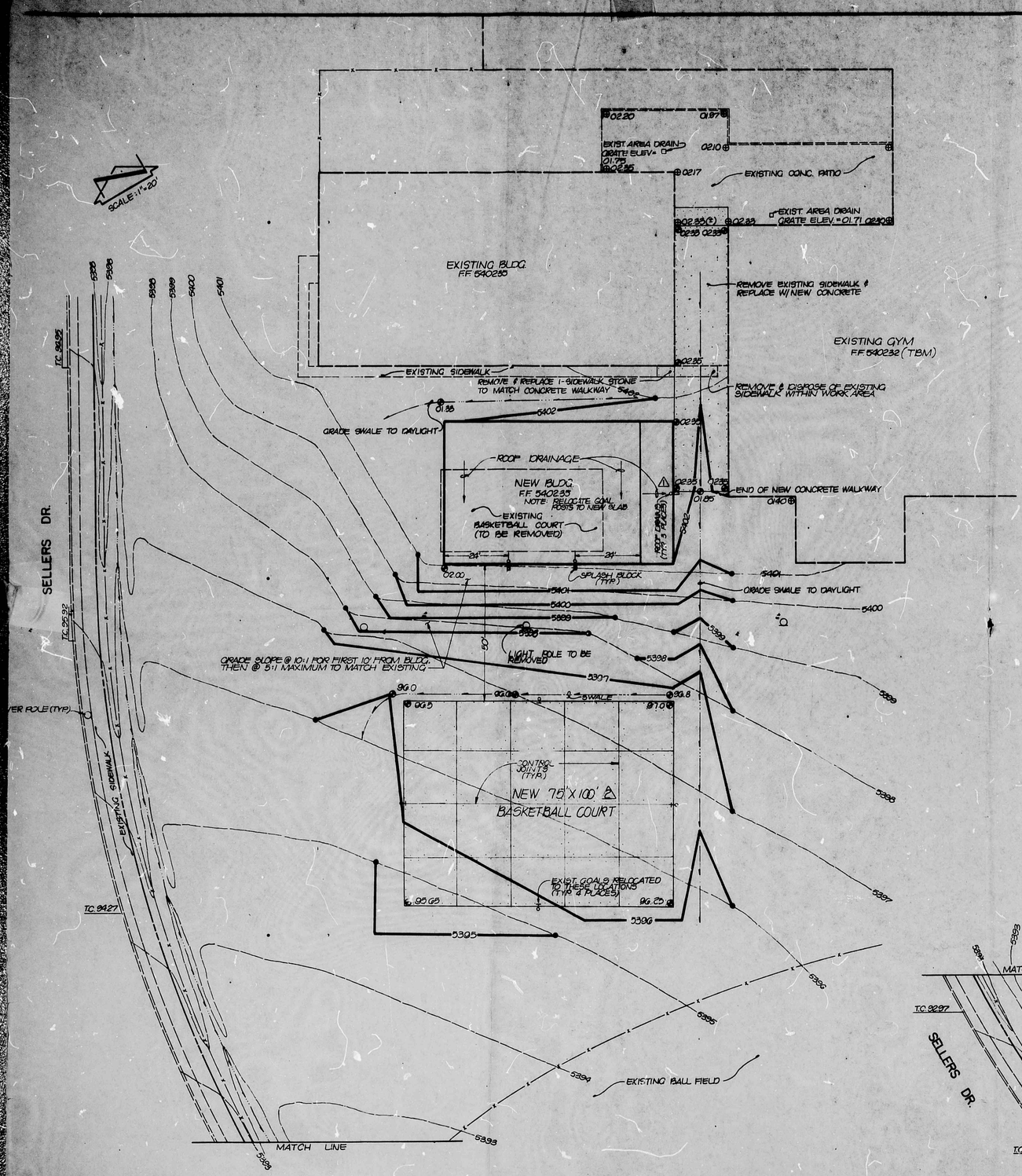
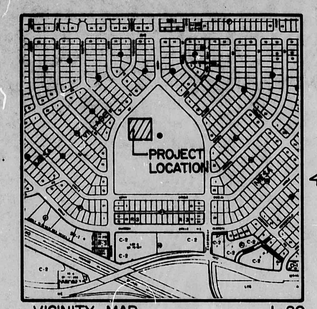
HYDROLOGY J20/D13 GRANT MIDDLE SCHOOL

J20/D13

Grant Middle School

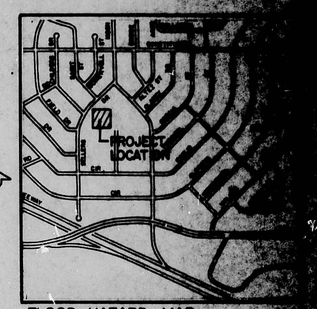
1 Plan





VICINITY MAP J-20

SCALE: 1" = 800'



FLOOD HAZARD MAP

SCALE: 1" = 1000'

