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 VALENICA COUNTIES, NEW MEXICO, UNITED STATES DEPT. OF AGRICULTURAL, SOIL CONSERVATION SERVICE.

C. FEMA FLOOD INSURANCE RATE MAP, CITY OF ALBUQUERQUE, NM.

D. ZONE ATLAS PAGE L-14-Z.

II. GENERAL INFORMATION:

A. SOIL TYPE (REF. B, SHEET NO. 30) SOIL TYPE IS BLUEPOINT LOAMY FINE SAND, 1% TO 9% SLOPES (BCC), HYDROLOGIC SOIL GROUP "A".

B. IMPERVIOUSNESS:

	EXISTING		PROPOSED	
TYPE OF SURFACE	SQ.FT.	ACRES	SQ.FT.	ACRES
BUILDING ROOF	2,104	0.0483	2,764	0.0635
ASPHALT & CONCRETE	9,331	0.2142	19,268	0.4423
UNPAVED PARKING	19,114	0.4388	-0-	-0-
LANDSCAPING	-0-	-0-	8,517	0.1955
SITE TOTAL	30,549	0.7013	30,549	0.7013

C. WEIGHTED "C" FACTORS:

	"C" FACTOR	EXISTING AREA	EXISTING C x A	PROPOSED AREA	PROPOSED C x A
BUILDING ROOF	0.90	0.0483	0.0435	0.0635	0.0572
ASPHALT & CONCRETE	0.95	0.2142	0.2035	0.4423	0.4202
UNPAVED PARKING	0.65	0.4388	0.2852	-0-	-0-
LANDSCAPING	0.25	-0-	-0-	0.1955	0.0489
SITE TOTAL		0.7013	0.5322	0.7013	0.5263

EXISTING WEIGHTED "C" FACTOR 0.5322/0.7013 = 0.76
PROPOSED WEIGHTED "C" FACTOR 0.5263/0.7013 = 0.75

D. 100-YEAR RAINFALL, 6-HOUR, P(6); (REF. A, PLATE 22.2, D-1)
P(6) = 2.3 INCHES.

E. TIME OF CONCENTRATION, Tc; Tc = 10 MINUTES (USE 10 MINUTES, MINIMUM VALUE FOR CALCULATIONS).

F. RAINFALL INTENSITY, I; (SEE REF. A, PLATE 22.2 D-2):
I = P(6) x 6.84 x Tc (EXP. -0.51)
= 2.30 x 6.84 x 10 (EXP. -0.51)
= 4.86 INCHES

III. PEAK DISCHARGE RATES (RATIONAL METHOD):
Q(100) = CIA Q(10) = 0.657 x Q(100)

A. EXISTING:
Q(100) = 0.76 x 4.86 x 0.7013 = 2.59 CFS
Q(10) = 0.657 x 2.59 = 1.70 CFS

B. PROPOSED:
Q(100) = 0.75 x 4.86 x 0.7013 = 2.56 CFS
Q(10) = 0.657 x 2.56 = 1.68 CFS

IV. VOLUME CALCULATIONS: (SCS METHOD)

A. WEIGHTED CURVE NUMBERS (REF. A, PLATE 22.2, C-2, TYPE "A" SOIL):

	CN	EXISTING AREA	EXISTING CN x A	PROPOSED AREA	PROPOSED CN x A
BUILDING ROOF	98	0.0483	4.7334	0.0635	6.2230
ASPHALT & CONCRETE	98	0.2142	20.9916	0.4423	43.3454
UNPAVED PARKING	72	0.4388	31.5936	-0-	-0-
LANDSCAPING	39	-0-	-0-	0.1955	7.6245
SITE TOTAL		0.7013	57.3186	0.7013	57.1929

EXISTING WEIGHTED CURVE NUMBER 57.3186/0.7013 = 82
PROPOSED WEIGHTED CURVE NUMBER 57.1929/0.7013 = 82

B. DIRECT RUNOFF VALUES (REF. A, PLATE 22.2, C-4):
WHERE Q = (P-0.25)(EXP. 2) / (P+0.85)
AND S = (1000 / CN) - 10

EXISTING DIRECT RUNOFF VALUE: Q = 0.85 INCHES
PROPOSED DIRECT RUNOFF VALUE: Q = 0.85 INCHES

C. 100-YEAR, SIX-HOUR VOLUMES:
V(100) = AREA x Q / 12

1. EXISTING CONDITION:
V(100) = 30,549 x 0.85 / 12 = 2,164 CU.FT.

2. PROPOSED CONDITION:
V(100) = 30,549 x 0.85 / 12 = 2,164 CU.FT.

V. CONCLUSION:
THE DIFFERENCE IN IMPERVIOUSNESS BETWEEN THE EXISTING CONDITION AND PROPOSED CONDITION WILL RESULT IN A NOMINAL REDUCTION OF PEAK DISCHARGE RATE.

