DRAINAGE INFORMATION SHEET

4-Plex

PROJECT TITLE: Warren Shaffer Apartments No. 2   ZONE ATLAS/DRNG. FILE #: G-16/D66 65A

LEGAL DESCRIPTION: Lot 10, Block 2, Indian Acres Subdivision

CITY ADDRESS: 3400 Wellesley Drive, NE

ENGINEERING FIRM: Lovelady & Associates   CONTACT: Frank D. Lovelady

    ADDRESS: 7408 Morrow Road, N.E. 87110   PHONE: 883-7973

OWNER: Warren Shaffer   CONTACT: Warren Shaffer

    ADDRESS: 5736 Osuna Drive NE   PHONE: 888-2928

ARCHITECT: Jerry Torr & Associates   CONTACT: Jerry Torr

    ADDRESS: 5736 Osuna Road NE   PHONE: 884-7713

SURVEYOR: N/A   CONTACT:

    ADDRESS: PHONE:

CONTRACTOR: N/A   CONTACT:

    ADDRESS: PHONE:

PRE-DESIGN MEETING:

_X_ YES   DRB NO. _____

____ NO   EPC NO. _____

_X_ COPY OF CONFERENCE RECAP   PROJ. NO. _____
SHEET PROVIDED

TYPE OF SUBMITTAL: CHECK TYPE OF APPROVAL SOUGHT:

____ DRAINAGE REPORT   ____ SKETCH PLAT APPROVAL

_X_ DRAINAGE PLAN   ____ PRELIMINARY PLAT APPROVAL

____ CONCEPTUAL GRADING & DRAINAGE PLAN   ____ SITE DEVELOPMENT PLAN APPROVAL

____ GRADING PLAN   ____ FINAL PLAT APPROVAL

____ EROSION CONTROL PLAN   _X_ BUILDING PERMIT APPROVAL

____ ENGINEER'S CERTIFICATION   ____ FOUNDATION PERMIT APPROVAL

_X_ SECOND SUBMITTAL PER CARLOS A.   ____ CERTIFICATE OF OCCUPANCY APPROVAL
MONTOYA/BERNIE J. MONTOYA
LETTER OF FEB. 12, 1985   ____ ROUGH GRADING PERMIT APPROVAL

    ____ GRADING/PAVING PERMIT APPROVAL

    ____ OTHER _____ (SPECIFY)

DATE SUBMITTED: February 18, 1985

    BY: Frank D. Lovelady, P.E.

scale 1"=10'

LOT 9

Property Line

Exist Church Bldg.
Fin. Flr. = 5115.80

New 30'
Conc. Drive Pad

NEW 30'
Conc. Drive Pad

Parking
Area

Asphalt

LOT 10

3' Conc. S.W.

Exist. Bldg. Foundation

New   4-Plex   Apartment Bldg
FIN. FLR. = 5110.50

S=0.0100 FT/FT

Exist Lawn

Exist Conc. Walk

RR Ties

3" Conc. S.W.

S=0.0100 FT/FT

New Conc. Sidewalk

Aztec Rd. N.E.

Wellesley Drive. N.E.

CONSTRUCTION NOTES:

1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE AT 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 RE-SOLVED 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 CITY RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.

EROSION AND SEDIMENTATION CONTROL:

THE CONTRACTOR IS RESPONSIBLE FOR EROSION AND SEDIMENTATION CONTROL DURING CONSTRUCTION. THE CONTRACTOR MUST PREVENT ALL SOIL-BEARING WATER GENERATED ON THE SITE FROM ENTERING THE AD-JACENT STREET. IN THE EVENT THAT SEDIMENT FROM THE SITE REACHES THE STREET, THE CONTRACTOR SHALL COMPLETELY AND THOROUGHLY REMOVE SAME WITHOUT DELAY.

LEGAL DESCRIPTION:

A CERTAIN TRACT OR PARCEL OF LAND SITUATED WITHIN THE CITY LIMITS OF THE CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO: BEING AND COMPRISING LOT 10, BLOCK 2, INDIAN ACRES SUBDIVISION, A SUBDIVISION OF THE CITY OF ALBUQUERQUE, NEW MEXICO.

LEGEND:

DESCRIPTION	EXISTING	NEW
FLOW DIRECTION		
CONTOUR		
SPOT ELEVATION		
PROPERTY LINE		
ROOF DRAIN		N/A

TC = TOP CURB
TA = TOP ASPHALT
FL = FLOW LINE

BENCH MARK:

STATION IS LOCATED 3.4 MI. NE OF DOWNTOWN ALBUQUERQUE AT THE INTERSECTION OF AZTEC ROAD AND LAFAYETTE DRIVE, IN THE SW QUAD-RANT OF THE INTERSECTION.

STATION IS 31.8 FT. SOUTH OF CENTERLINE ON AZTEC ROAD AND 30.6 FEET WEST OF CENTERLINE ON LAFAYETTE DRIVE.

STATION MARK IS A STANDARD USC&GS BRASS CAP SET IN TOP OF CONC-RETE POST FLUSH WITH THE GROUND AND STAMPED "P-225, 1951" ELEV-ATION 5099.957

TEMPORARY BENCH MARK (TBM) IS THE WEST TOP BONNET BOLT OF THE FIRE HYDRANT LOCATED NEAR THE NNW CURB RETURN OF WELLESLEY DRIVE, NE AND AZTEC DRIVE NE: ELEVATION 5109.68.

Flow Depth 0.20'

1/4" Minus Gravel Erosion Protection
2" Thick

SECTION A-A - SWALE
Scale 1"=2'

ADDITIONAL CALCULATIONS:

SWALE - EACH SWALE IS TO CARRY ONE-HALF OF ALL DRAINAGE EAST OF THE PARKING LOT.

