HYDROLOGY

L22/D30

ONE PLAN

1 PLAN FOR

WENONAH NORTH

L 22- D 30

GENERAL NOTES

1. Legal: Lot 3-A, Blk. 1, Fale Addition, Alb. N.M.
2. B.M.: B.C. 2-L22, Central & Tramway, Elevation 5659.96
3. T.B.M.: T.C. Northside, end of existing curb. Elevation 5606.06
4. Soils: SCS Soils Map 32, Soil Type TgB, Hydrologic Soil group "B"
5. Flood Hazard Zone: None
6. Surveyor: Ron Forstbauer Survey Company, April 1984

POND CAPACITIES

W. POND

Elev.	Area	Depth	Vol.
09^{3}	434		
		0.1	127
09^{2}	2108		
		0.1	255
09^{1}	3000		
		0.4	1455
09^{6}	4278		

1837 ft^3

available vs. 1633 required

E. POND

Elev.	Area	Depth	Vol.
15^{5}	310		
		0.1	112
15^{6}	1927		
		0.1	24[illegible]
15^{7}	2976		
		0.4	151[illegible]
16^{1}	4588		

1870 ft^3

available vs. 1623 required

SCALE: 1" = 20'

RESUBMITTAL 6-6-84
1. NOTE ADDED ABOUT STREET PAVEMENT
2. NOTE ADDED TO BLDG. WEST OF SITE
3. RETAINING WALL DETAIL ADDED
4. DRAIN WIDTH ADDED

LEGEND

- ASPHALT PAVING
- LANDSCAPED AREA
- PROPERTY LINE
- EXISTING CURB & GUTTER W/SIDEWALK
- 12.7 EXISTING SPOT ELEVATION
- --12-- EXISTING CONTOUR
- 12.7 PROPOSED SPOT ELEVATION
- --12-- PROPOSED FINISHED CONTOUR
- SURFACE FLOW DIRECTION
- BUILDING STRUCTURE

