HYDROLOGY

K17/D34
ONE PLAN

K17/D34

CALCULATIONS

1) Composite Runoff Factor

Gross Area = 21,344 S.F.
Area @ C = 0.95 = 12,368 S.F. = 58%
Area @ C = 0.60 = 4,488 S.F. = 21%
Area @ C = 0.15 = 4,488 S.F. = 21%

C comp. = (0.58 x 0.95) + (0.21 x 0.60) + (0.21 x 0.15)
= 0.71

2) Offsite Drainage

Area = 0.03 Acres
I_{100} = 5.4 in/hr
C = 0.71

Q = CIA = 0.71 x 5.4 x 0.03 = 0.51 cfs.

3) Swale Capacity = Offsite Drainage

depth = 0.5'
sideslope = 2.4:1
slope = 1%
n = 0.025
bottom width = 0

$Q = A \frac{(1.49)}{n} R^{2/3} S^{1/2}$

= 1.3 cfs > 0.3 OK

4) Ponding Requirements

Gross Area = 21,344 S.F.
C_{max} = 0.90
C_{ave} = 0.71
R_{100} = 2.4" = 0.2'

Volume Required = A x R x (C_{ave} - C_{max})
= 21,344 x 0.2 x (0.71 - 0.4)
= 1323 cubic feet

5) Adequacy of Roof Ponding

Roof Areas = 7408 S.F.
Volume on rooftops = 0.2 x 7408 x 0.95
= 1407 cubic feet > 1323 OK

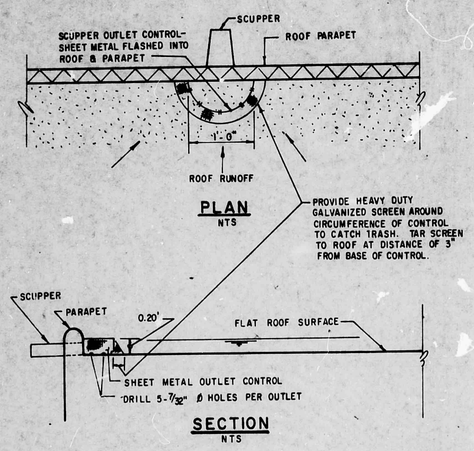
6) Orifice Sizing = Scupper Outlet Controls

NOTE: Orifices will be used to drain roof runoff over a 24 hour period. All roof runoff, has been directed into one of the infiltration basins via swales and grass slopes.

Using 5 orifices/control and building 1 as typical

A_t = 3960/(5x9) = 122 S.F.
T = 24 x 60 = 86,400 sec.
Y_1 = 0.67'
Y_2 = 0'
C_d = 0.62

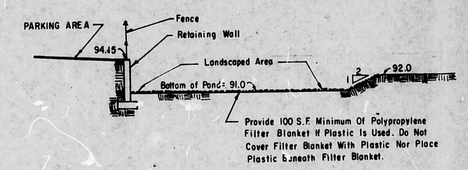
A_o = [illegible]
= .000254 S.F.
= [illegible]
d = [illegible] = 0.018'
= 7/32" ø orifice



PLAN
NTS

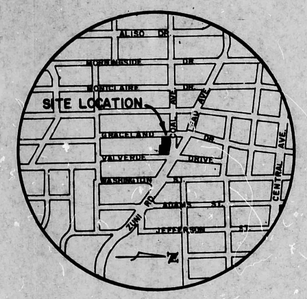
SECTION
NTS

SCUPPER OUTLET CONTROL

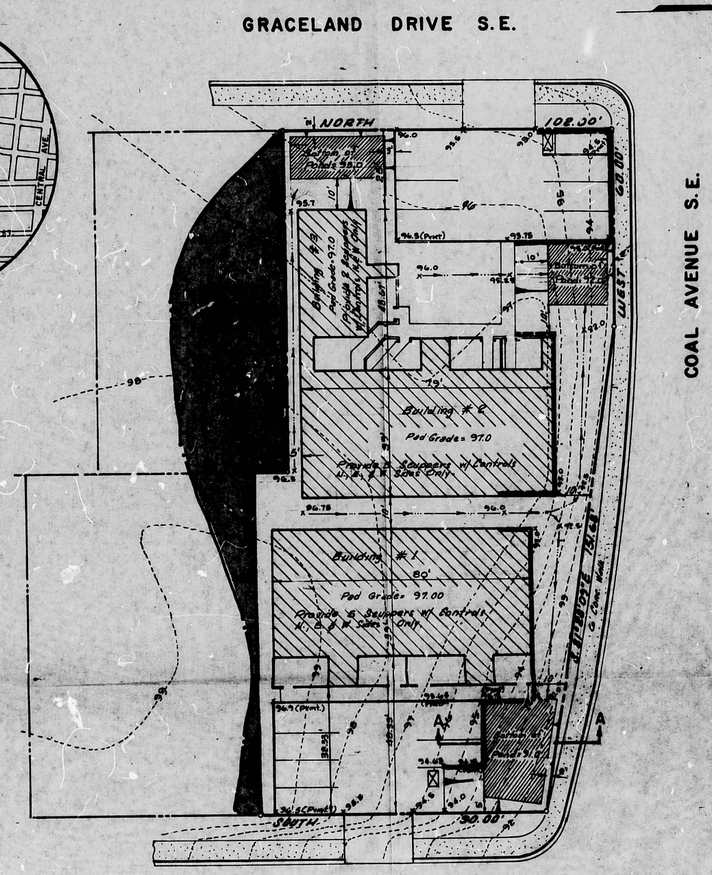


SECTION "A"

TYPICAL INFILTRATION POND



VICINITY MAP
N.T.S.



SITE PLAN
1" = 20'

LEGEND

- EXISTING GROUND CONTOUR
- RETAINING WALL
- PROPOSED ELEVATION
- BUILDING PAD
- DRAINAGE SWALE
- DRAINAGE AREA BOUNDARY
- INFILTRATION POND
- OFF-SITE DRAINAGE AREA

K17/D34
(1)

DRAINAGE PLAN

FOR

VALVERDE & COAL FOUR-PLEXES

LOCATED ON

LOT A, BLOCK 23, MESA GRANDE ADDITION AS THE SAME AS IS SHOWN AND DESIGNATED ON THE PLAT OF SAID ADDITION, FILED IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY ON JULY 14, 1927.

KENT M. WHITMAN
STATE OF NEW MEXICO
NO. 6170
REGISTERED PROFESSIONAL ENGINEER

DATE	JULY, 1977
SCALE	AS NOTED
DRAWN	K.W.
DESIGN	K.W.
JOB NO.	08-1-00[redacted]