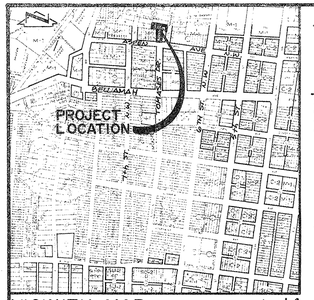


VICINITY MAP J-14

SCALE: 1" = 800'

LEGAL DESCRIPTION

LOTS 7 AND 8, TENORIO ADDITION AND LOTS 27 AND 28, DRYFUSS ADDITION ALBUQUERQUE, NEW MEXICO

PROJECT BENCHMARK

A SQUARE "D" CHISELED ON TOP OF CONCRETE CURB AT THE NW CURB RETURN AT THE INTERSECTION OF 4TH STREET AND HAINES NW. BM # Z-14.

ELEVATION = 4960.292 FEET (M.S.L.D.)

TBM

RAILROAD SPIKE LOCATED IN A LIGHT POLE APPROXIMATELY 46.5' EAST OF THE SOUTHEAST PROPERTY CORNER AS SHOWN ON THE DRAWING AT RIGHT.

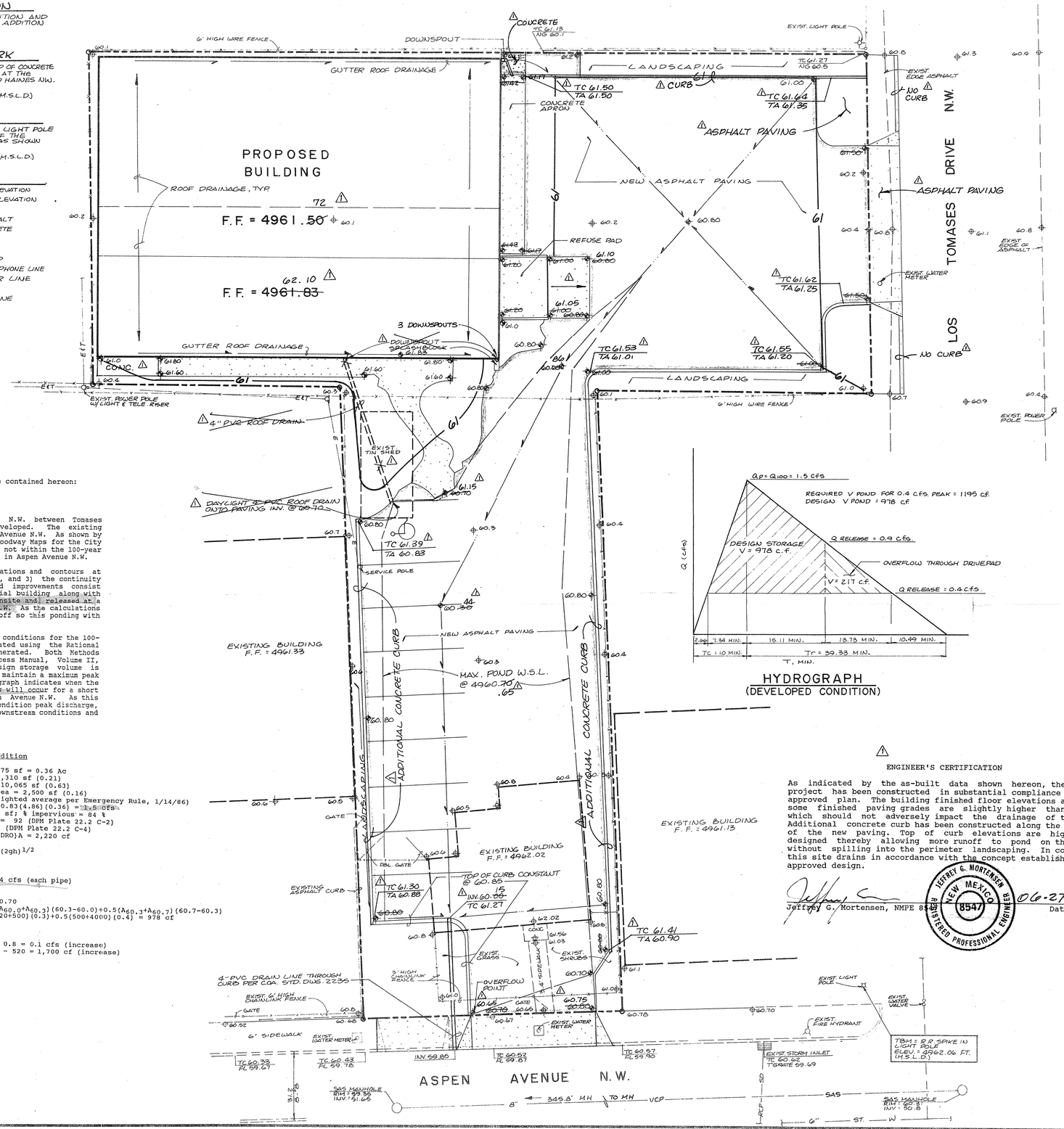
ELEVATION = 4962.06 FEET (M.S.L.D.)

