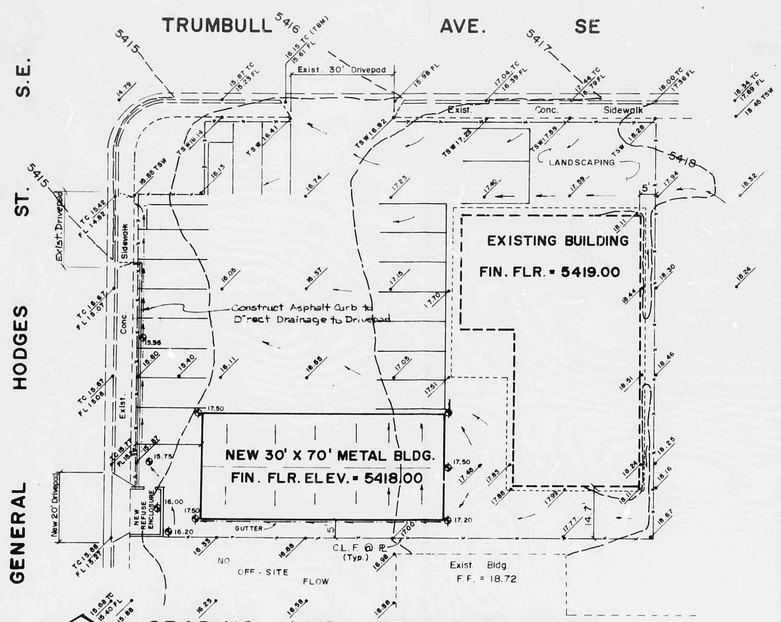
HYDROLOGY

L20/D36
ONE PLAN

L20/D36

1 PLAN

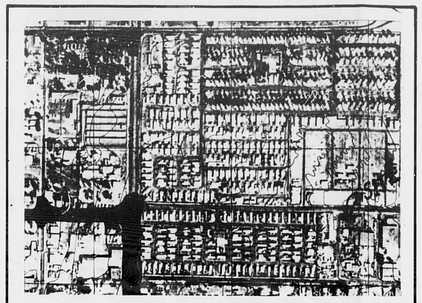


GRADING AND DRAINAGE PLAN

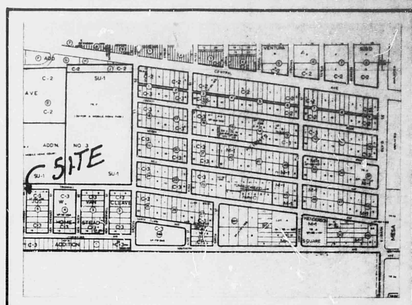
1" = 20'

LEGEND:

EXISTING	NEW	DESCRIPTION
		CONTOUR
		SPOT ELEVATION
		PROPERTY LINE
		POWER POLE
		FLOW DIRECTION
		TC TOP OF CURB
		FL FLOW LINE
		TSW TOP OF SIDEWALK



FLOODWAY MAP — NORTH — PANEL NO. 36 OF 50



VICINITY MAP — NORTH — ZONE ATLAS NO. L-20

DRAINAGE CALCULATIONS

I. REFERENCES:

A. CITY OF ALBUQUERQUE DEVELOPMENT PROCESS MANUAL (DPM) VOLUME 2, DESIGN CRITERIA, CHAPTER 22.

B. FLOODWAY MAP, PANEL 36 OF 50, (FEMA), OCTOBER 14, 1983.

C. SOIL SURVEY OF BERNALILLO COUNTY, NEW MEXICO, U.S. SOIL CONSERVATION SERVICE, JUNE, 1977.

II. ON-SITE RUNOFF CHARACTERISTICS:

A. UNDEVELOPED RUNOFF COEFFICIENT:

TYPE OF SURFACE	AREA	"C"VALUE	AREA("C")
STREETS, DRIVES, WALKS	13927	0.95	13231
ROOFS	4073	0.90	3666
LAWNS & LANDSCAPING UNDEVELOPED			
TOTAL AREA	18000 = 0.41 AC		16897

WEIGHTED "C" VALUE = 16897 / 18000 = 0.94

PERCENT IMPERVIOUS = 100 %

B. DEVELOPED RUNOFF COEFFICIENT:

TYPE OF SURFACE	AREA	"C"VALUE	AREA("C")
STREETS, DRIVES, WALKS	10842	0.95	10300
ROOFS	6173	0.90	5556
LAWNS & LANDSCAPING UNDEVELOPED	985	0.25	246
TOTAL AREA	18000		16102

WEIGHTED "C" VALUE = 16102 / 18000 = 0.94

PERCENT IMPERVIOUS = 95 %

C. RAINFALL, 100-YR.,6-HR.:(REF. A., PLATE 22.2 D-1)
R_6 = 2.4 INCHES

D. TIME OF CONCENTRATION: TEN (10) MINUTES.

E. RAINFALL INTENSITY,I (REF. A., PLATE 22.2 D-2)
$I=R_6X6.84X(T_c)^{-0.51}=(2.4)6.84(10)^{-0.51}=5.07IN/HR$

F. SOIL TYPE (REF. I.C., SHEET NO. 31) SOIL IS EtC, EMBUDO TIJERAS COMPLEX, HYDROLOGIC SOIL GROUP "B".

G. RUNOFF CURVE NUMBER (CN)-(REF.I.A., PLATE 22.2 C-2)
UNDEVELOPED LAND USE: COMMERCIAL, 100% IMPERVIOUS.
UNDEVELOPED CN = 97
DEVELOPED LAND USE: COMMERCIAL, 95% IMPERVIOUS.
DEVELOPED CN = 95

