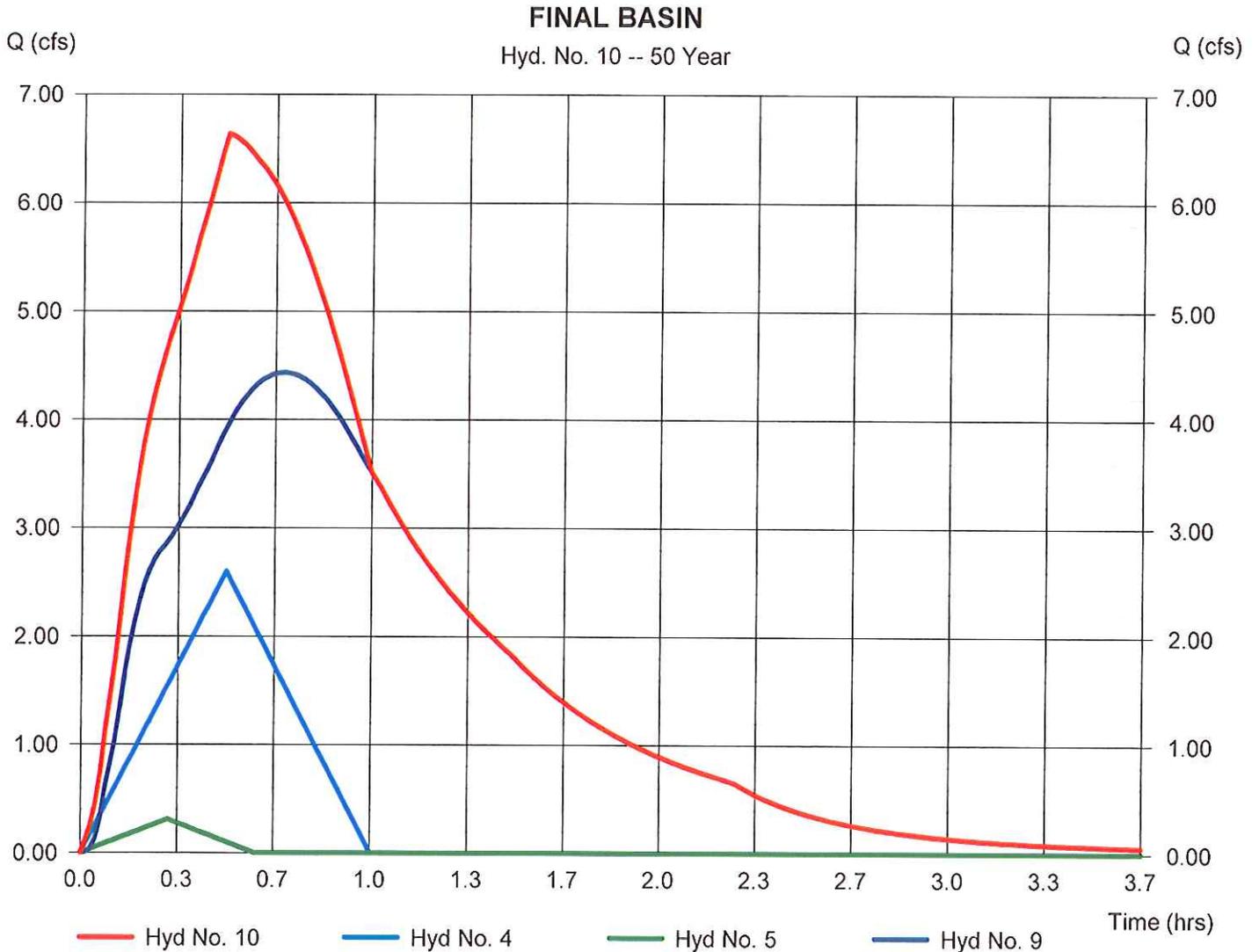
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Tuesday, Oct 16, 2012

