#12

Federal Emergency Management Agency

Washington, D.C. 20472

99 OCT -4 AM 11:29

MAYOR'S OFFICE

Larry B.

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

IN REPLY REFER TO:
Case No.: 99-06-815P

The Honorable Jim Baca
Mayor, City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Community: City of Albuquerque, New Mexico
Community No.: 350002
Panel Affected: 35001C0336 D
Effective Date of This Revision: SEP 27 1999

102-D

Dear Mayor Baca:

This responds to a request that the Federal Emergency Management Agency (FEMA) revise the effective Flood Insurance Rate Map (FIRM) for Bernalillo County, New Mexico and Incorporated Areas (the effective FIRM for your community), in accordance with Part 65 of the National Flood Insurance Program (NFIP) regulations. In a letter dated February 12, 1999, Ms. Susan M. Calongne, P.E., City/County Floodplain Administrator, City of Albuquerque/Bernalillo County, requested that FEMA revise the FIRM to show the effects of more detailed topographic information along the western overbank of Snow Vista Channel from Gibson Boulevard (also known as Sage Road) to approximately 700 feet upstream.

All data required to complete our review of this request were submitted with letters from Ms. Lynn M. Mazur, P.E., Project Engineer, Water Resources Group, Bohannan-Huston, Inc., and Ms. Calongne.

We have completed our review of the submitted data and the flood data shown on the effective FIRM. We have revised the FIRM to modify the floodplain boundary delineations of the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood) along Snow Vista Channel. As a result of the modifications, the width of the Special Flood Hazard Area (SFHA), the area that would be inundated by the base flood, for Snow Vista Channel decreased. The modifications are shown on the enclosed annotated copy of FIRM Panel(s) 35001C0336 D. This Letter of Map Revision (LOMR) hereby revises the above-referenced panel(s) of the effective FIRM dated September 20, 1996.

The modifications are effective as of the date shown above. The map panel(s) as listed above and as modified by this letter will be used for all flood insurance policies and renewals issued for your community.

A review of the determination made by this LOMR and any requests to alter this determination should be made within 30 days. Any request to alter the determination must be based on scientific or technical data.

We will not physically revise and republish the FIRM and Flood Insurance Study (FIS) report for your community to reflect the modifications made by this LOMR at this time. When changes to the previously cited FIRM panel(s) and FIS report warrant physical revision and republication in the future, we will incorporate the modifications made by this LOMR at that time.

This LOMR is based on minimum floodplain management criteria established under the NFIP. Your community is responsible for approving all floodplain development, and for ensuring all necessary permits required by Federal or State law have been received. State, county, and community officials, based on knowledge of local conditions and in the interest of safety, may set higher standards for construction in the SFHA. If the State, county, or community has adopted more restrictive or comprehensive floodplain management criteria, these criteria take precedence over the minimum NFIP criteria.

Because this LOMR will not be printed and distributed to primary users, such as local insurance agents and mortgage lenders, your community will serve as a repository for these new data. We encourage you to disseminate the information reflected by this LOMR throughout the community, so that interested persons, such as property owners, local insurance agents, and mortgage lenders, may benefit from the information. We also encourage you to prepare an article for publication in your community's local newspaper. This article should describe the changes that have been made and the assistance that officials of your community will give to interested persons by providing these data and interpreting the NFIP maps.

This determination has been made pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (Public Law 93-234) and is in accordance with the National Flood Insurance Act of 1968, as amended (Title XIII of the Housing and Urban Development Act of 1968, Public Law 90-448), 42 U.S.C. 4001-4128, and 44 CFR Part 65. Pursuant to Section 1361 of the National Flood Insurance Act of 1968, as amended, communities participating in the NFIP are required to adopt and enforce floodplain management regulations that meet or exceed NFIP criteria. These criteria are the minimum requirements and do not supersede any State or local requirements of a more stringent nature. This includes adoption of the effective FIRM to which the regulations apply and the modifications described in this LOMR.

FEMA makes flood insurance available in participating communities; in addition, we encourage communities to develop their own loss reduction and prevention programs. Our Project Impact initiative, developed by FEMA Director James Lee Witt, seeks to focus the energy of businesses, citizens, and communities in the United States on the importance of reducing their susceptibility to the impact of all natural disasters, including floods, hurricanes, severe storms, earthquakes, and wildfires. Natural hazard mitigation is most effective when it is planned for and implemented at the local level, by the entities who are most knowledgeable of local conditions and whose economic stability and safety are at stake. For your information, we are enclosing a Project Impact Fact Sheet. For additional information on Project Impact, please visit our Web site at **www.fema.gov**.

If you have any questions regarding floodplain management regulations for your community or the NFIP in general, please contact the Consultation Coordination Officer (CCO) for your community. Information on the CCO for your community may be obtained by contacting the Director, Mitigation Division of FEMA in Denton, Texas, at (940) 898-5127. If you have any technical questions regarding this LOMR, please contact Mr. Alan Johnson of our staff in Washington, DC, either by telephone at (202) 646-3403 or by facsimile at (202) 646-4596.

Sincerely,

Alan A. Johnson, P.E., Project Engineer
Hazards Study Branch
Mitigation Directorate

For: Matthew B. Miller, P.E., Chief
Hazards Study Branch
Mitigation Directorate

Enclosure(s)

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

Mr. John P. Kelly, P.E.
Acting Executive Director
Albuquerque Metropolitan Arroyo
Flood Control Authority

Ms. Lynn M. Mazur, P.E.
Project Engineer
Water Resources Group
Bohannan-Huston, Inc.

NATIONAL FLOOD INSURANCE PROGRA

FIRM

FLOOD INSURANCE RATE MAP

BERNALILLO COUNTY, NEW MEXICO AND INCORPORATED AREAS

PANEL 336 OF 825

(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFF
ALBUQUERQUE, CITY OF		0336	D
BERNALILLO COUNTY, UNINCORPORATED AREAS		0336	D

REVISED TO REFLECT LOMR DATED SEP 27 1999

MAP NUMBER 35001C0336

EFFECTIVE DATE SEPTEMBER 20, 199

Federal Emergency Management Agen

Federal Emergency Management Agency

Washington, D.C. 20472

September 3, 1999

Ms. Susan M. Calongne, P.E.
City/County Floodplain Administrator
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

IN REPLY REFER TO:
Case No.: 99-06-815P
Community: City of Albuquerque, New Mexico
Community No.: 350002

316-AD/ACK

Dear Ms. Calongne:

This acknowledges receipt of additional data in support of, your request for a Letter of Map Revision for the above-referenced community. Pertinent information about the request is listed below.

Identifier:	Timarron Estates
Flooding Source:	Unnamed Tributary to Snow Vista Channel
FIRM Panel(s) Affected:	35001C0036 D

Our review of the data submitted indicates we have the minimum data needed to continue our evaluation. If we need additional data to complete our evaluation, or if delays are encountered, we will notify you in writing within 30 days of the date of this letter.

If you write to us about your request, please include the case number shown above in your letter. If you have any questions about the status of your request, please call our Technical Evaluation Contractor, Michael Baker Jr., Inc. The Revisions Coordinator for your State, Ms. Laura Bittner, may be reached at (703) 317-6292.

Sincerely,

Matthew B. Miller

Matthew B. Miller, P.E., Chief
Hazards Study Branch
Mitigation Directorate

cc: Ms. Lynn Mazur, P.E
Project Engineer
Bohannan-Huston, Inc.

#12

Federal Emergency Management Agency

Washington, D.C. 20472

MAY 21 1999

Ms. Susan M. Calongne, P.E.
City/County Floodplain Administrator
City of Albuquerque/Bernalillo County
P.O. Box 1293
City of Albuquerque, NM 87103

IN REPLY REFER TO:
Case No.: 99-06-815P
Community: City of Albuquerque, New Mexico
Community No.: 350002

316-AD

Dear Ms. Calongne:

This is in reference to your February 12, 1999, request for a Letter of Map Revision for the above-referenced community. In our earlier letter to you, we indicated 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.

The submitted analysis, prepared by Bohannon Huston, Inc., is an evaluation of runoff from drainage areas of approximately 0.16 square mile that are located west of Timmaron Estates and drain to Snow Vista Channel. However, as shown on the effective Flood Insurance Rate Map (FIRM), additional drainage areas to the north and west that total approximately 0.88 square mile may affect flooding within Timmaron Estates. To decrease or remove the Special Flood Hazard Area, the area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood), shown within Timmaron Estates on the FIRM, please submit an analysis to demonstrate that the discharge and sediment load from all drainage areas discharging to Snow Vista Channel are contained in Snow Vista Channel between DeVargas Road (Gibson Road) and the outfall from the Sunrise Terrace subdivision. The drainage areas include Timmaron Estates and areas to the west, as well as the Sunrise Terrace subdivision and areas to the west and north. (See "Master Drainage Plan, Sunrise Terrace Units III, IV, and V," prepared by Ryals Engineering, 1994.) The analysis must also include any backwater effects from the DeVargas Road crossing.

Please send the required data directly to our Technical Evaluation Contractor at the following address:

Michael Baker Jr., Inc.
3601 Eisenhower Avenue, Suite 600
Alexandria, Virginia 22304

Attention: Ms. Laura D. Bittner
(703) 317-6292

For identification purposes, you must include the case number referenced above on all correspondence.

If we do not receive the required data within 90 days, we will suspend our processing of your request. Any data submitted after 90 days will be treated as an original submittal and will be subject to all submittal/payment procedures, including the flat review and processing fee for requests of this type established by the revised fee schedule that became effective on March 1, 1999. A copy of the notice summarizing the revised fee schedule, which was published in the *Federal Register*, is enclosed for your information.

