CITY OF
Albuquerque

October 9, 1997

Martin J. Chávez, Mayor

Ronald Bohannan, P.E.
Tierra West, LLC
4421 McLeod Rd. NE
Suite D
Albuquerque, NM 87109

RE: BOSQUE MEADOWS SUBDIVISION (D12-D2). ENGINEER'S CERTIFICATION FOR RELEASE OF FINANCIAL GUARANTEE AND SUBDIVISION CERTIFICATION. ENGINEER'S CERTIFICATION DATED SEPTEMBER 15, 1997.

Dear Mr. Bohannan:

Based on the information provided on your September 24, 1997 submittal, City Hydrology accepts the Engineer's Certification of grading and drainage for Release of Financial Guarantees and Subdivision Certification.

If I can be of further assistance, please feel free to contact me at 924-3984.

Sincerely,

Lisa Ann Manwill, P.E.
Hydrology

c: Terri Martin
Andrew Garcia
File

CITY OF
Albuquerque

Public Works Department

March 10, 1997

Martin J. Chávez, Mayor

Robert E. Gurulé, Director

Shahab Biazar, P.E.
Tierra West Dev.
4421 McLeod Rd. NE
Suite D
Albuquerque, NM 87109

RE: BOSQUE MEADOWS (D12-D2). DRAINAGE REPORT SUBMITTAL FOR SITE DEVELOPMENT PLAN FOR SUBDIVISION APPROVAL, PRELIMINARY PLAT, FINAL PLAT, AND GRADING PERMIT APPROVAL. ENGINEER'S STAMP DATED 2-18-97 (SHEETS 23 AND 24) 2-24-97 (SHEETS 4, 5, 21, AND 22).

Dear Shahab:

Based on the updated information provided on your February 28, 1997 submittal, the above referenced project is approved for Site Development Plan (for Subdivision), Preliminary Plat, Final Plat, and Grading Permit.

Prior to release of financial guarantees, an Engineer's Certification of the grading and drainage will be required.

If I can be of further assistance, please feel free to contact me at 924-3984.

Sincerely,

Lisa Ann Manwill, P.E.
Engineering Assoc./Hyd.

c: Andrew Garcia
File

Good for You, Albuquerque!

CITY OF
Albuquerque

December 9, 1996

Martin J. Chávez, Mayor

Shahab Biazar
Tierra West Dev.
4421 McLeod Rd. NE
Suite D
Albuquerque, NM 87109

RE: BOSQUE MEADOWS (D12-D2). DRAINAGE REPORT SUBMITTAL FOR SITE DEVELOPMENT PLAN FOR SUBDIVISION APPROVAL, PRELIMINARY PLAT, FINAL PLAT, AND GRADING PERMIT APPROVAL. ENGINEER'S STAMP DATED DECEMBER 2, 1996.

Dear Shahab:

Based on the information provided on your December 3, 1996 submittal, the above referenced project is approved for Site Development Plan for Subdivision, Preliminary Plat, and Final Plat. Prior to Grading Permit approval and Plat sign-off, we will need AMAFCA's concurrence. To date, Kurt Browning of AMAFCA, has not officially approved this project.

If I can be of further assistance, please feel free to contact me at 768-3622.

Sincerely,

Lisa Ann Manwill
Engineering Assoc./Hyd.

c: Andrew Garcia
File

DRAINAGE REPORT
FOR

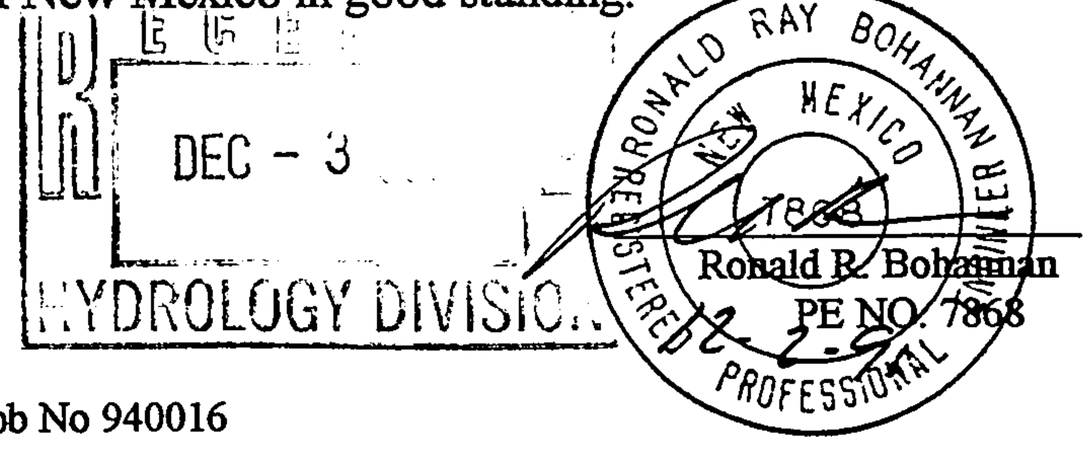
BOSQUE MEADOWS SUBDIVISION

Prepared by:

Tierra West Development Management Services
4421 McLeod Rd., NE, Suite D
Albuquerque, New Mexico 87109

September, 1996
Revised November, 1996
Revised December, 1996

I certify that this report was prepared under my supervision, and I am a registered professional engineer in the state of New Mexico in good standing.



Ronald R. Bohannan
PE NO. 7868

Job No 940016

SITE LOCATION

This proposed project is a 104 lot subdivision which falls within the North Coors Drainage Management Plan (NCDMP). The site is located on the east side of Coors Boulevard and approximately 1100' north of La Orilla Road. See attached Vicinity Map D-12 for location of the site. The site contains 17.332 acres.

EXISTING CONDITIONS

The site falls within the North Coors Drainage Management Plan Basins (NCDMP) *16.3E and *17.4E. All of the runoff from the site drains from west to east. There are two offsite drainage basins *16.1W (with runoff of 39.05 cfs) and *16.2W (with runoff of 78.07 cfs) which drain through this site. All of the runoff drains to the Corrales Main Canal located on the east side of the subdivision. See attached "Offsite Drainage Basins" for location of the site within the NCDMP basin layout.

PROPOSED CONDITIONS

Bosque Meadows is a 17.332 acre development that the owners propose to construct 104 single family houses. The proposed concept is to accept and route the offsite flows through the project, collecting all on-site flows and routing the combined flows to a proposed channel on the east side of the project. The proposed channel will convey the runoff south to a proposed 24"

* Basin number from NCDMP

storm drain pipe that will take the flows offsite and into the Corrales Main Canal. The channel will allow all offsite sediment to be deposited in accordance with NCDMP. The 24" RCP to Corrales Main Canal penetration will be designed and coordinated with AMAFCA.

A future phase located north of the main entrance will be developed at a later date. These undeveloped flows and a portion of basin 101.30 will collect in a temporary retention pond on that tract.

Bosque Meadows Subdivision falls within NCDMP basin 16.3E, and is impacted by two NCDMP offsite drainage basins *16.1W (116.10) and *16.2W (116.20) at the peak 100-year runoff rate of 39.05 cfs and 78.07 cfs which cross Coors Boulevard and enter the site. The runoff from Coors Road and the road's shoulders drains to this site as well (basins 116.31-116.34) and are included in the peak flows. The entire on-site and offsite runoff has been analyzed using four routing system (See Basin Layout Map for routing diagram located in the map pocket). Route 1 consists of basins 115.20 (*15.2W), 115.31, 115.32, and 101.30. This route discharges east to adjacent property just east of basin 101.30 at a 100-year runoff routed rate of 90.86 cfs and then from there to the Corrales Main Canal. Northerly portion of Bushel Road will remain undeveloped and continues to discharge under historic conditions. This route does not impact the site. Route 2 consists of basins 116.10 (*16.1W), 116.31, 116.32, 101.10, 101.20, and portion of basin 101.30. Basins 116.10, 116.31, and 116.32 are ponded and discharged to the retention pond via a 24" storm drain pipe at a flow rate of 31.70 cfs. Basins 101.10 and 101.20 sheet flow to this pond at a flow rate of 23.01 cfs. This retention pond is designed for a 10-day volume (±2.62 ac-ft). This pond will remain till further development of the site or property to the east develops and an outfall to the Corrales Main Canal is obtained. At that time a new drainage

* Basin number from NCDMP

solution and management plan will be submitted. In the future Bosque Meadow Boulevard will be extended across the Corrales Main Canal and that time a storm drain pipe will extended to the channel. Route 3 consists of offsite basins 116.20 (*16.2W), 116.33, 116.34, and on-site basins 100.10 through 100.70. Basins 116.20, 116.33, and 116.34 (the flows in Coors Boulevard) are limited at the entrance to the site and will be ponded within the property line. From there the runoff drains to a 24" pipe (limited by an eighteen inch orifice plate) and from there to the channel located at the southeast corner of the property at a flow rate of 24.40 cfs. All the on site subbasins surface flow to the south end of Bosque Meadows Place to an inlet at a flow rate of 56.38 and from there to the channel. The entire runoff from Route 3 drains to this channel at a flow rate of 78.44 cfs. This channel also acts as a pond where the runoff ponds and then discharges through the south end of the property to a 24" RCP pipe which discharges to the Corrales Main Canal at a routed flow rate of 31.79 cfs. The channel is designed based on the guidelines from North Coors Drainage Master Plan (NCDMP). The allowable discharge for Route 3, using the NCDMP, was calculated at 74.22 cfs. The discharge is limited due to the desilting requirements of NCDMP. Higher discharge is allowed but can not meet the settling requirements of the pond. Route 4 is the routing through the adjacent property (8-Pac) to the south. An easement is being secured from adjacent property (8-Pac site) to allow the discharge. Flows were shown for information only. Route 4 which consists of basin 117.10 (*17.1W), and basins 117.41 through 117.45 drain east through the future 8-Pac site to the Corrales Main Canal at the existing 100-year flow rate of 66.75 cfs.

Allowable Discharge

The allowable discharge (for route 3) using old and revised NCDMP was calculated at

* Basin number from NCDMP

74.22 cfs (old) and 103.58 cfs (new). The lower value was used for allowable discharge to the Corrales Main Canal. Old NCDMP runoff values were calculated using the rational method and the revised NCDMP runoff values were calculated using AHYMO program. See allowable discharge calculations in Section VI of this report.

FEMA MAP

The site falls within FEMA map number 350002-0008C and does not fall within a 100-year flood plain. There is an exiting flood plain due north and west side of the tract. See attached flood plain map for existing flood plain locations.

* Basin number from NCDMP

DRAINAGE CALCULATIONS

SECTION I - RUNOFF CALCULATIONS

Runoff calculations were preformed using Section 22.2, Hydrology of the Development Process Manual, Volume 2, Design Criteria for City of Albuquerque, New Mexico revised January, 1993.

SECTION II - STREET FLOW CAPACITY

Street capacity calculations were done using a computer program which uses the equations shown on sheets 2.1 and 2.2. Street capacity calculations were preformed using Section 22.3, Hydrology of the Development Process Manual, Volume 2, Design Criteria for City of Albuquerque, New Mexico. 8" curb was only used near the point of discharge into the drop inlet.

SECTION III - POND CALCULATIONS (10-Day Volume)

Volume calculations for 10-day volume were calculated for the pond which retains the runoff from basins contributing to Route 2. The first sheet is the 10-day Volume calculation for basin 101.10 & Total Volume for basins contributing to Route 2. The rest of the sheets from this section are the 10-day volume calculations for basin 101.20, portion of 101.30, 16.1W, 116.31, & 116.32. The 10-day volume calculations were preformed separately for each basin due to difference in land treatments.

SECTION IV - POND/OUTFLOW CALCULATIONS (AHYMO INPUT FILES)

Volume and outflow calculations were preformed for basins 100.60, 116.32, & 116.34. The number were used in AHYMO input files.

SECTION V - DRAINAGE SPILLWAY/PIPE/DROP INLET CALCULATIONS

This section includes the calculations for emergency spillways, drainage pipe calculations for routing the runoff. The pipe capacity calculation for the 24" RCP draining basin 100.60 to Corrales Main Canal was preformed. The water surface elevations in Corrales Main Canal was used as the tail water elevation for pipe capacity calculations under pressure. A copy of the Corrales Main Canal plan and profile sheet was included to show the Clear Water Surface Elevation (CWSEL).

SECTION VI - ALLOWABLE DISCHARGE CALCULATIONS (ROUTE 3)

This section shows the calculations for allowable discharge for Route 3 to Corrales Main Canal. North Coors Drainage Management Plan restricts the full developed discharge to Corrales Main Canal. The calculations in this section have used both the old NCDMP and revised NCDMP in order to calculate the allowable discharge to Corrales Main Canal. The lower value was used for allowable discharge.

SECTION VII - DESIGN CALCULATIONS FOR SEDIMENT CONTROL

North Coors Drainage Management Plan restricts sediment discharge to Corrales Main Canal. Therefore, "Design Calculations For Upstream Sediment Control" from NCDMP is used to calculate the channel hydraulic performance for sedimentation. A copy of the "Design Requirements For Upstream Sediment" is included in this section.

SECTION VIII - AHYMO FILES

AHYMO input files, summary output files, and output files are provided in this section.

