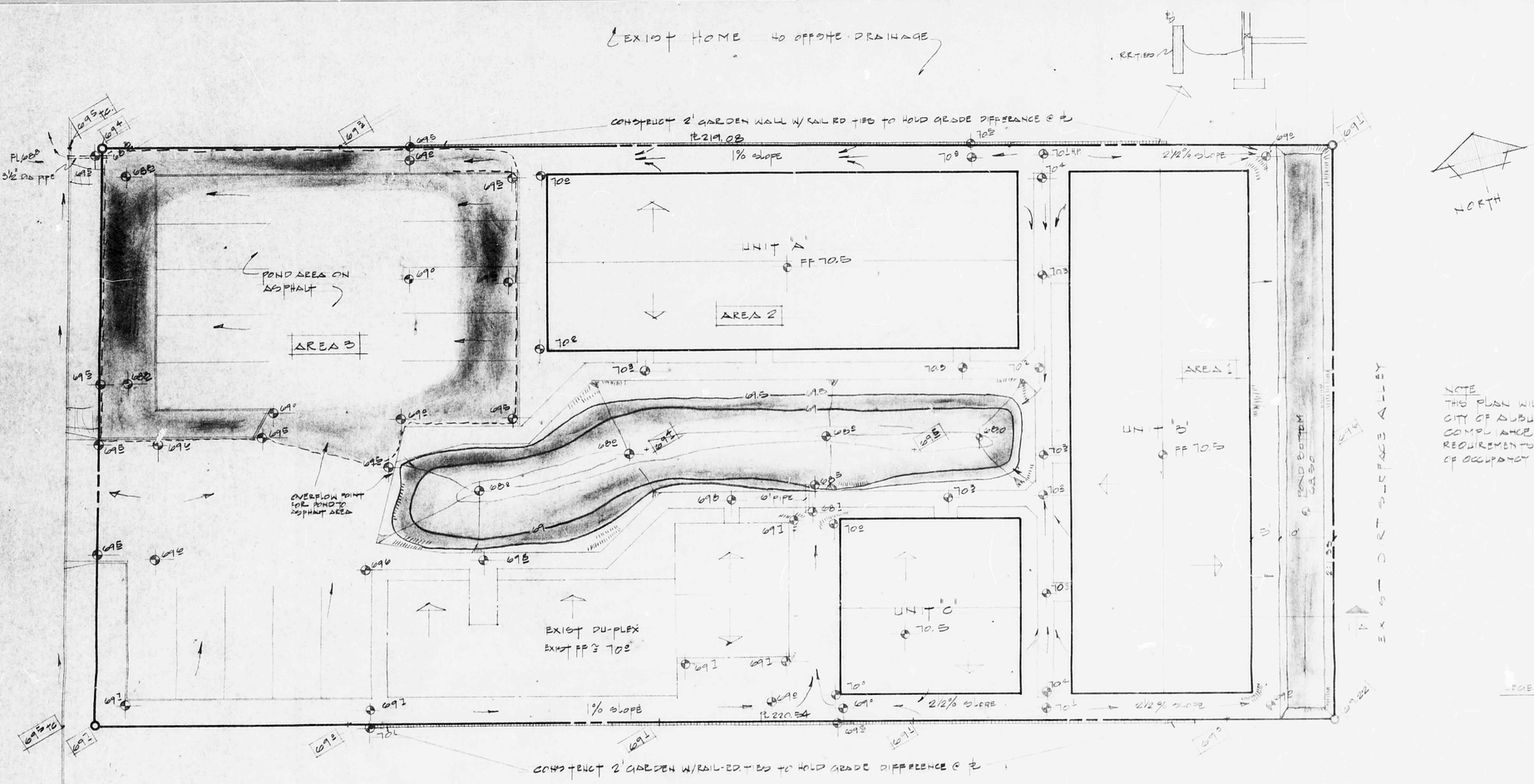
HYDROLOGY

G14/D16
TWO PLANS

G14-D16

2 PLANS



NOTE
THIS PLAN WILL BE INSPECTED BY CITY OF DUBUQUE DRAINAGE DEPT. FOR COMPLIANCE OF GRADING & DRAINAGE REQUIREMENTS BEFORE FINAL CERTIFICATE OF OCCUPANCY WILL BE ISSUED.

