

# County of Bernalillo

State of New Mexico

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2400 BROADWAY, S.E.  
ALBUQUERQUE, NEW MEXICO 87102  
PUBLIC WORKS (505) 848-1500

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ORLANDO VIGIL, TREASURER

February 25, 1997

C. A. Coonce, P.E.  
12324 Pineridge NE  
Albuquerque, New Mexico 87122

**RE: CRAVENS RESIDENCE, LOT 13, BLOCK 2, TRACT 2, UNIT 1, NAA (C22-D31)  
(PWD 96-77), ENGINEER'S STAMP DATED 12/4/96.**

Dear Mr. Coonce:

The purpose of this letter is to clarify some of the previous comments made by the County, AMAFCA and myself regarding the above referenced property. The main issue is the amount of runoff in the arroyo that should be used for design.

Recent studies by Resource Technology, Inc. have identified the avulsion upstream of this site and determined that at least 800 cfs may be carried in the arroyo through this lot. Therefore, since the County and AMAFCA have no plans to construct improvements to remove this avulsion at this time, 800 cfs should be used in your design.

Using the flow of 800 cfs, show the limits of the HGL and EGL on the plan. The erosion setback (ESB) must be calculated using AMAFCA's Sediment and Erosion Design Guide for this Q. The ESB should be plotted on the plan. Please use the formula in the DPM for calculating the freeboard. The finish floor elevation should be placed at a least as high as the EGL plus freeboard.

The limits of the existing FEMA floodplain must also be shown on the plan. Since the easement will be based on this floodplain, an encroachment license will be required for most of the construction on this lot.

With respect to your resubmittal, all of our previous comments apply. If you should have any questions, please feel free to contact us.

Sincerely,

A handwritten signature in cursive script, reading "Susan Calongne".

Susan M. Calongne, P.E.  
City/County Floodplain Administrator

c: Kurt Browning, Albuquerque Metropolitan Arroyo Flood Control Authority  
Roger Paul, Bernalillo County Public Works Division  
File



# County of Bernalillo

## State of New Mexico

2400 BROADWAY, S.E.  
ALBUQUERQUE, NEW MEXICO 87102  
PUBLIC WORKS (505) 848-1500

December 17, 1996

### BOARD OF COUNTY COMMISSIONERS

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**JOE BOWDICH**, SHERIFF

**H. R. FINE**, TREASURER

C. A. Coonce, P.E.  
12324 Pineridge NE  
Albuquerque, New Mexico 87122

**RE: CRAVENS RESIDENCE, LOT 13, BLOCK 2, TRACT 2, UNIT 1, NAA (C22-D31) (PWD 96-77) SUBMITTED FOR BUILDING PERMIT APPROVAL, ENGINEER'S STAMP DATED 12/4/96.**

Dear Mr. Coonce:

The County, AMAFCA and I have made a cursory review of the above referenced submittal and find that our previous comments still apply. We suggest that you meet with us after the holidays to discuss this site.

Please give me a call at 768-2666 to set up a time to meet.

Sincerely,

A handwritten signature in cursive script that reads "Susan Calongne".

Susan M. Calongne, P.E.

City/County Floodplain Administrator

c: Kurt Browning, Albuquerque Metropolitan Arroyo Flood Control Authority  
Roger Paul, Bernalillo County Public Works Division  
File



# County of Bernalillo

## State of New Mexico

2400 BROADWAY, S.E.  
ALBUQUERQUE, NEW MEXICO 87102  
PUBLIC WORKS (505) 848-1500

June 6, 1996

### BOARD OF COUNTY COMMISSIONERS

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DISTRICT 5  
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**JUDY D. WOODWARD**, CLERK  
**THOMAS J. MESCALL**, PROBATE JUDGE  
**JOE BOWDICH**, SHERIFF  
**H. R. FINE**, TREASURER

C. A. Coonce, P.E.  
12324 Pineridge NE  
Albuquerque, New Mexico 87122

RE: CRAVENS RESIDENCE, LOT 13, BLOCK 2, TRACT 2, UNIT 1, NAA (C22-D31) (PWD 96-77) SUBMITTED FOR BUILDING PERMIT APPROVAL, ENGINEER'S STAMP DATED 5/3/96.

Dear Mr. Coonce:

This letter is a compilation of comments from myself, AMAFCA and Bernalillo County. Prior to plan approval the following comments must be addressed:

1. The limits of the existing FEMA floodplain must be shown on the plan. It appears that the floodplain encroaches on most of this lot. Grading will be allowed within the floodplain if the analysis shows that the grading will not adversely affect any adjacent properties. If the proposed improvements change the floodplain, a Letter of Map Revision from FEMA will be required.
2. The calculated flow of 165 cfs is low for this arroyo. There are approved grading and drainage plans just downstream of this lot which use 400 to 500 cfs (one plan was prepared by you). There is also a recent study by RTI which may be referenced. That study indicates that there is an avulsion upstream. This must be addressed.
3. An easement will be required for the area within the existing floodplain, or the EGL, whichever is larger. Encroachment agreements will be required for any development within the easement. As you are aware, the easement must be on file at AMAFCA prior to plan approval.
4. All off-site drainage basins must be delineated on the plan. Calculations for the  $t_c$  is also required.
5. Typically the finish floor elevation is set at EGL plus freeboard. Please calculate the freeboard to see if the 2' is adequate.