SECTION IX - INFRASTRUCTURE LIST

A copy of infrastructure list is provided in this section.

Runoff Calculations
(The site is @ zone 1)

Basin Treatments
For upstream basins West side of the Coors Road a 1 DU/AC was assumed:

$D = 7\sqrt{}\ [(N*N) + (5*N)]$
$D = 7\sqrt{}\ [(1*1) + (5*1)]$
$D = 17.15\ \%$

From NCDMP Figure 9 (SCS hydraulic soil Group) for all the basins are classified as *100% A*.
Therefore, the following treatments were used for basins 16.1W, 16.2W, and 17.1W:
A = 82.85%, D = 17.15%

For Alban Hills subdivision:
"N" was greater than 6, therefore the following treatments were used:

B = 20%, C = 20%, D = 60%

For basins 115.31, 116.31, 116.33, 117.41, 117.43:
D = 100%

For basins 101.20, 115.32, 116.32, 116.34, 117.42, 117.44, 117.45:
B = 100%

DEPTH (INCHES) @ 100-YEAR STORM (Precipitation data from NCDMP)
Using Figure C-1, C-2, C-3 of DPM Section 12.2

P_{60} = 1.90 inches
P_{360} = 2.20 inches
P_{1440} = 2.65 inches

DEPTH (INCHES) @ 50-YEAR STORM

P_{60} = 1.90 x 0.90
= 1.71 inches
P_{360} = 1.98
P_{1440} = 2.39

DEPTH (INCHES) @ 10-YEAR STORM

P_{60} = 1.90 x 0.667
= 1.27 inches
P_{360} = 1.47
P_{1440} = 1.77

SITE

OFFSITE DRAINAGE BASINS

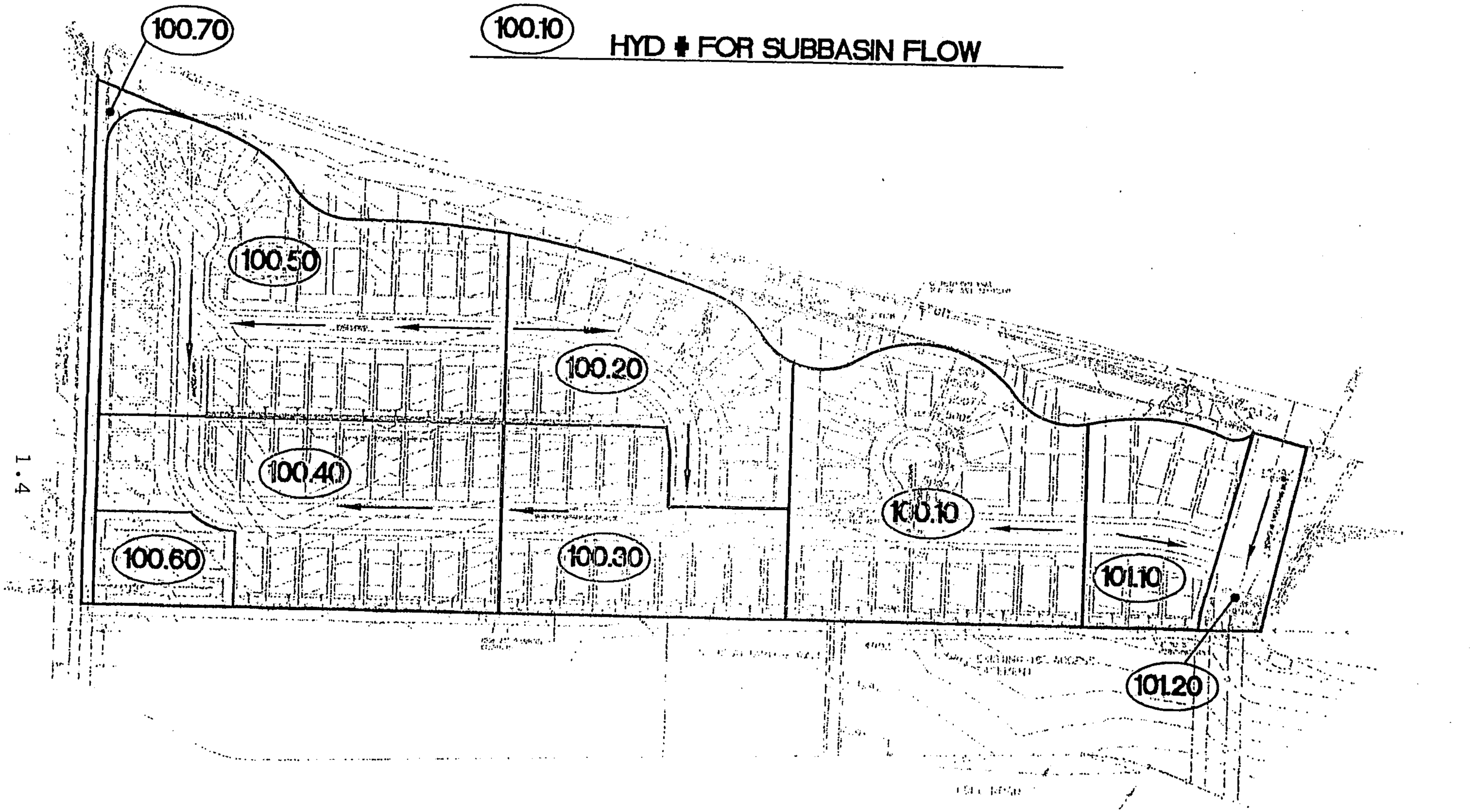
OFFSITE DRAINAGE BASINS

BASIN	AREA (SF)	AREA (AC)	AREA (MI^2)
15.2W	1777248.00	40.80	0.063750
15.3E	605484.00	13.90	0.021719
15.31	93754.54	2.15	0.003363
15.32	54778.25	1.26	0.001965
16.1W	927828.00	21.30	0.033281
16.2W	1853042.40	42.54	0.066469
16.3E	1349924.40	30.99	0.048422
116.31	47650.84	1.09	0.001709
116.32	31868.59	0.73	0.001143
116.33	90960.21	2.09	0.003263
116.34	92447.83	2.12	0.003316
116.35	810904.25	18.62	0.029087
17.1W	285753.60	6.56	0.010250
17.4E	2106997.20	48.37	0.075578
117.41	39941.11	0.92	0.001433
117.42	27356.43	0.63	0.000981
117.43	37980.42	0.87	0.001362
117.44	49382.37	1.13	0.001771
117.45	916716.60	21.04	0.032883

BASINS RUNOFF CALCULATION RESULTS

BASIN	Q-100 CFS	Q-50 CFS	Q-10 CFS
15.2W	74.82	60.07	28.69
15.3E	25.49	20.47	9.78
15.31	9.55	8.58	6.32
15.32	2.60	2.11	0.99
16.1W	39.05	31.36	14.98
16.2W	78.07	62.66	29.90
16.3E	56.81	45.61	21.80
116.31	4.86	4.36	3.22
116.32	1.52	1.23	0.58
116.33	9.27	8.32	6.14
116.34	4.38	3.56	1.67
17.1W	12.04	9.66	4.62
17.4E	88.99	71.38	33.95
117.41	4.08	3.66	2.70
117.42	1.30	1.06	0.50
117.43	3.87	3.48	2.56
117.44	2.34	1.90	0.89
117.45	43.41	35.27	16.53

OFFBASIN.WK4



1.4

ON–SITE BASIN LAYOUT

DRAINAGE BASINS

SUB-BASIN	AREA (SF)	AREA (AC)	AREA (MI^2)
100.10	142,900.74	3.2805	0.005126
100.20	100,747.48	2.3128	0.003614
100.30	86,423.59	1.9840	0.003100
100.40	123,863.69	2.8435	0.004443
100.50	187,397.67	4.3021	0.006722
100.60	24,076.57	0.5527	0.000864
100.70	13,985.70	0.3211	0.000502
101.10	54,762.40	1.2572	0.001964
101.20	22,422.90	0.5148	0.000804

BASINS RUNOFF CALCULATION RESULTS (under proposed conditions)

BASIN	Q-100 CFS	Q-50 CFS	Q-10 CFS
100.10	11.99	10.56	7.23
100.20	8.46	7.45	5.10
100.30	7.26	6.36	4.38
100.40	10.40	9.16	6.27
100.50	19.09	17.14	12.63
100.60	2.46	2.21	1.63
100.70	0.67	0.54	0.26
101.10	4.60	4.06	2.78
101.20	2.18	1.94	1.41

SEE AHYMO SUMMARY OUTPUT FILES

FINDING STREET CAPACITY - 32 F-F CROSS-SECTION FOR 4" CURB

$Q = 1.49/n\ A\ R^{(2/3)}\ S^{1/2}$
n = 0.017
SLOPE = STREET SLOPE
$R^{2/3} = (A/P)^{2/3}$
D2 = WATER DEPTH AFTER HYDRAULIC JUMP = $D1/2\ [SQRT\ (1 + 8Fr^2) - 1]$
$E = V^2 / 2g$

HALF STREET CALCULATIONS

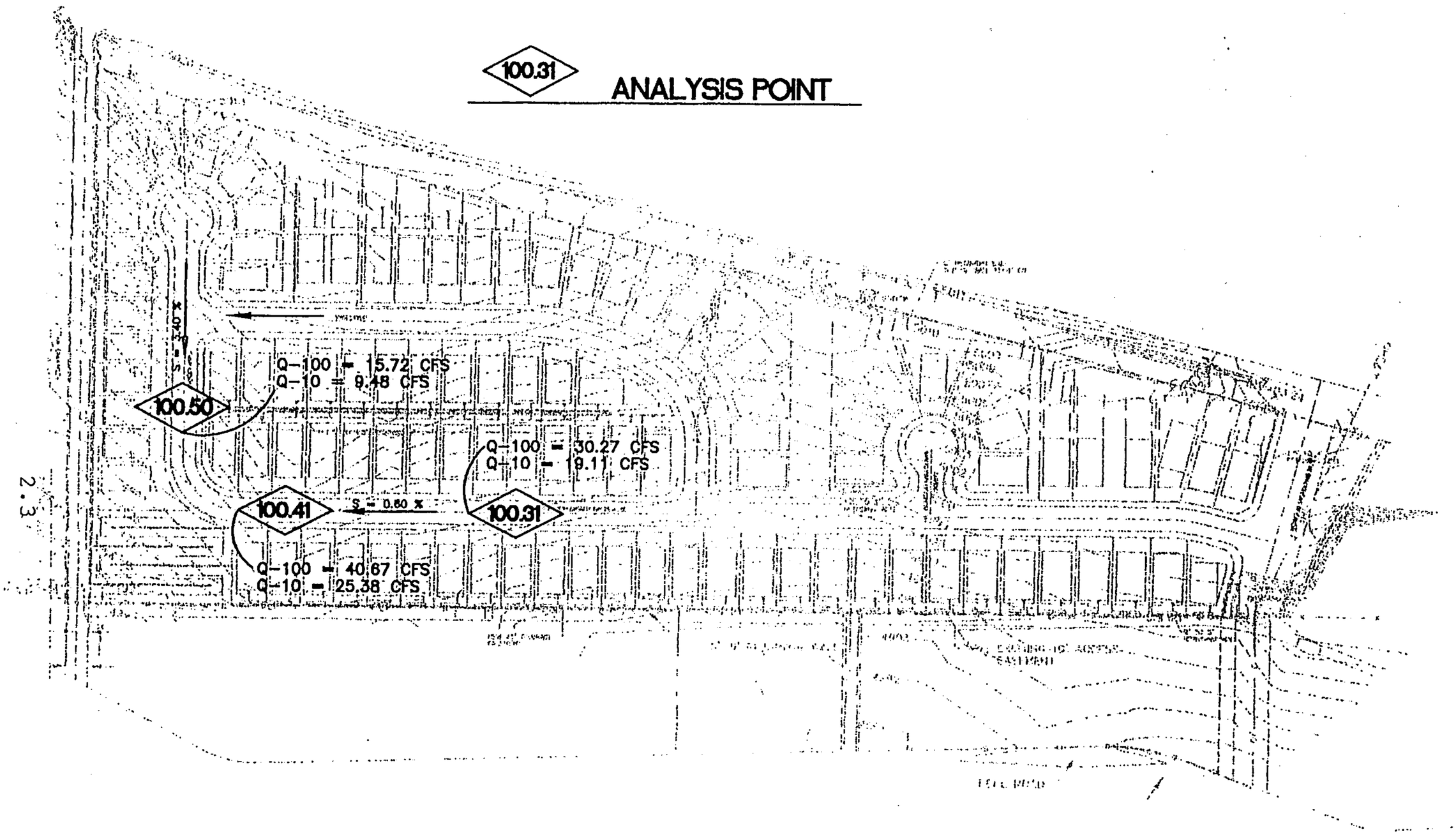
@ Y < or = 0.125
$A1 = \frac{1}{2}\ Y\ (Y/0.0625) = 8Y^2$
$P1 = SQRT[Y^2 + (Y/0.0625)^2] + Y = SQRT(257\ Y^2) + Y$

@ 0.125 < Y < or = 0.405 & Y1 = Y - 0.125
$A2 = A1 + \frac{1}{2}Y1\ (Y1/0.02) + 2Y1 = A1 + 25Y1^2 + 2Y1$
$P2 = P1 + SQRT[Y1^2 + (Y1/0.02)^2] + Y1 = P1 + SQRT(2501\ Y1^2) + Y1$

