DRAINAGE CALCULATIONS

COMPOSITE "C" FOR RATIONAL FORMULA:

A. EXISTING SITE

SURFACE TYPE	"C"	AREA	CxA
BUILDING ROOF	0.90	0.0714	0.0643
CONCRETE WALK/PAD	0.95	0.0040	0.0038
ASPHALT	0.95	0.0976	0.0927
LANDSCAPED	0.25	0.0516	0.0129
UNDEVELOPED	0.40	0.2182	0.0873
SITE TOTAL		0.4429	0.2610

EXISTING WEIGHTED "C" = 0.59

B. PROPOSED SITE

SURFACE TYPE	"C"	AREA	CxA
BUILDING ROOF	0.90	0.1334	0.1201
CONCRETE WALK/PAD	0.95	0.0149	0.0142
ASPHALT	0.95	0.2250	0.2138
LANDSCAPED	0.25	0.0593	0.0148
UNDEVELOPED	0.40	0.0103	0.0041
SITE TOTAL		0.4429	0.3670

PROPOSED WEIGHTED "C" = 0.83

100 YEAR RAINFALL, 6 HOUR DURATION, P(6)
(REF. A, PLATE 22.2 D-1):

P(6) = 2.20 INCHES

TIME OF CONCENTRATION, Tc:

Tc = 10 MINUTES MINIMUM

RAINFALL INTENSITY, I
(REF. A, PLATE 22.2 D-2):

I = P(6) x 6.84 x Tc[EXP(-0.51)]
= 2.20 x 6.84 x 10[EXP(-0.51)]
= 4.65 INCHES PER HOUR

PEAK DISCHARGE (RATIONAL METHOD):

A. EXISTING SITE

Q(100) = (0.59)(4.65)(0.4429) = 1.22 CFS
Q(10) = (0.657)(1.22) = 0.80 CFS

B. PROPOSED SITE
Q(100) = (0.83)(4.65)(0.4429) = 1.71 CFS
Q(10) = (0.657)(1.71) = 1.12 CFS

VOLUME CALCULATION:

A. EXISTING SITE

PERCENT IMPERVIOUS 39%

PERVIOUS CN = 85 (REF. A, PLATE 22.2 C-2, GRAVELED PARKING UNDEVELOPED)

COMPOSITE CN = 91 (REF. A, PLATE 22.2 C-3)

SOLUTION OF RUNOFF EQUATION, Q = 1.40 INCHES
(REF. A, PLATE 22.2 C-4)

VOLUME RUNOFF = (1.40/12)(19291) = 2250 C.F.

B. PROPOSED SITE

PERCENT IMPERVIOUS 84%

PERVIOUS CN = 85

COMPOSITE CN = 96 (REF. A, PLATE 22.2 C-3)

SOLUTION OF RUNOFF EQUATION, Q = 1.80 INCHES
(REF. A, PLATE 22.2 C-4)

VOLUME RUNOFF = (1.80/12)(19291) = 2894 C.F.

GENERAL INFORMATION:

A. SOIL TYPE (REF. B, PAGE 21), SOIL TYPE IS WINK-EMBUDO COMPLEX (WeB), HYDROLOGIC SOIL GROUP "B".

B. EXISTING SITE

SURFACE TYPE	SQ. FT.	ACRES
BUILDING ROOF	3110	0.0714
CONCRETE WALK/PAD	173	0.0040
ASPHALT	4253	0.0976
LANDSCAPED	2249	0.0516
UNDEVELOPED	9506	0.2182
SITE TOTAL	19291	0.4429

C. PROPOSED SITE

SURFACE TYPE	SQ. FT.	ACRES
BUILDING ROOF	5812	0.1334
CONCRETE WALK/PAD	647	0.0149
ASPHALT	9801	0.2250
LANDSCAPED	2581	0.0593
UNDEVELOPED	450	0.0103
SITE TOTAL	19291	0.4429

