

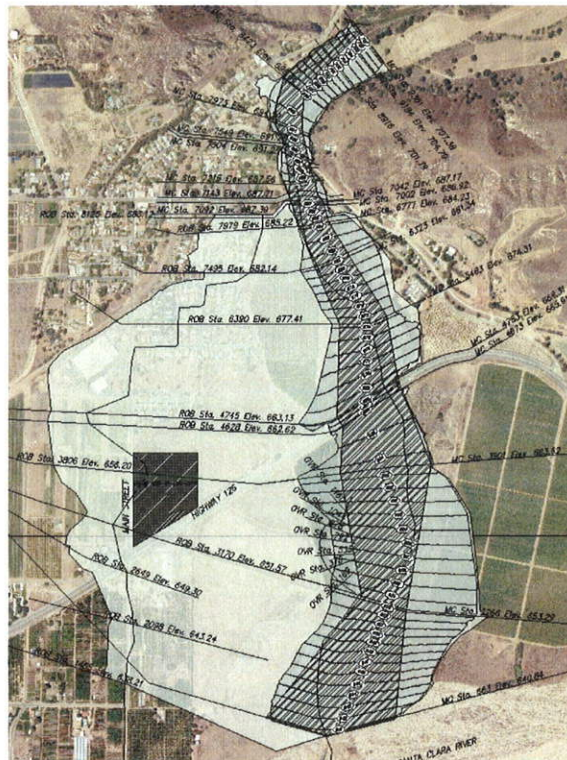


1672 Donlon Street
Ventura, CA 93003
Local 805.654.6977
Fax 805.654.6979
www.jdscivil.com

PIRU CREEK LOMR

PIRU, CA

FOR: **FEDERAL EMERGENCY MANAGEMENT
AGENCY**



C. REVIEW FEE

Has the review fee for the appropriate request category been included?

☒ Yes

Fee amount: \$ 4,690

☐ No, Attach ExplanationPlease see the DHS-FEMA Web site at http://www.fema.gov/plan/prevent/fhm/fm_fees.shtm for Fee Amounts and Exemptions.**D. SIGNATURE**

All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Name: Kinsey Hensley, P.E.

Company: Jensen Design & Survey, Inc.

Mailing Address:

1672 Donlon St. Ventura, CA 93003

Daytime Telephone No.: (805)633-2231

Fax No.: (805)633-2331

E-Mail Address: khensley@jdsccivil.com

Signature of Requester (required):

Date: 01/23/2015

As the community official responsible for floodplain management, I hereby acknowledge that we have received and reviewed this Letter of Map Revision (LOMR) or conditional LOMR request. Based upon the community's review, we find the completed or proposed project meets or is designed to meet all of the community floodplain management requirements, including the requirement that no fill be placed in the regulatory floodway, and that all necessary Federal, State, and local permits have been, or in the case of a conditional LOMR, will be obtained. In addition, we have determined that the land and any existing or proposed structures to be removed from the SFHA are or will be reasonably safe from flooding as defined in 44CFR 65.2(c), and that we have available upon request by FEMA, all analyses and documentation used to make this determination.

Community Official's Name and Title: Jeff Pratt

Community Name: Ventura Unincorporated

Mailing Address:

800 S. Victoria Ave. Ventura, CA 93009

Daytime Telephone No.: (805)654-2073

Fax No.: (805)477-7241

E-Mail Address: jeff.pratt@ventura.org

Community Official's Signature (required):

Date: 01/23/2015

CERTIFICATION BY REGISTERED PROFESSIONAL ENGINEER AND/OR LAND SURVEYOR

This certification is to be signed and sealed by a licensed land surveyor, registered professional engineer, or architect authorized by law to certify elevation information data, hydrologic and hydraulic analysis, and any other supporting information as per NFIP regulations paragraph 65.2(b) and as described in the MT-2 Forms Instructions. All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Certifier's Name: Kinsey Hensley, P.E.

License No.: C70360

Expiration Date: 9/30/2016

Company Name: Jensen Design & Survey, Inc.

Telephone No.: (805)633-2231

Fax No.: (805)633-2331

Signature:

Date: 01/23/2015

Ensure the forms that are appropriate to your revision request are included in your submittal.

Form Name and (Number)**Required if ...**

- | | |
|---|---|
| <input checked="" type="checkbox"/> Riverine Hydrology and Hydraulics Form (Form 2) | New or revised discharges or water-surface elevations |
| <input type="checkbox"/> Riverine Structures Form (Form 3) | Channel is modified, addition/revision of bridge/culverts, addition/revision of levee/floodwall, addition/revision of dam |
| <input type="checkbox"/> Coastal Analysis Form (Form 4) | New or revised coastal elevations |
| <input type="checkbox"/> Coastal Structures Form (Form 5) | Addition/revision of coastal structure |
| <input type="checkbox"/> Alluvial Fan Flooding Form (Form 6) | Flood control measures on alluvial fans |



Print Form

U.S. DEPARTMENT OF HOMELAND SECURITY - FEDERAL EMERGENCY MANAGEMENT AGENCY
OVERVIEW & CONCURRENCE FORM

O.M.B No. 1660-0016
Expires: 12/31/2010

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 1 hour per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless a valid OMB control number appears in the upper right corner of this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, U.S. Department of Homeland Security, Federal Emergency Management Agency, 500 C Street, SW, Washington DC 20472, Paperwork Reduction Project (1660-0016). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

A. REQUESTED RESPONSE FROM DHS-FEMA

This request is for a (check one):

- ☒ CLOMR: A letter from DHS-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 DHS-FEMA officially revising the current NFIP map to show the changes to floodplains, regulatory floodway or flood elevations. (See 44 CFR Ch. 1, Parts 60, 65 & 72)

B. OVERVIEW

1. The NFIP map panel(s) affected for all impacted communities is (are): 0670E

Community No.	Community Name	State	Map No.	Panel No.	Effective Date
060413	Ventura County	CA	06111C	0670E	01/20/2010

2. a. Flooding Source: Piru Creek

- b. Types of Flooding: ☒ Riverine ☐ Coastal ☐ Shallow Flooding (e.g., Zones AO and AH)
- ☐ Alluvial fan ☐ Lakes ☐ Other (Attach Description)

3. Project Name/Identifier: Piru Creek CLOMR

4. FEMA zone designations affected: AE/A (choices: A, AH, AO, A1-A30, A99, AE, AR, V, V1-V30, VE, B, C, D, X)

5. Basis for Request and Type of Revision:

a. The basis for this revision request is (check all that apply)

- ☐ Physical Change ☒ Improved Methodology/Data ☐ Regulatory Floodway Revision ☐ Base Map Changes
- ☐ Coastal Analysis ☐ Hydraulic Analysis ☒ Hydrologic Analysis ☐ Corrections
- ☐ Weir-Dam Changes ☐ Levee Certification ☐ Alluvial Fan Analysis ☐ Natural Changes
- ☐ New Topographic Data ☐ Other (Attach Description)

Note: A photograph and narrative description of the area of concern is not required, but is very helpful during review.

b. The area of revision encompasses the following structures (check all that apply)

- Structures: ☒ Channelization ☐ Levee/Floodwall ☒ Bridge/Culvert
- ☐ Dam ☐ Fill ☐ Other (Attach Description)

U.S. DEPARTMENT OF HOMELAND SECURITY - FEDERAL EMERGENCY MANAGEMENT AGENCY
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C. REVIEW FEE

Has the review fee for the appropriate request category been included?

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Company: Jensen Design & Survey, Inc.

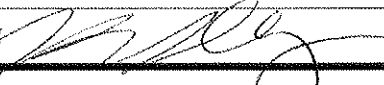
Mailing Address:

1672 Donlon St. Ventura, CA 93003

Daytime Telephone No.: (805)633-2231

Fax No.: (805)633-2331

E-Mail Address: khensley@jds civil.com

Signature of Requester (required): 

Date: 01/23/2015

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Form Name and (Number)**Required if ...**

- | | |
|---|---|
| <input checked="" type="checkbox"/> Riverine Hydrology and Hydraulics Form (Form 2) | New or revised discharges or water-surface elevations |
| <input type="checkbox"/> Riverine Structures Form (Form 3) | Channel is modified, addition/revision of bridge/culverts, addition/revision of levee/floodwall, addition/revision of dam |
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| <input type="checkbox"/> Coastal Structures Form (Form 5) | Addition/revision of coastal structure |
| <input type="checkbox"/> Alluvial Fan Flooding Form (Form 6) | Flood control measures on alluvial fans |

Seal (Optional)

Print Form

U.S. DEPARTMENT OF HOMELAND SECURITY - FEDERAL EMERGENCY MANAGEMENT AGENCY
RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B No. 1660-0016
Expires: 12/31/2010

PAPERWORK REDUCTION ACT

Public reporting burden for this form is estimated to average 3.25 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless a valid OMB control number appears in the upper right corner of this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, U.S. Department of Homeland Security, Federal Emergency Management Agency, 500 C Street, SW, Washington DC 20472, Paperwork Reduction Project (1660-0016). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

Flooding Source: Piru Creek
Note: Fill out one form for each flooding source studied

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

- ☐ Not revised (skip to section B) ☐ No existing analysis ☒ Improved data
☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☒ Changed physical condition of watershed

2. Comparison of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	Effective/FIS (cfs)	Revised (cfs)
Piru Creek	4 4 1	41,000	41,000

3. Methodology for New Hydrologic Analysis (check all that apply)

- ☐ Statistical Analysis of Gage Records ☒ Precipitation/Runoff Model
☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters) and documentation to support the new analysis.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? ☐ Yes ☒ No If yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.)	
			Effective	Proposed/Revised
Downstream Limit	Confluence of Santa Clara River	6 6 3	6 4 4	6 4 2
Upstream Limit	1.57 miles upstream of confluence of Santa Clara River	9 3 6 1	N / A	7 0 7 . 3 8

2. Hydraulic Method/Model Used HEC-RAS Version 4.1.0

B. HYDRAULICS (CONTINUED)

3. Pre-Submittal Review of Hydraulic Models

DHS-FEMA has developed two review programs, CHECK-2 and CHECK-RAS, to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs may help verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. **These tools do not replace engineering judgment.** CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/plan/prevent/fhm/fm_soft.shm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. Review of your submittal and resolution of valid modeling discrepancies may result in reduced review time.

4. Models Submitted

	Natural Run		Floodway Run		Datum
Duplicate Effective Model*	File Name:	Plan Name:	File Name:	Plan Name:	
Corrected Effective Model*	File Name:	Plan Name:	File Name:	Plan Name:	
Existing or Pre-Project Conditions Model	File Name: Piru Creek Analysis Dec2014	Plan Name: Piru Creek Analysis Dec2014	File Name: Piru Creek Analysis Dec2014	Plan Name: Piru Creek Analysis Dec2014	NAVD83
	Plan Name: Main Stream Multiple Profile	Plan Name: Main Stream Multiple Profile	File Name: Piru Main Stream Floodway	Plan Name: Piru Main Stream Floodway	NAVD83
Revised or Post-Project Conditions Model	File Name:	Plan Name:	File Name:	Plan Name:	NAVD83
Other - Flow over lateral structures on ROB	File Name: Piru Creek Dec2014	Plan Name: Piru Creek Dec2014	File Name:	Plan Name:	
	Plan Name: Piru Creek Overflow	Plan Name: Piru Creek Overflow			
Other - Flow on ROB or 500-year	File Name: Piru Creek Analysis Dec2014	Plan Name: Piru Creek Analysis Dec2014	File Name: Piru Creek Analysis Dec2014	Plan Name: Piru Creek Analysis Dec2014	
	<input checked="" type="checkbox"/> Digital Models Submitted? (Required)		Plan Name: Piru Creek ROB - only 500-yr		

* For details, refer to the corresponding section of the instructions.

C. MAPPING REQUIREMENTS

A **certified topographic map** must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

☒ Digital Mapping (GIS/CADD) Data Submitted

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach a **copy of the effective FIRM and/or FBFM**, annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2%-annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

☒ Annotated FIRM and/or FBFM (Required)

D. COMMON REGULATORY REQUIREMENTS*

1. For LOMR/CLOMR requests, do Base Flood Elevations (BFEs) increase?

☒ Yes ☐ No

a. For CLOMR requests, if either of the following is true, please submit **evidence of compliance with Section 65.12 of the NFIP regulations**:

- The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
- The proposed project encroaches upon a SFHA with or without BFEs established and would result in increases above 1.00 foot.

b. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☒ Yes ☐ No

If Yes, please attach **proof of property owner notification and acceptance (if available)**. Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

2. Does the request involve the placement or proposed placement of fill?

☐ Yes ☒ No

If Yes, the community must be able to certify that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets all of the standards of the local floodplain ordinances, and is reasonably safe from flooding in accordance with the NFIP regulations set forth at 44 CFR 60.3(a)(3), 65.5(a)(4), and 65.6(a)(14). Please see the MT-2 instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised?

☒ Yes ☐ No

If Yes, attach **evidence of regulatory floodway revision notification**. As per Paragraph 65.7(b)(1) of the NFIP Regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR/CLOMR requests, does this request have the potential to impact an endangered species?

☐ Yes ☒ No

If Yes, please submit documentation to the community to show that you have complied with Sections 9 and 10 of the Endangered Species Act (ESA). Section 9 of the ESA prohibits anyone from "taking" or harming an endangered species. If an action might harm an endangered species, a permit is required from U.S. Fish and Wildlife Service or National Marine Fisheries Service under Section 10 of the ESA.

For actions authorized, funded, or being carried out by Federal or State agencies, please submit documentation from the agency showing its compliance with Section 7(a)(2) of the ESA.

* Not inclusive of all applicable regulatory requirements. For details, see 44 CFR parts 60 and 65.

PIRU CREEK LOMR

PIRU, CA



PIRU CREEK LOMR PIRU, CA

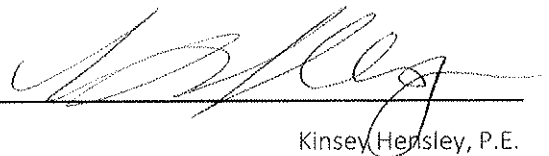
APN: 056-0-190-090

**Piru Creek
Piru, CA**

prepared for:
U.S. Department of Homeland Security
Federal Emergency Management Agency

prepared by:
Jensen Design & Survey, Inc.
1672 Donlon St.
Ventura, CA 93003




Kinsey Hensley, P.E.

January 19, 2015





TABLE OF CONTENTS

1.0	PROJECT OVERVIEW.....	4
1.1.	Project Description & Location.....	4
1.2.	Site Conditions & known variables.....	4
1.3.	Report Objective	6
2.0	DESIGN METHODOLOGY.....	6
2.1.	modeling program: hec-ras.....	6
2.2.	plans.....	6
2.3.	Boundary conditions	7
2.4.	Ineffective flow areas.....	7
3.0	CONCLUSIONS	8
4.0	APPENDICES.....	9



APPENDICES

APPENDIX A: NEW BFES AND FLOODPLAIN LIMITS	10
APPENDIX B: NEW BFES AND FLOODPLAIN LIMITS (AERIAL)	12
APPENDIX C: NEW BFES AND FLOODPLAIN LIMITS (FIRM).....	14
APPENDIX D: UPDATED FIRMS	16
APPENDIX E: UPDATED FIS 100-YEAR AND 500-YEAR PROFILES	19
APPENDIX F: HEC-RAS SUMMARY TABLE	22
APPENDIX G: HEC-RAS DETAILED CROSS SECTION OUTPUT TABLES FOR MAIN STREAM (PLAN 1) 25	
APPENDIX H: HEC-RAS CROSS SECTION DIAGRAMS FOR MAIN STREAM (PLAN 1)	36
APPENDIX I: OWNER NOTIFICATION AND AGREEMENT LETTERS AND SIGNATURES	51



1.0 PROJECT OVERVIEW

1.1. PROJECT DESCRIPTION & LOCATION

The owner of a site to the west of Piru Creek is preparing to develop the area. The location of this site, with APN# 056-0-190-090, is shown in Appendix B. The current FIRM, map number 06111C0670E, shows that this site is located within the 100-year and 500-year floodplains. The current FIRM was put into effect January 20, 2010. A more recent study originally created by Dewberry and recreated in this report, shows that the project site is not within the 100-year floodplain.

Piru Creek, a major tributary of the Santa Clara River, is located in unincorporated Ventura County near the community of Piru, approximately 6.5 miles west of the Ventura County line along the Santa Clara River. The flood plain limits of this creek are defined in the FIRM by FEMA, effective on January 20, 2010. Detailed hydraulic analysis was performed for 1.57 miles of the creek, measured from the mouth at the Santa Clara River and extending 1,400 feet upstream of Union Pacific Railroad, in order to investigate the actual extents of the flood plain. The boundaries of the creek's flood plain limits proved to vary from those found in the FIRM map produced by FEMA, creating the necessity of a LOMR for Piru Creek.

1.2. SITE CONDITIONS & KNOWN VARIABLES

Piru Creek is a part of the Ventura County unincorporated FIS. The study reach within Piru Creek is a natural channel with four bridge crossings.

1.2.1. EXISTING STRUCTURES

The bridge structures along Piru Creek are located at Telegraph Road, Old Center Street, New Center Street, and Union Pacific Railroad. The bridge geometry is summarized in the following table. The structure information for all structures was previously obtained from as-built plans and general measurements during field reconnaissance.

Bridge	Width (ft)	Length (ft)
Telegraph Road	93	1,110
Old Center Street	33	415
New Center Street	41	450
Union Pacific Railroad	31.3	340

1.2.2. FLOW RATE DATA

The flow rates used for the analysis of Piru Creek were 2,500 cfs, 33,000 cfs, 41,000 cfs, and 60,000 cfs for the 10-year, 50-year, 100-year, and 500-year storm events, respectively. These flow rates were taken from Volume 1, Table 5 – Summary of Discharges, found in the Ventura County Flood Insurance Study published on January 20, 2010 by FEMA.

1.2.3. TERRAIN DATA

LIDAR data was obtained in 2005 in the form of mass points, where each point is attributed with latitude, longitude, and elevation. A horizontal datum of NAD 1983 with projection of "StatePlane California V FIPS 0405 Feet" and a vertical datum of "NAVD 88" were used. Projected mass points were used to create an ESRI Terrain for the areas surrounding the stream, and 2-, 5-, and 10-foot contours were generated from the Terrain.

1.2.4. MANNING'S ROUGHNESS COEFFICIENT

Manning's coefficient values were determined for each cross section using the Cowan 1956 procedure outlined in "Guide for Selecting Manning's Roughness Coefficients for Natural Channels and Floodplains" (G.J. Arcement and V.R. Schneider, USGS Water Supply Paper 2339). Manning's coefficients for the channel were estimated using photographs taken during field reconnaissance and aerial images. The Manning's coefficient was adjusted to 0.04 based on field investigations performed by VCWPD. Land use classifications were developed from aerial imagery for overbank areas. Polygons were digitized for different land uses, which were attributed with the corresponding



Manning's values. Manning's coefficients varied from 0.02 to 0.08 for the channel and 0.016 to 0.11 for the overbanks.

1.2.5. STREAMLINE AND FLOW PATHS

The streamline for the main stream was defined using aerial imagery and 2-foot contour data. Bank stations were at first created as 20-foot offsets on each side of the stream, but were later adjusted in the hydraulic model based on the top of the embankments for the concrete channel and the 10-year water surface elevation for the natural channel. Flow path lines were created as 50-foot offsets on both sides of the stream. Similar procedures were followed to define the overbank streamlines.

1.2.6. CROSS SECTIONS

Data for the cross section geometry was extracted from the terrain. Each cross-section was positioned so that it represents a general channel and overbank topography on its upstream and downstream side. The cross sections were oriented to be perpendicular to the flow path. The cross sections for each plan are summarized in the following table. Note that some of the cross sections within the Overflow and Right Overbank geometries do not match up with cross sections within the Main Stream geometry. This is because these cross sections are located between those within the Main Stream cross sections. Cross sections within the same row align with cross sections from other plans within that row. Upstream and downstream cross sections for the four bridges are not included in the table below and are not shown in the exhibits.

Cross Section Summary per Plan

Main Stream	Overflow	Right Overbank
8916		
8423		
7973		
7504		
7215		
7092		
7042		8125
7002		
6777		7979
6323		7495
5463		6390
4783		4745
4673		4628
3901		3806
	1160	
	1044	
	878	
	722	
	535	
	378	
2266	169	3170
		2649
663		2098
		1465



1.3. REPORT OBJECTIVE

The intent of this report is to meet the current FEMA requirements. By meeting the requirements outlined by FEMA, the flood plain boundary will be adjusted through this LOMR so that the property with APN number 056-0-190-090 is shown to be outside of the flood plain limits.

2.0 DESIGN METHODOLOGY

2.1. MODELING PROGRAM: HEC-RAS

HEC-RAS, designed to perform one-dimensional hydraulic calculations for natural and constructed channels, was used to compute the water surface elevations throughout the study area of Piru Creek. Hydraulic modeling was performed using only one discharge location at the mouth of Piru Creek. Lateral structures were used in HEC-RAS on the natural high ground of the right overbank in order to determine the overtopping on the right overbank, resulting in reduced discharges for the 100-year and 500-year flows within the main channel. A discharge of 19.5 cfs was used to model the overflow area at the downstream of Piru Creek during the 100-year flow. The flow overtopping the main stream onto the right overbank during the 500-year flow was used to map the right overbank area, as discussed in Section 2.2.4.

2.2. PLANS

There were four plans set up within HEC-RAS, including Piru Creek Main Stream Multiple Profile, Piru Creek Overflow, Piru Creek Main Stream Floodway, and Piru Creek Right Overbank for 500-year Discharge.

2.2.1. PIRU CREEK MAIN STREAM MULTIPLE PROFILE

Plan 1, Piru Creek Main Stream Multiple Profile, includes four profiles corresponding to the 10-, 50-, 100-, and 500-year flow rates. The topography showed a presence of natural high ground between the main channel and the right overbank area. In order to account for the topography in the right overbank area, lateral structures were digitized and placed on top of the high ground, ensuring that the lateral discharge from the main channel to the overbank area was accounted for. Lateral structures in study were modeled using the standard weir equation for a broad crested weir. In general the weir coefficient for lateral structures should be significantly smaller than the coefficients typically assume for inline structures. A smaller coefficient is needed to account for the energy and momentum losses associated with the flow changing direction to overtop the lateral structure. For lateral structures in non-elevated overbank terrains the Hydraulic Engineering Center recommends coefficients ranging from 0.1-0.5; for this study a coefficient of 0.5 was used. The lateral structures were split in between subsequent cross sections and manually adjusted in HEC-RAS so that they fall exactly in between those two cross sections. The flow over the lateral structures shows that 19.5 cfs will overtop the natural high ground during the 100-year flow. This flow is negligible and will not be mapped since it results in depths of less than 1ft on the overbank areas. The flow over the lateral structures shows that the 500-year flow will overtop the natural high ground at the upstream side of the creek, following a separate flow path, which is modeled in Plan 4, Piru Creek Right Overbank for 0.2% Discharge.

2.2.2. PIRU CREEK MAIN STREAM FLOODWAY

For Plan 2, Piru Main Stream Floodway, a smooth floodway was obtained by using the equal conveyance reduction method for the floodway analysis. A preliminary analysis was made using Method 4 with a target elevation change of 1ft. The results from this run were imported to establish a starting point for the encroachment left and right stations when applying Method 1. The left and right stations were then modified to achieve a surge for the flood way between 0-1ft, not to exceed 1ft.



2.2.3. PIRU CREEK RIGHT OVERBANK FOR 500-YEAR DISCHARGE

In Plan 3, Piru Creek Right Overbank for 500-year Discharge, the overbank streamline was defined using 2-foot contours on the right overbank. The cross sections from the Main Stream were also used for the right overbank, but were altered so that only the portions of the cross sections starting from the highest point on the high ground of the main channel to the west end of the cross-section were used for this plan. The right overbank discharges were determined from the 500-year profile from Plan 1. The lateral structures were optimized to determine how much flow left the main channel onto the right overbank. At the upstream section of the Right overbank geometry the flow was determined to be 196cfs, a change of flow was added moving downstream to account for the overflows observed in Plan 1 for the 500-yr profile, see table below.

LATERAL STRUCTURES OVERBANK FLOW AN FLOW CHANGE LOCATIONS FOR 500 YEAR EVENT

Main Stream Station	Right Overbank Section	Overbank Discharge (cfs)	Flow Change Discharge (cfs)
8422	--	6.9	
7503	--	4.1	
7001	8125	185.8	196
6776	7979	200.9	369.9
6322	7495	388.5	785.4
5462	6390	251.6	1037

2.3. BOUNDARY CONDITIONS

For all profiles in Plan 1, Piru Creek Main Stream Multiple Profile, the downstream boundary condition was set at normal depth with an energy slope of 0.002. . For all profiles in Plan 2, Piru Creek Main Stream Floodway, the downstream boundary condition was set at normal depth with an energy slope of 0.002. The downstream boundary condition for Plan 3, Piru Creek Right Overbank for 500-year Discharge, was set at normal depth with an energy slope of 0.0099.

2.4. INEFFECTIVE FLOW AREAS

Ineffective flow areas were used to account for areas in a cross section that are not actively conveying flow downstream. Ineffective flow areas in this model are typically located near structures and local depression areas. To establish ineffective flow areas at local depressions we looked at the flow conveyance in the main channel, if the main channel had the capacity to carry the full flow then the flow displayed in the overbank area was not there and hence the area was marked as an ineffective flow area. When flow approaches structures it is constricted and as the flow leaves the structure it expands. In order to convey this occurrence near structures the ineffective flow feature was used to represent the correct amount of active flow area near structures.



3.0 CONCLUSIONS

The upstream limit of this study is located approximately 8698 feet from the confluence to the Santa Clara River at Section 9361, with a BFE 707.4'. The lower limit is located at the confluence with the Santa Clara River and it's denoted by Section 663. The proposed flood plain limits tie in to the effective map at the confluence with the Santa Clara River with BFE 644'. To establish the tie in location at the Santa Clara River an interpolation was done between the lower limit of the study (Section 663, BFE 642.1') and section 2233 with BFE 652.9'.

Through the use of this model, the floodplain has been shown so that the property within APN number 056-0-190-090 is out of the floodplain.

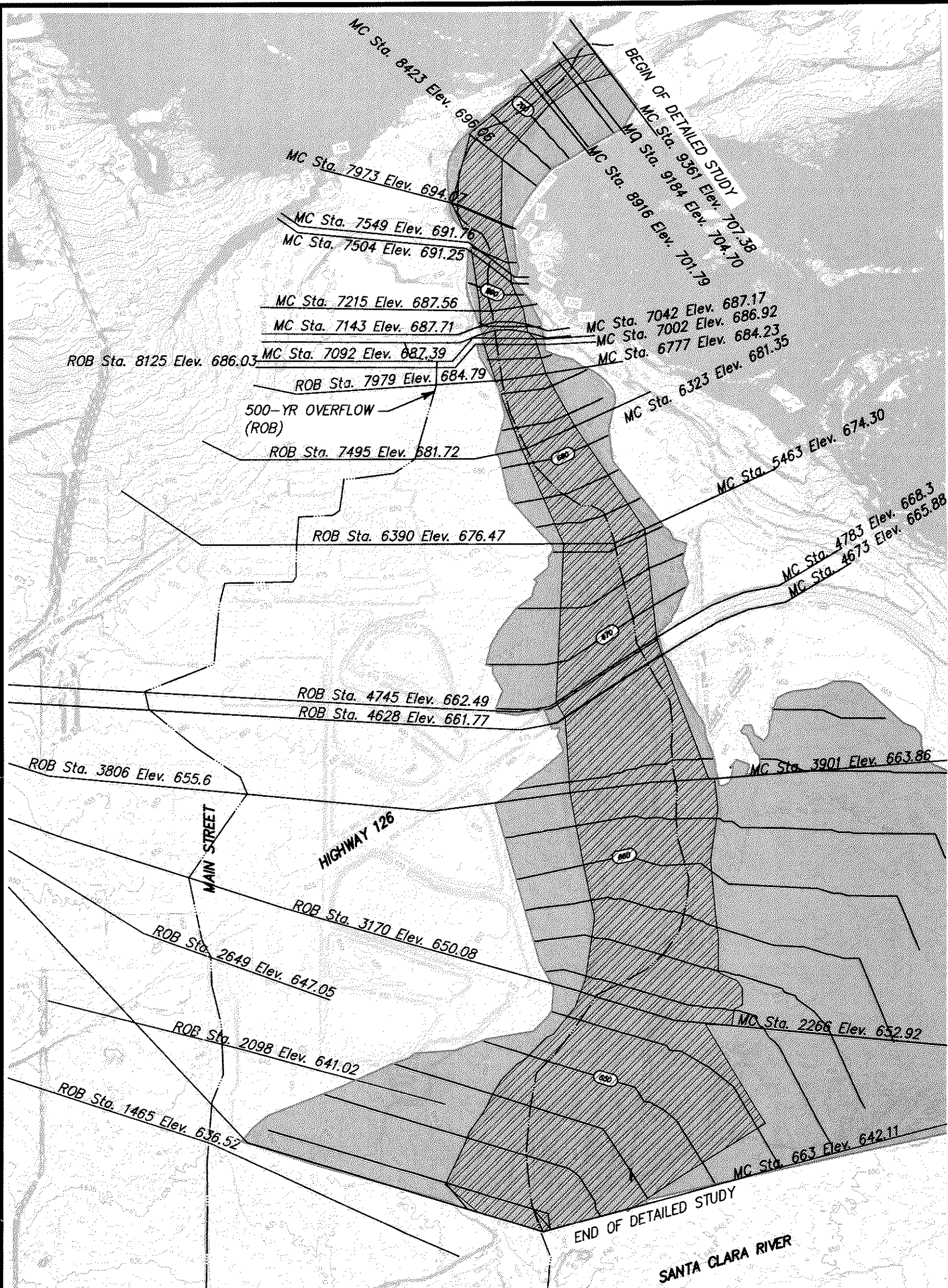


4.0 APPENDICES



APPENDIX A: NEW BFES AND FLOODPLAIN LIMITS

J:\JEN14138\Eng\Exhibits\4138 Piru Creek Cross Section Comparison.dwg Jan 28, 2015, 9:41am gramirez



NOTES:

TOPOGRAPHIC
INFORMATION SHOWN
HEREON IS BASED ON
LIDAR 2005 ON NAVD88
VERTICAL DATUM.



