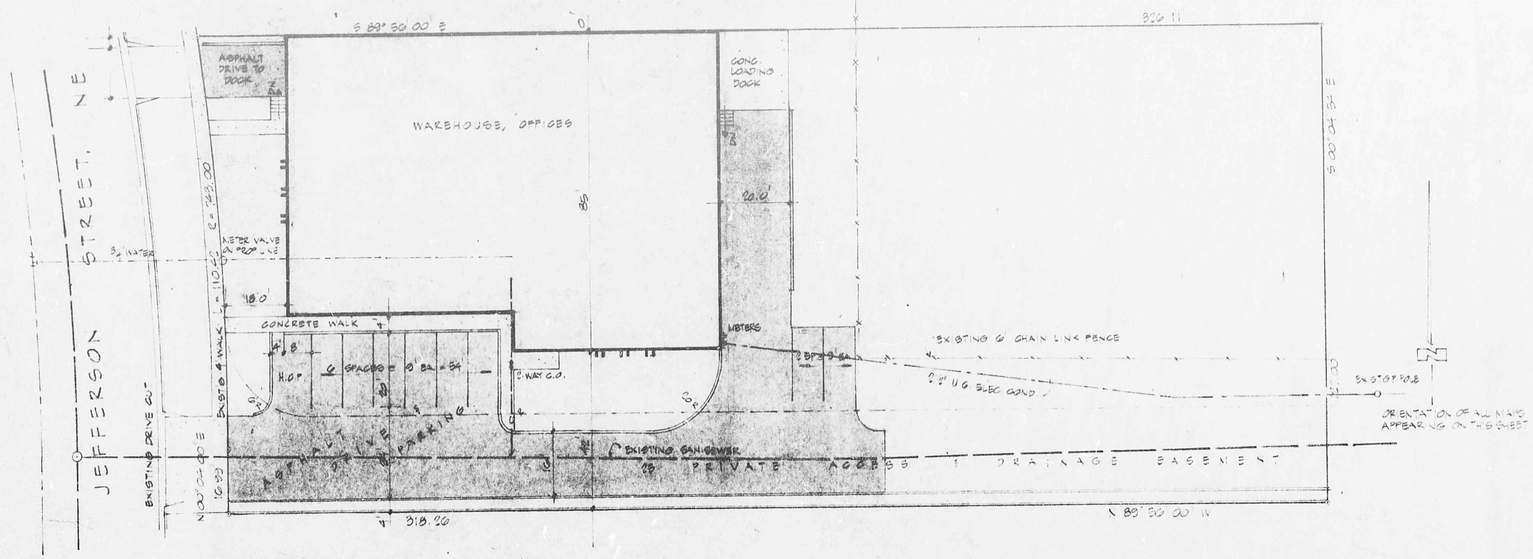
HYDROLOGY

F17/26
ONE PLAN



EXISTING FIRE HYDRANT LOCATION

SITE PLAN 1" = 20'

DRAINAGE PLAN

LEGAL DESCRIPTION

TRACT B OF THE BERRY SUBDIVISION
ALBUQUERQUE, NEW MEXICO

DESIGN DATA

OCCUPANCY GROUP	B-2
ZONING	M-1
CONSTRUCTION TYPE	V-1
ROOF LOAD	30 PSF
FLOOR LOAD	100 PSF
WIND LOAD	25 PSF
SEISMIC ZONE	1
SOIL BEARING	500 PSF
CONC. STRENGTH f'c	1500 PSI
STEEL STRENGTH Fy	30,000 PSI
AREA OF OFFICE	772 SQ FT
AREA OF WAREHOUSE	9228 SQ FT
PARKING REQUIRED	8 SPACES
PARKING SHOWN	8 SPACES

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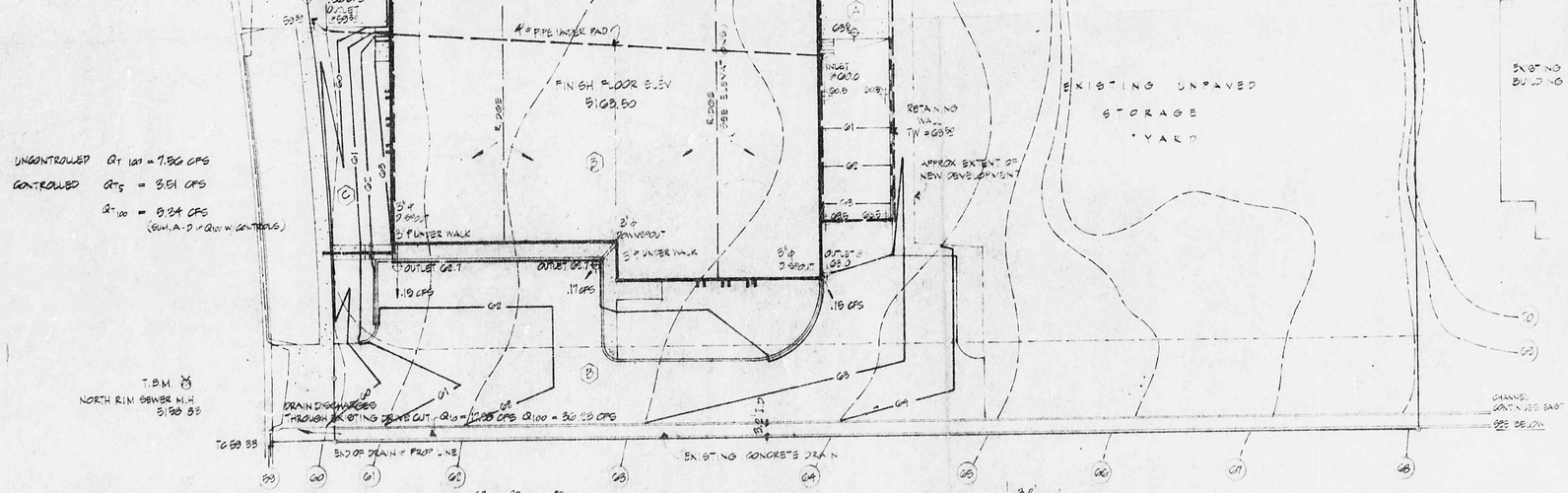
WAREHOUSE/OFFICE DIVERSIFIED CONTRACTORS

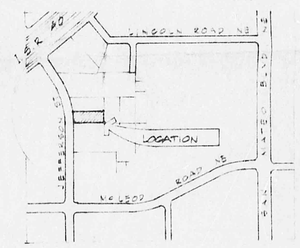
SITE PLAN / DRAINAGE



UNCONTROLLED $Q_{T\,100}$ = 7.86 CFS

CONTROLLED Q_{T5} = 3.51 CFS

Q_{T100} = 9.24 CFS (SUM A-D IF Q100 W/ CONTROLS)



VICINITY MAP NO SCALE

ATLAS PAGE F-17

ON-SITE DRAINAGE

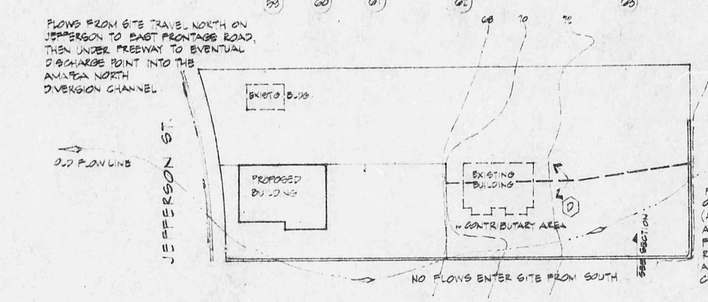
AREA OF LOT 40,000 SQ FT (0.918 AC)
RUNOFF COEFFICIENT (EXISTING AVG) .09
SLOPE, EAST-TO WEST 0.3% AVG
TIME OF CONCENTRATION 10.5 MIN (FROM NOMOGRAPH)

$\lambda_5 = \frac{21}{0.5^{0.24}} = 2.04$ IN/HR $Q_{10} = .60$ CFS

$\lambda_{100} = \frac{53}{0.5^{0.26}} = 5.92$ IN/HR $Q_{100} = 3.03$ CFS

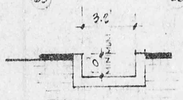
UNCONTROLLED RUNOFF

	AREA	C	Q_5	Q_{100}
(IMPERVIOUS AREA	17,000	1.00	1.10	3.02
(B) EXISTING AREA (REMAINING NO B)	20,000	.05	.64	1.66
OPEN AREA (GRASS)	0.140	.40	.03	.10
			TOTAL	4.86 CFS



A B & TRUCK YARD
CONTRIBUTING AREA 0.71 ACRES OF PAVEMENT
TC = 6.10 MIN
λ_5 = 2.60 IN/HR Q_{10} 17.95 CFS
λ_{100} = 5.4 IN/HR Q_{100} 36.08 CFS

FORMER LOCATION OF VINYARD ARROYO (AS APPEARS ON 1973 DETAIL PHOTO) ARROYO HAS BEEN DIVERTED, FILLED. REMAINING FLOWS FROM EAST ARE INTERCEPTED BY A 4' CONCRETE CHANNEL.



SECTION THRU EXISTING DRAIN

$V = \frac{1.486}{n} r^{.67} S^{.50}$

$= \frac{1.486}{.015} .67^{.67} .025^{.50}$

$= 99.06 \times .782 \times .158$

$= 11.3$ FT/SEC

$Q = 3.2 \times 11.3$

$= 36.16$ CFS

∴ EXISTING CHANNEL APPEARS CAPABLE OF HANDLING OFFSITE FLOWS FROM EAST. (A&B TRUCK YARD)

(A) DOCK & DRIVE
AREA .080 AC C = 1.00
Q_8 = .080 × 1.00 × 2.68 = .21 CFS
Q_{10} = (.21 - .087)(10/8)^.16 = .13
= .36 CFS MAX. ∠ Q8
USE 4" ϕ PIPE.

(B) ROOF PARKING
AREA .870 AC C = 1.00
.003 AC C = 0.40
Q_8 = 4.0 × .68 × 2.68
= .70 CFS
Q_{10} = (.70 - .040)(10/8)^.16 + .13
= .87 CFS (2 DOWNSPOUTS)
+ .140 × 1.00 × 5.4 = .80 CFS
+ .003 × .4 × 5.4 = .06 CFS
Q_{DT} = 1.37 CFS

(C) FRONT TO STREET
AREA 0.06 AC C = .40
.003 AC C = 1.00
Q_8 = .035 × .68 × 2.68 = .06 CFS
Q_{10} = .06 × .4 × 5.4 = .056
.003 × 1.0 × 5.4 = .049
.105 CFS

(D) CONTRIBUTARY AREA
CONTRIBUTING 3.0 AC C AVG = .80
Q_8 = 3 × .8 × 2.68 = 1.74 CFS
Q_{10} = 3.1 × .8 × 2.68 = 3.3 CFS
= 5.06

TOTAL UNCONTROLLED DISCHARGE THROUGH SITE NOT INCLUDED IN RUNDOWN 7.86 CFS

STATE OF NEW MEXICO JOHN J. HANSON, IV NO. 8041 REGISTERED ARCHITECT

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SHEET 1 OF 4

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1 PLAN