



DENVER
THE MILE HIGH CITY

AECOM

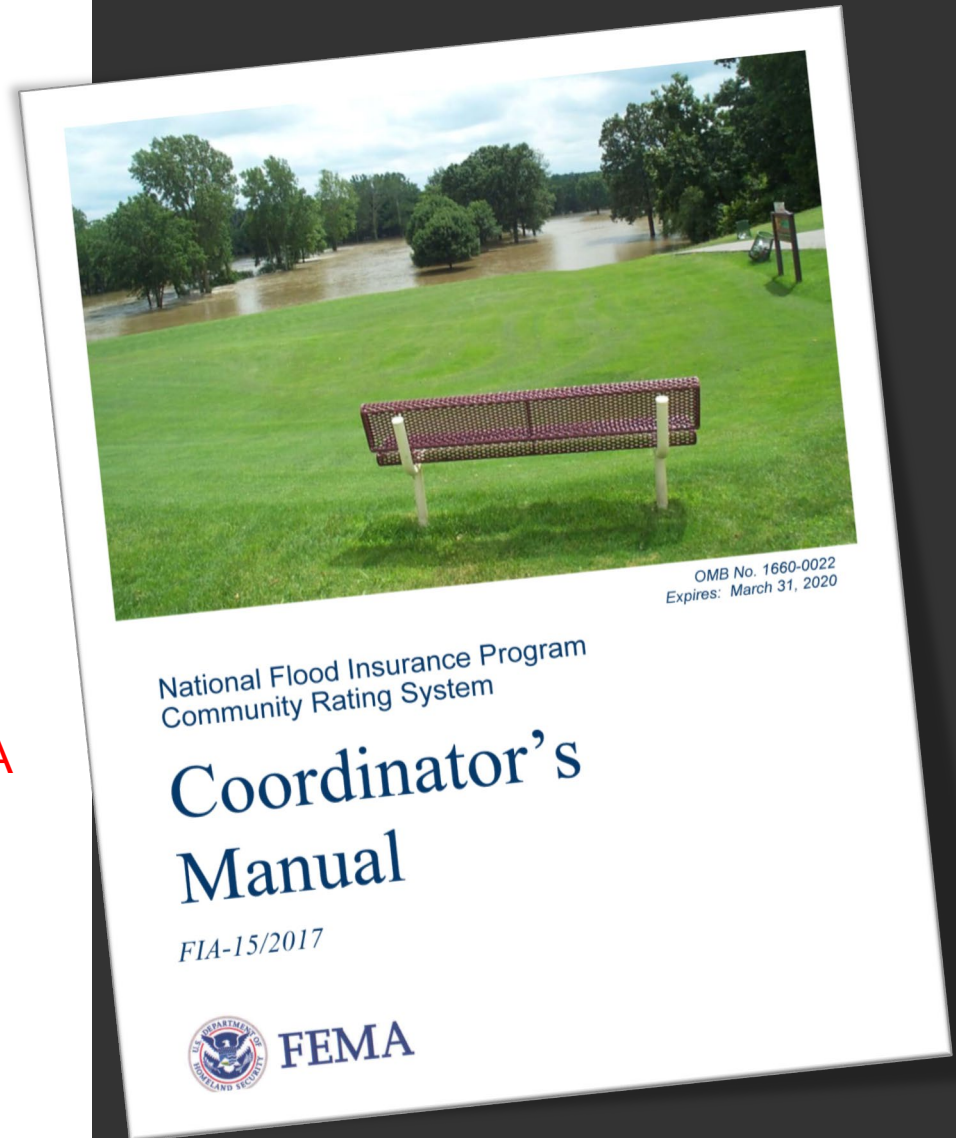
Imagine it.
Delivered.

Is that a COMPLETE Panel Number?

or Common Elevation Certificate Errors and What you can do to fix them... It's a CRS thing.