C. A. Coonce, P.E.

Page 2

6. Please plot the HGL and EGL for the arroyo under existing conditions (prior to grading). This will be compared to the HGL and EGL for the proposed grading. The HEC-2 input and output data should be provided for both conditions. Also show where the cross-sections are located.
7. The erosion setback (ESB) must be calculated using AMAFCA's Sediment and Erosion Design Guide. The ESB should be plotted on the plan.
8. Show the proposed well location on the plan. The location of the septic system is in violation of County Ordinance 88-1 with respect to distances from arroyos.
9. The plan describes the driveway as paved and graveled. Which treatment is proposed? Was this taken into account in the HEC-2 analysis?
10. The on-site hydrology accounts for too much land treatment A. The plan shows a large disturbed area around the residence. A note should be added to the plan addressing revegetation of the disturbed area.
11. There is a defined swale along Modesto. How will this be mitigated?

There have been previous grading and drainage submittals for this lot. Attached is a copy of the previous comments, some of which may apply to this plan. If you should have any questions regarding these comments, please call me at 768-2666.

Sincerely,

  
Susan M. Calongne, P.E.

City/County Floodplain Administrator

c: Kurt Browning, Albuquerque Metropolitan Arroyo Flood Control Authority  
Roger Paul, Bernalillo County Public Works Division  
File



# County of Bernalillo

State of New Mexico

ONE CIVIC PLAZA, N.W.  
ALBUQUERQUE, NEW MEXICO 87102  
ADMINISTRATION (505) 768-4000  
COMMISSION (505) 768-4217  
FAX (505) 768-4329

## BOARD OF COUNTY COMMISSIONERS

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DISTRICT 3

BARBARA J. SEWARD, MEMBER  
DISTRICT 4

JUAN R. VIGIL, COUNTY MANAGER

MARK J. CARILLO, ASSESSOR  
JUDY D. WOODWARD, CLERK  
THOMAS J. MESCALL, PROBATE JUDGE  
RAY GALLAGHER, SHERIFF  
H. R. FINE, TREASURER

October 3, 1994

Richard G. Vaughan, P.E.  
Kemper-Vaughan  
3700 Coors Rd. NW  
Albuquerque, New Mexico 87120

RE: GRADING AND DRAINAGE PLAN SUBMITTED FOR CRAVENS RESIDENCE, LOT 13,  
BLOCK 2, TRACT 2, UNIT 1, NORTH ALBUQUERQUE ACRES, (C22/D31),  
(PWD-94-190), ENGINEER'S STAMP DATED 8/15/94.

Dear Mr. Vaughan:

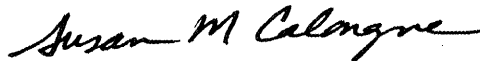
This letter incorporates my comments along with those of Bernalillo County and AMAFCA. Prior to plan approval, the following comments must be addressed:

1. A drainage easement comprising the entire flood plain must be dedicated to AMAFCA. The limits of the easement are based on the energy grade line (EGL), the sequent depth, or the FEMA floodplain map, whichever is wider. We suggest using a HEC-2 analysis to determine this. The easement must be granted, approved and on file at AMAFCA prior to plan approval. Please plot the proposed easement and EGL on the plan.
2. Without complete quantitative analysis to justify the decreased flow, we require use of the FEMA study numbers referenced. We do not agree with the 45 cfs referenced.
3. Hydrology calculations for off-site basins in the North Albuquerque Acres area should be made using the typical land treatment values of A=43%, B=20%, C=20%, and D=17%. Please delineate the off-site basins on the plan.
4. Erosion setback calculations based on the "Sediment and Erosion Design Guide" must be included. Please show the erosion setback and floodplain limits on the plan.
5. The avulsions (noted on plans as evolutions) referenced are still applicable. 100-year floodplain determinations are based on the existing FEMA maps which were prepared in 1983. Unless you are proposing to request a Letter of Map Revision from FEMA, the existing maps must be used.

