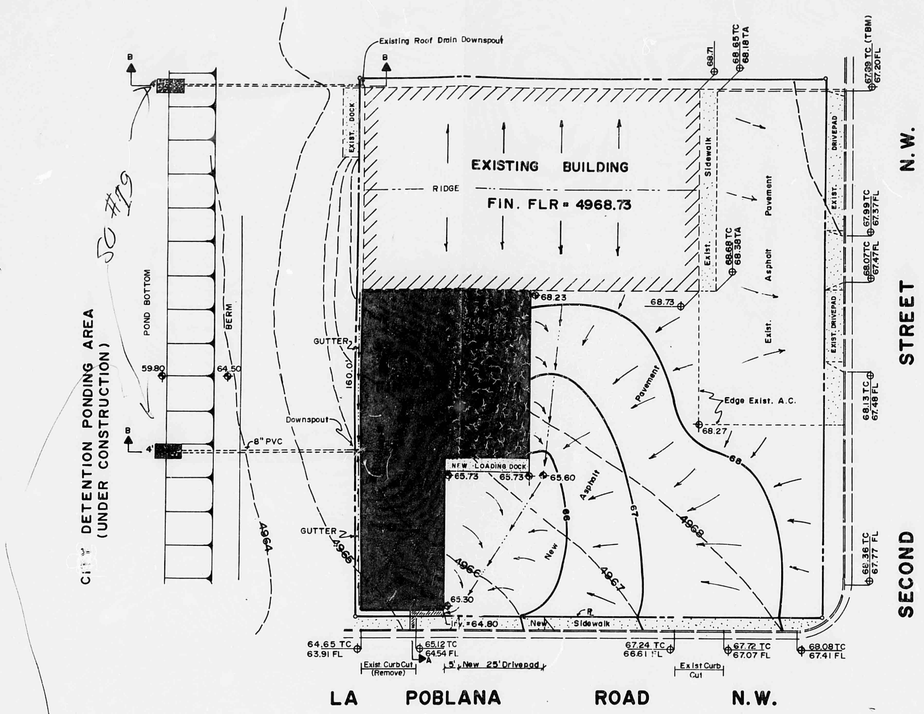
HYDROLOGY

H14/D50
1 PLAN

H14/D50

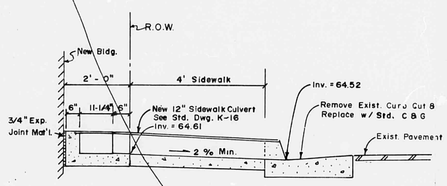
1 Plan



NORTH

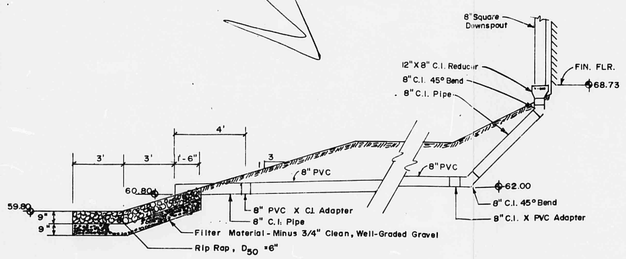
GRADING AND DRAINAGE PLAN

SCALE 1" = 20'



SECTION A-A

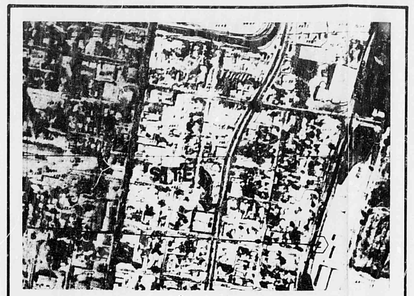
1X2" = 1' - 0"



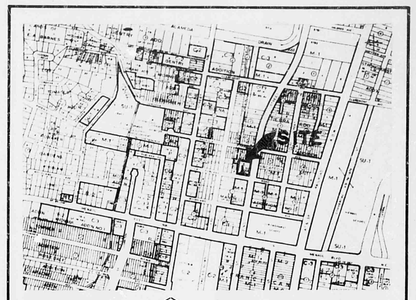
SECTION B-B

1/4" = 1' - 0"

LEGEND EXISTING	NEW	DESCRIPTION
— — — —	68	CONTOUR
✦	✦	SPOT ELEVATION
— · — · —	—	PROPERTY LINE
← —	← —	FLOW DIRECTION
	TC	TOP OF CURB (CONCRETE)
	TA	TOP OF ASPHALT
	FL	FLOW LINE



