

BRASHER & LORENZ, INC.

CONSULTING ENGINEERS

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

November 6, 1996

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

**SUBJECT: DRAINAGE PLAN FOR MI CASA ESTATES
(L9-D15) DRB 96-285**

Dear Lisa:

Attached please find 1 copy of the revised Drainage Report for the subject project. The report has been revised to address the comments listed in your October 30, 1996 letter. Specifically, your comments are addressed as follows:

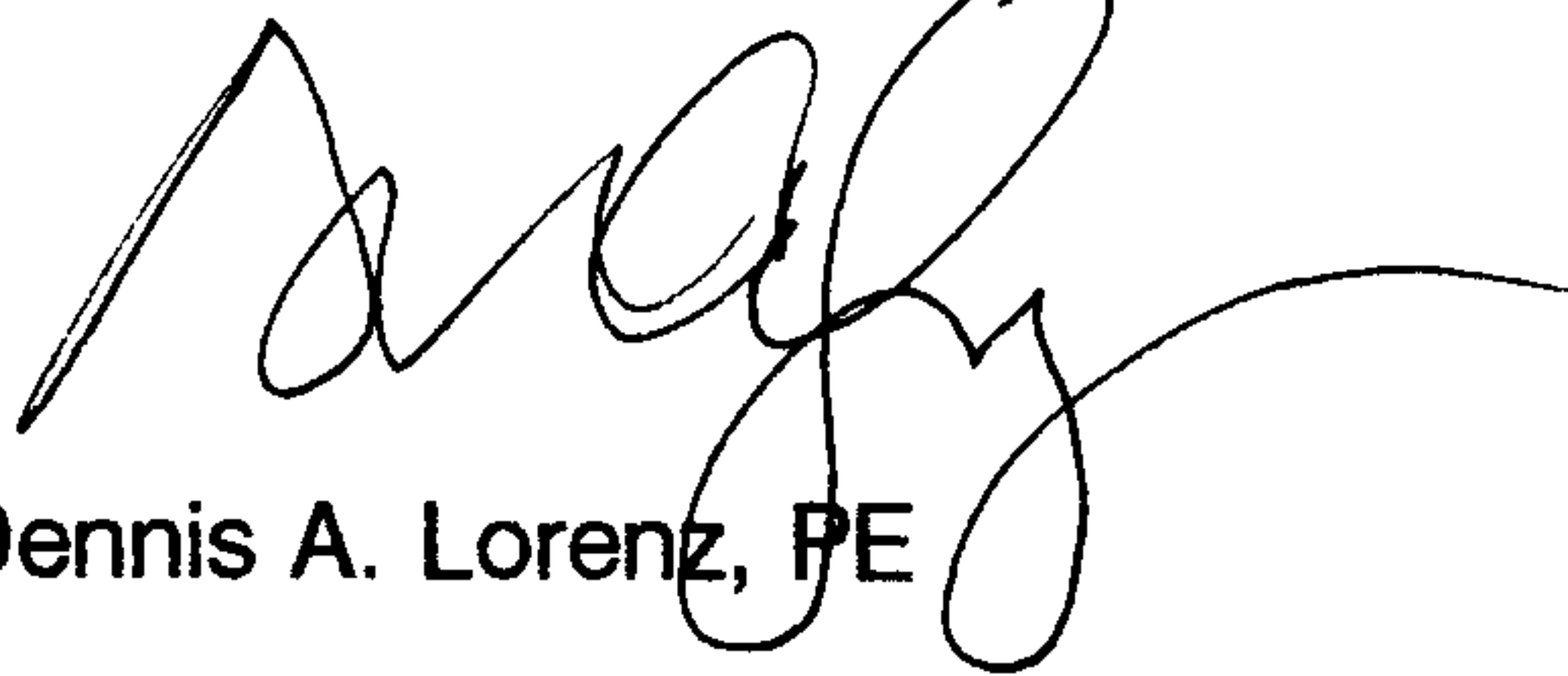
1. A one foot high water block is provided at the intersection with Tower Road. Casa Del Sol slopes north to south outfalling at San Ignacio Road. A water block is not required at San Ignacio. A copy of the street plan and profile for Casa Del Sol is provided for review.
2. A break in the garden wall along the west property line will be provided to allow off-site flows to enter the channel. The graphics on the Plan have been revised to reflect this condition.
3. The proposed channel is to be owned and maintained by the City. The Plan references COA Standard Drawing 2260 for construction.
4. A copy of the Infrastructure List is provided for your review.
5. A copy of the storm drain plan and profile is provided for your review, which indicates all required inlet types and invert elevations. The report includes a hydraulic analysis of the system.
6. SAD 222, by State Statute, provides free discharge into the proposed storm drainage system. Storm drains will be located in Tower and San Ignacio. This site drains into the 42 inch storm drain to be located in San Ignacio. A copy of this Report has been sent to the SAD

Consultant, Andrews, Asbury and Robert, Inc. Supporting documentation is provided as requested.

Please process the plan approval at your earliest convenience as Preliminary Plat is scheduled to be heard by DRB on November 12, 1996. If there is anything I can do to assist your timely review, please call.

Sincerely,

BRASHER & LORENZ, INC.



Dennis A. Lorenz, PE

/dl/6035
encl

Figure 12

EXHIBIT "A"

To Subdivision Improvements Agreement
DEVELOPMENT REVIEW BOARD (DRB) REQUIRED INFRASTRUCTURE LISTING
for **MI CASA ESTATES**

Following is a summary of Public/Private Infrastructure required to be constructed or financially guaranteed to be constructed for the above development. This summary is not necessarily a complete listing. During the design process, if the City determines that appurtenant items have not been included in the summary, those items will be included in the listing and related financial guarantee, if the items normally are the Subdivider responsibility. In addition, any unforeseen items which arise during construction which are necessary to complete the project and which normally are the Subdivider's responsibility are the responsibility of the Subdivider and will be included in the financial guarantee provided to the City.

SIZE	IMPROVEMENT	LOCATION	FROM	TO
28'	Street*	Casa Del Sol St SW	Tower Rd SW	San Ygnacio Rd
28'	Street*	Casa de Luna Ave SW	Casa Del Sol St SW	East PL Lot 9
24'	Street**	Tower Road SW	West PL Lot 14	East PL Lot 1
24'	Street***	San Ygnacio Road SW	West PL Tract "A"	East PL Lot 13
6"	Waterline	Casa Del Sol St SW	Tower Rd SW	San Ygnacio Rd
6"	Waterline	Casa de Luna Ave SW	Casa Del Sol St SW	East PL Lot 9
8"	Sanitary Sewer	Casa Del Sol St SW	Tower Rd SW	San Ygnacio Rd
8"	Sanitary Sewer	Casa de Luna Ave SW	Casa Del Sol St SW	East PL Lot 9
8"	Sanitary Sewer	Suneast Dr SW	San Ygnacio Rd SW	Sunridge Ave SW
30"	Storm Drain#	Casa Del Sol St SW	San Ygnacio Rd SW	150 ft North

10' Channel

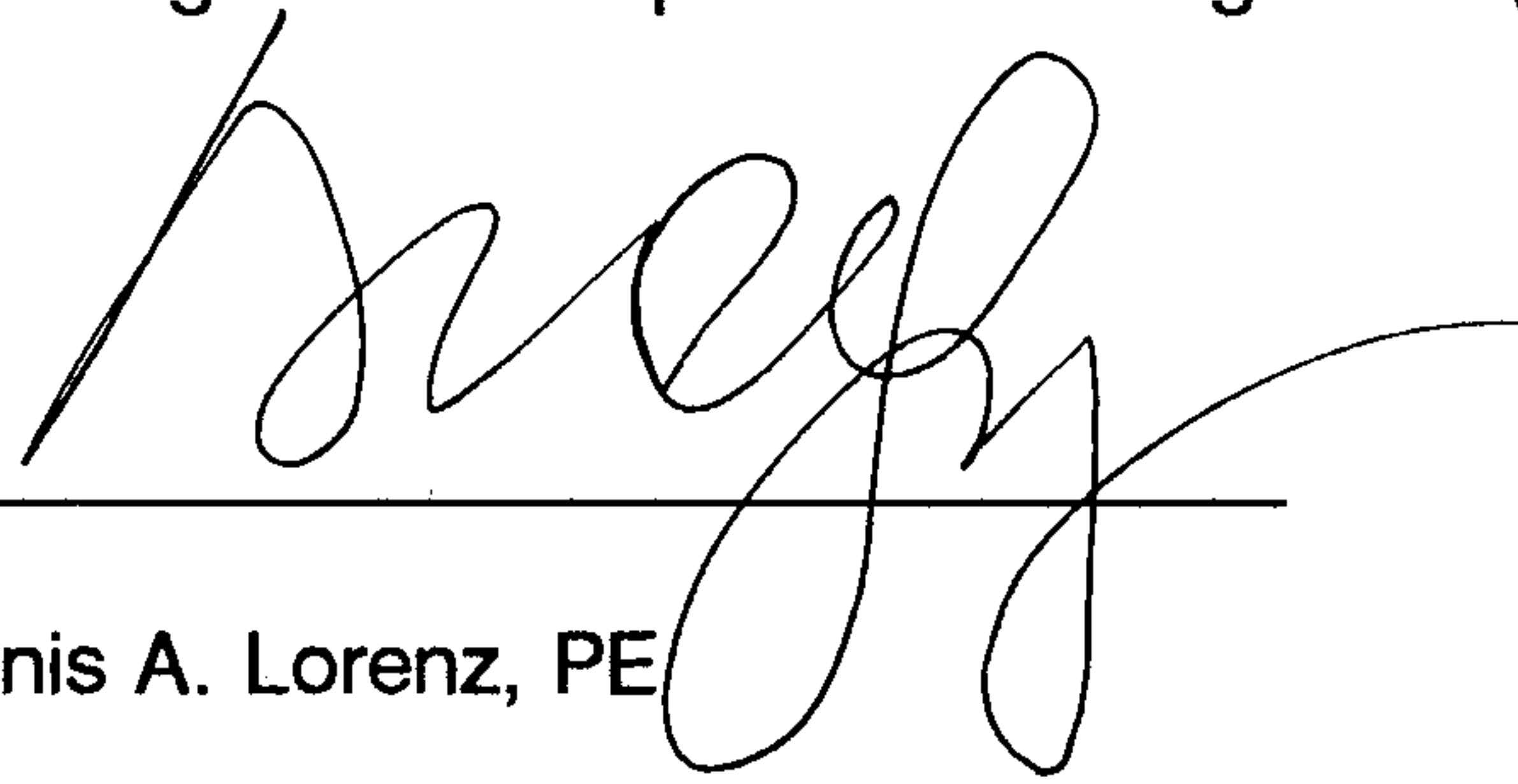
Interim Retention Pond on Lots 12 & 13, to be relaimed upon construction of 42" SD by SAD 222

* Street improvement to include curb & gutter, 4' sidewalk, and residential street pavement. Sidewalk construction to be deferred on fronts of lots until constrction of buildings on an individual lot basis.

- ** Street improvement to include curb & gutter, 6' sidewalk, and one-half width arterial street pavement
- *** Street improvement to include curb & gutter, 6' sidewalk, and one-half width residential street pavement
- # Storm drain complete with catch basins, manholes ,connector pipes, temporary connection to interim retention pond, and stubout to future 42" SD.

Residential street lighting per DPM

Certification of Grading to include private retaining walls (required for release of financial guarantee).

Prepared By: 

Print Name: Dennis A. Lorenz, PE

Firm: Brasher & Lorenz, Inc.

Development Review Board Member Approval

Planning Director

Utility Development

Parks & General Services

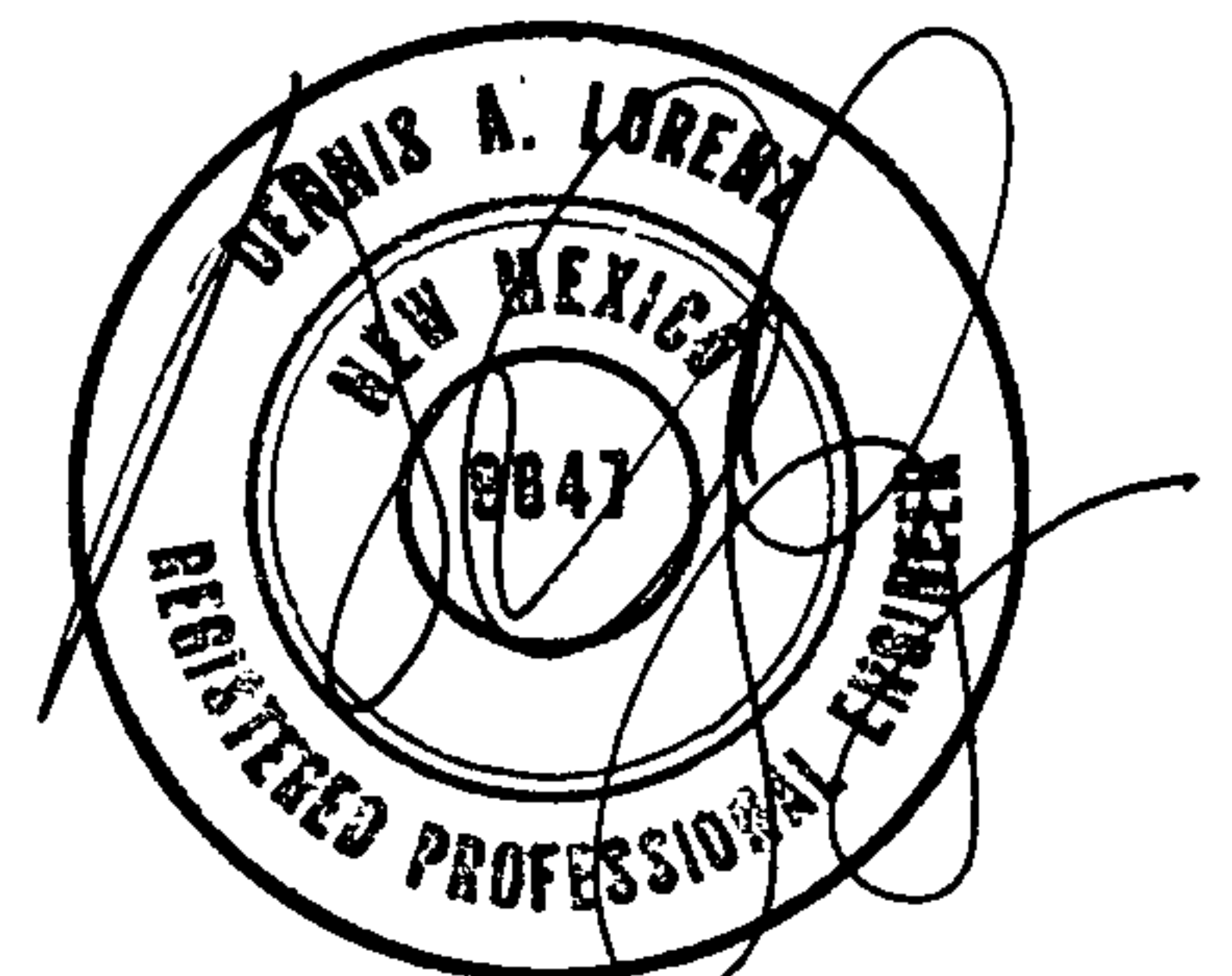
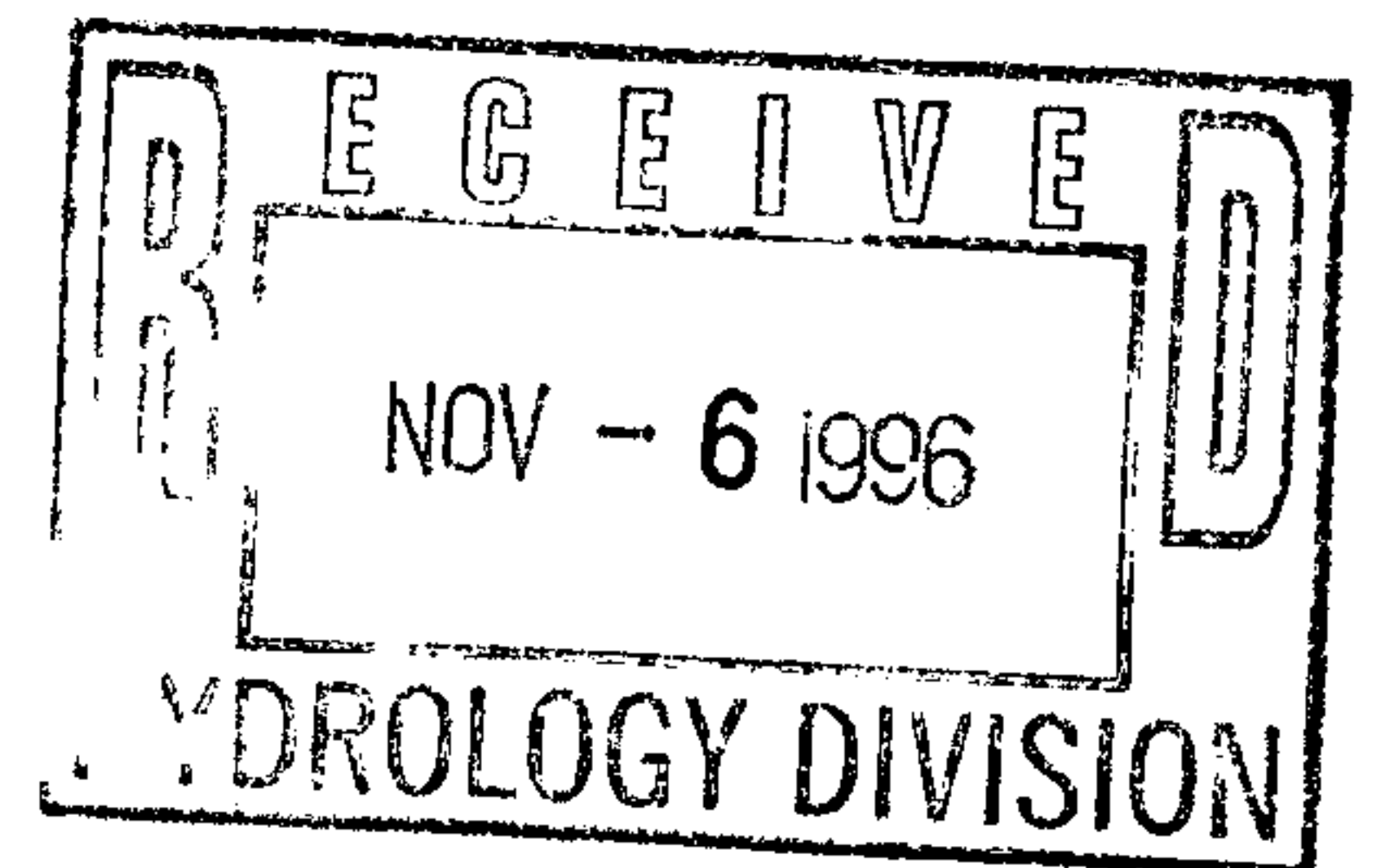
City Engineer/AMAFCA

Transportation Development

DRAINAGE REPORT
FOR
MI CASA ESTATES
Albuquerque, New Mexico

Prepared By:
BRASHER & LORENZ, INC.
Consulting Engineers
San Pedro NE Building 1, Suite 210
Albuquerque, New Mexico 87110

October, 1996



10-18-96
11-5-96

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PURPOSE AND SCOPE

Pursuant to the established Drainage Ordinance for the City of Albuquerque and the Development Process Manual, this Drainage Report outlines the drainage management criteria for controlling developed runoff from the project site. The property is to be developed as Mi Casa Estates, a 23 lot residential subdivision, with associated paving, landscaping, utility, grading, and drainage improvements. The scope of this plan is to provide drainage criteria for the safe management of excess runoff, and design detail for the construction of the required grading, paving and drainage improvements.

EXISTING CONDITIONS

The project site is approximately 5.0 acres in size and is located between Tower Road SW and San Ygnacio Road SW, just east of 90th Street SW. Presently the site is undeveloped. The site is sparsely vegetated with native grasses and shrubs. A wide, shallow depression crosses the tract from west to east, draining the northern two-thirds of the property. The northern third of the tract drains southeast into the depression at a 2.5 percent slope. The middle third of the tract drains northeast into the depression at a 2.5 percent slope. The southern third of the tract drains south toward San Ygnacio Road at a 2.5 percent slope. The elevations range from 5120 at the northwest corner to 5112 at the bottom of the depression on the east side. Off-site flows impact the site from the west. Tract 434, an undeveloped 5 acre tract located adjacent to the site on the west, drains into the depression mentioned above near the midpoint of the site. Tower Road is a paved rural road with no shoulders. San Ygnacio Road is a dirt road.

On-site soils consist of Madurez-Wink Association. This soil group is located on slightly convex piedmont fans on the west mesa. Runoff is slow, and the hazard of wind erosion is moderate to severe. This soils is classified as hydrologic soils group "B".

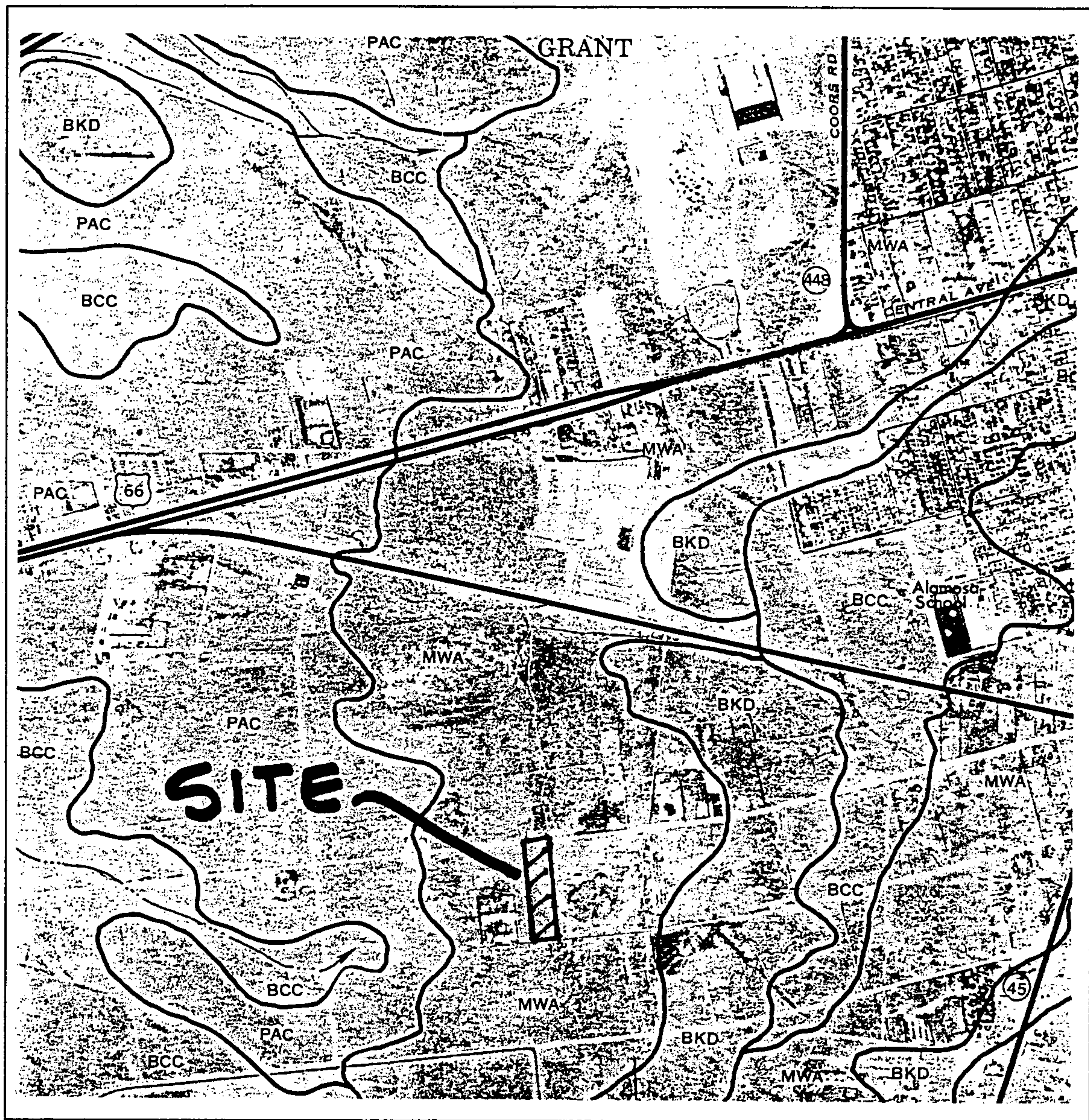
As shown by the attached Floodway Panel, this site does not lie within a designated flood hazard zone. A mapped floodplain is located within Tower Road, along the north edge of the site.

EXISTING DRAINAGE MASTERPLANS

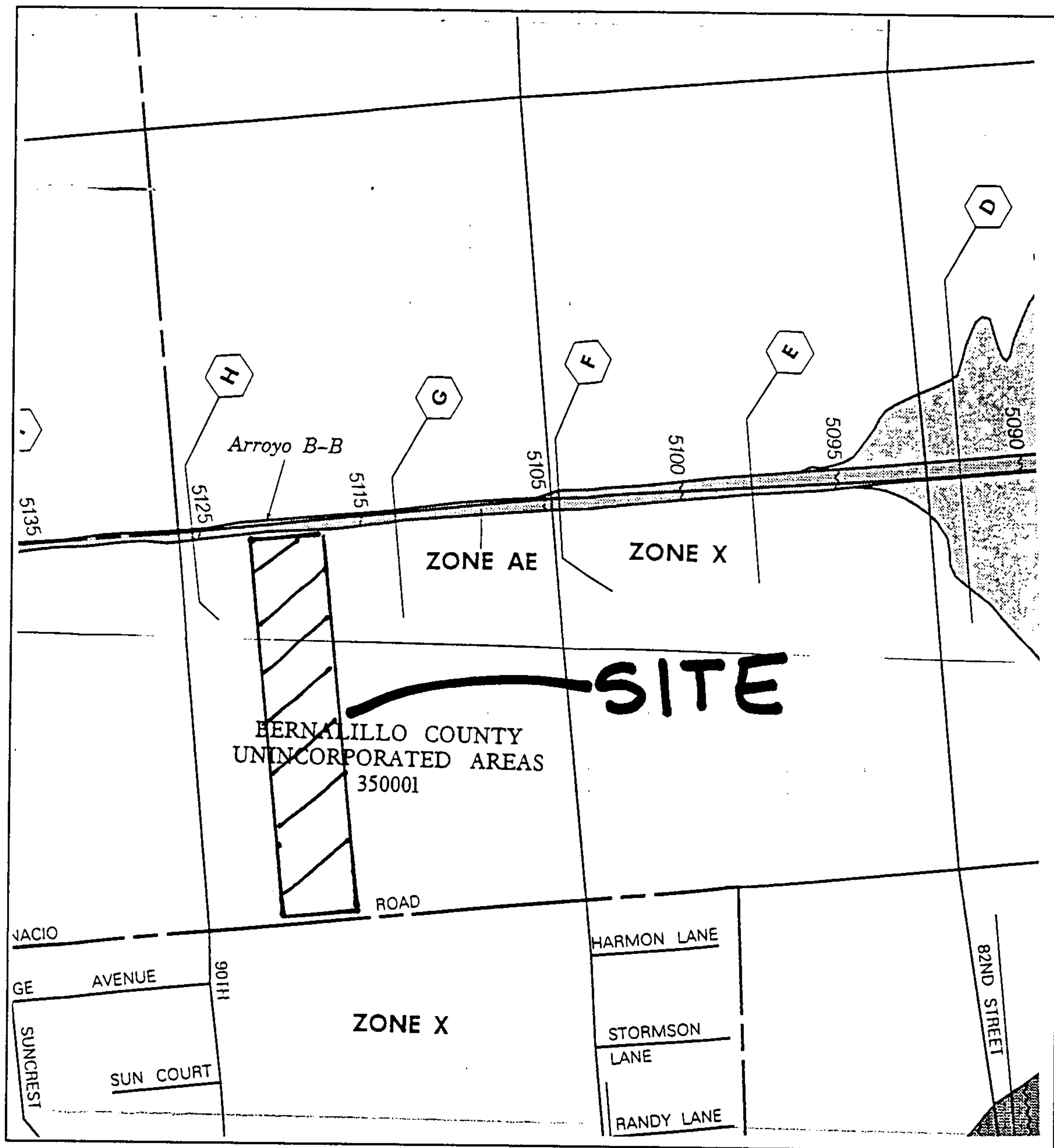
The drainage criteria for this site is established by the "Tower/Sage Drainage Master Plan", prepared by Andrews, Asbury & Robert, Inc. The Master Plan was prepared to support Special Assessment District 222, which will provide street, water, sanitary sewer and storm drainage improvements to the area. Improvements which benefit Mi Casa Estates are: a 60 inch storm drain in Tower, a 42 inch storm drain in San Ygnacio, water lines in Tower, sanitary sewer in San Ygnacio, and street paving in



LOCATION MAP
Figure 1



SOILS MAP
Figure 2



FLOOD INSURANCE RATE MAP
Figure 3

Tower and San Ygnacio. Since SAD 222 will not be in place for 18 to 24 months, interim retention ponding is imposed on all development projects within the District.

PROPOSED CONDITIONS

As shown by the Plan, the project consists of the development of the property into a 23 lot residential subdivision, with Tract "A" being created for the City of Albuquerque for the future Leavitt Reservoir. The Plan shows the elevations required to properly grade and construct the recommended improvements. The direction of drainage flows are given by flow arrows and on-site drainage basins are identified. All drainage improvements recommended by the Plan are detailed on Grading and Drainage Plan located in the back pocket of this report.

This project will be developed in two phases as follows:

PHASE ONE

Phase 1 will direct all stormwater to the southern end of Casa Del Sol where it will drain into a temporary retention pond located on Lots 12 and 13. The retention pond is sized to provide storage for a single 100 year 10 day storm draining from the project site. Undeveloped off-site runoff from Basin "C" will be routed through the pond via a spillway designed for the 100 year event.

A series of catch basins and connecting storm drains will be provided to convey runoff to the retention pond. The collection system is designed for the 100 year 6 hour developed condition for Basins "A" and "C". Upon completion of SAD 222 improvements the collection system will be connected to a 42 inch storm drain to be located within San Ygnacio Road.

PHASE TWO

Phase 2 consists of the reclamation of Lots 12 and 13 and connection to the proposed 42 inch storm drain in San Ygnacio Road, to be provided by SAD 222.

The proposed drainage Basins for the project are as follows:

BASIN "A"

This basin represents the majority of the subdivision. Basin "A" drains within Casa Del Sol to a bank of catch basins located just north of San Ygnacio. The catch basins will drain to the interim retention pond located on Lots 12 and 13. Upon completion of SD 222 drainage improvements, the catch basins will be connected to the 42 inch storm drain proposed in San Ygnacio allowing

development of Lots 12 and 13, per the Phase II Plan..

BASIN "B"

Basin "B" is a small area which consists of Lots 1 and 14 and that portion of Casa Del Sol positioned north of the proposed water block. Basin "B" drains into Tower Road.

BASIN "C"

This basin is an off-site area located west of the site. Basin "C" will enter the site through a concrete channel located between lots 17 and 18. Flows will then drain down Casa Del Sol to the proposed catch basins and storm drain.

BASIN "D"

Basin "D" represents Tract "A" and a portion of Tract 434 which is to become the City's Leavitt reservoir. A temporary retention pond will be constructed on Tract "A" as a temporary erosion control measure. This pond shall remain in place until the completion of SAD 222 improvements, and shall serve as an erosion control measure until the construction of the reservoir.

BASIN "E"

This basin represents the existing undeveloped off-site area which contributes to San Ygnacio along the project frontage.

BASIN "F"

This basin represents the existing undeveloped off-site area which contributes to Tower Road along the project frontage.

STREET PAVING IMPROVEMENTS

The project will provide the following street paving improvements:

1. Full width residential paving on Casa Del Sol Street and Casa De Luna Ave SW.
2. One-half width residential paving on San Ygnacio Road SW.
3. Curb, gutter, sidewalk, and temporary pavement on the south side of Tower Road SW. Due to the future construction of a 60 inch storm drain on the south side of Tower, permanent paving will be provided by SAD 222.

TEMPORARY EROSION CONTROL PLAN

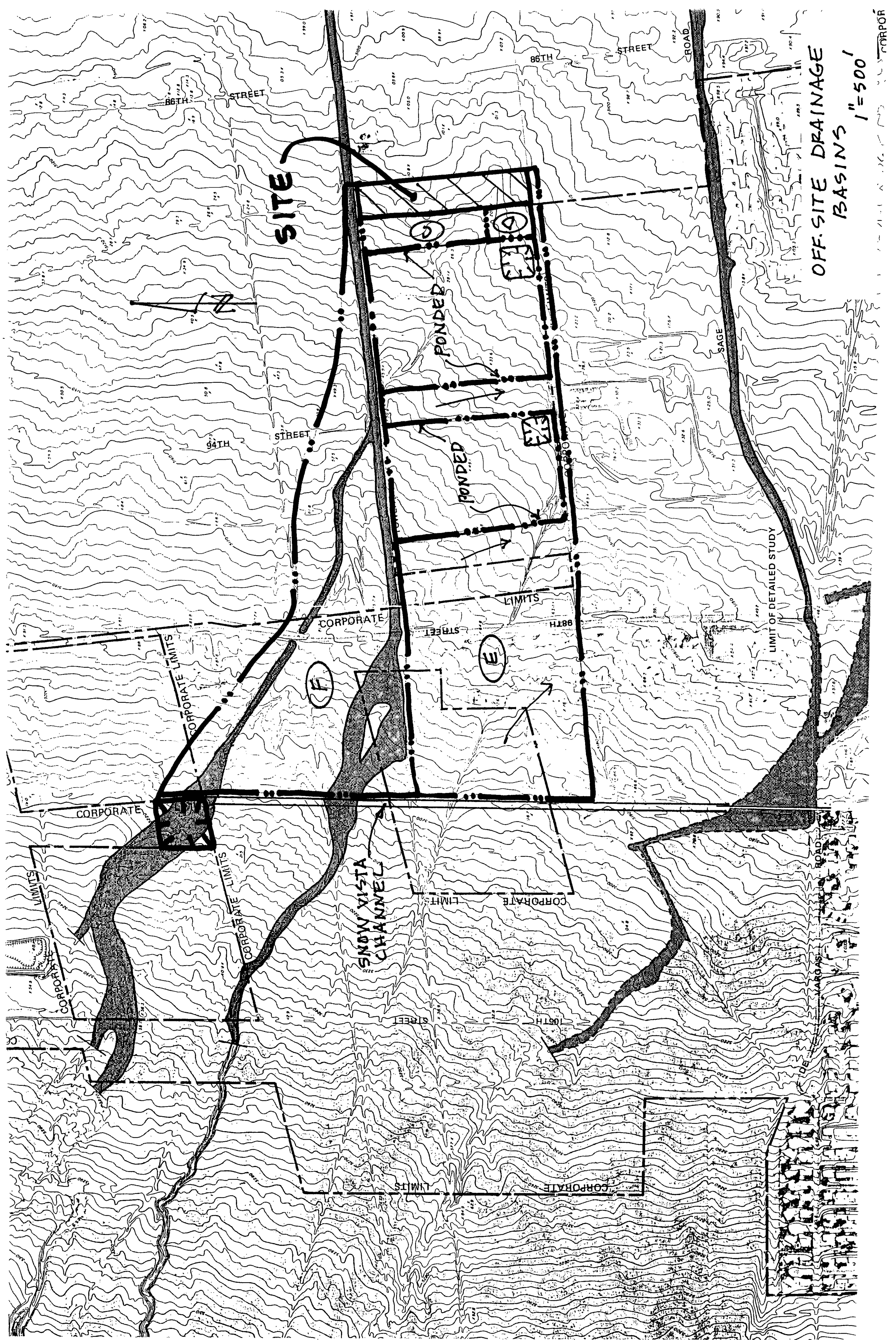
1. The intent of this temporary erosion control plan is to limit the discharge of sediment into the public street and/or storm drainage system and to protect adjacent properties from excess runoff during construction.
2. The Contractor shall obtain a Top Soil Disturbance Permit from Environmental Health prior to performing any earthwork related operations.
3. After the initial site clearing, the retention ponding areas should be rough graded to create a storage area for excess runoff and sediment.
4. Temporary erosion control berms should be constructed along the north, east and south project boundaries per Detail C/3 to direct excess runoff to the ponding area.
5. It is the Contractor's responsibility to properly maintain all temporary erosion control facilities during the construction phase of the project.