@ 0.405 < Y < or = 0.667 & Y2 = Y - 0.405
$A3 = A2 + 16Y2 + \frac{1}{2}Y2[Y2/(0.02)] = A2 + 16\ Y2$
$P3 = P2 + SQRT(Y2^2 + [Y2/(0.02)]^2) = P2 + Y2$

@ 0.667 < Y < or = 0.847 & Y3 = Y - 0.667
$A4 = A3 + 16Y3 + \frac{1}{2}Y3[Y3/(0.02)] = A3 + 16\ Y3 + 25\ Y3^2$
$P4 = P3 + SQRT(Y3^2 + [Y3/(0.02)]^2) = P3 + SQRT(2501\ Y3^2)$

SEE THE FOLLOWING SHEET FOR INPUT AND OUTPUT FILE FOR CALCULAITON RESULTS FROM COMPUTER PROGRAM USING THE EQUATION SHWON ABOVE



STREET CAPACITY ANALYSIS POINTS

STREET CAPACITY CALCULAITON

32' F-F, 4" CURB STREET SECTION

INPUT FILE

ANALYSIS POINT	100-YEAR FLOW CFS	10-YEAR FLOW CFS	SLOPE FT/FT
100.31	30.27	19.11	0.0060
100.41	40.67	25.38	0.0060
100.50	15.72	9.48	0.0340

OUTPUT FILE

ANALYSIS POINT	FLOW CFS	SLOPE FT/FT	Dn FT	Vn FT/S	D*V FT²/S	Fr	E	D2
STREET CAPACITY BASED ON 10-YEAR STORM								
100.31	19.11	0.0060	0.424	2.328	0.988	0.630	0.509	-------
100.41	25.38	0.0060	0.469	2.502	1.174	0.644	0.566	-------
100.50	9.48	0.0340	0.246	3.737	0.918	1.328	0.463	0.355
STREET CAPACITY BASED ON 100-YEAR STORM								
100.31	30.27	0.0060	0.499	2.616	1.306	0.653	0.606	-------
100.41	40.67	0.0060	0.555	2.819	1.564	0.667	0.678	-------
100.50	15.72	0.0340	0.293	4.235	1.242	1.378	0.572	0.433

STCP.WK4

VOLUME CALCULATIONS FOR 10-DAY STORM

ZONE = 1

DRAINAGE BASINS

BASIN	AREA (SF)	AREA (AC-FT)	AREA (MI^2)
101.10	54762.40	1.2572	0.001964

$$E = \frac{EA(AA) + EB(AB) + EC(AC) + ED(AD)}{AA + AB + AC + AD}$$

$$V\text{-}360 = E\,(AA + AB + AC + AD)$$

$$V\text{-}10\ Day = V\text{-}360 + AD\,(P\text{-}10\ Day - P\text{-}360) / 12\ in/ft$$

EA = 0.44
EB = 0.67
EC = 0.99
ED = 1.97

AA = 0.00%
AB = 20.00%
AC = 20.00%
AD = 60.00%

P-60 = 1.87
P-360 = 2.20
P-1440 = 2.66
P-10 Day = 3.67

E =	**1.5140**	**IN**
V-360 =	**0.1586**	**AC-FT**
AD =	**0.7543**	**AC**
V-10 Day =	**0.2510**	**AC-FT**
V-10 DAY =	**10934.23**	**CF**

V-10 DAY	AC-FT	CF
101.10 =	0.2510	10934.23
101.20 =	0.1028	4477.11
101.30 =	0.0714	3110.58
16.1W =	1.6942	73800.99
116.31 =	0.3136	13659.91
116.32 =	0.1930	8405.30
Total	2.6260	114388.12

See the following sheets for 10-day volume requirement calculations for ponds 101.20, 101.30, 16.1W, 116.31, & 116.32

ROUTE1.WK4

VOLUME CALCULATIONS FOR 10-DAY STOR

ZONE = 1

DRAINAGE BASINS

BASIN	AREA (SF)	AREA (AC-FT)	AREA (MI^2)
101.20	22422.90	0.5148	0.000804

$$E = \frac{EA(AA) + EB(AB) + EC(AC) + ED(AD)}{AA + AB + AC + AD}$$

$$V\text{-}360 = E\,(AA + AB + AC + AD)$$

$$V\text{-}10\ Day = V\text{-}360 + AD\,(P\text{-}10\ Day - P\text{-}360) / 12\ in/ft$$

EA = 0.44
EB = 0.67
EC = 0.99
ED = 1.97

AA = 0.00%
AB = 20.00%
AC = 20.00%
AD = 60.00%

P-60 = 1.87
P-360 = 2.20
P-1440 = 2.66
P-10 Day = 3.67

E =	**1.5140**	**IN**
V-360 =	**0.0649**	**AC-FT**
AD =	**0.3089**	**AC**
V-10 Day =	**0.1028**	**AC-FT**
V-10 DAY =	**4477.11**	**CF**

VOLUME CALCULATIONS FOR 10-DAY STORM

ZONE = 1

DRAINAGE BASINS

BASIN	AREA (SF)	AREA (AC-FT)	AREA (MI^2)
101.30*	55711.94	1.2790	0.001998

$$E = \frac{EA(AA) + EB(AB) + EC(AC) + ED(AD)}{AA + AB + AC + AD}$$

$$V\text{-}360 = E\,(AA + AB + AC + AD)$$

V-10 Day = V-360 + AD (P-10 Day - P-360) / 12 in/ft

EA = 0.44
EB = 0.67
EC = 0.99
ED = 1.97

AA = 0.00%
AB = 100.00%
AC = 0.00%
AD = 0.00%

P-60 = 1.87
P-360 = 2.20
P-1440 = 2.66
P-10 Day = 3.67

E =	**0.6700**	**IN**
V-360 =	**0.0714**	**AC-FT**
AD =	**0.0000**	**AC**
V-10 Day =	**0.0714**	**AC-FT**
V-10 DAY =	**3110.58**	**CF**

* Portion of basin 101.30, including the pond itself drain to this retention pond that needs to be accounted for

VOLUME CALCULATIONS FOR 10-DAY STOR

ZONE = 1

DRAINAGE BASINS

BASIN	AREA (SF)	AREA (AC-FT)	AREA (MI^2)
16.1W	927828.00	21.3000	0.033281

$$E = \frac{EA(AA) + EB(AB) + EC(AC) + ED(AD)}{AA + AB + AC + AD}$$

V-360 = E (AA + AB + AC + AD)

V-10 Day = V-360 + AD (P-10 Day - P-360) / 12 in/ft

EA = 0.44
EB = 0.67
EC = 0.99
ED = 1.97

AA = 82.85%
AB = 0.00%
AC = 0.00%
AD = 17.15%

P-60 = 1.87
P-360 = 2.20
P-1440 = 2.66
P-10 Day = 3.67

E =	**0.7024**	**IN**
V-360 =	**1.2468**	**AC-FT**
AD =	**3.6530**	**AC**
V-10 Day =	**1.6942**	**AC-FT**
V-10 DAY =	**73800.99**	**CF**

VOLUME CALCULATIONS FOR 10-DAY STOR

ZONE = 1

DRAINAGE BASINS

BASIN	AREA (SF)	AREA (AC-FT)	AREA (MI^2)
116.31	47650.84	1.0939	0.001709

$$E = \frac{EA(AA) + EB(AB) + EC(AC) + ED(AD)}{AA + AB + AC + AD}$$

V-360 = E (AA + AB + AC + AD)

V-10 Day = V-360 + AD (P-10 Day - P-360) / 12 in/ft

EA = 0.44
EB = 0.67
EC = 0.99
ED = 1.97

AA = 0.00%
AB = 0.00%
AC = 0.00%
AD = 100.00%

P-60 = 1.87
P-360 = 2.20
P-1440 = 2.66
P-10 Day = 3.67

E =	**1.9700**	**IN**
V-360 =	**0.1796**	**AC-FT**
AD =	**1.0939**	**AC**
V-10 Day =	**0.3136**	**AC-FT**
V-10 DAY =	**13659.91**	**CF**

VOLUME CALCULATIONS FOR 10-DAY STOR

ZONE = 1

DRAINAGE BASINS

BASIN	AREA (SF)	AREA (AC-FT)	AREA (MI^2)
116.32	31888.59	0.7321	0.001144

$$E = \frac{EA(AA) + EB(AB) + EC(AC) + ED(AD)}{AA + AB + AC + AD}$$

V-360 = E (AA + AB + AC + AD)

V-10 Day = V-360 + AD (P-10 Day - P-360) / 12 in/ft

EA = 0.44
EB = 0.67
EC = 0.99
ED = 1.97

AA = 0.00%
AB = 10.00%
AC = 0.00%
AD = 90.00%

P-60 = 1.87
P-360 = 2.20
P-1440 = 2.66
P-10 Day = 3.67

E =	**1.8400**	**IN**
V-360 =	**0.1122**	**AC-FT**
AD =	**0.6589**	**AC**
V-10 Day =	**0.1930**	**AC-FT**
V-10 DAY =	**8405.30**	**CF**

VOLUME CALCULATIONS FOR 10-DAY STORM

ZONE = 1

DRAINAGE BASINS

BASIN	AREA (SF)	AREA (AC-FT)	AREA (MI^2)
LOT	1000.00	0.0230	0.000036

$$E = \frac{EA(AA) + EB(AB) + EC(AC) + ED(AD)}{AA + AB + AC + AD}$$

$$V\text{-}360 = E\,(AA + AB + AC + AD)$$

$$V\text{-}10\ Day = V\text{-}360 + AD\,(P\text{-}10\ Day - P\text{-}360) / 12\ in/ft$$

EA = 0.44
EB = 0.67
EC = 0.99
ED = 1.97

AA = 0.00%
AB = 100.00%
AC = 0.00%
AD = 0.00%

P-60 = 1.87
P-360 = 2.20
P-1440 = 2.66
P-10 Day = 3.67

E =	**0.6700**	**IN**
V-360 =	**0.0013**	**AC-FT**
AD =	**0.0000**	**AC**
V-10 Day =	**0.0013**	**AC-FT**
V-10 DAY =	**55.83**	**CF**

Pond Size = 4'x28'x½' = 56.00 CF

POND VOLUME CALCULATIONS

(WITHIN BASIN 100.60)

Ab - Bottom Of The Pond Surface Area
At - Top Of The Pond Surface Area
D - Water Depth
Dt - Total Pond Depth
C - Change In Surface Area / Water Depth

$$Volume = Ab * D + 0.5 * C * D^2$$

$$C = (At - Ab) / Dt$$

Ab =	51.31	SF	@ elev. 4986.77
At =	368.58	SF	@ elev. 4989.69
Dt =	2.92	FT	
Dia =	24	IN	
Radius =	12	IN	
C =	108.65	FT / LF-DEPTH	

	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
4986.77	0.00	0.00000	0.00
4989.27	2.50	0.01074	18.53
4989.69	2.92	0.01407	20.96
4990.19	3.42	0.29043	23.53
4990.69	3.92	0.56680	25.85
4991.19	4.42	0.84316	27.97
4991.69	4.92	1.11952	29.95
4992.19	5.42	1.39588	31.80
4992.69	5.92	1.67224	33.55
4993.19	6.42	1.94860	35.22
4993.69	6.92	2.22496	36.80

$$Q = CA\sqrt{2gH}$$

C = 0.60

A = ¶ r^2, where r = 12"

g = 32.2

H = water depht, measured from the center of the orifice plate

Area of the channel from 4989.69 to 4993.69 is 24,076.57 sf

POND VOLUME CALCULATIONS

(WITHIN BASIN 116.32)

Ab - Bottom Of The Pond Surface Area
At - Top Of The Pond Surface Area
D - Water Depth
Dt - Total Pond Depth
C - Change In Surface Area / Water Depth

$Volume = Ab * D + 0.5 * C * D^2$

$C = (At - Ab) / Dt$

Ab =	5,481.41	SF
At =	20,111.13	SF
Dt =	4.00	FT
C =	3657.43	FT / LF-DEPTH

	DEPTH (FT) POND	DEPTH (FT) INLET	VOLUME (AC-FT)	PIPE (CFS)
5001.0		0.0	0.00000	0.00
5003.0		2.0	0.00039	18.53
5003.5		2.5	0.00048	21.39
5004.0		3.0	0.00058	23.92
5004.5		3.5	0.00068	26.20
5005.0	0.0	4.0	0.00077	28.30
5005.5	0.5		0.07419	30.25
5006.0	1.0		0.16859	32.09
5006.5	1.5		0.28398	33.82
5007.0	2.0		0.42037	35.48
5007.5	2.5		0.57775	37.05
5008.0	3.0		0.75611	38.57
5008.5	3.5		0.95547	40.02
5009.0	4.0		1.17582	41.43

$$Q = CA\sqrt{2gH}$$

PIPE

$C = 0.60$

$A = \P r^2$, where $r = 12"$

$g = 32.2$

H = water depht, measured from the center of the orifice plate (5003.74)

POND VOLUME CALCULATIONS

(WITHIN BASIN 116.34)