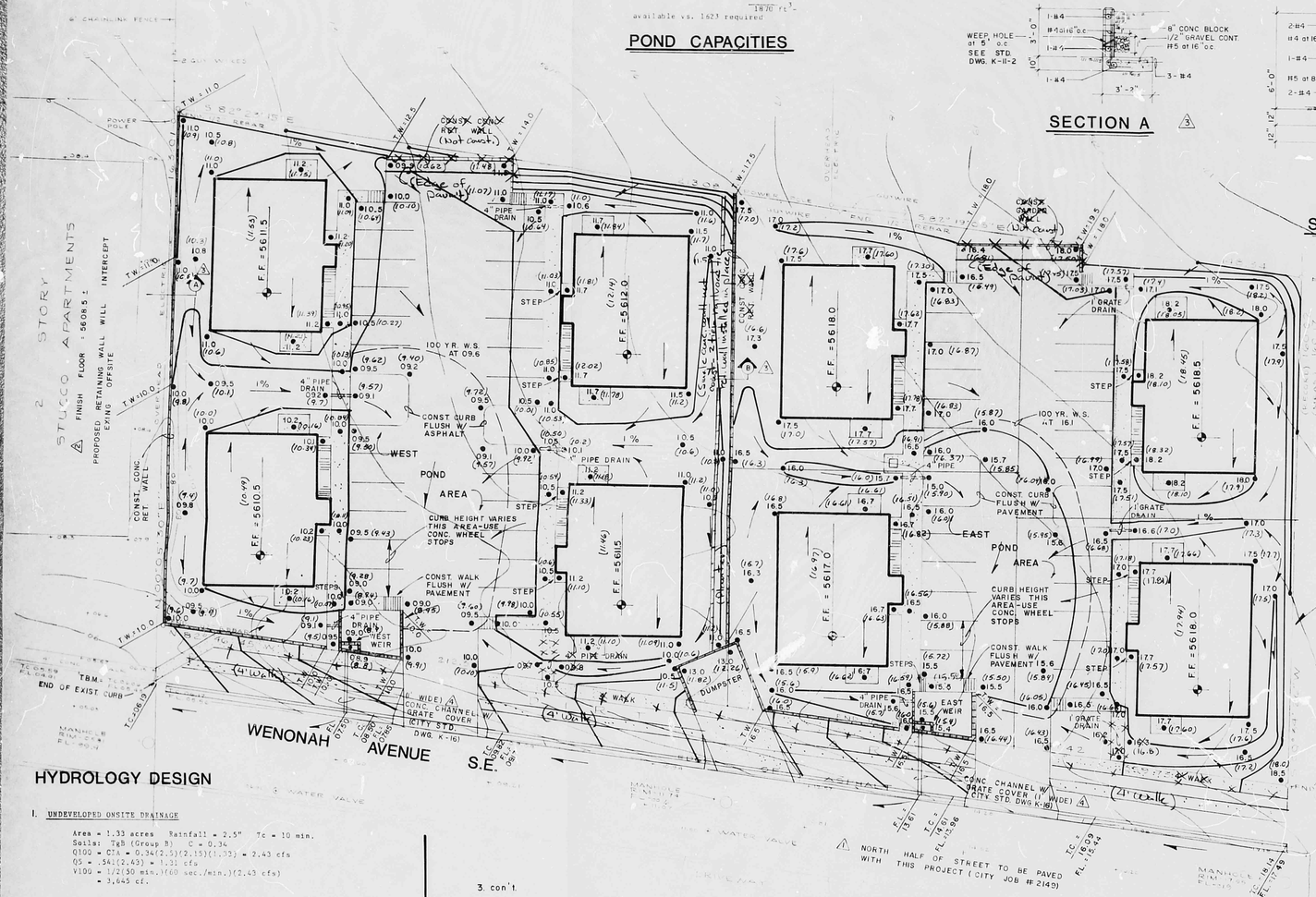
CERTIFICATION

I, CHRISTOPHER L. WEISS, DO HEREBY CERTIFY THAT THE AS-BUILT SITE IS IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED DRAINAGE PLAN, WITH NOTED CHANGES TO STRUCTURES DELETED OR REVISED.

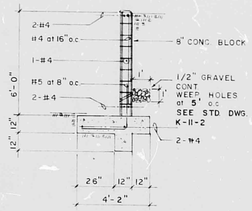
Christopher L. Weiss 2-27-85

CHRISTOPHER L. WEISS DATE

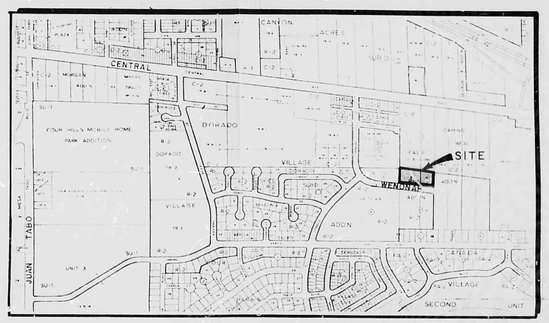
CERTIFICATION RESUBMITTAL DATE



SECTION A 3

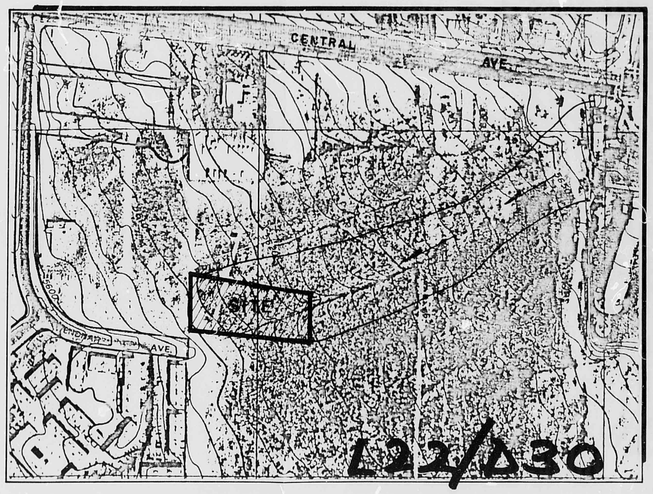


SECTION B 3



VICINITY MAP L-22

RECEIVED MAR 27 1985 HYDROLOGY SECTION

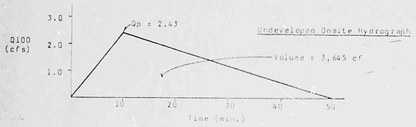


FLOOD HAZARD BOUNDARY MAP

HYDROLOGY DESIGN

1. UNDEVELOPED ONSITE DRAINAGE

Area = 1.33 acres Rainfall = 2.5" Tc = 10 min.
Soils: TgB (Group B) C = 0.34
Q100 = CIA = 0.34(2.5)(2.15)(1.33) = 2.43 cfs
Q5 = .34(2.43) = 1.31 cfs
V100 = 1/2(30 min.)(60 sec./min.)(2.43 cfs)
= 3,645 cf.



