City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

October 30, 2002

Chris Weiss, P.E.
C.L. Weiss Engineering
P.O. Box 97
Sandia Park, New Mexico 87047

RE: MECHENBIER OFFICE/WAREHOUSE (C-17/D113)
(8440 Washington NE)
ENGINEERS CERTIFICATION FOR CERTIFICATE OF OCCUPANCY
ENGINEERS STAMP DATED 2/7/2002
ENGINEERS CERTIFICATION DATED 10/24/2002

Dear Chris:

Based upon the information provided in your Engineers Certification submittal dated 10/25/2002, and the approval of the SO19 by the City's Storm Drainage Maintenance Inspector, the above referenced site is approved for a Permanent Certificate of Occupancy.

If I can be of further assistance, please contact me at 924-3981.

Sincerely,

Teresa A. Martin

Teresa A. Martin
Hydrology Plan Checker
Development & Bldg. Ser. Division

BLB

C: Certificate of Occupancy Clerk, COA
drainage file
approval file

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

February 12, 2002

Chris Weiss, PE
C.L. Weiss Engineering, INC.
PO Box 97
Sandia Park, NM 87047

Re: Mechenbier Office Warehouse Grading and Drainage Plan
Engineer's Stamp Dated 2-07-02, (C17/D113)

Dear Mr. Weiss,

Based on your submittal dated 1-08-02, the above referenced plan is approved for Building Permit and SO-19 Permit.

Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Also, prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.

If you have any questions, you can contact me at 924-3982.

Sincerely,

Leslie Romero
Engineering Associate, PWD
Development and Building Services

c: Terri Martin, Hydrology
Pam Lujan
File (2)

Mechenbier Construction, Inc.

8440 Washington St. N.E.

Office / Warehouse

ALBUQUERQUE, NM

CHRISTOPHER L. WEISS
NEW MEXICO
6033
REGISTERED PROFESSIONAL ENGINEER

RECEIVED
FEB 08 2002
HYDROLOGY SECTION

C.L. Weiss Engineering, Inc P.O. Box 97 Sandia Park, NM 87047
Tele/Fax - (505) 281-1800 E-Mail - clwnm@earthlink.net

Background

The proposed development will consist of a 35,034 sq. ft. single story office / warehouse building, with associated parking, a storage yard and landscaping improvements located on a 4 acre undeveloped tract. Two driveway entrances will allow traffic to loop around the building, accessing the common parking areas and the rear storage area. Natural drainage patterns route flows to Washington Street, located along the west side of the tract. The grade of Washington Street carries runoff north to existing storm drainage inlets. An undeveloped tract adjoins the north side, with developed properties boarding the south and east sides.

Onsite Drainage -

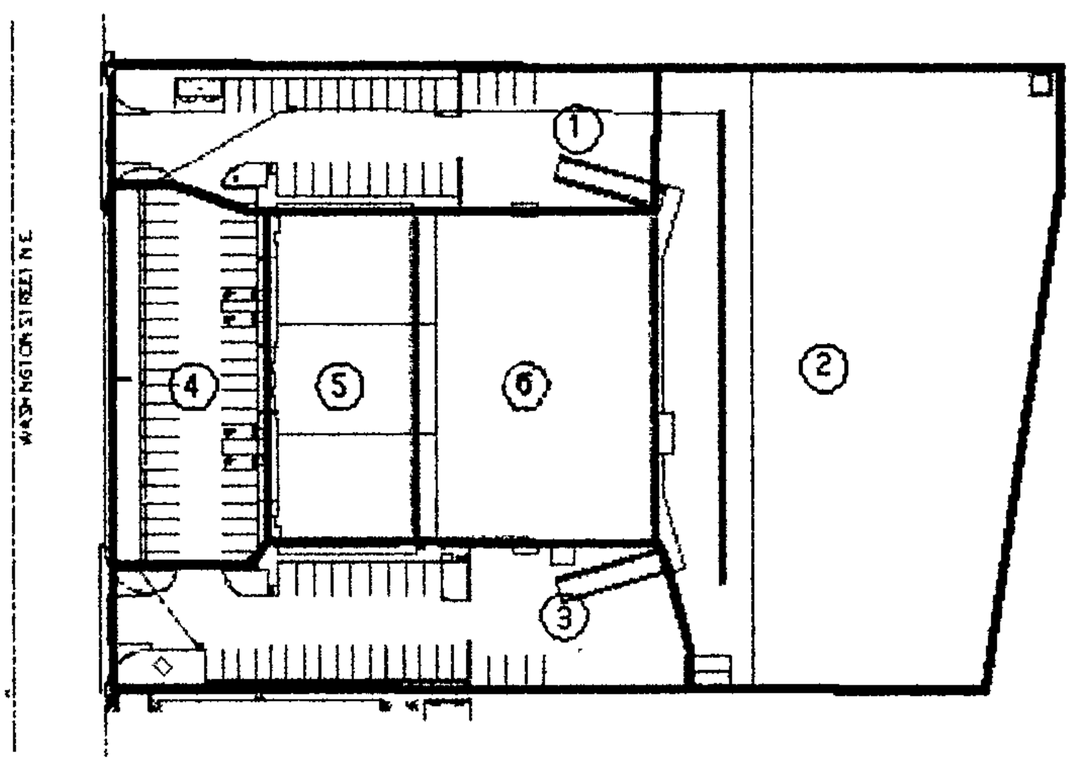
The criteria for all tracts draining to the Alameda Blvd., Jefferson Street and Washington storm drainage system (SAD 201) is storm runoff will be limited to the 10 year developed flow. For this site, the 100 yr. developed flow is 16.9 cfs, with the 10 yr. developed flow equal to 11.0 cfs (See Calculations).

Offsite Drainage -

An existing open channel system situated along the adjoining east commercial sites intercepts all offsite drainage. This channel extends to Anaheim Street to the south.

Basin Analysis -

The following basin analysis identifies the internal drainage areas for the completed site improvements, designated as Basins 1 - 6. Basins 1 & 3 encompass the side access / parking areas north and south of the building. These basins are picked up by short SS systems for routing into the front detention pond. Basins 4 & 5 comprise the front parking area and roof section which drain directly into the front detention pond. Basins 2 & 6 identify the rear storage yard area and back portion of the building roof. These areas are intercepted by the rear detention pond. The outlet for the rear pond is routed to the front detention pond by a private SS system where all flows enter Washington St. for final interception by the public SS system.



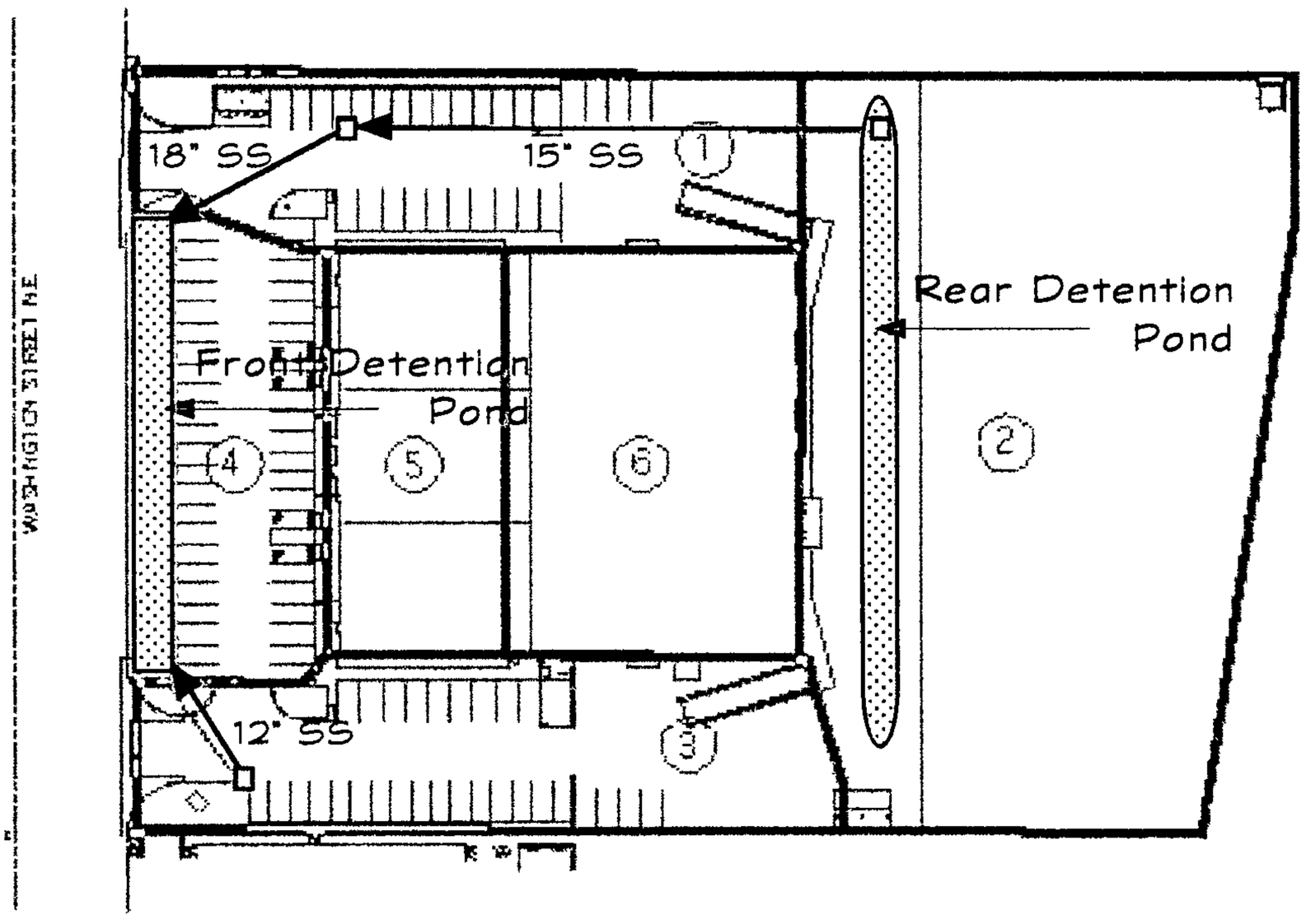
Pond and SS Analysis -

Proposed site drainage improvements to reduce the 100 yr. peak to the 10 yr. flow will involve the use of two detention ponds, one situated along the rear of the building and the other along Washington St. The Washington St. pond will be defined by vertical concrete walls, with the outlet system comprised of a 24" wide sidewalk culvert, combined with a weir section on the north end of the pond. The top of pond wall = 09.5 and pond bottom = 07.5. Maximum elevation for flows from Basins 1, 3, 4 & 5 of 8.3 cfs will = 09.0, with the sidewalk culvert controlling the outflow to 5.3 cfs.

The rear pond will be established as a shallow depression as part of the rear parking / storage area. The drain for the rear pond will be a single grate / box with a 15" dia. SS pipe serving as the outlet conduit, with the end capped inside the box. An 11" dia. hole cut in the pipe cap will serve as the control orifice to restrict flows from the rear pond to a maximum rate of 5.6 cfs. Maximum elevation in the rear pond from Basins 2 & 6 will = 13.4.

The 15" dia. rear pond outlet will be connected to the inlet box which intercepts flows from Basin 1. The final reach of the SS will be an 18" dia. pipe to carry flows from the Basin 1 box into the front pond. Flows from the rear pond will be routed through the front pond, overflowing the weir section onto the north driveway. Maximum depth of flow over the weir will be 0.25', resulting in a high water elevation of 09.25 from Basins 1 - 6.

A 12" dia. SS will pick up flows from Basin 3 for routing into the front detention pond. Minor areas composed of the front driveways drain directly into Washington St.



8440 Washington St. N E

CALCULATIONS: 100 YEAR STORM

Calculations are based on the Drainage Design Criteria for Bernalillo County Section 22.2, DPM, Vol 2, dated Jan., 1993

AREA OF SUB-BASIN: 170014 68 SF = 3.903

HISTORIC CONDITIONS

On-Site Historic Land Condition

Area a	=	0	SF
Area b	=	170014	SF
Area c	=	0	SF
Area d	=	0	SF
Total Area	=	170014	SF

DEVELOPED FLOWS:

On-Site Developed Land Condition

Area a	=	0	SF
Area b	=	25502	SF
Area c	=	0	SF
Area d	=	144512	SF
Total Area	=	170014	SF

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted } E = \frac{EaAa + EbAb + EcAc + EdAd}{Aa + Ab + Ac + Ad}$$

Historic E	=	0.78	in.	Developed E	=	1.92	in

On-Site Volume of Runoff: V360 = E*A / 12

Historic V360	=	11051	CF	Developed V360	=	27188	CF

On-Site Peak Discharge Rate: Qp = QpaAa+QpbAb+QpcAc+QpdAd / 43,560

For Precipitation Zone 2

Qpa	=	1.56	Qpc	=	3 14
Qbb	=	2.28	Qpd	=	4.70

Historic Qp	=	8.9	CFS	Developed Qp	=	16.9	CFS

CALCULATIONS: 10 YEAR STORM

AREA OF SUB-BASIN: 170014.68 SF = 3.903

HISTORIC CONDITIONS

On-Site Historic Land Condition

Area a	=	0	SF
Area b	=	170014	SF
Area c	=	0	SF
Area d	=	0	SF
Total Area	=	170014	SF

DEVELOPED FLOWS:

On-Site Developed Land Condition

Area a	=	0	SF
Area b	=	25502	SF
Area c	=	0	SF
Area d	=	144512	SF
Total Area	=	170014	SF

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted } E = \frac{EaAa + EbAb + EcAc + EdAd}{Aa + Ab + Ac + Ad}$$

Historic E	=	0.28	in.	Developed E	=	1.18	in.

