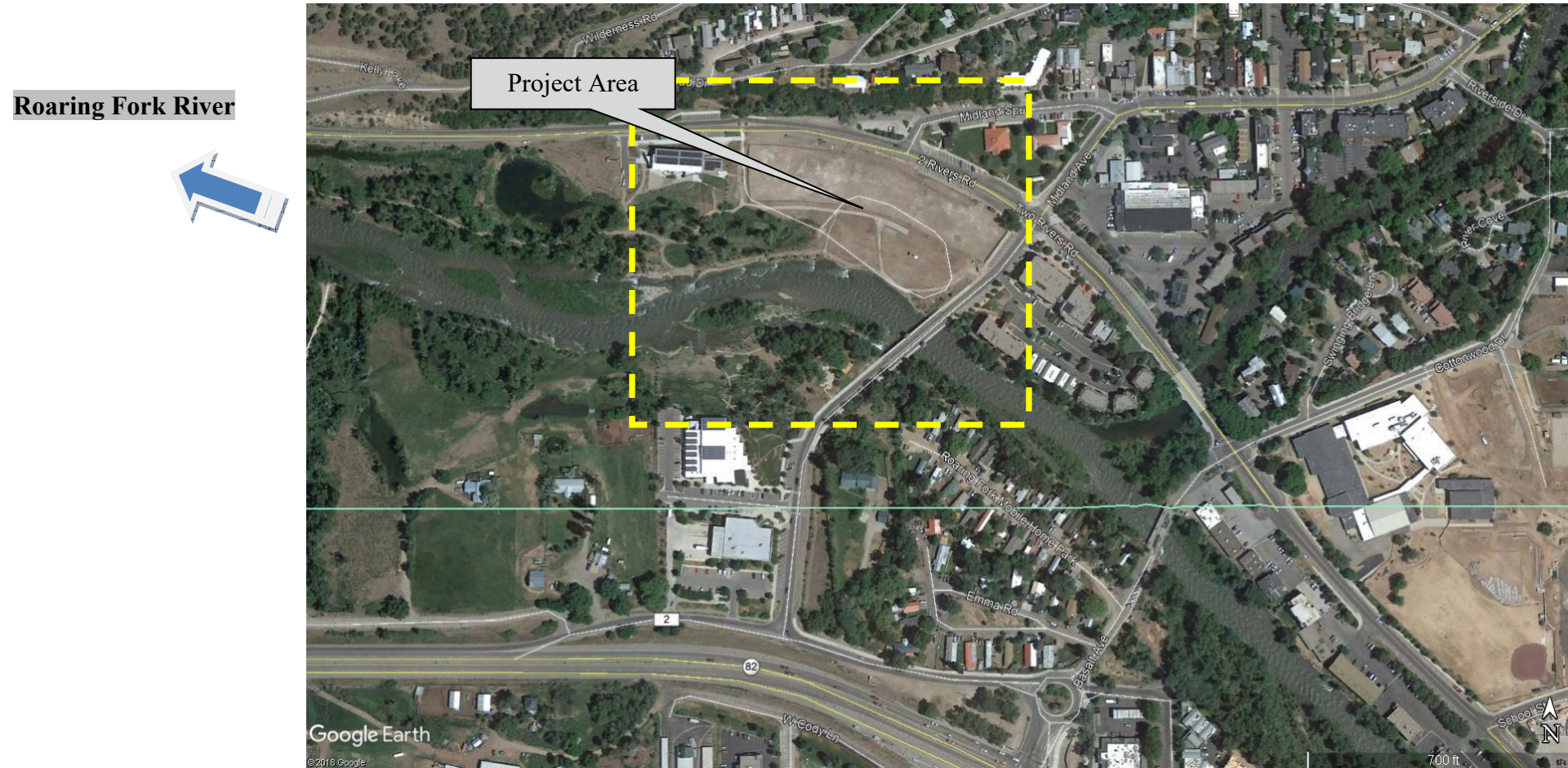


Letter of Map Revision for Phase II River Restoration Roaring Fork River Town of Basalt, Eagle County, Colorado



Prepared For:
Basalt River Park, LLC
723 E. Valley Road, Suite 200
Basalt, CO 81621

Prepared By:
Matrix Design Group, Inc.
1601 Blake St., Suite 200
Denver, Colorado 80202
(303) 572-0200

November 25, 2019

This LOMR for the Roaring Fork River within the Town of Basalt, Eagle County, Colorado was prepared under the supervision and direction of the undersigned Professional Engineer:

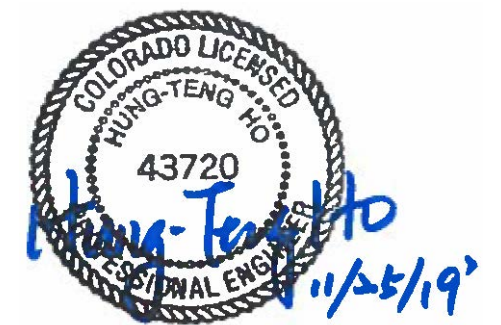


TABLE OF CONTENTS

1.0 Introduction..... 4
 1.1 Authorization 4
 1.2 Previous Studies..... 4
2.0 Purpose of Study 4
3.0 Location 4
4.0 Topographic Mapping 4
5.0 Hydrology 4
6.0 Hydraulic Analysis..... 5
7.0 Floodplain Boundaries and Profiles 7
8.0 Sediment Transport 7
9.0 Conclusions 7
10.0 References..... 7

LIST OF FIGURES

- Figure 1 – Profiles Comparison
- Figure 2 – Floodplain Expansion Due to Topographic Mapping

LIST OF TABLES

- Table 1 – Design Flood Flows for the Roaring Fork River
- Table 2 - Verification of Regulatory Effective Model
- Table 3 - Output Comparison _ Duplicated Effective vs. Regulatory Effective Model
- Table 4 - Corrected/ Post-project River Station Equation
- Table 5 - Output Comparison _ Corrected Effective vs. Regulatory Effective Model
- Table 6 - Output Comparison _ Corrected Effective vs. Post-project Phase I Condition Model
- Table 7 - Floodplain and Floodway Data Table _ Post-project Phase I Condition

LIST OF APPENDICES

APPENDIX A

- MT-2 Forms
- Certified As-built Plan
- Notification Letters

APPENDIX B

- Excerpts from FEMA Flood Insurance Study
- Flood Insurance Rate Map, December 4, 2007

APPENDIX C

- Effective HEC-RAS 4.1.0 Model Output
- Post-project/ As-built Condition HEC-RAS 4.1.0 Results
- Post-project/ As-built Condition HEC-RAS Cross Sections

APPENDIX D

- Exhibit 1 – LOMR Roaring Fork River Work Map
- Exhibit 2 - Annotated Flood Rate Insurance Map 08037C0931D
- Exhibit 3 - Annotated Floodway Data Table
- Exhibit 4 - Annotated Flood Insurance Study Profile 144P

APPENDIX E

- Digital Data

1.0 Introduction

1.1 Authorization

This Letter of Map Revision (LOMR) is prepared by Matrix Design Group, Inc. on behalf of Basalt River Park, LLC in cooperation with the Town of Basalt to incorporate changes to the regulatory floodplain as a result of river restoration improvements as approved by a Conditional Letter of Map Revision (CLOMR) Case No. 13-08-0261R. Two phased LOMRs were prepared to include all of the changes identified in the CLOMR. The Phase I Roaring Fork River Restoration LOMR Case No. 14-08-0868P has been approved and became effective on November 28, 2014. The Town has implemented zoning regulations that promote no adverse impact to the floodplain. This LOMR confirm that the Phase II restoration as-built condition complies with the no adverse impact regulation imposed by the Town.

1.2 Previous Studies

The Roaring Fork River *Floodplain Information Report* prepared by Matrix Design Group in November 14, 2001 established the floodplain and floodway boundaries for 9.6 miles of the Roaring Fork River beginning at the Garfield/Eagle County Line and continuing upstream through Eagle County, the Town of Basalt and Pitkin County to the confluence with Snowmass Creek. The Floodplain Information Report included detailed floodplain mapping with base flood elevations. The floodplain delineation base mapping was based upon aerial topographic mapping with 2-foot contour intervals obtained for the Town of Basalt in January 2001 from Aero-Metric, Inc.

The hydrology for the Roaring Fork River was developed by the U.S. Army Corps of Engineers after the construction of Ruedi Reservoir in the Fryingpan River watershed. This hydrology has proven to be reasonable based upon a long history of gage records and is used in this LOMR application without modification.

2.0 Purpose of Study

The Town of Basalt completed a *Roaring Fork River Stewardship Master Plan* on March 25, 2002. Using the hydraulic model from the 2001 *Floodplain Information Report*, the Master Plan determined the Pan & Fork Mobile Home Park located downstream from Midland Avenue along the north bank was at significant risk of flooding, with the potential of loss of life in a catastrophic flood event. The trailer park was located within the floodway of the Roaring Fork River. The Pan & Fork community only had marginal protection by a non-FEMA compliant levee.

The master plan determined the best course of action was to relocate the Pan & Fork Trailer Park out of the flood hazard area, remove the flood protection levee, widen the river channel and regrade the site to restore the natural functions of the river corridor. The constraints to the river corridor were removed and the channel widened to provide a stable meandering channel. The river banks were restored to provide natural ecological function. Removing the levee and restoring the river provided the necessary floodplain mitigation so that the flood fringe area away from the river banks and adjacent to Two Rivers Road could be filled and elevated to provide redevelopment opportunities. This approach provided a win-win opportunity by protecting the community from flood hazards, restoring the river and gaining land area outside of the floodway in the former flood fringe for safe redevelopment by elevating the development area above the 100-year flood elevations.

3.0 Location

The project site is located on the Roaring Fork River within the Town of Basalt, Colorado. This portion of the Town is within Eagle County, although nearby upstream reaches are within Pitkin County. River restoration work within the Roaring Fork River floodplain began at the Midland Avenue Bridge and extending downstream approximately 1,000 feet.

The Roaring Fork River is a major tributary to the Colorado River. The headwaters of the Roaring Fork River start above the City of Aspen and continue approximately 60 miles downstream to the confluence at the City of Glenwood Springs. At the confluence with the Colorado River, the Roaring Fork River has a 1,460 square mile drainage basin. Major tributaries to the Roaring Fork are the Crystal River, Fryingpan River, Maroon Creek, Castle Creek and Hunter Creek.

The river restoration construction removed the levee that protected the Pan and Fork Mobile Home Park and widened the channel, beginning downstream of Midland Avenue Bridge and extending downstream approximately 1000 feet. The major construction on the Roaring Fork River included boulder-lined bank protection, jetties, and channel invert restoration. Fill was placed in the northern fringe of the floodplain along Two Rivers Road to elevate the area for development.

4.0 Topographic Mapping

LiDAR base mapping is from 2012. However, the work area has all been field surveyed by Sopris Engineering. Sopris Engineering provided as-built topographic field survey and three cross-sectional surveys in areas of special interest. Field survey was utilized to establish riverbed elevations since the aerial mapping was based upon water surface elevations which were typically 18-24 inches higher than the riverbed.

As-built information for the channel restoration and fill at the **F** & Trailer Park was surveyed by Sopris Engineering in 2018 and provided to Matrix Design Group on September 12, 2018.

The basis of vertical control for the surveyed Roaring Fork River cross-sections is **NGVD 29** sea level datum originating at USGS benchmark for Section 12, Township 8 South, Range 87 West, of the 6th PM. For the floodplain analysis the NGVD 29 vertical datum was converted to **NAVD 88** by adding 4.82 feet.

5.0 Hydrology

Hydrology for this LOMR will remain the same as the effective FIS. The hydrologic analysis for the Roaring Fork drainage basin was completed by the U.S. Army Corps of Engineers. The peak flows determined for the 10, 50, 100 and 500-year floods were used to determine the flood profiles and the 100-year floodplain for this CLOMR. Table 1 lists the peak discharges for these floods on the Roaring Fork River in the reach at Town of Basalt.

TABLE 1 - DESIGN FLOOD FLOWS FOR THE ROARING FORK RIVER

Stream Reach	Cumulative Drainage Area (Sq. mi.)	Flood Peaks in cfs For Different Return Intervals			
		10-yr	50-yr	100-yr	500-yr
Roaring Fork River, above Sopris Creek, below Fryingpan River	850	7,100	9,400	10,400	14,300

Source: U.S. Army Corps of Engineers study values published in Flood Hazard Reports.

