

- LEGEND**
- EXISTING SPOT ELEVATION
 - PROPOSED SPOT ELEVATION
 - EXISTING CONTOUR
 - PROPOSED CONTOUR
 - SWALE
 - EXISTING TOP OF CURB
 - EXISTING FLOW LINE
 - CONCRETE
 - TH 52.50
 - TA 52.50
 - TOP OF HEADER CURB
 - TOP OF ASPHALT

PROJECT BENCHMARK
A SQUARE 'B' CHISELED ON TOP OF CONCRETE CURB AT THE NINE CURB RETURN LOCATED AT THE INTERSECTION OF MENAUL BLVD. AND CHELWOOD DR., N.E. IN THE NORTH-EAST QUADRANT OF THE INTERSECTION.
(ALSO B.M. G-H-22) ELEV. = 5705.20 FEET MSL.

LEGAL DESCRIPTION:
TRACT 3-B-1, INDIAN RIDGE SUBDIVISION

KEYED NOTES FOR SIDEWALK CULVERT:

- 3/8" CHECKERED STEEL PLATE CULVERT TOP.
- ROD ANCHOR 1" x 5".
- "V" INVERT.
- SIDEWALK GRADE.
- FLOW LINE ELEVATION.
- 3/8" x 1" P.H. C'SURK STAINLESS STEEL MACHINE SCREW.

- GENERAL NOTES FOR SIDEWALK CULVERT:**
- The invert shall be troweled and retroweled to produce a hard polished surface of maximum density and smoothness. "V" invert shall be V-shaped to within 3" of the outlet and tapered from this point to outlet. Invert at outlet shall parallel gutter flowline unless otherwise shown on plans.
 - Surface of all exposed concrete shall match the grade, color, finish and scoring of adjacent curb and sidewalk.
 - Stainless steel rod anchors drilled and tapped for flathead machine screws, spaced 24" o.c. maximum and a minimum of 2 per side per plate. There shall be an anchor within 6" of each end. Anchors shall be attached to the plate and the plate secured in place prior to pouring the walls.
 - The culvert steel top plate shall be cut perpendicular to the walls unless otherwise specified. Lengths shall be such that the weight per plate does not exceed 300 pounds. It shall be stressed relieved after fabrication. After cleaning surface of scale, rust, etc., the plate and framing members shall be painted with one shop coat red oxide and two finish coats of aluminum paint (AASHO M29).
 - Slope of culvert 1-1/2 minimum clearance from face of concrete, may be inclined if necessary.

DRAINAGE PLAN

The following items concern Menaul and Chelwood Office Building, Grading and Drainage Plan are contained hereon:

- Vicinity Map
- Grading Plan
- Calculations

The proposed improvements as shown by the Vicinity Map are located at the southwest corner of the intersection of Menaul Boulevard N.E. and Chelwood Park Boulevard N.E. At present, the site is undeveloped and the site presently slopes from the southeast corner to the northwest corner at approximately four percent.

As shown by Plate H-22 of the Albuquerque Master Drainage Study, the site does not lie within a designated Flood Hazard Zone. The site does however discharge a portion of its runoff to Menaul Boulevard where drainage problems currently exist at the intersection of Menaul and Juan Tabo. A controlled discharge is therefore being proposed. Some offsite flows do enter the site at the south boundary as delineated on the adjacent plan.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contours at 1' 0" intervals, 2) limit and character of the proposed improvements, 3) continuity between existing and proposed grades. As shown by this plan, the proposed improvements include the construction of a one story office building and adjacent asphalt paved parking. The site is graded such that it drains to the northwest corner of the site and ponded, then released into a 4-inch pipe into Menaul Boulevard. This pond has been sized for the 100-year, 6-hour rainfall event, based upon inflow/outflow hydrograph.

The Calculations which appear below analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The Rational Method has been used for this analysis in accordance with the City of Albuquerque Development Process Manual, Volume II. As shown by these calculations, the proposed improvements will decrease the amount of runoff that is discharged from the site into Public Right-Of-Way. If the pond limits are exceeded, runoff will spill into Menaul Boulevard, via the overflow spillway shown below.

