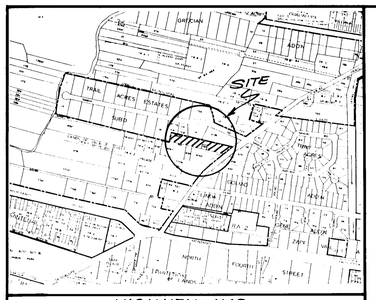


F-14-Z

MAESTAS SUBDIVISION
DRAINAGE STUDY

I. SOIL TYPE (SCS Soil Survey of Bernalillo County)

Gila series, stratified loam (Ge)
Hydrologic Soils Group B

II. DRAINAGE AREAS

	Area 1	Area 2	Area 3	Area 4
Total Area	1.16 Ac	0.35 Ac	0.13 Ac	0.13 Ac
Area of proposed streets, drives, walks	0.06	0.29	0.08	0.10
Area of proposed roofs*	0.34	-	-	-
Proposed lawns and landscaping	0.76	-	-	-
Area of proposed bar ditches	-	0.06	0.05	0.03
Percent impervious area	34%	83%	62%	77%

*Value is based on a 2500 S.F. house.

III. TIME OF CONCENTRATION

	Area 1	Area 2	Area 3	Area 4
Flow length	370 ft	470 ft	460 ft	85 ft
Elevation difference	1.3 ft	1.3 ft	1.1 ft	0.95 ft
Slope	0.35%	0.28%	0.24%	1.1%
Time of concentration	10 min	10 min	10 min	10 min

$Tc = \frac{0.0078L}{0.385}^{0.77} = 6.53$ use 10 min. (Area 1)

IV. 6-HOUR RAINFALL DEPTH

100-Year Storm 2.20 in.
10-Year Storm 1.45 in.

V. RUNOFF COEFFICIENTS

Area 1	Present Conditions Area	Present Conditions "C" Value	Present Conditions % Of Total	Proposed Conditions Area	Proposed Conditions "C" Value	Proposed Conditions % Of Total
Streets, drives, walks	0.03 Ac	0.95	2.6	0.06 Ac	0.95	5.2
Roofs	0.08	0.90	6.9	0.34	0.90	29.3
Undeveloped	1.05	0.40	90.5	-	-	-
Lawns & Landscaping	-	-	-	0.76	0.25	65.5
Composite "C" Values		0.45			0.48	
Area 2						
Streets, drives, walks	0.19	0.95	54.3	0.27	0.95	77.1
Bar Ditches (consider undeveloped)	-	-	-	0.08	0.40	22.9
Undeveloped	0.16	0.40	45.7	-	-	-
Composite "C" Values		0.70			0.82	
Area 3						
Streets, drives, walks	0.12	0.95	92.3	0.08	0.95	61.5
Bar Ditches (consider undeveloped)	-	-	-	0.05	0.40	38.5
Undeveloped	0.01	0.40	7.7	-	-	-
Composite "C" Values		0.91			0.74	
Area 4						
Streets, drives, walks	0.07	0.95	53.8	0.10	0.95	77.0
Bar Ditches (consider undeveloped)	-	-	-	0.03	0.40	23.0
Undeveloped	0.06	0.40	46.2	-	-	-
Composite "C" Values		0.70			0.82	

VI. RAINFALL INTENSITIES

100-Year Storm 4.53 in.
10-Year Storm 2.99 in.

VII. RUNOFF RATES

Q = CIA		Area 1	Area 2	Area 3	Area 4
Existing Conditions	Q(100)	2.36 cfs	1.10 cfs	0.54 cfs	0.41 cfs
	Q(10)	1.56	0.73	0.35	0.27
Proposed Conditions	Q(100)	2.52	1.30	0.43	0.48
	Q(10)	1.66	0.86	0.28	0.32

VIII. REQUIRED STORAGE AMOUNTS

	Area 1	Area 2	Area 3	Area 4
Percent Impervious	34	83	62	77
Pervious CN	75	95	95	95
Composite CN	85	95	95	95
Direct Runoff (in.) 100-Year/10-Year	1.0/0.4	1.7/1.0	1.7/1.0	1.7/1.0
Volume Required (C.F.) 100-Year/10-Year	4211/1684	2160/1270	802/472	802/472

(Example Vol = 1 in. x $\frac{1 \text{ ft.}}{12 \text{ in.}}$ x 1.16 Ac. x $\frac{43{,}560 \text{ ft}^2}{1 \text{ Ac.}}$ = 4211 C.F.)

