

Introduction
The 2.27 acre site is to be developed as 16 single family lots fronting on Pinnacle View Drive. It is currently platted as being included in Tract H-1, Embudo Hills Unit One. It is bounded on the north by Pinnacle View Drive, currently under construction with Tract F-1, on the east by Monte Largo Drive, an improved street, on the south by Unit One undeveloped land and on the west by the Lomas desilting basin.

The soil is designated as Tesajo-Millett stony, sandy loams, which is in the SCS hydrologic soil group "A".

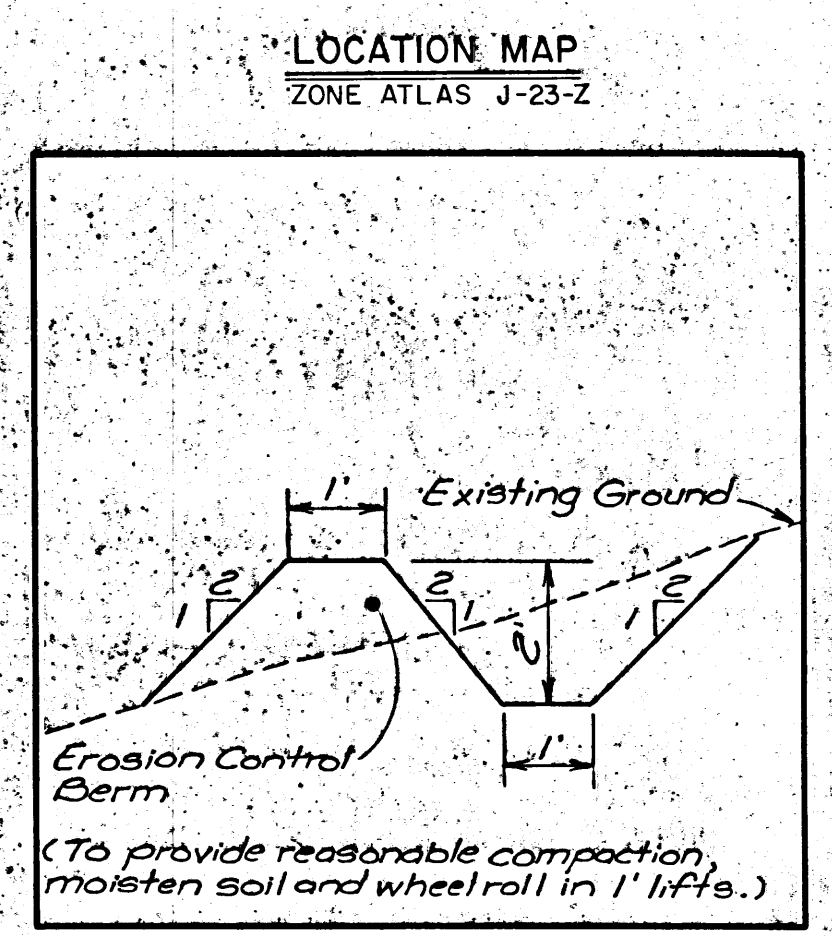
