

6 HR. - 100 YR, DEPTH = 0.28 FEET
24 HR. - 100 YR, DEPTH = 0.31 FEET
10 DAY - 100 YR, DEPTH = 0.39 FEET

$$\text{ELEVATION} = 55.60 + 0.39' = 56.00$$

N/F ANTHONY SERS
TRACT 309-A-2, MAP #38
WARRANTY DEED, #94327, FILED 02-09-6

N/F TEODOCIO H. & BLANCA E. CHAVEZ
TRACT 309-A-3, MAP #38
FILED 09-13-79, D1

N/F RANCEFORD H. & KATHLEEN JIO
TRACT 309-B-2, MAP #38
FILED 06-04-90, BCR 4

10 DAY-100 YR W.S. ELEVATION

BUILD CONC. WALL
TW ELEV=4957.00

10 DAY-100 YR W.S. ELEVATION
JOE AZAR SUBDIVISION
55.60FG FILED 05-17-72, D5-15.

BUILD CONC. WALL
TW ELEV=4957.00

LOT 2
L.D. MANUEL & CATHY
GONZALES
FILED 05-30-97, 97C-170

BUILD CONC. WALL
TW ELEV=4957.00

END PERIMETER WALL

Scale 1" = 20 ft

**APPLIED ENGINEERING AND
SURVEYING, INC.
ENGINEERS AND PLANNERS**

1805 Bial Drive NE
Office, (505) 237-1456

Albuquerque, New Mexico 87112
Fogarty, (505) 237-1456

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

TITLE: **GRADING PLAN**

Design Review Committee	City Engineer Approval
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City Project No.

Zone Map No.
J-12

Sheet	Of
3	7

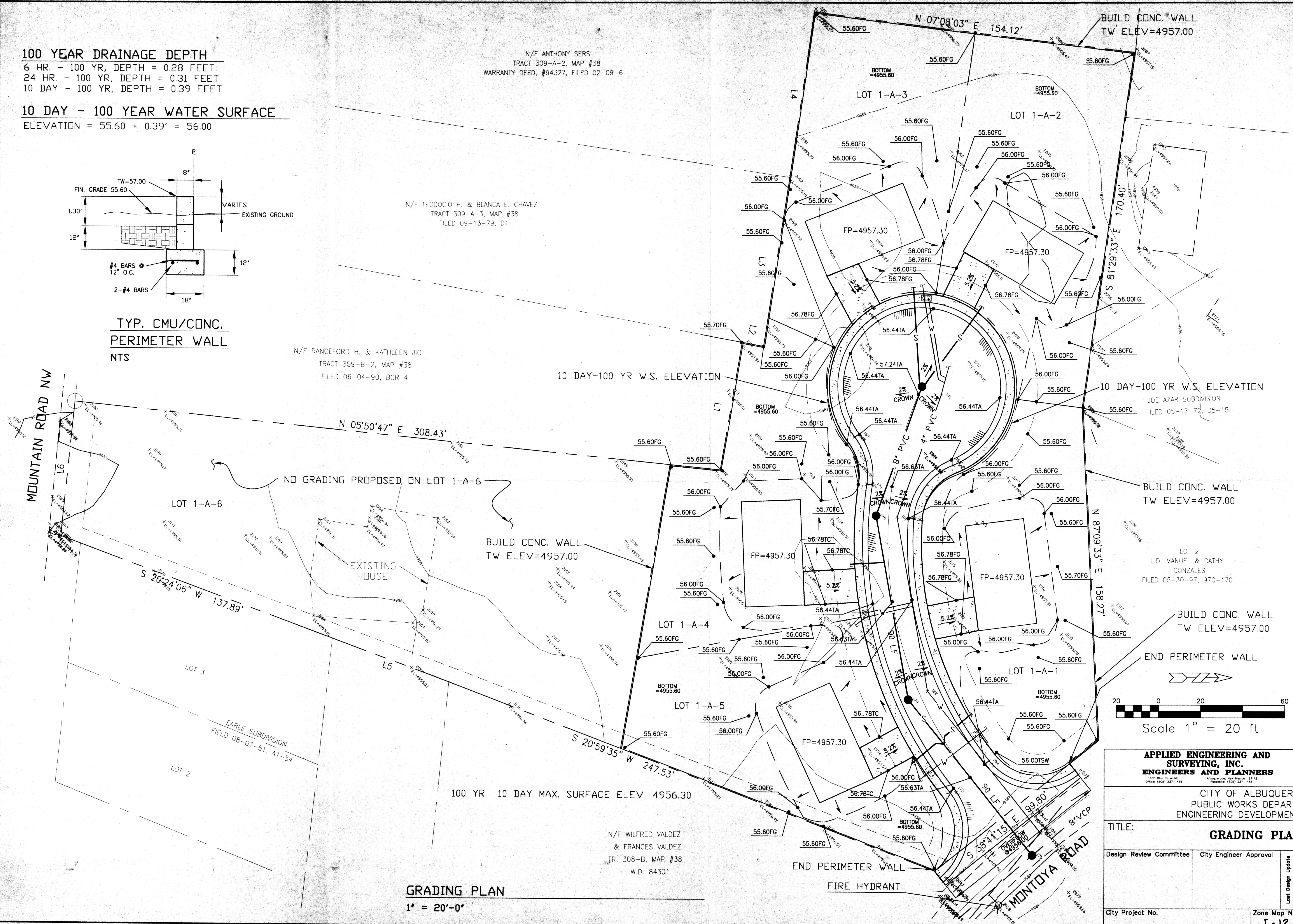
Mo./Day/Yr.	Mo./Day/Yr.