## Hyd. No. 10

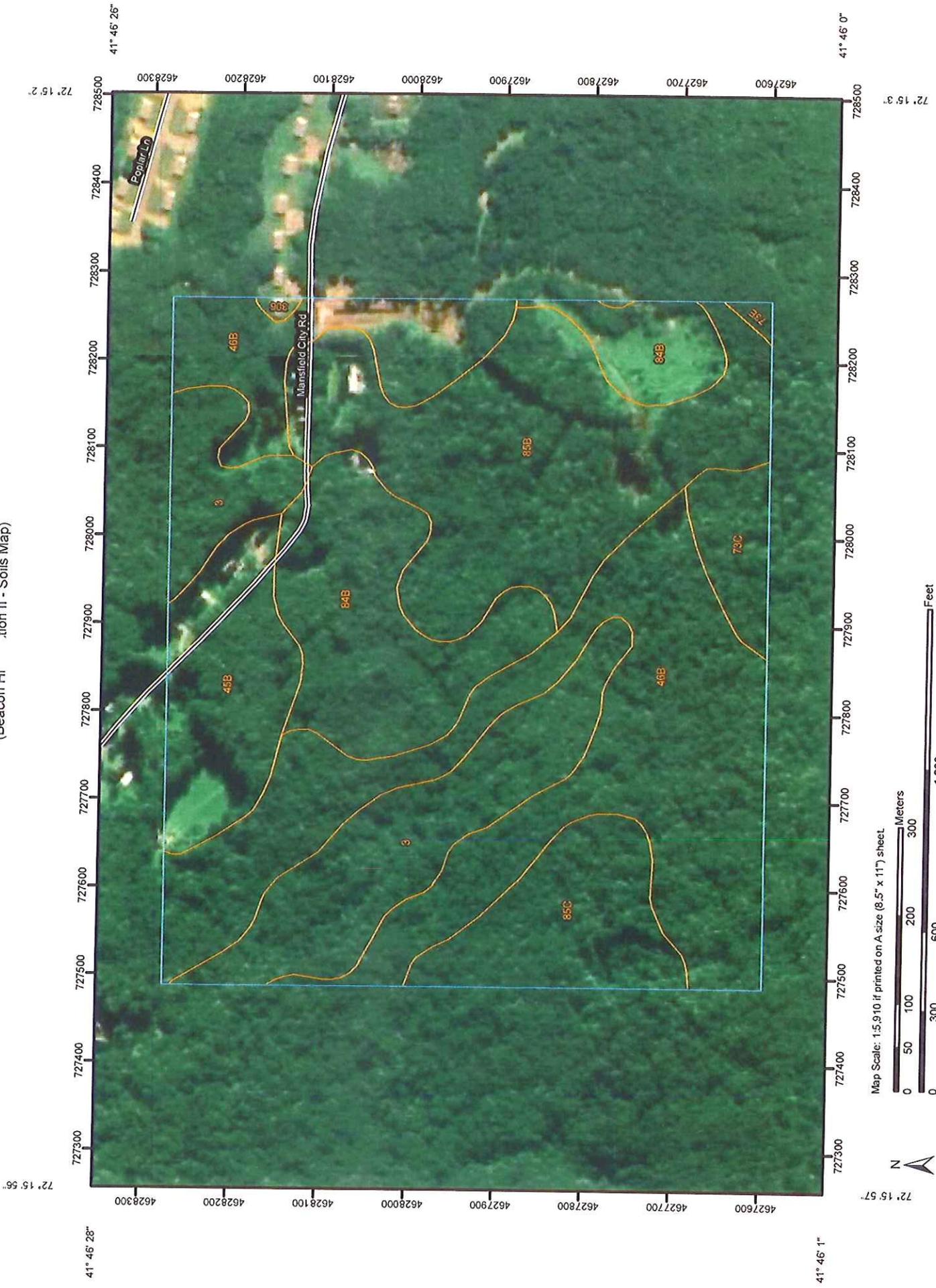
### FINAL BASIN

Hydrograph type	= Combine	Peak discharge	= 6.634 cfs
Storm frequency	= 50 yrs	Time to peak	= 0.50 hrs
Time interval	= 1 min	Hyd. volume	= 25,419 cuft
Inflow hyds.	= 4, 5, 9	Contrib. drain. area	= 3.380 ac

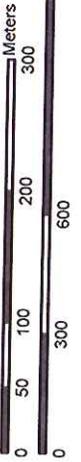


Appendix C  
Soils Map and Legend

Soil Map-  
ation II - Soils Map)



Map Scale: 1:5,910 if printed on A size (8.5" x 11") sheet.



## MAP LEGEND

	Area of Interest (AOI)
	Area of Interest (AOI)
	Soils
	Soil Map Units
<b>Special Point Features</b>	
	Blowout
	Borrow Pit
	Clay Spot
	Closed Depression
	Gravel Pit
	Gravelly Spot
	Landfill
	Lava Flow
	Marsh or swamp
	Mine or Quarry
	Miscellaneous Water
	Perennial Water
	Rock Outcrop
	Saline Spot
	Sandy Spot
	Severely Eroded Spot
	Sinkhole
	Slide or Slip
	Sodic Spot
	Spoil Area
	Stony Spot

	Very Stony Spot
	Wet Spot
	Other
<b>Special Line Features</b>	
	Gully
	Short Steep Slope
	Other
<b>Political Features</b>	
	Cities
<b>Water Features</b>	
	Streams and Canals
<b>Transportation</b>	
	Rails
	Interstate Highways
	US Routes
	Major Roads
	Local Roads

## MAP INFORMATION

Map Scale: 1:5,910 if printed on A size (8.5" x 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:12,000.

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

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

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

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
Coordinate System: UTM Zone 18N NAD83

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

Soil Survey Area: State of Connecticut  
Survey Area Data: Version 10, Mar 31, 2011

Date(s) aerial images were photographed: 8/16/2006; 7/17/2006

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

## Map Unit Legend

State of Connecticut (CT600)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, extremely stony	18.1	13.8%
45B	Woodbridge fine sandy loam, 3 to 8 percent slopes	10.4	7.9%
46B	Woodbridge fine sandy loam, 2 to 8 percent slopes, very stony	43.4	33.1%
73C	Charlton-Chatfield complex, 3 to 15 percent slopes, very rocky	3.6	2.7%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	0.3	0.3%
84B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes	18.4	14.1%
85B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes, very stony	27.1	20.7%
85C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes, very stony	9.4	7.2%
306	Udorthents-Urban land complex	0.2	0.2%
<b>Totals for Area of Interest</b>		<b>131.0</b>	<b>100.0%</b>