300' 0' 600'
SCALE: 1"=600'

LEGEND:

- | | | | |
|--|---------------------------|--|---------------------|
| | 500-YEAR FLOODPLAIN | | ROB FLOWLINE 500-YR |
| | 100-YEAR FLOODPLAIN | | MAJOR BFE |
| | FLOODWAY | | MINOR BFE |
| | MAINCHANNEL (MC) FLOWLINE | | CROSS SECTION |



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NEW BFES AND FLOODPLAIN LIMITS

PIRU CREEK

SHEET

1 OF 3

Jan 28, 2015



PIRU CREEK LOMR

PIRU, CA

APPENDIX B: NEW BFES AND FLOODPLAIN LIMITS (AERIAL)



NOTES:

TOPOGRAPHIC
INFORMATION SHOWN
HEREON IS BASED ON
LIDAR 2005 ON NAVD88
VERTICAL DATUM.



300' 0' 600'
SCALE: 1"=600'

LEGEND:

- | | | | |
|--|---------------------------|--|---------------------|
| | 500-YEAR FLOODPLAIN | | ROB FLOWLINE 500-YR |
| | 100-YEAR FLOODPLAIN | | MAJOR BFE |
| | FLOODWAY | | MINOR BFE |
| | MAINCHANNEL (MC) FLOWLINE | | CROSS SECTION |



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NEW BFES AND FLOODPLAIN LIMITS (AERIAL)

PIRU CREEK

SHEET

2 OF 3

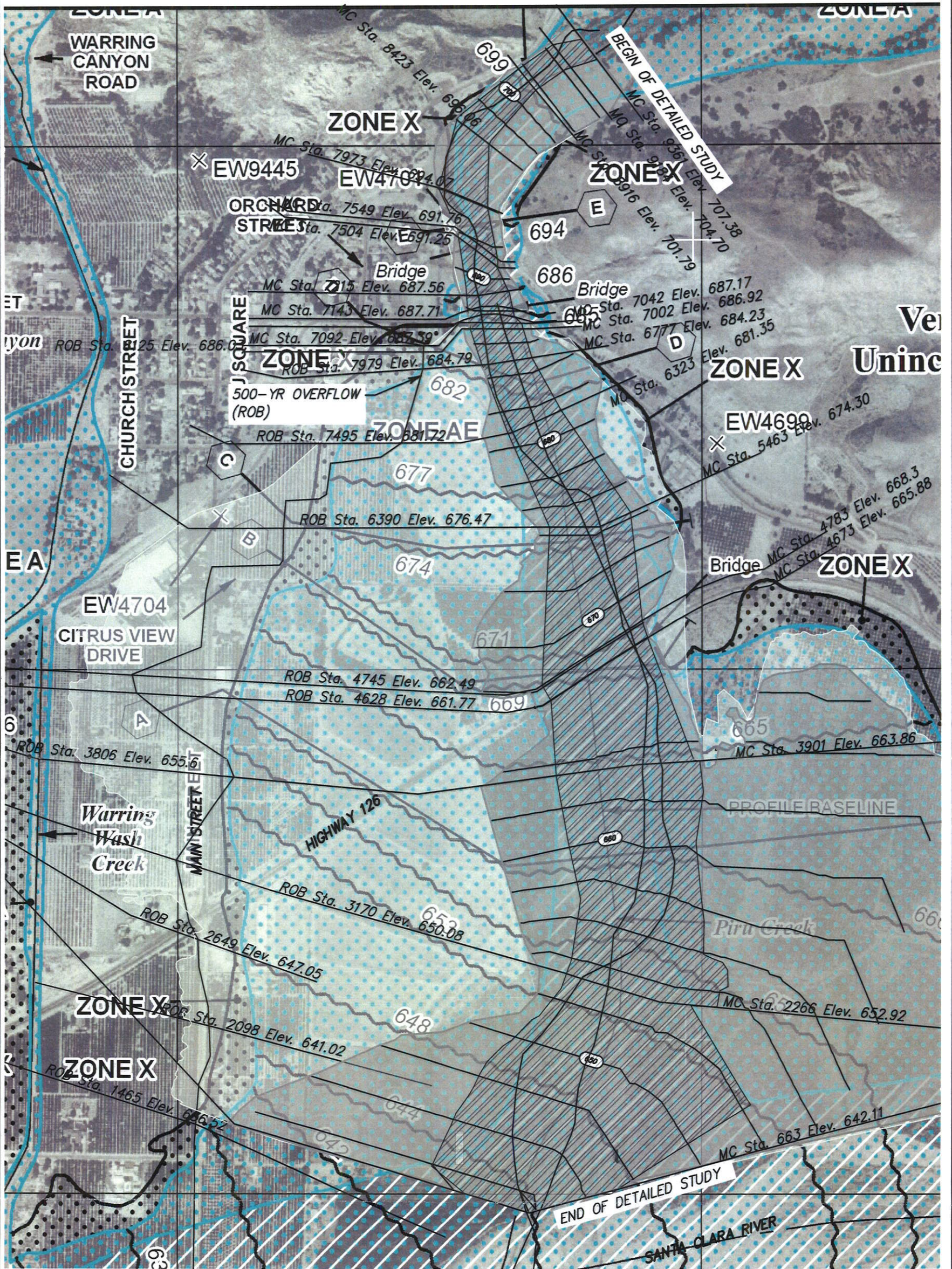
Jan 28, 2015



PIRU CREEK LOMR

PIRU, CA

APPENDIX C: NEW BFES AND FLOODPLAIN LIMITS (FIRM)

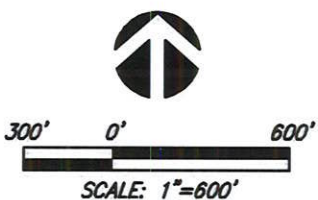


NOTES:

TOPOGRAPHIC
INFORMATION SHOWN
HEREON IS BASED ON
LIDAR 2005 ON NAVD88
VERTICAL DATUM.

LEGEND:

- | | | | |
|--|---------------------------|--|---------------------|
| | 500-YEAR FLOODPLAIN | | ROB FLOWLINE 500-YR |
| | 100-YEAR FLOODPLAIN | | MAJOR BFE |
| | FLOODWAY | | MINOR BFE |
| | MAINCHANNEL (MC) FLOWLINE | | CROSS SECTION |



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NEW BFES AND FLOODPLAIN LIMITS (FIS)

PIRU CREEK

SHEET

3 OF 3

Jan 28, 2015



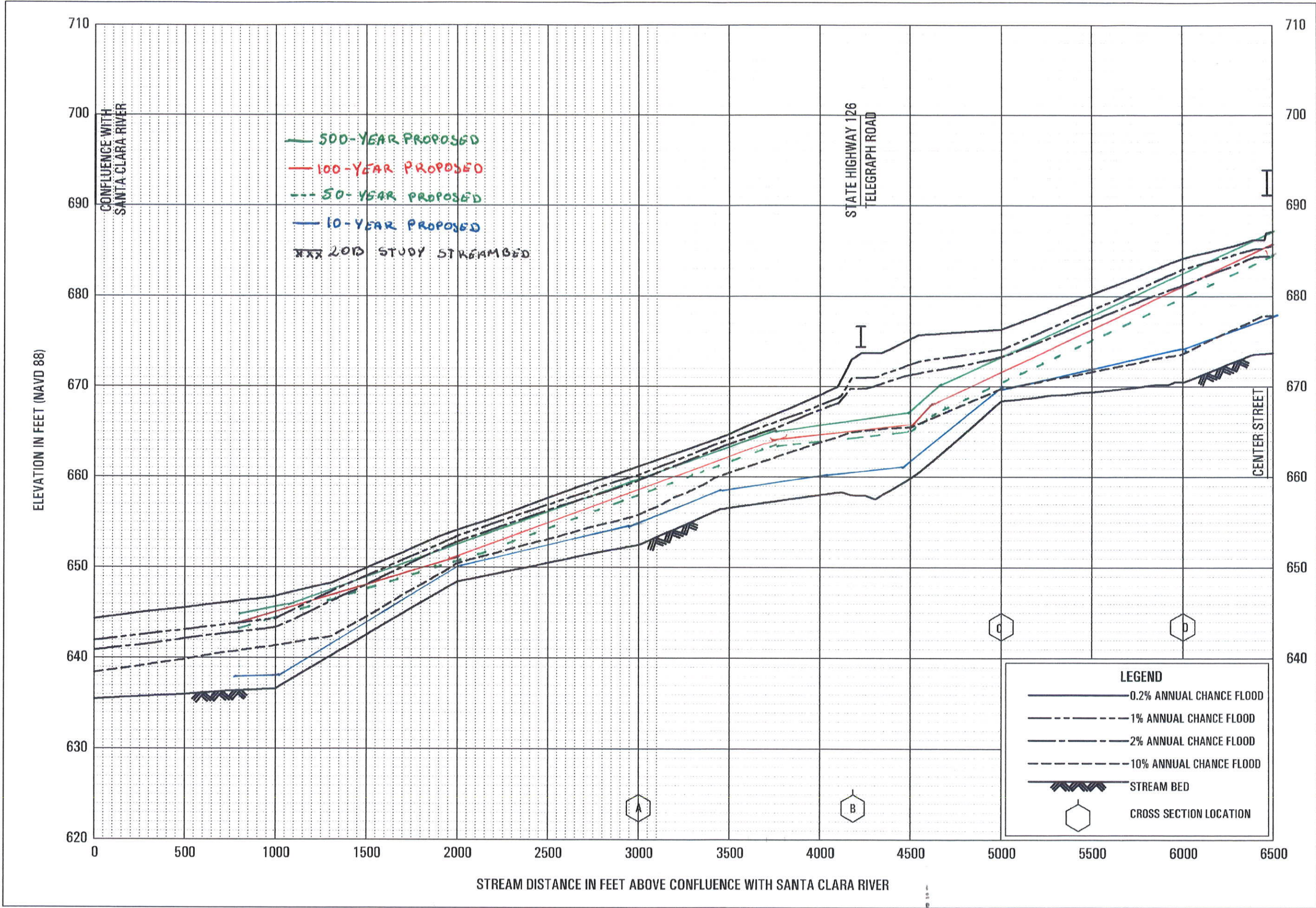
PIRU CREEK LOMR

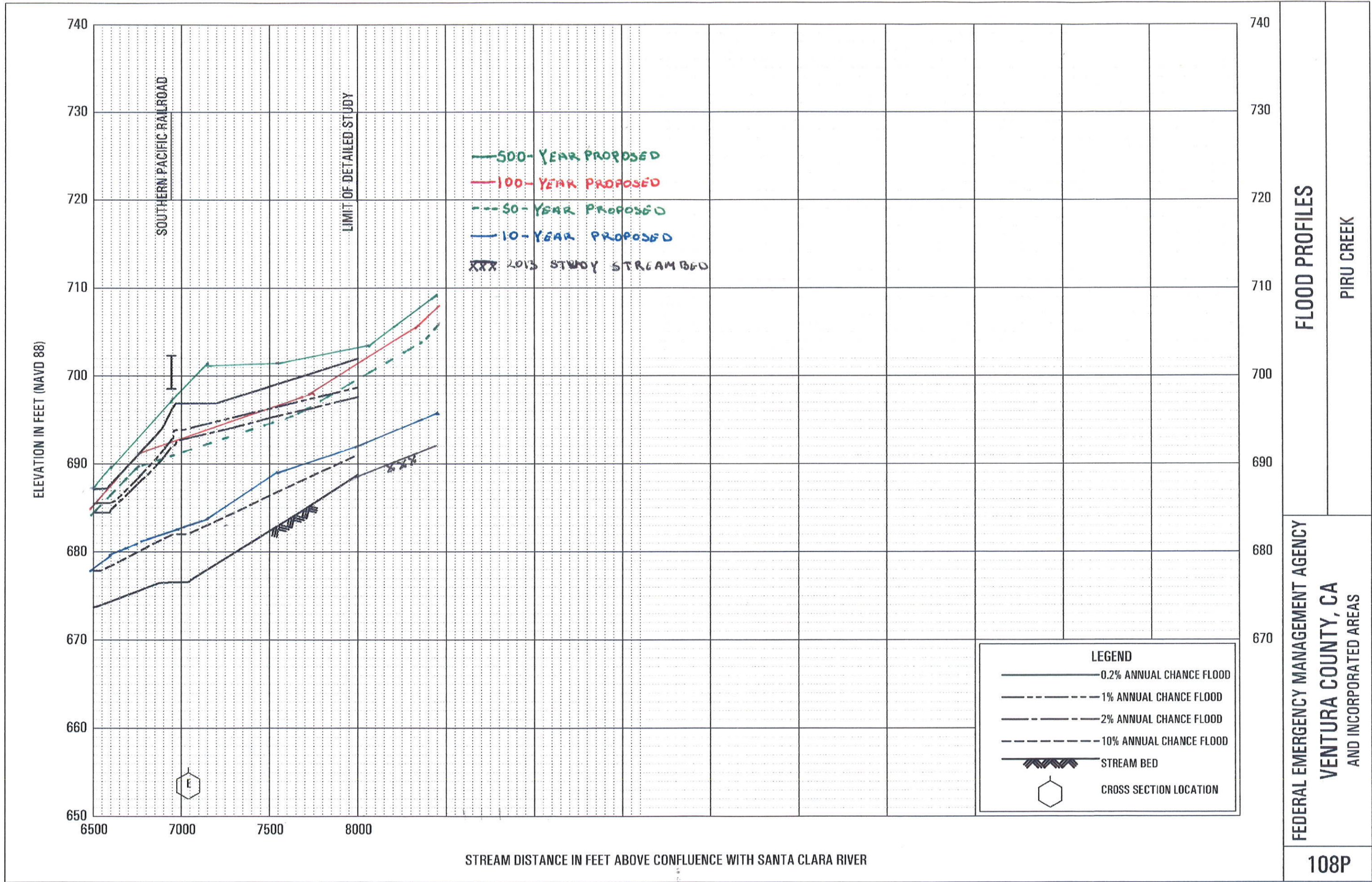
PIRU, CA

APPENDIX D: UPDATED FIRMS



APPENDIX E: UPDATED FIS 100-YEAR AND 500-YEAR PROFILES







APPENDIX F: HEC-RAS SUMMARY TABLE

HEC-RAS Plan: Plan - Main River: Piru Creek Reach: 1 Profile: 100-Year

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	9361	100-Year	41000.00	691.85	707.38		708.68	0.001725	9.66	4909.12	546.67	0.47
1	9184	100-Year	41000.00	690.00	704.70	704.70	707.97	0.005431	17.62	3532.43	559.33	0.85
1	8916	100-Year	41000.00	688.60	701.79	701.79	704.88	0.005636	16.04	3314.42	545.50	0.83
1	8915		Lat Struct									
1	8423	100-Year	41000.00	685.23	696.06	696.06	699.20	0.007250	15.90	3062.68	538.54	0.94
1	8422		Lat Struct									
1	7973	100-Year	41000.00	679.56	694.07	690.38	695.47	0.002124	9.26	4351.90	428.27	0.45
1	7972		Lat Struct									
1	7549	100-Year	41000.00	676.55	691.76	688.75	694.14	0.004117	13.03	3352.44	290.23	0.62
1	7527		Bridge									
1	7504	100-Year	41000.00	676.91	691.25	688.53	693.60	0.004257	13.18	3402.52	306.38	0.65
1	7503		Lat Struct									
1	7215	100-Year	41000.00	675.69	687.56	687.56	691.40	0.009362	16.84	2897.96	859.47	0.93
1	7214		Lat Struct									
1	7143	100-Year	41000.00	675.15	687.71	685.66	689.82	0.004663	12.36	3620.11	793.47	0.66
1	7117		Bridge									
1	7092	100-Year	41000.00	674.81	687.39	685.24	689.48	0.004610	12.34	3626.56	778.74	0.66
1	7042	100-Year	41000.00	673.85	687.17	684.77	689.24	0.004466	11.78	3622.25	1224.47	0.64
1	7023		Bridge									
1	7002	100-Year	41000.00	673.81	686.92	684.23	688.87	0.004126	11.34	3711.78	1341.83	0.62
1	7001		Lat Struct									
1	6777	100-Year	40985.55	673.69	684.23	682.65	687.27	0.008116	14.68	3179.76	837.20	0.85
1	6776		Lat Struct									
1	6323	100-Year	40985.55	670.08	681.35	680.74	683.69	0.006817	12.60	3652.86	1370.42	0.77
1	6322		Lat Struct									
1	5463	100-Year	40980.81	664.47	674.30	674.30	676.81	0.009532	12.94	3276.63	782.11	0.98
1	5462		Lat Struct									
1	4783	100-Year	40980.81	659.30	668.30	666.93	669.35	0.004527	9.71	5165.53	3664.34	0.62
1	4733		Bridge									
1	4673	100-Year	40980.81	659.14	665.88	665.87	668.06	0.004906	8.67	3575.47	3639.73	0.62
1	3901	100-Year	40980.81	654.74	663.86	662.18	664.83	0.003869	9.32	5733.04	6099.54	0.58
1	2266	100-Year	40980.81	643.92	652.92	652.92	655.17	0.010717	12.11	3576.57	4275.69	0.93
1	663	100-Year	40980.81	634.67	642.11	640.15	642.39	0.002002	4.79	11182.61	3411.27	0.41

HEC-RAS Plan: Plan - Main River: Piru_Creek Reach: 1 Profile: 500-YR

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	9361	500-YR	60000.00	691.85	709.10		711.12	0.002307	12.14	5888.18	617.26	0.56
1	9184	500-YR	60000.00	690.00	706.86	706.86	710.36	0.005142	18.93	4804.79	598.52	0.84
1	8916	500-YR	60000.00	688.60	703.73	703.73	707.44	0.005816	18.06	4398.21	568.25	0.86
1	8915		Lat Struct									
1	8423	500-YR	60000.00	685.23	701.50		703.23	0.002274	12.22	6094.49	566.54	0.57
1	8422		Lat Struct									
1	7973	500-YR	59994.88	679.56	701.47	692.34	702.46	0.000759	7.49	7600.13	581.25	0.29
1	7972		Lat Struct									
1	7549	500-YR	59994.88	676.55	700.27	691.29	701.95	0.001535	11.02	5898.64	1004.49	0.41
1	7527		Bridge									
1	7504	500-YR	59994.88	676.91	693.54	690.95	696.97	0.004989	15.91	4110.91	359.59	0.72
1	7503		Lat Struct									
1	7215	500-YR	59990.70	675.69	689.86	689.86	694.65	0.009120	19.02	3784.58	1262.04	0.95
1	7214		Lat Struct									
1	7143	500-YR	59990.70	675.15	689.88	687.70	692.79	0.005052	14.53	4496.93	1261.15	0.71
1	7117		Bridge									
1	7092	500-YR	59990.70	674.81	689.47	687.38	692.42	0.005152	14.65	4455.03	1175.52	0.72
1	7042	500-YR	59990.70	673.85	689.02	686.96	692.11	0.005403	14.45	4335.12	1359.79	0.73
1	7023		Bridge									
1	7002	500-YR	59990.70	673.81	688.49	686.35	691.58	0.005440	14.30	4326.36	1457.72	0.73
1	7001		Lat Struct									
1	6777	500-YR	59805.35	673.69	686.30	686.30	689.95	0.007801	16.48	4428.01	1724.18	0.86
1	6776		Lat Struct									
1	6323	500-YR	59605.79	670.08	682.94	682.94	685.37	0.006319	13.61	6624.02	1585.48	0.76
1	6322		Lat Struct									
1	5463	500-YR	59218.63	664.47	676.14	676.14	678.86	0.008290	13.73	4635.43	2132.78	0.90
1	5462		Lat Struct									
1	4783	500-YR	58964.50	659.30	670.15	668.22	671.21	0.003592	9.98	7402.81	4316.11	0.57
1	4733		Bridge									
1	4673	500-YR	58964.50	659.14	667.10	667.10	669.84	0.004659	9.52	4583.96	3857.66	0.62
1	3901	500-YR	58964.50	654.74	664.83	663.33	666.13	0.004665	11.03	7089.99	6410.28	0.64
1	2266	500-YR	58964.50	643.92	654.59	654.59	656.75	0.007783	12.29	5962.71	5400.39	0.83
1	663	500-YR	58964.50	634.67	643.02	640.96	643.37	0.002000	5.35	14408.78	3637.85	0.42



**APPENDIX G: HEC-RAS DETAILED CROSS SECTION OUTPUT TABLES FOR MAIN STREAM
(PLAN 1)**

Plan: Plan - Main Piru_Creek 1 RS: 9361 Profile: 100-Year

E.G. Elev (ft)	708.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.31	Wt. n-Val.	0.040	0.035	0.040
W.S. Elev (ft)	707.38	Reach Len. (ft)	217.60	170.69	170.19
Crit W.S. (ft)		Flow Area (sq ft)	1144.88	3728.61	35.63
E.G. Slope (ft/ft)	0.001725	Area (sq ft)	1144.88	3728.61	35.63
Q Total (cfs)	41000.00	Flow (cfs)	4881.49	36004.93	113.58
Top Width (ft)	546.67	Top Width (ft)	249.05	288.56	9.06
Vel Total (ft/s)	8.35	Avg. Vel. (ft/s)	4.26	9.66	3.19
Max Chl Dpth (ft)	15.52	Hydr. Depth (ft)	4.60	12.92	3.93
Conv. Total (cfs)	987050.1	Conv. (cfs)	117519.0	866796.8	2734.4
Length Wtd. (ft)	182.08	Wetted Per. (ft)	249.25	290.99	12.00
Min Ch El (ft)	691.85	Shear (lb/sq ft)	0.49	1.38	0.32
Alpha	1.21	Stream Power (lb/ft s)	907.12	0.00	0.00
Frctn Loss (ft)	0.51	Cum Volume (acre-ft)	218.56	527.29	1259.61
C & E Loss (ft)	0.20	Cum SA (acres)	73.71	85.30	334.72

Plan: Plan - Main Piru_Creek 1 RS: 9184 Profile: 100-Year

E.G. Elev (ft)	707.97	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.27	Wt. n-Val.	0.040	0.035	0.040
W.S. Elev (ft)	704.70	Reach Len. (ft)	263.31	267.56	264.52
Crit W.S. (ft)	704.70	Flow Area (sq ft)	1970.84	1405.78	155.81
E.G. Slope (ft/ft)	0.005431	Area (sq ft)	1970.84	1405.78	155.81
Q Total (cfs)	41000.00	Flow (cfs)	15042.47	24770.36	1187.17
Top Width (ft)	559.33	Top Width (ft)	422.99	104.21	32.13
Vel Total (ft/s)	11.61	Avg. Vel. (ft/s)	7.63	17.62	7.62
Max Chl Dpth (ft)	14.70	Hydr. Depth (ft)	4.66	13.49	4.85
Conv. Total (cfs)	556326.0	Conv. (cfs)	204110.1	336107.2	16108.6
Length Wtd. (ft)	266.10	Wetted Per. (ft)	423.38	105.19	33.56
Min Ch El (ft)	690.00	Shear (lb/sq ft)	1.58	4.53	1.57
Alpha	1.56	Stream Power (lb/ft s)	795.38	0.00	0.00
Frctn Loss (ft)	1.47	Cum Volume (acre-ft)	210.78	517.23	1259.24
C & E Loss (ft)	0.05	Cum SA (acres)	72.03	84.53	334.64

Plan: Plan - Main Piru_Creek 1 RS: 8916 Profile: 100-Year

E.G. Elev (ft)	704.88	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.09	Wt. n-Val.	0.040	0.035	0.040
W.S. Elev (ft)	701.79	Reach Len. (ft)	479.09	484.55	510.00
Crit W.S. (ft)	701.79	Flow Area (sq ft)	1466.48	1777.62	70.32
E.G. Slope (ft/ft)	0.005636	Area (sq ft)	1466.48	1777.62	70.32
Q Total (cfs)	41000.00	Flow (cfs)	12060.37	28507.74	431.89
Top Width (ft)	545.50	Top Width (ft)	372.86	153.13	19.51
Vel Total (ft/s)	12.37	Avg. Vel. (ft/s)	8.22	16.04	6.14
Max Chl Dpth (ft)	13.19	Hydr. Depth (ft)	3.93	11.61	3.60
Conv. Total (cfs)	546125.0	Conv. (cfs)	160645.6	379726.6	5752.8
Length Wtd. (ft)	482.91	Wetted Per. (ft)	375.85	155.71	21.52
Min Ch El (ft)	688.60	Shear (lb/sq ft)	1.37	4.02	1.15
Alpha	1.30	Stream Power (lb/ft s)	688.53	0.00	0.00
Frctn Loss (ft)	3.07	Cum Volume (acre-ft)	200.39	507.46	1258.55
C & E Loss (ft)	0.00	Cum SA (acres)	69.63	83.74	334.49

Plan: Plan - Main Piru_Creek 1 RS: 8423 Profile: 100-Year

E.G. Elev (ft)	699.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.14	Wt. n-Val.	0.040	0.034	0.130
W.S. Elev (ft)	696.06	Reach Len. (ft)	444.06	450.49	502.00
Crit W.S. (ft)	696.06	Flow Area (sq ft)	1392.23	1643.55	26.90
E.G. Slope (ft/ft)	0.007250	Area (sq ft)	1392.23	1643.55	26.90
Q Total (cfs)	41000.00	Flow (cfs)	14818.39	26137.00	44.61
Top Width (ft)	538.54	Top Width (ft)	343.48	183.89	11.17
Vel Total (ft/s)	13.39	Avg. Vel. (ft/s)	10.64	15.90	1.66
Max Chl Dpth (ft)	10.83	Hydr. Depth (ft)	4.05	8.94	2.41
Conv. Total (cfs)	481530.2	Conv. (cfs)	174036.6	306969.6	523.9
Length Wtd. (ft)	447.61	Wetted Per. (ft)	346.61	185.13	12.09
Min Ch El (ft)	685.23	Shear (lb/sq ft)	1.82	4.02	1.01
Alpha	1.13	Stream Power (lb/ft s)	988.93	0.00	0.00
Frctn Loss (ft)	1.60	Cum Volume (acre-ft)	184.67	488.43	1257.98
C & E Loss (ft)	0.52	Cum SA (acres)	65.69	81.87	334.31

Plan: Plan - Main Piru_Creek 1 RS: 7973 Profile: 100-Year

E.G. Elev (ft)	695.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.40	Wt. n-Val.	0.032	0.040	0.040
W.S. Elev (ft)	694.07	Reach Len. (ft)	430.10	423.55	346.00
Crit W.S. (ft)	690.38	Flow Area (sq ft)	2898.01	1313.83	140.07
E.G. Slope (ft/ft)	0.002124	Area (sq ft)	2898.01	1313.83	140.07
Q Total (cfs)	41000.00	Flow (cfs)	28095.18	12171.96	732.86
Top Width (ft)	428.27	Top Width (ft)	301.11	101.76	25.41
Vel Total (ft/s)	9.42	Avg. Vel. (ft/s)	9.69	9.26	5.23
Max Chl Dpth (ft)	14.51	Hydr. Depth (ft)	9.62	12.91	5.51
Conv. Total (cfs)	889716.9	Conv. (cfs)	609676.9	264136.6	15903.4
Length Wtd. (ft)	426.17	Wetted Per. (ft)	306.06	104.35	27.26
Min Ch El (ft)	679.56	Shear (lb/sq ft)	1.26	1.67	0.68
Alpha	1.02	Stream Power (lb/ft s)	1277.07	0.00	0.00
Frctn Loss (ft)	1.23	Cum Volume (acre-ft)	162.80	473.14	1257.02
C & E Loss (ft)	0.10	Cum SA (acres)	62.40	80.39	334.09

Plan: Plan - Main Piru_Creek 1 RS: 7549 Profile: 100-Year

E.G. Elev (ft)	694.14	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.38	Wt. n-Val.	0.038	0.040	0.040
W.S. Elev (ft)	691.76	Reach Len. (ft)	9.00	9.00	9.00
Crit W.S. (ft)	688.75	Flow Area (sq ft)	1450.17	1844.76	57.51
E.G. Slope (ft/ft)	0.004117	Area (sq ft)	1450.17	1844.76	57.51
Q Total (cfs)	41000.00	Flow (cfs)	16689.05	24036.38	274.56
Top Width (ft)	290.23	Top Width (ft)	138.47	136.65	15.11
Vel Total (ft/s)	12.23	Avg. Vel. (ft/s)	11.51	13.03	4.77
Max Chl Dpth (ft)	15.21	Hydr. Depth (ft)	10.47	13.50	3.81
Conv. Total (cfs)	638987.1	Conv. (cfs)	260099.7	374608.3	4279.0
Length Wtd. (ft)	9.00	Wetted Per. (ft)	149.78	144.34	27.09
Min Ch El (ft)	676.55	Shear (lb/sq ft)	2.49	3.28	0.55
Alpha	1.03	Stream Power (lb/ft s)	1383.46	0.00	0.00
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	141.34	457.78	1256.24
C & E Loss (ft)	0.11	Cum SA (acres)	60.23	79.23	333.93

Plan: Plan - Main Piru_Creek 1 RS: 7527 BR U Profile: 100-Year

E.G. Elev (ft)	693.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.74	Wt. n-Val.	0.038	0.040	0.040
W.S. Elev (ft)	691.25	Reach Len. (ft)	31.30	31.30	31.30
Crit W.S. (ft)	688.89	Flow Area (sq ft)	1379.69	1675.94	50.01
E.G. Slope (ft/ft)	0.005883	Area (sq ft)	1379.69	1675.94	50.01
Q Total (cfs)	41000.00	Flow (cfs)	18414.47	22313.14	272.38
Top Width (ft)	282.17	Top Width (ft)	138.20	129.65	14.32
Vel Total (ft/s)	13.20	Avg. Vel. (ft/s)	13.35	13.31	5.45
Max Chl Dpth (ft)	14.70	Hydr. Depth (ft)	9.98	12.93	3.49
Conv. Total (cfs)	534536.8	Conv. (cfs)	240078.4	290907.2	3551.2
Length Wtd. (ft)	31.30	Wetted Per. (ft)	149.20	165.93	25.34
Min Ch El (ft)	676.55	Shear (lb/sq ft)	3.40	3.71	0.72
Alpha	1.01	Stream Power (lb/ft s)	1383.46	0.00	0.00
Frctn Loss (ft)	0.17	Cum Volume (acre-ft)	141.04	457.42	1256.22
C & E Loss (ft)	0.15	Cum SA (acres)	60.20	79.20	333.93

Plan: Plan - Main Piru_Creek 1 RS: 7527 BR D Profile: 100-Year

E.G. Elev (ft)	693.67	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.44	Wt. n-Val.	0.040	0.040	0.040
W.S. Elev (ft)	691.23	Reach Len. (ft)	4.48	4.48	4.48
Crit W.S. (ft)	688.66	Flow Area (sq ft)	1300.71	1859.53	134.92
E.G. Slope (ft/ft)	0.005303	Area (sq ft)	1300.71	1859.53	134.92
Q Total (cfs)	41000.00	Flow (cfs)	15630.27	24198.40	1171.33
Top Width (ft)	299.34	Top Width (ft)	132.41	144.47	22.46
Vel Total (ft/s)	12.44	Avg. Vel. (ft/s)	12.02	13.01	8.68
Max Chl Dpth (ft)	14.32	Hydr. Depth (ft)	9.82	12.87	6.01
Conv. Total (cfs)	563019.1	Conv. (cfs)	214637.6	332296.5	16085.0
Length Wtd. (ft)	4.48	Wetted Per. (ft)	138.93	176.25	25.31
Min Ch El (ft)	676.91	Shear (lb/sq ft)	3.10	3.49	1.76
Alpha	1.02	Stream Power (lb/ft s)	1403.74	0.00	0.00
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	140.08	456.15	1256.16
C & E Loss (ft)	0.05	Cum SA (acres)	60.10	79.10	333.92

Plan: Plan - Main Piru_Creek 1 RS: 7504 Profile: 100-Year

E.G. Elev (ft)	693.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.35	Wt. n-Val.	0.040	0.040	0.040
W.S. Elev (ft)	691.25	Reach Len. (ft)	268.10	288.75	415.00
Crit W.S. (ft)	688.53	Flow Area (sq ft)	1304.03	1963.00	135.48
E.G. Slope (ft/ft)	0.004257	Area (sq ft)	1304.03	1963.00	135.48
Q Total (cfs)	41000.00	Flow (cfs)	14062.27	25881.27	1056.45
Top Width (ft)	306.38	Top Width (ft)	132.43	151.47	22.49
Vel Total (ft/s)	12.05	Avg. Vel. (ft/s)	10.78	13.18	7.80
Max Chl Dpth (ft)	14.34	Hydr. Depth (ft)	9.85	12.96	6.02
Conv. Total (cfs)	628371.4	Conv. (cfs)	215520.3	396659.8	16191.4
Length Wtd. (ft)	288.63	Wetted Per. (ft)	138.96	154.73	25.35
Min Ch El (ft)	676.91	Shear (lb/sq ft)	2.49	3.37	1.42
Alpha	1.04	Stream Power (lb/ft s)	1403.74	0.00	0.00
Frctn Loss (ft)	1.75	Cum Volume (acre-ft)	139.95	455.95	1256.14
C & E Loss (ft)	0.45	Cum SA (acres)	60.09	79.09	333.92

Plan: Plan - Main Piru_Creek 1 RS: 7215 Profile: 100-Year

E.G. Elev (ft)	691.40	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.84	Wt. n-Val.	0.040	0.040	0.074
W.S. Elev (ft)	687.56	Reach Len. (ft)	73.73	72.77	112.00
Crit W.S. (ft)	687.56	Flow Area (sq ft)	530.68	1979.26	388.02
E.G. Slope (ft/ft)	0.009362	Area (sq ft)	530.68	1979.26	881.83
Q Total (cfs)	41000.00	Flow (cfs)	5594.99	33321.88	2083.13
Top Width (ft)	859.47	Top Width (ft)	104.25	193.46	561.76
Vel Total (ft/s)	14.15	Avg. Vel. (ft/s)	10.54	16.84	5.37
Max Chl Dpth (ft)	11.87	Hydr. Depth (ft)	5.09	10.23	4.67
Conv. Total (cfs)	423739.5	Conv. (cfs)	57824.8	344385.3	21529.4
Length Wtd. (ft)	74.07	Wetted Per. (ft)	105.63	195.25	85.12
Min Ch El (ft)	675.69	Shear (lb/sq ft)	2.94	5.92	2.66
Alpha	1.23	Stream Power (lb/ft s)	1729.02	0.00	0.00
Frctn Loss (ft)	0.47	Cum Volume (acre-ft)	134.30	442.88	1251.30
C & E Loss (ft)	0.52	Cum SA (acres)	59.36	77.95	331.13

Plan: Plan - Main Piru_Creek 1 RS: 7143 Profile: 100-Year

E.G. Elev (ft)	689.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.11	Wt. n-Val.	0.040	0.040	0.040
W.S. Elev (ft)	687.71	Reach Len. (ft)	9.00	9.00	9.00
Crit W.S. (ft)	685.66	Flow Area (sq ft)	1061.01	2506.94	52.16
E.G. Slope (ft/ft)	0.004663	Area (sq ft)	1061.01	2506.94	398.57
Q Total (cfs)	41000.00	Flow (cfs)	9749.72	30991.30	258.99
Top Width (ft)	793.47	Top Width (ft)	151.66	230.11	411.71
Vel Total (ft/s)	11.33	Avg. Vel. (ft/s)	9.19	12.36	4.97
Max Chl Dpth (ft)	12.56	Hydr. Depth (ft)	7.00	10.89	2.99
Conv. Total (cfs)	600442.3	Conv. (cfs)	142783.9	453865.5	3792.9
Length Wtd. (ft)	9.00	Wetted Per. (ft)	153.88	233.01	19.04
Min Ch El (ft)	675.15	Shear (lb/sq ft)	2.01	3.13	0.80
Alpha	1.06	Stream Power (lb/ft s)	1942.67	0.00	0.00
Frctn Loss (ft)	0.05	Cum Volume (acre-ft)	132.95	439.14	1249.65
C & E Loss (ft)	0.00	Cum SA (acres)	59.15	77.59	329.88

Plan: Plan - Main Piru_Creek 1 RS: 7117 BR U Profile: 100-Year

E.G. Elev (ft)	689.77	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.12	Wt. n-Val.	0.040	0.040	0.040
W.S. Elev (ft)	687.65	Reach Len. (ft)	41.00	41.00	41.00
Crit W.S. (ft)	685.67	Flow Area (sq ft)	1043.61	2460.39	51.04
E.G. Slope (ft/ft)	0.006363	Area (sq ft)	1043.61	2460.39	51.04
Q Total (cfs)	41000.00	Flow (cfs)	10628.85	30077.51	293.64
Top Width (ft)	394.94	Top Width (ft)	150.55	227.11	17.28
Vel Total (ft/s)	11.53	Avg. Vel. (ft/s)	10.18	12.22	5.75
Max Chl Dpth (ft)	12.50	Hydr. Depth (ft)	6.93	10.83	2.95
Conv. Total (cfs)	513984.2	Conv. (cfs)	133245.4	377057.7	3681.1
Length Wtd. (ft)	41.00	Wetted Per. (ft)	168.11	293.63	18.87
Min Ch El (ft)	675.15	Shear (lb/sq ft)	2.47	3.33	1.07
Alpha	1.03	Stream Power (lb/ft s)	1942.67	0.00	0.00
Frctn Loss (ft)	0.25	Cum Volume (acre-ft)	132.74	438.62	1249.61
C & E Loss (ft)	0.03	Cum SA (acres)	59.11	77.55	329.84

Plan: Plan - Main Piru_Creek 1 RS: 7117 BR D Profile: 100-Year

E.G. Elev (ft)	689.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.07	Wt. n-Val.	0.040	0.040	0.040
W.S. Elev (ft)	687.42	Reach Len. (ft)	0.60	0.60	0.60
Crit W.S. (ft)	685.25	Flow Area (sq ft)	1127.15	2429.34	43.15
E.G. Slope (ft/ft)	0.006044	Area (sq ft)	1127.15	2429.34	43.15
Q Total (cfs)	41000.00	Flow (cfs)	11407.93	29335.49	256.58
Top Width (ft)	390.78	Top Width (ft)	156.20	221.50	13.09
Vel Total (ft/s)	11.39	Avg. Vel. (ft/s)	10.12	12.08	5.95
Max Chl Dpth (ft)	12.61	Hydr. Depth (ft)	7.22	10.97	3.30
Conv. Total (cfs)	527362.4	Conv. (cfs)	146734.4	377327.6	3300.3
Length Wtd. (ft)	0.60	Wetted Per. (ft)	176.43	284.15	14.60
Min Ch El (ft)	674.81	Shear (lb/sq ft)	2.41	3.23	1.11
Alpha	1.03	Stream Power (lb/ft s)	1947.33	0.00	0.00
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	131.72	436.32	1249.56
C & E Loss (ft)	0.01	Cum SA (acres)	58.97	77.33	329.82

Plan: Plan - Main Piru_Creek 1 RS: 7092 Profile: 100-Year

E.G. Elev (ft)	689.48	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.09	Wt. n-Val.	0.040	0.040	0.040
W.S. Elev (ft)	687.39	Reach Len. (ft)	53.34	50.22	42.53
Crit W.S. (ft)	685.24	Flow Area (sq ft)	1131.15	2452.66	42.75
E.G. Slope (ft/ft)	0.004610	Area (sq ft)	1131.15	2452.66	188.29
Q Total (cfs)	41000.00	Flow (cfs)	10520.52	30258.12	221.36
Top Width (ft)	778.74	Top Width (ft)	157.14	224.50	397.10
Vel Total (ft/s)	11.31	Avg. Vel. (ft/s)	9.30	12.34	5.18
Max Chl Dpth (ft)	12.58	Hydr. Depth (ft)	7.20	10.93	3.28
Conv. Total (cfs)	603841.8	Conv. (cfs)	154944.6	445637.0	3260.2
Length Wtd. (ft)	50.67	Wetted Per. (ft)	159.75	226.74	14.53
Min Ch El (ft)	674.81	Shear (lb/sq ft)	2.04	3.11	0.85
Alpha	1.05	Stream Power (lb/ft s)	1947.33	0.00	0.00
Frctn Loss (ft)	0.23	Cum Volume (acre-ft)	131.70	436.29	1249.56
C & E Loss (ft)	0.01	Cum SA (acres)	58.97	77.33	329.82

Plan: Plan - Main Piru_Creek 1 RS: 7042 Profile: 100-Year

E.G. Elev (ft)	689.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.06	Wt. n-Val.	0.040	0.040	0.040
W.S. Elev (ft)	687.17	Reach Len. (ft)	6.00	6.00	6.00
Crit W.S. (ft)	684.77	Flow Area (sq ft)	346.21	3213.78	62.26
E.G. Slope (ft/ft)	0.004466	Area (sq ft)	346.21	3213.78	1219.60
Q Total (cfs)	41000.00	Flow (cfs)	2797.37	37862.75	339.88
Top Width (ft)	1224.47	Top Width (ft)	56.58	308.04	859.86
Vel Total (ft/s)	11.32	Avg. Vel. (ft/s)	8.08	11.78	5.46
Max Chl Dpth (ft)	13.32	Hydr. Depth (ft)	6.12	10.43	3.55
Conv. Total (cfs)	613484.1	Conv. (cfs)	41857.1	566541.3	5085.7
Length Wtd. (ft)	6.00	Wetted Per. (ft)	58.96	310.88	19.10
Min Ch El (ft)	673.85	Shear (lb/sq ft)	1.64	2.88	0.91
Alpha	1.04	Stream Power (lb/ft s)	2184.60	0.00	0.00
Frctn Loss (ft)	0.03	Cum Volume (acre-ft)	130.80	433.02	1248.87
C & E Loss (ft)	0.04	Cum SA (acres)	58.84	77.02	329.21

Plan: Plan - Main Piru_Creek 1 RS: 7023 BR U Profile: 100-Year

E.G. Elev (ft)	689.17	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.19	Wt. n-Val.	0.040	0.040	0.040
W.S. Elev (ft)	686.97	Reach Len. (ft)	33.00	33.00	33.00
Crit W.S. (ft)	684.86	Flow Area (sq ft)	334.90	3103.72	58.80
E.G. Slope (ft/ft)	0.005688	Area (sq ft)	334.90	3103.72	58.80
Q Total (cfs)	41000.00	Flow (cfs)	2999.36	37645.17	355.47
Top Width (ft)	376.33	Top Width (ft)	56.27	303.04	17.03
Vel Total (ft/s)	11.72	Avg. Vel. (ft/s)	8.96	12.13	6.05
Max Chl Dpth (ft)	13.12	Hydr. Depth (ft)	5.95	10.24	3.45
Conv. Total (cfs)	543634.8	Conv. (cfs)	39769.6	499151.8	4713.3
Length Wtd. (ft)	33.00	Wetted Per. (ft)	58.60	344.56	18.55
Min Ch El (ft)	673.85	Shear (lb/sq ft)	2.03	3.20	1.13
Alpha	1.03	Stream Power (lb/ft s)	2184.60	0.00	0.00
Frctn Loss (ft)	0.17	Cum Volume (acre-ft)	130.75	432.59	1248.79
C & E Loss (ft)	0.10	Cum SA (acres)	58.83	76.98	329.15

Plan: Plan - Main Piru_Creek 1 RS: 7023 BR D Profile: 100-Year

E.G. Elev (ft)	688.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.00	Wt. n-Val.	0.040	0.040	0.040
W.S. Elev (ft)	686.89	Reach Len. (ft)	0.49	0.49	0.49
Crit W.S. (ft)	684.29	Flow Area (sq ft)	141.16	3443.72	70.35
E.G. Slope (ft/ft)	0.004892	Area (sq ft)	141.16	3443.72	70.35
Q Total (cfs)	41000.00	Flow (cfs)	956.16	39550.35	493.49
Top Width (ft)	376.94	Top Width (ft)	32.35	329.86	14.73
Vel Total (ft/s)	11.22	Avg. Vel. (ft/s)	6.77	11.48	7.01
Max Chl Dpth (ft)	13.08	Hydr. Depth (ft)	4.36	10.44	4.78
Conv. Total (cfs)	586165.1	Conv. (cfs)	13669.9	565439.9	7055.3
Length Wtd. (ft)	0.49	Wetted Per. (ft)	33.54	370.59	17.32
Min Ch El (ft)	673.81	Shear (lb/sq ft)	1.29	2.84	1.24
Alpha	1.02	Stream Power (lb/ft s)	2186.19	0.00	0.00
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	130.57	430.11	1248.74
C & E Loss (ft)	0.03	Cum SA (acres)	58.80	76.74	329.13

Plan: Plan - Main Piru_Creek 1 RS: 7002 Profile: 100-Year

E.G. Elev (ft)	688.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.95	Wt. n-Val.	0.040	0.040	0.040
W.S. Elev (ft)	686.92	Reach Len. (ft)	221.99	225.83	237.00
Crit W.S. (ft)	684.23	Flow Area (sq ft)	141.85	3498.19	71.74
E.G. Slope (ft/ft)	0.004126	Area (sq ft)	141.85	3498.19	1639.29
Q Total (cfs)	41000.00	Flow (cfs)	882.70	39660.12	457.18
Top Width (ft)	1341.83	Top Width (ft)	32.49	334.86	974.49
Vel Total (ft/s)	11.05	Avg. Vel. (ft/s)	6.22	11.34	6.37
Max Chl Dpth (ft)	13.11	Hydr. Depth (ft)	4.37	10.45	4.34
Conv. Total (cfs)	638310.4	Conv. (cfs)	13742.4	617450.3	7117.7
Length Wtd. (ft)	225.65	Wetted Per. (ft)	33.68	337.76	18.30
Min Ch El (ft)	673.81	Shear (lb/sq ft)	1.08	2.67	1.01
Alpha	1.03	Stream Power (lb/ft s)	2186.19	0.00	0.00
Frctn Loss (ft)	1.27	Cum Volume (acre-ft)	130.57	430.07	1248.73
C & E Loss (ft)	0.33	Cum SA (acres)	58.80	76.74	329.13

Plan: Plan - Main Piru_Creek 1 RS: 6777 Profile: 100-Year

E.G. Elev (ft)	687.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	3.04	Wt. n-Val.	0.045	0.040	0.035
W.S. Elev (ft)	684.23	Reach Len. (ft)	446.54	453.45	580.00
Crit W.S. (ft)	682.65	Flow Area (sq ft)	686.30	2474.21	19.26
E.G. Slope (ft/ft)	0.008116	Area (sq ft)	686.30	2474.21	159.96
Q Total (cfs)	40985.55	Flow (cfs)	4542.30	36325.15	118.10
Top Width (ft)	837.20	Top Width (ft)	278.41	268.16	290.63
Vel Total (ft/s)	12.89	Avg. Vel. (ft/s)	6.62	14.68	6.13
Max Chl Dpth (ft)	10.54	Hydr. Depth (ft)	2.47	9.23	2.24
Conv. Total (cfs)	454953.0	Conv. (cfs)	50421.1	403221.0	1310.9
Length Wtd. (ft)	453.88	Wetted Per. (ft)	279.52	270.80	9.48
Min Ch El (ft)	673.69	Shear (lb/sq ft)	1.24	4.63	1.03
Alpha	1.18	Stream Power (lb/ft s)	2320.96	0.00	0.00
Frctn Loss (ft)	3.37	Cum Volume (acre-ft)	128.46	414.59	1243.83
C & E Loss (ft)	0.21	Cum SA (acres)	58.00	75.18	325.69

Plan: Plan - Main Piru_Creek 1 RS: 6323 Profile: 100-Year

E.G. Elev (ft)	683.69	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.34	Wt. n-Val.	0.044	0.040	0.038
W.S. Elev (ft)	681.35	Reach Len. (ft)	860.00	860.61	550.00
Crit W.S. (ft)	680.74	Flow Area (sq ft)	435.96	3061.57	155.33
E.G. Slope (ft/ft)	0.006817	Area (sq ft)	435.96	3061.57	685.22
Q Total (cfs)	40985.55	Flow (cfs)	1895.97	38578.54	511.05
Top Width (ft)	1370.42	Top Width (ft)	303.20	363.65	703.58
Vel Total (ft/s)	11.22	Avg. Vel. (ft/s)	4.35	12.60	3.29
Max Chl Dpth (ft)	11.27	Hydr. Depth (ft)	1.44	8.42	0.76
Conv. Total (cfs)	496401.8	Conv. (cfs)	22963.3	467248.9	6189.6
Length Wtd. (ft)	856.58	Wetted Per. (ft)	304.27	367.65	205.21
Min Ch El (ft)	670.08	Shear (lb/sq ft)	0.61	3.54	0.32
Alpha	1.20	Stream Power (lb/ft s)	2905.95	0.00	0.00
Frctn Loss (ft)	6.86	Cum Volume (acre-ft)	122.70	385.77	1238.20
C & E Loss (ft)	0.02	Cum SA (acres)	55.02	71.89	319.07

Plan: Plan - Main Piru_Creek 1 RS: 5463 Profile: 100-Year

E.G. Elev (ft)	676.81	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.51	Wt. n-Val.	0.040	0.040	0.037
W.S. Elev (ft)	674.30	Reach Len. (ft)	675.84	679.18	1070.00
Crit W.S. (ft)	674.30	Flow Area (sq ft)	430.71	2736.36	109.56
E.G. Slope (ft/ft)	0.009532	Area (sq ft)	430.71	2736.36	272.74
Q Total (cfs)	40980.81	Flow (cfs)	5038.81	35403.84	538.15
Top Width (ft)	782.11	Top Width (ft)	72.89	510.20	199.01
Vel Total (ft/s)	12.51	Avg. Vel. (ft/s)	11.70	12.94	4.91
Max Chl Dpth (ft)	9.83	Hydr. Depth (ft)	5.91	5.36	1.41
Conv. Total (cfs)	419744.6	Conv. (cfs)	51609.9	362622.7	5512.0
Length Wtd. (ft)	799.70	Wetted Per. (ft)	74.35	512.25	78.02
Min Ch El (ft)	664.47	Shear (lb/sq ft)	3.45	3.18	0.84
Alpha	1.03	Stream Power (lb/ft s)	4285.90	0.00	0.00
Frctn Loss (ft)	5.08	Cum Volume (acre-ft)	114.15	328.50	1232.16
C & E Loss (ft)	0.44	Cum SA (acres)	51.31	63.25	313.37

Plan: Plan - Main Piru_Creek 1 RS: 4783 Profile: 100-Year

E.G. Elev (ft)	669.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.05	Wt. n-Val.	0.016	0.040	0.040
W.S. Elev (ft)	668.30	Reach Len. (ft)	13.40	13.40	13.40
Crit W.S. (ft)	666.93	Flow Area (sq ft)	1.69	1667.95	3495.89
E.G. Slope (ft/ft)	0.004527	Area (sq ft)	1.69	1667.95	15052.40
Q Total (cfs)	40980.81	Flow (cfs)	7.65	16192.90	24780.26
Top Width (ft)	3664.34	Top Width (ft)	2.33	216.77	3445.24
Vel Total (ft/s)	7.93	Avg. Vel. (ft/s)	4.53	9.71	7.09
Max Chl Dpth (ft)	9.00	Hydr. Depth (ft)	0.73	7.69	3.84
Conv. Total (cfs)	609065.8	Conv. (cfs)	113.7	240662.4	368289.7
Length Wtd. (ft)	13.40	Wetted Per. (ft)	2.74	218.63	912.77
Min Ch El (ft)	659.30	Shear (lb/sq ft)	0.17	2.16	1.08
Alpha	1.07	Stream Power (lb/ft s)	5685.22	0.00	0.00
Frctn Loss (ft)	0.08	Cum Volume (acre-ft)	110.79	294.16	1043.94
C & E Loss (ft)	0.12	Cum SA (acres)	50.73	57.59	268.61

Plan: Plan - Main Piru_Creek 1 RS: 4733 BR U Profile: 100-Year

E.G. Elev (ft)	669.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.44	Wt. n-Val.	0.016	0.040	0.040
W.S. Elev (ft)	667.72	Reach Len. (ft)	92.50	92.50	92.50
Crit W.S. (ft)	666.90	Flow Area (sq ft)	0.60	1483.82	2846.48
E.G. Slope (ft/ft)	0.008866	Area (sq ft)	0.60	1483.82	12181.87
Q Total (cfs)	40980.81	Flow (cfs)	2.69	16185.51	24792.61
Top Width (ft)	3141.52	Top Width (ft)	1.39	209.17	2930.97
Vel Total (ft/s)	9.46	Avg. Vel. (ft/s)	4.48	10.91	8.71
Max Chl Dpth (ft)	8.42	Hydr. Depth (ft)	0.43	7.09	3.96
Conv. Total (cfs)	435233.7	Conv. (cfs)	28.6	171897.0	263308.1
Length Wtd. (ft)	92.50	Wetted Per. (ft)	1.64	270.91	830.22
Min Ch El (ft)	659.30	Shear (lb/sq ft)	0.20	3.03	1.90
Alpha	1.04	Stream Power (lb/ft s)	5685.22	0.00	0.00
Frctn Loss (ft)	0.66	Cum Volume (acre-ft)	110.79	293.68	1039.75
C & E Loss (ft)	0.24	Cum SA (acres)	50.73	57.52	267.63

Plan: Plan - Main Piru_Creek 1 RS: 4733 BR D Profile: 100-Year

E.G. Elev (ft)	668.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.23	Wt. n-Val.		0.040	0.022
W.S. Elev (ft)	666.04	Reach Len. (ft)	4.31	4.31	4.31
Crit W.S. (ft)	666.04	Flow Area (sq ft)		978.44	2582.91
E.G. Slope (ft/ft)	0.005787	Area (sq ft)		978.44	2582.91
Q Total (cfs)	40980.81	Flow (cfs)		8058.76	32922.05
Top Width (ft)	793.63	Top Width (ft)		155.56	638.08
Vel Total (ft/s)	11.51	Avg. Vel. (ft/s)		8.24	12.75
Max Chl Dpth (ft)	6.93	Hydr. Depth (ft)		6.29	4.05
Conv. Total (cfs)	538690.9	Conv. (cfs)		105932.0	432758.9
Length Wtd. (ft)	4.31	Wetted Per. (ft)		196.65	750.80
Min Ch El (ft)	659.14	Shear (lb/sq ft)		1.80	1.24
Alpha	1.09	Stream Power (lb/ft s)	5751.31	0.00	0.00
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	110.79	291.06	1024.07
C & E Loss (ft)	0.03	Cum SA (acres)	50.72	57.13	263.84

Plan: Plan - Main Piru_Creek 1 RS: 4673 Profile: 100-Year

E.G. Elev (ft)	668.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.17	Wt. n-Val.		0.040	0.022
W.S. Elev (ft)	665.88	Reach Len. (ft)	785.04	772.26	480.00
Crit W.S. (ft)	665.87	Flow Area (sq ft)		991.04	2584.43
E.G. Slope (ft/ft)	0.004906	Area (sq ft)		991.04	14805.22
Q Total (cfs)	40980.81	Flow (cfs)		8592.73	32388.08
Top Width (ft)	3639.73	Top Width (ft)		161.07	3478.66
Vel Total (ft/s)	11.46	Avg. Vel. (ft/s)		8.67	12.53
Max Chl Dpth (ft)	6.79	Hydr. Depth (ft)		6.15	3.91
Conv. Total (cfs)	585083.7	Conv. (cfs)		122678.6	462405.1
Length Wtd. (ft)	604.83	Wetted Per. (ft)		162.92	666.46
Min Ch El (ft)	659.14	Shear (lb/sq ft)		1.86	1.19
Alpha	1.06	Stream Power (lb/ft s)	5751.31	0.00	0.00
Frctn Loss (ft)	2.63	Cum Volume (acre-ft)	110.79	290.97	1023.21
C & E Loss (ft)	0.60	Cum SA (acres)	50.72	57.12	263.64

Plan: Plan - Main Piru_Creek 1 RS: 3901 Profile: 100-Year

E.G. Elev (ft)	664.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.97	Wt. n-Val.	0.040	0.040	0.041
W.S. Elev (ft)	663.86	Reach Len. (ft)	1642.98	1634.61	1330.00
Crit W.S. (ft)	662.18	Flow Area (sq ft)	1282.04	1576.99	2874.01
E.G. Slope (ft/ft)	0.003869	Area (sq ft)	3840.57	1576.99	27564.90
Q Total (cfs)	40980.81	Flow (cfs)	11223.60	14700.55	15056.66
Top Width (ft)	6099.54	Top Width (ft)	1443.54	193.99	4462.01
Vel Total (ft/s)	7.15	Avg. Vel. (ft/s)	8.75	9.32	5.24
Max Chl Dpth (ft)	9.54	Hydr. Depth (ft)	7.51	8.13	2.81
Conv. Total (cfs)	658862.7	Conv. (cfs)	180445.7	236345.8	242071.1
Length Wtd. (ft)	1578.56	Wetted Per. (ft)	173.84	194.60	1032.24
Min Ch El (ft)	654.74	Shear (lb/sq ft)	1.78	1.96	0.67
Alpha	1.22	Stream Power (lb/ft s)	6651.53	0.00	0.00
Frctn Loss (ft)	9.53	Cum Volume (acre-ft)	76.19	268.20	789.77
C & E Loss (ft)	0.13	Cum SA (acres)	37.72	53.97	219.89

Plan: Plan - Main Piru_Creek 1 RS: 2266 Profile: 100-Year

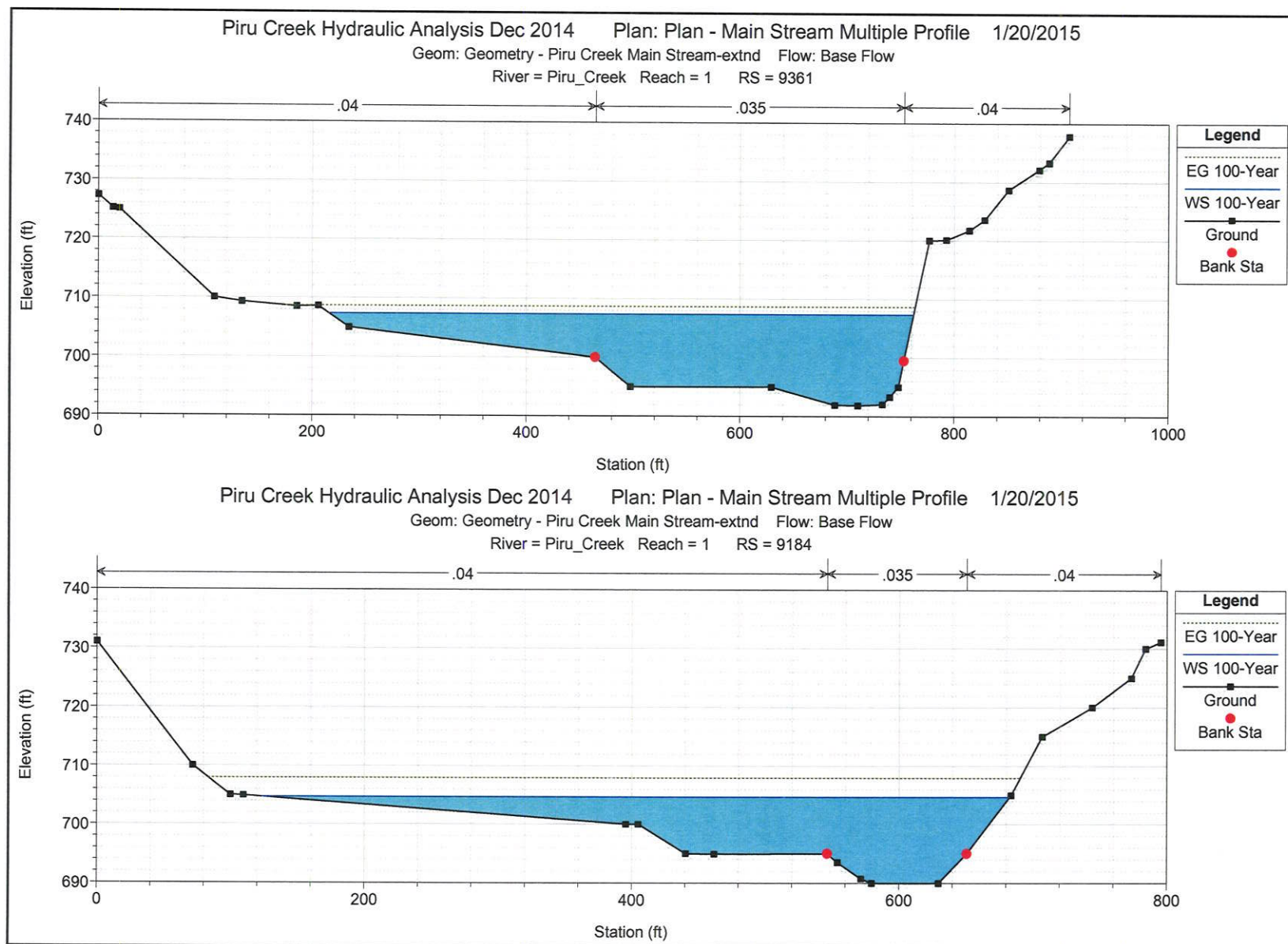
E.G. Elev (ft)	655.17	Element	Left OB	Channel	Right OB
Vel Head (ft)	2.25	Wt. n-Val.	0.050	0.039	0.069
W.S. Elev (ft)	652.92	Reach Len. (ft)	1550.00	1600.00	1650.00
Crit W.S. (ft)	652.92	Flow Area (sq ft)	102.45	3340.34	133.77
E.G. Slope (ft/ft)	0.010717	Area (sq ft)	102.45	3340.34	8049.43
Q Total (cfs)	40980.81	Flow (cfs)	181.96	40460.46	338.39
Top Width (ft)	4275.69	Top Width (ft)	284.32	640.54	3350.84
Vel Total (ft/s)	11.46	Avg. Vel. (ft/s)	1.78	12.11	2.53
Max Chl Dpth (ft)	9.00	Hydr. Depth (ft)	0.36	5.21	0.90
Conv. Total (cfs)	395854.9	Conv. (cfs)	1757.7	390828.5	3268.7
Length Wtd. (ft)	1606.85	Wetted Per. (ft)	284.90	643.66	150.22
Min Ch El (ft)	643.92	Shear (lb/sq ft)	0.24	3.47	0.60
Alpha	1.10	Stream Power (lb/ft s)	7362.86	0.00	0.00
Frctn Loss (ft)	6.27	Cum Volume (acre-ft)	1.83	175.94	246.07
C & E Loss (ft)	0.59	Cum SA (acres)	5.13	38.31	100.61

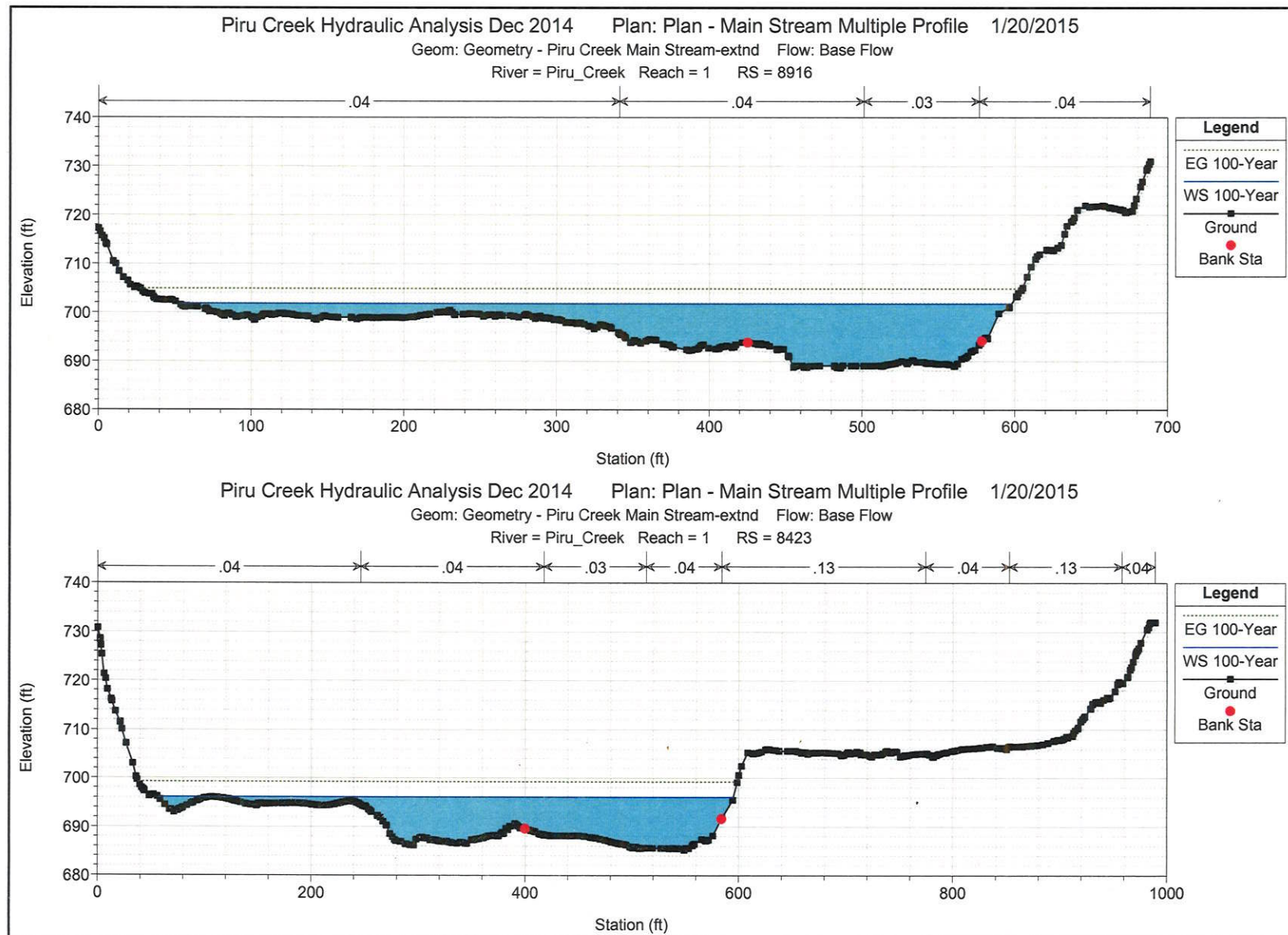
Plan: Plan - Main Piru Creek 1 RS: 663 Profile: 100-Year

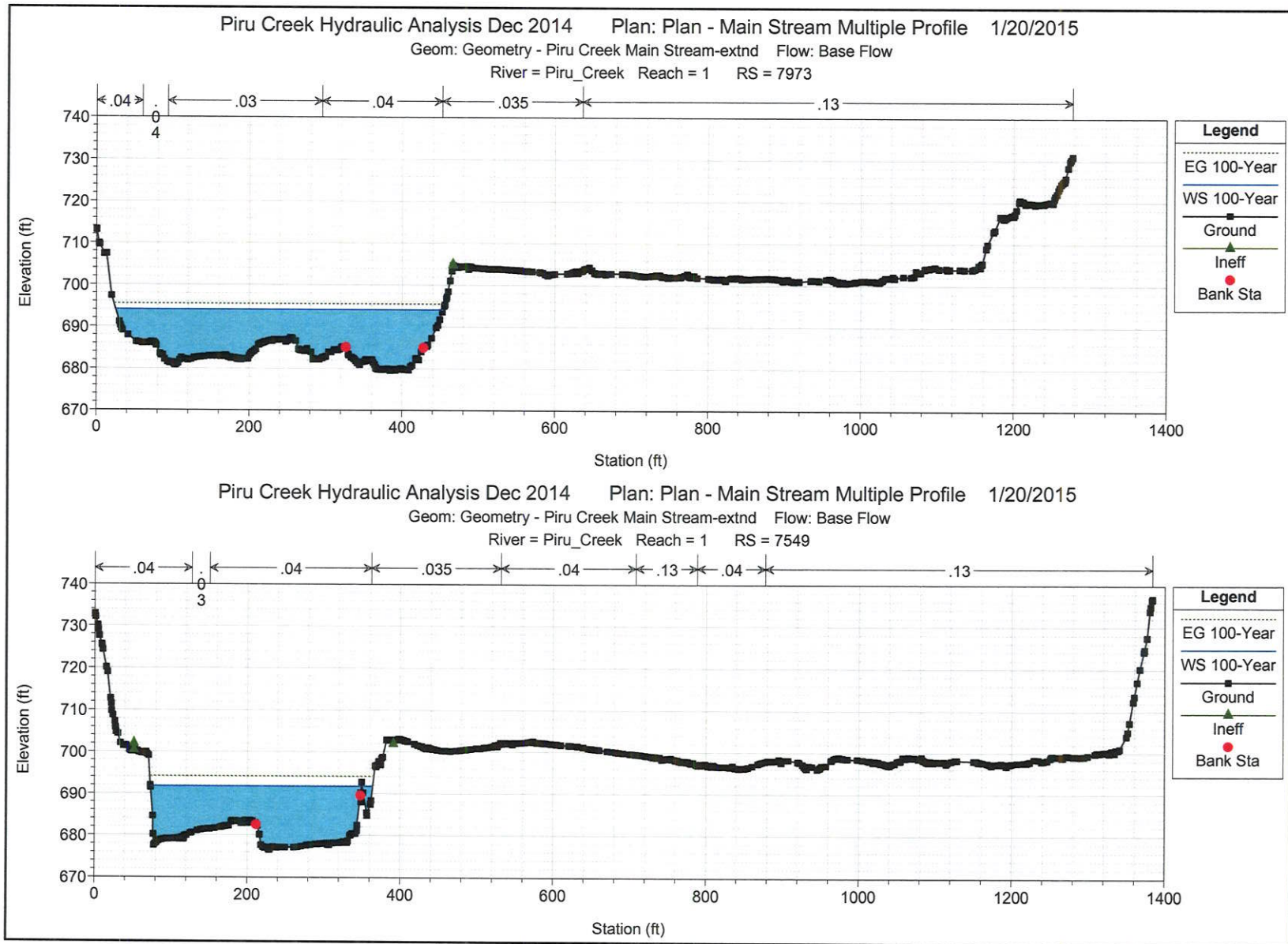
E.G. Elev (ft)	642.39	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.28	Wt. n-Val.	0.035	0.037	0.057
W.S. Elev (ft)	642.11	Reach Len. (ft)			
Crit W.S. (ft)	640.15	Flow Area (sq ft)	0.14	6239.60	4942.87
E.G. Slope (ft/ft)	0.002002	Area (sq ft)	0.14	6239.60	4942.87
Q Total (cfs)	40980.81	Flow (cfs)	0.03	29905.69	11075.10
Top Width (ft)	3411.27	Top Width (ft)	4.08	1445.63	1961.55
Vel Total (ft/s)	3.66	Avg. Vel. (ft/s)	0.21	4.79	2.24
Max Chl Dpth (ft)	8.96	Hydr. Depth (ft)	0.04	4.32	2.52
Conv. Total (cfs)	915893.2	Conv. (cfs)	0.7	668371.6	247520.9
Length Wtd. (ft)		Wetted Per. (ft)	4.08	1448.42	1966.30
Min Ch El (ft)	634.67	Shear (lb/sq ft)	0.00	0.54	0.31
Alpha	1.35	Stream Power (lb/ft s)	8471.14	0.00	0.00
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

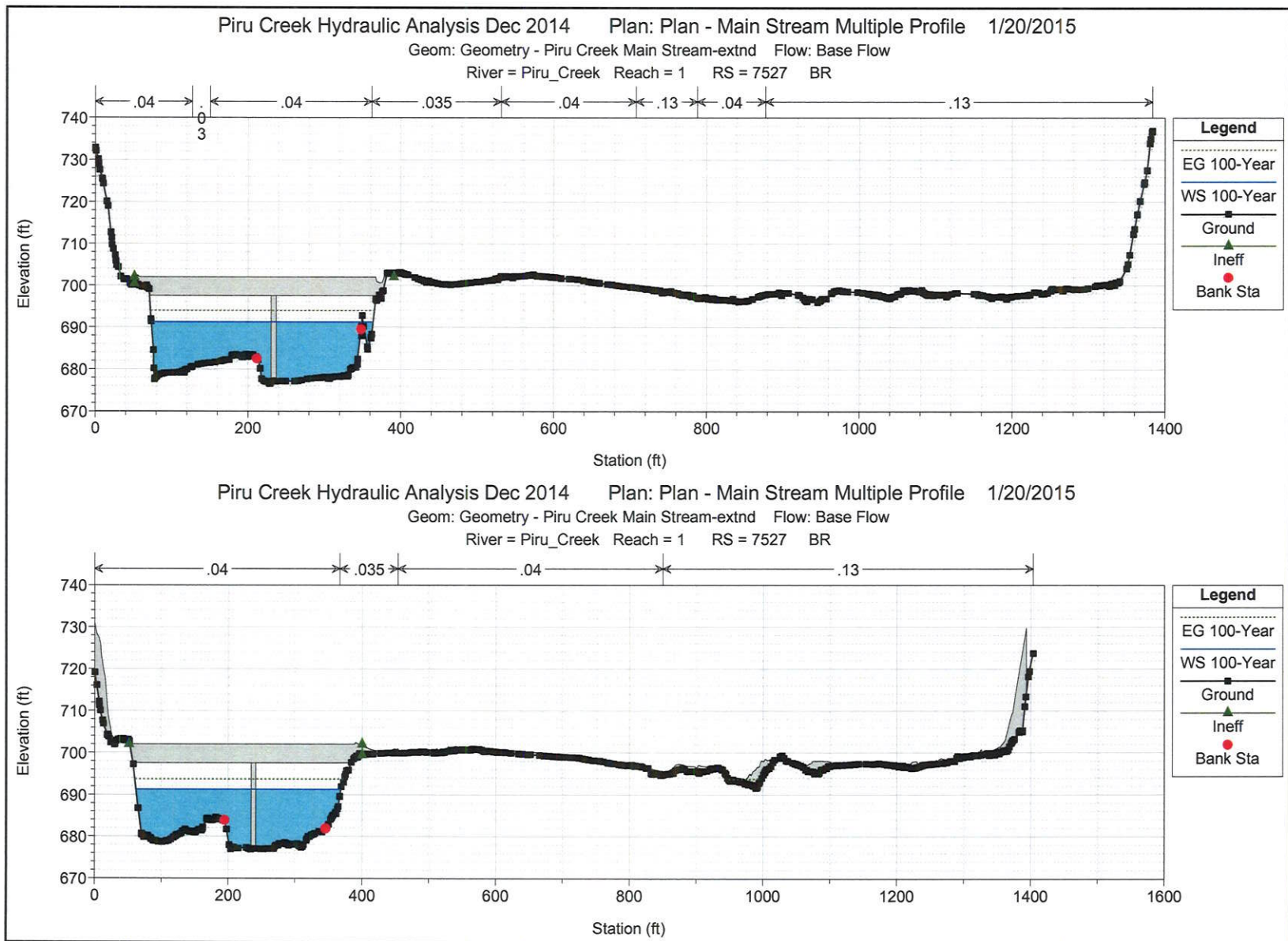


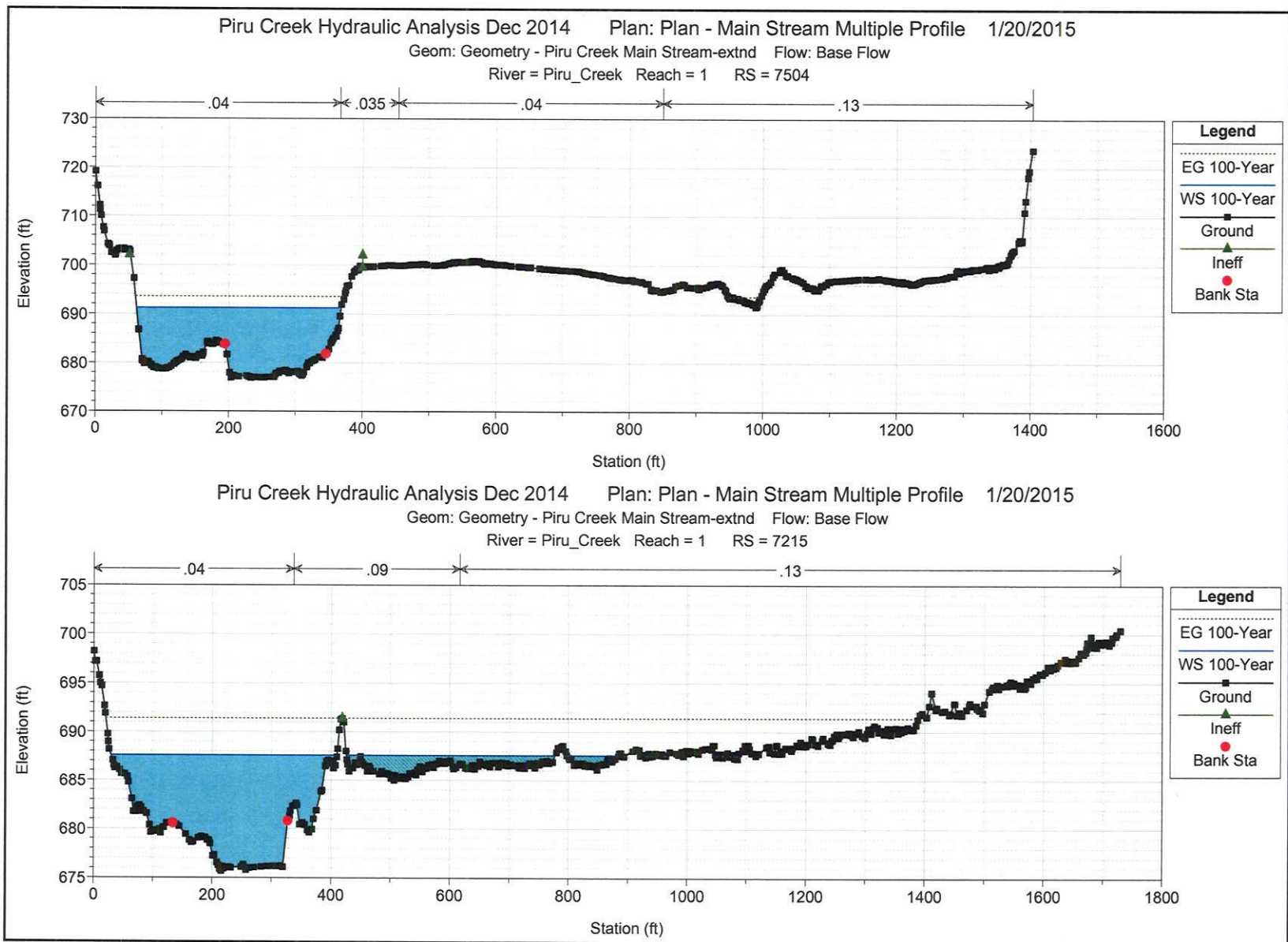
APPENDIX H: HEC-RAS CROSS SECTION DIAGRAMS FOR MAIN STREAM (PLAN 1)