CALCULATIONS

The calculations shown herein define the 100 year/6 hour design storm falling with the project area under existing and developed conditions. The Hydrology is per "Section 22.2, Part A, DPM, Vol 2" Dated January 1993. Calculations are provided to demonstrate on-site improvement capacities and downstream capacity.

APPENDIX

AHYMO OUTPUT FILES



OFF-SITE DRAINAGE
BASINS
1" = 500'

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*****
*                               MI CASA ESTATES
*                               PROJECT HYDROLOGY
*****
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                RAIN SIX=2.20  RAIN DAY=2.66  DT=0.03333 HRS
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* DEVELOPED BASIN C
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* ADD BASINS A & DEVELOPED C FOR STORM SEWER DESIGN
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PRINT HYD        ID=2  CODE=1
PRINT HYD        ID=3  CODE=1
PRINT HYD        ID=4  CODE=1
PRINT HYD        ID=5  CODE=1
PRINT HYD        ID=6  CODE=1
PRINT HYD        ID=7  CODE=1
PRINT HYD        ID=8  CODE=1
PRINT HYD        ID=9  CODE=1
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FINISH

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USER NO. = BRASHERE.I01

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* MI CASA ESTATES
* PROJECT HYDROLOGY

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1.9953	1.9993	2.0031	2.0068	2.0104	2.0140	2.0174
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2.0768	2.0790	2.0812	2.0833	2.0855	2.0875	2.0896
2.0916	2.0936	2.0956	2.0976	2.0995	2.1014	2.1033
2.1051	2.1070	2.1088	2.1106	2.1124	2.1141	2.1159
2.1176	2.1193	2.1210	2.1227	2.1244	2.1260	2.1276
2.1292	2.1308	2.1324	2.1340	2.1355	2.1371	2.1386
2.1401	2.1416	2.1431	2.1446	2.1460	2.1475	2.1489
2.1504	2.1518	2.1532	2.1546	2.1560	2.1573	2.1587
2.1600	2.1614	2.1627	2.1640	2.1654	2.1667	2.1680
2.1692	2.1705	2.1718	2.1731	2.1743	2.1756	2.1768
2.1780	2.1792	2.1804	2.1817	2.1829	2.1840	2.1852
2.1864	2.1876	2.1887	2.1899	2.1910	2.1922	2.1933
2.1944	2.1956	2.1967	2.1978	2.1989	2.2000	

* UNDEVELOPED SITE

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AREA = .007813 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
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* DEVELOPED SITE

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* UNDEVELOPED BASIN C

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* EXISTING BASIN E

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* DEVELOPED BASIN C

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 UNIT PEAK = 12.505 CFS UNIT VOLUME = .9984 B = 526.28 P60 = 1.8700
 AREA = .003167 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .119825HR TP = .133300HR K/TP RATIO = .898914 SHAPE CONSTANT, N = 3.942902
 UNIT PEAK = 6.8307 CFS UNIT VOLUME = .9985 B = 351.34 P60 = 1.8700
 AREA = .002592 SQ MI IA = .43333 INCHES INF = 1.06333 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* DEVELOPED BASIN D

COMPUTE NM HYD ID=9 HYD NO=109 DA=0.002802 SQ MI
 PER A=0 PER B=25 PER C=25 PER D=50
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 5.5312 CFS UNIT VOLUME = .9973 B = 526.28 P60 = 1.8700
 AREA = .001401 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
 UNIT PEAK = 3.7276 CFS UNIT VOLUME = .9969 B = 354.67 P60 = 1.8700
 AREA = .001401 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* ADD BASINS A & UNDEVELOPED C FOR POND DESIGN

ADD HYD ID=10 HYD NO=110 ID I=3 ID II=5

* ADD BASINS A & DEVELOPED C FOR STORM SEWER DESIGN

ADD HYD ID=11 HYD NO=111 ID I=3 ID II=8

PRINT HYD ID=1 CODE=1

PARTIAL HYDROGRAPH 101.00

RUNOFF VOLUME = .43925 INCHES = .1830 ACRE-Feet
 PEAK DISCHARGE RATE = 6.49 CFS AT 1.533 HOURS BASIN AREA = .0078 SQ. MI.

PRINT HYD ID=2 CODE=1

PARTIAL HYDROGRAPH 102.00

RUNOFF VOLUME = 1.44021 INCHES = .6001 ACRE-FEET
PEAK DISCHARGE RATE = 17.42 CFS AT 1.500 HOURS BASIN AREA = .0078 SQ. MI.

PRINT HYD ID=3 CODE=1

PARTIAL HYDROGRAPH 103.00

RUNOFF VOLUME = 1.44021 INCHES = .5030 ACRE-FEET
PEAK DISCHARGE RATE = 14.60 CFS AT 1.500 HOURS BASIN AREA = .0065 SQ. MI.

PRINT HYD ID=4 CODE=1

PARTIAL HYDROGRAPH 104.00

RUNOFF VOLUME = 1.44021 INCHES = .3933 ACRE-FEET
PEAK DISCHARGE RATE = 11.42 CFS AT 1.500 HOURS BASIN AREA = .0051 SQ. MI.

PRINT HYD ID=5 CODE=1

PARTIAL HYDROGRAPH 105.00

RUNOFF VOLUME = .99441 INCHES = .3054 ACRE-FEET
PEAK DISCHARGE RATE = 10.60 CFS AT 1.500 HOURS BASIN AREA = .0058 SQ. MI.

PRINT HYD ID=6 CODE=1

PARTIAL HYDROGRAPH 106.00

RUNOFF VOLUME = .43925 INCHES = .0656 ACRE-FEET
PEAK DISCHARGE RATE = 2.33 CFS AT 1.533 HOURS BASIN AREA = .0028 SQ. MI.

PRINT HYD ID=7 CODE=1

PARTIAL HYDROGRAPH 107.00

RUNOFF VOLUME = 1.18662 INCHES = 5.5375 ACRE-FEET
PEAK DISCHARGE RATE = 87.48 CFS AT 1.766 HOURS BASIN AREA = .0875 SQ. MI.

PRINT HYD ID=8 CODE=1

PARTIAL HYDROGRAPH 108.00

RUNOFF VOLUME = 1.44021 INCHES = .4424 ACRE-FEET
PEAK DISCHARGE RATE = 12.84 CFS AT 1.500 HOURS BASIN AREA = .0058 SQ. MI.

PRINT HYD ID=9 CODE=1

PARTIAL HYDROGRAPH 109.00

RUNOFF VOLUME = 1.39058 INCHES = .2078 ACRE-FEET
PEAK DISCHARGE RATE = 6.12 CFS AT 1.500 HOURS BASIN AREA = .0028 SQ. MI.

PRINT HYD ID=10 CODE=2

PARTIAL HYDROGRAPH 110.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.400	11.9	2.800	.3	4.200	.1	5.599	.1
.067	.0	1.467	22.7	2.866	.2	4.266	.1	5.666	.1
.133	.0	1.533	24.4	2.933	.2	4.333	.1	5.733	.1
.200	.0	1.600	18.4	3.000	.2	4.400	.1	5.799	.1
.267	.0	1.667	13.2	3.066	.2	4.466	.1	5.866	.1
.333	.0	1.733	9.9	3.133	.1	4.533	.1	5.933	.1
.400	.0	1.800	7.8	3.200	.1	4.600	.1	5.999	.1
.467	.0	1.866	6.3	3.266	.1	4.666	.1	6.066	.1
.533	.0	1.933	5.2	3.333	.1	4.733	.1	6.133	.0
.600	.0	2.000	4.3	3.400	.1	4.800	.1	6.199	.0
.667	.0	2.066	3.4	3.466	.1	4.866	.1	6.266	.0
.733	.0	2.133	2.4	3.533	.1	4.933	.1	6.333	.0
.800	.0	2.200	1.7	3.600	.1	4.999	.1	6.399	.0
.867	.0	2.266	1.3	3.666	.1	5.066	.1	6.466	.0
.933	.0	2.333	1.0	3.733	.1	5.133	.1	6.533	.0
1.000	.0	2.400	.8	3.800	.1	5.199	.1	6.599	.0
1.067	.0	2.466	.7	3.866	.1	5.266	.1	6.666	.0
1.133	.0	2.533	.6	3.933	.1	5.333	.1	6.733	.0
1.200	.2	2.600	.5	4.000	.1	5.399	.1		
1.267	1.2	2.666	.4	4.066	.1	5.466	.1		
1.333	4.0	2.733	.3	4.133	.1	5.533	.1		

RUNOFF VOLUME = 1.23157 INCHES = .8084 ACRE-FEET
PEAK DISCHARGE RATE = 25.20 CFS AT 1.500 HOURS BASIN AREA = .0123 SQ. MI.

PRINT HYD ID=11 CODE=2

PARTIAL HYDROGRAPH 111.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.400	14.1	2.800	.4	4.200	.1	5.599	.1
.067	.0	1.467	24.8	2.866	.3	4.266	.1	5.666	.1
.133	.0	1.533	26.4	2.933	.3	4.333	.1	5.733	.1
.200	.0	1.600	19.6	3.000	.3	4.400	.1	5.799	.1
.267	.0	1.667	14.2	3.066	.2	4.466	.1	5.866	.1
.333	.0	1.733	11.0	3.133	.2	4.533	.1	5.933	.1
.400	.0	1.800	9.0	3.200	.2	4.600	.1	5.999	.1
.467	.0	1.866	7.5	3.266	.2	4.666	.1	6.066	.1
.533	.0	1.933	6.4	3.333	.2	4.733	.1	6.133	.1
.600	.0	2.000	5.5	3.400	.1	4.800	.1	6.199	.0
.667	.0	2.066	4.7	3.466	.1	4.866	.1	6.266	.0
.733	.0	2.133	3.2	3.533	.1	4.933	.1	6.333	.0
.800	.0	2.200	2.1	3.600	.1	4.999	.1	6.399	.0
.867	.0	2.266	1.6	3.666	.1	5.066	.1	6.466	.0
.933	.0	2.333	1.3	3.733	.1	5.133	.1	6.533	.0
1.000	.0	2.400	1.0	3.800	.1	5.199	.1	6.599	.0
1.067	.0	2.466	.9	3.866	.1	5.266	.1	6.666	.0
1.133	.0	2.533	.7	3.933	.1	5.333	.1	6.733	.0
1.200	.3	2.600	.6	4.000	.1	5.399	.1		
1.267	2.3	2.666	.5	4.066	.1	5.466	.1		
1.333	6.1	2.733	.4	4.133	.1	5.533	.1		

RUNOFF VOLUME = 1.44017 INCHES = .9453 ACRE-FOOT
 PEAK DISCHARGE RATE = 27.44 CFS AT 1.500 HOURS BASIN AREA = .0123 SQ. MI.

FINISH

NORMAL PROGRAM FINISH

END TIME (HR:MIN:SEC) = 09:08:57

CALCULATIONS

MI CASA ESTATES

OCT 1996

INTERIM RETENTION PONDS

6035

SIZE INTERIM RETENTION PONDS

1. MAIN POND ON LOTS 12 + 13

— SIZE FOR BASIN A DEVELOPED
FLOW.

PER ANYMO HYD 103:

$$Q_{100} = 14.6 \text{ CFS} \quad V_{100} = 0.503 \text{ AF} \\ = 21,911 \text{ CF}$$

PROVIDE V_{10} DAY VOLUME:

$$V_{10} = V_{360} + A_D (P_{100} - P_{360}) / 12$$

$$A_D = 0.55 (4.19 \text{ AC}) = 2.30 \text{ AC}$$

$$P_{100} = 3.67$$

$$P_{360} = 2.20''$$

$$\Rightarrow V_{10 \text{ DAY}} = 0.503 + 2.30 (1.47) / 12$$

$$= 0.7848 \text{ AF}$$

$$= 34,184 \text{ CF}$$

$$\Rightarrow \underline{\underline{42,050 \text{ CF PROVIDED}}}$$

MI CASA ESTATES

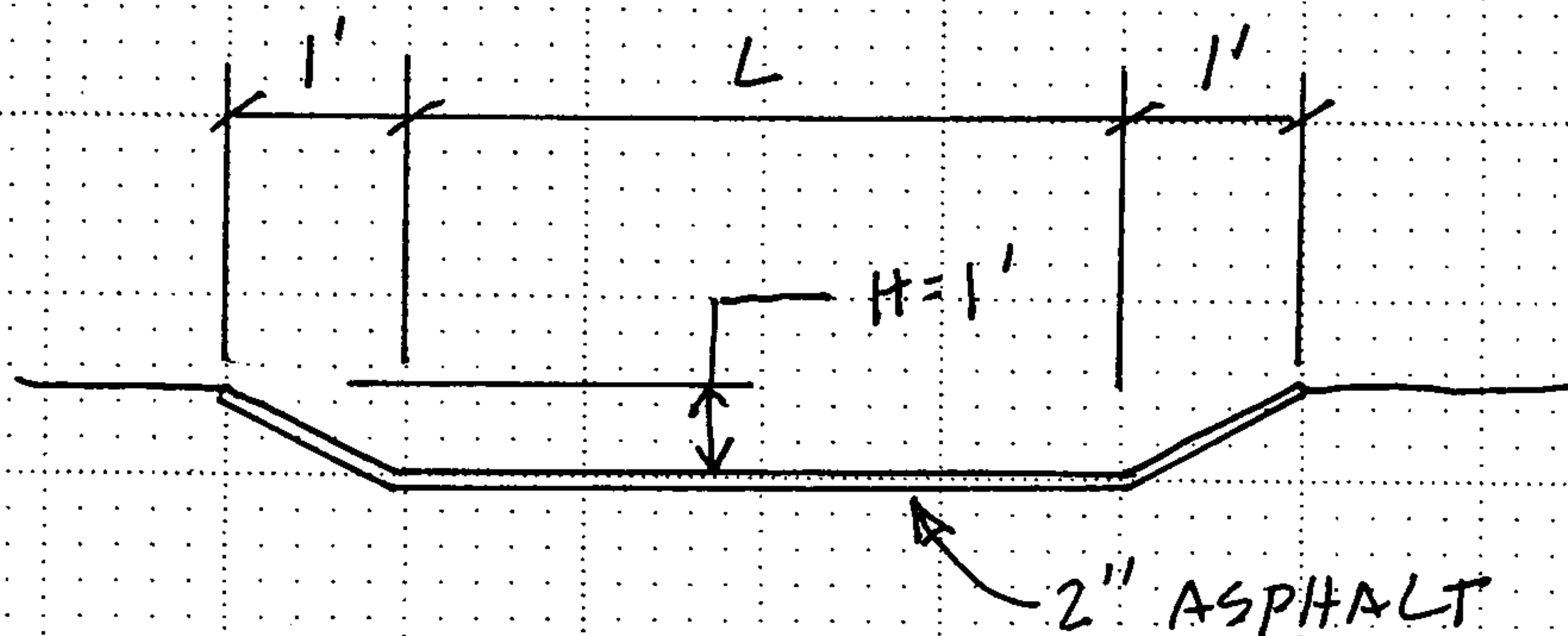
OCT 1996

INTERIM RETENTION PONDS

6035

OFF-SITE BASIN 'C' WILL ROUT THRU
POND. PROVIDE SPILLWAY FOR Q_{100} .

$$Q_{100} = 25.2 \text{ CFS} \quad \left[\text{BASINS A + UND C} \right]$$



WEIRS

Enter up to 10 weirs.

Enter <Return> only for flowrate and length to end.

FLOWRATE (CFS)	LENGTH (FT)	COEFF (-)	HEAD (FT)
25.20	9.3	2.700	1.00

MI CASA ESTATES

OCT 1996

INTERIM RETENTION POND

6035

2. TRACT A POND.

SIZE FOR UNDEV BASIN D:

PEZ A44WD 144D 106

 $Q_{100} = 2.33 \text{ CFS}$ $V_{100} = 0.066 \text{ AC FT}$ $= 2875 \text{ CF}$ POND TO REMAIN UNTIL
COMPLETION OF SAND 222.IF RESERVOIR SITE IS NOT
DEVELOPED AT COMPLETION OF
SAND 222, POND SHALL REMAIN
AS A TEMP EROSION CONTROL
MEASURE.

MI CASA ESTATES

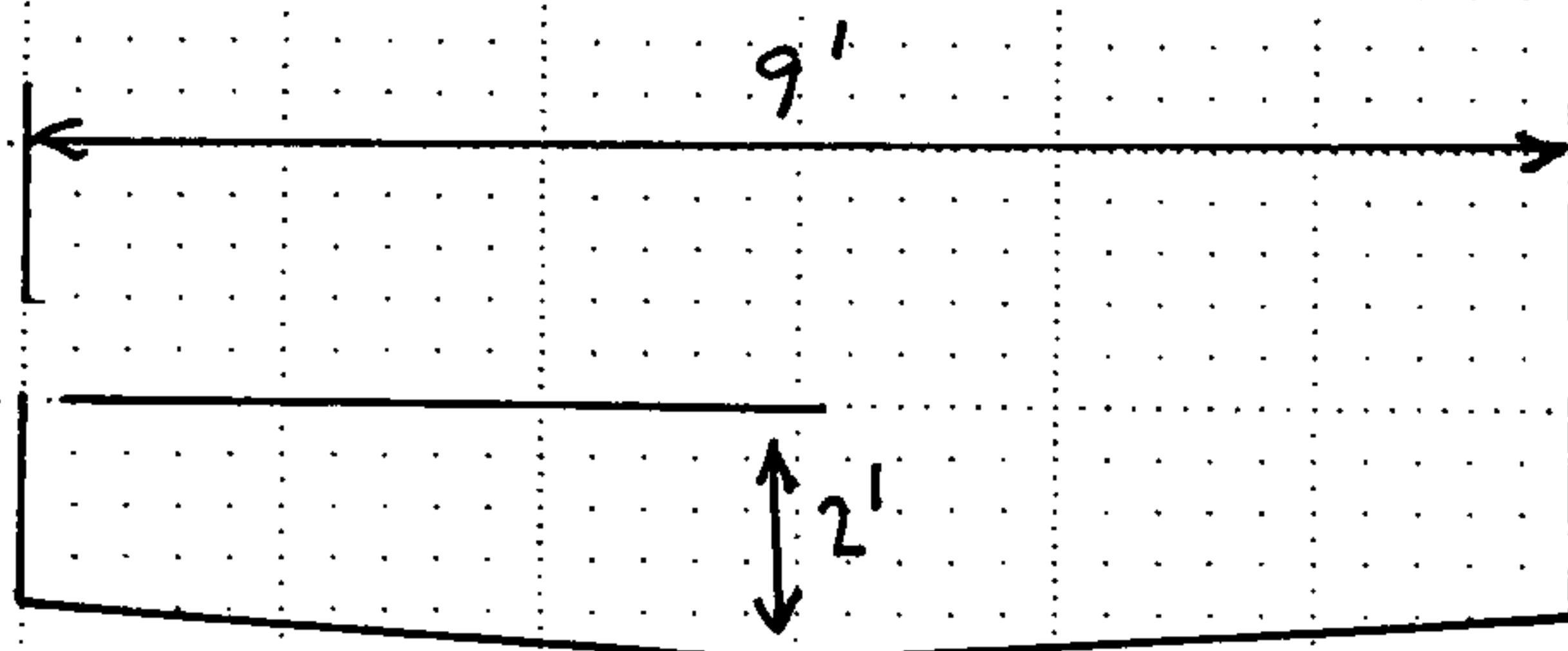
OCT 1996

BASIN C CHANNEL

6035

TEST BASIN B CHANNEL:

— 1. CHANNEL FLOW:

 $Q_{100} =$ TYPE - B' CHANNEL

PER A HYMO HYD 108:

 $Q_{100} = 12.84 \text{ CFS (BASIN C DEV)}$

MAN-MADE CHANNELS

VARIABLES LIST:

Y - FLOW DEPTH

B - CHANNEL BOTTOM WIDTH

S - CHANNEL SLOPE

Q - FLOWRATE

M - CHANNEL SIDE SLOPE

N - CHANNEL ROUGHNESS

VARIABLE TO BE SOLVED (Y, Q, B, M, S OR N) ? Y

Q (CFS) ? 12.84

B (FT) ? 9

M (FT/FT) ? 0

S (FT/FT) ? .01

N (FT^{1/6}) ? .013

RESULTS

Y= 0.29 FT

A= 2.65 SF

P= 9.59 FT

V= 4.85 FPS

F= 1.58 SUPER-CRITICAL FLOW

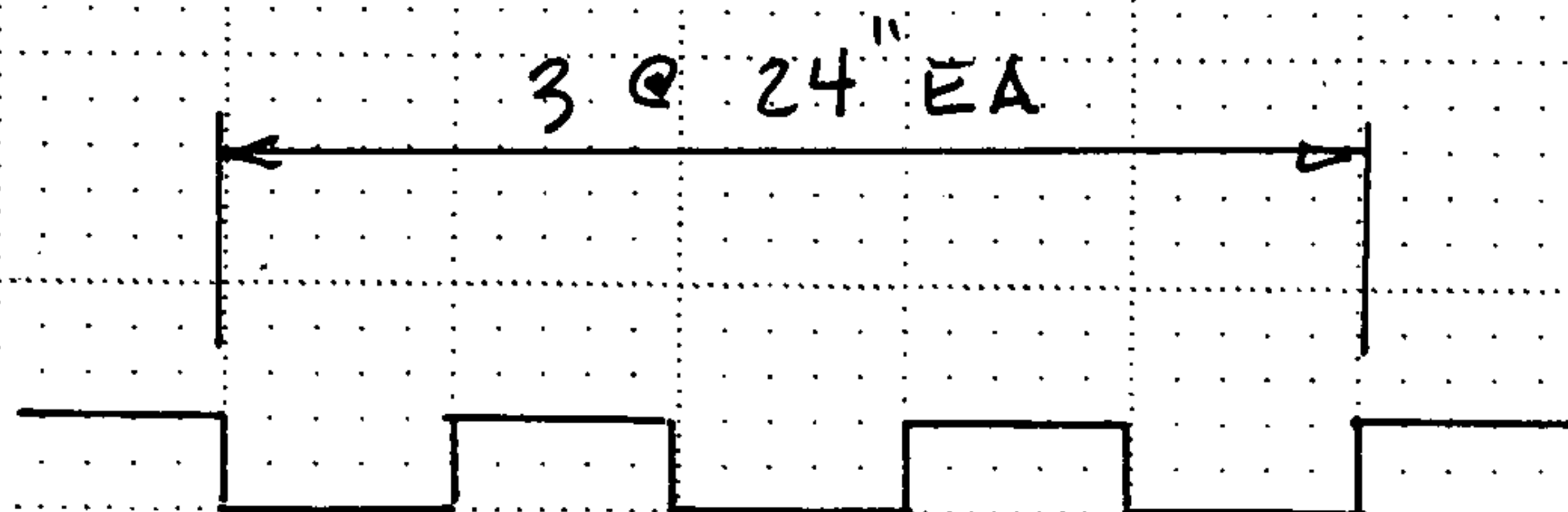
MI CASA ESTATES

OCT 1996

BASIN C CHANNEL

6035

2. TEST S/W CULVERTS

SECTION

$$Q_{100} = 12.84 \text{ CFS} = 4.3 \text{ CFS / CULVERT}$$

MAN-MADE CHANNELS

VARIABLES LIST:

Y - FLOW DEPTH

B - CHANNEL BOTTOM WIDTH

S - CHANNEL SLOPE

Q - FLOWRATE

M - CHANNEL SIDE SLOPE

N - CHANNEL ROUGHNESS

VARIABLE TO BE SOLVED (Y, Q, B, M, S OR N) ? Y

Q (CFS) ? 4.3

B (FT) ? 2

M (FT/FT) ? 0

S (FT/FT) ? .01

N (FT^{1/6}) ? .013

RESULTS

=====

Y= 0.42 FT

A= 0.84 SF

P= 2.84 FT

V= 5.09 FPS

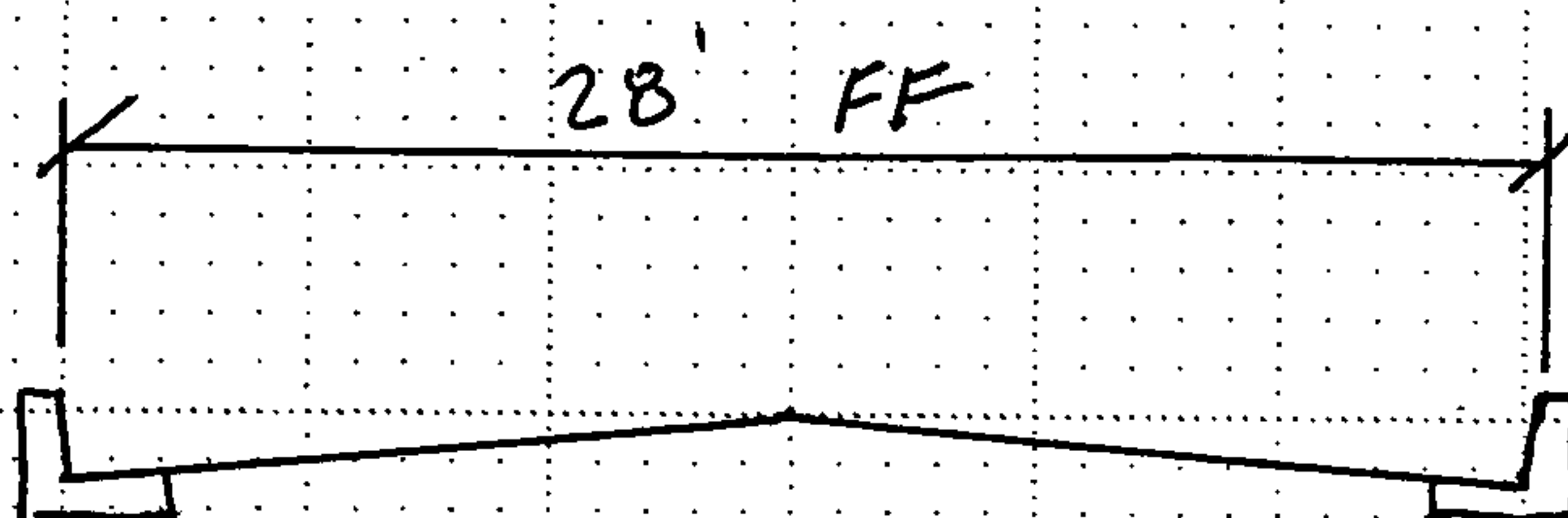
F= 1.38 SUPER-CRITICAL FLOW

MI CASA ESTATES

OCT 1996

STREET DEPTHS

6035

CHECK STREET DEPTH IN
CASA DEL SOL: $Q_{100} = 27.4 \text{ CFS}$ (DEV BASINS A + C)
SLOPE = 0.61%

VARIABLES LIST:

Y - FLOW ELEVATION

Q - FLOWRATE

S - CHANNEL SLOPE

VARIABLE TO BE SOLVED (Y, Q OR S) ? Y

Enter up to 20 cross-section points.
Enter <Return> only for distance to end.

Q (CFS) ? 27.5

S (FT/FT) ? .0061

CROSS-SECTION POINTS

DIST ELEV COEFF DIST ELEV COEFF

0	100.67.017		
0	100.00.017		
14	100.28.017		
28	100.00.017		
28	100.67.017		

RESULTS

Y=	100.45 FT
A=	8.75 SF
P=	28.91 FT
V=	3.14 FPS
F=	0.99 SUB-CRITICAL FLOW

 $d_{100} = 0.45 \text{ FT}$ $V = 3.14 \text{ FPS}$

STORM DRAIN DESIGN

Date: 10-21-96
Time: 14:08:35
Page: 1 of 1

RAINFALL FILE: C:\6035-SDE.rnd 0 YEAR DESIGN STORM

LINE ID		FLOW RATE INFO						PIPE INFO				HYDRAULIC INFO			
LINE#	DESCRIPTION DOWNLINE#	INC AR TOT AR (ac)	RUNOFFC WEIGHTD C	INLTIME Tc (min)	INLT I TOTL I (in/h)	INC CIA TOT CIA (cfs)	INPUTQ TOTALQ (cfs)	UNIFORM FLOWCAP (cfs)	SIZE/ TYPE (in)	INVERT UP/DOWN (ft)	PIPE LEN (ft)	NVAL INVSLOP (ft/ft)	HGLSLOPE JLC (ft/ft)	HYD GRD UP/DOWN (ft)	VEL UP/DOWN (ft/s)
1	DNLN = 0	0.0 0.0	0.00 0.00	0.00 0.20	0.00 0.00	0.00 0.00	0.00 27.50	31.3	27D 27D	106.83 106.33	49	0.013 0.010	0.010 1.00	108.47 107.97	8.87 8.87
2	DNLN = 1	0.0 0.0	0.00 0.00	0.00 0.07	0.00 0.00	0.00 0.00	4.75 13.75	19.6	18D 18D	108.45 107.83	18	0.013 0.035	0.008 1.00	109.83 109.69	8.07 7.78
3	DNLN = 2	0.0 0.0	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	9.00 9.00	9.0	18D 18D	108.85 108.65	27	0.013 0.007	0.021 1.00	111.42 110.85	5.09 5.09
4	DNLN = 1	0.0 0.0	0.00 0.00	0.00 0.08	0.00 0.00	0.00 0.00	4.85 13.75	16.5	18D 18D	108.45 107.83	25	0.013 0.025	0.014 1.00	110.04 109.69	7.78 7.78
5	DNLN = 4	0.0 0.0	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	8.90 8.90	8.9	18D 18D	108.85 108.65	28	0.013 0.007	0.020 1.00	111.56 110.99	5.04 5.04

SAD 222 DOCUMENTATION

ANDREWS, ASBURY & ROBERT, INC.

