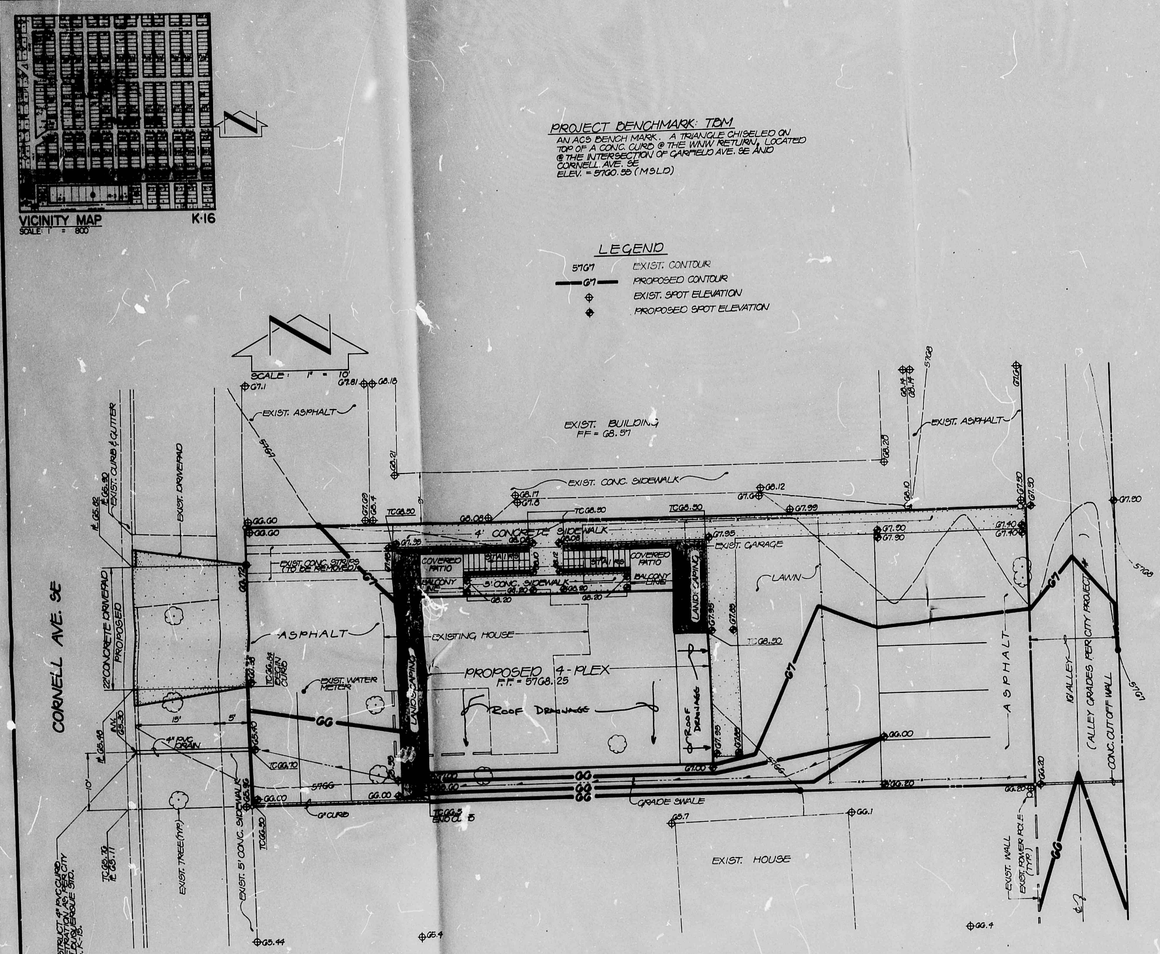
HYDROLOGY K16/D10 2 PLANS

K16/D10

2 Plans

CITY OF ALBUQUERQUE



Drainage Plan

The following items concerning the Cornell Apartments 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 east side of Cornell Avenue S.E. just south of Coal Avenue S.E. At present, the site is developed with an existing house and garage.

As shown by Plate K-16 of the Albuquerque Master Drainage Study, the site does not lie within a designated flood hazard zone. Flooding is believed to occur on Coal Avenue S.E., however, the small amount of discharge from this site will be routed through a 4" PVC curb penetration, situation. Runoff from the developed site will be routed through a 4" PVC curb penetration, draining the parking lot along Cornell Avenue. This outlet has been provided in accordance with the City of Albuquerque Water Waste Ordinance, i.e., to control nuisance flows.

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 the 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 four-plex along with asphalt parking, landscaped areas, sidewalk and lawn. In order to accommodate the proposed improvements, the existing house, patio and garage will be removed. The plan also demonstrates that all runoff within the site will be routed to the 4" PVC curb penetration previously mentioned. The plan also shows that there is an existing 16' wide alley at the east boundary of the property. Alley grades are being designed concurrently. The alley will be constructed in conjunction with this project by license agreement.

