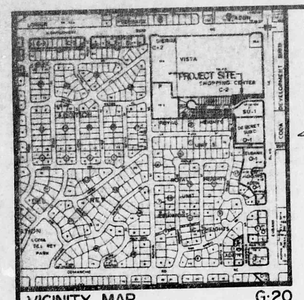
HYDROLOGY

G20/D2C
1 PLAN

G 20/D2C

1 Plan




VICINITY MAP G-20

**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 LOCATIONS 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.

## DRAINAGE PLAN

The following items concerning the Tract A Sierra Vista Townhouses 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 Montgomery Boulevard N.E. and Eubank Boulevard N.E.. The site is more particularly described as Tract A, Sierra Vista Shopping Center. At present, the site is partially developed. As shown by Plate G-20 of the Albuquerque Master Drainage Study, the site does not lie within a designated flood hazard zone. Off-site flows will be confined within the adjacent street, Sierra Vista Court N.E. Sierra Vista Court drains west to an existing drainage rundown located at the north end of the Cul-de-sac. From this point, runoff flows into an existing drainage channel which is the outfall for this site. Based upon the presence of the outfall and past drainage plan submittals (G20-D2A), the free discharge of runoff from this site is permissible.

The Grading Plan shows 1) existing contours at 1' 0" intervals, 2) proposed grades indicated by spot elevations and contours at 1' 0" intervals, and 3) the limit and character of all proposed improvements. As shown by this plan, the site drains from east to west and discharges its runoff to an existing concrete channel located at the northwest corner of the site. From this point, the runoff flows west and ultimately discharges to the previously mentioned drainage channel.

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 a minor increase in peak runoff, 0.2 cfs. Based upon the availability of downstream capacity, the free discharge of runoff is appropriate.

## CALCULATIONS

**Ground Cover Information**

1. From SCS Bernalillo County Soil Survey, Plate 22:
   TgB Tijeras Gravelly Fine Sandy Loam
   Hydrologic Soil Group B

**Rational Method**

Discharge: $Q = CiA$
where C varies

$i = P_6 (6.84)\ T_c^{-0.51} = 5.18$ in/hr
$P_6 = 2.45$ in (DPM Plate 22.2D-1)
$T_c = 10$ min (minimum)
$A$ = area, acres

Volume: $V = CP_6 A\ (1/12)$
where C varies
$P_6 = 2.45$ in (DPM Plate 22.2D-1)
$A$ = area, sf

**Existing Condition**

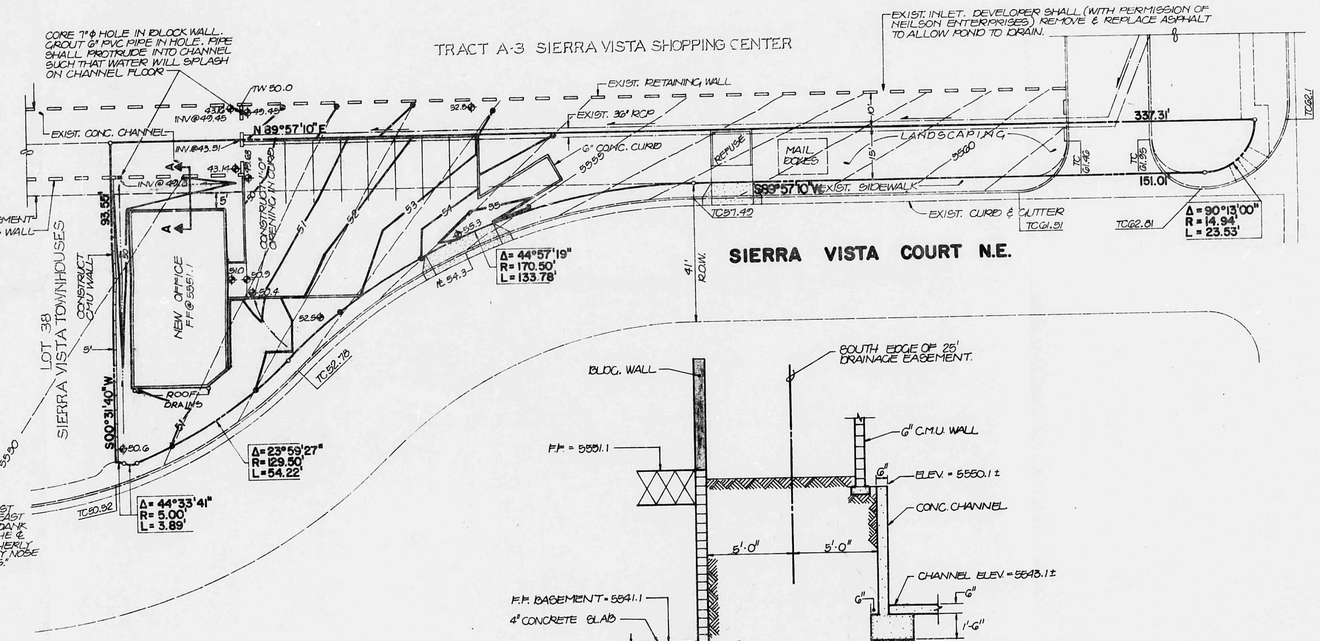
$A_{total} = 10{,}390 = 0.24$ Ac
$A_{imp} = 770$ sf; % impervious = 7%
$C = 0.37$ (DPM Plate 22.2C-1)
$Q_{100} = CiA = (0.37)\ (5.18)\ (0.24) = 0.5$ cfs
$V_{100} = CP_6A = (0.37)\ (2.45/12)\ (10{,}390) = 785$ cf

