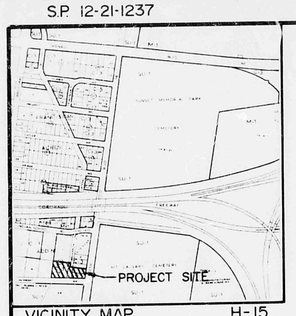
HYDROLOGY

H15/D26
2 PLANS

H15/D26

2 PLANS

S.P. 12-21-1237



VICINITY MAP H-15
SCALE : 1" = 800'

84 689

SUMMARY PLAT OF
TRACT X
FORMERLY LOTS 12,13 & 14, AND A PORTION OF THE VACATED ALAMEDA CANAL BLOCK 9, FRANCISCAN ACRES ALBUQUERQUE , NEW MEXICO
JANUARY, 1984

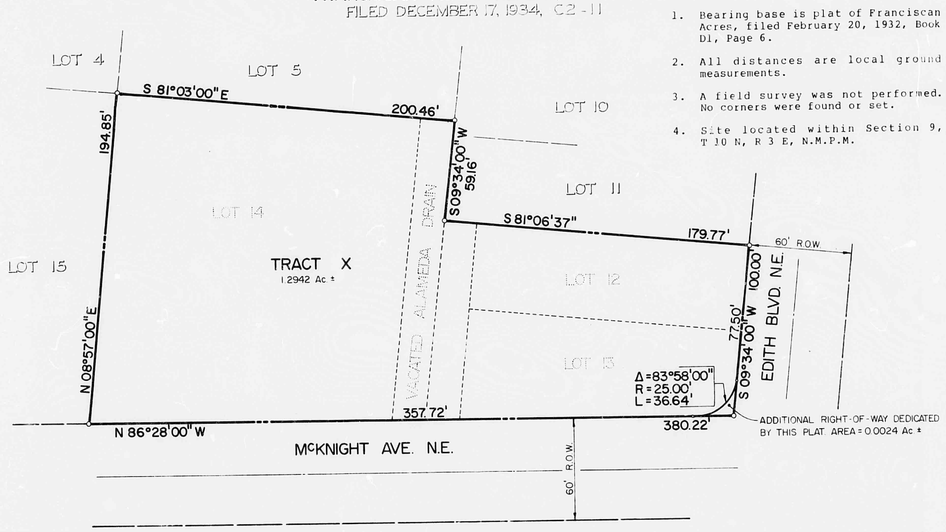
DESCRIPTION

A certain tract of land located within the Corporate Limits of the City of Albuquerque, comprising Lots 12, 13, 14, and the Vacated Alameda Canal Right-of-Way, Block 9 of the Franciscan Acres Replat, filed in the Office of the County Clerk of Bernalillo County, on December 17, 1934, Book C2, Page 11 and being more particularly described as follows:

Beginning at the southwest corner of the parcel herein described, being a point along the northerly Right-Of-Way line of McKnight Ave. N.E. and being the southwest corner of the former Lot 14; thence N 08°57'00" E a distance of 194.85 feet; thence S 81°03'00" E a distance of 200.46 feet; thence S 09°34'00" W a distance of 59.16 feet along the centerline of the Vacated Alameda Canal; thence S 81°06'37" E a distance of 179.77 feet; thence S 09°34'00" W a distance of 100.00 feet along the westerly Right-Of-Way line of Edith Blvd. N.E.; thence N 86°28'00" W a distance of 380.22 feet along the northerly Right-Of-Way line of McKnight Ave. N.E. to the point of beginning and containing 1.2966 acres more or less.

SCALE : 1" = 40'

FRANCISCAN ACRES REPLAT, BLOCK 9
FILED DECEMBER 17, 1934, C2-11



NOTES:

1. Bearing base is plat of Franciscan Acres, filed February 20, 1932, Book D1, Page 6.
2. All distances are local ground measurements.
3. A field survey was not performed. No corners were found or set.
4. Site located within Section 9, T 10 N, R 3 E, N.M.P.M.

DEDICATION

The undersigned owners of the land shown hereon do hereby consent to the subdivision of said land in the manner shown on this plat and do hereby dedicate all public rights of way, drainage way and utility easements including the right of ingress and egress and the right to trim interfering trees.

William C. Pruett 12/22/83
William E. Pruett, IPD Inc. Date

ACKNOWLEDGEMENT

STATE OF NEW MEXICO)
COUNTY OF BERNALILLO) ss

OFFICIAL SEAL JOHN TATMAN NOTARY PUBLIC STATE OF NEW MEXICO My Commission Expires 05/03/87

The foregoing instrument was acknowledged before me this 22nd day of December 19 83.