Q_{100} = 0.58 cfs The ratio of area east of parking lot to total

area is approximately 79/134 = 0.59

Q_{swale} = 0.58 x 0.59 x 0.5 = 0.17 cfs

Try swale 6" deep with 6:1 side slopes.
Per Mannings Eqution (HP41cv Program "V-DITCH")
D = 0.20 feet flow depth Z = 6:1 side slopes N = 0.035
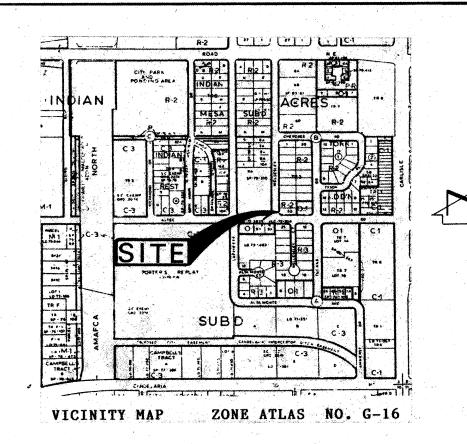S = 0.0092 ft/ft

Q = 0.21 cfs. > 0.17 cfs (Capacity is adequate)

V = 0.87 fps (Velocity is non-erodable)

Drainage Calculations

I. REFERENCES:

A. City of Albuquerque Development Process Manual (DPM) Volume 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 Depart-ment of Agriculture, Soil Conservation Service.

II. GENERAL INFORMATION:

A. Soil Type (Ref.B., Page 21) Soil type is EmB, Embudo gravelly fine sandy loam, 0 to 5 percent slopes. The Hydrologic Soil Group is "B".
B. Imperviousness:

Type of Surface	Existing Area Sq.Ft.	Acres	Proposed Area Sq.Ft.	Acres
Building roof	N/A		2,400	
Concrete Surfaces	"		384	
Asphalt Surfaces	"		2,732	
Landscaping	"		1,188	
Undeveloped surface	7,891		1,187	
Site total	7,891	0.1812	7,891	0.1812
Percent impervious	0%		70%	

C. "C" Factor (See Ref. A., Plate 22.2 C-1)
1. Undeveloped "C" Factor = 0.34
2. Developed "C" Factor = 0.66

D. Rainfall, 100-year, 6-hour, R_6; (See Ref.A., Plate 22.2 D-1) R_6 = 2.2 inches.

E. Time of Concentration, T_c: Use the minimum time of concentration of 10 minutes.

F. Rainfall Intensity, I; (See Ref. A, Plate 22.2 D-2)

$I = R_6 \times 6.84 \times T^{-0.51} = 2.2 \times 6.84 \times (10)^{-0.51}$ = 4.65 inches per hour.
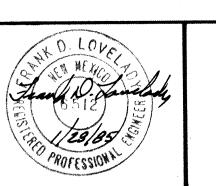
III. PEAK DISCHARGE:

A. Existing Conditions.
Q_{100} = 0.34 x 4.65 x 0.1812 = 0.28 cfs
Q_{10} = 0.657 x 0.28 = 0.19 cfs

B. Developed Conditions.
Q_{100} = 0.66 x 4.65 x 0.1812 = 0.58 cfs
Q_{10} = 0.657 x 0.58 = 0.38 cfs

IV. ANALYSIS OF DOWNSTREAM CONDITIONS:

A. Determine the peak discharge of the total drainage basin of which this site is a part and check the capacity of the existing channel which runs north from Aztec Road beginning at a point approximately 150 feet west of Lafayette Drive and ends in a ponding area near the intersection of Commanche Road and the North Diversion Channel:

B. Area = 54.89 acres. Overland flow time, T-1, (See Plate 22.2 B-1) curve for paved areas, slope is 1%: Velocity = 1.35 fps; L = 450

T-1 = 450/(1.35 x 60) = 5.6 min.; Street flow time (Plate 22.2 B-2) street length = 1,800';
Slope = (5134 - 5090)/ 1800 = 0.0244 or 2.44 %.
Velocity = 4.2 fps. T-2 = 1800/(4.2 x 60) = 7.1
Tc = T-1 + T-2 = 12.7 minutes.

$I = 2.2 \times 6.84 \ (12.7)^{-0.51}$ = 4.12 inches per hour.
Peak discharge by Rational Equation: Q = CIA

Assume developed "C" = 0.80
Q = 0.8 x 4.12 x 54.89 = 180.9 cfs.

C. Channel capacity. Average channel cross section is unlined, 12-foot bottom width 1½:1 side slopes, depth of 8 ft.; slope = 2/230 = 0.0087'/' : Assume flow depth of 2.5 feet A = 39.4   P = 21;
R = 39.4/ 21 = 1.87

$Q = 39.4(1.486/0.035)(1.87)^{2/3}(0.0087)^{1/2}$ =236
236 cfs>180.9 cfs; therefore the channel has ade-quate capacity with only 2 foot depth, or 6 feet of freeboard.

V. CONCLUSIONS:

1. Adequate downstream capacity exists and, therefore, unrestricted discharge from the site is acceptable.

2. The site does not lie within any flood hazard areas.

3. The site ,in both its existing and proposed con-ditions, is not subject to offsite flows crossing the side or rear lot lines. Minimal flows that may enter the property from the east are accepted.

GRADING & DRAINAGE PLAN
FOR
SHAFFER APARTMENTS NO.2 (4-PLEX)
(3400 Wellesley Drive, N.E.)
Albuquerque, New Mexico

REVISED FEB 18, 1985