City of Albuquerque

November 5, 1991

Frank Lovelady, P.E.
Lovelady & Associates
7408 Morrow, NE
Albuquerque, New Mexico   87110

    RE: DRAINAGE PLAN FOR A NEW OFFICE BUILDING FOR AGUAMATIC SPRINKLER
         & LANDSCAPE (K-19/D97) ENGINEER'S STAMP DATED OCTOBER 28, 1991

Dear Mr. Lovelady:

Based on the information provided on your submittal of October 29, 1991, the above referenced plan is approved for Building Permit.

Please attach a copy of this plan to the construction sets prior to sign-off by Hydrology.

If I can be of further assistance, please feel free to call me at 768-2650.

                     Cordially,

                     Bernie J. Montoya, C.E.
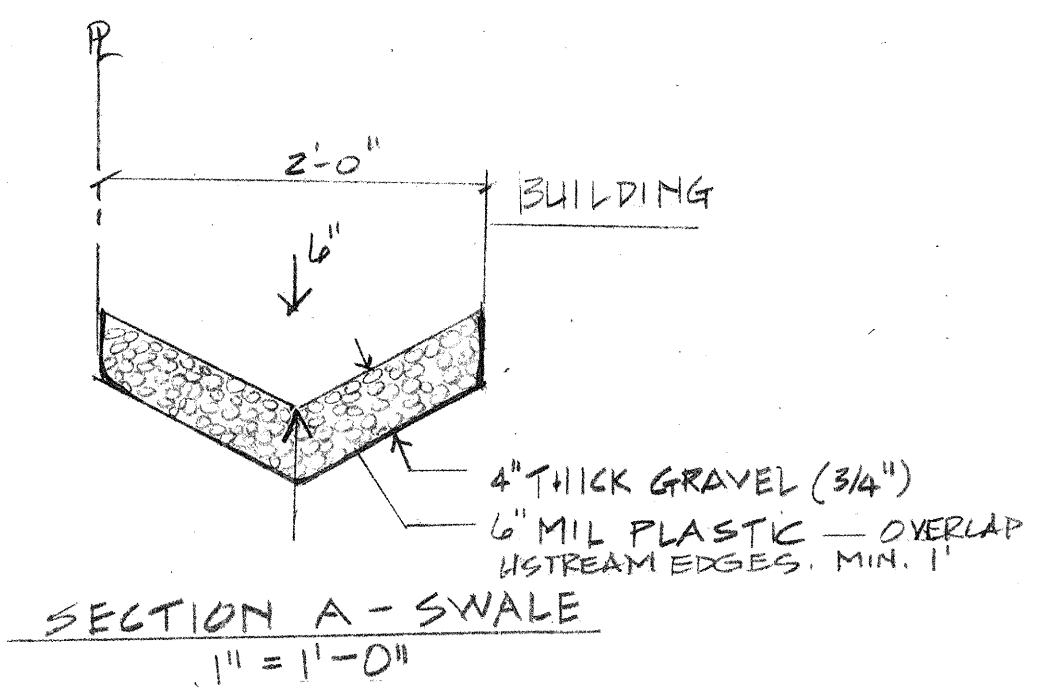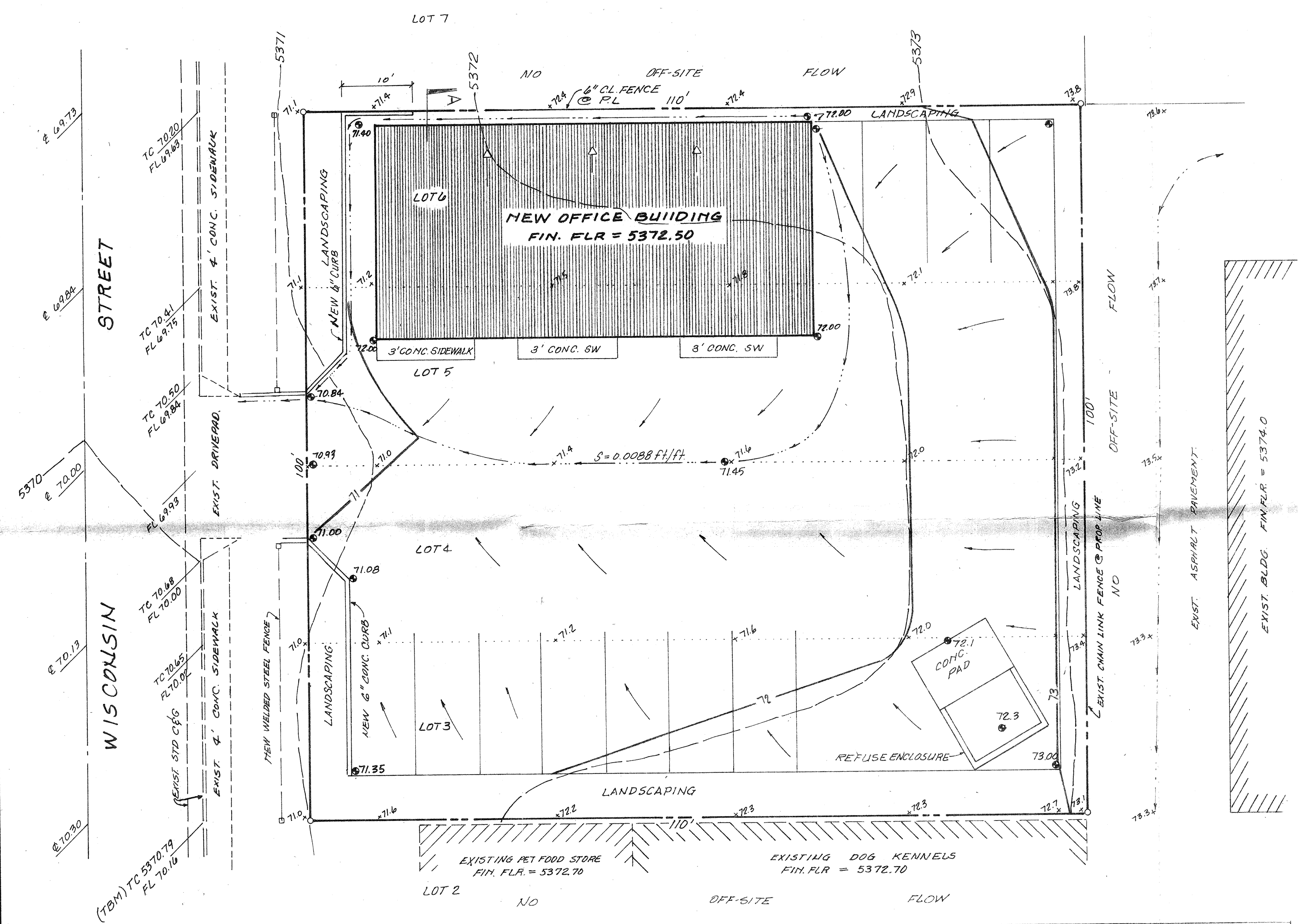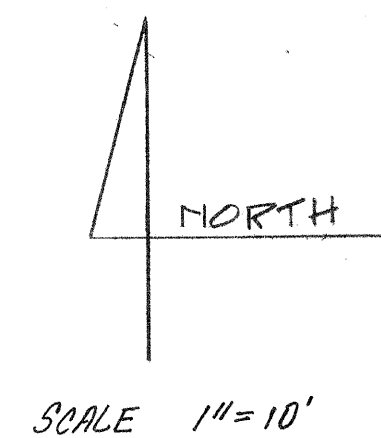   Engineering Assistant

BJM/bsj
(WP+3019)

PUBLIC WORKS DEPARTMENT

Walter H. Nickerson. Jr., P.E.   ENGINEERING GROUP   Telephone (505) 768-2500
Assistant Director Public Works

