HYDROLOGY

H16/D68

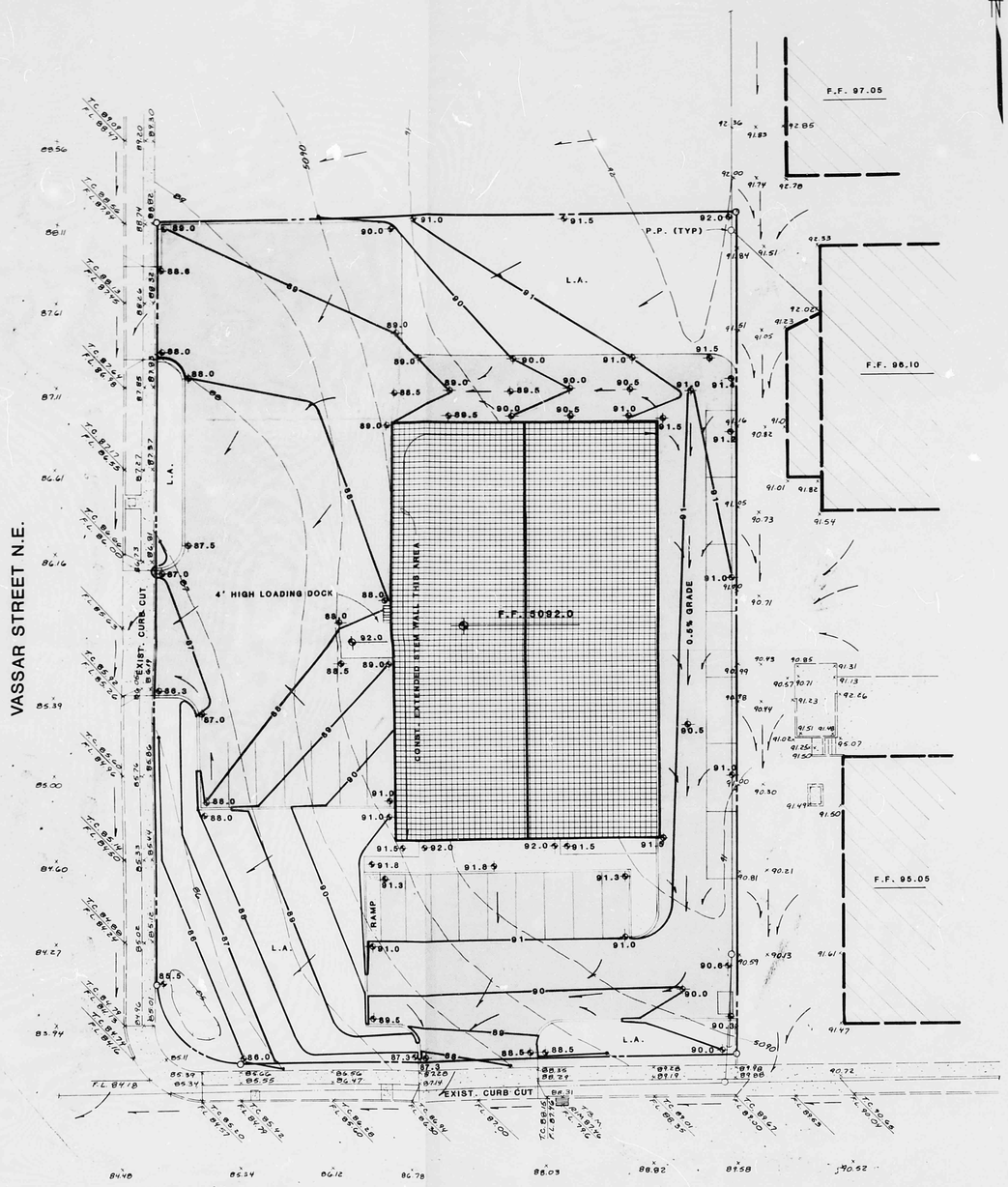
ONE PLAN

1 PLAN FOR

OFFICE/WAREHOUSE

PHOENIX + VASSAR

H 16-D 68



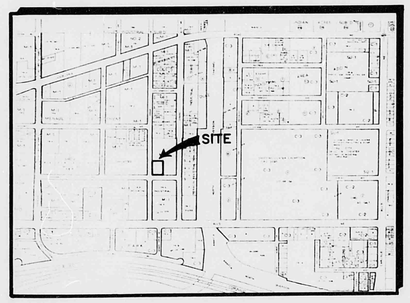
SCALE: 1"= 20'

LEGEND

- SIDEWALK, CURB & GUTTER (EXISTING, PROPOSED)
- PROPOSED ASPHALT
- BUILDING (EXISTING, PROPOSED)
- PROPERTY LINE
- 12.7 x — EXISTING SPOT ELEVATION
- EXISTING CONTOUR
- 12.5 — PROPOSED SPOT ELEVATION
- 10 — PROPOSED CONTOUR
- SURFACE FLOW DIRECTION (EXISTING, PROPOSED)
- L.A. — LANDSCAPED AREA
- T.G.W. — TOP OF GRADE WALL (LESS THAN 18" HIGH)
- T.R.W. — TOP OF RETAINING WALL (MORE THAN 18" HIGH)
- T.A. — TOP OF ASPHALT
- T.C. — TOP OF CURB
- F.L. — FLOW LINE
- F.F. — FINISHED FLOOR

CONSTRUCTION NOTES

1. Before construction, the Contractor shall check and verify pertinent figures shown hereon and shall make all applicable field measurements. Should any conflict, error or discrepancy be discovered, the contractor shall notify the Engineer at once to resolve the problem. It is recommended that the Contractor meet with the Engineer for a pre-design conference to discuss the scope of work and critical areas involved.
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 One Locating Service, 765-1234, for any work that may interfere with said utilities.



