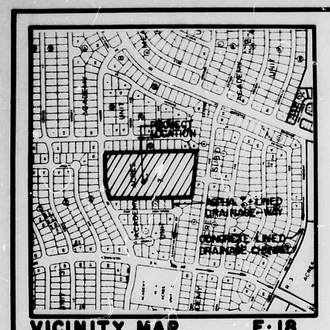
HYDROLOGY E18/D7A ARROYO DEL OSO ELEM. SCHOOL

E18/D7A

ARROYO DEL OSO

ELEM. SCHOOL

1 PLAN



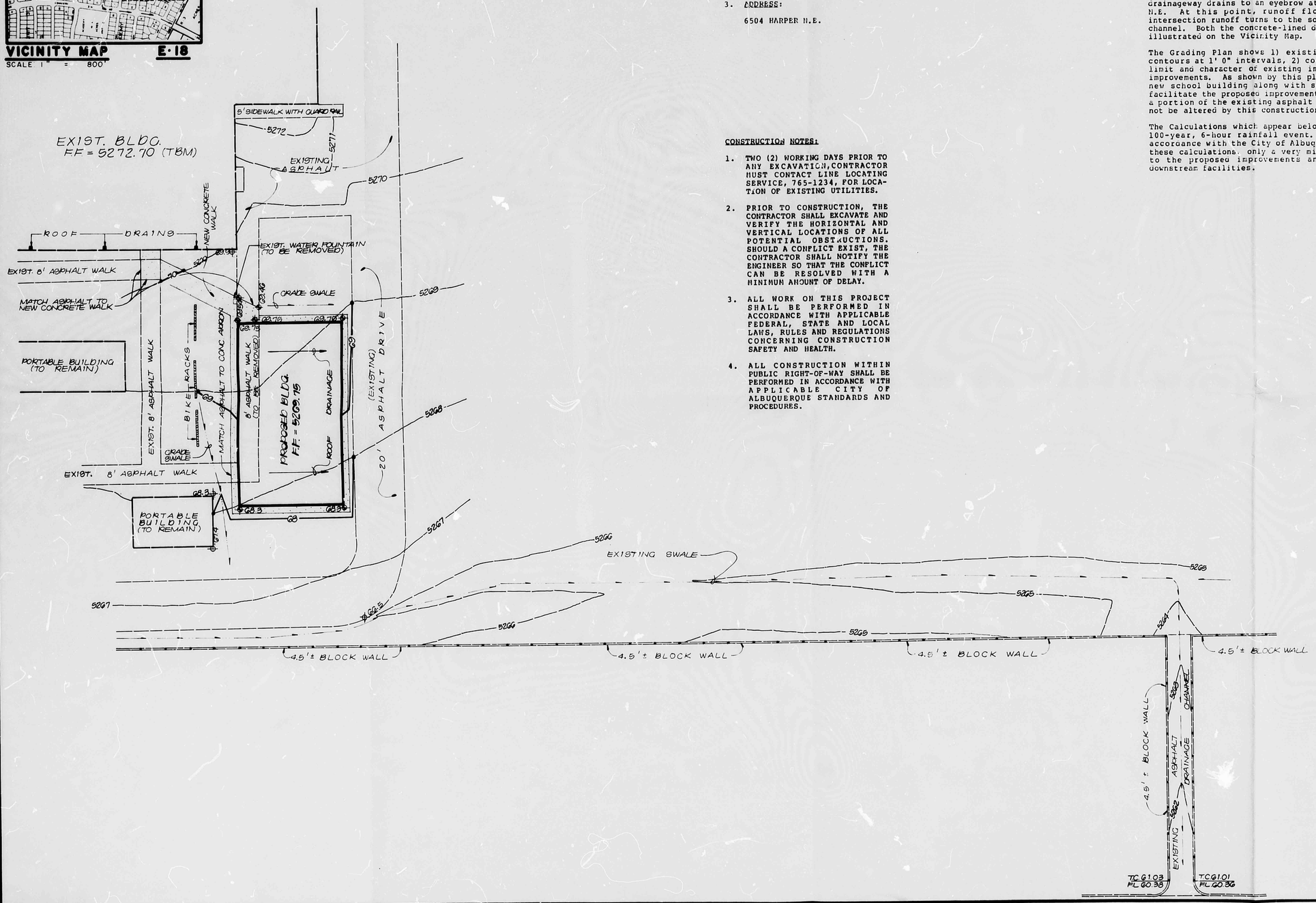
VICINITY MAP **E·18**

SCALE 1" = 800'

