HYDROLOGY

K19/D81
1 PLAN

K 19/D81

1 PLAN

VICINITY MAP K-19

LEGAL DESCRIPTION
LOT 10-A, BLOCK 6, UNITY ADDITION

PROJECT BENCHMARK
STATION 18 A STANDARD ACS BRASS DISK SET IN THE CURB AND STAMPED "G-K 20(R), 1974 ACS", LOCATED @ THE INTERSECTION OF CENTRAL AVE. & WYOMING BLVD. IN THE S.W. QUADRANT OF THE INTERSECTION.
ELEVATION = 5370.094 ft (MSLD)

TEMPORARY BENCHMARK
10" OF CONCRETE CURB LOCATED IN WYOMING BLVD. AS SHOWN BELOW.
ELEVATION = 5392.24 ft (MSLD)

LEGEND

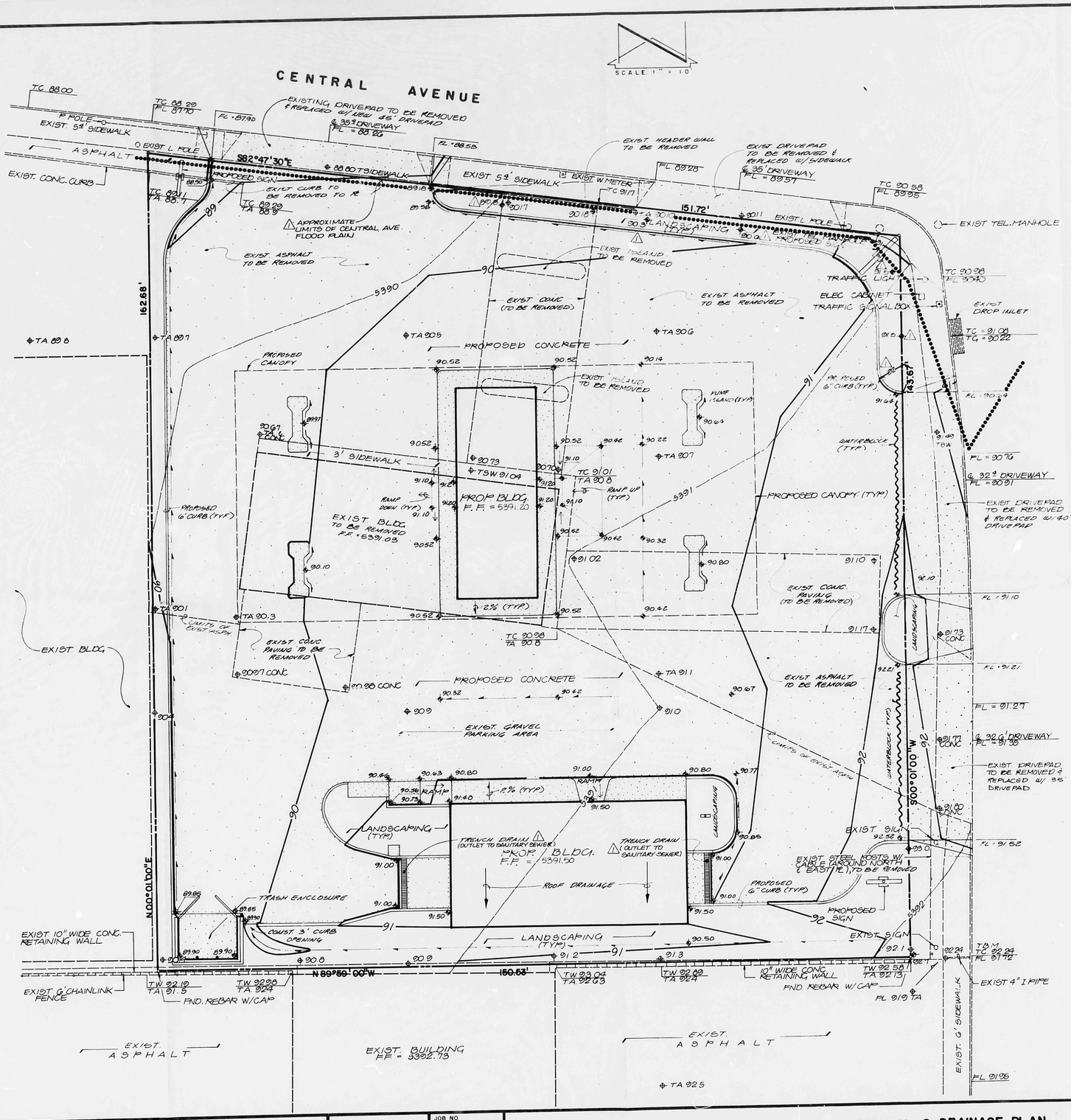
⊕	EXIST SPOT ELEV.
—5895—	EXIST CONTOUR
TC 91.50	TOP OF CURB ELEV.
FL 91.00	FLOW LINE ELEV.
	PROPERTY LINE
—51—	PROPOSED CONTOUR
⊕	PROPOSED SPOT ELEV.
	PROPOSED SWALE
	EXISTING SWALE
TA 90.67	TOP OF ASPHALT ELEV.