IX. RUNOFF RETENTION

This is an isolated tract of land from a drainage standpoint. The terrain is very flat and there are no existing storm sewers to drain into. There are no offsite flows.

It is recommended that public street runoff along Los Poblanos Lane be retained in the right-of-way within a bar ditch running along the north and south sides of the road. Runoff generated from Guadalupe Trail will also be retained within a bar ditch along the west side of the road as shown on the grading plan.

The driveways will be used as water blocks to prevent flows from migrating to the west and between public and private areas. The bar ditch along the north side of Los Poblanos Lane will be 6.37 ft. wide by 1.0 ft deep and will have a capacity of 1418 c.f. The bar ditch along the south side of Los Poblanos Lane will be 3.0 ft wide by 0.67 ft deep and will have a capacity of 485 c.f. of capacity. Check dams will be used to prevent flow from collecting at west end. The bar ditch along the west side of Guadalupe Trail will be 11.0 ft wide by 0.78 ft deep and will have a capacity of 472 C.F. These capacities correspond to volumes which would be generated by a ten-year storm. In the event of a 100-year storm, the excess would temporarily overflow into the paved areas of both streets.

The lot grading plan will incorporate a flat grading scheme to accommodate 100-year runoff within each lot. Additionally, impermeable eighteen-inch high walls will be built along the west, north and east sides of each lot to prevent migration of waters between lots. Lot six will not have a wall on the east side since it fronts Guadalupe Trail.

X. RECOMMENDED PAD ELEVATIONS

Using a volume of 4211 C.F. and the area being 34% impervious, the water would pond to a depth of 0.12 ft. or 1.44 inches within all areas of the development.

Based on this, the 100-year flood elevation for this site is estimated to be at an elevation of 0.12 ft. above the finished grade of each lot. It is therefore recommended that finish floor elevations be set a minimum of 1.12 ft. above the finished grade of each lot.

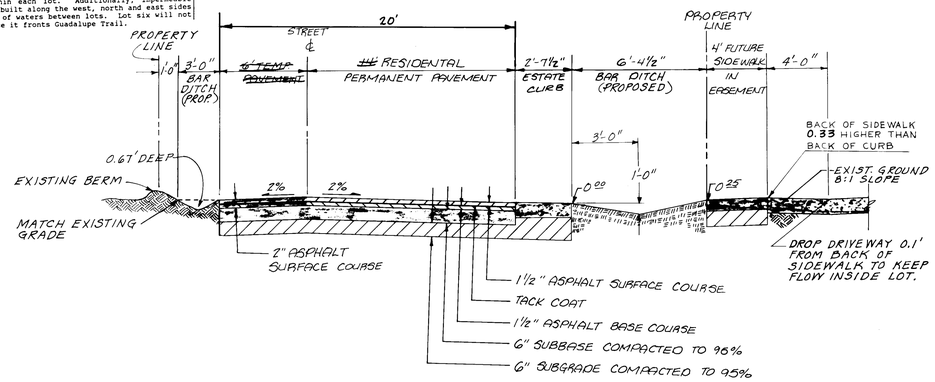
XI. ADDITIONAL RECOMMENDATIONS AND REQUIREMENTS:

A. The foundations of the proposed buildings should be damp-proofed and otherwise protected from seepage and moisture.

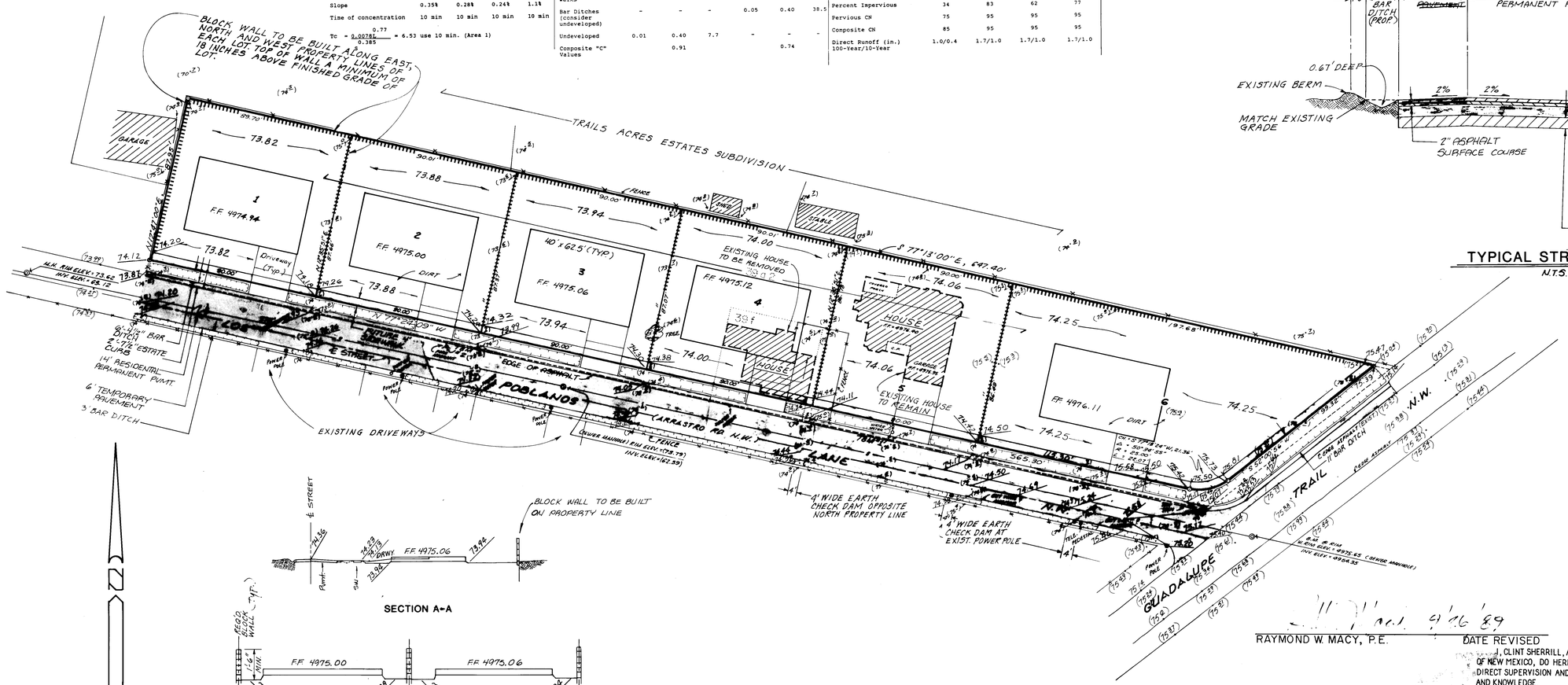
B. The road surface should be sloped to insure public water enters the proposed roadsite bar ditches.

C. Execution of a private drainage covenant that addresses the following items will be required:
   - o Grading and fill restrictions.
   - o Maintenance of the retaining wall (i.e., the perimeter wall referenced in IX. above).
   - o Certification of the individual finish floor elevations prior to occupancy.
   - o Recitation of possible consequences of non-compliance with restrictions above.

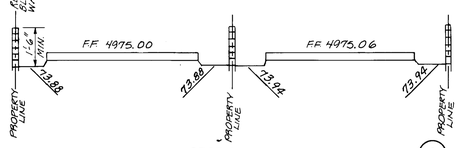
(PROPOSED MAESTAS SUBDIVISION)
TOPOGRAPHY SURVEY MAP
OF
TRACTS 39a2 AND 39f
M.R.G.C.D. MAP NO. 32
BERNALILLO COUNTY, NEW MEXICO
MARCH 1988



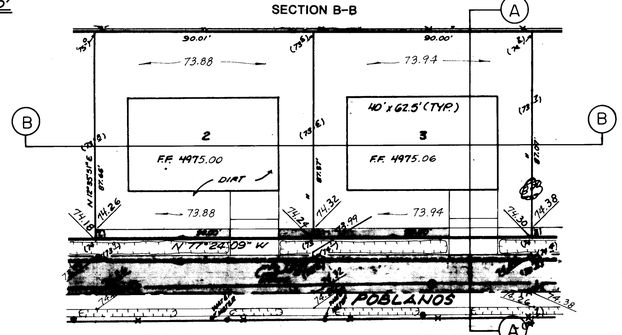
TYPICAL STREET SECTION
N.T.S.



