HYDROLOGY

L19/D25

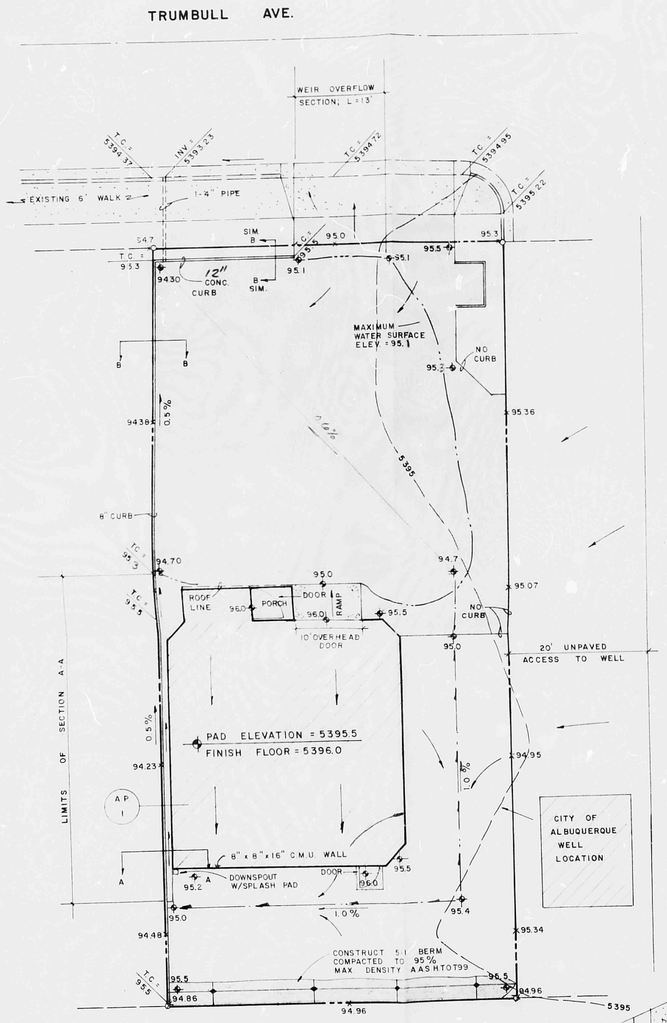
ONE PLAN

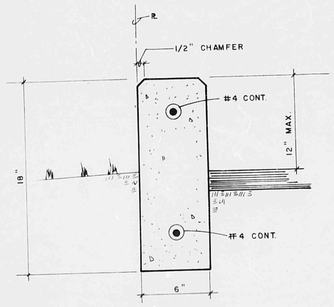
1 PLAN FOR

8510 TRUMBULL AVE.

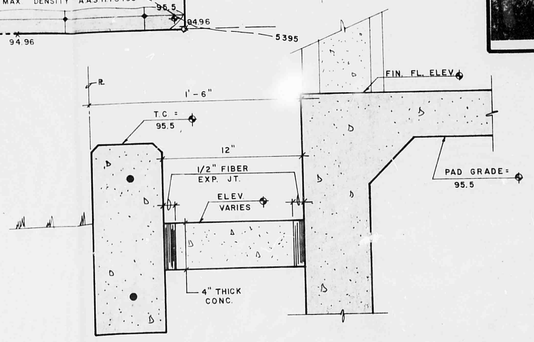
S.E.

L19- D25





SECTION B-B
1" = 5'



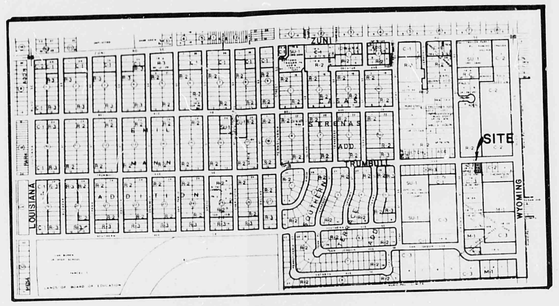
SECTION A-A
1" = 5

0 5 10 20

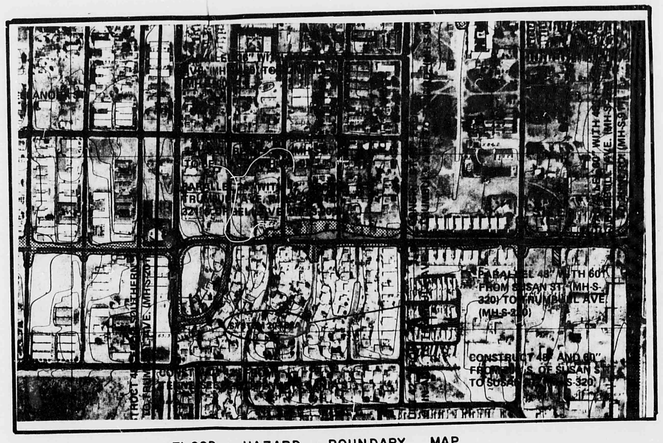
N

LEGEND

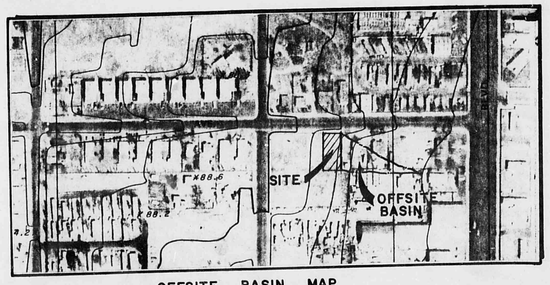
- ASPHALT PAVING
- LANDSCAPED AREA
- PROPERTY LINE
- EXISTING CURB & GUTTER W/SIDEWALK
- 12.7 EXISTING SPOT ELEVATION
- 12 EXISTING CONTOUR
- 12.7 PROPOSED SPOT ELEVATION
- 12 PROPOSED FINISHED CONTOUR
- SURFACE FLOW DIRECTION
- BUILDING STRUCTURE