·LEGEND·

◆	EXISTING SPOT ELEVATION
◆	PROPOSED SPOT ELEVATION
5521	EXISTING CONTOUR
21	PROPOSED CONTOUR
	SWALE
T.C. 21.55	EXISTING TOP OF CURB
F.L. 21.06	EXISTING FLOW LINE
	CONCRETE
	BASIN BOUNDARY

SCALE 1" = 20'



MISCELLANEOUS INFORMATION

1. PROJECT BENCHMARK:

   ACS BM 5-E18

   ELEVATION: 5307.35 FEET (NGVD)

2. TBM:

   FINISH FLOOR OF EXISTING BUILDING TO THE NORTHEAST OF THE PROPOSED BUILDING AS SHOWN BY THE GRADING PLAN.

   ELEVATION: 5272.70 FEET (NGVD)

3. ADDRESS:

   6504 HARPER N.E.

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 Arroyo Del Oso Elementary School 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 south side of Harper Drive N.E. between McKinney Drive N.E. and Glendora Drive N.E. At present, the site is developed as an Elementary School campus. The surrounding area is developed residentially.

Research has revealed that the site does not lie within a designated flood hazard zone. In fact, the site discharges runoff to a concrete-lined drainage channel via several improved streets. It is because of this that the additional increment of runoff generated by the proposed improvements will be freely discharged from the site to this downstream facility. At present, the site drains from east to west to an existing asphalt drainageway. This drainageway drains to an eyebrow at the intersection of Rosalita Avenue N.E. and Samantha Drive N.E. At this point, runoff flows to the west and onto McKinney Drive N.E. At this intersection runoff turns to the south and flows to the aforementioned concrete-lined drainage channel. Both the concrete-lined drainage channel and the asphalt drainageway are existing and illustrated on the Vicinity Map.

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 existing improvements, and 4) the limit and character of the proposed improvements. As shown by this plan, the proposed improvements include the construction of a new school building along with some additional concrete sidewalk and adjacent grading to facilitate the proposed improvements. This proposed construction will rerquire the removal of a portion of the existing asphalt walk. The existing pattern of runoff described above will not be altered by this construction.

The Calculations which appear below analyze both the existing and proposed 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 only a very minor increase in runoff is anticipated to leave the site due to the proposed improvements and hence should have very little impact on the existing downstream facilities.

Calculations

Ground Cover Information

1. From SCS Bernalillo County Soil Survey, Plate 21:

   EtC Embudo-Tijeras Complex

   Hydrologic Soil Group B

2. Existing Condition

   A_{total} = 9,460 sf = 0.22 Ac

   A_{imp} = 1930 sf

   % impervious = 1930/9460 = 0.20%

   'C' = 0.43 (DPM Plate 22.2C-1)

3. Developed Condition

   A_{total} = 9460 sf = 0.22 Ac

   A_{imp} = 5380 sf

   % impervious = 5380/9460 = 57%

   'C' = 0.61 (DPM Plate 22.2C-1)

Rational Method

1. 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 = 0.22 Ac (area affected by proposed work)

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

   where C varies

   P_6 = 2.3 in (DPM Plate 22.2D-1)

   A = 9460 sf (area affected by proposed work)

Existing Condition

$Q_{100} = CiA = 0.43\ (4.86)(0.22) = 0.5$ cfs

$V_{100} = CP_6A = 0.43\ (2.3/12)(9460) = 780$ cf

Developed Condition

$Q_{100} = CiA = 0.61\ (4.86)(0.22) = 0.7$ cfs

$V_{100} = CP_6A = 0.61\ (2.3/12)(9460) = 1106$ cf

Comparison

$Q_{100} = 0.5 - 0.7 = 0.2$ cfs

$V_{100} = 780 - 1106 = 326$ cf

REGISTERED PROFESSIONAL ENGINEER TERRY T. MARTIN 8782 NEW MEXICO LICENSED LAND SURVEYOR

7/8/83

MARTIN/MARTIN ASSOCIATES, INC.
811 DALLAS, N.E. · ALBUQUERQUE · NEW MEXICO · 87110
ENGINEERS

NO.	DATE	BY	REVISIONS

DESIGNED BY: J.G.M.
DRAWN BY: J.M.C.
APPROVED: T.T.M.

JOB NO. 30641
DATE 6·83

GRADING & DRAINAGE PLAN

ARROYO DEL OSO ELEMENTARY SCHOOL ADDITION

E18/D7A

FILE NO.

SHEET 1 OF 1

N29563