



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

September 18, 1991

Jeff Mortensen, P.E.
Jeff Mortensen & Associates, Inc.
6010-B Midway Park Boulevard, NE
Albuquerque, New Mexico 87109

RE: CONCEPTUAL DRAINAGE PLAN FOR AN ADDITION TO FOOTHILLS
FELLOWSHIP (K-23/D24) ENGINEER'S STAMP DATED AUGUST 29, 1991

Dear Mr. Mortensen:

Based on the information provided on your submittal of August 30, 1991, the above referenced plan is approved for Site Development.

If I can be of further assistance, please feel free to call me at 768-2650.

Cordially,

Bernie J. Montoya
Bernie J. Montoya, C.E.
Engineering Assistant

BJM/bsj
(WP+2922)

PUBLIC WORKS DEPARTMENT

Walter H. Nickerson, Jr., P.E.
Assistant Director Public Works

ENGINEERING GROUP

Telephone (505) 768-2500

AN EQUAL OPPORTUNITY EMPLOYER

PROJECT TITLE: FOOTHILLS FELLOWSHIP ZONE ATLAS/DRNG. FILE #: K-23 / 024
DRB #: _____ EPC #: _____ WORK ORDER #: _____
LEGAL DESCRIPTION: LOTS 3A AND 4A, BLOCK H, CENAROSA SUBDIVISION
CITY ADDRESS: 13801 ENCANTADO RD NE
ENGINEERING FIRM: JEFF MORTENSEN & ASSOC'S CONTACT: JOE KELLEY
ADDRESS: 6010-B MIDWAY PARK BLVD NE PHONE: 345-4250
OWNER: FOOTHILLS FELLOWSHIP CONTACT: _____
ADDRESS: 13801 ENCANTADO RD NE PHONE: 299-0016
ARCHITECT: SEE CONTRACTOR CONTACT: _____
ADDRESS: _____ PHONE: _____
SURVEYOR: JEFF MORTENSEN & ASSOC'S CONTACT: JOE KELLEY
ADDRESS: 6010-B MIDWAY PARK BLVD NE PHONE: 345-4250
CONTRACTOR: BANES SOUTHWEST CONTACT: BRUCE ROSS
ADDRESS: 4322 2ND NW PHONE: 349-3461

TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
☐ DRAINAGE PLAN
☒ CONCEPTUAL GRADING & DRAINAGE PLAN
☐ GRADING PLAN
☐ EROSION CONTROL PLAN
☐ ENGINEER'S CERTIFICATION
☐ OTHER

PRE-DESIGN MEETING:

- ☐ YES
☒ NO
☐ COPY PROVIDED

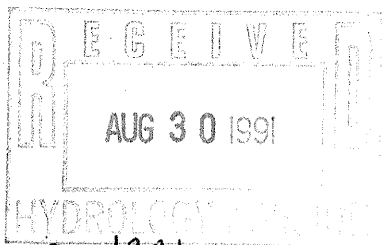
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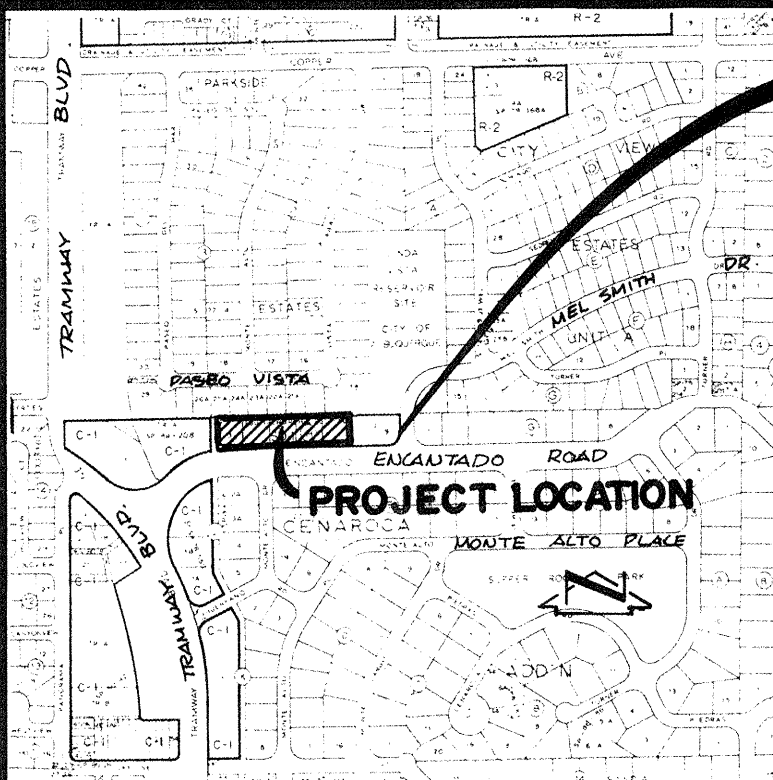
- ☐ SKETCH PLAT APPROVAL
☐ PRELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D. APPROVAL
☒ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☐ BUILDING PERMIT APPROVAL
☐ CERTIFICATE OF OCCUPANCY APPROVAL
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ S.A.D. DRAINAGE REPORT
☐ DRAINAGE REQUIREMENTS
☐ OTHER _____ (SPECIFY)