On-Site Volume of Runoff: V360 = E*A / 12

Historic V360	=	3967	CF	Developed V360	=	16732	CF

On-Site Peak Discharge Rate: Qp = QpaAa+QpbAb+QpcAc+QpdAd / 43,560

For Precipitation Zone 2

Qpa	=	0.38	Qpc	=	1.71
Qbb	=	0.95	Qpd	=	3.14

Historic Qp	=	3.7	CFS	Developed Qp	=	11.0	CFS

CALCULATIONS: 2 YEAR STORM

AREA OF SUB-BASIN:	170014.68	SF	=	3.903

HISTORIC CONDITIONS

On-Site Historic Land Condition

Area a	=	0	SF
Area b	=	170014	SF
Area c	=	0	SF
Area d	=	0	SF
Total Area	=	170014	SF

DEVELOPED FLOWS:

On-Site Developed Land Condition

Area a	=	0	SF
Area b	=	25502	SF
Area c	=	0	SF
Area d	=	144512	SF
Total Area	=	170014	SF

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted E} = \frac{EaAa + EbAb + EcAc + EdAd}{Aa + Ab + Ac + Ad}$$

Historic E	=	0.02	in.	Developed E	=	0.67 in.

On-Site Volume of Runoff: V360 = E*A / 12

Historic V360	=	283	CF	Developed V360	=	9556 CF

On-Site Peak Discharge Rate: Qp = QpaAa+QpbAb+QpcAc+QpdAd / 43,560

For Precipitation Zone 2

Qpa	=	0.00		Qpc	=	0.60
Qbb	=	0.08		Qpd	=	1.86
Historic Qp	=	0.3	CFS	Developed Qp	=	6.2 CFS

8440 Washington Street NE - Onsite 3asins

SUB BASIN 1

Area of sub-basin flows = 22798 = 0.5 Ac.

The following calculations are based on Treatment areas as shown in table to the right

Sub-basin Weighted Excess Precipitation

Weighted E = 1.85 in

Sub-basin Volume of Runoff (see formula above)

V360 = 3518 CF

Sub-basin Peak Discharge Rate: (see formula above)

Qp = 2.2 cfs

TREATMENT	
A =	0%
B =	20%
C =	0%
D =	80%

This sub basin is comprised of the North section of the site, with drainage captured by a single storm inlet for discharge into the Washington Street pond. Flows will enter the pond on the north end through an 18" dia. SDS pipe.

NEENAH SQUARE STEEL GRATE (PART NO. R-3588-L) CAPACITY CALCULATIONS

Using the orifice equation Q=CA * (2gh)^0.5

C	=	0.6
A	=	1.50
g	=	32.2
h	=	0.5
Q	=	5.11

Note: Area (A) at left, is based on the open area of a single Neenah steel square grate (part no. R-3588-L). Based on calculations shown, a single inlet with a head of 0.5' will accept 5.1 cfs. If the inlet becomes 50% clogged, at an h = 0.5', the inlet will accept 2.6 cfs. Total flow from Basin 1 will be 2.2 cfs, intercepted by one inlet - OK.

SUB BASIN 2

Area of sub-basin flows = 70692 SF = 1.6 Ac.

The following calculations are based on Treatment areas as shown in table to the right

Sub-basin Weighted Excess Precipitation

Weighted E = 1.92 in.

Sub-basin Volume of Runoff (see formula above)

V360 = 11305 CF

Sub-basin Peak Discharge Rate: (see formula above)

Qp = 7.0 cfs

TREATMENT	
A =	0%
B =	15%
C =	0%
D =	85%

This sub basin is comprised of the rear portion of the site, with drainage entering a rear detention pond. Flows from a portion of the building roof (Basin 6) also enters this pond. This pond will be established as a shallow depression as part of the rear parking / access area. The outlet for the pond will be a single grate / box (same as referenced for Basin 1 above) located at the north end of the pond . The surface grate will not be the controlling factor in establishing a pond outflow rate. A 15" dia. SDS pipe will be connected to the pond outlet box and capped inside the box. An 11" dia. hole cut in the pipe cap will serve as the control orifice to restrict flows from the rear pond to a maximum discharge rate of 5.6 cfs. See Hydrograph # 12 in the following exhibits for inflow / outflow calculations.

SUB BASIN 3

Area of sub-basin flows = 23331 = 0.5 Ac.

The following calculations are based on Treatment areas as shown in table to the right

Sub-basin Weighted Excess Precipitation

Weighted E = 1.85 in

Sub-basin Volume of Runoff (see formula above)

V360 = 3601 CF

Sub-basin Peak Discharge Rate: (see formula above)

Qp = 2.3 cfs

TREATMENT	
A =	0%
B =	20%
C =	0%
D =	80%

This sub basin is comprised of the South section of the site, with drainage captured by a single storm inlet for discharge into the Washington Street pond. Flows will enter the pond on the south end through a 12" dia. SDS pipe.

NEENAH SQUARE STEEL GRATE (PART NO. R-3588-L) CAPACITY CALCULATIONS

Using the orifice equation Q=CA * (2gh)^0.5

C	=	0.6
A	=	1.50
g	=	32.2
h	=	0.5
Q	=	5.11

Note: Area (A) at left, is based on the open area of a single Neenah steel square grate (part no. R-3588-L). Based on calculations shown, a single inlet with a head of 0.5' will accept 5.1 cfs. If the inlet becomes 50% clogged, at an h = 0.5', the inlet will accept 2.6 cfs. Total flow from Basin 3 will be 2.3 cfs, intercepted by one inlet - OK.

SUB BASIN 4

Area of sub-basin flows = 17145 SF = 0.4 Ac.

The following calculations are based on Treatment areas as shown in table to the right

Sub-basin Weighted Excess Precipitation

Weighted E = 1.66 in

Sub-basin Volume of Runoff (see formula above)

V360 = 2378 CF

Sub-basin Peak Discharge Rate: (see formula above)

Qp = 1.5 cfs

TREATMENT	
A =	0%
B =	34%
C =	0%
D =	66%

This sub basin is comprised of the front portion of the site, which includes the Washington Street detention pond. This pond will be defined by vertical concrete walls, with the outlet system comprized of a 24" wide sidewalk culvert, combined with a weir section on the north side of the pond. Flows entering directly into the pond from Basins 1, 3, 4 & 5 will be controlled for release by the sidewalk culverts. Flows routed through the front pond from the rear pond will be released over the weir section on the north end of the pond, flowing into the street across the north site dirveway.

SUB BASIN 5

Area of sub-basin flows = 22500 SF = 0.5 Ac.

The following calculations are based on Treatment areas as shown in table to the right

Sub-basin Weighted Excess Precipitation

Weighted E = 2.12 in.

Sub-basin Volume of Runoff (see formula above)

V360 = 3975 CF

Sub-basin Peak Discharge Rate: (see formula above)

Qp = 2.4 cfs

TREATMENT	
A =	0%
B =	0%
C =	0%
D =	100%

This sub basin is comprised of the west portion of the building roof area, with flows directly entering the Washington Street detention pond from the adjoinng parking area.

SUB BASIN 6

Area of sub-basin flows = 13500 SF = 0.3 Ac.

The following calculations are based on Treatment areas as shown in table to the right

Sub-basin Weighted Excess Precipitation

Weighted E = 2.12 in.

Sub-basin Volume of Runoff (see formula above)

V360 = 2385 CF

Sub-basin Peak Discharge Rate: (see formula above)

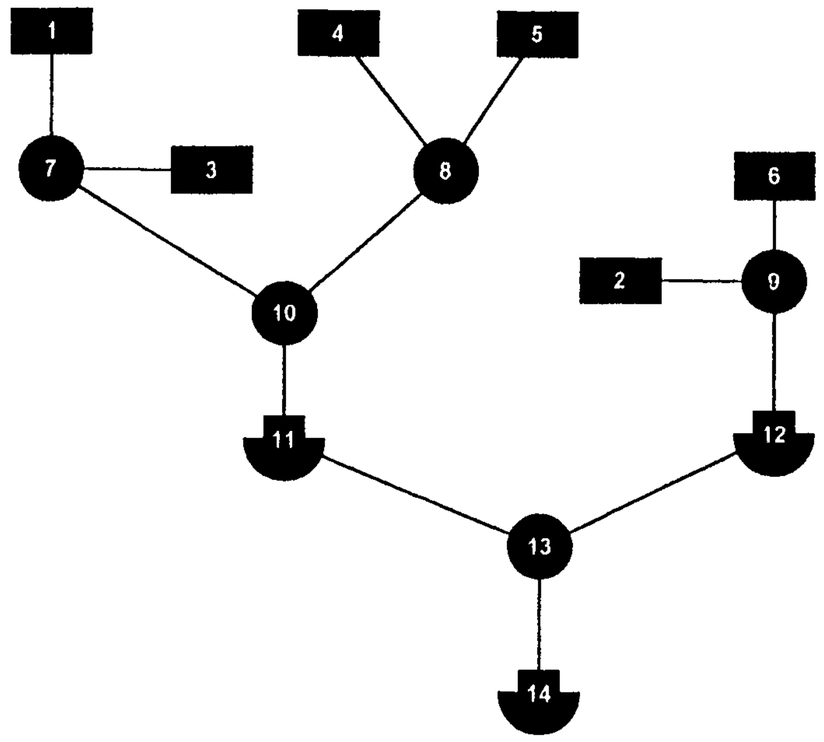
Qp = 1.5 cfs

TREATMENT	
A =	0%
B =	0%
C =	0%
D =	100%

This sub basin is comprised of the east half of the building roof area, with flows entering the rear detention pond.

SUB BASIN SUMMARY

		DISCHARGE		DESCRIPTION
Sub Basin 1	=	2.2	cfs	Drainage to Washington Street Pond
Sub Basin 2	=	7.0	cfs	Drainage to Rear Detention Pond
Sub Basin 3	=	2.3	cfs	Drainage to Washington Street Pond
Sub Basin 4	=	1.5	cfs	Drainage to Washington Street Detention Pond
Sub Basin 5	=	2.4	cfs	Roof Drainage to Washington Street Detention Pond
Sub Basin 6	=	1.5	cfs	Roof Drainage to Rear Detention Pond



Project: WashSt.GPW	IDF: SMBP.idf	14 hyd's	01-30-2002

Hydrograph Plot

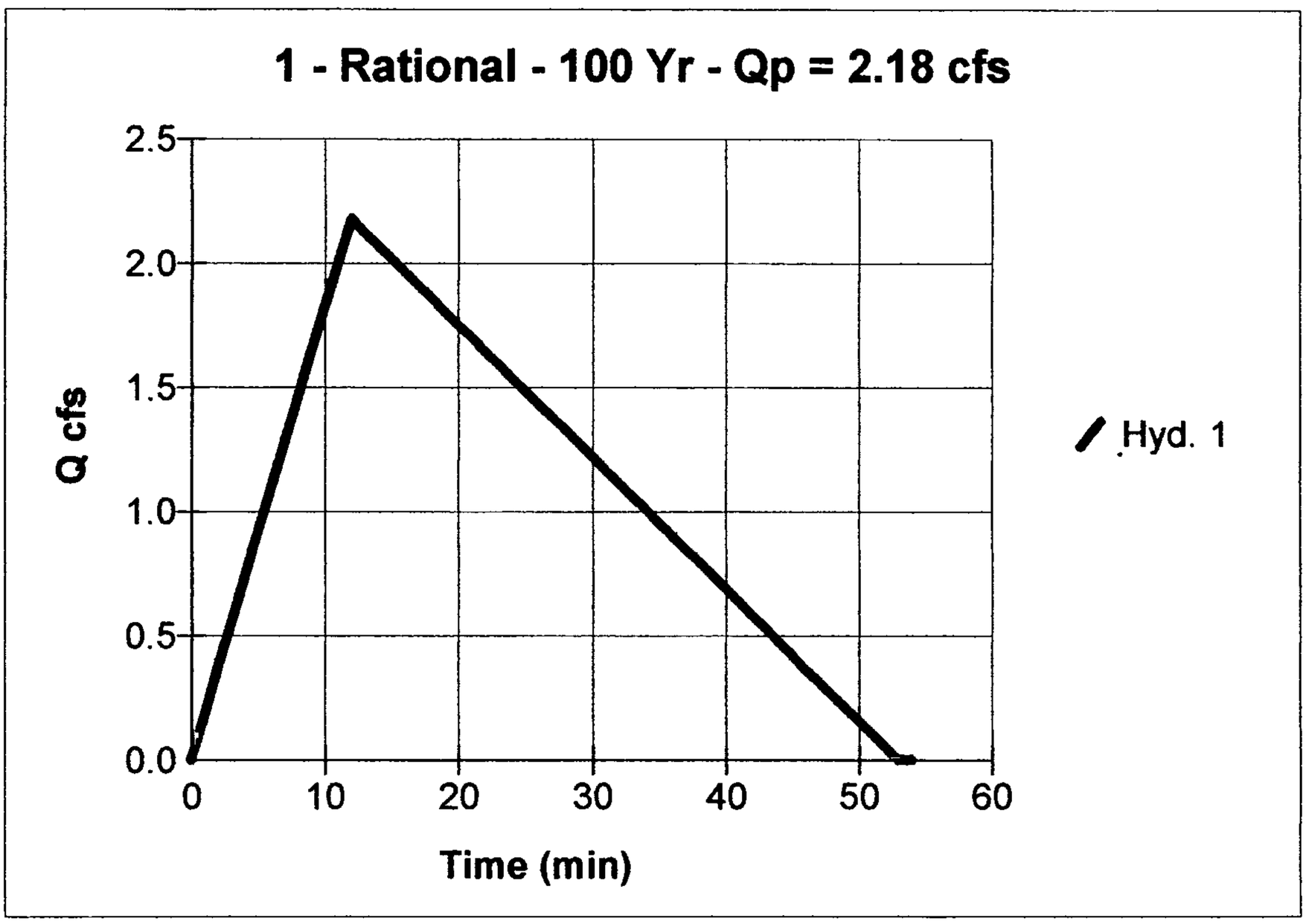
English

Hyd. No. 1

Basin 1

Hydrograph type	= Rational	Peak discharge	= 2.18 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 0.5 ac	Runoff coeff.	= 0.71
Intensity	= 6.14 in	Time of conc. (Tc)	= 12 min
I-D-F Curve	= SMBP.idf	Reced. limb factor	= 3.486

