

[illegible]

The following items concerning the Virgilio Gil Construction Company office building drainage plan are contained herein: 1. Vicinity map 2. Drainage plan 3. Grading plan 4. Erosion control plan 5. Calculations.

An office building is proposed on the tract as shown above. It is located on the west side of Fourth Street N.W., between Palo Duro Ave. and Delamar Ave. N.W. An alley runs from Palo Duro to Delamar Aves. just west of all the lots in this area.

At present the Tract is undeveloped. The Tract to the north is approximately at the same elevation, and it appears that no runoff enters the site from there. A building is located on this Tract and west of the building the land has a slope to the west toward the alley. Fourth Street N.W., curb, gutter and sidewalk border the tract to the east and no runoff comes in from that side. A paved parking area to the south has a low asphalt curb which keeps runoff away from the site Tract. The alley to the west is at a lower elevation and therefore no runoff comes from there. This Tract does not lie in a flood plain, does not lie adjacent to any natural or artificial water course and does not have any drainage easements attached to the property at this time.

When developed the impervious area will include the building roof and the front parking area. Two planting areas are planned just north and south of the front parking area.

Runoff from the building roof, the front parking area and the 2 planting areas will drain east. The parking area will be graded with a swale in the middle which will empty into Fourth Street N.W.. In the street, water flows south toward storm drain inlets at the northwest corner of the intersection of Fourth Street and Palo Duro, and another inlet on the north side of Palo Duro, just east of the alley exit.

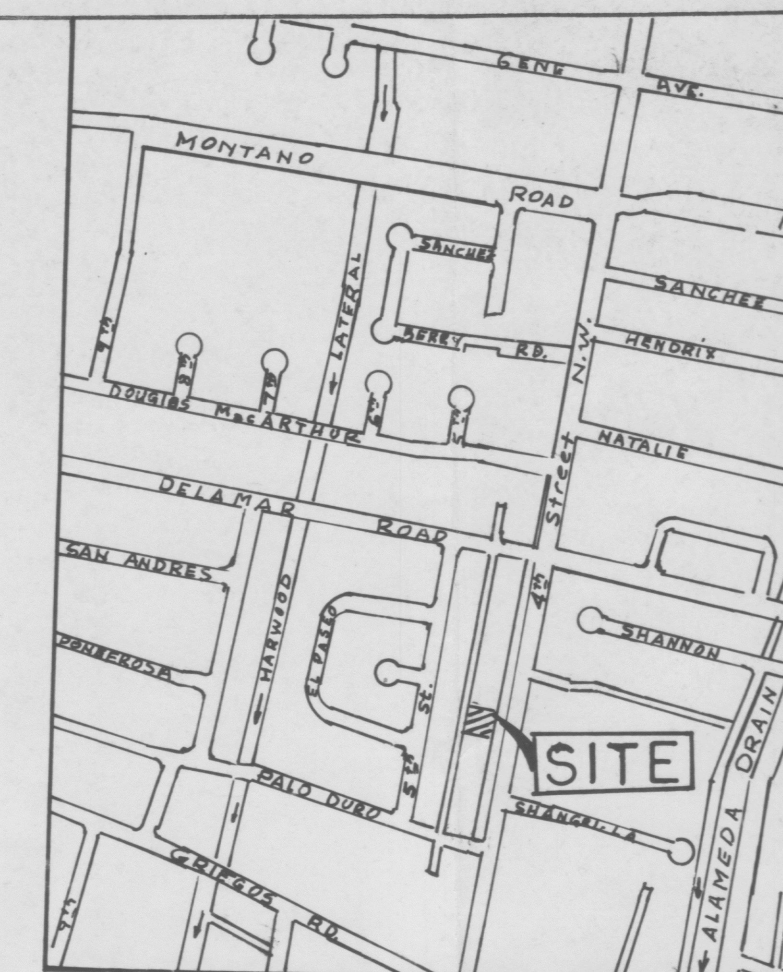
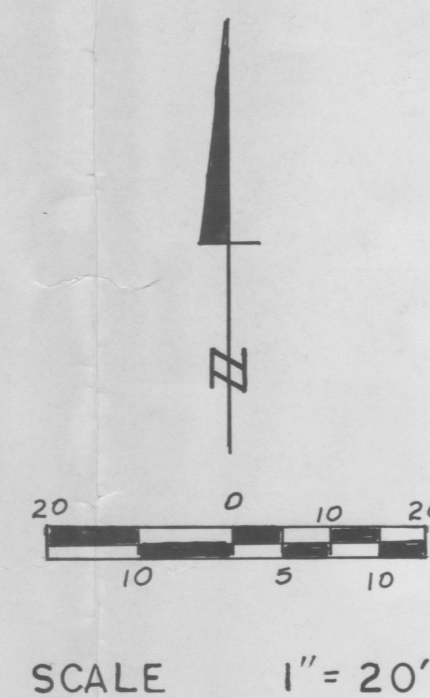
Free discharge is planned because: 1. the project is in an infill sitewith 100% development, 2. there is a storm drain system along Fourth Street, 3. the project area is not in a flood plain, and 4. runoff impact to the downstream drainage system is minimal because the drainage area is small (0.236 acs.) and only 0.98 c.f.s. discharge.

