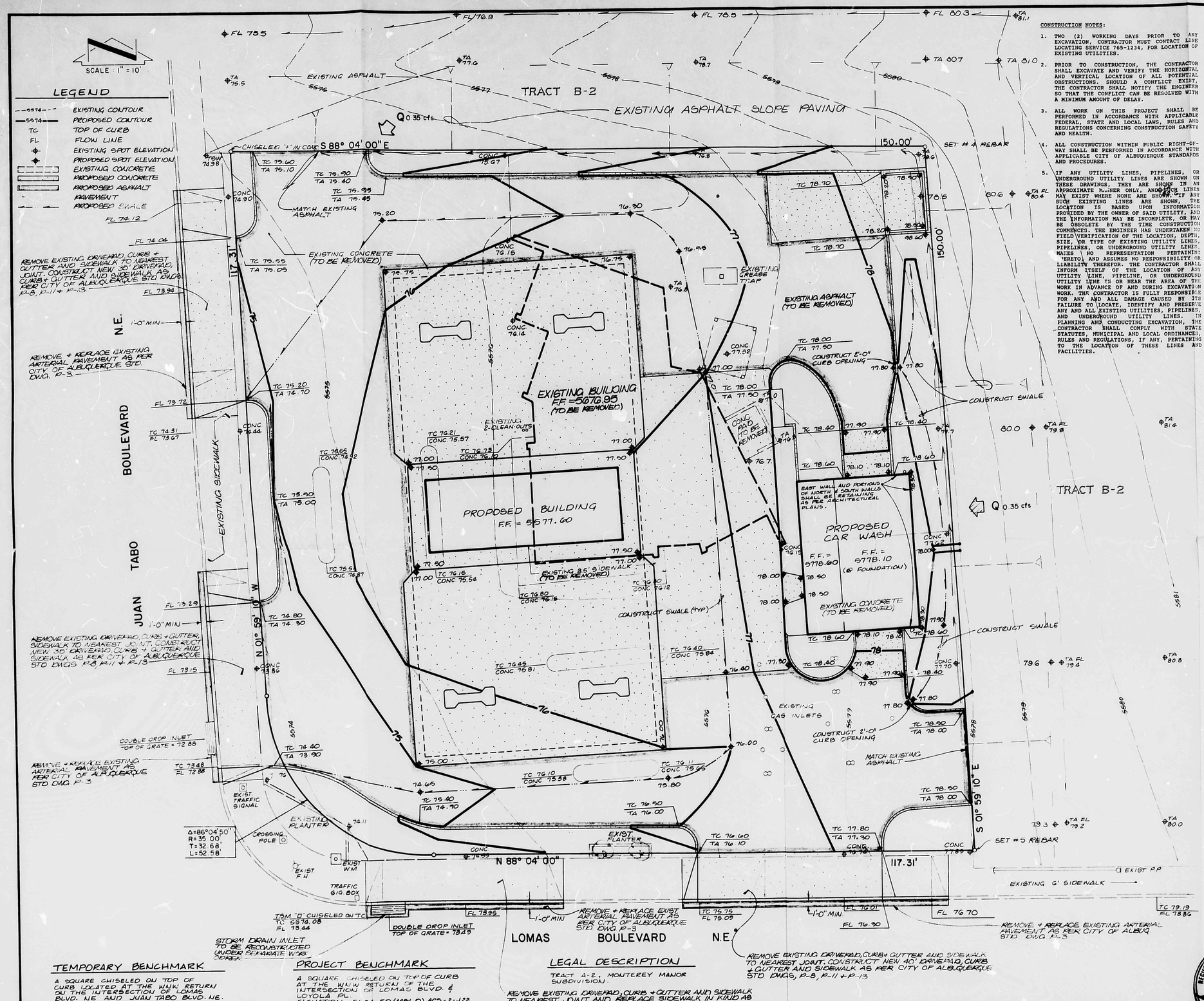
HYDROLOGY

J22/D12a
1 PLAN

J22/D12A

1 Plan



TEMPORARY BENCHMARK

A SQUARE CHISELED ON TOP OF CURB LOCATED AT THE WWW RETURN ON THE INTERSECTION OF LOMAS BLVD. NE AND JUAN TABO BLVD. NE.
ELEVATION = 5574.08 (MSLD)

PROJECT BENCHMARK

A SQUARE CHISELED ON TOP OF CURB AT THE WWW RETURN OF THE INTERSECTION OF LOMAS BLVD. & LOYOLA PL.
ELEVATION = 5634.50 (MSLD) ACS-2-J22

LEGAL DESCRIPTION

TRACT A-2, MONTEREY MANOR SUBDIVISION.

