HYDROLOGY

F14/D27
ONE PLAN

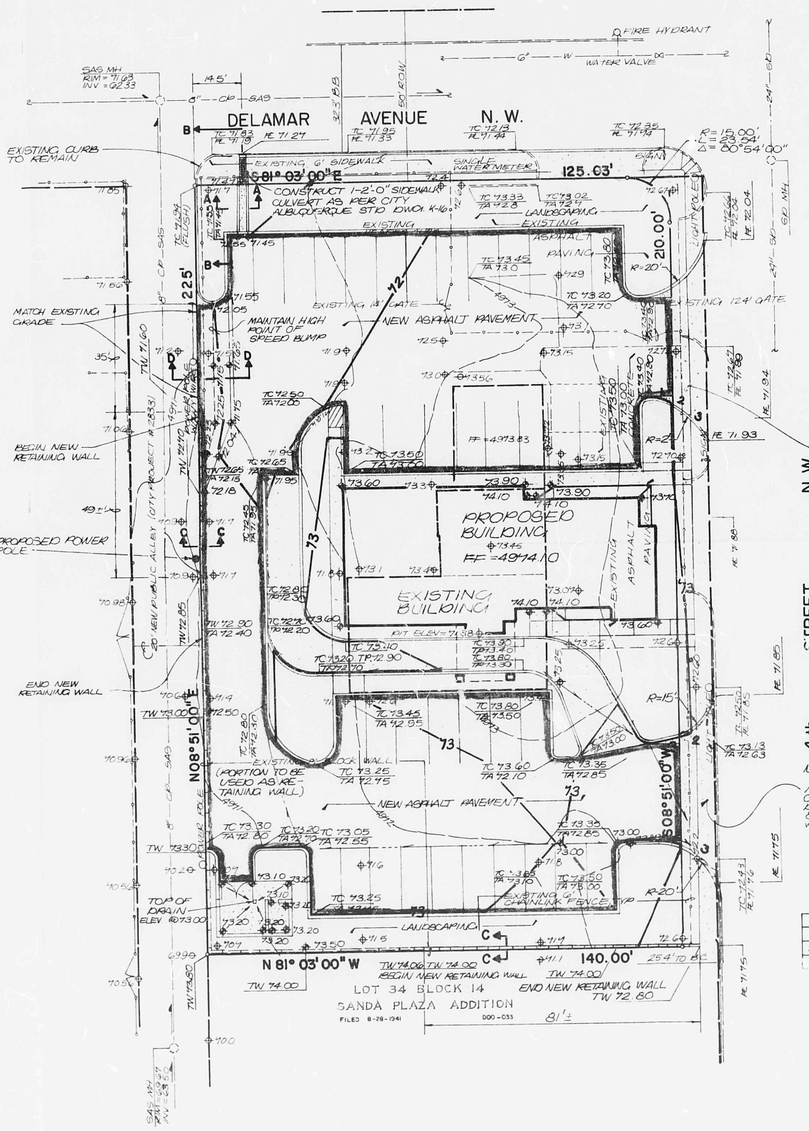
F141027

1 PLAN

VICINITY MAP

F-14

SCALE: 1" = 800'



	TC	FL
1	72.93	72.26
2	73.06	72.48
3	73.20	72.70

	TC	FL
1	73.15	72.65
2	72.98	72.40
3	72.82	72.15

	TC	FL
1	72.97	72.10
2	72.83	72.35
3	73.10	72.60

	TC	FL
1	73.05	72.55
2	72.88	72.30
3	72.72	72.05

LEGEND

- 4972 — EXISTING CONTOUR
- EXISTING SPOT ELEVATION
- EXISTING CHAINLINK FENCE
- EXISTING BLOCK WALL
- PROPERTY LINE
- NEW ASPHALT PAVEMENT
- PROPOSED SPOT ELEVATION
- PROPOSED SWALE
- PROPOSED CONCRETE
- PROPOSED RETAINING WALL
- 72 — PROPOSED CONCRETE
- TC — TOP OF CURB ELEVATION
- TA — TOP OF ASPHALT ELEVATION
- TP — TOP OF PAVEMENT ELEVATION

