Mistakes on Elevation Certificates

SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1. NFIP Community Name & Community Number	B2. County Name	B3. State
Harrison Township #260123	Macomb	Michigan

B4. Map/Panel Number	B5. Suffix	B6. FIRM Index Date	B7. FIRM Panel Effective/ Revised Date	B8. Flood Zone(s)	B9. Base Flood Elevation(s) (Zone AO, use Base Flood Depth)
26099C0356	H	11/20/2013	12/04/2012	AE	578.6'

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

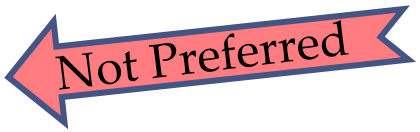
☐ FIS Profile ☐ FIRM ☐ Community Determined ☒ Other/Source: FIS Stillwater Chart

B11. Indicate elevation datum used for BFE in Item B9: ☐ NGVD 1929 ☒ NAVD 1988 ☐ Other/Source: _____

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

Designation Date: _____ ☐ CBRS ☐ OPA

What is the Base Flood Elevation (BFE) & how do you determine it?

- FIRM Map Panel? 

- Flood Insurance Study?
  - Profile Sheet
  - Floodway Data Chart
  - Stillwater Chart
- Community Determined?
- Other?

Major Mistakes…

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, AR/A, AR/AE, AR/A1–A30, AR/AH, AR/AO. Complete Items C2.a–h below according to the building diagram specified in Item A7. In Puerto Rico only, enter meters.

Benchmark Utilized: PID DH9013 Vertical Datum: NAVD 1988

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)	577.0	☒ feet	☐ meters
b) Top of the next higher floor	578.6	☒ feet	☐ meters
c) Bottom of the lowest horizontal structural member (V Zones only)	N/A	☒ feet	☐ meters
d) Attached garage (top of slab)	577.0	☒ feet	☐ meters
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)	578.7	☒ feet	☐ meters
f) Lowest adjacent (finished) grade next to building (LAG)	577.0	☒ feet	☐ meters
g) Highest adjacent (finished) grade next to building (HAG)	577.9	☒ feet	☐ meters
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support	N/A	☒ feet	☐ meters

COMMENTS SECTION PAGE 2

ELEVATION CERTIFICATE

SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by law to certify elevation information. *I certify that the information on this Certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.*

Were latitude and longitude in Section A provided by a licensed land surveyor? ☒ Yes ☐ No ☐ Check here if attachments.

Certifier's Name	License Number	
Karol L. Grove	39075	
Title		
Professional Land Surveyor		
Company Name		
Alpine Land Surveying, Inc.		
Address		
4237 Curtis Road		
City	**State**	**ZIP Code**
Highland	Michigan	48357
Signature	**Date**	**Telephone**
Karol L Grove	09/08/2016	(248) 807-1456

Place Seal Here

STATE OF MICHIGAN KAROL L. GROVE PROFESSIONAL SURVEYOR No. 39075 LICENSED PROFESSIONAL SURVEYOR

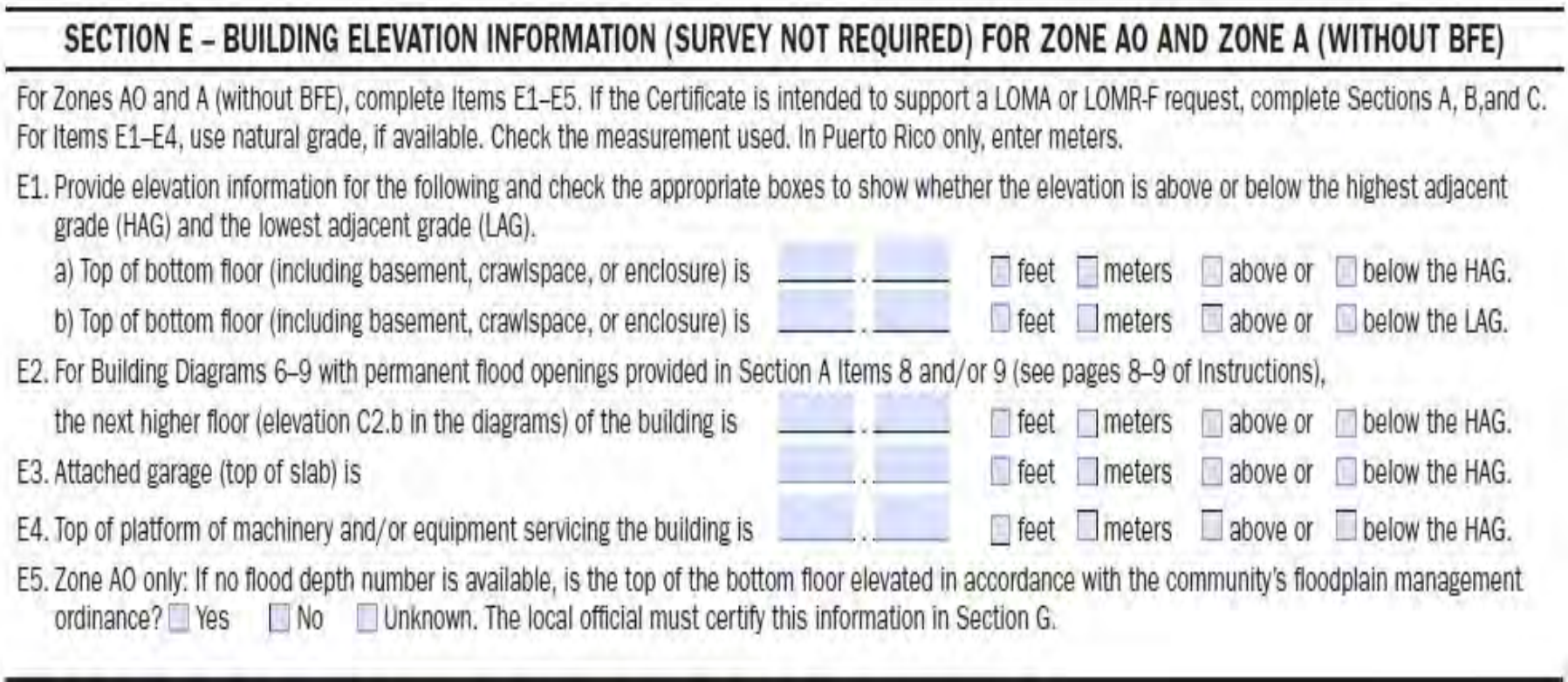
Copy all pages of this Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

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

All other mechanicals servicing this building are located on the upper floor at 578.3' elevation.

Can a homeowner complete an Elevation Certificate?

YES or NO????



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.

ELEVATION CERTIFICATE, page 3

Building Photographs

See Instructions for Item A6.

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

				FOR INSURANCE COMPANY USE
Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 8779 Lagoon Drive				Policy Number:
City Brighton	State MI	ZIP Code 48116		Company NAIC Number:

If using the Elevation Certificate to obtain NFIP flood insurance, affix at least 2 building photographs below according to the instructions for Item A6. Identify all photographs with date taken; "Front View" and "Rear View"; and, if required, "Right Side View" and "Left Side View." When applicable, photographs must show the foundation with representative examples of the flood openings or vents, as indicated in Section A8. If submitting more photographs than will fit on this page, use the Continuation Page.

Road View
02/02/15

Elevation Certificates in a Zone A

What is an acceptable BFE?

- Letter from DEQ?
- Nearby LOMA?
- Platted Subdivision?
- Letter from Community Official?

VACANT LAND

If it is located completely within a 1% Floodplain Area……
Is it buildable???