DATE SUBMITTED:

AUG 30, 1991

BY:

JOE KELLEY



VICINITY MAP

K-23

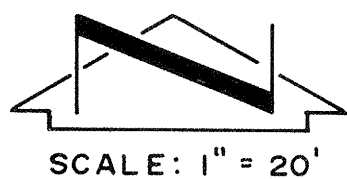
NO SCALE

PROJECT BENCHMARK: T.B.M.
AN A.C.S. BENCHMARK, NO. 14-K23, A CHISELED SQUARE, 21, ON TOP OF CONCRETE CURB AT THE NNW RETURN. BENCHMARK IS LOCATED IN THE NORTHWEST QUADRANT OF THE INTERSECTION OF MEL SMITH RD. N.E. AND ENCANTADO RD. N.E.
ELEVATION = 5781.50 FEET (M.S.L.D.)

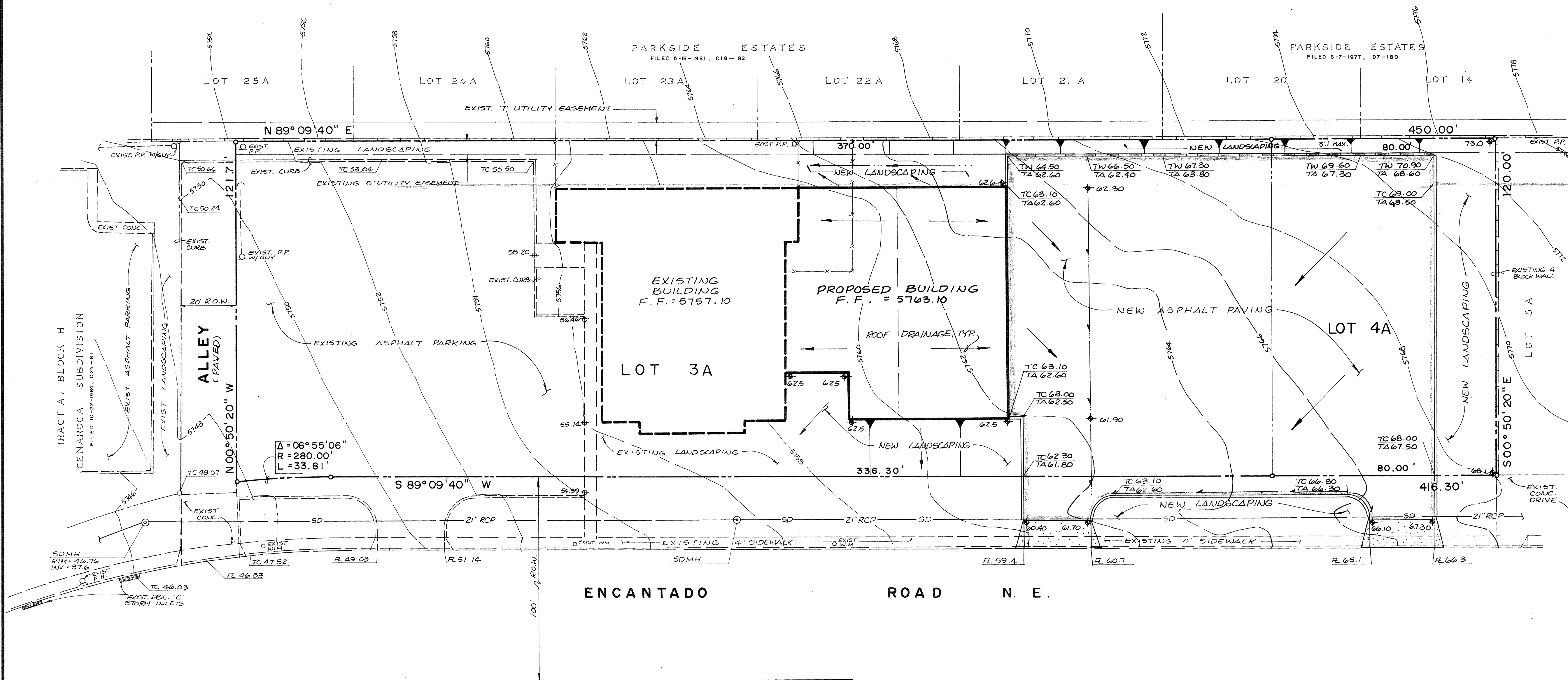
LEGAL DESCRIPTION
LOTS 3A AND 4A, BLOCK H,
CENAROCA SUBDIVISION

LEGEND

- 5760— EXISTING CONTOUR
- ⊕ EXISTING SPOT ELEVATION
- ⊕ PROPOSED SPOT ELEVATION
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED DIRECTION OF FLOW
- TC TOP OF CURB
- TW TOP OF WALL
- TA TOP OF ASPHALT
- SD STORM DRAIN LINE
- SAS SANITARY SEWER LINE
- W WATERLINE
- EXISTING WALL
- PROPOSED WALL



SCALE: 1" = 20'

**DRAINAGE PLAN**

The following items concerning the Foothills Fellowship Conceptual Drainage Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations

As shown by the Vicinity Map, the site is located on the north side of Encantado Road N.E. at the Encantado Road N.E./Monte Alto Drive N.E. intersection. The site is presently developed as a church with a building, landscaping and paving. Because the residential neighborhood around the site is fully developed, this is a modification to an existing site in an infill area. The site slopes to the south and discharges its runoff into Encantado Road N.E. Two storm inlets are located on Encantado Road N.E., just west of the site. These inlets discharge runoff into a public storm drain system which ultimately discharges into a concrete-lined channel 350' west of the site.

