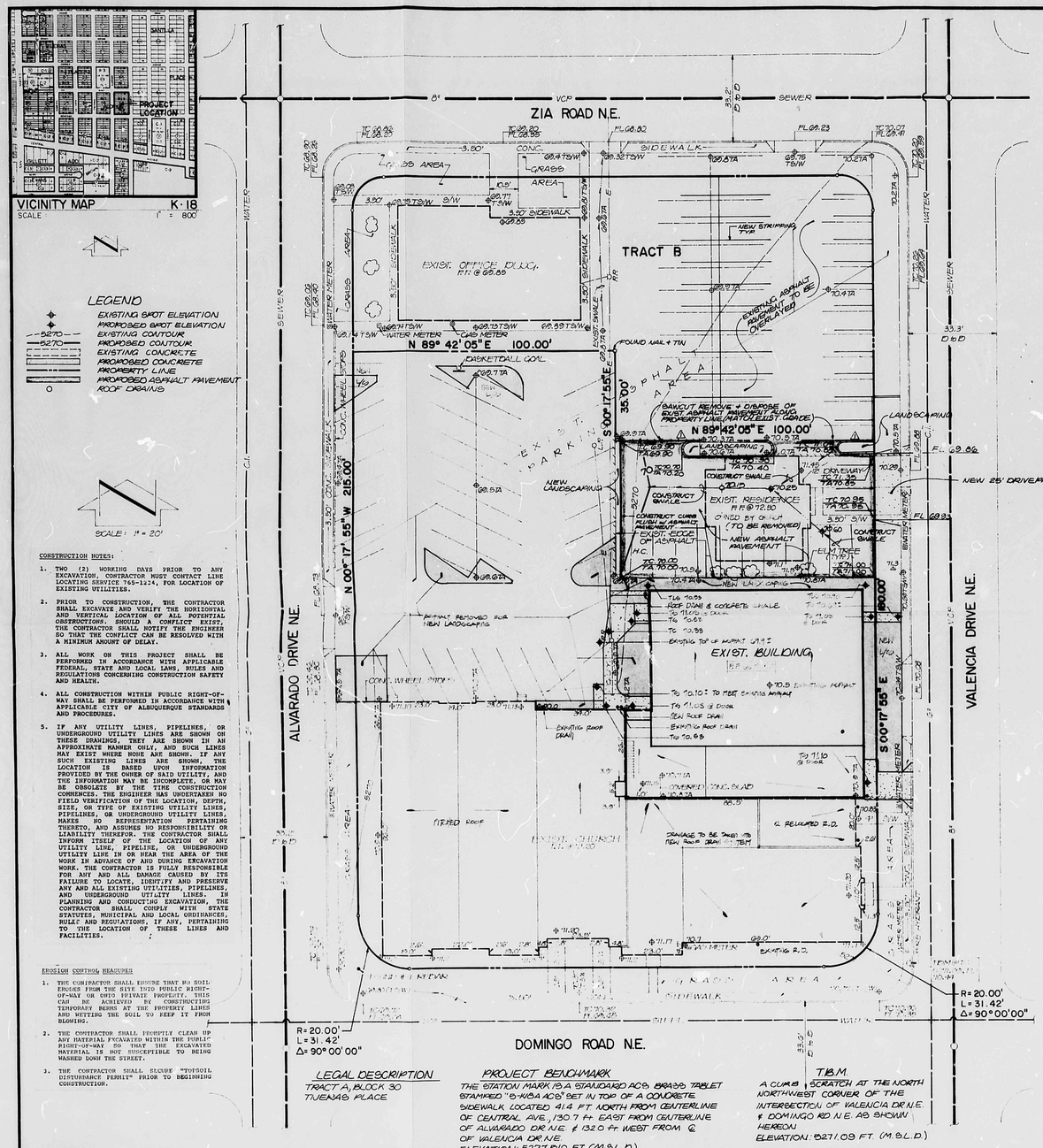
HYDROLOGY K18/D9 1 PLAN

K18/D9

1 PLAN

CITY OF ALBUQUERQUE

CITY OF ALBUQUERQUE
THIS MICROIMAGE IS THE BEST
AVAILABLE REPRODUCTION DUE



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.

LEGAL DESCRIPTION
TRACT A, BLOCK 30
TUENAB PLACE

PROJECT BENCHMARK
THE STATION MARK IS A STANDARD ACS BRASS TABLET STAMPED "6-K18 A ACS" SET IN TOP OF A CONCRETE SIDEWALK LOCATED 41.4 FT. NORTH FROM CENTERLINE OF CENTRAL AVE., 130.7 ft. EAST FROM CENTERLINE OF ALVARADO DR. N.E. & 132.0 ft. WEST FROM ℄ OF VALENCIA DR. N.E.
ELEVATION: 5277.610 FT. (M.S.L.D.)