NO.		DATE	REMARKS	BY
REVISIONS				
DESIGN				
DESIGNED BY			DATE	
DRAWN BY			DATE	

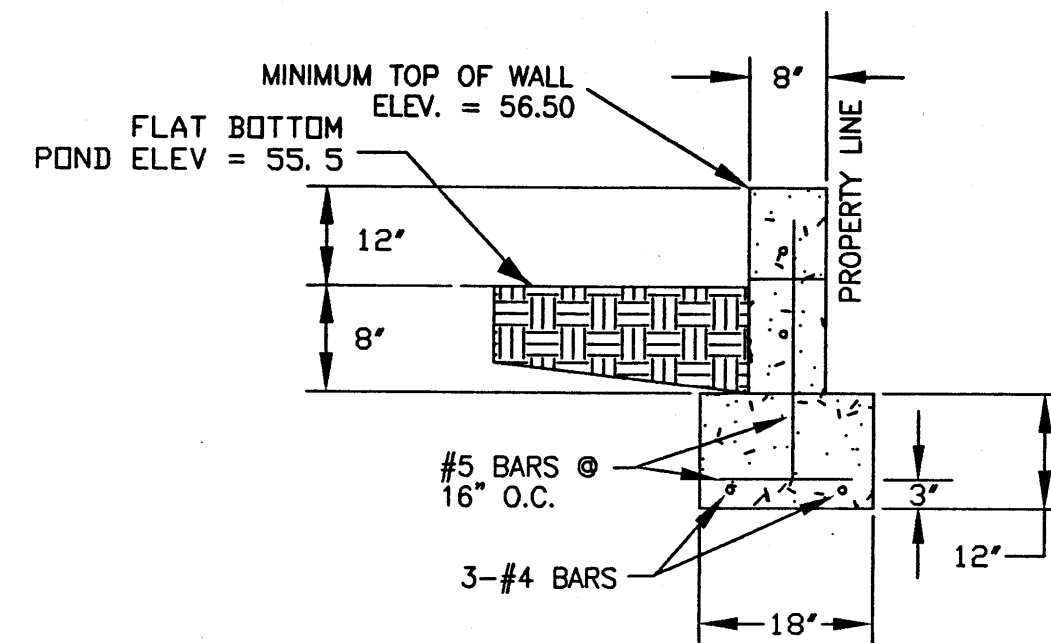
[illegible]

BENCH MARKS

AS BUILT INFORMATION			
CONTRACTOR	DATE		
WORK	DATE		
STANDARD BY	DATE		
INSPECTOR'S	DATE		
ACCEPTANCE BY	DATE		
FIELD	DATE		
VERIFICATION BY	DATE		
CORRECTED BY	DATE		
MICRO-FILM INFORMATION			
RECORDED BY	DATE		
NO.			

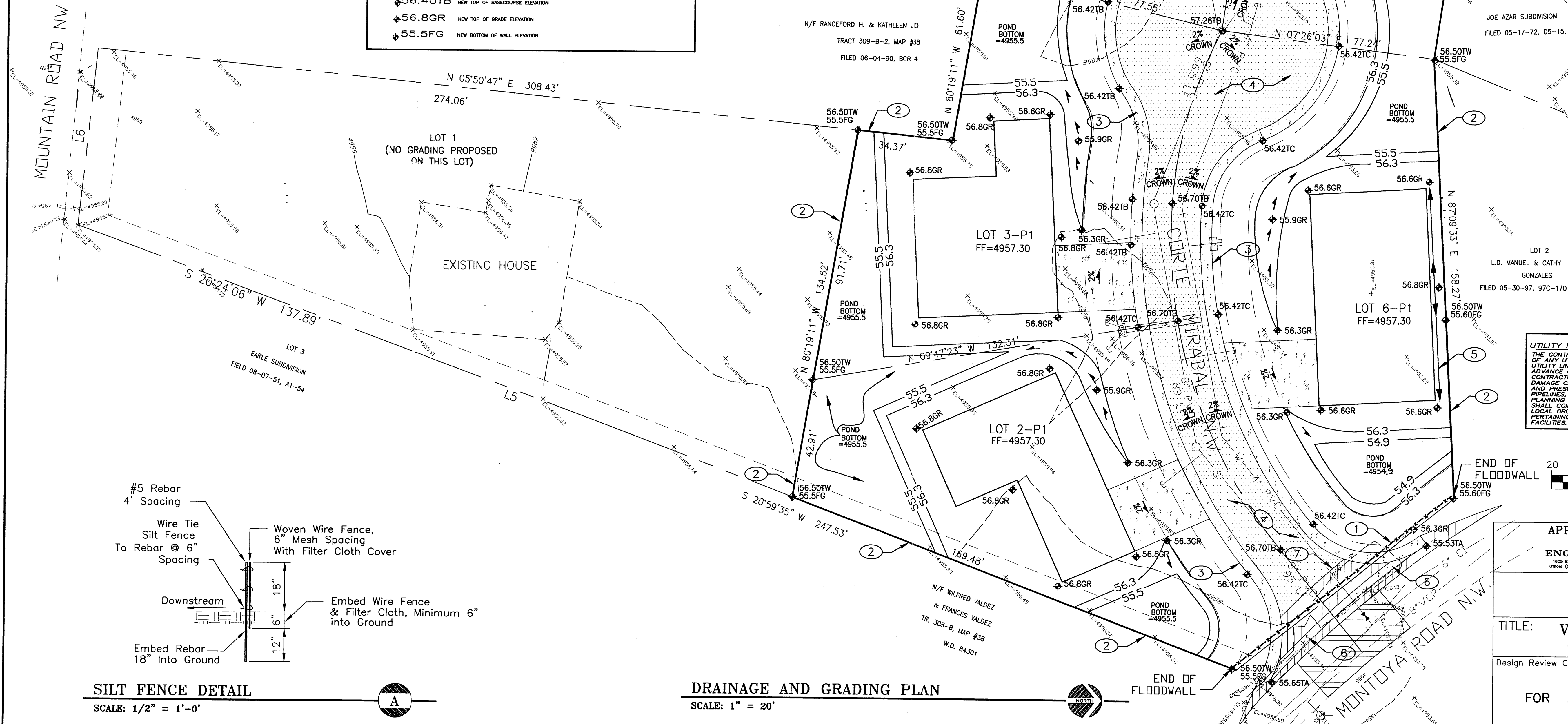
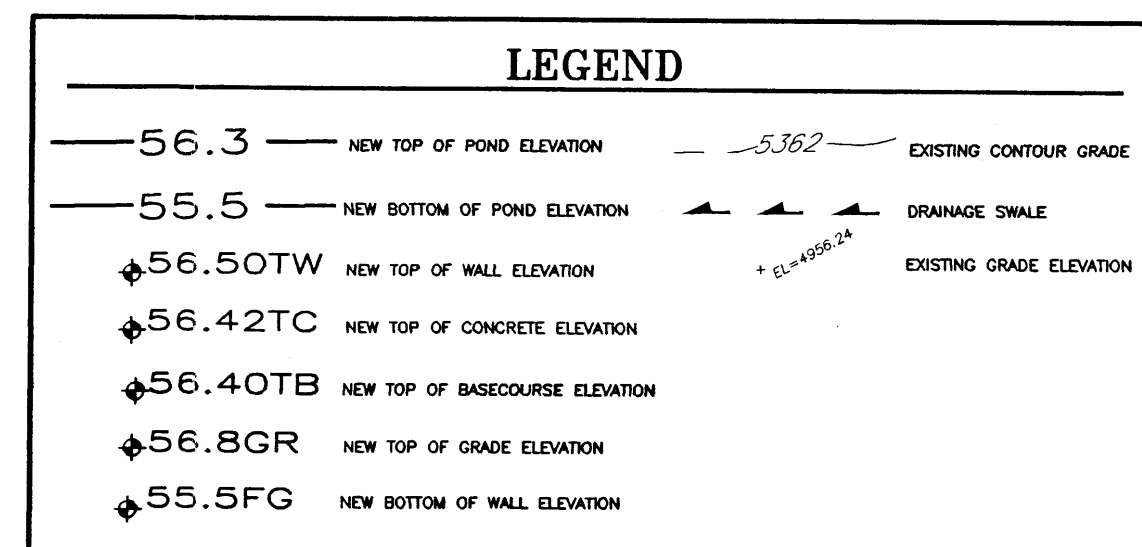