Ab - Bottom Of The Pond Surface Area
At - Top Of The Pond Surface Area
D - Water Depth
Dt - Total Pond Depth
C - Change In Surface Area / Water Depth

$$Volume = Ab * D + 0.5 * C * D^2$$

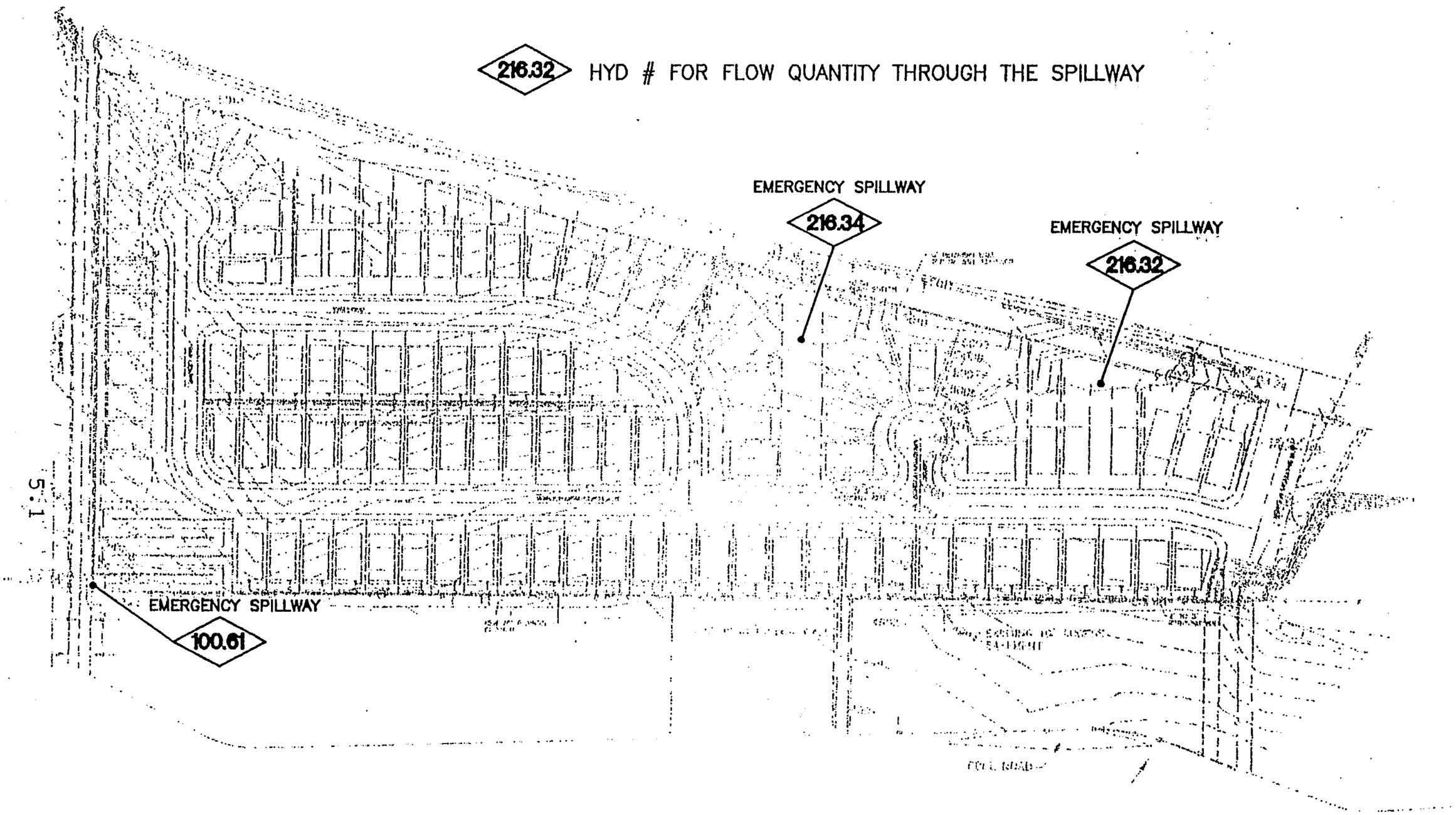
$$C = (At - Ab) / Dt$$

Ab =	8,511.99	SF
At =	9,800.28	SF
Dt =	1.00	FT
Orifice Diameter =	1.5	FT
C =	1288.29	FT / LF-DEPTH

	DEPTH (FT)	VOLUME (AC-FT)	Q-18" (CFS)
5001.00	0.0	0.00000	0.00
5002.00	1.0	0.00010	4.25
5003.00	2.0	0.00019	9.51
5004.00	3.0	0.00029	12.76
5005.00	4.0	0.00039	15.34
5009.50	4.5	0.10179	16.48
5010.00	5.0	0.21058	17.54
5010.50	5.5	0.32668	18.54
5011.00	6.0	0.45000	19.50
5011.50	6.5	0.58071	20.40
5012.00	7.0	0.71897	21.27
5012.50	7.5	0.86495	22.11
5013.00	8.0	1.01880	22.91
5013.50	8.5	1.18111	23.69
5010.00	9.0	1.35245	24.44

PIPE

$Q = CA\sqrt{2gH}$
C = 0.60
$A = \P r^2$, where r = 9"
g = 32.2
H = water depht, measured from the center of the orifice plate (5001.75)



5.1

EMERGENCY SPILLWAY LOCATIONS

DRAINAGE EMERGENCY SPILLWAY CALCULATIONS

Height required for the emergency spillway. See attached exhibit for location.

At drainage point *216.32*:

$Q = CLH^{3/2}$
$Q = 45.42$ cfs
$H = ?$
$C = 2.95$
$L = 18'$

$H = (Q/(CL))^{2/3}$
$= (45.42/(2.95*18))^{2/3}$
$= 0.90'$

At drainage point *216.34*:

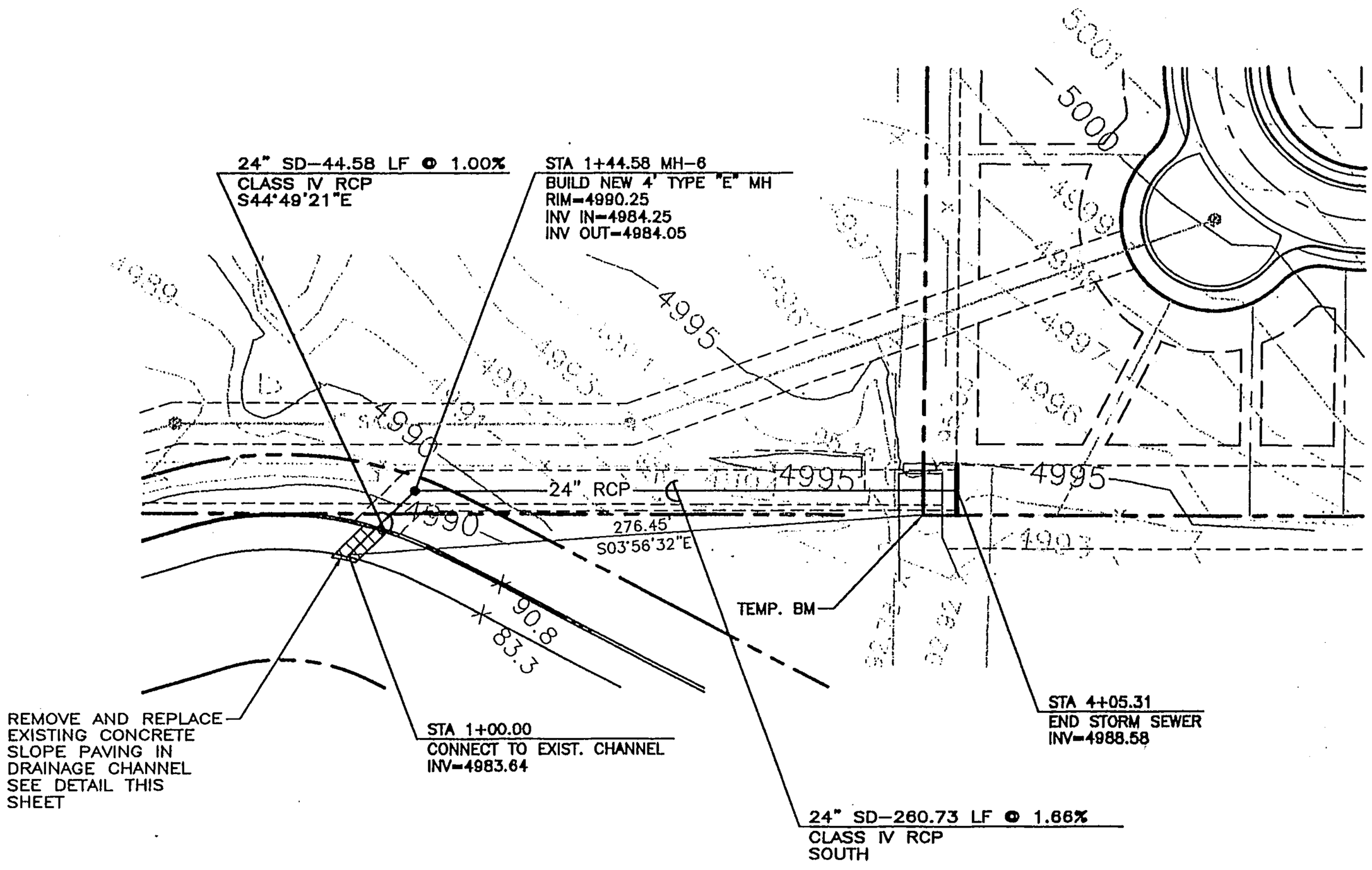
$Q = CLH^{3/2}$
$Q = 91.69$ cfs
$H = ?$
$C = 2.95$
$L = 18'$

$H = (Q/(CL))^{2/3}$
$= (91.96/(2.95*18))^{2/3}$
$= 1.44'$

At drainage point *100.61*:

$Q = CLH^{3/2}$
$Q = 78.44$ cfs
$H = ?$
$C = 2.95$
$L = 22'$

$H = (Q/(CL))^{2/3}$
$= (78.44/(2.95*22))^{2/3}$
$= 1.13'$



SD PIPE FROM CHANNEL TO CORRALES MAIN CANAL

Pressure Pipe Analysis & Design
Circular Pipe

Worksheet Name:

Comment: STORM SEWER MH TO CORRALES MAIN CANAL

Solve For Elevation @ 1

Given Input Data:

Pressure @ 1.....	0.00 psi
Elevation @ 2.....	4990.00 ft
Pressure @ 2.....	0.00 psi
Discharge.....	15875.16 gpm
Diameter.....	24.00 in
Length.....	44.58 ft
Hazen-Williams C..	130.00

CWSE @ Corrales Main Canal Point "A". See Attached P&P Sheet for Point Location & CWSEL @ The Channel

Computed Results:

Elevation @ 1.....	4990.65 ft
Velocity.....	11.26 fps
Headloss.....	0.65 ft
Energy Grade @ 1..	4992.62 ft
Energy Grade @ 2..	4991.97 ft
Friction Slope....	14.509 ft/1000 ft

CWSEL @ MH Point "B"

See Storm Sewer Plan & Profile Sheet for point Locations.

Open Channel Flow Module, Version 3.12 (c) 1990
Haestad Methods, Inc. * 37 Brookside Rd * Waterbury, Ct 06708

Pressure Pipe Analysis & Design
Circular Pipe

Worksheet Name:

Comment: STORM SEWER MH TO BASIN 100.60 (POND)

Solve For Elevation @ 1

Given Input Data:

Pressure @ 1.....	0.00 psi
Elevation @ 2.....	4990.65 ft
Pressure @ 2.....	0.00 psi
Discharge.....	15875.16 gpm
Diameter.....	24.00 in
Length.....	260.73 ft
Hazen-Williams C..	130.00

CWSEL @ The MH Point "C"

