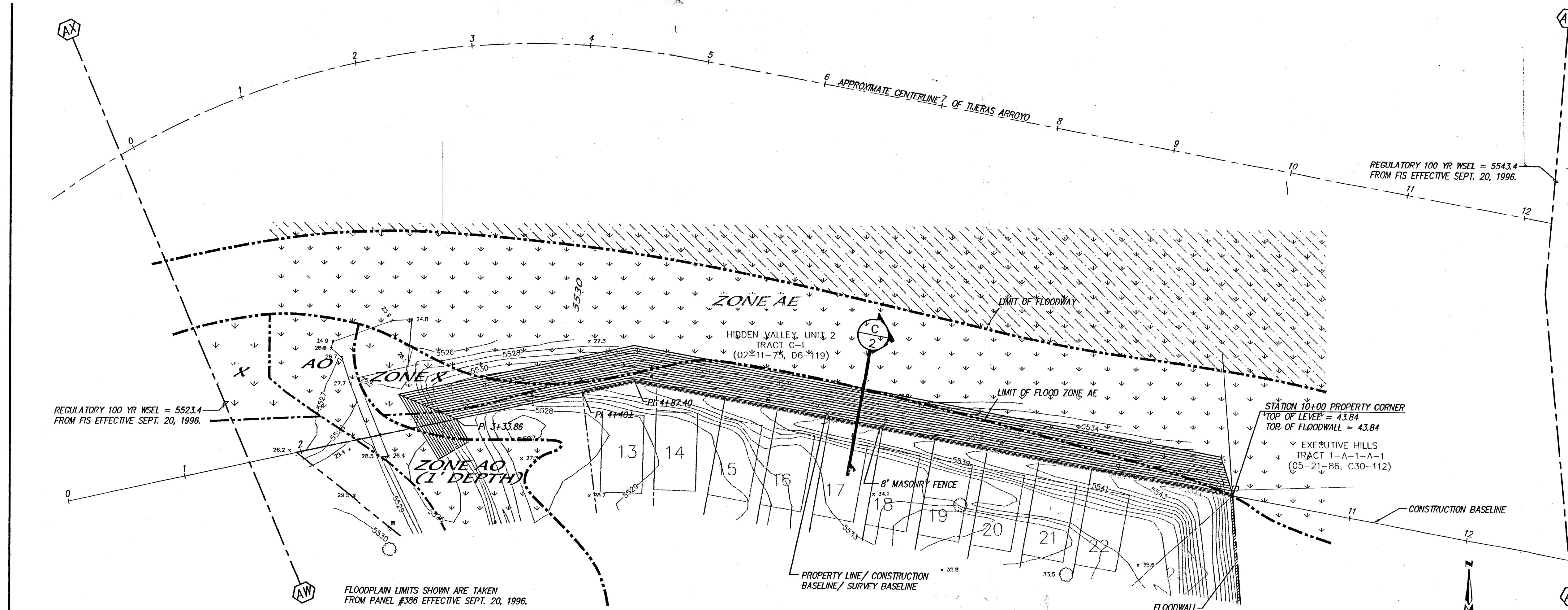
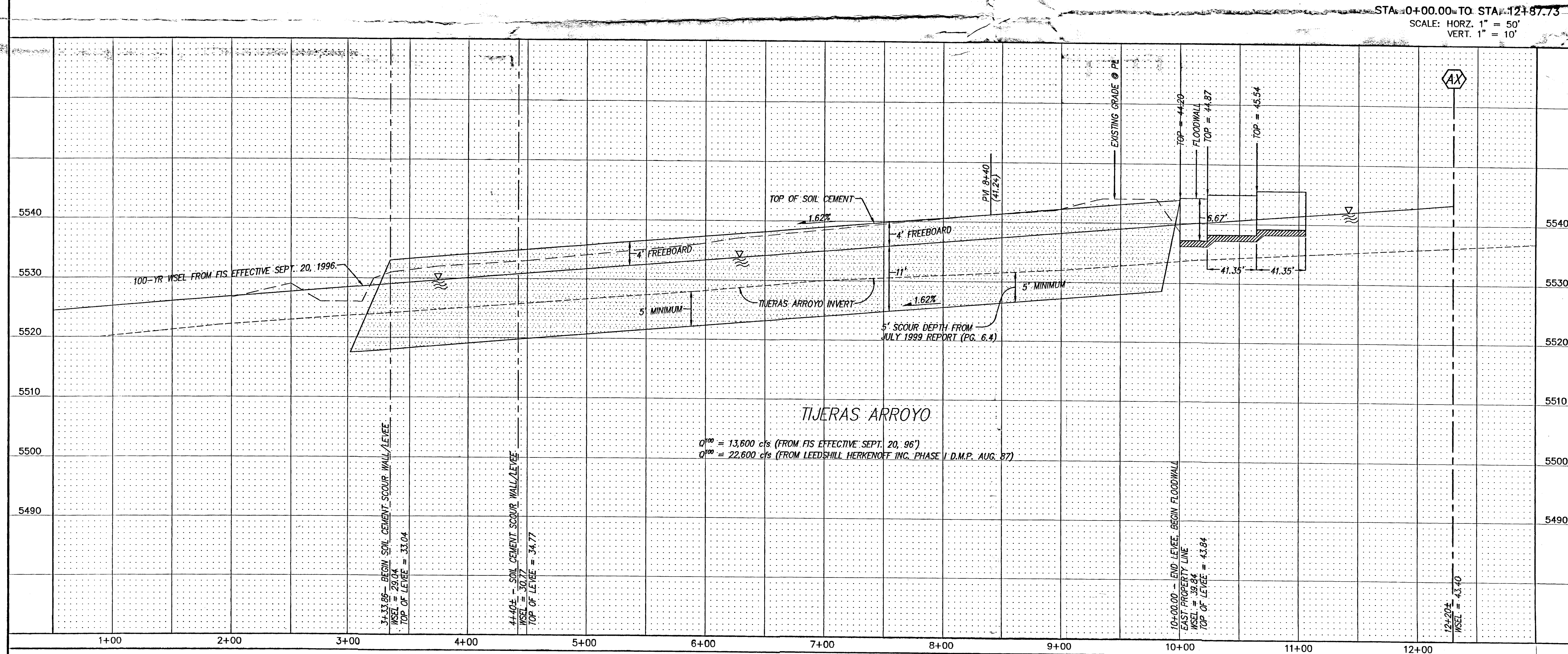



NOTES

EXISTING CONDITIONS
THIS 11 ACRE SITE IS CURRENTLY UNDEVELOPED AND DOES NOT PRODUCE SURFACE WATER RUNOFF. IT IS PROTECTED FROM THE TIJERAS ARROYO BY A LEVEE ON THE NORTH BOUNDARY AND FROM AN AMFCA MAINTAINED EARTH LINED CHANNEL (Q₁₀₀ = 450 CFS) ON THE WEST ALSO BY A LEVEE. THE TWO LEVEES (3' TO 10' HIGH) PREVENT ON-SITE SURFACE DRAINAGE FROM LEAVING THE SITE. IN ADDITION TO THE AMFCA CHANNEL RUNNING THROUGH THE WEST SIDE OF THE SITE THERE IS A SMALL EXISTING OFFSITE DRAINAGE AREA AT THE SOUTH EAST CORNER WHICH DRAINS INTO THIS SITE.

DRAINAGE MANAGEMENT PLAN
FREE DISCHARGE TO THE TIJERAS ARROYO IS ANTICIPATED. THE EXISTING FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE STUDY (FIS) INDICATES 100 YR FLOWS OF 13,600 CFS, BUT SEPARATE STUDIES INDICATE FUTURE 100 YR FLOWS IN THE TIJERAS ARROYO OF ABOUT 22,600 CFS (FROM "TIJERAS ARROYO DRAINAGE MANAGEMENT PLAN" (DMP), PHASE I, AUGUST 1987, BY LEEDSHILL HERKENHOF, INC.). THE FIS IDENTIFIES 500 YR FLOWS OF ABOUT 28,000 CFS AND THE PROFILES IN THAT REPORT SHOW AN APPROXIMATE INCREASE IN WATER SURFACE ELEVATION OF ABOUT 1.5' FROM THE 100 YR TO THE 500 YR ELEVATIONS. GENERALLY SPEAKING THE REQUIRED FREEBOARD FOR LEVEES IS 3' ABOVE THE 100 YR STORM BUT HERE ONE ADDITIONAL FOOT WILL BE PROVIDED. SO, THE TOP OF THE LEVEE IS SET 4' ABOVE THE 100 YR WATER SURFACE ELEVATION FROM THE FIS WHICH IS ALSO ABOUT 3' ABOVE THE WSEL THAT MAY RESULT IF THE FUTURE 100 YR FLOWS ARE INCREASED TO 22,600 CFS. A SCOUR WALL OF SOIL CEMENT WILL BE CONSTRUCTED ADJACENT TO THE TIJERAS ARROYO TO PREVENT LATERAL MIGRATION OF THE ARROYO INTO THIS DEVELOPMENT.

