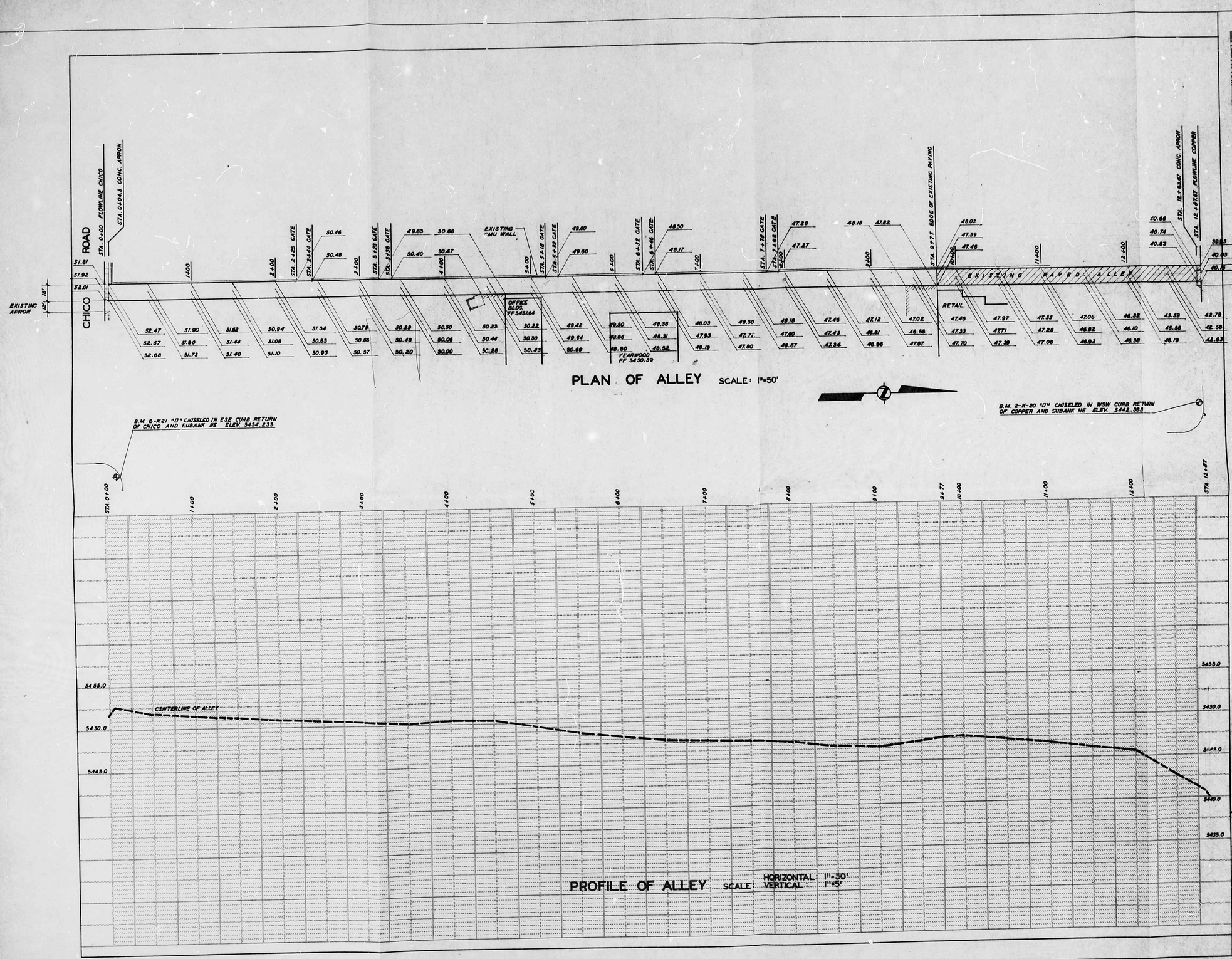
HYDROLOGY

K20/D26

TWO PLANS

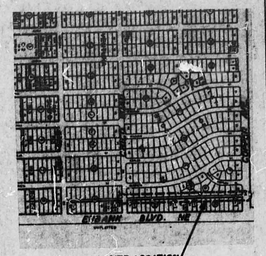
2 PLANS FOR

OFFICE FACILITY
C.J. VISSER
K20— D26



PLAN OF ALLEY SCALE: 1"=50'

PROFILE OF ALLEY SCALE: HORIZONTAL: 1"=50' VERTICAL: 1"=5'



VICINITY MAP NTS
MAP NO. K-110

RECEIVED NOV 26 1984 DESIGN HYDROLOGY SECTION

AS BUILT INFORMATION

CONTRACTOR | DATE
WORK STAKED BY | DATE
INSPECTORS ACCEPTANCE BY | DATE
VERIFICATION BY | DATE
REVISIONS CORRECTED BY | DATE

MICRO-FILM INFORMATION

RECORDED BY | DATE
NO.