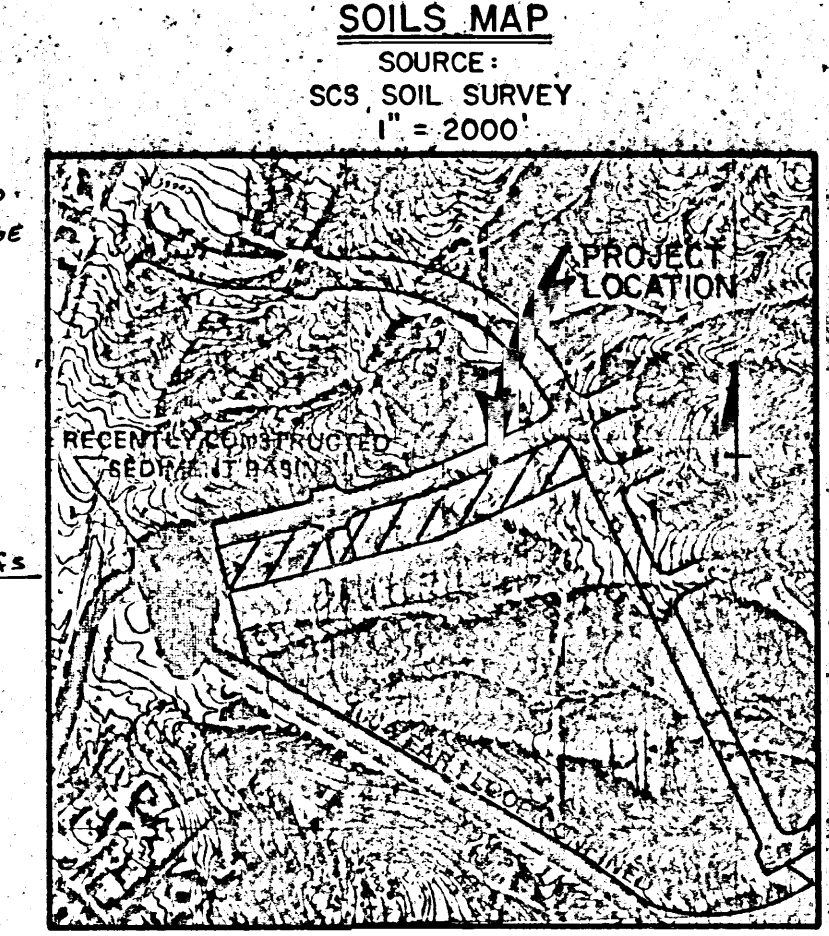
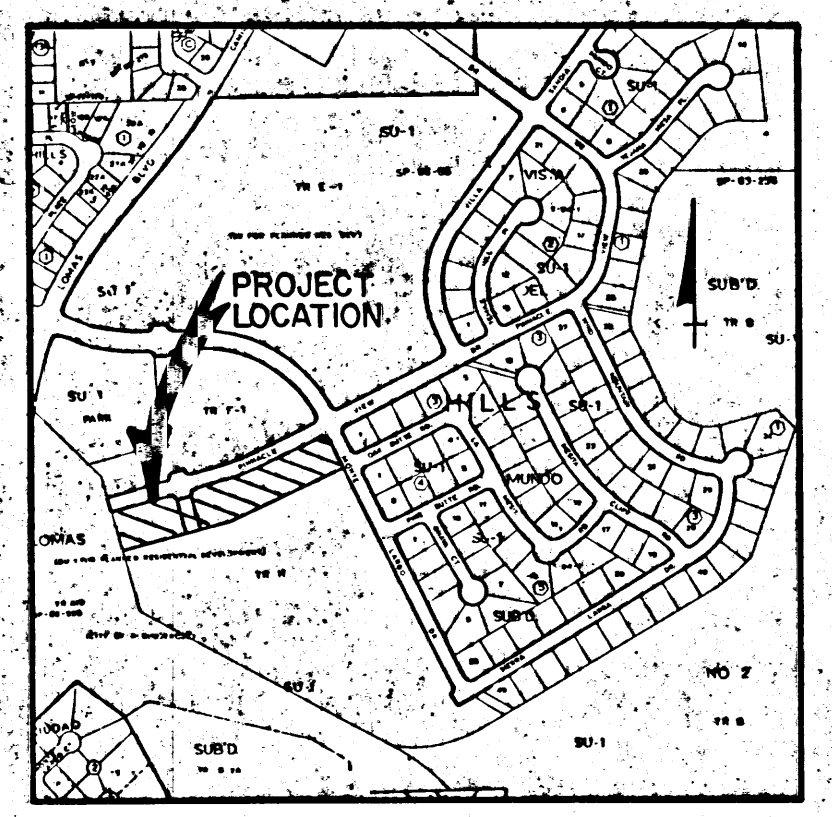
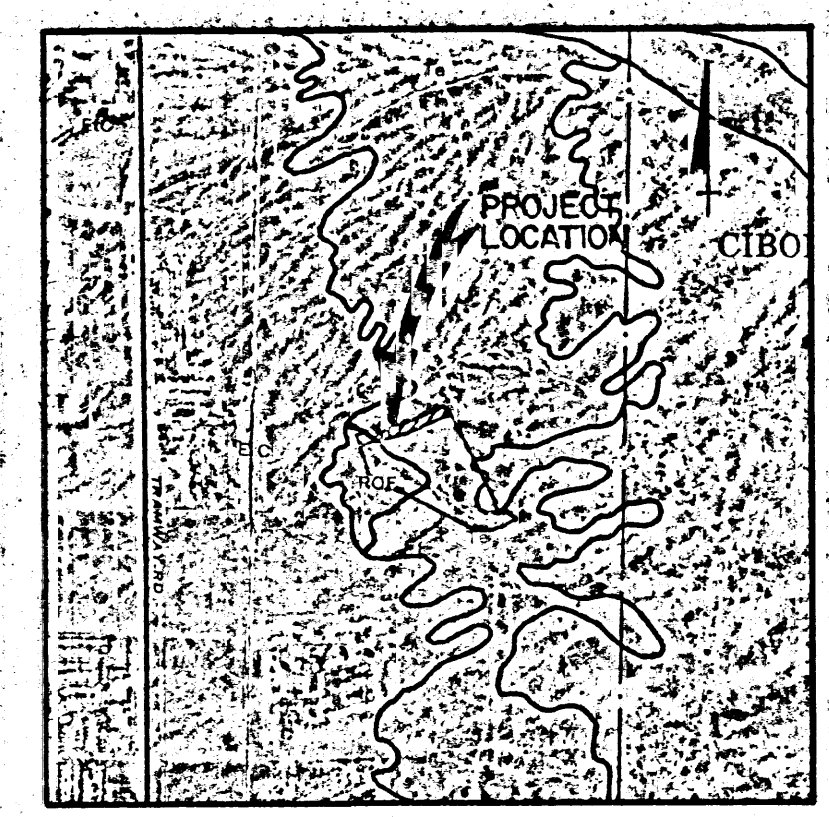
Existing
With the completion of improvements in Pinnacle View Drive, the only offsite flows that impact the site come from the south. A private drainage easement along the rear of lots 2-7, Block B, Unit One enters the site 105 feet west of Monte Largo. Also, an existing natural swale runs parallel and adjacent to the southern boundary. All runoff from this site currently flows through this arroyo to the Lomas desilting basin.