If you are unable to meet the 90-day deadline for submittal of required items, and would like FEMA to continue processing your request, you must request an extension of the deadline. This request must be submitted to our Technical Evaluation Contractor in writing and must provide (1) the reason why the data cannot be submitted within the requested timeframe, and (2) a new date for the submittal of the data. We receive a very large volume of requests and cannot maintain inactive requests for an indefinite period of time. Therefore, the fees will be forfeited for any request for which neither the requested data nor a written extension request is received within 90 days.

If you have any questions regarding this matter, please contact Mr. Alan Johnson of our staff in Washington, DC, either by telephone at (202) 646-3403 or by facsimile at (202) 646-4596.

Sincerely,

Matthew B. Miller

Matthew B. Miller, P.E., Chief
Hazards Study Branch
Mitigation Directorate

Enclosure(s)

cc: Ms. Lynn Mazur, P.E.
Project Engineer
Bohannon Huston

12

Federal Emergency Management Agency

Washington, D.C. 20472

March 3, 1999

Ms. Susan M. Calongne, P.E.
City/County Floodplain Administrator
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

IN REPLY REFER TO:
Case No.: 99-06-815P
Community: City of Albuquerque, New Mexico
Community No.: 350002

316-ACK.FRQ

Dear Ms. Calongne:

This responds to your request dated February 12, 1999, that the Federal Emergency Management Agency (FEMA) issue a revision to the Flood Insurance Rate Map (FIRM) for Bernalillo County, New Mexico and Incorporated Areas. Pertinent information about the request is listed below.

Identifier:	Timarron Estates
Flooding Source:	Unnamed Tributary to Snow Vista Channel
FIRM Panel(s) Affected:	35001C0336 D

We have completed an inventory of the items that you submitted. We have received the data and the review and processing fee ($2,300) required to begin a detailed technical review of your request. If additional data are required, we will inform you within 30 days of the date of this letter.

Please direct all questions concerning your request to our Technical Evaluation Contractor at the following address:

Michael Baker Jr., Inc.
3601 Eisenhower Avenue, Suite 600
Alexandria, Virginia 22304

Attention: Ms. Laura D. Bittner
(703) 317-6292

When you write us about your request, you must include the case number referenced above in your letter.

If you have any questions concerning FEMA policy, or the National Flood Insurance Program in general, please contact Mr. John Gambel of our staff in Washington, DC, either by telephone at (202) 646-2724 or by facsimile at (202) 646-4596.

Sincerely,

Matthew B. Miller

Matthew B. Miller, P.E., Chief
Hazards Study Branch
Mitigation Directorate

cc: Mr. Lynn Mazur, P.E.
Project Engineer
Bohannan Huston

COPY

August 25, 1999

BOHANNAN-HUSTON, INC.
Courtyard One
7500 JEFFERSON NE
Albuquerque
NM 87109-4335
voice 505.823.1000
fax 505.821.0892

Ms. Laura D. Bittner
Technical Evaluation Contractor
Michael Baker Jr., Inc.
3601 Eisenhower Avenue
Suite 600
Alexandria, VA 22304

Re: Timarron Estates Letter of Map Revision
Case No.: 99-06-815P
Community: City of Albuquerque, New Mexico
Community No.: 350002

Dear Ms. Bittner:

As requested in the letter from FEMA dated May 21, 1999, we are sending additional information to process the referenced LOMR. FEMA required hydraulic analysis for a section of Snow Vista Channel adjacent to the subdivision to show that flow is contained within the channel. We are also sending sheets from the construction plan set, "Westgate Diversion Channels / Snow Vista Channel - Phase II & III" (Leedshill-Herkenhoff, Inc., September 1986).

Following is a brief description of the hydraulic analysis.

100-Year Flows

In a discussion with David Preusch of your office, it was agreed that the design flow of 810 cubic feet per second (cfs) would be used for the hydraulic analysis. Since the time the channel was constructed, the hydrology for the Albuquerque area has been revised. Flow rates using the revised hydrology are significantly higher than previous flows. As a check, the model was also run with a flow of 1600 cfs.

Channel Sections

The channel is a concrete-lined trapezoidal section with a 10-foot bottom width and side slopes ranging from 1.5:1 to 2:1. The section just upstream of DeVargas Road (previously Gibson Boulevard) transitions to a half-trapezoidal and half-vertical wall section. This section continues under the road. Downstream of the crossing, the section is trapezoidal with 1.5:1 side slopes. The depth varies from 5.5 feet at the outfall for the Sunrise Terrace Subdivision to 8 feet downstream of DeVargas Road.

40 YEARS

These cross-sections were input into the hydraulic model using the profile grade and stationing from the design plans. It should be noted that stationing between Phases II & III differs by about 10 feet. Therefore, the stationing for Phase III was adjusted to provide a true length for the channel alignment. The stationing for the section of channel in the hydraulic model begins 200 feet downstream of the roadway crossing, Station 50+00, and ends at the outfall for Sunrise Terrace Subdivision, Station 65+39.40.

Hydraulic Model
The U.S. Army Corps of Engineers HEC-RAS model was used to evaluate the flow in the channel. The flow in this section of the channel is supercritical. Channel cross-sections were input from upstream to downstream. A Manning's roughness coefficient of 0.017 was used based on previous projects to account for sediment in the arroyo. The results indicate that, for a flow rate of 1600 cfs, the runoff will remain within the channel banks with over 1 foot of freeboard. We are enclosing the summary output and a diskette with the input model.

We are also enclosing a preliminary design report for the Snow Vista Channel, Phase III. The engineer at Leedshill-Herkenhoff, Inc. who was involved in the original design of the channel said that the report referenced on the plans, "Final Design Report, Snow Vista Channel Phase III", July 1982, was never completed and is not available.

John Gallagher from your office also requested verification that the pond at the end on Halter Drive in the Sunrise Terrace Subdivision was constructed. We field verified that there is a detention pond near the intersection of Halter Drive and Paso Fino to attenuate the runoff into Snow Vista Channel.

Please review the enclosed information at your earliest convenience and call me at (505) 823-1000 if you have any questions.

Sincerely,
Bohannan Huston, Inc.

Lynn M. Mazur

Lynn M. Mazur, P.E.
Project Engineer
Water Resources Group

LMM/gr
enclosure

cc: Ms. Susan Calongne, City of Albuquerque (w/o enclosure)
Ms. Lisa Manwill, AMAFCA (w/o enclosure)
Mr. Norm Gregory, Centex Homes (w/o enclosure)
Mr. Rick Beltramo, Bohannan Huston, Inc. (w/o enclosure)

COPY

August 12, 1999

BOHANNAN-HUSTON, INC.
Courtyard One
7500 JEFFERSON NE
Albuquerque
NM 87109-4335
voice 505.823.1000
fax 505.821.0892

Ms. Laura D. Bittner
Technical Evaluation Contractor
Michael Baker Jr., Inc.
3601 Eisenhower Avenue
Suite 600
Alexandria, VA 22304

Re: Timarron Estates Letter of Map Revision
Case No.: 99-06-815P
Community: City of Albuquerque, New Mexico
Community No.: 350002

Dear Ms. Bittner:

We would like to request an extension for submittal of requested items for the referenced LOMR. The letter from FEMA dated May 21, 1999 requested additional hydraulic analysis for Snow Vista Channel and the crossing structure at DeVargas Road. We responded with a letter to Mr. Alan Johnson of FEMA, dated June 16, 1999, listing reasons why we felt this request was unreasonable. On August 2, we received a reply from David Preusch of your office. He stated that the analysis was necessary to show that flow is contained within the channel adjacent to the Timarron Estates property. He also stated that we should use the 100-year flow of 810 cfs that is shown on the construction plans.

We need to coordinate the additional analysis with the property owner before we begin work. Therefore, we request an extension for the submittal of our results. Please consider this request at your earliest convenience and call me at (505) 823-1000 if you have any questions.

Sincerely,
Bohannan Huston, Inc.

Lynn M. Mazur

Lynn M. Mazur, P.E.
Project Engineer
Water Resources Group

LMM/gr

cc: Susan Calongne, City of Albuquerque
Lisa Manwill, AMAFCA
Norm Gregory, Centex Real Estate Corp.
Rick Beltramo, Bohannan Huston, Inc.

40 YEARS

P:\99395\hydro\corres\fema2.doc

Federal Emergency Management Agency

Washington, D.C. 20472

MAY 21 1999

Ms. Susan M. Calongne, P.E.
City/County Floodplain Administrator
City of Albuquerque/Bernalillo County
P.O. Box 1293
City of Albuquerque, NM 87103

IN REPLY REFER TO:
Case No.: 99-06-815P
Community: City of Albuquerque, New Mexico
Community No.: 350002

316-AD

Dear Ms. Calongne:

This is in reference to your February 12, 1999, request for a Letter of Map Revision for the above-referenced community. In our earlier letter to you, we indicated 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.

The submitted analysis, prepared by Bohannon Huston, Inc., is an evaluation of runoff from drainage areas of approximately 0.16 square mile that are located west of Timmaron Estates and drain to Snow Vista Channel. However, as shown on the effective Flood Insurance Rate Map (FIRM), additional drainage areas to the north and west that total approximately 0.88 square mile may affect flooding within Timmaron Estates. To decrease or remove the Special Flood Hazard Area, the area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood), shown within Timmaron Estates on the FIRM, please submit an analysis to demonstrate that the discharge and sediment load from all drainage areas discharging to Snow Vista Channel are contained in Snow Vista Channel between DeVargas Road (Gibson Road) and the outfall from the Sunrise Terrace subdivision. The drainage areas include Timmaron Estates and areas to the west, as well as the Sunrise Terrace subdivision and areas to the west and north. (See "Master Drainage Plan, Sunrise Terrace Units III, IV, and V," prepared by Ryals Engineering, 1994.) The analysis must also include any backwater effects from the DeVargas Road crossing.