A SEPARATE STUDY DONE BY AYRES ASSOCIATES FOR AMFCA DATED JULY 1999, USED A 100 YR FLOW OF 18,065 CFS IN A NEW HEC-RAS HYDRAULIC MODEL AND CAME UP WITH SOME 100 YR WATER SURFACE ELEVATIONS THAT ARE ABOUT 1.0' LOWER IN PLACES THAN THE ELEVATIONS IN THE CURRENT EFFECTIVE FIS. "THE LONG TERM EROSION ANALYSIS IN THE STUDY PREDICTED AS MUCH AS 2.8' OF DEPOSITION IN THIS REACH" (SEC 6.1) AND RECOMMENDS 3' OF FREEBOARD. BY ADDING 4' FREEBOARD TO THE FIS ELEVATION THIS DEVELOPMENT WILL MEET AND/OR EXCEED THE REQUIREMENTS OF THE AYRES REPORT. "SUMMING THE RESULTS FROM THE LONG-TERM AND SINGLE EVENT ANALYSIS INDICATES 3.3 TO 4.8 FEET OF POTENTIAL CHANNEL SCOUR FOR THE HIDDEN VALLEY SUBDIVISION AND THE UNDEVELOPED LAND" (PAGE 6.4). FOLLOWING THE RECOMMENDATIONS OF THE AYRES REPORT THE NORTH SIDE OF THIS SUBDIVISION WILL BE PROTECTED BY A SCOUR WALL OF SOIL CEMENT FROM A HEIGHT OF 4' ABOVE THE 100 YR WATER SURFACE ELEVATION TO A DEPTH 5' BELOW THE INVERT OF THE TIJERAS ARROYO. THE EXISTING AMFCA CHANNEL ON THE WEST SIDE WILL REMAIN AS IS. THE CURRENTLY MAPPED FLOODPLAIN ENCLOSES INTO SOME OF THE LOTS AND MAY BE REVISED BY A LETTER OF MAP REVISION (LORM) TO REFLECT THE EXISTING AMFCA CHANNEL. THE MINOR OFFSITE FLOWS WILL BE RECEIVED BY PRIVATE DRAINAGE ON THE INDIVIDUAL LOTS IN THE NORTH EAST CORNER AND CONVEYED BY SURFACE DRAINAGE IN THE INTERNAL PRIVATE STREETS AND DISCHARGED INTO THE AMFCA CHANNEL AT THE NORTH WEST CORNER OF THE SITE. A COMBINATION OF ROLL AND STANDARD CURB AND GUTTER WILL BE USED ON THE INTERNAL STREETS AS NECESSARY TO KEEP THE NORMAL DEPTH OF THE 100 YR FLOW BELOW THE TOP OF CURB AND THE ENERGY GRADE LINE WITHIN THE PRIVATE ROADWAY TRACT AND OUT OF THE INDIVIDUAL PRIVATE LOTS.



LEGEND

AX --- CROSS SECTION FROM FEMA'S FLOOD INSURANCE RATE STUDY.

--- FLOOD ZONE BOUNDARY

ZONE AE
BASE FLOOD ELEVATIONS DETERMINED.

ZONE AO
FLOOD DEPTHS OF 1 TO 3 FEET (NORMALLY SHEET FLOW ON SLOPING TERRAIN); AVERAGE DEPTHS DETERMINED FOR AREAS OF ALLUVIAL FAN FLOODING, VELOCITIES ALSO DETERMINED.

ZONE X
AREAS OF 500 YR FLOOD; AREAS OF 100 YR FLOOD WITH AVERAGE DEPTH OF LESS THAN 1' OR WITH DRAINAGE AREAS LESS THAN 1 SQ. MILE; AND AREAS PROTECTED BY LEVEES FROM 100 YR FLOODS.

--- FLOODWAY AREAS IN ZONE AE

--- 8" MASONRY FENCE

--- FLOODWALL

dmg MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS
P.O. BOX 90606
ALBUQUERQUE, NEW MEXICO 87199
(505) 828-2200, FAX (505) 797-9539

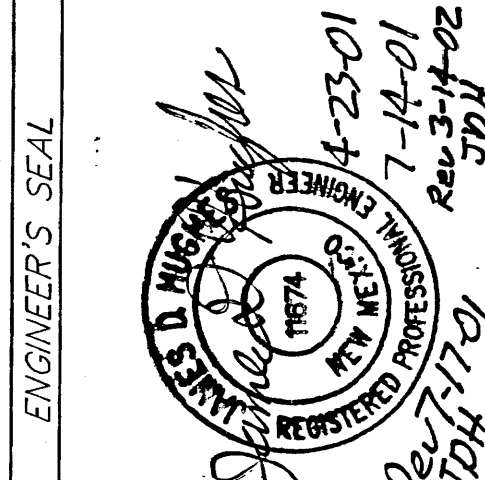
**CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP**

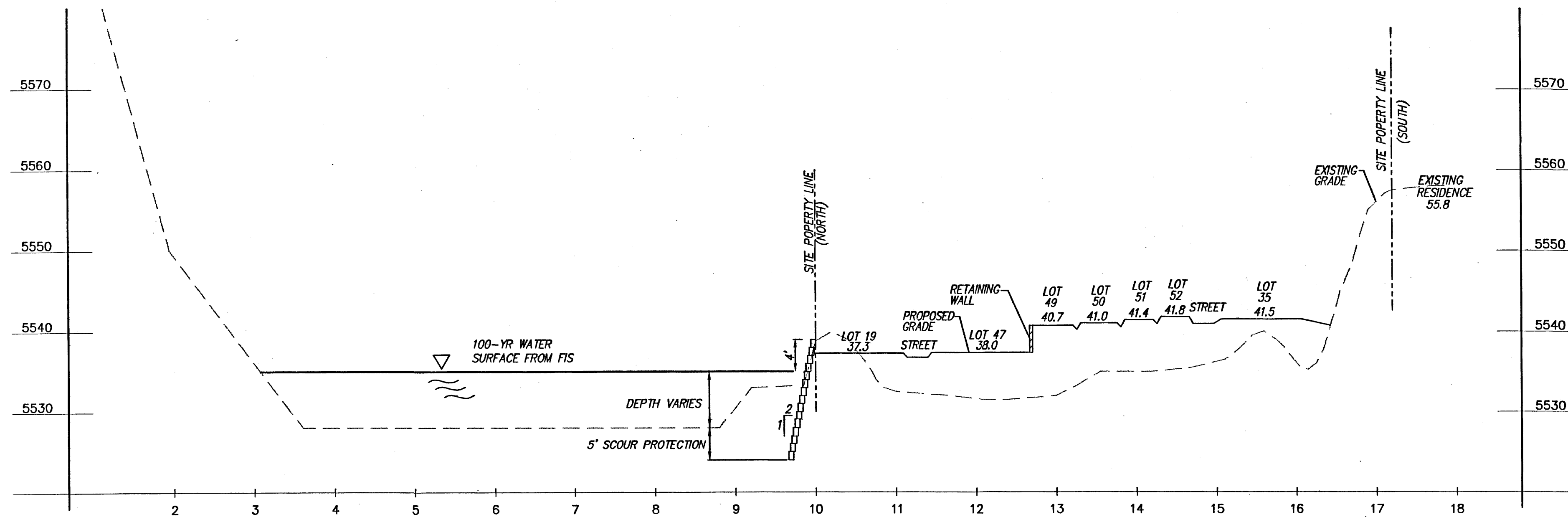
**HIDDEN VALLEY
PLAN AND PROFILE PLAN**

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	MO./DAY/YR.	MO./DAY/YR.