6. If construction is proposed within the erosion setback line that is calculated using the higher flow, then flood protection is required.
7. Please provide weir calculations to show that the backwater created by the driveway weir section remains within the floodplain easement.
8. Is a water well proposed for this site? If so, it must be located a minimum of 100' from all drain field sites. Please make sure that the septic system is not located within the limits of the floodplain.
9. This plan does not address perimeter fencing. The plan should state that perimeter fencing is not proposed for the site. Any perimeter fencing proposed must address how off-site flows are conveyed through the property.
10. Please include the standard Engineer's statement on the plan regarding inspection of the site as outlined in the County Ordinance. The statement must be signed and dated by the Engineer.
11. The Typical Section on sheet 1 shows sideslopes of 25:1 and 23:1, however the calculations use side slopes of 13:1 and 12:1.

Please keep in mind that with each resubmittal, you must redate the Engineer's stamp. Also, any reanalysis may result in additional comments. If you should have any questions, or would like to meet with us in order to discuss these comments, please call me at 768-2650.

Sincerely,



Susan M. Calongne, P.E.  
City/County Floodplain Administrator

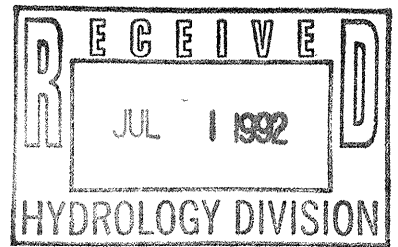
smc/wphyd/8840

c: Chris Rivera, City Hydrology  
Roger Paul, Molzen-Corbin/BCPWD  
Kurt Browning, AMAFCA  
Mathew O'Grady, BCPWD  
File

DRAINAGE DESIGN CALCULATIONS

FOR

LOT 13, BLOCK 2, TRACT 2, UNIT 1  
NORTH ALBUQUERQUE ACRES



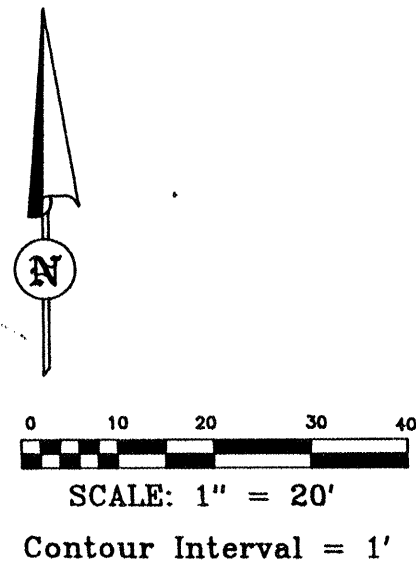
Building site is within the designated 100 year flood boundaries. However, actual field surveys indicate that channelization occurs upstream of subject property, narrowing flood boundaries considerably.

Channelization upstream of subject property is indicated on pertinent floodway mapping. The capacity of upstream channeling is essentially the same as the capacity through subject property. This would indicate that the flood boundary designation on subject Lot 13 and Lots 14 & 15, to the west, should be adjusted to reflect the actual field conditions.

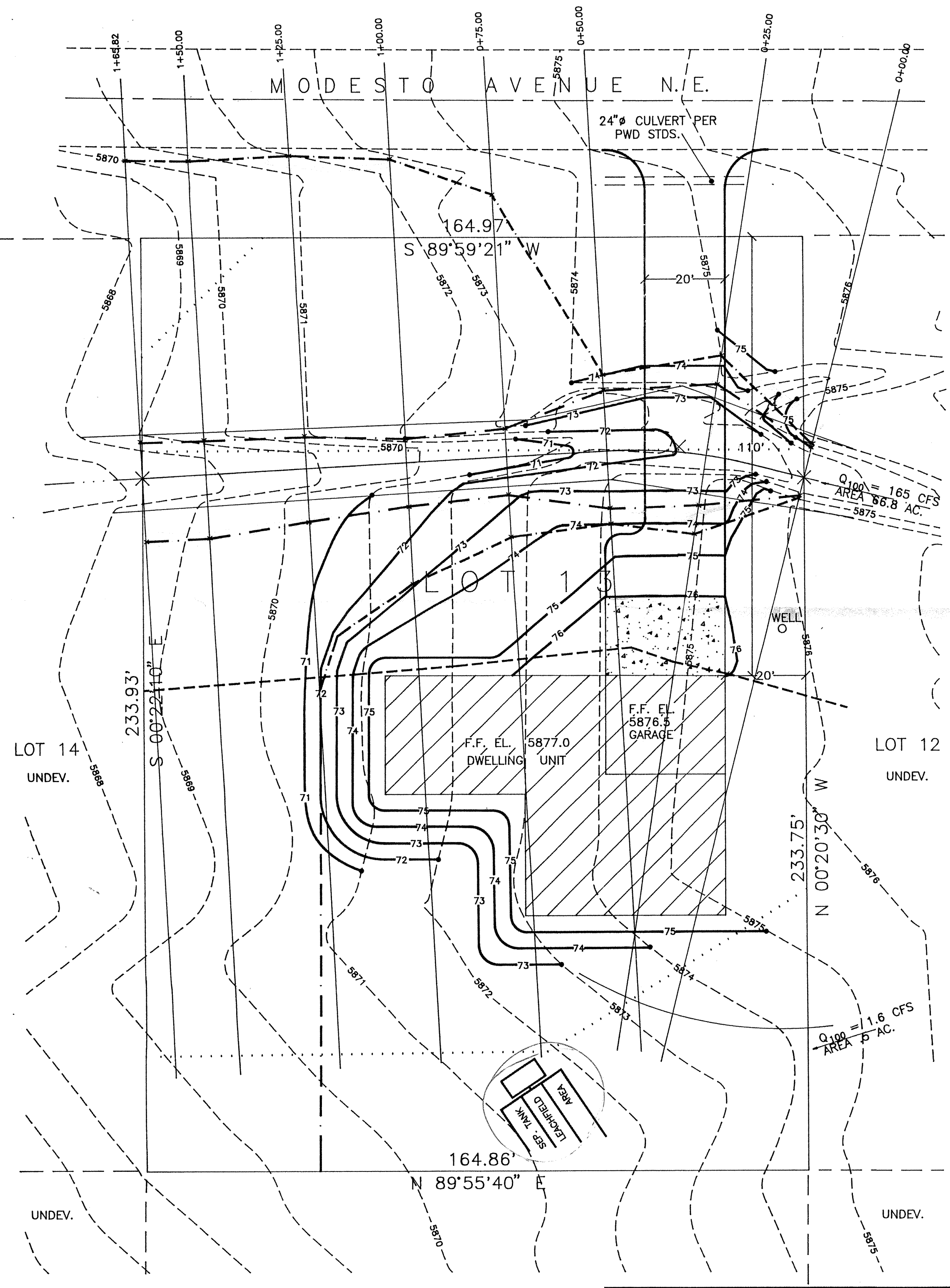
Proposed improvements to subject lot, while somewhat beyond what is normally done in North Albuquerque Acres will insure safe access to the property and residence during flood events.