Please send the required data directly to our Technical Evaluation Contractor at the following address:

Michael Baker Jr., Inc.
3601 Eisenhower Avenue, Suite 600
Alexandria, Virginia 22304

Attention: Ms. Laura D. Bittner
(703) 317-6292

For identification purposes, you must include the case number referenced above on all correspondence.

If we do not receive the required data within 90 days, we will suspend our processing of your request. Any data submitted after 90 days will be treated as an original submittal and will be subject to all submittal/payment procedures, including the flat review and processing fee for requests of this type established by the revised fee schedule that became effective on March 1, 1999. A copy of the notice summarizing the revised fee schedule, which was published in the *Federal Register,* is enclosed for your information.

If you are unable to meet the 90-day deadline for submittal of required items, and would like FEMA to continue processing your request, you must request an extension of the deadline. This request must be submitted to our Technical Evaluation Contractor in writing and must provide (1) the reason why the data cannot be submitted within the requested timeframe, and (2) a new date for the submittal of the data. We receive a very large volume of requests and cannot maintain inactive requests for an indefinite period of time. Therefore, the fees will be forfeited for any request for which neither the requested data nor a written extension request is received within 90 days.

If you have any questions regarding this matter, please contact Mr. Alan Johnson of our staff in Washington, DC, either by telephone at (202) 646-3403 or by facsimile at (202) 646-4596.

Sincerely,

Matthew B. Miller

Matthew B. Miller, P.E., Chief
Hazards Study Branch
Mitigation Directorate

Enclosure(s)

cc: Ms. Lynn Mazur, P.E.
Project Engineer
Bohannon Huston

Federal Emergency Management Agency
Washington, D.C. 20472

March 3, 1999

Ms. Susan M. Calongne, P.E.
City/County Floodplain Administrator
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

IN REPLY REFER TO:
Case No.: 99-06-815P
Community: City of Albuquerque, New Mexico
Community No.: 350002

316-ACK.FRQ

Dear Ms. Calongne:

This responds to your request dated February 12, 1999, that the Federal Emergency Management Agency (FEMA) issue a revision to the Flood Insurance Rate Map (FIRM) for Bernalillo County, New Mexico and Incorporated Areas. Pertinent information about the request is listed below.

Identifier:	Timarron Estates
Flooding Source:	Unnamed Tributary to Snow Vista Channel
FIRM Panel(s) Affected:	35001C0336 D

We have completed an inventory of the items that you submitted. We have received the data and the review and processing fee ($2,300) required to begin a detailed technical review of your request. If additional data are required, we will inform you within 30 days of the date of this letter.

Please direct all questions concerning your request to our Technical Evaluation Contractor at the following address:

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3601 Eisenhower Avenue, Suite 600
Alexandria, Virginia 22304

Attention: Ms. Laura D. Bittner
(703) 317-6292

When you write us about your request, you must include the case number referenced above in your letter.

If you have any questions concerning FEMA policy, or the National Flood Insurance Program in general, please contact Mr. John Gambel of our staff in Washington, DC, either by telephone at (202) 646-2724 or by facsimile at (202) 646-4596.

Sincerely,

Matthew B. Miller

Matthew B. Miller, P.E., Chief
Hazards Study Branch
Mitigation Directorate

cc: Mr. Lynn Mazur, P.E.
Project Engineer
Bohannan Huston

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

February 12, 1999

Mr. Monther S. Madanat
Michael Baker Jr., Inc.
3601 Eisenhower Avenue, Suite 600
Alexandria, Virginia 22304-6439

RE: **Request for a Letter of Map Revision for Timarron Estates Subdivision, City of Albuquerque, New Mexico, Community No. 350002, FIRM Panel 0336.**

Dear Mr. Madanat:

The purpose of this letter is to request a Letter of Map Revision for the above referenced project. This request consists of the elimination of the floodplain where the Timarron Estates Subdivision is to be constructed due to the fact that some of the upstream basins have been cut off, and the remaining basin discharges to an existing concrete channel.

Enclosed with this letter are the Application forms for requesting revisions to the National Flood Insurance Program (NFIP) maps. Along with the forms are the analysis, and other NFIP-related information which should facilitate an efficient review. The initial review fee of $2,300.00 will be sent under separate cover.

The City of Albuquerque has reviewed and approved the hydrologic and hydraulic calculations in this report. Our Community would greatly appreciate your prompt response and approval for this Letter of Map Revision. If you have any questions concerning this submittal, please call me at (505) 924-3982.

Sincerely,

Susan Calongne

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

Attachments

c: Lynn Mazur, P.E., Bohannan-Huston, Inc. (Letter only)
Norm Gregory, Centex Real Estate Corp. (Letter only)
File

TABLE OF CONTENTS

FORMS

FEDERAL EMERGENCY MANAGEMENT AGENCY **REVISION REQUESTER AND COMMUNITY OFFICIAL**	O.M.B No. 3067-0148 Expires April 30, 2001

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: See attached explanation 1.1

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

2. Flooding Source: Gibson Blvd./Sage Rd. Floodplain (Not labled on FIRM or FBFM)

3. Project Name/Identifier: Timarron Estates

4. FEMA zone designations affected: Zone A (Base flood elevations & flood hazard factors not determined.)
(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	Albuquerque, Bernalillo County	NM	35001C	0336D	09/20/96

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) Zone A	☐ Other (describe)

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
(Name)
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.

Operation and maintenance plans are attached. ☐ Yes ☒ No ☐ N/A

6. REVIEW FEE

The review fee for the appropriate request category has been included. ☒ Yes Fee amount: $2300.00

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

7. SIGNATURE

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

Norman Gregory

Signature of Revision Requester

Mr. Norm Gregory, Land Development Manager
Printed Name and Title of Revision Requester

Centex Real Estate Corp.
Company Name

Telephone No.: 505/761-9606 Date: January 12, 1999

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

Susan Calongne

Signature of Community Official

Susan Calongne, City/County Floodplain Administrator
Printed Name and Title of Community Official

Albuquerque, Bernalillo County, New Mexico
Community Name

Telephone No.: 505 924 3992 Date: 2-12-99

CERTIFICATION BY REGISTERED PROFESSIONAL ENGINEER AND/OR LAND SURVEYOR

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

Lynn Mazur

Signature

Lynn Mazur, Project Engineer
Printed Name and Title of Revision Requester

Registr No. 11797 Expires (Date) 12/31/99 State NM

Type of License/Expertise: Engineering

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

Additional Explanations for Form 1 – Revision Requester and Community Official Form

1.1 Basis for Revision Request

The project area is located in the southwest portion of Albuquerque, New Mexico (see Figure 1). The floodplain being considered for revision is a stream (not labeled on the original Flood Insurance Rate Map (FIRM) that runs from just north of San Ygnacio Road to the south for about 2200 feet. It ends just north of De Vargas Road and west of the Snow Vista Channel. It is labeled "Gibson Blvd./Sage Rd. floodplain" on all appropriate figures and is shown on the National Flood Insurance Program floodplain map, Panel 336. Note that De Vargas Road was previously known as Gibson Boulevard and is still labeled "Gibson Boulevard" on the FIRM map. The adjacent map, Panel 317, is also included to show that there is no additional source of flooding to the west. These panels are Figures 2 and 3 following this page.

One of the basins that contributes to this floodplain is a subdivision that has been developed since the FEMA floodplains were adopted. Specifically, the Letter of Map Revision (LOMR) for Sunrise Terrace (Case No. 97-06-250P Sept. 20, 1996) has removed the majority of the Gibson Blvd./Sage Rd. Floodplain.

The additional source of the floodplain is overland runoff from the west. It flows through the proposed Timarron Estates subdivision into the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) facility, Snow Vista Diversion Channel. This channel is concrete-lined and has capacity for the 100-year flood. The depth of the 100-year flow is less than one foot; therefore, it does not contribute to the existing 100-year floodplain. Since the upstream source of flooding was removed with the construction of the Sunrise Terrace storm drain system, and the existing flow does not contribute to the floodplain, this LOMR is for removing the remainder of the floodplain (see Figure 4).

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: Gibson Blvd./Sage Rd. Floodplain

Project Name/Identifier: Timarron Estates

1. REASON FOR NEW HYDROLOGIC ANALYSIS

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

☒ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Other

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

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)

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

ATTACHMENT A: STATISTICAL ANALYSIS OF GAGE RECORDS

Gaging Station: N/A

Gage Location (latitude and longitude):

		FIS:		Revised:	
1.	Number of years of data				
	Systematic				
	Historical				
2.	Homogeneous data	☐ Yes	☐ No	☐ Yes	☐ No
3.	Data adjustments	☐ Yes	☐ No	☐ Yes	☐ No
4.	Number of high outliers				
	Low outliers				
	Zero events				
5.	Generalized skew				
6.	Station skew				
7.	Adopted skew				
8.	Probability distribution used (justify if log-Pearson III was not used)				
9.	Transfer equations to ungaged sites			☐ Yes	☐ No
	If Yes, specify method				
10.	Expected probability*			☐ Yes	☐ No
11.	Comparison of results with other analyses			☐ Yes	☐ No
	If Yes, describe comparison				

12. **Attach analysis including plot of flood-frequency curve.** **Analysis Attached?** ☐ Yes ☐ No

*FEMA does not accept expected probability analyses for the purpose of reflecting flood hazard information in a FIS.

If any data are not available, indicate by N/A.

ATTACHMENT B: CONFIDENCE LIMITS EVALUATION

Stream: N/A

Select one location for Confidence Limits Evaluation (*describe location*):

1. Discharges for selected location:

Exceedence Probability		FIS:	Revised:
10%	(10-year)	_____ cfs	_____ cfs
2%	(50-year)	_____ cfs	_____ cfs
1%	(100-year)	_____ cfs	_____ cfs
0.2%	(500-year)	_____ cfs	_____ cfs

2. 1% Annual Chance (Base) Flood Confidence Intervals

90% Confidence Interval:	5% limit	_____ cfs
	95% limit	_____ cfs
50% Confidence Interval:	25% limit	_____ cfs
	75% limit	_____ cfs

3. If the discharge of the base flood in the FIS is beyond the 50% confidence interval but within the 90% confidence interval, does the base flood elevation change by 1.0 foot or more? ☐ Yes ☐ No

An example of confidence limits analysis can be found in Appendix 9 of Bulletin 17B.

4. **Confidence Limits Analysis Attached?** ☐ Yes ☐ No

ATTACHMENT C: REGIONAL REGRESSION EQUATIONS

1. Bibliographical Reference:

   N/A

   (Attach a copy of title page, table of contents, and pertinent pages including equations.)

2. Gaged or ungaged stream:

3. Hydrologic region(s):
   Attach backup map.

4. Provide parameters, values, and source of data used to define parameters.

		FIS:		Revised:	
5.	Urbanized conditions calculations	☐ Yes	☐ No	☐ Yes	☐ No
6.	Percent of watershed urbanization				
7.	Is the watershed controlled?	☐ Yes	☐ No	☐ Yes	☐ No
8.	Comparison with other analyses	☐ Yes	☐ No	☐ Yes	☐ No

If the answer to 5, 7, or 8 is Yes, explain methdology below. If data are not available, indicate with N/A.

Comments

9. **Attach computation and supporting maps, delineating the watershed boundary and drainage area divides.**

   Computation and Supporting Maps provided? ☐ Yes ☐ No

ATTACHMENT D: PRECIPITATION/RUNOFF MODEL

		FIS:		Revised:	
1.	Method or model used:	N/A		HYMO	
	Version:			AHYMO	
	Date:			1994	
2.	Source of rainfall depth:			DPM CH 22-2	
3.	Source of rainfall distribution:			DPM CH 22-2	
4.	Rainfall duration:			6 HR	
5.	Areal adjustment to precipitation (%):			N/A	
6.	Maximum overland flow length			400'	
7.	Hydrograph development method:			UNIT HYD.	
8.	Loss rate method:			IA/INF	
	Source of soils information:			SCS	
	Source of land use information:			FIELD	
9.	Channel routing method:			VOL. STRG. METHOD	
10.	Reservoir routing:	☐ Yes	☐ No	☒ Yes	☐ No
11.	Baseflow considerations: **If Yes, explain below how baseflow was determined:**	☐ Yes	☐ No	☐ Yes	☒ No
12.	Snowmelt considerations:	☐ Yes	☐ No	☐ Yes	☒ No
13.	Model calibration: **If Yes, explain below how calibration was performed**	☐ Yes	☐ No	☐ Yes	☒ No
14.	Future land use condition: **If Yes, explain why below**	☐ Yes	☐ No	☐ Yes	☒ No

15. **Attach precipitation/runoff model, hydrologic model schematic, curve number calculations, time of concentration calculations, and supporting maps, delineating the watershed boundary and drainage area divides.**

Information and Maps provided? ☒ Yes ☐ No

NOTE: FEMA policy is to base flooding on existing conditions.

Additional Explanations for Form 3 – Hydrologic Analysis Form

3.1 Changed Physical Condition

In 1997, a LOMR was approved for the removal of a portion of the Gibson/Sage Road Floodplain (reference Case No. 97-06-250P). Construction of the storm drain system to serve the Sunrise Terrace Subdivision effectively removed the primary source of the floodplain. The remaining portion of the floodplain was not included in the LOMR request. As noted in Explanation 1.1, the existing 100-year flow does not contribute to the floodplain.

3.2 Alternative Methodology

The hydrologic model used for this analysis the AHYMO computer model. It was used in accordance with the City of Albuquerque Development Process Manual (DPM), July 1997. The floodplain is designated Zone A on the FIRM indicating that base flood elevations and flood hazard factors were not determined in the Flood Insurance Study (FIS).

A diskette with the AHYMO model for existing conditions is included after this form. It includes Basin 100.0, an undeveloped tract to the west, and Basin 101.0, an undeveloped tract which will be the future Timarron Estates Subdivision (see Figure 5).

3.3 Approval of the Hydrologic Model

FEMA has accepted the City of Albuquerque Development Process Manual in a letter dated November 14, 1991, to Mr. Gilbert Aldaz, City/County Floodplain Administrator. In addition, the AHYMO hydrologic model used in this LOMR has been approved by the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA).

3.4 Comparison of 100-Year Discharges

No comparison of 100-year discharges can be made because the floodplain in question is Zone A; therefore, no flow values are given in the FIS. The flows shown are from a new AHYMO model and are based on existing conditions.

```
AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994          RUN DATE (MON/DAY/YR) =12/31/1998
INPUT FILE = timarron.hym                                                                    USER NO.= BOHN_HNM.STE

                                FROM  TO                 PEAK        RUNOFF                 TIME TO    CFS       PAGE =   1
                   HYDROGRAPH    ID   ID        AREA   DISCHARGE     VOLUME      RUNOFF      PEAK      PER
COMMAND          IDENTIFICATION  NO.  NO.     (SQ MI)    (CFS)       (AC-FT)    (INCHES)    (HOURS)    ACRE      NOTATION

*S******          TIMARRON ESTATES SUBDIVISION LOMR             ****************
*S******                 Existing Conditions                    ****************
*S******                100 YEAR 6-HOUR STORM                   ****************
START                                                                                                          TIME=        .00
RAINFALL  TYPE= 1                                                                                              RAIN6=     2.200
*S********* CALCULATE OFFSITE BASIN 100.0 **************************
COMPUTE NM HYD          100.00    -   10       .11070     69.20       2.593       .43925     1.567      .977 PER IMP=        .00
*S********* CALCULATE BASIN 101.0 - TIMARRON ESTATES   **************
COMPUTE NM HYD          101.00    -    5       .05450     48.07       1.359       .46747     1.533     1.378 PER IMP=        .00
*S********* ADD BASIN HYDROGRAPHS **********************
ADD HYD               101.ADD 10& 5    6       .16520    114.26       3.952       .44856     1.567     1.081
FINISH
```

Timarron Estates LOMR
Calculation of Time to Peak

Description	Var.	Unit	
Basin			**101**
Basin Area		Acres	34.90
Total Reach	L	Feet	2000.0
Overland Reach	L1	Feet	400.0
Overland K	K1		0.7
Overland Slope	S1	Percent	4.65
Adj. Overland Slope	S1'	Percent	4.542
Gully Reach	L2	Feet	1600.0
Gully K	K2		2.000
Gully Slope	S2	Percent	3.000
Adj. Gully Slope	S2'	Percent	3.000
Arroyo Reach	L3	Feet	0.0
Arroyo K	K3		3.000
Arroyo Slope	S3	Percent	1.000
Adj. Arroyo Slope	S3'	Percent	1.000
Lca (to centroid)	Lca	Feet	0.0
Base Discharge	Qb	cfs	0.0
Ground Slope S	S	Percent	3.330
Adjusted Slope S'	S'	Percent	3.330
K	K		1.508
K'	K'		1.501
K"	K"		0.000
K'"	K'"		0.000
Kn	Kn		0.033
Orig. TC	TC	Hrs.	0.202
Adjusted TC	TC'	Hrs.	0.202
Time Lag	Lg	Hrs.	-
Time to Peak	TP	Hrs.	**0.135**

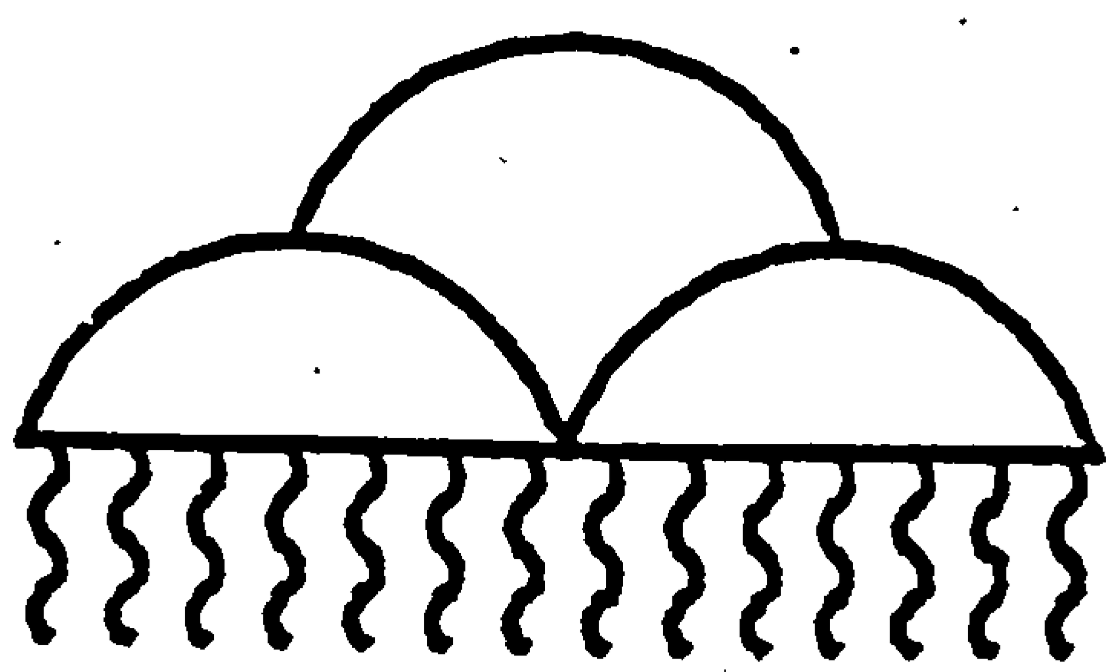
AHYMO Computer Program

Users Manual

(AMAFCA Hydrologic Model)

AMAFCA's Version of the A.R.S.
HYMO Computer Program

by the
Albuquerque Metropolitan Arroyo
Flood Control Authority (AMAFCA)
2600 Prospect NE
Albuquerque, NM 87107



January 1994 AHYMO194

Albuquerque
Metropolitan
Arroyo
Flood
Control
Authority

2600 PROSPECT N E · ALBUQUERQUE, N M 87107
TELEPHONE (505) 884-2215

January 24, 1994
Program Version: January, 1994
AHYMO194

CERTIFICATION OF ACCEPTANCE
AHYMO - AMAFCA Version of the ARS HYMO Computer Program
JANUARY 1994 VERSION

The HYMO computer program was developed by Jimmy R. Williams and Roy W. Hann, Jr. for the USDA Agricultural Research Service, (ARS), United States Department of Agriculture in cooperation with the Texas Agricultural Experiment Station, Texas A&M University. The function of the program is described in detail in the "HYMO: Problem - Oriented Computer Language for Hydrologic Modeling, Users Manual" (ARS-S-9, May 1973).

The Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) is a local government agency, organized as a quasi-municipal corporation and a political subdivision of the State of New Mexico. AMAFCA was created in 1963 by the "Arroyo Flood Control Act" [72-16-1 to 72-16-103 NMSA 1978] to protect persons and property from floods. Its boundaries include the City of Albuquerque and neighboring areas in Bernalillo County.

The HYMO program was modified and enhanced by Clifford E. Anderson, PE for AMAFCA. These modifications and enhancements along with portions of the ARS version of the program have been named AHYMO, for AMAFCA Hydrologic Model. The Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) is the owner of all revisions and enhancements made to the USDA Agricultural Research Service (ARS) version of the HYMO program.

The AHYMO version of the HYMO program, including the COMPUTE NM HYD, RAINFALL, LAND FACTORS, DIVIDE HYD, SEDIMENT BULK, SEDIMENT TRANS and ROUTE MCUNGE functions, has been reviewed and tested by AMAFCA. AMAFCA accepts the program for purposes of design of flood control structures or for flood plain land use regulation, when the program is used by Registered Professional Engineers who possess the experience and thorough understanding of the engineering principles that apply to the application of the program.

Larry A. Blair, PE
Executive Engineer
AMAFCA

Clifford E. Anderson, PE
Drainage Engineer
AMAFCA

FIGURE 5

TIMARRON ESTATES UNITS 1 & 2

OFFSITE DRAINAGE BASIN MAP

NOTE: THIS FIGURE IS FROM THE "DRAINAGE REPORT FOR TIMARRON ESTATES UNITS 1 AND 2 (MAP L-8/M-8)," COMMUNITY SCIENCES CORPORATION, APRIL 1998.

DATE: APR. 1998	community sciences corporation
SCALE: 1"=200'	
DESIGNED: KMW	
DRAWN: DLW	
JOB NO.: 399-06-036	LAND PLANNING P.O. Box 1328 · ENGINEERING Corrales, N.M. 87048 · SURVEYING (505) 897-0000

FEDERAL EMERGENCY MANAGEMENT AGENCY **RIVERINE HYDRAULIC 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 2.25 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: Gibson Blvd./Sage Rd. Floodplain

Project Name/Identifier: Timarron Estates

1. REACH TO BE REVISED

Describe the limits of the revision OR submit a copy of the FIRM with the revision area clearly highlighted.
Copy of FIRM(s) attached depicting area of the revision (highlighted, or circled)? ☒ Yes

Downstream Limit: _____

Upstream Limit: _____

2. MODELS SUBMITTED

Requirements: for areas which have detailed flooding:	for areas which do not have detailed flooding:
Full input and output listings along with files on diskette for each of the models listed below (items 1-4) and a summary of the source of input parameters used in the models must be provided. The summary must include a description of any changes made from model to model (e.g., Duplicate Effective model to Corrected Effective model). At a minimum, the Duplicate Effective (item 1) and the Revised or Post-Project Conditions (item 4) models must be submitted. See instructions for directions on when other models may be required.	Only the 100-year (Base) flood profile is required. A hydraulic model is not required for areas which do not have detailed flooding; however, BFEs may not be added to the revised FIRM. If a hydraulic model is developed for the area, items 3 and 4 described below must be submitted.

If hydraulic models are not developed, hydraulic analyses (including all calculations) for existing or pre-project conditions and revised or post-project conditions must be submitted. See attached Explanation 4.1

1. Duplicate Effective Model ☐ **Natural** **File Name** _____ ☐ **Floodway** **File Name** _____
Copies of the hydraulic analysis used in the effective FIS, referred to as the effective models (10-, 50-, 100-, and 500-year multi-profile runs and the floodway run) must be obtained and then reproduced on the requester's equipment to produce the Duplicate Effective model. This is required to assure that the effective models input data has been transferred correctly to the requester's equipment and to assure that the revised data will be integrated into the effective data to provide a continuous FIS model upstream and downstream of the revised reach.

2. Corrected Effective Model ☐ **Natural** **File Name** _____ ☐ **Floodway** **File Name** _____
The Corrected Effective model is the model that corrects any errors that occur in the Duplicate Effective model, adds any additional cross sections to the Duplicate Effective model, or incorporates more detailed topographic information than that used in the currently effective model. The Correctly Effective model must not reflect any man-made physical changes since the date of the effective model. An error could be a technical error in the modeling procedures, or any construction in the floodplain that occurred prior to the date of the effective model but was not incorporated into the effective model.

3. Existing or Pre-Project Conditions Model ☐ **Natural** **File Name** _____ ☐ **Floodway** **File Name** _____
The Duplicate Effective model or Corrective Effective model is modified to produce the Existing or Pre-Project Conditions model to reflect any modifications that have occurred within the floodplain since the date of the Effective model but prior to the construction of the project for which the revision is being requested. If no modification has occurred since the date of the effective model, then this model would be identical to the Corrected Effective model or Duplicate Effective model.

4. Revised or Post-Project Conditions Model ☐ **Natural** **File Name** _____ ☐ **Floodway** **File Name** _____
The Existing or Pre-Project Conditions model (or Duplicate Effective model or Corrected Effective model, as appropriate) is revised to reflect revised or post-project conditions. This model must incorporate any physical changes to the floodplain since the effective model was produced as well as the effects of the project. When the request is for the proposed project this model must reflect proposed conditions.

5. Other - Please attach a sheet describing all other models submitted along with the file names. ☐ **Natural** ☐ **Floodway**

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

3. STARTING WATER-SURFACE ELEVATIONS N/A

Explain how they were determined. Explanation Attached? ☐ Yes ☐ No

NOTE: If the effective study is an approximate study, the slope/area method is recommended.
For detailed analysis studies, using a known water-surface elevation is recommended.

4. RESULTS (from the model used to revise the 100-year water surface elevations) N/A

If the results indicate any of the following, attach an explanation - to this form, or to the hydraulic model printout- as to the reasonableness of the situation.

☐ Supercritical depth ☐ Critical Depth ☐ Drawdowns ☐ Negative Floodway Surcharges

☐ Floodway Surcharges Greater Than Maximum Allowed by Community/State

☐ Water surface elevations higher than the end points of cross sections.

☐ Floodway discharge is different than the Natural 100-year (base) flood discharge.

☐ Project causes 100-year floodplain or floodway elevations to increase (state if increases are located off the requester's property)

Explanation attached with Form ☐ **Explanation provided on attached printout** ☐

If Hydraulic model used is HEC-2, has it been checked with FEMA'S CHECK-2 computer program? ☐ **Yes** ☐ **No**
(see instructions for information on how to obtain CHECK-2)

5. REVISED FIRM/FBFM AND FLOOD PROFILES N/A

1. **Profile Transition**

   a. 100-Year Water-Surface Elevations - indicate the difference in water surface elevations where the project 100-year elevations tie into the existing 100-year water surface elevations at each end of the project.

   Downstream End ______ within ______ (feet) Upstream End ______ within ______ (feet)
   Cross-Section # *Cross-Section #*

   b. Floodway Elevations - indicate the difference in water surface elevations where the project floodway elevations tie into the existing floodway water surface elevations at each end of the project.

   Downstream End ______ within ______ (feet) Upstream End ______ within ______ (feet)
   Cross-Section # *Cross-Section #*

   c. Floodway widths - indicate the difference in floodway widths where the project floodway widths tie into the existing floodway width at each end of the project.

   Downstream End ______ within ______ (feet) Upstream End ______ within ______ (feet)
   Cross-Section # *Cross-Section #*

2. **Profile Checklist (check box if information has been provided on profile)**

   The following information (unless in parentheses) must be included at the same scale as the existing profiles for this project:

   ☐ Stream Name ☐ Community Name ☐ Corporate Limits labeled ☐ Study limits labeled

   ☐ Confluences labeled ☐ Channel Stationing ☐ Streambed profiled ☐ Cross Sections labeled

   ☐ Horizontal/Vertical Scales indicated ☐ 100-year elevs profiled*

   ☐ Road Crossings ☐ Labeled ☐ Low Chord Elevations ☐ Top of Road Elevations

   *All recurrence intervals in the effective study must also be profiled.

   Floodway Data Table

   Attach a Floodway Data Table for each cross section listed in the published Floodway Data table in the FIS report.

   Floodway Data Table Attached ☐ **Yes** ☐ **Not Required**

Additional Explanations for Form 4 - Riverine Hydraulic Analysis Form

4.1 Models Submitted

A detailed hydraulic analysis for the existing floodplain was not performed in this case because, as stated in Explanation 1.1, the primary source of flooding has been removed. The remaining source, overland flow from the west, was evaluated through the project area to determine the depth of flow. Flow depths were determined from Manning's equation using the cross-sections shown on Figure 6. The calculations are shown on the following pages. The flow depths are well below one foot, which indicates the absence of a defined floodplain through the project area. A hydraulic model was not developed because the stream is not well-defined, and there are no tailwater constraints in Snow Vista Diversion Channel.

***** PC PROGRAM STREAM SEPTEMBER 1994 *****

Timarron Estates LOMR
Upstream cross-section 1-1

MANNING'S N= .03 SLOPE= .047

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	5225.00	3	102.00	5224.00			
2	47.00	5224.00	4	154.00	5225.00			

WSEL (FT)	DEPTH INC (FT)	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID (FT)	VEL HEAD (FT)	ENERGY HEAD (FT)
5224.10	0.10	6.00	13.2	64.90	2.19	64.90	0.07	0.17
5224.20	0.20	12.98	43.4	74.80	3.34	74.80	0.17	0.37
5224.30	0.30	20.96	88.7	84.71	4.23	84.70	0.28	0.58
5224.40	0.40	29.92	149.1	94.61	4.98	94.60	0.39	0.79
5224.50	0.50	39.88	225.3	104.51	5.65	104.50	0.50	1.00
5224.60	0.60	50.82	317.7	114.41	6.25	114.40	0.61	1.21
5224.70	0.70	62.76	427.2	124.31	6.81	124.30	0.72	1.42
5224.80	0.80	75.68	554.7	134.22	7.33	134.20	0.83	1.63
5224.90	0.90	89.60	700.8	144.12	7.82	144.10	0.95	1.85
5225.00	1.00	104.50	866.5	154.02	8.29	154.00	1.07	2.07

For Flow Rate = 69 cfs, Flow Depth = 0.26 ft

***** PC PROGRAM STREAM SEPTEMBER 1994 *****

Timarron Estates LOMR
Midway cross-section 2-2

MANNING'S N= .03 SLOPE= .025

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	5196.00	3	200.00	5195.00			
2	50.00	5195.00	4	240.00	5196.00			

WSEL (FT)	DEPTH INC (FT)	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID (FT)	VEL HEAD (FT)	ENERGY HEAD (FT)
5195.10	0.10	15.45	25.6	159.00	1.66	159.00	0.04	0.14
5195.20	0.20	31.80	82.1	168.00	2.58	168.00	0.10	0.30
5195.30	0.30	49.05	163.3	177.01	3.33	177.00	0.17	0.47
5195.40	0.40	67.20	267.0	186.01	3.97	186.00	0.25	0.65
5195.50	0.50	86.25	392.1	195.01	4.55	195.00	0.32	0.82
5195.60	0.60	106.20	538.2	204.01	5.07	204.00	0.40	1.00
5195.70	0.70	127.05	705.0	213.02	5.55	213.00	0.48	1.18
5195.80	0.80	148.80	892.5	222.02	6.00	222.00	0.56	1.36
5195.90	0.90	171.45	1100.7	231.02	6.42	231.00	0.64	1.54
5196.00	1.00	195.00	1329.7	240.02	6.82	240.00	0.72	1.72

For Flow Rate = 98 cfs, Flow Depth = 0.22 ft

***** PC PROGRAM STREAM SEPTEMBER 1994 *****

Timarron Estates LOMR
Downstream cross-section 3-3

MANNING'S N= .03 SLOPE= .03

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	5177.00	3	388.00	5176.00			
2	100.00	5176.00	4	548.00	5177.00			

WSEL (FT)	DEPTH INC (FT)	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID (FT)	VEL HEAD (FT)	ENERGY HEAD (FT)
5176.10	0.10	30.10	54.1	314.00	1.80	314.00	0.05	0.15
5176.20	0.20	62.80	174.7	340.00	2.78	340.00	0.12	0.32
5176.30	0.30	98.10	349.9	366.00	3.57	366.00	0.20	0.50
5176.40	0.40	136.00	576.1	392.00	4.24	392.00	0.28	0.68
5176.50	0.50	176.50	852.3	418.00	4.83	418.00	0.36	0.86
5176.60	0.60	219.60	1178.3	444.00	5.37	444.00	0.45	1.05
5176.70	0.70	265.30	1554.6	470.01	5.86	470.00	0.53	1.23
5176.80	0.80	313.60	1982.0	496.01	6.32	496.00	0.62	1.42
5176.90	0.90	364.50	2461.3	522.01	6.75	522.00	0.71	1.61
5177.00	1.00	418.00	2993.8	548.01	7.16	548.00	0.80	1.80

For Flow Rate = 114 cfs, Flow Depth = 0.15 ft

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: Gibson Blvd./Sage Rd. Floodplain

Project Name/Identifier: Timarron Estates

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):

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

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.)? Orthophoto maps, date not available.

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

Effective FIS   Scale 1" = 500' Contour Interval 2'

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 Explanations for Form 5 - Riverine / Coastal Mapping Form

5.1 Mapping Changes N/A Responses

B. The 500-year floodplain is not applicable in this case.
C. There is no floodway within the project boundaries.
D. Cross-sections are shown on Figure 5; however, there is no stationing because a hydraulic model was not developed.
H. Tie-ins to the effective 100-year floodplain are not shown because there is no remaining floodplain.
M-O. There are no coastal zones in New Mexico.

N

500 250 0 500
1"=500'-0"

Bohannan Huston

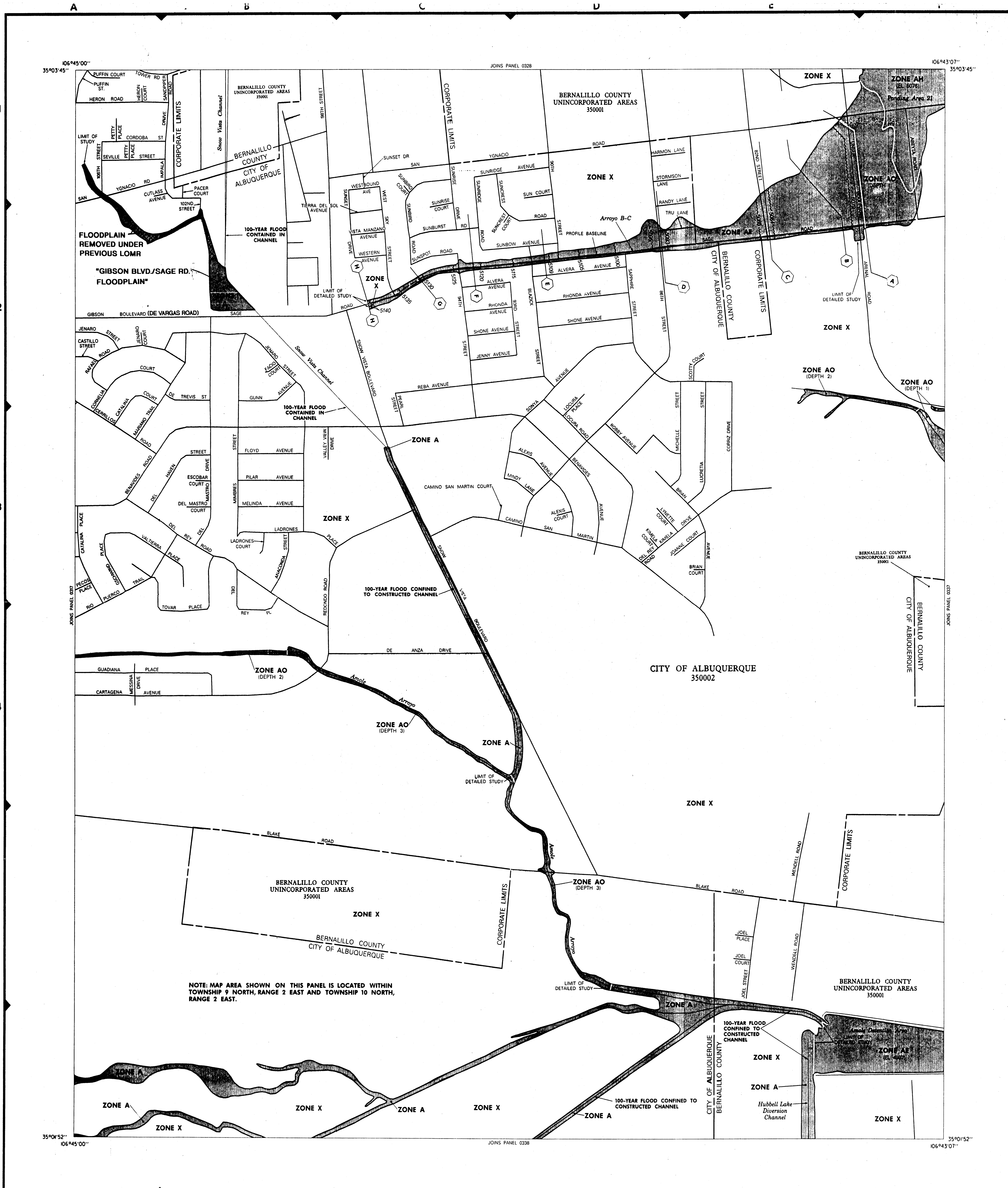
Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109

ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

TITLE: **TIMARRON SUBDIVISION**

PROJECT NO.: 99395	VICINITY MAP		
SEAL:	FIGURE 1		
	JOB NO. 99395C03	SHEET	OF
	DRAWN BY: S.F.G.	DATE: 02.10.99	
	CHECKED BY: L.M.M.	SCALE: 1" = 500'	

A_BHI_B01.99395.HYDRO.VICINITY.DWG 02.10.99



LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE A99 To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined.

ZONE V Coastal flood with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

ZONE X Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

ZONE X Areas determined to be outside 500-year floodplain.

ZONE D Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS

Identified 1983 | Identified 1990 | Otherwise Protected Areas

Coastal barrier areas are normally located within or adjacent to Special Flood Hazard Areas.

Flood Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.

513 — Base Flood Elevation Line; Elevation in Feet. See Map Index for Elevation Datum.

D — D Cross Section Line

(EL 987) Base Flood Elevation in Feet Where Uniform Within Zone. See Map Index for Elevation Datum.

RM7 × Elevation Reference Mark

● M2 River Mile

97°07'30", 32°22'30" Horizontal Coordinates Based on North American Datum of 1927 (NAD 27) Projection.

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas.

Coastal base flood elevations apply only landward of 0.0 NGVD, and include the effects of wave action; these elevations may also differ significantly from those developed by the National Weather Service for hurricane evacuation planning.

Areas of Special Flood Hazard (100-year flood) include Zones A, AE, AH, AO, A99, V, and VE.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Emergency Management Agency.

Floodway widths in some areas may be too narrow to show to scale. Floodway widths are provided in the Flood Insurance Study Report.

This map may incorporate approximate boundaries of Coastal Barrier Resource System Units and /or Otherwise Protected Areas established under the Coastal Barrier Improvement Act of 1990 (PL 101-591).

Corporate limits shown are current as of the date of this map. The user should contact appropriate community officials to determine if corporate limits have changed subsequent to the issuance of this map.

For community map revision history prior to countywide mapping, see Section 6.0 of the Flood Insurance Study Report.

For adjoining map panels and base map source see separately printed Map Index.

MAP REPOSITORY

Refer to Repository Listing on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP:

SEPTEMBER 20, 1996

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL:

Refer to the FLOOD INSURANCE RATE MAP EFFECTIVE DATE shown on this map to determine when actuarial rates apply to structures in zones where elevations or depths have been established.

To determine if flood insurance is available, contact an insurance agent or call the National Flood Insurance Program at (800) 638-6620.

APPROXIMATE SCALE IN FEET

500 0 500

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

BERNALILLO COUNTY, NEW MEXICO AND INCORPORATED AREAS

PANEL 336 OF 825

(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ALBUQUERQUE, CITY OF	350002	0336	D
BERNALILLO COUNTY, UNINCORPORATED AREAS	350001	0336	D

LOMR FIGURE 2

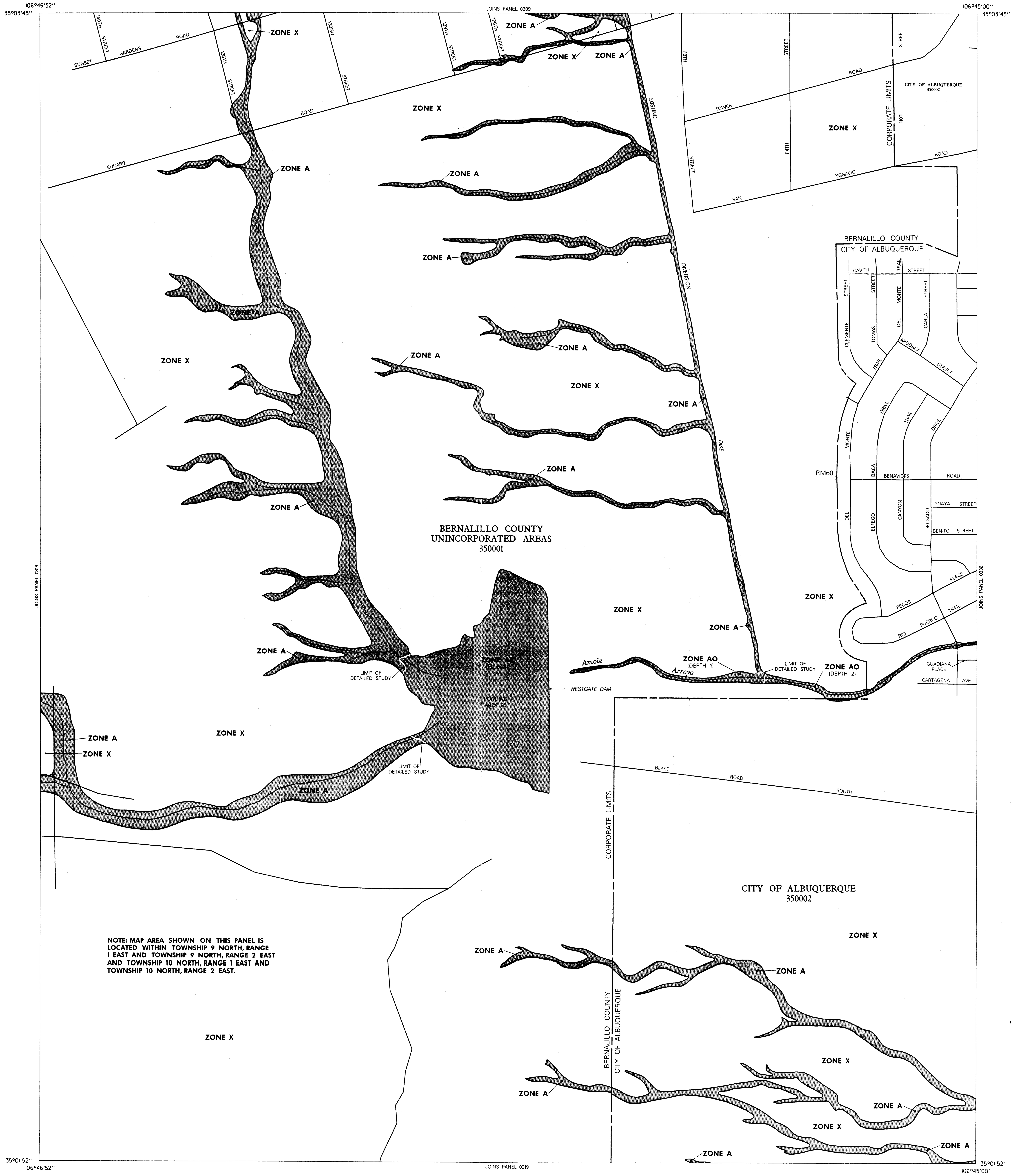
MAP NUMBER 35001C0336 D

EFFECTIVE DATE: SEPTEMBER 20, 1996

Federal Emergency Management Agency

ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FEET NGVD)	DESCRIPTION OF LOCATION
RM60	5276.80	An "X" chiseled on top of the concrete curb at the west-northwest curb return, located at the intersection of Benavides Road and Del Monte Trail, in the northwest quadrant of the intersection.



LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE A99 To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined.

ZONE V Coastal flood with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

ZONE X Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

ZONE X Areas determined to be outside 500-year floodplain.

ZONE D Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS

Identified 1983 | Identified 1990 | Otherwise Protected Areas

Coastal barrier areas are normally located within or adjacent to Special Flood Hazard Areas.

Flood Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.

513 — Base Flood Elevation Line: Elevation in Feet. See Map Index for Elevation Datum.

D — D Cross Section Line

(EL 987) Base Flood Elevation in Feet Where Uniform Within Zone. See Map Index for Elevation Datum.

RM7 × Elevation Reference Mark

• M2 River Mile

97°07'30", 32°22'30" Horizontal Coordinates Based on North American Datum of 1927 (NAD 27) Projection

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas.

Coastal base flood elevations apply only landward of 0.0 NGVD, and include the effects of wave action; these elevations may also differ significantly from those developed by the National Weather Service for hurricane evacuation planning.

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MAP REPOSITORY

Refer to Repository Listing on Map Index

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SEPTEMBER 20, 1996

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL:

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N

APPROXIMATE SCALE IN FEET

500 0 500

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

BERNALILLO COUNTY, NEW MEXICO AND INCORPORATED AREAS

PANEL 317 OF 825
(SEE MAP INDEX FOR PANELS NOT PRINTED)

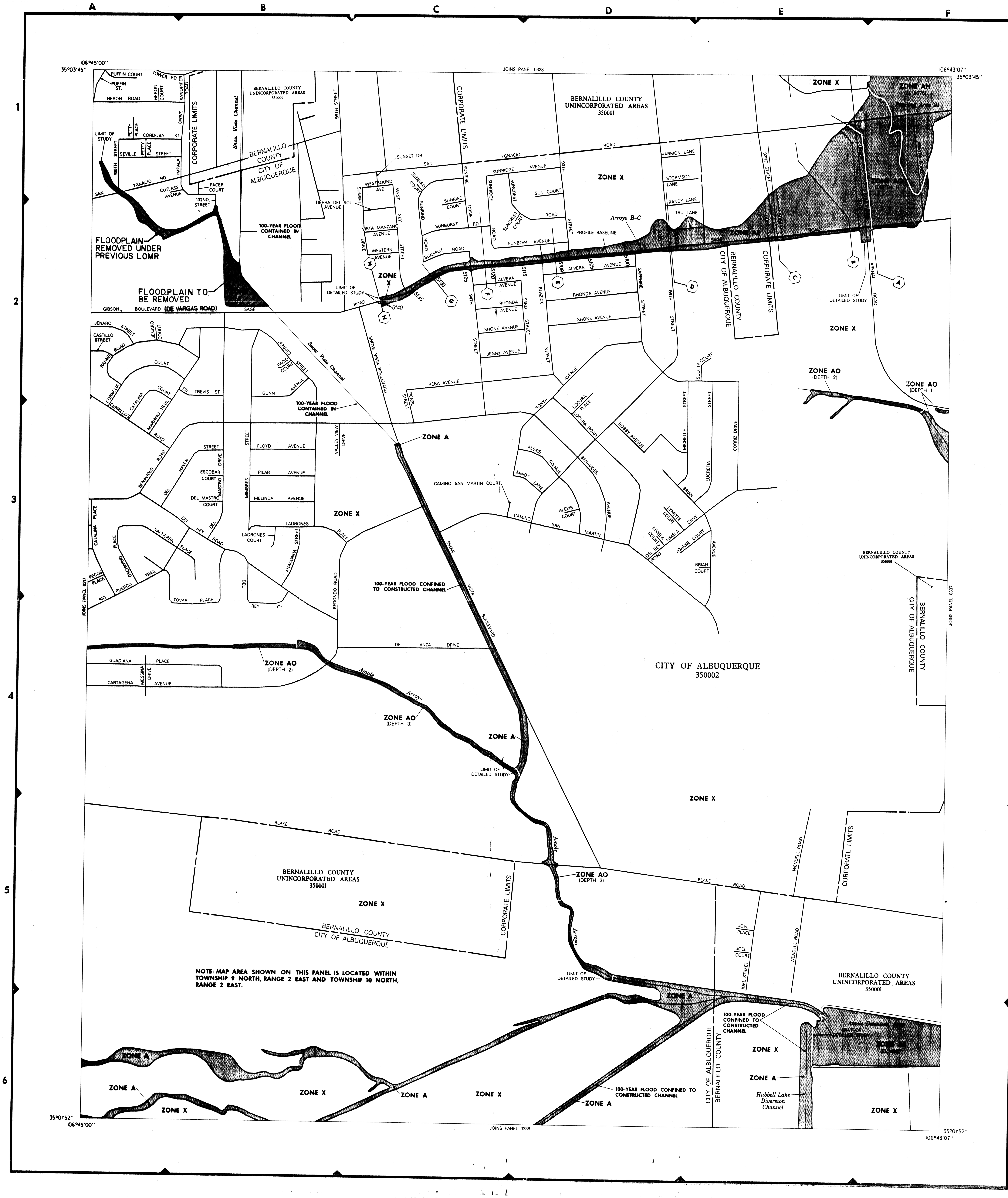
CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ALBUQUERQUE, CITY OF	350002	0317	D
BERNALILLO COUNTY, UNINCORPORATED AREAS	350001	0317	D

MAP NUMBER 35001C0317 D

EFFECTIVE DATE: SEPTEMBER 20, 1996

Federal Emergency Management Agency



LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

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- **ZONE AE** Base flood elevations determined.
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- **ZONE A99** To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined.
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- **ZONE VE** Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

- **ZONE X** Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

- **ZONE X** Areas determined to be outside 500-year floodplain.
- **ZONE D** Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS

Identified 1983 — Identified 1990 — Otherwise Protected Areas

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- Flood Boundary
- Floodway Boundary
- Zone D Boundary
- Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.
- 513 — Base Flood Elevation Line; Elevation in Feet. See Map Index for Elevation Datum.
- (D)—(D) Cross Section Line
- (EL 987) Base Flood Elevation in Feet Where Uniform Within Zone. See Map Index for Elevation Datum.
- RM7 × Elevation Reference Mark
- • M2 River Mile
- 97°07'30", 32°22'30" Horizontal Coordinates Based on North American Datum of 1927 (NAD 27) Projection.

NOTES

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For adjoining map panels and base map source see separately printed Map Index.

MAP REPOSITORY
Refer to Repository Listing on Map Index

EFFECTIVE DATE OF
COUNTYWIDE FLOOD INSURANCE RATE MAP:
SEPTEMBER 20, 1996

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL:

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N

APPROXIMATE SCALE IN FEET
500 0 500

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

BERNALILLO COUNTY, NEW MEXICO AND INCORPORATED AREAS

PANEL 336 OF 825
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:

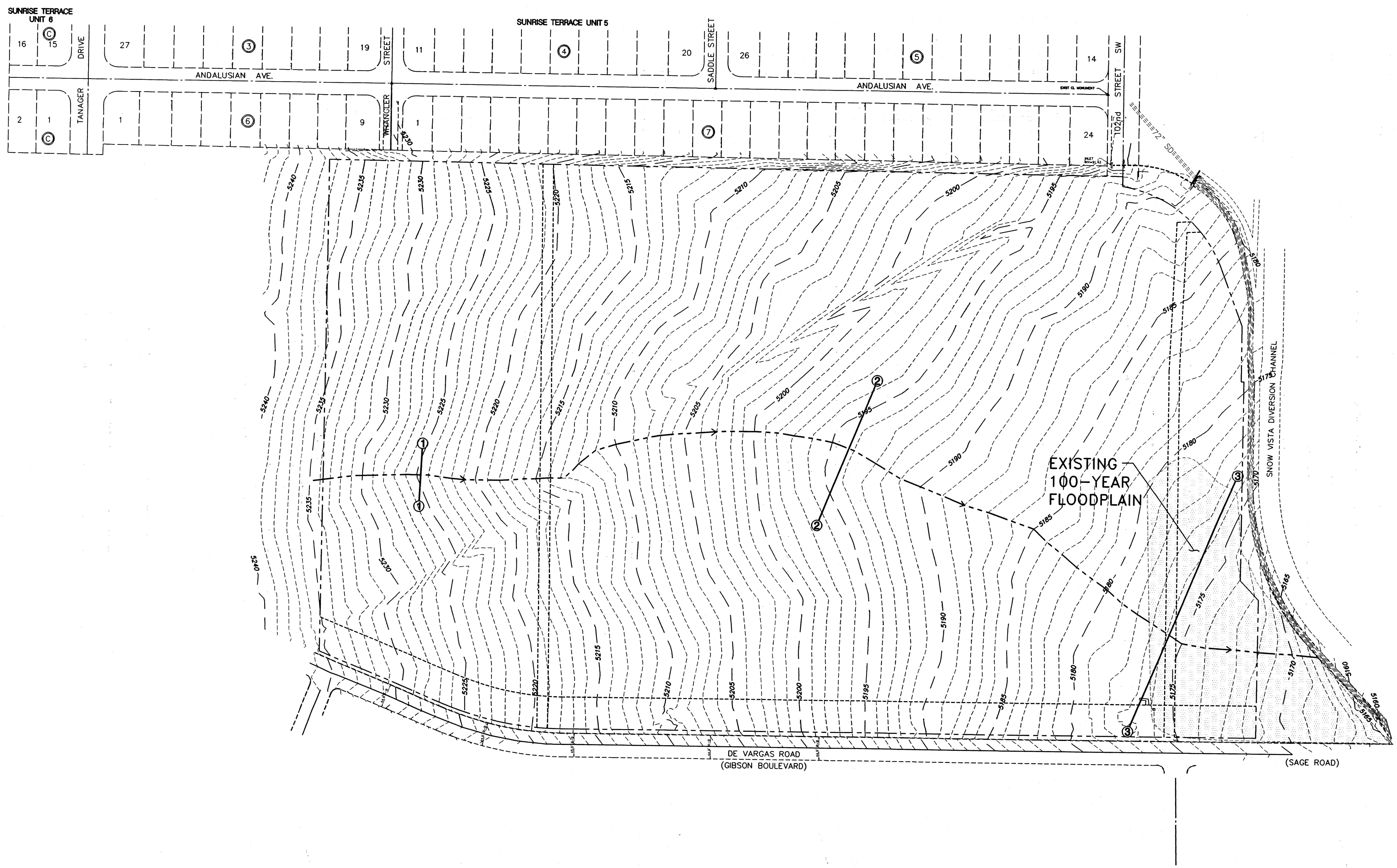
COMMUNITY	NUMBER	PANEL	SUFFIX
ALBUQUERQUE, CITY OF	350002	0336	D
BERNALILLO COUNTY, UNINCORPORATED AREAS	350001	0336	D

LOMR FIGURE 4

MAP NUMBER
35001C0336 D

EFFECTIVE DATE:
SEPTEMBER 20, 1996

Federal Emergency Management Agency



NOTES:

1. ELEVATIONS ARE NEW MEXICO STATE PLANE COORDINATES (CENTRAL ZONE) NAD 1927.

LEGEND

EXISTING FLOW LINE

HYDRAULIC CROSS-SECTIONS

N

100 50 0 100

1"=100'-0"

Bohannan Huston

Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109

ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

TITLE: TIMARRON SUBDIVISION

PROJECT NO.: 99395	EXISTING SITE		
SEAL:	FIGURE 6		
	JOB NO. 99395C03	SHEET	OF
	DRAWN BY: S.F.G.	DATE: 01.08.99	
	CHECKED BY: L.M.M.	SCALE: 1" = 100'	

A_BHI_801.99395.HYDRO.DRAWINGS.TIMARRON.DWG 01.08.99