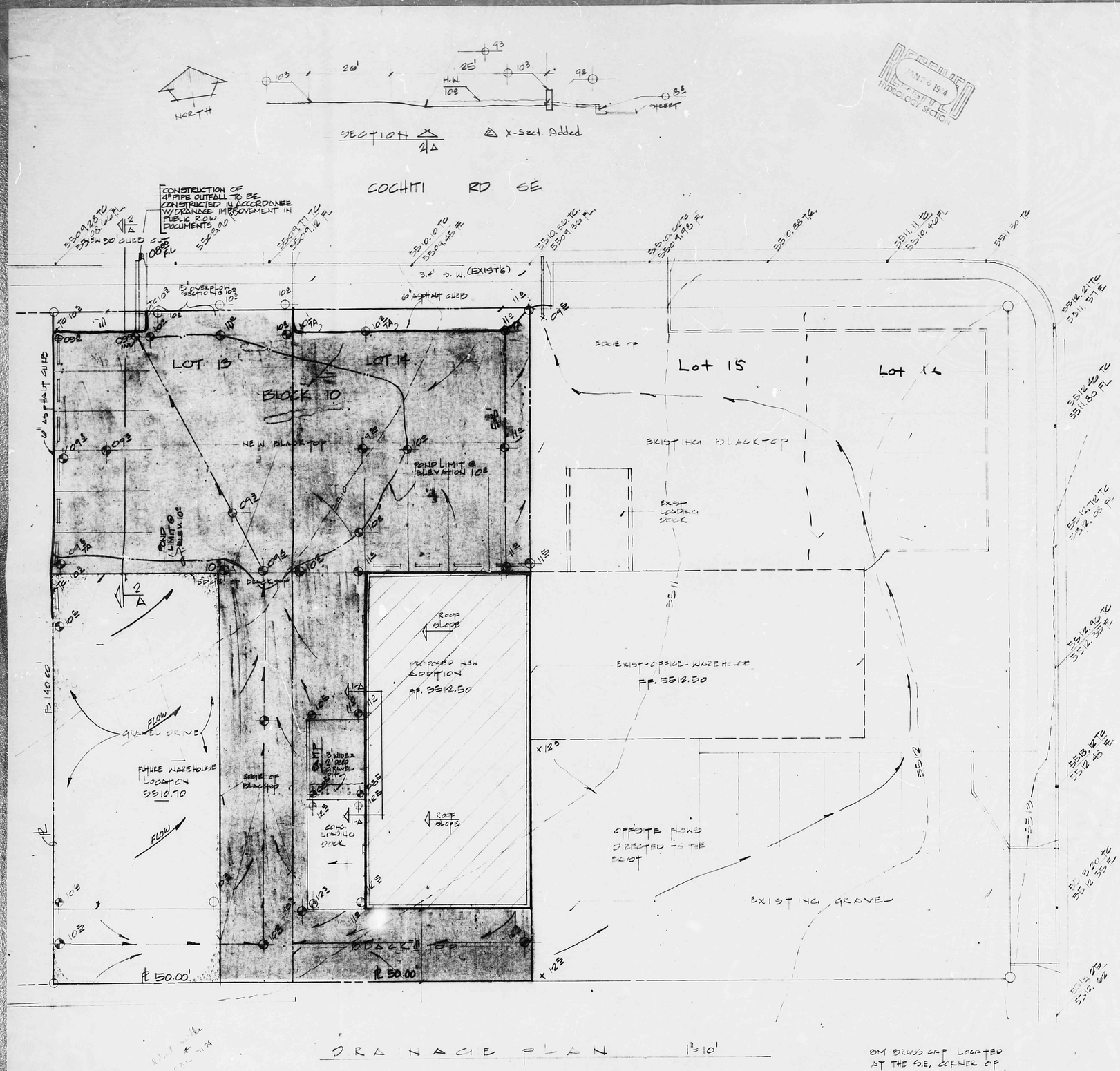
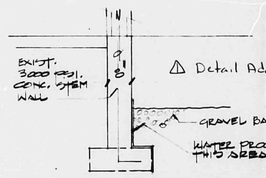
HYDROLOGY