6.0 Hydraulic Analysis

The U.S. Army Corp of Engineers HEC-RAS program version 4.1.0 was used to calculate the water surface elevations for the pre-project condition and post-project condition. The HEC-RAS hydraulic analysis that was completed for Roaring Fork River is presented below and includes the 10-, 50-, 100- and 500-year events. A floodway analysis based upon a zero-rise goal for the study reach is also included in this report.

Effective Model

The effective regulatory HEC-RAS model was derived from the Phase I Roaring Fork River Restoration LOMR Case No. 14-08-0868P, effective on November 28, 2014. The effective model was run using the HEC-RAS version 4.1.0 hydraulic model which was prepared by Matrix Design Group, Inc.

Duplicate Effective Model

A duplicated effective model is not necessary because this study continues to use HEC-RAS version 4.1.0 hydraulic model for floodplain and floodway analysis.

Corrected Effective Model/ Pre-Project (Existing Condition) Model

The corrected effective model or pre-project (existing condition) model is the same as the effective model.

Post-Project (As-built Condition) Model – Phase II

The hydraulic models of the LOMR Case No. 14-08-0868P were updated by incorporating the as-built survey information described in Section 4.0. The as-built geometry, titled as RFRiver_Community Campus_As-Built_Phase 2, in the HEC-RAS model was created using the effective model as a base. A total of five cross sections 74.5, 75, 75.5, 76.1 and 76.2 were updated with the as-built information for this LOMR Phase II application. The LOMR Phase I application updated cross section 74.5 and 75 at the right overbank area to reflect the fill for the development and the river restoration work. This study updated the cross-section 74.5 and 75 in the right overbank to reflect the fill to elevate the parcel above the 500-year floodplain. Cross-section 75 was also updated in the channel area to reflect the Phase II channel restoration. Cross sections 75.5, 76.1 and 76.2 were updated to depict the Phase II river restoration and the fill in the area of future development. The 100-year water surface profiles of the as-built condition of this LOMR Phase II and the pre-project condition were compared in Table 2. The

water surface elevations of the post-project condition are lower than the pre-project condition through the Phase II river restoration reach as a result of removing the levee and widening the channel.

Table 2 - Output Comparison _ Effective (LOMR Phase I) vs. Post-Project Phase II Condition

FIS Floodway Table Cross section	Q _{100-year} Total (cfs)	Effective Model HEC-RAS 4.1.0 Output			Post-project Condition Model HEC-RAS 4.1.0 Output			W.S. Elevation Change (Post-project - Effective) (ft)
		Model Cross Section ID	Channel Thalweg (ft)	W.S. Elevation (NGVD 29) ^{1,2} (ft)	Model Cross Section ID	Channel Thalweg (ft)	W.S. Elevation (NGVD 29) ^{1,2} (ft)	
	10,400	74.5	6571.5	6577.2	74.5	6571.5	6577.3	0.0
S	10,400	75	6574.3	6579.5	75	6571.6	6579.4	-0.1
	10,400	75.5	6574.2	6581.7	75.5	6573.0	6581.1	-0.6
	10,400	76.1	6576.8	6584.2	76.1	6577.1	6583.8	-0.4
	10,400	76.2	6577.3	6585.0	76.2	6577.7	6585.0	0.0
	10,400	76.35	Midland Avenue		76.35	Midland Avenue		-
	10,400	76.38	6577.2	6587.9	76.38	6577.2	6587.5	-0.4
T	10,400	76.65	6579.9	6588.0	76.65	6579.9	6588.0	0.0

¹ The NGVD 29 Datum was kept unchanged in the HEC-RAS 2.2 and HEC-RAS 4.1.0 model.

² Datum Adjustment: NAVD = NGVD + 4.82'.

Hydraulic Output

Table 3 shows the floodplain and floodway data for the post-project conditions. The results and detailed output of the HEC-RAS models are included in Appendix C. The post-project condition floodplain boundary has been delineated and is included in the work map (Exhibit 1) and annotated FIRM (Exhibit 2) in Appendix D. An annotated floodplain and floodway data table is shown on Exhibit 3 in Appendix D.

Table 3 - Floodplain and Floodway Data Table _ Post-Project Condition _ Phase II
Roaring Fork River, Town of Basalt, Colorado

Cross Section Number	River Station ¹ (feet)	Reference Location		Streambed Elevation (NGVD 29) ^{2,3} (feet)	100 - Year Floodplain (NGVD 29) ^{2,3}					Floodway (NGVD 29) ^{2,3}					Note
		FEMA Effective Model XS ID	FIRM Section ID		Peak Discharge (cfs)	Top Width (feet)	Active Flow Area (sq ft)	Average Velocity (ft/sec)	Water Surface Elevation (feet)	Water Surface Elevation (feet)	Increase (feet)	Top Width ⁴ (feet)	Area (sq ft)	Average Velocity (ft/s)	
73.5	27,756	-	-	6565.3	10,400	864	3189	3.3	6574.3	6574.5	0.2	695	3111	3.3	
74	27,993	-	-	6569.6	10,400	659	1693	7.3	6574.9	6574.9	0.0	659	1694	7.3	
74.5	28,190	-	-	6571.5	10,400	578	1245	8.4	6577.3	6577.3	0.0	546	1216	8.6	Downstream Limit
75	28,397	75	S	6571.6	10,400	557	1582	6.6	6579.4	6579.4	0.0	486	1401	7.4	Phase II cross section
75.5	28,610	-	-	6573.0	10,400	569	1548	7.8	6581.1	6581.1	0.0	569	1551	7.8	Phase II cross section
76.1	28,847	76.1	-	6577.1	10,400	696	2391	8.1	6583.8	6583.8	0.0	659	2290	8.1	Phase II cross section
76.2	28,978	76.2	-	6577.7	10,400	682	2008	5.3	6585.0	6585.0	0.0	572	1962	5.3	Phase II cross section
76.38	29,083	76.38	-	6577.2	10,400	1077	4948	2.3	6587.5	6587.5	0.0	610	3812	2.7	Upstream Limit
76.65	29,332	76.65	T	6579.9	10,400	1006	2311	5.0	6588.0	6588.1	0.1	632	2029	5.1	

¹ Stream distance in feet above Eagle / Garfield county line

² The NGVD 29 Datum was kept unchanged in the HEC-RAS 2.2 and HEC-RAS 4.1.0 model.

³ Datum Adjustment: NAVD = NGVD + 4.82'.

⁴ Floodway top width exclude high ground width inside floodway.

7.0 Floodplain Boundaries and Profiles

The 1 percent annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. For the Roaring Fork River, the 100-year floodplain boundary has been delineated using the flood elevations determined at each cross section. The floodplain boundaries were interpolated between the modeled cross sections using the topographic contours that were obtained from the as-built contours with an interval of 1 foot. The 100-, 500-year floodplain boundaries with Base Flood Elevations (BFEs) and floodway are shown on the attached LOMR Work Map (Exhibit 1) and the annotated FIRM Panels (Exhibit 2) in Appendix D.

A copy of annotated version of the effective flood insurance study (FIS) Floodway Data table for Roaring Fork River shows the revised floodplain and floodway data for the affected reaches. See Annotated Floodway Data Table (Exhibit 3) in Appendix D.

A copy of annotated version of the effective flood insurance study (FIS) profile for Roaring Fork River shows the revised elevation profiles for the affected reaches. See Annotated Flood Profile 144P (Exhibit 4) in Appendix D.

8.0 Sediment Transport

The Roaring Fork River bank-full channel in the study area has an average range of 90 to 120 feet wide as it flows through an alluvial valley. The average channel grade is 0.0127 feet per foot upstream of the Town of Basalt, transitioning to 0.0087 feet per foot downstream of the Town. The lower study reach has an average grade of approximately 0.007 feet per foot. The stream channel is braided, having a bed composed mostly of gravel, cobbles, and small round boulders ranging in the 6 to 15-inch diameter size. There are many riffles and rapids with many shallow pools along its course. Several irrigation ditches divert from the Roaring Fork along this reach. In most areas, the riverbanks are low with steep slopes (often over 45 degrees), being composed mostly of sand, gravel, and cobbles, with little or no vegetation below the mean annual high water mark. The steep slopes and lack of vegetation reduce the resistance of the banks to scour.

Cobble-bed streams such as the Roaring Fork River exhibit instability problems when the cobble particles are mobilized. Those particles begin to move when the water exceeds a shear stress on the bed particles beyond the threshold value for incipient motion. When flow rates and velocities are high enough to mobilize the cobble, the channel becomes unstable. Calculations were used to estimate the flow conditions under which the cobble will be mobilized. Bedload calculations and sediment rating curves have been developed specifically to estimate the flow frequency (i.e. 5-year flow conditions, 10-year flow conditions, 25-year flow conditions) under which particle mobilization will occur at particular locations of stream instability. The result is that the 10-year flood has the greatest impact over time on the channel morphology for this coarse bed channel.

River restoration includes excavation of large cobble deposits, constriction of the low flow channel to a uniform width to maintain uniform shear conditions, and stabilization of the river banks with large boulders. River stabilization measures were designed based upon 100-year flood hydraulic conditions.

9.0 Conclusions

The results of this analysis indicate that there is no adverse impact to the Base Flood Elevations (BFE's) by the proposed improvements. The channel improvements generally lower the water surface elevations.

Letters of notification of floodplain changes will be sent to the property owners affected by this LOMR Phase 2 application once FEMA completes the technical review. A draft letter can be found in the Appendix A. There are no insurable structures adversely affected by this LOMR. The Rocky Mountain Institute (RMI) property has been removed from the regulatory floodplain based on the Phase I river restoration and fill to elevate the building site. This study revised the 500-year floodplain to reflect the final fill at the RMI property. The 100-year floodplain is slightly wider than the LOMR Phase I 100-year floodplain at the RMI property that reflects the final milder slope bank grading.

10.0 References

1. FEMA Memorandum, HEC-RAS Version Updates, August 17, 2004.
2. Flood Insurance Study of Eagle County, Colorado and Incorporated Areas, prepared by Federal Emergency Management Agency, December 4, 2007.
3. Matrix Design Group, Inc., Proposed Community Campus Grading Plan and River Restoration Grading Plan, December 6, 2012.
4. Matrix Design Group, Inc., *Floodplain Information Report*, Roaring Fork River, Town of Basalt, Eagle and Pitkin Counties, Colorado, November 14, 2001.
5. Town of Basalt, *Roaring Fork River Stewardship Master Plan*, March 25, 2002.
6. Sopris Engineering, Topographic Field Surveys, September 2018.

APPENDIX A

- MT-2 Forms
- Certified As-built Plan
- Notification Letters

List of Notification Letters:

- Roaring Fork Conservancy No. 2467-073-06-001
- Roaring Fork Community No. 2467-074-25-024
- Town of Basalt No. 2467-073-06-002
- Town of Basalt No. 2467-074-00-128
- Town of Basalt No. 2467-074-67-002
- Town of Basalt No. 2467-074-58-006
- Basalt Regional Library No. 2467-074-58-001
- Stott, Lonnie & Alice No. 2467-073-00-020
- United States Postal Service No. 2467-074-05-801

Online Letter of Map Change

LOMC Application

Application ID: R3221656940749

Revision

Revision Review

Project Type

Project Type: LOMR

Payment Total

Fee: \$8000.00 (LOMR Based on As-Built Information (CLOMR previously issued by FEMA))

Project Name/Identifier

Project Name/Identifier: Roaring Fork River Restoration

Community Information

State, District or Territory: CO
County: Eagle County
Community Name: BASALT,TOWN OF
Map Panel Number - Effective Date: 08037C0931D - 12/04/2007
CID: 080052

State, District or Territory: CO
County: Eagle County
Community Name: EAGLE COUNTY *
Map Panel Number - Effective Date: 08037C0931D - 12/04/2007
CID: 080051

State, District or Territory: CO
County: Pitkin County
Community Name: PITKIN COUNTY*
Map Panel Number - Effective Date: 08097C0081E - 08/15/2019
CID: 080287

Flooding

Flooding Source: Roaring Fork River
Types of Flooding: Riverine

Basis for Request

The basis for this revision request is: Hydraulic Analysis , New Topographic Data , Physical Change , Regulatory Floodway Revision

Zone Designation

FEMA Zone designations affected: A , AE , X

Revision Structures

The area of revision encompasses the following structures: Channelization , Excavation , Fill


Primary Contact Information

Title: Mr.
First Name: Hung-Teng
Last Name: Ho
Address 1: 1601 Blake St., Suite 200
City: Denver
State, District or Territory: CO
ZIP Code: 80202
E-mail Address: hungteng_ho@matrixdesigngroup.com
Company/Organization: Matrix Design Group, Inc.
Phone: 303-572-0200
Fax: 303-572-0202

Community Official Information

Title: Mr.
First Name: Ryan
Last Name: Mahoney
Professional Title: Town Manager
Community Name: BASALT,TOWN OF
Address 1: 101 Midland Avenue
City: Basalt
State, District or Territory: CO
ZIP Code: 81621
E-mail Address: Ryan.Mahoney@basalt.net
Phone: 970-927-4701

As the CEO or designee responsible for the 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 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 request, the applicant has documented Endangered Species Act (ESA) compliance to DHS/FEMA prior to DHS/FEMA's review of the Conditional LOMR application. For LOMR request, I acknowledge that compliance with sections 9 and 10 of the ESA has been achieved independently of DHS/FEMA's process. For actions authorized, funded, or being carried out by Federal or State agencies, existing or proposed structures to be removed from the SFHA are or will be reasonably safe from flooding as defined in 44 CFR 65.2(c), and that we have available upon request by DHS/FEMA, all analyses and documentation used to make this determination.