- ① PROVIDE SILT FENCE PER DETAIL "A" SHOWN ALONG THE FRONTAGE OF MONTOYA ROAD PRIOR TO BEGINNING CONSTRUCTION. SILT FENCE SHALL BE MAINTAINED DURING ENTIRE STAGE OF CONSTRUCTION UNTIL PERMANENT EROSION IMPROVEMENTS IN PLACE. CONTRACTOR SHALL CLEAN ANY SEDIMENT RUNOFF IMMEDIATELY INTO ADJACENT PROPERTIES OR CITY PUBLIC STREETS.
- ② CONSTRUCT 12" HIGH FLOODWALL PER DETAIL "B" AROUND ENTIRE PERIMETER, EXCEPT ALONG FRONTAGE OF MONTOYA ROAD NW.
- ③ CONSTRUCT 4' WIDE MODIFIED ESTATE CURB AROUND ENTIRE CUL-DE-SAC.
- ④ CONSTRUCT 4' THICK AGGREGATE BASE COURSE IN CUL-DE-SAC.
- ⑤ PROVIDE ROOF DRAINS WITH CANALES AND SPLASH BLOCKS AT LOCATIONS SHOWN.
- ⑥ CONSTRUCT STANDARD ESTATE CURB ALONG MONTOYA ROAD NW.
- ⑦ CONSTRUCT 3" THICK TYPE "B" ASPHALT PAVING WITH 12" SUBGRADE PREPARATION PER CITY STANDARDS.



SCALE: $1/2'' = 1'-0''$

NOTE:
IF OWNER WANTS TO CONSTRUCT A
BLOCK WALL EXCEEDING 4' ON TOP OF
FLOODWALL, THE OWNER SHALL
COORDINATE WITH A STRUCTURAL
ENGINEER FOR STRUCTURAL WALL
REQUIREMENTS. THIS DESIGN IS FOR
FLOODWALL AND 4' HIGH BLOCK WALL.



SCALE: 1/2" = 1'-0'

SCALE: 1" = 20'

DIVISION		E PLAN		E MENT GROUP	
Mo./Day/Yr.		Mo./Day/Yr.			
HYDROLOGY SECTION		DESIGN SECTION			
Sheet	1	Of	2		

DRAINAGE PLAN

THE FOLLOWING ITEMS CONCERNING A NEW SUBDIVISION FOR LOT 1 and LOTS 2-P1 THRU 6-P1, LANDS OF MANUEL AND CATHY GONZALES, SECTION 13, T. 10 N, R. 2 E., N.M.P. M., ALBUQUERQUE, NEW MEXICO, GRADING AND DRAINAGE PLAN ARE CONTAINED HEREON:

1. VICINITY MAP
2. GRADING AND DRAINAGE PLAN
3. FIRM MAP 35001C0331 D
4. DRAINAGE CALCULATIONS

EXISTING CONDITIONS

AS SHOWN BY THE VICINITY MAP, THE SITE CONTAINS APPROXIMATELY 2.21 ACRES AND IS LOCATED ON THE WEST SIDE OF MONTOYA ROAD NW, NORTH OF MOUNTAIN ROAD NW. (SEE ATTACHED VICINITY MAP). THIS SITE CONTAINS ONE EXISTING RESIDENCE AS SHOWN ON LOT 1; THE REMAINING PROPOSED LOTS ARE UNDEVELOPED.

THE SITE TOPOGRAPHY IS FLAT IN THIS AREA AS THE MAJORITY OF THE VALLEY IS AT THIS LOCATION. THE SITE IS SPARSELY COVERED WITH NATIVE GRASSES.

PROPOSED CONDITIONS

AS SHOWN BY THE PLAN, THE PROJECT CONSISTS OF A SUBDIVISION WITH 6 NEW LOTS, AN EXISTING RESIDENCE WILL REMAIN IN LOT 1. DUE TO THE NATURE OF THE PROPERTY AND THE LACK OF STORM DRAINAGE FACILITIES, A "FLAT" GRADING SCHEME IS PROPOSED.

DUE TO THE EXISTING RESIDENCE CONSTRUCTED PRIOR TO THE DRAINAGE ORDINANCE IN LOT 1, NO DRAINAGE IMPROVEMENTS ARE PROPOSED FOR THIS LOT.

