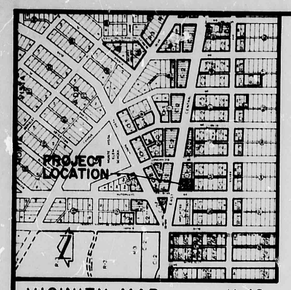
Hydrology K16/D16 Security Federal

K 16 / D16

Security Federal

1 Plan



VICINITY MAP K-16
SCALE: 1" = 800'

·LEGEND·

- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- 5195 EXISTING CONTOUR
- 95 PROPOSED CONTOUR
- PARKING METER
- PROPOSED CONCRETE

TBM:

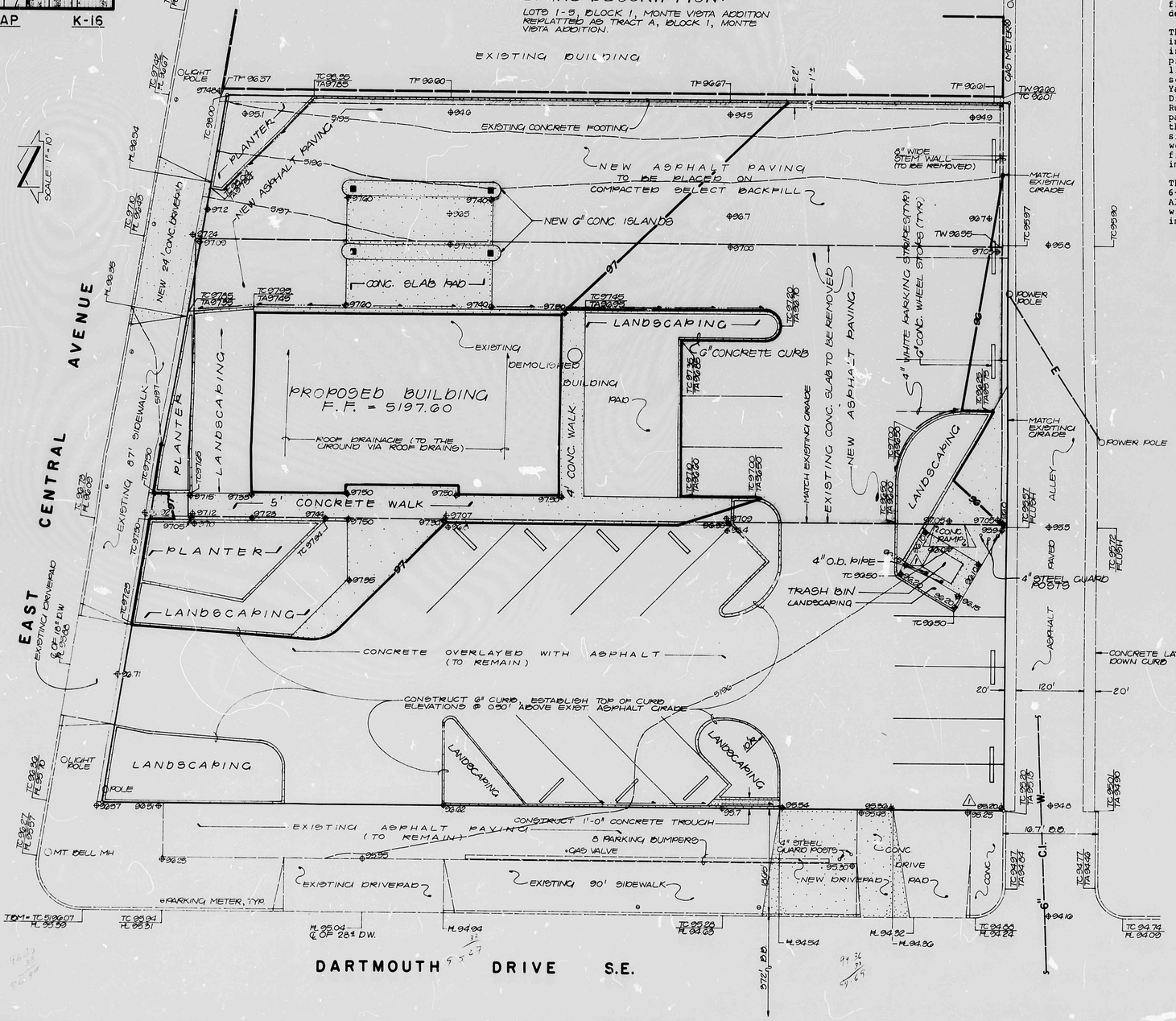
A SQUARE, 'D,' CHISELED IN TOP OF CURB @ THE NW CURB RETURN, AS SHOWN. ELEVATION: 5190.07 FEET (MSLD)

PROJECT BENCHMARK:

A STANDARD ACS BRASS DISK, STAMPED '15-K16, 1974 ACS,' SET IN A CONCRETE CYLINDER IN THE GROUND. LOCATED 2.1 MI. EAST OF DOWNTOWN ALBUQUERQUE @ THE TRISECTION OF CENTRAL AVE., MONTE VISTA BLVD. & GIRARD BLVD. ON THE SE. MEDIAN OF THE TRISECTION, THE STATION IS 468 FT. EAST OF ℄ ON GIRARD BLVD. & 23.3 FT. SOUTH OF ℄ OF THE WESTBOUND LANE ON CENTRAL AVE. ELEVATION: 5192.158 FEET (MSLD)

LEGAL DESCRIPTION:

LOTS 1-5, BLOCK 1, MONTE VISTA ADDITION REPLATTED AS TRACT A, BLOCK 1, MONTE VISTA ADDITION.



