FEMA Elevation Certificate

Presentation Overview

National Flood Insurance Program (NFIP)

FEMA Elevation Certificate

FEMA Elevation Certificate Diagrams
FEMA Elevation Certificate

Introduction

The NFIP Is A Quid Pro Quo Program

The NFIP Is A Carrot and Stick Program

FEMA agrees to make flood insurance and certain disaster assistance available within a community, in return the community agrees to adopt and enforce floodplain management regulations.
National Flood Insurance Program (NFIP)

With the passage of the National Flood Insurance Act of 1968, Congress established the NFIP in order to identify flood risk zones, and to make affordable flood insurance available to the public.

The NFIP is administered by the Federal Emergency Management Agency (FEMA), coordinated by the State of Montana, regulated and enforced by the Community.

The NFIP along with the Montana MCA’s and ARM’s provide a framework for a community’s floodplain management ordinance.
National Flood Insurance Program (NFIP)

There are 3 basic parts to the NFIP

Regulations

Insurance

Mapping
National Flood Insurance Program (NFIP)

BFE - Base Flood Elevation

CLOMR - Conditional Letter of Map Revision

DFIRM - Digital Flood Insurance Rate Map

FEMA - Federal Emergency Management Agency

FIRM - Flood Insurance Rate Map

FIS - Flood Insurance Study
National Flood Insurance Program (NFIP)

HAG - Highest Adjacent Grade
LAG - Lowest Adjacent Grade
LFE - Lowest Floor Elevation
LOMA - Letter Of Map Amendment
LOMC – Letter of Map Change
LOMR - Letter of Map Revision
National Flood Insurance Program (NFIP)

**Base Flood** - The flood having a 1% chance of being equaled or exceeded in any given year = Regulatory Standard.

There is a 26% chance that a home in a SFHA will be flooded during the life of a 30 year mortgage.

**Pre-FIRM Structure** – Any structure that is located in a Special Flood Hazard Area (SFHA) and the construction or substantial improvement of the building started before December 31, 1974 or before the date of the initial Flood Insurance Rate Map (FIRM).

**Post-FIRM Structure** – Any structure that is located in a Special Flood Hazard Area (SFHA) and the construction or substantial improvement of the building started after December 31, 1974 or on or after the date of the initial Flood Insurance Rate Map (FIRM).
National Flood Insurance Program (NFIP)

Special Flood Hazard Area (SFHA):

• The area inundated by floodwaters of the Base Flood.

• The area where the NFIP regulations must be enforced and where flood insurance is mandatory.

<table>
<thead>
<tr>
<th>Risk Zones</th>
<th>Description</th>
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<tbody>
<tr>
<td>A</td>
<td>Approx. Methods, no BFEs or flood depths are shown</td>
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<tr>
<td>AE, A1-30</td>
<td>Detailed and Limited Detail methods, with BFEs.</td>
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<tr>
<td>AH</td>
<td>Shallow Flooding (ponding), 1-3 ft depths with BFEs, detailed methods</td>
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<tr>
<td>AO</td>
<td>Shallow Flooding (sheet flow), 1-3’ depths, detailed methods, designated by 1’, 2’, or 3’ depth</td>
</tr>
</tbody>
</table>
National Flood Insurance Program (NFIP)

Special Flood Hazard Area (SFHA)

Also Known As:
- FEMA 100 yr. Floodplain
- The Area that has a 1% chance of flooding on any given year.
- The point where the BFE intersects the ground.
Three different types of floodplain studies can be used to identify the SFHA:

- Approximate Study
- Limited Detail Study
- Detailed Study
Types of Floodplain Studies

- Special Flood Hazard Area (SFHA)

  APPROXIMATE

- No Base Flood Elevations
- No Hydrology
- No Hydraulic Modeling
- No Flood Profiles
Types of Floodplain Maps

FEMA Flood Insurance Rate Map (FIRM) - **Approximate Study**
Flathead River – Flathead County
Types of Floodplain Maps

FEMA Digital Flood Insurance Rate Map (DFIRM) - Approximate Study
Flathead River – Flathead County
Types of Floodplain Studies

Special Flood Hazard Area (SFHA)

LIMITED DETAIL

Base Flood Elevation (BFE)

Flood Profiles and BFES published in FIS.

