


# Elevation Certificates




## Agenda

- Introductions & Housekeeping
- Overview
- Basics of the Elevation Certificate
- Building Diagrams
- Exercise
- Common Errors
- Using ECs in Floodplain Development Review
- Questions
- Test



## Presenter

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STARR II/FEMA Region 10 Service Center



## Continuing Education Credits

For full credit (2 CEC hours)

- You must participate in the polls and activities
- You must pass a short test at the end of the presentation**
  - 70% is passing
  - Two attempts

If you do not pass the test, but attend and participate in the entire session, 1 CEC will be awarded.



## The Current Form

- The current EC was released June 2016 and revised in December 2016
- “Phase-in” period ended December 31, 2016
- Download the latest version: <http://www.fema.gov/media-library/assets/documents/160>

## Major changes with the new EC



- Repagination (restored) to letter-size paper
- Section C and D now on same page
- Adobe fillable form
- One new building diagram (2B)
- Digital signatures
- Insert photos electronically

**December 2016 Revisions:**

- Photos can be removed
- Text can be entered (“N/A”) in some fields
- Two decimal places for Section C2

## Adobe Fillable Form

### Purpose of the Elevation Certificate

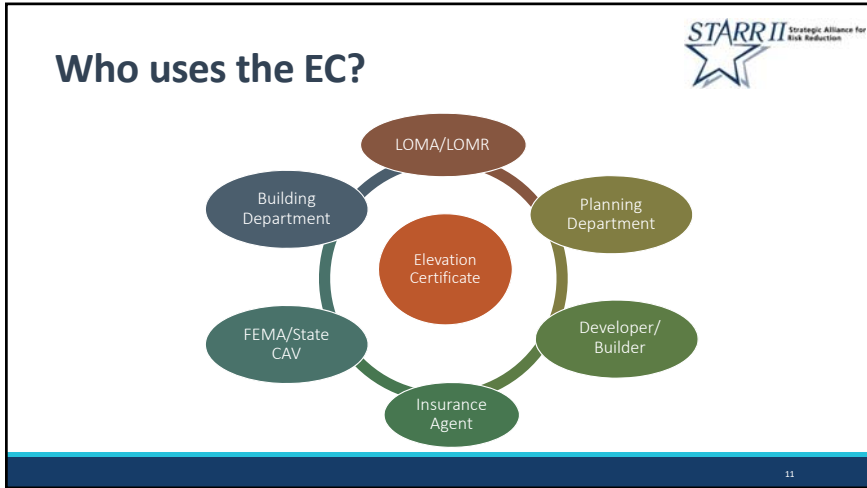
Required to rate insurance for Post-FIRM (and some Pre-FIRM) buildings

Determines compliance with building codes/local ordinance


Supports LOMA/LOMR-F

Prerequisite for CRS

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### Does the EC certify a building as "compliant"?





The Elevation Certificate is a report of existing conditions. The surveyor/engineer's stamp *does not* certify that the structure complies with federal, state, or local regulations. It only certifies the elevations in Section C.

**NO!**

*THE COMMUNITY* must review the certificate for completeness and accuracy, and determine if the structure is compliant!

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### Completing the EC

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### Key Terms



- FIRM = Flood Insurance Rate Map
- FIS = Flood Insurance Study
- BFE = Base Flood Elevation
- SFHA = Special Flood Hazard Area (1% ACF)
- LAG = Lowest adjacent grade
- HAG = Highest adjacent grade
- Lowest Floor
- Bottom Floor

### Section A – Property Information



- Property description
- Latitude/Longitude
- Horizontal datum (NAD)
- Building diagram number
- Photographs, two required for flood insurance rating
- Measurements of crawl spaces, enclosures, attached garages, and flood openings

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 1983 <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 ADS _____ sq ft		
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 ADS _____ sq ft		
d) Engineered flood openings? <input type="checkbox"/> Yes <input type="checkbox"/> No		

### Section A – Property Information



- Can be completed by the community or homeowner
- Verify property description/use and building diagram
- Review number of flood openings for compliance

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 ADS _____ sq ft		
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 ADS _____ sq ft		
d) Engineered flood openings? <input type="checkbox"/> Yes <input type="checkbox"/> No		

### A7 – Building Diagram



- Proper building diagram selection is essential for determining the elevations that must be measured to properly complete the EC
- Take photographs that capture the characteristics that support the building diagram

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 ADS _____ sq ft		
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 ADS _____ sq ft		
d) Engineered flood openings? <input type="checkbox"/> Yes <input type="checkbox"/> No		

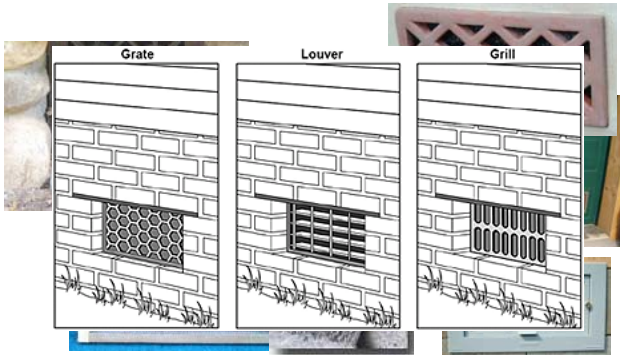
### Flood Openings (A8 & A9)



A permanent opening that allows for the free passage of water automatically in both directions without human intervention.

- Under the NFIP, a minimum of two openings are required for every enclosed area or crawlspace.
- The openings shall provide a total net area of not less than one square inch for every square foot area enclosed, excluding any bars, louvers, or other covers of the opening.

### Flood Openings



### Engineered Flood Openings



Individual Engineered Flood Openings Certification or an Evaluation Report issued by the International Code Council Evaluation Service (ICC ES) must be submitted to document that the design of the openings will allow for automatic equalization of hydrostatic flood forces on exterior walls.