LEGEND - 69.5 = EXIST. GR.
= PROPOSED GR.
= GRADED AREA

DRAINAGE SITE PLAN 1"=10'

GENERAL NOTES

1. SITE IS NOT LOCATED WITHIN A FLOOD HAZARD AREA FHBM - PAGE 3 - DEC. 4, 1979 MAP) (ZONE MAP# G-14-2)
2. SECONDARY AREAS DO NOT CONTRIBUTE OFFSITE DRAINAGE TO SITE - NO CLOSED FLOW CHARACTERISTICS. TOPO SUPPLIED BY MAYJOHN SURVEYING CO.
3. PLANS ORIGINALLY SUBMITTED 4-80 - DESIGN SUBJECT TO NOV. 79 DESIGN CRITERIA FOR THE VALLEY AREA, THE PONDS SHALL LEAVE A MIN. VOL. EQUIVALENT TO A 50 YEAR DEVELOPED RUNOFF WITH Q1 POSITIVE DISCHARGE WITH OVERFLOW PROVIDED WHERE APPLICABLE.
FOR SUB-AREAS WITHOUT POSITIVE DISCHARGE, POND VOL. SHOULD HAVE CAPACITY FOR 100 YR. DEVELOPED RUNOFF VOL.

AREA 1 - DRAINS TO EAST END OF SITE FOR TOTAL RETENTION (AREA = 3343 FT²)

VOL: DRAINING TO POND = (2.2/12)(0.64)(3343) = 392 FT³

POND VOL = 106.77 x 10' (TOP DIMENSION) x 0.5 DEEP = 468 FT³ > 392 FT³ REQ'D.

NOTE: SEE DETAIL 1-A

AREA 2 - DRAINS TO GRADED POND AREA IN CENTER OF SITE FOR TOTAL RETENTION = 10,900 FT²

VOL. DRAINING TO POND = (2.2/12)(0.66)(10,900) = 1319 FT³

POND BOTTOM @ 68.0 FT - AREA = 0 FT²
@ 69.0 FT - AREA = 400 FT² > 700 FT²(1) = 700 FT³
@ 69.5 FT - AREA = 1900 FT² > 1150 FT²(0.5) = 575 FT³
1275 FT³ CAPACITY > 1319 REQ'D.

AREA 3 DRAINS TO ASPHALT PAV'D AREA AT N.W. CORNER OF SITE -
50 YEAR - DEVELOPED VOL. REQ'D W/Q1 DISCHARGE (AREA = 88,63 FT²)

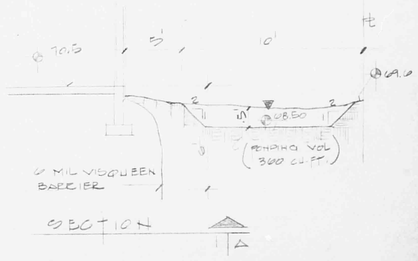
VOL. DRAINING TO POND = (2.0/12)(0.87)(88,63) = 1285 FT³