As shown by Panel 31 of 50 of the National Flood Insurance Program Flood Boundary and Floodway Maps for the City of Albuquerque, New Mexico, dated October 14, 1983, the site does not lie within a designated flood hazard area. The site does, however, border Encantado Road N.E. which is shown as a flood zone. Encantado Road N.E. outfalls into the previously-mentioned concrete drainage channel 350' downstream (west) of the site. This locates the site at the bottom of the watershed.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contours at 2'0" intervals; 2) the limit and character of the existing improvements; 3) the limit and character of the proposed improvements; and 4) continuity between existing and proposed grades. As shown by this Plan, the proposed improvements consist of the construction of a new building, new pavement, and new landscaping.

The calculations which appear hereon analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The peak discharge of runoff has been calculated using the Rational Method while the SCS Method has been used to quantify the volume of runoff generated. Both Methods have been used in accordance with the City of Albuquerque Development Process Manual, Volume II, coupled with the Mayor's Emergency Rule adopted January 14, 1986. As shown by these calculations, the proposed improvements will result in a minor increase in the runoff generated by the site. Free discharge from the site is, however, appropriate because: 1) the existing storm drain system is in close proximity to the site; 2) this is a modification to an existing site in an infill area; 3) the site is located near the bottom of the watershed (thus on-site ponding could increase the overall peak discharge); 4) the new drainage pattern is consistent with the existing drainage pattern and topography, and 5) a relatively minor increase in runoff is anticipated by this project.