Has limited Hydrology and Topographic Data

Has Limited Hydraulic Modeling at Bridges and Crossings
Types of Floodplain Maps

FEMA Digital Flood Insurance Rate Map (FIRM) – **Limited Detail Study**
Miller Creek - Missoula County
Types of Floodplain Maps

FEMA Flood Insurance Rate Map (DFIRM) – **Limited Detail Study**
Miller Creek - Missoula County
Types of Floodplain Studies

- Special Flood Hazard Area (SFHA)
- Flood Fringe
- DETAILED
- Floodway
- Base Flood Elevation (BFE)

Flood Profiles and BFES are published in FIS.
Based Upon Detailed Hydrology and Topographic data.
Based Upon Detailed Hydraulic Modeling.
Floodway Data Tables are published in the FIS.
Types of Floodplain Maps

FEMA Flood Insurance Rate Map (FIRM) - Detail Study
Flathead River – Flathead County
Types of Floodplain Maps

FEMA Floodway Boundary Map - Detail Study
Flathead River – Flathead County
Types of Floodplain Maps

FEMA Digital Flood Insurance Rate Map (DFIRM) - Detailed Study
Flathead River – Flathead County
DFIRM Map Legend

LEGEND

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

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A
No Base Flood Elevations determined.

ZONE AE
Base Flood Elevations determined.

ZONE AH
Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO
Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR
Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99
Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V
Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE
Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

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

OTHER FLOOD AREAS

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

1% annual chance floodplain boundary
0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
CRRS and OPA boundary

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

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

*Referenced to the North American Vertical Datum of 1988

Cross section line
Transect line
Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
1000-meter Universal Transverse Mercator grid values, zone 11
5000-foot grid ticks: Montana State Plane coordinate system, (FIPS Zone 2500), Transverse Mercator
Bench mark (see explanation in Notes to Users section of this FIRM panel)
River Mile

DATUM CONVERSION – NOAA’s VERTCON  http://www.ngs.noaa.gov/PC_PROD/VERTCON/
Flood Insurance Study (FIS)

The FIS report has three components:

- **The Flood Insurance Study Report**

- **The FIRM or DFIRM’s**

- **Prior to 1986, a separate Flood Boundary and Floodway Map (FBFM) was issued as a component of the FIS**
Flood Insurance Study (FIS)

The FIS serves as the basis for rating flood insurance, regulating floodplain development, and carrying out floodplain management measures.

Contains tables summarizing various flood hazard data, including BFE’s.

Contains computed flood profiles.
Example – DFIRM
This is the Regulatory BFE that must be used!

<table>
<thead>
<tr>
<th>CROSS SECTION</th>
<th>DISTANCE</th>
<th>WIDTH (FEET)</th>
<th>SECTION AREA (SQUARE FEET)</th>
<th>MEAN VELOCITY (FEET PER SECOND)</th>
<th>1-PERCENT ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION</th>
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<td>REGULATORY (FEET NAVD)</td>
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<td>FLATHEAD RIVER (cont.)</td>
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1 Feet above confluence with Flathead Lake

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Example – Floodway Data Table
### Example – Floodway Data Table

**Cross Section Stations** correspond to Stations on FIRM/DFIRM.

Distance from the downstream beginning of the detailed study, measured along river profile.

---

<table>
<thead>
<tr>
<th>CROSS SECTION</th>
<th>DISTANCE¹</th>
<th>WIDTH (FEET)</th>
<th>SECTION AREA (SQUARE FEET)</th>
<th>MEAN VELOCITY (FEET PER SECOND)</th>
<th>REGULATORY (FEET NAVD)</th>
<th>WITHOUT FLOODWAY (FEET NAVD)</th>
<th>WITH FLOODWAY (FEET NAVD)</th>
<th>INCREASE (FEET)</th>
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</tbody>
</table>

¹Feet above confluence with Flathead Lake
Example – Flood Profile

Legend:
- 0.2% Annual Chance Flood
- 1% Annual Chance Flood
- 2% Annual Chance Flood
- 10% Annual Chance Flood

Bridges

Stream Distance in Feet Above Canyon Ferry Lake

Stream Elevation in Feet (NAVD)
In order to identify the BFE at a development site, the stream stationing for the site must be determined.

1. Determine the site’s distance from a cross section or other feature that appears on the profile.
2. Find the feature’s stationing on the horizontal, or x-axis, and draw a vertical line upward until it intersects the appropriate flood profile.
3. Draw a horizontal straight line to the left or right edge of the graph and read the elevation on the y-axis.

Example – Flood Profile
General Flood Insurance Rating Concepts

Build outside the floodplain and flood insurance is very cheap (until you experience a flood loss)

Build in the floodplain and elevate the “living” or “finished floor” several feet above the BFE and insurance will be relatively cheap – the higher you go the cheaper it gets.

Structures in floodplain with a finished or enclosed floor below BFE - premiums will be very expensive.

If flood openings are missing or not sufficient and/or machinery/utilities are below BFE insurance will cost more.
Private Lender Determinations

Around 80% of all determinations are performed automatically using proprietary methods.

When USPS address cannot be found these automated determination methods may default to tax map parcel or even zip code.

A standard appeal process does not exist. Determination companies work for the lender and will only accept review requests from the lender.
What Is The Elevation Certificate Used For?

The Elevation Certificate is an important administrative tool of the National Flood Insurance Program (NFIP).

Used by communities to verify and document building compliance with the community’s floodplain management regulations.

Utilized to determine the proper flood insurance rate.

Used to support map amendments and revisions.
Who Certifies Building Elevations?

In order to be rated properly for flood insurance, a State-licensed professional is required to certify the elevation information on the Elevation Certificate.

Surveyor

Engineer

Architect
Who Needs An Elevation Certificate?

Anyone who will apply for insurance on a building that is located in or near a Special Flood Hazard Area (SFHA).

Anyone who is proposing to construct a new structure within a SFHA, or substantially improve an existing building within a SFHA.

Anyone who will apply for a LOMA, LOMR-F, CLOMA, or CLOMR-F.
If the EC is incorrect, conflicting, or incomplete? The property owner gets the more conservative insurance rating (i.e. more expensive).

If the insurance company cannot accept the EC because of errors or inconsistency? The lender may “force place” insurance. Force place does not require an EC - however it is very expensive.

If the rating is wrong because of incomplete or incorrect EC data, the policy holder is ultimately held liable.
Section A - General Property and Owner Information; some technical information about enclosures and lat/long coordinates with vertical datum

Section B
FIRM panel information

Section C
Documents elevations for any A zones with a BFE

Section D
Surveyor, Engineer, or Architect Certification, and Comments
Elevation Certificate overview

Section E
Documents elevations for AO-Zones and A-Zones *without* BFE

Section F
Property Owner/Owner’s representative Certification

Section G
Community information (optional)
# Elevation Certificate

## Section A

### Section A - Property Information

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<thead>
<tr>
<th>Property Information</th>
<th>For Insurance Company Use</th>
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<tbody>
<tr>
<td>A1. Building Owner’s Name</td>
<td>Policy Number:</td>
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<tr>
<td>A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.</td>
<td>Company NAIC Number:</td>
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<tr>
<td>City</td>
<td>State</td>
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<tr>
<td>A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)</td>
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**This is especially important if the property does not have an address.**

