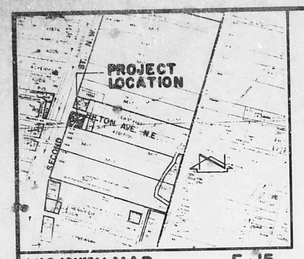
HYDROLOGY

F15/D14
ONE PLAN

F 15/D14

1 Plan



VICINITY MAP F-15
SCALE 1" = 800'

LEGEND

- EXIST. SPOT ELEVATION
- 5667 EXIST. CONTOUR
- EXIST. SWALE
- PROPERTY LINE
- EXIST. FENCE
- T.C. 56.50 TOP OF CURB
- F.L. 56.00 FLOW LINE
- EXIST. CONCRETE
- BASIN BOUNDARY LINE

PROJECT BENCHMARK

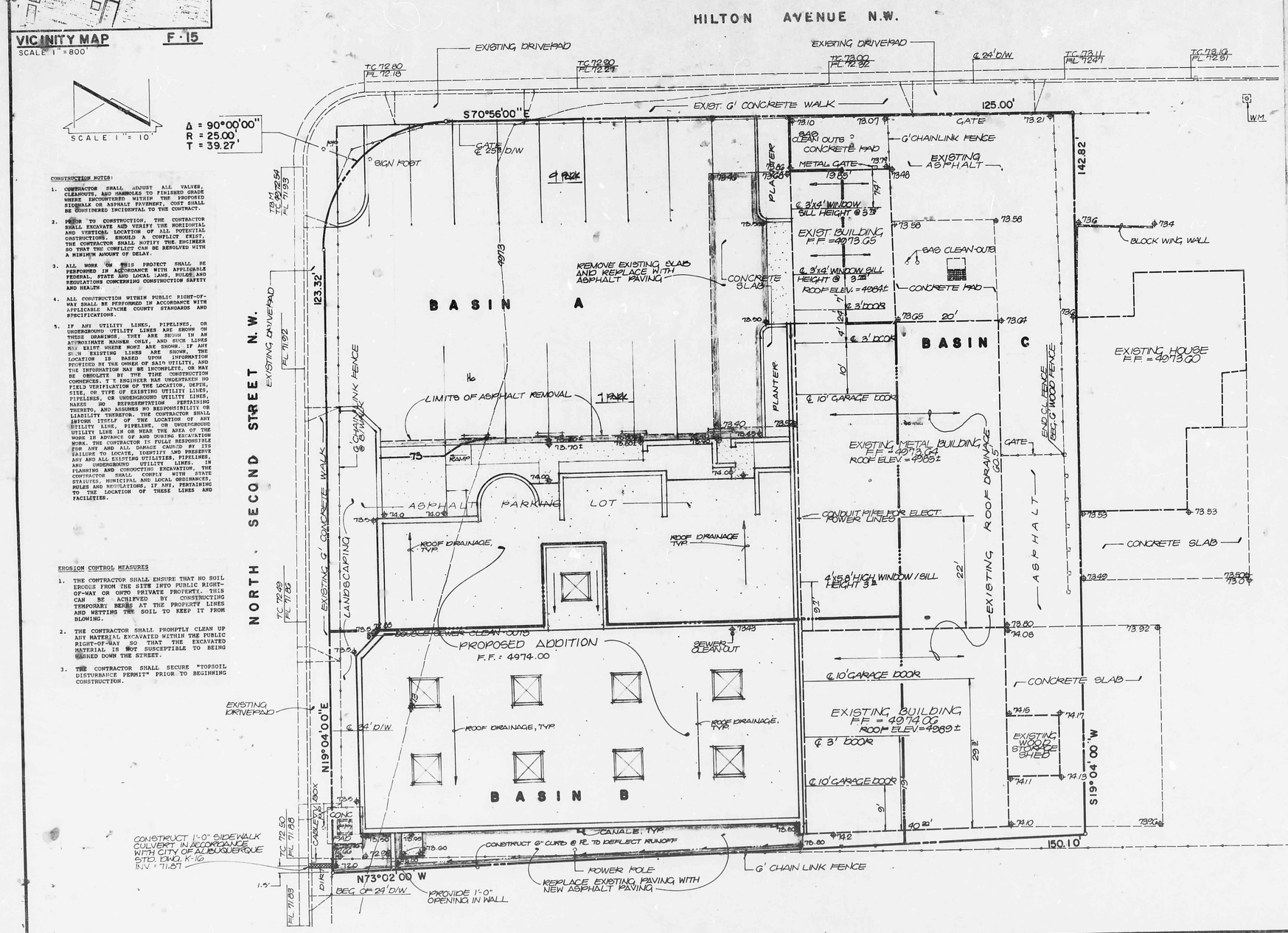
A STANDARD NMSHC BRASS TABLET, STAMPED 10TA N1471-94 SET IN 10" OF A CONCRETE POST FLUSH WITH THE GROUND, LOCATED IN THE MEDIAN STRIP OF SECOND STREET N.W., JUST NORTH OF THE INTERSECTION WITH PLEASANT STREET N.W.
ELEVATION = 4972.04 ft. (MSL D)

T.B.M.