Community Official Signature:  _____
Date: 11-20-19

Title: Ms.
 First Name: Nicole
 Last Name: Mosby
 Professional Title: Staff Engineer
 Community Name: EAGLE COUNTY *
 Address 1: P.O. Box 850
 City: Eagle
 State, District or Territory: CO
 ZIP Code: 81631
 E-mail Address: Nicole.Mosby@eaglecounty.us
 Phone: 970-328-3564

As the CEO or designee responsible for the 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 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 request, the applicant has documented Endangered Species Act (ESA) compliance to DHS/FEMA prior to DHS/FEMA's review of the Conditional LOMR application. For LOMR request, I acknowledge that compliance with sections 9 and 10 of the ESA has been achieved independently of DHS/FEMA's process. For actions authorized, funded, or being carried out by Federal or State agencies, existing or proposed structures to be removed from the SFHA are or will be reasonably safe from flooding as defined in 44 CFR 65.2(c), and that we have available upon request by DHS/FEMA, all analyses and documentation used to make this determination.

Community Official Signature: _____

Date: _____

Title: Ms.
 First Name: Catherine
 Last Name: Christoff
 Professional Title: Planning Engineer
 Community Name: PITKIN COUNTY*
 Address 1: 130 South Galena St
 City: Aspen
 State, District or Territory: CO
 ZIP Code: 81611
 E-mail Address: catherine.christoff@pitkincounty.com
 Phone: 970-429-2799

As the CEO or designee responsible for the 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 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 request, the applicant has documented Endangered Species Act (ESA) compliance to DHS/FEMA prior to DHS/FEMA's review of the Conditional LOMR application. For LOMR request, I acknowledge that compliance with sections 9 and 10 of the ESA has been achieved independently of DHS/FEMA's process. For actions authorized, funded, or being carried out by Federal or State agencies, existing or proposed structures to be removed from the SFHA are or will be reasonably safe from flooding as defined in 44 CFR 65.2(c), and that we have available upon request by DHS/FEMA, all analyses and documentation used to make this determination.

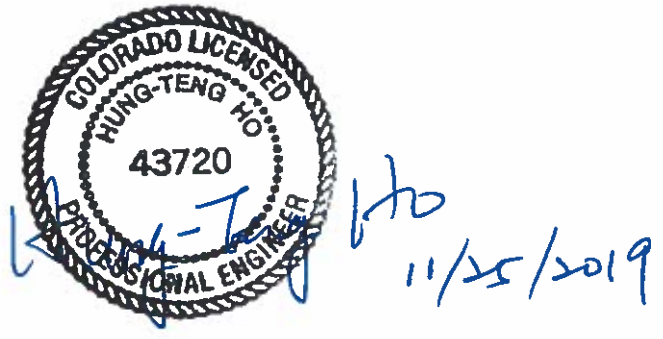
Community Official Signature: _____

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 instruction. 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.

First Name: Hung-Teng
Last Name: Ho
License Number: 43720
Expiration Date: 10/31/2021
Company Name: Matrix Design Group, Inc.
E-mail Address: hungteng.ho@matrixdesigngroup.com
Telephone Number: (303) 572-0200
Fax Number: (303) 572-0202
Certifier's Signature: _____
Date: _____



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: Roaring Fork River

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>Approx. 800 feet d/s Midland</u>	<u>74.5</u>	<u>6577.2 (NGVD)</u>	<u>6577.3 (NGVD)</u>
Upstream Limit*	<u>U/S face of Midland Ave Bridge</u>	<u>76.38</u>	<u>6587.9 (NGVD)</u>	<u>6587.5 (NGVD)</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 4.1.0

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>RFR_LOMR_Ph1.prj</u>	Plan Name: <u>RFR_LOMR_Ph1.P6</u>	File Name: <u>RFR_LOMR_Ph1.prj</u>	Plan Name: <u>RFR_LOMR_Ph1.P07</u>	<u>NGVD 29</u>
Corrected Effective Model*	File Name: _____	Plan Name: _____	File Name: _____	Plan Name: _____	_____
Existing or Pre-Project Conditions Model	File Name: <u>RFR_LOMR_Ph1.prj</u>	Plan Name: <u>RFR_LOMR_Ph1.P6</u>	File Name: <u>RFR_LOMR_Ph1.prj</u>	Plan Name: <u>RFR_LOMR_Ph1.P07</u>	<u>NGVD 29</u>
Revised or Post-Project Conditions Model	File Name: <u>RFR_LOMR_Ph2.prj</u>	Plan Name: <u>RFR_LOMR_Ph2.P1</u>	File Name: <u>RFR_LOMR_Ph2.prj</u>	Plan Name: <u>RFR_LOMR_Ph2.P2</u>	<u>NGVD 29</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: As-built survey

Source: Sopris Engineering, LLC of Carbondale, CO Date: September 12, 2018

Accuracy: 1 feet

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

Public reporting burden for this form is estimated to average 7 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 20598-3005, 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; 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: Roaring Fork River

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

A. GENERAL

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

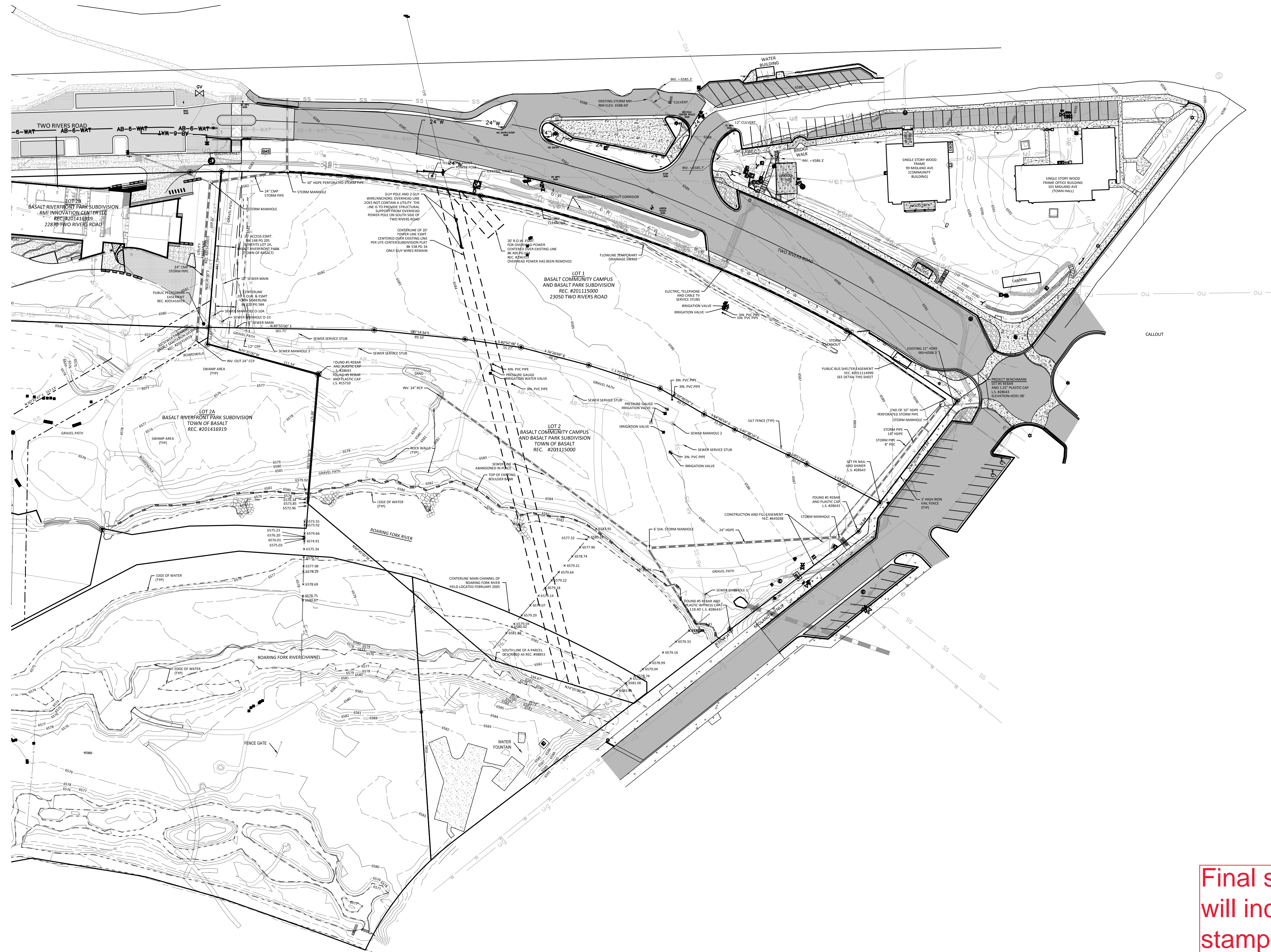
- Channelization.....complete Section B
- Bridge/Culvert.....complete Section C
- Dam.....complete Section D
- Levee/Floodwall.....complete Section E
- Sediment Transport.....complete Section F (if required)

Description Of Modeled Structure

1. Name of Structure: Roaring Fork River Restoration
Type (check one): Channelization Bridge/Culvert Levee/Floodwall Dam
Location of Structure: Starts from downstream of Midland Avenue Bridge and extends 600 feet downstream
Downstream Limit/Cross Section: HEC-RAS cross section 75
Upstream Limit/Cross Section: HEC-RAS cross section 76.2
2. Name of Structure: _____
Type (check one): Channelization Bridge/Culvert Levee/Floodwall Dam
Location of Structure: _____
Downstream Limit/Cross Section: _____
Upstream Limit/Cross Section: _____
3. Name of Structure: _____
Type (check one) Channelization Bridge/Culvert Levee/Floodwall Dam
Location of Structure: _____
Downstream Limit/Cross Section: _____
Upstream Limit/Cross Section: _____

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

EXISTING CONDITIONS WITH TOPOGRAPHY OF: LOMR PHASE II PROJECT AREA



GRAPHIC SCALE



(IN FEET)
1 inch = 50 ft.

SET #5 REBAR AND 1.25" PLASTIC CAP
L.S. #28643, UNLESS OTHERWISE NOTED

CURVE TABLE						
CURVE	LENGTH	RADIUS	TANGENT	CHORD	BEARING	DELTA
C1	765.27'	1223.30'	395.62'	752.85'	N 73°44'52" W	35°50'35"

SOPRIS ENGINEERING - LLC
CIVIL CONSULTANTS
502 MAIN STREET, SUITE A3
CARBONDALE, COLORADO 81623
(970) 704-0311

Final submittal
will include
stamp

MARK S. BECKLER, P.L.S. 28643

NOTICE: ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF CERTIFICATION SHOWN HEREON.

