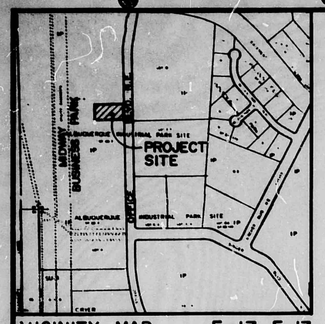
HYDROLOGY

E17/D41H

ONE PLAN



VICINITY MAP E-17, F-17

SCALE: 1" = 800'

PROJECT BENCHMARK

STATION IS A STANDARD BLM BRASS CAP, SET IN CONCRETE MONUMENT STAMPED BC $\frac{S1}{S2}\frac{S6}{S5}$, WHICH PROJECTS 1.0' ABOVE GROUND. THE STATION IS LOCATED 5.1 MILES NORTHEAST OF DOWNTOWN ALBUQ. EAST OF THE NORTH DIVERSION CHANNEL AND SOUTH OF OSUNA RD. N.E. TO REACH THE STATION FROM THE INTERCHANGE AT I-25 AND OSUNA RD. N.E., GO WEST ON OSUNA 1.0 MILES TO A DIRT ROAD, TURN RIGHT, GO SOUTH 0.5 MILES TO ANOTHER DIRT ROAD. THE STATION IS LOCATED LEFT OF THIS POINT.

ELEVATION = 5110.406 FEET (M.S.L.D.)

TBM #1

TOP OF CURB, ELEVATION AT A PROJECTION OF THE NORTHEASTERN PROPERTY CORNER AS SHOWN ON THE DRAWING BELOW.

ELEVATION = 5121.03 FEET (M.S.L.D.)

TBM #2

A SQUARE, □, CHISELED IN THE ℞ & ℄ OF THE CONCRETE CHANNEL, CHANNEL LOCATED AT THE SOUTHWEST PROPERTY CORNER AS SHOWN ON THE DRAWING BELOW.

ELEVATION = 5114.53 FEET (M.S.L.D.)

LEGAL DESCRIPTION

LOT 2B, MIDWAY BUSINESS PARK

LEGEND

◆	PROPOSED SPOT ELEVATION
◆	EXISTING SPOT ELEVATION
5G	PROPOSED CONTOUR
5550	EXISTING CONTOUR
	SWALE
	PROPERTY LINE
	CONCRETE
	PROPOSED ASPHALT
	PROPOSED FENCE
	EXISTING FENCE
T.C. 02.00	TOP OF CURB
FL. 01.65	FLOW LINE

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.

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.

DRAINAGE PLAN

The following items concerning the Lot 2B, Midway Business Park Office/Warehouse 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 Office Bouleverd N.E. within Midway Business Park. The site is undeveloped.

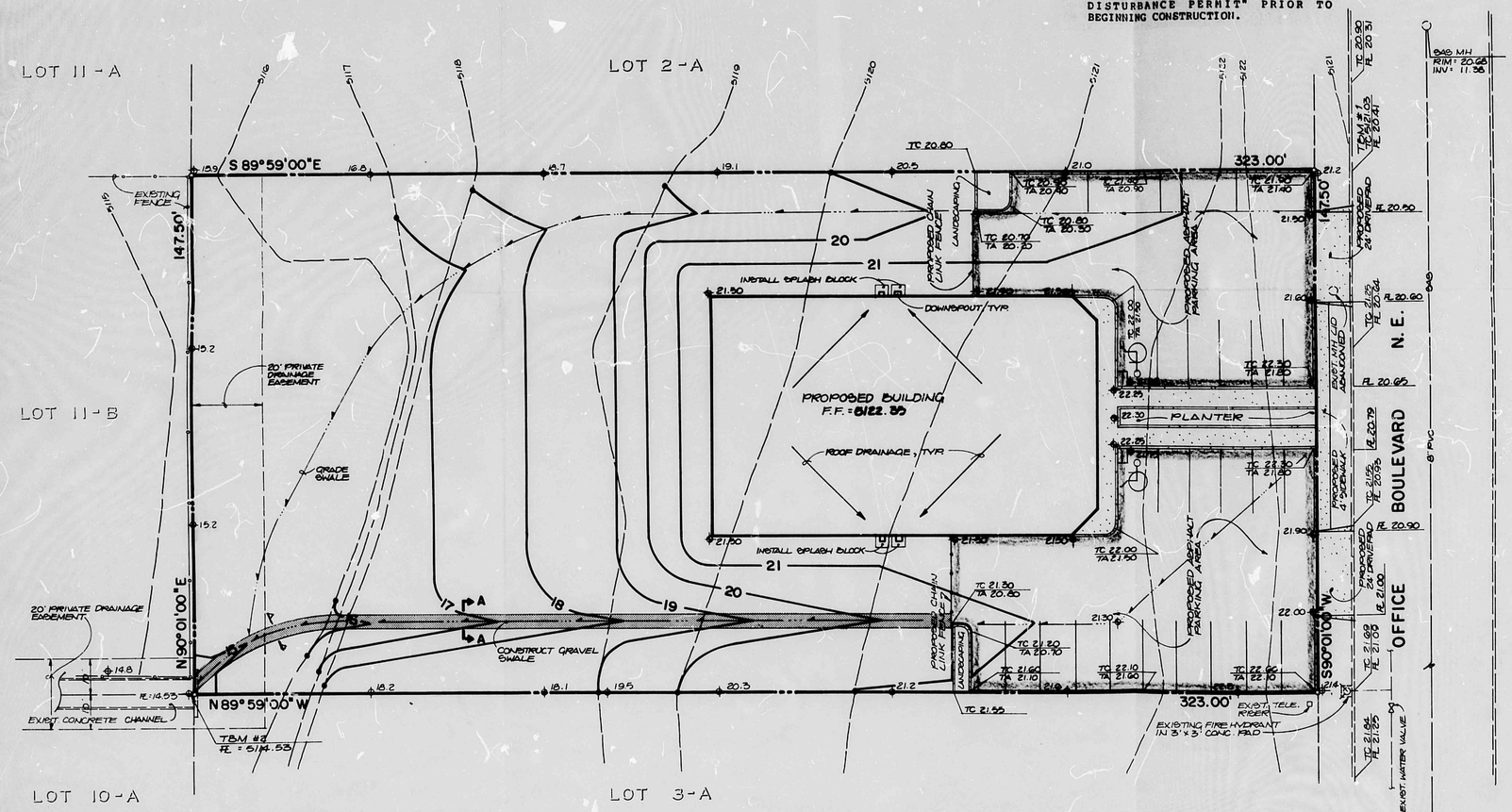
As shown by Plates E-17 and F-17 of the Albuquerque Master Drainage Study, the site does not lie within a designated Flood Hazard Zone. At present, runoff generated by the site flows from east to the west toward an existing concrete drainage channel located at the southwest corner of the site. The channel slopes at approximately 2% to the west and discharges onto Midway Park Bouleverd. From this point the runoff flows north to another channel just north of Midway Place Street. The runoff enters this channel which then discharges into the A.M.A.F.C.A. North Diversion channel. No offsite flows will enter from the east due the to development of Office Boulevard N.E. which conveys flows to the north to Midway Place N.E.

