HYDROLOGY

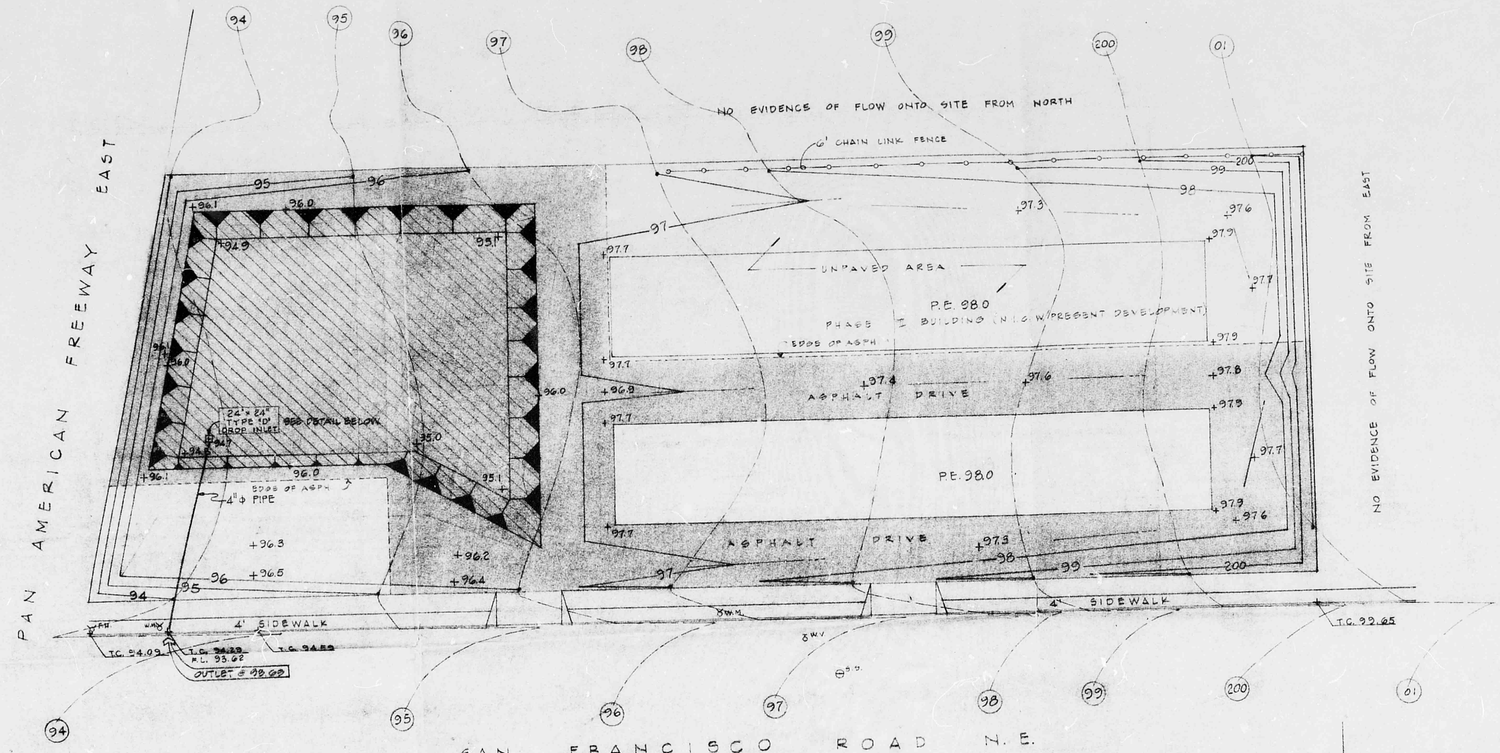
D18/D11

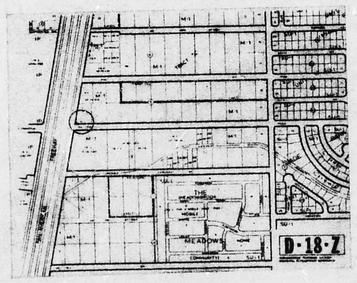
TWO PLANS

2 PLANS FOR

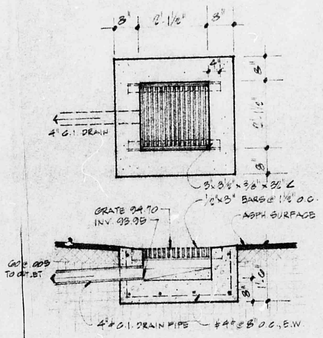
SAN FRANCISCO STORAGE

D18-D11





VICINITY MAP NO SCALE



DROP INLET DETAIL 1/2" = 1'-0"

