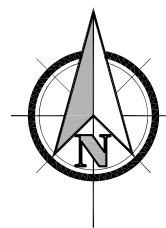


LOMR COLLABORATIVE COMMITMENT PROCESSING (LCCP) PILOT PROGRAM CHECKLIST

NAME	Stephen Brown
COMPANY	Kiowa Engineering Corporation
CONTACT INFORMATION	7175 West Jefferson Avenue Suite 2200 Lakewood, CO, 80235 sbrown@kiowaengineering.com 303-692-0369
MT-2 CASE TYPE	As-built LOMR following CLOMR
PROJECT DESCRIPTION (One Page of brief and concise description about the purpose of the request)	<input checked="" type="checkbox"/> Yes
LATITUDE-LONGITUDE	38.739292, 104.628095
MT-2 FORMS Form 1, 2, 3	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
EFFECTIVE FIRM	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No List all FIRM Panels affected below <div style="border: 1px solid black; padding: 5px; margin-top: 5px;">08041C0769G and 08041C0957G</div>
DIGITAL HYDRAULIC MODELS	<input checked="" type="checkbox"/> Effective <input type="checkbox"/> Corrected Effective - (optional) <input checked="" type="checkbox"/> Pre-Project (Existing) - (optional) <input checked="" type="checkbox"/> Proposed - (optional) <input checked="" type="checkbox"/> Post-Project (As-Built) - (optional)
EFFECTIVE HYDRAULIC MODELS - PDF COPY (if digital copy is not available)	Digital HEC-2 Models provided
DRAFT TOPOGRAPHIC WORK MAP	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
DRAFT ANNOTATED FIRM	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
ADDITIONAL NOTES	<div style="border: 1px solid black; height: 80px; margin-top: 5px;"></div>

CHECKLIST AND DATA SUBMITTAL:

This checklist including the required data may be submitted to Compass (FEMA PTS A&E Contractor) through email Compass.MT-2@aecom.com.



SCALE: NTS

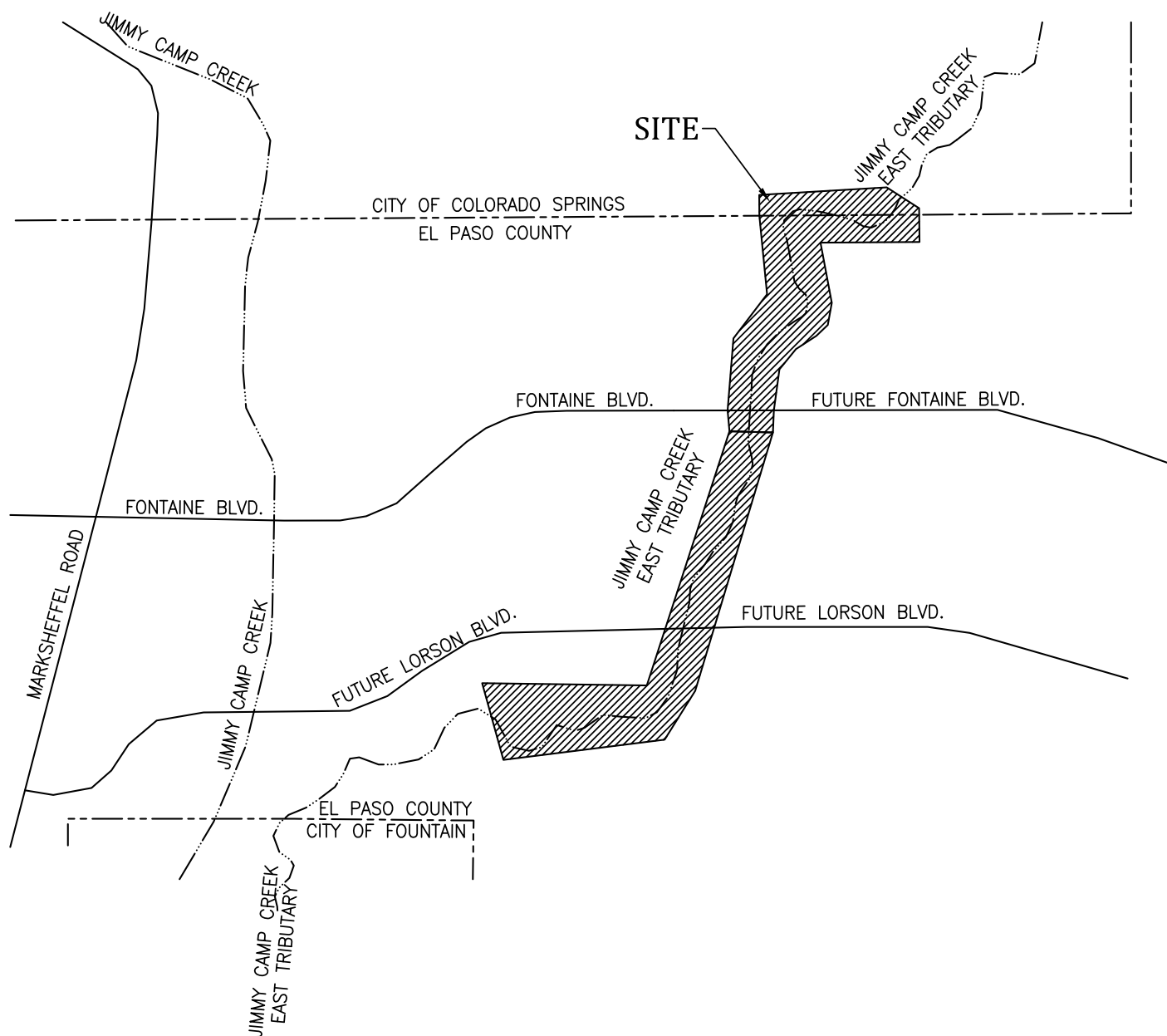


FIGURE 1
VICINITY MAP
EAST TRIBUTARY JIMMY CAMP CREEK LOMR
LORSON RANCH

East Tributary to Jimmy Camp Creek LOMR Project Summary

This LOMR request follows a CLOMR for Jimmy Camp Creek East Tributary approved in 2017 (Case No. 17-08-1043R). The effective model for the reach was a 2015 LOMR (Case No. 14-08-0534P). The project reach at this time consisted of a natural and unimproved major drainageway. Channel improvements in the current LOMR reflect channelization, five drop structures, and bridge crossings and Fontaine Boulevard and Lorson Boulevard associated with Lorson Ranch residential development. Construction of the improved channel was completed in 2018 after which asbuilt survey provided the basis of the Post Project hydraulic model and workmap.



Channel Upstream of Fontaine Blvd.



Upstream Face of Fontaine Blvd Bridge.

The HECRAS hydraulic models for the duplicate effective, corrected effective and proposed conditions are organized into two separate plans each for the 10-, 50-, 100-, 500-year storm frequencies and floodway. The Post Project model plan contains all flood frequencies and the floodway profile. In general, the Post Project profiles match well with the Proposed profiles from the CLOMR.

Sheets 1-4 of the submittal show the Post Project Workmap with the 100-, 500-, and floodway floodplain delineations based on asbuilt survey and contours. The corrected effective floodplain delineations from the CLOMR are also shown. The Post Project delineations were plotted based on top widths and water surface elevations at each section and then interpolated between sections. A floodway encroachment analysis was performed and plotted; the floodway and 100-year floodplain were coincident through the majority of the reach since flows were contained in the channel.