### More About Flood Openings



A window, a door, or a garage door is not considered an opening; but openings may be installed in doors.

Subtract area of grates, louvers, or grills



### More About Flood Openings



The bottom of the openings must be *no higher than one foot above* the higher of the exterior or interior grade or floor immediately below the opening.

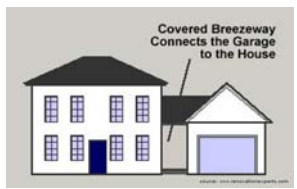
For more guidance on openings, see *NFIP Technical Bulletin 1 – ‘Openings in Foundation Walls and Walls of Enclosures.’*”

### Attached Garages



Common wall  
Single structure  
One insurance policy

Separate foundations  
Can be considered a separate structure  
Can be insured separately



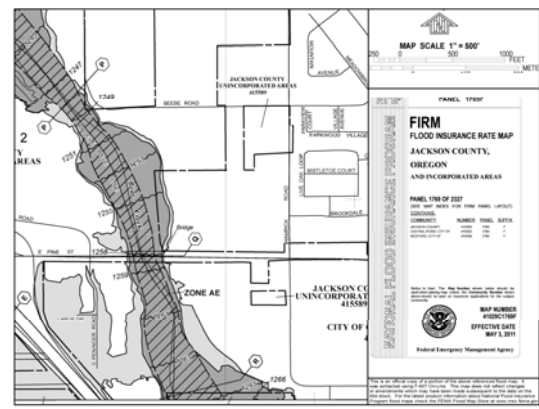
Could also have a separate EC

### Section B – FIRM Information



Can be completed by the community or homeowner  
Verify ALL FIELDS, especially Community Number, Map/Panel numbers/dates and BFE  
Check elevation datum used (NGVD29/NAVD88)

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 AE, 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					



### Section B – FIRM Information

Base Flood Elevation (BFE) to the tenth (0.1) of a foot.  
 Zone AE or A1-99—Use Flood Insurance Study  
 Zone AO—Use depth number on the FIRM/FIS  
 Zone A—if no BFE available, enter “N/A” and complete Section E, unless applying for a LOMA or LOMR-F  
 Zone VE—Use the FIRM and FIS

### Common Errors in Section B

- Wrong Community Number  
(common after new maps or annexations)
- Wrong Index date
- Wrong Panel date
- Item B-10: Where did the BFE come from, especially in unnumbered “A” zones
- Estimating BFE’s between the wavy lines on the FIRM

### Section C – Building Elevations

MUST be completed by a surveyor or engineer

“Finished construction” means all machinery and equipment are installed and final grading is completed

NO Blanks – use “N/A” if there is nothing to measure

## C1 – Basis for Elevations



Indicate if elevations are

From construction drawings

For building under construction

Finished construction – only after all machinery and equipment are installed and grading around structure is complete

**SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)**

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.

**C1 Elevations – Zones A1-A30, AE, AH, A (with BFE), VE, V1-V30, V (with BFE), AR, ARS, ARSE, ARS1-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 Elevation: \_\_\_\_\_ Vertical Datum: \_\_\_\_\_

Indicate elevation datum used for the elevations in items a) through h) below:  
 NAVD 1929  NAVD 1988  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, stratigapace, or enclosure floor)	_____	feet	<input type="checkbox"/>	meters	<input type="checkbox"/>
b) Top of the next higher floor	_____	feet	<input type="checkbox"/>	meters	<input type="checkbox"/>
c) Bottom of the lowest horizontal structural member (V Zones only)	_____	feet	<input type="checkbox"/>	meters	<input type="checkbox"/>
d) Attached garage (top of slab)	_____	feet	<input type="checkbox"/>	meters	<input type="checkbox"/>
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)	_____	feet	<input type="checkbox"/>	meters	<input type="checkbox"/>
f) Lowest adjacent (finished) grade next to building (LAG)	_____	feet	<input type="checkbox"/>	meters	<input type="checkbox"/>
g) Highest adjacent (finished) grade next to building (HAG)	_____	feet	<input type="checkbox"/>	meters	<input type="checkbox"/>
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support	_____	feet	<input type="checkbox"/>	meters	<input type="checkbox"/>

## Section C – Building Elevations



Enter measurements to nearest tenth of a foot

This section is required for Zones A1-30, AE, AH or A (with BFE) and for VE zones

This section is not required for Zones AO or A (without BFE), except to support an application for LOMA or LOMR-F

**SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)**

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.

**C1 Elevations – Zones A1-A30, AE, AH, A (with BFE), VE, V1-V30, V (with BFE), AR, ARS, ARSE, ARS1-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 Elevation: \_\_\_\_\_ Vertical Datum: \_\_\_\_\_

Indicate elevation datum used for the elevations in items a) through h) below:  
 NAVD 1929  NAVD 1988  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, stratigapace, or enclosure floor)	_____	feet	<input type="checkbox"/>	meters	<input type="checkbox"/>
b) Top of the next higher floor	_____	feet	<input type="checkbox"/>	meters	<input type="checkbox"/>
c) Bottom of the lowest horizontal structural member (V Zones only)	_____	feet	<input type="checkbox"/>	meters	<input type="checkbox"/>
d) Attached garage (top of slab)	_____	feet	<input type="checkbox"/>	meters	<input type="checkbox"/>
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)	_____	feet	<input type="checkbox"/>	meters	<input type="checkbox"/>
f) Lowest adjacent (finished) grade next to building (LAG)	_____	feet	<input type="checkbox"/>	meters	<input type="checkbox"/>
g) Highest adjacent (finished) grade next to building (HAG)	_____	feet	<input type="checkbox"/>	meters	<input type="checkbox"/>
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support	_____	feet	<input type="checkbox"/>	meters	<input type="checkbox"/>

## Section C - Benchmarks



Each benchmark in a network has a unique identifier

The National Geodetic Survey uses the Permanent Identifier (PID) to uniquely identify each benchmark.

