HYDROLOGY G10/D3B 2 PLANS

G 10/D3B

2 PLANS

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

DESIGN HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

June 6, 1985

Joe Jones
Denney-Gross & Associates, Inc.
2400 Comanche Road, NE
Albuquerque, New Mexico 87107

RE: DRAINAGE REPORT FOR EL RANCHO ATRISCO, UNIT 2B
(G-10/D3R) RECEIVED MAY 30, 1985

Dear Mr. Jones:

The referenced plan dated April 11, 1985, is approved to submit for the work order process.

If you have any questions or comments regarding this project, please call me at 766-7644.

Cordially,

Carlos A. Montoya

Carlos A. Montoya, P.E.
City/County Floodplain Administrator

CAM/bsj

Academy Engineering, Inc.
5353 Wyoming Blvd. N.E., Suite 3 • Albuquerque, New Mexico 87109 • (505) 821-8008

DRAINAGE REPORT

FOR

EL RANCHO ATRISCO UNIT 9

PHASE I

RECEIVED
MAY 30 1985
HYDROLOGY SECTION

SCOPE

The objective of this report is to present a comprehensive analysis of the Drainage Management and proposed plan of the El Rancho Atrisco Unit 9 Phase 1 Subdivision.

BACKGROUND

The property is currently zoned R-D. The proposed development consists of 49 townhouses on 7.39 acres. The project will be developed pursuant to the R-T zone requirements as stipulated by the R-D zone.

The site is located on the east side of Ouray Road NW, between Ronda de Lechusas and Ladera Street. Bounded on the north by El Rancho Atrisco Unit 2, the east by the Ladera Golf Course, the south by undeveloped property and to the west by El Rancho Atrisco Unit 8 (see attachment).

NATURAL DRAINAGE

The site, in its natural state, slopes roughly to the north and east at approximately 3% and less. Offsite drainage from the west and south is presently intercepted by Ouray Road. An existing channel located between El Rancho Atrisco Units 2 and 9 currently provides the drainage from the north bound portion of Ouray Road. The balance of the offsite drainage is conveyed to the Ladera Golf Course by Ouray Road easterly. The channel between Units 2 and 9 is currently unimproved and is proposed to be improved as a part of this project.

DEVELOPED RUNOFF

At this time, 7.39 acres of developed runoff will be created. Ultimately 16+ acres will be developed. Due to the available capacity of the proposed improved channel, approximately 6.2 acres of developed runoff will be added to the channel with this phase and ultimately up to 16 acres of development. Calculations attached address the proposed runoff and the ultimate runoff.

DESIGN CRITERIA

This analysis is based on the Rational Method of runoff calculation; the City D.P.M. supplements for such calculations were also used. Calculations were performed to establish 100 year frequency and the 10. year frequency storm runoff.

DRAINAGE PLAN

The primary concept is to drain each lot to the street, whereon the drainage would be taken to the northeast corner of the site. A concrete lining would then control the runoff and deposit water in the channel on the north side of the project. Some minor variations in the concept do exist. Lots created such that the rear yard abuts the golf course or the channel would be allowed to drain the rear yard in the historic direction offsite. Due to the townhouse concept, a few lots required rear lot ponding. Every possible form was studied in order to minimize the need for ponding.

The offsite contribution from Phase II is proposed to be handled by an earthen swale. The purpose of the swale is to place the offsite drainage in the adjacent channel and avoid sedimentation in the newly constructed streets.

DRAINAGE INFORMATION SHEET

PROJECT TITLE: EL RANCHO ATRISCO UNIT 2-B ZONE ATLAS/DRNG. FILE #: G-10 / D36

LEGAL DESCRIPTION: Portion of El Rancho Atrisco Tract 2

CITY ADDRESS: N/A

ENGINEERING FIRM: Denney-Gross & Associates, Inc. CONTACT: Joe Jones

ADDRESS: 2400 Comanche Road N.E., Albq., NM PHONE: 884-0696

OWNER: Mr. G. Mueller CONTACT: Gerhard Mueller

ADDRESS: Suite 500, 2625 Pennsylvania N.E., Alb. PHONE: 292-5851

ARCHITECT: N/A CONTACT:

ADDRESS: PHONE:

SURVEYOR: Denney-Gross & Associates, Inc. CONTACT: Steve Youtsey

ADDRESS: 2400 Comanche Road N.E., Albq., NM PHONE: 884-0696

CONTRACTOR: N/A CONTACT:

ADDRESS: PHONE:

PRE-DESIGN MEETING:

X YES
NO
COPY OF CONFERENCE RECAP SHEET PROVIDED

RECEIVED
MAY 30 1985
HYDROLOGY SECTION

B No.
PC No.
ROJ. No.

TYPE OF SUBMITTAL:

X DRAINAGE REPORT
DRAINAGE PLAN
CONCEPTUAL GRADING & DRAINAGE PLAN
X GRADING PLAN
EROSION CONTROL PLAN
ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

SKETCH PLAT APPROVAL
PRELIMINARY PLAT APPROVAL
SITE DEVELOPMENT PLAN APPROVAL
FINAL PLAT APPROVAL
X BUILDING PERMIT APPROVAL
FOUNDATION PERMIT APPROVAL
CERTIFICATE OF OCCUPANCY APPROVAL
ROUGH GRADING PERMIT APPROVAL
GRADING/PAVING PERMIT APPROVAL
X OTHER work order (SPECIFY)

DATE SUBMITTED: 5-30-85

BY: Joe Jones
JOE JONES

DENNEY-GROSS & ASSOCIATES, INC.
CONSULTING ENGINEERS
2400 COMANCHE ROAD, N.E.
ALBUQUERQUE, NEW MEXICO 87107
(505) 884-0996

RECEIVED
MAY 30 1985
HYDROLOGY SECTION

May 30, 1985

Mr. Carlos Montoya
City Hydrology
123 Central Ave. N.W.
Albuquerque, NM 87104

Re: Drainage & Grading Plan for
El Rancho Atrisco Unit 2B
DGA Job No. 794.112B

Dear Mr. Montoya:

Enclosed for your approval is one revised copy of the drainage and grading plan for the above referenced project.

We have addressed the comment from your letter of May 23, 1985. Lots 21-26 are adjacent to the Ladera Golf Course and will be graded to drain to the rear in the historic direction offsite. This precedent was set with the approval of El Rancho Atrisco Unit 9A, a copy of which is enclosed.

If you have any questions please feel free to call.

Sincerely,

Joe Jones

Joe Jones

JJ/slp

Enclosure

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

DESIGN HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

May 23, 1985

Mr. Joe Jones
Denney-Gross & Associates, Inc.
2400 Comanche Road NE
Albuquerque, NM 87108

REF: DRAINAGE REPORT FOR EL RANCHO ATRISCO UNIT 2B (G10-D3B) RECEIVED APRIL 11, 1985

Dear Mr. Jones:

I have reveiwed the referenced plan and forward the following comment. Between Ladera Golf Course and Lots 21-26 there appears to be a need for retaining walls. Please show the retaining wall or proposed contours which would eliminate the need for retaining walls.

If you should have any questions, please feel free to call me at 766-7644.

Sincerely,

Carlos A. Montoya

Carlos A. Montoya
City/County Flood Plain Admin.

CAM:mrk

DENNEY-GROSS & ASSOCIATES, INC.
CONSULTING ENGINEERS
2400 COMANCHE ROAD, N.E.
ALBUQUERQUE, NEW MEXICO 87107
(505) 884-0896

April 11, 1985

Fred Aguirre
City Hydrology
123 Central N.W.
Albuquerque, NM 87103

Re: El Rancho Atrisco Unit 2-B
DGA Job No. 794.11
Zone Atlas G-10

Dear Mr. Aguirre:

Enclosed for your approval is one copy of the drainage and grading plan for El Rancho Atrisco Unit 2-B. The site is located adjacent to the west side of the Ladera Golf Course Detention Area approximately 0.5 miles northeast of the Plains Electric Co-op Station. There is an existing improved earthen channel adjacent to the south side of El Rancho Atrisco Unit 2-A which is adjacent to the south side of Unit 2-B. This channel drains directly into the Ladera Basin and was designed as part of the El Rancho Atrisco sector plan, which also included Unit 2-B. Runoff from Unit 2-B will street flow through Unit 2-A into a concrete drainage easement, into the earthen channel, and then into the Ladera Detention Facility.

If you have any questions please feel free to call.

Sincerely,

Joe Jones

Joe Jones

JJ/slp

encl.

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION/DESIGN HYDROLOGY SECTION

PRE-DESIGN CONFERENCE RECAP

HYDROLOGY SECTION PROJECT NO.: G10 DATE: 3-13-85

PLANNING DIVISION NOS. EPC: _____ DRB: _____

SUBJECT: Phase I El Rancho Atrisco 2B

LEGAL DESCRIP.: _____

APPROVAL REQUESTED

X PRELIMINARY PLAT _____ FINAL PLAT

_____ SITE DEVELOPMENT PLAN _____ BUILDING PERMIT

_____ ROUGH GRADING

	WHO:	REPRESENTING:
ATTENDANCE:	Joe Jones	
	Carl A Martz	

X Conceptual Drainage Plan/Report required for Preliminary Plat and/or Site Development Plan sign-off.

X Approved Drainage Plan/Report required for Final Plat and/or Building Permit sign-off.

X Subdivision Improvements Agreement or Financial Security required.

FINDINGS: ① DRAINAGE PLAN PER DPM ② Free discharge to Ladera. Must address capacity & treatment of flow from site to Ladera ③

The undersigned agrees that the above findings are summarized accurately and are only subject to change if further investigation reveals that they are not reasonable or that they are based on inaccurate information.

SIGNED:	Carl A Martz	SIGNED:	
TITLE:	CE Hydrology	TITLE:	
DATE:	3-13-85	DATE:	

NOTE PLEASE PROVIDE A COPY OF THIS RECAP WITH THE DRAINAGE SUBMITTAL

DRAINAGE MANAGEMENT PLAN

EL RANCHO ATRISCO UNIT 2b

Prepared For:
Mr. Gerhard Mueller & Mr. John Lasagnina

APRIL 1985

DGA JOB NO. 794.11

RECEIVED
APR 11 1985
HYDROLOGY SECTION

Prepared By:
Denney-Gross & Associates, Inc.
Consulting Engineers
2400 Comanche Road Northeast
Albuquerque, New Mexico 87107

DRAINAGE INFORMATION SHEET

PROJECT TITLE: EL RANCHO ATRISCO UNIT 2b ZONE ATLAS/DRNG. FILE #: G-10 / 38

LEGAL DESCRIPTION: Portion of El Rancho Atrisco, Tract 2

CITY ADDRESS: N/A

ENGINEERING FIRM: Denney-Gross & Associates, Inc. CONTACT: Joe Jones

ADDRESS: 2400 Comanche Road N.E., Albq. PHONE: 884-0696

OWNER: Mssrs. G. Mueller & J. Lasagnina CONTACT: Gerhard Mueller

ADDRESS: Suite 500, 2625 Pennsylvania N.E.,Albq. PHONE: 292-5851

ARCHITECT: N/A CONTACT:

ADDRESS: PHONE:

SURVEYOR: Denney-Gross & Associates, Inc. CONTACT: Steve Youtsey

ADDRESS: 2400 Comanche Road N.E., Albq. PHONE: 884-0696

CONTRACTOR: N/A CONTACT:

ADDRESS: PHONE:

PRE-DESIGN MEETING:

X YES
NO
X COPY OF CONFERENCE RECAP SHEET PROVIDED

RECEIVED
APR 11 1985
HYDROLOGY SECTION

DRB No.
EPC No.
PROJ. No.

TYPE OF SUBMITTAL:

X DRAINAGE REPORT
DRAINAGE PLAN
CONCEPTUAL GRADING & DRAINAGE PLAN
GRADING PLAN
EROSION CONTROL PLAN
ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

SKETCH PLAT APPROVAL
X PRELIMINARY PLAT APPROVAL
SITE DEVELOPMENT PLAN APPROVAL
FINAL PLAT APPROVAL
BUILDING PERMIT APPROVAL
FOUNDATION PERMIT APPROVAL
CERTIFICATE OF OCCUPANCY APPROVAL
ROUGH GRADING PERMIT APPROVAL
GRADING/PAVING PERMIT APPROVAL
OTHER (SPECIFY)

DATE SUBMITTED: 4-10-85

BY: Joe Jones
JOE JONES

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION/DESIGN HYDROLOGY SECTION

PRE-DESIGN CONFERENCE RECAP

HYDROLOGY SECTION PROJECT NO.: C410 DATE: 3-13-85

PLANNING DIVISION NOS. EPC: _____ DRB: _____

SUBJECT: Phase I El Rancho Atrisco 2-B

LEGAL DESCRIP.: _____

APPROVAL REQUESTED

X PRELIMINARY PLAT ____ FINAL PLAT

____ SITE DEVELOPMENT PLAN ____ BUILDING PERMIT

____ ROUGH GRADING

	WHO:	REPRESENTING:
ATTENDANCE:	Joe Jones	
	Carlos A Montoya	

X Conceptual Drainage Plan/Report required for Preliminary Plat and/or Site Development Plan sign-off.

X Approved Drainage Plan/Report required for Final Plat and/or Building Permit sign-off.

X Subdivision Improvements Agreement or Financial Security required.

FINDINGS: ① DRAINAGE PLAN PER DPM ② Free discharge to Ladera. Must address capacity & ③ treatment of flow from site to Ladera

The undersigned agrees that the above findings are summarized accurately and are only subject to change if further investigation reveals that they are not reasonable or that they are based on inaccurate information.

SIGNED:	Carlos A Montoya	SIGNED:	Joe Jones
TITLE:	CE Hydrology	TITLE:	
DATE:	3-13-85	DATE:	3-13-85

NOTE PLEASE PROVIDE A COPY OF THIS RECAP WITH THE DRAINAGE SUBMITTAL

I, Gary W. Tibljas, hereby certify that the enclosed documents and drawings were prepared under my supervision and are true and correct to the best of my knowledge and belief.

Gary W. Tibljas

New Mexico Professional Engineer No. 8117

GARY W. TIBLJAS
NEW MEXICO
8117
REGISTERED PROFESSIONAL ENGINEER

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EL RANCHO ATRISCO UNIT 2b

DRAINAGE MANAGEMENT PLAN

I. PURPOSE

The purpose of this report is to determine an economical and effective storm water management plan for subject project.

II. GENERAL

The development site consists of 10.1 acres located adjacent to the west side of the Ladera Golf Course Detention Area and is approximately 0.5 miles northeast of the Plains Electric Co-op Station. (See Exhibit I.) Presently the site slopes west to east at about 1%, and there is an undeveloped runoff of 6.6 cfs which flows directly into the Ladera Detention Area via overland flow. There is an existing concrete rundown located at the south end of the adjacent subdivision. This rundown drains into an improved earthen channel which drains directly into the Ladera Detention Facility. The site consists of Soil Type "A" and is not located within a flood plain. (See Exhibits II and III.)

III. DRAINAGE

The development site will be graded such that all lots will drain into the fronting street. (See Exhibit IV.) The runoff will then flow east into Vista Del Sur and then south into the existing concrete rundown. The rundown discharges into an existing improved earthen channel which immediately discharges into the Ladera Detention Facility.

IV. CONCLUSION

El Rancho Atrisco Unit 2b is part of the El Rancho Atrisco Sector Plan; therefore, drainage considerations utilized in this report are consistent with this plan. All runoff from Unit 2b will street flow into an existing concrete rundown which drains into an improved earthen channel. This channel was designed to handle runoff from the northern portion of the El Rancho Atrisco Sector which includes Unit 2b. The channel discharges immediately into the Ladera Golf Course Detention Basin.

DENNEY - GROSS & ASSOCIATES, INC.
ENGINEERS SURVEYORS PLANNERS
2400 COMANCHE ROAD N.E.
ALBUQUERQUE, NEW MEXICO 87107
(505) 884-0695

LOCATION EL RANCHO ATRISCO 26
PROJ. NO. 794.11
DATE 3-19-85
DESIGNER J JONES
PAGE 1

UNDEVELOPED RUNOFF

$A = 10.1$ Ac.

$C = 0.16$ (DPM 22.2 C-1)

SOIL TYPE 'A'
"SOIL SURVEY OF BERNALILLO COUNTY"
SOIL CLASS BCC

$T_c = 0.0078 \frac{L^{.77}}{S^{.385}}$

$T_c = 0.0078 \frac{(1200)^{0.77}}{(0.006)^{0.385}} = \underline{13 \text{ MIN}}$

$i = 6.84 (R)(T_c)^{-.51}$

$R = 2.2$ (DPM 22.2 D-1)

$i = 4.07$ $\quad Q = Ci A = 0.16(4.07)(10.1) = \underline{6.6 \text{ CFS}}$ UNDEVELOPED

DEVELOPED RUNOFF

AVG. IMPERVIOUS AREA PER LOT: PADS = 2000 ft²
DRIVE = 300 ft²
R.O.W. = 1600 ft²
TOTAL 3900 ft² USE 4000 ft²

AVG. LOT SIZE: 80 X 115 = 9200 ft²
RIGHT OF WAY: = 2000 ft²
TOTAL AREA = 11,200 ft²

PERCENT IMPERVIOUS = 4000/11,200 = 35.7% USE 36%

TYPE "A" SOIL $\underline{C = 0.34}$ (DPM 22.2 C-1)

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LOCATION EL RANCHO ATRISCO 2b
PROJ. NO. 794.11
DATE 3-19-85
DESIGNER J. JONES
PAGE 2

DEVELOPED RUNOFF (CONT'D)

$T_c = 0.0078 \frac{(1200)^{.77}}{(0.005)^{.385}}$

$T_c = 14.09$ min $\quad i = 6.84(2.2)(14.09)^{-.51}$

$i = 3.9$

$C = 0.34$

SITE IS DIVIDED INTO 3 DRAINAGE AREAS:

$A_1 = 4.1$ Ac $\quad Q_1 = 0.34(3.9)(4.1) = 6.1$ cfs

$A_2 = 3.5$ Ac $\quad Q_2 = 0.34(3.9)(3.5) = 5.2$ cfs

$A_3 = 2.5$ Ac $\quad Q_3 = 0.34(3.9)(2.5) = 3.7$ cfs

Q TOTAL $= \underline{15.0 \text{ cfs}}$

OFFSITE FLOWS

AREA = 0.10 Ac (NORTH WEST CORNER OF SITE)

C = 0.16 (DPM 22.2 C-1)

$i = 3.9 \quad Q = 0.16(3.9)(0.10) = \underline{0.06 \text{ cfs}}$ (NEGLIGIBLE)

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LOCATION EL RANCHO ATRISCO 2b
PROJ. NO. 794.11
DATE 4-2-85
DESIGNER J JONES
PAGE 3

STREET CAPACITY

VISTA ALEGRE — 6.1 cfs
SECATE ALTO — 5.2 cfs (100 YR RUNOFF)

NOTE: MOUNTABLE CURBS ROLL TYPE WILL BE USED FOR THE EAST WEST STREETS. STANDARD CURB AND GUTTER WILL BE USED FOR VISTA DEL SUR.

$S = 0.005$
$n = 0.017$
$A = 2.35$

MANNING'S $Q = \frac{1.486}{n}(S)^{1/2} A R^{2/3}$

$R = 0.15$

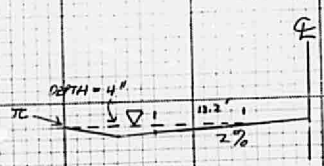
MAXIMUM DEPTH ALLOWABLE IS 0.2' ABOVE TC.

CHECK Q AT DEPTH = TC

$Q = \frac{1.486}{0.017}(0.005)^{0.5}(2.35)(0.15)^{0.67}$

$Q = 4.1$ cfs PER ½ STREET

$Q = 8.2$ cfs FOR FULL STREET



$A = 2.35$ ft²

$R = \frac{2.35}{15.83} = 0.15$

8.2 cfs > 6.1 cfs

CONCLUSION:

100 YR. RUNOFF WILL REMAIN IN THE STREET.

DENNEY - GROSS & ASSOCIATES, INC.
ENGINEERS SURVEYORS PLANNERS
2400 COMANCHE ROAD N.E.
ALBUQUERQUE, NEW MEXICO 87107
(505) 884-0695

LOCATION EL RANCHO ATRISCO 2B
PROJ. NO. 794.11
DATE 4-2-85
DESIGNER J JONES
PAGE 4

STREET CAPACITY (CONT'd)

VISTA DEL SUR
15 cfs FROM 2B

NOTE: STANDARD CURBS WILL BE USED ON VISTA DEL SUR.

Q FROM 2A

$Q = C i A$
$C = 0.34$
$i = 3.8$

$Q = 0.34(3.8)(8.5) = \underline{11.0 \text{ cfs}}$ FROM 2A

$A = 8.5$ AC

TOTAL Q IN VISTA DEL SUR = 26 cfs

(CHECK DEPTH AT EXISTING INTERSECTION OF VISTA DEL SUR AND MESA DE ARENA)

MANNING'S $Q = \frac{1.486}{n} S^{1/2} A R^{2/3}$

TYPICAL STREET SECTION

$S = 0.005$
$n = 0.017$
$Q = 26$ cfs

$26 = \frac{1.486}{0.017}(0.005)^{1/2} A R^{2/3}$

$A R^{2/3} = 0.297$

TRY DEPTH = 4"

$A = \frac{1}{2}(.33 + .205)(2) + \frac{1}{2}(10.25)(2.05) = 1.59 \text{ ft}^2$

$R = A/P = 1.59/13 = 0.085$

$A R^{2/3} = 0.305$ (OK)

CONCLUSION:

100 YR. FLOW DEPTH AT THE SOUTH END OF VISTA DEL SUR IS 0.33'.

DENNEY - GROSS & ASSOCIATES, INC.
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LOCATION EL RANCHO ATRISCO 2b
PROJ. NO. 794.11
DATE 3-19-85
DESIGNER J JONES
PAGE 5

CONCRETE DRAINAGE EASEMENT

TOTAL FLOW FROM 2b = 15 cfs

AREA 2A = 13.3 Ac
USE SAME IMPERVIOUS AS 2b
C = 0.34 (DPM 22.2 C-1)

$T_c = 0.0078 \frac{(1300)^{.77}}{(0.005)^{.385}} = 15$ min

$i = 6.84(2.2)(15)^{-.51} = 3.8$

$Q = CiA = 0.34(3.8)(13.3) = 17.2$ cfs FROM EL RANCHO ATRISCO 2A

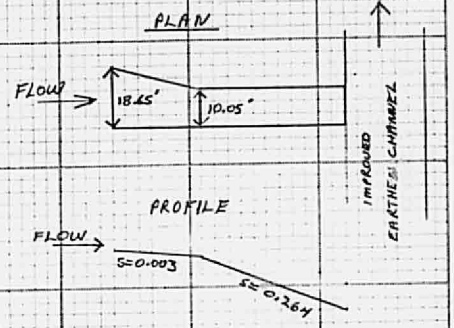
TOTAL FLOW TO EASEMENT : 32.2 cfs

CHECK INLET CAPACITY

Q AT INLET = 32.2 cfs

NOTE : SLOPE CHANGES FROM 0.003 TO 0.264 AT CONSTRICTION.

PLAN



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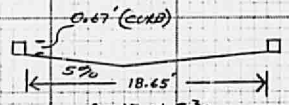
2400 COMANCHE ROAD N.E.
ALBUQUERQUE, NEW MEXICO 87107
(505) 884-0695

LOCATION EL RANCHO ATRISCO 26
PROJ. NO. 794.11
DATE 4-3-85
DESIGNER J JONES
PAGE 6

INLET CAPACITY (CONT'd)

$Q = C_c A_o C_v \sqrt{2g\,\Delta H}$

INLET CROSS SECTION



$A = 13.61\ ft^2/ft$

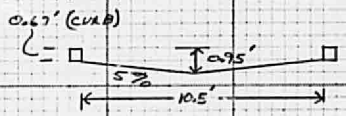
$Q = 32.2$
$C_c = 1.0$
$C_v = 0.86$
$A = 13.61\ ft^2/ft$

$32.2 = 1.0(13.61)(0.86)\sqrt{2(32.2)\,\Delta H}$

$\Delta H = 0.12'$

ΔH = DEPTH (DEPTH AT INLET)

OUTLET CROSS SECTION



$A = 7.67\ ft^2/ft$

CHECK CRITICAL DEPTH AT CONSTRICTION

$F^2 = \frac{V^2}{gd}$ $F^2 = 1$ @ CRITICAL DEPTH

$V = Q/A$

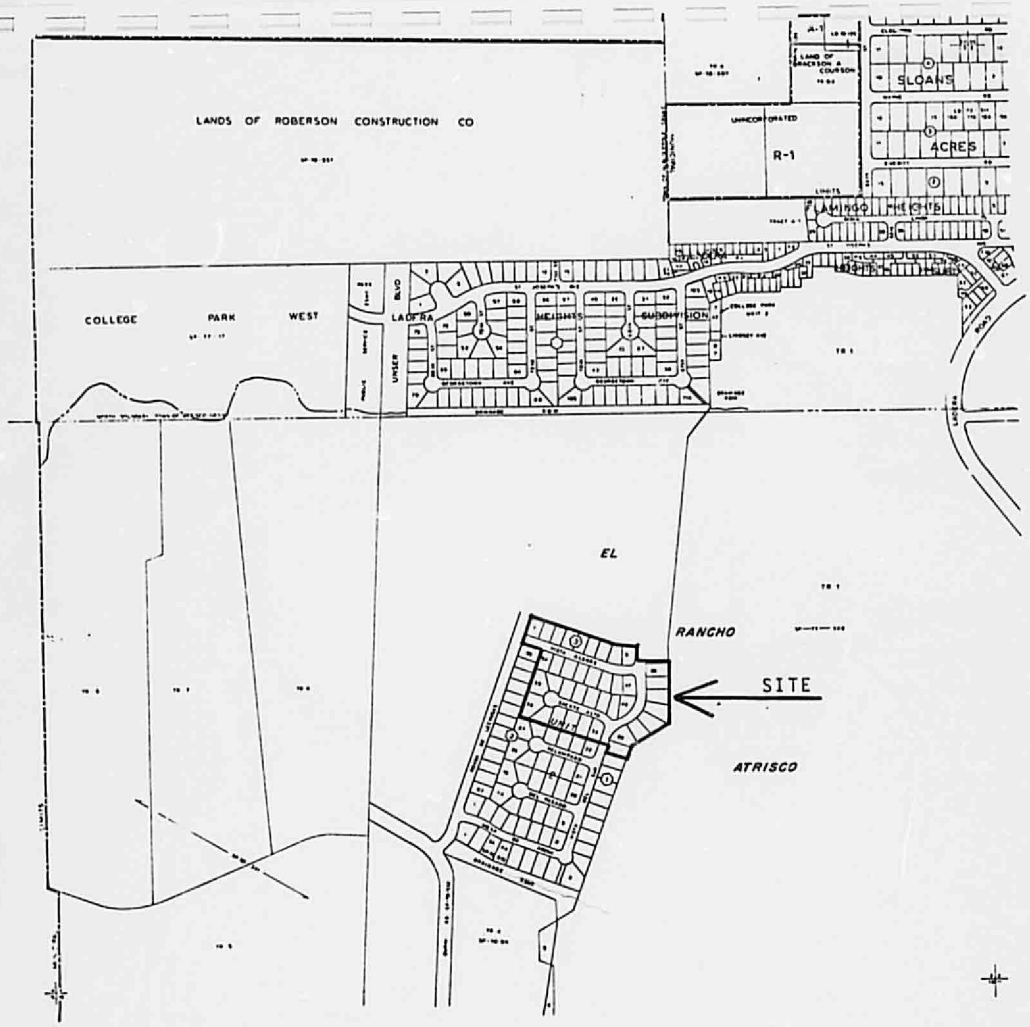
$F^2 = \frac{(Q/A)^2}{gd} = 1$

$Q = 32.2$ CFS
$A \approx 10.5d$
$g = 32.2$

$\left(\frac{32.2^2}{110.25d^2}\right) = 32.2d$

$0.29 = d^3$

$d = 0.66' < 0.87'$ (OK)



DRB 85 279
4-23-85

G-10-Z

EXHIBIT I

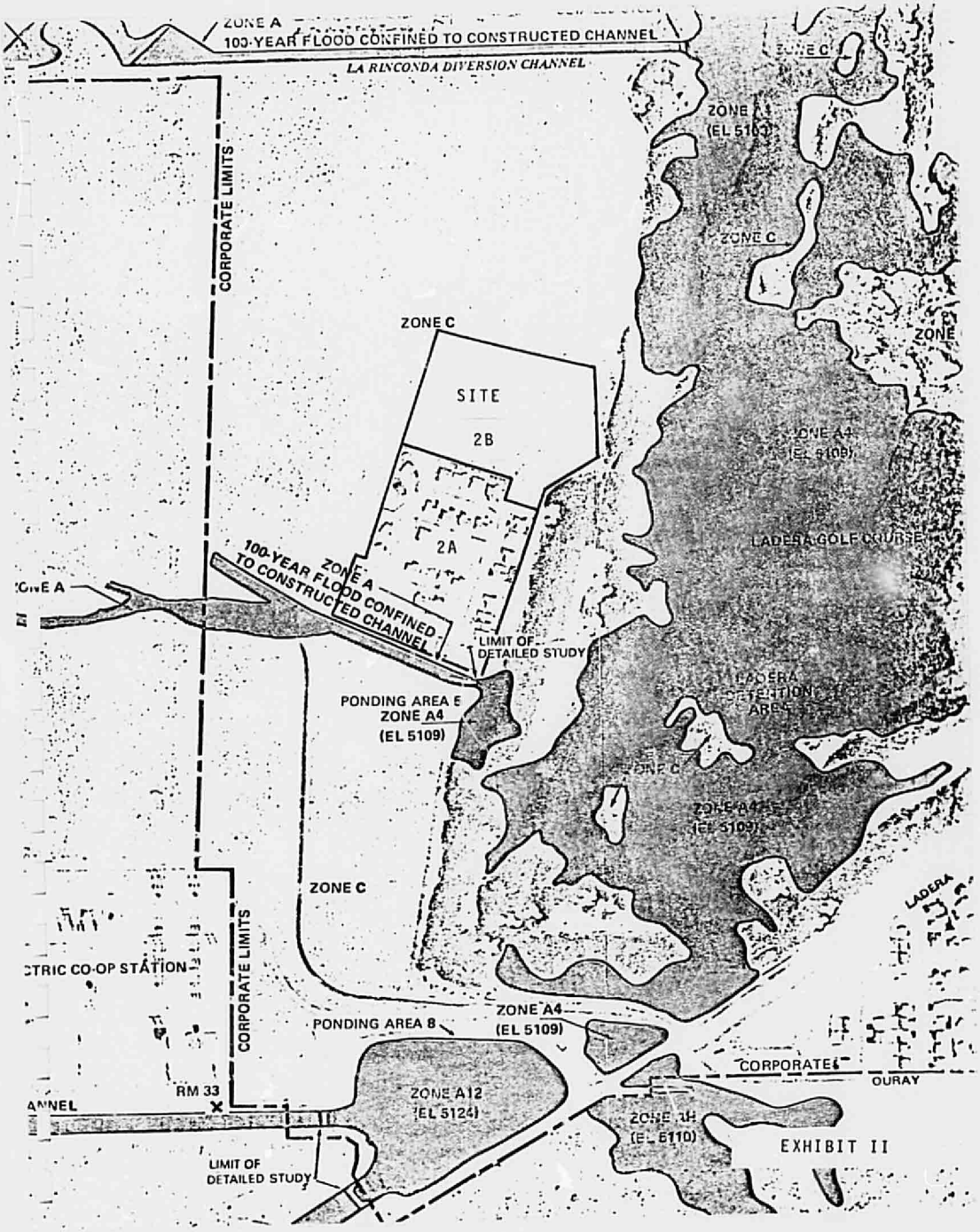

ZONE A
100-YEAR FLOOD CONFINED TO CONSTRUCTED CHANNEL
LA RINCONDA DIVERSION CHANNEL
CORPORATE LIMITS
ZONE C
SITE
2B
2A
ZONE A
100-YEAR FLOOD CONFINED TO CONSTRUCTED CHANNEL
LIMIT OF DETAILED STUDY
PONDING AREA E
ZONE A4
(EL 5109)
ZONE C
CORPORATE LIMITS
