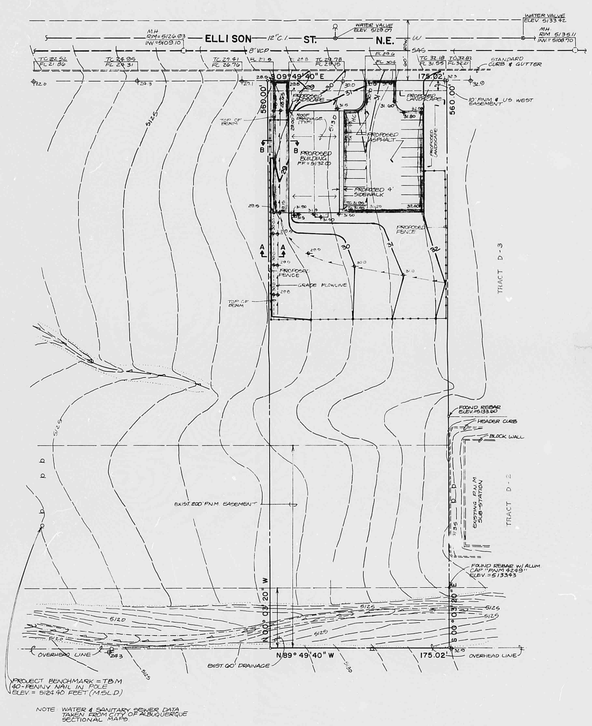
SCALE: 1" = 40'

PROJECT BENCHMARK = T.B.M.

A.C.S. STATION D-17, BEING A 60-PENNY NAIL IN THE SOUTH HOLE OF PYLON # 8B9, LOCATED ALONG AN ELECTRIC TRANSMISSION LINE, IN AN OPEN FIELD, 0.5 MI. WEST OF INTERSTATE 25 & ON THE PROJECTED CENTERLINE OF SAN ANTONIO DR. N.E., ELEVATION = 5129.40 ft. (M.S.L.D.)

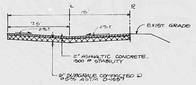
LEGAL DESCRIPTION

TRACT D-1-C1 - INTERSTATE INDUSTRIAL TRACT, 12-13-88, C36-18



NOTE: WATER & SANITARY SEWER DATA TAKEN FROM CITY OF ALBUQUERQUE SECTIONAL MAPS

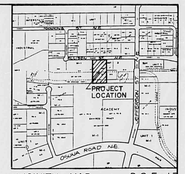
SECTION A-A
SCALE: 1" = 4'



SECTION B-B
SCALE: 1" = 5'

LEGEND

- 5125 — PROPERTY LINE
- EXISTING CONTOUR
- EXISTING SPOT ELEVATION
- SANITARY SEWER MANHOLE
- FIRE HYDRANT
- POWER POLE
- TOP OF BANK
- FLOWLINE LIMITS (CHANNEL)
- EXISTING FLOW DIRECTION
- 25 — PROPOSED SPOT ELEVATION
- PROPOSED CONTOUR
- PROPOSED CONCRETE
- PROPOSED ASPHALT



VICINITY MAP D&E-17
SCALE: 1" = 800'

DRAINAGE PLAN

The following items concerning the Cardinal Fence Drainage Plan are contained hereon:

1. Vicinity Map
2. Drainage Plan
3. Calculations

The site, as shown by the Vicinity Map, is located on the south side of Ellison Street NE between Jefferson Street NE and Washington Street NE. At present, the site is undeveloped. Adjacent properties to the north and east are developed making this an infill site. As shown by Panel 5 of the Flood Boundary and Floodway Map by the National Flood Insurance Program - October 16, 1981, the south end of the site is affected by a designated Flood Hazard Zone known as Pino Canyon Channel; however, flows generated from this site will not discharge to the arroyo. Presently, flows do not reach or cross through the arroyo. Development will be confined to the north end of the property, a nominally 280 feet from the arroyo.