Temporary riprap check dams were installed during construction as part of the erosion control plan (see Workmaps). These structures are to be removed once vegetation is established and were therefor not included in the Post Project model.

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

O.M.B No. 1660-0016
Expires February 28, 2014

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 1 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 it displays a valid OMB control number. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 1800 South Bell Street, Arlington, VA 20958-3005, 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.**

PRIVACY ACT STATEMENT

AUTHORITY: The National Flood Insurance Act of 1968, Public Law 90-448, as amended by the Flood Disaster Protection Act of 1973, Public Law 93-234.

PRINCIPAL PURPOSE(S): This information is being collected for the purpose of determining an applicant's eligibility to request changes to National Flood Insurance Program (NFIP) Flood Insurance Rate Maps (FIRM).

ROUTINE USE(S): The information on this form may be disclosed as generally permitted under 5 U.S.C § 552a(b) of the Privacy Act of 1974, as amended. This includes using this information as necessary and authorized by the routine uses published in DHS/FEMA/NFIP/LOMA-1 National Flood Insurance Program (NFIP); Letter of Map Amendment (LOMA) February 15, 2006, 71 FR 7990.

DISCLOSURE: The disclosure of information on this form is voluntary; however, failure to provide the information requested may delay or prevent FEMA from processing a determination regarding a requested change to a (NFIP) Flood Insurance Rate Maps (FIRM).

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):

Community No.	Community Name	State	Map No.	Panel No.	Effective Date
Example: 480301 480287	City of Katy Harris County	TX TX	48473C 48201C	0005D 0220G	02/08/83 09/28/90
080060	City of Colorado Springs	CO	08041C	0976G	12/07/18
080059	El Paso County, Unincorporated Areas	CO	08041C	0957G	12/07/18

2. a. Flooding Source: Jimmy Camp Creek East Tributary

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

3. Project Name/Identifier: East Tributary Jimmy Camp Creek LOMR Lorson Ranch

4. FEMA zone designations affected: AE, X (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)

6. ☒ Documentation of ESA compliance is submitted (required to initiate CLOMR review). Please refer to the instructions for more information.

C. REVIEW FEE

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

☒ Yes

Fee amount: \$8,000

☐ No, Attach Explanation

Please see the DHS-FEMA Web site at http://www.fema.gov/plan/prevent/fhm/fhm_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: Stephen A Brown

Company: Kiowa Engineering

Mailing Address:
7175 West Jefferson Avenue, Suite 2200
Lakewood, CO 80235

Daytime Telephone No.: 303-692-0369

Fax No.:

E-Mail Address: sbrown@kiowaengineering.com

Signature of Requester (required):

Date: 2/5/2019

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 requirements for when fill is 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. For Conditional LOMR requests, the applicant has documented Endangered Species Act (ESA) compliance to FEMA prior to FEMA's review of the Conditional LOMR application. For LOMR requests, I acknowledge that compliance with Sections 9 and 10 of the ESA has been achieved independently of FEMA's process. For actions authorized, funded, or being carried out by Federal or State agencies, documentation from the agency showing its compliance with Section 7(a)(2) of the ESA will be submitted. 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: Keith Curtis

Community Name: El Paso County, Colorado

Mailing Address:
2880 International Circle
Colorado Springs, CO 80910

Daytime Telephone No.: 719-327-2898

Fax No.:

E-Mail Address: Keith@PPRBD.org

Community Official's Signature (required):

Date:

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: Stephen A Brown

License No.: 40190

Expiration Date: 10/31/2019

Company Name: Kiowa Engineering Corporation

Telephone No.: 303-692-0369

Fax No.:

Signature:

Date: 2/5/2019

E-Mail Address: sbrown@kiowaengineering.com

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 checked="" 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 |

Seal (Optional)

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

O.M.B No. 1660-0016
Expires February 28, 2014

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 3.5 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, 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, Department of Homeland Security, Federal Emergency Management Agency, 1800 South Bell Street, Arlington VA 20958-3005, 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.**

PRIVACY ACT STATEMENT

AUTHORITY: The National Flood Insurance Act of 1968, Public Law 90-448, as amended by the Flood Disaster Protection Act of 1973, Public Law 93-234.

PRINCIPAL PURPOSE(S): This information is being collected for the purpose of determining an applicant's eligibility to request changes to National Flood Insurance Program (NFIP) Flood Insurance Rate Maps (FIRM).

ROUTINE USE(S): The information on this form may be disclosed as generally permitted under 5 U.S.C § 552a(b) of the Privacy Act of 1974, as amended. This includes using this information as necessary and authorized by the routine uses published in DHS/FEMA/NFIP/LOMA-1 National Flood Insurance Program (NFIP); Letter of Map Amendment (LOMA) February 15, 2006, 71 FR 7990.

DISCLOSURE: The disclosure of information on this form is voluntary; however, failure to provide the information requested may delay or prevent FEMA from processing a determination regarding a requested change to a NFIP Flood Insurance Rate Maps (FIRM).

Flooding Source: Jimmy Camp Creek East Tributary

Note: Fill out one form for each flooding source studied

A. HYDROLOGY

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

- | | | |
|---|--|--|
| <input checked="" type="checkbox"/> Not revised (skip to section B) | <input type="checkbox"/> No existing analysis | <input type="checkbox"/> Improved data |
| <input type="checkbox"/> Alternative methodology | <input type="checkbox"/> Proposed Conditions (CLOMR) | <input type="checkbox"/> Changed physical condition of watershed |

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

Location	Drainage Area (Sq. Mi.)	Effective/FIS (cfs)	Revised (cfs)
----------	-------------------------	---------------------	---------------

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

- | | |
|---|--|
| <input type="checkbox"/> Statistical Analysis of Gage Records | <input type="checkbox"/> Precipitation/Runoff Model → Specify Model: _____ |
| <input type="checkbox"/> Regional Regression Equations | <input type="checkbox"/> 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

Is the hydrology for the revised flooding source(s) affected by sediment transport? ☐ Yes ☐ No

If yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation..

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.)	
			Effective	Proposed/Revised
Downstream Limit*	<u>1036 ft. u/s of FIRM section D</u>	<u>6746</u>	<u>5693.45</u>	<u>5693.45</u>
Upstream Limit*	<u>712 ft. d/s of FIRM section I</u>	<u>14800</u>	<u>5735.56</u>	<u>5735.56</u>

*Proposed/Revised elevations must tie-into the Effective elevations within 0.5 foot at the downstream and upstream limits of revision.

2. Hydraulic Method/Model Used: HEC-RAS 5.0.5

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. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS.

4.