Total Volume = 3,518 cuft



Hydrograph Plot

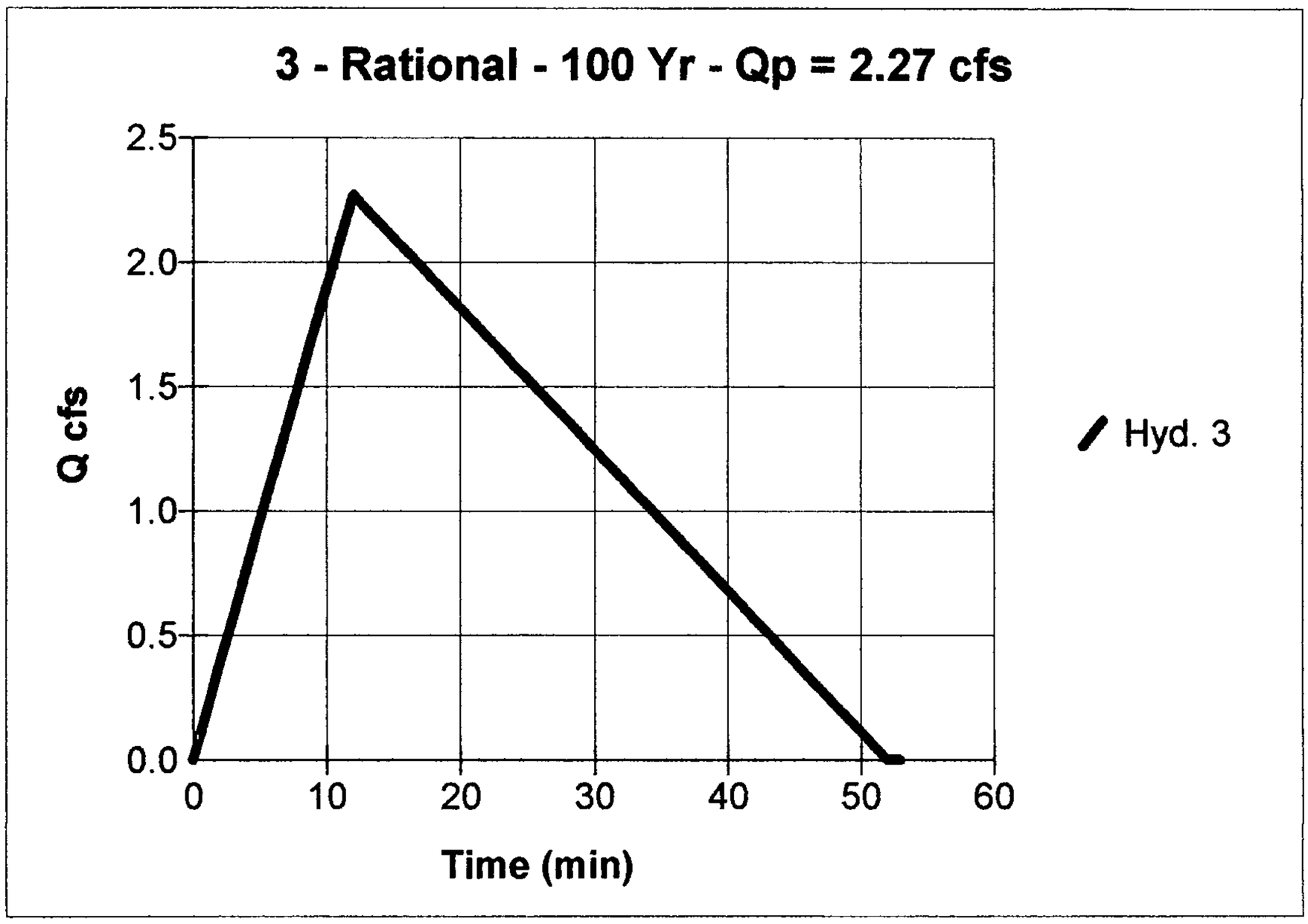
English

Hyd. No. 3

Basin 3

Hydrograph type	= Rational	Peak discharge	= 2.27 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 0.5 ac	Runoff coeff.	= 0.74
Intensity	= 6.14 in	Time of conc. (Tc)	= 12 min
I-D-F Curve	= SMBP.idf	Reced. limb factor	= 3.406

Total Volume = 3,601 cuft



Hydrograph Plot

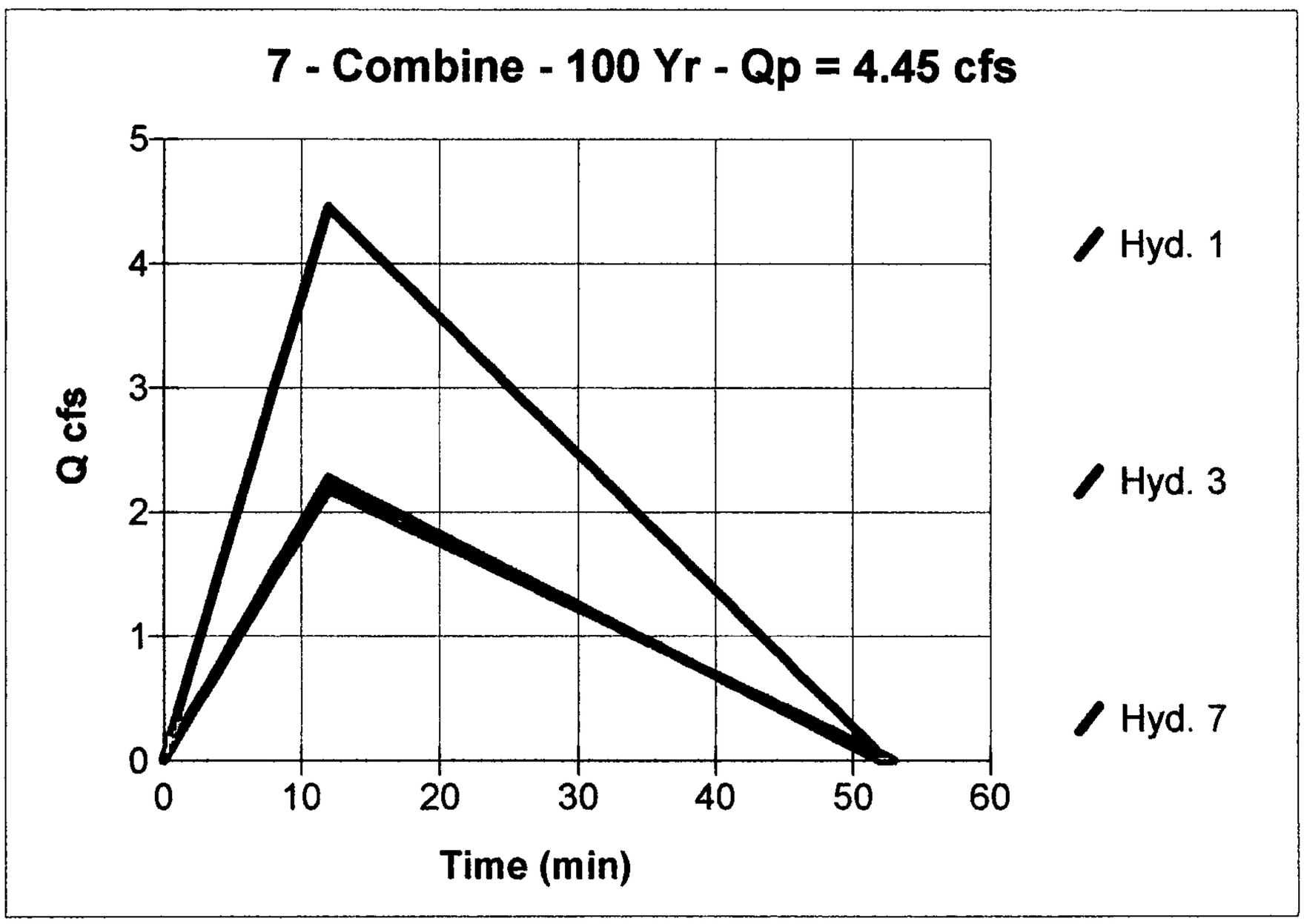
English

Hyd. No. 7

North & South Basins

Hydrograph type	= Combine	Peak discharge	= 4.45 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
1st inflow hyd. No.	= 1	2nd inflow hyd. No.	= 3

Total Volume = 7,005 cuft



Hydrograph Plot

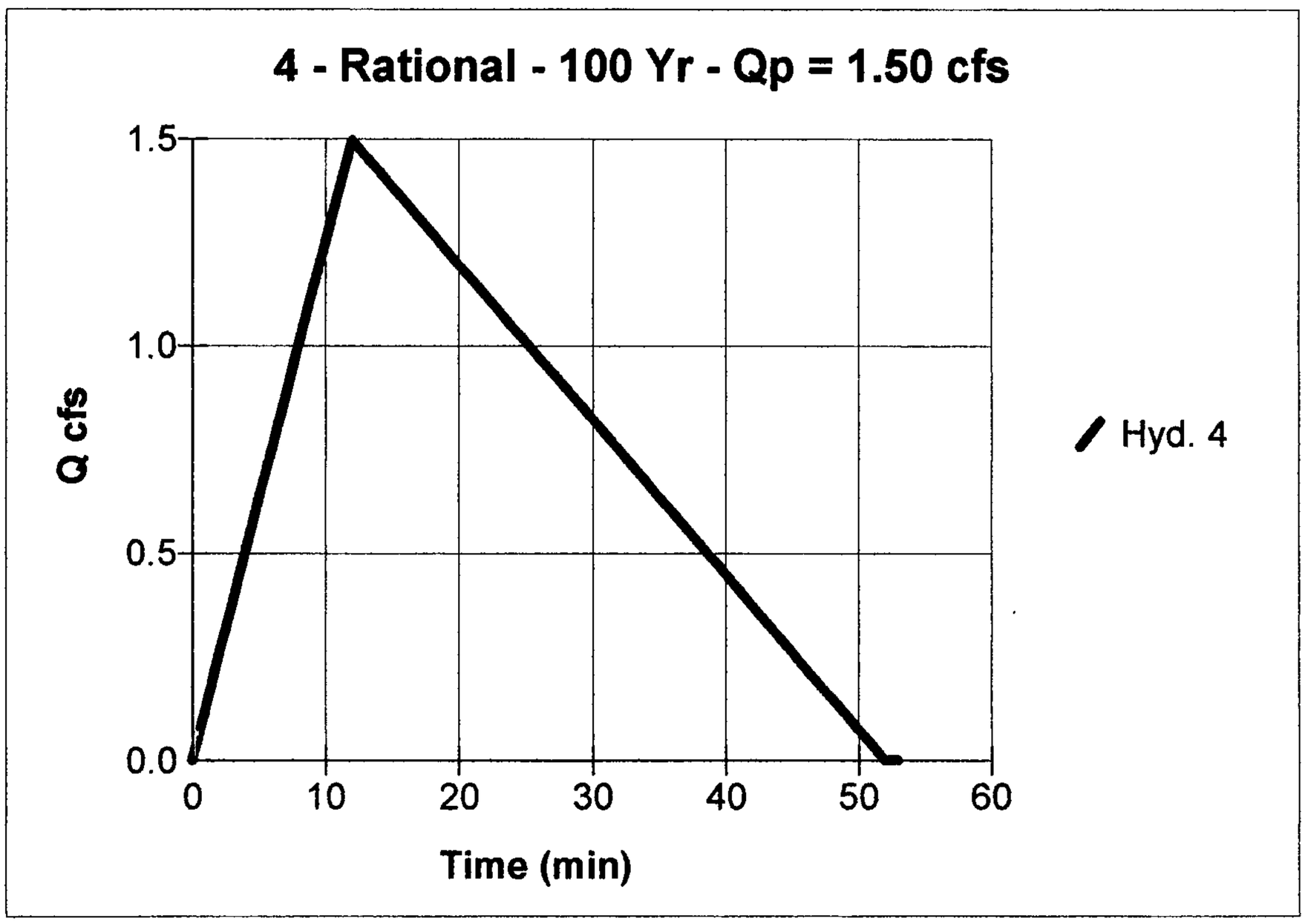
English

Hyd. No. 4

Basin 4

Hydrograph type	= Rational	Peak discharge	= 1.50 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 0.4 ac	Runoff coeff.	= 0.61
Intensity	= 6.14 in	Time of conc. (Tc)	= 12 min
I-D-F Curve	= SMBP.idf	Reced. limb factor	= 3.412