At present, runoff generated by the site flows from east to west onto the adjacent lot and eventually discharge to Ellison Street NE. Offsite flows include flows from the east including Tract D-2 and the undeveloped portion of D-1. Flows are also conveyed through the site through the 60' Drainage Easement (Pino Canyon Channel) filed November 11, 1971, Book A10, page 194.

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 building along with adjacent paving and landscaping. The building will be constructed on a raised pad to prevent inundation from runoff from both the adjacent offsite flows from the east, will drain north onto Ellison Street NE. This seems appropriate, as the other developed sites adjacent to Ellison Street NE free discharge in this fashion, the proposed site is an infill site, and the proposed improvements will not significantly alter the existing drainage patterns or interfere with existing drainage pattern. From this point, the runoff flows - 1) on Ellison Street NE and into the existing drainage channel located at the intersection of Ellison Street NE and Washington Street NE. From this point, the runoff will follow an existing flow path into the South Pino Inlet an route to the AMAFCA North Diversion Channel.

The Calculations which appear hereon analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The 100-year, 6-hour rainfall event was selected because it is required by 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 result in an negligible increase in runoff of approximately 0.7 cfs.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey,
Piute (1) Zah = Tenuda
Hydrologic Group = D
Existing Pervious CN = 61 (DPM Plate 22.2 C-2
Pasture or Range Land; good condition)
Developed Pervious CN = 61 (DPM Plate 22.2 C-2

Time of Concentration/Time to Peak

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

$T_p = T_c = 18$ min.

Point Rainfall

$P_6 = 2.2$ in. (DPM Plate 22.2 D-1)

Rational Method

Discharge: Q = CiA

where C varies
$i = 60\,P_6/T_c = 7.51$
$P_6 = 2.2$ in (DPM Plate 22.2D-1)
$T_c = 18$ min (minimum)
A = area, acres

SCS Method

Volume: $V = 3630(DRO)\,A$

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

Existing Condition

$A_{total} = 41,125$ sf = 0.94 Ac
Undeveloped area = 41,125 sf (1.0)
C = 0.45 (Weighted average per Emergency Rule, 1/14/86)
$P_{100} = 3.0$ in (DPM Plate 22.2 D-1)
$i_{100} = 60 \times 3.0/18 = 10.0$ in/hr
Composite CN = 61 (DPM Plate 22.2 C-3)
DRO = 0.15 in (DPM Plate 22.2 C-4)
$V_{100} = 3630\,(DRO)A = 510$ cf

Developed Condition

$A_{total} = 41,125$ sf = 0.94 Ac
Roof area = 5,500 sf (0.126)
Paved area = 14,375 sf (0.330)
Landscaped area = 4,400 sf (0.101)
Undeveloped area = 18,130 (0.440)
C = 0.90 (Weighted average per Emergency Rule, 1/14/86)
$P_{100} = 3.0$ in (DPM Plate 22.2 D-1)
$i_{100} = 60 \times 3.0/18 = 10.0$ in/hr
Composite CN = 91 (DPM Plate 22.2 C-3)
DRO = 0.34 in (DPM Plate 22.2 C-4)
$V_{100} = 3630\,(DRO)A = 1,980$ cf

Offsite Flows

Using C (Approx.) = 0.45
i = 1.45
A = 2.0 Ac (Approx.)
Q = CiA = 2.7 cfs

Comparison

$\Delta Q_{100} = 2.7 - 2.0 = 0.7$ cfs (increase)
$\Delta V_{100} = 1,980 - 510 = 1,470$ cf (increase)

Flow Entering Channel

$A_{total} = 37,475$ sf = 0.83 Ac
Roof area = 2,500 sf (0.06)
Paved area = 14,375 sf (0.33)
Landscaped area = 14,975 sf (0.34) - 1,350 = 13,625 sf (0.86)
Undeveloped area = 2,350 sf (0.06) - 400 = 1,950 sf (0.04)
C = 0.55 (Weighted average per Emergency Rule, 1/14/86)
$P_{100} = 3.0$ in (DPM Plate 22.2 D-1)
Infiltration = 0.5 cfs (approx. amount entering area entering culvert)
$Q_{total} = 1.6 + 0.9 = 2.5$ cfs