<u>Models Submitted</u>	<u>Natural Run</u>		<u>Floodway Run</u>		<u>Datum</u>
Duplicate Effective Model*	File Name: <u>2019LOMR</u>	Plan Name: <u>Duplicate Eff FP</u>	File Name: <u>ProposedEastTribu</u>	Plan Name: <u>Duplicate Eff FW</u>	<u>NGVD 1929</u>
Corrected Effective Model*	File Name: <u>2019LOMR</u>	Plan Name: <u>Corrected Eff FP</u>	File Name: _____	Plan Name: _____	<u>NGVD 1929</u>
Existing or Pre-Project Conditions Model	File Name: <u>2019LOMR</u>	Plan Name: <u>Corrected Eff FP</u>	File Name: _____	Plan Name: _____	<u>NGVD 1929</u>
Revised or Post-Project Conditions Model	File Name: <u>2019LOMR</u>	Plan Name: <u>Asbuilt Final</u>	File Name: <u>2019LOMR</u>	Plan Name: <u>Asbuilt Final</u>	<u>NGVD 1929</u>
Other - (attach description)	File Name: _____	Plan Name: _____	File Name: _____	Plan Name: _____	_____

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

☒ Digital Models Submitted? (Required)

C. MAPPING REQUIREMENTS

A **certified topographic work 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 (preferred)

Topographic Information: Colorado State Plane Coordinates, NAD 83, NGVD 29

Source: Field Survey

Date: January 2019

Accuracy: 0.1'

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**, at the same scale as the original, 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 on 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 compared to pre-project conditions.
 - The proposed project encroaches upon a SFHA with or without BFEs established and would result in increases above 1.00 foot compared to pre-project conditions.
- b. Does this LOMR request cause increase in the BFE and/or SFHA compared with the effective BFEs and/or SFHA? ☒ Yes ☐ No
If Yes, please attach **proof of property owner notification and acceptance (if available)**. Elements of and examples of property owner notifications 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 established. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)
4. For CLOMR requests, please submit documentation to FEMA and the community to show that you have complied with Sections 9 and 10 of the Endangered Species Act (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. Please see the MT-2 instructions for more detail.

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

DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
RIVERINE STRUCTURES FORM

O.M.B. NO. 1660-0016
Expires February 28, 2014

PAPERWORK BURDEN DISCLOSURE NOTICE

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Flooding Source: Jimmy Camp Creek East Tributary

Note: Fill out one form for each flooding source studied.

A. GENERAL

Complete the appropriate section(s) for each Structure listed below:

Channelization.....complete Section B
Bridge/Culvert.....complete Section C
Dam.....complete Section D
Levee/Floodwall.....complete Section E
Sediment Transport.....complete Section F (if required)

Description Of Modeled Structure

1. Name of Structure: Fontaine Boulevard Bridge

Type (check one): ☐ Channelization ☒ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

Location of Structure: Fontaine Boulevard and Jimmy Camp Creek East Tributary

Downstream Limit/Cross Section: 11523

Upstream Limit/Cross Section: 11668

2. Name of Structure: Lorson Boulevard Bridge

Type (check one): ☐ Channelization ☒ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

Location of Structure: Lorson Boulevard and Jimmy Camp Creek East Tributary

Downstream Limit/Cross Section: 9459

Upstream Limit/Cross Section: 9573

3. Name of Structure: Jimmy Camp Creek East Tributary Channel Design

Type (check one) ☒ Channelization ☐ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

Location of Structure: Jimmy Camp Creek East Tributary from 100' d/s of Fontaine Blvd. to county line 3100' u/s

Downstream Limit/Cross Section: 11395

Upstream Limit/Cross Section: 14527

NOTE: FOR MORE STRUCTURES, ATTACH ADDITIONAL PAGES AS NEEDED.

B. CHANNELIZATION

Flooding Source: Jimmy Camp Creek East Tributary

Name of Structure: Jimmy Camp Creek East Tributary Channel Design

1. Hydraulic Considerations

The channel was designed to carry 4,750/5200 (cfs) and/or the 100-year flood.

The design elevation in the channel is based on (check one):

☒ Subcritical flow ☐ Critical flow ☐ Supercritical flow ☐ Energy grade line

If there is the potential for a hydraulic jump at the following locations, check all that apply and attach an explanation of how the hydraulic jump is controlled without affecting the stability of the channel.

☐ Inlet to channel ☐ Outlet of channel ☒ At Drop Structures ☐ At Transitions

☐ Other locations (specify): _____

2. Channel Design Plans

Attach the plans of the channelization certified by a registered professional engineer, as described in the instructions.

3. Accessory Structures

The channelization includes (check one):

☐ Levees [Attach Section E (Levee/Floodwall)] ☒ Drop structures ☐ Superelevated sections
☐ Transitions in cross sectional geometry ☐ Debris basin/detention basin [Attach Section D (Dam/Basin)] ☐ Energy dissipator
☐ Weir ☐ Other (Describe): _____

4. Sediment Transport Considerations

Are the hydraulics of the channel affected by sediment transport? ☐ 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.

C. BRIDGE/CULVERT

Flooding Source: Jimmy Camp Creek East Tributary

Name of Structure: Fontaine Boulevard Bridge and Lorson Boulevard Bridge

1. This revision reflects (check one):

☒ Bridge/culvert not modeled in the FIS
☐ Modified bridge/culvert previously modeled in the FIS
☐ Revised analysis of bridge/culvert previously modeled in the FIS

2. Hydraulic model used to analyze the structure (e.g., HEC-2 with special bridge routine, WSPRO, HY8): HEC-RAS 5.0.5 If different than hydraulic analysis for the flooding source, justify why the hydraulic analysis used for the flooding source could not analyze the structures. Attach justification.

3. Attach plans of the structures certified by a registered professional engineer. The plan detail and information should include the following (check the information that has been provided):

<input checked="" type="checkbox"/> Dimensions (height, width, span, radius, length)	<input type="checkbox"/> Distances Between Cross Sections
<input checked="" type="checkbox"/> Shape (culverts only)	<input checked="" type="checkbox"/> Erosion Protection
<input checked="" type="checkbox"/> Material	<input checked="" type="checkbox"/> Low Chord Elevations – Upstream and Downstream
<input type="checkbox"/> Beveling or Rounding	<input checked="" type="checkbox"/> Top of Road Elevations – Upstream and Downstream
<input checked="" type="checkbox"/> Wing Wall Angle	<input checked="" type="checkbox"/> Structure Invert Elevations – Upstream and Downstream
<input checked="" type="checkbox"/> Skew Angle	<input checked="" type="checkbox"/> Stream Invert Elevations – Upstream and Downstream
	<input type="checkbox"/> Cross-Section Locations

4. Sediment Transport Considerations

Are the hydraulics of the structure affected by sediment transport? ☐ Yes ☒ No

If Yes, then fill out Section F (Sediment Transport) of Form 3. If no, then attach an explanation.

D. DAM/BASIN

Flooding Source: _____

Name of Structure: _____

1. This request is for (check one): ☐ Existing dam/basin ☐ New dam/basin ☐ Modification of existing dam/basin
2. The dam/basin was designed by (check one): ☐ Federal agency ☐ State agency ☐ Private organization ☐ Local government agency

Name of the agency or organization: _____

3. The Dam was permitted as (check one): ☐ Federal Dam ☐ State Dam

Provide the permit or identification number (ID) for the dam and the appropriate permitting agency or organization

Permit or ID number _____ Permitting Agency or Organization _____

- a. ☐ Local Government Dam ☐ Private Dam

Provided related drawings, specification and supporting design information.

4. Does the project involve revised hydrology? ☐ Yes ☐ No

If Yes, complete the Riverine Hydrology & Hydraulics Form (Form 2).

Was the dam/basin designed using critical duration storm? (must account for the maximum volume of runoff)

- ☐ Yes, provide supporting documentation with your completed Form 2.
- ☐ No, provide a written explanation and justification for not using the critical duration storm.