CITY PROJECT NO. ZONE MAP NO. SHEET OF

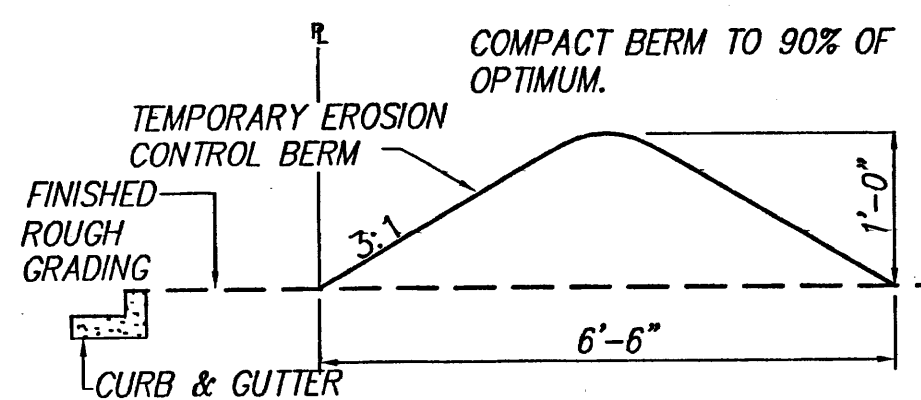
AS BUILT INFORMATION		BENCH MARKS		SURVEY INFORMATION		ENGINEER'S SEAL	
CONTRACTOR	DATE	STATION	DATE	FIELD NOTES	DATE	NO.	DATE
WORK BY	DATE	STATION 5+1022' IS LOCATED 8.7' M. SE OF DOWNTOWN ALBUQ. ON THE EAST SIDE OF THE MUNICIPAL LIMITS LINE IN THE FOUR HILLS SUBDIVISION AREA. STATION IS 600' EAST OF THE MUNICIPAL LINE.	DATE				
ACCEPTED BY	DATE	77.9' SE OF POWER POLE #373, AND 106' NW OF POWER POLE #601.	DATE				
REVISIONS	DATE	STATION IS A STANDARD ACS BRASS DISK SET IN CONCRETE MONUMENT IN THE GROUND. STATION IN STAMPED "5-M221926AC"	DATE				
DESIGNED BY	DATE	MONUMENT IN THE GROUND. STATION IN STAMPED "5-M221926AC"	DATE				
DRAWN BY	DATE	X = 424,017.61 Y = 1,475,700.07 ELEV. = 5594.518	DATE				
CHECKED BY	DATE		DATE				





SECTION A

SCALE: HORZ. 1" = 100'
VERT. 1" = 10'

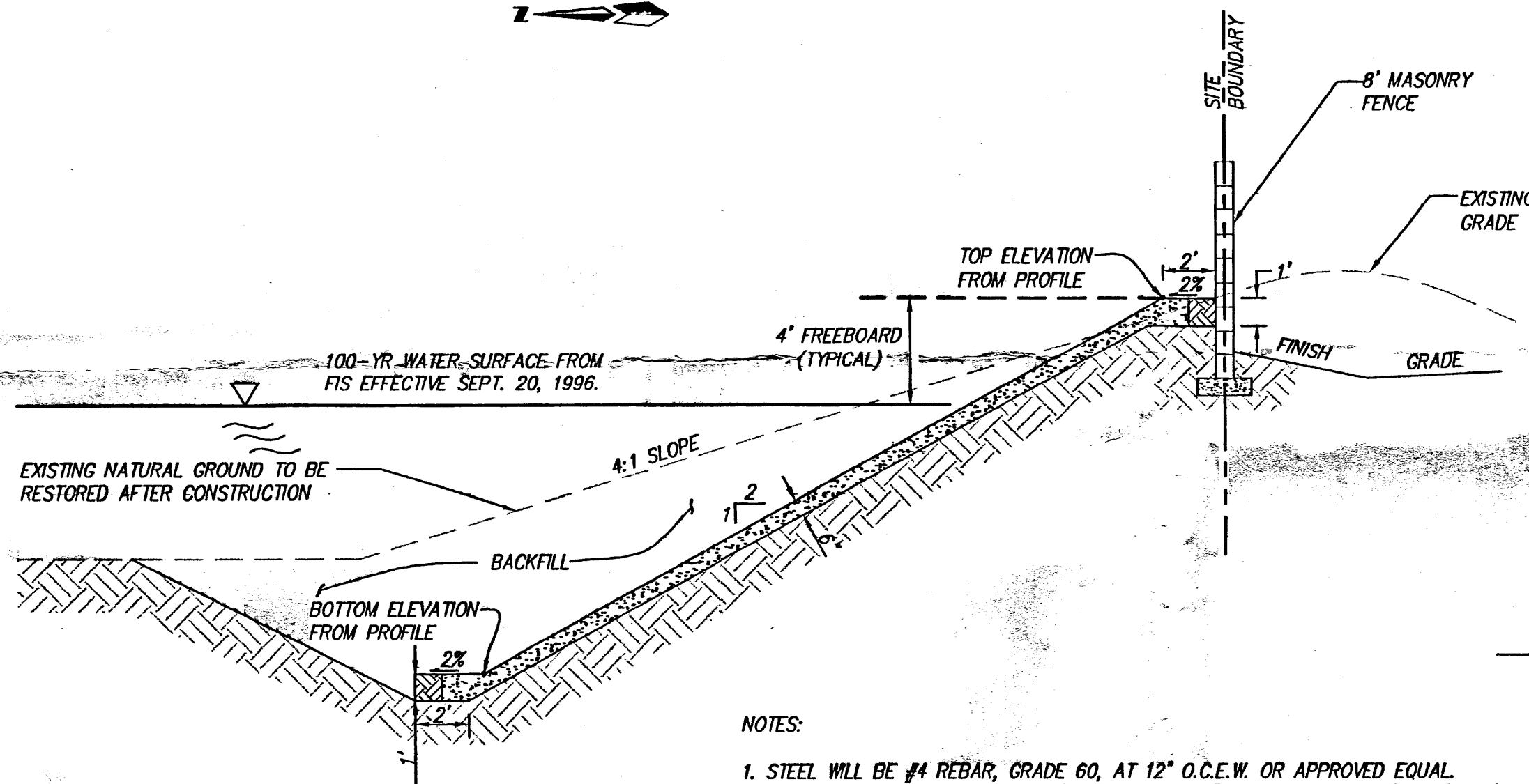


EROSION CONTROL BERM DETAIL

N.T.S.

EROSION CONTROL NOTES

1. CONTRACTOR MUST OBTAIN A TOPSOIL DISTURBANCE PERMIT FROM THE ENVIRONMENTAL HEALTH DIVISION PRIOR TO CONSTRUCTION.
2. CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION LATEST EDITION, SHALL GOVERN ALL WORK.
3. THE CONTRACTOR SHALL CONFORM TO ALL CITY, COUNTY, STATE AND FEDERAL DUST CONTROL MEASURES AND REQUIREMENTS, AND SHALL BE RESPONSIBLE FOR PREPARING AND OBTAINING ALL NECESSARY APPLICATIONS AND APPROVALS.
4. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE LOTS INTO PUBLIC RIGHT-OF-WAY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AS PER DETAIL, THIS SHEET AND BY NETTING THE SOIL TO KEEP IT FROM BLOWING. CONTRACTOR IS RESPONSIBLE FOR CLEANING UP ANY SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.
5. THE EARTHWORK CONTRACTOR SHALL STOCKPILE ENOUGH MATERIAL ADJACENT TO RETAINING WALL LOCATIONS TO BE UTILIZED FOR WALL BACKFILL.
6. ALL STREET ELEVATIONS SHOWN ARE FINISHED FLOW LINE ELEVATIONS.
7. TWO WORKING DAY PRIOR TO ANY EXCAVATION, THE CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM 260-1990 FOR LOCATION OF EXISTING UTILITIES.
8. WATERS OF THE UNITED STATES ARE LOCATED BETWEEN THE TWO BANKS OF THE MAIN ARROYO WHICH IS APPROXIMATELY AT THE LIMITS OF THE FLOODWAY. NO CONSTRUCTION ACTIVITY IS PLANNED WITHIN THE WATERS OF THE UNITED STATES AND THE CONTRACTOR IS TO KEEP ALL EQUIPMENT OUT OF THE WATERS OF THE UNITED STATES.