CALCULATIONS

Ground Cover Information

From GCS Bernalillo County Soil Survey, Plate 32:
Etc Soil (Embudo Tijeras Complex)
Hydrologic Soil Group B

Rational Method

Discharge: $Q = C i A$
where C = rational coefficient from DPM Plate 22.2C-1

$i = P_6 (6.84) T^{-0.51} = 5.50 \text{ in/hr}$
 $P_6 = 2.6 \text{ in (DPM Plate 22.2D-1)}$
 $T = 10 \text{ minutes (minimum)}$
A = area, acres

Volume: $V = C P_6 A$
C = rational coefficient from DPM Plate 22.2C-1
A = area, sf

Existing Condition

Site

$A_{\text{total}} = 26,190 \text{ sf} = 0.60 \text{ Ac}$
 $A_{\text{imp}} = 0.34$
 $Q_{100} = 1.1 \text{ cfs}$
 $V_{100} = 1925 \text{ cf}$

Developed Condition

Basin A: (Assume 90% impervious when developed)

$A = 26,135 \text{ sf}$
 $C = 0.86$
 $Q_{100} = 2.8 \text{ cfs}$
 $V_{100} = 4870 \text{ cf}$

Basin B: (Offsite)

$A = 1350 \text{ sf}$
 $A_{\text{imp}} = 440 \text{ sf}$
 $C = 0.48$
 $Q_{100} = 0.1 \text{ cfs}$

Pond Volume Required

$Q_{\text{release}} = C A \sqrt{2gh}$ (Orifice Equation)

where $C = 0.80$
 $A = 0.0873 \text{ sf}$ (4" pipe)
 $g = 32.2 \text{ ft/sec}^2$
 $h = 1.5'$

$Q_{\text{release}} = 0.7 \text{ cfs}$
required storage = 2739 cf (by Hydrograph Analysis)

Vpond:

$A_{99.4} = 0$	$V_{99.4} = 0$
$A_{99.6} = 1628 \text{ sf}$	$V_{99.6} = 325 \text{ cf}$
$A_{100.0} = 2000 \text{ sf}$	$V_{100.0} = 725 \text{ cf}$
$A_{100.9} = 2332$	$V_{100.9} = 1950 \text{ cf}$
	$V_{100} = 3000 \text{ cf}$