Total Volume = 2,378 cuft



Hydrograph Plot

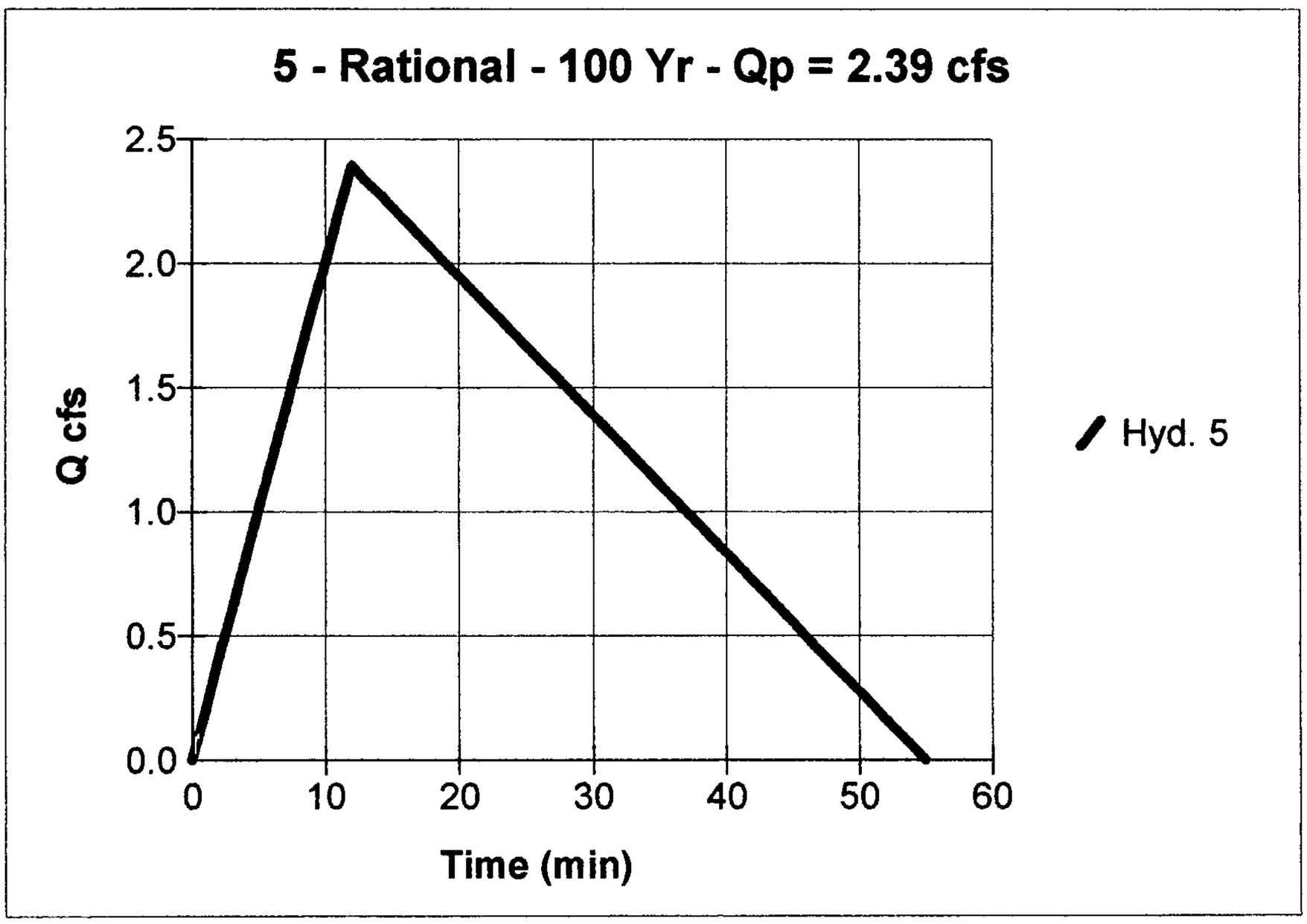
English

Hyd. No. 5

Basin 5

Hydrograph type	= Rational	Peak discharge	= 2.39 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 0.5 ac	Runoff coeff.	= 0.78
Intensity	= 6.14 in	Time of conc. (Tc)	= 12 min
I-D-F Curve	= SMBP.idf	Reced. limb factor	= 3.614

Total Volume = 3,975 cuft



Hydrograph Plot

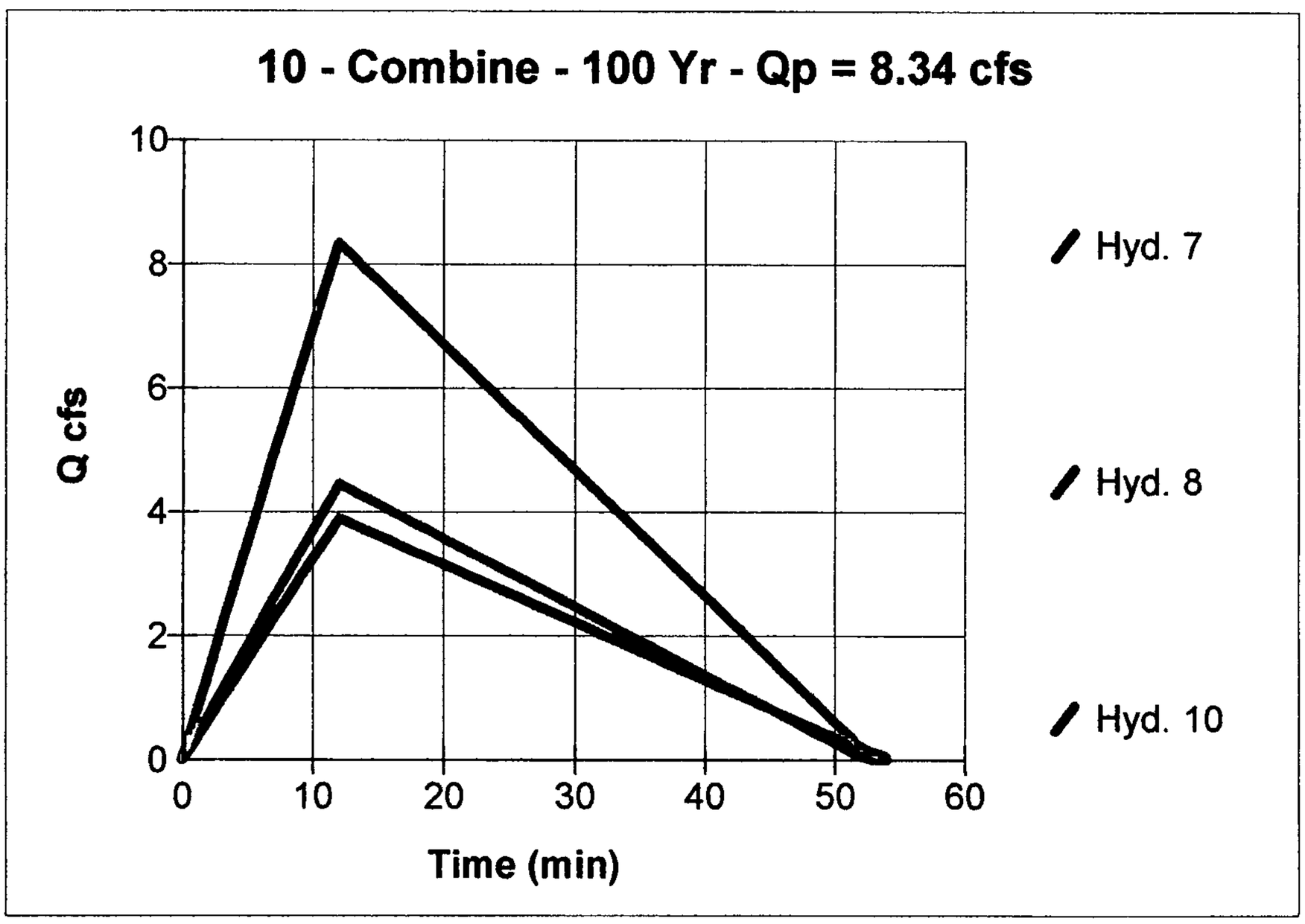
English

Hyd. No. 10

Basins to Front Detention Pond

Hydrograph type	= Combine	Peak discharge	= 8.34 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
1st inflow hyd. No.	= 7	2nd inflow hyd. No.	= 8

Total Volume = 13,290 cuft



Hydrograph Plot

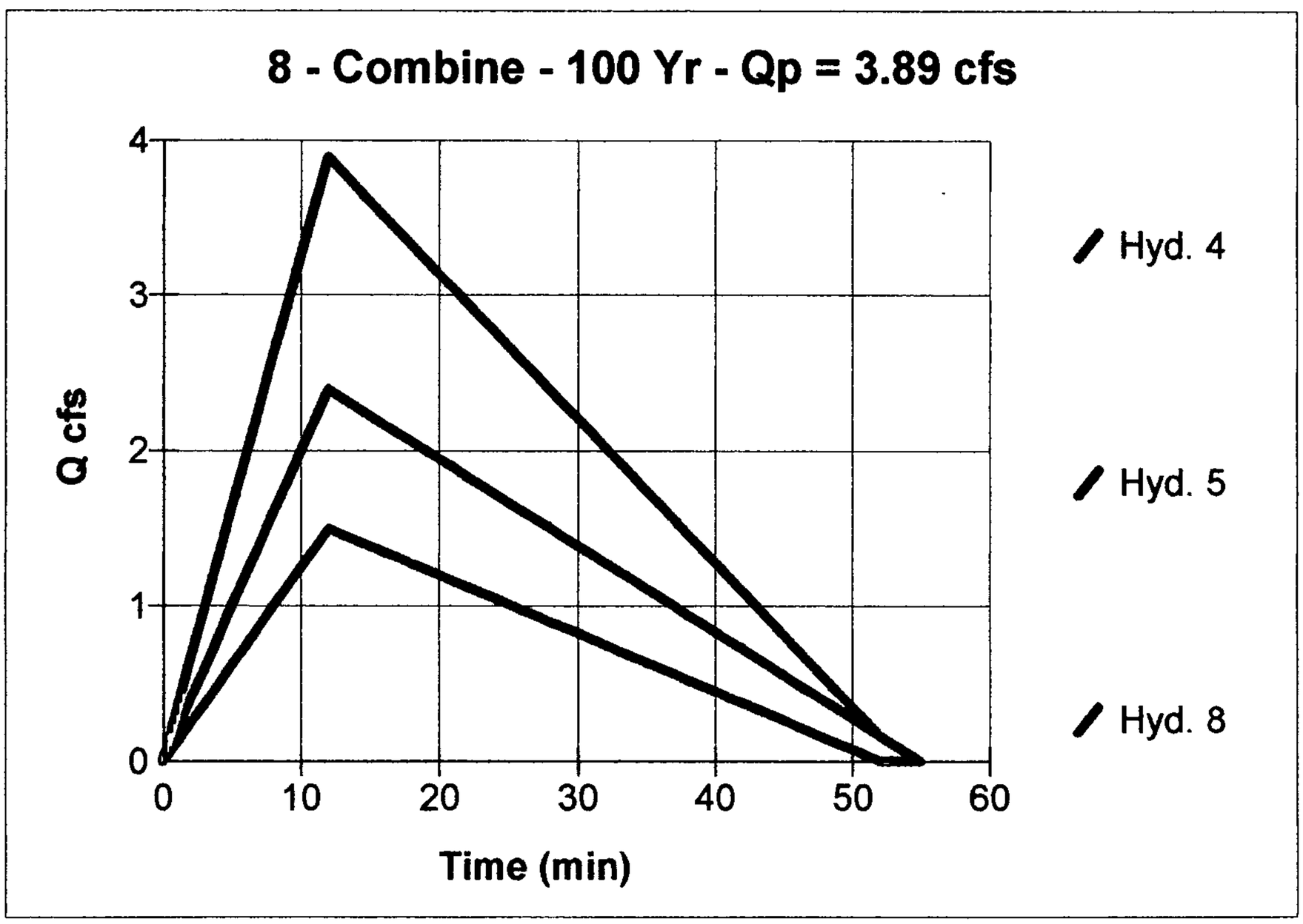
English

Hyd. No. 8

Front Basins

Hydrograph type	= Combine	Peak discharge	= 3.89 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
1st inflow hyd. No.	= 4	2nd inflow hyd. No.	= 5

Total Volume = 6,284 cuft



Hydrograph Plot

English

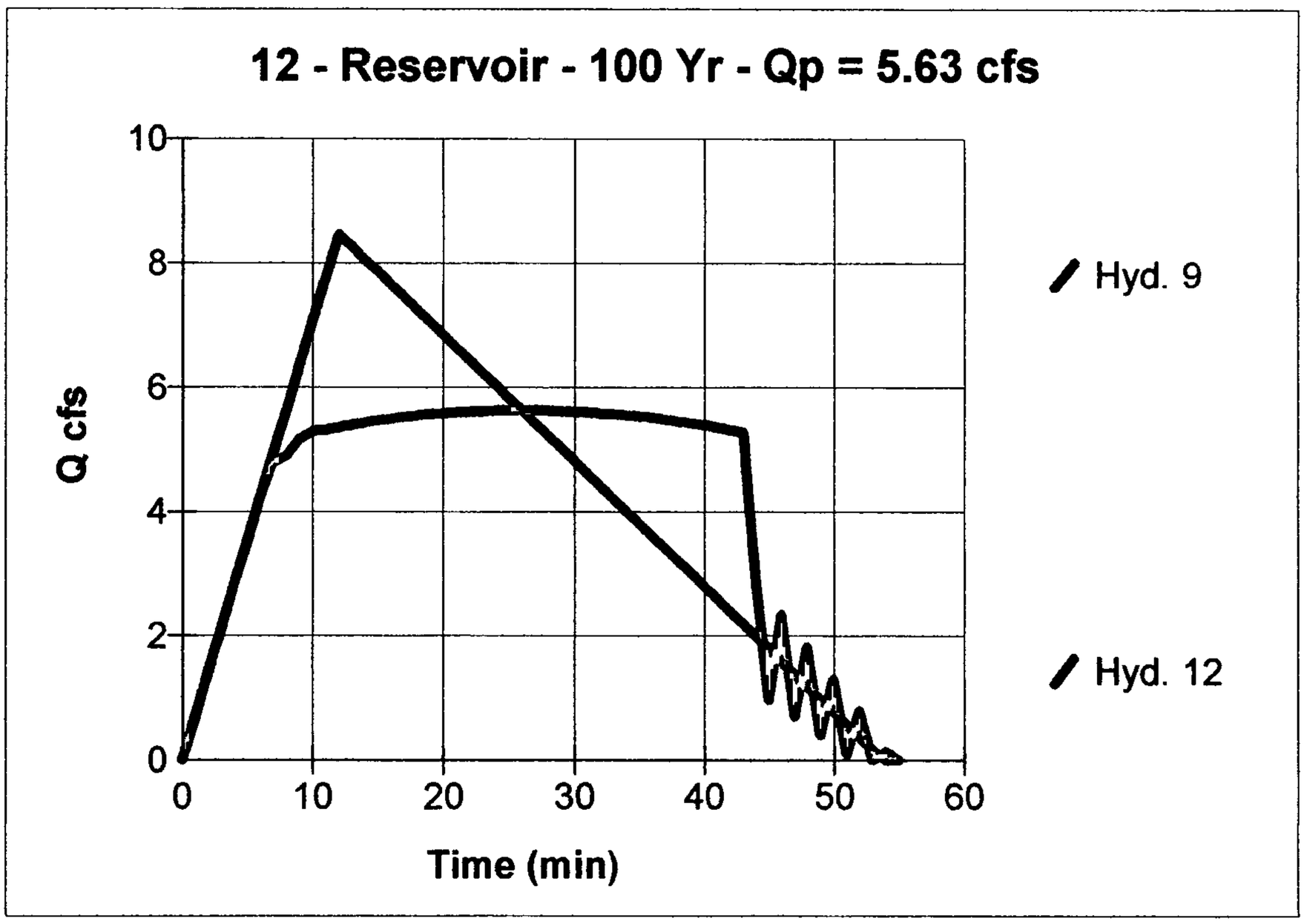
Hyd. No. 12

Rear Detention Pond

Hydrograph type	= Reservoir	Peak discharge	= 5.63 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyd. No.	= 9	Reservoir name	= Rear Pond
Max. Elevation	= 13.39 ft	Max. Storage	= 1,752 cuft