VICINITY MAP — L-19



FLOOD HAZARD BOUNDARY MAP



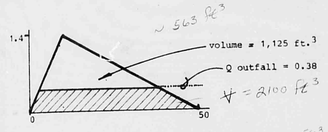
OFFSITE BASIN MAP

DRAINAGE AND GENERAL NOTES

1. Legal Description: Tract 1-B, Hager Industrial Park No. 2
2. City Address: 8510 Trumbell Avenue, SE, Albuquerque, NM
3. Zoning: C-3
4. Benchmark: City of Albuquerque Benchmark 8L20; elevation = 5,402.03
5. T.B.M.: Westerly property line projection on top of curb of Tract 1-B, Hager Industrial Park No. 2 on Trumbell Avenue, SE; elevation = 5,394.37.
6. Soil Classification: U.S.D.A. Soil Survey defines this as gravelly sandy loam of Hydrologic Soil Group B.
7. Off-Site Drainage Basin: As indicated on the map the off-site watershed comprises of an urbanized area of 0.3 acres. The area appears to be 50% impervious. Plate 22.2C1 of the DPM generates a "C" value of 0.58. Length of watershed is only 250 ft., hence t_c = 10 minutes.
8. Hydrology Values: Rainfall amount, P, using plate 22.2D-1 is 2.4". Using a t_c = 10 minutes because of the small watersheds the maximum intensity, I, will be derived using 10 minutes.
   $I = (P)(6.84)(t_c^{-0.51}) = 5.1$ inches/hr.
9. Existing Hydrologic Conditions
   a. Off-site drainage basin contribute Q = CIA = (0.58)(5.1)(0.31) = 0.9 c.f.s
   b. Undeveloped site drains "due west" w/c @ 0% impervious = 0.34; Q = CIA = (0.34)(5.1)(0.13) = 0.2 c.f.s.
10. Developed Site: The site comprises of 5,720 sq. ft. of which 1,515 sq. ft. is pervious; hence 74% is impervious and C = 0.72 (using Plate 22.22C1 of DPM). The developed peak rate of runoff = Q = CIA = (0.72)(5.1)(5720/43,560) = 0.5 c.f.s. The outfall shall consist of a 4" pipe with the inlet invert [illegible] the curb since the street is defined as a flood plain to prevent back flow into the parking lot pond. An overflow weir shall also be included at the driveway to handle any flows exceeding the detention pond capacity. $Q_{pipe} = Ca\sqrt{2gh}$ (w/h = 0.8) = 0.38 c.f.s.

the total Q inflow = 0.5 c.f.s. + 0.9 c.f.s. (off-site) = 1.4 c.f.s. Using a hydrograph with a base time of 5 times the time of concentration (Plate 22F' column 2), the following volume is required for 100% pipe operation of outfall. $\forall = (0.72)(2.4/12)(5720) = 825.6\ ft^3$

~ 563 ft³



actual volume provided = $\left(\frac{20.2\ ft.^2}{2}\right)(\ )$ = ~~845~~ 563 ft.³

Q outfall must equal 0.55 c.f.s. hence approximately 0.15 c.f.s. will overflow thru the drive pad to street. Note that the overflow section operating @ elevation 95.5 is capable of Q emergency = 3.0 L $H^{2/3}$ = (3)(13)(.3)$^{2/3}$ = 17.5 c.f.s. which is greater than the 1.4 c.f.s.

ANALYSIS POINT #1 (A.P. 1)
IMPERVIOUS AREA: 1260 S.FT. = 0.029 ACRES (45%)
PERVIOUS AREA: 1576 S.FT. = 0.036 ACRES (55%)
C = 0.56 (PLATE 22.2 C1, D.P.M. VOL. 2)
I = 5.1 INCHES PER HOUR
Q_{100} = CIA = 0.56(5.1)(0.065) = 0.19 C.F.S.
AT ENTRANCE $Q = C L H^{3/2} \Rightarrow H = \left[\frac{0.19}{(3)(1)}\right]^{2/3} = 0.16' = 2"$ O.K.
$Q_{CHANNEL} = \frac{1.486}{n} A R^{2/3} S^{1/2}$

d	Q
1"	0.10 C.F.S.
2"	0.29 C.F.S.

O.K.

CHANNEL CAN ADEQUATELY HANDLE FLOWS ALONG WEST R.

RECEIVED SEP 19 1983 ENGINEERING

REVISED 9-19-83 AH
REVISED 9-12-83

L19-D25
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Revisions	Date

Designed	A.H.	8-83
Drawn	M.W.	8-83
Checked	C.L.W.	8-83

GRADING/DRAINAGE PLAN FOR
8510 TRUMBELL AVE. S.E.

ANDRE HOULE N.M. REG. 7876 REGISTERED PROFESSIONAL ENGINEER

SHEET 1 OF 1