18091.01 d 09/12/2018 G:\2018\18091\SURVEY\SURVEY DWGS\SURVEY PLOTS\18091-EXCOND-LOMRI.dwg



1601 Blake Street, Suite 200
Denver, Colorado 80202
Phone: 303-572-0200
www.matrixdesigngroup.com

November 20, 2019

TOWN OF BASALT
101 Midland Avenue
Basalt, CO 81621

Re: Notification of increase/decrease of the 1% (100-year) annual chance floodplain and floodway for
Roar Fork River, Eagle County, Colorado

To whom it may concern,

The Flood Insurance Rate Map (FIRM) depicts floodplain information for flooding sources within a community including the base 100-year flood and the floodway. The 100-year floodplain is that area which has been determined to be subject to a 1% (100-year) or greater annual chance of flooding in any given year. The floodway is that portion of the 100-year floodplain including the channel of the river or other watercourse and the adjacent land area that must be preserved in order to discharge the base 100-year flood without cumulatively increasing the water surface elevation more than one (1) foot. The FIRM is used to determine flood insurance rates and to assist the community with floodplain management.

Matrix Design Group, Inc. is applying for a Letter of Map Revision (LOMR) from the Federal Emergency Management Agency (DHS-FEMA) on behalf of the Town of Basalt, Eagle County, Colorado to revise FIRM 08037C0931D for Roaring Fork River. Town of Basalt is proposing to revise the Roaring Fork River 100-year regulatory floodplain and floodway due to the post-project construction phase II of a river restoration from downstream of Midland Avenue Bridge and extends downstream approximately 600 feet and fill in the northern fringe of the floodplain along Two Rivers Road to elevate the area of future development. Attached work map (Exhibit 1) shows the post-project construction location of the river restoration, land fill and impacts to the floodplain and floodway on your properties.

Exhibit 1 illustrates property lines and both current effective and revised 1% annual chance (100-year) floodplain limits. The LOMR phase II map revision will generally reduce the regulatory 1% annual chance water-surface elevation for Roaring Fork River with a maximum water surface elevation decrease of 0.6 feet at a point approximately 370 feet downstream from the Midland Avenue Bridge.

This letter is to inform you of revision of the 1% annual chance floodplain and floodway on your properties at parcel number 2467-073-06-002, 2467-074-58-006, 2467-074-00-128, 2467-074-67-002. In addition, we certify that no insurable structures are negatively impacted due to the revision.

If you have any question or concerns about the proposed changes to the FIRM or its effect on your property, you may contact me at 303-572-0200.

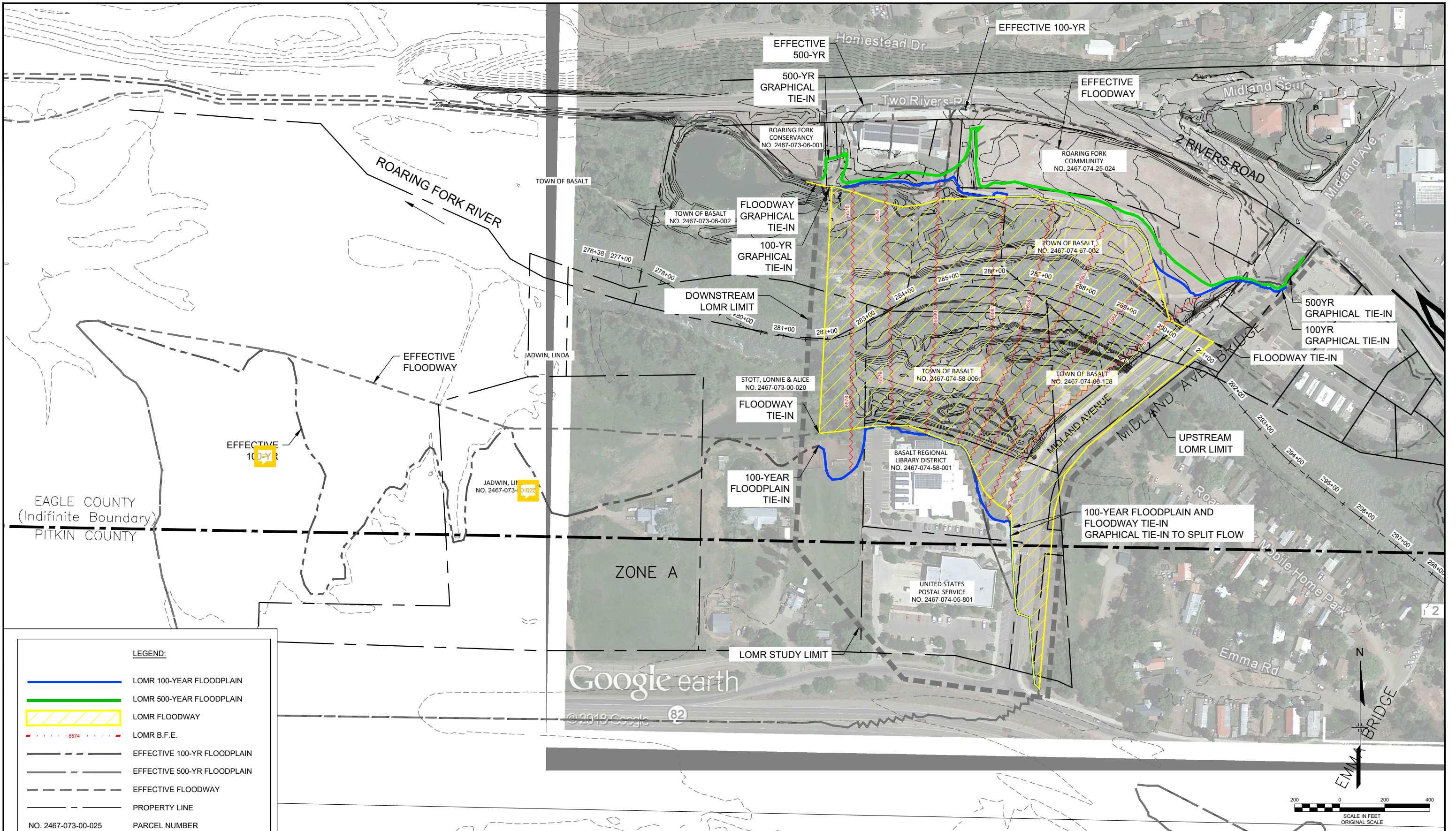
Sincerely,

Matrix Design Group, Inc.

Robert Krehbiel, PE
Vice President

Denver Colorado Springs Phoenix Anniston Atlanta Omaha Parsons Pueblo Sacramento Washington, D.C.

matrixdesigngroup.com



LEGEND:

- LOMR 100-YEAR FLOODPLAIN
- LOMR 500-YEAR FLOODPLAIN
- LOMR FLOODWAY
- LOMR B.F.E.
- EFFECTIVE 100-YR FLOODPLAIN
- EFFECTIVE 500-YR FLOODPLAIN
- EFFECTIVE FLOODWAY
- PROPERTY LINE
- PARCEL NUMBER

No.	DATE	DESCRIPTION	BY
REVISIONS			
COMPUTER FILE MANAGEMENT			
FILE NAME: R:11.014.011.000 (Basalt)DWGLOMR_Phase2\Basalt_RFR_LOMR_Phase 2_Work Map.dwg			
CTB FILE: ...			
PLOT DATE: 12/11/2019 4:47 PM			
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.			

SHEET KEY

HORIZONTAL CONTROL:
 MODIFIED COLORADO STATE PLAIN CENTRAL ZONE LAMBERT CONFORMAL PROJECT (NAD 83/92 INTERNATIONAL FEET). ALL COORDINATE POINTS WERE ADJUSTED TO A LOCAL PROJECT DATUM ELEVATION OF 6,500 FEET. THE COMBINED SCALE FACTOR FOR PROJECT COORDINATES IS:
 COMBINED FACTOR: 0.999636659
 RECIPROCAL FACTOR: 1.000363474

VERTICAL CONTROL:
 NGVD 29 PROVIDED FROM USGS BENCHMARKS:

NAME	TYPE	ORDER	ELEVATION
AP4	USGS	3RD	6589.20'
F 158	USGS	2ND	6749.07'
F 158	USGS	2ND	6640.66'
G 158	USGS	2ND	6507.86'

PREPARED BY:

Matrix
 DESIGN GROUP

FOR AND ON BEHALF OF
 MATRIX DESIGN GROUP, INC.
 PROJECT No. 11.014.011

**ROARING FORK RIVER RESTORATION
 AT BASALT RIVER PARK - PHASE II**

**LETTER OF MAP REVISION
 EXHIBIT 1 - WORKMAP**

DESIGNED BY: HTH	SCALE: HORIZ 1"=100'	DATE ISSUED: APRIL 2014	DRAWING No.:
DRAWN BY: HTH	VERT: 1"=10'	SHEET: OF	EX-1
CHECKED BY: RLK			

APPENDIX B

- Excerpts from FEMA Flood Insurance Study
- Flood Insurance Rate Map, December 4, 2007

Table 1. Summary of Discharges

Flooding Source and Study Reach	Drainage Area (sq. mi.)	Peak Discharges (cfs) (Annual Chance)			
		10%	2%	1%	0.2%
NORTH TRIBUTARIES					
Bighorn Creek Near Mouth	4.5	180	250	280	340
Black Gore Creek Near Mouth	20.7	440	590	640	770
Booth Creek Near Mouth	6.0	245	330	370	460
Brush Creek At downstream corporate limits of the Town of Eagle	150	875	1,150	1,225	1,400
Buffehr Creek Near Mouth	4.6	150	200	220	270
Colorado River Downstream of Eagle River Upstream of Eagle River	4,344 3,400	18,950 14,649	24,900 19,685	27,140 21,650	31,830 25,933
Eagle River Downstream of Gypsum Creek Downstream of Brush Creek Downstream of Lake Creek Downstream of Beaver Creek Downstream of Gore Creek Downstream of Minturn	944 808 658 402 361 260	5,890 5,300 4,530 3,980 3,800 2,520	7,430 6,690 5,710 5,010 4,790 3,290	8,030 7,230 6,170 5,430 5,190 3,490	9,330 8,400 7,060 6,210 5,940 3,980
East Mill Creek/West Mill Creek Near Mouth	7.2	200	280	300	370
Fryingpan River At Mouth Above Basalt At upstream limit of study	298 290 253	2,250 2,200 2,000	3,300 3,230 2,950	3,950 3,860 3,500	7,150 7,000 6,350
Gore Creek Near Mouth Upstream of Buffehr Creek Upstream of Red Sandston Upstream of Middle Creek Upstream of Spraddle Creek Upstream of Mill Creek Downstream of 1st Vail Course Bridge Upstream of Booth Creek Upstream of Pitkin Creek Upstream of Bighorn Creek	102 90.6 77.1 68.8 66.5 58.9 55.0 48.0 40.3 35.7	1,990 1,950 1,790 1,600 1,560 1,420 1,350 1,230 1,080 990	2,490 2,420 2,170 1,990 1,940 1,780 1,690 1,530 1,350 1,240	2,650 2,620 2,310 2,150 2,100 1,930 1,840 1,670 1,470 1,350	2,930 2,880 2,610 2,380 2,320 2,130 2,030 1,850 1,640 1,500
Gypsum Creek At Confluence with Eagle River	100	1,450	1,775	1,950	2,150
Middle Creek Near Mouth	5.9	110	130	140	160

Table 1. Summary of Discharges

Flooding Source and Study Reach	Drainage Area (sq. mi.)	Peak Discharges (cfs) (Annual Chance)			
		10%	2%	1%	0.2%
Pitkin Creek Near Mouth	5.3	180	260	290	380
Red Sandstone Creek Near Mouth	13.9	330	440	490	590
Roaring Fork River Roaring Fork River, above Garfield County Line Roaring Fork River, above Sopris Creek, below Fryingpan River Roaring Fork River, above Fryingpan River	870 850 510	7,300 7,100 6,100	9,800 9,400 8,500	10,800 10,400 9,400	14,700 14,300 12,200
Below Spris Creek					
Spraddle Creek Near Mouth	2.2	95	115	170	370
Taylor Creek At Downstream Limit of Study	8.8	245	300	325	480
Turkey Creek At Upstream Limit of Study At USGS Gage No. 635	30	525	720	795	955
Upper Gore Creek Just upstream of confluence with Gore Creek	14.4	550	690	740	845

