Federal Emergency Management Agency (FEMA) Elevation Certificate
City of Greenville Building Protection Requirements

City of Greenville Stormwater Ordinance
Article 19-7.5, Section C.1

- The Flood Protection Elevation (FPE) of all new residential structures shall be at least two feet above the Base Flood Elevation (BFE) with a recommendation of four feet above the BFE.
- Repaired or rebuilt structures with damage equaling ≥50% of the market value of the structure shall conform to the FPE requirements of new structures.
- Attached garages shall have a FPE of at least one foot above the BFE.
- Compensatory storage is required for all fill in the floodplain.
- Refer to Article 19-7.5, Section C.1 of the Stormwater Ordinance for a complete discussion of requirements.
Administrative tool of the NFIP that is used to:

- Determine the proper insurance premium rate
- Provide elevation information necessary to ensure compliance with community floodplain management ordinances (required for Community Rating System (CRS) communities)
- Support a request for a Letter of Map Amendment (LOMA) or Letter of Map Revision based on fill (LOMR-F)
<table>
<thead>
<tr>
<th>Section A - PROPERTY INFORMATION</th>
<th>For Insurance Company Use:</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1. Building Owner’s Name</td>
<td>Policy Number</td>
</tr>
<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>
<tr>
<td>A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)</td>
<td></td>
</tr>
<tr>
<td>A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.)</td>
<td></td>
</tr>
<tr>
<td>A5. Latitude/Longitude: Lat. __________________________ Long. __________________________</td>
<td>Horizontal Datum: ☐ NAD 1927 ☐ NAD 1983</td>
</tr>
<tr>
<td>A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.</td>
<td></td>
</tr>
<tr>
<td>A7. Building Diagram Number ______</td>
<td></td>
</tr>
<tr>
<td>A8. For a building with a crawlspace or enclosure(s):</td>
<td></td>
</tr>
<tr>
<td>a) Square footage of crawlspace or enclosure(s) ______ sq ft</td>
<td></td>
</tr>
<tr>
<td>b) No. of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade ______</td>
<td></td>
</tr>
<tr>
<td>c) Total net area of flood openings in A8.b ______ sq in</td>
<td></td>
</tr>
<tr>
<td>d) Engineered flood openings? ☐ Yes ☐ No</td>
<td></td>
</tr>
<tr>
<td>A9. For a building with an attached garage:</td>
<td></td>
</tr>
<tr>
<td>a) Square footage of attached garage ______ sq ft</td>
<td></td>
</tr>
<tr>
<td>b) No. of permanent flood openings in the attached garage within 1.0 foot above adjacent grade ______</td>
<td></td>
</tr>
<tr>
<td>c) Total net area of flood openings in A9.b ______ sq in</td>
<td></td>
</tr>
<tr>
<td>d) Engineered flood openings? ☐ Yes ☐ No</td>
<td></td>
</tr>
</tbody>
</table>
Photographs (A6)

• Required for all elevation certificate submittals to the City of Greenville.

• Minimum of 2 showing front & rear of building taken within 90 days:
  - must be taken with views confirming the diagram number
  - side view photos required if building has split-level or multi-level areas

• Must be in color and measure at least 3” X 3”.

• Additional photos are encouraged for clarification/documentation purposes.
Flood Openings

• Openings in walls that allow free passage of floodwaters in both directions, automatically, i.e., without human intervention, to equalize flood hydrostatic forces on both sides of the walls.

• A window, a door, or a garage door is not considered an opening.
Openings
Enclosures That Require Flood Openings

• Solid perimeter foundation walls (crawl space & elevated buildings)
• Spaces enclosed by non-structural walls under open foundation buildings in A Zones (breakaway & non-breakaway)
• Attached garages
• Accessory structures (detached garages & storage sheds)
• Manufactured home foundations (solid perimeter walls and rigid skirting)
Openings (A8)

- The measurement of the enclosed area in A8.a is taken from the outside of the space (gross area).
- To be counted as a flood opening in A8.b, the bottom of the opening must be located no higher than 1 foot above the higher of the interior or exterior grade under the opening.
• The area measurement in A8.c is the total **net** open area, excluding any bars, louvers, or other covers. If the net open area cannot be **reasonably** estimated, then:
  - indicate the **gross** size of the flood openings in A8.c, and
  - in the “Comments” area in Section D explain that the figure in A8.c is the gross area and describe the type of opening covers provided.
  - indicate if the openings are engineered in A8.d
Net Open Area Measurement

