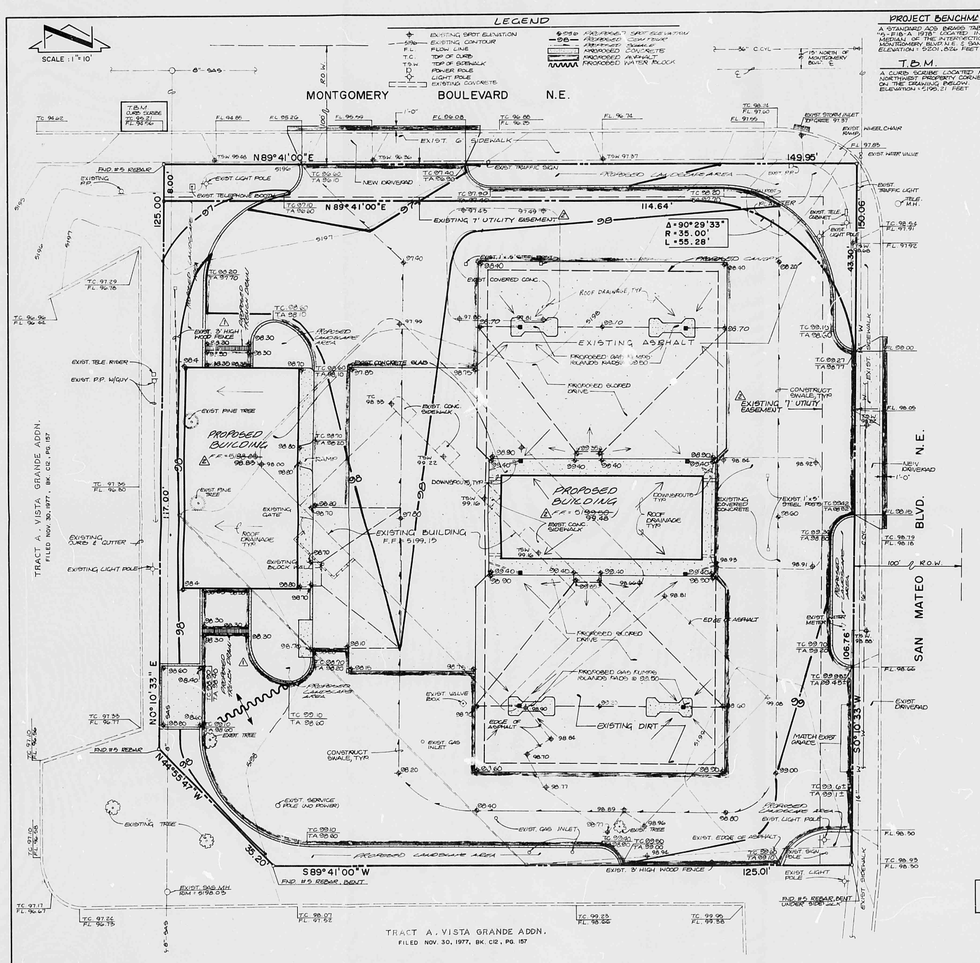
lydrology

File No. G-17/D032



PROJECT BENCHMARK

A STANDARD ACS BRASS TABLET STAMPED "A-21-B-A 1978" LOCATED IN THE EAST MEDIAN OF THE INTERSECTION OF MONTGOMERY BLVD N.E. & SAN MATEO BLVD N.E.
ELEVATION: 5204.824 FEET (MSL-D)

T.B.M.

A CURB SCRIBE LOCATED NEAR THE NORTHWEST ENGINEERS CORNER AS SHOWN HEREON. (NEAR PROJECT ELEVATION: 4196.37 FEET)

LEGAL DESCRIPTION

~~PORTION OF LOT C-1~~ BLOCK A, VISTA GRANDE ADDITION, UNIT ONE
LOTS P-1 & P-2

CERTIFICATION

As shown by the as-built survey data presented hereon, the buildings were constructed, within tolerance, at the specified finished floor elevations.

