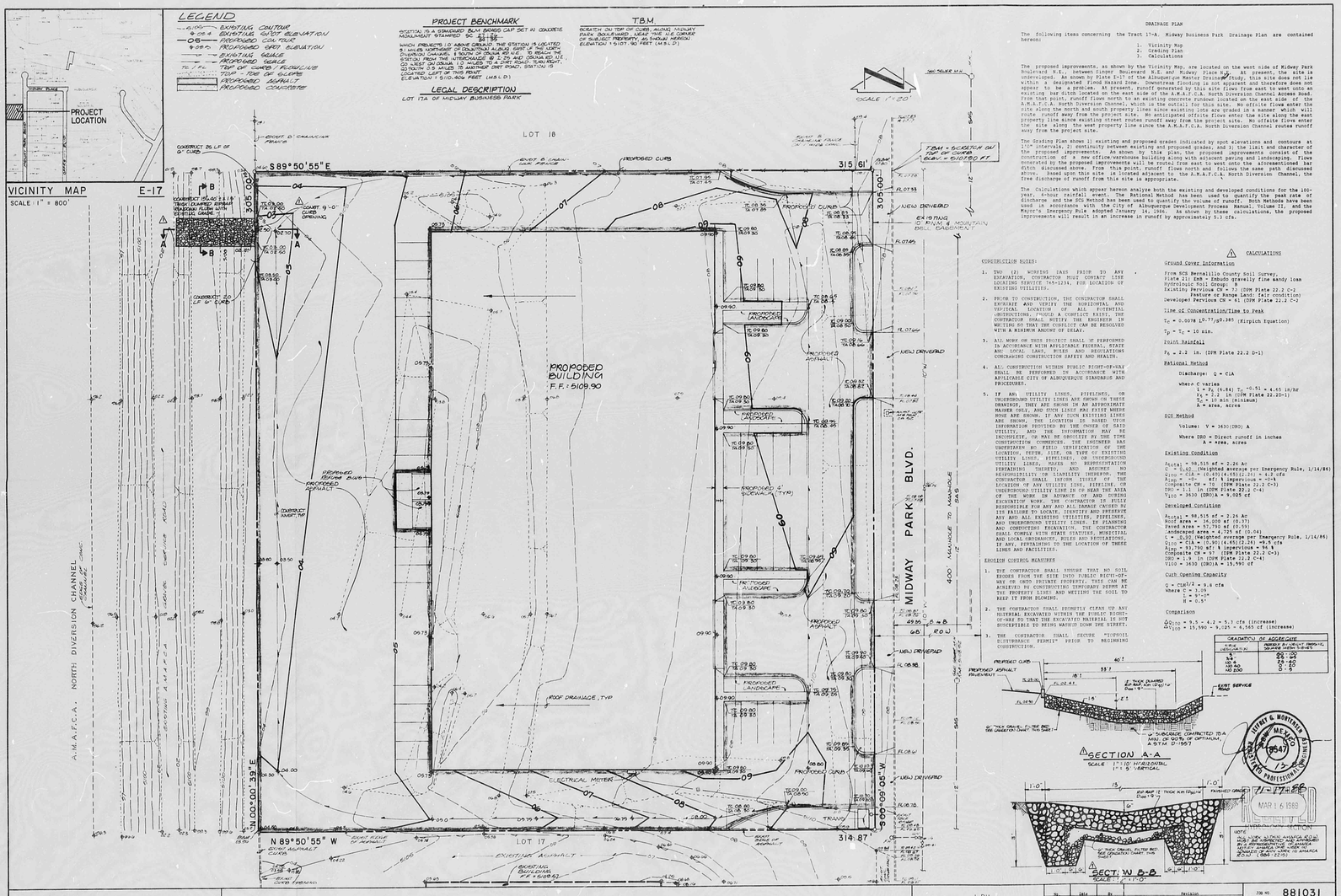
PUBLIC WORKS/HYDROLOGY

E17/D4IT

5921 Midway Pk Blvd.



DRAINAGE PLAN

The following items concerning the Tract 17-A, Midway Business 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 Midway Park boulevard N.E., between Singer Boulevard N.E. and Midway Place N.E. At present, the site is undeveloped. As shown by Plate I-11 of the Albuquerque Master Drainage Study, this site does not lie within a designated Flood Hazard Zone. Downstream flooding is not apparent and therefore does not appear to be a problem. At present, runoff generated by this site flows from east to west onto an existing bar ditch located on the east side of the A.M.A.F.C.A. North Diversion Channel Access Road. From that point, runoff flows north to an existing concrete rundown located on the east side of the A.M.A.F.C.A. North Diversion Channel, which is the outfall for this site. No offsite flows enter the site along the north and south property lines since existing lots are graded in a manner which will route runoff away from the project site. No anticipated offsite flows enter the site along the east property line since Midway Park Street routes runoff away from the project site. No offsite flows enter the site along the west property line since the A.M.A.F.C.A. North Diversion Channel routes runoff away from the project site.

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 office/warehouse building along with adjacent paving and landscaping. Flows generated by the proposed improvements will be routed from east to west onto the aforementioned bar ditch discussed above. From this point, runoff flows north and follows the same path discussed above. Based upon this site is located adjacent to the A.M.A.F.C.A. North Diversion Channel, 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 result in an increase in runoff by approximately 5.3 cfs.