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<td>b) No. of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade</td>
</tr>
<tr>
<td></td>
<td>c) Total net area of flood openings in A8.b sq in</td>
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<tr>
<td></td>
<td>d) Engineered flood openings? ☐ Yes ☐ No</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>A9. For a building with an attached garage:</th>
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<tbody>
<tr>
<td>a) Square footage of attached garage sq ft</td>
</tr>
<tr>
<td>b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade</td>
</tr>
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<td>c) Total net area of flood openings in A9.b sq in</td>
</tr>
<tr>
<td>d) Engineered flood openings? ☐ Yes ☐ No</td>
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</tbody>
</table>

**Use the most recent form.**

[www.fema.gov](http://www.fema.gov)

**OMB No. 1660-0008**

Expiration Date: July 31, 2015
Elevation Certificate
Section A

Detached garages are considered accessory structures.

A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.

Lat/Long must be accurate to 66 feet. Google Earth can be used. The horizontal datum must be identified and documented.

Photographs are required for insurance if it is a post FIRM structure.
A6: Additional forms for attaching photographs are provided with the EC.

- 3”x3” color photographs
- Digital format is acceptable
- Photographs must show front and rear of building
- If the building is split- or multi-level, at least 2 additional photographs are needed
A6: Additional forms for attaching photographs are provided with the EC

- Include the date the photograph was taken
- Must be taken within 90 days from the date of certification
- Photographs should capture key elements such as flood openings
- Helpful to show the lowest level of the building that is above grade
Elevation Certificate
Section A

SECTION A - PROPERTY INFORMATION

<table>
<thead>
<tr>
<th>A1. Building Owner's Name</th>
<th>FOR INSURANCE COMPANY USE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Policy Number:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.</th>
<th>Company NAIC Number:</th>
</tr>
</thead>
<tbody>
<tr>
<td>City</td>
<td>State</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.</td>
</tr>
<tr>
<td>A7. Building Diagram Number</td>
</tr>
</tbody>
</table>

**A 7: Building Diagram Number is required for insurance rating**
Elevation Certificate

Section A

A7: Building Diagram Numbers
Elevation Certificate

Section A

A7: Building Diagram Numbers

Diagrams 1-4: Non-elevated buildings; slab-on-grade or full/partial basement

Diagrams 5-8: Elevated buildings; crawlspace, elevated on piers/posts

Diagram 9: Subgrade crawlspace; if subgrade crawlspace does not meet 2/5 rule, use Diagram 2
## Elevation Certificate

### Section A

**Provide square footage and measurements of the crawl space.**

A8. For a building with a crawl space or enclosure(s):
   - a) Square footage of crawl space or enclosure(s) ________ sq ft
   - b) No. of permanent flood openings in the crawl space or enclosure(s) ________

**Provide the number of permanent flood openings (openings that allow the free passage of water in both directions without human intervention).**

Enter “0” if there are no permanent openings OR if openings are not within 1.0 feet above grade.

---

<table>
<thead>
<tr>
<th>A1. Building Owner's Name</th>
<th>Policy Number:</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.</td>
<td>Company NAIC Number:</td>
</tr>
<tr>
<td>City</td>
<td>State</td>
</tr>
</tbody>
</table>

**Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.):**

A3. Property Description

**Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.):**

A4. Building Use

**Latitude/Longitude:**

A5. Latitude/Longitude: Lat. ________ Long. ________

**Horizontal Datum:**

A5. Horizontal Datum: □ NAD 1927 □ NAD 1983
Provide square footage and measurements, along with any permanent opening information.
Openings Requirements:
- Located below BFE
- Two openings on exterior walls
- Automatic entry/exit of floodwaters
- 1 sq in per 1sq ft
- Bottom of opening can not be higher than one foot from \textit{ADJACENT} grade

Engineered Openings:
- Specifically designed and certified
- Engineered opening certificate from state building is located in OR ICC-ES evaluation report (applies to commercially approved flood vents)

Non-Engineered Openings
- Must meet openings requirements above
Example Engineered Openings Certificate

1. __________________________ do hereby certify that the opening(s) designed for installation in the aforementioned building will allow for the automatic equalizing of hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwater during floods up to and including the base (100-year) flood.

Signature __________________________ Date

Title __________________________

Type of Licence __________________________ Licence Number

Address __________________________

Figure 4. Example of Openings Certificate
If a LOMA or LOMR-F has been issued, provide letter, date, and case number in Comments area of Section D (Surveyors) or comment area of Section G (community official).

For a newly incorporated community or annexed area: enter annexed community information in B1-B6, and the actual FIRM data for B4, B5, B7-B9.
B6. Firm Index Date
B7. Firm Panel Effective or Revised Date

- **Flathead County, Montana**
  - Panel 1185 of 3425
  - Effective Date: September 5, 1984

- **Flathead County, Montana (Unincorporated Areas)**
  - Panel 1185 of 3425
  - Effective Date: September 5, 1984

- **Flathead County, Montana and Incorporated Areas**
  - Panel 425 of 3525
  - Effective Date: September 28, 2007
How To Find A FIRM Panel

• The Map Service Center Website (MSC)
  – www.msc.fema.gov

• Google Earth and the National Flood Hazard Layer

• FEMA Mapping Information Platform
  – www.hazards.fema.gov

• Need help: 1-877-FEMA-MAP
## Elevation Certificate

### Section B

<table>
<thead>
<tr>
<th>B1. NFIP Community Name &amp; Community Number</th>
<th>B2. County Name</th>
<th>B3. State</th>
</tr>
</thead>
<tbody>
<tr>
<td>B4. Map/Panel Number</td>
<td>B5. Suffix</td>
<td>B6. FIRM Index Date</td>
</tr>
<tr>
<td>B7. FIRM Panel Effective/Revised Date</td>
<td>B8. Flood Zone(s)</td>
<td>B9. Base Flood Elevation(s) (Zone A0, use base flood depth)</td>
</tr>
</tbody>
</table>

**B8.** Use the flood zone that the actual structure is located within.

**B9:** Base Flood Elevation: BFE - Use floodway data table, or FIS profiles to obtain BFE at upstream edge of structure

---

In Approximate A Zones, developments >5 acres or 50 acres requires the BFE to be determined by applicant through engineering analysis. BFE’s from other sources must be acknowledged by the Community and they must complete comments section or attach separate paper accepting the estimated BFE. If no BFEs available, enter N/A and complete Section E
### Elevation Certificate

#### Section B

<table>
<thead>
<tr>
<th>B1. NAPL Community Name &amp; Community Number</th>
<th>B2. County Name</th>
<th>B3. State</th>
</tr>
</thead>
<tbody>
<tr>
<td>B4. Map/Panel Number</td>
<td>B5. Suffix</td>
<td>B6. FIRM Index Date</td>
</tr>
</tbody>
</table>

**B10: Source of BFE - describe and document. (FIS, Approximate, etc.)**

**B11: Datum - IF EC is being used for insurance rating: Must be in same datum as Section C. The BFE datum is REQUIRED. Example: datum from FIRM is 1929, it is preferred that Section C be reported in 1929.**

In Approximate A Zones, developments >5 acres or 50 acres requires the BFE to be determined by applicant through engineering analysis. BFE’s from other sources must be acknowledged by the Community and they must complete comments section or attach separate paper accepting the estimated BFE. If no BFEs are available, enter N/A and complete Section E.
Example – Flood Profile
Elevation Certificate

Section C

Complete this section if a BFE is provided on the FIRM maps or if a BFE was developed from other sources.

Note: Use FIS profiles, summary of stillwater table or floodway data table to develop BFE at upstream edge of structure.

The surveyor should try to gain access to the crawl space to shoot the elevation of the crawl space floor.