The grading plan consists of the existing contours, proposed grades as shown by proposed spot elevations, location of swales and direction of flow. Retaining walls are not required.

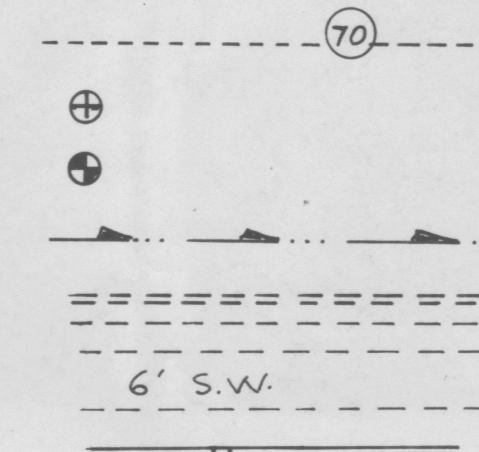
Sediment deposition due to erosion during construction will not be a problem. Site elevations will remain basically the same until the parking areas are paved. If necessary small earthen dikes will be constructed around the site to keep sediment from leaving the construction site.

Lot 16-A (Replat of Lots 16, 17 & 18)
Block 14 - Sandia Plaza
Sec. 32, T11N, R3E NMPM
Albuquerque, Bernalillo County
New Mexico

5005 Fourth Street N. W.

VICINITY MAP
ZONE ATLAS F-14-Z

Existing Contour Lines
Existing Spot Elevations
Proposed Spot Elevations
Proposed swales
Existing Curb & Gutter
Existing Sidewalk
8" wide slots thru parking lot curbs



CALCULATIONS

Total Tract Area	---	10,500 ^{sq}	= 0.2410	Ac.
Rear Planting Area	---	413 ^{sq}	= 0.0095	Ac.
Front Parking Area	---	3,547 ^{sq}	= 0.1273	Ac.
Building roof Area	---	3,600 ^{sq}	= 0.0826	Ac.
Front planting Area	---	940 ^{sq}	= 0.0216	Ac.