TOP OF CONCRETE CURB @ THE N.W. PROPERTY CORNER, AS SHOWN BELOW
ELEVATION = 4972.54 ft. (MSL D)

LEGAL DESCRIPTION

TRACT A, EASTVALE ADDITION



CONSTRUCTION NOTES:

1. CONTRACTOR SHALL ADJUST ALL VALVES, CLEANOUTS, AND MANHOLES TO FINISHED GRADE WHERE ENCOUNTERED WITHIN THE PROPOSED SIDEWALK OR ASPHALT PAVEMENT. COST SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
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 APACHE COUNTY STANDARDS AND SPECIFICATIONS.
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. T T 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 Osborn Machinery Drainage Plan are attached herein:

1. Vicinity Map
2. Grading Plan
3. Calculations

As shown by the Vicinity Map, this site is located at the southeast corner of the intersection of Second Street N.W. and Hilton Avenue N.W. At present, the site is developed commercially. Many of the surrounding sites along Second Street N.W. are also developed making this an infill site. Because the proposed improvements consist of a building addition, this project is a modification to an existing site.

As shown by Plate F-15 of the Albuquerque Master Drainage Study, this site does not lie within a designated Flood Hazard Zone. At present, Basins A and B drain directly onto Second Street N.W. Basin C, which is the easterly portion of the site, drains from south to north onto Hilton Avenue N.W. From this point, Hilton Avenue N.W. drains to the west into Second Street N.W. Second Street N.W. is rather flat, however, the predominant trend is one in which runoff flows from north to south.

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, and 4) continuity between existing and proposed grades. As shown by this Plan, Basin A will continue to drain onto Second Street N.W. via the existing drivepad. The proposed construction within this Basin will consist of the removal of asphalt paving and replacement of that paving with a building addition and landscaping. The net effect of these improvements will be a decrease in runoff due to the creation of additional pervious area. Basin B will continue to drain to Second Street N.W. The runoff from this portion of the site will be collected by a 1'0" sidewalk culvert which will discharge into the flow line of Second Street N.W. Using the Orifice Equation for a 8" high by 1' wide opening and an entrance coefficient of 0.75 reveals a capacity of 2 cfs. The contribution to this sidewalk culvert is only 1 cfs, therefore this 1' wide sidewalk culvert will will have sufficient capacity to pass the 100-year runoff generated by this Basin. Whereas Basins A and B will receive improvements as part of this project, Basin C will be unaltered. Its runoff will continue to flow from south to north onto Hilton Avenue N.W. without any change, therefore no calculations have been performed. In addition, Basin C intercepts offsite flows from the east, thereby protecting the proposed improvements from offsite flows.

The Calculations which appear hereon analyze the existing and developed conditions for the 100-year, 6-hour rainfall event. The SCS Method has been used for this analysis in accordance with the City of Albuquerque Development Process Manual, Volume II. These calculations demonstrate that the proposed improvements will result in a slight decrease in runoff generated by this site. Based upon this slight decrease in runoff, the fact that this site is an infill site, the fact that this is a modification to an existing site, that the proposed improvements will not alter the existing drainage pattern of the site, and that there is no apparent flooding in Second Street N.W., the free discharge of runoff from this site is appropriate.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey,
Plate: 21: Gb - Gila Loam
Hydrologic Soil Group: B
Existing Pervious CN = 61 (DPM Plate 22.2 C-2
Open Space : good 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

$P_6 = 2.2$ in. (DPM Plate 22.2 D-1)

Existing Condition (Basins A and B)

$A_{total} = 15,480$ sf $= 0.36$ Ac
$A_{imp} = 15,420$ sf; % impervious = 100 %
Composite CN = 98 (DPM Plate 22.2 C-3)
DRO = 2.0 in (DPM Plate 22.2 C-4)
$q_p = 45.4\ A/T_p = 1.63$ cfs/in runoff

$Q_{100} = Q_{peak} = q_p$ (DRO) = 3.3 cfs
$V_{100} = 3830$ (DRO) A = 2610 cf

Developed Condition

1. Basin A

$A_{total} = 10,270$ sf $= 0.24$ Ac
$A_{imp} = 9370$ sf; % impervious = 91 %
Composite CN = 95 (DPM Plate 22.2 C-3)
DRO = 1.7 in (DPM Plate 22.2 C-4)
$q_p = 45.4\ A/T_p = 1.09$ cfs/in runoff

$Q_{100} = Q_{peak} = q_p$ (DRO) = 1.9 cfs
$V_{100} = 3830$ (DRO) A = 1480 cf

2. Basin B

$A_{total} = 5210$ sf $= 0.12$ Ac
$A_{imp} = 5030$ sf; % impervious = 96 %
Composite CN = 96 (DPM Plate 22.2 C-3)
DRO = 1.8 in (DPM Plate 22.2 C-4)
$q_p = 45.4\ A/T_p = 0.54$ cfs/in runoff

$Q_{100} = Q_{peak} = q_p$ (DRO) = 1.0 cfs
$V_{100} = 3830$ (DRO) A = 780 cf

Comparison

$\Delta Q_{100} = 3.3 - (1.9 + 1.0) = 0.4$ cfs (decrease)
$\Delta V_{100} = 2610 - (1480 + 780) = 350$ cf (decrease)

RECEIVED
MAY 14 1986
HYDROLOGY SECTION

JEFFREY G. MORTENSEN
NEW MEXICO
1984
REGISTERED PROFESSIONAL ENGINEER
MAY 14, 1986

TOM VAN ZANDT ASSOCIATES INC. 811 DALLAS N.E. · ALBUQUERQUE · NEW MEXICO · 87110 ENGINEERS	NO. / DATE / BY / REVISIONS	DESIGNED BY J.G.M. / DRAWN BY J.M.C. / APPROVED J.G.M.	JOB NO. 51392 / DATE 11·85

GRADING AND DRAINAGE PLAN
OSBORN MACHINERY

F15/D14

FILE NO
SHEET 1 OF 1