Community Rating System

- Rewards Communities for Higher Standards with Insurance Premium Discounts
- 6 Basic Requirements for Class 9
 - In the NFIP Regular Phase for 1 year
 - Must be in full compliance with the NFIP regulations
 - **Must maintain FEMA Elevation Certificates on new buildings or substantial improvements in the SFHA**
 - Address repetitive loss properties in the community
 - Maintain flood insurance where required on community-owned properties





FEMA

NATIONAL FLOOD INSURANCE PROGRAM

ELEVATION CERTIFICATE

AND

INSTRUCTIONS

2015 EDITION

U.S. DEPARTMENT OF HOMELAND SECURITY
Federal Emergency Management Agency
National Flood Insurance Program

OMB No. 1560-0008
Expiration Date: November 30, 2018

ELEVATION CERTIFICATE

Important: Follow the instructions on pages 1-9.

Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

SECTION A - PROPERTY INFORMATION		FOR INSURANCE COMPANY USE	
A1. Building Owner's Name		Policy Number:	
A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.		Company NAIC Number:	
City	State	ZIP Code	
A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)			
A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.)			
A5. Latitude/Longitude: Lat. _____ Long. _____ Horizontal Datum: <input type="checkbox"/> NAD 1927 <input type="checkbox"/> NAD 1983			
A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.			
A7. Building Diagram Number _____			
A8. For a building with a crawlspace or enclosure(s):			
a) Square footage of crawlspace or enclosure(s) _____ sq ft			
b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade _____			
c) Total net area of flood openings in A8 b _____ sq in			
d) Engineered flood openings? <input type="checkbox"/> Yes <input type="checkbox"/> No			
A9. For a building with an attached garage:			
a) Square footage of attached garage _____ sq ft			
b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade _____			
c) Total net area of flood openings in A9 b _____ sq in			
d) Engineered flood openings? <input type="checkbox"/> Yes <input type="checkbox"/> No			
SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION			
B1. NFIP Community Name & Community Number		B2. County Name	B3. State
B4. Map/Panel Number	B5. Suffix	B6. FIRM Index Date	B7. FIRM Panel Effective/Revised Date
B8. Flood Zone(s)		B9. Base Flood Elevation(s) (Zone AO, use Base Flood Depth)	
B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9: <input type="checkbox"/> FIS Profile <input type="checkbox"/> FIRM <input type="checkbox"/> Community Determined <input type="checkbox"/> Other/Source: _____			
B11. Indicate elevation datum used for BFE in Item B9: <input type="checkbox"/> NGVD 1929 <input type="checkbox"/> NAVD 1988 <input type="checkbox"/> Other/Source: _____			
B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? <input type="checkbox"/> Yes <input type="checkbox"/> No Designation Date: _____ <input type="checkbox"/> CBRS <input type="checkbox"/> OPA			

FEMA Form 086-0-33 (7/15)

Replaces all previous editions.

Form Page 1 of 6

Why are Elevation Certificates (ECs) a PREREQUISITE???

- An accurate EC is the single most important source of information for flood insurance rating!
- NFIP Regs require elevation data, CRS requires ECs!
 - Communities must maintain a record of the lowest floor elevation for new or substantially approved buildings in SFHA [44CFR §60.3(b)(5)(iii)]
 - Communities must make building elevation data and related information available for public inspection and flood insurance rating. [44CFR §59.22(a)(9)(iii)]

The Sticky Wicket...

The Pesky Detail... Elevation Certificates must be CORRECT!

The CRS considers accurately completed Elevation Certificates to be evidence of a community's full compliance with the minimum requirements of the NFIP. Therefore, Elevation Certificates that are not accurately completed are taken as an indication that the community may not be in full compliance, and continued participation in the CRS may be an issue. - CRS Coordinator's Manual, Section 311

ISO Evaluates ECs for CRS in Two Ways

Credit

- ISO reviews all the ECs submitted using CRS EC Checklist.
- At Cycle Verification, credit is provided based on the first look.
- If only of a portion of submitted ECs are correct, *credit is prorated*.

Example:

38 possible points x (12 correct ECs ÷ 20 total ECs) = 22.8 points.

- No redo's on this. This is the score.
- Feedback is provided on all ECs – *CRS Elevation Certificate Evaluation Report*.

Compliance!!!

