CARDER CONCRETE PRODUCTS CO.
8311 WEST CARDER COURT
LITTLETON, COLORADO 80125
PHONE (303) 794-6303

WYOMING CONCRETE PIPE CO.
BRYAN STOCK TRAIL
CASPER, WYOMING 82601
PHONE (307) 265-3100

Temp C.O. Issued.
Additional Comments needed.
Need $$
Need 2 final Comm copies for final submittal.

DRAINAGE INFORMATION SHEET

PROJECT TITLE: AHEPA 501 Apartments **ZONE ATLAS/DRNG. FILE #:** J-10/D2J

DRB #: _____ **EPC #:** _____ **WORK ORDER #:** _____

LEGAL DESCRIPTION: Lots 2-B-1 & 1-A-1-A, Tracts N & O, Unit 2, Atrisco Business Park

CITY ADDRESS: *6700 Los Volcanes*

ENGINEERING FIRM: Advanced Engineering and Consulting, LLC **CONTACT:** Shahab Biazar

ADDRESS: 10205 Snowflake Ct. NW Alb., NM 87114 **PHONE:** (505) 899-5570

OWNER: _____ **CONTACT:** _____

ADDRESS: _____ **PHONE:** _____

ARCHITECT: *Holcomb, Musemeche & Associates, Inc.* **CONTACT:** *Mark Musemeche*

ADDRESS: *2727 Allen Parkway, Suite 1815, Houston, TX 77019* **PHONE:** *713-522-4141*

SURVEYOR: _____ **CONTACT:** _____

ADDRESS: _____ **PHONE:** _____

CONTRACTOR: _____ **CONTACT:** _____

ADDRESS: _____ **PHONE:** _____

TYPE OF SUBMITTAL:

_____ DRAINAGE REPORT

_____ DRAINAGE PLAN

_____ CONCEPTUAL GRADING & DRAINAGE PLAN

_____ GRADING PLAN

_____ EROSION CONTROL PLAN

_____ ENGINEER'S CERTIFICATION

__X__ AS-BUILIT GRADES

__X__ LOMR

PRE-DESIGN MEETING:

_____ YES

_____ NO

_____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

_____ SKETCH PLAN APPROVAL

_____ PRELIMINARY PLAT APPROVAL

_____ S. DEV. PLAN FOR SUB'D. APPROVAL

_____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL

_____ SECTOR PLAN APPROVAL

_____ FINAL PLAT APPROVAL

_____ FOUNDATION PERMIT APPROVAL

_____ BUILDING PERMIT APPROVAL

_____ CERTIFICATE OF OCCUPANCY APPROVAL

_____ GRADING PERMIT APPROVAL

_____ PAVING PERMIT APPROVAL

S. A. D. DRAINAGE REPORT

_____ DRAINAGE REQUIREMENTS

__X__ TEMPORARY CERTIFICATION OF OCCUPANCY

__X__ LOMR APPROVAL

RECEIVED
SEP 18 2000
HYDROLOGY SECTION

DATE SUBMITTED: 09 / 18 / 2000

BY: *SHAHAB BIAZAR*

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 4, 2000

Shahab Biazar, PE
Advanced Engineering Consulting LLC
10205 Snowflake Ct. NW
Albuquerque, NM 87114

Re: AHEPA 501 Apartments Grading and Drainage Plan
Engineer's Stamp dated 11-22-99 (J10/D2J)

Dear Mr. Biazar,

Based upon the information provided in your submittal dated 12-17-99, the above referenced site is approved for Grading Permit and Building Permit. Final Plat approval is also granted.

Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Also, prior to Certificate of Occupancy release, a LOMR for the new pond will be required and Engineer Certification per the DPM checklist will be required.

If you have any questions, you can contact me at 924-3986

Sincerely,

Bradley L. Bingham

Bradley L. Bingham, PE
Hydrology Review Engineer

C: Fred Aguirre, DRB
file

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

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

November 4, 1999

Shahab Biazar, PE
Advanced Engineering & Consulting LLC
10205 Snowflake Ct. NW
Albuquerque, NM 87114

RE: DRAINAGE REPORT FOR AHEPA 501 APARTMENTS (J-10/D2J)
RECEIVED OCT 5, 1999 FOR FINAL PLAT, GRADING & BLDG PRMT
ENGINEER'S STAMP DATED 9-6-99

Dear Mr. Biazar:

Based on the information included in the submittal referenced above, City Hydrology accepts the Drainage Report for Rough Grading. The following comments must be addressed:

Define the purpose and maintenance responsibilities for the pond on the Final Plat. Indicate the width of the proposed easement on the Plat and the Grading & Drainage Plan.

The southern inlet to the pond appears to be in an awkward location. The grouted rip-rap should extend to the bottom of the slope. How does the roof slope? Does it have down spouts?

If I can be of further assistance, You may contact me at 768-2727.

Sincerely,

John P. Curtin, P.E.
Project Manager, PWD/Hyd

c: Inspector

RECEIVED
DEC 17 1999
HYDROLOGY SECTION

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

NATIONAL FLOOD INSURANCE PROGRAM
FEMA MAP COORDINATION CONTRACTOR

Mr. Shahab Biazar, P.E.
Advanced Engineering and Consulting, LLC
10205 Snowflake Court, N.W.
Albuquerque, NM 87114

IN REPLY REFER TO:
Case No.: 01-06-303P
Community: City of Albuquerque, Bernalillo County, New Mexico
Community No.: 350002

316-AD

Dear Mr. Biazar:

This is in regard to the October 30, 2000, request that the Federal Emergency Management Agency (FEMA) issue a Letter of Map Revision for Bernalillo County, New Mexico and Incorporated Areas. In a previous letter, you were informed that additional data might be required to complete our review of the request. The data required to complete our review, which must be submitted within 90 days of the date of this letter, are listed below.

- Please submit a letter from the community official responsible for floodplain management stating that the land and any proposed structures to be removed from the Special Flood Hazard Area (SFHA) are "reasonably safe from flooding." "Reasonably safe from flooding" means base (1% annual chance or 100-year) flood waters will not inundate the land or damage structures to be removed from the SFHA and that any subsurface waters related to the base flood will not damage existing or proposed buildings. The community and engineers should review and use *FEMA Technical Bulletin 10-01, Ensuring that Structures Built on Fill In or Near Special Flood Hazard Areas are Reasonably Safe From Flooding*, which may be downloaded directly from the FEMA website at http://www.fema.gov/mit/TB10Prop.pdf.

Please send the required data to us at the address shown at the bottom of this page. Further action on the request has been suspended pending receipt of the required data.

When you write us about your request, please include the case number referenced above. If you have general questions about your case, FEMA policy, or the National Flood Insurance Program, please call FEMA's toll free map assistance line at 1-877-FEMA MAP (1-877-336-2627). If you have specific questions concerning your request, please contact the Engineer assigned to your case, Mark Delorey, by phone at 1-800-697-7275 Ext. 513, or by e-mail at mdelorey@pbsj.com.

Sincerely,

Joseph S. Montoya

Andre Cadogan, P.E.
Program Manager, Region VI

cc: Mr. Carlos Montoya, Floodplain Administrator, City of Albuquerque

DRAINAGE REPORT
FOR

AHEPA 501 APARTMENTS
LOMR

Prepared by:

ADVANCED
ENGINEERING
and CONSULTING, LLC

10205 Snowflake Ct. NW
Albuquerque, New Mexico 87114

RECEIVED
SEP 18 2000
HYDROLOGY SECTION

Prepared For:

Mark Musemeche
Holcomb, Musemeche & Associates Inc.
2727 Allen Parkway, Suite 1815
Houston, Texas 77019

September, 2000

SHAHAB BIAZAR
NEW MEXICO
13479
9-15-00
REGISTERED PROFESSIONAL ENGINEER

Shahab Biazar
PE NO. 13479

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Appendix A- Approved drainage report for the AHEPA 501 Apartments

Appendix B - Copy for the original drainage report for the design of the original retention pond.

Map Pocket 1 - AHEPA 501 Apartments grading and drainage plan

Map Pocket 2 - Grading and drainage plan which the original retention pond was built from

CITY OF
Albuquerque

A lbuquerque G eographic I nformation S ystem
PLANNING DEPARTMENT

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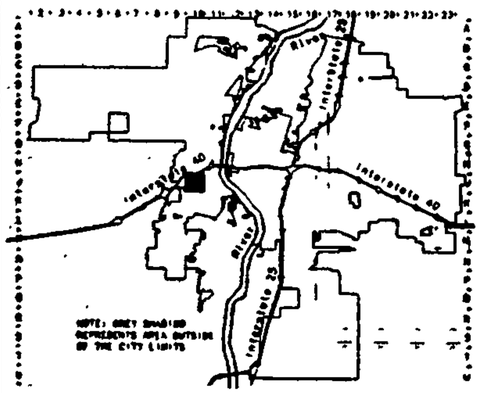
N
W E
S

GRAPHIC SCALE IN FEET

250 0 500 1000



Zone Atlas Page
J-10-Z

Map Amended through
December 09, 1998

Form 1

Revision Request And Community Official

Sheets 1 of 2 and 2 of 2
Fee Schedule Sheet
Additional Explanation For Form 1
Figure 2.1 - Original Pond Configuration
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FEDERAL EMERGENCY MANAGEMENT AGENCY **REVISION REQUESTER AND COMMUNITY OFFICIAL**	O.M.B No 3067-0148 Expires April 30, 2001

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 2.13 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

1. REQUESTED RESPONSE FROM FEMA

This request is for a:

☐ CLOMR A letter from FEMA commenting on whether a proposed project, if built as proposed, would justify a map revision, or proposed hydrology changes (See 44 CFR Ch 1, Parts 60,65 & 72).

☒ LOMR A letter from FEMA officially revising the current NFIP map to show the changes to floodplains, floodway or flood elevations LOMRs typically decrease flood hazards. (See 44 CFR Ch. 1 Parts 60 & 65.)

☐ Other Describe: _____

2. OVERVIEW

1. The basis for this revision request is (are): (check all that apply)

☒ Physical Change ☐ Improved Methodology/Data ☐ Floodway Revision

☐ Other Describe: _____

Note: A photograph is not required, but is very helpful during review

2. Flooding Source: On Site Runoff

3 Project Name/Identifier: AHEPA 501 Apartments

4. FEMA zone designations affected: Zone A

(example: A, AH, AO, A1-A30, A99, AE, V, V1-V30, VE, B, C, D, X)

5 The NFIP map panel(s) affected for all impacted communities is (are):

Community No.	Community Name	State	Map No.	Panel No	Effective Date
Ex: 480301 480287	Katy, City Harris County	TX TX	480301 48201C	0005D 0220G	02/08/83 ~~09/28/90~~
350002	City Of Albuquerque	NM	35001C	0329D	09/25/97

use 1996 maps

6. The area of revision encompasses the following types of flooding and structures. Check all that apply.

Types of Flooding	Structures
☐ Riverine	☐ Channelization
☐ Coastal	☐ Levee/Floodwall
☐ Alluvial fan	☐ Bridge/Culvert
☐ Shallow Flooding (e.g. Zones AO and AH)	☐ Dam
☐ Lakes	☐ Fill
☒ Other (describe) On Site Runoff	☒ Other (describe) Retention Pond

reference LOMR

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

4. ENCROACHMENT INFORMATION

1 Does the State have jurisdiction over the floodway or its adoption by communities participating in the NFIP? ☐ Yes ☒ No

If Yes, attach a copy of a letter notifying the appropriate State agency of the floodway revision and documentation of the approval of the revised floodway by the appropriate State agency.

2. Does the development in the floodway cause the 1% annual chance (base) elevation to increase at any location by more than 0 000 feet? ☐ Yes ☐ No ☒ N/A

3. Does the cumulative effect of all development that has occurred since the effective SFHA was originally identified cause the base flood elevation to increase at any location by more than one foot (or other increase limit if community or state has adopted more stringent criteria - even if a floodway has not been delineated by FEMA)? ☐ Yes ☐ No

If the answer to either items is Yes, please attach documentation that all requirements of Section 65.12 of the NFIP regulations have been met, regarding evaluation of alternatives, notice to individual legal property owners, concurrence of CEO, and certification that no insurable structures are impacted.

5. MAINTENANCE RESPONSIBILITY

The community is willing to assume responsibility for ☐ performing ☐ overseeing compliance with the maintenance and operation plans of the N/A flood control structure. If not performed promptly by an owner other than the community, the community will provide the necessary services without cost to the Federal government.

(Name)

Operation and maintenance plans are attached. ☐ **Yes** ☐ **No** ☒ **N/A** See Attached Explanation

6. REVIEW FEE

The review fee for the appropriate request category has been included. ☒ Yes Fee amount $ ~~2,200.00~~ 3,700

OR

This request is based on a federally sponsored flood-control project where 50 percent or more of the project's cost is federally sponsored, or the request is based on detailed hydrologic and hydraulic studies conducted by Federal, State, or local agencies to replace approximate studies conducted by FEMA and shown on the effective FIRM, thus the project is fee exempt ☐ Yes

Please see Instructions for Fee Amounts See Attached Sheet For Fee Schedule

7. SIGNATURE

Note: **I understand that my signature indicates that all information submitted in support of this request is correct**

Signature of Revision Requester

Shahab Biazar, P.E. Professional Engineer
Printed Name and Title of Revision Requester

Advanced Engineering & Consulting, LLC
Company Name

(505) 899-5570 09/12/00
Telephone No Date

Note: **Signature indicates that the community understands, from the revision requester, the impacts of the revision on flooding conditions in the community.**

Signature of Community Official

Printed Name and Title of Community Official

Community Name

Telephone No. Date

CERTIFICATION BY REGISTERED PROFESSIONAL ENGINEER AND/OR LAND SURVEYOR

This certification is in accordance with 44 CFR Ch. 1, Sect 65.2

Signature

Shahab Biazar, P.E. Professional Engineer
Printed Name and Title of Revision Requester

Registr No 13479 Expires (Date) 12/31/01 State NM

Type of License/Expertise. P.E.

Check which forms have been included with this request

Form Name and (Number)	Required if .....
☒ **Hydrologic** (3)	new or revised discharges
☐ **Hydraulic** (4)	new or revised water-surface elevations
☒ **Mapping** (5)	floodplain/floodway changes
☐ **Channelization** (6)	channel is modified
☐ **Bridge/Culvert** (7)	addition/revision of bridge/culvert
☐ **Levee/Floodwall** (8)	addition/revision of levee/floodwall
☐ **Coastal** (9)	new or revised coastal elevations
☐ **Coastal Structures** (10)	addition/revision of coastal structure
☐ **Dam** (11)	addition/revision of dam
☐ **Alluvial Fan** (12)	structures proposed on alluvial fan

Letter of Map Amendment (LOMA)	A letter from FEMA removing an existing structure or a legally defined parcel of land unaltered by fill from an SFHA (see 44 CFR Ch. 1, Part 70).
Conditional Letter of Map Amendment (CLOMA)	A letter from FEMA conditionally removing a proposed structure or a legally defined parcel of land unaltered by fill from an SFHA (see 44 CFR Ch. 1, Parts 70 and 72).
Letter of Map Revision Based on Fill (LOMR-F)	A letter from FEMA removing an existing structure or a or a legally defined parcel of land elevated by the placement of fill from an SFHA (see 44 CFR Ch. 1. Section 65.5 and Part 72).
Conditional Letter of Map Revision Based on Fill (CLOMR-F)	A letter from FEMA conditionally removing a proposed structure or a legally defined parcel of land to be elevated by the placement of fill from an SFHA (see 44 CFR Ch. 1, Section 65.5 and Part 72).

NFIP regulation, CFR Ch. 1, specifies the requirements regarding the submittal of revision requests to FEMA. A document entitled Appeals, Revisions, and Amendments to Flood Insurance Maps, A Guide for Community Officials, (FIA-12). provides background on the NFIP and an expanded explanation of these requirements.

NFIP Regulation, 44 CFR Ch. 1, Part 59, contain general provisions of the NFIP with which all requesters and community officials involved in revision requests should be familiar.

NFIP Regulation, 44 CFR Ch. 1, Section 65.2, contain definitions relative to certification of data, analyses, and structural works. This information is important to all professionals certifying technical information submitted with revision requests and should be carefully reviewed prior to signing the application/certification forms.

Part 72 of the NFIP regulations, published at 44 CFR 72, presents information regarding the reimbursement procedure that FEMA has initiated to allow for the recovery of costs associated with the review of requests for Conditional LOMRs, LOMRs, or Physical Map Revisions. The fees for FEMA's review and processing of CLOMRs, LOMRs, and Physical Map Revisions requests are as follows:

	CLOMR	LOMR	PMR
· Detailed data	--	[illegible]	$2,300
· Channel modification, new bridge or culvert, or combination	$3,100	$3,700	$3,700
· Levees, berms, or other structural modifications	$3,300	$4,300	$4,300
· Structural measures on alluvial fan	$5,000	$5,000	$5,000
· Review of revised hydrology	$3,100	--	--
· "As-Built" request follow-up to CLOMR	--	$2,300	$2,300

For requests involving a combination of the above, the highest fee will apply.

Payment must be made in the form of a check or money order made payable to the National Flood Insurance Program Please forward payment to the following address:

Federal Emergency Management Agency
Revisions Fee-Collection System Administrator
P.O. Box 3173
Merrifield, Virginia 22116
Fax: (703) 849-0282

Additional Explanation for Form 1

Revision Requester and Community Official

AHEPA 501 Apartments

2. Overview

2.1 Existing retention pond was enlarged and re-configured due to additional runoff based on the new developments on site. See Figure 2.1 for the original pond configuration. See Figure 2.2 for the modified pond configuration. Located in Map Pocket 2 is the original grading plan which the pond was built from. See Appendix B for the copy for the original drainage report for the design of the original retention pond. Sheet 2.cal.1 is the ponding volume requirements calculations for the adjacent property. Sheet 2.cal.2 is the ponding volume requirements for the on site runoff. Sheet 2.cal.3 is the ponding volume calculation based on the as-built data for the retention pond.

2.2 & 2.6 The flooding source is due to the storm runoff from this tract and the adjacent tract only. This pond is a common retention pond for both this and the adjacent tract to the east.

5. Maintenance Responsibility

The drainage structure is a retention pond. The maintenance of the pond will be very little. This pond is a private retention pond for the purpose of this site and the adjacent property to the east. Prior to modification of the pond, the maintenance of the pond was the responsibility of the both property owners and will remain the same after these new modifications.

Agreement &
Cov.

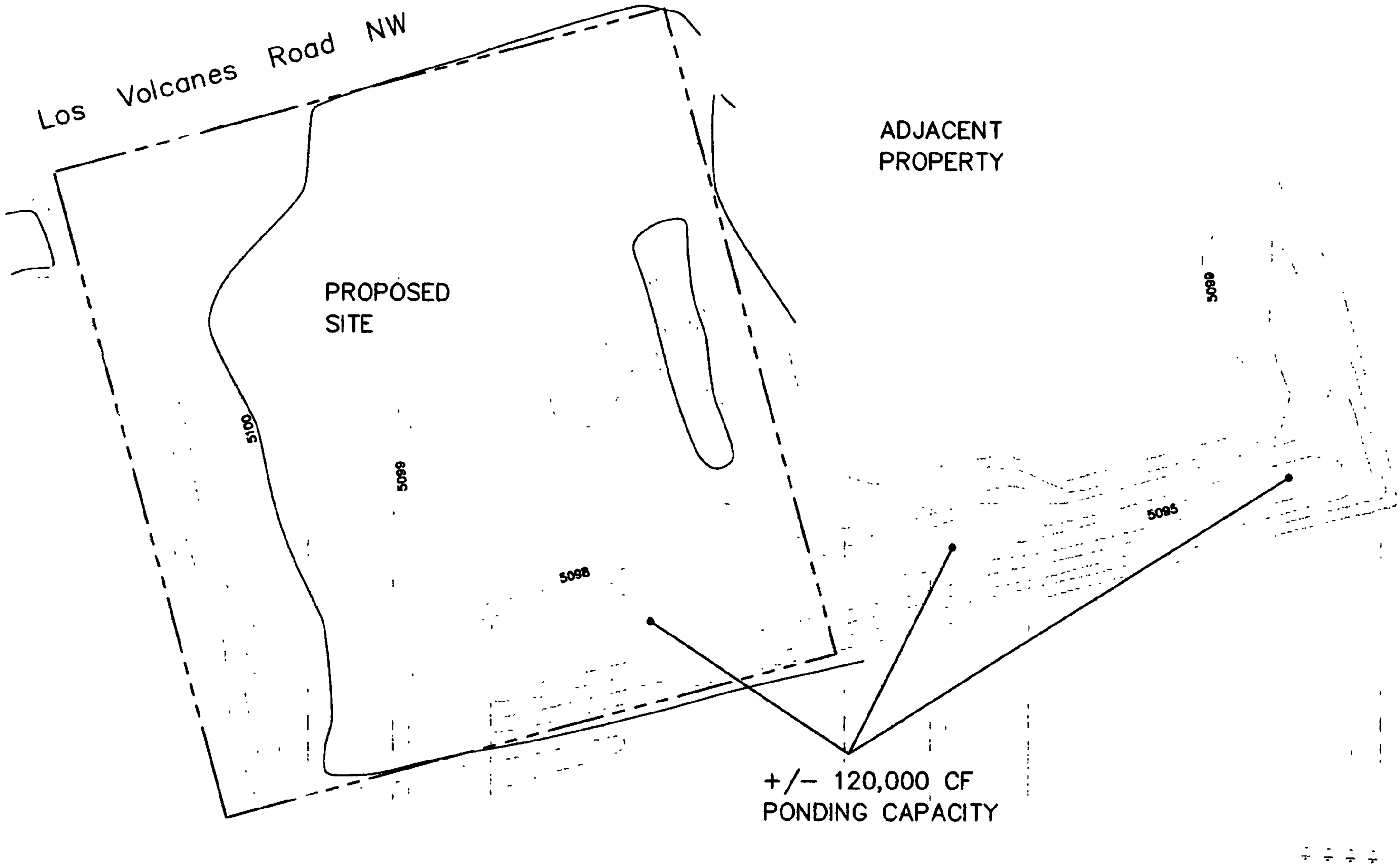


FIGURE 2.1

ORIGINAL POND CONFIGURATION

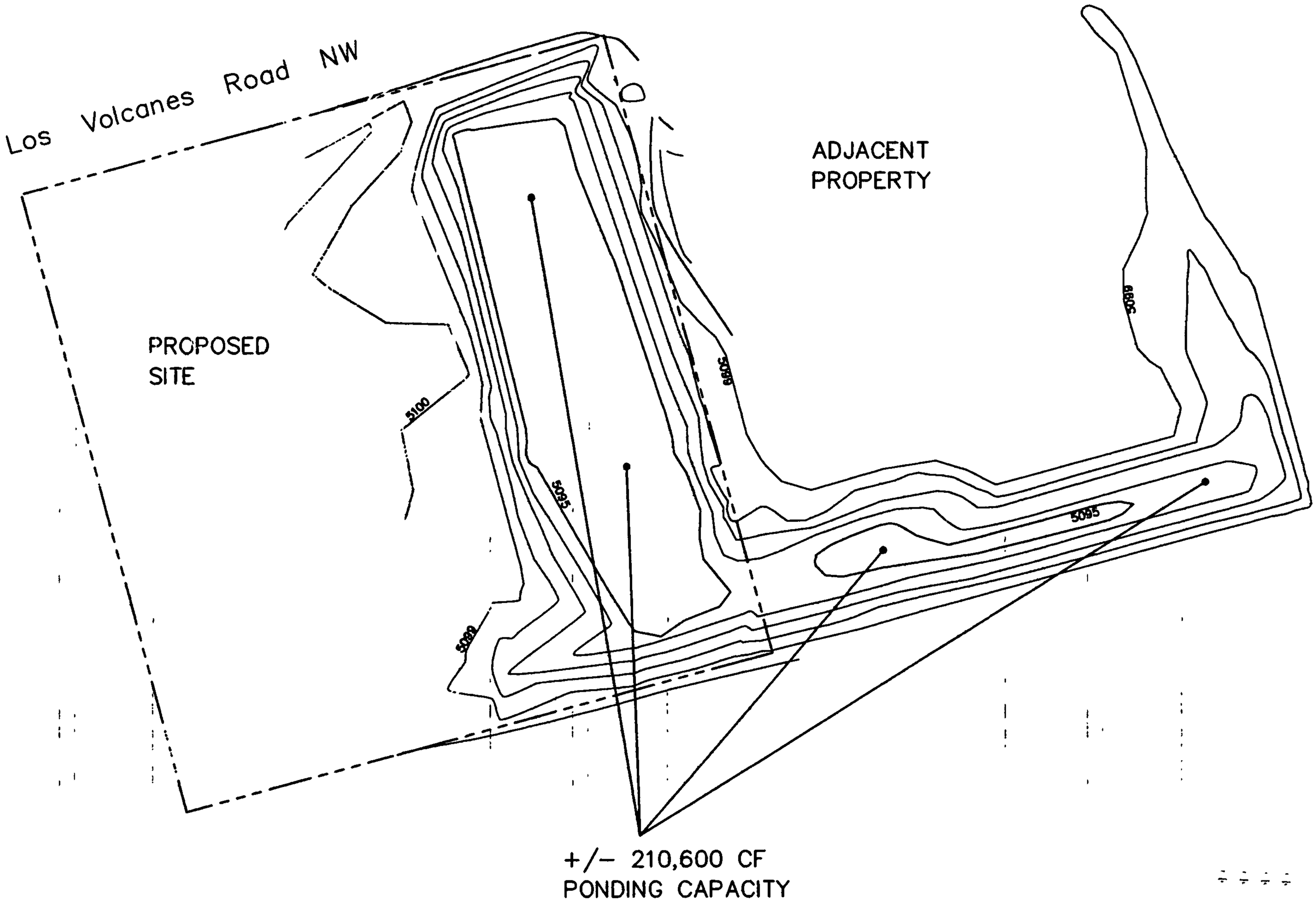


FIGURE 2.2

MODIFIED POND CONFIGURATION

OFFSITE PONDING CALCULATIONS

(REQUIRED VOLUME)