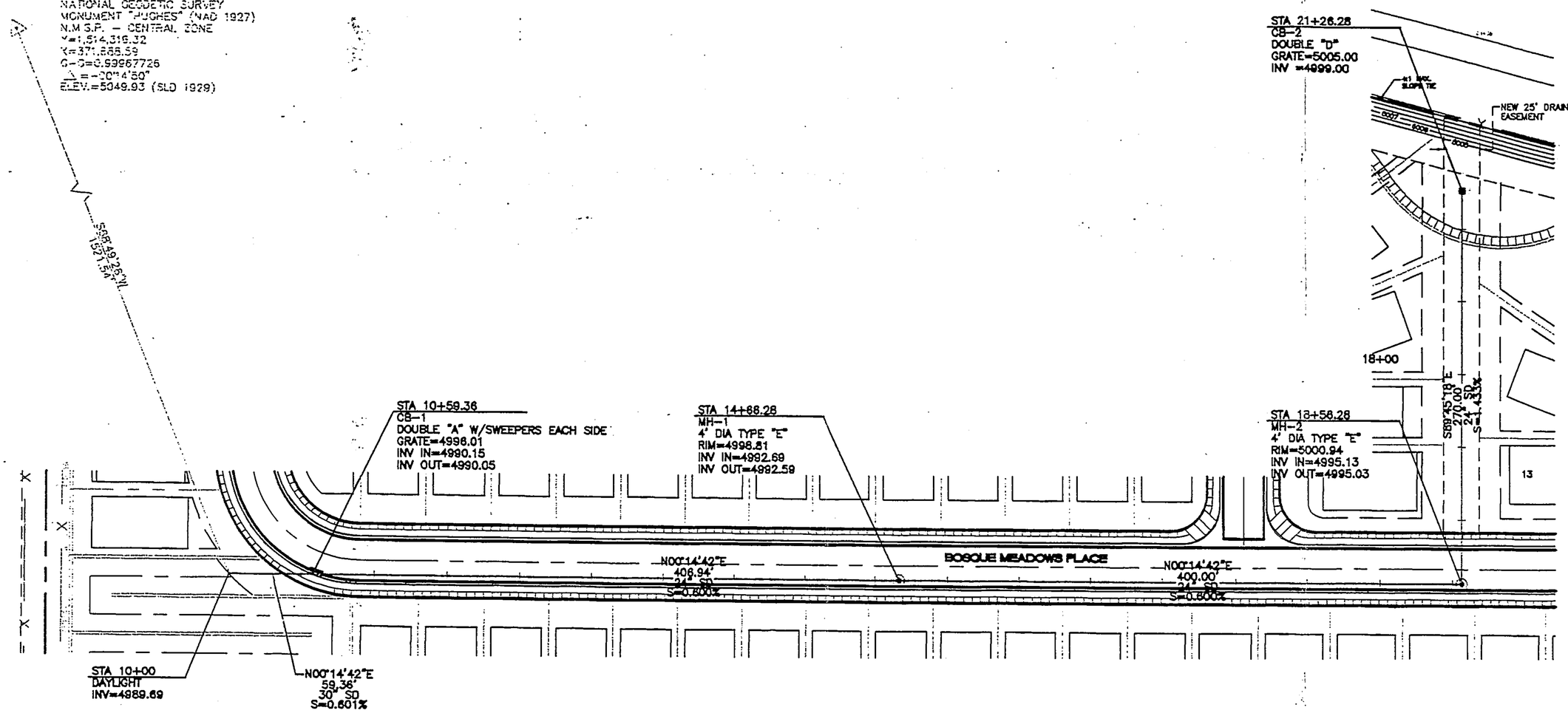
Computed Results:

Elevation @ 1.....	4994.43 ft
Velocity.....	11.26 fps
Headloss.....	3.78 ft
Energy Grade @ 1..	4996.40 ft
Energy Grade @ 2..	4992.62 ft
Friction Slope....	14.509 ft/1000 ft

CWSE @ Point "B"

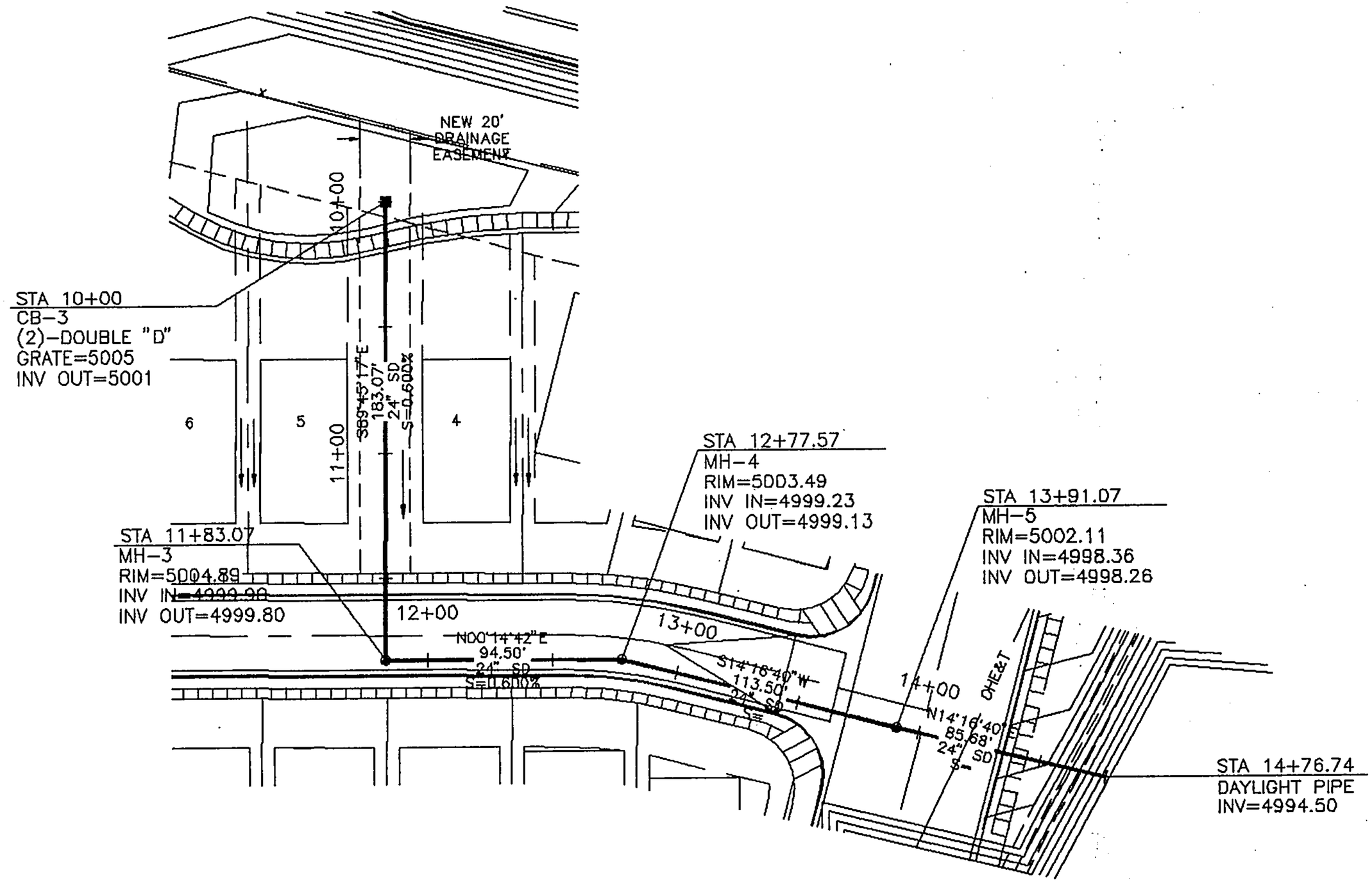
See Storm Sewer Plan & Profile Sheet for Point Locations

Open Channel Flow Module, Version 3.12 (c) 1990
Haestad Methods, Inc. * 37 Brookside Rd * Waterbury, Ct 06708

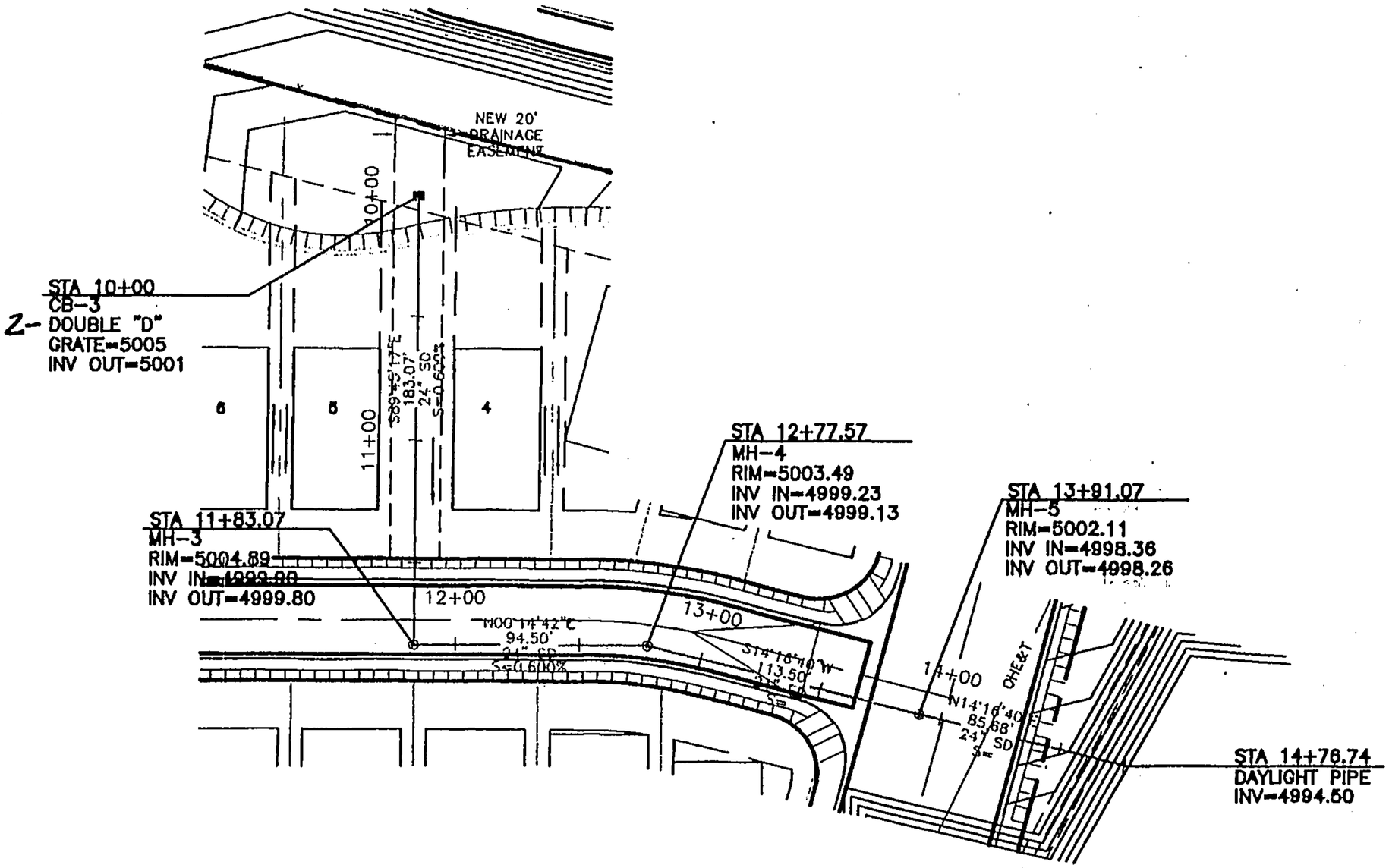


SD PIPE FROM BASIN 116.34 TO THE CHANNEL

5.12



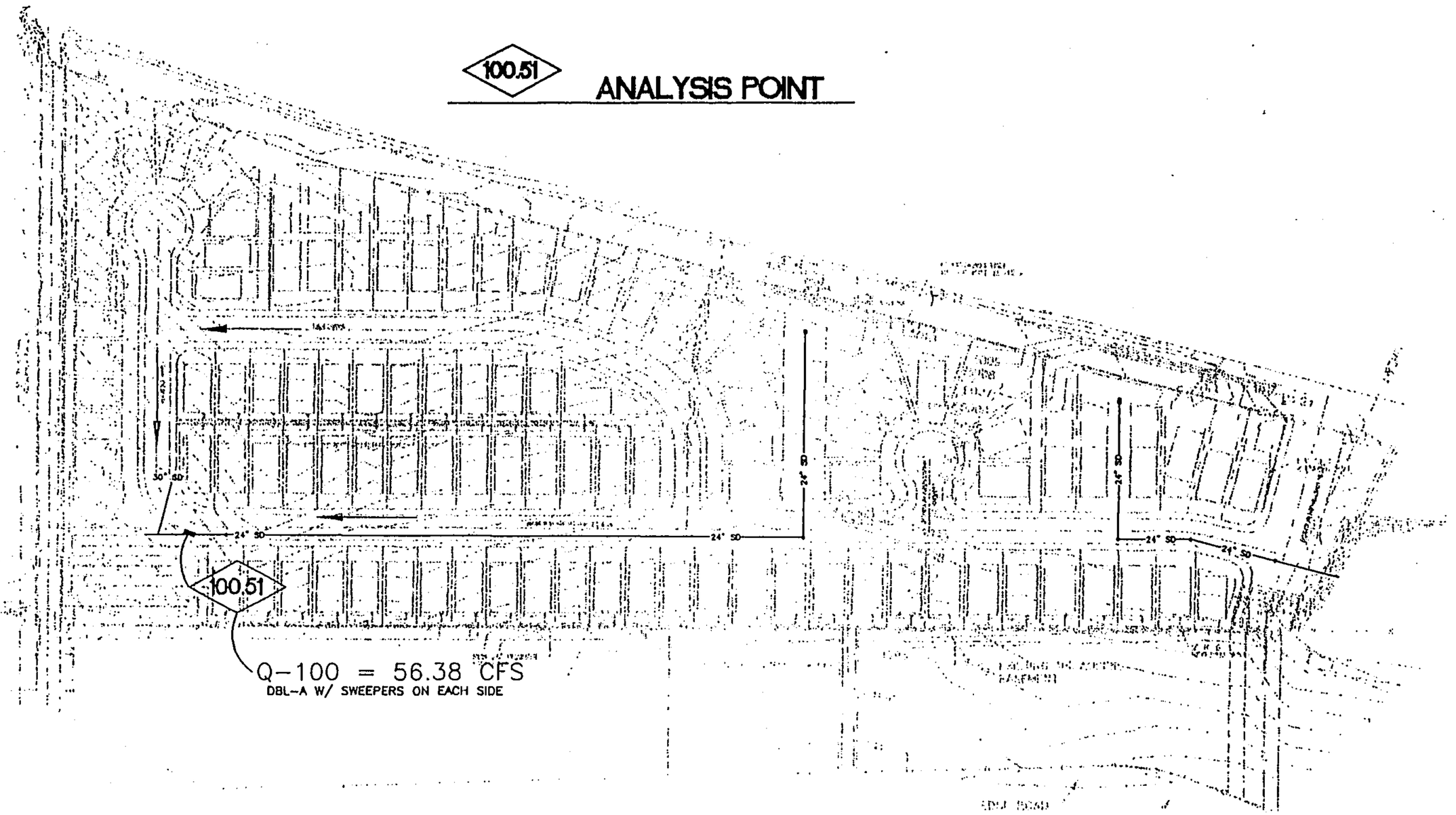
SD PIPE FROM BASIN 116.32 TO THE RETENTION POND