2. OFFSITE DRAINAGE

Examination of Map L-22 from Albuquerque Master Drainage Study and recent field visits indicate that approximately 5 acres could drain through the site. About 3.5 acres will drain to the east pond, the remaining 1.5 acres will drain to the west pond.

East Pond Q100 = CIA = 0.34(2.5)(2.15)(3.5) = 6.4
West Pond Q100 = CIA = 0.34(2.5)(2.15)(1.5) = 2.7

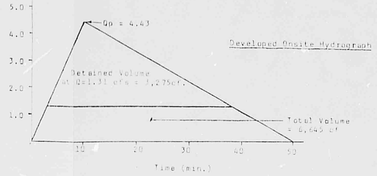
9.1

3. DEVELOPED ONSITE DRAINAGE

Area = 1.33 acres Rainfall = 2.5" Tc = 10 min.
C = 0.34

Q100 = CIA = 0.62(2.5)(2.15)(1.33) = 4.43 cfs
V100 = 1/2(30 min.)(60 sec./min.)(4.43 cfs)
= 6,645 cf.

3. con't.



Current design criteria of City of Albuquerque requires that discharge from the development site be no greater than 1.31 cfs (undeveloped Q5). Therefore, from developed onsite hydrograph and Qp = 1.31 cfs the required pond volume is 3,275 cf. Note that this is a conservative design since the difference between V100 developed and V100 undeveloped is 6,645-3,645 = 3,000 cf.

With two ponds in use, each pond must have a volume of 1640 cf. and a controlled outlet discharge of 1.31 cfs/2 = 0.66 cfs. Also, adequate spillway capacity must be available to carry the combined onsite and offsite Q100 = 4.43 + 9.10 = 13.53 cfs. Of the total flow of 13.53 cfs, the east pond spillway must carry 8.62 cfs, the west pond spillway 4.91 cfs.

4. OUTLET AND SPILLWAY DESIGNS

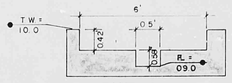
Two compound broad-crested rectangular weirs were designed to meet the controlled outflow and spillway requirements. The east pond weir has a total crest length of 10' (0.42' head) and a 0.5' wide (0.58' head) control notch. The west pond weir has a total crest length of 6' (0.42' head) and a 0.5' wide (0.58' head) control notch. The spillway crest height is designed to cause emergency overflow spillage via the two drive pads onto Wenonah Ave. in the event of weir blockage.

The outlet channel for the east pond will be a 2' x 0.5' rectangular channel (Dh = 0.31') with 9% slope; the west pond will be a 1' x 0.5' rectangular channel (Dh = 0.4') with 9% slope. Both channels will discharge to Wenonah Ave.

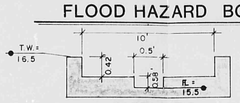
Weir Calculations: ("C" values from King & Brater, 5th Ed. p.5-40)

Q5 = 0.66 cfs = $CLH^{3/2}$ = 3.04(0.5)(0.58)$^{3/2}$ = 0.67 O.K.
Q e. spillway = 8.62 ≤ $CLH^{3/2}$ (10' crest + 0.5' notch)
8.62 ≤ 2.38(10)(.42)$^{3/2}$ + 3.32(0.5)(1)$^{3/2}$
8.62 ≤ 8.68 O.K.

Q w. spillway = 4.91 ≤ $CLH^{3/2}$ (6'crest + 0.5' notch)
4.91 ≤ 2.54(6)(.42)$^{3/2}$ + 3.32(0.5)(1)$^{3/2}$
4.91 ≤ 5.71 O.K.

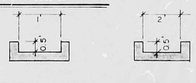


WEST WEIR



EAST WEIR

WEIR SECTIONS



WEST CHANNEL

EAST CHANNEL

CHANNEL SECTIONS

SEE CITY STANDARD DRAWING K-16 FOR CONSTRUCTION DETAILS

C.T.S. INC. ENGINEERING
1100 ALVARADO N.E. SUITE A
ALBUQUERQUE, NEW MEXICO 87110
(505) 266-3444

REVISIONS DATE

DESIGNED
DRAWN
CHECKED

DRAINAGE / GRADING PLAN
WENONAH NORTH

SHEET 1 OF 1