**Developed Condition**

$A_{total} = 10{,}390 = 0.24$ Ac
$A_{imp} = 5380$ sf; % impervious = 52%
$C = 0.59$ (DPM Plate 22.2C-1)
$Q_{100} = CiA = (0.59)\ (5.18)\ (0.24) = 0.7$ cfs
$V_{100} = CP_6A = (0.59)\ (2.45/12)\ (10{,}390) = 1250$ cf

**Comparison**

$\Delta Q_{100} = 0.5 - 0.7 = 0.2$ cfs (increase)
$\Delta V_{100} = 785 - 1250 = 465$ cf (increase)

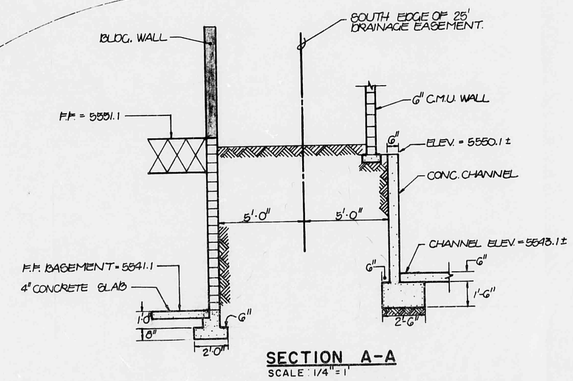



## LEGEND

- 5550 — EXIST. CONTOUR
- 50 — PROPOSED CONTOUR
- 515 — PROPOSED SPOT ELEV.
- CONCRETE
- SWALE

## PROJECT BENCHMARK:

A STD. BRASS CAP SET IN A CONC. POST 0.31' ABOVE GRND. LOCATED IN THE EAST MEDIAN @ THE INTERSECTION OF EUBANK & MONTGOMERY N/B, 300' EAST OF THE ℄ OF EUBANK AND 1.5' SOUTH OF NORTHERLY MEDIAN CURB 35.8' WEST OF EASTERLY NOSE OF MEDIAN CURB STAMPED "M 1A1975". ELEV. @ 5564.101




**SECTION A-A**
SCALE: 1/4" = 1'

REGISTERED PROFESSIONAL ENGINEER THOMAS T. MANN, JR. 3782 NEW MEXICO

RECEIVED MAY 08 1984 HYDROLOGY SECTION

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|---|---|---|---|---|---|
| mann/martin associates inc. 811 DALLAS, N.E. · ALBUQUERQUE · NEW MEXICO · 87110 ENGINEERS | NO. / DATE / BY / REVISIONS | DESIGNED BY: T.T.M. | JOB NO. 10385 | GRADING & DRAINAGE PLAN | FILE NO. |
| | | DRAWN BY: J.M. | DATE 3 / 84 | TRACT 'A' SIERRA VISTA TOWNHOUSES | SHEET 1 OF 1 |
| | | APPROVED: T.T.M. | | | |