5.12

SD PIPE FROM BASIN 116.32 TO THE RETENTION POND

100.51 ANALYSIS POINT



DROP INLET LOCATION/CAPACITY ANALYSIS POINT

STORM DROP INLET (EFFECTIVE AREA-IN PONDING SECTION)
(DBL-A with sweepers on each side @ the ponding section)

Area @ the Grate:

L = 88 ¾" - 2 ($6"_{ENDS}$) - $6"_{CENTER\ PIECE}$ - 14 ($½"_{MIDOLE\ BARS}$)

= 63 ¾" = 5.3125'

W = 25 ½" - 13 ($½"_{MIDOLE\ BARS}$)

= 19" = 1.5833'

Area = 5.3125 x 8.41
= 8.41 SF

Effective are = 8.41 - .5 $(8.41)_{Clogging\ Factor}$

= 4.21 SF @ the Grate

Are @ the Throat:

L = 13.50'

H = 10 ¼" - 4 ½"
= 5 ¼" = 0.5208'

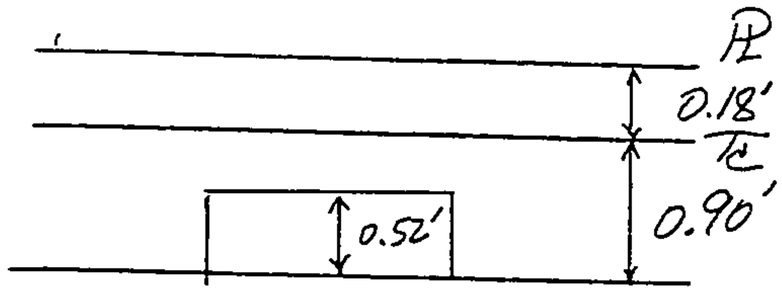
Area = 13.50 x 0.5208
= 7.0308 SF @ the Throat

Total Area

Area = 4.21_{Grate} + 7.0308_{Throat}

= 11.2408 SF

Throat



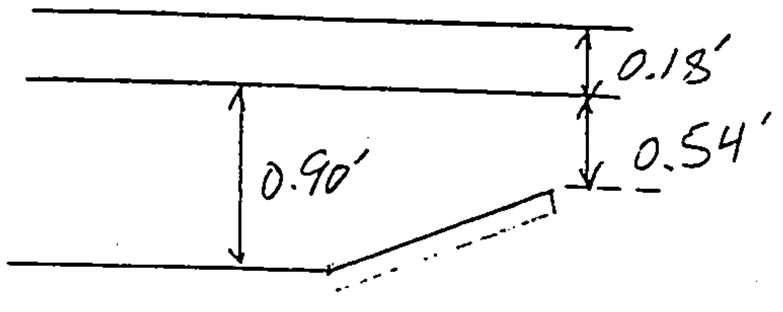
$H = 0.90 + 0.18 - 0.52/2 = 0.72'$

$Q = CA\sqrt{2gH}$

$= 0.6(4.21)\sqrt{2(32.2)\,0.82'}$

$= 18.36$ cfs

Grate



$H = 0.18 + (0.9 + 0.54)/2 = 0.90'$

$Q = CA\sqrt{2gH}$

$= 0.6(11.2408)\sqrt{2(32.2)[0.90]}$

$= 51.34$ cfs

$Q_T = 69.70$ cfs > 56.38 cfs

ALLOWABLE DISCHARGE CALCULATIONS (Route 3 Discharge)

OVERALL DRAINAGE BASINS				OLD	NEW	OLD	NEW
BASIN	AREA (SF)	AREA (AC)	AREA (MI^2)	* Q	* *Q	* Q/AC	* *Q/AC
15.2W	1777248.00	40.80	0.063750	21.30	85.00	0.52	2.08
15.3E	605484.00	13.90	0.021719	36.90	10.00	2.65	0.72
16.1W	927828.00	21.30	0.033281	11.60	45.00	0.54	2.11
16.2W	1853042.40	42.54	0.066469	21.40	89.00	0.50	2.09
17.1W	285753.60	6.56	0.010250	4.20	14.00	0.64	2.13
16.3E	1349924.40	30.99	0.048422	83.30	23.00	2.69	0.74
17.4E	2106997.20	48.37	0.075578	112.80	34.00	2.33	0.70

ROUTE 3

BASIN	AREA (SF)	AREA (AC)	AREA (MI^2)	* Q	* *Q
16.2W	1853042.40	42.54	0.066469	21.40	89.00
116.33	98079.09	2.25	0.003518	6.05	1.67
116.34	92447.83	2.12	0.003316	5.70	1.58
100.10	142900.74	3.28	0.005126	8.82	2.43
100.20	100747.48	2.31	0.003614	6.22	1.72
100.30	86423.59	1.98	0.003100	5.33	1.47
100.40	123863.69	2.84	0.004443	7.64	2.11
100.50	187397.67	4.30	0.006722	11.56	3.19
100.60	24076.57	0.55	0.000864	1.49	0.41
SUBTOTAL				***74.22***	***103.58***

* ALLOWABLE DISCHARGE FROM OLD NCDMP

** ALLOWABLE DISCHARGE FROM NEW NCDMP

Allowable discharge was calculated using the old and new NCDMP.

Also see the following tables for allowable discharge values from old and new NCDMP

TABLE A
HYDROLOGY SUMMARY - PEAK FLOWS
NORTH COORS DRAINAGE MANAGEMENT PLAN (NCDMP) - MIDDLE AREA

Basin	Original NCDMP (CFS)	Future Controls	Revised NCDMP (CFS) (5/95)	*Allowable Discharge
16.2W	51	No	89	89
16.3E	109	Yes	119	23
17.1W	10	No	14	14
17.2W	36	Yes	65	12
17.3W	27	Yes	56	11
17.4E	136	Yes	173	34
Numeric Total	1669		2104	638
Total Not Controlled	280		411	411
Routed Total	389		813	*Based on existing downstream capacity. Values may vary.

P - Existing NCDMP shows ponding from this basin.

380 capacity?

Why is allowable much higher than 380??

Channel capacity @ outlet
= 380 flow + 40 irrig.

big difference due to uncontrolled flows and problems @ "small ponds"!??

based on this report or as outlined in NCAMP??

TABLE A
HYDROLOGY SUMMARY - PEAK FLOWS
NORTH COORS DRAINAGE MANAGEMENT PLAN (NCDMP) - MIDDLE AREA

Basin	Original NCDMP (CFS)	Future Controls	Revised NCDMP (CFS) (5/95)	*Allowable Discharge
8.1W	50	Yes	54	P 5
8.3W	156	Yes	229	P 46
10.1W	337	Yes	371	P 16 Use 38 cfs combined at 10.1W and 10.2E
10.2E	121	Yes	132	P 26
11.1W	176	Yes	188	P 11
11.2E	35	No	31	31
12.1W	79	Yes	112	P 10
12.2W	42	Yes	51	P 5
12.3E	44	Yes	51	10
13.1W	26	Yes	39	8
13.2E	36	No	36	36
14.1W	33	No	61	61
14.2E	18	No	16	16
15.1W	21	No	34	34
15.2W	50	No	85	85
15.3E	50	Yes	53	10
16.1W	26	No	45	45

how can "P" not show? / ponded elsewhere?

P - Ponding per NCDMP (see page 12)

Design Requirements For Upstream Sediment Control

Desilting / Channel Pond Dimensions

W =	25.00	ft	Width Of The Pond
H =	4.00	ft	Water Depth
A =	100.00	ft²	Area
Q =	78.44	cfs	100-YEAR STORM
1/2 Q =	39.22	cfs	50% Of 100-YEAR STORM

Using design requirement for upstream sediment control from North Coors Drainage Management Plan (NCDMP). See attached copy of upstream sediment control from NCDMP

Max. Horizontal Velocity in Sediment pond =	0.39	ft/sec	(0.5 ft/s @ 50% of Q-100)
Retention Time in Pond (Sec) =	2000.00	sec	Depth Of Pond (ft) / 0.002 ft/sec
L =	784.40	ft	Required Length of the pond (V x A)
Min. Pond Storage =	0.1253	ac-ft	(0.0024 Ac Ft per Acre of Upstream Drainage Basin)
Pond Storage Volume Provided =	2.4739	ac-ft	

SED.WK4

North Coors Drainage Mngt Plan

DESIGN REQUIREMENTS FOR UPSTREAM SEDIMENT CONTROL

Min Pond Storage = 0.0024 Ac ft. per Acre of Upstream Drainage Basin.

Velocity of Sediment Fall = 0.002 ft/Sec @ 50% of Q100 (Course Silt)

Max Horizontal Velocity in Sediment Pond = 0.5 ft/Sec @ 50% of Q_{100}

Retention Time in Pond (Sec) = Depth of Pond (ft) / 0.002 ft/Sec

* From North Coors Drainage Mangement Plan

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/26/1996

INPUT FILE = 24.dat USER NO.= R_BOHANN.I01

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
START										TIME= .00
RAINFALL TYPE= 1										RAIN6= 2.200
COMPUTE NM HYD	115.20	-	1	.06375	74.82	2.412	.70939	1.500	1.834	PER IMP= 17.15
COMPUTE NM HYD	115.31	-	2	.00336	9.55	.353	1.96638	1.500	4.438	PER IMP= 100.00
ADD HYD	215.31	1& 2	3	.06711	84.37	2.765	.77237	1.500	1.964	
COMPUTE NM HYD	115.32	-	1	.00197	2.60	.071	.68101	1.533	2.068	PER IMP= .00
ADD HYD	215.32	1& 3	2	.06908	86.96	2.836	.76977	1.500	1.967	
COMPUTE NM HYD	101.20	-	1	.00494	11.56	.399	1.51255	1.500	3.655	PER IMP= 60.00
ADD HYD	100.21	1& 3	2	.07206	95.94	3.163	.82315	1.500	2.080	
COMPUTE NM HYD	116.10	-	1	.03328	39.05	1.259	.70939	1.500	1.834	PER IMP= 17.15
COMPUTE NM HYD	116.31	-	2	.00171	4.86	.179	1.96638	1.500	4.443	PER IMP= 100.00
ADD HYD	216.31	1& 2	3	.03499	43.91	1.438	.77077	1.500	1.961	
COMPUTE NM HYD	116.32	-	1	.00114	1.52	.042	.68101	1.533	2.073	PER IMP= .00
ADD HYD	216.32	1& 3	2	.03613	45.42	1.480	.76793	1.500	1.964	
ROUTE RESERVOIR	516.32	2	3	.03613	31.70	1.487	.77139	1.633	1.371	AC-FT= .148
COMPUTE NM HYD	101.10	-	1	.00196	4.60	.158	1.51255	1.500	3.663	PER IMP= 60.00
COMPUTE NM HYD	101.20	-	2	.00080	2.18	.079	1.83784	1.500	4.227	PER IMP= 90.00
ADD HYD	100.21	1& 2	4	.00277	6.78	.237	1.60684	1.500	3.827	
ADD HYD	100.22	3& 4	1	.03890	37.21	1.724	.83084	1.533	1.495	
COMPUTE NM HYD	116.20	-	1	.06647	78.07	2.515	.70939	1.500	1.835	PER IMP= 17.15
COMPUTE NM HYD	116.33	-	2	.00326	9.27	.342	1.96638	1.500	4.438	PER IMP= 100.00
ADD HYD	216.33	1& 2	3	.06973	87.34	2.857	.76820	1.500	1.957	
COMPUTE NM HYD	116.34	-	1	.00332	4.38	.120	.68101	1.533	2.066	PER IMP= .00
ADD HYD	216.34	1& 3	2	.07305	91.69	2.977	.76424	1.500	1.961	
ROUTE RESERVOIR	516.34	2	5	.07305	40.72	2.977	.76425	1.700	.871	AC-FT= 1.030
COMPUTE NM HYD	100.10	-	1	.00513	14.56	.538	1.96638	1.500	4.437	PER IMP= 100.00
COMPUTE NM HYD	100.20	-	2	.00361	8.46	.292	1.51255	1.500	3.657	PER IMP= 60.00
ADD HYD	100.21	1& 2	3	.00874	23.01	.829	1.77866	1.500	4.114	
COMPUTE NM HYD	100.30	-	1	.00310	7.26	.250	1.51255	1.500	3.658	PER IMP= 60.00
ADD HYD	100.31	1& 3	2	.01184	30.27	1.079	1.70896	1.500	3.995	
COMPUTE NM HYD	100.40	-	1	.00444	10.40	.358	1.51255	1.500	3.656	PER IMP= 60.00
ADD HYD	100.41	1& 2	3	.01628	40.67	1.438	1.65535	1.500	3.902	
COMPUTE NM HYD	100.50	-	1	.00672	15.72	.542	1.51255	1.500	3.654	PER IMP= 60.00
ADD HYD	100.51	1& 3	2	.02301	56.38	1.980	1.61362	1.500	3.830	
ADD HYD	100.52	2& 5	1	.09605	87.76	4.957	.96767	1.533	1.428	
COMPUTE NM HYD	100.60	-	2	.00086	2.46	.091	1.96638	1.500	4.449	PER IMP= 100.00
ADD HYD	100.61	1& 2	3	.09692	90.10	5.048	.97657	1.533	1.453	
ROUTE RESERVOIR	500.61	3	1	.09692	35.37	5.058	.97862	2.166	.570	AC-FT= 1.974
COMPUTE NM HYD	100.20	-	1	.00050	.67	.018	.68101	1.533	2.085	PER IMP= .00
COMPUTE NM HYD	117.10	-	1	.01025	12.04	.388	.70939	1.500	1.835	PER IMP= 17.15
COMPUTE NM HYD	117.41	-	2	.00143	4.08	.150	1.96638	1.500	4.444	PER IMP= 100.00
ADD HYD	217.41	1& 2	3	.01168	16.11	.538	.86352	1.500	2.155	
COMPUTE NM HYD	117.42	-	1	.00098	1.30	.036	.68101	1.533	2.074	PER IMP= .00
ADD HYD	217.42	1& 3	4	.01266	17.41	.574	.84938	1.500	2.148	
COMPUTE NM HYD	117.43	-	1	.00136	3.87	.143	1.96638	1.500	4.444	PER IMP= 100.00
COMPUTE NM HYD	117.44	-	2	.00177	2.34	.064	.68101	1.533	2.069	PER IMP= .00
ADD HYD	217.44	1& 2	3	.00313	6.20	.207	1.23968	1.500	3.094	
ADD HYD	317.44	3& 4	1	.01580	23.61	.781	.92679	1.500	2.335	
COMPUTE NM HYD	117.45	-	2	.03288	43.41	1.194	.68101	1.533	2.063	PER IMP= .00