Most other networks will assign a similar identifier

## Section C - Building Elevation Data



It may be necessary to enter the building to ensure that all required elevations are obtained

Use the same datum as was used in B9

**SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)**

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.

**C1 Elevations – Zones A1-A30, AE, AH, A (with BFE), VE, V1-V30, V (with BFE), AR, ARS, ARSE, ARS1-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 Elevation: \_\_\_\_\_ Vertical Datum: \_\_\_\_\_

Indicate elevation datum used for the elevations in items a) through h) below:  
 NAVD 1929  NAVD 1988  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, stratigapace, or enclosure floor)	_____	feet	<input type="checkbox"/>	meters	<input type="checkbox"/>
b) Top of the next higher floor	_____	feet	<input type="checkbox"/>	meters	<input type="checkbox"/>
c) Bottom of the lowest horizontal structural member (V Zones only)	_____	feet	<input type="checkbox"/>	meters	<input type="checkbox"/>
d) Attached garage (top of slab)	_____	feet	<input type="checkbox"/>	meters	<input type="checkbox"/>
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)	_____	feet	<input type="checkbox"/>	meters	<input type="checkbox"/>
f) Lowest adjacent (finished) grade next to building (LAG)	_____	feet	<input type="checkbox"/>	meters	<input type="checkbox"/>
g) Highest adjacent (finished) grade next to building (HAG)	_____	feet	<input type="checkbox"/>	meters	<input type="checkbox"/>
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support	_____	feet	<input type="checkbox"/>	meters	<input type="checkbox"/>



### C2 a – Top of Bottom Floor



- Slab foundation
- Basement floor
- Elevated floor
- Enclosure floor
- Crawlspace floor



**SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)**

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

C2. Elevations – Zones A1-A30, AE, AH, A1 (with BFE), VC, V1-V70, V1 (with BFE), AD, AR, AR1, AR2, AR3, AR4, AR5, AR6, AR7, AR8, AR9, AR10, AR11, AR12, AR13, AR14, AR15, AR16, AR17, AR18, AR19, AR20, AR21, AR22, AR23, AR24, AR25, AR26, AR27, AR28, AR29, AR30, AR31, AR32, AR33, AR34, AR35, AR36, AR37, AR38, AR39, AR40, AR41, AR42, AR43, AR44, AR45, AR46, AR47, AR48, AR49, AR50, AR51, AR52, AR53, AR54, AR55, AR56, AR57, AR58, AR59, AR60, AR61, AR62, AR63, AR64, AR65, AR66, AR67, AR68, AR69, AR70, AR71, AR72, AR73, AR74, AR75, AR76, AR77, AR78, AR79, AR80, AR81, AR82, AR83, AR84, AR85, AR86, AR87, AR88, AR89, AR90, AR91, AR92, AR93, AR94, AR95, AR96, AR97, AR98, AR99, AR100, AR101, AR102, AR103, AR104, AR105, AR106, AR107, AR108, AR109, AR110, AR111, AR112, AR113, AR114, AR115, AR116, AR117, AR118, AR119, AR120, AR121, AR122, AR123, AR124, AR125, AR126, AR127, AR128, AR129, AR130, AR131, AR132, AR133, AR134, AR135, AR136, AR137, AR138, AR139, AR140, AR141, AR142, AR143, AR144, AR145, AR146, 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AR862, AR863, AR864, AR865, AR866, AR867, AR868, AR869, AR870, AR871, AR872, AR873, AR874, AR875, AR876, AR877, AR878, AR879, AR880, AR881, AR882, AR883, AR884, AR885, AR886, AR887, AR888, AR889, AR890, AR891, AR892, AR893, AR894, AR895, AR896, AR897, AR898, AR899, AR900, AR901, AR902, AR903, AR904, AR905, AR906, AR907, AR908, AR909, AR910, AR911, AR912, AR913, AR914, AR915, AR916, AR917, AR918, AR919, AR920, AR921, AR922, AR923, AR924, AR925, AR926, AR927, AR928, AR929, AR930, AR931, AR932, AR933, AR934, AR935, AR936, AR937, AR938, AR939, AR940, AR941, AR942, AR943, AR944, AR945, AR946, AR947, AR948, AR949, AR950, AR951, AR952, AR953, AR954, AR955, AR956, AR957, AR958, AR959, AR960, AR961, AR962, AR963, AR964, AR965, AR966, AR967, AR968, AR969, AR970, AR971, AR972, AR973, AR974, AR975, AR976, AR977, AR978, AR979, AR980, AR981, AR982, AR983, AR984, AR985, AR986, AR987, AR988, AR989, AR990, AR991, AR992, AR993, AR994, AR995, AR996, AR997, AR998, AR999, AR1000.

### Top of Bottom Floor



### Top of Bottom Floor



### Bottom Floor vs. Lowest Floor



**BOTTOM FLOOR**

Objective

Measured by the surveyor

The floor with the lowest elevation

- Assumed to be level
- If sloped, use lowest point of the floor

C2.a on the EC

**LOWEST FLOOR**

Interpreted by the community floodplain administrator

Based on multiple factors

Used for rating insurance

Determines whether structure is compliant with local floodplain ordinance

### C2 d – Attached Garage



An attached garage means the garage is beside the building, not underneath or separate

Record the elevation for attached garages only, otherwise enter "N/A"

**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.

C2. Elevations – Zones A1-A30, AE, AH, A (with BFE), VE, Y1-Y30, V (with BFE), AR, AR.A, AR.AE, AR.A1-A30, AR.UH, AR.UH.AQ.  
 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:  
 NGVD 1929  NAVD 1988  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) \_\_\_\_\_ feet  meters  
 feet  meters

b) Top of the next higher floor \_\_\_\_\_ feet  meters  
 feet  meters

c) Bottom of the lowest horizontal structural member (V Zones only) \_\_\_\_\_ feet  meters  
 feet  meters

d) Attached garage (top of slab) \_\_\_\_\_ feet  meters  
 feet  meters

f) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments) \_\_\_\_\_ feet  meters  
 feet  meters

g) Lowest adjacent (finished) grade next to building (LAG) \_\_\_\_\_ feet  meters  
 feet  meters

h) Highest adjacent (finished) grade next to building (HAG) \_\_\_\_\_ feet  meters  
 feet  meters

i) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support. \_\_\_\_\_ feet  meters  
 feet  meters