Capacity of Channel

$Q_{CH} = 1.49\,AR^{2/3}S^{1/2}$ (Manning's Equation)
$= 1.49\,(2.25)(0.15)^{2/3}(0.005)^{1/2} = 3.9$ cfs
n=0.035
Therefore, $Q_{CH} > Q_{total}$: $3.9 > 2.5$ cfs

CONSTRUCTION NOTES:

1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE (843-1164, FOR LOCATION OF EXISTING UTILITIES.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL POTENTIAL CONFLICTS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT MAY BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
3. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
4. ALL CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE CURRENT APPLICABLE CITY OF ALBUQUERQUE STANDARD AND PROCEDURES.
5. IF ANY UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES ARE FOUND ON THE PROPERTY, THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE OWNER ONLY, AND FOR LINES THAT EXIST WHERE THERE ARE NO OWNER, IF ANY, THE CONTRACTOR SHALL NOTIFY THE ENGINEER. THE LOCATION IS BASED UPON INFORMATION PROVIDED BY THE OWNER OF SAID UTILITY, AND THE CONTRACTOR SHALL ASSUME THAT THERE MAY BE UNKNOWN AT THE TIME CONTRACTION COMMENCES, THE ENGINEER AND OWNERSHIPS NO RESPONSIBILITY FOR THE ACCURACY OF THE SIZE, ON TYPE OF EXISTING UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES. THE CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR THEMSELVES, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR ANY UTILITY LINES, PIPELINE, OR UNDERGROUND UTILITY LINE IN OR NEAR THE AREA OF THE WORK WHICH MAY BE DAMAGED AS A RESULT OF HIS WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS OPERATIONS TO ANY AND ALL EXISTING UTILITIES, AND ANY AND ALL EXISTING UTILITIES, PIPELINES, AND UNDERGROUND UTILITY LINES. IN ADDITION TO THE FOREGOING, THE CONTRACTOR SHALL COMPLY WITH STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, AND 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 EROSION FROM THE SITE IS PUBLIC RIGHT-OF-WAY. THIS CAN BE ACHIEVED ON PROPERTY. THIS CAN BE ACHIEVED BY CONTOURING TEMPORARY BERMS AT THE PROPERTY LINES AND WETTING THE SOIL TO KEEP IT FROM BLOWING.
2. THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MUD OR DIRT TRACKED ONTO THE PUBLIC RIGHT-OF-WAY AND STAY THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED ONTO THE STREET.
3. THE CONTRACTOR SHALL SECURE "TOPSOIL DISTURBANCE PERMIT" PRIOR TO BEGINNING CONSTRUCTION.

RECEIVED DEC 6 1988 HYDROLOGY SECTION

NEW MEXICO REGISTERED PROFESSIONAL ENGINEER 6540

JEFF MORTENSEN & ASSOCIATES, INC.
ENGINEERS
8100 MONTGOMERY NE - ALBUQUERQUE, NM 87109
TELEPHONE (505) 265-3671

GRADING & DRAINAGE PLAN
CARDINAL FENCE

DESIGN BY	G.C.J.	No.	Date	By	Revision	JOB NO. 881391
DRAWN BY	R.A.R.					DATE 12/88
APPROVED BY	J.G.M.					SHEET 1 OF 1

D-17 / D064

Ref 21 DATE 2-2-89 OP ETP

CITY OF ALBUQUERQUE

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Karla Rosser
CITY CLERK RECORDER

OFFICIAL SEAL NORMETTA SANCHEZ NOTARY PUBLIC STATE OF NEW MEXICO
My Commission Expires: May 8, 1990
Normetta Sanchez

CITY OF ALBUQUERQUE
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PLANS/PLATS ON FILE

FILE DESC: D-17 / D064

PLANS/PLATS 1

F 30 D 24 C 20 B 16 A 12

CITY OF ALBUQUERQUE

C D F