H. DIRECT RUNOFF, Q_D, INCHES (REF. I.A., PL. 22.2 C-4)
UNDEVELOPED Q_D = 2.1 IN. DEVELOPED Q_D = 2.0 IN.

III. ON-SITE PEAK DISCHARGE BY RATIONAL EQUATION:

A. EXISTING CONDITIONS:
Q_{100} = 0.94 X 5.07 X 0.41 = 1.95 CFS
Q_{10} = 0.657 X 1.95 = 1.28 CFS

B. DEVELOPED CONDITIONS:
Q_{100} = 0.89 X 5.07 X 0.41 = 1.85 CFS
Q_{10} = 0.657 X 1.85 = 1.21 CFS

IV. ON-SITE VOLUME BY S.C.S. METHOD:

A. EXISTING CONDITIONS:
V_{100} = AREA (Q_D/12) = 18000 (2.1/12) = 3150 CF
V_{10} = 0.657 X 3150 = 2070 CF

B. DEVELOPED CONDITIONS:
V_{100} = AREA (Q_D/12) = 18000(2.0/12) =3000 CF
V_{10} = 0.657 X 3000 = 1971 CF

PRE-DESIGN CONFERENCE FINDINGS:

1. EXISTING SITE WITH IMPERVIOUS LOT. CONSTRUCTION TO INVOLVE REMOVAL OF APPROXIMATELY 40 X 80 SQUARE AREA OF ASPHALT AND TO CONSTRUCT A 30X70 AND MINOR ASPHALT REPLACEMENT AROUND THE NEW BUILDING.
2. RUNOFF WILL REMAIN ESSENTIALLY UNCHANGED.
3. S.O. # 19 (SIDEWALK CULVERT) PROCESS MAY BE APPROPRIATE FOR DISCHARGE OF RUNOFF.

DRAINAGE COMMENTS:

1. THE SITE DOES NOT LIE WITHIN OR ADJACENT TO A DESIGNATED FLOOD HAZARD AREA.
2. FREE DISCHARGE IS WARRANTED SINCE THE PROPOSED DEVELOPMENT WILL NOT INCREASE RUNOFF. DOWNSTREAM CAPACITY IS ADEQUATE SINCE THERE IS A 48" STORM SEWER IN WYOMING. (THIS STORM SEWER DOES NOT SHOW ON THE SECTIONALS.
3. OFF-SITE FLOW IS LIMITED TO A SMALL AMOUNT FROM THE PAVED LOT TO THE EAST. THIS HISTORICAL FLOW IS ACCEPTED. THE AREA APPEARS TO BE VERY LIMITED AND IS TOO INSIGNIFICANT TO ATTEMPT TO QUANTIFY.

BENCH MARK:

ALL ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO CITY OF ALBUQUERQUE BENCH MARK 5-K20. STATION IS LOCATED 39.1 FEET EAST OF THE CENTERLINE OF MOON STREET AND 43.5 FEET NORTH OF THE CENTERLINE OF CENTRAL AVENUE. STATION IS AN A.C.S. DISK SET IN A DRILLED HOLE ON TOP OF CURB. STATION IS STAMPED "5-K20 ACS". ELEVATION = 5427.362 FEET.

TEMPORARY BENCH MARK IS LOCATED AT THE WEST END OF THE EXISTING DRIVE PAD ON TRUMBULL AVENUE. THE POINT IS MARKED BY A SQUARE AND THE LETTERS "TBM" PAINTED ON THE TOP OF CURB. ELEVATION = 5416.23 FEET.

LEGAL DESCRIPTION:

TRACT "A", BLOCK 5, AS SHOWN AND DESIGNATED ON THE SUMMARY PLAT OF TRACTS "A" AND "B", BLOCK 5, JOHN W. VANCLEAVE HOMESTEAD ADDITION, AS FILED IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO, FEBRUARY, 1984.

Note: S.O.19 Not Required w/ Deletion of S.W. Culvert.

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY

NOTICE TO CONTRACTOR

1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY. AN APPROVED COPY OF THESE PLANS MUST BE SUBMITTED AT THE TIME OF APPLICATION FOR THIS PERMIT.
2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH INTERIM SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1985.
3. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.
4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
5. BACKFILL COMPACTION SHALL BE ACCORDING TO RESIDENTIAL STREET USE.
6. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
7. THE ADDRESS OF THE PROPERTY SERVED IS 9212 TRUMBULL AVENUE, S.E.

APPROVALS:

DESIGN APPROVAL G.S. Reeder, P.E. 26 MAY 87
HYDROLOGY SECTION DATE

INSPECTION APPROVAL _____
CONSTRUCTION SECTION DATE

ACCEPTANCE: _____
CONSTRUCTION SECTION/PERMITS DATE

RECEIVED MAY 08 1987 HYDROLOGY SECTION

Revised May 7, 1987

FRANK D. LOVELACE NEW MEXICO (C 12) REGISTERED PROFESSIONAL ENGINEER
Frank D. Lovelace 11/25/86

GRADING AND DRAINAGE PLAN

CHAPPARRAL LTD. - SHOP/WAREHOUSE

9212 TRUMBULL AVENUE, S.E.

ALBUQUERQUE, NEW MEXICO

2/5

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