



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

August 25, 2000

Dennis Lorenz, P.E.
Brasher & Lorenz, Inc.
2201 San Pedro NE, Bldg 1, Suite 210
Albuquerque, NM 87110

RE: ENGINEER'S CERTIFICATION FOR FARMER'S MARKET, (G-16/ D115),
ENGINEER'S STAMP DATED 3/1/00, CERTIFICATION DATED
08/15/2000.

Dear Mr. Lorenz,

Based upon the information provided in your submittal dated August, 17, 2000, the Engineering Certification for Certificate of Occupancy for the project referred to above is approved.

If you have any questions, please call me at 924-3988.

Sincerely,

Stuart Reeder, P.E.

Stuart Reeder, P.E.
Hydrology Division

xc: Whitney Reiersen
File

DRAINAGE INFORMATION SHEET

PROJECT TITLE: FARMER'S MARKET ZONE ATLAS/DRNG. FILE #: G16. D115
 DRB #: EPC #: WORK ORDER #:
 LEGAL DESCRIPTION: TRACT B-1-H COMANCHE BUSINESS PARK
 CITY ADDRESS: VASSAR PL NE

ENGINEERING FIRM: Brasher & Lorenz, Inc. CONTACT: Dennis A. Lorenz
2201 San Pedro NE Bldg.1 Suite 210
 ADDRESS: Albuquerque, New Mexico 87110 PHONE: 888-6088

OWNER: JACK BROWNE CONTACT:
 ADDRESS: 12301 SAN FRANCISCO NE PHONE: 873-8780

ARCHITECT: RICK BENNETT CONTACT:
 ADDRESS: 1118 PARK SW PHONE: 242-1859

SURVEYOR: ENGINEER CONTACT:
 ADDRESS: PHONE:

CONTRACTOR: BROWN DEVELOPMENT CONTACT: R. BENNETT
 ADDRESS: 1118 PARK SW PHONE: 242-1859

TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
- ☐ DRAINAGE PLAN
- ☐ CONCEPTUAL GRADING & DRAINAGE PLAN
- ☐ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☒ ENGINEER'S CERTIFICATION
- ☐ OTHER

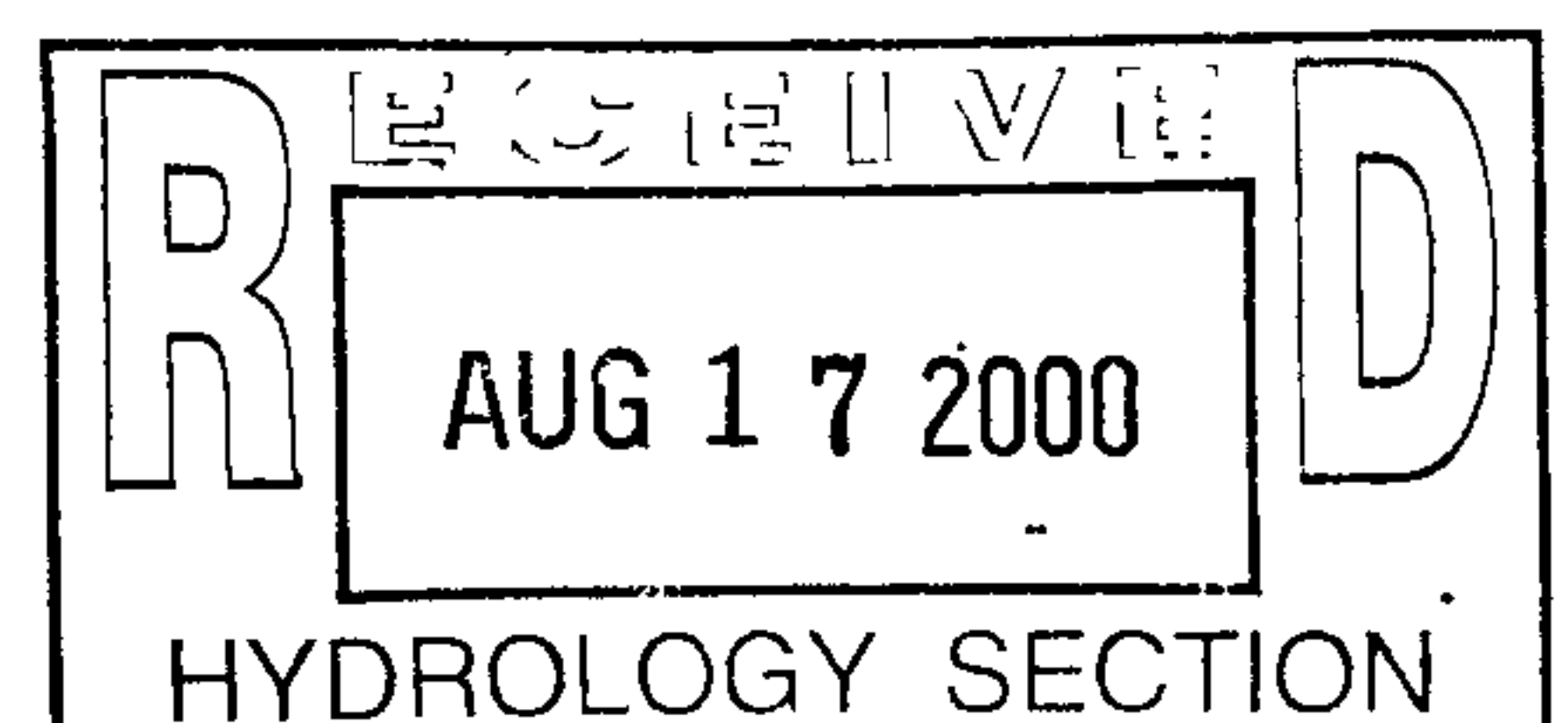
PRE-DESIGN MEETING:

- ☐ YES
- ☐ NO
- ☐ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SKETCH PLAT APPROVAL
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D. APPROVAL
- ☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ☐ SECTOR PLAN APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☐ FOUNDATION PERMIT APPROVAL
- ☐ BUILDING PERMIT APPROVAL
- ☒ CERTIFICATE OF OCCUPANCY APPROVAL
- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ S.A.D. DRAINAGE REPORT
- ☐ DRAINAGE REQUIREMENTS
- ☐ OTHER (SPECIFY)

DATE SUBMITTED: 8.16.00
 BY: Dennis A. Lorenz





City of Albuquerque

March 16, 2000

Dennis Lorenz, P.E.
Brasher & Lorenz
2201 San Pedro NE
Bldg. 1 - Suite 210
Albuquerque, NM 87110

RE: *FARMER'S MARKET Addition (G16-D115). GRADING AND DRAINAGE PLAN FOR BUILDING PERMIT APPROVAL. ENGINEER'S STAMP DATED MARCH 1, 2000.*

Dear Mr. Lorenz:

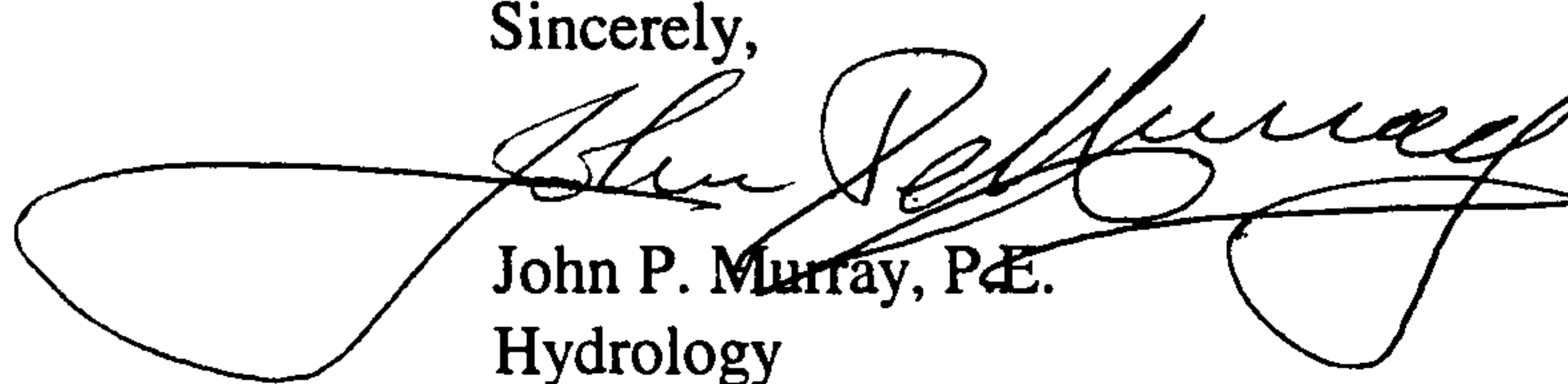
Based on the information provided on your March 1, 2000 submittal, the above referenced project is approved for Building Permit.

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

Prior to Certificate of Occupancy approval, an Engineer's Cetification per the DPM will be required.

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

Sincerely,



John P. Murray, P.E.
Hydrology

c: ✓ Whitney Reiersen
✓ File

DRAINAGE INFORMATION SHEET

PROJECT TITLE: FARMERS MARKET ADDITION ZONE ATLAS/DRNG. FILE #: G16-D115
DRB #: NA EPC #: NA WORK ORDER #: NA
LEGAL DESCRIPTION: TRACT B-1-H
CITY ADDRESS: VASSAR PL NE

ENGINEERING FIRM: Brasher & Lorenz, Inc. CONTACT: Dennis A. Lorenz
2201 San Pedro NE Bldg.1 Suite 210
ADDRESS: Albuquerque, New Mexico 87110 PHONE: 888-6088

OWNER: JACK BROWNE CONTACT: SAME
ADDRESS: 12301 SAN FRANCISCO PHONE: 856-1124

ARCHITECT: RICK BENNETT CONTACT: same
ADDRESS: 1118 PARK SW PHONE: 242-1859

SURVEYOR: ENGINEER CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: BROWN DEVELOPMENT CONTACT: L. CHAVEZ
ADDRESS: 1118 PM24C SW PHONE: 242-1859

TYPE OF SUBMITTAL:

☐ DRAINAGE REPORT

☒ DRAINAGE PLAN

☒ CONCEPTUAL GRADING & DRAINAGE PLAN

☒ GRADING PLAN

☐ EROSION CONTROL PLAN

☐ ENGINEER'S CERTIFICATION

☐ OTHER _____

PRE-DESIGN MEETING:

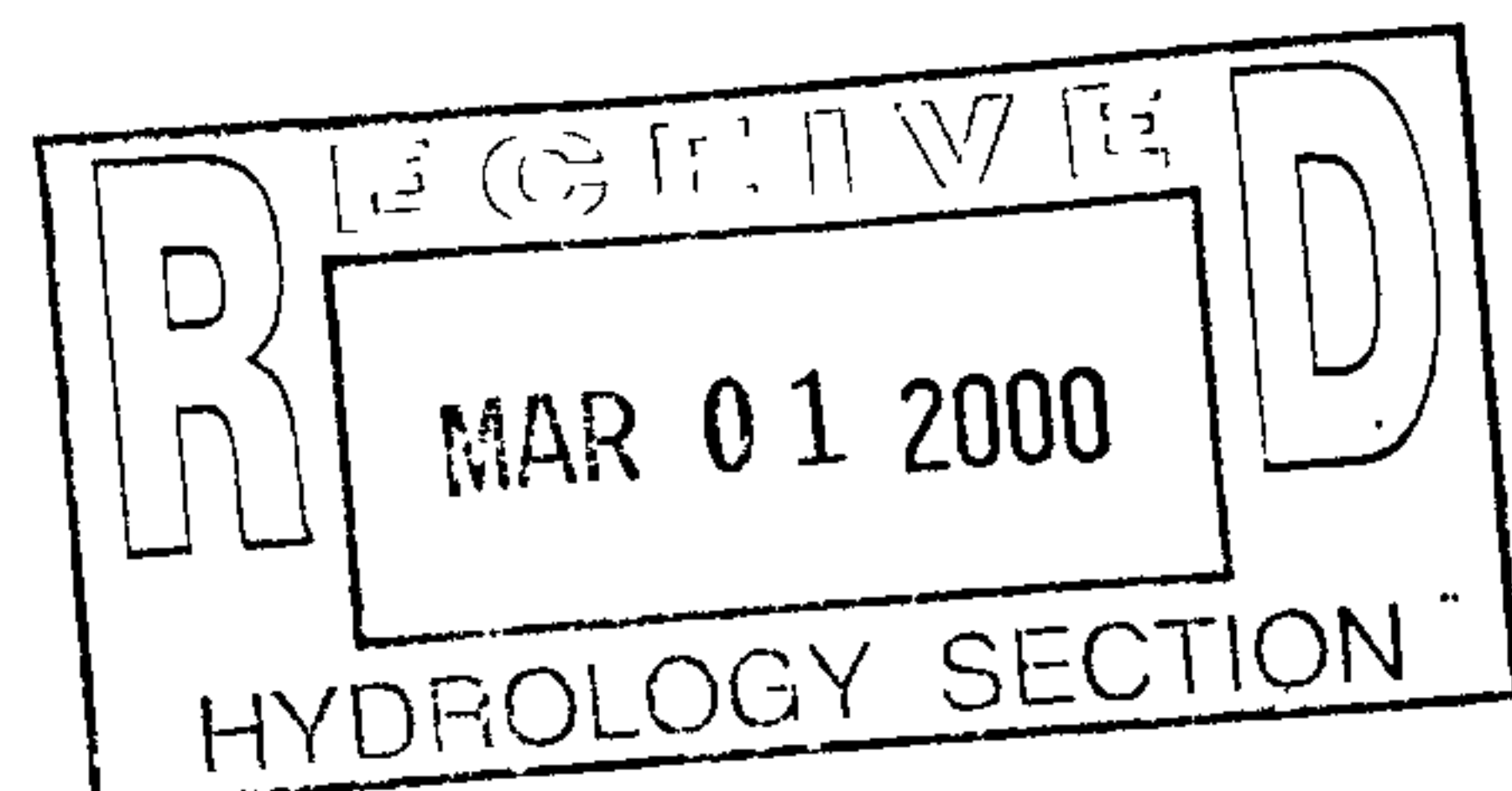
YES
X NO
COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

_____ SKETCH PLAT APPROVAL
 _____ PRELIMINARY PLAT APPROVAL
 _____ S. DEV. PLAN FOR SUB'D. APPROVAL
 _____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
 _____ SECTOR PLAN APPROVAL
 _____ FINAL PLAT APPROVAL
 _____ FOUNDATION PERMIT APPROVAL
 X BUILDING PERMIT APPROVAL
 _____ CERTIFICATE OF OCCUPANCY APPROVAL
 _____ GRADING PERMIT APPROVAL
 _____ PAVING PERMIT APPROVAL
 _____ S.A.D. DRAINAGE REPORT
 _____ DRAINAGE REQUIREMENTS
 _____ OTHER _____ (SPECIFY)

DATE SUBMITTED: 3.1.2000

BY: Dennis A. Lorenz



SUPPLEMENTAL CALCULATIONS

FOR

FARMERS MARKET

Albuquerque, New Mexico

Prepared by:

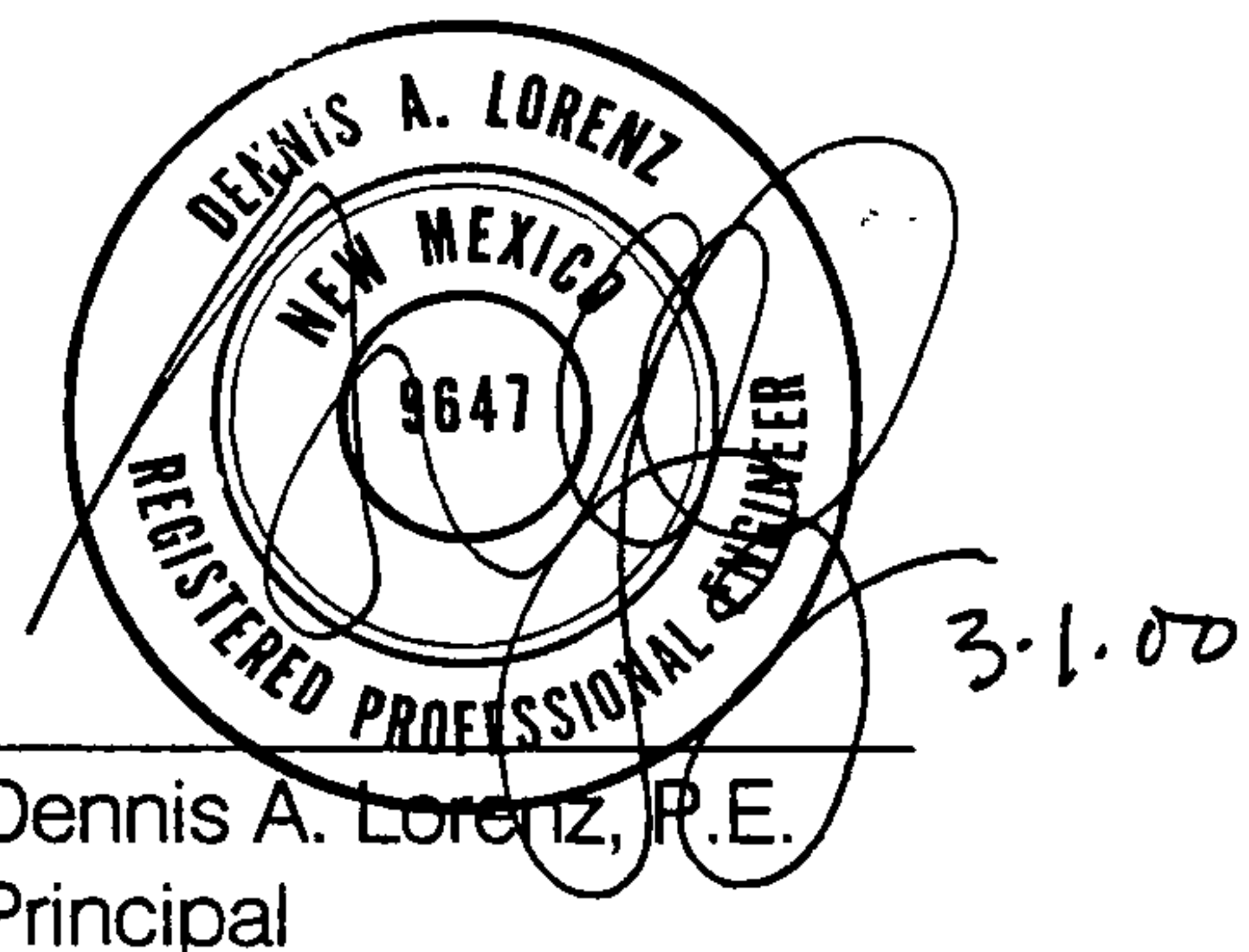
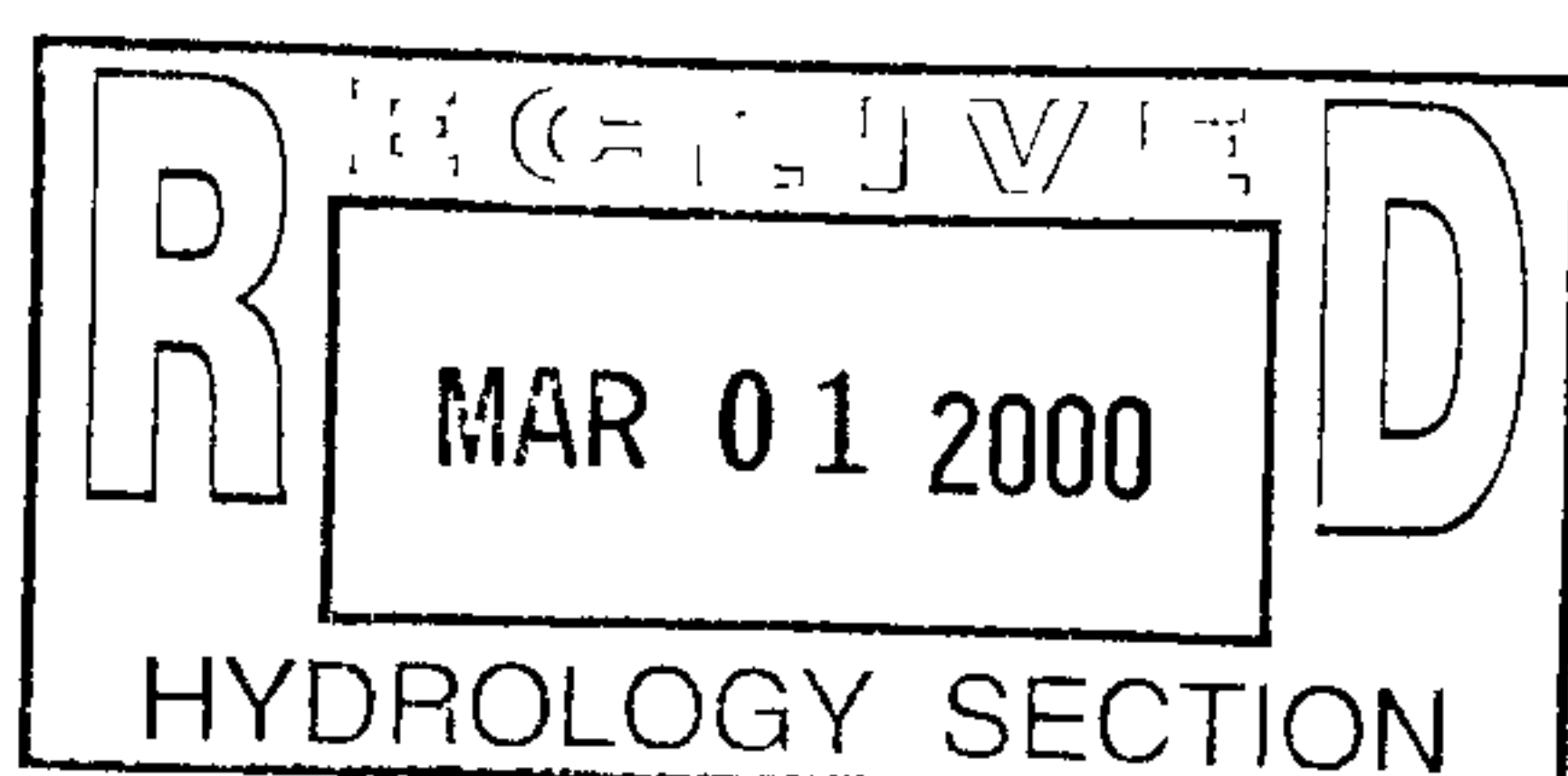
BRASHER & LORENZ, INC.

Consulting Engineers

2201 San Pedro NE Building 1, Suite 210

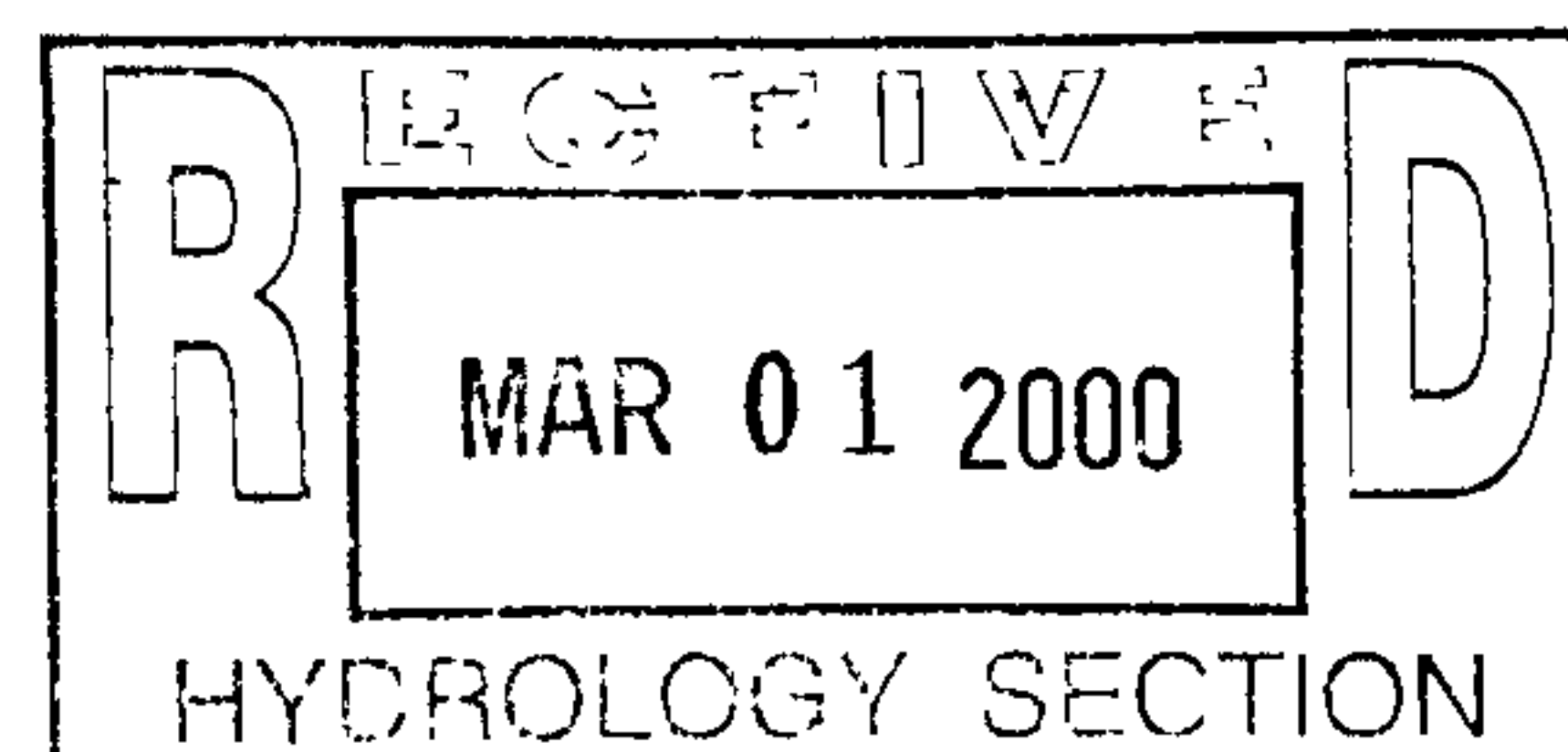
Albuquerque, New Mexico 87110

March 2000



Dennis A. Lorenz, P.E.
Principal

INFRASTRUCTURE DESIGN



FARMERS MKT

7067

10-26-97

UPDATED 3-1-00

①

EXISTING POND
POND ROUTINGGIVEN: PER DMP MAX DISCHARGE
FOR SITE = 3.61 CFS/AC

SITE A = 1.1217 AC

 $Q_{ALLOW} = 1.1217 (3.61) = 4.05 \text{ CFS}$ $Q_{SITE} = 4.98 \text{ CFS} < \text{POND REQ'D}$ $Q_{BASIN 'A'} = 4.36 \text{ CFS}$ $Q_{BASIN 'B'} = 0.63 \text{ CFS}$ ROUT BASIN 'B' THRU POND
@ MINIMAL Q_{OUT}