When to do a ***LOMR-F***

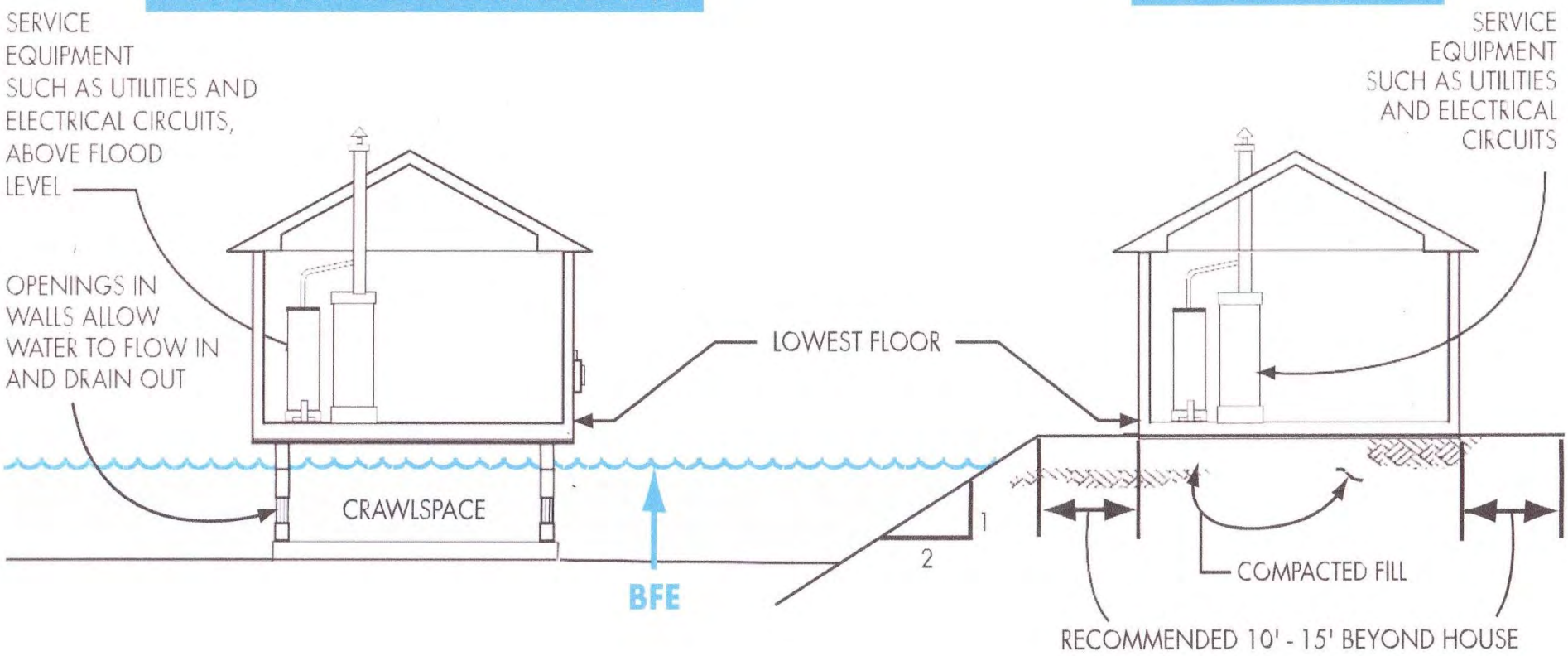
- Fill has been placed.
- Ground is too low & fill will be placed

• • •

- "Slab on Grade" building, with the slab above the BFE & LAG below the BFE

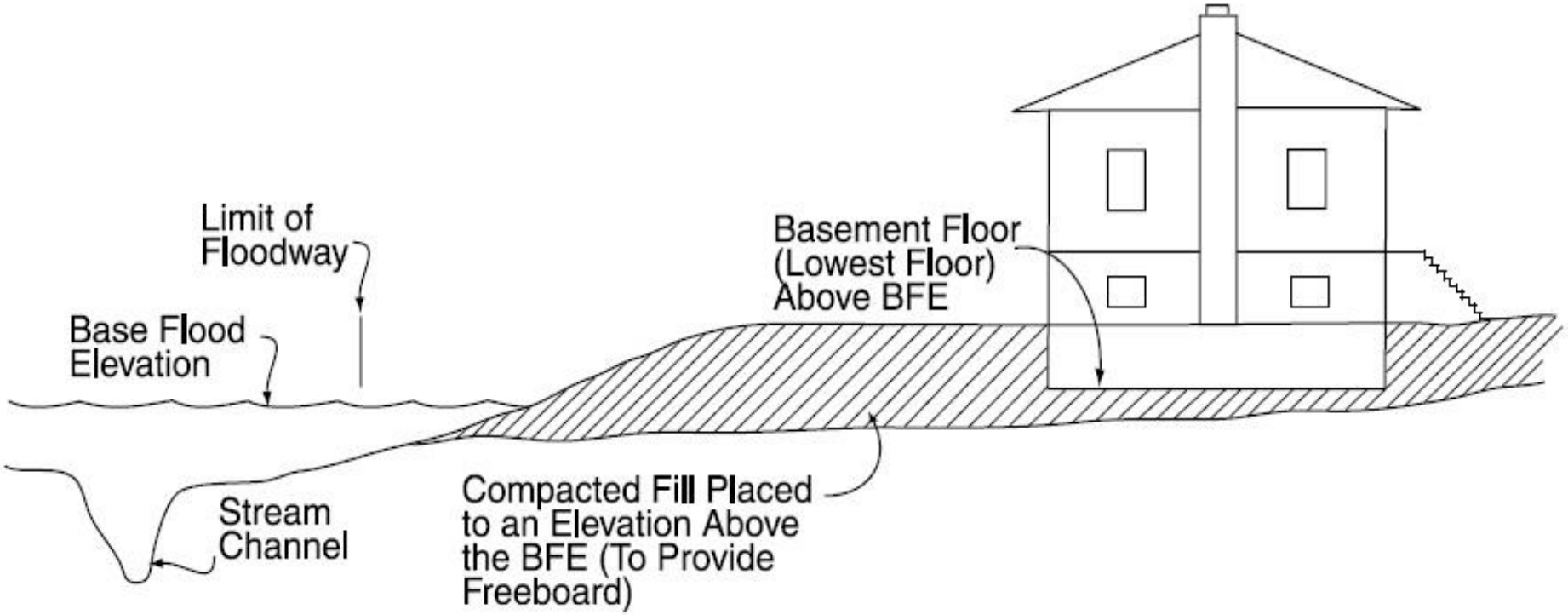
Elevate on Foundation Walls

Elevate on Fill

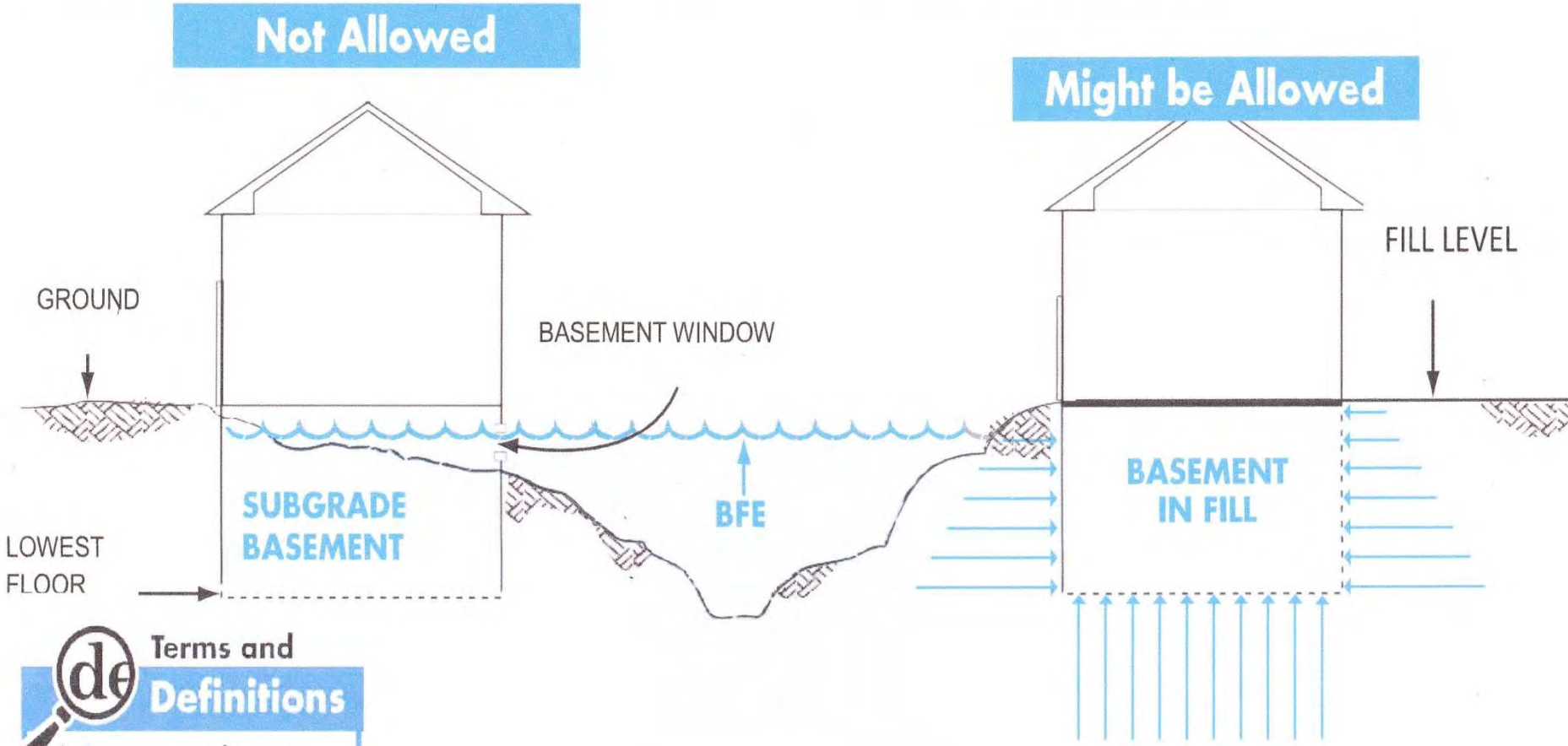


CAUTION! Enclosures (including crawlspaces) have some special requirements, see page 35. Note: When the walking surface of the lowest floor is at the minimum elevation, under-floor utilities and ductwork are not allowed. Fill used to elevate buildings must be properly compacted (see page 32).

