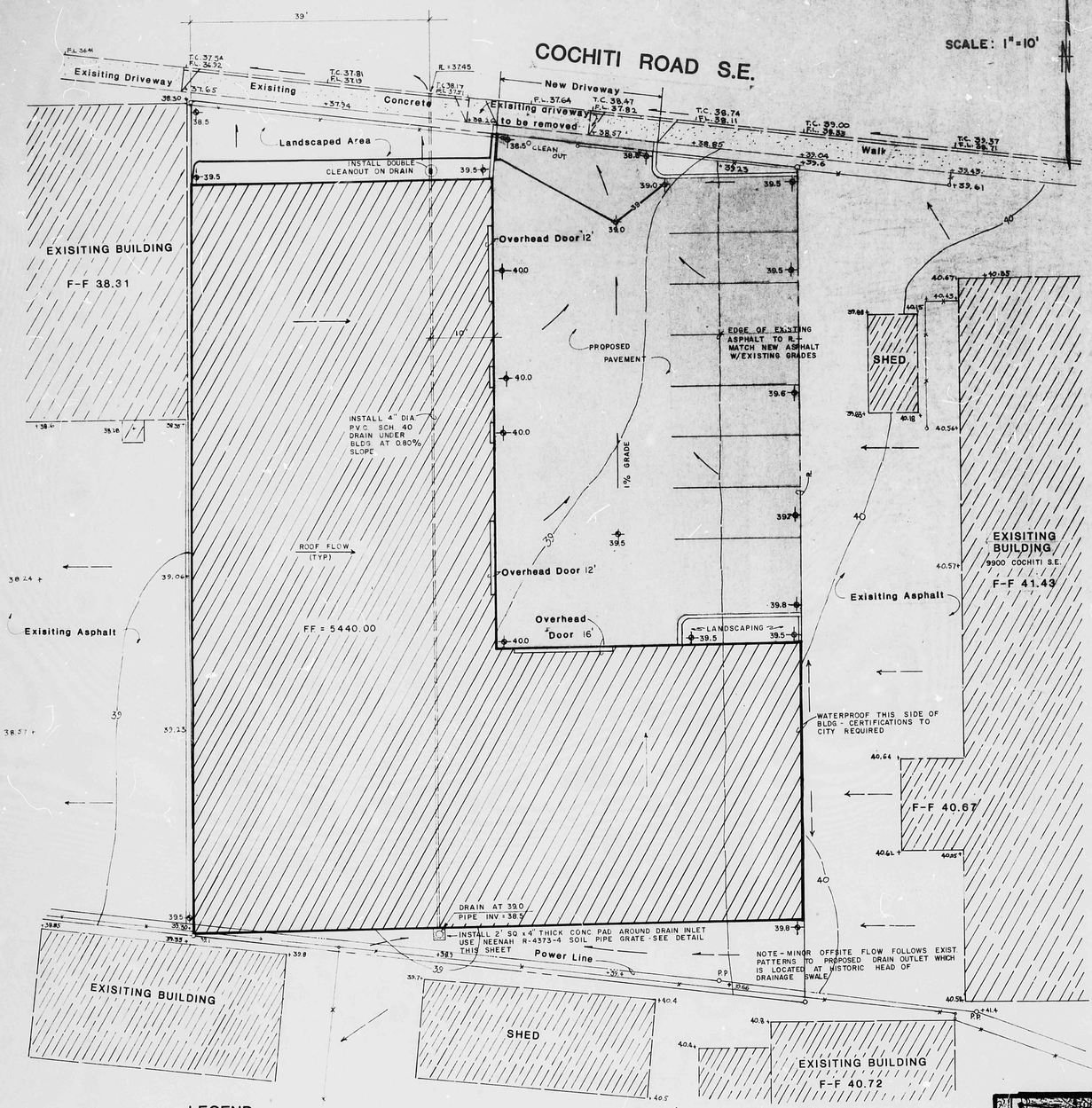
HYDROLOGY L20/D23 HALBERTS CUSTOM CABINETS

L20/D23

HALBERTS CUSTOM CABINETS

1 PLAN



CONSTRUCTION NOTES:

1. Before beginning construction, the Contractor shall check and verify pertinent figures shown here on and all applicable field measurements. Should any conflict, error or discrepancy be discovered, the Contractor shall notify the Engineer at once to resolve the problem.
2. The Contractor shall be responsible for following the plans using his best skill and attention. Any departure from the plans must be approved by the Engineer and the City Hydrology Department prior to construction.
3. The Contractor shall check the site plan for locations of existing utilities within or adjacent to streets and shall take all necessary precautions and efforts to locate and protect these utilities. He shall give 48 hours notice to Line Locating Service, 765-1234, for any work that he contemplates would interfere with said utilities.

