



Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP REVISION DETERMINATION DOCUMENT

COMMUNITY AND REVISION INFORMATION		PROJECT DESCRIPTION	BASIS OF REQUEST
COMMUNITY	City of Boulder Boulder County Colorado	CULVERT EXCAVATION FILL LEVEE	FLOODWAY HYDRAULIC ANALYSIS LEVEE CERTIFICATION UPDATED TOPOGRAPHIC DATA
	COMMUNITY NO.: 080024		
IDENTIFIER	Lower Bear Canyon Creek and Harrison Levee Improvements	APPROXIMATE LATITUDE AND LONGITUDE: 40.014, -105.240 SOURCE: Google Earth DATUM: NAD 83	
ANNOTATED MAPPING ENCLOSURES		ANNOTATED STUDY ENCLOSURES	
TYPE: FIRM* NO.: 08013C0413J DATE: December 18, 2012		DATE OF EFFECTIVE FLOOD INSURANCE STUDY: December 18, 2012 FLOOD PROFILES: 14P and 15P FLOODWAY DATA TABLE: 6	

Enclosures reflect changes to flooding sources affected by this revision.

* FIRM - Flood Insurance Rate Map

FLOODING SOURCE AND REVISED REACH

See Page 2 for Additional Flooding Sources

Bear Canyon Creek - from approximately 140 feet downstream of Arapahoe Avenue to just upstream of Foothills Parkway

SUMMARY OF REVISIONS

Flooding Source	Effective Flooding	Revised Flooding	Increases	Decreases
Bear Canyon Creek	Zone AE	Zone AE	YES	YES
	Zone X (shaded)	Zone X (shaded)	YES	YES
	BFEs*	BFEs	YES	YES
	Floodway	Floodway	YES	YES

* BFEs - Base Flood Elevations

DETERMINATION

This document provides the determination from the Department of Homeland Security's Federal Emergency Management Agency (FEMA) regarding a request for a Letter of Map Revision (LOMR) for the area described above. Using the information submitted, we have determined that a revision to the flood hazards depicted in the Flood Insurance Study (FIS) report and/or National Flood Insurance Program (NFIP) map is warranted. This document revises the effective NFIP map, as indicated in the attached documentation. Please use the enclosed annotated map panels revised by this LOMR for floodplain management purposes and for all flood insurance policies and renewals in your community.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Information eXchange toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304. Additional Information about the NFIP is available on our Web site at <http://www.fema.gov/national-flood-insurance-program>.

Patrick "Rick" F. Sacbbit, P.E., Branch Chief
Engineering Services Branch
Federal Insurance and Mitigation Administration

15-08-0360P

102-I-A-C



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**LETTER OF MAP REVISION
DETERMINATION DOCUMENT (CONTINUED)**

OTHER FLOODING SOURCES AFFECTED BY THIS REVISION

FLOODING SOURCE AND REVISED REACH

Bear Canyon Creek - from approximately 140 feet downstream of Arapahoe Avenue to just downstream of Foothills Parkway

SUMMARY OF REVISIONS

Flooding Source	Effective Flooding	Revised Flooding	Increases	Decreases
Bear Canyon Creek	Zone AO	Zone AO	YES	YES

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Information eXchange toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304. Additional Information about the NFIP is available on our Web site at <http://www.fema.gov/national-flood-insurance-program>.

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LETTER OF MAP REVISION DETERMINATION DOCUMENT (CONTINUED)

COMMUNITY INFORMATION

APPLICABLE NFIP REGULATIONS/COMMUNITY OBLIGATION

We have made this determination pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (P.L. 93-234) and in accordance with the National Flood Insurance Act of 1968, as amended (Title XIII of the Housing and Urban Development Act of 1968, P.L. 90-448), 42 U.S.C. 4001-4128, and 44 CFR Part 65. Pursuant to Section 1361 of the National Flood Insurance Act of 1968, as amended, communities participating in the NFIP are required to adopt and enforce floodplain management regulations that meet or exceed NFIP criteria. These criteria, including adoption of the FIS report and FIRM, and the modifications made by this LOMR, are the minimum requirements for continued NFIP participation and do not supersede more stringent State/Commonwealth or local requirements to which the regulations apply.

