



KEN SCHULTZ  
MAYOR

# City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

November 13, 1989

Jeff Mortensen  
Jeff Mortensen & Associates  
811 Dallas NE  
Albuquerque, NM 87110

RE: DRAINAGE PLAN FOR CAPTAIN D's - COORS BLVD. NW  
(G11-D6A1) ENGINEER'S STAMP DATED 8/18/89

Dear Mr. Mortensen:

Based on the information provided on your August 22, 1989 submittal, the above referenced drainage plan is approved for building permit and rough grading.

Delay in reviewing this submittal was caused by the fact that the Master Drainage Plan submitted by Rhombus was not approved until October 20, 1989.

Please attach a copy of this approved plan to the construction sets prior to sign off by Hydrology.

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

Sincerely,

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

BJM:jc  
WP+1229

PUBLIC WORKS DEPARTMENT

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

ENGINEERING GROUP

Telephone (505) 768-2500

AN EQUAL OPPORTUNITY EMPLOYER



A SQUARE "D" CHISELED ON TOP OF  
CONCRETE MEDIAN CURB IN LEFT  
TURN BAY, LOCATED ON COORS  
BOULEVARD IN MEDIAN, 105' E  
SOUTH OF REDLAND N.W.  
ELEVATION: 5101.95 ft. (M.S.L.D.)

Figure 10-1 displays various symbols used in civil engineering drawings. On the left, a vertical list of symbols includes: a horizontal line with 'TA 100 36' above it; a horizontal line with '100' above it and three dots below it; a circle with a crosshair; a horizontal line with '5101' above it; a horizontal line with '100' above it; a rectangular box with '100' inside; a rectangular box with '100' inside and a small square at the bottom left; and a rectangular box with '100' inside and a small square at the bottom left.

On the right, corresponding text labels are provided: 'PROPOSED TOP OF ASPHALT ELEVATION PER PLAN BY RICHMOND P.A. DATED 07-04-89', 'EXISTING CONTOUR SPOT ELEVATION', 'PROPOSED SPOT ELEVATION', 'EXISTING CONTOUR', 'PROPOSED CONTOUR', 'PROPOSED CONCRETE', and 'PROPOSED ASPHALT'.

The following items concerning the Captain D's-Coors Boulevard N.W. Grading and 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 east side of Coors Boulevard N.W. between Redlands Road N.W. and Sequoia Road N.W. At present, the site is undeveloped. Much of the surrounding area is currently developed commercially. This plan is a modification to the Master Drainage Plan prepared by Rhombus, P.A., dated 7-4-89. As shown by Panel 21 of the National Insurance Program Flood Boundary and Floodway Maps for the City of Albuquerque, the site does not lie within a designated flood hazard zone. Downstream flooding is shown, however, the construction of a 48" RCP storm drain in Redlands Road N.W. and a 30" RCP storm drain located in the public alley which lies to the east of the site under SAD 198, was intended to eliminate the flooding. At present, runoff generated by this site drains to a depressed area located within the site. No offsite flows enter the site along the north property line because the paved alley appears to route runoff away from the project site. No offsite flows enter the site along the south property line because the paved access drive appears to route runoff away from the project site. No offsite flows enter the site along the west property line because the existing bar ditch appears to route runoff away from the project site. No offsite flows enter the site from the east because the site is topographically higher than the adjacent property.

The grading plan shows 1) existing and proposed grades indicated by spot elevations and contours at 1'0" intervals, 2) continuity between existing and proposed grades, and 3) the limit and character of the proposed improvements. As shown by this plan, the proposed improvements consist of the construction of a new restaurant along with adjacent paving and landscaping. Runoff generated by the proposed improvements will be routed from east to west onto the remaining portion of Tract C-1. Runoff within the remainder of Tract C-1 will be routed to a single "D" storm inlet as shown by the Master Drainage Plan prepared by Rhombus, P.A., dated 7-4-99. The plan prepared by Rhombus, P.A., allows the free discharge of runoff from the storm inlet located in Reclands Road N.W. This pattern is consistent with the proposed site drainage as shown by the plan prepared by Rhombus, P.A. Because of this, the free discharge of runoff from this site is appropriate.

The Calculations which appear hereon analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The Rational Method has been used to quantify the peak rate of discharge and the SCS Method has been used to quantify the volume of runoff. Both Methods have been used in accordance with the City of Albuquerque Development Process Manual, Volume II, and the Mayor's Emergency Rule adopted January 14, 1986. As shown by these calculations, the proposed improvements will increase the peak discharge by approximately 1.1 cfs.