FILL - Basement



Basements Are Unsafe



Terms and Definitions

A **basement** is any portion of a building that has its floor sub-grade (below ground level) on all sides.

New basements below the BFE are not allowed. An inch of water over the sill and the entire basement can fill. Excavating a basement into fill doesn't always make it safe, pressure from saturated ground can damage the walls. Basements can be designed and built under certain circumstances. Check with your local permit office – the community must certify that a filled site is "reasonably safe from flooding."

Procedure to file a LOMR-F

Same documents as a LOMA except:

- Must use the MT-1 Form

• • •

- Must pay a fee ($425 for single parcel)

- Can be much more complicated……

Non-Participating Community??

- Can you still file a LOMA if the Community is Non-Participating?
- How do we know if a Community in Non-Participating?
- Can you file a LOMA in a Non-Mapped Community?
- Can you prepare an Elevation Certificate in a Non-Mapped Community?
- When will you have problems filing a LOMA in a Non-Participating Community?

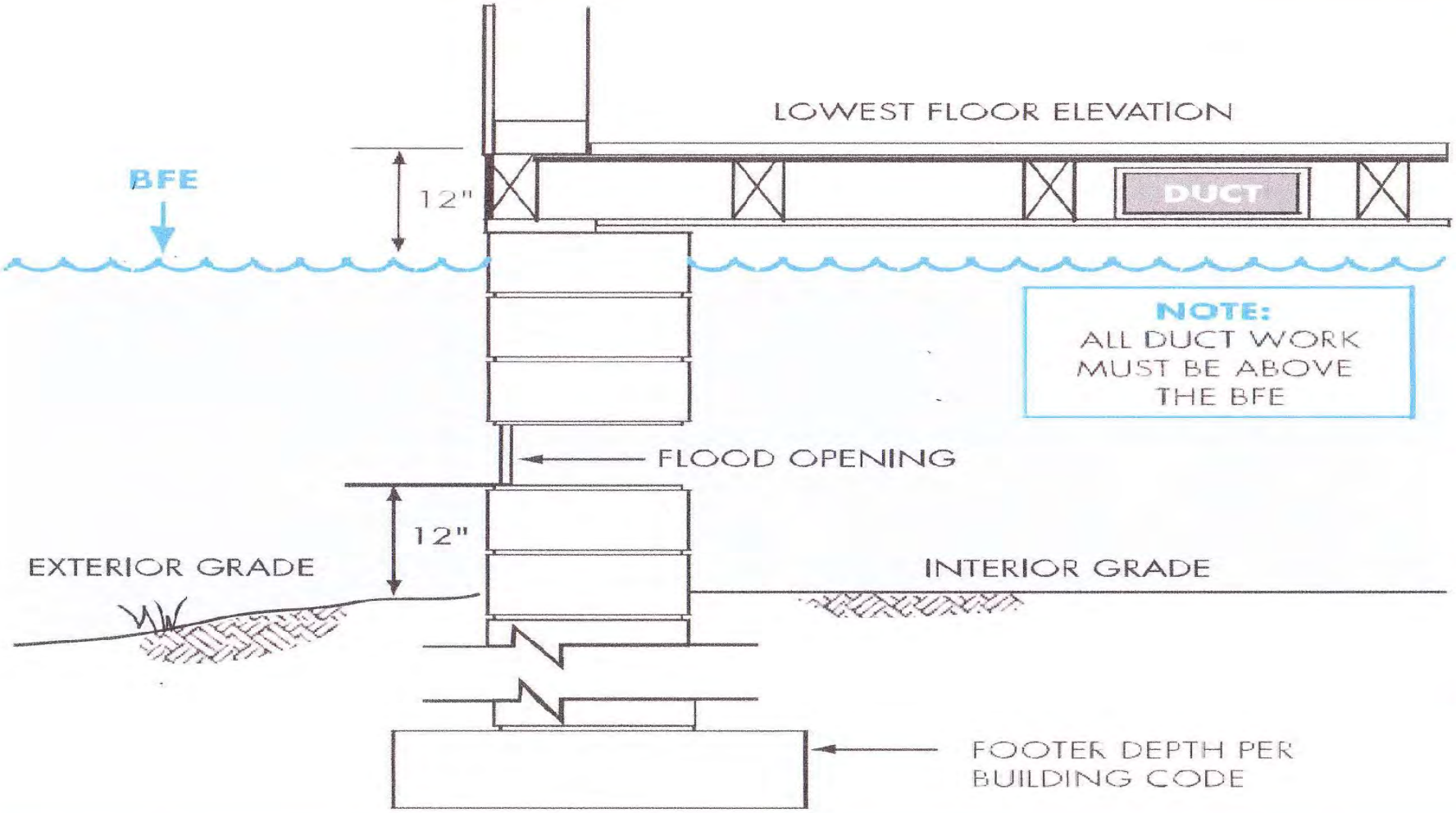
Let's talk
NON-COMPLIANT vs. COMPLIANT

How do we make a structure Compliant?

- **Flood Vents**
- **Elevating Mechanicals**
- **Adjusting Elevations**

What to look at?

Crawlspace Details



Standard Vent
42 sq. in.

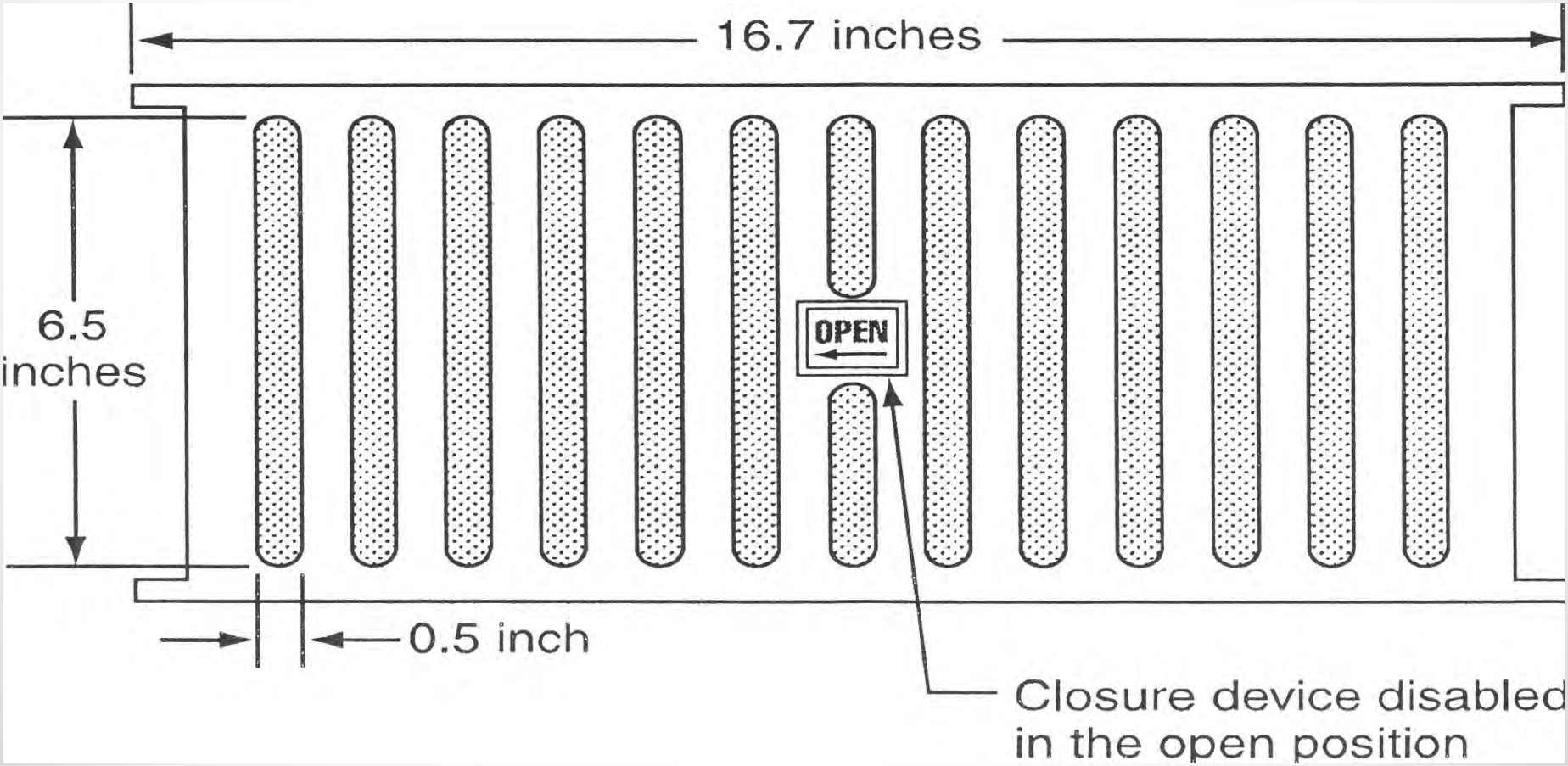
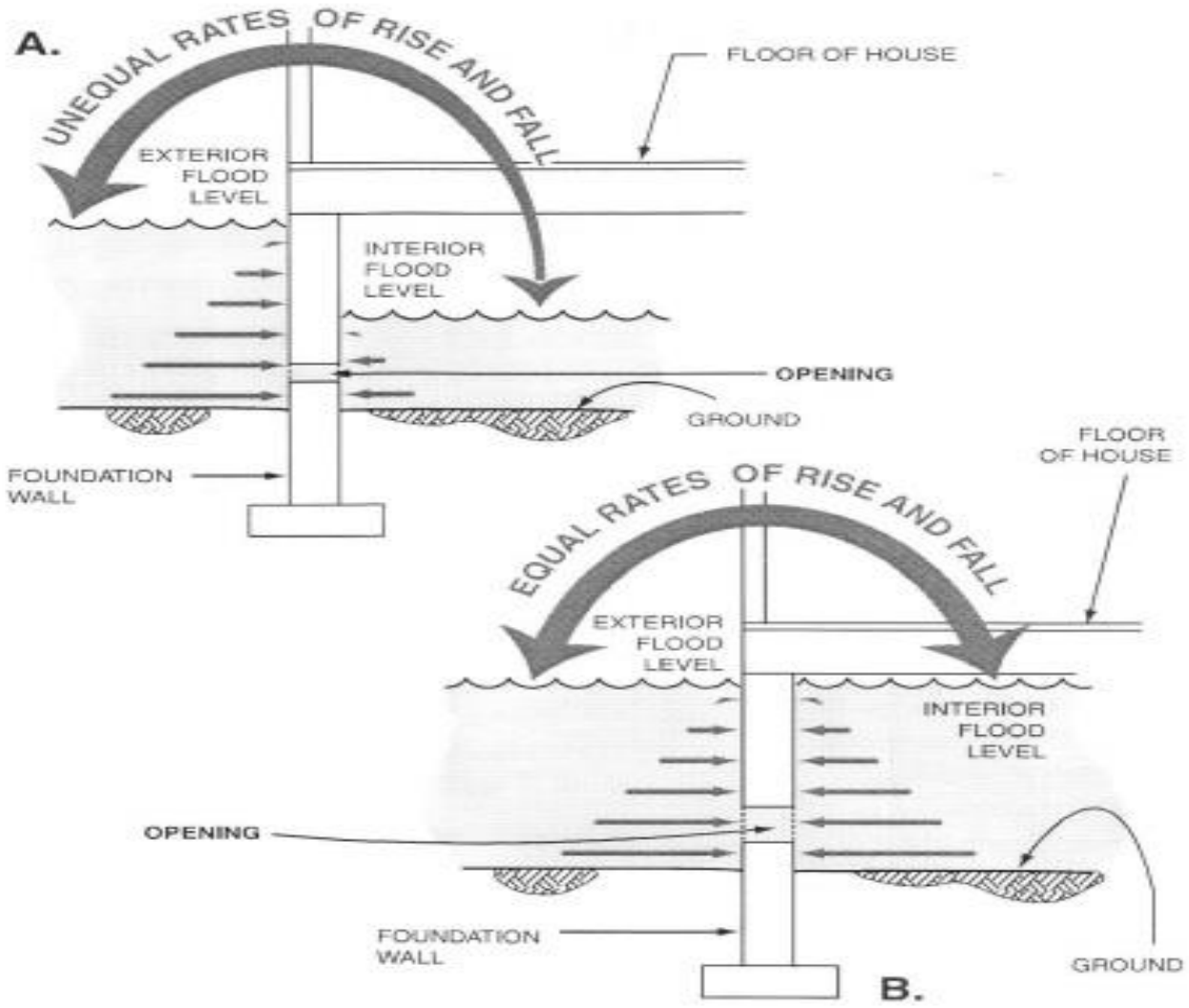