Proposed
All lots in the developed condition will drain directly to Pinnacle View Drive. In order to accomplish this, the rear of the lots will be filled modifying the existing natural swale slightly. The point where the swale enters the desilting basin will be moved south approximately 100 feet. Because of the redirection of the drainage on the lots, the flow in the swale will be reduced from 14.1 cfs to 7.6 cfs.

Per the Master Drainage Study for Embudo Hills, Tract H is allowed a runoff of 80 cfs, or 3.9 cfs per acre. This site is allowed a maximum runoff of 8.9 cfs and will generate 7.8 cfs. Free discharge can be used.

Calculation
Runoff peaks were determined using the criteria set forth in the City of Albuquerque's Development Process Manual.

Erosion Control
A berm/trench of the dimensions shown on this sheet is required adjacent to the entire length of Pinnacle View Drive. The berm/trench shall remain in place during all phases of site work construction.



EXISTING

ONSITE	AREA - 2.27 AC.	$T_c = 10 \text{ MIN.}$	OFFSITE	FROM BASIN B, EMBUDO HILLS UNIT ONE DRAINAGE REPORT
RAINFALL - 2.55 IN.	$L = 5.39 \text{ IN./HR.}$			
$C = 0.40$				
$Q_{100} = 4.9 \text{ cfs}$	$Q_n = 3.2 \text{ cfs}$			
TO EXISTING NATURAL SWALE AT SOUTH BOUNDARY	$T_c = 10 \text{ MIN.}$			
AREA - 3.53 AC.	$L = 5.39 \text{ IN./HR.}$			
RAINFALL - 2.55 IN.				
$C = 0.40$				
$Q_{100} = 7.6 \text{ cfs}$	$Q_n = 4.9 \text{ cfs}$			

PROPOSED

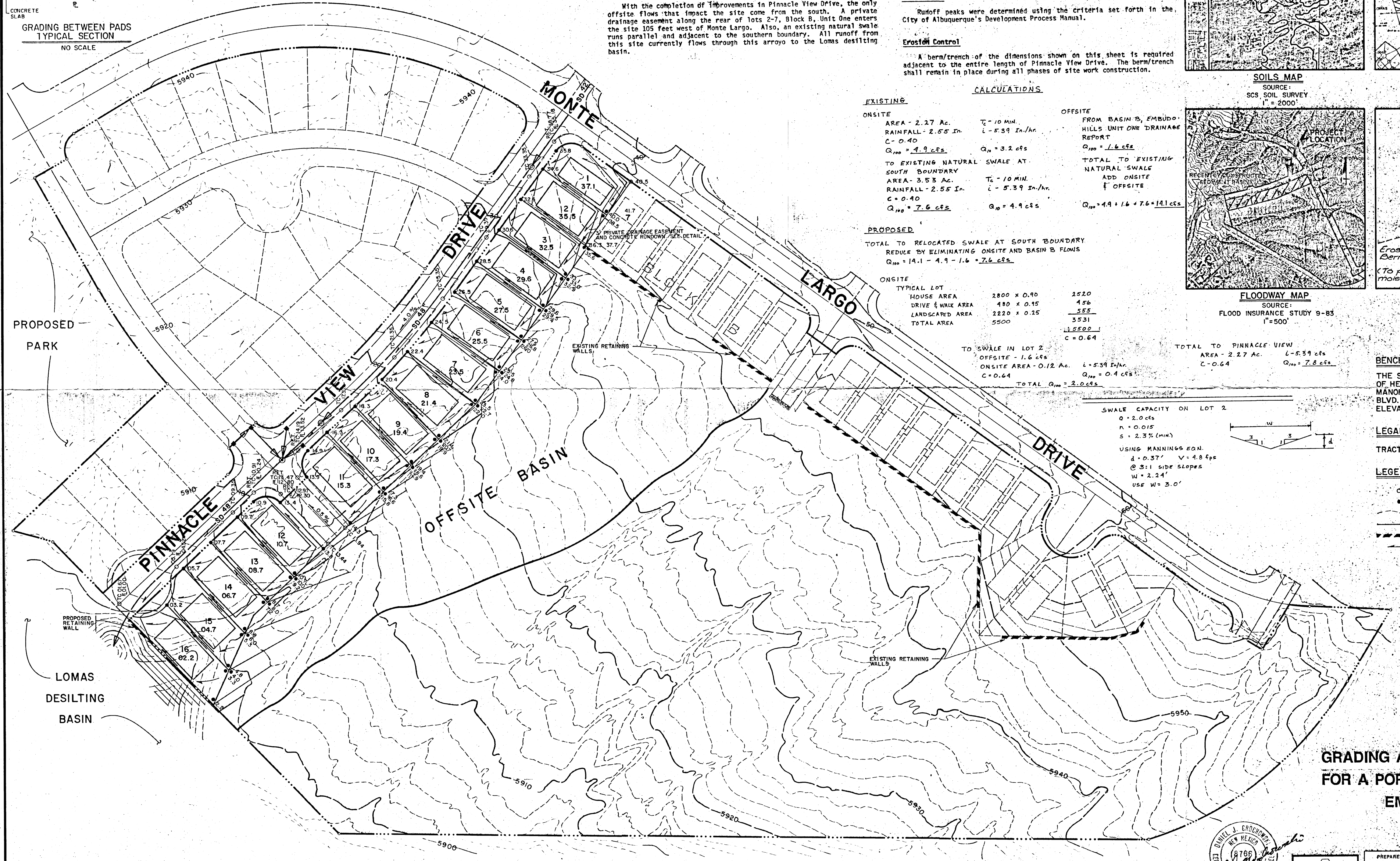
TOTAL TO RELOCATED SWALE AT SOUTH BOUNDARY				
REDUCE BY ELIMINATING ONSITE AND BASIN B FLOWS				
$Q_{100} = 14.1 - 4.9 - 1.6 = 7.6 \text{ cfs}$				

ONSITE

TYPICAL LOT	2800 X 0.90	2520
HOUSE AREA	480 X 0.15	156
DRIVE & WALK AREA	2220 X 0.25	555
LANDSCAPED AREA		5531
TOTAL AREA		5500
		$C = 0.64$