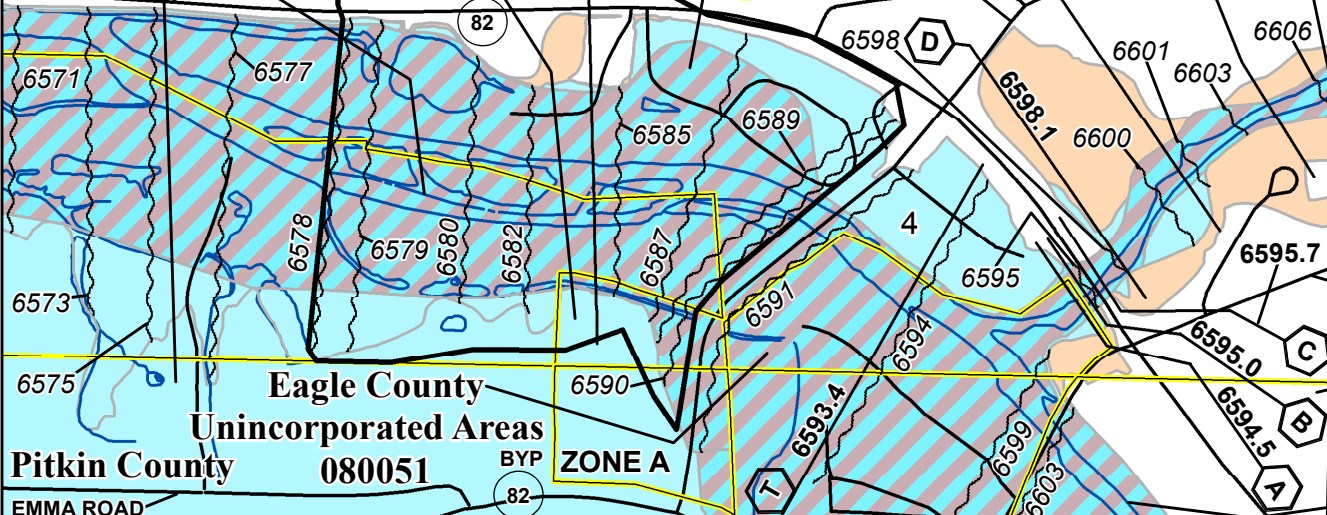
**Eagle County
Unincorporated Areas
080051**

NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 8 SOUTH, RANGE 86 WEST AND TOWNSHIP 8 SOUTH, RANGE 87 WEST.

**Pitkin County
Unincorporated Areas
080287**

**Town of Basalt
080052**

TWO RIVERS ROAD



**Eagle County
Unincorporated Areas
Pitkin County 080051**

**Town of Basalt
080052**

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

OTHER AREAS OF FLOOD HAZARD

- 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*

SCALE

Map Projection:
NAD83 UTM Zone 13N
Western Hemisphere; Vertical Datum NAVD88

1 inch = 500 feet 1:6,000



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

EAGLE COUNTY, COLORADO
And Incorporated Areas

PANEL 931 OF 1125



FEMA

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
BASALT, TOWN OF	080052	0931	D
EAGLE COUNTY	08005	0931	D

**REVISED TO
REFLECT LOMR
EFFECTIVE: November 28, 2014**

VERSION NUMBER
1.1.1.0

MAP NUMBER
08037C0931D

EFFECTIVE DATE
DECEMBER 4, 2007

APPENDIX C

- Effective HEC-RAS 4.1.0 Model Output
- Post-project/ As-built Condition HEC-RAS 4.1.0 Results
- Post-project/ As-built Condition HEC-RAS Cross Sections

Effective Floodplain Outputs

Profile Output Table - Standard Table 1

HEC-RAS Plan: RFR_AB_Ph1_FP River: RIVER-1 Reach: 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
Reach-1	72.5	100 Year	10400.00	6566.00	6572.46	6570.19	6572.72	0.001692	5.01	2940.78	681.81	0.40
Reach-1	73	100 Year	10400.00	6567.00	6573.11	6573.11	6574.05	0.013664	9.87	1735.04	880.52	1.03
Reach-1	73.5	100 Year	10400.00	6565.27	6574.34	6573.47	6574.61	0.001950	5.14	3188.58	856.03	0.42
Reach-1	74	100 Year	10400.00	6569.58	6574.86	6574.86	6576.06	0.010551	9.96	1428.77	611.80	0.94
Reach-1	74.5	100 Year	10400.00	6571.50	6577.23	6577.23	6578.74	0.011195	10.84	1223.66	412.58	0.99
Reach-1	75	100 Year	10400.00	6574.26	6579.53	6579.53	6580.76	0.008873	10.10	1452.48	540.03	0.88
Reach-1	75.5	100 Year	10400.00	6574.24	6581.68	6580.99	6582.40	0.006202	8.74	2191.38	737.41	0.74
Reach-1	76.1	100 Year	10400.00	6576.81	6584.21	6584.21	6585.94	0.008971	11.36	1280.04	858.11	0.90
Reach-1	76.2	100 Year	10400.00	6577.33	6585.01	6585.01	6587.63	0.008150	13.00	814.62	857.64	1.00
Reach-1	76.35	Mult Open										
Reach-1	76.38	100 Year	10400.00	6577.15	6587.88	6585.17	6587.96	0.000240	3.08	4945.01	1085.75	0.19
Reach-1	76.65	100 Year	10400.00	6579.90	6588.02	6588.02	6590.00	0.026570	12.21	2077.16	892.93	0.93

Froude number for the main channel.

LOMR Phase II Floodplain Outputs

Profile Output Table - Standard Table 1

HEC-RAS Plan: RFR_AB_Ph2_FW River: RIVER-1 Reach: 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
Reach-1	72.5	100 Year	10400.00	6566.00	6572.46	6570.19	6572.72	0.001692	5.01	2940.78	681.81	0.40
Reach-1	73	100 Year	10400.00	6567.00	6573.11	6573.11	6574.05	0.013664	9.87	1735.04	880.52	1.03
Reach-1	73.5	100 Year	10400.00	6565.27	6574.34	6573.47	6574.61	0.001950	5.14	3188.58	856.03	0.42
Reach-1	74	100 Year	10400.00	6569.58	6574.86	6574.86	6576.06	0.010551	9.96	1428.77	611.80	0.94
Reach-1	74.5	100 Year	10400.00	6571.50	6577.27	6577.27	6578.75	0.010834	10.72	1240.03	423.42	0.97
Reach-1	75	100 Year	10400.00	6571.59	6579.41	6578.38	6580.33	0.005600	8.50	1582.36	527.00	0.71
Reach-1	75.5	100 Year	10400.00	6572.96	6581.11	6581.11	6582.65	0.012519	11.14	1332.21	530.77	1.02
Reach-1	76.1	100 Year	10400.00	6577.06	6583.77	6583.77	6585.43	0.010179	10.88	1279.44	681.89	0.94
Reach-1	76.2	100 Year	10400.00	6577.71	6585.01	6585.01	6586.95	0.008683	12.17	1971.97	637.75	1.01
Reach-1	76.35	Mult Open										
Reach-1	76.38	100 Year	10400.00	6577.15	6587.49	6585.17	6587.58	0.000305	3.37	4578.16	1077.37	0.21
Reach-1	76.65	100 Year	10400.00	6579.90	6588.02	6588.02	6590.00	0.026570	12.21	2077.16	892.93	0.93

Effective Floodway Outputs

Profile Output Table - Encroachment 1

HEC-RAS Plan: RFR_AB_Ph1_FW River: RIVER-1 Reach: Reach-1 Profile: Floodway

Reach	River Sta	Profile	W.S. Elev (ft)	Prof Delta WS (ft)	E.G. Elev (ft)	Top Width Act (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Enc Sta L (ft)	Ch Sta L (ft)	Ch Sta R (ft)	Enc Sta R (ft)
Reach-1	72.5	Floodway	6572.46	0.00	6572.72	680.00	2146.95	5474.97	2778.08	1000.00	1299.50	1524.00	1680.00
Reach-1	73	Floodway	6573.15	0.04	6574.21	697.66	1189.01	5874.78	3336.22	1530.00	1794.00	1994.00	2227.66
Reach-1	73.5	Floodway	6574.50	0.15	6574.75	688.34	1224.21	5584.54	3591.25	183.00	420.60	653.60	878.40
Reach-1	74	Floodway	6574.86	0.00	6576.06	611.87	460.93	7536.00	2403.08	142.67	342.00	558.30	801.26
Reach-1	74.5	Floodway	6577.23	0.00	6578.78	384.34	1734.95	8217.52	447.52	159.00	319.70	522.30	698.54
Reach-1	75	Floodway	6579.57	0.04	6580.82	522.00	1082.33	7781.40	1536.26	133.00	297.50	484.00	655.00
Reach-1	75.5	Floodway	6581.69	0.01	6582.50	627.82	875.90	5945.33	3578.77	191.33	433.10	583.50	900.00
Reach-1	76.1	Floodway	6584.21	0.00	6585.94	398.38	475.44	8792.16	1132.40	464.00	819.90	980.90	1176.00
Reach-1	76.2	Floodway	6585.07	0.05	6587.63	177.14	7.46	10392.54		380.00	801.00	957.50	965.00
Reach-1	76.35 BR D #1	Floodway	6587.05	-0.06	6587.70	150.00	0.57	7065.14		380.00	801.00	957.50	965.00
Reach-1	76.35 BR U #1	Floodway	6587.07	-0.05	6587.80	147.00	208.88	6720.20	136.63	337.00	810.27	941.81	947.00
Reach-1	76.38	Floodway	6587.87	0.00	6587.98	610.00	6872.67	3489.22	38.12	337.00	810.27	941.81	947.00
Reach-1	76.65	Floodway	6588.09	0.08	6590.03	605.96	1491.61	8908.39		1241.25	1727.01	1873.52	1873.52

