HYDROLOGY K19/D11 1 PLAN

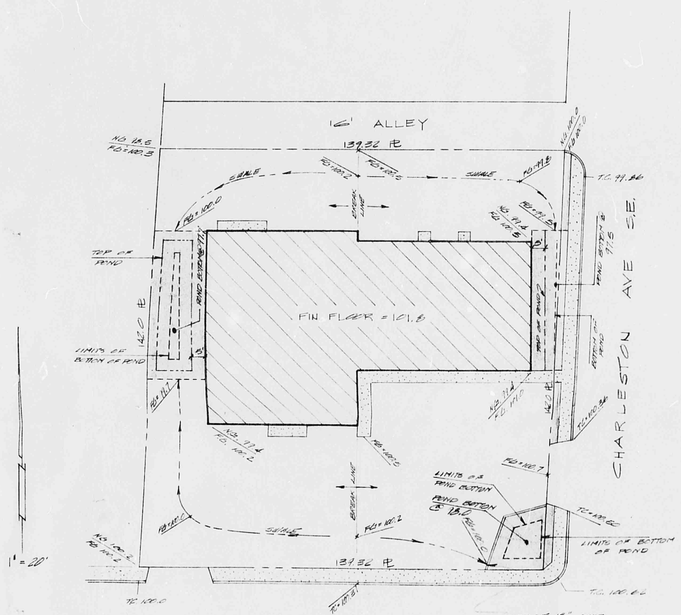
NO DOCUMENTS

K19/D11

1 Plan

No Documents

CITY OF ALBUQUERQUE



SIDEWALKS

PAVED AREA

LANDSCAPED AREA

ENCHANTMENT ENGINEERING INC.
1000 P. EUGENE BLVD. NE
ALBUQUERQUE, N.M.

DRAINAGE CALCULATIONS

LOT 16-A
BLOCK 1
B. M. MOORE ADDITION

UNDEVELOPED:

AREA UNDER CONSIDERATION	0.482 AC.
NATURAL RUNOFF COEFFICIENT	0.45
EXISTING SLOPE	1.2%
TIME OF CONCENTRATION	12 MINS
INTENSITY	5 IN/HR.
100-YR., 6 HR. PRECIPITATION	2.5 IN
UNDEVELOPED RUNOFF	2.70 CFS
VOLUME OF NATURAL RUNOFF	0.638 AC. FT.

DEVELOPED:

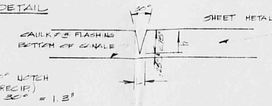
	AREA (AC)	C=	A×C
FLAT ROOF	0.140	1.00	0.119
PAVEMENT & SIDEWALKS	0.278	0.92	0.251
LANDSCAPED & OPEN	0.031	0.40	0.012

RUNOFF @ ASSUMED MAX. INTENSITY 5.4 IN/HR × 0.386 = 2.08 CFS
VOLUME OF RUNOFF = 0.620 AC. FT.

REQUIRED STORAGE VOLUME = 0.620 − 0.038 = 0.582 AC. FT.

DISCHARGE FROM ROOF TO BE CONTROLLED BY 7 MODIFIED CANALES

TYPICAL CANALE DETAIL



C = 0.40 FOR 30° NOTCH
H = 2.5' (6-HR PRECIP)
L = (2.5 − .25) TAN 30° = 1.2'

$Q = C\,\frac{4}{3}\,L\,H\sqrt{2gH}$ = 0.010 CFS PER CANALE

TOTAL ROOF DISCHARGE = 0.07 CFS

DETERMINATION OF ROOF STORAGE VOLUME

$R_v = \frac{\text{ALLOWABLE OUTFLOW}}{\text{AVERAGE RUNOFF RATE}} = \frac{0.010}{1.14 \times 1.18} = 0.008$ CFS/IN. IMPERVIOUSNESS

$T = .25 + \sqrt{\frac{1000 \times 0.75}{R_v}} = 24.71$ MIN.

$V_s = \frac{11340 \cdot T}{T+25} - 40.26\,T = 6762.54$ FT³/AC IMPERVIOUSNESS

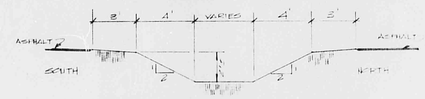
FROM "A SIMPLIFIED METHOD FOR ESTIMATING RUNOFF" BY GLENN TRIANTAFILLOU AND ALLEN V. WARREN, WATER & SEWAGE WORKS DEC. 1973 PP 25 & 442

VOLUME RETAINED ON ROOF = 6762.54 × 0.14 × 0.35 = 332 FT³ = 0.008 AC. FT.

OPEN AREA PENDING CAPACITY = 1800 FT³ = 0.0330 AC. FT.

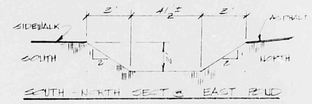
TOTAL PENDING CAPACITY OF AREA UNDER CONSIDERATION = 0.038 AC. FT.

WEST-EAST SECT @ WEST POND

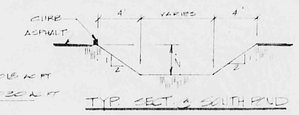


SOUTH-NORTH SECT @ WEST POND

WEST-EAST SECT @ EAST POND



SOUTH-NORTH SECT @ EAST POND



TYP. SECT @ SOUTH POND

7711 ZUNI RD. SW.
BEST BRAND HOMES INC

THIS PLAN SHOT TWICE ONCE ON LIGHT AND ONCE ON DARK.

D 24 C 20 B 16 A 12

CITY OF ALBUQUERQUE

C D