John Tatman

APPROVALS

for Filter 12/29/83
Chief City Surveyor, Engineering Division Date

Robert D. Fromayer 12-28-83
Traffic Engineer, City of Albuquerque, NM Date

12-29-83
Planning Director, City of Albuquerque, NM Date

N/A
City Engineer, City of Albuquerque, NM Date

Rowell Dunn 12/28/83
Property Manager, City of Albuquerque, NM Date

N/A
Water Resources, City of Albuquerque, NM Date

N/A
Parks and Recreation, City of Albuquerque, NM Date

N/A
AMAFCA Date

CERTIFICATION

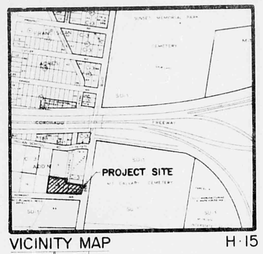
I, Thomas T. Mann, Jr., do hereby certify that I am a registered Land Surveyor under the lawsof the State of New Mexico, and that this plat was prepared by me or under my supervision; shows all easements made know to me by the Owner, utility companies or other interested parties; meets the minimum requirements of monumentation and surveys of the Bernalillo County Subdivision Ordinance, and is true and correct to the best of knowledge and belief.

12/21/83
Date Thomas T. Mann, Jr. N.M.P.L.S. No. 3792

REGISTERED PROFESSIONAL ENGINEER STATE OF NEW MEXICO THOMAS T. MANN, JR. 3792 LAND SURVEYOR

SP-83-399

RIO GRANDE ENGINEERS - ALBUQUERQUE - NEW MEXICO - 87110
JOB No 3-1541



VICINITY MAP H-15

SCALE 1" = 800'

DRAINAGE PLAN

The following items concerning the IPD Drainage Plan are contained hereon:

1. Vicinity Map
2. AMDS Plate
3. Grading Plan
4. Caculations

As shown by the Vicinity Map, the proposed improvements are located at the northwest corner of the intersection of Edith Blvd. N.E. and McKnight Avenue N.E. At present, the site is developed as is much of the surrounding area. The site to the east is a cemetery and probably will remain as such. Because of this, the runoff contribution from that area is not expected to change.

Based upon the pre-design conference held with Mr. Billy J. Goolsby, P.E., on November 30, 1983, downstream capacity is available contingent upon street capacity. The calculations below demonstrate that the Avenue, McKnight Avenue N.E., can adequately handle both the existing flow and the projected future flow based upon the 100-year, 6 hour rainfall event. It is because of this that a free discharge of runoff from the site has be utilized and no interim ponding provided. It should also be noted that there is an existing storm drain system in McKnight Avenue N.E. with a series of catch basins located at the intersection of McKnight Avenue and Broadway Boulevard.

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 grades, 3) the limit and character of both existing and proposed improvements, and 4) three separate drainage basins. As shown by this plan the proposed improvements include the construction of a warehouse and adjacent asphalt paving. In addition, the plan shows Basin 1 which presently drains to McKnight and Basin 2 which drains to an existing irrigation ditch/easement. Basin 3, as shown by the proposed grades, will drain to the existing drivepad at the southwest corner to the site and discharge onto McKnight.

The calculations which appear below analyze both the existing and fully 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 total runoff discharged from the site will be increased by approximately 3 cfs. Also demonstrated is that downstream capacity does exist to permit this increase in peak discharge. The street hydraulics calculations are based upon the Manning Equation modified for use with an HP-67 program in which the inputs are a function of the street geometry. Lastly, it should be realized that the proposed improvements will not increase the discharge from Basin 2 to the north, and that the discharge from what is now defined as Basin 3 will be directed to public right-of-way and will no longer discharge onto private property.

CALCULATIONS

Ground Cover Information

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

2. Existing Condition

   A_{total} = 56,480 sf = 1.30 Ac

   A_{imp} = 22,000 sf

   % impervious = 39%

   'C' = 0.36 (DPM Plate 22.2 C-1)

3. Developed Condition

   A_{total} = 56,480 sf = 1.30 Ac

   A_{imp} = 54,070 sf (Assume 7% landscaping for remaining pervious area)

   % impervious = 96%

   'C' = 0.87 (DPM Plate 22.2 C-1)

   Basin 1 = 15,400 sf = 0.35 Ac
   Basin 2 = 36,000 sf = 0.08 Ac
   Basin 3 = 37,480 sf = 0.87 Ac