149 Jackson N.E.
ALBUQUERQUE, NEW MEXICO 87108

(505) 265-6631

TO Dennis Lorenz

LETTER OF TRANSMITTAL

DATE <u>Sept 10 96</u>	JOB NO. <u>572</u>
ATTENTION <u>Dennis Lorenz</u>	
RE:	

WE ARE SENDING YOU ☐ Attached ☐ Under separate cover via _____ the following items:

- ☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION
			Drainage rpt shts
			P & P's paving
			Plans utilities

THESE ARE TRANSMITTED as checked below:

- ☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☒ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☐ For review and comment ☐ _____
☐ FOR BIDS DUE _____ 19 _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS _____

COPY TO File 572

SIGNED: [Signature]

DRAINAGE INFORMATION SHEET

PROJECT TITLE: MI CASA ESTATES ZONE ATLAS/DRNG. FILE #: L9-115
DRB #: 96-285 EPC #: — WORK ORDER #: —
LEGAL DESCRIPTION: TRACT 433 TOWN OF ATRISCO GRANT UNIT 3
CITY ADDRESS: TOWER RD SW
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: CHRONIS ENTERPRISES CONTACT: —
ADDRESS: 1102 WASHINGTON NE PHONE: 836-2660
ARCHITECT: NA CONTACT: —
ADDRESS: — PHONE: —
SURVEYOR: PRECISION SURVEYS CONTACT: L. MEDRAND
ADDRESS: 2929 COOKS NW PHONE: 839-0569
CONTRACTOR: — 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

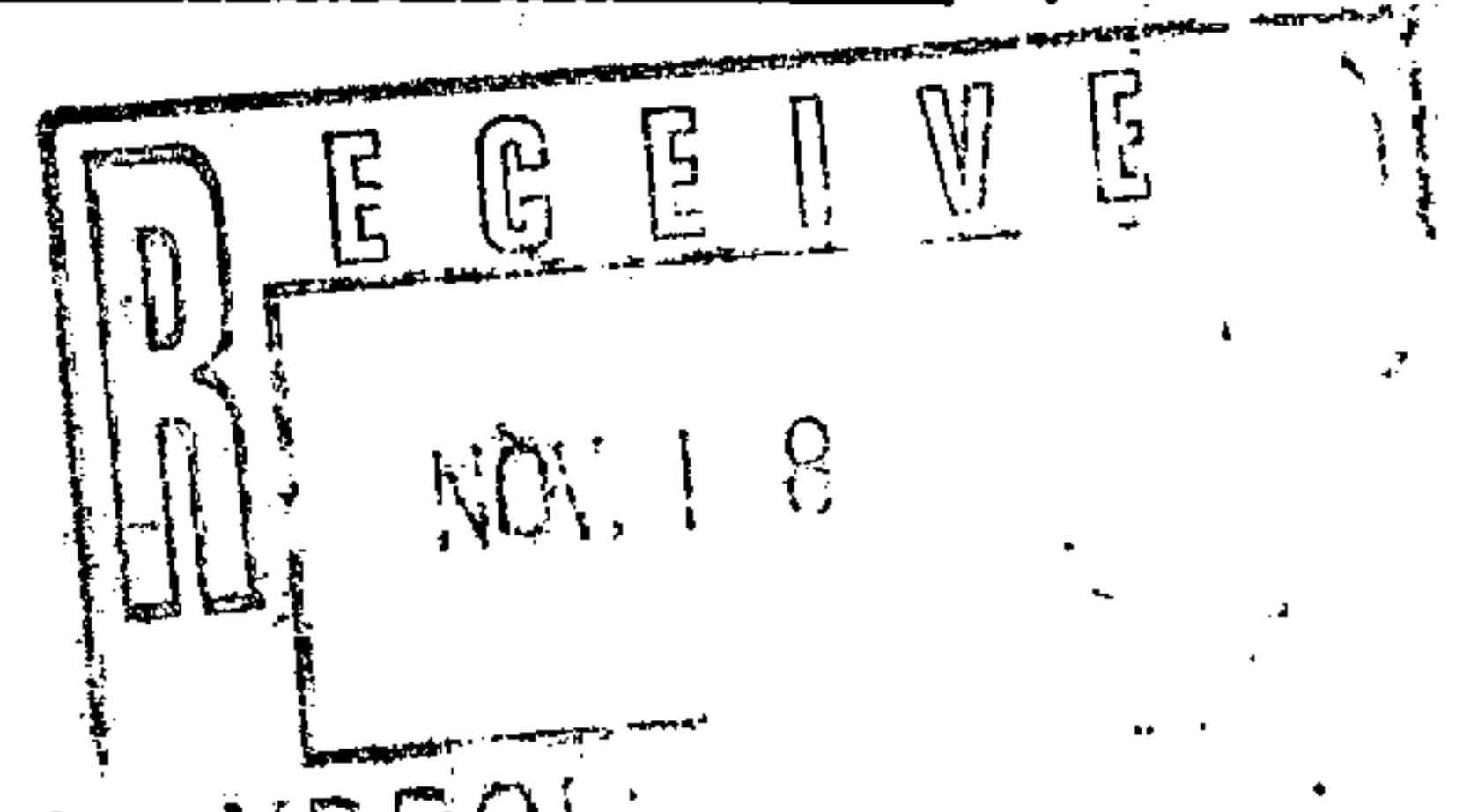
CHECK TYPE OF APPROVAL SOUGHT:

- ☐ 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:

11-18-96

BY:

Dennis A. Lorenz

LETTER OF TRANSMITTAL

BRASHER & LORENZ, INC. CONSULTING ENGINEERS

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

TO: FRED AGUIRRE DATE: 11-18-96
CITY HYDROLOGY

SUBJECT: M1 CASA ESTATES DRB 96-285

WE ARE SENDING YOU: ATTACHED UNDER SEPARATE COVER VIA THE FOLLOWING

COPIES	DATE	DESCRIPTION
<u>1</u>		<u>APPROVED GRADING PLAN</u>
<u>1</u>		<u>PRELIM PLAT</u>
<u>1</u>		<u>INFRASTRUCTURE LIST</u>

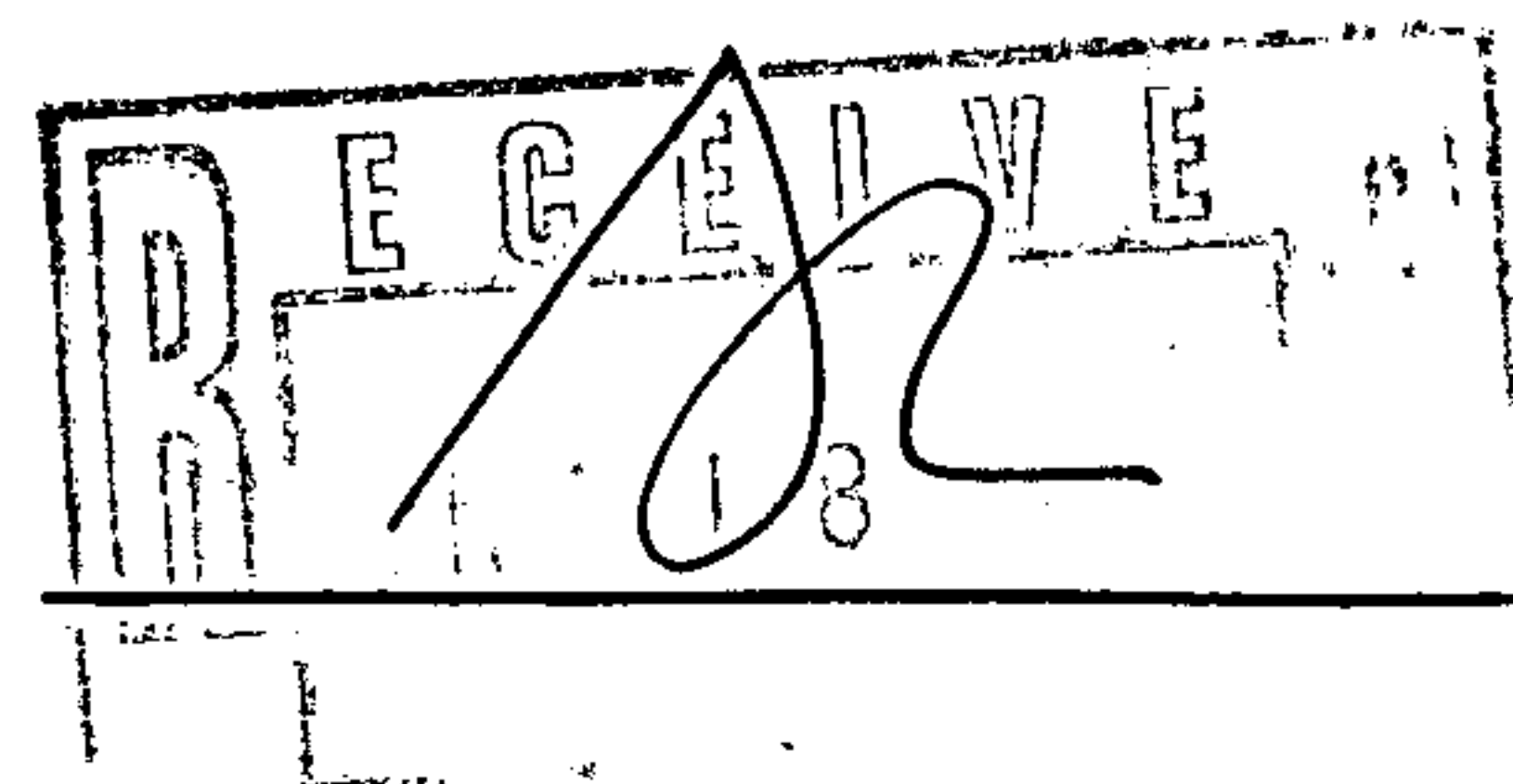
THESE ARE TRANSMITTED AS CHECKED BELOW:

FOR APPROVAL FOR YOUR USE X AS REQUESTED X FOR REVIEW AND COMMENT
OTHER

REMARKS:

COPY TO: 6035

SIGNED:



IF ENCLOSURES ARE NOT AS NOTED, PLEASE CALL

Figure 12

EXHIBIT "A"

To Subdivision Improvements Agreement
DEVELOPMENT REVIEW BOARD (DRB) REQUIRED INFRASTRUCTURE LISTING
for **MI CASA ESTATES**

Following is a summary of Public/Private Infrastructure required to be constructed or financially guaranteed to be constructed for the above development. This summary is not necessarily a complete listing. During the design process, if the City determines that appurtenant items have not been included in the summary, those items will be included in the listing and related financial guarantee, if the items normally are the Subdivider responsibility. In addition, any unforeseen items which arise during construction which are necessary to complete the project and which normally are the Subdivider's responsibility are the responsibility of the Subdivider and will be included in the financial guarantee provided to the City.

SIZE	IMPROVEMENT	LOCATION	FROM	TO
28'	Street*	Casa Del Sol St SW	Tower Rd SW	San Ygnacio Rd
28'	Street*	Casa de Luna Ave SW	Casa Del Sol St SW	East PL Lot 9
24'	Street**	Tower Road SW	90th Street SW	East PL Lot 1
6"	Waterline	Casa Del Sol St SW	Tower Rd SW	San Ygnacio Rd
6"	Waterline	Casa de Luna Ave SW	Casa Del Sol St SW	East PL Lot 9
8"	Waterline	Tower Road SW	West PL Lot 14	East PL Lot 1
8"	Sanitary Sewer	Casa Del Sol St SW	Tower Rd SW	San Ygnacio Rd
8"	Sanitary Sewer	Suneast Dr SW	San Ygnacio Rd SW	Sunridge Ave SW
30"	Storm Drain#	Casa Del Sol St SW	San Ygnacio Rd SW	150 ft North
10'	Concrete Channel	Between Lots 17 & 18	Casa Del Sol St NW	West PL Lot 18

Interim Retention Pond on Lots 12 & 13, to be reclaimed upon construction of 42" SD by SAD 222

* Street improvement to include curb & gutter, 4' sidewalk, and residential street pavement. Sidewalk construction to be deferred on fronts of lots until construction of buildings on an individual lot basis.

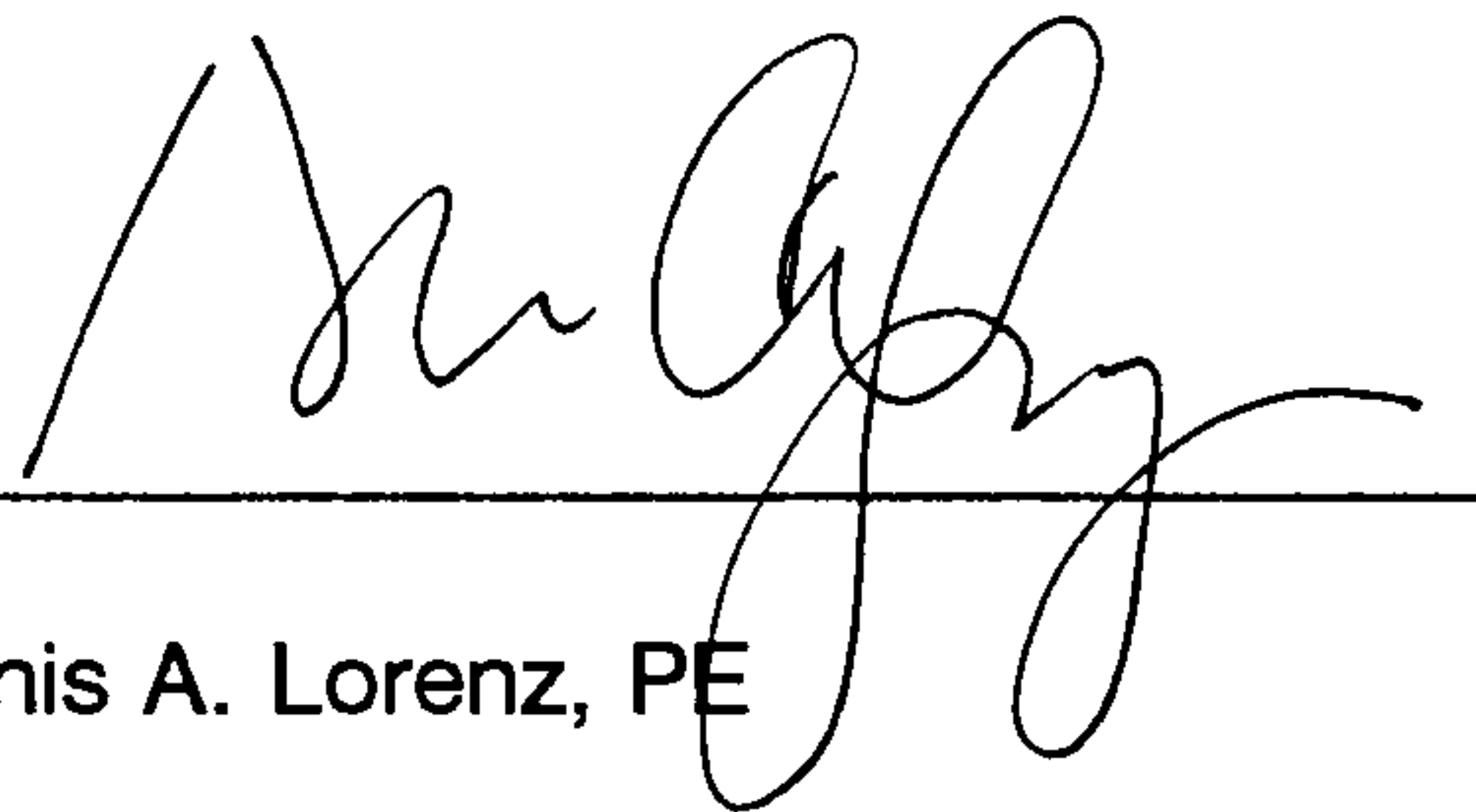
- ** Street improvement to include 24 ' wide temporary pavement and temporary drainage improvements as required by DRC.
- # Storm drain complete with catch basins, manholes ,connector pipes, temporary connection to interim retention pond, and stubout to future 42" SD.

Residential street lighting per DPM

Certification of Grading to include private retaining walls (required for release of financial guarantee).

DEFERRED IMPROVEMENTS (PENDING SAD 222):

SIZE	IMPROVEMENT	LOCATION	FROM	TO
24'	Street***	Tower Road SW	West PL Lot 14	East PL Lot 1
24'	Street****	San Ygnacio Road SW	West PL Tract "A"	East PL Lot 13
42"	Storm Drain	San Ygnacio Road SW	West PL Tract "A"	East PL Lot 13
60"	Storm Drain	Tower Road SW	West PL Lot 14	East PL Lot 1
***	Street improvement to include curb & gutter, 6' sidewalk, and one-half width arterial street pavement			
****	Street improvement to include curb & gutter, 6' sidewalk, and one-half width residential street pavement			

Prepared By: 

Print Name: Dennis A. Lorenz, PE

Firm: Brasher & Lorenz, Inc.

Development Review Board Member Approval

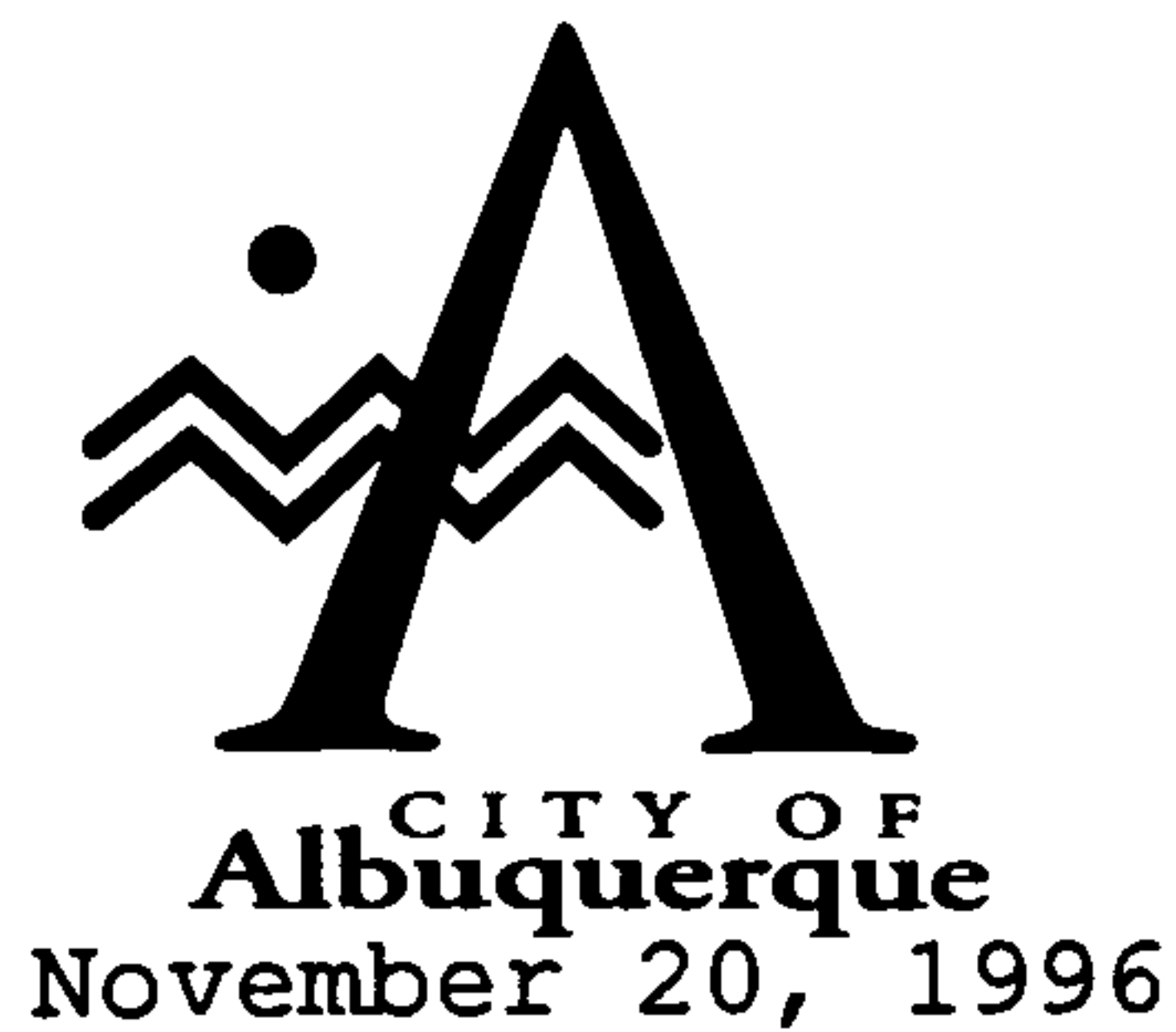
Planning Director

Utility Development

Parks Design Development

City Engineer/AMAFCA

Transportation Development



Martin J. Chávez, Mayor

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

**RE: MI CASA ESTATES (L9-D15). UPDATED INFRASTRUCTURE LIST SUBMITTAL
FOR PRELIMINARY PLAT APPROVAL. ENGINEER'S STAMP DATED 11-5-96.**

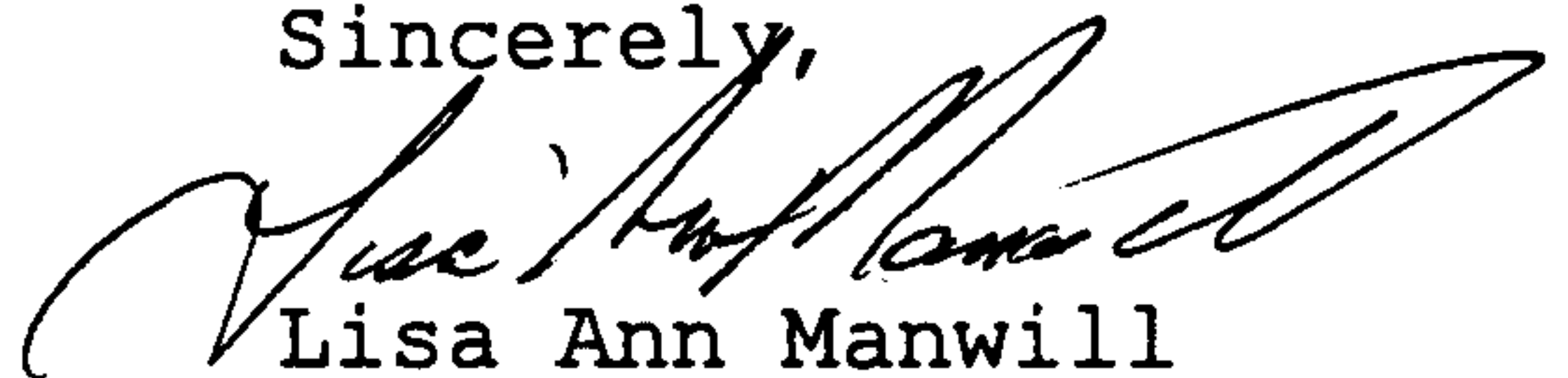
Dear Mr. Lorenz:

Based on the updated information provided on your November 18, 1996 submittal, the above referenced project is approved for Preliminary Plat.

For your DRC submittal, please be certain to address drainage improvements corresponding with the temporary paving improvements in Tower Road.

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

Sincerely,



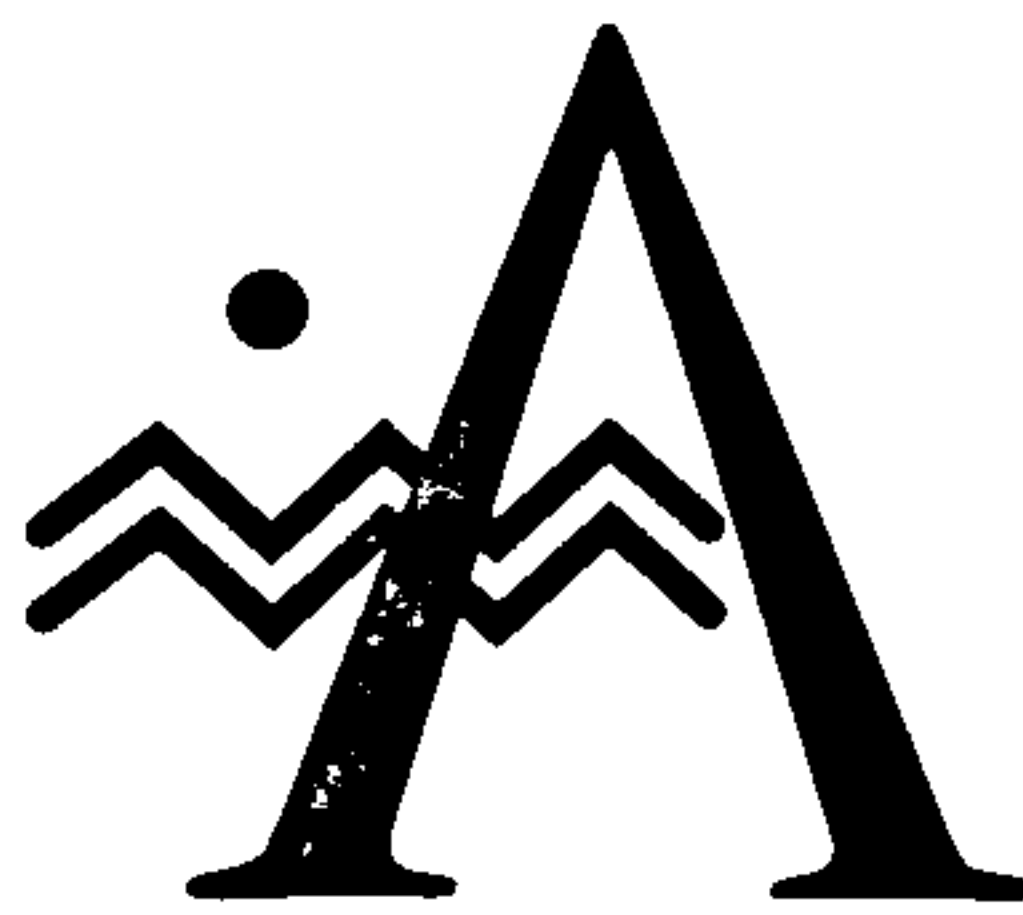
Lisa Ann Manwill
Engineering Assoc./Hyd.

c: Andrew Garcia

File

Good for You, Albuquerque!





CITY OF
Albuquerque

November 12, 1996

Martin J. Chávez, Mayor

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

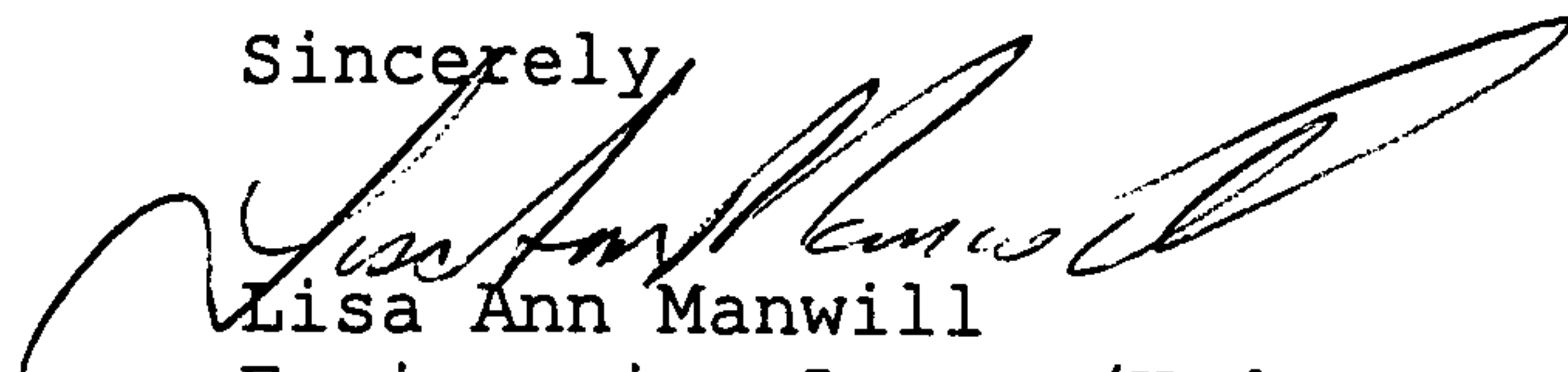
**RE: MI CASA ESTATES (L9-D15). DRAINAGE REPORT SUBMITTAL FOR
PRELIMINARY PLAT APPROVAL. ENGINEER'S STAMP DATED 11-5-96.**

Dear Mr. Lorenz:

Based on the information provided on your November 6, 1996 submittal, the above referenced project is approved for Preliminary Plat. With your next submittal, please be certain to include the 10-foot concrete channel on your infrastructure list.

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~~

Good for You, Albuquerque!







TABLE 2
TOWER/SAGE DRAINAGE MASTER PLAN
AHYMO BASIN PARAMETER WORKSHEET
PEAK BASIN FLOWS AND VOLUMES

(ALL FLOWS & VOLUMES INCLUDE A 5% BULKING FACTOR)

BASIN	AREA		LENGTH (ft.)	ELEV. DIFF. (ft.)	SLOPE (%)	K	VEL (fps)	T(c) (hr.)	T(p) (hr.)	LAND TREATMENT (%)				10 YEAR		100 YEAR	
														PEAK FLOW (6hr.) (cfs)	RUNOFF VOLUME (24hr.) (ac.ft.)	PEAK FLOW (6hr.) (cfs)	RUNOFF VOLUME (24hr.) (ac.ft.)
	(ac.)	(sq.mi.)								A	B	C	D				
A1-D	29.3	0.0458	400	8.0	2.00	1.0	1.41	0.08	0.05								
			500	3.0	0.60	2.0	1.55	0.09	0.06								
			900	25.0	2.78	3.0	5.00	<u>0.05</u>	<u>0.03</u>								
								0.22	0.15		24		76	70	3.2	112	5.2
		TOTAL =															
A2-D	25.3	0.0395	200	6.0	3.00	0.7	1.21	0.05	0.03								
			850	23.0	2.71	3.0	4.93	0.05	0.03								
			1000	6.0	0.60	3.0	2.32	<u>0.12</u>	<u>0.08</u>								
								0.21	0.14		30		70	59	2.6	96	4.2
		TOTAL =															
A3-D	26.8	0.0419	200	4.0	2.00	0.7	0.99	0.06	0.04								
			900	9.0	1.00	3.0	3.00	0.08	0.06								
			750	18.0	2.40	3.0	4.65	<u>0.04</u>	<u>0.03</u>								
								0.18	0.12		35		65	62	2.6	103	4.3
		TOTAL =															
A4-D	28.1	0.0439	200	6.0	3.00	0.7	1.21	0.05	0.03								
			800	16.0	2.00	3.0	4.24	0.05	0.03								
			1000	6.0	0.60	3.0	2.32	<u>0.12</u>	<u>0.08</u>								
								0.22	0.15		20		80	69	3.2	110	5.1
		TOTAL =															
A5-D	28.9	0.0452	200	4.0	2.00	0.7	0.99	0.06	0.04								
			950	8.0	0.84	3.0	2.75	0.10	0.06								
			900	18.0	2.00	3.0	4.24	<u>0.06</u>	<u>0.04</u>								
								0.21	0.14		40		60	61	2.6	103	4.4
		TOTAL =															
A6-D	28.9	0.0452	200	4.0	2.00	0.7	0.99	0.06	0.04								
			950	8.0	0.84	3.0	2.75	0.10	0.06								
			900	18.0	2.00	3.0	4.24	<u>0.06</u>	<u>0.04</u>		35	10	55			86.4	3.6
								0.21	0.14		50		50	54	2.3	95	4.0
		TOTAL =															

SEE MAP NO. 2 FOR BASIN IDENTIFICATION

TABLE 2
TOWER/SAGE DRAINAGE MASTER PLAN
AHYMO BASIN PARAMETER WORKSHEET
PEAK BASIN FLOWS AND VOLUMES

(ALL FLOWS & VOLUMES INCLUDE A 5% BULKING FACTOR)

BASIN	AREA		LENGTH (ft.)	ELEV. DIFF. (ft.)	SLOPE (%)	K	VEL (fps)	T(c) (hr.)	T(p) (hr.)	LAND TREATMENT				10 YEAR		100 YEAR	
	(ac.)	(sq.mi.)								($\%$)				PEAK FLOW (6hr.) (cfs)	RUNOFF VOLUME (24hr.) (ac.ft.)	PEAK FLOW (6hr.) (cfs)	RUNOFF VOLUME (24hr.) (ac.ft.)
										A	B	C	D				
A7-D	13.2	0.0206	150	1.0	0.67	0.7	0.57	0.07	0.05								
			400	1.0	0.25	3.0	1.50	0.07	0.05								
			900	18.0	2.00	3.0	4.24	<u>0.06</u>	<u>0.04</u>		35	10	55			$\Delta=3$	1.6
			TOTAL =					0.21	0.14		50		50	25	1.0	46.2 43	1.8
A8-D	36.5	0.0570	200	4.0	2.00	0.7	0.99	0.06	0.04								
			900	21.0	2.33	3.0	4.58	0.05	0.04								
			1250	6.0	0.48	3.0	2.08	<u>0.17</u>	<u>0.11</u>								
			TOTAL =					0.28	0.19		30		70	73	3.7	119	6.1
A9-D	6.5	0.0102	200	1.0	0.50	0.7	0.49	0.11	0.07								
			900	22.0	2.44	3.0	4.69	<u>0.05</u>	<u>0.04</u>								
			TOTAL =					0.17	0.11		50		50	13	0.5	23	0.9
A10-D	6.5	0.0102	150	2.0	1.33	0.7	0.81	0.05	0.03								
			900	18.0	2.00	3.0	4.24	0.06	0.04								
			100	2.0	2.00	3.0	4.24	<u>0.01</u>	<u>0.00</u>								
			TOTAL =					0.12	0.08		50		50	13	0.5	23	0.9
A11-D	5.5	0.0086	200	1.0	0.50	1.0	0.71	0.08	0.05								
			1000	13.0	1.30	3.0	3.42	0.08	0.05								
			200	2.0	1.00	3.0	3.00	<u>0.02</u>	<u>0.01</u>								
			TOTAL =					0.18	0.12		24		76	(14)	0.6	23	1.0
A12-D	23.0	0.0359	200	2.0	1.00	0.7	0.70	0.08	0.05								
			950	12.0	1.26	3.0	3.37	0.08	0.05								
			650	8.0	1.23	3.0	3.33	<u>0.05</u>	<u>0.04</u>								
			TOTAL =					0.21	0.14		24		76	56	2.5	91	4.1

SEE MAP NO. 2 FOR BASIN IDENTIFICATION

TABLE 2
TOWER/SAGE DRAINAGE MASTER PLAN
AHYMO BASIN PARAMETER WORKSHEET
PEAK BASIN FLOWS AND VOLUMES

(ALL FLOWS & VOLUMES INCLUDE A 5% BULKING FACTOR)

BASIN	AREA		LENGTH (ft.)	ELEV. DIFF. (ft.)	SLOPE (%)	K	VEL (fps)	T(c) (hr.)	T(p) (hr.)	LAND TREATMENT				10 YEAR		100 YEAR	
	(ac.)	(sq.mi.)								($\%$)				PEAK FLOW (6hr.) (cfs)	RUNOFF VOLUME (24hr.) (ac.ft.)	PEAK FLOW (6hr.) (cfs)	RUNOFF VOLUME (24hr.) (ac.ft.)
										A	B	C	D				
A13-D	28.9	0.0452	200	3.0	1.50	0.7	0.86	0.06	0.04								
			1000	3.0	0.30	3.0	1.64	0.17	0.11								
			850	7.0	0.82	3.0	2.72	<u>0.09</u>	<u>0.06</u>								
			TOTAL =					0.32	0.21		35		65	52	2.8	86	4.6
A14-D	28.9	0.0452	300	0.5	0.17	1.0	0.41	0.20	0.14								
			1000	4.0	0.40	3.0	1.90	0.15	0.10								
			800	1.0	0.13	3.0	1.06	<u>0.21</u>	<u>0.14</u>								
			TOTAL =					0.56	0.37		30		70	39	2.9	63	4.8
A15-D	16.2	0.0253	200	1.0	0.50	0.7	0.49	0.11	0.07								
			950	4.0	0.42	3.0	1.95	0.14	0.09								
			300	1.0	0.33	3.0	1.73	<u>0.05</u>	<u>0.03</u>								
			TOTAL =					0.30	0.20		40		60	28	1.4	48	2.5
A16-D	40.8	0.0638	200	0.5	0.25	0.7	0.35	0.16	0.11								
			950	1.0	0.11	3.0	0.97	0.27	0.18								
			500	3.0	0.60	3.0	2.32	0.06	0.04								
			1250	56.0	4.48	3.0	6.35	<u>0.05</u>	<u>0.04</u>								
TOTAL =						0.54	0.36		50		50	43	3.2	76	5.6		
A17-D	6.9	0.0108	150	3.0	2.00	0.7	0.99	0.04	0.03								
			900	14.0	1.56	3.0	3.74	0.07	0.04								
			100	1.0	1.00	3.0	3.00	<u>0.01</u>	<u>0.01</u>								
			TOTAL =						0.12	0.08		50		50	14	0.5	24

SEE MAP NO. 2 FOR BASIN IDENTIFICATION

TABLE 2
TOWER/SAGE DRAINAGE MASTER PLAN
AHYMO BASIN PARAMETER WORKSHEET
PEAK BASIN FLOWS AND VOLUMES

(ALL FLOWS & VOLUMES INCLUDE A 5% BULKING FACTOR)