PROJECT BENCHMARK = TBM

ACS BENCHMARK "F14" A 1/4" BOLT NEAR BACK OF CURB, PROJECTING 1/4" ABOVE TOP OF CURB @ THE SOUTHEAST CURB RETURN, LOCATED @ THE INTERSECTION OF 4th STREET N.W. & DELAMAR AVENUE N.W. IN THE SOUTHEAST QUADRANT OF THE INTERSECTION. ELEVATION = 4972.71 FEET (MSLD)

LEGAL DESCRIPTION

LOT 35-A, BLOCK 14, SANDIA PLAZA ADDITION

CONSTRUCTION NOTES:

1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE 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 RESOLVED 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 PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.
5. IF ANY UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES ARE SHOWN ON THESE DRAWINGS, THEY ARE SHOWN IN AN APPROXIMATE MANNER ONLY, AND SUCH LINES MAY EXIST WHERE NONE ARE SHOWN. IF ANY SUCH EXISTING LINES ARE SHOWN, THE LOCATION IS BASED UPON INFORMATION PROVIDED BY THE OWNER OF SAID UTILITY, AND THE INFORMATION MAY BE INCOMPLETE, OR MAY BE OBSOLETE BY THE TIME CONSTRUCTION COMMENCES. THE ENGINEER HAS UNDERTAKEN NO FIELD VERIFICATION OF THE LOCATION, DEPTH, SIZE, OR TYPE OF EXISTING UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES, MAKES NO REPRESENTATION PERTAINING THERETO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE CONTRACTOR SHALL INFORM ITSELF OF THE LOCATION OF ANY UTILITY LINE, PIPELINE, OR UNDERGROUND UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ADVANCE OF AND DURING EXCAVATION WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES, AND UNDERGROUND UTILITY LINES. IN PLANNING AND CONDUCTING EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.

EROSION CONTROL MEASURES

1. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR ONTO PRIVATE PROPERTY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AT THE PROPERTY LINES AND WETTING THE SOIL TO KEEP IT FROM BLOWING.
2. THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED DOWN THE STREET.
3. THE CONTRACTOR SHALL SECURE "TOPSOIL DISTURBANCE PERMIT" PRIOR TO BEGINNING CONSTRUCTION.

DRAINAGE PLAN

The following items concerning the Hardee's Drainage Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations

The proposed improvements as shown by the Vicinity Map are located on the southwest corner of the intersection of Delamar Avenue N.W. and Fourth Street N.W. At present, the site is developed. Much of the surrounding area is currently developed, thereby making this an infill site. At present, the site flows from east to west onto the adjacent alley located along the west property line. As shown by Plate F-14 of the Albuquerque Master Drainage Study, this site does not lie within a designated Flood Hazard Zone. No offsite flows enter the site along the north and west property lines since the adjacent streets route runoff away from the project site. No offsite flows enter the site along the south property line since there is an existing block wall which keeps flows from entering the site. No offsite flows enter the site along the west property line since the adjacent alley is graded in a manner which will route flows away from the project site.

The Grading Plan shows 1) existing and proposed spot elevations and contours at 1'0" intervals, 2) continuity between existing and proposed grades, and 3) the limit and character of the proposed improvements. As shown by this Plan, the proposed improvements consist of the removal of an existing building along with adjacent paving and the construction of a new restaurant along with adjacent paving and landscaping. Flows generated by this site will be routed from south to north onto Delamar Avenue N.W. from that point, the runoff will flow west along the south edge of Delamar Avenue N.W. to existing storm drain inlets located in Delamar Avenue N.W. which is the outfall for this site. This pattern is consistent with existing site drainage based upon the fact that this site is an infill site and the proximity of downstream facilities, the free discharge of runoff from this site is appropriate.

The Calculations which appear hereon analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The Rational Method has been used to quantify the peak rate of discharge and the SCS Method has been used to quantify the volume of runoff. Both methods have been used in accordance with the City of Albuquerque Development Process Manual, Volume II and the Mayor's Emergency Rule adopted January 14, 1986. As shown by these Calculations, the proposed improvements will increase the discharge by approximately 1.2 cfs.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey, Gb - Gila loam
Plate: 29
Hydrologic Soil Group: B
Existing Pervious CN = 70 (DPM Plate 22.2 C-2)
Pasture or Range Land: fair condition)
Developed Pervious CN = 61 (DPM Plate 22.2 C-2)

Time of Concentration/Time to Peak

$T_C = 0.0078\ L^{0.77}/i^{0.385}$ (Kirpich Equation)
$T_P = T_C = 10$ min.