We provide the floodway designation to your community as a tool to regulate floodplain development. Therefore, the floodway revision we have described in this letter, while acceptable to us, must also be acceptable to your community and adopted by appropriate community action, as specified in Paragraph 60.3(d) of the NFIP regulations.

NFIP regulations Subparagraph 60.3(b)(7) requires communities to ensure that the flood-carrying capacity within the altered or relocated portion of any watercourse is maintained. This provision is incorporated into your community's existing floodplain management ordinances; therefore, responsibility for maintenance of the altered or relocated watercourse, including any related appurtenances such as bridges, culverts, and other drainage structures, rests with your community. We may request that your community submit a description and schedule of maintenance activities necessary to ensure this requirement.

COMMUNITY REMINDERS

We based this determination on the 1-percent-annual-chance flood discharges computed in the FIS for your community without considering subsequent changes in watershed characteristics that could increase flood discharges. Future development of projects upstream could cause increased flood discharges, which could cause increased flood hazards. A comprehensive restudy of your community's flood hazards would consider the cumulative effects of development on flood discharges subsequent to the publication of the FIS report for your community and could, therefore, establish greater flood hazards in this area.

Your community must regulate all proposed floodplain development and ensure that any permits required by Federal or State/Commonwealth law have been obtained. State/Commonwealth or community officials, based on knowledge of local conditions and in the interest of safety, may set higher standards for construction or may limit development in floodplain areas. If your State/Commonwealth or community has adopted more restrictive or comprehensive floodplain management criteria, those criteria take precedence over the minimum NFIP requirements.

We will not print and distribute this LOMR to primary users, such as local insurance agents or mortgage lenders; instead, the community will serve as a repository for the new data. We encourage you to disseminate the information in this LOMR by preparing a news release for publication in your community's newspaper that describes the revision and explains how your community will provide the data and help interpret the NFIP maps. In that way, interested persons, such as property owners, insurance agents, and mortgage lenders, can benefit from the information.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Information eXchange toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304. Additional Information about the NFIP is available on our Web site at <http://www.fema.gov/national-flood-insurance-program>.

A handwritten signature in black ink, appearing to read "Rick Sacbbit".

Patrick "Rick" F. Sacbbit, P.E., Branch Chief
Engineering Services Branch
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LETTER OF MAP REVISION DETERMINATION DOCUMENT (CONTINUED)

This revision has met our criteria for removing an area from the 1-percent-annual-chance floodplain to reflect the placement of fill. However, we encourage you to require that the lowest adjacent grade and lowest floor (including basement) of any structure placed within the subject area be elevated to or above the Base (1-percent-annual-chance) Flood Elevation.

We have designated a Consultation Coordination Officer (CCO) to assist your community. The CCO will be the primary liaison between your community and FEMA. For information regarding your CCO, please contact:

Ms. Jeanine D. Petterson
Director, Mitigation Division
Federal Emergency Management Agency, Region VIII
Denver Federal Center, Building 710
P.O. Box 25267
Denver, CO 80225-0267
(303) 235-4830

STATUS OF THE COMMUNITY NFIP MAPS

We are processing a revised FIRM and FIS report for Boulder County in our countywide format; therefore, we will not physically revise and republish the FIRM and FIS report for your community to incorporate the modifications made by this LOMR at this time. Preliminary copies of the countywide FIRM and FIS report, which present information from the effective FIRMs and FIS reports for your community and incorporated communities in Boulder County, were submitted to your community for review on July 23, 2015. We will incorporate the modifications made by this LOMR into the countywide FIRM and FIS report before they become effective.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Information eXchange toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304. Additional Information about the NFIP is available on our Web site at <http://www.fema.gov/national-flood-insurance-program>.

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**LETTER OF MAP REVISION
DETERMINATION DOCUMENT (CONTINUED)**

PUBLIC NOTIFICATION OF REVISION

A notice of changes will be published in the *Federal Register*. This information also will be published in your local newspaper on or about the dates listed below and through FEMA's Flood Hazard Mapping Web site at https://www.floodmaps.fema.gov/fhm/Scripts/bfe_main.asp.