T.B.M.
A CURB SCRATCH AT THE NORTH NORTHWEST CORNER OF THE INTERSECTION OF VALENCIA DR. N.E. & DOMINGO RD. N.E. AS SHOWN HEREON
ELEVATION: 5271.09 FT. (M.S.L.D.)

DRAINAGE PLAN

The following items concerning the Highland Assembly of God 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 west side of Valencia Drive N.E. between Zia Road N.E. and Domingo Road N.E. At present, the site is developed. Much of the surrounding area is currently developed, thereby making this an infill site. As shown by Plate K-18 of the Albuquerque Master Drainage Study, this site does not lie within a designated flood hazard zone. Thus, Plate K-18 does not indicate any apparent downstream flooding. No offsite flows enter this site along the east, west, and south property lines since the adjacent streets route runoff away from the project site. No offsite flows enter this site along the north property line since the adjacent lot is graded in a manner which will route runoff away from the project site. At present, this site drains from east to west onto Alvarado Drive N.E.

The grading plan shows 1) existing grades indicated by spot elevations and contours at 1'0" intervals, 2) continuity between existing and proposed grades, and 3) the limit and character of the proposed improvements. As shown by this plan, the proposed improvements consist of the removal of an existing building and the construction of new asphalt paving and landscaping. Flows generated by the proposed improvements will be routed from east to west onto Alvarado Drive N.E. This pattern is consistent with existing site drainage. Based upon the fact that this site is an infill site and a minor increase of runoff generated by the proposed improvements, the free discharge of runoff from this site is appropriate.

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 increase the total discharge from this site by approximately 0.1 cfs.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey,
Plate 31: EtC - Embudo Tijeras Complex
Hydrologic 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)

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

$P_6 = 2.32$ in. (DPM Plate 22.2 D-1)

Rational Method

Discharge: $Q = CiA$

where C varies
$i = P_6\ (6.84)\ T_C^{-0.51} = 4.90$ in/hr
$P_6 = 2.32$ 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 = 43,328 sf = 0.99 Ac
Roof area = 22,145 sf (0.51)
Paved area = 15,403 sf (0.36)
Landscaped area = 5780 sf (0.13)
C = 0.83 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CiA = (0.83)(4.90)(0.99) = 4.0$ cfs
Aimp = 37,548 sf; % impervious = 87 %
Composite CN = 92 (DPM Plate 22.2 C-3)
DRO = 1.5 in (DPM Plate 22.2 C-4)
$V_{100} = 3630\ (DRO)A = 5390$ cf

Developed Condition

Atotal = 43,328 sf = 0.99 Ac
Roof area = 20,720 sf (0.48)
Paved area = 17,923 sf (0.41)
Landscaped area = 4685 sf (0.11)
C = 0.85 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CiA = (0.85)(4.90)(0.99) = 4.1$ cfs
Aimp = 38,643 sf; % impervious = 89 %
Composite CN = 93 (DPM Plate 22.2 C-3)
DRO = 1.6 in (DPM Plate 22.2 C-4)
$V_{100} = 3630\ (DRO)\ A = 5750$ cf

Comparison

$\Delta Q_{100} = 4.1 - 4.0 = 0.1$ cfs (increase)
$\Delta V_{100} = 5750 - 5390 = 360$ cf (increase)

STATE OF NEW MEXICO
GREGORY TYLER HICKS
No. 1280
REGISTERED ARCHITECT

GARNER/Hicks ARCHITECTS
The Sunshine Building 112 Second St. S.W.
Albuquerque, New Mexico 87102 (505) 243 7492

HIGHLAND ASSEMBLY OF GOD
GYM/CLASSROOM ADDITION

JEFFREY G. MORTENSEN
NEW MEXICO
8547
REGISTERED PROFESSIONAL ENGINEER
11-24-86

RECEIVED
NOV 24 1986
HYDROLOGY SECTION

C-2
2 of 8
8-7-84

NO	DATE	BY	REVISIONS
1	11/86	LRA	REVISED PARKING LOT & DRIVEPAD LOCATION

DESIGNED BY JGM
DRAWN BY JMM
APPROVED TTM
JOB NO 40162
DATE 02/84

GRADING AND DRAINAGE PLAN
HIGHLAND ASSEMBLY OF GOD

BOHANNAN-HUSTON INC.
ALBUQUERQUE NEW MEXICO
ENGINEERS

CITY OF ALBUQUERQUE
THIS MICROIMAGE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT

CITY OF ALBUQUERQUE