LEGEND

CONTOUR INTERVAL - 1'

+ SPOT ELEVATIONS

(95) EXISTING CONTOURS

95 PROPOSED CONTOURS

POND SLOPE

PONDING AREA

FLOW LINE

PROPOSED SPOT ELEVATIONS & CONTOURS INDICATE SUBGRADE SURFACES

FIELD NOTES TAKEN MARCH 3, 1983

SCALE 1" = 20'

CALCULATIONS

EXISTING SITE CONDITIONS:

VACANT LAND - NO IMPROVEMENTS ON SITE - USED AS OUTSIDE STORAGE FOR LANDSCAPING / NURSERY. SITE DRAINS AS A SHEET FLOW FROM EAST TO WEST ONTO PAN AMERICAN FREEWAY EAST.

SCS SOILS GROUP "B" - 50% IMPERVIOUS - "C" = .55

TIME OF CONCENTRATION:

$T.C. = 0.0078 \frac{360^{0.77}}{.0208^{0.385}} = 3.22$ MIN. - USE 10 MIN FOR CALCULATIONS

$I_{100} = 2.2 \times 2.84 \times 10^{-.51}$	=	4.65 IN/HR
$I_{10} = 4.65 \times .657$	=	3.06 IN/HR
$Q_{10} = 1.017\ AC \times .55 \times 3.06$	=	1.71 CFS
$Q_{100} = 1.017\ AC \times .55 \times 4.65$	=	2.60 CFS, PEAK

DEVELOPED RUNOFF

100% OF SITE TO BE PAVED OR ROOFED C = 1.00

$Q_{10} = 1.017 \times 1.00 \times 3.06$	=	3.11 CFS
$Q_{100} = 1.017 \times 1.00 \times 4.65$	=	4.73 CFS, PEAK

RUNOFF VOLUME

$V = 1.017\ (43560) \times 1.00 \times 2.3/12$	=	8121.76 CU. FT.
TOTAL DURATION OF RUNOFF (T) = $\frac{2(8121.76)}{4.73}$	=	3434 SEC.
FLOW IN 4" ϕ PIPE: $Q = \frac{0.463}{0.013} \times 3.3^{8/3} \times .01^{1/2}$	=	.185 CFS
VOLUME OUTFLOW FOR DURATION: .185 CFS × 3434 SEC	=	636 CU. FT.
NET VOLUME TO BE PONDED: 8122 - 636	=	7486 CU. FT.

POND SIZING

$V = \left[\frac{1}{3}\left(2748 + 5980 + \sqrt{2748 \times 5980}\right)\right] + \left[\frac{1}{2}\ 5980 \times .3\right] = 7918$ CU. FT. CAPACITY > 7486 CU. FT

BENCH MARK: ACS T-D18 5190.962'

AN "X" CHISLED ON THE WEST BONNET BOLT OF A FIRE HYDRANT LOCATED ON THE EAST SIDE OF US HWY. I-25 EAST FRONTAGE RD, ABOUT 0.2 MILES SOUTH OF THE JUNCTION WITH PINO AVE.

DRAINAGE PLAN

5301 SAN FRANCISCO RD. N.E.
PORTION OF LOTS 28, 29, & 30
BLOCK 5, TRACT A, UNIT A,
NORTH ALBUQUERQUE ACRES

FOR
THE TYRE CORPORATION

PREPARED BY
ENCHANTMENT ENGINEERING
3910 INDIAN SCHOOL RD. N.E., SUITE 105
ALBUQUERQUE N.M.
294 - 8859

MARCH 22, 1983

Revised 3-31-83

D18/D11

Billy G

APPROVED FOR DRAINAGE
2/8/84
DATE
Billy J. Gockeley CE/Hydro.
SIGNATURE TITLE
ADVISE DRAINAGE INSPECTOR
WHEN GRADING EXECUTED

ENCHANTMENT ENGINEERING Inc.
9910 INDIAN SCHOOL RD. N.E., Suite H-15
ALBUQUERQUE, N. M. Ph. 294-6859

NOTE: THIS AMENDED PLAN IS SUBMITTED TO SHOW METHOD OF RE-CREATING POND VOLUME THAT WILL BE TAKEN BY CONSTRUCTION OF NEWEST MINI-WAREHOUSE.

