HYDROLOGY K18/D35 2 PLANS

K18/D35

2 Plans

D 24 C 20 B 16 A 12 CITY OF ALBUQUERQUE C D

DRAINAGE PLAN

The following items concerning the Cook Retirement Center Drainage Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations

The proposed improvements, as shown by the Vicinity Map, are located on the east side of Valencia Avenue S.E. between Central and Zuni. At present, the site is undeveloped. Several of the surrounding parcels are developed.

As shown by Plate K-18 of the Albuquerque Master Drainage Study, the site lies within a designated Flood Hazard Zone. However, a recent application for amendment to the Flood Hazard Zone by Isaacson/Arfman would remove this area from the Flood Hazard Zone. Installation of upstream facilities with the Fairgrounds Phase II improvements is the reason for removing this site from the Flood Plan.

As indicated by the Grading Plan, there is also an existing 54" storm drain in Valencia. The land to the east of the site has been developed as a shopping center. The pavement has been shaped such that the storm water runoff will flow south on the shopping center side rather than onto the project side. The site to the south has been developed and contains all waters on the site. The land to the north is approximately parallel to the site and strokes from east to west and does not contribute flow to the site. The project site is bordered on the west by Valencia, therefore, offsite flows are negligible.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contours at 1' 0" intervals, 2) continuity between existing and proposed elevations, 3) the limit and character of the existing improvements, and 4) the limit and character of the proposed improvements. As shown by this plan, the proposed improvements consist of several buildings with associated landscaping and asphalt paving. At present time, the site drains from east to west. The proposed grading will convey the flows around the buildings and through the landscaped and paved areas to a point adjacent to Valencia. A drop inlet will be constructed in the landscaped area to receive all flows from the site. Flows will be given an opportunity to percolate before being discharged through an 18" RCP into the back of an existing drop inlet. The drop inlet in turn is connected to the 54" storm drain in Valencia. The project site is at the bottom of the watershed; therefore, it is appropriate to introduce the waters into the storm drain system and remove them from the area as rapidly as possible.

The Calculations which appear below analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The Rational Method has been used for this analysis in accordance with the City of Albuquerque Development Process Manual, Volume II. As shown by these calculations, the proposed improvements will result in an increase in the runoff discharged from the site.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey, Plate 31:
Wink, Embudo we^B

Hydrologic Soil Group B

Rational Method

Discharge: $Q = CiA$

where C varies
$i = P_6 (6.84) T_c^{-0.51} = 4.86$ in/hr
$P_6 = 2.3$ in (DPM Plate 22.2D-1)
$T_c = 10$ min (minimum)
A = area, acres

Volume: $V = CP_6A(1/12)$

Where C varies
$P_6 = 2.3$ in (DPM Plate 22.2D-1)
A = area, sf

Existing Condition

$A_{total} = 227.552$ sf = 5.22 Ac
$A_{imp} = 13.128$ sf; % impervious = 6%
'C' = 0.37 (DPM Plate 22.2C-1)
$Q_{100} = CiA = 0.37 (4.86) 5.22 = 9.4$ cfs
$V_{100} = CP_6A = 0.37 (2.3/12) 227552 - 16137$ c.f.

Developed Condition

$A_{total} = 227552$ sf = 5.22 Ac
$A_{imp} = 138876$ sf; % impervious = 61%
'C' = 0.63 (DPM Plate 22.2C-1)
$Q_{100} = CiA = 0.63 (4.86) 5.22 = 16.0$ cfs
$V_{100} = CP_6A = 0.63 (2.3/12) 227.552 - 27477$ cf.

Comparison

$Q_{100} = 16.0 - 9.4 = 6.6$ cfs increase
$V_{100} = 27477 - 16137 = 11340$ cf increase.

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.

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.

PROJECT BENCHMARK
CITY OF ALBUQUERQUE BRASS CAP '5-K18B' LOCATED IN TURNWAY NORTH WEST OF THE INTERSECTION OF SAN PEDRO DR. & CENTRAL AVE.
ELEVATION = 5290.33 FEET (MSL D)

T.B.M.
TOP OF CURB @ THE PROJECTION OF THE SOUTHWEST PROPERTY CORNER, AS SHOWN ON THE DRAWING.
ELEVATION = 5279.42 FEET (MSL D)

LEGAL DESCRIPTION
TRACT 5-A, TUERAS PLACE IMPROVEMENT

STREET ADDRESS
500 VALENCIA DRIVE SE

REGISTERED PROFESSIONAL ENGINEER
STATE OF NEW MEXICO
THOMAS M. MOORE
3792
NEW MEXICO LICENSED PROFESSIONAL ENGINEER AND LAND SURVEYOR
1-9-86