## CALCULATIONS

### Ground Cover Information

From SCS Bernalillo County Soil Survey,  
Plate 20: MWA - Madurez - Wink association  
Hydrologic Soil Group: B  
Existing Pervious CN = 70 (DPM Plate 22.2 C-2)  
Pasture or Range Land: fair condition)  
Developed Pervious CN = 61 (DPM Plate 22.2 C-2)  
Open Space: good condition)

## Time of Concentration/Time to Peak

$$T_C = 0.0078 L^{0.77}/S^{0.385} \text{ (Kirpich Equation)}$$

$$T_p = T_c = 10 \text{ min.}$$

### Point Rainfall

P<sub>6</sub> = 2.2 in. (DPM Plate 22.2 D-1)

### Rational Method

Discharge:  $Q = CiA$

where C varies

$$i = P_6 (6.84) T_C^{-0.51} = 4.65 \text{ in/hr}$$

$P_6 = 2.2$  in (DPM Plate 22.2D-1)  
 $T_C = 10$  min (minimum)

A = area, acres

### SCS Method

Volume: V = 3630(DRO) A

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

Existing Condition

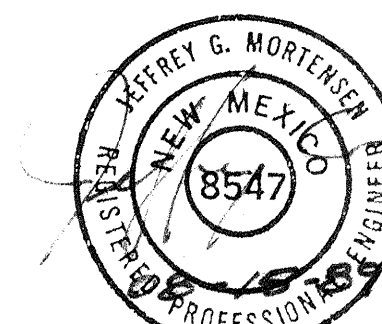
$A_{total} = 27,540$  sf = 0.63 Ac  
 $C = 0.40$  (Weighted average per Emergency Rule, 1/14/86)  
 $Q_{100} = C i_A = 0.40(4.65)(0.63) = 1.2$  cfs  
 $A_{imp} = -0-$  sf; % impervious = -0-%  
 $Composite\ CN = 70$  (DPM Plate 22.2 C-2)  
 $DRO = 0.38$  in (DPM Plate 22.2 C-4)  
 $V_{100} = 3630$  (DRO)A = 870 cf

Developed Condition

Atotal = 27,540 sf = 0.63 Ac  
 Roof area = 2,420 sf (0.09)  
 Paved area = 18,470 sf (0.67)  
 Landscaped area = 6,650 sf (0.24)  
 C = 0.78 (Weighted average per Emergency Rule, 1/14/86)  
 Q100 = CIA = 0.78(4.65)(0.63) = 2.3 cfs  
 Aimp = 20,890 sf; % impervious = 76 %  
 Composite Cn = 89 (Dm Flats 2 C-2)  
 V100 = 1.2 in (DPM Flats 2 C-4)  
 V100 = 3630 (DROA) = 2,745 cfs

### Comparison

$$\Delta Q_{100} = 2.3 - 1.2 = 1.1 \text{ cfs (increase)}$$
$$\Delta V_{100} = 2,745 - 870 = 1,875 \text{ cf (increase)}$$