BENCH MARKS

6-K-21 "D" CHISELED IN ESE CURB RETURN OF CHICO & EUBANK
2-K-20 "D" CHISELED IN WSW CURB RETURN OF COPPER & EUBANK

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

NO.	DATE	REMARKS	BY

REVISIONS

DESIGN

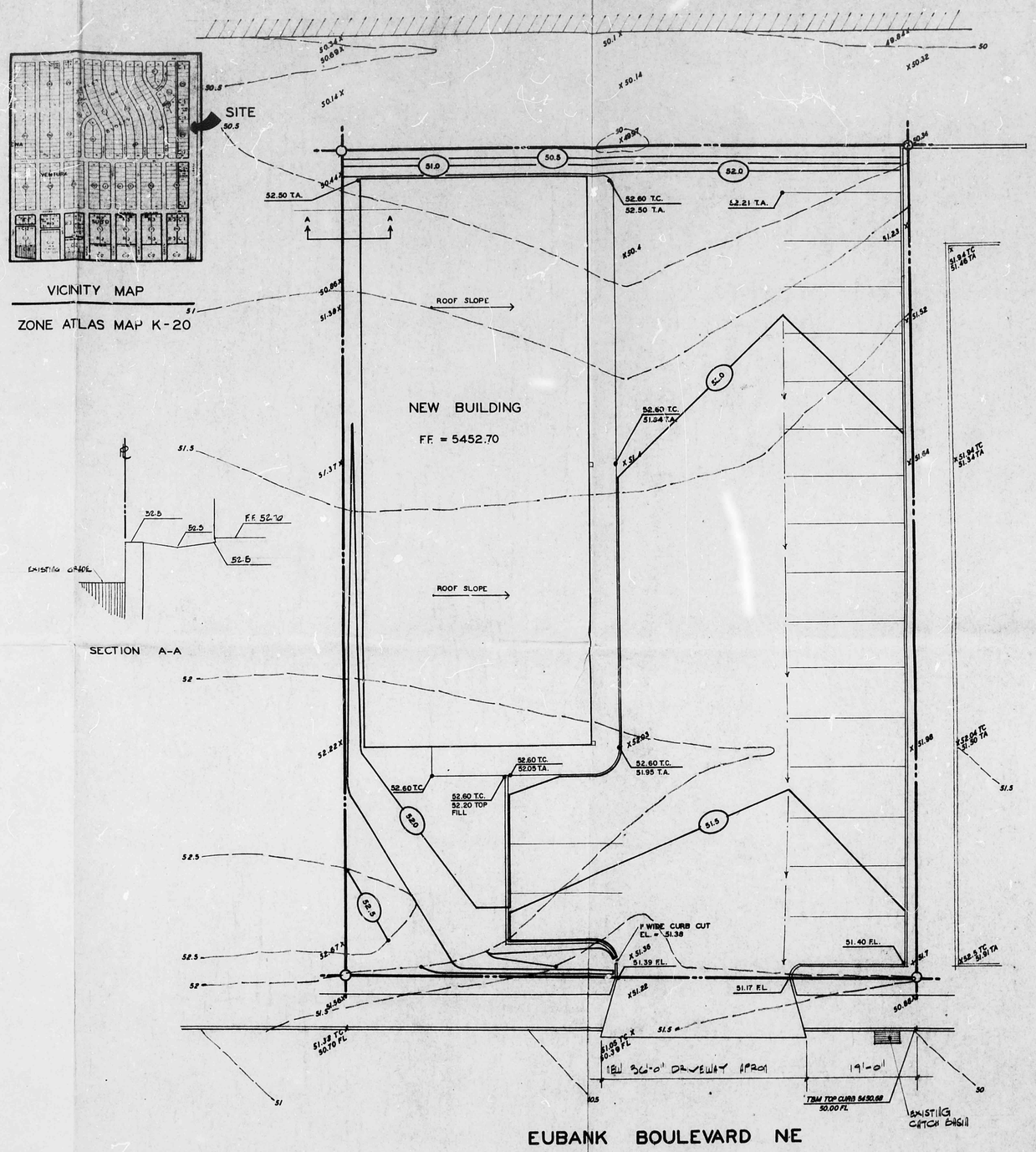
DESIGNED BY | DATE
DRAWN BY | DATE
CHECKED BY | DATE

