310/0618

TERMINATION AND RELEASE OF AGREEMENT AND COVENANT
City Project No. 4972

THIS TERMINATION AND RELEASE OF AGREEMENT AND COVENANT is made and entered into as of the 15th day of October, 2012, by the City of Albuquerque, (the "City").

WHEREAS, **Westland Development Co, Inc**, a New Mexico Corporation, as User, entered into Agreement and Covenant dated **May 21, 1997**, (the "Agreement and Covenant"), with the City, as Grantor, which Agreement and Covenant was recorded **May 23, 1997**, in the office of the County Clerk of Bernalillo County, State of New Mexico, in Book **97-14**, Pages **204 thru 209**; as Document No. **97052272**, which permitted an **interim retention pond** on **Tract A, Cedar Ridge Estates, Unit 2**; and

WHEREAS, the City has determined that the Agreement and Covenant is no longer required.

THEREFORE, the City terminates the Agreement and Covenant and hereby releases and discharges the Property described in the Agreement and Covenant.

IN WITNESS WHEREOF, the undersigned has executed this Termination and Release of Agreement and Covenant as of the day and year first above written.

CITY OF ALBUQUERQUE
a municipal corporation

By: _____ 10-15-12 10-14-12
Richard Dourte, City Engineer date

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

This instrument was acknowledged before me on October 15, 2012, by Richard Dourte, City Engineer of the City of Albuquerque, a New Mexico municipal corporation on behalf of said corporation.

(SEAL)
OFFICIAL SEAL
LISA CORNEJO
NOTARY PUBLIC-STATE OF NEW MEXICO
My commission expires 7-5-2014

_____
Notary Public

My Commission Expires: 7-5-2014

Doc# 2012109159
10/18/2012 02:41 PM Page: 1 of 1
TERM R $25 00 M. Toulouse Oliver, Bernalillo County

Bernalillo County, NM
One Civic Plaza NW
P.O Box 542
Albuquerque, NM 87102

Receipt: 0405161

Product	Name	Extended
TERM	Termination	$25.00
	# Pages	1
	Document #2012109159	
	# Of Entries	0
	In Person/Interested Person	false
Total		$25.00
Tender (Check)		$25.00

Check# 1677
Paid By Rhett Waterman

Thank You!

10/18/12 2:41 PM jusanchez

CITY OF ALBUQUERQUE

August 31, 2007

Dennis Lorenz, P.E.
Brasher Lorenz
2201 San Pedro NE
Albuquerque, NM 87110

Re: Cedar Ridge Estates Unit 2, Phase II, Lots 14-P1 – 17-P1,
Approval for Final Plat
Engineer's Stamp dated 9/16/1996 (J-10/D018)
Certification dated 8/30/2007

Based upon the information provided in your submittal received 8/31/2007, the above referenced certification is approved for Final Plat by Hydrology.

If you have any questions, you can contact me at 924-3982.

Sincerely,

Timothy Sims
Plan Checker-Hydrology, Planning Dept.
Development and Building Services

C: Brad Bingham
File

P.O. Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

D 018

DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(Rev. 06/22/2005)

PROJECT TITLE: CEDAR RIDGE ESTATES
ZONE MAP/DRG. FILE #: J.10 / ~~D26~~
DRB#: NA EPC#: NA
WORK ORDER#: 497291

LEGAL DESCRIPTION: LOTS 14P.1 - 17P.1 CEDAR RIDGE ESTATES UNIT 2
CITY ADDRESS: 6716 SICKWOOD NW

ENGINEERING FIRM: BRASHER + LORENZ
ADDRESS: 2201 SAN PEDRO NE
CITY, STATE: ALBQ, NM
CONTACT: D. LORENZ
PHONE: 888-6088
ZIP CODE: 87110

OWNER: SUNCAL COMPANIES
ADDRESS: 401 COORS NW
CITY, STATE: ALBQ NM
CONTACT: J. NELSON
PHONE: 831.9600
ZIP CODE: 87121

ARCHITECT: NA
ADDRESS:
CITY, STATE:
CONTACT:
PHONE:
ZIP CODE:

SURVEYOR: ADAM'S SURVEYS
ADDRESS: 3424 STANFORD NE
CITY, STATE: ABQ NM
CONTACT: D. GALINDRO
PHONE: 235.8429
ZIP CODE: 87107

CONTRACTOR: STAR PAVING
ADDRESS: 3109 LOVE RD SW
CITY, STATE: ALBQ NM
CONTACT: JOE CRUZ
PHONE: 877 0380
ZIP CODE: 87121

BLB

TYPE OF SUBMITTAL:
- ____ DRAINAGE REPORT
- ____ DRAINAGE PLAN 1st SUBMITTAL
- ____ DRAINAGE PLAN RESUBMITTAL
- ____ CONCEPTUAL G & D PLAN
- ____ GRADING PLAN
- ____ EROSION CONTROL PLAN
- X ENGINEER'S CERT (HYDROLOGY)
- ____ CLOMR/LOMR
- ____ TRAFFIC CIRCULATION LAYOUT
- ____ ENGINEER'S CERT (TCL)
- ____ ENGINEER'S CERT (DRB SITE PLAN)
- ____ OTHER

CHECK TYPE OF APPROVAL SOUGHT:
- ____ SIA/FINANCIAL GUARANTEE RELEASE
- ____ PRELIMINARY PLAT APPROVAL
- ____ S. DEV. PLAN FOR SUB'D APPROVAL
- ____ S. DEV. FOR BLDG. PERMIT APPROVAL
- ____ SECTOR PLAN APPROVAL
- X FINAL PLAT APPROVAL
- ____ FOUNDATION PERMIT APPROVAL
- ____ BUILDING PERMIT APPROVAL
- ____ CERTIFICATE OF OCCUPANCY (PERM)
- ____ CERTIFICATE OF OCCUPANCY (TEMP)
- ____ GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ WORK ORDER APPROVAL
- ____ OTHER (SPECIFY)

RECEIVED
AUG 31 2007
HYDROLOGY SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED:
- ____ YES
- X NO
- ____ COPY PROVIDED

SUBMITTED BY: D. LORENZ DATE: 8.30.07

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope to the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. **Drainage Report:** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more.

BRASHER & LORENZ, INC.
CONSULTING ENGINEERS
2201 San Pedro NE Bldg 1 Suite 1300 • Albuquerque, NM 87110 • Phone (505) 888-6088 • Fax (505) 888-6188 • www.brasherlorenz.com

August 30, 2007

Bradley Bingham, PE
Development and Building Services
Plaza Del Sol
Albuquerque, New Mexico 87102

SUBJECT: **CEDAR RIDGE ESTATES, UNIT II**
PHASE II GRADING PLAN CERTIFICATION
6716 Silkwood NW
J10/D2G

Dear Bradley:

Submitted herewith for review and approval are two copies of the Engineer's Certification of Grading and Drainage for the subject project. Cedar ridge Estates Unit 2 was developed in 1998. At the time of construction existing mapped floodplains existed north and south of the site pending construction of the West Bluff Outfall and West Mesa Diversion projects. Therefore, temporary retention ponding was implemented by the developer, Westland Development Co. The pending projects have since been constructed allowing the temporary retention pond encumbering Lots 14-P1 thru 17-P1 to be reclaimed. The pond has been filled in, building pads constructed, all in compliance with the Phase II Grading Plan dated 10-19-1998. This certification will support future building permit requests by unknown home builders.

If you have any questions, or if I can be of any assistance, please feel free to call.

Sincerely,

BRASHER & LORENZ, INC.

Dennis A. Lorenz, PE
Principal

/dl/07541
encl

RECEIVED
AUG 31 2007
HYDROLOGY SECTION

97037159 1498 #4972 (Unit 2)

TERMINATION AND RELEASE OF EASEMENT

THIS TERMINATION AND RELEASE OF EASEMENT is made and entered into as of the 11 day of April, 1997, by the City of Albuquerque, (the "City").

WHEREAS, the Westland Development Corporation, as Grantor, entered into an Easement Agreement, (the "Easement"), with the City of Albuquerque, (the "City") as Grantor, which Easement was recorded November 1, 1996 in the office of the County Clerk of Bernalillo County, New Mexico, in Book 96-29, Pages 5239 -5242; as Document No. 96-120078;

WHEREAS, the City of Albuquerque has determined that the Easement is no longer required.

THEREFORE, City of Albuquerque, terminates the easement and hereby releases and discharges the property described in the grant of Easement:

IN WITNESS WHEREOF, the undersigned has executed this Termination and Release of Easement as of the day and year first above written.

CITY OF ALBUQUERQUE
a municipal corporation

By: _____
Its: R.E.D. Dir.

4/10/97

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

This instrument was acknowledged before me on April 11, 1997, by ROBERT E. GURULE for the City of Albuquerque, a New Mexico municipal corporation on behalf of said corporation.

_____
Notary Public

My Commission Expires:

1-30-98

STATE OF NEW MEXICO
COUNTY OF BERNALILLO
FILED FOR RECORD

97 APR 14 PM 2:56

97-10 Pg 1498

COUNTY CLERK AND EX-OFFICIO RECORDER
DEPUTY

97037158 1496

#4972 (Unit 2)

CANCELLATION AND RELEASE OF AGREEMENT AND COVENANT

THIS CANCELLATION AND RELEASE OF AGREEMENT AND COVENANT is made and entered into as of the 11 day of April, 1997, by the City of Albuquerque, (the "City").

WHEREAS, the City of Albuquerque ("City") and WESTLAND DEVELOPMENT CO., INC., a New Mexico corporation ("Westland") entered into an agreement and covenant (the "Agreement") to construct temporary facilities for a temporary retention pond south of Los Volcanes Road NW adjacent to City property. The Agreement was recorded November 1, 1996 in Book 96-29 at page 5233-5238 as Document No. 96120077 in the records of the Bernalillo County Clerks Office, New Mexico.

WHEREAS, all of the conditions prior to cancellation of the Agreement have been satisfactorily performed, and the parties wish to cancel the Agreement and Covenant.

THEREFORE, City of Albuquerque hereby cancels terminates and releases the Agreement and Covenant.

IN WITNESS WHEREOF, the undersigned has executed this Cancellation and Release of Agreement and Covenant as of the day and year first above written.

CITY OF ALBUQUERQUE
a municipal corporation

By: _____
Its: Chief Administrative Officer

APPROVED:

By: _____ 4/11/97
City Engineer

Westland Development Co., Inc.

_____
~~Barbara Page, President & CEO~~
LEROY CHAVEZ, V.P. OF DEV.

STATE OF NEW MEXICO
COUNTY OF BERNALILLO

97 APR 14 PM 2:56

97-10 pg 1496-1497

SHERYL L. BAWARD
COUNTY CLERK
DEPUTY

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

This instrument was acknowledged before me on April 11, 1997, 1997 by Lawrence Rael, Chief Administrative Officer of the City of Albuquerque, a municipal corporation, on behalf of the corporation.

Notary Public

My Commission Expires:

1-20-98

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

This instrument was acknowledged before me on April 2, 1997 by ~~Barbara Page, President & CEO,~~ on behalf of the corporation.
LEROY CHAVEZ, V.P. OF DEV.

Linda J. Blair
Notary Public

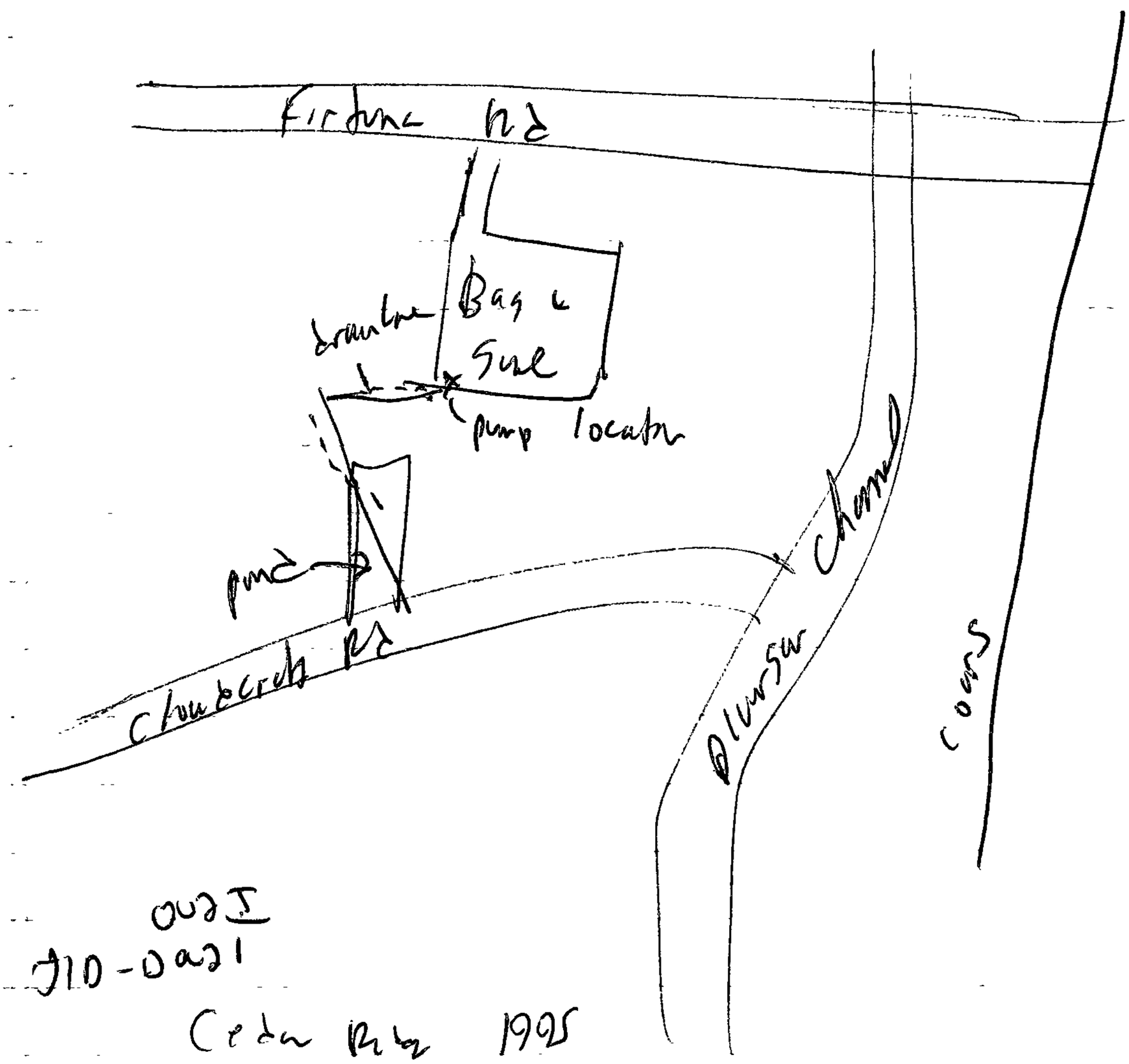
My Commission Expires:

OFFICIAL SEAL
LINDA J. BLAIR
NOTARY PUBLIC - STATE OF NEW MEXICO
My Commission Expires 8/5/97

June 09 mosquito problem
Palma Pudilla

Bag & Save

pump to drain to natural low pt
on the North side of Cloudcroft Rd



002 I
710-0021

Cedar Ridge 1995

City of Albuquerque

August 18, 1999

James D. Hughes, P.E.
Mark Goodwin & Associates
P. O. Box 90606
Albuquerque, New Mexico 87199

RE: Grading and Drainage Certification for Cedar Ridge Estates Unit 3, (J10/D18) Submitted for Release of Financial Guarantees, Engineer's Certification Stamp Dated 7/26/99.

Dear Mr. Hughes:

Based on the information provided, the above referenced plan is adequate to satisfy the Grading and Drainage Certification requirement per the Infrastructure List dated April 16, 1996, and last amended on June 9, 1998, for the release of financial guarantees for Unit 3 of the Cedar Ridge Estates Subdivision.

As you are aware, a Letter of Map Revision (LOMR) is required for Unit 4. Therefore, prior to release of the SIA for Unit 4, the LOMR must be received from FEMA to remove the ponds.

If you have any questions, or if I may be of further assistance to you, please call me at 924-3982.

Sincerely,

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Terri Martin, City Project # 5986.81
Fred Ambrogi, Westland Development Co.
File

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION E

96-150

L .B. Case ~~No. 94-34~~
~~2-18-97~~ D.R.C. Project No.
~~6-11-96~~ Date Submitted ~~4-16-96~~
Prelim. Plat Approved ~~4-16-96~~
Prelim. Plat Expires ~~4-16-96~~
~~4-16-98~~ 4/7/99

Figure 12

3 SEE SHEETS 1 OF 3 + 2 OF 3 6/9/98 DH.S-96-23

EXHIBIT "A"
To Subdivision Improvements Agreement
DEVELOPMENT REVIEW BOARD (DRB) REQUIRED INFRASTRUCTURE LISTING
for **CEDAR RIDGE ESTATES, UNITS X & 3 + 4**

Following is a summary of Public/Private Infrastructure required to be constructed or financially guaranteed to be constructed for the above development. This summary is not necessarily a complete listing. During the design process, if the City determines that appurtenant items have not been included in the summary, those items will be included in the listing and related financial guarantee, if the items normally are the Subdivider responsibility. In addition, any unforeseen items which arise during construction which are necessary to complete the project and which normally are the Subdivider's responsibility are the responsibility of the Subdivider and will be included in the financial guarantee provided to the City.

I. UNIT 2

SIZE	IMPROVEMENT	LOCATION	FROM	TO
6"	Waterline	Zinnia Pl	West Cul de Sac	Quailbrush Dr
6"	Waterline	Honeylocust Ct	Honeylocust Ave	End
6"	Waterline	Honeylocust Ave	Quailbrush Dr	Unit 1
6"	Waterline	Silkwood Ave	Quailbrush Dr	Unit 1
6"	Waterline	Quailbrush Dr	Poppy Ave	Silkwood Ave
8"	Sanitary Sewer	Zinnia Pl	West Cul de Sac	Quailbrush Dr
8"	Sanitary Sewer	Honeylocust Ct	Honeylocust Ave	End
8"	Sanitary Sewer	Honeylocust Ave	Quailbrush Dr	Unit 1
8"	Sanitary Sewer	Silkwood Ave	Quailbrush Dr	Unit 1
8"	Sanitary Sewer	Quailbrush Dr	Zinnia Pl	Silkwood Ave

SEE ATTACHED

SIZE	IMPROVEMENT	LOCATION	FROM	TO
28'FF	Street*	Zinnia Pl	West Cul de Sac	Quailbrush Dr
28'FF	Street*	Honeylocust Ct	Honeylocust Ave	End
28'FF	Street*	Honeylocust Ave	Quailbrush Dr	~~Unit 1~~ E. PL LOT 7 BLK 'D'
28'FF	Street*	Silkwood Ave	Quailbrush Dr	~~Unit 1~~ E. PL LOT 8 BLK 'D'
28'FF	Street*	Quailbrush Dr	Silkwood Ave	Poppy Ave
4'	Sidewalk	Los Volcanes Rd	West PL Unit 2	~~Unit 1~~ LOT 8, BLK F

INTERIM RETENTION POND, TR S-2, ATRISCO BUSINESS PARK, UNIT 2, W/ EASEMENT + COVENANT DL.

~~40' Concrete Channel Public ROW Zinnia Pl West PL Unit 2 DL~~

~~Lot 1, Block B, Pines Subdivision DL~~

Interim Retention Pond at Block I, Unit 2

Interim Retention Pond at I-40/Unser Blvd
INTERIM RETENTION POND, TR 'A', BLOCK 'F', CEDAR RIDGE ESTATES, UNIT 2, W/ AGREEMENT + COVENANT D

~~Interim Retention Pond at Lot 1A-1, Tract N, Atrisco Business Park, Inlet System~~ DL.

Interim Detention Pond expansion on Lot 1-C, Tr S-2, ABP to provide storage for Units 2 & 3

* All streets to include curb & gutter and 4' sidewalk both sides and residential street pavement

Certification of Grading to include private retaining walls AND PRIVATE DRAINAGE CHANNELS (required for release of financial guarantee).

[redacted]

"Conditional Letter of Map Revision" (CLOMR) is required for Final Plat approval for Unit 2.

"Letter of Map Revision" (LOMR) is required for release of Financial Guarantees for the storm drainage improvements for Unit 2 only.

Residential street lighting per DPM.

SEE ATTACHED

II. UNIT 3

SIZE	IMPROVEMENT	LOCATION	FROM	TO
6"	Waterline	Photinia Pl	West Cul de Sac	East Cul de Sac
6"	Waterline	Poppy Pl	West Cul de Sac	Quailbrush Dr
8"	Waterline	Poppy Ave	Quailbrush Dr	Cedar Ridge St
8"	Waterline	Cedar Ridge St	Poppy Ave	Unit 1

SIZE	IMPROVEMENT	LO .TION	FROM	TO
8"	Waterline	Quailbrush Dr	Fortuna Rd	Poppy Ave
8"	Sanitary Sewer	Photinia Pl	West Cul de Sac	East Cul de Sac
8"	Sanitary Sewer	Poppy Pl	West Cul de Sac	Quailbrush Dr
8"	Sanitary Sewer	Poppy Ave	Quailbrush Dr	Cedar Ridge St
8"	Sanitary Sewer	Cedar Ridge St	Poppy Ave	Unit 1
8"	Sanitary Sewer	Quailbrush Dr	Poppy Ave	Photinia Pl
28'FF	Street*	Photinia Pl	West Cul de Sac	East Cul de Sac
28'FF	Street*	Poppy Pl	West Cul de Sac	Quailbrush Dr
28'FF	Street*	Poppy Ave	Quailbrush Dr	Cedar Ridge St
28'FF	Street*	Cedar Ridge St	Poppy Ave	Unit 1
28'FF-50'FF	Street*	Quailbrush Dr	Poppy Ave	Photinia Pl
50'FF	Street w/median*	Quailbrush Dr	Photinia Pl	Fortuna Rd
Half Width	Street**	Fortuna Rd	East PL Unit 3	West PL Unit 3
10'	Concrete Channel	Public R/W	Photinia Pl	Fortuna Rd

* All streets to include curb & gutter and 4' sidewalk both sides and residential street pavement

** Includes curb & gutter, 4' sidewalk, and 24' residential pavement, south side only

Certification of Grading to include private retaining walls (required for release of financial guarantee).

Residenial street lighting per DPM

SEE ATTACHED SHEETS 1 + 2/3 (OF 4)

3

D.R.B. Case No. 96-150
D.R.C. Project No. _____
Date Submitted 5-19-98
Prelim. Plat Approved _____
Prelim. Plat Expires _____

Figure 12

EXHIBIT "A"

To Subdivision Improvements Agreement
DEVELOPMENT REVIEW BOARD (DRB) REQUIRED INFRASTRUCTURE LISTING
for Cedar Ridge Units 3 & 4

Following is a summary of Public/Private Infrastructure required to be constructed or financially guaranteed to be constructed for the above development. This summary is not necessarily a complete listing. During the design process, if the City determines that appurtenant items have not been included in the summary, those items will be included in the listing and related financial guarantee, if the items normally are the Subdivider responsibility. In addition, any unforseen items which arise during construction which are necessary to complete the project and which normally are the Subdivider's responsibility are the responsibility of the Subdivider and will be included in the financial guarantee provided to the City.

Size	Type Improvement	Location	From	To
		UNIT 3		
8"	Waterline	Photinia Pl.	Quailbrush Dr.	Rosebud Dr.
6"	Waterline	Poppy Pl.	West Cul de Sac	Quailbrush Dr.
8"	Waterline	Rosebud Dr.	Photinia Pl.	Unit 1(Lot 28, Blk 3)
8"	Waterline	Quailbrush Dr.	Fortuna Rd.	Photinia Pl.
6"	Waterline	Quailbrush Dr.	Photinia Pl.	S. Side Lot 20, Blk 1
8"	Sanitary Sewer	Photinia Pl.	Lot 2, Blk 2	Rosebud Dr.
8"	Sanitary Sewer	Poppy Pl.	West Cul de Sac	Quailbrush Dr.
8"	Sanitary Sewer	Honeylocust Ct.	S. Cul de Sac	Photinia Pl.
8"	Sanitary Sewer	Rosebud Dr.	Photinia Pl.	Unit1(Lot 28, Blk 3)
8"	Sanitary Sewer	Quailbrush Dr.	Poppy Pl.	Fortuna Rd.
28'FF	Street*	Photinia Pl.	Quailbrush Dr.	Rosebud Dr.
28'FF	Street*	Poppy Pl.	West Cul de Sac	Quailbrush Dr.
28'FF	Street*	Honeylocust Ct.	S. Cul de Sac	Photinia Pl.
28'FF	Street*	Rosebud Dr.	Photinia Pl.	Unit 1 (Lot 28 Block 3)

D.R.B. Case No. 96-150
D.R.C. Project No. _____
Date Submitted 5-19-98
Prelim. Plat Approved _____
Prelim. Plat Expires _____

Size	Type Improvement	Location	From	To
28'FF-50'FF	Street*	Quailbrush Dr.	Poppy Pl.	Photinia Pl.
50'FF	Street w/median*	Quailbrush Dr.	Photinia Pl.	Fortuna Rd.
20' Face to ~~½ Width~~ Edge	~~Street**~~ Collector Pvmt + Sidewalk & C&G **	Fortuna Rd.	East PL Unit 3	Quailbrush Dr.
18"-36"	Storm Sewer and 4 Inlets at intersection of Quailbrush Dr. and Fortuna Rd.			
30'	Temp. Ashphalt Rundown			

REFERENCE

* All streets to include curb & gutter and 4' sidewalk both sides and residential street pavement.

** Includes curb & gutter, 4' sidewalk and 24' ~~residential~~ pavement (20' Collector & 4' Min. Temp Pavement) south side only.

Certification of Grading to include private retaining walls (required for release of financial guarantee).

Residential street lighting per DPM.

UNIT 4

6"	Waterline	Photinia Pl.	West Cul de Sac	Quailbrush Dr.
8"	Sanitary Sewer	Photinia Pl.	West Cul de Sac	Quailbrush Dr.
28'FF	Street*	Photinia Pl.	West Cul de Sac	Quailbrush Dr.
½ Width	Street**	Fortuna Rd.	West PL Unit 4	Quailbrush Dr.

~~III. FUTURE REGIONAL STORM DRAINAGE IMPROVEMENTS~~

UNIT 4 (Continued) Downstream Drainage Facilities to be Constructed

~~The following storm drainage improvements will be required to reclaim land encumbered by interim drainage ponds to be located on Block I, Unit 3, Cedar Ridge Estates, and Lot 1A-1, Tract 1, Atrisco Business Park and Lot 1-C, Tract S-2, Atrisco Business Park:~~

SIZE	IMPROVEMENT	LOCATION	FROM	TO
66"	Storm Drain#	Fortuna Rd.	Landmark St.	West Mesa Diversion
36"	Storm Drain#	Los Volcanes Rd.	West Mesa Diversion	Existing road sag located approx. 950' west

Engineer's Certification of Private Grading Required for Release of SIA

#Includes drop inlets and connector pipe at pertinent locations

"LOMR" Required for Release of SIA

This LOMR is required to remove the ponds to develop Unit 4

Prepared By: _____

Print Name: Dennis A. Lorenz, PE

Firm: Brasher & Lorenz, Inc.

Development Review Board Member Approval

Ked 6/9/98
Ked 2.18.97
Ked 6.11.96
4-16-96
Planning Director

6-9-98
2-18-97
6-11-96
Utility Development

4-16-96
Parks & General Services

2/18/97
4-16-96
City Engineer/AMAFCA

6/9/98

6-09-98
6-11-97
4-16-96
2-18-97
Transportation Development

CITY OF
Albuquerque

November 6, 1998

Dennis A. Lorenz, P.E.
Brasher & Lorenz, Inc.
2201 San Pedro NE, Bldg. 1, Suite 210
Albuquerque, New Mexico 87110

RE: Revised Grading Plan for Lots 11A and 12A, Cedar Ridge Estates Unit 2 (J10/D18) Engineer's Stamp Dated 10/19/98.

Dear Mr. Lorenz:

Based on the information provided, the above referenced revised Grading Plan for Lots 11A and 12A is approved for Final Plat action.

If you have any questions, or if I may be of further assistance to you, please call me at 924-3982.

Sincerely,

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Leroy Chavez, Westland Development Co.
File

CITY OF
Albuquerque

June 8, 1998

James D. Hughes, P.E.
Mark Goodwin & Associates
P. O. Box 90606
Albuquerque, New Mexico 87199

RE: Revised Grading Plan for Cedar Ridge Estates-Units 3 & 4 (J10/D18) Submitted for Preliminary Plat Approval and Rough Grading of Unit III, Engineer's Stamp Dated 5/8/98.

Dear Mr. Hughes:

Based on the information provided, the above referenced Grading Plan is approved for Preliminary Plat action. The revised Grading Plan is also approved for Rough Grading Permit release for Unit 3.

The Plat must contain a note identifying that all of Unit 4 is located within a FEMA floodplain until such time that a Letter of Map Revision is received to remove it.

As you are aware, a topsoil disturbance permit must be obtained prior to any grading within Unit 3. The Engineer's Certification, per the Infrastructure List, is required prior to release of financial guarantees for each Unit.

If you have any questions, please call me at 924-3982.

Sincerely,

Susan Calongne

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Fred Aguirre, DRB-96-150
Leroy Chavez, Westland Development Co.
File

D. Mark Goodwin & Associates, P.A.
Consulting Engineers

P.O. BOX 90606, ALBUQUERQUE, NM 87199
(505) 828-2200 FAX 797-9539
e-mail: dmg@swcp.com

May 7, 1998

Ms. Susan Calongne, PE
Hydrology Division
City of Albuquerque
PO Box 1293
Albuquerque, NM 87103

Re: Cedar Ridge Estates, Units 3 & 4 (J10/D18)

Dear Ms. Calongne:

The plans for the referenced project have been revised and the comments, dated April 2, 1998, have been addressed as follows:

1. *On-site basins A&B are now shown on sheet 1 of 2 and off-site basins are attached (see Figure 6a form 3/19/96 report). Note that there are no changes to the off-site drainage and that the Fortuna Road storm sewer and the West Mesa Diversion will still be required prior to the development of Unit 4. It is shown here schematically only and is to be designed separately by others.*

2. *A note about the floodplain on Unit 4 was added to both the Preliminary Plat Sheet 5 and the narrative on sheet 1 of the Grading Plan.*

3. *A boundary has been added around Unit 4 on sheet 1 of the Grading Plan.*

4. *The temporary diversion berm on the west side of Unit 3 has been changed to a temporary floodwall, and the temporary off-site undeveloped drainage area has been identified on the attached map with flows on the attached AHYMO and they are summarized on the plan (sheet 1).*

5. *The sump on Fortuna Road is existing and it can not readily be removed. We have done our best to accommodate it and used conservative assumptions regarding the ultimate future design of that system. Upstream of the sump we assumed minimal pipe flow and maximum surface flow to size the inlets. But the final design (by others) may choose to intercept more drainage upstream leaving the inlets in this sump slightly over-designed.*

6. *Smith Engineering has prepared a conceptual plan for the West Mesa Diversion, including the storm sewer in Fortuna Road, dated February 1998. (The new project manager is Carlos Montoya...the old one was John Murray.)*

7. *I have double checked to make sure that the existing pond was designed for the 100 year, 10 day storm.*

8. *Grading at the northeast corner of the subdivision is now different because we are vacating the access easement, and a retaining wall was added.*

Please contact our office if you have any questions or comments.

Sincerely,

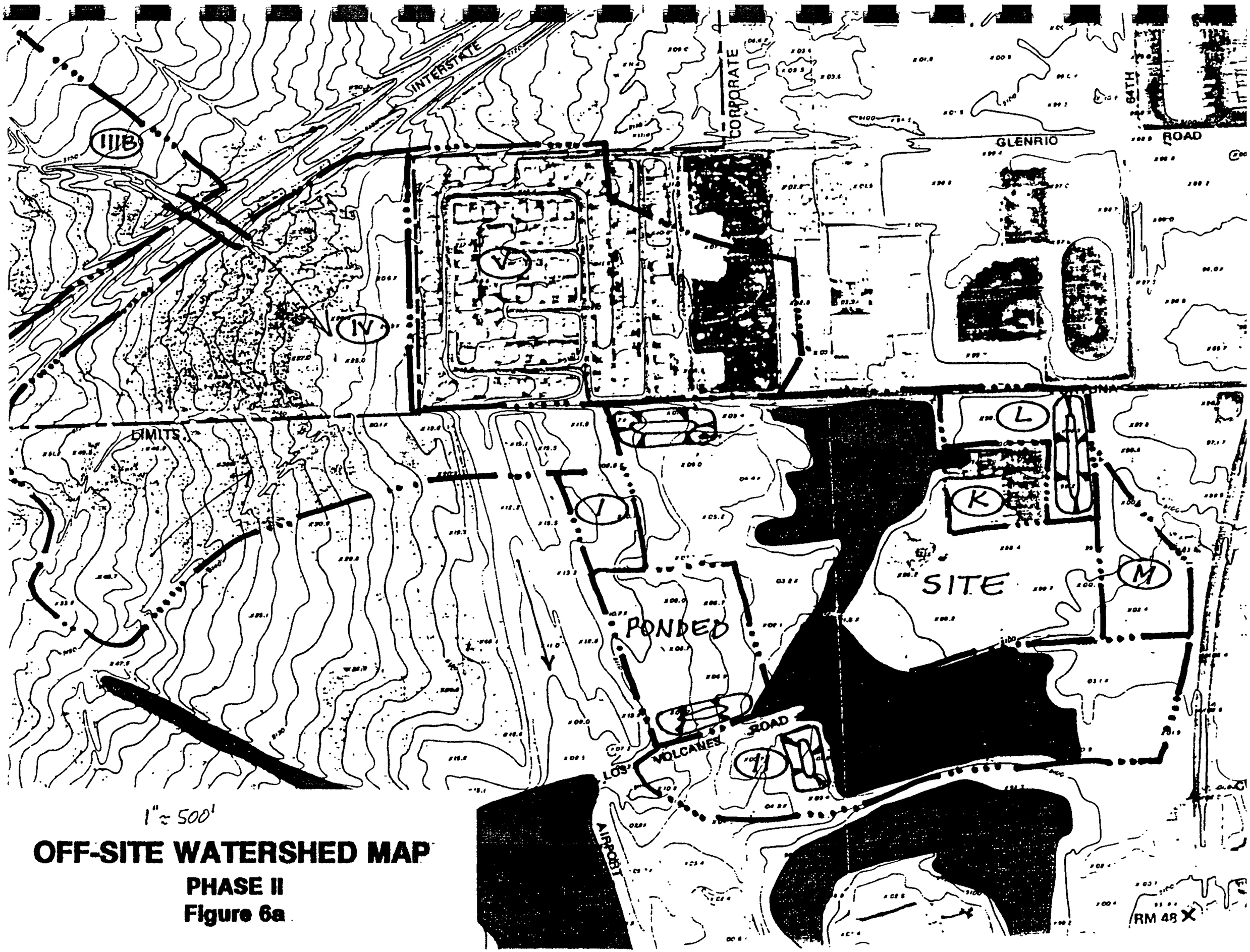
MARK GOODWIN & ASSOCIATES, P.A.