### Attached Garages



C2(d)

- Common wall
- Single structure
- One insurance policy



C2(a)

- Parking on the bottom floor
- Beneath, **not beside** the building
- Floor(s) above the parking area

### C2 e – Machinery and Equipment



Machinery and equipment servicing the building includes those located in an attached garage, enclosure, or on an open utility platform

**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.

C2. Elevations – Zones A1-A30, AE, AH, A (with BFE), VE, Y1-Y30, V (with BFE), AR, AR.A, AR.AE, AR.A1-A30, AR.UH, AR.UH.AQ.  
 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:  
 NGVD 1929  NAVD 1988  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) \_\_\_\_\_ feet  meters  
 feet  meters

b) Top of the next higher floor \_\_\_\_\_ feet  meters  
 feet  meters

c) Bottom of the lowest horizontal structural member (V Zones only) \_\_\_\_\_ feet  meters  
 feet  meters

d) Attached garage (top of slab) \_\_\_\_\_ feet  meters  
 feet  meters

f) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments) \_\_\_\_\_ feet  meters  
 feet  meters

g) Lowest adjacent (finished) grade next to building (LAG) \_\_\_\_\_ feet  meters  
 feet  meters

h) Highest adjacent (finished) grade next to building (HAG) \_\_\_\_\_ feet  meters  
 feet  meters

i) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support. \_\_\_\_\_ feet  meters  
 feet  meters

### Machinery & Equipment



### Machinery & Equipment




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### Machinery & Equipment




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### C2f & C2g – Lowest & Highest Adjacent Grade

Measure the grade immediately adjacent to the building



**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.

C2. Elevations – Zones A1–A30, AE, AH, A (with BFE), VE, V1–V30, V (with BFE), AR, AR1A, AR1AE, AR1A–A30, AR1AH, AR1AG. 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.  
 NAVD 1989  NAVD 1988  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) \_\_\_\_\_  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 of lowest elevation of deck or stairs, including structural support \_\_\_\_\_  feet  meters

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### C2 h – Lowest Grade Elevation at Deck Support or Stairs

Enter value only if stairs or deck are attached to the structure; if freestanding or it doesn't exist, enter "N/A"

C2h required (if applicable) if EC will support a LOMA or LOMR-F



**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.

C2. Elevations – Zones A1–A30, AE, AH, A (with BFE), VE, V1–V30, V (with BFE), AR, AR1A, AR1AE, AR1A–A30, AR1AH, AR1AG. 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.  
 NAVD 1989  NAVD 1988  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) \_\_\_\_\_  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 of lowest elevation of deck or stairs, including structural support \_\_\_\_\_  feet  meters

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### Common Errors in Section C



- Surveying for Finished Construction too early
- Information certified in C2(a-g) does not support Building Diagram used
- Datum not converted to that of B9 (BFE)
- No entry for C2e (machinery and equipment)
- Leaving field blank or entering "0" instead of using "N/A" when there is nothing to measure

### Section D - Surveyor Certification



The certification box must include the certifier's seal if Section C was completed by a surveyor or engineer

**SECTION D - SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION**

This certification is to be signed and sealed by a licensed surveyor, engineer, or architect authorized by law to certify elevation information. I certify that the information on this Certificate represents the best effort to obtain 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?  Yes  No  Check here if attachments.

Certifier's Name \_\_\_\_\_ License Number \_\_\_\_\_

Title \_\_\_\_\_

Company Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ ZIP Code \_\_\_\_\_

Signature \_\_\_\_\_ Telephone \_\_\_\_\_

**Place Seal Here** (with a circular seal graphic)

Comments (including type of equipment and location, per C2(e), if applicable)

### Who can certify elevations?



- Surveyor OK in all states
- Engineer Check with your State NFIP Coordinator
- Architect Not allowed in many states for "as-built" elevations

### Section D - Comments



**SECTION D - SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION**

Comments (including type of equipment and location, per C2(e), if applicable)

- Location of machinery
- Additional machinery
- Engineered flood openings
- Benchmarks
- Building characteristics
- Additional floors
- Anything that needs explanation

## Section E - Survey not required



Used in AO Zones and A Zones where there is no established BFE

Certified by homeowner or community official

Elevations should be relative to highest or lowest NATURAL GRADE whenever available; indicate that elevations E1 – E4 are based on natural grade in “Comments” area of Section F

SECTION E – BUILDING ELEVATION INFORMATION (SURVEY NOT REQUIRED) FOR ZONE AO AND ZONE A (WITHOUT BFE)	
For Zones AO and A (without BFE), complete items E1-E5. If the Certificate is intended to support a LOMA or LOMR-F request, complete Sections A, B and C. For items E1-E4, use natural grade, if available. Check the measurement used. In Plunge Pool only, enter meters.	
E1. Provide elevation information for the following and check the appropriate boxes to show whether the elevation is above or below the highest adjacent grade (HAG) and the lowest adjacent grade (LAG):	
a) Top of bottom floor (including basement, crawlspace, or enclosure) is: _____	<input type="checkbox"/> feet <input type="checkbox"/> meters <input type="checkbox"/> above or <input type="checkbox"/> below the HAG.
b) Top of bottom floor (including basement, crawlspace, or enclosure) is: _____	<input type="checkbox"/> feet <input type="checkbox"/> meters <input type="checkbox"/> above or <input type="checkbox"/> below the LAG.
E2. For Building Diagrams 6–8 with permanent flood openings provided in Section A Items 8 and/or 9 (see pages 1–2 of instructions), the next higher floor elevation (C2) in the diagram of the building is: _____	
E3. Attached garage (top of slab) is: _____	
E4. Top of platform of machinery and/or equipment servicing the building is: _____	
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? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown. The local official must certify this information in Section G.	

