HYDROLOGY H14/D56 1 PLAN

H14/D56

1 PLAN

CITY OF ALBUQUERQUE
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VICINITY MAP H-14

SCALE 1" = 600'

LEGEND

- PROPERTY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- 6537 EXISTING SPOT ELEVATION
- 6540 PROPOSED SPOT ELEVATION
- DPP/GLP POWER POLE / LIGHT POLE
- GLB LIGHT POLE BASE
- TC | FL TOP OF CURB / FLOW LINE
- TC | TSW TOP OF CURB / TOP OF SIDEWALK
- TA | C TOP OF ASPHALT / CONCRETE
- PROPOSED ASPHALT
- PROPOSED CONCRETE

PROJECT BENCHMARK

I.C.S. STATION 3-H-15, A BRASS CAP SCRIBED ON TOP OF CONCRETE CURB AT THE NW CURB RETURN AT THE INTERSECTION OF POINTS OF NW & ARVADA AVE NW. ELEVATION ELEVATION = 4956.67 FEET (M.S.L.D.)

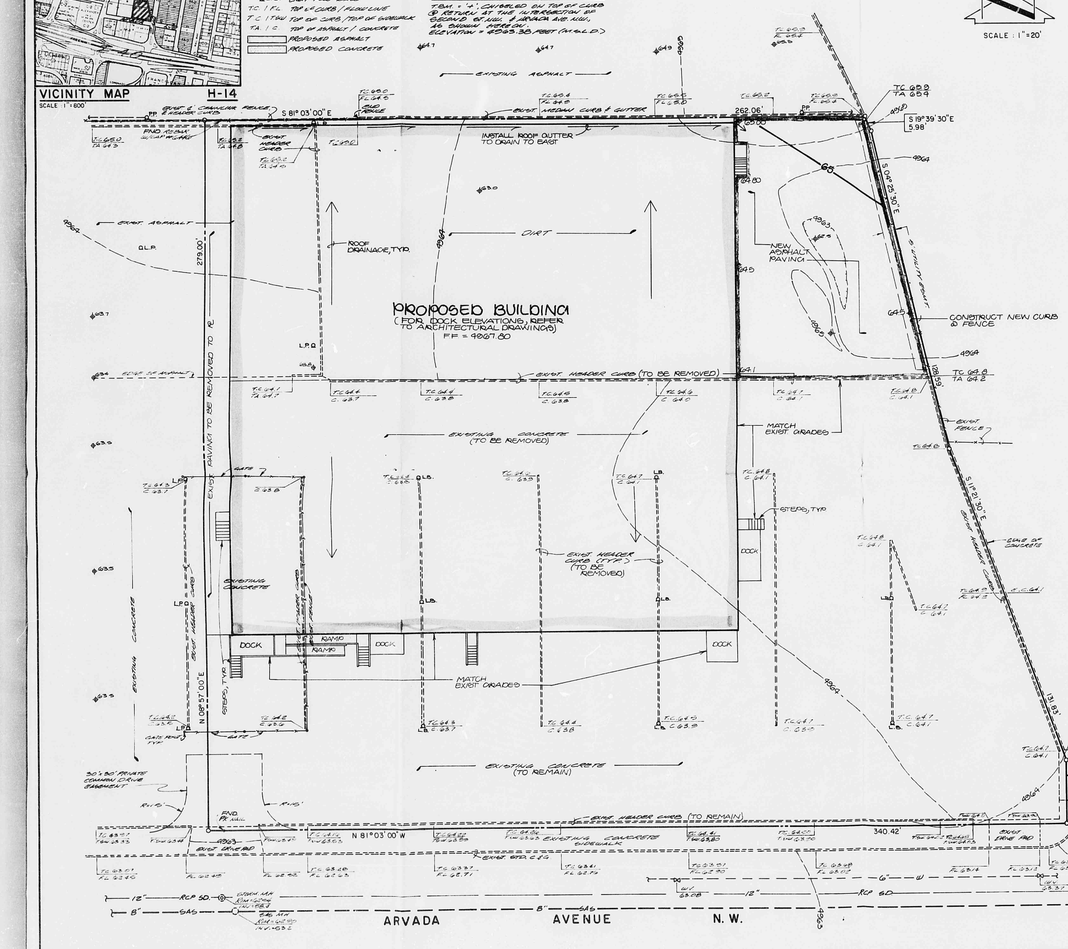
TEMPORARY BENCHMARK

"CHISEL + X", CHISELED ON TOP OF CURB @ RETURN AT THE INTERSECTION OF SECOND ST. NW. & ARVADA AVE. NW., AS SHOWN ON THIS DRAWING. ELEVATION = 4955.50 FEET (M.S.L.D.)

LEGAL DESCRIPTION

TRACT D, KAUKY - DOSTER PARCEL, ALBUQUERQUE, NEW MEXICO

SCALE : 1" = 20'



DRAINAGE PLAN

The following items concerning the Tee-Pee Parts Drainage Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations

The proposed improvements, as shown by the Vicinity Map, are located at the northwest corner of the intersection of Second Street N.W. and Arvada Avenue N.W. At present, the site is mostly developed with concrete and asphalt paving. Much of the surrounding area is also currently developed, thereby making this a modification to an existing site within an infill area. The proposed improvements consist of the removal of some asphalt and concrete paving, the addition of a building and some new paving.

As shown by Panel 22 of the Federal Emergency Management Agency Flood Boundary and Floodway Map, dated October 14, 1983, this site lies adjacent to a Flood Hazard Zone. Presently, flows generally flow from northeast to southwest to the flood zone on Arvada Avenue N.W. Because the site is situated at the outfall point, its runoff will pass long before the peak discharge which causes the flooding to occur. Any detention would merely serve to aggravate the existing flooding identified. Due to the fact that this is a modification to an existing site, the negligible increase in runoff demonstrated by the calculations and the proximity of this site to the flood hazard area, the free discharge of runoff from this site is appropriate.