LEGEND

⊕	EXISTING SPOT ELEVATION
⊕	PROPOSED SPOT ELEVATION
-x-x-x-	EXISTING FENCE
	PROPOSED ASPHALT
	PROPOSED CONCRETE
TC	TOP OF CURB
FL	FLOW LINE
NG	NATURAL GROUND
E&T	ELECTRIC & TELEPHONE LINE
SAS	SANITARY SEWER LINE
W	WATERLINE
SD	STORM DRAIN LINE

SCALE: 1" = 10'

10' 5' 0 10'



DRAINAGE PLAN

The following items concerning the Independent Fire Company Drainage Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations

As shown by this plan, the site is located on the north side of Aspen Avenue N.W. between Tomases Drive N.W. and 7th Street N.W. At the present time, the site is partially developed. The existing drainage pattern is one in which runoff flows from north to south onto Aspen Avenue N.W. As shown by Panel 28 of 50 of the National Flood Insurance Program Flood Boundary and Floodway Maps for the City of Albuquerque, New Mexico, the site lies within a 500-year flood zone but is not within the 100-year flood zone. This map also indicates there is no 100-year downstream flooding in Aspen Avenue N.W.

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 proposed improvements, and 3) the continuity between the existing and proposed grades. As shown by this plan, the proposed improvements consist of the demolition of existing structures and the construction of a commercial building along with adjacent paving and landscaping. Runoff from the site will be ponded onsite and released at a controlled rate through (a) 4" PVC pipe and the drivepad into Aspen Avenue N.W. As the calculations indicate, the developed state peak runoff exceeds the existing state peak runoff so this ponding with a controlled release is appropriate.

The calculations which appear hereon analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The peak discharge of runoff has been calculated using the Rational Method while the SCS Method has been used to quantify the volume of runoff generated. Both Methods have been used in accordance with the City of Albuquerque Development Process Manual, Volume II, coupled with the Mayor's Emergency Rule adopted January 14, 1986. The design storage volume is approximately 200 cfs smaller than the calculated storage volume required to maintain a maximum peak discharge of 0.4 cfs, the capacity of the 4" discharge pipe. As the hydrograph indicates when the storage volume is exceeded, a combined peak discharge of approximately 0.9 cfs will occur for a short duration of time through the 4" outlet pipe and the drivepad into Aspen Avenue N.W. As this developed state peak discharge is approximately the same as the existing condition peak discharge, the modifications proposed for this site will have negligible impact on the downstream conditions and are appropriate.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey,
Plate 30: Gk - Glendale 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
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

$P_6 = 2.3$ in. (DPM Plate 22.2 D-1)