PONDING AREA 8
ZONE A4
(EL 5109)
ZONE A12
(EL 5124)
RM 33
LIMIT OF DETAILED STUDY
ZONE C
(EL 5160)
ZONE C
ZONE A4
(EL 5108)
LADERA GOLF COURSE
LADERA DETENTION AREA
ZONE C
ZONE A4
(EL 5109)
LADERA
CORPORATE
OURAY
ZONE A4
(EL 5110)

EXHIBIT II

BERNALILLO COUNTY, AND PARTS OF SANDOVAL

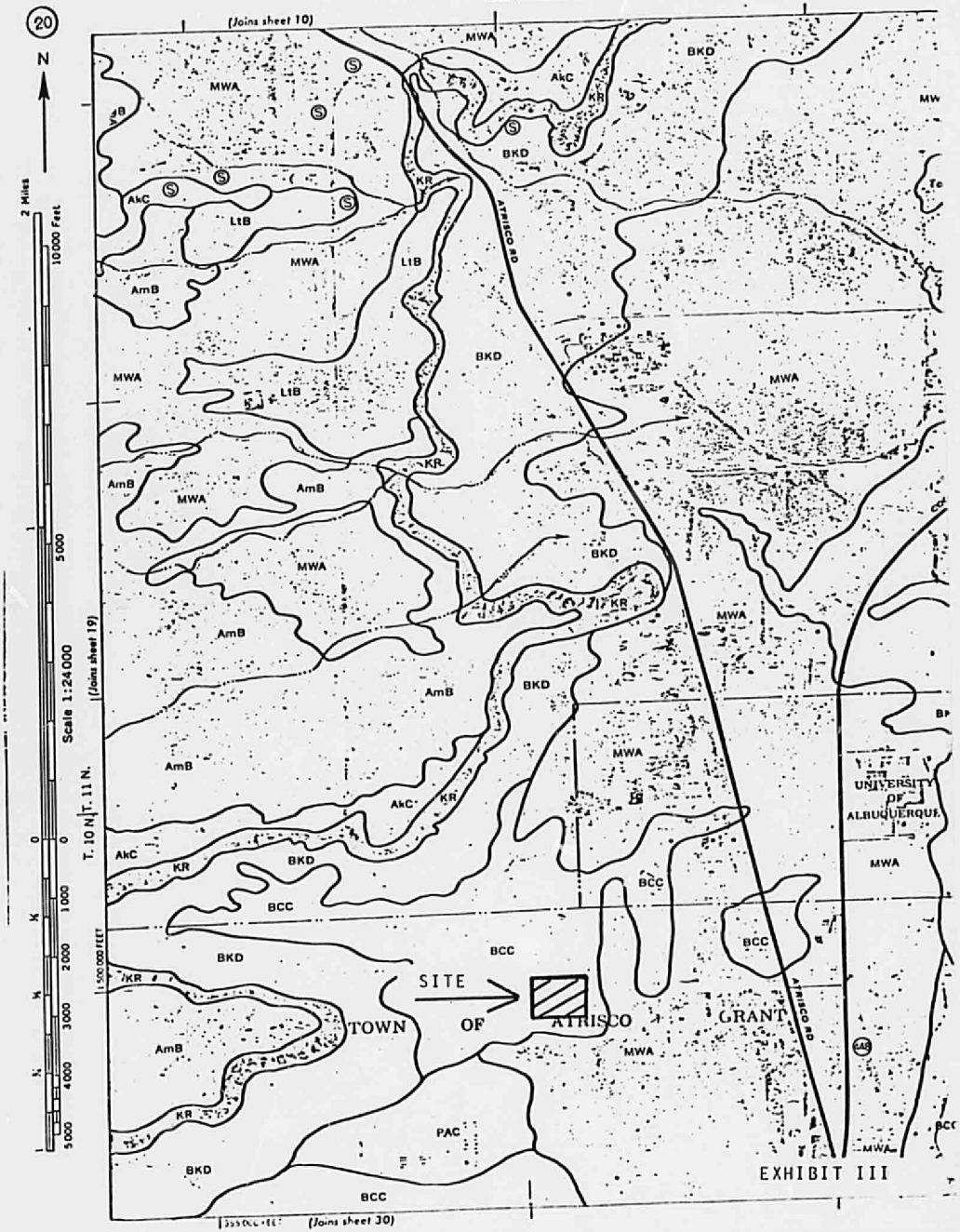


EXHIBIT III