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## Notes on Section E



In Zones without a BFE, Section E is all that is required to obtain flood insurance

- Section E may be completed by a property owner or owner's representative
- May also be completed by a surveyor or community floodplain manager

To support a LOMA or LOMR-F

- Section C must also be completed and elevations certified by a licensed surveyor, architect, or engineer

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## Section F - Property Owner Certification



Certifies measurements in Section E taken by a property owner (or owner's representative)

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

SECTION F – PROPERTY OWNER (OR OWNER'S REPRESENTATIVE) CERTIFICATION				
The property owner or owner's authorized representative who completes Sections A, B, and E for Zone A (without a FEMA-issued or community-issued BFE) or Zone AO must sign here. The statements in sections A, B, and E are correct to the best of my knowledge.				
Property Owner or Owner's Authorized Representative's Name: _____				
Address _____	City _____	State _____	ZIP Code _____	
Signature _____	Date _____	Telephone _____		
Comments: _____				
<input type="checkbox"/> Check here if attachments.				

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## Section G - Community Information



The community official who completes Section C or E must complete this section  
Must attach certified documentation with EC

SECTION G – COMMUNITY INFORMATION (OPTIONAL)		
The local official who is authorized by law or ordinance to enforce the community's floodplain management ordinance can complete Sections A, B, C, or E, and G of the Elevation Certificate. Complete the applicable items and sign below. Check the measurement used in items G1-G3. In Plunge Pool only, enter meters.		
G1. <input type="checkbox"/> 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 (include the name and date of the elevation table in the Community area below).		
G2. <input type="checkbox"/> 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-G5) is provided for community floodplain management purposes.		
G4. Permit Number _____	G5. Date Permit Issued _____	G6. Date Certificate of Completion/Ordinance Issued _____
G7. This permit has been issued for: <input type="checkbox"/> New Construction <input type="checkbox"/> Substantial Improvement		
G8. Elevation of an built lowest floor (including basement) _____		
G9. BFE or in Zone AO, depth of flooding at the building site _____		
G10. Community's design flood elevation _____		
Local Official's Name _____	Title _____	
Community Name _____	Type/Purpose _____	
Signature _____	Date _____	

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### Section G - Community Information



- Use Section G to document corrections or changes
- Enter permit information
- Community determined BFE
- Community identified Design Elevation
- Identify attachments
- Comments, or anything that requires explanation

### Suggestions for Surveyors



The EC is used to communicate important information to many different audiences for many different reasons; accuracy is key.

Read the Instructions , they are detailed and helpful.

Refer to FEMA 467-1, Floodplain Management Bulletin Elevation Certificate, May 2004 for further instruction.

Selecting the correct Building Diagram is very important.

### Suggestions for Surveyors



The community floodplain administrator can help you determine the correct flood zone or use FEMA’s Map Service Center.

When determining BFEs in AE zones, use the flood profiles in the FIS, not the FIRM panel alone.

The floodplain administrator may call you to clarify information on the EC or to ask you to correct it if necessary.

### Building Photographs



Photographs are optional unless the Elevation Certificate is being used to obtain flood insurance.

The certifier must provide at least two photographs showing the front and rear of the building taken within 90 days from the date of certification.

Date must be included on photos.

Photographs should capture key elements, such as foundation, flood openings, mechanical and building diagram.

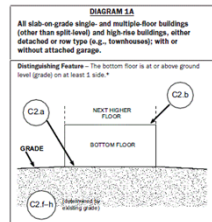




# Building Diagrams



## Diagram 1A (Slab on grade)



Not common in flood zones as new construction or substantial improvement because it is insufficiently elevated



C2.a = C2.g and C2.h  
C2.a = lowest floor when a BFE is available



## Diagram 1A (Without Garage)



C2.a – Top of bottom floor  
C2.f – Lowest adjacent (finished) grade next to building (LAG)  
C2.g – Highest adjacent (finished) grade next to building (HAG)




## Diagram 1A - Slab-on-grade, multiple floors

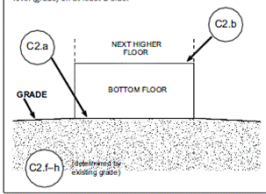



C2.a – Top of bottom floor  
C2.b – Top of next higher floor  
C2.f – Lowest adjacent (finished) grade next to building (LAG)  
C2.g – Highest adjacent (finished) grade next to building (HAG)

### Diagram 1A




**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.\*



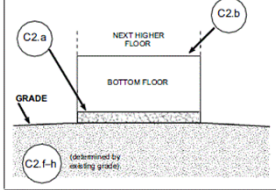



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### Diagram 1B (Raised slab)



**DIAGRAM 1B**  
 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 1 side.\*






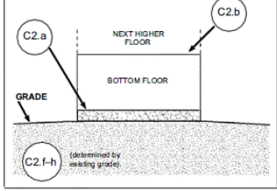
Distinguishing Feature – the bottom floor is at or above ground level (grade) on at least one side.\*

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### Diagram 1B (Raised slab)



**DIAGRAM 1B**  
 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 1 side.\*




Thick slab or inside of foundation is filled  
 C2.a = lowest floor when a BFE is available; E1.a is lowest floor if no BFE

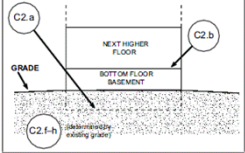


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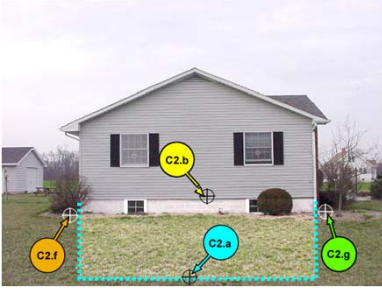
### Diagram 2A - Basement



**DIAGRAM 2**  
 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.\*



Not allowed in any flood zone as new construction or substantial improvement



C2.a is less than C2.f and C2.g  
 C2.a = lowest floor when a BFE is available

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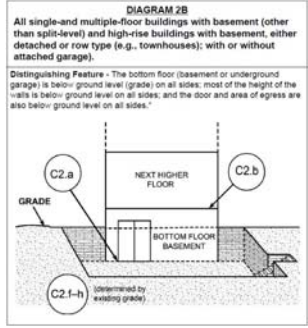


# Basement



Any area of the building having its floor below ground level on all sides.