VI. FLOOD INFORMATION (REF. C, PANEL 34 OF 50):
THE SUBJECT SITE IS NOT IN A DESIGNATED 100-YEAR FLOOD ZONE.

VII. OFF-SITE FLOWS:

A. OFF-SITE FLOWS TO THE SUBJECT SITE ARE FROM PROPERTIES EAST OF THE SITE COMPRISING A CONTRIBUTING AREA APPROXIMATELY 0.5511 ACRES IN AREA, WITH AN ESTIMATED "C" FACTOR OF 0.60.

B. OFF-SITE PEAK DISCHARGE RATES (RATIONAL METHOD):
Q(100) = CIA
= 0.60 x 4.86 x 0.5511 = 1.61 CFS

C. OFF-SITE FLOWS WILL BE PERMITTED TO FREELY ENTER AND CROSS THE SUBJECT SITE.

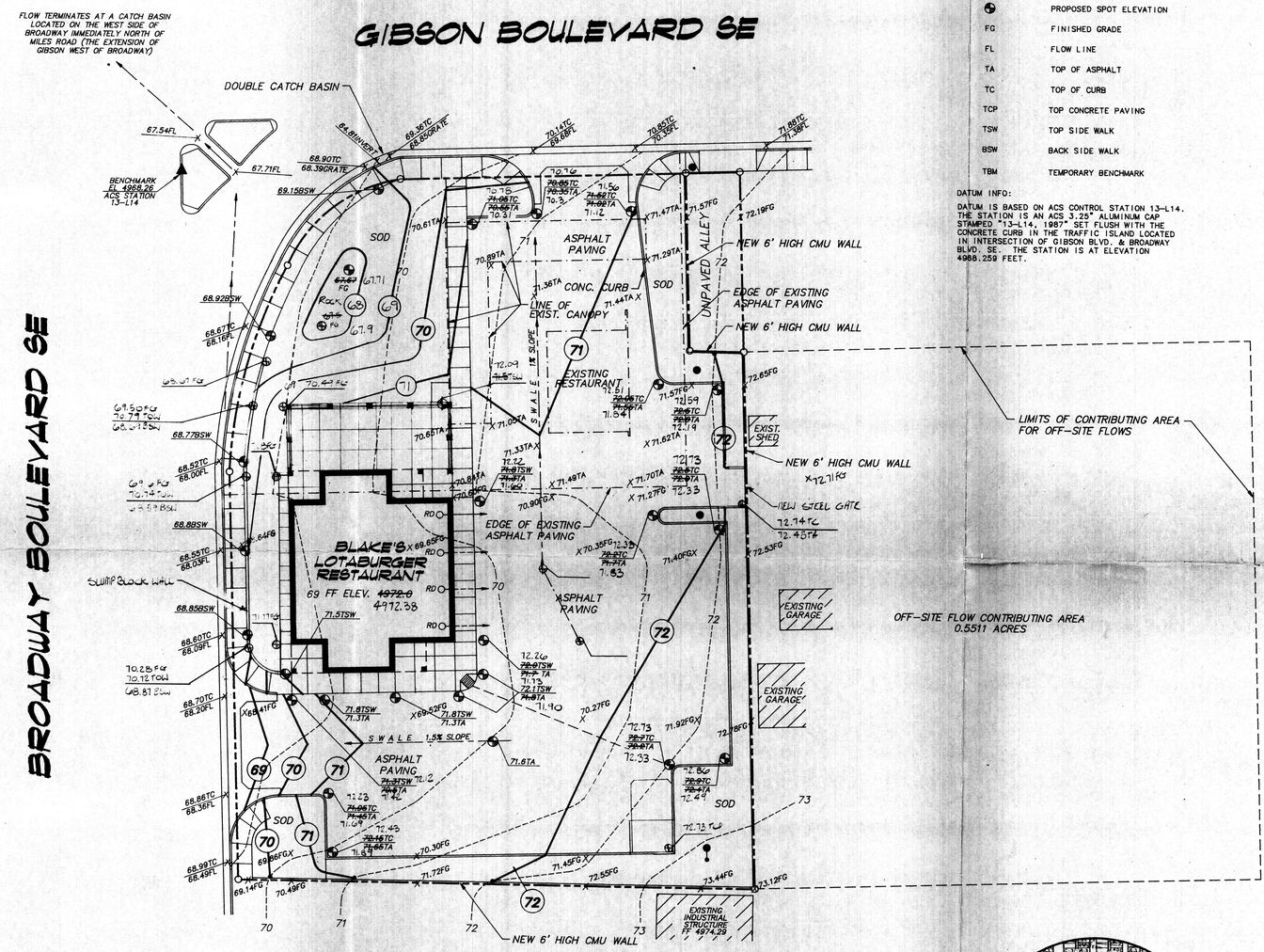
D. THE NEW CONCRETE MASONRY GARDEN WALL WHICH IS TO BE CONSTRUCTED ALONG THE EAST PROPERTY LINE SHALL BE PROVIDED WITH THIRTY (30) 5.5" WIDE X 4" HIGH ORIFICES AT GRADE LEVEL TO ALLOW OFF-SITE SHEET FLOWS TO ENTER THE SITE.