CALCULATIONS**Ground Cover Information**

From SCS Bernalillo County Soil Survey, Plate 32: ETC - Embudo Tijeras Complex
Hydrologic Soil Group: B
Existing Pervious CN = 61 (DPM Plate 22.2 C-3)
Pasture or Range Land: good condition)
Developed Pervious CN = 61 (DPM Plate 22.2 C-3)
Open Space: good condition)

Time of Concentration/Time to Peak
 $T_C = 0.0078 L^{0.77} / S^{0.385}$ (Kirpich Equation)

 $T_p = T_C = 10 \text{ min.}$
Point Rainfall
 $P_6 = 2.52 \text{ in.}$ (DPM Plate 22.2 D-1)
Rational Method
 $\text{Discharge: } Q = CIA$

where C varies

 $i = P_6 (6.84) T_C^{-0.51} = 5.33 \text{ in/hr}$
 $P_6 = 2.52 \text{ in (DPM Plate 22.2D-1)}$
 $T_C = 10 \text{ min (minimum)}$
 $A = \text{area, acres}$
SCS Method
 $\text{Volume: } V = 3630 (\text{DRO}) A$

Where DRO = Direct runoff in inches
A = area, acres

Existing Condition

Atotal = 56,400 sf = 1.29 Ac
Roof area = 6,100 sf (0.11)
Paved area = 15,800 sf (0.28)
Landscaped area = 4,500 sf (0.08)
Undeveloped area = 30,000 sf (0.53)
C = 0.60 (Weighted average per Emergency Rule, 1/14/86)
 $Q_{100} = CIA = 0.60(5.33)1.29 = 4.1 \text{ cfs}$
% impervious = 39 %
Composite CN = 75 (DPM Plate 22.2 C-3)
DRO = 0.66 in (DPM Plate 22.2 C-4)
 $V_{100} = 3630 (\text{DRO})A = 3100 \text{ cf}$

Developed Condition

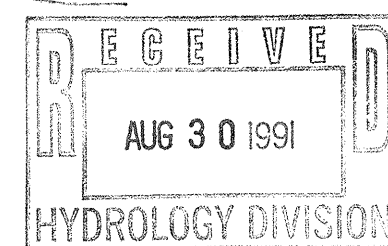
Atotal = 56,400 sf = 1.29 Ac
Roof area = 12,200 sf (0.22)
Paved area = 33,300 sf (0.59)
Landscaped area = 10,900 sf (0.19)
C = 0.81 (Weighted average per Emergency Rule, 1/14/86)
 $Q_{100} = CIA = 0.81(5.33)1.29 = 5.6 \text{ cfs}$
% impervious = 81 %
Composite CN = 91 (DPM Plate 22.2 C-3)
DRO = 1.63 in (DPM Plate 22.2 C-4)
 $V_{100} = 3630 (\text{DRO})A = 7600 \text{ cf}$

Comparison

$\Delta Q_{100} = 5.6 - 4.1 = 1.5 \text{ cfs (increase)}$
 $\Delta V_{100} = 7600 - 3100 = 4500 \text{ cf (increase)}$



08-29-91



JEFF MORTENSEN & ASSOCIATES, INC.
6010-B MIDWAY PARK BLVD. N.E.
ALBUQUERQUE, NEW MEXICO 87109
ENGINEERS & SURVEYORS (505)345-4250

CONCEPTUAL
GRADING AND DRAINAGE PLAN
FOOTHILLS FELLOWSHIP

DESIGNED BY J.P.K.

DRAWN BY S.G.H.

APPROVED BY J.G.M.

NO.

DATE

BY

REVISIONS

JOB NO.

910711

DATE

08-1991

SHEET

OF

1 OF 1