LOCAL NEWSPAPER

Name: *The Daily Camera*

Dates: March 17, 2016 and March 24, 2016

Within 90 days of the second publication in the local newspaper, a citizen may request that we reconsider this determination. Any request for reconsideration must be based on scientific or technical data. Therefore, this letter will be effective only after the 90-day appeal period has elapsed and we have resolved any appeals that we receive during this appeal period. Until this LOMR is effective, the revised flood hazard determination information presented in this LOMR may be changed.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Information eXchange toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304. Additional Information about the NFIP is available on our Web site at <http://www.fema.gov/national-flood-insurance-program>.

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Engineering Services Branch
Federal Insurance and Mitigation Administration

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
BEAR CANYON CREEK								
A	1,554	124	805	6.1	5,243.0	5,242.9 ²	5,242.9	0.0
B	2,487	210	508	6.1	5,247.6	5,247.6	5,248.1	0.5
C	3,302	90	305	10.1	5,258.3	5,258.3	5,258.3	0.1
D	4,191	70	321	9.6	5,267.4	5,267.4	5,267.4	0.0
E	4,498	78	362	8.5	5,272.4	5,272.4	5,272.4	0.0
F	4,844	138	389	7.9	5,273.8	5,273.8	5,273.8	0.0
G	6,512	70	272	11.3	5,290.3	5,290.3	5,290.3	0.0
H	7,489	300	987	3.1	5,306.2	5,306.2	5,307.0	0.8
I	7,567	100	796	3.9	5,307.4	5,307.4	5,307.7	0.3
J	8,363	335	539	5.4	5,319.6	5,319.6	5,319.6	0.0
K	8,498	276	590	5.0	5,322.1	5,322.1	5,322.3	0.2
L	9,474	260	658	4.4	5,332.2	5,332.2	5,333.1	0.9
M	9,855	175	492	6.0	5,336.2	5,336.2	5,336.8	0.6
N	11,104	51	217	10.2	5,360.6	5,360.6	5,360.6	0.0
O	11,717	73	386	4.1	5,374.4	5,374.4	5,374.4	0.0
P	12,334	137	275	7.6	5,384.8	5,384.8	5,384.8	0.0
Q	12,536	101	256	8.2	5,390.1	5,390.1	5,390.1	0.0
R	13,695	65	199	10.0	5,416.3	5,416.3	5,416.3	0.0
S	14,807	99	208	8.8	5,443.6	5,443.6	5,443.6	0.0
T	15,213	116	204	8.5	5,455.7	5,455.7	5,455.7	0.0
U	15,553	121	205	8.5	5,465.6	5,465.6	5,465.6	0.0
V	15,910	133	218	7.6	5,477.1	5,477.1	5,477.1	0.0

↑
REVISED
DATA

¹Feet above confluence with Boulder Creek

²Elevation computed without consideration of flooding controlled by Boulder Creek