Rational Method

1. Discharge: $Q = CiA$
   where C varies
   $i = P_6(6.84)T_c^{-0.51} = 4.65$ in/hr
   P_6 = 2.2 in (DPM Plate 22.2 D-1)
   T_c = 10 min (minimum)
   A = area, acres

2. Volume: $V = CP_6A(1/12)$
   where C varies
   P_6 = 2.2 in (DPM Plate 22.2 D-1)
   A = area, sf

Hydrology

1. Existing Condition

   $Q_{100} = CiA = 0.36(4.65)(1.30) = 2.2$ cfs
   $V_{100} = CP_6A = 0.36(2.2/12)(56,480) = 3730$ cf

2. Developed Condition

   a. Basin 1
      $Q_{100} = CiA = 0.87(4.65)(0.35) = 1.4$ cfs
      $V_{100} = CP_6A = 0.87(2.2/12)(15,400) = 2460$ cf

   b. Basin 2
      $Q_{100} = CiA = 0.87(4.65)(0.08) = 0.4$ cfs
      $V_{100} = CP_6A = 0.87(2.2/12)(3600) = 570$ cf

   c. Basin 3
      $Q_{100} = CiA = 0.87(4.65)(0.87) = 3.5$ cfs
      $V_{100} = CP_6A = 0.87(2.2/12)(37,480) = 5980$ cf

3. Comparison

   $\Delta Q_{100} = 2.2 - (1.4+0.4+3.5) = 3.1$ cfs (increase)
   $\Delta V_{100} = 3730 - (2460+570+5980) = 5280$ cf (increase)

Downstream Capacity

1. AMDS Results (Page 1 C-2)

   a. AP 118 Q_{peak} = 17 cfs, $Q_{overland}$ = 0 cfs

      (i.e. 17 cfs accepted by storm drain system)

   b. AP 120 Q_{peak} = 38 cfs, $Q_{overland}$ = 14 cfs

      (i.e. 24 cfs accepted by storm drain system)

2. Street Hydraulics (Manning Equation)

   w = 40' (street width)
   s = 0.015 (average street slope)
   n = 0.017 (Manning roughness coefficient)
   S_c = 0.02 (street cross-slope, assumed)
   d = varies (depth of flow above curb flowline)
   Q = f (stree geometry) = f(w,s,n,S_c,d)
   @ d = 0.67', Q = 119 cfs
   @ Q = 38 cfs, d = 0.44' and v = 4 fps
   @ Q = 14 cfs, d = 0.31' and v = 3 fps
   @ Q = 43 cfs, d = 0.45' and v = 4.2 fps
   @ Q = 19 cfs, d = 0.34' and v = 3.3 fps

