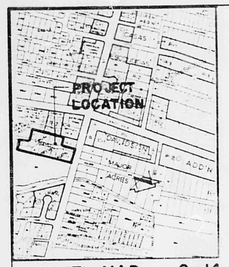
HYDROLOGY

G14/D5
1 PLAN

G14/D5

1 Plan



VICINITY MAP G-14
SCALE 1" = 800'

· LEGEND ·

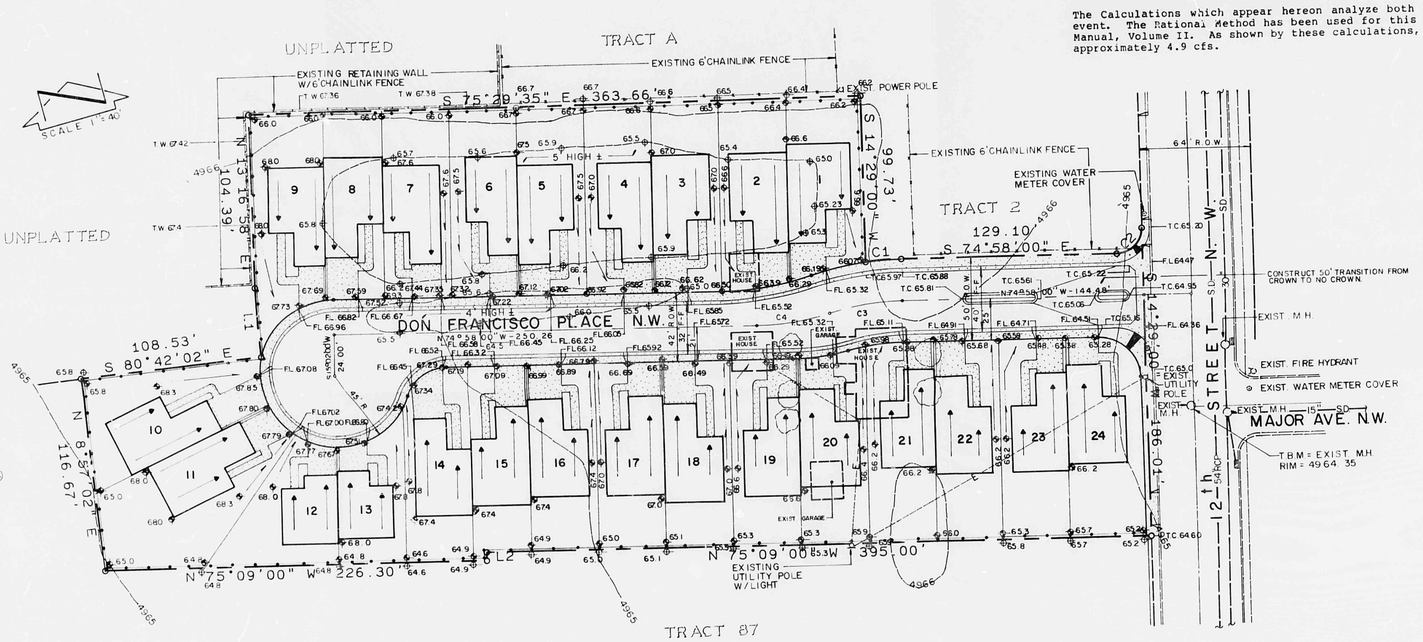
- PROPOSED SPOT ELEVATION
- EXISTING SPOT ELEVATION
- 56 — PROPOSED CONTOUR
- 5556 — EXISTING CONTOUR
- SWALE
- PROPERTY LINE
- CONCRETE
- PROPOSED ASPHALT
- PROPOSED FENCE
- EXISTING FENCE
- TC 02.00 — TOP OF CURB
- FL 01.65 — FLOW LINE
- ROOF DRAINAGE
- EXISTING STORM INLET

· LEGAL DESCRIPTION ·

LOTS 1-24, DON FRANCISCO COMPOUND, A REPLAT OF REEVES' ADDITION LOTS 1-13.

· TEMPORARY BENCHMARK ·

TOP OF RIM ELEVATION OF MANHOLE LOCATED @ ℄ OF THE INTERSECTION OF 12TH ST. N.W. & MAJOR AVE. N.W.
ELEV = 4964.35 ft. (M.S.L.D.)



FINISH FLOOR ELEVATION		
LOT	GARAGE	HOUSE
1	4966.60	4967.10
2	4966.60	4967.10
3	4967.00	4967.50
4	4967.00	4967.50
5	4967.50	4968.00
6	4967.50	4968.00
7	4967.65	4968.15
8	4968.00	4968.50
9	4968.00	4968.50
10	4968.20	4968.70
11	4968.20	4968.70
12	4968.00	4968.50

FINISH FLOOR ELEVATION		
LOT	GARAGE	HOUSE
13	4968.00	4968.50
14	4967.60	4968.10
15	4967.60	4968.10
16	4967.60	4968.10
17	4967.10	4967.60
18	4967.10	4967.60
19	4966.60	4967.10
20	4966.60	4967.10
21	4966.20	4966.70
22	4966.20	4966.70
23	4966.20	4966.70
24	4966.20	4966.70

LINE	BEARING	DISTANCE
L1	N 11°14'21" E	41.81
L2	S 14°36'35" W	5.00

CURVE	ARC	DELTA	RADIUS	CHORD LENGTH	CHORD BEARING
C1	21.16	7°07'52"	170.00	21.15	S 78°31'56" E
C2	23.71	90°33'00"	15.00	21.31	N 59°45'30" E
C3	43.58	179°13'15"	145.00	43.42	N 83°34'37" W
C4	43.58	179°13'15"	145.00	43.42	N 83°34'37" W