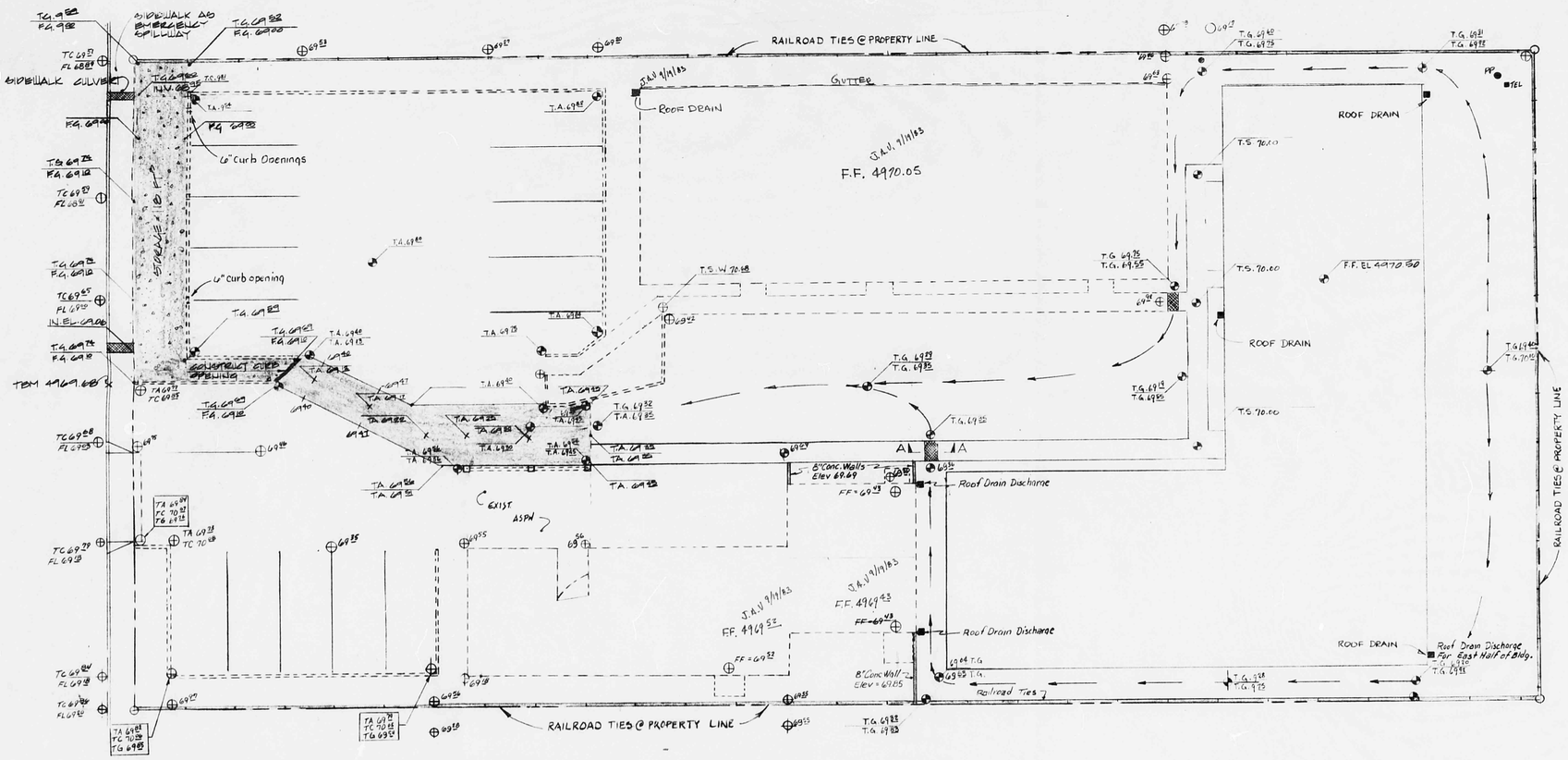
POND BOTTOM @ 68.5 - AREA = 0 FT²
@ 69.0 - AREA = 2800 > 1400 FT²(0.5) = 850 FT³
@ 69.5 - AREA = 4000 > 3400 FT²(0.5) 1700 FT³
1950 FT³ CAPACITY > 1285 FT³ REQ'D

TOP WATER SURFACE FOR VOL. 50'S 69.5
50 YEAR VOL = (2.0/12)(0.87)(88,63) = 413 FT³ - NO OVERFLOW FROM POND BECAUSE OF UNDER CAPACITY