A circular professional seal for Michael E. Meyer, a Professional Engineer in the State of New Mexico. The seal includes the text "MICHAEL E. MEYER", "STATE OF NEW MEXICO", "1992", and "PROFESSIONAL ENGINEER". A handwritten signature is written over the seal.

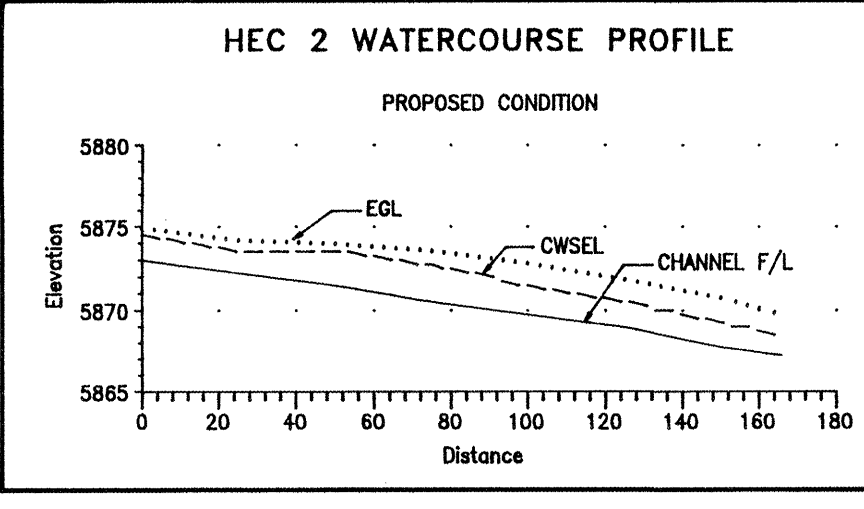




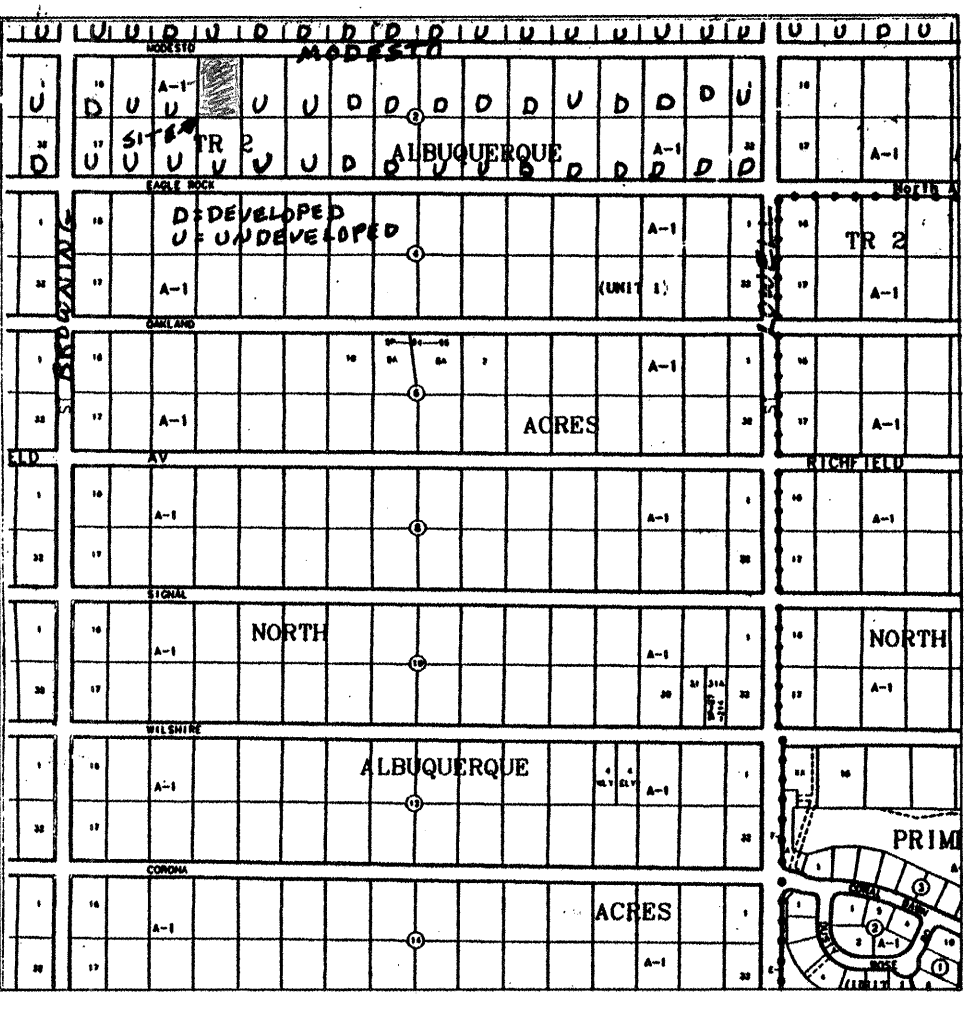
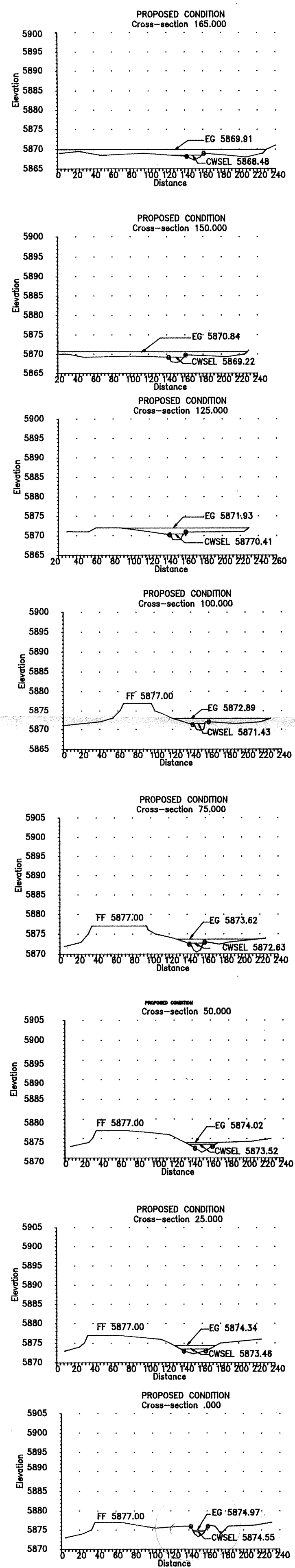
- NOTES:
- 1) BASIS OF BEARINGS: NORTH LINE LOT 13
  - 2) BASIS OF ELEVATION: ACS STA. 2 C-21, ELEV. = 5868.10
  - 3) Survey control and mapping by ConSurvey Surveying Co., P.O. BOX 9, SAN FIDEL, New Mexico, 87049, (505) 552-9898
  - 4) Unless otherwise indicated, all Lot corners are #5 rebar/cap.
  - 5) Date of Field Survey: January 4, 1996
  - 6) THIS IS NOT A BOUNDARY SURVEY: LOT LINES ARE FOR ILLUSTRATIVE PURPOSES ONLY.



- LEGEND
- EXISTING SPOT ELEVATIONS
  - EXISTING CONTOURS
  - PROPOSED CONTOURS
  - CONCRETE WATERCOURSE FLOWLINE
  - COMPUTED WATER SURFACE ELEVATION
  - ENERGY GRADE LINE PROPOSED
  - EROSION OFFSET
  - FEMA FLOODPLAIN LIMITS



HEC 2 WATERCOURSE SECTIONS



LEGAL DESCRIPTION: LOT 13, BLOCK 2, TRACT 2, UNIT 1, NORTH ALBUQUERQUE ACRES, BERNALILLO COUNTY, NEW MEXICO  
ADDRESS: MODESTO AVE., N.E.