- Net open area = permanently open area of a non-engineered opening
- Operable vents, such as standard air vents, must be disabled in the open position to qualify as flood openings
Openings (A8) (cont)

• Openings that are entirely above the BFE, or any portion of an opening that is above the BFE, are not counted towards the compliance with the NFIP flood opening requirements.
Non-Engineered & Engineered Flood Openings

- Non-engineered openings meet the prescriptive requirements of NFIP regulations
- Engineered openings or devices can be of two types:
  - individually certified by a registered design professional for a specific building, or
  - devices for which an Evaluation Report has been issued by the International Code Council Evaluation Service (ICC-ES)
Openings\textsuperscript{(A8)} (cont)

• The use of engineered flood openings should be disclosed in “Comments” in Section D and the documentation required for engineered openings should be attached to the EC. FEMA TB-1 specifies acceptable forms of documentation.

• Close-up photos of flood openings are required to be provided with the EC.
Regardless of whether engineered or non-engineered opening are used:

- Each enclosed area must have a minimum of two openings (different walls when possible).
- The bottom of each opening must be no more than one foot above grade.
- Any screens, grates, grilles, fixed louvers, or other covers or devices must not block or impede the automatic flow of floodwaters into and out of the enclosed area.
Attached Garages (A9)

- See Notes for A8.
- Location of flood openings (applies to all enclosed areas):
  - on at least two sides of an enclosure where possible
  - on exterior walls where possible
  - may be installed in exit doors and garage doors.
Townhouses and Openings

• Interior townhouse units have less linear exterior wall length than the end units, it can be a challenge to the requirement for adequate net open area and the requirement that each enclosed area have openings. If openings cannot be provided in at least two walls, the NFIP allows all openings to be installed in one wall.

• Design of interior townhouse units can satisfy the guidance that openings should be on different sides if the walls inside the enclosed area have openings to connect enclosed spaces from front to back.
Figure 12. Illustration of suggested flood openings in enclosures under elevated townhouses (number of openings for illustration purposes only)
Situations That Do Not Require Flood Openings

- Manufactured homes with flexible skirting
- Flood-proofed enclosures in non-residential buildings (see TB-3)
- Enclosures formed by breakaway walls below buildings in V Zones (see TB-9)
Situations That Do Not Require Flood Openings, cont’d

• Back filled stem wall foundations
  – Note: Fill in the floodplain requires compensatory storage and the receipt of a LOMR-F from FEMA as required by the City Stormwater Ordinance. The City has a “zero-rise” policy for all development in the floodplain.
Common Issues
Section A

Correct building diagram number

Does the square footage make sense?
Are there openings?
Is there at least an equal amount of square inches?

Is there an attached garage?
Are there openings?
Is there at least an equal amount of square inches?
## SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

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

<table>
<thead>
<tr>
<th>B4. Map Number</th>
<th>B5. Suffix</th>
<th>B6. FIRM Index Date</th>
<th>B7. FIRM Panel Effective/Revised Date</th>
<th>B8. Flood Zone(s)</th>
<th>B9. Base Flood Elevation(s) (Zone AO, use base flood depth)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9.

  □ FIS Profile □ FIRM □ Community Determined □ Other (Describe) ____________________________________________

B11. Indicate elevation datum used for BFE in Item B9: □ NGVD 1929 □ NAVD 1988 □ Other (Describe) ____________________

B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? □ Yes □ No

  Designation Date_____________________________ □ CBRS □ OPA
Does this information match the FIRM and Index?

<table>
<thead>
<tr>
<th>SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1. NFIP Community Name &amp; Community Number</td>
</tr>
<tr>
<td>B4. Map Number</td>
</tr>
<tr>
<td>B8. Flood Zone(s)</td>
</tr>
</tbody>
</table>

B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9.

- [ ] FIS Profile
- [ ] FIRM
- [ ] Community Determined
- [ ] Other (Describe)

B11. Indicate elevation datum used for BFE in Item B9:
- [ ] NGVD 1929
- [ ] NAVD 1988
- [ ] Other (Describe)

B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)?

