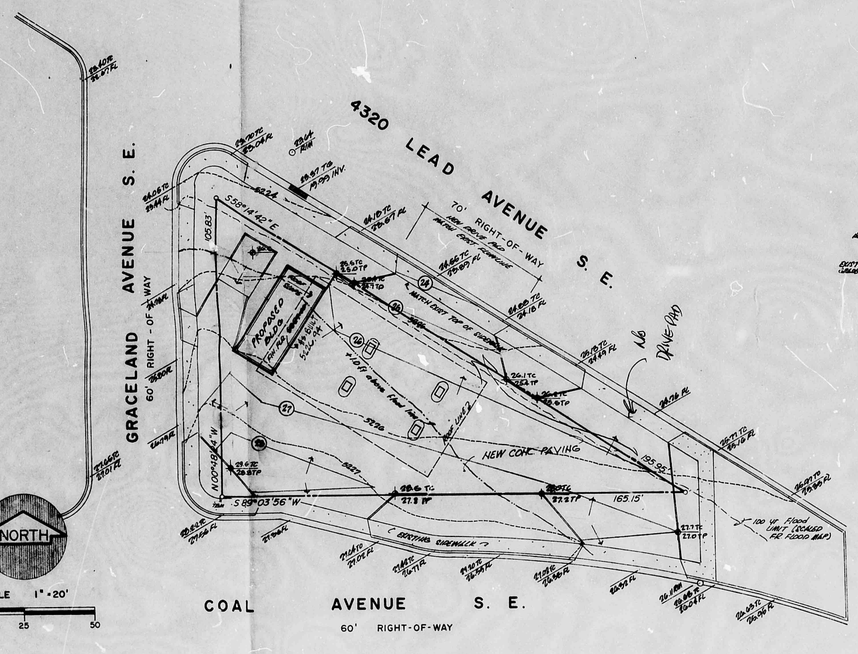
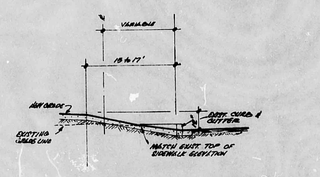
HYDROLOGY K17/D47 1 PLAN

K17/D47

1 Plan

CITY OF ALBUQUERQUE





TYP. DRIVEPAD X-SECTION (HTS)

VICINITY MAP NTS
ZONE ATLAS PAGE K-17

LEGAL DESCRIPTION:
BLOCK 16
MESA GRANDE ADDITION
BERNALILLO COUNTY, NEW MEXICO

NOTE:
FINISH FLOOR ELEVATION MUST BE CERTIFIED BY THE ENGINEER PRIOR TO CERTIFICATE OF OCCUPANCY BEING RELEASED

+1.0 FT. ABOVE FLOOD LINE PLOTTED HEREON DOES NOT REFLECT THE NEW DETENTION POND IMPROVEMENT INSTALLED

FIN. FINISH FLOOR ELEVATION IS WITHIN SUBSTANTIAL COMPLIANCE WITH PROPOSED DRAIN & FLOODPROOFING PROVISION.

U.S. MAIL
C. ROBERTS
NEW MEXICO PROFESSIONAL ENGINEER

6/16/86

REVISED 6/27/86
REVISED 11/5/87

DRAINAGE CALCULATIONS

I. REFERENCES:

A. City of Albuquerque Development Process Manual (DPM) Vol. 2, Design Criteria, Chapter 22: Drainage, Flood Control, and Erosion Control.
B. Soil Survey of Bernalillo County and parts of Sandoval and Valencia Counties, New Mexico, United States Department of Agriculture, Soil Conservation Service
C. Floodway, Flood Boundary and Floodway map, City of Albuquerque, New Mexico. Panel 29 of 50.
D. City of Albuquerque Zone Atlas page F-17.