②

SIZE OUTLET

LIMIT OUTLET TO $\pm 0.2 \text{ CFS}$

DIA

AREA (SF)

3"

0.049

4"

0.087

6"

0.196

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

$$C = 0.60$$

H

 $Q_{3"}$ $Q_{4"}$ $Q_{6"}$

1'

0.24

0.42

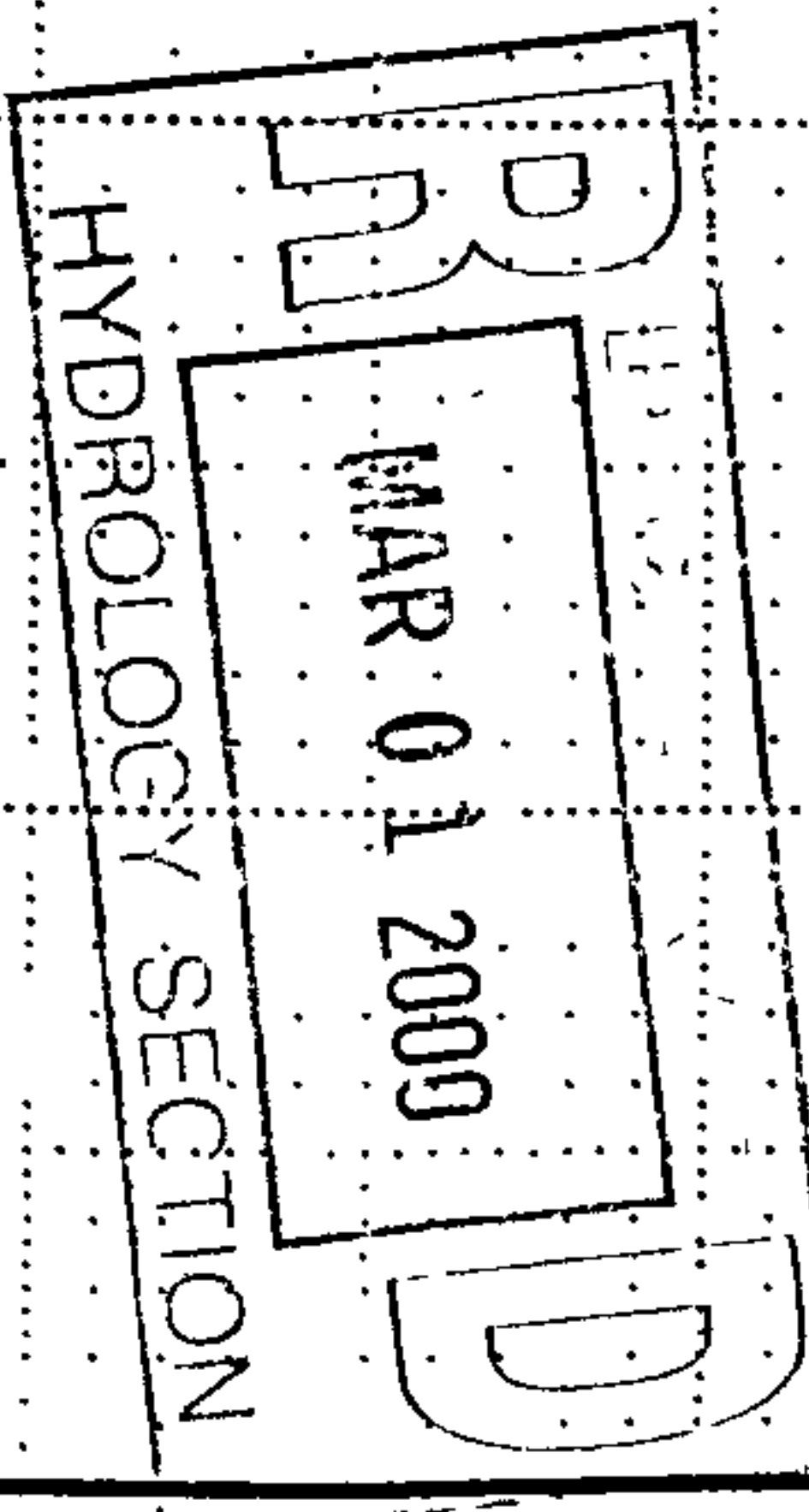
0.94

2'

0.33

0.59

1.33



FARMERS

MKT

7067

2/

10.26.97

UPDATED 3-1-00

③ ROUTE RES TABLE

⇒ USE 3" OUTLET

Q OUT CFS	STORAGE AF	ELEV MSLD
0	0	74.7
0.26	0.010904	76.0
0.32	0.02590	76.7

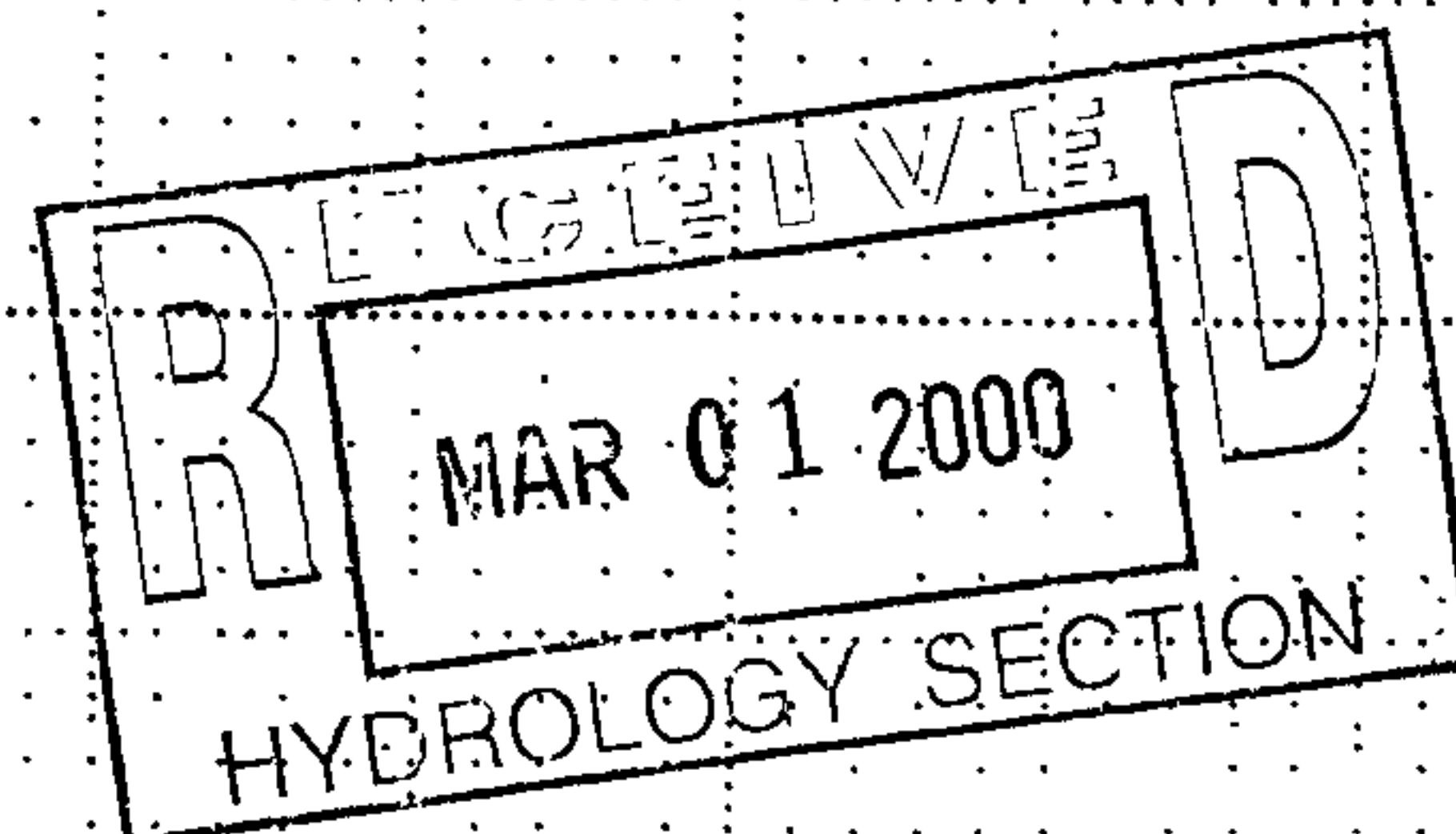
PER A144MO:

QOUT = 0.24 CFS

VOL = 0.0099 AF = 431 CF

MAX WSE = 75.9

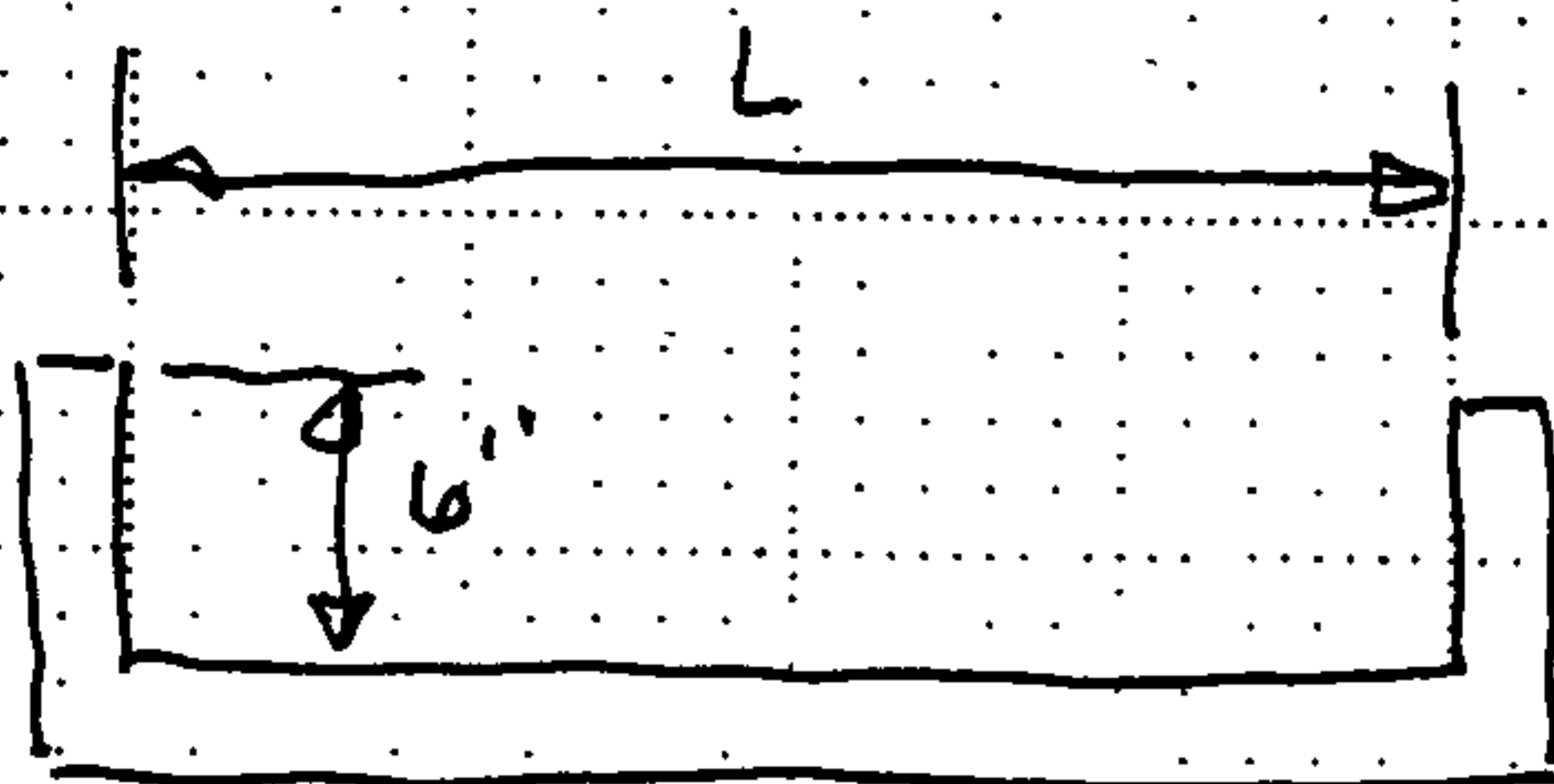
⇒ TOTAL Q SITE = 4.50 CFS ~ Q ALLOW



10.26.97

UPDATED 3-1-00

② POND SPILLWAY



$$Q_{100} = 1.0 \text{ CFS}$$

SECTION

BY WEIR EQN

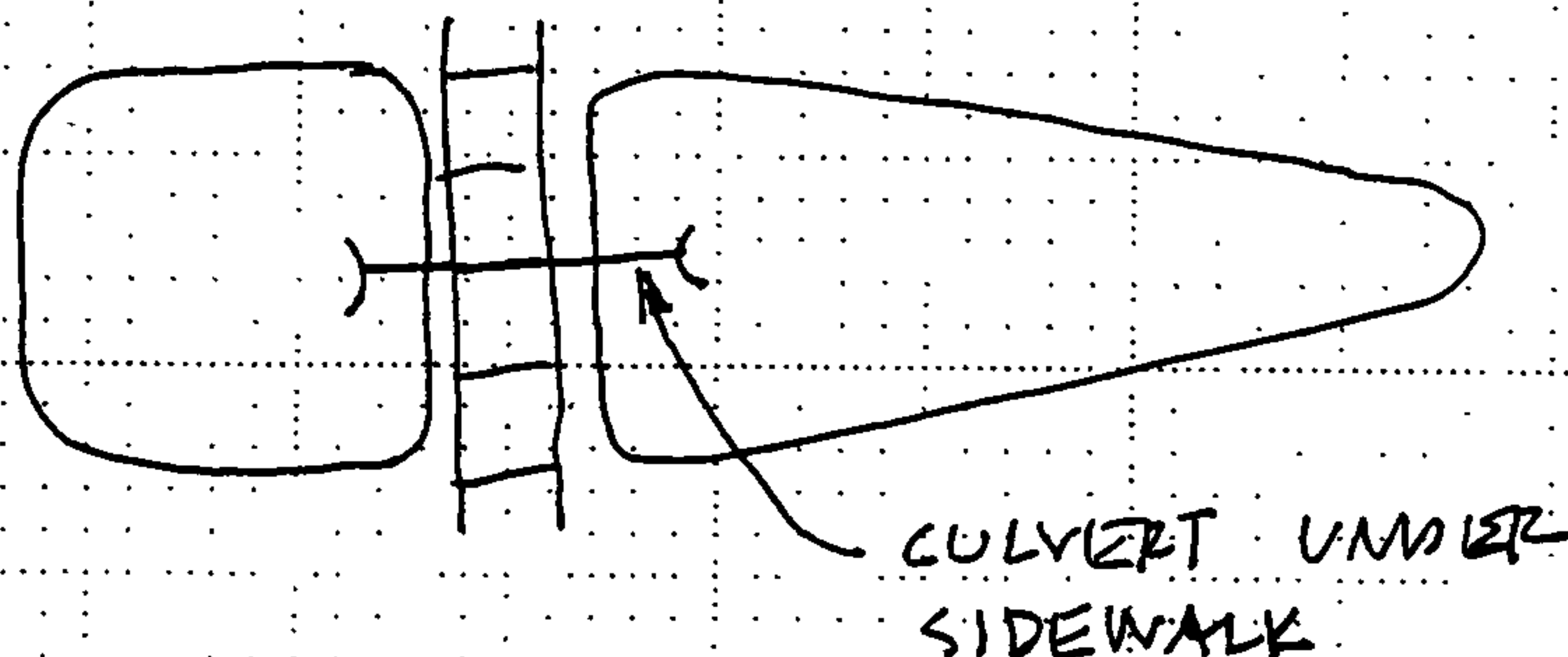
$$Q = CLH^{3/2}$$

$$C = 2.50 \quad H = 0.5'$$

$$\Rightarrow L = Q / CH^{3/2} = 1.13' \quad \text{USE } 2'$$

③ POND CULVERT

SIZE CULVERT PIPE CONNECTING
POND SECTIONS



$$Q_{100} = 1.0 \text{ CFS}$$

$$H_{\text{MAX}} = 1.5 \text{ FT}$$

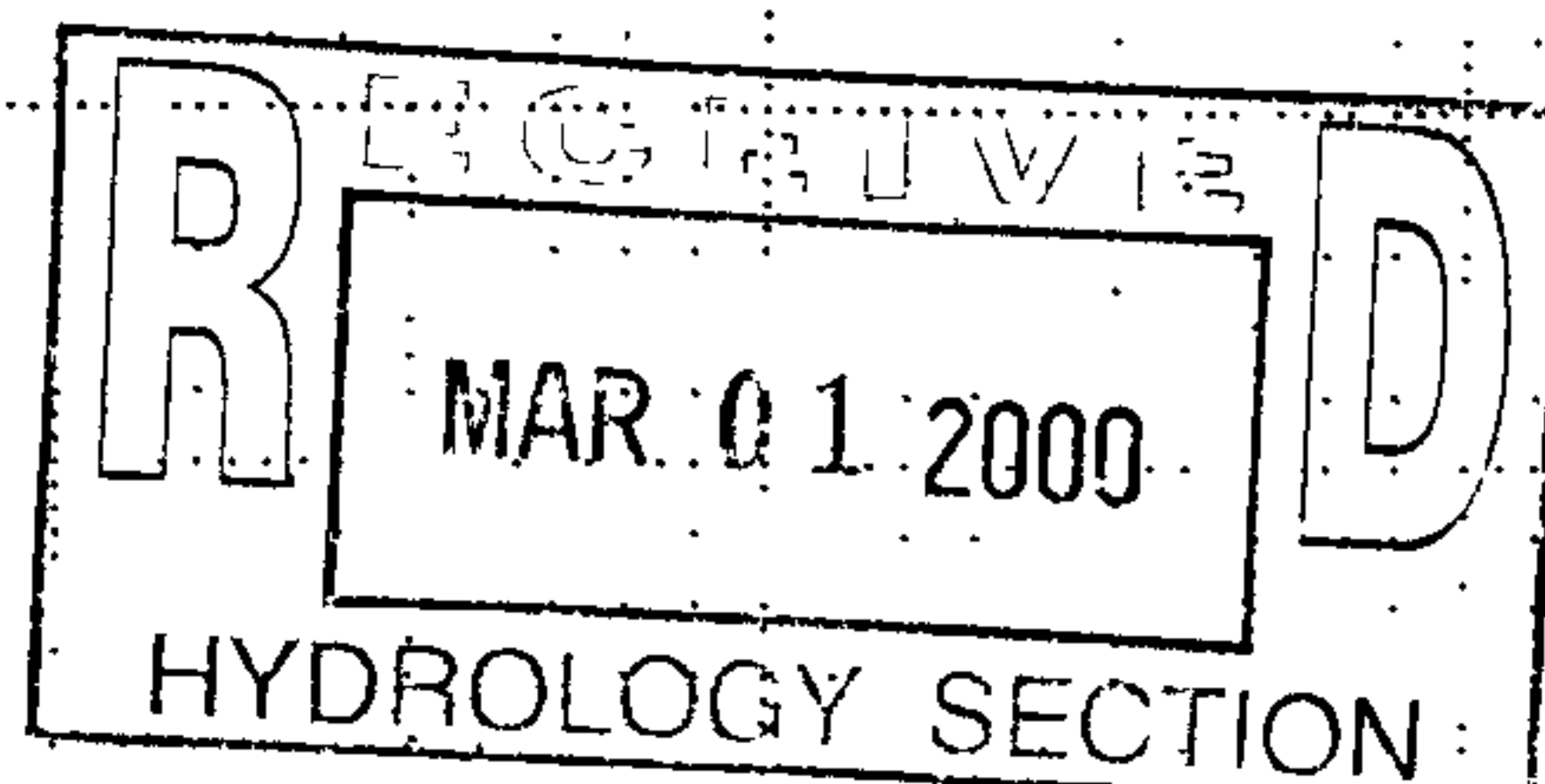
USE 8" PIPE

$$A = 0.35 \text{ SF}$$

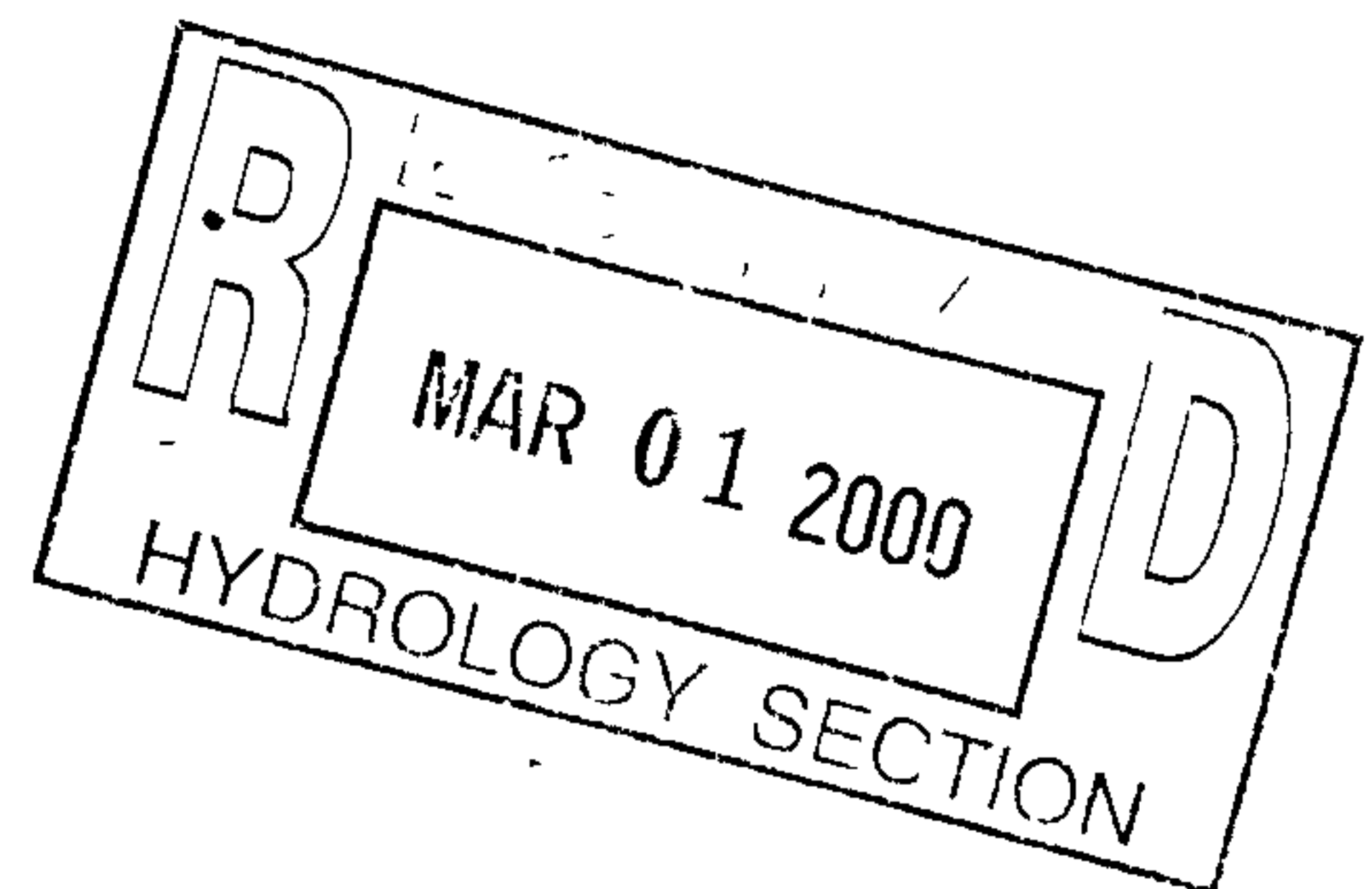
$$Q = CA\sqrt{2gh}$$

$$C = 0.6$$

$$\Rightarrow Q_{8"} = 2.06 \text{ CFS} < Q_{100}$$



AHYMO OUTPUT FILES



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*****
*
*                               FARMERS MARKET
*                               ON-SITE HYDROLOGY
*****
START                          TIME=0.0  PUNCH CODE=0
RAINFALL                       TYPE=1  RAIN QUARTER=0.0  RAIN ONE=2.01
                                RAIN SIX=2.35  RAIN DAY=2.75  DT=0.03333 HRS

* EXISTING SITE
COMPUTE NM HYD                 ID=1  HYD NO=EX.SITE  DA= 0.001753 SQ MI
                                PER A=0  PER B=5  PER C=41  PER D=54
                                TP=0.1333 HR  MASS RAIN=-1

* DEVELOPED SITE
COMPUTE NM HYD                 ID=2  HYD NO=DEV.SITE  DA=0.001753 SQ MI
                                PER A=0  PER B=5  PER C=10  PER D=85
                                TP=0.1333 HR  MASS RAIN=-1

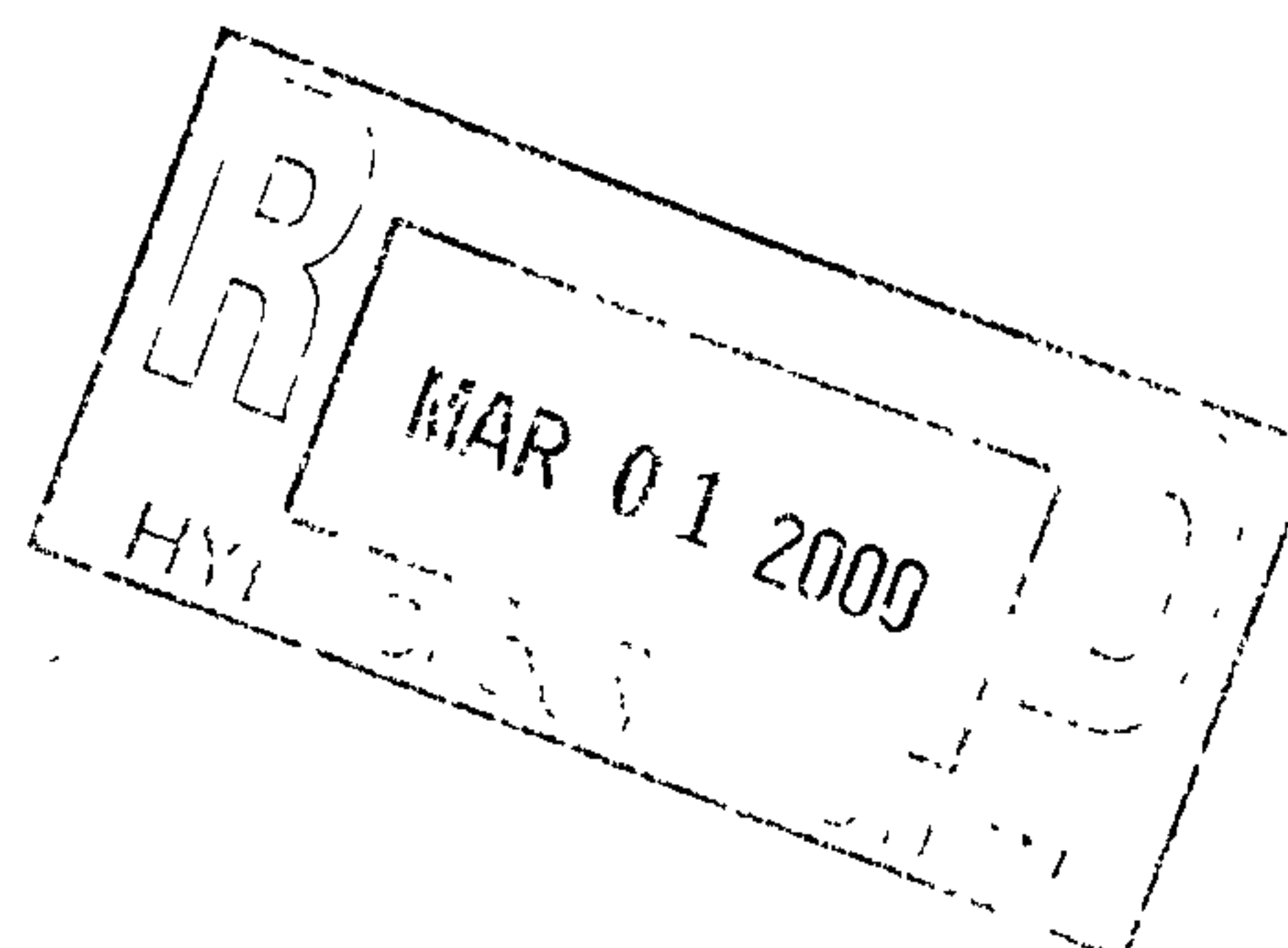
* BASIN A DEVELOPED
COMPUTE NM HYD                 ID=3  HYD NO=DEV.BASINA  DA=0.001536 SQ MI
                                PER A=0  PER B=5  PER C=10  PER D=85
                                TP=0.1333 HR  MASS RAIN=-1