TO SWALE IN LOT 2
OFFSITE - 1.6 cfs
ONSITE AREA - 0.12 AC. $L = 5.39 \text{ IN./HR.}$
 $C = 0.64$ $Q_{100} = 0.4 \text{ cfs}$
TOTAL $Q_{100} = 2.0 \text{ cfs}$

TOTAL TO PINNACLE VIEW
AREA - 2.27 AC. $L = 5.39 \text{ IN./HR.}$
 $C = 0.64$ $Q_{100} = 7.8 \text{ cfs}$



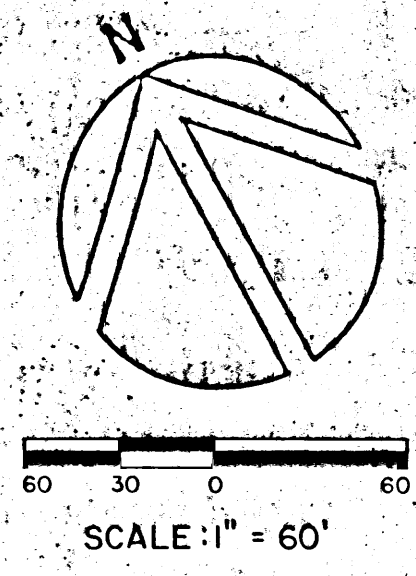
SWALE CAPACITY ON LOT 2
 $Q = 2.0 \text{ cfs}$
 $n = 0.015$
 $S = 2.3\% \text{ (MIN.)}$

USING MANNING'S EQN.
 $d = 0.37'$ $V = 4.8 \text{ fps}$
 $@ 3:1 \text{ side slopes}$
 $W = 2.24'$
USE $W = 3.0'$

BENCHMARK:
THE STATION IS A SQUARE CHISELED ON TOP OF HEADER CURB AT S.W. CORNER OF SANDIA MANOR PUMP STATION, S.E. CORNER OF LOMAS BLVD. AND PINNACLE VIEW DRIVE.
ELEVATION = 6011.49

LEGAL DESCRIPTION:
TRACT H, EMBUDO HILLS.

- LEGEND**
- EXISTING SPOT ELEVATION
 - PROPOSED SPOT ELEVATION
 - EXISTING CONTOUR
 - - - PROPOSED CONTOUR
 - RETAINING WALL
 - DIRECTION OF FLOW