VICINITY MAP H 16

SCOPE:

The proposed improvements, comprised of an office warehouse, associated pavement, walks and landscaping, is located at the NE corner of Phoenix and Vassar streets. The overall site is comprised of three lots, but only lot 3 will be developed at this time. Future development of the remaining two lots will follow the same land use.

The present site is an undeveloped parcel with no unusual grade characteristics or drainage patterns. The site is immediately downstream from the AMAFCA diversion channel, and adjacent development on the east has isolated the site from the effects of off-site drainage. The lot presently drains to Vassar St., which in turn drains to the storm sewer on Phoenix Ave.

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: Lot 3, Jones Industrial Park, Albuquerque N.M.

SURVEYOR: Ron Forstbauer Surveying Co., January, 1985.

B.M.: 1-40-12, Brass Cap located in the center of the Median of Menaul Blvd. NE at the crossing of the AMAFCA North Diversion Channel. Elev. 5114.55.

T.B.M.: Rim of Storm Gate, south side of site in Phoenix Ave. Elev. = 5097.46.

SOILS: SCS Soils Map 21/31, Soil type 'Cm', Hydrologic soil group 'A'.

FLOOD HAZARD: Site is not located in a flood zone, Area 1 AMDS H-16. Flows from site enter a storm sewer system which drains to a retention pond west of I-25.

OFF-SITE DRAINAGE: Site is isolated from upland drainage by the presence of an adjacent development which intercepts and diverts runoff to the south to Phoenix Ave.

EROSION CONTROL: If contractor stockpiles fill dirt on site prior to beginning construction, he will be responsible for either creating a temporary holding pond at the low end of the site or erecting a fabric silt fence along the downslope property line to catch sediment laden runoff.

CALCULATIONS:
Based on a pre-design meeting with City of Albuquerque Hydrology, on 1-11-85., the following criteria was established.

a. Discharge to be determined by analysis of downstream capacity.

b. Existing system tie-in may be appropriate.

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: 44,917 sq.ft.= 1.03 Ac. (Lot 3)

Run-off Coefficient:

Existing site:	Developed Site:
A imp. = 0 Ac	A imp. = 0.80 Ac
% imp. = 0 %	% imp. = 0.78 %
"C" = 0.16 (DPM 22.2 C-1)	"C" = 0.62 (DPM 22.2 C-1)

Rainfall Intensity:

I = P_6 (6.84) $Tc^{-0.51}$ = 4.76" per hour
where P_6 = 2.25" (DPM 22.2 D-1)
Tc = 10 minutes

Existing Condition:	Developed Condition:
Q100 = (0.16)(4.76)(1.03) = 1 cfs	Q100 = (0.62)(4.76)(1.03) = 3 cfs
V100 = (1)(5 Tc)(60 sec/in)/2 = 1500 cu. ft.	V100 = (3)(5 Tc)(60 sec/in)/2 = 4500 cu. ft.

SUMMARY:

Q100 = (3)-(1) = 2 cfs (increase)
V100 = (4500)-(1500) = 3000 cu. ft. (increase)

Downstream capacity -
Area draining to intersection of Vassar & Phoenix = 27.6 Ac
Acre Imp. = 16.6 Ac (Existing Condition)
% Imp. = 0.60 %
C = 0.46
I = 4.76 for a Tc = 10 min.
Q = (0.46)(4.76)(27.6) = 63 cfs
Capacity of Phoenix Ave. (DPM plate 22.3 D-2)
Avg. slope @ site = 2.74 %.
1/2 street capacity @ curb depth of 0.67' = 58 cfs
Grate capacity - Type 'A' (DPM plate 22.3 B-5)
Depth of flow in gutter = 0.67'
Capacity for slope of 2.742 = 13 cfs
Storm Sewer capacity in Phoenix in front of site
Dia 24", S= 2 % ±.
Q = $kS^{\frac{1}{2}}$, where k = 226.2 (Plate 22.3 B-5)
= 226.2 $(2)^{\frac{1}{2}}$ = 32 cfs
Total system capacity in Phoenix in front of site
= (58)(2) + 32 = 148 cfs
Total Q draining to intersection = 63 cfs (existing condition w/suite included as developed area)

The storm sewer system farther downstream has been analyzed by the city and found to have capacity for the present development. Therefore, we recommend free discharge from the site to the streets of Vassar and Phoenix.

APPROVED FOR DRAINAGE
5-8-85
DATE
SIGNATURE TITLE
ADVISE DRAINAGE INSPECTOR WHEN GRADING EXECUTED

RECEIVED
MAR 25 1985
HYDROLOGY SECTION

WEISS-HINES ENGINEERING INC.
1100 ALVARADO N.E. SUITE B
ALBUQUERQUE, NEW MEXICO 87110
(505) 266 - 3444

REVISIONS DATE
DESIGNED MW 3-85
DRAWN MW 3-85
CHECKED CW 3-85

DRAINAGE / GRADING PLAN
PHOENIX/VASSAR STREET
OFFICE & WAREHOUSE

H ENGINEERING

REGISTERED PROFESSIONAL ENGINEER

SHEET 1 OF 1

H16/D68