Jeffrey E. Montaña, N.M. P.E. 8547 — 06-01-88 Date

VICINITY MAP — G-17
SCALE : 1" = 800'

DRAINAGE PLAN

The following items concerning the Phillips 66 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 quadrant of the intersection of Montgomery Boulevard N.E. and San Mateo Boulevard N.E. At present, the site is developed, making this a modification to an existing site. Much of the surrounding area is currently developed commercially, thereby making this an infill site. As shown by Plate D-17 of the Albuquerque Master Drainage Study (AMDS), this site does not lie within a designated Flood Hazard Zone. However, the site does lie adjacent to a designated flood hazard zone. Because of this, the finished floor of the buildings have been established at least 2 feet above the corresponding flowline elevations of Montgomery Boulevard N.E. At present, the site drains from south to north onto Montgomery Boulevard N.E. From that point, runoff flows in a westerly direction to an existing drainage inlet. This pattern is consistent with existing site drainage. Runoff between San Mateo Boulevard N.E. and Monroe Street N.E. from that point, runoff flows within Montgomery Boulevard N.E. to a storm drain which outfalls to the North Diversion Channel. Unfortunately, this storm drain system does not have ample capacity, hence, street flooding occurs. No offsite flows enter the site along the north and east property line since the existing streets route runoff away from the project site. No offsite flows enter the site along the west and south property lines since existing lots are graded in a manner which will route runoff away from the project 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 an existing service station along with adjacent paving and the construction of a new service station and carwash along with adjacent paving and landscaping. Runoff generated by this site will be routed from south to north onto Montgomery Boulevard N.E. From that point, runoff flows in a westerly direction to an existing drainage inlet. This pattern is consistent with existing site drainage. Runoff between San Mateo Boulevard N.E. and Monroe Street N.E. from that point, runoff flows within Montgomery Boulevard N.E. to a storm drain system. This pattern is consistent with existing site drainage. Runoff generated by this site will be routed from south to north onto Montgomery Boulevard N.E. from

LEGEND

PROJECT BENCHMARK

T.B.M.