DRAINAGE PLAN

The following items concerning the Grant Middle School Improvements Drainage Plan are [illegible] hereon:

1. Vicinity Map
2. Flood Hazard Map
3. Grading Plan
4. Calculations

The proposed improvements, as shown by the Vicinity Map, are located along Sellers [illegible] Grant Middle School campus. At present, the site is developed. Adjacent sites are [illegible]

The site does not lie within a flood hazard zone, as shown by the Flood Hazard Map. [illegible] Hazard Map was taken from the "City of Albuquerque, New Mexico, Bernalillo County Flo[illegible] Boundary Map" prepared by the U. S. Department of H.U.D., Federal Insurance Program. [illegible] the Albuquerque Master Drainage Study Plate J20 reveals that downstream flooding is [illegible] however, the portion of the Grant Middle School Campus to receive further improvements [illegible] contribute runoff to the street. Runoff from this portion of the campus is contained [illegible] a berm ranging in height from 1'-2' and located at the property line. In addition, [illegible] do not present a problem to this site, as evidenced by field inspection and map review.

The Grading Plan shows (1) existing grades indicated by contours at 1'-0" intervals, (2) [illegible] grades indicated by spot elevations and contours at 1'-0" intervals, (3) continuing [illegible] ting and proposed elevations, and (4) the limit and character of the proposed improvements. [illegible] shown by this plan, the proposed improvements include the construction of a new [illegible] building, the removal, reconstruction and lengthening of the concrete walkway between [illegible] gym and the new building, the demolition of the existing basketball court and the [illegible] a new basketball court. The grading required by these improvements will not alter the [illegible] drainage pattern. Runoff will flow in a southerly direction, being contained [illegible] mentioned berm at the property line, and be discharged onto the existing ballfield. [illegible] flatness of the ballfield, it is anticipated that all runoff which enters the ballfield [illegible] rarily pond and eventually infiltrate.

The calculations which appear below analyze both the existing and developed conditions [illegible] 100-year, 6-hour rainfall event. The Rational method has been used for this analysis [illegible] with the City of Albuquerque Development Process Manual Volume II. As shown by [illegible] only a minor increase in runoff is anticipated.

CALCULATIONS 2

RATIONAL METHOD

1. DISCHARGE: $Q = CiA$

$C_{100\%} = 0.95$

$C_{21\%} = 0.43$ (DPM Plate 22.2C-1)

$i = P_6(6.84)T_c^{-0.51} = 5.18$ in/hr

where $P_6 = 2.45"$ (DPM Plate 22.2D-1)

$T_c = 10$ min (Minimum)

$A = 13{,}840$ sf $= 0.32$ Ac

2. VOLUME: $V = CP_6A$

$C_{100\%} = 0.95$

$C_{21\%} = 0.43$ (DPM Plate 22.2C-1)

$P_6 = 2.45"$ (DPM Plate 22.2D-1)

$A = 13{,}840$ sf

EXISTING CONDITION

$A_{impervious} = 2904$ sf

$A_{pervious} = 10{,}936$ sf

$\%\ impervious = \frac{2904}{2904+10{,}936} = 21\%$

$Q_{100} = 0.43\,(5.18)\,0.32 = 0.71$ cfs

$V_{100} = 0.43\,(\frac{2.45}{12})\,13{,}840 = 1215$ cf

DEVELOPED CONDITION

$A_{impervious} = 13{,}840$ sf $= 0.32$ Ac

$Q_{100} = 0.95\,(5.18)\,0.32 = 1.56$ cfs

$V_{100} = 0.95\,(\frac{2.45}{12})\,13{,}840 = 2684$ cf

COMPARISON

$\Delta Q_{100} = 1.56 - 0.71 = 0.85$ cfs

$\Delta V_{100} = 2684 - 1215 = 1469$ cf

OTHER INFORMATION

1. PROJECT BENCHMARK: ACS brass [illegible] 1979" located at the northwest [illegible] the intersection of Constitution [illegible] Moon N.E.

   Elevation: 5410.93 feet (NGVD)

2. TEMPORARY BENCHMARK: Finished [illegible] existing gym as shown by grading [illegible]

   Elevation: 5402.32 feet (NGVD)

3. SOIL (from SCS Soil Survey, Fl[illegible]

   BtC Embudo-Tijeras Complex [illegible]

4. ADDRESS: 1111 Easterday N.E.

NO	DATE	BY	REVISIONS
1	8/23/82	JMT	RELOCATED ROOF DRAINS, AND ADDED BASKETBALL GOAL LOCATIONS
2	8/26/82	JGM	ENLARGE AND REGRADE BASKETBALL COURTS; REVISE CALCS.

DESIGNED BY JGM
DRAWN BY CGC
APPROVED TTM

JOB NO. 2-0671
DATE 7/82

[illegible] ASSOCIATES, INC.
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ENGINEERS

GRANT MIDDLE SCHOOL IMPROVEMENTS

ALBUQUERQUE PUBLIC SCHOOLS

J20/D13