BASIN	AREA		LENGTH (ft.)	ELEV. DIFF. (ft.)	SLOPE (%)	K	VEL (fps)	T(c) (hr.)	T(p) (hr.)	LAND TREATMENT (%)				10 YEAR		100 YEAR	
														PEAK FLOW (6hr.) (cfs)	RUNOFF VOLUME (24hr.) (ac.ft.)	PEAK FLOW (6hr.) (cfs)	RUNOFF VOLUME (24hr.) (ac.ft.)
	(ac.)	(sq.mi.)								A	B	C	D				
A18-D	6.6	0.0103	150	2.0	1.33	0.7	0.81	0.05	0.03								
			900	8.0	0.89	3.0	2.83	0.09	0.06								
			100	1.0	1.00	3.0	3.00	0.01	0.01								
			TOTAL =					0.15	0.10		40		60	14	0.6	24	1.0
A19-D	6.9	0.0108	150	1.0	0.67	0.7	0.57	0.07	0.05								
			900	2.0	0.22	3.0	1.41	0.18	0.12								
			100	0.5	0.50	3.0	2.12	0.01	0.01								
			TOTAL =					0.26	0.18		40		60	13	0.6	22	1.1
A20-D	4.4	0.0069	150	1.0	0.67	0.7	0.57	0.07	0.05								
			500	1.0	0.20	3.0	1.34	0.10	0.07								
			100	0.5	0.50	3.0	2.12	0.01	0.01								
			TOTAL =					0.19	0.13		40		60	10	0.4	16	0.7
B1-D	14.7	0.0230	200	5.0	2.50	0.7	1.11	0.05	0.03								
			1150	25.0	2.17	3.0	4.42	0.07	0.05								
			TOTAL =					0.12	0.08		32		68	35	1.5	58	2.4
B2-D	22.4 = 179 to 12.4	0.0350	200	6.0	3.00	0.7	1.21	0.05	0.03								
			1100	19.0	1.73	3.0	3.94	0.08	0.05							46 cfs	
			700	15.0	2.14	3.0	4.39	0.04	0.03								
			TOTAL =					0.17	0.11		40		60	49	2.0	83	3.4
B3-D	27.9	0.0436	200	2.0	1.00	0.7	0.70	0.08	0.05								
			1000	16.0	1.60	3.0	3.79	0.07	0.05								
			900	13.0	1.44	3.0	3.61	0.07	0.05		35	10	55			94.8	3.5
			TOTAL =					0.22	0.15		50		50	51	2.2	89	3.8

Δ = 6 cfs

SEE MAP NO. 2 FOR BASIN IDENTIFICATION

TABLE 2
TOWER/SAGE DRAINAGE MASTER PLAN
AHYMO BASIN PARAMETER WORKSHEET
PEAK BASIN FLOWS AND VOLUMES

(ALL FLOWS & VOLUMES INCLUDE A 5% BULKING FACTOR)

														10 YEAR		100 YEAR	
BASIN	AREA		LENGTH (ft.)	ELEV. DIFF. (ft.)	SLOPE (%)	K	VEL (fps)	T(c) (hr.)	T(p) (hr.)	LAND TREATMENT				PEAK FLOW (6hr.) (cfs)	RUNOFF VOLUME (24hr.) (ac.ft.)	PEAK FLOW (6hr.) (cfs)	RUNOFF VOLUME (24hr.) (ac.ft.)
	(ac.)	(sq.mi.)								($\%$)							
										A	B	C	D				
B4-D	14.7	0.0230	200	5.0	2.50	0.7	1.11	0.05	0.03								
			450	6.0	1.33	3.0	3.46	0.04	0.02								
			1050	12.0	1.14	3.0	3.21	<u>0.09</u>	<u>0.06</u>		35	10	55			$\Delta 3$	1.8
		TOTAL =						0.18	0.12		50		50	29	1.1	51.1	2.0
B5-D TOWER POND	25.0	0.0391						0.20	0.13	30	50	15	5	21	0.6	55	1.6
B6-D	29.4	0.0459	200	1.0	0.50	0.7	0.49	0.11	0.07								
			950	1.0	0.11	3.0	0.97	0.27	0.18								
			850	5.0	0.59	3.0	2.30	<u>0.10</u>	<u>0.07</u>								
		TOTAL =						0.49	0.32		35		65	41	2.8	68	4.7
B7-D	37.8	0.0591	400	3.0	0.75	1.0	0.87	0.13	0.09								
			1000	3.0	0.30	3.0	1.64	0.17	0.11								
			950	5.0	0.53	3.0	2.18	<u>0.12</u>	<u>0.08</u>								
		TOTAL =						0.42	0.28		33		67	58	3.7	97	6.2
B8-D	57.0	0.0891	200	1.0	0.50	0.7	0.49	0.11	0.07								
			1000	1.0	0.10	3.0	0.95	0.29	0.20								
			800	1.0	0.13	3.0	1.06	0.21	0.14								
			950	5.0	0.53	3.0	2.18	<u>0.12</u>	<u>0.08</u>								
		TOTAL =						0.74	0.49		50		50	49	4.4	86	7.8

SEE MAP NO. 2 FOR BASIN IDENTIFICATION

TABLE 2
TOWER/SAGE DRAINAGE MASTER PLAN
AHYMO BASIN PARAMETER WORKSHEET
PEAK BASIN FLOWS AND VOLUMES

(ALL FLOWS & VOLUMES INCLUDE A 5% BULKING FACTOR)

BASIN	AREA		LENGTH (ft.)	ELEV. DIFF. (ft.)	SLOPE (%)	K	VEL (fps)	T(c) (hr.)	T(p) (hr.)	LAND TREATMENT (%)				10 YEAR		100 YEAR	
														PEAK FLOW (6hr.) (cfs)	RUNOFF VOLUME (24hr.) (ac.ft.)	PEAK FLOW (6hr.) (cfs)	RUNOFF VOLUME (24hr.) (ac.ft.)
	(ac.)	(sq.mi.)								A	B	C	D				
S1-D	20.1	0.0314	100	2.0	2.00	0.7	0.99	0.03	0.02								
			675	10.0	1.48	3.0	3.65	0.05	0.03								
			325	8.0	2.46	3.0	4.71	0.02	0.01								
			400	8.0	2.00	3.0	4.24	<u>0.03</u>	<u>0.02</u>								
								0.12	0.08		35		65	46	1.9	77	3.2
		TOTAL =															
S2-D	10.4	0.0163	100	2.0	2.00	0.7	0.99	0.03	0.02								
			675	10.0	1.48	3.0	3.65	0.05	0.03								
			325	8.0	2.46	3.0	4.71	0.02	0.01								
			325	8.0	2.46	3.0	4.71	0.02	0.01								
			400	8.0	2.00	3.0	4.24	<u>0.03</u>	<u>0.02</u>								
		TOTAL =						0.14	0.10		50		50	21	0.8	36	1.4
S3-D	36.3	0.0567	50	1.0	2.00	0.7	0.99	0.01	0.01								
			400	9.0	2.25	3.0	4.50	0.02	0.02								
			500	5.0	1.00	3.0	3.00	0.05	0.03								
			250	6.0	2.40	3.0	4.65	0.01	0.01								
			250	2.0	0.80	3.0	2.68	0.03	0.02								
			850	14.0	1.65	3.0	3.85	0.06	0.04								
			150	1.0	0.67	3.0	2.45	<u>0.02</u>	<u>0.01</u>								
								0.20	0.14		50		50	68	2.8	120	5.0
		TOTAL =															
S4-D	27.9	0.0436	200	3.0	1.50	0.7	0.86	0.06	0.04								
			950	10.0	1.05	3.0	3.08	0.09	0.06								
			900	9.0	1.00	3.0	3.00	<u>0.08</u>	<u>0.06</u>								
		TOTAL =						0.23	0.16		40		60	55	2.5	93	4.2

SEE MAP NO. 2 FOR BASIN IDENTIFICATION

TABLE 2
TOWER/SAGE DRAINAGE MASTER PLAN
AHYMO BASIN PARAMETER WORKSHEET
PEAK BASIN FLOWS AND VOLUMES

(ALL FLOWS & VOLUMES INCLUDE A 5% BULKING FACTOR)

														10 YEAR		100 YEAR	
BASIN	AREA		LENGTH (ft.)	ELEV. DIFF. (ft.)	SLOPE (%)	K	VEL (fps)	T(c) (hr.)	T(p) (hr.)	LAND TREATMENT (%)				PEAK FLOW (6hr.) (cfs)	RUNOFF VOLUME (24hr.) (ac.ft.)	PEAK FLOW (6hr.) (cfs)	RUNOFF VOLUME (24hr.) (ac.ft.)
	(ac.)	(sq.mi.)								A	B	C	D				
S5-D	15.2	0.0238	400	6.0	1.50	3.0	3.67	0.03	0.02								
			1000	4.0	0.40	3.0	1.90	<u>0.15</u>	<u>0.10</u>								
		TOTAL =						0.18	0.12		41		59	33	1.3	56	2.3
S6-D	24.2	0.0378	400	1.0	0.25	1.0	0.50	0.22	0.15								
			400	1.0	0.25	3.0	1.50	0.07	0.05								
			200	2.0	1.00	3.0	3.00	0.02	0.01								
			1100	5.0	0.45	3.0	2.02	<u>0.15</u>	<u>0.10</u>								
			TOTAL =						0.47	0.31		40		60	32	2.2	55
S7-D	36.5	0.0570	400	2.0	0.50	1.0	0.71	0.16	0.10								
			950	1.0	0.11	2.0	0.65	0.41	0.27								
			650	3.0	0.46	2.0	1.36	<u>0.13</u>	<u>0.09</u>								
			TOTAL =						0.70	0.46		29		71	43	3.7	70
S8-D	43.7	0.0683	400	2.0	0.50	1.0	0.71	0.16	0.10								
			1000	1.0	0.10	3.0	0.95	0.29	0.20								
			1100	6.0	0.55	3.0	2.22	<u>0.14</u>	<u>0.09</u>								
			TOTAL =						0.59	0.39		37		63	52	4.1	87
S9-D	47.9	0.0748	300	10.0	3.33	1.0	1.83	0.05	0.03								
			950	9.0	0.95	3.0	2.92	0.09	0.06								
			1150	33.0	2.87	3.0	5.08	<u>0.06</u>	<u>0.04</u>								
			TOTAL =						0.20	0.13		50		50	94	3.7	166

SEE MAP NO. 2 FOR BASIN IDENTIFICATION

TABLE 2
TOWER/SAGE DRAINAGE MASTER PLAN
AHYMO BASIN PARAMETER WORKSHEET
PEAK BASIN FLOWS AND VOLUMES

(ALL FLOWS & VOLUMES INCLUDE A 5% BULKING FACTOR)

BASIN	AREA		LENGTH (ft.)	ELEV. DIFF. (ft.)	SLOPE (%)	K	VEL (fps)	T(c) (hr.)	T(p) (hr.)	LAND TREATMENT (%)				10 YEAR		100 YEAR	
	(ac.)	(sq.mi.)												PEAK FLOW (6hr.) (cfs)	RUNOFF VOLUME (24hr.) (ac.ft.)	PEAK FLOW (6hr.) (cfs)	RUNOFF VOLUME (24hr.) (ac.ft.)
										A	B	C	D				
C1-D	24.7	0.0386	200	6.0	3.00	0.7	1.21	0.05	0.03								
			500	3.0	0.60	3.0	2.32	0.06	0.04								
			850	23.0	2.71	3.0	4.93	0.05	0.03								
			250	4.0	1.60	3.0	3.79	<u>0.02</u>	<u>0.01</u>								
			TOTAL =					0.17	0.11		33		67	58	2.4	96	4.0
C2-D	12.0	0.0188	100	2.0	2.00	0.7	0.99	0.03	0.02								
			750	8.0	1.07	3.0	3.10	0.07	0.04								
			400	6.0	1.50	3.0	3.67	<u>0.03</u>	<u>0.02</u>								
			TOTAL =					0.13	0.08		35		65	28	1.1	46	1.9
C3-D	15.0	0.0234	400	8.0	2.00	2.0	2.83	0.04	0.03								
			200	2.0	1.00	3.0	3.00	0.02	0.01								
			800	13.0	1.63	3.0	3.82	<u>0.06</u>	<u>0.04</u>								
			TOTAL =					0.12	0.08		10		90	43	1.9	67	3.0
C4-D	19.7	0.0308	200	5.0	2.50	0.7	1.11	0.05	0.03								
			500	4.0	0.80	3.0	2.68	0.05	0.03								
			300	9.0	3.00	3.0	5.20	0.02	0.01								
			1050	13.0	1.24	3.0	3.34	<u>0.09</u>	<u>0.06</u>								
			TOTAL =					0.21	0.14		26		74	48	2.1	77	3.4
C5-D	5.8	0.0091	1250	4.0	0.32	3.0	1.70	0.20	0.14			50	50	13	0.5	22	0.9
C6-D	12.4	0.0194	1400	16.0	1.14	2.0	2.14	0.18	0.12		10		90	36	1.5	55	2.5

SEE MAP NO. 2 FOR BASIN IDENTIFICATION

TABLE 3
TOWER/SAGE DRAINAGE MASTER PLAN
SUMMARY OF PEAK DISCHARGES
AND PEAK VOLUMES

(ALL FLOWS INCLUDE A 5% BULKING FACTOR)

ANALYSIS POINT	Q(10) (6hr.) (cfs)	V(10) (24hr.) (ac.ft.)	Q(100) (6hr.) (cfs)	V(100) (24hr.) (ac.ft.)	
1	70	3.2	112	5.2	
2	126	5.7	204	9.4	
3	179	8.3	292	13.7	
4	244	11.4	397	18.8	
5	298	14.0	490	23.2	
6	73	3.7	119	6.1	
7	78	4.2	132	7.0	
8	86	4.7	147	7.9	
9	445	22.0	748	36.8	
10	457	22.6	~~766~~	37.8	Tower Sys. total
11	35	1.5	58	2.4	
12	77	3.5	132	5.8	
13	118	5.6	211	9.6	217 cfs
14	142	6.8	252	11.6	260 cfs
15	46	1.9	77	3.2	
16	65	2.7	109	4.6	
17	132	5.5	228	9.6	
18	185	8.0	318	13.8	
19	202	9.4	348	16.4	
20	345	16.5	599	27.7	
21	820	39.3	1414	67.2	
22	23	39.3	25	67.2	
23	59	42.1	90	71.9	
24	111	45.8	178	78.1	
25	151	50.2	250	85.9	
26	56	2.5	91	4.1	
27	104	5.2	170	8.7	
28	127	8.2	207	13.5	
29	14	0.5	24	0.9	
30	22	1.1	39	1.9	
31	24	1.7	46	3.0	
32	30	2.1	57	3.7	
33	180	11.7	303	19.6	
34	217	14.9	368	25.2	
35	32	2.2	55	3.7	
36	71	5.9	118	9.8	
37	120	9.9	201	16.7	
38	149	13.7	251	23.2	
39	58	2.4	96	4.0	
40	83	3.6	138	5.9	
41	124	5.4	199	8.9	
42	48	2.1	77	3.4	
43	171	7.5	276	12.3	
44	175	8.0	283	13.2	
45	36	1.5	55	2.5	

490 + 24% A6-D + A7D

Tower Sys. total

217 cfs

260 cfs

36.8
27.7
64.5

766
599
1365

NOTE: SEE MAP NO. 2 FOR LOCATION OF ANALYSIS POINTS

Amole del Norte Storm Drainage
Facilities

Tower / Sage Drainage Master Plan

APPENDIX A

AMOLE DEL NORTE STORM DRAINAGE FACILITIES TOWER/SAGE DRAINAGE MASTER PLAN

AHYMO SUMMARY TABLE - 2 YEAR - 24 HOUR STORM

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
INPUT FILE = MASTER2.IN

RUN DATE (MON/DAY/YR) =12/10/1994
USER NO.= ANASRONM.101

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										
RAINFALL TYPE= 2										TIME= .00
SEDIMENT BULK										RAIN24= 1.160
COMPUTE NM HYD	A1-D&AP#1	-	3	.04580	40.45	1.842	.75409	1.500	1.380	PK BF = 1.05
ROUTE	AP-1R	3	2	.04580	39.97	1.842	.75410	1.550	1.364	PER IMP= 76.00
COMPUTE NM HYD	A2-D	-	3	.03950	33.62	1.466	.69579	1.500	1.330	PER IMP= 70.00
ADD HYD	AP#2	2& 3	10	.08530	70.50	3.308	.72709	1.550	1.291	
ROUTE	AP#2R	10	2	.08530	70.77	3.308	.72710	1.550	1.296	
COMPUTE NM HYD	A3-D	-	3	.04190	34.25	1.446	.64721	1.500	1.277	PER IMP= 65.00
ADD HYD	AP#3	2& 3	10	.12720	100.19	4.754	.70078	1.550	1.231	
ROUTE	AP#3R	10	2	.12720	101.05	4.754	.70078	1.550	1.241	
COMPUTE NM HYD	A4-D	-	3	.04390	40.76	1.857	.79296	1.500	1.451	PER IMP= 80.00
ADD HYD	AP#4	2& 3	10	.17110	140.05	6.611	.72443	1.550	1.279	
ROUTE	AP#4R	10	2	.17110	140.22	6.611	.72443	1.550	1.280	
COMPUTE NM HYD	A5-D	-	3	.04520	33.17	1.443	.59863	1.500	1.147	PER IMP= 60.00
ADD HYD	AP#5	2& 3	10	.21630	170.37	8.054	.69814	1.550	1.231	
ROUTE	AP#5R	10	2	.21630	169.15	8.054	.69814	1.550	1.222	
COMPUTE NM HYD	A6-D	-	3	.04520	27.86	1.209	.50146	1.500	.963	PER IMP= 50.00
ADD HYD	PART AP#9	2& 3	10	.26150	194.52	9.263	.66414	1.550	1.162	
COMPUTE NM HYD	A7-D	-	3	.02060	12.70	.551	.50146	1.500	.963	PER IMP= 50.00
ADD HYD	PART AP#9	10& 3	10	.28210	206.09	9.813	.65226	1.550	1.141	
COMPUTE NM HYD	A8-D&AP#6	-	3	.05700	41.85	2.115	.69579	1.550	1.147	PER IMP= 70.00
ROUTE	AP#6R	3	2	.05700	37.67	2.115	.69580	1.600	1.033	
COMPUTE NM HYD	A9-D	-	3	.01020	6.49	.273	.50146	1.500	.995	PER IMP= 50.00
ADD HYD	AP#7	2& 3	20	.06720	41.94	2.388	.66629	1.600	.975	
ROUTE	AP#7R	20	2	.06720	41.44	2.388	.66630	1.650	.963	
COMPUTE NM HYD	A10-D	-	3	.01020	6.49	.273	.50146	1.500	.995	PER IMP= 50.00
ADD HYD	AP#8	2& 3	20	.07740	45.24	2.661	.64456	1.600	.913	
ROUTE	AP#8R	20	2	.07740	45.07	2.661	.64457	1.650	.910	
ADD HYD	AP#9	10& 2	10	.35950	238.50	12.474	.65060	1.550	1.037	
ROUTE	AP#9R	10	2	.35950	237.62	12.474	.65060	1.550	1.033	
COMPUTE NM HYD	A11-D	-	3	.00860	8.17	.346	.75409	1.500	1.485	PER IMP= 76.00
ADD HYD	AP#10	2& 3	20	.36810	244.63	12.820	.65302	1.550	1.038	
COMPUTE NM HYD	B1-D&AP#11	-	3	.02300	19.63	.830	.67636	1.500	1.334	PER IMP= 68.00
ROUTE	AP#11R	3	2	.02300	16.50	.830	.67638	1.550	1.121	
COMPUTE NM HYD	B2-D	-	3	.03500	26.50	1.117	.59863	1.500	1.183	PER IMP= 60.00
ADD HYD	AP#12	2& 3	10	.05800	40.73	1.947	.62944	1.500	1.097	
ROUTE	AP#12R	10	2	.05800	35.20	1.947	.62946	1.600	.948	
COMPUTE NM HYD	B3-D	-	3	.04360	25.73	1.166	.50146	1.500	.922	PER IMP= 50.00
ADD HYD	AP#13	2& 3	10	.10160	58.91	3.113	.57452	1.550	.906	
ROUTE	AP#13R	10	2	.10160	57.77	3.113	.57452	1.600	.888	
COMPUTE NM HYD	B4-D	-	3	.02300	14.64	.615	.50146	1.500	.994	PER IMP= 50.00
ADD HYD	AP#14	2& 3	10	.12460	69.46	3.728	.56103	1.550	.871	
ROUTE	AP#14R	10	12	.12460	69.06	3.728	.56103	1.550	.866	
COMPUTE NM HYD	S1-D&AP#15	-	3	.03140	25.67	1.084	.64721	1.500	1.277	PER IMP= 65.00
ROUTE	AP-15R	3	2	.03140	24.64	1.084	.64723	1.500	1.226	
COMPUTE NM HYD	S2-D	-	3	.01630	10.38	.436	.50146	1.500	.995	PER IMP= 50.00
ADD HYD	AP#16	2& 3	10	.04770	35.01	1.520	.59739	1.500	1.147	
ROUTE	AP#16R	10	2	.04770	34.72	1.520	.59741	1.550	1.137	

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 = 2 NOTATION
COMPUTE NM HYD	S3-D	-	3	.05670	34.95	1.516	.50146	1.500	.963	PER IMP= 50.00
ADD HYD	AP#17	2& 3	10	.10440	67.58	3.036	.54529	1.500	1.012	
ROUTE	AP#17R	10	2	.10440	68.61	3.036	.54529	1.550	1.027	
COMPUTE NM HYD	S4-D	-	3	.04360	29.38	1.392	.59862	1.550	1.053	PER IMP= 60.00
ADD HYD	AP#18	2& 3	10	.14800	97.99	4.428	.56100	1.550	1.035	
ROUTE	AP#18R	10	2	.14800	90.91	4.428	.56100	1.600	.960	
COMPUTE NM HYD	S5-D	-	3	.02380	17.73	.748	.58891	1.500	1.164	PER IMP= 59.00
ADD HYD	AP#19	2& 3	10	.17180	104.08	5.176	.56486	1.550	.947	
ADD HYD	AP#20	12&10	10	.29640	173.15	8.904	.56325	1.550	.913	
ADD HYD	PART AP#21	20&10	10	.66450	417.78	21.724	.61298	1.550	.982	
COMPUTE NM HYD	B5-D_TWRPND	-	3	.03910	2.79	.112	.05389	1.500	.112	PER IMP= 5.00
ADD HYD	AP#21	10& 3	20	.70360	420.24	21.836	.58191	1.550	.933	
ROUTE RESERVOIR	AP#22	20	12	.70360	18.44	21.136	.56324	2.550	.041	AC-FT= 15.081
ROUTE	AP#22R	12	2	.70360	18.44	21.123	.56291	2.600	.041	
COMPUTE NM HYD	B6-D	-	3	.04590	23.22	1.584	.64721	1.700	.790	PER IMP= 65.00
ADD HYD	AP#23	2& 3	10	.74950	36.14	22.708	.56807	1.750	.075	
ROUTE	AP#23R	10	2	.74950	35.42	22.689	.56760	1.800	.074	
COMPUTE NM HYD	B7-D	-	3	.05910	33.40	2.101	.66664	1.650	.883	PER IMP= 67.00
ADD HYD	AP#24	2& 3	10	.80860	64.31	24.790	.57484	1.700	.124	
ROUTE	AP#24R	10	2	.80860	64.24	24.774	.57445	1.750	.124	
COMPUTE NM HYD	B8-D	-	3	.08910	25.88	2.383	.50146	1.900	.454	PER IMP= 50.00
ADD HYD	AP#25	2& 3	30	.89770	86.89	27.156	.56721	1.800	.151	
COMPUTE NM HYD	A12-D&AP#26	-	3	.03590	33.09	1.444	.75409	1.500	1.440	PER IMP= 76.00
ROUTE	AP#26R	3	2	.03590	31.80	1.444	.75411	1.550	1.384	
COMPUTE NM HYD	A13-D	-	3	.04520	28.90	1.560	.64721	1.600	.999	PER IMP= 65.00
ADD HYD	AP#27	2& 3	10	.08110	60.36	3.004	.69452	1.550	1.163	
ROUTE	AP#27R	10	2	.08110	58.12	3.004	.69452	1.600	1.120	
COMPUTE NM HYD	A14-D	-	3	.04520	22.40	1.677	.69579	1.750	.774	PER IMP= 70.00
ADD HYD	AP#28	2& 3	10	.12630	72.95	4.681	.69497	1.600	.903	
ROUTE	AP#28R	10	2	.12630	72.22	4.681	.69497	1.600	.893	
COMPUTE NM HYD	A15-D	-	3	.02530	15.45	.808	.59863	1.550	.954	PER IMP= 60.00
ADD HYD	PART AP#33	2& 3	20	.15160	87.33	5.489	.67889	1.600	.900	
COMPUTE NM HYD	A17-D&AP#29	-	3	.01080	6.88	.289	.50146	1.500	.995	PER IMP= 50.00
ROUTE	AP#29R	3	2	.01080	4.23	.289	.50150	1.600	.613	
COMPUTE NM HYD	A18-D	-	3	.01030	7.80	.329	.59863	1.500	1.183	PER IMP= 60.00
ADD HYD	AP#30	2& 3	10	.02110	10.81	.618	.54886	1.500	.800	
ROUTE	AP#30R	10	2	.02110	6.01	.618	.54885	1.750	.445	
COMPUTE NM HYD	A19-D	-	3	.01080	7.04	.345	.59863	1.550	1.019	PER IMP= 60.00
ADD HYD	AP#31	2& 3	10	.03190	11.70	.962	.56566	1.600	.573	
ROUTE	AP#31R	10	2	.03190	11.43	.962	.56568	1.600	.560	
COMPUTE NM HYD	A20-D	-	3	.00690	5.23	.220	.59863	1.500	1.184	PER IMP= 60.00
ADD HYD	AP#32	2& 3	10	.03880	14.86	1.183	.57152	1.600	.598	
ROUTE	AP#32R	10	22	.03880	13.79	1.183	.57153	1.650	.555	
ADD HYD	AP#33	20&22	10	.19040	100.33	6.672	.65701	1.600	.823	
ROUTE	AP#33R	10	2	.19040	100.61	6.672	.65701	1.650	.826	
COMPUTE NM HYD	A16-D	-	3	.06380	23.21	1.706	.50146	1.750	.568	PER IMP= 50.00
ADD HYD	AP#34	2& 3	10	.25420	120.71	8.378	.61796	1.650	.742	
COMPUTE NM HYD	S6-D&AP#35	-	3	.03780	18.01	1.207	.59863	1.700	.744	PER IMP= 60.00
ROUTE	AP#35R	3	2	.03780	17.52	1.207	.59863	1.750	.724	
COMPUTE NM HYD	S7-D	-	3	.05700	24.87	2.145	.70551	1.850	.682	PER IMP= 71.00
ADD HYD	AP#36	2& 3	10	.09480	40.63	3.351	.66287	1.800	.670	
ROUTE	AP#36R	10	2	.09480	39.76	3.352	.66288	1.850	.655	

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 = 3 NOTATION
COMPUTE NM HYD	S8-D	-	3	.06830	29.31	2.287	.62778	1.800	.671	PER IMP= 63.00
ADD HYD	AP#37	2& 3	10	.16310	68.00	5.638	.64817	1.850	.651	
ROUTE	AP#37R	10	2	.16310	68.32	5.638	.64817	1.850	.655	
COMPUTE NM HYD	S9-D	-	3	.07480	47.24	2.000	.50146	1.500	.987	PER IMP= 50.00
ADD HYD	AP#38	2& 3	20	.23790	83.36	7.639	.60204	1.800	.548	
COMPUTE NM HYD	C1-D&AP#39	-	3	.03860	32.48	1.372	.66664	1.500	1.315	PER IMP= 67.00
ROUTE	AP#39R	3	2	.03860	31.42	1.372	.66666	1.500	1.272	
COMPUTE NM HYD	C2-D	-	3	.01880	15.37	.649	.64721	1.500	1.277	PER IMP= 65.00
ADD HYD	AP#40	2& 3	10	.05740	46.79	2.021	.66027	1.500	1.274	
ROUTE	AP#40R	10	2	.05740	45.96	2.021	.66028	1.550	1.251	
COMPUTE NM HYD	C3-D	-	3	.02340	26.19	1.111	.89013	1.500	1.749	PER IMP= 90.00
ADD HYD	AP#41	2& 3	10	.08080	69.84	3.132	.72683	1.500	1.350	
COMPUTE NM HYD	C4-D&AP#42	-	3	.03080	27.67	1.207	.73466	1.500	1.403	PER IMP= 74.00
ROUTE	AP#42R	3	2	.03080	27.17	1.207	.73468	1.500	1.378	
ADD HYD	AP#43	10& 2	10	.11160	97.00	4.339	.72899	1.500	1.358	
ROUTE	AP#43R	10	2	.11160	94.99	4.339	.72900	1.550	1.330	
COMPUTE NM HYD	C5-D	-	3	.00910	6.89	.272	.56068	1.500	1.184	PER IMP= 50.00
ADD HYD	AP#44	2& 3	10	.12070	101.40	4.611	.71630	1.550	1.313	
COMPUTE NM HYD	C6-D&AP#45	-	3	.01940	21.71	.921	.89013	1.500	1.749	PER IMP= 90.00
FINISH										

AMOLE DEL NORTE STORM DRAINAGE FACILITIES TOWER/SAGE DRAINAGE MASTER PLAN

AHYMO SUMMARY TABLE - 5 YEAR - 24 HOUR STORM

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
INPUT FILE = MASTER5.IN

RUN DATE (MON/DAY/YR) =12/10/1994
USER NO.= ANASRONM.101

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= 2										RAIN24= 1.510
SEDIMENT BULK										PK BF = 1.05
COMPUTE NM HYD	A1-D&AP#1	-	3	.04580	56.31	2.570	1.05230	1.500	1.921	PER IMP= 76.00
ROUTE	AP-1R	3	2	.04580	55.67	2.570	1.05231	1.550	1.899	
COMPUTE NM HYD	A2-D	-	3	.03950	47.41	2.063	.97905	1.500	1.875	PER IMP= 70.00
ADD HYD	AP#2	2& 3	10	.08530	99.05	4.633	1.01838	1.500	1.814	
ROUTE	AP#2R	10	2	.08530	99.73	4.633	1.01838	1.550	1.827	
COMPUTE NM HYD	A3-D	-	3	.04190	49.01	2.051	.91802	1.500	1.828	PER IMP= 65.00
ADD HYD	AP#3	2& 3	10	.12720	142.13	6.684	.98532	1.550	1.746	
ROUTE	AP#3R	10	2	.12720	144.11	6.684	.98532	1.550	1.770	
COMPUTE NM HYD	A4-D	-	3	.04390	56.30	2.578	1.10113	1.500	2.004	PER IMP= 80.00
ADD HYD	AP#4	2& 3	10	.17110	197.91	9.262	1.01503	1.550	1.807	
ROUTE	AP#4R	10	2	.17110	199.33	9.263	1.01503	1.550	1.820	
COMPUTE NM HYD	A5-D	-	3	.04520	48.09	2.066	.85698	1.500	1.662	PER IMP= 60.00
ADD HYD	AP#5	2& 3	10	.21630	243.31	11.328	.98200	1.550	1.758	
ROUTE	AP#5R	10	2	.21630	243.29	11.328	.98200	1.550	1.758	
COMPUTE NM HYD	A6-D	-	3	.04520	41.93	1.772	.73491	1.500	1.450	PER IMP= 50.00
ADD HYD	PART_AP#9	2& 3	10	.26150	281.86	13.100	.93929	1.550	1.684	
COMPUTE NM HYD	A7-D	-	3	.02060	19.11	.807	.73491	1.500	1.450	PER IMP= 50.00
ADD HYD	PART_AP#9	10& 3	10	.28210	299.44	13.907	.92436	1.550	1.659	
COMPUTE NM HYD	A8-D&AP#6	-	3	.05700	58.97	2.976	.97905	1.550	1.617	PER IMP= 70.00
ROUTE	AP#6R	3	2	.05700	55.63	2.976	.97906	1.600	1.525	
COMPUTE NM HYD	A9-D	-	3	.01020	9.82	.400	.73491	1.500	1.505	PER IMP= 50.00
ADD HYD	AP#7	2& 3	20	.06720	62.19	3.376	.94199	1.600	1.446	
ROUTE	AP#7R	20	2	.06720	61.60	3.376	.94200	1.600	1.432	
COMPUTE NM HYD	A10-D	-	3	.01020	9.82	.400	.73491	1.500	1.505	PER IMP= 50.00
ADD HYD	AP#8	2& 3	20	.07740	68.16	3.776	.91470	1.600	1.376	
ROUTE	AP#8R	20	2	.07740	66.98	3.776	.91470	1.650	1.352	
ADD HYD	AP#9	10& 2	10	.35950	352.50	17.683	.92228	1.550	1.532	
ROUTE	AP#9R	10	2	.35950	351.81	17.683	.92228	1.550	1.529	
COMPUTE NM HYD	A11-D	-	3	.00860	11.37	.483	1.05230	1.500	2.066	PER IMP= 76.00
ADD HYD	AP#10	2& 3	20	.36810	361.61	18.166	.92532	1.550	1.535	
COMPUTE NM HYD	B1-D&AP#11	-	3	.02300	27.86	1.171	.95464	1.500	1.893	PER IMP= 68.00
ROUTE	AP#11R	3	2	.02300	24.16	1.171	.95466	1.550	1.642	
COMPUTE NM HYD	B2-D	-	3	.03500	38.53	1.600	.85698	1.500	1.720	PER IMP= 60.00
ADD HYD	AP#12	2& 3	10	.05800	59.77	2.771	.89570	1.500	1.610	
ROUTE	AP#12R	10	2	.05800	54.02	2.771	.89571	1.550	1.455	
COMPUTE NM HYD	B3-D	-	3	.04360	38.59	1.709	.73491	1.500	1.383	PER IMP= 50.00
ADD HYD	AP#13	2& 3	10	.10160	91.38	4.480	.82670	1.550	1.405	
ROUTE	AP#13R	10	2	.10160	89.04	4.480	.82670	1.550	1.369	
COMPUTE NM HYD	B4-D	-	3	.02300	22.14	.901	.73491	1.500	1.504	PER IMP= 50.00
ADD HYD	AP#14	2& 3	10	.12460	108.35	5.381	.80975	1.550	1.359	
ROUTE	AP#14R	10	12	.12460	107.85	5.381	.80976	1.550	1.352	
COMPUTE NM HYD	S1-D&AP#15	-	3	.03140	36.73	1.537	.91802	1.500	1.828	PER IMP= 65.00
ROUTE	AP-15R	3	2	.03140	35.33	1.537	.91803	1.500	1.758	
COMPUTE NM HYD	S2-D	-	3	.01630	15.69	.639	.73491	1.500	1.504	PER IMP= 50.00
ADD HYD	AP#16	2& 3	10	.04770	51.02	2.176	.85544	1.500	1.671	
ROUTE	AP#16R	10	2	.04770	50.50	2.176	.85545	1.550	1.654	

