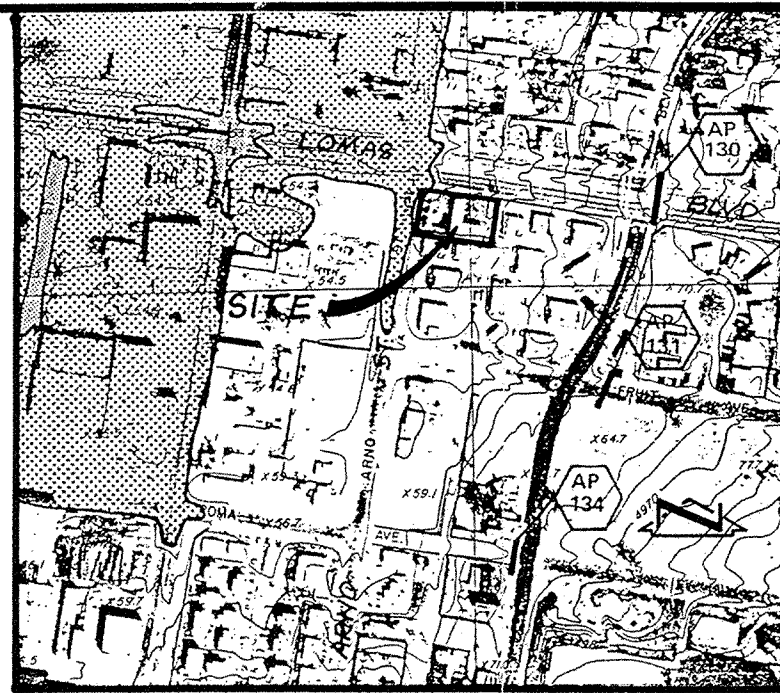


VICINITY MAP
SCALE: 1" = 800' (APPROX.)



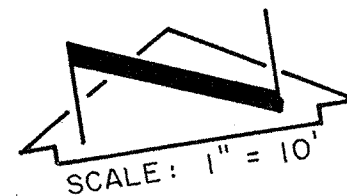
ALBUQUERQUE MASTER DRAINAGE STUDY
SCALE: 1" = 400'

- LEGEND**
- EXIST. SPOT ELEVATION
 - EXIST. CONTOUR
 - PROPOSED SPOT ELEVATION
 - PROPOSED CONTOUR
 - EXIST. FLOWLINE
 - PROPOSED FLOWLINE
 - PROPOSED HIGH-POINT
 - PROPOSED WALL
 - PROPOSED CONCRETE
 - TC TOP OF CURB
 - FL FLOWLINE
 - TSW TOP OF SIDEWALK
 - T/CONC. TOP OF CONCRETE

LEGAL DESCRIPTION
TRACT A-1, LOMAS AND ARNO TRACT,
CITY OF ALBUQUERQUE

PROJECT BENCHMARK
STATION IS A STANDARD CITY OF ALBUQUERQUE DISK SET
IN A BLOCK OF CONCRETE STAMPEDED IN 1954.
STATION IS LOCATED 44.7 FEET SOUTH OF THE INTERSECTION
OF LOMAS BLVD. AND THE A.T. & S.F. RAILWAY 0.5 FEET
WEST OF THE INSIDE RAIL OF THE FOURTH SET OF TRACKS.
ELEV. = 4957.06 FEET (MSLD)

T.B.M.
CHISELED "D" ON TC RETURN AS SHOWN ON DRAWING BELOW.
ELEV. = 4956.35 FEET (MSLD)



DRAINAGE PLAN

The following items concerning the Downtown Chevron Drainage Plan are contained hereon:

- Vicinity Map
- Watershed Map
- Grading Plan
- Calculations

As shown by the Vicinity Map, the site is located at the southeast corner of the intersection of Lomas Boulevard N.E. and Arno Street N.E. At present, the site is developed as a gasoline service station. Recent platting action vacated an existing public alley which lies along the easterly edge of this site. It is the intent of this plan to pave that former alley which was previously undeveloped. This proposed construction represents a modification to an existing site within an infill area. The extent of the improvements proposed hereon are negligible impact on downstream conditions.

As shown by the Watershed Map and Panel 28 of 50 of the National Flood Insurance Program Flood Insurance Rate Maps for the City of Albuquerque, bearing the date of October 14, 1983, this site does not lie within a designated flood hazard zone. The site does appear, however, to contribute runoff to an existing AH zone, with the maximum floodplain elevation of 4954. A recent City project has been constructed in this area which was intended to alleviate this flooding. Regardless, the extent of the improvements proposed hereon are extremely minor and will have an insignificant impact on downstream conditions.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contours at 1'0" intervals, 2) the limit and character of the existing improvements, 3) the limit and character of the proposed improvements, and 4) continuity between existing and proposed grades. As stated above, the proposed improvements consist of replacing a compacted, unpaved area with new paving and buffer landscaping. The area for which improvements are proposed coincides with a vacated alley which has been incorporated into the property. A private drainage easement has been retained coincident with the vacated alley. The purpose for the private drainage easement appears to have been to accept any runoff which may potentially drain to the former alley. Review of existing site conditions, combined with the topographic data shown hereon, indicate that runoff originating to the south and east of the site continues to flow in a westerly direction toward Arno Street N.E. Provisions have been made, however, to accept potential overflow runoff through an opening in the new perimeter wall. By providing the opening in the wall, off-site flows will not be blocked, nor restricted. The paving of the former alley will drain in a northerly direction to Lomas Boulevard N.E. via a 1'0" sidewalk culvert which will replace an existing alley intersection.