Figure 6-2
Wall openings must allow flood waters not only to enter the house but also to rise and fall at the same rate as flood waters outside.



When the number and/or size of openings in foundation walls are inadequate (A), interior flood levels cannot rise or fall as fast as exterior flood levels. As a result, hydrostatic pressures, as indicated by the horizontal arrows, are not equalized. When the number and size of openings are adequate (B), interior and exterior flood levels rise and fall at the same rate and hydrostatic pressures are equalized.

ENGINEERED FLOOD VENTS


MIP
most innovative product
AT WORLD OF CONCRETE

ENGINEERED FLOOD VENTS

Placement of vents??

Number of vents??

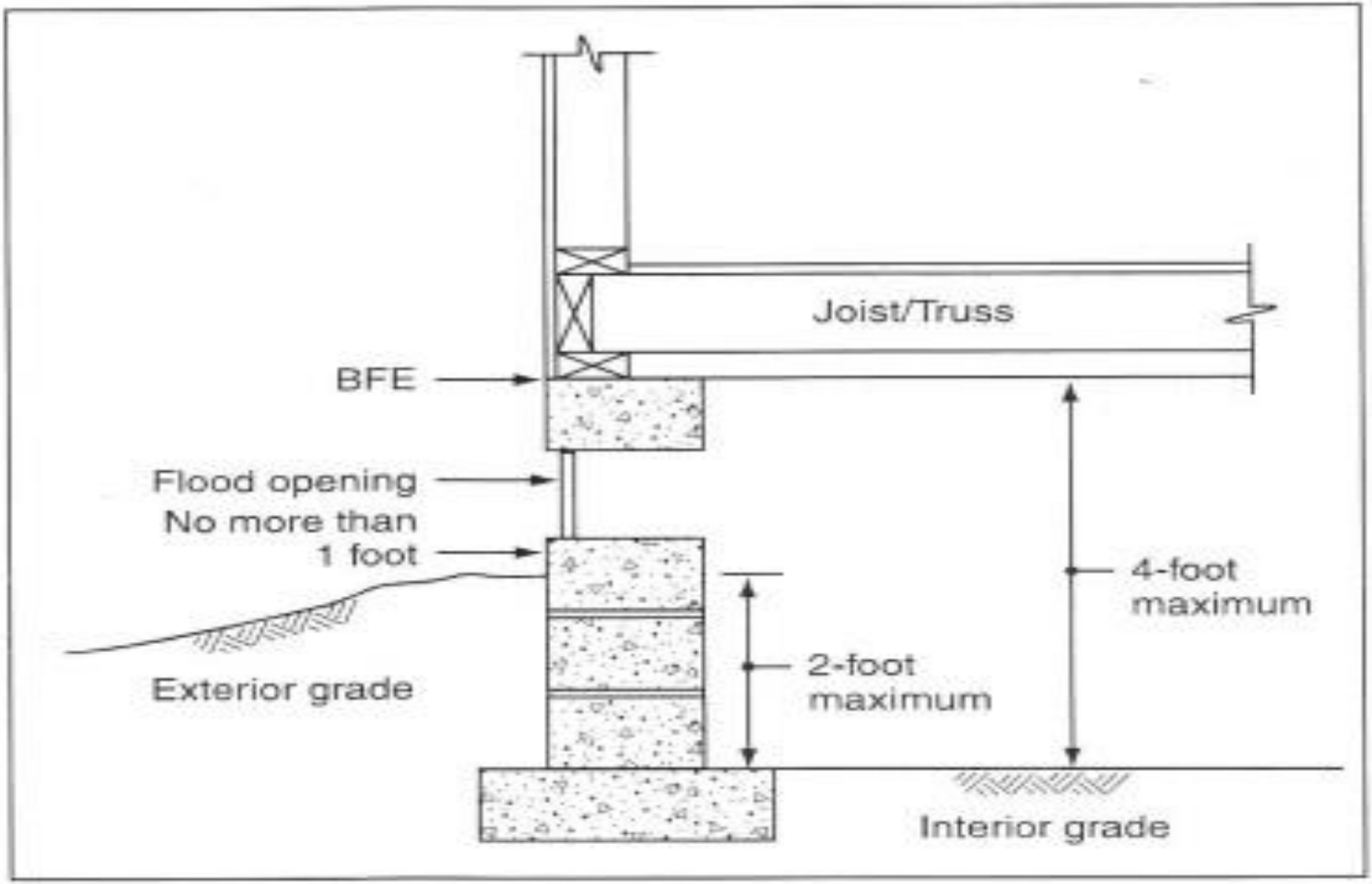


Figure 2. Limitations on below-grade crawlspaces in shallow flood hazard areas (TB 11)

The floor of my basement/crawlspace is lower than the ground level; what do I do?

What you do is pay extremely high flood insurance premiums. According to FEMA guidelines in Technical Bulletin 1-08, if all four sides of the structure are below grade by even one inch, the structure has a basement. In a flood zone, having a basement almost guarantees very high flood insurance rates.

To lower your premium, you need to equalize the interior and exterior grade on at least one side of the house. How do you do that???

The easiest way to do this is to either add fill to the inside of the basement until at least one wall is at or above exterior grade, or to dig-out the ground outside until it is at or below the interior grade (floor) level. This will turn your basement into a crawlspace, which (if properly vented) should have drastically lower flood insurance rates.

ELEVATING ALL MECHANICALS SERVICING THE STRUCTURE!