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 = 2 NOTATION
COMPUTE NM HYD	S3-D	-	3	.05670	52.60	2.222	.73491	1.500	1.449	PER IMP= 50.00
ADD HYD	AP#17	2& 3	10	.10440	100.58	4.399	.78997	1.500	1.505	
ROUTE	AP#17R	10	2	.10440	101.92	4.399	.78998	1.550	1.525	
COMPUTE NM HYD	S4-D	-	3	.04360	42.58	1.993	.85698	1.550	1.526	PER IMP= 60.00
ADD HYD	AP#18	2& 3	10	.14800	144.50	6.391	.80971	1.550	1.526	
ROUTE	AP#18R	10	2	.14800	135.23	6.391	.80972	1.550	1.428	
COMPUTE NM HYD	S5-D	-	3	.02380	25.87	1.072	.84477	1.500	1.698	PER IMP= 59.00
ADD HYD	AP#19	2& 3	10	.17180	157.67	7.464	.81457	1.550	1.434	
ADD HYD	AP#20	12&10	10	.29640	265.52	12.845	.81254	1.550	1.400	
ADD HYD	PART AP#21	20&10	10	.66450	627.13	31.011	.87502	1.550	1.475	
COMPUTE NM HYD	B5-D_TWRPND	-	3	.03910	11.33	.343	.16453	1.500	.453	PER IMP= 5.00
ADD HYD	AP#21	10& 3	20	.70360	637.93	31.354	.83553	1.550	1.417	
ROUTE RESERVOIR	AP#22	20	12	.70360	21.14	30.140	.80320	2.650	.047	AC-FT= 22.490
ROUTE	AP#22R	12	2	.70360	21.14	30.122	.80271	2.700	.047	
COMPUTE NM HYD	B6-D	-	3	.04590	32.98	2.247	.91802	1.700	1.123	PER IMP= 65.00
ADD HYD	AP#23	2& 3	10	.74950	48.86	32.369	.80977	1.750	.102	
ROUTE	AP#23R	10	2	.74950	47.94	32.343	.80912	1.800	.100	
COMPUTE NM HYD	B7-D	-	3	.05910	47.30	2.971	.94243	1.650	1.251	PER IMP= 67.00
ADD HYD	AP#24	2& 3	10	.80860	90.81	35.314	.81886	1.700	.175	
ROUTE	AP#24R	10	2	.80860	90.32	35.289	.81828	1.750	.175	
COMPUTE NM HYD	B8-D	-	3	.08910	38.26	3.492	.73491	1.900	.671	PER IMP= 50.00
ADD HYD	AP#25	2& 3	30	.89770	122.92	38.781	.81001	1.800	.214	
COMPUTE NM HYD	A12-D&AP#26	-	3	.03590	46.03	2.015	1.05230	1.500	2.003	PER IMP= 76.00
ROUTE	AP#26R	3	2	.03590	44.24	2.015	1.05231	1.550	1.925	
COMPUTE NM HYD	A13-D	-	3	.04520	41.11	2.213	.91802	1.600	1.421	PER IMP= 65.00
ADD HYD	AP#27	2& 3	10	.08110	85.04	4.228	.97745	1.550	1.638	
ROUTE	AP#27R	10	2	.08110	81.75	4.228	.97746	1.600	1.575	
COMPUTE NM HYD	A14-D	-	3	.04520	31.52	2.360	.97905	1.750	1.089	PER IMP= 70.00
ADD HYD	AP#28	2& 3	10	.12630	103.43	6.588	.97802	1.600	1.280	
ROUTE	AP#28R	10	2	.12630	102.75	6.588	.97803	1.600	1.271	
COMPUTE NM HYD	A15-D	-	3	.02530	22.32	1.156	.85698	1.550	1.379	PER IMP= 60.00
ADD HYD	PART AP#33	2& 3	20	.15160	124.54	7.744	.95782	1.600	1.284	
COMPUTE NM HYD	A17-D&AP#29	-	3	.01080	10.40	.423	.73491	1.500	1.505	PER IMP= 50.00
ROUTE	AP#29R	3	2	.01080	6.82	.423	.73495	1.600	.986	
COMPUTE NM HYD	A18-D	-	3	.01030	11.34	.471	.85698	1.500	1.721	PER IMP= 60.00
ADD HYD	AP#30	2& 3	10	.02110	16.27	.894	.79446	1.550	1.205	
ROUTE	AP#30R	10	2	.02110	9.74	.894	.79445	1.700	.721	
COMPUTE NM HYD	A19-D	-	3	.01080	10.18	.494	.85698	1.550	1.473	PER IMP= 60.00
ADD HYD	AP#31	2& 3	10	.03190	18.22	1.388	.81559	1.600	.893	
ROUTE	AP#31R	10	2	.03190	17.85	1.388	.81560	1.600	.874	
COMPUTE NM HYD	A20-D	-	3	.00690	7.60	.315	.85698	1.500	1.721	PER IMP= 60.00
ADD HYD	AP#32	2& 3	10	.03880	22.90	1.703	.82294	1.600	.922	
ROUTE	AP#32R	10	22	.03880	21.53	1.703	.82295	1.650	.867	
ADD HYD	AP#33	20&22	10	.19040	145.20	9.447	.93033	1.600	1.192	
ROUTE	AP#33R	10	2	.19040	144.79	9.447	.93033	1.650	1.188	
COMPUTE NM HYD	A16-D	-	3	.06380	34.20	2.501	.73491	1.750	.838	PER IMP= 50.00
ADD HYD	AP#34	2& 3	10	.25420	174.99	11.948	.88128	1.650	1.076	
COMPUTE NM HYD	S6-D&AP#35	-	3	.03780	25.85	1.728	.85698	1.700	1.068	PER IMP= 60.00
ROUTE	AP#35R	3	2	.03780	25.19	1.728	.85698	1.750	1.041	
COMPUTE NM HYD	S7-D	-	3	.05700	34.90	3.013	.99126	1.850	.957	PER IMP= 71.00
ADD HYD	AP#36	2& 3	10	.09480	57.66	4.741	.93770	1.800	.950	
ROUTE	AP#36R	10	2	.09480	56.61	4.741	.93771	1.850	.933	

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 = 3 NOTATION
COMPUTE NM HYD	S8-D	-	3	.06830	41.75	3.255	.89360	1.800	.955	PER IMP= 63.00
ADD HYD	AP#37	2& 3	10	.16310	97.31	7.996	.91923	1.800	.932	
ROUTE	AP#37R	10	2	.16310	97.38	7.996	.91924	1.850	.933	
COMPUTE NM HYD	S9-D	-	3	.07480	71.67	2.932	.73491	1.500	1.497	PER IMP= 50.00
ADD HYD	AP#38	2& 3	20	.23790	120.04	10.928	.86127	1.800	.788	
COMPUTE NM HYD	C1-D&AP#39	-	3	.03860	46.22	1.940	.94243	1.500	1.871	PER IMP= 67.00
ROUTE	AP#39R	3	2	.03860	44.71	1.940	.94245	1.500	1.810	
COMPUTE NM HYD	C2-D	-	3	.01880	22.00	.920	.91802	1.500	1.828	PER IMP= 65.00
ADD HYD	AP#40	2& 3	10	.05740	66.71	2.861	.93443	1.500	1.816	
ROUTE	AP#40R	10	2	.05740	65.45	2.861	.93444	1.550	1.782	
COMPUTE NM HYD	C3-D	-	3	.02340	35.46	1.527	1.22320	1.500	2.368	PER IMP= 90.00
ADD HYD	AP#41	2& 3	10	.08080	98.24	4.387	1.01805	1.500	1.900	
COMPUTE NM HYD	C4-D&AP#42	-	3	.03080	38.65	1.688	1.02788	1.500	1.961	PER IMP= 74.00
ROUTE	AP#42R	3	2	.03080	37.98	1.688	1.02790	1.500	1.927	
ADD HYD	AP#43	10& 2	10	.11160	136.22	6.076	1.02077	1.500	1.907	
ROUTE	AP#43R	10	2	.11160	133.80	6.076	1.02077	1.550	1.873	
COMPUTE NM HYD	C5-D	-	3	.00910	10.46	.403	.82943	1.500	1.795	PER IMP= 50.00
ADD HYD	AP#44	2& 3	10	.12070	143.51	6.478	1.00634	1.550	1.858	
COMPUTE NM HYD	C6-D&AP#45	-	3	.01940	29.40	1.266	1.22320	1.500	2.368	PER IMP= 90.00
FINISH										

AMOLE DEL NORTE STORM DRAINAGE FACILITIES TOWER/SAGE DRAINAGE MASTER PLAN

AHYMO SUMMARY TABLE - 10 YEAR - 6 HOUR STORM

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
INPUT FILE = MASTER10.IN

RUN DATE (MON/DAY/YR) =12/10/1994
USER NO.= ANASRONM.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= 1.470
SEDIMENT BULK										PK BF = 1.05
COMPUTE NM HYD	A1-D&AP#1	-	3	.04580	69.84	2.555	1.04607	1.533	2.383	PER IMP= 76.00
ROUTE	AP-1R	3	2	.04580	68.19	2.555	1.04608	1.533	2.326	
COMPUTE NM HYD	A2-D	-	3	.03950	58.73	2.070	.98256	1.500	2.323	PER IMP= 70.00
ADD HYD	AP#2	2& 3	10	.08530	126.03	4.625	1.01666	1.533	2.309	
ROUTE	AP#2R	10	2	.08530	121.55	4.625	1.01666	1.567	2.227	
COMPUTE NM HYD	A3-D	-	3	.04190	62.00	2.077	.92964	1.500	2.312	PER IMP= 65.00
ADD HYD	AP#3	2& 3	10	.12720	178.95	6.703	.98799	1.533	2.198	
ROUTE	AP#3R	10	2	.12720	176.30	6.703	.98799	1.567	2.166	
COMPUTE NM HYD	A4-D	-	3	.04390	69.37	2.548	1.08841	1.533	2.469	PER IMP= 80.00
ADD HYD	AP#4	2& 3	10	.17110	244.00	9.251	1.01375	1.533	2.228	
ROUTE	AP#4R	10	2	.17110	243.66	9.251	1.01376	1.567	2.225	
COMPUTE NM HYD	A5-D	-	3	.04520	60.67	2.113	.87671	1.500	2.097	PER IMP= 60.00
ADD HYD	AP#5	2& 3	10	.21630	298.09	11.364	.98511	1.533	2.153	
ROUTE	AP#5R	10	2	.21630	300.22	11.364	.98512	1.567	2.169	
COMPUTE NM HYD	A6-D	-	3	.04520	54.14	1.858	.77086	1.500	1.872	PER IMP= 50.00
ADD HYD	PART_AP#9	2& 3	10	.26150	348.39	13.223	.94808	1.567	2.082	
COMPUTE NM HYD	A7-D	-	3	.02060	24.68	.847	.77086	1.500	1.872	PER IMP= 50.00
ADD HYD	PART_AP#9	10& 3	10	.28210	370.35	14.069	.93514	1.567	2.051	
COMPUTE NM HYD	A8-D&AP#6	-	3	.05700	73.08	2.987	.98256	1.567	2.003	PER IMP= 70.00
ROUTE	AP#6R	3	2	.05700	69.35	2.987	.98256	1.600	1.901	
COMPUTE NM HYD	A9-D	-	3	.01020	12.85	.419	.77086	1.500	1.968	PER IMP= 50.00
ADD HYD	AP#7	2& 3	20	.06720	78.19	3.406	.95042	1.600	1.818	
ROUTE	AP#7R	20	2	.06720	77.45	3.406	.95042	1.600	1.801	
COMPUTE NM HYD	A10-D	-	3	.01020	12.85	.419	.77086	1.500	1.968	PER IMP= 50.00
ADD HYD	AP#8	2& 3	20	.07740	86.29	3.826	.92675	1.600	1.742	
ROUTE	AP#8R	20	2	.07740	84.57	3.826	.92676	1.633	1.707	
ADD HYD	AP#9	10& 2	10	.35950	444.68	17.895	.93333	1.567	1.933	
ROUTE	AP#9R	10	2	.35950	445.31	17.895	.93333	1.567	1.935	
COMPUTE NM HYD	A11-D	-	3	.00860	14.12	.480	1.04607	1.500	2.566	PER IMP= 76.00
ADD HYD	AP#10	2& 3	20	.36810	456.74	18.375	.93596	1.567	1.939	
COMPUTE NM HYD	B1-D&AP#11	-	3	.02300	35.05	1.179	.96139	1.500	2.381	PER IMP= 68.00
ROUTE	AP#11R	3	2	.02300	30.26	1.179	.96140	1.567	2.056	
COMPUTE NM HYD	B2-D	-	3	.03500	49.22	1.637	.87671	1.500	2.197	PER IMP= 60.00
ADD HYD	AP#12	2& 3	10	.05800	76.96	2.816	.91028	1.533	2.073	
ROUTE	AP#12R	10	2	.05800	70.87	2.816	.91029	1.567	1.909	
COMPUTE NM HYD	B3-D	-	3	.04360	50.81	1.793	.77086	1.533	1.821	PER IMP= 50.00
ADD HYD	AP#13	2& 3	10	.10160	117.94	4.608	.85045	1.533	1.814	
ROUTE	AP#13R	10	2	.10160	118.15	4.608	.85045	1.567	1.817	
COMPUTE NM HYD	B4-D	-	3	.02300	28.97	.946	.77086	1.500	1.968	PER IMP= 50.00
ADD HYD	AP#14	2& 3	10	.12460	142.09	5.554	.83575	1.567	1.782	
ROUTE	AP#14R	10	12	.12460	142.64	5.554	.83576	1.567	1.789	
COMPUTE NM HYD	S1-D&AP#15	-	3	.03140	46.47	1.557	.92964	1.500	2.312	PER IMP= 65.00
ROUTE	AP-15R	3	2	.03140	45.36	1.557	.92964	1.533	2.257	
COMPUTE NM HYD	S2-D	-	3	.01630	20.53	.670	.77086	1.500	1.968	PER IMP= 50.00
ADD HYD	AP#16	2& 3	10	.04770	64.98	2.227	.87537	1.533	2.129	
ROUTE	AP#16R	10	2	.04770	64.75	2.227	.87538	1.533	2.121	

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 = 2 NOTATION
COMPUTE NM HYD	S3-D	-	3	.05670	67.91	2.331	.77086	1.500	1.872	PER IMP= 50.00
ADD HYD	AP#17	2& 3	10	.10440	132.26	4.558	.81861	1.533	1.979	
ROUTE	AP#17R	10	2	.10440	129.72	4.558	.81861	1.533	1.942	
COMPUTE NM HYD	S4-D	-	3	.04360	55.28	2.039	.87671	1.533	1.981	PER IMP= 60.00
ADD HYD	AP#18	2& 3	10	.14800	185.00	6.597	.83572	1.533	1.953	
ROUTE	AP#18R	10	2	.14800	174.83	6.597	.83572	1.567	1.846	
COMPUTE NM HYD	S5-D	-	3	.02380	33.12	1.099	.86612	1.500	2.175	PER IMP= 59.00
ADD HYD	AP#19	2& 3	10	.17180	201.97	7.696	.83993	1.567	1.837	
ADD HYD	AP#20	12&10	10	.29640	344.61	13.250	.83818	1.567	1.817	
COMPUTE NM HYD	PART AP#21	20&10	10	.66450	801.35	31.625	.89235	1.567	1.884	
ADD HYD	B5-D_TWRPND	-	3	.03910	20.97	.559	.26796	1.533	.838	PER IMP= 5.00
ROUTE RESERVOIR	AP#22	10& 3	20	.70360	820.24	32.184	.85765	1.567	1.822	
ROUTE	AP#22R	12	2	.70360	22.56	27.419	.73067	2.733	.050	AC-FT= 28.648
COMPUTE NM HYD	B6-D	-	3	.04590	22.56	27.370	.72937	2.767	.050	
ADD HYD	AP#23	2& 3	10	.74950	40.84	2.276	.92964	1.700	1.390	PER IMP= 65.00
ROUTE	AP#23R	10	2	.74950	58.74	29.646	.74163	1.733	.122	
COMPUTE NM HYD	B7-D	-	3	.05910	57.42	29.578	.73995	1.767	.120	
ADD HYD	AP#24	2& 3	10	.80860	58.43	2.997	.95081	1.667	1.545	PER IMP= 67.00
ROUTE	AP#24R	10	2	.80860	110.96	32.575	.75537	1.700	.214	
COMPUTE NM HYD	B8-D	-	3	.08910	110.02	32.517	.75400	1.733	.213	
ADD HYD	AP#25	2& 3	30	.89770	48.60	3.663	.77086	1.900	.852	PER IMP= 50.00
COMPUTE NM HYD	A12-D&AP#26	-	3	.03590	151.40	36.180	.75568	1.767	.264	
ROUTE	AP#26R	3	2	.03590	56.49	2.003	1.04607	1.500	2.459	PER IMP= 76.00
COMPUTE NM HYD	A13-D	-	3	.04520	55.04	2.003	1.04608	1.533	2.395	
ADD HYD	AP#27	2& 3	10	.08110	51.60	2.241	.92964	1.567	1.784	PER IMP= 65.00
ROUTE	AP#27R	10	2	.08110	104.41	4.244	.98117	1.567	2.012	
COMPUTE NM HYD	A14-D	-	3	.04520	100.48	4.244	.98117	1.600	1.936	
ADD HYD	AP#28	2& 3	10	.12630	38.70	2.369	.98256	1.767	1.338	PER IMP= 70.00
ROUTE	AP#28R	10	2	.12630	126.50	6.612	.98166	1.600	1.565	
COMPUTE NM HYD	A15-D	-	3	.02530	125.93	6.612	.98166	1.633	1.558	
ADD HYD	PART AP#33	2& 3	20	.15160	28.32	1.183	.87671	1.567	1.749	PER IMP= 60.00
COMPUTE NM HYD	A17-D&AP#29	-	3	.01080	152.70	7.795	.96414	1.600	1.574	
ROUTE	AP#29R	3	2	.01080	13.61	.444	.77086	1.500	1.968	PER IMP= 50.00
COMPUTE NM HYD	A18-D	-	3	.01030	9.06	.444	.77088	1.600	1.311	
ADD HYD	AP#30	2& 3	10	.02110	14.49	.482	.87671	1.500	2.198	PER IMP= 60.00
ROUTE	AP#30R	10	2	.02110	21.78	.926	.82249	1.533	1.613	
COMPUTE NM HYD	A19-D	-	3	.01080	13.18	.926	.82251	1.667	.976	
ADD HYD	AP#31	2& 3	10	.03190	12.75	.505	.87671	1.567	1.845	PER IMP= 60.00
ROUTE	AP#31R	10	2	.03190	24.19	1.430	.84080	1.600	1.185	
COMPUTE NM HYD	A20-D	-	3	.00690	23.73	1.431	.84081	1.633	1.162	
ADD HYD	AP#32	2& 3	10	.03880	9.71	.323	.87671	1.500	2.199	PER IMP= 60.00
ROUTE	AP#32R	10	22	.03880	30.03	1.753	.84717	1.600	1.209	
COMPUTE NM HYD	AP#33	20&22	10	.19040	28.02	1.753	.84718	1.633	1.128	
ADD HYD	AP#33R	10	2	.19040	179.65	9.548	.94031	1.600	1.474	
ROUTE	A16-D	-	3	.06380	178.37	9.549	.94031	1.633	1.464	
COMPUTE NM HYD	AP#34	2& 3	10	.25420	43.34	2.623	.77086	1.733	1.061	PER IMP= 50.00
ADD HYD	S6-D&AP#35	-	3	.03780	216.66	12.171	.89778	1.667	1.332	
ROUTE	AP#35R	3	2	.03780	32.34	1.767	.87671	1.700	1.337	PER IMP= 60.00
COMPUTE NM HYD	S7-D	-	3	.05700	31.61	1.767	.87671	1.733	1.307	
ADD HYD	AP#36	2& 3	10	.09480	42.77	3.019	.99315	1.867	1.173	PER IMP= 71.00
ROUTE	AP#36R	10	2	.09480	71.13	4.787	.94670	1.800	1.172	
					69.58	4.787	.94671	1.833	1.147	

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 = 3 NOTATION
COMPUTE NM HYD	S8-D	-	3	.06830	51.91	3.309	.90847	1.767	1.187	PER IMP= 63.00
ADD HYD	AP#37	2& 3	10	.16310	120.45	8.096	.93069	1.833	1.154	
ROUTE	AP#37R	10	2	.16310	120.46	8.096	.93069	1.833	1.154	
COMPUTE NM HYD	S9-D	-	3	.07480	93.91	3.075	.77086	1.500	1.962	PER IMP= 50.00
ADD HYD	AP#38	2& 3	20	.23790	148.71	11.171	.88043	1.800	.977	
COMPUTE NM HYD	C1-D&AP#39	-	3	.03860	58.26	1.957	.95081	1.500	2.358	PER IMP= 67.00
ROUTE	AP#39R	3	2	.03860	56.81	1.957	.95081	1.533	2.300	
COMPUTE NM HYD	C2-D	-	3	.01880	27.83	.932	.92964	1.500	2.313	PER IMP= 65.00
ADD HYD	AP#40	2& 3	10	.05740	83.20	2.889	.94386	1.533	2.265	
ROUTE	AP#40R	10	2	.05740	83.01	2.890	.94387	1.533	2.260	
COMPUTE NM HYD	C3-D	-	3	.02340	43.23	1.490	1.19426	1.500	2.887	PER IMP= 90.00
ADD HYD	AP#41	2& 3	10	.08080	123.65	4.380	1.01638	1.533	2.391	
COMPUTE NM HYD	C4-D&AP#42	-	3	.03080	47.58	1.684	1.02490	1.500	2.414	PER IMP= 74.00
ROUTE	AP#42R	3	2	.03080	47.65	1.684	1.02491	1.533	2.417	
ADD HYD	AP#43	10& 2	10	.11160	171.29	6.063	1.01873	1.533	2.398	
ROUTE	AP#43R	10	2	.11160	162.28	6.063	1.01873	1.567	2.272	
COMPUTE NM HYD	C5-D	-	3	.00910	13.14	.429	.88414	1.500	2.256	PER IMP= 50.00
ADD HYD	AP#44	2& 3	10	.12070	174.80	6.493	1.00858	1.533	2.263	
COMPUTE NM HYD	C6-D&AP#45	-	3	.01940	35.85	1.236	1.19426	1.500	2.887	PER IMP= 90.00
FINISH										

AMOLE DEL NORTE STORM DRAINAGE FACILITIES TOWER/SAGE DRAINAGE MASTER PLAN

AHYMO SUMMARY TABLE - 10 YEAR - 24 HOUR STORM

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
INPUT FILE = MAST2410.IN

RUN DATE (MON/DAY/YR) =12/10/1994
USER NO.= ANASRONM.101

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= 2										RAIN24= 1.780
SEDIMENT BULK										PK BF = 1.05
COMPUTE NM HYD	A1-D&AP#1	-	3	.04580	68.62	3.162	1.29435	1.500	2.341	PER IMP= 76.00
ROUTE	AP-1R	3	2	.04580	67.80	3.162	1.29436	1.550	2.313	
COMPUTE NM HYD	A2-D	-	3	.03950	58.32	2.551	1.21103	1.500	2.307	PER IMP= 70.00
ADD HYD	AP#2	2& 3	10	.08530	121.60	5.713	1.25576	1.500	2.227	
ROUTE	AP#2R	10	2	.08530	122.25	5.713	1.25577	1.550	2.239	
COMPUTE NM HYD	A3-D	-	3	.04190	60.91	2.551	1.14160	1.500	2.271	PER IMP= 65.00
ADD HYD	AP#3	2& 3	10	.12720	175.06	8.264	1.21816	1.550	2.150	
ROUTE	AP#3R	10	2	.12720	177.74	8.264	1.21816	1.550	2.183	
COMPUTE NM HYD	A4-D	-	3	.04390	68.23	3.161	1.34990	1.500	2.429	PER IMP= 80.00
ADD HYD	AP#4	2& 3	10	.17110	242.91	11.425	1.25196	1.550	2.218	
ROUTE	AP#4R	10	2	.17110	244.83	11.425	1.25196	1.550	2.236	
COMPUTE NM HYD	A5-D	-	3	.04520	60.28	2.585	1.07217	1.500	2.084	PER IMP= 60.00
ADD HYD	AP#5	2& 3	10	.21630	300.08	14.009	1.21439	1.550	2.168	
ROUTE	AP#5R	10	2	.21630	300.55	14.009	1.21439	1.550	2.171	
COMPUTE NM HYD	A6-D	-	3	.04520	53.83	2.250	.93330	1.500	1.861	PER IMP= 50.00
ADD HYD	PART AP#9	2& 3	10	.26150	350.21	16.259	1.16580	1.550	2.093	
COMPUTE NM HYD	A7-D	-	3	.02060	24.54	1.025	.93330	1.500	1.861	PER IMP= 50.00
ADD HYD	PART AP#9	10& 3	10	.28210	372.85	17.284	1.14882	1.550	2.065	
COMPUTE NM HYD	A8-D&AP#6	-	3	.05700	72.44	3.682	1.21103	1.550	1.986	PER IMP= 70.00
ROUTE	AP#6R	3	2	.05700	69.75	3.682	1.21104	1.600	1.912	
COMPUTE NM HYD	A9-D	-	3	.01020	12.64	.508	.93330	1.500	1.936	PER IMP= 50.00
ADD HYD	AP#7	2& 3	20	.06720	78.23	4.189	1.16887	1.600	1.819	
ROUTE	AP#7R	20	2	.06720	78.03	4.189	1.16888	1.600	1.814	
COMPUTE NM HYD	A10-D	-	3	.01020	12.64	.508	.93330	1.500	1.936	PER IMP= 50.00
ADD HYD	AP#8	2& 3	20	.07740	86.51	4.697	1.13782	1.600	1.746	
ROUTE	AP#8R	20	2	.07740	84.14	4.697	1.13783	1.650	1.699	
ADD HYD	AP#9	10& 2	10	.35950	443.11	21.981	1.14645	1.550	1.926	
ROUTE	AP#9R	10	2	.35950	442.23	21.981	1.14645	1.550	1.922	
COMPUTE NM HYD	A11-D	-	3	.00860	13.87	.594	1.29435	1.500	2.519	PER IMP= 76.00
ADD HYD	AP#10	2& 3	20	.36810	454.18	22.575	1.14991	1.550	1.928	
COMPUTE NM HYD	B1-D&AP#11	-	3	.02300	34.43	1.451	1.18326	1.500	2.339	PER IMP= 68.00
ROUTE	AP#11R	3	2	.02300	30.50	1.451	1.18328	1.550	2.072	
COMPUTE NM HYD	B2-D	-	3	.03500	48.37	2.001	1.07217	1.500	2.159	PER IMP= 60.00
ADD HYD	AP#12	2& 3	10	.05800	75.46	3.453	1.11621	1.500	2.033	
ROUTE	AP#12R	10	2	.05800	70.44	3.453	1.11623	1.550	1.898	
COMPUTE NM HYD	B3-D	-	3	.04360	49.48	2.170	.93330	1.500	1.773	PER IMP= 50.00
ADD HYD	AP#13	2& 3	10	.10160	118.42	5.623	1.03772	1.550	1.821	
ROUTE	AP#13R	10	2	.10160	116.28	5.623	1.03772	1.550	1.788	
COMPUTE NM HYD	B4-D	-	3	.02300	28.48	1.145	.93330	1.500	1.935	PER IMP= 50.00
ADD HYD	AP#14	2& 3	10	.12460	141.21	6.768	1.01844	1.550	1.771	
ROUTE	AP#14R	10	12	.12460	140.69	6.768	1.01845	1.550	1.764	
COMPUTE NM HYD	S1-D&AP#15	-	3	.03140	45.64	1.912	1.14160	1.500	2.271	PER IMP= 65.00
ROUTE	AP-15R	3	2	.03140	44.09	1.912	1.14162	1.500	2.194	
COMPUTE NM HYD	S2-D	-	3	.01630	20.19	.811	.93330	1.500	1.935	PER IMP= 50.00
ADD HYD	AP#16	2& 3	10	.04770	64.28	2.723	1.07041	1.500	2.106	
ROUTE	AP#16R	10	2	.04770	63.42	2.723	1.07042	1.550	2.077	

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 = 2 NOTATION
COMPUTE NM HYD	S3-D	-	3	.05670	67.53	2.822	.93330	1.500	1.861	PER IMP= 50.00
ADD HYD	AP#17	2& 3	10	.10440	128.10	5.545	.99594	1.500	1.917	
ROUTE	AP#17R	10	2	.10440	129.55	5.545	.99595	1.550	1.939	
COMPUTE NM HYD	S4-D	-	3	.04360	53.32	2.493	1.07217	1.550	1.911	PER IMP= 60.00
ADD HYD	AP#18	2& 3	10	.14800	182.86	8.039	1.01840	1.550	1.931	
ROUTE	AP#18R	10	2	.14800	173.14	8.039	1.01840	1.550	1.828	
COMPUTE NM HYD	S5-D	-	3	.02380	32.55	1.343	1.05828	1.500	2.137	PER IMP= 59.00
ADD HYD	AP#19	2& 3	10	.17180	201.46	9.382	1.02392	1.550	1.832	
ADD HYD	AP#20	12&10	10	.29640	342.15	16.150	1.02162	1.550	1.804	
ADD HYD	PART AP#21	20&10	10	.66450	796.34	38.725	1.09268	1.550	1.872	
COMPUTE NM HYD	B5-D_TWRPND	-	3	.03910	20.53	.589	.28248	1.500	.821	PER IMP= 5.00
ADD HYD	AP#21	10& 3	20	.70360	815.60	39.314	1.04766	1.550	1.811	
ROUTE RESERVOIR	AP#22	20	12	.70360	22.55	37.241	.99242	2.700	.050	AC-FT= 28.615
ROUTE	AP#22R	12	2	.70360	22.55	37.214	.99170	2.750	.050	
COMPUTE NM HYD	B6-D	-	3	.04590	40.70	2.795	1.14160	1.700	1.385	PER IMP= 65.00
ADD HYD	AP#23	2& 3	10	.74950	58.48	40.009	1.00088	1.700	.122	
ROUTE	AP#23R	10	2	.74950	57.47	39.971	.99994	1.750	.120	
COMPUTE NM HYD	B7-D	-	3	.05910	58.27	3.686	1.16937	1.650	1.541	PER IMP= 67.00
ADD HYD	AP#24	2& 3	10	.80860	111.08	43.657	1.01233	1.700	.215	
ROUTE	AP#24R	10	2	.80860	110.07	43.624	1.01156	1.750	.213	
COMPUTE NM HYD	B8-D	-	3	.08910	48.46	4.435	.93330	1.900	.850	PER IMP= 50.00
ADD HYD	AP#25	2& 3	30	.89770	151.32	48.059	1.00379	1.750	.263	
COMPUTE NM HYD	A12-D&AP#26	-	3	.03590	56.08	2.478	1.29435	1.500	2.441	PER IMP= 76.00
ROUTE	AP#26R	3	2	.03590	53.92	2.478	1.29437	1.550	2.347	
COMPUTE NM HYD	A13-D	-	3	.04520	50.84	2.752	1.14160	1.600	1.758	PER IMP= 65.00
ADD HYD	AP#27	2& 3	10	.08110	104.48	5.230	1.20921	1.550	2.013	
ROUTE	AP#27R	10	2	.08110	100.28	5.230	1.20922	1.600	1.932	
COMPUTE NM HYD	A14-D	-	3	.04520	38.63	2.919	1.21103	1.750	1.335	PER IMP= 70.00
ADD HYD	AP#28	2& 3	10	.12630	127.40	8.150	1.20986	1.600	1.576	
ROUTE	AP#28R	10	2	.12630	126.72	8.150	1.20986	1.600	1.568	
COMPUTE NM HYD	A15-D	-	3	.02530	27.89	1.447	1.07217	1.550	1.723	PER IMP= 60.00
ADD HYD	PART AP#33	2& 3	20	.15160	153.94	9.596	1.18688	1.600	1.587	
COMPUTE NM HYD	A17-D&AP#29	-	3	.01080	13.38	.538	.93330	1.500	1.936	PER IMP= 50.00
ROUTE	AP#29R	3	2	.01080	9.06	.538	.93334	1.600	1.311	
COMPUTE NM HYD	A18-D	-	3	.01030	14.24	.589	1.07217	1.500	2.160	PER IMP= 60.00
ADD HYD	AP#30	2& 3	10	.02110	21.01	1.127	1.00106	1.550	1.556	
ROUTE	AP#30R	10	2	.02110	13.26	1.126	1.00104	1.650	.982	
COMPUTE NM HYD	A19-D	-	3	.01080	12.72	.618	1.07217	1.550	1.841	PER IMP= 60.00
ADD HYD	AP#31	2& 3	10	.03190	24.03	1.744	1.02509	1.600	1.177	
ROUTE	AP#31R	10	2	.03190	23.54	1.744	1.02510	1.600	1.153	
COMPUTE NM HYD	A20-D	-	3	.00690	9.54	.395	1.07217	1.500	2.161	PER IMP= 60.00
ADD HYD	AP#32	2& 3	10	.03880	29.89	2.139	1.03345	1.600	1.204	
ROUTE	AP#32R	10	22	.03880	28.27	2.139	1.03345	1.650	1.138	
ADD HYD	AP#33	20&22	10	.19040	181.25	11.735	1.15561	1.600	1.487	
ROUTE	AP#33R	10	2	.19040	180.24	11.735	1.15561	1.650	1.479	
COMPUTE NM HYD	A16-D	-	3	.06380	43.27	3.176	.93330	1.750	1.060	PER IMP= 50.00
ADD HYD	AP#34	2& 3	10	.25420	218.83	14.910	1.09981	1.650	1.345	
COMPUTE NM HYD	S6-D&AP#35	-	3	.03780	32.14	2.161	1.07217	1.700	1.329	PER IMP= 60.00
ROUTE	AP#35R	3	2	.03780	31.42	2.161	1.07217	1.700	1.299	
COMPUTE NM HYD	S7-D	-	3	.05700	42.70	3.724	1.22492	1.850	1.170	PER IMP= 71.00
ADD HYD	AP#36	2& 3	10	.09480	71.06	5.885	1.16400	1.800	1.171	
ROUTE	AP#36R	10	2	.09480	69.80	5.885	1.16400	1.850	1.150	