# NEW! Diagram 2B



C2.a is less than C2.g, but not necessarily C2.f



Image source: Google (1/7/2016)

# Diagram 2B



Distinguishing features

- The bottom floor (basement or underground garage) is below ground level (grade) on all sides
- Most of the height of the walls are below ground level on all sides
- The door and area of egress is also below ground level on all sides.

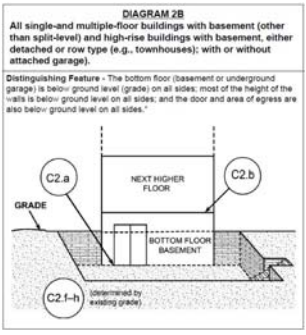
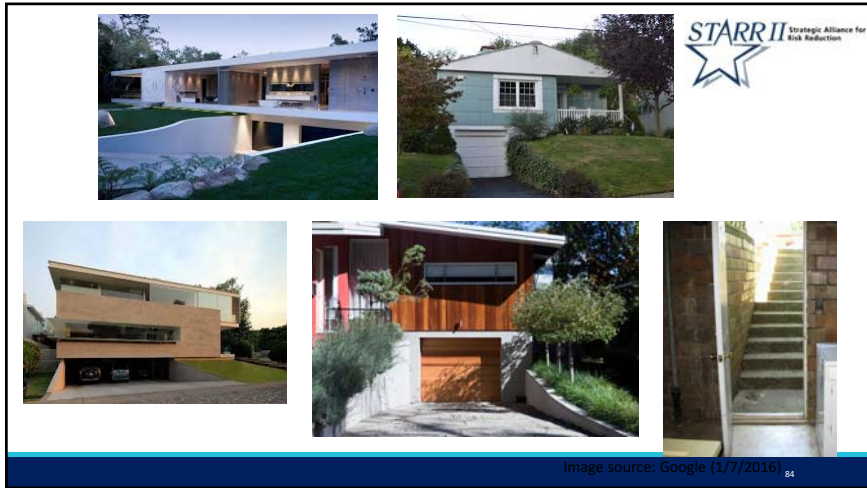


Image source: Google (1/7/2016)



### Diagram 3 – Split level

**DIAGRAM 3**  
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.\*

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### Diagram 3 (no flood openings)

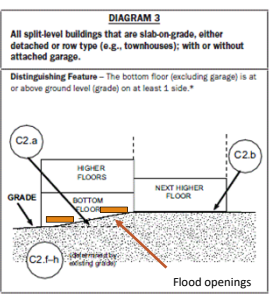
**DIAGRAM 3**  
All split-level buildings that are slab-on-grade, either detached or row type (e.g., townhouses); with or without attached garage.  
Distinguishing Feature – The bottom floor (excluding garage) is at or above ground level (grade) on at least 1 side.\*

No flood openings

Not allowed in any SFHA unless bottom floor has sufficient flood vents (next slide)  
C2.a = lowest floor when a BFE is available; E1.a is lowest floor if no BFE

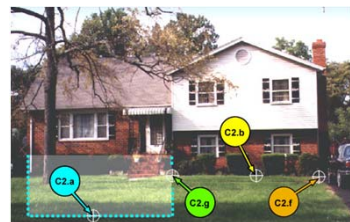
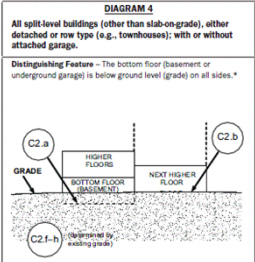
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### Diagram 3 – with flood openings



Bottom floor may only be used for parking and storage  
 C2.b = lowest floor when a BFE is available; E2 is lowest floor if no BFE

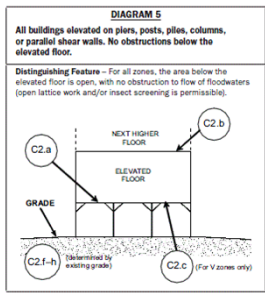
### Diagram 4 (Split level, basement)



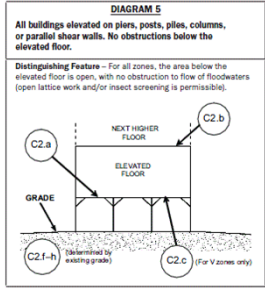
Not allowed in any flood zone as new construction or substantial improvement (basement)

C2.a is less than C2.f and C2.g  
 C2.a = lowest floor when a BFE is available

### Diagram 5 – Posts & Piers



### Diagram 5



- In A Zones, C2.a is the lowest floor when a BFE is available; E1.a is lowest floor if no BFE
- In V Zones, C2.c is the lowest floor



### Diagram 5

STARR II Strategic Alliance for Risk Reduction

C2.a

C2.c (V Zone)

C2.h

C2.f

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### Diagram 5 with Breakaway Walls

STARR II Strategic Alliance for Risk Reduction

C2.a – Top of bottom floor  
C2.h – Lowest adjacent grade at lowest elevation of deck or stairs, including structural support

C2.a

C2.h

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### Diagram 5 - Manufactured Dwellings

STARR II Strategic Alliance for Risk Reduction

**DIAGRAM 5**  
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).

C2.a

C2.b

NEXT HIGHER FLOOR

ELEVATED FLOOR

GRADE

C2.f-h (Determined by existing grade)

C2.c (For V zones only)

Manufactured dwellings installed on piers would be considered Diagram 5

Skirting, non-structural screening, or lattice can be ignored.