Storage Indication method used

Total Volume = 13,673 cuft



Hydrograph Plot

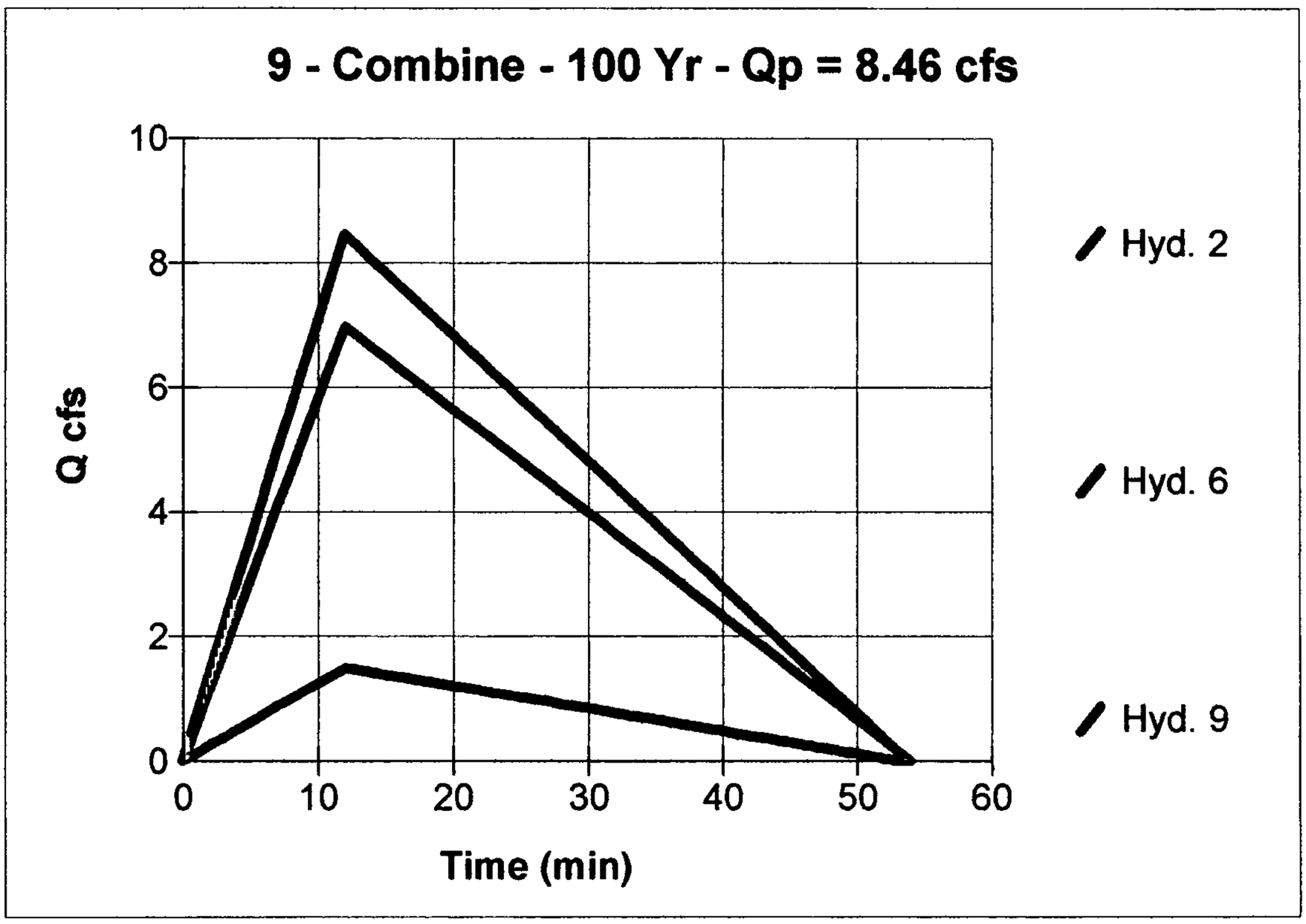
English

Hyd. No. 9

Rear Basins

Hydrograph type	= Combine	Peak discharge	= 8.46 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
1st inflow hyd. No.	= 2	2nd inflow hyd. No.	= 6

Total Volume = 13,664 cuft



Hydrograph Plot

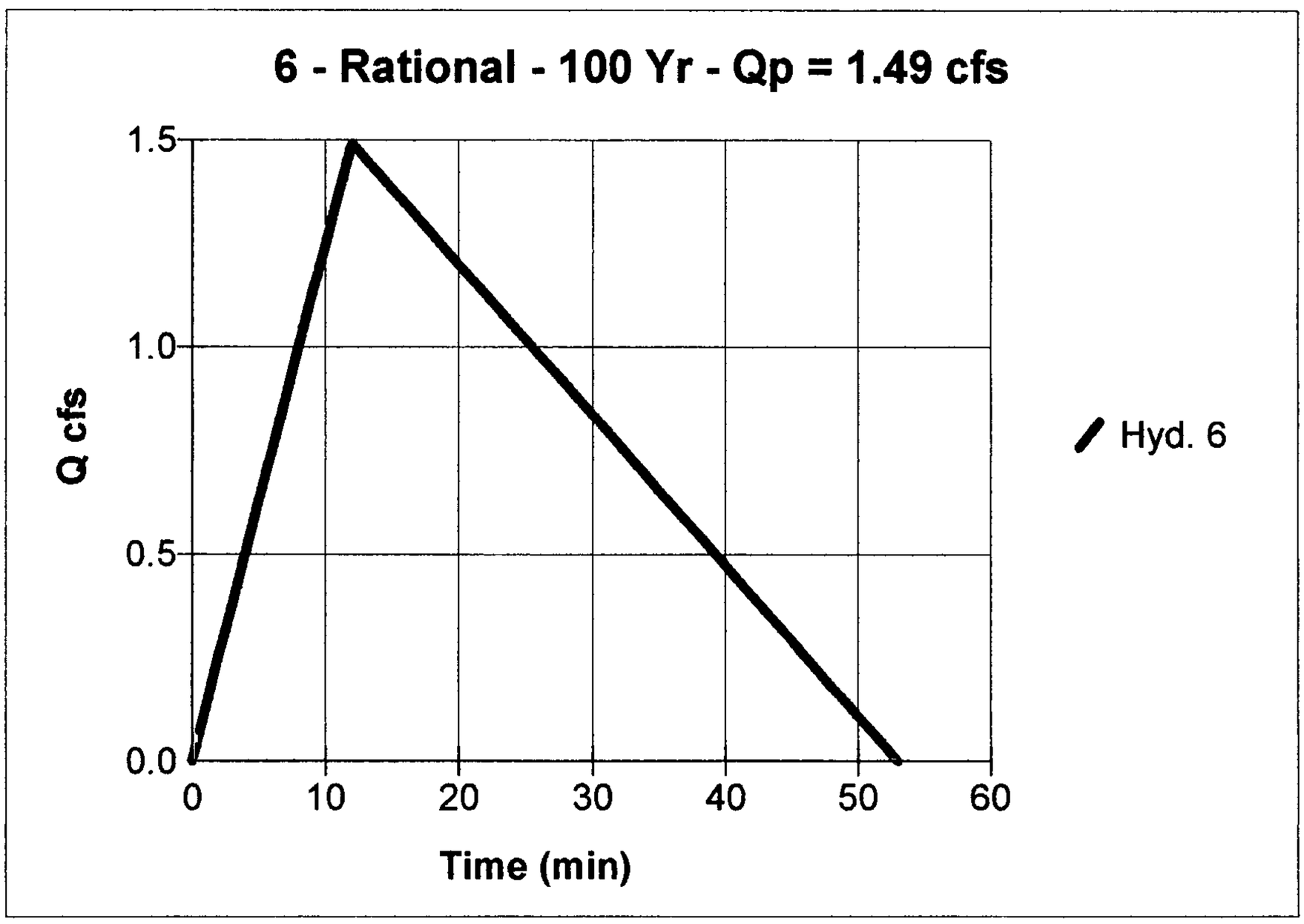
English

Hyd. No. 6

Basin 6

Hydrograph type	= Rational	Peak discharge	= 1.49 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 0.3 ac	Runoff coeff.	= 0.81
Intensity	= 6.14 in	Time of conc. (Tc)	= 12 min
I-D-F Curve	= SMBP.idf	Reced. limb factor	= 3.443

Total Volume = 2,385 cuft



Hydrograph Plot

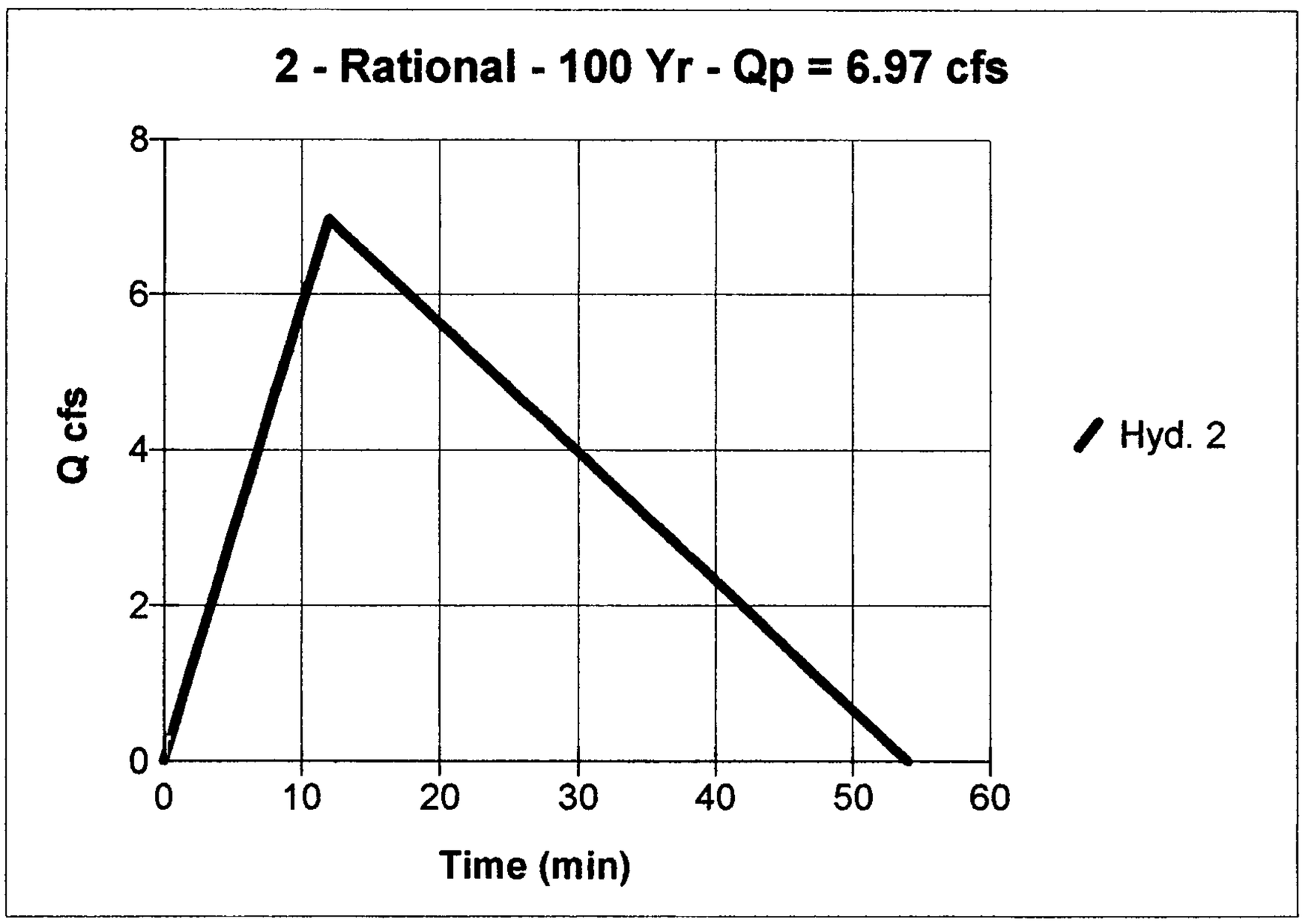
English

Hyd. No. 2

Basin 2

Hydrograph type	= Rational	Peak discharge	= 6.97 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 1.6 ac	Runoff coeff.	= 0.71
Intensity	= 6.14 in	Time of conc. (Tc)	= 12 min
I-D-F Curve	= SMBP.idf	Reced. limb factor	= 3.505