Air Conditioning Units

Sump Pumps are fine

Enclosures Below the BFE

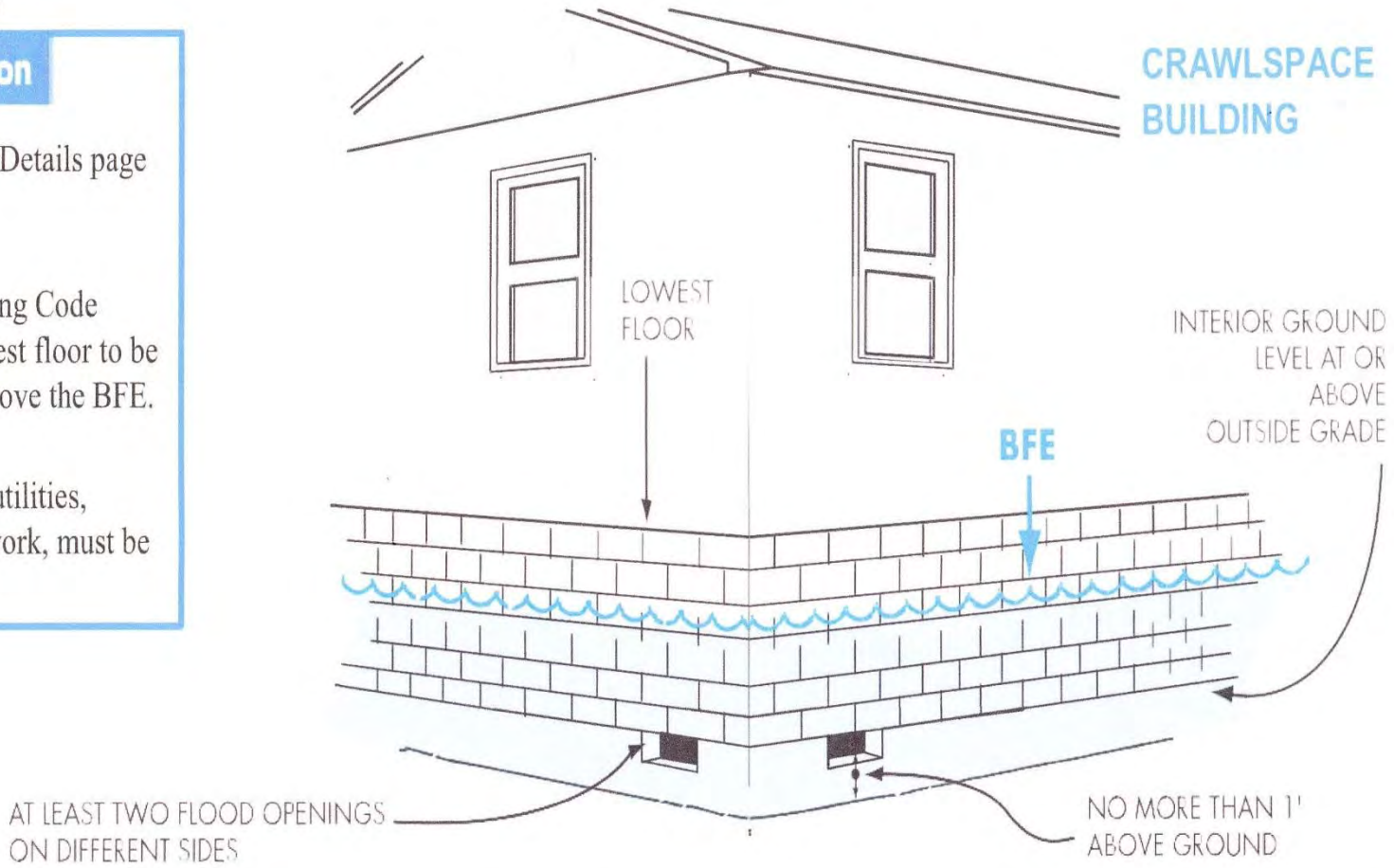
Important

Information

See Crawlspace Details page 36).

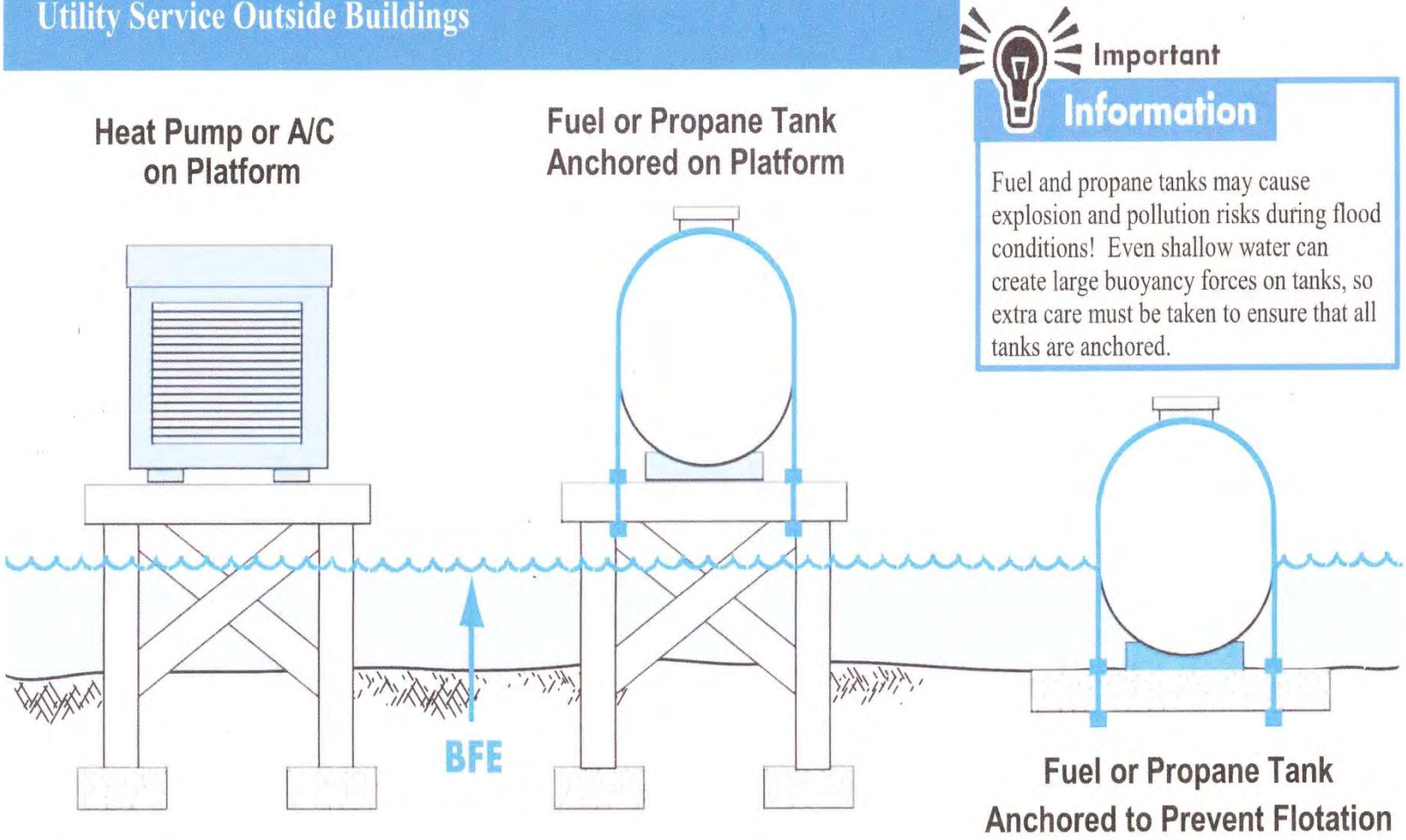
Michigan Building Code requires the lowest floor to be at least 1 foot above the BFE.

All under-floor utilities, including duct work, must be above the BFE.



A crawlspace is one way to elevate just a couple of feet. For best flood protection and drainage, the interior ground surface should be the same as the outside ground level along at least one side. Check with the local permit office for restrictions. In all cases, the following are required: openings/vents, elevated utilities and ductwork, flood resistant materials, and limitations on use.