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 LOCATIONS OF ALL UTILITIES AND OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING 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 IT CANNOT BE ASSUMED THAT ALL UTILITY LINES ARE SHOWN OR THAT THE LOCATIONS ARE ACCURATE. 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 THEREOF, AND DISCLAIMS ANY 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 ITS WORK, THE CONTRACTOR SHALL COMPLY WITH ALL 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.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey,
Plate 21: EmB - Embudo gravelly fine sandy loam
Hydrologic Soil Group: B
Existing Pervious CN = 73 (DPM Plate 22.2 C-2
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)

Rational Method

Discharge: Q = CIA

where C varies
$I = P_6\ (6.84)\ T_C^{-0.51} = 4.65$ in/hr
$P_6 = 2.2$ in (DPM Plate 22.2D-1)
$T_C = 10$ min (minimum)
A = area, acres

SCS Method

Volume: V = 36300 (DRO) A

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

Existing Condition

$A_{total} = 98,515$ sf = 2.26 Ac
C = 0.32 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = C1A = (0.32)(4.65)(2.26) = 4.2$ cfs
$A_{imp.} = 0$ sf; % impervious = 0%
Composite CN = 73 (DPM Plate 22.2 C-3)
DRO = 1.1 in (DPM Plate 22.2 C-4)
$V_{100} = 3630$ (DRO)A = 9,025 cf

Developed Condition

$A_{total} = 98,515$ sf = 2.26 Ac
Roof Area = 14,000 sf (0.32)
Paved Area = 57,790 sf (0.59)
Landscaped Area = 4,725 sf (0.04)
C = 0.90 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = C1A = (0.90)(4.65)(2.26) = 9.5$ cfs
$A_{imp.} = 62,790$ sf; % impervious = 64 %
Composite CN = 87 (DPM Plate 22.2 C-3)
DRO = 1.9 in (DPM Plate 22.2 C-4)
$V_{100} = 3630$ (DRO)A = 15,590 cf

Curb Opening Capacity

$Q = CLd^{3/2} = 9.6$ cfs
Where C = 3.09
L = 97'-0"
d = 0.5'

Comparison

$\Delta Q_{100} = 9.5 - 4.2 = 5.3$ cfs (increase)
$\Delta V_{100} = 15,590 - 9,025 = 6,565$ cf (increase)

GRADATION OF AGGREGATE	
SIEVE DESIGNATION	PERCENT BY WEIGHT PASSING SIEVE
1 1/2	100
1	95 - 100
3/8	55 - 85
NO. 4	35 - 60
NO. 40	8 - 30
NO. 200	0 - 6

R# 25 DATE 3-15-02 OP ESP

CITY OF ALBUQUERQUE

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The photographic process used meets the Basic Microfilm Standards of the National Micrographics Association (MS115-1977)

Chas. I. Athey 11/5/02
DIRECTOR

Roberta Duran
NOTARY PUBLIC
OFFICIAL SEAL
Roberta Duran
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires 2/07/02