Total Volume = 11,305 cuft



Hydrograph Plot

English

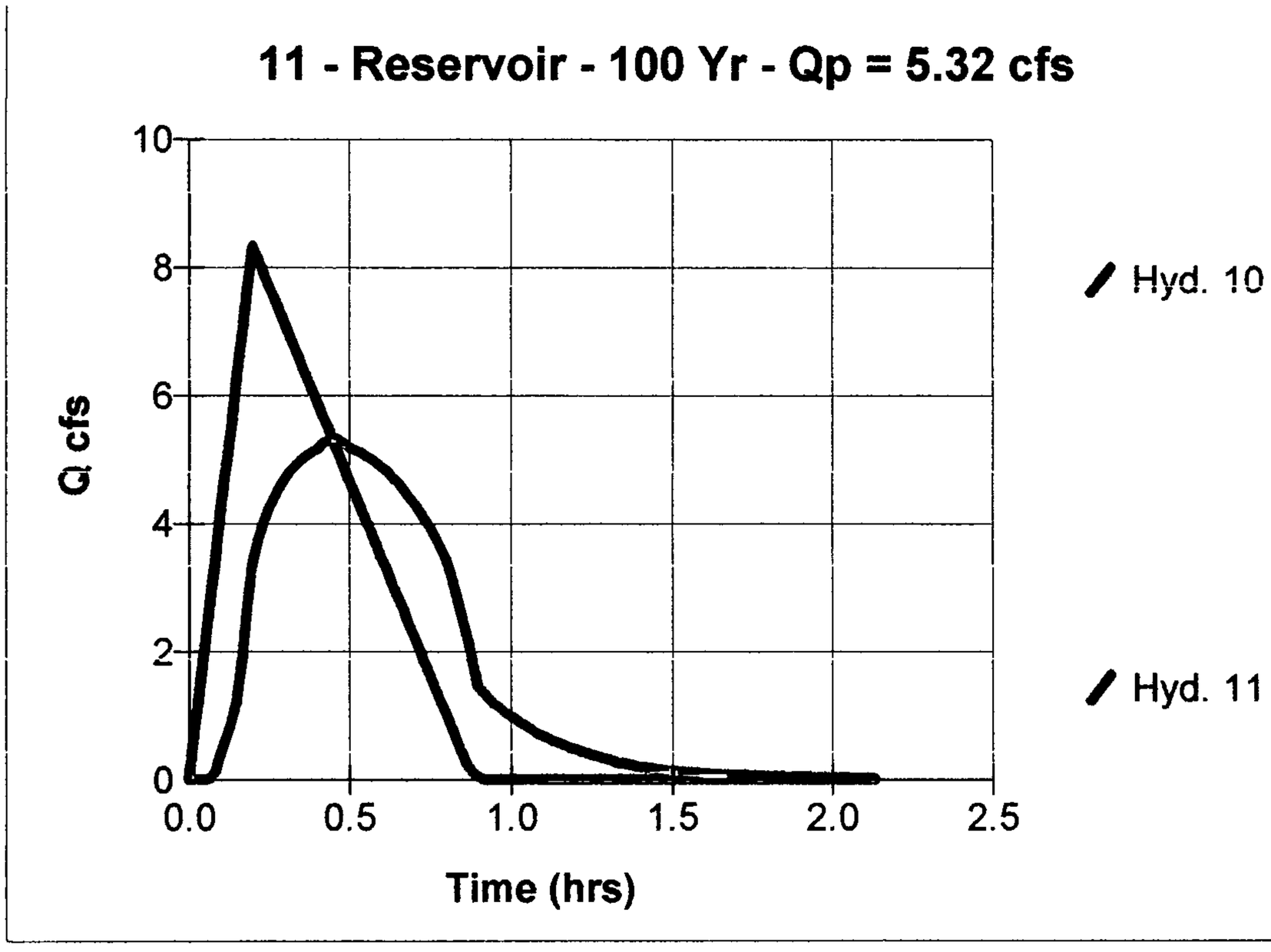
Hyd. No. 11

Washington St Pond

Hydrograph type	= Reservoir	Peak discharge	= 5.32 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyd. No.	= 10	Reservoir name	= Front Detention
Max. Elevation	= 9.02 ft	Max. Storage	= 4,320 cuft

Storage Indication method used

Total Volume = 13,006 cuft



Reservoir Report

English

Reservoir No. 2 - Rear Pond

Pond Data

Pond storage is based on known contour areas

Stage / Storage Table

Stage ft	Elevation ft	Contour area sqft	Incr. Storage cuft	Total storage cuft
0.00	9.80	04	0	0
0.50	10.30	04	2	2
1.00	10.80	04	2	4
1.50	11.30	04	2	6
2.00	11.80	04	2	8
2.50	12.30	04	2	10
2.70	12.50	04	1	11
3.20	13.00	430	109	125
3.70	13.50	7,810	2,060	2,185
4.00	13.80	11,535	2,902	5,087

Culvert / Orifice Structures

	[A]	[B]	[C]	[D]
Rise in	= 11.0	0.0	0.0	0.0
Span in	= 11.0	0.0	0.0	0.0
No. Barrels	= 1	0	0	0
Invert El. ft	= 9.80	0.00	0.00	0.00
Length ft	= 0.0	0.0	0.0	0.0
Slope %	= 0.00	0.00	0.00	0.00
N-Value	= .013	.000	.000	.000
Orif. Coeff.	= 0.60	0.00	0.00	0.00
Multi-Stage	= -----	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len ft	= 0.0	0.0	0.0	0.0
Crest El. ft	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 0.00	0.00	0.00	0.00
Eqn. Exp.	= 0.00	0.00	0.00	0.00
Multi-Stage	= No	No	No	No

Tailwater Elevation = 0.00 ft

Note: All outflows have been analyzed under inlet and outlet control.

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Discharge cfs
0.00	0	9.80	0.00	---	---	---	---	---	---	---	0.00
0.50	2	10.30	0.91	---	---	---	---	---	---	---	0.91
1.00	4	10.80	2.34	---	---	---	---	---	---	---	2.34
1.50	6	11.30	3.24	---	---	---	---	---	---	---	3.24
2.00	8	11.80	3.95	---	---	---	---	---	---	---	3.95
2.50	10	12.30	4.54	---	---	---	---	---	---	---	4.54
2.70	11	12.50	4.76	---	---	---	---	---	---	---	4.76
3.20	125	13.00	5.26	---	---	---	---	---	---	---	5.26
3.70	2,185	13.50	5.72	---	---	---	---	---	---	---	5.72
4.00	5,087	13.80	5.98	---	---	---	---	---	---	---	5.98

Hydrograph Plot

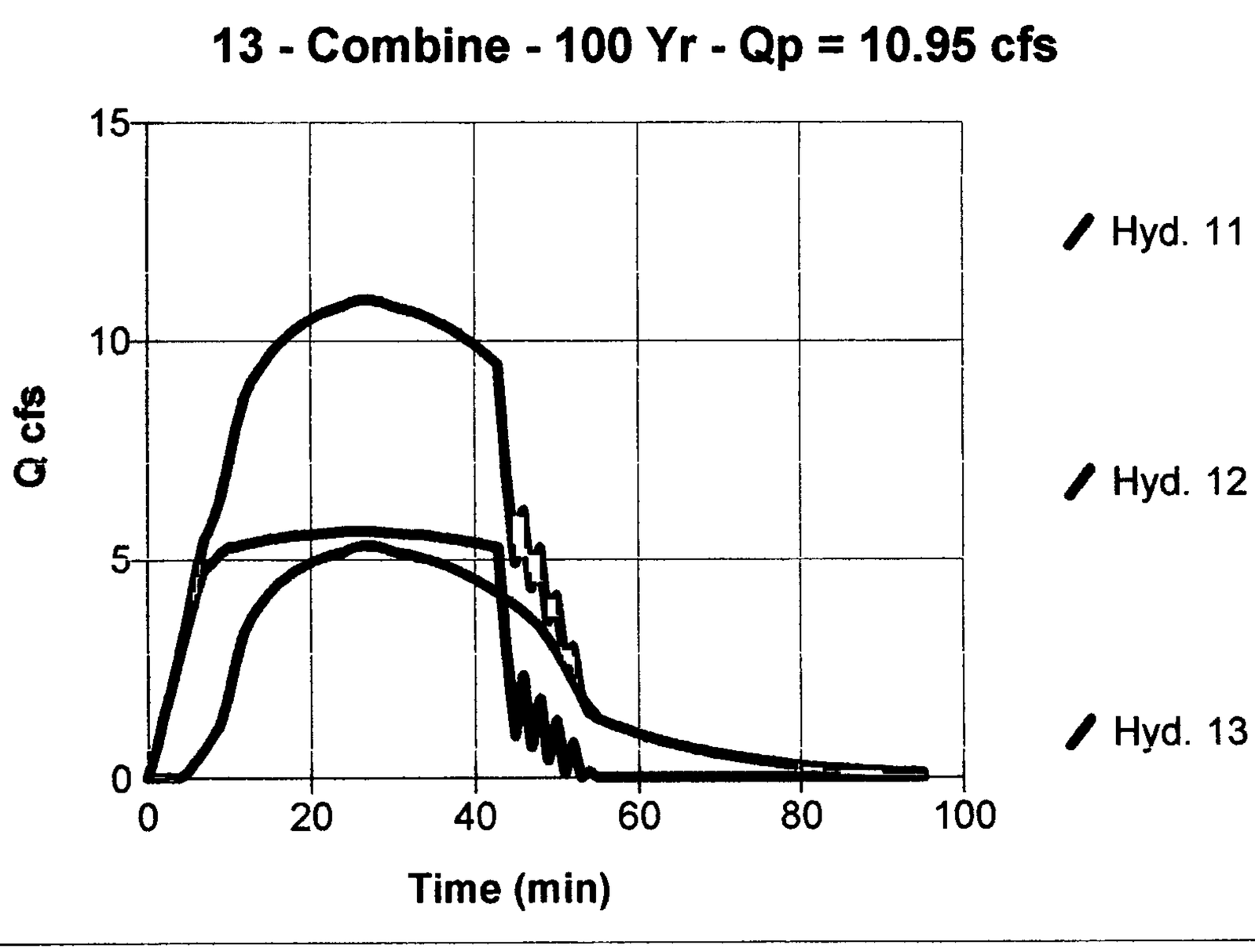
English

Hyd. No. 13

Combined Ponds

Hydrograph type	=	Combine	Peak discharge	=	10.95 cfs
Storm frequency	=	100 yrs	Time interval	=	1 min
1st inflow hyd. No.	=	11	2nd inflow hyd. No.	=	12