ZONE = 1

DRAINAGE BASINS

BASIN	AREA (SF)	AREA (AC-FT)	AREA (MI^2)
OFFSITE	122850.00	2.82025	0.004407

$$E = \frac{EA(AA) + EB(AB) + EC(AC) + ED(AD)}{AA + AB + AC + AD}$$

V-360 = E (AA + AB + AC + AD)

V-10 Day = V-360 + AD (P-10 Day - P-360) / 12 in/ft

EA = 0.44
EB = 0.67
EC = 0.99
ED = 1.97

AA = 0.00%
AB = 59.33%
AC = 0.00%
AD = 40.67%

P-60 = 1.87
P-360 = 2.20
P-1440 = 2.66
P-10 Day = 3.67

E = 1.1987 IN
V-360 = 0.2817 AC-FT
AD = 1.1470 AC
V-10 Day = 0.4222 AC-FT
V-10 DAY = 18,392.27 CF

VOL ENCROACHED INTO FLOODPLAIN =100,804.00 CF
V-10 DAY = 18,392.27 CF

TOTAL REQUIRED PONDING VOLUME = 119,196.27 CF

ON-SITE PONDING CALCULATIONS

(REQUIRED VOLUME)

ZONE = 1

DRAINAGE BASINS

SUB-BASIN	AREA (SF)	AREA (AC-FT)	AREA (MI^2)
ON-SITE	133637.26	3.06789	0.004794

$$E = \frac{EA(AA) + EB(AB) + EC(AC) + ED(AD)}{AA + AB + AC + AD}$$

V-360 = E (AA + AB + AC + AD)

V-10 Day = V-360 + AD (P-10 Day - P-360) / 12 in/ft

EA = 0.44
EB = 0.67
EC = 0.99
ED = 1.97

AA = 0.00%
AB = 53.29%
AC = 10.00%
AD = 36.71%

P-60 = 1.87
P-360 = 2.20
P-1440 = 2.66
P-10 Day = 3.67

E = 1.1792 IN
V-360 = 0.3015 AC-FT
AD = 1.1262 AC
V-10 Day = 0.4394 AC-FT
V-10 DAY = 19,142.06 CF

OFFSITE PONDING REQUIREMENTS = 119,196.27 CF
ON-SITE PONDING REQUIREMENTS = 19,142.06 CF

TOTAL REQUIRED PONDING VOLUME = 138,338.33 CF

VOLUME CALCULATIONS

(BASED ON THE AS-BUILT GRADES FOR THE RETENTION POND)

ELEVATION FT	SURFACE AREA SF
5,099.00	83,713.34
5,098.00	62,533.76
5,097.00	49,043.80
5,096.00	36,630.21
5,095.00	24,609.03
5,094.50	8,315.23

ELEVATION FT	VOLUME CF	
5,099.00	**210,600.02**	**TOTAL PONDING CAPACITY**
5,098.01	**138,338.33**	*
5,098.00	137,476.47	
5,097.00	81,687.69	
5,096.00	38,850.69	
5,095.00	8,231.07	
5,094.50	0.00	

*** 100-YEAR WATER SURFACE ELEVATION**
(BASED ON THE REQUIRED VOLUME)

Form 3

Hydrologic Analysis

Sheet 1 of 5 only (sheet 2 through 5 not required)
Additional Explanation For Form 3

FEDERAL EMERGENCY MANAGEMENT AGENCY **HYDROLOGIC ANALYSIS**	O.M.B No. 3067-0148 Expires April 30, 2001

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average **3.67** hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S W., Washington DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

Note: Fill out one form for each flooding source studied

Community Name: City of Albuquerque, Bernalillo County

Flooding Source: On Site Runoff

Project Name/Identifier: AHEPA 501 Apartments, City of Albuquerque

1. REASON FOR NEW HYDROLOGIC ANALYSIS

☐ No existing analysis ☐ Improved data ☐ Changed physical condition of watershed

☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☒ Other Modification of Existing Retention Pond

For the reason stated above, please attach a detailed explanation. If a computer program/model was used in revising the hydrologic analysis, **please provide a diskette with the input files** for the same flood recurrence intervals contained in the FIS for that stream; and at least for the 1% annual chance (base) flood where no detailed study exists.

Explanation provided: ☐ Yes ☐ No **Diskettes provided:** ☐ Yes ☐ No N/A

2. METHODOLOGY FOR NEW ANALYSIS

Indicate Method	Required Data	Data Included
☐ Statistical Analysis of Gage Records	Form 3 - Attachment A	☐ Yes ☐ No
☐ Regional Regression Equations	Form 3 - Attachment C	☐ Yes ☐ No
☐ Precipitation/Runoff Model	Form 3 - Attachment D	☐ Yes ☐ No
☒ Other	Back-up computations and supporting data	☒ Yes ☐ No

3. APPROVAL OF ANALYSIS

The hydrologic analysis has already been approved by a local, state, or Federal Agency ☒ Yes ☐ No ☐ Not Required

If Yes, attach evidence of approval. ☐ **Approval attached**. If No, attach explanation. ☒ **Explanation attached**.

4. COMPARISON OF BASE FLOOD DISCHARGES

Location	Drainage Area (SqMi)	FIS(cfs)	Revised (cfs)
N/A			

Note. When revised discharges are not significantly different than the FIS discharges, FEMA may require a confidence limits analysis (see attachment B) at a later date to complete the review.

If only a portion of a detailed study area was revised please attach an explanation describing the transition from the proposed discharges to the effective discharges. ☒ **Explanation Included** ☐ **Explanation Not Required**

5. HISTORICAL FLOODING INFORMATION

If historical data are available for the flooding source please provide. Location, peak discharges/water-surface elevations and dates, and source of information. ☒ **Data Attached** ☐ **Data Not Available**

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

Additional Explanation for Form 3

Hydrological Analysis

AHEPA 501 Apartments

1. Reason For New Hydrological Analysis

The original retention pond was enlarged due to new construction on site. Therefore, new hydrological Analysis was required for additional ponding volume. See Figure 2.1 for the original pond configuration. See Figure 2.2 for the modified pond configuration.

2. Methodology For New Analysis

The Hydrological model used was AHYMO computer model used in accordance with the City of Albuquerque Development Process Manuel. See Appendix A for the approved drainage report for the AHEPA 501 Apartments, and Appendix B for the original drainage report for the adjacent site were the original retention pond was designed.

3. Approval of Analysis

FEMA has accepted the City of Albuquerque Development Process Manuel in a letter dated November 14, 1991 to Mr. Gilbert Aldez, City/County Floodplain Administrator at that time.

4. Comparison of Base Flood Discharge

The discharge can not be compared with the previous analysis. The storm runoff discharge and the volume has increased significantly due to this new development.

5. Historical Flooding Information

The drainage report which had calculated the original ponding requirement for the retention pond is attached in Appendix B.

Form 5

Riverine/Coastal Mapping

Sheets 1 of 2 and 2 of 2
Additional Explanation For Form 5
Figure 5.1 - Proposed Floodplain (1"=500')
Figure 5.2 - Proposed Floodplain (Enlarged Figure, Not To Scale)
Figure 5.3 - Site Location Based On FIRM Map (1"=500')
Figure 5.4 - Private Drainage Easement (Not To Scale)

FEDERAL EMERGENCY MANAGEMENT AGENCY **RIVERINE/COASTAL MAPPING**	O.M.B No. 3067-0148 Expires April 30, 2001

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 1.5 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

Note: Fill out one form for each flooding source studied

Community Name: City of Albuquerque, Bernalillo County

Flooding Source: On Site Runoff

Project Name/Identifier: AHEPA 501 Apartments

This is a ☒ Manual ☐ Digital submission. *Digital map submissions may be used to update digital FIRMs (DFIRMs). For updating DFIRMs, these submissions must be coordinated with FEMA Headquarters as far in advance as possible.*

1. MAPPING CHANGES

1. A topographic workmap must be submitted showing the following information (check N/A when not applicable):

a. Revised approximate 100-year floodplain boundaries (Zone A)	☒ Yes	☐ No	☐ N/A
b. Revised detailed 100- and 500-year floodplain boundaries.	☒ Yes	☐ No	☐ N/A
c. Revised floodway boundaries	☐ Yes	☐ No	☒ N/A
d. Location and alignment of all cross sections with stationing control indicated.	☐ Yes	☐ No	☒ N/A
e Stream alignments, road alignments and dam alignments.	☐ Yes	☐ No	☒ N/A
f. Current community boundaries.	☒ Yes	☐ No	☐ N/A
g. Effective 100-year floodplain and floodway boundaries from FIRM/FBFM reduced or enlarged to the scale of the topographic workmap	☒ Yes	☐ No	☐ N/A
h. Tie-ins between the effective and revised 100-, 500-year and floodway boundaries	☐ Yes	☐ No	☒ N/A
i The requester's property boundaries and community easements	☒ Yes	☐ No	☐ N/A
j. The signed certification of a registered professional engineer	☒ Yes	☐ No	☐ N/A
k. Location and description of reference marks	☒ Yes	☐ No	☐ N/A
l. Vertical datum (example: NGVD, NAVD)	☒ Yes	☐ No	☐ N/A
m. Coastal zone designations tie into adjacent areas not being revised	☐ Yes	☐ No	☒ N/A
n. Location and alignment of all coastal transects used to revise the coastal analyze	☐ Yes	☐ No	☒ N/A
o. V-zone has been delineated to extend landward to the heel of the primary frontal dune	☐ Yes	☐ No	☒ N/A

If any items are marked No or N/A please attach an explanation.

2. What is the source and date of the updated topographic information (example: orthophoto maps, July 1985; filed survey, May 1979, beach profile, June 1987 etc.)?

Field Survey (September, 2000)

3. What is the scale and contour interval of the following workmaps?

Effective FIS	Scale N/A	Contour Interval
Revision Request	Scale 1"=100'	Contour Interval 1'

NOTE: Revised topographic information must be of equal or greater detail than effective.

4. Attach an annotated FIRM/FBFM at the scale of the effective FIRM/FBFM showing the revised 100- and 500-year floodplain and the floodway boundaries and how they tie into those shown on the effective FIRM/FBFM downstream and upstream of the revisions or adjacent to the area of revision for coastal studies **FIRM/FBFM attached? ☒ Yes ☐ No**

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

2. EARTH FILL PLACEMENT N/A

1. The fill is: ☐ Existing ☐ Proposed

2. Has fill been/will be placed in the regulatory floodway? ☐ Yes ☐ No
   If Yes, please attach completed Riverine Hydraulic Analysis Form (Form 4).

3. Has fill been/will be placed in floodway fringe (*area between the floodway and 100-year floodplain boundaries*)? ☐ Yes ☐ No

   If Yes, then complete A, B, C, and D below.

   a. Are fill slopes for granular materials steeper than one vertical on one-and-one-half horizontal? ☐ Yes ☐ No

      If Yes, justify steeper slopes _____

      _____

   b. Is adequate erosion protection provided for fill slopes exposed to moving flood waters? (*Slopes exposed to flows with velocities of up to 5 feet per second (fps) during the 100-year flood must, at a minimum, be protected by a cover of grass, vines, weeds, or similar vegetation; slopes exposed to flows with velocities greater than 5 fps during the 100-year flood must, at a minimum, be protected by stone or rock riprap.*)

      ☐ Yes ☐ No

      If No, describe erosion protection provided _____

      _____

   c. Has all fill placed in revised 100-year floodplain been compacted to 95 percent of the maximum density obtainable with the Standard Proctor Test Method or acceptable equivalent method? ☐ Yes ☐ No

   d. Can structures conceivably be constructed on the fill at any time in the future? ☐ Yes ☐ No

   If Yes, attach certification of fill compaction (item 3c. above) by the community's NFIP permit official, a registered professional Engineer, or an accredited soils engineer in accordance with Subparagraph 65.5(a)(6) of the NFIP regulations.

   Fill certification attached ☐ **Yes** ☐ **No**

4. Has fill been/will be placed in a V zone? ☐ Yes ☐ No

   If Yes, is the fill protected from erosion by a flood control structure such as a revetment or seawall?

   ☐ Yes ☐ No

   If Yes, attach the Coastal Structures Form (Form 10).

Additional Explanation for Form 5

Riverine/Coastal Mapping

AHEPA 501 Apartments

1. Mapping Changes

a & b. Revised detail 100-year floodplain boundaries (Zone A) is shown on Figure 5.1 (1"=500') and Figure 5.2 (enlarged section, not to scale).

f. City of Albuquerque boundaries are the limits of the current community boundaries.

g. Effective 100-year floodplain boundary from FIRM map is shown on Figure 5.3 (1"=500').

i. See Figure 5.4 for the requester's boundary and community easement (the easement is a private drainage easement).

j. See Form 1, Page 2 of 2, for the signed certification of a registered professional engineer.

l. See AHEPA 501 Apartments grading and drainage plan located in the Map Pocket 1 for the vertical datum reference.

Figure 5.1

PROPOSED FLOODPLAIN

FLOODPLAIN SECTION TO BE REMOVED

PROPOSED FLOODPLAIN

JOINS PANEL 0327

ZONE A

Pond 2

Pond 4

Pond 5

ZONE X

ZONE A

Pond 3

ROAD

VOLCANES

LOS

Pond 6

Pond

Pond 7

ZONE A

ZONE A

Pond 9

Pond 8

ZONE AE
(EL 5099)

BOULEV

REVISED AREA

DAYTONA

ROAD

HWY

ROAD

CLOUDCROFT

COORS

63RD

62ND

61ST

60TH

ESTANCIA

APPROXIMATE SCALE IN FEET

500 0

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

BERNALILLO COUNTY, NEW MEXICO AND INCORPORATED AREAS

PANEL 329 OF 825
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY	NUMBER	PANEL
ALBUQUERQUE, CITY OF	350002	0329
BERNALILLO COUNTY, UNINCORPORATED AREAS	350001	0329

REVISED TO REFLECT LOMR'S EFFECTIVE AS OF SEP 25 1997

DATED SEP 25 1997

MAP NUMBER
35001C0329 D

EFFECTIVE DATE:
SEPTEMBER 20, 1996

Federal Emergency Management Agency

ZONE AO
(DEPTH 1)

ZONE AE
(EL 5099)

ZONE AE
(EL 5099)

CITY OF ALBUQUERQUE
350002

ROAD

ZONE X

ZONE AH
(EL 5082)

BLUEWATER

ZONE AO
(DEPTH 1)

ZONE AH
(EL 5097)

ZONE X

AIRPORT

ZONE AH
(EL 5085)

STREET

STREET

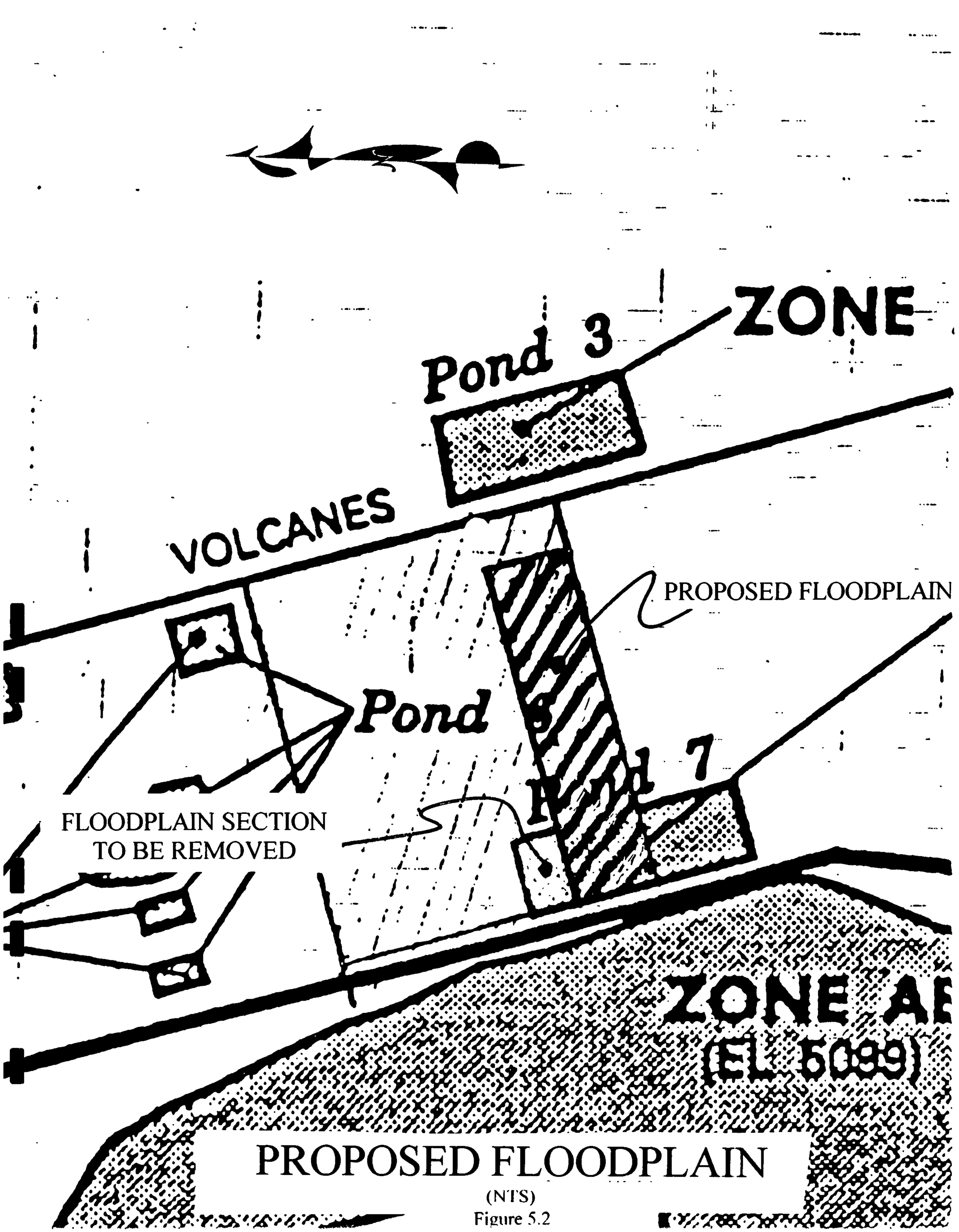
STREET

STREET

AVALON

3RD

KNOTTS LANDING COURT

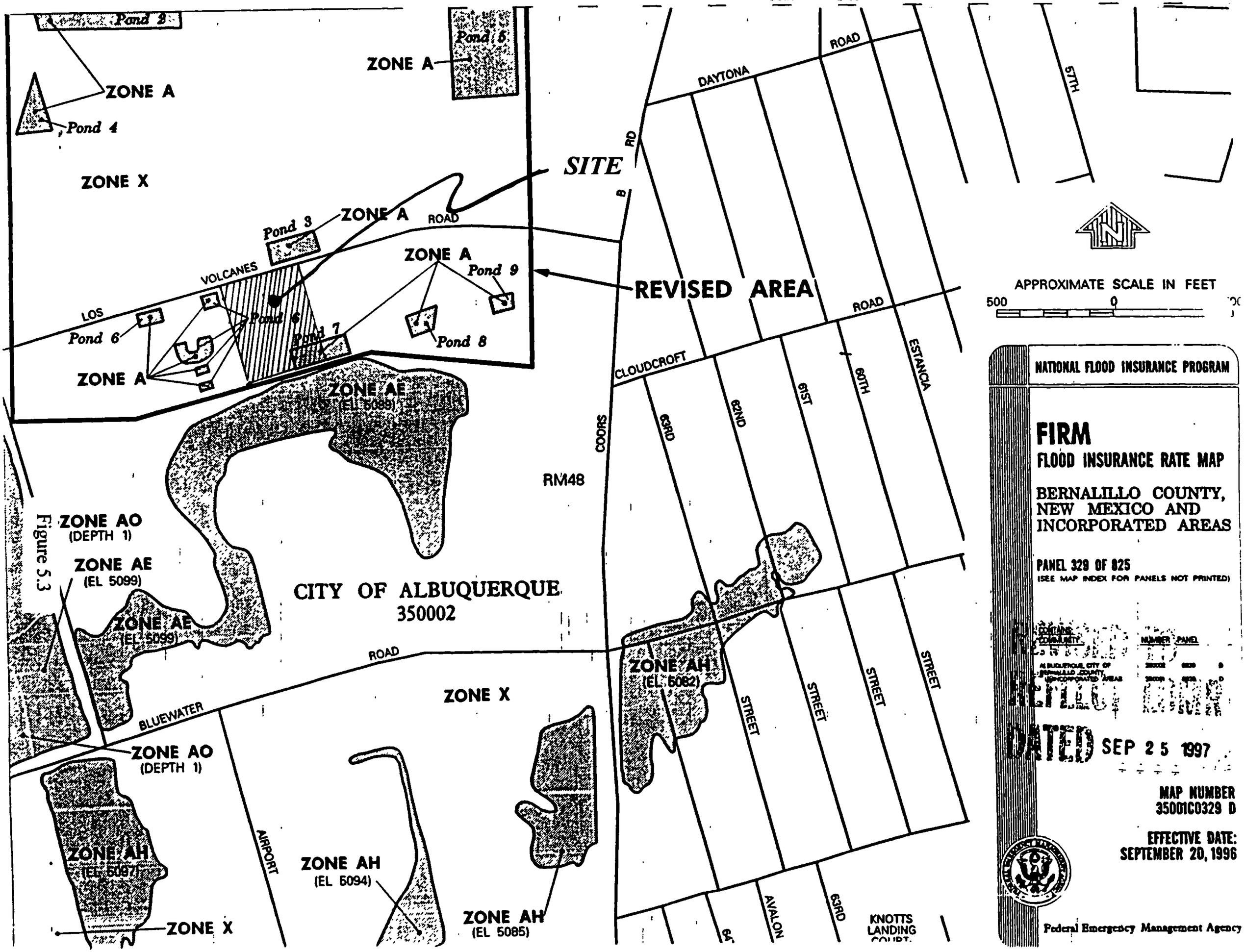


PROPOSED FLOODPLAIN

(NTS)

Figure 5.2

Figure 5.3



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

BERNALILLO COUNTY, NEW MEXICO AND INCORPORATED AREAS

PANEL 329 OF 825
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY	NUMBER	PANEL
ALBUQUERQUE, CITY OF BERNALILLO COUNTY UNINCORPORATED AREAS	350002 350001	0329 D 0329 D

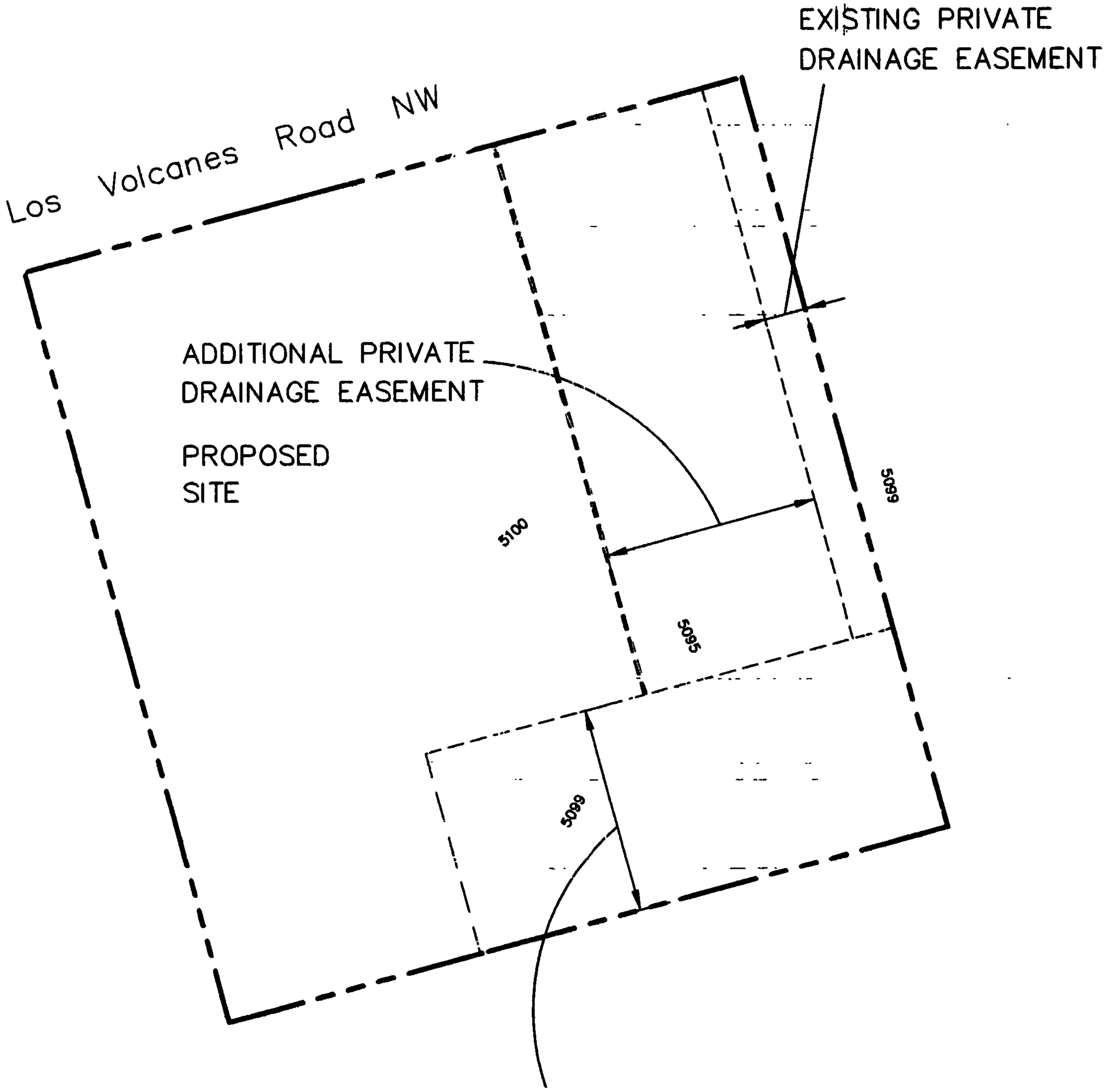
REVISED TO:

DATED SEP 25 1997

MAP NUMBER
35001C0329 D

EFFECTIVE DATE:
SEPTEMBER 20, 1996

Federal Emergency Management Agency



PRIVATE DRAINAGE EASEMENT

FIGURE 5.4

Appendix A

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

January 4, 2000

Shahab Biazar, PE
Advanced Engineering Consulting LLC
10205 Snowflake Ct. NW
Albuquerque, NM 87114

Re: AHEPA 501 Apartments Grading and Drainage Plan
Engineer's Stamp dated 11-22-99 (J10/D2J)

Dear Mr. Biazar,

Based upon the information provided in your submittal dated 12-17-99, the above referenced site is approved for Grading Permit and Building Permit.. Final Plat approval is also granted.

Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Also, prior to Certificate of Occupancy release, a LOMR for the new pond will be required and Engineer Certification per the DPM checklist will be required.

If you have any questions, you can contact me at 924-3986

Sincerely,

Bradley L. Bingham

Bradley L. Bingham, PE
Hydrology Review Engineer

C: Fred Aguirre, DRB
file

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

DRAINAGE REPORT
FOR

AHEPA 501 APARTMENTS

Prepared by:

ADVANCED ENGINEERING and CONSULTING, LLC

10205 Snowflake Ct. NW
Albuquerque, New Mexico 87114

Prepared For:

Mark Musemeche
Holcomb, Musemeche & Associates Inc.
2727 Allen Parkway, Suite 1815
Houston, Texas 77019

August, 1999
Revised September, 1999

Shahab Biazar
PE NO. 13479

CITY OF
Albuquerque

Albuquerque Geographic Information System

PLANNING DEPARTMENT

©Copyright 1998

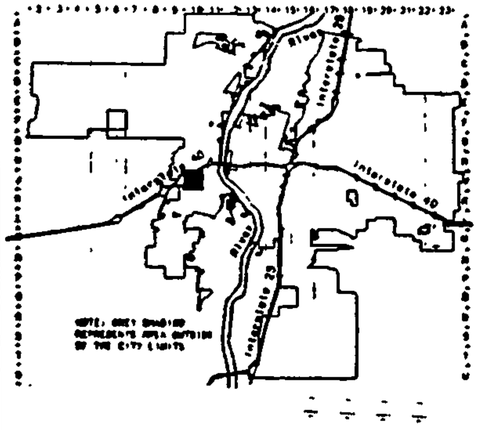
N

W E

S

GRAPHIC SCALE IN FEET

250 0 500 1000



Zone Atlas Page

J-10-Z

Map Amended through
December 09, 1998

Location

AHEPA 501 Apartments are Lots 2-B-2 and 1-A-1-A, Tract N, Unit 2, Atrisco Business Park. The site is a ±3.068 acre tract, and it is located ±1,100' east of the Airport Drive, on the south side of Los Volcanes Road. See attached Zone Atlas page J-10-Z for location of the site.

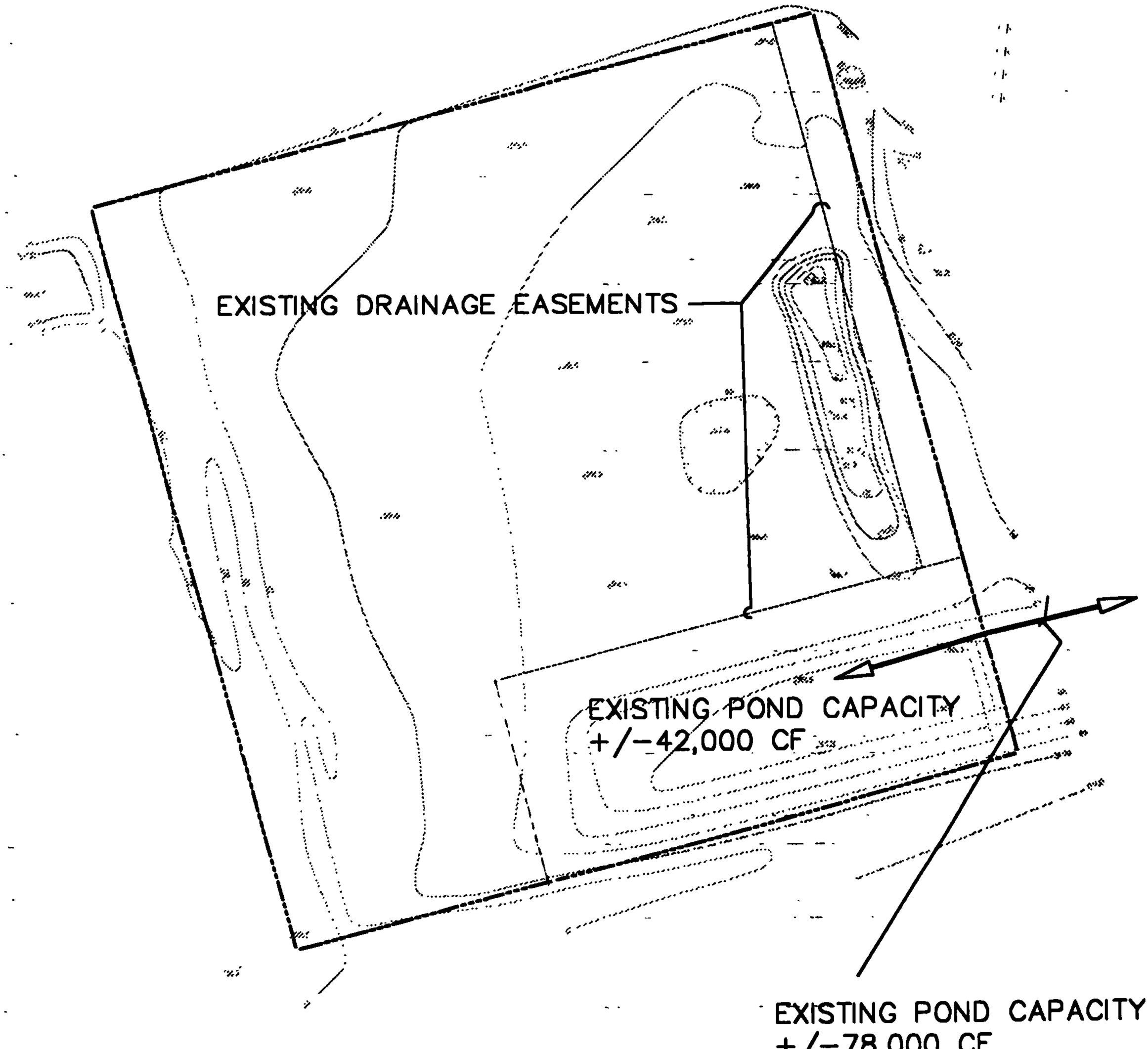
Purpose

Advanced Engineering and Consulting, LLC on behalf of Holcomb, Musemeche & Associates Inc. has prepared this grading and drainage solution for the proposed site. This report is prepared in order to obtain grading and drainage approval, preliminary and final plat approval, and building permit approval.

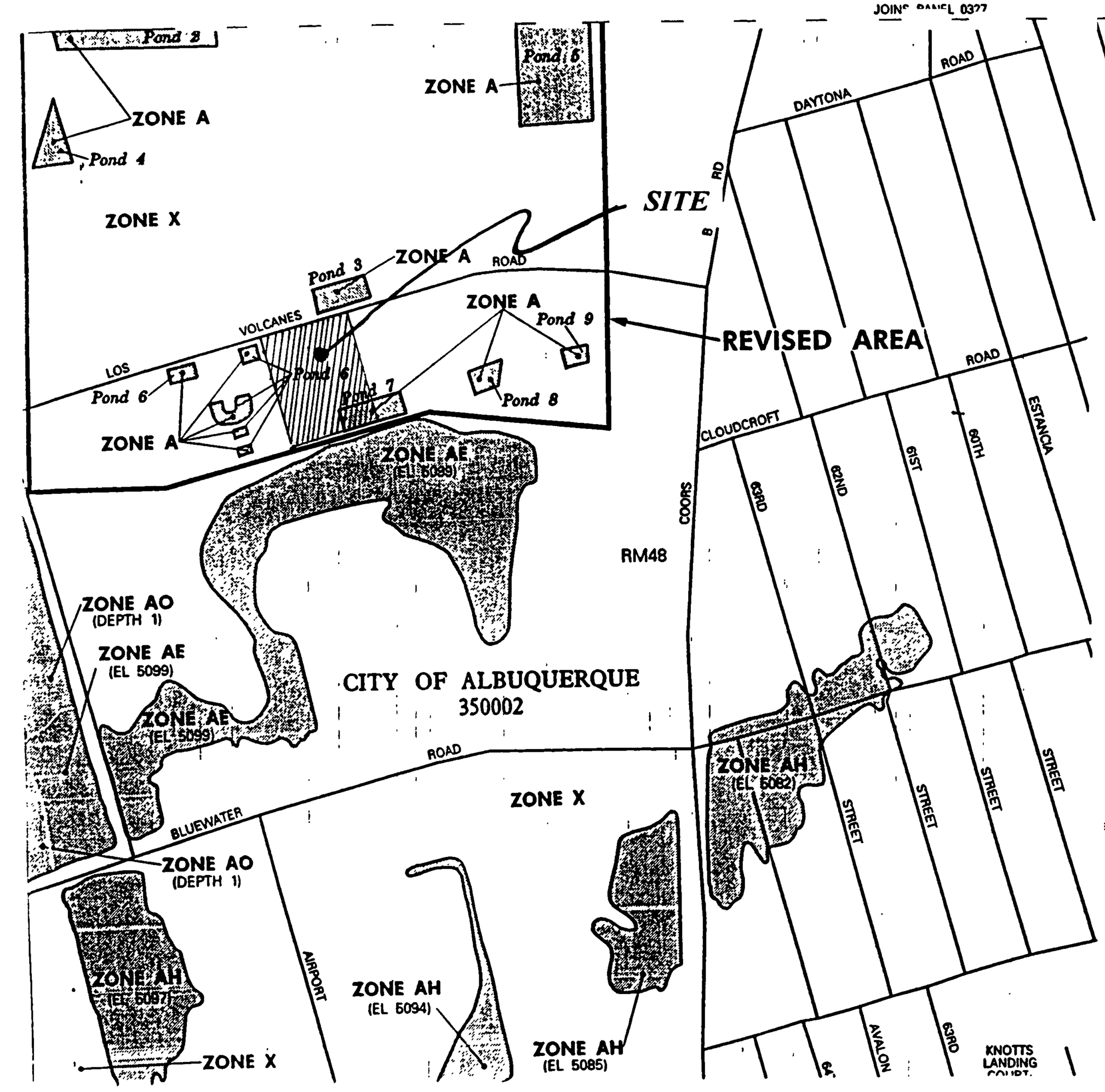
Existing Drainage Conditions

The site falls within the West Mesa Outfall System. There is fairly flat. There is an existing retention pond which is located at the southern portion. This portion of the retention is used for the ponding of The Tract to the east, and it has capacity of 42,000 cf. This pond was designed and built under City Drainage number J10/D002J. There is also a 20' drainage easement (along the easterly boundary line) for the future extension of the storm sewer system in Los Volcanes Road. The site at the existing conditions, 100-year (6-hour) storm, generates a runoff of 4.77 cfs which ponds on site. Except the retention pond at the southerly portion of the site, there are no other offsite runoff that drain to or through this site.

Based on the revised (September 25, 1997) FIRM Map number 35001C0329-D southerly portion of the site falls within a 100-year flood plain, Zone A. See attached exhibit for the location of the site.



EXISTING POND/EASEMENT



APPROXIMATE SCALE IN FEET

500 0 500

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

BERNALILLO COUNTY, NEW MEXICO AND INCORPORATED AREAS

PANEL 329 OF 825

(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY	NUMBER	PANEL
ALBUQUERQUE, CITY OF	350002	0329 D
BERNALILLO COUNTY	350001	0329 D

REVISED

DATED SEP 25 1997

MAP NUMBER
35001C0329 D

EFFECTIVE DATE:
SEPTEMBER 20, 1996

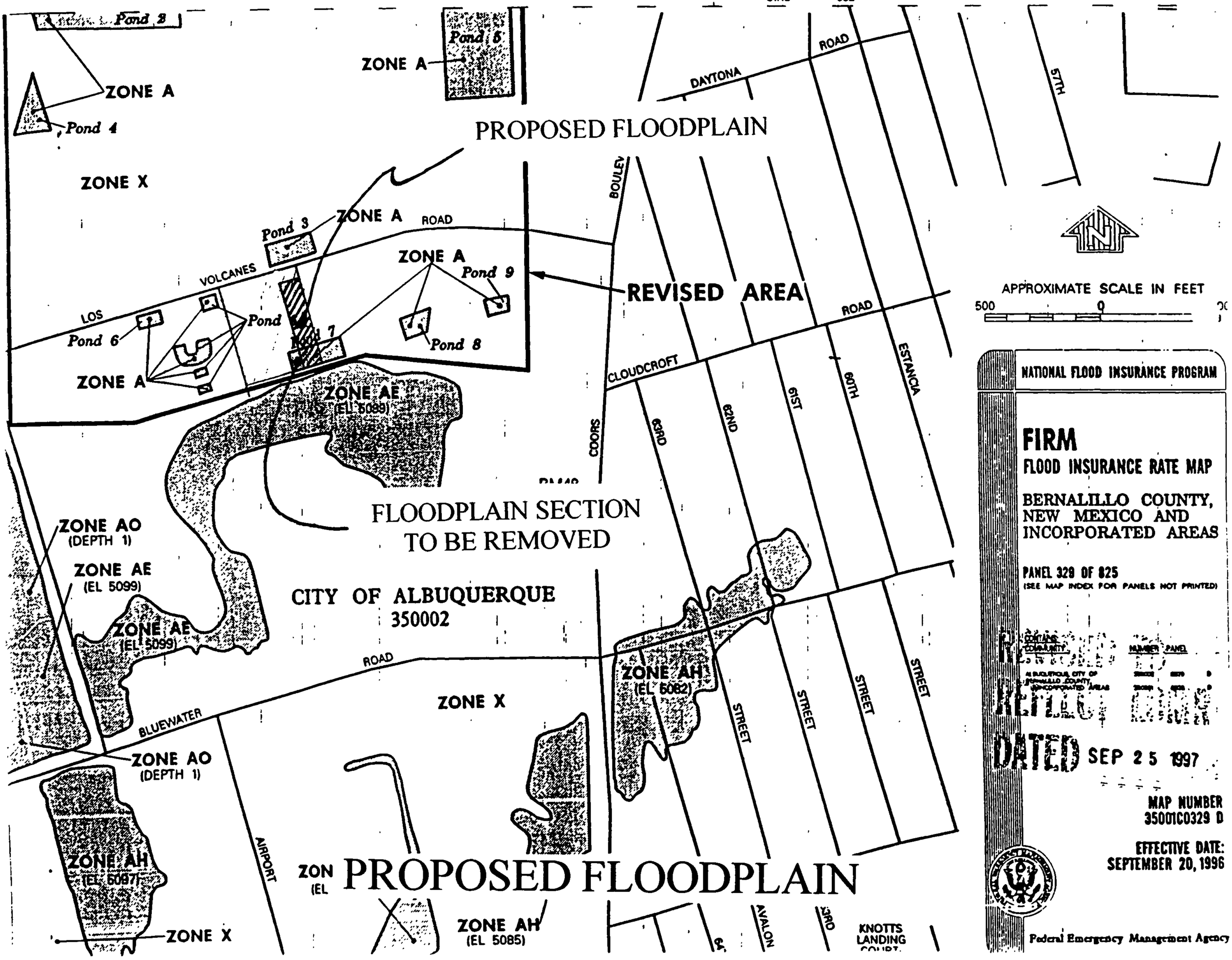
Federal Emergency Management Agency

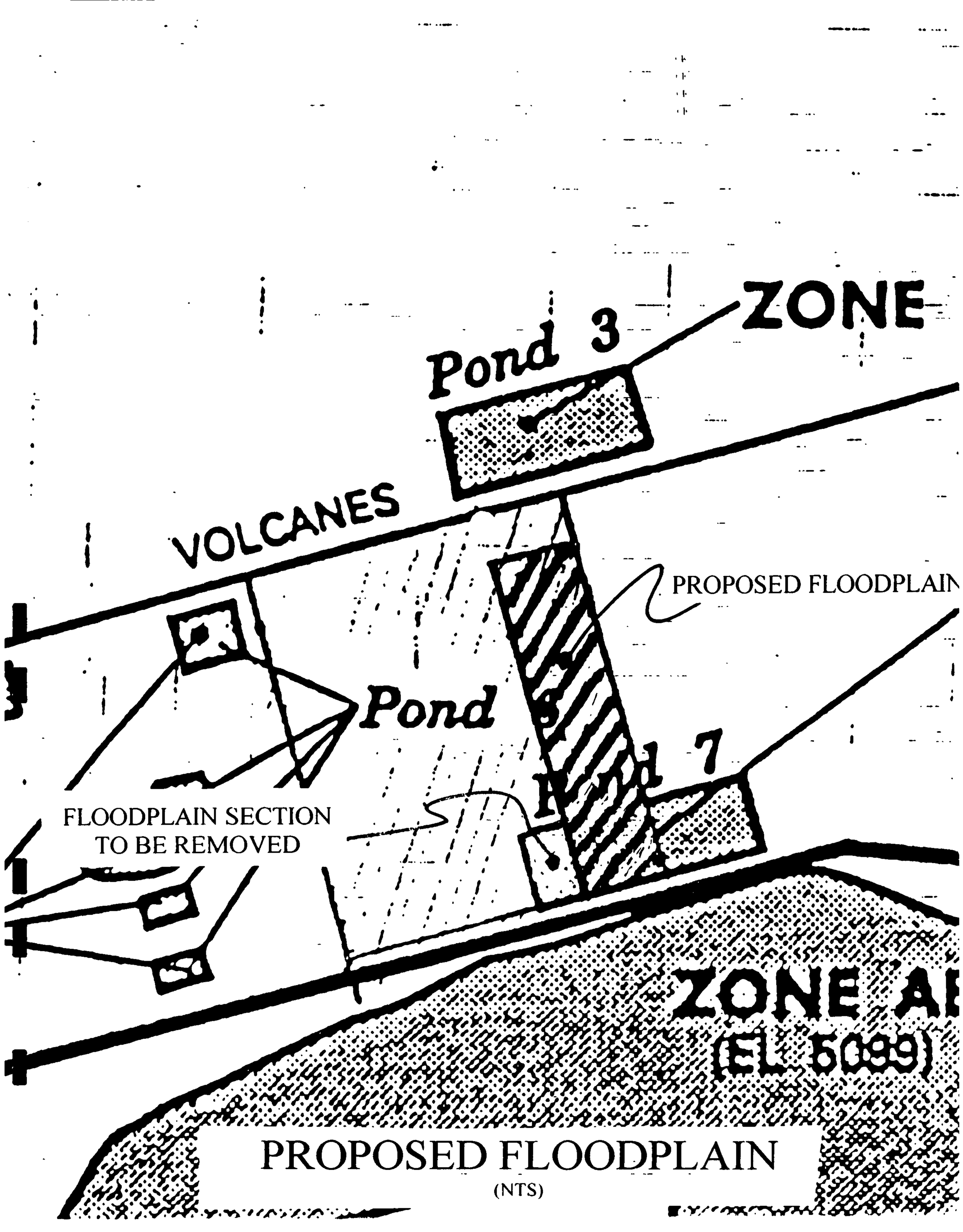
Proposed Conditions and On-Site/Offsite Drainage Management Plan

The owners are proposing to build ±42,000 sf apartment unit. The site will be design to drain to a retention pond along the easterly boundary. This existing pond will be modified. Portion of pond will be vacated and new easement will be granted based on the configuration of the new pond. The total ponding requirement for the adjacent site was calculated by Construction, Analysis and Management, Inc. in July 1994 under City Drainage # J10/D2J. The total required ponding (110,403 cf) for the adjacent site was calculated using the sum of the displaced volume due to the fill material (100,804 cf) and the 100-year/24-hour volume (12,272 cf) under developed conditions minus the 100-year/24-hour volume (2,673 cf) under existing conditions. The required ponding volume (119,196.27 cf) for the adjacent site was recalculated using sum of the displaced volume due to the fill material (100,804 cf) from the original construction of the easterly property and the developed 100-year/10-day volume (18,392.27 cf). Therefore, the total ponding requirement of 138,338.27 cf is the sum of the ponding requirement (119,196.27 cf) from the adjacent site plus the on-site developed 100-year/10-day volume (19,142 cf). Under developed condition the site generates a runoff of 9.11 cfs which is retained on site.

West Mesa Diversion Outfall System

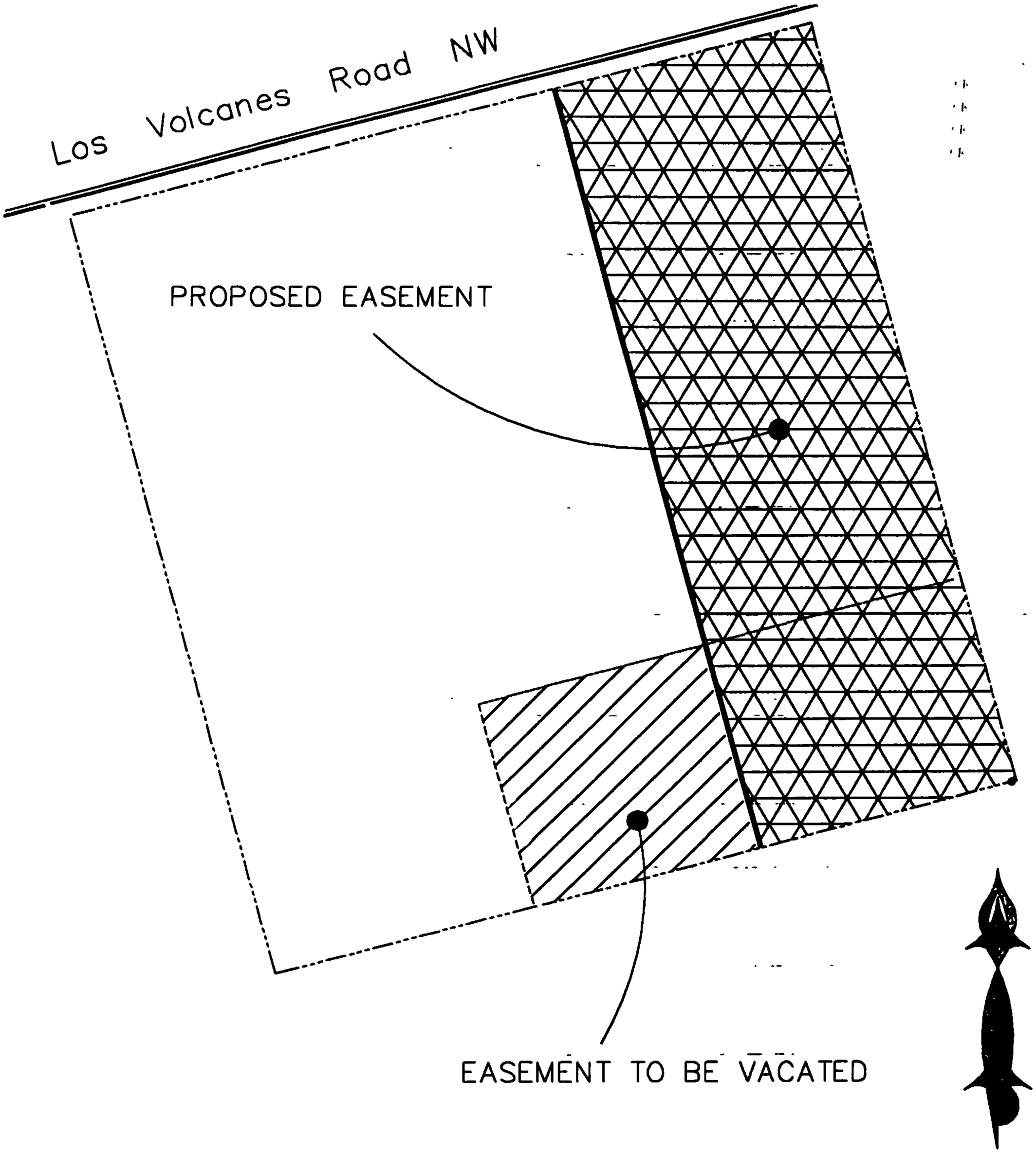
The site falls within the West Mesa Diversion Outfall System. We talked with Steve Boberg (City Hydrology) regarding the status of the master storm sewer pipe and its capacity. The storm sewer pipe for this reach of the master plan will not be built for at least three more years. The City of Albuquerque is in the process of finding a detention pond site up stream of our project. If the detention pond location is found, we will be able to discharge fully developed


Pond 2
ZONE A
Pond 5
ZONE A
Pond 4
DAYTONA
ROAD
H75
PROPOSED FLOODPLAIN
ZONE X
BOULEV
ZONE A
ROAD
Pond 3
ZONE A
Pond 9
VOLCANES
REVISED AREA
LOS
Pond
Pond 6
Pond 7
Pond 8
ZONE A
ROAD
CLOUDCROFT
ESTANCIA
ZONE AE
(EL 5089)
COORS
63RD
62ND
61ST
60TH
FLOODPLAIN SECTION
TO BE REMOVED
ZONE AO
(DEPTH 1)
ZONE AE
(EL 5099)
CITY OF ALBUQUERQUE
350002
ZONE AE
(EL 5099)
ROAD
ZONE AH
(EL 5082)
STREET
STREET
STREET
STREET
ZONE X
BLUEWATER
ZONE AO
(DEPTH 1)
ZONE AH
(EL 5097)
ZONE X
AIRPORT
ZON
(EL
ZONE AH
(EL 5085)
AVALON
3RD
KNOTTS
LANDING
COURT
PROPOSED FLOODPLAIN
APPROXIMATE SCALE IN FEET
500
0
NATIONAL FLOOD INSURANCE PROGRAM
FIRM
FLOOD INSURANCE RATE MAP
BERNALILLO COUNTY,
NEW MEXICO AND
INCORPORATED AREAS
PANEL 329 OF 825
(SEE MAP INDEX FOR PANELS NOT PRINTED)
COMMUNITY
NUMBER
PANEL
REVISED
DATED SEP 25 1997
MAP NUMBER
350001C0329 D
EFFECTIVE DATE:
SEPTEMBER 20, 1996
Federal Emergency Management Agency



PROPOSED FLOODPLAIN

(NTS)



PROPOSED EASEMENT

runoff. If the pond location is not found, we will be allowed to discharge up 75% of the developed runoff. The site can be drained to the future storm sewer pipe in Los Volcanes Road with a storm sewer pipe along the easterly property line. Once the storm sewer in Los Volcanes Road is in place a new grading plan should be submitted for any revision to this grading plan. Under the future conditions the grading plan should show the removal of unnecessary ponding and the proposed storm sewer pipe connection to the main line in Los Volcanes Road.

Future Conditions

Under the future conditions, once the storm sewer pipe in Los Volcanos is in place, the remaining portion of the flood plain will be removed from the site. Inlets will be placed at the discharged points of the site into the retention pond to intercept the runoff, and then from there the runoff will be routed to the storm sewer system in Los Volcanos via storm sewer pipe.

Calculations

City of Albuquerque, Development Process Manuel, Section 22.2, Hydrology Section, revised January 1993, was used for the runoff calculations. The site falls under Zone 1 based on Figure A-1 of page A-1.

RUNOFF CALCULATIONS

The site is @ Zone 1

DEPTH (INCHES) @ 100-YEAR STORM

P_{60} = 1.87 inches

P_{360} = 2.20 inches

P_{1440} = 2.66 inches

DEPTH (INCHES) @ 10-YEAR STORM

P_{60} = 1.87 x 0.667
= 1.25 inches

P_{360} = 1.47

P_{1440} = 1.77

See the summary output from AHYMO calculations.

Also see the following summary tables.

RUNOFF CALCULATION RESULTS

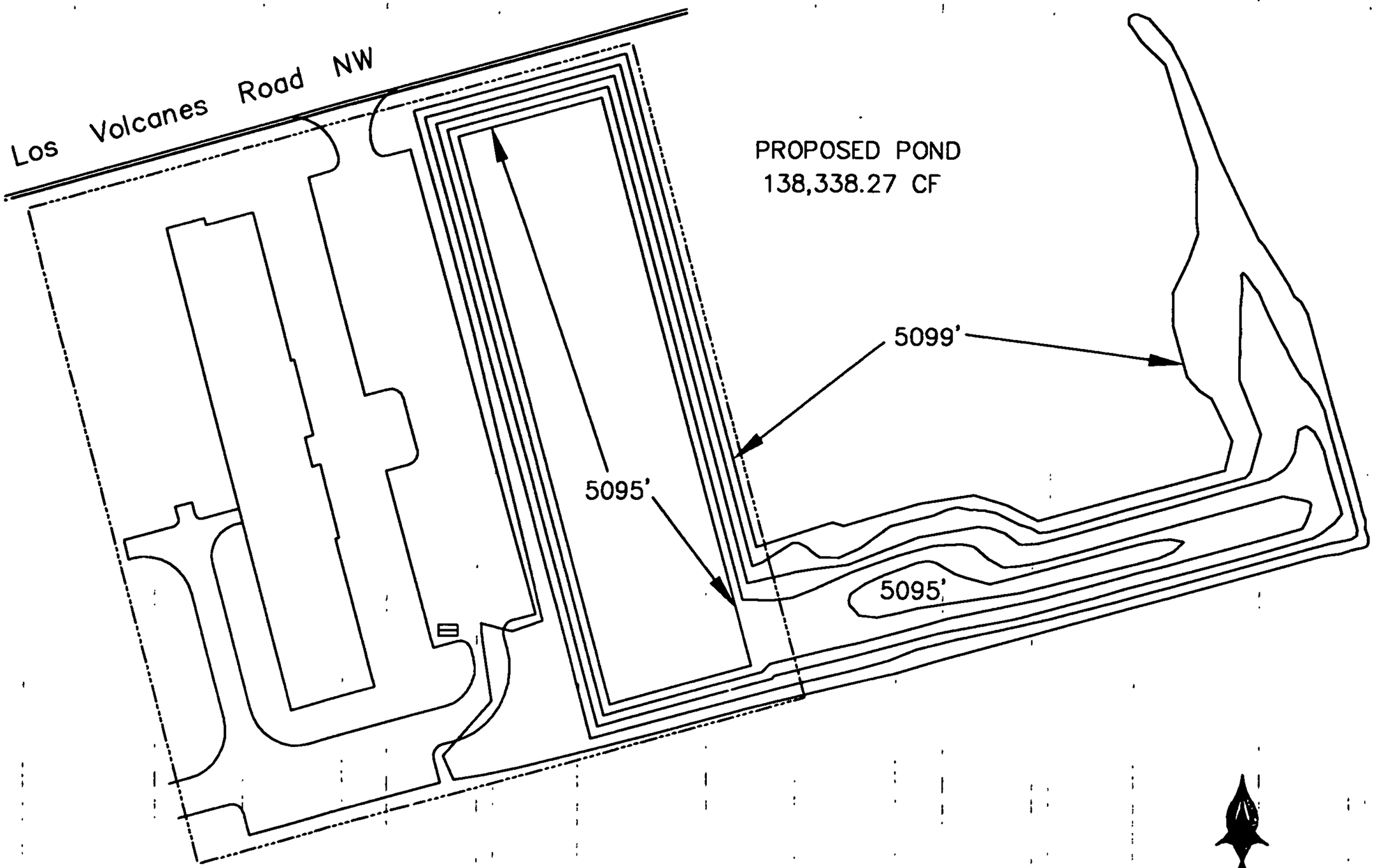
BASIN	AREA (SF)	AREA (AC)	AREA (MI^2)
ON-SITE A	133637.26	3.0679	0.004794

EXISTING

BASIN	Q-100 CFS	Q-10 CFS
ON-SITE	4.77	1.31

PROPOSED

BASIN	Q-100 CFS	Q-10 CFS
ON-SITE	9.11	4.89



PROPOSED PONDING LAYOUT

PONDING CALCULATIONS

ZONE = 1

DRAINAGE BASINS

BASIN	AREA (SF)	AREA (AC-FT)	AREA (MI^2)
OFFSITE	122850.00	2.82025	0.004407

$$E = \frac{EA(AA) + EB(AB) + EC(AC) + ED(AD)}{AA + AB + AC + AD}$$

V-360 = E (AA + AB + AC + AD)

V-10 Day = V-360 + AD (P-10 Day - P-360) / 12 in/ft

EA = 0.44
EB = 0.67
EC = 0.99
ED = 1.97

AA = 0.00%
AB = 59.33%
AC = 0.00%
AD = 40.67%

P-60 = 1.87
P-360 = 2.20
P-1440 = 2.66
P-10 Day = 3.67

E = 1.1987 IN
V-360 = 0.2817 AC-FT
AD = 1.1470 AC
V-10 Day = 0.4222 AC-FT
V-10 DAY = 18,392.27 CF

VOL ENCROACHED INTO FLOODPLAIN =100,804.00 CF
V-10 DAY = 18,392.27 CF

TOTAL REQUIRED PONDING VOLUME = 119,196.27 CF

V101.WK4

PONDING CALCULATIONS

ZONE = 1

DRAINAGE BASINS

SUB-BASIN	AREA (SF)	AREA (AC-FT)	AREA (MI^2)
ON-SITE	133637.26	3.06789	0.004794

$$E = \frac{EA(AA) + EB(AB) + EC(AC) + ED(AD)}{AA + AB + AC + AD}$$

V-360 = E (AA + AB + AC + AD)

V-10 Day = V-360 + AD (P-10 Day - P-360) / 12 in/ft

EA = 0.44
EB = 0.67
EC = 0.99
ED = 1.97

AA = 0.00%
AB = 53.29%
AC = 10.00%
AD = 36.71%

P-60 = 1.87
P-360 = 2.20
P-1440 = 2.66
P-10 Day = 3.67

E =	**1.1792**	**IN**
V-360 =	**0.3015**	**AC-FT**
AD =	**1.1262**	**AC**
V-10 Day =	**0.4394**	**AC-FT**
V-10 DAY =	**19,142.06**	**CF**

V101.WK4

POND CALCULATIONS

(PROPOSED RETENTION POND)

ELEVATION FT	SURFACE AREA SF
5,099.00	83,441.78
5,098.00	62,299.49
5,097.00	50,593.83
5,096.00	40,088.39
5,095.00	29,524.25

ELEVATION FT	VOLUME CF	
5,099.00	**209,464.73**	**TOTAL PONDING CAPACITY**
5,098.03	**138,780.21**	**100-YEAR, 10-DAY PONDING DEPTH**
5,098.00	136,594.09	
5,097.88	129,820.49	
5,097.80	125,304.76	
5,097.60	114,015.43	
5,097.00	80,147.43	
5,096.00	34,806.32	
5,095.00	0.00	

Volume required for the offsite runoff =	119,196.27	cf
Volume rquired for the onstie runoff =	19,142.00	cf
Total ponding volume required =	**138,338.27**	**cf**

Total ponding capacity = 209,464.73 cf >> required ponding volume

See the following sheet for the 10-day volume calculations

```
*
* ZONE 1
*
*************************************************************************
*        100-YEAR,  6-HR STORM (UNDER EXISTING CONDITIONS)              *
*************************************************************************
*
START
RAINFALL              TYPE=1 RAIN QUARTER=0.0 IN
                      RAIN ONE=1.87 IN RAIN SIX=2.20 IN
                      RAIN DELAY=2.66 IN DT=0.03333 HR
COMPUTE NM HYD        ID=1 HYD NO=100.0 AREA=0.004794 SQ MI
                      PER A=77.00 PER B=15.00 PER C=5.00 PER D=3.00
                      TP=0.1333 HR MASS RAINFALL=-1
*
*************************************************************************
*         10-YEAR,  6-HR STORM (UNDER EXISTING CONDITIONS)              *
*************************************************************************
*
START                 TIME=0.0
RAINFALL              TYPE=1 RAIN QUARTER=0.0 IN
                      RAIN ONE=1.25 IN RAIN SIX=1.47 IN
                      RAIN DAY=1.77 IN DT=0.03333 HR
COMPUTE NM HYD        ID=1 HYD NO=110.0 AREA=0.004794 SQ MI
                      PER A=77.00 PER B=15.00 PER C=5.00 PER D=3.00
                      TP=0.1333 HR MASS RAINFALL=-1
*
*************************************************************************
*        100-YEAR,  6-HR STORM (UNDER PROPOSED CONDITIONS)              *
*************************************************************************
*
START
RAINFALL              TYPE=1 RAIN QUARTER=0.0 IN
                      RAIN ONE=1.87 IN RAIN SIX=2.20 IN
                      RAIN DELAY=2.66 IN DT=0.03333 HR
COMPUTE NM HYD        ID=1 HYD NO=100.1 AREA=0.004794 SQ MI
                      PER A=0.00 PER B=53.29 PER C=10.00 PER D=36.71
                      TP=0.1333 HR MASS RAINFALL=-1
*
*************************************************************************
*         10-YEAR,  6-HR STORM (UNDER PROPOSED CONDITIONS)              *
*************************************************************************
*
START                 TIME=0.0
RAINFALL              TYPE=1 RAIN QUARTER=0.0 IN
                      RAIN ONE=1.25 IN RAIN SIX=1.47 IN
                      RAIN DAY=1.77 IN DT=0.03333 HR
COMPUTE NM HYD        ID=1 HYD NO=110.1 AREA=0.004794 SQ MI
                      PER A=0.00 PER B=53.29 PER C=10.00 PER D=36.71
                      TP=0.1333 HR MASS RAINFALL=-1
*
*************************************************************************
*
FINISH
```

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =07/19/1999

INPUT FILE = 9910

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=	2.200
COMPUTE NM HYD	100.00	-	1	.00479	4.77	.137	.53578	1.533	1.556	PER IMP=	3.00
START										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	1.470
COMPUTE NM HYD	110.00	-	1	.00479	1.31	.038	.14848	1.533	.427	PER IMP=	3.00
START										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	2.200
COMPUTE NM HYD	100.10	-	1	.00479	9.11	.300	1.17177	1.500	2.968	PER IMP=	36.71
START										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	1.470
COMPUTE NM HYD	110.10	-	1	.00479	4.89	.157	.61355	1.500	1.594	PER IMP=	36.71

FINISH

Appendix B

DRAINAGE REPORT

FOR

ASSISTED CARE LIVING CENTER
LOT 1A1 UNIT 2
ATRISCO BUSINESS PARK

Zone Atlas Sheet J-10-Z

JULY 1994
(REVISED FROM APRIL 1994)

PREPARED FOR

Design Professionals Inc.
3939 San Pedro Dr. N.E.
Building F, Suite A
Albuquerque, New Mexico 87109

PREPARED BY

Construction, Analysis and Management, Inc.
4250 Montgomery, N.E.
Suite 5,
Albuquerque, New Mexico 87109

Raymond Hensley, P.E.
N.M.P.E. 7873

7-5-94

RECD JUL 18 1994 HYDROLOGY

RAYMOND HENSLEY NEW MEXICO No. 7873 REGISTERED PROFESSIONAL ENGINEER

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RECEIVED

JUL 18 1994

PURPOSE

The purpose of this report is to analyze the existing and proposed developed drainage on the site for the Assisted Care Living Center, and to propose solutions to control the excess storm water runoff resulting from the 100-year storm falling on the adjacent and subject parcels.

PROJECT LOCATION AND DESCRIPTION

The site is located west of Coors Road on the south side of Los Volcanes in the Atrisco Business Park including 2.88202 acres more or less. It is bounded on the east by a commercial development used as a senior center, and on the west by commercial lot. (see the appendix, plate 1 for location map and plate 4 for floodway map). The existing site consists of 2.88 acres of undeveloped and uncompacted surface. The parcel slopes from east to west at about .5 percent. All undeveloped surfaces are vegetated with weeds and native grasses. The proposed development will create 62,614 square feet of impermeable surface.

EXISTING DRAINAGE CONDITIONS

The site is bounded by a paved roadway, Los Volcanes Rd., on the north, and undeveloped land to the south and west. A developed lot lies to the east. The subject is located within and beneath the 100 year prudent limit flood plain. The vacant land adjacent to the west is the lowest portion of the flood plain. Please refer to figure 1.

The topographic survey (figure-1/plate 2) indicates the property at an existing mean elevation of 5099 feet above MSL. The current project 100 year flood limits are at 5101 feet above MSL. This condition was discussed with hydrology staff in a pre-design meeting March 1994.

The location of the property, shown on plate 1, indicates that the precipitation zone for the subject is Zone 1 according to the Development Process Manual, Volume 2, Section 22.2 - HYDROLOGY, Section A-1. Likewise, the soil conditions are given by Table A-4 as Treatment A..

JUL 18 1994

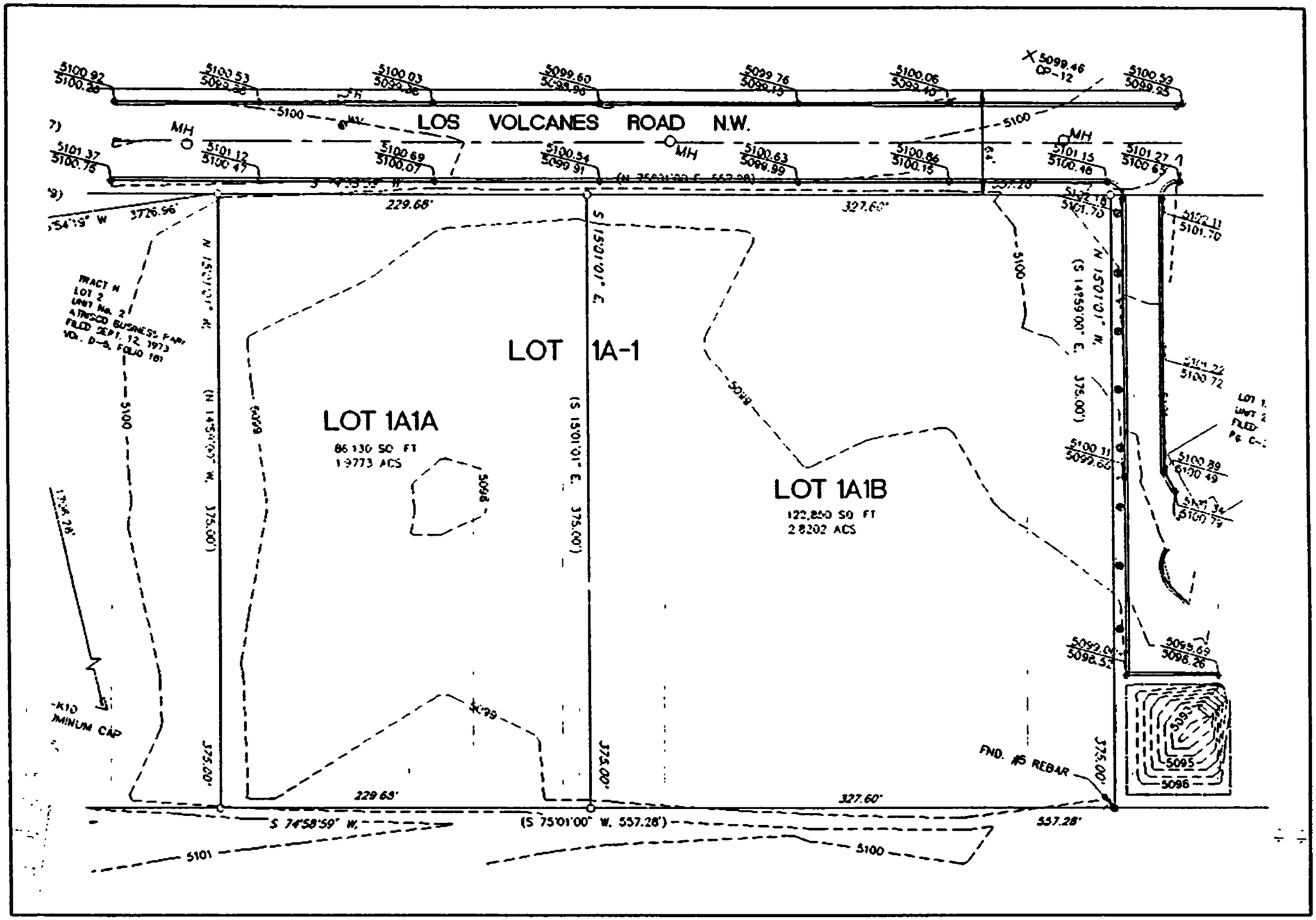


Figure 1 - Existing Conditions (Plate 2)

JUL 18 1994

The storm water flows are self contained within the lots 1A1-A and 1A1-B. The following are the calculations for the flood water generation for lot 1A!1-B, the subject property, using the DPM, Section 22.2, A-6:

$$Q_{p100} - Q_{pA} \times A_A$$

(1) Equation a-10

BASIN	AREA	PEAK DISCHARGE (table A-9)	FLOW
Treatment A	122,850 sf	1.29 cfs/acre	3.628 cfs

This flow generated on lot 1A1-B sheets to lot 1A1-A.

DEVELOPED DRAINAGE CONDITIONS

The site plan (Plate 3) shows the configuration of the proposed development of the property. Approximately 49,961 square feet will be converted to impermeable surfaces. According to the following table:

Building	23,509 sf.
Walks	7,559 sf.
Paving	15,026 sf.
Courtyard Improvements	3,667 sf.
Total	49,961 sf.

Note: It is assumed that the courtyard will be primarily landscaped for at least 50% of the area.

Subsequent to development the property will be consist of impervious surfaces, Treatment "D", and landscaped areas, Treatment "B".

DPM, Section 22.2, A-6:

$$Q_{p100} - Q_{pB} \times A_B + Q_{pD} \times A_D$$

(2) Equation a-10

BASIN	AREA	PEAK DISCHARGE (table A-9)	FLOW
Treatment B	72,889 sf	2.03 cfs/acre	3.397 cfs
Treatment D	49,961 sf	4.37 cfs/acre	5.012 cfs
Total	122,850 sf		8.409 cfs

JUL 1 8 1994

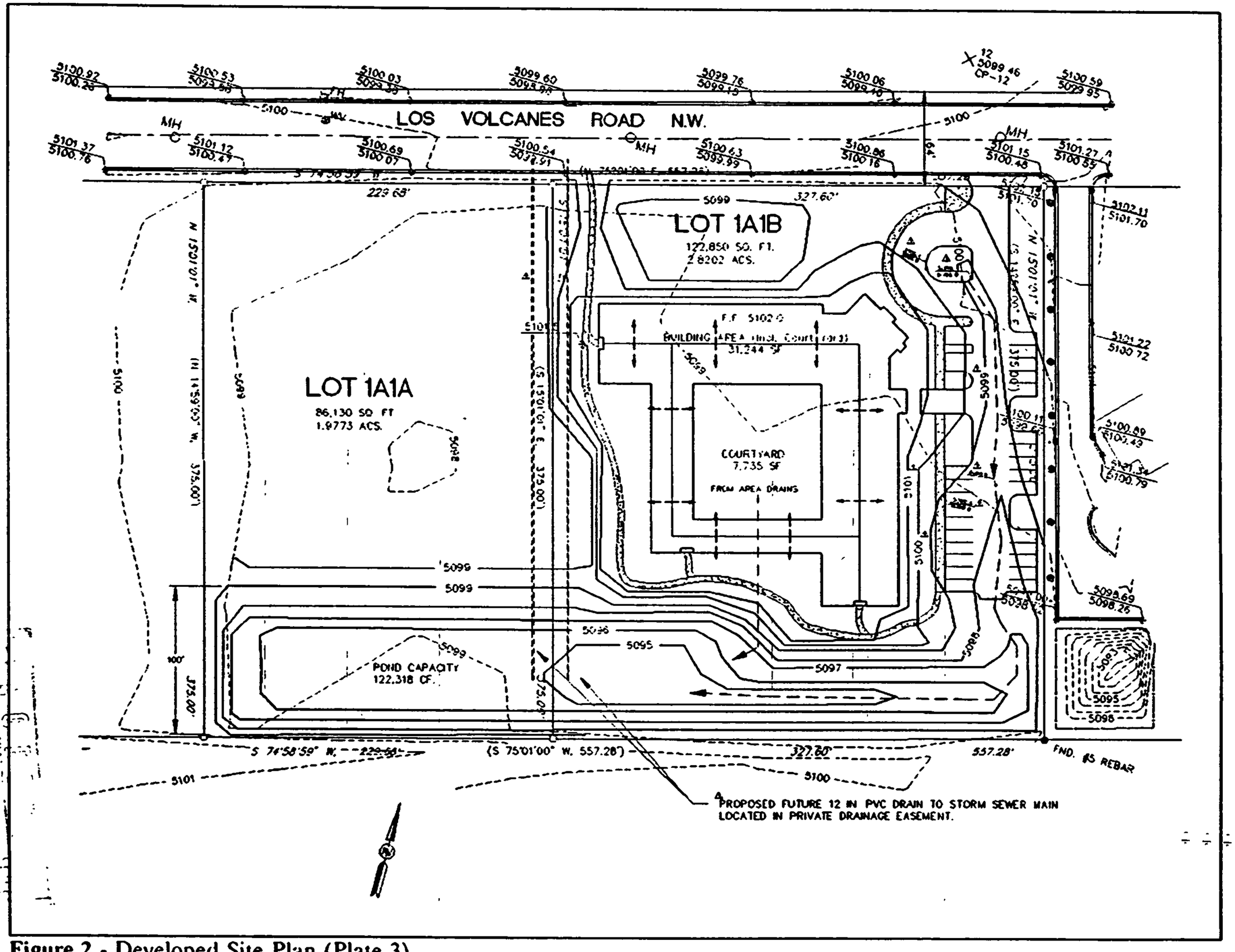


Figure 2 - Developed Site Plan (Plate 3)

DISPLACEMENT AND FLOOD PONDING CAPACITY

As a result of the subject property existing within the flood plain, it is necessary to off set all additional volumes of development above existing grade to the elevation of the estimated flood plain elevation of 5101 feet. The total amount of developed fill is estimated to be 100,804 cf. The table below gives the area of each contour elevation. Each of these were integrated using Simpson's Rule to yield the volume of fill above existing elevation.

	Developed		Existing	
Elevation Contour	Area	Volume Contribution	Area	Volume Contribution
5098	173,505.	0.0	207,095.	0.0
5099	99,749.	136,627.0	65,831.	136,463.0
5100	60,658.	80,204.0	713.	33,272.0
5101	46,758.	53,708.0	N/A	
Total		270,539.0		169,735.0

Total fill above existing grade: 270,539 - 169,735 = 100,804 cf

The base pond volume required is therefore 100,804 cf (2.31 ac-ft). In addition to this amount, the development will generate excess flows from impervious surfaces that must be added to this total. Because of the nature of the existing conditions and assumed percolation rates, we have assumed the necessity of 24 hour retention of these excess flows. The following is a tabulation of the required additional pond capacity:

$$V_{360} = \frac{E_A \times A_A + E_B \times A_B + E_D \times A_D}{12}$$

(3) Equation a-6

EXISTING CONDITIONS:

BASIN	AREA	EXCESS (table A-8)	VOLUME
Treatment A	122,850 sf	.44 inches	4,505. cf

DEVELOPED CONDITIONS:

BASIN	AREA	EXCESS (table A-9)	FLOW
Treatment B	72,889 sf	.67 inches	4,070. cf
Treatment D	49,961 sf	1.97 inches	8,202. cf
Total	122,850 sf		12,272. cf

The requirement for the 24 hour retention is given by:

$$V_{1440} - V_{360} + A_D \times (P_{1440} - P_{360})/12 \qquad \text{(4) Equation a-7}$$

$$V_{1440} - 12{,}272 + 49{,}961 \times (2.66 - 2.2)/12$$

The difference between the existing conditions and the developed conditions would require an additional 9,599 cf. (.220 ac-ft.)

The total required pond volume is the sum of the displacement plus excess developed flows, or 110,403 cf. (2.535 ac-ft). The design indicated in plate 3 would allow 122,318 cf. (2.808 ac-ft) as calculated in the following table. A pond of this size may also allow for some future development on lots 1A1A or 1A1B.

Elevation Contour	Area	Volume Contribution
5099	57,122.	0.0
5098	40,353.	48,738.0
5097	30,218.	36,286.0
5096	20,660.	25,439.0
5095	5,049.	12,855.0
Total		122,318.0

JUL 18 1994
HYDROLOGY DIV.

FUTURE DEVELOPMENTS

The West Bluff Drainage Plan has indicated a proposed 84 inch RCP at a .006 ft/ft slope be located in Los Volcanes Rd. A December 23, 1988 communication from Roger

Green to Dwayne Sheppard in the file of West Mesa Senior Center indicates that there are some problems with the proposed design of the system. A copy of this memorandum is included in the appendix. A proposed design change from 84 inch to 68 x 109 oval at .0045 ft/ft slope was given. This would allow 2 feet of cover of the storm sewer main. If a future connection of a 12 inch outlet from the subject property were installed at the location of the proposed pond it could be connected to this proposed main system with an approximate slope of .012 ft/ft from a catch basin elevation of 5097 feet.

We have reviewed Hydrology Department Staff's (Mr. Green) calculations and design suggestions for the modification of the West Bluff Drainage Plan recommendations. We agree with the memorandum suggestions. However, the final solution may take anyone of a variety of possible solutions.

RECOMMENDATIONS

Construct a retention pond of a capacity of at least 112,873 cf. This will require the use of lands located to the west of the subject property for additional ponding capacity. Therefore an easement should be given to the subject property from the adjacent land to the west to allow the given ponding required. This easement and pond will be required until such time as the proposed 84 inch RCP storm drainage system is constructed in Los Volcanes Rd.

When the storm drainage system is completed in Los Volcanes a 12 inch drain and inlet in the proposed pond will direct storm flow to the new system. The ponding in the rear of the property will be altered to a catch basin. An easement and location is given on the plan for this future connection. When this connection is accomplished the ponding will no longer be required and the easement to the adjacent property for the pond may be returned to the owners of lot 1A1-A to the west.

We can not recommend installation of the future drain line to the Los Volcanes Rd. at this time, because of the status of the final design assumptions of the future main storm drain. However, we recommend that the location of any future drain line be dedicated at a location along the west property line from a proposed catch basin at the same location of the proposed pond to the street.

Given the flood plain elevation of 5101 feet above MSL, the proposed building will be constructed at a finished floor elevation of 5102 feet.

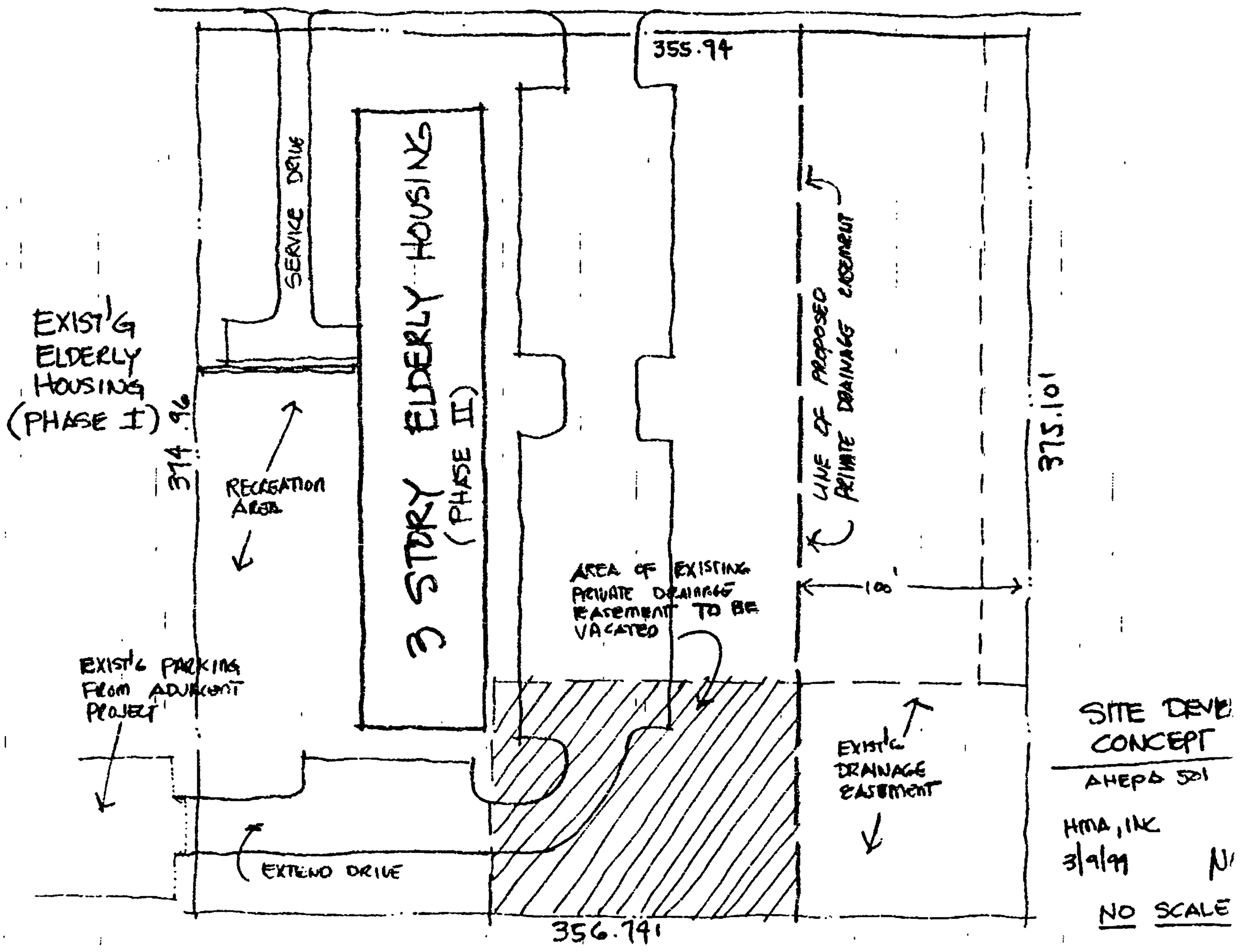
CONCLUSIONS

If the above recommendations are followed, the site will be protected from flooding and the potential downstream flooding situation will not be altered significantly during the 100-year storm event.

JUL 18 1994
HYDROLOGY

APPENDIX

RECEIVED
JUL 18 1994
ENGINEERING DIVISION


LOS VOLCANOS ROAD NW
355.94
SERVICE DRIVE
ELDERLY HOUSING
3 STORY (PHASE II)
EXIST'G ELDERLY HOUSING (PHASE I)
314.96
RECREATION AREA
LINE OF PROPOSED PRIVATE DRAINAGE EASEMENT
375.101
100'
AREA OF EXISTING PRIVATE DRAINAGE EASEMENT TO BE VACATED
EXIST'G PARKING FROM ADJACENT PROJECT
EXTEND DRIVE
EXIST'G DRAINAGE EASEMENT
356.741
SITE DEVE
CONCEPT
AHEPA 501
HMA, INC
3/9/99
NO SCALE

ADVANCED ENGINEERING and CONSULTING, LLC

Consulting
Design
Development
Management
Inspection

December 17, 1999

Mr. John Curtin, P.E.
Project Manager, PWD/Hyd
P.O. Box 1293
Albuquerque, New Mexico 87103

RE: REVISED GRADING/DRAINAGE PLAN FOR AHEPA 501 APARTMENTS, (J10/D2J)

Dear Mr. Curtin:

This letter is in response to your comments sent on November 4, 1999 for the above referenced site. The purpose and maintenance responsibility of the pond is shown on the plat. The width of the drainage easement is added to the Plat and the Grading and Drainage Plan.

The grouted rip is extended to the bottom of the pond. The roof slopes to the front and the back of the building, and there are no down spouts.

Please contact me if there are any questions or concerns regarding this submittal.

Sincerely yours,

Shahab Biazar, P.E.

RECEIVED
DEC 17 1999
HYDROLOGY SECTION

10205 Snowflake Court N.W., Albuquerque, N.M. 87114 PH (505) 899-5570 FAX (505) 897-4996 EMAIL AECLLC@aol.com

DRAINAGE INFORMATION SHEET

PROJECT TITLE: AHEPA 501 Apartments **ZONE ATLAS/DRNG. FILE #:** J-10/D2J

DRB #: _____ **EPC #:** _____ **WORK ORDER #:** _____

LEGAL DESCRIPTION: Lots 2-B-1 & 1-A-1-A, Tracts N & O, Unit 2, Atrisco Business Park

CITY ADDRESS: *Located about 1100' east of Air Port Dr. on the south side of Los Volcanes*

ENGINEERING FIRM: Advanced Engineering and Consulting, LLC **CONTACT:** Shahab Biazar

ADDRESS: 10205 Snowflake Ct. NW Alb., NM 87114 **PHONE:** (505) 899-5570

OWNER: _____ **CONTACT:** _____

ADDRESS: _____ **PHONE:** _____

ARCHITECT: *Holcomb, Musemeche & Associates, Inc.* **CONTACT:** *Mark Musemeche*

ADDRESS: *2727 Allen Parkway, Suite 1815, Houston, TX 77019* **PHONE:** *713-522-4141*

SURVEYOR: _____ **CONTACT:** _____

ADDRESS: _____ **PHONE:** _____

CONTRACTOR: _____ **CONTACT:** _____

ADDRESS: _____ **PHONE:** _____

TYPE OF SUBMITTAL:

_____ DRAINAGE REPORT

_____ DRAINAGE PLAN

_____ CONCEPTUAL GRADING & DRAINAGE PLAN

__X__ GRADING PLAN

_____ EROSION CONTROL PLAN

_____ ENGINEER'S CERTIFICATION

_____ OTHER

PRE-DESIGN MEETING:

_____ YES

_____ NO

_____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

_____ SKETCH PLAN APPROVAL

_____ PRELIMINARY PLAT APPROVAL

_____ S. DEV. PLAN FOR SUB'D. APPROVAL

_____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL

_____ SECTOR PLAN APPROVAL

__X__ FINAL PLAT APPROVAL

_____ FOUNDATION PERMIT APPROVAL

__X__ BUILDING PERMIT APPROVAL

_____ CERTIFICATE OF OCCUPANCY APPROVAL

__X__ GRADING PERMIT APPROVAL

_____ PAVING PERMIT APPROVAL

_____ S. A. D. DRAINAGE REPORT

_____ DRAINAGE REQUIREMENTS

_____ OTHER

RECEIVED
DEC 17 1999
HYDROLOGY SECTION

DATE SUBMITTED: *12/17/99*

BY: *SHAHAB BIAZAR*

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

November 4, 1999

Shahab Biazar, PE
Advanced Engineering & Consulting LLC
10205 Snowflake Ct. NW
Albuquerque, NM 87114

RE: DRAINAGE REPORT FOR AHEPA 501 APARTMENTS (J-10/D2J)
RECEIVED OCT 5, 1999 FOR FINAL PLAT, GRADING & BLDG PRMT
ENGINEER'S STAMP DATED 9-6-99

Dear Mr. Biazar:

Based on the information included in the submittal referenced above, City Hydrology accepts the Drainage Report for Rough Grading. The following comments must be addressed:

Define the purpose and maintenance responsibilities for the pond on the Final Plat. Indicate the width of the proposed easement on the Plat and the Grading & Drainage Plan.

The southern inlet to the pond appears to be in an awkward location. The grouted rip-rap should extend to the bottom of the slope. How does the roof slope? Does it have down spouts?

If I can be of further assistance, You may contact me at 768-2727.

Sincerely,

John P. Curtin, P.E.
Project Manager, PWD/Hyd

c: Inspector

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

DRAINAGE INFORMATION SHEET

PROJECT TITLE: AHEPA 501 Apartments **ZONE ATLAS/DRNG. FILE #:** J-10/D2J

DRB #: _____ **EPC #:** _____ **WORK ORDER #:** _____

LEGAL DESCRIPTION: Lots 2-B-1 & 1-A-1-A, Tracts N & O, Unit 2, Atrisco Business Park

CITY ADDRESS: *Located about 1100' east of Air Port Dr. on the south side of Los Volcanes*

ENGINEERING FIRM: Advanced Engineering and Consulting, LLC **CONTACT:** Shahab Biazar

ADDRESS: 10205 Snowflake Ct. NW Alb., NM 87114 **PHONE:** (505) 899-5570

OWNER: _____ **CONTACT:** _____

ADDRESS: _____ **PHONE:** _____

ARCHITECT: *Holcomb, Musemeche & Associates, Inc.* **CONTACT:** *Mark Musemeche*

ADDRESS: *2727 Allen Parkway, Suite 1815, Houston, TX 77019* **PHONE:** *713-522-4141*

SURVEYOR: _____ **CONTACT:** _____

ADDRESS: _____ **PHONE:** _____

CONTRACTOR: _____ **CONTACT:** _____

ADDRESS: _____ **PHONE:** _____

TYPE OF SUBMITTAL:

_____ DRAINAGE REPORT

_____ DRAINAGE PLAN

_____ CONCEPTUAL GRADING & DRAINAGE PLAN

__X__ GRADING PLAN

_____ EROSION CONTROL PLAN

_____ ENGINEER'S CERTIFICATION

_____ TCL

PRE-DESIGN MEETING:

_____ YES

_____ NO

_____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

_____ SKETCH PLAN APPROVAL

_____ PRELIMINARY PLAT APPROVAL

_____ S. DEV. PLAN FOR SUB'D. APPROVAL

_____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL

_____ SECTOR PLAN APPROVAL

__X__ FINAL PLAT APPROVAL

_____ FOUNDATION PERMIT APPROVAL

__X__ BUILDING PERMIT APPROVAL

_____ CERTIFICATE OF OCCUPANCY APPROVAL

__X__ GRADING PERMIT APPROVAL

_____ PAVING PERMIT APPROVAL

_____ S. A. D. DRAINAGE REPORT

_____ DRAINAGE REQUIREMENTS

_____ *OTHER*

RECEIVED
OCT 5 1999
HYDROLOGY SECTION

DATE SUBMITTED: *09/06/99*

BY: *SHAHAB BIAZAR*

ADVANCED ENGINEERING and CONSULTING, LLC

Consulting
Design
Development
Management
Inspection

September 6, 1999

RECEIVED
OCT 5 1999
HYDROLOGY SECTION

Ms. Susan Calongne, P.E.
City/County Floodplain Administrator
600 Second Street NW
Albuquerque, New Mexico 87102

RE: REVISED GRADING/DRAINAGE PLAN FOR AHEPA 501 APARTMENTS, (J10/D2J)

Dear Ms. Calongne:

This letter is in response to your comments sent on September 1, 1999 for the above referenced site:

1. Copy of the plat which was submitted for the Sketch Plat is enclosed with the drainage report.

2. The layout for the grading plan is based on the latest modifications from the architect on the site plan.

3. The revised FEMA map has been used on the plan and in the report. A LOMR will be prepared after the pond is built. There is no infrastructure. Therefore, the LOMR will be submitted as soon as the pond is in place to obtain approval from FEMA prior to final certification of occupancy.

4. The architect wanted to maintain the building at 5102'. We should have some extra cut from the new pond wich can be used for the pad area. The displaced volume from the fill area was eliminated from the ponding requirement calculations. The total ponding requirement for the adjacent site was calculated by Construction, Analysis and Management, Inc. in July 1994 under City Drainage # J10/D2J. The total required ponding (110,403 cf) for the adjacent site was calculated using the sum of the displaced volume due to the fill material (100,804 cf) and the 100-year/24-hour volume (12,272 cf) under developed conditions minus the 100-year/24-hour volume (2,673 cf) under existing conditions. The required ponding volume (119,196.27 cf) for the adjacent site was recalculated using sum of the displaced volume due to the fill material (100,804 cf) and the 100-year/10-day volume (18,392.27 cf). The pond extends to the east into the adjacent property. Therefore, the runoff from the adjacent property drains south and then into the retention pond.

10205 Snowflake Court N.W., Albuquerque, N.M. 87114 PH (505) 899-5570 FAX (505) 897-4996 EMAIL AECLLC@aol.com

5. Auto Cad was used to calculate the land treatment based on the type of improvements proposed for the site. A good portion of the site is to be used for the ponding purposes. Therefore, the ponding area and all the landscaping areas around the building were used as B treatment in our runoff and volume calculations. There are no existing improvements on the site except the existing pond. Therefore, 100% treatment "A" was assumed for the existing conditions.

6. The runoff from the adjacent site (to the west) drains south and then into the retention pond. Portion of the existing retention pond extends east to the adjacent property, and it is on the southerly portion of the adjacent site.

7. The runoff in the future will drain to several inlets and then will be routed to the storm sewer system in Los Volcanos via a storm sewer pipe. A separate drainage report will be submitted then.

Please contact me if there are any questions or concerns regarding this submittal.

Sincerely yours,

Shahab Biazar, P.E.

City of Albuquerque

September 1, 1999

Shahab Biazar, P.E.
Advanced Engineering and Consulting, LLC
10205 Snowflake Ct. NW
Albuquerque, New Mexico 87114

RE: Grading and Drainage Plan for AHEPA 501 Apartments, (J10/D2J) Submitted for Final Plat, Building Permit and Grading Permit Approval, Engineer's Stamp Dated 8/2/99.

Dear Mr. Biazar:

Prior to approval of the above referenced plan, the following comments must be addressed:

1. Since this plan is submitted for Final Plat approval, please provide a copy of the proposed Plat. Will the Plat require DRB approval?

2. City Transportation made comments regarding the Traffic Circulation Layout (TCL). Markups were provided to the Architect. If changes are made to the site due to these comments, please revise the grading plan to match.

3. The existing pond located on this site appears to be Pond 7 on the Letter of Map Revision (LOMR) issued by FEMA on September 25, 1997. Use the LOMR exhibit for the FIRM on the plan and in the report. The proposal to relocate this pond will require a LOMR from FEMA. If infrastructures are required for this site, then the LOMR requirement will be on the Infrastructure List, and the LOMR must be received prior to release of financial guarantees. If infrastructures are not needed for this site, then the LOMR must be received from FEMA prior to the issuance of the Certificate of Occupancy (C.O.). The owner must be made aware that the LOMR request will require As-Builts for the pond, therefore, there may be a delay in getting the C.O.

4. Since the LOMR removed the floodplain from this site, the finish floor elevation will not have to be raised to 5102'. The required pond volume no longer needs to include the displaced floodplain volume. The pond must be sized for the 100-year, 10-day volume from both your developed site and from the adjacent site. Please verify that the "existing" volume from the adjacent site is the 100-year, 10-day volume from that site. How does the runoff from this site enter the pond?

5. How were the existing and proposed land treatments determined for this site?

6. It appears that runoff from the site to the west can enter the site through the paved parking area. Please address this.

7. The plan shows runoff entering the pond from the parking lot at two locations. In the ultimate condition, when the off-site storm drain is in place, how will the runoff be intercepted and conveyed to Los Volcanes Road? A preliminary design should be provided at this time.

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

Sincerely,

Susan Calongne

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

C: - File

City of Albuquerque

Mr. Mark Musemeche
Holcomb, Musemeche & Associates, Inc.
2727 Allen Parkway, Suite 1815
Houston, Texas 77019

August 26, 1999

RE: TRAFFIC CIRCULATION LAYOUT REVIEW FOR BUILDING PERMIT APPROVAL
AHEPA 501 APARTMENTS, J10-D002J, Architect's Stamp not dated

Dear Mr. Musemeche:

The above referenced Traffic Circulation Layout (TCL) requires modifications to the site plan prior to review for Building Permit. The comments are indicated in red ink on the attached marked-up site plan.

Please note on the site plan that the engineer's certification required by the Hydrology section needs to include certification that this site was constructed in accordance with the TCL before Certificate of Occupancy (C.O.) is released.

Please return the attached marked-up site plan with your next submittal.

You can reach me at 924-3993 to set up a meeting to discuss this project.

Sincerely,

Afsaneh Yavari
Associate Engineer

Attachments
cc: Shahab Biazar, Advanced Engineering & Consulting, LLC

DRAINAGE INFORMATION SHEET

PROJECT TITLE: AHEPA 501 Apartments **ZONE ATLAS/DRNG. FILE #:** J-10 / D0025

DRB #: _____ **EPC #:** _____ **WORK ORDER #:** _____

LEGAL DESCRIPTION: Lots 2-B-1 & 1-A-1-A, Tracts N & O, Unit 2, Atrisco Business Park

CITY ADDRESS: *Located about 1100' east of Air Port Dr. on the south side of Los Volcanes*

ENGINEERING FIRM: Advanced Engineering and Consulting, LLC **CONTACT:** Shahab Biazar

ADDRESS: 10205 Snowflake Ct. NW Alb., NM 87114 **PHONE:** (505) 899-5570

OWNER: _____ **CONTACT:** _____

ADDRESS: _____ **PHONE:** _____

ARCHITECT: *Holcomb, Musemeche & Associates, Inc.* **CONTACT:** *Mark Musemeche*

ADDRESS: *2727 Allen Parkway, Suite 1815, Houston, TX 77019* **PHONE:** *713-522-4141*

SURVEYOR: _____ **CONTACT:** _____

ADDRESS: _____ **PHONE:** _____

CONTRACTOR: _____ **CONTACT:** _____

ADDRESS: _____ **PHONE:** _____

TYPE OF SUBMITTAL:

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

PRE-DESIGN MEETING:

- ____ YES
- ____ NO
- ____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- ____ SKETCH PLAN APPROVAL
- ____ PRELIMINARY PLAT APPROVAL
- ____ S. DEV. PLAN FOR SUB'D. APPROVAL
- ____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ____ SECTOR PLAN APPROVAL
- X FINAL PLAT APPROVAL
- ____ FOUNDATION PERMIT APPROVAL
- X BUILDING PERMIT APPROVAL
- ____ CERTIFICATE OF OCCUPANCY APPROVAL
- X GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ S. A. D. DRAINAGE REPORT
- ____ DRAINAGE REQUIREMENTS
- ____ *OTHER*

DATE SUBMITTED: *08/03/99*

BY: *SHAHAB BIAZAR*

RECEIVED
AUG 3 1999
HYDROLOGY SECTION

CITY OF
Albuquerque

P.O. Box 1293 Albuquerque, NM 87103

September 6, 1996

Martin J. Chávez, Mayor

Raymond Hensley, PE
C.A.M.I.
P.O. Box 21940
Albuquerque, NM 87154

RE: ENGINEER'S CERTIFICATION FOR ASSISTED LIVING CENTER (J-10/D2J)
RECEIVED AUGUST 15, 1996 FOR CERTIFICATE OF OCCUPANCY
ENGINEER'S STAMP DATED 8/13/96

Dear Mr. Hensley:

Based on the information included in the submittal referenced above, City Hydrology accepts the engineer's certification for certificate of occupancy.

Contact Vicki Chavez at Code Enforcement to obtain the permanent Certificate of Occupancy for 6600 Los Volcanes NW.

If I can be of further assistance, You may contact me at 768-2727.

Sincerely,

John P. Curtin, P.E.
Civil Engineer, Hydrology

c: Andrew Garcia

AINAGE INFORMATION SHEET

PROJECT TITLE: Westland Assisted Care ZONE ATLAS/DRNG. FILE #: J-10/D24

'RB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: Lots 19A3, Tract N, Los Volcanes, Unit 2

CITY ADDRESS: 6600 Los Volcanes, N.W.

ENGINEERING FIRM: CAMT CONTACT: Raymond Hensley

ADDRESS: _____ PHONE: 298-3477

OWNER: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

ARCHITECT: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

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

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL
___ PRELIMINARY PLAT APPROVAL
___ S. DEV. PLAN FOR SUB'D. APPROVAL
___ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
___ SECTOR PLAN APPROVAL
___ FINAL PLAT APPROVAL
___ FOUNDATION PERMIT APPROVAL
___ BUILDING PERMIT APPROVAL
X CERTIFICATE OF OCCUPANCY APPROVAL
___ GRADING PERMIT APPROVAL
___ PAVING PERMIT APPROVAL
___ S.A.D. DRAINAGE REPORT
___ DRAINAGE REQUIREMENTS
___ OTHER _____ (SPECIFY)

PRE-DESIGN MEETING:

___ YES
___ NO
___ COPY PROVIDED

Called Vicki Chavez for 30 Day Temp On Aug 26. JPC

ENC: DRAINAGE COVENANT
EASEMENT

Notified Phylis that permanent C.O. is OK on 9-5-96 JPC

DATE SUBMITTED: 8/15/96

BY: Raymond Hensley

AUG 15 19

(NOT DEVELOPER OWNED PROPERTY)

95008160

PRIVATE FACILITY DRAINAGE COVENANT AND RESERVATION OF DRAINAGE EASEMENT

9500295

7489

This Drainage Covenant, between [state the name of the present real property owner exactly as shown on the real estate document conveying title to the present owner and state the legal status of the owner, for example, "single person," "husband and wife," "corporation of the State of _____," "partnership"]: Westland Development Co., Inc., a New Mexico Corporation ("Owner"), whose address is 401 Coors Blvd., NW, Alb, NM 87121; [state the name of the developer or subdivider required to construct the drainage facility and state the legal status of the developer, for example, "single person," "husband and wife," "corporation of the State of _____," "partnership"]: Westland House (No. 1), Ltd., Limited NM Partnership ("Developer"), whose address is 1124 NE Halsey, 490 Portland, OR 97720 and the City of Albuquerque, a New Mexico municipal corporation ("City"), whose address is P. O. Box 1293, Albuquerque, New Mexico 87103, is made in Albuquerque, Bernalillo County, New Mexico and is entered into as of the date Owner and Developer sign this Covenant.

1. Recital. The Owner is the owner of the following described real property located at [give legal description, and street address:] Lot 1A1A of Tract N, Atrisco Business Park Unit 2, located on Los Volcanes Road N.W. between Coors Blvd., N.W. and Arnoro Road N.W.

in Bernalillo County, New Mexico (the "Property").

Pursuant to City ordinances, regulations and other applicable laws, the Developer is required to construct and maintain certain drainage facilities and the Owner, for good and valuable consideration received from the Developer, is willing to allow construction and maintenance of the Drainage Facility on its Property, and the parties wish to enter into this Covenant to establish the obligations and responsibilities of the parties.

2. Description and Construction of Drainage Facility. The Developer shall construct the following "Drainage Facility" within the Property at the Developer's sole expense in accordance with the standards, plans and specifications approved by the City:

Temporary Retention Pond.

The Drainage Facility is more particularly described in Exhibit A attached hereto and made a part hereof.

(APPROVED BY LEGAL AS TO FORM ONLY 9-6-88)

3. Reservation of Easement. The Owner, for itself, its heirs, successors and assigns, jointly and severally, hereby grants to Developer, its heirs, successors and assigns, jointly and severally, a perpetual easement over and across a portion of the Owner's property for the benefit of [describe the lots, parcels or tracts which are to be benefited by the Drainage Facility and easement] Lot A1A, Tract N, Arrisco Business Park Unit 2

for the purpose of permitting the flow, conveyance, and discharge of storm water runoff and for the purpose of permitting ingress and egress for the construction, maintenance and repair of the drainage facility. The land affected by the grant of this easement is more particularly described as:

Lot 1A1A of Tract N, Arrisco Business Park Unit 2.

4. Maintenance of Drainage Facility. The Developer shall maintain the Drainage Facility and Easement at the Developer's sole cost in accordance with the approved Drainage Report and plans. In the event the Developer fails to maintain the Drainage Facility, Owner agrees that it shall be responsible for maintenance of the Drainage Facility and Easement in accordance with the approved Drainage Report and plans.

5. Benefit to Property. The Developer and Owner acknowledge and understand that the Drainage Facility required herein to be constructed is for the private benefit and protection of the Developer's property and that failure to maintain such facility could result in damage or loss to the Owner's Property and to the property of Developer.

6. Inspection of Drainage Facility. The City shall have no duty or obligation whatsoever to perform any inspection, maintenance or repair of the Drainage Facility, it being the duty of the Developer, its heirs, successors and assigns to construct and maintain the facility in accordance with approved plans and specifications.

7. Liability of City. The Developer and Owner understand and agree that the City shall not be liable to the Developer or the Owner, or their respective heirs, successors or assigns, or to any third parties for any damages resulting from the Developer's or Owner's failure to construct, maintain or repair the Drainage Facility.

8. Indemnification. The Developer owns and controls the Drainage Facility and shall not permit the Drainage Facility to constitute a hazard to the health or safety of the general public. The Developer agrees to indemnify, defend and hold harmless the City, its officials, agents and employees, and the Owner, its heirs, successors and assigns from any claims, actions, suits or other proceedings arising from or out of the negligent acts or omissions of the Developer, its agents, representatives, contractors or subcontractors or arising from the failure of the Developer, its agents, representatives, contractors or subcontractors to perform any act or duty required of the Developer herein; provided, however, to the extent, if at all, Section 56-7-1 NMSA 1978 is applicable to this Agreement, this Agreement to indemnify will not extend to liability, claims, damages, losses or expenses, including attorney's fees, arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications by the respective indemnitee, or the agents or employees of the respective indemnitee; or (2) the giving of or the failure to give direction or instructions by the respective indemnitee, where such giving or failure to give directions or instructions is the primary cause of bodily injury to persons or damage to property.

9. Assessment. Nothing in this Easement and Covenant shall be construed to relieve the Owner or Developer, or their respective heirs, assigns and successors from an assessment against the Owner's or Developer's property for improvements under a duly authorized and approved Special Assessment District. The parties specifically agree that the value of the Drainage Facility will not reduce the amount assessed by the City.

10. Binding on Owner's Property. The easement, covenants and obligations of the Owner and Developer set forth herein shall be binding on the Owner and Developer, and their respective heirs, assigns and successors and on the Owner's Property and constitute covenants running with the Owner's Property until released by the City's Chief Administrative Officer as approved by the City Engineer.

11. Entire Covenant. This Covenant contains the entire agreement of the parties and supersedes any and all other agreements or understandings, oral or written, whether previous to the execution hereof or contemporaneous herewith.

12. Changes to Covenant. Changes to this Covenant are not binding unless made in writing, signed by all parties.

13. Effective Date of Covenant. This Covenant shall be effective as of the date of signature of the Owner and Developer.

DEVELOPER: Westland House (No.1) Ltd

By: G. Edward Dobbs
Its: President
Dated: _____

OWNER: Westland Development Co., Inc.

By: Barbara Page
Its: President & C.E.O.
Dated: _____

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

~~The foregoing~~ This instrument was acknowledged before me ~~this~~ on 28TH day of JUNE, 1994, by [name of person signing:] BARBARA PAGE [title or capacity, for instance, "President" or "Owner":] PRESIDENT & CEO of [name of the entity which owns the Property if other than the individual signing, for instance, the name of the corporation, partnership, or joint venture:] WESTLAND DEVELOPMENT COMPANY, INC.

Ponchita J. King
Notary Public

My Commission Expires:
11/16/94

My Commission Expires: _____

1493

STATE OF NEW ME O)
) ss
COUNTY OF BERNALILLO)

~~The foregoing~~ This instrument was acknowledged before me ~~this~~ on 28TH day of JUNE, 1994, by [name of person signing:] G. EDWARD DOBBS, [title or capacity, for instance, "President" or "Owner":] PRESIDENT of [the Developer if other than an individual, for instance, the name of the corporation, partnership, or joint venture:] WESTLAND HOUSE (No. 1)

Panchita J. King
Notary Public

My Commission Expires:
11/16/94

CITY OF ALBUQUERQUE:

Accepted:

By: Pauline E. Cc JPC
Director Public Works Department
Dated: 1.26.95

[EXHIBIT A ATTACHED]

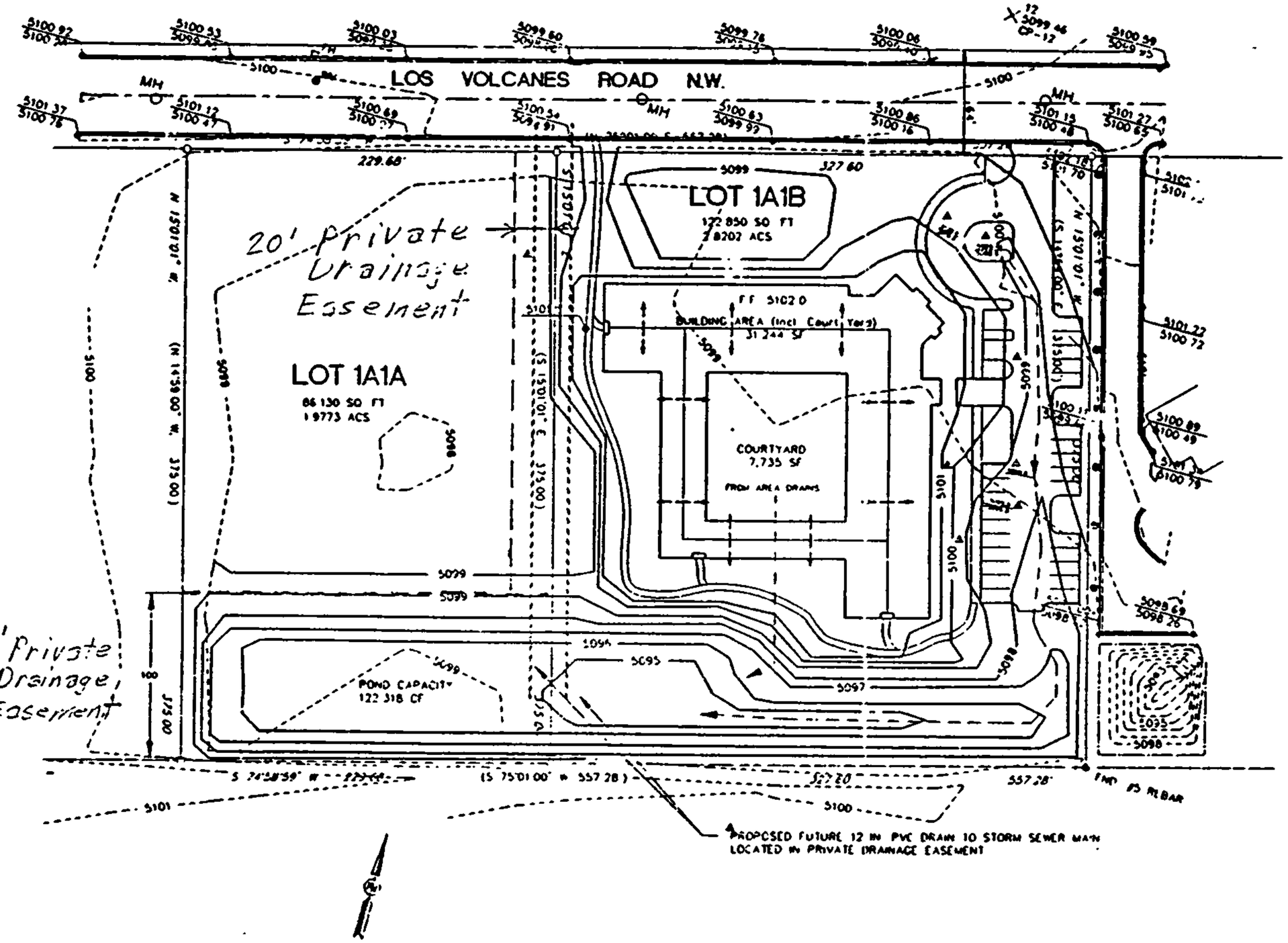
231F

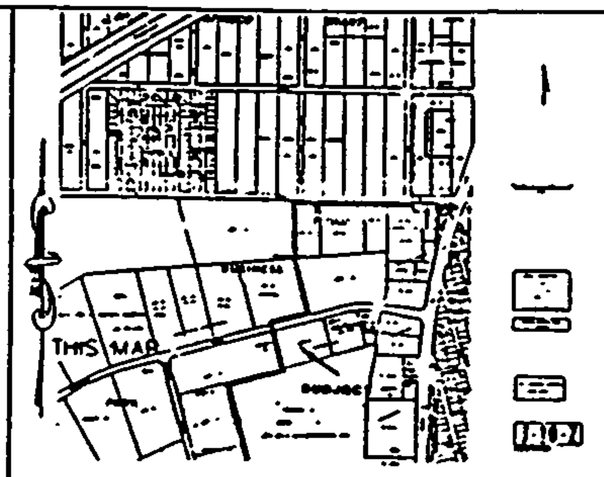
(APPROVED BY LEGAL AS TO FORM ONLY 9-6-88)

STATE OF NEW MEXICO
COUNTY OF BERNALILLO
FILED FOR RECORD

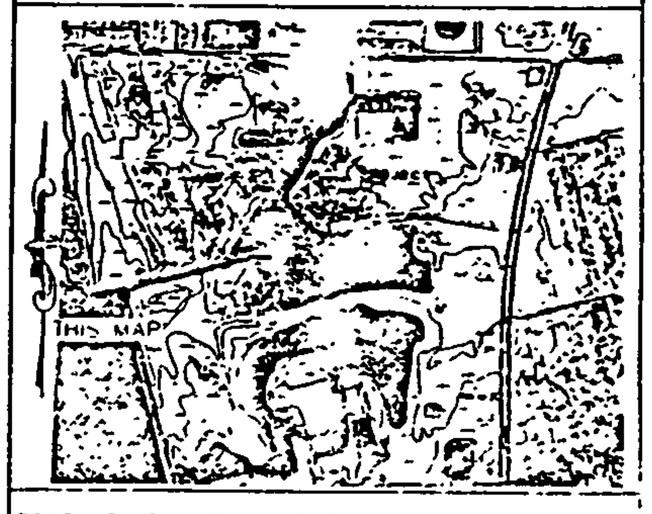
1995 JAN 26 AM 10: 17

95-7485-7494
BK
JUDY D. WOOD
CO. CLERK





PORTION OF FLOODWAY MAP PANEL 350003 0027



ZONE ATLAS MAP# J-10-Z (AGIS)

SITE CONDITIONS

EXISTING		
UNDISTURBED VACANT LAND - CLASS "B"		
DPM SECTION 22.2, TABLE A-4	122 850 SF	
PROPOSED DEVELOPMENT		
IMPERVIOUS SURFACES - CLASS "D"		
BUILDING (Less Courtyard)	23 509 SF	
WALKS	7,557 SF	
PAVING	15 025 SF	
WALKS AND IMPROVEMENTS IN COURTYARD	3,86[illegible] SF	(ASSUMED 50%)
TOTAL CLASS "D"	49 96[illegible] SF	
LANDSCAPING - CLASS "B"	72 88[illegible] SF	

LEGAL DESCRIPTION

LOTS 1A1A AND LOT 1A1B OF LOT 1A1, TRACT "A" AND "D", UNIT 2

LEGEND

NEW CONTOUR 5000

EXISTING CONTOUR 4950

FLOW LINE

GRAPHIC SCALE

1" = 5'

CONTOURS:

CAMI
CONSTRUCTION ANALYSIS & MANAGEMENT, INC.
MECHANICAL & CIVIL ENGINEERS

THIS PLAN IS TO BE USED WITH DRAINAGE REPORT DATED APRIL 1994

NO.	DATE	DESCRIPTION

PROPOSED ASSISTED LIVING FACILITY

DRAINAGE PLAN

C2

25

CITY OF
Albuquerque

P.O. Box 1293 Albuquerque, NM 87103

June 7, 1996

Martin J. Chávez, Mayor

Raymond Hensley, PE
C.A.M.I.
P.O. Box 21940
Albuquerque, NM 87154

RE: ENGINEER'S CERTIFICATION FOR ASSISTED LIVING CENTER (J-10/D2J)
RECEIVED MAY 10, 1996 FOR CERTIFICATE OF OCCUPANCY
ENGINEER'S STAMP DATED 5/9/96

Dear Mr. Hensley:

Based on the information included in the submittal referenced above, City Hydrology has the following comments that must be addressed:

The DPM requires the Engineer to certify *substantial compliance*. Use the approved plan, dated 1/31/95, for the Engineer's Certification. Indicate the as-built elevations on the Plan. Calculate the as-built volume of the pond. Include a copy of the executed & recorded *private facility drainage covenant and reservation of drainage easement* in the submittal.

If you have any questions about this project, You may contact me at 768-2727.

Sincerely,

John P. Curtin, P.E.
Civil Engineer, Hydrology

c: Andrew Garcia

RAINAGE INFORMATION SHEET

PROJECT TITLE: Wastland House ZONE ATLAS/DRNG. FILE #: J10/D2J

RB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: ~~6300~~ 6300- Los Volcanes

CITY ADDRESS: 6600 Los Volcanes NW.

ENGINEERING FIRM: C.A.M.I. CONTACT: Raymond Brantley

ADDRESS: 4001 Juan Tabo NE #A PHONE: 298-3477

OWNER: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

ARCHITECT: DPI CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT
____ DRAINAGE PLAN
____ CONCEPTUAL GRADING & DRAINAGE PLAN
____ GRADING PLAN
____ EROSION CONTROL PLAN
__X__ ENGINEER'S CERTIFICATION
____ OTHER _____

PRE-DESIGN MEETING:

____ YES
____ NO
____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL
____ PRELIMINARY PLAT APPROVAL
____ S. DEV. PLAN FOR SUB'D. APPROVAL
____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
____ SECTOR PLAN APPROVAL
____ FINAL PLAT APPROVAL
____ FOUNDATION PERMIT APPROVAL
____ BUILDING PERMIT APPROVAL
__X__ CERTIFICATE OF OCCUPANCY APPROVAL (TEMP)
____ GRADING PERMIT APPROVAL
____ PAVING PERMIT APPROVAL
____ S.A.D. DRAINAGE REPORT
____ DRAINAGE REQUIREMENTS
____ OTHER _____ (SPECIFY)

30 day Temp issued on 5-10-96

DATE SUBMITTED: May 8, 1996

BY: Raymond Brantley

RECEIVED
MAY 10 1996

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

February 17, 1995

Raymond Hensley, P.E.
C.A.M.I.
P.O. Box 21940
Albuquerque, N.M. 87154

RE: REVISED DRAINAGE PLAN FOR ASSISTED LIVING CENTER (J-10/D2J)
RECEIVED FEBRUARY 3, 1995 FOR BUILDING PERMIT APPROVAL
ENGINEER'S STAMP DATED 1/31/95

Dear Mr. Hensley:

Based on the information included in the submittal referenced above, City Hydrology approves this project for Building Permit.

Include a copy of the approved Drainage Plan, dated 1/31/95, in the set of construction documents that will be submitted to Code Administration for the Building Permit.

Engineer's Certification of grading & drainage per DPM checklist must be approved before any Certificate of Occupancy will be released.

If you have any questions about this project, You may contact me at 768-2727.

Sincerely,

John P. Curtin

John P. Curtin, P.E.
Civil Engineer/Hydrology

c: Andrew Garcia
George Bolling, DPI, 3901 San Pedro NE 87110

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Assisted Care Living ZONE ATLAS/DRNG. FILE #: J-10/D25

RB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: Lot 1A1, Tract N & O, Unit 2, Atrisco Business Park

CITY ADDRESS: _____

ENGINEERING FIRM: C.A.M.T. CONTACT: Raymond Hensley

ADDRESS: 4001 Montano NW, NM PHONE: 298-3477

OWNER: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

ARCHITECT: DPI CONTACT: George Bollinger

ADDRESS: 3901 San Pedro PHONE: 298-1575

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT

__X__ DRAINAGE PLAN

____ CONCEPTUAL GRADING & DRAINAGE PLAN

____ GRADING PLAN

____ EROSION CONTROL PLAN

____ ENGINEER'S CERTIFICATION

____ OTHER _____

PRE-DESIGN MEETING:

____ YES

____ NO

____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL

____ PRELIMINARY PLAT APPROVAL

____ S. DEV. PLAN FOR SUB'D. APPROVAL

____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL

____ SECTOR PLAN APPROVAL

____ FINAL PLAT APPROVAL

____ FOUNDATION PERMIT APPROVAL

__X__ BUILDING PERMIT APPROVAL

____ CERTIFICATE OF OCCUPANCY APPROVAL

____ GRADING PERMIT APPROVAL

____ PAVING PERMIT APPROVAL

____ S.A.D. DRAINAGE REPORT

____ DRAINAGE REQUIREMENTS

____ OTHER _____ (SPECIFY)

Response to Letter dated 1/11/95

DATE SUBMITTED: 1/31/95

BY: Raymond Hensley

FEB 3 1995

HYDROLOGY DIVISION

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 11, 1995

Raymond Hensley, P.E.
C.A.M.I.
P.O. Box 21940
Albuquerque, N.M. 87154

RE: REVISED DRAINAGE PLAN FOR ASSISTED LIVING CENTER (J-10/D2J), RECEIVED DECEMBER 22, 1994 FOR BUILDING PERMIT APPROVAL ENGINEER'S STAMP DATED 12/21/94

Dear Mr. Hensley:

Based on the information included in the submittal referenced above, City Hydrology has the following comments that must be addressed before Building Permit approval:

Comment 1, dated 8/8/94, has not been thoroughly addressed. A water block must be provided at the entrance on Los Volcanes Rd NW. Attached is a marked up copy of the parking lot showing necessary locations for spot elevations. It would increase the probability that the parking lot would be paved correctly, if the invert was located a constant distance from the property line instead of meandering.

If you have any questions about this project, You may contact me at 768-2727.

Sincerely,

John P. Curtin, P.E.
Civil Engineer/Hydrology

c: Andrew Garcia

'AINAGE INFORMATION SHEET

PROJECT TITLE: Assisted Care Living Center ZONE ATLAS/DRNG. FILE #: J-10/D2J

'RB #: 94-219 EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: Lot 1A1-A/B Atrisco Business Park

CITY ADDRESS: _____

ENGINEERING FIRM: C.A.M.I. CONTACT: Raymond Hensley, P.E.

ADDRESS: P.O. Box 21940 87154 4520 Montgomery BLvd. N.E. PHONE: 298-3477 889-9558

OWNER: Westland Development Partnership CONTACT: Ed Dobbs

ADDRESS: _____ PHONE: _____

ARCHITECT: Design Professionals Inc. CONTACT: George Bolling

ADDRESS: _____ PHONE: _____

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT
XX DRAINAGE PLAN
____ CONCEPTUAL GRADING & DRAINAGE PLAN
____ GRADING PLAN
____ EROSION CONTROL PLAN
____ ENGINEER'S CERTIFICATION
____ OTHER Resubmission

PRE-DESIGN MEETING:

____ YES
____ NO
____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL
____ PRELIMINARY PLAT APPROVAL
____ S. DEV. PLAN FOR SUB'D. APPROVAL
____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
____ SECTOR PLAN APPROVAL
____ FINAL PLAT APPROVAL
____ FOUNDATION PERMIT APPROVAL
XX BUILDING PERMIT APPROVAL
____ CERTIFICATE OF OCCUPANCY APPROVAL
____ GRADING PERMIT APPROVAL
____ PAVING PERMIT APPROVAL
____ S.A.D. DRAINAGE REPORT
____ DRAINAGE REQUIREMENTS
____ OTHER _____ (SPECIFY)

DATE SUBMITTED: 12/20/94

BY: Raymond Hensley

Raymond Hensley, P.E.

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

August 8, 1994

Raymond Hensley, P.E.
C.A.M.I., 4520 Montgomery NE #5
Albuquerque, N.M. 87109

RE: DRAINAGE REPORT FOR ASSISTED CARE LIVING CENTER (J-10/D2J)
RECEIVED JULY 18, 1994 FOR BUILDING PERMIT APPROVAL
ENGINEER'S STAMP DATED 7-13-94

Dear Mr. Hensley:

Based on the information included in the submittal referenced above, City Hydrology has the following comments that must be addressed prior to Building Permit approval:

1. Proposed spot elevations are required at each corner of the parking lot to verify that there is positive drainage to the pond. Curb openings are required at the south end of the parking lot to allow runoff to reach the pond. Sufficient proposed spot elevations are required at the drivepad to verify the water block. An enlarged plan of the parking lot would be a good method of showing the detailed elevations necessary for this area.

2. Only one 12"PVC pipe is required to drain the pond. Lot 1A1A was recommended because it would place the pipe further from the building. Typically easements are 20' wide for one pipe. Indicate proposed inverts for the 12"PVC pipe.

If you have any questions about this project, You may contact me at 768-2727.

Sincerely,

John P. Curtin, P.E.
Civil Engineer/Hydrology

c: Andrew Garcia

WPHYD/8487/jpc

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

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Assisted Care Living Center ZONE ATLAS/DRNG. FILE #: J-10/D2J

'RB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: Lot 1A1-A/B Atrisco Business Park

CITY ADDRESS: _____

ENGINEERING FIRM: C.A.M.I. CONTACT: Raymond Hensley

ADDRESS: 4520 Montgomery Blvd N.E. PHONE: 889-9558

OWNER: Westland Development Partnership CONTACT: Ed Dobbs

ADDRESS: _____ PHONE: _____

ARCHITECT: Design Professionals Inc. CONTACT: George Bolling

ADDRESS: _____ PHONE: _____

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

- X DRAINAGE REPORT
- X DRAINAGE PLAN
- ____ CONCEPTUAL GRADING & DRAINAGE PLAN
- ____ GRADING PLAN
- ____ EROSION CONTROL PLAN
- ____ ENGINEER'S CERTIFICATION
- ____ OTHER Resubmission

PRE-DESIGN MEETING:

- ____ YES
- ____ NO
- ____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- ____ SKETCH PLAT APPROVAL
- ____ PRELIMINARY PLAT APPROVAL
- ____ S. DEV. PLAN FOR SUB'D. APPROVAL
- ____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ____ SECTOR PLAN APPROVAL
- ____ FINAL PLAT APPROVAL
- ____ FOUNDATION PERMIT APPROVAL
- X BUILDING PERMIT APPROVAL
- ____ CERTIFICATE OF OCCUPANCY APPROVAL
- ____ GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ S.A.D. DRAINAGE REPORT
- ____ DRAINAGE REQUIREMENTS
- ____ OTHER _____ (SPECIFY)

DATE SUBMITTED: 7/15/94

BY: Raymond J. Hensley

HYDROLOGY DIVISION
JUL 18 1994

CAMI

CONSTRUCTION ANALYSIS
& MANAGEMENT, INC.

July 12, 1994

John Curtin, P.E.
City of Albuquerque
Hydrology Department
P.O. Box 1293
Albuquerque, New Mexico 87103

RE: **CONCEPTUAL DRAINAGE REPORT FOR ASSISTED CARE LIVING CENTER (J-10/D2J) RECEIVED APRIL 14, 1994 FOR SITE DEV PLAN FOR BLDG PERMIT APPROVAL ENGINEER'S STAMP DATED 4/12/94**

Dear Mr. Curtin:

In response to your letter dated April 28, 1994, we are submitting the following revisions and amendments to the Drainage Report and Drainage Plan as you requested.

The following are the positive responses with the three reiterated items(1) of said letter:

1. *Provide calculations to verify the volume of proposed fill and the volume of additional ponding provided.*

Please refer to the revised drainage report, page 5, for the fill volumes; and to page 6 for the pond calculations.

2. *Proposed contours do not reflect the proposed parking lot. Spot elevations will be necessary to define this area.*

Accompanying the revised Drainage Report, there is a revised Drainage Plan. Please note on the plan those revisions indicated by the triangle symbol inclosing the number 1. These are the revisions suggested in your April letter. Additional information concerning elevations, both spot and contour, have been provided.

3. *A Private Facility Drainage Covenant must be executed & recorded for the temporary retention pond. The future 12" PVC connection to the storm main must be shown on Lot 1A1A in a private drainage easement.*

The Private Facility Drainage Covenant was presented to the City Engineers office for filing the week of 5 July, 1994 in accordance with DPM procedures. The Drainage Plan reflects the 12" PVC connection and easement requirements.

If you have any questions concerning this project please call, 889-9558. I appreciate your consideration and input toward this project.

Sincerely,

Raymond Hensley,P.E
President

ATRIUM NORTH
P.O. Box 21940 • Albuquerque, New Mexico 87154
(505) 889-9558 • Fax (505) 889-0625

DRAINAGE REPORT

FOR

ASSISTED CARE LIVING CENTER
LOT 1A1 UNIT 2
ATRISCO BUSINESS PARK

Zone Atlas Sheet J-10-Z

JULY 1994

(REVISED FROM APRIL 1994)

PREPARED FOR

Design Professionals Inc.
3939 San Pedro Dr. N.E.
Building F, Suite A
Albuquerque, New Mexico 87109

PREPARED BY

Construction, Analysis and Management, Inc.
4250 Montgomery, N.E.
Suite 5,
Albuquerque, New Mexico 87109

Raymond Hensley

Raymond Hensley, P.E.
N.M.P.E. 7873

RECEIVED
7-5-94
JUL 18 1994
HYDROLOGY

RAYMOND HENSLEY
NEW MEXICO
No. 7873
REGISTERED PROFESSIONAL ENGINEER

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PURPOSE

The purpose of this report is to analyze the existing and proposed developed drainage on the site for the Assisted Care Living Center, and to propose solutions to control the excess storm water runoff resulting from the 100-year storm falling on the adjacent and subject parcels.

PROJECT LOCATION AND DESCRIPTION

The site is located west of Coors Road on the south side of Los Volcanes in the Atrisco Business Park including 2.88202 acres more or less. It is bounded on the east by a commercial development used as a senior center, and on the west by commercial lot. (see the appendix, plate 1 for location map and plate 4 for floodway map). The existing site consists of 2.88 acres of undeveloped and uncompacted surface. The parcel slopes from east to west at about .5 percent. All undeveloped surfaces are vegetated with weeds and native grasses. The proposed development will create 62,614 square feet of impermeable surface.

EXISTING DRAINAGE CONDITIONS

The site is bounded by a paved roadway, Los Volcanes Rd., on the north, and undeveloped land to the south and west. A developed lot lies to the east. The subject is located within and beneath the 100 year prudent limit flood plain. The vacant land adjacent to the west is the lowest portion of the flood plain. Please refer to figure 1.

The topographic survey (figure-1/plate 2) indicates the property at an existing mean elevation of 5099 feet above MSL. The current project 100 year flood limits are at 5101 feet above MSL. This condition was discussed with hydrology staff in a pre-design meeting March 1994.

The location of the property, shown on plate 1, indicates that the precipitation zone for the subject is Zone 1 according to the Development Process Manual, Volume 2, Section 22.2 - HYDROLOGY, Section A-1. Likewise, the soil conditions are given by Table A-4 as Treatment A.

JUL 18 1994

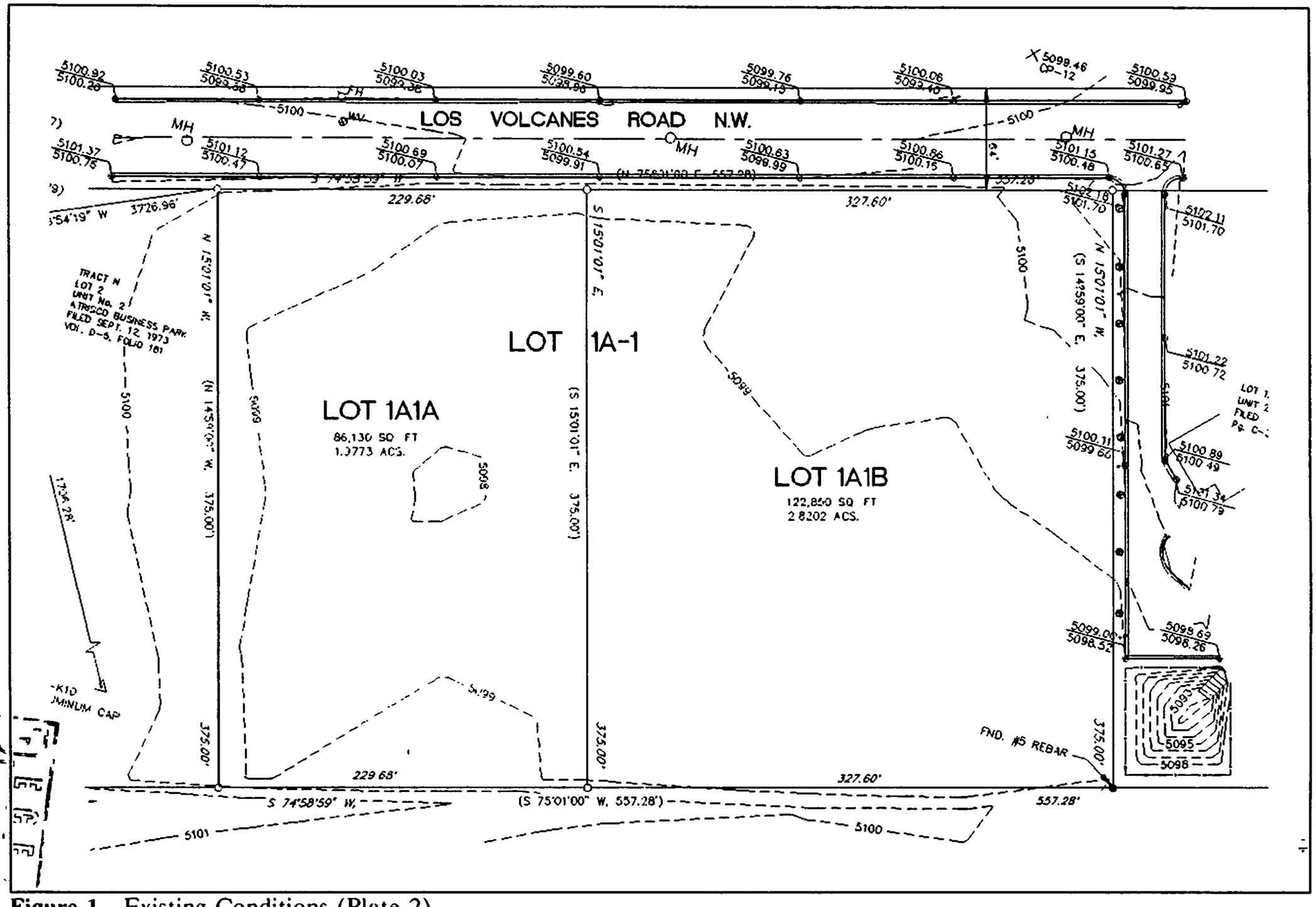

Figure 1 - Existing Conditions (Plate 2)

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The storm water flows are self contained within the lots 1A1-A and 1A1-B. The following are the calculations for the flood water generation for lot 1A!1-B, the subject property, using the DPM, Section 22.2, A-6:

$$Q_{p100} - Q_{pA} \times A_A$$

(1) Equation a-10

BASIN	AREA	PEAK DISCHARGE (table A-9)	FLOW
Treatment A	122,850 sf	1.29 cfs/acre	3.628 cfs

This flow generated on lot 1A1-B sheets to lot 1A1-A.

DEVELOPED DRAINAGE CONDITIONS

The site plan (Plate 3) shows the configuration of the proposed development of the property. Approximately 49,961 square feet will be converted to impermeable surfaces. According to the following table:

Building	23,509 sf.
Walks	7,559 sf.
Paving	15,026 sf.
Courtyard Improvements	3,667 sf.
Total	49,961 sf.

Note: It is assumed that the courtyard will be primarily landscaped for at least 50% of the area.

Subsequent to development the property will be consist of impervious surfaces, Treatment "D", and landscaped areas, Treatment "B".

DPM, Section 22.2, A-6:

$$Q_{p100} = Q_{pB} \times A_B + Q_{pD} \times A_D$$

(2) Equation a-10

BASIN	AREA	PEAK DISCHARGE (table A-9)	FLOW
Treatment B	72,889 sf	2.03 cfs/acre	3.397 cfs
Treatment D	49,961 sf	4.37 cfs/acre	5.012 cfs
Total	122,850 sf		8.409 cfs

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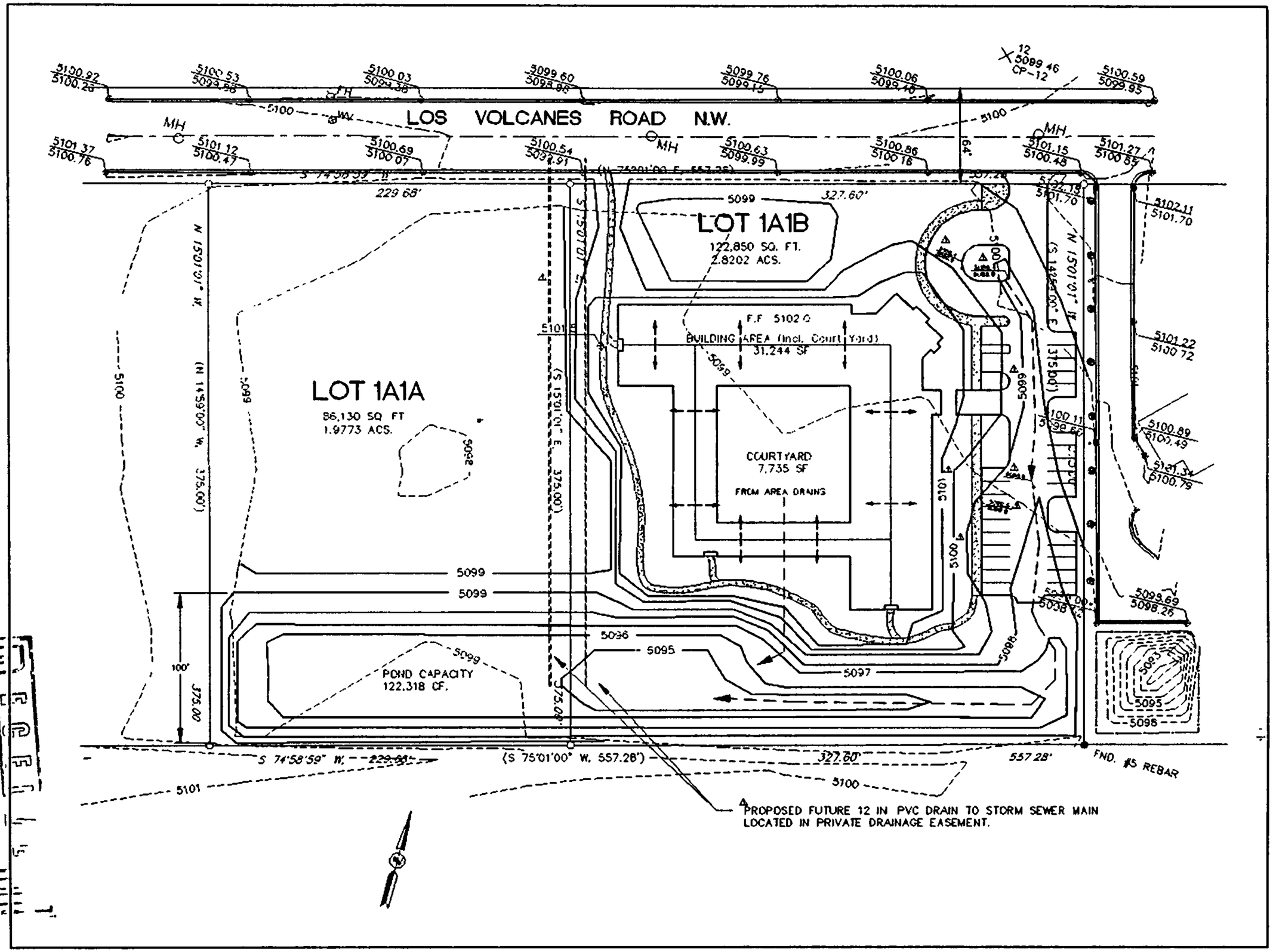

Figure 2 - Developed Site Plan (Plate 3)

DISPLACEMENT AND FLOOD PONDING CAPACITY

As a result of the subject property existing within the flood plain, it is necessary to off set all additional volumes of development above existing grade to the elevation of the estimated flood plain elevation of 5101 feet. The total amount of developed fill is estimated to be 100,804 cf. The table below gives the area of each contour elevation. Each of these were integrated using Simpson's Rule to yield the volume of fill above existing elevation.

	Developed		Existing	
Elevation Contour	Area	Volume Contribution	Area	Volume Contribution
5098	173,505.	0.0	207,095.	0.0
5099	99,749.	136,627.0	65,831.	136,463.0
5100	60,658.	80,204.0	713.	33,272.0
5101	46,758.	53,708.0	N/A	
Total		270,539.0		169,735.0

Total fill above existing grade: 270,539 - 169,735 = 100,804 cf

The base pond volume required is therefore 100,804 cf (2.31 ac-ft). In addition to this amount, the development will generate excess flows from impervious surfaces that must be added to this total. Because of the nature of the existing conditions and assumed percolation rates, we have assumed the necessity of 24 hour retention of these excess flows. The following is a tabulation of the required additional pond capacity:

$$V_{360} = \frac{E_A \times A_A + E_B \times A_B + E_D \times A_D}{12}$$

(3) Equation a-6

EXISTING CONDITIONS:

BASIN	AREA	EXCESS (table A-8)	VOLUME
Treatment A	122,850 sf	.44 inches	4,505. cf

DEVELOPED CONDITIONS:

BASIN	AREA	EXCESS (table A-9)	FLOW
Treatment B	72,889 sf	.67 inches	4,070. cf
Treatment D	49,961 sf	1.97 inches	8,202. cf
Total	122,850 sf		12,272. cf

The requirement for the 24 hour retention is given by:

$$V_{1440} = V_{360} + A_D \times (P_{1440} - P_{360})/12 \qquad \text{(4) Equation a-7}$$

$$V_{1440} = 12{,}272 + 49{,}961 \times (2.66 - 2.2)/12$$

The difference between the existing conditions and the developed conditions would require an additional 9,599 cf. (.220 ac-ft.)

The total required pond volume is the sum of the displacement plus excess developed flows, or 110,403 cf. (2.535 ac-ft). The design indicated in plate 3 would allow 122,318 cf. (2.808 ac-ft) as calculated in the following table. A pond of this size may also allow for some future development on lots 1A1A or 1A1B.

Elevation Contour	Area	Volume Contribution
5099	57,122.	0.0
5098	40,353.	48,738.0
5097	30,218.	36,286.0
5096	20,660.	25,439.0
5095	5,049.	12,855.0
Total		122,318.0

JUL 18 1994
HYDROLOGY DIVI...

FUTURE DEVELOPMENTS

The West Bluff Drainage Plan has indicated a proposed 84 inch RCP at a .006 ft/ft slope be located in Los Volcanes Rd. A December 23, 1988 communication from Roger

Green to Dwayne Sheppard in the file of West Mesa Senior Center indicates that there are some problems with the proposed design of the system. A copy of this memorandum is included in the appendix. A proposed design change from 84 inch to 68 x 109 oval at .0045 ft/ft slope was given. This would allow 2 feet of cover of the storm sewer main. If a future connection of a 12 inch outlet from the subject property were installed at the location of the proposed pond it could be connected to this proposed main system with an approximate slope of .012 ft/ft from a catch basin elevation of 5097 feet.

We have reviewed Hydrology Department Staff's (Mr. Green) calculations and design suggestions for the modification of the West Bluff Drainage Plan recommendations. We agree with the memorandum suggestions. However, the final solution may take anyone of a variety of possible solutions.

RECOMMENDATIONS

Construct a retention pond of a capacity of at least 112,873 cf. This will require the use of lands located to the west of the subject property for additional ponding capacity. Therefore an easement should be given to the subject property from the adjacent land to the west to allow the given ponding required. This easement and pond will be required until such time as the proposed 84 inch RCP storm drainage system is constructed in Los Volcanes Rd.

When the storm drainage system is completed in Los Volcanes a 12 inch drain and inlet in the proposed pond will direct storm flow to the new system. The ponding in the rear of the property will be altered to a catch basin. An easement and location is given on the plan for this future connection. When this connection is accomplished the ponding will no longer be required and the easement to the adjacent property for the pond may be returned to the owners of lot 1A1-A to the west.

We can not recommend installation of the future drain line to the Los Volcanes Rd. at this time, because of the status of the final design assumptions of the future main storm drain. However, we recommend that the location of any future drain line be dedicated at a location along the west property line from a proposed catch basin at the same location of the proposed pond to the street.

Given the flood plain elevation of 5101 feet above MSL, the proposed building will be constructed at a finished floor elevation of 5102 feet.

CONCLUSIONS

If the above recommendations are followed, the site will be protected from flooding and the potential downstream flooding situation will not be altered significantly during the 100-year storm event.

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APPENDIX

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VICINITY MAP
Plate 1

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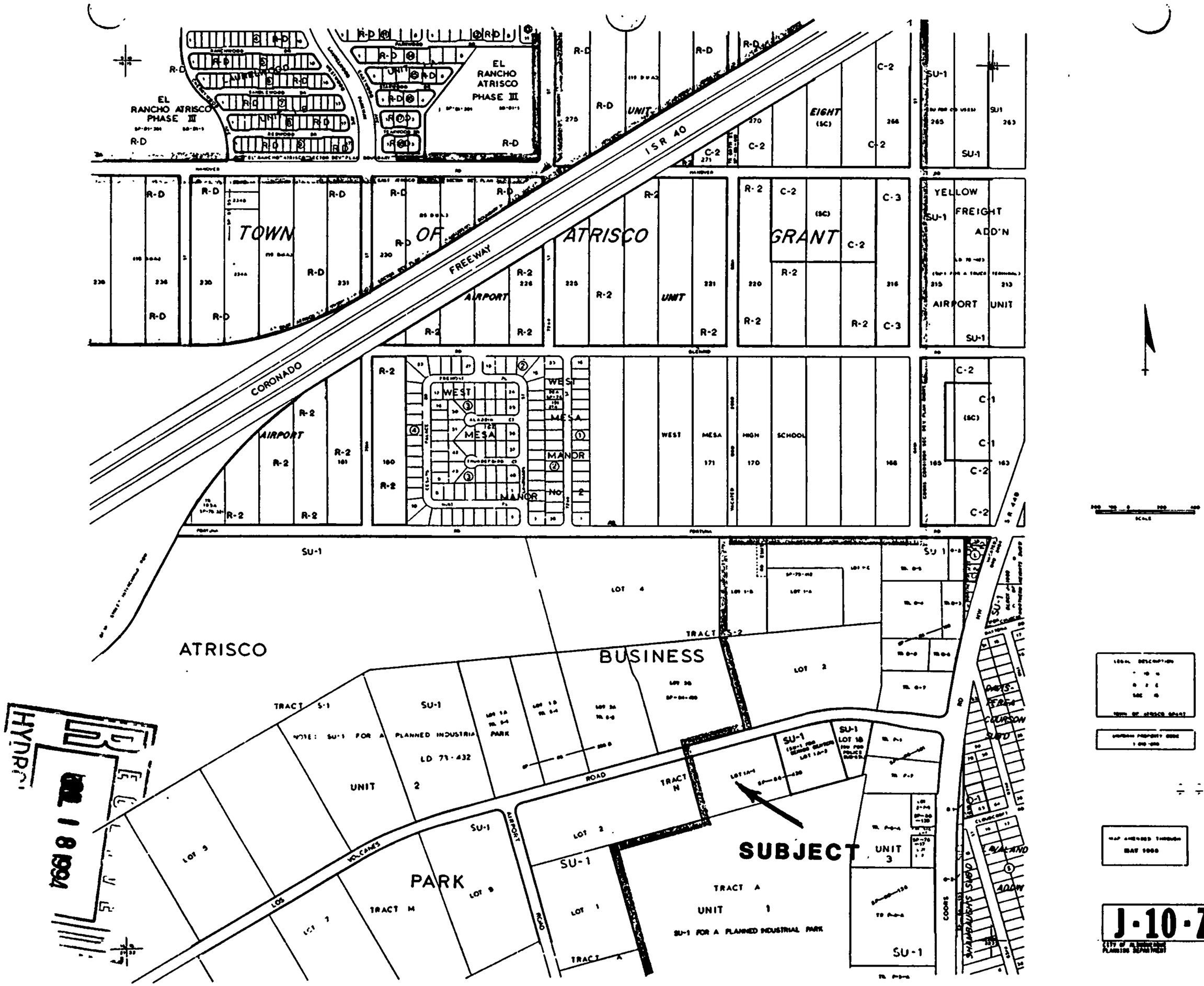
EL RANCHO ATRISCO PHASE III
EL RANCHO ATRISCO PHASE III
UNIT
EIGHT (SC)
ISR 40
TOWN OF ATRISCO GRANT
FREEWAY
AIRPORT
UNIT
YELLOW FREIGHT ADD'N
AIRPORT UNIT
CORONADO
WEST MESA MANOR
WEST MESA MANOR NO 2
WEST MESA
HIGH SCHOOL
SU-1
R-D
R-2
C-1
C-2
C-3
ATRISCO
BUSINESS
PARK
SUBJECT
TRACT A
UNIT 1
SU-1 FOR A PLANNED INDUSTRIAL PARK
UNIT 3
UNIT 2
TRACT M
TRACT N
LOT 4
LOT 2
LOT 3
LOT 1
LOT 9
ROAD
VOLCANES
AIRPORT
COORS
4000W
SCALE

J-10-Z

FLOODWAY MAP
PORTION OF FEMA MAP PANEL 35002 0027
PLATE 4

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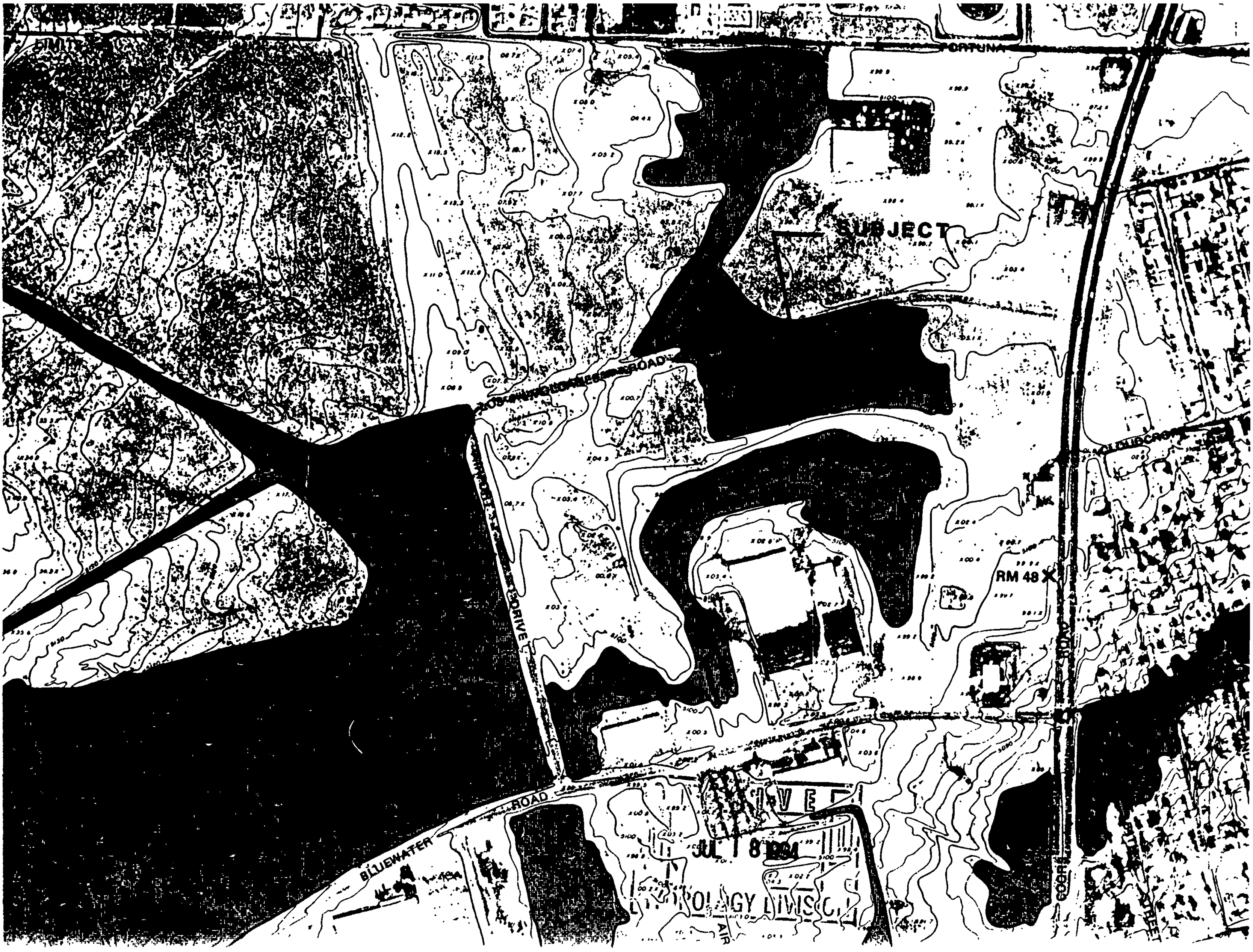
SUBJECT
ORTUNA
BLUEWATER
ROAD
DRIVE
RM 48
JUL 18 1984

HYDROLOGY MEMORANDUM, DEC. 1988
From Roger Green to Dwayne Sheppard
Concerning the West Bluff Drainage Plan

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FILE COPY

MEMORANDUM:

December 23, 1988

CITY OF ALBUQUERQUE PUBLIC WORKS DEPT.

ENGINEERING GROUP

TO: Dwayne Sheppard, Hydrology/ Special Planning

FROM: Roger Green, Hydrology Section, Development

Roger

SUBJECT: West Bluff Drainage Plan

Recent review of development plans on Los Volcanes Road, west of Coors, has surfaced a problem with the proposed storm drain System No. 512 as shown in appendix D of the West Bluff Drainage Plan. An 84" RCP at 0.006'/' slope is proposed. Starting at the known invert of elev. 5078.5 at the I-40 box culvert crossing and following the proposed grades upstream the 84" RCP soffit would be above the street grade by 1.0 feet. An alternative solution that will work is to use a 68"x109" oval pipe at a 0.0045 '/' slope. This will still provide capacity for the 461 cfs and provide 2.0 feet of cover for the pipe at the sag in Los Volcanes Road, elev. 5098.5

The West Mesa Senior Center is being built on Los Volcanes Road and will include a retention pond with a storm drain to the street R.O.W. to be capped until the public storm drain is constructed in Los Volcanes. At that time the retention pond will be replaced by a catch basin and the private drain connected.

xc. Dan Hogan, Hydrology Design

RAG/(WP+979)

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JUL 18 1994
HYDROLOGY Div.

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

April 28, 1994

Raymond Hensley, P.E.
C.A.M.I., 4520 Montgomery NE #5
Albuquerque, N.M. 87109

RE: CONCEPTUAL DRAINAGE REPORT FOR ASSISTED CARE LIVING CENTER (J-10/D2J)
RECEIVED APRIL 14, 1994 FOR SITE DEV PLAN FOR BLDG PRMT APPROVAL
ENGINEER'S STAMP DATED 4/12/94

Dear Mr. Hensley:

Based on the information included in the submittal referenced above, City Hydrology approves this project for Site Dev Plan for Building Permit.

The following comments must be addressed prior to Building Permit approval:

1. Provide calculations to verify the volume of proposed fill and the volume of additional ponding provided.

2. Proposed contours do not reflect the proposed parking lot. Spot elevations will be necessary to define this area.

3. A Private Facility Drainage Covenant must be executed & recorded for the temporary retention pond. The future 12"PVC connection to the storm main must be shown on Lot 1A1A in a private drainage easement.

If you have any questions about this project, You may contact me at 768-2727.

Sincerely,

John P. Curtin, P.E.
Civil Engineer/Hydrology

c: Fred Aguirre

WPHYD/8487/jpc

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

DRAINAGE INFORMATION SHEET

PROJECT TITLE: ASSISTED CARE LIVING CNTR ZONE ATLAS/DRNG. FILE #: J-10/D2J

DRB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: LOT 1A1 TRACT N UNIT 2, ATRISCO BUSINESS PARK

CITY ADDRESS: _____

ENGINEERING FIRM: C.A.M.I CONTACT: RAYMOND HENSLEY

ADDRESS: 4520 MONTGOMERY NE #5 PHONE: 889-9558

OWNER: WESTLAND DEVELOPMENT COMPANY INC CONTACT: _____

ADDRESS: _____ PHONE: _____

ARCHITECT: DESIGN PROFESSIONALS INC. CONTACT: GEORGE BELLING

ADDRESS: 3939 SAN PEDRO DR. N.E. PHONE: 881-6336

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

- X DRAINAGE REPORT
- X DRAINAGE PLAN
- ____ CONCEPTUAL GRADING & DRAINAGE PLAN
- ____ GRADING PLAN
- ____ EROSION CONTROL PLAN
- ____ ENGINEER'S CERTIFICATION
- ____ OTHER _____

PRE-DESIGN MEETING:

- Y YES
- ____ NO
- ____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- ____ SKETCH PLAT APPROVAL
- ____ PRELIMINARY PLAT APPROVAL
- ____ S. DEV. PLAN FOR SUB'D. APPROVAL
- X S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ____ SECTOR PLAN APPROVAL
- ____ FINAL PLAT APPROVAL
- ____ FOUNDATION PERMIT APPROVAL
- ____ BUILDING PERMIT APPROVAL
- ____ CERTIFICATE OF OCCUPANCY APPROVAL
- ____ GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ S.A.D. DRAINAGE REPORT
- ____ DRAINAGE REQUIREMENTS
- ____ OTHER _____ (SPECIFY)

DATE SUBMITTED: April 11, 1994

BY: _____

RECEIVED
APR 14 1994
HYDROLOGY

8487

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

PRE-DESIGN CONFERENCE

DRAINAGE FILE/ZONE ATLAS PAGE NO.: J-10 DATE: 3-18-94

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

SUBJECT: Los Volcanes Assisted Living

STREET ADDRESS: Los Volcanes

LEGAL DESCRIPTION: Tract 1A1 Atrisco Bus. Park Unit 1

APPROVAL REQUESTED:

____	PRELIMINARY PLAT	____	FINAL PLAT
X	SITE DEVELOPMENT PLAN	____	BUILDING PERMIT
____	GRADING/PAVING PERMIT	____	OTHER

	WHO	REPRESENTING
ATTENDANCE:	Raymond Hensley	
	John Curtin	C.O.A./PWD/Hyd

FINDINGS:

Institution use Facility.

Site is on an A4 FHZ (EL 5101) on Panel 27. Buildings will require Flood proofing (F.F. 5102 minimum). Flood plain volume must be balanced by equal volume of ponding.

Drainage Plan should check to see that Concept of adjacent sites is still valid (S.D. Tie in).

Project must make provisions to tie into Future West Mesa Diversion System when it is constructed.

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:	Raymond Hensley	SIGNED:	John P. Curtin
TITLE:	ENGINEER	TITLE:	CE/Hyd
DATE:	3/18/94	DATE:	3/18/94

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