**REVISED TO
REFLECT LOMR
EFFECTIVE: July 22, 2016**

TABLE 6

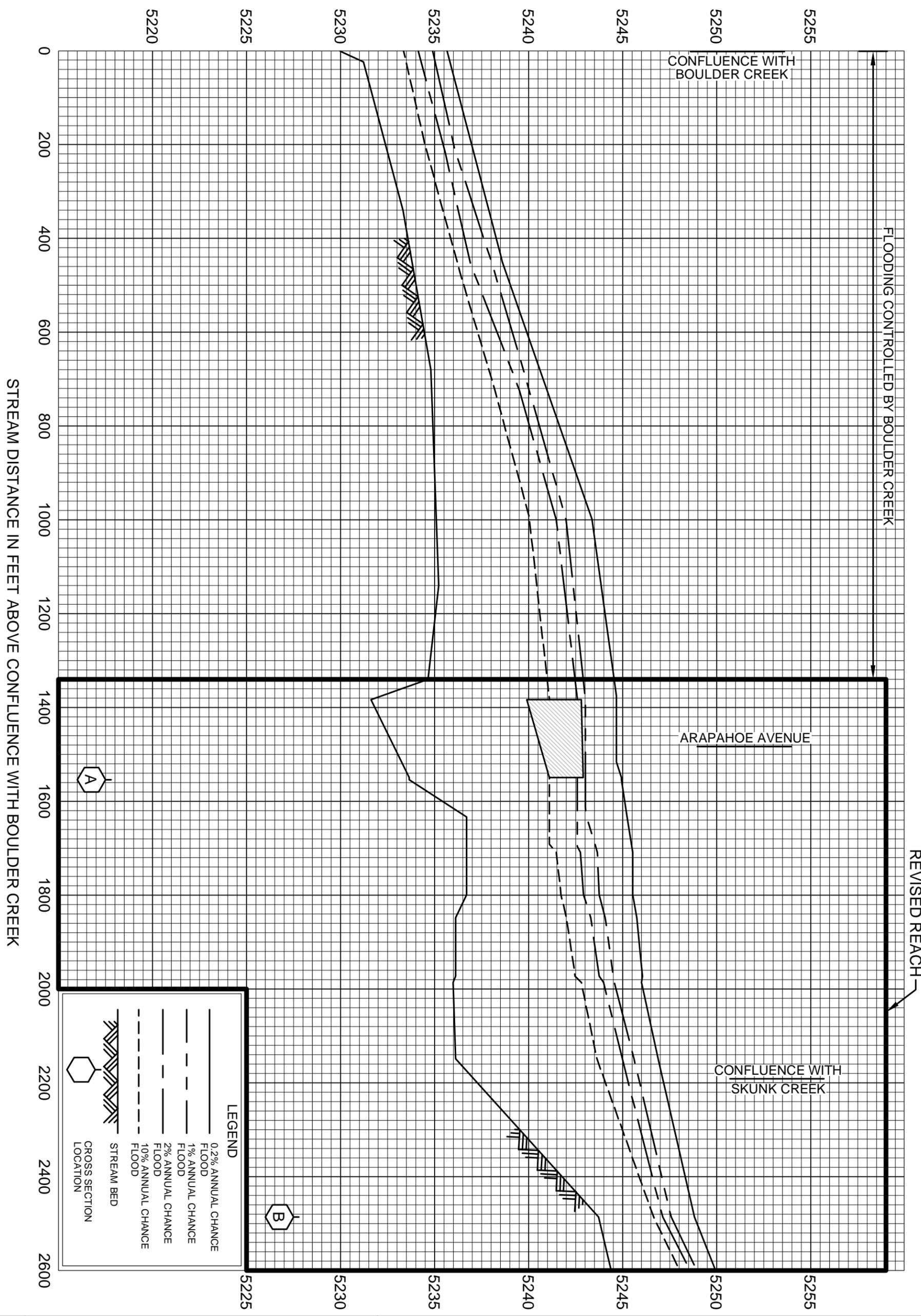
FEDERAL EMERGENCY MANAGEMENT AGENCY

**BOULDER COUNTY, CO
AND INCORPORATED AREAS**

FLOODWAY DATA

BEAR CANYON CREEK

ELEVATION IN FEET (NAVD)