3. Watershed Contribution

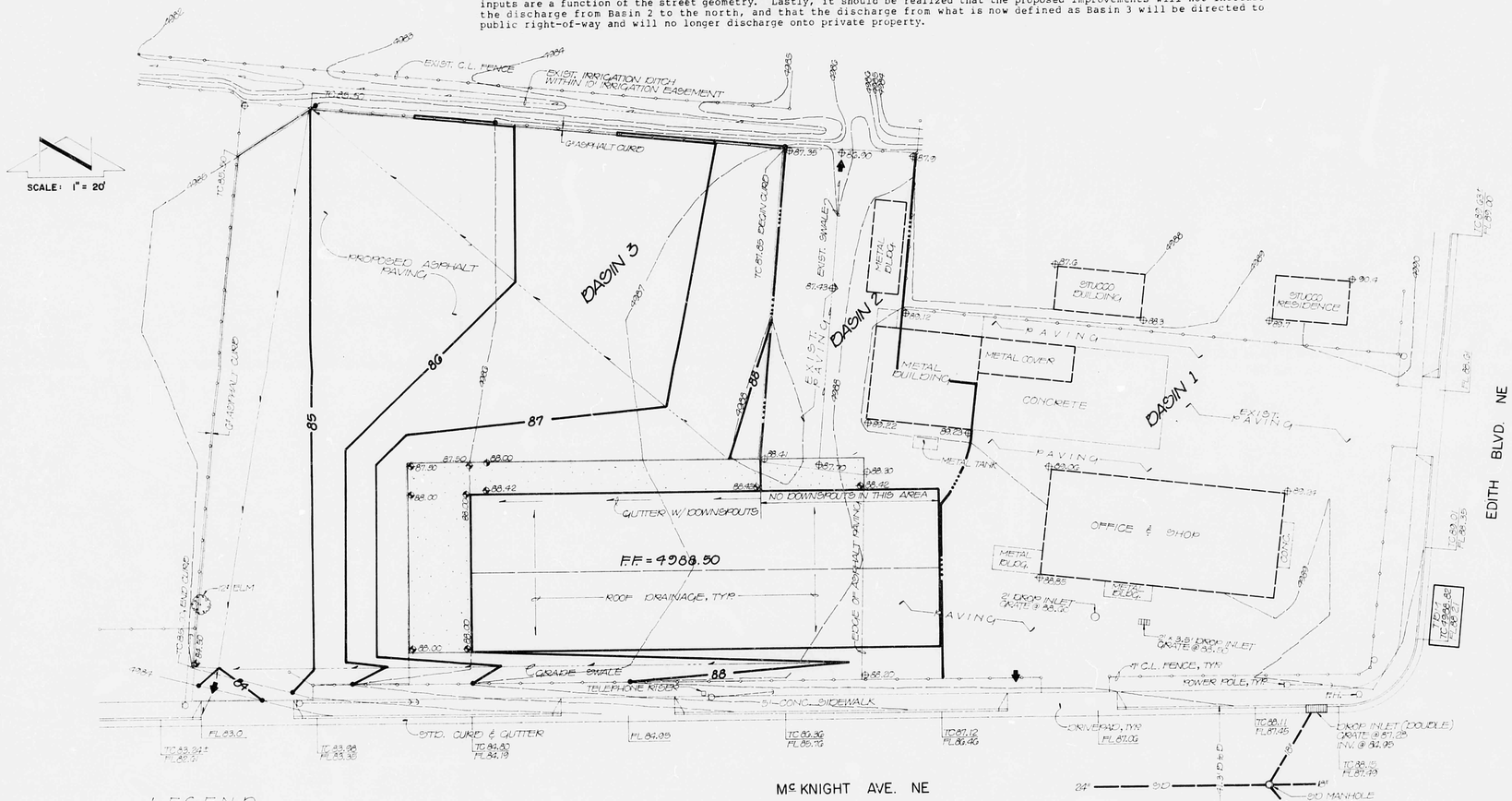
   a. Existing

      Q_{100} = 38 cfs (AMDS AP 120)

   b. Future

      Area between Edith and Broadway = 6.2 Ac±
      Let C = 0.9
      Let i = 4.65 in/hr
      Q_{100} = 0.9 (4.65)(6.2) = 26 cfs (partial)
      Q_{100} = 26 + 17 = 43 cfs (watershed)
      $Q_{overland}$ = 43 - 24 = 19 cfs

RECEIVED
DEC 23 1983
ENGINEERING



LEGEND

- EXIST. CONTOUR
- PROPOSED CONTOUR
- EXIST. SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- DRAINAGE BASIN BOUNDARY
- CONCRETE
- ASPHALT

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 PROCEDEURES.

PROJECT BENCHMARK = TBM:

ACS BM 5-H15
Elevation: 4988.82 feet (MSLD)

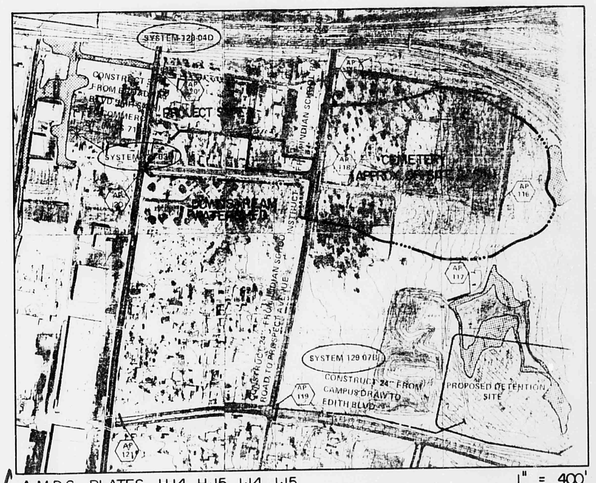
LEGAL ADDRESS:

Tract X, Block 9, Franciscan Acres

STREET ADDRESS

1903 Edith Boulevard N.E.

REGISTERED PROFESSIONAL ENGINEER — STATE OF NEW MEXICO — THOMAS J. MARK — 3703 — LAND SURVEYOR
12/23/83



A.M.D.S. PLATES H-14, H-15, J-14, J-15 1" = 400'

BOHANNAN-HUSTON Associates, Inc. 811 DALLAS N.E. • ALBUQUERQUE • NEW MEXICO • 87110 ENGINEERS	NO.	DATE	BY	REVISIONS	DESIGNED BY JGM DRAWN BY J.T. APPROVED TTM	JOB NO. 31541 DATE 12/83

GRADING AND DRAINAGE PLAN
INDUSTRIAL PARTS DEPOT

FILE NO.
SHEET 1 OF 1