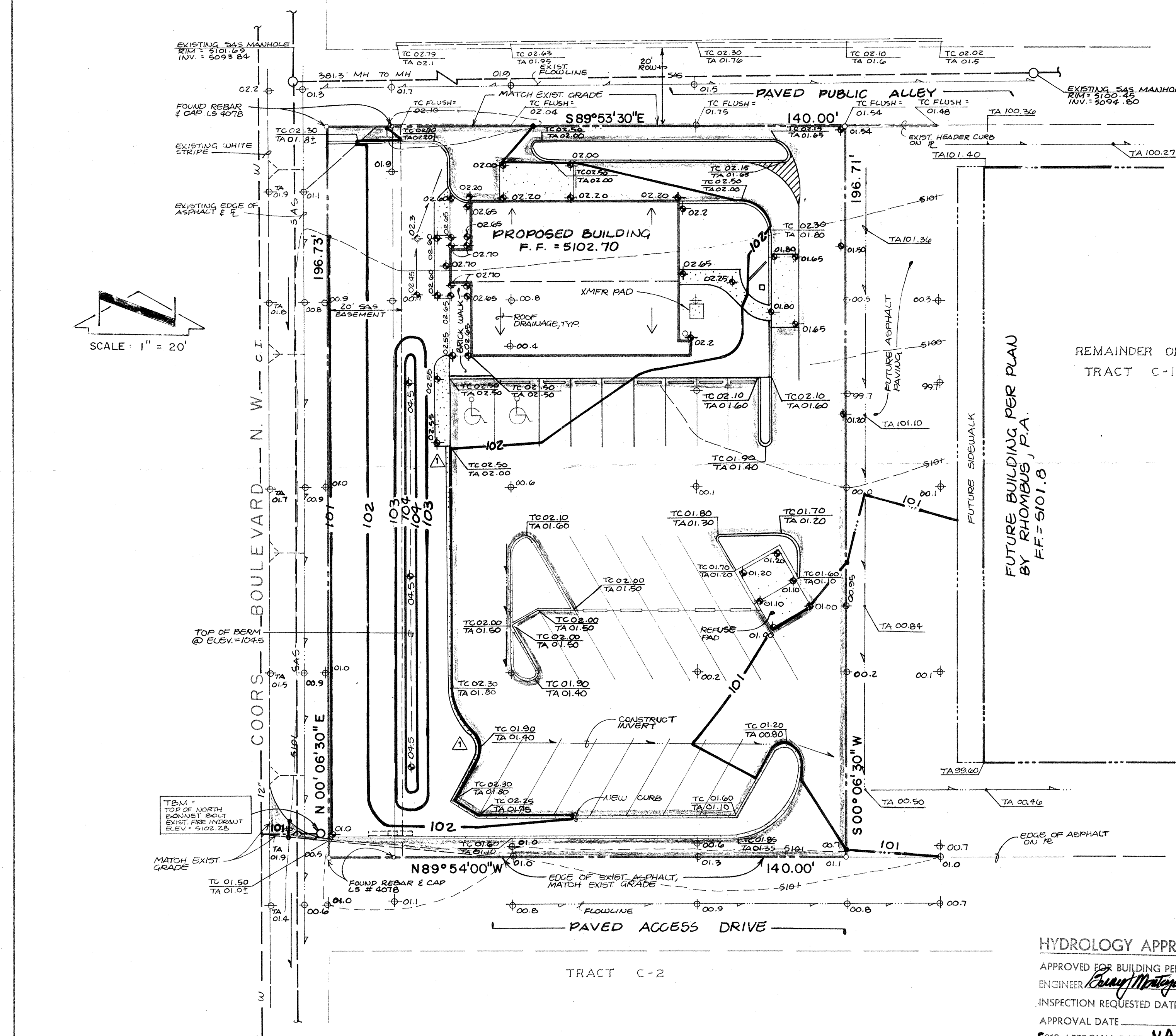
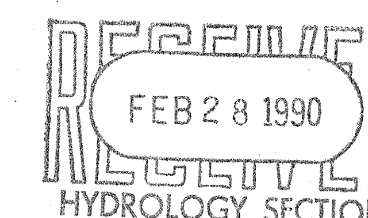
12-20-8  
02-27-90

CONSTRUCTION NOTES:

1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR MUST CONTACT LINE LOCATING SERVICE 765-1234, FOR LOCATION OF EXISTING UTILITIES.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
3. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
4. ALL CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.
5. 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 UNDERTAKEN NO FIELD VERIFICATION OF THE LOCATION, DEPTH, SIZE, OR TYPE OF EXISTING UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES, 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.

## EROSION CONTROL MEASURES

1. 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 AND WETTING THE SOIL TO KEEP IT FROM BLOWING.
2. THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED DOWN THE STREET.
3. THE CONTRACTOR SHALL SECURE "TOPSOIL DISTURBANCE PERMIT" PRIOR TO BEGINNING CONSTRUCTION.

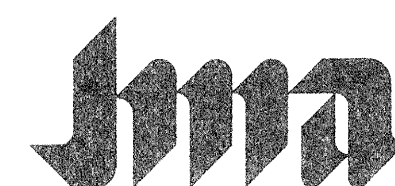


## HYDROLOGY APPROVAL &amp; INSPECTION


APPROVED FOR BUILDING PERMIT \_\_\_\_\_  
ENGINEER Brian Montoya DATE 3/2/90  
INSPECTION REQUESTED DATE \_\_\_\_\_  
APPROVAL DATE \_\_\_\_\_ DISAPPROVED \_\_\_\_\_  
5019 APPROVAL DATE NA  
SURVEY DATE \_\_\_\_\_  
HYDROLOGY BOOK NO./PAGE NO. \_\_\_\_\_  
SURVEYED BY \_\_\_\_\_  
COMMENTS \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## GRADING AND DRAINAGE PLAN

CAPTAIN D'S - COORS BOULEVARD N.W.



JEFF MORTENSEN & ASSOCIATES, INC.  
811 DALIAS, N.E., ALBUQUERQUE, NM 87110  
ENGINEERS • TELEPHONE (505) 265-5611

DESIGN BY	L.P.U.	No.	Date	By	Revision	JOB NO.	890752
			2/90	JGM	REVISE SITE PLAN	DATE	08/89
DRAWN BY	J.M.A.					SHEET	OF
							4
APPROVED BY	J.G.M.						4