Composite $C = 5,547 \times 0.95 + 3,600 \times 0.90 + 940 \times 0.25 = 8,744.65 \div 10,087$
 " $C = 0.87$ (Building & Front Area)

Rainfall 100 year 6 hr. Vol. -- 2.2" (Plate 22.2 D-1)
 I ($T_c < 10 \text{ min.}$) -- 2.2 (Plate 22.2 D-2)
 i (Intensity) = (6 hr. Vol. $\times I$) -- 4.84

$$C = 0.40$$

$$Q_{100} = C \cdot L \cdot A = 0.40 \times 4.84 \times 0.2410 = 0.47 \text{ c.f.s.}$$

$$Vol._{100} = 6 \text{ hr. Vol.} \div 12'' \times C \cdot V \cdot A = 2.2 \div 12 \times .40 \times 10,500 = 770 \text{ cu. ft.}$$

Rear Planting Area: (will be stored within area)

$$C = 0.25$$

$$Q_{100} = 0.25 \times 4.84 \times 0.0095 = 0.01 \text{ c.f.s.}$$

$$\text{Vol.}_{100} = 0.25 \times 2.2 \div 12 \times 413 = 18.9 \text{ cu. ft.}$$

$$C = 0.87$$

$$Q_{100} = 0.87 \times 4.84 \times 0.2316 = 0.98 \text{ c.f.s.}$$

$$Vol._{100} = 0.87 \times 2.2 \div 12 \times 10,087^{0.7} = 1,609 \text{ cu ft.}$$

Half-Street Capacity:
Width = 60' $\frac{1}{2}$ width = 30'
Curb = 8" $n = 0.017$
 $A = 10''$ $WP = 30.8'$
 $r = 0.33$ $r^2 = 0.47$
 $Av. S = 0.0622$ $S^2 = 0.047$
 $V = 1.93$ F.P.S. $Q = 19.3$ c.f.s.

Storm Drain Capacity:

Existing = 24" RCP $S = 0.0012$ $n = 0.013$

Used $Q = \frac{.000614}{d^{8/3}} s^{1/2}$

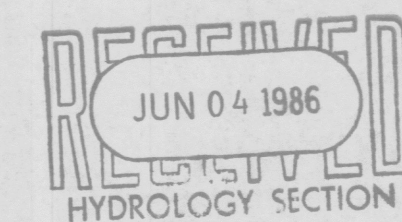
Q = 7.85 c.f.s. A = 3.14 ft²
V = 2.5 f.p.s.

Top Width = 64' S = 0.00125 n = 0.017
Assume d = 0.1' A = 3.2⁰¹ WP = 64'
r = 0.05 r^{2/3} = 0.1356
S = 0.00125 S^{1/2} = 0.035
V = 1.486 ÷ r n S^{1/2}, r^{2/3} = 0.41 f.p.s.
Q = VA = 1.32 c.f.s. (exceeds Q_{ten})


F14-D26

Submitted 6-4-86
He indicated that it need
only be placed in
the drainage file
CAM

RIVERA ENGINEERING
2624 Valencia Dr. N.E.
Albuquerque, NM 87110



ENGINEER'S SEAL		SURVEY INFORMATION		BENCH MARKS		AS BUILT INFORMATION	
		FIELD NOTES		City of Albuquerque BM No. 11-F14 Elev. 4972.549 - Standard ACS aluminum cap set flush with curb at S.E. corner of intersection of 4th St. & Delamar Rd. NW.		CONTRACTOR	
		NO.	BY			STAMPED BY	DATE
1	4-14-86 Update Cylinders - Drain Test parking to alley	RAR					
2	5-29-84 Moke building wash. - Mopel air discharge Toward 4th St	RAR					
NO. DATE	REMARKS	BY					
REVISIONS							
DESIGN							
DESIGNED BY	Raul A. Rivera	DATE	3-18-84				
DRAWN BY	RAR	DATE	3-86				
CHECKED BY		DATE					



Raul A. Rivera
Mar. 18, 1986

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

TITLE: DRAINAGE PLAN

OFFICE BUILDING VIRGILIO GIL CONSTRUCTION CO.

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
City Engineer			Liquid Waste		
A.C.E.- Design			Traffic		
A.C.E.-Hydrology			Water		

DRAWING NO.	MAP NO.	SHEET	OF
----------------	---------	-------	----