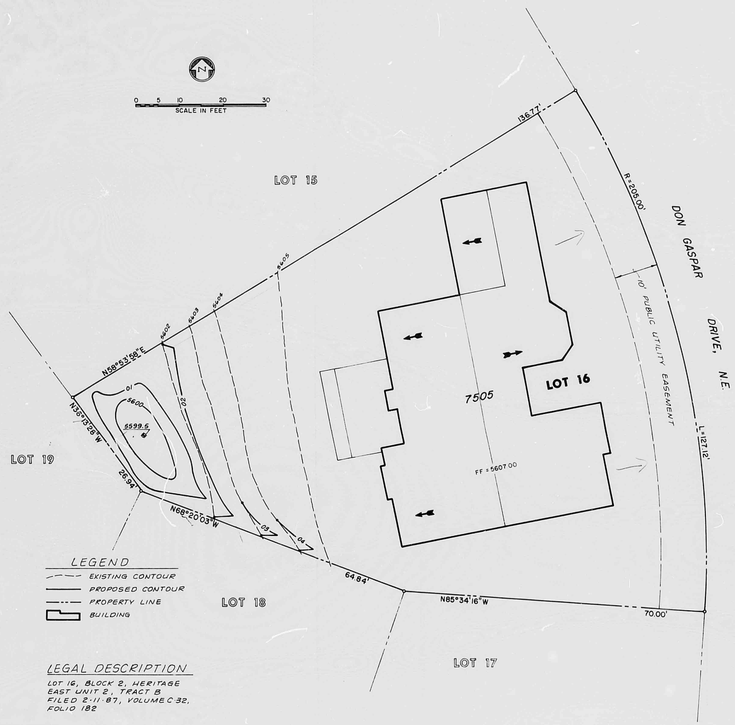
PUBLIC WORKS/HYDROLOGY

D20/D3E1



LEGAL DESCRIPTION

LOT 16, BLOCK 2, HERITAGE EAST UNIT 2, TRACT B FILED 2-11-87, VOLUME C-32, FOLIO 182

DRAINAGE PLAN

The following items concerning the 7505 Don Gaspar Drainage Plan are contained herein:

1. Vicinity Map
2. Grading Plan
3. Calculations

The proposed improvements, as shown by the Vicinity Map, are located at 7505 Don Gaspar NE in the Heritage East - Unit Two - Tract B - Subdivision. It is a residential lot. The house has been constructed, and the rear yard is being landscaped. The adjacent lots are also developed.

The site does not lie within a designated Flood Hazard Zone. A Grading and Drainage Plan was prepared by Community Science Corporation (CSC) and approved for rough grading on January 9, 1987. The CSC Drainage Plan indicates that all rear yard waters are to be retained in a pond.

This Grading Plan shows 1) existing and proposed grades as indicated by spot elevations and contours at 1'-0" intervals, 2) continuity between existing and proposed elevations, 3) the limit and character of existing improvements, and 4) the limit and character of proposed improvements. As shown by this plan, the proposed improvements consist of landscaping and a retention pond. The site slopes to the west, and all waters falling in the back yard will be routed to the pond. The pond will have grassed slopes and a granular bottom. Plastic will not be installed under the gravel. The CSC Plan indicates approximately 200 cubic feet of pond. The proposed pond will have in excess of 303 cubic feet.

The Calculations which appear below, analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The National and SCS Methods have been used for this analysis in accordance with the City of Albuquerque Development Process Manual, Volume II. As shown by these calculations, the proposed improvements will exceed the requirements of the CSC Plan.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey,
Plate:
Hydrologic Soil Group: B
Existing Pervious CN = 61 (DPM Plate 22.2 C-2
Pasture or Range Land: poor condition)
Developed Pervious CN = (DPM Plate 22.2 C-2)

Time of Concentration/Time to Peak

$T_C = 0.0078\ L0.77/S^{0.385}$ (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 = 5310 sf = 0.12 Ac
Roof area = 0 sf ( )
Paved area = 0 sf ( )
Landscaped area = 5310 sf ( )
C = 0.40 (Weighted average per Emergency Rule, 1/14/86)

$Q_{100} = CiA = 0.40(5.28)0.12 = 0.25$ cfs
Asp = 0 sf; % impervious = 0 %
Composite CN = 61 (DPM Plate 22.2 C-3)
DRO = 0.2 in (DPM Plate 22.2 C-4)
$V_{100} = 3630\ (DRO)A = 87$ cf

Developed Condition

A total = 5310 sf = 0.12 Ac
Roof area = 1458 sf = (.27)
Paved area = 0 sf = (0)
Landscaped area = 3852 sf = (.73)
C = .41 (Weighted average per Emergency Rule, 1/14/86)

$Q_{100} = CiA = 0.41(5.28)0.12 = 0.27$ cfs
A sp = 1458 sf; % impervious = 27 %
Composite CN = 71 (DPM Plate 22.2 C-3)
DRO = 0.6 in (DPM Plate 22.2 C-4)
$V_{100} = 3630\ (DRO)\ A = 218$ cf

Comparison

$Q_{100} = 0.27 - 0.25 = 0.02$ cfs increase
$V_{100} = 218 - 87 = 131$ cf increase

Pond Volume

$(628+515)/2.(4) + (256+84)/2\ (1) + (84+0)/2\ (.5) = 840$ c.f.

VICINITY MAP D-20
SCALE 1" = 800'

BENCH MARKS
T.B.M. - F.F.Elev. = 5607.00
B.M. - N.E. Bonnet Bolt on Fire Hydrant at the N.E. Corner of Jacobo Court, N.E. and San Francisco Road, N.E. Elev. = 5578.92

AS BUILT INFORMATION
CONTRACTOR
DATE
SURVEYED BY
DATE
DRAWN BY
DATE
CHECKED BY
DATE
MICRO-FILM INFORMATION
DRAWN BY
DATE

SURVEY INFORMATION
FIELD NOTES BY
DATE
NO.

ENGINEER'S SEAL

REMARKS
NO. DATE BY

REVISIONS
DESIGN
DESIGNED BY TTM DATE 7-85
DRAWN BY AJ DATE 7-85
CHECKED BY TTM DATE 7-85

RECEIVED
JUL 11 1988
HYDROLOGY SECTION

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: GRADING & DRAINAGE PLAN
7505 DON GASPAR DRIVE, NE

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
D.R.C. Chair					
Trans. Dev.					
Utility Dev.					

DRAWING NO. | MAP NO. D-20 | SHEET 1 OF 1

RE 24 DATE 3.15.02 OP EP

CITY OF ALBUQUERQUE

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DIRECTOR

CITY OF ALBUQUERQUE
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STATE OF NEW MEXICO
My Commission Expires 07/25/2005

PLANS/PLATS ON FILE

FILE DESC: D20/D3E1

PLANS/PLATS 1

F30 D24 C20 B16 A12 CITY OF ALBUQUERQUE C D F