DUE TO THE FLAT GRADING SCHEME REQUIREMENTS THE FOLLOWING IS TO BE IMPLEMENTED WITH THIS PLAN FOR LOTS 2-P1 THRU 6-P1:

- PAD ELEVATION SHALL BE A MINIMUM OF ONE (1) FOOT ABOVE THE 100-YEAR, 10-DAY STORM WATER SURFACE ELEVATION
- A PERMANENT PERIMETER WALL OR BARRIER AROUND THE DEVELOPMENT IS REQUIRED TO CONTAIN THE 100-YEAR, 24-HOUR STORM DEVELOPED RUNOFF
- THE HIGH POINT OF THE ROADWAY IS TO BE 4" ABOVE THE 100-YEAR, 10-DAY WATER SURFACE ELEVATION.

THE NEW ROADWAY WILL BE DESIGNED WITH A NORMAL CROWN AND A MODIFIED ESTATE-TYPE CURB IN ORDER TO ALLOW THE STREET FLOW FRONTAGE TO DRAIN INTO EACH OF THE PROPERTIES. THE PLAN SHOWS THE PROPOSED ELEVATIONS REQUIRED TO PROPERLY GRADE THE REQUIRED PAVING AND DRAINAGE IMPROVEMENTS. ALL DRIVEWAYS AND PARKING AREAS WILL BE PAVED, LANDSCAPING IS TO BE PROVIDED PER ZONING REQUIREMENTS.

WITH REGARDS TO THE PROPOSED CONDITIONS THAT ARE SHOWN IN THE CALCULATIONS, THE AVERAGE HOUSE IN THIS AREA IS ABOUT 3200 SQUARE FEET. DUE TO THE SIZE OF THE 0.25 ACRE LOT A 3200 SQUARE FEET HOUSE WAS ASSUMED WITH ABOUT 600 SQUARE FEET OF DRIVEWAY.

THE CALCULATIONS WHICH APPEAR HEREON, ANALYZE BOTH THE EXISTING AND DEVELOPED CONDITIONS FOR THE 100-YEAR, 6-HOUR RAINFALL RUNOFF FOR PEAK FLOWS AND STORM DURATION FOR VOLUME REQUIREMENTS. THE PROCEDURE FOR 40 ACRE AND SMALLER BASINS AS SET FORTH IN THE REVISION OF SECTION 22.7 HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL, VOLUME 2, DESIGN CRITERIA, DATED JANUARY 1993. THIS D.P.M. PROCEDURE IS USED FOR ANALYZING ONSITE FLOWS.

DOWNSTREAM CAPACITY

THERE ARE NO ACCESSIBLE STORM DRAIN FACILITIES IN THIS AREA THAT THIS SUBDIVISION CAN DRAIN INTO; THEREFORE DOWNSTREAM DRAINAGE CAPACITY IS NOT AN ISSUE.

ACCORDING TO THE FLOOD INSURANCE RATE MAP (SEE ATTACHED MAP COPY), PANEL 35001C0331 D, DATED SEPTEMBER 20, 1996, THIS SITE DOES NOT LIE IN A DESIGNATED FLOODPLAIN.

EROSION CONTROL

TEMPORARY EROSION CONTROL WILL BE REQUIRED DURING THE CONSTRUCTION PHASE TO PROTECT DOWNSTREAM PROPERTY AND IMPROVEMENTS FROM SEDIMENT AND UNCONTROLLED RUNOFF. THE CONTRACTOR SHALL INSTALL THE PERIMETER FLOODWALL ALONG THE SOUTH, NORTH, EAST AND WEST SIDE OF THE PROJECT BOUNDARIES PRIOR TO BEGINNING CONSTRUCTION IN ORDER TO HOLD RUNOFF DURING CONSTRUCTION. A SILT FENCE WILL ALSO BE REQUIRED ALONG MONTOYA ROAD IN ORDER TO MINIMIZE SEDIMENT INTO MONTOYA ROAD PRIOR TO BEGINNING CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROPERLY MAINTAIN THESE FACILITIES DURING THE CONSTRUCTION PHASE OF THE PROJECT.

OFFSITE FLOWS

THERE ARE NO OFFSITE FLOWS THAT ENTER THIS PROPERTY, SINCE THE SURROUNDING PROPERTY IS FLAT.

DRAINAGE CALCULATIONS

1. **PRECIPITATION ZONE = 2**
2. **DESIGN STORM = DEPTH (INCHES) AT 100-YEAR STORM**
6-HOUR = 2.35 INCHES
24-HOUR = 2.75 INCHES
10 DAY = 3.95 INCHES
3. **PEAK DISCHARGE (CFS/ACRE) FOR 100-YEAR, ZONE 2, TABLE A-9:**
 $Q = 1.56 \text{ CFS/ACRE SOIL UNCOMPACTED "A"}$
 $Q = 2.28 \text{ CFS/ACRE LANDSCAPED "B"}$
 $Q = 3.14 \text{ CFS/AC COMPACTED SOIL "C"}$
 $Q = 4.70 \text{ CFS/ACRE IMPERVIOUS AREA "D"}$
FOR WATERSHEDS LESS THAN OR EQUAL TO 40 ACRES
4. **EXCESS PRECIPITATION, E (INCHES), 6-HOUR STORM, ZONE 2, TABLE A-8:**
 $E = 0.53 \text{ INCHES SOIL UNCOMPACTED "A"}$
 $E = 0.78 \text{ INCHES LANDSCAPED "B"}$
 $E = 1.13 \text{ INCHES COMPACTED SOIL "C"}$
 $E = 2.12 \text{ INCHES IMPERVIOUS AREA "D"}$
5. **EXISTING CONDITIONS ONSITE**

LOT 1:
EXISTING 2800SF RESIDENCE AND 1000SF PATIO/DRIVEWAY,
TREATMENT "D", AREA = 0.09 ACRES
REMAINING PORTION OF LOT, TREATMENT "C", AREA = 0.56 ACRES

TREATMENT	AREA (ACRES)
A	0
B	0
C	0.56 (COMPACTED BY HUMAN ACTIVITY)
D	0.09 (RESIDENCE AND DRIVEWAY/PATIO)