* BASIN B DEVELOPED
COMPUTE NM HYD                 ID=4  HYD NO=DEV.BASINB  DA=0.0002169 SQ MI
                                PER A=0  PER B=5  PER C=10  PER D=85
                                TP=0.1333 HR  MASS RAIN=-1

* ROUTE BASIN B THRU DETENTION POND
ROUTE RESERVOIR               ID=5  HYD NO=POND.OUT  INFLOW=4  CODE=2
                                OUT (CFS)  STORAGE (AC-FT)  ELEV (FT)
                                0 0 74.7
                                0.26 0.010904 76.0
                                0.32 0.025900 76.7

* ADD BASINS A AND B
ADD HYD                        ID=6  HYD NO=DEV.A+B  ID I=3  ID II=5
PRINT HYD                      ID=1  CODE=5
PRINT HYD                      ID=2  CODE=5
PRINT HYD                      ID=3  CODE=5
PRINT HYD                      ID=4  CODE=5
PRINT HYD                      ID=5  CODE=5
PRINT HYD                      ID=6  CODE=5
FINISH

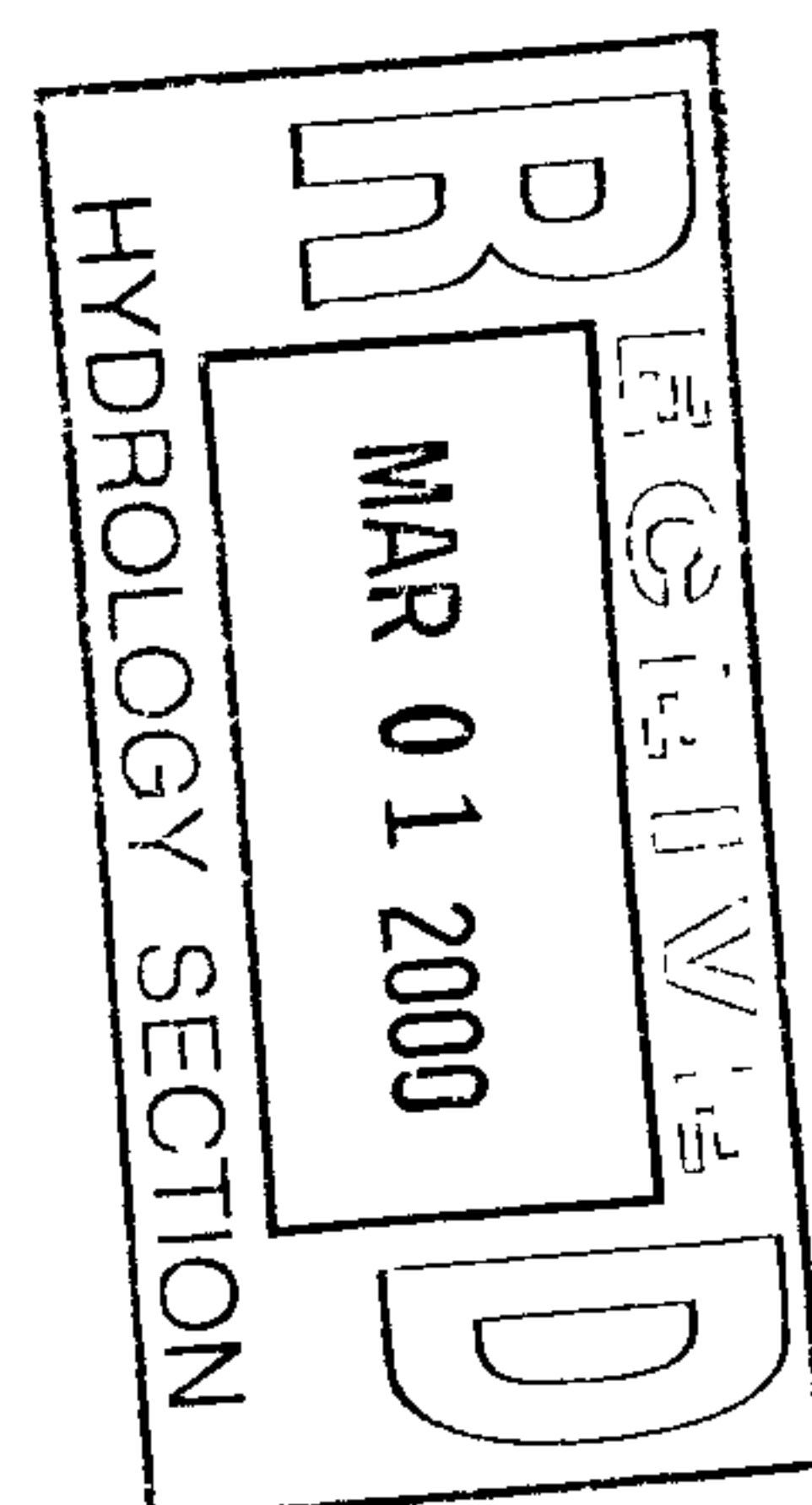
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AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
 INPUT FILE = 00507.dat

RUN DATE (MON/DAY/YR) =02/29/2000
 USER NO.= BRASHERE.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	PAGE = 1 NOTATION
START										TIME= .00
RAINFALL	TYPE= 1									RAIN6= 2.350
COMPUTE NM HYD	EX.SITE	-	1	.00175	4.43	.153	1.64044	1.500	3.951	PER IMP= 54.00
COMPUTE NM HYD	DEV.SITE	-	2	.00175	4.98	.182	1.94748	1.500	4.436	PER IMP= 85.00
COMPUTE NM HYD	DEV.BASINA	-	3	.00154	4.36	.160	1.94748	1.500	4.438	PER IMP= 85.00
COMPUTE NM HYD	DEV.BASINB	-	4	.00022	.63	.023	1.94748	1.500	4.541	PER IMP= 85.00
ROUTE RESERVOIR	POND.OUT	4	5	.00022	.24	.023	1.94659	1.766	1.700	AC-FT= .010
ADD HYD	DEV.A+B	3& 5	6	.00175	4.50	.182	1.94677	1.500	4.007	
FINISH										



AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
RUN DATE (MON/DAY/YR) = 02/29/2000
START TIME (HR:MIN:SEC) = 15:34:57 USER NO.= BRASHERE.I01
INPUT FILE = 00507.dat

* FARMERS MARKET
* ON-SITE HYDROLOGY

START TIME=0.0 PUNCH CODE=0
RAINFALL TYPE=1 RAIN QUARTER=0.0 RAIN ONE=2.01
RAIN SIX=2.35 RAIN DAY=2.75 DT=0.03333 HRS

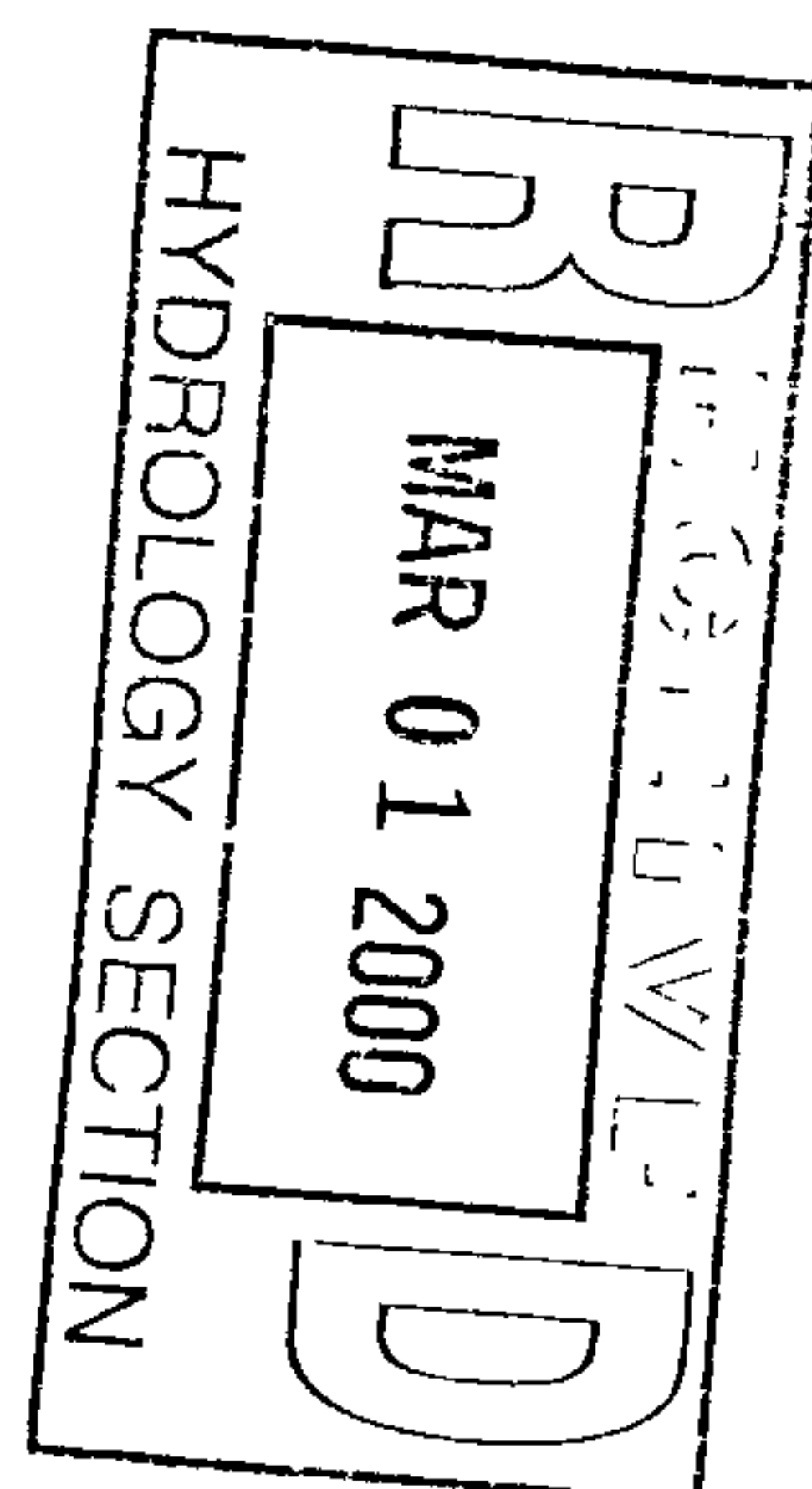
COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.

DT =	.033330 HOURS	END TIME =	5.999400 HOURS
.0000	.0016	.0033	.0049
.0120	.0139	.0158	.0178
.0263	.0286	.0309	.0333
.0439	.0467	.0497	.0529
.0669	.0709	.0751	.0807
.1371	.1840	.2514	.3434
1.0449	1.2624	1.3533	1.4300
1.6704	1.7200	1.7664	1.8102
1.9622	1.9953	2.0268	2.0566
2.1033	2.1088	2.1140	2.1191
2.1373	2.1414	2.1454	2.1494
2.1639	2.1673	2.1706	2.1739
2.1862	2.1891	2.1919	2.1947
2.2054	2.2080	2.2105	2.2130
2.2225	2.2248	2.2270	2.2293
2.2379	2.2399	2.2420	2.2440
2.2519	2.2538	2.2557	2.2576
2.2648	2.2666	2.2684	2.2701
2.2769	2.2785	2.2802	2.2818
2.2881	2.2897	2.2912	2.2928
2.2987	2.3002	2.3017	2.3031
2.3088	2.3102	2.3115	2.3129
2.3183	2.3196	2.3209	2.3222
2.3273	2.3286	2.3298	2.3311
2.3360	2.3372	2.3384	2.3396
2.3443	2.3454	2.3466	2.3477

* EXISTING SITE

COMPUTE NM HYD ID=1 HYD NO=EX.SITE DA= 0.001753 SQ MI
PER A=0 PER B=5 PER C=41 PER D=54
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 3.7373 CFS UNIT VOLUME = .9965 B = 526.28 P60 = 2.0100
AREA = .000947 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330



K = .110124HR TP = .133300HR K/TP RATIO = .826140 SHAPE CONSTANT, N = 4.320714
UNIT PEAK = 2.2747 CFS UNIT VOLUME = .9948 B = 376.02 P60 = 2.0100
AREA = .000806 SQ MI IA = .36630 INCHES INF = .87565 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* DEVELOPED SITE

COMPUTE NM HYD ID=2 HYD NO=DEV.SITE DA=0.001753 SQ MI
PER A=0 PER B=5 PER C=10 PER D=85
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 5.8828 CFS UNIT VOLUME = .9976 B = 526.28 P60 = 2.0100
AREA = .001490 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .115660HR TP = .133300HR K/TP RATIO = .867666 SHAPE CONSTANT, N = 4.095337
UNIT PEAK = .71306 CFS UNIT VOLUME = .9809 B = 361.48 P60 = 2.0100
AREA = .000263 SQ MI IA = .40000 INCHES INF = .97000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* BASIN A DEVELOPED

COMPUTE NM HYD ID=3 HYD NO=DEV.BASINA DA=0.001536 SQ MI
PER A=0 PER B=5 PER C=10 PER D=85
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 5.1546 CFS UNIT VOLUME = .9973 B = 526.28 P60 = 2.0100
AREA = .001306 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

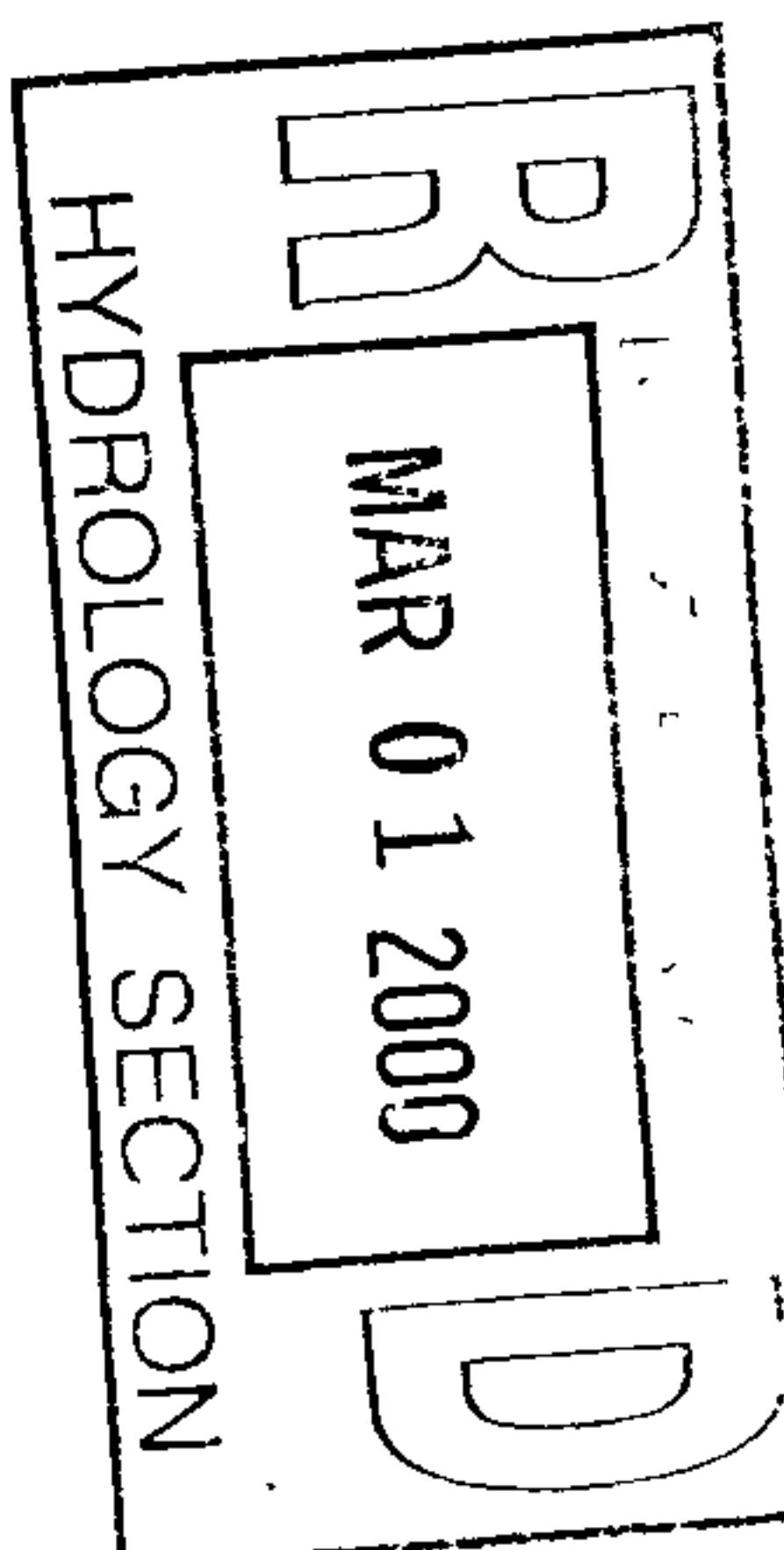
K = .115660HR TP = .133300HR K/TP RATIO = .867666 SHAPE CONSTANT, N = 4.095337
UNIT PEAK = .62479 CFS UNIT VOLUME = .9789 B = 361.48 P60 = 2.0100
AREA = .000230 SQ MI IA = .40000 INCHES INF = .97000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* BASIN B DEVELOPED

COMPUTE NM HYD ID=4 HYD NO=DEV.BASINB DA=0.0002169 SQ MI
PER A=0 PER B=5 PER C=10 PER D=85
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = .72788 CFS UNIT VOLUME = .9840 B = 526.28 P60 = 2.0100
AREA = .000184 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .115660HR TP = .133300HR K/TP RATIO = .867666 SHAPE CONSTANT, N = 4.095337
UNIT PEAK = .88227E-01CFS UNIT VOLUME = .8795 B = 361.48 P60 = 2.0100



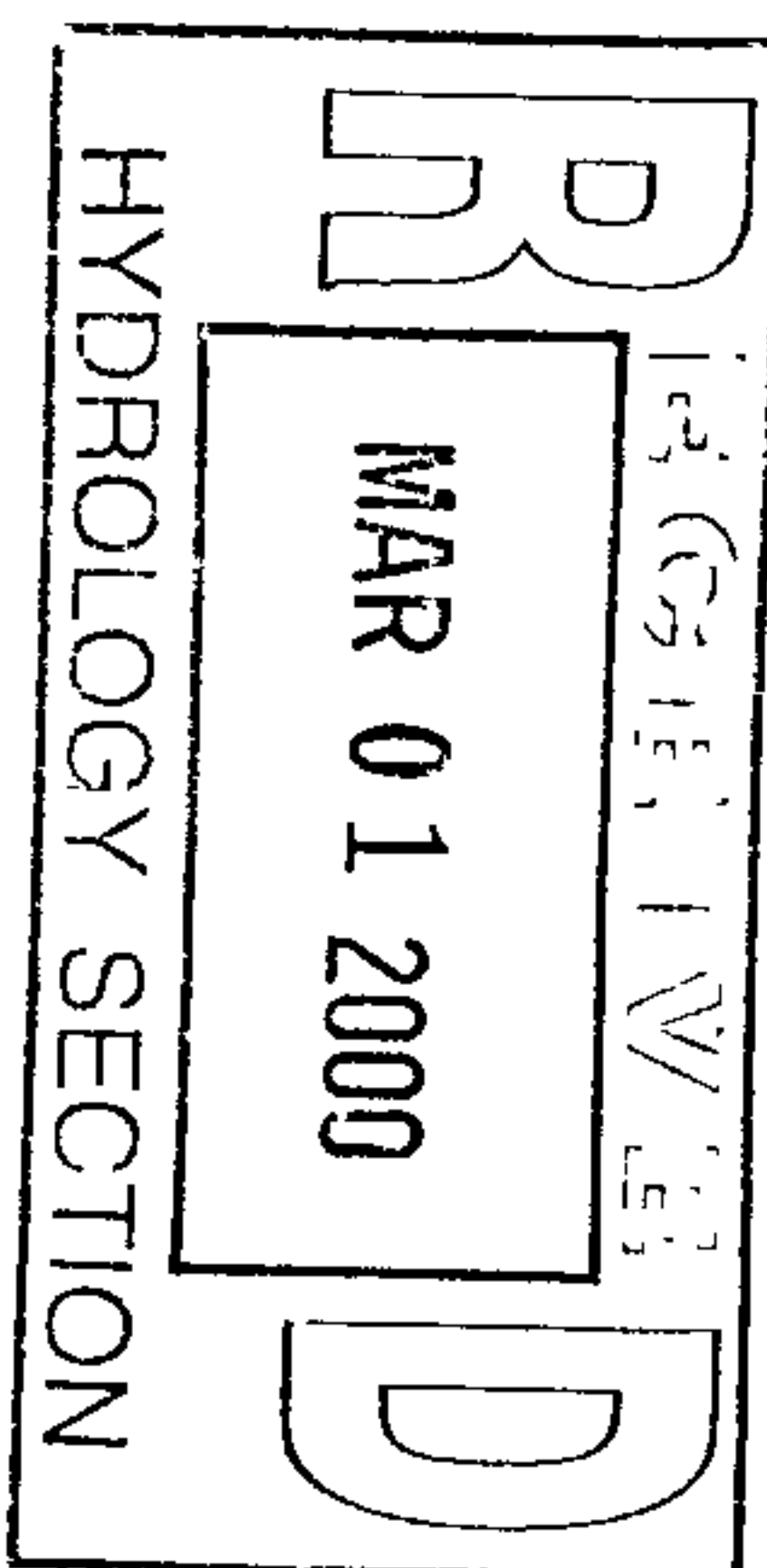
AREA = .000033 SQ MI IA = .40000 INCHES INF = .97000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* ROUTE BASIN B THRU DETENTION POND

ROUTE RESERVOIR ID=5 HYD NO=POND.OUT INFLOW=4 CODE=2
 OUT (CFS) STORAGE (AC-FT) ELEV (FT)
 0 0 74.7
 0.26 0.010904 76.0
 0.32 0.025900 76.7

* * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	74.70	.000	.00
.07	.00	74.70	.000	.00
.13	.00	74.70	.000	.00
.20	.00	74.70	.000	.00
.27	.00	74.70	.000	.00
.33	.00	74.70	.000	.00
.40	.00	74.70	.000	.00
.47	.00	74.70	.000	.00
.53	.00	74.70	.000	.00
.60	.00	74.70	.000	.00
.67	.00	74.70	.000	.00
.73	.00	74.70	.000	.00
.80	.00	74.70	.000	.00
.87	.00	74.70	.000	.00
.93	.00	74.70	.000	.00
1.00	.00	74.70	.000	.00
1.07	.00	74.70	.000	.00
1.13	.00	74.70	.000	.00
1.20	.01	74.70	.000	.00
1.27	.07	74.72	.000	.00
1.33	.18	74.80	.001	.02
1.40	.35	74.95	.002	.05
1.47	.58	75.20	.004	.10
1.53	.60	75.52	.007	.16
1.60	.44	75.74	.009	.21
1.67	.32	75.84	.010	.23
1.73	.26	75.88	.010	.24
1.80	.22	75.88	.010	.24
1.87	.19	75.86	.010	.23
1.93	.16	75.82	.009	.22
2.00	.14	75.78	.009	.22
2.07	.12	75.73	.009	.21
2.13	.08	75.66	.008	.19
2.20	.04	75.58	.007	.18
2.27	.03	75.49	.007	.16
2.33	.02	75.41	.006	.14
2.40	.02	75.34	.005	.13



2.47	.02	75.27	.005	.11
2.53	.01	75.21	.004	.10
2.60	.01	75.15	.004	.09
2.67	.01	75.10	.003	.08
2.73	.01	75.06	.003	.07
2.80	.01	75.02	.003	.06
2.87	.01	74.98	.002	.06
2.93	.01	74.95	.002	.05
3.00	.01	74.93	.002	.05
3.07	.01	74.90	.002	.04
3.13	.00	74.88	.002	.04
3.20	.00	74.86	.001	.03
3.27	.00	74.84	.001	.03
3.33	.00	74.83	.001	.03
3.40	.00	74.82	.001	.02
3.47	.00	74.80	.001	.02
3.53	.00	74.79	.001	.02
3.60	.00	74.78	.001	.02
3.67	.00	74.78	.001	.02

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
---------------	-----------------	----------------	-------------------	------------------