II. GENERAL INFORMATION:

A. Soil Type (Ref. B, Page 31) Soil type is Cut and Fill Land (CuL). Hydrologic Soil Group "A".
B. Imperviousness:

Type of Surface	Existing Area Sq. Ft.	Existing Area Acres	Proposed Area Sq. Ft.	Proposed Area Acres
Building Roof	-0-	-0-	3200	0.0735
Concrete	1503	0.0345	4891	0.1122
Asphalt	6836	0.1569	-0-	-0-
Landscapd	-0-	-0-	648	0.0149
Undeveloped Land	400	0.0092	-0-	-0-
Site Total	8739	0.2006	8739	0.2006

C. "C" Factor (See Amendment to the DPM Jan.19.1986)

1. Proposed impervious surfaces

	"C" Factor	Area	C x A
Building (Roof area)	0.90	0.0735	0.0662
Concrete	0.95	0.1122	0.1066
Asphalt	0.95	-0-	-0-
Landscape (lawn)	0.25	0.0149	0.0037
Undeveloped	0.40	-0-	-0-
Total		0.2006	0.1765

Developed weighted "C" Factor: 0.1765/0.2006 = 0.88

2. Existing impervious surfaces

	"C" Factor	Area	C x A
Building (Roof area)	0.90	-0-	-0-
Concrete	0.95	0.0345	0.0328
Asphalt	0.95	0.1569	0.1491
Landscape	0.25	-0-	-0-
Undevelopedarea	0.40	0.0092	0.0037
Total		0.2006	0.1856

Existing weighted "C" Factor: 0.1856 / 0.2006 = 0.93

D. Rainfall, 100-year, 6-hour, K(6): (See Ref. A, Plate 22.2, D-1); K(6) = 2.30 inches.
E. Time of Concentration, Tc: Tc < 10 minutes: use 10 minutes (minimum value) for calculations.
F. Rainfallintensity, I: (See Ref. A, Plate 22.2 D-2)
I = K(6) x 6.84 x Tc exp(-0.51)
= 2.30 x 6.84 x 10 exp(-0.51)
= 4.86 in/hr

III. PEAK DISCHARGE:

A. Existing Conditions. (Use Rational Equation)
Q(100) = 0.93 x 4.86 x 0.2006 = 0.91 cfs
Q(10) = 0.657 x 191 = 0.60 (Ref. A, Plate 22.2 D-1)
B. Developed Conditions.
Q(100) = 0.88 x 4.86 x 0.2006 = 0.86 cfs
Q(10) = 0.657 x 0.86 = 0.56 cfs

IV. FLOOD INFORMATION: (see ref. C, panel 29 of 50)

A. 100 yr. flood zone AO (depth 1 ft.) encroaches into the site along Lead Avenue SE as shown on drainage plan. The flood zone is contained along the south right-of-way line of Lead Avenue SE. The newly constructed detention pond (Highland Detention Pond) improvesthe existing flooding on Lead Avenue SE.
B. rloodproofing: The finish floor of the proposed building is set 2.72 ft. above the exisitng gutter along flood zone.

V. CONCLUSIONS:

The new development is over exisitng impervious surface, mostly asphalt paving with no designated landscaping. The proposed 7.5% landscaping decreases the generated storm runoff, therefore the proposed runoff will have minimal impact on downstream conditions. The existing and proposed storm runoff is discharged into Lead Avenue SE and caught by an existing catch basin downstream. The exisitng asphalt paving will be replaced with concrete paving. All existing sidewalks and drivepads will remain unless otherwise indicated on plan.

VI. CONSTRUCTION NOTES:

A. Two (2) working days prior to any excavation, contractor must contact line locating service at 765-1234 for location of existing utilities.
B. 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.
C. 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.
D. All construction within City Righ of Way shall be performed in accordance with applicable Ci , of Albuquerque standards and proceedures.

SYMBOL LEGEND

	Existing contour
	Proposed contour
	Existing spot elevati
	Proposed spot elevation
	Direction of flow
TA	Top of asphalt
TC	Top of curb
FL	Flowline
TG	Top of Grate (catch basin)
TBM	Temporary benchmark as shown on Drainage Plan ("□TBM" spray painted blue on top of concrete sidewalk bears elevation 5228.27 reference to City of Albuquerque (ACS) standard brass cap stamped 8K17, bears mean sea level datum elevation 5229.820

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HYDROLOGY SECTION

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

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