RECEIVED
FEB 07 1984
HYDROLOGY SECTION

NET REMAINING AREA — 32990 SQ FT (.848 AC)
SURFACE 100% IMPERVIOUS, C = 1.0
I_{100} (PER PREVIOUS CALCULATIONS) = 4.05 IN/HR.
Q_{100} PEAK = .848 × 4.05 × 1.0 = 3.34 CFS
100 YEAR FREQUENCY STORM 2.2 IN.
RUNOFF VOLUME (NET) = 32990 × 2.2/12 = 6774 CU.FT.
RUNOFF DURATION = 6774 × 2 / 4.05 = 2914 SECONDS

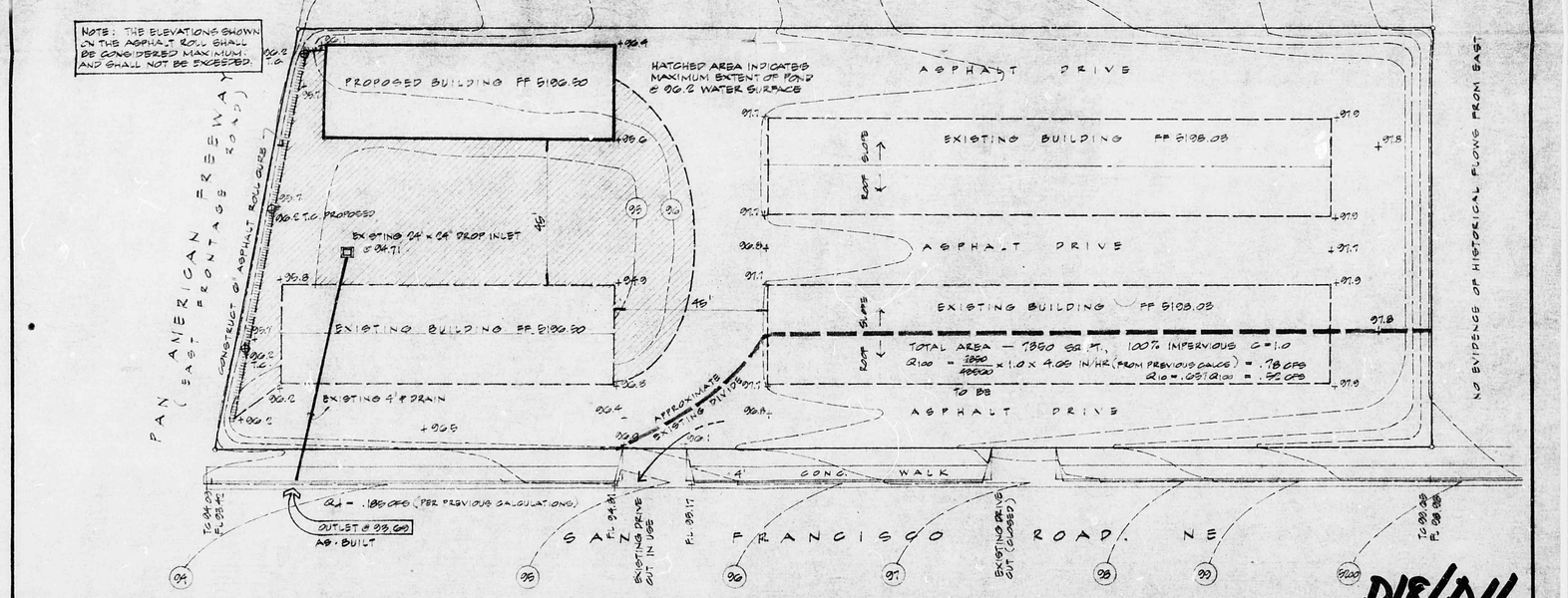
Q_2 OF RELEASE = .189 CFS (PER PREVIOUS CALCULATIONS)
VOL. OF RELEASE FOR DURATION = 2914 × .189 = 550 CU.FT.
NET REQUIRED VOLUME = 6774 - 550 = 6224 CU.FT.

POND VOLUME AS SHOWN HEREON
SURFACE AREA @ 96.0 = 6602 S.F.
AREA WITHIN 96.0 CONTOUR = 3420 S.F.
$V = \frac{1.2}{3} \times (6602 + 3420 + \sqrt{6602 \times 3420}) = 6889$ CU.FT.
V @ 98.0 TO DROP = $\frac{3420 \times 2.0}{3}$ = 331 CU.FT.
TOTAL AVAILABLE VOLUME = 6220 CU.FT.

AMENDED DRAINAGE PLAN
9801 SAN FRANCISCO ROAD, NE
LOT 28-A BLOCK - 3
TRACT - A UNIT - A
NORTH ALBUQUERQUE ACRES
FOR
THE TYRE CORPORATION
JANUARY 20, 1983
SCALE 1" = 20'

ALL CONTOURS SHOWN ARE EXISTING OR AS-BUILT.

JANUARY 27, 1984



D18/D11

CITY OF ALBUQUERQUE
THIS MICROIMAGE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT

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