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 = 3 NOTATION
COMPUTE NM HYD	S8-D	-	3	.06830	51.63	4.057	1.11383	1.800	1.181	PER IMP= 63.00
ADD HYD	AP#37	2& 3	10	.16310	120.57	9.942	1.14298	1.800	1.155	
ROUTE	AP#37R	10	2	.16310	120.27	9.942	1.14299	1.850	1.152	
COMPUTE NM HYD	S9-D	-	3	.07480	92.37	3.723	.93330	1.500	1.929	PER IMP= 50.00
ADD HYD	AP#38	2& 3	20	.23790	148.94	13.666	1.07705	1.800	.978	
COMPUTE NM HYD	C1-D&AP#39	-	3	.03860	57.22	2.407	1.16937	1.500	2.316	PER IMP= 67.00
ROUTE	AP#39R	3	2	.03860	55.48	2.407	1.16939	1.500	2.246	
COMPUTE NM HYD	C2-D	-	3	.01880	27.33	1.145	1.14160	1.500	2.272	PER IMP= 65.00
ADD HYD	AP#40	2& 3	10	.05740	82.81	3.552	1.16027	1.500	2.254	
ROUTE	AP#40R	10	2	.05740	81.05	3.552	1.16028	1.550	2.206	
COMPUTE NM HYD	C3-D	-	3	.02340	42.41	1.858	1.48877	1.500	2.832	PER IMP= 90.00
ADD HYD	AP#41	2& 3	10	.08080	120.53	5.410	1.25540	1.500	2.331	
COMPUTE NM HYD	C4-D&AP#42	-	3	.03080	47.24	2.081	1.26658	1.500	2.396	PER IMP= 74.00
ROUTE	AP#42R	3	2	.03080	46.52	2.081	1.26660	1.500	2.360	
ADD HYD	AP#43	10& 2	10	.11160	167.05	7.490	1.25848	1.500	2.339	
ROUTE	AP#43R	10	2	.11160	164.06	7.491	1.25849	1.550	2.297	
COMPUTE NM HYD	C5-D	-	3	.00910	13.07	.508	1.04738	1.500	2.244	PER IMP= 50.00
ADD HYD	AP#44	2& 3	10	.12070	176.14	7.999	1.24257	1.550	2.280	
COMPUTE NM HYD	C6-D&AP#45	-	3	.01940	35.16	1.540	1.48877	1.500	2.832	PER IMP= 90.00
FINISH										

AMOLE DEL NORTE STORM DRAINAGE FACILITIES TOWER/SAGE DRAINAGE MASTER PLAN

AHYMO SUMMARY TABLE - 100 YEAR - 6 HOUR STORM

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
INPUT FILE = MASTER6.IN

RUN DATE (MON/DAY/YR) =12/10/1994
USER NO.= ANASRONM.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										
RAINFALL TYPE= 1										TIME= .00
SEDIMENT BULK										RAIN6= 2.210
COMPUTE NM HYD	A1-D&AP#1	-	3	.04580	111.86	4.273	1.74932	1.533	3.816	PK BF = 1.05
ROUTE	AP-1R	3	2	.04580	109.16	4.273	1.74933	1.533	3.724	PER IMP= 76.00
COMPUTE NM HYD	A2-D	-	3	.03950	95.91	3.514	1.66790	1.500	3.794	PER IMP= 70.00
ADD HYD	AP#2	2& 3	10	.08530	203.51	7.787	1.71161	1.533	3.728	
ROUTE	AP#2R	10	2	.08530	194.79	7.787	1.71162	1.567	3.568	
COMPUTE NM HYD	A3-D	-	3	.04190	102.87	3.576	1.60006	1.500	3.836	PER IMP= 65.00
ADD HYD	AP#3	2& 3	10	.12720	291.85	11.362	1.67486	1.533	3.585	
ROUTE	AP#3R	10	2	.12720	286.92	11.362	1.67487	1.533	3.524	
COMPUTE NM HYD	A4-D	-	3	.04390	109.89	4.223	1.80360	1.533	3.911	PER IMP= 80.00
ADD HYD	AP#4	2& 3	10	.17110	396.80	15.585	1.70789	1.533	3.624	
ROUTE	AP#4R	10	2	.17110	392.87	15.585	1.70790	1.567	3.588	
COMPUTE NM HYD	A5-D	-	3	.04520	102.56	3.694	1.53221	1.500	3.545	PER IMP= 60.00
ADD HYD	AP#5	2& 3	10	.21630	490.46	19.279	1.67118	1.533	3.543	
ROUTE	AP#5R	10	2	.21630	488.61	19.279	1.67118	1.567	3.530	
COMPUTE NM HYD	A6-D	-	3	.04520	95.37	3.367	1.39652	1.500	3.297	PER IMP= 50.00
ADD HYD	PART_AP#9	2& 3	10	.26150	573.77	22.645	1.62370	1.567	3.428	
COMPUTE NM HYD	A7-D	-	3	.02060	43.47	1.534	1.39651	1.500	3.297	PER IMP= 50.00
ADD HYD	PART_AP#9	10& 3	10	.28210	616.11	24.180	1.60711	1.533	3.413	
COMPUTE NM HYD	A8-D&AP#6	-	3	.05700	119.28	5.070	1.66790	1.567	3.270	PER IMP= 70.00
ROUTE	AP#6R	3	2	.05700	115.76	5.070	1.66791	1.600	3.173	
COMPUTE NM HYD	A9-D	-	3	.01020	22.61	.760	1.39652	1.500	3.464	PER IMP= 50.00
ADD HYD	AP#7	2& 3	20	.06720	131.61	5.830	1.62670	1.600	3.060	
ROUTE	AP#7R	20	2	.06720	131.12	5.830	1.62671	1.600	3.049	
COMPUTE NM HYD	A10-D	-	3	.01020	22.61	.760	1.39652	1.500	3.464	PER IMP= 50.00
ADD HYD	AP#8	2& 3	20	.07740	146.97	6.590	1.59636	1.600	2.967	
ROUTE	AP#8R	20	2	.07740	143.44	6.590	1.59637	1.633	2.896	
ADD HYD	AP#9	10& 2	10	.35950	747.50	30.769	1.60480	1.567	3.249	
ROUTE	AP#9R	10	2	.35950	747.19	30.769	1.60480	1.567	3.248	
COMPUTE NM HYD	A11-D	-	3	.00860	22.64	.802	1.74932	1.500	4.113	PER IMP= 76.00
ADD HYD	AP#10	2& 3	20	.36810	765.60	31.572	1.60817	1.567	3.250	
COMPUTE NM HYD	B1-D&AP#11	-	3	.02300	57.58	2.013	1.64077	1.500	3.912	PER IMP= 68.00
ROUTE	AP#11R	3	2	.02300	53.26	2.013	1.64077	1.533	3.618	
COMPUTE NM HYD	B2-D	-	3	.03500	83.14	2.860	1.53221	1.500	3.712	PER IMP= 60.00
ADD HYD	AP#12	2& 3	10	.05800	132.29	4.873	1.57525	1.533	3.564	
ROUTE	AP#12R	10	2	.05800	124.14	4.873	1.57526	1.567	3.344	
COMPUTE NM HYD	B3-D	-	3	.04360	89.24	3.247	1.39652	1.533	3.198	PER IMP= 50.00
ADD HYD	AP#13	2& 3	10	.10160	210.88	8.120	1.49854	1.533	3.243	
ROUTE	AP#13R	10	2	.10160	209.23	8.120	1.49855	1.567	3.218	
COMPUTE NM HYD	B4-D	-	3	.02300	50.97	1.713	1.39652	1.500	3.463	PER IMP= 50.00
ADD HYD	AP#14	2& 3	10	.12460	251.67	9.833	1.47971	1.567	3.156	
ROUTE	AP#14R	10	12	.12460	251.49	9.833	1.47971	1.567	3.154	
COMPUTE NM HYD	S1-D&AP#15	-	3	.03140	77.10	2.680	1.60006	1.500	3.836	PER IMP= 65.00
ROUTE	AP-15R	3	2	.03140	75.27	2.680	1.60006	1.533	3.745	
COMPUTE NM HYD	S2-D	-	3	.01630	36.13	1.214	1.39652	1.500	3.463	PER IMP= 50.00
ADD HYD	AP#16	2& 3	10	.04770	109.77	3.894	1.53049	1.533	3.596	
ROUTE	AP#16R	10	2	.04770	109.08	3.894	1.53050	1.533	3.573	

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 = 2 NOTATION
COMPUTE NM HYD	S3-D	-	3	.05670	119.63	4.223	1.39652	1.500	3.297	PER IMP= 50.00
ADD HYD	AP#17	2& 3	10	.10440	227.71	8.117	1.45773	1.533	3.408	
ROUTE	AP#17R	10	2	.10440	224.43	8.117	1.45773	1.533	3.359	
COMPUTE NM HYD	S4-D	-	3	.04360	93.23	3.563	1.53221	1.533	3.341	PER IMP= 60.00
ADD HYD	AP#18	2& 3	10	.14800	317.66	11.679	1.47967	1.533	3.354	
ROUTE	AP#18R	10	2	.14800	301.32	11.680	1.47967	1.567	3.181	
COMPUTE NM HYD	S5-D	-	3	.02380	56.16	1.928	1.51864	1.500	3.687	PER IMP= 59.00
ADD HYD	AP#19	2& 3	10	.17180	347.65	13.607	1.48506	1.567	3.162	
ADD HYD	AP#20	12&10	10	.29640	599.14	23.440	1.48281	1.567	3.158	
ADD HYD	PART AP#21	20&10	10	.66450	1364.74	55.012	1.55226	1.567	3.209	
COMPUTE NM HYD	B5-D_TWRPND	-	3	.03910	54.90	1.551	.74390	1.500	2.194	PER IMP= 5.00
ADD HYD	AP#21	10& 3	20	.70360	1414.13	56.563	1.50734	1.567	3.140	
ROUTE RESERVOIR	AP#22	20	12	.70360	25.11	35.845	.95522	2.967	.056	AC-FT= 51.036
ROUTE	AP#22R	12	2	.70360	25.11	35.760	.95294	3.000	.056	
COMPUTE NM HYD	B6-D	-	3	.04590	67.94	3.917	1.60006	1.700	2.313	PER IMP= 65.00
ADD HYD	AP#23	2& 3	10	.74950	89.59	39.676	.99257	1.700	.187	
ROUTE	AP#23R	10	2	.74950	87.10	39.564	.98976	1.767	.182	
COMPUTE NM HYD	B7-D	-	3	.05910	96.51	5.129	1.62720	1.667	2.552	PER IMP= 67.00
ADD HYD	AP#24	2& 3	10	.80860	178.28	44.693	1.03635	1.700	.345	
ROUTE	AP#24R	10	2	.80860	176.50	44.595	1.03409	1.733	.341	
COMPUTE NM HYD	B8-D	-	3	.08910	85.98	6.636	1.39652	1.900	1.508	PER IMP= 50.00
ADD HYD	AP#25	2& 3	30	.89770	249.59	51.232	1.07006	1.767	.434	
COMPUTE NM HYD	A12-D&AP#26	-	3	.03590	90.60	3.349	1.74932	1.500	3.943	PER IMP= 76.00
ROUTE	AP#26R	3	2	.03590	88.53	3.349	1.74933	1.533	3.853	
COMPUTE NM HYD	A13-D	-	3	.04520	85.68	3.857	1.60006	1.567	2.962	PER IMP= 65.00
ADD HYD	AP#27	2& 3	10	.08110	170.19	7.207	1.66612	1.567	3.279	
ROUTE	AP#27R	10	2	.08110	163.37	7.207	1.66613	1.567	3.148	
COMPUTE NM HYD	A14-D	-	3	.04520	63.41	4.021	1.66790	1.767	2.192	PER IMP= 70.00
ADD HYD	AP#28	2& 3	10	.12630	206.62	11.227	1.66675	1.600	2.556	
ROUTE	AP#28R	10	2	.12630	205.14	11.227	1.66676	1.633	2.538	
COMPUTE NM HYD	A15-D	-	3	.02530	47.80	2.067	1.53221	1.567	2.952	PER IMP= 60.00
ADD HYD	PART AP#33	2& 3	20	.15160	250.62	13.295	1.64430	1.600	2.583	
COMPUTE NM HYD	A17-D&AP#29	-	3	.01080	23.94	.804	1.39652	1.500	3.464	PER IMP= 50.00
ROUTE	AP#29R	3	2	.01080	17.25	.804	1.39654	1.567	2.496	
COMPUTE NM HYD	A18-D	-	3	.01030	24.48	.842	1.53221	1.500	3.713	PER IMP= 60.00
ADD HYD	AP#30	2& 3	10	.02110	39.23	1.646	1.46272	1.533	2.905	
ROUTE	AP#30R	10	2	.02110	27.05	1.646	1.46274	1.633	2.003	
COMPUTE NM HYD	A19-D	-	3	.01080	21.52	.883	1.53221	1.567	3.114	PER IMP= 60.00
ADD HYD	AP#31	2& 3	10	.03190	46.47	2.529	1.48619	1.600	2.276	
ROUTE	AP#31R	10	2	.03190	45.55	2.529	1.48621	1.633	2.231	
COMPUTE NM HYD	A20-D	-	3	.00690	16.40	.564	1.53221	1.500	3.715	PER IMP= 60.00
ADD HYD	AP#32	2& 3	10	.03880	56.70	3.092	1.49437	1.600	2.283	
ROUTE	AP#32R	10	22	.03880	53.24	3.092	1.49438	1.633	2.144	
ADD HYD	AP#33	20&22	10	.19040	302.55	16.387	1.61374	1.600	2.483	
ROUTE	AP#33R	10	2	.19040	300.65	16.387	1.61375	1.633	2.467	
COMPUTE NM HYD	A16-D	-	3	.06380	76.29	4.752	1.39652	1.733	1.868	PER IMP= 50.00
ADD HYD	AP#34	2& 3	10	.25420	368.19	21.139	1.55922	1.667	2.263	
COMPUTE NM HYD	S6-D&AP#35	-	3	.03780	54.70	3.089	1.53221	1.700	2.261	PER IMP= 60.00
ROUTE	AP#35R	3	2	.03780	53.55	3.089	1.53221	1.733	2.213	
COMPUTE NM HYD	S7-D	-	3	.05700	69.88	5.112	1.68147	1.867	1.915	PER IMP= 71.00
ADD HYD	AP#36	2& 3	10	.09480	118.32	8.201	1.62194	1.800	1.950	
ROUTE	AP#36R	10	2	.09480	115.67	8.201	1.62195	1.833	1.906	

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 = 3 NOTATION
COMPUTE NM HYD	S8-D	-	3	.06830	87.17	5.730	1.57292	1.767	1.994	PER IMP= 63.00
ADD HYD	AP#37	2& 3	10	.16310	201.19	13.930	1.60141	1.800	1.927	
ROUTE	AP#37R	10	2	.16310	201.09	13.930	1.60141	1.833	1.926	
COMPUTE NM HYD	S9-D	-	3	.07480	165.79	5.571	1.39652	1.500	3.463	PER IMP= 50.00
ADD HYD	AP#38	2& 3	20	.23790	251.17	19.501	1.53698	1.767	1.650	
COMPUTE NM HYD	C1-D&AP#39	-	3	.03860	96.00	3.350	1.62720	1.500	3.886	PER IMP= 67.00
ROUTE	AP#39R	3	2	.03860	93.15	3.350	1.62720	1.533	3.771	
COMPUTE NM HYD	C2-D	-	3	.01880	46.17	1.604	1.60006	1.500	3.837	PER IMP= 65.00
ADD HYD	AP#40	2& 3	10	.05740	137.58	4.954	1.61830	1.500	3.745	
ROUTE	AP#40R	10	2	.05740	136.26	4.954	1.61831	1.533	3.709	
COMPUTE NM HYD	C3-D	-	3	.02340	66.79	2.420	1.93929	1.500	4.460	PER IMP= 90.00
ADD HYD	AP#41	2& 3	10	.08080	199.05	7.374	1.71126	1.533	3.849	
COMPUTE NM HYD	C4-D&AP#42	-	3	.03080	76.75	2.829	1.72218	1.500	3.893	PER IMP= 74.00
ROUTE	AP#42R	3	2	.03080	76.59	2.829	1.72219	1.533	3.885	
ADD HYD	AP#43	10& 2	10	.11160	275.63	10.203	1.71427	1.533	3.859	
ROUTE	AP#43R	10	2	.11160	261.93	10.203	1.71427	1.533	3.667	
COMPUTE NM HYD	C5-D	-	3	.00910	21.80	.762	1.57073	1.500	3.742	PER IMP= 50.00
ADD HYD	AP#44	2& 3	10	.12070	283.42	10.966	1.70345	1.533	3.669	
COMPUTE NM HYD	C6-D&AP#45	-	3	.01940	55.38	2.007	1.93929	1.500	4.460	PER IMP= 90.00
FINISH										

AMOLE DEL NORTE STORM DRAINAGE FACILITIES TOWER/SAGE DRAINAGE MASTER PLAN

AHYMO SUMMARY TABLE - 100 YEAR - 24 HOUR STORM

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
INPUT FILE = MASTER24.IN

RUN DATE (MON/DAY/YR) =12/10/1994
USER NO.= ANASRONM.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= 2										RAIN24= 2.670
SEDIMENT BULK										PK BF = 1.05
COMPUTE NM HYD	A1-D&AP#1	-	3	.04580	110.15	5.172	2.11755	1.500	3.758	PER IMP= 76.00
ROUTE	AP-1R	3	2	.04580	108.15	5.172	2.11756	1.550	3.690	
COMPUTE NM HYD	A2-D	-	3	.03950	95.25	4.228	2.00697	1.500	3.768	PER IMP= 70.00
ADD HYD	AP#2	2& 3	10	.08530	197.61	9.400	2.06634	1.500	3.620	
ROUTE	AP#2R	10	2	.08530	195.92	9.401	2.06635	1.550	3.589	
COMPUTE NM HYD	A3-D	-	3	.04190	101.17	4.279	1.91483	1.500	3.773	PER IMP= 65.00
ADD HYD	AP#3	2& 3	10	.12720	284.05	13.679	2.01643	1.550	3.489	
ROUTE	AP#3R	10	2	.12720	288.58	13.679	2.01643	1.550	3.545	
COMPUTE NM HYD	A4-D	-	3	.04390	108.30	5.130	2.19127	1.500	3.855	PER IMP= 80.00
ADD HYD	AP#4	2& 3	10	.17110	391.99	18.810	2.06129	1.550	3.580	
ROUTE	AP#4R	10	2	.17110	395.01	18.810	2.06129	1.550	3.607	
COMPUTE NM HYD	A5-D	-	3	.04520	101.94	4.394	1.82268	1.500	3.524	PER IMP= 60.00
ADD HYD	AP#5	2& 3	10	.21630	488.75	23.204	2.01143	1.550	3.531	
ROUTE	AP#5R	10	2	.21630	489.83	23.204	2.01143	1.550	3.538	
COMPUTE NM HYD	A6-D	-	3	.04520	94.89	3.950	1.63839	1.500	3.280	PER IMP= 50.00
ADD HYD	PART AP#9	2& 3	10	.26150	577.67	27.153	1.94694	1.550	3.452	
COMPUTE NM HYD	A7-D	-	3	.02060	43.26	1.800	1.63839	1.500	3.281	PER IMP= 50.00
ADD HYD	PART AP#9	10& 3	10	.28210	617.72	28.953	1.92441	1.550	3.421	
COMPUTE NM HYD	A8-D&AP#6	-	3	.05700	118.36	6.101	2.00698	1.550	3.245	PER IMP= 70.00
ROUTE	AP#6R	3	2	.05700	116.16	6.101	2.00698	1.600	3.184	
COMPUTE NM HYD	A9-D	-	3	.01020	22.28	.891	1.63839	1.500	3.412	PER IMP= 50.00
ADD HYD	AP#7	2& 3	20	.06720	131.46	6.992	1.95102	1.600	3.057	
ROUTE	AP#7R	20	2	.06720	132.02	6.992	1.95103	1.600	3.070	
COMPUTE NM HYD	A10-D	-	3	.01020	22.28	.891	1.63839	1.500	3.412	PER IMP= 50.00
ADD HYD	AP#8	2& 3	20	.07740	147.32	7.884	1.90982	1.600	2.974	
ROUTE	AP#8R	20	2	.07740	145.00	7.884	1.90983	1.600	2.927	
ADD HYD	AP#9	10& 2	10	.35950	747.91	36.837	1.92127	1.550	3.251	
ROUTE	AP#9R	10	2	.35950	745.86	36.837	1.92127	1.550	3.242	
COMPUTE NM HYD	A11-D	-	3	.00860	22.24	.971	2.11755	1.500	4.040	PER IMP= 76.00
ADD HYD	AP#10	2& 3	20	.36810	765.11	37.808	1.92586	1.550	3.248	
COMPUTE NM HYD	B1-D&AP#11	-	3	.02300	56.61	2.417	1.97012	1.500	3.845	PER IMP= 68.00
ROUTE	AP#11R	3	2	.02300	52.84	2.417	1.97014	1.550	3.589	
COMPUTE NM HYD	B2-D	-	3	.03500	81.81	3.402	1.82268	1.500	3.652	PER IMP= 60.00
ADD HYD	AP#12	2& 3	10	.05800	130.68	5.819	1.88114	1.500	3.521	
ROUTE	AP#12R	10	2	.05800	125.22	5.819	1.88115	1.550	3.373	
COMPUTE NM HYD	B3-D	-	3	.04360	87.28	3.810	1.63839	1.500	3.128	PER IMP= 50.00
ADD HYD	AP#13	2& 3	10	.10160	209.92	9.629	1.77697	1.550	3.228	
ROUTE	AP#13R	10	2	.10160	209.40	9.629	1.77697	1.550	3.220	
COMPUTE NM HYD	B4-D	-	3	.02300	50.21	2.010	1.63839	1.500	3.411	PER IMP= 50.00
ADD HYD	AP#14	2& 3	10	.12460	253.60	11.639	1.75138	1.550	3.180	
ROUTE	AP#14R	10	12	.12460	250.94	11.639	1.75139	1.550	3.147	
COMPUTE NM HYD	S1-D&AP#15	-	3	.03140	75.82	3.207	1.91483	1.500	3.773	PER IMP= 65.00
ROUTE	AP-15R	3	2	.03140	73.86	3.207	1.91484	1.500	3.675	
COMPUTE NM HYD	S2-D	-	3	.01630	35.59	1.424	1.63839	1.500	3.412	PER IMP= 50.00
ADD HYD	AP#16	2& 3	10	.04770	109.45	4.631	1.82035	1.500	3.585	
ROUTE	AP#16R	10	2	.04770	106.53	4.631	1.82037	1.550	3.489	

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 = 2 NOTATION
COMPUTE NM HYD	S3-D	-	3	.05670	119.03	4.954	1.63839	1.500	3.280	PER IMP= 50.00
ADD HYD	AP#17	2& 3	10	.10440	222.73	9.585	1.72153	1.500	3.333	
ROUTE	AP#17R	10	2	.10440	222.44	9.586	1.72153	1.550	3.329	
COMPUTE NM HYD	S4-D	-	3	.04360	90.14	4.238	1.82268	1.550	3.230	PER IMP= 60.00
ADD HYD	AP#18	2& 3	10	.14800	312.58	13.824	1.75132	1.550	3.300	
ROUTE	AP#18R	10	2	.14800	300.36	13.824	1.75133	1.550	3.171	
COMPUTE NM HYD	S5-D	-	3	.02380	55.26	2.290	1.80425	1.500	3.628	PER IMP= 59.00
ADD HYD	AP#19	2& 3	10	.17180	348.69	16.114	1.75866	1.550	3.171	
ADD HYD	AP#20	12&10	10	.29640	599.64	27.753	1.75560	1.550	3.161	
ADD HYD	PART AP#21	20&10	10	.66450	1364.74	65.561	1.84991	1.550	3.209	
COMPUTE NM HYD	B5-D_TWRPND	-	3	.03910	54.51	1.599	.76663	1.500	2.178	PER IMP= 5.00
ADD HYD	AP#21	10& 3	20	.70360	1415.47	67.160	1.78971	1.550	3.143	
ROUTE RESERVOIR	AP#22	20	12	.70360	25.11	53.623	1.42899	2.950	.056	AC-FT= 51.017
ROUTE	AP#22R	12	2	.70360	25.11	53.548	1.42698	3.000	.056	
COMPUTE NM HYD	B6-D	-	3	.04590	67.74	4.688	1.91483	1.700	2.306	PER IMP= 65.00
ADD HYD	AP#23	2& 3	10	.74950	89.59	58.235	1.45685	1.700	.187	
ROUTE	AP#23R	10	2	.74950	87.30	58.135	1.45433	1.750	.182	
COMPUTE NM HYD	B7-D	-	3	.05910	96.33	6.152	1.95169	1.650	2.547	PER IMP= 67.00
ADD HYD	AP#24	2& 3	10	.80860	178.07	64.286	1.49069	1.700	.344	
ROUTE	AP#24R	10	2	.80860	176.26	64.199	1.48865	1.700	.341	
COMPUTE NM HYD	B8-D	-	3	.08910	85.79	7.786	1.63839	1.900	1.504	PER IMP= 50.00
ADD HYD	AP#25	2& 3	30	.89770	249.51	71.984	1.50352	1.750	.434	
COMPUTE NM HYD	A12-D&AP#26	-	3	.03590	89.93	4.054	2.11755	1.500	3.914	PER IMP= 76.00
ROUTE	AP#26R	3	2	.03590	86.27	4.054	2.11756	1.550	3.755	
COMPUTE NM HYD	A13-D	-	3	.04520	84.50	4.616	1.91483	1.600	2.921	PER IMP= 65.00
ADD HYD	AP#27	2& 3	10	.08110	170.34	8.670	2.00456	1.550	3.282	
ROUTE	AP#27R	10	2	.08110	161.75	8.670	2.00457	1.600	3.116	
COMPUTE NM HYD	A14-D	-	3	.04520	63.35	4.838	2.00697	1.750	2.190	PER IMP= 70.00
ADD HYD	AP#28	2& 3	10	.12630	207.69	13.508	2.00542	1.600	2.569	
ROUTE	AP#28R	10	2	.12630	205.93	13.509	2.00542	1.600	2.548	
COMPUTE NM HYD	A15-D	-	3	.02530	47.15	2.459	1.82268	1.550	2.912	PER IMP= 60.00
ADD HYD	PART AP#33	2& 3	20	.15160	252.00	15.968	1.97492	1.600	2.597	
COMPUTE NM HYD	A17-D&AP#29	-	3	.01080	23.59	.944	1.63839	1.500	3.412	PER IMP= 50.00
ROUTE	AP#29R	3	2	.01080	17.21	.944	1.63844	1.600	2.489	
COMPUTE NM HYD	A18-D	-	3	.01030	24.08	1.001	1.82268	1.500	3.654	PER IMP= 60.00
ADD HYD	AP#30	2& 3	10	.02110	37.99	1.945	1.72833	1.550	2.814	
ROUTE	AP#30R	10	2	.02110	27.33	1.945	1.72829	1.650	2.024	
COMPUTE NM HYD	A19-D	-	3	.01080	21.49	1.050	1.82268	1.550	3.110	PER IMP= 60.00
ADD HYD	AP#31	2& 3	10	.03190	46.33	2.995	1.76023	1.600	2.269	
ROUTE	AP#31R	10	2	.03190	45.57	2.995	1.76023	1.600	2.232	
COMPUTE NM HYD	A20-D	-	3	.00690	16.14	.671	1.82268	1.500	3.655	PER IMP= 60.00
ADD HYD	AP#32	2& 3	10	.03880	56.53	3.665	1.77133	1.600	2.276	
ROUTE	AP#32R	10	22	.03880	53.38	3.665	1.77131	1.650	2.150	
ADD HYD	AP#33	20&22	10	.19040	304.40	19.633	1.93343	1.600	2.498	
ROUTE	AP#33R	10	2	.19040	301.70	19.633	1.93343	1.650	2.476	
COMPUTE NM HYD	A16-D	-	3	.06380	76.21	5.575	1.63839	1.750	1.867	PER IMP= 50.00
ADD HYD	AP#34	2& 3	10	.25420	370.33	25.208	1.85938	1.650	2.276	
COMPUTE NM HYD	S6-D&AP#35	-	3	.03780	54.41	3.675	1.82268	1.700	2.249	PER IMP= 60.00
ROUTE	AP#35R	3	2	.03780	53.37	3.675	1.82269	1.700	2.206	
COMPUTE NM HYD	S7-D	-	3	.05700	69.82	6.157	2.02540	1.850	1.914	PER IMP= 71.00
ADD HYD	AP#36	2& 3	10	.09480	118.15	9.832	1.94456	1.800	1.947	
ROUTE	AP#36R	10	2	.09480	115.65	9.832	1.94456	1.850	1.906	

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 = 3 NOTATION
COMPUTE NM HYD	S8-D	-	3	.06830	86.71	6.841	1.87797	1.750	1.984	PER IMP= 63.00
ADD HYD	AP#37	2& 3	10	.16310	201.53	16.672	1.91667	1.800	1.931	
ROUTE	AP#37R	10	2	.16310	200.55	16.672	1.91667	1.800	1.921	
COMPUTE NM HYD	S9-D	-	3	.07480	163.31	6.536	1.63839	1.500	3.411	PER IMP= 50.00
ADD HYD	AP#38	2& 3	20	.23790	251.06	23.209	1.82917	1.750	1.649	
COMPUTE NM HYD	C1-D&AP#39	-	3	.03860	94.39	4.018	1.95169	1.500	3.821	PER IMP= 67.00
ROUTE	AP#39R	3	2	.03860	91.67	4.018	1.95170	1.500	3.711	
COMPUTE NM HYD	C2-D	-	3	.01880	45.40	1.920	1.91483	1.500	3.773	PER IMP= 65.00
ADD HYD	AP#40	2& 3	10	.05740	137.07	5.938	1.93961	1.500	3.731	
ROUTE	AP#40R	10	2	.05740	132.85	5.938	1.93962	1.550	3.616	
COMPUTE NM HYD	C3-D	-	3	.02340	65.54	2.965	2.37556	1.500	4.376	PER IMP= 90.00
ADD HYD	AP#41	2& 3	10	.08080	195.47	8.902	2.06586	1.500	3.780	
COMPUTE NM HYD	C4-D&AP#42	-	3	.03080	76.20	3.418	2.08069	1.500	3.865	PER IMP= 74.00
ROUTE	AP#42R	3	2	.03080	75.14	3.418	2.08070	1.500	3.812	
ADD HYD	AP#43	10& 2	10	.11160	270.61	12.320	2.06995	1.500	3.789	
ROUTE	AP#43R	10	2	.11160	262.56	12.320	2.06996	1.550	3.676	
COMPUTE NM HYD	C5-D	-	3	.00910	21.64	.880	1.81242	1.500	3.716	PER IMP= 50.00
ADD HYD	AP#44	2& 3	10	.12070	282.44	13.200	2.05053	1.550	3.656	
COMPUTE NM HYD	C6-D&AP#45	-	3	.01940	54.34	2.458	2.37556	1.500	4.377	PER IMP= 90.00
FINISH										



CITY OF
Albuquerque
October 30, 1996

Martin J. Chávez, Mayor

Dennis Lorenz
Brasher & Lorenz, Inc.
2201 San Perdro NE
Building 1 Suite 210
Albuquerque, NM 87110

**RE: MI CASA ESTATES (L9-D15). DRAINAGE REPORT SUBMITTAL FOR PRELIMINARY
PLAT APPROVAL. ENGINEER'S STAMP DATED 10-18-96.**

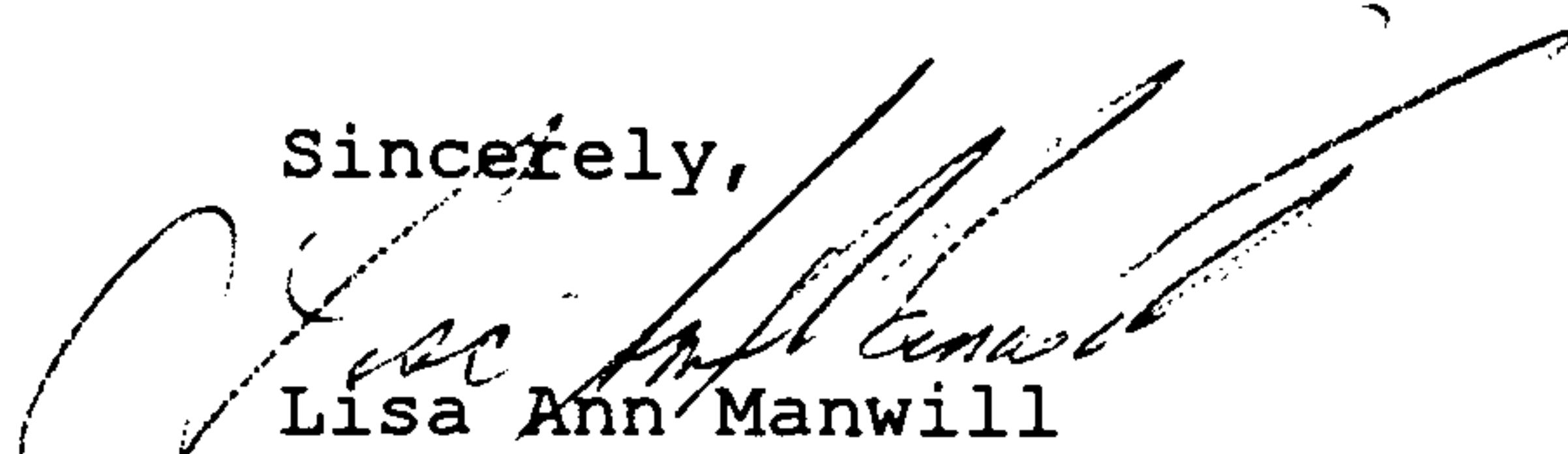
Dear Mr. Lorenz:

Based on the information provided on your October 22, 1996 submittal, City Hydrology has the following comments:

1. Please provide a minimum 1-foot water block at each entrance to the subdivision.
2. How will water from off site basin "C" enter the channel between lots 17 and 18? It appears that the CMU retaining wall will block the water.
3. Will the channel between lots 17 and 18 be maintained by the City? If so, the channel will have to be built to City Standards (concrete lined).
4. Provide a copy of the proposed infrastructure list.
5. Give inlet elevations. What type of inlets are going to be used? Provide inlet capacity calculations.
7. According to SAD 222, what is this basins allowable discharge? Please provide copies of the supporting documents.

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.

Good for You, Albuquerque!