Point Rainfall

$P_6 = 2.2$ in. (DPM Plate 22.2 D-1)

Rational Method

Discharge: $Q = CiA$
where C varies
$i = P_6\ (6.84)\ T_C^{-0.51} = 4.65$ in/hr
$P_6 = 2.2$ in (DPM Plate 22.2D-1)
$T_C = 10$ min (minimum)
A = area, acres

SCS Method

Volume: $V = 3630(DRO)\ A$
Where DRO = Direct runoff in inches
A = area, acres

Existing Condition

A_{total} = 31,500 sf = 0.72 Ac
Roof area = 3455 sf = (0.10)
Paved area = 4640 sf = (0.14)
Landscaped area = 23,405 sf = (0.19)
C = 0.43 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CiA = (0.43)(4.65)(0.72) = 1.4$ cfs
A_{imp} = 8105 sf; % impervious = 26 %
Composite CN = 71 (DPM Plate 22.2 C-3)
DRO = 0.4 in (DPM Plate 22.2 C-4)
V_{100} = 3630 (DRO)A = 1045 cf

Developed Condition

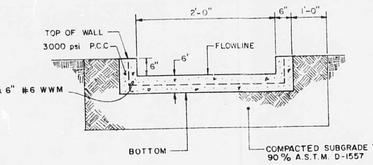
A_{total} = 31,500 sf = 0.72 Ac
Roof area = 3680 sf = (0.11)
Paved area = 19,985 sf = (0.60)
Landscaped area = 7835 sf = (0.06)
C = 0.77 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CiA = (0.77)(4.65)(0.72) = 2.6$ cfs
A_{imp} = 23,665 sf; % impervious = 75 %
Composite CN = 89 (DPM Plate 22.2 C-3)
DRO = 1.3 in (DPM Plate 22.2 C-4)
V_{100} = 3630 (DRO) A = 3400 cf

Channel Capacity

$Q = CA\sqrt{2gh} = 3.2$ cfs $> Q_{100}$
Where C = 0.8
A = 1.0 sf
g = 32.2 ft/sec²
h = 0.25

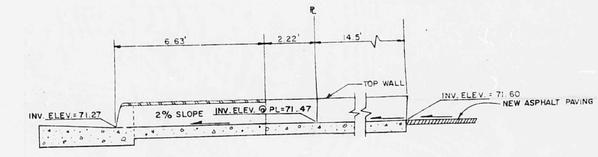
Comparison

$\Delta Q_{100} = 2.6 - 1.4 = 1.2$ cfs (increase)
$\Delta V_{100} = 3400 - 1045 = 2355$ cf (increase)



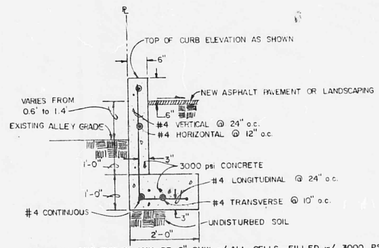
SECTION A-A

NO SCALE



SECTION B-B

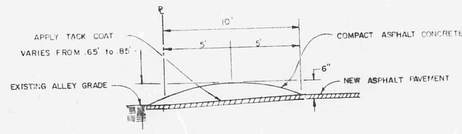
SCALE: 1" = 3'-0"



NOTE: WALL CONSTRUCTION MAY BE 6" CMW w/ ALL CELLS FILLED w/ 3000 PSI CONCRETE IN LIEU OF REINFORCED CONCRETE CONSTRUCTION.

SECTION C-C

SCALE: 1" = 2'-0"



SECTION D-D

HORIZONTAL SCALE: 1" = 5'-0"
VERTICAL SCALE: 1" = 3'-0"

JEFFREY G. MORTENSEN
NEW MEXICO
8547
REGISTERED PROFESSIONAL ENGINEER
08-06-86

RECEIVED
AUG 07 1986
HYDROLOGY SECTION

CONN MAY ASSOCIATES P.C.
811 DALLAS N.E. · ALBUQUERQUE · NEW MEXICO · 87110
ENGINEERS

NO.	DATE	BY	REVISIONS

DESIGNED BY LRU
DRAWN BY LRD
APPROVED JTM

JOB NO. 60971
DATE 7·86

GRADING & DRAINAGE PLAN
HARDEE'S ON 4th STREET N.W.

F14/D27

FILE NO.
SHEET 1 OF 1