Utility Service Outside Buildings

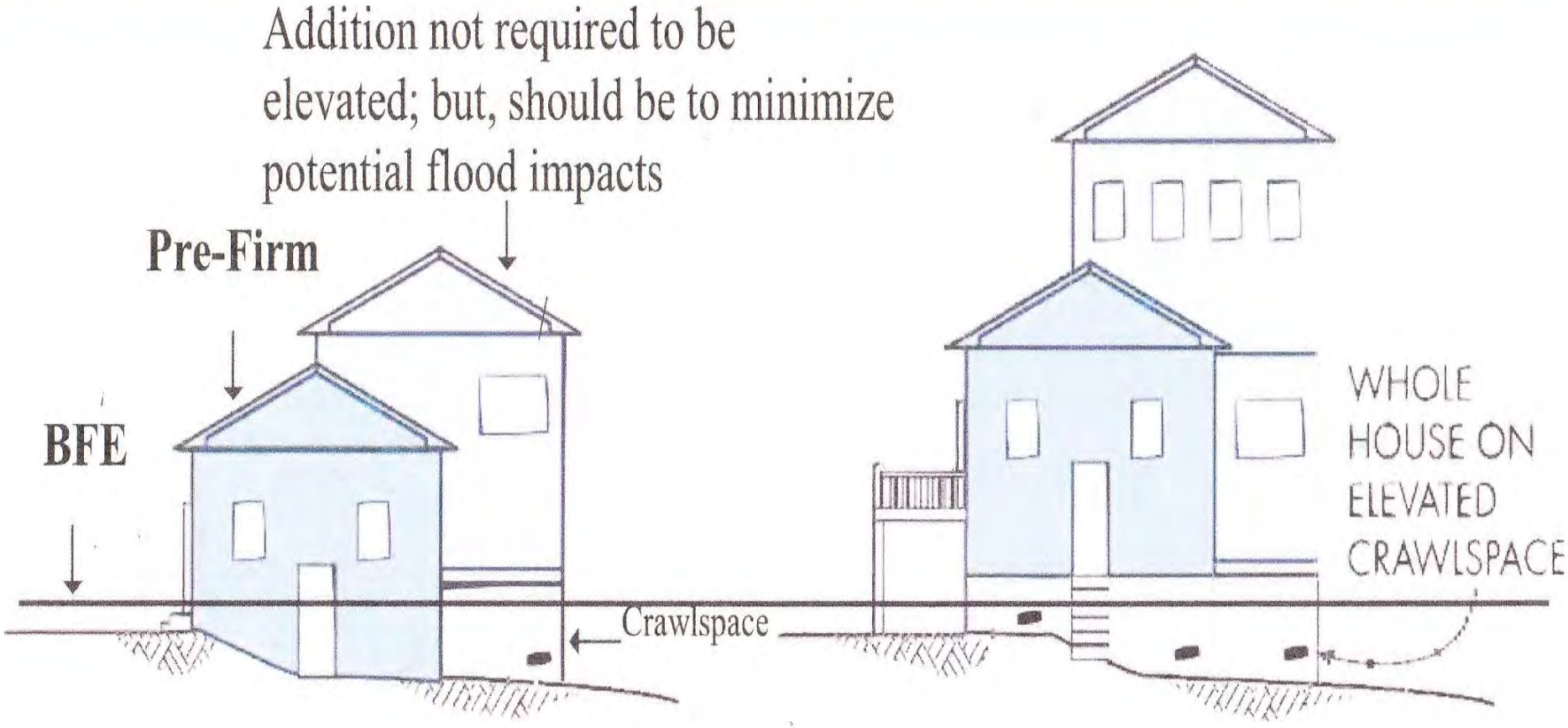


Important Information

Fuel and propane tanks may cause explosion and pollution risks during flood conditions! Even shallow water can create large buoyancy forces on tanks, so extra care must be taken to ensure that all tanks are anchored.

Whether inside an attached garage or outside the building, all utilities, appliances and equipment must be elevated above the BFE or protected against flood damage. Utilities include plumbing fixtures, electrical equipment, gas lines, fuel tanks, and heating and air conditioning equipment.

Planning to Make Alterations, Repairs or Additional Improvements to Your Floodplain Building?



Improvement Costs are <50% of Existing Structure's Market Value

Improvement Costs are >50% of Existing Structure's Market Value

Can we make this house Compliant???

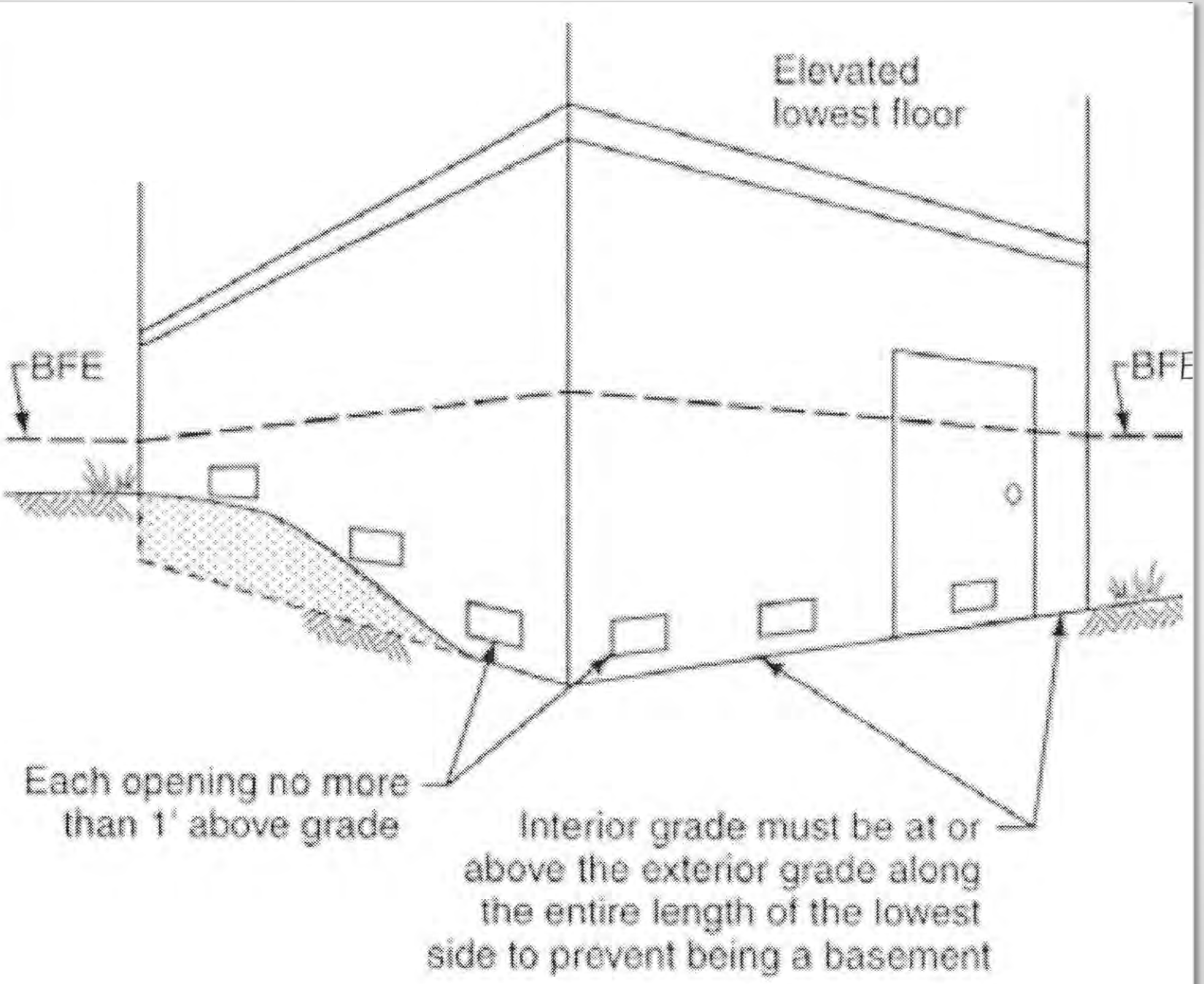
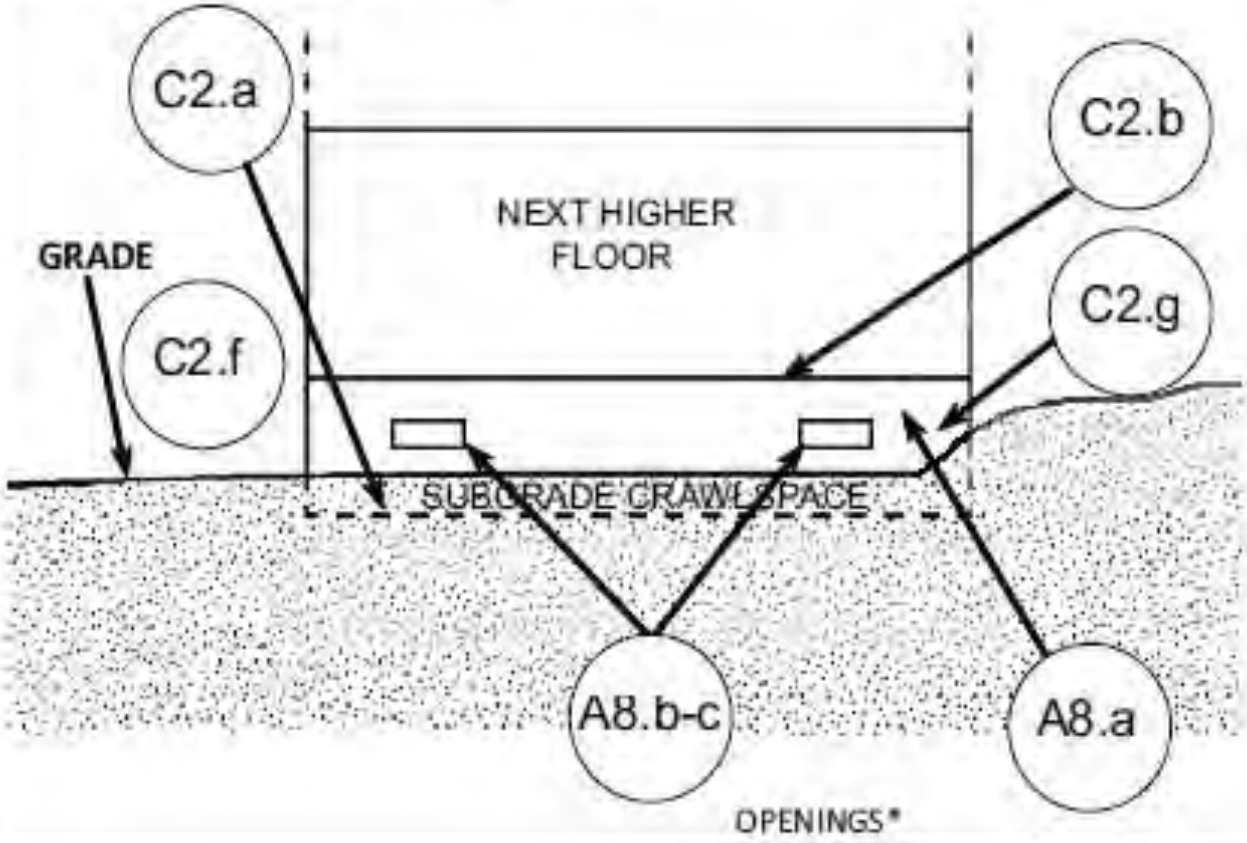

Elevated
lowest floor
BFE
BFE
Each opening no more
than 1' above grade
Interior grade must be at or
above the exterior grade along
the entire length of the lowest
side to prevent being a basement

DIAGRAM 9

All buildings (other than split-level) elevated on a sub-grade crawlspace, with or without attached garage.

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



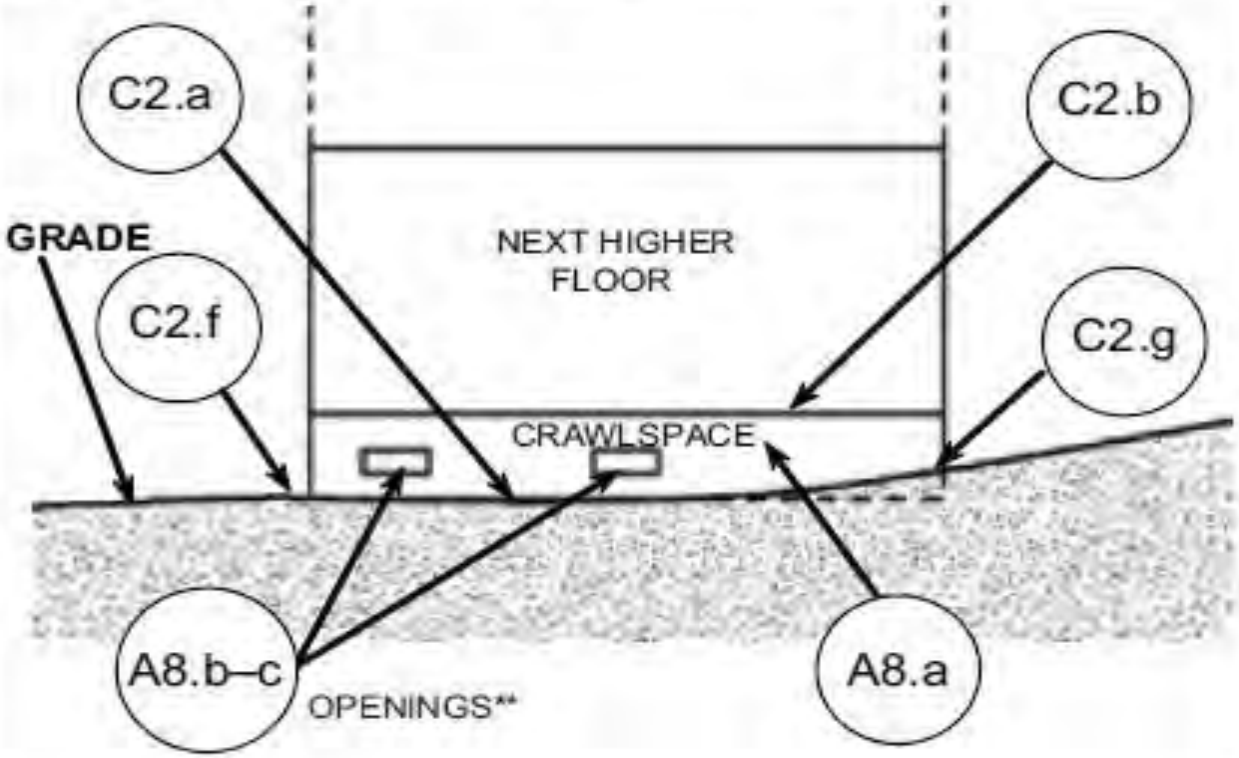
NON-Compliance

Compliance

DIAGRAM 8

All buildings elevated on a crawlspace with the floor of the crawlspace at or above grade on at least 1 side, with or without an attached garage.

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



Shooting the Structure

Checking the LAG

Completing a LOMA

Main Components (when filing)

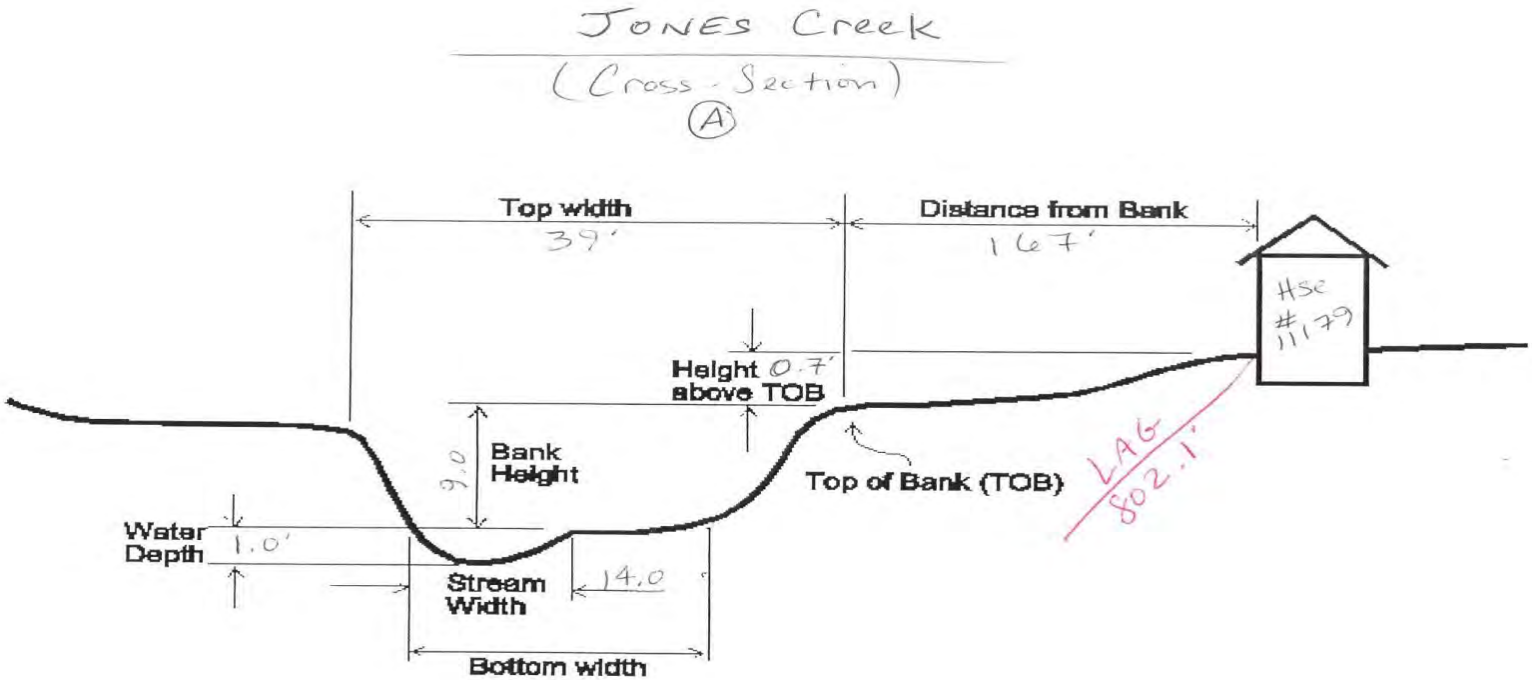
1. Deed
2. FIRMette
3. Plat Map or Tax Map
4. Elevation Form or MT-EZ
5. Base Flood Elevation
6. Community Acknowledgement Form (Special)

Establishing a BFE in a Zone A

- ✓ Look for other nearby LOMA's
- ✓ Submit a request to the DEQ (with supporting data)
- ✓ Community Records
- ✓ Nearby Platted Subdivision
- ✓ Submit a request to FEMA (with supporting data)

