HYDROLOGY J22/D56 1 PLAN

J22/56

1 PLAN

CITY OF ALBUQUERQUE
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VICINITY MAP J-22

SCALE: 1" = 800'

LEGEND

- 98 — EXIST. CONTOUR
- 98 — PROPOSED CONTOUR
- ◆ 94.6 EXIST. SPOT ELEVATION
- ◆ 96.0 PROPOSED SPOT ELEVATION
- EXIST. SWALE
- PROPOSED SWALE
- TC / FL — TOP OF CURB / FLOWLINE
- TG / TA — TOP OF CURB / TOP OF ASPHALT
- PROPOSED CONCRETE
- PROPOSED ASPHALT

PROJECT BENCHMARK

A.C.S. STATION 6-J21A, A STANDARD A.C.S. BRASS TABLET STAMPED "6-J21A", SET FLUSH WITH THE CURB IN THE SOUTH MEDIAN OF JUAN TABO BLVD. N.E., AT THE INTERSECTION WITH CONSTITUTION AVE. N.E.

ELEVATION = 5534.2260 FEET (NGVD)

TEMPORARY BENCHMARK

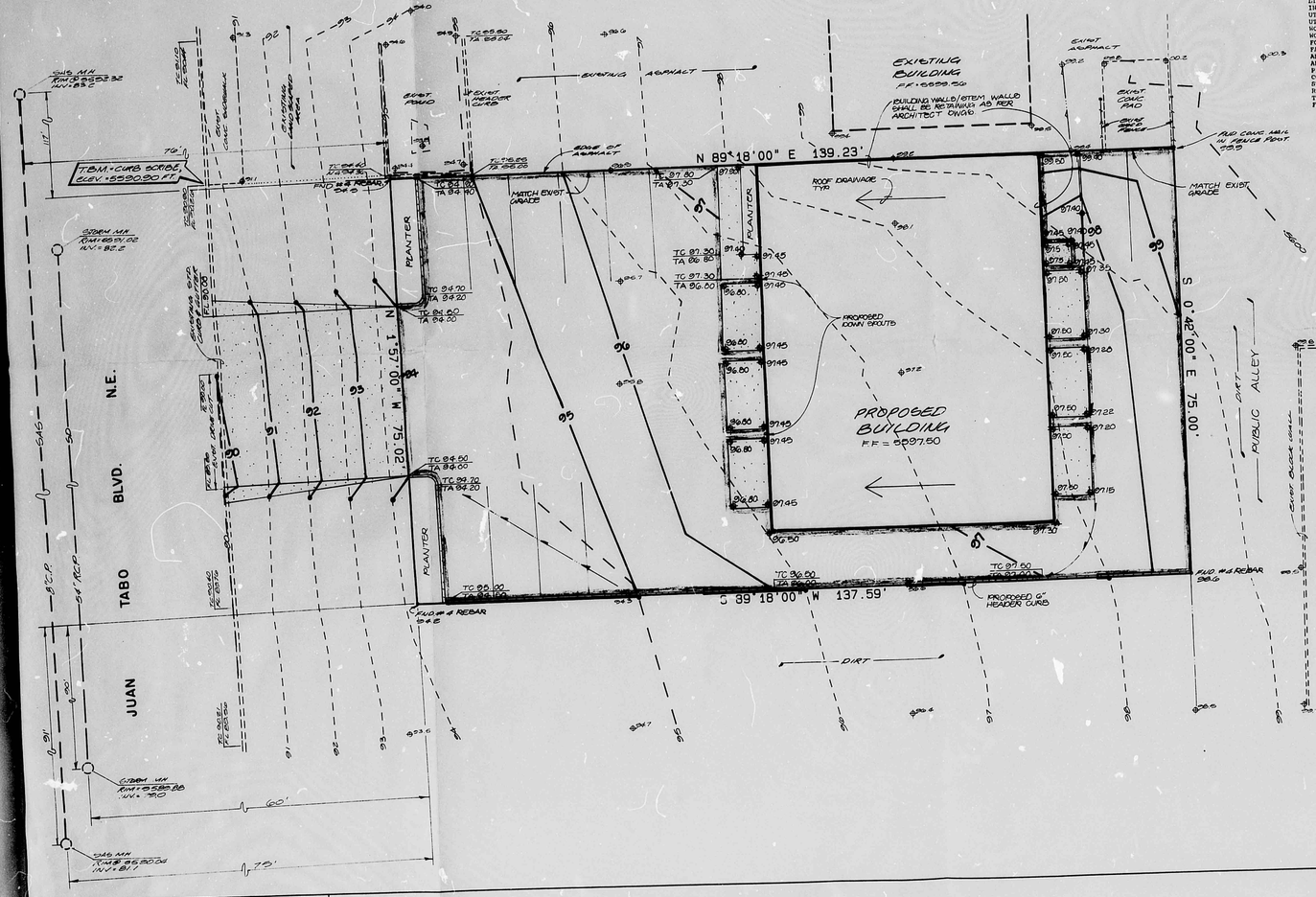
T.B.M. = CURB SCRIBE, LOCATED APPROX. 32' WEST OF N.W. CORNER OF SUBJECT PROPERTY, AS SHOWN HEREON.