DRAINAGE INFORMATION SHEET

PROJECT TITLE: MI CASA ESTATES ZONE ATLAS/DRNG. FILE #: L9/A15
 DRB #: 96-285 EPC #: — WORK ORDER #: —
 LEGAL DESCRIPTION: TRACT 433 TOWN OF ATRISCO GRANT UNIT 3
 CITY ADDRESS: TOWER RD SW

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

OWNER: CHRONIS ENTERPRISES CONTACT: —
 ADDRESS: 1102 WASHINGTON NE PHONE: 836-2660

ARCHITECT: NA CONTACT: —
 ADDRESS: — PHONE: —

SURVEYOR: PRECISION SURVEYS CONTACT: L. MEBRAND
 ADDRESS: 2929 COOKS NW PHONE: 839-0569

CONTRACTOR: — CONTACT: —
 ADDRESS: — PHONE: —

TYPE OF SUBMITTAL:

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

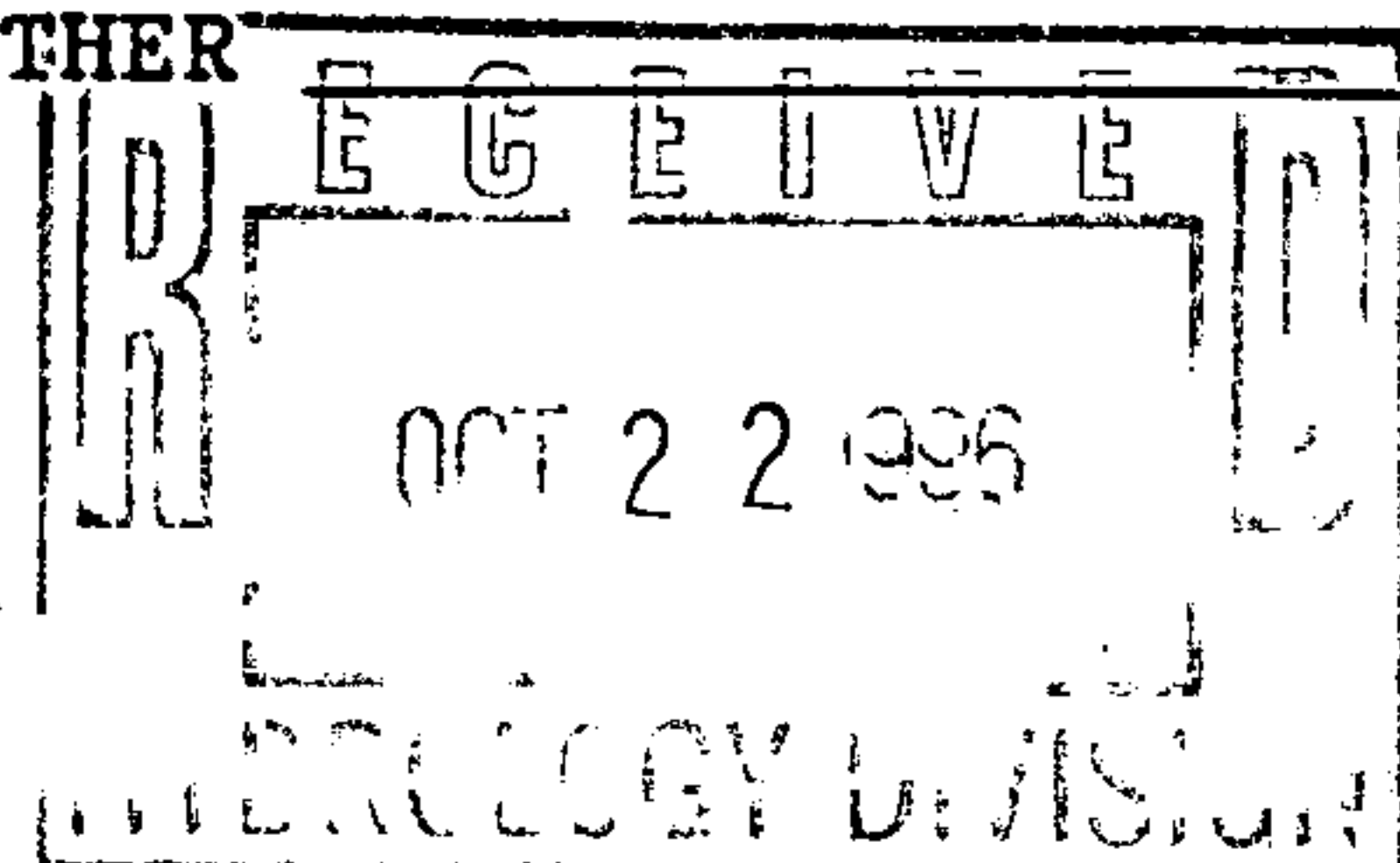
PRE-DESIGN MEETING:

- ☒ 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: 10-21-96
 BY: Dennis A. Lorenz

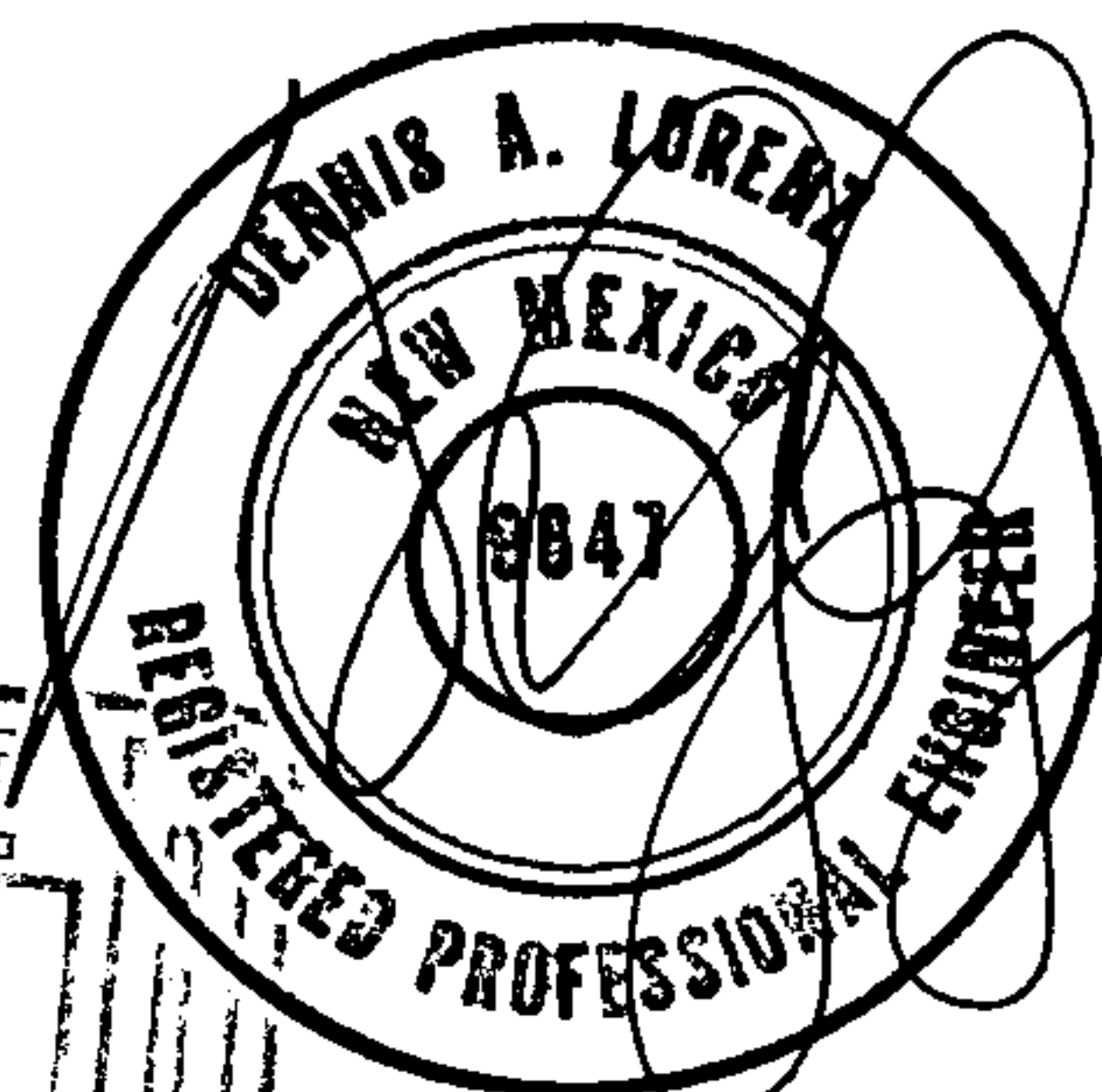
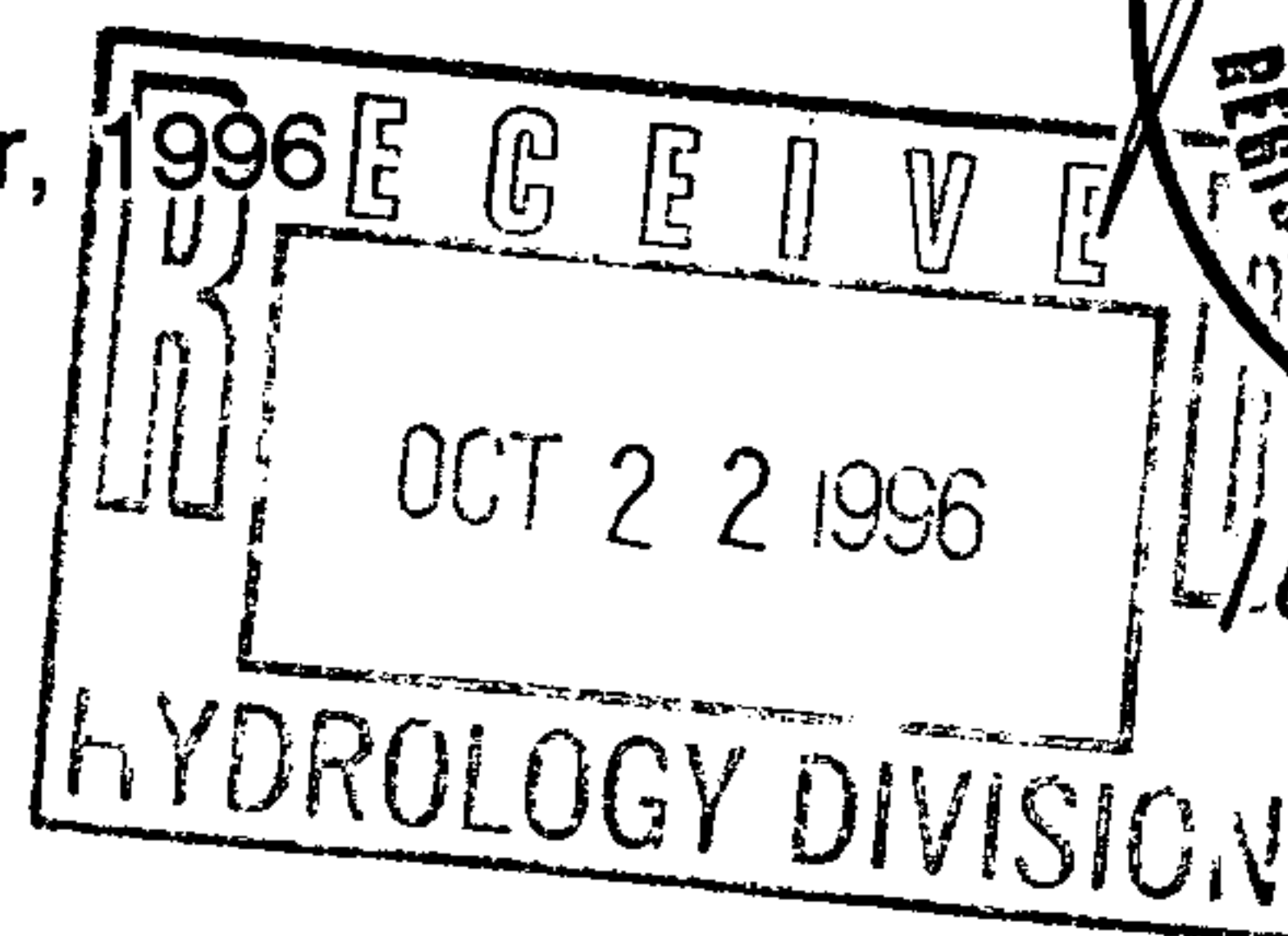


DRAINAGE REPORT
FOR
MI CASA ESTATES
Albuquerque, New Mexico

Prepared By:

BRASHER & LORENZ, INC.
Consulting Engineers
San Pedro NE Building 1, Suite 210
Albuquerque, New Mexico 87110

October, 1996



10-18-96

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TITLE	PAGE NO.
PURPOSE AND SCOPE	1
EXISTING CONDITIONS	1
EXISTING DRAINAGE MASTERPLANS	1
PROPOSED CONDITIONS	5
DRAINAGE MASTERPLAN UPDATE	6
TEMPORARY EROSION CONTROL	7

LIST OF FIGURES AND EXHIBITS

TITLE	PAGE NO.
VICINITY MAP - FIGURE 1	2
FLOOD INSURANCE RATE MAP - FIGURE 2	3
CALCULATIONS	APPENDIX
GRADING AND DRAINAGE PLAN	POCKET

PURPOSE AND SCOPE

Pursuant to the established Drainage Ordinance for the City of Albuquerque and the Development Process Manual, this Drainage Report outlines the drainage management criteria for controlling developed runoff from the project site. The property is to be developed as Mi Casa Estates, a 23 lot residential subdivision, with associated paving, landscaping, utility, grading, and drainage improvements. The scope of this plan is to provide drainage criteria for the safe management of excess runoff, and design detail for the construction of the required grading, paving and drainage improvements.

EXISTING CONDITIONS

The project site is approximately 5.0 acres in size and is located between Tower Road SW and San Ygnacio Road SW, just east of 90th Street SW. Presently the site is undeveloped. The site is sparsely vegetated with native grasses and shrubs. A wide, shallow depression crosses the tract from west to east, draining the northern two-thirds of the property. The northern third of the tract drains southeast into the depression at a 2.5 percent slope. The middle third of the tract drains northeast into the depression at a 2.5 percent slope. The southern third of the tract drains south toward San Ygnacio Road at a 2.5 percent slope. The elevations range from 5120 at the northwest corner to 5112 at the bottom of the depression on the east side. Off-site flows impact the site from the west. Tract 434, an undeveloped 5 acre tract located adjacent to the site on the west, drains into the depression mentioned above near the midpoint of the site. Tower Road is a paved rural road with no shoulders. San Ygnacio Road is a dirt road.

On-site soils consist of Madurez-Wink Association. This soil group is located on slightly convex piedmont fans on the west mesa. Runoff is slow, and the hazard of wind erosion is moderate to severe. This soils is classified as hydrologic soils group "B".

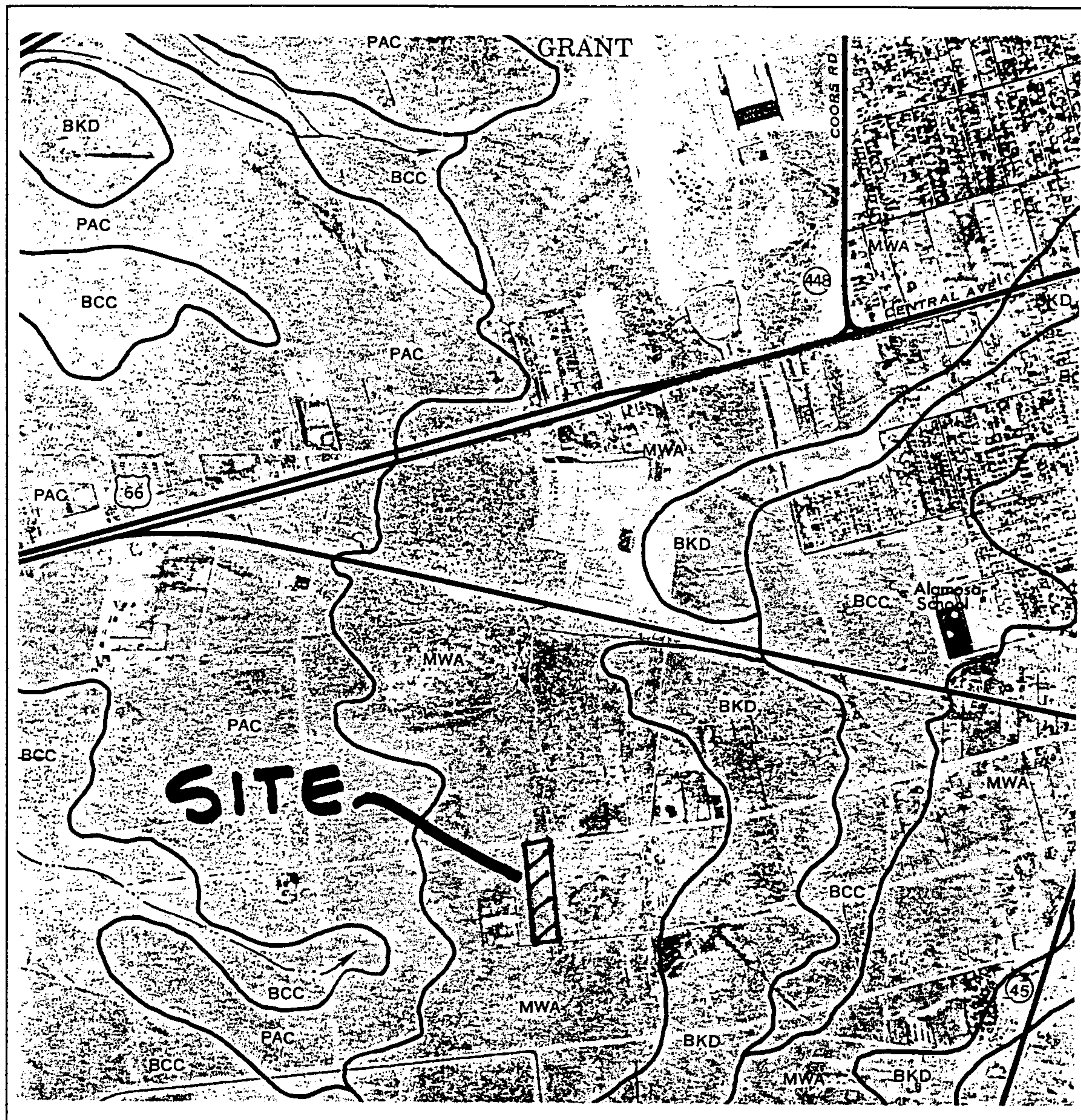
As shown by the attached Floodway Panel, this site does not lie within a designated flood hazard zone. A mapped floodplain is located within Tower Road, along the north edge of the site.

EXISTING DRAINAGE MASTERPLANS

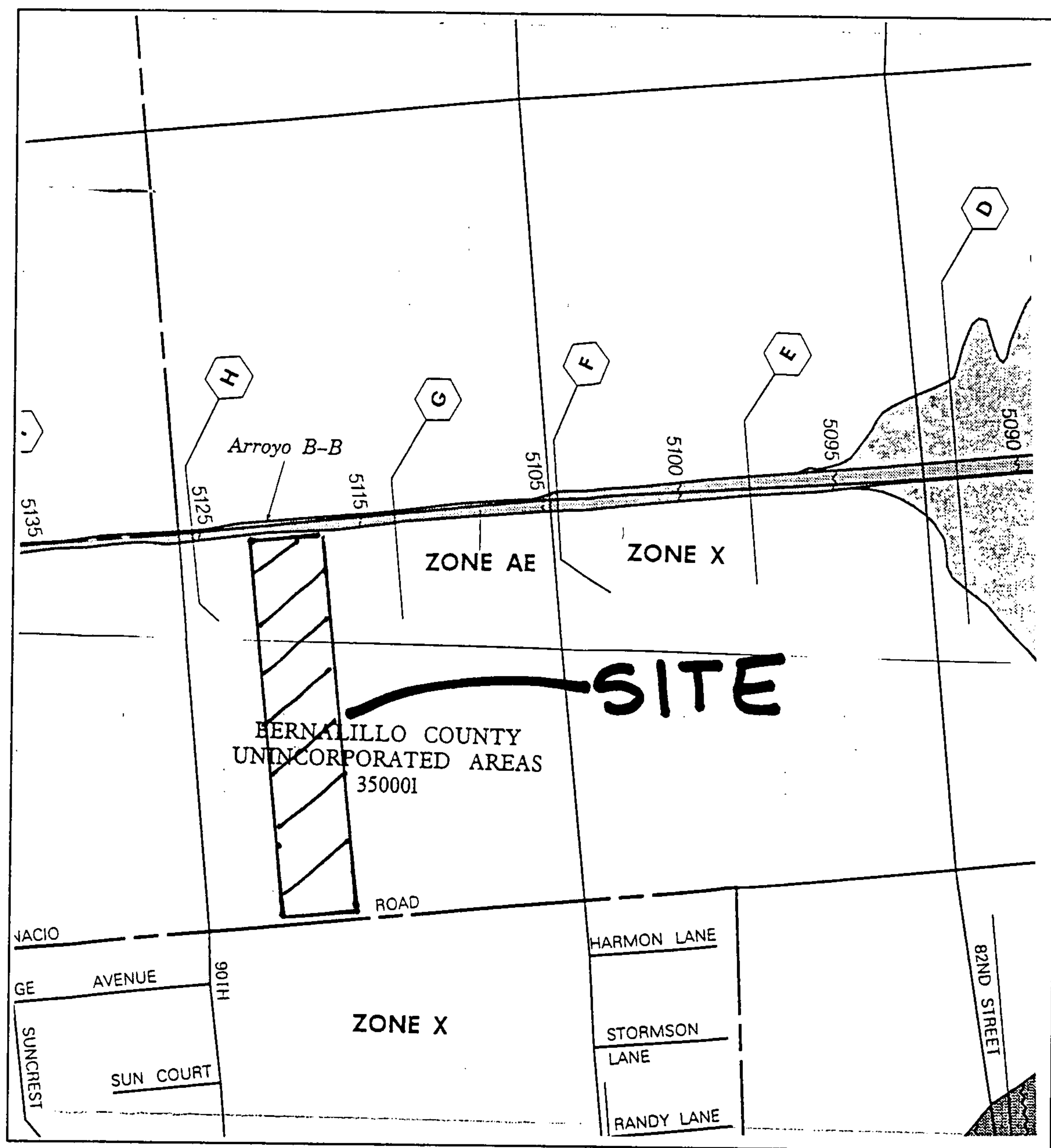
The drainage criteria for this site is established by the "Tower/Sage Drainage Master Plan", prepared by Andrews, Asbury & Robert, Inc. The Master Plan was prepared to support Special Assessment District 222, which will provide street, water, sanitary sewer and storm drainage improvements to the area. Improvements which benefit Mi Casa Estates are: a 60 inch storm drain in Tower, a 42 inch storm drain in San Ygnacio, water lines in Tower, sanitary sewer in San Ygnacio, and street paving in



LOCATION MAP
Figure 1



SOILS MAP
Figure 2



FLOOD INSURANCE RATE MAP
Figure 3

Tower and San Ygnacio. Since SAD 222 will not be in place for 18 to 24 months, interim retention ponding is imposed on all development projects within the District.

PROPOSED CONDITIONS

As shown by the Plan, the project consists of the development of the property into a 23 lot residential subdivision, with Tract "A" being created for the City of Albuquerque for the future Leavitt Reservoir. The Plan shows the elevations required to properly grade and construct the recommended improvements. The direction of drainage flows are given by flow arrows and on-site drainage basins are identified. All drainage improvements recommended by the Plan are detailed on Grading and Drainage Plan located in the back pocket of this report.

This project will be developed in two phases as follows:

PHASE ONE

Phase 1 will direct all stormwater to the southern end of Casa Del Sol where it will drain into a temporary retention pond located on Lots 12 and 13. The retention pond is sized to provide storage for a single 100 year 10 day storm draining from the project site. Undeveloped off-site runoff from Basin "C" will be routed through the pond via a spillway designed for the 100 year event.

A series of catch basins and connecting storm drains will be provided to convey runoff to the retention pond. The collection system is designed for the 100 year 6 hour developed condition for Basins "A" and "C". Upon completion of SAD 222 improvements the collection system will be connected to a 42 inch storm drain to be located within San Ygnacio Road.

is pond sized for off site flow too?

PHASE TWO

Phase 2 consists of the reclamation of Lots 12 and 13 and connection to the proposed 42 inch storm drain in San Ygnacio Road, to be provided by SAD 222.

The proposed drainage Basins for the project are as follows:

\ BASIN "A"

This basin represents the majority of the subdivision. Basin "A" drains within Casa Del Sol to a bank of catch basins located just north of San Ygnacio. The catch basins will drain to the interim retention pond located on Lots 12 and 13. Upon completion of SD 222 drainage improvements, the catch basins will be connected to the 42 inch storm drain proposed in San Ygnacio allowing

development of Lots 12 and 13, per the Phase II Plan..

BASIN "B"

Basin "B" is a small area which consists of Lots 1 and 14 and that portion of Casa Del Sol positioned north of the proposed water block. Basin "B" drains into Tower Road.

BASIN "C"

This basin is an off-site area located west of the site. Basin "C" will enter the site through a concrete channel located between lots 17 and 18. Flows will then drain down Casa Del Sol to the proposed catch basins and storm drain.

*Check Survey
for an
Easement*

BASIN "D"

Basin "D" represents Tract "A" and a portion of Tract 434 which is to become the City's Leavitt reservoir. A temporary retention pond will be constructed on Tract "A" as a temporary erosion control measure. This pond shall remain in place until the completion of SAD 222 improvements, and shall serve as an erosion control measure until the construction of the reservoir.

BASIN "E"

This basin represents the existing undeveloped off-site area which contributes to San Ygnacio along the project frontage.

BASIN "F"

This basin represents the existing undeveloped off-site area which contributes to Tower Road along the project frontage.

STREET PAVING IMPROVEMENTS

The project will provide the following street paving improvements:

1. Full width residential paving on Casa Del Sol Street and Casa De Luna Ave SW.
2. One-half width residential paving on San Ygnacio Road SW.
3. Curb, gutter, sidewalk, and temporary pavement on the south side of Tower Road SW. Due to the future construction of a 60 inch storm drain on the south side of Tower, permanent paving will be provided by SAD 222. ?

TEMPORARY EROSION CONTROL PLAN

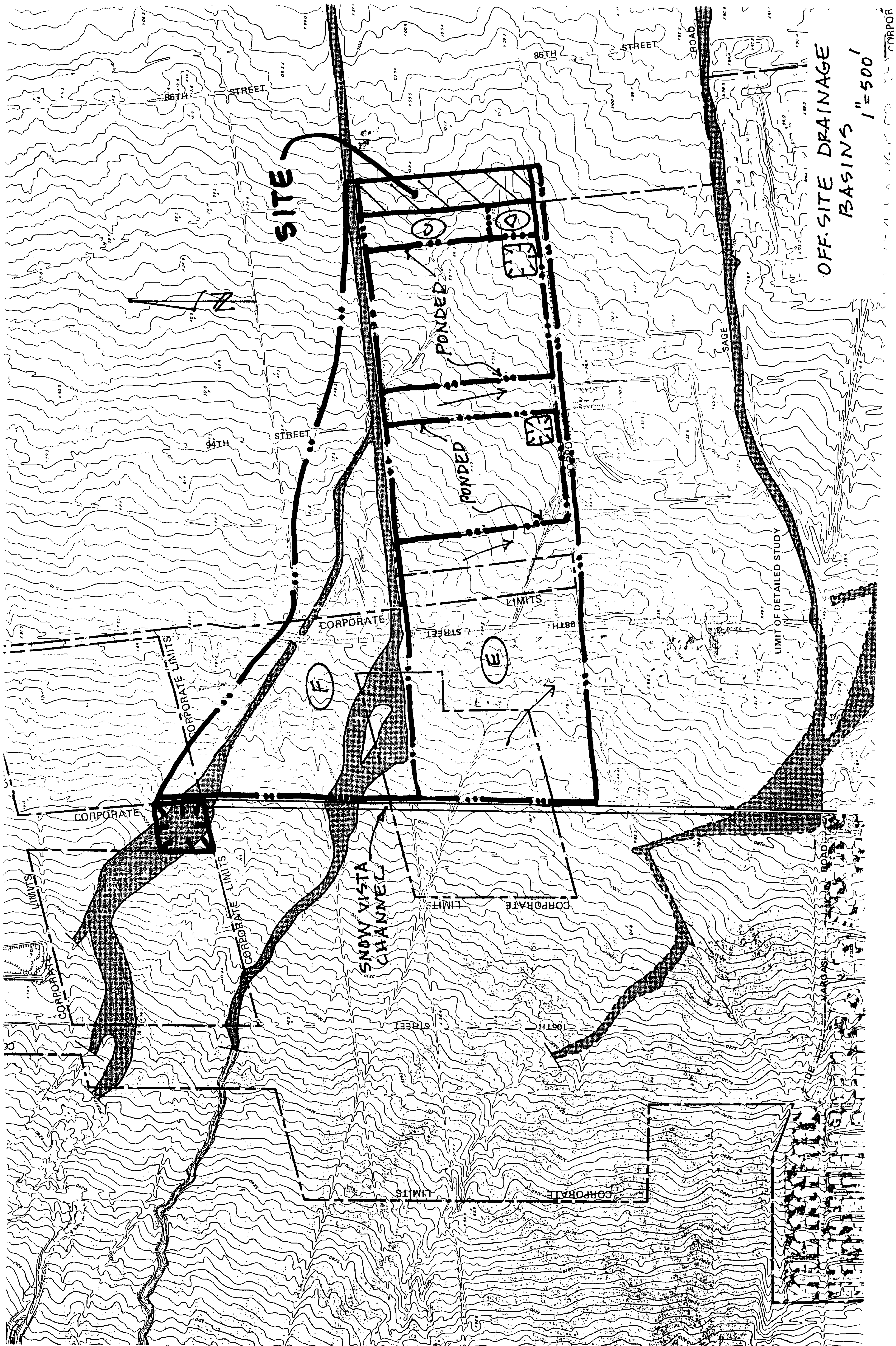
1. The intent of this temporary erosion control plan is to limit the discharge of sediment into the public street and/or storm drainage system and to protect adjacent properties from excess runoff during construction.
2. The Contractor shall obtain a Top Soil Disturbance Permit from Environmental Health prior to performing any earthwork related operations.
3. After the initial site clearing, the retention ponding areas should be rough graded to create a storage area for excess runoff and sediment.
4. Temporary erosion control berms should be constructed along the north, east and south project boundaries per Detail C/3 to direct excess runoff to the ponding area.
5. It is the Contractor's responsibility to properly maintain all temporary erosion control facilities during the construction phase of the project.

CALCULATIONS

The calculations shown herein define the 100 year/6 hour design storm falling with the project area under existing and developed conditions. The Hydrology is per "Section 22.2, Part A, DPM, Vol 2" Dated January 1993. Calculations are provided to demonstrate on-site improvement capacities and downstream capacity.