The Grading Plan shows 1) existing contours at 1'0" intervals, 2) proposed grades indicated by spot elevations and contours at 1'0" intervals, 3) the limit and character of the existing improvements, and 4) the limit and character of all proposed improvements. As shown by this plan, the proposed improvements involve the removal of some of the existing concrete and asphalt paving to accommodate the addition of a building. The proposed improvements also involve some minor paving at the northeast corner of the site. Offsite flows from the east will be contained in Second Street N.W. The existing curb along the north side of the site prevent offsite flows from entering the site along the north. No offsite flows are anticipated from the south or west. The runoff generated by this site will continue to flow as before towards the existing drivepads on the south side of the site. The runoff will flow into Arvada Avenue N.W. via the drivepads.

The Calculations which appear hereon analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The Rational Method has been used to quantify the peak rate of discharge and the SCS Method has been used to quantify the volume of runoff. Both Methods have been used in accordance with the City of Albuquerque Development Process Manual, Volume II, and the Mayor's Emergency Rule adopted January 14, 1986. As shown by these calculations, the proposed improvements will result in a negligible net increase in peak runoff by 1.0 cfs.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey,
Plate 30: Gm - Glendale Complex
Hydrologic Soil Group: 70
Existing Pervious CN = 70 (DPM Plate 22.2 C-2
Pasture or Range Land: fair condition)
Developed Pervious CN = 70 (DPM Plate 22.2 C-2
Pasture or Range Land: Fair condition)

Time of Concentration/Time to Peak

$T_C = 0.0078\ L^{0.77}/S^{0.385}$ (Kirpich Equation)

$T_P = T_C = 10$ min.