RELEASE RATE Q1 UNDEVELOPED
I = 1.02"/HR
Q1 = (0.87)(1.02)(0.20) = 0.15 CFS

SIZE UP PIPE TO DISCHARGE 0.15 CFS
UNDER A HEAD OF 0.5, PIPE AREA = 0.06 FT²
USE 1 - 3 1/2" DIA. PIPE





DRAINAGE & GRADING PLAN 1"= 10'-0"

DRAINAGE AREA = 0.54 ACRES
COEFFICIENT OF RUNOFF = 0.85
INTENSITY OF RAINFALL (100 YR.) = $(2.2 \times 6.84 \times 10^{-.81}) = 4.65$ "/HR.
$Q = CIA = 0.85(4.65)(0.54)$
$Q_{100} = 2.13$ CFS

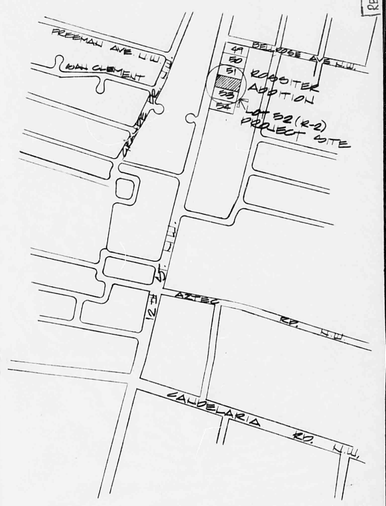
USE SIDEWALK CULVERT WITH STEEL PLATE-
MAX WIDTH = 24"
DETERMINE CAPACITY: $Q = CLH^{3/2}$, $L = 2.0$, $H = 0.41$, $C = 3.08$
$= 3.08(2)(0.41)^{3/2}$
$= 1.62$ CFS USE: 2 SIDEWALK CULVERTS

NOTE:

1. THE SITE IS NOT LOCATED IN A FLOOD HAZARD AREA (ZONE ATLAS MAP C-14)
2. THE SITE IS NOT ALLERTING ANY OUTSIDE FLOWS AND IS PREVENTING ANY POSSIBLE DAMAGE BY CONSTRUCTING RAILROAD TIES ALONG THE PROPERTY LINE EXCEPT ON THE STREET SIDE.

J.A.V. 9/9/83

2. THERE ARE NO OUTSIDE FLOWS PRESENTLY DISCHARGING INTO THE SITE AND CONSTRUCTION OF RAILROAD TIES ALONG THE PROPERTY LINE ON THE SIDES AND REAR CONTAINS THE THE ONSITE FLOWS WITHIN THE PROPERTY.



VICINITY MAP
N.T.S.

LEGEND

- ⊕ EXISTING ELEV.
- ◐ EXISTING ELEV. @ PROPOSED IMPROVEMENT. PROPOSED ELEV @ " "
- □ ASPHALT TO BE REMOVED AND REPLACED WITH NEW ASPHALT AT REQ'D LEVELS AS PER INDICATED ON PLANS.
- ⊡ EXISTING GRAVELED AREA TO BE EXCAVATED AND LOWERED TO REQ'D LEVEL; GRAVEL SHALL BE RE-INSTALLED AND LEVELED OUT.

G14/D16

REVISED DATE: AUG. 18, 1983
REVISED: SEPT. 19, 1983

JOB NUMBER 100/83
DATE AUGUST 12, 1983
DRAWN J.V.
CHECKED M.T.

PROJECT 6 UNIT APARTMENT BUILDING
4426 12th ST. N.W. 87107
ALBUQUERQUE, N.M.
OWNER L & L CONSTRUCTION CO.
LOUIS TRUJILLO - GEN. CONTR.
TITLE DRAINAGE PLAN & NOTES

MIGUEL TRUJILLO AND ASSOCIATES
ARCHITECTURE PLANNING
230 TRUMAN N.E.
ALBUQUERQUE, NEW MEXICO
(505) 265-8329
87108

REGISTERED PROFESSIONAL ENGINEER
JACOB A. VIGIL
NEW MEXICO
4450

SHEET C-3
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