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. The analysis of the release rate through the 4" PVC pipe is based upon the Orifice equation. Because the inflow is equal to the outflow, no ponding should occur. If runoff should back up for some reason, the overflow runoff will leave the site via the new concrete drivepad.

RECEIVED
OCT 12 1983
ENGINEERING

Calculations

Ground Cover Information

1. From SCS Bernalillo County Soil Survey, Plate 31:

   WeB Wink-Embudo Complex

   Hydrologic Soil Group B

2. Existing Condition

   A_{total} = 7100 sf = 0.16 Ac

   A_{imp} = 1370 sf

   % impervious = 1370/7100 = 19%

   'C' = 0.42 (DPM Plate 22.2C-1)

3. Developed Condition

   A_{total} = 7100 sf = 0.16 Ac

   A_{imp} = 5200 sf

   % impervious = 5200/7100 = 73%

   'C' = 0.71 (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 = area, acres

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

   where C varies

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

   A = area, sf

Existing Condition

$Q_{100} = CiA = 0.42(4.86)(0.16) = 0.3$ cfs

$V_{100} = CP_6A = 0.42(2.3/12)(7100) = 572$ cf

Developed Condition

$Q_{100} = CiA = 0.71(4.86)(0.16) = 0.6$ cfs

$V_{100} = CP_6A = 0.71(2.3/12)(7100) = 966$ cf

$Q_{release} = CA\sqrt{2gh} = 0.6$ cfs.

where C = 0.75

A = 0.0873 sf (4" dia pipe)

$g = 32.2$ ft/sec^2

h = 66.70 - 65.40 - 1/2(4/12) = 1.1'

$Q_{in} = Q_{out}$, therefore no ponding required.

Comparison

$\Delta Q_{100} = 0.3 - 0.6 = 0.3$ cfs (increase)

$\Delta V_{100} = 572 - 966 = 394$ cf (increase)

REGISTERED PROFESSIONAL ENGINEER
TIMOTHY J. MOORE
No. 4800
LAND SURVEYOR

CITY OF ALBUQUERQUE
THIS MICROIMAGE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT

CITY OF ALBUQUERQUE

CITY WIDE ENGINEERING, INC.
811 DALLAS N.E. · ALBUQUERQUE · NEW MEXICO · 87110
ENGINEERS

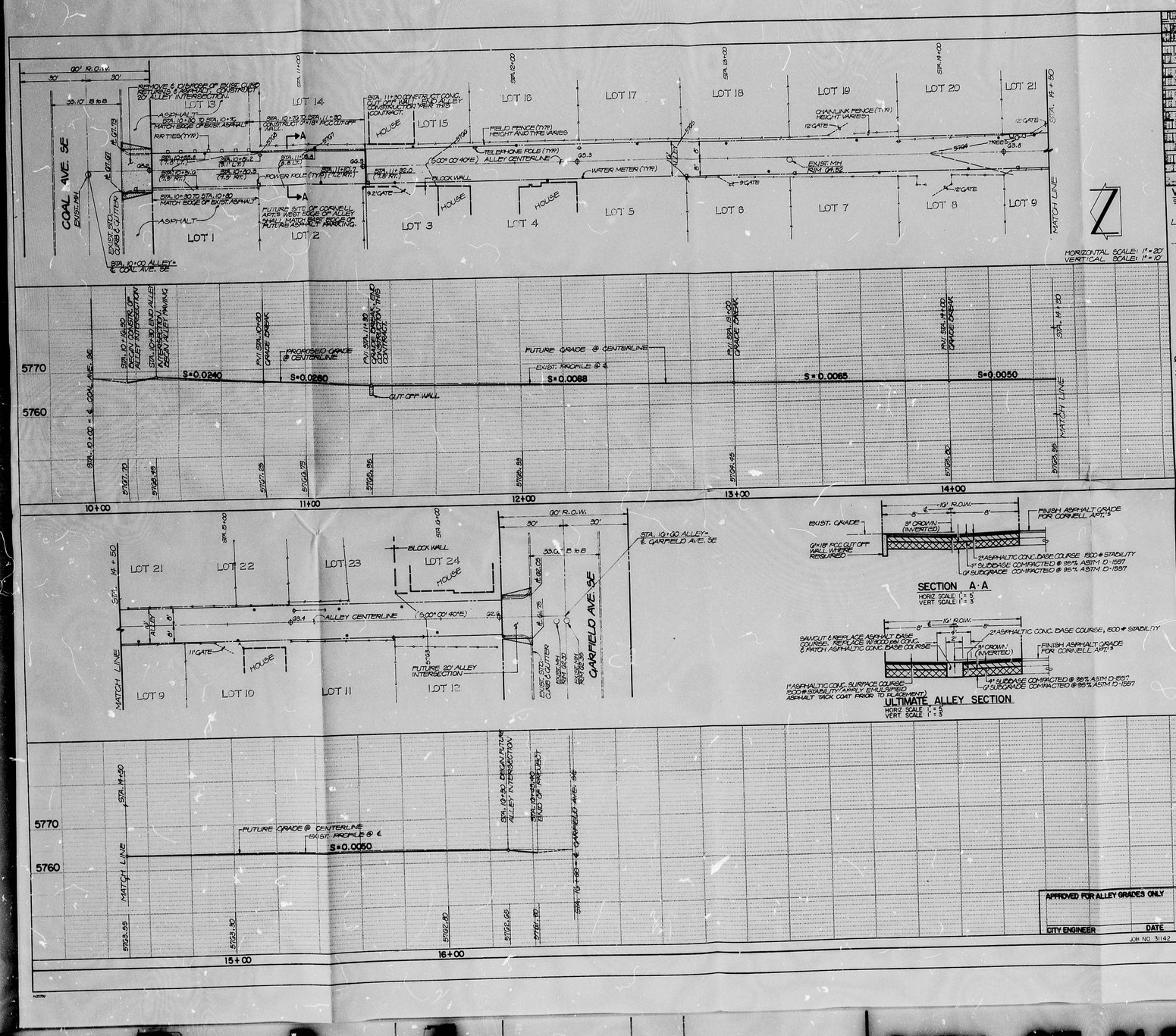
NO.	DATE	BY	REVISIONS

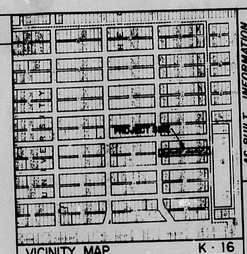
DESIGNED BY: JGM
DRAWN BY: J.T.
APPROVED: TJM

JOB NO. 31141
DATE 9/83

GRADING & DRAINAGE PLAN
CORNELL APARTMENTS FOR GAIL SKINNER

FILE NO.
SHEET 1 OF 1





VICINITY MAP K-16

SCALE 1" = 800'

LEGEND:

⊕ EXIST. SPOT ELEVATION

—94— EXIST. CONTOUR

GENERAL NOTES

1. All work detailed on these plans to be performed under contract shall, except otherwise stated or provided for hereon, be constructed in accordance with the New Mexico Standard Specifications for Public Works Construction - 1979 Edition (referred to herein as the Standard Specifications) and the City of Albuquerque Contract Documents for City-Wide Utilities and Cash Paving No. 31.
2. Two (2) working days prior to any excavation, Contractor must contact line locating service, 765-1234, for location of existing utilities.
3. 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.
4. The Contractor shall maintain access to adjacent properties during construction.
5. 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.
6. The contractor must submit a construction signing and barricading plan to Traffic Engineering to receive a barricading permit prior to construction.
7. Alley shall be constucted in conjunction with Cornell Apartments by license agreement.
8. Contractor shall adjust to grade all water meters, valve boxes and manholes encountered within the construction limits.
9. Contractor shall pave around all existing telephone and power poles. One-half inch expansion joints shall be provided where paving is concrete.

AS BUILT INFORMATION

CONTRACTOR
WORK STAKED BY
INSPECTOR
FIELD TASKS
FIELD CHECK BY
DATE
VERIFICATION BY
DATE
CERTIFICATION
CORRECTED PLAT
DATE

MICROFILM INFORMATION

RECORDED BY
DATE
NO.
OCT 12 1983

BENCH MARK

AN ACS BENCH MARK: A TRIANGLE CHISELED ON TOP OF A CONCRETE CURB @ THE WWW NETWORK, LOCATED @ THE INTERSECTION OF GARFIELD AVE. SE AND CORNELL AVE. SE.
ELEVATION - 5700.98 (NGLD)

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

NEW MEXICO PROFESSIONAL ENGINEER THOMAS MAYO No. 5 STATE OF NEW MEXICO

NO.	DATE	REMARKS	BY

BOHANNAN-HUSTON INC. ENGINEERS
8500 MENAUL N.E. - ALBUQUERQUE - NEW MEXICO - 87110
DALLAS, N.J.

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

TITLE: ALLEY BETWEEN CORNELL SE & STANFORD SE FROM COAL AVE. SE TO GARFIEL D AVE. SE

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
City Engineer			Liquid Waste		
A.C.E.-Design			Traffic		
A.C.E.-Hydrology			Water		
Q.A.					

DRAWING NO. | MAP NO. K-16 | SHEET 1 OF 1

CITY OF ALBUQUERQUE
THIS MICROIMAGE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT