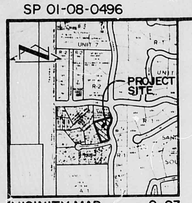
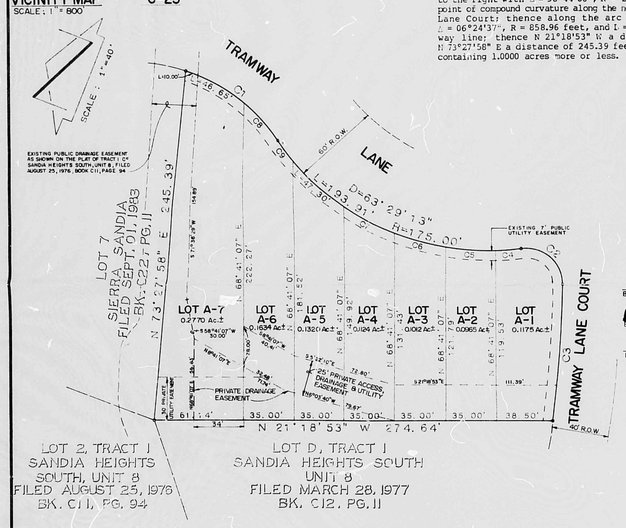
PUBLIC WORKS/HYDROLOGY

C23/D2

SP 01-08-0496



VICINITY MAP C-23
SCALE: 1" = 800'



DESCRIPTION

A certain tract of land located within Bernalillo County, New Mexico, and comprising Lot A, Tract 1 of Sandia Heights South, Unit 8, as shown on the plat filed in the Office of the County Clerk of Bernalillo County on March 28, 1977, Book C12, Page 11, and being more particularly described as follows:

Beginning at the northeast corner of the parcel herein described, being a point along the west right-of-way line of Tramway Lane; thence along the arc of a curve to the right with Δ = 37°45'56", R = 125.00 feet, and L = 82.39 feet to a point of compound curvature along said right-of-way line; thence along the arc of a curve to the left with Δ = 63°29'13", R = 175.00 feet, and L = 193.91 to a point of compound curvature along said right-of-way line; thence along the arc of a curve to the right with Δ = 98°44'06", R = 25.00 feet, and L = 43.08 feet to a point of compound curvature along the north right-of-way line of Tramway Lane Court; thence along the arc of a curve to the right with Δ = 06°24'37", R = 858.96 feet, and L = 96.10 feet along said right-of-way line; thence N 21°18'53" W a distance of 274.64 feet; thence N 73°27'58" E a distance of 245.39 feet to the point of beginning and containing 1.0000 acres more or less.

State of New Mexico } SS
County of Bernalillo }
Filed for record and recorded on this 2 day of Aug 1985 in Book C27 Page 140 of the records of Bernalillo County, New Mexico.
Witness my hand and seal of office
Deputy

85 51004 PLAT OF LOTS A-1 THROUGH A-7 A REPLAT OF LOT A, TRACT 1, SANDIA HEIGHTS SOUTH, UNIT 8 BERNALILLO COUNTY, NEW MEXICO JANUARY, 1985

RECEIVED SEP 2 1985 HYDROLOGY SECTION

DEDICATION
The undersigned owners of the land shown hereon do hereby consent to the subdivision of said land in the manner shown on this plat and do hereby grant all private access, drainage and utility easements, including the right of ingress and egress and the right to trim interfering trees.

Van W. Tillotson 1-11-85
VAN W. TILLOTSON — Date

CAROLYN M. TILLOTSON — DATE

ACKNOWLEDGEMENT
STATE OF NEW MEXICO)
COUNTY OF BERNALILLO) SS
My Commission Expires 6/27/88

The foregoing instrument was acknowledged before me this 11th day of January 1985
Ruth A. Armand SP-85-276
Notary Public

APPROVALS: SCS-85-9 / DRB-85-36

N.A.
Bernalillo County Planner — Date

Barbara J. Seward 6-20-85
Bernalillo County Board of Commission Chairman — Date

6/21/85
Bernalillo County Commission Chairman — Date

Richard Dwan 6-25-85
Planning Director, City of Albuquerque, N.M. — Date

Jon E. Eichgrand 6-25-85
Water Resources, City of Albuquerque, N.M. — Date

Fred J. Fagan 6-25-85
City Engineer, City of Albuquerque — Date

Don Sobo 6-19-85
Dir. P.O.A., City of Albuquerque — Date

Robert A. Tramm 6-25-85
Traffic Engineer, City of Albuquerque, N.M. — Date

Martin Valdez 6-25-85
Parks and Recreation, City of Albuquerque, N.M. — Date

Neil Clark 062485
Chief City Surveyor, City of Albuquerque, N.M. — Date

A. Val Valdez 6-24-85
Property Manager, City of Albuquerque, N.M. — Date

CERTIFICATION
I, Thomas T. Mann, Jr., do hereby certify that I am a registered Land Surveyor under the laws of the State of New Mexico, and that this plat was prepared by me or under my supervision; shows all easements noted in a title report prepared by Title Insurance Company of Minnesota on August 2, 1984; meets the minimum requirements of monumentation and surveys of the Albuquerque Subdivision ordinance, and is true and correct to the best of my knowledge and belief.

Thomas T. Mann 6/7/85
Thomas T. Mann, Jr., N.M.P.E. & L.S. No. 3792 — Date

REGISTERED PROFESSIONAL ENGINEER AND LAND SURVEYOR — THOMAS T. MANN, JR. — 3792 — STATE OF NEW MEXICO

ACKNOWLEDGEMENT
STATE OF NEW MEXICO)
COUNTY OF BERNALILLO) SS
My Commission Expires 6-27-88

The foregoing instrument was acknowledged before me on this 7th day of February, 1985
Ruth A. Armand
Notary Public

CURVE DATA			
CURVE	ARC	DELTA	RADIUS
C1	82.39	37°45'56"	125.00
C2	43.08	98°44'06"	25.00
C3	96.10	6°24'37"	858.96
C4	17.29	5°59'54"	175.00
C5	35.13	11°30'08"	175.00
C6	98.37	11°54'06"	175.00
C7	39.66	10°59'14"	175.00
C8	35.74	16°28'51"	125.00
C9	18.16	5°56'40"	175.00

Notes:

1. A field survey was not performed; no corners were found or set.
2. No street mileage was created.
3. All distances are ground distances.
4. Site located within Section 14, T11N, R4E, N.M.P.M.
5. Bearing base is "Replat of Southern Portion of Tract 1, Sandia Heights South, Unit 8, filed March 28, 1977, Book C12, Page 11.

CONRAD ASSOCIATES P.C.
811 DALLAS N.E. - ALBUQUERQUE - NEW MEXICO - 87110
ENGINEERS
Job No. 41031

PLANS/PLATS ON FILE

FILE DESC: C23/D2

PLANS/PLATS 2

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R# 24 DATE 3/4/02 OP

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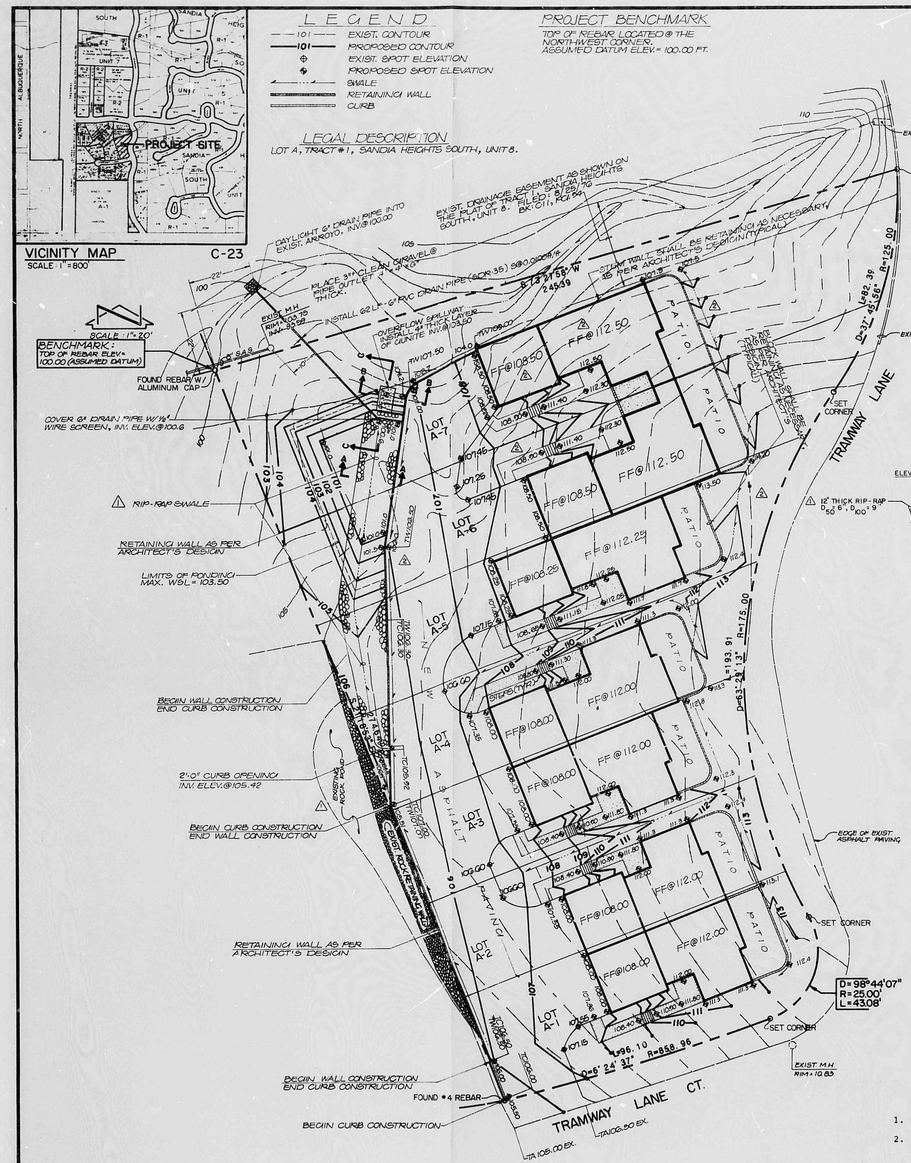
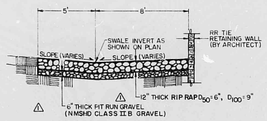
DIRECTOR