- To stay in the CRS, at least 90% of the community's ECs MUST be correct, e.g. have no problems.
- *If less than 90% pass, the community MUST correct them to stay in the CRS.*
- ECs reviewed with each Annual Certification.
- Compliance evaluated at Cycle Verification

CRS EC Checklist

U.S. DEPARTMENT OF HOMELAND SECURITY
Federal Emergency Management Agency
National Flood Insurance Program

OMB No. 1660-0008
Expiration Date: November 30, 2018

ELEVATION CERTIFICATE

Important: Follow the instructions on pages 1-9.

Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

SECTION A - PROPERTY INFORMATION		FOR INSURANCE COMPANY USE	
A1. Building Owner's Name CRS EC Checklist		Policy Number:	
A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. Either A2 or A3 must be completed, with City, State, and Zip		Company NAIC Number:	
City	State	ZIP Code	
A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.) Either A2 or A3 must be completed, with City, State, and Zip			
A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.)			
A5. Latitude/Longitude: Lat. _____ Long. _____ Horizontal Datum: <input type="checkbox"/> NAD 1927 <input type="checkbox"/> NAD 1983			
A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.			
A7. Building Diagram Number <u>Must be full Diagram Number (e.g., "1A" of "1B", not just "1")</u>			
A8. For a building with a crawlspace or enclosure(s): If there is no crawlspace, or enclosure, or garage, you may leave the fields blank or enter "0" if that's the correct value. a) Square footage of crawlspace or enclosure(s) _____ sq ft b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade _____ c) Total net area of flood openings in A8.b _____ sq ft d) Engineered flood openings? <input type="checkbox"/> Yes <input type="checkbox"/> No If there are engineered flood openings, attach the certification from the engineer or the ICC Evaluation Service			
A9. For a building with an attached garage: If there is no garage, you may leave the fields blank or enter "0" if that's the correct value. a) Square footage of attached garage _____ sq ft b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade _____ c) Total net area of flood openings in A9.b _____ sq ft d) Engineered flood openings? <input type="checkbox"/> Yes <input type="checkbox"/> No If there are engineered flood openings, attach the certification from the engineer or the ICC Evaluation Service			
SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION			
B1. NFIP Community Name & Community Number		B2. County Name	B3. State
B4. Map/Panel Number	B5. Suffix	B6. FIRM Index Date	B7. FIRM Panel Effective/Revised Date
B8. Flood Zone(s)		B9. Base Flood Elevation(s) (Zone AO, use Base Flood Depth)	
B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9: <input type="checkbox"/> FIS Profile <input type="checkbox"/> FIRM <input type="checkbox"/> Community Determined <input type="checkbox"/> Other/Source: _____			
B11. Indicate elevation datum used for BFE in Item B9: <input type="checkbox"/> NGVD 1929 <input type="checkbox"/> NAVD 1988 <input type="checkbox"/> Other/Source: _____			
B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? <input type="checkbox"/> Yes <input type="checkbox"/> No Designation Date: _____ <input type="checkbox"/> CBRS <input type="checkbox"/> OPA			

FEMA Form 086-0-33 (7/15)

Replaces all previous editions.