FLOODWAY MAP — NORTH — PANEL NO. 22 OF 50



VICINITY MAP — NORTH — ZONE ATLAS NO. H-14

DRAINAGE CALCULATIONS

I. REFERENCES:

A. CITY OF ALBUQUERQUE DEVELOPMENT PROCESS MANUAL (DPM) VOLUME 2, DESIGN CRITERIA, CHAPTER 22.

B. FLOODWAY MAP, PANEL 22 OF 50, (FEMA), OCTOBER 14, 983.

C. SOIL SURVEY OF BERNALILLO COUNTY, NEW MEXICO, U.S. SOIL CONSERVATION SERVICE, JUNE, 1977.

II. ON-SITE RUNOFF CHARACTERISTICS:

A. UNDEVELOPED RUNOFF COEFFICIENT:

TYPE OF SURFACE	AREA	"C" VALUE	AREA ("C")
STREETS, DRIVES, WALKS	3700	0.95	3515
ROOFS	6000	0.90	5400
LAWNS & LANDSCAPING			
UNDEVELOPED	12700	0.40	5080
TOTAL AREA	22400 = 0.51 AC		13995

WEIGHTED "C" VALUE = 13995 / 22400 = 0.62

PERCENT IMPERVIOUS = 43%

B. DEVELOPED RUNOFF COEFFICIENT:

TYPE OF SURFACE	AREA	"C" VALUE	AREA ("C")
STREETS, DRIVES, WALKS	12775	0.95	12136
ROOFS	9625	0.90	8663
LAWNS & LANDSCAPING			
UNDEVELOPED			
TOTAL AREA	22400		20799

WEIGHTED "C" VALUE = 20799 / 22400 = 0.93

PERCENT IMPERVIOUS = 100%

C. RAINFALL, 100-YR.,6-HR.:(REF. A., PLATE 22.2 D-1) P_6 = 2.2 INCHES

D. TIME OF CONCENTRATION: 10 MINUTES

E. RAINFALL INTENSITY.I (REF. A., PLATE 22.2 D-2)

$I = P_6 X 6.84 X (T_c)^{-0.51} = (2.2) 6.84 (10)^{-0.51} = 4.65 IN/HR$

F. SOIL TYPE (REF. I.C., SHEET NO. 20) SOIL IS Gb, GILA LOAM, HYDROLOGIC SOIL GROUP "B".

G. RUNOFF CURVE NUMBER (CN)-(REF.I.A., PLATE 22.2 C-4)
UNDEVELOPED LAND USE: BUSINESS AND COMMERCIAL
UNDEVELOPED CN = 88
DEVELOPED LAND USE: BUSINESS AND COMMERCIAL
DEVELOPED CN = 98

H. DIRECT RUNOFF, Q_p, INCHES (REF. I.A., PL. 22.2 C-4)
UNDEVELOPED Q_p = 1.25 IN. DEVELOPED Q_p = 2.0 IN.

III. ON-SITE PEAK DISCHARGE BY RATIONAL EQUATION:

A. EXISTING CONDITIONS:
Q_{100} = 0.62 X 4.65 X 0.51 = 1.47 CFS
Q_{10} = 0.657 X 1.47 = 0.96 CFS

B. DEVELOPED CONDITIONS:
Q_{100} = 0.93 X 4.65 X 0.51 = 2.21 CFS
Q_{10} = 0.657 X 2.21 = 1.45 CFS

IV. ON-SITE VOLUME BY S.C.S. METHOD:

A. EXISTING CONDITIONS:
V_{100} = AREA (Q_p/12) = 22400 (1.25/12) = 2333 CF
V_{10} = 0.657 X 2333 = 1533 CF

B. DEVELOPED CONDITIONS:
V_{100} = AREA (Q_p/12) = 22400(2.0/12) =3733 CF
V_{10} = 0.657 X 3733 = 2453 CF

V. ROOF DRAINAGE OUTFALL:

AREA = 5125 SF = 0.12 ACRE Q = CIA = 0.9 X 4.65 X 0.12 = 0.5 CFS PER ARMCO PIPE CALCULATOR, A 6" DIAMETER PVC PIPE, N = 0.009 WILL CARRY 1.5 CFS ON A SLOPE OF 4.4%. A 6" PIPE IS ADEQUATE. HOWEVER, FOR EASE OF MAINTENANCE, USE 8" DIAMETER.