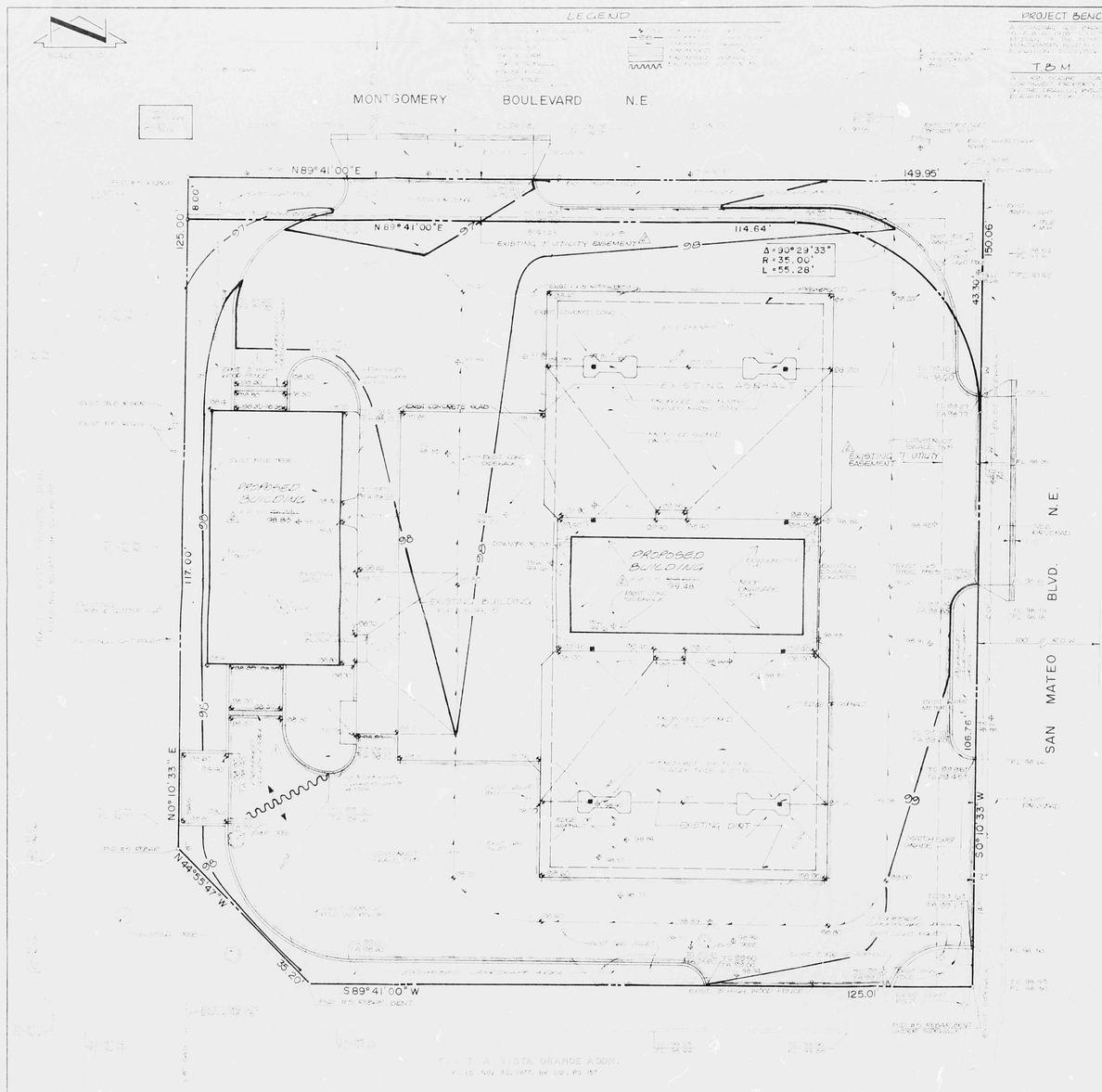
LEGAL DESCRIPTION

LOTS P-1 & P-2

CERTIFICATION

As shown by the as-built survey data presented hereon, the buildings were constructed, within tolerance, at the specified finished floor elevations.

Jeffrey G. Mondragon, N.M.P.E. 8547 — Date 6-6-1988



CONTRACTOR SHALL REFER TO DEMOLITION PLAN FOR REMOVAL OF EXISTING FACILITIES

Jeffrey G. Mondragon, N.M.P.E. 8547

VICINITY MAP G-17

SCALE 1" = 800'

DRAINAGE PLAN

The following items concerning the Phillips 66 Drainage Plan are attached hereto:

1. Grading Plan
2. Grading Plan
3. Calculations

The proposed improvements, as shown by the Vicinity Map, are located on the northwest quadrant of the intersection of Montgomery Boulevard N.E. and San Mateo Boulevard N.E. At present, the site is developed, serving as a gasoline station. Montgomery Boulevard N.E. is designed and constructed to the ultimate cross section as shown by Plate G-17 of the Albuquerque Master Drainage Study (AMDS). This site's lies not far within a drainage sub-basin. However, from the Phillips 66 site's location, it is evident that the drainage from the site's roof tops of the buildings have been established at least a foot above the corresponding finished elevations of Montgomery Boulevard N.E. Thus, the site's drainage is to be conveyed to the Montgomery Boulevard N.E. Drainage System. Flows in a manner in addition to an existing cross drain inlet located in the south side of Montgomery Blvd. N.E. before drain water enters the street and San Mateo Boulevard N.E. Street drain. From the street, drain water enters the drain system which falls into the Tijeras Arroyo. Immediately, this alone drain system has sufficient capacity, based upon the flow rate of approximately 1.0 cubic feet per second (cfs). However, the drainage system does not extend south of the site. Thus, the site's drainage must be routed through the south property lines since existing lots are graded in a manner which will route runoff away from the proposed site.