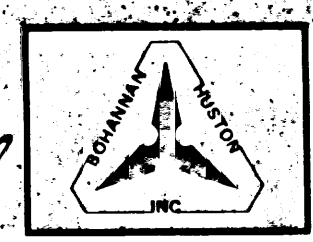


**GRADING AND DRAINAGE PLAN
FOR A PORTION OF TRACT H-1
EMBUDO HILLS**

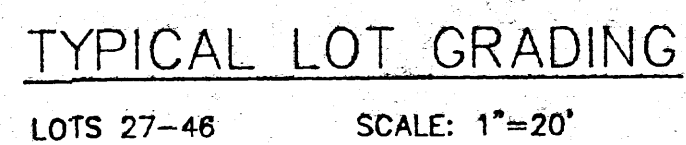
UPPER LOMAS CHANNEL

APPROVED FOR ROUGH GRADING
G.S. Reeder PE 17 FEB 88
HYDROLOGY ENGINEER DATE

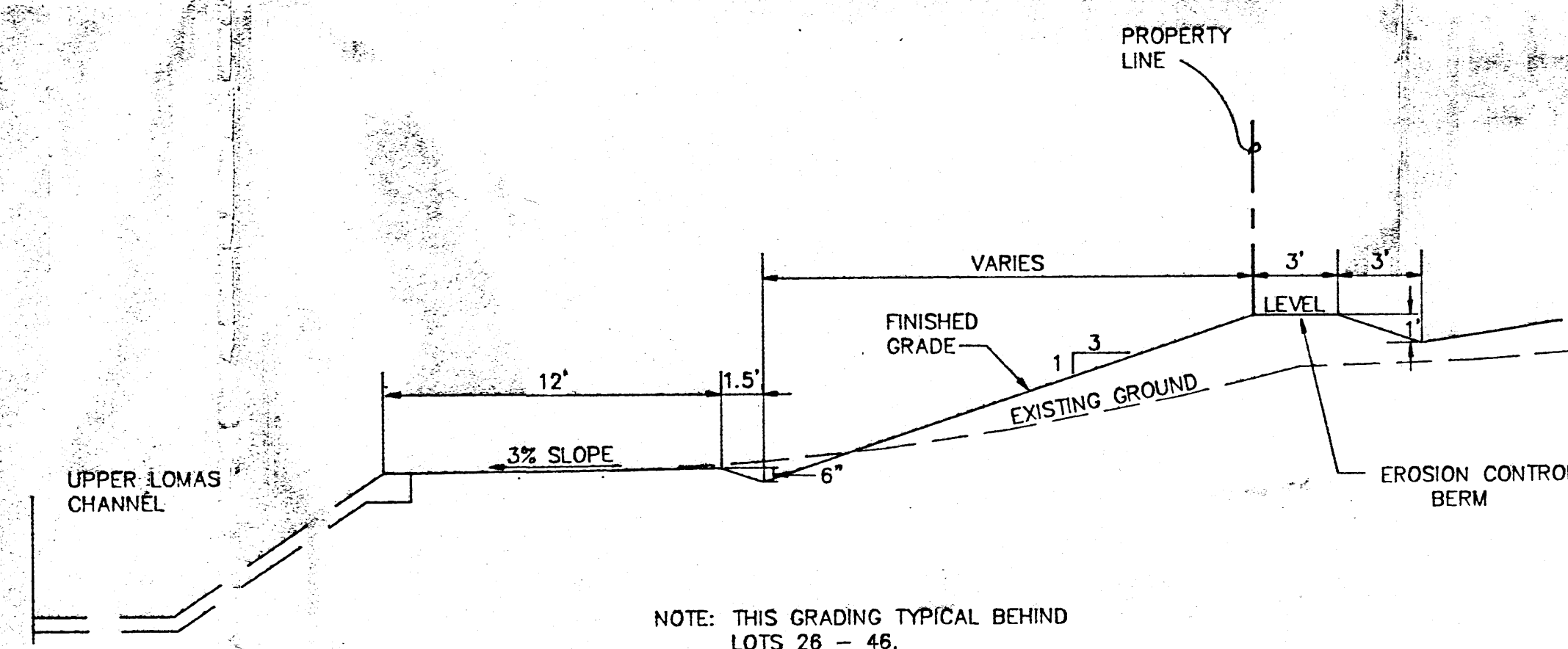
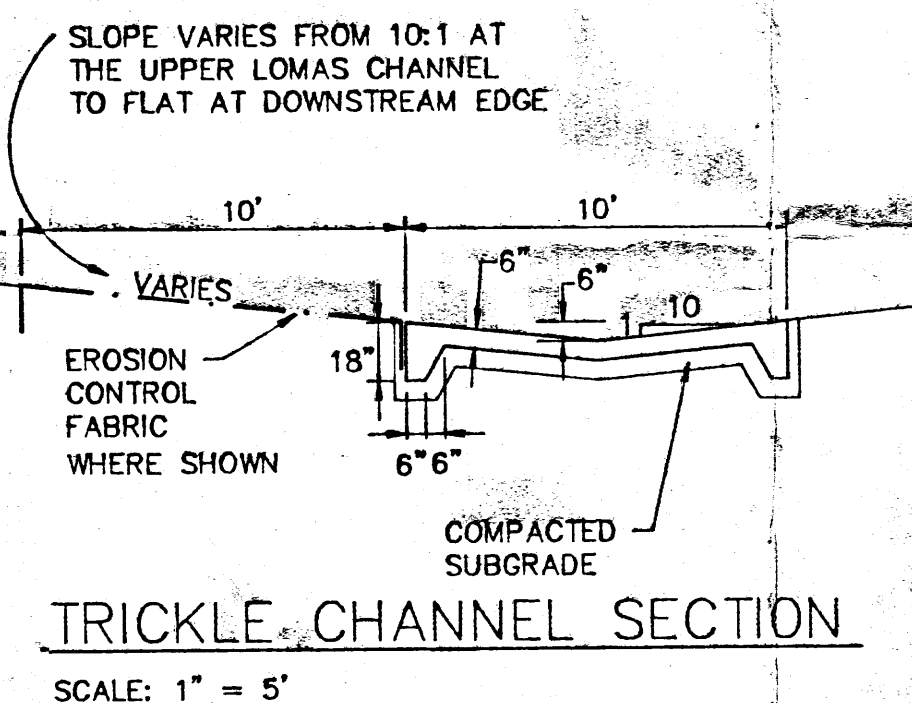
DANIEL J. GROCHOWSKI
NEW MEXICO
8766
PROFESSIONAL ENGINEER
12/25/87



PREPARED BY:
BOHANNAN-HUSTON, INC.
COURTYARD 17500 JEFFERSON ST., N.E. ALBUQUERQUE, NM 87109
(505) 823-1000
ENGINEERS, ARCHITECTS, & PLANNERS