If access to the crawl space cannot be gained: Use a yardstick or tape measure to measure the floor height to the “next higher floor,” then subtract the crawl space height from the elevation of the “next higher floor.”
Elevation Certificate
Section C

Ask the property owner if they have documentation or know the height from the crawl space floor to the next higher floor. (Try to verify this by looking inside the crawl space through any openings or vents.)

Contact the local floodplain administrator and see if there may be documentation of the elevation of the crawl space floor as part of the previously issued permit for the building.

In all cases, provide the elevation in the comments area and a brief description of how the elevation was obtained.
Elevation Certificate
Section C

C1: Building elevations are based on: Construction Drawings, Building Under Construction elevations, and/or Finished Construction Drawings.

C1. Building elevations are based on: [ ] Construction Drawings* [ ] Building Under Construction* [ ] Finished Construction
* A new Elevation Certificate will be required when construction of the building is complete.


C2: Survey required! Document; the benchmark utilized, vertical datum, and any conversion method used. Provide the Permanent Identifier (PID) or other unique identifier assigned to the benchmark. (NGS, OPUS, CORS, or Real-Time Network)

a) Top of bottom floor (including basement, crawlspace, or enclosure floor) ______. _______ [ ] feet [ ] meters

All elevations for the certificate, including elevations for Items C2 a-h, must use the same datum that the BFE is referenced to.

b) Attic/loft/garage (top of slab) _______. _______ [ ] feet [ ] meters

C2 a-d: building elevations refer back to the building diagram number used in Item A7.

c) Lowest adjacent (unfinished) grade next to building (LG) _______. _______ [ ] 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
Elevation Certificate
Section C

SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: □ Construction Drawings* □ Building Under Construction* □ Finished Construction

*A new Elevation Certificate will be required when construction of the building is complete.


Benchmark Utilized: ____________________________ Vertical Datum: ____________________________

Indicate elevation datum used for the elevations in Items a) through h) below: □ NGVD 1929 □ NAVD 1988 □ Other/Source: _____________

Datum used for building elevations must be the same as that used for the BFE.

C2(d): Record the elevation for attached garages only at top of slab. An attached garage means that the garage is an adjacent structure, not one underneath the residence, or a separate structure.

d) Attached garage (top of slab) __________ . ________ □ feet □ meters

e) Lowest elevation of machinery or equipment servicing the building __________ . ________ □ feet □ meters

C2(e): Machinery and equipment servicing the building located in an attached garage, enclosure, or on a open utility platform. Includes furnaces, heat pumps, air conditioners, ductworks, and sump pumps.
Elevation Certificate

Section C

SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on:  □ Construction Drawings*  □ Building Under Construction*  □ Finished Construction
   *A new Elevation Certificate will be required when construction of the building is complete.

   
   Benchmark Utilized: ___________________________  Vertical Datum: ___________________________
   
   Indicate elevation datum used for the elevations in items a) through h) below.  □ NGVD 1929  □ NAVD 1988  □ Other/Source: ___________________________
   Datum used for building elevations must be the same as that used for the BFE.
   
   a) Top of bottom floor (including basement, crawlspace, or enclosure floor) ______. ______  □ feet  □ meters

C2f: Lowest adjacent (finished) grade next to bldg (LAG)
   Ground, sidewalk, patio slab, ATTACHED GARAGE, etc.

C2g: Highest adjacent (finished) grade next to bldg (HAG).  Ground, sidewalk, patio slab, ATTACHED GARAGE, etc.

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

C2h: Lowest adjacent grade at lowest elevation of deck or stairs, including structural support
**Elevation Certificate**

**Section D**

**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.

- [ ] Check here if comments are provided on back
- [ ] Check here if attachments

Were latitude and longitude in Section A provided by a licensed land surveyor?
- [ ] Yes
- [ ] No

<table>
<thead>
<tr>
<th>Certifier’s Name</th>
<th>City</th>
<th>State</th>
<th>ZIP Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Signature
- [ ] Date
- [ ] Telephone

FEMA Form 086-0-33 (7/12)

See reverse side for continuation.