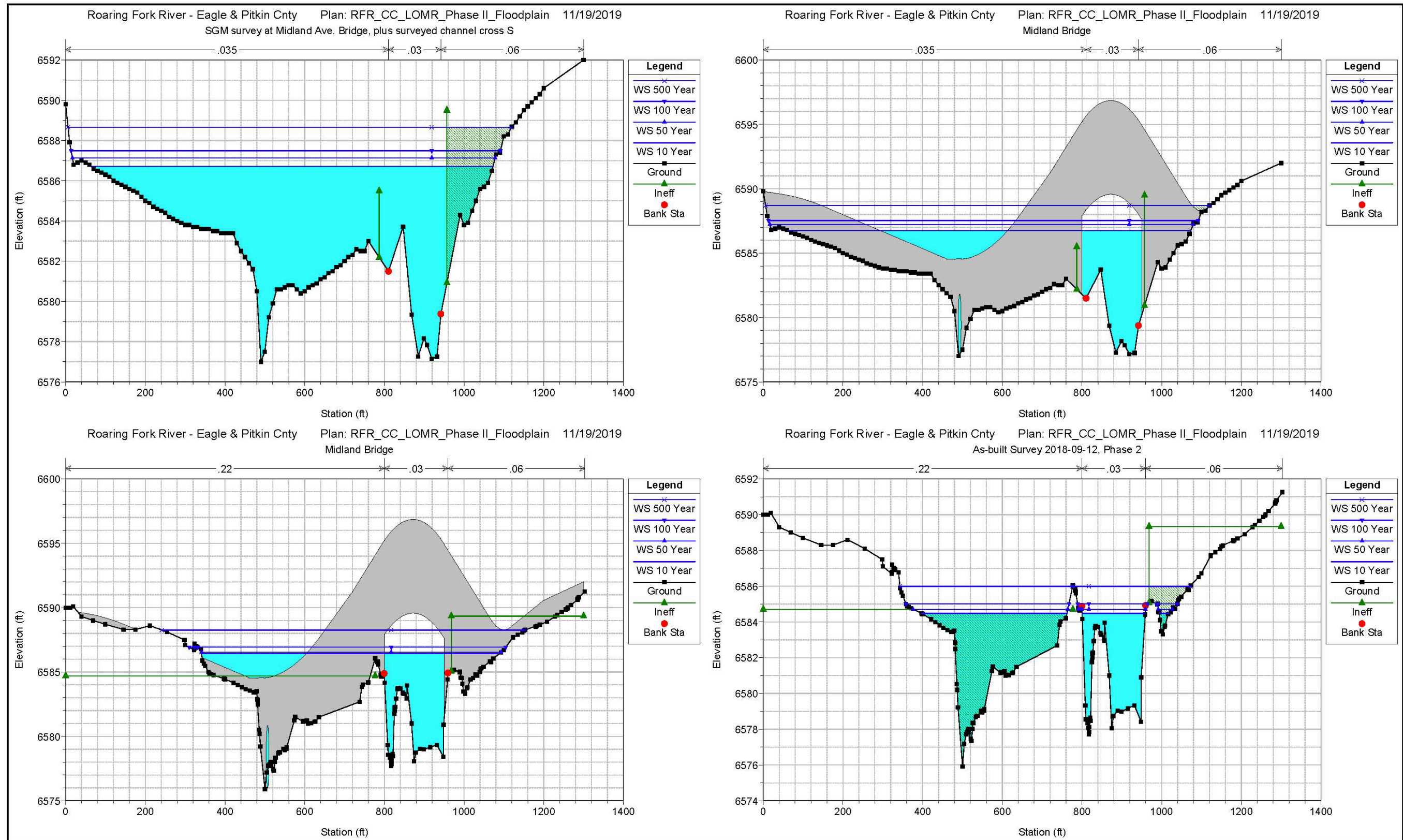
LOMR Phase II Floodway Outputs

Profile Output Table - Encroachment 1

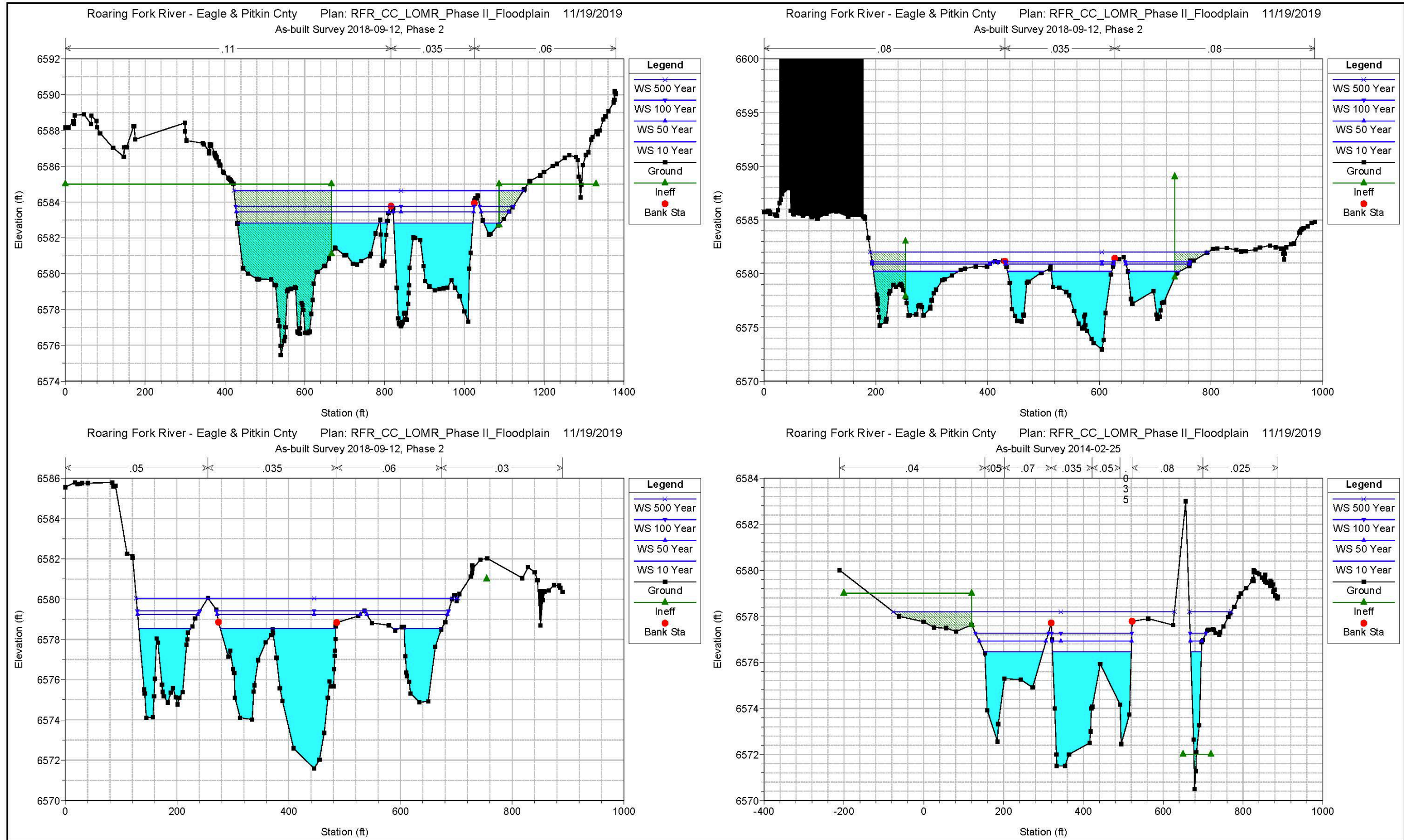
HEC-RAS Plan: RFR_AB_Ph2_FW River: RIVER-1 Reach: Reach-1 Profile: Floodway

Reach	River Sta	W.S. Elev (ft)	Prof Delta WS (ft)	E.G. Elev (ft)	Top Width Act (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Enc Sta L (ft)	Ch Sta L (ft)	Ch Sta R (ft)	Enc Sta R (ft)
Reach-1	72.5	6572.46	0.00	6572.72	680.00	2146.95	5474.97	2778.08	1000.00	1299.50	1524.00	1680.00
Reach-1	73	6573.15	0.04	6574.21	697.66	1189.01	5874.78	3336.22	1530.00	1794.00	1994.00	2227.66
Reach-1	73.5	6574.50	0.15	6574.75	688.34	1224.21	5584.54	3591.25	183.00	420.60	653.60	878.40
Reach-1	74	6574.86	0.00	6576.06	611.87	460.93	7536.00	2403.08	142.67	342.00	558.30	801.26
Reach-1	74.5	6577.27	0.00	6578.81	392.16	1708.68	8261.38	429.95	161.00	319.70	522.30	707.46
Reach-1	75	6579.42	0.01	6580.55	456.52	1492.34	8602.19	305.48	144.00	274.13	485.81	630.00
Reach-1	75.5	6581.11	0.00	6582.65	444.35	1117.39	8043.67	1238.94	193.12	431.09	627.54	762.33
Reach-1	76.1	6583.77	0.00	6585.43	405.27	895.77	9351.90	152.33	464.00	816.37	1024.85	1123.12
Reach-1	76.2	6585.03	0.01	6586.98	550.48	1705.97	8694.03		380.00	799.60	959.59	952.05
Reach-1	76.35 BR D #1	6585.91	0.12	6587.16	150.01		7500.61		380.00	799.60	959.59	952.05
Reach-1	76.35 BR U #1	6586.34	0.05	6587.36	147.00	214.37	7140.60	145.64	337.00	810.27	941.81	947.00
Reach-1	76.38	6587.49	0.00	6587.61	610.00	6813.20	3547.23	39.58	337.00	810.27	941.81	947.00
Reach-1	76.65	6588.09	0.08	6590.03	605.96	1491.61	8908.39		1241.25	1727.01	1873.52	1873.52

LOMR Phase II HEC-RAS Cross-sections

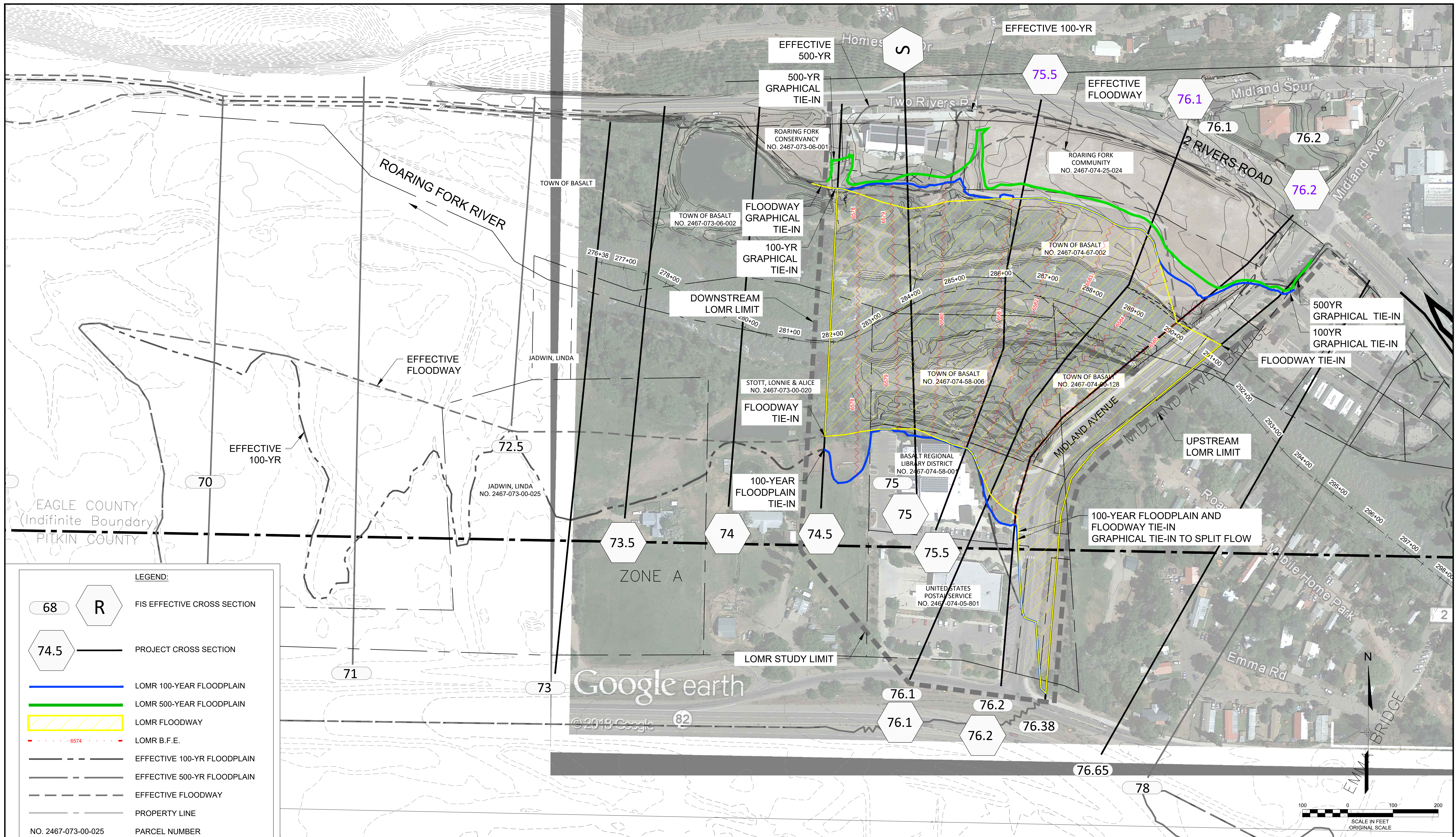


LOMR Phase II HEC-RAS Cross-sections



APPENDIX D

- Exhibit 1 – LOMR Roaring Fork River Work Map
- Exhibit 2 - Annotated Flood Rate Insurance Map 08037C0931D
- Exhibit 3 - Annotated Floodway Data Table
- Exhibit 4 - Annotated Flood Insurance Study Profile 144P



LEGEND:

68	R	FIS EFFECTIVE CROSS SECTION
74.5	—	PROJECT CROSS SECTION
— (Blue)		LOMR 100-YEAR FLOODPLAIN
— (Green)		LOMR 500-YEAR FLOODPLAIN
— (Yellow)		LOMR FLOODWAY
— (Red Dashed)		LOMR B.F.E.
— (Black Dashed)		EFFECTIVE 100-YR FLOODPLAIN
— (Black Dashed)		EFFECTIVE 500-YR FLOODPLAIN
— (Black Dashed)		EFFECTIVE FLOODWAY
— (Thin Black)		PROPERTY LINE
NO. 2467-073-00-025		PARCEL NUMBER

REFERENCE DRAWINGS	No.	DATE	DESCRIPTION	BY
X-FIRM: 08037C08310				
X-MD: 022x34				
X-EX: Floodplain				
MP: Base				
MP: Grading				
X-EX: TOPO - Office				
X-AB: FLOODPLAIN LOMR Phase 2				
X-PLAT: 11026 BDRY				
X-PP: SITE				
11190 PNTS X-SECTIONS SURVEY				
11190 FLOOD OUT 11-17-15				
X-RM: Plan				
Details				
11190_BASE_1				
Basalt_Google_Map_05-10-18				
18091 SURFACE Junk				
ACAD-18091-EXCOND-LOMR				