$Q(\text{EXISTING}) = (3.14 \times 0.56) + (4.70 \times 0.09)$
 $= 2.18 \text{ CFS (6HR) EXISTING ONSITE FLOW}$
 $V(\text{EXISTING-6HR}) = [(1.13 \times 0.56) + (2.12 \times 0.09)] / 12$
 $= 0.07 \text{ AC-Ft} = 3049 \text{ CF}$
 $V(\text{EXISTING-24HR}) = (0.07 \text{ AC-Ft}) + [(0.09 \text{ AC} \times (2.75 - 2.35))] / 12$
 $= 0.07 \text{ AC-Ft} = 3,180 \text{ CF}$
 $V(\text{EXISTING-10DAY}) = (0.07 \text{ AC-Ft}) + [(0.09 \text{ AC} \times (3.95 - 2.35))] / 12$
 $= 0.11 \text{ AC-Ft} = 3,571 \text{ CF}$

LOTS 2-P1 THRU 6-P1:
SOIL UNCOMPACTED, TREATMENT "A", AREA = 1.56 ACRES

TREATMENT	AREA (ACRES)
A	1.56
B	0
C	0
D	0

$Q(\text{EXISTING}) = (1.56 \times 1.56) = 2.4 \text{ CFS EXISTING ONSITE FLOW}$
 $V(\text{EXISTING-6HR}) = [(0.53 \times 1.56)] / 12 = 0.069 \text{ AC-Ft} = 3006 \text{ CF}$
 $V(\text{EXISTING-6HR}) = 3006 \text{ CF} / \text{SLOTS} = 601 \text{ CF/LOT}$
 $= V(24\text{HR}) = V(10\text{DAY}) \text{ NO IMPERVIOUS AREA}$

PROPOSED CONDITIONS ONSITE

TOTAL SUBDIVISION ACREAGE = 2.21 ACRES
LOT 1 = 0.62 ACRES
LOT 2-P1 = 0.31 ACRES
LOT 3-P1 = 0.31 ACRES
LOT 4-P1 = 0.29 ACRES
LOT 5-P1 = 0.30 ACRES
LOT 6-P1 = 0.37 ACRES

LOT 1 (EXISTING HOUSE AND IMPROVEMENTS)

$Q(\text{EXISTING}) = Q(\text{PROPOSED}) = 2.4 \text{ CFS}$ SINCE NO INCREASE IN EXISTING CONDITIONS PROPOSED
 $V(\text{EXISTING}) = V(\text{PROPOSED}) = 3006 \text{ CF}$ NO INCREASE IN EXISTING CONDITIONS PROPOSED, NO PONDING PROPOSED

LOTS 2-P1 THRU 6-P1

TYPICAL LOT:

IMPERVIOUS BUILDING AREA "D" = $[(3200 \text{ SF HOUSE}) + (600 \text{ SF DRVY}) + (117' \times 10' \text{ ROADWAY}) + (117' \times 4' \text{ ESTATE CURB})] / 43,560$
 $= 0.12 \text{ ACRES TREATMENT "D"}$

LANDSCAPED AREA "B", ASSUME 30 % OF ACREAGE IS LANDSCAPED =

$0.30 \times 0.29 \text{ ACRES (LOTS 4-P1)} = 0.09 \text{ ACRES TREATMENT "B"}$

ASSUME REMAINING AREA IS COMPACTED SOIL "C" =

$(0.29 - 0.12 - 0.09) = 0.08 \text{ ACRES TREATMENT "C"}$

TREATMENT	AREA (ACRES)
A	0
B	0.09
C	0.08
D	0.12

$Q(\text{PROPOSED}) = (2.28 \times 0.09) + (3.14 \times 0.08) + (4.70 \times 0.12)$
 $= 1.02 \text{ CFS PROPOSED ONSITE FLOW FOR EACH LOT}$
 $V(\text{PROPOSED-6HR}) = [(0.78 \times 0.09) + (1.13 \times 0.08) + (2.12 \times 0.12)] / 12$
 $= 0.035 \text{ AC-Ft} = 1,506 \text{ CF PER LOT REQUIRED}$
 $V(\text{PROPOSED-24HR}) = (0.035 \text{ AC-Ft}) + [(0.12 \times (2.75 - 2.35))] / 12$
 $= 0.039 \text{ AC-Ft} = 1,699 \text{ CF}$
 $V(\text{PROPOSED-10DAY}) = (0.035 \text{ AC-Ft}) + [(0.12 \times (3.95 - 2.35))] / 12$
 $= 0.051 \text{ AC-Ft} = 2,222 \text{ CF REQUIRED PER LOT}$

VERIFY POND CAPACITY

LOT 2-P1:

$(2,366 \text{ SF} + 792 \text{ SF}) \times 0.8 \text{ FT} = 2,526 \text{ CF} > 2,222 \text{ CF REQD.} - \text{OK}$

LOT 3-P1:

$(1,649 \text{ SF} + 1,273 \text{ SF}) \times 0.8 \text{ FT} = 2,347 \text{ CF} > 2,222 \text{ CF REQD.} - \text{OK}$

LOT 4-P1:

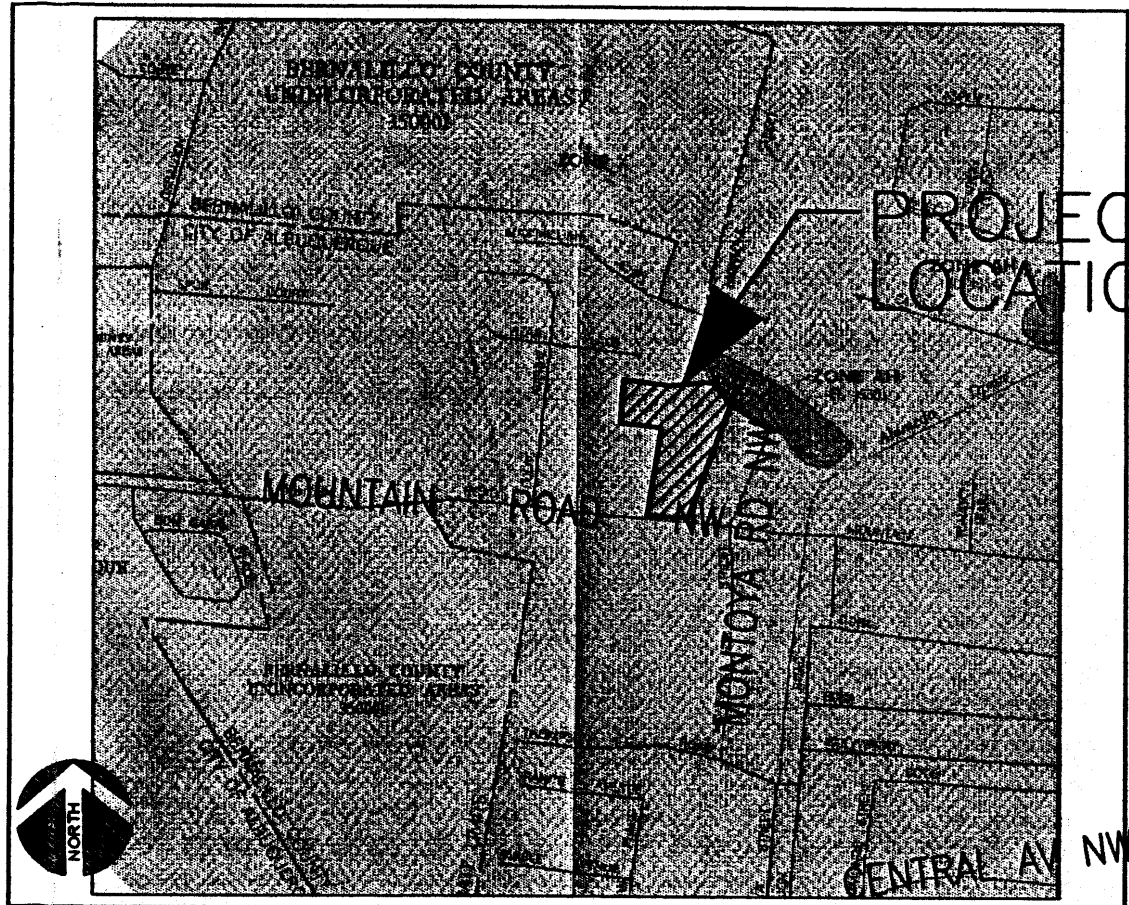
$(1,482 \text{ SF} + 3,367 \text{ SF}) \times 0.8 \text{ FT} = 3,879 \text{ CF} > 2,222 \text{ CF REQD.} - \text{OK}$

LOT 5-P1:

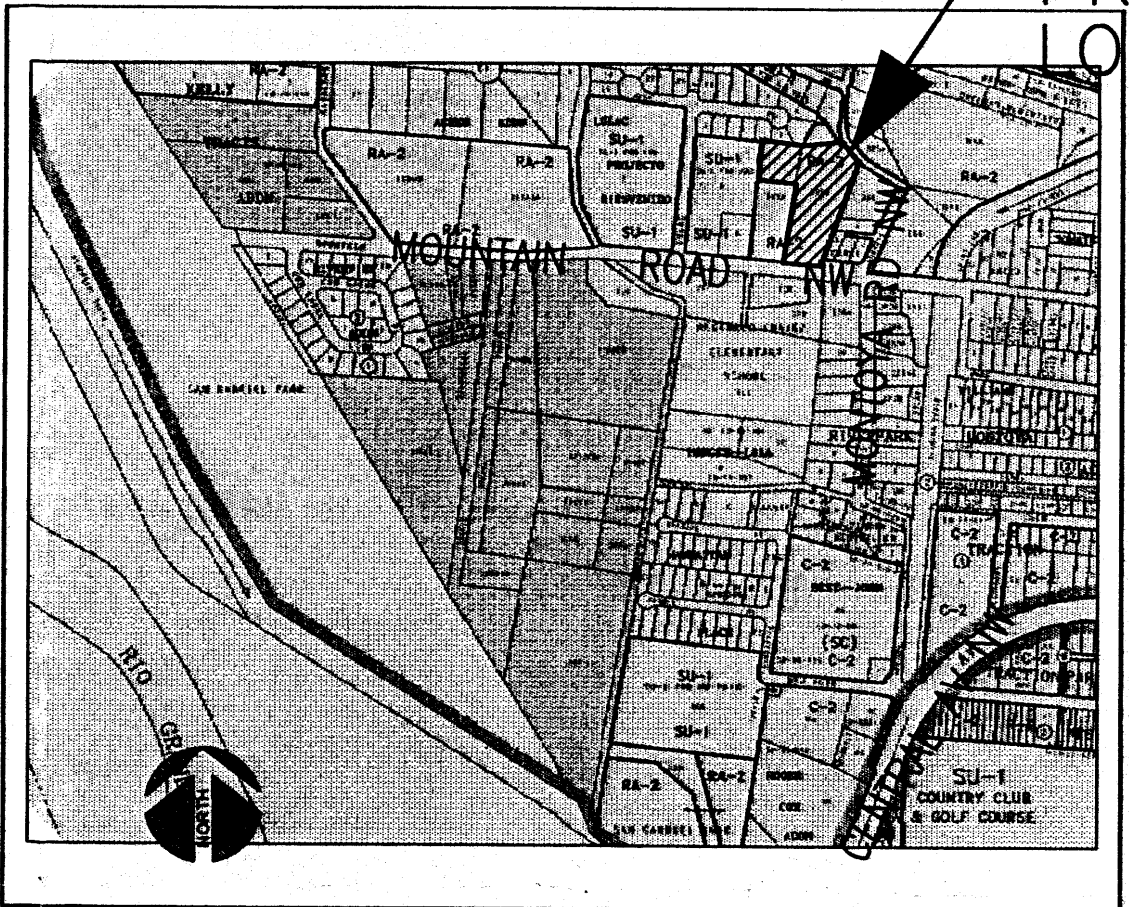
$(3,494 \text{ SF} + 1,523 \text{ SF}) \times 0.8 \text{ FT} = 4,013 \text{ CF} > 2,222 \text{ CF REQD.} - \text{OK}$

LOT 6-P1:

$(1,066 \text{ SF} \times 0.8 \text{ FT}) + (984 \text{ SF} \times 1.4 \text{ FT}) = 2,229 \text{ CF} > 2,222 \text{ CF REQD.} - \text{OK}$