Form Page 1 of 6

ELEVATION CERTIFICATE

OMB No. 1660-0008
Expiration Date: November 30, 2018

IMPORTANT: In these spaces, copy the corresponding information from Section A.		FOR INSURANCE COMPANY USE	
Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.		Policy Number:	
City	State	ZIP Code	Company NAIC Number
SECTION C - BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)			
C1. Building elevations are based on: <input type="checkbox"/> Construction Drawings* <input type="checkbox"/> Building Under Construction* <input type="checkbox"/> Finished Construction *A new Elevation Certificate will be required when construction of the building is complete.			
C2. Elevations - Zones A1-A30, AE, AH, A (with BFE), VE, V1-V30, V (with BFE), AR, AR/A, AR/AE, AR/A1-A30, AR/AH, AR/AO. Complete items C2.a-h below according to the building diagram specified in Item A7. In Puerto Rico only, enter meters. Benchmark Utilized: _____ Vertical Datum: _____ Indicate elevation datum used for the elevations in items a) through h) below. <input type="checkbox"/> NGVD 1929 <input type="checkbox"/> NAVD 1988 <input type="checkbox"/> Other/Source: _____ Datum used for building elevations must be the same as that used for the BFE. Items a), f) and g) must always have a number. If items b) - e) are not relevant, enter "N/A" Check the measurement used.			
a) Top of bottom floor (including basement, crawlspace, or enclosure floor)	_____	feet	meters
b) Top of the next higher floor	_____	feet	meters
c) Bottom of the lowest horizontal structural member (V Zones only)	_____	feet	meters
d) Attached garage (top of slab)	_____	feet	meters
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)	_____	feet	meters
f) Lowest adjacent (finished) grade next to building (LAG)	_____	feet	meters
g) Highest adjacent (finished) grade next to building (HAG)	_____	feet	meters
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support	_____	feet	meters
SECTION D - SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION			
This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by law to certify elevation information. I certify that the information on this Certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001. Were latitude and longitude in Section A provided by a licensed land surveyor? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Check here if attachments.			
Certifier's Name	License Number	Place Seal Here	
Title			
Company Name			
Address			
City	State		
Signature	Date	ZIP Code	Telephone
Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.			
Comments (including type of equipment and location, per C2(e), if applicable)			

FEMA Form 086-0-33 (7/15)

Replaces all previous editions.

Form Page 2 of 6

CRS Elevation Certificate Evaluation Report

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Community: Denver				NFIP #:080046		Report Date: 6/7/2018 6:58:54 PM		Round: 1						
Codes: C: Culled R: Residential NR: Non-Residential NA: Not Applicable P: Possible														
Address				Culled Certificate	Diagram #	Res/Non-Residential	Flood Zone	BFE	Lowest Floor Freeboard	Mach/Equip Freeboard	Att Garage Freeboard	Enclosure Size	Noncompliant?	Errors: (refer to Error Key for detailed explanation)

Error Key - Detailed Explanations

ID	Description
23	If Diagram# = 1, 1a, 1b, or 5, Area of Crawl must be blank
24	If Diagram# = 1a, 1b, 2, 5, or 7, Difference between C2a and C2b cannot be less than 5
47	Map/Panel Number is not the correct format.
58	C2a_TopOfBottomFloor must be lower than C2f_LowestAdjacent when A7_BuildingDiagramNumber = 2, 2A, 2B, 4, or 9.
153	C1_BuildingElevationLevels cannot be blank

Non-Compliance Key - Detailed Explanations

ID	Description
P1	The Lowest Floor for compliance is below B9. (Base Flood Elevation).
P11	C2.e. (machinery and/or equipment) is not elevated to at least the Base Flood Elevation level.

Common Errors

Can you believe how nitpicky that dang Panel Number is???

Common Errors - Is that a COMPLETE Panel Number???

B1. NFIP Community Name City and County of Denver	
B4. Map/Panel Number 00800460211	B5. Suffix H

Nope! Too many digits!

B1. NFIP Community Name City and County of Denver	
B4. Map/Panel Number 0211	B5. Suffix H

Nope! Not enough digits!