Total Volume = 26,679 cuft



Hydrograph Plot

English

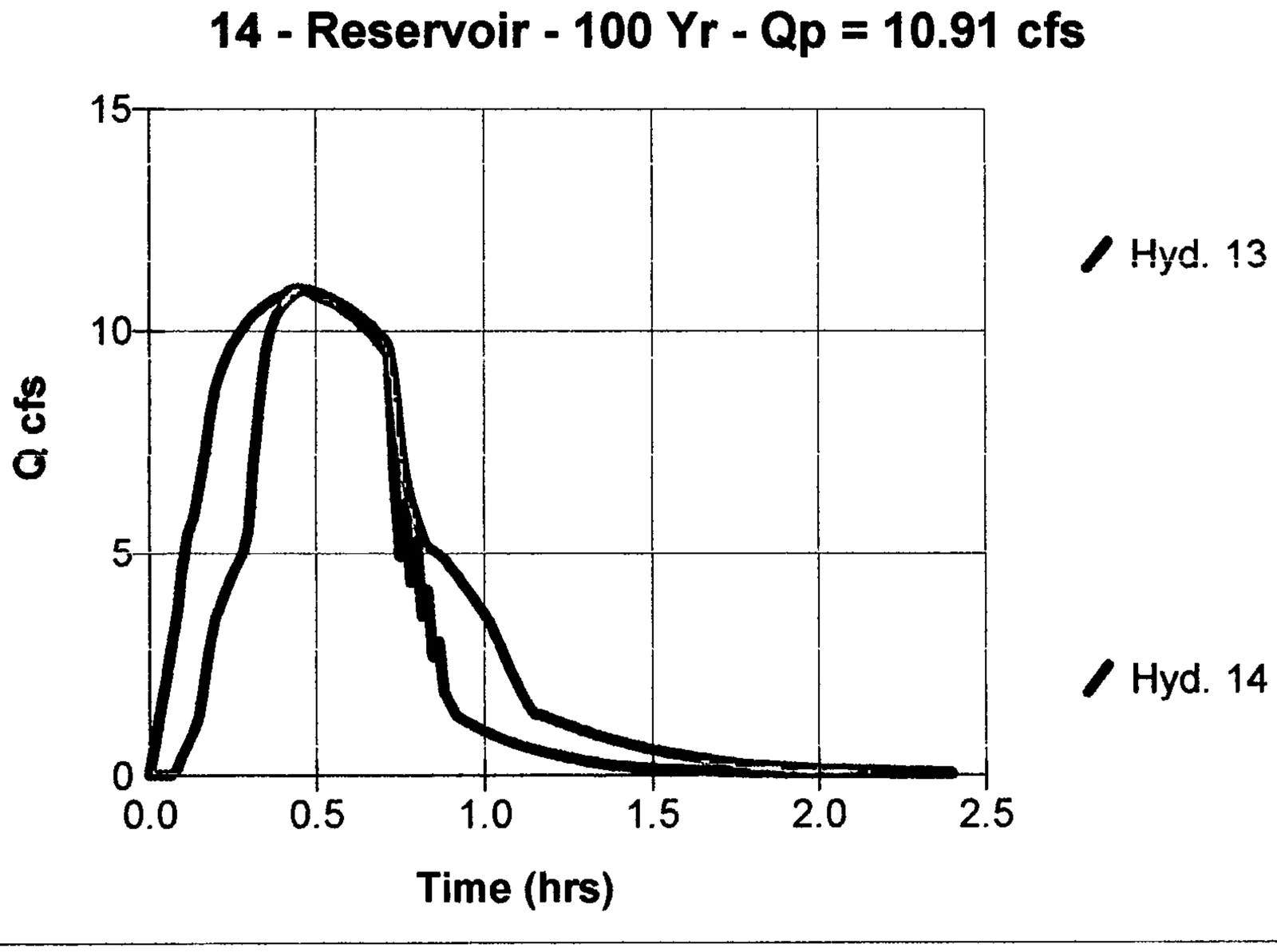
Hyd. No. 14

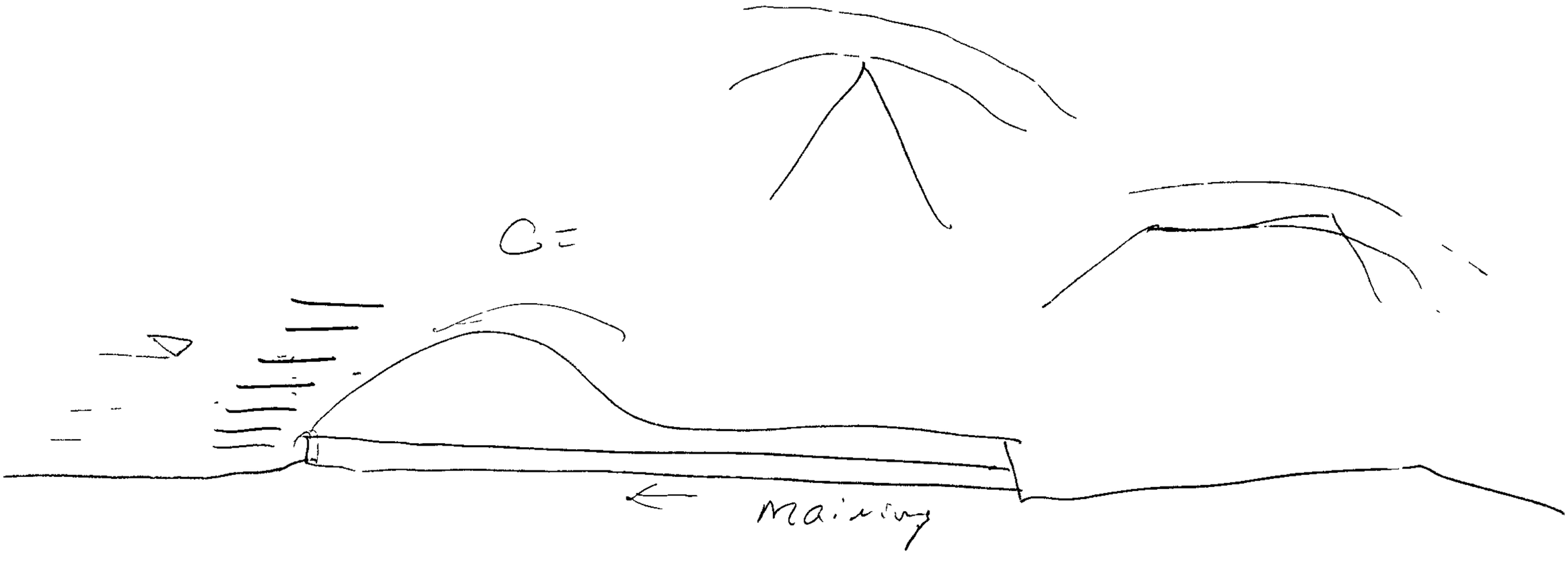
Site Q100 Wash Pond

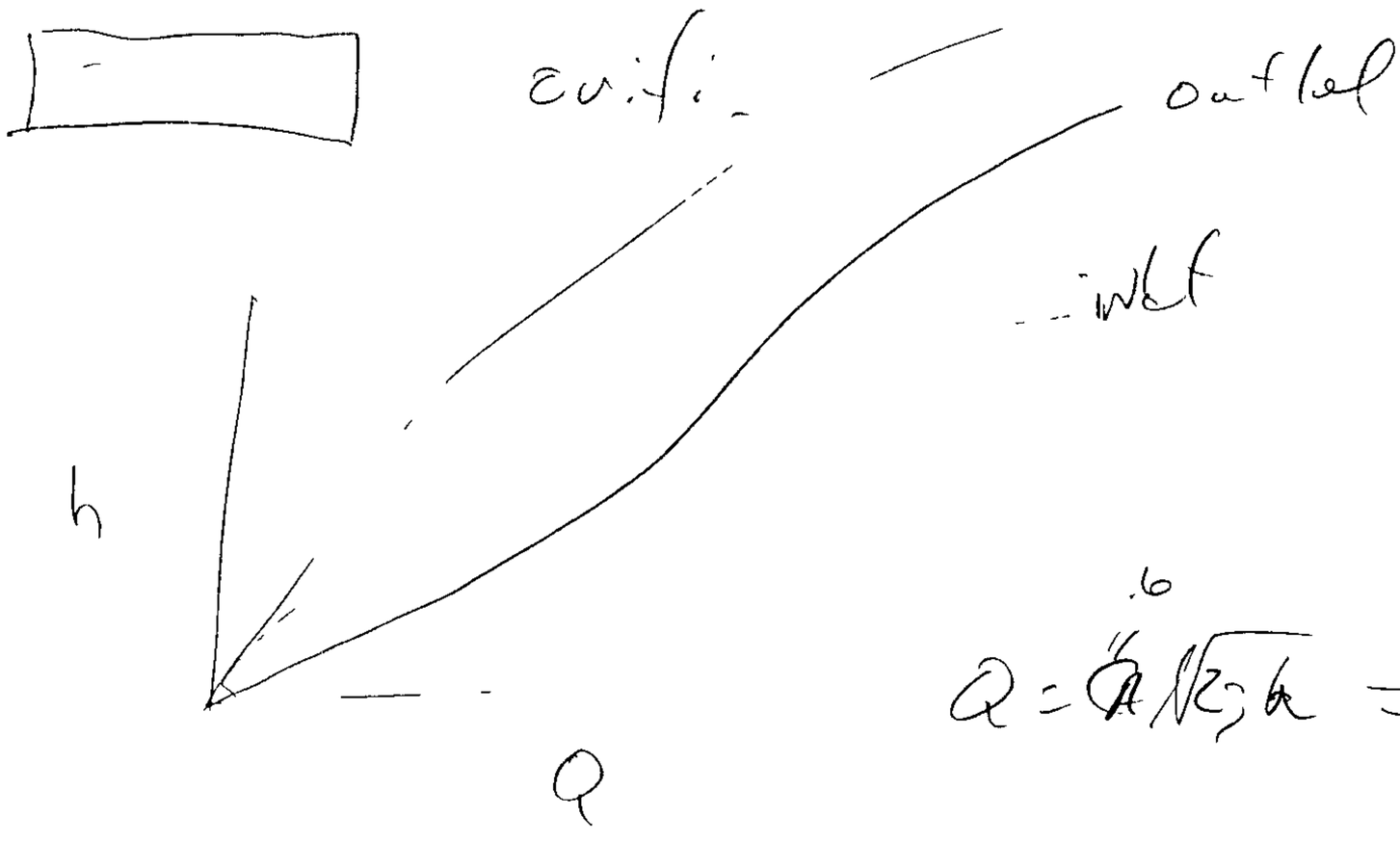
Hydrograph type	= Reservoir	Peak discharge	= 10.91 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Inflow hyd. No.	= 13	Reservoir name	= Front Detention
Max. Elevation	= 9.25 ft	Max. Storage	= 4,984 cuft

Storage Indication method used

Total Volume = 26,394 cuft







$$Q = C_A \sqrt{2gh} = QA$$

$$Q = A \frac{1.49}{n} R^{2/3} S^{1/2}$$

Reservoir Report

English

Reservoir No. 1 - Front Detention Pond

Pond Data

Bottom area = 0.0 sqft Side slope = 0.0:1 Bottom elev. = 0.00 ft Depth = 0.00 ft

Stage / Storage Table

Stage ft	Elevation ft	Contour area sqft	Incr. Storage cuft	Total storage cuft
0.00	7.50	2,843	0	0
0.20	7.70	2,843	569	569
0.40	7.90	2,843	569	1,137
0.60	8.10	2,843	569	1,706
0.80	8.30	2,843	569	2,274
1.00	8.50	2,843	569	2,843
1.20	8.70	2,843	569	3,412
1.40	8.90	2,843	569	3,980
1.60	9.10	2,843	569	4,549
1.80	9.30	2,843	569	5,117
2.00	9.50	2,843	569	5,686

Culvert / Orifice Structures

	[A]	[B]	[C]	[D]
Rise in	= 6.0	0.0	0.0	0.0
Span in	= 24.0	0.0	0.0	0.0
No. Barrels	= 1	0	0	0
Invert El. ft	= 7.60	0.00	0.00	0.00
Length ft	= 5.0	0.0	0.0	0.0
Slope %	= 1.00	0.00	0.00	0.00
N-Value	= .013	.000	.000	.000
Orif. Coeff.	= 0.60	0.00	0.00	0.00
Multi-Stage	= ----	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len ft	= 14.0	0.0	0.0	0.0
Crest El. ft	= 9.00	0.00	0.00	0.00
Weir Coeff.	= 2.92	0.00	0.00	0.00
Eqn. Exp.	= 1.50	0.00	0.00	0.00
Multi-Stage	= No	No	No	No

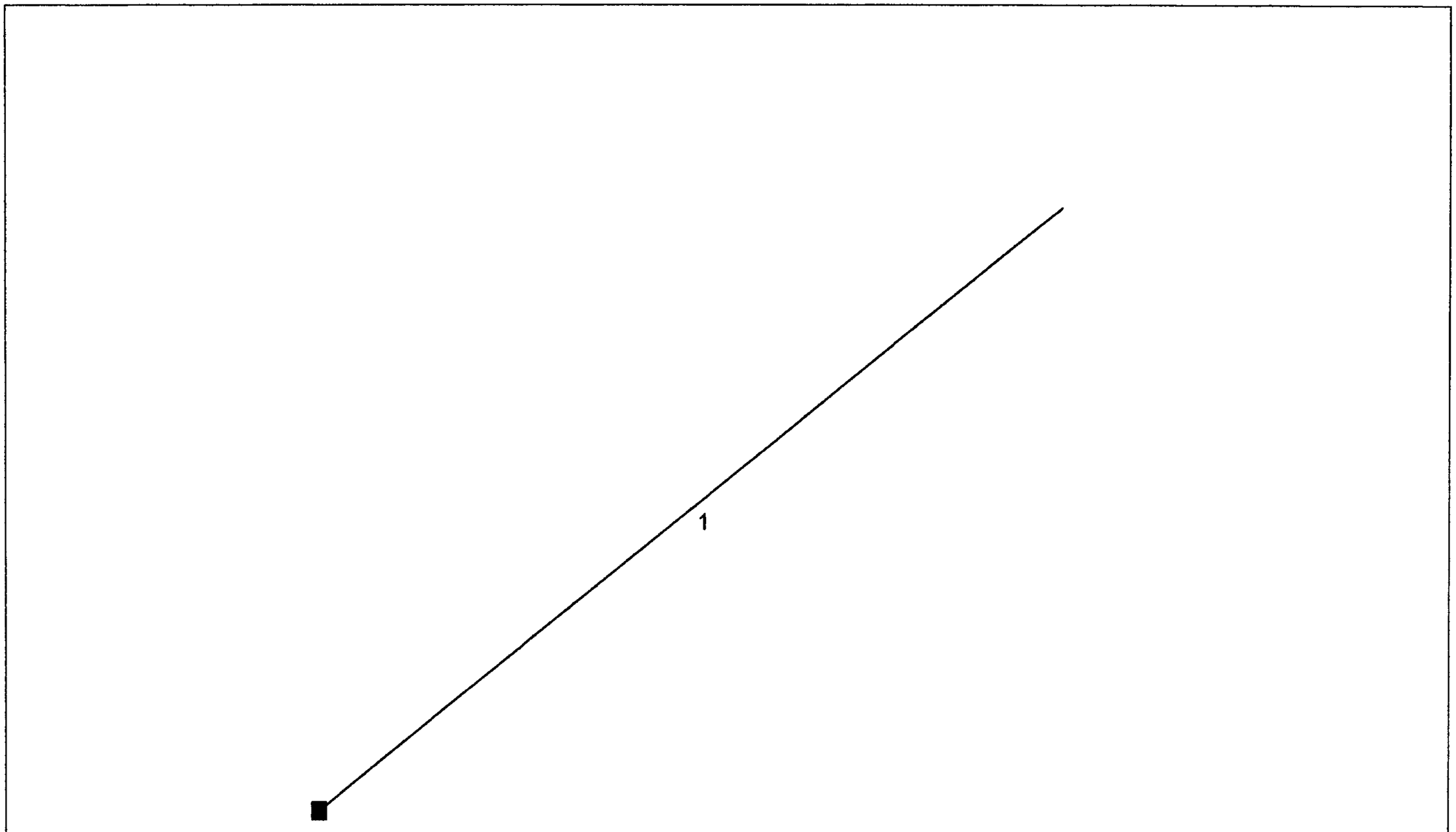
Tailwater Elevation = 0.00 ft

Stage / Storage / Discharge Table

Note. All outflows have been analyzed under inlet and outlet control

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Discharge cfs
0.00	0	7.50	0.00	---	---	---	0.00	---	---	---	0.00
0.20	569	7.70	0.22	---	---	---	0.00	---	---	---	0.22
0.40	1,137	7.90	0.83	---	---	---	0.00	---	---	---	0.83
0.60	1,706	8.10	1.37	---	---	---	0.00	---	---	---	1.37
0.80	2,274	8.30	3.07	---	---	---	0.00	---	---	---	3.07
1.00	2,843	8.50	3.88	---	---	---	0.00	---	---	---	3.88
1.20	3,412	8.70	4.44	---	---	---	0.00	---	---	---	4.44
1.40	3,980	8.90	4.93	---	---	---	0.00	---	---	---	4.93
1.60	4,549	9.10	5.38	---	---	---	1.29	---	---	---	6.68
1.80	5,117	9.30	5.80	---	---	---	6.72	---	---	---	12.52
2.00	5,686	9.50	6,18	---	---	---	14.45	---	---	---	20.64

