HYDROLOGY

L16/D14
ONE PLAN

L16-D14

1 PLAN

DRAINAGE CALCULATIONS

I. Existing Conditions

A. Area (126' x 31') + (30' x 16') = 16,986 SF = 0.3900 ac
- Existing Building 28' x 44' = 1,232 SF = 0.0283 ac
- Existing Landscaping = 643 SF = 0.0148 ac
- Concrete sidewalks, etc. = 1,353 SF = 0.0311 ac
- AC Paving = 9,498 SF = 0.2180 ac
- Undeveloped = 4,260 SF = 0.0978 ac

B. Off-site Flow – The existing concrete block wall presently blocks flows from the east. Property to the North and South drain directly to Yale Boulevard.

C. Soil Type – Soil Survey of Bernalillo County and parts of Sandoval and Valencia Counties, New Mexico Sheet No. 31, shows two soil series underlying the site.
Wink – Fine sandy loam, 0 to 5 % slopes (WsB)
Madurez – Wink association, gently sloping (MWA)
Both soil series are in Hydrologic Soil Group B.

D. "C" Factor – From City of Albuquerque Development Process Manual (DPM) Volume II Design, Plate 22.2 C-1, shows undeveloped "C" Factor of 0.34. The following are assumed for developed surfaces.
- Buildings and Sidewalks = 1.0
- Paving = 0.9
- Landscaping = 0.34
- Undeveloped = 0.34

Weighted "C" Factor – Existing Conditions

$$C = \frac{1.0\,(0.0283 + 0.0311) + 0.9\,(0.2180) + 0.34\,(0.0148 + 0.0978)}{0.3900} = 0.75$$

E. Intensity
From DPM Plate 22.2 D-1, 6-hour 100-year rainfall = 2.3"
Assume T_c = 10 minutes for small site
From DPM Plate 22.2 D-2, $I = (6\text{-hr rain})\ 6.84\ T_c^{-0.51}$

$$I = (2.3)(6.84)(10)^{-0.51} = 4.86 \text{ in/hr}$$

E. Peak Discharge – By rational equation $Q = CIA = (0.75)(4.86)(0.39) = 1.42$ cfs

II. Developed Conditions

A. Area

Building 1,232 + 50	= 1,282 SF	=	0.0294 ac
Landscaping 643 + 626	= 1,269 SF	=	0.0291 ac
Paving 9,498 + 3,634	= 13,132 SF	=	0.3015 ac
Concrete sidewalk	= 1,303 SF	=	0.0300 ac
	16,986 SF		0.3900 ac

B. Weighted "C" Factor

$$C = \frac{1.0\,(0.0294 + 0.0300) + 0.9\,(0.3015) + 0.34\,(0.0291)}{0.3900} = 0.87$$

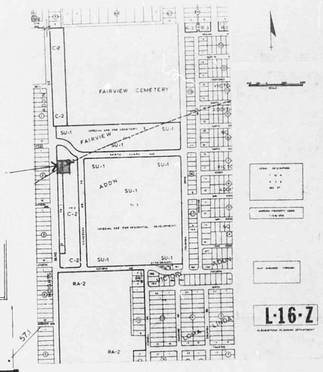
C. Peak Discharge – By rational equation $Q = CIA = (0.87)(4.86)(0.39) = 1.65$ cfs

III. Additional Runoff Generated by Proposed Improvement

Existing Runoff	1.42 cfs
Runoff after improvements	1.65 cfs
Runoff created by improvements	0.23 cfs

IV. Conclusions
1. The additional runoff generated adding 50 SF of building area and 3,634 SF of paving will not significantly increase discharge from the site.
2. Runoff from North 30' of Lot 2-A-1 will discharge to Yale boulevard through the curb cut without crossing the lot line into Lot 3, and vice versa.

SITE PLAN - RESTAURANT #348 1"=10'-0"
1024 YALE BLVD. SE.



VICINITY MAP SITE #2

Note: Elevations shown hereon are referenced to City BM. C-9 at intx. of Yale & Gibson in median of Gibson E. of Yale. Elev.= 5191.90

TBM: Finished floor of existing building Elev. 5156.57

RICHARD V. HALL NEW MEXICO REGISTERED PROFESSIONAL ENGINEER

Richard Hall

Aug 29th 1984
Revised Oct 3, 1984

Legal Description: N. 30' of Lot 2-A-1, FAIRVIEW ADDITION, filed: 10/15/79, Vol C15, Fol. 139.

GARNER/hicks ARCHITECTS
The Sunshine Building 112 Second St. S.W.
Albuquerque, New Mexico 87102 (505) 243-7492

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3

2-8-81-84

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