C2.a = lowest floor when a BFE is available;  
E1.a is lowest floor if no BFE

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### Diagram 5 – Manufactured w/breakaway skirting

STARR II Strategic Alliance for Risk Reduction


C2.a

C2.h

C2.e

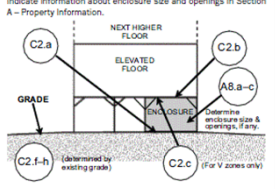

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### Diagram 6




**DIAGRAM 6**  
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.

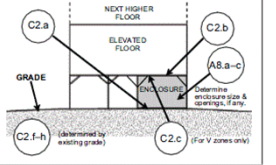
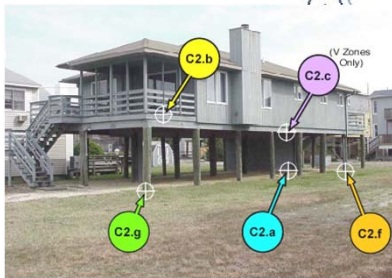
95

### Diagram 6



**DIAGRAM 6**  
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.

Not allowed in any flood zone as new construction or substantial improvement unless enclosure has sufficient flood openings

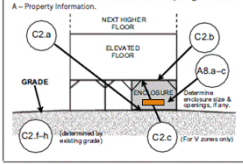
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### Diagram 6



**DIAGRAM 6**  
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 may only be used for parking and storage

In SFHA, flood openings necessary in lower enclosure

Lowest floor is the first floor without flood openings (C2.a or C2.b)

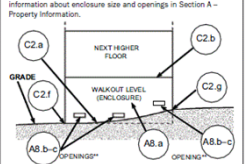
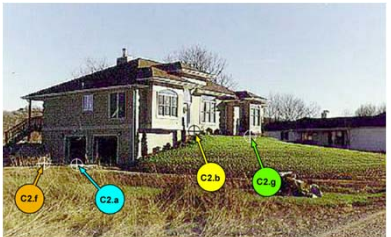
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### Diagram 7 (Full-story foundation)



**DIAGRAM 7**  
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 1 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.

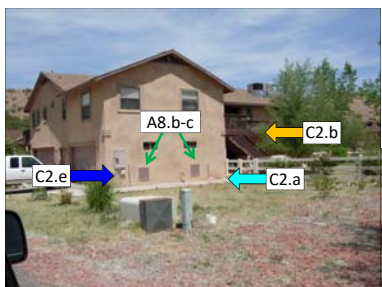
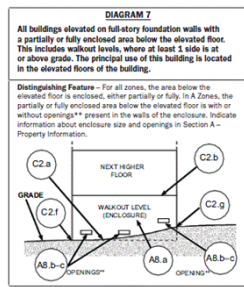



Walk-out enclosure may only be used for parking and storage

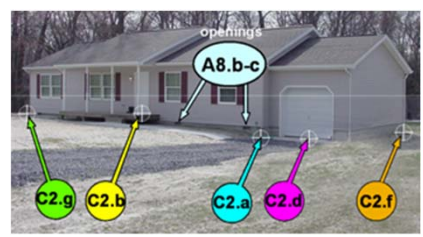
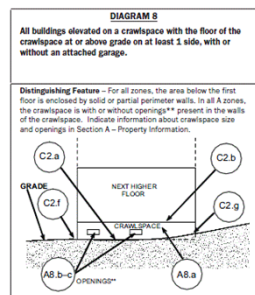
98



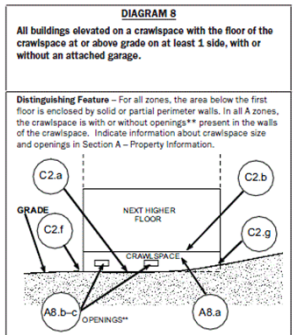
### Diagram 7



### Diagram 8 (Crawlspace)



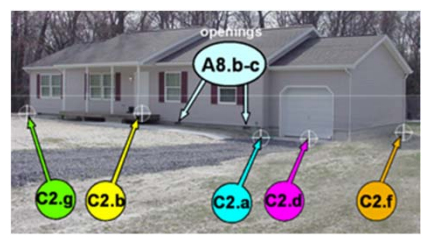
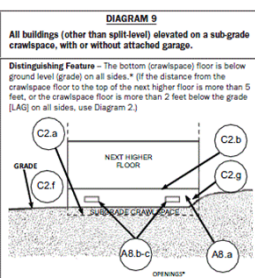
### Diagram 8



Crawlspace height must not exceed 4 feet  
Attached garage must be used only for parking and storage  
C2.b = lowest floor

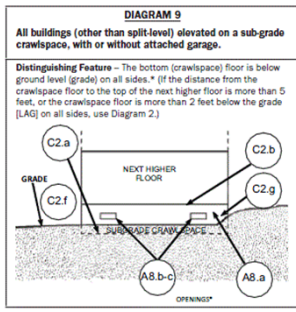


### Diagram 9 (Below-grade crawlspace)



Is this an 8 or a 9?

### Diagram 9

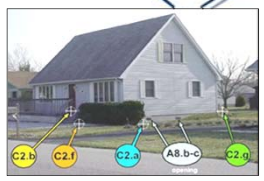
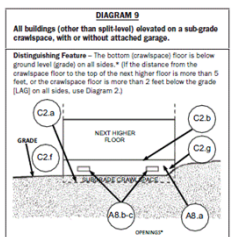


Crawlspace height must not exceed 4 feet high, 2 feet deep

Attached garage must be used only for parking and storage

C2b = lowest floor

### More on Diagram 9



Look carefully at building plans

C2a must be no more than 2 feet below LAG on all sides

C2b minus C2a must not exceed 5 feet

If these conditions are not met, you have a Diagram 2 (basement)

Diagram 9 only allowed if local ordinance allows below grade crawlspaces

### Check the Building Diagram!



The form contains various sections for recording building details. The 'Building Diagram' section is highlighted with an orange arrow. Other sections include 'General Information', 'Elevation Data', and 'Remarks'. The form is titled 'STARR II Strategic Alliance for Risk Reduction'.