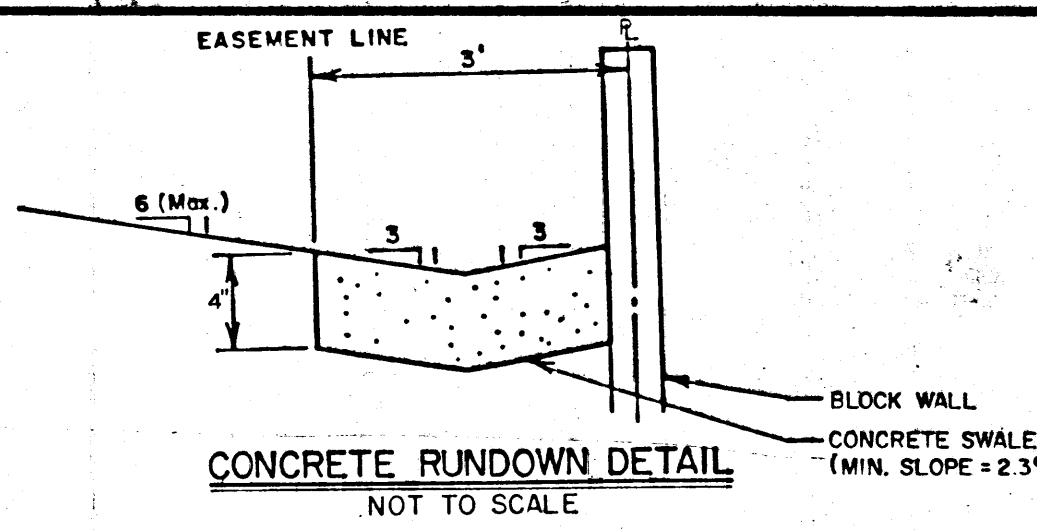
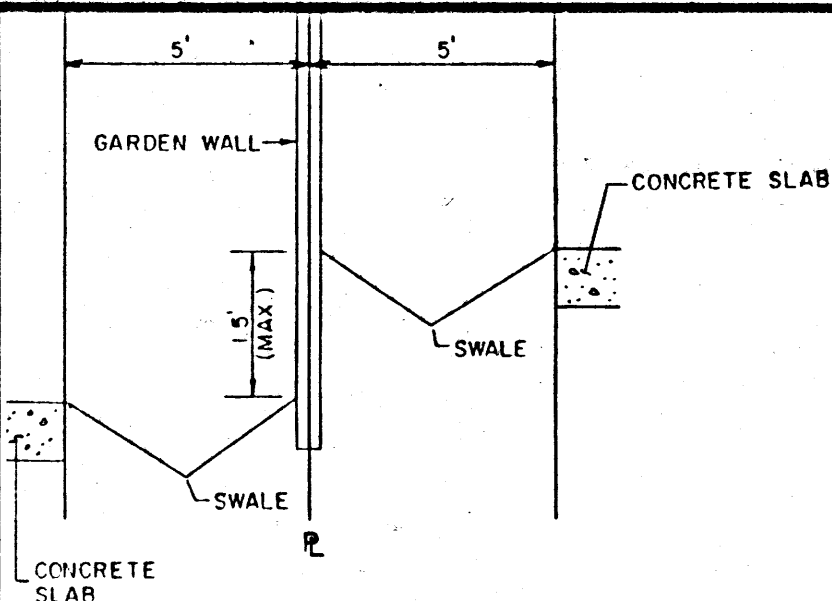
1. ALL FILL SHALL BE COMPACTED TO A MINIMUM OF 90% ASTM D-1557; HOUSE PADS SHALL BE COMPACTED AT 95% ASTM D-1557.
2. THE PAD ELEVATIONS SHOWN HEREON ARE FOR ROUGH GRADING PURPOSES.
3. FINISHED FLOOR ELEVATIONS MAY BE HIGHER THAN THE PAD ELEVATIONS AS DETERMINED BY THE INDIVIDUAL HOUSE DESIGN.
4. FINISHED FLOOR ELEVATIONS SHOULD BE ESTABLISHED AT A MINIMUM OF 6 INCHES ABOVE PAD ELEVATIONS; DEVIATIONS FROM THESE GUIDELINES MUST BE BASED ON THE RECOMMENDATIONS AND/OR DESIGN OF A COMPETENT DESIGN PROFESSIONAL.
5. RETAINING WALLS SHALL BE CONSTRUCTED BY THE DEVELOPER.
6. YARD (GARDEN) WALLS SHALL BE CONSTRUCTED BY THE LOT OWNER OR ITS BUILDER.
7. THE FINISHED GRADING OF EACH LOT SHALL BE ACCOMPLISHED BY THE LOT OWNER OR ITS BUILDER. ALL ROOF RUNOFF SHOULD BE DIRECTED TO THE STREETS. LOTS 1-23 SHALL BE GRADED TO DIRECT THE BACKYARD RUNOFF AROUND THE HOUSE AND TO THE STREETS. LOTS 27-46 SHALL BE GRADED AS SHOWN AT LEFT WITH BACKYARD PONDING FOR NUISANCE WATERS FROM UNDEVELOPED FLOWS ONLY.
8. MAXIMUM SLOPES SHALL BE 3:1; MINIMUM SLOPES SHALL BE 1%.
9. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM, 260-1990, FOR LOCATION OF EXISTING UTILITIES.
10. IF ANY UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES ARE SHOWN ON THESE DRAWINGS, THEY ARE SHOWN IN AN APPROXIMATE MANNER ONLY, AND SUCH LINES MAY EXIST WHERE NONE ARE SHOWN. IF ANY SUCH EXISTING LINES ARE SHOWN, THE LOCATION IS BASED UPON INFORMATION PROVIDED BY THE OWNER OF SAID UTILITY, AND THE INFORMATION MAY BE INCOMPLETE, OR MAY BE OBSOLETE BY THE TIME CONSTRUCTION COMMENCES. THE ENGINEER HAS CONDUCTED ONLY PRELIMINARY INVESTIGATION OF THE LOCATION, DEPTH, SIZE, OR TYPE OF EXISTING UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES. THIS INVESTIGATION IS NOT CONCLUSIVE, AND MAY NOT BE COMPLETE, THEREFORE, MAKES NO REPRESENTATION PERTAINING THERETO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE CONTRACTOR SHALL INFORM ITSELF OF THE LOCATION OF ANY UTILITY LINE, PIPELINE, OR UNDERGROUND UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ADVANCE OF AND DURING EXCAVATION WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES, AND UNDERGROUND UTILITY LINES. IN PLANNING AND CONDUCTING EXCAVATION, 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.
11. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR ONTO PRIVATE PROPERTY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AT THE PROPERTY LINES (AS SHOWN BELOW) AND WETTING THE SOIL TO KEEP IT FROM BLOWING.
12. THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY SO THAT THE EXCAVATED MATERIAL IS NOT ERODED AND WASHED DOWN THE STREET.
13. THE CONTRACTOR SHALL SECURE "TOPSOIL DISTURBANCE PERMIT" PRIOR TO BEGINNING CONSTRUCTION. AN EXCAVATION PERMIT IS REQUIRED FOR ALL WORK WITHIN PUBLIC RIGHT-OF-WAY.
14. CONTRACTOR SHALL CONTACT MR. GLENN JURGENSON, STORM DRAIN MAINTENANCE, C.O.A., 9805 CENTRAL AVENUE NE, (505) 291-6214, PRIOR TO COMMENCEMENT AND FOLLOWING COMPLETION OF ALL GRADING WITHIN THE LOMAS DETENTION BASIN AND LOMAS CHANNEL RIGHT-OF-WAY.



