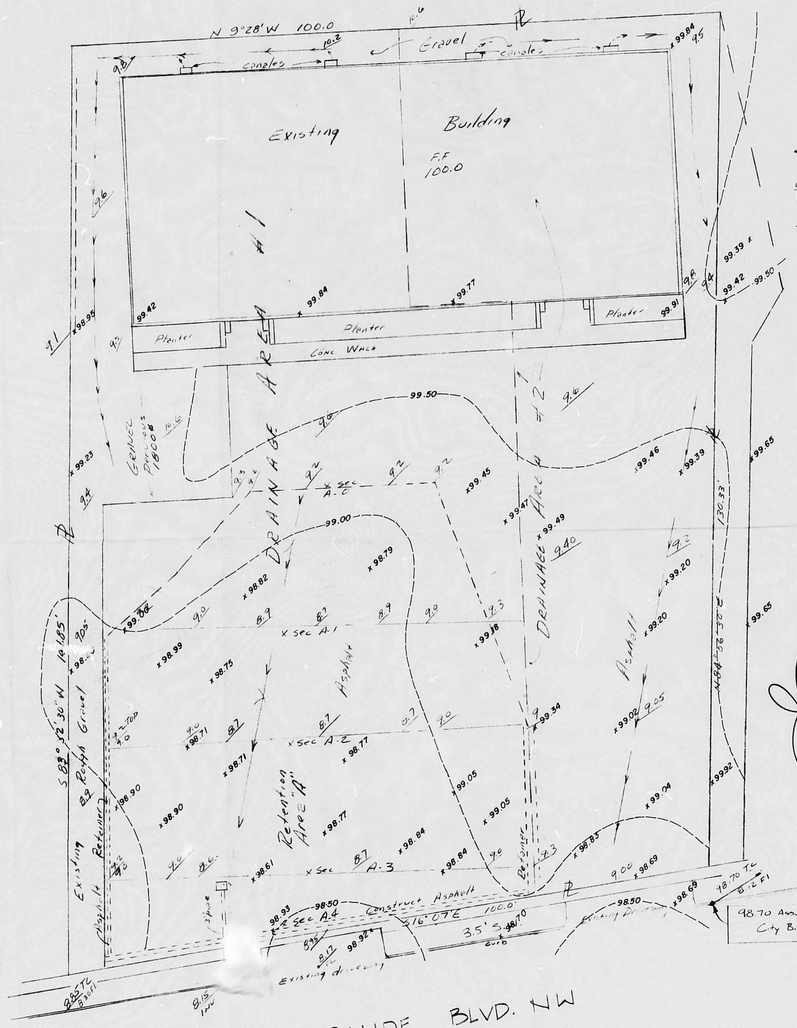
HYDROLOGY

H12/D10

ONE PLAN

H12 D10

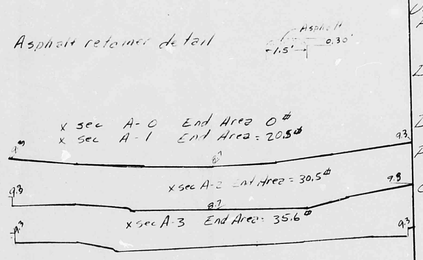
1" = 10'



GRADING PLAN - 1" = 10'

LEGAL DESCRIPTION
TRACT 178 MRGCD MAP 35
ZONE H-12-Z

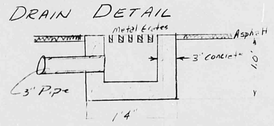
Asphalt retainer detail



x Sec A-4 End Area = 0#

21' x 20.5'/2 = Vol A0 → A-1 = 215 cu ft
17 x (20.5+30.5)/2 = Vol A-1 → A-2 = 433 cu ft
20.5 x (30.5+35.6)/2 = Vol A-2 → A-3 = 677 cu ft
7.5 x (35.6+0)/2 = Vol A3 → A4 = 133 cu ft
Total Vol Ret Area A = 1458 cu ft

DRAIN DETAIL



REGISTERED PROFESSIONAL ENGINEER NO. 9570 NEW MEXICO JACOB A. WOOD

98.70 Asphalt = 4964.73 City Data
City B.M. 1-G12 El 4963.986

DRAINAGE CALCULATIONS

Natural original site 3609# — 13603#
Developed site (incl all buildings, asphalt + conc) — 11,784#
Undeveloped site (gravel + landscaping) — 18259
Pond Vol Required - impervious x 0.9 + pervious x .4 ($\frac{24}{12}$) = 1180 cu ft
- orig pervious x 0.4 x $\frac{24}{12}$

Drainage Area #1
total 8600#
impervious 6800#
pervious 1800#

Drainage Area #2 (flows to street) 5003#

Ponding Required = Drainage Area #1 Runoff =
$C_1 \times \frac{24}{12} \times 8600\#$
C_1 = co-efficient for runoff = $\frac{\text{pervious}(0.4) + \text{impervious}(1.0)}{\text{total area}}$
$\frac{1800 \times .4 + 6800 \times 1.0}{8600} = 0.87$

$0.87 \times \frac{24}{12} \times 8600\# =$ 1496 cu ft Vol. required

Allowable Discharge $Q_1 = C_1 \times$ site Ac. $\times I$
$Q_1 = 0.87 \times 0.3174 Ac \times 1.62 = 0.44$ cfs

Existing orifice discharge = $Q = C \times$ Area of pipe $\times \sqrt{2gh}$
orifice dia = 0.25" radius = 0.125" C for 3" pipe = 0.6 head = 10'
$Q = 0.6 \times \pi \times 0.125^2 \times \sqrt{2 \times 32\frac{ft}{sec} \times 1' head}$
$Q = 0.6 \times 0.5 \times \sqrt{64}$
$Q = 0.24$ cfs for a 3" pipe

VOLUME OF PONDING:
REQUIRED: $(.09 \times \frac{22}{12} \times 13{,}609 FT^2) - (.045 \times \frac{22}{12} \times 13{,}609 FT^2) = 1123 FT^3$

ACTUAL PONDING VOLUME PER FIELD SURVEY: $800 FT^3$

AS PER DISCUSSION WITH FRED AGUIRRE PONDING VOLUME IS ADEQUATE.

JAKE VIGIL
6/22/81

APPROVED FOR DRAINAGE
6-23-81
DATE
SIGNATURE TITLE
ADVISE DRAINAGE INSPECTOR WHEN GRADING EXECUTED
ALSO CERTIFIED BY ENGINEER

Revisions | Date MAY 26, 1981 | drawn by FEG | job no | Sheet No A-1a

SHEET TITLE
DRAINAGE PLAN
DRAINAGE CALCULATIONS

PROJECT TITLE
MEGA - ONE OFFICE BLDG
2221 RIO GRANDE BLVD NW
242-6964 PAUL SPEAR

Southwest Surveying Co., Inc.
215 Marble Ave. N.W.
Albuquerque, NM
344-1015

H12/D10 (1)