Comparison

$\Delta Q = -0.4 \text{ cfs}$
 $\Delta V = +29450 \text{ cfs}$

Weir Calculations

$Q = 3.33 L H^{3/2}$
 $L = 1$
 $H = 0.5'$
 $Q = 1.18 \text{ cfs}$

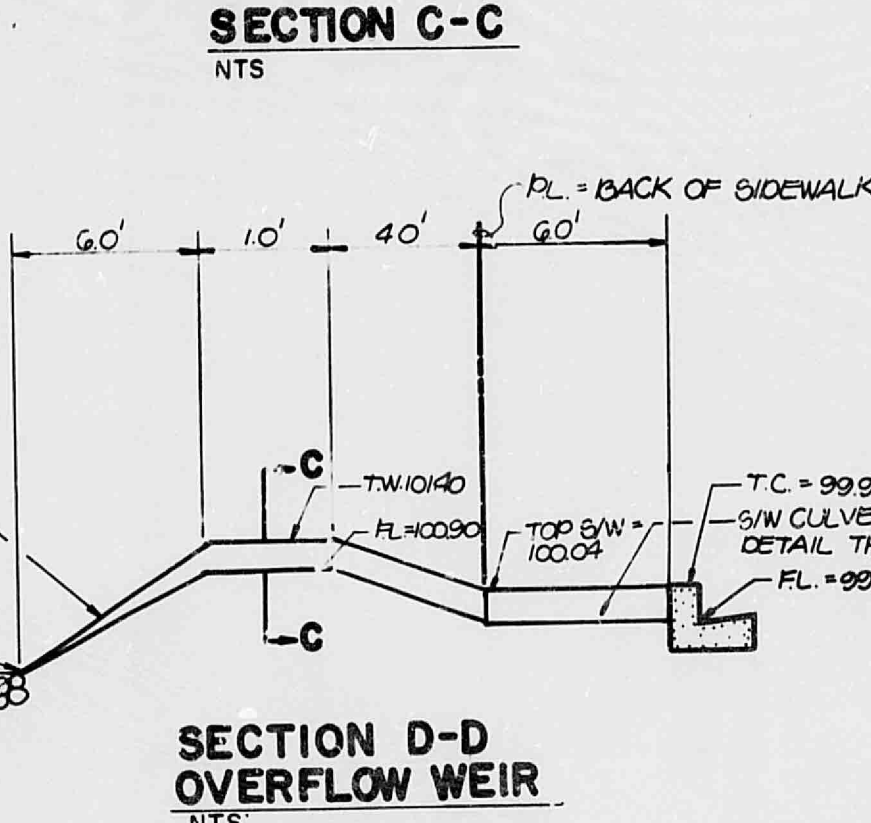
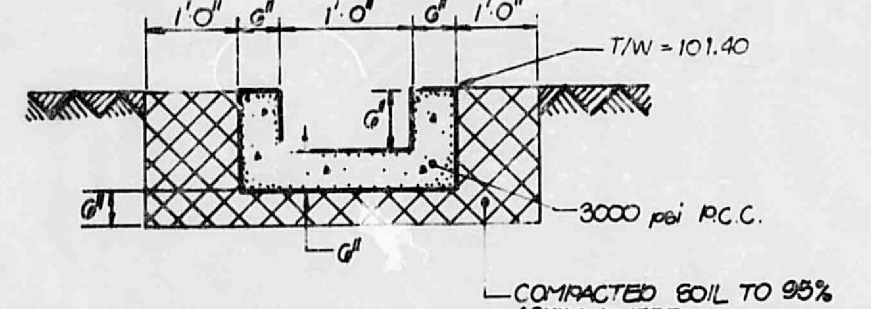
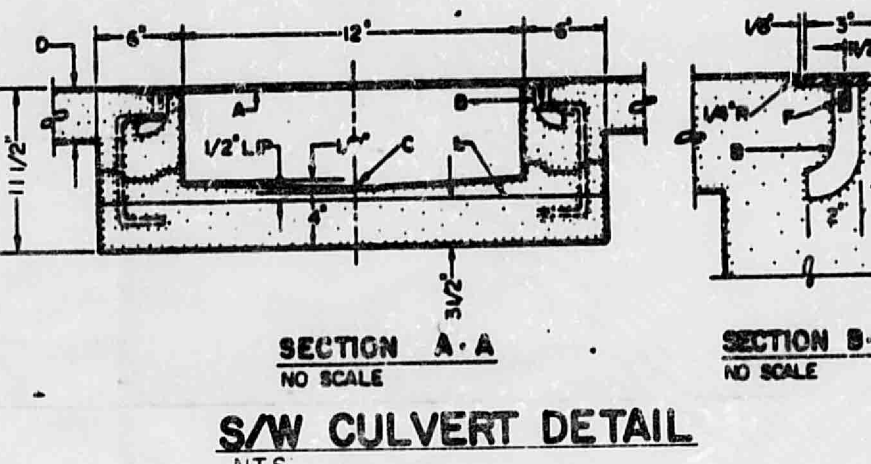
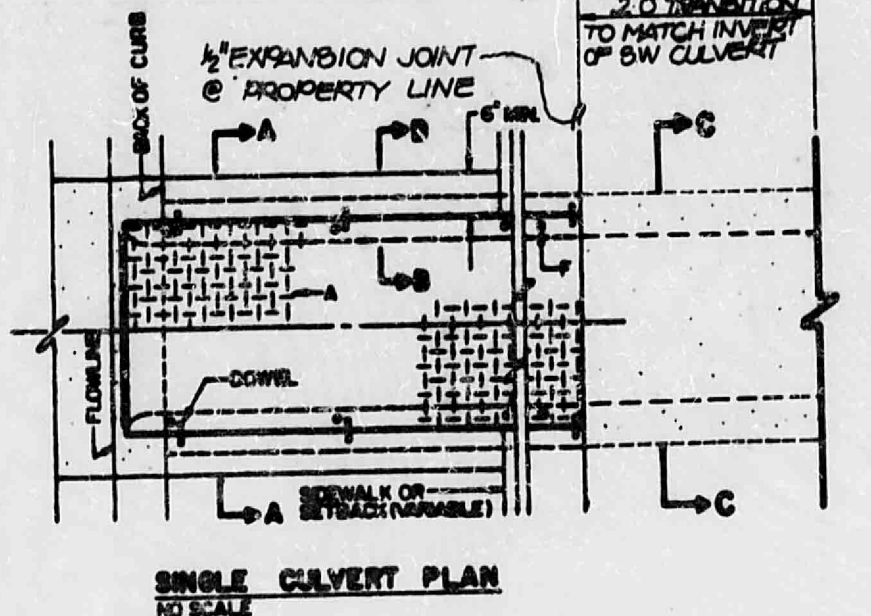
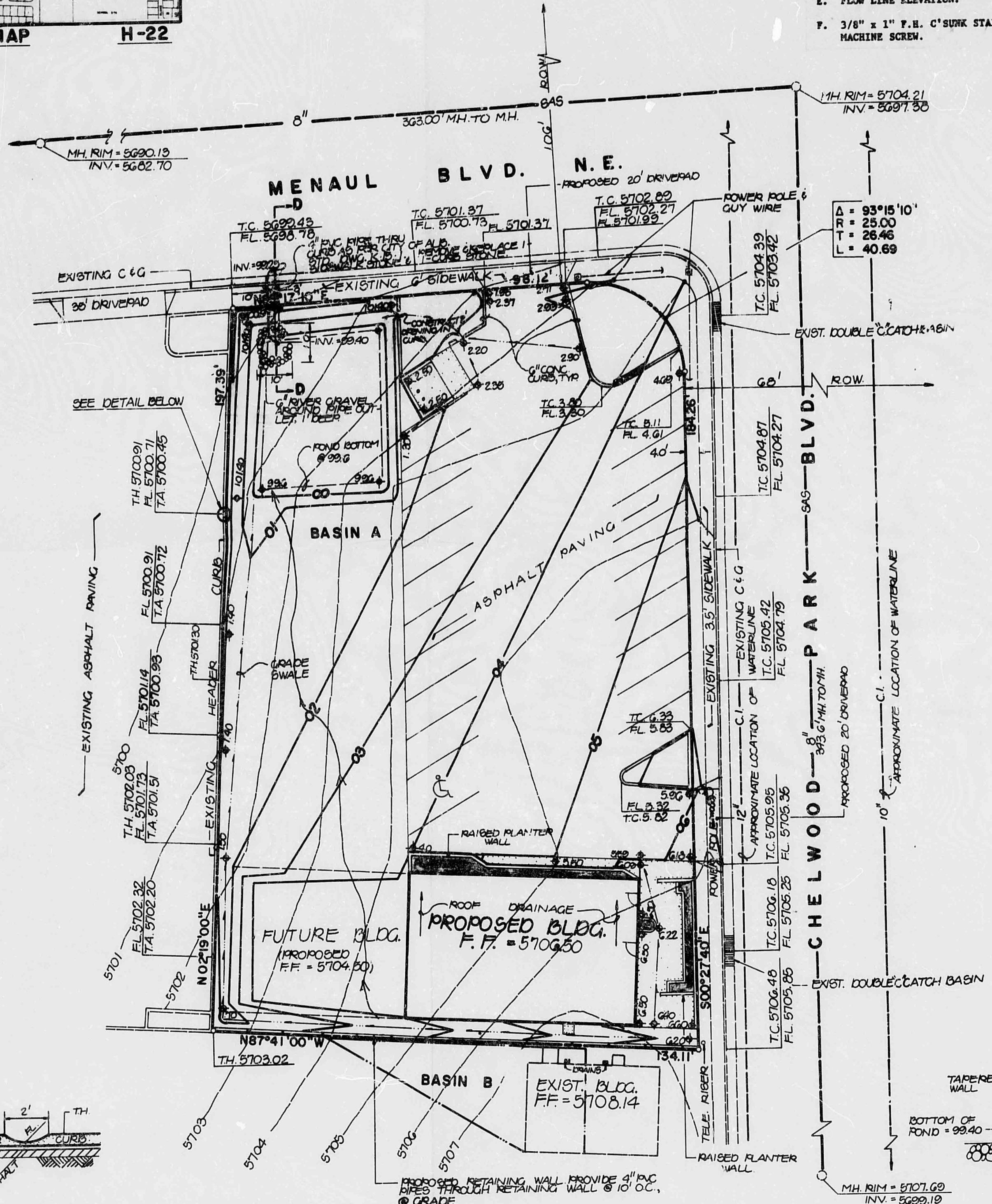
EROSION CONTROL MEASURES

- 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 BARRIERS AT THE PROPERTY LINES AND NETTING 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.

CONSTRUCTION NOTES

- Two working days prior to any excavation, Contractor must contact Line Locating Service, 765-1234, for location of existing utilities.
- Prior to construction, the Contractor shall excavate and verify the horizontal and vertical locations of all existing utilities and 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.
- 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.

Approved
7/24/84
[Signature]
[Professional Engineer Seal]



TYPICAL HEADER CURB OPENING (EXISTING)
NTS

DESIGNED BY: S.K.S.
DRAWN BY: J.M.C.
APPROVED: J.G.M.

NO. DATE BY REVISIONS

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JOB NO.
40321
DATE
3-84

GRADING & DRAINAGE PLAN
OFFICE BUILDING
MENAUL & CHELWOOD

FILE NO.
SHEET 1 OF 1