5. Does the submittal include debris/sediment yield analysis? ☐ Yes ☐ No

If Yes, then fill out Section F (Sediment Transport). If No, then attach your explanation for why debris/sediment analysis was not considered?

6. Does the Base Flood Elevation behind the dam/basin or downstream of the dam/basin change? ☐ Yes ☐ No

If Yes, complete the Riverine Hydrology & Hydraulics Form (Form 2) and complete the table below.

FREQUENCY (% annual chance)	Stillwater Elevation Behind the Dam/Basin	
	FIS	REVISED
10-year (10%)	_____	_____
50-year (2%)	_____	_____
100-year (1%)	_____	_____
500-year (0.2%)	_____	_____
Normal Pool Elevation	_____	_____

7. Please attach a copy of the formal Operation and Maintenance Plan

E. LEVEE/FLOODWALL

1. System Elements

a. This Levee/Floodwall analysis is based on (check one):

- ☐ upgrading of
an existing
levee/floodwall
system ☐ a newly
constructed
levee/floodwall
system ☐ reanalysis of
an existing
levee/floodwall
system

b. Levee elements and locations are (check one):

- ☐ earthen embankment, dike, berm, etc. Station _____ to _____
☐ structural floodwall Station _____ to _____
☐ Other (describe): Station _____ to _____

c. Structural Type (check one): ☐ monolithic cast-in place reinforced concrete ☐ reinforced concrete masonry block ☐ sheet piling
☐ Other (describe): _____

d. Has this levee/floodwall system been certified by a Federal agency to provide protection from the base flood?

☐ Yes ☐ No

If Yes, by which agency? _____

e. Attach certified drawings containing the following information (indicate drawing sheet numbers):

- | | |
|---|----------------------|
| 1. Plan of the levee embankment and floodwall structures. | Sheet Numbers: _____ |
| 2. A profile of the levee/floodwall system showing the Base Flood Elevation (BFE),
levee and/or wall crest and foundation, and closure locations for the total levee system. | Sheet Numbers: _____ |
| 3. A profile of the BFE, closure opening outlet and inlet invert elevations, type and size
of opening, and kind of closure. | Sheet Numbers: _____ |
| 4. A layout detail for the embankment protection measures. | Sheet Numbers: _____ |
| 5. Location, layout, and size and shape of the levee embankment features, foundation treatment,
Floodwall structure, closure structures, and pump stations. | Sheet Numbers: _____ |

2. Freeboard

a. The minimum freeboard provided above the BFE is:

Riverine

- | | | |
|--|------------------------------|-----------------------------|
| 3.0 feet or more at the downstream end and throughout | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 3.5 feet or more at the upstream end | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 4.0 feet within 100 feet upstream of all structures and/or constrictions | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

Coastal

- | | | |
|--|------------------------------|-----------------------------|
| 1.0 foot above the height of the one percent wave associated with the 1%-annual-chance
stillwater surge elevation or maximum wave runup (whichever is greater). | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 2.0 feet above the 1%-annual-chance stillwater surge elevation | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

Please note, occasionally exceptions are made to the minimum freeboard requirement. If an exception is requested, attach documentation addressing Paragraph 65.10(b)(1)(ii) of the NFIP Regulations.

If No is answered to any of the above, please attach an explanation.

b. Is there an indication from historical records that ice-jamming can affect the BFE? ☐ Yes ☐ No

If Yes, provide ice-jam analysis profile and evidence that the minimum freeboard discussed above still exists.

3. Closures

a. Openings through the levee system (check one): ☐ exists ☐ does not exist

If opening exists, list all closures:

Channel Station	Left or Right Bank	Opening Type	Highest Elevation for Opening Invert	Type of Closure Device

(Extend table on an added sheet as needed and reference)

Note: Geotechnical and geologic data

In addition to the required detailed analysis reports, data obtained during field and laboratory investigations and used in the design analysis for the following system features should be submitted in a tabulated summary form. (Reference U.S. Army Corps of Engineers [USACE] EM-1110-2-1906 Form 2086.)

4. Embankment Protection

- a. The maximum levee slope land side is: _____
- b. The maximum levee slope flood side is: _____
- c. The range of velocities along the levee during the base flood is: _____ (min.) to _____ (max.)
- d. Embankment material is protected by (describe what kind): _____
- e. Riprap Design Parameters (check one): ☐ Velocity ☐ Tractive stress
Attach references

Reach	Sideslope	Flow Depth	Velocity	Curve or Straight	Stone Riprap			Depth of Toedown
					D ₁₀₀	D ₅₀	Thickness	
Sta to								
Sta to								
Sta to								
Sta to								
Sta to								
Sta to								

(Extend table on an added sheet as needed and reference each entry)

- f. Is a bedding/filter analysis and design attached? ☐ Yes ☐ No
- g. Describe the analysis used for other kinds of protection used (include copies of the design analysis):

Attach engineering analysis to support construction plans.

5. Embankment And Foundation Stability

- a. Identify locations and describe the basis for selection of critical location for analysis:

- ☐ Overall height: Sta.: _____, height _____ ft.
- ☐ Limiting foundation soil strength:
- Strength ϕ = _____ degrees, c = _____ psf
- Slope: SS = _____ (h) to _____ (v)
- (Repeat as needed on an added sheet for additional locations)
- b. Specify the embankment stability analysis methodology used (e.g., circular arc, sliding block, infinite slope, etc.):

- c. Summary of stability analysis results:

E. LEVEE/FLOODWALL (CONTINUED)

5. Embankment And Foundation Stability (continued)

Case	Loading Conditions	Critical Safety Factor	Criteria (Min.)
I	End of construction		1.3
II	Sudden drawdown		1.0
III	Critical flood stage		1.4
IV	Steady seepage at flood stage		1.4
VI	Earthquake (Case I)		1.0

(Reference: USACE EM-1110-2-1913 Table 6-1)

d. Was a seepage analysis for the embankment performed? ☐ Yes ☐ No

If Yes, describe methodology used:

e. Was a seepage analysis for the foundation performed? ☐ Yes ☐ No

f. Were uplift pressures at the embankment landside toe checked? ☐ Yes ☐ No

g. Were seepage exit gradients checked for piping potential? ☐ Yes ☐ No

h. The duration of the base flood hydrograph against the embankment is _____ hours.

Attach engineering analysis to support construction plans.

6. Floodwall And Foundation Stability

a. Describe analysis submittal based on Code (check one): ☐ UBC (1988) ☐ Other (specify): _____

b. Stability analysis submitted provides for: ☐ Overturning ☐ Sliding If not, explain: _____

c. Loading included in the analyses were: ☐ Lateral earth @ P_A = _____ psf; P_p = _____ psf

☐ Surcharge-Slope @ _____. ☐ surface _____ psf

☐ Wind @ P_w = _____ psf

☐ Seepage (Uplift); _____ ☐ Earthquake @ P_{eq} = _____ %g

☐ 1%-annual-chance significant wave height: _____ ft.

☐ 1%-annual-chance significant wave period: _____ sec.

d. Summary of Stability Analysis Results: Factors of Safety.

Itemize for each range in site layout dimension and loading condition limitation for each respective reach.

Loading Condition	Criteria (Min)		Sta	To	Sta	To
	Overturn	Sliding	Overturn	Sliding	Overturn	Sliding
Dead & Wind	1.5	1.5				
Dead & Soil	1.5	1.5				
Dead, Soil, Flood, & Impact	1.5	1.5				
Dead, Soil, & Seismic	1.3	1.3				

(Ref: FEMA 114 Sept 1986; USACE EM 1110-2-2502)
Note: (Extend table on an added sheet as needed and reference)

E. LEVEE/FLOODWALL (CONTINUED)

6. Floodwall And Foundation Stability (continued)

e. Foundation bearing strength for each soil type:

Bearing Pressure	Sustained Load (psf)	Short Term Load (psf)
Computed design maximum		
Maximum allowable		

- f. Foundation scour protection ☐ is, ☐ is not provided. If provided, attach explanation and supporting documentation:

Attach engineering analysis to support construction plans.

7. Settlement

- a. Has anticipated potential settlement been determined and incorporated into the specified construction elevations to maintain the established freeboard margin? ☐ Yes ☐ No
- b. The computed range of settlement is _____ ft. to _____ ft.
- c. Settlement of the levee crest is determined to be primarily from : ☐ Foundation consolidation ☐ Embankment compression
☐ Other (Describe): _____
- d. Differential settlement of floodwalls ☐ has ☐ has not been accommodated in the structural design and construction.

Attach engineering analysis to support construction plans.

8. Interior Drainage

- a. Specify size of each interior watershed:

Draining to pressure conduit: _____ acres

Draining to ponding area: _____ acres

- b. Relationships Established

Ponding elevation vs. storage ☐ Yes ☐ No

Ponding elevation vs. gravity flow ☐ Yes ☐ No

Differential head vs. gravity flow ☐ Yes ☐ No

- c. The river flow duration curve is enclosed: ☐ Yes ☐ No

- d. Specify the discharge capacity of the head pressure conduit: _____ cfs

- e. Which flooding conditions were analyzed?

- Gravity flow (Interior Watershed) ☐ Yes ☐ No
- Common storm (River Watershed) ☐ Yes ☐ No
- Historical ponding probability ☐ Yes ☐ No
- Coastal wave overtopping ☐ Yes ☐ No

If No for any of the above, attach explanation.

- e. Interior drainage has been analyzed based on joint probability of interior and exterior flooding and the capacities of pumping and outlet facilities to provide the established level of flood protection. ☐ Yes ☐ No If No, attach explanation.

- g. The rate of seepage through the levee system for the base flood is _____ cfs

- h. The length of levee system used to drive this seepage rate in item g: _____ ft.

E. LEVEE/FLOODWALL (CONTINUED)

8. Interior Drainage (continued)

- i. Will pumping plants be used for interior drainage? ☐ Yes ☐ No

If Yes, include the number of pumping plants: _____ For each pumping plant, list:

	Plant #1	Plant #2
The number of pumps		
The ponding storage capacity		
The maximum pumping rate		
The maximum pumping head		
The pumping starting elevation		
The pumping stopping elevation		
Is the discharge facility protected?		
Is there a flood warning plan?		
How much time is available between warning and flooding?		

Will the operation be automatic? ☐ Yes ☐ No

If the pumps are electric, are there backup power sources? ☐ Yes ☐ No

(Reference: USACE EM-1110-2-3101, 3102, 3103, 3104, and 3105)

Include a copy of supporting documentation of data and analysis. Provide a map showing the flooded area and maximum ponding elevations for all interior watersheds that result in flooding.

9. Other Design Criteria

a. The following items have been addressed as stated:

Liquefaction ☐ is ☐ is not a problem

Hydrocompaction ☐ is ☐ is not a problem

Heave differential movement due to soils of high shrink/swell ☐ is ☐ is not a problem

b. For each of these problems, state the basic facts and corrective action taken:

Attach supporting documentation

c. If the levee/floodwall is new or enlarged, will the structure adversely impact flood levels and/or flow velocities floodside of the structure?
☐ Yes ☐ No Attach supporting documentation

d. Sediment Transport Considerations:

Was sediment transport considered? ☐ Yes ☐ No

If Yes, then fill out Section F (Sediment Transport). If No, then attach your explanation for why sediment transport was not considered.

10. Operational Plan And Criteria

a. Are the planned/installed works in full compliance with Part 65.10 of the NFIP Regulations? ☐ Yes ☐ No

b. Does the operation plan incorporate all the provisions for closure devices as required in Paragraph 65.10(c)(1) of the NFIP regulations?
☐ Yes ☐ No

c. Does the operation plan incorporate all the provisions for interior drainage as required in Paragraph 65.10(c)(2) of the NFIP regulations?
☐ Yes ☐ No If the answer is No to any of the above, please attach supporting documentation.

E. LEVEE/FLOODWALL (CONTINUED)

11. Maintenance Plan

Please attach a copy of the formal maintenance plan for the levee/floodwall

12. Operations and Maintenance Plan

Please attach a copy of the formal Operations and Maintenance Plan for the levee/floodwall.

CERTIFICATION OF THE LEVEE DOCUMENTATION

This certification is to be signed and sealed by a licensed registered professional engineer authorized by law to certify elevation information data, hydrologic and hydraulic analysis, and any other supporting information as per NFIP regulations paragraph 65.10(e) 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: _____ License No.: _____ Expiration Date: _____

Company Name: _____ Telephone No.: _____ Fax No.: _____

Signature: _____ Date: _____ E-Mail Address: _____

F. SEDIMENT TRANSPORT

Flooding Source: _____

Name of Structure: _____

If there is any indication from historical records that sediment transport (including scour and deposition) can affect the Base Flood Elevation (BFE); and/or based on the stream morphology, vegetative cover, development of the watershed and bank conditions, there is a potential for debris and sediment transport (including scour and deposition) to affect the BFEs, then provide the following information along with the supporting documentation:

Sediment load associated with the base flood discharge: Volume _____ acre-feet

Debris load associated with the base flood discharge: Volume _____ acre-feet

Sediment transport rate _____ (percent concentration by volume)

Method used to estimate sediment transport: _____

Most sediment transport formulas are intended for a range of hydraulic conditions and sediment sizes; attach a detailed explanation for using the selected method.

Method used to estimate scour and/or deposition: _____

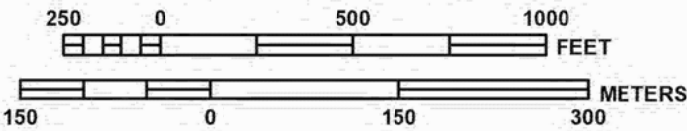
Method used to revise hydraulic or hydrologic analysis (model) to account for sediment transport: _____

Please note that bulked flows are used to evaluate the performance of a structure during the base flood; however, FEMA does not map BFEs based on bulked flows.

If a sediment analysis has not been performed, an explanation as to why sediment transport (including scour and deposition) will not affect the BFEs or structures must be provided.



MAP SCALE 1" = 500'



LEGEND

- POST PROJECT 500-YEAR FLOODPLAIN
- POST PROJECT 100-YEAR FLOODPLAIN
- POST PROJECT FLOODWAY

NFIP

PANEL 0957G

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP
EL PASO COUNTY,
COLORADO
AND INCORPORATED AREAS

PANEL 957 OF 1300
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
COLORADO SPRINGS, CITY OF	080060	0957	G
EL PASO COUNTY	080059	0957	G
FOUNTAIN, CITY OF	080061	0957	G

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
08041C0957G

MAP REVISED
DECEMBER 7, 2018

Federal Emergency Management Agency

CITY OF COLORADO SPRINGS
080060

COUNTY
ATED AREAS
59

ZONE AE

13

ZONE
AE

Jimmy Camp
Creek -
East Tributary




JOINS PANEL 0976

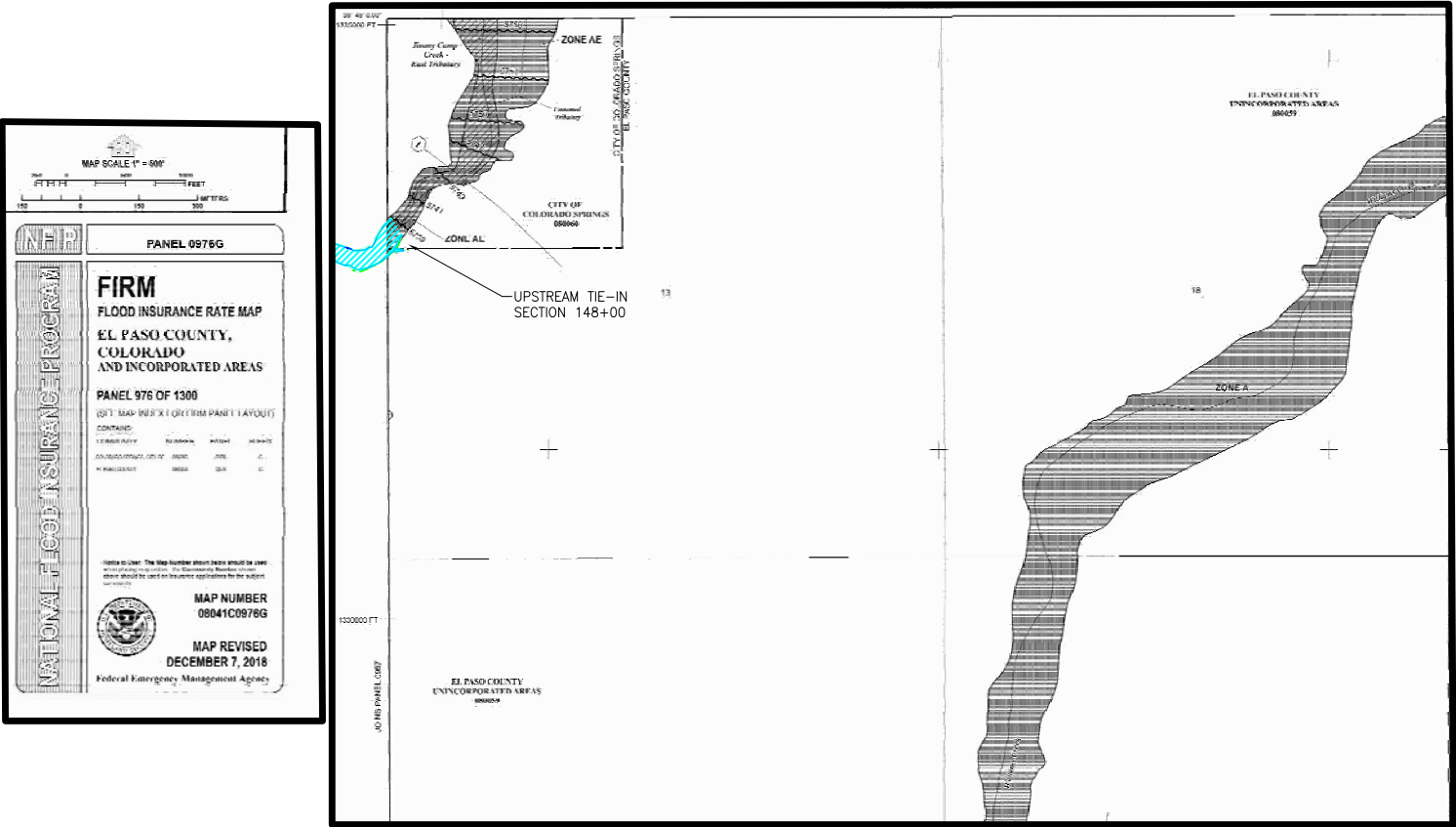
ZONE AE

ZONE
AE

EL PASO COUNTY

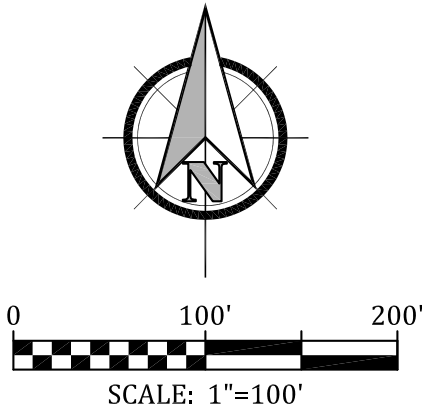
ANNOTATED FIRM
JIMMY CAMP CREEK EAST TRIBUTARY LOMR

LEGEND	
	POST PROJECT 500-YEAR FLOODPLAIN
	POST PROJECT 100-YEAR FLOODPLAIN
	POST PROJECT FLOODWAY





LEGEND	
	CORRECTED EFFECTIVE 100-YEAR FLOODPLAIN
	CORRECTED EFFECTIVE 500-YEAR FLOODPLAIN
	POST PROJECT 100-YEAR FLOODPLAIN
	POST PROJECT 500-YEAR FLOODPLAIN
	POST PROJECT FLOODWAY
	EXISTING CONTOURS



TOPOGRAPHY DOWNSTREAM OF SECTION 84+30 IS BASED UPON AERIAL MAPPING PROVIDED BY CORE ENGINEERING INC., COLORADO STATE PLANE COORDINATES 1983, AND NATIONAL GEODETIC VERTICAL DATUM OF 1929.

THE TOPOGRAPHY WAS COMPILED IN ACCORDANCE WITH NATIONAL MAPPING STANDARDS FOR 1"=200' & 2" CONTOUR INTERVAL DETAIL.

TOPOGRAPHIC MAPPING UPSTREAM OF SECTION 54+30 IS BASED ON FIELD SURVEY BY M & S CIVIL CONSULTANTS, COLORADO STATE PLANE COORDINATES 1983, AND NATIONAL GEODETIC VERTICAL DATUM OF 1929.

SITE BENCHMARK: FIMS MONUMENT NO. F204

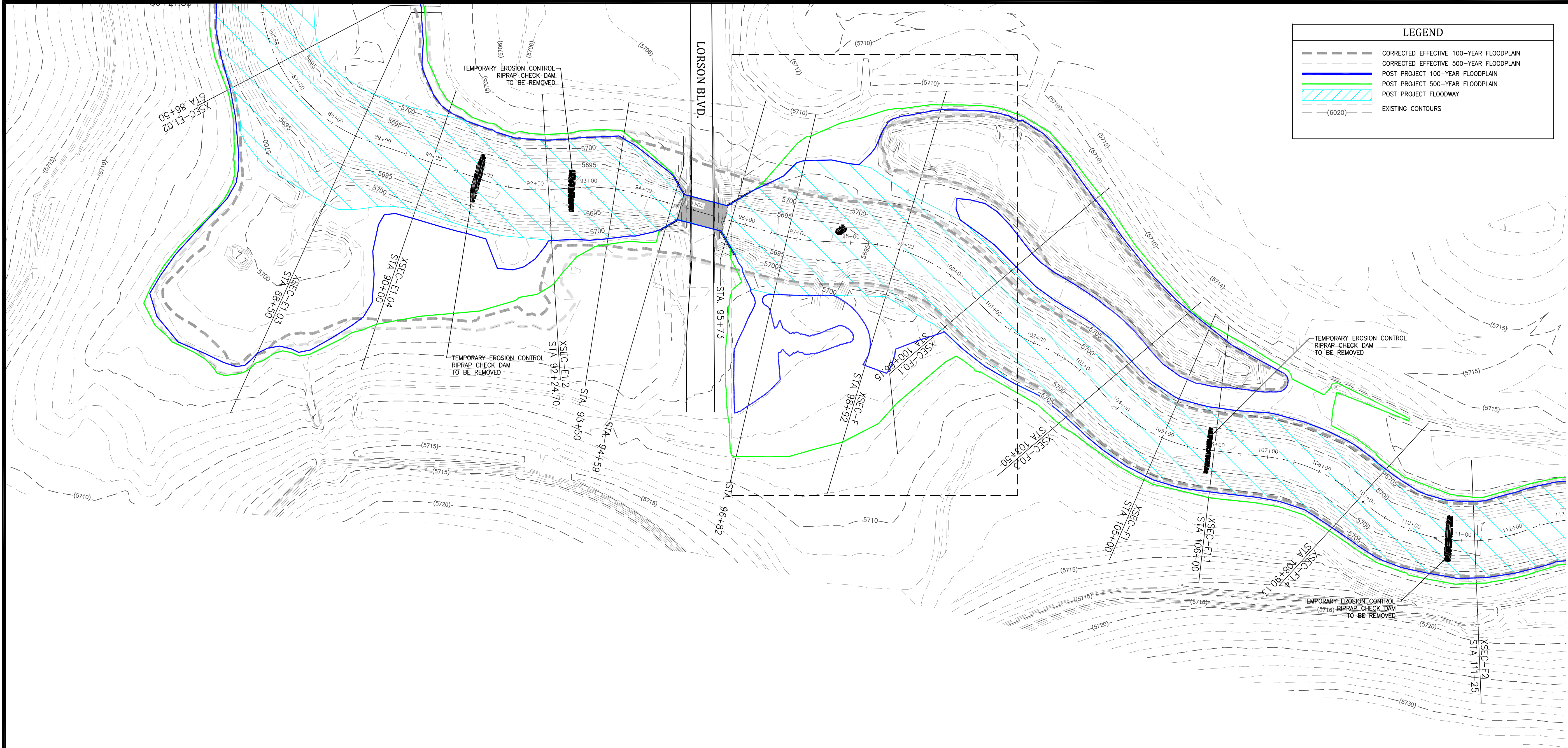
STEPHEN A. BROWN
COLORADO LIC. 40190

2/15/19
DATED

EAST TRIBUTARY JIMMY CAMP CREEK CLOMR
LORSON RANCH
POST PROJECT CONDITIONS FLOODPLAIN MAP
EL PASO COUNTY, COLORADO

Project No.:	19001
Date:	FEBRUARY 7, 2019
Design:	SAB
Drawn:	SAB
Check:	RNW
Revisions:	

SHEET



TOPOGRAPHIC MAPPING IS BASED ON FIELD SURVEY BY M & S CIVIL CONSULTANTS, COLORADO STATE PLANE COORDINATES 1983, AND NATIONAL GEODETIC VERTICAL DATUM OF 1929.

SITE BENCHMARK: FIMS MONUMENT NO. F204

STEPHEN A. BROWN
COLORADO LIC. 40190

2/15/19
DATED

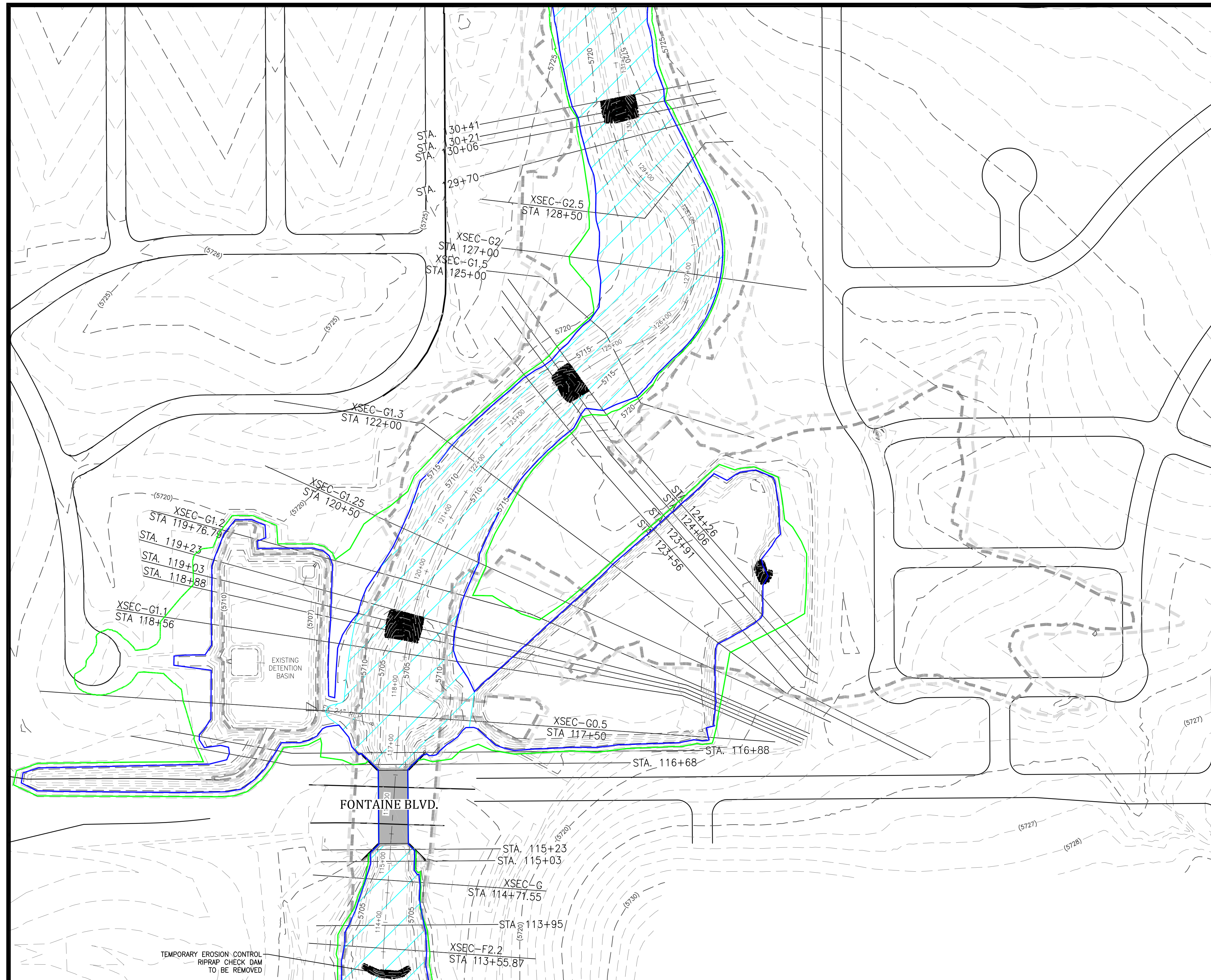
EAST TRIBUTARY JIMMY CAMP CREEK CLOMR
LORSON RANCH
POST PROJECT CONDITIONS FLOODPLAIN MAP
EL PASO COUNTY, COLORADO