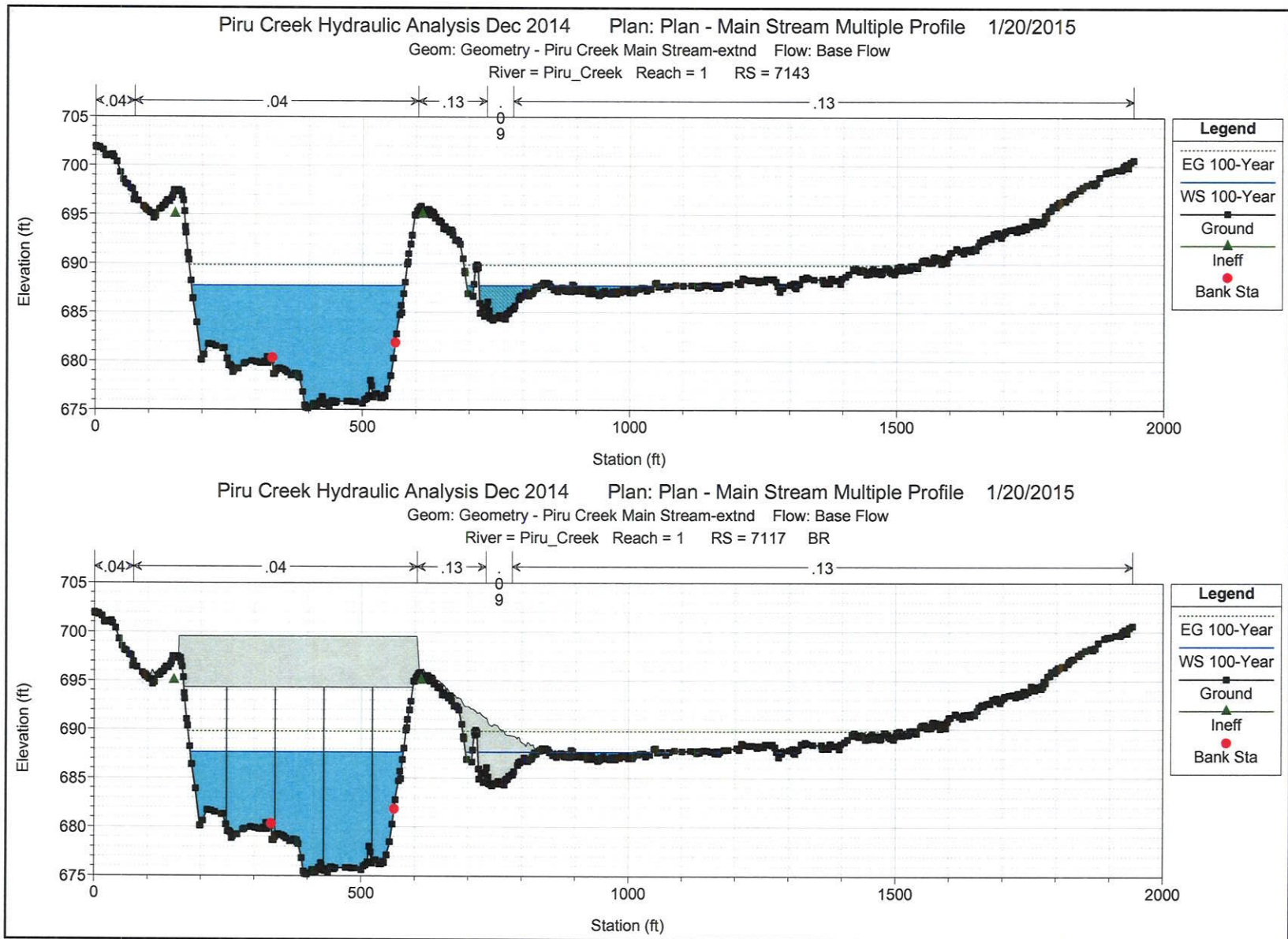


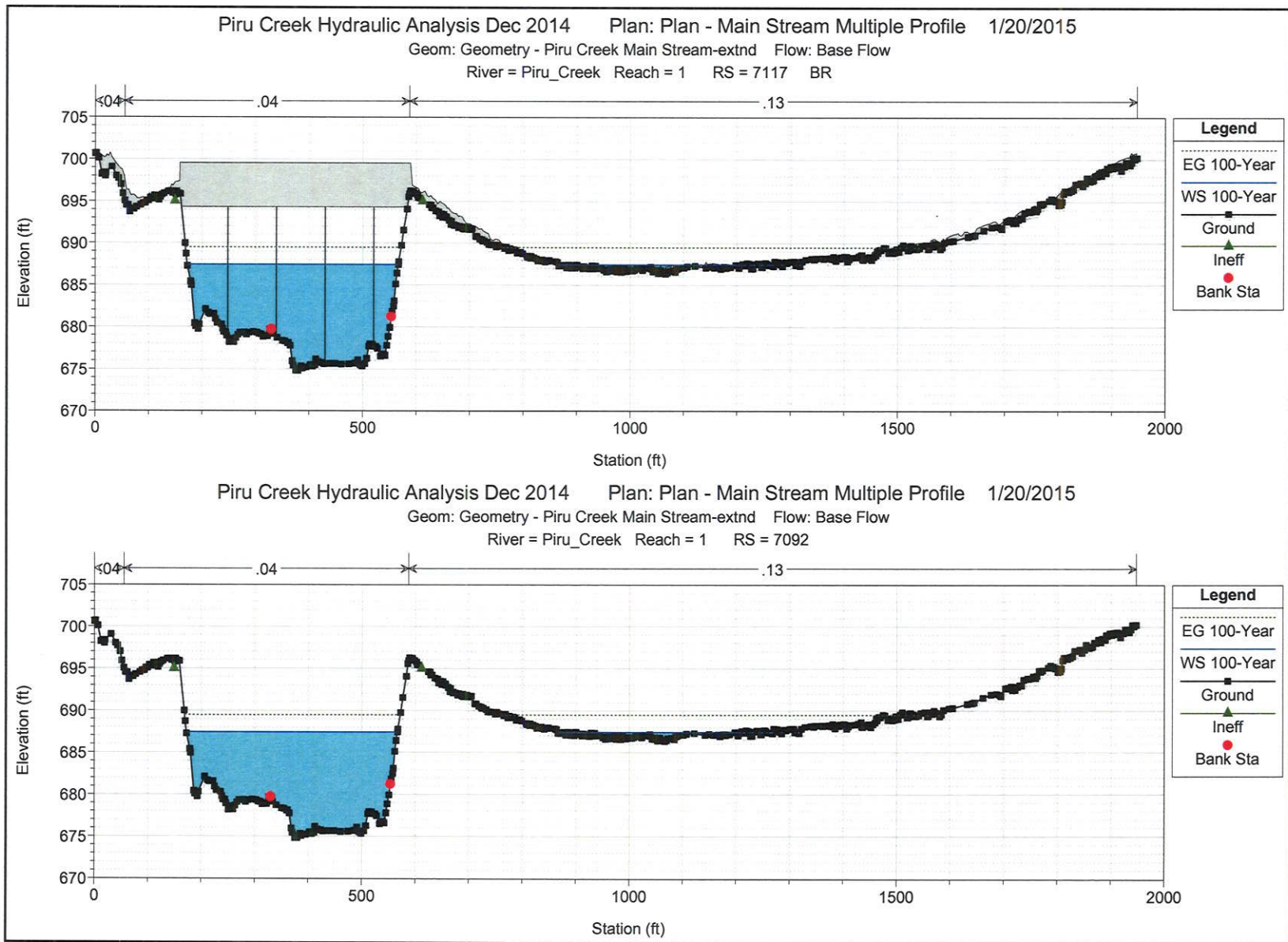


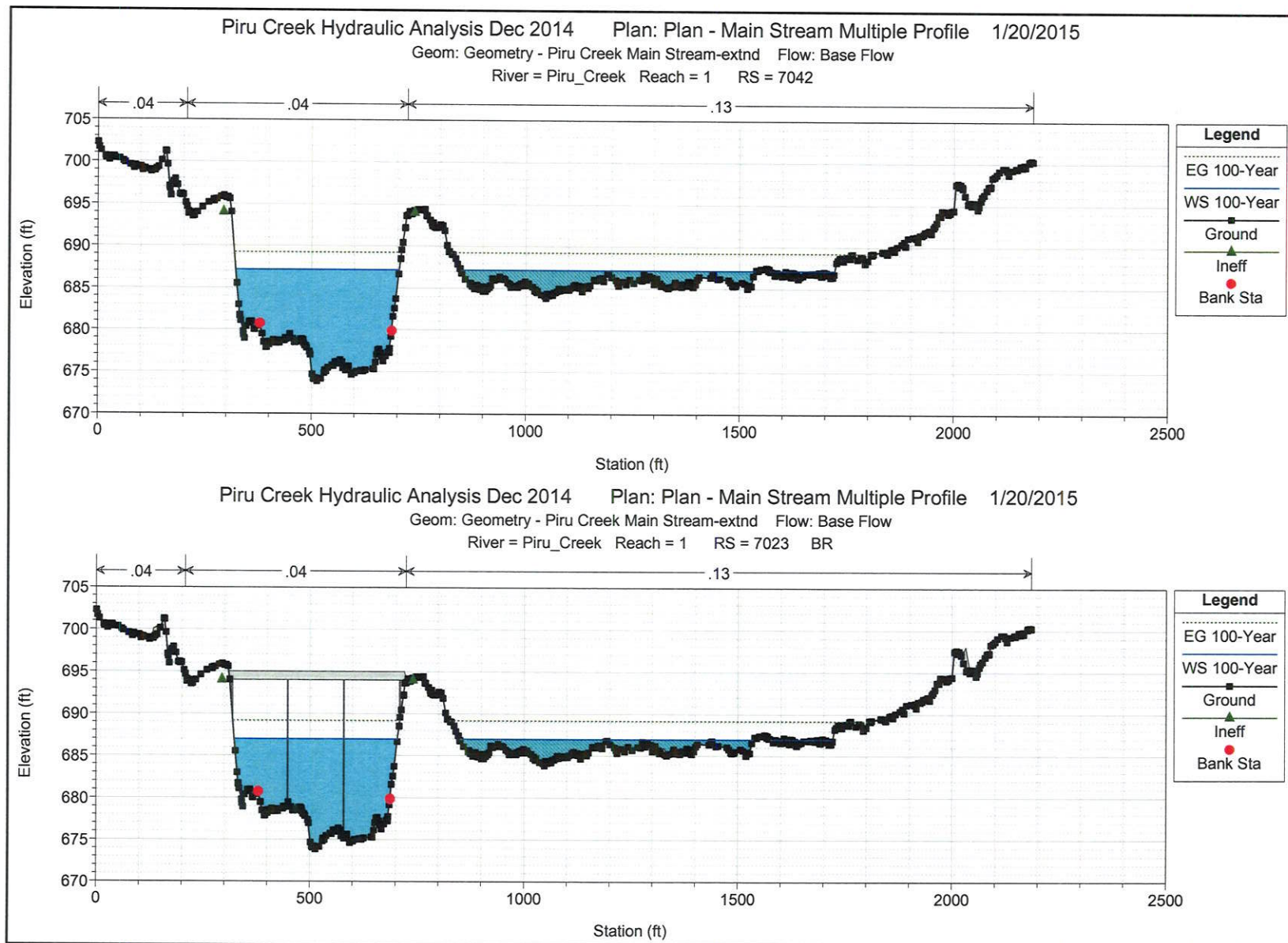


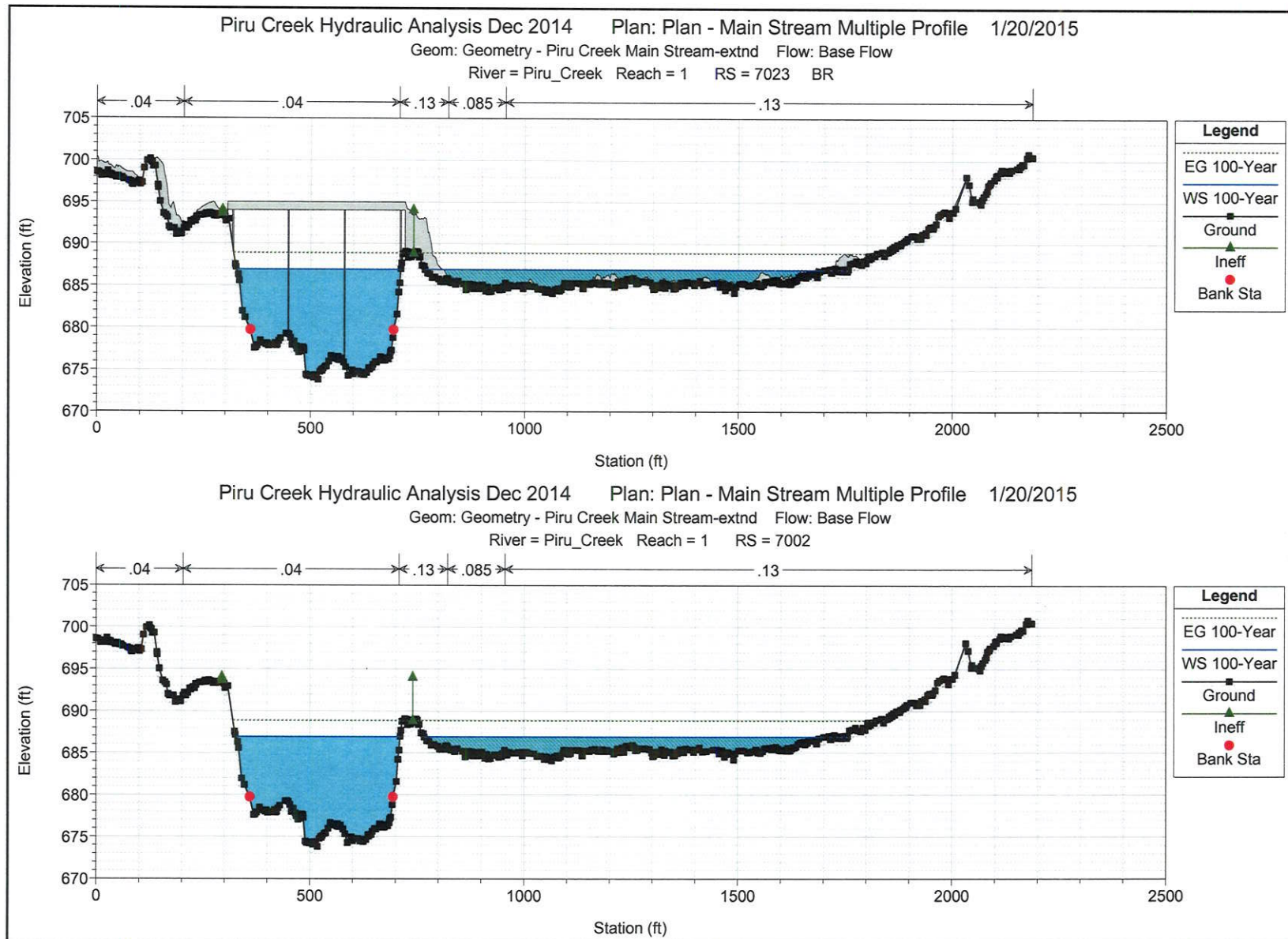


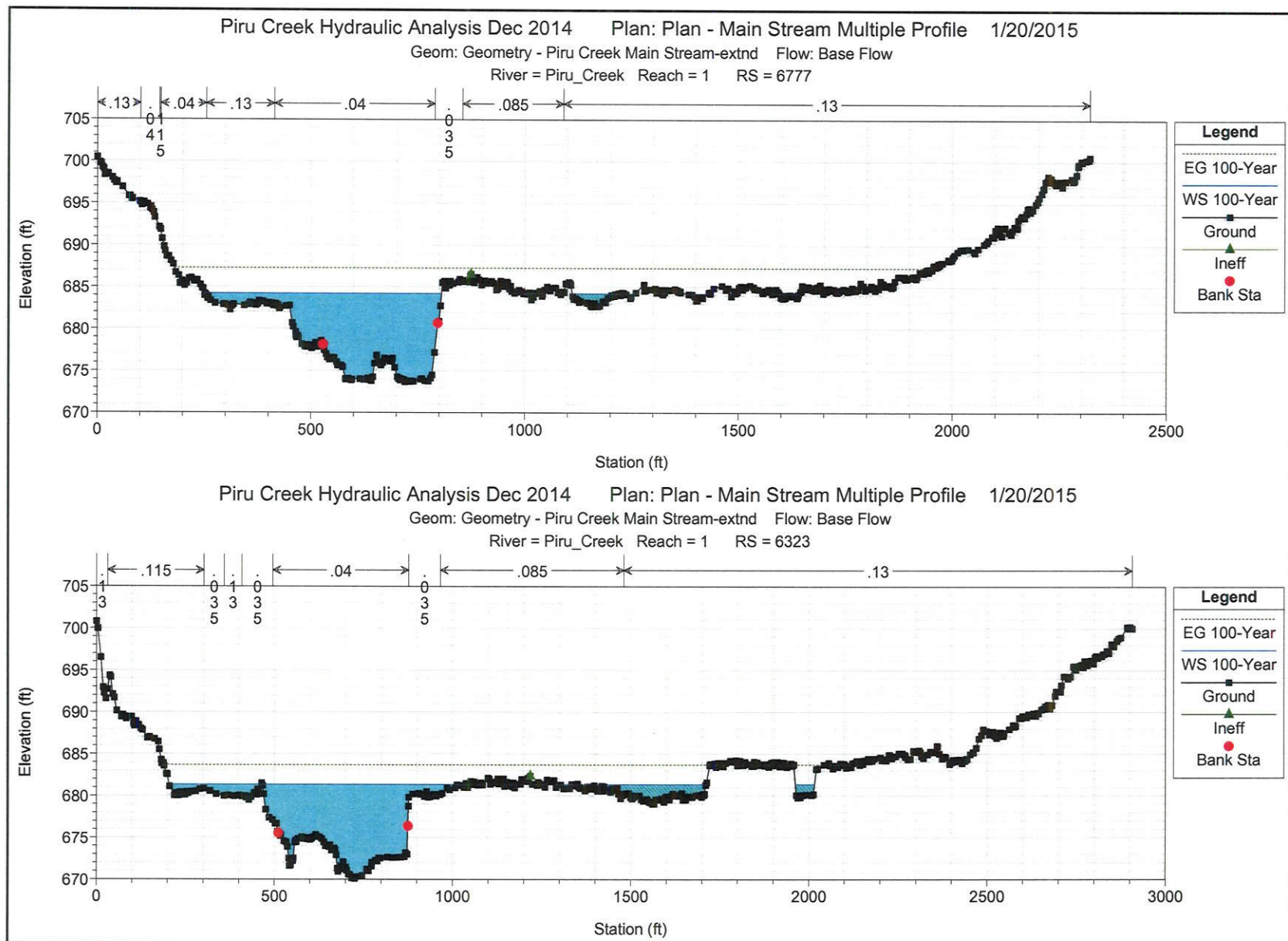


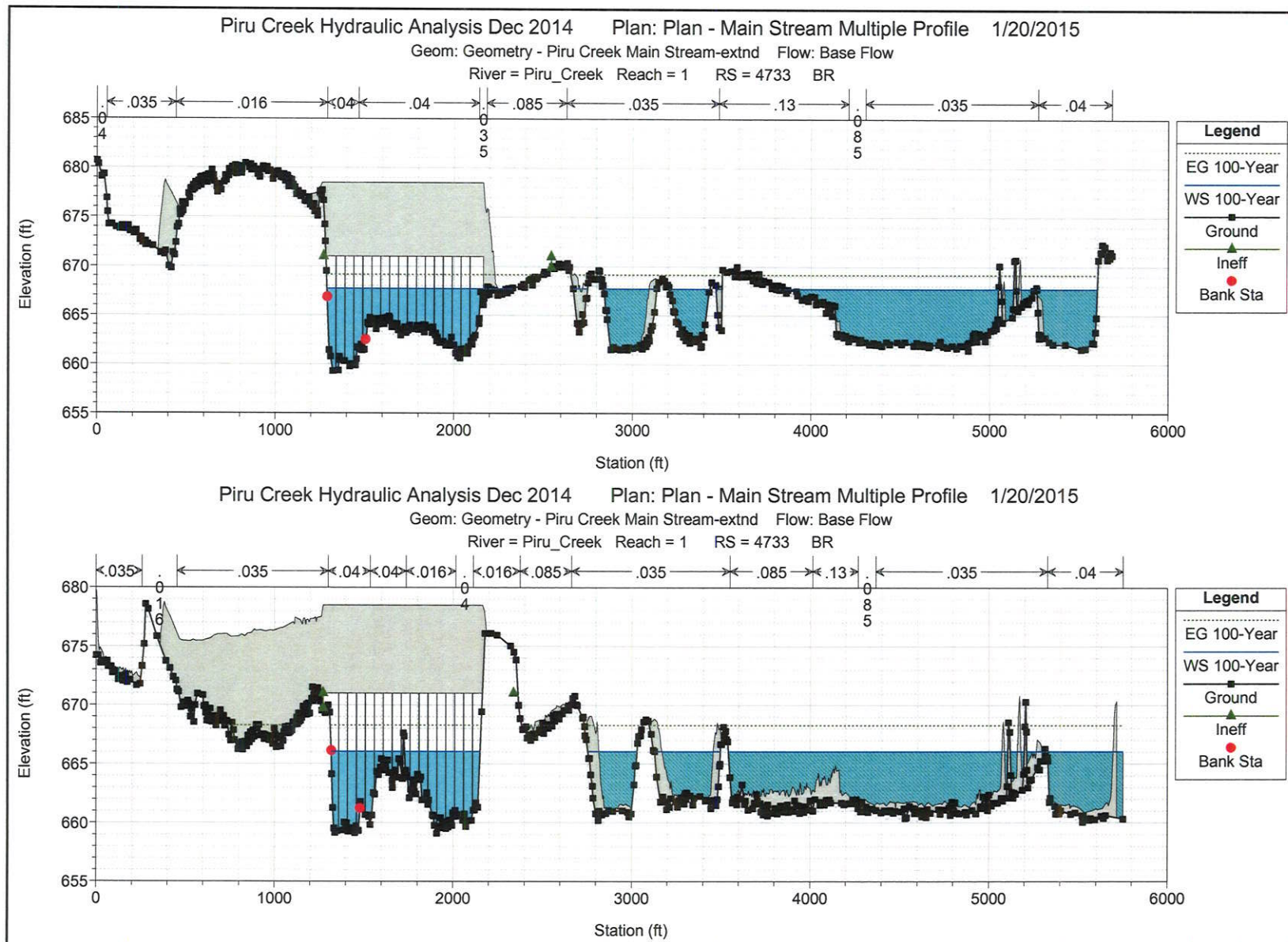


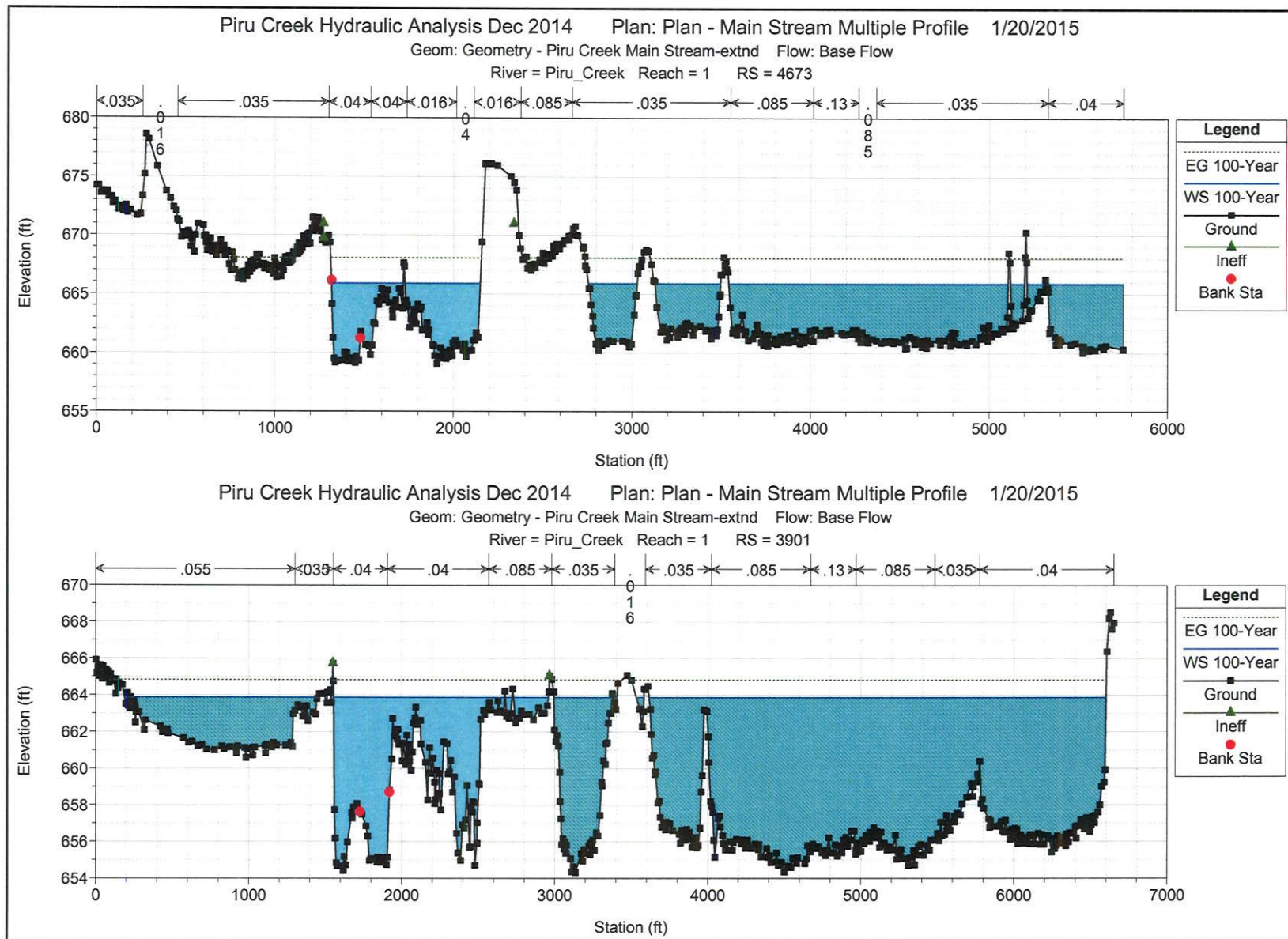


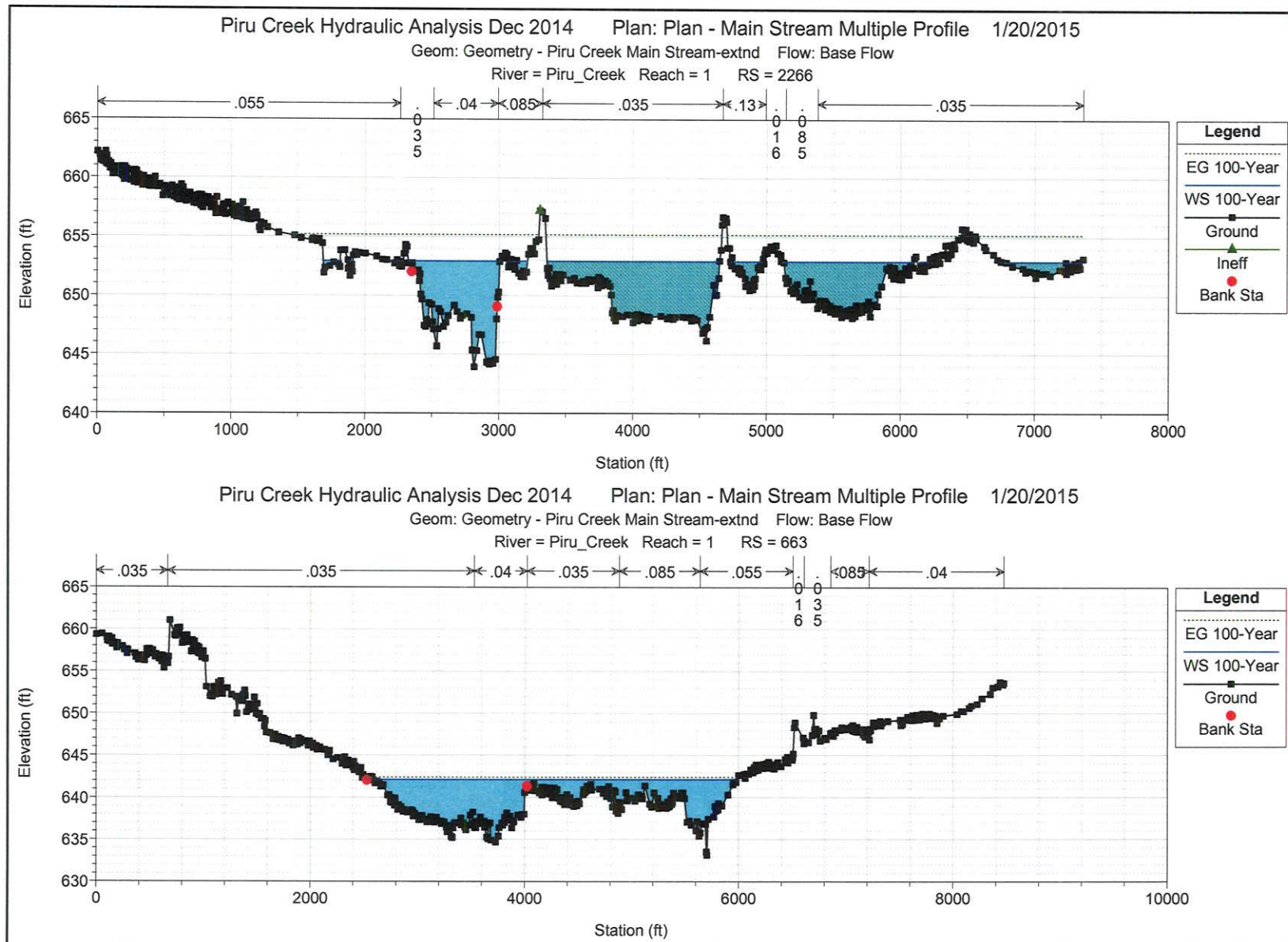














APPENDIX I: OWNER NOTIFICATION AND AGREEMENT LETTERS AND SIGNATURES



Delivering excellence through experience

1672 Donlon Street
Ventura, CA 93003
Local 805 654-6977
Fax 805 654-6979
www.jdscivil.com

JEN01.4138

Wednesday, October 22, 2013

Mary Burger
PO Box 369
Piru, CA 93040

RE: Notification and Agreement for increases in 1% (100-year) annual chance floodplain Base Flood Elevations

Dear Miss Burger,

The Flood Insurance Rate Map FIRM for a community depicts land which has been determined to be subject to a 1% (100-year) or greater chance of flooding in any given year. The FIRM is used to determine flood insurance rates and to help the community with floodplain management.

Jensen Design & Survey, Inc. is applying for a letter of Map Revision (LOMR) from the Federal Emergency Management Agency (DHS-FEMA) to revise FIRM 06111C0670E for County of Ventura along Piru Creek. Jensen Design & Survey, Inc. is proposing to revise the FIRM to reflect the construction of the Piru Bridge and updated topography.

The Letter of Map Revision will result in:

1. Increase of Base (1% annual chance) Flood Elevations (BFEs) ranging from 0.1 feet to 2.0 feet along a 1,380 foot stretch of the channel.
2. Changing the floodway limits within Piru Creek.
3. Changing the limits of the 1% annual chance floodplain throughout the length of the Creek.

Piru Creek is located along the portion of your properties with APN No: 055-0-210-125.

The Ventura County Watershed Protection District has requested that affected property owners sign a statement of concurrence that the project does not have a significant impact on their ability to utilize their property. If you concur with these findings please sign the enclosed copy of this letter in the space provided below and return it in the enclosed envelope. By signing this document, you will not be responsible to any other land owners along the Piru Creek that may be affected by the change in the Floodplain Limits. Attached you will find two exhibits, one showing the current FIRM and one showing the revised FIRM.

K:\JEN14138\Hydro\LOMR\4138-Ltr Property owner for county-mary burger.doc

Engineers

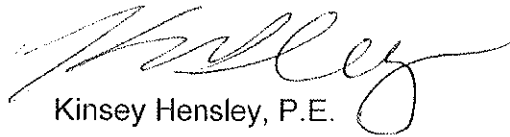
Planners

Surveyors

Landscape Architects

If you have any questions or concerns about the proposed changes to the FIRM or its affect on your property, we would be happy to meet with you to review. You may contact me at 805-654-6977.

Sincerely,



Kinsey Hensley, P.E.

Mary Burger

I concur with the findings of this study and accept that there may be an increase in water surface in the 100-year flood of up to 2.0 feet.

Property Owner Signature

Date

Attachments

Kinsey Hensley

From: Kinsey Hensley
Sent: Monday, February 10, 2014 8:04 AM
To: 'Camulos Ranch'
Subject: Piru Floodplain 2 of 2
Attachments: Pages from 4138_CLOMR_Report_Compiled_red-2.pdf

Kinsey Hensley, P.E.
Civil Engineer
Jensen Design & Survey, Inc.
1672 Donlon Street
Ventura, CA 93003
805-654-6977 (main)
805-633-2231 (direct)
805-633-2331 (fax)
khensley@jds civil.com

Kinsey Hensley

From: Kinsey Hensley
Sent: Monday, February 10, 2014 8:04 AM
To: 'Camulos Ranch'
Subject: Piru Floodplain 1 of 2
Attachments: Pages from 4138_CLOMR_Report_Compiled_red-1.pdf

I have to send this in two emails because the size is large.

Kinsey Hensley, P.E.
Civil Engineer
Jensen Design & Survey, Inc.
1672 Donlon Street
Ventura, CA 93003
805-654-6977 (main)
805-633-2231 (direct)
805-633-2331 (fax)
khensley@jdscivil.com

Kinsey Hensley

From: Kinsey Hensley
Sent: Thursday, February 20, 2014 4:09 PM
To: 'Camulos Ranch'
Subject: RE: Piru Floodplain

Matt,

I have not received a signed letter from you yet regarding the Floodplain Changes. I am wondering if you sent it or if you have any further questions. Thanks.

Kinsey Hensley, P.E.

Civil Engineer

Jensen Design & Survey, Inc.

1672 Donlon Street

Ventura, CA 93003

805-654-6977 (main)

805-633-2231 (direct)

805-633-2331 (fax)

khensley@jdscivil.com

From: Camulos Ranch [<mailto:camulosranch@yahoo.com>]

Sent: Wednesday, February 05, 2014 4:24 PM

To: Kinsey Hensley

Subject: Re: Piru Floodplain

Hi Kinsey,

I'm not sure why but this is my correct email address.

Thanks,

Matt

On Wednesday, February 5, 2014 7:49 AM, Kinsey Hensley <khensley@jdscivil.com> wrote:

Matt,

I attempted to send the file, but it got bounced back. Can you reply if you got this message and then I will try to resend? Thanks.

Kinsey Hensley, P.E.

Civil Engineer

Jensen Design & Survey, Inc.

1672 Donlon Street

Ventura, CA 93003

805-654-6977 (main)

805-633-2231 (direct)

805-633-2331 (fax)

khensley@jdscivil.com

Kinsey Hensley

From: Donald Jensen
Sent: Monday, March 31, 2014 3:32 PM
To: Lynn Jensen
Cc: Kinsey Hensley
Subject: RE: Matt freeman

Kinsey ,

I just called Matt...

-----Original Message-----

From: Lynn Jensen
Sent: Monday, March 31, 2014 3:29 PM
To: Donald Jensen
Cc: Kinsey Hensley
Subject: RE: Matt freeman

I don't know anything about this. Matt's cell # is 805-501-3188 and his office # is 805-521-1561. Better that Kinsey call him.

Lynn Gray Jensen
Chief Financial Officer
Jensen Design & Survey, Inc
1672 Donlon St.
Ventura, CA 93003
(805) 654-6977
www.jdscivil.com

-----Original Message-----

From: Donald Jensen
Sent: Monday, March 31, 2014 1:46 PM
To: Lynn Jensen
Subject: Matt freeman

Can you call matt for Kinsey and ask him to sign the letter piru LOMR acknowledgement...

Sent from my iPhone

LEGEND



SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance 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 AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.



FLOODWAY AREAS IN ZONE AE

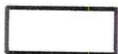
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.



ZONE X

OTHER FLOOD AREAS

Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.



ZONE X

OTHER AREAS

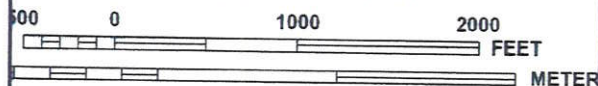
Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D

Areas in which flood hazards are undetermined, but possible.



MAP SCALE 1" = 1000'



ZONE D

Areas in which flood hazards are undetermined, but possible.



COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS



OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary

0.2% annual chance floodplain boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

513

(EL. 987)

Base Flood Elevation line and value; elevation in feet*

Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

— A — A — Cross section line

— 23 — 23 — Transect line

87°07'45", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere

26°00'N 1000-meter Universal Transverse Mercator grid values, zone 11

600000 FT 5000-foot grid ticks: California State Plane coordinate system, zone V (FIPSZONE 0405), Lambert Conformal Conic projection

DX5510 x Bench mark (see explanation in Notes to Users section of this FIRM panel)

● M1.5 River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

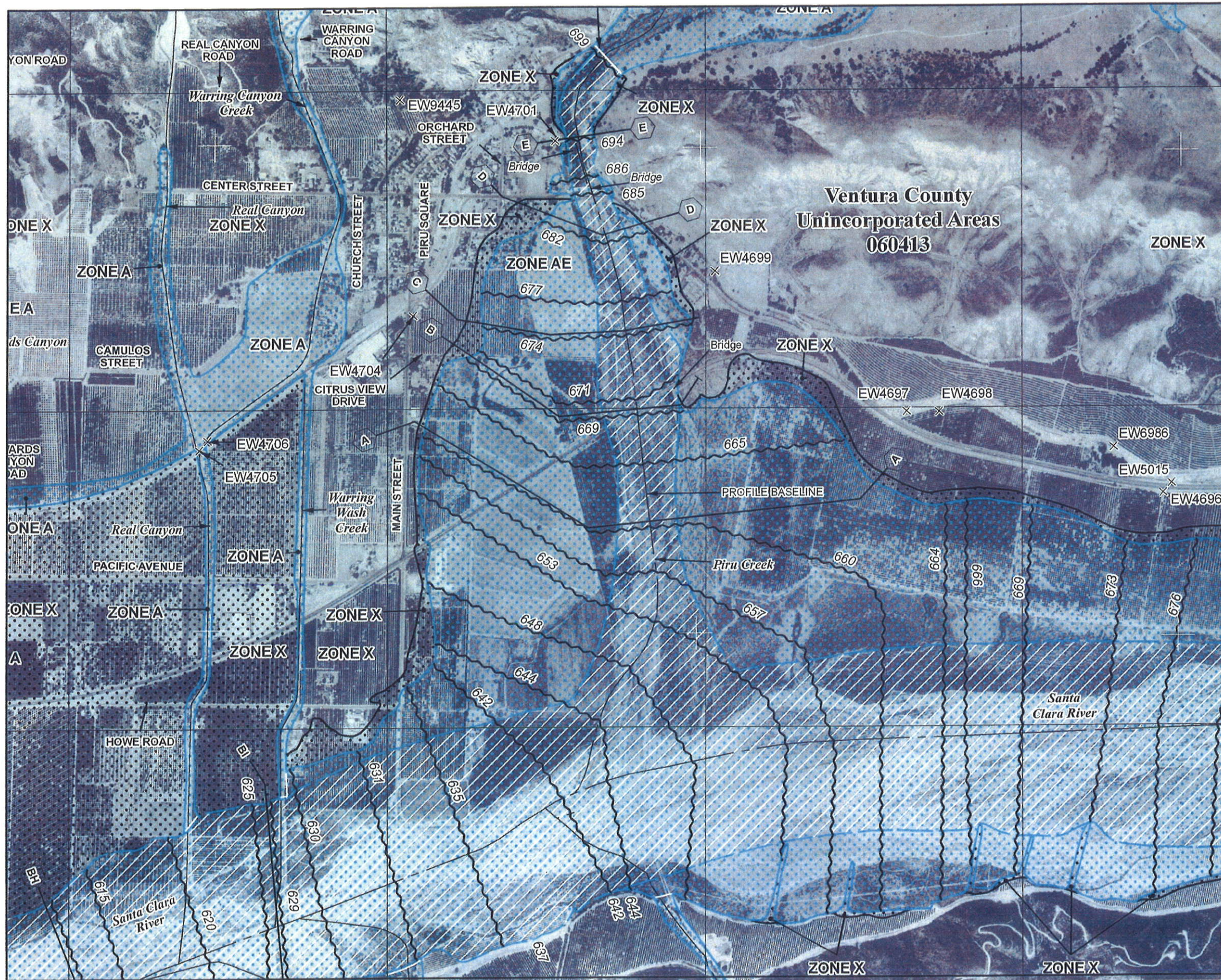
EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
January 20, 2010


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

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov





MAP SCALE 1" = 1000'

0 1000 2000 FEET

0 1000 2000 METER

PANEL 0670E

FIRM

FLOOD INSURANCE RATE MAP

VENTURA COUNTY,
CALIFORNIA
AND INCORPORATED AREAS


PANEL 670 OF 1275

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
VENTURA COUNTY	060413	0670	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



MAP NUMBER

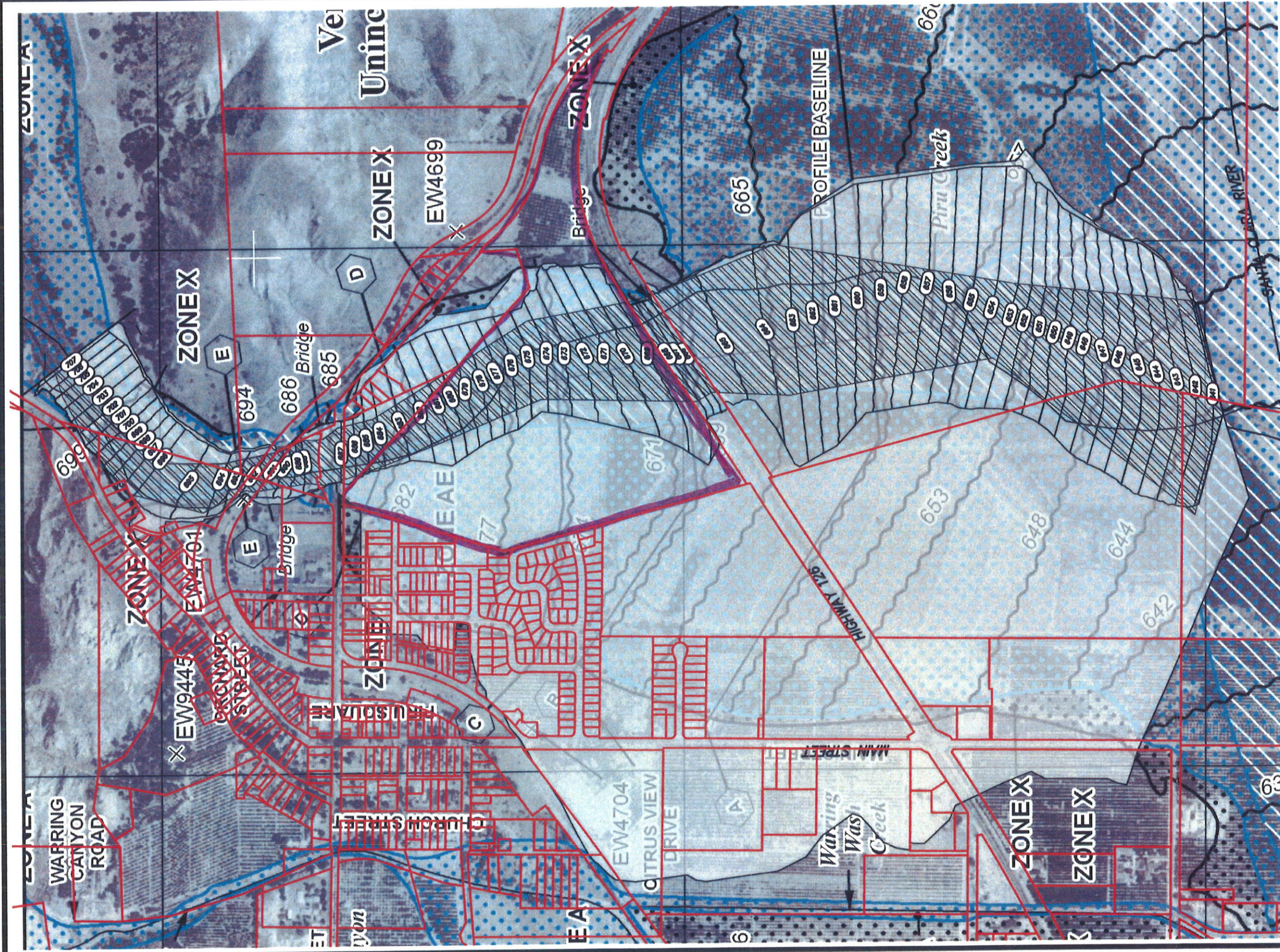
06111C0670E

EFFECTIVE DATE

JANUARY 20, 2010

Federal Emergency Management Agency

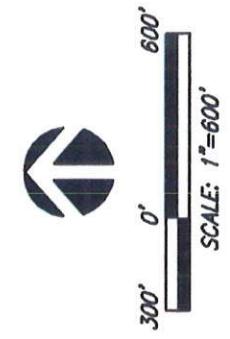
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NOTES:

LEGEND:

- 500-YEAR FLOODPLAIN
- 100-YEAR FLOODPLAIN
- FLOODWAY
- MAINTENANCE (MC) FLOWLINE
- OVERFLOW (OVR) FLOWLINE
- ROB FLOWLINE
- MAJOR BFE
- MINOR BFE
- PARCELS

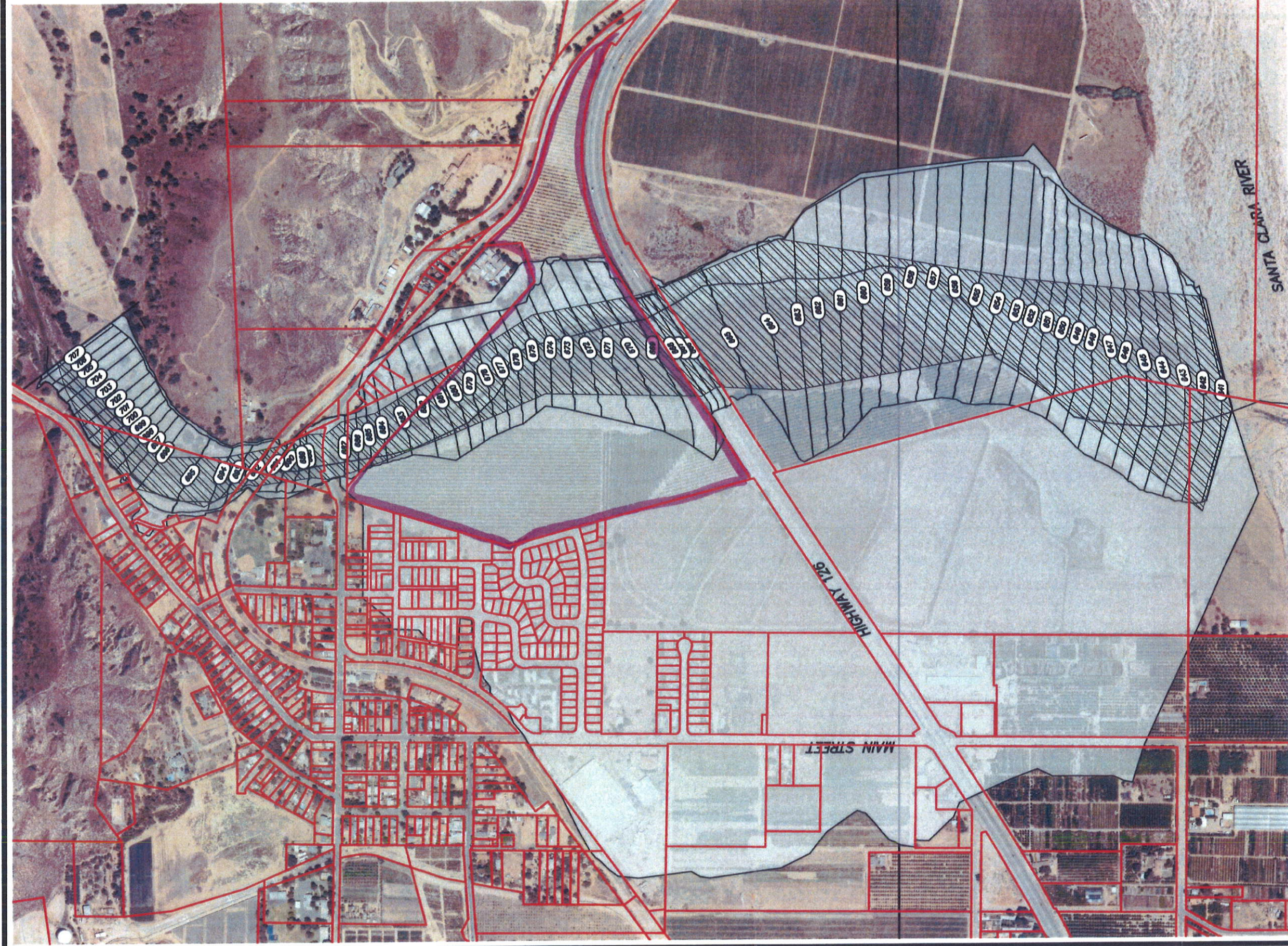


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VENTURA, CALIF. 93003
PHONE 805/654-6877
FAX 805/654-6879

**NEW BFS
AND EXISTING FLOODPLAIN LIMITS (FIS)**
PIRU CREEK

SHEET
3 OF 3
Oct 24, 2013



NOTES:

LEGEND:

- | | |
|---------------------------|-------------------------|
| 500-YEAR FLOODPLAIN | OVERFLOW (OVR) FLOWLINE |
| 100-YEAR FLOODPLAIN | ROB FLOWLINE |
| FLOODWAY | MAJOR BFE |
| MAINGHANNEL (MC) FLOWLINE | MINOR BFE |
| | PARCELS |



300' 0' 600'

SCALE: 1"=600'



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NEW BFEs
OVERLAY AERIAL
PIRU CREEK
SHEET
3 OF 3
Oct 24, 2013



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JEN01.4138
Wednesday, October 22, 2013

Ventura County Transportation Commission (VCTC)
950 County Square Drive, Suite 207
Ventura, CA 93003

RE: Notification and Agreement for increases in 1% (100-year) annual chance floodplain Base Flood Elevations

Dear VCTC,

The Flood Insurance Rate Map FIRM for a community depicts land which has been determined to be subject to a 1% (100-year) or greater chance of flooding in any given year. The FIRM is used to determine flood insurance rates and to help the community with floodplain management.

Jensen Design & Survey, Inc. is applying for a letter of Map Revision (LOMR) from the Federal Emergency Management Agency (DHS-FEMA) to revise FIRM 06111C0670E for County of Ventura along Piru Creek. Jensen Design & Survey, Inc. is proposing to revise the FIRM to reflect the construction of the Piru Bridge and updated topography.

The Letter of Map Revision will result in:

1. Increase of Base (1% annual chance) Flood Elevations (BFEs) ranging from 0.1 feet to 2.0 feet along a 1,380 foot stretch of the channel.
2. Changing the floodway limits within Piru Creek.
3. Changing the limits of the 1% annual chance floodplain throughout the length of the Creek.

Piru Creek is located along the portion of your properties with APN Nos: 055-0-190-100, 056-0-070-030, 056-0-070-020, and 055-0-190-110.

The Ventura County Watershed Protection District has requested that affected property owners sign a statement of concurrence that the project does not have a significant impact on their ability to utilize their property. If you concur with these findings please sign the enclosed copy of this letter in the space provided below and return it in the enclosed envelope. By signing this document, you will not be responsible to any other land owners along the Piru Creek that may be affected by the change in the Floodplain Limits. Attached you will find two exhibits, one showing the current FIRM and one showing the revised FIRM.

K:\JEN14138\hydro\CLOMR\4138-Ltr Property owner for county-ventura county.doc

Engineers


Planners

Surveyors

Landscape Architects

If you have any questions or concerns about the proposed changes to the FIRM or its affect on your property, we would be happy to meet with you to review. You may contact me at 805-654-6977.

Sincerely,



Kinsey Hensley, P.E.

Ventura County Transportation Commission

I concur with the findings of this study and accept that there may be an increase in water surface in the 100-year flood of up to 2.0 feet.



Property Owner Signature

1-14-2019

Date

Attachments

LEGEND



SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance 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 AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.



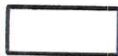
FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.



OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
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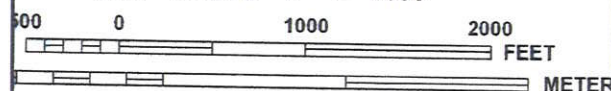


OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.



MAP SCALE 1" = 1000'



ZONE D	Areas in which flood hazards are undetermined, but possible.
	COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
	OTHERWISE PROTECTED AREAS (OPAs)
CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.	
	1% annual chance floodplain boundary
	0.2% annual chance floodplain boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
	Base Flood Elevation line and value; elevation in feet*
	Base Flood Elevation value where uniform within zone; elevation in feet*
* Referenced to the North American Vertical Datum of 1988	
	Cross section line
	Transect line
87°07'45", 32°22'30"	
Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere	
176°00'00"N	
1000-meter Universal Transverse Mercator grid values, zone 11	
600000 FT	
5000-foot grid ticks: California State Plane coordinate system, zone V (FIPSZONE 0405), Lambert Conformal Conic projection	
DX5510 x	
Bench mark (see explanation in Notes to Users section of this FIRM panel)	
● M1.5	
River Mile	

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

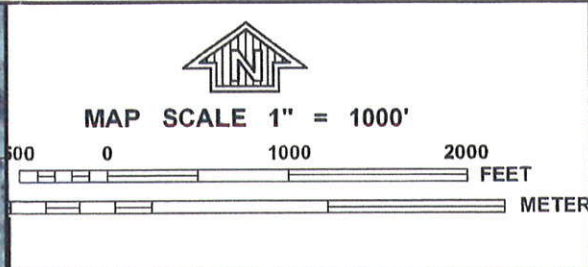
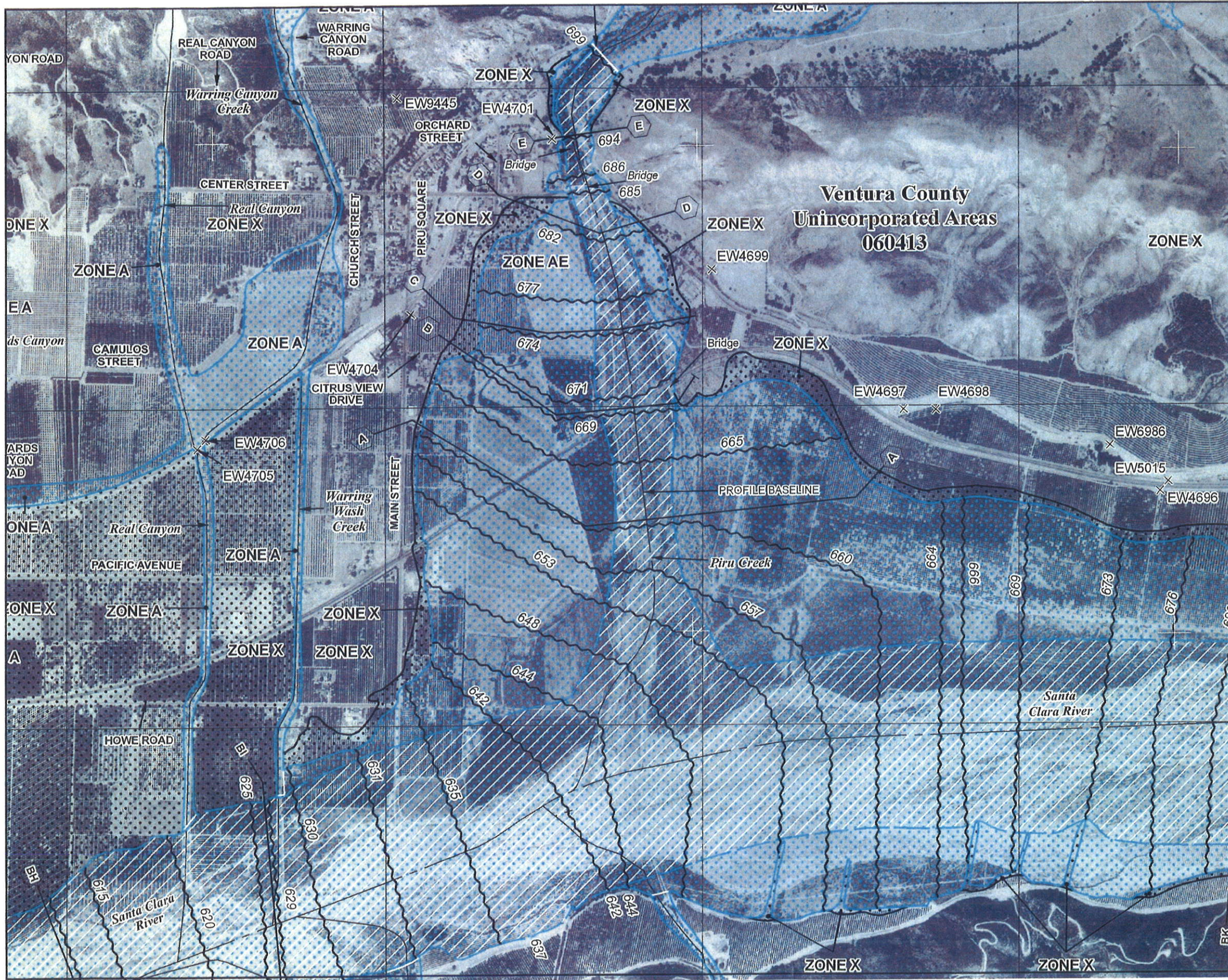
EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
January 20, 2010

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

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0670E

FIRM
FLOOD INSURANCE RATE MAP

**VENTURA COUNTY,
CALIFORNIA
AND INCORPORATED AREAS**

PANEL 670 OF 1275
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
VENTURA COUNTY	060413	0670	E

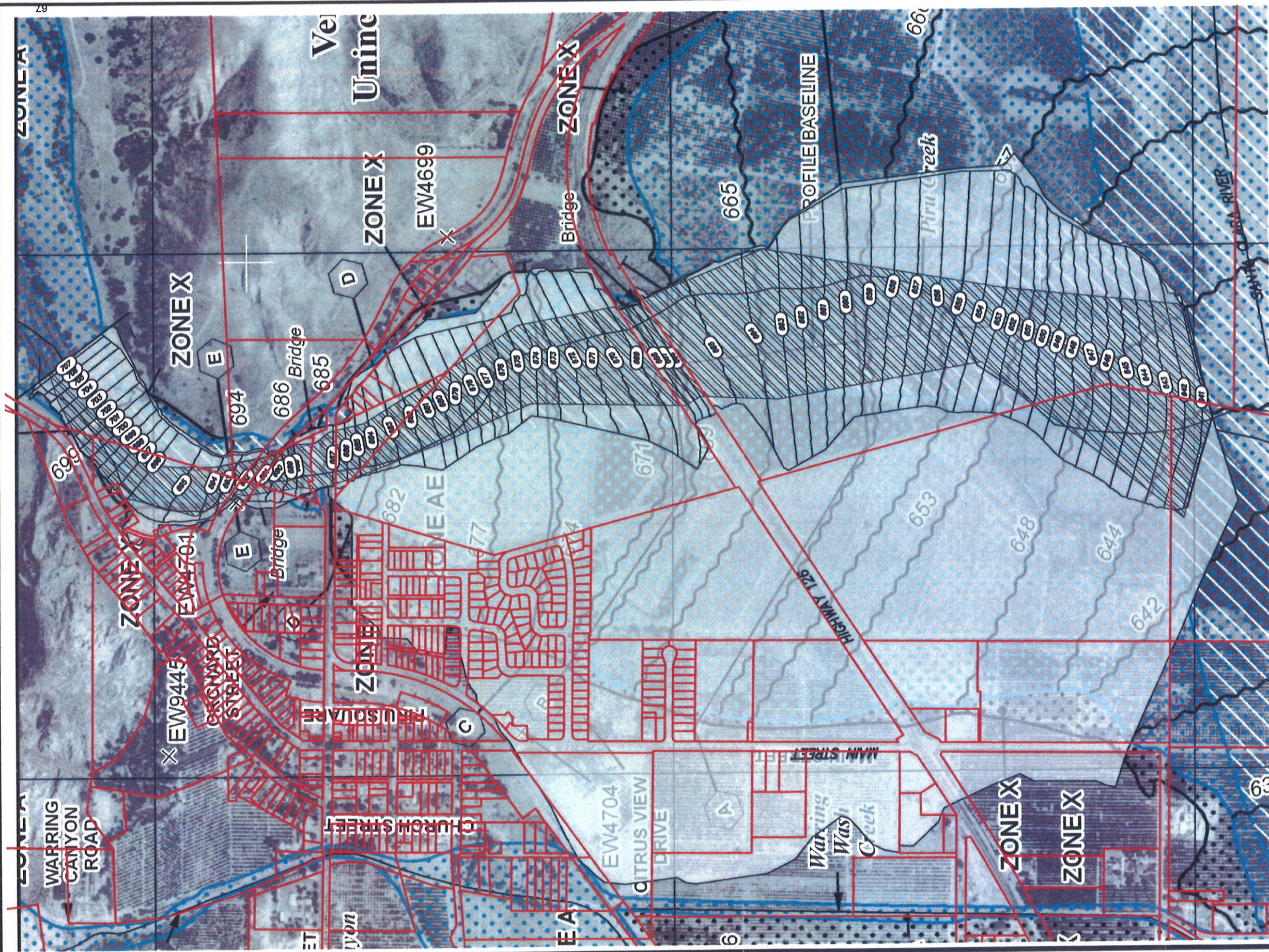
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
06111C0670E

EFFECTIVE DATE
JANUARY 20, 2010

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



NOTES:

LEGEND:

- 500-YEAR FLOODPLAIN
- 100-YEAR FLOODPLAIN
- FLOODWAY
- MAINCHANNEL (MC) FLOWLINE
- OVERFLOW (OVR) FLOWLINE
- ROB FLOWLINE
- MAJOR BFE
- MINOR BFE
- PARCELS



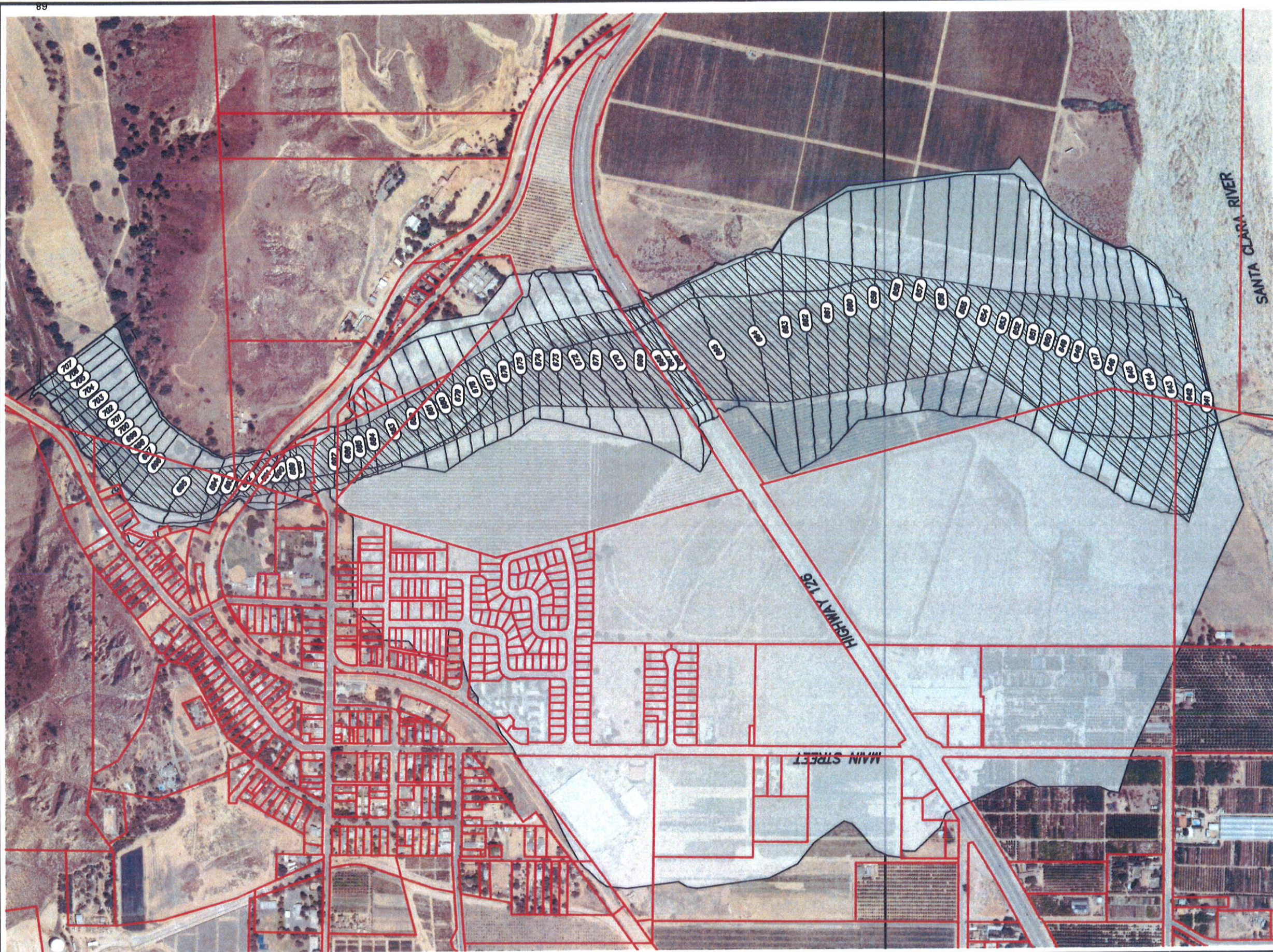
SCALE: 1"=600'



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FAX 805/654-8979
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NEW BFEs
AND EXISTING FLOODPLAIN LIMITS (FIS)
PIRU CREEK

SHEET
3 OF 3
Oct 24, 2013



NOTES:

LEGEND:

- 500-YEAR FLOODPLAIN
- 100-YEAR FLOODPLAIN
- FLOODWAY
- MAINCANNEL (MC) FLOWLINE

- OVERFLOW (OVR) FLOWLINE
- ROB FLOWLINE
- MAJOR BFE
- MINOR BFE
- PARCELS



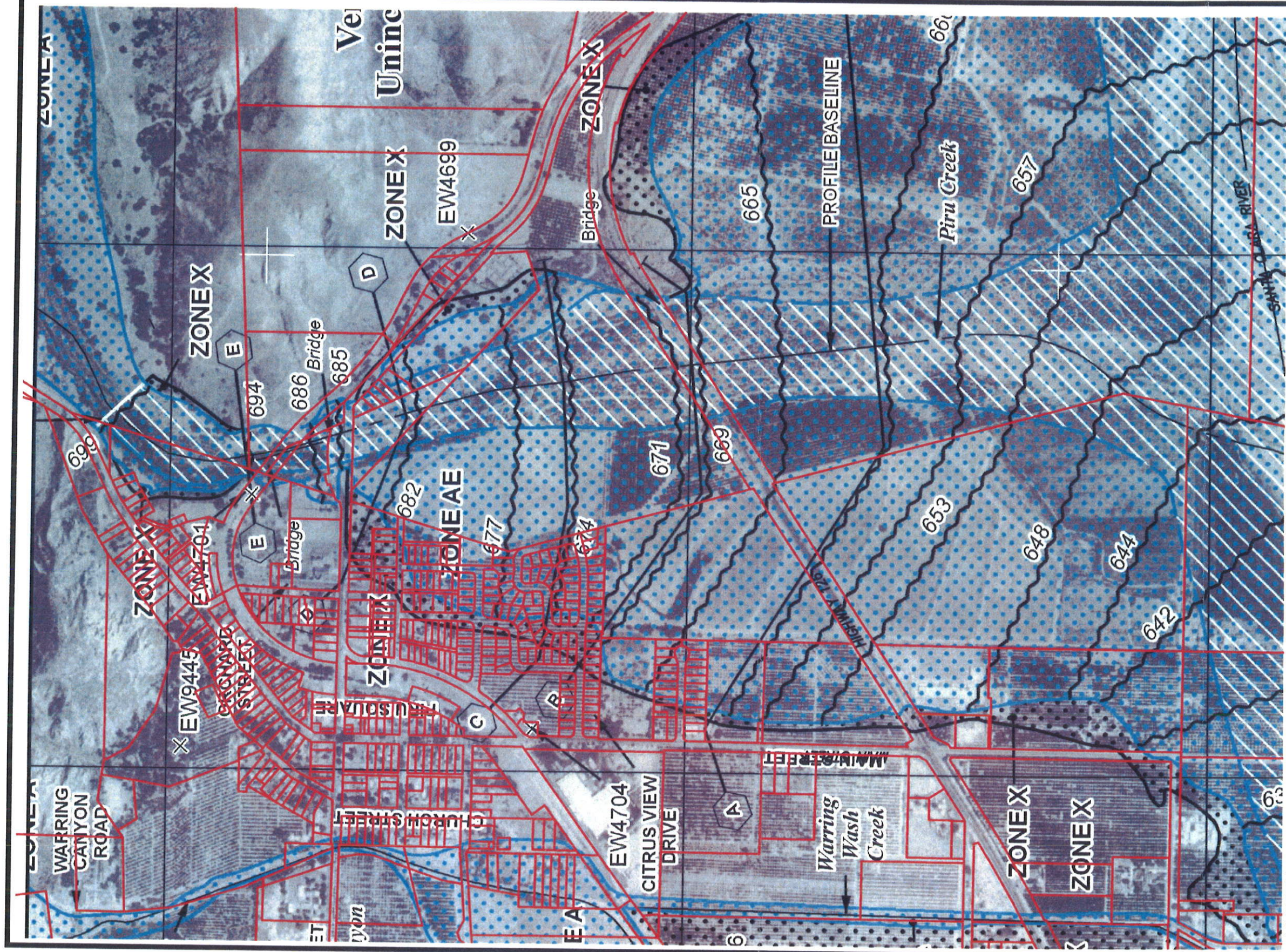
300' 0' 600'
SCALE: 1"=600'



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FAX 805/654-6979
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NEW BFES
OVERLAY AERIAL
PIRU CREEK

SHEET
3 OF 3
Oct 24, 2013



NOTES:



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FAX 805/654-6979

EXISTING FIRM
PIRU CREEK

SHEET
3 OF 3
Oct 24, 2013



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JEN01.4138
Wednesday, October 22, 2013

Paul Constance
PO Box 75
Piru, CA 93040

RE: Notification and Agreement for increases in 1% (100-year) annual chance floodplain Base Flood Elevations

Dear Mr. Constance,

The Flood Insurance Rate Map FIRM for a community depicts land which has been determined to be subject to a 1% (100-year) or greater chance of flooding in any given year. The FIRM is used to determine flood insurance rates and to help the community with floodplain management.

Jensen Design & Survey, Inc. is applying for a letter of Map Revision (LOMR) from the Federal Emergency Management Agency (DHS-FEMA) to revise FIRM 06111C0670E for County of Ventura along Piru Creek. Jensen Design & Survey, Inc. is proposing to revise the FIRM to reflect the construction of the Piru Bridge and updated topography.

The Letter of Map Revision will result in:

1. Increase of Base (1% annual chance) Flood Elevations (BFEs) ranging from 0.1 feet to 2.0 feet along a 1,380 foot stretch of the channel.
2. Changing the floodway limits within Piru Creek.
3. Changing the limits of the 1% annual chance floodplain throughout the length of the Creek.

Piru Creek is located along the portion of your properties with APN Nos: 056-0-020-100 and 056-0-020-090.

The Ventura County Watershed Protection District has requested that affected property owners sign a statement of concurrence that the project does not have a significant impact on their ability to utilize their property. If you concur with these findings please sign the enclosed copy of this letter in the space provided below and return it in the enclosed envelope. By signing this document, you will not be responsible to any other land owners along the Piru Creek that may be affected by the change in the Floodplain Limits. Attached you will find two exhibits, one showing the current FIRM and one showing the revised FIRM.

K:\JEN14138\Hydro\CLOMR\4138-Ltr Property owner for county-paul constance.doc

Engineers

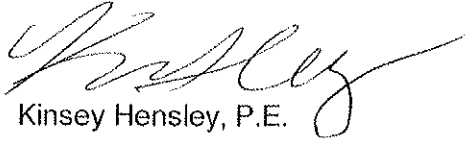
Planners

Surveyors

Landscape Architects

If you have any questions or concerns about the proposed changes to the FIRM or its affect on your property, we would be happy to meet with you to review. You may contact me at 805-654-6977.

Sincerely,



Kinsey Hensley, P.E.

~~Paul Constance~~ Constance Paul

I concur with the findings of this study and accept that there may be an increase in water surface in the 100-year flood of up to 2.0 feet.



Property Owner Signature

1/14/19
Date

Attachments

LEGEND



SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance 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.
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ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.



FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.



OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
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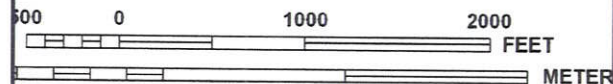


OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.



MAP SCALE 1" = 1000'



ZONE D	Areas in which flood hazards are undetermined, but possible.
	COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
	OTHERWISE PROTECTED AREAS (OPAs)
CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.	
	1% annual chance floodplain boundary
	0.2% annual chance floodplain boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
	Base Flood Elevation line and value; elevation in feet*
	Base Flood Elevation value where uniform within zone; elevation in feet*
* Referenced to the North American Vertical Datum of 1988	
	Cross section line
	Transect line
87°07'45", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
1276000N	1000-meter Universal Transverse Mercator grid values, zone 11
600000 FT	5000-foot grid ticks: California State Plane coordinate system, zone V (FIPSZONE 0405), Lambert Conformal Conic projection
DX5510 X	Bench mark (see explanation in Notes to Users section of this FIRM panel)
● M1.5	River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

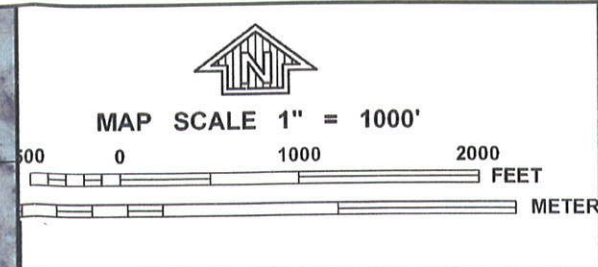
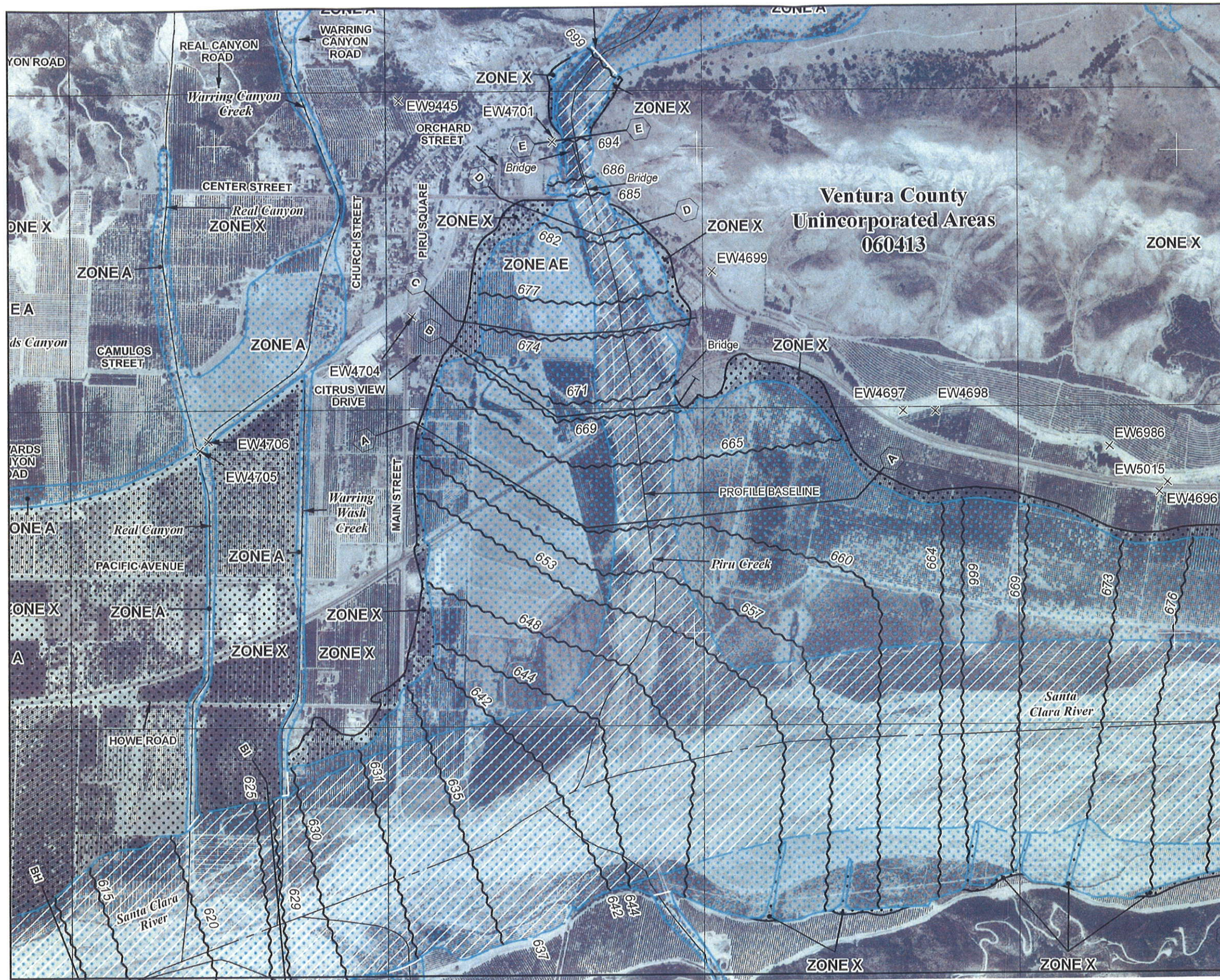
EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
January 20, 2010

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

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

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NFIP

PANEL 0670E

FIRM

FLOOD INSURANCE RATE MAP

VENTURA COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 670 OF 1275
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
VENTURA COUNTY	060413	0670	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

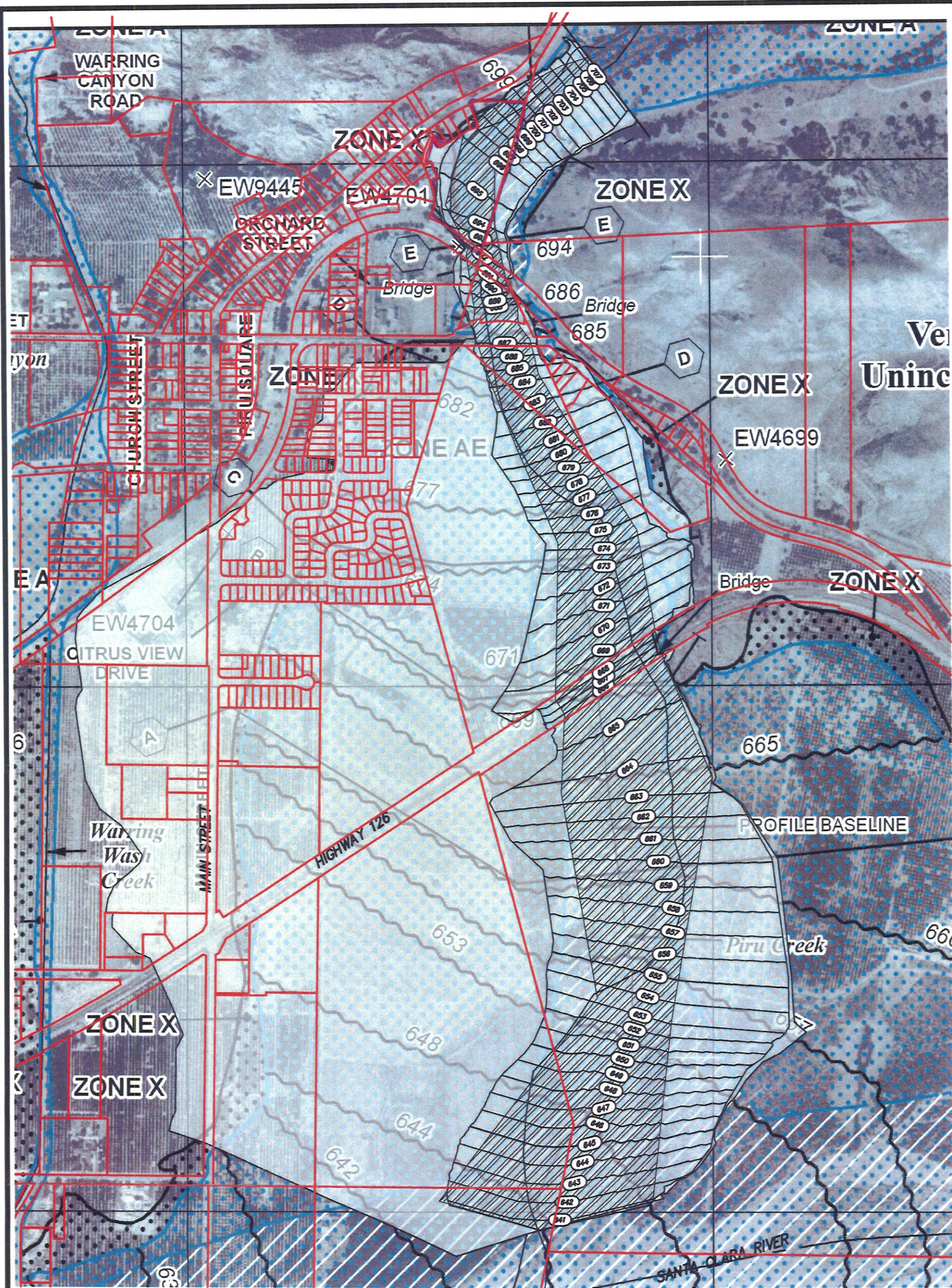
MAP NUMBER
06111C0670E

EFFECTIVE DATE
JANUARY 20, 2010

Federal Emergency Management Agency

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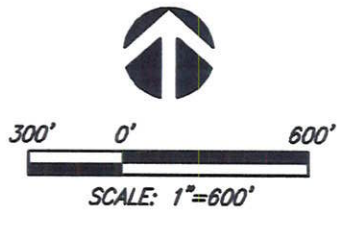
J:\JEN14138\Eng\Exhibits\4138 Piru Creek FIRM Property owner exhibits.dwg Oct 24, 2013, 1:33pm kpascoe



NOTES:

LEGEND:

- | | | | |
|--|---------------------------|--|-------------------------|
| | 500-YEAR FLOODPLAIN | | OVERFLOW (OVR) FLOWLINE |
| | 100-YEAR FLOODPLAIN | | ROB FLOWLINE |
| | FLOODWAY | | MAJOR BFE |
| | MAINCHANNEL (MC) FLOWLINE | | MINOR BFE |
| | | | PARCELS |



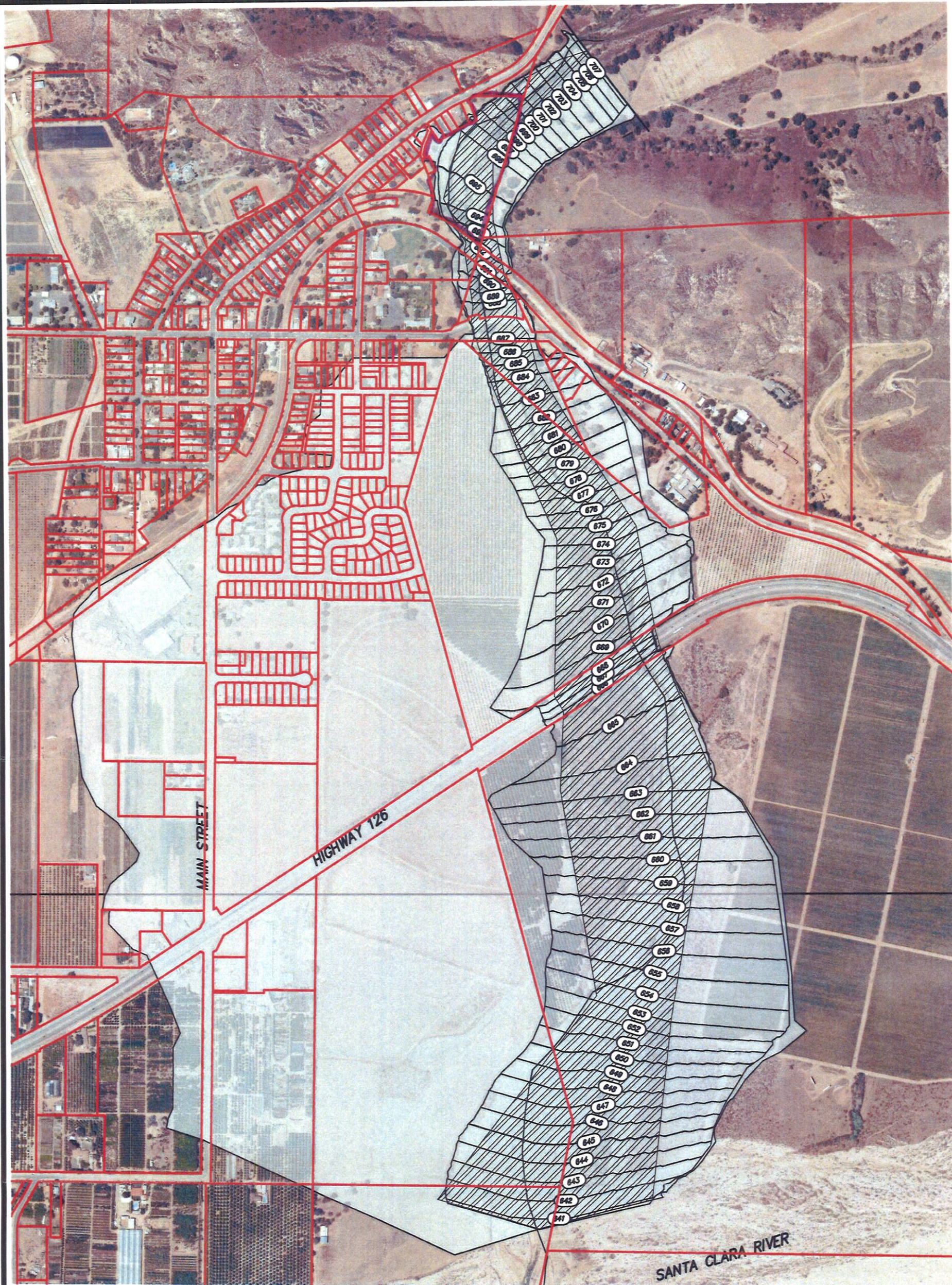
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& SURVEY, INC.**
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VENTURA, CALIF. 93003
PHONE 805/654-6977
FAX 805/654-6979

NEW BFES
AND EXISTING FLOODPLAIN LIMITS (FIS)
PIRU CREEK




SHEET
3 OF 3
Oct 24, 2013



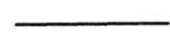


J:\JEN14138\Eng\Exhibits\4138 Piru Creek FIRM Property owner exhibits.dwg Oct 24, 2013, 1:42pm kpascoe

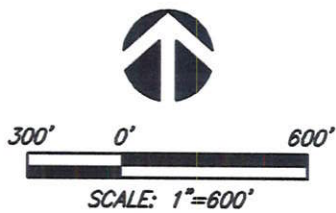


NOTES:

LEGEND:

-  500-YEAR FLOODPLAIN
-  100-YEAR FLOODPLAIN
-  FLOODWAY
-  MAINCHANNEL (MC) FLOWLINE

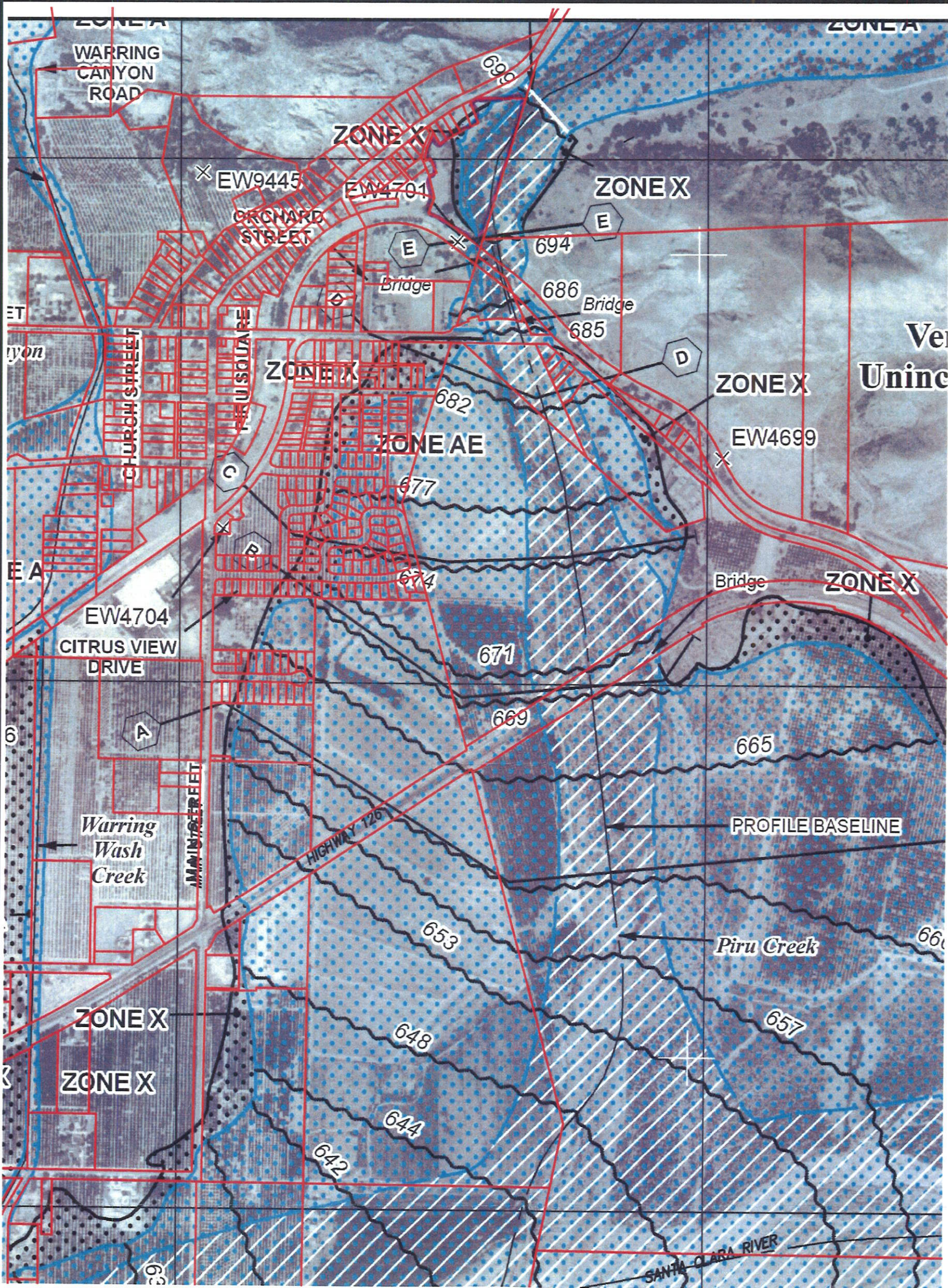
-  OVERFLOW (OVR) FLOWLINE
-  ROB FLOWLINE
-  MAJOR BFE
-  MINOR BFE
-  PARCELS



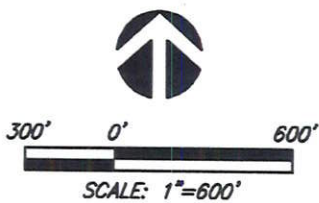
1672 DONLON STREET
VENTURA, CALIF. 93003
PHONE 805/654-6977
FAX 805/654-6979

NEW BFES
OVERLAY AERIAL
PIRU CREEK

SHEET
3 OF 3
Oct 24, 2013



NOTES:



1872 DONLON STREET
VENTURA, CALIF. 93003
PHONE 805/654-6977
FAX 805/654-6979

EXISTING FIRM
PIRU CREEK

SHEET
3 OF 3
Oct 24, 2013



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Ventura, CA 93003
Local 805 654-6977
Fax 805 654-6979
www.jdscivil.com

JEN01.4138

Wednesday, October 22, 2013

Tim Cohen
PO Box 378
Piru, CA 93040

RE: Notification and Agreement for increases in 1% (100-year) annual chance floodplain Base Flood Elevations

Dear Mr. Cohen,

The Flood Insurance Rate Map FIRM for a community depicts land which has been determined to be subject to a 1% (100-year) or greater chance of flooding in any given year. The FIRM is used to determine flood insurance rates and to help the community with floodplain management.

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The Letter of Map Revision will result in:

1. Increase of Base (1% annual chance) Flood Elevations (BFEs) ranging from 0.1 feet to 2.0 feet along a 1,380 foot stretch of the channel.
2. Changing the floodway limits within Piru Creek.
3. Changing the limits of the 1% annual chance floodplain throughout the length of the Creek.

