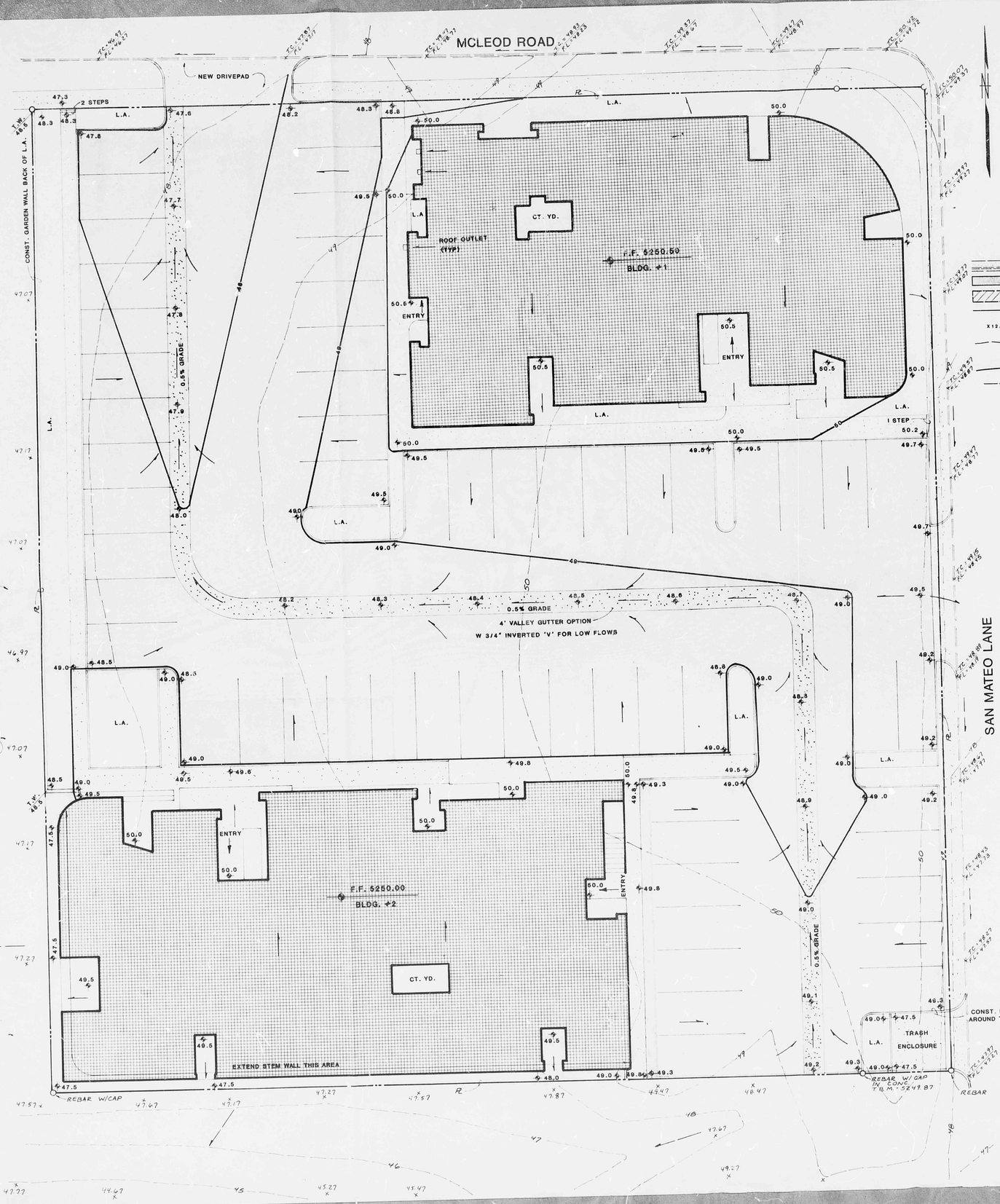
HYDROLOGY

F18/D35
ONE PLAN

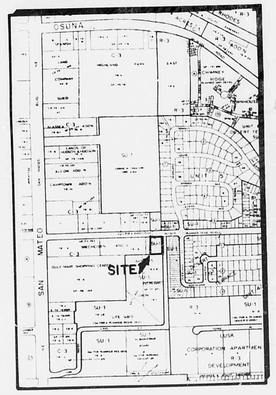
F18/D35

1 Plan



LEGEND

- SIDEWALK, CURB & GUTTER (EXISTING, PROPOSED)
- PROPOSED ASPHALT
- BUILDING (EXISTING, PROPOSED)
- PROPERTY LINE
- X12.7 — EXISTING SPOT ELEVATION
- EXISTING CONTOUR
- 12.5 — PROPOSED SPOT ELEVATION
- PROPOSED CONTOUR
- SURFACE FLOW DIRECTION (EXISTING, PROPOSED)



VICINITY MAP F 18

RECEIVED
DEC 17 1984
HYDROLOGY SECTION

SCOPE:

The proposed improvements, comprised of an office complex of two buildings, paved parking, curbs and associated walks, is located on McLeod Road, east of San Mateo Blvd.