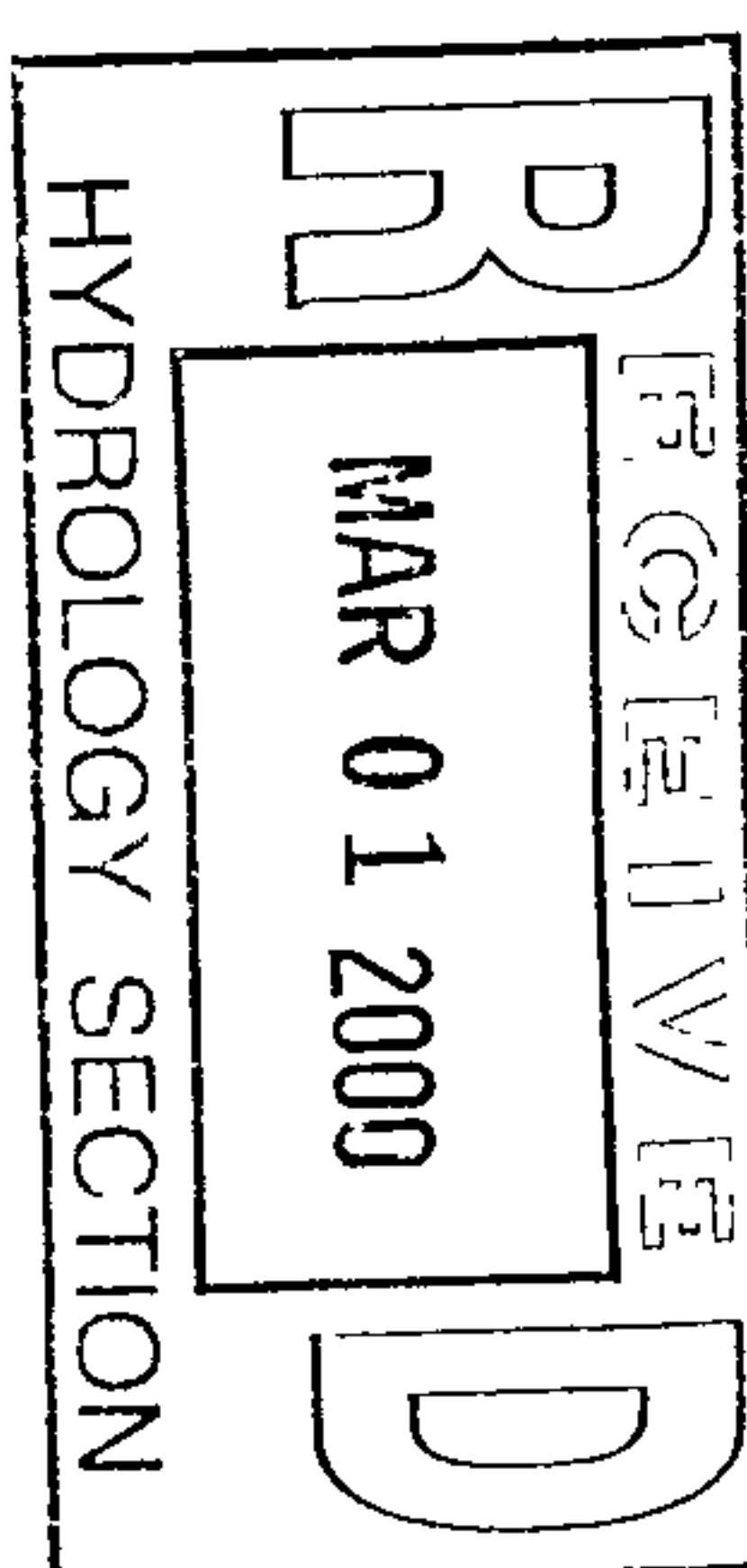
3.73	.00	74.77	.001	.01
3.80	.00	74.76	.001	.01
3.87	.00	74.76	.000	.01
3.93	.00	74.75	.000	.01
4.00	.00	74.75	.000	.01
4.07	.00	74.74	.000	.01
4.13	.00	74.74	.000	.01
4.20	.00	74.74	.000	.01
4.27	.00	74.73	.000	.01
4.33	.00	74.73	.000	.01
4.40	.00	74.73	.000	.01
4.47	.00	74.73	.000	.01
4.53	.00	74.73	.000	.01
4.60	.00	74.73	.000	.01
4.67	.00	74.72	.000	.00

PEAK DISCHARGE = .236 CFS - PEAK OCCURS AT HOUR 1.77
 MAXIMUM WATER SURFACE ELEVATION = 75.880
 MAXIMUM STORAGE = .0099 AC-FT INCREMENTAL TIME= .033330HRS

* ADD BASINS A AND B
 ADD HYD ID=6 HYD NO=DEV.A+B ID I=3 ID II=5
 PRINT HYD ID=1 CODE=5

HYDROGRAPH FROM AREA EX.SITE

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	1.0	2.666	.1	4.000	.0
.167	.0	1.500	4.4	2.833	.1	4.166	.0
						5.333	.0
						5.499	.0



.333	.0	1.667	2.3	3.000	.0	4.333	.0	5.666	.0
.500	.0	1.833	1.4	3.166	.0	4.500	.0	5.833	.0
.667	.0	2.000	.9	3.333	.0	4.666	.0	5.999	.0
.833	.0	2.166	.4	3.500	.0	4.833	.0	6.166	.0
1.000	.0	2.333	.2	3.666	.0	4.999	.0	6.333	.0
1.167	.0	2.500	.1	3.833	.0	5.166	.0		

RUNOFF VOLUME = 1.64044 INCHES = .1534 ACRE-FEET
 PEAK DISCHARGE RATE = 4.43 CFS AT 1.500 HOURS BASIN AREA = .0018 SQ. MI.

PRINT HYD ID=2 CODE=5

HYDROGRAPH FROM AREA DEV.SITE

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	1.4	2.666	.1	4.000	.0	5.333	.0
.167	.0	1.500	5.0	2.833	.1	4.166	.0	5.499	.0
.333	.0	1.667	2.5	3.000	.0	4.333	.0	5.666	.0
.500	.0	1.833	1.6	3.166	.0	4.500	.0	5.833	.0
.667	.0	2.000	1.2	3.333	.0	4.666	.0	5.999	.0
.833	.0	2.166	.5	3.500	.0	4.833	.0	6.166	.0
1.000	.0	2.333	.3	3.666	.0	4.999	.0	6.333	.0
1.167	.0	2.500	.1	3.833	.0	5.166	.0	6.499	.0

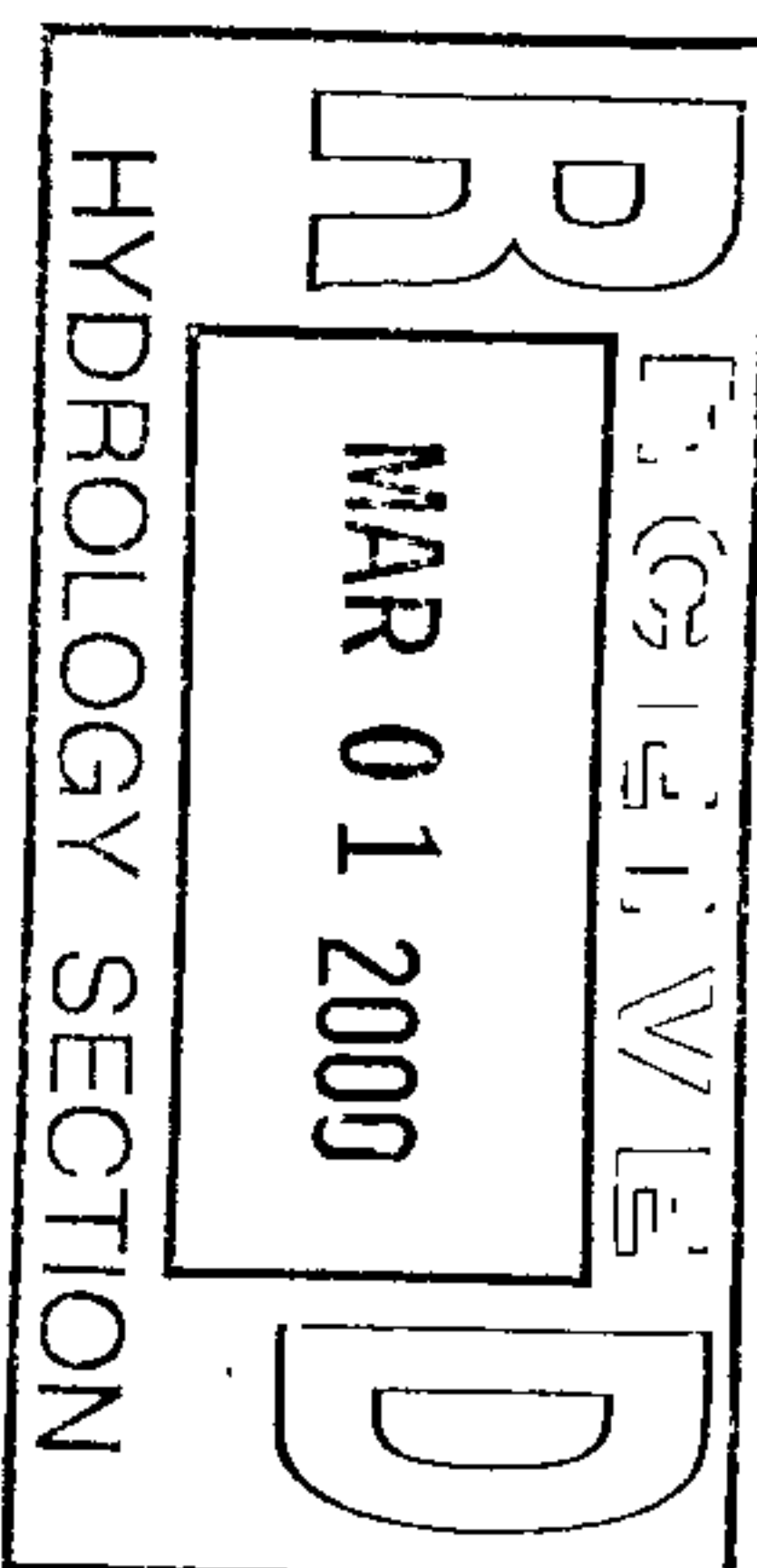
RUNOFF VOLUME = 1.94748 INCHES = .1821 ACRE-FEET
 PEAK DISCHARGE RATE = 4.98 CFS AT 1.500 HOURS BASIN AREA = .0018 SQ. MI.

PRINT HYD ID=3 CODE=5

HYDROGRAPH FROM AREA DEV.BASINA

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	1.2	2.666	.1	4.000	.0	5.333	.0
.167	.0	1.500	4.4	2.833	.1	4.166	.0	5.499	.0
.333	.0	1.667	2.2	3.000	.0	4.333	.0	5.666	.0
.500	.0	1.833	1.4	3.166	.0	4.500	.0	5.833	.0
.667	.0	2.000	1.0	3.333	.0	4.666	.0	5.999	.0
.833	.0	2.166	.5	3.500	.0	4.833	.0	6.166	.0
1.000	.0	2.333	.2	3.666	.0	4.999	.0	6.333	.0
1.167	.0	2.500	.1	3.833	.0	5.166	.0	6.499	.0

RUNOFF VOLUME = 1.94748 INCHES = .1595 ACRE-FEET
 PEAK DISCHARGE RATE = 4.36 CFS AT 1.500 HOURS BASIN AREA = .0015 SQ. MI.



PRINT HYD

ID=4 CODE=5

HYDROGRAPH FROM AREA DEV.BASINB

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	.2	2.666	.0	4.000	.0	5.333	.0
.167	.0	1.500	.6	2.833	.0	4.166	.0	5.499	.0
.333	.0	1.667	.3	3.000	.0	4.333	.0	5.666	.0
.500	.0	1.833	.2	3.166	.0	4.500	.0	5.833	.0
.667	.0	2.000	.1	3.333	.0	4.666	.0	5.999	.0
.833	.0	2.166	.1	3.500	.0	4.833	.0	6.166	.0
1.000	.0	2.333	.0	3.666	.0	4.999	.0		
1.167	.0	2.500	.0	3.833	.0	5.166	.0		

RUNOFF VOLUME = 1.94748 INCHES = .0225 ACRE-FEET
 PEAK DISCHARGE RATE = .63 CFS AT 1.500 HOURS BASIN AREA = .0002 SQ. MI.

PRINT HYD

ID=5 CODE=5

HYDROGRAPH FROM AREA POND.OUT

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	.1	3.000	.0	4.500	.0	5.999	.0
.167	.0	1.667	.2	3.166	.0	4.666	.0	6.166	.0
.333	.0	1.833	.2	3.333	.0	4.833	.0	6.333	.0
.500	.0	2.000	.2	3.500	.0	4.999	.0	6.499	.0
.667	.0	2.166	.2	3.666	.0	5.166	.0	6.666	.0
.833	.0	2.333	.1	3.833	.0	5.333	.0		
1.000	.0	2.500	.1	4.000	.0	5.499	.0		
1.167	.0	2.666	.1	4.166	.0	5.666	.0		
1.333	.0	2.833	.1	4.333	.0	5.833	.0		

RUNOFF VOLUME = 1.94659 INCHES = .0225 ACRE-FEET
 PEAK DISCHARGE RATE = .24 CFS AT 1.766 HOURS BASIN AREA = .0002 SQ. MI.

PRINT HYD

ID=6 CODE=5

HYDROGRAPH FROM AREA DEV.A+B

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	4.5	3.000	.1	4.500	.0	5.999	.0
.167	.0	1.667	2.5	3.166	.1	4.666	.0	6.166	.0
.333	.0	1.833	1.7	3.333	.1	4.833	.0	6.333	.0
.500	.0	2.000	1.2	3.500	.0	4.999	.0	6.499	.0
.667	.0	2.166	.7	3.666	.0	5.166	.0	6.666	.0

HYDROLOGY SECTION

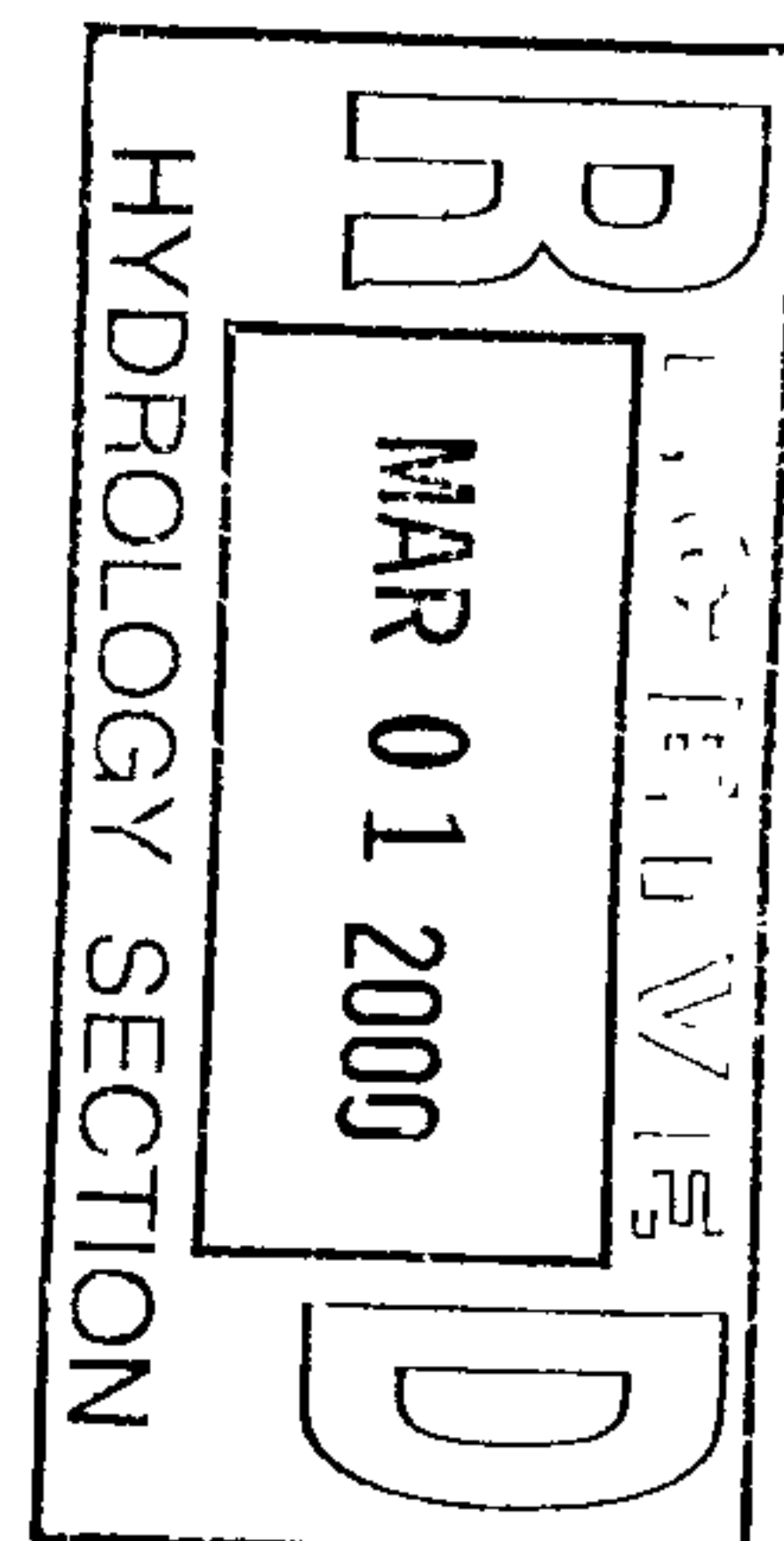
MAR 01 2009

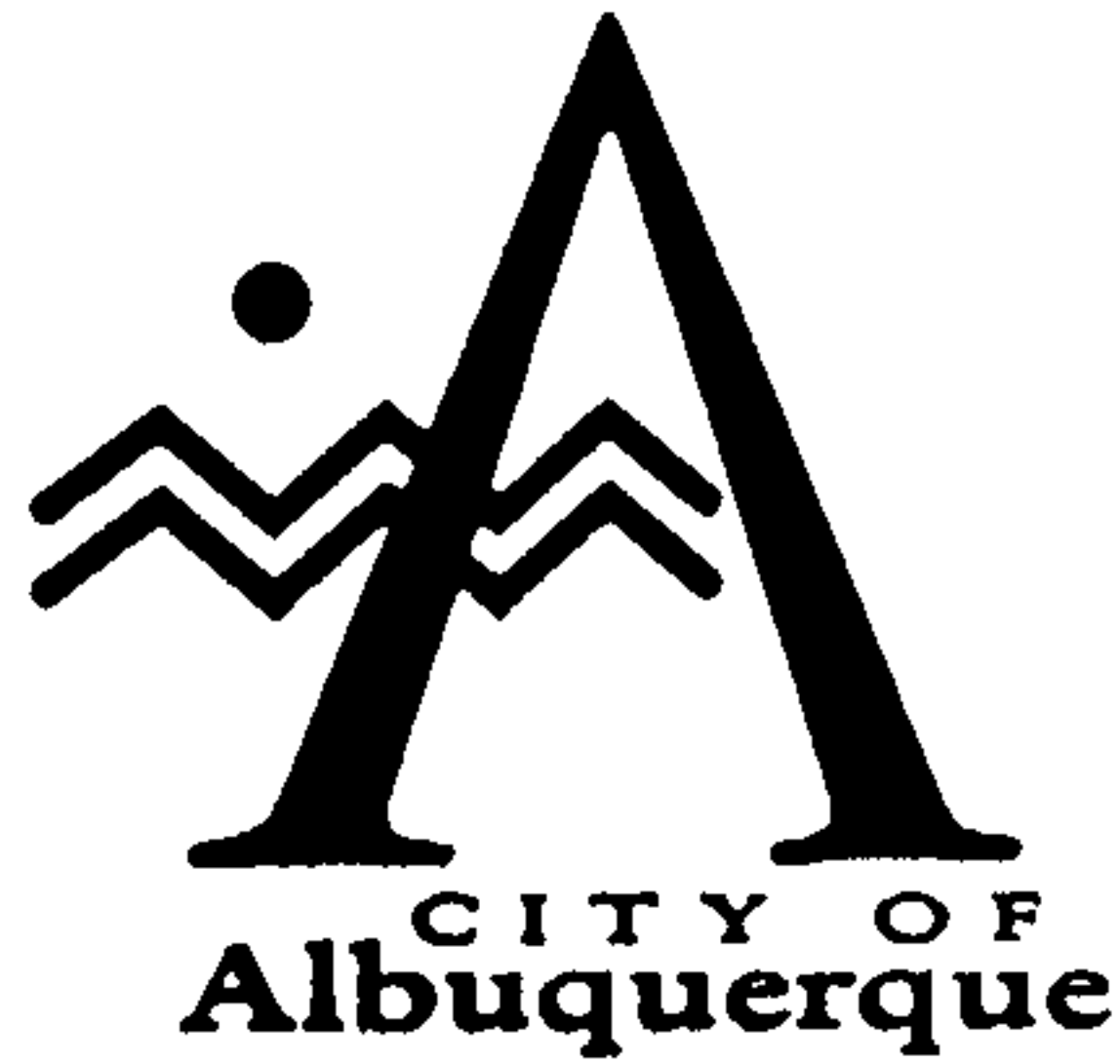
.833	.0	2.333	.4	3.833	.0	5.333	.0
1.000	.0	2.500	.2	4.000	.0	5.499	.0
1.167	.0	2.666	.2	4.166	.0	5.666	.0
1.333	1.3	2.833	.1	4.333	.0	5.833	.0

RUNOFF VOLUME = 1.94677 INCHES = .1820 ACRE-FEET
 PEAK DISCHARGE RATE = 4.50 CFS AT 1.500 HOURS BASIN AREA = .0018 SQ. MI.

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 15:34:57





June 16, 1998

Dennis Lorenz, P.E.
Brasher & Lorenz
2201 San Pedro NE
Bldg. 1 - Suite 210
Albuquerque, NM 87110

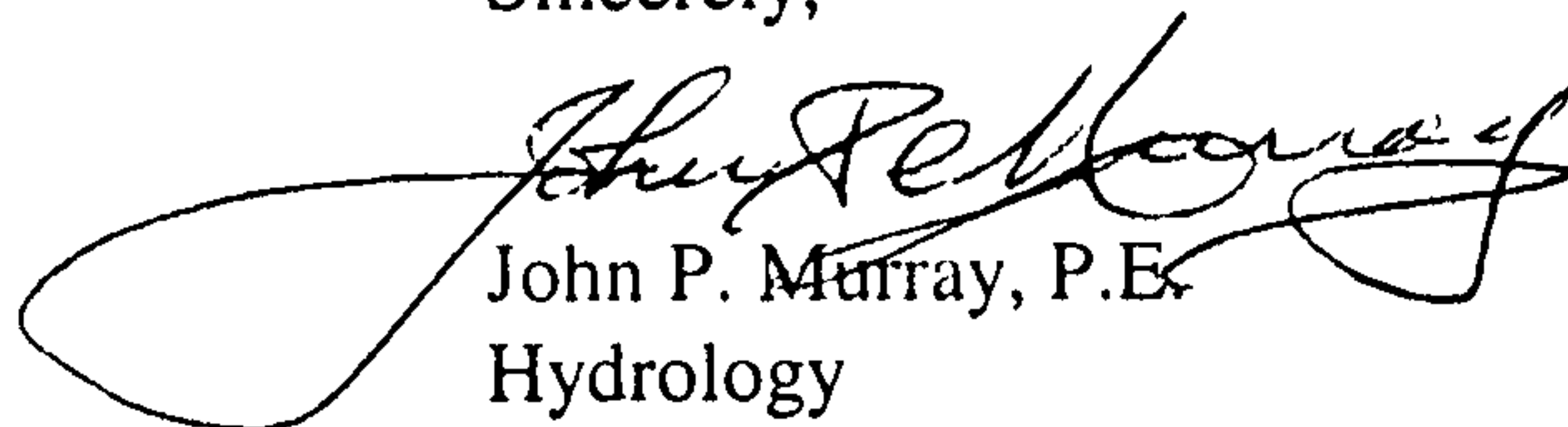
**RE: FARMER'S MARKET (G16-D115). ENGINEER'S CERTIFICATION FOR
CERTIFICATE OF OCCUPANCY APPROVAL. ENGINEER'S STAMP DATED
May 27, 1998.**

Dear Mr. Lorenz:

Based on the information provided on your May 27, 1998 submittal, the above referenced project is approved for Certificate of Occupancy.

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

Sincerely,



John P. Murray, P.E.
Hydrology

c: ✓ Andrew Garcia
✓ File

Good for You, Albuquerque!