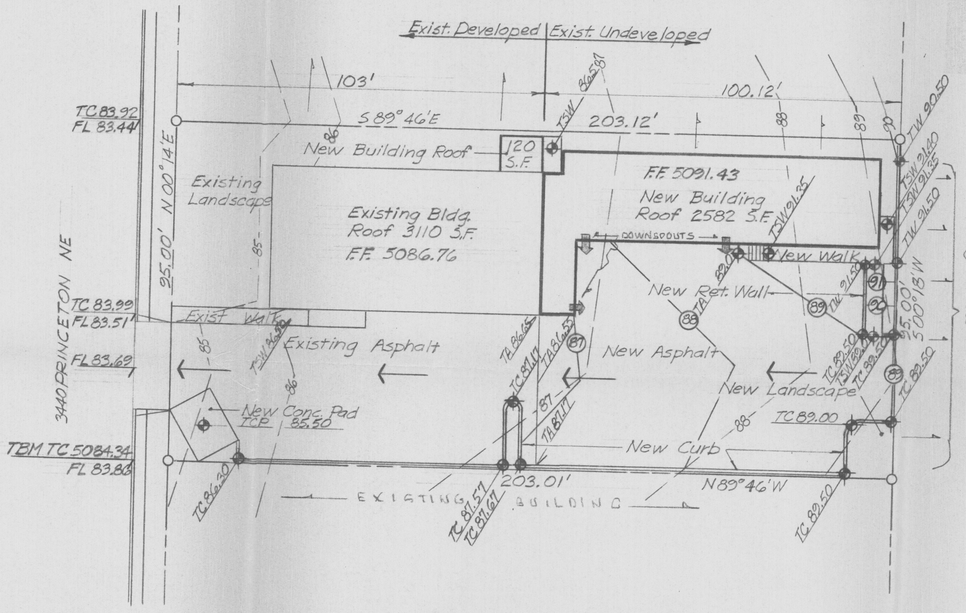
REFERENCES:

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 23 OF 50, OCT. 8, 1980.

D. ZONE ATLAS PANEL G-16-Z.



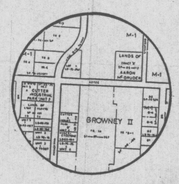
DRAINAGE PLAN

Scale 1" = 20'

PROJECT BRIEF:

THIS SITE IS CURRENTLY AN EXISTING OFFICE BUILDING SUBJECT TO ADDITIONAL BUILDING AND PARKING EXPANSION. THE UNDEVELOPED PORTION IS CURRENTLY A GRAVELED PARKING AREA. THE DIFFERENCE OF RUN-OFF GENERATED DUE TO THE PROPOSED EXPANSION INCREASES BY 29% (644 C.F.), WHICH IS DISCHARGED INTO THE RIGHT-OF-WAY OF PRINCETON N.E. AS SHOWN. ALL RUN-OFF GENERATED ON SITE AND DISCHARGED INTO THE STREET RIGHT-OF-WAY IS DRAINED BY CURB FLOW TO THE INTERSECTING STREET NORTH, AZTEC N.E., AND FLOWS BY CURB TO A CITY STORM DRAINAGE INLET AT AZTEC AND PAN AMERICAN NORTH. THIS SITE DOES NOT CONTRIBUTE TO A DESIGNATED 100 YEAR FLOOD PLAIN AND WILL HAVE MINIMAL IMPACT ON DOWNSTREAM CONDITIONS.

G-16-Z



VICINITY MAP Site

LEGEND

EXISTING CONTOUR LINE	87
DESIGN CONTOUR LINE	88
EXISTING SPOT ELEVATION	84.04
DESIGN SPOT ELEVATION	82.20
TC TOP OF CURB	
TA TOP OF ASPHALT	
FG FINISH GRADE	
TW TOP OF WALL	
TSW TOP OF SIDEWALK	
TCP TOP OF CONCRETE PAVING	

TBM A square ☒ chisled on top of curb at SW corner property, Elev. 5084.34 MSL based on ACS Station 12-H16

RECEIVED
OCT - 6 1992
HYDROLOGY DIV'S

ROBERT A. MEYER
N.M. 9831
REGISTERED PROFESSIONAL ENGINEER

LEGAL DESCRIPTION: A Tract of Land in The City Limits of Albuq. A Portion of The SW 1/4 of The SW 1/4 of Section 3, Township 10 N. Range 3 E. New Mexico Principal Meridian, Bernalillo Cnty. New Mexico.

DRAINAGE PLAN		
SCALE: 1" = 20'	APPROVED BY:	DRAWN BY RM
DATE: 9/92		REVISED
HOME/COMMERCIAL SECURITY		
		DRAWING NUMBER #17