Point Rainfall

$P_6 = 2.2$ in. (DPM Plate 22.2 D-1)

Rational Method

Discharge: $Q = CiA$

where C varies
$i = P_6\ (6.84)\ T_C^{-0.51} = 4.65$ in/hr
$P_6 = 2.2$ in (DPM Plate 22.2D-1)
$T_C = 10$ min (minimum)
A = area, acres

SCS Method

Volume: $V = 3630(DRO)\ A$

Where DRO = Direct runoff in inches
A = area, acres

Existing Condition

Atotal = 83,970 sf = 1.93 Ac
Paved area = 60,330 SF (0.72)
Dirt area = 23,640 sf (0.28)
C = 0.80 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CiA = 0.80(4.65)1.93 = 7.2$ cfs
Aimp = 60,330 sf; % impervious = 72 %
Composite CN = 90 (DPM Plate 22.2 C-3)
DRO = 1.27 in (DPM Plate 22.2 C-4)
$V_{100} = 3630\ (DRO)A = 8{,}900$ cf

Developed Condition

Atotal = 83,970 sf = 1.93 Ac
Roof area = 40,000 sf (0.48)
Paved area = 41,550 sf (0.49)
Dirt area = 2,420 sf (0.03)
C = 0.91 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CiA = 0.91(4.65)1.93 = 8.2$ cfs
Aimp = 81,550 sf; % impervious = 97%
Composite CN = 97 (DPM Plate 22.2 C-3)
DRO = 1.87 in (DPM Plate 22.2 C-4)
$V_{100} = 3630\ (DRO)\ A = 13{,}100$ cf

Comparison

$\Delta Q_{100} = 8.2 - 7.2 = 1.0$ cfs (increase)
$\Delta V_{100} = 13{,}100 - 8{,}900 = 4{,}200$ cf (increase)

CONSTRUCTION NOTES:

1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE 765-1234, FOR LOCATION OF EXISTING UTILITIES.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
3. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
4. ALL CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.
5. IF ANY UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES ARE SHOWN ON THESE DRAWINGS, THEY ARE SHOWN IN AN APPROXIMATE MANNER ONLY, AND SUCH LINES MAY EXIST WHERE NONE ARE SHOWN. IF ANY SUCH EXISTING LINES ARE SHOWN, THE LOCATION IS BASED UPON INFORMATION PROVIDED BY THE OWNER OF SAID UTILITY, AND THE INFORMATION MAY BE INCOMPLETE, OR MAY BE OBSOLETE BY THE TIME CONSTRUCTION COMMENCES. THE ENGINEER HAS UNDERTAKEN NO FIELD VERIFICATION OF THE LOCATION, DEPTH, SIZE, OR TYPE OF EXISTING UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES, MAKES NO REPRESENTATION PERTAINING THERETO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE CONTRACTOR SHALL INFORM ITSELF OF THE LOCATION OF ANY UTILITY LINE, PIPELINE, OR UNDERGROUND UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ADVANCE OF AND DURING EXCAVATION WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES, AND UNDERGROUND UTILITY LINES. IN PLANNING AND CONDUCTING EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.

EROSION CONTROL MEASURES

1. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR ONTO PRIVATE PROPERTY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AT THE PROPERTY LINES AND WETTING THE SOIL TO KEEP IT FROM BLOWING.
2. THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED DOWN THE STREET.
3. THE CONTRACTOR SHALL SECURE "TOPSOIL DISTURBANCE PERMIT" PRIOR TO BEGINNING CONSTRUCTION.

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BOHANNAN-HUSTON INC.
8111 DALLAS, N.E. • ALBUQUERQUE • NEW MEXICO • 87109
ENGINEERS

GRADING AND DRAINAGE PLAN

TEE-PEE PARTS

DESIGN BY	J.G.M. / P.M.L.
DRAWN BY	C.V.M. / R.A.R.
APPROVED BY	J.G.M.

No.	Date	By	Revision

JOB NO. 871031
DATE 08-87
SHEET 1 OF 1

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