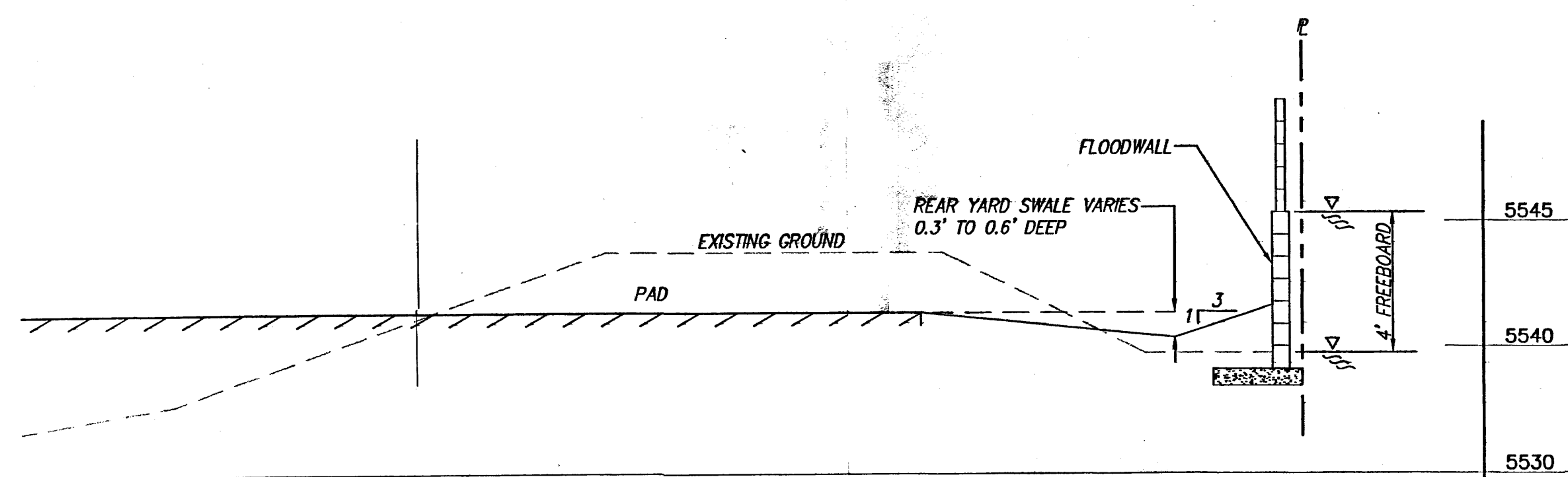


NOTES:

1. STEEL WILL BE #4 REBAR, GRADE 60, AT 12" O.C.E.W. OR APPROVED EQUAL.
2. THE CONCRETE WILL BE TINTED "SAN DIEGO BUFF" BY DAVIS COLOR (1 LB./SACK).
3. EXPANSION JOINTS ARE PER CITY OF ALBUQUERQUE DWG 2265.
4. EDGE THICKENING PER CITY OF ALBUQUERQUE DWG 2261.
5. CONCRETE (OR SHOTCRETE) SHALL BE 3000 PSI MIN.

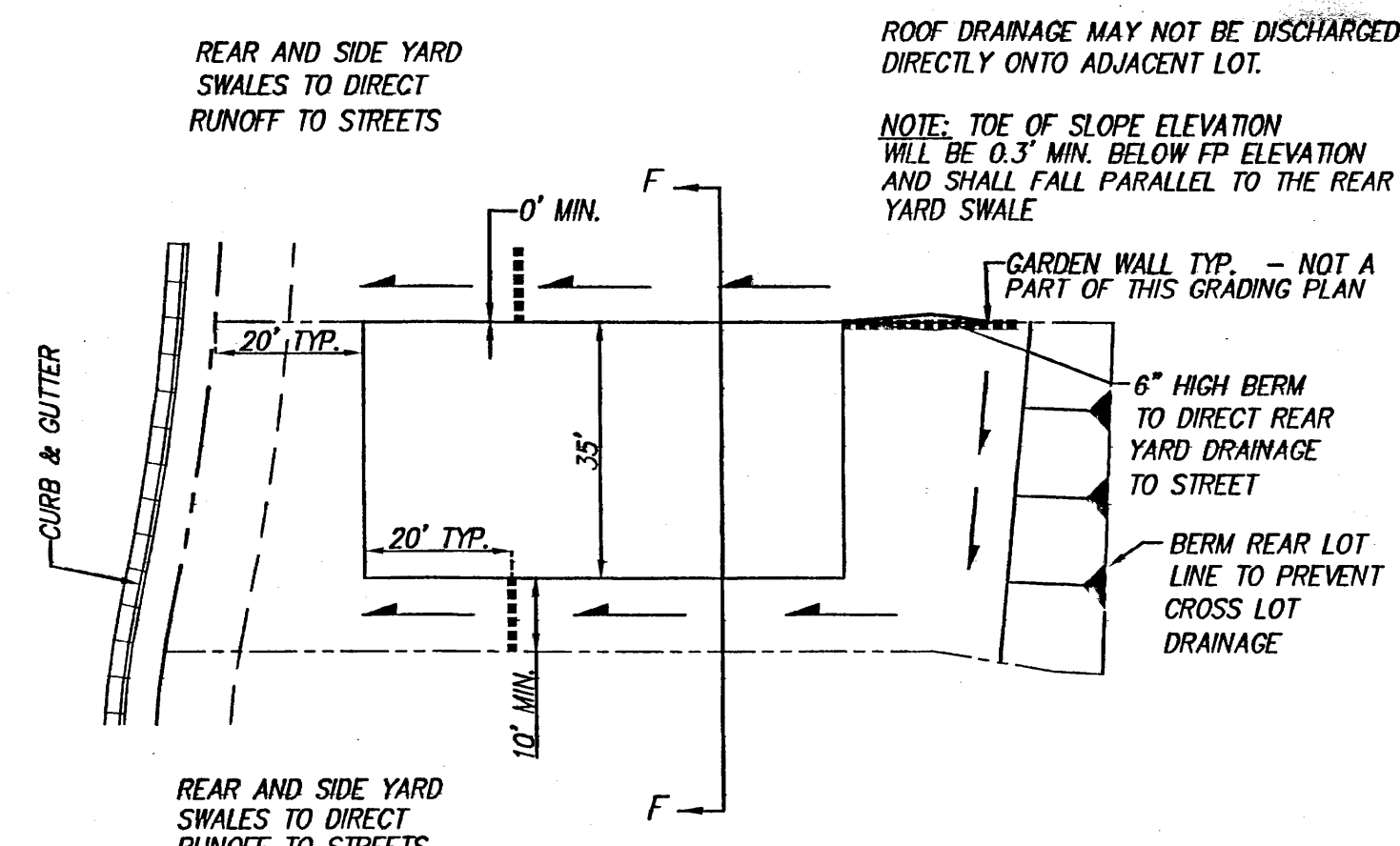
SECTION C-C

SCALE: 1" = 5'



