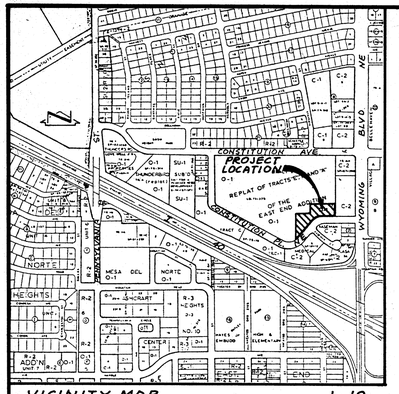
181070

LEGAL DESCRIPTION

A PORTION OF TRACT 1, REPLAT OF TRACTS "E", "F" AND A PORTION OF TRACT "A" EAST END ADDITION, IN THE CITY OF ALBUQUERQUE.



VICINITY MAP

SCALE: 1" = 800' (APPROX.)

J-19

PROJECT BENCH MARK

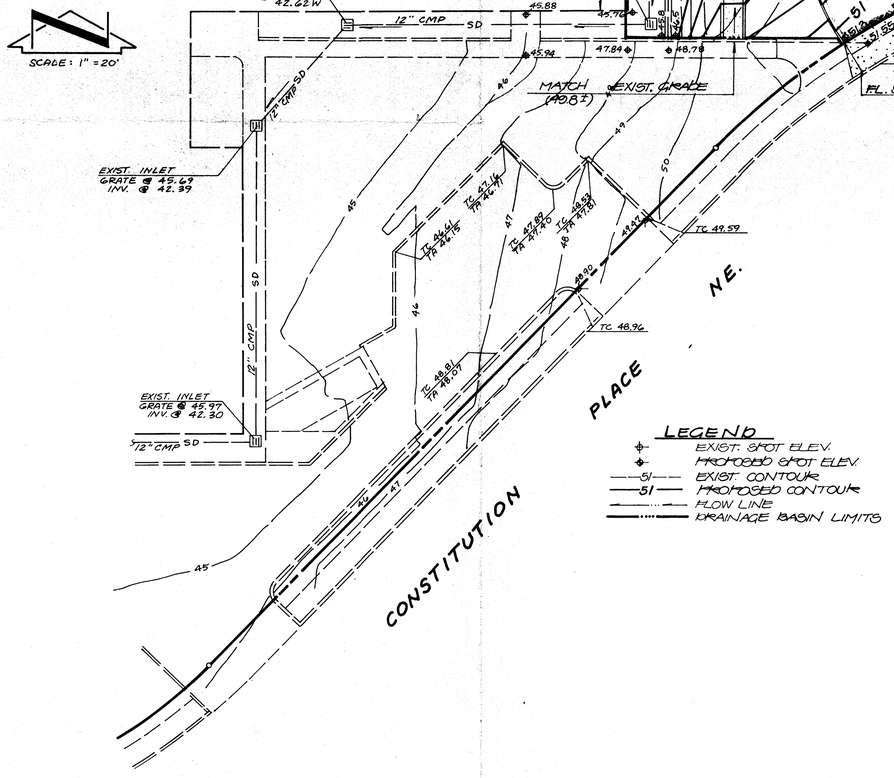
BENCH MARK IS A STANDARD A.C.S. BRASS TABLET STAMPED "S-J19 1979" SET FLUSH WITH THE CURB, LOCATED IN THE S.W. QUADRANT OF THE INTERSECTION OF CONSTITUTION AVE. NE AND WYOMING BLVD. NE.

ELEVATION = 5360.37 FEET (M.S.L.D.)

TBM

TBM IS THE CORNER OF A TOP OF CONCRETE WALK AS SHOWN ON THIS PLAN.

ELEVATION = 5349.39 FEET (M.S.L.D.)



LEGEND

- EXIST. SPOT ELEV.
- PROPOSED SPOT ELEV.
- EXIST. CONTOUR
- PROPOSED CONTOUR
- FLOW LINE
- DRAINAGE BASIN LIMITS

DRAINAGE PLAN

The following items concerning the Kaseman Arthritis Center Parking Lot Drainage Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations

As shown by the Vicinity Map, the site is located at the southeast corner of the Presbyterian-Kaseman Hospital complex. This is an existing developed site within an infill area. This project can be characterized as a modification to an existing site within an infill area.

As shown by Panel 30 of 50 of the National Flood Insurance Program Flood Insurance Rate Maps for the City of Albuquerque, New Mexico, dated October 14, 1983, this site does not lie within a designated flood hazard zone. Further review of this map does not reveal any downstream flooding, hence it appears that this site does not contribute runoff to an existing flood hazard zone. The proposed construction will occur at a location which is currently topographically lower than the adjacent public street, Constitution Place N.E. This area of the site currently exists as a detention pond which drains via a 4" PVC drain line. The drain line discharges to the surface just above an existing private storm inlet. The storm inlet is connected to a private storm drain facility which drains in a southwesterly direction to discharge at a point farther to the west on the site. Because the parking lot expansion proposed hereon will also be topographically lower than the street, detention ponding will be used in order to control the rate of discharge from the parking lot to the existing private storm drain system.