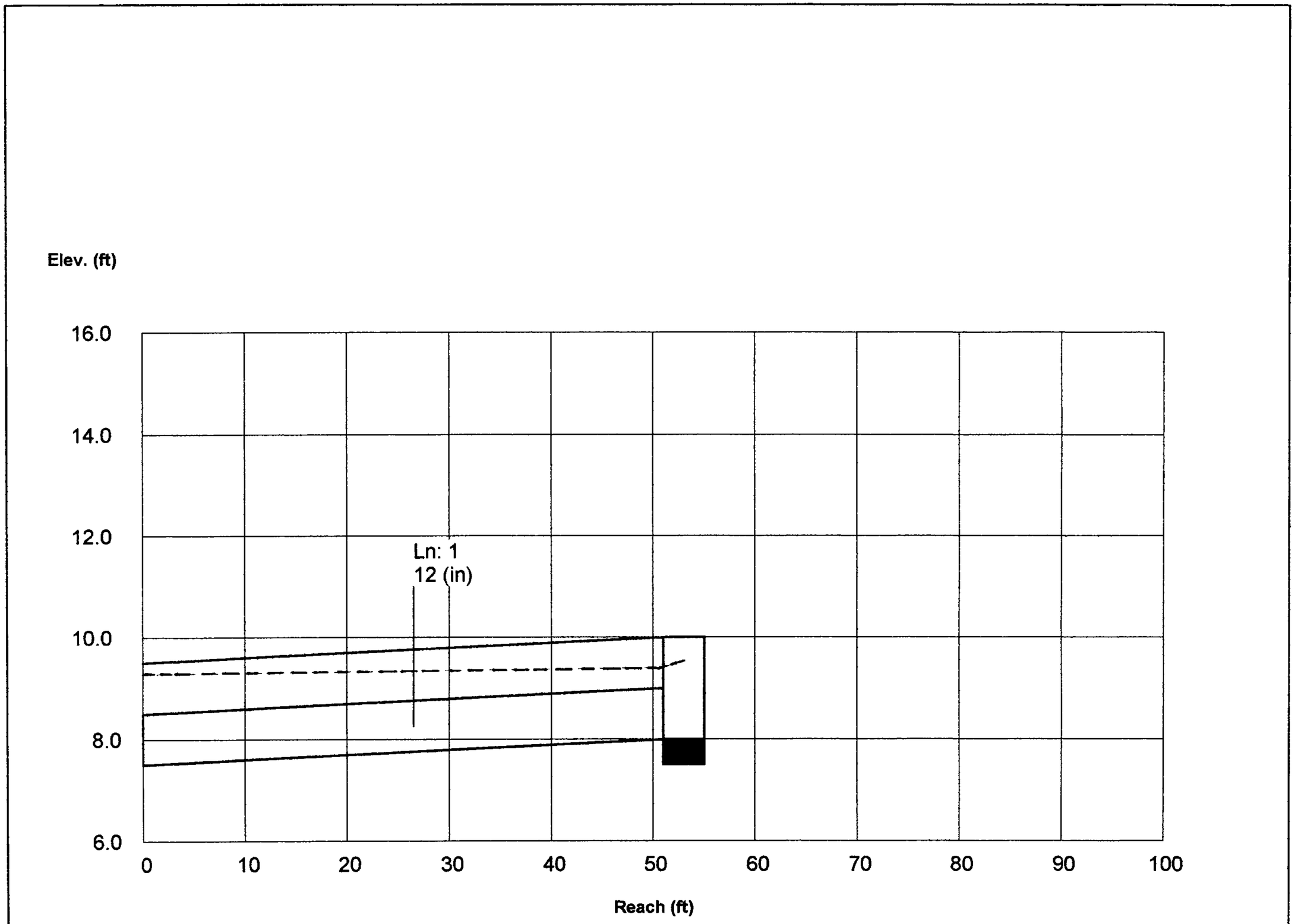
Hydraflow Plan View



Project file: Wash4acS.stm	IDF file: SMBP.idf	No. Lines: 1	01-30-2002

Storm Sewer Profile

Proj. file: New.stm



Hydraflow Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(In/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
1	End	56.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	2.30	4.37	2.93	12	0.89	8.00	7.50	9.39	9.25	10.00	9.50	South Pond Pipe

Project File: Wash4acS.stm | IDF File: SMBP.idf | Total number of lines: 1 | Run Date: 02-06-2002

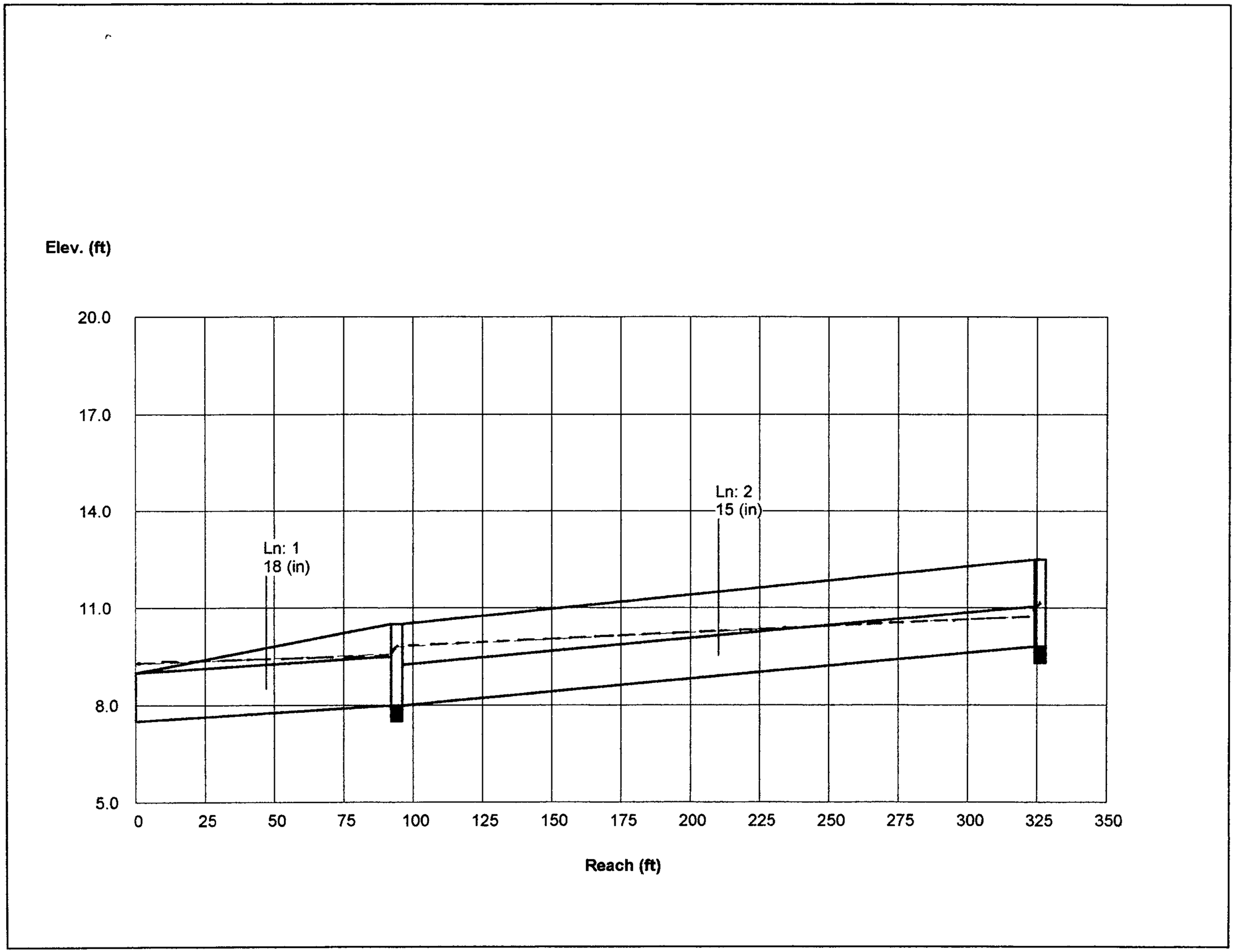
NOTES: Intensity = 0.00 / (Inlet time + 0.00) ^ 0.00; Return period = 100 Yrs. ; Initial tailwater elevation = 9 25 (ft)

Hydraflow Plan View

Project file: Wash4ac.stm	IDF file: SMBP.idf	No. Lines: 2	01-30-2002

Storm Sewer Profile

Proj. file: Wash4ac.stm



Hydraflow Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
1	End	94.0	0.00	0.00	0.00	0.00	0.00	0.0	0.8	0.0	7.80	9.96	4.41	18	0.53	8.00	7.50	9.58	9.27	10.50	9.00	Basin 1 Outlet
2	1	232.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	5.60	7.39	5.08	15	0.78	9.80	8.00	10.75	9.79	12.50	10.50	Rear Pond Outlet

Project File: Wash4ac.stm | IDF File: SMBP.idf | Total number of lines: 2 | Run Date: 02-04-2002

NOTES: Intensity = 0.00 / (Inlet time + 0.00) ^ 0.00; Return period = 100 Yrs. ; Initial tailwater elevation = 9.27 (ft)

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Public Works Department

Transportation Development Services Section

April 23, 2002

Tim Veltkamp for Ann Marie Christian, Registered Architect
6801 Jefferson N.W.
Suite 100
Albuquerque, NM 87109

Re: Traffic Circulation Layout (TCL) Submittal for Building Permit Approval for
Mechenbeier Office/Warehouse, [C17 / D113]
8440 Washington N.E.
Architect's Stamp Dated 04/17/02

Dear Mr. Veltkamp:

The TCL submittal, dated April 18, 2002, is sufficient for acceptance by this office and is stamped and signed as such. Four copies have been made as required: two for submittal of building permit plans, one for this office and one to be kept by you to be used for certification of the site for final C.O. for Hydrology/Transportation.

When the site is complete and a Permanent C.O. is needed, a Letter of Certification (specifically stating "Certification"), stating that the site was built in substantial compliance with the approved plan, needs to be included with the approved copy of the Traffic Circulation Layout (TCL).

For the quickest turnaround time, submit the "acceptable" TCL. The "acceptable" TCL is an ***exact*** copy of the approved TCL, stamped and signed by this office, or signed off D.R.B. Site Plan. It is in each of the two City Permit Plan Sets—the contractor's City field set and the City's plan set--in the basement of the Plaza Del Sol building. The letter or the TCL, or both, must be stamped with the designer's seal, signed and dated for that certification.

A second option would be to place a typed or stamped Statement of Certification on the "acceptable" TCL, with the designer's seal, signed and dated for that certification.

All documentation must be submitted with a *FULLY* completed Drainage and Transportation Information Sheet (also used for the Grading and Drainage submittal) to Hydrology at the Development Services Center. Submit to front counter personnel for log in and evaluation by Transportation.

Once verification of certification is completed and approved, notification will be made to Building Safety to issue Final C.O. to confirm that Final C.O. has been issued to the superintendent, call Building Safety at 924-3306.

Sincerely,

Mike Zamora, Commercial Plan Checker
Development and Building Services
Planning Department

c: Hydrology file
Mike Zamora

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Public Works Department
Transportation Development Services Section

April 10, 2002

Tim Veltkamp for Ann Marie Christian , Reg. Architect
Dekker, Perich, Sabatini
6801 Jefferson N.E.
Suite 100
Albuquerque, NM 87109

Re: TCL Submittal for Building Permit Approval for
Mechenbier Office/Warehouse, [C17 / D113]
8440 Washington St. N.E.,
Architect's Stamp Dated 04/03/02

Dear Mr. Veltkamp:

The location referenced above, dated April 03, 2002, is not acceptable and requires modification to the Traffic Circulation Layout (TCL) prior to Building Permit release as stated on the attached *PRELIMINARY* TCL checklist, and red-lined TCL markup with comments. Completion of some comments will allow further evaluation of that area of concern.

Please resubmit revised TCL after addressing marked up comments, along with checklist and all current and past red-lined, mark-up copies. Submit package with fully completed Drainage and Transportation Information Sheet for every submittal.

Sincerely,

Mike Zamora, Commercial Plan Checker
Development and Building Services
Planning Department

c: Hydrology file
Mike Zamora

October 28, 2002

Dekker/Perich/Sabatini
architecture
interiors
planning
engineering

Mr. Michael Zamora
Commercial Plan Checker
Development and Building Service, Planning Department
City of Albuquerque
Public Works Department - Transportation Development Services Section
P.O. Box 1293
Albuquerque, New Mexico 87103

Re: Mechenbier Office/Warehouse, [C17/D113]
8440 Washington NE
Architect's Certification for C.O.

Dear Mr. Zamora:

Attached is an exact copy of the approved TCL. Our office has visited the site at intervals appropriate to the stages of construction. Such visits and observations are not intended to be an exhaustive check or detailed inspection of the Contractor's work but rather are to allow our office, as experienced professionals, to become generally familiar with the work in progress and to determine, in general, if the Work is proceeding in accordance with the Contact Documents.

Based on our observations we hereby certify that this site has been constructed in substantial compliance with the approved site plan located at 8440 Washington NE, with the only exceptions being the north wall between the parking and yard moved 1'-0" to the east, and the south wall between parking and yard moved 3'-0" to the east. The relocation of these walls did not affect parking or traffic circulation as approved in the TCL. The north side accessible ramp was extended to accommodate grading conditions, and parking bumpers were added at all spaces along the building front. The red-clouded areas on the approved TCL copy indicate these adjustments.

If you have any questions regarding our observations, please feel free to contact us.

Very truly yours,

Dekker/Perich/Sabatini Ltd.

Ann Marie Christian, AIA
Associate

STATE OF NEW MEXICO
ANN MARIE CHRISTIAN
3852
10/28/02
REGISTERED ARCHITECT

RECEIVED
OCT 29 2002
HYDROLOGY SECTION

6801 Jefferson NE
Suite 100
Albuquerque NM
87109
505 761-9700
fax 761 4222
dps@dpsabq com