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SHEET

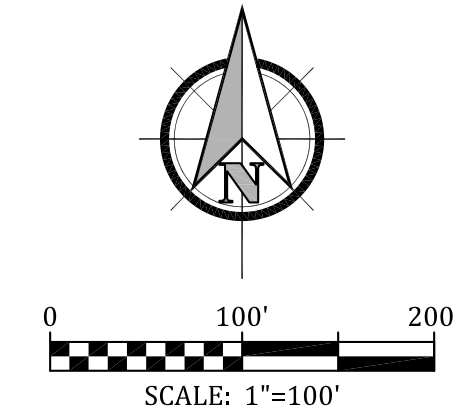
2

OF 4 SHEETS



LEGEND

	CORRECTED EFFECTIVE 100-YEAR FLOODPLAIN
	CORRECTED EFFECTIVE 500-YEAR FLOODPLAIN
	POST PROJECT 100-YEAR FLOODPLAIN
	POST PROJECT 500-YEAR FLOODPLAIN
	POST PROJECT FLOODWAY
	EXISTING CONTOURS



TOPOGRAPHIC MAPPING IS BASED FIELD SURVEY
BY M & S CIVIL CONSULTANTS, COLORADO STATE
PLANE COORDINATES 1983, AND NATIONAL
GEODETIC VERTICAL DATUM OF 1929.

STEPHEN A. BROWN
COLORADO LIC. 40190

EAST TRIBUTARY JIMMY CAMP CREEK CLOMR
LORSON RANCH
POST PROJECT CONDITIONS FLOODPLAIN MAP
EL PASO COUNTY, COLORADO

Celebrating 30 years
Kiowa
Engineering Corporation

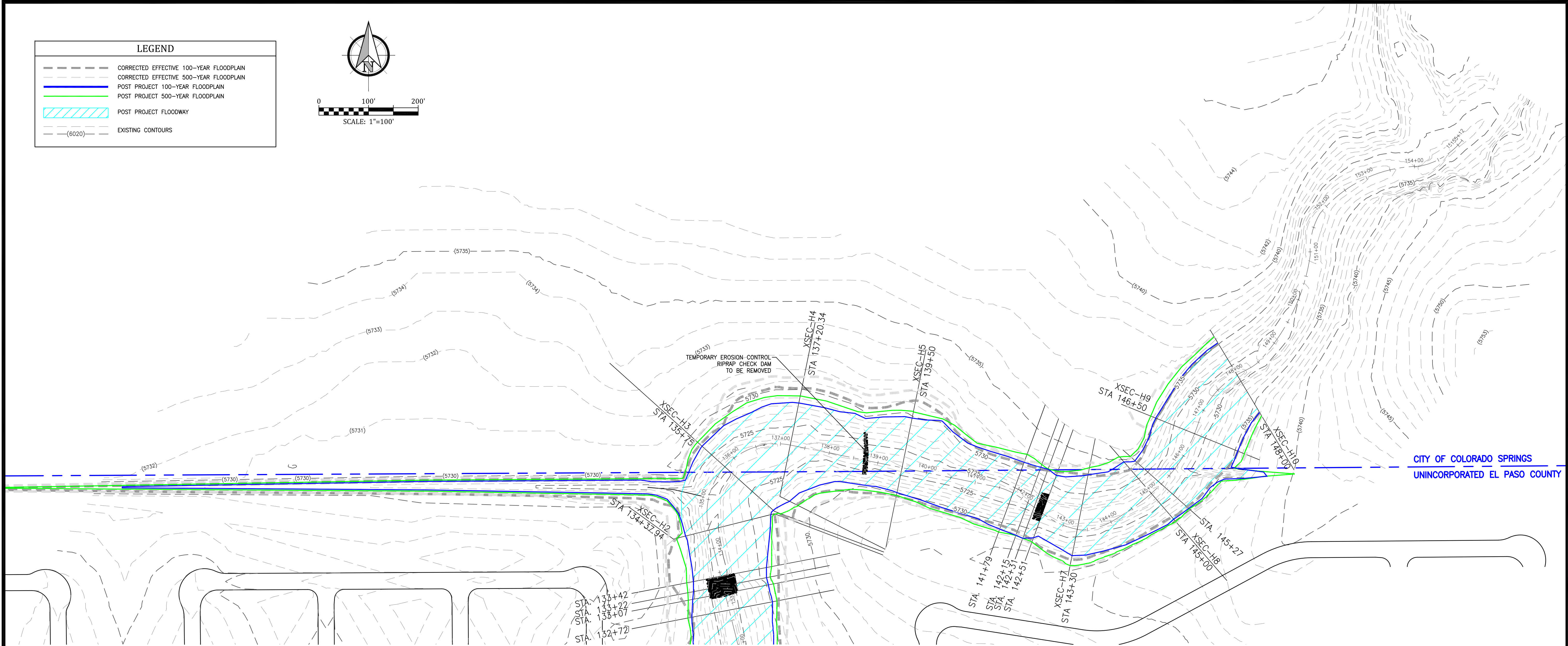
1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

Project No.:	19001
Date:	FEBRUARY 7, 2019
Design:	SAB
Drawn:	SAB
Check:	RNW
Revisions:	

SHEET

3

OF 4 SHEETS



LEGEND

CORRECTED EFFECTIVE 100-YEAR FLOODPLAIN

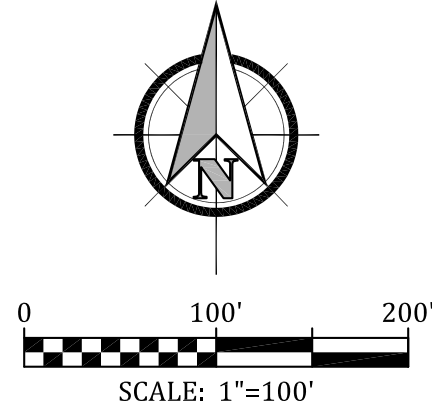
CORRECTED EFFECTIVE 500-YEAR FLOODPLAIN

POST PROJECT 100-YEAR FLOODPLAIN

POST PROJECT 500-YEAR FLOODPLAIN

POST PROJECT FLOODWAY

EXISTING CONTOURS



TOPOGRAPHIC MAPPING IS BASED ON FIELD SURVEY BY M & S CIVIL CONSULTANTS, COLORADO STATE PLANE COORDINATES 1983, AND NATIONAL GEODETIC VERTICAL DATUM OF 1929.

SITE BENCHMARK: FIMS MONUMENT NO. F204

STEPHEN A. BROWN
COLORADO LIC. 40190

2/15/19
DATED

EAST TRIBUTARY JIMMY CAMP CREEK CLOMR

LORSON RANCH

POST PROJECT CONDITIONS FLOODPLAIN MAP

EL PASO COUNTY, COLORADO

Project No.:	19001
Date:	FEBRUARY 7, 2019
Design:	SAB
Drawn:	SAB
Check:	RNW
Revisions:	

SHEET

4

OF 4 SHEETS