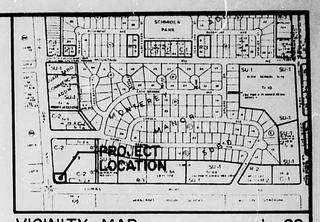
REMOVE EXISTING DRIVEPAD, CURB + GUTTER AND SIDEWALK TO NEAREST JOINT AND REPLACE SIDEWALK IN KIND AS PER CITY OF ALBUQUERQUE STD DWG. P-13

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 OTHER 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.



VICINITY MAP J-22
SCALE 1" = 800'

DRAINAGE PLAN

The following items concerning the Phillips Petroleum 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 northeast corner of the intersection of Juan Tabo Boulevard N.E. and Lomas Boulevard N.E. At present, the site is developed. Much of the surrounding area is currently developed, thereby making this an infill site. As shown by Plate J-21 of the Albuquerque Master Drainage Study, this site does not lie within a designated Flood Hazard Zone, however, this site is adjacent to designated street flooding on Juan Tabo Boulevard N.E. No offsite flows enter the site along the south and west property lines since the adjacent streets route runoff away from the project site. Offsite flows, as shown in the Calculations, enter the project site along the north and east property lines which can be accepted and conveyed through the the site.

The Grading Plan shows 1) existing and proposed grades indicated by 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 existing buildings, along with adjacent paving and the construction of a new service station along with adjacent paving and landscaping. Flows generated by this site will be routed from east to west onto Juan Tabo Boulevard N.E. This pattern is consistent with existing site drainage pattern. At present, the site flows from east to west onto Juan Tabo Boulevard N.E. to existing storm drain inlets located at the northeast corner of the intersection of Juan Tabo Boulevard N.E. and Lomas Boulevard N.E. Based upon the fact that the site is an infill site, the proximity of downstream facilities, and a decrease of runoff generated by the proposed improvements, the free discharge of runoff from this site is appropriate.

The Calculations which appear hereon analyze 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 decrease the total discharge from this site by approximately 0.2 cfs.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey,
Plate 32: TyB, Tijeras gravel fine sandy loam
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

$T_c = 0.0078\ L^{0.77}/S^{0.385}$ (Kirpich Equation)

$T_p = T_c = 10$ min.

Point Rainfall

$P_6 = 2.46$ in. (DPM Plate 22.2 D-1)

Rational Method

Discharge: $Q = CIA$
where C varies
$I = P_6\ (6.84)\ T_c^{-0.51} = 5.20$ in/hr
$P_6 = 2.46$ 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} = 22,490 sf = 0.52 Ac
Roof area = 2,470 sf (0.11)
Paved area = 19,920 sf (0.86)
Landscaped area = 100 sf (0.03)
C = 0.94 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CIA = (0.94)(5.20)(0.52) = 2.5$ cfs
A_{imp} = 22,390 sf; % impervious = 99 %
Composite CN = 98 (DPM Plate 22.2 C-3)
DRO = 2.3 in (DPM Plate 22.2 C-4)
$V_{100} = 3630\ (DRO)A = 4340$ cf

Developed Condition

A_{total} = 22,490 sf = 0.52 Ac
Roof area = 6,605 sf (0.29)
Paved area = 12,995 sf (0.58)
Landscaped area = 2,890 sf (0.13)
C = 0.85 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CIA = (0.85)(5.20)(0.52) = 2.3$ cfs
A_{imp} = 19,600 sf; % impervious = 87 %
Composite CN = 96 (DPM Plate 22.2 C-3)
DRO = 2.1 in (DPM Plate 22.2 C-4)
$V_{100} = 3630\ (DRO)\ A = 3,965$ cf

Offsite Flows

A_{total} = 6,480 sf = 0.14 Ac
Roof Area = -0- sf (0)
Paved area = 6,480 sf (1.0)
Landscaped area = -0- sf (0)
C = 0.95 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CIA = (0.95)(5.20)(0.14) = 0.7$ cfs
A_{imp} = 6,480 sf; % impervious = 100 %
Composite CN = 98 (DPM Plate 22.2 C-3)
DRO = 2.3 in (DPM Plate 22.2 C-4)
$V_{100} = 3630\ (DRO)\ A = 1,170$ cf

Comparison

$\Delta Q_{100} = 2.5 - 2.3 = 0.2$ cfs (decrease)
$\Delta V_{100} = 4340 - 3965 = 375$ cf (decrease)

Jack Atwood
PHILLIPS ENGINEER

REGISTERED PROFESSIONAL ENGINEER STATE OF NEW MEXICO THOMAS MANN, JR. 5932 AND LAND SURVEYOR 10-86

RECEIVED OCT 09 1986 HYDROLOGY SECTION

NO	DATE	BY	REVISIONS

DESIGNED BY L.P.U.
DRAWN BY T.M.A.
APPROVED T.T.M.
JOB NO 60861
DATE 10-86

GRADING & DRAINAGE PLAN
PHILLIPS PETROLEUM
900 JUAN TABO BLVD N.E.

FILE NO
SHEET 1 OF 1