DRAINAGE INFORMATION SHEET

PROJECT TITLE: FARMERS MARKET ZONE ATLAS/DRNG. FILE #: G16-D115
 DRB #: EPC #: WORK ORDER #:
 LEGAL DESCRIPTION: TR B-I-H COMANCHE BUSINESS PARK
 CITY ADDRESS: VASSAR PL NE

ENGINEERING FIRM: Brasher & Lorenz, Inc. CONTACT: Dennis A. Lorenz
2201 San Pedro NE Bldg.1 Suite 210
 ADDRESS: Albuquerque, New Mexico 87110 PHONE: 888-6088

OWNER: JACK BROWNE CONTACT: SAME
 ADDRESS: 12301 SAN FRANCISCO NE PHONE: 856-1124

ARCHITECT: RICK BENNETT CONTACT: SAME
 ADDRESS: 1118 PARK SW PHONE: 242-1859

SURVEYOR: UNKNOWN CONTACT:
 ADDRESS: PHONE:

CONTRACTOR: BROWN DEVELOPMENT CONTACT: L. CHAVEZ
 ADDRESS: 1118 PARK SW PHONE: 242-1859

TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
- ☐ DRAINAGE PLAN
- ☐ CONCEPTUAL GRADING & DRAINAGE PLAN
- ☐ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☒ ENGINEER'S CERTIFICATION
- ☐ OTHER

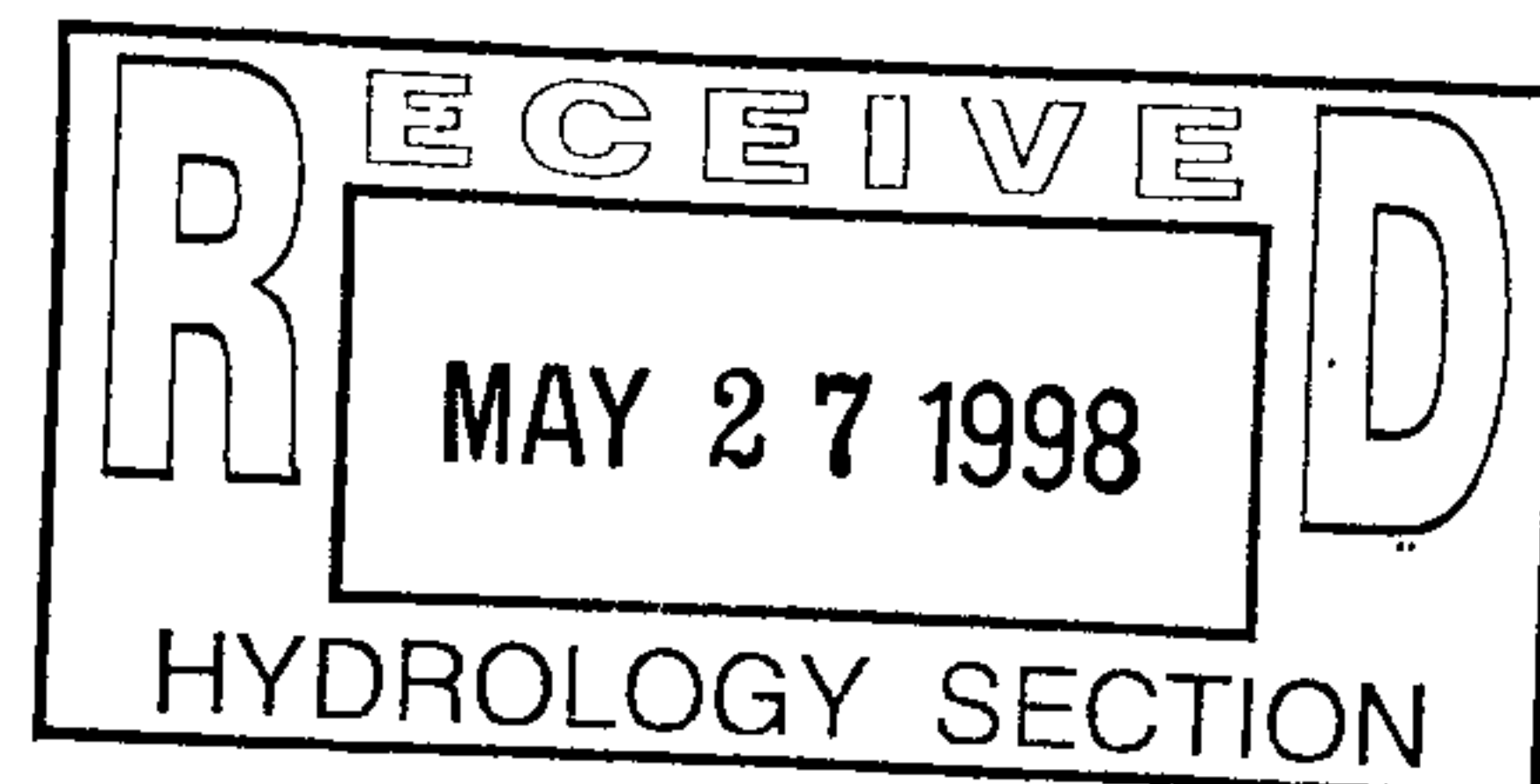
PRE-DESIGN MEETING:

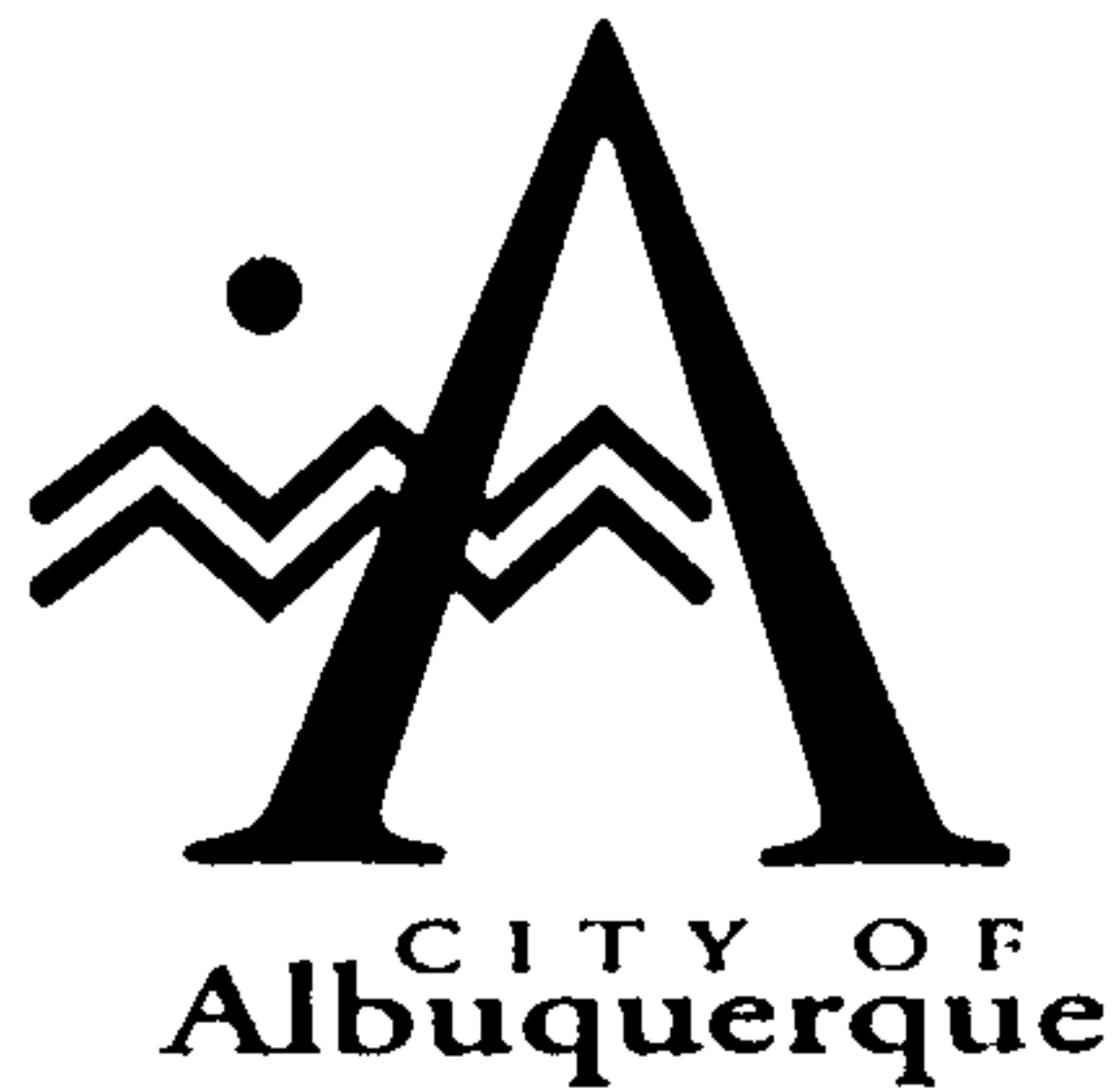
- ☐ YES
- ☐ NO
- ☐ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SKETCH PLAT APPROVAL
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D. APPROVAL
- ☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ☐ SECTOR PLAN APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☐ FOUNDATION PERMIT APPROVAL
- ☐ BUILDING PERMIT APPROVAL
- ☒ CERTIFICATE OF OCCUPANCY APPROVAL
- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ S.A.D. DRAINAGE REPORT
- ☐ DRAINAGE REQUIREMENTS
- ☐ OTHER (SPECIFY)

DATE SUBMITTED: 5.27.98
 BY: Dennis A. Lorenz





Martin J. Chávez, Mayor

November 3, 1997

Levi J. Valdez
George T. Rodriguez Development Consultant
12800 San Juan NE
Albuquerque, New Mexico 87123

RE: GRADING/PAVING PLAN FOR AAA U-LOCK IT SELF STORAGE FACILITIES
(G16-D115) ENGINEER'S STAMP DATED 10/24/07

Dear Mr. Valdez:

Based on the information provided on your October 28, 1997 submittal, the above referenced site is approved for Grading/Paving Permit.

Please be advised that Engineer Certification per the DPM checklist will be required after the paving is completed.

If I can be of further assistance, please feel free to contact me at 924-3986.

C: Andrew Garcia
Harry-Kolenc, Armour Pavement Inc.
File

Sincerely

Bernie J. Montoya CE
Associate Engineer



DRAINAGE INFORMATION SHEET

New 5
67-16 110

PROJECT TITLE: AAA U-LOCK IT SELF STORAGE FACILITIES ZONE ATLAS/DRNG. FILE #: 67-16 110

DRB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: LOT "A" & LOT ONE (1), PORTERS REPLAT

CITY ADDRESS: 3131 CANDELARIA ROAD N.E.

ENGINEERING FIRM: LEVI J. VALDEZ, P.E. GEORGE T. RODRIGUEZ CONTACT: MR. VALDEZ MR. RODRIGUEZ
DEVELOPMENT CONSULTANT
 ADDRESS: 12800 SAN JUAN N.E. 87123 PHONE: 294-0320

OWNER: CAUNLES & ASSOCIATES CONTACT: MR. DAVID CAUNLES
 ADDRESS: 1116 PENNSYLVANIA N.E. 87110 PHONE: 266-5711 (PROPERTY MGR.)

ARCHITECT: N/A CONTACT: _____
 ADDRESS: _____ PHONE: _____

SURVEYOR: TORRES SURVEYING CONTACT: MR. JIM TORRES
 ADDRESS: P.O. Box 478, TIJERAS, N.M. 87059 PHONE: 286-2066

CONTRACTOR: ? CONTACT: _____
 ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
- ☒ DRAINAGE PLAN
- ☐ CONCEPTUAL GRADING & DRAINAGE PLAN
- ☐ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☐ ENGINEER'S CERTIFICATION
- ☐ OTHER _____

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SKETCH PLAT APPROVAL
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D. APPROVAL
- ☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ☐ SECTOR PLAN APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☐ FOUNDATION PERMIT APPROVAL
- ☐ BUILDING PERMIT APPROVAL
- ☐ CERTIFICATE OF OCCUPANCY APPROVAL
- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ S.A.D. DRAINAGE REPORT
- ☐ DRAINAGE REQUIREMENTS
- ☐ SUBDIVISION CERTIFICATION
- ☐ OTHER _____ (SPECIFY)

PRE-DESIGN MEETING:

- ☒ YES
- ☐ NO
- ☐ COPY PROVIDED

RECEIVED

OCT 28 1997

HYDROLOGY SECTION

DATE SUBMITTED: OCT. 27, 1997

BY: GEORGE T. RODRIGUEZ



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 8, 1998

Dennis Lorenz, P.E.
Brasher & Lorenz
2201 San Pedro NE
Bldg. 1 - Suite 210
Albuquerque, NM 87110

***RE: FARMER'S MARKET (G16-D115). UPDATED GRADING AND DRAINAGE PLAN
FOR BUILDING AND SO #19 PERMIT APPROVALS. ENGINEER'S STAMP
DATED 12-4-97.***

Dear Mr. Lorenz: .

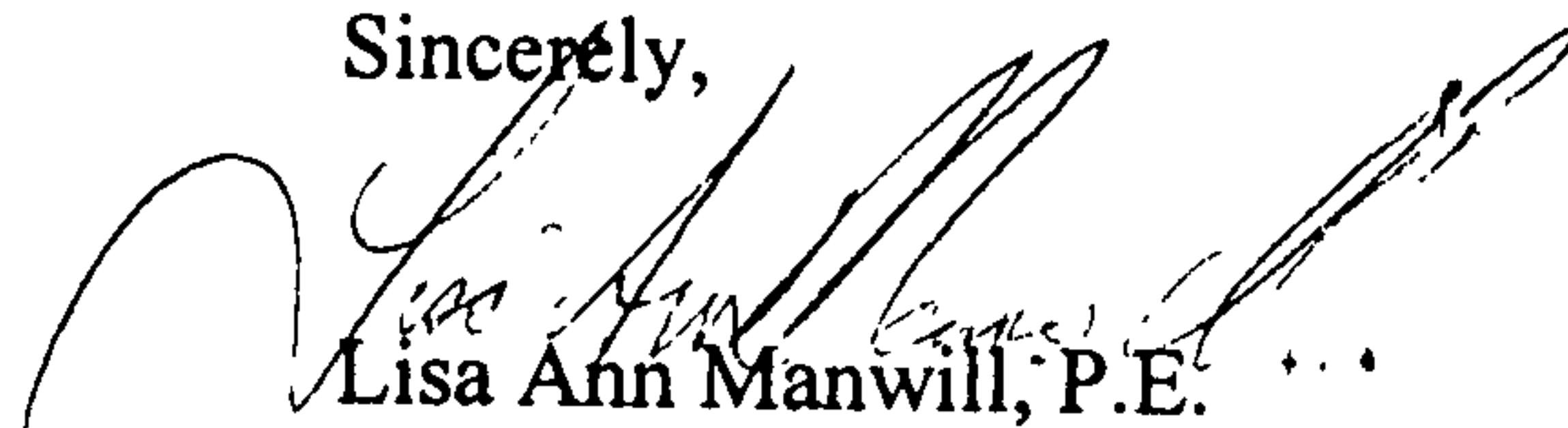
Based on the updated information provided on your December 15, 1997 submittal, the above referenced project is approved for Building and SO #19 Permits.

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

A separate permit is required for construction within City right-of-way. A copy of this approval letter must be on hand when applying for the excavation permit.

Prior to Certificate of Occupancy approval, and Engineer's Certification 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.
Hydrology

c: Arlene Portillo
Andrew Garcia

File

**CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT**

January 8, 1998

INTEROFFICE CORRESPONDENCE

HYDROLOGY DIVISION

TO: Desiderio Salas, Street Maintenance Division
FROM: Lisa Ann Manwill, P.E. Engineering Associate, PWD *LAM*
**SUBJECT: PRIVATE DRAINAGE FACILITIES WITHIN PUBLIC RIGHT-OF-WAY
UPDATED DRAINAGE FILE NUMBER G16-D115.**

Transmitted herewith, is a copy of the approved drainage plan for the referenced project incorporating the SO #19 design.

This plan is being submitted to you for permitting and inspection. Please provide this section with a signed-off copy per the signature block upon construction and acceptance by your office.

As you are aware, the signed off SO #19 is required by this office for Certificate of Occupancy release; therefore your expeditious processing of this plan would be greatly appreciated and would avoid any unnecessary delay in the release of the Certificate of Occupancy.

Thank you for your cooperation and if you should have any questions and/or comments, please feel free to call me at 924-3984.

Attachment

File Copy

DRAINAGE INFORMATION SHEET

PROJECT TITLE: FARMER'S MARKET ZONE ATLAS/DRNG. FILE #: G16-D115
DRB #: _____ EPC #: _____ WORK ORDER #: _____
LEGAL DESCRIPTION: TRACT B-1-H COMANCHE BUSINESS PARK
CITY ADDRESS: VASSAR PLACE NE
ENGINEERING FIRM: Brasher & Lorenz, Inc. CONTACT: Dennis A. Lorenz
2201 San Pedro NE Bldg.1 Suite 210
ADDRESS: Albuquerque, New Mexico 87110 PHONE: 888-6088
OWNER: JACK BROWNE CONTACT: SAME
ADDRESS: 12301 SAN FRANCISCO PHONE: 856-1124
ARCHITECT: PICK BENNETT CONTACT: SAME
ADDRESS: 1118 PARK SW PHONE: 242-1859
SURVEYOR: NA CONTACT: _____
ADDRESS: _____ PHONE: _____
CONTRACTOR: NA CONTACT: _____
ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

☐ DRAINAGE REPORT
☒ DRAINAGE PLAN
☐ CONCEPTUAL GRADING & DRAINAGE PLAN
☐ GRADING PLAN
☐ EROSION CONTROL PLAN
☐ ENGINEER'S CERTIFICATION
☐ OTHER _____

PRE-DESIGN MEETING:

☐ YES
☒ NO
☐ COPY PROVIDED

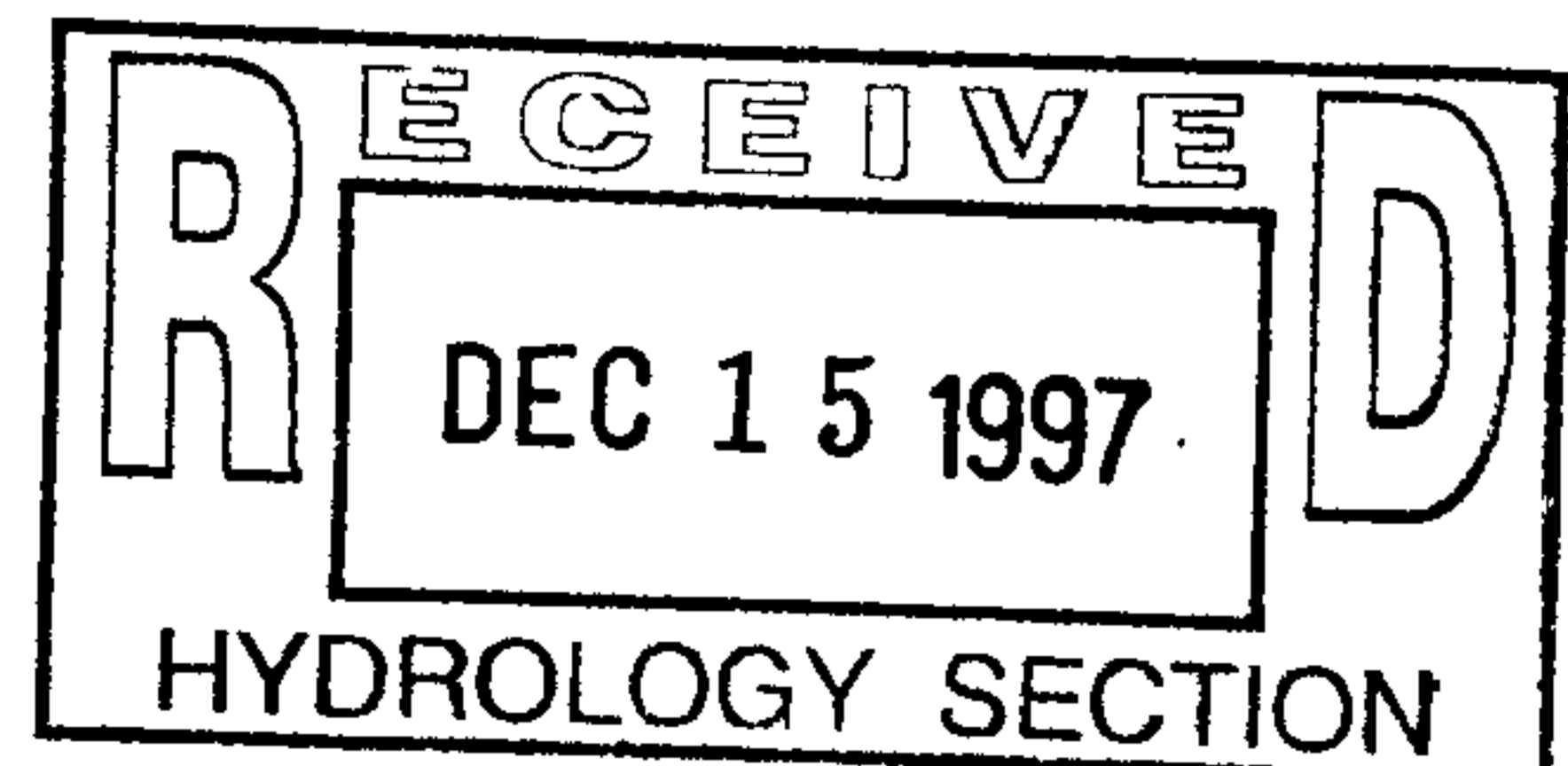
CHECK TYPE OF APPROVAL SOUGHT:

☐ SKETCH PLAT APPROVAL
☐ PRELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D. APPROVAL
☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☒ BUILDING PERMIT APPROVAL
☐ CERTIFICATE OF OCCUPANCY APPROVAL
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ S.A.D. DRAINAGE REPORT
☐ DRAINAGE REQUIREMENTS
☐ OTHER _____ (SPECIFY)

DATE SUBMITTED:

12-12-97

BY:

Dennis A. Lorenz

BRASHER & LORENZ, INC.
CONSULTING ENGINEERS

2201 SAN PEDRO NE BUILDING 1 SUITE 210 ALBUQUERQUE, NM 87110 PHONE (505) 888-6088 FAX (505) 888-6188

December 12, 1997

Lisa Ann Manwill, PE
Hydrology Department
City of Albuquerque
PO Box 1293
Albuquerque, New Mexico 87102

SUBJECT: DRAINAGE PLAN AND FARMER'S MARKET (G16-D115)

Dear Lisa:

Submitted herewith for review and approval is one copy of the revised Grading and Drainage Plan for the subject project. The Plan has been revised as follows:

1. The finished floor elevation has been raised 6 inches to allow for higher loading dock heights.
2. The sidewalks at the building entrance and between the 2 ponds have been increased in width.
3. The landscaped median located between the loading dock and the handicap parking has been revised in length to accommodate grade transitions.

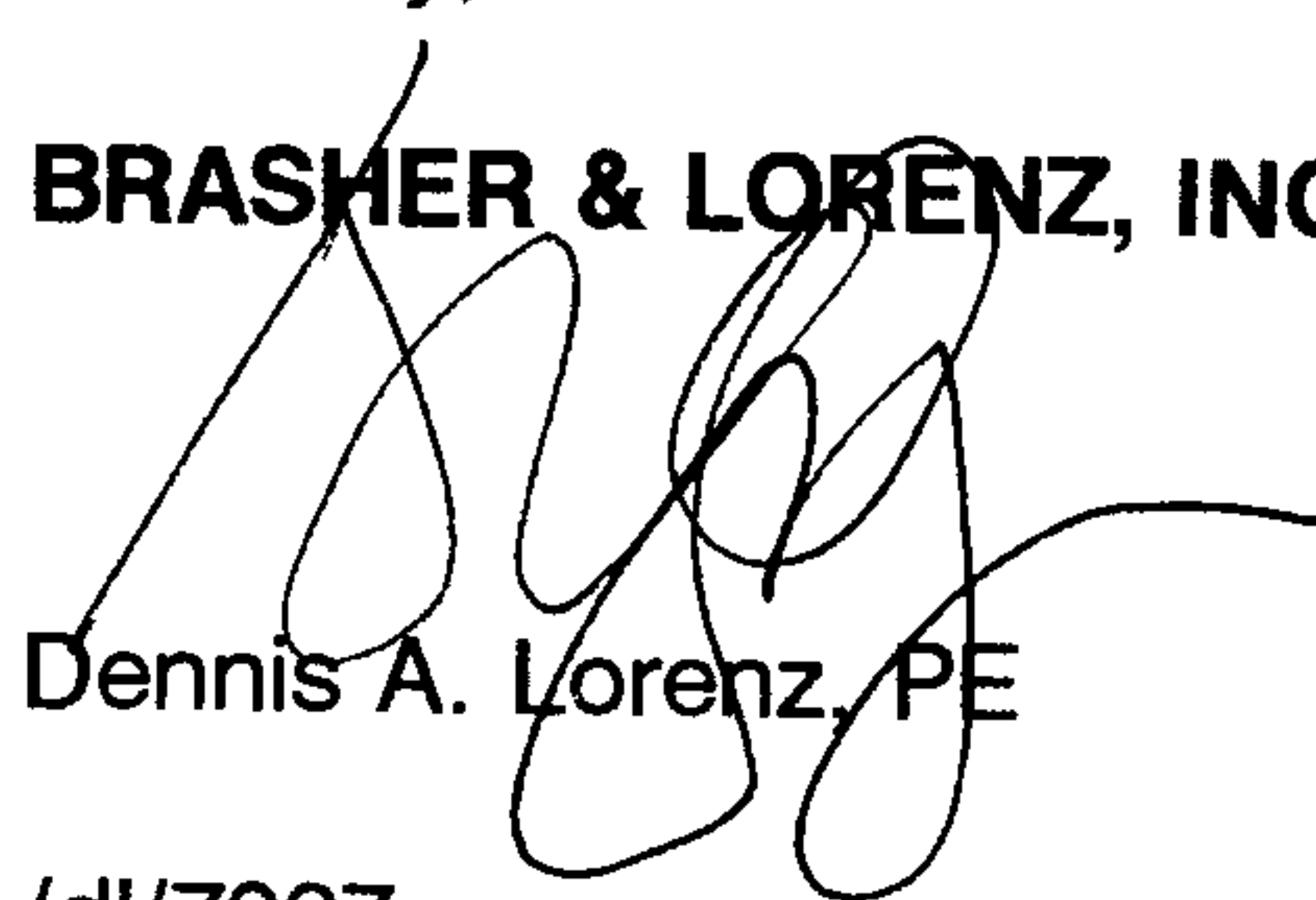
All other aspects of the Plan remain the same; no changes were made to the Supplemental Calculations.

I have provided an additional copy of the Plan for SO#19 purposes.

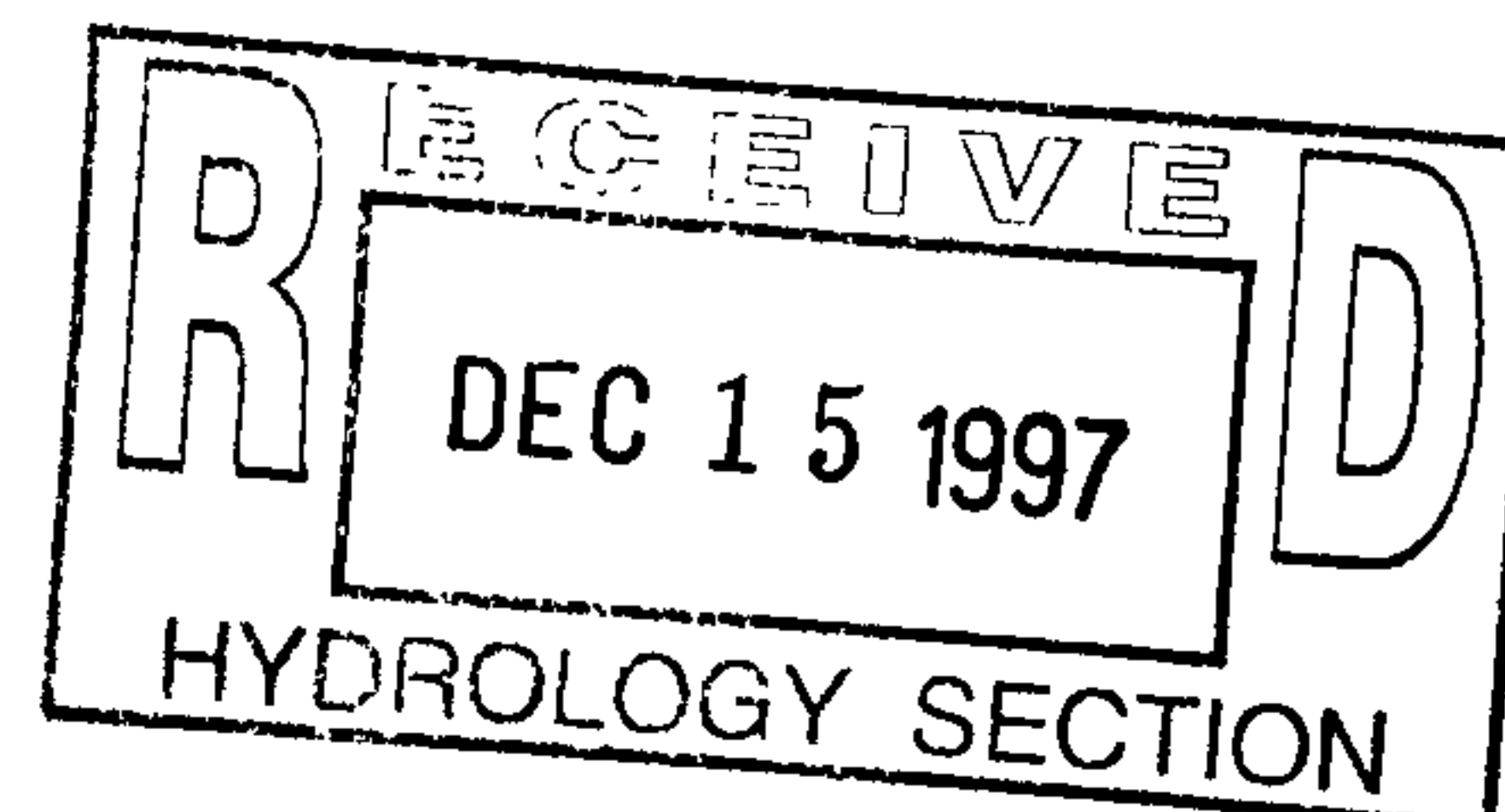
If you have any questions please call.