RECEIVED
JAN 10 1986
HYDROLOGY SECTION

CONWAY ASSOCIATES, P.C.
811 DALLAS N.E. · ALBUQUERQUE · NEW MEXICO · 87110
ENGINEERS

NO.	DATE	BY	REVISIONS
1	1/9/86	TM	ADDED FLOOD PLAIN LIMITS

DESIGNED BY TTM
DRAWN BY LBD
APPROVED TTM

JOB NO. 51451
DATE 11·85

CONCEPTUAL GRADING & DRAINAGE PLAN
COOK RETIREMENT CENTER

FILE NO.
SHEET 1 OF 2

CITY OF ALBUQUERQUE
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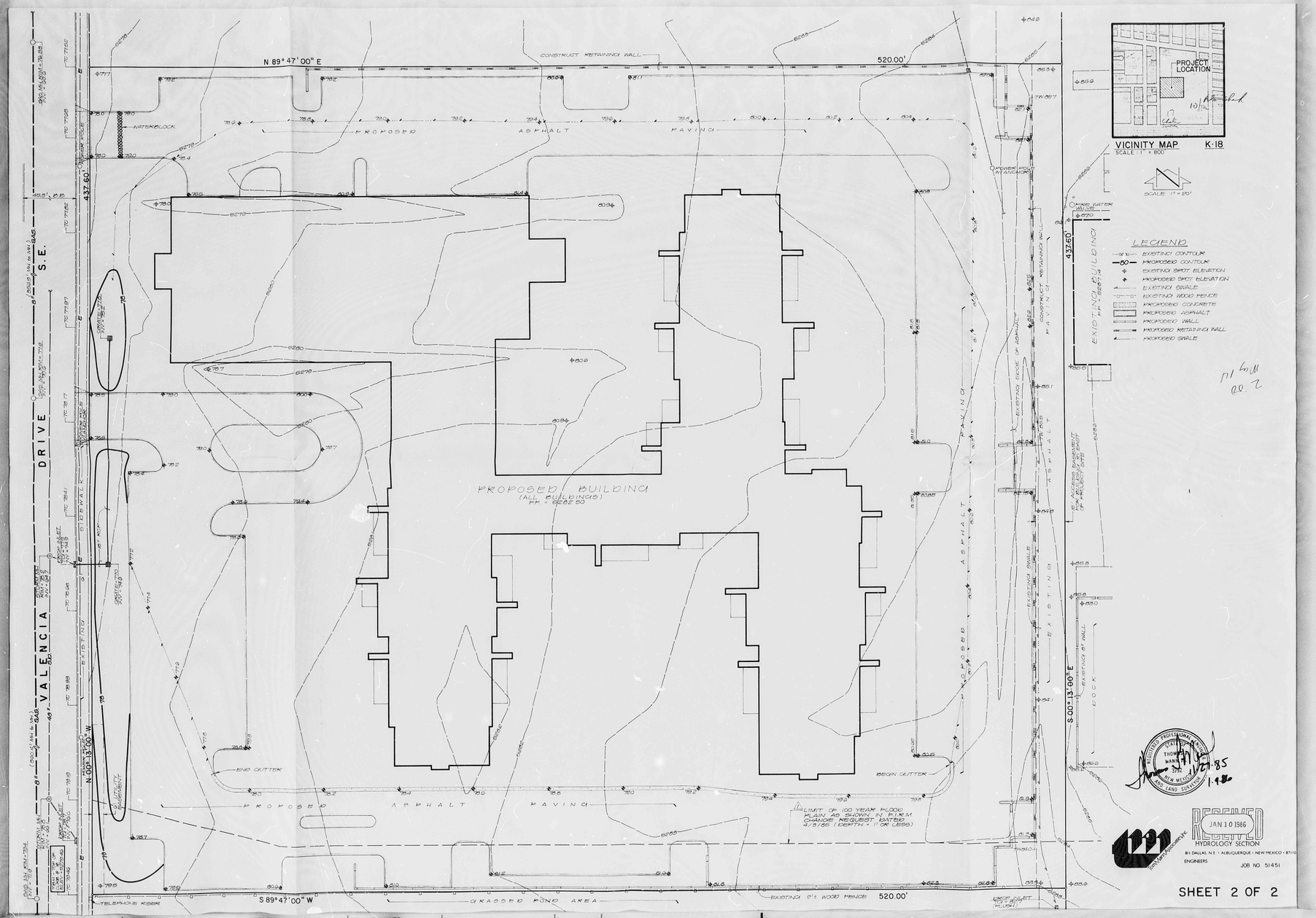

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