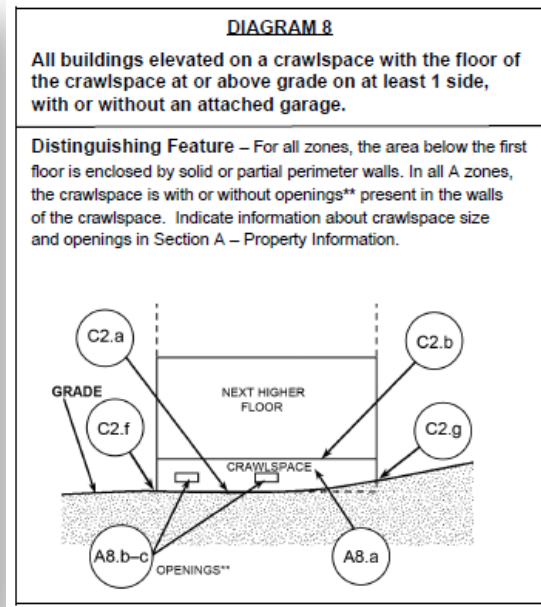
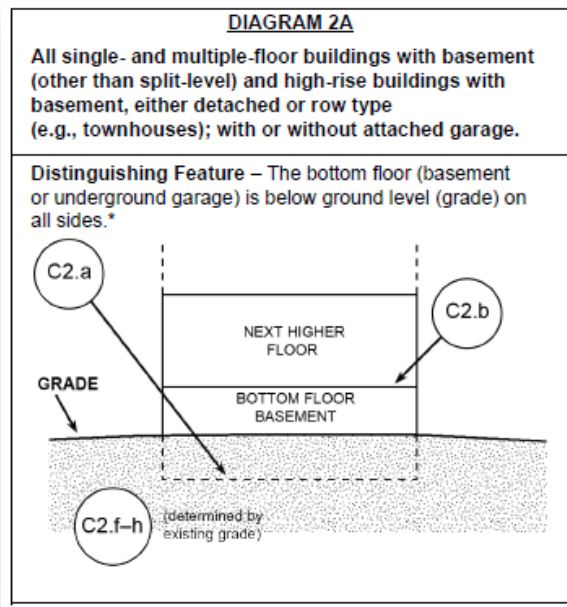
B1. NFIP Community Name City and County of Denver	
B4. Map/Panel Number 0800460211	B5. Suffix H

YES!

Map Panel number must be 10 digits – 6 digit CID+ 4 digit Panel number

Common Errors – Building Diagram

- Double check the selected Building Diagram.



- Make sure the data entry makes sense based on the Building Diagram used.
 - For example on Diagram 2A, Item C2a, Top of Bottom Floor must be LOWER than Item C2f, Lowest Adjacent Grade.
- Diagrams 5 and 6 not common in Colorado. (Piers, Posts, Piles, Columns)
 - Exception: Manufactured homes with skirting that is only decorative are Diagram 5

Common Errors – Crawlspace, Garages, Flood Vents

- At Items A8 and A9, if one row is filled in, there should be answers for EVERY row.
- If Item A9 is completed, so must be Item C2d.

A8. For a building with a crawlspace or enclosure(s):

- a) Square footage of crawlspace or enclosure(s) sq ft
- b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade
- c) Total net area of flood openings in A8.b sq in
- d) Engineered flood openings? ☐ Yes ☐ No

A9. For a building with an attached garage:

- a) Square footage of attached garage sq ft
- b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade
- c) Total net area of flood openings in A9.b sq in
- d) Engineered flood openings? ☐ Yes ☐ No

- If you have engineered flood vents:
 - Make sure to include the **current** certification from the engineer or the ICC Evaluation Service.
 - Also make sure to include the actual coverage area in the notes (it's usually more than 1 ft²!)

Common Errors – Machinery & Equipment, Building Address

- Item C2.e. must ALWAYS be completed unless the building has NO machinery. Include descriptions and locations in the Comments section.

SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)			
C1. Building elevations are based on: <input type="checkbox"/> Construction Drawings* <input type="checkbox"/> Building Under Construction* <input type="checkbox"/> Finished Construction			
*A new Elevation Certificate will be required when construction of the building is complete.			
C2. Elevations – Zones A1–A30, AE, AH, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, AR/AO. Complete Items C2.a–h below according to the building diagram specified in Item A7. In Puerto Rico only, enter meters.			
Benchmark Utilized: _____		Vertical Datum: _____	
Indicate elevation datum used for the elevations in items a) through h) below.			
<input type="checkbox"/> NGVD 1929 <input type="checkbox"/> NAVD 1988 <input type="checkbox"/> Other/Source: _____			
Datum used for building elevations must be the same as that used for the BFE.			
		Check the measurement used.	
a) Top of bottom floor (including basement, crawlspace, or enclosure floor)	_____	<input type="checkbox"/> feet	<input type="checkbox"/> meters
b) Top of the next higher floor	_____	<input type="checkbox"/> feet	<input type="checkbox"/> meters
c) Bottom of the lowest horizontal structural member (V Zones only)	_____	<input type="checkbox"/> feet	<input type="checkbox"/> meters
d) Attached garage (top of slab)	_____	<input type="checkbox"/> feet	<input type="checkbox"/> meters
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)	_____	<input type="checkbox"/> feet	<input type="checkbox"/> meters
f) Lowest adjacent (finished) grade next to building (LAG)	_____	<input type="checkbox"/> feet	<input type="checkbox"/> meters
g) Highest adjacent (finished) grade next to building (HAG)	_____	<input type="checkbox"/> feet	<input type="checkbox"/> meters
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support	_____	<input type="checkbox"/> feet	<input type="checkbox"/> meters

- Provide the Building Street Address info on EVERY page.