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ADD HYD	217.45	1& 2	3	.04868	66.75	1.975	.76076	1.500	2.142	
FINISH										

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/14/1996

INPUT FILE = 24-50.dat USER NO.= R_BOHANN.I01

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
START										TIME= .00
RAINFALL TYPE= 1										RAIN6= 1.980
COMPUTE NM HYD	115.20	-	1	.06375	60.07	1.941	.57101	1.500	1.472	PER IMP= 17.15
COMPUTE NM HYD	115.31	-	2	.00336	8.58	.313	1.74690	1.500	3.986	PER IMP= 100.00
ADD HYD	215.31	1& 2	3	.06711	68.65	2.255	.62992	1.500	1.598	
COMPUTE NM HYD	115.32	-	1	.00197	2.11	.056	.53296	1.533	1.680	PER IMP= .00
ADD HYD	215.32	1& 3	2	.06908	70.73	2.311	.62716	1.500	1.600	
COMPUTE NM HYD	101.20	-	1	.00494	10.19	.347	1.31491	1.500	3.220	PER IMP= 60.00
ADD HYD	100.21	1& 3	2	.07206	78.83	2.601	.67692	1.500	1.709	
COMPUTE NM HYD	116.10	-	1	.03328	31.36	1.014	.57101	1.500	1.472	PER IMP= 17.15
COMPUTE NM HYD	116.31	-	2	.00171	4.36	.159	1.74690	1.500	3.990	PER IMP= 100.00
ADD HYD	216.31	1& 2	3	.03499	35.72	1.173	.62842	1.500	1.595	
COMPUTE NM HYD	116.32	-	1	.00114	1.23	.032	.53296	1.533	1.684	PER IMP= .00
ADD HYD	216.32	1& 3	2	.03613	36.93	1.205	.62540	1.500	1.597	
ROUTE RESERVOIR	516.32	2	3	.03613	23.31	1.205	.62540	1.633	1.008	AC-FT= .163
COMPUTE NM HYD	101.10	-	1	.00196	4.06	.138	1.31491	1.500	3.227	PER IMP= 60.00
COMPUTE NM HYD	101.20	-	2	.00080	1.94	.070	1.62550	1.500	3.777	PER IMP= 90.00
ADD HYD	100.21	1& 2	4	.00277	6.00	.207	1.40491	1.500	3.386	
ADD HYD	100.22	3& 4	1	.03890	28.15	1.413	.68087	1.533	1.131	
COMPUTE NM HYD	116.20	-	1	.06647	62.66	2.024	.57101	1.500	1.473	PER IMP= 17.15
COMPUTE NM HYD	116.33	-	2	.00326	8.32	.304	1.74690	1.500	3.986	PER IMP= 100.00
ADD HYD	216.33	1& 2	3	.06973	70.99	2.328	.62602	1.500	1.591	
COMPUTE NM HYD	116.34	-	1	.00332	3.56	.094	.53296	1.533	1.678	PER IMP= .00
ADD HYD	216.34	1& 3	2	.07305	74.50	2.422	.62180	1.500	1.594	
ROUTE RESERVOIR	516.34	2	5	.07305	22.65	2.431	.62399	1.800	.485	AC-FT= .970
COMPUTE NM HYD	100.10	-	1	.00513	13.07	.478	1.74690	1.500	3.985	PER IMP= 100.00
COMPUTE NM HYD	100.20	-	2	.00361	7.45	.253	1.31491	1.500	3.222	PER IMP= 60.00
ADD HYD	100.21	1& 2	3	.00874	20.53	.731	1.56820	1.500	3.669	
COMPUTE NM HYD	100.30	-	1	.00310	6.39	.217	1.31491	1.500	3.222	PER IMP= 60.00
ADD HYD	100.31	1& 3	2	.01184	26.92	.948	1.50186	1.500	3.552	
COMPUTE NM HYD	100.40	-	1	.00444	9.16	.312	1.31491	1.500	3.220	PER IMP= 60.00
ADD HYD	100.41	1& 2	3	.01628	36.08	1.260	1.45083	1.500	3.462	
COMPUTE NM HYD	100.50	-	1	.00672	13.85	.471	1.31491	1.500	3.219	PER IMP= 60.00
ADD HYD	100.51	1& 3	2	.02301	49.92	1.731	1.41110	1.500	3.391	
ADD HYD	100.52	2& 5	1	.09605	68.54	4.162	.81251	1.500	1.115	
COMPUTE NM HYD	100.60	-	2	.00086	2.21	.080	1.74690	1.500	3.996	PER IMP= 100.00
ADD HYD	100.61	1& 2	3	.09692	70.75	4.243	.82083	1.500	1.141	
ROUTE RESERVOIR	500.61	3	1	.09692	30.16	4.253	.82276	2.100	.486	AC-FT= 1.150
COMPUTE NM HYD	100.20	-	1	.00050	.54	.014	.53296	1.533	1.696	PER IMP= .00
COMPUTE NM HYD	117.10	-	1	.01025	9.66	.312	.57101	1.500	1.473	PER IMP= 17.15
COMPUTE NM HYD	117.41	-	2	.00143	3.66	.134	1.74690	1.500	3.991	PER IMP= 100.00
ADD HYD	217.41	1& 2	3	.01168	13.33	.446	.71519	1.500	1.782	
COMPUTE NM HYD	117.42	-	1	.00098	1.06	.028	.53296	1.533	1.685	PER IMP= .00
ADD HYD	217.42	1& 3	4	.01266	14.37	.474	.70107	1.500	1.773	
COMPUTE NM HYD	117.43	-	1	.00136	3.48	.127	1.74690	1.500	3.991	PER IMP= 100.00
COMPUTE NM HYD	117.44	-	2	.00177	1.90	.050	.53296	1.533	1.681	PER IMP= .00
ADD HYD	217.44	1& 2	3	.00313	5.36	.177	1.06057	1.500	2.672	
ADD HYD	317.44	3& 4	1	.01580	19.73	.651	.77237	1.500	1.951	
COMPUTE NM HYD	117.45	-	2	.03288	35.27	.935	.53296	1.533	1.676	PER IMP= .00

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ADD HYD	217.45	1& 2	3	.04868	54.61	1.585	.61065	1.533	1.753	
FINISH										

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/14/1996

INPUT FILE = 24-10.dat USER NO.= R_BOHANN.I01

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
START										TIME= .00
RAINFALL TYPE= 1										RAIN6= 1.470
COMPUTE NM HYD	115.20	-	1	.06375	28.69	.965	.28372	1.500	.703	PER IMP= 17.15
COMPUTE NM HYD	115.31	-	2	.00336	6.32	.222	1.23822	1.500	2.938	PER IMP= 100.00
ADD HYD	215.31	1& 2	3	.06711	35.01	1.187	.33154	1.500	.815	
COMPUTE NM HYD	115.32	-	1	.00197	.99	.024	.23009	1.533	.788	PER IMP= .00
ADD HYD	215.32	1& 3	2	.06908	35.96	1.211	.32865	1.500	.813	
COMPUTE NM HYD	101.20	-	1	.00494	6.97	.230	.87292	1.500	2.203	PER IMP= 60.00
ADD HYD	100.21	1& 3	2	.07206	41.98	1.417	.36868	1.500	.910	
COMPUTE NM HYD	116.10	-	1	.03328	14.98	.504	.28372	1.500	.703	PER IMP= 17.15
COMPUTE NM HYD	116.31	-	2	.00171	3.22	.113	1.23822	1.500	2.941	PER IMP= 100.00
ADD HYD	216.31	1& 2	3	.03499	18.20	.616	.33032	1.500	.813	
COMPUTE NM HYD	116.32	-	1	.00114	.58	.014	.23009	1.533	.789	PER IMP= .00
ADD HYD	216.32	1& 3	2	.03613	18.75	.630	.32715	1.500	.811	
ROUTE RESERVOIR	516.32	2	3	.03613	18.73	.630	.32715	1.500	.810	AC-FT= .001
COMPUTE NM HYD	101.10	-	1	.00196	2.78	.091	.87293	1.500	2.208	PER IMP= 60.00
COMPUTE NM HYD	101.20	-	2	.00080	1.41	.049	1.13741	1.500	2.734	PER IMP= 90.00
ADD HYD	100.21	1& 2	4	.00277	4.18	.140	.94953	1.500	2.361	
ADD HYD	100.22	3& 4	1	.03890	22.92	.771	.37144	1.500	.920	
COMPUTE NM HYD	116.20	-	1	.06647	29.90	1.006	.28372	1.500	.703	PER IMP= 17.15
COMPUTE NM HYD	116.33	-	2	.00326	6.14	.215	1.23822	1.500	2.938	PER IMP= 100.00
ADD HYD	216.33	1& 2	3	.06973	36.04	1.221	.32837	1.500	.807	
COMPUTE NM HYD	116.34	-	1	.00332	1.67	.041	.23009	1.533	.787	PER IMP= .00
ADD HYD	216.34	1& 3	2	.07305	37.64	1.262	.32391	1.500	.805	
ROUTE RESERVOIR	516.34	2	5	.07305	18.10	1.265	.32483	1.700	.387	AC-FT= .276
COMPUTE NM HYD	100.10	-	1	.00513	9.64	.339	1.23822	1.500	2.937	PER IMP= 100.00
COMPUTE NM HYD	100.20	-	2	.00361	5.10	.168	.87293	1.500	2.204	PER IMP= 60.00
ADD HYD	100.21	1& 2	3	.00874	14.73	.507	1.08710	1.500	2.634	
COMPUTE NM HYD	100.30	-	1	.00310	4.38	.144	.87293	1.500	2.205	PER IMP= 60.00
ADD HYD	100.31	1& 3	2	.01184	19.11	.651	1.03100	1.500	2.522	
COMPUTE NM HYD	100.40	-	1	.00444	6.27	.207	.87293	1.500	2.204	PER IMP= 60.00
ADD HYD	100.41	1& 2	3	.01628	25.38	.858	.98785	1.500	2.435	
COMPUTE NM HYD	100.50	-	1	.00672	9.48	.313	.87293	1.500	2.203	PER IMP= 60.00
ADD HYD	100.51	1& 3	2	.02301	34.85	1.171	.95426	1.500	2.367	
ADD HYD	100.52	2& 5	1	.09605	51.33	2.436	.47558	1.500	.835	
COMPUTE NM HYD	100.60	-	2	.00086	1.63	.057	1.23822	1.500	2.945	PER IMP= 100.00
ADD HYD	100.61	1& 2	3	.09692	52.96	2.493	.48237	1.500	.854	
ROUTE RESERVOIR	500.61	3	1	.09692	26.19	2.503	.48415	1.933	.422	AC-FT= .611
COMPUTE NM HYD	100.20	-	1	.00050	.26	.006	.23009	1.533	.795	PER IMP= .00
COMPUTE NM HYD	117.10	-	1	.01025	4.62	.155	.28372	1.500	.704	PER IMP= 17.15
COMPUTE NM HYD	117.41	-	2	.00143	2.70	.095	1.23822	1.500	2.942	PER IMP= 100.00
ADD HYD	217.41	1& 2	3	.01168	7.32	.250	.40074	1.500	.979	
COMPUTE NM HYD	117.42	-	1	.00098	.50	.012	.23009	1.533	.790	PER IMP= .00
ADD HYD	217.42	1& 3	4	.01266	7.79	.262	.38752	1.500	.962	
COMPUTE NM HYD	117.43	-	1	.00136	2.56	.090	1.23822	1.500	2.942	PER IMP= 100.00
COMPUTE NM HYD	117.44	-	2	.00177	.89	.022	.23009	1.533	.788	PER IMP= .00
ADD HYD	217.44	1& 2	3	.00313	3.42	.112	.66825	1.500	1.707	
ADD HYD	317.44	3& 4	1	.01580	11.22	.373	.44320	1.500	1.109	
COMPUTE NM HYD	117.45	-	2	.03288	16.53	.404	.23009	1.533	.785	PER IMP= .00