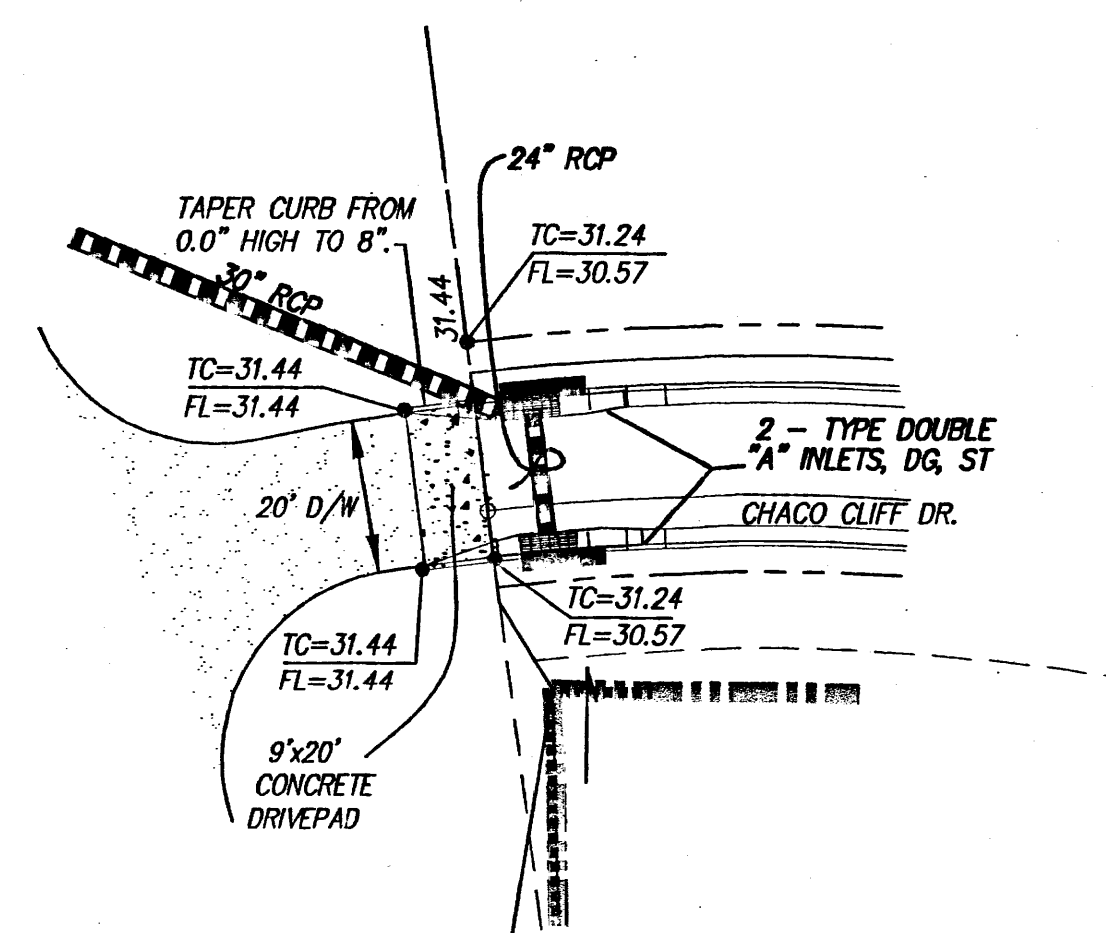
SECTION E-B

SCALE: 1" = 5'



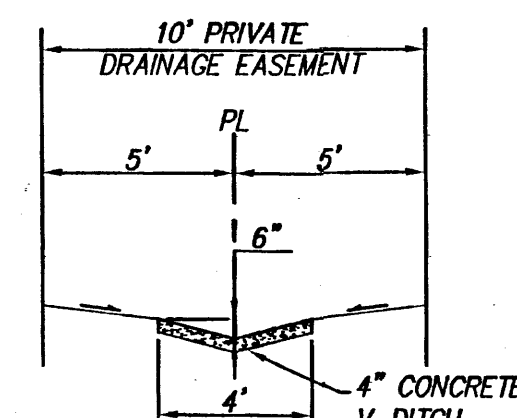
TYPICAL LOT GRADING DETAIL

NTS



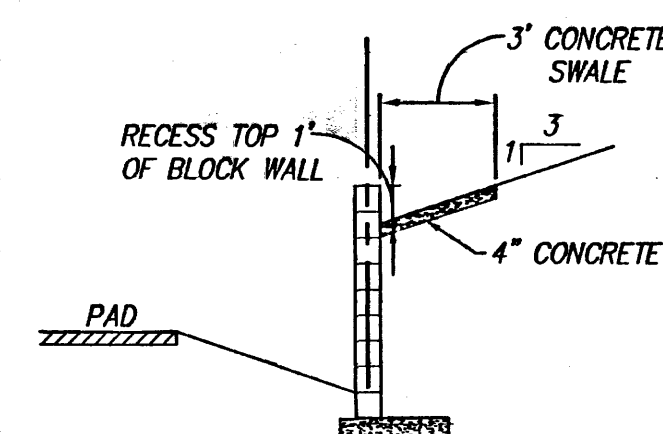
DRIVEPAD DETAIL

NTS



SECTION E-E

SCALE: 1" = 5'



SECTION D-D

SCALE: 1" = 5'

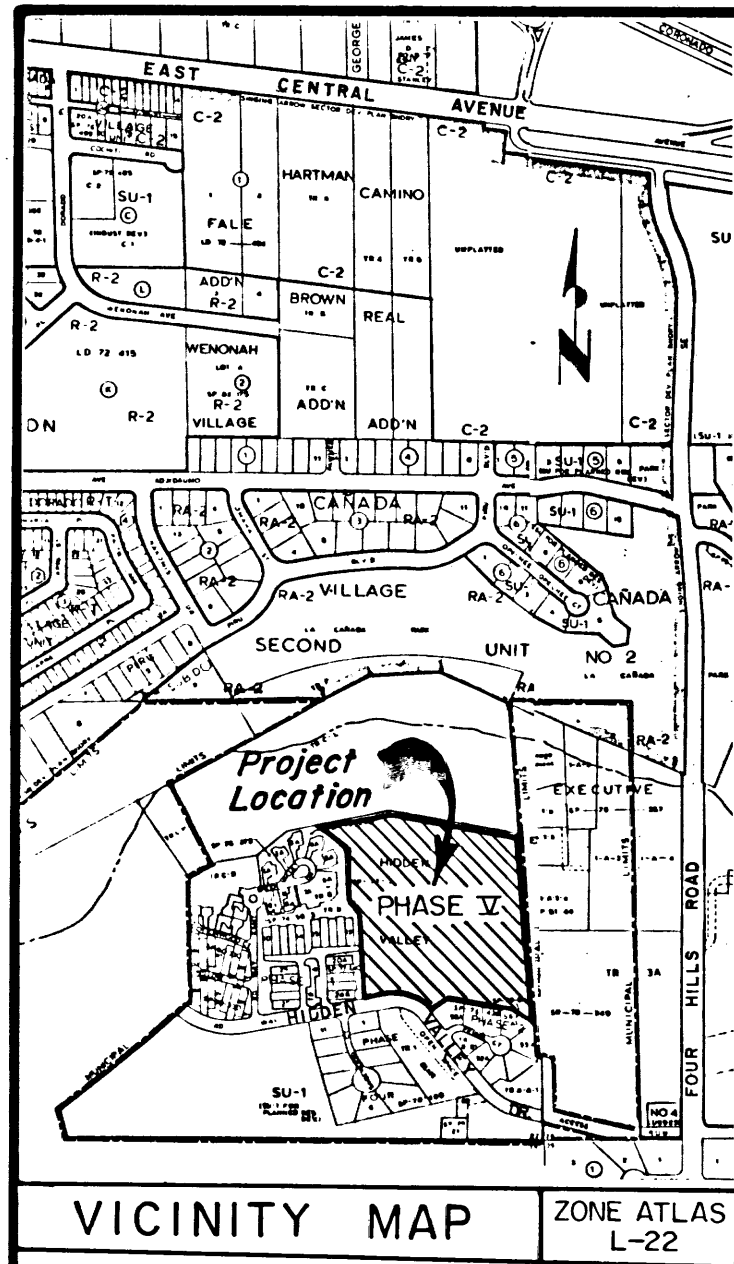
MARK GOODWIN & ASSOCIATES, P.A. CONSULTING ENGINEERS P.O. BOX 90606 ALBUQUERQUE, NEW MEXICO 87199 (505) 828-2200, FAX (505) 797-9539		CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT ENGINEERING DEVELOPMENT GROUP TITLE: EL VALLADO SUBDIVISION GRADING & DRAINAGE PLAN DETAILS	
DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	MO./DAY/YR.
CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
	L-22	2	3

AS BUILT INFORMATION			
CONTRACTOR	DATE	NO.	BY
INSPECTOR'S ACCEPTANCE BY	DATE		
REVISIONS	DATE		
NO.	DATE		
DESIGNED BY	DATE		
DRAWN BY	DATE		
CHECKED BY	DATE		
NO.	DATE		