ELEVATION = 5530.50 FEET (NGVD)

LEGAL DESCRIPTION

LOTS 15, 16 & 17, BLOCK 3, ROYAL HEIGHTS, ALBUQUERQUE, NEW MEXICO.

SCALE: 1" = 10'



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.

WATERSHED MAP J-22

DRAINAGE PLAN

The following items concerning the Royal Heights Drainage Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations

As shown by the Vicinity Map, the site is located north of the northeast corner of the intersection of Juan Tabo Boulevard N.E. and Sumner Avenue N.E. At present, the site is undeveloped. Much of the surrounding area is currently developed, thereby making this an infill site. The proposed improvements consist of a building, paving, and landscaping.

As shown by Panel 31 of the Federal Emergency Management Agency Flood Boundary and Floodway Map, dated October 16, 1987, this site does not lie within a designated Flood Hazard Zone. The site appears to contribute runoff to a flood hazard area at the intersection of Juan Tabo Boulevard N.E. and Montain Road N.E. A storm drain facility exists on Juan Tabo Boulevard N.E. As shown by the calculations, the increase in runoff by the proposed improvements is negligible and will have minimum impact on the downstream drainage facility. Due to the fact that this is an infill site, the proximity of this site to the existing storm drain facility and the negligible increase in runoff, 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 consist of a building, paving and landscaping. Flows generally flow from northeast to southwest. Offsite flows from the north are contained in the adjacent developed lot. No offsite flows are anticipated from the south or west. Some existing offsite flows from the east are anticipated to enter the site from the undeveloped area northeast of the site. As shown by these calculations, the anticipated peak runoff entering the site will be 1.6 cfs. As shown by this plan, onsite flows along with offsite flows entering the site will be directed to a proposed drive pad located on the west side of the site. The runoff will then be discharged into Juan Tabo Boulevard N.E. where there is an existing storm drainage facility. Runoff will exit the site via the proposed drive pad.

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 0.7 cfs.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey,
Plate 37: TgB - Tijeras Complex
Hydrolog. Soil Group: B
Existing Pervious CN = 70 (DPM Plate 22.2 C-2
Pasture or Range Land: fair condition)
Developed Pervious CN = 61 (DPM Plate 22.2 C-2)
Open Space: good condition)

Time of Concentration/Time to Peak

$T_c = 0.0078\ LD^{.77}/S^{0.385}$ (Kirpich Equation)

$T_p = T_c = 10$ min.

Point Rainfall

$P_6 = 2.48$ in. (DPM Plate 22.2 D-1)

Rational Method

Discharge: Q = CiA

where C varies
$i = P_6\ (6.86)\ T_c^{-0.51} = 5.24$ in/hr
$P_6 = 2.48$ 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 = 10,380 sf = 0.24 Ac
Undeveloped area = 10,380 sf (1.00)
C = 0.40 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CiA = 0.40(5.24)0.24 = 0.5$ cfs
Aimp = -0- sf; % impervious = -0- %
Composite CN = 70 (DPM Plate 22.2 C-3)
DRO = 0.1 in (DPM Plate 22.2 C-4)
$V_{100} = 3630$ (DRO)A = 350 cf

Developed Condition

Atotal = 10,380 sf = 0.24 Ac
Roof area = 3,250 sf (0.31)
Paved area = 6,955 sf (0.67)
Landscaped area = 175 sf (0.02)
C = 0.92 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CiA = 0.92(5.24)0.24 = 1.2$ cfs
Aimp = 10,205 sf; % impervious = 98 %
Composite CN = 97 (DPM Plate 22.2 C-3)
DRO = 2.1 in (DPM Plate 22.2 C-4)
$V_{100} = 3630$ (DRO) A = 1,830 cf

Offsite Flows - Existing Conditions

Atotal = 32,300 sf = 0.74 Ac
Undeveloped area = 32,300 sf (1.00)
C = 0.40 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CiA = 0.40(5.24)0.74 = 1.6$ cfs
Aimp = -0- sf; % impervious = -0- %
Composite CN = 70 (DPM Plate 22.2 C-3)
DRO = 0.45 in (DPM Plate 22.2 C-4)
$V_{100} = 3630$ (DRO) A = 1,210 cf

Comparison

$\Delta Q_{100} = 1.2 - 0.5 = 0.7$ cfs (increase)
$\Delta V_{100} = 1,830 - 350 = 1,480$ cf (increase)

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GRADING & DRAINAGE PLAN

ROYAL HEIGHTS

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

NO.	DATE	BY	Revision

JOB NO. 871241
DATE 11-1987
SHEET 1 OF 1

CITY OF ALBUQUERQUE

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