IMPORTANT: In these spaces, copy the corresponding information from Section A.			
Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.			
City	State	ZIP Code	

Crikey, there's an error...

The Community CAN fix some sections...

- Only Sections A & B
- Do not redline a signed form!
- Use the Correction Form, aka Memo for Correctness and Completion

But NOT others...

- Only the surveyor can change Section C
- Only the property owner or their rep can change Section E

[Community letterhead]

Memo of Review For Correctness and Completion

The attached FEMA Elevation Certificate has been reviewed by this office.
The items noted below are not correct on the attached form and should read as entered on this page.

SECTION A - PROPERTY INFORMATION					For Insurance Company Use:	
A1. Building Owner's Name					Policy Number	
A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.					Company NAIC Number	
City State ZIP Code						
A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)						
A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.)						
A5. Latitude/Longitude: Lat. Long. Horizontal Datum: <input type="checkbox"/> NAD 1927 <input type="checkbox"/> NAD 1983						
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b) No. of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade sq in						
c) Total net area of flood openings in A8.b sq in						
d) Engineered flood openings? <input type="checkbox"/> Yes <input type="checkbox"/> No						
A9. For a building with an attached garage:						
a) Square footage of attached garage sq ft						
b) No. of permanent flood openings in the attached garage within 1.0 foot above adjacent grade sq in						
c) Total net area of flood openings in A9.b sq in						
d) Engineered flood openings? <input type="checkbox"/> Yes <input type="checkbox"/> No						
SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION						
B1. NFIP Community Name & Community Number			B2. County Name		B3. State	
B4. Map/Panel Number	B5. Suffix	B6. FIRM Index Date	B7. FIRM Panel Effective/Revised Date	B8. Flood Zone(s)	B9. Base Flood Elevation(s) (Zone AO, use base flood depth)	
B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9.						
<input type="checkbox"/> FIS Profile <input type="checkbox"/> FIRM <input type="checkbox"/> Community Determined <input type="checkbox"/> Other (Describe) _____						
B11. Indicate elevation datum used for BFE in Item B9: <input type="checkbox"/> NGVD 1929 <input type="checkbox"/> NAVD 1988 <input type="checkbox"/> Other (Describe) _____						
B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? <input type="checkbox"/> Yes <input type="checkbox"/> No						
Designation Date <input type="checkbox"/> CBRS <input type="checkbox"/> OPA						
Local Official's Name				Title		
Community Name				Telephone		
Signature				Date		
Comments						

Best Practices

Best Practices – Recommendations for Owners/Submitters

- Don't pay the surveyor until the community approves the EC. There's no leverage to get corrections once the surveyor has been paid.
- Submit a draft EC BEFORE its signed to community comments.
- ALWAYS include pictures; show the whole building, each side, equipment, vents.
- ALWAYS use the comments sections to provide additional details needed to clarify any.

Best Practices for Communities

- Get a draft copy of the EC before it's signed. Provide comments and have them resubmit.
- Don't submit ECs to ISO that you don't need to submit!
 - Only submit ECs for insurable structures (not detached garages, sheds, etc.)
 - Only submit ECs for new construction or Substantial Improvement
 - ISO will review all ECs they receive; don't set yourself up for more work.
- File management is important for your own sanity.
 - Keep ECs not needed for CRS separate.
 - Use a descriptive file naming convention.
- Sign up to get the NFIP/CRS Update Newsletter.
<https://crsresources.org/100-2/newsletter/>

Let's chat...

aka Questions???

May the EC review odds be ever in your favor!

Thank you!



Jeremy Hamer, PE, CFM

Floodplain Administrator

**City & County of Denver, Public Works –
Engineering and Regulatory**

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