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ADD HYD	217.45	1& 2	3	.04868	27.46	.777	.29925	1.533	.882	
FINISH										

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/11/1996

INPUT FILE = ON.DAT USER NO.= R_BOHANN.I01

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
START										
RAINFALL TYPE= 1										TIME= .00
										RAIN6= 2.200
COMPUTE NM HYD	100.10	-	1	.00513	11.99	.414	1.51255	1.500	3.655	PER IMP= 60.00
COMPUTE NM HYD	100.20	-	1	.00361	8.46	.292	1.51255	1.500	3.657	PER IMP= 60.00
COMPUTE NM HYD	100.30	-	2	.00310	7.26	.250	1.51255	1.500	3.658	PER IMP= 60.00
COMPUTE NM HYD	100.40	-	1	.00444	10.40	.358	1.51255	1.500	3.656	PER IMP= 60.00
COMPUTE NM HYD	100.50	-	2	.00672	19.09	.705	1.96638	1.500	4.437	PER IMP= 100.00
COMPUTE NM HYD	100.60	-	1	.00086	2.46	.091	1.96638	1.500	4.449	PER IMP= 100.00
COMPUTE NM HYD	100.70	-	2	.00050	.67	.018	.68101	1.533	2.085	PER IMP= .00
COMPUTE NM HYD	101.20	-	1	.00196	4.60	.158	1.51255	1.500	3.663	PER IMP= 60.00
COMPUTE NM HYD	101.20	-	1	.00080	2.18	.079	1.83784	1.500	4.227	PER IMP= 90.00
START										
RAINFALL TYPE= 1										TIME= .00
										RAIN6= 1.980
COMPUTE NM HYD	100.10	-	1	.00513	10.56	.359	1.31491	1.500	3.220	PER IMP= 60.00
COMPUTE NM HYD	100.20	-	1	.00361	7.45	.253	1.31491	1.500	3.222	PER IMP= 60.00
COMPUTE NM HYD	100.30	-	2	.00310	6.39	.217	1.31491	1.500	3.222	PER IMP= 60.00
COMPUTE NM HYD	100.40	-	1	.00444	9.16	.312	1.31491	1.500	3.220	PER IMP= 60.00
COMPUTE NM HYD	100.50	-	2	.00672	17.14	.626	1.74690	1.500	3.985	PER IMP= 100.00
COMPUTE NM HYD	100.60	-	1	.00086	2.21	.080	1.74690	1.500	3.996	PER IMP= 100.00
COMPUTE NM HYD	100.70	-	2	.00050	.54	.014	.53296	1.533	1.696	PER IMP= .00
COMPUTE NM HYD	101.20	-	1	.00196	4.06	.138	1.31491	1.500	3.227	PER IMP= 60.00
COMPUTE NM HYD	101.20	-	1	.00080	1.94	.070	1.62550	1.500	3.777	PER IMP= 90.00
START										
RAINFALL TYPE= 1										TIME= .00
										RAIN6= 1.470
COMPUTE NM HYD	100.10	-	1	.00513	7.23	.239	.87293	1.500	2.203	PER IMP= 60.00
COMPUTE NM HYD	100.20	-	1	.00361	5.10	.168	.87293	1.500	2.204	PER IMP= 60.00
COMPUTE NM HYD	100.30	-	2	.00310	4.38	.144	.87293	1.500	2.205	PER IMP= 60.00
COMPUTE NM HYD	100.40	-	1	.00444	6.27	.207	.87293	1.500	2.204	PER IMP= 60.00
COMPUTE NM HYD	100.50	-	2	.00672	12.63	.444	1.23822	1.500	2.937	PER IMP= 100.00
COMPUTE NM HYD	100.60	-	1	.00086	1.63	.057	1.23822	1.500	2.945	PER IMP= 100.00
COMPUTE NM HYD	100.70	-	2	.00050	.26	.006	.23009	1.533	.795	PER IMP= .00
COMPUTE NM HYD	101.20	-	1	.00196	2.78	.091	.87293	1.500	2.208	PER IMP= 60.00
COMPUTE NM HYD	101.20	-	1	.00080	1.41	.049	1.13741	1.500	2.734	PER IMP= 90.00
FINISH										

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/11/1996

INPUT FILE = OFF.DAT USER NO.= R_BOHANN.I01

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
START										TIME= .00
RAINFALL TYPE= 1										RAIN6= 2.200
COMPUTE NM HYD	101.20	-	1	.00494	14.04	.518	1.96638	1.500	4.437	PER IMP= 100.00
COMPUTE NM HYD	115.20	-	1	.06375	74.82	2.412	.70939	1.500	1.834	PER IMP= 17.15
COMPUTE NM HYD	115.30	-	1	.02172	25.49	.822	.70939	1.500	1.834	PER IMP= 17.15
COMPUTE NM HYD	115.31	-	1	.00336	9.55	.353	1.96638	1.500	4.438	PER IMP= 100.00
COMPUTE NM HYD	115.32	-	1	.00197	2.60	.071	.68101	1.533	2.068	PER IMP= .00
COMPUTE NM HYD	116.10	-	1	.03328	39.05	1.259	.70939	1.500	1.834	PER IMP= 17.15
COMPUTE NM HYD	116.20	-	1	.06647	78.07	2.515	.70939	1.500	1.835	PER IMP= 17.15
COMPUTE NM HYD	116.30	-	1	.04842	56.81	1.832	.70939	1.500	1.833	PER IMP= 17.15
COMPUTE NM HYD	116.31	-	1	.00171	4.86	.179	1.96638	1.500	4.443	PER IMP= 100.00
COMPUTE NM HYD	116.32	-	1	.00114	1.52	.042	.68101	1.533	2.073	PER IMP= .00
COMPUTE NM HYD	116.33	-	1	.00326	9.27	.342	1.96638	1.500	4.438	PER IMP= 100.00
COMPUTE NM HYD	116.34	-	1	.00332	4.38	.120	.68101	1.533	2.066	PER IMP= .00
COMPUTE NM HYD	117.10	-	1	.01025	12.04	.388	.70939	1.500	1.835	PER IMP= 17.15
COMPUTE NM HYD	117.40	-	1	.07558	88.99	2.859	.70939	1.500	1.840	PER IMP= 17.15
COMPUTE NM HYD	117.41	-	1	.00143	4.08	.150	1.96638	1.500	4.444	PER IMP= 100.00
COMPUTE NM HYD	117.42	-	1	.00098	1.30	.036	.68101	1.533	2.074	PER IMP= .00
COMPUTE NM HYD	117.43	-	1	.00136	3.87	.143	1.96638	1.500	4.444	PER IMP= 100.00
COMPUTE NM HYD	117.44	-	1	.00177	2.34	.064	.68101	1.533	2.069	PER IMP= .00
COMPUTE NM HYD	117.45	-	1	.03288	43.41	1.194	.68101	1.533	2.063	PER IMP= .00
START										TIME= .00
RAINFALL TYPE= 1										RAIN6= 1.980
COMPUTE NM HYD	101.20	-	1	.00494	12.61	.461	1.74690	1.500	3.986	PER IMP= 100.00
COMPUTE NM HYD	115.20	-	1	.06375	60.07	1.941	.57101	1.500	1.472	PER IMP= 17.15
COMPUTE NM HYD	115.30	-	1	.02172	20.47	.661	.57101	1.500	1.472	PER IMP= 17.15
COMPUTE NM HYD	115.31	-	1	.00336	8.58	.313	1.74690	1.500	3.986	PER IMP= 100.00
COMPUTE NM HYD	115.32	-	1	.00197	2.11	.056	.53296	1.533	1.680	PER IMP= .00
COMPUTE NM HYD	116.10	-	1	.03328	31.36	1.014	.57101	1.500	1.472	PER IMP= 17.15
COMPUTE NM HYD	116.20	-	1	.06647	62.66	2.024	.57101	1.500	1.473	PER IMP= 17.15
COMPUTE NM HYD	116.30	-	1	.04842	45.61	1.475	.57101	1.500	1.472	PER IMP= 17.15
COMPUTE NM HYD	116.31	-	1	.00171	4.36	.159	1.74690	1.500	3.990	PER IMP= 100.00
COMPUTE NM HYD	116.32	-	1	.00114	1.23	.032	.53296	1.533	1.684	PER IMP= .00
COMPUTE NM HYD	116.33	-	1	.00326	8.32	.304	1.74690	1.500	3.986	PER IMP= 100.00
COMPUTE NM HYD	116.34	-	1	.00332	3.56	.094	.53296	1.533	1.678	PER IMP= .00
COMPUTE NM HYD	117.10	-	1	.01025	9.66	.312	.57101	1.500	1.473	PER IMP= 17.15
COMPUTE NM HYD	117.40	-	1	.07558	71.38	2.302	.57101	1.500	1.476	PER IMP= 17.15
COMPUTE NM HYD	117.41	-	1	.00143	3.66	.134	1.74690	1.500	3.991	PER IMP= 100.00
COMPUTE NM HYD	117.42	-	1	.00098	1.06	.028	.53296	1.533	1.685	PER IMP= .00
COMPUTE NM HYD	117.43	-	1	.00136	3.48	.127	1.74690	1.500	3.991	PER IMP= 100.00
COMPUTE NM HYD	117.44	-	1	.00177	1.90	.050	.53296	1.533	1.681	PER IMP= .00
COMPUTE NM HYD	117.45	-	1	.03288	35.27	.935	.53296	1.533	1.676	PER IMP= .00
START										TIME= .00
RAINFALL TYPE= 1										RAIN6= 1.470
COMPUTE NM HYD	101.20	-	1	.00494	9.29	.326	1.23822	1.500	2.937	PER IMP= 100.00
COMPUTE NM HYD	115.20	-	1	.06375	28.69	.965	.28372	1.500	.703	PER IMP= 17.15
COMPUTE NM HYD	115.30	-	1	.02172	9.78	.329	.28372	1.500	.704	PER IMP= 17.15
COMPUTE NM HYD	115.31	-	1	.00336	6.32	.222	1.23822	1.500	2.938	PER IMP= 100.00
COMPUTE NM HYD	115.32	-	1	.00197	.99	.024	.23009	1.533	.788	PER IMP= .00

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION	
COMPUTE NM HYD	116.10	-	1	.03328	14.98	.504	.28372	1.500	.703	PER IMP=	17.15
COMPUTE NM HYD	116.20	-	1	.06647	29.90	1.006	.28372	1.500	.703	PER IMP=	17.15
COMPUTE NM HYD	116.30	-	1	.04842	21.80	.733	.28372	1.500	.703	PER IMP=	17.15
COMPUTE NM HYD	116.31	-	1	.00171	3.22	.113	1.23822	1.500	2.941	PER IMP=	100.00
COMPUTE NM HYD	116.32	-	1	.00114	.58	.014	.23009	1.533	.789	PER IMP=	.00
COMPUTE NM HYD	116.33	-	1	.00326	6.14	.215	1.23822	1.500	2.938	PER IMP=	100.00
COMPUTE NM HYD	116.34	-	1	.00332	1.67	.041	.23009	1.533	.787	PER IMP=	.00
COMPUTE NM HYD	117.10	-	1	.01025	4.62	.155	.28372	1.500	.704	PER IMP=	17.15
COMPUTE NM HYD	117.40	-	1	.07558	33.95	1.144	.28372	1.500	.702	PER IMP=	17.15
COMPUTE NM HYD	117.41	-	1	.00143	2.70	.095	1.23822	1.500	2.942	PER IMP=	100.00
COMPUTE NM HYD	117.42	-	1	.00098	.50	.012	.23009	1.533	.790	PER IMP=	.00
COMPUTE NM HYD	117.43	-	1	.00136	2.56	.090	1.23822	1.500	2.942	PER IMP=	100.00
COMPUTE NM HYD	117.44	-	1	.00177	.89	.022	.23009	1.533	.788	PER IMP=	.00
COMPUTE NM HYD	117.45	-	1	.03288	16.53	.404	.23009	1.533	.785	PER IMP=	.00
FINISH											