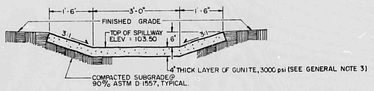
NOTARY PUBLIC
OFFICIAL SEAL Roberta Duran NOTARY PUBLIC STATE OF NEW MEXICO My Commission Expires 07/07/02

D24 C20 B16 A12 CITY OF ALBUQUERQUE C D

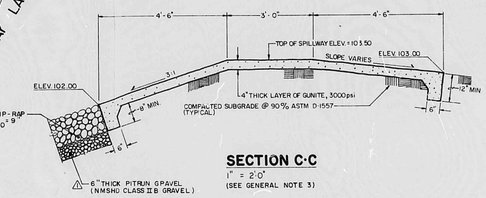




SECTION A-A
1" = 5'0"



SECTION B-B
1" = 2'0"



SECTION C-C
1" = 2'0"
(SEE GENERAL NOTE 3)

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.

CONSTRUCTION NOTES:

1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE 765-1234. 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 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 & BERNALILLO COUNTY ROAD DEPARTMENT REQUIREMENTS.

GENERAL NOTES

1. Roof drainage shall not be permitted to drain into the patio areas.
2. Patio walls shall be provided with weepholes at grade on the downhill side; these weepholes shall not be permitted in the common walls.
3. A 3000 psi concrete spillway will be acceptable in lieu of gunite; all other criteria shall be met.
4. Grading beyond the limits shown shall not be permitted to minimize disturbance to the natural terrain.
5. Splash blocks shall be provided beneath all canales and/or scuppers.

JEFFREY G. MORTENSEN NEW MEXICO 8547 REGISTERED PROFESSIONAL ENGINEER 12-7-84

DRAINAGE PLAN

The following items concerning the Lot A, Tract 1, Sandia Heights South, Unit 8, 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 northwest corner of Tramway Lane N.E. and Tramway Lane Court N.E. The site is presently undeveloped. Much of the surrounding land is developed residentially.

As shown by Plate 11 of the Flood Boundary and Floodway Maps of the City of Albuquerque, Bernalillo County, the site does not lie within a Flood Hazard Zone, however, downstream flooding conditions are identified in the existing arroyo that flows along the north property line of the subject site. Because of this flooding, controlled discharge will be required for this site. Presently, the site drains from east to west and ultimately discharges its runoff to the aforementioned arroyo. This arroyo, located in a drainage easement along the north property line, will divert all offsite flows from the adjacent site to the north to a point past the project site. No offsite flows will enter from the adjacent sites to the west and south due to the fact that those sites are topographically lower than the project site. To the east, Tramway Lane N.E. will divert most offsite flows to a point downstream from the subject site. Only that runoff generated by the west half of Tramway Lane N.E. adjacent to the site will enter the project site from the east. These flows will be negligible.

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 elevations, 3) the limit and character of the proposed improvements, and 4) the limits of ponding. As shown by this plan, the proposed improvements include seven residential townhomes, asphalt paving and landscaping. The site will drain from east to west to a low point located at the west side of the common driveway. The runoff will then be conveyed through a gravelled swale to a positive discharge pond located in the northwest corner of the project site. The pond will be drained by a 6-inch drainpipe daylighted into the arroyo. The pond depth will not exceed 2.5 feet. An overflow spillway is provided to protect the pond embankments from being overtopped.