Sincerely,

BRASHER & LORENZ, INC.


Dennis A. Lorenz, PE

/dl/7067
encl



SUPPLEMENTAL CALCULATIONS

FOR

FARMERS MARKET

Albuquerque, New Mexico

Prepared by:

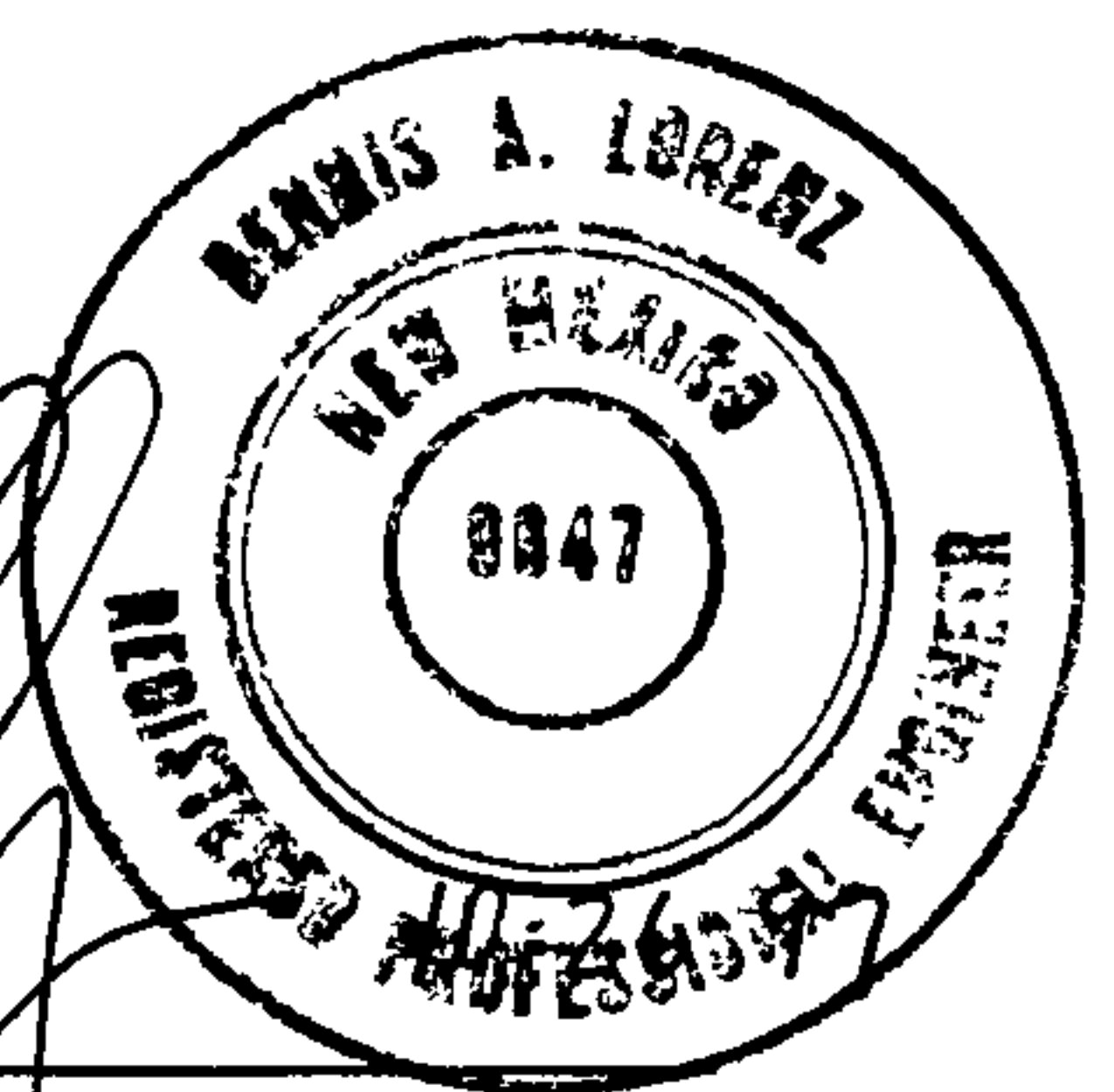
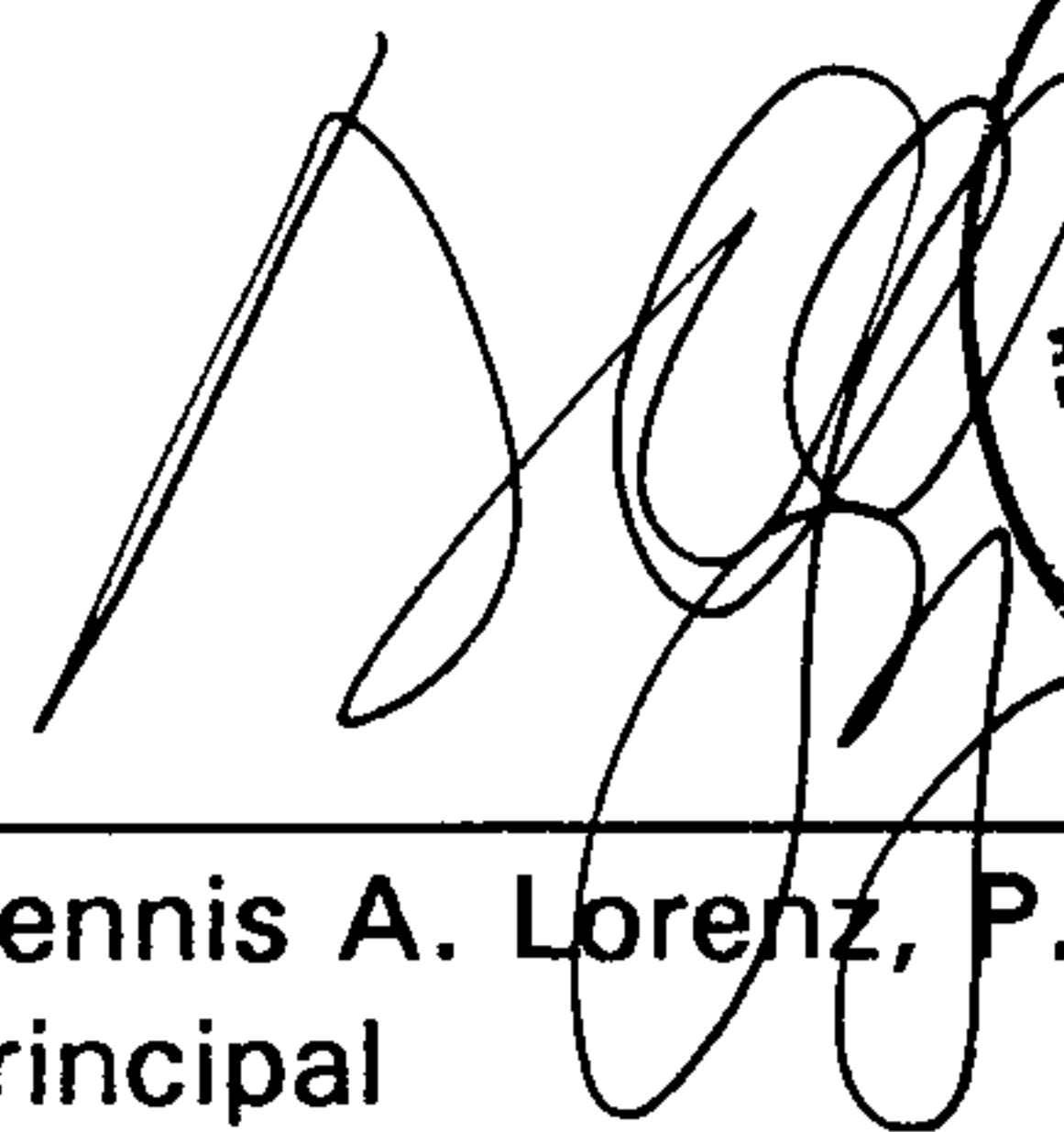
BRASHER & LORENZ, INC.

Consulting Engineers

2201 San Pedro NE Building 1, Suite 210

Albuquerque, New Mexico 87110

October 1997



Dennis A. Lorenz, P.E.
Principal

INFRASTRUCTURE DESIGN

FARMERS MKT

7067

1/

10-26-97

① POND ROUTING

GIVEN: PER DMP MAX DISCHARGE
FOR SITE = 3.61 CFS/AC

SITE A = 1.1217 AC

$$Q_{ALLOW} = 1.1217 (3.61) = 4.05 \text{ CFS}$$

$$Q_{SITE} = 4.43 \text{ CFS} < \text{POND REQ'D}$$

$$Q_{BASIN 'A'} = 3.43 \text{ CFS}$$

$$Q_{BASIN 'B'} = 1.00 \text{ CFS}$$

ROUT BASIN 'B' THRU POND

$$\text{LIMIT } Q_{OUT} \text{ TO } 4.05 - 3.43 = 0.62 \text{ CFS}$$

② SIZE OUTLET

LIMIT OUTLET TO 0.62 CFS

DIA	AREA (SF)
3"	0.049
4"	0.087
6"	0.196

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

$$C = 0.60$$

H	Q _{3"}	Q _{4"}	Q _{6"}
1'	0.24	0.42	0.94
2'	0.33	0.59	1.33

FARMERS MKT

7067

2/

10.26.97

(B) ROUTE RES TABLE

 $\Rightarrow$ USE 3" OUTLET

Q OUT CFS	STORAGE AF	ELEV MSLD
0	0	74.7
0.26	0.010904	76.0
0.32	0.02590	76.7

PER A144MO:

$$Q_{OUT} = 0.29 \text{ CFS}$$

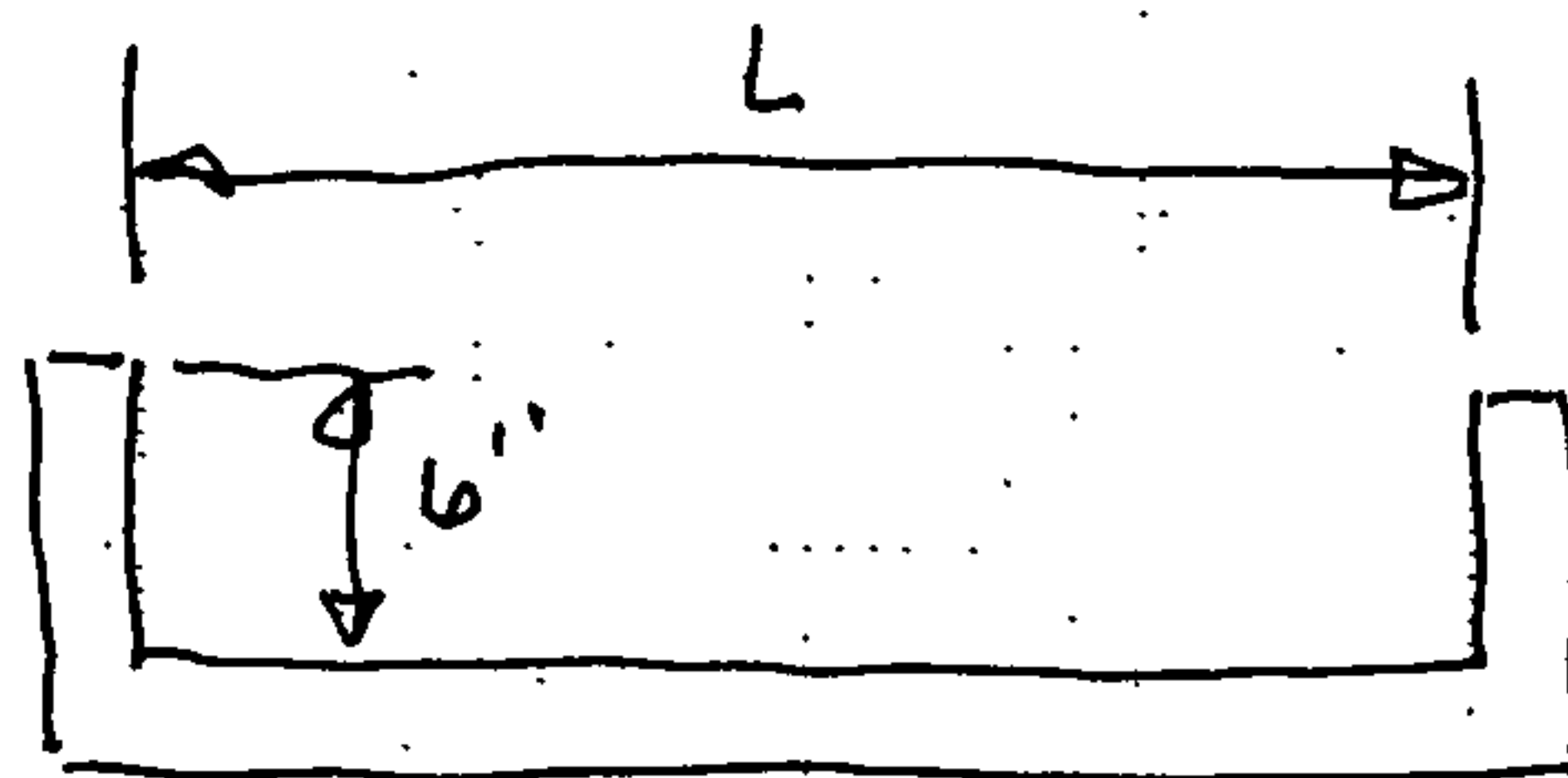
$$VOL = 0.0173 \text{ AF} = 754 \text{ CF}$$

$$MAX \text{ WSE} = 76.30$$

$$\Rightarrow \text{TOTAL } Q \text{ SITE} = 3.64 \text{ CFS} < Q_{ALLOW}$$

10.26.97

(2) POND SPILLWAY



$$Q_{100} = 1.0 \text{ CFS}$$

SECTION

BY WEIR EQN

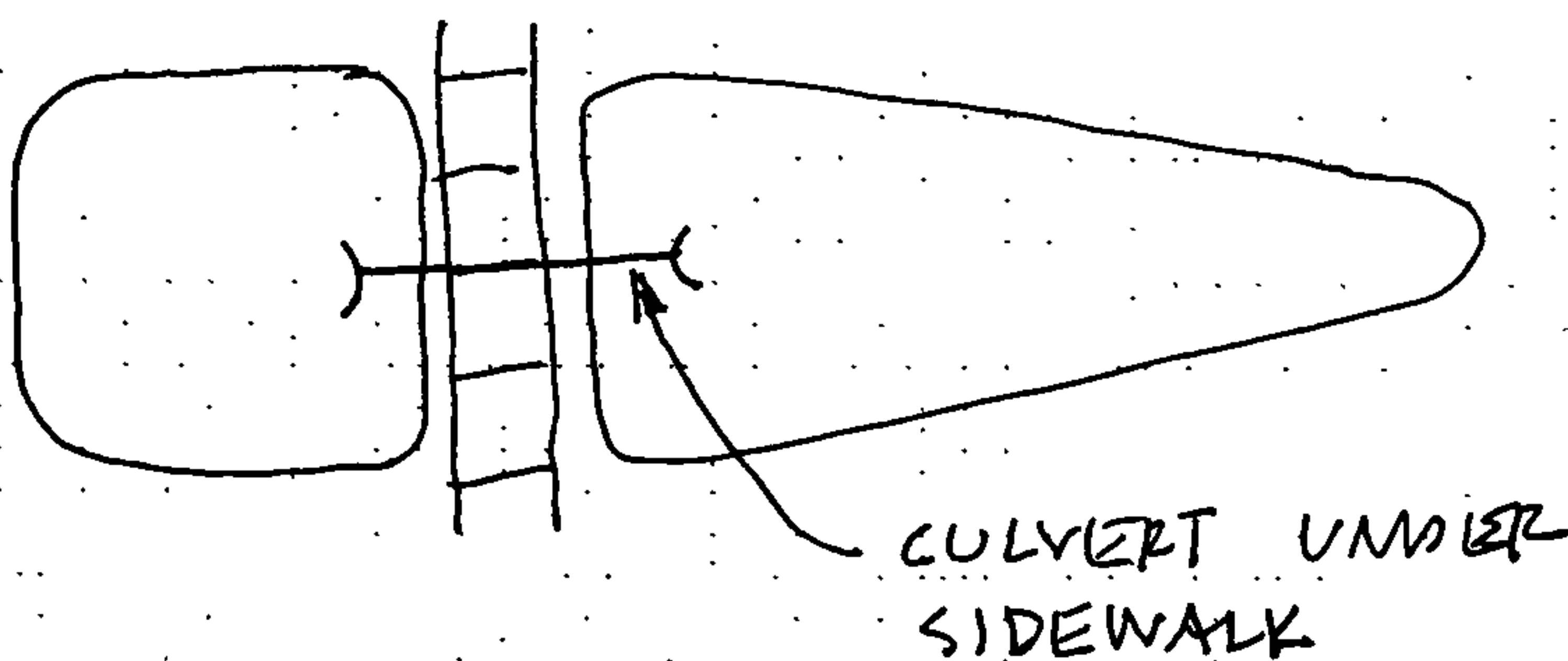
$$Q = CLH^{3/2}$$

$$C = 2.50 \quad H = 0.5'$$

$$\Rightarrow L = Q / CH^{3/2} = 1.13' \quad \text{USE } 2'$$

(3) POND CULVERT

SIZE CULVERT PIPE CONNECTING
POND SECTIONS.



$$Q_{100} = 1.0 \text{ CFS}$$

$$H_{\text{MAX}} = 1.5 \text{ FT}$$

USE 8" PIPE

$$A = 0.35 \text{ SF}$$

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

$$C = 0.6$$

$$\Rightarrow Q_{8"} = 2.04 \text{ CFS} < Q_{100}$$

AHYMO OUTPUT FILES

```

*****
*
*               FARMERS MARKET
*               ON-SITE HYDROLOGY
*****
START          TIME=0.0  PUNCH CODE=0
RAINFALL       TYPE=1  RAIN QUARTER=0.0  RAIN ONE=2.01
               RAIN SIX=2.35  RAIN DAY=2.75  DT=0.03333 HRS

* EXISTING SITE
COMPUTE NM HYD  ID=1  HYD NO=EX.SITE  DA= 0.001753 SQ MI
               PER A=100  PER B=0  PER C=0  PER D=0
               TP=0.1333 HR  MASS RAIN=-1

* DEVELOPED SITE
COMPUTE NM HYD  ID=2  HYD NO=DEV.SITE  DA=0.001753 SQ MI
               PER A=0  PER B=5  PER C=41  PER D=54
               TP=0.1333 HR  MASS RAIN=-1

* BASIN A DEVELOPED
COMPUTE NM HYD  ID=3  HYD NO=DEV.BASINA  DA=0.001387 SQ MI
               PER A=0  PER B=5  PER C=47  PER D=48
               TP=0.1333 HR  MASS RAIN=-1

* BASIN B DEVELOPED
COMPUTE NM HYD  ID=4  HYD NO=DEV.BASINB  DA=0.000366 SQ MI
               PER A=0  PER B=15  PER C=10  PER D=75
               TP=0.1333 HR  MASS RAIN=-1

* ROUTE BASIN B THRU DETENTION POND
ROUTE RESERVOIR  ID=5  HYD NO=POND.OUT  INFLOW=4  CODE=2
                OUT (CFS)  STORAGE (AC-FT)  ELEV (FT)
                0          0          74.7
                0.26       0.010904       76.0
                0.32       0.025900       76.7

* ADD BASINS A AND B
ADD HYD          ID=6  HYD NO=DEV.A+B  ID I=3  ID II=5
PRINT HYD        ID=1  CODE=5
PRINT HYD        ID=2  CODE=5
PRINT HYD        ID=3  CODE=5
PRINT HYD        ID=4  CODE=5
PRINT HYD        ID=5  CODE=5
PRINT HYD        ID=6  CODE=5
FINISH

```

RUN DATE (MON/DAY/YR) =10/28/1997
USER NO.= BRASHERE.I01

[illegible]

AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
RUN DATE (MON/DAY/YR) = 10/28/1997
START TIME (HR:MIN:SEC) = 10:54:27 USER NO.= BRASHERE.I01
INPUT FILE = 7067.DAT

* FARMERS MARKET
* ON-SITE HYDROLOGY

START TIME=0.0 PUNCH CODE=0
RAINFALL TYPE=1 RAIN QUARTER=0.0 RAIN ONE=2.01
RAIN SIX=2.35 RAIN DAY=2.75 DT=0.03333 HRS

COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.

DT = .033330 HOURS END TIME = 5.999400 HOURS

.0000	.0016	.0033	.0049	.0066	.0084	.0102
.0120	.0139	.0158	.0178	.0199	.0219	.0241
.0263	.0286	.0309	.0333	.0358	.0384	.0411
.0439	.0467	.0497	.0529	.0561	.0596	.0631
.0669	.0709	.0751	.0807	.0866	.0930	.1066
.1371	.1840	.2514	.3434	.4644	.6186	.8106
1.0449	1.2624	1.3533	1.4300	1.4982	1.5602	1.6174
1.6704	1.7200	1.7664	1.8102	1.8514	1.8904	1.9273
1.9622	1.9953	2.0268	2.0566	2.0850	2.0915	2.0976
2.1033	2.1088	2.1140	2.1191	2.1239	2.1285	2.1329
2.1373	2.1414	2.1454	2.1494	2.1531	2.1568	2.1604
2.1639	2.1673	2.1706	2.1739	2.1771	2.1802	2.1832
2.1862	2.1891	2.1919	2.1947	2.1975	2.2002	2.2028
2.2054	2.2080	2.2105	2.2130	2.2154	2.2178	2.2202
2.2225	2.2248	2.2270	2.2293	2.2315	2.2336	2.2358
2.2379	2.2399	2.2420	2.2440	2.2460	2.2480	2.2500
2.2519	2.2538	2.2557	2.2576	2.2594	2.2612	2.2631
2.2648	2.2666	2.2684	2.2701	2.2718	2.2735	2.2752
2.2769	2.2785	2.2802	2.2818	2.2834	2.2850	2.2866
2.2881	2.2897	2.2912	2.2928	2.2943	2.2958	2.2973
2.2987	2.3002	2.3017	2.3031	2.3045	2.3060	2.3074
2.3088	2.3102	2.3115	2.3129	2.3143	2.3156	2.3169
2.3183	2.3196	2.3209	2.3222	2.3235	2.3248	2.3261
2.3273	2.3286	2.3298	2.3311	2.3323	2.3335	2.3348
2.3360	2.3372	2.3384	2.3396	2.3408	2.3419	2.3431
2.3443	2.3454	2.3466	2.3477	2.3488	2.3500	

* EXISTING SITE

COMPUTE NM HYD ID=1 HYD NO=EX.SITE DA= 0.001753 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=0.1333 HR MASS RAIN=-1

K = .160154HR TP = .133300HR K/TP RATIO = 1.201459 SHAPE CONSTANT, N = 2.957910
UNIT PEAK = 3.6608 CFS UNIT VOLUME = .9957 B = 278.37 P60 = 2.0100
AREA = .001753 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* DEVELOPED SITE

COMPUTE NM HYD ID=2 HYD NO=DEV.SITE DA=0.001753 SQ MI
PER A=0 PER B=5 PER C=41 PER D=54
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 3.7373 CFS UNIT VOLUME = .9965 B = 526.28 P60 = 2.0100

AREA = .000947 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .110124HR TP = .133300HR K/TP RATIO = .826140 SHAPE CONSTANT, N = 4.320714
UNIT PEAK = 2.2747 CFS UNIT VOLUME = .9948 B = 376.02 P60 = 2.0100
AREA = .000806 SQ MI IA = .36630 INCHES INF = .87565 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* BASIN A DEVELOPED

COMPUTE NM HYD ID=3 HYD NO=DEV.BASINA DA=0.001387 SQ MI
PER A=0 PER B=5 PER C=47 PER D=48
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 2.6285 CFS UNIT VOLUME = .9949 B = 526.28 P60 = 2.0100
AREA = .000666 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .109815HR TP = .133300HR K/TP RATIO = .823821 SHAPE CONSTANT, N = 4.334145
UNIT PEAK = 2.0391 CFS UNIT VOLUME = .9937 B = 376.87 P60 = 2.0100
AREA = .000721 SQ MI IA = .36442 INCHES INF = .87038 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* BASIN B DEVELOPED

COMPUTE NM HYD ID=4 HYD NO=DEV.BASINB DA=0.000366 SQ MI
PER A=0 PER B=15 PER C=10 PER D=75
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 1.0837 CFS UNIT VOLUME = .9881 B = 526.28 P60 = 2.0100
AREA = .000275 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .122231HR TP = .133300HR K/TP RATIO = .916961 SHAPE CONSTANT, N = 3.860795
UNIT PEAK = .23735 CFS UNIT VOLUME = .9435 B = 345.78 P60 = 2.0100
AREA = .000092 SQ MI IA = .44000 INCHES INF = 1.08200 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* ROUTE BASIN B THRU DETENTION POND

ROUTE RESERVOIR ID=5 HYD NO=POND.OUT INFLOW=4 CODE=2
OUT (CFS) STORAGE (AC-FT) ELEV (FT)
0 0 74.7
0.26 0.010904 76.0
0.32 0.025900 76.7

* * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	74.70	.000	.00
.07	.00	74.70	.000	.00
.13	.00	74.70	.000	.00
.20	.00	74.70	.000	.00
.27	.00	74.70	.000	.00
.33	.00	74.70	.000	.00
.40	.00	74.70	.000	.00

.47	.00	74.70	.000	.00
.53	.00	74.70	.000	.00
.60	.00	74.70	.000	.00
.67	.00	74.70	.000	.00
.73	.00	74.70	.000	.00
.80	.00	74.70	.000	.00
.87	.00	74.70	.000	.00
.93	.00	74.70	.000	.00
1.00	.00	74.70	.000	.00
1.07	.00	74.70	.000	.00
1.13	.00	74.70	.000	.00
1.20	.02	74.70	.000	.00
1.27	.10	74.74	.000	.01
1.33	.27	74.84	.001	.03
1.40	.55	75.07	.003	.07
1.47	.91	75.48	.007	.16
1.53	.95	75.98	.011	.26
1.60	.70	76.14	.014	.27
1.67	.51	76.22	.016	.28
1.73	.41	76.26	.017	.28
1.80	.34	76.29	.017	.28
1.87	.30	76.30	.017	.29
1.93	.26	76.29	.017	.29
2.00	.22	76.28	.017	.28
2.07	.19	76.26	.017	.28
2.13	.13	76.23	.016	.28
2.20	.07	76.19	.015	.28
2.27	.05	76.13	.014	.27
2.33	.04	76.07	.012	.27
2.40	.03	76.01	.011	.26
2.47	.02	75.89	.010	.24
2.53	.02	75.76	.009	.21
2.60	.02	75.64	.008	.19
2.67	.01	75.53	.007	.17
2.73	.01	75.44	.006	.15
2.80	.01	75.35	.005	.13
2.87	.01	75.28	.005	.12
2.93	.01	75.21	.004	.10
3.00	.01	75.16	.004	.09
3.07	.01	75.10	.003	.08
3.13	.01	75.06	.003	.07
3.20	.01	75.02	.003	.06
3.27	.01	74.98	.002	.06
3.33	.01	74.95	.002	.05
3.40	.01	74.93	.002	.05
3.47	.01	74.90	.002	.04
3.53	.01	74.88	.002	.04
3.60	.01	74.86	.001	.03
3.67	.01	74.85	.001	.03

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
---------------	-----------------	----------------	-------------------	------------------

3.73	.01	74.83	.001	.03
3.80	.01	74.82	.001	.02
3.87	.00	74.81	.001	.02
3.93	.00	74.80	.001	.02
4.00	.00	74.79	.001	.02
4.07	.00	74.78	.001	.02
4.13	.00	74.77	.001	.01

4.20	.00	74.77	.001	.01
4.27	.00	74.76	.001	.01
4.33	.00	74.76	.000	.01
4.40	.00	74.75	.000	.01
4.47	.00	74.75	.000	.01
4.53	.00	74.75	.000	.01
4.60	.00	74.74	.000	.01
4.67	.00	74.74	.000	.01
4.73	.00	74.74	.000	.01
4.80	.00	74.74	.000	.01
4.87	.00	74.73	.000	.01
4.93	.00	74.73	.000	.01
5.00	.00	74.73	.000	.01
5.07	.00	74.73	.000	.01
5.13	.00	74.73	.000	.01
5.20	.00	74.73	.000	.01
5.27	.00	74.73	.000	.01
5.33	.01	74.73	.000	.01
5.40	.01	74.73	.000	.01
5.47	.01	74.73	.000	.01
5.53	.01	74.73	.000	.01
5.60	.01	74.73	.000	.01
5.67	.01	74.73	.000	.01
5.73	.01	74.73	.000	.01
5.80	.01	74.73	.000	.01
5.87	.01	74.73	.000	.01
5.93	.01	74.73	.000	.01
6.00	.01	74.73	.000	.01
6.07	.01	74.73	.000	.01
6.13	.00	74.73	.000	.01
6.20	.00	74.73	.000	.01
6.27	.00	74.72	.000	.00

PEAK DISCHARGE = .285 CFS - PEAK OCCURS AT HOUR 1.87
 MAXIMUM WATER SURFACE ELEVATION = 76.296
 MAXIMUM STORAGE = .0173 AC-FT INCREMENTAL TIME= .033330HRS

* ADD BASINS A AND B
 ADD HYD ID=6 HYD NO=DEV.A+B ID I=3 ID II=5
 PRINT HYD ID=1 CODE=5

HYDROGRAPH FROM AREA EX.SITE

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	.833	.0	1.667	1.0	2.500	.1	3.333	.0
.167	.0	1.000	.0	1.833	.4	2.666	.0	3.500	.0
.333	.0	1.167	.0	2.000	.2	2.833	.0	3.666	.0
.500	.0	1.333	.0	2.166	.1	3.000	.0		
.667	.0	1.500	1.7	2.333	.1	3.166	.0		

RUNOFF VOLUME = .53121 INCHES = .0497 ACRE-FEET
 PEAK DISCHARGE RATE = 1.75 CFS AT 1.533 HOURS BASIN AREA = .0018 SQ. MI.