Zone A

Establishing the BFE on a River , Creek or Drain



Flood Zone – Non Mapped

DEPARTMENT OF HOMELAND SECURITY - FEDERAL EMERGENCY MANAGEMENT AGENCY

ELEVATION FORM

O.M.B. NO. 1660-0015
Expires February 28, 2014

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this data collection is estimated to average 1.25 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and submitting the form. This collection is required to obtain or retain benefits. You are not required to respond to this collection of information unless a valid OMB control number is displayed on this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 1800 South Bell Street, Arlington, VA 20598-3005, Paperwork Reduction Project (1660-0015). **NOTE: Do not send your completed form to this address.**

This form must be completed for requests and must be completed and signed by a registered professional engineer or licensed land surveyor. **A DHS - FEMA National Flood Insurance Program (NFIP) Elevation Certificate may be submitted in lieu of this form for single structure requests.**

For requests to remove a structure on natural grade OR on engineered fill from the Special Flood Hazard Area (SFHA), submit the lowest adjacent grade (the lowest ground touching the structure), ***including an attached deck or garage***. For requests to remove an entire parcel of land from the SFHA, provide the lowest lot elevation; or, if the request involves an area described by metes and bounds, provide the lowest elevation within the metes and bounds description. All measurements are to be rounded to nearest tenth of a foot. In order to process your request, all information on this form must be completed ***in its entirety***. **Incomplete submissions will result in processing delays.**

1. NFIP Community Number: Property Name or Address:
2. Are the elevations listed below based on ☐ ***existing*** or ☐ ***proposed*** conditions? (Check one)
3. For the existing or proposed structures listed below, what are the types of construction? (check all that apply)
   ☐ crawl space ☐ slab on grade ☐ basement/enclosure ☐ other (explain)
4. Has DHS - FEMA identified this area as subject to land subsidence or uplift? (see instructions) ☐ Yes ☐ No
   If yes, what is the date of the current re-leveling? / (month/year)
5. What is the elevation datum? ☐ NGVD 29 ☐ NAVD 88 ☐ Other (explain)
   If any of the elevations listed below were computed using a datum different than the datum used for the effective Flood Insurance Rate Map (FIRM) (e.g., NGVD 29 or NAVD 88), what was the conversion factor?
   Local Elevation +/- ft. = FIRM Datum
6. Please provide the Latitude and Longitude of the most upstream edge of the ***structure*** (in decimal degrees to the nearest fifth decimal place):
   Indicate Datum: ☐ WGS84 ☐ NAD83 ☐ NAD27 Lat. . Long. .
   Please provide the Latitude and Longitude of the most upstream edge of the ***property*** (in decimal degrees to the nearest fifth decimal place):
   Indicate Datum: ☐ WGS84 ☐ NAD83 ☐ NAD27 Lat. . Long. .

Address	Lot Number	Block Number	Lowest Lot Elevation*	Lowest Adjacent Grade To Structure	Base Flood Elevation	BFE Source

This certification is to be signed and sealed by a licensed land surveyor, registered professional engineer, or architect authorized by law to certify elevation information. All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Certifier's Name:	License No.:	Expiration Date:
Company Name:	Telephone No.:	
Email:	Fax No.	
Signature:	Date:	

* For requests involving a portion of property, include the lowest ground elevation within the metes and bounds description.
Please note: If the Lowest Adjacent Grade to Structure is the only elevation provided, a determination will be issued for the structure only.

Seal (optional)

Elevation Form

DEPARTMENT OF HOMELAND SECURITY - FEDERAL EMERGENCY MANAGEMENT AGENCY

ELEVATION FORM

O.M.B. NO. 1660-0015
Expires February 28, 2014

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this data collection is estimated to average 1.25 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and submitting the form. This collection is required to obtain or retain benefits. You are not required to respond to this collection of information unless a valid OMB control number is displayed on this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 1800 South Bell Street, Arlington, VA 20598-3005, Paperwork Reduction Project (1660-0015). NOTE: Do not send your completed form to this address.

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For requests to remove a structure on natural grade OR on engineered fill from the Special Flood Hazard Area (SFHA), submit the lowest adjacent grade (the lowest ground touching the structure), **including an attached deck or garage**. For requests to remove an entire parcel of land from the SFHA, provide the lowest lot elevation; or, if the request involves an area described by metes and bounds, provide the lowest elevation within the metes and bounds description. All measurements are to be rounded to nearest tenth of a foot. In order to process your request, all information on this form must be completed **in its entirety. Incomplete submissions will result in processing delays.**

1. NFIP Community Number: 260213 Property Name or Address: 410 Miller Road, Ann Arbor, Michigan 48103

2. Are the elevations listed below based on ■ *existing* or ☐ *proposed* conditions? (Check one)

3. For the existing or proposed structures listed below, what are the types of construction? (check all that apply)
   All other buildings
   ☐ crawl space ■ slab on grade ■ basement/enclosure ☐ other (explain)
   House

4. Has DHS - FEMA identified this area as subject to land subsidence or uplift? (see instructions) ☐ Yes ■ No
   If yes, what is the date of the current re-leveling? / (month/year)

5. What is the elevation datum? ☐ NGVD 29 ■ NAVD 88 ☐ Other (explain)
   If any of the elevations listed below were computed using a datum different than the datum used for the effective Flood Insurance Rate Map (FIRM) (e.g., NGVD 29 or NAVD 88), what was the conversion factor?
   Local Elevation +/- ft. = FIRM Datum

6. Please provide the Latitude and Longitude of the most upstream edge of the **structure** (in decimal degrees to the nearest fifth decimal place):
   See page #2
   Indicate Datum: ☐ WGS84 ■ NAD83 ☐ NAD27 Lat. Long.
   Please provide the Latitude and Longitude of the most upstream edge of the **property** (in decimal degrees to the nearest fifth decimal place):
   Indicate Datum: ☐ WGS84 ☐ NAD83 ☐ NAD27 Lat. Long.

Address	Lot Number	Block Number	Lowest Lot Elevation*	Lowest Adjacent Grade To Structure	Base Flood Elevation	BFE Source
See Page 2						

This certification is to be signed and sealed by a licensed land surveyor, registered professional engineer, or architect authorized by law to certify elevation information. All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Certifier's Name:	License No.:	Expiration Date: 10/31/2015
Company Name:	Telephone No.:	
Email:	Fax No.:	
Signature:	Date:	

Seal (optional)

* For requests involving a portion of property, include the lowest ground elevation within the metes and bounds description.
Please note: If the Lowest Adjacent Grade to Structure is the only elevation provided, a determination will be issued for the structure only.

Elevation Form Page 1

Multiple Structures

Continued from Page 1

Structure	Year Built	Lat.	Long.	Lowest Adjacent Grade To Structure	Base Flood Elevation	BFE Source
House	1956	42.28374	-83.75181	898.6'	N/A	See Enclosed
						Nearby LOMA
Barn #1	1988	42.28299	-83.75188	898.2'	N/A	
Barn #2	1959	42.28308	-83.75198	899.6'	N/A	
Garage	1962	42.28893	-83.75119	897.6'	N/A	
Shed	1998	42.28339	-83.75199	897.9'	N/A	

This certification is to be signed and sealed by a licensed land surveyor, registered professional engineer, or architect authorized by law to certify elevation information. All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Certifier's Name: Karol L. Grove	License No.: 39075	Expiration Date: 10/31/2015
Company Name: Flood Zone Specialists	Telephone No.: [illegible]	
Email: [illegible]	Fax No.: [illegible]	
Signature: Karol L. Grove	Date: 08/18/2014	

STATE OF MICHIGAN · KAROL L. GROVE · PROFESSIONAL SURVEYOR · LICENSED PROFESSIONAL SURVEYOR

Seal (optional)

* For requests involving a portion of property, include the lowest ground elevation within the metes and bounds description.
Please note: If the Lowest Adjacent Grade to Structure is the only elevation provided, a determination will be issued for the structure only.

Elevation Form Page 2

Multiple Structures

Navigating FEMA's Websites

Google Earth Overlay

Flood Maps

Flood Insurance Studies

FIRMette's

eLOMA's

LOMA's (Zone A)

Important Numbers:

Federal Emergency Management Agency
(FEMA)
1-877-336-2627 (FEMA Map Specialists Hotline)

National Flood Insurance Program (NFIP)
1-800-638-6620

Important Websites:

https://msc.fema.gov

https://hazards.fema.gov

Using the FEMA Map Overlay with Google Earth:

1. You will first need to load the **"Free Google Earth Download"** onto the computer
2. Then go to **https://hazards.fema.gov**
3. Click on **"Tools & Links"**
4. On the right side column click the second bullet point down **"Using the National Flood Hazard Layer in Google Earth"**
5. Scroll half way down to the **FEMA NFHL**, under this you will click on a link **FEMA NFHL v3.0.kmz**
6. This will bring up the FEMA Map Overlay on Google Earth. You can feed any address in at the top left corner of the screen.

QUESTIONS??