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. The pond release rate is analyzed based on the Orifice Equation. The required pond volume was determined by hydrograph analysis. The Average End-Area Method was used to calculate the actual pond volume. The spillway capacity was analyzed based on the Weir Equation for rectangular weirs. As shown by the calculations, the proposed improvements will decrease the peak discharge from the site by approximately 0.9 cfs.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey, Plate 12:
Etc, Embudo - Tijeras Complex; gravelly fine sandy loam
Hydrologic Soil Group B

Rational Method

Discharge: $Q = CiA$
where C varies
$i = P_6\,(6.84)\,T_c^{-0.51} = 5.50$ in/hr
$P_6 = 2.6$ in (DPM Plate 22.2D-1)
$T_c = 10$ min (mimimum)
A = area, acres

Volume: $V = CP_6A(1/12)$
where C varies
$P_6 = 2.6$ in (DPM Plate 22.2D-1)
A = area, sf

Existing Condition

$A_{total} = 43{,}560$ sf = 1.00 Ac
$A_{IMP} = 0$ sf; % impervious = 0%
$C = 0.34$ (DPM Plate 22.2C-1)
$Q_{100} = CiA = 0.34\,(5.50)(1.00) = 1.9$ cfs
$V_{100} = CP_6A = 0.34\,(2.6/12)(43{,}560) = 3210$ cf

Developed Condition

$A_{total} = 43{,}560$ sf = 1.00 Ac
$A_{IMP} = 19{,}548$ sf; % impervious = 45%
$C = 0.55$ (DPM Plate 22.2C-1)
$Q_{100} = CiA = 0.55\,(5.50)(1.00) = 3.0$ cfs
$V_{100} = CP_6A = 0.55\,(2.6/12)(43{,}560) = 5190$ cf

6" Drain Pipe Capacity

$Q = CA\sqrt{2gh}$ (Orifice Equation)
where C = 0.45
A = 0.20 sf
$g = 32.2$ ft/sec^2
h = 2.0 ft
$Q = 0.45\,(0.20)\sqrt{2(32.2)(2.0)}$
Q = 1.0 cfs

Comparison

$\Delta Q_{100} = 1.9 - 1.0 = 0.9$ cfs (decrease)
$\Delta V_{100} = 5190 - 3210 = 1980$ cf (increase)

Pond Volume

Average End-Area Method

$V_{pond} = 1/2\,(A_{top\ elev} + A_{bottom\ elev})$(top elevation - bottom elevation)

$V_{pond} = 1/2\,(A_{103.50} + A_{101.00})(103.50 - 101.00) +$
$1/2\,(A_{101.00} + A_{100.60})(101.00 - 100.60)$

$V_{pond} = 1/2\,(1425 + 634)(2.5) + 1/2\,(634 + 0)(0.40)$

$V_{pond} > V_{pond}$ required

2700 cf > 2280 cf (determined by Hydrograph Analysis)

Spillway Capacity

$Q = 3.33\,(L - 0.2H)\,H^{1.5}$ (Weir Equation for rectangular weirs)
where L = 3.0 ft
H = 0.5 ft
$Q = 3.33\,(3.0 - 0.2(0.5))\,0.5^{1.5}$
$Q = 3.4$ cfs > Q_{100}

RECEIVED SEP 2 1989 HYDROLOGY SECTION

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DIRECTOR 11/5/92
NOTARY PUBLIC
OFFICIAL SEAL Roberta Duran NOTARY PUBLIC STATE OF NEW MEXICO My Commission Expires 8/28/92

BOHANNAN-HUSTON INC. ENGINEERS
8181 DALLAS, N.E. · ALBUQUERQUE · NEW MEXICO · 87110

NO.	DATE	BY	REVISIONS
1	2/85	J.T.O.	REVISIONS AS PER AMAFCA COMMENTS
2	2/85	J.T.O.	SITE REVISIONS, GRADES & RETAINING WALL IN NORTHERLY UNITS.

DESIGNED BY J.T.O.
DRAWN BY C.G.C.
APPROVED J.G.M.
JOB NO. 4-1031
DATE 12/84

GRADING & DRAINAGE PLAN
LOT A, TRACT # 1, SANDIA HEIGHTS SOUTH, UNIT 8

FILE NO.
SHEET 1 OF 1

D 24 C 20 B 16 A 12 CITY OF ALBUQERQUE C D