The Grading Plan shows, existing and proposed grades indicated by spot elevations and contours. The information is generally between existing and proposed grades, as well as the site's proposed improvements. As shown by the plan, the proposed improvements consist of the removal of existing asphalt and building, and the construction of a new building and asphalt. As a result of the proposed improvements, the runoff generated by this site will be routed from site to north side Montgomery Boulevard N.E. from the south roof tops of the existing building. A portion of the asphalt will be directed to the drainage system. The remaining asphalt and roof tops will be directed to the street and may be captured by the existing drainage system in place. This pattern is consistent with existing. Therefore, based upon the fact that the site is an infill development, the proposed improvements are consistent with the surrounding development and the proximity of downstream facilities, the free discharge of runoff from this site is appropriate.

The Calculations within appear herein analyze the existing and developed conditions for the 100-year, 6-hour rainfall events. The Rational Method has been used to quantify the peak rate of runoff, and the Soil Conservation Service Method to quantify the volume of runoff. Both methods have been used in accordance with the City Albuquerque Development Process Manual, Volume 1 and 2 and the Corporate Drainage Ordinance. The site's Existing Conditions and the proposed improvements will result in no change in peak discharge.

CALCULATIONS

Proposed Soil Information

Area and Permeability Group Data (Table 1)
Plate 22.2 SMA = Sandy (gravel, silt sand, loam
Hydrologic Soil Group: B
Existing Impervious = 0% (DPM Plate 22.2 (a))
Pervious or Ramp (lawn) = 100% (DPM Plate 22.2 (a))
Developed Pervious CN = 61 (DPM Plate 22.2 (a))

Time of Concentration (Lag to Peak)

$T_c = 0.0078 (L^{0.77} s^{0.385})$ (Kirpich Equation)

$T_p = T_c \times 60$ min.

Point Rainfall

$P_6 = 2.2$ in. (DPM Plate 22.2 (b))

Rational Method

Discharge: $Q = CIA$

Where C varies
$I = P_6 / (6 \times 60)$ = rainfall intensity, in/hr
T_c = 10 min (DPM Plate 22.2(c))
A = area, acres

SCS Method

Volume: $V = 3630 (Q) A$

Where Q = runoff in inches
A = area, acres

Existing Conditions

Average 22,196 sf = 0.51 Ac
Roof area = 7,120 sf (.16)
Paved area = 12,076 sf (.28)
Landscaped area = 2,000 sf (.05)
Dirt Area = 0 sf
Composite Runoff Coefficient per Increment (Table 1.14.06)
Roof = CIA = (0.90)(1.45)(0.51) = 2.0 cfs
Paved = CIA = (0.90)(1.45)(0.28) = 1.1 cfs
Landscape CN = 61 (DPM Plate 22.2 (c))
Composite CN = 61 (DPM Plate 22.2 (c))
Runoff = 1.0 in (DPM Plate 22.2 (d))
Vol = 3630 (1.0)(0.51) = 2,670 cf

Developed Condition

Average = 22,196 sf = 0.51 Ac
Roof area = 7,120 sf (.16)
Paved area = 11,080 sf (.25)
Landscaped area = 2,000 sf (.05)
Dirt Area = 0 sf
Composite Runoff Coefficient per Increment (Table 1.14.06)
Roof = CIA = (0.90)(1.45)(0.51) = 2.0 cfs
Paved = CIA = (0.90)(1.45)(0.25) = 1.0 cfs
Landscape CN = 61 (DPM Plate 22.2 (c))
Composite CN = 61 (DPM Plate 22.2 (c))
Runoff = 1.0 in (DPM Plate 22.2 (d))
Vol = 3630 (1.0) A = 2,960 cf

Conclusion

Vpre = 2.0 - 2.0 = 0.0 cfs (no change)
Vpost = 2960 - 2670 = 290 cf (increase)

THIS PLAN SHOT TWICE ONCE ON LIGHT AND ONCE ON DARK.

CITY OF ALBUQUERQUE
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CITY OF ALBUQUERQUE

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Karen Aaron
CITY CLERK RECORDER

OFFICIAL SEAL
NORBERTA SANCHEZ
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires 11/14/90

Norberta Sanchez

GRADING & DRAINAGE PLAN

PHILLIPS 66 - SAN MATEO

6-88	JGM	AS BUILT BLDG. EFE, REVISE BLDG. & PAVE. AND EASEMENTS		870971	
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8/7/2032

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CITY OF ALBUQUERQUE

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