VIII. CONSTRUCTION NOTES:

A. 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.

B. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION CONTRACTOR MUST CONTACT LINE LOCATING SERVICE AT 1-800-321-2537 (260-1990 IN ALBUQUERQUE) FOR LOCATION OF EXISTING UTILITIES.

C. 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.



GRADING PLAN

SCALE: 1"=20.0'

LEGAL DESCRIPTION:

PLAT OF TRACT 'A', BLOCK 20, TORREON ADDITION BEING A REPLAT OF LOT 1, BLOCK 20, TORREON ADDITION AND TRACTS 441, 442, 443, AND 444 M.R.G.C.D. MAP NO. 41, ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO

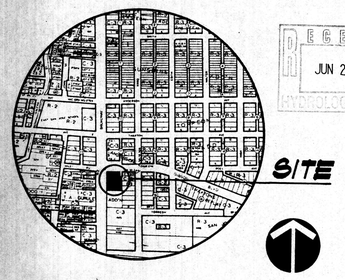
I HEREBY CERTIFY THAT I AM A LICENSED ENGINEER #1872 AND HAVE CHECKED THE FINISH FLOOR & SITE IMPROVEMENTS ELEVATIONS AND FOUND THEM TO BE IN SUBSTANTIAL COMPLIANCE AS SHOWN HEREON.

D. W. LEE, JR. NEW MEXICO 1872 PROFESSIONAL ENGINEER
6/25/91

SYMBOLS LEGEND

--- 71 ---	EXISTING CONTOUR
(70)	PROPOSED CONTOUR
X69.33	EXISTING SPOT ELEVATION
	PROPOSED SPOT ELEVATION
FG	FINISHED GRADE
FL	FLOW LINE
TA	TOP OF ASPHALT
TC	TOP OF CURB
TCP	TOP CONCRETE PAVING
TSW	TOP SIDE WALK
BSW	BACK SIDE WALK
TBM	TEMPORARY BENCHMARK

DATUM INFO:
DATUM IS BASED ON ACS CONTROL STATION 13-L14. THE STATION IS AN ACS 3.25" ALUMINUM CAP STAMPED "13-L14, 1987" SET FLUSH WITH THE CONCRETE CURB IN THE TRAFFIC ISLAND LOCATED IN INTERSECTION OF GIBSON BLVD. & BROADWAY BLVD. SE. THE STATION IS AT ELEVATION 4968.259 FEET.



VICINITY MAP

RECEIVED JUN 25 1991 HYDROLOGY DIVISION

BLAKE'S LOTABURGER RESTAURANT FOR G. BLAKE CHANSLOR
2200 BROADWAY BOULEVARD SE, ALBUQUERQUE, NM

ARCHITECTURE BY THE KEN HOVEY DESIGN GROUP INC
(505) 255-9400 • 335 JEFFERSON STREET SE, SUITE B, ALBUQUERQUE, N.M. 87108

D. W. LEE, JR. NEW MEXICO 1872 PROFESSIONAL ENGINEER

JOB NO:	9019
DATE:	14 JAN 1991
REVISIONS	
	1 MARCH 1991
	MAY 23, 1991
	25 JUNE, 1991

SHEET C2