GENERAL DISCUSSION:

THIS LOT IS LOCATED ON THE SOUTH SIDE OF MODESTO AVE., AND IS THE FOURTH LOT EAST OF BROWNING IN THE NORTH ALBUQUERQUE ACRES SUBDIVISION. BOTH MODESTO AND BROWNING ARE PAVED STREETS, MAINTAINED BY BERNALILLO COUNTY. THE LOT GRADES UNIFORMLY FROM THE EAST TO THE WEST, WITH A SHALLOW E-W WATERCOURSE APPROXIMATELY 55 FEET SOUTH OF THE NORTH (MODESTO) PROPERTY LINE. THE THIRD LOTS TO THE EAST AND TO THE WEST OF THIS LOT ARE DEVELOPED.

DEVELOPED HYDROLOGY:

THIS PROPOSED DEVELOPMENT INCLUDES 4650 S.F. OF IMPERVIOUS AREA (HOUSE, GARAGE, DRIVEPAD, PATIOS, SIDEWALKS, ETC.), AND 1800 S.F. OF GRAVELED DRIVEWAY. IT IS ASSUMED THAT 2000 S.F. OF LAWN AND GARDEN WILL BE DEVELOPED. IN THE SHORT TERM, UNTIL RE-VEGETATION TAKES PLACE, 2000 S.F. OF DISTURBED SOIL WILL EXIST. THE ACTUAL RUNOFF WILL DECREASE AFTER NATIVE VEGETATION HAS RE-ESTABLISHED.

IN ACCORDANCE WITH DPM PROCEDURES, THE FOLLOWING TABLE GIVES THE MAXIMUM 100 YEAR DISCHARGE FOR THIS DEVELOPMENT IN ZONE 3 AND FOR A TIME OF CONCENTRATION OF 12 MIN.

TREATMENT	AREA (AC)	MAX RUNOFF (CFS/AC)	MAX Q (CFS)
A	0.562	2.20	1.24
B	0.046	2.92	0.63
C	0.170	3.73	0.56
D	0.107	5.25	0.68

TOTAL AREA 0.885 AC. TOTAL 100 YR. Q 2.56 CFS = 2.89 CFS/ AC

OFFSITE WATERSHED HYDROLOGY:

FOR NORTH ALBUQUERQUE ACRES, FULLY DEVELOPED, THE WATERSHED DRAINAGE IS COMPUTED USING TABLE A-9 FROM SEC. 22 OF THE DPM FOR ALBUQUERQUE, BERNALILLO COUNTY, AND AMAFCA. THE ASSUMED TREATMENT PERCENTAGES ARE A = 43%, B = 20%, C = 20%, AND D = 17%. THE HYDROLOGIC ZONE IS 4. THE RUNOFF PER WATERSHED ACRE IS  $(0.43)(2.20) + (0.20)(2.92) + (0.20)(3.73) + (0.17)(5.25) = 3.17$  CFS/ ACRE.

LOT ACCESS:

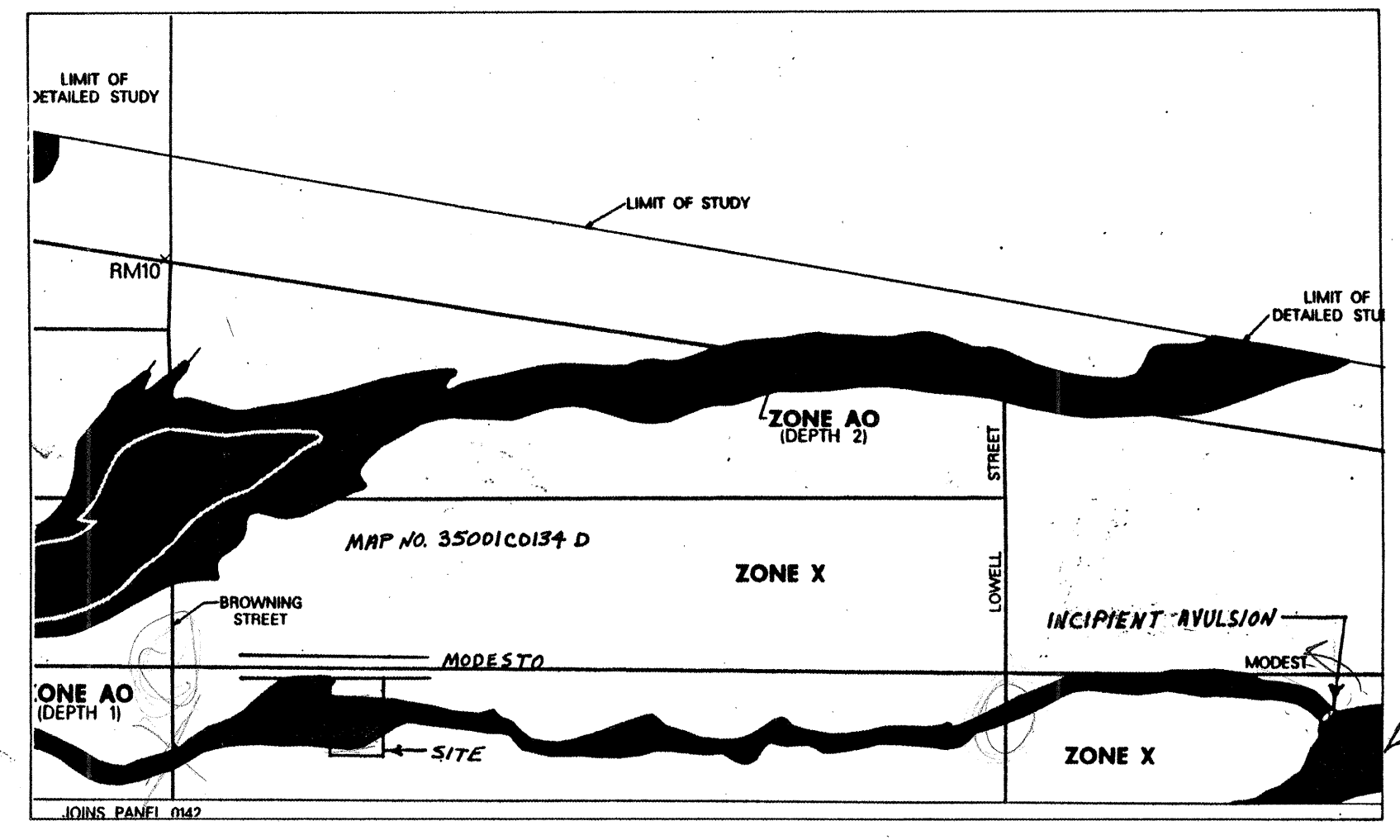
THE PAVED PUBLIC ACCESS IS TO MODESTO AVE. FROM BROWNING STREET OR TRAMWAY BLVD. BERNALILLO COUNTY MAINTAINS MODESTO AND BROWNING, AND THEY ARE CURRENTLY PAVED. WITH THE EXISTING TRANSITION FROM THE PAVED MODESTO TO THIS PROPERTY, A CULVERT IS NOT NEEDED. A WATER LEVEL CROSSING IS UTILIZED FOR THIS ACCESS. THIS IS THE SAME TYPE OF CROSSING WHICH BERNALILLO COUNTY USED IN THE PAVED BROWNING CROSSING OF THIS SYSTEM THREE LOTS TO THE WEST (DOWNSTREAM).

WALLS AND FENCING:

NO FENCING OR PRIVACY WALLS ARE REQUESTED. SHOULD THAT CHANGE, THE PRIOR APPROVAL OF BOTH BERNALILLO COUNTY AND AMAFCA MUST BE OBTAINED.

EROSION SETBACK:

THE ESB IS DETERMINED BY USING EQ. 3.81a OF THE "SEDIMENT AND EROSION DESIGN GUIDE", I.E.,  $\Delta_{max} = 11.5 Q_{100}^{0.84}$  FOR  $Q_{100} \leq 200$  CFS AND  $Q_{100} = 0.2 Q_{100}$ ,  $Q_{100} = 0.2(165) = 33$  CFS AND  $BSB = 46.6$  FT. THIS IS SHOWN ON THE SITE PLAN.



OFFSITE FLOWS:

THIS LOT HAS A WATERCOURSE FROM EAST TO WEST, APPROXIMATELY 55 FT. SOUTH OF THE NORTH PROPERTY LINE. THIS SYSTEM IS A TRIBUTARY OF THE LA CUEVA ARROYO. IN RESEARCHING THE AMAFCA FILES, PWD-93-115 FOR LOT 32, BLOCK 1, TRACT 3, UNIT 1, CALCULATED 529 CFS, AND A PREVIOUS SUBMITTAL ON THIS LOT (LOT 13) CALCULATED 45 CFS FOR THE 100 YEAR MAX Q FLOWS. THE ESTIMATES ARE TOO HIGH IN ONE SUBMITTAL AND TOO LOW IN THE OTHER. UTILIZING THE COUNTY AND AMAFCA SPONSORED TOPOGRAPHIC MAPS AT 1" TO 100' SCALE, THE AREA CONTRIBUTING TO THIS SYSTEM IS 66.8 ACRES. THE AHYMO SOLUTION FOR THIS AREA, USING THE STANDARD N.A.A. TREATMENT PERCENTAGES, DPM 22.2, C-22-Z RAINFALL, AND A COMPUTED  $t_p$  OF 0.194 HR., THE 100 YEAR  $Q_p$  IS 163.42 CFS. A  $Q_p$  OF 165 CFS WAS UTILIZED FOR THE HEC-2 SOLUTIONS. THIS 165 CFS IS BELIEVED TO BE REALISTIC BECAUSE THE FLOODPLAIN IN THE EXISTING CONDITION MATCHES THE CURRENTLY USED FEMA FLOODPLAIN MAP. THE ELEVATION CONTOURS ON THIS LOT ARE ESSENTIALLY PERPENDICULAR TO THE FLOWLINE, RIGHT AND LEFT, FROM THE CHANNEL BANKS OUTWARD. THIS INDICATES THAT FOR A VERY SMALL ELEVATION IN WATER LEVEL OVER THE BANKS, THE WATER WOULD BE IN A VERY WIDE, VERY THIN SHEET ACROSS THIS LOT.