Replaces all previous editions.

**Official Stamped Certification is required.**

**D: Latitude and Longitude verification**

**D: Use the Comments area to provide datum, elevation, openings, or other relevant information not specified on the form.**
E: For Zones AO and Zone A without BFE, a survey is not required for the EC to be used for insurance rating.

b) Top of bottom floor (including basement, crawlspace, or enclosure) is _____ . _____ □ feet □ meters □ above or □ below the LAG.

E2. For Building Diagrams 6-9 with permanent flood openings provided in Section A Items 8 and/or 9 (see pages 8-9 of Instructions), the next higher floor (elevation C2 h in the diagrams) of the building is _____ . _____ □ feet □ meters □ above or □ below the HAG.

E: Enter measurements to nearest tenth of foot.

E4. Top of platform of machinery and/or equipment servicing the building is _____ . _____ □ feet □ meters □ above or □ below the HAG.

E5. Zone AO only: If no flood depth number is available, is the top of the bottom floor elevated in accordance with the community’s floodplain management ordinance? □ Yes □ No □ Unknown. The local official must certify this information in Section G.

E: Provide comments in Section F if based on the “natural grade”
Applies when Section E is completed.

The address entered in this section must be the mailing address of the property owner or property owner’s representative who provided the information on the certificate.
### Elevation Certificate

**Section G**

**G1:** Community officials can transfer information from a previously certified document.

- G1. The information in Section C was taken from other documentation that has been signed and sealed by a licensed surveyor, engineer, or architect who is authorized by law to certify elevation information. (Indicate the source and date of the elevation data in the Comments area below.)
- G2. A community official completed Section E for a building located in Zone A (without a FEMA-issued or community-issued BFE) or Zone AO.
- G3. The following information (items G4–G9) is provided for community floodplain management purposes.

**G2:** An authorized community official who completes Sections C or E must complete this section.

**G3:** An authorized community official may complete the form for informational purposes only.

<table>
<thead>
<tr>
<th>Community Name</th>
<th>Telephone</th>
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<tbody>
<tr>
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</table>

<table>
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<tr>
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<td></td>
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</tbody>
</table>

☐ Check here if attachments.
Elevation Certificate
Section A
A7: Building Diagram Numbers
Elevation Certificate Building Diagrams

**DIAGRAM 1A**

All slab-on-grade single- and multiple-floor buildings (other than split-level) and high-rise buildings, either detached or row type (e.g., townhouses); with or without attached garage.

**Distinguishing Feature** – The bottom floor is at or above ground level (grade) on at least 1 side.*

---

All slab-on-grade single and multiple-floor buildings (other than split level) and high-rise buildings, either detached or row type (e.g. townhouse); with or without attached garage.

The bottom floor is at or above ground level (grade) on at least one side.
Slab-on-grade, one-story building with attached garage
All raised slab-on-grade or slab-on-stem-wall-with-fill single- and multiple-floor buildings (other than split-level), either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature – The bottom floor is at or above ground level (grade) on at least one side.

The bottom floor is at or above the ground level (grade) on at least one side.
Elevation Certificate Building Diagrams

Diagram 1B

Elevated slab on back-filled stemwall
All single- and multiple-floor buildings with basement (other than split-level) and high-rise buildings with basement, either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature – The bottom floor (basement or underground garage) is below ground level (grade) on all sides.*

The bottom floor (basement or underground garage) is below ground level (grade) on all sides. Buildings constructed above crawl spaces that are below grade on all sides should also use this diagram.
Multiple-floor building with basement, w/o attached garage
All split-level buildings that are slab-on-grade, either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature – The bottom floor (excluding garage) is at or above ground level (grade) on at least 1 side.*

The bottom floor (excluding garage) is at or above the ground level (grade) on at least one side.
Slab-on-grade, split-level building w/o attached garage
All split-level buildings (other than slab-on-grade), either detached or row type (e.g., townhouses); with or without attached garage.