DRAINAGE PLAN

The following items concerning the Security Federal - Dartmouth 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 southeast corner of the intersection of Dartmouth Drive S.E. and East Central Avenue. At present, the site consists of existing asphalt paving and the building pad from a previously demolished building. These existing improvements account for approximately 81 percent of the site which is, in the existing state, impervious. The propdsed improvements consists of the construction of a bank building along with adjacent landscaping and some additional paving.

As shown by Plate K-16 of the Albuquerque Master Drainage Study, this site does not lie within a designated Flood Hazard Zone. Furthermore, this site does not contribute to an existing downstream flooding problem. In view of this and the fact that the majority of this site is already impervious, the free discharge of runoff from this site is appropriate. This is also supported by the minor increase in runoff due to the new development as demonstrated by the calculations below.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contours at 1' 0" intervals, 2) the limit and character of the existing improvements, 3) the limit and character of the proposed improvements, and 4) continuity between existing and proposed grades. As shown by this plan, the site presently drains from east to west with the exception of the small "dirt" portion along the east property line. Runoff from the site is discharged to Dartmouth Drive S.E. From this point, the runoff flows to the south where it is intercepted by Silver Avenue S.E. From this point, the runoff flows west to Yale Boulevard S.E. This pattern of runoff is verified by the review of Plate K-16 of the Albuquerque Master Drainage Study. The construction proposed for this site will not alter this existing pattern of runoff. Runoff from the improved site will be discharged to Dartmouth Drive S.E. via drivepads and/or to the existing paved alley which lies along the south property line of the site. In either case, the developed runoff from the site will be discharged to public right-of-way. This will account for the majority of the runoff from the site with minor portions of the runoff being discharged via drivepads to East Central Avenue. It is worthwhile to note, that the proposed construction for this site will not alter the existing trend in runoff from this site. Lastly, due to the developed nature of the surrounding area, there are no offsite flows impacting this site.

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 for this analysis in accordance with the City of Albuquerque Development Process Manual, Volume II. As shown by these calculations, the proposed improvements will only increase the peak runoff from the site by 0.3 cfs, a very minor amount. This increase will have no impact on downstream conditions, therefore, interim ponding has not been provided.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey, Plate 31:
Cu Cut and Fill Land
Hydrologic Soil Group A

Rational Method

Discharge: $Q = CiA$
where C varies
$i = P_6 (6.84)\, T_c^{-0.51} = 4.82$ in/hr
$P_6 = 2.28$ in (DPM Plate 22.2D-10
$T_c = 10$ min (minimum)
A = area, acres

Volume: $V = CP_6A(1/12)$
where C varies
$P_6 = 2.28$ in (DPM Plate 22.2D-1)
A = area, sf

Existing Condition

$A_{total} = 18{,}780$ sf $= 0.43$ Ac
$A_{imp} = 15{,}270$ sf; % impervious = 81%
$C = 0.65$ (DPM Plate 22.2C-1)
$Q_{100} = CiA = 0.65\,(4.82)(0.43) = 1.3$ cfs
$V_{100} = CP_6A = 0.65\,(2.28/12)(18{,}780) = 2320$ cf

Developed Condition

$A_{total} = 18{,}780$ sf $= 0.43$ Ac
$A_{imp} = 16{,}790$ sf; % impervious = 89%
$C = 0.75$ (DPM Plate 22.2C-1)
$Q_{100} = CiA = 0.75\,(4.82)(0.43) = 1.6$ cfs
$V_{100} = CP_6A = 0.75\,(2.28/12)(18{,}780) = 2680$ cf

Comparison

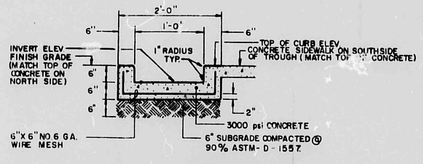
$\Delta Q_{100} = 1.6 - 1.3 = 0.3$ cfs (increase)
$\Delta V_{100} = 2680 - 2320 = 360$ cf (increase)

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.



CONCRETE TROUGH SECTION
SCALE: N.T.S.

RECEIVED APR 17 1985 HYDROLOGY SECTION

JEFFREY G. MORTEMORE NEW MEXICO REGISTERED PROFESSIONAL ENGINEER 04-17-85

NO.	DATE	BY	REVISIONS
1	4/85	JGM	ADJUST LAYOUT FOR SITE PLAN CHANGES, REVISE GRADING ACCORDINGLY.

DESIGNED BY JGM
DRAWN BY LBD
APPROVED JGM

JOB NO. 41761
DATE 1·85

BIDWELL, MARTIN & ASSOCIATES INC. ENGINEERS
BIDWELL ASSOCIATES INC. · ALBUQUERQUE · NEW MEXICO · 87110

GRADING & DRAINAGE PLAN
SECURITY FEDERAL - DARTMOUTH

K16/D16

FILE NO.
SHEET 1 OF 1