PRINT HYD ID=2 CODE=5

HYDROGRAPH FROM AREA DEV.SITE

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS

HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	1.333	1.0	2.666	.1	4.000	.0	5.333	.0
.167	.0	1.500	4.4	2.833	.1	4.166	.0	5.499	.0
.333	.0	1.667	2.3	3.000	.0	4.333	.0	5.666	.0
.500	.0	1.833	1.4	3.166	.0	4.500	.0	5.833	.0
.667	.0	2.000	.9	3.333	.0	4.666	.0	5.999	.0
.833	.0	2.166	.4	3.500	.0	4.833	.0	6.166	.0
1.000	.0	2.333	.2	3.666	.0	4.999	.0	6.333	.0
1.167	.0	2.500	.1	3.833	.0	5.166	.0		

RUNOFF VOLUME = 1.64044 INCHES = .1534 ACRE-FEET
 PEAK DISCHARGE RATE = 4.43 CFS AT 1.500 HOURS BASIN AREA = .0018 SQ. MI.

PRINT HYD ID=3 CODE=5

HYDROGRAPH FROM AREA DEV.BASINA

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	1.333	.7	2.666	.1	4.000	.0	5.333	.0
.167	.0	1.500	3.4	2.833	.0	4.166	.0	5.499	.0
.333	.0	1.667	1.8	3.000	.0	4.333	.0	5.666	.0
.500	.0	1.833	1.0	3.166	.0	4.500	.0	5.833	.0
.667	.0	2.000	.7	3.333	.0	4.666	.0	5.999	.0
.833	.0	2.166	.3	3.500	.0	4.833	.0	6.166	.0
1.000	.0	2.333	.2	3.666	.0	4.999	.0	6.333	.0
1.167	.0	2.500	.1	3.833	.0	5.166	.0		

RUNOFF VOLUME = 1.58114 INCHES = .1170 ACRE-FEET
 PEAK DISCHARGE RATE = 3.43 CFS AT 1.500 HOURS BASIN AREA = .0014 SQ. MI.

PRINT HYD ID=4 CODE=5

HYDROGRAPH FROM AREA DEV.BASINB

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	1.333	.3	2.666	.0	4.000	.0	5.333	.0
.167	.0	1.500	1.0	2.833	.0	4.166	.0	5.499	.0
.333	.0	1.667	.5	3.000	.0	4.333	.0	5.666	.0
.500	.0	1.833	.3	3.166	.0	4.500	.0	5.833	.0
.667	.0	2.000	.2	3.333	.0	4.666	.0	5.999	.0
.833	.0	2.166	.1	3.500	.0	4.833	.0	6.166	.0
1.000	.0	2.333	.0	3.666	.0	4.999	.0		
1.167	.0	2.500	.0	3.833	.0	5.166	.0		

RUNOFF VOLUME = 1.81228 INCHES = .0354 ACRE-FEET
 PEAK DISCHARGE RATE = 1.00 CFS AT 1.500 HOURS BASIN AREA = .0004 SQ. MI.

PRINT HYD ID=5 CODE=5

HYDROGRAPH FROM AREA POND.OUT

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
------	------	------	------	------	------	------	------	------	------

HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	1.500	.2	3.000	.1	4.500	.0	5.999	.0
.167	.0	1.667	.3	3.166	.1	4.666	.0	6.166	.0
.333	.0	1.833	.3	3.333	.1	4.833	.0	6.333	.0
.500	.0	2.000	.3	3.500	.0	4.999	.0	6.499	.0
.667	.0	2.166	.3	3.666	.0	5.166	.0	6.666	.0
.833	.0	2.333	.3	3.833	.0	5.333	.0	6.833	.0
1.000	.0	2.500	.2	4.000	.0	5.499	.0	6.999	.0
1.167	.0	2.666	.2	4.166	.0	5.666	.0		
1.333	.0	2.833	.1	4.333	.0	5.833	.0		

RUNOFF VOLUME = 1.81160 INCHES = .0354 ACRE-FOOT
 PEAK DISCHARGE RATE = .29 CFS AT 1.866 HOURS BASIN AREA = .0004 SQ. MI.

PRINT HYD ID=6 CODE=5

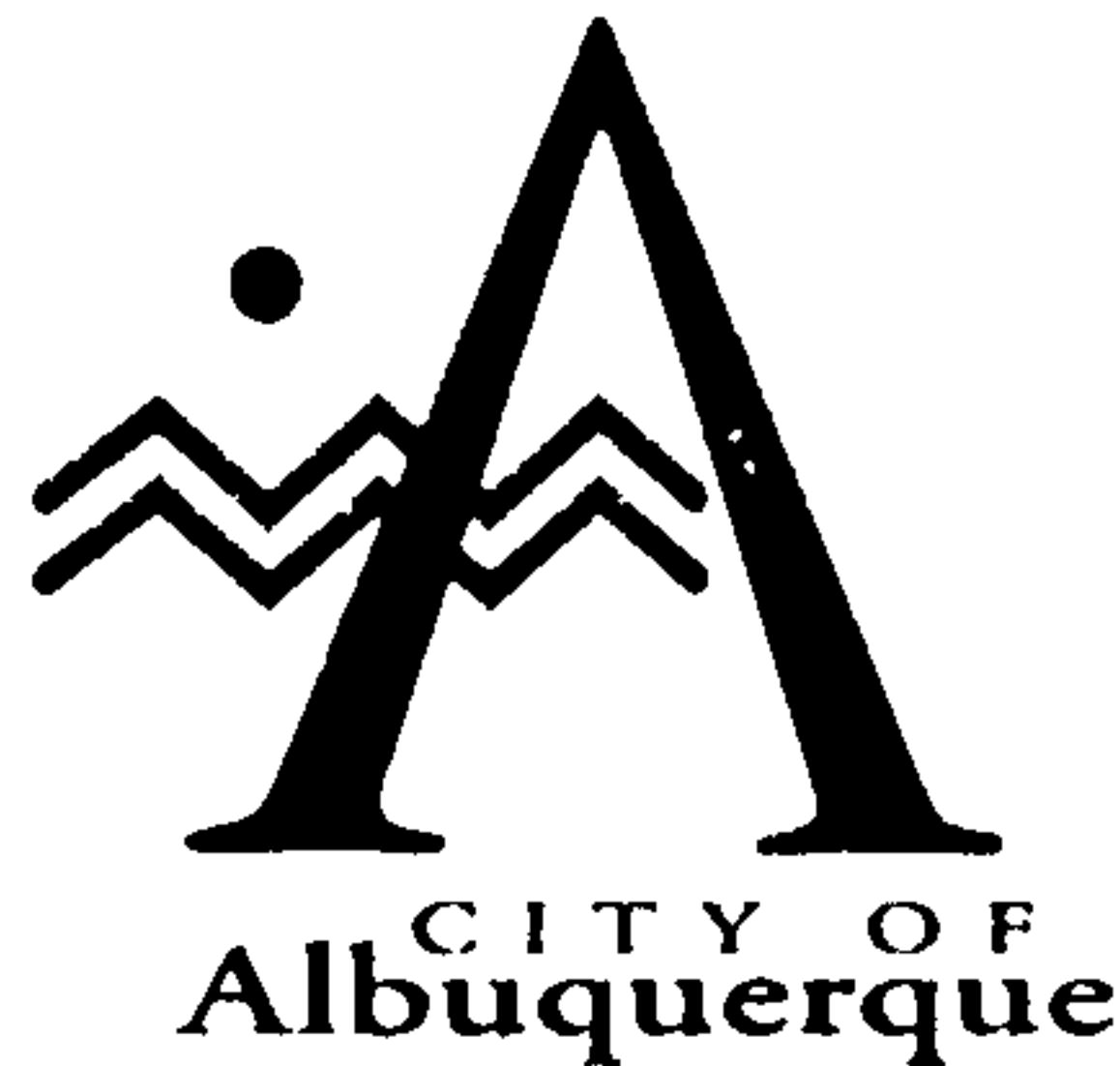
HYDROGRAPH FROM AREA DEV.A+B

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	3.6	3.000	.1	4.500	.0	5.999	.0
.167	.0	1.667	2.1	3.166	.1	4.666	.0	6.166	.0
.333	.0	1.833	1.3	3.333	.1	4.833	.0	6.333	.0
.500	.0	2.000	1.0	3.500	.1	4.999	.0	6.499	.0
.667	.0	2.166	.6	3.666	.0	5.166	.0	6.666	.0
.833	.0	2.333	.4	3.833	.0	5.333	.0	6.833	.0
1.000	.0	2.500	.3	4.000	.0	5.499	.0	6.999	.0
1.167	.0	2.666	.2	4.166	.0	5.666	.0		
1.333	.8	2.833	.2	4.333	.0	5.833	.0		

RUNOFF VOLUME = 1.62866 INCHES = .1523 ACRE-FEET
 PEAK DISCHARGE RATE = 3.64 CFS AT 1.500 HOURS BASIN AREA = .0018 SQ. MI.

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 10:54:28



November 25, 1997

Martin J. Chávez, Mayor

Dennis Lorenz, P.E.
Brasher & Lorenz
2201 San Pedro NE
Bldg. 1 - Suite 210
Albuquerque, NM 87110

RE: *FARMER'S MARKET (G16-D115). GRADING AND DRAINAGE PLAN FOR BUILDING AND SO #19 PERMIT APPROVALS. ENGINEER'S STAMP DATED 10-26-97.*

Dear Mr. Lorenz:

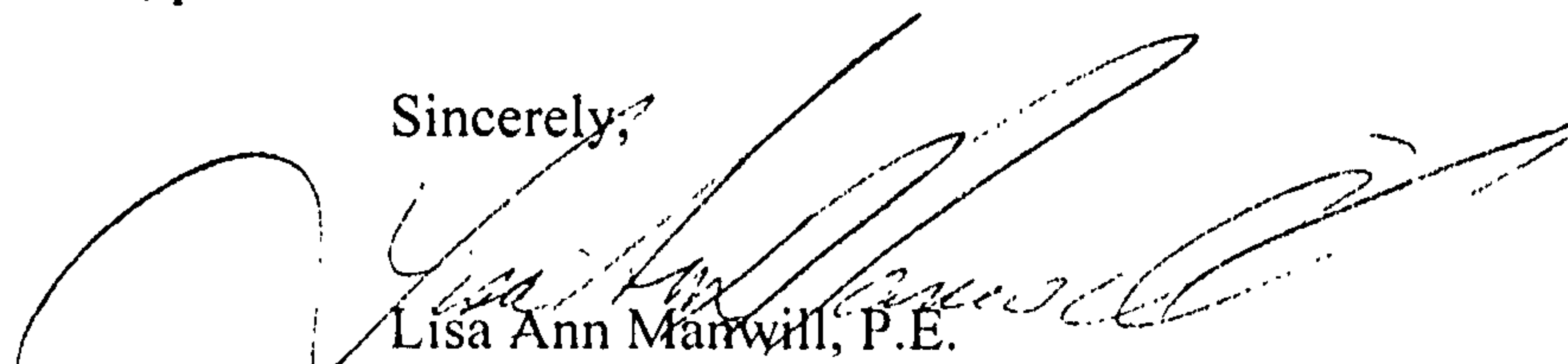
Based on the information provided on your October 29, 1997 submittal, the above referenced project is approved for Building and SO #19 Permits.

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

A separate permit is required for construction within City right-of-way. A copy of this approval letter must be on hand when applying for the excavation permit.

Prior to Certificate of Occupancy approval, and Engineer's Certification 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.
Hydrology

c: Arlene Portillo
Andrew Garcia
File



CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

November 25, 1997

INTEROFFICE CORRESPONDENCE

HYDROLOGY DIVISION

TO: Desiderio Salas, Street Maintenance Division
FROM: Lisa Ann Manwill, P.E. Engineering Associate, PWD *LA*
SUBJECT: **PRIVATE DRAINAGE FACILITIES WITHIN PUBLIC RIGHT-OF-WAY
DRAINAGE FILE NUMBER G16-D115.**

Transmitted herewith, is a copy of the approved drainage plan for the referenced project incorporating the SO #19 design.

This plan is being submitted to you for permitting and inspection. Please provide this section with a signed-off copy per the signature block upon construction and acceptance by your office.

As you are aware, the signed off SO #19 is required by this office for Certificate of Occupancy release; therefore your expeditious processing of this plan would be greatly appreciated and would avoid any unnecessary delay in the release of the Certificate of Occupancy.

Thank you for your cooperation and if you should have any questions and/or comments, please feel free to call me at 924-3984.

Attachment

*File
Copy*

DRAINAGE INFORMATION SHEET

PROJECT TITLE: FARMER'S MARKET ZONE ATLAS/DRNG. FILE #: G16-115
DRB #: — EPC #: — WORK ORDER #: —
LEGAL DESCRIPTION: TRACT B-1-H COMANCHE BUSINESS PARK
CITY ADDRESS: VASSAR PLACE NE
ENGINEERING FIRM: Brasher & Lorenz, Inc. CONTACT: Dennis A. Lorenz
2201 San Pedro NE Bldg. 1 Suite 210
ADDRESS: Albuquerque, New Mexico 87110 PHONE: 888-6088
OWNER: JACK BROWNE CONTACT: SAME
ADDRESS: 12301 SAN FRANCISCO NE PHONE: 856-1124
ARCHITECT: RICK BENNETT CONTACT: SAME
ADDRESS: 1118 PARK SW PHONE: 242-1859
SURVEYOR: ENGIMBER CONTACT: —
ADDRESS: — PHONE: —
CONTRACTOR: NA CONTACT: —
ADDRESS: — PHONE: —

TYPE OF SUBMITTAL:

— DRAINAGE REPORT
X DRAINAGE PLAN
— CONCEPTUAL GRADING & DRAINAGE PLAN
— GRADING PLAN
— EROSION CONTROL PLAN
— ENGINEER'S CERTIFICATION
— OTHER —

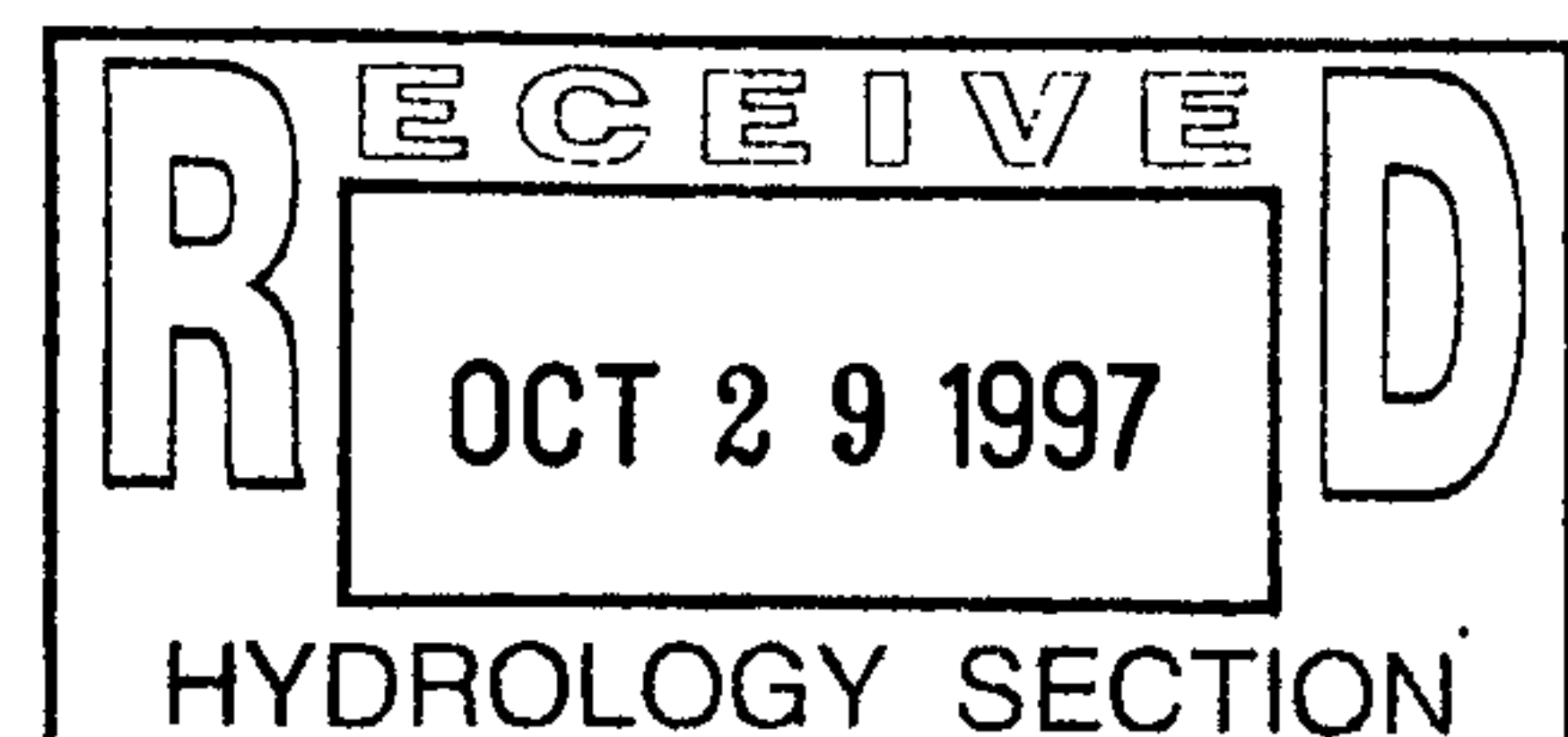
PRE-DESIGN MEETING:

— YES
X NO
— COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

— SKETCH PLAT APPROVAL
— PRELIMINARY PLAT APPROVAL
— S. DEV. PLAN FOR SUB'D. APPROVAL
— S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
— SECTOR PLAN APPROVAL
— FINAL PLAT APPROVAL
— FOUNDATION PERMIT APPROVAL
X BUILDING PERMIT APPROVAL
— CERTIFICATE OF OCCUPANCY APPROVAL
— GRADING PERMIT APPROVAL
— PAVING PERMIT APPROVAL
— S.A.D. DRAINAGE REPORT
— DRAINAGE REQUIREMENTS
— OTHER — (SPECIFY)

DATE SUBMITTED: 10.29.97
BY: Dennis A. Lorenz

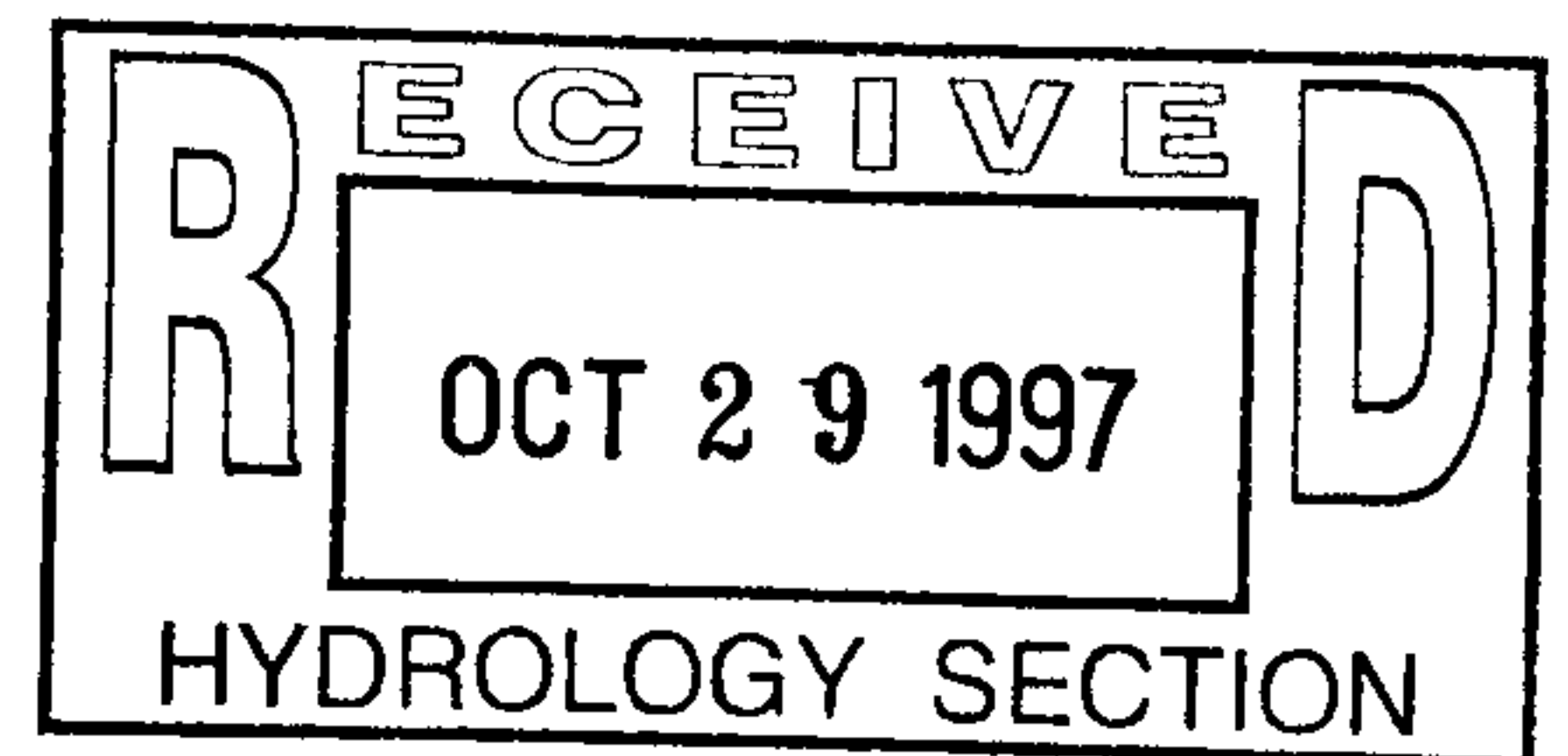


SUPPLEMENTAL CALCULATIONS

FOR

FARMERS MARKET

Albuquerque, New Mexico



Prepared by:

BRASHER & LORENZ, INC.

Consulting Engineers

2201 San Pedro NE Building 1, Suite 210

Albuquerque, New Mexico 87110

October 1997

A handwritten signature in black ink, appearing to read "Dennis A. Lorenz", is written over a circular professional engineer seal. The seal contains the text "DENNIS A. LORENZ" at the top, "N.M. REG. P.E." in the center, and the number "3847" below it. The words "REGISTERED PROFESSIONAL ENGINEER" are written around the bottom edge of the seal.