**Distinguishing Feature** – The bottom floor (basement or underground garage) is below ground level (grade) on all sides.*

The bottom floor (basement or underground garage) is below ground level (grade) on all sides. Buildings constructed above crawl spaces that are below grade on all sides should also use this diagram.
Elevation Certificate Building Diagrams

Diagram 4

Split-level building w/o attached garage
All buildings elevated on piers, posts, piles, columns, or parallel shear walls. No obstructions below the elevated floor.

Distinguishing Feature – For all zones, the area below the elevated floor is open, with no obstruction to flow of floodwaters (open lattice work and/or insect screening is permissible).

For all zones, the area below the elevated floor is open, with no obstruction to flow of floodwater (open lattice work and/or insect screening is permissible).
Multi-level building elevated on piles, no obstructions below the elevated floor
All buildings elevated on piers, posts, piles, columns, or parallel shear walls with full or partial enclosure below the elevated floor.

**Distinguishing Feature** – For all zones, the area below the elevated floor is enclosed, either partially or fully. In A Zones, the partially or fully enclosed area below the elevated floor is with or without openings present in the walls of the enclosure. Indicate information about enclosure size and openings in Section A – Property Information.

**Enclosure**: That portion of an elevated building below the lowest elevated floor that is either partially or fully shut-in by rigid walls.

In A zones the partially or fully enclosed area below the elevated floor is with or without openings present in the walls of the enclosure.
Elevation Certificate Building Diagrams

Diagram 6

Elevated building, partial enclosure
All buildings elevated on full-story foundation walls with a partially or fully enclosed area below the elevated floor. This includes walkout levels, where at least one side is at or above grade. The principal use of this building is located in the elevated floors of the building.

**Distinguishing Feature** – For all zones, the area below the elevated floor is enclosed, either partially or fully. In A Zones, the partially or fully enclosed area below the elevated floor is with or without openings** present in the walls of the enclosure. Indicate information about enclosure size and openings in Section A – Property Information.

In A zones the partially or fully enclosed area below the elevated floor is with or without openings present in the walls of the enclosure.
Building elevated on full-story foundation walls, fully enclosed area below the elevated floor

Diagram 7
Elevation Certificate Building Diagrams

All buildings elevated on a crawl space with the floor of the crawl space at or above grade on at least one side, with or without an attached garage.

Distinguishing Feature – For all zones, the area below the first floor is enclosed by solid or partial perimeter walls. In all A zones, the crawl space is with or without openings** present in the walls of the crawl space. Indicate information about crawl space size and openings in Section A – Property Information.

For all zones, the area below the first floor is enclosed by solid or partial perimeter walls. In A zones the partially or fully enclosed area below the elevated floor is with or without openings present in the walls of the enclosure.
Multi-level building elevated on crawl space
All buildings (other than split-level) elevated on sub-grade crawl space, with or without attached garage.

**Distinguishing Feature** – The bottom (crawl space) floor is below ground level (grade) on all sides.* (If the distance from the crawl space floor to the top of the next higher floor is more than 5 feet, or the crawl space floor is more than 2 feet below the grade [LAG] on all sides, use Diagram 2.)

The bottom (crawl space) floor is below ground level (grade) on all sides. If the distance from the crawl space floor to the top of the next floor is more than 5 feet, or the crawl space floor is more than 2 feet below the grade (LAG) on all sides, use Diagram 2.
One-story building on crawl space with attached garage
Contacts

• FEMA Publications
  – 1-800-480-2520 (Toll Free)

• FEMA FIRM and FIS Ordering
  – 1-800-358-9616 (Toll Free)

• General Mapping and LOMC Questions
  – 1-877-FEMA-MAP (Toll Free)

• www.fema.gov

• msc.fema.gov
Floodplains: The Basics

Questions?

DNRC Website
http://www.dnrc.mt.gov/wrd/water_op/floodplain/default.asp

FEMA Map Store
https://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1