Piru Creek is located along the portion of your properties with APN Nos: 055-0-190-130, 055-0-190-120.

The Ventura County Watershed Protection District has requested that affected property owners sign a statement of concurrence that the project does not have a significant impact on their ability to utilize their property. If you concur with these findings please sign the enclosed copy of this letter in the space provided below and return it in the enclosed envelope. By signing this document, you will not be responsible to any other land owners along the Piru Creek that may be affected by the change in the Floodplain Limits. Attached you will find two exhibits, one showing the current FIRM and one showing the revised FIRM.

K:\JEN14138\Hydro\CLOMR\4138-Ltr Property owner for county-tim cohen.doc

Engineers

Planners

Surveyors

Landscape Architects

If you have any questions or concerns about the proposed changes to the FIRM or its affect on your property, we would be happy to meet with you to review. You may contact me at 805-654-6977.

Sincerely,



Kinsey Hensley, P.E.

Tim Cohen

I concur with the findings of this study and accept that there may be an increase in water surface in the 100-year flood of up to 2.0 feet.



Property Owner Signature

11/20/13

Date

Attachments

LEGEND



SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance 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 AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.



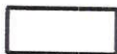
FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.



ZONE X

Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.



OTHER AREAS

ZONE X

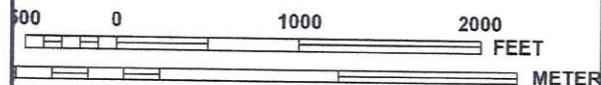
Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D

Areas in which flood hazards are undetermined, but possible.



MAP SCALE 1" = 1000'



ZONE D

Areas in which flood hazards are undetermined, but possible.



COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS



OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.



1% annual chance floodplain boundary



0.2% annual chance floodplain boundary



Floodway boundary



Zone D boundary



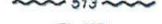
CBRS and OPA boundary



Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.



Base Flood Elevation line and value; elevation in feet*



Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988



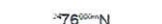
Cross section line



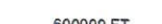
Transect line



Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere



1000-meter Universal Transverse Mercator grid values, zone 11



5000-foot grid ticks: California State Plane coordinate system, zone V (FIPSZONE 0405), Lambert Conformal Conic projection



Bench mark (see explanation in Notes to User's section of this FIRM panel)



River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

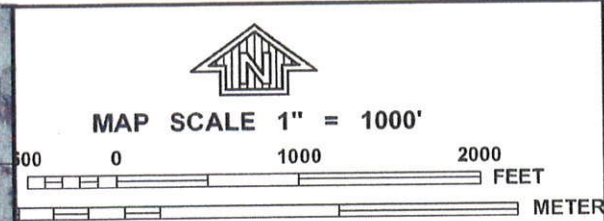
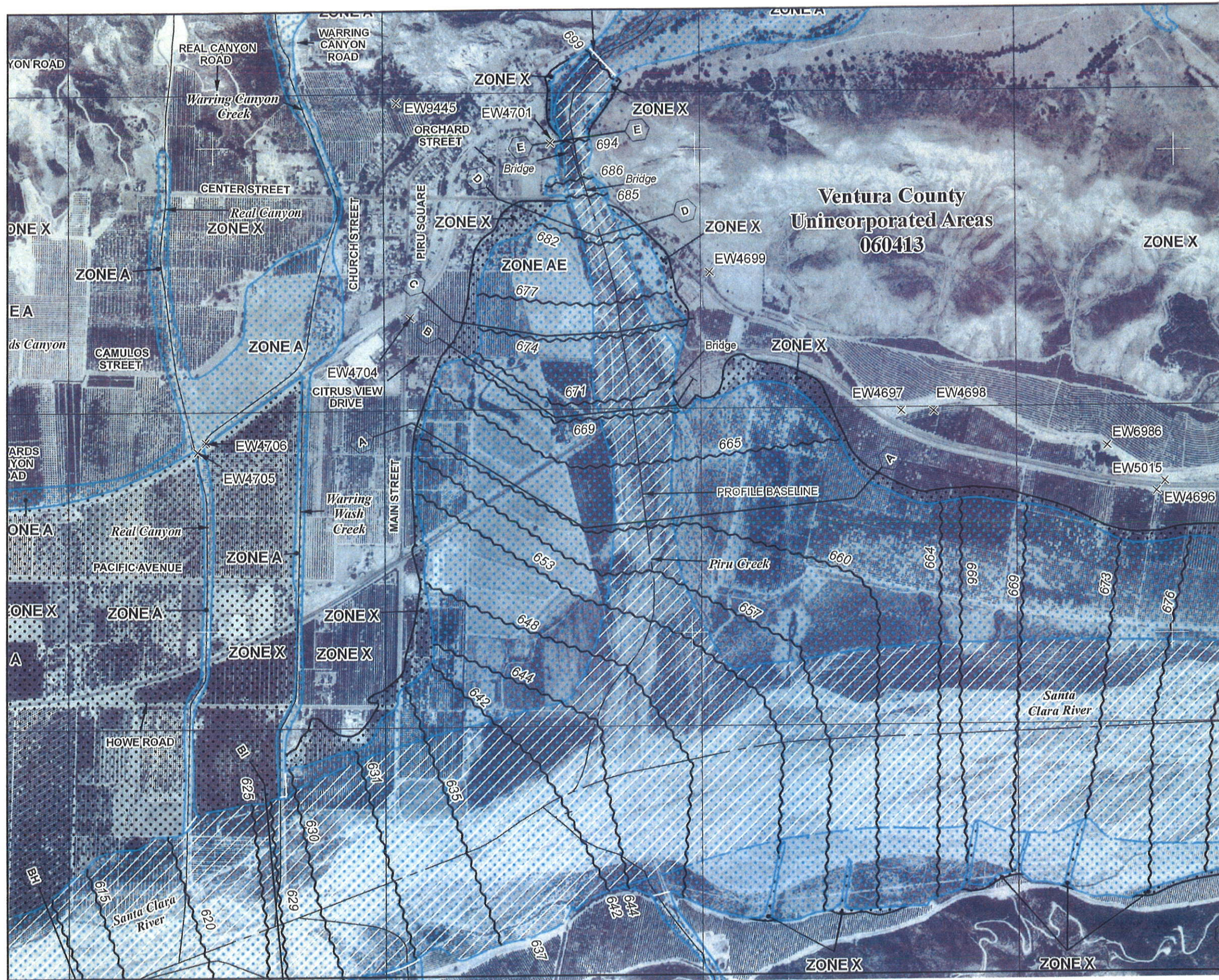
EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
January 20, 2010

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

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0670E

FIRM

FLOOD INSURANCE RATE MAP

VENTURA COUNTY,
CALIFORNIA
AND INCORPORATED AREAS

PANEL 670 OF 1275
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
VENTURA COUNTY	060413	0670	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

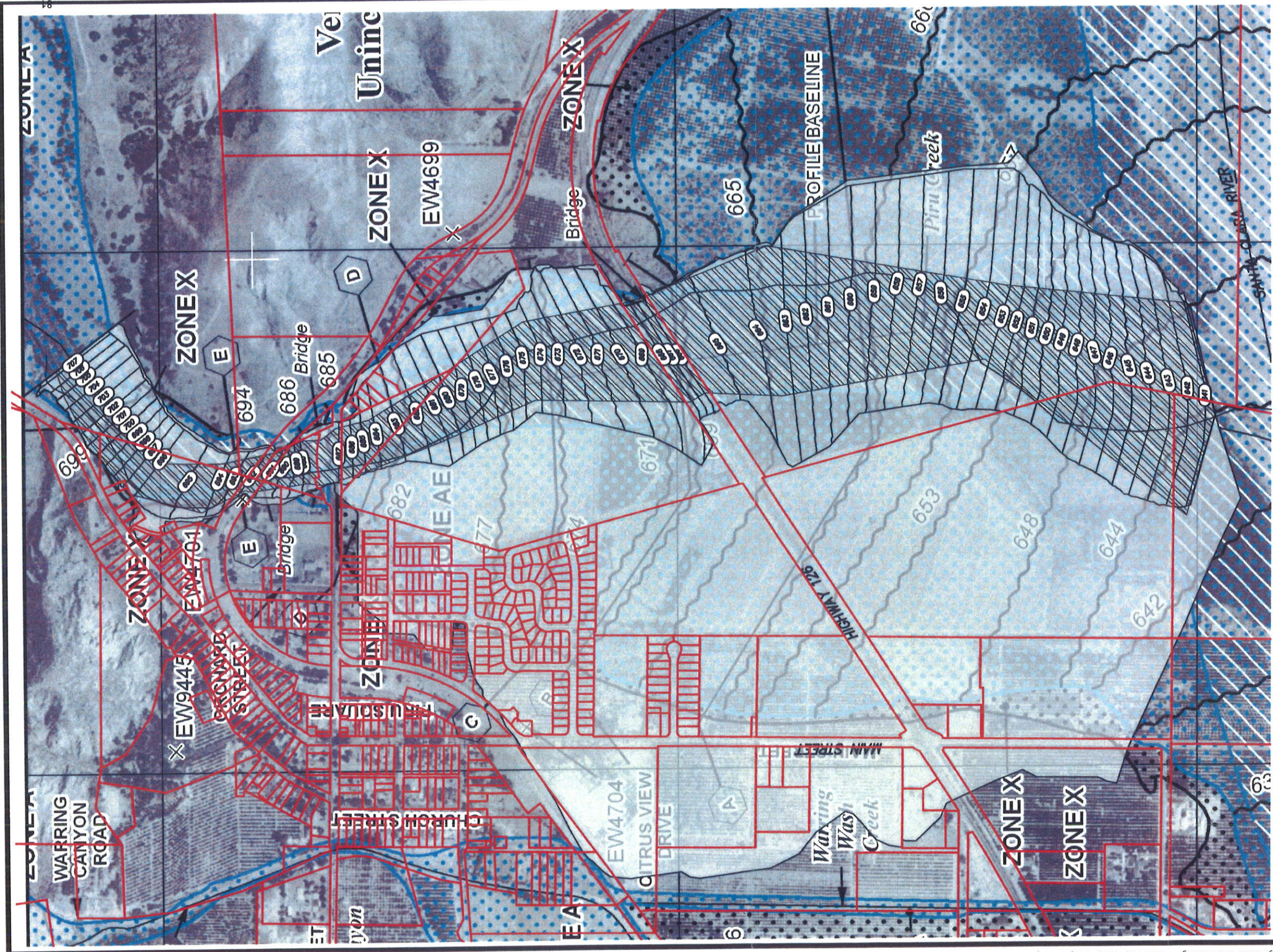
MAP NUMBER
06111C0670E

EFFECTIVE DATE
JANUARY 20, 2010

Federal Emergency Management Agency

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80



NOTES:

LEGEND:

- 500-YEAR FLOODPLAIN
- 100-YEAR FLOODPLAIN
- FLOODWAY
- MAINTENANCE CHANNEL (MC) FLOWLINE
- OVERFLOW (OVR) FLOWLINE
- ROB FLOWLINE
- MAJOR BFE
- MINOR BFE
- PARCELS



300' 0' 600'
SCALE: 1"=600'

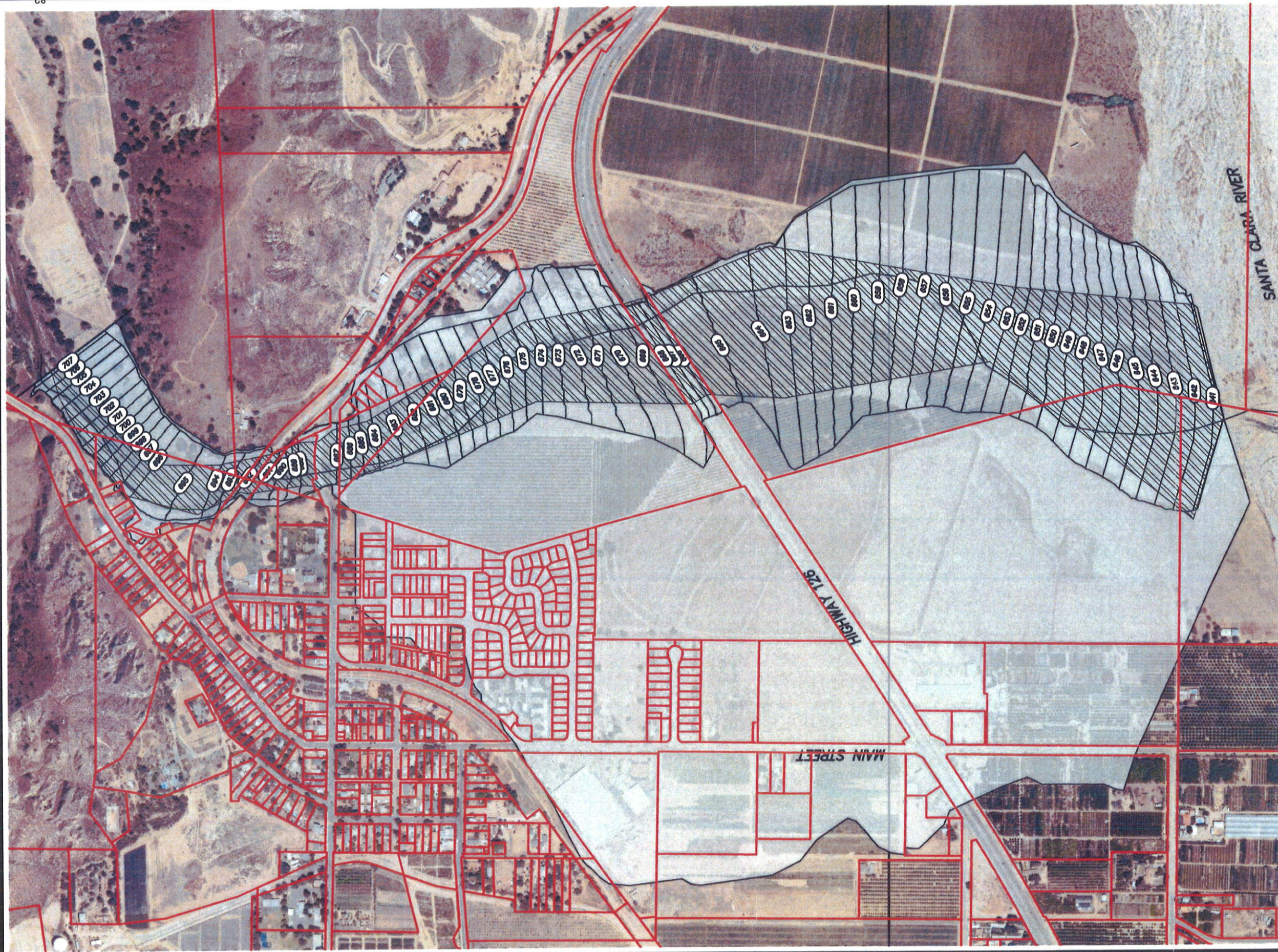


1672 DONLON STREET
VENTURA, CALIF. 93003
PHONE 805/654-6977
FAX 805/654-6979
www.jdsurvey.com

**NEW BFEs
AND EXISTING FLOODPLAIN LIMITS (FIS)**






PIRU CREEK

SHEET
3 OF 3
Oct 24, 2013



NOTES:

LEGEND:

- | | | | |
|---|---------------------------|---|-------------------------|
|  | 500-YEAR FLOODPLAIN | | OVERFLOW (OVR) FLOWLINE |
|  | 100-YEAR FLOODPLAIN | | ROB FLOWLINE |
|  | FLOODWAY | | MAJOR BFE |
|  | MAINTENANCE (MC) FLOWLINE | | MINOR BFE |
| | |  | PARCELS |

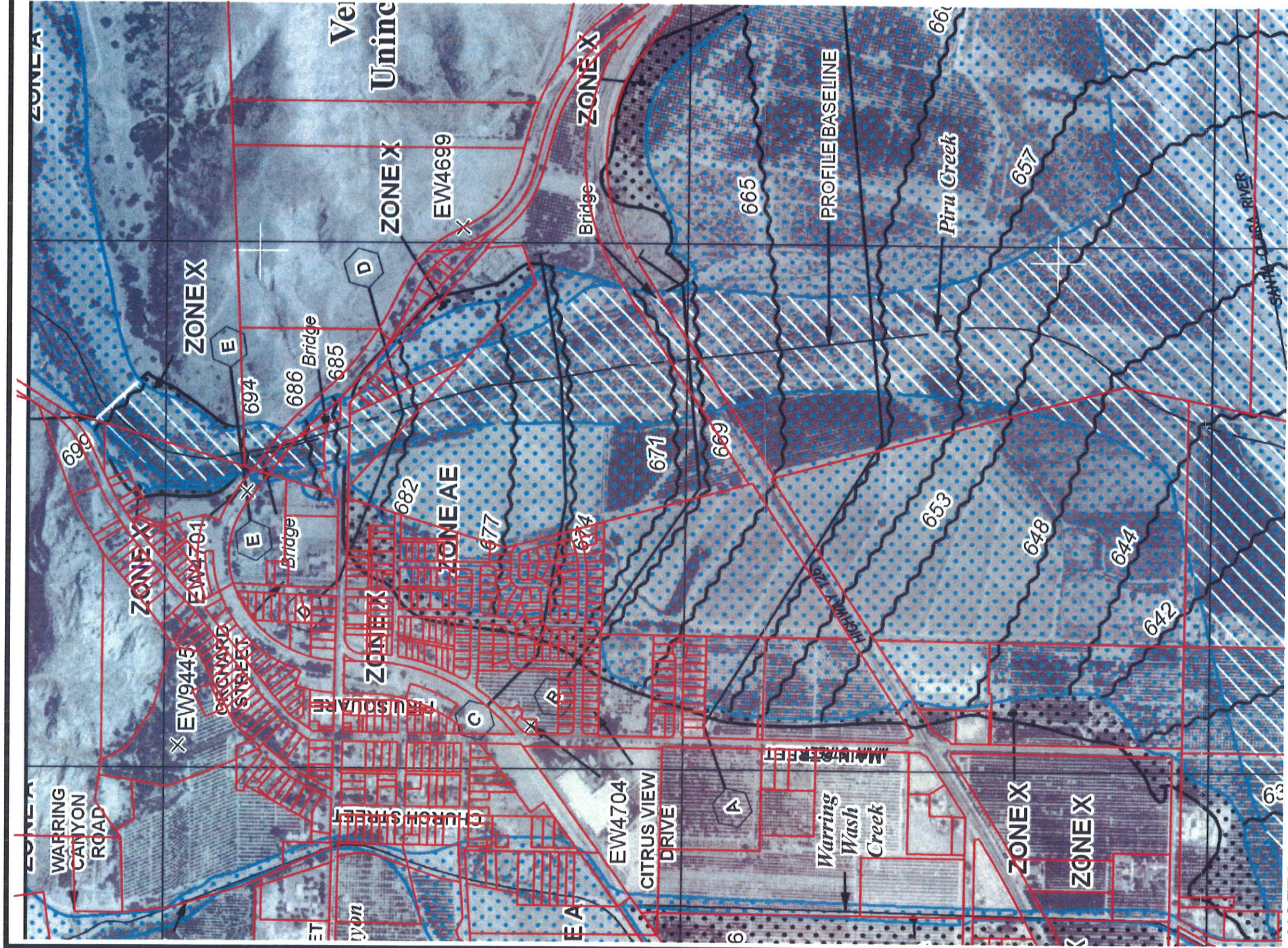


300' 0' 600'
SCALE: 1"=600'



1672 DONLON STREET
VENTURA, CALIF. 93003
PHONE 805/654-6977
FAX 805/654-6979

NEW BFEs
OVERLAY AERIAL
PIRU CREEK



NOTES:



1672 DONLON STREET
VENTURA, CALIF. 93003
PHONE 805/654-8877
FAX 805/654-8879

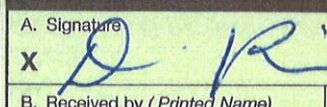
EXISTING FIRM

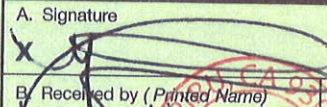
PIRU CREEK

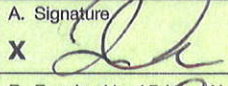

SHEET

3 OF 3

Oct 24, 2013

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 		<p>A. Signature X  <input type="checkbox"/> Agent <input type="checkbox"/> Addressee</p>	
<p>1. Article Addressed to: Ventura County Transportation Commission (VCTC) 950 County Square Drive Suite 207 Ventura, CA 93003</p>		<p>B. Received by (Printed Name) _____ C. Date of Delivery 10/28</p>	
<p>2. Article Number (7) 7002 0860 0002 2248 8328</p>		<p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p>	
<p>PS Form 3811, February 2004</p>		<p>Domestic Return Receipt 102595-02-M-1540</p>	

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 		<p>A. Signature X  <input type="checkbox"/> Agent <input type="checkbox"/> Addressee</p>	
<p>1. Article Addressed to: Paul Constance PO Box 75 Piru, CA 93040</p>		<p>B. Received by (Printed Name) _____ C. Date of Delivery NOV 10 2013 11:4-2013</p>	
<p>2. Article Number (Trans) 7002 0860 0002 2248 8335</p>		<p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p>	
<p>PS Form 3811, February 2004</p>		<p>Domestic Return Receipt 102595-02-M-1540</p>	

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 		A. Signature X  <input type="checkbox"/> Agent <input type="checkbox"/> Addressee	
1. Article Addressed to: Tim Cohen PO Box 378 Piru, CA 93040		B. Received by (Printed Name) Tim Cohen	C. Date of Delivery 
2. Article Number (Transfer) 7002 0860 0002 2248 8342		D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No	
		3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.	
		4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes	

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 		A. Signature  <input type="checkbox"/> Agent <input type="checkbox"/> Addressee	
1. Article Addressed to: Mary Burger PO Box 369 Piru, CA 93040		B. Received by (Printed Name)	C. Date of Delivery 
2. Article Number (Transfer) 7002 0860 0002 2248 8311		D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No	
		3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.	
		4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes	

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT
THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING
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[HTTP://MSC.FEMA.GOV](http://MSC.FEMA.GOV)

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE)
Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee See Notes Zone X
- NO SCREEN
- Area of Minimal Flood Hazard Zone X
- Area of Undetermined Flood Hazard Zone D

OTHER AREAS OF FLOOD HAZARD

OTHER AREAS

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)

- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

OTHER FEATURES

NOTES TO USERS

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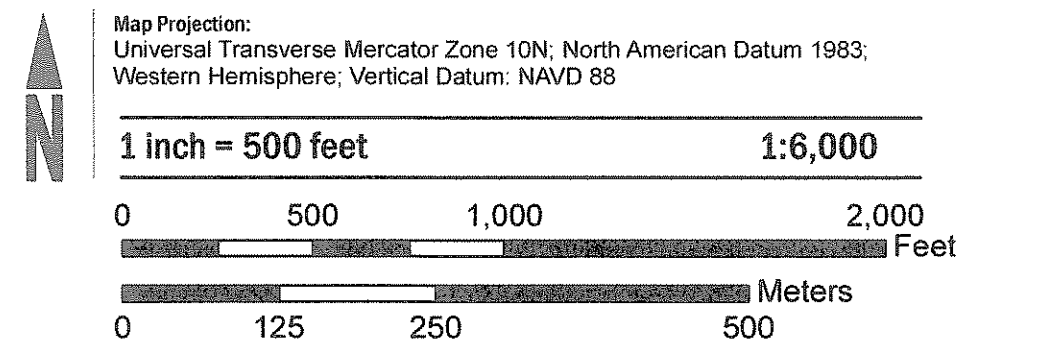
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CBRS Area **Otherwise Protected Area**

SCALE



PANEL LOCATOR



FEMA

National Flood Insurance Program

**NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP**

FLOOD COUNTY, USA
and Incorporated Areas

PANEL 670 of 1275

Panel Contains:

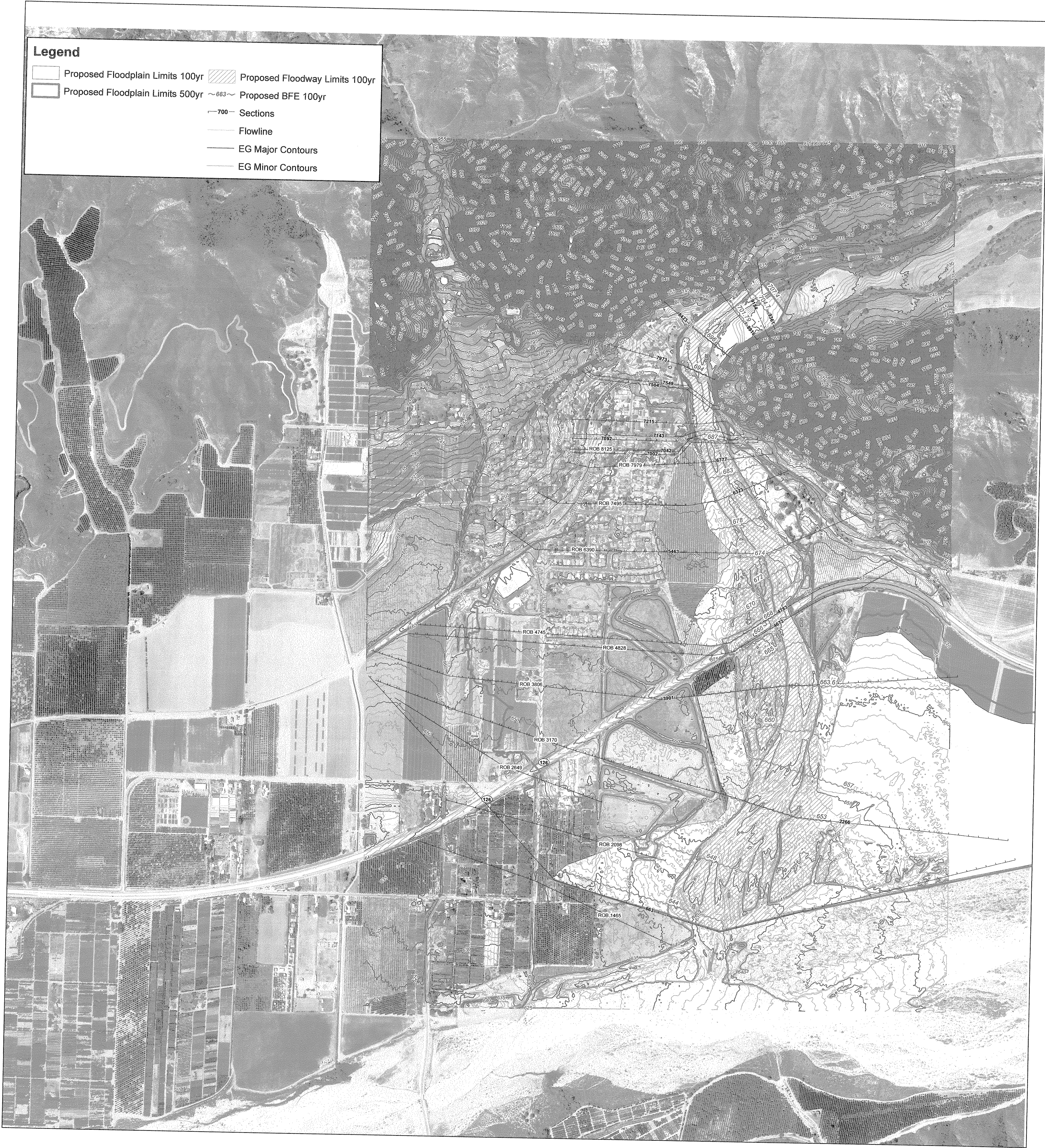
COMMUNITY	NUMBER	PANEL	SUFFIX
VENTURA COUNTY	060413	0670	E

VERSION NUMBER
X.X.X.X

MAP NUMBER
XXXXXXXXXX

EFFECTIVE DATE
MM/DD/YYYY

17



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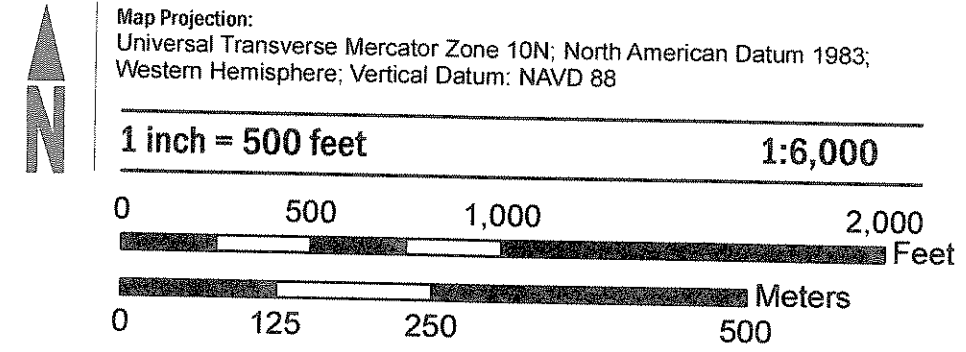
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CBRS Area **Otherwise Protected Area**

SCALE



PANEL LOCATOR



FEMA

National Flood Insurance Program

**NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP**

**FLOOD COUNTY, USA
and Incorporated Areas**

PANEL 670 OF 1275



Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
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VERSION NUMBER
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