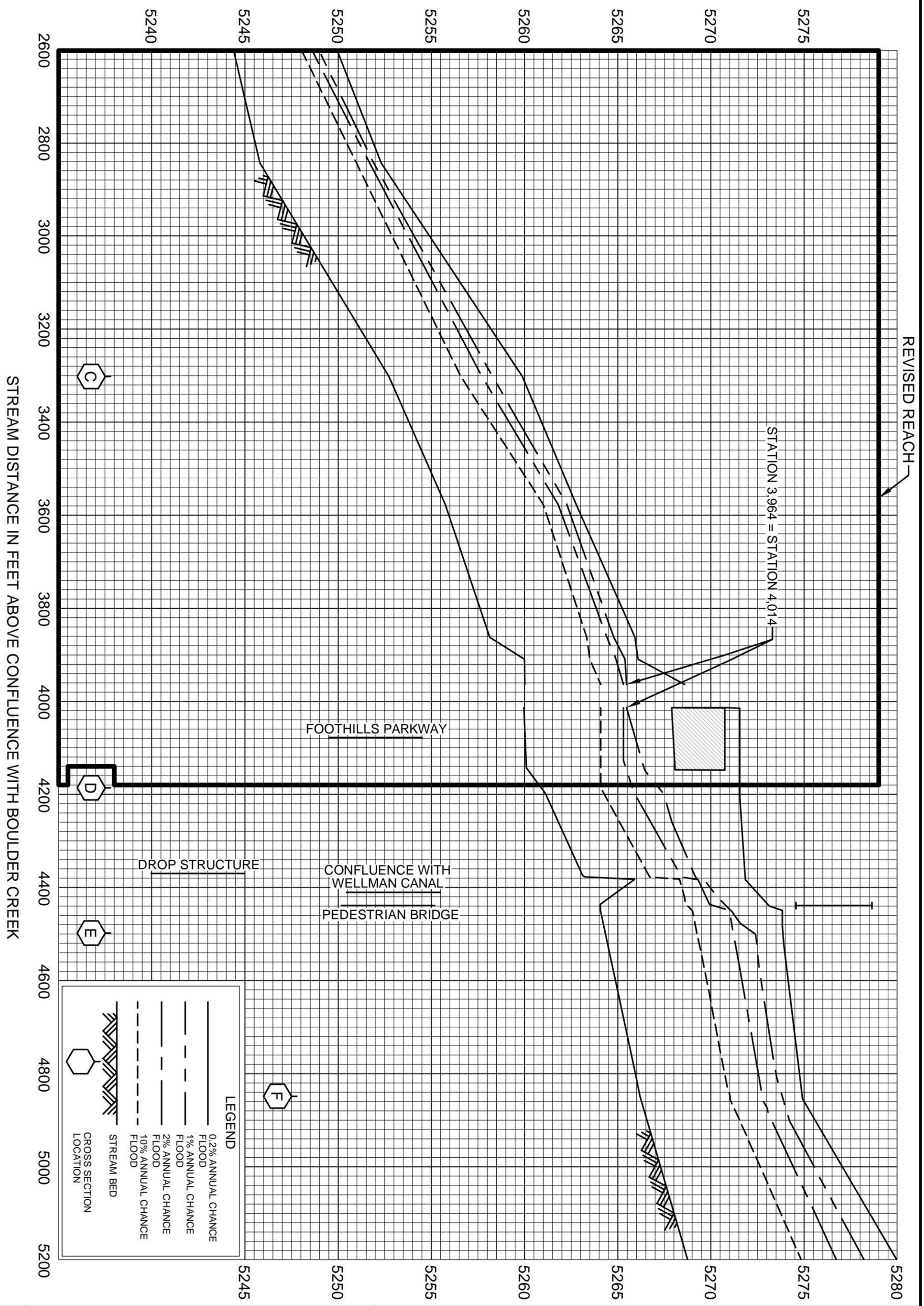
LEGEND

- 0.2% ANNUAL CHANCE FLOOD
- - - 1% ANNUAL CHANCE FLOOD
- 2% ANNUAL CHANCE FLOOD
- - - 10% ANNUAL CHANCE FLOOD
- ▨ STREAM BED
- ⬡ CROSS SECTION LOCATION

FEDERAL EMERGENCY MANAGEMENT AGENCY
**BOULDER COUNTY, CO
 AND INCORPORATED AREAS**

FLOOD PROFILES
 BEAR CANYON CREEK
 REVISED TO REFLECT LOMR
 EFFECTIVE: July 22, 2016

ELEVATION IN FEET (NAVD)