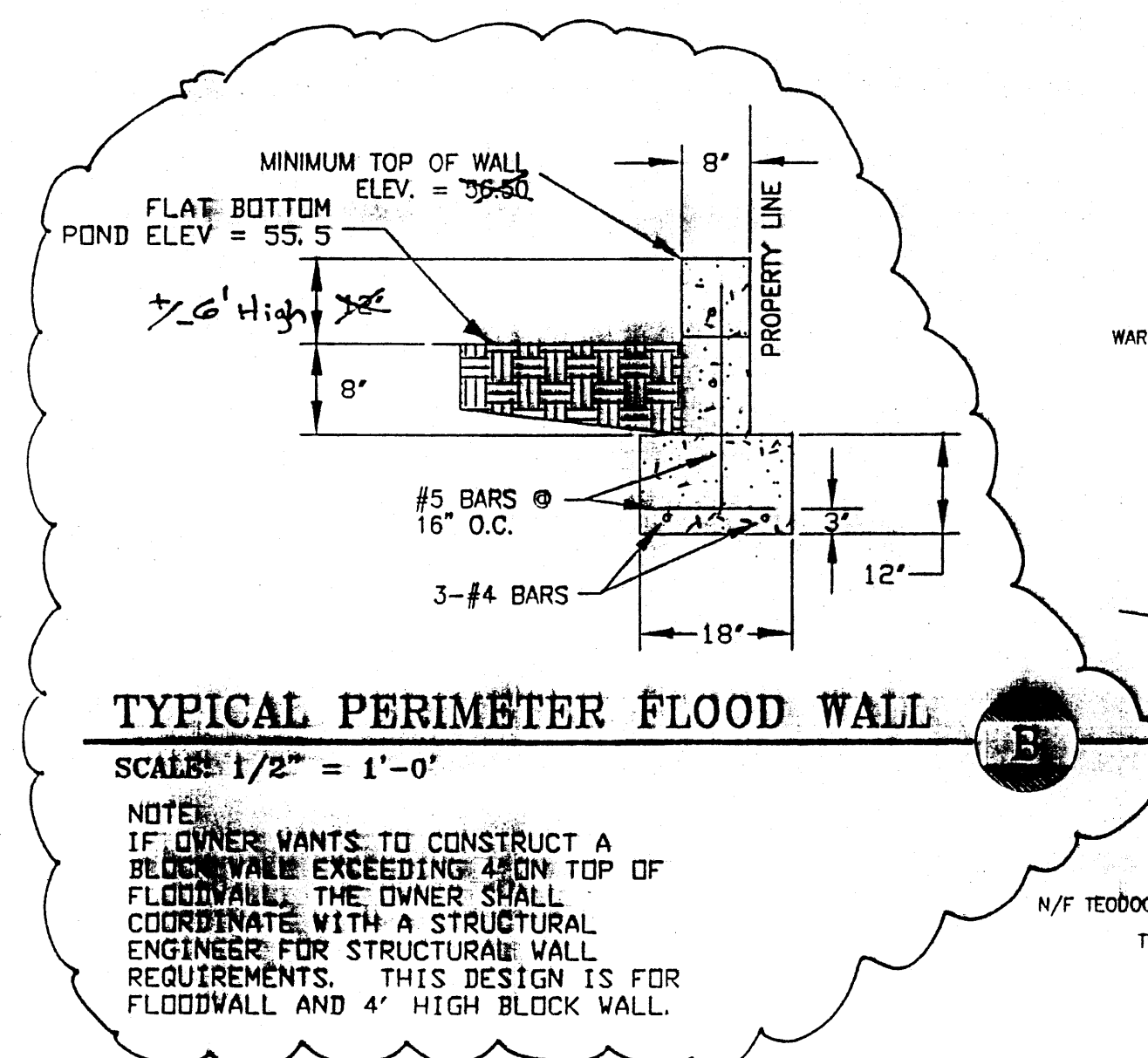
FIRM MAP 35001C0331 D



VICINITY MAP (J-12)