AN EQUAL OPPORTUNITY EMPLOYER

NORTH

SCALE 1" = 10'

SITE

Site Plan Labels

LOT 7

NO   OFF-SITE   FLOW
6" CL FENCE @ PL
LANDSCAPING

LOT 6
NEW OFFICE BUILDING
FIN. FLR = 5372.50

LOT 5
3' CONC. SIDEWALK   3' CONC. SW   3' CONC. SW

NEW 6" CURB
NEW LANDSCAPING

S = 0.0088 ft/ft

WISCONSIN STREET

EXIST. 4' CONC. SIDEWALK
EXIST. DRIVEPAD
EXIST 6' CONC. SIDEWALK
EXIST STD CG
NEW WELDED STEEL FENCE
NEW 6" CONC CURB

LOT 4

LANDSCAPING

LOT 3
CONC PAD

LANDSCAPING
REFUSE ENCLOSURE

EXISTING PET FOOD STORE
FIN. FLR. = 5372.70
LOT 2

EXISTING DOG KENNELS
FIN. FLR. = 5372.70

NO   OFF-SITE   FLOW

EXIST CHAIN LINK FENCE @ PROP LINE
EXIST ASPHALT PAVEMENT
EXIST BLDG FIN FLR = 5374.0

(TBM) TC 5370.79
TC 5370.16

Section Detail

2'-0"
BUILDING
6"
4" THICK GRAVEL (3/4")
6" MIL PLASTIC — OVERLAP UPSTREAM EDGES MIN. 1'

SECTION A - SWALE
1" = 1'-0"

EROSION CONTROL NOTES:

The contractor shall be responsible for compliance with the following:

1. No sediment-bearing water shall be allowed to discharge from the site.

2. During grading operations and until the project has been completed, adjacent property, rights-of-way and easements shall be protected from flooding by runoff from the site.

3. Should the contractor fail to prevent sediment-bearing water from entering public right-of-way or adjacent private property, he shall promptly remove all sediment originating from the site.

