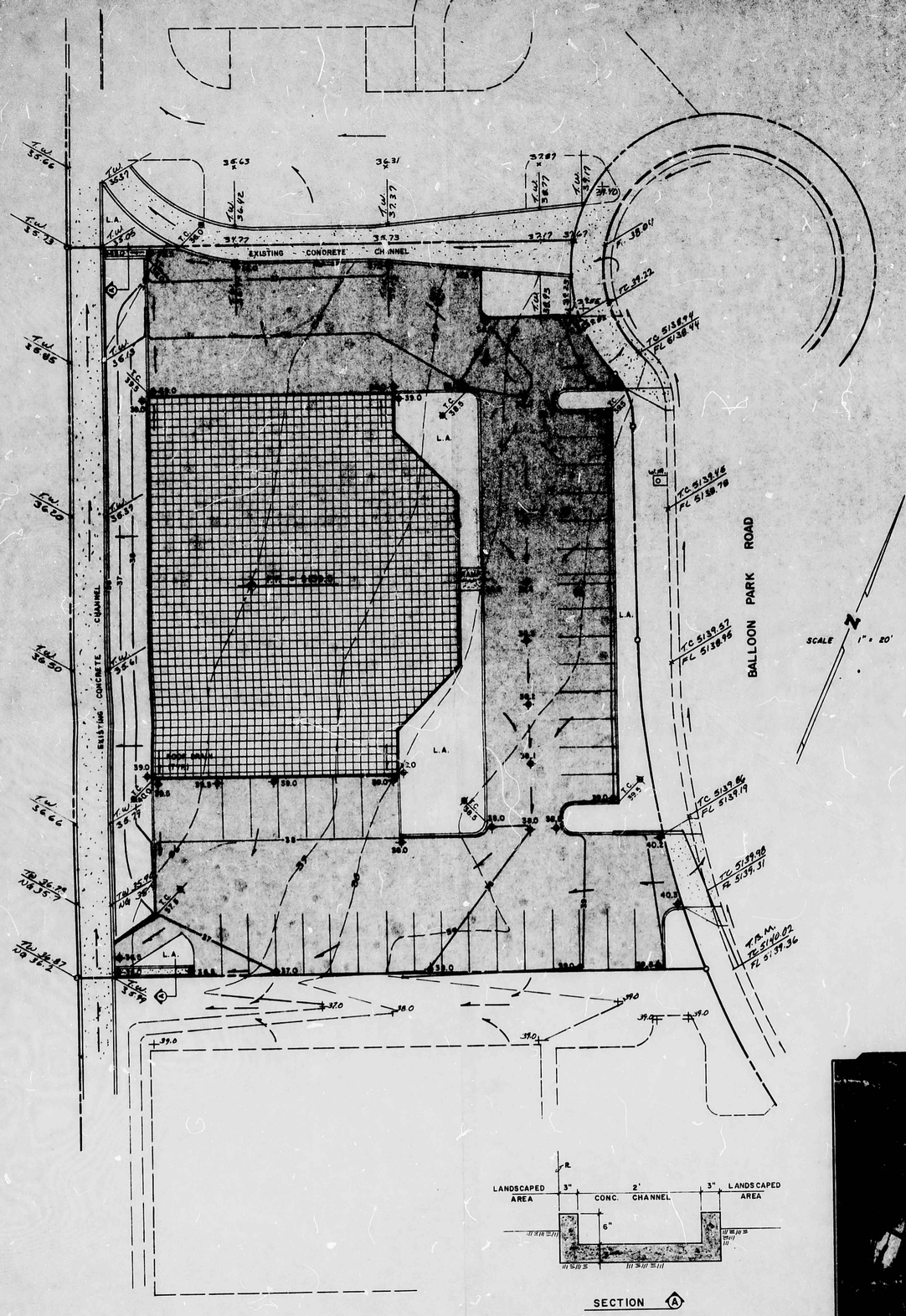
HYDROLOGY

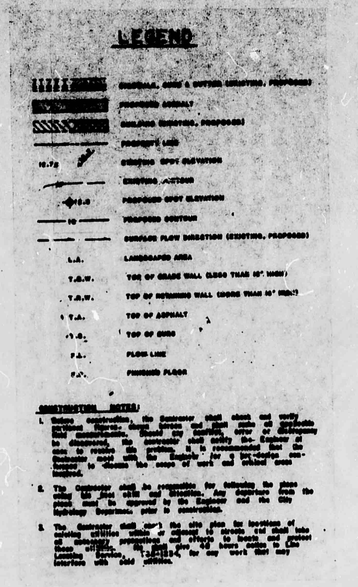
E17/D19F
ONE PLAN

E 17/D22F

1 PLAN



LEGEND



NOTES:

The proposed improvements, comprised of an office building, paved access and parking areas and associated landscaping, is located in the Balloon Field Industrial Park on Lot 9A.

The project site is a one-acre undeveloped parcel bordered on the east by Balloon Field Road, on the west by an improved lined channel on the north and west sides, and a new [illegible] on the south side. The lot will be graded to direct flows into the channel on the west side. The lot will be graded to direct flows into the channel on the south side. The lot will be graded as shown on the approved Master Drainage Plans for Balloon Field Industrial Park.

The intent of this plan is to show:

a) Grade 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.

GENERAL NOTES:

LEGAL: Lot 9A, Balloon Field Industrial Park, Albuquerque, New Mexico.

SURVEYED: Claussen and Associates, Inc., 3400 Stanford Dr. N.E., Albuquerque, N.M. July, 1986.

B.M.1: Manhole at intersection of Zircher and Singer Boulevards. Elevation = 5,144.07.

T.B.M.1: Top of curb on Balloon Park Road at extension of south property line. Elevation = 5,144.02.

SOILS: Soil Type 'Bad', Hydrologic Soil Group "B".

FLOOD HAZARD: Site is not located within a flood hazard zone, as shown on FEMA Map No.16.

OFF-SITE DRAINAGE: The site is unaffected by offsite drainage due to the presence of surrounding improvements on the east and north sides. Flow patterns of the lot bordering the south side of the site drain directly west into the concrete channel.

EROSION CONTROL: Contractor will be responsible for containing any sediments generated during construction by using either a fabric silt fence (as shown by detail) or by constructing a 2'-high earth berm across low points.

CALCULATIONS: 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: 43,560 sq ft. = 1.0 Ac.

Run-off Coefficient:

Existing site:	Developed Site:
Undeveloped Area = 43,560 ft²	Roof Area = 12,500 ft² Landscaped Area = 11,100 ft²
$C_u = \frac{43,560(0.40)}{43,560} = 0.40$	$C_u = \frac{12,500(0.95)}{43,560} = 0.27$ $C_l = \frac{11,100(0.25)}{43,560} = 0.06$
Composite C = 0.40	Composite C = 0.77

Rainfall Intensity:

$I = P_6 (6.84) T_c^{-0.51} = 4.7$" per hour
where $P_6 = 2.2$" (DPM 22.2 D-1)
$T_c = 10$ minutes

Existing Condition:	Developed Condition:
$Q_{100} = (0.40)(4.7)(1)$ = 2 cfs	$Q_{100} = (0.77)(4.7)(1)$ = 4 cfs
$V_{100} = (2)(50T_c)(60 \text{ sec/min})/2$ = 3000 cu. ft.	$V_{100} = (4)(50)(60)/2$ = 6000 cu. ft.

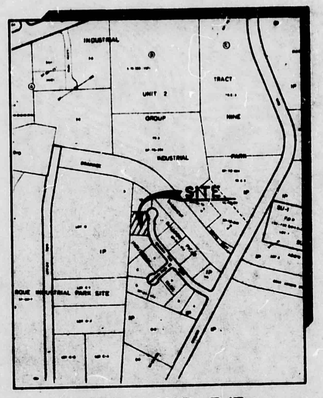
SUMMARY:

$Q_{100} = (2)-(4) = 2$ cfs (increase)
$V_{100} = (3000)-(6000) = 3000$ cu. ft. (increase)

CHANNEL RUNDOWN CAPACITY (SECTION A)

S = 2.0 % (min.)
n = 0.015
At a 6" flow depth, Q = 7 c.f.s. capacity for an expected maximum flow of 2 c.f.s. in each channel

FLOOD HAZARD MAP



VICINITY MAP - E-17

RECEIVED
AUG 08 1986
HYDROLOGY SECTION

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REVISIONS | DATE

DESIGNED S.C. Hines 5-86
DRAWN Nuñez 5-86
CHECKED C.H. 5-86

DRAINAGE / GRADING PLAN
LOT 9 BALLOON FIELD INDUSTRIAL PARK

CHRISTOPHER C. HINES
NEW MEXICO
REGISTERED PROFESSIONAL ENGINEER

SHEET 1 OF 1