THE PROPOSED DWELLING UNIT WAS PLACED ON THE SLIGHT RISE ON THE HIGH (EAST) SIDE OF THE LOT. THE FINISHED FLOOR ELEVATION OF 5877 FT. IS TWO FEET HIGHER THAN THE EGL OF 5875 FT. AT THE WATERCOURSE ENTRANCE INTO THIS PROPERTY. THE PROPOSED AMAFCA EASEMENT IS THE EGL. THIS CONSTITUTES A LARGE PORTION OF THIS LOT AND DICTATES THAT THE OWNER CAREFULLY PLANS THE LANDSCAPING, AND OBTAINS AMAFCA APPROVAL.

THE WATERCOURSE SHOWS A NORTH BRANCH AT THE EAST PROPERTY LINE. THE RECENT COUNTY AND AMAFCA TOPOS, AS WELL AS ON-SITE INSPECTION, CONFIRM THAT THIS BRANCH DISAPPEARS APPROXIMATELY 100 FT. EAST OF THIS LOT, AND CARRIES AN INSIGNIFICANT AMOUNT OF WATER. THE ENTIRE 165 CFS WAS COMPUTED IN THE PRIMARY CHANNEL. A SMALL SYSTEM CROSSES THIS LOT AT THE S.E. CORNER, AND DRAINS APPROXIMATELY 1/2 ACRE, CARRYING 1.6 CFS.

EROSION SETBACK:

THE MINIMUM DISTANCE FROM THE STRUCTURE TO THE EGL IS 16 FEET. THIS IS GREATER THAN THE 12 FEET, WHICH IS ONE EMPIRICAL EROSION OFFSET, E.G., SIX TIME THE Q IN 100 CFS OR PORTIONS THEREOF.

FLOOD PLAIN STATUS:

AS CAN BE SEEN BY THE PLOT OF THIS LOT ON THE FEMA MAP, THE LOT IS IN A FLOODPLAIN. THE PROPOSED AMAFCA EASEMENT IS THE EGL OF THE COMPUTED  $Q_{100}$  FOR THE PROPOSED GRADING.

DRAINAGE AND FILL SLOPES:

ALL FILL SLOPES GREATER THAN 3:1 ARE TO BE PROTECTED WITH AN EROSION BLANKET AND SEEDED WITH A DRY LAND MIX OF GRASSES AND FLOWERS. THE DESIGN FILL SLOPES ARE 4:1 OR GREATER.

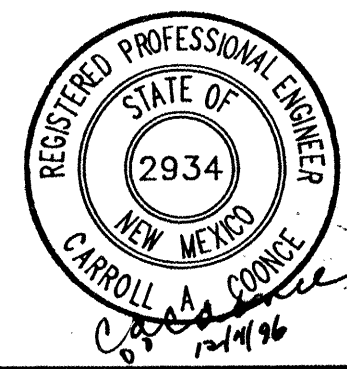
AFFIDAVIT

I HAVE PERSONALLY INSPECTED THIS TRACT OF LAND, AND IT DOES NOT APPEAR THAT GRADING, FILLING, OR EXCAVATION HAVE OCCURRED SINCE THIS CONTOUR MAP WAS MADE.

C.A. COONCE, N.M.P.E. # 2934

12/4/96  
DATE

PWD-96-77 BP-96- C-22/D31



C.A. COONCE & ASSOC.

ENVIRONMENTAL, WATER RESOURCES, & SANITARY CONSULTING ENGINEERS  
12324 PINERIDGE N.E. ALBUQUERQUE, N.M. 87112 PH (505) 298-1088

TITLE SITE, GRADING AND DRAINAGE

PROJECT LOT DEVELOPMENT PLAN FOR DAN CRAVENS

DATE 05/02/96 REVISED 12/03/96  
DRAWN LSC  
CHECKED CAC

SHEET 1 OF 1