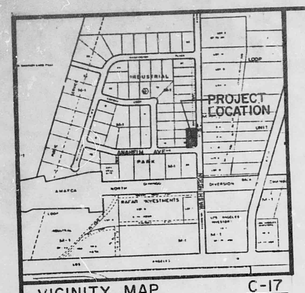
HYDROLOGY

017/D1A1

ONE PLAN



VICINITY MAP C-17

SCALE 1" = 800'

LEGEND

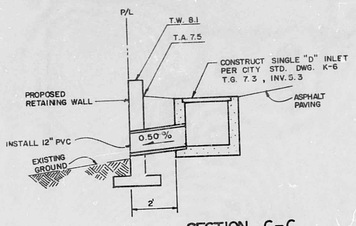
- EXIST. SHOT ELEVATION
- PROPOSED SHOT ELEVATION
- 5100 EXIST. CONTOUR
- 00 PROPOSED CONTOUR
- PROPOSED CONCRETE
- PROPOSED ASPHALT
- CHAINLINK FENCE
- SWALE
- TC TOP OF GRATE
- TW TOP OF WALL

PROJECT BENCHMARK

A STANDARD A.C.S. BRASS CAP, NO. 8-C17, LOCATED 0.3 MI. NORTH OF THE INTER-SECTION OF LOS ANGELES DR. NE & WASHINGTON ST. NE. ELEVATION @ 5111.03 FEET (M.S.L.D.)

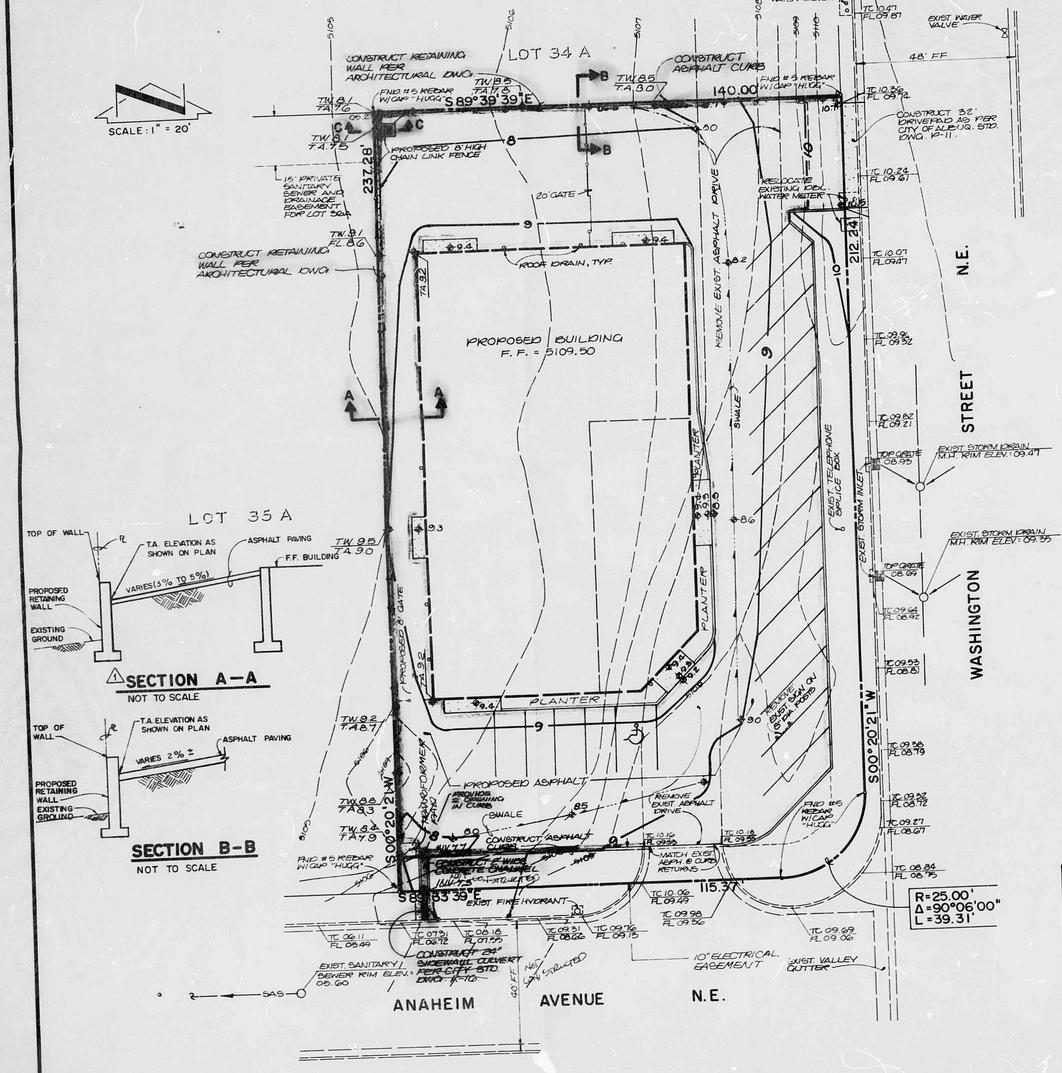
LEGAL DESCRIPTION

LOT 36A CLIFFORD INDUSTRIAL PARK.



SECTION C-C

NOT TO SCALE



SCALE : 1" = 20'

CONSTRUCTION NOTES:

1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, 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.

△6. BACKFILL COMPACTION SHALL BE ACCORDING TO ARTERIAL STREET USE.