The present site is an undeveloped tract, boardered on the north and east with paved streets and developed tracts on the remaining sides.

The intent of this plan is to show:

a) Grading relationships between the existing ground elevations and proposed finished elevations in order to facilitate positive drainage to designated discharge points.

b) The extent of proposed site improvements, including buildings, walks and pavement.

c) The flow rate/volume of rainfall runoff across or around these improvements and methods of handling these flows to meet City requirements for drainage management.

d) The relationship of onsite improvements with existing neighboring property to insure an orderly transition between proposed and surrounding grades.

CONSTRUCTION NOTES:

1. Before beginning construction, the Contractor shall check and verify pertinent figures shown here on and all applicable field measurements. Should any conflict, error or discrepancy be discovered, the Contractor shall notify the Engineer at once to resolve the problem. It is recommended that the contractor meet with the Engineer for a pre-design conference to determine the scope of work and critical areas involved.

2. The Contractor shall be responsible for following the plans using his best skill and attention. Any departure from the plans must be approved by the Engineer and the City Hydrology Department prior to construction.

3. The Contractor shall check the site plan for locations of existing utilities within or adjacent to streets and shall take all necessary precautions and efforts to locate and protect these utilities. He shall give 48 hours notice to Line Locating Service, 765-1234, for any work that he contemplates would interfere with said utilities.

GENERAL NOTES:

LEGAL:
Bakers Union Life Subdivision, Tract E, R, Albuquerque, New Mexico (Area = 0.82 Ac)

SURVEYOR:
Bill Bayer, November 1984.

B.M.:
B-F17, located at San Mateo Lane and San Mateo Blvd. Elevation 5209.13.

T.B.M.:
Top of property SE property corner, Elevation 5249.87.

SOILS:
SCS Soils Map Page 21, Soil Type TgB Soil Hydrologic Group "B".

FLOOD HAZARD:
Site is not located in a flood hazard area (AMDS F-18)

OFF-SITE DRAINAGE:
Site is isolated from the effects of offsite drainage due to surrounding streets on uphill side of site.

EROSION CONTROL:
Site will be developed in one phase with no stockpile of materials, so sediment erosion will be minor.

CALCULATIONS:
Based on a pre-design meeting with City of Albuquerque Hydrology, on 11-16-84, the following criteria was established:

A. Discharge to be determined by analysis of downstream capacity.

Calculations are based on the City of Albuquerque D.P.M. Manual, Vol. II for the 100 year-6 hour storm, using the Rational Formula to compare the existing and proposed runoff rates.

RATIONAL METHOD- Q = CIA

Area of site: 35,719 sq.ft.= 0.82 Ac.

Run-off Coefficient:

Existing site:	Developed Site:
A imp. = 0 Ac	A imp. = 0.77 Ac
Σ imp. = 0 %	Σ imp. = 0.94 %
"C" = 0.34 (DPM 22.2 C-1)	"C" = 0.90 (DPM 22.2 C-1)

Rainfall Intensity:

$I = P_6 (6.84)\ Tc^{-0.54} = 4.65"$ per hour
where $P_6 = 2.2"$ (DPM 22.2 D-1)
Tc = 10 minutes

Existing Condition:	Developed Condition:
Q100 = (0.34)(4.65)(0.82) = 1.3 cfs	Q100 = (0.90)(4.65)(0.82) = 3.4 cfs
V100 = (Q100)(5 Tc)(60 sec/in)/2 = 1950 cu. ft.	V100 = (3.4)(50)(60)/2 = 5100 cu. ft.

SUMMARY:

ΔQ100 = (1.3)-(3.4) = 2.1 cfs (increase)
ΔV100 = (1950)-(5100) = 3150 cu. ft. (increase)

DOWNSTREAM CAPACITY:
-AMDS AP 2301, San Mateo and McLeod, peak flow of 19.7 cfs @ Tc = 0.36 hours. (Hydg. #2301.1)
-Storm sewer capacity at AP2301 = 32 cfs, which is greater than peak flow in McLeod.
-Tc from the site to AP2301 $= (0.0078)(1400)^{0.77}/0.02^{0.385}$ = 9 min. < peak @ 2 min.

Therefore, downstream capacity exists for site to free discharge onto McLeod Road.

CTS INC.
ENGINEERING
1100 ALVARADO N.E. SUITE A
ALBUQUERQUE, NEW MEXICO 87110
(505) 266 - 3444

REVISIONS	DATE
DESIGNED CMJ	12-6-84
DRAWN BWJ	12-6-84
CHECKED CMJ	12-6-84

DRAINAGE / GRADING PLAN
GRADY OFFICE COMPLEX

CTS

Christopher C. Jones 12-12-84

SHEET 1 OF 1