PLAN SHOT TWICE
ONCE ON LIGHT
ONCE ON DARK

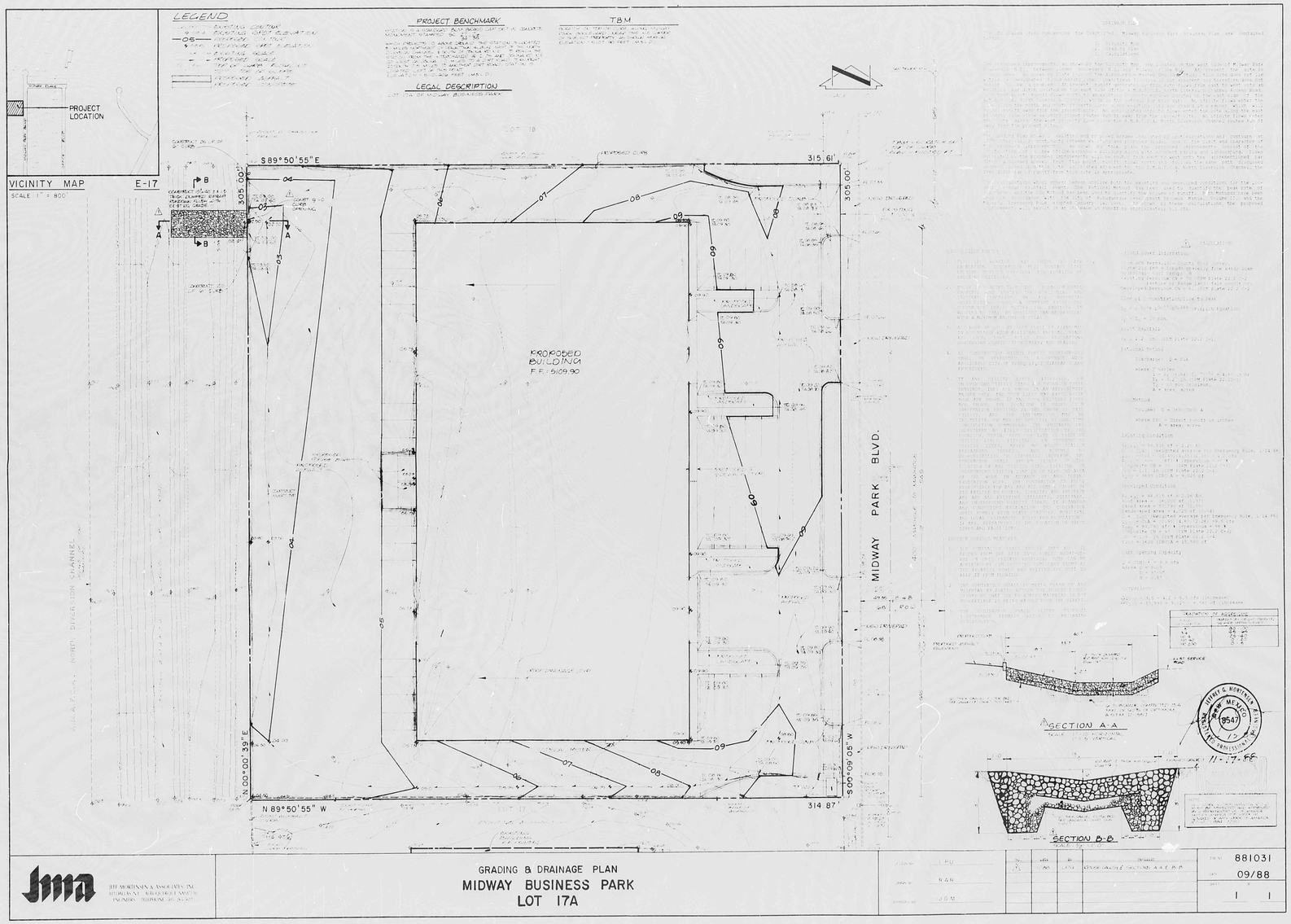
CITY OF ALBUQUERQUE
THIS MICROIMAGE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT.

PLANS/PLATS ON FILE

FILE DESC: E17/D41+

PLANS/PLATS 1

E 30 D 24 C 20 B 16 A 12 CITY OF ALBUQERQUE C D F



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