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

TITLE:
PRELIMINARY ALLEY GRADES

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
City Engineer			Liquid Waste		
A.C.E.-Design			Traffic		
A.C.E.-Hydrology			Water		

DRAWING NO. | MAP NO. K-20 | SHEET 1 OF 1



GRADING & DRAINAGE PLAN

0 5 10 20 30

DRAINAGE CALCULATIONS
LOT 16B BUENA VENTURA

I. General Data

A. References
1. City of Albuquerque, Development Process Manual (DPM) Volume 2, Design Criteria, Chapter 22, Drainage, Flood Control and Erosion Control.
2. Soil Survey of Bernalillo County and parts of Sandoval and Valencia Counties, New Mexico, US Soil Conservation Service, Issued June 1977.

B. Soil Type
(Ref. 2, Sheet 32) Soil is TgB. Tijereras gravelly fine sandy loam, 1 to 5 percent slopes, Hydrologic Soils Group B.

C. Rainfall
The 6-hour 100-year rainfall, R6, for the site location (See Ref. 1, Plate 22.2 D-1) is 2.4 inches.

D. Time of Concentration
By overland flow times, (See Ref. 1, Plate 22.2 B-1) Distance from Eubank to most remote point is approximately 150 feet.
Delta Elevation = 1' (approx)
Slope = 1/150 = 0.0067
Velocity-lower curve = 0.5

Tc = 150/(0.5 x 60) = 5 minutes
Use 10 minutes, Minimum Tc

E. Runoff Coefficient
(See Ref. 1, Plate 22.2 C-1) For SCS Soils Group B, 0% impervious, C=0.34 The following developed "C" factors are used:
Bldg. roofs, conc., gravel over polyethylene film =1.0
Asphalt Paving =0.90
Landscaping, natural vegetation, etc. =0.34

F. Intensity
(See Ref. 1, Plate 22.2 D-2)
I=R6 (6.84)(Tc)-0.51 = 2.4 (6.84)(10)-0.51=5.07 Use 5.1 inches/hour

G. Discharge
The 100-year peak developed and undeveloped discharge is given by the rational equation, Q = CIA.

H. Volume
The 100-year 6-hour volume is given by a similar rational approach: V=C(R6/12) Area in square feet.

II. Off-Site Flow
No off-site flow

III. On-Site Flow

A. Existing Conditions
Site Area = 14,723 SF
Q=CIA=0.34 x 5.1 x (14723/43560) = 0.59 cfs
V=0.34 (2.4/12) 14723 = 1,001 CF

B. Developed Conditions
Areas:

Building	4000 SF	
Concrete	759 SF	
Asphalt	8002 SF	
Dirt or landscaping	1962 SF	
Total	14723 SF	= 0.338

Weighted "C" Factor:
C=(4000 759) 1.0 (8002) 0.9 (1962) 0.34 = 0.86
14723

C. Peak Discharge
Q=CIA=0.86 x 5.1 x 0.338 = 1.48
V=0.86 (2.14/12) 14723 = 2532

D. Net Increase Due to Development
Qnet = 1.48 - 0.59 = 0.89 cfs
Vnet = 2532 - 1001 = 1531 cfs

IV. Downstream Capacity

Eubank boulevard has a 60" RCP storm sewer with a single "C" catch basin located adjacent to the northeast corner of the site. The storm sewer discharges into the I-40 median channel about 1,500 feet north of the site. Drainage leaving the site will immediately enter the catch basin.

L E G E N D

	Existing contour
52.67 X	Existing spot elevation
TC 52.60	Proposed spot elevation
52.0	Proposed contour
	Swale
T.C.	Top of curb
T.A.	Top of asphalt
F.L.	Flow line
F.F.	Finished floor

RICHARD V. ROLLE
NEW MEXICO
No. 5412
REGISTERED PROFESSIONAL ENGINEER

GRADING AND DRAINAGE PLAN

OFFICE FACILITY
325 EUBANK BOULEVARD NE
ALBUQUERQUE, NEW MEXICO

RECEIVED
SEP 26 1984
HYDROLOGY SECTION

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