4. Control of sediment-bearing waters shall be accomplished by use of a compacted earth berm along the downstream perimeter of the property.
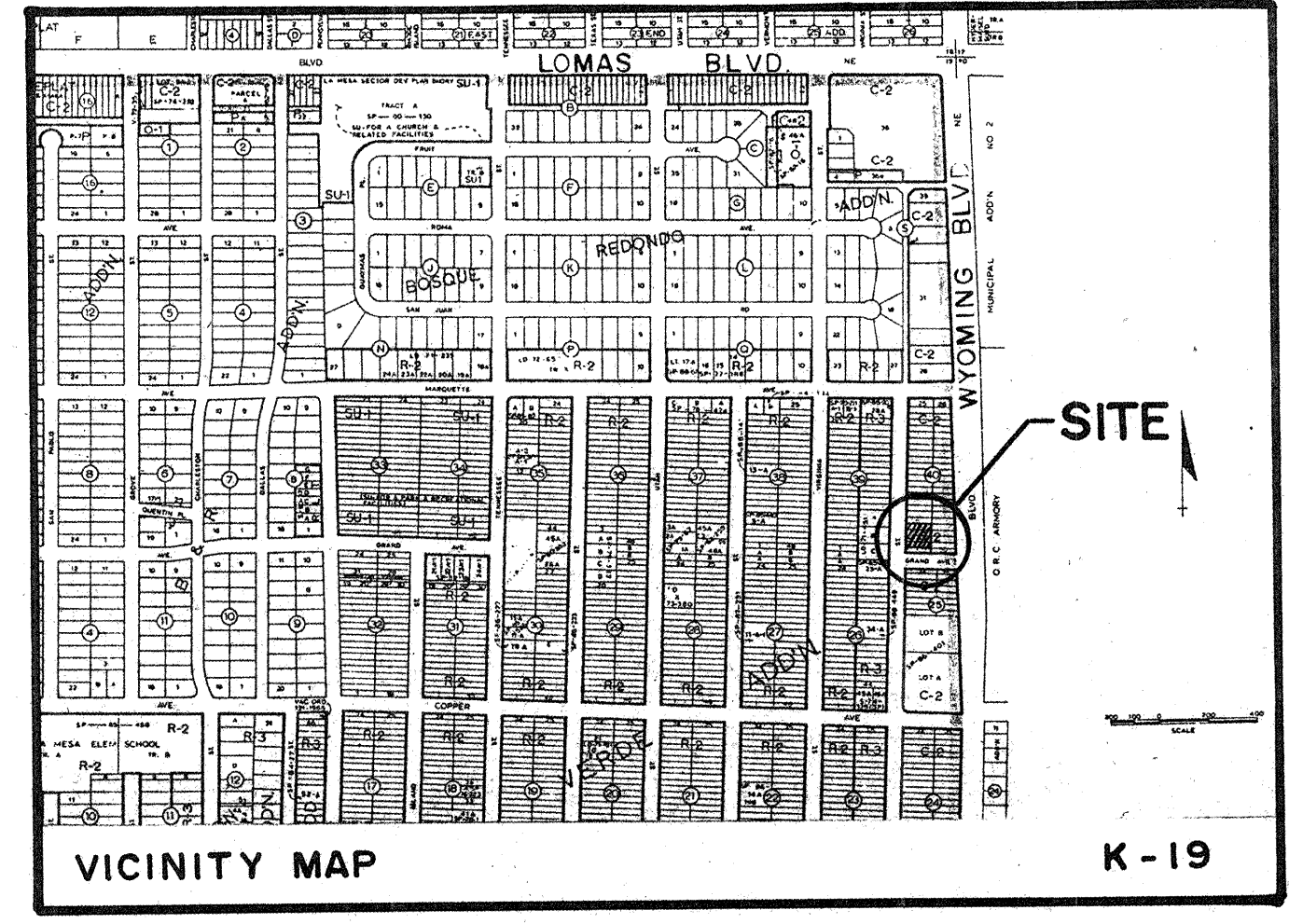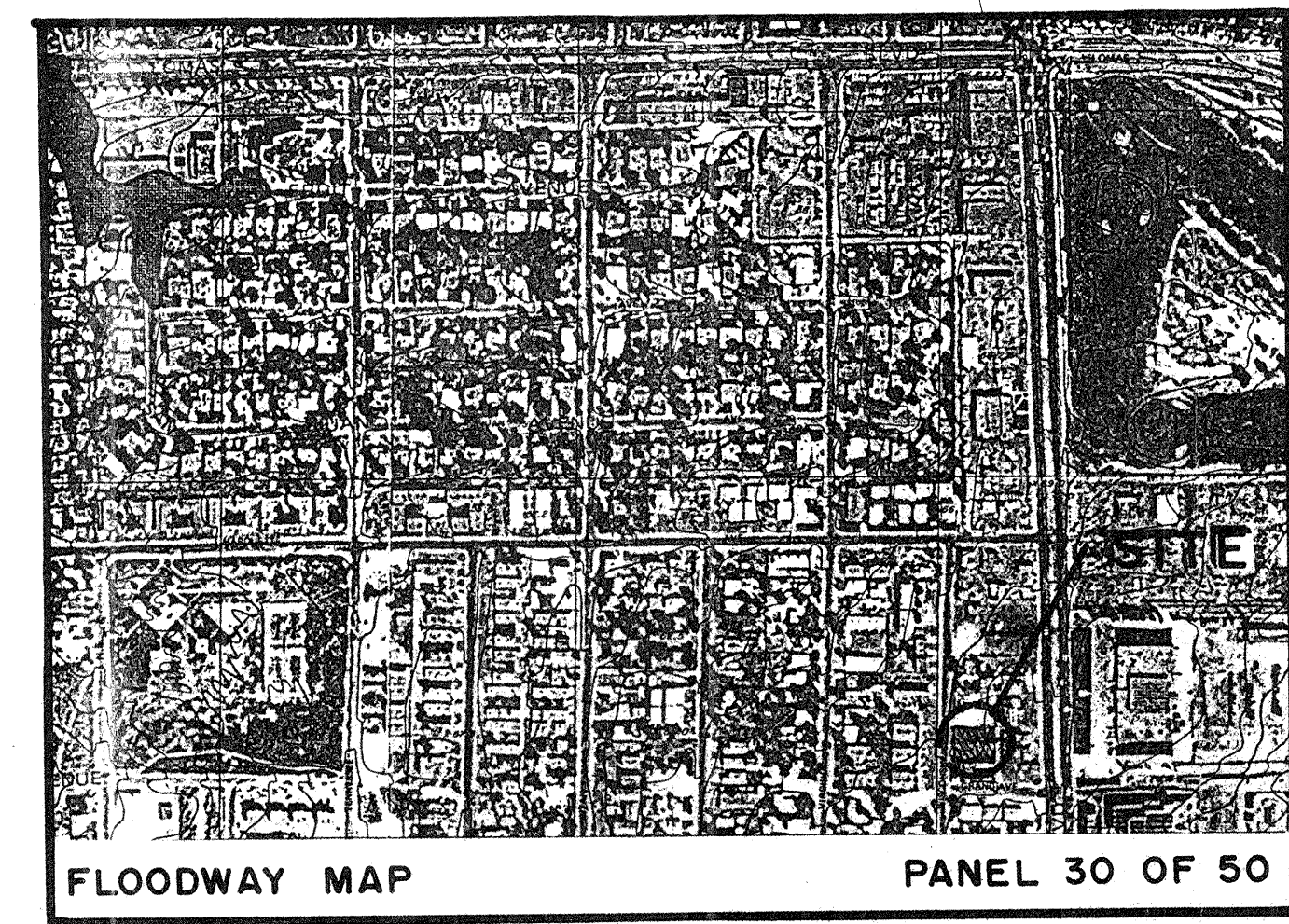
EXISTING CONDITIONS:

The site is located on the east side of Wisconsin Street. The site is fenced and unpaved. There is on off-site flow. The site is not adjacent to a designated flood zone but there is a flood zone downstream on Louisiana Blvd.

DEVELOPED CONDITIONS:

The site will drain through the existing drivepad into Wisconsin Street. The building roof slopes to the north and roof runoff will be carried between the building and property line in a gravel-lined swale.

DOWNSTREAM CAPACITY ANALYSIS:

The site is an in-fill site. In accordance with verbal communication with City Hydrology, 1 cfs increase in Q_{100} should not be exceeded.

SOIL INFORMATION:

(Refer to "Soil Survey of Bernalillo County", June 1977). Soil is TgB, Tijeras gravelly fine sandy loam, 1 to 5 percent slopes, hydrologic soil group "B".

TIME OF CONCENTRATION:

Use ten (10) minutes, minimum time of concentration.

RAINFALL, 100-YEAR, 6-HOUR:

(Refer to D.P.M. Plate 22.2 D-1). R_6 = 2.4 inches.

RAINFALL INTENSITY:

$I = R_6 \times 6.84 \times Tc^{-0.51} = 2.4 \times 6.84 \times 10^{-0.51} = 5.07$ inches per hour.

SITE IMPERVIOUSNESS:

Surface Type	"C"	"CN"	Direct Runoff	Existing Area (Sq. Ft.)	Developed Area (Sq. Ft.)
Building Roof	0.90	98	2.20		1860
Asphalt & Conc.	0.95	98	2.20		7713
Landscaping	0.25	61	0.21		1427
Unpaved	0.40	82	0.95	11000	—
Totals				11000	11000

WEIGHTED "C" VALUE:

Existing: C = 0.40

Developed:

$C_w = (0.90 \times 1860 + 0.95 \times 7713 + 0.25 \times 1427) / 11000 = 0.85$

PEAK DISCHARGE:

Existing: $Q_{100} = 0.40 \times 5.07 (11000/43560) = 0.51$ cfs.
$Q_{10} = 0.657 \times 0.51 = 0.34$ cfs

Developed:

$Q_{100} = 0.85 \times 5.07 (11000/43560) = 1.09$ cfs
$Q_{10} = 0.657 \times 1.09 = 0.72$ cfs

Note: Increase in discharge resulting from development is less than 1 cfs. Therefore, unrestricted discharge is acceptable.