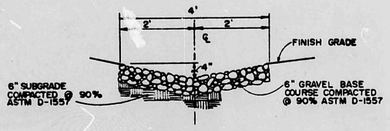
The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contours at 1'-0" intervals, 2) continuity between existing and proposed grades, and 3) the limit and character of the proposed improvements. As shown by this plan, the proposed improvements consist of the construction of the office/warehouse along with adjacent landscaping and paving. Flows generated from the north side of the parking lot flow westward through the proposed chain link fence, then into a graded swale that leads to the concrete channel where it meets with the discharge from the southern portion of the site. This flow from the south is conveyed to the existing concrete channel by a gravel swale. From this point, the runoff follows the same path described above.

The Master Drainage Plan for Midway Business Park (E17-D41, Section 1-C), contains the site to be developed. The site lies within Drainage Basin 1-C which contains 4.2 acres. Drainage Basin 1-C is allowed the free discharge of 16.0 cfs. This permits 16.0 cfs/4.2 acres, or 3.8 cfs/acre. This site is 1.03 acres, therefore, 3.9 cfs/acre x 1.03 acres = 4.0 cfs is an allowable discharge for this site and free discharge is appropriate.

The Calculations shown hereon analyze both the existing and proposed conditions for the 100-year, 6-hour rainfall event. The Rational Method has been used in accordance with the City of Albuquerque Development Process Manual, Volume II. As shown by these calculations, the peak discharge to the concrete channel is increased by approximately 1.0 cfs.

RECEIVED OCT 08 1985 HYDROLOGY SECTION





SECTION A-A

SCALE: 1" = 2'

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey, Plate 21:
EmB Embudo gravelly fine sandy loam
Hydrologic Soil Group B

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 22.2 D-1)
$T_c = 10$ min (minimum)
A = area, acres

Volume: $V = CP_6A(1/12)$
where C varies
$P_6 = 2.2$ in (DPM Plate 22.2 D-1)
A = area, acres

Existing Condition

$A_{total} = 47,640$ sf = 1.09 Ac
$A_{imp} = 0$ sf; % impervious = 0%
$C^{ex} = 0.34$ (DPM Plate 22.2 C-1)
$Q_{100} = CiA = 0.34(4.65)(1.09) = 1.7$ cfs
$V_{100} = CP_6A = 0.34(2.2/12)(47,640) = 2,970$ cf

Developed Condition

$A_{total} = 47,640$ sf = 1.09 Ac
$A_{imp} = 19,710$ sf; % impervious = 41%
$C^{pr} = 0.53$ (DPM Plate 22.2 C-1)
$Q_{100} = CiA = 0.53(4.65)(1.09) = 2.7$ cfs
$V_{100} = CP_6A = 0.53(2.2/12)(47,640) = 4,630$ cf

Comparison

$\Delta Q_{100} = 2.7 - 1.7 = 1.0$ cfs (increase)
$\Delta V_{100} = 4,630 - 2,970 = 1,660$ cf (increase)

Gravel Swale Capacity

Area = 4' x 0.3' = 1.2 sf
R = A/P = 1.2/4 = 0.30
n = 0.020
s = 0.027
$Q = (1.49/n) A R^{2/3} s^{1/2}$
$= (1.49/0.020)(1.2)(0.30)^{2/3}(0.027)^{1/2}$
$= 6.5$ cfs $> Q_{100} = 2.7$ cfs

RECEIVED OCT 08 1985 HYDROLOGY SECTION

JEFFREY G. MORTON NEW MEXICO 9547 10-07-85 REGISTERED PROFESSIONAL ENGINEER

Tom Mann Associates Inc.
811 DALLAS, N.E. • ALBUQUERQUE • NEW MEXICO • 87110
ENGINEERS

NO.	DATE	BY	REVISIONS

DESIGNED BY: R.H.D.
DRAWN BY: S.G.H.
APPROVED: J.G.M.

JOB NO. 51111
DATE 10·85

GRADING AND DRAINAGE PLAN
LOT 2-B, MIDWAY BUSINESS PARK

E17/D41H

FILE NO.
SHEET 1 OF 1