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, 4) continuity between existing and proposed grades. As shown by this plan, the proposed improvements consist of the construction of a parking lot. The parking lot is being constructed in an existing landscaped area. In both the existing and developed condition, the land will lie topographically lower than the adjacent public street. As mentioned above, detention ponding will be implemented to control the release of stormwater runoff from this portion of the site. Adequate capacity is provided within the parking lot in the event that the 4" discharge pipe should become clogged.

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 while the SCS Method has been used to quantify the volume of runoff generated. Both Methods have been used in accordance with the Development Process Manual, Volume II, combined with the Mayor's Emergency Rule dated January 14, 1986. As shown by these calculations, the proposed construction will result in an increase in runoff. The pond calculations and analysis indicate that adequate volume will be provided within the parking lot and that the release rate from this portion of the site will be maintained at a level very close to that which is observed in the existing condition. Because of this, the capacity of the existing storm drain system will not be overtaxed.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey,
Plate 31: EtC - Embudo Tijeras Complex
Hydrologic Soil Group: B
Pervious CN = 61 (DPM Plate 22.2 C-2
Open Space - good 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

$P_6 = 2.37$ in. (DPM Plate 22.2 D-1)

Rational Method

Discharge: $Q = CiA$

where C varies
$i = P_6\ (6.84)\ T_c^{-0.51} = 5.01$ in/hr
$P_6 = 2.37$ 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

$A_{total} = 40,300$ sf = 0.93 Ac
Roof area = 4,300 sf (0.11)
Paved area = 6,600 sf (0.16)
Landscaped area = 29,400 sf (0.73)
C = 0.43 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CiA = 0.43(5.01)(0.93) = 2.1$ cfs
% impervious = 27 %
Composite CN = 71 (DPM Plate 22.2 C-3)
DRO = 0.5 in (DPM Plate 22.2 C-4)
$V_{100} = 3630\ (DRO)A = 1690$ cf

Developed Condition

$A_{total} = 40,300$ sf = 0.93 Ac
Roof area = 4365 sf (0.11)
Paved area = 15,600 sf (0.39)
Landscaped area = 20,335 sf (0.50)
C = 0.59 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CiA = 0.59(5.01)(0.93) = 2.7$ cfs
% impervious = 50 %
Composite CN = 79 (DPM Plate 22.2 C-3)
DRO = 0.78 in (DPM Plate 22.2 C-4)
$V_{100} = 3630\ (DRO)A = 2630$ cf

Comparison

$Q_{100} = 2.7 - 2.1 = 0.6$ cfs (increase)
$V_{100} = 2630 - 1690 = 940$ cf (increase)

Pond Volume

$V_{pond} = 1/2[(A_{45.5} + A_{46})(46-45.5) + (A_{46} + A_{46.5})(46.5 - 46)]$
$= 1/2[(0 + 4870)(0.5) + (4870 + 5290)(0.5)]$
$= 1/2(2435 + 5080) = 3757$ cf
$V_{pond} > V_{100}$

Pond Release Rate

1. Existing Condition
$Q = CA\ (2gh)^{1/2}$ (Orifice Equation)
Where c = 0.6
A = 0.0873 sf (1" dia pipe)
$g = 32.2$ ft/sec^2
h = 49 - 47.5 - 0.2 = 1.3'
$Q_{release, exist.} = 0.5$ cfs

2. Developed Condition
$Q = CA\ (2gh)^{1/2}$ (Orifice Equation)
Where C = 0.6
A = 0.0873 sf (1" dia pipe)
$g = 32.2$ ft/sec^2
h = 45.5 - 43.5 - 0.2 = 1.8'
$Q_{release, dev.} = 0.6$ cfs $-$ $Q_{release, exist.}$

Construction Notes:

1. Two (2) working days prior to any excavation, contractor must contact New Mexico One Call System, 260-1990, 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 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.

6. 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 structures. For construction details, refer to landscaping plan.

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.

JEFFREY A. MORTENSEN NEW MEXICO 8547 REGISTERED PROFESSIONAL ENGINEER

RECEIVED JUL - 7 1992 HYDROLOGY DIVISION

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

GRADING & DRAINAGE PLAN

KASEMAN ARTHRITIS CENTER PARKING LOT

DESIGNED BY J.G.M.
DRAWN BY C.E.N.
APPROVED BY J.G.M.

NO.	DATE	BY	REVISIONS
*			

JOB NO. 920541
DATE 06 - 92
SHEET 1 OF 1

J-19/D4A