DRAINAGE PLAN

The following items concerning the Don Francisco Compound 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 west side of 12th Street, N.W. and just south of Candelaria Road, N.W. At present, the site is undeveloped. Much of the surrounding area is currently developed. As shown by Plate G-14 of the Albuquerque Master Drainage Study, the site does not lie within a Designated Flood Hazard Zone. Furthermore, downstream flooding is not apparent, and therefore, does not appear to be a problem. Also, a new storm public storm drain system is currently under construction Project No. 2063 in 12th Street, N.W., and will be completed by January, 1986. Based upon the apparent downstream capacity of 12th Street, N.W., and the fact that this is an infill site, the free discharge of runoff from this site is appropriate.

At present, the majority of runoff generated by this parcel does not freely drain and effectively ponds onsite. A small portion of the runoff, however, flows from west to east onto 12th Street, N.W. In addition, some offsite flows enter the site along the north and south property lines. This runoff, which has been quantified in the calculations, will be accepted and conveyed through the site onto 12th Street, N.W.

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 existing and proposed improvements. As shown by this plan, the proposed improvements consist of the construction of single family townhouse dwelling units. That runoff which is generated by the houses, driveways, and front yards will drain to Don Francisco Place N.W. From this point, the runoff will flow east to 12th Street N.W. where it will flow south along the west edge of 12th Street N.W. to the aforementioned Public Storm Drain System which is presently under construction. The rain which falls upon the backyards will be drained away from the houses and will remain in the backyards. This will represent a negligible amount of runoff generated by 100% pervious areas. This method of handling the backyard runoff is also consistent with the previously approved plan for this site. Lastly, no retaining walls are required by this plan. Most backyards have the recommended 10% slope with 1% being the flattest and 30% (3:1) being the steepest.

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 for this analysis in accordance with the City of Albuquerque Development Process Manual, Volume II. As shown by these calculations, the proposed improvements will result in a net increase in peak runoff of approximately 4.9 cfs.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey, Plate 20:
Ge - Gila Clay Loam
Gb - Gila loam
Hydrologic Soil Group B

Rational Method

Discharge: $Q = CiA$
where C varies
$i = P_6\,(6.84)\,T_c^{-0.51} = 4.65$ in./hr
$P_6 = 2.2$ in (DPM Plate 22.2 D-1)
$T_c = 10$ min (minimum)
A = area, acres

Volume: $V = CP_6A(1/12)$
where C varies
$P_6 = 2.2$ in (DPM Plate 22.2 D-1)
A = area, sf

Existing Condition

$A_{total} = 138{,}358$ sf $= 3.18$ Ac
$A_{IMP} = 3{,}500$ sf; % impervious = 3%
$C = 0.35$ (DPM Plate 22.2 C-1)
$Q_{100} = CiA = 0.35(4.65)(3.18) = 5.2$ cfs
$V_{100} = CP_6A = 0.35(2.2/12)(138{,}358) = 8{,}880$ cf

Developed Condition

$A_{total} = 138{,}358$ sf $= 3.18$ Ac
$A_{IMP} = 94{,}500$ sf; % impervious = 68%
$C = 0.68$ (DPM Plate 22.2 C-1)
$Q_{100} = CiA = 0.68(4.65)(3.18) = 10.1$ cfs
$V_{100} = CP_6A = 0.68(2.2/12)(138{,}358) = 17{,}250$ cf

Offsite Flows

$A_{total} = 18{,}000$ sf $= 0.41$ Ac
$A_{IMP} = 4{,}000$ sf; % impervious = 22%
$C = 0.44$ (DPM Plate 22.2 C-1)
$Q_{100} = CiA = 0.44(4.65)(0.41) = 0.8$ cfs
$V_{100} = CP_6A = 0.44(2.2/12)(18{,}000) = 1{,}450$ cf

Comparison

$\Delta Q_{100} = 10.1 - 5.2 = 4.9$ cfs (increase)
$\Delta V_{100} = 17{,}250 - 8{,}880 = 8{,}370$ cf (increase)

RECEIVED
DEC 18 1985
HYDROLOGY SECTION

APPROVED FOR ROUGH GRADING (±1')

CITY ENGINEER DATE

AS BUILT INFORMATION
CONTRACTOR — DATE
WORK STAKED BY — DATE
INSPECTOR'S ACCEPTANCE BY — DATE
FIELD VERIFICATION BY — DATE
DRAWINGS CORRECTED BY — DATE
MICRO-FILM INFORMATION
RECORDED BY — DATE
NO.

BENCH MARKS
(ACS 8-G14) A SQUARE CUT IN THE SOUTH EAST CORNER OF THE INTERSECTION OF 12TH ST. N.W. IN THE S.E. QUADRANT OF THE INTERSECTION.
ELEV. = 4966.39 ft. (M.S.L.D.)

SURVEY INFORMATION
FIELD NOTES
NO. — BY — DATE

REFERENCES
MAP NO. — W.O. NO.
EST. NO.

NO.	DATE	REMARKS	BY

BOHNAY ASSOCIATES
811 DALLAS N.E. - ALBUQUERQUE - NEW MEXICO - 87110
ENGINEERS
JOB NO. 5262

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

TITLE: DON FRANCISCO COMPOUND
GRADING & DRAINAGE PLAN

DRAWING NO.

SHEET 3 OF 6