James D. Hughes, PE
Senior Engineer

RECEIVED
MAY 08 1998
HYDROLOGY SECTION

JDH/sb

f:\\cedar.rid\comments.no2

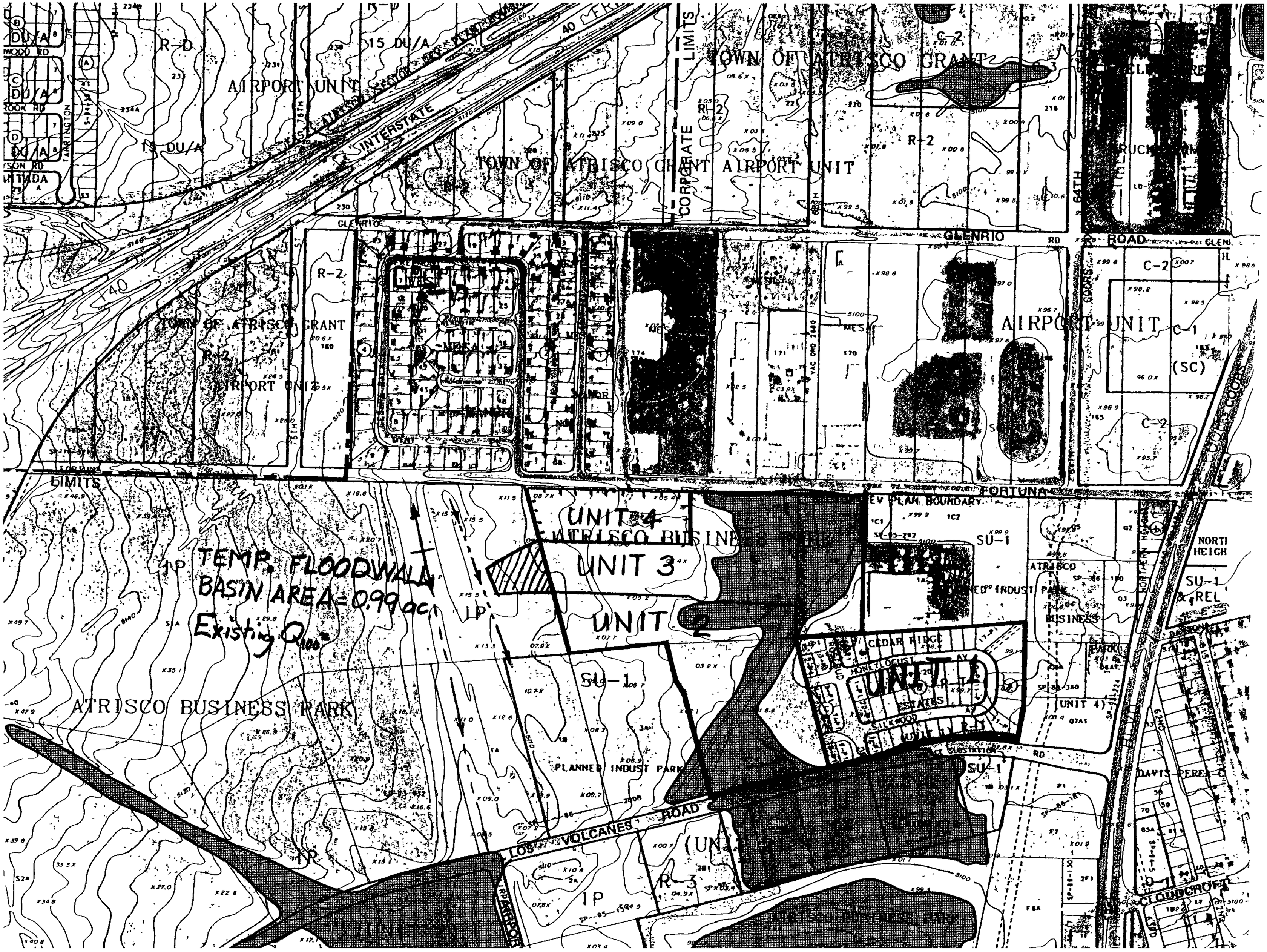


1" ≈ 500'

OFF-SITE WATERSHED MAP

PHASE II

Figure 6a


TEMP. FLOODWALL
BASIN AREA=0.99ac
Existing Q100
AIRPORT UNIT
TOWN OF ATRISCO GRANT
CORPORATE LIMITS
INTERSTATE
GLENRIO ROAD
FORTUNA
ATRISCO BUSINESS PARK
PLANNED INDUST PARK
UNIT 4
UNIT 3
UNIT 2
UNIT 1
LOS VOLCANES ROAD
CLOUDCROFT
COOLS
SU-1
R-2
R-3
IP
C-1
C-2
(SC)

Summary

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =04/17/1998
INPUT FILE = CEDAR99.DAT USER NO.= M_GOODWN.I01

PAGE = 1

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
START										TIME= .00
RAINFALL TYPE= 1										RAIN6= 2.250
COMPUTE NM HYD	903.00	-	3	.00155	1.38 cfs	.039	.47013	1.532	1.393	PER IMP= .00
FINISH										

0.99 ac

RECEIVED
MAY 08 1998
HYDROLOGY SECTION

Input

```
START                TIME=0.0
***** CEDAR RIDGE ESTATES UNIT 3
***** OFF-SITE (TEMPORARY & UNDEVELOPED) FLOODWALL
***** 100-YEAR 6-HOUR STORM EVENT
***** APRIL 17, 1998
RAINFALL             TYPE=1 RAIN QUARTER=0.0 IN
                     RAIN ONE=1.92 IN RAIN SIX=2.25 IN
                     RAIN DAY=2.65 IN DT=0.0333 HR
COMPUTE NM HYD       ID=3 HYD NO=903.0 AREA=0.00155 SQ MI
                     PER A=100 PER B=0 PER C=0 PER D=0
                     TP=0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=3 CODE=1
FINISH
→
```

Detailed Output

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START                TIME=0.0
***** CEDAR RIDGE ESTATES UNIT 3
***** OFF-SITE (TEMPORARY & UNDEVELOPED) FLOODWALL
***** 100-YEAR 6-HOUR STORM EVENT
***** APRIL 17, 1998
RAINFALL             TYPE=1 RAIN QUARTER=0.0 IN
                     RAIN ONE=1.92 IN RAIN SIX=2.25 IN
                     RAIN DAY=2.65 IN DT=0.0333 HR

          COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
          DT =     .033300 HOURS       END TIME =     5.994000 HOURS
             .0000   .0016   .0032   .0049   .0065   .0083   .0100
             .0118   .0137   .0156   .0175   .0195   .0216   .0237
             .0259   .0281   .0304   .0328   .0353   .0378   .0404
             .0432   .0460   .0489   .0520   .0552   .0586   .0621
             .0658   .0697   .0739   .0791   .0848   .0908   .1033
             .1320   .1762   .2399   .3268   .4412   .5872   .7690
             .9911  1.2043  1.2918  1.3654  1.4308  1.4902  1.5449
            1.5957  1.6431  1.6876  1.7294  1.7689  1.8062  1.8415
            1.8749  1.9066  1.9367  1.9653  1.9924  1.9998  2.0056
            2.0112  2.0165  2.0215  2.0264  2.0310  2.0355  2.0398
            2.0439  2.0479  2.0518  2.0556  2.0593  2.0628  2.0663
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            2.1098  2.1122  2.1147  2.1171  2.1194  2.1217  2.1240
            2.1263  2.1285  2.1307  2.1328  2.1349  2.1370  2.1391
            2.1411  2.1432  2.1451  2.1471  2.1490  2.1510  2.1529
            2.1547  2.1566  2.1584  2.1602  2.1620  2.1638  2.1655
            2.1673  2.1690  2.1707  2.1724  2.1740  2.1757  2.1773
            2.1789  2.1805  2.1821  2.1837  2.1852  2.1868  2.1883
            2.1898  2.1913  2.1928  2.1943  2.1958  2.1972  2.1987
            2.2001  2.2015  2.2029  2.2043  2.2057  2.2071  2.2085
            2.2098  2.2112  2.2125  2.2138  2.2151  2.2165  2.2178
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            2.2278  2.2290  2.2303  2.2315  2.2327  2.2339  2.2350
            2.2362  2.2374  2.2385  2.2397  2.2409  2.2420  2.2431
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     UNIT PEAK =   3.2005    CFS   UNIT VOLUME =     .9951       B =   275.25      P60 = 1.9200
     AREA =       .001550 SQ MI    IA =     .65000 INCHES    INF =   1.67000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033300
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PRINT HYD            ID=3 CODE=1

                                    HYDROGRAPH FROM AREA   903.00


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    PEAK DISCHARGE RATE =       1.38 CFS  AT   1.532 HOURS   BASIN AREA =    .0016 SQ. MI.


FINISH

    NORMAL PROGRAM FINISH          END TIME (HR:MIN:SEC) = 07:23:50
```

CITY OF
Albuquerque

April 2, 1998

James D. Hughes, P.E.
Mark Goodwin & Associates
P. O. Box 90606
Albuquerque, New Mexico 87199

RE: Grading and Drainage Plans for Cedar Ridge Estates-Units III & IV (J10/D18) Submitted for Preliminary Plat approval and Rough Grading of Unit III, Engineer's Stamp Dated 3/13/98.

Dear Mr. Hughes:

Prior to approval for Preliminary Plat action and rough Grading permit release for the above referenced subdivision, the following comments must be addressed:

1. This plan must be able to stand alone. Provide the on-site and off-site drainage basins used in the drainage calculations. Provide all of the pertinent information from the Master Plan.

2. Show the limits of the existing FEMA floodplain on the plan. Per the Letter of Map Revision (LOMR) dated September 25, 1997, the temporary retention pond shown on the plan has been mapped as a FEMA floodplain. Any alteration of this pond will require a LOMR from FEMA. It is advised that a request for a Conditional Letter of Map Revision be submitted to FEMA through my office before any construction begins.

3. Show the boundary between Unit III and Unit IV. It is unclear what is proposed with each Unit.

4. This plan proposes a temporary diversion berm outside of the project limits on the west side. An off-site drainage easement is required prior to Preliminary Plat approval, and an Agreement and Covenant must be in place prior to construction. How much runoff is conveyed by this berm? Provide the off-site basin and drainage calculations.

5. The use of the sump inlets at the end of Photinia Place is acceptable, however, the sump condition on Fortuna road is not. Since street improvements will be required on Fortuna, it appears that this street will slope to the east. Provide the ultimate street grades and storm drain requirements.

6. What is the status of the future storm drain system proposed in Fortuna? Has the outfall been constructed?

April 2, 1998

7. Are the temporary retention ponds designed for the 100-year, 10-day storm?

8. Provide a section showing how the back of Lots 10, 11 and 12 tie into the existing ground on the east side of the subdivision. It appears that the lots may drain onto the adjacent property.

If you have any questions regarding these comments, please call me at 924-3982.

Sincerely,

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Leroy Chavez, Westland Development Co.
File

City of Albuquerque

P. O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103
PUBLIC WORKS DEPARTMENT
November 13, 1997

CITY OF Albuquerque

CERTIFICATE OF WORK ORDER COMPLETION

Westland Development Co. Inc.
401 Coors NW
Albuquerque, NM 87121

RE: CEDAR RIDGE ESTATES UNIT 2 - PROJECT NO.: 4972 (MAP NO. J-10)

Dear Sir:

This is to certify that the City of Albuquerque accepts Project No. 4972 as being completed according to approved plans and construction specifications. Please be advised this certificate of completion shall only become effective upon final plat approval and filling in the office of the Bernalillo County Clerk's Office.

The project is described as follows:

- Project consisted of 6" waterlines and 8" Sanitary Sewer Lines on Zinnia Place from west cul-de-sac to Quailbrush Drive, on Honeylocust Court from Honeylocust Avenue to end. Honeylocust Avenue from Quailbrush Drive to Unit One, Silkwood Avenue from Quailbrush Drive to Unit One. Quailbrush Drive from Poppy Avenue to Silkwood Avenue. Paving was also placed throughout the subdivision and above mentioned streets. Four foot sidewalk was built on Los Volcanes Road from West Place Unit Two to Lot Eight, Blk. F. Three off site temporary ponds, one located west of Unser Blvd. NW and north of Interstate 40; adjacent to Parkway Subdivision; the other two north of Cedar Ridge Estate Unit Two and south of Fortuna Rd. SW.

The contractor's correction period began the date of this letter and is effective for a period of one (1) year.

Sincerely,

Russell B. Givler, P.E.
Chief Construction Engineer,
Construction Management/Public Works

cc:

Brasher & Lorenz Engineering
Sundance Mechanical
Fred Aguirre, Hydrology, PWD
Tina Pohl, Engineering Group, PWD
Terri Martin, Engineering Group, PWD
Martin Barker, Materials Testing Lab
Linda Adamsko, Special Assessments, DFM
Sam Hall, Water Systems, PWD
Andre Houle, Street Maintenance, PWD
Roger Green, Water/Wastewater Group, PWD
Ray Chavez, Traffic Engineering, PWD
Josie Jaramillo, New Meter Sales, Finance Group, PWD
Richard Zamora, Maps and Records, PWD
John Ewing, Risk Management
f/Project No. 4972
f/Readers
f/Warranty:Contract

Author: Fred J. Aguirre at CABQ-PUBWORKS
Date: 6/11/97 1:01 PM
Priority: Normal
Receipt Requested
CC: Ricardo B. Roybal
TO: John R. Castillo at CABQ-PWDSUN
Subject: Re: Reviews

---------- Message Contents ----------

John, here is the information you requested regarding Cedar Ridge Unit 2. If you have any questions or require more information, please let me know.

Additionally, what is that date that you need the "Pro-Rata" information by?

_____ Reply Separator _____

Subject: Reviews
Author: John R. Castillo at CABQ-PWDSUN
Date: 5/28/97 1:33 PM

Fred Ambrosi (sic?), Westland, told me that your review of the Cedar Ridge Ph 2 took 11 week longer that it should have, because each time they submitted their report, you had additional comments. He noted that this happen 4 times and that if all the comments/requirements were asked for at once, they would have been able to complete the efforts concurrently in two or three weeks total. I have been mtg w/ a group that wants to have a "one bite of the apple" rule. This is to say that you get only one chance to review and provide your comments/requirements. I noted that this is not so simple, since many times submittals are not complete or the initial comments bring out other information that results in addtional comments/requirements. But I said that I would review his particular case. Pls let me know what happen re: this site.
JRC

MEMO

To: John Castillo
From: Fred J. Aguirre
Subject: Cedar Ridge Unit 2&3 Westland
Date: June 11, 1997

The following is a chronology order of events regarding Hydrology's approval of Cedar Ridge Units 1 & 2. As you can see, Westland revised their report three times. The first time was to change the phasing of their platting. The second revision was to remove a pond designed on Sunwest's Bank's property without the Bank's approval. The third revision was to move the pond back onto Sunwest's property after they obtained Sunwest Bank's approval. Each drainage submittal was approved by this office without a reject. Each submittal Westland made was the direct result of their decisions and not the result of any additional comments and/or requirements by this office.

03/26/96	**Westland's Engineer submits a revised drainage report dated 3/19/96 to revise the phasing of their preliminary Plat.**
04/02/96	Westland schedules a DRB hearing for their revised Preliminary Plat action. (Deferred to 4/09/96)
04/09/96	Westland schedules a DRB hearing for their revised Preliminary Plat action. (Deferred to 4/16/96)
04/15/96	**City approves the revised Drainage report dated 3/19/96 for their revised Preliminary Plat phasing.**
04/16/96	Westland schedules a DRB hearing for their revised Preliminary Plat action. DRB approves the revised preliminary plat, revised infrastructure list and revised grading plan.
06/04/96	Westland schedules a DRB hearing to vacate a temporary drainage easement and Final Plat approval. (deferred to 6/11/96 at the agent's request)
06/11/96	Westland schedules a DRB hearing to vacate a temporary drainage easement and Final Plat approval. DRB approved the Final plat with the condition that the drainage report dated 3/19/96 be updated to reflect the vacation action and the relocation of the pond placed on Sunwest Bank's property without their concurrence.
08/16/96	**Westland's Engineer submits an updated drainage report dated 8/14/96 to satisfy the Final Plat conditions of 6/11/96.**
09/20/96	**City approves the updated drainage report dated 8/14/96 and grading plan dated 9/16/96.**
12/31/96	**Westland's Engineer submits a revised drainage report dated 12/27/96 to amend their Preliminary Plat for the purpose of relocating a temporary drainage pond from the south side of Los Volcanes onsite and to relocate a pond onsite back onto Sunwest Bank's property. Sunwest Bank approves relocation of the pond in a letter dated 9/27/96.**

01/15/97	**City approves a revised drainage report dated 12/27/96. Condition of approval is the granting of a temporary public drainage easement and execution of an Agreement and Covenant.**
02/18/97	Westland requests and amended Preliminary Plat to reflect the relocation of the ponds and Final Plat approval. DRB approves amended Preliminary Plat and Final Plat. Final Plat was delegated to City Engineer for the SIA and Planning.
04/08/97	Westland submits to DRC a Private Facility Drainage Covenant instead of the public drainage easement and An Agreement and Covenant as required by our approval letter dated 1/15/97. City Legal accepts Private Facility Drainage Covenant with modifications in order to expedite Westland's plat.
04/18/97	City Engineer signs plat.
04/22/97	Westland request extension to their Preliminary Plat. No show by applicant (Fred Ambrogi). Deferred to 04/29/97.
04/29/97	Westland request extension to their Preliminary Plat. DRB approves extension request.

CITY OF
Albuquerque
Public Works Department

Martin J. Chávez, Mayor

Robert E. Gurulé, Director

January 15, 1997

Dennis A. Lorenz, P.E.
Brasher & Lorenz, Inc.
2201 San Pedro NE, Bldg. 1, Suite 210
Albuquerque, New Mexico 87110

RE: REVISED DRAINAGE REPORT AND GRADING PLAN FOR CEDAR RIDGE ESTATES, (J10/D18) SUBMITTED FOR FINAL PLAT APPROVAL, ENGINEER'S STAMP DATE D 12/2796.

Dear Mr. Lorenz:

Based on the information provided in the submittal of December 31, 1996, the above referenced plan and report are approved for Final Plat approval. Regarding the relocation of the two ponds, please note the following comments:

1. The pond to be relocated on Lots 14 through 17 must be within a public drainage easement. An Agreement and Covenant will be required for this pond.

2. If the Plat for Unit 2 has been signed, then the removal of the drainage easement for the interim sedimentation pond on Lot 11 and the interim channel along the west side of the property will require a Vacation action. A public drainage easement and an Agreement and Covenant will be required for the temporary retention pond located on the Sunwest Bank property.

3. The Work Order plans must be revised, or a change order must be done, to relocate both of the public ponds.

If you should have any questions regarding these comments, please contact me at 924-3982.

Sincerely,

Susan Calongne

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Fred Aguirre, DRB-96-150
Leroy Chavez, Westland Development Co.
File

DRAINAGE REPORT

FOR

CEDAR RIDGE ESTATES

UNITS 2 & 3

Prepared for:

WESTLAND DEVELOPMENT CO., INC.
401 Coors Boulevard NW
Albuquerque, New Mexico 87105

RECEIVED
HYDROLOGY DIVISION

DENNIS A. LORENZ
NEW MEXICO
9847
REGISTERED PROFESSIONAL ENGINEER

3-19-96
8-14-96
12-27-96

BRASHER & LORENZ, INC.
Consulting Engineers

March, 1996

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DRAINAGE PLAN - ULTIMATE CONDITON - EXHIBIT 3	POCKET

PURPOSE AND SCOPE

The purpose of this Drainage Report is to establish the criteria for controlling surface runoff from CEDAR RIDGE and contributing upstream areas in a manner which is acceptable to the City of Albuquerque and the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA). The plan studies the effect of existing and developed 100-year and 10-year/6-hour duration storm events on the project site. The plan outlines drainage management criteria for the development of CEDAR RIDGE ESTATES, UNITS 2 & 3.

The scope of this plan is to ensure that the project will be protected from storm runoff and that the development of this project will not increase the flooding potential of adjacent and downstream properties.

Approval of this Drainage Report shall facilitate preliminary plat and work order approval for CEDAR RIDGE ESTATES, UNITS 2 & 3.

SITE LOCATION AND DESCRIPTION

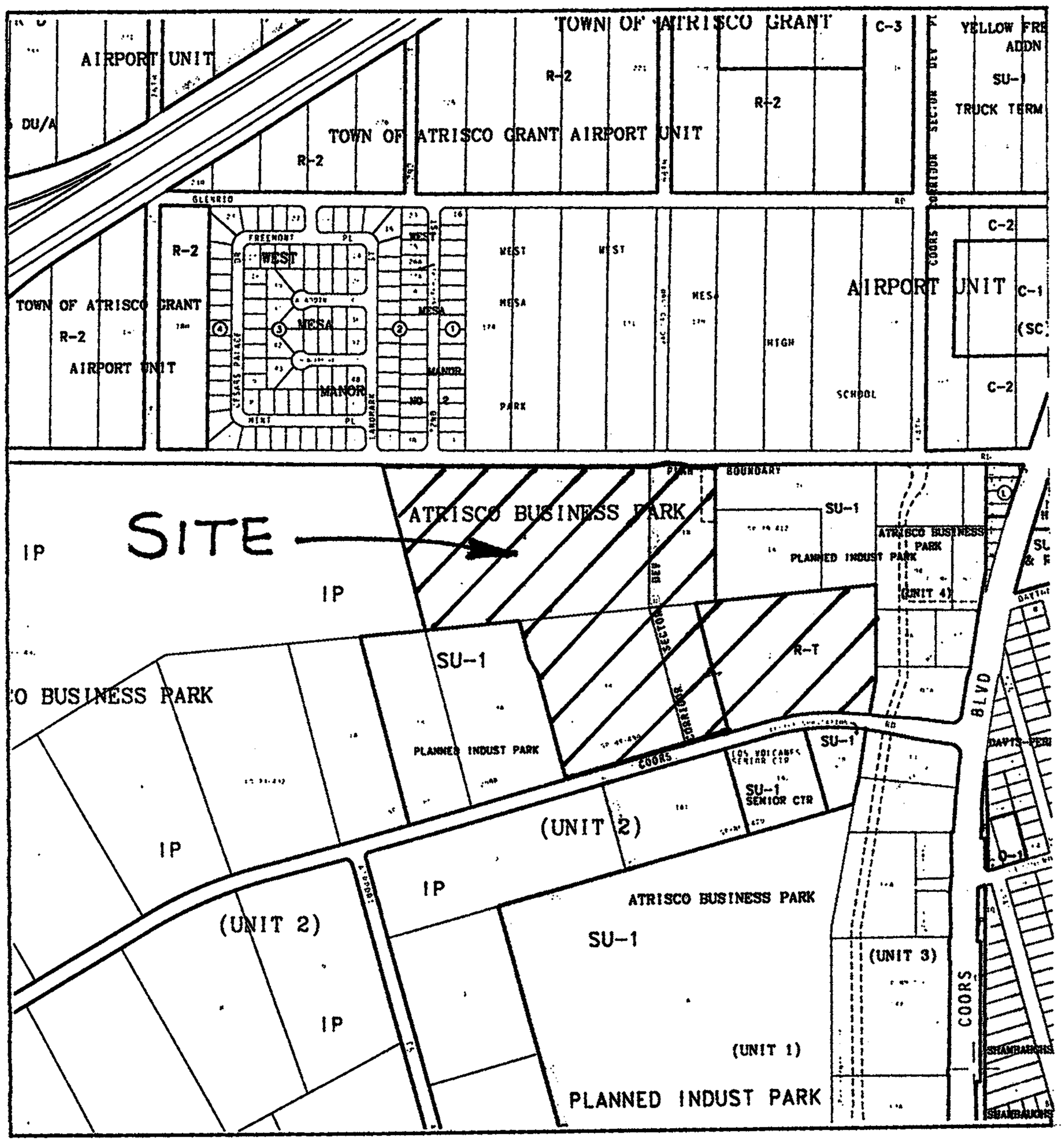
CEDAR RIDGE ESTATES is located on the Albuquerque West Mesa and is bounded by Fortuna Road NW on the north, Los Volcanes Road NW on the south, and portions of developed/undeveloped lands on the east and west (see Vicinity Map-Figure 1). The site is more particularly described as Lots 1-B, 2-A, 2-B, 3-B, and 4 of Tract S-2, Atrisco Business Park.

The site is presently undeveloped and covered with native vegetation. The site topography generally slopes from west to east at approximately 1%. A depression is located near the center of the site which is identified as a 100-year flood hazard zone by the FIRM for Albuquerque, New Mexico (see Figure 2). The flood hazard zone is a result of the site accepting offsite flows from the property to the west, north of I-40, Fortuna Road, and Los Volcanes Road. Fortuna and Los Volcanes both have vertical sag points which outfall onto the property near the flood hazard zone.

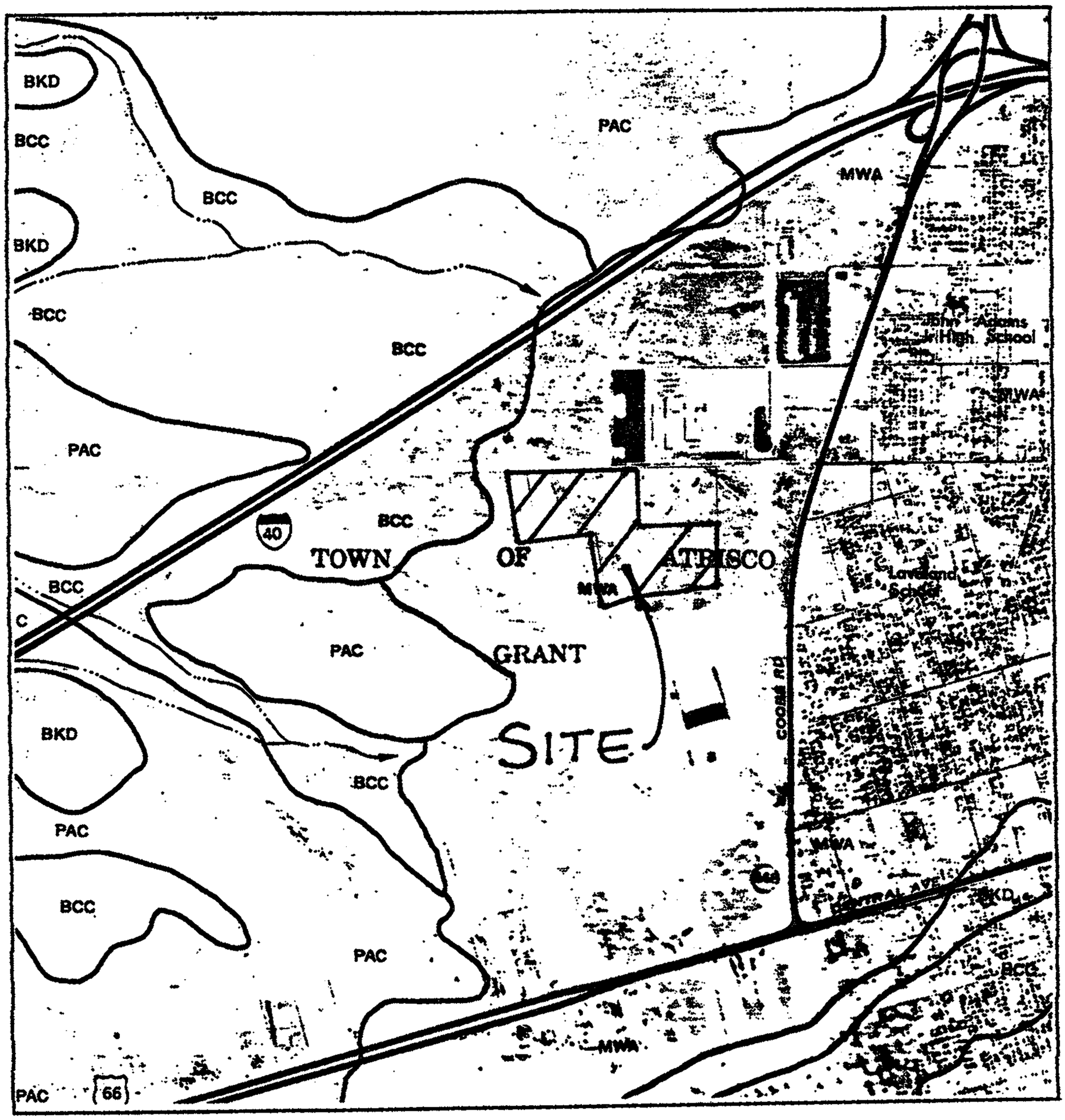
The site soils are generally composed of madunez wink soils which are classified in hydrologic soil group "B" (see Figure 3). Limitations for road, dwellings and drainage improvements are moderate. The soils group has a tendency to exhibit shrink/swell characteristics. Ponding areas and berms may show piping and seepage.

EXISTING DRAINAGE CONDITIONS

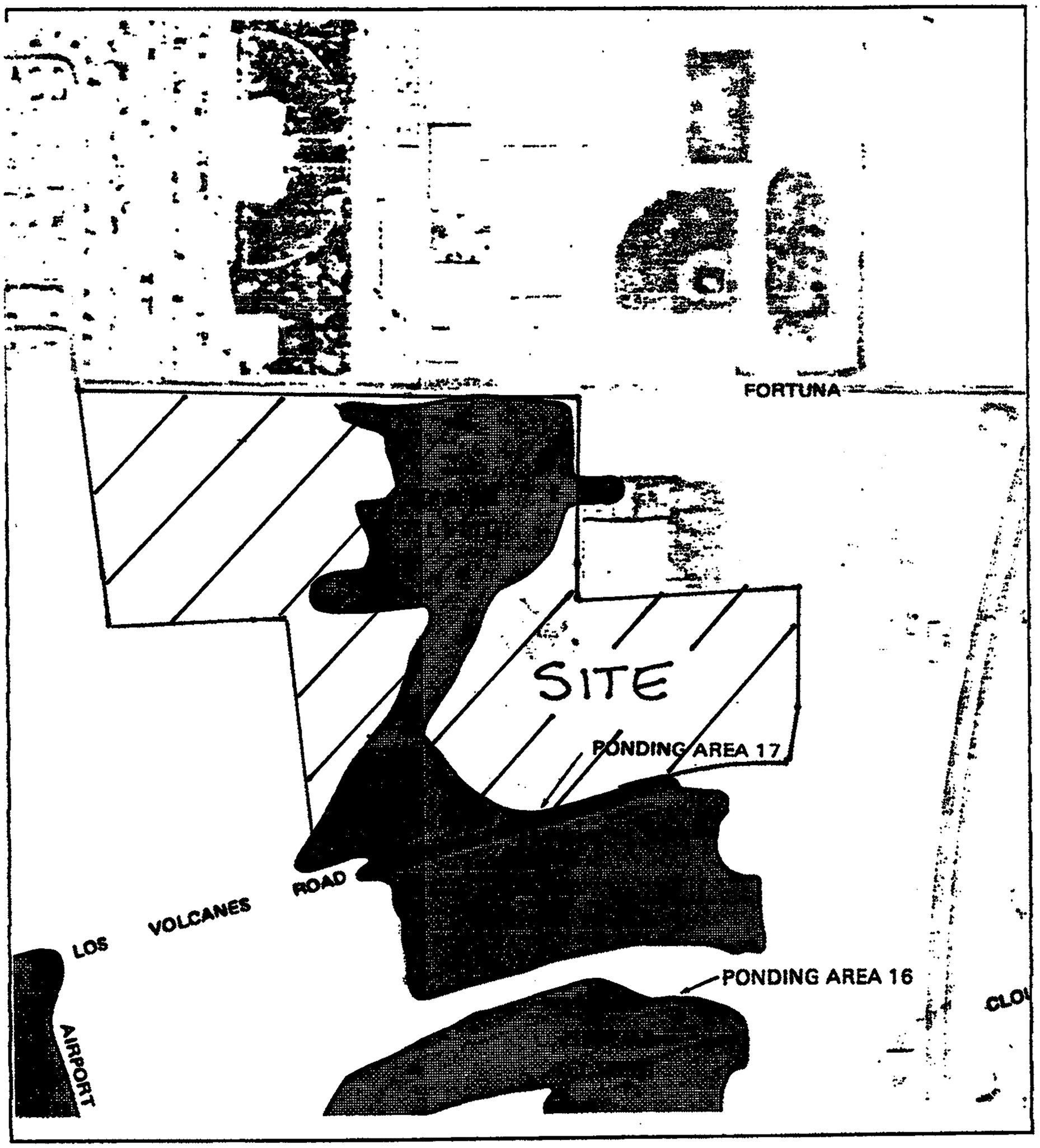
As mentioned above, the project site is presently undeveloped. Existing onsite topography slopes to the center of the site to an existing 100-year floodplain. The site accepts offsite flows from undeveloped land to the west, north of I-40, the West Mesa Manor Subdivision, portions of West Mesa Park, and Fortuna Road to the north,



VICINITY MAP
Figure 1



SOILS MAP
Figure 2



FLOOD INSURANCE RATE MAP
Figure 3

undeveloped land to the east and Los Volcanes Road to the south (see figure 4). These offsite flows enter the site by existing rundowns located at vertical sag curves within Fortuna Road and Los Volcanes Road. Two existing developments located adjacent to the site, the old Bag-N-Save Warehouse Foods site to the east and Tierra Pointe Apartments to the west, both implement onsite retention ponding and therefore do not contribute to the floodplain.

Construction of CEDAR RIDGE ESTATES, UNIT 1 was completed during the summer of 1995. Unit 1 improvements included the storm drain, drop inlets and interim retention pond required to support Units 1, 2 & 3.

SUMMARY OF EXISTING DRAINAGE STUDIES

The criteria for management of stormwater runoff for CEDAR RIDGE ESTATES is established by the following area wide drainage masterplans:

1. The West Bluff Drainage Plan, Phases I-III, by Andrews, Asbury and Robert, Inc.

2. Master Drainage Plan for Atrisco Business Park, By Easterling & Associates, Inc., March 1993.

3. Conceptual Grading & Drainage Plan for El Ranco Atrisco Phase V, by Easterling & Associates, Inc., August 1987.

4. Drainage Report for Cedar Ridge Estates, Unit 1, By Brasher Engineering, Inc., April 1995.

5. CLOMR Submittal for Cedar Ridge Estates, By Brasher Engineering, Inc., April 1995.

The drainage report for CEDAR RIDGE ESTATES, UNITS 2 & 3 utilizes the improvement recommendations outlined in these masterplans. Due to the timing of the CEDAR RIDGE development and proposed storm drainage improvement projects recommended by the masterplans, interim improvements will be implemented until an outfall system is constructed.

Subsequent to approval of the Drainage Report for Cedar Ridge Estates, CLOMR approval was obtained from FEMA for the project (see CLOMR in Appendix). The CLOMR approved the required interim retention pond sites recommended by the report.

PROPOSED DRAINAGE CONDITIONS

The development of CEDAR RIDGE ESTATES, UNITS 2 & 3 and surrounding undeveloped properties relies heavily upon the public infrastructure recommended by the approved masterplans. Unfortunately, due to lack of funding, the drainage improvements which benefit this site are not scheduled for construction at this time. The present feeling is that it could be up to 10 years before these improvements are available for use by the regional property owners. It is therefore necessary for interim drainage improvements to be constructed to allow for CEDAR RIDGE ESTATES, UNITS 2 & 3 to develop. The following narrative describes how the project site will interface with the future infrasturcture, and what interim improvements will be provided to allow for development.

A. INTERIM CONDITIONS

1. PHASE I

Phase I consists of the development of CEDAR RIDGE ESTATES, UNIT 1 which proposes 57 lots and contains approximately 10 acres. UNIT 1 construction was completed during the summer of 1995. UNIT 1 development occurred without alteration of the existing floodplain. Since the floodplain was not be altered no off-site improvements are required with the development of UNIT 1. Since no drainage outfall exists for the project site an interim retention pond was constructed on Lot 1-C, Tract S-2, which is owned by Westland Development Co., Inc. The interim pond was sized to store the 100 year 10 day volume from UNITS 1, 2 & 3 (412,513 cf). Other UNIT I improvements consisted of street and storm drainage facilities designed to convey the estimated 100 year 6 hour design storm reulting from the entire build-out of CEDAR RIDGE ESTATES (approximately 40 acres).

2. PHASE II

The Phase II interim condition will utilize retention ponding as a means of managing on-site and off-site stormwater. The ponds are to be sized to provide adequate storage to remove the floodplain located on the property. Four pond sites will be utilized to manage interim drainage conditions as follows:

- Undeveloped flows from off-site Basin IIIA will be collected in an interim retention pond to be located west of Unser Boulevard and north of I-40.

  This interim retention pond was originally sized to retain the Basin

IIIA 100 year 10 day volume . Since the writing of the CEDAR RIDGE ESTATES report development has occurred, altering the character of the basin. With The construction of Tierra Oeste and Parkway Subdivisions retention ponding was provided to support those projects. CEDAR RIDGE ESTATES, UNITS 2 & 3 will provide retention ponding for the remaining 86 acre undeveloped basin (164,657 cf).

- A second interim pond site located at the northwest quadrant of CEDAR RRIDGE ESTATES will collect off-site runoff from undeveloped land east of Unser and north of I-40, north of Fortuna and south of I-40, and West Mesa Manor a fully developed residential subdivision (Basins IIIB, IV & V).

- A third interim retention pond will be constructed on Lots 14 through 17, Block "F" to pond existing flows from Basin II. This pond will be sized to accept excess stormwater from the Tierra Pointe Apartments. Per the Drainage Report for the Los Volcanes Apartments prepared by Isaccson & Arfman, P.A., January 1985, the Tierra Pointe Apartments discharge approximately 3,000 cubic feet into Los Volcanes Road during the 100-year/6-hour storm. A drainage rundown with sidewalk culverts will be constructed at the existing low point in Los Volcanes Road to drain street flow south into the interim retention pond.

- A fourth interim retention pond will be constructed just west of Block "G" to collect undeveloped runoff from Basin "I". The pond is to be located on property owned by Sunwest Bank. Construction and maintenance will be by Westland Development Co., Inc. with permission of Sunwest Bank (see letter in Appendix).

As shown by Figure 4a, 25' drainageways exist along the west and north sides of the Tierra Pointe Apartments. These drainageways exist by drainage covenant executed by Westland Development Co., Inc. and Los Volcanes Association Limited Partnership II. The purpose of the drainageways is to divert offsite flows around the Tierra Pointe Apartments site. The offsite basin is identified by the Drainage Report for Los Volcanes Apartments as a ±6 acre parcel located north and west of the apartment site. The western swale will continue to function as designed and direct flows to Airport Road. The northern easement will drain Basin I to a temporary retention pond located west of CEDAR RIDGE ESTATES. Since CEDAR RIDGE ESTATES will provide improvements to manage these flows there is no need for the 25' drainageway within the subdivision. The drainageway will be vacated with the proposed platting actions.

Upstream flows from portions of Tract S-1 and Lot 1A of Tract S-1 will continue to drain in historical patterns to the south, contributing to an existing flood hazard zone located west of Airport Road. These flows are diverted south by the abandoned dirt runway which acts as a diversion berm.

Basin K represents the old Bag-N-Save Warehouse food store. Presently, this site manages stormwater by use of a retention pond located south of the building. The interim pond proposed within Lot 1-C is sized to accept flows from this site should Bag-N-Save wish to remove the pond and implement a free discharge concept. The owners of Lot 1-C, Tract S-2 are willing to grant a private drainage easement for the placement of facilities at Bag-N-Save's request.

3. PHASE III

Lomr will map floodplain w/in ponds. Lomr required for release of financial guarantees.

Phase III will consist of the construction of UNIT 3. UNIT 2 will provide all the interim storm drainage improvements required to support UNIT 3 development and remove the floodplain. All interim retention ponds will be in place including the on-site retention pond to be located at the northwest corner of the project site.

A temporary drainage easement and channel will be provided with the construction of Unit 3 for the purpose of conveying undeveloped runoff from off-site Basin VIa to the proposed retention pond.

B. ULTIMATE CONDITIONS

Another Lomr required to reclaim lots where ponds are located

Ultimately the West Mesa Diversion (Systems 500.04 and 504.5) will convey all flows from areas south of I-40 and east of Airport Road to the West Bluff Outfall, thereby removing existing floodplains. Upstream flows from Basin III will be conveyed by the I-40 Interceptor to the West Bluff Outfall. A 30-inch storm drain will be constructed to drain upstream basins west of the site and south of Fortuna Road. The storm drain will be located in Airport Road and drain south to the Coors drainage system and detention pond.

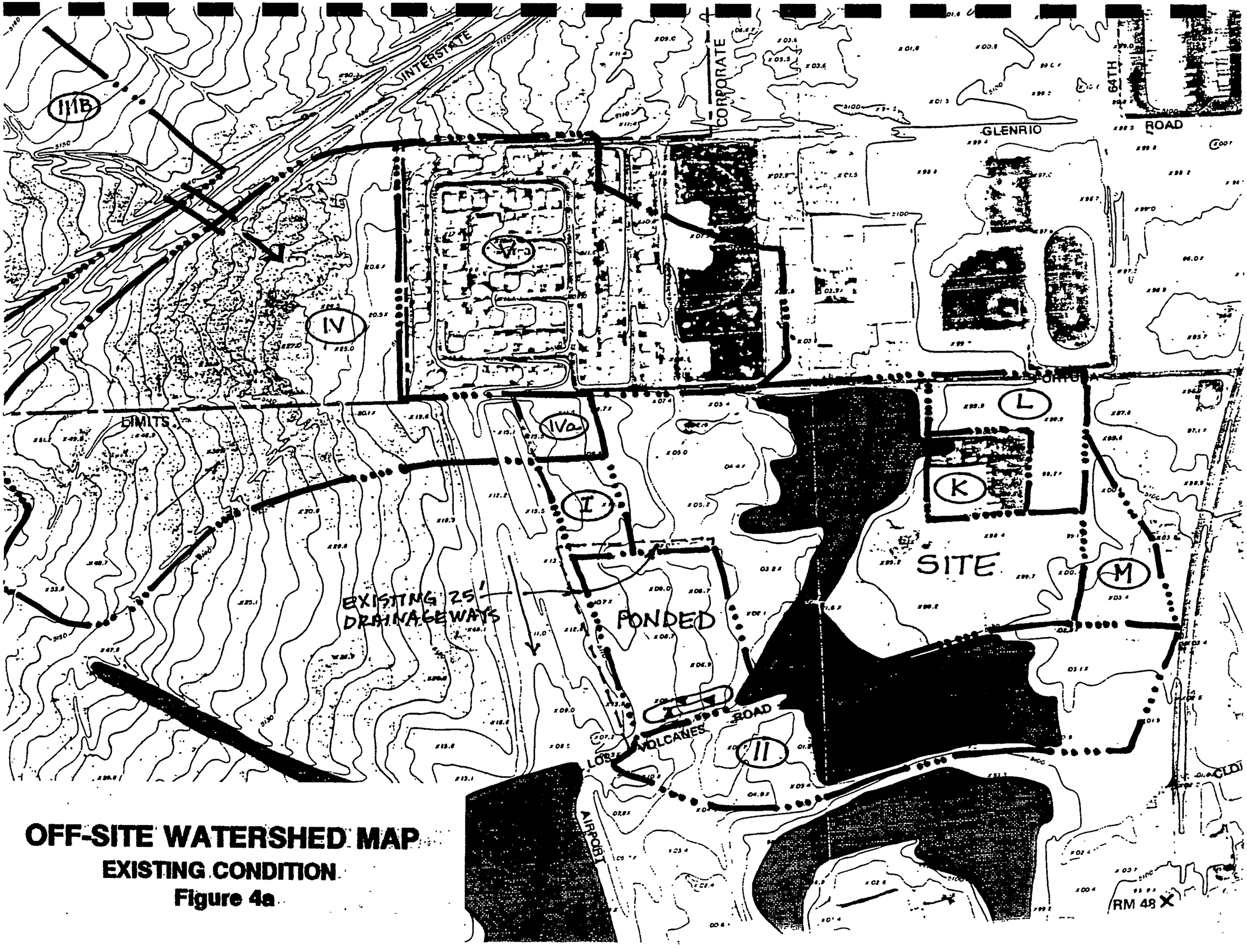
Offsite flow from Basins IV and V are expected to contribute approximately 211 cfs to Fortuna Road under developed conditions. This was determined by calculating the existing 100 year 6 hour flow from Basin V (West Mesa Manor) and assuming developed flows from Basin IV.

Figures 4-7 are provided to demonstrate the drainage basins which affect the CEDAR RIDGE ESTATES development.

TEMPORARY EROSION CONTROL

Temporary erosion control measures are recommended during the construction phase

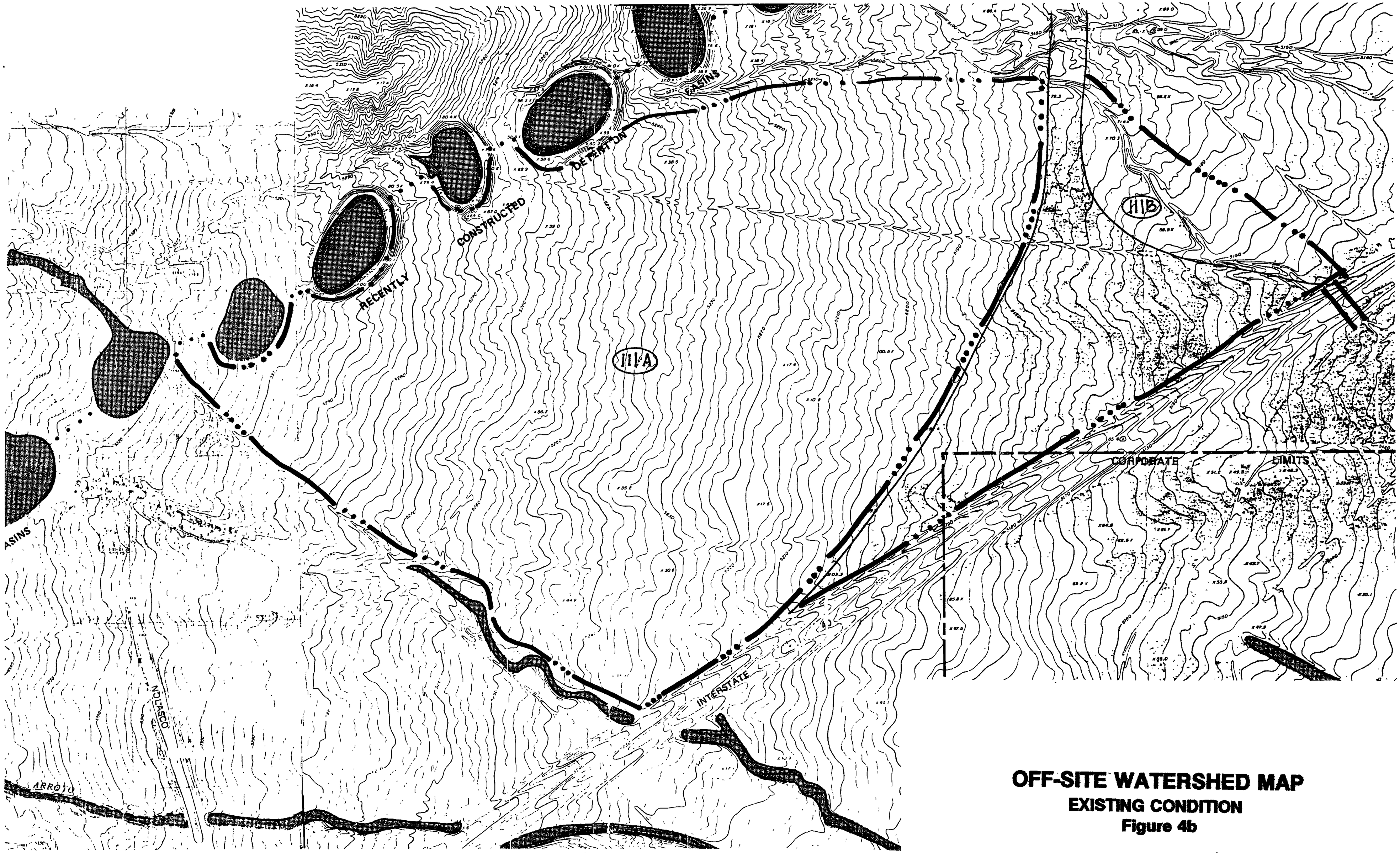
of the project to limit the discharge of sediment into adjoining public streets and private property. Temporary erosion control berms will be required alon the project boundaries. Complete details and exact location of the erosion control facilities will be shown on the grading plan for CEDAR RIDGE ESTATES, UNITS 2 & 3, which will be provided with the work order planset. The interim retention ponds will be scheduled for construction first, thereby providing an outfall for all onsite and offsite flows. All temporary erosion control facilities shall be maintained by the contractor throughout the construction phase.



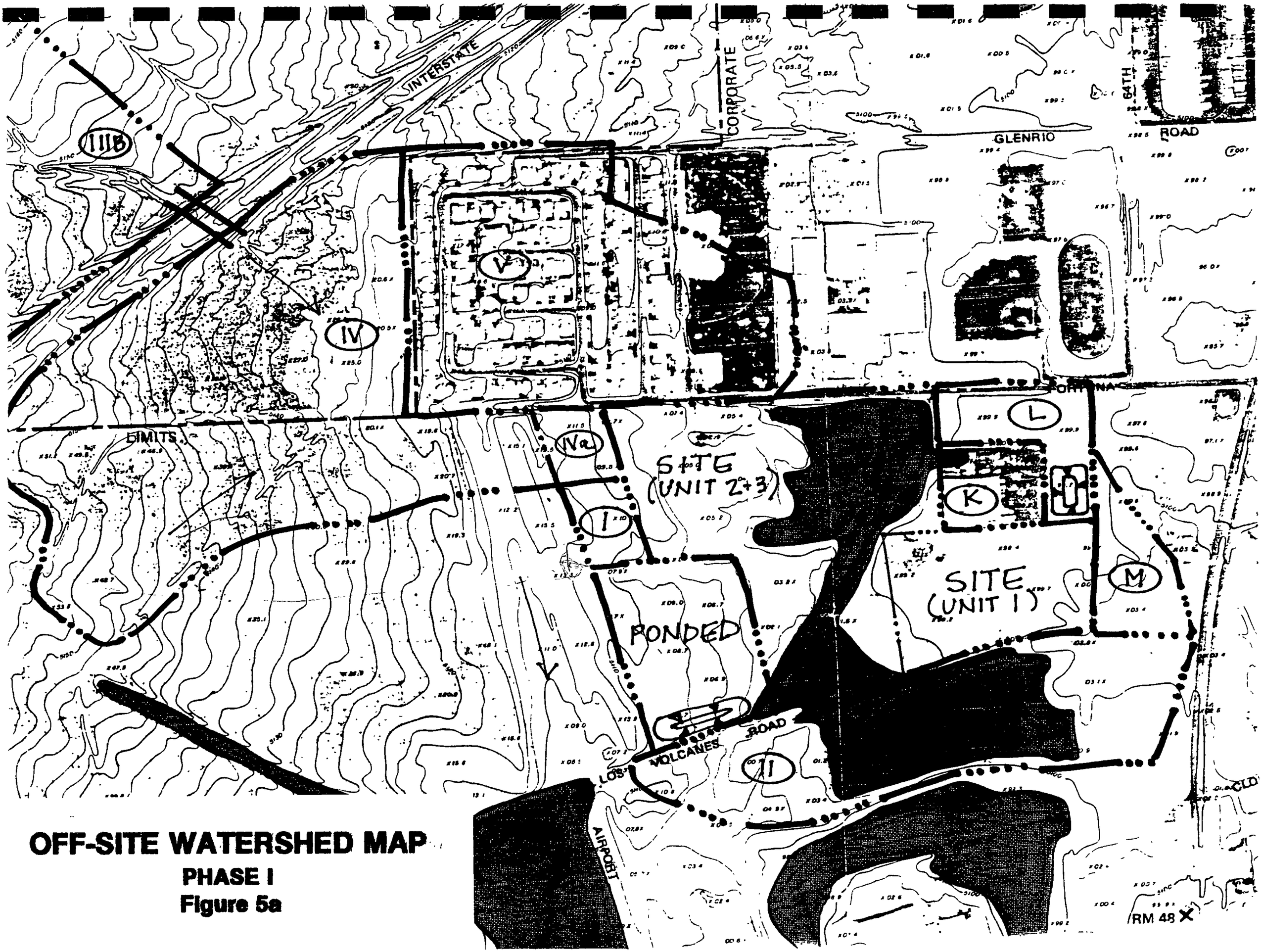
OFF-SITE WATERSHED MAP

EXISTING CONDITION

Figure 4a



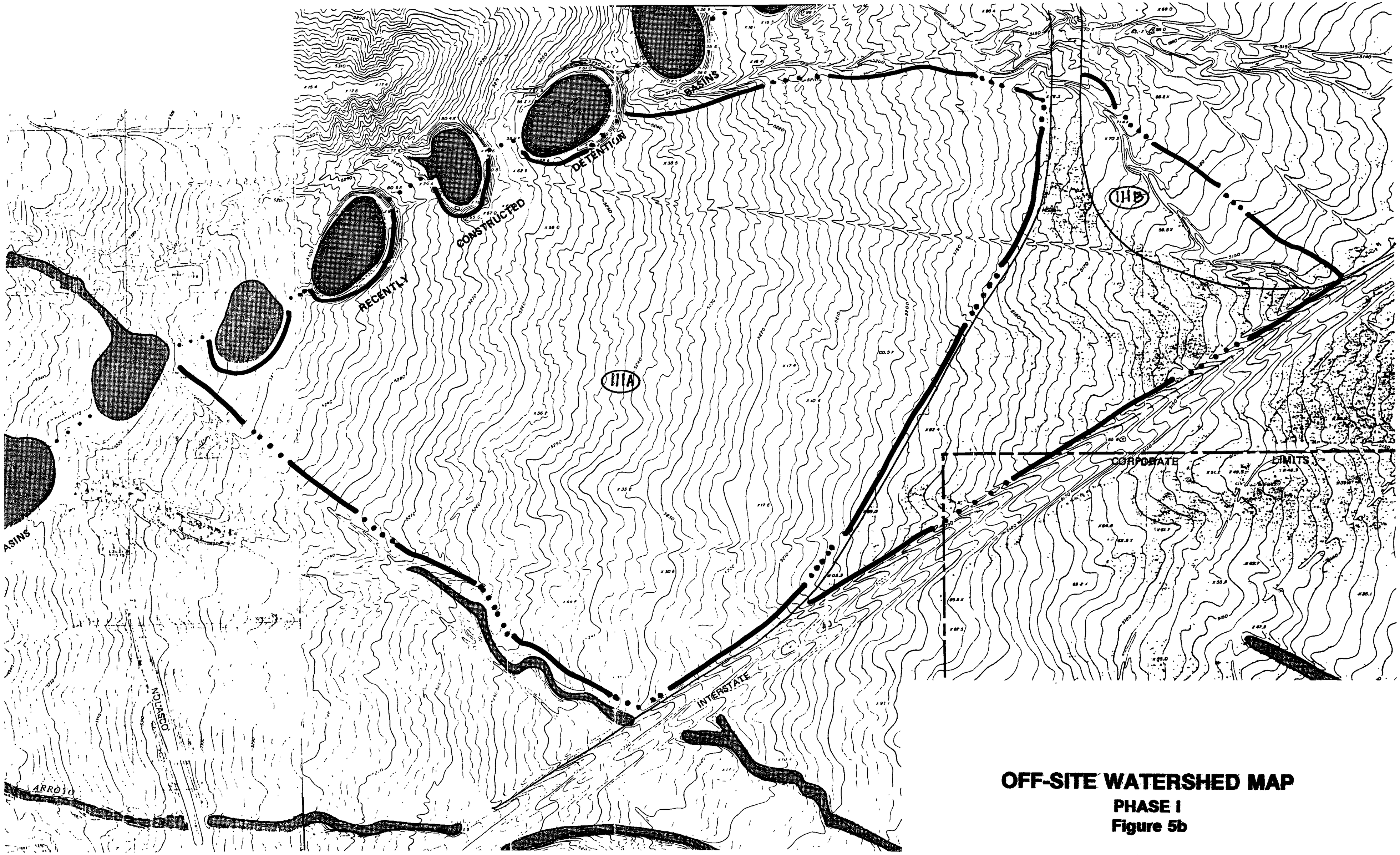
OFF-SITE WATERSHED MAP
EXISTING CONDITION
Figure 4b



OFF-SITE WATERSHED MAP

PHASE I

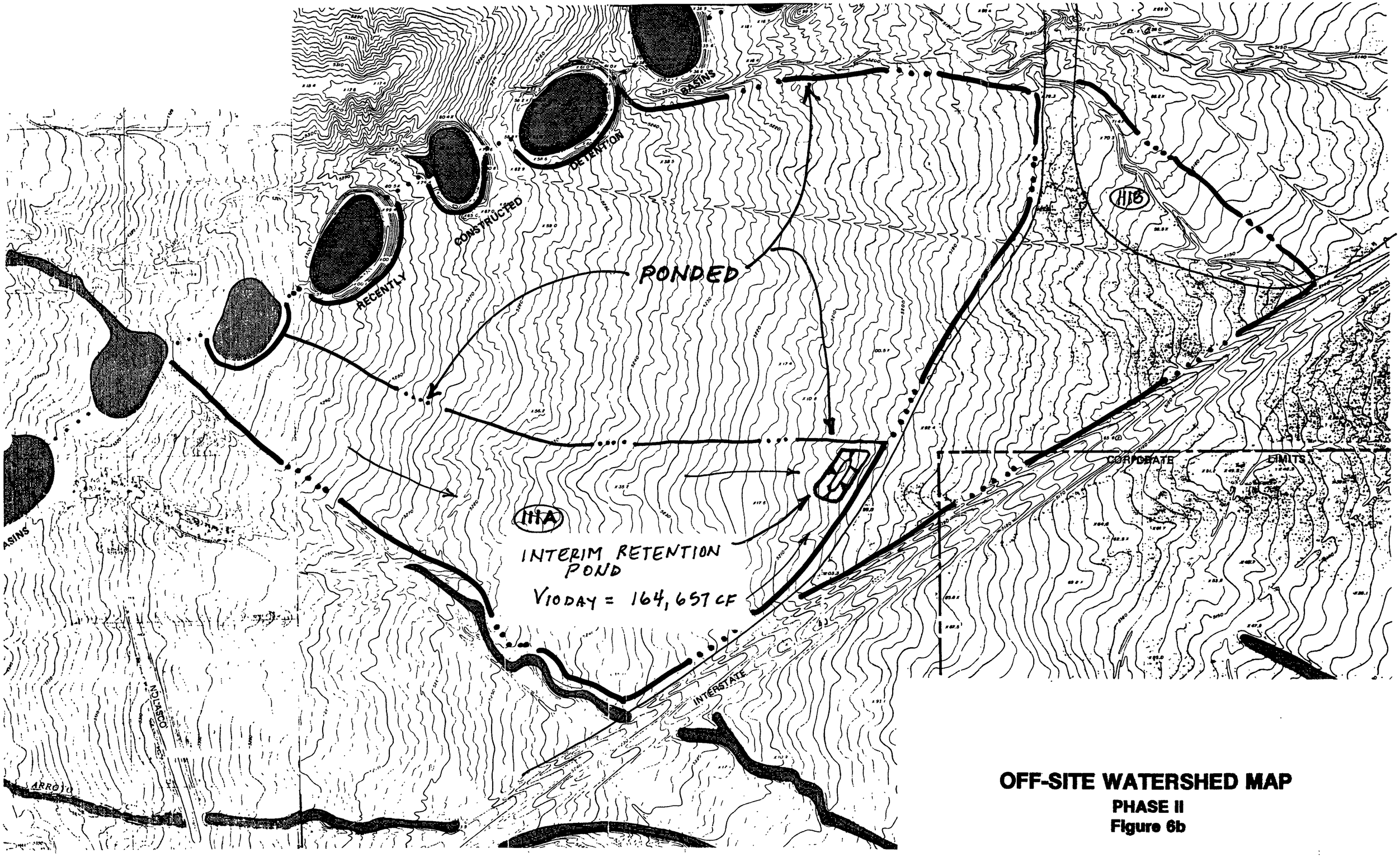
Figure 5a



OFF-SITE WATERSHED MAP

PHASE I

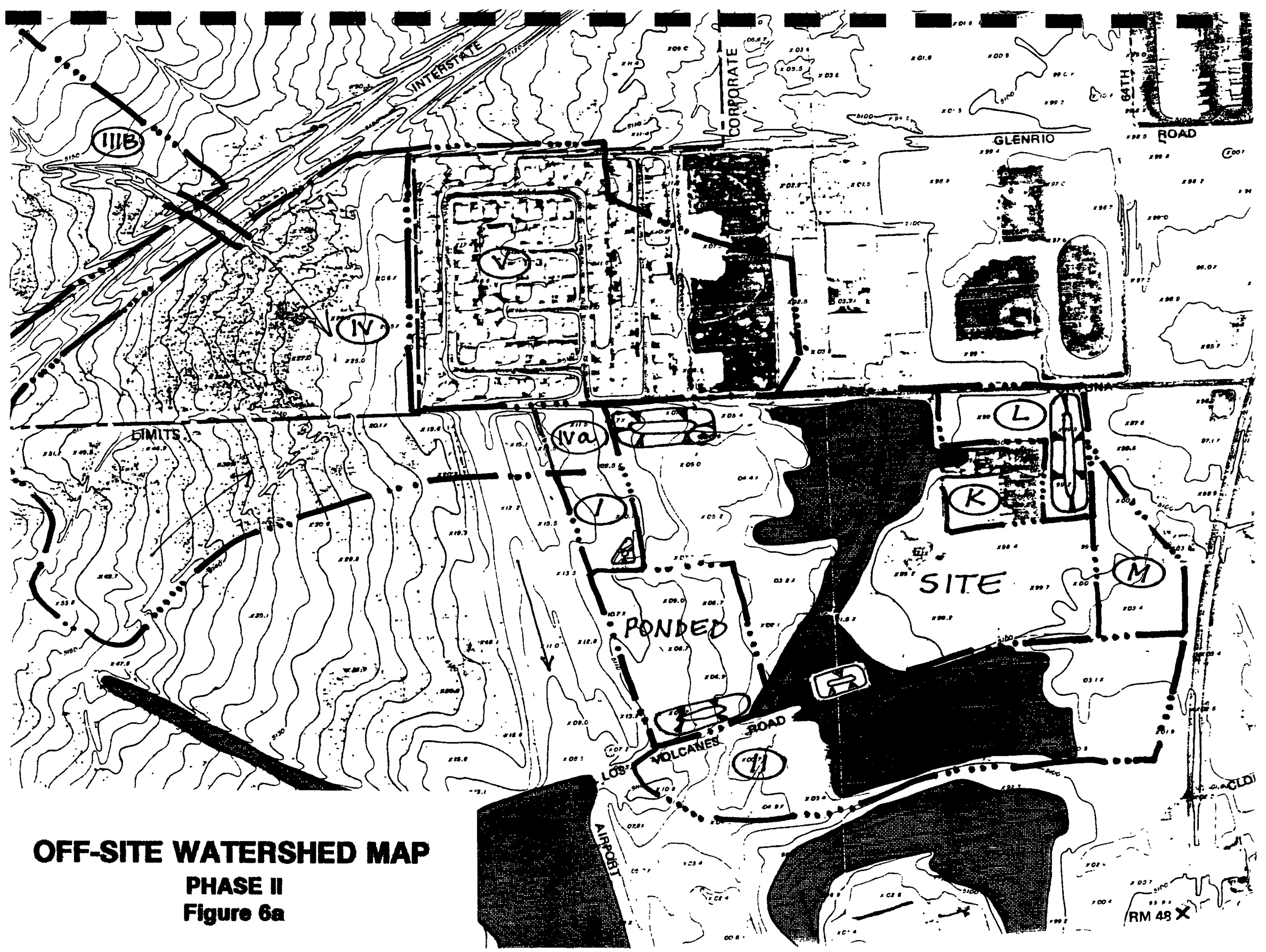
Figure 5b



OFF-SITE WATERSHED MAP

PHASE II

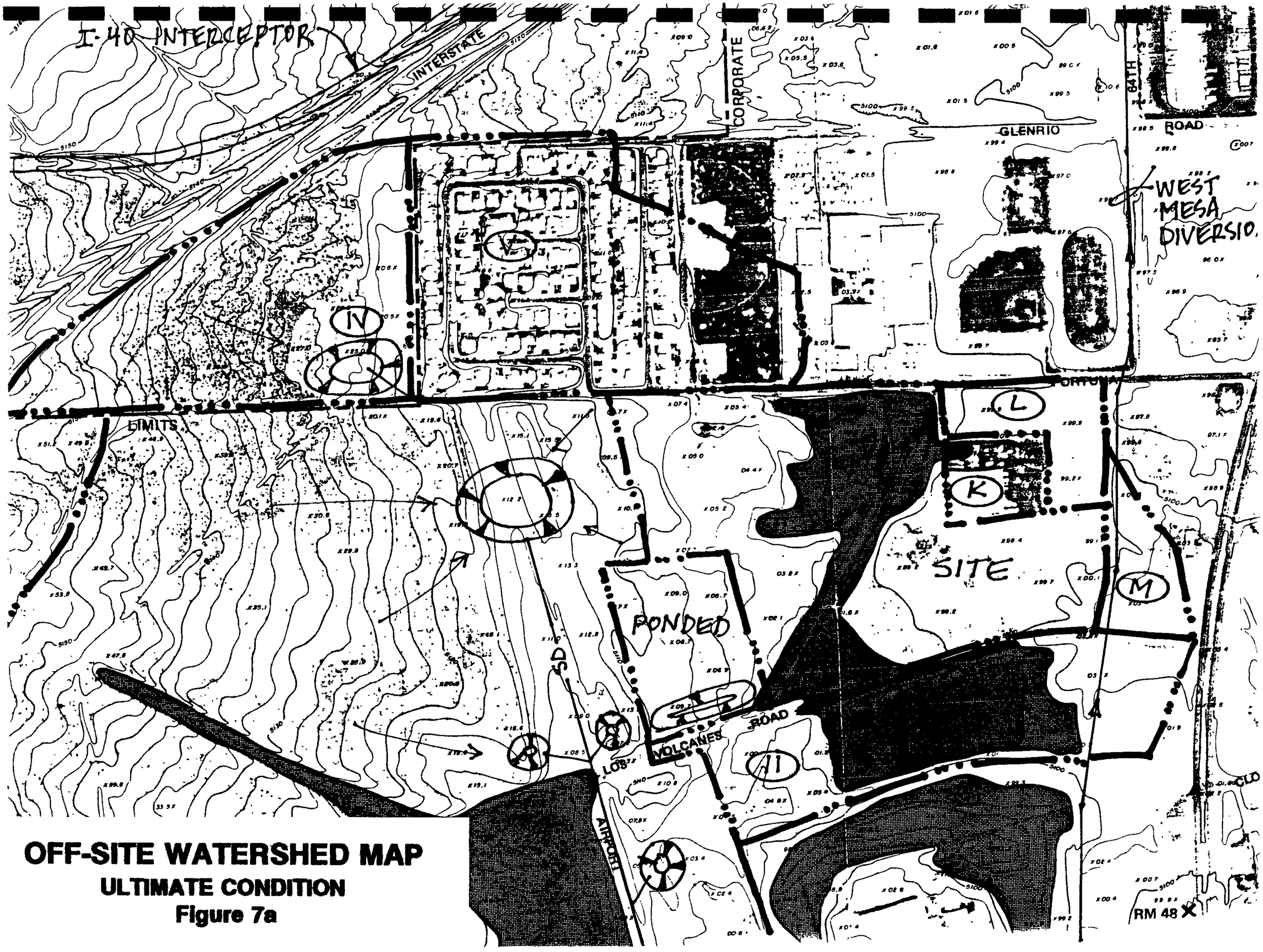
Figure 6b



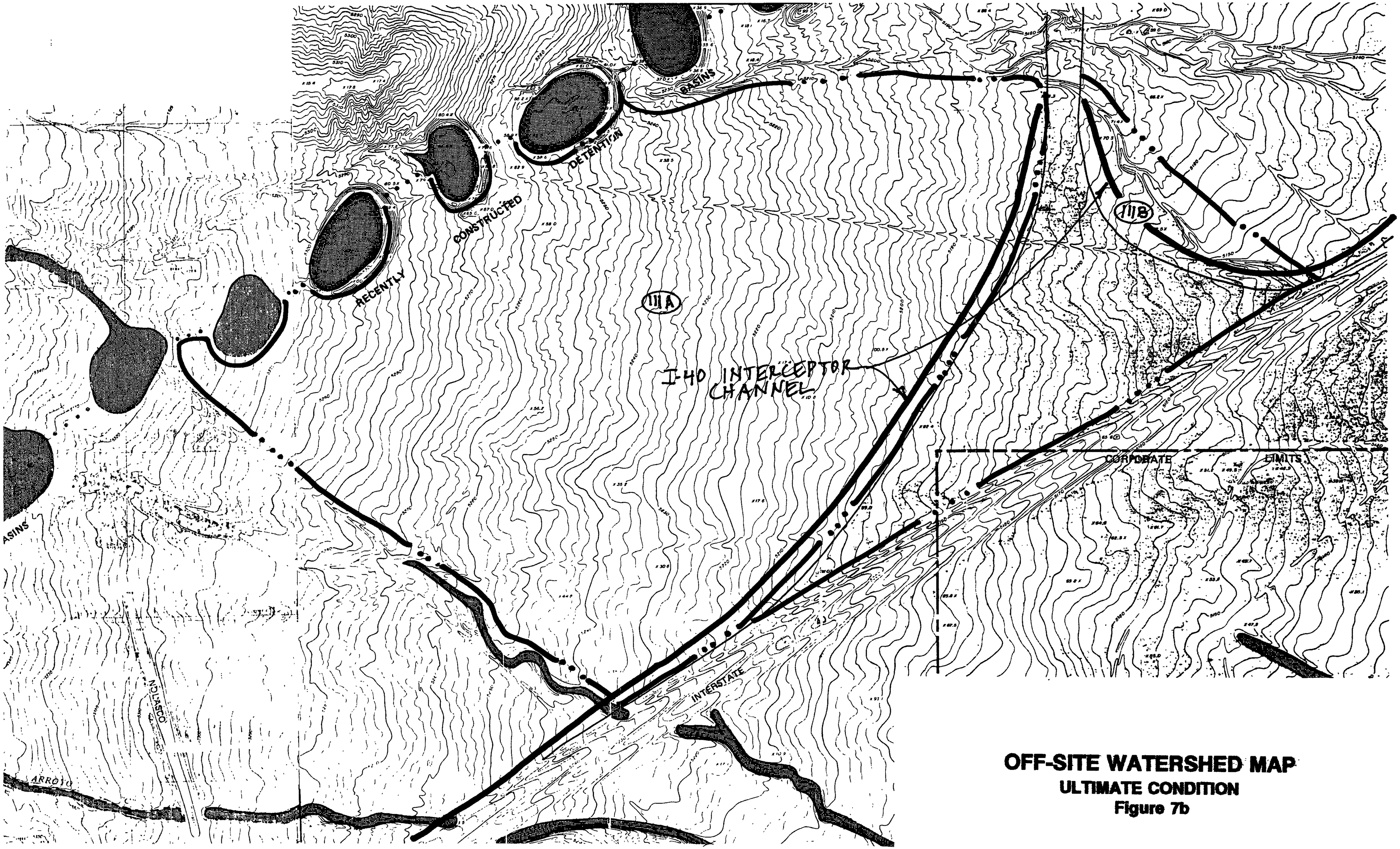
OFF-SITE WATERSHED MAP

PHASE II

Figure 6a



OFF-SITE WATERSHED MAP
ULTIMATE CONDITION
Figure 7a



OFF-SITE WATERSHED MAP
ULTIMATE CONDITION
Figure 7b

APPENDIX

CALCULATIONS

8·14·96

1.

HYDROLOGY
(HYMO)

Precipitation Zone 1 P360 = 2.20 in

AP	Basin	Basin area (Ac)	Land Treatment A (Acres)	B	C	D	Ew (in)	V100 (af)	Q100 cfs
Off-Site existing conditions									
24	I	3.20	3.20	0.00	0.00	0.00	0.44	0.14	5.0
26	II	25.00	23.0	0.20	0.00	1.8	0.55	1.38	45.5
22	III	275.0	275.	0.00	0.00	0.00	0.44	12.1	425.7
23	IV	68.00	68.0	0.00	0.00	0.00	0.44	2.99	105.3
25	*V	36.00	0.00	9.36	7.2	19.4	1.44	4.32	124.6
12	*M	4.70	3.70	0.00	0.00	1.00	0.77	0.30	9.1
21	IIIA	86.00	86.0	0.00	0.00	0.00	0.44	3.78	133.2
22	IIIB	87.00	87.0	0.00	0.00	0.00	0.44	3.83	134.7
23	IVa	2.8	2.8	0.00	0.00	0.00	0.44	0.12	4.4
Developed conditions									
1	**A	3.70	0.00	0.00	0.00	3.70	1.97	0.61	16.2
2	A+B	7.80	0.00	2.03	1.56	4.21	1.44	0.93	27.00
3	C	3.20	0.00	0.83	0.64	1.73	1.44	0.38	11.10
4	D	3.00	0.00	0.78	0.60	1.62	1.44	0.36	10.40
5	C+E	9.10	0.00	2.37	1.82	4.91	1.44	1.09	31.50
6	D+F	5.10	0.00	1.33	1.02	2.75	1.44	0.61	17.60
7	D+F+G	10.50	0.00	2.73	2.10	5.67	1.44	1.26	36.30
8	H	3.90	0.00	1.01	0.78	2.11	1.44	0.47	13.50
9	C-G,i	23.20	0.00	6.03	4.64	12.5	1.44	2.78	80.30
10	H+J	9.00	0.00	2.34	1.80	4.86	1.44	1.08	31.10
11	C-J	32.20	0.00	8.37	6.44	17.3	1.44	3.86	111.4

8-14-96

2.

12	A-J	40.00	0.00	10.4	8.00	21.6	1.44	4.80	138.4
12	K	3.90	0.00	0.00	0.40	3.50	1.87	0.61	16.40
12	L	5.10	0.00	0.00	5.10	0.00	0.99	0.42	14.6
12	A-L	49.00	0.00	10.4	13.5	25.1	1.43	5.84	169.5
9	i	3.60	0.00	0.94	0.72	1.94	1.44	0.43	12.45
10	J	5.10	0.00	1.33	1.02	2.75	1.44	0.61	17.64
11	Unit1	10.00	0.00	2.60	2.00	5.40	1.44	1.20	34.60
23	IV	25.00	0.00	6.50	5.00	13.5	1.44	3.00	86.50

All undeveloped flow rates and volumesinclude a 20% sediment bulking factor

* Basins V & M are fully developed basins. No sediment bulking factor was applied

** Basin A is assumed ponded with Land Treatment D=100%. No sediment bulking factor was applied

PROJECT NAME CEDAR RIDGE ESTATES JOB NO. 5008

SUBJECT POND SIZING

BY _____ CHECKED BY _____ DATE 3-19-96 PAGE 3 OF _____

1. INTERIM POND SIZES ARE BASED ON 100 YR 10 DAY PER DPM VOL 2 CHP 22 PART A.5.

$P_{360} = 2.2''$ $P_{10DAY} = 3.67''$

$V_{10\,DAY} = V_{360} + A_D (P_{10D} - P_{360})/12$

A. UNIT 1

BASINS: SITE + EXISTING K, L, M, I

$A = 40.0 + 3.9 + 5.1 + 4.7 + 3.2 = 56.9\,AC$

$V_{360} = 4.80 + 0.61 + 0.42 + 0.30 + 0.14 = 6.27\,AF$

$A_D = 21.6 + 3.5 + 0 + 1.0 + 0 = 26.1\,AC$

$V_{10\,DAY} = \underline{412,513\,CF}$

$\Rightarrow$ 420,400 CF PROVIDED BY UNIT 1 CONSTRUCTION (PROJ NO 4972.90)

B. BASIN IIIA:

$A = 86\,AC$ $A_D = 0$

$V_{360} = \underline{3.78\,AF}$ $V_{10\,DAY} = V_{360} = \underline{164,657\,CF}$

PROJECT NAME CEDAR RIDGE ESTATES JOB NO. 5008

SUBJECT POND SIZING

BY _____ CHECKED BY _____ DATE 3-19-96 PAGE 4 OF _____

C. LOS VOLCANES (LOTS 14-17, BLK)

BASIN II

$A = 25$ AC

$V_{360} = 1.38$ AF

$A_D = 1.8$ AC

$V_{10\ DAY} = 69,696$ CF

⇒ ADD 3,000 CF FROM TIERRA POINT

$V_{10\ DAY} = \underline{\underline{72,696}}$ CF

D. ON-SITE @ NW CORNER UNIT 3

BASINS: A, IIIB, IV, V

$A = 3.7 + 87.0 + 68.0 + 36.0 = 194.7$ AC

$A_D = 0 + 0 + 0 + 19.4 = 19.4$ AC

$V_{360} = 0.61 + 3.83 + 2.99 + 4.32 = 11.75$ AF

$V_{10\ DAY} = \underline{\underline{415,503}}$ CF

PROJECT NAME CEDAR RIDGE EST. JOB NO. 5008

SUBJECT POND SIZING

BY _____ CHECKED BY _____ DATE 12-27-96 PAGE 5 OF _____

E. BASIN I

$A = 3.2\ A$

$V_{360} = 0.14\ AF$ $\qquad A_D = 0$

$V_{10\ DAY} = 0.14\ AF = 6098\ CF.$

PROJECT NAME CEDAR RIDGE ESTATES JOB NO. 5008

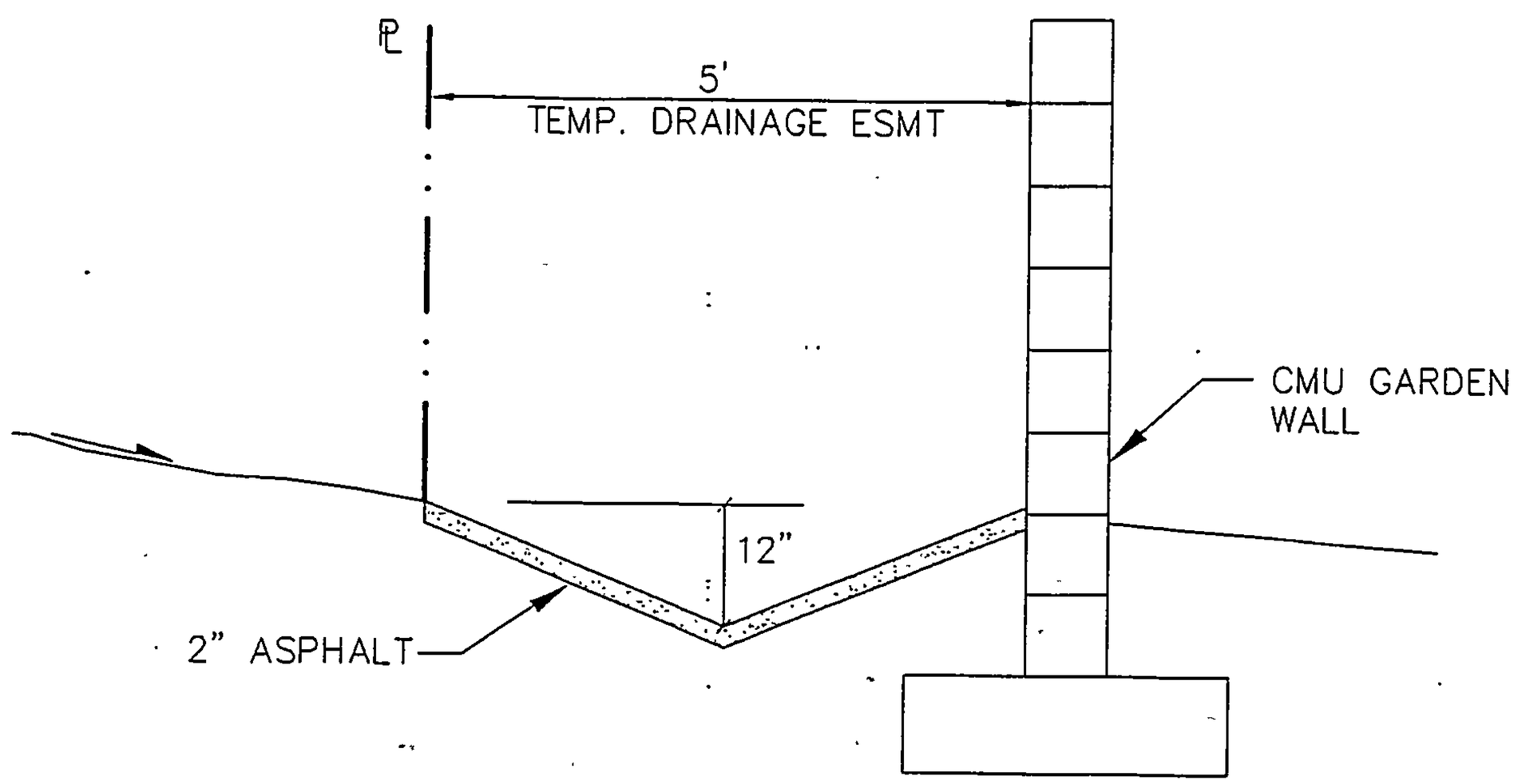
SUBJECT BASIN IVa - INTERIM IMPROVEMENTS

BY _____ CHECKED BY _____ DATE 6-14-96 PAGE 6 OF _____

REV 12-27-96

4. OFFSITE BASIN IVa CHANNEL.

CONSTRUCT INTERIM CHANNEL TO CONVEY OFFSITE UNDEVELOPED FLOWS @ WEST PL



PROPERTY LINE CHANNEL SECTION

1"=2'

BASIN IVa

Q_{100} = 4.4 CFS

V_{100} = 0.12 AC

PROJECT NAME CEDAR RIDGE ESTATES JOB NO. 5008

SUBJECT BASIN IVa - INTERIM IMPROVEMENTS

BY _____ CHECKED BY _____ DATE 8-14-96 PAGE 7 OF _____

REV 12-27-96

MAN-MADE CHANNELS

```
VARIABLES LIST:
         Y - FLOW DEPTH        B - CHANNEL BOTTOM WIDTH      S - CHANNEL SLOPE
         Q - FLOWRATE          M - CHANNEL SIDE SLOPE        N - CHANNEL ROUGHNESS

VARIABLE TO BE SOLVED (Y,Q,B,M,S OR N) ? Y


Q (CFS)     ? 5                                RESULTS
B (FT)      ? 0                          ================
M (FT/FT)   ? 2.5                        Y=        0.70 FT
S (FT/FT)   ? .01                        A=        1.21 SF
N (FT^1/6)  ? .017                       P=        3.75 FT
                                         V=        4.12 FPS
                                         F=        1.23      SUPER-CRITICAL FLOW
```

PROJECT NAME CEDAR RIDGE EST. JOB NO. 5008

SUBJECT DRAINAGE CALCULATIONS

BY DL CHECKED BY DATE 3-22-94 PAGE 8 OF

REV 4-3-95

2. STREET DEPTHS

AP	BASINS	Q_{100} CFS	SLOPE	d_{100} FT	VEL FIS	E FT	EGL FT	
1	A	12.8	0.4%	0.46	1.8	0.05	0.51	
2	A + B	27.0	"	0.57	2.5	0.10	0.67	
3	C	11.1	"	0.44	1.8	0.05	0.49	
4	D + I	14.5	"	0.47	2.0	0.06	0.53	
5	C + E	31.5	"	0.61	2.7	0.11	0.72	*
6	D + F + I	21.7	"	0.54	2.4	0.09	0.63	
7	D + F + G + I	40.4	"	0.67	3.0	0.14	0.81	*
8	H	13.5	"	0.46	2.0	0.06	0.52	
9	C-G, I, i	84.4	"	0.70	3.0	0.14	0.84	*
10	H + J	31.1	"	0.61	2.7	0.11	0.78	*
11	C-J, i	115.5	0%	0.67+	-0-	-0-	0.67+	*
9	i	12.5	0.4%	0.46	1.8	0.05	0.51	
25	IV, V	211.0	0.4%	0.67+	3.5	0.20	0.87	*

* STORM DRAIN REQUIRED, SEE PAGE 7

PROJECT NAME CEDAR RIDGE EST JOB NO. 5008

SUBJECT DRAINAGE CALCULATIONS

BY DL CHECKED BY DATE 3-22-94 PAGE 9 OF

REV 4-3-95

3. STORM DRAIN SIZING

AP	SURFACE Q100 CFS	STREET d100 FT	# DI's	PIPE SLOPE	MAIN DIA IN	Q PIPE CFS	RESIDUAL FLOW CFS
7	40.4	0.67	6	0.5%	36"	36	4.4
5	31.5	0.61	4	0.5%	30"	31.5	0
11	48.0	0.67	DRAINS TO TYPE 'A' CHANNEL				
25	211.0	0.67+	SPECIAL COLLECTION SYSTEM		66"	211.0	0
26	37.9	0.67+	6	2.0%	24"	37.9	0

NOTE: STORM DRAIN CONSTRUCTED BY CITY PROJECT 4972.90

CORRESPONDENCE

5000

P.O. Box 25500
Albuquerque, New Mexi 7125-0500
Tel. 505-282-3064
Fax 505-282-4190

Robert M. Goodman
President

SUNWEST BANK

September 27, 1996

Mr. Fred Aguirre
Hydrology Department
City of Albuquerque
Post Office Box 1293
Albuquerque, NM 87103

Re: Cedar Ridge Phase II

Dear Mr. Aguirre:

This letter is to confirm that Sunwest Bank of Albuquerque, N.A., as owner of Tract S-1A of Atrisco Business Park Unit 2, will allow grading on the easterly portion of this Tract for the purpose of creating a temporary detention pond of approximately 100' x 100' for existing undeveloped flows and if required, grant a temporary drainage for such purposes.

This pond would ultimately be eliminated when Tract S-1A is developed and these flows would be routed to the existing storm drain in Airport Road as required by the Easterling drainage report prepared for Sunwest Bank of Albuquerque, N.A.

Should you have any questions, please do not hesitate to contact me.

Sincerely,

Robert M. Goodman
President

RMG/cas
6910

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
UTILITY DEVELOPMENT DIVISION/HYDROLOGY SECTION

PRE-DESIGN CONFERENCE

DRAINAGE FILE/ZONE ATLAS PAGE NO.: J10-D2G DATE: 1/27/94

EPC NO.: _____ DRB NO.: _____ ZONE: _____

SUBJECT: Ventana Ridge

STREET ADDRESS: _____

LEGAL DESCRIPTION: Lots 1B, 2, 4 & 3B of Tract 52 of Atrisco Business Park

APPROVAL REQUESTED:

- ✓ PRELIMINARY PLAT
- ___ SITE DEVELOPMENT PLAN
- ___ GRADING/PAVING PERMIT
- ___ FINAL PLAT
- ___ BUILDING PERMIT
- ___ OTHER

ATTENDANCE:	WHO	REPRESENTING
	Dennis Lorenz	
	Fred J. Aguirre	

FINDINGS:

An approved drainage report is required for preliminary plat approval. The major issues this report will need to address are:

- Removal of the existing floodpoint –
- Street design/storm drain requirements in Fortuna and Los Volcanes. The design ~~with~~ must include the greater of interim off-site flows or developed off-site flows.
- The relocation of the existing floodpoint must be designed towards a future outfall system
- A LOMR will be required to release the financial guarantees.
- ~~The flow in the street must~~ (or) The height of a hydraulic jump cannot exceed .2' above top of curb. Street flows with no potential for a sump can have the normal depth to the top of curb.

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: _____ SIGNED: _____

TITLE: _____ TITLE: _____

DATE: 1/27/94 DATE: 1-27-94

NOTE PLEASE PROVIDE A COPY OF THIS PRE-DESIGN FORM WITH THE DRAINAGE SUBMITTAL.

Federal Emergency Management Agency

Washington, D.C. 20472

MAY 30 1995

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

IN REPLY REFER TO:
Case No.: 95-06-162R

The Honorable Martin Chavez
Mayor, City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

Community: City of Albuquerque, New Mexico
Community No.: 350002

104

Dear Mayor Chavez:

This is in response to a letter dated April 11, 1995, from Mr. Dennis A. Lorenz, P.E., Brasher Engineering, Inc., to the Federal Emergency Management Agency (FEMA) regarding the effective Flood Insurance Rate Map (FIRM) and Flood Insurance Study (FIS) report for the City of Albuquerque, New Mexico. With his letter, Mr. Lorenz provided additional information to support a February 21, 1995, request for a Conditional Letter of Map Revision (CLOMR) from Ms. Susan M. Calongne, P.E., City/County Floodplain Administrator, City of Albuquerque. Ms. Calongne requested that FEMA evaluate the effects that proposed grading and construction of the following four interim retention ponds would have on the effective FIRM and FIS report: northwest of the intersection of Interstate Highway 40 and Unser Boulevard (Interim Pond 1); just south of Fortuna Drive, approximately 2,600 feet west of Coors Road (Interim Pond 2); just south of Fortuna Drive, approximately 800 feet west of Coors Road (Interim Pond 3); and just south of Los Volcanes Road, approximately 1,400 feet west of Coors Road (Interim Pond 4).

All data required by FEMA to evaluate this request were submitted with Ms. Calongne's February 21 letter, and with letters dated March 14 and April 11, 1995, from Mr. Lorenz. All fees necessary to process this CLOMR, a total of $1,600, have been received.

We have reviewed the data submitted and the flood data used to prepare the effective FIRM for the City of Albuquerque, New Mexico. We believe that if the proposed project is constructed as shown on the report entitled "CLOMR Submitted for Cedar Ridge Estates Subdivision, Albuquerque, New Mexico," dated February 1995, prepared by Brasher Engineering, Inc., a revision to the FIRM would be warranted.

The proposed interim retention ponds are intended to store the rainfall runoff generated by a flood having a 1-percent probability of being equaled or exceeded in any given year (base flood) over the watershed area that currently contributes to Ponding Area 17, shown on the effective FIRM. In the proposed conditions, the Special Flood Hazard Area (SFHA) for Ponding Area 17 will be replaced by the SFHAs that will be created by the proposed interim retention ponds. These proposed ponds will increase the SFHA. The increases will be located within the Westland Development Company's property, and no insurable structures will be affected.

Upon completion of the project, your community may submit the data listed below and request that we make a final determination on revising the effective FIS report and FIRM.

- An initial fee of $225, which represents the minimum charges associated with a request of this type, must be submitted before we can process your revision request. Payment of this fee shall be made in the form of a check or money order made payable in U.S. funds to the National Flood Insurance Program (NFIP), or by credit card payment. The payment shall be forwarded to one of the addresses listed below.

For U.S. Postal Service:	For overnight service:
Federal Emergency Management Agency	Fee-Collection System Administrator
Fee-Collection System Administrator	c/o Dewberry & Davis, METS Division
P.O. Box 3173	8401 Arlington Boulevard
Merrifield, Virginia 22116-3173	Fairfax, Virginia 22031

- As-built plans, certified by a registered professional engineer, of all proposed project elements

- Certification that all fill placed in the currently effective SFHA and below the proposed base flood elevation is compacted to 95 percent of the maximum density obtainable with the Standard Proctor Test method issued by the American Society for Testing and Materials (ASTM Standard D-698) or an acceptable equivalent method for all areas to be removed from the currently effective SFHA

- An officially adopted maintenance and operation plan for Interim Ponds 1 through 4. This plan, which may be in the form of a written statement from the community Chief Executive Officer, an ordinance, or other legislation, must describe the nature of the maintenance activities, the frequency with which they will be performed, and the title of the local community official who will be responsible for ensuring that the maintenance activities are accomplished.

- Information to verify that the rainfall runoff generated at Sub-basins IIIb, VI, and V, shown on the topographic work map entitled "Off-Site Watershed Map, Phase II," undated, prepared by Brasher Engineering, Inc., will be conveyed to Interim Pond 2 by a drainage system that will not fail because of clogging or sedimentation during a base flood event.

- Hydrologic and hydraulic analyses, for as-built conditions, of the base flood

This response to Ms. Calongne's request is based on minimum floodplain management criteria established under the NFIP. Your community is responsible for approving all proposed floodplain development, including this request, and for assuring that the necessary permits required by Federal or State law have been received. State and community officials, based on knowledge of local conditions and in the interest of human safety, may set higher standards for construction or may limit development in floodplain areas. If the State of New Mexico or your community has adopted more restrictive or comprehensive floodplain management criteria, those criteria take precedence over the minimum NFIP requirements.

If you have any questions regarding floodplain management regulations for your community or the NFIP in general, please contact the Consultation Coordination Officer (CCO) for your community. Information on the CCO for your community may be obtained by contacting the Director, Mitigation Division of FEMA in Denton, Texas, at (817) 898-5127. If you have any technical questions regarding this CLOMR, please contact Mr. Alan Johnson of our staff in Washington, DC, either by telephone at (202) 646-3403 or by facsimile at (202) 646-4596.

Sincerely,

Michael K. Buckley, P.E., Chief
Hazard Identification Branch
Mitigation Directorate

cc: Ms. Susan M. Calongne, P.E.
City/County Floodplain Administrator
City of Albuquerque

√ Mr. Dennis A. Lorenz, P.E.
Brasher Engineering, Inc.

400 54

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

June 22, 1995

CERTIFICATE OF COMPLETION AND ACCEPTANCE

Leroy Chavez
Westland Development
401 Coors Blvd. N.W.
Albuquerque, NM 87121

RE: CEDAR RIDGE ESTATES PHASE I PROJECT NO. 4972.80
(MAP J-10)

Dear Sir:

This is to certify that the City of Albuquerque accepts Project No. 4972.80 as being completed according to approved plans and construction specifications.
Please be advised this certificate of completion and acceptance shall only become effective upon final plat approval and filing in the office of the Bernalillo County Clerk's Office.

The project is described as follows:

- This project consisted of installation of of water main and services, sanitary sewer mains, manholes, and services. Residential Streets paving and storm water drain were installed. Also installed was 4" wide sidewalk.

The contractor's correction period begins the date of this letter and will be effective for a period of one (1) year.

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

Sincerely,

Rick Roybal, P.E.
City Engineer,
Engineering Group
Public Works Department

Sincerely,

Russell B. Givler, P.E.
Chief Construction Engineer,
Engineering Group
Public Works Department

cc: Dennis Lorenz, Brasher Engineering
John Bellisle, J. R. Hale
Fred Aguirre, Engineering Group, PWD
Theresa Lucero, Engineering Group, PWD
Terri Martin, Engineering Group, PWD
Martin Barker, Engineering Group, PWD
Steve Gonzales, Special Assessments, DFM
Sam Hall, Operations Group, PWD
Jim Fink, Operations Group, PWD
Dean Wall, Engineering Group, PWD
Stuart Reeder, Water/Wastewater Group, PWD
Ray Chavez, Traffic Engineering, PWD
Josie Gutierrez, New Meter Sales, Finance Group, PWD
Richard Zamora, Engineering Group, PWD
f/Project No. 4972.80
f/Readers
f/Warranty:Contract

GRADING AND DRAINAGE CERTIFICATION

FOR

CEDAR RIDGE ESTATES, UNIT 2

DENNIS A. LORENZ
NEW MEXICO
9647
REGISTERED PROFESSIONAL ENGINEER

6-23-97

BRASHER & LORENZ, INC.
Consulting Engineers

June 1997

RECEIVED
JUL 02 1997
HYDROLOGY SECTION

AS-BUILT CONDITIONS

The following information is provided to document the "as-built" conditions following the construction of Cedar Ridge Estates, Unit 2. Cedar Ridge Estates, Unit 2 provids interim ponding basins for the displacement of the Floodplain historically encumbering the site, and adjoining properties located to the south. The approved Drainage Report for the subject project recommended the construction of interim retention ponds at 4 locations. Brasher & Lorenz, Inc. measured the ponds after construction to verify storage capacities. The following table reports design versus as-built storage capacities:

POND LOCATION	DESIGN VOLUME (CF)	AS-BUILT VOLUME (CF)
UNSER @ I-40	164,657	202,900
FORTUNA ROAD	615,503	713,275
TRACT S-2	6,098	11,000
LOS VOLCANES ROAD	72,696	41,500

All ponds provide the required storage, with the exception of the Los Volcanes pond, which has a 31,196 cubic foot deficit.

LOS VOLCANES POND ANALYSIS

Since the writing of the Drainage Report for Cedar Ridge Estates, Unit 2, the character of Basin II (which contributes to the Los Volcanes Pond) has changed. Development within the basin has reduced the ponded drainage basin to the area representing Los Volcanes Road, a basin of 3.37 acres. The following properties have developed and have provided on-site retention ponding equivalent to the volume of the displaced floodplain, plus on-site developed flows:

ID	LEGAL DESCRIPTION **	PROJECT NAME	SITE AREA (AC)	POND VOLUME (CF)
1	LOT 2A	UNDEVELOPED	5.00	DRAINS TO HUD HOUSING
2	PORTION LOT 2B	HUD HOUSING PROJECT	3.14	28,750

3	LOT 2B2 & 1A1A	UNDEVELOPED	3.08	DRAINS TO ASSISTED LIVING
4	LOT 1A1B	ASSISTED LIVING FACILITY	2.82	122,235
5	LOT 1	LOS VOLCANES SENIOR CENTER	3.00	24,394
6	LOT 1B	VALLEY WESTSIDE POLICE SUBSTA	1.31	6,657
7	LOT P1 & P2	UNDEVELOPED	4.09	DRAINS SOUTH AWAY FROM LOS VOLCANES

** All lots are located within Tract "N", Unit 2, Atrisco Business Park

REVISED POND VOLUME

The Los volcanes pond requirement can be revised to reflect the changed conditions within Basin II. The pond volume is reduced as follows:

1. Original Basin II hydrology:

   A = 25.0 ACRES

   Q100 = 45.5 CFS

   V100 = 1.38 AF
   = 60,113 CF

   V10day = 69,696 CF

   Interim Pond Vol = 69,696 CF + 3,000 CF from Tierra Pointe Apts.
   =72,696 CF

2. Per the attached drainage basin map Basin II has been reduced to Los Volcanes Road (3.37 acres). Land treatment values are as follows:

Aa = 0 ACRES 0%

Ab = 0 ACRES 0%

Ac = 0.67 ACRES 20%

Ad = 2.70 ACRES 80%

Per the attached AHYMO output:

Q100 = 13.73 CFS

V100 = 0.4975 AF

V10day = V360 + Ad(P10day - P360)/12

P10day = 3.67 IN P360 = 2.20 IN

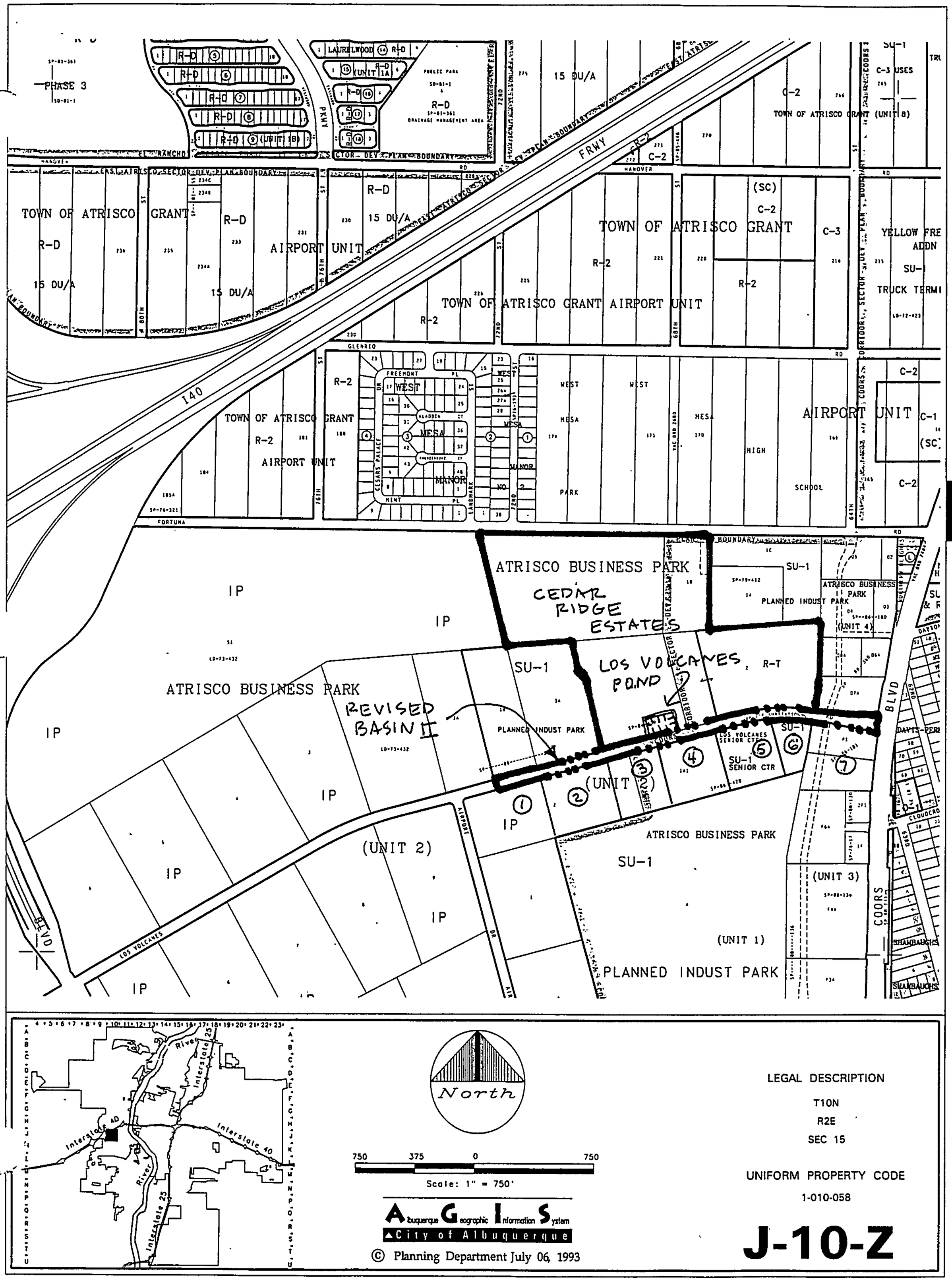
V10day = 0.8283 AF
= 36,079 CF

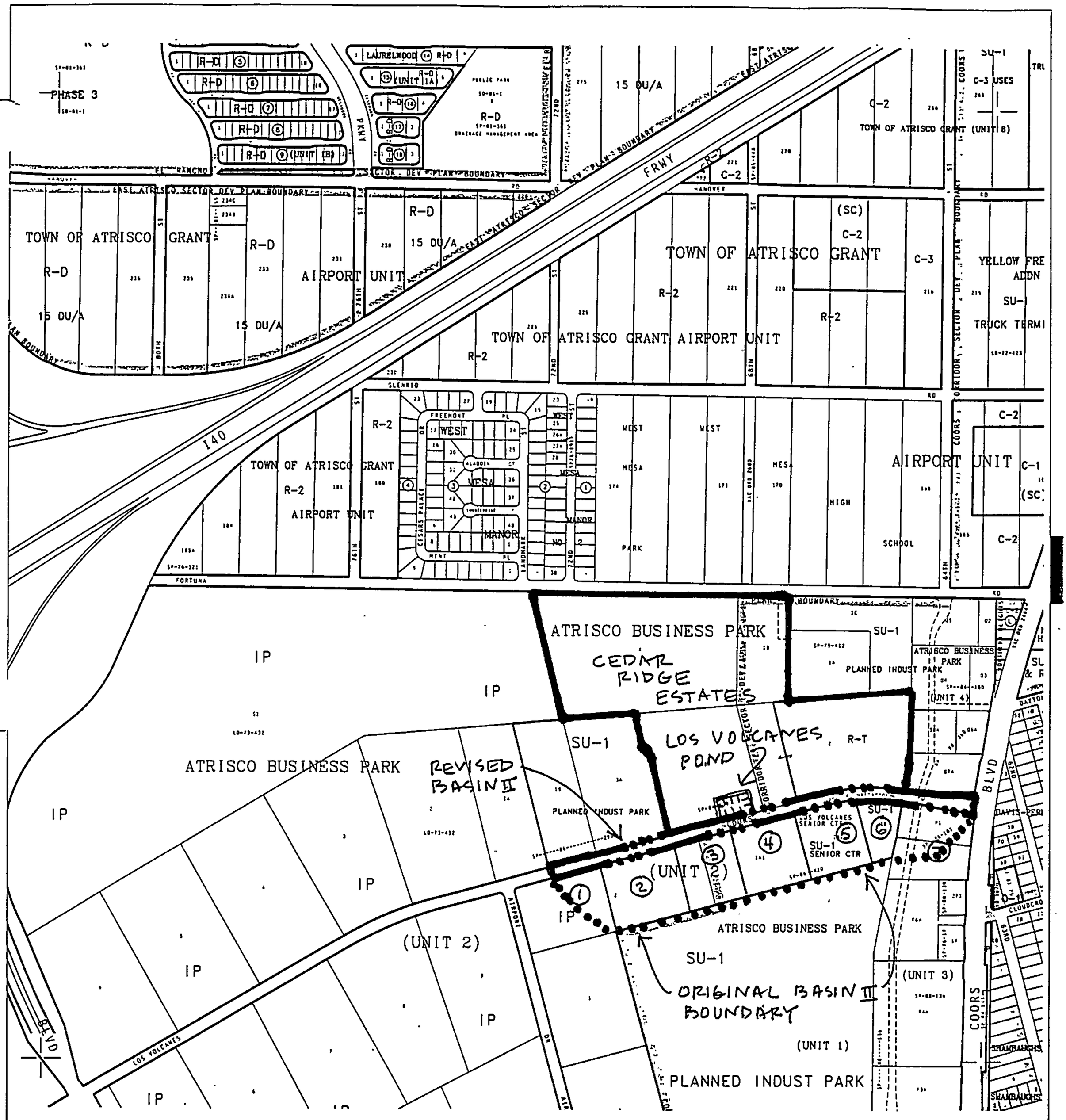
Add 3,000 CF from Tierra Pointe Apts

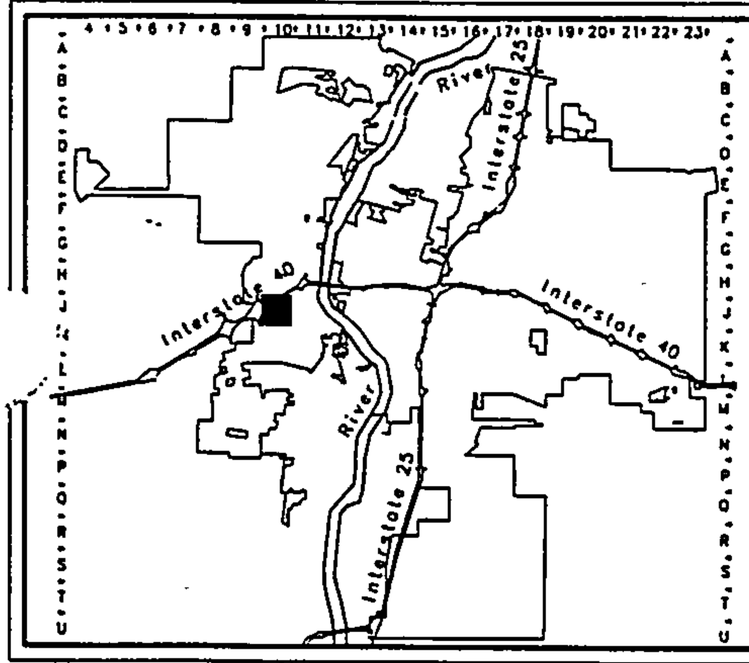
Required pond volume = 39,079 CF

As-built pond volume = 41,500 CF

Excess storage = 2,421 CF


PHASE 3
R-D
LAUREL WOOD
UNIT 1A
PUBLIC PARK
DRAINAGE MANAGEMENT AREA
15 DU/A
C-2
TOWN OF ATRISCO GRANT (UNIT 8)
C-3 USES
TOWN OF ATRISCO GRANT
AIRPORT UNIT
R-2
(SC)
C-3
YELLOW FRE ADDN
SU-1
TRUCK TERMI
I40
WEST MESA
MANOR
PARK
HIGH SCHOOL
C-1
ATRISCO BUSINESS PARK
CEDAR RIDGE ESTATES
IP
SU-1
LOS VOLCANES POND
R-T
REVISED BASIN II
PLANNED INDUST PARK
LOS VOLCANES SENIOR CTR
(UNIT 2)
(UNIT 3)
(UNIT 1)
COORS
BLVD
North
750 375 0 750
Scale: 1" = 750'
Albuquerque Geographic Information System
City of Albuquerque
© Planning Department July 06, 1993
LEGAL DESCRIPTION
T10N
R2E
SEC 15
UNIFORM PROPERTY CODE
1-010-058
J-10-Z





750 375 0 750

Scale: 1" = 750'

Albuquerque Geographic Information System

City of Albuquerque

© Planning Department July 06, 1993

LEGAL DESCRIPTION

T10N

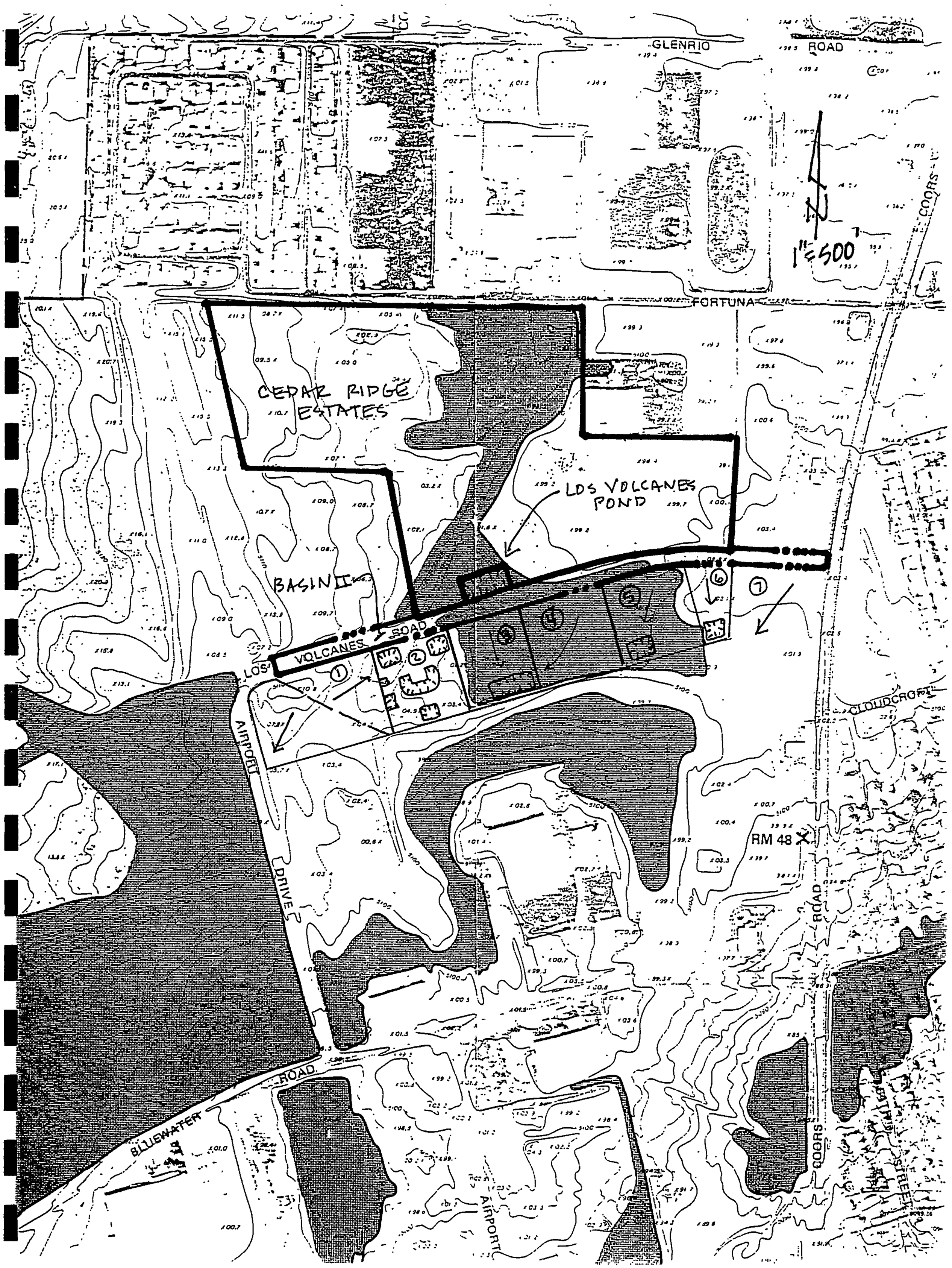
R2E

SEC 15

UNIFORM PROPERTY CODE

1-010-058

J-10-Z


GLENRIO ROAD
FORTUNA
COORS
1" = 500'
CEDAR RIDGE ESTATES
LOS VOLCANES POND
BASIN II
LOS VOLCANES ROAD
AIRPORT DRIVE
CLOUDCROFT
RM 48
ROAD
BLUEWATER ROAD
AIRPORT
COORS
STREET
1
2
3
4
5
6
7

```
*************************************************************************.
*                              BASIN "II"
*                          PROJECT HYDROLOGY
*************************************************************************
START               TIME=0.0  PUNCH CODE=0
RAINFALL            TYPE=1  RAIN QUARTER=0.0  RAIN ONE=1.87
                    RAIN SIX=2.20  RAIN DAY=2.66  DT=0.03333 HRS
* EXISTING BASIN "II"
COMPUTE NM HYD      ID=1  HYD NO=BASIN.II  DA=0.005266 SQ MI
                    PER A=0  PER B=0  PER C=20  PER D=80
                    TP=0.1333 HR  MASS RAIN=-1
PRINT HYD           ID=1  CODE=2
FINISH
```

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    AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
         RUN DATE (MON/DAY/YR) = 07/01/1997
         START TIME (HR:MIN:SEC) = 10:39:47     USER NO.= BRASHERE.I01
         INPUT FILE = 5008II.DAT

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*                                BASIN "II"
*                            PROJECT HYDROLOGY
*****************************************************************************
START                TIME=0.0  PUNCH CODE=0
RAINFALL             TYPE=1  RAIN QUARTER=0.0  RAIN ONE=1.87
                     RAIN SIX=2.20  RAIN DAY=2.66  DT=0.03333 HRS

                COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
                DT =    .033330 HOURS       END TIME =     5.999400 HOURS
                   .0000   .0016   .0033   .0050   .0067   .0085   .0103
                   .0122   .0141   .0160   .0180   .0201   .0222   .0243
                   .0266   .0289   .0312   .0337   .0362   .0388   .0415
                   .0443   .0472   .0502   .0534   .0567   .0601   .0637
                   .0675   .0715   .0758   .0809   .0865   .0924   .1050
                   .1334   .1771   .2398   .3254   .4379   .5814   .7600
                   .9780  1.1804  1.2649  1.3363  1.3997  1.4575  1.5106
                  1.5600  1.6061  1.6493  1.6900  1.7284  1.7646  1.7989
                  1.8314  1.8623  1.8915  1.9193  1.9456  1.9518  1.9576
                  1.9630  1.9682  1.9732  1.9780  1.9825  1.9869  1.9912
                  1.9953  1.9993  2.0031  2.0068  2.0104  2.0140  2.0174
                  2.0207  2.0240  2.0272  2.0303  2.0333  2.0363  2.0392
                  2.0420  2.0448  2.0475  2.0502  2.0528  2.0554  2.0580
                  2.0605  2.0629  2.0653  2.0677  2.0700  2.0723  2.0746
                  2.0768  2.0790  2.0812  2.0833  2.0855  2.0875  2.0896
                  2.0916  2.0936  2.0956  2.0976  2.0995  2.1014  2.1033
                  2.1051  2.1070  2.1088  2.1106  2.1124  2.1141  2.1159
                  2.1176  2.1193  2.1210  2.1227  2.1244  2.1260  2.1276
                  2.1292  2.1308  2.1324  2.1340  2.1355  2.1371  2.1386
                  2.1401  2.1416  2.1431  2.1446  2.1460  2.1475  2.1489
                  2.1504  2.1518  2.1532  2.1546  2.1560  2.1573  2.1587
                  2.1600  2.1614  2.1627  2.1640  2.1654  2.1667  2.1680
                  2.1692  2.1705  2.1718  2.1731  2.1743  2.1756  2.1768
                  2.1780  2.1792  2.1804  2.1817  2.1829  2.1840  2.1852
                  2.1864  2.1876  2.1887  2.1899  2.1910  2.1922  2.1933
                  2.1944  2.1956  2.1967  2.1978  2.1989  2.2000

* EXISTING BASIN "II"
COMPUTE NM HYD       ID=1  HYD NO=BASIN.II  DA=0.005266 SQ MI
                     PER A=0  PER B=0  PER C=20  PER D=80
                     TP=0.1333 HR  MASS RAIN=-1

    K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
    UNIT PEAK =   16.632    CFS   UNIT VOLUME =    .9987       B =   526.28      P60 = 1.8700
    AREA =      .004213 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

    K =   .105867HR    TP =   .133300HR    K/TP RATIO =   .794199     SHAPE CONSTANT, N =  4.514851
    UNIT PEAK =   3.0667    CFS   UNIT VOLUME =    .9963       B =   388.14      P60 = 1.8700
    AREA =      .001053 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD            ID=1  CODE=2
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HYDROGRAPH FROM AREA BASIN.II

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.400	7.7	2.800	.2	4.200	.1	5.599	.1
.067	.0	1.467	12.6	2.866	.2	4.266	.1	5.666	.1
.133	.0	1.533	13.1	2.933	.2	4.333	.1	5.733	.1
.200	.0	1.600	9.5	3.000	.1	4.400	.1	5.799	.1
.267	.0	1.667	7.0	3.066	.1	4.466	.1	5.866	.1
.333	.0	1.733	5.6	3.133	.1	4.533	.1	5.933	.1
.400	.0	1.800	4.8	3.200	.1	4.600	.1	5.999	.1
.467	.0	1.866	4.1	3.266	.1	4.666	.1	6.066	.1
.533	.0	1.933	3.6	3.333	.1	4.733	.1	6.133	.0
.600	.0	2.000	3.2	3.400	.1	4.800	.1	6.199	.0
.667	.0	2.066	2.7	3.466	.1	4.866	.1	6.266	.0
.733	.0	2.133	1.8	3.533	.1	4.933	.1	6.333	.0
.800	.0	2.200	1.2	3.600	.1	4.999	.1	6.399	.0
.867	.0	2.266	.8	3.666	.1	5.066	.1	6.466	.0
.933	.0	2.333	.7	3.733	.1	5.133	.1	6.533	.0
1.000	.0	2.400	.6	3.800	.1	5.199	.1	6.599	.0
1.067	.0	2.466	.5	3.866	.1	5.266	.1	6.666	.0
1.133	.0	2.533	.4	3.933	.1	5.333	.1	6.733	.0
1.200	.2	2.600	.3	4.000	.1	5.399	.1	6.799	.0
1.267	1.4	2.666	.3	4.066	.1	5.466	.1		
1.333	3.8	2.733	.2	4.133	.1	5.533	.1		

RUNOFF VOLUME = 1.77127 INCHES = .4975 ACRE-FEET
PEAK DISCHARGE RATE = 13.73 CFS AT 1.500 HOURS BASIN AREA = .0053 SQ. MI.

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 10:39:47

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =07/01/1997
INPUT FILE = 5008II.DAT USER NO.= BRASHERE.I01

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION*
START										TIME= .00
RAINFALL TYPE= 1										RAIN6= 2.200
COMPUTE NM HYD	BASIN.II	-	1	.00527	13.73	.497	1.77127	1.500	4.075	PER IMP= 80.00
FINISH										

CHAVEZ - GRIEVES / CONSULTING ENGINEERS, Inc.

5639 Jefferson Street NE, Albuquerque, New Mexico 87109 Phone (505) 344-4080 - Fax (505) 343-8759

RETENTION POND VOLUME CALCULATIONS

By: Joe Kelley
Project: Los Volcanes HUD Housing

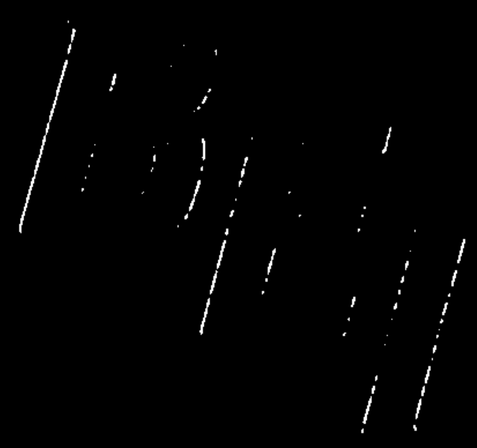
Date: October 16, 1996
Zone Atlas: J-10

This procedure is in accordance with the City of Albuquerque Development Process Manual, Volume 2, Section 22.2, "Hydrology", Equations c-7 and a-9.

BASIN	Q_{360} (CFS)	V_{360} (AC-FT)	A_D (AC)	$V_{10\text{-}DAY}$ (AC-FT)	$V_{10\text{-}DAY}$ (CU-FT)
On-Site	10.66	0.374	1.83	0.58	25,264.80
Off-Site	2.8	0.077	0	0.08	3,484.80

Post-it® Fax Note 7671

To Mike Tenn	Date 7/1/97 # of pages ▶ 1
Co./Dept. Bender / Lopez	From Joe Kelley
Phone #	Co. Chavez - Grieves
Fax # 888-6189	Phone # 344-4080
	Fax #



IBRACHER ENGINEERING INC.
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DRAINAGE REPORT

FOR

VENTANA RIDGE

RECEIVED
MAY - 3 1994
HYDROLOGY DIVISION

Prepared for:

WESTLAND DEVELOPMENT CO., INC.

401 Coors Boulevard NW

Albuquerque, New Mexico 87105

March, 1994

JERRY A. LORENZ
NEW MEXICO
9547
REGISTERED PROFESSIONAL ENGINEER
3-24-94
5-2-94

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EXISTING CONDITIONS	1
SUMMARY OF EXISTING STUDIES	5
PROPOSED CONDITIONS	5
EROSION CONTROL	8

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FLOOD HAZARD MAP - FIGURE 3	4
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EXISTING CONDITIONS - FIGURE 4b	10
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PHASE I - FIGURE 5b	12
PHASE II - FIGURE 6a	13
PHASE II - FIGURE 6b	14
ULTIMATE CONDITION - FIGURE 7a	15
ULTIMATE CONDITION - FIGURE 7b	16
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PRE-DESIGN CONFERENCE RECAP	APPENDIX
DRAINAGE PLAN - PHASE I - EXHIBIT 1	POCKET
DRAINAGE PLAN - PHASE II - EXHIBIT 2	POCKET
DRAINAGE PLAN - ULTIMATE CONDITON - EXHIBIT 3	POCKET

PURPOSE AND SCOPE

The purpose of this Drainage Report is to establish the criteria for controlling surface runoff from VENTANA RIDGE and contributing upstream areas in a manner which is acceptable to the City of Albuquerque and the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA). The plan studies the effect of existing and developed 100-year and 10-year/6-hour duration storm events on the project site. The plan outlines drainage management criteria for the development of VENTANA RIDGE.

The scope of this plan is to ensure that the project will be protected from storm runoff and that the development of this project will not increase the flooding potential of adjacent and downstream properties.

Approval of this Drainage Report shall facilitate preliminary plat and work order approval for VENTANA RIDGE.

SITE LOCATION AND DESCRIPTION

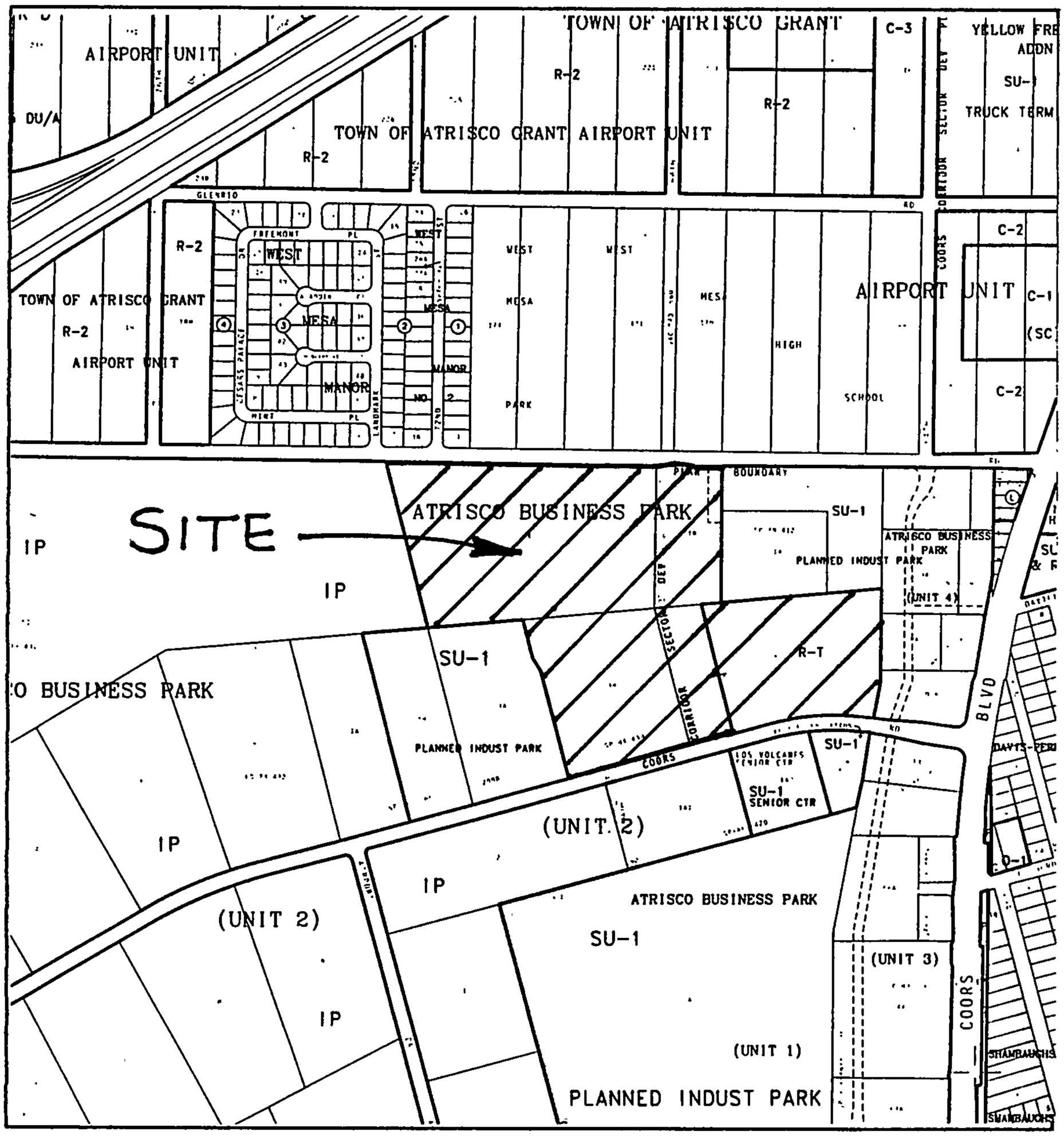
VENTANA RIDGE is located on the Albuquerque West Mesa and is bounded by Fortuna Road NW on the north, Los Volcanes Road NW on the south, and portions of developed/undeveloped lands on the east and west (see Vicinity Map-Figure 1). The site is more particularly described as Lots 1-B, 2-A, 2-B, 3-B, and 4 of Tract S-2, Atrisco Business Park.

The site is presently undeveloped and covered with native vegetation. The site topography generally slopes from west to east at approximately 1%. A depression is located near the center of the site which is identified as a 100-year flood hazard zone by the FIRM for Albuquerque, New Mexico (see Figure 2). The flood hazard zone is a result of the site accepting offsite flows from the property to the west, north of I-40, Fortuna Road, and Los Volcanes Road. Fortuna and Los Volcanes both have vertical sag points which outfall onto the property near the flood hazard zone.

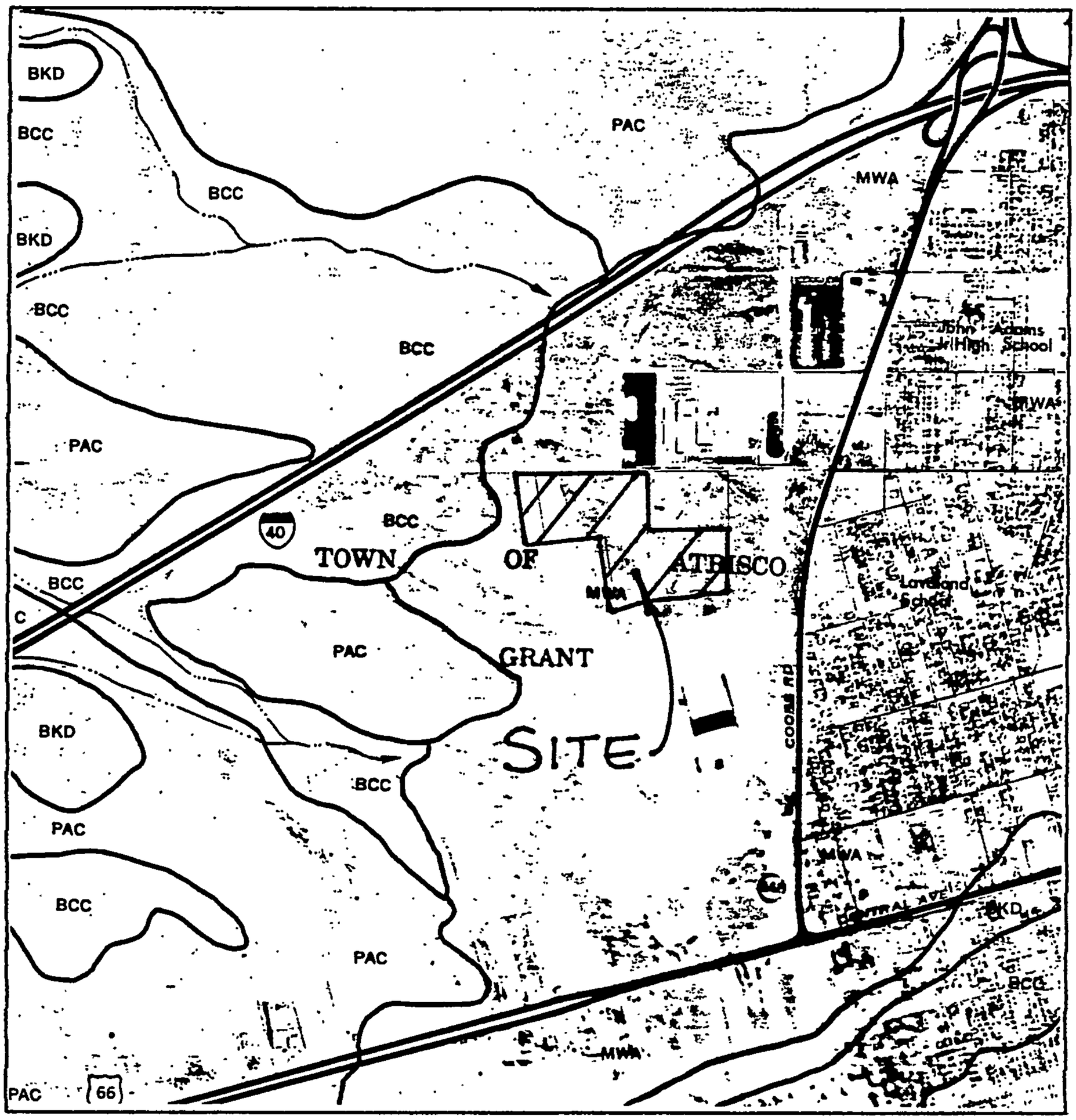
The site soils are generally composed of madunez wink soils which are classified in hydrologic soil group "B" (see Figure 3). Limitations for road, dwellings and drainage improvements are moderate. The soils group has a tendency to exhibit shrink/swell characteristics. Ponding areas and berms may show piping and seepage.

EXISTING DRAINAGE CONDITIONS

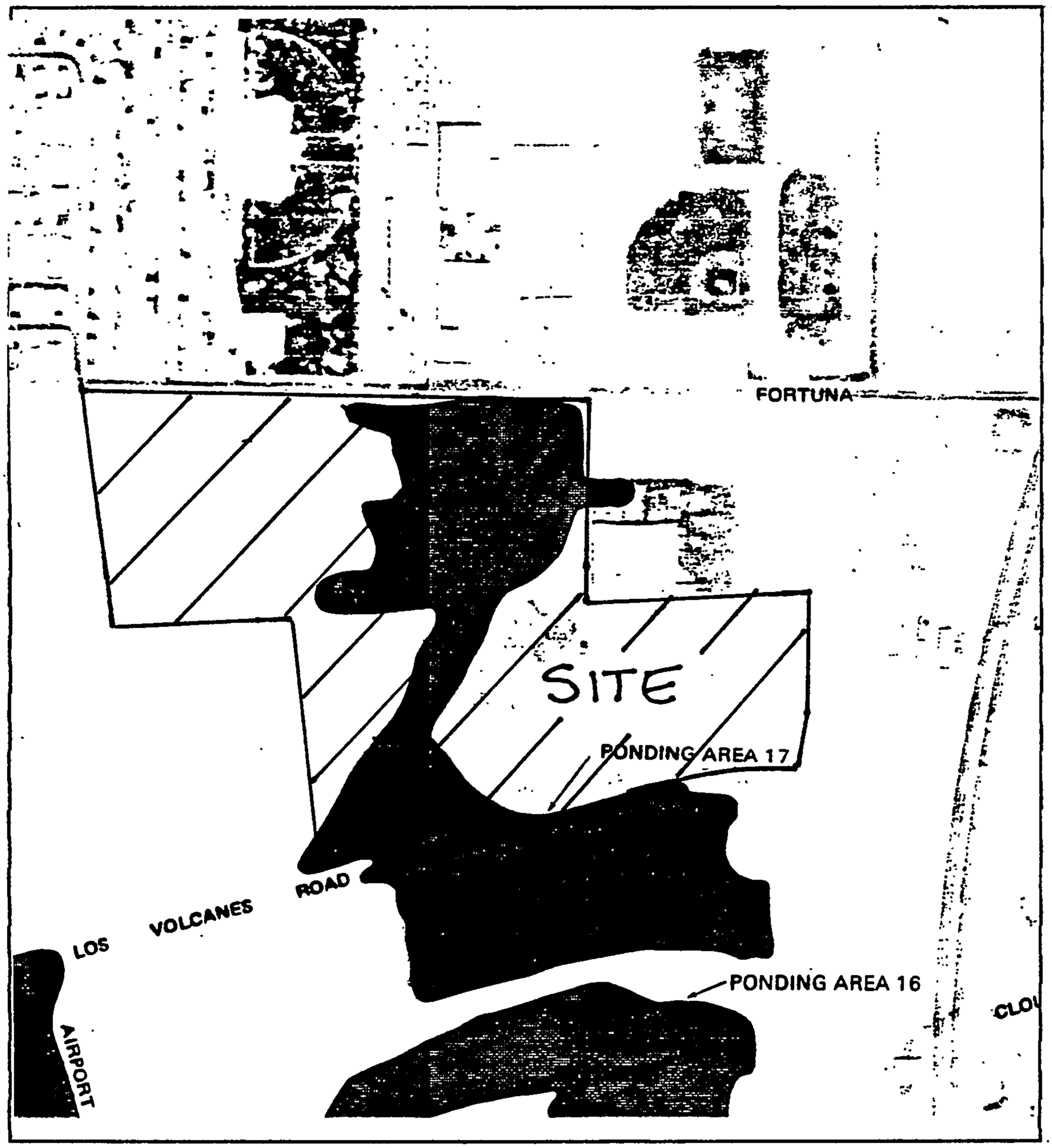
As mentioned above, the project site is presently undeveloped. Existing onsite topography slopes to the center of the site to an existing 100-year floodplain. The site accepts offsite flows from undeveloped land to the west, north of I-40,



VICINITY MAP
Figure 1



SOILS MAP
Figure 2



FLOOD INSURANCE RATE MAP
Figure 3

the West Mesa Manor Subdivision, portions of West Mesa Park, and Fortuna Road to the north, undeveloped land to the east and Los Volcanes Road to the south (see figure 4). These offsite flows enter the site by existing rundowns located at vertical sag curves within Fortuna Road and Los Volcanes Road. Two existing developments located adjacent to the site, the old Bag-N-Save Warehouse Foods site to the east and Tierra Pointe Apartments to the west, both implement onsite retention ponding and therefore do not contribute to the floodplain.

SUMMARY OF EXISTING DRAINAGE STUDIES

The criteria for management of stormwater runoff for VENTANA RIDGE is established by the following area wide drainage masterplans:

1. The West Bluff Drainage Plan, Phases I-III, by Andrews, Asbury and Robert, Inc.

2. Master Drainage Plan for Atrisco Business Park, By Easterling & Associates, Inc., March 1993.

3. Conceptual Grading & Drainage Plan for El Ranco Atrisco Phase V, by Easterling & Associates, Inc., August 1987.

The drainage report for VENTANA RIDGE utilizes the improvement recommendations outlined in these masterplans. Due to the timing of the VENTANA RIDGE development and proposed storm drainage improvement projects recommended by the masterplans, interim improvements will be implemented until an outfall system is constructed.

PROPOSED DRAINAGE CONDITIONS

The development of VENTANA RIDGE and surrounding undeveloped properties relies heavily upon the public infrastructure recommended by the approved masterplans. Unfortunately, due to lack of funding, the drainage improvements which benefit this site are not scheduled for construction at this time. The present feeling is that it could be up to 10 years before these improvements are available for use by the regional property owners. It is therefore necessary for interim drainage improvements to be constructed to allow for VENTANA RIDGE to develop. The following narrative describes how VENTANA RIDGE will interface with the future infrasturcture, and what interim improvements will be provided to allow for development.

A. ULTIMATE CONDITIONS

Ultimately the West Mesa Diversion (Systems 500.04 and 504.5) will convey all flows from areas south of I-40 and

east of Airport Road to the West Bluff Outfall, thereby removing existing floodplains. Upstream flows from Basin III will be conveyed by the I-40 Interceptor to the West Bluff Outfall. A 30-inch storm drain will be constructed to drain upstream basins west of the site and south of Fortuna Road. The storm drain will be located in Airport Road and drain south to the Coors drainage system and detention pond.

Offsite flow from Basins IV and V are expected to contribute approximately 127.1 cfs to Fortuna Road under developed conditions. This was determined by calculating the exicting 100 year 6 hour flow from Basin V (West Mesa Manor) and assuming developed flows from Basin IV would be ponded to reduce downstream infrastructure costs. A allowable discharge rate of 0.1 cfs/acre was selected for this analysis, which is consistent with the Master Drainage Plan for Atrisco Business Park.

B. INTERIM CONDITIONS

1. PHASE I

Phase I consists of the development of Unit 1 of Ventana Ridge which proposes 57 lots and contains approximately 10 acres. Phase I development will occur without alteration of the existing floodplain. Since the floodplain will not be altered no off-site improvements are required with the development of Phase I. Since no drainage outfall exists for the project site an interim detention pond will be constructed on Lot 1-C, Tract S-2, which is owned by Westland Development Co., Inc. The interim pond will be sized to store the 100 year 10 day volume from Phase I. Other Phase I improvements will consist of street and storm drainage facilities designed to convey the estimated 100 year 6 hour design storm reulting from the entire build-out of Ventana Ridge (approximately 40 acres). A pond outlet will be provided by extending a temporary drainline from an existing storm drain located on Fortuna Road approximately 400 feet east of the pond site.

2. PHASE II

The Phase II interim condition will utilize retention and detention ponding as a means of managing stormwater. Four pond sites will be utilized to manage interim drainage conditions:

- Undeveloped flows from off-site Basin IIIA will be collected in an interim retention pond to be located west of Unser Boulevard and north of I-40.

- A second interim pond site located at thenorthwest quadrant of Ventana Ridge will collect off-site runoff from undeveloped land east of Unser and north of I-40, north of Fortuna and south of I-40, and West Mesa Manor a fully developed residential subdivision (Basins IIIB, IV & V).

- A third interim retention pond will be constructed on Lot 1A-1, Tract N to pond existing flows from Basin II. This pond will be sized to accept excess stormwater from the Tierra Pointe Apartments. Per the Drainage Report for the Los Volcanes Apartments prepared by Isaccson & Arfman, P.A., January 1985, the Tierra Pointe Apartments discharge approximately 3,000 cubic feet into Los Volcanes Road during the 100-year/6-hour storm. A storm drain and collection system will be constructed in Los Volcanes Road to drain street flow south into the interim retention pond.

- The interim detention pond constructed on Lot 1-C. as a part of Phase I development will be expanded to detain all developed flows from the site, and existing flows from Basins I, K, L and M. The pond is sized to hold approximately 411,642 cubic feet. Surface flows will enter the pond at Fortuna and from the site at Analysis Points 11 and 13. It will be necessary to improve Fortuna Road full width from the west project boundary to convey offsite flows to the pond sites. This will require reconstruction of the existing sag point located at the park site. As shown by the plan and calculations, the interim ponding sites will provide sufficient storage volume to replace the existing flood hazard zone.

As shown by Figure 4a, 25' drainageways exist along the west and north sides of the Tierra Pointe Apartments. These drainageways exist by drainage covenant executed by Westland Development Co., Inc. and Los Volcanes Association Limited Partnership II. The purpose of the drainageways is to divert offsite flows around the Tierra Pointe Apartments site. The offsite basin is identified by the Drainage Report for Los Volcanes Apartments as a ±6 acre parcel located north and west of the apartment site. The western swale will continue to function as designed and direct flows to Airport Road. The northern swale will drain Basin I to an easement located at Zinnia Road where flows will be routed through the site. Since Ventana Ridge will manage these flows internally there is no need for the 25' drainageways, which will be vacated with the proposed platting actions.

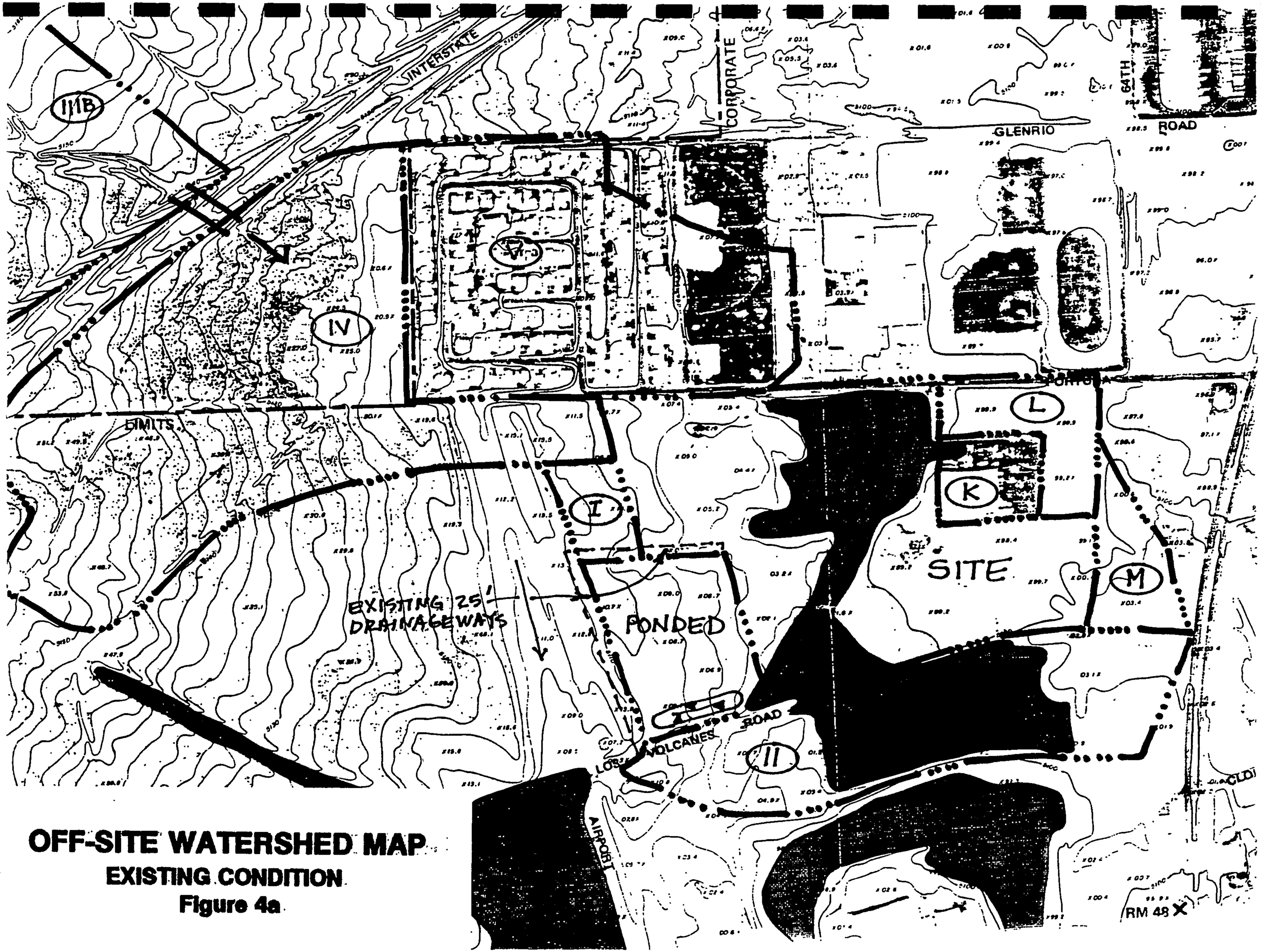
Upstream flows from portions of Tract S-1 and Lot 1A of Tract S-1 will continue to drain in historical patterns to the south, contributing to an existing flood hazard zone located west of Airport Road. These flows are diverted south by the abandoned dirt runway which acts as a diversion berm.

Basin K represents the old Bag-N-Save Warehouse food store. Presently, this site manages stormwater by use of a retention pond located south of the building. The interim pond proposed within Lot 1-C is sized to accept flows from this site should Bag-N-Save wish to remove the pond and implement a free discharge concept. The owners of Lot 1-C, Tract S-2 are willing to grant a private drainage easement for the placement of facilities at Bag-N-Save's request.

Figures 4-7 are provided to demonstrate the drainage basins which affect the VENTANA RIDGE development.

EROSION CONTROL

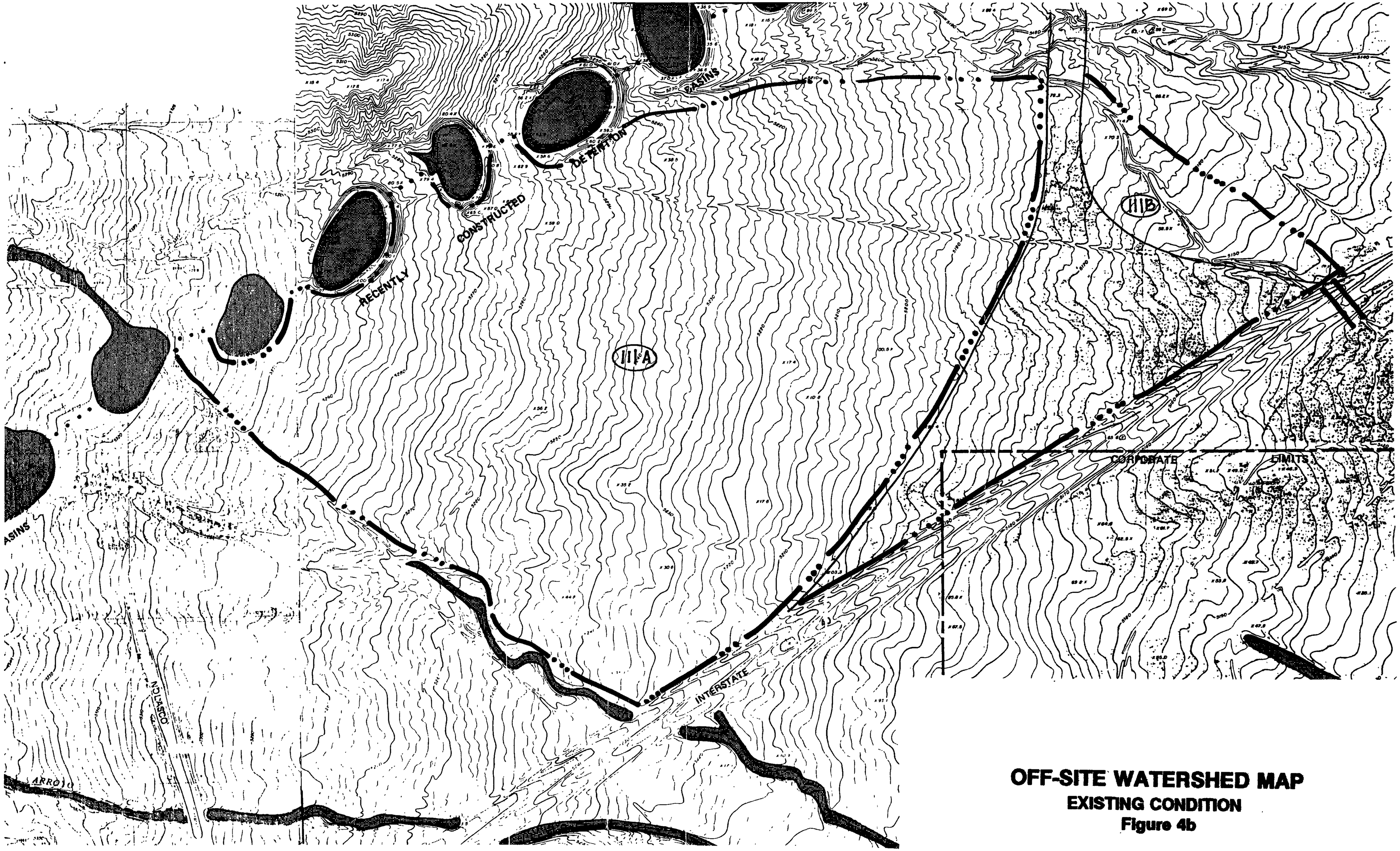
Temporary erosion control measures are recommended during the construction phase of the project to limit the discharge of sediment into adjoining public streets and private property. Temporary erosion control berms will be required alon the project boundaries. Complete details and exact location of the erosion control facilities will be shown on the grading plan for VENTANA RIDGE, which will be provided with the work order planset. The interim retention ponds will be scheduled for construction first, thereby providing an outfall for all onsite and offsite flows. All temporary erosion control facilities shall be maintained by the contractor throughout the construction phase.



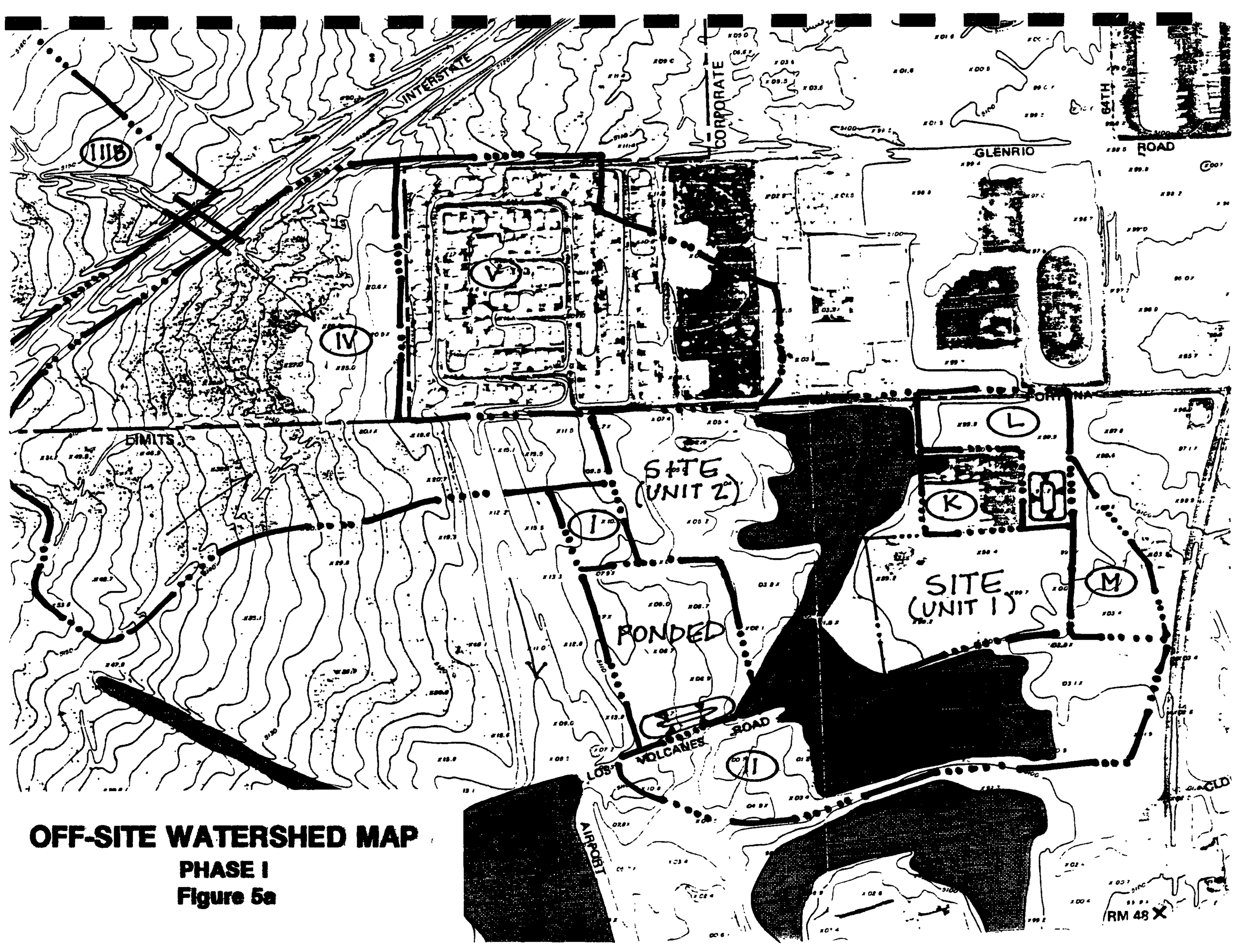
OFF-SITE WATERSHED MAP

EXISTING CONDITION

Figure 4a



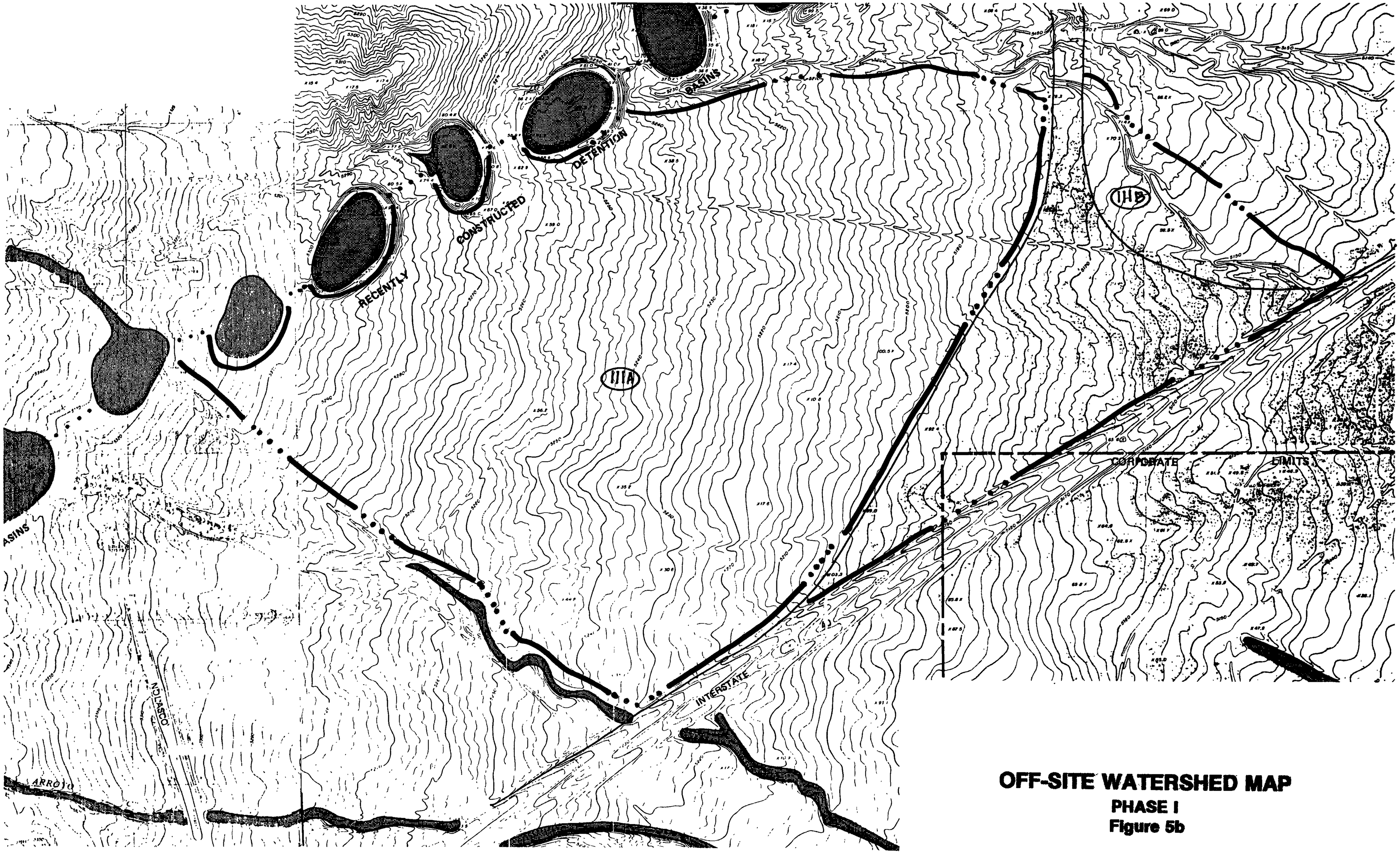
OFF-SITE WATERSHED MAP
EXISTING CONDITION
Figure 4b



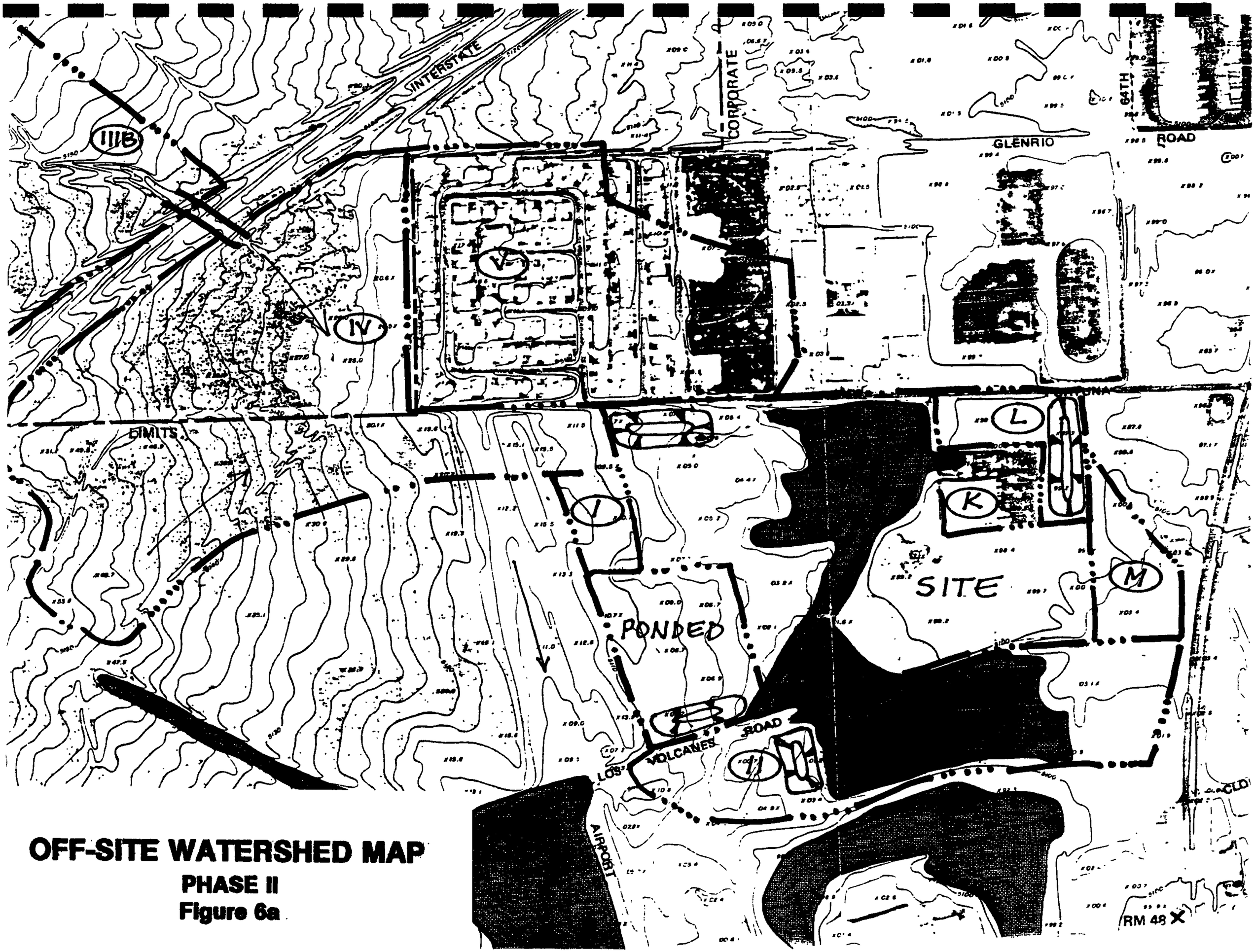
OFF-SITE WATERSHED MAP

PHASE I

Figure 5a



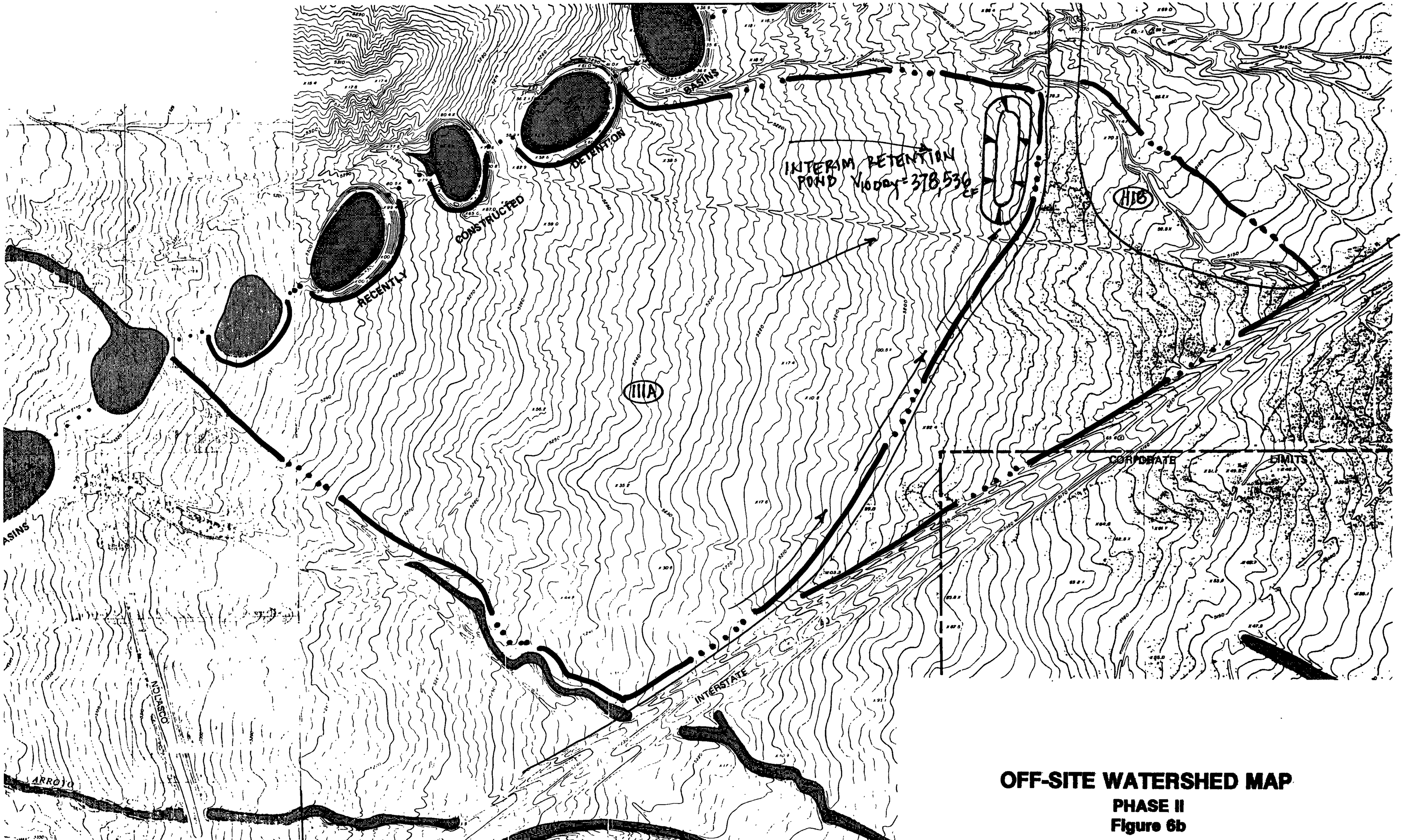
OFF-SITE WATERSHED MAP
PHASE I
Figure 5b



OFF-SITE WATERSHED MAP

PHASE II

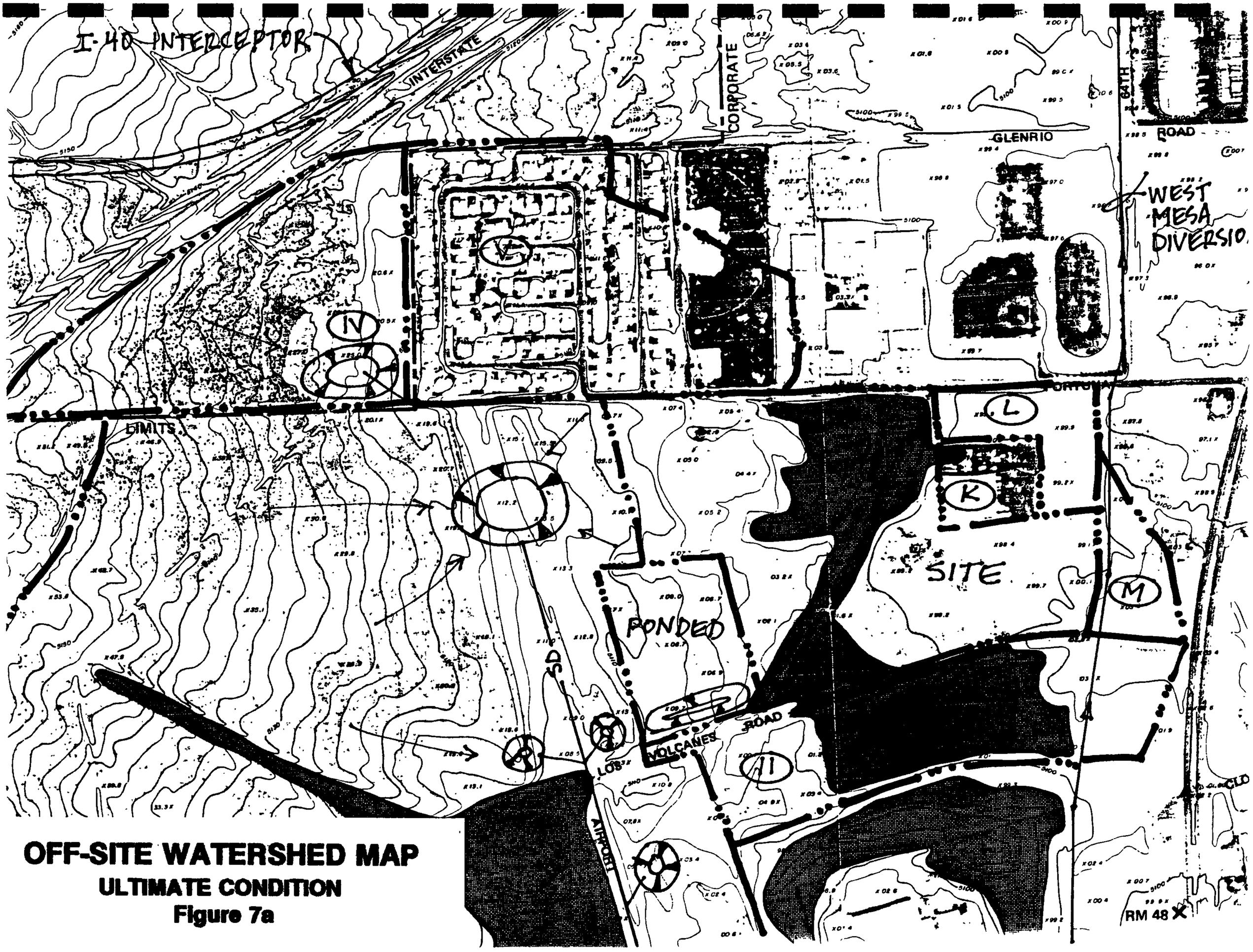
Figure 6a



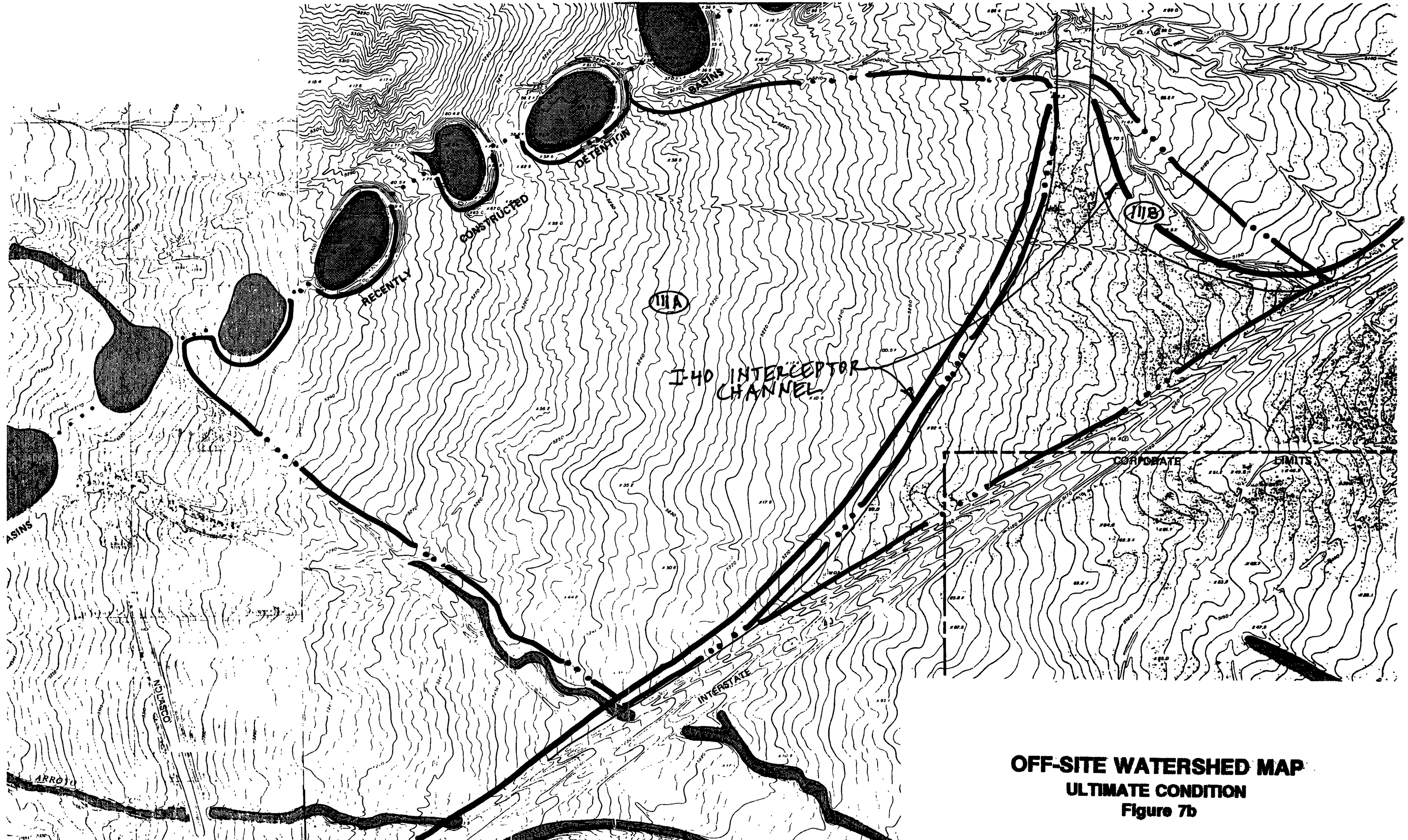
OFF-SITE WATERSHED MAP

PHASE II

Figure 6b



OFF-SITE WATERSHED MAP
ULTIMATE CONDITION
Figure 7a



OFF-SITE WATERSHED MAP
ULTIMATE CONDITION
Figure 7b

APPENDIX

CALCULATIONS

HYDROLOGY
(HYMO)

Precipitation Zone 1 — P360 = 2.20 in

AP	Basin	Basin area (Ac)	Land Treatment A (Acres)	B	C	D	Ew (in)	V100 (af)	Q100 cfs
Existing conditions									
24	I	3.20	3.20	0.00	0.00	0.00	0.44	0.12	4.1
26	II	25.00	23.0	0.20	0.00	1.8	0.55	1.15	37.9
22	III	275.0	275.	0.00	0.00	0.00	0.44	10.0	354.8
23	IV	68.00	68.0	0.00	0.00	0.00	0.44	2.49	87.7
25	V	36.00	0.00	9.36	7.2	19.4	1.44	4.32	124.6
12	M	4.70	3.70	0.00	0.00	1.00	0.77	0.30	9.1
21	IIIA	237.0	237.	0.00	0.00	0.00	0.44	8.69	305.7
22	IIIB	38.00	38.0	0.00	0.00	0.00	0.44	1.39	49.1
1	A	3.70	3.70	0.00	0.00	0.00	0.44	0.14	4.70
Developed conditions									
1	A	3.70	0.00	0.96	0.74	2.00	1.44	0.44	12.8
2	A+B	7.80	0.00	2.03	1.56	4.21	1.44	0.93	27.00
3	C	3.20	0.00	0.83	0.64	1.73	1.44	0.38	11.10
4	D	3.00	0.00	0.78	0.60	1.62	1.44	0.36	10.40
5	C+E	9.10	0.00	2.37	1.82	4.91	1.44	1.09	31.50
6	D+F	5.10	0.00	1.33	1.02	2.75	1.44	0.61	17.60
7	D+F+G	10.50	0.00	2.73	2.10	5.67	1.44	1.26	36.30
8	H	3.90	0.00	1.01	0.78	2.11	1.44	0.47	13.50
9	C-G,i	23.20	0.00	6.03	4.64	12.5	1.44	2.78	80.30
10	H+J	9.00	0.00	2.34	1.80	4.86	1.44	1.08	31.10
11	C-J	32.20	0.00	8.37	6.44	17.3	1.44	3.86	111.4

		Area	%A	%B	%C	%D	Ew	V100	Q100
12	A-J	40.00	0.00	10.4	8.00	21.6	1.44	4.80	138.4
12	K	3.90	0.00	0.00	0.40	3.50	1.87	0.61	16.40
12	L	5.10	0.00	0.00	5.10	0.00	0.99	0.42	14.6
12	A-L	49.00	0.00	10.4	13.5	25.1	1.43	5.84	169.5
9	i	3.60	0.00	0.94	0.72	1.94	1.44	0.43	12.45
10	J	5.10	0.00	1.33	1.02	2.75	1.44	0.61	17.64
11	Unit1	10.00	0.00	2.60	2.00	5.40	1.44	1.20	34.60
23	IV	25.00	0.00	6.50	5.00	13.5	1.44	3.00	86.50

All undevelopedflow rates include a 20% sediment bulking factor

PROJECT NAME VENTANA RIDGE JOB NO. 90034

SUBJECT DRAINAGE CALCULATIONS

BY DL CHECKED BY DATE 3-22-94 PAGE 3 OF

1. INTERIM POND VOLUMES

ALL POND SIZES ARE BASED ON 100 YR 10 DAY VOLUME PER DPM VOL 2 CHP 22.2 PART A.5.

$P_{360} = 2.20''$ $P_{10\ DAY} = 3.67''$

$V_{10\ DAY} = V_{360} + A_D (P_{10DAY} - P_{360})/12$

A. PHASE I

BASINS: UNIT 1 + EXIST K, L, M

AREA = 10.0 + 3.9 + 5.1 + 4.7 = 23.7 AC

V_{360} = 1.20 + 0.61 + 0.42 + 0.30 = 2.53 AF

A_D = 5.4 + 3.5 + 0 + 1.00 = 9.90 AC

$V_{10\ DAY} = 2.53 + \frac{9.9}{12}(1.47) = 3.74$ AF

= 162,915 CF *

* POND TO DRAIN TO EXIST SD IN FORTUNA RD. EXACT POND SIZE + ROUTING TO BE PROVIDED W/ WORK ORDER SUBMITTAL.

PROJECT NAME VENTANA RIDGE JOB NO. 90034

SUBJECT DRAINAGE CALCULATIONS

BY DL CHECKED BY DATE 3-22-94 PAGE 4 OF

B. PHASE II

1. ON-SITE @ NW SUB'N CORNER

BASINS: A, IIIB, IV, V ALL EXIST COND.

AREA = 3.70 + 38.0 + 68.0 + 36.0 = 145.7 AC

V_{360} = 0.14 + 1.39 + 2.49 + 4.32 = 8.34 AF

A_D = 0 + 0 + 0 + 19.4 = 19.4 AC

$V_{10\ DAY} = 8.34 + \frac{19.4}{12}(1.47) = 10.72$ A-F

= 466,963 CF

2. LOS VOLCANES

BASIN II

AREA = 25 AC

V_{360} = 1.15 A-F

A_D = 1.8 AC

$V_{10\ DAY} = 1.15 + \frac{1.8}{12}(1.47) = 1.37$ AF

= 59,677 CF

⇒ ADD 3000 CF FROM TIERRA POINTE

$V_{10\ DAY}$ = 62,677 CF

PROJECT NAME VENTANA RIDGE JOB NO. 90034

SUBJECT DRAINAGE CALCULATIONS

BY DL CHECKED BY DATE 3-22-94 PAGE 5 OF

3. BASIN IIIa

AREA = 237 AC

V_{360} = 8.69 A-F

A_D = 0

$V_{10\ DAY}$ = 8.69 A-F

= 378,536 CF

4. LOT 1A

EXPAND PHASE I POND

BASINS: SITE + EXISTING K, L, M, I

AREA = 40 + 3.9 + 5.1 + 4.7 + 3.2 = 56.9 AC

V_{360} = 4.80 + 0.61 + 0.42 + 0.30 + 0.12 = 6.25 AF

A_D = 21.6 + 3.5 + 0 + 1.0 + 0 = 26.1 AC

$V_{10\ DAY} = 6.25 + \frac{26.1}{12}(1.47) = 9.45$ A-F

= 411,642 CF *

* SEE NOTE PAGE 1

PROJECT NAME VENTANA RIDGE JOB NO. 90034

SUBJECT DRAINAGE CALCULATIONS

BY DL CHECKED BY DATE 3-22-94 PAGE 6 OF

2. STREET DEPTHS

AP	BASINS	Q100 CFS	SLOPE	d100 FT	VEL FIS	E FT	EGL FT	
1	A	12.8	0.4%	0.46	1.8	0.05	0.51	
2	A + B	27.0	"	0.57	2.5	0.10	0.67	
3	C	11.1	"	0.44	1.8	0.05	0.49	
4	D + I	14.5	"	0.47	2.0	0.06	0.53	
5	C + E	31.5	"	0.61	2.7	0.11	0.72	*
6	D + F + I	21.7	"	0.54	2.4	0.09	0.63	
7	D + F + G + I	40.4	"	0.67	3.0	0.14	0.81	*
8	H	13.5	"	0.46	2.0	0.06	0.52	
9	C-G, I, i	84.4	"	0.70	3.0	0.14	0.84	*
10	H + J	31.1	"	0.61	2.7	0.11	0.78	*
11	C - J, i	115.5	0%	0.67+	-0-	-0-	0.67+	*
9	i	12.5	0.4%	0.46	1.8	0.05	0.51	
25	IV, V	127.1	0.4%	0.67+	3.5	0.20	0.87	*

* STORM DRAIN REQUIRED, SEE PAGE 5

PROJECT NAME VENTANA RIDGE JOB NO. 90034

SUBJECT DRAINAGE CALCULATIONS

BY DL CHECKED BY DATE 3-22-94 PAGE 7 OF

3. STORM DRAIN SIZING

AP	SURFACE Q100 CFS	STREET d100 FT	# DI's	PIPE SLOPE	MAIN DIA IN	Q PIPE CFS	RESIDUAL FLOW CFS
7	40.4	0.67	6	0.5%	36"	36	4.4
5	31.5	0.61	4	0.5%	30"	31.5	0
11	48.0	0.67	DRAINS TO TYPE 'A' CHANNEL				
25	127.1	0.67+	SPECIAL COLLECTION SYSTEM		54"	127.1	0
26	37.9	0.67+	6	2.0%	24"	37.9	0

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
UTILITY DEVELOPMENT DIVISION/HYDROLOGY SECTION

PRE-DESIGN CONFERENCE

DRAINAGE FILE/ZONE ATLAS PAGE NO.: J10-D2G DATE: 1/27/94

EPC NO.: _____ DRB NO.: _____ ZONE: _____

SUBJECT: Ventana Ridge

STREET ADDRESS: _____

LEGAL DESCRIPTION: Lots 1B, 2, 4 & 3B of Tract 52 of Atrisco Business Park

APPROVAL REQUESTED:

- ✓ PRELIMINARY PLAT
- ___ SITE DEVELOPMENT PLAN
- ___ GRADING/PAVING PERMIT
- ___ FINAL PLAT
- ___ BUILDING PERMIT
- ___ OTHER

	WHO	REPRESENTING
ATTENDANCE:	Dennis Lorenz	
	Fred J Aguirre	

FINDINGS:

An approved drainage report is required for preliminary plat approval. The major issues this report will need to address are:

- Removal of the existing floodplain –
- Street design/storm drain requirements in Fortuna and Los Volcanes. The design ~~with~~ must include the greater of interim off-site flows or developed off-site flows.
- The relocation of the existing floodplain must be designed towards a future outfall system
- A LOMR will be required to release the financial guarantees.
- ~~The flow in the street must~~ ~~co~~ The height of a hydraulic jump cannot exceed .2' above top of curb. Street flows with no potential for a jump can have the normal depth to the top of curb.

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:	[signature]	SIGNED:	[signature]
TITLE:		TITLE:	
DATE:	1/27/94	DATE:	1-27-94

NOTE PLEASE PROVIDE A COPY OF THIS PRE-DESIGN FORM WITH THE DRAINAGE SUBMITTAL.

ESPEY,
HUSTON &
ASSOCIATES, INC.
Engineering & Environmental Consultants

DRAINAGE REPORT
FOR
VENTANA RIDGE

Prepared for:

WESTLAND DEVELOPMENT COMPANY, INC.
401 Coors Boulevard NW
Albuquerque, New Mexico 87105

RECEIVED
OCT 28 1988
HYDROLOGY SECTION

DENNIS L. LOREN
NEW MEXICO
9647
REGISTERED PROFESSIONAL ENGINEER

9-29-88
10-27-88

September, 1988

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PROPOSED CONDITIONS	5
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REQUIRED INFRASTRUCTURE	10

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FLOOD HAZARD MAP - FIGURE 3	4
EXISTING DRAINAGE BASINS - FIGURE 4	6
PROPOSED DRAINAGE BASINS - FIGURE 5	9
CALCULATIONS	APPENDIX
PREDESIGN CONFERENCE RECAP	APPENDIX
DRAINAGAE PLAN - EXHIBIT I	POCKET

PURPOSE AND SCOPE

The purpose of this Drainage Report is to establish the criteria for controlling surface runoff from VENTANA RIDGE and contributing upstream areas in a manner which is acceptable to the City of Albuquerque and the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA). The Plan studies the existing and developed conditions of the subject site and analyzes both conditions at the 100-year and 10-year/6-hour duration storm events. The Plan outlines drainage management criteria for the development of VENTANA RIDGE.

The scope of this Plan is to ensure that the project will be protected from storm runoff and that the development of this project will not increase the flooding potential of adjacent and downstream properties.

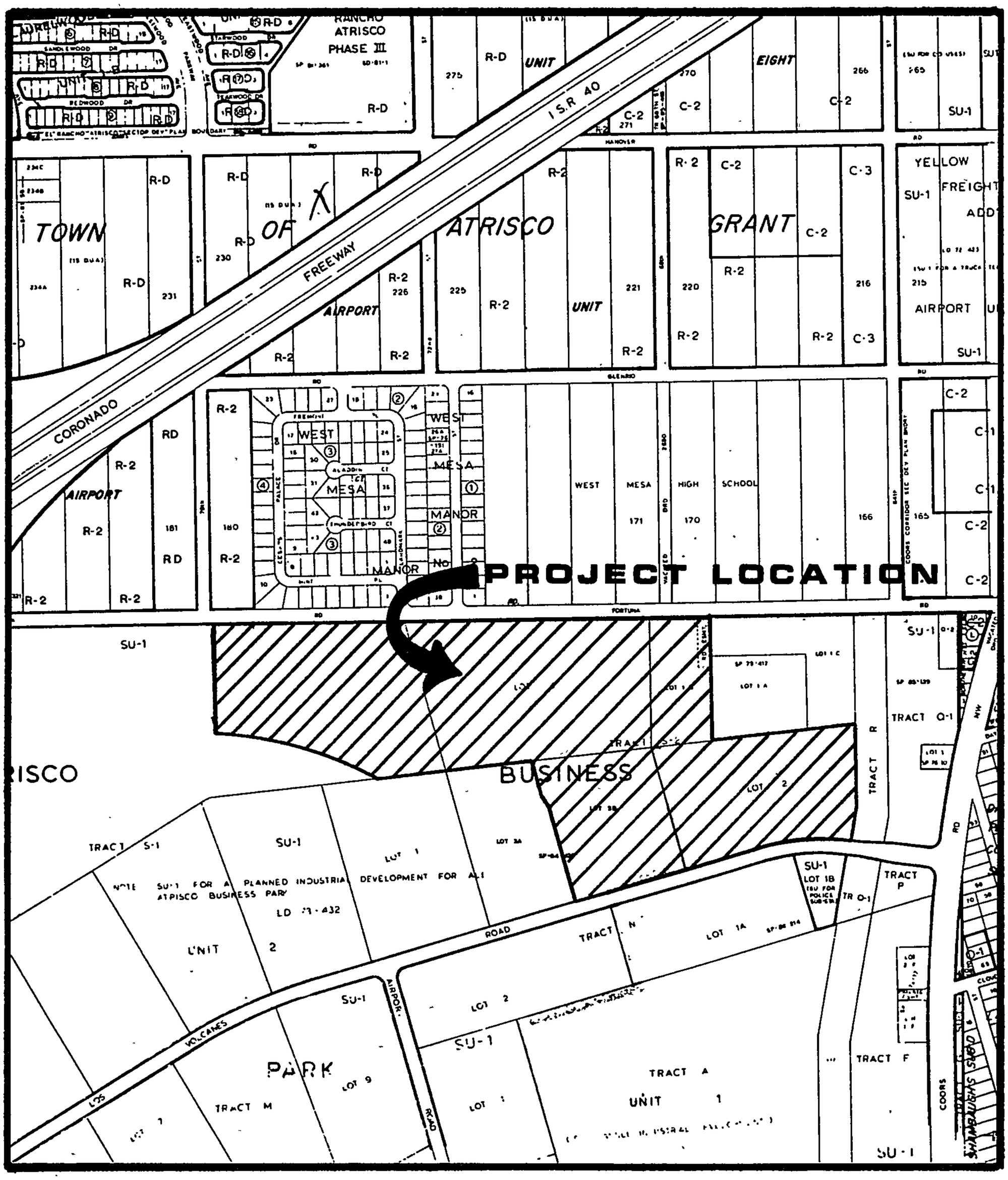
Approval of this Drainage Report shall facilitate Preliminary Plat and Work Order approval for VENTANA RIDGE.

SITE LOCATION AND DESCRIPTION

VENTANA RIDGE is located on the Albuquerque West Mesa and is bounded by Fortuna Road NW on the north, Los Volcanes Road NW on the south, future 76th Street NW on the west, and undeveloped land on the east (see Vicinity Map -Figure 1). The site is more particularly described as Lots 1-B, 2-A, 2-B, 3-B, 4 of Tract S-2, and a portion of Tract S-1, Atrisco Business Park.

The site is presently undeveloped and covered with native vegetation. The site topography generally slopes from west to east at approximatley 1%. A depression is located near the center of the site which is identified as a 100-year flood hazard zone by the FIRM for Albuquerque, New Mexico (see Figure 2). The flood hazard zone is a result of the site accepting offsite flows from the undeveloped property to the west, north of I-40, Fortuna Road, and Los Volcanes Road. Fortuna and Los Volcanes both have sag points which outfall onto the property near the flood hazard zone.

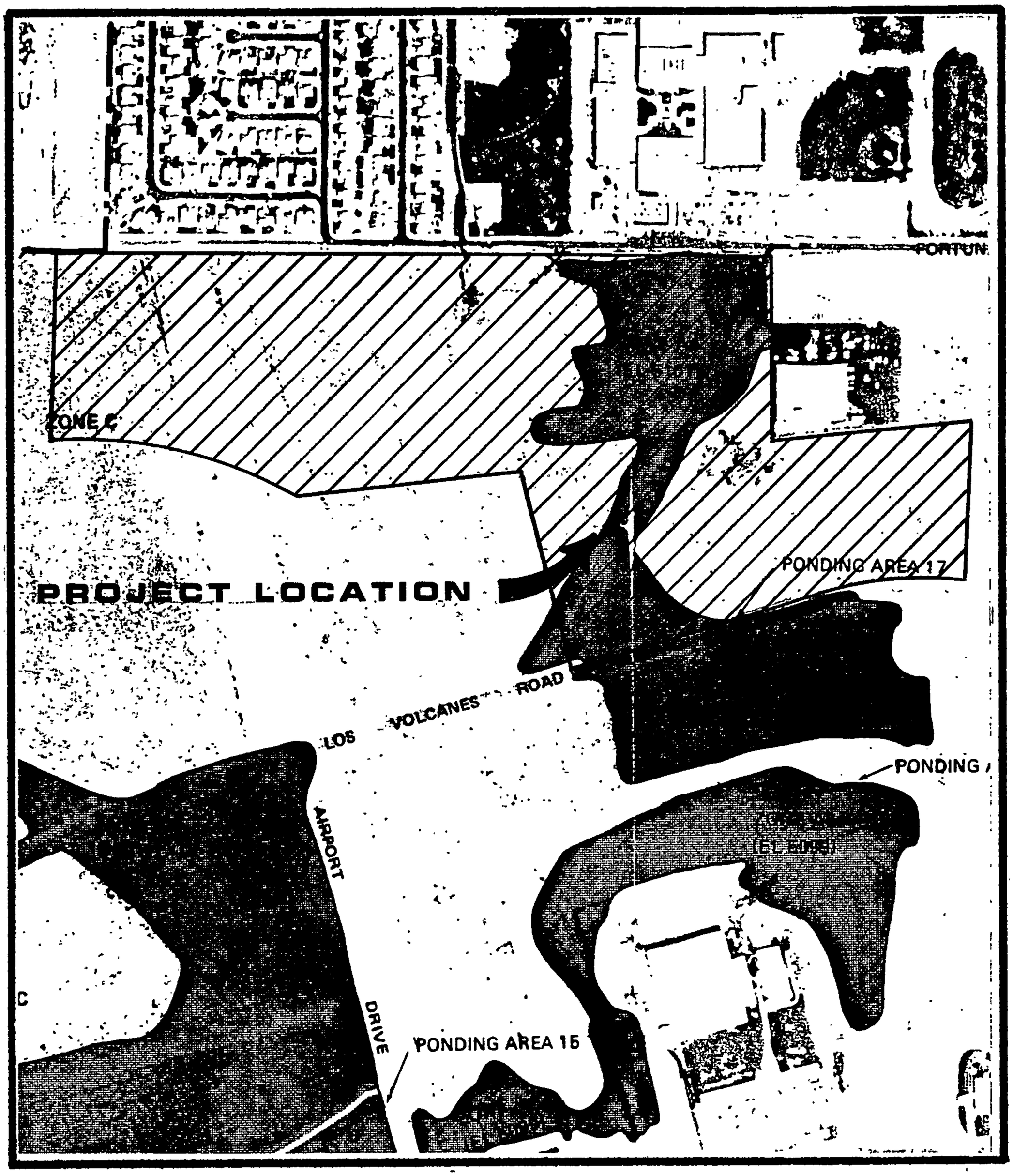
The site soils are generally composed of madunez wink soils which are classified in hydrologic soil group "B" (see Figure 3). Limitations for roads, dwellings



VICINITY MAP

SCALE: 1"=800'

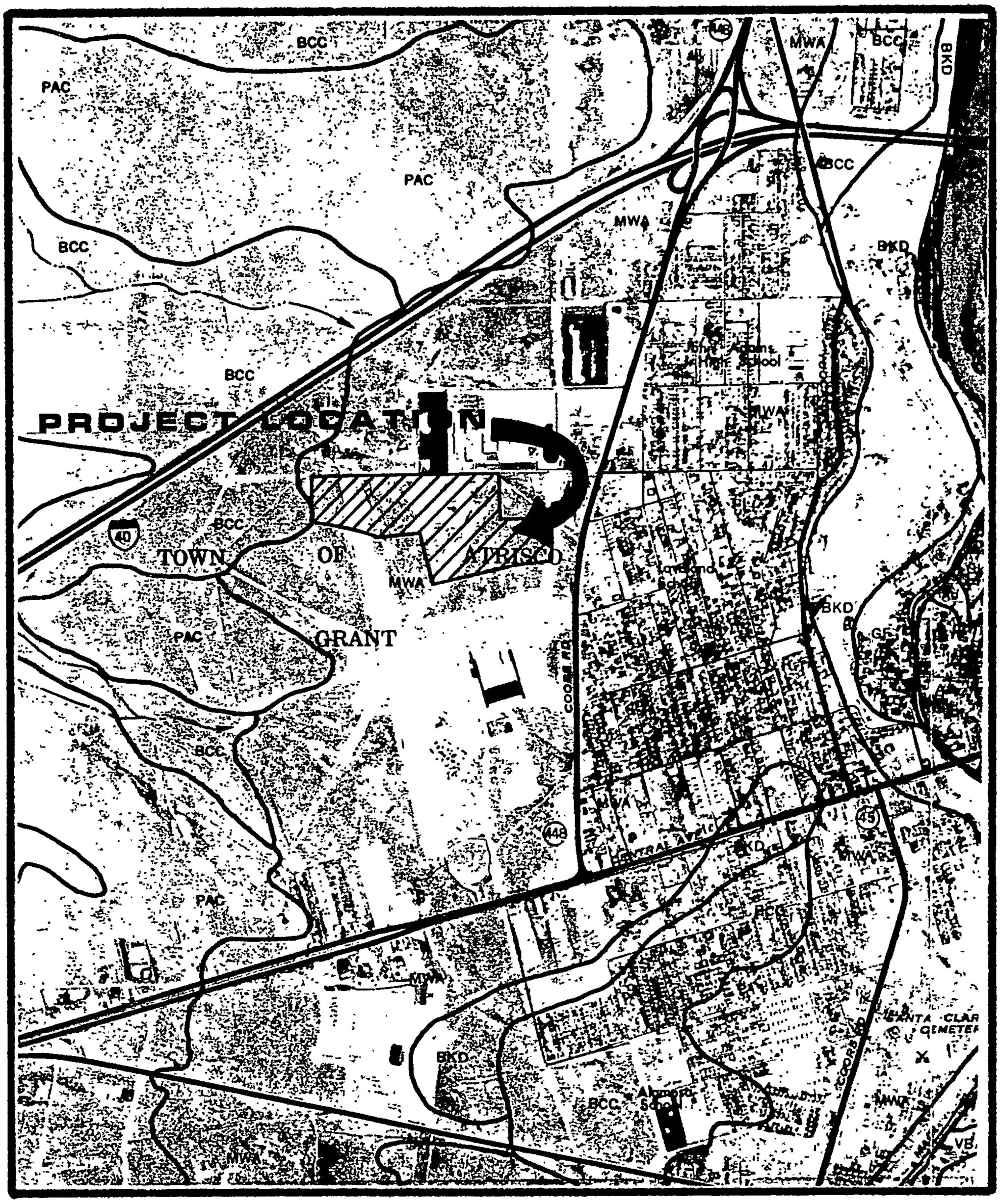
FIGURE 1



FLOOD HAZARD MAP

SCALE: 1"=500'

FIGURE 2



SOILS MAP

SCALE: 1"=2000'

FIGURE 3

and drainage improvements are moderate. The soils group has a tendency to exhibit shrink/swell characteristics. Ponding areas and berms may show piping and seepage.

EXISTING DRAINAGE CONDITIONS

As mentioned above, the project site is presently undeveloped. Existing onsite topography slopes to the center of the site to an existing 100-year floodplain. The site accepts offsite flows from undeveloped land to the west, north of I-40, the West Mesa Manor Subdivision, portions of West Mesa Park, West Mesa High School and Fortuna Road to the north, undeveloped land to the east and Los Volcanes Road to the south (see Figure 4). These offsite flows enter the site by existing rundowns located at sag curves within Fortuna Road and Los Volcanes Road. Two existing developments located adjacent to the site, Bag-N-Save Warehouse Foods and Tierra Pointe Apartments, both implement onsite retention ponding and therefore do not contribute to the floodplain.

SUMMARY OF EXISTING DRAINAGE STUDIES

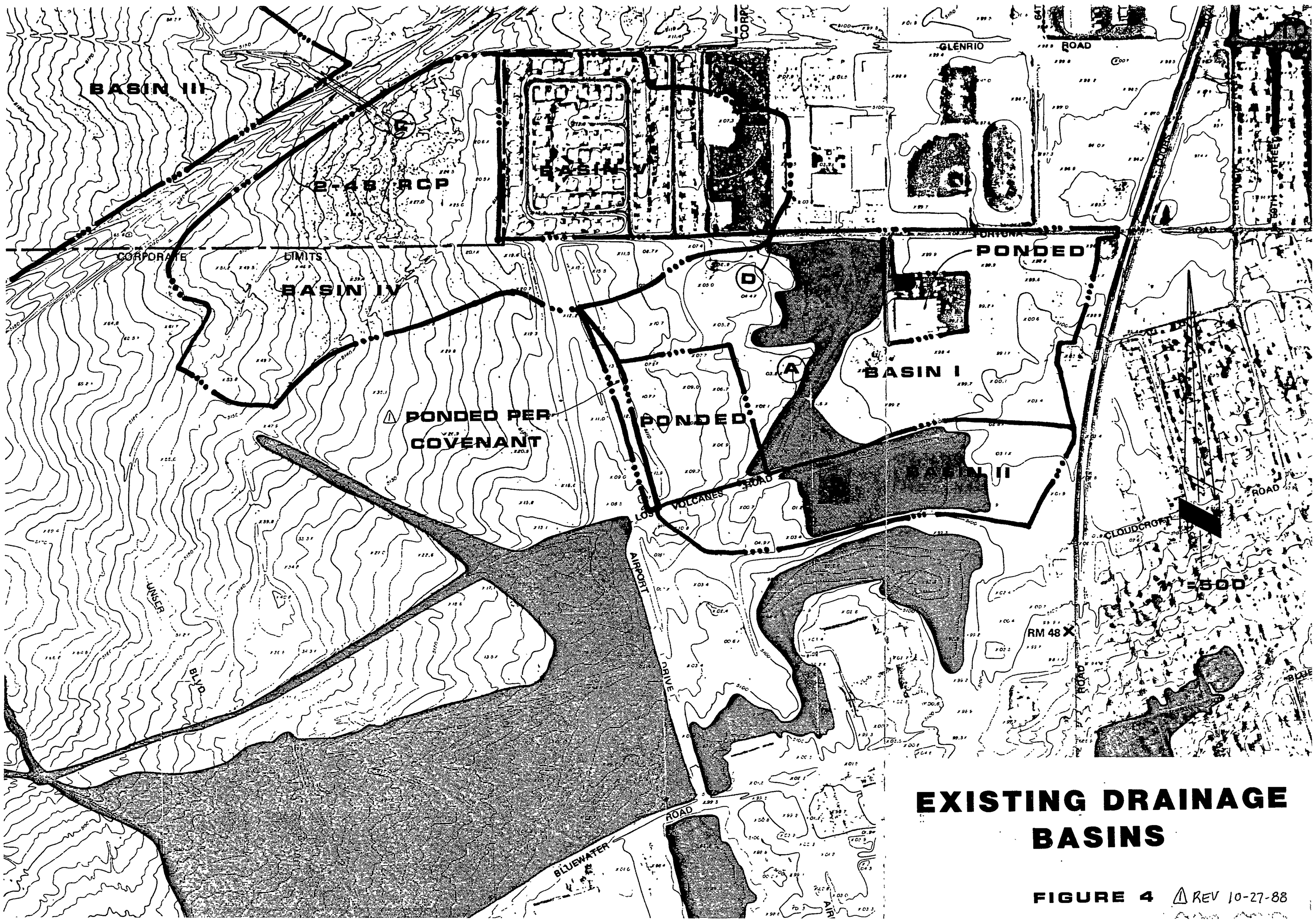
The criteria for management of stormwater runoff for VENTANA RIDGE is established by the West Bluff Drainage Plan, Phases I-III, prepared by Andrews, Asbury and Robert, Inc. The drainage plan is presented in three phases:

Phase I	Preliminary Engineering Report
Phase II	Existing Conditions Report
Phase III	Improved Conditions Report

The drainage report for VENTANA RIDGE utilizes the hydrology and improvement recommendations recommended by the West Bluff Drainage Plan. Due to the timing of the VENTANA RIDGE development and proposed storm drainage improvement projects recommended by the West Bluff Drainage Plan, interim improvements will be implemented until an outfall system is constructed.

PROPOSED DRAINAGE CONDITIONS

The development of VENTANA RIDGE and surrounding undeveloped properties relys heavily upon the public infrastructure recommended by the West Bluff



EXISTING DRAINAGE BASINS

FIGURE 4 ⚠ REV 10-27-88

Drainage Plan. Unfortunately, due to lack of funding, the West Bluff drainage improvements which benefit this site are not scheduled for construction. The present feeling is that it could be up to 10 years before these improvements are available for use by the regional property owners. It is therefore necessary for interim drainage improvements to be constructed to allow for VENTANA RIDGE to develop. The following narrative describes how VENTANA RIDGE will interface with the future West Bluff infrastructure, and what interim improvements will be provided to allow for development.

A. Ultimate Condition

Ultimately the West Mesa Diversion (System 500.04 and 504.5) will convey all flows from the watershed to the West Bluff Outfall. Upstream flows from Basin III will be conveyed by the I-40 Interceptor (System 605.13) to the West Bluff Outfall. This diversion will allow for the remaining upstream basin (Basin IV) to develop without ponding. An 84-inch storm drain (System 512) will be constructed to drain upstream basins west of Airport Road, Los Volcanes Road and Basin II. The drain will outfall at the West Mesa Diversion Channel which is to begin at Los Volcanes Road.

In the ultimate condition, the site, Basins 3, 4, 5, II, IV and V will drain to the West Mesa Diversion, thereby removing existing floodplains. No ponding will be required within the West Mesa Diversion drainage basin.

B. Interim Condition

The interim condition will utilize retention and detention ponding as a means of managing stormwater. An interim retention pond will be constructed on Lot 1A-1, Tract N to pond existing flows from Basin II. This pond will be sized to accept excess stormwater from the Tierra Pointe Apartments. Per the Drainage Report for the Los Volcanes Apartments prepared by Isaccson & Arfman, P.A., January 1985, the Tierra Pointe Apartments discharge approximately 3,000

Need easement & covenant prior to W.O. or Final Plat Sign off.

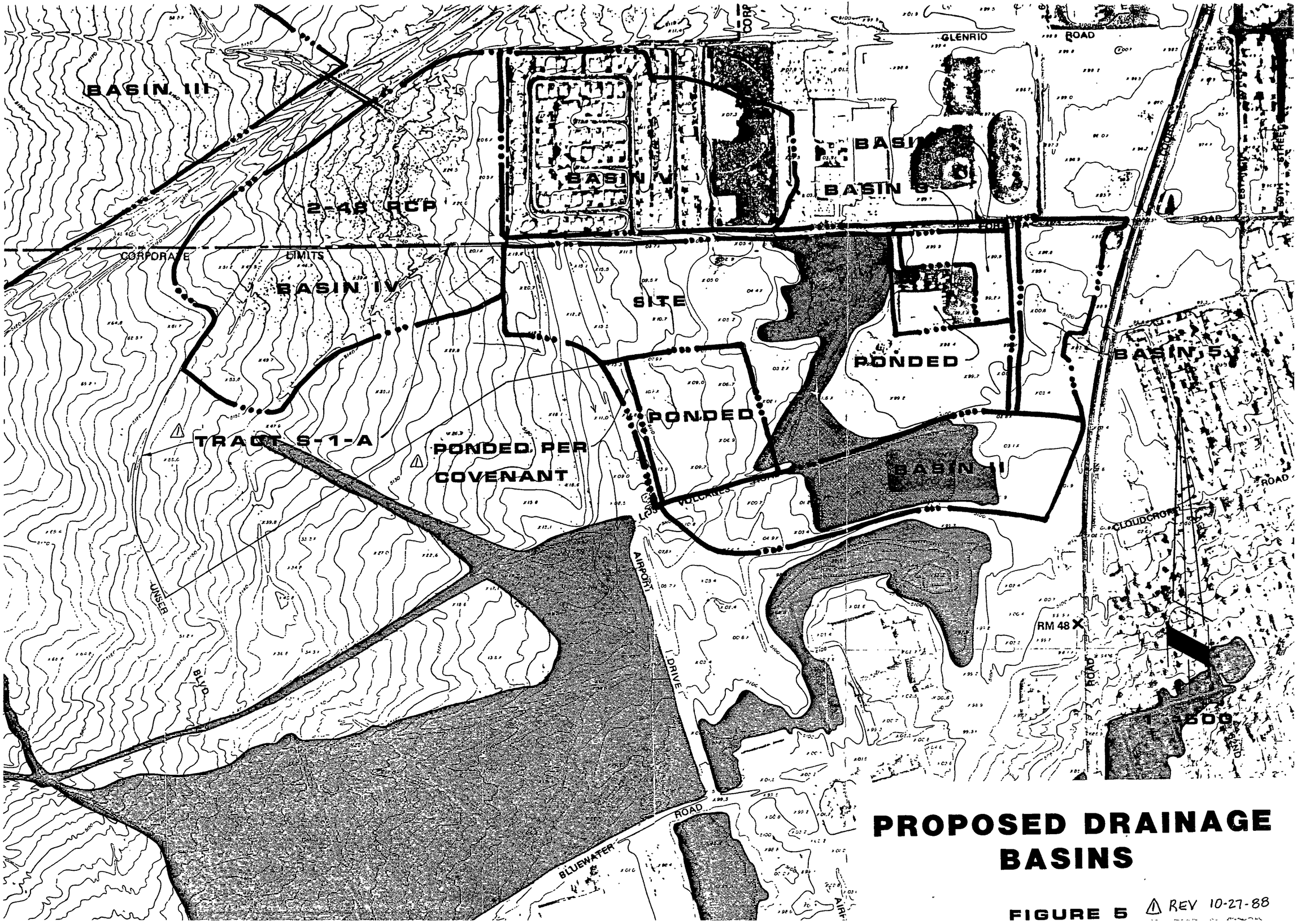
cubic feet into Los Volcanes Road during the 100-year/6-hour storm. The existing sag point in Los Volcanes Road will be reconstructed to allow flows to drain south into the interim retention pond.

Need Public easement & Covenant prior to W.O. & Final Plat signoff

An interim detention pond will be constructed within the 90' drainage easement, which is reserved for the West Mesa Diversion Channel. This pond will accept developed flows from the site, Basins 3, 4 and 5 and existing flows from Basins III, IV and V. The pond is sized to hold approximately 407,300 cubic feet. Surface flows will enter the pond at Fortuna and from the site at Analysis Point 13. It will be necessary to improve Fortuna Road full width from 76th Street to convey offsite flows to the pond. This will require reconstruction of the existing sag point located at the park site. A pond outfall will be provided by extending a temporary drainline from an existing storm drain located approximately 400 feet east of the pond site. The pond is expected to drain within 6 hours. As shown by the plan and calculations, the interim ponding sites will provide sufficient storage volume to replace the existing flood hazard zone.

Street improvements to 76th Street are expected to be deferred; therefore, an interim diversion berm will be constructed along the west property line to direct offsite flows south following historical drainage patterns until 76th Street is improved.

As shown by the Plan and Figure 4, 25' drainageways exist along the west and north sides of the Tierra Pointe Apartments. These drainageways exist by drainage covenant executed by Westland Development Co., Inc. and Los Volcanes Association Limited Partnership II. The purpose of the drainageways is to divert offsite flows around the Tierra Point Apartment site. The offsite basin is identified by the Drainage Report for Los Volcanes Apartments as a ±6 acre parcel located north and west of the apartment site. Ventana Ridge project will improve this condition by incorporating the northern portion of the subject offsite basin into it's subsdivision boundary. This eliminates the need for the northern swale. The western swale will continue to function as designed.



PROPOSED DRAINAGE BASINS

FIGURE 5 △1 REV 10-27-88

Upstream flows from Tract S-1-A and Lot 1A of Tract S-1 will continue to drain in historical patterns to the south, contributing to an existing flood hazard zone located west of Airport Road. These flows are diverted south by the abandoned dirt runway which acts as a diversion berm.

Basin 3 represents the Bag-N-Save Warehouse foodstore. Presently, this site manages stormwater by use of a pond located south of the store. The interim pond located within the 90 foot drainage easement is sized to accept flows from this site should Bag-N-Save wish to remove the pond and implement a free discharge concept. The owners of Lot 1, Tract S-2 are willing to grant a private drainage easement for the placement of facilities at Bag-N-Save's request. need this prior to Preliminary Plat approval.

Figure 5 is provided to demonstrate the proposed drainage basins which affect the VENTANA RIDGE development.

EROSION CONTROL

Temporary erosion control measures are to be taken during the construction phase of the project to limit the discharge of sediment into adjoining public streets and private property. Temporary erosion control berms will be required along the project boundaries. Complete details and exact location of the erosion control facilities will be shown on the grading plan for VENTANA RIDGE, which will be provided with the work order planset. The interim retention ponds will be scheduled for construction first, thereby providing an outfall for all onsite and offsite flows. All temporary erosion control facilities shall be maintained by the contractor throughout the construction phase.

REQUIRED INFRASTRUCTURE

With the development of VENTANA RIDGE, certain infrastructure improvements will be required. The following list represents the infrastructure recommended by this plan:

A. Public Infrastructure

1. Improvement of Fortuna Road, full width, from 76th Street to 64th Street

2. Internal residential street network, typically 32 ft. F-F, for conveyance of onsite stormwater

3. Concrete drainage channels, type "A" at Analysis Points 13 and 16

4. Interim retention pond located at Lot 1A-1, Tract N, Atrisco Business Park along with street reconstruction of Los Volcanes, and a drainage rundown into pond

5. Interim detention pond within 90' drainage easement, at Tracts Q4, Q5, Q7, Q8, Atrisco Business Park with drainage rundowns at Analysis Points 13 and 23 and approximately 400 L.F. 24-inch storm drain to existing storm drain in Fortuna Road

6. Temporary diversion berm along west property line

B. Private Infrastructure

1. Retaining walls thorughout site per Drainage Plan

Dennis thinks it premature to include #4 & Bag & Save Outfall

APPENDIX

PROJECT NAME VENTANA RIDGE JOB NO. 11329

SUBJECT CRITERIA

BY DL CK. BY _____ APPROVED BY _____ DATE 9-22-88 PAGE 1 OF _____

I. CRITERIA FOR HYDROLOGIC CALCULATIONS PER SCS METHOD FOR SMALL WATERSHEDS AS OUTLINED IN THE DEVELOPMENT PROCESS MANUAL, VOL II, CHAPTER 22

A. RAINFALL $P_{100} = 2.20''$ $P_{10} = 1.45''$

B. TIME OF CONCENTRATION

$$T_c = 0.0078 (L)^{0.77} / (S)^{0.385}, \text{ MIN.}$$

WHERE : L = LENGTH (FT)
S = SLOPE (FT/FT)

C. CURVE NUMBER

CN DETERMINED BY PLATES 22.2 C-2 & 3.

D. SOIL : MADUREZ WINK (MWA)
HYDROLOGIC SOIL GROUP B

E. RUNOFF

$$Q = \frac{45.4\,AR}{T_c}, \text{ CFS}$$

WHERE : A = AREA (AC)
R = DIRECT RUNOFF (IN)

F. VOLUME

$$V = 3630\,AR, \text{ CF.}$$

NOTES:

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Engineering & Environmental Consultants

VENTANA RIDGE
HYDROLOGY

Analysis Point	Basin	Area (acres)	Length (feet)	Height (feet)	TC (min)	CN	R 10 (in)	R 100 (in)	Q 10 (cfs)	Q 100 (cfs)	V 10 (cf)	V 100 (cf)
1	1A	3.5	630	14	10	80	0.35	0.70	5.6	11.2	4,447	8,894
2	1B	5.6	900	13	10	80	0.35	0.70	8.1	16.2	6,480	12,960
3	1C	2.0	350	2	10	80	0.35	0.70	3.2	6.4	2,541	5,082
4	1A-D	14.0	1530	18	12	80	0.35	0.70	18.5	37.0	17,787	35,574
5	1E	1.6	400	3	10	80	0.35	0.70	2.5	5.0	2,033	4,066
6	1A-F	18.2	2030	20	16	80	0.35	0.70	18.1	36.2	23,123	46,246
7	1A-G	20.5	2380	22	19	80	0.35	0.70	17.1	34.2	26,045	52,090
8	1i	2.0	360	3	10	80	0.35	0.70	3.2	6.4	2,541	5,082
9	1A-i	24.8	2880	24	23	80	0.35	0.70	17.1	34.2	31,508	63,016
10	1J	3.4	650	4	10	80	0.35	0.70	5.4	10.8	4,320	8,640
11	1J-K	8.1	1500	8	16	80	0.35	0.70	8.0	16.0	10,291	20,582
12	1M	3.4	720	4	10	80	0.35	0.70	5.4	10.8	4,320	8,640
13	1A-N	45.7	3730	27	29	80	0.35	0.70	25.0	50.0	58,062	116,122
13N	1A-L	37.9	3730	27	29	80	0.35	0.70	20.8	41.6	48,152	96,304
13S	1M-N	7.8	1320	7	15	80	0.35	0.70	8.3	16.6	9,910	19,820
14	2A	3.3	670	7	10	80	0.35	0.70	5.2	10.4	4,193	8,386
15	2A-B	7.4	1300	10	13	80	0.35	0.70	9.0	18.0	9,402	18,804
16	2A-C	9.9	1630	12	15	80	0.35	0.70	10.5	21.0	12,587	25,156
17	3	4.3	650	2	11	97	1.10	1.90	20.0	33.7	17,170	29,657
18	4	5.0	700	1	15	65	0.05	0.20	0.8	3.2	908	3,630
18	3-4	9.3	700	1	15	90	0.70	1.30	19.7	36.6	23,631	43,886
19	5	9.9	350	8	10	90	0.70	1.30	31.5	58.4	25,156	46,718
*20	II	25.0	1500	4	21	70	0.10	0.35	5.4	18.9	9,075	31,762
*21	III-V	365.5	10300	217	42	69	0.10	0.30	39.5	118.5	132,677	398,030
*22	III-V,2	375.4	10850	220	45	69	0.10	0.30	37.9	113.6	136,270	408,810
*23	III-V,2	377.6	11850	220	49	69	0.10	0.30	35.0	105.0	137,069	411,207
*24	III	275	7600	180	32	68	0.10	0.30	39.0	117.0	99,825	299,475
#21	IV-V,2	91.0							31	93		
#23	IV-V,2	100.9							35	70		
$A	I	62.5	2000	2	39	65	0.05	0.20	3.6	14.6	11,344	45,375
$B	II	25.0	1500	4	21	70	0.10	0.35	5.4	18.9	9,075	31,762
$C	III	275	7600	180	32	68	0.10	0.35	39.0	117.0	99,825	299,475
$D	IV	62.5	3400	55	20	69	0.10	0.35	14.2	49.7	22,688	79,406
$D	V	36.0	2500	21	20	78	0.30	0.60	24.5	49.0	39,204	78,408

* Interim conditions
\# Ultimate conditions per West Bluff Drainage Plan
$ Existing conditions

PROJECT NAME VENTANA RIDGE JOB NO. 11329

SUBJECT

BY ____ CK. BY ____ APPROVED BY ____ DATE ____ PAGE 3 OF ____

STREET DEPTHS

AP	Q_{10} CFS	Q_{100} CFS	SLOPE	d_{10} FT	d_{100} FT	CURB TYPE	COMMENT
1	5.6	11.2	0.019	0.28	0.35	M	
2	8.1	16.2	0.004	0.39	0.48	M	
3	3.2	6.4	0.004	0.30	0.37	M	
4	18.5	37.0	0.010	0.44	0.53	S	
5	2.5	5.0	0.004	0.28	0.34	M	
6	18.1	34.2	"	0.49	0.62	S	
7	17.1	34.2	"	0.48	0.62	S	
8	3.2	6.4	"	0.30	0.37	M	
9	17.1	34.2	"	0.48	0.62	S	
10	5.4	10.8	0.010	0.31	0.42	M	
11	8.0	16.0	0.004	0.39	0.48	M	
12	5.4	10.8	"	0.31	0.43	M	
13N	20.8	41.6	"	0.52	0.67	S	
13S	8.3	16.6	"	0.40	0.48	M	STD @ CURVE