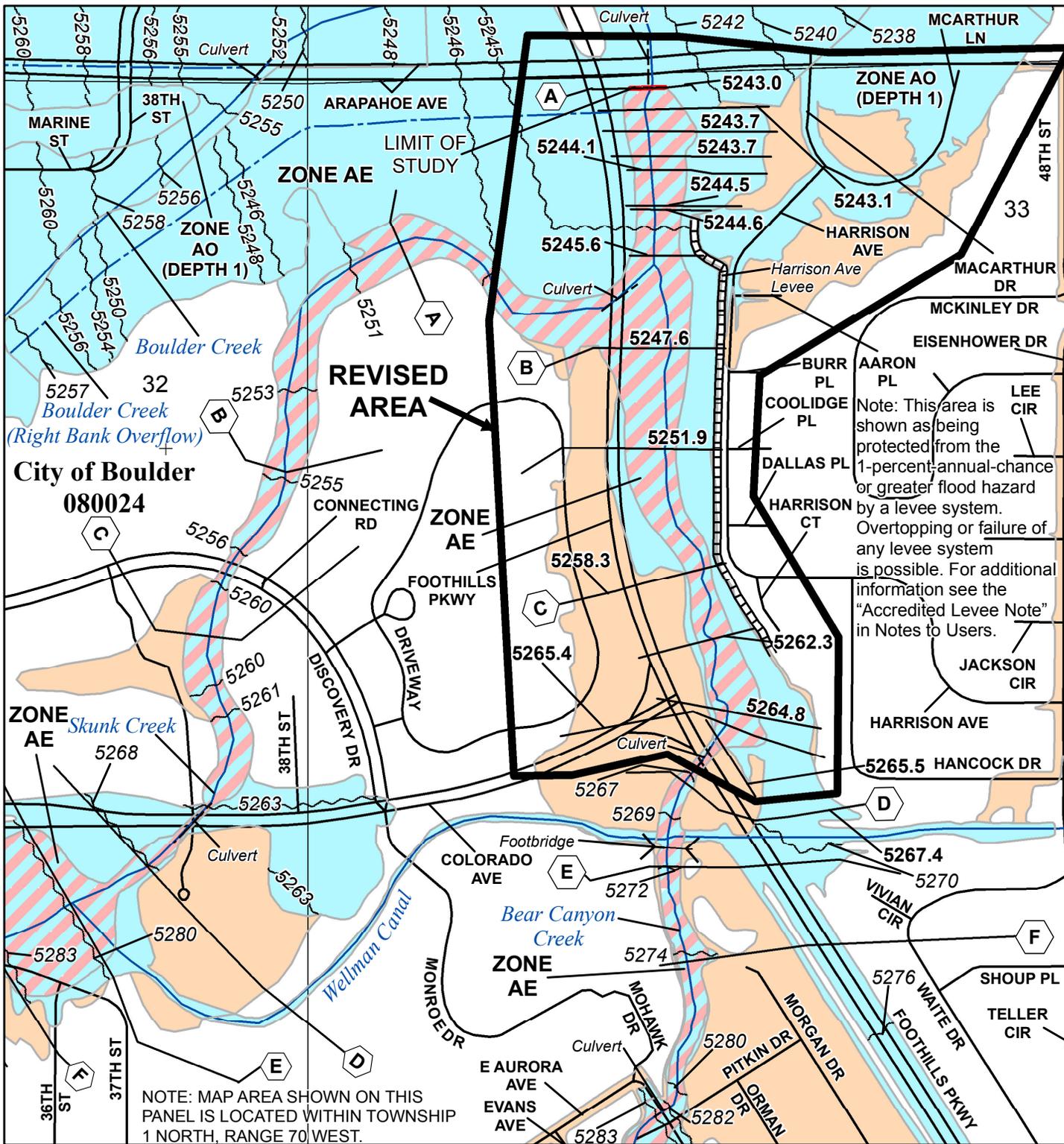


LEGEND

	0.2% ANNUAL CHANCE FLOOD
	1% ANNUAL CHANCE FLOOD
	2% ANNUAL CHANCE FLOOD
	10% ANNUAL CHANCE FLOOD
	STREAM BED
	CROSS SECTION LOCATION

FEDERAL EMERGENCY MANAGEMENT AGENCY
**BOULDER COUNTY, CO
 AND INCORPORATED AREAS**

FLOOD PROFILES
 REVISED TO REFLECT LOMR EFFECTIVE: July 22, 2016
BEAR CANYON CREEK



Accredited Levee Notes to Users: Check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1-percent-annual-chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection for areas on this panel. To mitigate flood risk in residual risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit the FEMA website at <http://www.fema.gov/national-flood-insurance-program>.

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

Note: This area is shown as being protected from the 1-percent-annual-chance or greater flood hazard by a levee system. Overtopping or failure of any levee system is possible. For additional information see the "Accredited Levee Note" in Notes to Users.

SCALE

Map Projection: NAD83 UTM Zone 13N
Western Hemisphere; Vertical Datum: NAVD 88

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

BOULDER COUNTY, COLORADO
and Incorporated Areas

PANEL 413 OF 615

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
BOULDER, CITY OF	080024	0413	J
BOULDER COUNTY	080023	0413	J

REVISED TO REFLECT LOMR EFFECTIVE: July 22, 2016

VERSION NUMBER 1.1.1.0
MAP NUMBER 08013C0413J
MAP REVISED DECEMBER 18, 2012

NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 1 NORTH, RANGE 70 WEST.