SECTION A-A



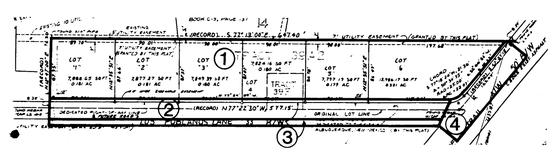
SECTION B-B



TYPICAL LOT GRADING PLAN DETAILS

LEGEND:

1. SPOT ELEVATIONS (EXIST.) (74.9)
2. POWER LINE
3. FENCE LINE
4. POWER POLE & ANCHOR
5. MANHOLE
6. WATER METER
7. PROPOSED GRADE 74.9
8. FINISH FLOOR FF
9. PROPOSED POND
10. EXIST. LOT LINE
11. NEW LOT LINE
12. BLOCK WALL



DRAINAGE AREAS

NOTE: ELEVATION SHOWN ON THE MAP HEREON ARE REFERENCED TO STANDARD CITY OF ALBUQUERQUE U.S.G.S. BRASS TABLET STAMPED "DOUGLAS 1969", ELEVATION = 4972.25, LOCATED ± 60' EAST OF THE INTERSECTION OF GRANDE ROAD N.W. AND DELAWARE ST.

NOTES

1. TBM #1, SET ON THE S.E. CORNER OF THE METAL (WATER METER) PLATING, SOUTH OF LOT 5, ELEVATION = 4974.81.
2. TBM #2, SET ON THE SOUTHERLY BONNET BOLT OF THE FIRE HYDRANT, LOCATED SOUTH OF LOT 2, ELEVATION = 4976.07.
3. ROADSIDE PONDS SHALL NOT BE CONNECTED WITH CULVERTS BENEATH THE DRIVEWAYS.
4. REQUIRED BLOCK WALL SHALL BE GROUT FILLED ALL CELLS.

GRADING AND DRAINAGE PLAN PREPARED BY:

GARDNER, MASON & ASSOCIATES, INC.
ENGINEERS & PLANNERS
ALBUQUERQUE, NM

RAYMOND W. MACY, P.E. — DATE 1/18/89

RAYMOND W. MACY, P.E. — DATE REVISED 5/7/89

RAYMOND W. MACY, P.E. — DATE REVISED 5/26/89

RAYMOND W. MACY, P.E. — DATE REVISED 9/22/89

RAYMOND W. MACY NEW MEXICO 414 REGISTERED PROFESSIONAL ENGINEER

I, CLINT SHERRILL, A DULY REGISTERED LAND SURVEYOR UNDER THE LAWS OF THE STATE OF NEW MEXICO, DO HEREBY CERTIFY THAT THIS PLAT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT THIS PLAT IS CORRECT AND TRUE TO THE BEST OF MY BELIEF AND KNOWLEDGE.

CLINT SHERRILL, P.L.S. #5953

FOR INFORMATION ONLY

SCANNED BY BY LASON

C of A PWD Maps & Records

1	2	3	4	5	6	7	8	9	10	11	12
2	6		3	8	9	2	0	3	9	0	

(REVISED: 06-30-89)
(REVISED: 04-20-88)

CLIENT
HERMAN MAESTAS

SURVEY AND MAP BY
CLINT SHERRILL AND ASSOCIATES
ALBUQUERQUE, NEW MEXICO

LOCATION
TRACTS 39 & 2 AND 39 f
M.R.G.C.D. MAP № 32

DATE	DRAWN BY	SCALE	SHEET
3-2-88	R. CORIZ	1" = 30'	

DRAWING NO. 3892 SHEET 3 OF 4