COMPUTER FILE MANAGEMENT
FILE NAME: R:\11.014.011.000 (Basalt)\DWG\LOMR_Phase2\Basalt_RFR_LOMR_Phase 2_Work Map.dwg
CTB FILE: ---
PLOT DATE: 12/11/2019 4:36 PM
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

SHEET KEY

NO.	DATE	DESCRIPTION	BY

HORIZONTAL CONTROL:
 MODIFIED COLORADO STATE PLAIN CENTRAL ZONE LAMBERT CONFORMAL PROJECT (NAD 83/92 INTERNATIONAL FEET). ALL COORDINATE POINTS WERE ADJUSTED TO A LOCAL PROJECT DATUM ELEVATION OF 6,500 FEET. THE COMBINED SCALE FACTOR FOR PROJECT COORDINATES IS:
 COMBINED FACTOR: 0.999636659
 RECIPROCAL FACTOR: 1.000363474

VERTICAL CONTROL:
 NGVD 29 PROVIDED FROM USGS BENCHMARKS:

NAME	TYPE	ORDER	ELEVATION
AP4	USGS	3RD	6589.20'
E 158	USGS	2ND	6749.07'
F 158	USGS	2ND	6640.66'
G 158	USGS	2ND	6507.86'

PREPARED BY:
Matrix
 DESIGN GROUP

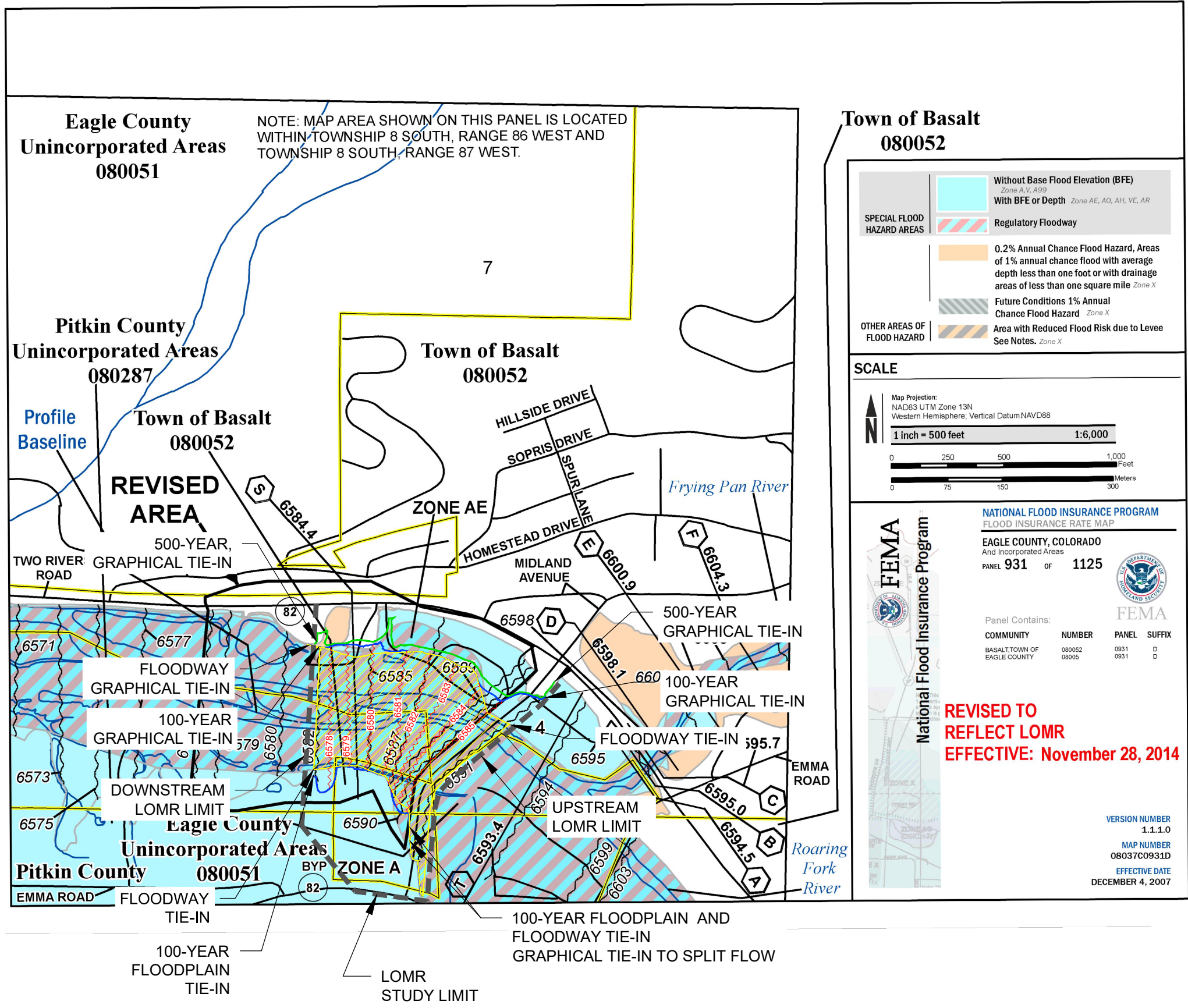
SEAL

 FOR AND ON BEHALF OF
 MATRIX DESIGN GROUP, INC.
 PROJECT No. 11.014.011

**ROARING FORK RIVER RESTORATION
 AT BASALT RIVER PARK - PHASE II**

**LETTER OF MAP REVISION
 EXHIBIT 1 - WORKMAP**

DESIGNED BY:	HTH	SCALE:	DATE ISSUED:	November 2019	DRAWING No.
DRAWN BY:	HTH	HORIZ:	1"=100'		
CHECKED BY:	RLK	VERT:	1"=10'	SHEET	OF
					EX-1



**Town of Basalt
080052**

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

SCALE

Map Projection:
NAD83 UTM Zone 13N
Western Hemisphere, Vertical Datum NAVD88

1 inch = 500 feet 1:6,000

0 250 500 1,000 Feet
0 75 150 300 Meters

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

EAGLE COUNTY, COLORADO
And Incorporated Areas
PANEL 931 OF 1125

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
BASALT, TOWN OF EAGLE COUNTY	080052 08005	0931 0931	D D

REVISOR TO REFLECT LOMR EFFECTIVE: November 28, 2014

VERSION NUMBER 1.1.1.0
MAP NUMBER 08037C0931D
EFFECTIVE DATE DECEMBER 4, 2007

EXHIBIT 2 - ANNOTATED FIRM

LEGEND:

- PROPOSED 100-YEAR FLOODPLAIN
- PROPOSED 500-YEAR FLOODPLAIN
- PROPOSED FLOODWAY
- PROPOSED B.F.E. (NGVD 29)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
						FEET (NGVD)		
ROARING FORK RIVER								
A	770	1,135	2,255	4.8	6,385.3	6,385.3	6,385.3	0.0
B	2,663	367	1,078	10.0	6,399.1	6,399.1	6,399.1	0.0
C	4,339	535	1,350	8.1	6,415.2	6,415.2	6,415.2	0.0
D	6,356	1,384	2,563	4.2	6,428.2	6,428.2	6,428.2	0.0
E	7,637	996	1,950	5.5	6,436.2	6,436.2	6,436.2	0.0
F	8,645	250	1,381	7.8	6,440.6	6,440.6	6,440.6	0.0
G	9,887	161	845	12.8	6,452.2	6,452.2	6,452.2	0.0
H	10,902	413	1,244	8.7	6,461.6	6,461.6	6,461.6	0.0
I	12,884	270	1,025	10.5	6,475.5	6,475.5	6,475.5	0.0
J	13,810	187	1,417	7.6	6,483.3	6,483.3	6,483.3	0.0
K	15,558	421	1,341	8.1	6,492.3	6,492.3	6,492.3	0.0
L	17,311	150	847	12.8	6,502.8	6,502.8	6,502.8	0.0
M	18,726	185	1,024	10.6	6,513.6	6,513.6	6,513.6	0.0
N	19,461	134	1,001	10.8	6,520.2	6,520.2	6,520.2	0.0
O	21,275	112/12 ²	741	14.0	6,533.6	6,533.6	6,533.6	0.0
P	23,183	346	1,032	10.1	6,543.5	6,543.5	6,543.5	0.0
Q	24,952	444	2,029	5.1	6,556.4	6,556.4	6,556.4	0.0
R	26,178	605	2,196	4.7	6,567.2	6,567.2	6,567.2	0.0
S	28,358	494	1,570	6.2	6,584.2	6,584.2	6,584.2	0.0
T ³	29,219	610/370 ²	2,381	4.4	6,593.4	6,593.4	6,593.5	0.1
U ⁴	30,144	295	1,288	7.3	6,604.5	6,604.5	6,604.5	0.0
V ⁴	31,507	289	921	10.2	6,620.3	6,620.3	6,620.3	0.0
W ⁴	33,910	481	1,186	7.9	6,652.0	6,652.0	6,652.0	0.0
X ⁴	35,200	281	978	9.6	6,667.9	6,667.9	6,667.9	0.0
Y ⁴	36,405	405	1,088	9.4	6,682.0	6,682.0	6,682.0	0.0
Z ⁴	37,525	406	1,344	7.0	6,700.0	6,700.0	6,700.0	0.0

Reach Revised

REVISED DATA

¹ Stream distance in feet above Eagle / Garfield county line

³ Shown without consideration of Lateral flow

² Total width/width in Eagle County

⁴ Located outside of Eagle County

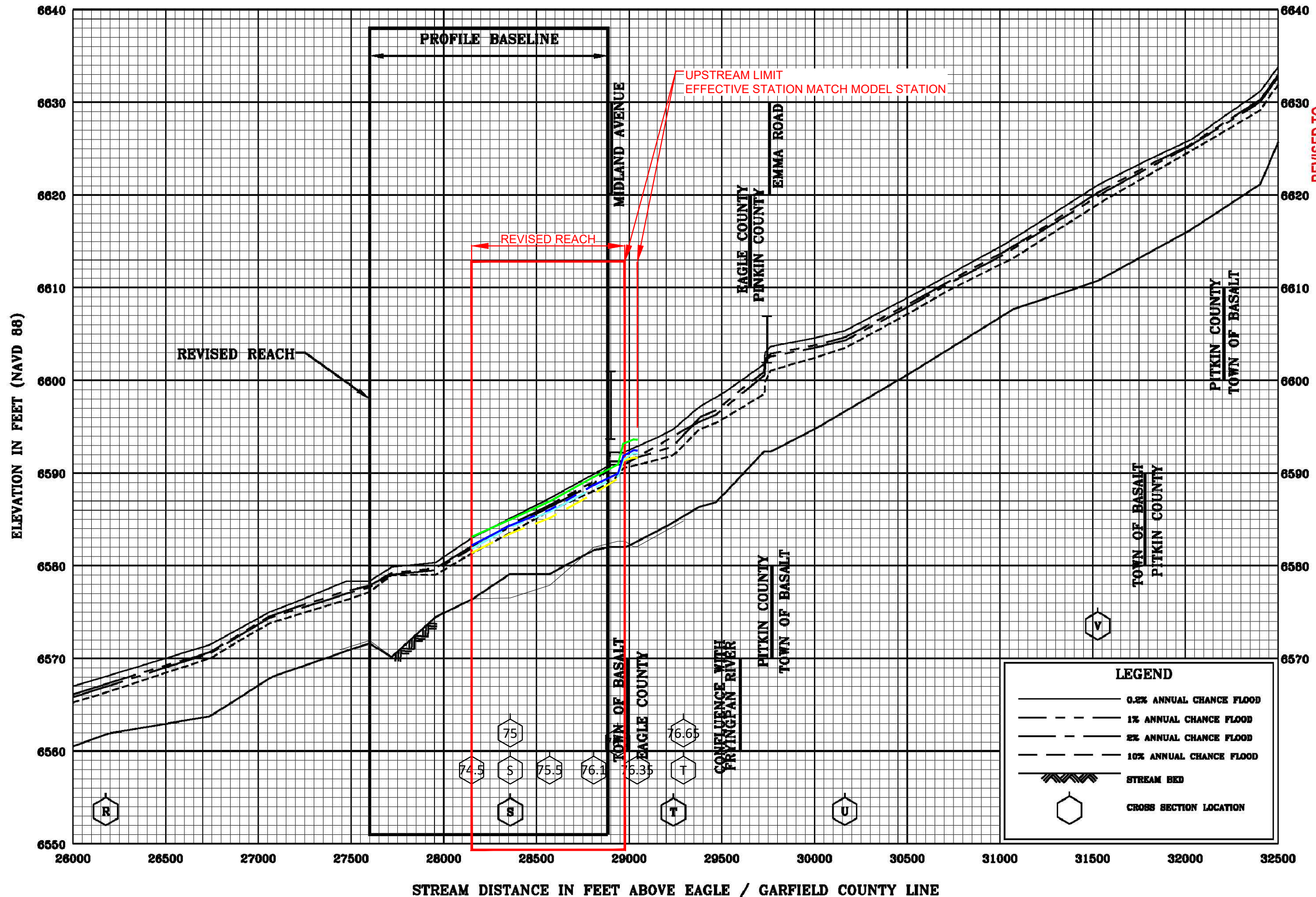
REVISED TO REFLECT LOMR EFFECTIVE: November 28, 2014