Rational Method

Discharge: $Q = CiA$

where C varies
$i = P_6\ (6.84)\ T_c^{-0.51} = 4.86$ in/hr
$P_6 = 2.3$ 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} = 15,875 sf = 0.36 Ac
Roof area = 911 sf (0.06)
Paved area = 60 sf (--)
Landscaped area = 320 sf (0.02)
Undeveloped area = 14,584 sf (0.92)
C = 0.43 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CiA = 0.43(4.86)(0.36) = 0.8$ cfs
Aimp = 970 sf; % impervious = 6 %
Composite CN = 72 (DPM Plate 22.2 C-2)
DRO = 0.5 in (DPM Plate 22.2 C-4)
$V_{100} = 3630\ (DRO)A = 520$ cf

Developed Condition

A_{total} = 15,875 sf = 0.36 Ac
Roof area = 3,310 sf (0.21)
Paved area = 10,065 sf (0.63)
Landscaped area = 2,500 sf (0.16)
C = 0.83 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CiA = 0.83(4.86)(0.36) = 1.5$ cfs
Aimp = 13,375 sf; % impervious = 84 %
Composite CN = 92 (DPM Plate 22.2 C-2)
DRO = 1.7 in (DPM Plate 22.2 C-4)
$V_{100} = 3630\ (DRO)A = 2,220$ cf

$Q_{release} = CA(2gh)^{1/2}$
C = 0.75
A = 0.087 sf
h = 0.53'
$Q_{release} = 0.4$ cfs (each pipe)

Pond Volume
Max WSL = 4960.70
Volume = $0.5(A_{60.0}+A_{60.3})(60.3-60.0)+0.5(A_{60.3}+A_{60.7})(60.7-60.3)$
$= 0.5(20+500)(0.3)+0.5(500+4000)(0.4) = 978$ cf

Comparison

$\Delta Q_{100} = 0.9 - 0.8 = 0.1$ cfs (increase)
$\Delta V_{100} = 2,220 - 520 = 1,700$ cf (increase)

HYDROGRAPH
(DEVELOPED CONDITION)

ENGINEER'S CERTIFICATION

As indicated by the as-built data shown hereon, the subject project has been constructed in substantial compliance with the approved plan. The building finished floor elevations along with some finished paving grades are slightly higher than designed which should not adversely impact the drainage of the site. Additional concrete curb has been constructed along the perimeter of the new paving. Top of curb elevations are higher than designed thereby allowing more runoff to pond on the paving without spilling into the perimeter landscaping. In conclusion, this site drains in accordance with the concept established by the approved design.

Jeffrey G. Mortensen, NMPE 8547 — 06-27-91 Date

JEFFREY G. MORTENSEN NEW MEXICO 8547 REGISTERED PROFESSIONAL ENGINEER

10-17-90

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 in writing 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 conducted only preliminary investigation of the location, depth, size, or type of existing utility lines, pipelines, or underground utility lines. This investigation is not conclusive, and may not be complete, therefore, 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. An Excavation/Construction Permit will be required before beginning any work within City right-of-way. An approved copy of these plans must be submitted at the time of application for this permit.
7. Backfill compaction shall be according to Residential street use.
8. Maintenance of these facilities shall be the responsibility of the owner of the property served.
9. 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 the structure. 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.

APPROVALS	NAME	DATE
A.C.E. / DESIGN		
INSPECTOR		
A.C.E. / FIELD		

RECEIVED JUN 27 1991 HYDROLOGY DIVISION

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

GRADING AND DRAINAGE PLAN
INDEPENDENT FIRE CO.

DESIGNED BY J.G.M.
DRAWN BY J.M.C./J.M.A.
APPROVED BY J.G.M.

NO	DATE	BY	REVISIONS
1	06/91	JGM	AS-BUILT & CERTIFY

JOB NO. 900794
DATE 10-1990
SHEET 1 OF 1