△7. MAINTENANCE OF THE 24" SIDEWALK CULVERT ON ANAHEIM AVE. N.E. AS SHOWN HEREON SHALL BE THE RESPONSIBILITY OF THE OWNER OF LOT 36A, CLIFFORD INDUSTRIAL PARK

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.

△1 RESPONSE TO 5/5/86 LETTER

The drainage facility (Section B-B) as shown on sheet 2 of 6 of the Bohannan Report will begin construction in May 1986.

△2

Single "D" Inlet Capacity

Entrance control exists, therefore the capacity shall be analyzed based on the 12" PVC pipe functioning as an orifice:

Orifice Equation: $Q_{capacity} = CA\sqrt{2gh}$

Where C = Orifice Coefficient = 0.80
A = Area of Orifice = 0.79 S.F.
g = 32.2 ft/sec^2
h = head on center of orifice = 1.50'

$Q = (0.80)(0.79)\sqrt{2 \times 32.2 \times 1.50}$

= 6.2 cfs > 5.5 cfs

DRAINAGE PLAN

The following items concerning Lot 36-A, Clifford Industrial Park Drainage Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations

The proposed improvements, as shown by the Vicinity Map are located on the west side of Washington Street N.E. and on the north side of Anaheim Avenue N.E. At present, the site is undeveloped. Several of the surrounding sites are developed. As shown by Plate C-17 of the Albuquerque Master Drainage Study, the site does not lie within a designated Flood Hazard Zone. A Master Drainage Report for the Clifford Industrial Park dated August 1982 was prepared by Bohannan Huston. This report outlines the drainage criteria and schematics for the entire subdivision of which this site is one lot.

The Grading Plans shows 1) existing and proposed grades indicated by spot elevations and contours at 1'0" intervals, 2) the continuity between existing and proposed elevations, 3) the limit and character of the existing improvements, and 4) the limit and character of the proposed improvements. As shown by this plan, the proposed improvements consist of the construction of a warehouse office building and associated landscaping and paving. At present, the site drains from east to west. The site is lower than Washington Street. It is approximately parallel with Anaheim Avenue and the lot to the north and higher than the lot to the west. There is a storm sewer system in Washington Street that intercepts the flows in the street. Therefore, offsite flows are negligible. The site will be graded such that all flows go to the northwest corner of the site. A fifteen foot private sanitary sewer and drainage easement was created for Lot 36-A across Lot 35-A. This will allow the runoff to flow into the drainage system that was established by the Bohannan Report. The Bohannan Report calls for uncontrolled discharge for this site.

The Calculations which appear below analyze the existing and developed conditions for the 100-year, 6-hour rainfall event. The Soil Conservation Service Method has been used for this analysis in accordance with the City of Albuquerque Development Process Manual, Volume II. As shown by these Calculations, the proposed improvements will result in an increase in runoff discharged from the site. This pattern of runoff is consistent with the Master Drainage Plan.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey,
Plate: 22
Hydrologic Soil Group: Embudo EmB, Type B
Existing Pervious CN = 70 (DPM Plate 22.2 C-2
Existing Pasture or Range Land: fair 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)

$T_p = T_c = 10$ min.

Point Rainfall

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

Existing Condition

$A_{total} = 33{,}085$ sf $= 0.76$ Ac

$A_{imp} = 5{,}688$ sf; % impervious = 17 %
Composite CN = 75 (DPM Plate 22.2 C-3)
DRO = 0.5 in (DPM Plate 22.2 C-4)
$q_p = 45.4\ A/T_p = 3.5$ cfs/in runoff

$Q_{100} = Q_{peak} = q_p$ (DRO) $= 1.7$ cfs

$V_{100} = 3630$ (DRO)A $= 1{,}379$ cf

Developed Condition

$A_{total} = 33{,}085$ sf $= 0.76$ Ac

$A_{imp} = 30{,}585$ sf; % impervious = 92 %
Composite CN = 94 (DPM Plate 22.2 C-3)
DRO = 1.6 in (DPM Plate 22.2 C-4)
$q_p = 45.4\ A/T_p = 3.5$ cfs/in runoff

$Q_{100} = Q_{peak} = q_p$ (DRO) $= 5.5$ cfs

$V_{100} = 3630$ (DRO) A $= 4{,}414$ cf

Comparison

$\Delta Q_{100} = 5.5 - 1.7 = 3.8$ cfs increase
$\Delta V_{100} = 4414 - 1379 = 3035$ increase

RECEIVED
AUG 18 1986
HYDROLOGY SECTION

APPROVED FOR DRAINAGE
8/25/86
DATE
Raymond Shaw PE Hydrology
SIGNATURE TITLE

REGISTERED PROFESSIONAL ENGINEER AND LAND SURVEYOR
STATE OF NEW MEXICO
THOMAS T. MANN JR.
4982
5-12-86
8-18-86

NO.	DATE	BY	REVISIONS
△1	5/86	TTM	ADD LETTER RESPONSE, SWALE SECTION
△2	8/86	R.P.	ADD SDWK. CULVERT, TYPE "D" INLET,
			REVISE GRADING
△3	8/86	R.P.	ADD NOTES NO. 6 & 7

811 DALLAS N.E. · ALBUQUERQUE · NEW MEXICO · 87110
ENGINEERS

DESIGNED BY R.P.
DRAWN BY S.G.H.
APPROVED T.T.M.

JOB NO 60701
DATE 4-86

LOT 36A, CLIFFORD INDUSTRIAL PARK

FILE NO.
SHEET 1 OF 1