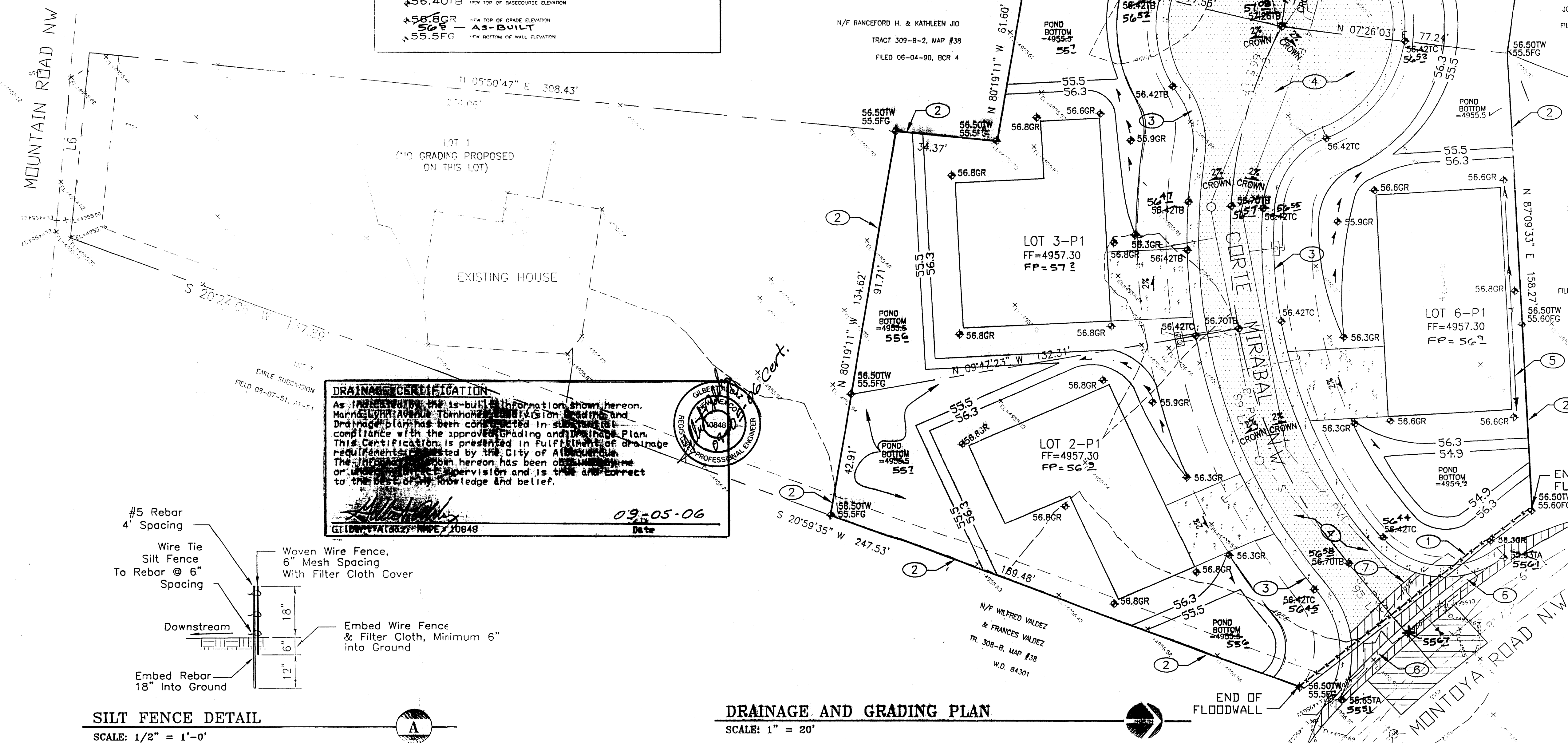
FILE:	RECEIVED AUG 22 2005 HYDROLOGY SECTION
Applied Engineering & Surveying, Inc. 1605 BLAIR DRIVE NE ALBUQUERQUE, NEW MEXICO 87112 PH: (505)237-1456	DRAINAGE CALCULATIONS FOR VILLA PLAZA VIEJA SUBDIVISION GRADING AND DRAINAGE PLAN ALBUQUERQUE, NEW MEXICO
	SHEET NUMBER: 2

- ① PROVIDE SILT FENCE PER DETAIL "A" SHOWN ALONG THE FRONTAGE OF MONTOYA ROAD PRIOR TO BEGINNING CONSTRUCTION. SILT FENCE SHALL BE MAINTAINED DURING ENTIRE STAGE OF CONSTRUCTION UNTIL PERMANENT EROSION IMPROVEMENTS IN PLACE. CONTRACTOR SHALL CLEAN ANY SEDIMENT RUNOFF IMMEDIATELY INTO ADJACENT PROPERTIES OR CITY PUBLIC STREETS.
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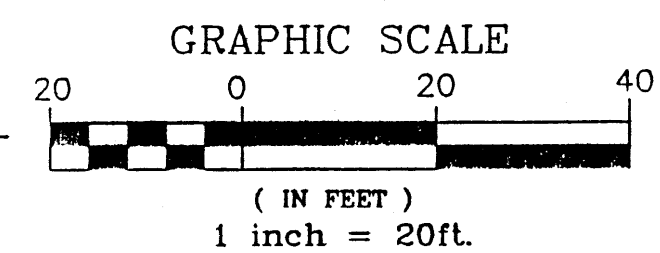
LEGEND

- 56.3 — NEW TOP OF FENCE ELEVATION
- 55.5 — NEW BOTTOM OF FENCE ELEVATION
- ▲ 56.50' W NEW TOP OF WALL ELEVATION
- ▲ 56.42' C NEW TOP OF CONCRETE ELEVATION
- ▲ 56.40' B NEW TOP OF BASECOURSE ELEVATION
- ▲ 56.38' R NEW TOP OF GRADE ELEVATION
- ▲ 56.5' F NEW BOTTOM OF WALL ELEVATION
- 55.62 — EXISTING CONTOUR GRADE
- ▲ ▲ DRAINAGE SWALE
- ▲ EXISTING GRADE ELEVATION
- FP = 56' AS-BUILT PAD ELEV.



UTILITY PRECAUTIONS:

THE CONTRACTOR SHALL INFORM ITSELF OF THE LOCATION OF ANY UTILITY LINES, PIPELINES OR UNDERGROUND UTILITY LINES IN OR NEAR THE AREA OF THE WORK IN A MANNER THAT WILL PREVENT DAMAGE TO SUCH LINES. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PROTECT EXISTING UTILITY LINES, PIPELINES AND UNDERGROUND UTILITY LINES. IN PLANNING AND CONDUCTING THE OPERATION, THE CONTRACTOR SHALL COMPLY WITH STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.



**APPLIED ENGINEERING AND
SURVEYING, INC.
ENGINEERS AND PLANNERS**

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Offices (505) 237-1456

Albuquerque, New Mexico 87112
Facsimile (505) 237-1456

CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT ENGINEERING DEVELOPMENT GROUP	
TITLE:	VILLA PLAZA VIEJA SUBDIVISION GRADING AND DRAINAGE PLAN

Design Review Committee	City Engineer Approval	Design Update
FLOODWALL REQUIRED AS PART OF THIS W.O.,		

City Project No.	6424812	Zone Map No.	J-12	Sheet	3	Of	5
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						ENGINEER'S SEAL		SURVEY INFORMATION		BENCH MARKS		AS BUILT INFORMATION	
								FIELD NOTES		TEMPORARY BENCHMARK IS EXISTING		CONTRACTOR WORK	
								NO.	BY DATE	SANITARY SEWER MANHOLE RIM ELEVATION = 4955.84; +/- 80 FEET EAST OF INTERSECTION OF CORTE GONZALES NW AND MONTROYA RD, SEE SHEET 5 FOR LOCATION. BASED ON C.D.A. BENCHMARK 12-J12 VERTICAL DATUM, N.G.V.D. 1929	STARTED BY DATE	CHECKED BY DATE	RECORDED BY DATE
NO. DATE REMARKS						BY							
DESIGNED BY						DATE							
DRAWN BY						DATE							
CHECKED BY						DATE							