SURVEY INFORMATION			
DATE	BY	NO.	BY

ENGINEER'S SEAL

 3-4-02



VICINITY MAP

DRAINAGE CALCULATIONS

Soil Type - TgB - Tijeras Gravelly Fine Loam

Existing Conditions

$$P_6 = 2.5 \text{ in.}$$

$$I = 6.84 (P_6)(T_c)^{-.51}$$

$$T_c = 0.0078 L^{.77} \quad \text{where } L = 1080'$$

$$S = \frac{\Delta h}{L} = \frac{.39}{1080} = 0.036$$

$$T_c = 0.0078 \frac{(1080)^{.77}}{0.036^{.385}} = 6.1 \text{ min.}$$

Use 10 min.

$$I = 6.84 (2.5)(10)^{-.51}$$

$$= 5.28 \text{ in/hr}$$

Rational Method -
Undeveloped

$$Q = CIA \quad C = 0.40 \text{ (Ken Schultz Memo)}$$

$$A = 11.0 \text{ Ac} = 479,160 \text{ sf}$$

$$Q = (0.40)(5.28)(11.0)$$

$$= 23.2 \text{ cfs}$$

$$V_{100} = C(P_6/12)(A)$$

$$= (.40)(2.5/12)(479,160) = 39,930 \text{ cf}$$

Rational Method -
Developed Conditions

$$Q = CIA$$

$$C = .95 \text{ Paved Area} = 1.2 \text{ Ac} + .03 \text{ Ac} + .51 \text{ Ac} = 1.4 \text{ Ac}$$

$$C = .90 \text{ Roofs} = 1.75 \text{ Ac}$$

$$C = .25 \text{ Landscaping} = 2.84 \text{ Ac}$$

$$C = .40 \text{ Undeveloped} = 4.67 \text{ Ac}$$

$$1.74 \times .95 = 1.65$$

$$1.75 \times .90 = 1.58$$

$$2.84 \times .25 = 0.71$$

$$4.67 \times .40 = 1.87$$

$$5.81$$

$$\text{Weighted 'C'} = \frac{5.81}{11.0} = 0.53$$

$$Q_{100} = CIA = (0.53)(5.28)(11) = 30.8 \text{ cfs}$$

$$V_{100} = C(P_6/12)A = .53(2.5/12)(479,160)$$

$$= 52,910 \text{ cf}$$

$$\Delta Q_{100} = 30.8 - 23.2 = 7.6 \text{ cfs (increase)}$$

$$\Delta V_{100} = 52,910 - 39,930 = 12,980 \text{ cf (increase)}$$

Offsite Flows

$$Q = CIA \quad I = 5.28 \text{ in/hr}$$

$$A = 0.60 \text{ Ac}$$

$$C = 0.40$$

$$Q = (0.40)(5.28)(0.60)$$

$$Q = 1.9 \text{ cfs}$$



TYPICAL LOT LAYOUT
Scale 1" = 20'

LEGAL DESCRIPTION

Hidden Valley V.

GENERAL NOTES

The proposed development site consists of 11.0 acres and is located approximately 700' west of Four Hills Road, S.E., and adjacent to Hidden Valley Drive, S.E.

The site is located adjacent to a flood hazard zone by the north and west, which is restrained by the existing dike. This dike is maintained by A.M.A.F.C.A. An outlet structure will be installed on the northwest section of the existing dike, which shall be approved by A.M.A.F.C.A.

DRAINAGE NOTES

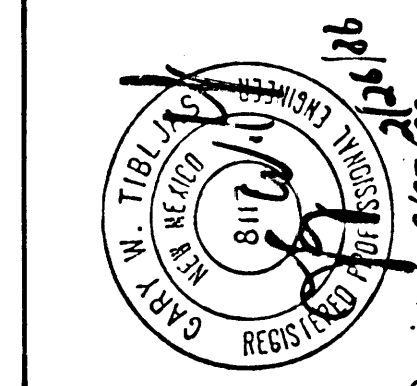
Free discharge is attainable by the City of Albuquerque Hydrology Department when proof of Dike Maintenance by A.M.A.F.C.A. is provided and the drainage outlet to the arroyo is approved by A.M.A.F.C.A. Offsite flow is accepted and routed through the site. Calculations for offsite flow show that only 1.9 cfs (approximately) will enter the site.

LEGEND

- Private Drainage Easement
- Offsite Drainage
- Flow Arrows
- AMAFCA Drainage Easement
- City of Albuquerque Drainage Easement
- FEMA Flood Hazard Boundary
- Easement To Be Vacated By AMAFCA
- 100yr Floodzone Storm Runoff Elevation

NOTES

AMAFCA must have north-dike easement for maintenance.



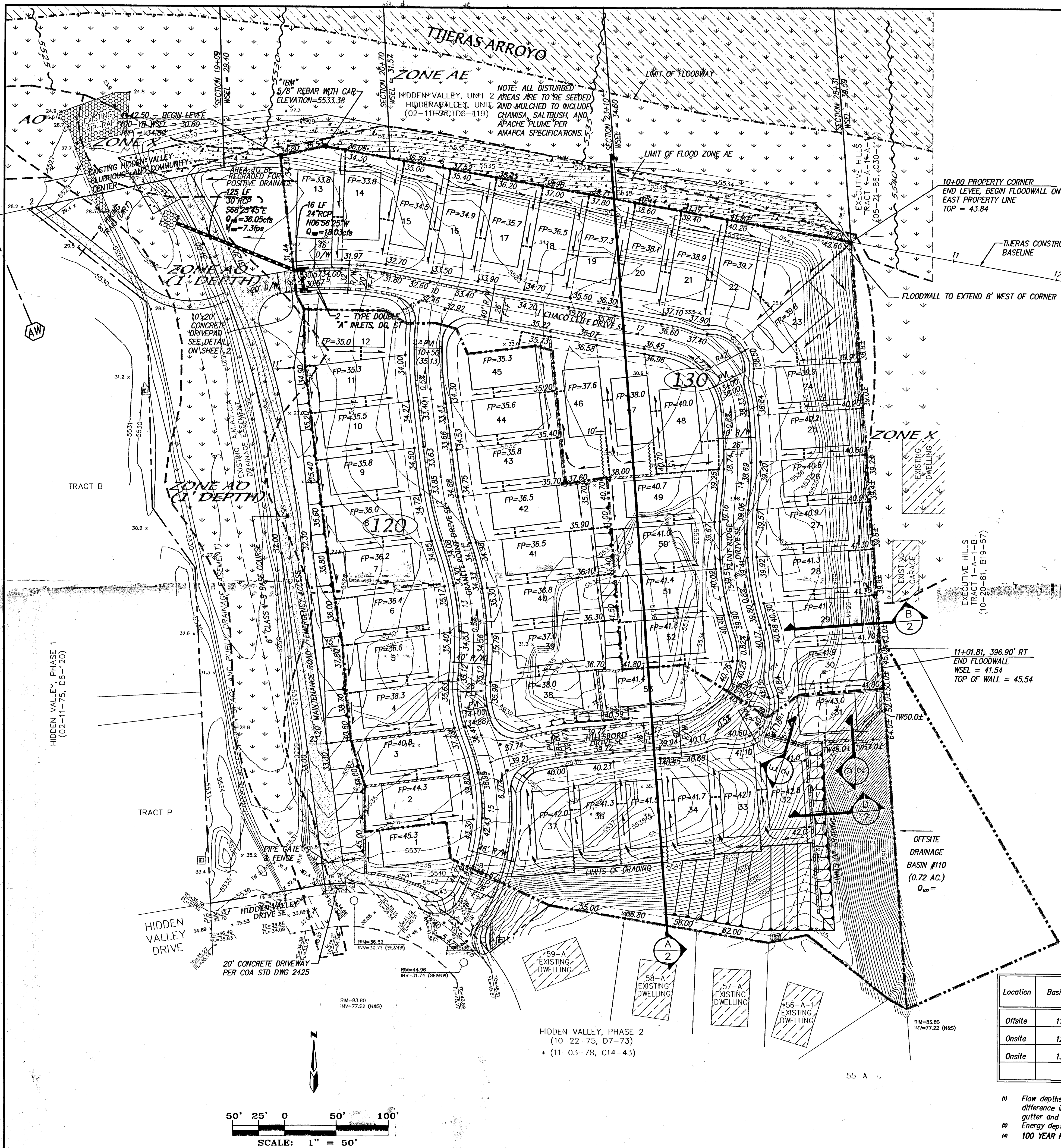
DESIGNED BY:	CHECKED BY:	REVISIONS

HIDDEN VALLEY PHASE V

CONCEPTUAL DRAINAGE AND GRADING

dtm & associates, inc.
Denney-Tibbles-McLean & Associates, Inc.
Consulting Engineers & Planners
2400 CORONADO ROAD NE ALBUQUERQUE, NM 87107
TELEPHONE (505) 884-0896