### Notes for the Surveyor



You may need to enter the structure and/or look into the crawlspace to select the correct building diagram and take all required measurements

The use of the building's bottom floor enclosure can change the Building Diagram

Measure bottom of flood openings relative to interior or exterior grade, whichever is higher; explain in comments

Remember, you are just there to report what you see.

## Notes for the Community Official



- Ensure that the EC makes sense
- Verify that the correct building diagram has been selected
- Verify that all necessary data has been collected to determine building compliance
- Only use an EC based on finished construction to determine building compliance

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## Top Surveyor Errors



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Counting blocked flood openings



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Counting flood openings that are too high



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## Missed Machinery—Go Inside!



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## Common Surveyor Errors



Assuming that a structure built on fill or natural ground above BFE is “above the floodplain” and therefore in Zone X

Using the wrong datum, not converting to the one used on FIRM

Leaving fields blank

NO COMMENTS!

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## Top Community Errors



Not requiring a “Finished Construction” EC for final review

Crossing out entries to make corrections

Not using Section G to make comments, modifications (e.g. added flood vents), or to enter permit information

Accepting Elevation Certificates without reviewing for accuracy or for compliance with local regulations.

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## Helpful Hints for Reviewers



Make a “complete and correct” finished construction EC a condition for Certificate of Occupancy.

Never assume the EC was filled out correctly because it has the “professional's” seal on it.

Establish a review process that determines if the EC is complete and correct.


Fill out as much of the EC as you can at the time of permit application (Section A and B).

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## Using Elevation Certificates in the Development Review Process


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## 8 Steps to Plan Review

- 1) Is it "Development"?
- 2) Is it in the Special Flood Hazard Area?
- 3) Permits
- 4) Substantial Improvement
- 5) Base Flood Elevation  
Require an Elevation Certificate
- 6) Lowest Floor Elevation
- 7) Inspections
- 8) Record Keeping

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## Step 3: Permits


Floodplain Development Permit (FDP) application

- Fees as required by your ordinance
- A location or plat map
- Plans showing existing and proposed conditions
- **Pre-construction Elevation Certificate**

Additional state or federal permits

- Wetlands, below ordinary high water line, in a scenic corridor, or adjacent to a fish-bearing stream, etc.

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## Step 5: BFE – Require EC

Inform the applicant of the need for an Elevation Certificate and the need to hire a surveyor.

Surveyor should include at least three visits:

- Pre-construction
- Mid-construction
- Finished construction (As-Built)

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## Step 6: Lowest Floor Elevation



Lowest floor of the building must be built to, or above BFE

- Check your local ordinance for additional freeboard requirements

Flood protection methods:

Elevate on piers, posts, columns or walls

Elevate on fill

Floodproofing (non-residential buildings only)

**Verify the Building Diagram on the Elevation Certificate**

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## Permit Approval/Denial



If the development complies with floodplain regulations **and is reasonably safe from flooding**, approve it and issue the permit

- Conditional approval
- Flag for inspection as floodplain development
- **Enter the permit into a log of floodplain development permits and in Section G4 of the Elevation Certificate**

If the proposed development does not comply, deny the permit application with a written explanation of the denial

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## Step 7: Inspections



Site inspections ensure that the project is built according to the plans

After the foundation is staked out, but before construction begins

When the foundation is complete

- (Under Construction EC Required)

When construction is completed

- After ALL mechanical and building utilities installed
- After final grading completed
- Verify flood-resistant materials below BFE
- Count flood vents in lower enclosures
- Verify completed Finished Construction Elevation Certificate

Issue the Certificate of Occupancy only after full compliance is demonstrated and the final Elevation Certificate is submitted.

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## Step 8: Record Keeping



Keep all pertinent records, for completed projects and denied permits, **forever**:

- Permit application/review checklist
- Engineering data (plans, specifications, hydraulic and hydrologic analyses, No-Rise Analyses)
- Correspondence relating to the project
- Variance or appeals proceedings
- Inspection documentation
- BFE data for subdivisions of at least 5 acres or 50 lots
- **Finished Construction Elevation Certificates**
- Certificate of occupancy
- Floodproofing Certificate (non-residential structures)

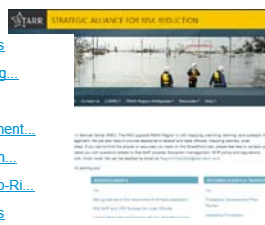
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## But wait! There's more!



Visit <http://j.mp/starronlinetraining> and [www.starr-team.com](http://www.starr-team.com) for additional training opportunities including Floodplain Development Review and Inspecting Floodplain Development!

Mar 29, 2018 10:00 am [STARR: Elevation Certificates](#)  
 Apr 26, 2018 10:00 am [STARR: Tools for Determining...](#)  
 May 10, 2018 10:00 am [STARR: NFIP Basics](#)  
 May 24, 2018 9:00 am [STARR: Floodplain Development...](#)  
 May 24, 2018 10:30 am [STARR: Inspecting Floodplain...](#)  
 Jun 7, 2018 10:00 am [STARR: How to Review a "No-Rt...](#)  
 Jun 14, 2018 10:00 am [STARR: Elevation Certificates](#)



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## Questions? (There will be a test)



Use "Raise Hand" feature to address the class verbally

Use "Q&A" to type your question if you are shy.

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## Ask the Help Desk



The Region X Help Desk is available for questions.

**[RegionXHelpDesk@starr-team.com](mailto:RegionXHelpDesk@starr-team.com)**

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## Contact Information



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