The calculations which appear hereon analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The peak discharge of runoff has been calculated using the Rational Method, while the volume of runoff generated has been computed by the SCS Method. Both Methods have been used in accordance with the City of Albuquerque Development Process Manual, Volume II, combined with the Mayor's Emergency Rule dated January 14, 1986. As shown by these calculations, a very minor increase in runoff is anticipated in conjunction with the proposed improvements. It is based upon this minor increase in runoff, combined with the fact that this is a modification to an existing site within an infill area, that the free discharge of runoff from this site is appropriate.

REMOVE EXIST. ALLEY INTERSECTION, REPLACE WITH CURB & GUTTER 1'0" SIDEWALK CULVERT PER C.O.A. STD. DWG. E2286

20' PUBLIC UTILITY EASEMENT (VACATED ALLEY)

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey, Plates 30 and 31: Cu - Cut and Fill Land
Hydrologic Soil Group: A
Existing Pervious CN = 72 (DPM Plate 22.2 C-2; Dirt)
Developed Pervious CN = 49 (DPM Plate 22.2 C-2)
Open Space: fair condition)

Time of Concentration/Time to Peak

$T_c = 0.0078 L^{0.77} / S^{0.385}$ (Kirpich Equation)
 $T_p = T_c = 10$ min.

Point Rainfall

$P_6 = 2.25$ in. (DPM Plate 22.2 D-1)

Rational Method

Discharge: $Q = CIA$

Where C varies
 $i = P_6(6.84)T_c^{-0.51} = 4.76$ in/hr
 $P_6 = 2.25$ 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

- CONSTRUCTION NOTES:**
- Two (2) working days prior to any excavation, contractor must contact New Mexico One Call System 260-1990, for location of existing utilities.
 - 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 in writing so that the conflict can be resolved with a minimum amount of delay.
 - 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.
 - All construction within public right-of-way shall be performed in accordance with applicable City of Albuquerque Standards and Procedures.
 - 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 conducted only preliminary investigation of the location, depth, size, or type of existing utility lines, pipelines, or underground utility lines. This investigation is not conclusive, and may not be complete, therefore, 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.
 - 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.
 - Backfill compaction shall be according to ARTERIAL street use.
 - Maintenance of these facilities shall be the responsibility of the owner of the property served.
 - The design of planters and landscaped areas is not part of this plan. All planters and landscaped areas adjacent to the building(s) shall be provided with positive drainage to avoid any ponding adjacent to the structure. For construction details, refer to landscaping plan.

- Erosion Control Measures**
- 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.
 - 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.
 - The contractor shall secure "Topsoil Disturbance Permit" prior to beginning construction.

APPROVALS	NAME	DATE
A.C.E. / DESIGN		
INSPECTOR		
A.C.E. / FIELD		

Existing Condition

$A_{total} = 13,497$ sf = 0.31 Ac
Roof area = 4,150 sf (0.31)
Paved area = 6,157 sf (0.46)
Landscaped area = 980 sf (0.07)
Dirt area = 2,210 sf (0.16)
 $C = 0.80$ (Weighted average per Emergency Rule, 1/14/86)
 $Q_{100} = CIA = 0.80(4.76)(0.31) = 1.2$
% Impervious = 77 %
Composite CN = 36 (DPM Plate 22.2 C-3)
DRO = 1.1 in (DPM Plate 22.2 C-4)
 $V_{100} = 3630 (DRO)A = 1240$ cf

Developed Condition

$A_{total} = 13,497$ sf = 0.31 Ac
Roof area = 4,150 sf (0.31)
Paved area = 7,827 sf (0.58)
Landscaped area = 1,520 sf (0.11)
 $C = 0.86$ (Weighted average per Emergency Rule, 1/14/86)
 $Q_{100} = CIA = 0.86(4.76)(0.31) = 1.3$
% Impervious = 99 %
Composite CN = 92 (DPM Plate 22.2 C-3)
DRO = 1.5 in (DPM Plate 22.2 C-4)
 $V_{100} = 3630 (DRO)A = 1690$ cf

Comparison

$\Delta Q_{100} = 1.3 - 1.2 = 0.1$ cfs (increase)
 $\Delta V_{100} = 1690 - 1240 = 450$ cf (increase)

DRAINAGE CERTIFICATION

As indicated by the as-built information shown hereon, the new paving and drainage improvements for the Downtown Chevron have been constructed in substantial conformance with the approved Grading and Drainage Plan. It is based upon this Certification that acceptance of this project is hereby requested.

Jeffrey G. Mortensen
NEW MEXICO
REGISTERED PROFESSIONAL ENGINEER
8547
04/30/93
Date

Jeffrey G. Mortensen
NEW MEXICO
REGISTERED PROFESSIONAL ENGINEER
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04/30/93
Date



JEFF MORTENSEN & ASSOCIATES, INC.
6010-B MIDWAY PARK BLVD. N.E.
ALBUQUERQUE, NEW MEXICO 87109
ENGINEERS & SURVEYORS (505)345-4250

GRADING & DRAINAGE PLAN
DOWNTOWN CHEVRON

NO.	DATE	BY	REVISIONS	JOB NO.
1	04/93	JGM	AS-BUILT & CERTIFY	921031
DESIGNED BY	JGM			DATE
DRAWN BY	CEN			11 / 92
APPROVED BY	JGM			SHEET 1 OF 1