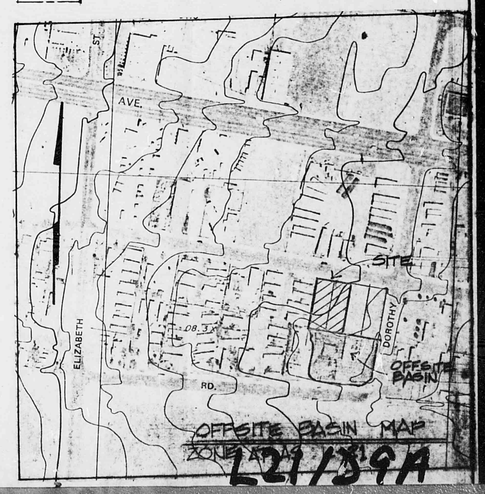
L21/D9A
ONE PLAN

L21/D9A

1 PLAN







applied 1/30/84

DRAINAGE AND GRADING NOTES

1. LEGAL: Lots 13 and 14, Block 10, East Central Addition.

2. FLOOD HAZARD ZONE: Zone C as per the F.H.B.M. dated September 15, 1983, panel 350002-00374.

3. SOIL TYPE: Sandy clay loam as identified in the soil survey of Bernalillo County prepared by the Soil Conservation Service (Plate 32) and of hydrologic Soil Group B.

4. BENCH MARK: City of Albuquerque B.M. Station N.M. Ber. 13 located on the southeast corner of Central Ave. and Britt Ave., Elevation 5486.95. (survey information based upon survey by Albuquerque Surveying Company.)

5. HYDROLOGY FACTORS: From Plate 22.2Di the 100 year-6 hour Rainfall (R100) equals 2.5 inches. The 10-minute intensity (I_{10})=(2.5)(2.11)= 5.3 inches per hour (Plate 22.2D-2)

"C" factor undeveloped is 0.34
"C" factor @ 50% impervious is 0.58
"C" factor @ 100% impervious is 1.00

6. OFFSITE DRAINAGE: The site has a small offsite drainage basin of 0.5 acres draining thru it. These flows will be routed thru the site unimpeded and allowed to overflow thru the driveway. Q100=CIA= (0.58)(5.3)(0.5)= 1.5 c.f.s.

7. UNDEVELOPED CONDITION: This site drains to the northwest onto Cochite Road S.E. The site comprises of 0.32 acres of undeveloped land with a "C" factor of 0.34. Q100= CIA= (0.34)(5.3)(.32)= 0.6. c.f.s. Q10= 0.657 Q100= 0.4 c.f.s.

8. DEVELOPED DRAINAGE MANAGEMENT PLAN: The site in it's developed condition will be effectively impervious, hence C=100. The drainage will be routed thru a detention pond. The pond will be sized to handle this development as follows.

C=1.0
I=5.3
A=0.32
Q= CxIxA= (1.0)(5.3)(0.32)=1.7 c.f.s.

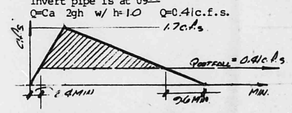
Volume of 100 year-6 hour rainfall =2.5 subtract 0.2" of initial abstraction with 0.1" of abstraction in the 6 hours=2.2 inches runoff volume = (2.2)(140)(100)(1/12)=2567 cubic feet.

Volume = ½ Q (time)>>

$= \frac{2v}{Q} = \frac{2(2567)}{(2.7)(60)} = 50$ minutes

POND SIZE REQUIRED

Maximum water surface at 09^{80}
Invert pipe is at 09^{00}
Q=Ca 2gh w/ h=1.0 Q=0.41c.f.s.



Pond Volume= ½(1.7+.41)(50)(60)= 1470 cu. ft.
Pond Volume Provided:

Elevation	Area	Ave. Area	Depth	Volume
09^{00}	0			
		863	.30	259
09^{50}	1726			
		2214	.70	1808 >1471 OK
09^{80}	3404			

Overflow Weir Capacity;

Q=CLH 3/2= (3.0)(15)(.3)$^{3/2}$= 7 c.f.s. OK
to pass offsite and developed flows.

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

REVISIONS: 1 X-Sect. DATE 1-24-84
DESIGNED
DRAWN
CHECKED

DRAINAGE / GRADING PLAN

WAREHOUSE ADDITION ON LOTS 13 & 14, BK 10
EAST CENTRAL ADDITION

SHEET ___ OF ___