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY
EAGLE COUNTY, CO
 AND INCORPORATED AREAS

FLOODWAY DATA

ROARING FORK RIVER



REVISED TO
REFLECT LOMR
EFFECTIVE: November 28, 2014

FEDERAL EMERGENCY MANAGEMENT AGENCY
EAGLE COUNTY, CO
AND INCORPORATED AREAS

ROARING FORK RIVER

APPENDIX E

Compact Disk



NATIONAL FLOOD INSURANCE PROGRAM

FEMA PRODUCTION AND TECHNICAL SERVICES CONTRACTOR

April 3, 2020

Mr. Hung-Teng Ho, P.E.
Project Engineer
Matrix Design Group, Inc.
1601 Blake Street, Suite 200
Denver, CO 80202

IN REPLY REFER TO:
Case No.: 20-08-0275P
Community: Town of Basalt, Eagle County,
and Pitkin County, CO
Community No.: 080052, 080051, 080287

316-AD

Dear Mr. Ho:

This responds to your request dated January 7, 2020, that the Department of Homeland Security's Federal Emergency Management Agency (FEMA) issue a revision to the Flood Insurance Rate Map (FIRM) for Eagle County and Pitkin County, Colorado, and Incorporated Areas. Pertinent information about the request is listed below.

Identifier:	Roaring Fork River Restoration
Flooding Source:	Roaring Fork River
FIRM Panel(s) Affected:	08037C0931D and 08097C0081E

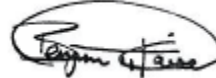
The data required to complete our review, which must be submitted within 90 days of the date of this letter, are listed on the attached summary.

If we do not receive the required data within 90 days, we will suspend our processing of your request. Any data submitted after 90 days will be treated as an original submittal and will be subject to all submittal/payment procedures, including the flat review and processing fee for requests of this type established by the current fee schedule. The current fee schedule is available for your information on the FEMA website at <https://www.fema.gov/flood-map-related-fees>.

FEMA receives a very large volume of requests and cannot maintain inactive requests for an indefinite period of time. Therefore, we are unable to grant extensions for the submission of required data/fee for revision requests. If a requester is informed by letter that additional data are required to complete our review of a request, the data/fee **must** be submitted within 90 days of the date of the letter. Any fees already paid will be forfeited if the requested data are not received within 90 days.

If you have general questions about your request, FEMA policy, or the National Flood Insurance Program, please contact the FEMA Map Information eXchange (FMIX), toll free, at 1-877-FEMA MAP (1-877-336-2627). If you have specific questions concerning your request, please contact your case reviewer, Mr. Alex Bauch, by e-mail at bauchal@cdmsmith.com or by telephone at (303) 383-2376, or the Revisions Coordinate for your state, Mr. Henry Poburka, CFM, by e-mail poburkahw@cdmsmith.com or by telephone at (303) 383-2369.

Sincerely,



Benjamin Kaiser, P.E., CFM
Revisions Manager
Compass PTS JV

Attachment:

Summary of Additional Data

cc: Mr. Ryan Mahoney
Manager, Town of Basalt

Ms. Nicole Mosby
Staff Engineer
Eagle County

Ms. Catherine Christoff
Planning Engineer
Pitkin County



NATIONAL FLOOD INSURANCE PROGRAM

FEMA PRODUCTION AND TECHNICAL SERVICES CONTRACTOR

Summary of Additional Data Required to Support a Letter of Map Revision (LOMR)

Case No.: 20-08-0275P

Requester: Mr. Hung-Teng Ho, P.E.

Community: Town of Basalt, Eagle County,
and Pitkin County, CO

Community No.: 080052, 080051, 080287

The issues listed below must be addressed before we can continue the review of your request.

1. Our review of the submitted post-project conditions Hydrologic Engineering Center's River Analysis System HEC-RAS 4.1.0 hydraulic analysis revealed the following issues. Please submit a revised hydraulic analysis that corrects these issues and provide digital copies of the input and output files for this model.
 - a. Our review revealed discrepancies in the locations of the encroachment stations along the revised reach of the Roaring Fork River. Please revise the post-project conditions hydraulic model so that the encroachment stations are located at the bank stations or in the floodway fringe, the area between the channel bank station and the limits of the 1-percent-annual-chance (base) floodplain, for all cross sections.
 - b. Our review revealed the use of ineffective flow inside the floodway at Cross Sections 75.5 and 76.1. The floodway should be reserved for actively conveying the base flood. As ineffective flow is defined as the area of a cross section that will contain water that is not actively being conveyed, please adjust the encroachment stations to ensure the floodway contains only areas that will actively convey flow.
2. The submitted topographic work map, entitled "Roaring Fork River Restoration at Basalt River Park – Phase II," prepared by Matrix Design Group, dated December 23, 2019, does not provide essential information required to complete our review of this request. Please submit a revised topographic work map, certified by a registered Professional Engineer, that shows all applicable items listed in Section C of Application/Certification Form 2, entitled "Riverine Hydrology and Hydraulics Form," including the following information:
 - a. Please show the flow line used in the hydraulic model.
 - b. For clarity, please revise the format (line type, color, scale) of the effective 0.2-percent-annual-chance floodplain, base floodplain, and regulatory floodway to make them more visible.
 - c. Please label the topographic contours so that the revised floodplain delineations can be verified.

- d. The effective 0.2-percent-annual-chance floodplain, base floodplain, and regulatory floodway boundary delineations were not shown on the above-referenced topographic work map on the south bank upstream of the revision area. Please update the topographic work map and show the effective and proposed floodway boundary delineations clearly in different line type and color.
 - e. For clarity and ease of viewing, please remove the red base flood elevation (BFE) lines from the work map.
 - f. The base floodplain and regulatory floodway topwidths in the proposed conditions hydraulic analysis do not match the approximate base floodplain and floodway topwidths shown on the above referenced work map at Cross Section 76.38. Please revise to ensure the modeled and mapped topwidths are consistent.
3. The submitted annotated FIRM does not include all the effective FIRM panels affected by your revision request. Our review revealed panel 08097C0081E of the FIRM for Pitkin County, Colorado and Incorporated Areas is affected. Please submit annotated copies of all affected FIRM panels, at the scales of the effective FIRM, that clearly show the revised boundary delineations of the base floodplain shown on the above-referenced topographic work map and how they tie-in to the boundary delineations shown on the effective FIRM at the downstream and upstream ends of the revised reach.
 4. Please submit an updated annotated FIRM that is consistent with the changes requested in the items above.
 5. We have received the draft notification that was included in your submission. Once we are confident that there will be no further changes to the modeling and/or mapping, we will provide our comments on the draft so that it can be finalized and distributed.

Please upload the required data using the Online LOMC website at <https://hazards.fema.gov/femaportal/onlinelomc/signin>.

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



NATIONAL FLOOD INSURANCE PROGRAM

FEMA PRODUCTION AND TECHNICAL SERVICES CONTRACTOR

August 5, 2020

Mr. Robert Krehbiel, P.E.
Vice President
Matrix Design Group, Inc.
1601 Blake Street, Suite 200
Denver, CO 80202

IN REPLY REFER TO:
Case No.: 20-08-0275P
Community: Town of Basalt, Eagle County,
and Pitkin County, CO
Community No.: 080052, 080051, 080287

316-AD

Dear Mr. Krehbiel:

This responds to your request dated January 7, 2020, that the Department of Homeland Security's Federal Emergency Management Agency (FEMA) issue a revision to the Flood Insurance Rate Map (FIRM) for Eagle County and Pitkin County, Colorado, and Incorporated Areas. Pertinent information about the request is listed below.

Identifier:	Roaring Fork River Restoration
Flooding Source:	Roaring Fork River
FIRM Panel(s) Affected:	08037C0931D and 08097C0081E

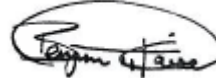
The data required to complete our review, which must be submitted within 90 days of the date of this letter, are listed on the attached summary.

If we do not receive the required data within 90 days, we will suspend our processing of your request. Any data submitted after 90 days will be treated as an original submittal and will be subject to all submittal/payment procedures, including the flat review and processing fee for requests of this type established by the current fee schedule. The current fee schedule is available for your information on the FEMA website at <https://www.fema.gov/flood-map-related-fees>.

FEMA receives a very large volume of requests and cannot maintain inactive requests for an indefinite period of time. Therefore, we are unable to grant extensions for the submission of required data/fee for revision requests. If a requester is informed by letter that additional data are required to complete our review of a request, the data/fee **must** be submitted within 90 days of the date of the letter. Any fees already paid will be forfeited if the requested data are not received within 90 days.

If you have general questions about your request, FEMA policy, or the National Flood Insurance Program, please contact the FEMA Map Information eXchange (FMIX), toll free, at 1-877-FEMA MAP (1-877-336-2627). If you have specific questions concerning your request, please contact your case reviewer, Mr. Alex Bauch, by e-mail at bauchal@cdmsmith.com or by telephone at (303) 383-2376, or the Revisions Coordinate for your state, Mr. Henry Poburka, CFM, by e-mail poburkahw@cdmsmith.com or by telephone at (303) 383-2369.

Sincerely,

A handwritten signature in black ink, appearing to read "Benjamin Kaiser", enclosed within a hand-drawn oval.

Benjamin Kaiser, P.E., CFM
Revisions Manager
Compass PTS JV

Attachment:

Summary of Additional Data
Annotated Property Owner Notification

cc: Mr. Ryan Mahoney
Manager, Town of Basalt

Ms. Nicole Mosby, P.E., CFM
Staff Engineer
Eagle County

Ms. Catherine Christoff, P.E.
Planning Engineer
Pitkin County



NATIONAL FLOOD INSURANCE PROGRAM

FEMA PRODUCTION AND TECHNICAL SERVICES CONTRACTOR

Summary of Additional Data Required to Support a Letter of Map Revision (LOMR)

Case No.: 20-08-0275P

Requester: Mr. Robert Krehbiel, P.E.

Community: Town of Basalt, Eagle County,
and Pitkin County, CO

Community No.: 080052, 080051, 080287

The issues listed below must be addressed before we can continue the review of your request.

1. Please provide documentation of the current corporate limits for the Town of Basalt. Acceptable documentation includes a current corporate limits map provided by the community along with an annexation agreement, if applicable. Additionally, please provide the Town of Basalt corporate limit map in digital format. Please ensure the digital data are spatially referenced and cite what projection (coordinate system, example: UTM/State Plane) was used.
2. Our review of the submitted draft Property Owner Notification received on June 23, 2020, revealed that it needs revision before it can be published. Please prepare the final Property Owner Notification based on our revised draft notice. Documentation of legal notice may take the form of a copy of letter sent (letter must be on community letterhead) along with either a mailing list or certified mailing receipts. Individual notices that are not sent on community letterhead must also include certification from the community that all affected property owners have been notified of the floodway revision. The individual legal notices must include the extent of revision and contact information for any interested parties and must also mention the community's intent to revise the regulatory floodway. **Please submit a draft copy of the notification for verification of content, prior to publication or distribution.**

Please upload the required data using the Online LOMC website at
<https://hazards.fema.gov/femaportal/onlinelomc/signin>.

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