VOLUME, 100-YEAR AND 10-YEAR, 6-HOUR:

Existing: $V_{100} = 11000 (0.95 / 12) = 871$ cf.
$V_{10} = 0.657 \times 871 = 572$ cf.

Developed:

$V_{100} = (2.20 \times 9573 + 0.21 \times 1427) / 12 = 1780$ cf.
$V_{10} = 0.657 \times 1780 = 1169$ cf.

BUILDING RUNOFF:

$Q = 0.90 \times 5.07 (62 \times 30)/43560 = 0.19$ cfs

Try 6" deep, 2' wide swale with 3/4" X 4" thick gravel lining. N = 0.035

Side slopes, 2:1 A = $(1.32 \times 0.33)\frac{1}{2}$ = 0.22 sf P = $2(0.66^2 + 0.33^2)^{1/2}$ = 1.47

R = A/P = 0.22 / 1.47 = 0.1497 Use Manning's Equation.

$Q = A(1.486 / N)R^{2/3}S^{1/2} = 0.22(1.486/0.035)0.1497^{2/3} \times 0.0100^{1/2} = 0.26$ cfs

0.26 cfs > 0.19 cfs, therefore, swale is adequate.

BENCH MARK:

Station 7-K20 located at the intersection of Gen. Stillwell and Copper, N.E., in the S.W. quadrant of the intersection. A square chiseled on the WSW curb return. Elevation = 5391.057 Feet.
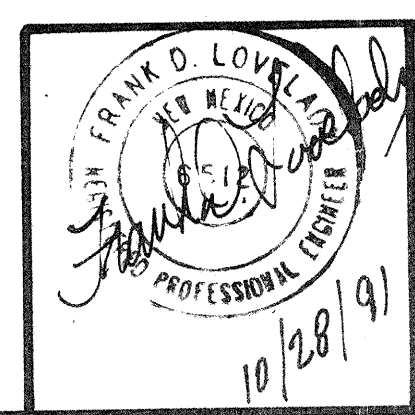
TEMPORARY BENCH MARK (TBM):

A 2" square and letters "TBM" painted with black paint on top of curb at a point opposite the SW corner of the site. Elevation = 5370.79

LEGAL DESCRIPTION:

Lots numbered three (3), four (4), five (5) and six (6) in Block Forty (40) of Mesa Verde Addition to the City of Albuquerque, New Mexico, as the same are shown and designated on the map of said addition, filed in the office of the County Clerk of Bernalillo County, New Mexico, on November 17, 1939 in Map Book C, Folio 38.

NOTES:

1. See Architectural Site Plan for dimensions of building and parking lot.

2. Add 0.5' to asphalt elevations to obtain top curb elevations.

LEGEND:

EXISTING	NEW	DESCRIPTION
—5373—	—73—	CONTOUR
x72.0	72.0	SPOT ELEVATION
————		PROPERTY LINE
→		SHEET FLOW
		SWALE
	TA	TOP OF ASPHALT
	TC	TOP OF CURB
	FL	FLOW LINE

OCT 2 9 1991
HYDROLOGY DIVISION

FRANK D. LOVELACE
NEW MEXICO
PROFESSIONAL ENGINEER
10/28/91

GRADING & DRAINAGE PLAN
NEW OFFICE BUILDING FOR
AGUAMATIC SPRINKLER & LANDSCAPE
ALBUQUERQUE, NEW MEXICO