APPENDIX

AHYMO OUTPUT FILES



OFF-SITE DRAINAGE
BASINS
1"=500'

CORPOR

```

*****
*                               MI CASA ESTATES
*                               PROJECT HYDROLOGY
*****
START          TIME=0.0  PUNCH CODE=0
RAINFALL       TYPE=1  RAIN QUARTER=0.0  RAIN ONE=1.87
               RAIN SIX=2.20  RAIN DAY=2.66  DT=0.03333 HRS

* UNDEVELOPED SITE
COMPUTE NM HYD  ID=1  HYD NO=101  DA=0.007813 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=102  DA=0.007813 SQ MI
               PER A=0  PER B=25  PER C=20  PER D=55
               TP=0.1333 HR  MASS RAIN=-1

* DEVELOPED BASIN A
COMPUTE NM HYD  ID=3  HYD NO=103  DA=0.006548 SQ MI
               PER A=0  PER B=25  PER C=20  PER D=55
               TP=0.1333 HR  MASS RAIN=-1

* DEVELOPED BASIN B
COMPUTE NM HYD  ID=4  HYD NO=104  DA=0.00512 SQ MI
               PER A=0  PER B=25  PER C=20  PER D=55
               TP=0.1333 HR  MASS RAIN=-1

* UNDEVELOPED BASIN C
COMPUTE NM HYD  ID=5  HYD NO=105  DA=0.005759 SQ MI
               PER A=0  PER B=0  PER C=100  PER D=0
               TP=0.1333 HR  MASS RAIN=-1

* UNDEVELOPED BASIN D
COMPUTE NM HYD  ID=6  HYD NO=106  DA=0.002802 SQ MI
               PER A=100  PER B=0  PER C=0  PER D=0
               TP=0.1333 HR  MASS RAIN=-1

* EXISTING BASIN E
COMPUTE NM HYD  ID=7  HYD NO=107  DA=0.0875 SQ MI
               PER A=20  PER B=20  PER C=20  PER D=40
               TP=0.364 HR  MASS RAIN=-1

* DEVELOPED BASIN C
COMPUTE NM HYD  ID=8  HYD NO=108  DA=.005759 SQ MI
               PER A=0  PER B=25  PER C=20  PER D=55
               TP=0.1333 HR  MASS RAIN=-1

* DEVELOPED BASIN D
COMPUTE NM HYD  ID=9  HYD NO=109  DA=0.002802 SQ MI
               PER A=0  PER B=25  PER C=25  PER D=50
               TP=0.1333 HR  MASS RAIN=-1

* ADD BASINS A & UNDEVELOPED C FOR POND DESIGN
ADD HYD        ID=10  HYD NO=110  ID I=3  ID II=5
* ADD BASINS A & DEVELOPED C FOR STORM SEWER DESIGN
ADD HYD        ID=11  HYD NO=111  ID I=3  ID II=8
PRINT HYD      ID=1  CODE=1
PRINT HYD      ID=2  CODE=1
PRINT HYD      ID=3  CODE=1
PRINT HYD      ID=4  CODE=1
PRINT HYD      ID=5  CODE=1
PRINT HYD      ID=6  CODE=1
PRINT HYD      ID=7  CODE=1
PRINT HYD      ID=8  CODE=1
PRINT HYD      ID=9  CODE=1
PRINT HYD      ID=10  CODE=2
PRINT HYD      ID=11  CODE=2
FINISH

```

RUN DATE (MON/DAY/YR) =10/20/1996
USER NO.= BRASHERE.I01

		FROM	TO		PEAK	RUNOFF		TIME TO	CFS	PAGE = 1
COMMAND	HYDROGRAPH IDENTIFICATION	ID NO.	ID NO.	AREA (SQ MI)	DISCHARGE (CFS)	VOLUME (AC-FT)	RUNOFF (INCHES)	PEAK (HOURS)	PER ACRE	NOTATION
START									TIME=	.00
RAINFALL TYPE= 1									RAIN6=	2.200
COMPUTE NM HYD	101.00	-	1	.00781	6.49	.183	.43925	1.533	1.298	PER IMP= .00
COMPUTE NM HYD	102.00	-	2	.00781	17.42	.600	1.44021	1.500	3.483	PER IMP= 55.00
COMPUTE NM HYD	103.00	-	3	.00655	14.60	.503	1.44021	1.500	3.484	PER IMP= 55.00
COMPUTE NM HYD	104.00	-	4	.00512	11.42	.393	1.44021	1.500	3.484	PER IMP= 55.00
COMPUTE NM HYD	105.00	-	5	.00576	10.60	.305	.99441	1.500	2.877	PER IMP= .00
COMPUTE NM HYD	106.00	-	6	.00280	2.33	.066	.43925	1.533	1.300	PER IMP= .00
COMPUTE NM HYD	107.00	-	7	.08750	87.48	5.538	1.18662	1.766	1.562	PER IMP= 40.00
COMPUTE NM HYD	108.00	-	8	.00576	12.84	.442	1.44021	1.500	3.484	PER IMP= 55.00
COMPUTE NM HYD	109.00	-	9	.00280	6.12	.208	1.39058	1.500	3.412	PER IMP= 50.00
ADD HYD	110.00	3& 5	10	.01231	25.20	.808	1.23157	1.500	3.200	
ADD HYD	111.00	3& 8	11	.01231	27.44	.945	1.44017	1.500	3.484	
FINISH										

AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
RUN DATE (MON/DAY/YR) = 10/20/1996
START TIME (HR:MIN:SEC) = 09:08:55 USER NO.= BRASHERB.I01
INPUT FILE = 6035.DAT

* MI CASA ESTATES
* PROJECT HYDROLOGY

START TIME=0.0 PUNCH CODE=0
RAINFALL TYPE=1 RAIN QUARTER=0.0 RAIN ONE=1.87
RAIN SIX=2.20 RAIN DAY=2.66 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	.0050	.0067	.0085	.0103
.0122	.0141	.0160	.0180	.0201	.0222	.0243
.0266	.0289	.0312	.0337	.0362	.0388	.0415
.0443	.0472	.0502	.0534	.0567	.0601	.0637
.0675	.0715	.0758	.0809	.0865	.0924	.1050
.1334	.1771	.2398	.3254	.4379	.5814	.7600
.9780	1.1804	1.2649	1.3363	1.3997	1.4575	1.5106
1.5600	1.6061	1.6493	1.6900	1.7284	1.7646	1.7989
1.8314	1.8623	1.8915	1.9193	1.9456	1.9518	1.9576
1.9630	1.9682	1.9732	1.9780	1.9825	1.9869	1.9912
1.9953	1.9993	2.0031	2.0068	2.0104	2.0140	2.0174
2.0207	2.0240	2.0272	2.0303	2.0333	2.0363	2.0392
2.0420	2.0448	2.0475	2.0502	2.0528	2.0554	2.0580
2.0605	2.0629	2.0653	2.0677	2.0700	2.0723	2.0746
2.0768	2.0790	2.0812	2.0833	2.0855	2.0875	2.0896
2.0916	2.0936	2.0956	2.0976	2.0995	2.1014	2.1033
2.1051	2.1070	2.1088	2.1106	2.1124	2.1141	2.1159
2.1176	2.1193	2.1210	2.1227	2.1244	2.1260	2.1276
2.1292	2.1308	2.1324	2.1340	2.1355	2.1371	2.1386
2.1401	2.1416	2.1431	2.1446	2.1460	2.1475	2.1489
2.1504	2.1518	2.1532	2.1546	2.1560	2.1573	2.1587
2.1600	2.1614	2.1627	2.1640	2.1654	2.1667	2.1680
2.1692	2.1705	2.1718	2.1731	2.1743	2.1756	2.1768
2.1780	2.1792	2.1804	2.1817	2.1829	2.1840	2.1852
2.1864	2.1876	2.1887	2.1899	2.1910	2.1922	2.1933
2.1944	2.1956	2.1967	2.1978	2.1989	2.2000	

* UNDEVELOPED SITE

COMPUTE NM HYD ID=1 HYD NO=101 DA=0.007813 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=0.1333 HR MASS RAIN=-1

K = .163684HR TP = .133300HR K/TP RATIO = 1.227936 SHAPE CONSTANT, N = 2.899764
UNIT PEAK = 16.033 CFS UNIT VOLUME = .9987 B = 273.54 P60 = 1.8700
AREA = .007813 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=102 DA=0.007813 SQ MI
PER A=0 PER B=25 PER C=20 PER D=55
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 16.965 CFS UNIT VOLUME = .9987 B = 526.28 P60 = 1.8700

AREA = .004297 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .119825HR TP = .133300HR K/TP RATIO = .898914 SHAPE CONSTANT, N = 3.942902
UNIT PEAK = 9.2669 CFS UNIT VOLUME = .9990 B = 351.34 P60 = 1.8700
AREA = .003516 SQ MI IA = .43333 INCHES INF = 1.06333 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* DEVELOPED BASIN A

COMPUTE NM HYD ID=3 HYD NO=103 DA=0.006548 SQ MI
PER A=0 PER B=25 PER C=20 PER D=55
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 14.219 CFS UNIT VOLUME = .9985 B = 526.28 P60 = 1.8700
AREA = .003601 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .119825HR TP = .133300HR K/TP RATIO = .898914 SHAPE CONSTANT, N = 3.942902
UNIT PEAK = 7.7665 CFS UNIT VOLUME = .9987 B = 351.34 P60 = 1.8700
AREA = .002947 SQ MI IA = .43333 INCHES INF = 1.06333 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* DEVELOPED BASIN B

COMPUTE NM HYD ID=4 HYD NO=104 DA=0.00512 SQ MI
PER A=0 PER B=25 PER C=20 PER D=55
TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 11.118 CFS UNIT VOLUME = .9984 B = 526.28 P60 = 1.8700
AREA = .002816 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .119825HR TP = .133300HR K/TP RATIO = .898914 SHAPE CONSTANT, N = 3.942902
UNIT PEAK = 6.0728 CFS UNIT VOLUME = .9983 B = 351.34 P60 = 1.8700
AREA = .002304 SQ MI IA = .43333 INCHES INF = 1.06333 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* UNDEVELOPED BASIN C

COMPUTE NM HYD ID=5 HYD NO=105 DA=0.005759 SQ MI
PER A=0 PER B=0 PER C=100 PER D=0
TP=0.1333 HR MASS RAIN=-1

K = .105867HR TP = .133300HR K/TP RATIO = .794199 SHAPE CONSTANT, N = 4.514851
UNIT PEAK = 16.769 CFS UNIT VOLUME = .9997 B = 388.14 P60 = 1.8700
AREA = .005759 SQ MI IA = .35000 INCHES INF = .83000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* UNDEVELOPED BASIN D

COMPUTE NM HYD ID=6 HYD NO=106 DA=0.002802 SQ MI
PER A=100 PER B=0 PER C=0 PER D=0
TP=0.1333 HR MASS RAIN=-1

K = .163684HR TP = .133300HR K/TP RATIO = 1.227936 SHAPE CONSTANT, N = 2.899764
UNIT PEAK = 5.7500 CFS UNIT VOLUME = .9970 B = 273.54 P60 = 1.8700
AREA = .002802 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* EXISTING BASIN B

COMPUTE NM HYD ID=7 HYD NO=107 DA=0.0875 SQ MI
 PER A=20 PER B=20 PER C=20 PER D=40
 TP=0.364 HR MASS RAIN=-1

K = .199538HR TP = .364000HR K/TP RATIO = .548182 SHAPE CONSTANT, N = 7.053668
 UNIT PEAK = 50.365 CFS UNIT VOLUME = .9998 B = 523.79 P60 = 1.8700
 AREA = .035000 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .360653HR TP = .364000HR K/TP RATIO = .990805 SHAPE CONSTANT, N = 3.563494
 UNIT PEAK = 46.865 CFS UNIT VOLUME = .9997 B = 324.93 P60 = 1.8700
 AREA = .052500 SQ MI IA = .50000 INCHES INF = 1.25000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* DEVELOPED BASIN C

COMPUTE NM HYD ID=8 HYD NO=108 DA=.005759 SQ MI
 PER A=0 PER B=25 PER C=20 PER D=55
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 12.505 CFS UNIT VOLUME = .9984 B = 526.28 P60 = 1.8700
 AREA = .003167 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .119825HR TP = .133300HR K/TP RATIO = .898914 SHAPE CONSTANT, N = 3.942902
 UNIT PEAK = 6.8307 CFS UNIT VOLUME = .9985 B = 351.34 P60 = 1.8700
 AREA = .002592 SQ MI IA = .43333 INCHES INF = 1.06333 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* DEVELOPED BASIN D

COMPUTE NM HYD ID=9 HYD NO=109 DA=0.002802 SQ MI
 PER A=0 PER B=25 PER C=25 PER D=50
 TP=0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
 UNIT PEAK = 5.5312 CFS UNIT VOLUME = .9973 B = 526.28 P60 = 1.8700
 AREA = .001401 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
 UNIT PEAK = 3.7276 CFS UNIT VOLUME = .9969 B = 354.67 P60 = 1.8700
 AREA = .001401 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* ADD BASINS A & UNDEVELOPED C FOR POND DESIGN

ADD HYD ID=10 HYD NO=110 ID I=3 ID II=5

* ADD BASINS A & DEVELOPED C FOR STORM SEWER DESIGN

ADD HYD ID=11 HYD NO=111 ID I=3 ID II=8

PRINT HYD ID=1 CODE=1

PARTIAL HYDROGRAPH 101.00

RUNOFF VOLUME = .43925 INCHES = .1830 ACRE-FOOT
 PEAK DISCHARGE RATE = 6.49 CFS AT 1.533 HOURS BASIN AREA = .0078 SQ. MI.

PRINT HYD ID=2 CODE=1

PARTIAL HYDROGRAPH 102.00

RUNOFF VOLUME = 1.44021 INCHES = .6001 ACRE-FEET
PEAK DISCHARGE RATE = 17.42 CFS AT 1.500 HOURS BASIN AREA = .0078 SQ. MI.

PRINT HYD ID=3 CODE=1

PARTIAL HYDROGRAPH 103.00

RUNOFF VOLUME = 1.44021 INCHES = .5030 ACRE-FEET
PEAK DISCHARGE RATE = 14.60 CFS AT 1.500 HOURS BASIN AREA = .0065 SQ. MI.

PRINT HYD ID=4 CODE=1

PARTIAL HYDROGRAPH 104.00

RUNOFF VOLUME = 1.44021 INCHES = .3933 ACRE-FEET
PEAK DISCHARGE RATE = 11.42 CFS AT 1.500 HOURS BASIN AREA = .0051 SQ. MI.

PRINT HYD ID=5 CODE=1

PARTIAL HYDROGRAPH 105.00

RUNOFF VOLUME = .99441 INCHES = .3054 ACRE-FEET
PEAK DISCHARGE RATE = 10.60 CFS AT 1.500 HOURS BASIN AREA = .0058 SQ. MI.

PRINT HYD ID=6 CODE=1

PARTIAL HYDROGRAPH 106.00

RUNOFF VOLUME = .43925 INCHES = .0656 ACRE-FEET
PEAK DISCHARGE RATE = 2.33 CFS AT 1.533 HOURS BASIN AREA = .0028 SQ. MI.

PRINT HYD ID=7 CODE=1

PARTIAL HYDROGRAPH 107.00

RUNOFF VOLUME = 1.18662 INCHES = 5.5375 ACRE-FEET
PEAK DISCHARGE RATE = 87.48 CFS AT 1.766 HOURS BASIN AREA = .0875 SQ. MI.

PRINT HYD ID=8 CODE=1

PARTIAL HYDROGRAPH 108.00

RUNOFF VOLUME = 1.44021 INCHES = .4424 ACRE-FEET
PEAK DISCHARGE RATE = 12.84 CFS AT 1.500 HOURS BASIN AREA = .0058 SQ. MI.

PRINT HYD ID=9 CODE=1

PARTIAL HYDROGRAPH 109.00

RUNOFF VOLUME = 1.39058 INCHES = .2078 ACRE-FEET
PEAK DISCHARGE RATE = 6.12 CFS AT 1.500 HOURS BASIN AREA = .0028 SQ. MI.

PRINT HYD ID=10 CODE=2

PARTIAL HYDROGRAPH 110.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.400	11.9	2.800	.3	4.200	.1	5.599	.1
.067	.0	1.467	22.7	2.866	.2	4.266	.1	5.666	.1
.133	.0	1.533	24.4	2.933	.2	4.333	.1	5.733	.1
.200	.0	1.600	18.4	3.000	.2	4.400	.1	5.799	.1
.267	.0	1.667	13.2	3.066	.2	4.466	.1	5.866	.1
.333	.0	1.733	9.9	3.133	.1	4.533	.1	5.933	.1
.400	.0	1.800	7.8	3.200	.1	4.600	.1	5.999	.1
.467	.0	1.866	6.3	3.266	.1	4.666	.1	6.066	.1
.533	.0	1.933	5.2	3.333	.1	4.733	.1	6.133	.0
.600	.0	2.000	4.3	3.400	.1	4.800	.1	6.199	.0
.667	.0	2.066	3.4	3.466	.1	4.866	.1	6.266	.0
.733	.0	2.133	2.4	3.533	.1	4.933	.1	6.333	.0
.800	.0	2.200	1.7	3.600	.1	4.999	.1	6.399	.0
.867	.0	2.266	1.3	3.666	.1	5.066	.1	6.466	.0
.933	.0	2.333	1.0	3.733	.1	5.133	.1	6.533	.0
1.000	.0	2.400	.8	3.800	.1	5.199	.1	6.599	.0
1.067	.0	2.466	.7	3.866	.1	5.266	.1	6.666	.0
1.133	.0	2.533	.6	3.933	.1	5.333	.1	6.733	.0
1.200	.2	2.600	.5	4.000	.1	5.399	.1		
1.267	1.2	2.666	.4	4.066	.1	5.466	.1		
1.333	4.0	2.733	.3	4.133	.1	5.533	.1		

RUNOFF VOLUME = 1.23157 INCHES = .8084 ACRE-FEET
PEAK DISCHARGE RATE = 25.20 CFS AT 1.500 HOURS BASIN AREA = .0123 SQ. MI.

PRINT HYD ID=11 CODE=2

PARTIAL HYDROGRAPH 111.00

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.400	14.1	2.800	.4	4.200	.1	5.599	.1
.067	.0	1.467	24.8	2.866	.3	4.266	.1	5.666	.1
.133	.0	1.533	26.4	2.933	.3	4.333	.1	5.733	.1
.200	.0	1.600	19.6	3.000	.3	4.400	.1	5.799	.1
.267	.0	1.667	14.2	3.066	.2	4.466	.1	5.866	.1
.333	.0	1.733	11.0	3.133	.2	4.533	.1	5.933	.1
.400	.0	1.800	9.0	3.200	.2	4.600	.1	5.999	.1
.467	.0	1.866	7.5	3.266	.2	4.666	.1	6.066	.1
.533	.0	1.933	6.4	3.333	.2	4.733	.1	6.133	.1
.600	.0	2.000	5.5	3.400	.1	4.800	.1	6.199	.0
.667	.0	2.066	4.7	3.466	.1	4.866	.1	6.266	.0
.733	.0	2.133	3.2	3.533	.1	4.933	.1	6.333	.0
.800	.0	2.200	2.1	3.600	.1	4.999	.1	6.399	.0
.867	.0	2.266	1.6	3.666	.1	5.066	.1	6.466	.0
.933	.0	2.333	1.3	3.733	.1	5.133	.1	6.533	.0
1.000	.0	2.400	1.0	3.800	.1	5.199	.1	6.599	.0
1.067	.0	2.466	.9	3.866	.1	5.266	.1	6.666	.0
1.133	.0	2.533	.7	3.933	.1	5.333	.1	6.733	.0
1.200	.3	2.600	.6	4.000	.1	5.399	.1		
1.267	2.3	2.666	.5	4.066	.1	5.466	.1		
1.333	6.1	2.733	.4	4.133	.1	5.533	.1		

RUNOFF VOLUME = 1.44017 INCHES = .9453 ACRE-FOOT
PEAK DISCHARGE RATE = 27.44 CFS AT 1.500 HOURS BASIN AREA = .0123 SQ. MI.

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 09:08:57

CALCULATIONS

MI CASA ESTATES

OCT 1996

INTERIM RETENTION PONDS

6035

SIZE INTERIM RETENTION PONDS

1. MAIN POND ON LOTS 12 + 13

— SIZE FOR BASIN A DEVELOPED
FLOW.

PER ANYMO HYD 103:

$$Q_{100} = 14.6 \text{ CFS} \quad V_{100} = 0.503 \text{ AF} \\ = 21,911 \text{ CF}$$

PROVIDE V_{10} DAY VOLUME:

$$V_{10} = V_{360} + A_b (P_{100} - P_{360}) / 12$$

$$A_b = 0.55 (4.19 \text{ AC}) = 2.30 \text{ AC}$$

$$P_{100} = 3.67$$

$$P_{360} = 2.20''$$

$$\Rightarrow V_{10 \text{ DAY}} = 0.503 + 2.30 (1.47) / 12$$

$$= 0.7848 \text{ AF}$$

$$= 34,184 \text{ CF}$$

$$\Rightarrow \underline{\underline{42,050 \text{ CF PROVIDED}}}$$

MI CASA ESTATES

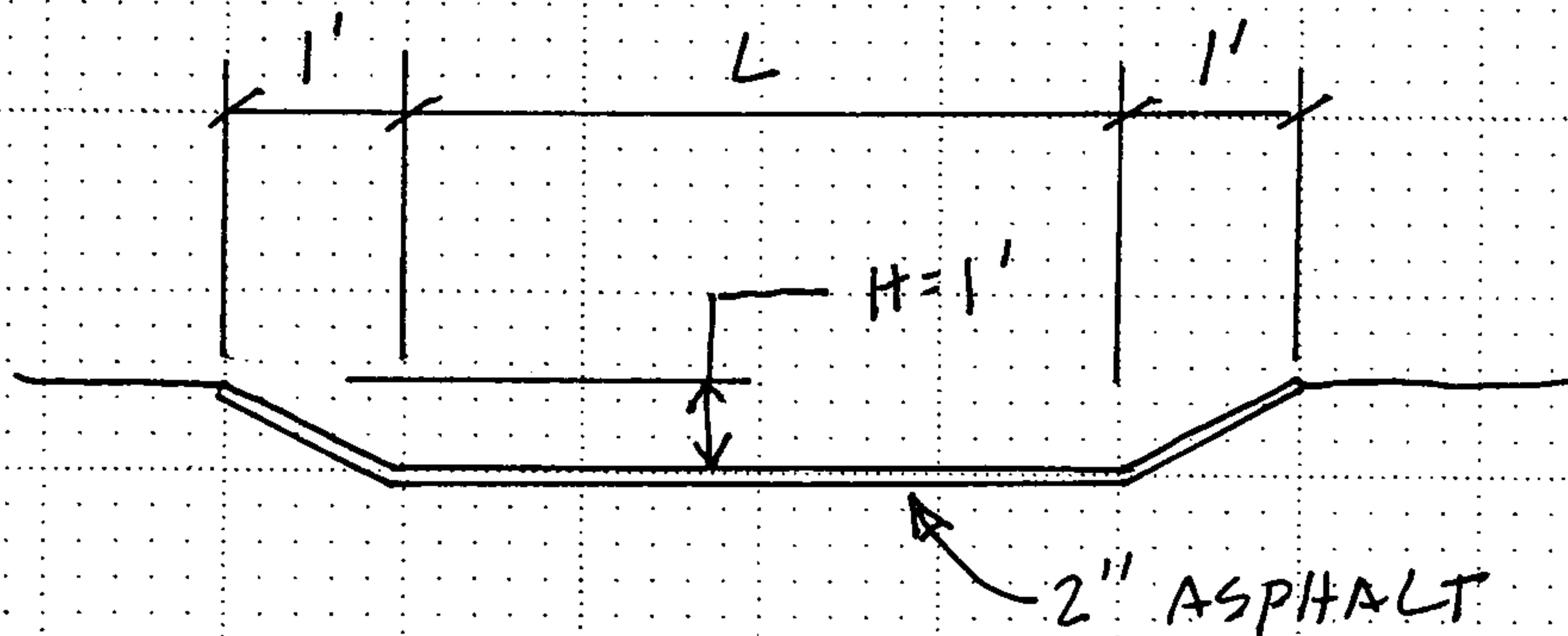
OCT 1996

INTERIM RETENTION PONDS

6035

OFF-SITE BASIN 'C' WILL ROUT THRU
POND. PROVIDE SPILLWAY FOR Q_{100} :

$Q_{100} = 25.2 \text{ CFS}$ [BASINS A + UND C]



WEIRS

Enter up to 10 weirs.

Enter <Return> only for flowrate and length to end.

FLOWRATE (CFS)	LENGTH (FT)	COEFF (-)	HEAD (FT)
25.20	9.3	2.700	1.00

MI CASA ESTATES

OCT 1996

INTERIM RETENTION PONDS

6035

2. TRACT 'A' POND.

SIZE FOR UNDEV BASIN D:

PEZ A144MO HYD 106

$Q_{100} = 2.33$ CFS

$V_{100} = 0.066$ AC FT

= 2875 CF

POND TO REMAIN UNTIL
COMPLETION OF SAV 222.

IF RESERVOIR SITE IS NOT
DEVELOPED AT COMPLETION OF
SAV 222, POND SHALL REMAIN
AS A TEMP EROSION CONTROL
MEASURE.

MI CASA ESTATES

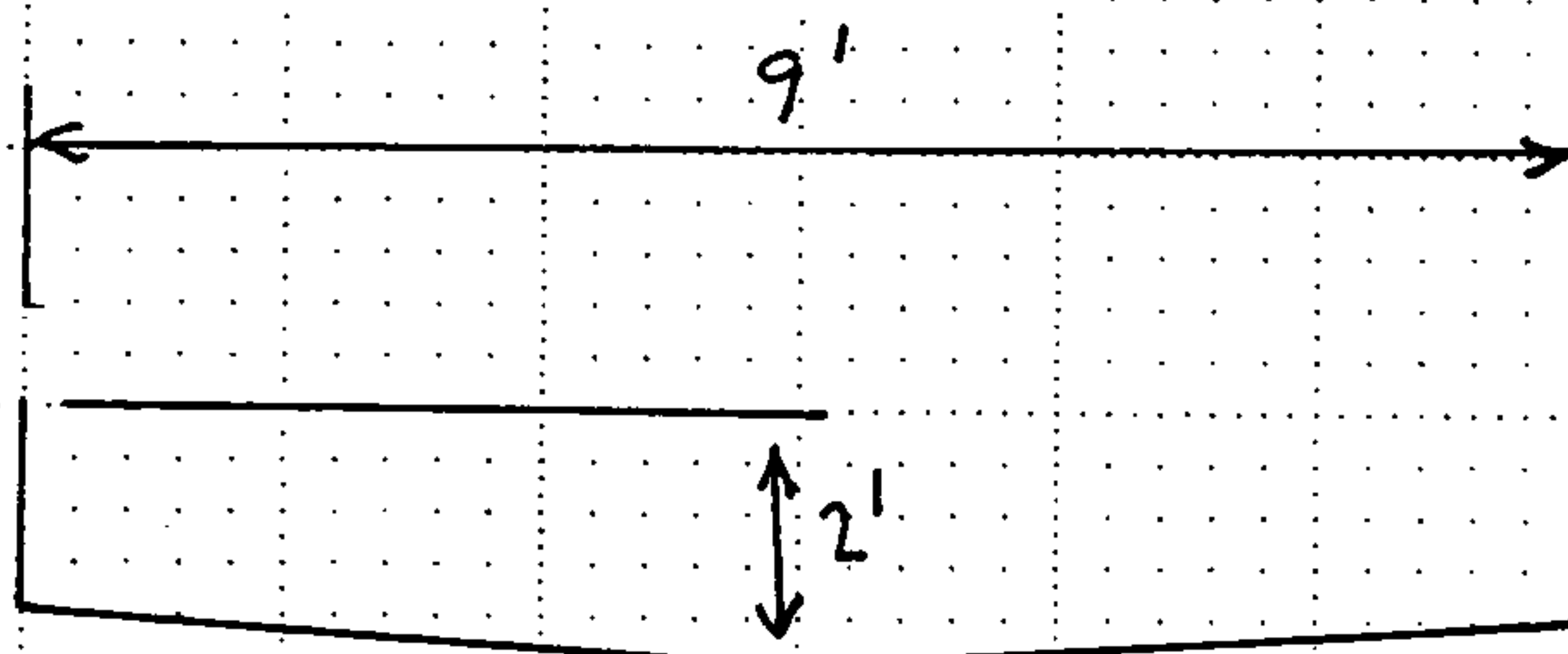
OCT 1996

BASIN C CHANNEL

6035

TEST BASIN B CHANNEL:

1. CHANNEL FLOW:

 $Q_{100} =$ TYPE - B' CHANNEL

PER ANYMO HYD 108:

 $Q_{100} = 12.84 \text{ CFS (BASIN C DEV)}$

MAN-MADE CHANNELS

VARIABLES LIST:

Y - FLOW DEPTH

B - CHANNEL BOTTOM WIDTH

S - CHANNEL SLOPE

Q - FLOWRATE

M - CHANNEL SIDE SLOPE

N - CHANNEL ROUGHNESS

VARIABLE TO BE SOLVED (Y, Q, B, M, S OR N) ? Y

Q (CFS) ? 12.84

B (FT) ? 9

M (FT/FT) ? 0

S (FT/FT) ? .01

N (FT^{1/6}) ? .013

RESULTS

Y= 0.29 FT

A= 2.65 SF

P= 9.59 FT

V= 4.85 FPS

F= 1.58

SUPER-CRITICAL FLOW

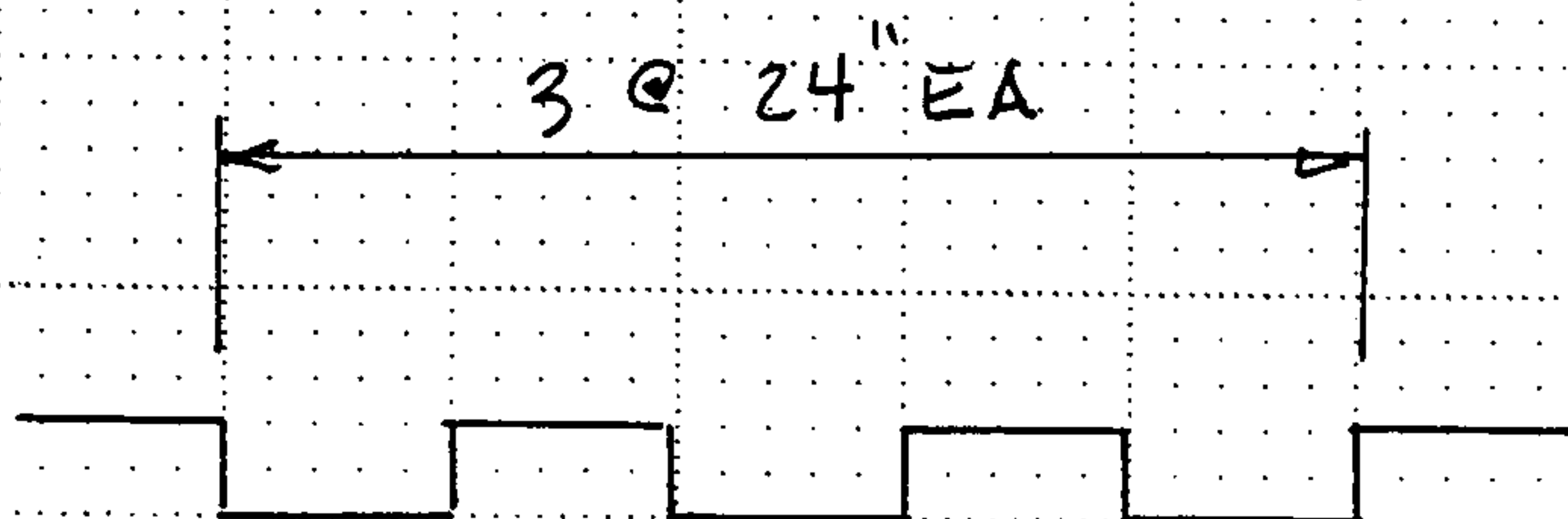
MI CASA ESTATES

OCT 1996

BASIN C CHANNEL

6035

2. TEST S/W CULVERTS



SECTION

$$Q_{100} = 12.84 \text{ CFS} = 4.3 \text{ CFS / CULVERT}$$

MAN-MADE CHANNELS

VARIABLES LIST:

Y - FLOW DEPTH
Q - FLOWRATEB - CHANNEL BOTTOM WIDTH
M - CHANNEL SIDE SLOPES - CHANNEL SLOPE
N - CHANNEL ROUGHNESS

VARIABLE TO BE SOLVED (Y, Q, B, M, S OR N) ? Y

Q (CFS) ? 4.3
B (FT) ? 2
M (FT/FT) ? 0
S (FT/FT) ? .01
N (FT^{1/6}) ? .013

RESULTS

=====

Y=	0.42 FT
A=	0.84 SF
P=	2.84 FT
V=	5.09 FPS
F=	1.38

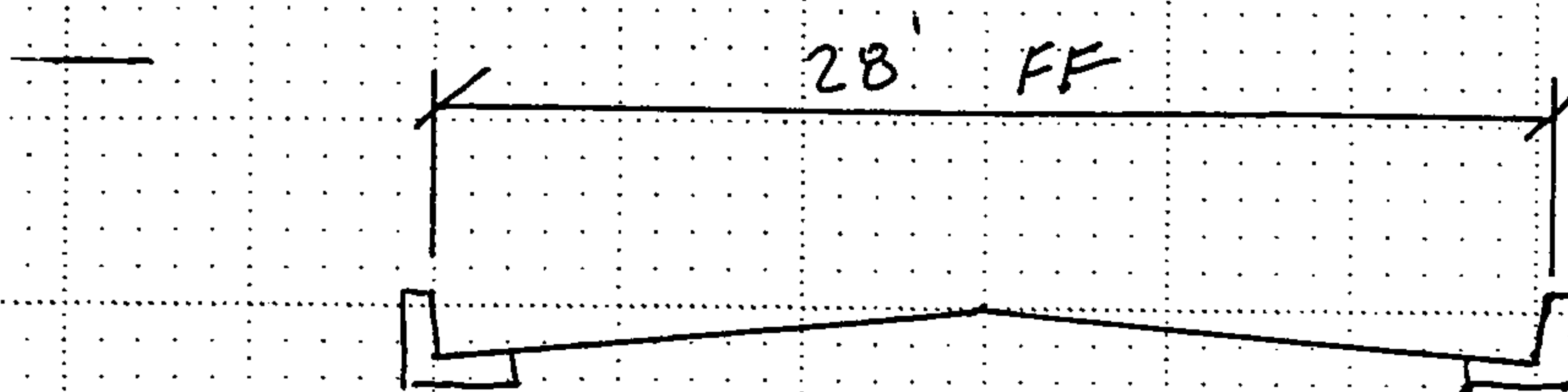
SUPER-CRITICAL FLOW

MI CASA ESTATES

OCT 1996

STREET DEPTHS

6035

CHECK STREET DEPTH IN
CASA DEL SOL: $Q_{100} = 27.4 \text{ CFS}$ (DEV BASINS A + C)
 $\text{SLOPE} = 0.61\%$

VARIABLES LIST:

Y - FLOW ELEVATION

Q - FLOWRATE

S - CHANNEL SLOPE

VARIABLE TO BE SOLVED (Y, Q OR S) ? Y

Enter up to 20 cross-section points.
Enter <Return> only for distance to end.Q (CFS) ? 27.5
S (FT/FT) ? .0061

CROSS-SECTION POINTS

DIST ELEV COEFF DIST ELEV COEFF

0	100.67.017		
0	100.00.017		
14	100.28.017		
28	100.00.017		
28	100.67.017		

RESULTS

Y=	100.45 FT
A=	8.75 SF
P=	28.91 FT
V=	3.14 FPS
F=	0.99 SUB-CRITICAL FLOW

 $d_{100} = 0.45 \text{ FT}$ $V = 3.14 \text{ FPS}$

STORM DRAIN DESIGN

Date: 10-21-96
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RAINFALL FILE: C:\6035-SDE.rnd 0 YEAR DESIGN STORM

$$I = 0.000 / (T_c + 0.000) \sim 0.000$$

LINE ID		FLOW RATE INFO						PIPE INFO				HYDRAULIC INFO			
LINE#	DESCRIPTION DOWNLINE#	INC AR TOT AR (ac)	RUNOFFC WEIGHTD C	INLTIME Tc (min)	INLT I TOTL I (in/h)	INC CIA TOT CIA (cfs)	INPUTQ TOTALQ (cfs)	UNIFORM FLOWCAP (cfs)	SIZE/ TYPE (in)	INVERT UP/DOWN (ft)	PIPE LEN (ft)	NVAL INVSLOP (ft/ft)	HGLSLOPE JLC (ft/ft)	HYD GRD UP/DOWN (ft)	VEL UP/DOWN (ft/s)
1	DNLN = 0	0.0 0.0	0.00 0.00	0.00 0.20	0.00 0.00	0.00 0.00	0.00 27.50	31.3	27D 27D	106.83 106.33	49	0.013 0.010	0.010 1.00	108.47 107.97	8.87 8.87
2	DNLN = 1	0.0 0.0	0.00 0.00	0.00 0.07	0.00 0.00	0.00 0.00	4.75 13.75	19.6	18D 18D	108.45 107.83	18	0.013 0.035	0.008 1.00	109.83 109.69	8.07 7.78
3	DNLN = 2	0.0 0.0	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	9.00 9.00	9.0	18D 18D	108.85 108.65	27	0.013 0.007	0.021 1.00	111.42 110.85	5.09 5.09
4	DNLN = 1	0.0 0.0	0.00 0.00	0.00 0.08	0.00 0.00	0.00 0.00	4.85 13.75	16.5	18D 18D	108.45 107.83	25	0.013 0.025	0.014 1.00	110.04 109.69	7.78 7.78
5	DNLN = 4	0.0 0.0	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	8.90 8.90	8.9	18D 18D	108.85 108.65	28	0.013 0.007	0.020 1.00	111.56 110.99	5.04 5.04

DRAINAGE INFORMATION SHEET

PROJECT TITLE: MI CASA ESTATES ZONE ATLAS/DRNG. FILE #: 19/115
 DRB #: 96-285 EPC #: — WORK ORDER #: —
 LEGAL DESCRIPTION: TRACT 433 TOWN OF ATRISCO GRANT UNIT 3
 CITY ADDRESS: TOWER : RD SW

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: CHRONIS ENTERPRISES CONTACT: —
 ADDRESS: 1102 WASHINGTON NE PHONE: 836-2660

ARCHITECT: NA CONTACT: —
 ADDRESS: — PHONE: —

SURVEYOR: PRECISION SURVEYS CONTACT: L. MEBRAND
 ADDRESS: 2929 COOKS NW PHONE: 839-0569

CONTRACTOR: — 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: 11-5-96
 BY: Dennis A. Lorenz