MAINTENANCE ROAD GRADING &
TEMPORARY EROSION CONTROL BERM
SCALE: 1"=5'

<p style="text-align: center;">CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT ENGINEERING GROUP</p>					
<p>TITLE: SANDIA HILLS</p> <p style="text-align: center;">Grading & Drainage Details</p>					
APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
DRC CHAIRMAN			WATER		
TRANSPORTATION			WASTE WATER		
HYDROLOGY					
PROJECT NO.		MAP NO.		SHEET OF	
4568.90		J-23		5 12	

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TOTAL TO EXISTING NATURAL SWALE AT SOUTH BOUNDARY		TOTAL TO EXISTING NATURAL SWALE	
REDUCE BY ELIMINATING ONSITE AND BASIN B FLOWS		ADD ONSITE & OFFSITE	
$Q_{100} = 14.1 - 4.9 - 1.6 = 7.6 \text{ cfs}$		$Q_{100} = 4.9 + 1.6 + 7.6 = 14.1 \text{ cfs}$	

PROPOSED

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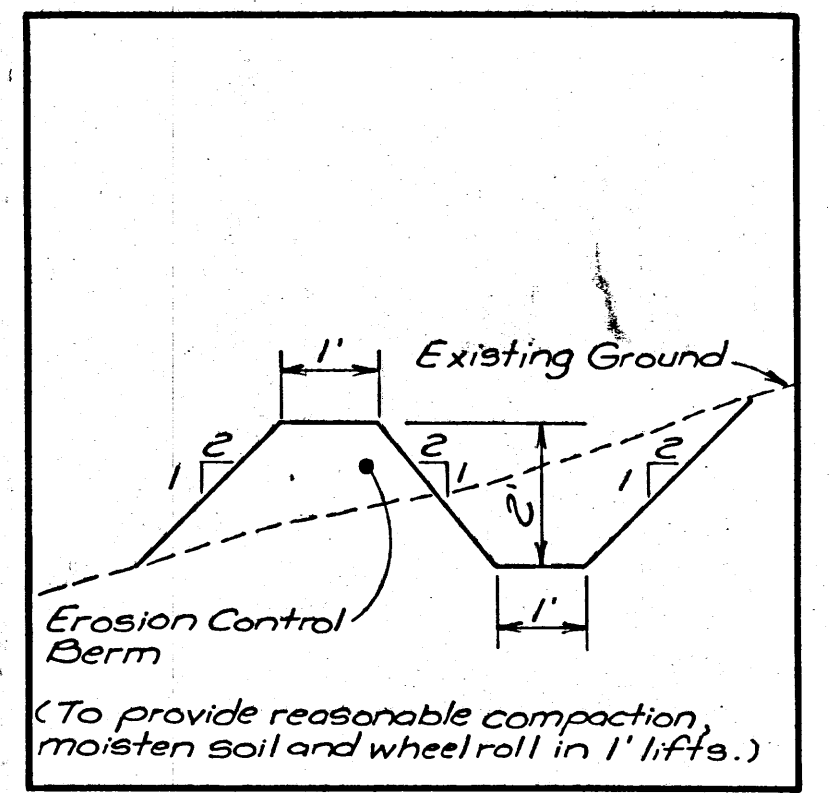
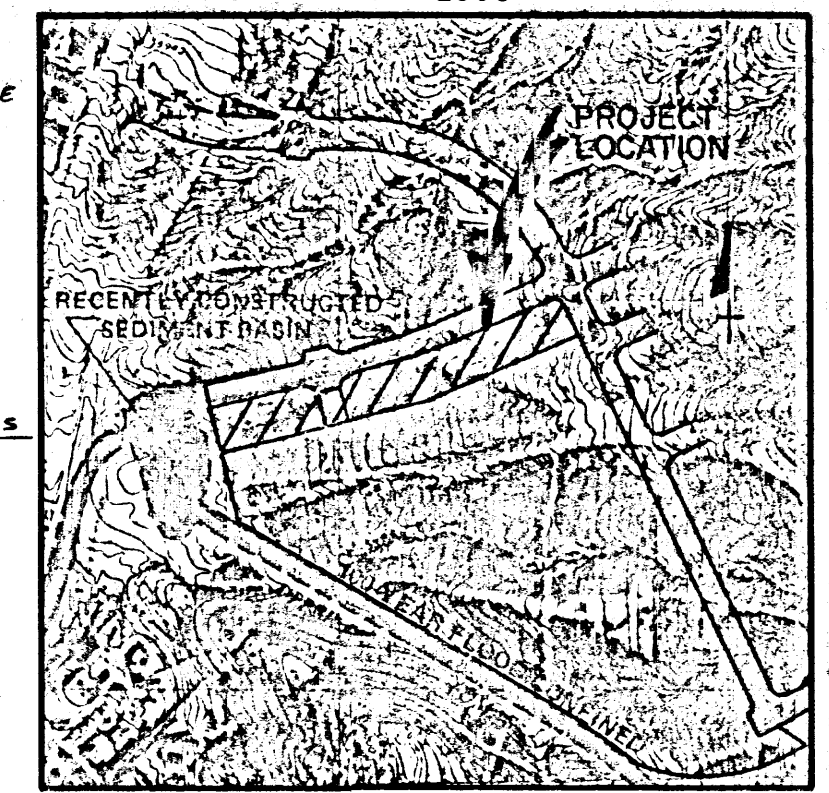
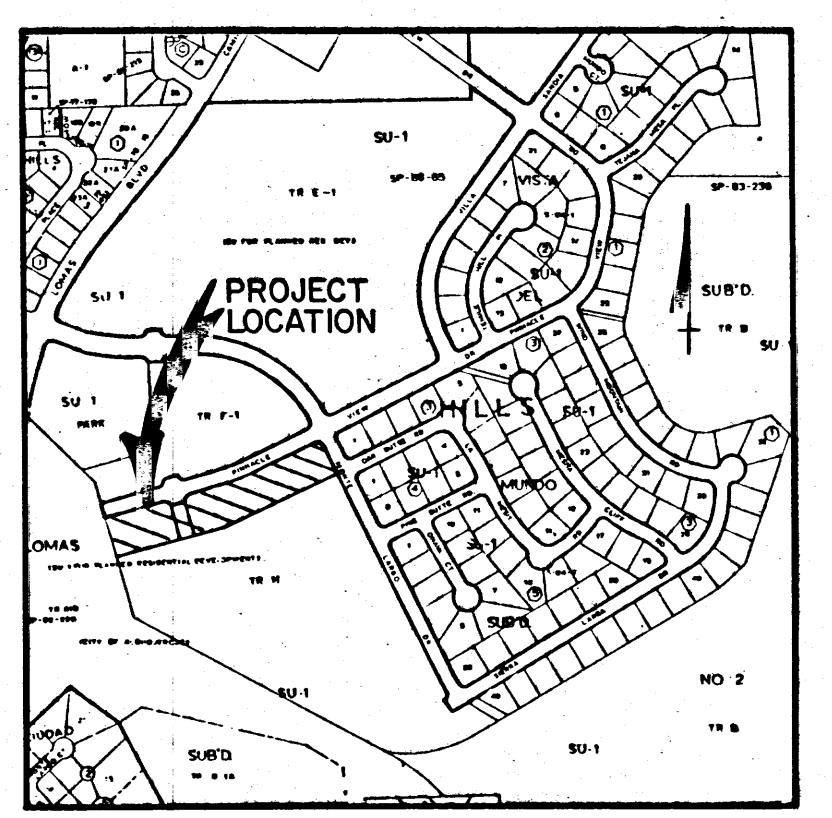
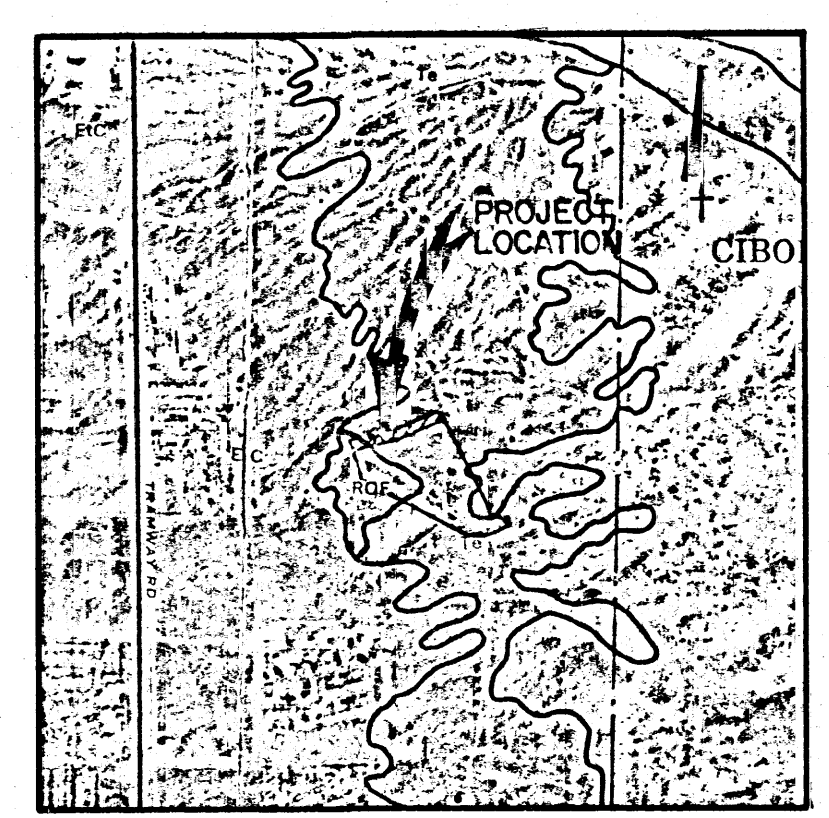
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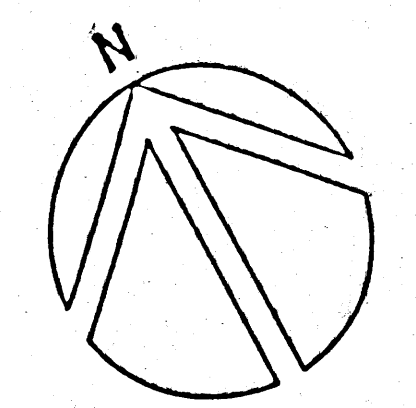
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ELEVATION = 6011.49

LEGAL DESCRIPTION:

TRACT H, EMBUDO HILLS.

LEGEND

- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- EXISTING CONTOUR
- PROPOSED CONTOUR
- RETAINING WALL
- DIRECTION OF FLOW



SCALE: 1" = 60'

RECEIVED
JAN 21 1988
HYDROLOGY SECTION

GRADING AND DRAINAGE PLAN FOR A PORTION OF TRACT H-1 EMBUDO HILLS

Date	Revision	By
12/23/87	Revised Per City Comments	SH

PREPARED BY:
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