14	5.2	10.4	0.010	0.30	0.45	M	
15	9.0	18.0	0.004	0.40	0.50	M	
16	10.5	21.0	0.004	0.40	0.48	~~M~~ S	STD @ ~~CUL~~ entire street
21	39.5	118.5	"		*	S	INTERIM
22	37.9	113.6	"		*	S	INTERIM
23	35.0	105.0	"		*	S	INTERIM
21	31	93	"		*	S	ULTIMATE
23	35	70	"		*	S	ULTIMATE

* SEE PG 4.

NOTES:

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PROJECT NAME VENTANA RIDGE JOB NO.

SUBJECT

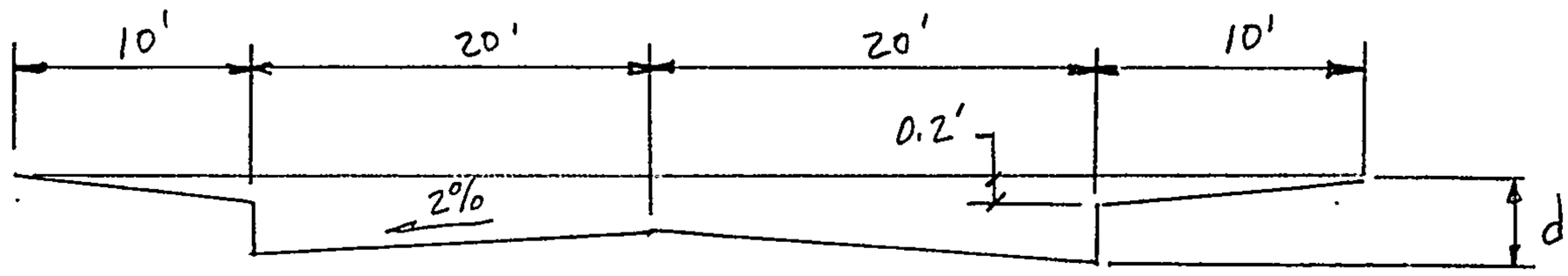
BY CK. BY APPROVED BY DATE PAGE 4 OF

STREET DEPTH CONT.

- ANALYSIS POINTS 1-16 STREET DEPTHS PER DPM PLATE 22.3 D-1

- ANALYSIS POINTS 21-23 STREET DEPTHS PER MANNING EQUATION:

$$Q = \frac{1.49}{n} A R^{2/3} S^{1/2}$$



STREET SECTION

$A = 40(d-0.2) + 10(d-0.67)$

$P = 60 + 2d$

$R = A/P$

$n = 0.017 \qquad S = 0.004$

$Q = \frac{1.49}{0.017} A R^{2/3} (0.004)^{1/2} \Rightarrow AR^{2/3} = Q/5.54$

SOLVING FOR d:

	AP	d_{100}
INTERIM	21	0.95
	22	0.93
	23	0.90
ULTIMATE	21	0.85
	23	0.77

$0.87' < d < 1.0'$ WILL NOT FLOOD PRIVATE PROPERTY – REQUEST VARIANCE.

NOTES:

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PROJECT NAME VENTANA RIDGE JOB NO. 11329

SUBJECT

BY CK. BY APPROVED BY DATE PAGE 5 OF

ONSITE DRAINAGE CHANNEL DESIGN:

- USE STANDARD COA TYPE 'A' CONCRETE CHANNEL PER STD DWG 2260

- DETERMINE NORMAL DEPTH IN 9' WIDE CHANNELS

- DETERMINE INLET WIDTHS AT STREET CURBLINE

  - NORMAL DEPTH BY MANNINGS EQN:

$$Q = \frac{1.49}{n} A R^{2/3} S^{1/2}$$

SOLVE FOR Y_o

WHERE: $n = 0.013$
$S = 0.01$ min.
$A = 9Y_o$
$P = 9 + 2Y_o$
$R = A/P$

  - INLET WIDTH BY WEIR:

$$Q = 3.33 L H^{3/2}$$

$$L = Q / 3.33 (0.67)^{3/2}$$

WHERE: $H = 0.67'$

AP	Q_{100}	Y_o	*USE Y=	L	USE L=
13	50.0	0.7'-8"	1.75'	27.6'	29'
16	21.0	0.4'	1.50'	11.6'	13'

* PROVIDES 1.0' MIN FREEBOARD.

NOTES:

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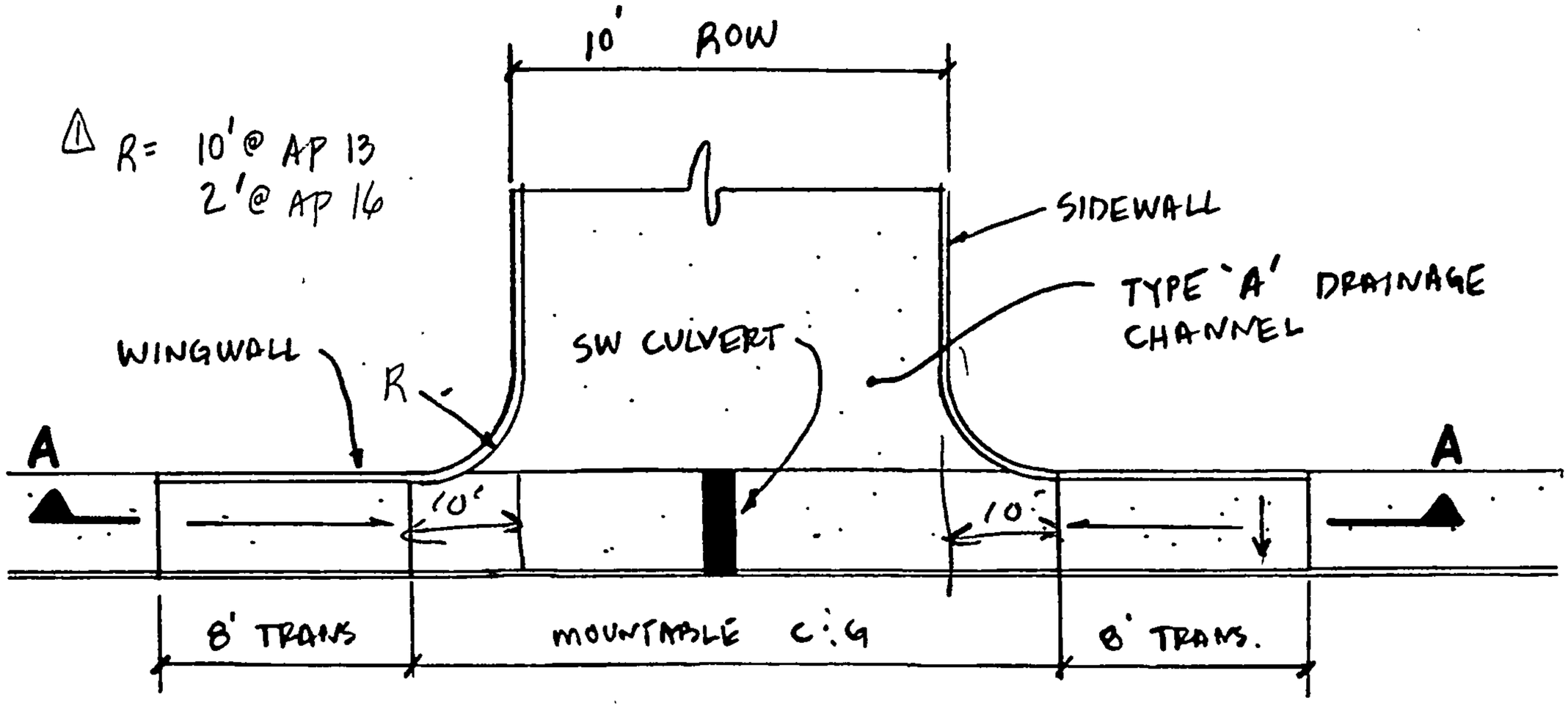
PROJECT NAME VENTANA RIDGE JOB NO. 11329

SUBJECT

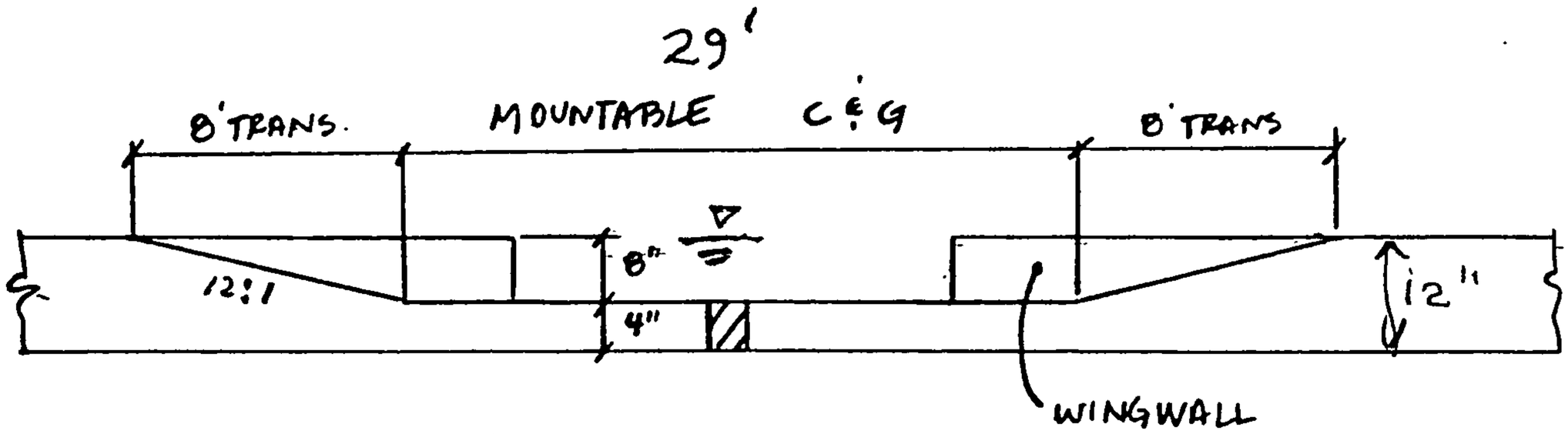
BY CK. BY APPROVED BY DATE PAGE 6 OF

⚠ REVISED 10-27-88

DRAINAGE CHANNEL INLET AT AP 13 AND 16



PLAN



SECTION A-A

NOTES:

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PROJECT NAME VENTANA RIDGE JOB NO. 11329

SUBJECT

BY CK. BY APPROVED BY DATE PAGE 7 OF

LOS VOLCANES POND INLET DESIGN

AT AP 20 $Q_{100} = 18.9$ CFS

$V_{100} = 31{,}762$ CF

⇒ ADD 3,000 CF FROM LOS VOLCANES APARTMENTS PER ARFMAN REPORT

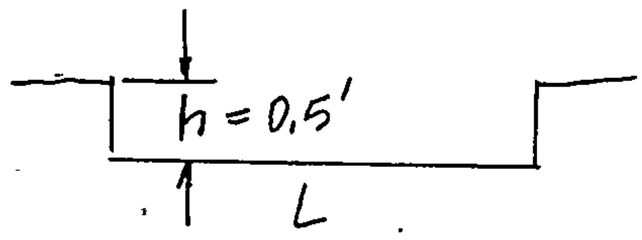
$V_{100} = 34{,}762$ CF

- DESIGN INLET WIDTH FROM STREET BY WEIR EQN:

$$Q = 3.33 L H^{3/2}$$ WHERE: $H = 0.87'$

$$L = \frac{Q}{3.33 H^{3/2}} = 7.0 \text{ FT}$$

- CHECK CHANNEL / RUNDOWN DEPTH



$$Q = \frac{1.49}{n} A R^{2/3} \cdot S^{1/2}$$

WHERE. $S = 0.20$
$A = 0.5L$
$P = 1 + L$
$n = 0.013$
$Q = 18.9$

BY TRIAL $L = 1.5'$

TAPER RUNDOWN FROM 10' @ CURB TO 3' ± AT POND BOTTOM.

NOTES:

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PROJECT NAME VENTANA RIDGE JOB NO. 11329

SUBJECT

BY CK. BY APPROVED BY DATE PAGE 8 OF

DRAINAGE INLETS TO TRACT 'R' POND

A. FORTUNA ROAD @ AP 23

- DETERMINE INLET WIDTH BY WEIR:

$Q = 3.33\,LH^{3/2}$ WHERE $H = 0.87'$

$Q = 105$ CFS

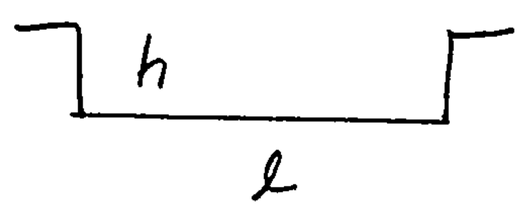
Water block is only 0.3' high

$L = Q / 3.33(0.87)^{3/2}$

$L = 38.9'$ USE 40'

- DETERMINE CHANNEL RUNDOWN WIDTH BY MANNINGS:

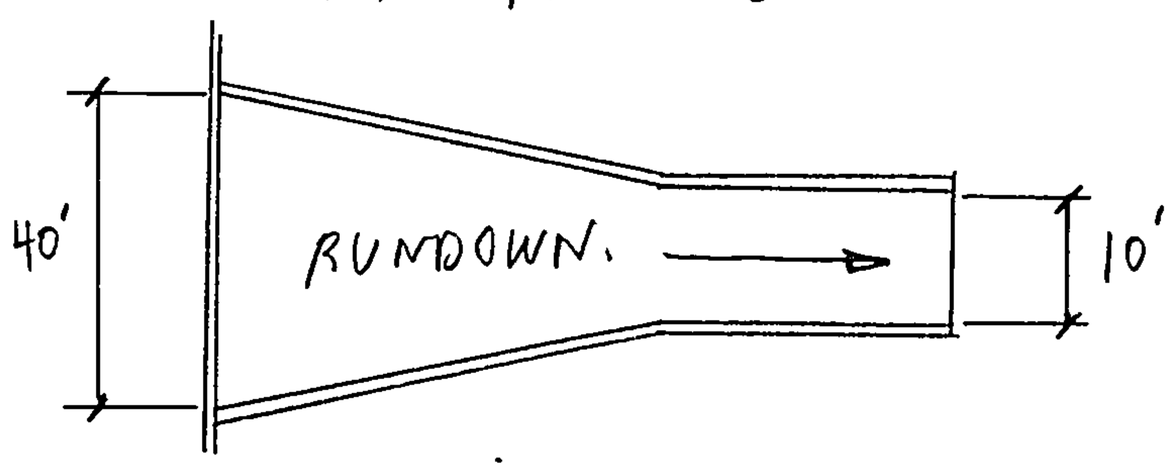
$Q = \frac{1.49}{n} AR^{2/3} S^{1/2}$ WHERE: $n = 0.013$, $S = 0.2$, $h = 0.5'$, $A = \ell/2$, $P = \ell + 1$



BY T & E $\ell = 7'+$

USE 10' (ALLOWS FOR ACCESS)

TAPER RUNDOWN FROM ' AT FORTUNA TO ' AT POND BOTTOM



NOTES:

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PROJECT NAME VENTANA RIDGE JOB NO. 11329

SUBJECT

BY CK. BY APPROVED BY DATE PAGE 9 OF

B. DRAINAGE CHANNEL AT AP 13

$Q_{100} = 49.8$ CF

- CHECK CHANNEL WIDTH BY MANNINGS;

WHERE $H = 0.5'$ $S = 0.33$

$n = 0.013$

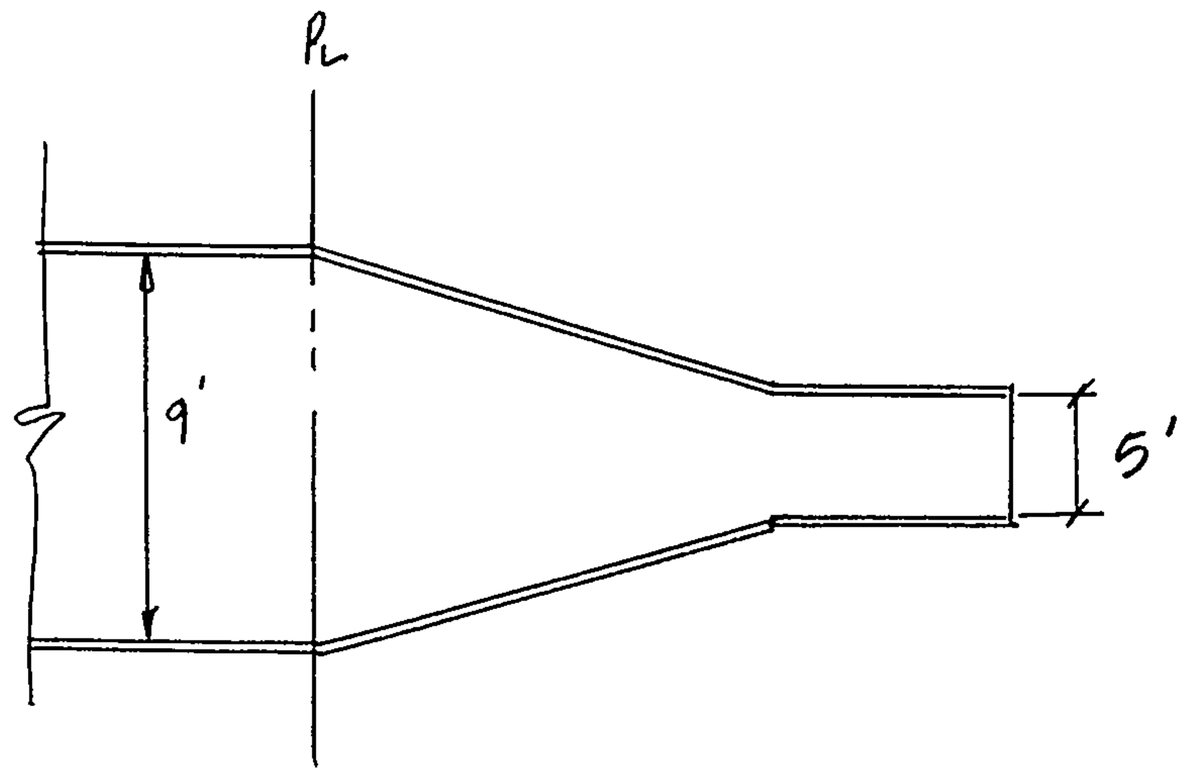
$A = l/2$

$P = l + 1$

BY T:E $l = 3' \pm$

USE 5'

TAPER CHANNEL FROM 9' @ PL TO 5' AT POND BOTTOM



NOTES:

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PROJECT NAME VENTANA RIDGE JOB NO. 11329

SUBJECT

BY CK. BY APPROVED BY DATE PAGE 10 OF

REV 10-27-88

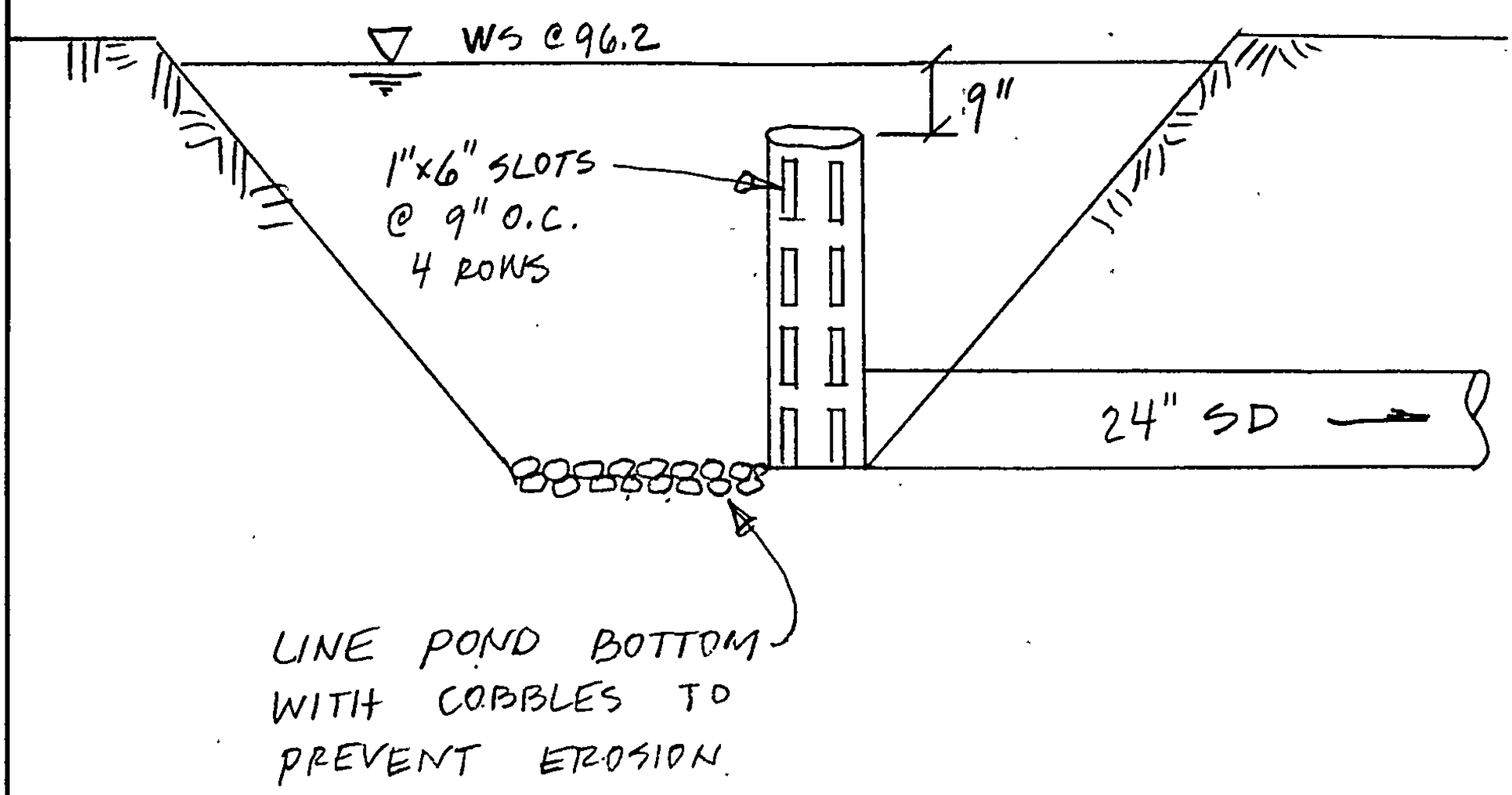
TRACT 'R' DETENTION POND OUTLET

A. DESIGN SLOTTED STANDPIPE OUTLET

POND BOTTOM = 91.8

POND WATER SURFACE = 96.2

USE 12" STANDPIPE WITH 24" SD.
CONNECT 24" SD TO EXISTING D.I.
LOCATED IN FORTUNA. D.I. DRAINS
TO COORS SYSTEM BY 15" RCP.
24" POND DRAIN (TEMP) WILL REDUCE
CLOGGING POTENTIAL.



NOTES:

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ASSOCIATES, INC.
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PROJECT NAME VENTANA RIDGE JOB NO. 11329

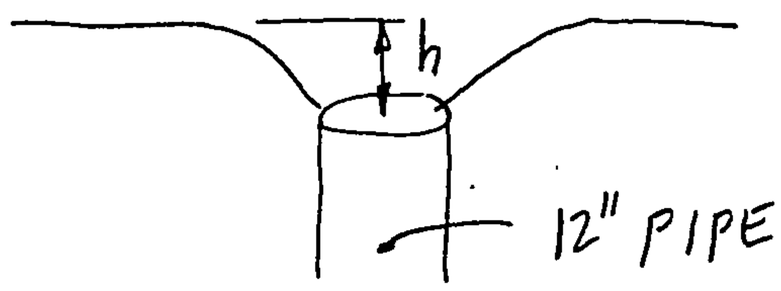
SUBJECT

BY ____ CK. BY ____ APPROVED BY ____ DATE ____ PAGE 11 OF ____

REV 10-27-88

STANDPIPE / DRAINLINE CAPACITY

WATER WILL DRAIN INTO TOP OF PIPE UNDER WEIR CONDITION:



$Q = 3.33 L H^{3/2}$

$h = 9''$

$L = P = 0.79$ FT

$Q = 1.7$ CFS.

SLOTS WILL ACCEPT WATER UNDER ORIFACE CONDITIONS:

$Q = CA\sqrt{2gh}$

$C = 0.6$

$A = 0.25$ SF/SLOT

$g = 32.2$ F/S^2

h = VARIES FT

ROW	h	Q
1	1.25'	1.3
2	2.25'	1.8
3	3.25'	2.2
4	4.25'	2.5

7.8 CFS X 4 SLOTS

= 31.2 CFS MAX.

NOTES:

ESPEY, HUSTON & ASSOCIATES, INC.
Engineering & Environmental Consultants

PROJECT NAME VENTANA RIDGE JOB NO. 11329

SUBJECT

BY CK. BY APPROVED BY DATE 10-27-88 PAGE 11A OF

CHECK 24" SD FOR INLET CONTROL BY ORIFACE:

$$Q = CA\sqrt{2gh}$$

ASSUMING STANDPIPE IS FULL, AVAILABLE HEAD = 3.4 FT

$C = 0.6$
$A = 3.14$ SF
$g = 32.2$ F/s^2
$h = 3.4'$

$$Q_{MAX} = \underline{\underline{27.9 \text{ CFS.}}}$$

⇒ USE 27.9 CFS FOR MAX POND DISCHARGE THIS ASSUMES 24" SD WILL DRAIN UNDER PRESSURE FLOW. HYDRAULIC GRADELINE CALCULATIONS TO BE PROVIDED WITH WORK ORDER MAY REQUIRE ADJUSTMENT TO PIPE SIZE.

B. POND SIZING

POND VOLUME IS DETERMINED BY USING THE POND INFLOW HYDROGRAPHS PRESENTED ON PAGES 12-16.

NOTES:

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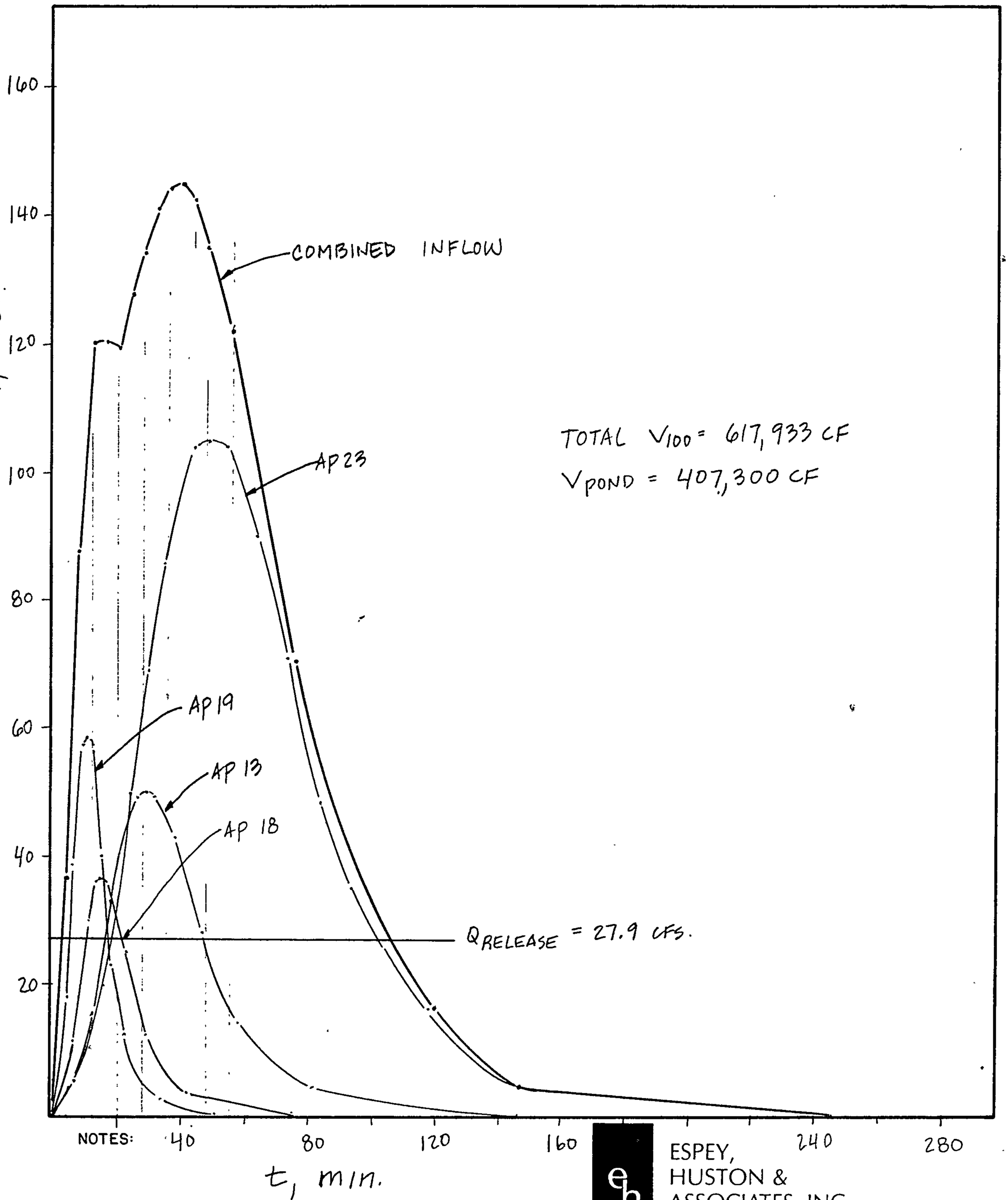
PROJECT NAME VENTANA RIDGE JOB NO. 11329

SUBJECT DETENTION POND INFLOW HYDROGRAPH

BY _____ CK. BY _____ APPROVED BY _____ DATE _____ PAGE 12 OF _____



NOTES:

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Engineering & Environmental Consultants

HYDROGRAPH COMPUTATION WORKSHEET

DATE 9-27-88
COMPUTED BY DL
CHECK BY

PROJECT VENTANA RIDGE

LOCATION BASINS III-V, 2

ANALYSIS POINT # 23

(DR. AREA) A = 377.6 ACRES

T_c 49 MIN

POINT RAINFALL 2.2 IN. FROM PLATE 22.2 D-1

CN = 69 FROM PLATES 22.2 C-2, 22.2 C-3

RUNOFF VOLUME R = 0.3 IN. FROM PLATE 22.2 C-4

COMPUTED T_p = 49 MIN. $T_p = T_c$
(Rounded to even minute)

$q_p = \frac{45.4A}{T_p}$ = 349.9 CFS./INCH OF RUNOFF

$(R \times q_p) = Q_{peak}$ = 105.0 CFS

$t(\text{COLUMN}) = (t/T_p)$ $t = T_p(t/T_p)$

$y = \frac{Q}{Q_{peak}}$ $Q = y(Q_{peak})$

	(t/T_p)	t (min.)	y	Q (cfs)
1	0	0	0	0
2	.1	4.9	.03	3.2
3	.2	9.8	.10	10.5
4	.3	14.7	.190	20.0
5	.4	19.6	.310	32.6
6	.5	24.5	.470	49.4
7	.6	29.4	.660	69.3
8	.7	34.3	.820	86.1
9	.8	39.2	.930	97.7
10	.9	44.1	.990	104.0
11	1.0	49	1.00	105.0
12	1.1	53.9	.990	104.0
13	1.2	58.8	.930	97.7
14	1.3	63.7	.860	90.3
15	1.4	68.6	.780	81.9
16	1.5	73.5	.680	71.4
17	1.6	78.4	.560	58.8
18	1.7	83.3	.460	48.3
19	1.8	88.2	.390	41.0
20	1.9	93.1	.330	34.7
21	2.0	98	.280	29.4
22	2.2	107.8	.207	22.1
23	2.4	117.6	.147	15.8
24	2.6	127.4	.107	11.6
25	2.8	137.2	.077	8.4
26	3.0	147	.055	6.3
27	3.2	156.8	.040	4.2
28	3.4	166.6	.029	3.2
29	3.6	176.4	.021	2.1
30	3.8	186.2	.015	1.6
31	4.0	196	.011	1.1
32	4.5	220.5	.005	0.5
33	5.0	245	.000	0

PLATE 22.2 F-1

HYDROGRAPH COMPUTATION WORKSHEET

DATE 9-27-88
COMPUTED BY DL
CHECK BY

PROJECT VENTANA RIDGE

LOCATION BASIN 1

ANALYSIS POINT # 13

(DR. AREA) A = 45.7 ACRES

T_c 29 MIN

POINT RAINFALL 2.2 IN. FROM PLATE 22.2 D-1

CN = 80 FROM PLATES 22.2 C-2, 22.2 C-3

RUNOFF VOLUME R = 0.7 IN. FROM PLATE 22.2 C-4

COMPUTED T_p = 29 MIN. $T_p = T_c$
(Rounded to even minute)

$q_p = \frac{45.4A}{T_p}$ = 71.5 CFS./INCH OF RUNOFF

$(R \times q_p) = Q_{peak}$ = 50.0 CFS

t(COLUMN)=(t/T_p) $t=T_p(t/T_p)$

$y = \frac{Q}{Q_{peak}}$ $Q = y(Q_{peak})$

	(t/T_p)	t (min.)	y	Q (cfs)
1	0	0	0	0
2	.1	2.9	.03	1.5
3	.2	5.8	.10	5.0
4	.3	8.7	.190	9.5
5	.4	11.6	.310	15.5
6	.5	14.5	.470	23.5
7	.6	17.4	.660	33.0
8	.7	20.3	.820	41.0
9	.8	23.2	.930	46.5
10	.9	26.1	.990	49.5
11	1.0	29	1.00	50
12	1.1	31.9	.990	49.5
13	1.2	34.8	.930	46.5
14	1.3	37.7	.860	43.0
15	1.4	40.6	.780	39
16	1.5	43.5	.680	34
17	1.6	46.4	.560	28
18	1.7	49.3	.460	23
19	1.8	52.2	.390	19.5
20	1.9	55.1	.330	16.5
21	2.0	58.0	.280	14
22	2.2	63.8	.207	10.4
23	2.4	69.6	.147	7.5
24	2.6	75.4	.107	5.5
25	2.8	81.2	.077	4.0
26	3.0	87	.055	3
27	3.2	92.8	.040	2
28	3.4	98.6	.029	1.5
29	3.6	104.4	.021	1.0
30	3.8	110.2	.015	0.8
31	4.0	116.0	.011	0.5
32	4.5	130.5	.005	0.2
33	5.0	145.0	.000	0

PLATE 22.2 F-1

HYDROGRAPH COMPUTATION WORKSHEET

DATE 9-27-88
COMPUTED BY DL
CHECK BY

PROJECT VENTANA RIDGE

LOCATION BASIN 5

ANALYSIS POINT # 19

(DR. AREA) A = 9.9 ACRES

T_c 10 MIN

POINT RAINFALL 2.2 IN. FROM PLATE 22.2 D-1

CN = 90 FROM PLATES 22.2 C-2, 22.2 C-3

RUNOFF VOLUME R = 1.3 IN. FROM PLATE 22.2 C-4

COMPUTED T_p = 10 MIN. $T_p = T_c$
(Rounded to even minute)

$q_p = \frac{45.4A}{T_p}$ = 44.9 CFS./INCH OF RUNOFF

$(R \times q_p) = Q_{peak}$ = 58.4 CFS

t(COLUMN)=(t/T_p) $t=T_p(t/T_p)$

$y = \frac{Q}{Q_{peak}}$ $Q = y(Q_{peak})$

	(t/T_p)	t (min.)	y	Q (cfs)
1	0	0	0	0
2	.1		.03	1.8
3	.2		.10	5.8
4	.3		.190	11.1
5	.4		.310	18.1
6	.5		.470	27.4
7	.6		.660	38.5
8	.7		.820	47.9
9	.8		.930	54.3
10	.9		.990	57.8
11	1.0	10	1.00	58.4
12	1.1		.990	57.8
13	1.2		.930	54.3
14	1.3		.860	50.2
15	1.4		.780	45.5
16	1.5		.680	39.7
17	1.6		.560	32.7
18	1.7		.460	26.9
19	1.8		.390	22.8
20	1.9		.330	19.3
21	2.0		.280	16.4
22	2.2		.207	12.3
23	2.4		.147	8.8
24	2.6		.107	6.4
25	2.8		.077	4.7
26	3.0		.055	3.5
27	3.2		.040	2.3
28	3.4		.029	1.8
29	3.6		.021	1.2
30	3.8		.015	0.9
31	4.0		.011	0.6
32	4.5		.005	0.3
33	5.0		.000	0

PLATE 22.2 F-1

HYDROGRAPH COMPUTATION WORKSHEET

DATE 9-27-88
COMPUTED BY DL
CHECK BY

PROJECT VENTANA RIDGE

LOCATION BASINS 3 & 4

ANALYSIS POINT # 18

(DR. AREA) A = 9.3 ACRES

T_c 15 MIN

POINT RAINFALL 2.2 IN. FROM PLATE 22.2 D-1

CN = 90 FROM PLATES 22.2 C-2, 22.2 C-3

RUNOFF VOLUME R = 1.3 IN. FROM PLATE 22.2 C-4

COMPUTED T_p = 15 MIN. $T_p = T_c$
(Rounded to even minute)

$q_p = \frac{45.4A}{T_p}$ = 28.1 CFS./INCH OF RUNOFF

$(R \times q_p) = Q_{peak}$ = 36.6 CFS

$t(\text{COLUMN}) = (t/T_p)$ $t = T_p(t/T_p)$

$y = \frac{Q}{Q_{peak}}$ $Q = y(Q_{peak})$

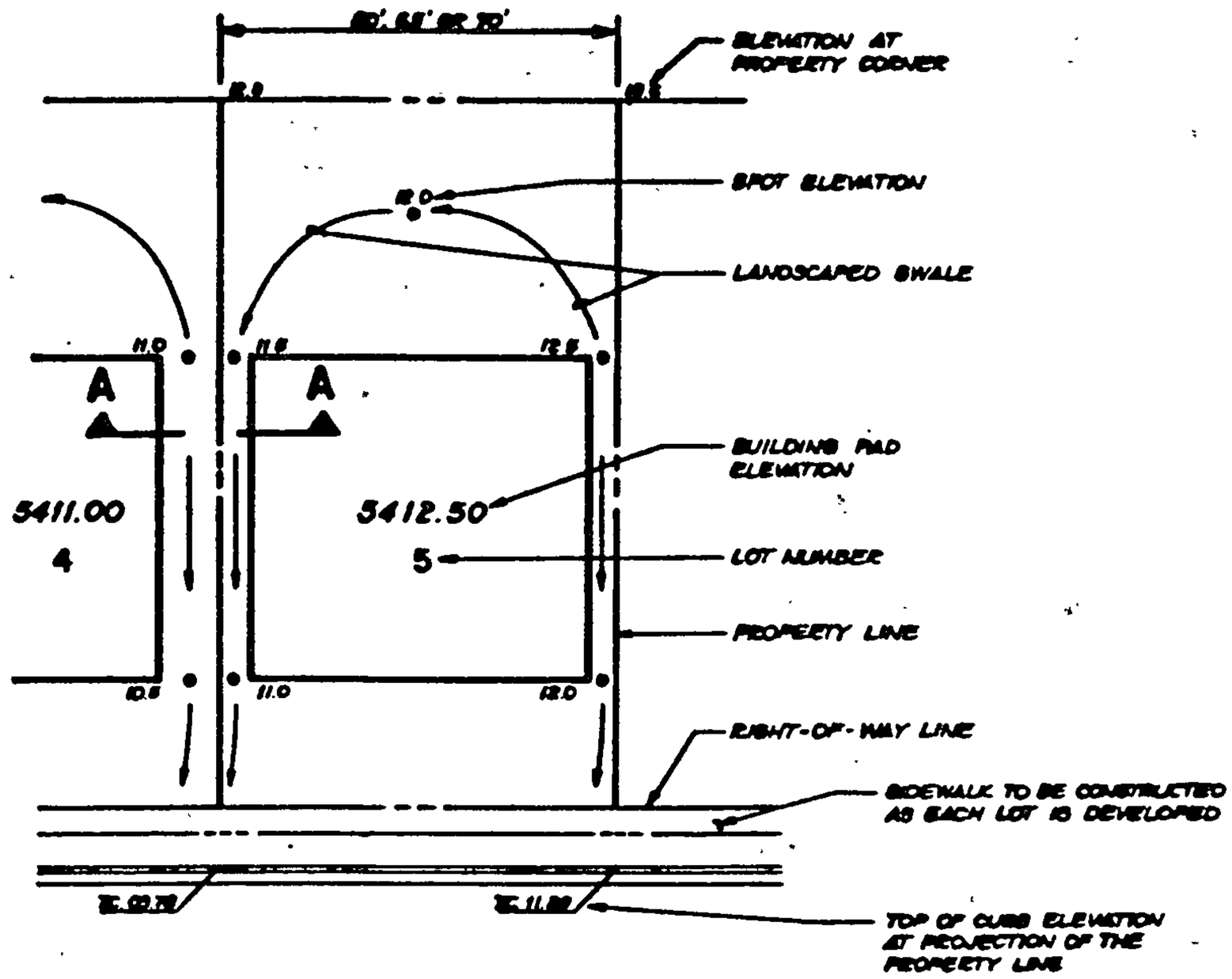
	(t/T_p)	t (min.)	y	Q (cfs)
1	0	0	0	0
2	.1	1.5	.03	1.1
3	.2	3.0	.10	3.7
4	.3	4.5	.190	6.9
5	.4	6.0	.310	11.3
6	.5	7.5	.470	17.2
7	.6	9.0	.660	24.2
8	.7	10.5	.820	30.0
9	.8	12.0	.930	34.0
10	.9	13.5	.990	36.2
11	1.0	15.0	1.00	36.6
12	1.1	16.5	.990	36.2
13	1.2	18.0	.930	34.0
14	1.3	19.5	.860	31.5
15	1.4	21.0	.780	28.5
16	1.5	22.5	.680	24.9
17	1.6	24.0	.560	20.5
18	1.7	25.5	.460	16.8
19	1.8	27.0	.390	14.3
20	1.9	28.5	.330	12.1
21	2.0	30.0	.280	10.2
22	2.2	33.0	.207	7.7
23	2.4	36.0	.147	5.5
24	2.6	39.0	.107	4.0
25	2.8	42.0	.077	2.9
26	3.0	45.0	.055	2.2
27	3.2	48.0	.040	1.5
28	3.4	51.0	.029	1.1
29	3.6	54.0	.021	0.7
30	3.8	57.0	.015	0.5
31	4.0	60.0	.011	0.4
32	4.5	67.5	.005	0.2
33	5.0	75.0	.000	0

PLATE 22.2 F-1

PROJECT NAME VENTANA RIDGE JOB NO. 11329

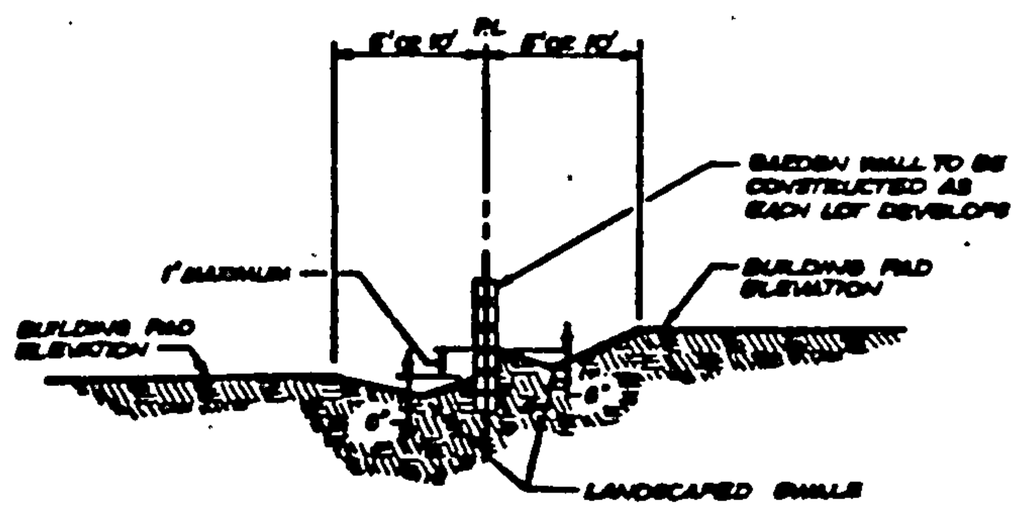
SUBJECT

BY CK. BY APPROVED BY DATE PAGE 17 OF



LOT GRADING DETAIL

SCALE: 1" = 20'



SECTION A-A

SCALE: 1" = 5'

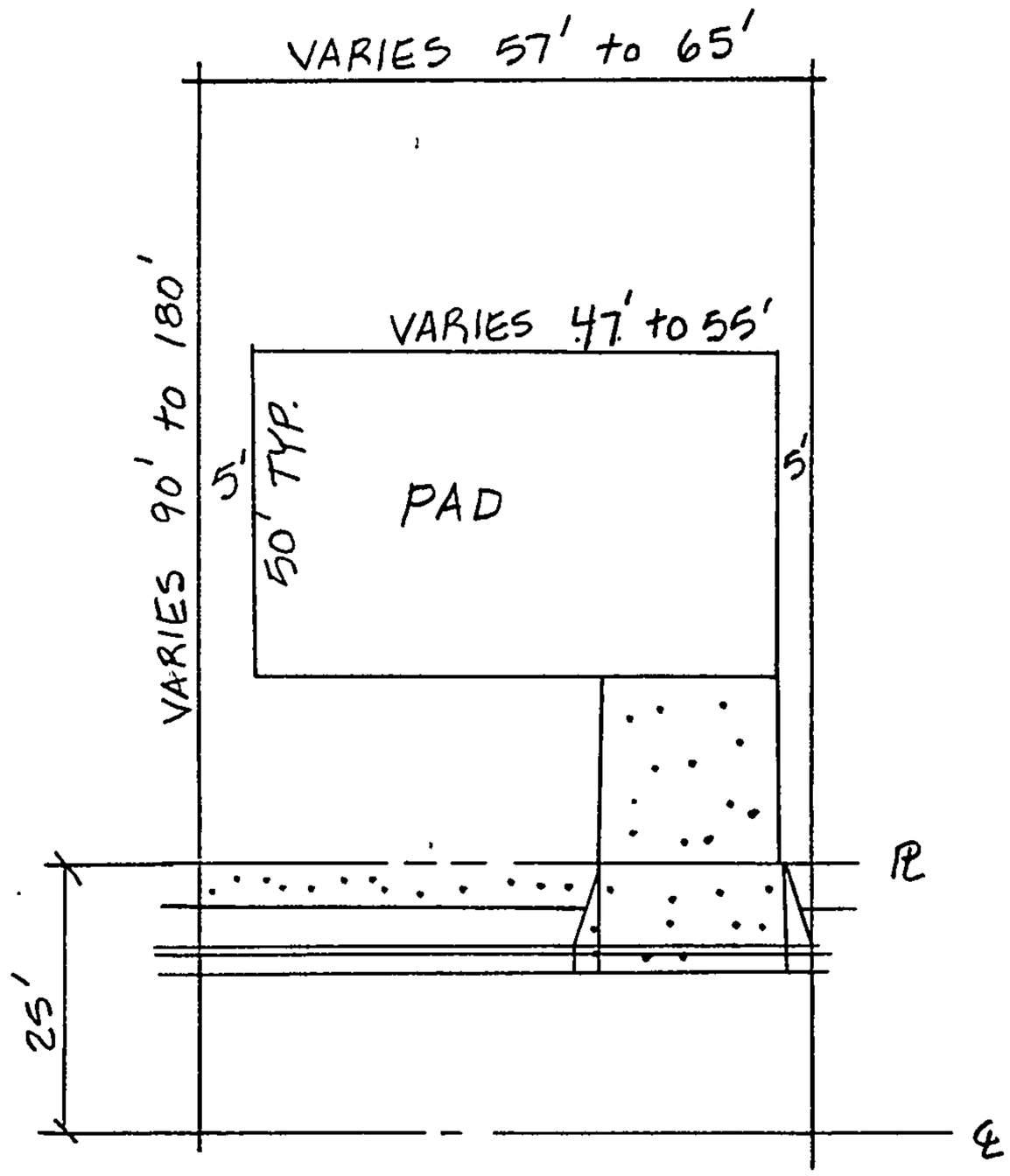
NOTES:

ESPEY, HUSTON & ASSOCIATES, INC.
Engineering & Environmental Consultants

PROJECT NAME VENTANA RIDGE JOB NO. 11329

SUBJECT CN DETERMINATION - ONSITE

BY _____ CK. BY _____ APPROVED BY _____ DATE 10-27-88 PAGE 18 OF _____



LOT SIZE	GROSS AREA INCL. R.O.W	% IMP	CN	LOT SIZE % TOTAL
57 x 105	7410 SF	55	81	5
58 x 95	6960 "	59	83	3
60 x 90	6900	56	81	11
60 x 95	7200	59	83	4
60 x 100	7500	57	82	10
60 x 105	7830	55	81	7
60 x 110	8100	52	79	2
60 x 115 +	8400 +	50	79	58

NOTES:

ESPEY, HUSTON & ASSOCIATES, INC.
Engineering & Environmental Consultants

PROJECT NAME VENTANA RIDGE JOB NO. 11329

SUBJECT

BY ____ CK. BY ____ APPROVED BY ____ DATE 10-27-88 PAGE 19 OF ____

AVE CN = 80.04 USE 80

NOTE CN DETERMINED BY USING DPM PLATE 22.2 C-2 AND 22.2 C-3, WITH PERVIOUS CN = 61

NOTES:

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

CONFERENCE RECAP

DRAINAGE FILE/ZONE ATLAS PAGE NO.: J 10 DATE: 7/27/88 @ 10:00 a.m.

PLANNING DIVISION NOS: EPC: _____ DRB: _____

SUBJECT: Atrisco Business Park Residential Subdivision

STREET ADDRESS (IF KNOWN): _____

SUBDIVISION NAME: Atrisco Business Park Lots 1B, 2A, 2B, 3B & 4
Tracts 52 & 51

APPROVAL REQUESTED:

✓ PRELIMINARY PLAT — FINAL PLAT
SITE DEVELOPMENT PLAN — BUILDING PERMIT
OTHER — ROUGH GRADING

	WHO	REPRESENTING
ATTENDANCE:	Dennis Lorenz	Espey, Huston
	Fred Aguirre	Hydrology Section

FINDINGS:

- An approved drainage report is required for the subject request.
- No objection to the relocation of the existing 100yr floodplains if the relocation is in accordance with the City's floodplain ord & City's drainage ordinance; is compatible with the future Westbluff outfall; drainage easement(s) are granted to the City; maintenance is provided if required. Additionally, the relocation may require compliance with the State's DFM requirements.
- Recommend that a conceptual grading & drainage plan be provided prior to your sketch plat application with ERC. The conceptual plan is to identify the overall drainage concept.

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:	Fred Aguirre	SIGNED:	[illegible]
TITLE:		TITLE:	
DATE:	7/28/88	DATE:	7/28/88

**NOTE: PLEASE PROVIDE A COPY OF THIS REPORT WITH THE DRAINAGE SUBMITTAL