R-4373-4

GRATE DIA = 4 3/4"
GRATE DEPTH = 2 7/8"
PIPE SIZE = 4"
WT. LBS. = 4

PIPE INLET DETAIL

SCOPE:

The proposed improvements, comprised of a warehouse building and paved parking area, will be constructed on the south side of Cochiti Road SE, between the major streets of Moon and Eubank Blvd.

The present site is an open parcel of land presently being used for general parking for the adjacent light industrial business to the east.

The intent of this plan is to show:

a) Grading relationships between the existing ground elevations and proposed finished elevations in order to facilitate positive drainage to designated discharge points.

b) The extent of proposed site improvements, including buildings, walks and pavement.

c) The flow rate/volume of rainfall runoff across or around these improvements and methods of handling these flows to meet City requirements for drainage management.

d) The relationship of onsite improvements with existing neighboring property to insure an orderly transition between proposed and surrounding grades.

GENERAL NOTES:

LEGAL:
Western 1/2 of Tract "A", Lands of Martha and Will Nail, Albuquerque, New Mexico. (Area = 0.31 Ac)

SURVEYOR:
Ron Forstbauer Survey Company, September, 1984.

B.M.:
City BM 5-k-20 ACS Brass Cap located on NE corner of Moon and Central, Elevation 5427.36.

T.B.M.:
Westr extension to T.C. on south side of Cochiti Road SE, Elevation 5437.54.

SOILS:
SCS Soils Map #32, Soil Type EMB, Soil Hydrologic Group "B".

FLOOD HAZARD:
Site is not located within or adjacent to a flood hazard area, but does drain to a flood zone at Cochiti and Moon SE.

OFF-SITE DRAINAGE:
Site is affected by minor sheet flow from adjacent site to the east. Existing flow pattern drains to Cochiti within limits of site. Proposed flow patterns will continue to route offsite flows to Cochiti thru site.

EROSION CONTROL:
Site will be developed in a single phase with minor filling of site. No stockpiled fill is anticipated, thus erosion from site will be minimal.

CALCULATIONS:
Based on a pre-design meeting with City of Albuquerque Hydrology, on September 25, 1984, the following criteria was established:

a. Site discharge to be determined by analysis of downstream capacity. This site is an "in-fill" to the surrounding area and is at the bottom of drainage area.

Calculations are based on the City of Albuquerque D.P.M. Manual, Vol. II for the 100 year-6 hour storm, using the Rational Formula to compare the existing and proposed runoff rates.

RATIONAL METHOD- Q = CIA

Area of site: 13,595 sq.ft.= 0.31 Ac.

Run-off Coefficient:

Existing site:	Developed Site:
A imp. = 0 Ac	A imp. = 12,845 Ac
% imp. = 0 %	% imp. = 94 %
"C" = 0.34 (DPM 22.2 C-1)	"C" = 0.90 (DPM 22.2 C-1)

Rainfall Intensity:

$I = P_6 (6.84)\ Tc^{-0.51}$ = 5.07" per hour
where P_6 = 2.4"(DPM 22.2 D-1)
Tc = 10 minutes

Existing Condition:	Developed Conditions:
Q100 = (0.34)(5.07)(0.31) = 0.5cfs	Q100 = (0.90)(5.07)(0.31) = 1.4cfs
V100 = (Q100)(5 Tc)(60 sec/in)/2 = 750 cu. ft.	V100 = (1.4)(50)(60)/2 = 2100 cu. ft.