Dennis A. Lorenz, P.E.
Principal

INFRASTRUCTURE DESIGN

FARMERS MKT

7067

1/

10-26-97

① POND ROUTING

GIVEN: PER DMP MAX DISCHARGE
FOR SITE = 3.61 CFS/AC

SITE A = 1.1217 AC

$Q_{ALLOW} = 1.1217 (3.61) = 4.05 \text{ CFS}$

$Q_{SITE} = 4.43 \text{ CFS} < \text{POND REQ'D}$

$Q_{BASIN 'A'} = 3.43 \text{ CFS}$

$Q_{BASIN 'B'} = 1.00 \text{ CFS}$

ROUT BASIN 'B' THRU POND

LIMIT Q_{OUT} TO $4.05 - 3.43 = 0.62 \text{ CFS}$

② SIZE OUTLET

LIMIT OUTLET TO 0.62 CFS

DIA	AREA (SF)
3"	0.049
4"	0.087
6"	0.196

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

$$C = 0.60$$

H	$Q_{3"}$	$Q_{4"}$	$Q_{6"}$
1'	0.24	0.42	0.94
2'	0.33	0.59	1.33

FARMERS MKT

7067

2/

10.26.97

(B) ROUTE RES TABLE

 $\Rightarrow$ USE 3" OUTLET

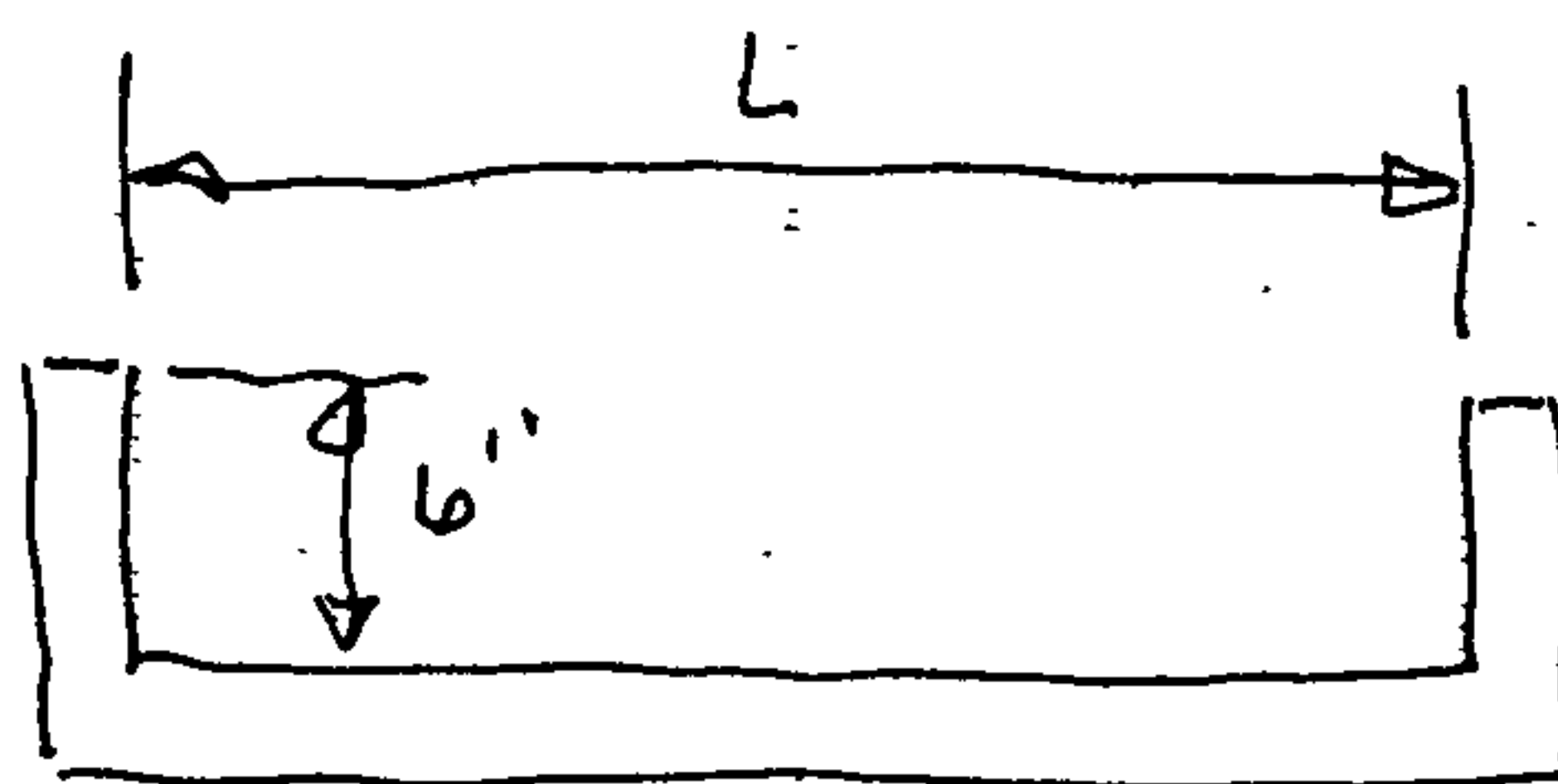
Q OUT CFS	STORAGE AF	ELEV MSLD
0	0	74.7
0.26	0.010904	76.0
0.32	0.02590	76.7

PER A144MO:

 $Q_{OUT} = 0.29 \text{ CFS}$ $VOL = 0.0173 \text{ AF} = 754 \text{ CF}$ $MAX \text{ WSE} = 76.30$ $\Rightarrow$ TOTAL Q SITE = 3.64 CFS < Q_{ALLOW}

10-26-97

(2) POND SPILLWAY



$$Q_{100} = 1.0 \text{ CFS}$$

SECTION

BY WEIR EQN

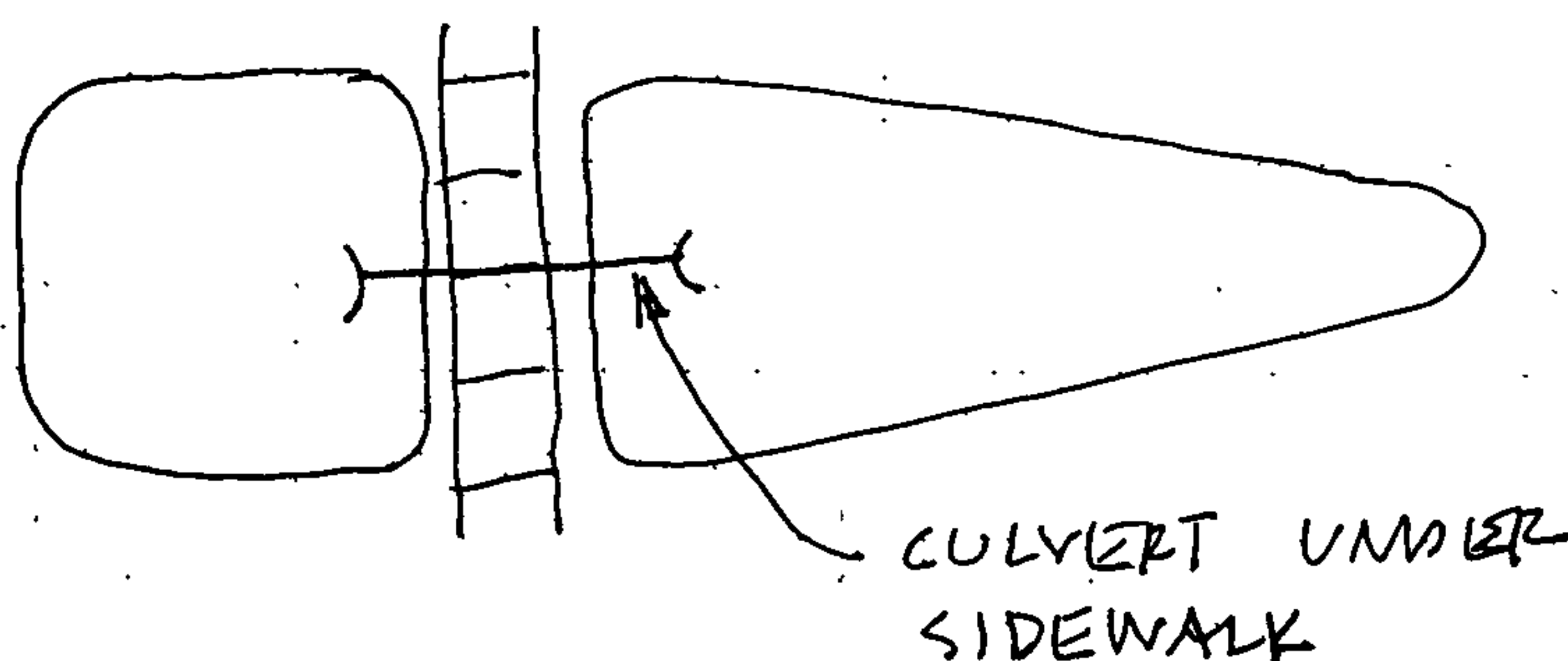
$$Q = CLH^{3/2}$$

$$C = 2.50 \quad H = 0.5'$$

$$\Rightarrow L = Q / CH^{3/2} = 1.13' \quad \text{USE } 2'$$

(3) POND CULVERT

SIZE CULVERT PIPE CONNECTING
POND SECTIONS.



$$Q_{100} = 1.0 \text{ CFS}$$

$$H_{\text{MAX}} = 1.5 \text{ FT}$$

USE 8" PIPE

$$A = 0.35 \text{ SF}$$

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

$$C = 0.6$$

$$\Rightarrow Q_{8"} = 2.04 \text{ CFS} < Q_{100}$$

AHYMO OUTPUT FILES

*
FARMERS MARKET
*
ON-SITE HYDROLOGY

START TIME=0.0 PUNCH CODE=0
RAINFALL TYPE=1 RAIN QUARTER=0.0 RAIN ONE=2.01
RAIN SIX=2.35 RAIN DAY=2.75 DT=0.03333 HRS

* EXISTING SITE

COMPUTE NM HYD ID=1 HYD NO=EX.SITE DA= 0.001753 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=0.1333 HR MASS RAIN=-1

* DEVELOPED SITE

COMPUTE NM HYD ID=2 HYD NO=DEV.SITE DA=0.001753 SQ MI
PER A=0 PER B=5 PER C=41 PER D=54
TP=0.1333 HR MASS RAIN=-1

* BASIN A DEVELOPED

COMPUTE NM HYD ID=3 HYD NO=DEV.BASINA DA=0.001387 SQ MI
PER A=0 PER B=5 PER C=47 PER D=48
TP=0.1333 HR MASS RAIN=-1

* BASIN B DEVELOPED

COMPUTE NM HYD ID=4 HYD NO=DEV.BASINB DA=0.000366 SQ MI
PER A=0 PER B=15 PER C=10 PER D=75
TP=0.1333 HR MASS RAIN=-1

* ROUTE BASIN B THRU DETENTION POND

ROUTE RESERVOIR ID=5 HYD NO=POND.OUT INFLOW=4 CODE=2
OUT (CFS) STORAGE (AC-FT) ELEV (FT)
0 0 74.7
0.26 0.010904 76.0
0.32 0.025900 76.7

* ADD BASINS A AND B

ADD HYD ID=6 HYD NO=DEV.A+B ID I=3 ID II=5
PRINT HYD ID=1 CODE=5
PRINT HYD ID=2 CODE=5
PRINT HYD ID=3 CODE=5
PRINT HYD ID=4 CODE=5
PRINT HYD ID=5 CODE=5
PRINT HYD ID=6 CODE=5
FINISH

RUN DATE (MON/DAY/YR) =10/28/1997
USER NO.= BRASHERE.I01

		FROM	TO		PEAK	RUNOFF		TIME TO	CFS	PAGE = 1
	HYDROGRAPH	ID	ID	AREA	DISCHARGE	VOLUME	RUNOFF	PEAK	PER	
COMMAND	IDENTIFICATION	NO.	NO.	(SQ MI)	(CFS)	(AC-FT)	(INCHES)	(HOURS)	ACRE	NOTATION
START									TIME=	.00
RAINFALL TYPE= 1									RAIN6=	2.350
COMPUTE NM HYD	EX.SITE	-	1	.00175	1.75	.050	.53121	1.533	1.563	PER IMP= .00
COMPUTE NM HYD	DEV.SITE	-	2	.00175	4.43	.153	1.64044	1.500	3.951	PER IMP= 54.00
COMPUTE NM HYD	DEV.BASINA	-	3	.00139	3.43	.117	1.58114	1.500	3.864	PER IMP= 48.00
COMPUTE NM HYD	DEV.BASINB	-	4	.00037	1.00	.035	1.81228	1.500	4.256	PER IMP= 75.00
ROUTE RESERVOIR	POND.OUT	4	5	.00037	.29	.035	1.81160	1.866	1.218	AC-FT= .017
ADD HYD	DEV.A+B	3& 5	6	.00175	3.64	.152	1.62866	1.500	3.241	
FINISH										

AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
RUN DATE (MON/DAY/YR) = 10/28/1997
START TIME (HR:MIN:SEC) = 10:54:27 USER NO.= BRASHERE.I01
INPUT FILE = 7067.DAT

* FARMERS MARKET
* ON-SITE HYDROLOGY

START TIME=0.0 PUNCH CODE=0
RAINFALL TYPE=1 RAIN QUARTER=0.0 RAIN ONE=2.01
 RAIN SIX=2.35 RAIN DAY=2.75 DT=0.03333 HRS

COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.

DT = .033330 HOURS END TIME = 5.999400 HOURS

.0000	.0016	.0033	.0049	.0066	.0084	.0102
.0120	.0139	.0158	.0178	.0199	.0219	.0241
.0263	.0286	.0309	.0333	.0358	.0384	.0411
.0439	.0467	.0497	.0529	.0561	.0596	.0631
.0669	.0709	.0751	.0807	.0866	.0930	.1066
.1371	.1840	.2514	.3434	.4644	.6186	.8106
1.0449	1.2624	1.3533	1.4300	1.4982	1.5602	1.6174
1.6704	1.7200	1.7664	1.8102	1.8514	1.8904	1.9273
1.9622	1.9953	2.0268	2.0566	2.0850	2.0915	2.0976
2.1033	2.1088	2.1140	2.1191	2.1239	2.1285	2.1329
2.1373	2.1414	2.1454	2.1494	2.1531	2.1568	2.1604
2.1639	2.1673	2.1706	2.1739	2.1771	2.1802	2.1832
2.1862	2.1891	2.1919	2.1947	2.1975	2.2002	2.2028
2.2054	2.2080	2.2105	2.2130	2.2154	2.2178	2.2202
2.2225	2.2248	2.2270	2.2293	2.2315	2.2336	2.2358
2.2379	2.2399	2.2420	2.2440	2.2460	2.2480	2.2500
2.2519	2.2538	2.2557	2.2576	2.2594	2.2612	2.2631
2.2648	2.2666	2.2684	2.2701	2.2718	2.2735	2.2752
2.2769	2.2785	2.2802	2.2818	2.2834	2.2850	2.2866
2.2881	2.2897	2.2912	2.2928	2.2943	2.2958	2.2973
2.2987	2.3002	2.3017	2.3031	2.3045	2.3060	2.3074
2.3088	2.3102	2.3115	2.3129	2.3143	2.3156	2.3169
2.3183	2.3196	2.3209	2.3222	2.3235	2.3248	2.3261
2.3273	2.3286	2.3298	2.3311	2.3323	2.3335	2.3348
2.3360	2.3372	2.3384	2.3396	2.3408	2.3419	2.3431
2.3443	2.3454	2.3466	2.3477	2.3488	2.3500	

* EXISTING SITE

COMPUTE NM HYD ID=1 HYD NO=EX.SITE DA= 0.001753 SQ MI
 PER A=100 PER B=0 PER C=0 PER D=0
 TP=0.1333 HR MASS RAIN=-1

K = .160154HR TP = .133300HR K/TP RATIO = 1.201459 SHAPE CONSTANT, N = 2.957910
UNIT PEAK = 3.6608 CFS UNIT VOLUME = .9957 B = 278.37 P60 = 2.0100
AREA = .001753 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* DEVELOPED SITE

COMPUTE NM HYD ID=2 HYD NO=DEV.SITE DA=0.001753 SQ MI
 PER A=0 PER B=5 PER C=41 PER D=54
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 3.7373 CFS UNIT VOLUME = .9965 B = 526.28 P60 = 2.0100

AREA = .000947 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .110124HR TP = .133300HR K/TP RATIO = .826140 SHAPE CONSTANT, N = 4.320714
UNIT PEAK = 2.2747 CFS UNIT VOLUME = .9948 B = 376.02 P60 = 2.0100
AREA = .000806 SQ MI IA = .36630 INCHES INF = .87565 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* BASIN A DEVELOPED

COMPUTE NM HYD ID=3 HYD NO=DEV.BASINA DA=0.001387 SQ MI
PER A=0 PER B=5 PER C=47 PER D=48
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 2.6285 CFS UNIT VOLUME = .9949 B = 526.28 P60 = 2.0100
AREA = .000666 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .109815HR TP = .133300HR K/TP RATIO = .823821 SHAPE CONSTANT, N = 4.334145
UNIT PEAK = 2.0391 CFS UNIT VOLUME = .9937 B = 376.87 P60 = 2.0100
AREA = .000721 SQ MI IA = .36442 INCHES INF = .87038 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* BASIN B DEVELOPED

COMPUTE NM HYD ID=4 HYD NO=DEV.BASINB DA=0.000366 SQ MI
PER A=0 PER B=15 PER C=10 PER D=75
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 1.0837 CFS UNIT VOLUME = .9881 B = 526.28 P60 = 2.0100
AREA = .000275 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .122231HR TP = .133300HR K/TP RATIO = .916961 SHAPE CONSTANT, N = 3.860795
UNIT PEAK = .23735 CFS UNIT VOLUME = .9435 B = 345.78 P60 = 2.0100
AREA = .000092 SQ MI IA = .44000 INCHES INF = 1.08200 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* ROUTE BASIN B THRU DETENTION POND

ROUTE RESERVOIR ID=5 HYD NO=POND.OUT INFLOW=4 CODE=2
OUT (CFS) STORAGE (AC-FT) ELEV (FT)
0 0 74.7
0.26 0.010904 76.0
0.32 0.025900 76.7

* * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
.00	.00	74.70	.000	.00
.07	.00	74.70	.000	.00
.13	.00	74.70	.000	.00
.20	.00	74.70	.000	.00
.27	.00	74.70	.000	.00
.33	.00	74.70	.000	.00
.40	.00	74.70	.000	.00

.47	.00	74.70	.000	.00
.53	.00	74.70	.000	.00
.60	.00	74.70	.000	.00
.67	.00	74.70	.000	.00
.73	.00	74.70	.000	.00
.80	.00	74.70	.000	.00
.87	.00	74.70	.000	.00
.93	.00	74.70	.000	.00
1.00	.00	74.70	.000	.00
1.07	.00	74.70	.000	.00
1.13	.00	74.70	.000	.00
1.20	.02	74.70	.000	.00
1.27	.10	74.74	.000	.01
1.33	.27	74.84	.001	.03
1.40	.55	75.07	.003	.07
1.47	.91	75.48	.007	.16
1.53	.95	75.98	.011	.26
1.60	.70	76.14	.014	.27
1.67	.51	76.22	.016	.28
1.73	.41	76.26	.017	.28
1.80	.34	76.29	.017	.28
1.87	.30	76.30	.017	.29
1.93	.26	76.29	.017	.29
2.00	.22	76.28	.017	.28
2.07	.19	76.26	.017	.28
2.13	.13	76.23	.016	.28
2.20	.07	76.19	.015	.28
2.27	.05	76.13	.014	.27
2.33	.04	76.07	.012	.27
2.40	.03	76.01	.011	.26
2.47	.02	75.89	.010	.24
2.53	.02	75.76	.009	.21
2.60	.02	75.64	.008	.19
2.67	.01	75.53	.007	.17
2.73	.01	75.44	.006	.15
2.80	.01	75.35	.005	.13
2.87	.01	75.28	.005	.12
2.93	.01	75.21	.004	.10
3.00	.01	75.16	.004	.09
3.07	.01	75.10	.003	.08
3.13	.01	75.06	.003	.07
3.20	.01	75.02	.003	.06
3.27	.01	74.98	.002	.06
3.33	.01	74.95	.002	.05
3.40	.01	74.93	.002	.05
3.47	.01	74.90	.002	.04
3.53	.01	74.88	.002	.04
3.60	.01	74.86	.001	.03
3.67	.01	74.85	.001	.03

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
---------------	-----------------	----------------	-------------------	------------------

3.73	.01	74.83	.001	.03
3.80	.01	74.82	.001	.02
3.87	.00	74.81	.001	.02
3.93	.00	74.80	.001	.02
4.00	.00	74.79	.001	.02
4.07	.00	74.78	.001	.02
4.13	.00	74.77	.001	.01

4.20	.00	74.77	.001	.01
4.27	.00	74.76	.001	.01
4.33	.00	74.76	.000	.01
4.40	.00	74.75	.000	.01
4.47	.00	74.75	.000	.01
4.53	.00	74.75	.000	.01
4.60	.00	74.74	.000	.01
4.67	.00	74.74	.000	.01
4.73	.00	74.74	.000	.01
4.80	.00	74.74	.000	.01
4.87	.00	74.73	.000	.01
4.93	.00	74.73	.000	.01
5.00	.00	74.73	.000	.01
5.07	.00	74.73	.000	.01
5.13	.00	74.73	.000	.01
5.20	.00	74.73	.000	.01
5.27	.00	74.73	.000	.01
5.33	.01	74.73	.000	.01
5.40	.01	74.73	.000	.01
5.47	.01	74.73	.000	.01
5.53	.01	74.73	.000	.01
5.60	.01	74.73	.000	.01
5.67	.01	74.73	.000	.01
5.73	.01	74.73	.000	.01
5.80	.01	74.73	.000	.01
5.87	.01	74.73	.000	.01
5.93	.01	74.73	.000	.01
6.00	.01	74.73	.000	.01
6.07	.01	74.73	.000	.01
6.13	.00	74.73	.000	.01
6.20	.00	74.73	.000	.01
6.27	.00	74.72	.000	.00

PEAK DISCHARGE = .285 CFS - PEAK OCCURS AT HOUR 1.87
 MAXIMUM WATER SURFACE ELEVATION = 76.296
 MAXIMUM STORAGE = .0173 AC-FT INCREMENTAL TIME= .033330HRS

* ADD BASINS A AND B
 ADD HYD ID=6 HYD NO=DEV.A+B ID I=3 ID II=5
 PRINT HYD ID=1 CODE=5

HYDROGRAPH FROM AREA EX.SITE

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	.833	.0	1.667	1.0	2.500	.1	3.333	.0
.167	.0	1.000	.0	1.833	.4	2.666	.0	3.500	.0
.333	.0	1.167	.0	2.000	.2	2.833	.0	3.666	.0
.500	.0	1.333	.0	2.166	.1	3.000	.0		
.667	.0	1.500	1.7	2.333	.1	3.166	.0		

RUNOFF VOLUME = .53121 INCHES = .0497 ACRE-FEET
 PEAK DISCHARGE RATE = 1.75 CFS AT 1.533 HOURS BASIN AREA = .0018 SQ. MI.

PRINT HYD ID=2 CODE=5

HYDROGRAPH FROM AREA DEV.SITE

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS

HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	1.333	1.0	2.666	.1	4.000	.0	5.333	.0
.167	.0	1.500	4.4	2.833	.1	4.166	.0	5.499	.0
.333	.0	1.667	2.3	3.000	.0	4.333	.0	5.666	.0
.500	.0	1.833	1.4	3.166	.0	4.500	.0	5.833	.0
.667	.0	2.000	.9	3.333	.0	4.666	.0	5.999	.0
.833	.0	2.166	.4	3.500	.0	4.833	.0	6.166	.0
1.000	.0	2.333	.2	3.666	.0	4.999	.0	6.333	.0
1.167	.0	2.500	.1	3.833	.0	5.166	.0		

RUNOFF VOLUME = 1.64044 INCHES = .1534 ACRE-FEET
PEAK DISCHARGE RATE = 4.43 CFS AT 1.500 HOURS BASIN AREA = .0018 SQ. MI.

PRINT HYD ID=3 CODE=5

HYDROGRAPH FROM AREA DEV.BASINA

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	.7	2.666	.1	4.000	.0	5.333	.0
.167	.0	1.500	3.4	2.833	.0	4.166	.0	5.499	.0
.333	.0	1.667	1.8	3.000	.0	4.333	.0	5.666	.0
.500	.0	1.833	1.0	3.166	.0	4.500	.0	5.833	.0
.667	.0	2.000	.7	3.333	.0	4.666	.0	5.999	.0
.833	.0	2.166	.3	3.500	.0	4.833	.0	6.166	.0
1.000	.0	2.333	.2	3.666	.0	4.999	.0	6.333	.0
1.167	.0	2.500	.1	3.833	.0	5.166	.0		

RUNOFF VOLUME = 1.58114 INCHES = .1170 ACRE-FEET
PEAK DISCHARGE RATE = 3.43 CFS AT 1.500 HOURS BASIN AREA = .0014 SQ. MI.

PRINT HYD ID=4 CODE=5

HYDROGRAPH FROM AREA DEV.BASINB

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.333	.3	2.666	.0	4.000	.0	5.333	.0
.167	.0	1.500	1.0	2.833	.0	4.166	.0	5.499	.0
.333	.0	1.667	.5	3.000	.0	4.333	.0	5.666	.0
.500	.0	1.833	.3	3.166	.0	4.500	.0	5.833	.0
.667	.0	2.000	.2	3.333	.0	4.666	.0	5.999	.0
.833	.0	2.166	.1	3.500	.0	4.833	.0	6.166	.0
1.000	.0	2.333	.0	3.666	.0	4.999	.0		
1.167	.0	2.500	.0	3.833	.0	5.166	.0		

RUNOFF VOLUME = 1.81228 INCHES = .0354 ACRE-FEET
PEAK DISCHARGE RATE = 1.00 CFS AT 1.500 HOURS BASIN AREA = .0004 SQ. MI.

PRINT HYD ID=5 CODE=5

HYDROGRAPH FROM AREA POND.OUT

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
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HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS	HRS	CFS
.000	.0	1.500	.2	3.000	.1	4.500	.0	5.999	.0
.167	.0	1.667	.3	3.166	.1	4.666	.0	6.166	.0
.333	.0	1.833	.3	3.333	.1	4.833	.0	6.333	.0
.500	.0	2.000	.3	3.500	.0	4.999	.0	6.499	.0
.667	.0	2.166	.3	3.666	.0	5.166	.0	6.666	.0
.833	.0	2.333	.3	3.833	.0	5.333	.0	6.833	.0
1.000	.0	2.500	.2	4.000	.0	5.499	.0	6.999	.0
1.167	.0	2.666	.2	4.166	.0	5.666	.0		
1.333	.0	2.833	.1	4.333	.0	5.833	.0		

RUNOFF VOLUME = 1.81160 INCHES = .0354 ACRE-FOOT
PEAK DISCHARGE RATE = .29 CFS AT 1.866 HOURS BASIN AREA = .0004 SQ. MI.

PRINT HYD ID=6 CODE=5

HYDROGRAPH FROM AREA DEV.A+B

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	3.6	3.000	.1	4.500	.0	5.999	.0
.167	.0	1.667	2.1	3.166	.1	4.666	.0	6.166	.0
.333	.0	1.833	1.3	3.333	.1	4.833	.0	6.333	.0
.500	.0	2.000	1.0	3.500	.1	4.999	.0	6.499	.0
.667	.0	2.166	.6	3.666	.0	5.166	.0	6.666	.0
.833	.0	2.333	.4	3.833	.0	5.333	.0	6.833	.0
1.000	.0	2.500	.3	4.000	.0	5.499	.0	6.999	.0
1.167	.0	2.666	.2	4.166	.0	5.666	.0		
1.333	.8	2.833	.2	4.333	.0	5.833	.0		

RUNOFF VOLUME = 1.62866 INCHES = .1523 ACRE-FEET
 PEAK DISCHARGE RATE = 3.64 CFS AT 1.500 HOURS BASIN AREA = .0018 SQ. MI.

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 10:54:28