EROSION CONTROL PLAN:

CONSTRUCT A 1.0 FOOT HIGH BERM ALONG THE LOWER PROPERTY LINE AT THE SW CORNER OF THE SITE TO INTERCEPT ALL RUNOFF FROM THE SITE DURING THE PERIOD THAT THE BUILDING IS UNDER CONSTRUCTION.

DRAINAGE COMMENTS:

1. THE SITE DOES NOT LIE WITHIN OR ADJACENT TO A DESIGNATED FLOOD HAZARD AREA. (SEE FLOODWAY MAP INSET.)

2. THERE IS NO OFF-SITE FLOW ASSOCIATED WITH THIS SITE.

3. RUNOFF FROM THE SOUTH SIDE OF THE EXISTING BUILDING WILL FLOW ONTO THE NEW BUILDING OR ONTO THE NEW ASPHALT PARKING LOT, AS THE CASE MAY BE.

4. THE NEW BUILDING ROOF WILL DRAIN TO GUTTERS ON THE WEST WALL. THESE GUTTERS WILL DRAIN TO A SINGLE DOWNSPOUT AT THE MID-POINT OF THE WEST WALL OF THE NEW BUILDING.

5. THE DOWNSPOUT DISCUSSED IN ITEM 3 ABOVE WILL DISCHARGE INTO THE CITY OF ALBUQUERQUE PONDING AREA. CONSTRUCTION OF THIS PONDING AREA WILL COMMENCE IN EARLY DECEMBER AND WILL BE COMPLETED IN FEBRUARY OR MARCH, 1987. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE ROOF DRAIN OUTFALL LINE WITH THE CITY'S CONTRACTOR FOR THE PONDING AREA.

6. THE NEW ASPHALT PAVEMENT WILL DRAIN TO A SIDEWALK CULVERT LOCATED AT THE EAST END OF THE EXISTING 18-FOOT CURB CUT WHICH IS TO BE REMOVED. A SECTION SIMILAR TO THE SIDEWALK CULVERT SHALL BE CONTINUED EAST TO THE SE CORNER OF THE BUILDING SO THAT THE GRADES IN THE LOADING DOCK AREA WILL BE SUFFICIENTLY STEEP FOR POSITIVE DRAINAGE. THE CHANNEL PARALLELING THE SIDEWALK SHALL BE COVERED WITH A STEEL PLAT, TO PREVENT A TRIPPING HAZARD.

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY

NOTICE TO CONTRACTOR

1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY. AN APPROVED COPY OF THESE PLANS MUST BE SUBMITTED AT THE TIME OF APPLICATION FOR THIS PERMIT.

2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH INTERIM SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1985.

3. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.

4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.

5. BACKFILL COMPACTION SHALL BE ACCORDING TO RESIDENTIAL STREET USE.

6. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.

7. THE ADDRESS OF THE PROPERTY SERVED IS 2819 SECOND ST. NW

APPROVALS:

HYDROLOGY	Bernie J. Montoya	11/23/86 (DATE)
INSPECTOR	Jerry G. Mathews (NAME)	6/11/87 (DATE)
CONSTRUCTION	(NAME)	6/12/87 (DATE)

BENCH MARK:

NGSHC BRASS TABLET NM 47-12, LOCATED APPROXIMATELY 175' NORTH OF INTERSECTION OF SECOND STREET AND PHOENIX AVENUE. ELEVATION 4967.899 FEET.

TEMPORARY BENCH MARK - A SQUARE AND LETTERS TBM PAINTED WITH BLACK PAINT ON TOP OF CURB AT THE NE CORNER OF THE SITE. ELEVATION 4967.89 FEET.

LEGAL DESCRIPTION:

TRACT "A", M-M ADDITION, AS SHOWN AND DESIGNATED ON THE AMMENDED PLAT OF SAID ADDITION FILED IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY ON DECEMBER 31, 1974.

REVISED 10/28/86

Science West - 36451 H14/D50

FRANK D. LOVELA — NEW MEXICO — 6512 — REGISTERED PROFESSIONAL ENGINEER — 10/21/86

GRADING AND DRAINAGE PLAN
WAREHOUSE BUILDING
FOR
MR. MEL MONTOYA
2819 SECOND STREET, NW
ALBUQUERQUE, NM

RECEIVED OCT 28 1986 HYDROLOGY SECTION