- [ ] Yes
- [ ] No

Designation Date ___________________________ | [ ] CBRS | [ ] OPA

Is the correct source indicated? | House location only? | Was the BFE obtained from a profile (AE) or a FIRM (V)?
**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 ___________________________**

**Conversion/Comments ___________________________**

<table>
<thead>
<tr>
<th>Item</th>
<th>Measurement Used</th>
<th>Feet</th>
<th>Meters (Puerto Rico only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>Top of bottom floor (including basement, crawlspace, or enclosure floor)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b)</td>
<td>Top of the next higher floor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c)</td>
<td>Bottom of the lowest horizontal structural member (V Zones only)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d)</td>
<td>Attached garage (top of slab)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e)</td>
<td>Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>f)</td>
<td>Lowest adjacent (finished) grade next to building (LAG)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>g)</td>
<td>Highest adjacent (finished) grade next to building (HAG)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>h)</td>
<td>Lowest adjacent grade at lowest elevation of deck or stairs, including structural support</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
New 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 one side.*

C2.a

C2.b

NEXT HIGHER FLOOR

BOTTOM FLOOR

C2.f-n (determined by existing grade)

**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 one side.*

C2.a

C2.b

NEXT HIGHER FLOOR

BOTTOM FLOOR

C2.f-n (determined by existing grade)

* A floor that is below ground level (grade) on all sides is considered a basement even if the floor is used for living purposes, or as an office, garage, workshop, etc.
An “opening” is 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 is required for enclosures or crawlspaces. The openings shall provide a total net area of not less than one square inch for every square foot of area enclosed, excluding any bars, louvers, or other covers of the opening. Alternatively, an 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 the automatic equalization of hydrostatic flood forces on exterior walls. A window, a door, or a garage door is not considered an opening; openings may be installed in doors. Openings shall be on at least two sides of the enclosed area. If a building has more than one enclosed area, each area must have openings to allow floodwater to directly enter. 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.

** A floor that is below ground level (grade) on all sides is considered a basement even if the floor is used for living purposes, or as an office, garage, workshop, etc.
Section C Notes

• “Finished Construction” should be used only when all machinery and/or equipment have been installed and the grading around the building is completed.

• If the building is identified as “Finished Construction”, the photos provided in A6 should reflect finished construction.
• Enter N/A for items that do not apply.
• C2.e is the lowest platform elevation of machinery or equipment servicing the building. For buildings with elevators, C2.e will typically be the bottom of the shaft.
• The type of equipment from C2.e must be described in the “Comments” area of Section D.
• Adjacent grade = the elevation of the ground, sidewalk, patio slab, or deck support immediately next to the building.
  - If the EC is to be used to support a request for a LOMA or LOMR-F, provide C2.h: the lowest adjacent grade elevation measured at the deck or stairs, including structural support
• For a “Finished Construction” EC, exterior work next to the building must be finished prior to the completion of C2.f and C2.g.
Lowest Adjacent Grade (LAG) (C2:f)

“Elevation of the lowest ground surface that touches any of the exterior walls of a building.”

• Indicates whether or not a Letter of Map Change (LOMC) is in order.
• Not defined by regulation, defined in FEMA 312 Homeowner’s Guide to Retrofitting
Highest Adjacent Grade (HAG) (C2:g)

Highest adjacent grade means the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

- Defined in 44CFR Part 59
- Indicates if a building conforms with elevation requirements of law/ordinance
- If determining HAG in an area with no determined BFE’s, then you would use Highest adjacent NATURAL grade where available.
<table>
<thead>
<tr>
<th>C1. Building elevations are based on:</th>
<th>Construction Drawings*</th>
<th>Building Under Construction*</th>
<th>Finished Construction*</th>
</tr>
</thead>
<tbody>
<tr>
<td>*A new Elevation Certificate will be required when construction of the building is complete.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| C2. Elevations - Zones A1, A20, AE, AH, A (with BFE), VE, VF30, VF (with BFE), AR, AR/AE, AR/AH, AR/AO. Complete items C2.a-h below according to the building diagram specified in Item A7. Use the same datum as the BFE. |
|Benchmark Utilized __________________ | Vertical Datum __________________ |
| Conversion/Comments __________________ |
| a) Top of bottom floor (including basement, crawlspace, or enclosure floor) __________________ | feet | meters (Puerto Rico only) |
| b) Top of the next higher floor __________________ | feet | meters (Puerto Rico only) |
| c) Bottom of the lowest horizontal structural member (V Zones only) __________________ | feet | meters (Puerto Rico only) |
| d) Attached garage (top of slab) __________________ | feet | meters (Puerto Rico only) |
| e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments) __________________ | feet | meters (Puerto Rico only) |
| f) Lowest adjacent (finished) grade next to building (LAG) __________________ | feet | meters (Puerto Rico only) |
| g) Highest adjacent (finished) grade next to building (HAG) __________________ | feet | meters (Puerto Rico only) |
| h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support __________________ | feet | meters (Puerto Rico only) |

Was there a conversion? Are there any calculations attached? Do the elevations entered match the building diagram number?
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 of form. Were latitude and longitude in Section A provided by a licensed land surveyor? ☐ Yes ☐ No

Certifier’s Name

License Number

Title

Company Name

Address

City State ZIP Code

Signature Date Telephone

FEMA Form 81-31, Mar 09 See reverse side for continuation. Replaces all previous editions

IMPORTANT: In these spaces, copy the corresponding information from Section A.

Policy Number

Company NAIC Number

SECTION D - SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION (CONTINUED)

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

Comments

Signature Date

☐ Check here if attachments
Sections E and F

- Sections E and F are completed where there is:
  - A Zone with no BFE
  - AO Zone

Sections A, B and E. Certified by:
- Property owner information
- Completed by property owner
## 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 Puerto Rico 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 ______. ______ feet ______ meters ______ above or ______ below the HAG.
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.b in the diagrams) of the building is ______. ______ feet ______ meters ______ above or ______ below the HAG.

### E3.
Attached garage (top of slab) is ______. ______ feet ______ meters ______ above or ______ below the HAG.

### 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.
**Section F**

**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.*

<table>
<thead>
<tr>
<th>Property Owner’s or Owner’s Authorized Representative’s Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
</tr>
<tr>
<td>Signature</td>
</tr>
<tr>
<td>Comments</td>
</tr>
</tbody>
</table>

- [ ] Check here if attachments
**Section G**

---

**SECTION G - COMMUNITY INFORMATION (OPTIONAL)**

The local official who is authorized by law or ordinance to administer the community's floodplain management ordinance can complete Sections A, B, C (or E), and G of this Elevation Certificate. Complete the applicable item(s) and sign below. Check the measurement used in Items G8 and G9.

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.

<table>
<thead>
<tr>
<th>G4. Permit Number</th>
<th>G5. Date Permit Issued</th>
<th>G6. Date Certificate Of Compliance/Occupancy Issued</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

G7. This permit has been issued for: □ New Construction □ Substantial Improvement

G8. Elevation of as-built lowest floor (including basement) of the building __________ feet __________ meters (PR) Datum __________

G9. BFE or (in Zone AO) depth of flooding at the building site __________ feet __________ meters (PR) Datum __________

G10. Community's design flood elevation __________ feet __________ meters (PR) Datum __________

<table>
<thead>
<tr>
<th>Local Official's Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Signature __________________ Date __________

Comments ____________________________________________________________

Check here if attachments □

---
**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 one side.*

**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 one side.*
Diagram 1A & 1B Notes

• For multi-story slab-on-grade buildings, Section C2.b (top of next higher floor) must be completed.

• Elevated slab (back-filled stem wall) foundation systems should be described in the “Comments” area in Section D.
Slab-on-grade without attached garage
Slab-on-grade, one story building with attached garage
Raised Slab-on-Grade with Fill
Slab-on-grade, multiple-floor row type building without attached
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. Buildings constructed above crawl spaces that are below grade on all sides should also use this diagram.*
Basement

- Below Grade on All Sides
Multiple-floor building with basement, without 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 one side.*

- **GRADE**
- **BOTTOM FLOOR**
- **HIGHER FLOORS**
- **NEXT HIGHER FLOOR**
- **a**
- **b**
- **f**
- **g** (determined by existing grade)
Slab-on-grade, split-level building without attached garage.

- Top of bottom floor (measure at doorsill at lower double doors)
- Top of next higher floor (measure at doorsill)
- Lowest adjacent finished grade
- Highest adjacent finished grade
- , , , and  Not Applicable
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. Buildings constructed above crawl spaces that are below grade on all sides should also use this diagram.*

---

**Diagram 4**

GRADE

<table>
<thead>
<tr>
<th>a</th>
<th>HIGHER FLOORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>b</td>
<td>NEXT HIGHER FLOOR</td>
</tr>
</tbody>
</table>

BOTTOM FLOOR (BASEMENT)

f, g (determined by existing grade)
Split-level building without attached garage
Multi-level building elevated on piles with no obstructions below the elevated floor.

- **a**: Top of bottom floor (measure at doorsill)
- **b**: Top of next higher floor (measure at doorsill)
- **c**: Bottom of lowest horizontal structural member
- **d**: Elevation of machinery and equipment (measure at top of platform)
- **e**: Lowest adjacent finished grade
- **f**: Highest adjacent finished grade
- **g**: Not Applicable
- **h**: Not Applicable
Elevated Building
No obstructions

C2.a
C2.b
C2.c (V Zones only)
“Open” Defined

• Wooden or plastic lattice, with at least 40 percent of its area open, and made of material no thicker than \( \frac{1}{2} \) inch.

• Wooden or plastic slats or shutters, with at least 40 percent of their area open, and made of material no thicker than 1 inch.
• open louvers

• open slats
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 openings in Section C, Building Elevation Information (Survey Required).

Diagram:
- a: ELEVATED FLOOR
- b: NEXT HIGHER FLOOR
- c: ENCLOSURE
- d: GRADE
- f, g: (determined by existing grade)
- f, g: (For V zones only)
Diagram 6 Notes

• For multiple enclosures, the primary enclosure info. should be provided in Section A8 and additional enclosures should be listed separately in the “Comments” area in Section D (size, # of openings, & total net open area).
Enclosure

• That portion of an elevated building below the lowest elevated floor that is either partially or fully shut-in by rigid walls (Flood Insurance Manual)

or

• Areas created by a crawlspace or solid walls that fully enclose areas below the BFE (Technical Bulletins).
Multi-level building elevated with partial enclosure

LOMA or LOMR-F
Multi-level building elevated with partial enclosure
Building elevated on full-story foundation walls with a fully enclosed area below the elevated floor.

- **a** Top of bottom floor (measure at top of doorsill)
- **b** Top of next higher floor (measure at top of doorsill)
- **c** Elevation of machinery and equipment (measure at top of platform)
- **d** Lowest adjacent finished grade
- **e** Highest adjacent finished grade
- **f** and **g** Indicate No openings in the enclosure
- **h** and **i** Not Applicable
Diagram 7 Notes

• See Diagram 6 Notes.
• The interior floor along the lower side of a building that is set into a sloping site must be at or above the exterior grade across the entire length of that side of the building, otherwise the enclosure becomes a basement (Diagram 2).
Multiple-level building elevated on crawl space.

- **Top of bottom floor** (measure at top of crawl space floor)
- **Top of next higher floor** (measure at doorsill)
- **Lowest adjacent finished grade**
- **Highest adjacent finished grade**
- **Number of openings within 1 foot above adjacent grade**
- **Total area of all openings**
- """", """", and """
- **Not Applicable**
Diagram 8 Notes

• Crawl space: interior floor area ≤ 5 feet below the top of the next higher floor.

• If the crawl space is below ground level on all sides, then the space is by definition a basement (Diagram 2 or 4).

• Use “Comments” area in Section D to identify unusual situations (e.g. crawl space grade is significantly higher than exterior grade).
Elevation Certificate Resources

• Instructions forCompleting the Elevation Certificate – provided with the EC (www.fema.gov/pdf/nfip/elvcert.pdf)


• Online Tutorial “Surveyor’s Guide to the Elevation Certificate” (http://training.nfipstat.com/ecsurveyor/)

• FEMA Technical Bulletins
  (www.fema.gov/plan/prevent/floodplain/techbul.shtm)

• Local, State, and Federal contacts
  - Local floodplain manager or inspection office
  - SC Department of Natural Resources, Flood Mitigation Program (www.dnr.sc.gov/water/flood)
  - FEMA (www.fema.gov)