SUMMARY:

ΔQ100 = (1.4)-(0.5) = 0.9cfs (increase)
ΔV100 = (2100)-(750) = 1350cu. ft. (increase)

DOWNSTREAM SYSTEM:

Site drains to Cochiti, which picks up flows in a 24" storm sewer, draining to a 36" line in Moon. The nearest inlet to the site is at the SE corner of Cochiti and Alter, 150' west of the site. The flows then travel 600' in the storm sewer to the 36" Moon line.

A review of the City Master Plan shows an analysis point on Moon street, or AP202. Data from the computer printout shows a peak flow of 453 cfs at a time of concentration of 0.32 hrs. at AP202. (Hydrograph #381).

The sub area draining to the south side of Cochiti and the inlet nearest the site is 4 Ac., with a Tc of 9.8 min. based on a slope of 1.6%, Vel. of 3.4'/sec. in Cochiti. Total sub area Q to inlet = 18 cfs for a C=0.90.

A comparison of the Tc of the flows from the site to the AP202 shows the following:

Time for flow to reach street from most remote part of site (Plate 22.2 B-1).
Slope = 0.005'/', paved - Vel. = 1'/sec.
Time = 80' of travel / 1'/sec. x 60 sec/min. = 1.3 min.

Time for flow in street to reach inlet (Plate 22.2 B-2)
Slope = 0.015'/'- Vel. = 3.3'/sec.
Time = 150' of travel / 3.3'/sec. x 60 sec/min. = 0.7 min.

Time for flow in storm sewer to Moon main.
Slope = 0.0092'/' for a 24" RCP, n= 0.013 flowing full @ 19 cfs, Vel. = 6.0'/sec. (Kutters Formula)
Time = 600' of travel / 6.0'/sec. x 60 sec./min. = 1.7 min.

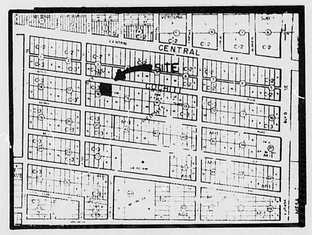
Total time for sites flows to reach Moon 4 min.≃Therefore, flows from the site will be in the storm system before the upland flows peak at 10 and 19 min., respectively. The effect of these flows displacing other runoff that impacts the system later can be considered insignificant due to the size of the site and it's minor contributions to the downstream

APPROVED FOR DRAINAGE
11/11/84
DATE
SIGNATURE
TITLE
ADVISE DRAINAGE INSPECTOR WHEN GRADING EXECUTED

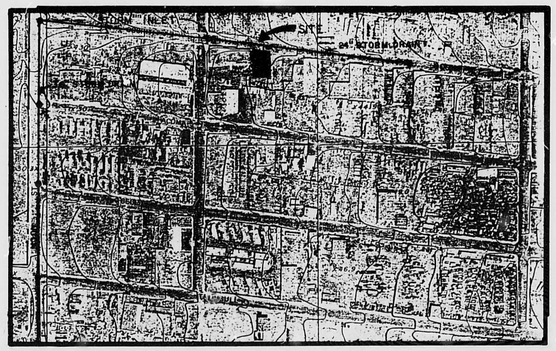
L20 / D23

LEGEND

- SIDEWALK, CURB & GUTTER (EXISTING, PROPOSED)
- PROPOSED ASPHALT
- BUILDING (EXISTING, PROPOSED)
- PROPERTY LINE
- X12.7 / 12.7 — EXISTING SPOT ELEVATION
- 10 — EXISTING CONTOUR
- 12.5 — PROPOSED SPOT ELEVATION
- 10 — PROPOSED CONTOUR
- SURFACE FLOW DIRECTION (EXISTING, PROPOSED)
- PROPERTY LINE
- CHAIN LINK FENCE



VICINITY MAP L-20



STORM SYSTEM/TOPO

OCT 17 1984

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(505) 268 - 3444

REVISIONS	DATE
DESIGNED	10-84
DRAWN	10-84
CHECKED	10-84

DRAINAGE / GRADING PLAN
HALBERT'S CUSTOM CABINETS
9896 COCHITI S.E.

NEW MEXICO CHRISTOPHER PROFESSIONAL ENGINEER

SHEET 1 OF 1