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 Phillips Petroleum Drainage Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations

The Grading Plan shows 1) existing and proposed grades indicated by contours at 1'0" intervals, 2) continuity between existing and proposed grades, 3) the limit and character of the proposed improvements. As shown by this Plan, the proposed improvements consist of the construction of a new service station along with associated paving and landscaping.

As shown by the Vicinity Map, the site is located at the southwest corner of Wyoming Boulevard and Central Avenue. At present, the site is developed as an existing service station and associated paving and appurtenances. The site is currently being utilized as a used car lot. The surrounding area is developed, thereby classifying this site as an infill site. There is an existing 48" storm drain pipe in Wyoming Boulevard which drains south into Zuni Avenue, connecting with an existing storm drain system. The current Flood Hazard Boundary Maps indicate that Wyoming Boulevard and Central Avenue are in Flood Hazard Zones, subject to a flood depth of 1'-0". However, a current study has been prepared by Bohannan-Huston, Inc., dated November, 1986, which indicates that Central Avenue is subject to a flood depth of 0.9', while Wyoming Boulevard is not in a flood zone. The HYMO modeling technique has been utilized to determine water surface elevations. Although the Bohannan-Huston Study is preliminary, we concur that Wyoming Boulevard is not in a flood plain. The fact that Wyoming Boulevard is not in a Flood Hazard Zone is apparent due to the fact that the majority of the runoff in Wyoming Boulevard south of Zuni Road is directed westerly in Zuni Road at the intersection of Wyoming and Zuni. Therefore, the contributing drainage area for Wyoming Boulevard north of Zuni is relatively small. Flows in Central Avenue will encroach slightly onto private property during the 100-year storm. However, a 1' water block has been provided, and the finished floor elevation of the building is 2' above the flowline in Central Avenue.

As shown by the grading plan, the proposed improvements will generate slightly more runoff than that which is currently being discharged. However, the increase in runoff, 0.3 cfs, is negligible and will not adversely impact downstream properties.

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.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey,
Plate: 31, MWA - Madurez - Wink Association
Hydrologic Soil Group: B
Existing Pervious CN = 85 (DPM Plate 22.2 C-2 (Gravel parking)
Developed Pervious CN = 69 (DPM Plate 22.2 C-2) (Grass cover, 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

$P_6 = 2.5$ in. (DPM Plate 22.2 D-1)

Rational Method

Discharge: $Q = CiA$

where C varies
$i = P_6\ (6.84)\ T_C^{-0.51} = 5.28$ in/hr
$P_6 = 2.5$ 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} = 23,060 sf = 0.53 Ac
Roof area = 1620 sf (c = 0.90)
Paved area = 13,040 sf (c = 0.95)
Gravel parking area = 8400 sf (c = 0.40)
c = 0.75 (Weighted average per Emergency Rule, 1/14/86)
Q_{100} = CiA = 2.1 cfs
Composite CN = 93 (DPM Plate 22.2 C-3)
DRO = 1.8 in (DPM Plate 22.2 C-4)
V_{100} = 3630 (DRO)A = 3460 cf

Developed Condition

A_{total} = 23,060 sf = 0.53 Ac
Roof area = 1800 sf (c = 0.90)
Paved area = 18,410 sf (c = 0.95)
Landscaped area = 2850 sf (c = 0.25)
c = 0.86 (Weighted average per Emergency Rule, 1/14/86)
Q_{100} = CiA = 2.4 cfs
Aimp = 20,210 sf; % impervious = 88 %
Composite CN = 95 (DPM Plate 22.2 C-3)
DRO = 1.95 in (DPM Plate 22.2 C-4)
V_{100} = 3630 (DRO) A = 3750 cf

Comparison

ΔQ_{100} = 2.4 - 2.1 = 0.3 cfs (increase)
ΔV_{100} = 3750 - 3460 = 290 cf (increase)

REGISTERED PROFESSIONAL ENGINEER — STATE OF NEW MEXICO — 3752 — 3-19-87 — AND LAND SURVEYOR

RECEIVED MAR 13 1987 HYDROLOGY SECTION

TOM MOORE ASSOCIATES, P.C.
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ENGINEERS

NO.	DATE	BY	REVISIONS
1	3/12	SKS	DELINEATE FLOOD PLAIN, ADD SPOT ELEV @ P.L.
			REVISE VERBAGE

DESIGNED BY S.K.S.
DRAWN BY C.V.M.
APPROVED T.T.M.

JOB NO. 61641
DATE 12 · 86

GRADING & DRAINAGE PLAN

PHILLIPS WYOMING/CENTRAL (# 26614)

FILE NO.
SHEET 1 OF 1

N61257