TYPE DRAWING	SHEET
PRELIM ☐	1
CONST. ☐	
RECORD ☐	
DATE: FEB. 1986	OF
JOB NO. 84912	SHEETS



EXISTING CONDITIONS

THIS 11 ACRE SITE IS CURRENTLY UNDEVELOPED AND DOES NOT PRODUCE SURFACE WATER RUNOFF. IT IS PROTECTED FROM THE TIJERAS ARROYO BY A LEVEE ON THE NORTH BOUNDARY AND FROM AN AMAFCA MAINTAINED EARTH LINED CHANNEL (10' - 450' CFS) ON THE WEST ALSO BY A LEVEE. THE TWO LEVEES (3' TO 10' HIGH) PREVENT ON-SITE SURFACE DRAINAGE FROM LEAVING THE SITE. IN ADDITION TO THE AMAFCA CHANNEL RUNNING THROUGH THE WEST SIDE OF THE SITE THERE IS A SMALL EXISTING OFFSITE DRAINAGE AREA AT THE SOUTH EAST CORNER WHICH DRAINS INTO THIS SITE.

DRAINAGE MANAGEMENT PLAN

FREE DISCHARGE TO THE TIJERAS ARROYO IS ANTICIPATED. THE EXISTING FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE STUDY (FIS) INDICATES 100 YR. FLOWS OF 13,600 CFS, BUT SEPARATE STUDIES INDICATE FUTURE 100 YR. FLOWS IN THE TIJERAS ARROYO OF ABOUT 22,600 CFS (FROM "TIJERAS ARROYO DRAINAGE MANAGEMENT PLAN" (DMP), PHASE I, AUGUST 1987, BY LEEDSHILL HERKENHOFF, INC.). THE FIS IDENTIFIES 500 YR. FLOWS OF ABOUT 28,000 CFS AND THE PROFILES IN THAT REPORT SHOW AN APPROXIMATE INCREASE IN WATER SURFACE ELEVATION OF ABOUT 1.5' FROM THE 100 YR. TO THE 500 YR. ELEVATIONS. GENERALLY SPEAKING THE REQUIRED FREEBOARD FOR LEVEES IS 3' ABOVE THE 100 YR. STORM, BUT HERE ONE ADDITIONAL FOOT WILL BE PROVIDED. SO, THE TOP OF THE LEVEE IS SET 4' ABOVE THE 100 YR. WATER SURFACE ELEVATION FROM THE FIS WHICH IS 50 ABOUT 3' ABOVE THE WSEL THAT MAY RESULT IF THE FUTURE 100 YR. FLOWS ARE INCREASED TO 22,600 CFS. A SCOUR WALL OF SOIL CEMENT WILL BE CONSTRUCTED ADJACENT TO THE TIJERAS ARROYO TO PREVENT LATERAL MIGRATION OF THE ARROYO INTO THIS DEVELOPMENT.

A SEPARATE STUDY DONE BY AYRES ASSOCIATES FOR AMAFCA DATED JULY 1999, USED A 100 YR. FLOW OF 18,065 CFS IN A NEW HEC-RAS HYDRAULIC MODEL AND CAME UP WITH SOME 100 YR. WATER SURFACE ELEVATIONS THAT ARE ABOUT 1.0' LOWER IN PLACES THAN THE ELEVATIONS IN THE CURRENT EFFECTIVE FIS. "THE LONG TERM EROSION ANALYSIS IN THE STUDY PREDICTED AS MUCH AS 2.8' OF DEPOSITION IN THIS REACH" (SEC 6.1) AND RECOMMENDS 3' OF FREEBOARD. BY ADDING 4' FREEBOARD TO THE FIS ELEVATION THIS DEVELOPMENT WILL MEET AND/OR EXCEED THE REQUIREMENTS OF THE AYRES REPORT. "SUMMING THE RESULTS FROM THE LONG-TERM AND SINGLE EVENT ANALYSIS INDICATES 3.3 TO 4.8 FEET OF POTENTIAL CHANNEL SCOUR FOR THE HIDDEN VALLEY SUBDIVISION AND THE UNDEVELOPED LAND" (PAGE 6.4). FOLLOWING THE RECOMMENDATIONS OF THE AYRES REPORT THE NORTH SIDE OF THIS SUBDIVISION WILL BE PROTECTED BY A SCOUR WALL OF SOIL CEMENT FROM A HEIGHT OF 4' ABOVE THE 100 YR. WATER SURFACE ELEVATION TO A DEPTH 5' BELOW THE INVERT OF THE TIJERAS ARROYO. THE EXISTING AMAFCA CHANNEL ON THE WEST SIDE WILL REMAIN AS IS. "THE CURRENTLY MAPPED FLOODPLAIN ENDOCHORES INTO SOME OF THE LOTS AND MAY BE REVISED BY A LETTER OF MAP REVISION (LORM) TO REFLECT THE EXISTING AMAFCA CHANNEL. THE MINOR OFFSITE FLOWS WILL BE RECEIVED BY PRIVATE DRAINAGE ON THE INDIVIDUAL LOTS IN THE NORTH EAST CORNER AND CONVEYED BY SURFACE DRAINAGE IN THE INTERNAL PRIVATE STREETS AND DISCHARGED INTO THE AMAFCA CHANNEL AT THE NORTH WEST CORNER OF THE SITE. A COMBINATION OF ROLL AND STANDARD CURB AND GUTTER WILL BE USED ON THE INTERNAL STREETS AS NECESSARY TO KEEP THE NORMAL DEPTH OF THE 100 YR. FLOW BELOW THE TOP OF CURB AND THE ENERGY GRADE LINE WITHIN THE PRIVATE ROADWAY TRACT AND OUT OF THE INDIVIDUAL PRIVATE LOTS.

SUMP INLET CAPACITY

CAPACITY IS MEASURED BY THE WEIR EQUATION AT THE UP OF GUTTER ASSUMING AN ALLOWABLE PONDING ELEVATION EQUAL TO THE LOWEST ADJACENT RIGHT-OF-WAY ELEVATION. THE LENGTH OF THE DOUBLE GRATE FACING THE STREET IS 6.5'± AND THE DEPTH IS 0.725'± AT THE UP OF THE GUTTER. THE SIDES ARE EACH 2' LONG (4' TOTAL) AND THE AVERAGE DEPTH IS 0.892'± FROM THE WEIR EQUATION:

(Front) $Q_{up} = 3.0 \times 6.5' \times 0.725'^{1.48} = 12.04 \text{ cfs}$
(Sides) $Q_{up} = 3.0 \times 4.0' \times 0.892'^{1.48} = 10.11 \text{ cfs}$
(Total) $Q_{up} = 6.02 \text{ cfs} + 10.11 \text{ cfs} = 22.15 \text{ cfs}$

* NOTE:

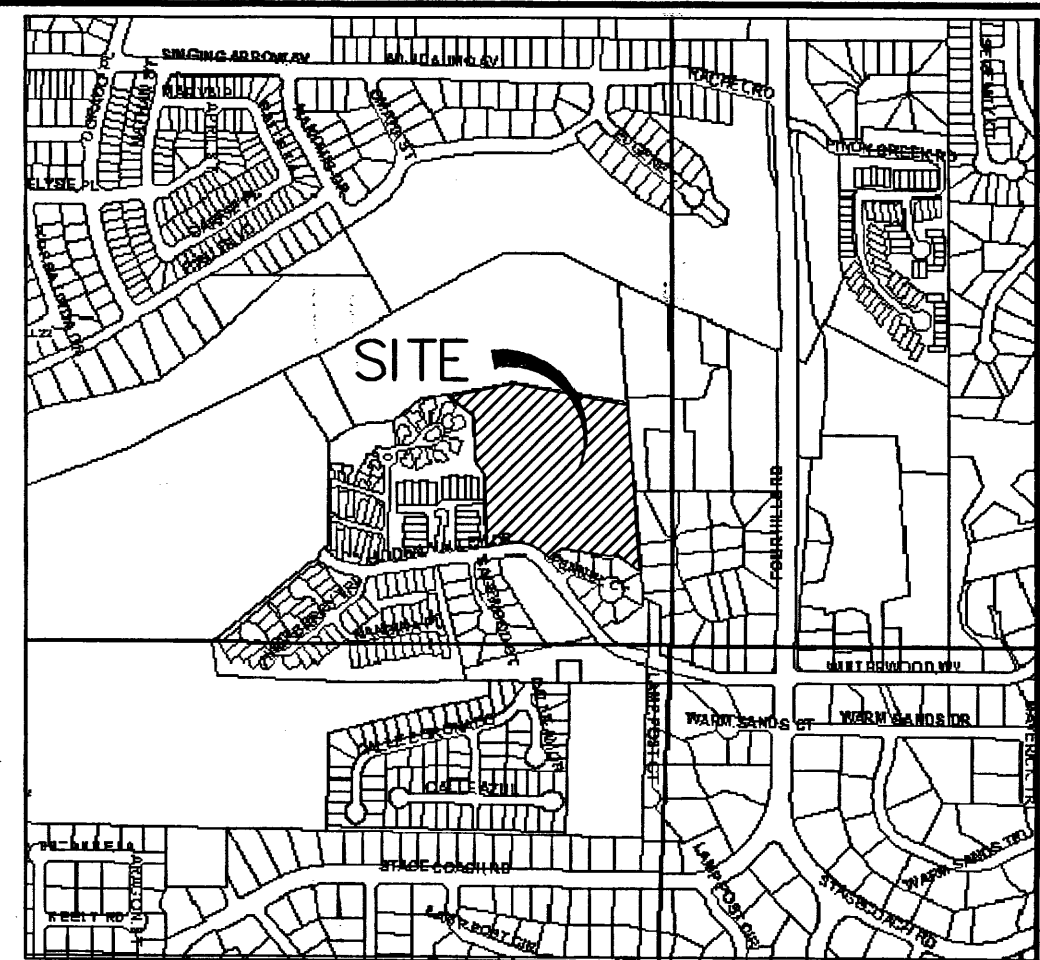
THESE DEPTHS ASSUME STANDARD 8" CURB WITH THE RIGHT-OF-WAY 9' BEHIND THE CURB AND 0.18' ABOVE THE TOP OF THE CURB.

THE 100-YEAR FLOW TO THE SUMP INLETS IS 36.05 cfs. TWO INLETS HAVE A CAPACITY OF 44.30 cfs THUS PROVIDING A SAFETY FACTOR THAT WOULD ALLOW 19% OF THE INLET TO CLOG WITHOUT EXCEEDING THE NORMAL DESIGN CRITERIA.

SUMMARY OF HYDROLOGY

Location	Basin No.	Area Ac.	Hydrologic Group				100 Year Flow (cfs) ^(a)	Curb Type/Slope	Flow Depth ft ^(b)	Velocity fps	Energy Depth ft ^(c)
			A	B	C	D					
Offsite	110	0.72	0	0	75	25	2.73	N/A	---	---	---
Onsite	120	4.57	0	21	22	57	18.48	Std/0.5%	0.61'	2.5	0.71'
Onsite	130	3.67	0	21	22	57	14.84	Roll/1.77%	0.32'	3.2	0.48'
							36.05	Std/1.77%	0.49'	4.5	0.80'

- ^(a) Flow depths are taken from Plate 22.3 D-1 of the DPM and reduced by 3/4" for roll curb types to account for the difference in gutter depression. Allowable depths may not exceed curb heights which are 0.33' for roll curb and gutter and 0.67' for standard curb and gutter.
^(b) Energy depth is calculated as flow depth plus energy head. Allowable depths are 0.20' above the top of curb.
^(c) 100 YEAR PRECIPITATION (From Figures D, E and F, and Eq. 28 of DPM 22.2) $P_m = 2.07"$, $P_{100} = 2.60"$, $P_{100} = 3.25"$.



VICINITY MAP ZONE MAP: L-22-Z

TBM (TEMPORARY BENCHMARK)

ACS BENCHMARK

STATION IS LOCATED 8.7 MI. SE OF DOWNTOWN ALBUQUERQUE ON THE EAST SIDE OF THE MUNICIPAL LIMITS LINE IN THE FOUR HILLS SUBDIVISION AREA. STATION IS 600 FT. EAST OF THE MUNICIPAL LIMITS LINE, 77.9' SE OF POWER POLE #537, AND 186.0' NW OF POWER POLE #60. STATION IS STANDARD ACS BRASS DISK SET IN A CONCRETE MONUMENT IN GROUND. STATION IS STAMPED "5-M22.1975ACS". ELEVATION = 5594.518 (SLD 1929)

LEGAL DESCRIPTION

A TRACT OF LAND SITUATE WITHIN SECTION 27, TOWNSHIP 10 NORTH, RANGE 4 EAST, NEW MEXICO PRINCIPAL MERIDIAN, CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO BEING THE REMAINDER OF HIDDEN VALLEY AS THE SAME IS SHOWN AND DESIGNATED ON SAID PLAT FILED FOR RECORD IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO ON SEPTEMBER 13, 1974 IN VOLUME D6, FOLIO 84 AND CONTAINING 10.9747 ACRES MORE OR LESS.

LEGEND

- AX -- CROSS SECTION FROM FEMA'S FLOOD INSURANCE RATE STUDY
- ZONE AE -- BASE FLOOD ELEVATIONS DETERMINED.
- ZONE AO -- FLOOD DEPTHS OF 1 TO 3 FEET (NORMALLY SHEET FLOW ON SLOPING TERRAIN); AVERAGE DEPTHS DETERMINED FOR AREAS OF ALLUVIAL FAN FLOODING, VELOCITIES ALSO DETERMINED.
- ZONE X -- AREAS OF 500 YR. FLOOD; AREAS OF 100 YR. FLOOD WITH AVERAGE DEPTH OF LESS THAN 1' OR WITH DRAINAGE AREAS LESS THAN 1 SQ. MILE; AND AREAS PROTECTED BY LEVEES FROM 100 YR. FLOODS.
- FLOODWAY AREAS IN ZONE AE
- EXISTING CONTOUR
- EXISTING CURB
- EXISTING SPOTS
- EXISTING TOP OF CURB
- EXISTING FLOWLINE
- NEW RIGHT-OF-WAY
- NEW PADS
- NEW LOT LINES
- NEW RETAINING WALL
- NEW GARDEN WALL
- SOIL CEMENT EROSION PROTECTION
- LIMIT OF FLOODWAY FROM FIRM
- LIMIT OF FLOOD PLANE FROM FIRM
- WATER SURFACE CONTOURS FROM FIRM
- WATER BLOCK
- DRAINAGE BASIN BOUNDARY
- NEW MOUNTABLE CURB & GUTTER
- NEW STANDARD CURB & GUTTER
- LIMITS OF GRADING
- BASIN IDENTIFICATION NUMBER
- 130
- CROSS SECTION LINE & WATER SURFACE ELEVATION, AYRES ASSOC. 1999
- RECEIVED JUL 18 2001 HYDROLOGY SECTION

THE FLOOD HAZARD ZONES SHOWN HEREON ARE BASED ON THE FLOOD INSURANCE RATE MAP, FIRM, PANELS #35001C0367 & #35001C0366 EFFECTIVE SEPTEMBER 20, 1996.

EL VALLADO SUBDIVISION

GRADING & DRAINAGE PLAN

dmg MARK GOODWIN & ASSOCIATES, P.A. CONSULTING ENGINEERS

P.O. BOX 90606 ALBUQUERQUE, NEW MEXICO 87199 (505)828-2200, FAX (505)797-9539

Designed: JDH Drawn: STAFF Checked: DMG Scale: 1" = 50' Date: 01-18-01 Job: A00036 Sheet 1 of 3

